

GC864-QUAD vs GC864-QUAD V2 and GC864-DUAL V2 Application Note

80000NT10034a Rev. 0 - 2010-01-22



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This document is related to the following products:

APPLICABLE PRODUCTS

PRODUCT
GC864-QUAD/PY
GC864-QUAD V2
GC864-DUAL V2



1. Introduction

1.1. Scope

This application note is intended to highlight the differences from the hardware point of view, between the GC864-QUAD/PY, GC864-QUAD V2 and GE864-DUAL V2 with the aim to help the system integrator in the design an host application and therefore a PCB, which might host all the GE864 variants. 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 GC864 to another, for instance from the GC864-QUAD/PY to GC864-QUAD V2 or GC864 DUAL V2.

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. 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.

1.4. Related Documents

The following documents are related to:

- GC864-QUAD/PY Hardware User Guide,
- GC864-QUAD/DUAL V2 Hardware User Guide,

1.5. Document History

Revision	Date	Changes	Location
0	2010-01-22	First issue	Trieste



3. Comparison table

The following table highlights ONLY the differences in the pin-out functions between the GC864-QUAD/PY, the GC864-QUAD V2 and the GC864-DUAL V2. All other pins that are not mentioned in the table, have maintained exactly the same function on all the product variants. For a complete pin-out table of each product, please consult the relevant Hardware User Guide.

The yellow color highlights pins that have common features on all the products, but that have lower tolerance on GC864-QUAD V2 and GC864-DUAL V2 products against the CMOS high level input as described in the paragraph 3.1.

The green color highlights pins that have features that are missing, or might have different feature (e.g. different GPIO #) on GC864-QUAD V2 and GC864-DUAL V2 products. Those pins have lower tolerance against the CMOS high level input as described in the paragraph 3.1.

The blue color highlights the signals/features that are missing on the GC864-QUAD V2 and GC864-DUAL V2 products.



GC864-QUAD, GC864-QUAD V2, GC864-QUAD Automotive and GE864-QUAD Automotive V2 Application Note
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Functions						GC864-QUAD	GC864-QUAD-V2 /DUAL V2
Ball	Signal	I/O	Description	Internal PULL UP	Type		
8	AXE	I	Handsfree switching	100K	CMOS 2.8V	available	available
24					CMOS 2.8V	TX Data for debug monitor / DVI1_CLK (Digital Voice Interface)	TX Data for debug monitor
23					CMOS 2.8V	RX Data for debug monitor / DVI1_WA (Digital Voice Interface)	RX Data for debug monitor
47					CMOS 2.8V	Reserved	SERVICE
25	C103 / TXD	I	Serial data input (TXD) from DTE		CMOS 2.8V	available	available
26	C104 / RXD	O	Serial data output to DTE		CMOS 2.8V	available	available
29	C108 / DTR	I	Input for Data terminal ready signal (DTR) from DTE		CMOS 2.8V	available	available
31	C105 / RTS	I	Input for Request to send signal (RTS) from DTE		CMOS 2.8V	available	available
28	C106 / CTS	O	Output for Clear to send signal (CTS) to DTE		CMOS 2.8V	available	available
32	C109 / DCD	O	Output for Data carrier detect signal (DCD) to DTE		CMOS 2.8V	available	available
27					CMOS 2.8V	C107 / DSR / DVI1_RX (Digital Voice Interface)	C107 / DSR
30	C125 / RING	O	Output for Ring indicator signal (RI) to DTE		CMOS 2.8V	available	available
51						CHARGE, Charger input	RESERVED
51						CHARGE, Charger Input	RESERVED
50						VAUX1	RESERVED
49	PWR MON	O	Power ON Monitor		CMOS 2.8V	available	available
36		I			CMOS 2.8	DVI2_CLK with internal PULL UP 4.7K	DVI_CLK no internal PULL UP
35						DVI1_TX with internal PULL UP 4.7K	RESERVED



GC864-QUAD, GC864-QUAD V2, GC864-QUAD Automotive and GE864-QUAD Automotive V2 Application Note
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Functions						GC864-QUAD	GC864-QUAD-V2 /DUAL V2
Ball	Signal	I/O	Description	Internal PULL UP	Type		
62						GPIO_12 Configurable, CMOS 2.8V	RESERVED
66	TGPIO_03	I/O	GPIO_03 Configurable		CMOS 2.8V	available	available
59	TGPIO_04	I/O	GPIO_04 Configurable / RF Transmission Control		CMOS 2.8V	available	available
58						GPIO_20 Configurable, CMOS 2.8V	RESERVED
60						GPIO_14 Configurable, CMOS 2.8V	RESERVED
57						GPIO_11 Configurable, CMOS 2.8V	RESERVED
56						GPIO_19 Configurable, CMOS 2.8V	RESERVED
70	TGPIO_01	I/O	GPIO_01 Configurable		CMOS 2.8V	available	available
65		I/O			CMOS 2.8V	GPIO_18 Configurable / DVI2_RX	DVI_RX
71		I/O			CMOS 2.8V	GPIO_17 Configurable / DVI2_WA	DVI_WA
61						GPIO_15 Configurable CMOS 2.8V	RESERVED
67	TGPIO_08	I/O	GPIO_08 Configurable		CMOS 2.8V	available	available
68	TGPIO_06 / ALARM	I/O	GPIO_06 Configurable / ALARM		CMOS 2.8V	available	available
76	TGPIO_09	I/O	GPIO_09 Configurable		CMOS 2.8V	available	available
74	TGPIO_02 / JDR	I/O	GPIO_02 Configurable / Jammer detect report		CMOS 2.8V	available	available
73	TGPIO_07 / BUZZER	I/O	GPIO_07 Configurable / Buzzer		CMOS 2.8V	available	available
75						GPIO_16 Configurable, CMOS 2.8V	RESERVED
77						GPIO_13 Configurable, CMOS 2.8V	RESERVED
78	TGPIO_05 / RFTXM ON	I/O	GPIO_05 Configurable / Transmitter ON monitor		CMOS 2.8V	available	available



GC864-QUAD, GC864-QUAD V2, GC864-QUAD Automotive and GE864-QUAD Automotive V2 Application Note
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Functions						GC864-QUAD	GC864-QUAD-V2 /DUAL V2
Ball	Signal	I/O	Description	Internal PULL UP	Type		
72						GPIO_21 Configurable, CMOS 2.8V	RESERVED
64						GPIO_22 Configurable, CMOS 1.8V	RESERVED
63		I/O			CMOS 2.8V	GPIO_10 Configurable / DVI2_TX	GPIO_10 Configurable / DVI_TX

NOTE:

For a compatible design, all the pins corresponding to "RESERVED" MUST NOT be connected.



3.1. GPIO Logic levels

The GC864-QUAD V2 and GC864-DUAL V2 have a lower tolerance against the high level input compared to the GC864-QUAD, which are highlighted in red in the following subparagraphs. **The same levels must be applied on the serial port pins also.**

3.1.1. GC864-QUAD V2 and GC864-DUAL V2

Where not specifically stated, all the interface circuits work at 2.8V CMOS logic levels. The following table shows the logic level specifications used in the GC864-QUAD V2 and the GC864-DUAL V2 interface circuits:

Absolute Maximum Ratings - Not Functional

Parameter	Min	Max
Input level on any digital pin when on	-0.3V	+3.1V
Input voltage on analog pins when on	-0.3V	+3.0 V

Operating Range - Interface levels (2.8V CMOS)

Level	Min	Max
Input high level	2.1V	3.1V
Input low level	0V	0.5V
Output high level	2.2V	3.0V
Output low level	0V	0.35V

Operating Range - Interface levels (1.8V CMOS)

Level	Min	Max
Input high level	1.6V	2.2V
Input low level	0V	0.4V
Output high level	1,65V	2.2V
Output low level	0V	0.35V



3.1.2. GC864-QUAD / PY

Where not specifically stated, all the interface circuits work at 2.8V CMOS logic levels. The following table shows the logic level specifications used in the GC864-QUAD / PY interface circuits:

Absolute Maximum Ratings -Not Functional

Parameter	Min	Max
Input level on any digital pin when on	-0.3V	+3.6V
Input voltage on analog pins when on	-0.3V	+3.0 V

Operating Range - Interface levels (2.8V CMOS)

Level	Min	Max
Input high level	2.1V	3.3V
Input low level	0V	0.5V
Output high level	2.2V	3.0V
Output low level	0V	0.35V

Operating Range - Interface levels (1.8V CMOS)

Level	Min	Max
Input high level	1.6V	2.2V
Input low level	0V	0.4V
Output high level	1,65V	2.2V
Output low level	0V	0.35V



NOTE:

For a compatible design, the narrower logic levels of the GC864-QUAD V2 / GC864-DUAL V2 MUST be chosen; otherwise there is the risk to damage the unit.



3.2. Application SW GPIO configuration

According to the pin-outs of the products, (see paragraphs 3), the name of GPIO pins are not the same between the products. Therefore, Telit recommends managing this diversity making use of two different initialization files implemented in the software application running on the host PCB.

