



FN980 Family Telit Proprietary QMI Command Reference Guide

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APPLICABILITY TABLE

PRODUCTS

	SW Versions	Modules
■ ■ FN980m	38.02.002	5G
■ ■ FN980	38.02.202	5G
■ ■ FT980-KS	38.12.202	5G
■ ■ FT980m	38.22.002	5G
■ ■ FT980	38.22.202	5G

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1. INTRODUCTION

1.1. Scope

Scope of this document is to give an overview of the fonts, styles and general structure -- first chapter included -- to use when writing hardware user guides.

1.2. Audience

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Danger – This information **MUST** be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

Function declarations, function names, type declarations, and code samples appear in a different font, e.g., `#include`.

An asterisk (*) in a TLV indicates that it is applicable only for 3GPP2.

A double asterisk (**) in a TLV indicates that it is applicable only for 3GPP.

Parameter types are indicated by arrows:

- Designates an input parameter
- ← Designates an output parameter
- ↔ Designates a parameter used for both input and output

1.5. Related Documents

- Qualcomm Messaging Interface (QMI) Architecture Document, 80-VB816-1
- Qualcomm QMI COMMON 1.10 for MPSS.TH.2.0.1 (QMI Common Constant Definitions Spec), 80-NV406-2
- Qualcomm QMI CTL 1.11 for MPSS.TH.2.0.1 (QMI Control Svc Spec), 80-NV406-3
- Qualcomm QMI WDS 1.117 for MPSS.TH.2.0 (QMI Wireless Data Service Spec), 80-NV404-5
- Qualcomm QMI DMS 1.52 for MPSS.TH.2.0 (QMI Device Management Service) Spec, 80-NV404-4
- Qualcomm QMI NAS 1.169 for MPSS.TH.2.0.1 (QMI Network Access Service Spec), 80-NV406-6
- Qualcomm QMI WMS 1.25 Spec for MPSS.TH.2.0 (QMI Wireless Message Service Spec), 80-NV404-9
- Qualcomm QMI UIM 1.54 for MPSS.TH.2.0 (QMI User Identity Module Spec), 80-NV404-12 B
- Qualcomm QMI LOC 2.113 for MPSS.HI.1.0 (QMI Location Svc Spec), 80-NV720-17 Rev. A
- Qualcomm QMI PDC 1.9 for MPSS.TH.2.0.1 (QMI Persistent Device Configuration Svc Spec), 80-NV406-38 A



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For more details about QUALCOMM® proprietary QMI services, please refer to the QCT documents.

2. COMMON CONSTANT DEFINITIONS (QMI_COMMON)

Table 3-1 lists QMI service type values that are currently defined. These values are used to specify to which QMI service the messages are routed.

Table 3-1 Telit QMI service and values

QMI service	QMI service type value
QMI_FOTA(Firmware Over The Air Service) - TBD	0xE6
QMI_GMS (Telit General Modem Service)	0xE7
QMI_GAS (Telit General Application Service)	0xE8

2.1. QMI result codes

For QMI services that conform to the generalized QMI service message protocol, the result Type-Length-Value (TLV) is present in all response messages. The Result Code TLV consists of two parameters: qmi_result and qmi_error.

2.1.1. qmi_result code

The qmi_result parameter contains one of the values in Table 3-2.

Table 3-2 qmi_result parameter values

Result code	Hex value
QMI_RESULT_SUCCESS	0x0000
QMI_RESULT_FAILURE	0x0001

All other values are reserved for future assignment.

2.1.2. qmi_error codes

The qmi_error parameter contains one of the values in Table 3-3.

Table 3-3 qmi_error parameter values

Error code	Hex value
QMI_ERR_NONE	0x0000
QMI_ERR_MALFORMED_MSG	0x0001
QMI_ERR_NO_MEMORY	0x0002
QMI_ERR_INTERNAL	0x0003
QMI_ERR_ABORTED	0x0004
QMI_ERR_CLIENT_IDS_EXHAUSTED	0x0005

QMI_ERR_UNABORTABLE_TRANSACTION	0x0006
QMI_ERR_INVALID_CLIENT_ID	0x0007
QMI_ERR_NO_THRESHOLDS	0x0008
QMI_ERR_INVALID_HANDLE	0x0009
QMI_ERR_INVALID_PROFILE	0x000A
QMI_ERR_INVALID_PINID	0x000B
QMI_ERR_INCORRECT_PIN	0x000C
QMI_ERR_NO_NETWORK_FOUND	0x000D
QMI_ERR_CALL_FAILED	0x000E
QMI_ERR_OUT_OF_CALL	0x000F
QMI_ERR_NOT_PROVISIONED	0x0010
QMI_ERR_MISSING_ARG	0x0011
QMI_ERR_ARG_TOO_LONG	0x0013
QMI_ERR_INVALID_TX_ID	0x0016
QMI_ERR_DEVICE_IN_USE	0x0017
QMI_ERR_OP_NETWORK_UNSUPPORTED	0x0018
QMI_ERR_OP_DEVICE_UNSUPPORTED	0x0019
QMI_ERR_NO_EFFECT	0x001A
QMI_ERR_NO_FREE_PROFILE	0x001B
QMI_ERR_INVALID_PDP_TYPE	0x001C
QMI_ERR_INVALID_TECH_PREF	0x001D
QMI_ERR_INVALID_PROFILE_TYPE	0x001E
QMI_ERR_INVALID_SERVICE_TYPE	0x001F
QMI_ERR_INVALID_REGISTER_ACTION	0x0020
QMI_ERR_INVALID_PS_ATTACH_ACTION	0x0021
QMI_ERR_AUTHENTICATION_FAILED	0x0022
QMI_ERR_PIN_BLOCKED	0x0023
QMI_ERR_PIN_PERM_BLOCKED	0x0024
QMI_ERR_SIM_NOT_INITIALIZED	0x0025

QMI_ERR_MAX_QOS_REQUESTS_IN_USE	0x0026
QMI_ERR_INCORRECT_FLOW_FILTER	0x0027
QMI_ERR_NETWORK_QOS_UNAWARE	0x0028
QMI_ERR_INVALID_QOS_ID/QMI_ERR_INVALID_ID	0x0029
QMI_ERR_REQUESTED_NUM_UNSUPPORTED	0x002A
QMI_ERR_INTERFACE_NOT_FOUND	0x002B
QMI_ERR_FLOW_SUSPENDED	0x002C
QMI_ERR_INVALID_DATA_FORMAT	0x002D
QMI_ERR_GENERAL	0x002E
QMI_ERR_UNKNOWN	0x002F
QMI_ERR_INVALID_ARG	0x0030
QMI_ERR_INVALID_INDEX	0x0031
QMI_ERR_NO_ENTRY	0x0032
QMI_ERR_DEVICE_STORAGE_FULL	0x0033
QMI_ERR_DEVICE_NOT_READY	0x0034
QMI_ERR_NETWORK_NOT_READY	0x0035
QMI_ERR_CAUSE_CODE	0x0036
QMI_ERR_MESSAGE_NOT_SENT	0x0037
QMI_ERR_MESSAGE_DELIVERY_FAILURE	0x0038
QMI_ERR_INVALID_MESSAGE_ID	0x0039
QMI_ERR_ENCODING	0x003A
QMI_ERR_AUTHENTICATION_LOCK	0x003B
QMI_ERR_INVALID_TRANSITION	0x003C
QMI_ERR_NOT_A_MCAST_IFACE	0x003D
QMI_ERR_MAX_MCAST_REQUESTS_IN_USE	0x003E
QMI_ERR_INVALID_MCAST_HANDLE	0x003F
QMI_ERR_INVALID_IP_FAMILY_PREF	0x0040
QMI_ERR_SESSION_INACTIVE	0x0041
QMI_ERR_SESSION_INVALID	0x0042

QMI_ERR_SESSION_OWNERSHIP	0x0043
QMI_ERR_INSUFFICIENT_RESOURCES	0x0044
QMI_ERR_DISABLED	0x0045
QMI_ERR_INVALID_OPERATION	0x0046
QMI_ERR_INVALID_QMI_CMD	0x0047
QMI_ERR_TPDU_TYPE	0x0048
QMI_ERR_SMSC_ADDR	0x0049
QMI_ERR_INFO_UNAVAILABLE	0x004A
QMI_ERR_SEGMENT_TOO_LONG	0x004B
QMI_ERR_SEGMENT_ORDER	0x004C
QMI_ERR_BUNDLING_NOT_SUPPORTED	0x004D
QMI_ERR_OP_PARTIAL_FAILURE	0x004E
QMI_ERR_POLICY_MISMATCH	0x004F
QMI_ERR_SIM_FILE_NOT_FOUND	0x0050
QMI_ERR_EXTENDED_INTERNAL	0x0051
QMI_ERR_ACCESS_DENIED	0x0052
QMI_ERR_HARDWARE_RESTRICTED	0x0053
QMI_ERR_ACK_NOT_SENT	0x0054
QMI_ERR_INJECT_TIMEOUT	0x0055
QMI_ERR_INCOMPATIBLE_STATE	0x005A
QMI_ERR_FDN_RESTRICT	0x005B
QMI_ERR_SUPS_FAILURE_CAUSE	0x005C
QMI_ERR_NO_RADIO	0x005D
QMI_ERR_NOT_SUPPORTED	0x005E
QMI_ERR_NO_SUBSCRIPTION	0x005F
QMI_ERR_CARD_CALL_CONTROL_FAILED	0x0060
QMI_ERR_NETWORK_ABORTED	0x0061
QMI_ERR_MSG_BLOCKED	0x0062
QMI_ERR_INVALID_SESSION_TYPE	0x0064

QMI_ERR_INVALID_PB_TYPE	0x0065
QMI_ERR_NO_SIM	0x0066
QMI_ERR_PB_NOT_READY	0x0067
QMI_ERR_PIN_RESTRICTION	0x0068
QMI_ERR_PIN2_RESTRICTION	0x0069
QMI_ERR_PUK_RESTRICTION	0x006A
QMI_ERR_PUK2_RESTRICTION	0x006B
QMI_ERR_PB_ACCESS_RESTRICTED	0x006C
QMI_ERR_PB_DELETE_IN_PROG	0x006D
QMI_ERR_PB_TEXT_TOO_LONG	0x006E
QMI_ERR_PB_NUMBER_TOO_LONG	0x006F
QMI_ERR_PB_HIDDEN_KEY_RESTRICTION	0x0070
QMI_ERR_PB_NOT_AVAILABLE	0x0071
QMI_ERR_DEVICE_MEMORY_ERROR	0x0072
QMI_ERR_NO_PERMISSION	0x0073
QMI_ERR_TOO_SOON	0x0074
QMI_ERR_TIME_NOT_ACQUIRED	0x0075
QMI_ERR_OP_IN_PROGRESS	0x0076
QMI_ERR_FW_WRITE_FAILED	0x0184
QMI_ERR_FW_INFO_READ_FAILED	0x0185
QMI_ERR_FW_FILE_NOT_FOUND	0x0186
QMI_ERR_FW_DIR_NOT_FOUND	0x0187
QMI_ERR_FW_ALREADY_ACTIVATED	0x0188
QMI_ERR_FW_CANNOT_GENERIC_IMAGE	0x0189
QMI_ERR_FW_FILE_OPEN_FAILED	0x0190
QMI_ERR_FW_UPDATE_DISCONTINUOUS_FRAME	0x0191
QMI_ERR_FW_UPDATE_FAILED	0x0192

0xF000 to 0xFFFFE – Vendor-defined error codes

All codes in the range 0x0000 to 0xEFFF, except those that were previously mentioned in this section, are reserved for future assignment.

Refer to the individual service specification documents for the meanings of the error codes.

3. FIRMWARE OVER THE AIR SERVICE (QMI_FOTA)

The QMI_FOTA provides applications running on a tethered device, such as Terminal Equipment (TE), with the following commands related to device management services through OTA:

- Firmware download and upgrade

It is expected that user-level applications, for example, connection managers and/or device drivers on the TE, use QMI_FOTA to access this functionality on the MSM™ device.

3.1. Theory of Operation

3.1.1. Generalized QMI Service Compliance

The QMI_FOTA service complies with the generalized QMI service specification, including the rules for messages, indications and responses, byte ordering, arbitration, constants, result, and error code values described in 80-VB816-1. Extensions to the generalized QMI service theory of operation are noted in subsequent sections of this chapter.

3.1.2. FOTA Service Type

FOTA is assigned QMI service type 0xE6.

3.1.3. Message Definition Template

3.1.3.1. Response Message Result TLV

This Type-Length-Value (TLV) (defined in Section 4.1.3.1) is present in all Response messages defined in this document. It is not present in the Indication messages.

3.1.4. QMI_FOTA Fundamental Concepts

The QMI_FOTA service provides OTA device management services. Device management includes:

- Check firmware update from DM server
- Download firmware update from FTP server
- Firmware update

3.1.5. Service State Variables

3.1.5.1. Shared State Variables

No QMI_FOTA state variables are shared across control points.

3.2. QMI_FOTA Messages

Table 13-1 QMI_FOTA messages

Command	ID	Description
QMI_FOTA_RUN_FTPGETOTA	0x000B	This command is used to download an update package from an FTP server.
QMI_FOTA_DO_UPGRADE	0x000C	This command is used to start an update process.
QMI_FOTA_EVENT_INDICATOR	0x000D	Unsolicited indicator of FOTA session status changes during an FTP FOTA session.

3.2.1. QMI_FOTA_RUN_FTPGETOTA

This command is used to download an update package from FTP server.

FOTA message ID

0x000B

Version introduced

Major - 1, Minor - 0

3.2.1.1. Request - QMI_FOTA_RUN_FTPGETOTA_REQ_MSG

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	FTP Server URL
Length	1024			2	
Value	→	char	ftpurl	1024	
Type	0x02			1	Complete path to the file to be downloaded
Length	1024			2	
Value	→	char	remotefile	1024	

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	FTP Port
Length	2			2	
Value	→	uint16	ftpport	2	

Type	0x11			1	Username
Length	256			2	
Value	→	char	username	256	
Type	0x12			1	Password
Length	256			2	
Value	→	char	password	1	

3.2.1.2. Response - QMI_FOTA_RUN_FTPGETOTA_RESP_MSG

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

3.2.1.3. Description of QMI_FOTA_RUN_FTPGETOTA REQ/RESP

This command is used to download an update package from FTP server. Passive and Binary modes are used by default and cannot be changed. A client receives the event for the session state change through the indication message (QMI_FOTA_EVENT_INDICATOR).

The QMI_FOTA_RUN_FTPGETOTA and 3.3.3 QMI_FOTA_OEM_FTP_START_SESSION QMI messages can't be used simultaneously when using FOTA. These QMI messages must be used independently.

3.2.2. QMI_FOTA_DO_UPGRADE

This command is used to validate an OTA Firmware update delta and to start an update process.

FOTA message ID

0x000C

Version introduced

Major - 1, Minor - 0

3.2.2.1. Request - QMI_FOTA_DO_UPGRADE_REQ_MSG

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Mode
Length	1			2	
Value	→	uint8	mode	1	Currently, this value will accept a single parameter with fixed value 2.
Type	0x11			1	Verbose level
Length	1			2	
Value	→	uint8	ver_lev	1	Not supported on LM960 series
Type	0x12			1	Port speed during update process
Length	4			2	
Value	→	uint8	dbg_baud_rate	4	Not supported on LM960 series

3.2.2.2. Response - QMI_FOTA_DO_UPGRADE_RESP_MSG

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

3.2.2.3. Description of QMI_FOTA_DO_UPGRADE_REQ/RESP

This command is used to start firmware update. Firmware package should be downloaded through QMI_FOTA_RUN_FTPGETOTA message to start update process. During the firmware update process, the modem will be reboot several times. A client receives the result of firmware update through the indication message (QMI_FOTA_EVENT_INDICATOR).

3.2.3. QMI_FOTA_EVENT_INDICATOR

This command is used to start an update process.

FOTA message ID

0x000D

Version introduced

Major - 1, Minor - 0

3.2.3.1. Indication - QMI_FOTA_EVENT_INDICATOR_MSG

Message type

Indication

Sender

Service

Scope

To all control points (broadcast)

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Indication type
Length	4			2	
Value	→	uint32	status	4	Status enum. Values: <ul style="list-style-type: none"> • FOTA_FTP_DOWNLOAD_START (0) • FOTA_FTP_DOWNLOAD_COMPLETE (1) • FOTA_INSTALL_START (2) • FOTA_INSTALL_RESULT (3)
Type	0x02			1	Result code
Length	4			2	
Value	→	uint32	err	4	Result code enum. Values: <ul style="list-style-type: none"> • SUCCESS (0) • NO_UPDATE (1) • OPERATION_CANCELED (2) • SERVER_UNREACHABLE (3) • NETWORK_ERROR (4) • BAD_CREDENTIAL (5) • FW_UPDATE_FAILED (6) • GENERAL_ERROR (7)

Optional TLVs

None

3.2.3.2. Description of QMI_FOTA_EVENT_INDICATOR

This broadcast indication is sent (intended for all control points) when the FTP FOTA session status changes and firmware update is done.

3.3. QMI_FOTA Messages for OEM FTP Server

Table 13-2 QMI_FOTA messages for OEM FTP Server

Command	ID	Description
QMI_FOTA_OEM_FTP_SET_SERVER_INFO	0x0040	This command is used to set ftp server information before starting client-initiated session.
QMI_FOTA_OEM_FTP_GET_SERVER_INFO	0x0041	This command is used to get ftp server information.
QMI_FOTA_OEM_FTP_START_SESSION	0x0042	This command is used to start client-initiated session.
QMI_FOTA_OEM_FTP_STOP_SESSION	0x0043	This command is used to stop current session.
QMI_FOTA_OEM_FTP_SET_SETTINGS	0x0044	This command is used to set OEM_FTP_FOTA related settings.
QMI_FOTA_OEM_FTP_GET_SETTINGS	0x0045	This command is used to get OEM_FTP_FOTA related settings.
QMI_FOTA_OEM_FTP_SET_EVENT_REPORT	0x0046	This command is used to enable for unsolicited indicator of OEM_FTP_FOTA status.
QMI_FOTA_OEM_FTP_SEND_SELECTION	0x0047	This command is used to receive user selection command.
QMI_FOTA_OEM_FTP_EVENT_REPORT_INDICATOR	0x0048	This command is used to receive user selection command.

3.3.1. QMI_FOTA_OEM_FTP_SET_SERVER_INFO

This command is used to set ftp server information before starting client-initiated session. This request message should be sent by control point once when the ftp server information is changed or the modem is first used.

0x0040

Version introduced

Major - 1, Minor - 0

3.3.1.1. Request – QMI_FOTA_OEM_FTP_SET_SERVER_INFO_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	

Length	Var			2	
Value	→	string	strFTP_URL	var	FTP Server URL • The maximum length of the string is 1024.

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	Var			2	
Value	→	string	strDeltaDescriptorPath	var	root path where fota delta descriptor is gathered. • The maximum length of the string is 1024. • If this value is not defined, ftp home directory will be used. • For example, if delta descriptor is uploaded to the ftp server in the following path <i>FOTA_DELTA<MODEL>/<CURRENT_SW_VER>/delta_descriptor.txt</i> this field shall be filled with the value "FOTA_DELTA"
Type	0x11			1	
Length	2			2	
Value	→	uint16	ftpport	2	
Type	0x12			1	
Length	Var			2	
Value	→	string	strUserName	var	User Name

					• The maximum length of the string is 256.
Type	0x13			1	
Length	Var			2	
Value	→	string	strPassword	var	Password • The maximum length of the string is 256. • The password will be in clear text.

3.3.1.2. Response – QMI_FOTA_OEM_FTP_SET_SERVER_INFO_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

None

3.3.1.3. Description of QMI_FOTA_OEM_FTP_SET_SERVER_INFO REQ/RESP

This command is used to set ftp server information before starting client-initiated session.

This request message should be sent by control point once when the ftp server information is changed or the modem is first used.

3.3.2. QMI_FOTA_OEM_FTP_GET_SERVER_INFO

This command is used to get ftp server information.

0x0041

Version introduced

Major - 1, Minor - 0

3.3.2.1. Request – QMI_FOTA_OEM_FTP_GET_SERVER_INFO_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.3.2.2. Response – QMI_FOTA_OEM_FTP_GET_SERVER_INFO_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	
Length	Var			2	
Value	→	string	strFTP_URL	var	FTP Server URL <ul style="list-style-type: none"> • The maximum length of the string is

					1024.
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Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	Var			2	
Value	→	string	strDeltaDescriptorPath	var	<p>root path where fota delta descriptor is gathered.</p> <ul style="list-style-type: none"> • The maximum length of the string is 1024. • If this value is not defined, ftp home directory will be used. • For example, if delta descriptor is uploaded to the ftp server in the following path <i>FOTA_DELTA<MODEL>/<CURRENT_SW_VERSION>/delta_descriptor.txt</i> <p>this field shall be filled with the value "FOTA_DELTA"</p>
Type	0x11			1	
Length	2			2	
Value	→	uint16	ftpport	2	
Type	0x12			1	
Length	Var			2	
Value	→	string	strUserName	var	<p>User Name</p> <ul style="list-style-type: none"> • The maximum length of the string is 256.
Type	0x13			1	
Length	Var			2	
Value	→	string	strPassword	var	<p>Password</p> <ul style="list-style-type: none"> • This value is digested with md5(password) from the password

					received through the SET message
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3.3.2.3. Description of QMI_FOTA_OEM_FTP_GET_SERVER_INFO REQ/RESP

This command is used to get ftp server information.

3.3.3. QMI_FOTA_OEM_FTP_START_SESSION

This command is used to start client-initiated session.

0x0042

Version introduced

Major - 1, Minor - 0

3.3.3.1. Request – QMI_FOTA_OEM_FTP_START_SESSION_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	sessionType	1	Session type Value: • 0x01 – FOTA, to check availability of FW Update

Optional TLVs

None

3.3.3.2. Response – QMI_FOTA_OEM_FTP_START_SESSION_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code

Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	
Length	4			2	
Value	→	uint32	sessionResponse	4	Session Response. OMA-DM availability CHECK for the requested item. Value: <ul style="list-style-type: none"> • 0x00000001 – Available • 0x00000002 – Not Available • 0x00000003 – Check Timed out • 0x00001001 – Server Info not available • 0x00001002 – Invalid delta descriptor • 0xffffffff – Invalid data

Optional TLVs

None

3.3.3.3. Description of QMI_FOTA_OEM_FTP_START_SESSION REQ/RESP

This command is used to start client-initiated session.

3.2.1 QMI_FOTA_RUN_FTPGETOTA and QMI_FOTA_OEM_FTP_START_SESSION QMI messages can not be used simultaneously when using FOTA. These QMI messages must be used independently.

3.3.4. QMI_FOTA_OEM_FTP_STOP_SESSION

This command is used to stop current session.

Message ID

0x0043

Version introduced

Major - 1, Minor – 0

3.3.4.1. Request – QMI_FOTA_OEM_FTP_STOP_SESSION_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	sessionType	1	Session type Value: • 0x01 – FOTA, to check availability of FW Update

Optional TLVs

None

3.3.4.2. Response – QMI_FOTA_OEM_FTP_STOP_SESSION_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

None

3.3.4.3. Description of QMI_FOTA_OEM_FTP_STOP_SESSION REQ/RESP

This command is used to stop current session.

3.3.5. QMI_FOTA_OEM_FTP_SET_SETTINGS

This command is used to set OEM_FTP_FOTA related settings.

Message ID

0x0044

Version introduced

Major - 1, Minor - 0

3.3.5.1. Request – QMI_FOTA_OEM_FTP_SET_SETTINGS_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	auto_download_firmware	1	Firmware Auto Download Value: • 0x00 – FALSE • 0x01 – TRUE
Type	0x02			1	
Length	1			2	
Value	→	uint8	auto_update_firmware	1	indicating FOTA Automatic update Value: • 0x00 – Firmware auto update FALSE • 0x01 – Firmware auto update TRUE (if this value is set, the device is automatically rebooted)

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	4			2	
Value	→	uint32	polling_timer	4	Polling timer to connect to AVMS server Value: • 0 ~ 525600 (min) • 0 – disabled
Type	0x11			1	
Length	1			2	
Value	→	uint8	fw_auto_SDM	1	OMA Automatic UI Alert Response (NOT supported)
Type	0x12			1	
Length	1			2	
Value	→	uint8	auto_connect	1	Auto connect (NOT supported)
Type	0x13			1	
Length	1			2	
Value	→	uint8	auto_reboot	1	Auto reboot (NOT supported) If auto_update_firmware parameter is set, the device is automatically rebooted
Type	0x14			1	Connection Retry Timers (NOT supported)
Length	16			2	
Value	→	uint16	connectionRetryTimers	16	It is an array of size 8 and each element size is uint16.
Type	0x15			1	APN Info (NOT supported)

Length	Var			2	
Value	→	string	strAPN	var	The maximum length of the string is 49.
Type	0x16			1	User Name (NOT supported)
Length	Var			2	
Value	→	string	strUsername	var	The maximum length of the string is 29.
Type	0x17			1	Password (NOT supported)
Length	Var			2	
Value	→	string	strPassword	var	The maximum length of the string is 29.
Type	0x18			1	NotifStore (NOT supported)
Length	1			2	
Value	→	uint8	nNotifStore	1	
Type	0x19			1	Period Info (NOT supported)
Length	8			2	
Value	→	uint32	uMin	4	
		uint32	uMax	4	

3.3.5.2. Response – QMI_FOTA_OEM_FTP_SET_SETTINGS_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	

Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

None

3.3.5.3. Description of QMI_FOTA_OEM_FTP_SET_SETTINGS REQ/RESP

This command is used to set OEM_FTP_FOTA related settings.

3.3.6. QMI_FOTA_OEM_FTP_GET_SETTINGS

This command is used to get OEM_FTP_FOTA related settings.

Message ID

0x0045

Version introduced

Major - 1, Minor - 0

3.3.6.1. Request – QMI_FOTA_OEM_FTP_GET_SETTINGS_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.3.6.2. Response – QMI_FOTA_OEM_FTP_GET_SETTINGS_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	

Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	
Length	1			2	
Value	→	uint8	auto_download_firmware	1	Firmware Auto Download <p>Value:</p> <ul style="list-style-type: none"> • 0x00 – FALSE • 0x01 – TRUE
Type	0x04			1	
Length	1			2	
Value	→	uint8	auto_update_firmware	1	indicating FOTA Automatic update <p>Value:</p> <ul style="list-style-type: none"> • 0x00 – Firmware auto update FALSE • 0x01 – Firmware auto update TRUE (if this value is set, the device is automatically rebooted)

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	4			2	
Value	→	uint32	polling_timer	4	Polling timer to connect to AVMS server

					Value: • 0 ~ 525600 (min) • 0 – disabled
Type	0x11			1	
Length	1			2	
Value	→	uint8	fw_auto_SDM	1	OMA Automatic UI Alert Response (NOT supported)
Type	0x12			1	
Length	1			2	
Value	→	uint8	auto_connect	1	Auto connect (NOT supported)
Type	0x13			1	
Length	1			2	
Value	→	uint8	auto_reboot	1	Auto reboot (NOT supported) If auto_update_firmware parameter is set, the device is automatically rebooted
Type	0x14			1	Connection Retry Timers (NOT supported)
Length	16			2	
Value	→	uint16	connectionRetryTimers	16	It is an array of size 8 and each element size is uint16.
Type	0x15			1	APN Info (NOT supported)
Length	Var			2	
Value	→	string	strAPN	var	The maximum length of the string is 49.
Type	0x16			1	User Name (NOT supported)
Length	Var			2	
Value	→	string	strUsername	var	The maximum length of the string is 29.

Type	0x17			1	Password (NOT supported)
Length	Var			2	
Value	→	string	strPassword	var	The maximum length of the string is 29.
Type	0x18			1	NotifStore (NOT supported)
Length	1			2	
Value	→	uint8	nNotifStore	1	
Type	0x19			1	Period Info (NOT supported)
Length	8			2	
Value	→	uint32	uMin	4	
		uint32	uMax	4	
Type	0x1A			1	NotifStore (NOT supported)
Length	4			2	
Value	→	uint32	OMA_DM_Enabled	4	OMADMEEnabled - OMA DM Enabeld. (NOT supported. This interace supports fota using only FTP server)

3.3.6.3. Description of QMI_FOTA_OEM_FTP_GET_SETTINGS_REQ/RESP

This command is used to get OEM_FTP_FOTA related settings.

3.3.7. QMI_FOTA_OEM_FTP_SET_EVENT_REPORT

This command is used to enable for unsolicited indicator of OEM_FTP_FOTA status.

Message ID

0x0046

Version introduced

Major - 1, Minor - 0

3.3.7.1. Request – QMI_FOTA_OEM_FTP_SET_EVENT_REPORT_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	enable_event	1	Enable event Value: <ul style="list-style-type: none"> • 0x00 – disable event report • 0x01 – enable event report

Optional TLVs

None

3.3.7.2. Response – QMI_FOTA_OEM_FTP_SET_EVENT_REPORT_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

None

3.3.7.3. Description of QMI_FOTA_OEM_FTP_SET_EVENT_REPORT_REQ/RESP

This command is used to enable for unsolicited indicator of OEM_FTP_FOTA status.

3.3.8. QMI_FOTA_OEM_FTP_SEND_SELECTION

This command is used to receive user selection command.

Message ID

0x0047

Version introduced

Major - 1, Minor - 0

3.3.8.1. Request – QMI_FOTA_OEM_FTP_SEND_SELECTION_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	selection	1	User Selection Value: • 0x01 – Accept • 0x02 – Reject • 0x03 – Defer

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	4			2	
Value	→	uint32	defer_time	4	Defer time in minutes A value of 0 will cause the prompt to be resent immediately
Type	0x11			1	
Length	Var			2	

Value	→	string	strRejectReason	var	Reject Reason. The maximum length of the string is 100.
Type	0x12			1	
Length	1			2	
Value	→	uint8	client_perform_operation_flag	1	Client operation flag after accept (NOT supported since we do not have enough information about this flag) Value: • 0x00 – if modem performs the operation (download or update) • 0x01 – if client performs the operation (download or update)
Type	0x13			1	
Length	1			2	
Value	→	uint8	package_id	1	Package ID. (NOT supported since we do not have enough information about this flag)

3.3.8.2. Response – QMI_FOTA_OEM_FTP_SEND_SELECTION_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE

		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
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Optional TLVs

None

3.3.8.3. Description of QMI_FOTA_OEM_FTP_SEND_SELECTION REQ/RESP

This command is used to receive user selection command.

3.3.9. QMI_FOTA_OEM_FTP_EVENT_REPORT_INDICATOR

This command is used to receive user selection command.

Message ID

0x0048

Version introduced

Major - 1, Minor - 0

3.3.9.1. Indication – QMI_FOTA_OEM_FTP_EVENT_REPORT_INDICATOR_MSG

Message Type

Indication

Sender

Service

Indication scope

Per control point (unicast)

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Binary Update Session Info
Length	16			2	
Value	→	uint8	binary_type	1	Binary Type Value: <ul style="list-style-type: none"> • 1 – Firmware • 2 – User App (NOT supported) • 3 – Legato Framework (NOT supported)
		uint8	state	1	State Value:

					<ul style="list-style-type: none"> • 0x01 – No binary update available • 0x02 – Query binary Download • 0x03 – Binary Downloading • 0x04 – Binary downloaded • 0x05 – Query Binary Update • 0x06 – Binary updating • 0x07 – Binary updated • 0x08 – Binary update failed • 0x09 – Binary download failed. • 0x0A – Invalid delta descriptor file.
	uint8	user_input_request		1	<p>Bit mask of available user inputs.</p> <ul style="list-style-type: none"> • 0x01 – No user input required. Informational indication. • 0x02 – Accept. • 0x03 – Reject.
	uint16	user_input_timeout		2	<p>Timeout for user input in minutes. A value of 0 means no time-out.</p>
	uint32	package_size		4	<p>The size (in bytes) of the update package.</p>
	uint32	downloaded_size		4	<p>The number of bytes being downloaded.</p> <p>For downloading state, this value shall be > 0 and incremented toward the package_size.</p> <p>For other states, the value shall be 0 as it is meaningless.</p>
	uint16	updateCompleteStatus		2	
	uint8	severity		1	<p>indicating severity (NOT supported since we do not have enough information about this flag)</p> <p>Value:</p> <ul style="list-style-type: none"> • 0x01 – Mandatory

					• 0x02 – Optional
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Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	Var			2	
Value	→	string	strVersion	Var	FW Version string in ASCII. The maximum length of the string is 128.
Type	0x11			1	
Length	Var			2	
Value	→	string	strName	var	Package Name in ASCII. The maximum length of the string is 128.
Type	0x12			1	
Length	Var			2	
Value	→	string	strDescription	var	Description of Update Package in ASCII. The maximum length of the string is 1024.
Type	0x13			1	Notification
Length	2			2	
Value	→	uint16	session_status	2	This field will set to the session status for notifications that occur at the end of a session, zero for all other notifications. Value: <ul style="list-style-type: none"> • 0x0000 – Successful: Session succeeded • 0x0005 – User cancel: Session cancelled • 0x7F14 – Download failure: Failed to download FOTA image
Type	0x14			1	Connection Request
Length	3			2	

Value	→	uint8	user_input_request	1	Bit mask of available user inputs. <ul style="list-style-type: none"> • 0x01 – No user input required. Informational indication. • 0x02 – Accept. • 0x03 – Reject.
		uint16	user_input_timeout	2	Timeout for user input in minutes. A value of 0 means no time-out.
Type	0x15			1	Connection Request
Length	4			2	
Value	→	uint32	update_package_statuses	4	This is used as a response event to the QMI_FOTA_OEM_FTP_START_SESSION_REQ message. Value: <ul style="list-style-type: none"> • 0x00000001 – Available • 0x00000002 – Not Available • 0x00000003 – Check Timed out • 0x00001001 – Server Info not available • 0x00001002 – Invalid delta descriptor • 0xffffffff – Invalid data

3.3.9.2. Description of QMI_FOTA_OEM_FTP_EVENT_REPORT_INDICATOR

This broadcast indication is sent (intended for all control points) when the FOTA OEM FTP session status changes.

3.3.10. QMI_FOTA_OEM_FTP_GET_SESSION_INFO

This command is used to get current FOTA session information.

Message ID

0x004B

Version introduced

Major - 1, Minor - 0

3.3.10.1. Request – QMI_FOTA_OEM_FTP_GET_SESSION_INFO_REQ_MSG

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
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Type	0x01			1	
Length	1			2	
Value	→	uint8	sessionType	1	Session type Value: <ul style="list-style-type: none"> • 0x01 – FOTA, to get current FOTA session

Optional TLVs

None

3.3.10.2. Response – QMI_FOTA_OEM_FTP_GET_SESSION_INFO_RESP_MSG

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	Binary Update Session Info
Length	16			2	
Value	→	uint8	binary_type	1	Binary Type Value: <ul style="list-style-type: none"> • 1 – Firmware

					<ul style="list-style-type: none"> • 2 – User App (NOT supported) • 3 – Legato Framework (NOT supported)
	uint8	state	1	<p>State</p> <p>Value:</p> <ul style="list-style-type: none"> • 0x01 – No binary update available • 0x02 – Query binary Download • 0x03 – Binary Downloading • 0x04 – Binary downloaded • 0x05 – Query Binary Update • 0x06 – Binary updating • 0x07 – Binary updated • 0x08 – Binary update failed • 0x09 – Binary download failed. • 0x0A – Invalid delta descriptor file. 	
	uint8	user_input_request	1	<p>Bit mask of available user inputs.</p> <ul style="list-style-type: none"> • 0x01 – No user input required. Informational indication. • 0x02 – Accept. • 0x03 – Reject. 	
	uint16	user_input_timeout	2	<p>Timeout for user input in minutes.</p> <p>A value of 0 means no time-out.</p>	
	uint32	package_size	4	<p>The size (in bytes) of the update package.</p>	
	uint32	downloaded_size	4	<p>The number of bytes being downloaded.</p> <p>For downloading state, this value shall be > 0 and incremented toward the package_size.</p> <p>For other states, the value shall be 0 as it is meaningless.</p>	
	uint16	updateCompleteSta	2		

			tus		
		uint8	severity	1	<p>indicating severity (NOT supported since we do not have enough information about this flag)</p> <p>Value:</p> <ul style="list-style-type: none"> • 0x01 – Mandatory • 0x02 – Optional

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	Var			2	
Value	→	string	strVersion	Var	FW Version string in ASCII. The maximum length of the string is 128.
Type	0x11			1	
Length	Var			2	
Value	→	string	strName	var	Package Name in ASCII. The maximum length of the string is 128.
Type	0x12			1	
Length	Var			2	
Value	→	string	strDescription	var	Description of Update Package in ASCII. The maximum length of the string is 1024.
Type	0x13			1	Notification
Length	2			2	
Value	→	uint16	session_status	2	This field will set to the session status for notifications that occur at the end of a session, zero for all other notifications.

					Value: <ul style="list-style-type: none"> • 0x0000 – Successful: Session succeeded • 0x0005 – User cancel: Session cancelled • 0x7F14 – Download failure: Failed to download FOTA image
Type	0x14			1	Connection Request
Length	4			2	
Value	→	uint32	update_package_statuses	4	This is same as a sessionResponse field of response event to the QMI_FOTA_OEM_FTP_START_SESSION_REQ message Value: <ul style="list-style-type: none"> • 0x00000001 – Available • 0x00000002 – Not Available • 0x00000003 – Check Timed out • 0x00001001 – Server Info not available • 0x00001002 – Invalid delta descriptor • 0xffffffff – Invalid data

3.3.10.3. Description of QMI_FOTA_OEM_FTP_GET_SESSION_INFO REQ/RESP
 This command is used to get current FOTA session information.

3.4. QMI_FOTA Messages for AT&T ODIS

Table 13-4 QMI_FOTA messages for AT&T ODIS

Command	ID	Description
QMI_FOTA_OEM_ATT_GET_HOST_ODIS	0x0049	This command is used to get information related to the current host odis.
QMI_FOTA_OEM_ATT_SET_HOST_ODIS	0x004A	This command is used to set information related to the current host odis to NVM and DM application.

3.4.1. QMI_FOTA_OEM_ATT_GET_HOST_ODIS

This command is used to get information related to the current host odis.

FOTA message ID

0x0049

Version introduced

Major – 1, Minor – 0

3.4.1.1. Request – QMI_FOTA_OEM_ATT_GET_HOST_ODIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.4.1.2. Response – QMI_FOTA_OEM_ATT_GET_HOST_ODIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	
Length	Var			2	
Value	→	string	manString	Var	Host Device Manufacturer Name The maximum length of the string is 255.
Type	0x04			1	
Length	Var			2	
Value	→	string	modelString	Var	Host Device Model Name. The maximum length of the string is 255.
Type	0x05			1	
Length	Var			2	
Value	→	string	swVerString	Var	Host Device Software Version Name. The maximum length of the string is 255.

Type	0x06			1	
Length	Var			2	
Value	→	string	plasmaIDString	Var	Host Device Unique ID Name. (Changed from version 16.3 to Host Device Unique ID) The maximum length of the string is 255.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

3.4.1.3. Description of QMI_FOTA_OEM_ATT_GET_HOST_ODIS REQ/RESP

This command is used to get information related to the current host odis.

3.4.2. QMI_FOTA_OEM_ATT_SET_HOST_ODIS

This command is used to set information related to the current host odis to NVM and DM application.

FOTA message ID

0x004A

Version introduced

Major – 1, Minor – 0

3.4.2.1. Request – QMI_FOTA_OEM_ATT_SET_HOST_ODIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	Var			2	
Value	→	string	manString	Var	Host Device Manufacturer Name The maximum length of the string is 255.
Type	0x02			1	
Length	Var			2	
Value	→	string	modelString	Var	Host Device Model Name. The maximum length of the string is 255.
Type	0x03			1	
Length	Var			2	
Value	→	string	swVerString	Var	Host Device Software Version Name. The maximum length of the string is 255.
Type	0x04			1	
Length	Var			2	
Value	→	string	plasmaIDString	Var	Host Device Unique ID Name. (Changed from version 16.3 to Host Device Unique ID) The maximum length of the string is 255.

Optional TLVs

None

3.4.2.2. Response – QMI_FOTA_OEM_ATT_SET_HOST_ODIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

3.4.2.3. Description of QMI_FOTA_OEM_ATT_SET_HOST_ODIS REQ/RESP

This command is used to set information related to the current host odis to NVM and DM application.

4. TELIT GENERAL MODEM SERVICE (QMI_GMS)

The QMI_GMS provides applications running on a tethered device, such as Terminal Equipment (TE), with the following commands related to extended service by Telit on modem processor:

- Network access (debugging, carrier aggregation information)
- Test (simple testing)
- Location/Position determination (NMEA data)

It is expected that user-level applications, for example, connection managers and/or device drivers on the TE, use QMI_GMS to access this functionality on the MSM™ device.

4.1. Theory of Operation

4.1.1. Generalized QMI Service Compliance

The QMI_GMS service complies with the generalized QMI service specification, including the rules for messages, indications and responses, byte ordering, arbitration, constants, result, and error code values described in 80-VB816-1. Extensions to the generalized QMI service theory of operation are noted in subsequent sections of this chapter.

4.1.2. GMS Service Type

The GMS is assigned QMI service type 0xE7.

4.1.3. Message Definition Template

4.1.3.1. Response Message Result TLV

This Type-Length-Value (TLV) is present in all Response messages defined in this document. It is not present in the Indication messages.

Name	Version introduced	Version last modified
Result Code	Corresponding command's <i>Version introduced</i>	N/A

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	qmi_result	2	Result code •QMI_RESULT_SUCCESS •QMI_RESULT_FAILURE
		uint16	qmi_result	2	Error code - Possible error code

					values are described in the error codes section of each message definition
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4.1.4. QMI_GMS Fundamental Concepts

The QMI_GMS service enables the control points to use extended functionalities by Telit on modem processor. Available information includes:

- Getting debugging information, carrier aggregation information performed by modem device
- Simple test to set/get value
- NMEA data indication enable/disable

4.1.5. Service State Variables

4.1.5.1. Shared State Variables

No QMI_GMS state variables are shared across control points.

4.2. QMI_GMS Messages

Table 14-1 QMI_GMS messages

Command	ID	Description
QMI_GMS_WDS_3GPP_CONFIG_ITEM_SET	0x0100	This command used to set 3GPP configure item information
QMI_GMS_WDS_3GPP_CONFIG_ITEM_GET	0x0101	This command used to get 3GPP configure item information.
QMI_GMS_WDS_CREATE_PROFILE	0x0103	This command used to create a configured profile with specified settings.
QMI_GMS_DMS_GET_DYING_GASP_CFG	0x0200	This command used to get the Dying GASP Configuration.
QMI_GMS_DMS_SET_DYING_GASP_CFG	0x0201	This command used to set the Dying GASP Configuration.
QMI_GMS_DMS_GET_DYING_GASP_STAT	0x0202	This command used to get Dying GASP Statistics.
QMI_GMS_DMS_CLR_DYING_GASP_STAT	0x0203	This command used to clear the Dying GASP Statistics.
QMI_GMS_DMS_GET_CUST_FEATURES	0x0204	This command used to get the setting of customization feature.
QMI_GMS_DMS_SET_CUST_FEATURES	0x0205	This command used to set the customization feature.
QMI_GMS_DMS_GET_PC_INFO	0x0206	This command used to get device power control status information.
QMI_GMS_DMS_SET_FWSWITCH	0x20A	This command used to specify network configuration on the modem.
QMI_GMS_DMS_GET_FWSWITCH	0x20B	This command used to get current network configuration on the modem.
QMI_GMS_DMS_TMCFG_VER	0x20C	This command used to get Telit modem configuration version on the modem
QMI_GMS_NAS_GET_DEBUG_INFO	0x0300	This command used to get some variables for NAS DEBUG
QMI_GMS_NAS_GET_CA_INFO	0x0301	This command used to get some variables for NAS CA
QMI_GMS_NAS_MODEM_STATUS	0x0302	This command used to get some variables for NAS MODEM STATUS

QMI_GMS_NAS_GET_LTECQI_INFO	0x0303	This command used to get some variables for NAS CQI
QMI_GMS_NAS_GET_LTE_SCC_RX_INFO	0x0304	This command used to get LTE SCC RX information
QMI_GMS_NAS_IND_REGISTER	0x0305	This command used to set the OTA message indication
QMI_GMS_NAS_OTA_MSG_REPORT	0x0306	This command indicates the OTA message using QMI
QMI_GMS_NAS_SET_4RX_DISABLE	0x0307	This command used to set 4RX disable.
QMI_GMS_NAS_GET_4RX_DISABLE	0x0308	This command used to get 4RX disable.
QMI_GMS_NAS_GET_BAND_CAP	0x0309	This command used to get band capability.
QMI_GMS_NAS_GET_ENDC_CA_INFO	0x030F	This command used to get the carrier aggregation information of LTE and 5G CC when EN-DC is activated.
QMI_GMS_TEST_SET_VALUE	0x0F00	This command used to set some variables for TEST
QMI_GMS_TEST_GET_VALUE	0x0F01	This command used to get some variables for TEST
QMI_GMS_LOC_NMEA_DATA_IND_REG	0x1000	This command used to enable/disable NMEA DATA indications. Once this indication enabled, string format NMEA-DATA sent to client whenever NMEA DATA changed. (Deprecated)
QMI_GMS_LOC_GET_AUTO_START	0x1001	This command used to get GNSS Auto Start Setting.
QMI_GMS_LOC_SET_AUTO_START	0x1002	This command used to set GNSS Auto Start Setting.
QMI_GMS_LOC_SET_NMEA_TYPE	0x1003	This command used to set NMEA type Setting.
QMI_GMS_LOC_GET_GNSS_MB_CFG	0x1004	This command used to get current GNSS multi-band Configuration Setting.
QMI_GMS_LOC_SET_GNSS_MB_CFG	0x1005	This command used to set current GNSS multi-band Configuration Setting.

QMI_GMS_OMA_GET_HOST_ODIS	0xE200	This command is used to get information related to the current host odis from NVM.
QMI_GMS_OMA_SET_HOST_ODIS	0xE201	This command is used to set information related to the current host odis to NVM.

4.2.1. QMI_GMS_WDS_3GPP_CONFIG_ITEM_SET

This command used to set 3GPP configure item information.

GMS message ID

0x0100

Version introduced

Major - 1, Minor - 1

4.2.1.1. Request - QMI_GMS_WDS_3GPP_CONFIG_ITEM_SET_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Name	Version introduced	Version last modified
LTEAttachProfile	1.0	1.0
ProfileList	1.0	1.0
DefaultPDNEnabled	1.0	1.0
_3gppRelease	1.0	1.0
LTEAttachProfileList	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LTE Attach Profile
Length	2			2	
Value	→	uint16	LTEAttachProfile	2	Value indicating the attached LTE Profile. Value: • 1 ~ 24 • 0xFFFF – Invalid data
Type	0x11			1	Profile List

Length	10			2	
Value	→	uint16	ProfileList	10	Each element points to a single WORD value indicating profile. Index 0 is the total length of the profile list. The actual index order is used from index 1 to index 4. Values: • 1 ~ 24 • 0xFFFF – Invalid data
Type	0x12			1	Default PDN Enabled
Length	1			2	
Value	→	uint8	DefaultPDNEnabled	1	Values: • 0x00 – Disabled • 0x01 – Enabled • 0xFF – Invalid data
Type	0x13			1	3GPP release version
Length	1			2	
Value	→		_3gppRelease	1	Values • 0x00 – Release_99 • 0x01 – Release_5 • 0x02 – Release_6 • 0x03 – Release_7 • 0x04 – Release_8 • 0x05 – Release_9 • 0x06 – Release_10 • 0x07 – Release_11 • 0xFF – Invalid data
Type	0x14			1	LTE Attach Profile List
Length	Var			2	
Value	→	uint8	LTEAttachProfileList_len	1	Length of LTE Attach Profile List
		uint16	LTEAttachProfileList	Var	It can't input a profile number that does not exist if the profile number entered as "AT + CGDCONT command" or "legacy QMI profile add command" does not exist. Values: • 1 ~ 24

4.2.1.2. Response - QMI_GMS_WDS_3GPP_CONFIG_ITEM_SET_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.1.3. Description of QMI_GMS_WDS_3GPP_CONFIG_ITEM_SET_REQ/RESP

This command used set 3GPP Item configure item information

4.2.2. QMI_GMS_WDS_3GPP_CONFIG_ITEM_GET

This command used to set 3GPP configure item information.

GMS message ID

0x0101

Version introduced

Major - 1, Minor - 1

4.2.2.1. Request - QMI_GMS_WDS_3GPP_CONFIG_ITEM_GET_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.2.2. Response - QMI_GMS_WDS_3GPP_CONFIG_ITEM_GET_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
LTEAttachProfile	1.0	1.0
ProfileList	1.0	1.0

DefaultPDNEnabled	1.0	1.0
_3gppRelease	1.0	1.0
LTEAttachProfileList	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	LTE Attach Profile
Length	2			2	
Value	→	uint16	LTEAttachProfile	2	Value indicating the attached LTE Profile. Value: <ul style="list-style-type: none"> • 1 ~ 24 • 0xFFFF – Invalid data.
Type	0x04			1	Profile List
Length	10			2	
Value	→	uint16	ProfileList	10	Each element points to a single WORD value indicating profile. Index 0 is the total length of the profile list. The actual index order is used from index 1 to index 4. Values: <ul style="list-style-type: none"> • 1 ~ 24 • 0xFFFF – Invalid data
Type	0x05			1	Default PDN Enabled
Length	1			2	
Value	→		DefaultPDNEnabled	1	Values: <ul style="list-style-type: none"> • 0x00 – Disabled • 0x01 – Enabled • 0xFF – Invalid data
Type	0x06			1	3GPP release version
Length	1			2	
Value	→		_3gppRelease	1	Values <ul style="list-style-type: none"> • 0x00 – Release_99 • 0x01 – Release_5 • 0x02 – Release_6 • 0x03 – Release_7 • 0x04 – Release_8

					<ul style="list-style-type: none"> • 0x05 – Release_9 • 0x06 – Release_10 • 0x07 – Release_11 • 0xFF – Invalid data
Type	0x07			1	LTE Attach Profile List
Length	Var			2	
Value	→	uint8	LTEAttachProfileList_len	1	Length of LTE Attach Profile List
		uint16	LTEAttachProfileList	Var	It can't input a profile number that does not exist if the profile number entered as "AT + CGDCONT command" or "legacy QMI profile add command" does not exist. Values: <ul style="list-style-type: none"> • 1 ~ 24

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.2.3. Description of QMI_GMS_WDS_3GPP_CONFIG_ITEM_GET_REQ/RESP

This command used get 3GPP Item configure item information

4.2.3. QMI_GMS_WDS_CREATE_PROFILE

This command used to create a configured profile with specified settings.

GMS message ID

0x0103

Version introduced

Major - 1, Minor - 1

4.2.3.1. Request - QMI_GMS_WDS_CREATE_PROFILE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
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Profile type	1.0	1.0
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Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Profile Type
Length	1			2	
Value	→	enum8	profile_type	1	Identifies the technology type of the profile. Values: <ul style="list-style-type: none"> • WDS_PROFILE_TYPE_3GPP (0x00) – 3GPP • WDS_PROFILE_TYPE_3GPP2 (0x01) – 3GPP2 • WDS_PROFILE_TYPE_EPC (0x02) – EPC

Optional TLVs

Name	Version introduced	Version last modified
test optional value	1.0	1.0
Profile Id	1.0	1.0
Profile name	1.0	1.0
PDP Type	1.0	1.0
PDP Data Compression Type	1.0	1.0
Context Access Point node Name	1.0	1.0
Primary DNS IPv4 Address Preference	1.0	1.0
Secondary DNS IPv4 Address Preference	1.0	1.0
UMTS Requested QoS	1.0	1.0
UMTS Minimum QoS	1.0	1.0
GPRS Requested QoS	1.0	1.0
GPRS Minimum QoS	1.0	1.0
Username	1.0	1.0
Password	1.0	1.0
Authentication Preference	1.0	1.0
IPv4 Address Preference	1.0	1.0

PCSCF Address Using PCO Flag	1.0	1.0
PDP Access Control Flag	1.0	1.0
PCSCF Address Using DHCP	1.0	1.0
IM CN flag	1.0	1.0
Traffic Flow Template ID1 Parameters	1.0	1.0
TFT ID2 Parameters	1.0	1.0
PDP Context Number	1.0	1.0
PDP Context Secondary Flag	1.0	1.0
PDP Context Primary ID	1.0	1.0
IPv6 Address Preference	1.0	1.0
UMTS Requested QoS with Signaling Indication Flag	1.0	1.0
UMTS Minimum QoS with Signaling Indication	1.0	1.0
Primary DNS IPv6 Address Preference	1.0	1.0
Secondary DNS IPv6 Address Preference	1.0	1.0
DHCP/NAS Preference	1.0	1.0
3GPP LTE QoS Parameters	1.0	1.0
APN Disabled Flag	1.0	1.0
PDN Inactivity Timeout	1.0	1.0
APN Class	1.0	1.0
Support Emergency Calls	1.0	1.0
Negotiate DNS Server Preference	1.0	1.0
PPP Session Close Timer for DO	1.0	1.0
PPP Session Close Timer for 1X	1.0	1.0
Allow/Disallow Lingering of Interface	1.0	1.0
LCP ACK Timeout	1.0	1.0
IPCP ACK Timeout	1.0	1.0
AUTH Timeout	1.0	1.0

LCP Configuration Request Retry Count Value	1.0	1.0
IPCP Configuration Request Retry Count	1.0	1.0
AUTH Retry	1.0	1.0
Authentication Protocol	1.0	1.0
User ID	1.0	1.0
Authentication Password	1.0	1.0
Data Rate	1.0	1.0
Application Type	1.0	1.0
Data Mode	1.0	1.0
Application Priority	1.0	1.0
APN String	1.0	1.0
PDN Type	1.0	1.0
Is PCSCF Address Needed	1.0	1.0
IPv4 Primary DNS Address	1.0	1.0
IPv4 Secondary DNS Address	1.0	1.0
Primary IPv6 DNS Address	1.0	1.0
Secondary IPv6 DNS Address	1.0	1.0
RAT Type	1.0	1.0
APN Enabled	1.0	1.0
PDN Inactivity Timeout	1.0	1.0
APN Class	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Profile id
Length	1			2	
Value	→	uint8	profile_id	1	Index identifying the profile.
Type	0x11			1	Profile Name

Length	Var			2	
Value	→	string	Profile_name	var	One or more bytes describing the profile. The description can be a user-defined name for the profile. QMI_ERR_ARG_TOO_LONG is returned if the profile_name is too long.
Type	0x12			1	PDP Type
Length	1			2	
Value	→	enum8	pdp_type	1	Specifies the type of data payload exchanged over the airlink when the packet data session is established with this profile. Values: <ul style="list-style-type: none"> • WDS_PDP_TYPE_PDP_IPV4 (0x00) – PDP-IP (IPv4) • WDS_PDP_TYPE_PDP_PPP (0x01) – PDP-PPP • WDS_PDP_TYPE_PDP_IPV6 (0x02) – PDP-IPv6 • WDS_PDP_TYPE_PDP_IPV4V6 (0x03) – PDP-IPv4 and IPv6 • WDS_PDP_TYPE_PDP_NON_IP (0x04) – PDP-NON IP
Type	0x13			1	PDP Header Compression Type
Length	1			2	
Value	→	enum8	pdp_hdr_compression_type	1	Values: WDS_PDP_HDR_COMPR_TYPE_OFF (0x00) – PDP header compression is off WDS_PDP_HDR_COMPR_TYPE_MANUFACTURER_PREF (0x01) – Manufacturer preferred compression WDS_PDP_HDR_COMPR_TYPE_RFC_1144 (0x02) – PDP header compression based on RFC 1144 WDS_PDP_HDR_COMPR_TYPE_RFC_2507 (0x03) – PDP header compression based on RFC 2507

					WDS_PDP_HDR_COMPRESSION_TYPE_RFC_3095 (0x04) – PDP header compression based on RFC 3095
Type	0x14			1	PDP Data Compression Type
Length	1			2	
Value	→	enum8	pdp_data_compression_type	1	<p>Values:</p> <p>DS_PDP_DATA_COMPRESSION_TYPE_OFF (0x00) – PDP data compression is off</p> <p>DS_PDP_DATA_COMPRESSION_TYPE_MANUFACTURER_PREF (0x01) – Manufacturer preferred compression</p> <p>WDS_PDP_DATA_COMPRESSION_TYPE_V4_2 (0x02) – V.42BIS data compression</p> <p>WDS_PDP_DATA_COMPRESSION_TYPE_V4_4 (0x03) – V.44 data compression</p>
Type	0x15			1	Context Access Point Node (APN)Name
Length	1			2	
Value	→	string	apn_name	var	<p>String parameter that is a logical name used to select the GGSN and external packet data network.</p> <p>If the value is NULL or omitted, the subscription default value is requested.</p> <p>This value is applicable to 3GPP and EPC Profile types.</p> <p>QMI_ERR_ARG_TOO_LONG is returned if the APN name is too long.</p>
Type	0x16			1	Primary DNS IPv4 Address Preference
Length	4			2	
Value	→	uint32	primary_dns_ipv4_address_preference	4	Used as a preference during negotiation with the network; if not specified, the wireless device attempts to obtain the DNS address automatically from the network. The negotiated value is provided to the host via DHCP.
Type	0x17			1	Secondary DNS IPv4 Address Preference

Length	4			2	
Value	→	uint32	secondary_DNS_I Pv4_address_pref erence	4	Used as a preference during negotiation with the network; if not specified, the wireless device attempts to obtain the DNS address automatically from the network. The negotiated value is provided to the host via DHCP.
Type	0x18			1	UMTS Requested QoS
Length	33			2	
Value	→	enum8	traffic_class	1	Traffic class. Values: WDS_TRAFFIC_CLASS_SUBSCRIBED (0x00) – Subscribed WDS_TRAFFIC_CLASS_CONVERSATIONAL (0x01) – Conversational WDS_TRAFFIC_CLASS_STREAMING (0x02) – Streaming WDS_TRAFFIC_CLASS_INTERACTIVE (0x03) – Interactive WDS_TRAFFIC_CLASS_BACKGROUND (0x04) – Background
		uint32	max_uplink_bitrate	4	Maximum uplink bitrate in bits per second.
		uint32	max_downlink_bitrate	4	Maximum downlink bitrate in bits per second.
		uint32	guaranteed_uplink_bitrate	4	Guaranteed uplink bitrate in bits per second.
		uint32	guaranteed_downlink_bitrate	4	Guaranteed downlink bitrate in bits per second.
		enum8	qos_delivery_order	1	Values: WDS_QOS_DELIVERY_ORDER_SUBSCRIBE (0x00) – Subscribe

				<p>WDS_QOS_DELIVERY_ORDER_ON (0x01) – Delivery order on</p> <p>WDS_QOS_DELIVERY_ORDER_OFF (0x02) – Delivery order off</p>	
		uint32	max_sdu_size	4	Maximum SDU size.
		enum8	sdu_error_ratio	1	<p>Target value for the fraction of SDUs lost or detected as erroneous. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 1x10² • 2 – 7x10³ • 3 – 1x10³ • 4 – 1x10⁴ • 5 – 1x10⁵ • 6 – 1x10⁶ • 7 – 1x10¹
		enum8	residual_bit_error_ratio	1	<p>Target value for the undetected bit error ratio in the delivered SDUs. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 5x10² • 2 – 1x10² • 3 – 5x10³ • 4 – 4x10³ • 5 – 1x10³ • 6 – 1x10⁴ • 7 – 1x10⁵ • 8 – 1x10⁶ • 9 – 6x10⁸
		enum8	delivery_erroneous_SDUs	1	<p>Delivery of erroneous SDUs. Indicates whether SDUs detected as erroneous are delivered or not. Values:</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO_DETECTION (0x01) – No detection</p>

					<p>WDS_DELIVERY_ERRONEOUS_SDUS_YES (0x02) – Erroneous SDU is delivered</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO (0x03) – Erroneous SDU is not delivered</p>
		uint32	transfer_delay	4	Transfer delay. Indicates the targeted time between a request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds; if the parameter is set to 0, the subscribed value is requested.
		uint32	traffic_handling_priority	4	Traffic handling priority. Specifies the relative importance for handling of SDUs that belong to the UMTS bearer, compared to the SDUs of other bearers. If the parameter is set to 0, the subscribed value is requested.
Type	0x19			1	UMTS Minimum QoS
Length	33			2	
Value	→	enum8	traffic_class	1	<p>Traffic class. Values:</p> <p>WDS_TRAFFIC_CLASS_SUBSCRIBED (0x00) – Subscribed</p> <p>WDS_TRAFFIC_CLASS_CONVERSATIONAL (0x01) – Conversational</p> <p>WDS_TRAFFIC_CLASS_STREAMING (0x02) – Streaming</p> <p>WDS_TRAFFIC_CLASS_INTERACTIVE (0x03) – Interactive</p> <p>WDS_TRAFFIC_CLASS_BACKGROUND (0x04) – Background</p>
		uint32	max_uplink_bitrate	4	Maximum uplink bitrate in bits per second.
		uint32	max_downlink_bitrate	4	Maximum downlink bitrate in bits per second.
		uint32	guaranteed_uplink_bitrate	4	Guaranteed uplink bitrate in bits per second.

		uint32	guaranteed_downlink_bitrate	4	Guaranteed downlink bitrate in bits per second.
		enum8	qos_delivery_order	1	<p>Values:</p> <p>WDS_QOS_DELIVERY_ORDER_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_QOS_DELIVERY_ORDER_ON (0x01) – Delivery order on</p> <p>WDS_QOS_DELIVERY_ORDER_OFF (0x02) – Delivery order off</p>
		uint32	max_sdu_size	4	Maximum SDU size.
		enum8	sdu_error_ratio	1	<p>Target value for the fraction of SDUs lost or detected as erroneous. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 1x10² • 2 – 7x10³ • 3 – 1x10³ • 4 – 1x10⁴ • 5 – 1x10⁵ • 6 – 1x10⁶ • 7 – 1x10¹
		enum8	residual_bit_error_ratio	1	<p>Target value for the undetected bit error ratio in the delivered SDUs. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 5x10² • 2 – 1x10² • 3 – 5x10³ • 4 – 4x10³ • 5 – 1x10³ • 6 – 1x10⁴ • 7 – 1x10⁵ • 8 – 1x10⁶ • 9 – 6x10⁸
		enum8	delivery_erroneous_SDUs	1	Delivery of erroneous SDUs. Indicates whether SDUs detected as erroneous are delivered or not. Values:

					<p>WDS_DELIVERY_ERRONEOUS_SDUS_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO_DETECTION (0x01) – No detection</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_YES (0x02) – Erroneous SDU is delivered</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO (0x03) – Erroneous SDU is not delivered</p>
		uint32	transfer_delay	4	Transfer delay. Indicates the targeted time between a request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds; if the parameter is set to 0, the subscribed value is requested.
		uint32	traffic_handling_priority	4	<p>Traffic handling priority. Specifies the relative importance for handling of SDUs that belong to the UMTS bearer, compared to the SDUs of other bearers.</p> <p>If the parameter is set to 0, the subscribed value is requested.</p>
Type	0x1A			1	GPRS Requested QoS
Length	20			2	
Value	→	uint32	precedence_class	4	Precedence class
		uint32	delay_class	4	Delay class
		uint32	reliability_class	4	Reliability class
		uint32	peak_throughput_class	4	Peak throughput class
		uint32	mean_throughput_class	4	Mean throughput class
Type	0x1B			1	GRPS Minimum QoS
Length	20			2	
Value	→	uint32	precedence_class	4	Precedence class
		uint32	delay_class	4	Delay class

		uint32	reliability_class	4	Reliability class
		uint32	peak_throughput_class	4	Peak throughput class
		uint32	mean_throughput_class	4	Mean throughput class
Type	0x1C			1	Username
Length	var			2	
Value	→	String	username	var	Username used during data network authentication. QMI_ERR_ARG_TOO_LONG is returned if the storage on the wireless device is insufficient in size to hold the value.
Type	0x1D			1	Password
Length	var			2	
Value	→	String	password	var	Password used during data network authentication. QMI_ERR_ARG_TOO_LONG is returned if the storage on the wireless device is insufficient in size to hold the value.
Type	0x1E			1	Authentication Preference
Length	1			2	
Value	→	mask8	authentication_preference	1	Bitmap that indicates the Authentication algorithm preference. Values: Bit 0 – PAP preference: • 0 – PAP is never performed • 1 – PAP can be performed Bit 1 – CHAP preference: • 0 – CHAP is never performed • 1 – CHAP can be performed All other bits are reserved and ignored. They must be set to zero by the client. If more than one bit is set, the device decides which authentication procedure is performed while setting up the data session, for example, the device can have a policy to select the most secure authentication mechanism.

Type	0x1F			1	IPv4 Address Preference
Length	4			2	
Value	→	uint32	ipv4_address_preference	4	Preferred IPv4 address assigned to the TE. The actual assigned address is negotiated with the network and can differ from this value. If not specified, the IPv4 address is obtained automatically from the network. The assigned value is provided to the host via DHCP.
Type	0x20			1	PCSCF Address Using PCO Flag
Length	1			2	
Value	→	boolean	pcscf_addr_using_pco	1	
Type	0x21			1	PDP Access Control Flag
Length	1			2	
Value	→	enum8	pdp_access_control_flag	1	Values: WDS_PDP_ACCESS_CONTROL_NONE (0x00) – None WDS_PDP_ACCESS_CONTROL_REJECT (0x01) – Reject WDS_PDP_ACCESS_CONTROL_PERMISSION (0x02) – Permission
Type	0x22			1	PCSCF Address Using DHCP
Length	1			2	
Value	→	boolean	pcscf_addr_using_dhcp	1	Values: • 1 – TRUE – Request PCSCF address using DHCP • 0 – FALSE – Do not request (default)
Type	0x23			1	IM CN flag
Length	1			2	
Value	→	boolean	im_cn_flag	1	Values: • 1 – TRUE – Request IM CN flag for

					<p>this profile</p> <ul style="list-style-type: none"> • 0 – FALSE – Do not request IM CN flag for this profile
Type	0x24			1	Traffic Flow Template (TFT) ID1 Parameters
Length	39			2	
Value	→	uint8	filter_id	1	Filter identifier.
		uint8	eval_id	1	Evaluation precedence index.
		enum8	ip_version	1	<p>IP version number. Values:</p> <ul style="list-style-type: none"> • WDS_IP_VERSION_IPV4 (0x04) – IPv4 • WDS_IP_VERSION_IPV6 (0x06) – IPv6
		uint8	source_ip	16	<p>Values:</p> <ul style="list-style-type: none"> • IPv4 – Fill the first 4 bytes • IPv6 – Fill all the 16 bytes
		uint8	source_ip_mask	1	Mask value for the source address.
		uint8	next_header	1	Next header/protocol value.
		uint16	dest_port_range_start	2	Start value for the destination port range.
		uint16	dest_port_range_end	2	End value for the destination port range.
		uint16	src_port_range_start	2	Start value for the source port range.
		uint16	src_port_range_end	2	End value for the source port range.
		uint32	ipsec_spi	4	IPSec security parameter index.
		uint16	tos_mask	2	TOS mask (traffic class for IPv6).
uint32	flow_label	4	Flow label.		
Type	0x25			1	TFT ID2 Parameters
Length	39			2	
Value	→	uint8	filter_id	1	Filter identifier.
		uint8	eval_id	1	Evaluation precedence index.

		enum8	ip_version	1	IP version number. Values: • WDS_IP_VERSION_IPV4 (0x04) – IPv4 • WDS_IP_VERSION_IPV6 (0x06) – IPv6
		uint8	source_ip	16	Values: • IPv4 – Fill the first 4 bytes • IPv6 – Fill all the 16 bytes
		uint8	source_ip_mask	1	Mask value for the source address.
		uint8	next_header	1	Next header/protocol value.
		uint16	dest_port_range_start	2	Start value for the destination port range.
		uint16	dest_port_range_end	2	End value for the destination port range.
		uint16	src_port_range_start	2	Start value for the source port range.
		uint16	src_port_range_end	2	End value for the source port range.
		uint32	ipsec_spi	4	IPSec security parameter index.
		uint16	tos_mask	2	TOS mask (traffic class for IPv6).
		uint32	flow_label	4	Flow label.
Type	0x26			1	PDP Context Number
Length	1			2	
Value	→	uint8	pdp_context	1	PDP context number
Type	0x27			1	PDP Context Secondary Flag
Length	1			2	
Value	→	boolean	secondary_flag	1	Values: • 1 – TRUE – This is the secondary profile • 0 – FALSE – This is not the secondary profile
Type	0x28			1	PDP Context Primary ID
Length	1			2	

Value	→	uint8	primary_id	1	PDP context number primary ID.
Type	0x29			1	IPv6 Address Preference
Length	16			2	
Value	→	uint8	ipv6_address_preference	16	Preferred IPv6 address assigned to the TE. The actual assigned address is negotiated with the network and can differ from this value; if not specified, the IPv6 address is obtained automatically from the network.
Type	0x2A			1	UMTS Requested QoS with Signaling Indication Flag
Length	34			2	
Value	→	enum8	traffic_class	1	Traffic class. Values: WDS_TRAFFIC_CLASS_SUBSCRIBED (0x00) – Subscribed WDS_TRAFFIC_CLASS_CONVERSATIONAL (0x01) – Conversational WDS_TRAFFIC_CLASS_STREAMING (0x02) – Streaming WDS_TRAFFIC_CLASS_INTERACTIVE (0x03) – Interactive WDS_TRAFFIC_CLASS_BACKGROUND (0x04) – Background
		uint32	max_uplink_bitrate	4	Maximum uplink bitrate in bits per second.
		uint32	max_downlink_bitrate	4	Maximum downlink bitrate in bits per second.
		uint32	guaranteed_uplink_bitrate	4	Guaranteed uplink bitrate in bits per second.
		uint32	guaranteed_downlink_bitrate	4	Guaranteed downlink bitrate in bits per second.
		enum8	qos_delivery_order	1	Values:

				<p>WDS_QOS_DELIVERY_ORDER_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_QOS_DELIVERY_ORDER_ON (0x01) – Delivery order on</p> <p>WDS_QOS_DELIVERY_ORDER_OFF (0x02) – Delivery order off</p>
	uint32	max_sdu_size	4	Maximum SDU size.
	enum8	sdu_error_ratio	1	<p>Target value for the fraction of SDUs lost or detected as erroneous. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 1x102 • 2 – 7x103 • 3 – 1x103 • 4 – 1x104 • 5 – 1x105 • 6 – 1x106 • 7 – 1x101
	enum8	residual_bit_error_ratio	1	<p>Target value for the undetected bit error ratio in the delivered SDUs. Values:</p> <ul style="list-style-type: none"> • 0 – Subscribe • 1 – 5x102 • 2 – 1x102 • 3 – 5x103 • 4 – 4x103 • 5 – 1x103 • 6 – 1x104 • 7 – 1x105 • 8 – 1x106 • 9 – 6x108
	enum8	delivery_erroneous_SDUs	1	<p>Delivery of erroneous SDUs. Indicates whether SDUs detected as erroneous are delivered or not. Values:</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO_DETECTION (0x01) – No detection</p>

					<p>WDS_DELIVERY_ERRONEOUS_SDUS_YES (0x02) – Erroneous SDU is delivered</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO (0x03) – Erroneous SDU is not delivered</p>
		uint32	transfer_delay	4	Transfer delay. Indicates the targeted time between a request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds; if the parameter is set to 0, the subscribed value is requested.
		uint32	traffic_handling_priority	4	Traffic handling priority. Specifies the relative importance for handling of SDUs that belong to the UMTS bearer, compared to the SDUs of other bearers. If the parameter is set to 0, the subscribed value is requested.
		boolean	sig_ind	1	<p>Signaling indication flag. Values:</p> <ul style="list-style-type: none"> • 0 – Signaling indication off • 1 – Signaling indication on
Type	0x2B			1	UMTS Minimum QoS with Signaling Indication
Length	34			2	
Value	→	enum8	traffic_class	1	<p>Traffic class. Values:</p> <p>WDS_TRAFFIC_CLASS_SUBSCRIBED (0x00) – Subscribed</p> <p>WDS_TRAFFIC_CLASS_CONVERSATIONAL (0x01) – Conversational</p> <p>WDS_TRAFFIC_CLASS_STREAMING (0x02) – Streaming</p> <p>WDS_TRAFFIC_CLASS_INTERACTIVE (0x03) – Interactive</p>

				WDS_TRAFFIC_CLASS_BACKGROUND (0x04) – Background
	uint32	max_uplink_bitrate	4	Maximum uplink bitrate in bits per second.
	uint32	max_downlink_bitrate	4	Maximum downlink bitrate in bits per second.
	uint32	guaranteed_uplink_bitrate	4	Guaranteed uplink bitrate in bits per second.
	uint32	guaranteed_downlink_bitrate	4	Guaranteed downlink bitrate in bits per second.
	enum8	qos_delivery_order	1	Values: WDS_QOS_DELIVERY_ORDER_SUBSCRIBE (0x00) – Subscribe WDS_QOS_DELIVERY_ORDER_ON (0x01) – Delivery order on WDS_QOS_DELIVERY_ORDER_OFF (0x02) – Delivery order off
	uint32	max_sdu_size	4	Maximum SDU size.
	enum8	sdu_error_ratio	1	Target value for the fraction of SDUs lost or detected as erroneous. Values: • 0 – Subscribe • 1 – 1x10 ² • 2 – 7x10 ³ • 3 – 1x10 ³ • 4 – 1x10 ⁴ • 5 – 1x10 ⁵ • 6 – 1x10 ⁶ • 7 – 1x10 ¹
	enum8	residual_bit_error_ratio	1	Target value for the undetected bit error ratio in the delivered SDUs. Values: • 0 – Subscribe • 1 – 5x10 ² • 2 – 1x10 ² • 3 – 5x10 ³ • 4 – 4x10 ³

					<ul style="list-style-type: none"> • 5 – 1x103 • 6 – 1x104 • 7 – 1x105 • 8 – 1x106 • 9 – 6x108
		enum8	delivery_erroneous_SDUs	1	<p>Delivery of erroneous SDUs. Indicates whether SDUs detected as erroneous are delivered or not. Values:</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_SUBSCRIBE (0x00) – Subscribe</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO_DETECTION (0x01) – No detection</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_YES (0x02) – Erroneous SDU is delivered</p> <p>WDS_DELIVERY_ERRONEOUS_SDUS_NO (0x03) – Erroneous SDU is not delivered</p>
		uint32	transfer_delay	4	Transfer delay. Indicates the targeted time between a request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds; if the parameter is set to 0, the subscribed value is requested.
		uint32	traffic_handling_priority	4	Traffic handling priority. Specifies the relative importance for handling of SDUs that belong to the UMTS bearer, compared to the SDUs of other bearers. If the parameter is set to 0, the subscribed value is requested.
		boolean	sig_ind	1	<p>Signaling indication flag. Values:</p> <ul style="list-style-type: none"> • 0 – Signaling indication off • 1 – Signaling indication on
Type	2C			1	Primary DNS IPv6 Address Preference
Length	16			2	
Value	→	uint8	primary_dns_ipv6_address_preference	16	The value can be used as a preference during negotiation with the network; if not specified, the wireless device attempts to obtain the DNS address

					automatically from the network. The negotiated value is provided to the host via the DHCP
Type	0x2D			1	Secondary DNS IPv6 Address Preference
Length	16			2	
Value	→	uint8	secodnary_dns_ip_v6_address_preference	16	The value can be used as a preference during negotiation with the network; if not specified, the wireless device attempts to obtain the DNS address automatically from the network. The negotiated value is provided to the host via the DHCP
Type	0x2E			1	DHCP/NAS Preference
Length	1			2	
Value	→	enum8	addr_allocation_preference	1	Indicates the address allocation preference. Values: WDS_ADDR_ALLOC_PREF_NAS (0x00) – NAS signaling is used for address allocation DS_ADDR_ALLOC_PREF_DHCP (0x01) – DHCP is used for address allocation
Type	0x2F			1	3GPP LTE QoS Parameters
Length	17			2	
Value	→	uint8	qci	1	For LTE, the requested QoS must be specified using the QoS Class Identifier (QoS). Values: QCI value 0 – Requests the network to assign the appropriate QCI value QCI values 1 to 4 – Associated with guaranteed bitrates QCI values 5 to 9 – Associated with nonguaranteed bitrates, the values specified as guaranteed and maximum bitrates are ignored.
		uint32	g_dl_bit_rate	4	Guaranteed DL bitrate.

		uint32	max_dl_bit_rate	4	Maximum DL bitrate.
		uint32	g_ul_bit_rate	4	Guaranteed UL bitrate.
		uint32	max_ul_bit_rate	4	Maximum UL bitrate.
Type	0x30			1	APN Disabled Flag
Length	1			2	
Value	→	boolean	apn_disabled_flag	1	Setting this flag disables the use of this profile for making data calls. Any data call with this profile fails locally. Values: <ul style="list-style-type: none"> • 0 – FALSE (default) • 1 – TRUE
Type	0x31			1	PDN Inactivity Timeout
Length	4			2	
Value	→	uint32	pdn_inactivity_timeout	4	Duration of the inactivity timer in seconds. If a PDP context or PDN connection is inactive (that is, no data Rx or Tx) for this duration of time, the PDP context or PDN connection is disconnected. The default setting of zero is treated as an infinite value.
Type	0x32			1	APN Class
Length	1			2	
Value	→	uint8	apn_class	1	An opaque, numeric identifier representing the APN in the profile. The APN class can be transparently set for any profile and queried later.
Type	0x33			1	Support Emergency Calls
Length	1			2	
Value	→	boolean	support_emergency_calls	1	When this flag is set, the user can make emergency calls using this profile. Values: <ul style="list-style-type: none"> • 0 – FALSE (default) • 1 – TRUE
Type	0x34			1	Negotiate DNS Server Preference
Length	1			2	
Value	→	boolean	negotiate_dns_server_preference	1	Values:

					<ul style="list-style-type: none"> • 1 – TRUE – Request DNS address from the PDSN (default) • 0 – FALSE – Do not request DNS address from the PDSN
Type	0x35			1	PPP Session Close Timer for DO
Length	4			2	
Value	→	uint32	ppp_session_close_timer_DO	4	Timer value (in seconds) on DO indicating how long the PPP session must linger before closing down.
Type	0x36			1	PPP Session Close Timer for 1X
Length	4			2	
Value	→	uint32	ppp_session_close_timer_1x	4	Timer value (in seconds) on 1X indicating how long the PPP session must linger before closing down.
Type	0x37			1	Allow/Disallow Lingering of Interface
Length	1			2	
Value	→	boolean	allow_linger	1	Values: <ul style="list-style-type: none"> • 1 – TRUE – Allow lingering • 0 – FALSE – Do not allow lingering
Type	0x38			1	LCP ACK Timeout
Length	2			2	
Value	→	uint16	lcp_ack_timeout	2	Value of LCP ACK timeout in milliseconds.
Type	0x39			1	IPCP ACK Timeout
Length	2			2	
Value	→	uint16	ipcp_ack_timeout	2	Value of IPCP ACK timeout in milliseconds.
Type	0x3A			1	AUTH Timeout
Length	2			2	
Value	→	uint16	auth_timeout	2	Value of authentication timeout in milliseconds.
Type	0x3B			1	LCP Configuration Request Retry Count Value
Length	1			2	

Value	→	uint8	lcp_creq_retry_count	1	LCP configuration request retry count value.
Type	0x3C			1	IPCP Configuration Request Retry Count
Length	1			2	
Value	→	uint8	ipcp_creq_retry_count	1	IPCP configuration request retry count value.
Type	0x3D			1	AUTH Retry
Length	1			2	
Value	→	uint8	auth_retry_count	1	Authentication retry count value.
Type	0x3E			1	Authentication Protocol
Length	1			2	
Value	→	enum8	auth_protocol	1	Values: WDS_PROFILE_AUTH_PROTOCOL_NONE (0) – None WDS_PROFILE_AUTH_PROTOCOL_PAP (1) – PAP WDS_PROFILE_AUTH_PROTOCOL_CHAP (2) – CHAP WDS_PROFILE_AUTH_PROTOCOL_PAP_CHAP (3) – PAP or CHAP
Type	0x3F			1	User ID
Length	var			2	
Value	→	string	user_id	var	User ID used during data network authentication; maximum length allowed is 127 bytes. QMI_ERR_ARG_TOO_LONG is returned if the storage on the wireless device is insufficient in size to hold the value.
Type	0x40			1	Authentication Password
Length	var			2	

Value	→	string	auth_password	var	<p>Password used during data network authentication; maximum length allowed is 127 bytes.</p> <p>QMI_ERR_ARG_TOO_LONG is returned if the storage on the wireless device is insufficient in size to hold the value.</p>
Type	0x41			1	Data Rate
Length	1			2	
Value	→	enum8	data_rate	1	<p>Values:</p> <p>WDS_PROFILE_DATA_RATE_LOW (0) – Low (Low speed Service Options (SO15) only)</p> <p>WDS_PROFILE_DATA_RATE_MEDIUM (1) – Medium (SO33 + low R-SCH)</p> <p>WDS_PROFILE_DATA_RATE_HIGH (2) – High (SO33 + high R-SCH)</p> <p>Note: Default is 2.</p>
Type	0x42			1	Application Type
Length	4			2	
Value	→	enum	app_type	4	<p>Values:</p> <p>WDS_PROFILE_APP_TYPE_DEFAULT (0x00000001) – Default application type</p> <p>WDS_PROFILE_APP_TYPE_LBS (0x00000020) – LBS application type</p> <p>WDS_PROFILE_APP_TYPE_TETHERED (0x00000040) – Tethered application type</p> <p>Note: Application type value in a profile cannot be modified. It can only be used to search for the profile ID numbers that have the specified application type.</p> <p>Note: An error message is returned if this TLV is included in the request.</p>
Type	0x43			1	Data Mode

Length	1			2	
Value	→	enum8	data_mode	1	<p>Values:</p> <p>WDS_PROFILE_DATA_MODE_CDMA_HDR (0) – CDMA or HDR (Hybrid 1X and 1xEV-DO)</p> <p>WDS_PROFILE_DATA_MODE_CDMA (1) – CDMA only (1X only)</p> <p>WDS_PROFILE_DATA_MODE_HDR (2) – HDR only (1xEV-DO only)</p> <p>Note: Default is 0.</p>
Type	0x44			1	Application Priority
Length	1			2	
Value	→	uint8	app_priority	1	<p>Numerical one byte value defining the application priority; higher value implies higher priority.</p> <p>Note: Application priority value in a profile cannot be modified. It is listed for future extensibility of profile ID search based on application priority.</p> <p>Note: An error message is returned if this TLV is included in the request.</p>
Type	0x45			1	APN String
Length	Var			2	
Value	→	string	apn_string	var	<p>String representing the access point name (APN); maximum length allowed is 100 bytes.</p> <p>QMI_ERR_ARG_TOO_LONG is returned if the APN name is too long.</p>
Type	0x46			1	PDN Type
Length	1			2	
Value	→	enum8	pdn_type	1	<p>Values:</p> <p>WDS_PROFILE_PDN_TYPE_IPV4 (0) – IPv4 PDN type</p> <p>WDS_PROFILE_PDN_TYPE_IPV6 (1) – IPv6 PDN type</p>

					WDS_PROFILE_PDN_TYPE_IPV4_IPV6 (2) – IPv4 or IPv6 PDN type
					WDS_PROFILE_PDN_TYPE_UNSPECIFIED (3) – Unspecified PDN type (implying no preference)
Type	0x47			1	Is PCSCF Address Needed
Length	1			2	
Value	→	boolean	is_pcscf_address_needed	1	Indicates whether the PCSCF address is requested from PDSN. Values: <ul style="list-style-type: none"> • 1 – TRUE – Request the PCSCF value from the PDSN • 0 – FALSE – Do not request the PCSCF value from the PDSN
Type	0x48			1	IPv4 Primary DNS Address
Length	4			2	
Value	→	uint32	primary_v4_dns_address	4	Primary IPv4 DNS address that can be statically assigned to the UE.
Type	0x49			1	IPv4 Secondary DNS Address
Length	4			2	
Value	→	uint32	secondary_v4_dns_address	4	Secondary IPv4 DNS address that can be statically assigned to the UE.
Type	0x4A			1	Primary IPv6 DNS Address
Length	16			2	
Value	→	uint8	primary_v6_dns_address	16	Primary IPv6 DNS address that can be statically assigned to the UE.
Type	0x4B			1	Secondary IPv6 DNS Address
Length	16			2	
Value	→	uint8	secondary_v6_dns_address	16	Secondary IPv6 DNS address that can be statically assigned to the UE.
Type	0x4C			1	RAT Type
Length	1			2	

Value	→	enum8	rat_type	1	Values: • WDS_RAT_TYPE_HRPD (1) – HRPD • WDS_RAT_TYPE_EHRPD (2) – EHRPD • WDS_RAT_TYPE_HRPD_EHRPD (3) – HRPD_EHRPD
Type	0x4D			1	APN Enabled
Length	1			2	
Value	→	boolean	apn_enabled_3gpp2	1	Indicates whether the APN in that profile is enabled or disabled. Values: • 1 – Enabled (default value) • 0 – Disabled; the data call cannot be established using that APN
Type	0x4E			1	PDN Inactivity Timeout
Length	4			2	
Value	→	uint32	pdn_inactivity_timeout_3gpp2	4	Duration of the inactivity timer in minutes. If a PDP context or PDN connection is inactive (that is, no data Rx or Tx) for this duration of time, the PDP context or PDN connection is disconnected. The default setting of zero is treated as an infinite value.
Type	0x4F			1	APN Class
Length	1			2	
Value	→	uint8	apn_class_3gpp2	1	An opaque, numeric identifier representing the APN in the profile. This can be transparently set for any profile and queried later.

4.2.3.2. Response - QMI_GMS_CREATE_PROFILE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
Profile Type	1.0	1.0
Profile Index	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Profile type
Length	1			2	
Value	→	enum8	profile_type	1	Identifies the technology type of the profile. Values: <ul style="list-style-type: none"> • WDS_PROFILE_TYPE_3GPP (0x00) – 3GPP • WDS_PROFILE_TYPE_3GPP2 (0x01) – 3GPP2 • WDS_PROFILE_TYPE_EPC (0x02) – EPC
Type	0x04			1	Profile Index
Length	1			2	
Value	→	uint8	profile_index	1	index identifying the profile.

Optional TLVs

Name	Version introduced	Version last modified
Extended Error Code	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x12			1	Extended Error Code
Length	2			2	
Value	→	uint16	extended_error_code	2	Extended error code received from the DS profile subsystem.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.3.3. Description of QMI_GMS_CREATE_PROFILE REQ/RESP

This command used to check if GMS service is running, properly by setting and getting simple variables

4.2.4. QMI_GMS_WDS_PRESERVED_APN_BACKUP

This command used to trigger APN backup on current operator.

GMS message ID

0x0104

Version introduced

Major - 1, Minor - 0

4.2.4.1. Request - QMI_GMS_WDS_PRESERVED_APN_BACKUP_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

4.2.4.2. Response - QMI_GMS_WDS_PRESERVED_APN_BACKUP_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	Uint16	result	2	Result Code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.5. QMI_GMS_DMS_GET_DYING_GASP_CFG

This command used to get the Dying GASP Configuration.

GMS Message ID

0x0200

Version introduced

Major - 1, Minor – 0

4.2.5.1. Request - QMI_GMS_DMS_GET_DYING_GASP_CFG_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.5.2. Response - QMI_GMS_DMS_GET_DYING_GASP_CFG_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint8	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	MS Destination Number
Length	Var			2	
Value	→		pDestSMSNum_len	1	Number of sets of the following elements • pDestSMSNum
			pDestSMSNum	Var	SMS Destination Number as string of 8 bit ASCII Characters Max 20 chars.

Type	0x11			1	SMS Content
Length	Var			2	
Value	→		pDestSMSContent_len	1	Number of sets of the following elements • pDestSMSContent
			pDestSMSContent	Var	SMS Content as a string of 8 bit ASCII text characters Max 160 chars

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.5.3. Description of QMI_GMS_DMS_GET_DYING_GASP_REQ/RESP

This command used to get the Dying Gasp Configuration (SMS number and SMS Test).

4.2.6. QMI_GMS_DMS_SET_DYING_GASP_CFG

This command used to set the Dying GASP Configuration.

GMS Message ID

0x0201

Version introduced

Major - 1, Minor – 0

4.2.6.1. Request - QMI_GMS_DMS_SET_DYING_GASP_CFG_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SMS Destination Number
Length	Var			2	
Value	→		pDestSMSNum_len	1	Number of sets of the following elements • pDestSMSNum

			pDestSMSNum	Var	SMS Destination Number as string of 8 bit ASCII Characters Max 20 chars.
Type	0x11			1	SMS Content
Length	Var			2	
Value	→		pDestSMSContent_len	1	Number of sets of the following elements • pDestSMSContent
			pDestSMSContent	Var	SMS Content as a string of 8 bit ASCII text characters Max 160 chars

4.2.6.2. Response - QMI_GMS_DMS_SET_DYING_GASP_CFG_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.6.3. Description of QMI_GMS_DMS_SET_DYING_GASP_REQ/RESP

This command used to set the Dying Gasp Configuration (SMS number and SMS Test).

4.2.7. QMI_GMS_DMS_GET_DYING_GASP_STAT

This command used to get Dying GASP Statistics.

GMS Message ID

0x0202

Version introduced

Major - 1, Minor – 0

4.2.7.1. Request - QMI_GMS_DMS_GET_DYING_GASP_STAT_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.7.2. Response - QMI_GMS_DMS_GET_DYING_GASP_STAT_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	Timestamp
Length	4			2	
Value	→	uint32	pTimeStamp	4	Timestamp of the last time power loss was detected and Dying Gasp feature was triggered. UTC time in seconds since Jan 06, 1980 (GPS Epoch)
Type	0x04			1	SMS attempted flag
Length	1			2	
Value	→	uint8	pSMSAttemptedFlag	1	Indicates whether device attempted to send SMS in the last power loss event.

					<p>Value:</p> <ul style="list-style-type: none"> • 0 - SMS not attempted • 1 - SMS attempted <p>This only indicates device sent the SMS but does not guarantee network delivery.</p>
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Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.7.3. Description of QMI_GMS_DMS_GET_DYING_GASP_REQ/RESP

This command used to get the Dying Gasp Statistics (Timestamp and SMS attempted flag).

4.2.8. QMI_GMS_DMS_CLR_DYING_GASP_STAT

This command used to clear the Dying GASP Statistics.

GMS Message ID

0x0203

Version introduced

Major - 1, Minor – 0

4.2.8.1. Request - QMI_GMS_DMS_CLR_DYING_GASP_STAT_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.8.2. Response - QMI_GMS_DMS_CLR_DYING_GASP_STAT_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field	Field	Parameter	Size	Description
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	value	type		(byte)	
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.8.3. Description of QMI_GMS_DMS_CLR_DYING_GASP REQ/RESP

This command used to remove the Dying Gasp Statistics (Timestamp and SMS attempted flag).

4.2.9. QMI_GMS_DMS_GET_CUST_FEATURES

This command used to get the setting of customization feature.

GMS Message ID

0x0204

Version introduced

Major – 1, Minor – 0

4.2.9.1. Request - QMI_GMS_DMS_GET_CUST_FEATURES_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Customization feature
Length	var			2	
Value	→	string	cust_id	var	String of customization feature: • AUDIS - Audio disable • DGACTION - Dying gasp Action

					<ul style="list-style-type: none"> • DGENABLE - Dying gasp Enable • GPSSEL - GPS Antenna Select • IPV6ENABLE - Support IPV6 Data Connection
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Optional TLVs

None

4.2.9.2. Response - QMI_GMS_DMS_GET_CUST_FEATURES_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI RESULT FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Customization feature
Length	var			2	
Value	→	uint8	cust_id_len	1	Length of cust_id
		string	cust_id	var	String of customization feature
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x04			1	Information about customization setting
Length	var			2	
		uint8	cust_id_len	1	Length of cust_id
		string	cust_id	var	String of customization feature • AUDIS - Audio disable • DGACTION - Dying gasp Action • DGENABLE - Dying gasp Enable • GPSSEL - GPS Antenna Select • IPV6ENABLE - Support IPV6 Data

				Connection
	uint8	cust_value_len	1	Length of cust_value field
	uint8	cust_value	var	<p>Customization setting value (Maximum 8 bytes)</p> <p>Value given in ASCII digits:</p> <ul style="list-style-type: none"> • AUDIS - Audio disable 0x30 - enable audio 0x31 - disable audio (default) • DGACTION - Dying gasp Action (same with #DGENABLE) 0x30 - Disable sending both detach request and SMS 0x31 - Enable only the SMS option (default) 0x32 - Enable only sending detach request 0x33 - Enable sending both SMS and detach request • DGENABLE – Dying gasp Enable cust_value[0] – enable/disable dying gasp 0x30 - disable (default) 0x31 - enable cust_value[1] – GPIO number used for dying gasp event monitoring. cust_value[2] – GPIO trigger used for event 0x30 - activate dying gasp when GPIO translates from high to low (default) 0x31 - activate dying gasp when GPIO translates from low to high • GPSSEL - GPS Antenna Select 0x30 - Dedicated GPS Port 0x31 - GPS Rx over AUX Port 0x32 - GPS Rx over dedicated GPS port with no bias voltage applied. • IPV6ENABLE – whether to support IPV6 0x30 - disabled 0x31 - enabled
	uint16	cust_attr	2	<p>Customization setting attribute.</p> <p>Value:</p> <ul style="list-style-type: none"> • 0 - read only • 1 - read/write

Optional TLVs
None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	One or more required TLVs were missing in the request
QMI_ERR_INVALID_ARG	Selected operating mode is invalid

4.2.10. QMI_GMS_DMS_SET_CUST_FEATURES

This command used to set the customization feature.

GMS message ID

0x0205

Version introduced

Major – 1, Minor – 0

4.2.10.1. Request - QMI_GMS_DMS_SET_CUST_FEATURES_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Customization feature
Length	var			2	
Value	→	string	cust_id	var	String of customization feature: <ul style="list-style-type: none"> • AUDIS - Audio disable • DGACTION - Dying gasp Action • DGENABLE - Dying gasp Enable • GPSSEL - GPS Antenna Select • IPV6ENABLE - Support IPV6 Data Connection
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Value of customization feature
Length	var			2	
Value	→	uint8	cust_value_len	1	Length of cust_value field
		uint8	cust_value	var	Customization setting value (Maximum 8 bytes)

					<p>Value given in ASCII digits:</p> <ul style="list-style-type: none"> • AUDIS - Audio disable 0x30 - enable audio 0x31 - disable audio (default) • DGACTION - Dying gasp Action (same with #DGENABLE) 0x30 - Disable sending both detach request and SMS 0x31 - Enable only the SMS option (default) 0x32 - Enable only sending detach request 0x33 - Enable sending both SMS and detach request • DGENABLE – Dying gasp Enable cust_value[0] – enable/disable dying gasp 0x30 - disable (default) 0x31 - enable cust_value[1] – GPIO number used for dying gasp event monitoring. Available range is from 0x31(GPIO_01) to 0x38(GPIO_08). cust_value[2] – GPIO trigger used for event 0x30 - activate dying gasp when GPIO translates from high to low (default) 0x31 - activate dying gasp when GPIO translates from low to high • GPSSSEL - GPS Antenna Select 0x30 - Dedicated GPS Port 0x31 - GPS Rx over AUX Port 0x32 - GPS Rx over dedicated GPS port with no bias voltage applied. • IPV6ENABLE – whether to support IPV6 0x30 - disabled 0x31 - enabled
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Optional TLVs

None

4.2.10.2. Response - QMI_GMS_DMS_SET_CUST_FEATURES_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
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Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	One or more required TLVs were missing in the request
QMI_ERR_INVALID_ARG	Selected operating mode is invalid

4.2.11. QMI_GMS_DMS_GET_PC_INFO

This command used to get device power control status information.

GMS message ID

0x0206

Version introduced

Major - 1, Minor - 0

4.2.11.1. Request – QMI_GMS_DMS_GET_PC_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.11.2. Response – QMI_GMS_DMS_GET_PC_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV is always present in the response.

Name	Version introduced	Version last modified
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Selected operating mode	1.0	1.0
LPM flag availability	1.0	1.0
W_DISABLE availability	1.0	1.0
Power Off mode availability	1.0	1.0
Persistent LPM availability	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Selected operating mode
Length	1			2	
Value	→	uint8	opMode	1	Values: 0 - Online 1 - Low power 2 - Factory Test mode 3 - Offline 4 - Resetting 5 - Shutting down 6 - Persistent low power 8 - Conducting network test for GSM/WCDMA
Type	0x04			1	LPM flag availability
Length	4			2	
Value	→	int32	has_LpmFlag	4	Values: 0 - Unavailable 1 - Available
Type	0x05			1	W_DISABLE availability
Length	4			2	
Value	→	int32	has_Wdisable	4	Values: 0 - Unavailable 1 - Available
Type	0x06			1	Power Off mode availability
Length	4			2	
Value	→	int32	has_PowerOffMode	4	Values: 0 - Unavailable 1 - Available

Type	0x07			1	Persistent LPM availability
Length	4			2	
Value	→	int32	has_PersistentLpm	4	Values: 0 - Unavailable 1 - Available

Optional TLVs

Name	Version introduced	Version last modified
LPM force flags	1.0	1.0
W_DISABLE switch position	1.0	1.0
Power Off mode	1.0	1.0
LPM persistence	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LPM force flags
Length	4			2	
Value	→	uint32	LpmFlag	4	Values (Bitmask): bit0 - Tracks the state of W_DISABLE TLV, indicating state of the W_DISABLE switch bit1 - Set if LPM is requested by host request, such as AT command, QMI or MBIM request. Cleared by a host request to return to online mode. Also set when the device is cold or warm booted in persistent LPM. bit2 - Set when the device temperature is outside the valid operating range. Cleared if the temperature returns to the normal range. bit3 - Set when the device voltage is outside the valid operating range. Cleared if the voltage returns to the normal range. bit4 - Set on power up when BIOS locking is enabled. Cleared when the host has disabled the BIOS lock. (Not Supported) bit 5- Set if the current device configuration does not match the GOBI image preference. (Not Supported) bit6-31 - Additional LPM causes may be added to future products. (Not supported)

Type	0x11			1	W_DISABLE switch position
Length	1			2	
Value	→	uint8	Wdisable	1	Values: 0 - Switch set to ON position (activate, radio off) 1 - Switch set to OFF position
Type	0x12			1	Power Off mode
Length	1			2	
Value	→	uint8	PowerOffMode	1	Action taken when W_DISABLE is switched to the ON position. Values: 0 - LPM 1 - Shutdown (Not supported) 2 - Ignore
Type	0x13			1	LPM persistence
Length	1			2	
Value	→	uint8	PersistentLpm	1	Values: 0 - Non-persistent LPM 1 - Persistent LPM

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.12. QMI_GMS_DMS_SET_FWSWITCH

This command used to specify network configuration on the modem

GMS Message ID

0x020A

Version introduced

Major - 1, Minor - 0

4.2.12.1. Request – QMI_GMS_DMS_SET_FWSWITCH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	network config ID

Length	1			2	
Value	→	uint8	config_id	1	Values: 0 - generic GCF config 1 - generic PTCRB config 10 - ATT config 11 - TMO config 12 - VZW config 13 – Sprint config 20 - SKT config 21 – SKT Dongle config 30 - NTT config 40 - Telstra config 50 – Anatel config
Type	0x02			1	modem FW image
Length	1			2	
Value	→	uint8	modem_fw	1	Values: 0 – M0 modem FW image 1 – M1 modem FW image
Type	0x03			1	reserved 1 filed for the future feature
Length	1			2	
Value	→	uint8	reserved_1	1	Values: 0 - 255 – any value

Optional TLVs

None

4.2.12.2. Response – QMI_GMS_DMS_SET_FWSWITCH_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result Code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE No error in the request

QMI_ERR_INTERNAL Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.13. QMI_GMS_DMS_GET_FSWITCH

This command used to get current network configuration on the modem

Message ID

0x020B

Version introduced

Major - 1, Minor - 0

4.2.13.1. QMI_GMS_DMS_GET_FSWITCH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.13.2. QMI_GMS_DMS_GET_FSWITCH_RESP

Message type

Response

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of

					each message definition.
Type	0x03			1	network config ID
Length	1			2	
Value	→	uint8	config_id	1	Values: 0 - generic GCF config 1 - generic PTCRB config 10 - ATT config 11 - TMO config 12 - VZW config 20 - SKT config 21 – SKT Dongle config 30 - NTT config 40 – Telstra config 50 – Anatel config
Type	0x04			1	modem FW image
Length	1			2	
Value	→	uint8	modem_fw	1	Values: 0 – M0 modem FW image 1 – M1 modem FW image
Type	0x05			1	reserved 1 field for the future feature
Length	1			2	
Value	→	uint8	reserved_1	1	Values: 0 – 255 – any value

Optional TLVs

None

Error codes

QMI_ERR_NONE No error in the request

QMI_ERR_INTERNAL Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.14. QMI_GMS_NAS_GET_DEBUG_INFO

This command used to get some variables for NAS DEBUG.

GMS message ID

0x0300

Version introduced

Major - 1, Minor - 1

4.2.14.1. Request - QMI_GMS_NAS_GET_DEBUG_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.14.2. Response - QMI_GMS_NAS_GET_DEBUG_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
Radio interface	1.1	1.1
Temperature	1.1	1.1
Operating mode	1.1	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Radio interface
Length	4			2	
Value	→	enum	radio_if	4	Radio interface technology of the signal being measured. Values: <ul style="list-style-type: none"> • 0x00 – RADIO_IF_NO_SVC – None (no service) • 0x01 – RADIO_IF_CDMA_1X – cdma2000® 1X • 0x02 – RADIO_IF_CDMA_1XEVD0 – cdma2000® HRPD (1xEV-DO) • 0x03 – RADIO_IF_AMPS – AMPS • 0x04 – RADIO_IF_GSM – GSM • 0x05 – RADIO_IF_UMTS – UMTS • 0x08 – RADIO_IF_LTE – LTE supported technologies.
Type	0x04			1	temperature
Length	2			2	

Value	→	int16	temperature	2	module temperature information. The value range is -40-120.
Type	0x05			1	operating mode
Length	4			2	
Value	→	enum	operating_mode	4	Operating mode. Values: <ul style="list-style-type: none"> • 0x00 - ONLINE (0) • 0x01 - LOW_POWER (1) • 0x02 - FACTORY_TEST_MODE (2) • 0x03 - OFFLINE (3) • 0x04 - RESETTING (4) • 0x05 - SHUTTING_DOWN (5)

Optional TLVs

Name	Version introduced	Version last modified
LTE Information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LTE Information
Length	39			2	
Value	→	uint8	ims_reg	1	Indicates whether IMS is registered 0 – not registered 1 - registered
		uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131

					BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 167 BAND 48 – 168 BAND 71 – 166
		uint8	bandwidth	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz

				<p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_15 (1) – 3 MHz <p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_25 (2) – 5 MHz <p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_50 (3) – 10 MHz <p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_75 (4) – 15 MHz <p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_100 (5) – 20 MHz
	enum	downlink_mod	4	<p>LTE downlink modulation. Values:</p> <ul style="list-style-type: none"> • CMAPI_LTE_API_MODULATION_BPSK (0x00) – BPSK • CMAPI_LTE_API_MODULATION_QPSK (0x01) – QPSK • CMAPI_LTE_API_MODULATION_16QAM (0x02) – 16-QAM • CMAPI_LTE_API_MODULATION_64QAM (0x03) – 64-QAM • CMAPI_LTE_API_MODULATION_256QAM (0x04) – 256-QAM • CMAPI_LTE_API_MODULATION_UNKNOWN (0x05) – UNKNOWN
	enum	uplink_mod	4	<p>LTE uplink modulation. Values:</p> <ul style="list-style-type: none"> • CMAPI_LTE_API_MODULATION_BPSK (0x00) – BPSK • CMAPI_LTE_API_MODULATION_QPSK (0x01) – QPSK • CMAPI_LTE_API_MODULATION_16QAM (0x02) – 16-QAM • CMAPI_LTE_API_MODULATION_64QAM (0x03) – 64-QAM

				<ul style="list-style-type: none"> • CMAPI_LTE_API_MODULATION_256QAM (0x04) – 256-QAM • CMAPI_LTE_API_MODULATION_UNKNOWN (0x05) – UNKNOWN
	uint16	rx_channel	2	E-UTRA absolute radio frequency channel number of the serving cell. Range: supported EARFCN under B65.
	uint16	tx_channel	2	E-UTRA TX radio frequency channel. Range: supported EARFCN under B65.
	enum	emm_state	4	<p>NAS Extended Mobility Management (EMM) state.</p> <p>Values:</p> <ul style="list-style-type: none"> • NAS_EMM_NULL (0) – Null • NAS_EMM_DEREGISTERED (1) – Deregistered • NAS_EMM_REGISTERED_INITIATED (2) – Registered, initiated • NAS_EMM_REGISTERED (3) – Registered • NAS_EMM_TRACKING_AREA_UPDATING_INITIATED (4) – Tracking area update initiated • NAS_EMM_SERVICE_REQUEST_INITIATED (5) – Service request initiated • NAS_EMM_DEREGISTERED_INITIATED (6) – Deregistered, initiated
	enum	emm_substate	4	<p>NAS EMM substate. Values:</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_NO_IMSI (0) –Deregistered, no IMSI • NAS_EMM_DEREGISTERED_PLMN_SEARCH (1) – Deregistered, PLMN search

					<p>NAS_EMM_DEREGISTERED_ATTACH _NEEDED (2) – Deregistered, attach needed</p> <ul style="list-style-type: none"> • <p>NAS_EMM_DEREGISTERED_NO_CELL _AVAILABLE (3) – Deregistered, no cell is available</p> <ul style="list-style-type: none"> • <p>NAS_EMM_DEREGISTERED_ATTEMPTING _TO_ATTACH (4) – Deregistered, attempting to attach</p> <ul style="list-style-type: none"> • <p>NAS_EMM_DEREGISTERED_NORMAL _SERVICE (5) – Deregistered, normal service</p> <ul style="list-style-type: none"> • <p>NAS_EMM_DEREGISTERED_LIMITED _SERVICE (6) – Deregistered, limited service</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_NORMAL _SERVICE (7) – Registered, normal service</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_UPDATE_ NEEDED (8) – Registered, update needed</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_ATTEMPTING_ TO_UPDATE (9) – Registered, attempting to update</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_NO_CELL_ AVAILABLE (10) – Registered, no cell is available</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_PLMN_ SEARCH (11) – Registered, PLMN search</p> <ul style="list-style-type: none"> • <p>NAS_EMM_REGISTERED_LIMITED_ SERVICE</p>
--	--	--	--	--	--

				<p>(12) – Registered, limited service</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_ATTEMPTING_TO_UPDATE_MM <p>(13) – Registered, attempting to update MM</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_IMSI_DETACH_INITIATED <p>(14) – Registered, IMSI detach initiated</p> <ul style="list-style-type: none"> • NAS_EMM_INTERNAL_SUBSTATE <p>(15) –Internal substate</p>
	enum	ps_attach_state	4	<p>Packet-switched domain attach state of the mobile. Values:</p> <ul style="list-style-type: none"> • 0x00 – PS_UNKNOWN – Unknown or not applicable • 0x01 – PS_ATTACHED – Attached • 0x02 – PS_DETACHED – Detached
	enum	emm_connection_state	4	<p>NAS RRC state. Values:</p> <ul style="list-style-type: none"> • EMM_IDLE_STATE_V01 (0) • EMM_WAITING_FOR_RRC_CONFIRMATION_STATE_V01 (1) • EMM_CONNECTED_STATE_V01 (2) • EMM_RELEASING_RRC_CONNECTION_STATE_V01 (3)
	uint32	rx_channel_ext	4	<p>E-UTRA absolute radio frequency channel number of the serving cell. Range: supported EARFCN.</p>
	uint32	tx_channel_ext	4	<p>E-UTRA TX radio frequency channel. Range: supported EARFCN.</p>

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.14.3. Description of QMI_GMS_NAS_GET_DEBUG_INFO REQ/RESP

This command used to get the debugging information of device.

4.2.15. QMI_GMS_NAS_GET_CA_INFO

This command used to get some variables for NAS CA.

GMS message ID

0x0301

Version introduced

Major - 1, Minor - 1

4.2.15.1. Request - QMI_GMS_NAS_GET_CA_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.15.2. Response - QMI_GMS_NAS_GET_CA_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
PCC CA Information	1.0	1.1
SCC 0 CA Information	1.0	1.1
SCC 1 CA Information	1.0	1.1
SCC 2 CA Information	1.1	1.1
SCC 3 CA Information	1.1	1.1
SCC 4 CA Information	1.2	1.2
SCC 5 CA Information	1.2	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	PCC CA Information

Length	26			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155

					<p>BAND 126 – 156</p> <p>BAND 127 – 157</p> <p>BAND 28 – 158</p> <p>BAND 29 – 159</p> <p>BAND 30 – 160</p> <p>BAND 66 – 161</p> <p>BAND 250 – 162</p> <p>BAND 46 – 163</p> <p>BAND 27 – 164</p> <p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	<p>E-UTRA absolute radio frequency channel number of the serving cell.</p> <p>Range: 0 to 68935.</p>
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	<p>Physical Cell Id.</p> <p>Range : 0 to 503.</p>
		int32	rsrp	4	<p>Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm</p>
		int32	rsqi	4	<p>Current RSSI in 1/10 dBm as measured by L1.</p> <p>Range : 0 to -120 dbm</p>
		int32	rsrq	4	<p>Current RSRQ in 1/10 dB as measured by L1.</p> <p>Range : -3 to -20 dbm</p>

		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		uint16	tac	2	Tracking area code information for LTE.
Type	0x11			1	SCC 0 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150

					<p>BAND 43 – 151</p> <p>BAND 23 – 152</p> <p>BAND 26 – 153</p> <p>BAND 32 – 154</p> <p>BAND 125 – 155</p> <p>BAND 126 – 156</p> <p>BAND 127 – 157</p> <p>BAND 28 – 158</p> <p>BAND 29 – 159</p> <p>BAND 30 – 160</p> <p>BAND 66 – 161</p> <p>BAND 250 – 162</p> <p>BAND 46 – 163</p> <p>BAND 27 – 164</p> <p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured

					by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 0 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x12			1	SCC 1 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142

					<p>BAND 18 – 143</p> <p>BAND 19 – 144</p> <p>BAND 20 – 145</p> <p>BAND 21 – 146</p> <p>BAND 24 – 147</p> <p>BAND 25 – 148</p> <p>BAND 41 – 149</p> <p>BAND 42 – 150</p> <p>BAND 43 – 151</p> <p>BAND 23 – 152</p> <p>BAND 26 – 153</p> <p>BAND 32 – 154</p> <p>BAND 125 – 155</p> <p>BAND 126 – 156</p> <p>BAND 127 – 157</p> <p>BAND 28 – 158</p> <p>BAND 29 – 159</p> <p>BAND 30 – 160</p> <p>BAND 66 – 161</p> <p>BAND 250 – 162</p> <p>BAND 46 – 163</p> <p>BAND 27 – 164</p> <p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth

					• NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 db
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 1 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x13			1	SCC 2 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 –121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134

					BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz

					<p>bandwidth</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 2 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x14			1	SCC 3 CA Information
Length	28			2	
Value	→	uint8	band_class	1	<p>LTE band class. (band number – band class)</p> <p>BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125</p>

					BAND 7 – 126
					BAND 8 – 127
					BAND 9 – 128
					BAND 10 – 129
					BAND 11 – 130
					BAND 12 – 131
					BAND 13 – 132
					BAND 14 – 133
					BAND 17 – 134
					BAND 33 – 135
					BAND 34 – 136
					BAND 35 – 137
					BAND 36 – 138
					BAND 37 – 139
					BAND 38 – 140
					BAND 39 – 141
					BAND 40 – 142
					BAND 18 – 143
					BAND 19 – 144
					BAND 20 – 145
					BAND 21 – 146
					BAND 24 – 147
					BAND 25 – 148
					BAND 41 – 149
					BAND 42 – 150
					BAND 43 – 151
					BAND 23 – 152
					BAND 26 – 153
					BAND 32 – 154
					BAND 125 – 155
					BAND 126 – 156
					BAND 127 – 157
					BAND 28 – 158
					BAND 29 – 159
					BAND 30 – 160
					BAND 66 – 161
					BAND 250 – 162
					BAND 46 – 163
					BAND 27 – 164

					<p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	<p>E-UTRA absolute radio frequency channel number of the serving cell.</p> <p>Range: 0 to 68935.</p>
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	<p>Physical Cell Id.</p> <p>Range : 0 to 503.</p>
		int32	rsrp	4	<p>Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm</p>
		int32	rsqi	4	<p>Current RSSI in 1/10 dBm as measured by L1.</p> <p>Range : 0 to -120 dbm</p>
		int32	rsrq	4	<p>Current RSRQ in 1/10 dB as measured by L1.</p> <p>Range : -3 to -20 dbm</p>
		int32	sinr	4	<p>Measured SINR in dB.</p> <p>Range : 0 to 250</p>
		enum	state	4	<p>Current SCC 3 state.</p> <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x15			1	SCC 4 CA Information

Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155

					<p>BAND 126 – 156</p> <p>BAND 127 – 157</p> <p>BAND 28 – 158</p> <p>BAND 29 – 159</p> <p>BAND 30 – 160</p> <p>BAND 66 – 161</p> <p>BAND 250 – 162</p> <p>BAND 46 – 163</p> <p>BAND 27 – 164</p> <p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	<p>E-UTRA absolute radio frequency channel number of the serving cell.</p> <p>Range: 0 to 68935.</p>
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	<p>Physical Cell Id.</p> <p>Range : 0 to 503.</p>
		int32	rsrp	4	<p>Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm</p>
		int32	rsqi	4	<p>Current RSSI in 1/10 dBm as measured by L1.</p> <p>Range : 0 to -120 dbm</p>
		int32	rsrq	4	<p>Current RSRQ in 1/10 dB as measured by L1.</p> <p>Range : -3 to -20 dbm</p>

		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 4 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x16			1	SCC 5 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147

					BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.

		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 5 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission



NOTE : The 32.00.0XX model could support 5CA and 24.01.5XX model can support 3CA. The 38.00.0XX model could support 7CA.

4.2.15.3. Description of QMI_GMS_NAS_GET_CA_INFO REQ/RESP

This command used to get the carrier aggregation information of LTE.

4.2.16. QMI_GMS_NAS_MODEM_STATUS

This command used to get some variables for modem NAS and LTE status.

GMS message ID

0x0302

Version introduced

Major - 1, Minor - 1

4.2.16.1. Request - QMI_GMS_NAS_MODEM_STATUS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.16.2. Response - QMI_GMS_NAS_MODEM_STATUS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
nas_CommInfo	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	nas_CommInfo
Length	5			2	
Value	→	int8	temperature	1	Temperature. Module temperature report in degrees Celsius. Value: <ul style="list-style-type: none"> 0x80 - Not Available.
		uint8	modemMode	1	Modem Operating Mode. Values: <ul style="list-style-type: none"> 0x00 - POWERING OFF 0x01 - FACTORY TEST 0x02 - OFFLINE 0x03 - OFFLINE_AMPS 0x04 - OFFLINE_CDMA 0x05 - ONLINE 0x06 - LOW POWER MODE 0x07 - RESETTING 0x08 - NETWORK TEST 0x09 - OFFLINE REQUEST 0x0A - PSEUDO ONLINE 0x0B - RESETTING MODEM 0xFF - Unknown
		uint8	systemMode	1	System mode. Radio interface technology of the signal being measured.

					Values: <ul style="list-style-type: none"> • 0x00 - No service • 0x01 - AMPS • 0x02 - CDMA • 0x03 - GSM • 0x04 - HDR • 0x05 - WCDMA • 0x06 - GPS • 0x07 - TDSCDMA • 0x08 - WLAN • 0x09 - LTE • 0xFF - Unknown
		uint8	imsRegState	1	IMS Registration State. Values: <ul style="list-style-type: none"> • 0x00 - NO SRV • 0x01 - IN PROG • 0x02 - FAILED • 0x03 - LIMITED • 0x04 - FULL SRV • 0xFF - Unknown
		uint8	psState	1	PS Attach State. Values: <ul style="list-style-type: none"> • 0x00 - Attached • 0x01 - Detached • 0xFF - Unknown

Optional TLVs

Name	Version introduced	Version last modified
pLTEInfo	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	nas_CommInfo
Length	9			2	
Value	→	uint8	band	1	LTE Band. Values: <ul style="list-style-type: none"> • 1 ~ 40 (Band in decimal) • 0xFF - Invalid
		uint8	bandwidth	1	BandWidth. Values:

				<ul style="list-style-type: none"> • 0x00 - 1.4 MHz • 0x01 - 3 MHz • 0x02 - 5 MHz • 0x03 - 10 MHz • 0x04 - 15 MHz • 0x05 - 20 MHz • 0x06 - Invalid <p>0xFF - Unknown</p>
	uint16	RXChan	2	<p>RX channel number in decimal. E-UTRA absolute radio frequency channel number of the serving cell.</p> <p>Values:</p> <ul style="list-style-type: none"> • Supported EARFCN under B65. <p>0xFFFF - Not Available</p>
	uint16	TXChan	2	<p>TX channel number in decimal. E-UTRA TX radio frequency channel.</p> <p>Values:</p> <ul style="list-style-type: none"> • Supported EARFCN under B65. <p>0xFFFF - Not Available</p>
	uint8	emmState	1	<p>NAS Extended Mobility Management (EMM) state. Values:</p> <ul style="list-style-type: none"> • NAS_EMM_NULL (0) – Null • NAS_EMM_DEREGISTERED (1) – Deregistered • NAS_EMM_REGISTERED_INITIATED (2) – Registered, initiated • NAS_EMM_REGISTERED (3) – Registered • NAS_EMM_TRACKING_AREA_UPDATING_INITIATED (4) – Tracking area update initiated • NAS_EMM_SERVICE_REQUEST_INITIATED (5) – Service request initiated • NAS_EMM_DEREGISTERED_INITIATED

				(6) – Deregistered, initiated
		uint8	emmSubState	1
				<p>NAS EMM substate. Values:</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_NO_IMSI <p>(0) – Deregistered, no IMSI</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_PLMN_SEARCH <p>(1) – Deregistered, PLMN search</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_ATTACH_NEEDED <p>(2) – Deregistered, attachneeded</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_NO_CELL_AVAILABLE <p>(3) – Deregistered, no cellis available</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_ATTEMPTING_TO_ATTACH <p>(4) – Deregistered,attempting to attach</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_NORMAL_SERVICE <p>(5) – Deregistered, normalservice</p> <ul style="list-style-type: none"> • NAS_EMM_DEREGISTERED_LIMITED_SERVICE <p>(6) – Deregistered, limitedservice</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_NORMAL_SERVICE <p>(7) – Registered, normal service</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_UPDATE_NEEDED <p>(8) – Registered, update needed</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_ATTEMPTING_TO_UPDATE <p>(9) – Registered, attempting to update</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_NO_CELL_AVAILABLE <p>(10) – Registered, no cell isavailable</p> <ul style="list-style-type: none"> • NAS_EMM_REGISTERED_PLMN

				SEARCH (11) – Registered, PLMN search •NAS_EMM_REGISTERED_LIMITED_SERVICE (12) – Registered, limited service •NAS_EMM_REGISTERED_ATTEMPTING_TO_UPDATE_MM (13) – Registered, attempting to update MM •NAS_EMM_REGISTERED_IMSI_DETACH_INITIATED (14) – Registered, IMSI detach initiated • NAS_EMM_INTERNAL_SUBSTATE (15) –Internal substate
		uint8	emmConnState	1 EMM Connected Mode State. Values: <ul style="list-style-type: none"> • 0x00 - RRC Idle • 0x01 - Waiting RRC Cfm • 0x02 - RRC Connected • 0x03 - RRC Releasing 0xFF - Unknown

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.16.3. Description of QMI_GMS_NAS_MODEM_STATUS_REQ/RESP

This command used to get the modem status information of device.

4.2.17. QMI_GMS_NAS_GET_LTECQI_INFO

This command used to get some variables for NAS LTE CQI.

GMS message ID

0x0303

Version introduced

Major - 1, Minor - 1

4.2.17.1. Request - QMI_GMS_NAS_GET_LTECQI_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.17.2. Response - QMI_GMS_NAS_GET_LTECQI_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name		Version introduced		Version last modified	
PCC CQI Information		1.1		1.1	
SCC 0 CQI Information		1.1		1.1	
SCC 1 CQI Information		1.1		1.1	
SCC 2 CQI Information		1.1		1.1	
SCC 3 CQI Information		1.1		1.1	
SCC 4 CQI Information		1.1		1.1	
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	PCC CQI Information
Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15
Type	0x11			1	SCC 0 CA Information
Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15
Type	0x12			1	SCC 1 CA Information

Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15
Type	0x13			1	SCC 2 CA Information
Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15
Type	0x14			1	SCC 3 CA Information
Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15
Type	0x15			1	SCC 4 CA Information
Length	2			2	
Value	→	uint8	cqi_0	1	Channel Quality Indicator. Range: 0-15
		uint8	cqi_1	1	Channel Quality Indicator. Range: 0-15

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.17.3. Description of QMI_GMS_NAS_GET_LTECQI_INFO REQ/RESP

This command used to get the CQI(Channel Quality Indicator) value information of LTE.

4.2.18. QMI_GMS_NAS_GET_LTE_SCC_RX_INFO

This command used to get some variables for NAS LTE CQI.

GMS message ID

0x0304

Version introduced

Major - 1, Minor - 1

4.2.18.1. Request - QMI_GMS_NAS_GET_LTE_SCC_RX_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.18.2. Response - QMI_GMS_NAS_GET_LTE_SCC_RX_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
SCC 0 Information	1.0	1.0
SCC 0 RX 0 Information	1.0	1.0
SCC 0 RX 1 Information	1.0	1.0
SCC 0 RX 2 Information	1.0	1.0
SCC 0 RX 3 Information	1.0	1.0
SCC 1 Information	1.0	1.0
SCC 1 RX 0 Information	1.0	1.0
SCC 1 RX 1 Information	1.0	1.0
SCC 1 RX 2 Information	1.0	1.0
SCC 1 RX 3 Information	1.0	1.0
SCC 2 Information	1.0	1.0
SCC 2 RX 0 Information	1.0	1.0
SCC 2 RX 1 Information	1.0	1.0
SCC 2 RX 2 Information	1.0	1.0

SCC 2 RX 3 Information	1.0	1.0
SCC 3 Information	1.0	1.0
SCC 3 RX 0 Information	1.0	1.0
SCC 3 RX 1 Information	1.0	1.0
SCC 3 RX 2 Information	1.0	1.0
SCC 3 RX 3 Information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SCC 0 Information * If SCC 0 is available, all RX 0, 1, 2 and 3 of SCC 0 information would be displayed.
Length	3			2	
Value	→	int16	sinr	2	Measured SINR in dB. Values: <ul style="list-style-type: none"> • 0 to 250 • -999 (invalid)
		uint8	numInstances	1	Number of sets of the following <ul style="list-style-type: none"> • rxChainIndex • isRadioTuned • rxPower • rsrp • rsrq
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x11			1	SCC 0 RX 0 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values:

					<ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x12			1	SCC 0 RX 1 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x13			1	SCC 0 RX 2 Information

Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x14			1	SCC 0 RX 3 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1.

					Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Type	0x15			1	SCC 1 Information * If SCC 1 is available, all RX 0, 1, 2 and 3 of SCC 1 information would be displayed.
Length	3			2	
Value	→	int16	sinr	2	Measured SINR in dB. Values: <ul style="list-style-type: none"> 0 to 250 -999 (invalid)
		uint8	numInstances	1	Number of sets of the following <ul style="list-style-type: none"> rxChainIndex isRadioTuned rxPower rsrp rsrq
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x16			1	SCC 1 RX 0 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> 0 to -120 -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values:

					<ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x17			1	SCC 1 RX 1 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> 0 to -120 -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x18			1	SCC 1 RX 2 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx

		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x19			1	SCC 1 RX 3 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1.

					Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Type	0x1A			1	SCC 2 Information * If SCC 2 is available, all RX 0, 1, 2 and 3 of SCC 2 information would be displayed.
Length	3			2	
Value	→	int16	sinr	2	Measured SINR in dB. Values: <ul style="list-style-type: none"> 0 to 250 -999 (invalid)
		uint8	numInstances	1	Number of sets of the following <ul style="list-style-type: none"> rxChainIndex isRadioTuned rxPower rsrp rsrq
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1B			1	SCC 2 RX 0 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> 0 to -120 -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values:

					<ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1C			1	SCC 2 RX 1 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> 0 to -120 -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1D			1	SCC 2 RX 2 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned

		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1E			2	SCC 2 RX 3 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Type	0x1F			1	SCC 3 Information * If SCC 3 is available, all RX 0, 1, 2

					and 3 of SCC 3 information would be displayed.
Length	3			2	
Value	→	int16	sinr	2	Measured SINR in dB. Values: <ul style="list-style-type: none"> • 0 to 250 • -999 (invalid)
		uint8	numInstances	1	Number of sets of the following <ul style="list-style-type: none"> • rxChainIndex • isRadioTuned • rxPower • rsrp • rsrq
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x20			1	SCC 3 RX 0 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description

Type	0x21			1	SCC 3 RX 1 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> • -44 to -140 • -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> • -3 to -20 • -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x22			1	SCC 3 RX 2 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> • 0 - Primary Rx • 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> ▪ 0x00 - Not tuned ▪ 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> • 0 to -120 • -999 (invalid)

		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)
Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x23			2	SCC 3 RX 3 Information
Length	14			2	
Value	→	uint8	rxChainIndex	1	Rx antenna path Values: <ul style="list-style-type: none"> 0 - Primary Rx 1 - Diversity Rx
		uint8	isRadioTuned	1	Rx path is tuned to a channel or Not Values: <ul style="list-style-type: none"> 0x00 - Not tuned 0x01 - Tuned
		int32	rxPower	4	Rx power value in 1/10 dBm resolution. Values: <ul style="list-style-type: none"> 0 to -120 -999 (invalid)
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Values: <ul style="list-style-type: none"> -44 to -140 -999 (invalid)
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Values: <ul style="list-style-type: none"> -3 to -20 -999 (invalid)

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point

	or the message was corrupted during transmission
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4.2.18.3. Description of QMI_GMS_NAS_GET_LTE_SCC_RX_INFO REQ/RESP

This command used to get LTE SCC RX information. If SCC 0 is valid, SCC 0 information and four SCC0 RX information are all displayed but if not, all responses related on SCC 0 are not displayed. Other SCC's work same.



NOTE : The 32.00.0XX model could support 5CA. So 32.00.0XX model could have SCC 0, 1, 2 and 3 information. On the other hand, the 24.01.5XX model can have only SCC 0 and 1 information. This command should be conducted on CA connected status. If not, it will return "QMI_ERR_NOT_SUPPORTED".

4.2.19. QMI_GMS_NAS_IND_REGISTER

This command used to set the OTA message indication.

GMS message ID

0x0305

Version introduced

Major - 1, Minor - 0

4.2.19.1. Request - QMI_GMS_NAS_IND_REGISTER_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Enable or disable indicating LTE ESM uplink messages
Length	1			2	
Value	→	uint8	IteEsmUI	1	0 – Disable, 1 – Enable
Type	0x02			1	Enable or disable indicating LTE ESM downlink messages
Length	1			2	
Value	→	uint8	IteEsmDI	1	0 – Disable, 1 – Enable
Type	0x03			1	Enable or disable indicating LTE EMM uplink messages
Length	1			2	

Value	→	uint8	lteEmmUI	1	0 – Disable, 1 – Enable
Type	0x04			1	Enable or disable indicating LTE EMM downlink messages
Length	1			2	
Value	→	uint8	lteEmmDI	1	0 – Disable, 1 – Enable
Type	0x05			1	Enable or disable indicating GSM/UMTS uplink messages
Length	1			2	
Value	→	uint8	gsmUmtsUI	1	0 – Disable, 1 – Enable
Type	0x06			1	Enable or disable indicating GSM/UMTS downlink messages
Length	1			2	
Value	→	uint8	gsmUmtsDI	1	0 – Disable, 1 – Enable
Type	0x07			1	Enable or disable indicating Rank Indicator messages
Length	1			2	
Value	→	uint8	pRankIndicatorInd	1	0 – Disable, 1 – Enable
Type	0x08			1	Enable or disable indicating Timer Indicator messages
Length	1			2	
Value	→	uint8	pTimer	1	0 – Disable, 1 – Enable

Optional TLVs

None

4.2.19.2. Response - QMI_GMS_NAS_IND_REGISTER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code

Length	4			2	
Value	→	uint16	qmi_result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	qmi_error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.20. QMI_GMS_NAS_OTA_MSG_REPORT

This command indicates the OTA message using QMI.

GMS message ID

0x0306

Version introduced

Major - 1, Minor – 0

4.2.20.1. Indication – QMI_GMS_NAS_OTA_MSG_REPORT_IND

Message type

Indication

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	OTA message type
Length	1			2	
Value	→	Uint32	msgType	4	OTA message type. Values: • 0 – LTE ESM uplink • 1 – LTE ESM downlink • 2 – LTE EMM uplink • 3 – LTE EMM downlink • 4 – GSM/UMTS uplink • 5 – GSM/UMTS downlink
Type	0x02			1	OTA message content length
Length	2			2	

Value	→	uint16	dataLen	2	OTA message content length
Type	0x03			1	OTA message content
Length	Var			2	
Value	→	uint8	dataBuf	Var	OTA message content
Type	0x04			1	NAS release version
Length	1			2	
Value	→	uint8	release	1	NAS release version
Type	0x05			1	NAS major version
Length	1			2	
Value	→	uint8	major	1	NAS major version
Type	0x06			1	NAS minor version
Length	1			2	
Value	→	uint8	minor	1	NAS minor version
Type	0x07			1	Seconds in local time since Jan 6 th 1980 00:00:00 UTC
Length	8			2	
Value	→	uint64	time	8	Seconds in local time since Jan 6 th 1980 00:00:00 UTC

Optional TLVs

None

4.2.20.2. Description of QMI_GMS_NAS_OTA_MSG_REPORT

This indication used to send NAS logging data which host device received from modem through QMI event callback. Interested control points are those that previously registered, using the QMI_GMS_NAS_IND_REGISTER_REQ message, for the corresponding state to be reported.

4.2.21. QMI_GMS_NAS_SET_4RX_DISABLE

This command used to set 4RX disable.

GMS message ID

0x0307

Version introduced

Major - 1, Minor - 0

4.2.21.1. Request - QMI_GMS_NAS_SET_4RX_DISABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
4RXDIS value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Selected 4RX enable or disable
Length	1			2	
Value	→	uint8	m_value	1	Value: .0 – 4RX enable. .1 – 4RX disable. (only enable 2RX)

Optional TLVs

None.

4.2.21.2. Response - QMI_GMS_NAS_SET_4RX_DISABLE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.21.3. Description of QMI_GMS_NAS_SET_4RX_DISABLE REQ/RESP

This command used to set 4RX disable.

4.2.22. QMI_GMS_NAS_GET_4RX_DISABLE

This command used to get 4RX disable.

GMS message ID

0x0308

Version introduced

Major - 1, Minor - 0

4.2.22.1. Request - QMI_GMS_NAS_GET_4RX_DISABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.22.2. Response - QMI_GMS_NAS_GET_4RX_DISABLE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
4RXDIS value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Selected 4RX enable or disable
Length	1			2	
Value	→	uint8	m_value	1	Value: .0 – 4RX enable. .1 – 4RX disable. (only enable 2RX)

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.22.3. Description of QMI_GMS_NAS_GET_4RX_DISABLE REQ/RESP

This command used to get 4RX disable.

4.2.23. QMI_GMS_NAS_GET_BAND_CAP

This command used to get band capability.

GMS message ID

0x0309

Version introduced

Major - 1, Minor - 0

4.2.23.1. Request - QMI_GMS_NAS_GET_BAND_CAP_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.23.2. Response - QMI_GMS_NAS_GET_BAND_CAP_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
band capability	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	band capability
Length	44			2	
Value	→	enum	variant	1	Variant name. 1 – GENERIC (GCF) 2 – ATT 3 – VZW 4 – TMUS 5 – PTCRB 6 – SPRINT 7 – SKT

					8 – NTT 9 – KDDI 10 – TELSTRA 11 – ANATEL
		uint64	band_pref	8	Bitmask representing the band preference to be set. See Table A-1 for details.
		uint64	bits_1_64	8	Bits 1 to 64 of the 256-bit LTE E-UTRA Operating Band bitmask
		uint64	bits_65_128	8	Bits 65 to 128 of the 256-bit LTE E-UTRA Operating Band bitmask <ul style="list-style-type: none"> • 2 – band 66 66 – band 66 + band 71
		uint64	bits_129_192	8	Bits 129 to 192 of the 256-bit LTE E-UTRA Operating Band bitmask
		uint64	bits_193_256	8	Bits 193 to 256 of the 256-bit LTE E-UTRA Operating Band bitmask

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

Table A-1 Band preference bit values

Bit value	Name	Description
Bit 0 (0x0000000000000001)	QMI_NAS_BAND_CLASS_0_A_SYSTEM	Band Class 0, A-System
Bit 1 (0x0000000000000002)	QMI_NAS_BAND_CLASS_0_B_AB_GSM850	Band Class 0, B-System, Band Class 0 AB , GSM 850 band
Bit 2 (0x0000000000000004)	QMI_NAS_BAND_CLASS_1_ALL_BLOCKS	Band Class 1, all blocks
Bit 3 (0x0000000000000008)	QMI_NAS_BAND_CLASS_2_PLACEHOLDER	Band Class 2 placeholder
Bit 4 (0x0000000000000010)	QMI_NAS_BAND_CLASS_3_A_SYSTEM	Band Class 3, A-System

Bit 5 (0x0000000000000020)	QMI_NAS_BAND_CLASS_4_ALL_BLOCKS	Band Class 4, all blocks
Bit 6 (0x0000000000000040)	QMI_NAS_BAND_CLASS_5_ALL_BLOCKS	Band Class 5, all blocks
Bit 7 (0x0000000000000080)	QMI_NAS_GSM_DCS_1800_BAND	GSM DCS 1800 band
Bit 8 (0x0000000000000100)	QMI_NAS_E_GSM_900_BAND	GSM Extended GSM (E-GSM) 900 band
Bit 9 (0x0000000000000200)	QMI_NAS_P_GSM_900_BAND	GSM Primary GSM (P-GSM) 900 band
Bit 10 (0x0000000000000400)	QMI_NAS_BAND_CLASS_6	Band Class 6
Bit 11 (0x0000000000000800)	QMI_NAS_BAND_CLASS_7	Band Class 7
Bit 12 (0x0000000000001000)	QMI_NAS_BAND_CLASS_8	Band Class 8
Bit 13 (0x0000000000002000)	QMI_NAS_BAND_CLASS_9	Band Class 9
Bit 14 (0x0000000000004000)	QMI_NAS_BAND_CLASS_10	Band Class 10
Bit 15 (0x0000000000008000)	QMI_NAS_BAND_CLASS_11	Band Class 11
Bit 16 (0x0000000000010000)	QMI_NAS_GSM_BAND_450	GSM 450 band
Bit 17 (0x0000000000020000)	QMI_NAS_GSM_BAND_480	GSM 480 band
Bit 18 (0x0000000000040000)	QMI_NAS_GSM_BAND_750	GSM 750 band
Bit 19 (0x0000000000080000)	QMI_NAS_GSM_BAND_850	GSM 850 band
Bit 20 (0x0000000001000000)	QMI_NAS_GSM_BAND_RAILWAYS_900_BAND	GSM Railways GSM 900 band
Bit 21 (0x0000000002000000)	QMI_NAS_GSM_BAND_PCS_1900_BAND	GSM PCS 1900 band
Bit 22 (0x0000000004000000)	QMI_NAS_WCDMA_EU_J_CH_IMT_2100_BAND	WCDMA Europe, Japan, and China IMT 2100 band
Bit 23 (0x0000000008000000)	QMI_NAS_WCDMA_US_PCS_1900_BAND	WCDMA U.S. PCS 1900 band
Bit 24 (0x0000000010000000)	QMI_NAS_EU_CH_DCS_1800_BAND	WCDMA Europe and China DCS 1800 band
Bit 25 (0x0000000020000000)	QMI_NAS_WCDMA_US_1700_BAND	WCDMA U.S. 1700 band
Bit 26 (0x0000000040000000)	QMI_NAS_WCDMA_US_850_BAND	WCDMA U.S. 850 band
Bit 27 (0x0000000080000000)	QMI_NAS_WCDMA_JAPAN_800_BAND	WCDMA Japan 800 band
Bit 28 (0x0000000100000000)	QMI_NAS_BAND_CLASS_12	Band Class 12
Bit 29 (0x0000000200000000)	QMI_NAS_BAND_CLASS_14	Band Class 14
Bit 30 (0x0000000400000000)	QMI_NAS_RESERVED	Reserved
Bit 31 (0x0000000800000000)	QMI_NAS_BAND_CLASS_15	Band Class 15
Bit 48 (0x0010000000000000)	QMI_NAS_WCDMA_EU_2600_BAND	WCDMA Europe 2600 band

Bit 49 (0x0020000000000000)	QMI_NAS_WCDMA_EU_J_900_BAND	WCDMA Europe and Japan 900 band
Bit 50 (0x0040000000000000)	QMI_NAS_WCDMA_J_1700_BAND	WCDMA Japan 1700 band
Bit 56 (0x1000000000000000)	QMI_NAS_BAND_CLASS_16	Band Class 16
Bit 57 (0x2000000000000000)	QMI_NAS_BAND_CLASS_17	Band Class 17
Bit 58 (0x4000000000000000)	QMI_NAS_BAND_CLASS_18	Band Class 18
Bit 59 (0x8000000000000000)	QMI_NAS_BAND_CLASS_19	Band Class 19

4.2.23.3. Description of QMI_GMS_NAS_GET_BAND_CAP REQ/RESP

This command used to get band capability

4.2.24. QMI_GMS_NAS_GET_CA_INFO_EXT

This command used to get the carrier aggregation information of LTE with UL info.

GMS message ID

0x030D

Version introduced

Major - 1, Minor - 1

4.2.24.1. Request - QMI_GMS_NAS_GET_CA_INFO_EXT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.24.2. Response - QMI_GMS_NAS_GET_CA_INFO_EXT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Extended PCC CA Information	1.0	1.0
Extended SCC CA Information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
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Type	0x10			1	Extended PCC CA Information
Length	31			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153

					<p>BAND 32 – 154</p> <p>BAND 125 – 155</p> <p>BAND 126 – 156</p> <p>BAND 127 – 157</p> <p>BAND 28 – 158</p> <p>BAND 29 – 159</p> <p>BAND 30 – 160</p> <p>BAND 66 – 161</p> <p>BAND 250 – 162</p> <p>BAND 46 – 163</p> <p>BAND 27 – 164</p> <p>BAND 31 – 165</p> <p>BAND 47 – 166</p> <p>BAND 48 – 167</p> <p>BAND 71 – 168</p>
		uint32	channel	4	<p>E-UTRA absolute radio frequency channel number of the serving cell.</p> <p>Range: 0 to 68935.</p>
		uint8	dl_bw	1	<p>Bandwidth. Values:</p> <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	<p>Physical Cell Id.</p> <p>Range : 0 to 503.</p>
		int32	rsrp	4	<p>Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm</p>
		int32	rsqi	4	<p>Current RSSI in 1/10 dBm as measured by L1.</p> <p>Range : 0 to -120 dbm</p>

		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		uint16	tac	2	Tracking area code information for LTE.
		uint32	uplink_channel	4	Uplink E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 133471 .
		uint8	ul_bw	1	Bandwidth for uplink. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
Type	0x11			1	Extended SCC CA Information
Length	33			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130

					BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency

				channel number of the serving cell. Range: 0 to 68935.
	uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
	int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
	int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
	int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
	int32	sinr	4	Measured SINR in dB. Range : 0 to 250
	enum	state	4	Current SCC 0 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
	uint32	uplink_channel	4	Uplink E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 133471 .
	uint8	ul_bw	1	Bandwidth for uplink. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth

					<ul style="list-style-type: none"> • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
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Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NOT_SUPPORTED	Not the environment in which the message is executed.



NOTE : If module has not the LTE acquisition, it returns ERROR and also if UL configuration is not set on SCC, the Extended SCC CA Information could not be reported.

4.2.24.3. Description of QMI_GMS_NAS_GET_CA_INFO_EXT REQ/RESP

This command used to get the carrier aggregation information of LTE with UL info.

4.2.25. QMI_GMS_NAS_NET_CHANGE

This command used to send some network changing indications using QMI.

GMS message ID

0x030E

Version introduced

Major - 1, Minor - 0

4.2.25.1. Request - QMI_GMS_NAS_NET_CHANGE_IND_REG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Special NAS event indication registration
Length	1			2	

Value	→	uint8	enable	1	0 – Disable, 1 – Enable
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Optional TLVs

None

4.2.25.2. Response - QMI_GMS_NAS_NET_CHANGE_IND_REG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	qmi_result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	qmi_error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

4.2.25.3. Indication - QMI_GMS_NAS_NET_CHANGE_IND

Message type

Indication

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	special event information
Length	4			2	
Value	→	int32	msgType	4	special event information. Values: <ul style="list-style-type: none"> • 1 - fallback from ENDC to LTE • 2 - activated 4G Carrier Aggregation • 3 - activated 5G ENDC

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.26. QMI_GMS_NAS_GET_ENDC_CA_INFO

This command used to get the carrier aggregation information of LTE and 5G CC when EN-DC is activated.

GMS message ID

0x030F

Version introduced

Major - 1, Minor - 1

4.2.26.1. Request - QMI_GMS_NAS_GET_ENDC_CA_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.26.2. Response - QMI_GMS_NAS_GET_ENDC_CA_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
PCC CA Information	1.0	1.0
SCC 0 CA Information	1.0	1.0
SCC 1 CA Information	1.0	1.0
SCC 2 CA Information	1.0	1.0
SCC 3 CA Information	1.0	1.0
SCC 4 CA Information	1.0	1.0
5G CC Information (ENDC)	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	PCC CA Information
Length	26			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151

					BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1.

					Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		uint16	tac	2	Tracking area code information for LTE.
Type	0x11			1	SCC 0 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 –121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146

					BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.

		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 0 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x12			1	SCC 1 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 –121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138

					BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149 BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz

					bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 db
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 1 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x13			1	SCC 2 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129

					BAND 11 – 130
					BAND 12 – 131
					BAND 13 – 132
					BAND 14 – 133
					BAND 17 – 134
					BAND 33 – 135
					BAND 34 – 136
					BAND 35 – 137
					BAND 36 – 138
					BAND 37 – 139
					BAND 38 – 140
					BAND 39 – 141
					BAND 40 – 142
					BAND 18 – 143
					BAND 19 – 144
					BAND 20 – 145
					BAND 21 – 146
					BAND 24 – 147
					BAND 25 – 148
					BAND 41 – 149
					BAND 42 – 150
					BAND 43 – 151
					BAND 23 – 152
					BAND 26 – 153
					BAND 32 – 154
					BAND 125 – 155
					BAND 126 – 156
					BAND 127 – 157
					BAND 28 – 158
					BAND 29 – 159
					BAND 30 – 160
					BAND 66 – 161
					BAND 250 – 162
					BAND 46 – 163
					BAND 27 – 164
					BAND 31 – 165
					BAND 47 – 166
					BAND 48 – 167
					BAND 71 – 168

		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 2 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x14			1	SCC 3 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120

					BAND 2 – 121
					BAND 3 – 122
					BAND 4 – 123
					BAND 5 – 124
					BAND 6 – 125
					BAND 7 – 126
					BAND 8 – 127
					BAND 9 – 128
					BAND 10 – 129
					BAND 11 – 130
					BAND 12 – 131
					BAND 13 – 132
					BAND 14 – 133
					BAND 17 – 134
					BAND 33 – 135
					BAND 34 – 136
					BAND 35 – 137
					BAND 36 – 138
					BAND 37 – 139
					BAND 38 – 140
					BAND 39 – 141
					BAND 40 – 142
					BAND 18 – 143
					BAND 19 – 144
					BAND 20 – 145
					BAND 21 – 146
					BAND 24 – 147
					BAND 25 – 148
					BAND 41 – 149
					BAND 42 – 150
					BAND 43 – 151
					BAND 23 – 152
					BAND 26 – 153
					BAND 32 – 154
					BAND 125 – 155
					BAND 126 – 156
					BAND 127 – 157
					BAND 28 – 158
					BAND 29 – 159

					BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm
		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250

		enum	state	4	Current SCC 3 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x15			1	SCC 4 CA Information
Length	28			2	
Value	→	uint8	band_class	1	LTE band class. (band number – band class) BAND 1 – 120 BAND 2 – 121 BAND 3 – 122 BAND 4 – 123 BAND 5 – 124 BAND 6 – 125 BAND 7 – 126 BAND 8 – 127 BAND 9 – 128 BAND 10 – 129 BAND 11 – 130 BAND 12 – 131 BAND 13 – 132 BAND 14 – 133 BAND 17 – 134 BAND 33 – 135 BAND 34 – 136 BAND 35 – 137 BAND 36 – 138 BAND 37 – 139 BAND 38 – 140 BAND 39 – 141 BAND 40 – 142 BAND 18 – 143 BAND 19 – 144 BAND 20 – 145 BAND 21 – 146 BAND 24 – 147 BAND 25 – 148 BAND 41 – 149

					BAND 42 – 150 BAND 43 – 151 BAND 23 – 152 BAND 26 – 153 BAND 32 – 154 BAND 125 – 155 BAND 126 – 156 BAND 127 – 157 BAND 28 – 158 BAND 29 – 159 BAND 30 – 160 BAND 66 – 161 BAND 250 – 162 BAND 46 – 163 BAND 27 – 164 BAND 31 – 165 BAND 47 – 166 BAND 48 – 167 BAND 71 – 168
		uint32	channel	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	dl_bw	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		int32	rsrp	4	Current RSRP in 1/10 dBm as measured by L1. Range : -44 to -140 dbm

		int32	rsqi	4	Current RSSI in 1/10 dBm as measured by L1. Range : 0 to -120 dbm
		int32	rsrq	4	Current RSRQ in 1/10 dB as measured by L1. Range : -3 to -20 dbm
		int32	sinr	4	Measured SINR in dB. Range : 0 to 250
		enum	state	4	Current SCC 4 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
Type	0x16			1	5G CC Information
Length	32			2	
Value	→	int32	endc_band	4	ENDC active band.
		uint16	endc_bandwidth	2	ENDC Bandwidth (MHz). Range: 5 to 400
		int32	endc_channel	4	ENDC active downlink channel.
		int32	endc_ul_channel	4	ENDC active uplink channel.
		uint16	endc_pci	2	ENDC Physical Cell Id.
		int32	endc_rsrp	4	Current ENDC RSRP in 1/10 dBm as measured by L1.
		int32	endc_rssi	4	Current ENDC RSSI in 1/10 dBm as measured by L1.
		int32	endc_rsrq	4	Current ENDC RSRQ in 1/10 dB as measured by L1.
		int32	endc_sinr	4	Measured ENDC SINR in dB.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.26.3. Description of QMI_GMS_NAS_GET_ENDC_CA_INFO REQ/RESP

This command used to get the carrier aggregation information of LTE and 5G CC when EN-DC is activated.

4.2.27. QMI_GMS_NAS_GET_LTE_CPHY_CA_INFO

This command used to get simple LTE CA info.

GMS message ID

0x0310

Version introduced

Major - 1, Minor - 1

4.2.27.1. Request - QMI_GMS_NAS_GET_LTE_CPHY_CA_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.27.2. Response - QMI_GMS_NAS_GET_LTE_CPHY_CA_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
PCC CA Information	1.0	1.0
SCC 0 CA Information	1.0	1.0
SCC 1 CA Information	1.0	1.0
SCC 2 CA Information	1.0	1.0
SCC 3 CA Information	1.0	1.0
SCC 4 CA Information	1.0	1.0
SCC 5 CA Information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	PCC CA Information
Length	8			2	

Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_band width	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
Type	0x11			1	SCC 0 CA Information
Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_band width	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth

		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 0 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number
Type	0x12			1	SCC 1 CA Information
Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_bandwidth	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 1 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number
Type	0x13			1	SCC 2 CA Information
Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.

		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_bandwidth	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 2 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number
Type	0x14			1	SCC 3 CA Information
Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_bandwidth	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth

					<ul style="list-style-type: none"> • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 3 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number
Type	0x15			1	SCC 4 CA Information
Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_bandwidth	1	Bandwidth. Values: <ul style="list-style-type: none"> • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 4 state. <ul style="list-style-type: none"> • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number
Type	0x16			1	SCC 5 CA Information

Length	10			2	
Value	→	uint16	pci	2	Physical Cell Id. Range : 0 to 503.
		uint32	freq	4	E-UTRA absolute radio frequency channel number of the serving cell. Range: 0 to 68935.
		uint8	cphy_ca_dl_bandwidth	1	Bandwidth. Values: • NAS_LTE_BW_NRB_6 (0) – 1.4 MHz bandwidth • NAS_LTE_BW_NRB_15 (1) – 3 MHz bandwidth • NAS_LTE_BW_NRB_25 (2) – 5 MHz bandwidth • NAS_LTE_BW_NRB_50 (3) – 10 MHz bandwidth • NAS_LTE_BW_NRB_75 (4) – 15 MHz bandwidth • NAS_LTE_BW_NRB_100 (5) – 20 MHz bandwidth
		uint8	band	1	LTE active band.
		uint8	scell_state	1	Current SCC 5 state. • INIT (0) • CONFIGURED (1) • ACTIVE (2)
		uint8	scell_idx	1	Scell index number

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.27.3. Description of QMI_GMS_NAS_GET_LTE_CPHY_CA_INFO REQ/RESP

This command used to get simple LTE CA info.

4.2.28. QMI_GMS_NAS_SET_B30TXDIS

This command used to set B30 TX disable.

GMS message ID

0x0311

Version introduced

Major - 1, Minor - 0

4.2.28.1. Request - QMI_GMS_NAS_SET_B30TXDIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
B30TXDIS value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Selected B30 TX enable or disable
Length	1			2	
Value	→	uint8	mode	1	Value: .0 – B30 TX enable. .1 – B30 TX disable.

Optional TLVs

None.

4.2.28.2. Response - QMI_GMS_NAS_SET_B30TXDIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.28.3. Description of QMI_GMS_NAS_SET_B30TXDIS REQ/RESP

This command used to set LTE B30 TX disable.

4.2.29. QMI_GMS_NAS_GET_B30TXDIS

This command used to get B30 TX disable.

GMS message ID

0x0312

Version introduced

Major - 1, Minor - 0

4.2.29.1. Request - QMI_GMS_NAS_GET_B30TXDIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.29.2. Response - QMI_GMS_NAS_GET_B30TXDIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
B30 TX value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	LTE B30 TX enable or disable value
Length	1			2	
Value	→	uint8	mode	1	Value: .0 – B30 TX enable. .1 – B30 TX disable.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point

	or the message was corrupted during transmission
--	--

4.2.29.3. Description of QMI_GMS_NAS_GET_B30TXDIS REQ/RESP

This command used to get LTE B30 TX disable.

4.2.30. QMI_GMS_TEST_SET_VALUE

This command used to set some variables for TEST.

GMS message ID

0x0F00

Version introduced

Major - 1, Minor - 0

4.2.30.1. Request - QMI_GMS_TEST_SET_VALUE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	test mandatory value
Length	1			2	
Value	→	uint8	m_value	1	Value range is 0-255

Optional TLVs

Name	Version introduced	Version last modified
test optional value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	test optional value
Length	1			2	
Value	→	uint8	o_value	1	Value range is 0-255

4.2.30.2. Response - QMI_GMS_TEST_SET_VALUE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.30.3. Description of QMI_GMS_TEST_SET_VALUE REQ/RESP

This command used to check if GMS service is running, properly by setting and getting simple variables

4.2.31. QMI_GMS_TEST_GET_VALUE

This command used to set some variables for TEST.

GMS message ID

0x0F01

Version introduced

Major - 1, Minor - 0

4.2.31.1. Request - QMI_GMS_TEST_GET_VALUE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.31.2. Response - QMI_GMS_TEST_GET_VALUE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
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Type	0x03			1	test mandatory value
Length	1			2	
Value	→	uint8	m_value	1	Value range is 0-255

Optional TLVs

Name	Version introduced	Version last modified
test optional value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	test optional value
Length	1			2	
Value	→	uint8	o_value	1	Value range is 0-255

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.31.3. Description of QMI_GMS_TEST_GET_VALUE REQ/RESP

This command used to check if GMS service is running, properly by setting and getting simple variables.

4.2.32. QMI_GMS_LOC_NMEA_DATA_IND_REG

This command used to enable/disable NMEA DATA indications. Once this indication enabled, string format NMEA-DATA sent to client whenever NMEA DATA changed. (Deprecated)

GMS message ID

0x1000

Version introduced

Major - 1, Minor - 0

4.2.32.1. Request - QMI_GMS_LOC_NMEA_DATA_IND_REG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
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NMEA data indication registration	Unknown	1.0
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Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	NMEA data indication registration
Length	1			2	
Value	→	uint8	enable	1	Value: • 0 – Disable • 1 – Enable

Optional TLVs

None

4.2.32.2. Response - QMI_GMS_LOC_NMEA_DATA_IND_REG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

4.2.32.3. Indication - QMI_GMS_LOC_NMEA_DATA_IND

Message type

Indication

Sender

Service

Scope

Per control point (unicast)

Mandatory TLVs

Name	Version introduced	Version last modified
NMEA event type	Unknown	1.0
NMEA location data	Unknown	1.0
size to write	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	NMEA event type
Length	4			2	
Value	→	enum	event_indication	4	Values: • 0 – Normal nmea event • Other value is not specified
Type	0x02			1	NMEA location data
Length	256			2	
Value	→	char	nmea_data	256	
Type	0x03			1	size to write
Length	4			2	
Value	→	uint32	nmea_data_size	4	

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.32.4. Description of QMI_GMS_LOC_NMEA_DATA_IND_REG REQ/RESP/IND

This command is deprecated.

This command enable/disable NMEA DATA indication occurred on modem processor and it allows the clients run on application processor to control NMEA indication.

NMEA DATA is equivalent to NMEA URC string format, which is defined in AT Command User Guide. Refer to \$GPSNMUN command in AT user guide for more detailed information.



Because the NMEA URC string is only generated in Application processor, this QMI messages must not be used.

4.2.33. QMI_GMS_LOC_GET_AUTO_START

This command used to get GNSS Auto Start Setting.

GMS Message ID

0x1001

Version introduced

Major - 1, Minor – 0

4.2.33.1. Request - QMI_GMS_LOC_GET_AUTO_START_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.33.2. Response - QMI_GMS_LOC_GET_AUTO_START_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	Setting to indicate when modem should start an automatic
Length	1			2	
Value	→	uint8	function	1	Values: \n <ul style="list-style-type: none"> • 0 -- disabled \n • 1 -- At bootup \n • 2 -- When NMEA port is opened \n • 0xff -- not reported by modem
Type	0x04			1	function_reported

Length	1			2	
Value	→	uint8	function_reported	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem \n • 1 -- reported by modem
Type	0x05			1	Type of GNSS fix
Length	1			2	
Value	→	uint8	fix_type	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem • 1 -- Default Engine mode \n • 2 -- MS-Based \n • 3 -- MS-Assisted \n • 4 -- Standalone
Type	0x06			1	fix_type_reported
Length	1			2	
Value	→	uint8	fix_type_reported	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem \n • 1 -- reported by modem
Type	0x07			1	max_time
Length	1			2	
Value	→	uint8	max_time	1	Values: \n <ul style="list-style-type: none"> • Maximum time allowed for the receiver to get a fix in seconds \n • Valid range: 1-255 • 0 -- not reported by modem
Type	0x08			1	max_time_reported
Length	1			2	
Value	→	uint8	max_time_reported	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem \n • 1 -- reported by modem
Type	0x09			1	max_dist

Length	4			2	
Value	→	uint32	max_dist	4	Values: \n <ul style="list-style-type: none"> • Maximum uncertainty of a fix measured by distance in meters \n • Valid range: 1-4294967280 • 0 -- not reported by modem
Type	0x0A			1	max_dist_reported
Length	1			2	
Value	→	uint8	max_dist_reported	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem \n • 1 -- reported by modem
Type	0x0B			1	fix_rate
Length	4			2	
Value	→	uint32	fix_rate	4	Values: \n <ul style="list-style-type: none"> • Time between fixes in seconds \n • Valid range: 1-65535 • 0 -- not reported by modem
Type	0x0C			1	fix_rate_reported
Length	1			2	
Value	→	uint8	fix_rate_reported	1	Values: \n <ul style="list-style-type: none"> • 0 -- not reported by modem \n • 1 -- reported by modem

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.33.3. Description of QMI_GMS_LOC_GET_AUTO_START REQ/RESP

This command used to get GNSS Auto Start Setting.

4.2.34. QMI_GMS_LOC_SET_AUTO_START

This command used to set GNSS Auto Start Setting.

GMS Message ID

0x1002

Version introduced

Major - 1, Minor – 0

4.2.34.1. Request - QMI_GMS_LOC_SET_AUTO_START_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Setting to indicate when modem should start an automatic
Length	1			2	
Value	→	uint8	function	1	Values: \n <ul style="list-style-type: none"> • 0 -- disabled \n • 1 -- At bootup \n • 2 -- When NMEA port is opened
Type	0x02			1	set_function
Length	1			2	
Value	→	uint8	set_function	1	Values: \n <ul style="list-style-type: none"> • 0 -- do not set to modem \n • 1 -- set to modem
Type	0x03			1	Type of GNSS fix
Length	1			2	
Value	→	uint8	fix_type	1	Values: \n <ul style="list-style-type: none"> • 1 -- Default Engine mode \n • 2 -- MS-Based \n • 3 -- MS-Assisted \n • 4 -- Standalone
Type	0x04			1	set_fix_type

Length	1			2	
Value	→	uint8	set_fix_type	1	Values: \n <ul style="list-style-type: none"> • 0 -- do not set to modem \n • 1 -- set to modem
Type	0x05			1	max_time
Length	1			2	
Value	→	uint8	max_time	1	Values: \n <ul style="list-style-type: none"> • Maximum time allowed for the receiver to get a fix in seconds \n • Valid range: 1-255
Type	0x06			1	set_max_time
Length	1			2	
Value	→	uint8	set_max_time	1	Values: \n <ul style="list-style-type: none"> • 0 -- do not set to modem \n • 1 -- set to modem
Type	0x07			1	max_dist
Length	4			2	
Value	→	uint32	max_dist	4	Values: \n <ul style="list-style-type: none"> • Maximum uncertainty of a fix measured by distance in meters \n • Valid range: 1-4294967280
Type	0x08			1	set_max_dist
Length	1			2	
Value	→	uint8	set_max_dist	1	Values: \n <ul style="list-style-type: none"> • 0 -- do not set to modem \n • 1 -- set to modem
Type	0x09			1	fix_rate
Length	4			2	
Value	→	uint32	fix_rate	4	Values: \n

					<ul style="list-style-type: none"> Time between fixes in seconds \n Valid range: 1-65535
Type	0x0A			1	set_fix_rate
Length	1			2	
Value	→	uint8	set_fix_rate	1	Values: \n <ul style="list-style-type: none"> 0 -- do not set to modem \n 1 -- set to modem

Optional TLVs

None

4.2.34.2. Response - QMI_GMS_LOC_SET_AUTO_START_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> QMI_RESULT_SUCCESS QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.34.3. Description of QMI_GMS_LOC_SET_AUTO_START REQ/RESP

This command used to set GNSS Auto Start Setting.

4.2.35. QMI_GMS_LOC_SET_NMEA_TYPE

This command used to set NMEA type Setting.

GMS Message ID

0x1003

Version introduced

Major - 1, Minor – 0

4.2.35.1. Request - QMI_GMS_LOC_SET_NMEA_TYPE_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Indicate whether NMEA port is opened or not.
Length	1			2	
Value	→	uint8	nmea_mode_ind	1	Values: \n <ul style="list-style-type: none"> • 0 -- NMEA streaming stop \n • 1 -- NMEA Streaming start

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	set nmea type mask
Length	4			2	
Value	→	uint32	nmea_type	4	Values: \n <ul style="list-style-type: none"> • Set NMEA type mask to modem \n • 0x0 : Disable NMEA type to modem \n • 0x1-0x7CFDFF: Enable NMEA type to modem \n • Valid mask definition \n • Enable GPGGA type : 0x00000001 • Enable GPRMC type : 0x00000002 • Enable GPGSV type : 0x00000004 • Enable GPGSA type : 0x00000008

					<ul style="list-style-type: none"> • Enable GPVTG type : 0x00000010 • Enable GPGLL type : 0x00000020 • Enable GLGSV type : 0x00000040 • Enable GNGSA type : 0x00000080 • Enable GNGNS type : 0x00000100 • Enable GARMC type : 0x00000400 • Enable GAGSV type : 0x00000800 • Enable GAGSA type : 0x00001000 • Enable GAVTG type : 0x00002000 • Enable GAGGA type : 0x00004000 • Enable BDGSV type : 0x00008000 • Enable GPGNS type : 0x00040000 • Enable GLGNS type : 0x00080000 • Enable GNGSV type : 0x00100000 • Enable GAGNS type : 0x00200000 • Enable BDGSA type : 0x00400000
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4.2.35.2. Response - QMI_GMS_LOC_SET_NMEA_TYPE_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of

					each message definition.
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Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.35.3. Description of QMI_GMS_LOC_SET_NMEA_TYPE REQ/RESP

This command used to set NMEA type Setting.

4.2.36. QMI_GMS_LOC_GET_GNSS_MB_CFG

This command used to get current GNSS multi-band Configuration Setting.

GMS Message ID

0x1004

Version introduced

Major - 1, Minor – 0

4.2.36.1. Request - QMI_GMS_LOC_GET_GNSS_MB_CFG_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.36.2.

4.2.36.3. Response - QMI_GMS_LOC_GET_GNSS_MB_CFG_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE

			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	Setting option for GNSS multiband configuration.
Length	1			2	
Value	→	uint8	function	1	Values: \n <ul style="list-style-type: none"> • 0 -- Disable \n <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are disabled. • 1 -- Enable \n <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are enabled. ○ GNSS multi-band signal tracking is conditional engaged. • 2 -- Forced Enable <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are enabled. ○ Enables GNSS multi-band signal tracking always and prevents engagement of DPO (Dynamic Power Optimization).

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.36.4. Description of QMI_GMS_LOC_GET_GNSS_MB_CFG REQ/RESP

This command used to get current GNSS multi-band Configuration Setting.

4.2.37. QMI_GMS_LOC_SET_GNSS_MB_CFG

This command used to set current GNSS multi-band Configuration Setting.

GMS Message ID

0x1005

Version introduced

Major - 1, Minor – 0

4.2.37.1. Request - QMI_GMS_LOC_SET_GNSS_MB_CFG_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Setting option for GNSS multiband configuration.
Length	1			2	
Value	→	uint8	function	1	Values: \n <ul style="list-style-type: none"> • 0 -- Disable \n <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are disabled. • 1 -- Enable \n <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are enabled. ○ GNSS multi-band signal tracking is conditional engaged. • 2 -- Forced Enable <ul style="list-style-type: none"> ○ GPS L5, GAL E5a and BDS B2a are enabled. ○ Enables GNSS multi-band signal tracking always and prevents engagement of DPO (Dynamic Power Optimization).

Optional TLVs

None

4.2.37.2. Response - QMI_GMS_LOC_SET_GNSS_MB_CFG_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS

					<ul style="list-style-type: none"> • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.37.3. Description of QMI_GMS_LOC_SET_GNSS_MB_CFG REQ/RESP

This command used to set current GNSS multi-band Configuration Setting.



The current setting is stored in NVM and new setting is applicable across device power cycles.

4.2.38. QMI_GMS_OMA_GET_HOST_ODIS

This command is used to get information related to the current host odis from NVM.

FOTA message ID

0xE200

Version introduced

Major – 1, Minor – 0

4.2.38.1. Request – QMI_GMS_OMA_GET_HOST_ODIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.38.2. Response – QMI_GMS_OMA_GET_HOST_ODIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	
Length	Var			2	
Value	→	string	manStr	Var	Host Device Manufacturer Name The maximum length of the string is 255.
Type	0x04			1	
Length	Var			2	
Value	→	string	modelStr	Var	Host Device Model Name. The maximum length of the string is 255.
Type	0x05			1	
Length	Var			2	
Value	→	string	swVerStr	Var	Host Device Software Version Name. The maximum length of the string is 255.
Type	0x06			1	
Length	Var			2	
Value	→	string	uniqueIDStr	Var	Host Device Unique ID Name. The maximum length of the string is 255.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.38.3. Description of QMI_FOTA_OEM_ATT_GET_HOST_ODIS REQ/RESP

This command is used to get information related to the current host odis from NVM.

4.2.39. QMI_GMS_OMA_SET_HOST_ODIS

This command is used to set information related to the current host odis to NVM only.

Note: It is for internal use, should use the QMI_FOTA_OEM_ATT_SET_HOST_ODIS that is included DM application side.

FOTA message ID

0xE201

Version introduced

Major – 1, Minor – 0

4.2.39.1. Request – QMI_GMS_OMA_SET_HOST_ODIS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	Var			2	
Value	→	string	manStr	Var	Host Device Manufacturer Name The maximum length of the string is 255.
Type	0x02			1	
Length	Var			2	
Value	→	string	modelStr	Var	Host Device Model Name. The maximum length of the string is 255.
Type	0x03			1	
Length	Var			2	
Value	→	string	swVerStr	Var	Host Device Software Version Name. The maximum length of the string is 255.
Type	0x04			1	
Length	Var			2	
Value	→	string	uniqueIDStr	Var	Host Device Unique ID Name. The maximum length of the string is 255.

Optional TLVs

None

4.2.39.2. Response – QMI_GMS_OMA_SET_HOST_ODIS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

4.2.39.3. Description of QMI_GMS_OMA_SET_HOST_ODIS REQ/RESP

This command is used to set information related to the current host odis to NVM only.

4.2.40. QMI_GMS_DMS_GET_MTU

This command used to get the MTU size.

Message ID

0x0207

Version introduced

Major - 1, Minor – 0

4.2.40.1. Request - QMI_GMS_DMS_GET_MTU_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.40.2. Response - QMI_GMS_DMS_GET_MTU_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint8	error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	pOutput
Length	12			2	
Value	→		TlvPresent	1	MTUSize3gpp 1 if read successful, 0 if failure
			MTUSize3gpp	2	MTU of current using.
Value	→		TlvPresent	1	Not used. Always 0
			hrpdMTUSize	2	Not used. Always 0
Value	→		TlvPresent	1	Not used. Always 0
			ehrpdmTUSize	2	Not used. Always 0
Value	→		TlvPresent	1	UsbMTUSize 1 if read successful, 0 if failure
			UsbMTUSize	2	MTU of Rm interface

Optional TLVs

None

4.2.41. QMI_GMS_DMS_SET_MTU

This command used to set the MTU of modem side. If the network receives an MTU, the device should not use a larger MTU setting.

Message ID

0x0208

Version introduced

Major - 1, Minor - 0

4.2.41.1. Request - QMI_GMS_DMS_SET_MTU_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	reqArg
Length	2			2	
Value	→		MTUSize	2	MTU size to change

Optional TLVs

None

4.2.41.2. Response - QMI_GMS_DMS_SET_MTU_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_NO_THRESHOLDS_V01	Out of range(the changeable MTU size is 576 to 2000.)
QMI_ERR_OP_DEVICE_UNSUPPORTED_V01	Failed to set carrier default MTU (reqArg set to 0)

4.2.42. QMI_GMS_DMS_TMCFG_VER

This command used to get the TMCFG version information

Message ID

0x020C

Version introduced

Major - 1, Minor – 0

4.2.42.1. Request - QMI_GMS_DMS_TMCFG_VER_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.42.2. Response - QMI_GMS_DMS_TMCFG_VER_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> QMI_RESULT_SUCCESS

					<ul style="list-style-type: none"> QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	
Length	Var			2	
Value	→		pkg_ver	Var	tmcfg package version string. string format: xxxxy xxx: TMCFG package version number y : TMCFG package version extension
Type	0x11		mno_ver	1	
Length	Var			2	
Value	→			Var	The activated MNO(Mobile Network Operator) config version string format: P0H.ddeef P0H : prefix string dd : network operator ID eee : config version number f : config extension number
Type	0x12		oem_ver	1	
Length	Var			2	
Value	→			Var	The activated OEM config version string format: xyy x : OEM ID

					yy: OEM config version number
Type	0x13		cal_ver	1	
Length	Var			2	
Value	→			Var	The activated CAL config version Currently, it's not supported.

4.2.43. QMI_GMS_DMS_FSWITCH_INFO

This command shows the available FSWITCH information

Message ID

0x020D

Version introduced

Major - 1, Minor - 0

4.2.43.1. Request - QMI_GMS_DMS_FSWITCH_INFO_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.43.2. Response - QMI_GMS_DMS_FSWITCH_INFO_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE

			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	pOutput
Length	Var			2	
Value	→		info_list_len	1	The maximum length of info list is 32 Number of sets of the following elements mno_id mno_name_len mno_name
			mno_id	1	Mobile Network Operator ID Valid ID range is 0 – 254. Invalid ID is 255
			mno_name_len	1	The length of the mno name string The maximum length is 32
			mno_name	Var	Mobile Network Operator name string.

Optional TLVs

None

4.2.44. QMI_GMS_DMS_SWPKG_V

This command shows SW package version and its components version

Message ID

0x020F

Version introduced

Major - 1, Minor – 0

4.2.44.1. Request - QMI_GMS_DMS_SWPKG_V_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.44.2. Response - QMI_GMS_DMS_SWPKG_V_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	pOutput
Length	Var			2	
Value	→		pkg_ver	Var	SW package version string The maximum length is 32
Type	0x04			1	pOutput
Length	Var			2	
Value	→		modem_ver	Var	modem version string The maximum length is 32
Type	0x05			1	pOutput
Length	Var			2	
Value	→		param_ver	Var	parameter version string, which is consist of the activated network config version and OEM config version as below <the activated network config version>[-<OEM config version>]

					Where <oem config version> is shown only if OEM config activated. The maximum length is 32
Type	0x06			1	pOutput
Length	Var			2	
Value	→		app_ver	Var	application version string The maximum length is 32

Optional TLVs

None

4.2.45. QMI_GMS_DMS_FWSWITCH_INFO_EX

This command is the extension command of QMI_GMS_DMS_FWSWITCH_INFO. It shows the available MNO configuration list with its name and version.

Message ID

0x0210

Version introduced

Major - 1, Minor - 0

4.2.45.1. Request - QMI_GMS_DMS_FWSWITCH_INFO_EX_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

4.2.45.2. Response - QMI_GMS_DMS_FWSWITCH_INFO_EX_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code

Length	4			2	
Value	→		result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
			error	2	Error code. Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	pOutput
Length	Var			2	
Value	→		info_list_len	1	The maximum length of info list is 32 Number of sets of the following elements mno_id mno_name_len mno_name mno_cfg_ver_len mno_cfg_ver reserved_1 reserved_2 reserved_3 reserved_4
			mno_id	1	Mobile Network Operator ID Valid ID range is 0 - 254. Invalid ID is 255
			mno_name_len	1	The length of the mno name string The maximum length is 32
			mno_name	Var	Mobile Network Operator name string.
			mno_cfg_ver_len	1	The length of the mno config version string. The maximum length is 16
			mno_cfg_ver	Var	Mobile Network Operator config version string.
			reserved_1	1	Reserved field for the future use

					It's filled with 0xFF
			reserved_2	1	Reserved field for the future use It's filled with 0xFF
			reserved_3	2	Reserved field for the future use. It's filled with 0xFFFF
			Reserved_4	4	Reserved field for the future use. It's filled with 0xFFFFFFFF

Optional TLVs

None

5. TELIT GENERAL APPLICATION SERVICE (QMI_GAS)

The QMI_GAS provides applications running on a tethered device, such as Terminal Equipment (TE), with the following commands related to extended service by Telit on application processor:

- Device management (USB configuration, Modem firmware management)
- Test (simple testing)

It is expected that user-level applications, for example, connection managers and/or device drivers on the TE, use QMI_GAS to access this functionality on the MSM™ device.

5.1. Theory of Operation

5.1.1. Generalized QMI Service Compliance

The QMI_GAS service complies with the generalized QMI service specification, including the rules for messages, indications and responses, byte ordering, arbitration, constants, result, and error code values described in 80-VB816-1. Extensions to the generalized QMI service theory of operation are noted in subsequent sections of this chapter.

5.1.2. GAS Service Type

The GAS is assigned QMI service type 0xE8.

5.1.3. Message Definition Template

5.1.3.1. Response Message Result TLV

This Type-Length-Value (TLV) (defined in Section 4.1.3.1) is present in all Response messages defined in this document. It is not present in the Indication messages.

5.1.4. QMI_GAS Fundamental Concepts

The QMI_GAS service enables the control points to use extended functionalities by Telit on application processor. Available information includes:

- USB configuration
- Changing device status, activation/update/insert/remove modem firmware, getting modem firmware information
- Simple test to set/get value

5.1.5. Service State Variables

5.1.5.1. Shared State Variables

No QMI_GAS state variables are shared across control points.

5.2. QMI_GAS Messages

Table 15-1 QMI_GAS messages

Command	ID	Description
QMI_GAS_DMS_USB_CFG_SET	0x0203	This command is for setting USB configuration.
QMI_GAS_DMS_USB_CFG_GET	0x0204	This command is for getting USB configuration.
QMI_GAS_DMS_MODE_SET	0x0205	This command is for changing device status to firmware upgrade. (Deprecated)
QMI_GAS_DMS_ACTIVE_FW	0x0206	This command is used for activation specific modem f/w.
QMI_GAS_DMS_SET_FW	0x0207	This command is used for update or insert modem f/w. (Deprecated)
QMI_GAS_DMS_GET_FW	0x0208	This command is used for getting stored modem f/w information.
QMI_GAS_DMS_CELAR_FW	0x0209	This command is used for remove stored modem f/w.
QMI_GAS_DMS_RESET_INFO_IND_REG	0x020A	This command used to enable/disable RESET INFO indication.
QMI_GAS_DMS_GET_RESET_INFO	0x020B	This command used to get RESET INFO that has reason for the most recent devices reset or power-down.
QMI_GAS_DMS_SET_CRASH_ACTION	0x020C	This command used to store mode of crash action for usbdump/ramdump or normal rese.
QMI_GAS_DMS_GET_CRASH_INFO	0x020D	This command used to get the most recent crash information.
QMI_GAS_DMS_ERRGEN	0x020F	This command used to generate a crash forcely.
QMI_GAS_DMS_GET_HOST_FWVER	0x0210	This command used to get host firmware version.
QMI_GAS_DMS_GET_OEM_FWVER	0x0211	This command used to get OEM firmware version.
QMI_GAS_DMS_GET_CRASH_ACTION	0x0212	This command used to get the crash action mode from device.
QMI_GAS_DMS_SET_USB_SWITCH	0x0213	This command used to configure USB speed mode.
QMI_GAS_DMS_GET_USB_SWITCH	0x0214	This command used to get current

		configuration for USB speed mode
QMI_GAS_DMS_ACTIVE_FW_EXT	0x0215	This command is used for activation specific modem f/w.
QMI_GAS_DMS_GET_FW_EXT	0x0216	This command is used for getting stored modem f/w information.
QMI_GAS_DMS_ADD_FW_PLMNID	0x0217	This command is used to add user PLMN ID in EFS for automatic firmware switch by SIM. (Deprecated)
QMI_GAS_DMS_GET_FW_PLMNID	0x0218	This command used to get operator/user PLMN IDs in EFS for automatic firmware switch by SIM. (Deprecated)
QMI_GAS_DMS_DEL_FW_PLMNID	0x0219	This command used to delete user PLMN ID in EFS for automatic firmware switch. (Deprecated)
QMI_GAS_DMS_SET_FWAUTOSIM	0x0222	This command is used for automatic carrier switching by SIM.
QMI_GAS_DMS_GET_FWAUTOSIM	0x0223	This command is used to get auto carrier switching mode.
QMI_GAS_DMS_GET_FW_PLMNID_EXT	0x0225	This command used to get operator/user PLMN IDs in EFS for automatic firmware switch by SIM.
QMI_GAS_DMS_ADD_FW_PLMNID_EXT	0x0226	This command is used to add user PLMN ID in EFS for automatic firmware switch by SIM.
QMI_GAS_DMS_DEL_FW_PLMNID_EXT	0x0227	This command used to delete user PLMN ID in EFS for automatic firmware switch.
QMI_GAS_TEST_SET_VALUE	0x0F00	This command used to set some variables for TEST
QMI_GAS_TEST_GET_VALUE	0x0F01	This command used to get some variables for TEST
QMI_GAS_PSM_GET_PSM_EVT_CFG	0xE400	This command used to get wakeup event mask from PSM
QMI_GAS_PSM_SET_PSM_EVT_CFG	0xE401	This command used to set wakeup event mask from PSM
QMI_GAS_PSM_GET_WAKEN_CFG_REQ	0xE402	This command used to get WAKE_N pin configuration.
QMI_GAS_PSM_SET_WAKEN_CFG_REQ	0xE403	This command used to set WAKE_N pin configuration.

QMI_GAS_PSM_GET_WDISA_CFG_REQ	0xE404	This command used to get W_DISABLE_N pin configuration (get Power Saving Mode)
QMI_GAS_PSM_SET_WDISA_CFG_REQ	0xE405	This command used to set W_DISABLE_N pin configuration (set Power Saving Mode)
QMI_GAS_PSM_GET_EVT_REQ	0xE406	This command used to get last wake up source during PSM
QMI_GAS_LOG_SET_REDIRECT	0xE500	This command used to redirect syslog to QXDM.

5.2.1. QMI_GAS_DMS_USB_CFG_SET

This command is for setting USB configuration.

GAS message ID

0x0203

Version introduced

Major - 1, Minor - 0

5.2.1.1. Request - QMI_GAS_DMS_USB_CFG_SET_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Selected USB composition	Unknown	1.0
hsic	Unknown	1.0
persistence	Unknown	1.0
immediate	Unknown	1.0
reboot	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Selected USB composition
Length	4			2	
Value	→	uint32	pid	4	Values: <ul style="list-style-type: none"> • 0x1050 • 0x1051 • 0x1052 • 0x1053 (* Please refer to AT Commands Guide for detailed information for each PID)
Type	0x02			1	Hsic
Length	1			2	
Value	→	uint8	hsic	1	Values: <ul style="list-style-type: none"> • 0 -- HSUSB • 1 -- HSIC (Not Supported)
Type	0x03			1	persistence

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Selected USB composition
Length	1			2	
Value	→	boolean	persistence	1	Values: • 0 – No (Not Supported) • 1 – Yes
Type	0x04			1	immediate
Length	1			2	
Value	→	boolean	immediate	1	Values: • 0 -- No • 1 – Yes (Not Supported)
Type	0x05			1	reboot
Length	1			2	
Value	→	boolean	reboot	1	Values: • 0 – No (Not Supported) • 1 – Yes

Optional TLVs

None

5.2.1.2. Response - QMI_GAS_DMS_USB_CFG_SET_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.1.3. Description of QMI_GAS_DMS_USB_CFG_SET REQ/RESP

This command set the USB configuration. The USB CFG configuration set result TLV is only returned if no errors occur.

5.2.2. QMI_GAS_DMS_USB_CFG_GET

This command is for getting USB configuration.

GMS message ID

0x0204

Version introduced

Major - 1, Minor - 0

5.2.2.1. Request - QMI_GAS_DMS_USB_CFG_GET_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.2.2. Response - QMI_GAS_DMS_USB_CFG_GET_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Selected USB composition
Length	4			2	
Value	→	uint32	pid	4	Values: <ul style="list-style-type: none"> • 0x1052 • 0x1050 • 0x1051 • 0x1053 (* Please refer to AT Commands Guide for detailed information for each PID)
Type	0x04			1	hsic
Length	1			2	
Value	→	uint8	hsic	1	Values: <ul style="list-style-type: none"> • 0 -- HSUSB

					• 1 -- HSIC (Not Supported)
Type	0x05			1	persistence
Length	1			2	
Value	→	boolean	persistence	1	Values: • 0 – No (Not Supported) • 1 -- Yes
Type	0x06			1	immediate
Length	1			2	
Value	→	boolean	immediate	1	Values: • 0 -- No • 1 – Yes (Not Supported)
Type	0x07			1	reboot
Length	1			2	
Value	→	boolean	reboot	1	Values: • 0 – No (Not Supported) • 1 -- Yes

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.2.3. Description of QMI_GAS_DMS_USB_CFG_GET REQ/RESP

This command returns the USB configuration. The USB configuration result TLV is only returned if no errors occur.

5.2.3. QMI_GAS_DMS_ACTIVE_FW

This command is used for activation specific modem f/w.

GAS message ID

0x0206

Version introduced

Major - 1, Minor - 0

5.2.3.1. Request - QMI_GAS_DMS_ACTIVE_FW_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Name	Version introduced	Version last modified
Carrier name structure	1.0	1.0
Slot index	1.0	1.0
Version structure	1.0	1.0
Auto sim enable	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Carrier name structure(Deprecated)
Length	Var			2	
Value	→	uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	carrier name which want to activate. (length limit 100 bytes) It can know the carrier name through QMI_GAS_DMS_GET_FW
Type	0x11			1	Slot index
Length	Var			2	
Value	→	uint8	slot_index	1	number of index which want to activate. (available range: 1 to 2)
Type	0x12			1	Version structure
Length	Var			2	

Value	→	uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	f/w version which want to activate. (length limit 100 bytes)
Type	0x13			1	Auto sim detection(Deprecated)
Length	Var			2	
Value	→	uint8	Auto sim enable	1	number of index • 0 – Disable automatic SIM • 1 – Enable automatic SIM • 2 – One shot enable automatic SIM

NOTE: In case of automatic SIM enable state, carrier switch should be discarded until automatic SIM disable state.

5.2.3.2. Response - QMI_GAS_DMS_ACTIVE_FW_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.3) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	One or more required TLVs were missing in the request
QMI_ERR_ARG_TOO_LONG	String size too long
QMI_ERR_OP_DEVICE_UNSUPPORTED	Operation is not supported by the device
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_WRITE_FAILED	F/w file write failed
QMI_ERR_FW_INFO_READ_FAILED	Stored f/w read failed
QMI_ERR_FW_FILE_NOT_FOUND	There is no matched f/w file by conditions

QMI_ERR_FW_DIR_NOT_FOUND	There is no matched f/w directory by conditions
QMI_ERR_FW_ALREADY_ACTIVATED	Already activated
QMI_ERR_AUTO_SIM_ALREADY_ENABLED	Already activated

5.2.3.3. Description of QMI_GAS_DMS_ACTIVE_FW REQ/RESP

This command is used for switching stored modem firmware. Also, it can be selected through index, f/w version as well as carrier name.

5.2.4. QMI_GAS_DMS_GET_FW

This command is used for getting stored modem f/w information.

GAS message ID

0x0208

Version introduced

Major - 1, Minor - 1

5.2.4.1. Request - QMI_GAS_DMS_GET_FW_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate mode to get firmware information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	operate mode to get firmware information
Length	1			2	
Value	→	uint8	operate_mode	1	operate_mode (valid range: 0 to 2) Supported values: <ul style="list-style-type: none"> • 0 – activated (executed) f/w • 1 - all stored f/w • 2 - specific f/w with condition • 3 – auto sim status and activated (executed) f/w(Deprecated)

Optional TLVs

Name	Version introduced	Version last modified
Index condition	1.0	1.0
Carrier name structure	1.0	1.0
Version structure	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Index condition
Length	1			2	

Value	→	uint8	slot_index	1	Number of index which want to get f/w information. (available range: 1 to 2)
Type	0x11			1	Carrier name structure(Deprecated)
Length	Var			2	
Value	→	uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	carrier name which want to activate. (length limit 100 bytes) It can know the carrier name through QMI_GAS_DMS_GET_FW
Type	0x12			1	Version structure
Length	Var			2	
Value	→	uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	f/w version which want to activate. (length limit 100 bytes)

5.2.4.2. Response - QMI_GAS_DMS_GET_FW_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
operate_mode	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE

		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x01			1	Show requested operate mode
Length	1			2	
Value	→	uint8	operate_mode	1	operate_mode (valid range: 0 to 2) Supported values: <ul style="list-style-type: none"> • 0 – activated (executed) f/w • 1 - all stored f/w • 2 - specific f/w with condition • 3 – auto sim status and activated (executed) f/w (0: disable, 1:enable, 2: one shot enable)

The Result Code TLV (defined in Section 4.1.3.3) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
stored firmware information 1	1.0	1.1
stored firmware information 2	1.0	1.1
stored firmware information 3	1.0	1.1
stored firmware information 4	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	stored firmware information 1
Length	1			2	
Value	→	uint8	index	1	Index number stored firmware
		uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	Carrier name (Deprecated)
		uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	Modem f/w version (length limit 100 bytes)

		uint8	pri_rev_len	1	Number of length the following elements: - pri_rev
		string	pri_rev	Var	PRI revision (length limit 100 bytes)
Type	0x11			1	stored firmware information 2
Length	1			2	
Value	→	uint8	index	1	Index number stored firmware
		uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	Carrier name (Deprecated))
		uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	Modem f/w version (length limit 100 bytes)
		uint8	pri_rev_len	1	Number of length the following elements: - pri_rev
		string	pri_rev	Var	PRI revision (length limit 100 bytes), which is the same as TMCFG (CNV) version. string format: eeef[-xyy] eee: TMCFG package version number f : TMCFG package extension number [-xyy] : OEM config version, which is an optional field. It's shown if OEM config activated in the device. x : OEM ID yy: OEM config version number
Type	0x12			1	stored firmware information 3
Length	1			2	
Value	→	uint8	index	1	Index number stored firmware
		uint8	name_len	1	Number of length the following elements:

					- name
		string	name	Var	Carrier name (Deprecated))
		uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	Modem f/w version (length limit 100 bytes)
		uint8	pri_rev_len	1	Number of length the following elements: - pri_rev
		string	pri_rev	Var	PRI revision (length limit 100 bytes)
Type	0x13			1	stored firmware information 4
Length	1			2	
Value	→	uint8	index	1	Index number stored firmware
		uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	Carrier name (Deprecated))
		uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	Modem f/w version (length limit 100 bytes)
		uint8	pri_rev_len	1	Number of length the following elements: - pri_rev
		string	pri_rev	Var	PRI revision (length limit 100 bytes)
Type	0x14			1	Auto sim status
Length	1			2	
		uint8	Auto sim status	1	0 - auto sim is not set. 1 - auto sim was set.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	One or more required TLVs were missing in the request
QMI_ERR_ARG_TOO_LONG	String size too long
QMI_ERR_OP_DEVICE_UNSUPPORTED	Operation is not supported by the device
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_WRITE_FAILED	F/w file write failed
QMI_ERR_FW_INFO_READ_FAILED	Stored f/w read failed
QMI_ERR_FW_FILE_NOT_FOUND	There is no matched f/w file by conditions
QMI_ERR_FW_DIR_NOT_FOUND	There is no matched f/w directory by conditions
QMI_ERR_FW_ALREADY_ACTIVATED	Already activated

5.2.4.3. Description of QMI_GAS_DMS_GET_FW REQ/RESP

This command is used for getting stored modem f/w information into the device.

5.2.5. QMI_GAS_DMS_CLEAR_FW

This command is used to remove stored modem f/w.

GAS message ID

0x0209

Version introduced

Major - 1, Minor - 1

5.2.5.1. Request - QMI_GAS_DMS_CLEAR_FW_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate mode to clear modem firmware	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	operate mode to clear modem firmware
Length	1			2	
Value	→	uint8	operate_mode	1	Operate mode to clear modem f/w into the device. Supported values: • 0 - clear all modem f/w • 1 - specific modem f/w with condition

Optional TLVs

Name	Version introduced	Version last modified
Index condition	1.0	1.1
Carrier name structure	1.0	1.0
Version structure	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Index condition
Length	1			2	
Value	→	uint8	slot_index	1	Number of index which want to get f/w information. (available range: 1 to 2)
Type	0x11			1	Carrier name structure(Deprecated)

Length	Var			2	
Value	→	uint8	name_len	1	Number of length the following elements: - name
		string	name	Var	carrier name which want to activate. (length limit 100 bytes) It can know the carrier name through QMI_GAS_DMS_GET_FW
Type	0x12			1	Version structure
Length	Var			2	
Value	→	Uint8	versions_len	1	Number of length the following elements: - version
		string	versions	Var	f/w version which want to activate. (length limit 100 bytes)

5.2.5.2. Response - QMI_GAS_DMS_CLEAR_FW_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.3) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	One or more required TLVs were missing in the request
QMI_ERR_ARG_TOO_LONG	String size too long
QMI_ERR_OP_DEVICE_UNSUPPORTED	Operation is not supported by the device
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_WRITE_FAILED	F/w file write failed
QMI_ERR_FW_INFO_READ_FAILED	Stored f/w read failed

QMI_ERR_FW_FILE_NOT_FOUND	There is no matched f/w file by conditions
QMI_ERR_FW_DIR_NOT_FOUND	There is no matched f/w directory by conditions
QMI_ERR_FW_ALREADY_ACTIVATED	Already activated

5.2.5.3. Description of QMI_GAS_DMS_FW_CLEAR REQ/RESP

This command removed stored modem f/w image of the device. If activated f/w is removed by this command, modem will reboot to avoid ambiguous state and will activate as Generic image. hence, stored Generic f/w can't be removed through this command.

5.2.6. QMI_GAS_DMS_SET_CRASH_ACTION

This command used to store mode of crash action for usbdump or normal reset, QMI_GAS_DMS_SET_CRASH_ACTION request sent to client only one time.

GAS message ID

0x020C

Version introduced

Major - 1, Minor – 0

5.2.6.1. Request – QMI_GAS_DMS_SET_CRASH_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
crash action mode	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Request mode of crash action
Length	1			2	
Value	→	uint8	crashAction	1	Value: <ul style="list-style-type: none"> • 0 – USB Memory Download. Modem will reset after a crash and will stay in USB download mode with only DM port enumerated. • 1 – Reset. Modem will reset and come back in ONLINE mode. • 2 – USB Memory Download. With USB 2.0 • 3 – USB Memory Download. With USB 3.0

Optional TLVs

None

5.2.6.2. Request – QMI_GAS_DMS_SET_CRASH_ACTION_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Result Code	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_INVALID_ARG	Invalid parameter in the request

5.2.6.3. Description of QMI_GAS_DMS_CRASH_ACTION REQ/RESP

This command used to store mode of crash action for usbdump or normal reset.

5.2.7. QMI_GAS_DMS_GET_CRASH_INFO

This command used to get the most recent crash information.

GAS message ID

0x020D

Version introduced

Major - 1, Minor – 0

5.2.7.1. Request – QMI_GAS_DMS_GET_CRASH_INFO_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate mode to get crash information	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Crash Info indication registration
Length	1			2	
Value	→	uint8	clear	1	Value: <ul style="list-style-type: none"> • 0 – do not clear crash data after response • 1 – clear crash data after response

Optional TLVs

None

5.2.7.2. Request – QMI_GAS_DMS_GET_CRASH_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
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crashStatus	1.0	1.1
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Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	Indicates whether a crash occurred.
Length	2			2	
Value	→	uint8	crashStatus	1	0 - no crash 1 - crash has occurred

Optional TLVs

Name	Version introduced	Version last modified
crash_info	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	reset information
Length	2			2	Show crash information
Value	→	uint8	excep_info_sw_ver_len	1	Number of length the following elements: - excep_info_sw_ver
		string	excep_info_sw_ver	Var	software version name (length limit 16 bytes)

	uint8	excep_info_date_len	Var	Number of length the following elements: - excep_info_date
	string	excep_info_date	1	date information (length limit 16 bytes)
	uint8	excep_info_time_len	Var	Number of length the following elements: - excep_info_time
	string	excep_info_time	1	time information. (UTC time. Not local time) (length limit 16 bytes)
	UInt32	excep_info_line	4	line number information
	uint8	excep_info_filename_len	Var	Number of length the following elements: - excep_info_filename
	string	excep_info_filename	1	file name information. (length limit 32 bytes)
	uint8	excep_info_msg_len	Var	Number of length the following elements: - excep_info_msg
	string	excep_info_msg	1	crash message information (length limit 256 bytes)
	UInt32	excep_info_crash_total_cnt	4	Total crash count

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.7.3. Description of QMI_GAS_DMS_GET_CRASH_INFO_REQ/RESP
This command is used for getting crash information into the device

5.2.8. QMI_GAS_DMS_ERRGEN

This command used to generate a crash forcibly

GAS message ID

0x020F

Version introduced

Major - 1, Minor – 0

5.2.8.1. Request – QMI_GAS_DMS_ERRGEN_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.8.2. Request – QMI_GAS_DMS_ERRGEN_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Result Code	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.8.3. Description of QMI_GAS_DMS_ERRGEN_REQ/RESP

This command used to generate a crash forcibly

5.2.9. QMI_GAS_DMS_RESET_INFO_IND_REG

This command used to enable/disable RESET INFO indication. After this indication enabled, QMI_GAS_DMS_RESET_INFO_IND indication sent to client only one time. Control point must register for the QMI_GAS_DMS_RESET_INFO_IND indication via QMI_GAS_DMS_RESET_INFO_IND_REG_REQ to learn about the reason for the most recent device reset.

GAS message ID

0x020A

Version introduced

Major - 1, Minor – 0

5.2.9.1. Response - QMI_GAS_DMS_RESET_INFO_IND_REG_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Reset Info indication registration	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Reset Info indication registration
Length	1			2	
Value	→	uint8	enable	1	Value: • 0 – Disable • 1 – Enable

Optional TLVs

None

5.2.9.2. Response - QMI_GAS_DMS_RESET_INFO_IND_REG_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Result Code	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.9.3. Response - QMI_GAS_DMS_RESET_INFO_IND

Message Type

Indication

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
The reason for the most recent device reset or power-down	1.0	1.0

Field	Field Value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	reset information
Length	2			2	

Value	→	uint8	type	1	<p>type of reset or power down</p> <ul style="list-style-type: none"> • 0 -- unknown • 1 -- warm • 2 -- hard • 3 -- crash • 4 -- power <p>Note. In the QCT model, the warm reset occurs only after a crash. So it does not provide a warm reset to give a more critical crash situation.</p>
		uint8	source	1	<p>entity which initiated the reset or power down</p> <ul style="list-style-type: none"> • 0 -- unknown • 1 -- user requested (AT#REBOOT, Firmware download - including host-initiated image switching) • 2 -- Not supported - hardware switch (W_DISABLE) • 3 -- temperature critical • 4 -- voltage critical • 5 -- Not supported - configuration update (SIM-based image switching) • 6 -- Not supported - LWM2M (Light Weight M2M client (internal process for LWM2M)) • 7 -- Not supported - OMA-DM • 8 -- Not supported - FOTA

Optional TLVs

None

5.2.9.4. Description of QMI_GAS_DMS_RESET_INFO_IND_REG_REQ/RESP/IND

This command used to enable/disable RESET INFO indication. It has reason for the most recent devices reset or power-down.

After this indication enabled, QMI_GAS_DMS_RESET_INFO_IND indication sent to client only one time.

If Control point wants to get RESET INFO any time on run time, use

QMI_GAS_DMS_RESET_INFO_IND_REG_REQ/
QMI_GAS_DMS_RESET_INFO__ND_REG_RESP

5.2.10. QMI_GAS_DMS_GET_RESET_INFO

This command used to get RESET INFO that has reason for the most recent devices reset or power-down

GAS message ID

0x020B

Version introduced

Major - 1, Minor – 0

5.2.10.1. Request – QMI_GAS_DMS_GET_RESET_INFO_REQ

Message Type

Response

Sender

Service

Mandatory TLVs

None

Optional TLVs

None

5.2.10.2. Request – QMI_GAS_DMS_GET_RESET_INFO_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
The reason for the most recent device reset or power-down	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	reset information

Length	2			2	
Value	→	uint8	type	1	<p>type of reset or power down</p> <ul style="list-style-type: none"> • 0 -- unknown • 1 -- warm • 2 -- hard • 3 -- crash • 4 -- power <p>Note. In the QCT model, the warm reset occurs only after a crash. So it does not provide a warm reset to give a more critical crash situation.</p>
		uint8	source	1	<p>entity which initiated the reset or power down</p> <ul style="list-style-type: none"> • 0 -- unknown • 1 -- user requested (AT#REBOOT, Firmware download - including host-initiated image switching) • 2 -- Not supported - hardware switch (W_DISABLE) • 3 -- temperature critical • 4 -- voltage critical • 5 -- Not supported - configuration update (SIM-based image switching) • 6 -- Not supported - LWM2M (Light Weight M2M client (internal process for LWM2M)) • 7 -- Not supported - OMA-DM • 8 -- Not supported - FOTA

5.2.10.3. Description of QMI_GAS_DMS_GET_RESET_INFO_IND REQ/RESP

This command used to get RESET INFO that has reason for most recent devices reset or power-down.

5.2.11. QMI_GAS_DMS_GET_HOST_FWVER

This command used to get host firmware version.

GAS message ID

0x0210

Version introduced

Major - 1, Minor – 0

5.2.11.1. Request – QMI_GAS_DMS_GET_HOST_FWVER_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.11.2. Request – QMI_GAS_DMS_GET_HOST_FWVER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Host firmware version	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	

Length	Var			2	
Value	→	string	host_fwver	Var	Host firmware name(length limit 32 bytes)

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.11.3. Description of QMI_GAS_DMS_GET_HOST_FWVER_REQ/RESP

This command used to get host firmware version.

5.2.12. QMI_GAS_DMS_GET_CRASH_ACTION

This command used to get the crash action mode from device.

GAS message ID

0x0212

Version introduced

Major - 1, Minor – 0

5.2.12.1. Request – QMI_GAS_DMS_GET_CRASH_ACTION_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.12.2. Request – QMI_GAS_DMS_GET_CRASH_ACTION_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
crash action mode	1.0	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	

Length	1			2	
Value	→	uint8	CrashState	1	Value: <ul style="list-style-type: none"> • 0 – USB Memory Download. Modem will reset after a crash and will stay in USB download mode with only DM port enumerated. • 1 – Reset. Modem will reset and come back in ONLINE mode. • 2 – USB Memory Download. With USB 2.0 • 3 – USB Memory Download. With USB 3.0

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.12.3. Description of QMI_GAS_DMS_GET_CRASH_ACTION_REQ/RESP

This command used to get the crash action mode from device.

5.2.13. QMI_GAS_DMS_SET_USB_SWITCH

This command used to configure USB speed mode.

GAS message ID

0x0213

Version introduced

Major - 1, Minor – 0

5.2.13.1. Request – QMI_GAS_DMS_SET_USB_SWITCH_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
config	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	USB Mode Configuration
Length	4			2	
Value	→	uint32	Config	4	Values: • 0 - Not Configured • 1 - USB High Speed

Optional TLVs

None

5.2.13.2. Response – QMI_GAS_DMS_SET_USB_SWITCH_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Result Code	1.0	1.0

Field	Field	Field	Parameter	Size	Description
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	value	type		(byte)	
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.13.3. Description of QMI_GAS_DMS_SET_USB_SWITCH_REQ/RESP

This command used to configure USB speed mode.

5.2.14. QMI_GAS_DMS_GET_USB_SWITCH

This command used to get current configuration for USB speed mode.

GAS message ID

0x0214

Version introduced

Major - 1, Minor – 0

5.2.14.1. Request – QMI_GAS_DMS_GET_USB_SWITCH_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.14.2. Response – QMI_GAS_DMS_GET_USB_SWITCH_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
config	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	
Length	4			2	

Value	→	uint32	Config	4	Values: • 0 - Not Configured • 1 - USB High Speed
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Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.14.3. Description of QMI_GAS_DMS_GET_USB_SWITCH_REQ/RESP

This command used to get current configuration for USB speed mode.

5.2.15. QMI_GAS_DMS_ADD_FW_PLMNID

This command is used to add user PLMN ID in EFS for automatic firmware switch by SIM.

GAS message ID

0x0217

Version introduced

Major - 1, Minor - 0

5.2.15.1. Request - QMI_GAS_DMS_ADD_FW_PLMNID_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
carrier_index	1.0	1.0
mccmnc	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	CARRIER INDEX
Length	1			2	
Value	→	uint8	carrier_index	1	Carrier index to add PLMN ID in EFS. Supported carrier index: • 1 - Sprint

					<ul style="list-style-type: none"> • 2 - Verizon • 3 - AT&T • 4 - FirstNet • 5 - TMUS • 6 - Telstra • 7 - NTT Docomo • 8 - Bell • 9 - Rogers • 10 - Telus • 11 - SKT
Type	0x02			1	mccmnc type
Length	Var			2	
Value	→	char	mccmnc	Var	Digits of MCCMNC. (Min length 5 ~ Max length 6)

Optional TLVs

None

5.2.15.2. Response - QMI_GAS_DMS_ADD_FW_PLMNID_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed
QMI_ERR_FW_WRITE_FAILED	EFS write failed

5.2.15.3. Description of QMI_GAS_DMS_ADD_FW_PLMNID

This command is used to add user PLMN ID in EFS for automatic firmware switch by SIM. This command is deprecated in models that support QMI_GMS_DMS_SET_FW SWITCH. QMI_GAS_DMS_ADD_FW_PLMNID_EXT is an equivalent command and should be used instead.

5.2.16. QMI_GAS_DMS_GET_FW_PLMNID

This command used to get PLMN IDs in EFS for automatic firmware switch by SIM.

GAS message ID

0x0218

Version introduced

Major - 1, Minor - 0

5.2.16.1. Request - QMI_GAS_DMS_GET_FW_PLMNID_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate_mode	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	operate_mode type
Length	1			2	
Value	→	uint8	operate_mode	1	operate_mode (valid range: 0 to 1) Supported values: • 0 - all carriers • 1 - specific carrier

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	carrier_index type
Length	1			2	
Value	→	uint8	carrier_index	1	Carrier index to add PLMN ID in EFS. Supported carrier index: • 1 - Sprint • 2 - Verizon • 3 - AT&T • 4 - FirstNet • 5 - TMUS • 6 - Telstra • 7 - NTT Docomo • 8 - Bell • 9 - Rogers • 10 - Telus • 11 - SKT

5.2.16.2. Response - QMI_GAS_DMS_GET_FW_PLMNID_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
result	1.0	1.0

operate_mode	1.0	1.0
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Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code type
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x01			1	operate_mode type
Length	1			2	
Value	→	uint8	operate_mode	1	operate_mode (valid range: 0 to 1) Supported values: • 0 - all carriers • 1 - specific carrier

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10		plmn_list_1	1	Carrier list1 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x11		plmn_list_2	1	Carrier list2 type

Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x12		plmn_list_3	1	Carrier list3 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x13		plmn_list_4	1	Carrier list4 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value

					<ul style="list-style-type: none"> • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x14		plmn_list_5	1	Carrier list5 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value <ul style="list-style-type: none"> • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x15		plmn_list_6	1	Carrier list6 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value <ul style="list-style-type: none"> • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x16		plmn_list_7	1	Carrier list7 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)

		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x17		plmn_list_8	1	Carrier list8 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x18		plmn_list_9	1	Carrier list9 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x19		plmn_list_10	1	Carrier list10 type
Length	Var			2	

Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)
Type	0x1a		plmn_list_11	1	Carrier list11 type
Length	Var			2	
Value	→	uint8	index	1	Carrier index in EFS
		uint8	carrier_name_len	1	Length of carrier_name
		char	carrier_name	Var	carrier name (length limit 100 bytes)
		uint8	mccmnc_len	1	Length of mccmnc
		char	mccmnc	Var	mccmnc values which is stored in EFS. (length limit 255 bytes) MCCMNC value • 0:mccmnc - operator PLMN ID type (Read only) • 1:mccmnc - user PLMN ID type (READ/WRITE)

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed
QMI_ERR_FW_WRITE_FAILED	EFS write failed

5.2.16.3. Description of QMI_GAS_DMS_GET_FW_PLMNID

This command is used to get user/operator PLMN IDs in EFS for automatic firmware switch by SIM.

This command is deprecated in models that support QMI_GMS_DMS_SET_FWSWITCH.

QMI_GAS_DMS_GET_FW_PLMNID_EXT is an equivalent command and should be used instead.

5.2.17. QMI_GAS_DMS_DEL_FW_PLMNID

This command used to delete user PLMN ID in EFS for automatic firmware switch.

GAS message ID

0x0219

Version introduced

Major - 1, Minor - 0

5.2.17.1. Request - QMI_GAS_DMS_DEL_FW_PLMNID_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate_mode	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	operate_mode type
Length	1			2	
Value	→	uint8	operate_mode	1	operate mode to delete user PLMN ID information <ul style="list-style-type: none"> • 0 - delete all user PLMN ID • 1 - delete a specific carrier • 2 - delete a mccmnc from specific carrier

Optional TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Carrier index type
Length	1			2	
Value	→	uint8	carrier_index	1	carrier index to delete user PLMN ID Supported carrier index: <ul style="list-style-type: none"> • 0 - delete all carriers (not used mccmnc val) • 1 - Sprint • 2 - Verizon • 3 - AT&T • 4 - FirstNet • 5 - TMUS • 6 - Telstra • 7 - NTT Docomo • 8 - Bell • 9 - Rogers • 10 - Telus • 11 - STK

					If carrier_index is valid and mccmnc is not set, it will be deleted user PLMN IDs of selected carrier.
Type	0x11			1	
Length	Var			2	
Value	→	char	mccmnc	Var	If the carrier_index is valid, this mccmnc will be deleted in the selected carrier_index. Number of mccmnc digits (5 or 6 digits of MCCMNC string)

5.2.17.2. Response - QMI_GAS_DMS_DEL_FW_PLMNID_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed
QMI_ERR_FW_WRITE_FAILED	EFS write failed

5.2.17.3. Description of QMI_GAS_DMS_DEL_FW_PLMNID

This command is used to delete user PLMN ID in EFS for automatic firmware switch by SIM.

This command is deprecated in models that support QMI_GMS_DMS_SET_FWSWITCH.

QMI_GAS_DMS_DEL_FW_PLMNID_EXT is an equivalent command and should be used instead.

5.2.18. QMI_GAS_DMS_SET_FWAUTOSIM

This command is used for automatic carrier switching by SIM.

GAS Message ID

0x0222

Version introduced

Major - 1, Minor - 0

5.2.18.1. Request – QMI_GAS_DMS_SET_FWAUTOSIM_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
autosim_mode	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	autosim_mode
Length	1			2	
Value	→	uint8	autosim_mode	1	number of autosim_mode which want to activate. Values: <ul style="list-style-type: none"> • GAS_DMS_FWAUTOSIM_DISABLE (0x00) • GAS_DMS_FWAUTOSIM_ENABLE (0x01) • GAS_DMS_FWAUTOSIM_ONESHOT (0x02)

Optional TLVs

None

5.2.18.2. Response – QMI_GAS_DMS_SET_FWAUTOSIM_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result Code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE No error in the request

QMI_ERR_INTERNAL Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.18.3. Description of QMI_GAS_DMS_SET_FWAUTOSIM

This command is the functionality for automatic carrier switch by SIM.

5.2.19. QMI_GAS_DMS_GET_FWAUTOSIM

This command is used to get auto carrier switching mode.

GAS Message ID

0x0223

Version introduced

Major - 1, Minor - 0

5.2.19.1. Request - QMI_GAS_DMS_GET_FWAUTOSIM_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.19.2. Response - QMI_GAS_DMS_GET_FWAUTOSIM_RESP

Message type

Response

Sender

Control point

Mandatory TLVs

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code - Possible error code values are described in the error codes section of each message definition.
Type	0x03			1	autosim_mode
Length	1			2	
Value	→	uint8	autosim_mode	1	number of autosim_mode which want to activate. Values:

					<ul style="list-style-type: none"> • GAS_DMS_FWAUTOSIM_DISABLE (0x00) • GAS_DMS_FWAUTOSIM_ENABLE (0x01) • GAS_DMS_FWAUTOSIM_ONESHOT (0x02)
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Optional TLVs

None

Error codes

QMI_ERR_NONE No error in the request

QMI_ERR_INTERNAL Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.19.3. Description of QMI_GAS_DMS_GET_FWAUTOSIM

This command is the functionality for automatic carrier switch by SIM.

5.2.20. QMI_GAS_DMS_GET_UPTIME

This command used to get elapsed time from system up.

GAS message ID

0x0224

Version introduced

Major - 1, Minor – 0

5.2.20.1. Request – QMI_GAS_DMS_GET_UPTIME_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Time format to get elapsed time from system up	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	
Length	1			2	
Value	→	uint8	format	1	Time format to get the elapsed time from system up

					Value: • 0 – sec unit • 1 – time unit
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Optional TLVs

None

5.2.20.2. Response - QMI_GAS_DMS_GET_UPTIME_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Result Code	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code. Possible error code values are described in the error codes section of each message definition.

Optional TLVs

Name	Version introduced	Version last modified
uptime (sec unit)	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	uptime (sec unit)
Length	8			2	
Value	→	uint64	uptime	8	

Name	Version introduced	Version last modified
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uptime info (time unit)	1.0	1.0
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Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x11			1	uptime info (time unit)
Length	12			2	
Value	→	uint32	hours	4	hours
		uint32	minutes	4	minutes
		uint32	seconds	4	seconds

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.20.3. Description of QMI_GAS_DMS_GET_UPTIME_REQ/RESP

This command used to get elapsed time from system up.

5.2.21. QMI_GAS_DMS_GET_FW_PLMNID_EXT

This command is used to get a list of PLMN ID (MCCMNC) of mobile network operators saved for automatic firmware switching by SIM.

GAS message ID

0x0225

Version introduced

Major - 1, Minor - 12

5.2.21.1. Request - QMI_GAS_DMS_GET_FW_PLMNID_EXT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate_mode	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Operate mode

Length	1			2	
Value	→	uint8	operate_mode	1	Operate mode. Values: <ul style="list-style-type: none"> • GAS_DMS_GET_FW_PLMNID_ALL (0x00) • GAS_DMS_GET_FW_PLMNID_SPECIFIC_CARRIER (0x01)

Optional TLVs

Name	Version introduced	Version last modified
carrier_index	1.12	1.12
sub_carrier_index	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Mobile Network Operator config id
Length	1			2	
Value	→	uint8	carrier_index	1	Mobile Network Operator config id
Type	0x11			1	Mobile Network Operator sub-config id
Length	1			2	
Value	→	uint8	sub_carrier_index	1	Mobile Network Operator sub-config id

5.2.21.2. Response - QMI_GAS_DMS_GET_FW_PLMNID_EXT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
result	1.12	1.12
operate_mode	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result code type
Length	4			2	
Value	→	uint16	result	2	Result code <ul style="list-style-type: none"> • QMI_RESULT_SUCCESS

					• QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition
Type	0x03			1	Operate mode
Length	1			2	
Value	→	uint8	operate_mode	1	Operate mode. Values: • GAS_DMS_GET_FW_PLMNID_ALL (0x00) • GAS_DMS_GET_FW_PLMNID_SPECIFIC_CARRIER (0x01)
Type	0x04			1	stored PLMN ID information
Length	Var			2	
Value	→	uint8	info_lit_len	1	Number of sets of the following elements: • index • sub_index • carrier_name_len • carrier_name • mccmnc_len • mccmnc
		uint8	index	1	Mobile Network Operator config id
		uint8	sub_index	1	Mobile Network Operator sub-config id
		uint8	carrier_name_len	1	Number of sets of the following elements: • carrier_name
		char	carrier_name	Var	Mobile Network Operator name.(length limit 16 bytes)
		uint8	mccmnc_len	1	Number of sets of the following elements: • mccmnc
		char	mccmnc	Var	MCCMNC.(length limit 255 bytes)

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed

QMI_ERR_FW_WRITE_FAILED	EFS write failed
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5.2.21.3. Description of QMI_GAS_DMS_GET_FW_PLMNID_EXT

This command is used to get a list of PLMN ID (MCCMNC) of mobile network operators saved for automatic firmware switching by SIM.

Available only on models that support QMI_GMS_DMS_SET_FWSWITCH.

5.2.22. QMI_GAS_DMS_ADD_FW_PLMNID_EXT

This command is used to add user PLMN ID (MCCMNC) for automatic firmware switching by SIM.

GAS message ID

0x0226

Version introduced

Major - 1, Minor - 12

5.2.22.1. Request - QMI_GAS_DMS_ADD_FW_PLMNID_EXT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
carrier_index	1.12	1.12
sub_carrier_index	1.12	1.12
mccmnc	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile Network Operator config id
Length	1			2	
Value	→	uint8	carrier_index	1	Mobile Network Operator config id
Type	0x02			1	Mobile Network Operator sub-config id
Length	1			2	
Value	→	uint8	sub_carrier_index	1	Mobile Network Operator sub-config id
Type	0x03			1	mccmnc
Length	Var			2	
Value	→	char	mccmnc	Var	MCCMNC

Optional TLVs

None

5.2.22.2. Response - QMI_GAS_DMS_ADD_FW_PLMNID_EXT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed
QMI_ERR_FW_WRITE_FAILED	EFS write failed

5.2.22.3. Description of QMI_GAS_DMS_ADD_FW_PLMNID_EXT

This command is used to add user PLMN ID (MCCMNC) for automatic firmware switching by SIM. Available only on models that support QMI_GMS_DMS_SET_FWSWITCH.

5.2.23. QMI_GAS_DMS_DEL_FW_PLMNID_EXT

This command is used to delete user PLMN ID (MCCMNC) for automatic firmware switching by SIM.

GAS message ID

0x0227

Version introduced

Major - 1, Minor - 12

5.2.23.1. Request - QMI_GAS_DMS_DEL_FW_PLMNID_EXT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
operate_mode	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	operate_mode
Length	1			2	
Value	→	uint8	operate_mode	1	operate mode. Values: • GAS_DMS_DEL_FW_PLMNID_ALL (0x00) - delete all user PLMN ID.

					<ul style="list-style-type: none"> • GAS_DMS_DEL_FW_PLMNID_SPECIFIC_CARRIER (0x01) - delete all selected carrier PLMN ID. • GAS_DMS_DEL_FW_PLMNID_SPECIFIC_ID (0x02) - delete 1 mccmnc which is selected carrier PLMN ID.
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Optional TLVs

Name	Version introduced	Version last modified
carrier_index	1.12	1.12
sub_carrier_index	1.12	1.12
mccmnc	1.12	1.12

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Mobile Network Operator config id
Length	1			2	
Value	→	uint8	carrier_index	1	Mobile Network Operator config id
Type	0x11			1	Mobile Network Operator sub-config id
Length	1			2	
Value	→	uint8	sub_carrier_index	1	Mobile Network Operator sub-config id
Type	0x12			1	MCCMNC
Length	Var			2	
Value	→	char	mccmnc	Var	MCCMNC

5.2.23.2. Response - QMI_GAS_DMS_DEL_FW_PLMNID_EXT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INVALID_ARG	Invalid parameter in the request
QMI_ERR_FW_INFO_READ_FAILED	EFS read failed
QMI_ERR_FW_WRITE_FAILED	EFS write failed

5.2.23.3. Description of QMI_GAS_DMS_DEL_FW_PLMNID_EXT

This command is used to delete user PLMN ID (MCCMNC) for automatic firmware switching by SIM.

Available only on models that support QMI_GMS_DMS_SET_FWSWITCH.

5.2.24. QMI_GAS_TEST_SET_VALUE

This command used to set some variables for TEST.

GAS message ID

0x0F00

Version introduced

Major - 1, Minor - 0

5.2.24.1. Request - QMI_GAS_TEST_SET_VALUE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	test mandatory value
Length	1			2	
Value	→	uint8	m_value	1	Value range is 0-255

Optional TLVs

Name	Version introduced	Version last modified
test optional value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	test optional value
Length	1			2	
Value	→	uint8	o_value	1	Value range is 0-255

5.2.24.2. Response - QMI_GAS_TEST_SET_VALUE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.24.3. Description of QMI_GAS_TEST_SET_VALUE REQ/RESP

This command used to check if GAS service is running, properly by setting and getting simple variables

5.2.25. QMI_GAS_TEST_GET_VALUE

This command used to set some variables for TEST.

GAS message ID

0x0F01

Version introduced

Major - 1, Minor - 0

5.2.25.1. Request - QMI_GAS_TEST_GET_VALUE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.25.2. Response - QMI_GAS_TEST_GET_VALUE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
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Type	0x03			1	test mandatory value
Length	1			2	
Value	→	uint8	m_value	1	Value range is 0-255

Optional TLVs

Name	Version introduced	Version last modified
test optional value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	test optional value
Length	1			2	
Value	→	uint8	o_value	1	Value range is 0-255

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.25.3. Description of QMI_GAS_TEST_GET_VALUE REQ/RESP

This command used to check if GAS service is running, properly by setting and getting simple variables.

5.2.26. QMI_GAS_PSM_GET_PSM_EVT_CFG

This command used to get Wakeup event mask.

GAS message ID

0xE400

Version introduced

Major - 1, Minor – 0

5.2.26.1. Request - QMI_GAS_PSM_GET_PSM_EVT_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.26.2. Response - QMI_GAS_PSM_GET_PSM_EVT_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	mandatory value
Length	1			2	
Value	→	uint32	psmevtcfg	4	Values: <ul style="list-style-type: none"> • 0 - Disabled • 1 - Mobile SMS • 2 - Network De-registration • 3 - All configurations are enabled

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.26.3. Description of QMI_GAS_PSM_GET_PSM_EVT_CFG REQ/RESP

This command used to get Wakeup event mask

5.2.27. QMI_GAS_PSM_SET_PSM_EVT_CFG

This command used to set Wakeup event mask.

GAS message ID

0xE401

Version introduced

Major - 1, Minor - 0

5.2.27.1. Request - QMI_GAS_PSM_SET_PSM_EVT_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1			1	mandatory value
Length	4			2	
Value	→	uint32	psmevtcfg	4	Values: <ul style="list-style-type: none"> • 0 - Disabled • 1 - Mobile SMS • 2 - Network De-registration • 3 - Set all configurations

5.2.27.2. Response - QMI_GAS_PSM_SET_PSM_EVT_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.27.3. Description of QMI_GAS_PSM_SET_EVT_CFG REQ/RESP

This command used to set Wakeup event mask

5.2.28. QMI_GAS_PSM_GET_WAKEN_CFG

This command used to get WAKE_N pin configuration.

GAS message ID

0xE402

Version introduced

Major - 1, Minor – 0

5.2.28.1. Request - QMI_GAS_PSM_GET_WAKEN_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.28.2. Response - QMI_GAS_PSM_GET_WAKEN_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Number_of_waken_value
Length	4			2	
Value	→	uint32	Number_of_waken	4	Value range 1 to 5
Type	0x04			1	number of tring value.
Length	4			2	
Value	→	uint32	tring	4	Value range 0 to 5000 millisecond
Type	0x05			1	number of tpause value.
Length	4			2	
Value	→	uint32	tpause	4	Value range 0 to 5000 millisecond

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.28.3. Description of QMI_GAS_PSM_GET_WAKEN_CFG REQ/RESP

This command used to get WAKE_N pin configuration

5.2.29. QMI_GAS_PSM_SET_WAKEN_CFG

This command used to set WAKE_N pin configuration.

GAS message ID

0xE403

Version introduced

Major - 1, Minor - 0

5.2.29.1. Request - QMI_GAS_PSM_SET_WAKEN_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1			1	number of waken value
Length	4			2	
Value	→	uint32	number_of_waken	4	Value range 1 to 5
Type	0x2			1	number of tring value
Length	4			2	
Value	→	uint32	tring	4	Value range 0 to 5000 millisecond
Type	0x3			1	number of tpause value
Length	4			2	
Value	→	uint32	tpause	4	Value range 0 to 5000 millisecond

5.2.29.2. Response - QMI_GAS_PSM_SET_WAKEN_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing

QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
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5.2.29.3. Description of QMI_GAS_PSM_SET_WAKEN_CFG REQ/RESP

This command used to set WAKE_N pin configuration

5.2.30. QMI_GAS_PSM_GET_WDISA_CFG

This command used to get W_DISABLE_N pin configuration.

GAS message ID

0xE404

Version introduced

Major - 1, Minor – 0

5.2.30.1. Request - QMI_GAS_PSM_GET_WDISA_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.30.2. Response - QMI_GAS_PSM_GET_WDISA_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	w_disable_cfg value.
Length	1			2	
Value	→	uint32	w_disable_cfg	4	Values: <ul style="list-style-type: none"> • 0 - Low Power Mode (disable both RX/TX) • 1 - Power saving which watches W_DISABLE_N pin • 2 - ignore on W_DISABLE_N pin • 10 - enable dying gasp with W_DISABLE_N pin (activated when translates from high to low)

Error codes

QMI_ERR_NONE	No error in the request
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QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.30.3. Description of QMI_GAS_PSM_GET_WDISA_CFG REQ/RESP

This command used to get w_disable_n pin configuration (Power Save mode)

5.2.31. QMI_GAS_PSM_SET_WDISA_CFG

This command used to set Wakeup event mask.

GAS message ID

0xE405

Version introduced

Major - 1, Minor - 0

5.2.31.1. Request - QMI_GAS_PSM_SET_WDISA_CFG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x1			1	w_disable_cfg value.
Length	4			2	
Value	→	uint32	w_disable_cfg	4	Values: <ul style="list-style-type: none"> • 0 - Low Power Mode (disable both RX/TX) • 1 - Power saving which watches W_DISABLE_N pin • 2 - Ignore on W_DISABLE_N pin • 10 - enable dying gasp with W_DISABLE_N pin (activated when translates from high to low)

5.2.31.2. Response - QMI_GAS_PSM_SET_WDISA_CFG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point

	or the message was corrupted during transmission
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5.2.31.3. Description of QMI_GAS_PSM_SET_WDISA_CFG REQ/RESP

This command used to set w_disable_n pin configuration (Power Save mode)

5.2.32. QMI_GAS_PSM_GET_EVT

This command used to get wake up event details.

GAS message ID

0xE406

Version introduced

Major - 1, Minor – 0

5.2.32.1. Request - QMI_GAS_PSM_GET_EVT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

5.2.32.2. Response - QMI_GAS_PSM_GET_EVT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 4.1.3.1) is always present in the response.

Name	Version introduced	Version last modified
test mandatory value	Unknown	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x03			1	Wake up source mask
Length	4			2	
Value	→	uint32	src_mask	4	Wake up source mask
Type	0x04			1	Last wakeup source
Length	4			2	
Value	→	uint32	last_src	4	Values: • 1 - SMS event

					• 2 - Network deregistration event
Type	0x05			1	timestamp
Length	8			2	
Value	→	uint64	timestamp_micro	8	Returns microseconds (epoch time)

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

5.2.32.3. Description of QMI_GAS_PSM_GET_EVT REQ/RESP

This command used to get last wakeup source and timestamp.

5.2.33. QMI_GAS_LOG_SET_REDIRECT

This command used to redirect syslog to QXDM.

GAS message ID

0xE500

Version introduced

Major - 1, Minor – 0

5.2.33.1. Request – QMI_GAS_LOG_SET_REDIRECT_REQ

Message Type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Redirection mode	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Redirect
Length	4			2	
Value	→	uint32	redirect	4	Values: • 0 – do not use redirection • 1 – redirect syslog to QXDM

Optional TLVs

None

5.2.33.2. Response – QMI_GAS_LOG_SET_REDIRECT_RESP

Message Type

Response

Sender

Service

Mandatory TLVs

Name	Version introduced	Version last modified
Redirection mode	1.0	1.0

Field	Field	Field	Parameter	Size	Description
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	value	type		(byte)	
Type	0x02			1	Result code
Length	4			2	
Value	→	uint16	result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	error	2	Error code – Possible error code values are described in the error codes section of each message definition

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point, or the message was corrupted during transmission

5.2.33.3. Description of QMI_GAS_LOG_SET_REDIRECT_REQ/RESP

This command used to redirect syslog to QXDM.

6. ACRONYMS AND ABBREVIATIONS

Term	Definition
AAA	address assignment acknowledgment
AAM	agent advertisement message
ACB	access class barring
ACC	asynchronous communication channel
ACCOLC	access overload class
ACK	acknowledgment
ACL	access control list
ACSGL	allowed CSG list
AES	Advanced Encryption Standard
AMP	Address Management Protocol
AMPS	analog mobile phone system
AMSS	Advanced Mobile Subscriber Software
AN	access network
AP	application processor
APN	access point name
ARFCN	absolute radio frequency channel number
AT	access terminal
ATCOP	AT command processor
BC	broadcast
BPLMN	background public land mobile network
BS	base station
BSR	better system reselection
CAM	channel assignment message
CATPT	card application toolkit protocol teleservice
CBC	cipher block chaining
CBS	cell broadcast service

CCO	cell change order
CHAP	Challenge Handshake Authentication Protocol
CK	control key
CLAT	customer-side translator
CMAS	Commercial Mobile Alert System
CN	core network
CPICH	common pilot channel
CS	content server
CSG	closed subscriber group
CSP	customer service profile
CSPDN	circuit-switched public data networks
CTR	counter
DBM	data burst messaging
DC	dedicated channel
DCE	data circuit terminating equipment
DCM	Data Connection Management
DCS	data coding scheme
DCTM	data call throttling manager
DDS	designated data subscription
DDTM	Data Dedicated Transmission mode
DHCP	Dynamic Host Configuration Protocol
DL	download
DM	Device Management
DMS	Device Management Service
DNS	domain name server
DO	data optimizer
DOS	data over signaling
DPA	default packet application
DRB	Data Radio Bearer

DRX	discontinuous reception
DS	download server
DSDA	dual SIM dual active
DSDS	dual SIM dual standby
DTC	dedicated traffic channel
DTE	data terminal equipment
DTM	dual transfer mode
DUN	dial-up networking
EARFCN	E-UTRA Absolute Radio Frequency Channel Number
ECBM	Emergency Callback mode
eDRX	extended DRX
EF	elementary file
EGPRS	enhanced general packet radio service
eHRPD	Evolved High Rate Packet Data
eMBMS	evolved multimedia broadcast/multicast services
EMC	electromagnetic compatibility
EMM	EPS Mobility Management
EMPA	enhanced multiframe packet application
EONS	enhanced operator name string
EP	endpoint
EPC	Evolved Packet Core
ePDG	evolved packet data gateway
EPS	evolved packet system
ERI	extended roaming indicator
ERMES	European Radio Messaging System
ESM	Event Signaling Message
ESN	electronic serial number
ESP	encapsulating security payload
ETWS	Earthquake and Tsunami Warning System

FA	foreign agent
FDD	frequency division duplex
FDN	fixed dialing number
FEC	forward error correction
FMC	Fixed Mobile Convergence
FOTA	Firmware over-the-air
FTP	File transfer protocol
GAUP	Generic Attribute Update Protocol
GGSN	gateway GPRS support node
GMM	GPRS mobility management
GPRS	general packet radio services
GSMA	GSM Association
GW	gateway
GW	GSM/WCDMA
HA	home agent
HDR	high data rate
HDR	high data range
HLR	home location register
HPT	high priority traffic
HSIC	high-speed inter-chip interface
HSS	home subscriber server
HSUSB	high-speed universal serial bus
ICCID	integrated circuit card ID
ID	identification
IM	instant messenger
IMEI	international mobile equipment identity
IMS	IP multimedia subsystem
IMSI	International Mobile Station/Subscriber Identity
IPCP	Internet Protocol Control Protocol

IPSec	Internet Protocol security
IRAT	Inter Radio Access Technology
ISDN	Integrated Services Digital Network
LAC	location area code
LBS	location-based services
LCP	link control protocol
LLC	logical link control
LTE	long term evolution
MAC	message authentication code
MAC	media access control
MBMS	multimedia broadcast/multicast services
MBSFN	multicast broadcast single frequency network
MC	multicell
MC	message center
MCC	mobile country code
MCS	modulation and coding scheme
MDN	mobile directory number
ME	mobile equipment
MEID	mobile equipment identifier
MFPA	multiflow packet application
MIN	mobile identification number
MIP	Mobile Interface Protocol
MMPA	multilink multiflow packet application
MMTEL	multimedia telephony
MN	mobile network
MNC	mobile network code
MNO	mobile network operator
MO	mobile-originating call (originating a call)
MS	mobile station

MSC	mobile switching center
MSISDN	mobile station international subscriber directory number
MT	Mobile terminating call (receiving a call)
MTCH	multicast traffic channel
MTU	maximum transmission unit
Multisim	multiple simultaneous (active radio interfaces)
MWI	message waiting indicator
NAI	network access identifier
NAM	number assignment module
NAS	Network Access Service
NAT	network address translation
NBNS	NetBIOS name server
NITZ	network identity and time zone
NSAPI	netscape server application programming interface
NV	nonvolatile
NW	network
OCSGL	operator CSG list
OOS	out of service
OTA	over the air
OTASP	over-the-air service programming
PAP	Password Authentication Protocol
PCCPCH	primary common control physical channel
PCI	physical cell ID
PCIE	peripheral component interconnect express
PCO	protocol configuration option
PCS	personal communications service
P-CSCF	proxy call session control function
PDN	packet data network
PDP	Packet Data Protocol

PDSN	packet data serving node
PDU	protocol data unit
PID	protocol identifier data
PLMN	public land mobile network
PMCH	physical multicast channel
PN	pseudorandom noise
PP	point-to-point
PPP	Point-to-Point Protocol
PR	Parameter Retrieval
PRACH	packet random access channel
PRI	product release information
PRL	preferred roaming list
PS	packet-switched
PSPDN	packet-switched private data network
PSTN	public switched telephone network
PTI	procedure transaction ID
PUK	PIN unlock key
QMI	Qualcomm Messaging Interface
QMUX	QMI Multiplexing Protocol
QOS	quality of service
RAB	radio access bearer
RAC	routing area code
RACH	random access channel
RAT	radio access technology
RD	reduced dormancy
R-data	relay data
RF	radio frequency
RLF	radio link failure
RLP	Radio Link Protocol

RP	Relay Protocol
RPM	radio policy manager
RRC	radio resource control
RRP	registration reply
RSCP	received signal code power
RSRP	reference signal received power
RSRQ	reference signal received quality
RSSI	received signal strength indicator
RTP	Real-time Transport Protocol
RTRE	runtime R-UIM enable
RUIM	removable user identity module
Rx	receive
SA	security association
SAI	service area identity
SAP	service access point
SC	service center
SCI	slot cycle index
SCRM	supplemental channel request message
SDU	service data unit
SGLTE	simultaneous GSM and LTE
SGSN	Serving GPRS Service Node
SI	service interval
SIB	system information block
SIM	subscriber identity module
SINR	signal-to-interface plus noise ratio
SIP	session initiation protocol
SKU	stock keeping unit
SLIMbus	serial low-power inter-chip media bus
SM	short message

SME	station management entity
SMS	short message service
SMSC	short message service center
SMSP	short message service parameters
SNDCP	Subnetwork-Dependent Convergence Protocol
SNR	signal-to-noise ratio
SO	service option
SPC	service programming code
SPI	security parameter index
SPN	service provider name
SRVCC	single radio voice call continuity
SSAC	service-specific access class
SVLTE	simultaneous voice and LTE
SVN	software version number
SWM	Software Management
TDD	time division duplex
TDS	test data service
TDSCDMA	test data service code division multiple access
TD-SCDMA	time division synchronous code division multiple access
TE	terminal equipment
TFT	traffic flow template
TLV	type-length-value
TMGI	temporary mobile group identity
TMCFG	Telit modem configuration
TOI	transport object identifier
TOS	type of service
TP	Transport Layer Protocol
TPDU	Transfer Protocol data unit
TSI	transport session identifier

Tx	transmit
UATI	unique access terminal identifier
UCI	universal computer interface
UD	unsolicited data
UE	user equipment
UIM	user identity module
UL	upload
UMTS	universal mobile telecommunications system
USIM	universal subscriber identity module
VPF	validity period format
WAP	Wireless Access Protocol
WDA	Wireless Data Administrative
WDS	Wireless Data Service
WMS	Wireless Message Service
WQE	Wi-Fi quality estimation
WWAN	wireless wide area network

7. DOCUMENT HISTORY

Revision	Date	Changes
Preliminary	2019-09-23	Initial release
Rev.1	2019-06-29	<p>New:</p> <ul style="list-style-type: none"> - QMI_GAS_PSM_GET_EVT - QMI_GAS_PSM_GET_PSM_EVT_CFG - QMI_GAS_PSM_GET_WAKEN_CFG - QMI_GAS_PSM_GET_WDISA_CFG - QMI_GAS_PSM_SET_PSM_EVT_CFG - QMI_GAS_PSM_SET_WAKEN_CFG - QMI_GAS_PSM_SET_WDISA_CFG - QMI_GMS_DMS_GET_FWSWITCH - QMI_GMS_DMS_SET_FWSWITCH - QMI_GMS_NAS_GET_CA_INFO_EXT - QMI_GMS_NAS_GET_ENDC_CA_INFO - QMI_GMS_NAS_GET_LTE_CPHY_CA_INFO - QMI_GMS_NAS_NET_CHANGE - QMI_GMS_WDS_PRESERVED_APN_BACKUP - QMI_GAS_DMS_ADD_FW_PLMNID - QMI_GAS_DMS_GET_FW_PLMNID - QMI_GAS_DMS_DEL_FW_PLMNID - QMI_GAS_DMS_SET_FWAUTOSIM - QMI_GAS_DMS_GET_FWAUTOSIM <p>Update:</p> <ul style="list-style-type: none"> - QMI_FOTA - QMI_GMS - QMI_GMS_NAS_GET_DEBUG_INFO - QMI_GMS_NAS_IND_REGISTER - QMI_GMS_NAS_MODEM_STATUS - QMI_GMS_NAS_OTA_MSG_REPORT - QMI_GMS_NAS_SET_4RX_DISABLE_REQ <p>Delete:</p> <ul style="list-style-type: none"> - None
Rev. 2	2020-11-18	<p>New:</p> <ul style="list-style-type: none"> - QMI_GMS_LOC_GET_GNSS_MB_CFG - QMI_GMS_LOC_SET_GNSS_MB_CFG <p>Update:</p> <ul style="list-style-type: none"> - QMI_GMS_NAS_GET_ENDC_CA_INFO - QMI_GAS_PSM_SET_WDISA_CFG - QMI_GAS_PSM_GET_WDISA_CFG - QMI_GMS_NAS_GET_BAND_CAP <p>Delete:</p> <ul style="list-style-type: none"> - None
Rev. 3	2021-06-17	<p>New:</p> <ul style="list-style-type: none"> - QMI_GMS_NAS_SET_B30TXDIS - QMI_GMS_NAS_GET_B30TXDIS - QMI_GMS_DMS_TMCFG_VER

		<ul style="list-style-type: none"> - QMI_GMS_DMS_FWSWITCH_INFO - QMI_GAS_DMS_GET_UPTIME - QMI_GAS_DMS_GET_FW_PLMNID_EXT - QMI_GAS_DMS_ADD_FW_PLMNID_EXT - QMI_GAS_DMS_DEL_FW_PLMNID_EXT - QMI_GMS_LOC_GET_GNSS_TTF - <p>Update:</p> <ul style="list-style-type: none"> - QMI_GMS_NAS_GET_BAND_CAP - QMI_GAS_DMS_GET_FW_PLMNID - QMI_GAS_DMS_ADD_FW_PLMNID - QMI_GAS_DMS_DEL_FW_PLMNID - QMI_GMS_LOC_SET_GNSS_MB_CFG - QMI_GMS_LOC_NMEA_DATA_IND_REG - QMI_GMS_DMS_GET_DYING_GASP_CFG - QMI_GMS_DMS_SET_DYING_GASP_CFG - QMI_GMS_DMS_GET_DYING_GASP_STAT - QMI_GMS_DMS_CLR_DYING_GASP_STAT - QMI_GMS_DMS_GET_CUST_FEATURES - QMI_GMS_DMS_SET_CUST_FEATURES - <p>Delete:</p> <ul style="list-style-type: none"> - QMI_GMS_NAS_LED_MODE_CHANGE
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