

Telit EVK2 User Guide

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HE863-EUR INTERFACE	3990250797	HE863
HE863-EUG INTERFACE	3990250798	HE863
HE863-NAD INTERFACE	3990250799	HE863
HE863-NAR INTERFACE	3990250800	HE863
HE863-NAG INTERFACE	3990250801	HE863
HE863-AUR INTERFACE	3990250803	HE863
HE863-AUG INTERFACE	3990250804	HE863
HE910 INTERFACE	3990250917	HE910
GE910 INTERFACE	3990250882	GE910
DE910 INTERFACE	3990250886	DE910
CE910 INTERFACE	3990250887	CE910



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2. Description

The motherboard *CS1139B* can be split into several functional blocks depending on the implemented function; the following drawings show a block diagram and the displacement of the main blocks on motherboard.

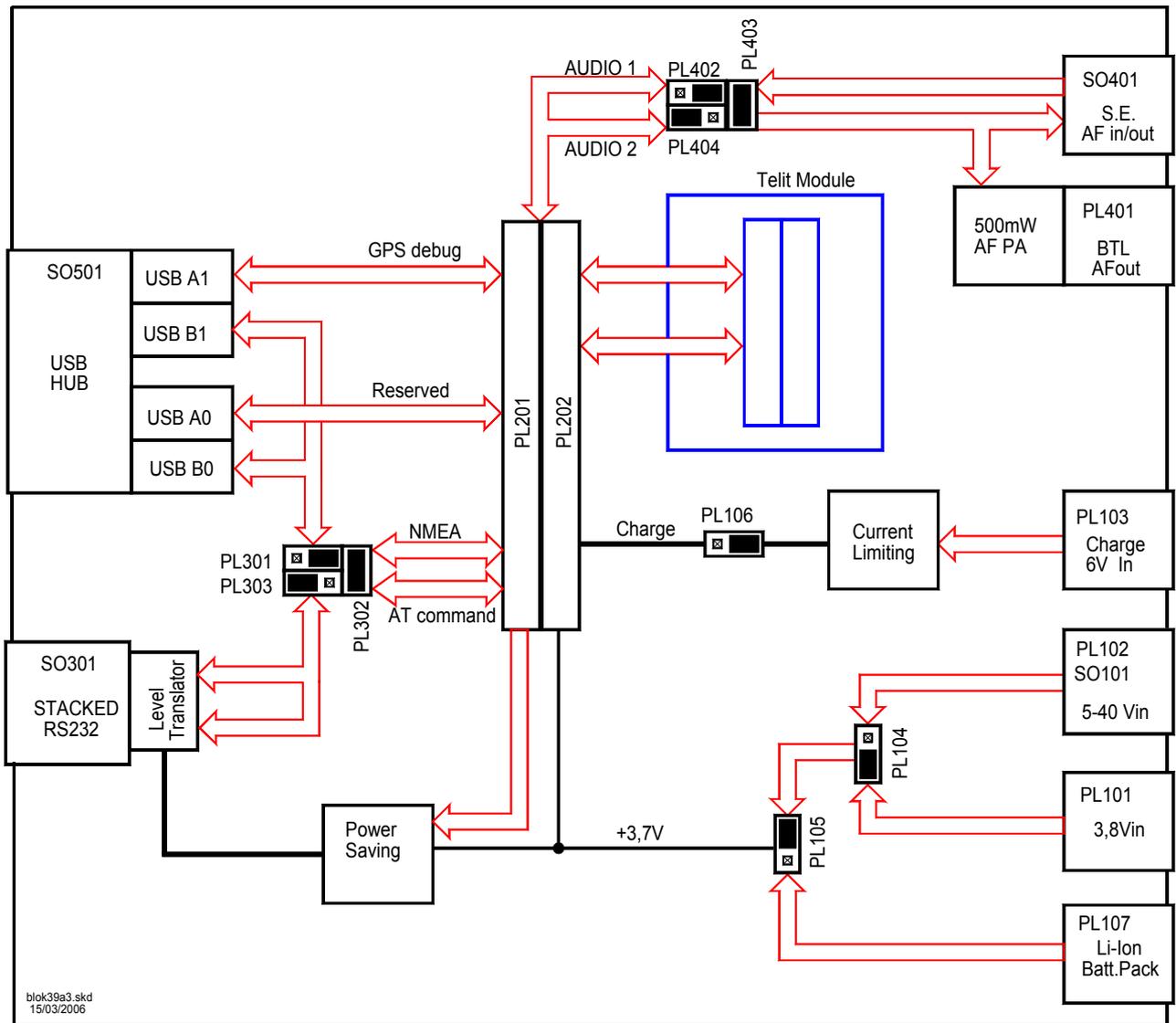


Figure 2: Miscellaneous signals, connections and routing on *CS1139B*.



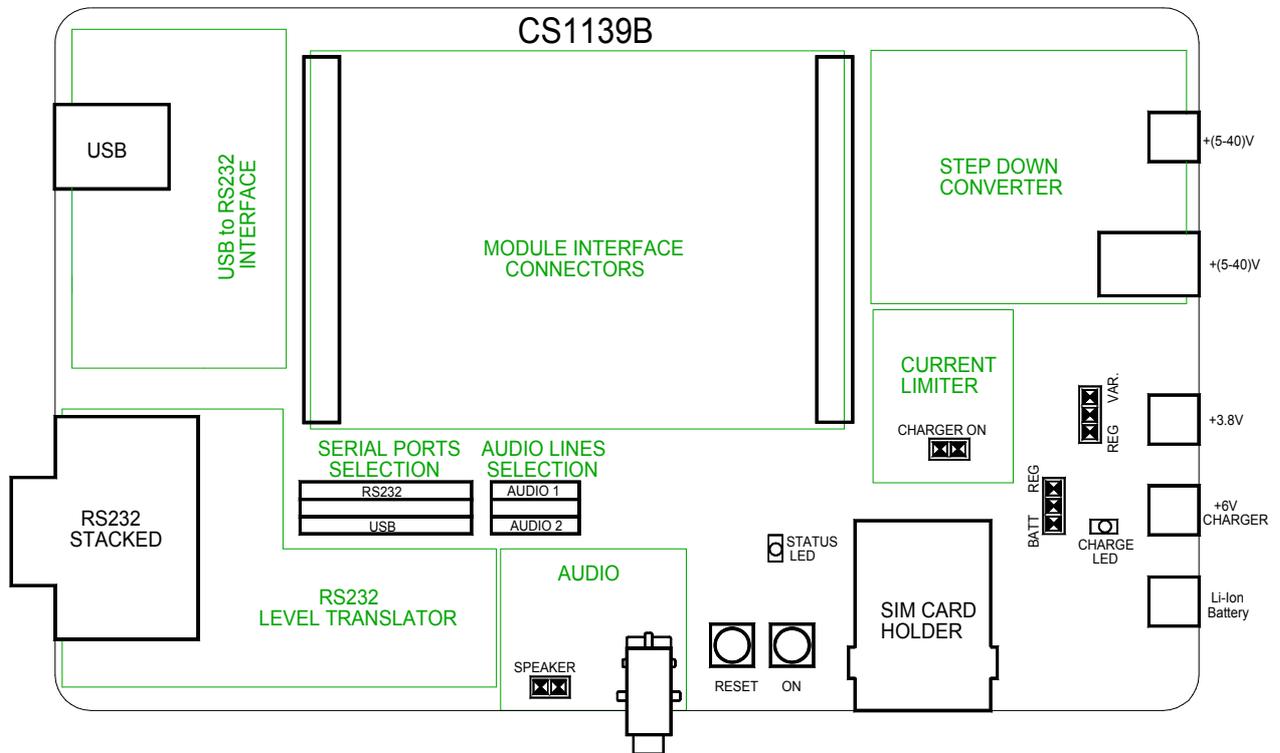


Figure 3: CS1139B circuitual displacement

2.1. PCB characteristics

Material : FR4
 Thickness: 0,95 mm
 Surface finishing: Chemical gold plate Ni 5um/ Au 0,1um



2.2. Mechanical characteristics of the assembled PCBs

2.2.1. Mother Board CS1139B

Length	100 mm (max 102,6 mm)
Width	160 mm (max 166,10mm)
Height	47,6 mm (included the support with columns)
Weight	200 gr (without any interface)

2.2.2. GM862 Interface CS1150B

Length	66,04 mm
Width	78,74 mm
Height	21,00 mm
Weight	27 gr (without the module)

2.2.3. GE863 Interface CS1151A

Length	75 mm (max 84,70mm)
Width	78,74 mm
Height	21,00 mm
Weight	40 gr (with module)
Weight	44,3 gr (with module for GPS version)

2.2.4. GE864 Interface CS1152B

Length	66,04 mm (max 75,20mm)
Width	78,74 mm
Height	21,00 mm
Weight	36 gr (with module)

2.2.5. GE864-GPS Interface CS1439B

Length	78.70 mm (max mm)
Width	83.70 mm
Height	21 mm



2.2.6. GC864 Interface CS1203B

Length	66,04 mm
Width	78,74 mm
Height	21,00 mm
Weight	27 gr (without the module)

2.2.7. GC864-C2 Interface CS1231X

Length	50,00 mm
Width	33,00 mm
Height	5,60 mm
Weight	13,8 gr (with module)

2.2.8. GE865 Interface CS1324A

Length	66,04 mm (max 75,20mm)
Width	78,74 mm
Height	21,00 mm
Weight	34 gr (with module)

2.2.9. GE865/SE867-AGPS Interface CS1433

Length	101.00 mm
Width	78.74 mm
Height	mm

2.2.10. GE865/JF2 Interface CS1521

Length	101,00 mm
Width	78,74 mm
Height	mm

2.2.11. GL865 Interface CS1431A

Length	66,04 mm (max 75,20mm)
Width	78,74 mm
Height	21,00 mm
Weight	34 gr (with module)



2.2.12. UC864-CC864 Interface KS0101C

Length	102,00 mm
Width	67,50 mm
Height	20,80 mm
Weight	55 gr (without module)

2.2.13. HE910 Interface CS1467D

Length	107,00 mm
Width	102,00 mm
Height	25,00 mm

2.2.14. GE910 Interface CS1467D

Length	107,00 mm
Width	102,00 mm
Height	25,00 mm

2.2.15. DE910 Interface CS1467D

Length	107,00 mm
Width	102,00 mm
Height	25,00 mm

2.2.16. CE910 Interface CS1467D

Length	107,00 mm
Width	102,00 mm
Height	25,00 mm



NOTE:

The overall height for every combination (mother board + interface board) is still the height of the mother board



4. Insertion of the Interface Boards

Every *Interface Board* must be inserted on *CS1139B* paying great attention to match the position of the main connectors; this has been made easy:

optically by a triangle drawn on both printed circuits (except CS1231X) ;
mechanically shifting a column out of regular square cross position.

Both guide systems are highlighted by orange color as shown on the next figure.

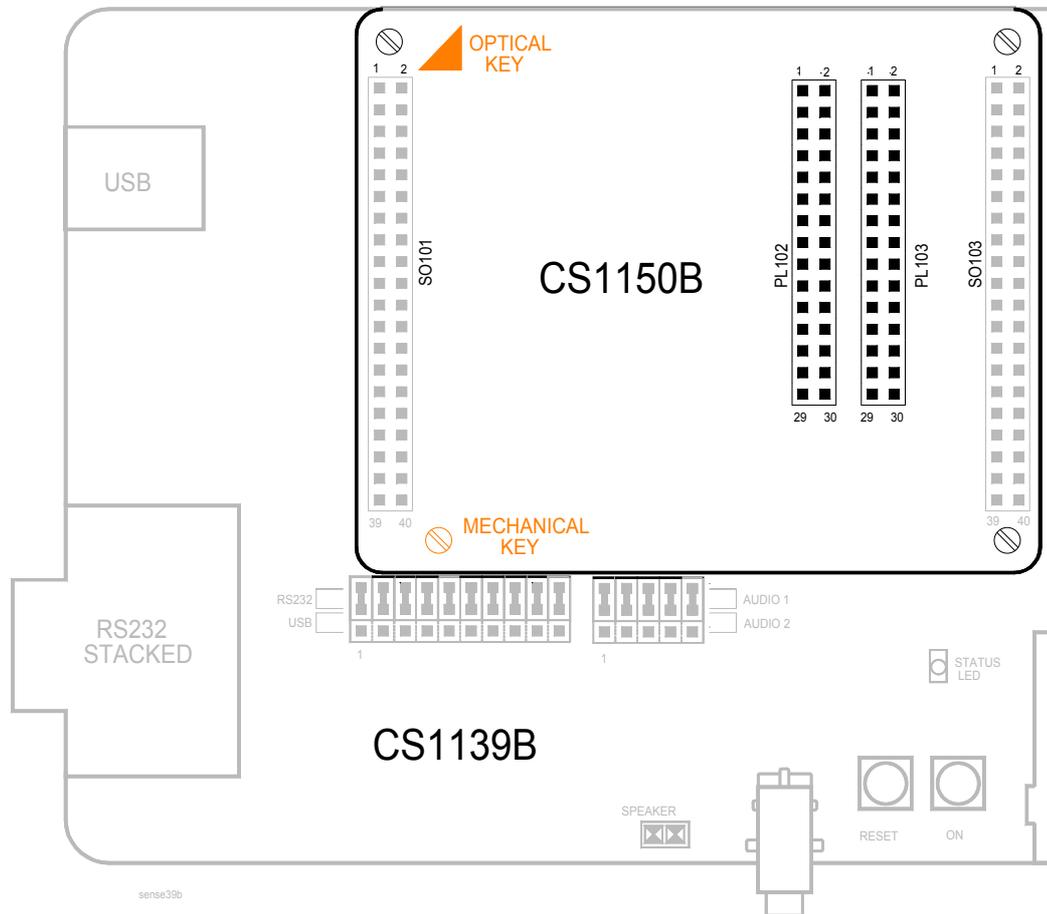


Figure 4: Positioning Guide Systems of *GM862 Interface Board* on CS1139B.



6. Serial interface

The following figure shows the architecture of the serial ports.

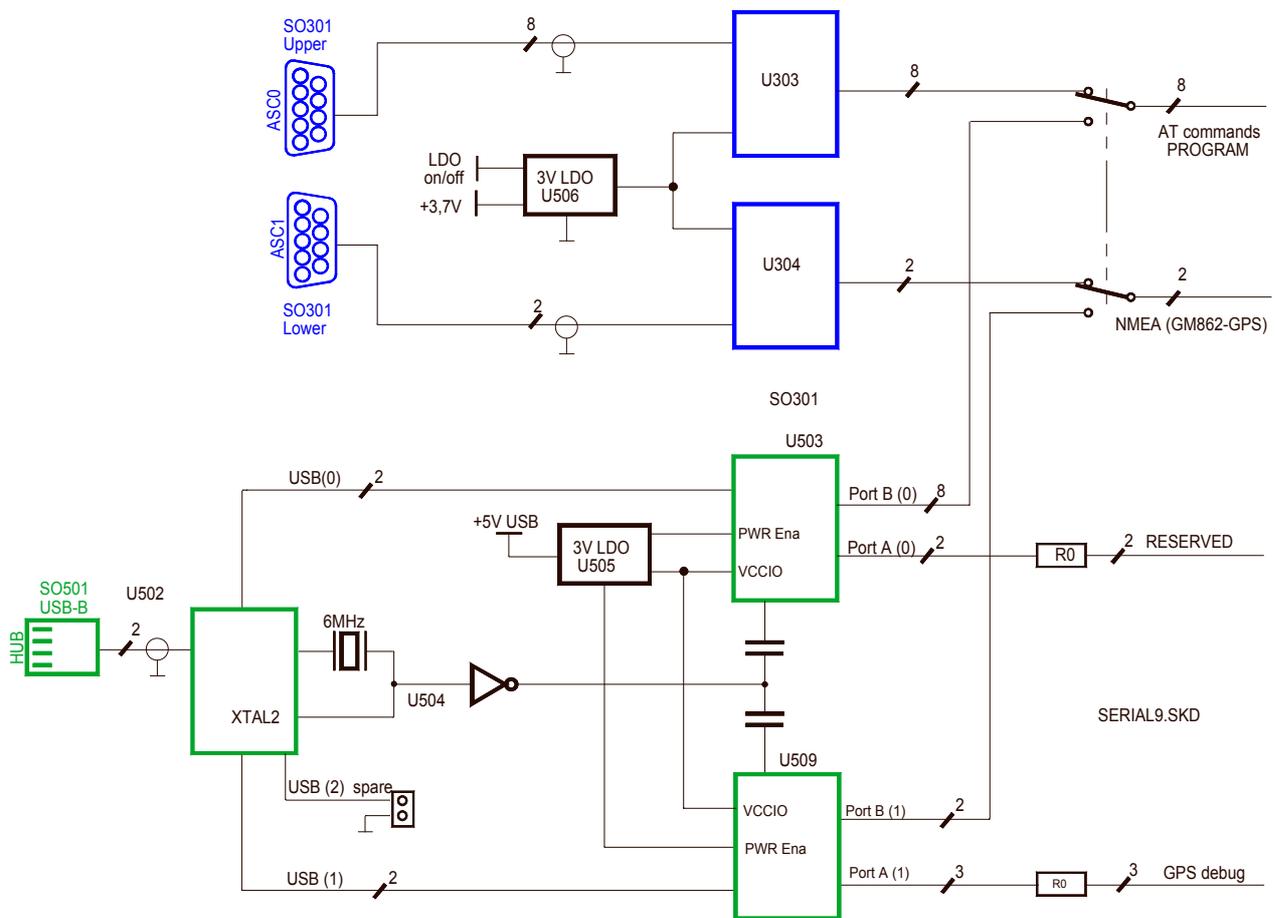


Figure 9: Serial ports block diagram.



6.1. Serial Port Setup

Communications between your application and the Telit modules are allowed connecting the DTE to the *Asynchronous Serial Interfaces* of Base-Band Chip, ASC0 and ASC1, through the *stacked standard RS232 communications port (double 9 way D-socket connector at slow data rates of RS232 protocol)* or a *standard USB-B Series receptacle (at higher data rates of USB1.1 specification through a CMOS HUB that realizes a multiple attachment point device)*.

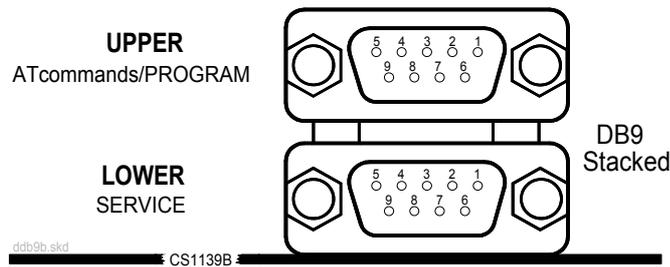


Figure 10: Double 9 way D-Socket Connector

The selection is made short circuiting *PL302&PL303 (RS232 mode)* or *PL302&PL301 (USB 1.1 mode)* by 10 pieces of 2 contacts jumpers. This solution has been implemented because you can isolate every single line during the development.

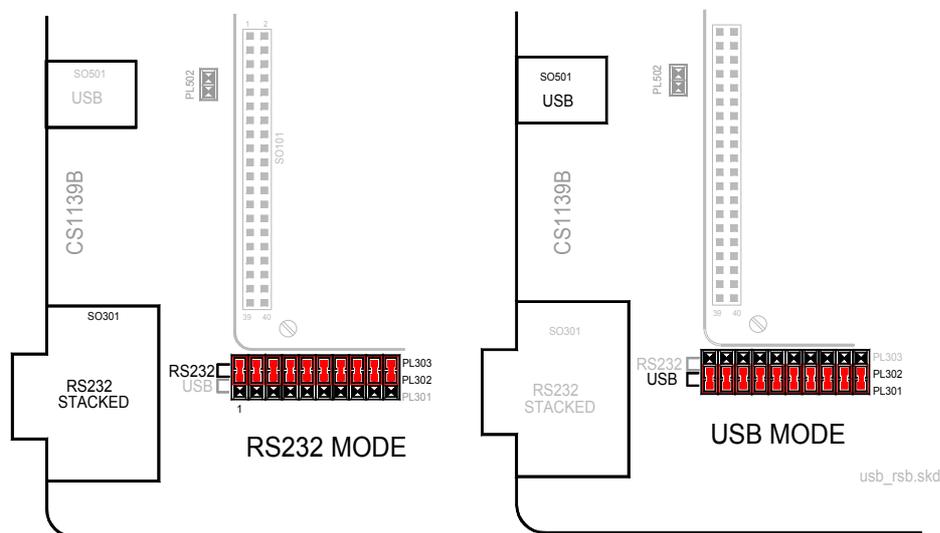


Figure 11: Serial Ports selection



7.3.2. Benefits and disadvantages

Differential amplifiers are desirable to use, especially in audio applications where signal levels are very low such as those from microphones.

Classically, the benefits obtained from differential amplification are:

Increase of Common Mode Rejection Ratio (CMRR)

Differential inputs enable cancellation of any noise common on both inputs. Noise generated at the input of the amplifier has a greater effect than noise generated at the output, because any noise on the input is multiplied by the gain of the amplifier.

Increase Signal to Noise Ratio (SNR)

The inputs to the amplifier are especially sensitive to noise because they are typically not driven by a very low impedance source.

High Rejection in Electromagnetic Interference (EMI)

Noise immunity is very important in wireless phones because the RF signal is sent in bursts such that the frequency between bursts is in the audio band. RF rectification is such a problem that many manufacturers shield the audio portion of the phone.

Double Useful signals level

The signal levels from microphone and the voltage swing to the load are doubled. Then the AF power to the load it is 4 times the single-ended Afpower at the same voltage supply.

No output blocking capacitor is needed

Even if the differential outputs are biased at half-supply; no DC voltage exists across the load. You do not need the big, expensive and heavy blocking capacitors (generally from 33 μ F to 1000 μ F), lowering the cost and saving PCB space

There is no frequency limiting effect due to the high pass filter network created with the speaker impedance and the coupling capacitance.

Less shielding is required from amplifier to load

Mainly we have only one disadvantage using differential amplification: the routing of one more signal line could be more difficult and the additional trace requires more board space.



7.3.3. Settings

Connecting your accessories to *SO401 in/out connector*, you will implement Single Ended Input/Output configurations.

Removing all 2 *contacts jumpers* inserted between *PL402&PL403* or *PL403&PL404*, the *in/out lines* of our modules will be directly available on *PL402* and *PL404* connectors.

In such a way, you will be able to implement fully Differential Input/Output configurations. Only with GC864-QUAD/PY-C2 modules the *Ear output* lines are AC coupled.

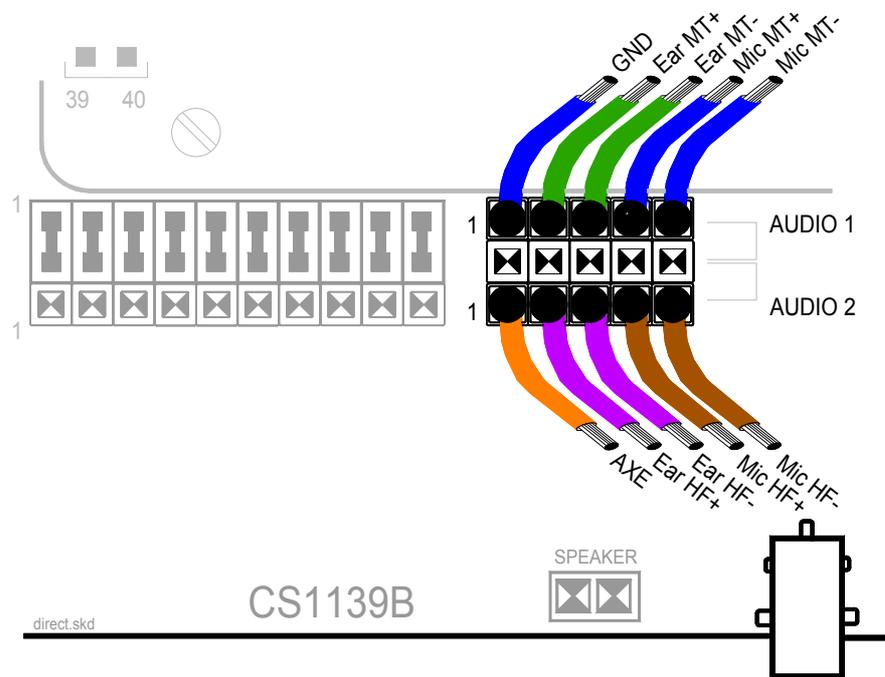


Figure 12: PL402 and PL404 Fully Differential audio lines.



9. Audio outputs

The EVK2 output audio signals could be drive a device connected to *SO401* (LOW AF POWER mode) or to *PL401* (HIGH AF POWER mode).

9.1. Low AF Power Mode

Inserting the 2 *contacts jumpers* as explained at paragraph 9A, a standard *off-the-shelf Headset* should be connected to the *SO401* (3 contacts, 2.5mm diameter jack connector).

With such an insertion, the Telit Modules will power the Microphone through a Single Ended input circuit and the Earpiece through a Single Ended/ AC coupled output circuit.



NOTE:

The acoustic performance of the *Headset* (*frequency response, loudness*) largely depends by its housing, fitting and acoustic impedance.

The coil impedance of the Headset should be higher than 15 ohm @ 1KHz.

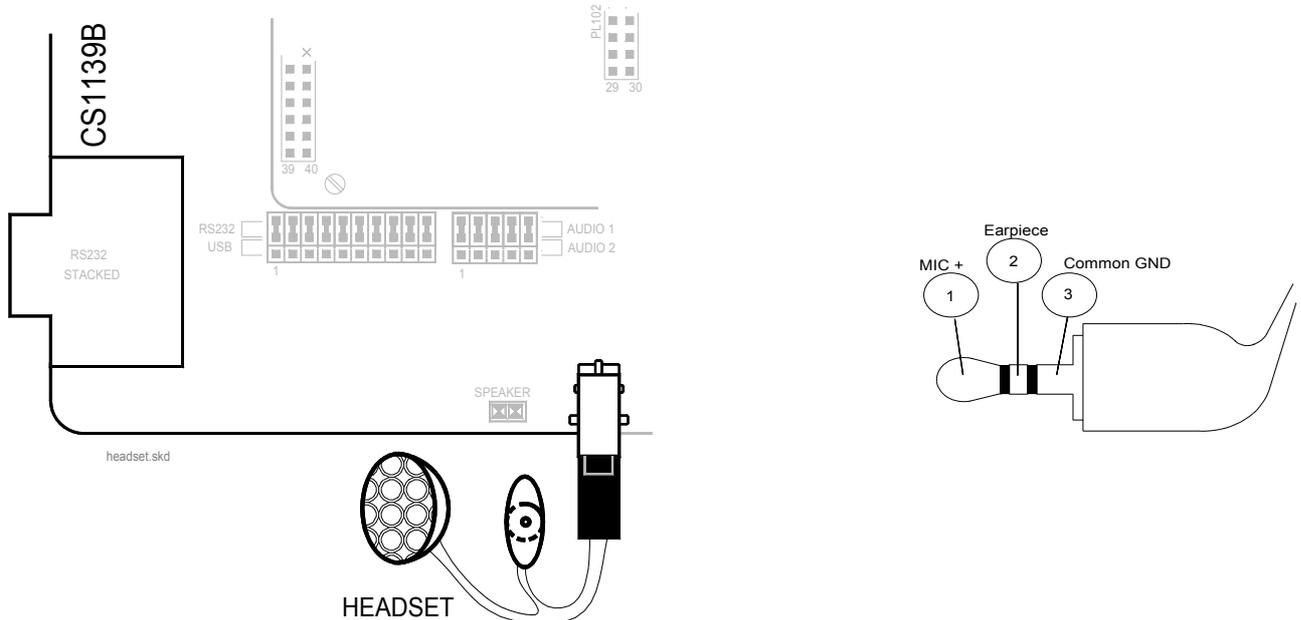


Figure 14: Headset insertion



9.2. High AF Power Mode

Connecting an **8 ohm** Speaker to PL401 by a 2 contacts female connector, you could drive it through the 500mW Power Amplifier.

In this case the Speaker will be driven in fully differential configuration, with no side connected to ground and without any output coupling capacitor. Therefore care must be taken because there is DC voltage on both sides of the Speaker.

The overall gain of this amplifier can be modified varying the ratios R406/R404 and R407/R410:

$$A_v = 2 \cdot \frac{R404}{R406} = 2 \cdot \frac{R407}{R410} \quad \text{if } R404=R407 \text{ and } R406=R410$$



NOTE:

The coil impedance of the Speaker should be higher than 8 ohm @ 1KHz .

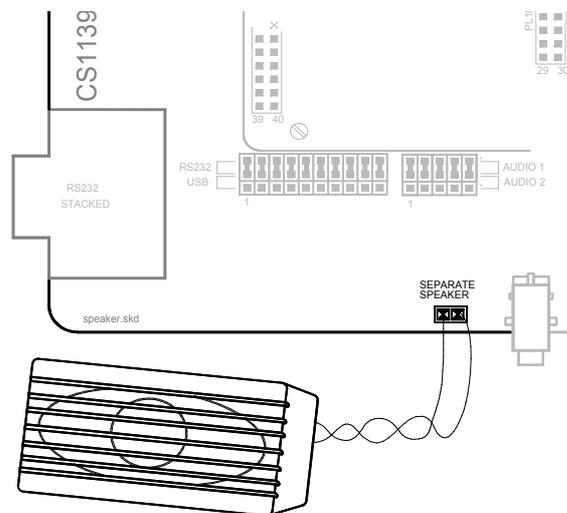


Figure 16: Speaker insertion



9.2.1. Speaker and Stand-alone Microphone

If you are using a Speaker, you can connect a *stand-alone electrete microphone* by a coaxial 2,5mm plug to SO401, respecting the following pin-out.

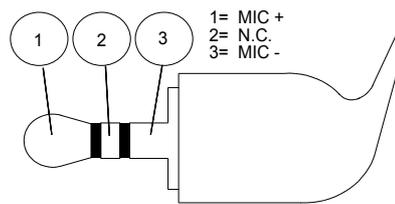


Figure 17: Microphone Plug Connection

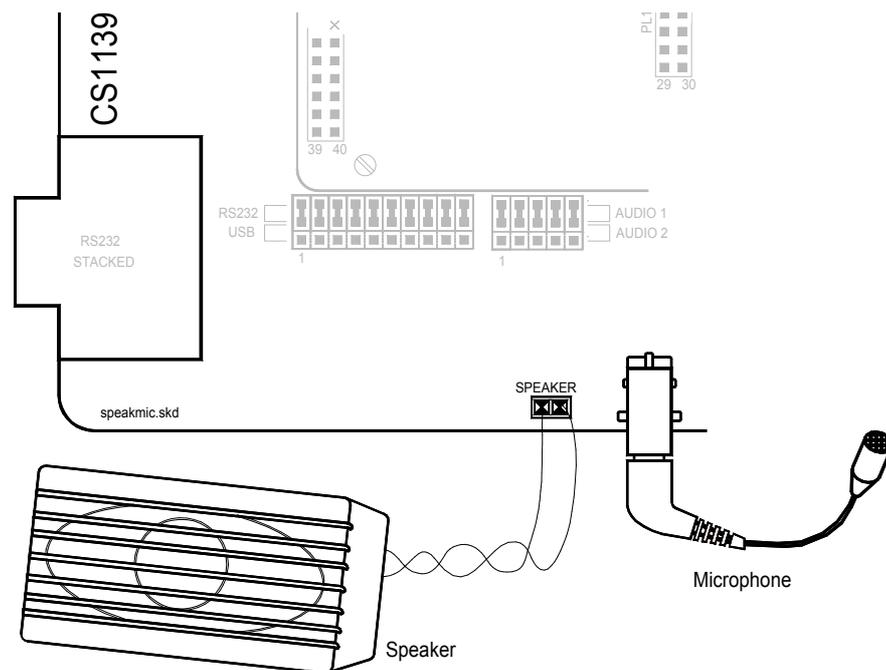


Figure 18: Speaker & Microphone case insertion



9.2.2. Speaker plus Headset

If you have chosen to connect the Speaker to *HIGH AF POWER* output, without having a stand-alone electret microphone, it is also possible to connect a standard *off-the-shelf Headset* to SO401 without any problem, as shown in the figure 18: the AF output signal will be heard on both Speaker and Earpiece.



WARNING:

You must use the right coil impedance depending from audio output you want to use.

If you sort out the LOW AF POWER solution connecting your Headset to SO401, the coil impedance **must be at least 16Ω@1KHz or higher**.

If you sort out the HIGH AF POWER solution connecting your Speaker to PL401, the coil impedance **must be at least 8Ω@1KHz or higher**

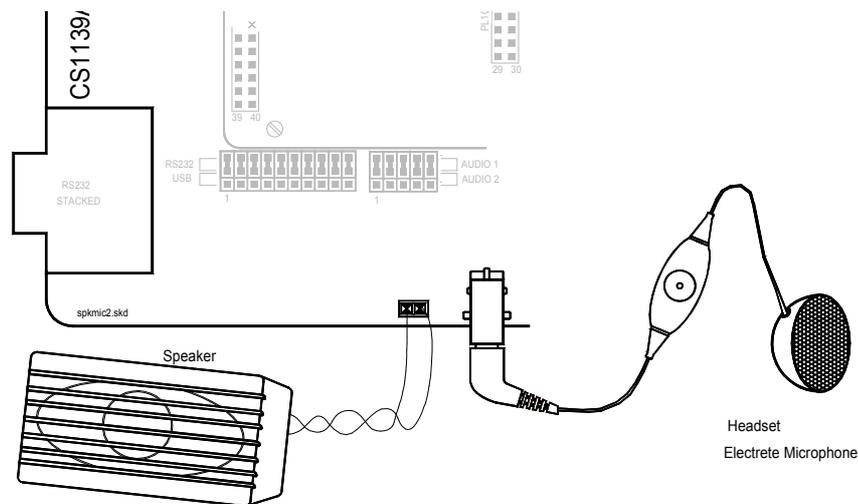


Figure 19: Speaker

Headset insertion

plus



11. Indication and services

11.1. Optical Indicators

11.1.1. Status Led

It is a debug aid that shows information on the network service availability and Call status.

LED status	Device Status
Permanently off	Device off
Fast blinking (period 1s, Ton 0,5s)	Net search / Not registered / turning off
Slow blinking (period 3s, Ton 0,3s)	Registered: full service
Permanently on	A call is active

Table 6: STAT_LED indications

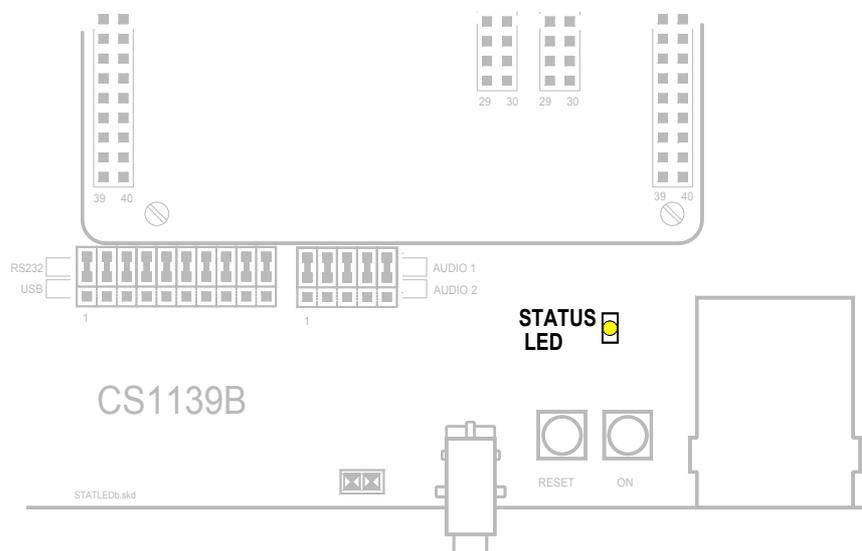


Figure 20: STAT_LED position



11.1.2. CHARGE Led

A yellow LED is used as *Charge In Act* Indicator, as explained in the following table.

CHARGE LED	Meaning
Always on	Start Charge/ Hugh current Charge in act
Always off	Low current Charge in act/Charge stop

Table 7: CHARGE LED indications

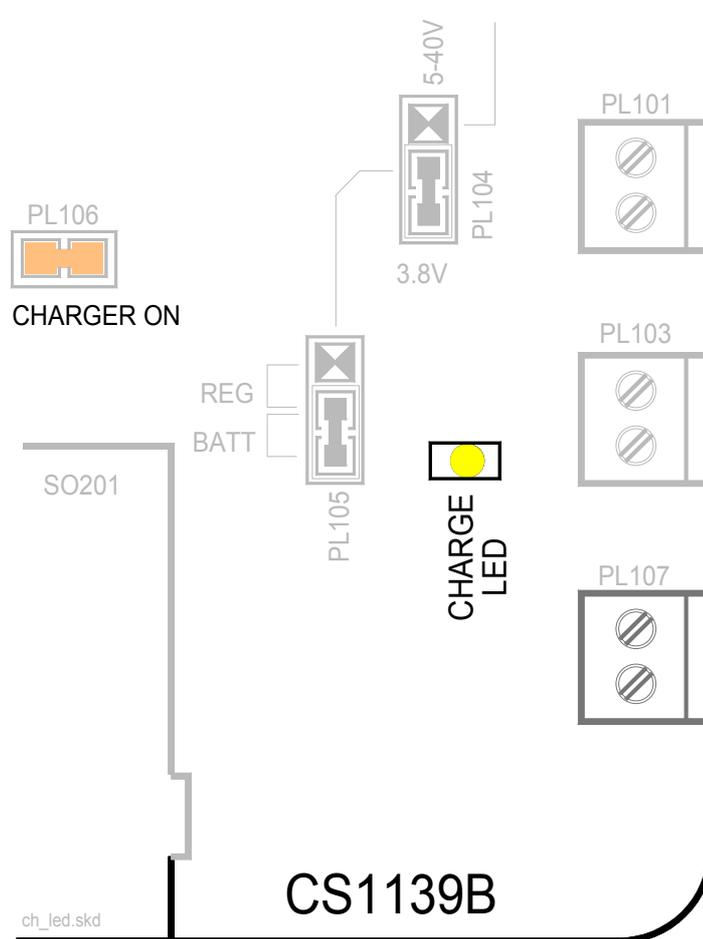


Figure 21: CHARGE LED position



12. Connectors pinout

12.1. Motherboard to Module

The connections between CS1139B and every Telit module Interface Board are made through two *40 pin male* connectors. Theirs pin functions are listed in the following tables.

Pin	Signal	Type	Function
1	NC ¹		
2	TX_Trace	Digital Output	to RS232 or USB level translators
3	RX_Trace	Digital Input	from RS232 or USB level translators
4	IIC_SDA_HW	Digital In/Out	from/to USB level translators
5	GND	DC voltage	Power
6	IIC_SCL_HW	Digital Input	from USB level translators
7	SSC0_CLK	Digital Output	to USB level translators
8	SSC0_MTSR	Digital In/Out	from/to USB level translators
9	SSC0_MRST	Digital In/Out	from/to USB level translators
10	NC		
11	GND	DC voltage	Power
12	GND	DC voltage	Power
13	GND	DC voltage	Power
14	GND	DC voltage	Power
15	C109/DCD	Digital Output	to RS232 or USB level translator
16	C104/RXD	Digital Output	to RS232 or USB level translator
17	C103/TXD	Digital Input	from RS232 or USB level translator
18	C108/DTR	Digital Input	from RS232 or USB level translator
19	GND	DC voltage	Power
20	C107/DSR	Digital Output	to RS232 or USB level translator
21	C105/RTS	Digital Input	from RS232 or USB level translator
22	C106/CTS	Digital Output	to RS232 or USB level translator
23	C125/RING	Digital Output	to RS232 or USB level translator
24	NC		
25	GND	DC voltage	Power
26	GND	DC voltage	Power
27	GND	DC voltage	Power
28	GND	DC voltage	Power
29	EAR_HF+	AC Out Voltage	Audio
30	EAR_MT-	AC Out Voltage	Audio
31	EAR_HF-	AC Out Voltage	Audio

¹ DO NOT CONNECT



13. Module Interface Boards

13.1. Generality

You can use your **EVK2** with see **APPLICABILITY LIST** Telit modules fitted on its own *Interface Board*; all connections are made through *2x40 contacts* connectors.

It's possible to use these *Interface Boards* also in stand-alone mode, inserting the “*not mounted*” components (*related to RESET BUTTON, ON BUTTON, SIM HOLDER and STATUS LED functions*) plus the use of an external *level translator* circuit.

For more information refer to Telit Product Description

13.2. Short Description

The interface boards convert the module connection technology (*board-to-board or BGA soldering*) into a PTH pin connector. The part of the basic interfaces is served by the motherboard, whereas specific interfaces according to the type of the module (*antenna, general purpose inputs/outputs GPIO, ADC/DAC, UART*) are available on the adapter board to connect it to the user applications, extension boards, measurements equipment or other tools.

13.3. Further Accessories for GPS version

When test the GPS products, besides the content of the single kits you need the accessories listed in below table.

SMA/MMCX cable adapter	Module under test	Interface Board	GPS Antenna
1ff1400073tlb		P/N	1rr0100071tlb
1	GM862-GPS	3990250670	1
-	GE863-GPS	3990250671	1
-	GE864-GPS	TBD	1
-	SE867-AGPS	TBD	1
-	HE910	3990250829	1

Table 11. GPS versions further accessories.



14. GM862 Interface

This board allows easily interfacing the module with the EVK2 and testing its functionalities; any version of GM862 can be insert.
No settings are needed.



Figure 23. GM862 Interface Board

14.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone setup*) you have to mount the following missing components:

- RESET Button
- ON Button;
- STATUS LED and its load resistance.



15. GE863 Interface

This board allows easily interfacing the GE863 modules with the EVK2 and testing their functionalities;



Figure 24. GE863 Interface Boards: GE863-QUAD or GE863-SIM (at left) and GE863-GPS (at right)

15.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount also:

- the SIMCARD Holder;
- the RESET Button
- the ON Button;
- the STATUS LED and its load resistance.



15.2. Content of the kits

Please check out the contents of your interface kit; if any of the items is missing, please contact your supplier.

15.2.1. GE863-PY/QUAD version

Description	Quantity
GE863 INTERFACE BOARD	1
2 PIN JUMPER FEMALE CONN	2

Table 13

15.2.2. GE863-GPS version

Description	Quantity
GE863-GPS INTERFACE BOARD	1
2 PIN JUMPER FEMALE CONN	2

Table 14

15.2.3. GE863-SIM version

Description	Quantity
GE863-SIM INTERFACE BOARD	1
2 PIN JUMPER FEMALE CONN	2

Table 15

15.3. Interface connectors

The following connectors are available in any version:

GSM RF connector (*SMA Female*)

2 male connectors (4 pins each one: PL101, PL102) to select the Serial port configuration

2 female connectors (40 pins each one: SO101, SO106) to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines)

2 male connectors (*30 pins each one: PL103, PL104*), on which it is possible to connect external devices like user's application, Telit extension boards, measurements equipment or other tools

15.4. Additional components for GPS version

The following components are available only in GPS version (P/N 3990250671):



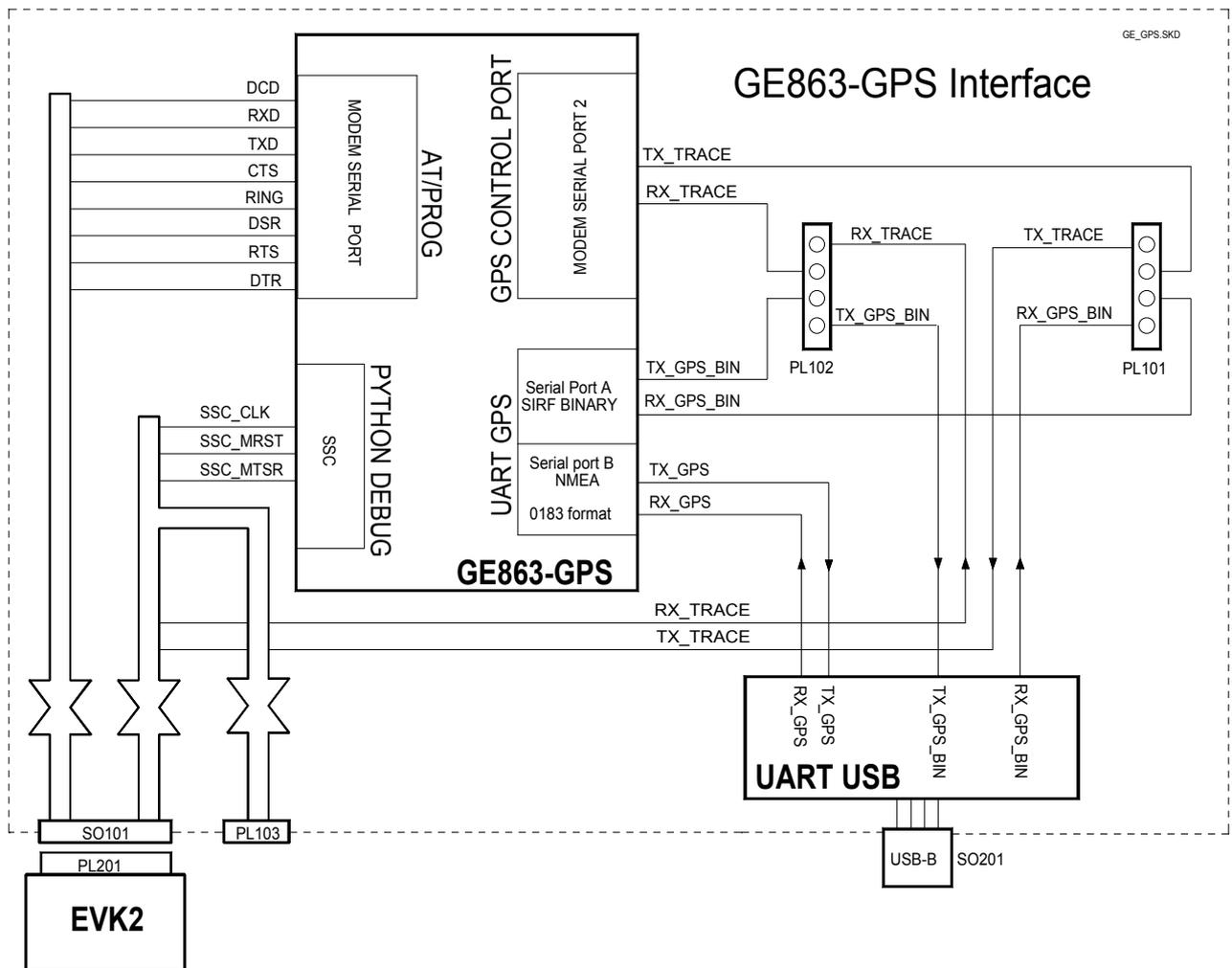


Figure 26: GE863-GPS Serial ports block diagram

15.6. Serial port configuration

To switch the serial lines you must short-circuit the PL101-PL102 connectors by 2 contacts jumpers.

15.6.1. GE863-PY/QUAD

The 2 contacts jumpers have to be fitted between *pin1* & *pin2* of PL101-PL102 connectors. This carries out the *Python Debug Port* on Trace Port of EVK2.



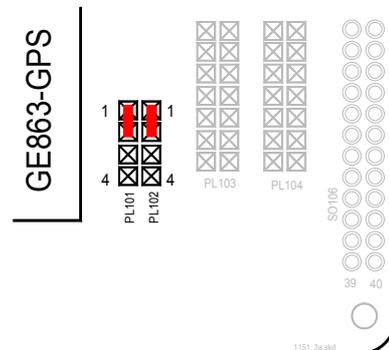


Figure 27: Jumpers setting for GE863-PY/QUAD

15.6.2. GE863 – GPS

The 2 contacts jumpers have to be fitted between *pin2&pin3* or *pin3&pin4* of PL101-PL102 connectors.

“CONTROLLED MODE”

This set the *SIRF Binary* to serial port of the modem. (*Typical application Design*)

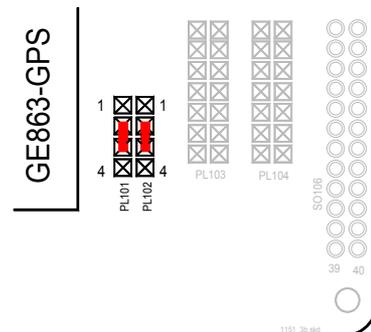


Figure 28: Jumpers setting for SIRF BINARY port connected to MODEM port 2



NOTE: All AT GPS commands are available in this configuration



“SEPARATED SERIAL PORT”

This set the *SIRF Binary* available on the USB connector.

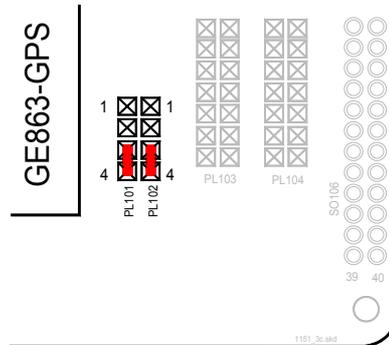


Figure 29: Jumpers setting for SIRF BINARY port available on USB connector



NOTE:

In this configuration some AT GPS commands are not available. Refer to AT Commands Reference User Guide.

15.7. ANTENNA connectors

15.7.1. GPS ANTENNA connector

An active GPS antenna should be connected to SO104; the GPS section provides the DC feeding.



WARNING:

Don't connect a *GSM* antenna on this connector

15.7.2. GSM ANTENNA connector

A GSM antenna should be connected to SO103.

15.7.3. RFU ANTENNA connector

On PCB there is the mounting possibility of a further RF connector (*SO105*): it is related to future implementation.



16. GE864 Interface

This board allows easily interfacing the GE864 modules with the EVK2 and testing their functionalities;
No settings are needed.



Figure 30. GE864 Interface Board

16.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount the following missing components:

- the SIMCARD Holder;
- the RESET Button
- the ON Button;
- the STATUS LED and its load resistance.



16.2. Interface connectors

The following connectors are available:

2 male connectors (30 PTH pins each one: PL102, PL103), by which it is possible to connect external devices, user's application, Telit extension boards, measurements equipment or other tools;

2 female connectors (40 PTH pins each one: SO101, SO102), to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines);

16.3. Content of the kit

Please check out the contents of your interface kit; if any of the items is missing, please contact your supplier.

Description	Quantity
GE864 INTERFACE	1

Table 16



17. GE864-GPS Interface

This board allows testing the functionalities and performance of the GE864-GPS module.

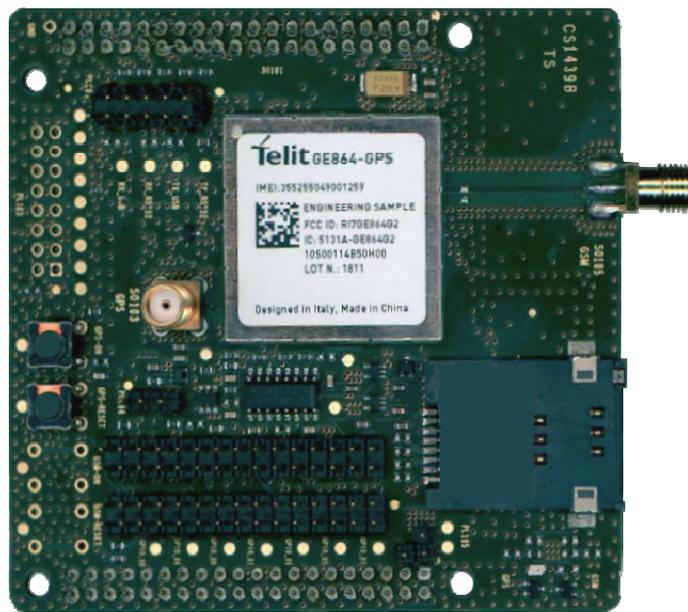


Figure 31. GE864-GPS Interface Board

17.1. Part numbering

This board comes in three different configurations, each characterized by its own part number, depending on the module it contains. In the following paragraphs we will refer to them using an identifier according to the table below:

Part number	Identifier	Module mounted
3990250820	cs1439b	cs1479
3990250821	cs1439b-A	cs1446
3990250822	cs1439b-B	cs1485a

Table 17

17.2. Stand-alone setup



The interface can be used without the EVK2, in this case the following components have to be soldered on the board:
 the GSM-RESET button
 the GSM-ON button
 the STATUS led and its load resistor.

17.3. Interface connectors

The following connectors are available:

- 2 male connectors (30 PTH pins each: PL101 and PL102), to connect external devices, user's applications, Telit extension boards, measurement equipment or other tools; PL102 can also be used to select particular configurations between the GSM module's GPIOs and the GPS module
- 2 female connectors (40 PTH pins each one: SO101 and SO104), to connect the interface to the EVK2 mother board (power supply lines, serial in/out lines, audio in/out lines)
- 1 male connector (3 PTH pins: PL104), to select an enable signal for the external GPS LNA
- 1 male connector (2 PTH pins: PL105), in order to allow inserting an ammeter in series with the supply, in order to monitor the module's current consumption
- 1 GSM RF connector (SMA Female: SO105)
- 1 GPS RF connector (SMA Female: SO103)
- 1 JTAG connector (PL103, not mounted)
- 1 male connector (12 PTH pins: PL201), to select one of the available configurations for the Serial and USB ports.

17.4. Contents of the kit

Please check out the contents of your interface kit. If any of the following items is missing, contact your Telit supplier.

Description	Quantity
GE864-GPS INTERFACE	1
JUMPERS	13

Table 18



17.5. Power supply

The module (but not the whole interface) receives its power supply from PL105: this jumper must always be plugged in, except when a series measurement instrument is needed.

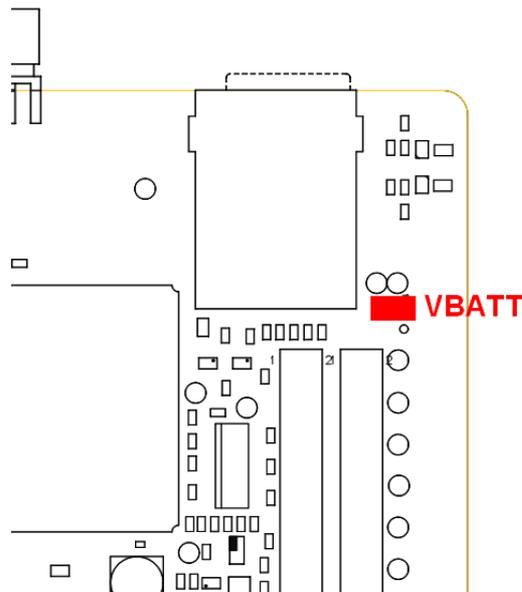


Figure 32. Jumper for VBATT.

17.6. GPS external LNA enable signal

The module contains an internal LNA for the GPS antenna that is enabled by default. The user can though decide to use an external LNA: this option is selected by means of a software command, which puts the internal LNA in a low gain mode and provides an additional signal to enable the external LNA. The interface can provide a bias for the external LNA, and the user can choose whether to enable it by this signal or to leave it always enabled, by means of a jumper on PL104, as shown in the picture below.



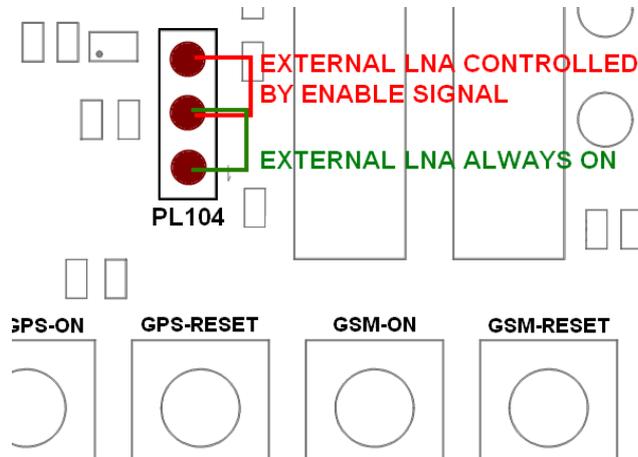


Figure 33. Jumper on PL104.

17.7. Serial port configuration

By means of proper jumper connections on PL201, three different configurations for serial outputs can be selected. These configurations are mutually exclusive.

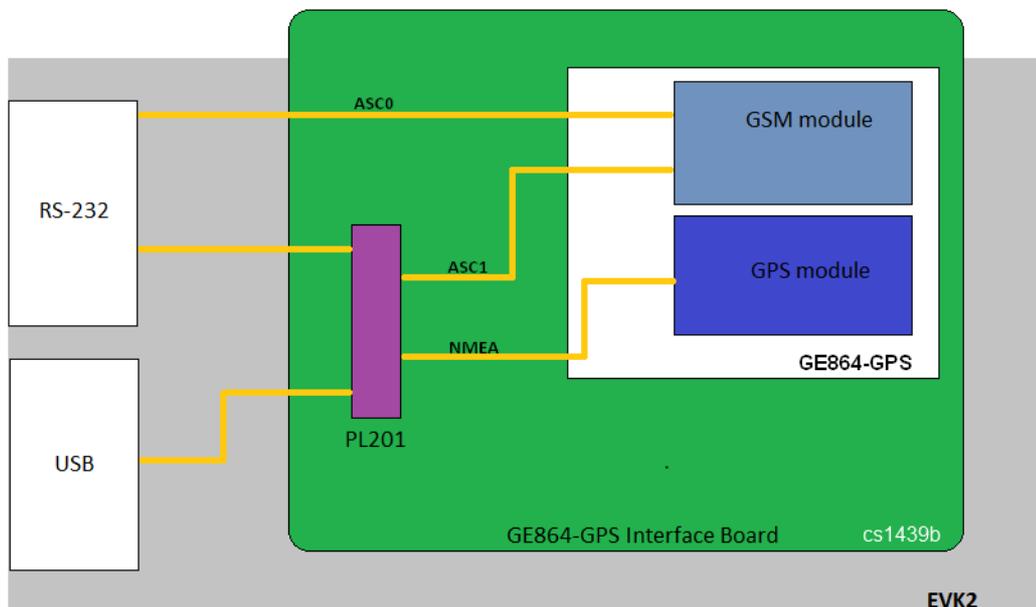


Figure 34. GE864-GPS Interface Board serial connections



17.7.1. ASC1 to RS-232

This configuration connects the ASC1 UART to the Trace serial connector of the EVK2.

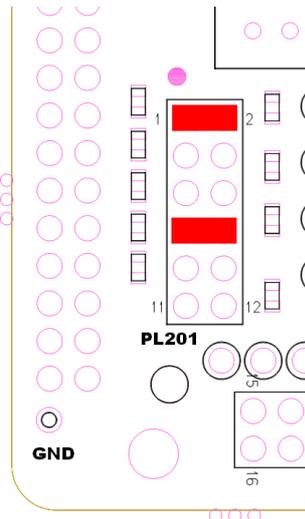


Figure 35. ASC1 to RS-232 (Trace) configuration

17.7.2. GPS to ASC1 (internal host controlling configuration)

This configuration directly connects the host GSM module to the GPS receiver, thus setting the GPS receiver in Controlled Mode.

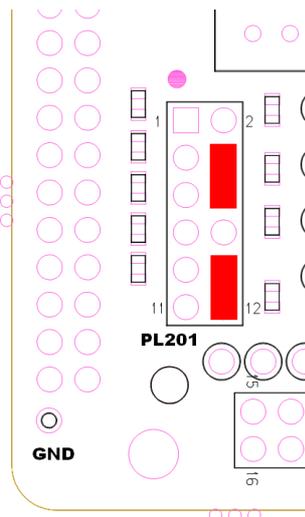


Figure 36. GPS to ASC1 configuration





WARNING:

Other than the ASCII UART, the user must also connect the host module's GPIOs to the corresponding signals of the GPS receiver (as explained in the next paragraphs).

17.7.3. GPS to RS-232 (external host controlling configuration)

This configuration allows sending the GPS output to the Trace serial connector of the EVK2.

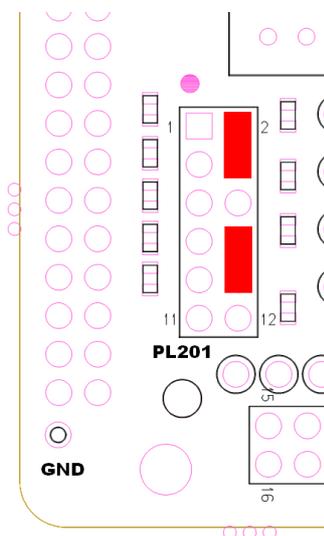


Figure 37. GPS to RS-232 (Trace) configuration

17.7.4. GPS to USB

The NMEA sentences can be redirected to EVK2's USB port by setting PL201 as explained in the Figure 37, i.e. connecting the NMEA line with the RS-232, and at the same time setting the EVK2 serial line on USB Mode, as shown in Paragraph 7.1 of this document.



17.8. GPIO settings

The interface allows choosing among different options for driving the GPS control signals:
Using the GPIOs of the GSM module

Using an external host

Manually controlling the signals by plugging a jumper.

The last option is not available for every signal and every configuration; please refer to the schematics of the interface for more details.

The choice among the options can be made by PL102, as detailed below.

17.8.1. Internal host controlling configuration

The following settings on PL101 and PL102 allow selecting the internal host configuration.
Two different cases have to be considered:

cs1439b-A

cs1439b and cs1439b-B

Refer to the beginning of this chapter for the correspondence between board part number and mounting options.

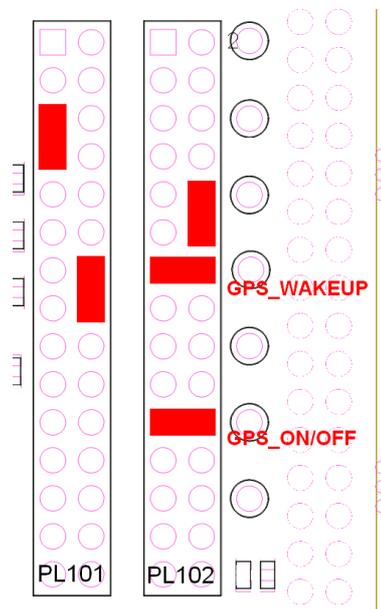


Figure 38. Settings for PL101 and PL102: internal host,cs1439b-A



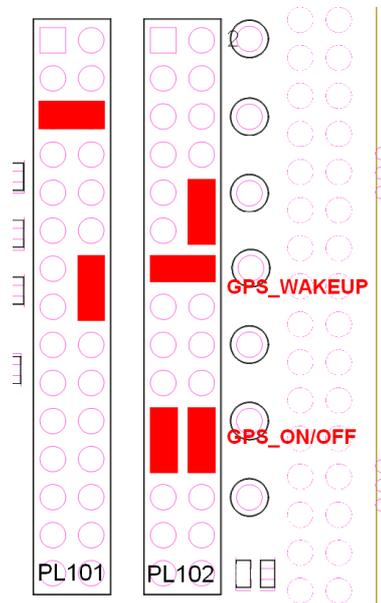


Figure 39. Settings for PL101 and PL102: internal host, **cs1439b** and **cs1439b-B**

Note that jumper settings are detailed in the pictures above.

The signal connected to **pin10** of PL102 is no longer available, and it is recommended to tie it to ground by plugging a jumper between **pin10 & pin12** of PL102.

17.8.2. External host controlling configuration

When an external host is used to drive the GPS module, two different cases have to be considered:

cs1439b-A
cs1439b and **cs1439b-B**

Refer to the beginning of this chapter for the correspondence between board part number and mounting options.

Two jumpers must be plugged, between **pin14 & pin16** of PL101 and **pin10 & pin12** of PL102. Additionally, the host GPIOs must be connected to PL102 as shown in the pictures below.

Note that in this configuration the signal on **pin10** of PL102 is no longer available and it must be connected to ground by plugging a jumper on **pin10 & pin12** of PL102.



17.9. Antenna connectors

17.9.1. GSM antenna connector

A GSM antenna must be connected to SO105.

17.9.2. GPS antenna connector

A GPS antenna must be connected to SO103.



WARNING:

Don't connect a *GSM* antenna on this connector



18. GE865 – SE867 AGPS Interface

This board allows testing the functionalities and performance of the GE865 and SE867 modules interconnected according to Telit guidelines.

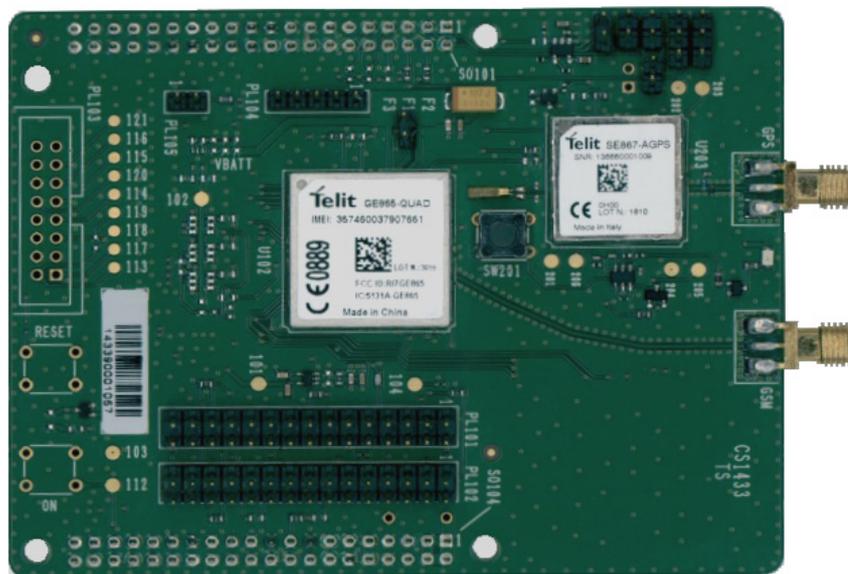


Fig.38. GE865/SE867-AGPS Interface Board

18.1. Stand-alone setup

The interface can be used without the EVK2, in this case the following components have to be soldered on the board:

- the RESET button
- the ON button
- the STATUS led and its load resistor.



18.2. Interface connectors

The following connectors are available:

- 2 male connectors (30 PTH pins each: PL101 and PL102), to connect external devices, user's applications, Telit extension boards, measurement equipment or other tools
- 2 female connectors (40 PTH pins each one: SO101 and SO104), to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines)
- 1 male connector (5 PTH pins: PL104), which makes available in one place all GPIOs related to PCM
- 1 GSM RF connector (SMA Female: SO103)
- 1 GPS RF connector (SMA Female: SO201)
- 1 JTAG connector (PL103, not mounted)
- 2 male connectors (2 PTH pins: PL203, PL205, not mounted), which allow to manually control some functions, therefore freeing the corresponding GPIOs for other uses
- 1 male connector (2 PTH pins: PL204) by means of which the user can manually disable VIN_GPS
- 4 male connectors (2 PTH pins: PL202, PL207; 3 PTH pins: PL201, PL206) to select one particular UART connection configuration.

18.3. Contents of the kit

Please check out the contents of your interface kit. If any of the following items is missing, contact your Telit supplier.

Description	Quantity
GE865/SE867-AGPS INTERFACE	1
JUMPERS	5

Table 19



18.3.2. GSM to Trace

This configuration is realized by plugging a female jumper connector on **pin2 & pin3** of both PL201 and PL206. It allows redirecting the GE865 UART to the EVK2 RS-232 Trace. No connection with the SE867 UART is present.

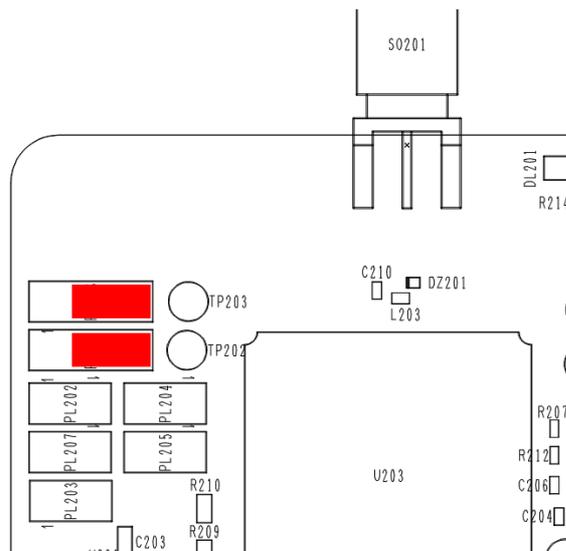


Figure 44. Jumpers in GSM to Trace configuration.



19. GE865 – JF2 Interface

This board allows testing the functionalities and performance of the GE865 and JF2 modules interconnected according to Telit guidelines.

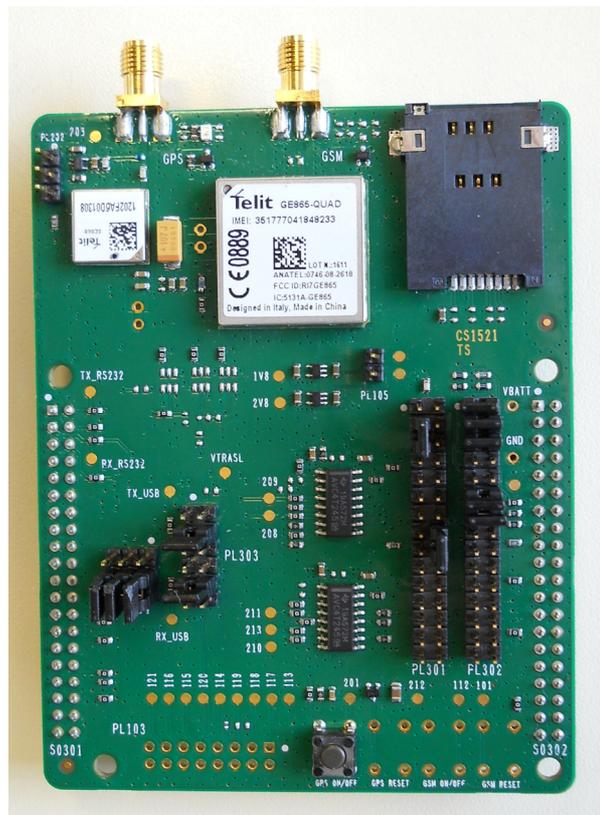


Figure 46. GE865/JF2 Interface Board.

19.1. Stand-alone setup

The interface can be used without EVK2 and in this case the following components have to be soldered to the board:

- RESET button
- GSM ON/OFF button
- GSM STATUS led and its load resistor



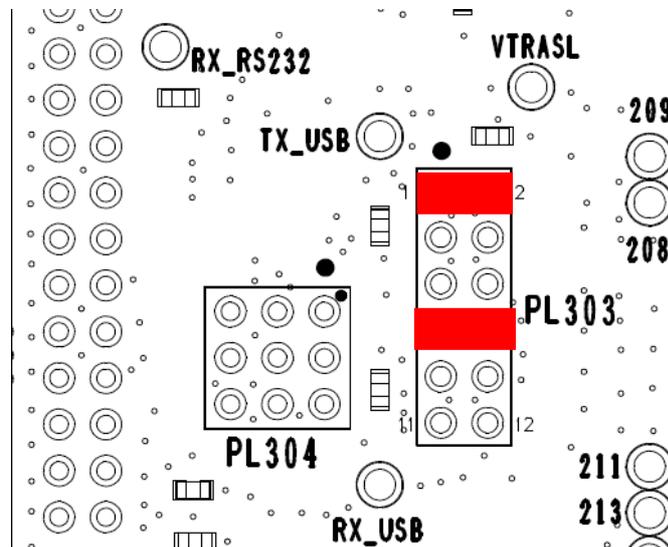


Figure 50.GSM to RS-232 (Trace) configuration

19.8. GPS to Trace

This configuration allows sending the GPS output to the Trace serial connector of EVK2 by means of transceivers.

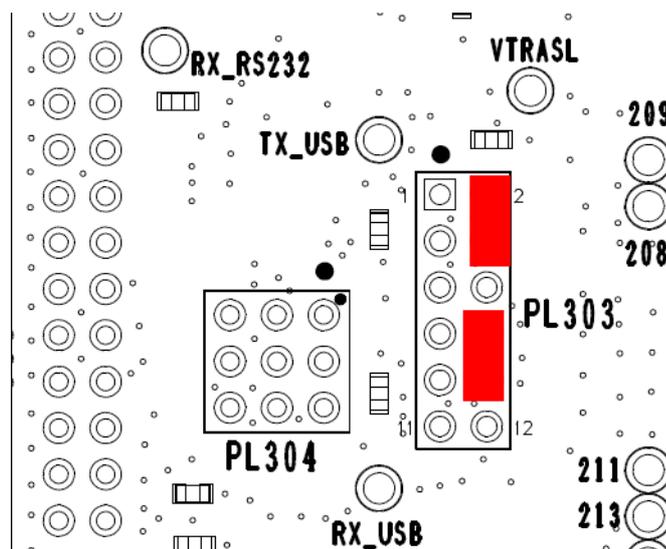


Figure 51.GPS to RS232 (Trace)



19.9. GSM to USB

This configuration connects the GSM to the USB connector of the EVK2.

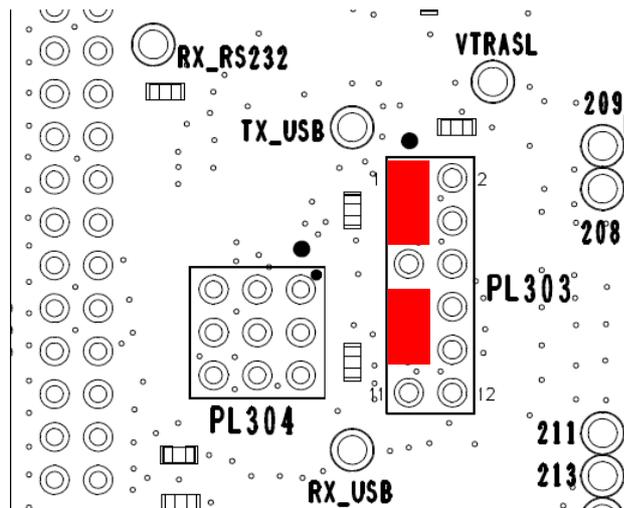


Figure 52.GSM to USB

19.10. GPS to USB

The NMEA sentences can be redirected to the EVK2's USB port by setting the PL303 as explained in the Figure 53, i.e. connecting the NMEA line with the RS-232, and at the same time setting the EVK2 serial line on USB mode, as showed in Paragraph 7.1 of this document.

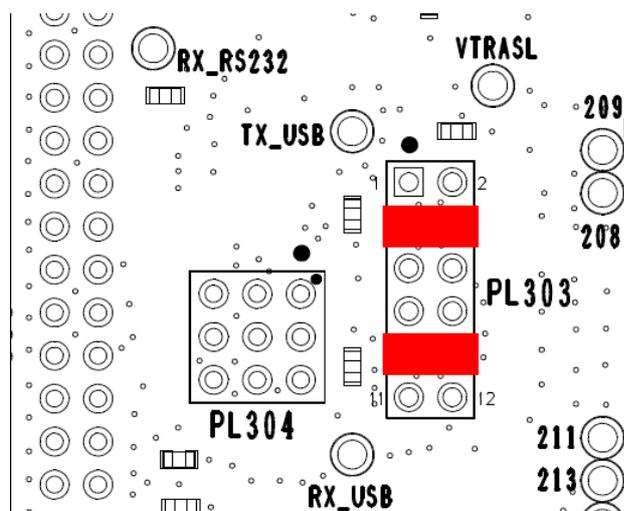


Figure 53.GPS to USB



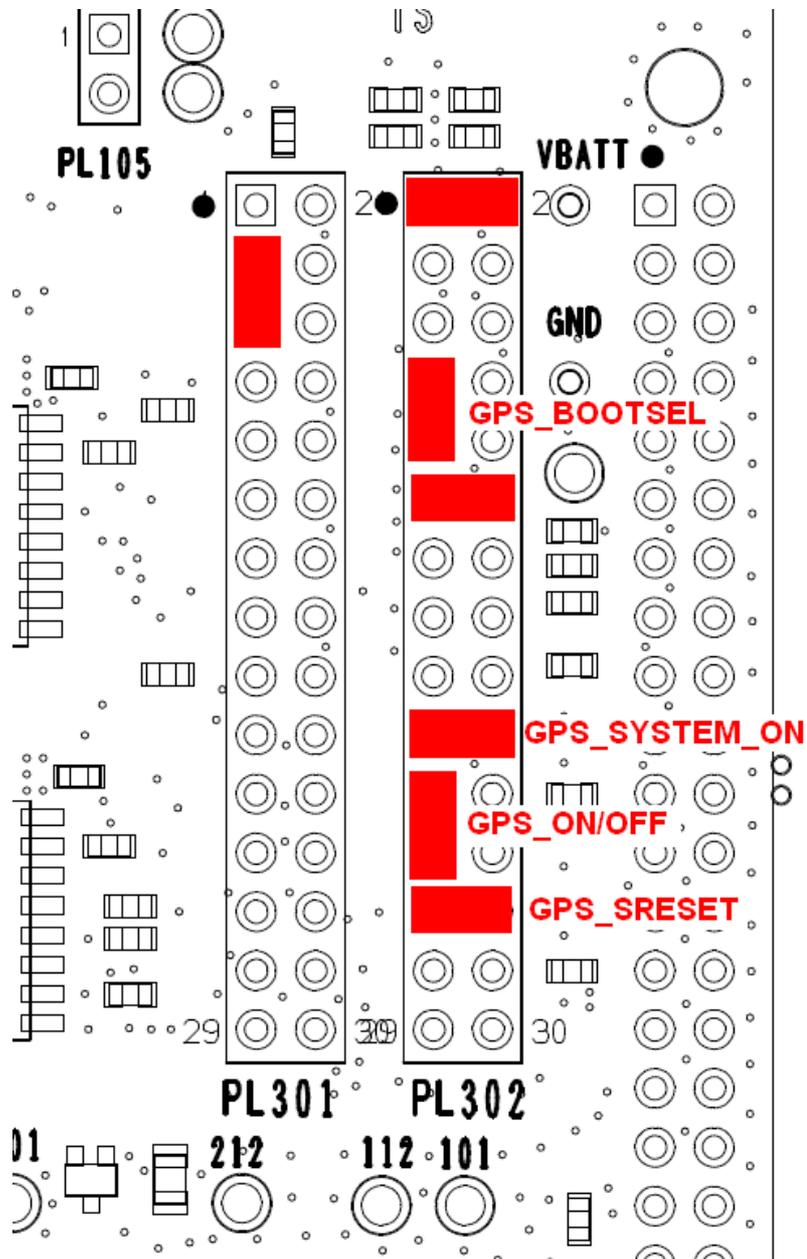


Figure 55. Settings for PL301 and PL302: internal host controlling

19.12.2. External host controlling configuration

The following settings on PL301 and PL302 allow selecting the external host configuration.



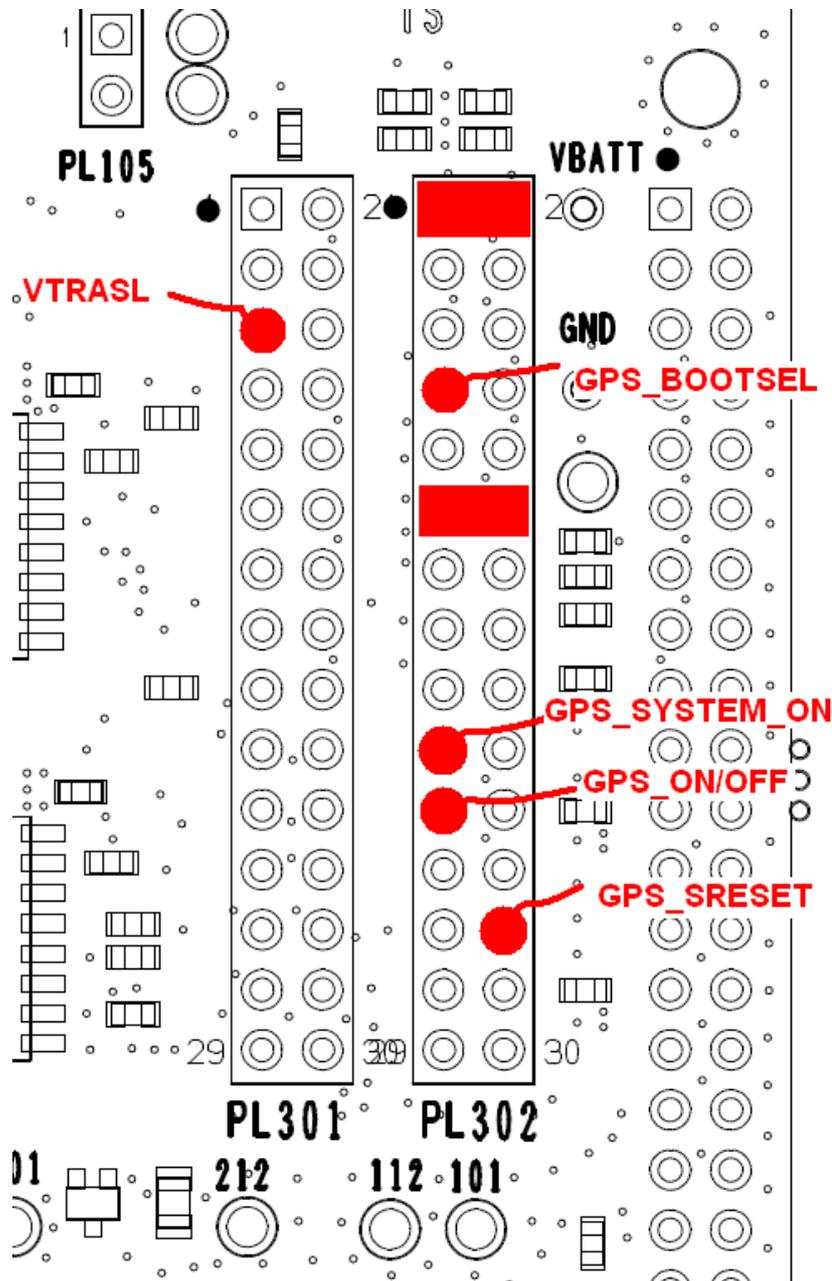


Figure 56.Settings for PL301 and PL302: external host.

19.13. GPS serial interface setting

GPS module has the capability to operate in serial UART mode, SPI mode or I2C mode depending upon how the JF2 GPIO6 and GPIO7 pins are strapped at power up. In the table below is shown the configuration set in PL302 to select the type of serial interface:



MODE	GPS GPIO n.6	GPS GPIO n.7
UART	1-2 pins shorted in PL302	Float
I2C	Float	15-16 pins shorted in PL302
SPI	Float	Float

Table 21

If you connect JF2 module with GE865 module you must use UART configuration. Using an external host, if you want use I2C configuration, you need to plugging on PL302 two jumpers in positions 3-4 and 5-6 in order to connect pull-ups in SDA and SCL lines.

19.14. MEMS Sensor/EEPROM Interface

The DR I2C port of JF2 is used for connecting to MEMS sensors, such as accelerometer or magnetometer.

	GPS GPIO n.4	GPS GPIO n.0	GPS GPIO n.1
With sensor	Float	3-4 pins shorted in PL302	5-6 pins shorted in PL302
Without sensor	13-14 pins shorted in PL302	Float	Float

Table 22

19.15. GPS power-on management

JF2 module power on/off can be controlled by an external host signal or it is possible to have the automatic module transition to the full power state by tying the SYSTEM-ON output to the ON-OFF input. The table below shows how to set these two options:

	Power Mode
10-12 and 19-21 pins shorted in PL302	Full power mode
11-12 pins shorted in PL302	ON/OFF controlled by an external host signal

Table 23

19.16. Antenna connectors

19.16.1. GSM antenna connector

A GSM antenna must be connected to SO105.



19.16.2. GPS antenna connector

A GPS antenna must be connected to SO201.



WARNING:

Don't connect a *GSM* antenna on the GPS antenna connector



20. GC864 Interface

This board allows easily interfacing the module with the EVK2 and testing its functionalities; any version of GC864 can be inserted.
No settings are needed.

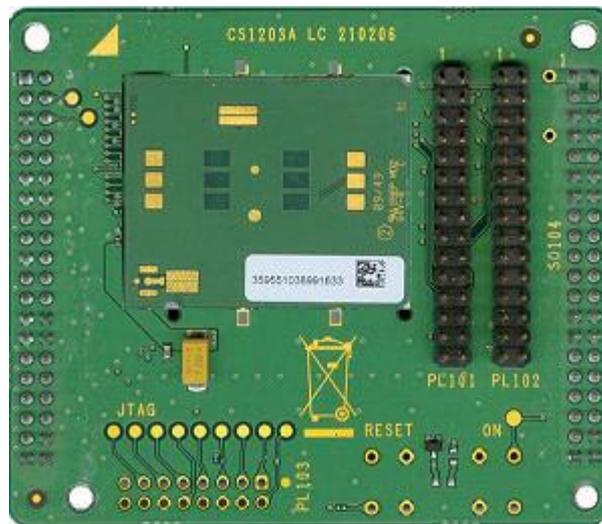


Figure 57. GC864 Interface Board

20.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount also:

- the SIMCARD Holder;
- the RESET Button
- the ON Button;
- the STATUS LED and its load resistance.



22. GE865 Interface

This board allows easily interfacing the GE865 modules with the EVK2 and testing their functionalities;
No settings are needed.



Figure 59. GE864 Interface Board

22.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount the following missing components:

- the RESET Button
- the ON Button;
- the STATUS LED and its load resistance.



23. GL865 Interface

This board allows easily interfacing the GL865 modules with the EVK2 and testing their functionalities;
No settings are needed.



Figure 60. GL865 Interface Board

23.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount the following missing components:

- the RESET Button
- the ON Button;
- the STATUS LED and its load resistance.



24. UC864 family Interface

This board allows easily interfacing the UC864/CC864 modules with the EVK2 and testing their functionalities;

No settings are needed.

For more information please refer to 1vv0300771 (UC864/CC864 Interface Board User Guide)



Figure 61. UC864 Interface Board

24.1. Stand-alone setup

If you need to use the interface out of EVK2 (*Stand-alone* setup) you have to mount the following missing components:

- the RESET Button
- the ON Button;



25. HE910 family Interface

This board allows easily interfacing the HE910 modules with the EVK2 and testing their functionalities;
No settings are needed.

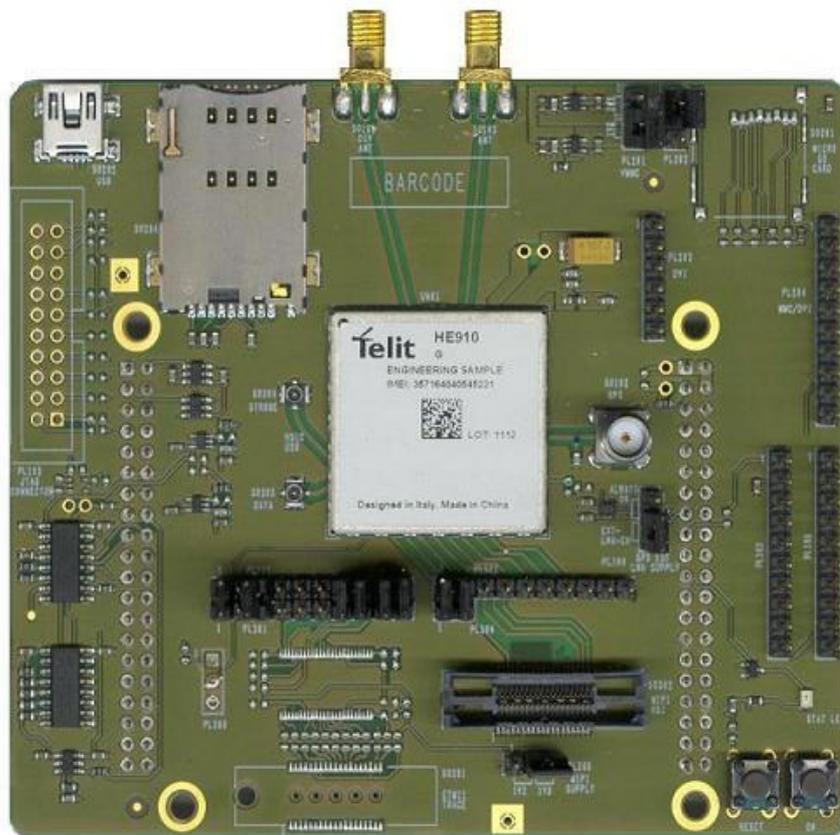


Figure 62. HE910 Interface Board



25.1. Stand-alone setup

The Jumper setting and the assembled components are ready permitting the standalone use.

25.2. Interface connectors

The following connectors are available:

2 female connectors (40 PTH pins each one: SO101, SO104), to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines);

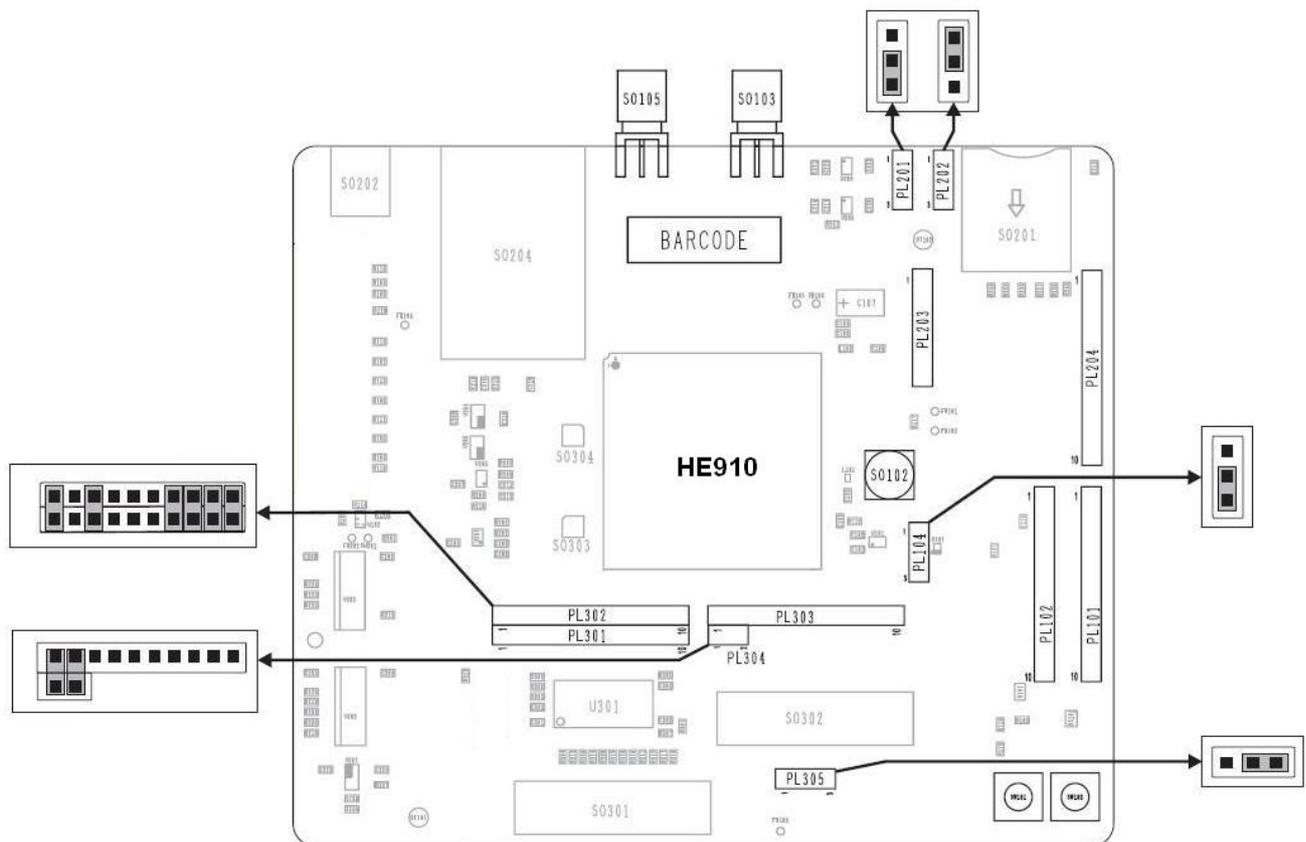
1 USB connector (SO202) related to the HE910 USB 2.0 port.

3 RF connectors for GSM/UMTS Antenna (SO103), Receiver Diversity Antenna (SO105) and GPS Antenna (SO102)

1 SIM Holder (SO204)

A group of Male connectors (PL301, PL302, PL303, PL304, PL102, PL203, PL204) that provide the additional signals (i.e. GPIOs) and could select the functions by Jumper setting (see the related document section/schematic for this).

The following picture is showing the connector's positions and the default settings for the Jumpers.



25.4. Expansion Connectors

25.4.1. PL301/PL302

The connectors are carrying the following signals:

PL301		
Pin#	Pin Name	Description
1	STAT_LED	Status Led
2	NC	
3	RESERVED	
4	NC	
5	NC	
6	NC	
7	C125/RING	
8	C107/DSR	
9	C109/DCD	
10	RESERVED	

PL302		
Pin#	Pin Name	Description
1	GPIO_01	Default function is Status Led
2	GPIO_02	
3	GPIO_03	
4	GPIO_04	
5	GPIO_06	
6	GPIO_07	
7	C125/RING	Jumper to EVK2
8	C107/DSR	Jumper to EVK2
9	C109/DCD	Jumper to EVK2
10	RESERVED	Jumper to EVK2



25.4.2. PL303/PL304/PL305

The connectors are carrying the following signals:

PL303		
Pin#	Pin Name	Description
1	TX_AUX	Auxiliary serial port (TX)
2	RX_AUX	Auxiliary serial port (RX)
3	SPI_CLK	SPI
4	SPI_MRDY	SPI
5	SPI_SRDY	SPI
6	GPIO_08	
7	GPIO_09	
8	GPIO_10	
9	RESERVED	
10	NC	

PL304		
Pin#	Pin Name	Description
1	TX_AUX	Jumper to EVK2
2	RX_AUX	Jumper to EVK2

PL305		
Pin#	Pin Name	Description
1	RESERVED	-
2	VDD_IO	Input pin for the bus supply
3	VIO_1V8	VIO supply at 1.8V



25.4.3. PL102

The connector is providing the following signals:

PL102		
Pin#	Pin Name	Description
1	VAUX/PWRMON	Auxiliary supply / Power On Indicator
2	VRTC	RTC Backup
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	GPIO_05	GPIO
7	RESERVED	
8	RESERVED	
9	RESERVED	
10	GND	

25.4.4. ON_OFF & UNCONDITIONAL SHUTDOWN BUTTONS

The 2 Buttons present on the Interface should be used to control the Power ON and UNCONDITIONAL SHUTDOWN lines of the module.

The 2 Buttons on the EVK2 could not be used with the HE910 Interface.

25.5. Content of the kit

Please check out the contents of your interface kit; if any of the items is missing, please contact your supplier.

Description	Quantity
HE910 INTERFACE	1
MINI USB CABLE	1



26.1. Stand-alone setup

The Jumper setting and the assembled components are ready permitting the standalone use.

26.2. Interface connectors

The following connectors are available:

2 female connectors (40 PTH pins each one: SO101, SO104), to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines);

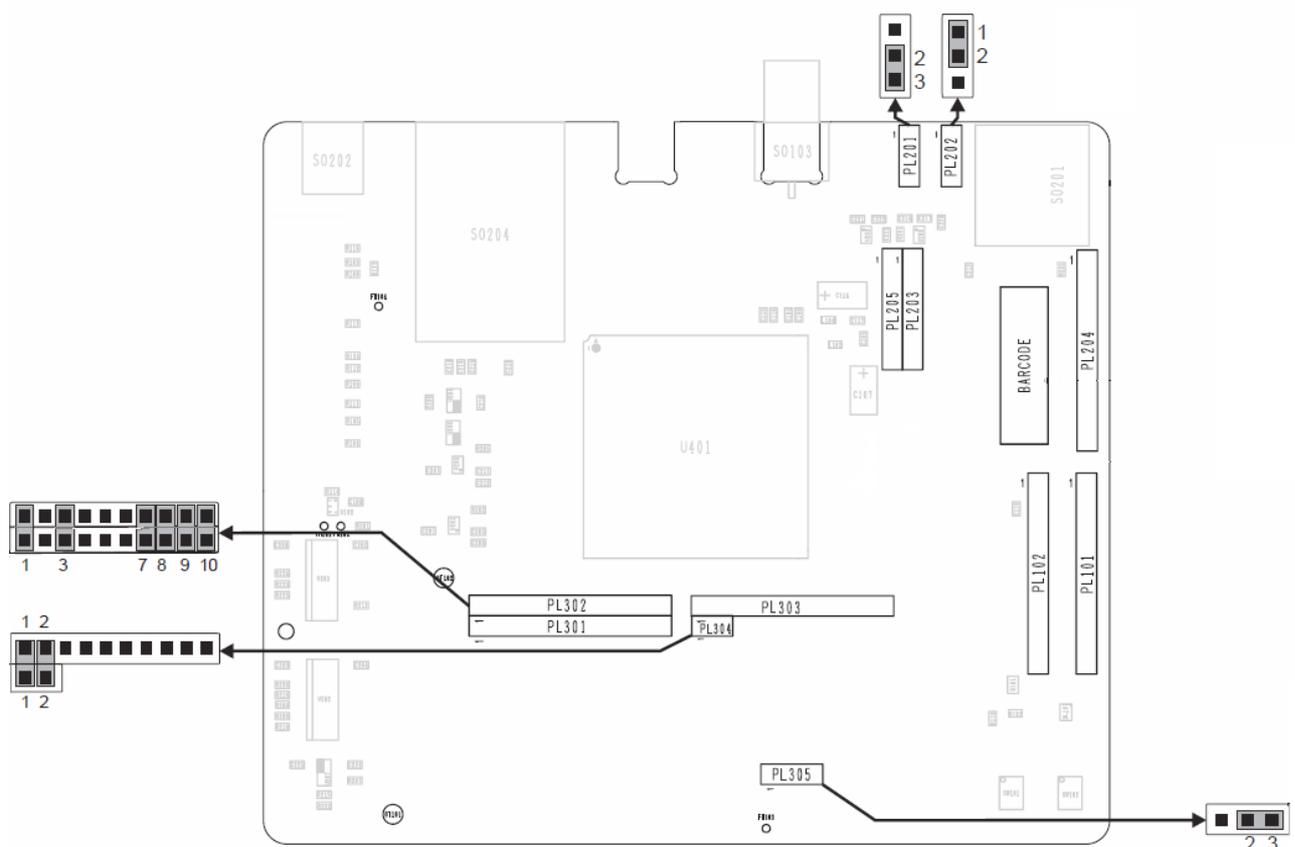
1 USB connector (SO202) related to the GE910 USB 2.0 port.

1 RF connectors for GSM/GPRS Antenna (SO103),

1 SIM Holder (SO204)

A group of Male connectors (PL301, PL302, PL303, PL304, PL102, PL203, PL204, PL205) that provide the additional signals (i.e. GPIOs) and could select the functions by Jumper setting (see the related document section/schematic for this).

The following picture is showing the connector's positions and the default settings for the Jumpers.



26.3. Antenna connectors

26.3.1. GSM/GPRS Antenna connector

A GSM/GPRS compatible antenna (Refer to the product's HW user guide) antenna must be connected to SO103.

26.4. Expansion Connectors

26.4.1. PL301/PL302

The connectors are carrying the following signals:

PL301		
Pin#	Pin Name	Description
1	STAT_LED	Status Led
2	NC	
3	RESERVED	
4	NC	
5	NC	
6	NC	
7	C125/RING	
8	C107/DSR	
9	C109/DCD	
10	RESERVED	

PL302		
Pin#	Pin Name	Description
1	GPIO_01	Default function is Status Led
2	GPIO_02	
3	GPIO_03	
4	GPIO_04	
5	GPIO_06	
6	GPIO_07	
7	C125/RING	Jumper to EVK2
8	C107/DSR	Jumper to EVK2
9	C109/DCD	Jumper to EVK2
10	RESERVED	Jumper to EVK2



26.4.2. PL303/PL304

The connectors are carrying the following signals:

PL303		
Pin#	Pin Name	Description
1	TX_AUX	Auxiliary serial port (TX)
2	RX_AUX	Auxiliary serial port (RX)
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	GPIO_08	
7	GPIO_09	
8	GPIO_10	
9	RESERVED	
10	NC	

PL304		
Pin#	Pin Name	Description
1	TX_AUX	Jumper to EVK2
2	RX_AUX	Jumper to EVK2

26.4.3. PL102

The connector is providing the following signals:

PL102		
Pin#	Pin Name	Description
1	VAUX/PWRMON	Auxiliary supply / Power On Indicator
2	VRTC	RTC Backup
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	GPIO_05	GPIO
7	RESERVED	
8	RESERVED	
9	RESERVED	
10	GND	



27. DE910 family Interface

This board allows easily interfacing the DE910 modules with the EVK2 and testing their functionalities;
No settings are needed.



Figure 64. DE910 Interface Board



27.1. Stand-alone setup

The Jumper setting and the assembled components are ready permitting the standalone use.

27.2. Interface connectors

The following connectors are available:

2 female connectors (40 PTH pins each one: SO101, SO104), to connect the interface to the EVK2 mother board circuits (power supply lines, serial in/out lines, audio in/out lines);

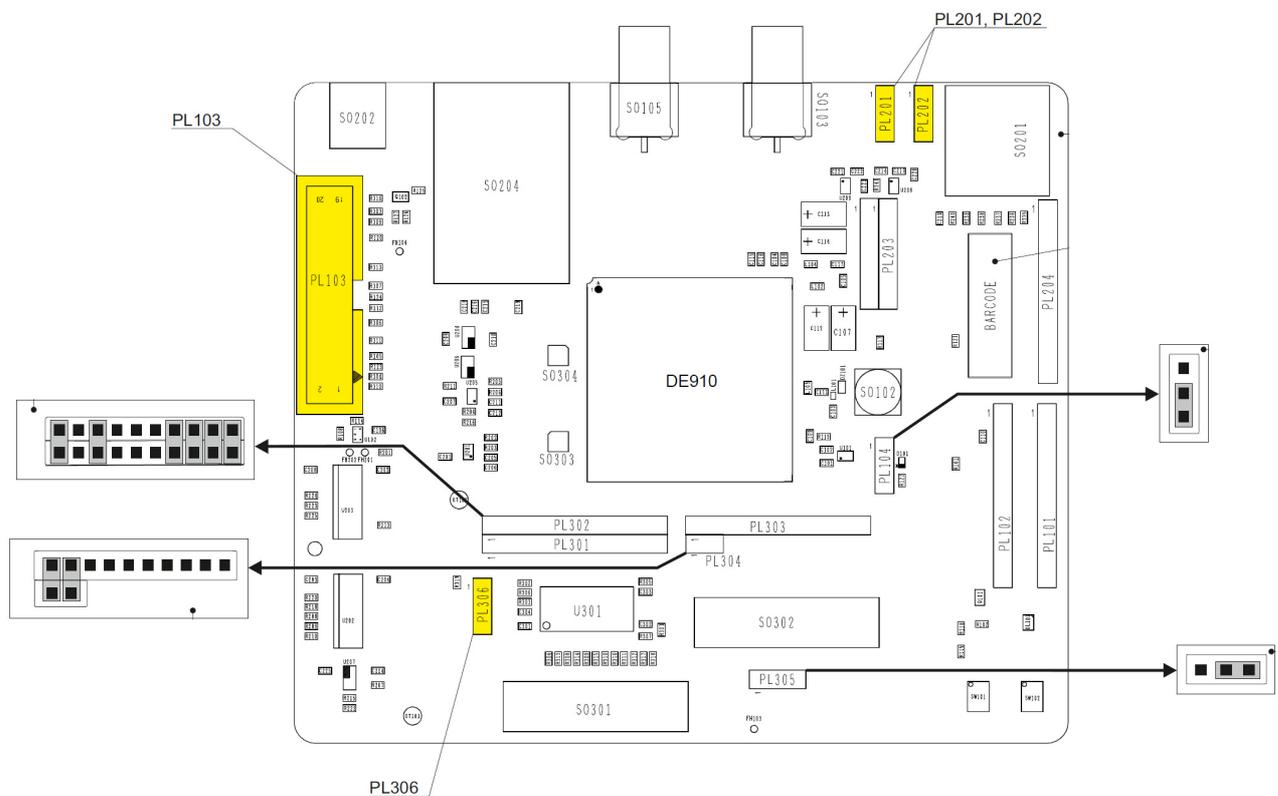
1 USB connector (SO202) related to the DE910 USB 2.0 port.

3 RF connectors for CDMA Antenna (SO103), Receiver Diversity Antenna (SO105) and GPS Antenna (SO102)

1 RUIM Holder (SO204)

A group of Male connectors (PL301, PL302, PL303, PL304, PL102, PL203, PL204) that provide the additional signals (i.e. GPIOs) and could select the functions by Jumper setting (see the related document section/schematic for this).

The following picture is showing the connector's positions and the default settings for the Jumpers.



27.4. Expansion Connectors

27.4.1. PL301/PL302

The connectors are carrying the following signals:

PL301		
Pin#	Pin Name	Description
1	STAT_LED	Status Led
2	NC	
3	RESERVED	
4	NC	
5	NC	
6	NC	
7	C125/RING	
8	C107/DSR	
9	C109/DCD	
10	RESERVED	

PL302		
Pin#	Pin Name	Description
1	GPIO_01	Default function is Status Led
2	GPIO_02	
3	GPIO_03	
4	GPIO_04	
5	GPIO_06	
6	GPIO_07	
7	C125/RING	Jumper to EVK2
8	C107/DSR	Jumper to EVK2
9	C109/DCD	Jumper to EVK2
10	RESERVED	Jumper to EVK2





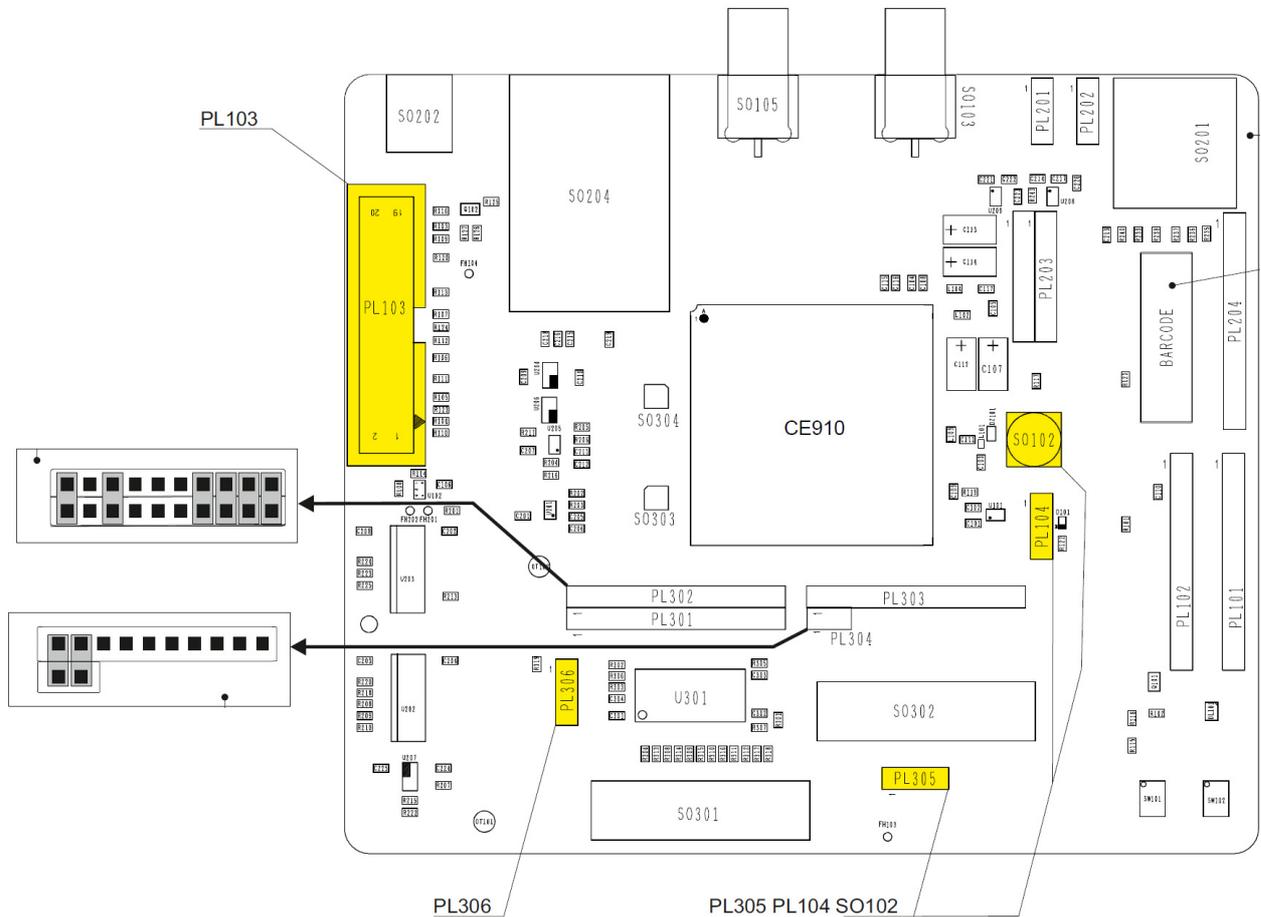
28. CE910 family Interface

This board allows easily interfacing the CE910 modules with the EVK2 and testing their functionalities;
No settings are needed.



Figure 65. CE910 Interface Board





28.3. Antenna connectors

28.3.1. CDMA Antenna connector

A CDMA compatible antenna (Refer to the product's HW user guide) must be connected to SO103.

28.4. Expansion Connectors

28.4.1. PL301/PL302

The connectors are carrying the following signals:

PL301		
Pin#	Pin Name	Description
1	STAT_LED	Status Led
2	NC	



3	RESERVED	
4	NC	
5	NC	
6	NC	
7	C125/RING	
8	C107/DSR	
9	C109/DCD	
10	RESERVED	

PL302		
Pin#	Pin Name	Description
1	GPIO_01	Default function is Status Led
2	GPIO_02	
3	GPIO_03	
4	GPIO_04	
5	GPIO_06	
6	GPIO_07	
7	C125/RING	Jumper to EVK2
8	C107/DSR	Jumper to EVK2
9	C109/DCD	Jumper to EVK2
10	RESERVED	Jumper to EVK2

28.4.2. PL303/PL304

The connectors are carrying the following signals:

PL303		
Pin#	Pin Name	Description
1	TX_AUX	Auxiliary serial port (TX)
2	RX_AUX	Auxiliary serial port (RX)
3	RESERVED	
4	RESERVED	
5	RESERVED	
6	GPIO_08	
7	GPIO_09	
8	GPIO_10	
9	RESERVED	
10	NC	





29. GPIO ports

A certain number of GPIO ports (General Purpose Input/Output) are available on every Telit Module Interface Board, giving you the possibility to drive digital devices and report their own status.

Some of these ports are dedicated. *Refer to Telit Product Description and Telit Hardware User Guide* to have all information about characteristics of every GPIO port.

You can consult the following paragraphs to see the displacement of GPIO on every Interface Board.



Note on p/n 3990250684 and p/n 3990250685 GE863
(Refer to schematic diagrams *30276SE11151A-C*, *30276SE11151A-D*)

If you use these interfaces the following two pins of PL104 connector assume different functions, and precisely:

Pin 20 = ADC_IN2
Pin 21 = ADC_IN3
Pin 26 = N.C



29.1.3. GE863 Interfaces (p/n 3990250684 -3990250685-3990250703)

Refer to schematic diagrams 3\0276SE11151A-C; 30276SE11151A-D; 30276SE11151A-G

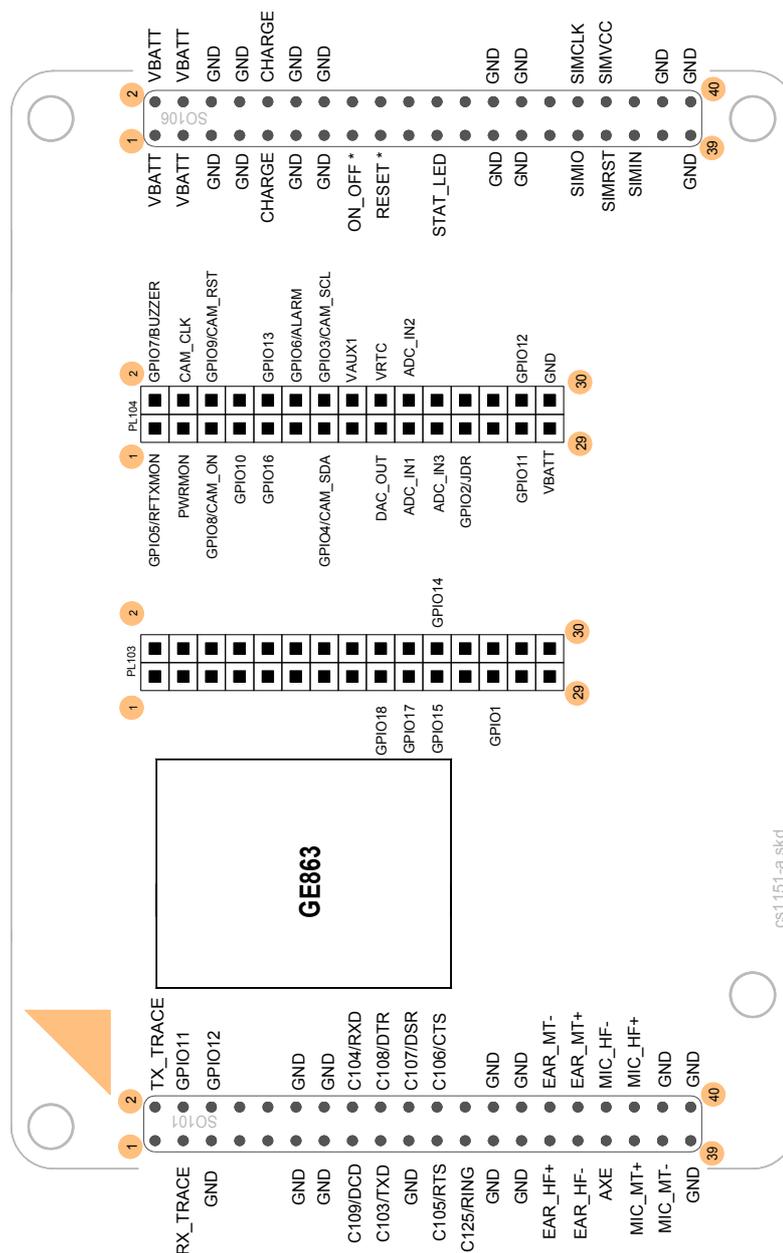


Figure 65: Position of GPIO ports on GE863 interfaces

29.1.4. GE864 Interface (p/n 3990250672)

(Refer to schematic diagram 30276SE1152B)



29.1.7. GC864 Interface

(Refer to schematic diagram 30276SE111203B)

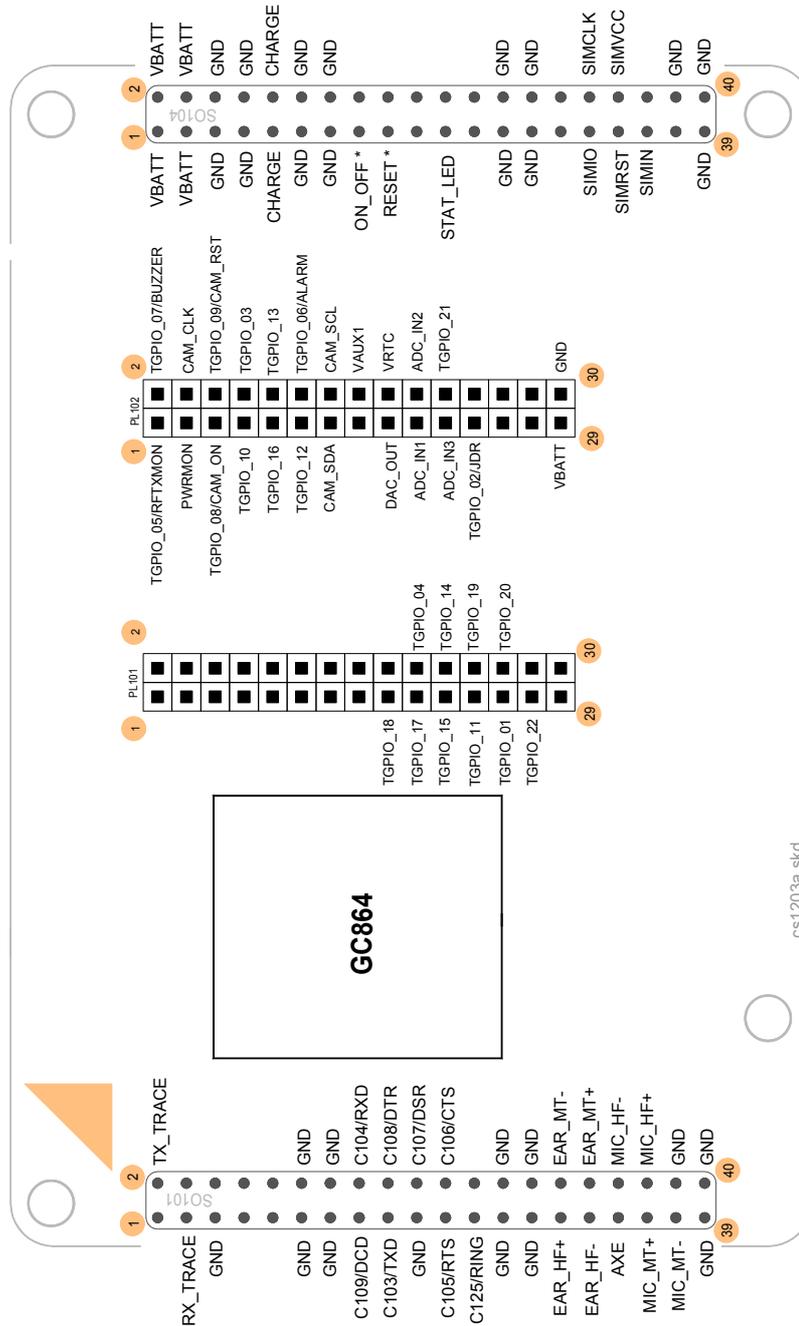


Figure 69. Position of GPIO ports on GC864 interface



29.1.9. UC864 Interface

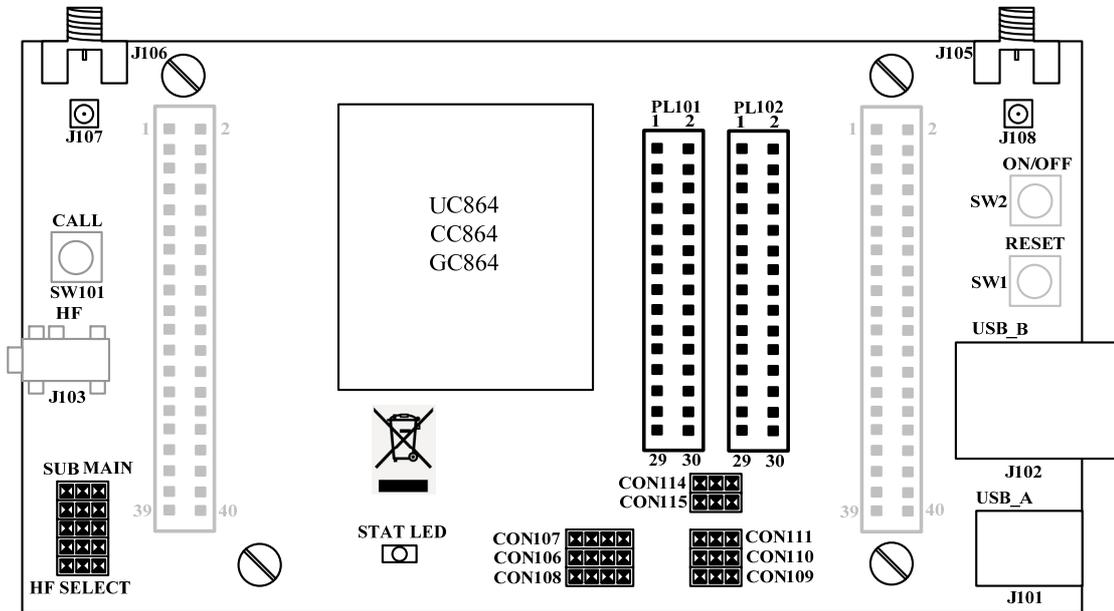


Figure 71. Position of GPIO on connectors of UC864 interface

PL101				PL102			
N.C	1	2	N.C	TGPIO_05/ RTXM0N	1	2	TGPIO_07/ BUZZER
N.C	3	4	N.C	PWRMON	3	4	RESERVED
N.C	5	6	N.C	TGPIO_08	5	6	TGPIO_09
N.C	7	8	N.C	TGPIO_10/ PCM_TX	7	8	TGPIO_03
N.C	9	10	N.C	TGPIO_16	9	10	TGPIO_13
N.C	11	12	N.C	TGPIO_12	11	12	TGPIO_06/ ALARM
N.C	13	14	N.C	PCM_CLOCK	13	14	USB_ID
N.C	15	16	N.C	N.C.	15	16	VAUX1
TGPIO_18/ PCM_RX	17	18	N.C	DAC_OUT	17	18	VRTC
TGPIO_17/ PCM_SYNC	19	20	TGPIO_04	ADC_IN1	19	20	ADC_IN2
TGPIO_15	21	22	TGPIO_14	ADC_IN3	21	22	TGPIO_21
TGPIO_11	23	24	TGPIO_19	TGPIO_02/JDR	23	24	N.C
TGPIO_01	25	26	TGPIO_20	N.C	25	26	N.C
TGPIO_22	27	28	N.C	RESERVED	27	28	RESERVED
N.C	29	30	N.C	VBATT	29	30	GND

Table 30 GPIO pin positioning



29.1.10. HE910 Interface

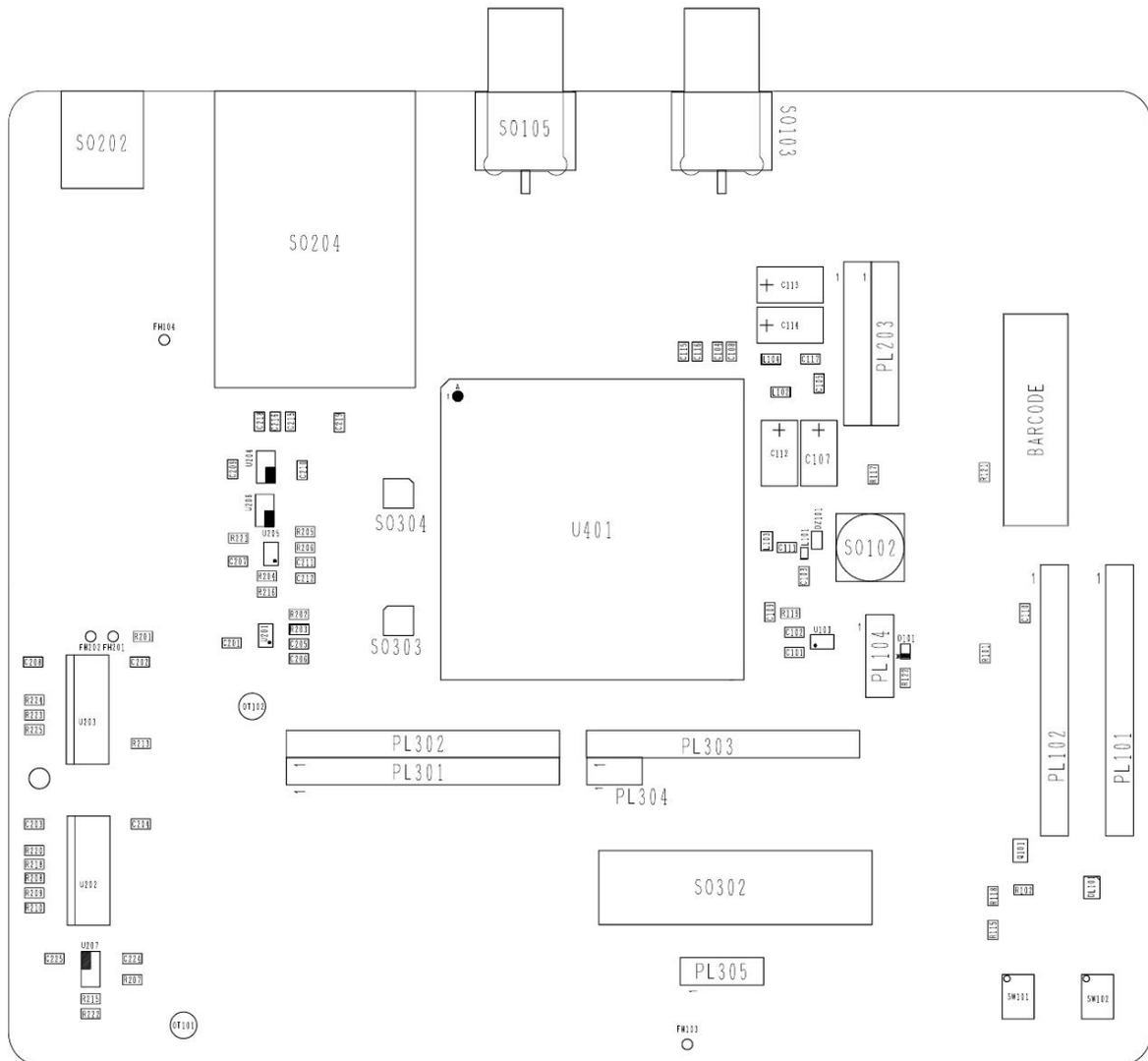


Figure 72. Position of GPIO on connectors of HE910 interface



29.1.11. GE910 Interface

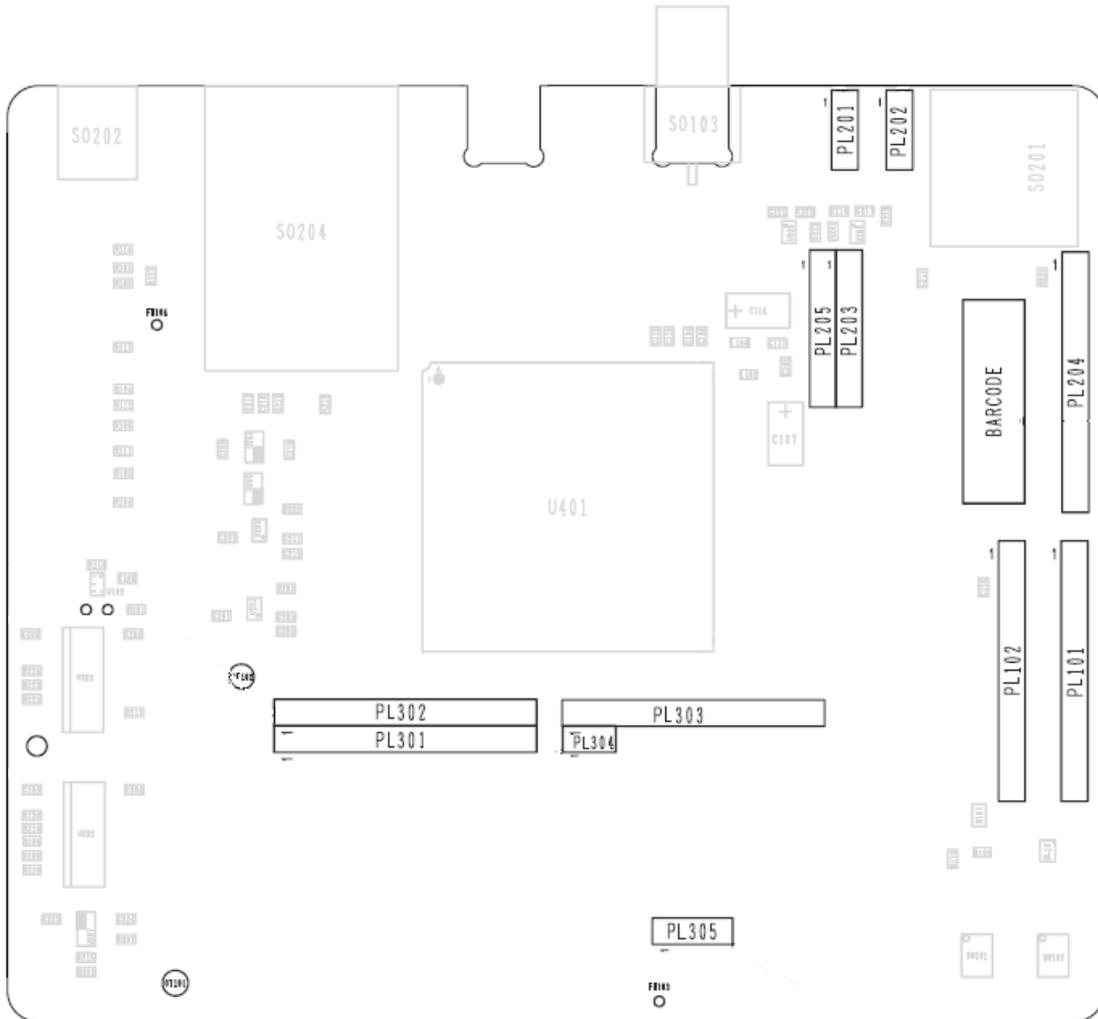


Figure 73. Position of GPIO on connectors of GE910 interface



29.1.12. DE910 Interface

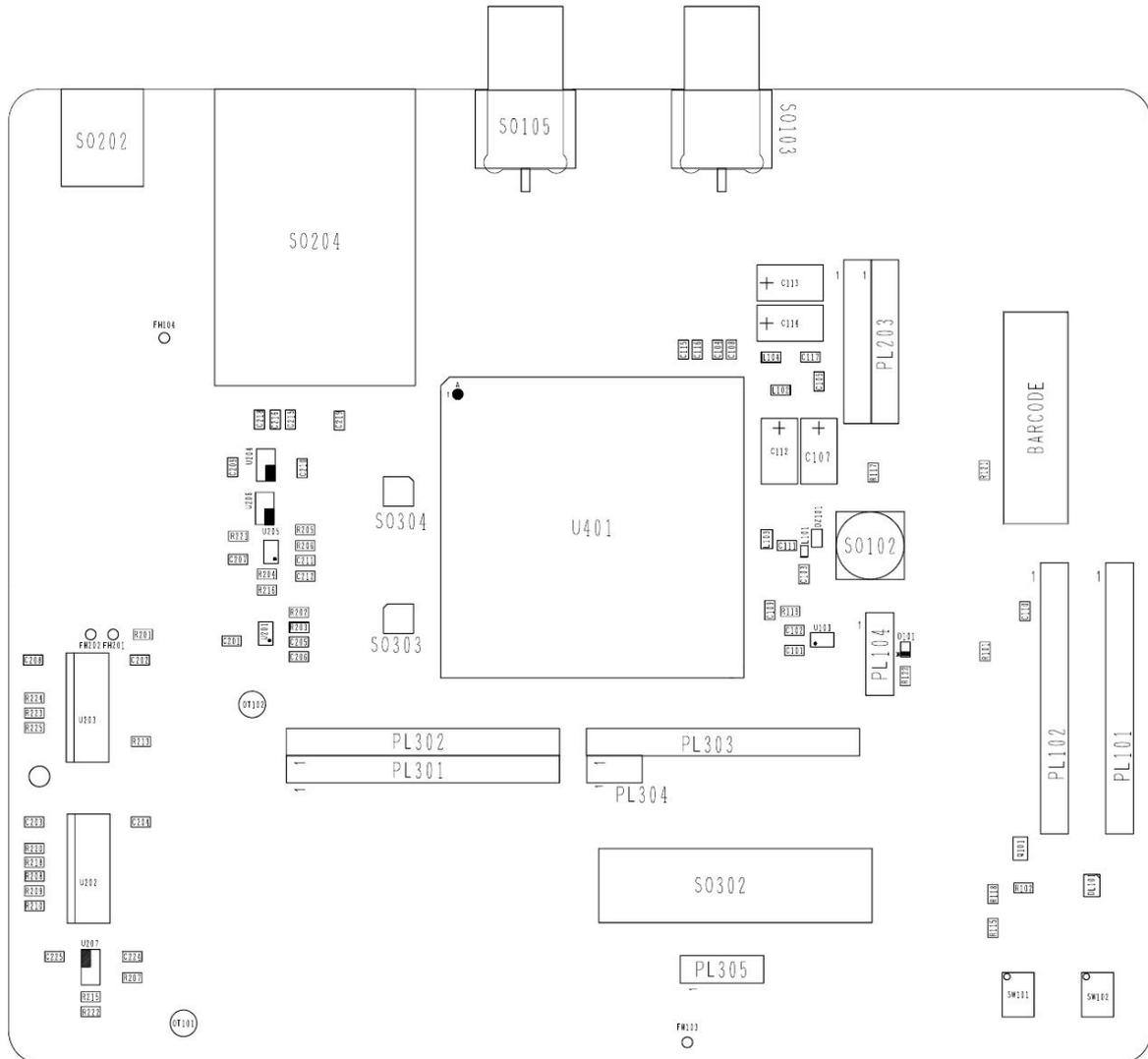


Figure 74. Position of GPIO on connectors of DE910 interface



29.1.13. CE910 Interface

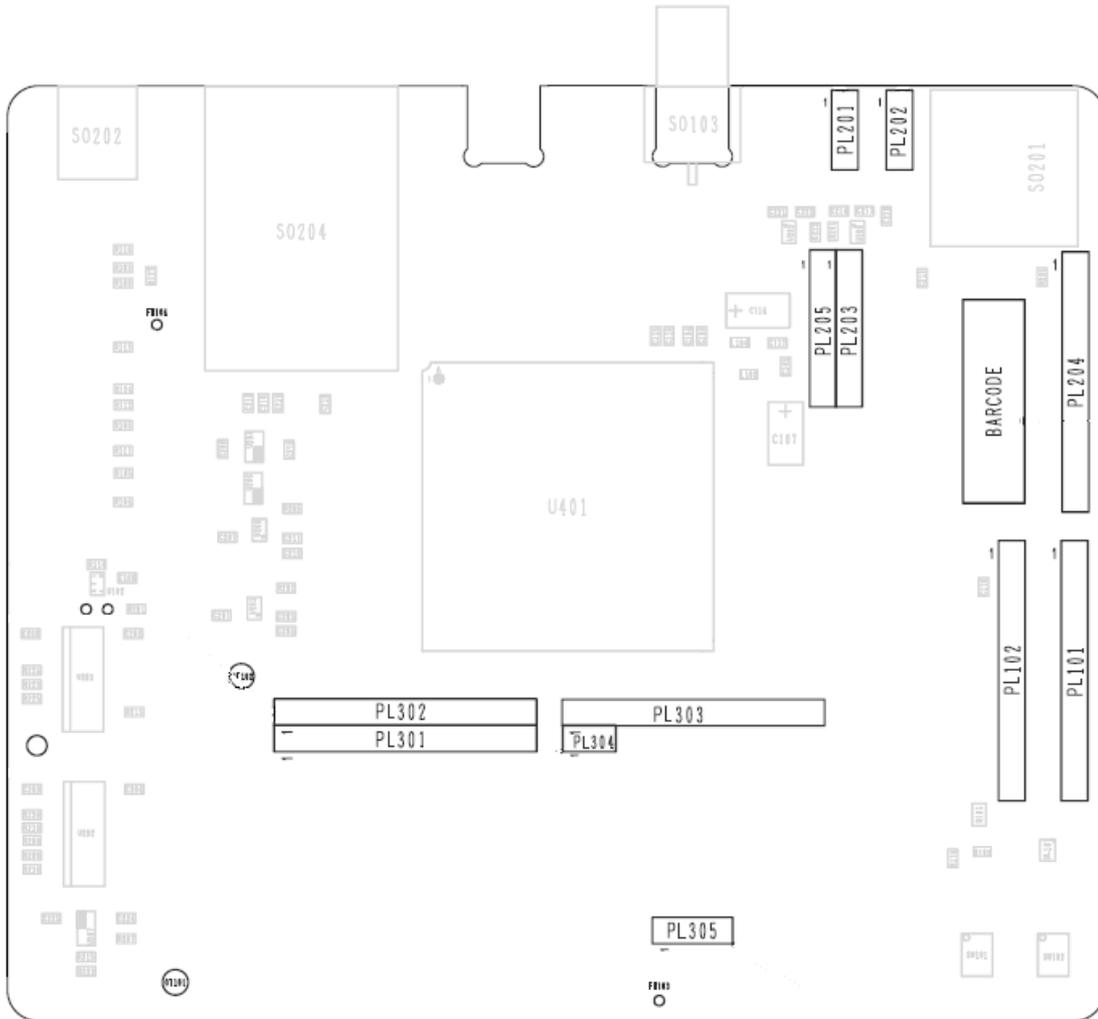


Figure 75. Position of GPIO on connectors of CE910 interface



The connectors are carrying the following signals:

Pin Name	Pin/Connector
GPIO_01	Pin 1 (PL302)
GPIO_02	Pin 2 (PL302)
GPIO_03	Pin 3 (PL302)
GPIO_04	Pin 4 (PL302)
GPIO_05	Pin 6 (PL102)
GPIO_06	Pin 5 (PL302)
GPIO_07	Pin 6 (PL302)
GPIO_08	Pin 6 (PL303)
GPIO_09	Pin 7 (PL303)
GPIO_10	Pin 8 (PL303)

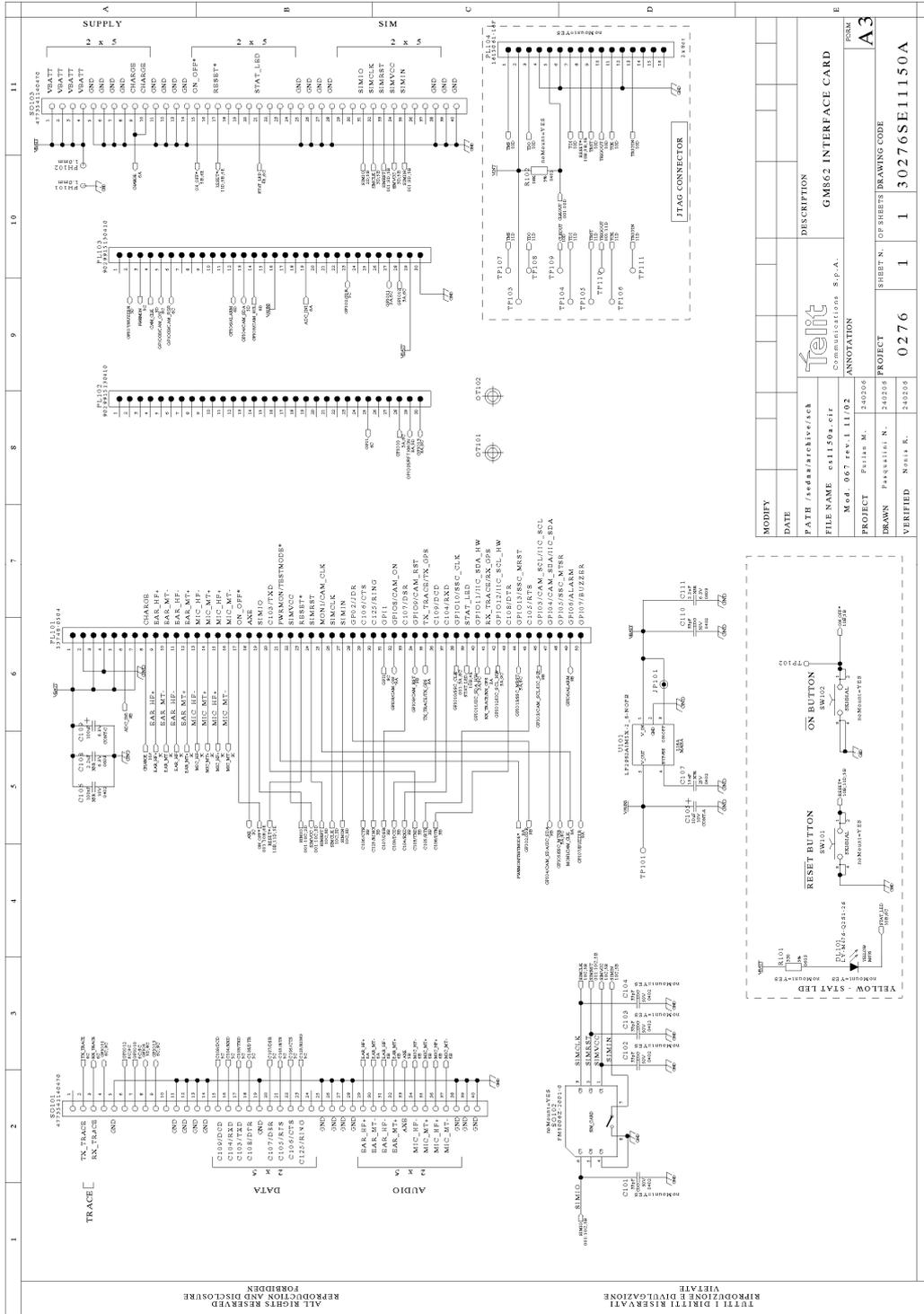


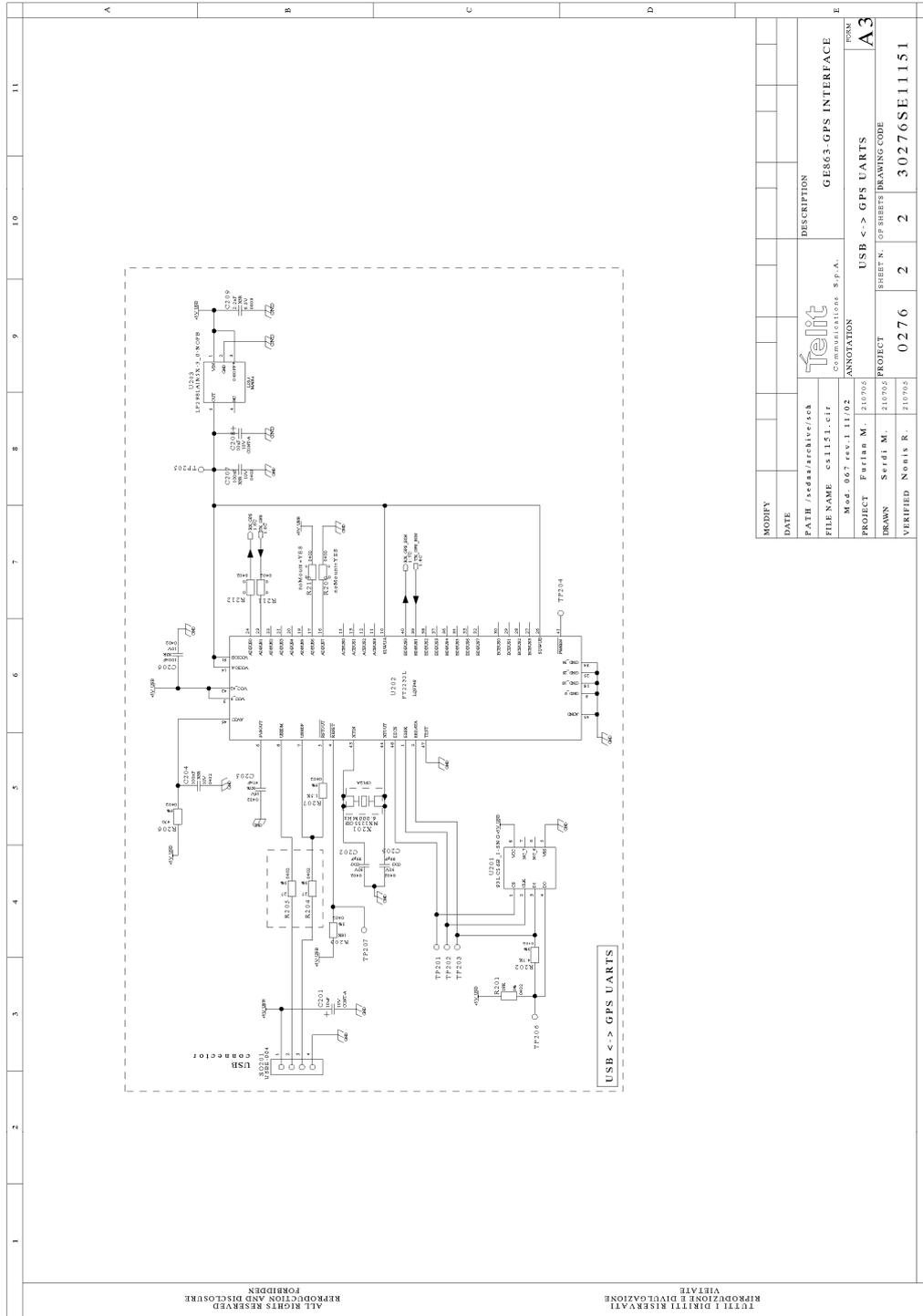
30. SCHEMATICS

In the following paragraphs the user can find the schematics related to all EVK2 boards, therefore to the Mother Board, to the Interface Boards and to the Extension Boards.



30.2. GM862 Interface Board





MODIFY	DATE	DESCRIPTION
		GER863 GPS INTERFACE
FILE NAME	c51151.ctb	
Mod. 067 rev.1.11702	COMMUNICATIONS S.p.A.	
PROJECT	Furiam M. 210702	USB <-> GPS UARTS
DRWN	Serfidi M. 210702	SHEET N. OF SHEETS DRAWING CODE
VERIFIED	Noris R. 210702	0276 2 30276SE11151

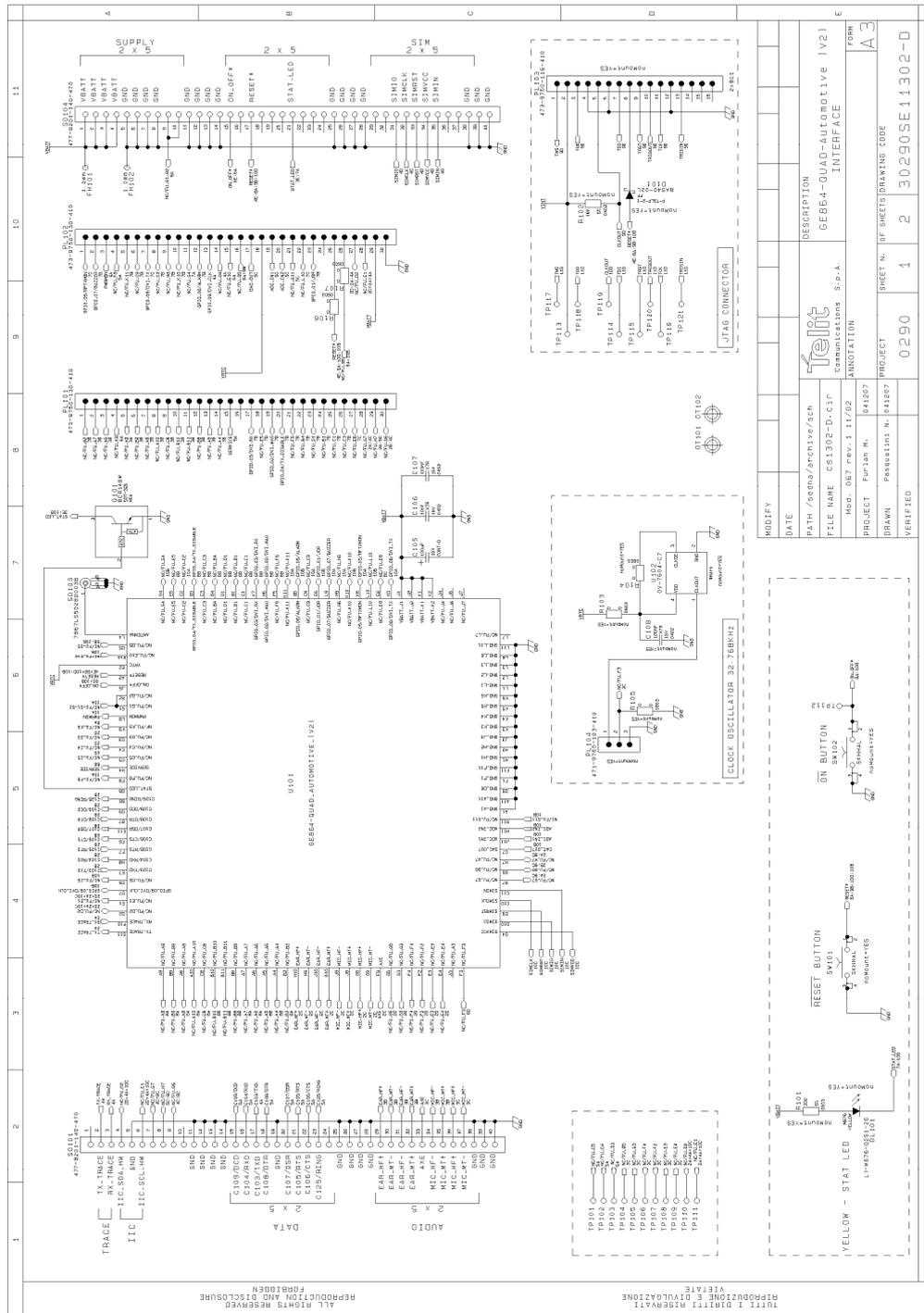
ALL RIGHTS RESERVED
RIPRODUZIONE E DIVULGAZIONE
VIETATE



NOTE: This sheet is related only to GPS version.



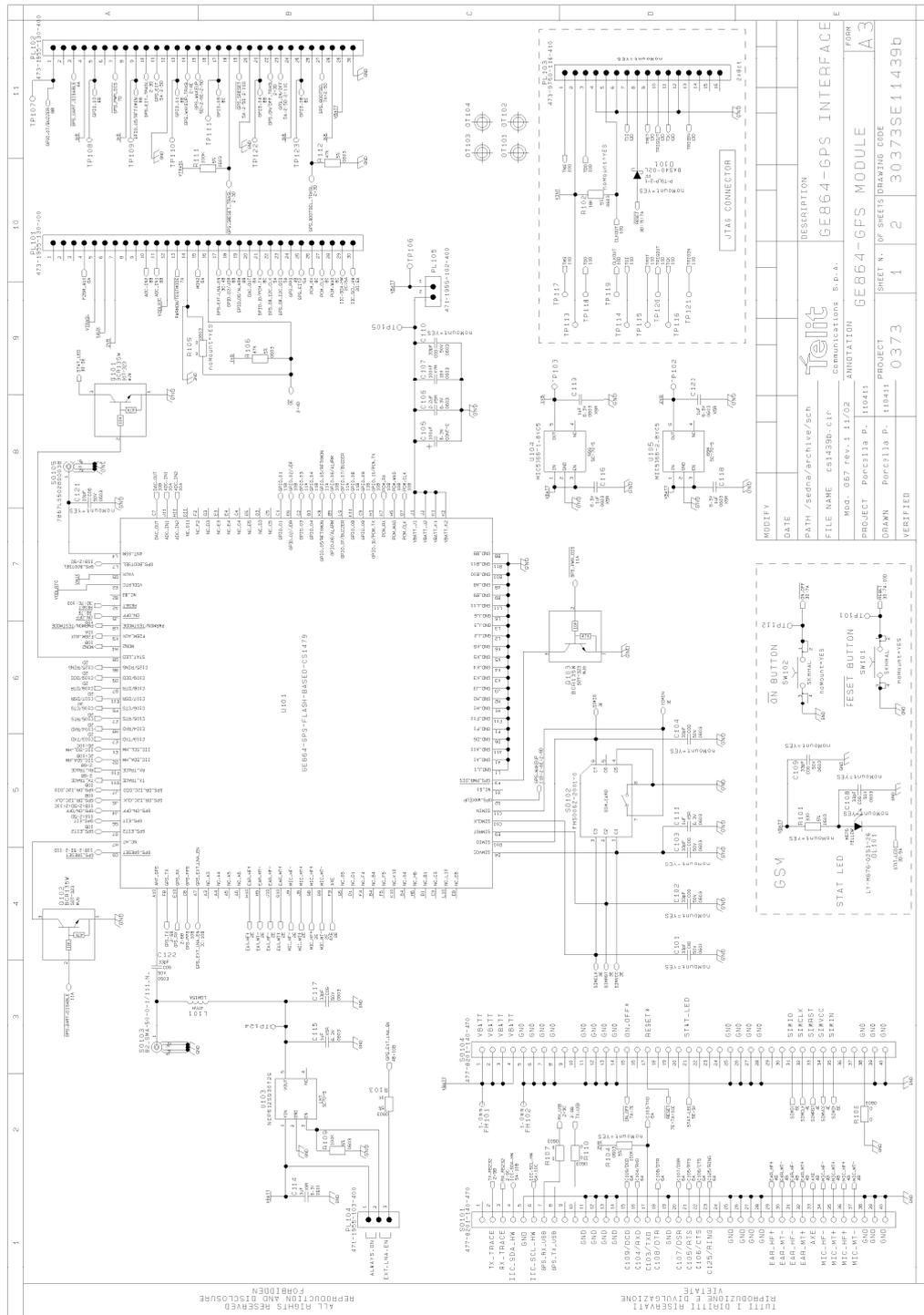
30.5. GE864 Interface board – Automotive



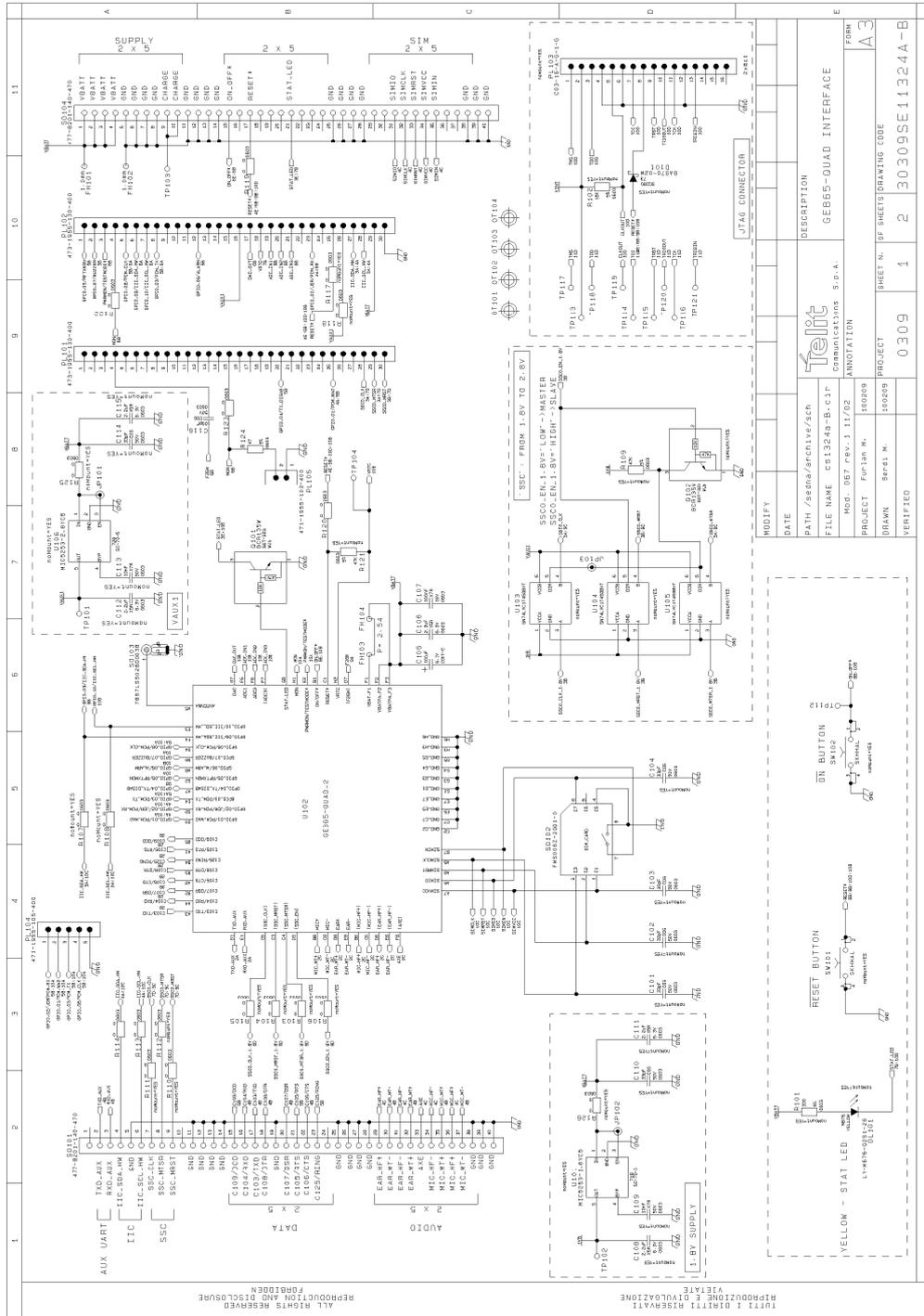
DATE	MODIFY	DESCRIPTION
FILE NAME	CS1302-D-1-1	GE864-QUAD-AUTOMOTIVE (V2)
COMMUNICATIONS S.P.A.	COMMUNICATIONS S.P.A.	INTERFACE
PROJECT	Furcan N. 041207	FORM
DRAWN	PROJEKTI N. 041207	ANNOTATION
VERIFIED	SHEET N. 1	OF SHEETS 2
	PROJECT	0290
	DRAWING CODE	30290SE11302-D



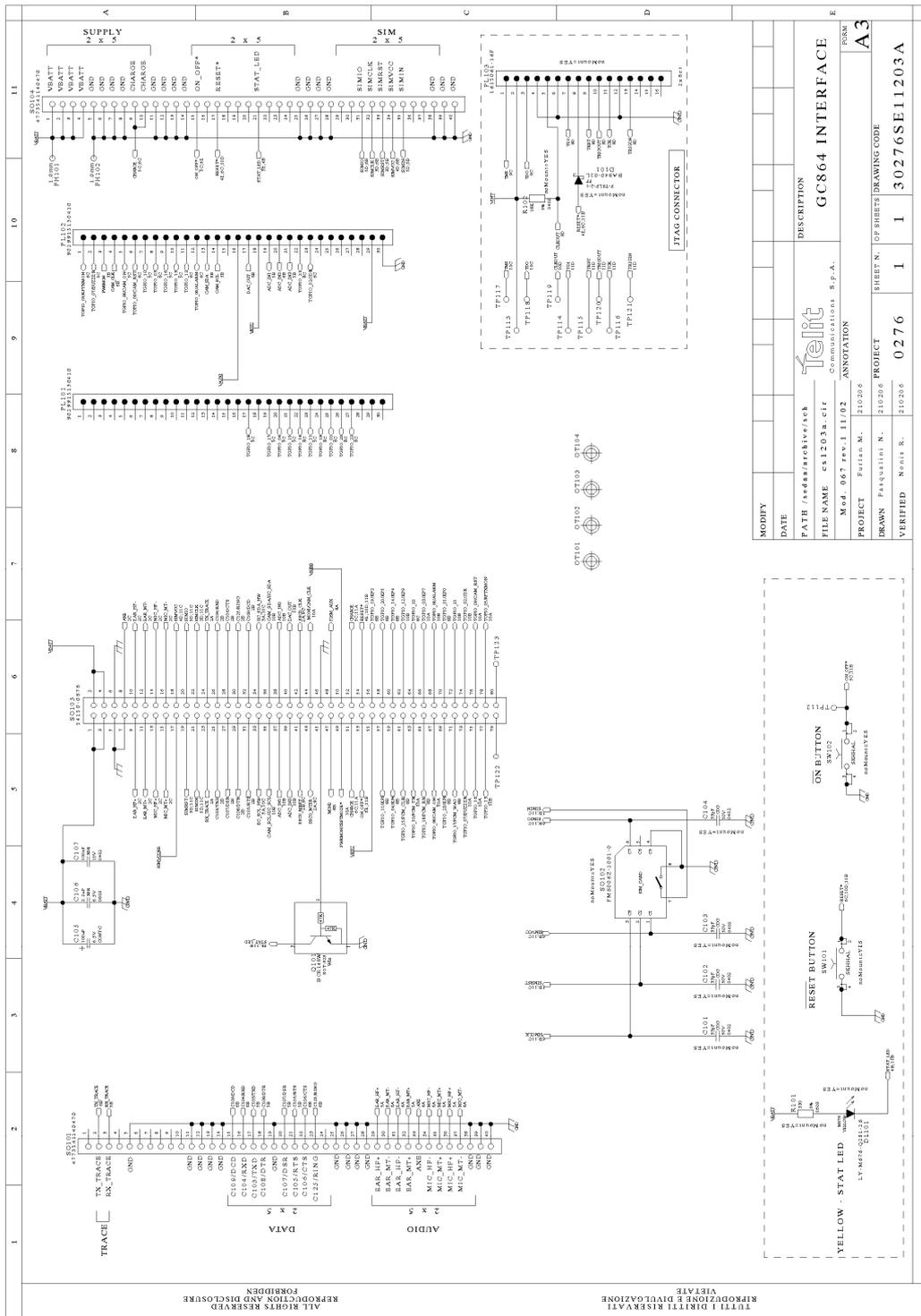
30.7. GE864-GPS Interface board



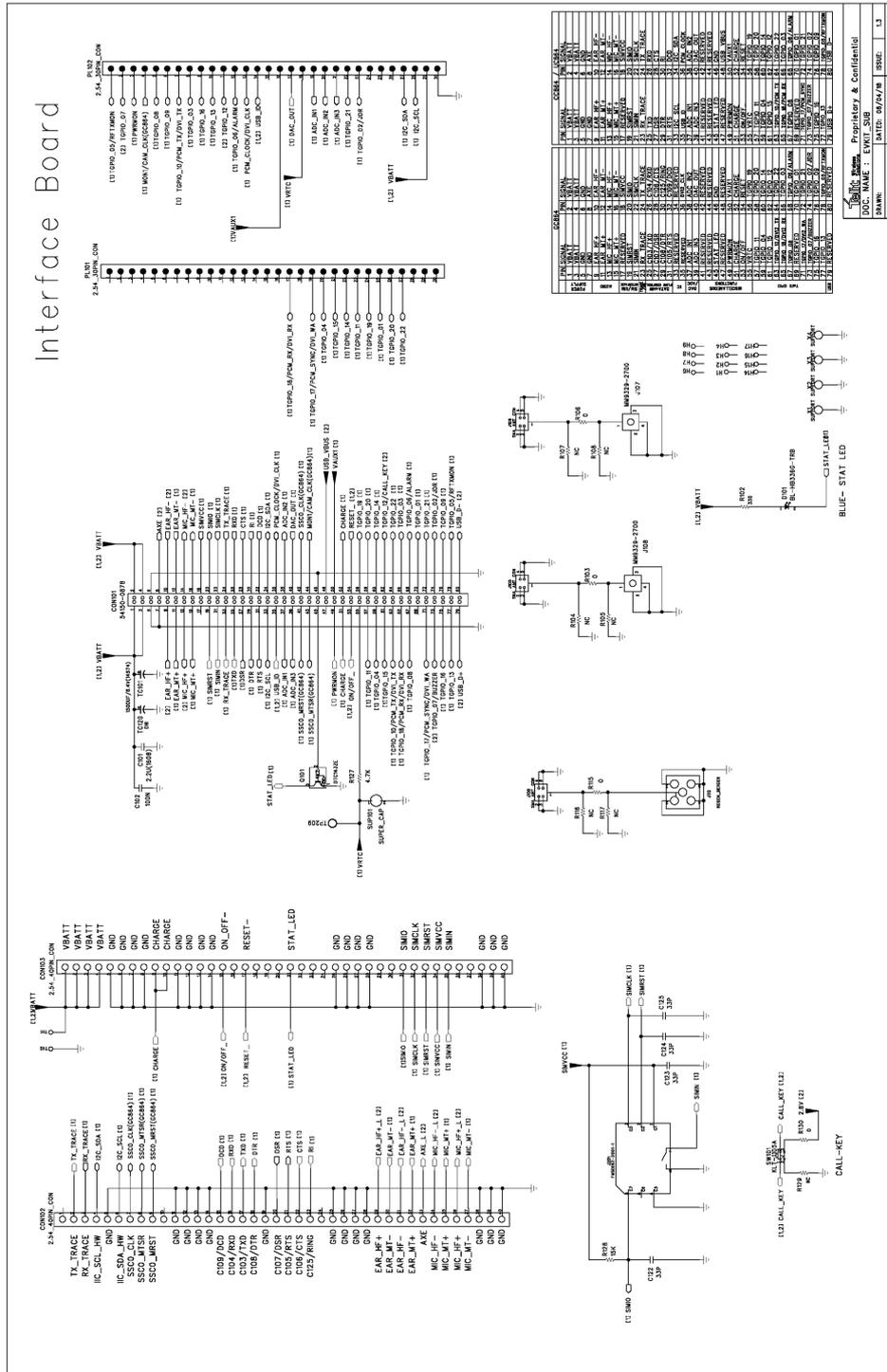
30.9. GE865 Interface board



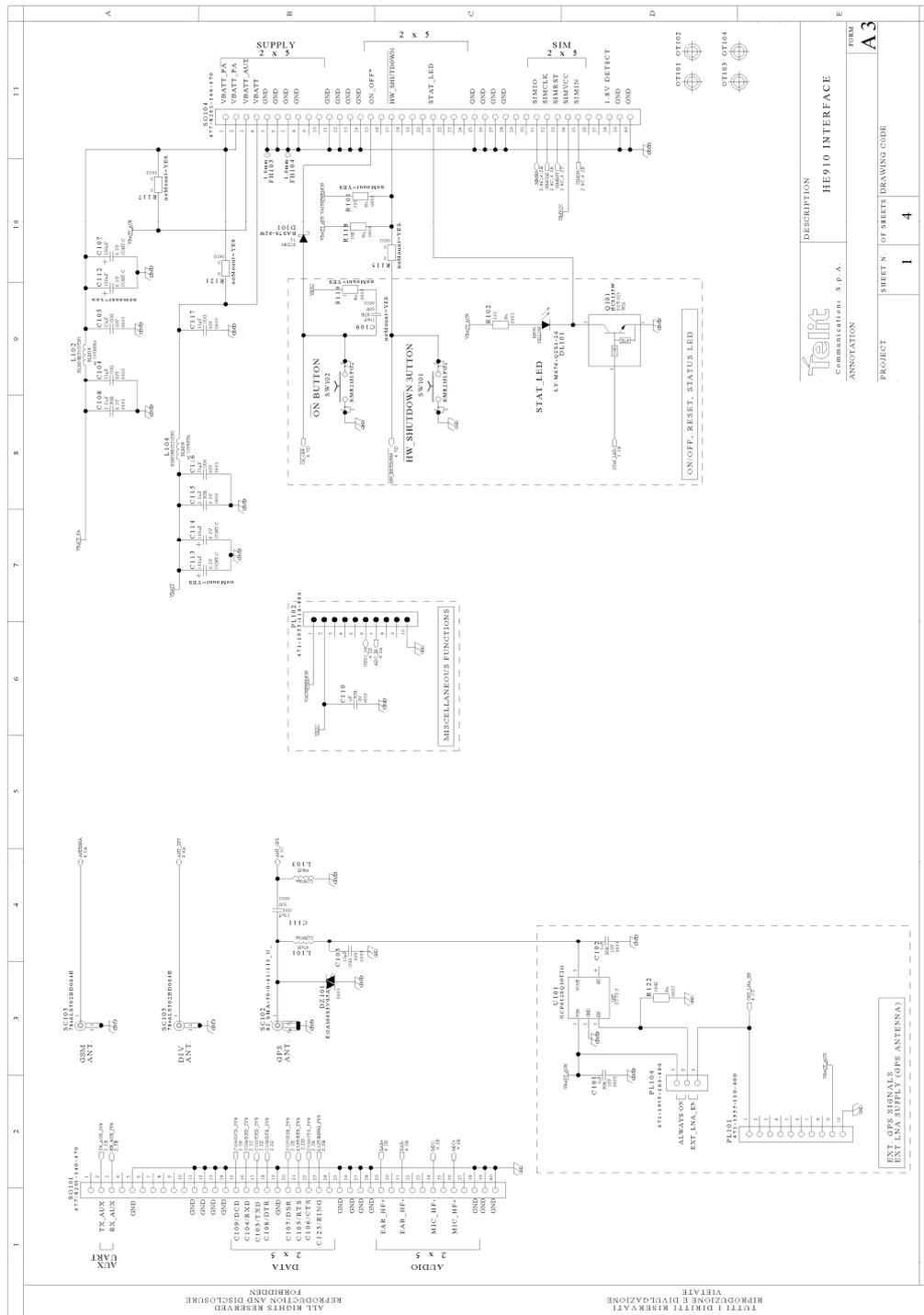
30.11. GC864 Interface board



30.13. UC864 Interface board

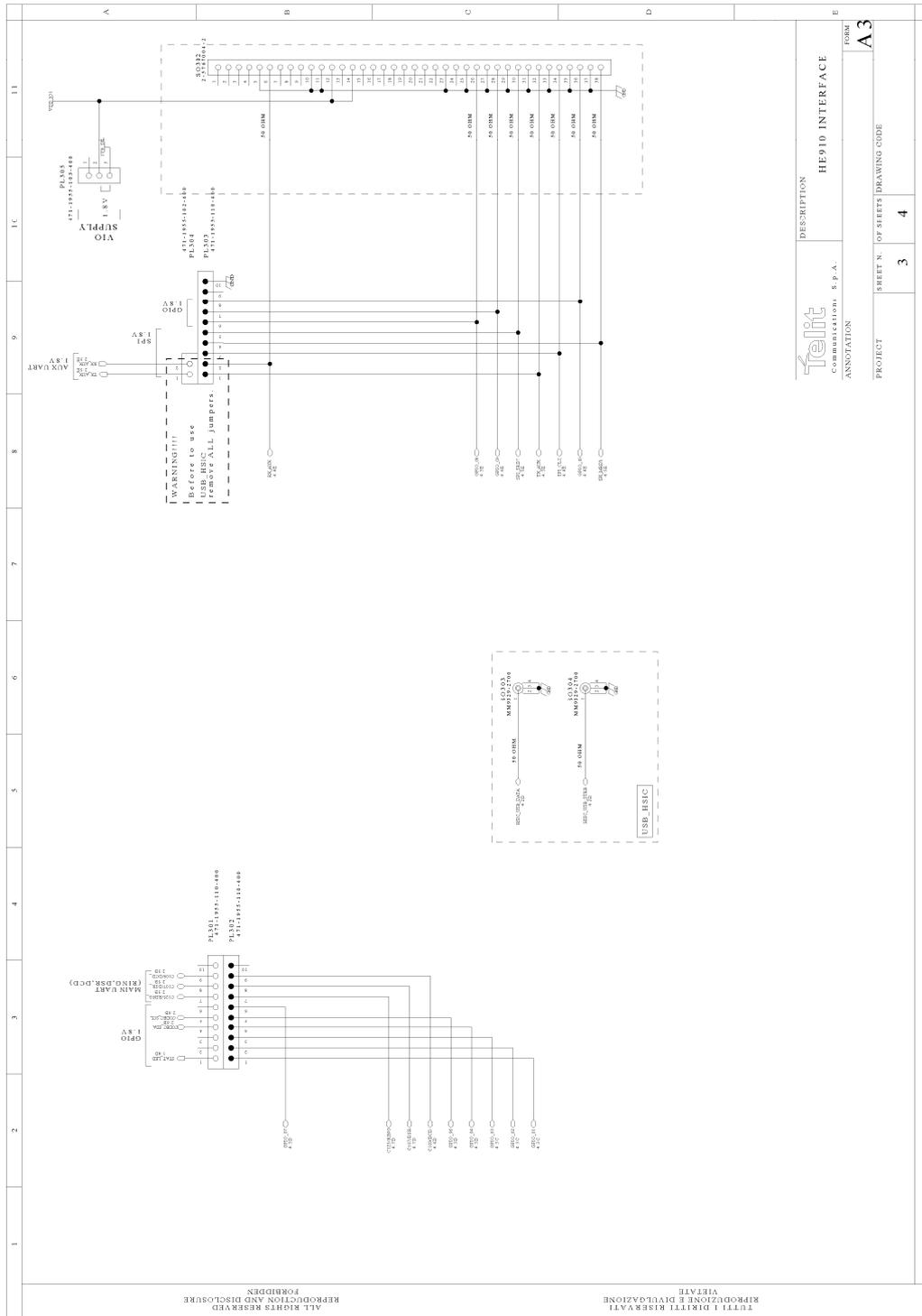


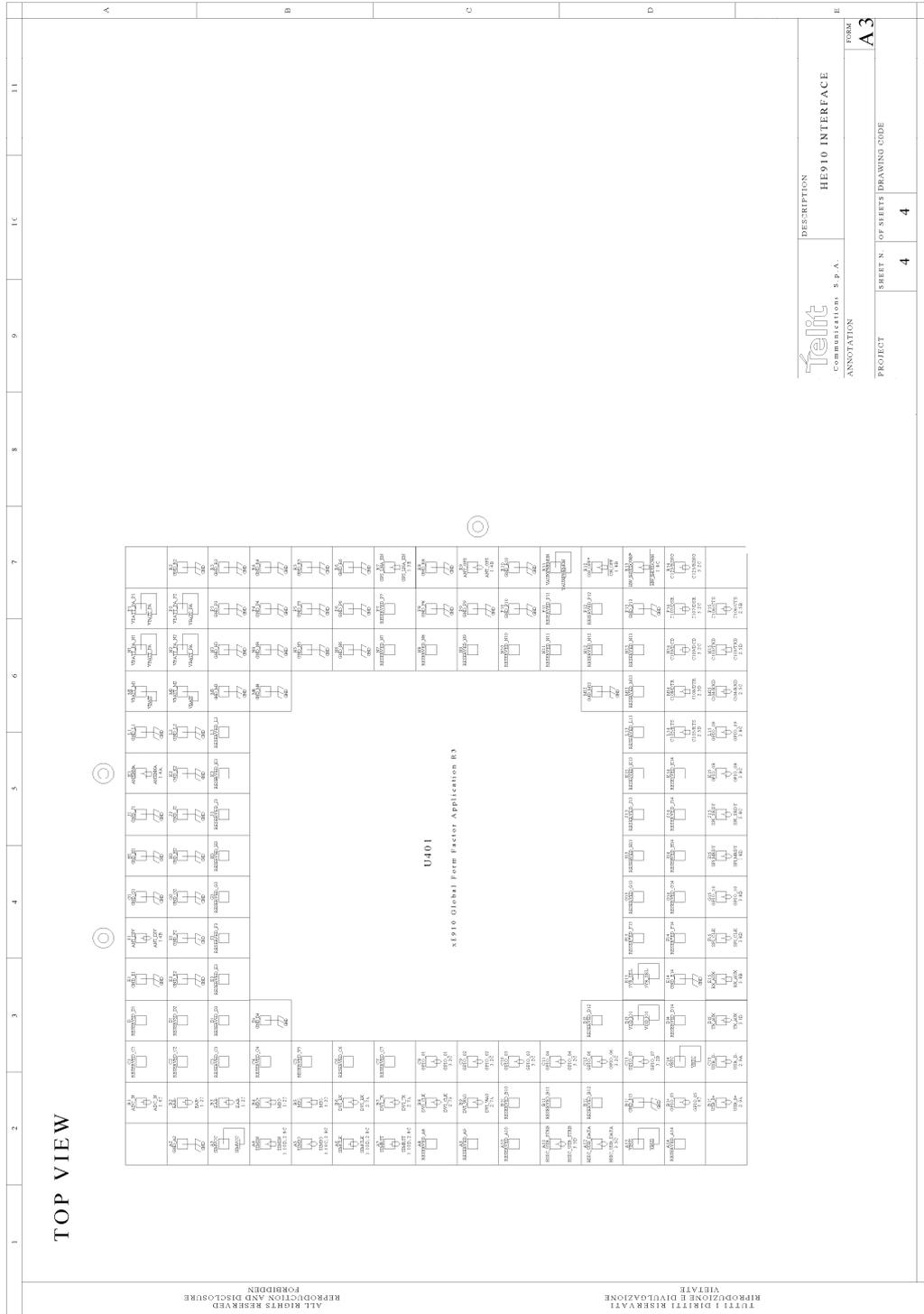
30.14. HE910 Interface board



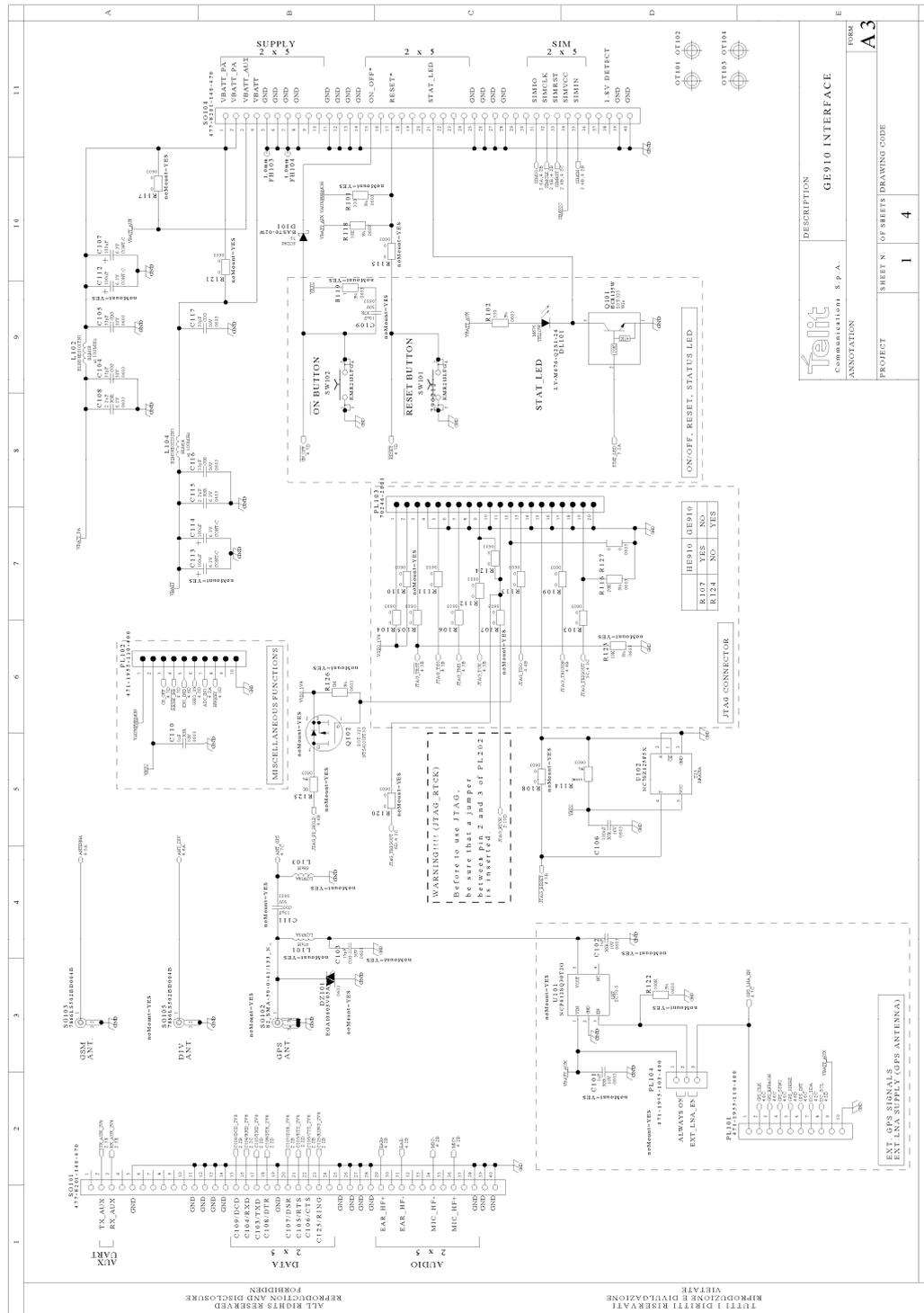
DESCRIPTION	HE910 INTERFACE
COMPANION	S.p.A.
ANNOTATION	
PROJECT	OF SHEETS DRAWING CODE
SHEET N.	1
FORM	4
FORM	A3

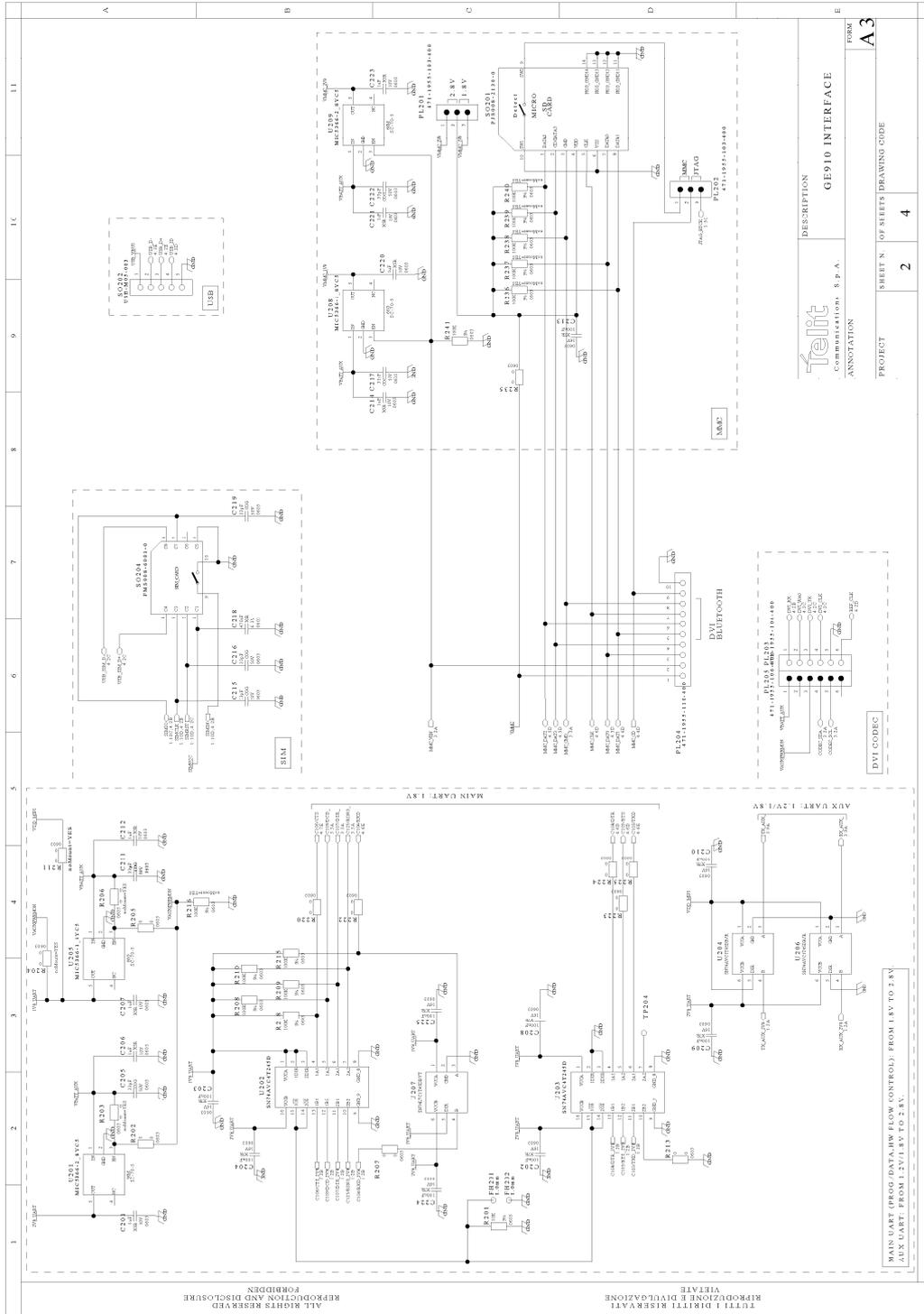


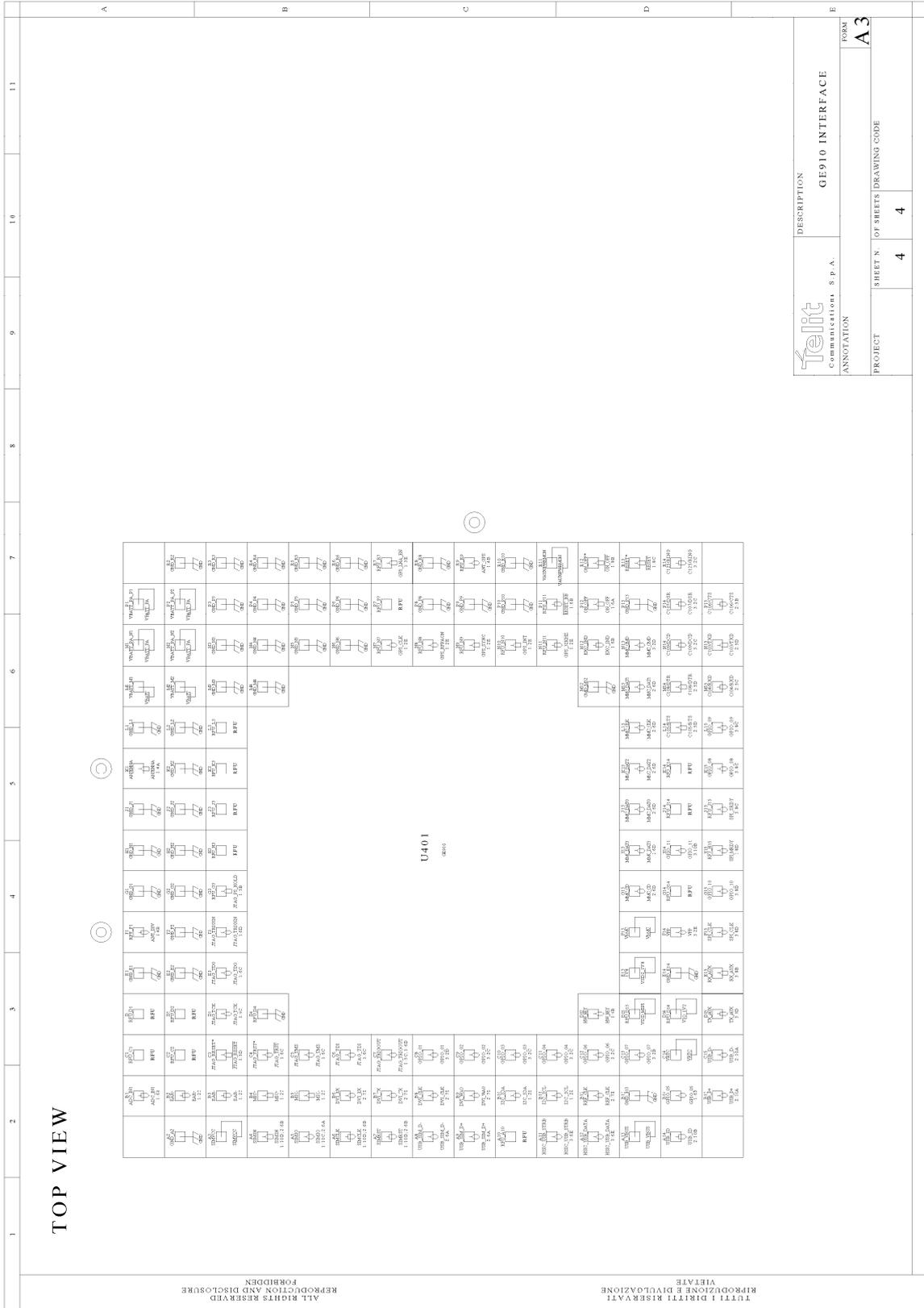


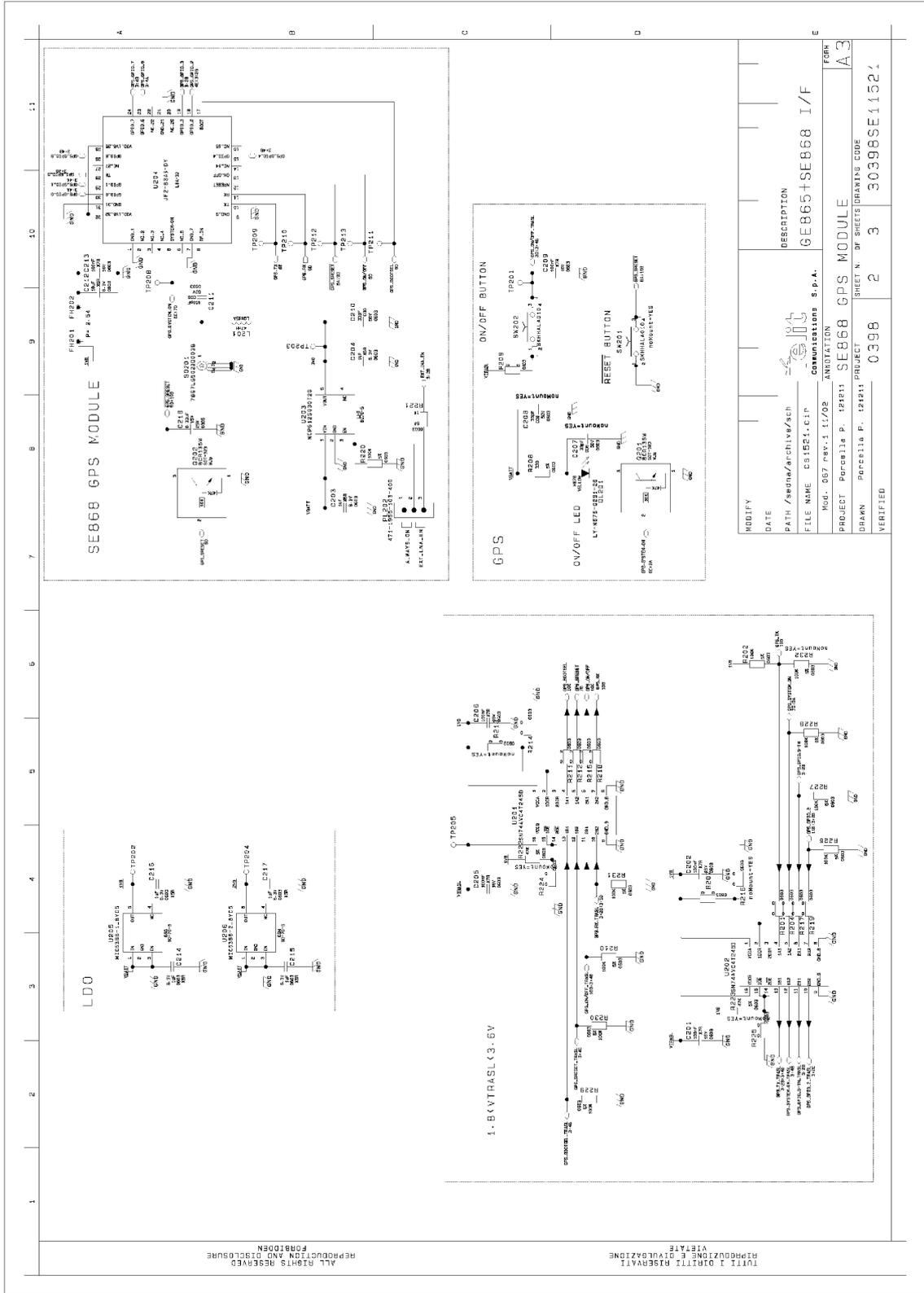


30.15. GE910 Interface board

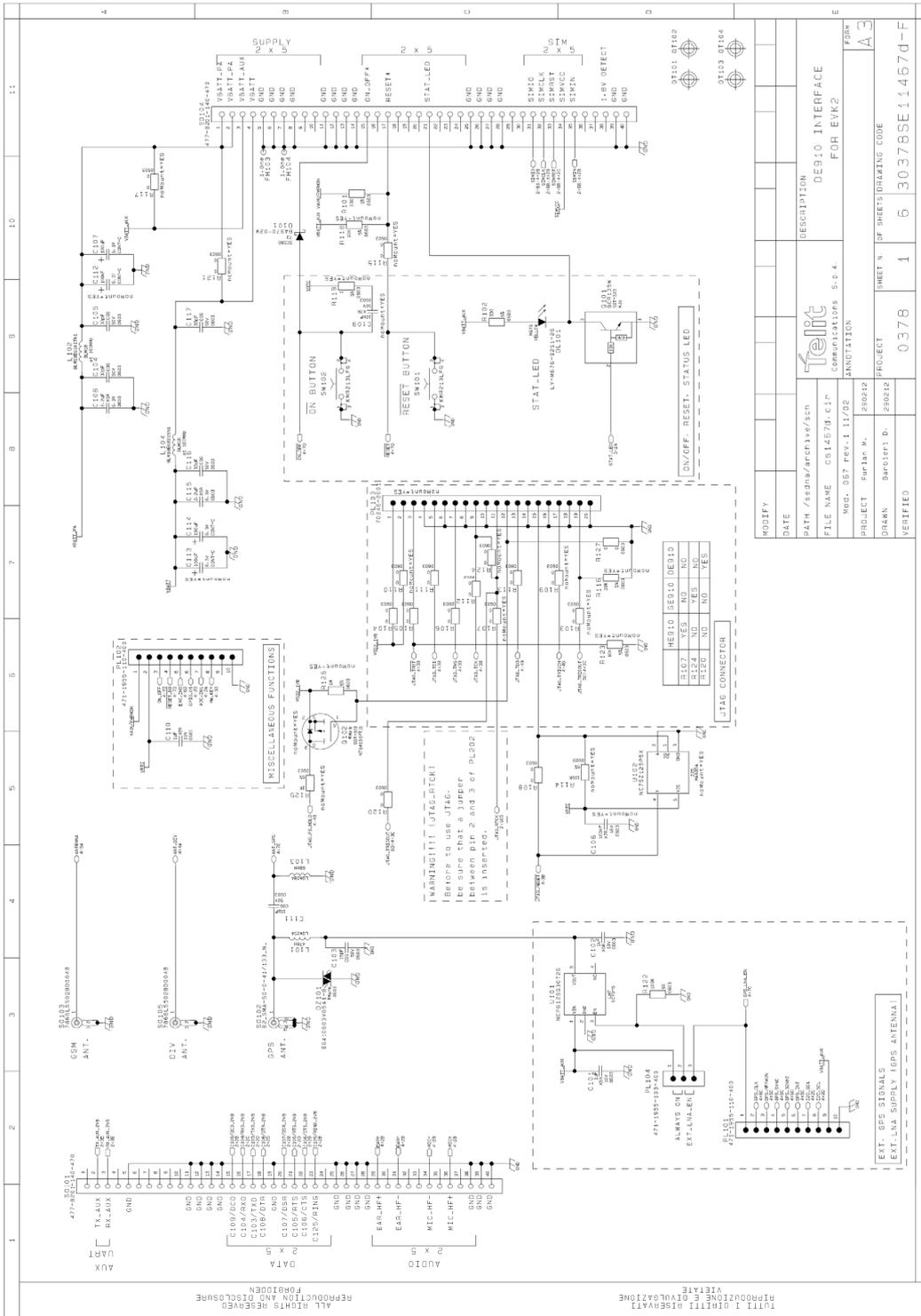


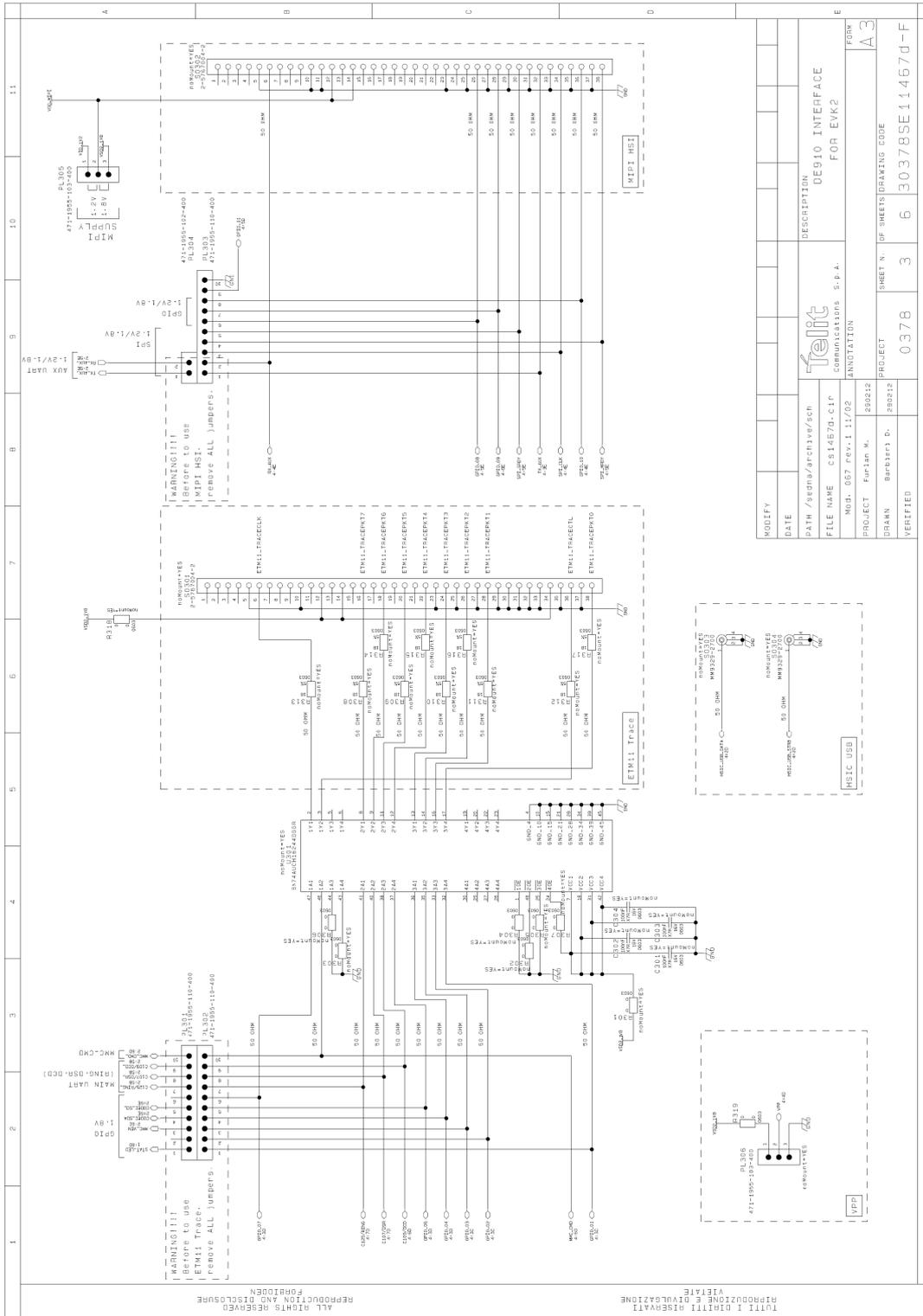


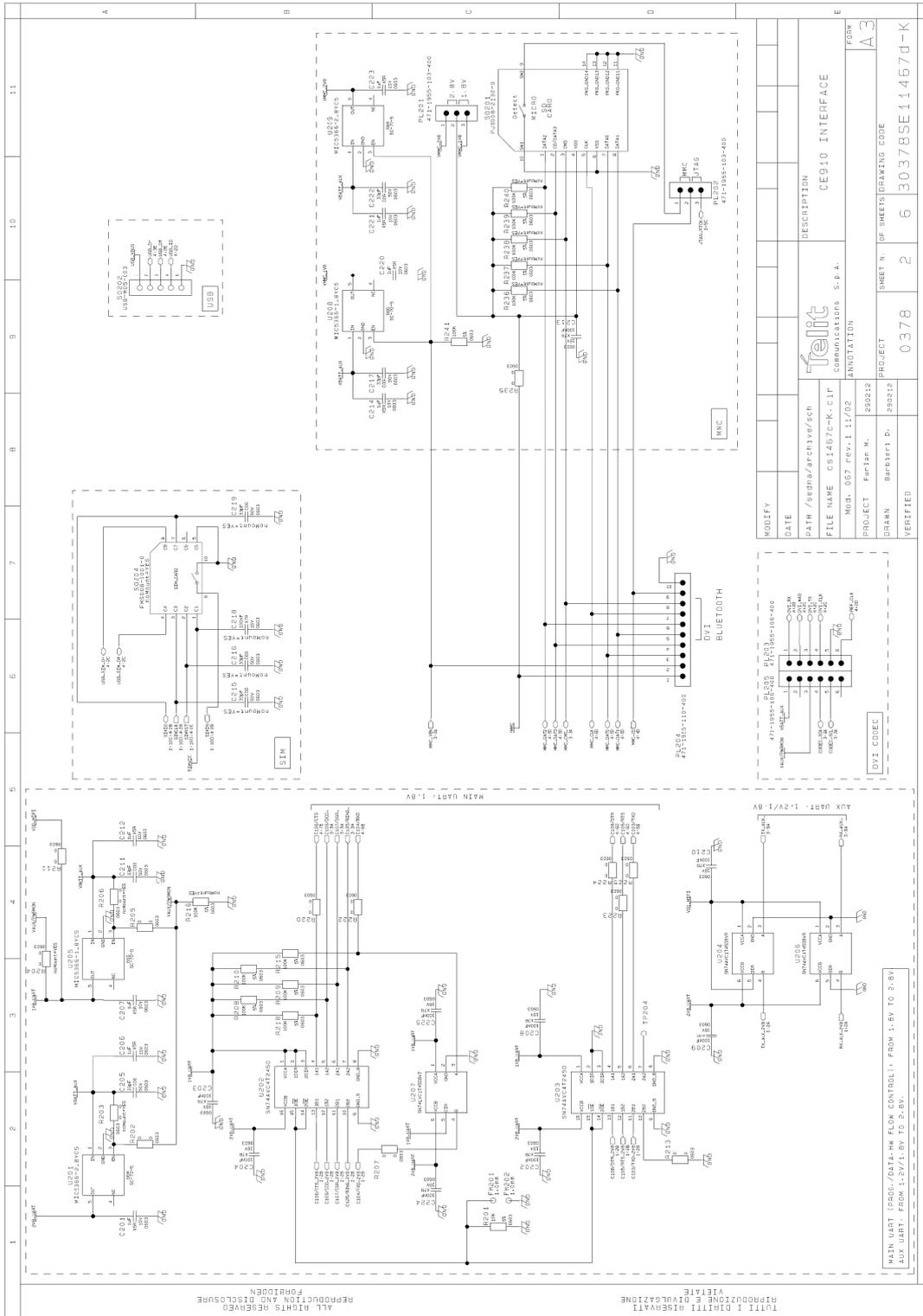




30.17. DE910 Interface board







33. RoHS Certifications



EU RoHS DECLARATION OF CONFORMITY



1.

PRODUCTS NAMES	Telit's CODE
EVK2	3990150474
GM882 INTERFACE	3990250670
GE863-PY INTERFACE	3990250684
GE863-GPS INTERFACE	3990250696
GE863-SIM INTERFACE	3990250703
GE864-PY INTERFACE	3990250672
GE864-QUAD V2 INTERFACE	3990250777
GE864-DUAL V2 INTERFACE	3990250778
GE864-QUAD AUTOMOTIVE V2 INTERFACE	3990250773
GE864-QUAD ATEX V2 INTERFACE	3990250772
GE864-QUAD SIM V2 INTERFACE	3990250771
GE864-GPS INTERFACE	3990250820
GC864 INTERFACE	3990250880
GC864-QUAD-C2 INTERFACE	3990250883
GE865-QUAD INTERFACE	3990250786
GE865/SE867-AGPS INTERFACE	3990250814
GL865-QUAD INTERFACE	3990250812
GL865-DUAL INTERFACE	3990250783
GL868-DUAL INTERFACE	3990250790
UC884 INTERFACE	4990150470
HE910 EVK2 INTERFACE	3990250829

2. Telit Communications S.p.A Via Stazione di Prosecco, 5/b 34010 Sgonico (TRIESTE)-ITALY (manufacturer).

3. This declaration of conformity is issued under the sole responsibility of the manufacturer.

4. Evaluation board for product's development and product's specific interfaces.

5. The products described above are in conformity with EU Community harmonisation 2002/95/CE (EU-ROHS Directive) on Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS), subsequent amendments and the European Court of Justice decision on Deca-BDE substances from July 1, 2008.

6. This information represents Telit's knowledge and belief as of the date that it is provided. Telit bases its material content knowledge on information provided by third parties and has taken and continues to take commercially reasonable steps to provide representative and accurate information, but may not have conducted chemical analysis on incoming materials and chemicals.

The documents relevant to the products described above and which support this Declaration of Conformity, are held at Telit Communications S.p.A Via Stazione di Prosecco, 5/b 34010 Sgonico (TRIESTE) ITALY that managed the compliance assessment process.

Signed on behalf of Telit Communications S.p.A.



 Quality System Manager
 Cesare Robelli

Trieste, **2011-07-21**

Mod 0216 2011-05 Rev.0 - This Declaration of Conformity is issued in compliance with 768/2008/EC



Rev.5	13/10/2006	<p>Renamed figure from 38 to 42</p> <p>Pag.2 Added products name and P/N for GE863-PY/QUAD interface and GC864-C2 interface</p> <p>3.2.6 Added mechanical characteristics GC864-C2 interface</p> <p>5.0 Correct Optically Positioning Guide system description</p> <p>7.1 Correct the line selection description</p> <p>6.5.2 Updated Current Charger footnote</p> <p>Generality: added note for the VGA camera</p> <p>Added in the Cross List GE864-PY/QUAD interface and GC864-C2 interface</p> <p>15.2.1 Inserted P/N of GE863-GPS version</p> <p>Added GC864-C2 interface description</p> <p>20.1 Corrected GPIO location and added p/n of GM862 interface</p> <p>20.2 Corrected GPIO location and added p/n of GE863-GPS interface</p> <p>Corrected GPIO location and added p/n of GE863 interface</p> <p>Corrected GPIO location and added p/n of GE864 interface</p> <p>Corrected GPIO location and added p/n of GC864 interface</p> <p>Corrected GPIO location and added p/n of GC864-C2 interface</p> <p>Added GC864-C2 interface Schematic</p> <p>GM862 Interface p/n 3990250670: added RoHS certification</p> <p>GE863-PY Interface p/n 3990250669: added RoHS certification</p> <p>GE863-GPS Interface p/n 3990250671: added RoHS certification</p> <p>GE863-PY Interface p/n 3990250684: added RoHS certification</p> <p>GC864-QUAD Interface p/n 3990250685: added RoHS certification</p> <p>GE864-PY Interface p/n 3990250672: added RoHS certification</p> <p>GC864-PY Interface p/n 3990250680: added RoHS certification</p>
Rev.6	24/05/2007	<p>Pag. 2 Product Table updated</p> <p>Pag. 10 Table 1 updated</p> <p>Pag.24 Modified the formula</p> <p>Pag.22 Inserted the Audio Section chapter</p> <p>Pag.39 Table 10 modified</p> <p>PCB release updating</p> <p>Erased all Dual Camera paragraph</p> <p>Figures and table updated</p> <p>Paragraph 15.3 16.2 17.3 18.3 19.3 inserted</p> <p>24.1 EVK2 SYS p/n 3990150463: added RoHS certification</p> <p>24.9 GE864-QUAD Interface p/n 3990250688: added RoHS certification</p> <p>24.11 GE864-QUAD-C2 Interface p/n 3990250683: added RoHS certification</p>



Rev.7	22/01/2008	<p>Pag. 2 Product Table updated with UC864-E and GE863-SIM</p> <p>Pag.7 Disclaimer Date modified</p> <p>Pag.13 Inserted UC864 Interface dimensions</p> <p>Pag.36 Inserted refer to GE863-SIM</p> <p>Pag.38 Table 10 Inserted UC864 and GE863-SIM Interface Code</p> <p>Pag.38 Order Code Table updated</p> <p>Pag.42 Added figure 24 with GE863-SIM photo</p> <p>Pag.43 Added GE863-SIM version kit list</p> <p>Pag.54 Inserted UC864 Interface photo</p> <p>Pag.64 Inserted figure 40 and Table 17 of UC864 GPIO positioning</p> <p>Pag.77-78 Inserted UC864 Interface Schematic diagrams</p> <p>Removed notes regarding interface board of phased out models from the GE863 family (Please refer to the previous version of this document if you need information for the interfaces with the following P/N: 3990250669 & 3990250677)</p>
Rev.8	20/03/2008	<p>Pag.64 Updated 40 and Table 19 of UC864 GPIO positioning</p> <p>Pag.66-70 Updated EVK mother board schematics</p> <p>Pag.81 Added new European WEEE directive</p>
Rev9	28/05/2008	<p>Pag.77-78 Replaced UC864 Interface board schematics with more readable drawings.</p>
Rev10	20/06/2011	<p>Pag.02 Replaced the applicability list – Pag.123 replaced the RoHS certifications</p>
Rev11	18/07/2011	<p>HE910 added to the document</p> <p>GE864-GPS section update to align with latest PCB development</p>
Rev 12	2012/05/21	<p>Added GE865-JF2 sections</p>
Rev 13	2012/06/25	<p>Updated fig.48</p> <p>Updated HE910 interface board P/N in applicability Table.</p> <p>Update GE865+JF2 drawings §27.1</p>
Rev 14	2012/12/11	<p>Updated with GE910 interface board; P/N in applicability Table.</p> <p>Updated Startup procedure chapter with XX910 products and timings;</p> <p>Updated Power ON Switch chapter with XX910 products and timings;</p> <p>Updated Figure 22 Switches position</p> <p>Added info for DE910 and CE910</p> <p>20 2.2.15 DE910 Interface CS1467D</p> <p>20 2.2.16 CE910 Interface CS1467D</p> <p>27 DE910 family Interface</p> <p>28 CE910 family Interface</p> <p>29.1.12 DE910 Interface</p> <p>29.1.13 CE910 Interface</p> <p>30.17 DE910 Interface board schematic</p> <p>30.18 CE910 Interface board schematic</p>

