GE863-QUAD & GE863-QUAD V2 (CL2) HW Differences Application Note

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This document is related to the following products:

APPLICABLE PRODUCTS

PRODUCT
GE863-QUAD

Contents

1. Introduction

1.1. Scope

This application note is intended to highlight the differences from the hardware point of view, between the GE863-QUAD and the GE863-QUAD V2 (CL2), with the aim to help the system integrator in the design an host application and therefore a PCB, which might host all the GE863-QUAD. However, this option might require a minimum part list change of the host PCB. Moreover, this document might help also the system integrator to migrate its application from the use of one version of GE863-QUAD to GE863-QUAD V2 (CL2).

1.2. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit's Technical Support Center (TTSC) at:

TS-EMEA@telit.com
TS-NORTHAMERICA@telit.com
TS-LATINAMERICA@telit.com
TS-APAC@telit.com

Alternatively, use:
http://www.telit.com/en/products/technical-support-center/contact.php
For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:
http://www.telit.com
To register for product news and announcements or for product questions contact Telit's Technical Support Center (TTSC).
Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.
Telit appreciates feedback from the users of our information.

1.3. Document Organization

This document contains the following chapters:
Chapter 1: "Overview" provides a scope for this document, target audience, contact and support information, and text conventions.
Chapter 2: "General considerations" is about what customer has to know before design activity.
Chapter 3: "Comparison Table" describes the differences between the modules.
Chapter 4: "Mechanical Dimension" : highlight the differences between the module's packaging.
Chapter 5: "Document history" : contains the revision history of the present document.

1.4. Text Conventions

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 suggestion that may be useful when integrating the module.

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

1.5. Related Documents

- GE863-QAUD documentation

2. General considerations

Before start with a design of an application that makes use of the GE863-QUAD, all the contents of the HW User Guides of the product must be known. This application note is intended to highlight only the differences between those products, and help on some project aspects.

3. Comparison table

The following table highlights ONLY the differences in the pin-out functions between the GE863-QUAD and the GE863-QUAD V2 (CL2).

The yellow color highlights pins that have common features, but that have small difference.

The blue color highlights the pin on GE863-QUAD V2 (CL2) not implemented all or part of the function.

GE863-QUAD					GE863-QUAD V2(CL2)			
Ball	Signal	I/O	Description	Type	Signal	I/O	Description	Type
1	GPIO13	I/O	GPIO13	CMOS 2.8V	GPIO13	I/O	GPIO13	CMOS 2.8V
2	GPIO12	I/O	GPIO12 pull-up 47KΩ	CMOS 2.8V	GPIO12	I/O	GPIO12 NO pull-up	CMOS 2.8V
3	GPIO11	I/O	GPIO11 pull-up 4.7KΩ	CMOS 2.8V	GPIO11	I/O	GPIO11 NO pull-up	CMOS 2.8V
4	GPIO10/ DVI2_TX	I/O	GPIO10 DVI2_TX (Digital Voice Interface)	CMOS 2.8V	GPIO10/ DVI2_TX	I/O	GPIO10 DVI2_TX (Digital Voice Interface)	CMOS 2.8V
5	GPIO9	I/O	GPIO9	CMOS 2.8V	GPIO9	I/O	GPIO9	CMOS 2.8V
6	GPIO8	I/O	GPIO8	CMOS 2.8V	GPIO8	I/O	GPIO8	CMOS 2.8V
7	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
8	GND	-	Ground	Power	GND	-	Ground	Power
9	EAR_MT-	AO	Handset earphone signal output, phase -	Audio	EAR_MT-	AO	Handset earphone signal output, phase -	Audio
10	EAR_MT+	AO	Handset earphone signal output, phase +	Audio	EAR_MT+	AO	Handset earphone signal output, phase +	Audio
11	EAR_HF+	AO	Handsfree ear output, phase +	Audio	EAR_HF+	AO	Handsfree ear output, phase +	Audio
12	EAR_HF-	AO	Handsfree ear output, phase -	Audio	EAR_HF-	AO	Handsfree ear output, phase -	Audio
13	MIC_MT+	AI	Handset microphone signal input; phase+	Audio	MIC_MT+	AI	Handset microphone signal input; phase+	Audio
14	MIC_MT-	AI	Handset microphone signal input; phase-	Audio	MIC_MT-	AI	Handset microphone signal input; phase-	Audio
15	MIC_HF+	AI	Handsfree microphone input; phase +	Audio	MIC_HF+	AI	Handsfree microphone input; phase +	Audio
16	MIC_HF-	AI	Handsfree microphone input; phase -	Audio	MIC_HF-	AI	Handsfree microphone input; phase -	Audio
17	GND	-	Ground	Power	GND	-	Ground	Power
18	SIMCLK	O	External SIM signal - Clock	1.8/3V ONLY	SIMCLK	O	External SIM signal - Clock	1.8/3V ONLY
19	SIMRST	O	External SIM signal - Reset	1.8/3V ONLY	SIMRST	O	External SIM signal - Reset	1.8/3V ONLY
20	SIMIO	I/O	External SIM signal - Data I/O	1.8/3V ONLY	SIMIO	I/O	External SIM signal - Data I/O	1.8/3V ONLY
21	SIMIN	I/O	External SIM signal - Presence (active low) Pull-up 47KΩ	CMOS 2.8V	SIMIN	I/O	External SIM signal - Presence (active low) Internal pull-up	CMOS 2.8V
22	SIMVCC	-	External SIM signal - Power	1.8/3V ONLY	SIMVCC	-	External SIM signal - Power	1.8/3V ONLY
23	ADC_IN1	AI	Analog /Digital converter input	A/D	ADC_IN1	AI	Analog /Digital converter input	A/D
24	VRTC	AO	VRTC Backup capacitor	Power	VRTC	AO	VRTC Backup capacitor	Power
25	TX_TRACE		TX data for GPS control (TX data for Debug in case of GE863-QUAD/PY/SIM)	CMOS 2.8V	TX_TRACE		TX data for GPS control (TX data for Debug in case of GE863-QUAD/PY/SIM)	CMOS 2.8V
26	RX_TRACE		RX data for GPS control (RX data for Debug in case of GE863-QUAD/PY/SIM)	CMOS 2.8V	RX_TRACE		RX data for GPS control (RX data for Debug in case of GE863-QUAD/PY/SIM)	CMOS 2.8V
27	VBATT	-	Main power supply	Power	VBATT	-	Main power supply	Power
28	GND	-	Ground	Power	GND	-	Ground	Power
29	STAT_LED	O	Status indicator led	CMOS 1.8V	STAT_LED	O	Status indicator led	CMOS 1.8V
30	AXE	I	Handsfree switching Pull-up 100KΩ	CMOS 2.8V	AXE	I	Handsfree switching Internal pull-up	CMOS 2.8V
31	VAUX1	-	Power output for external accessories	-	VAUX1	-	Power output for external accessories	-

32	GPIO4/ DVI2_CLK	I/O	GPIO4 Configurable general purpose I/O pin/ DVI2_CLK (Digital Voice Interface) pull-up 4.7KΩ	CMOS 2.8V	GPIO4/ DVI2_CLK	I/O	GPIO4 Configurable general purpose I/O pin/ DVI2_CLK (Digital Voice Interface) NO pull-up WARNING: DVI2_CLK and GPIO4 cannot be used at the same time. GPIO4 must be set as INPUT when DVI is used. DVI must be disabled when GPIO4 is used.	CMOS 2.8V
33	GPIO2 / JDR	I/O	GPIO2 Configurable general purpose I/O pin / Jammer Detect Output	CMOS 2.8V	GPIO2 / JDR	I/O	GPIO2 Configurable general purpose I/O pin / Jammer Detect Output	CMOS 2.8V
34	GPIO1	I/O	GPIO1 Configurable general purpose I/O pin	CMOS 2.8V	GPIO1	I/O	GPIO1 Configurable general purpose I/O pin	CMOS 2.8V
35	CHARGE	AI	Charger input	Power	CHARGE	AI	Charger input	Power
36	GND	-	Ground	Power	GND	-	Ground	Power
37	C103/TXD	I	Serial data input (TXD) from DTE	CMOS 2.8V	C103/TXD	I	Serial data input (TXD) from DTE	CMOS 2.8V
38	C104/RXD	O	Serial data output to DTE	CMOS 2.8V	C104/RXD	O	Serial data output to DTE	CMOS 2.8V
39	C108/DTR	I	Input for Data terminal ready signal (DTR) from DTE	CMOS 2.8V	C108/DTR	I	Input for Data terminal ready signal (DTR) from DTE	CMOS 2.8V
40	C105/RTS	I	Input for Request to send signal (RTS) from DTE	CMOS 2.8V	C105/RTS	I	Input for Request to send signal (RTS) from DTE	CMOS 2.8V
41	C106/CTS	O	Output for Clear to send signal (CTS) to DTE	CMOS 2.8V	C106/CTS	O	Output for Clear to send signal (CTS) to DTE	CMOS 2.8V
42	C109/DCD	O	Output for Data carrier detect signal (DCD) to DTE	CMOS 2.8V	C109/DCD	O	Output for Data carrier detect signal (DCD) to DTE	CMOS 2.8V
43	C107/DSR	O	Output for Data set ready signal (DSR) to DTE	CMOS 2.8V	C107/DSR	O	Output for Data set ready signal (DSR) to DTE	CMOS 2.8V
44	C125/RING	O	Output for Ring indicator signal (RI) to DTE	CMOS 2.8V	C125/RING	O	Output for Ring indicator signal (RI) to DTE	CMOS 2.8V
45	GND	-	Ground	Power	GND	-	Ground	Power
46	ON_OFF*	I	Input command for switching power ON or OFF (toggle command). pull-up 47KΩ	Pull up to VBATT	ON_OFF*	I	Input command for switching power ON or OFF (toggle command). ON_OFF* must be tied low at least 5 seconds.	Pull up to VBATT
47	RESET*	I	Reset input	MAX 2.0V	RESET*	I	Reset input	MAX 1.8V
48	GND	-	Ground	Power	GND	-	Ground	Power
49	ANTENNA	O	GSM Antenna output - 50 Ω	RF	ANTENNA	O	GSM Antenna output - 50 Ω	RF
50	GND	-	Ground	Power	GND	-	Ground	Power
51	GPIO7 / BUZZER	I/O	GPIO7 / BUZZER output	CMOS 2.8V	GPIO7 / BUZZER	I/O	GPIO7 / BUZZER output	CMOS 2.8V
52	PWRMON	O	Power ON Monitor	CMOS 2.8V	PWRMON	O	Power ON Monitor	CMOS 2.8V
53	GPIO5 RFTXMON	I/O	GPIO5 / RF TX_ON signaling output	CMOS 2.8V	GPIO5 RFTXMON	I/O	GPIO5 / RF TX_ON signaling output	CMOS 2.8V
54	GPIO6 ALARM	I/O	GPIO6 / ALARM output	CMOS 2.8V	GPIO6 ALARM	I/O	GPIO6 / ALARM output	CMOS 2.8V
55	GPIO3	I/O	GPIO3 pull-up 47KΩ	CMOS 2.8V	GPIO3	I/O	GPIO3 NO pull-up	CMOS 2.8V
56	GND	-	Ground	Power	GND	-	Ground	Power
57	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
58	CLK SSC	I/O	Python Debug (CLK)	CMOS 2.8V	CLK SSC	I/O	Python Debug NOT implemented	CMOS 2.8V
59	GPIO17/ DVI2_WAO	I/O	GPIO17 Configurable general purpose I/O pin/ DVI2_WAO	CMOS 2.8V	GPIO17/ DVI2_WAO	I/O	GPIO17 Configurable general purpose I/O pin/ DVI2_WAO	CMOS 2.8V

			(Digital Voice Interface)				(Digital Voice Interface)	
60	GPIO14	I/O	GPIO	-	GPIO14	I/O	GPIO	-
61	MRST SSC	I/O	Python Debug (MRST)	-	MRST SSC	I/O	Python Debug NOT implemented	-
62	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
63	DAC_OUT	O	DAC out		DAC_OUT	O	DAC out	
64	GPIO16	I/O	GPIO	CMOS 2.8V	GPIO16	I/O	GPIO	CMOS 2.8V
65	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
66	MTSR SSC	I/O	Python Debug (MTSR)	-	MTSR SSC	I/O	Python Debug NOT implemented	-
67	GND	-	Ground	Power	GND	-	Ground	Power
68	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
69	GND	-	Ground	Power	GND	-	Ground	Power
70	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
71	GPIO15	I/O	GPIO	-	GPIO15	I/O	GPIO	-
72	GND	-	Ground	Power	GND	-	Ground	Power
73	RESERVED	-	RESERVED	-	RESERVED		RESERVED	
74	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
75	RESERVED	-	RESERVED	-	RESERVED		RESERVED	
76	GPIO18/ DVI2_RX	I/O	GPIO18 Configurable general purpose I/O pin/ DVI2_RX (Digital Voice Interface)	CMOS 2.8V	GPIO18/ DVI2_RX	I/O	GPIO18 Configurable general purpose I/O pin/ DVI2_RX (Digital Voice Interface)	CMOS 2.8V
77	GND	-	Ground	Power	GND	-	Ground	Power
78	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	
79	GND	-	Ground	Power	GND	-	Ground	Power
80	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	
81	RESERVED	-	RESERVED	-	RESERVED	-	RESERVED	-
82	GND	-	Ground	Power	GND	-	Ground	Power
83	RESERVED	-	RESERVED		RESERVED		RESERVED	
84	GND	-	GPS	Power	GND	-	GPS	Power

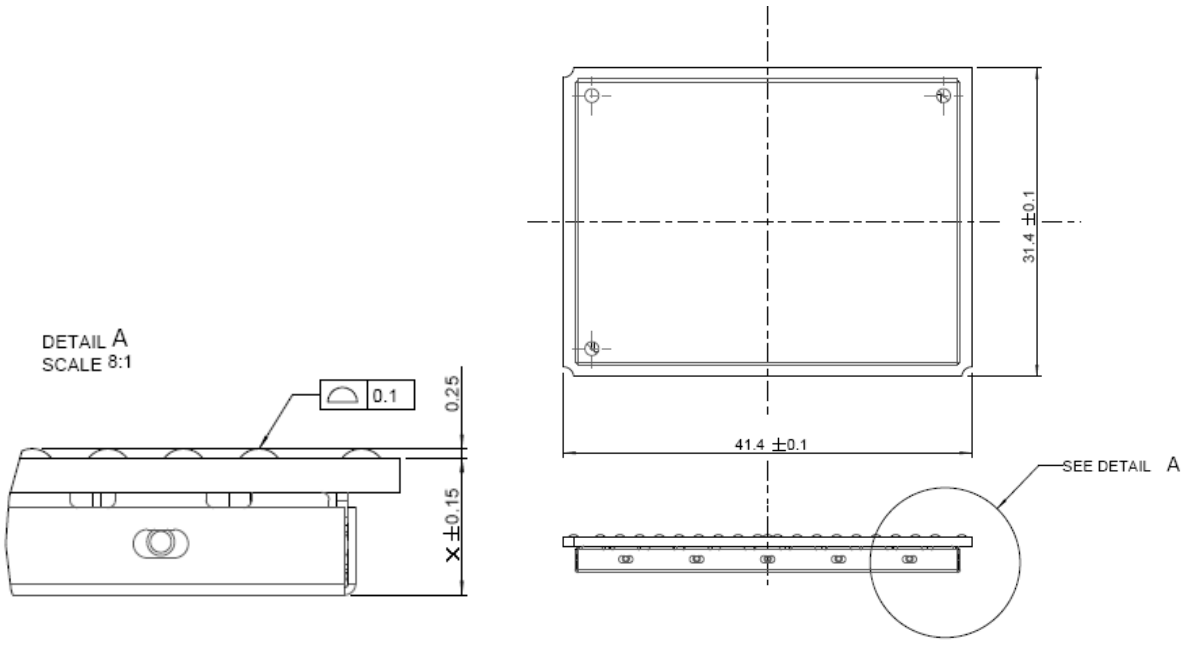
NOTE:
For a compatible design, all the balls corresponding to “RESERVED” MUST NOT be connected.

4. Mechanical Dimensions

The following the differences from mechanical point of view:

The Telit GE863 module's overall dimensions are:

	GE863-QUAD	GE863-QUAD V2 (CL2)
Length	41.4 mm	41.4 mm
Width	31.4 mm	31.4 mm
Thickness (x)	3.6 mm	4.0 mm



5. Document History

Revision	Date	Changes	Location
0	2012-09-11	First issue	Trieste