

# GE863-Pro<sup>3</sup> Extension Memory Board User Guide

1v0300793 Rev. 0 - 02/12/08



**GE863-PRO3 Extension Memory Board User Guide**  
 1v0300793 Rev. 0 - 02/12/08

**This document is relating to the following products:**

<p>GSM   GPRS</p> <p><b>GE863-PRO<sup>3</sup></b> Embedded</p>	
<p>GE863-PRO3</p>	<p>GE863PR3***-***</p> <p>The suffix "***-***" depends on the module HW/SW configuration. Please contact your Telit representative for details</p>



# Contents

- 1 Introduction ..... 5**
  - 1.1 Scope ..... 5**
  - 1.2 Audience ..... 5**
  - 1.3 Contact Information, Support..... 5**
  - 1.4 Product Overview ..... 5**
  - 1.5 Document Organization ..... 6**
  - 1.6 Related Documents ..... 6**
  - 1.7 Document History ..... 6**
- 2 Memory interface connection block diagram ..... 7**
- 3 How to setup the board ..... 8**
  - 3.1 How to plug the board..... 8**
    - 3.1.1 Jumper selection..... 10
- 4 Mechanical description..... 12**
  - 4.1 Overall section dimension ..... 12**
  - 4.2 Main components ..... 12**
    - 4.2.1 Top side ..... 12
    - 4.2.2 Bottom side ..... 14
  - 4.3 PIN-OUT table ..... 15**
- Appendix 1: How to connect an external flash to PRO<sup>3</sup> in your application ..... 16**



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# 1 Introduction

## 1.1 Scope

This document is a user guide for using Telit GE863-PRO<sup>3</sup> Extension Memory Board that can be plugged on the top of the PRO3 Evaluation Board.

This user guide serves the following purpose:

- Provides details about the GE863-PRO<sup>3</sup> memory interface component and schematics.
- Describes how to configure the memory interface in order to use the different memories.

## 1.2 Audience

This User Guide is intended for the users of the Telit GE863-PRO<sup>3</sup> product who want to extend the capacity of the default flash memory already included in the module.

## 1.3 Contact Information, Support

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

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

[TS-EMEA@telit.com](mailto:TS-EMEA@telit.com) or <http://www.telit.com/en/products/technical-support-center/contact.php>

Telit appreciates feedback from the users of our information.

## 1.4 Product Overview

The GE863-PRO<sup>3</sup> Extension Memory interface is composed of three serial flash memories of 4MB, 8MB and 16MB with 50MHz SPI BUS Interface.



**GE863-PRO3 Extension Memory Board User Guide**  
1vv0300793 Rev. 0 - 02/12/08

These three memories can be controlled either SPI0 than SPI1 control signals used by PRO<sup>3</sup> Interface Board: The different memory can be selected using some jumpers as described in following paragraphs.

## 1.5 Document Organization

This manual contains the following chapters:

- “Chapter 1, Introduction” provides a scope for this manual, target audience, technical contact information, and text conventions.
- “Chapter 2, Memory Interface connection block diagram” provides an overview of the PRO<sup>3</sup> memory interface connection.
- “Chapter 3, How to setup the memory interface board” details how to connect the memory interface board to the PRO<sup>3</sup> EVK with related jumpers configuration.
- “Chapter 4, Mechanical description” details about the mechanical design.

### How to Use

If you are new to this product, it is recommended to start by reading through TelitGE863PRO3 EVK User Guide 1VV0300776.

## 1.6 Related Documents

The following documents are related to this user guide:

- [1] TelitGE863PRO3 Hardware User Guide 1vv0300773a
- [2] TelitGE863PRO3 U-BOOT Software User Guide 1vv0300777
- [3] TelitGE863PRO3 EVK User Guide 1VV0300776
- [4] TelitGE863PRO3 Linux Development Environment 1VV0300780
- [5] TelitGE863PRO3 Linux GSM Library User Guide 1vv0300782
- [6] TelitGE863PRO3 Product Description 80285ST10036a

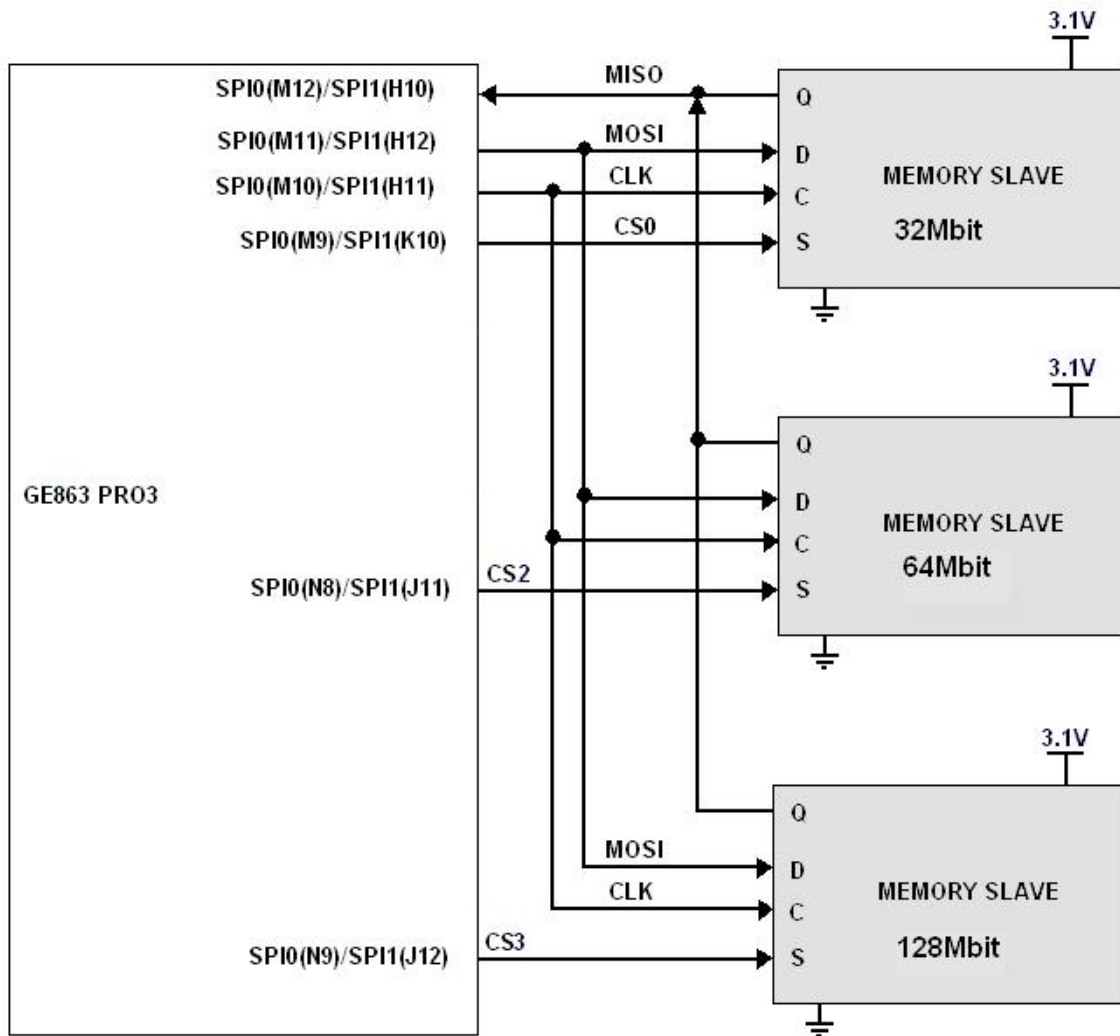
## 1.7 Document History

Revision	Date	Changes
ISSUE #0	02/12/08	First Release



## 2 Memory interface connection block diagram

In the following picture the connection between the memory interface and the PRO3 product is shown.



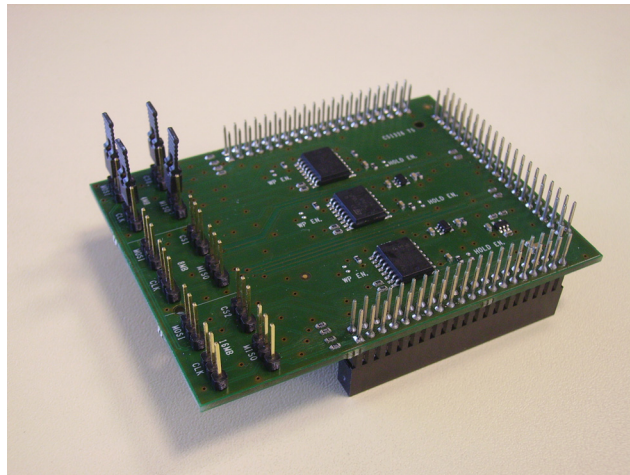
Block Diagram



## 3 How to setup the board

### 3.1 How to plug the board

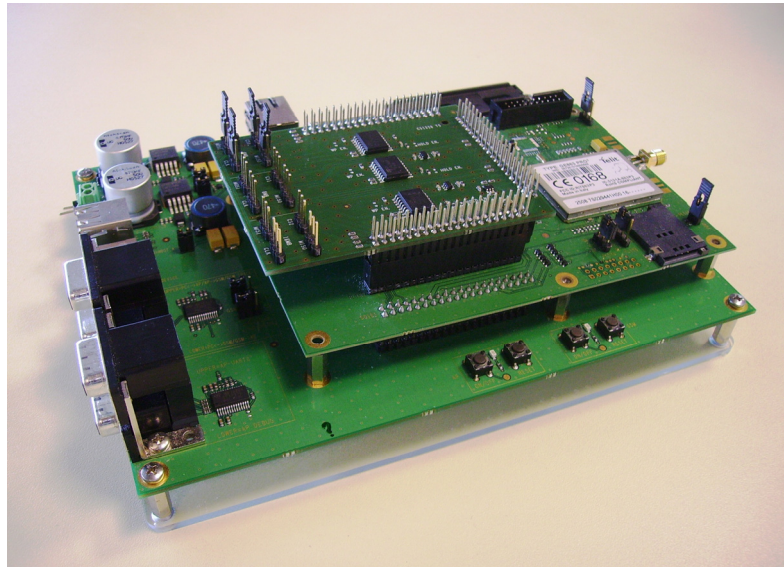
The form factor of the board allowed to plug it on EVK-PRO<sup>3</sup> and thanks its double-layer interface connectors you can plug on it the eventual board for the specific application to develop.





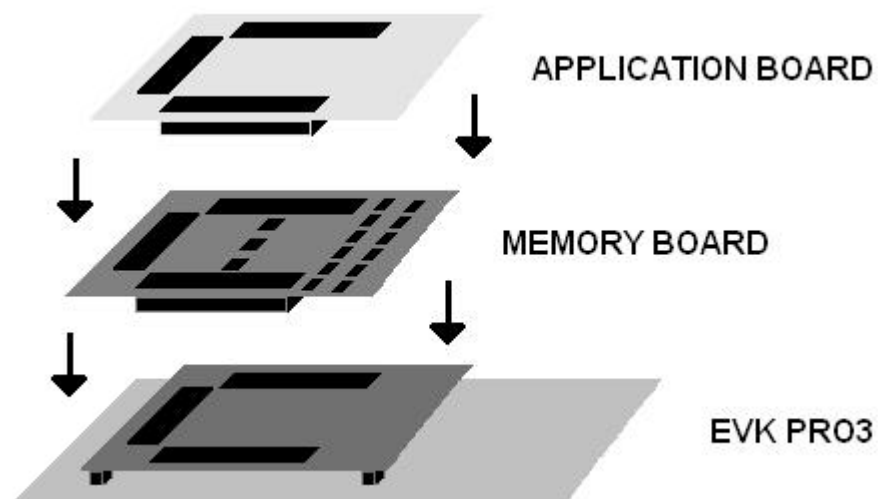
## GE863-PRO3 Extension Memory Board User Guide

1v0300793 Rev. 0 - 02/12/08



The steps for use the Memory Board are:

- plug the Memory Board on the EVK-PRO<sup>3</sup>
- select the jumpers to use the SPI0 or SPI1 control signals
- if necessary plug in your application board on the Memory Board
- power supply the EVK-PRO<sup>3</sup>
- start developing the application



## GE863-PRO3 Extension Memory Board User Guide

1v0300793 Rev. 0 - 02/12/08

Remember that the SPI CS signals are:

- CS0 to select the 32Mbit memory
- CS2 to select the 64Mbit memory
- CS3 to select the 128Mbit memory

MISO, MOSI and CLOCK SPI signals are shared by every memory.

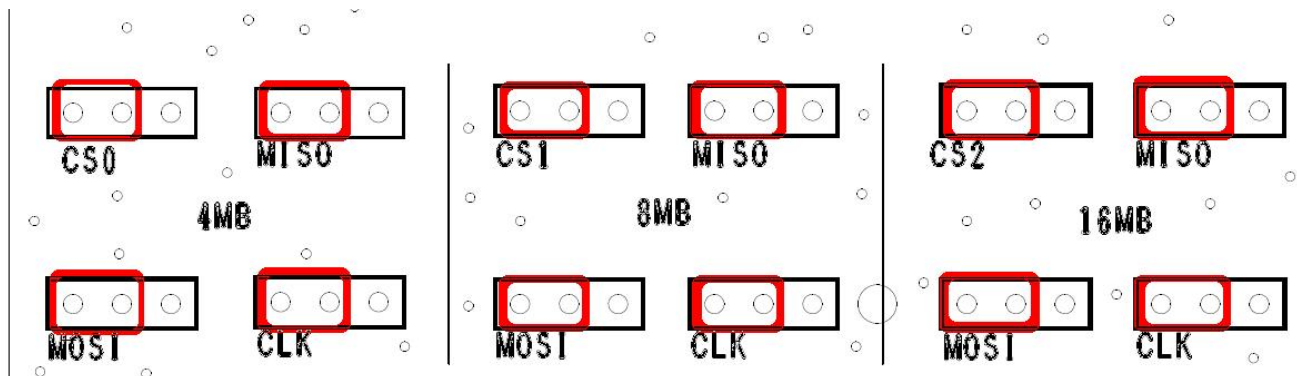
### 3.1.1 Jumper selection

In the following table the possible memory connection selection is shown:

Configuration Memory Interface				
SPI0/SPI1				
me/cs	CS0	CS1	CS2	CS3
4	X	N/A		
8		N/A	X	
16		N/A		X

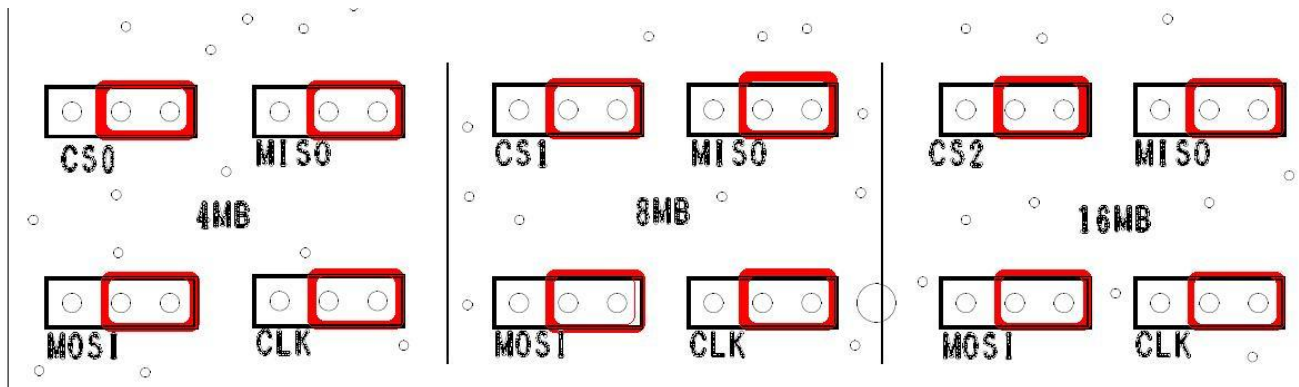
Each memory has a series of four jumpers to select the SPI signal to use.

In figure below you can find the jumpers selection to use SPI0 control signals:



**GE863-PRO3 Extension Memory Board User Guide**  
 1v0300793 Rev. 0 - 02/12/08

In figure below you can find the jumpers selection to use SPI1 control signals:



## 4 Mechanical description

### 4.1 Overall section dimension

The **Telit GE863-PRO<sup>3</sup> Extension Memory Board** overall dimensions are:

- **Length:** 90 mm
- **Width:** 68 mm

### 4.2 Main components

#### 4.2.1 Top side

##### Top Side list

PL104: 3 pin jumper for MOSI signal for Memory 32Mbit  
 PL105: 3 pin jumper for CLK signal for Memory 32Mbit  
 PL106: 3 pin jumper for CS0 signal for Memory 32Mbit  
 PL107: 3 pin jumper for MISO signal for Memory 32Mbit

PL108: 3 pin jumper for MOSI signal for Memory 64Mbit  
 PL109: 3 pin jumper for CLK signal for Memory 64Mbit  
 PL110: 3 pin jumper for CS2 signal for Memory 64Mbit  
 PL111: 3 pin jumper for MISO signal for Memory 64Mbit

PL112: 3 pin jumper for MOSI signal for Memory 128Mbit  
 PL113: 3 pin jumper for CLK signal for Memory 128Mbit  
 PL114: 3 pin jumper for CS3 signal for Memory 128Mbit  
 PL115: 3 pin jumper for MISO signal for Memory 128Mbit

U101: LDO  
 U102: Bus Transceiver for CS2 signal  
 U103: Bus Transceiver for CS3 signal

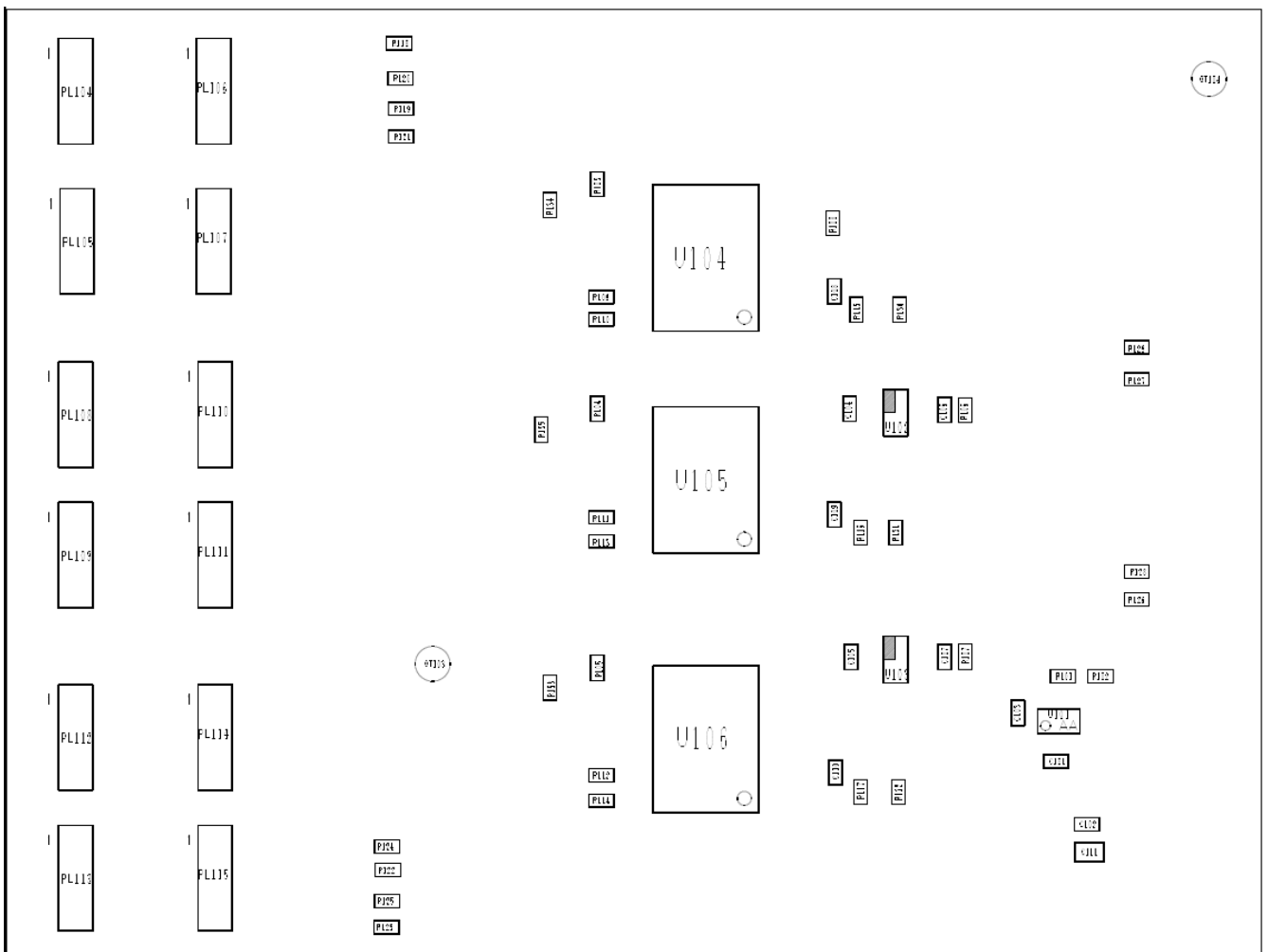
U104: Memory 32Mbit



## GE863-PRO3 Extension Memory Board User Guide

1v0300793 Rev. 0 - 02/12/08

U105: Memory 64Mbit  
U106: Memory 128Mbit



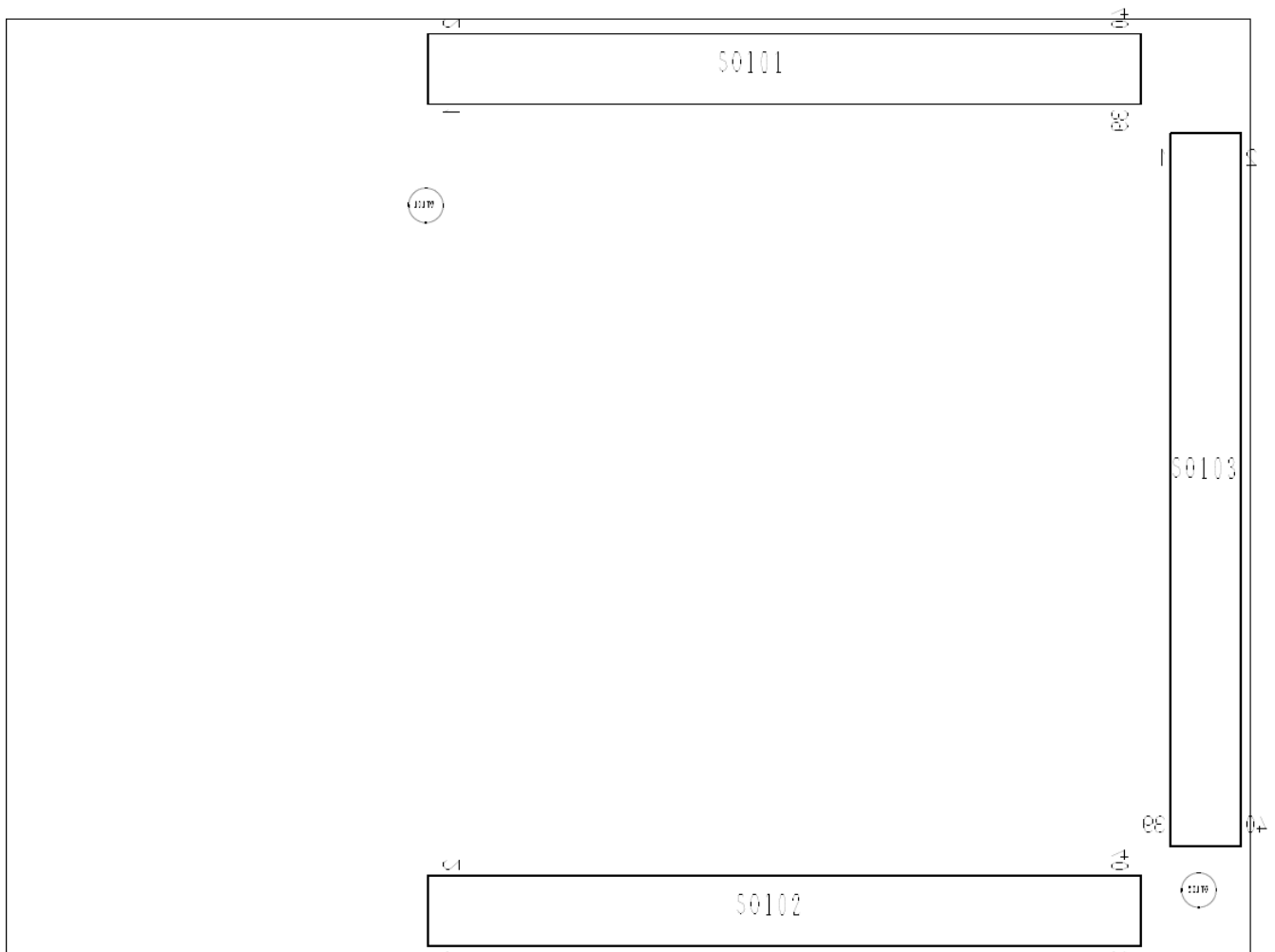
**TOP side view**



## 4.2.2 Bottom side

### BOTTOM side list:

- SO101: Interface connector
- SO102: Interface connector
- SO103: Interface connector



**BOTTOM side view**



## 4.3 PIN-OUT table

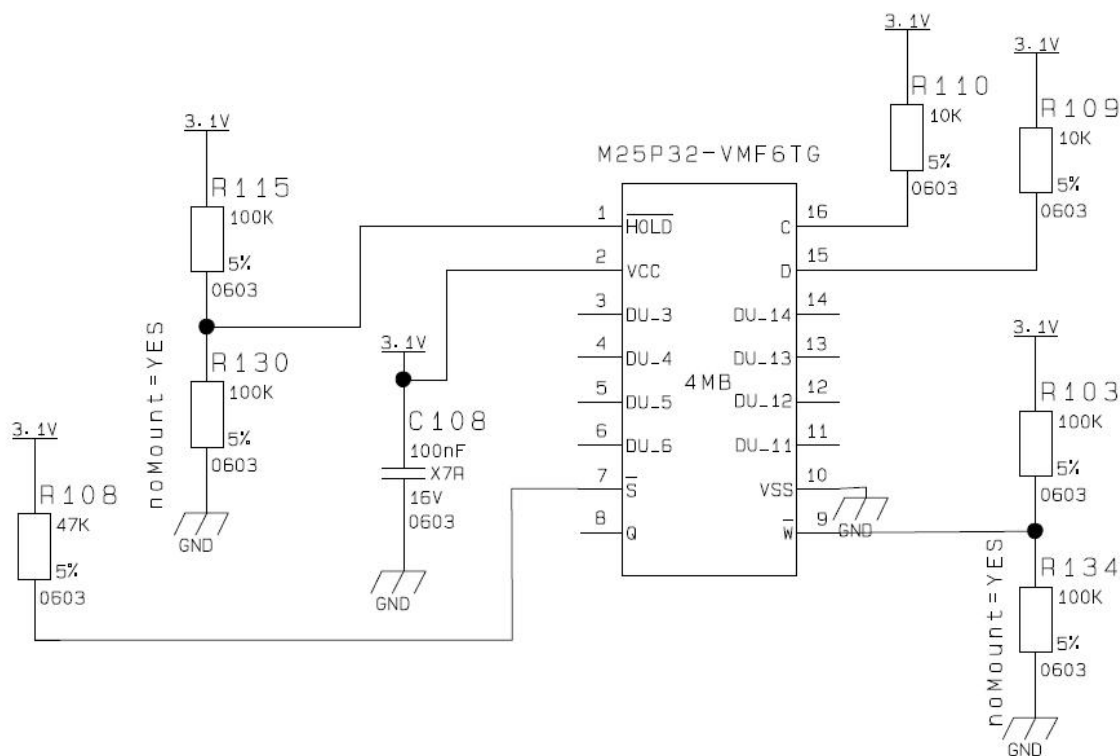
For detailed information about all the interface connectors SO101,SO102,SO103 see the "TelitGE863PRO3 EVK User Guide" [3] where are described all the PINs coming from the EVK.

	SO101	SO102	SO103
Pin n.	Signal name	Signal name	Signal name
1	MISO_SPI0	MISO_SPI1	RESERVED_EVK
2	MOSI_SPI0	MOSI_SPI1	RESERVED_EVK
3	CLK_SPI0	CLK_SPI1	RESERVED_EVK
4	CS0_SPI0	CS0_SPI1	RESERVED_EVK
5	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
6	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
7	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
8	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
9	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
10	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
11	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
12	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
13	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
14	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
15	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
16	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
17	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
18	RESERVED_EVK	RESERVED_EVK	CS2_SPI0
19	RESERVED_EVK	RESERVED_EVK	CS3_SPI0
20	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
21	RESERVED_EVK	RESERVED_EVK	CS2_SPI1
22	RESERVED_EVK	RESERVED_EVK	CS3_SPI1
23	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
24	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
25	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
26	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
27	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
28	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
29	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
30	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
31	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
32	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
33	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
34	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
35	RESERVED_EVK	3.1V	RESERVED_EVK
36	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
37	RESERVED_EVK	RESERVED_EVK	GND
38	RESERVED_EVK	RESERVED_EVK	RESERVED_EVK
39	GND	GND	GND
40	GND	GND	RESERVED_EVK



# Appendix 1: How to connect an external flash to PRO<sup>3</sup> in your application

The recommended connection for the flash data memory to the GE863-PRO<sup>3</sup> processor is using the SPI0 bus and the CS0. In the following scheme you can see how to connect a 4MB memory interface to the GE863-PRO<sup>3</sup>. The same method can be applied also on any other memory.



Legend:

- D (15) = MOSI signal
- C (16) = CLK signal
- 7 = CS (chip select)
- 8 = MISO

