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R-GM862-Q4 GSM/GPRS Module

The R-GM862-Q4 is a pin to pin compatible drop-in-replacement to Telit's GM862-Quad module. It utilizes Telit's GE864-Quad GSM/GPRS module and is suitable for all industrial m2m applications. It has integrated SIM card holder and its operating voltage range is compatible with Telit's GM862 products as well. It supports features like jamming detection, integrated TCP/IP protocol stack, and Telit's Easy Scan® functionality feature extend capabilities without adding cost.

Product features

- Quad-band EGSM 850/ 900/ 1800/ 1900 MHz
- GSM/GPRS protocol stack 3GPP Release 4 compliant
- Output power
  - Class 4 12W) @ 850 / 900 MHz
  - Class 1 (1W) @ 1800 / 1900 MHz
- Control via AT commands according to 3GPP TS 27.005, 27.007 and Telit custom AT commands
- Serial port multiplexer 3GPP IS 27.010 SIM access profile
- SIM application toolkit 3GPP TS 51.014
- Power consumption (typical values)
  - Power off: < 62 uA
  - Idle (registered, power saving):1.5 mA @ DRX=9
  - Dedicated mode: <240 mA @ max power level
  - GPRS cl.10: <420 mA @ max power level
- Supply voltage range: 3.22-4.5V DC (3.8V DC recommended)
- TCP/IP stack access via AT commands
- Sensitivity:
  107 dBm (typ.I @ 850 / 900 MHz
  106 dBm (typ.1@ 1800 / 1900 MHz
- Dimensions: 30 x 30 x 2.8 mm
- Weight: XX grams
- Extended temperature range
  40°C to +85°C [operational)
  40°C to +85°C (storage temperature)
- RoHS compliant
- DARP/SAIC support
- TCP/IP stack access via AT Commands

Interfaces

- 50-pin Molex connector
- 12 I/O ports maximum
- Analog audio (balanced and unbalanced)
- 1 A/D converter
- Buzzer output
- ITU-T V.24 serial link through UART:
  - CMOS level
  - Baud rate from 300 to 115,200 bps
  - Autobauding from 2,400 to 57,600 bps
- 50 Ohm MMCX antenna connector
- On board SIM card holder, 1.8 V / 3 V with real-time detection

GSM supplementary

- Call forwarding
- Call barring
- Call waiting & call hold
- Advice of charge
- Calling line identification presentation ICLIP)
- Calling line identification restriction ICLIR)
- Unstructured supplementary services mobile originated data IUSSD)
- Closed user group

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Audio

- Telephony, emergency call
- Half rate, full rate, enhanced full rate and adaptive multi rate voice codecs (HR, FR, EFR, AMR)
- Superior echo cancellation & noise reduction
- Handset hands-free operations
- DTMF

Approvals

- Pending

SMS

- Point-to-point mobile originated and mobile terminated SMS
- Concatenated SMS supported
- SMS cell broadcast
- Text and PDU mode

GPRS data

- GPRS class 10
- Mobile station class B
- Coding scheme 1 to 4
- PBCCH support
- GERAN Feature Package 1 support (NACC, Extended TBF)

Additional features

- SIM phonebook
- Fixed dialing number (FDN)
- Real-time clock
- Alarm management
- Battery management
- Network LED support
- IRA character set
- Jamming detection & report
- Embedded TCP/IP stack, including TOP, IP, UDP, SMTP and FTP protocols
- PFM (Premium FOTA Management) Over-the-Air update service
- Remote AT Commands
- Event monitor

Circuit Switched Data Transmission

Asynchronous non-transparent

CSD up to 9.6 kbp

Parameter	Value
Nominal Supply Voltage	*3.8 V*
Normal Operating Voltage Range	*3.4 V – 4.2 V*
Extended Operating Voltage Range	*3.22 V – 4.5 V*
Digital Input high level 2.8V CMOS	*Min 2.1V - Max 3.3V*
Digital Input low level 2.8V CMOS	*Min 0V - Max 0.5V*
Digital Output high level 2.8V CMOS	*Min 2.2V - Max 3.0V*
Digital Output low level 2.8V CMOS	*Min 0V - Max 0.35V*

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Pinouts

Pin	Signal	I/O	Function	Internal pull up	Type
1	VBATT	-	Main power supply		Power
2	GND	-	Ground		Power
3	VBATT	-	Main power supply		Power
4	GND	-	Ground		Power
5	VBATT	-	Main power supply		Power
6	A/D	-	A/D converter @ 11 bit (Input Impedance >100Kohm)		Max 2V input
7	VBATT	-	Main power supply		Power
8	CHARGE	AI	Battery Charger Input		Power
9	EAR_HF+	AO	Handsfree ear output, phase +		Audio
10	EAR_MT-	AI	Handset earphone signal output, phase -		Audio
11	EAR_HF-	AO	Handsfree ear output, phase -		Audio
12	EAR_MT+	AO	Handset earphone signal output, phase +		Audio
13	MIC_HF-	AI	Handsfree microphone input; phase -		Audio
14	MIC_MT+	AI	Handset microphone signal input; phase+		Audio
15	MIC_HF+	AI	Handsfree microphone input; phase +		Audio
16	MIC_MT-	AI	Handset microphone signal input; phase-		Audio
17	ON_OFF	I	Input command for switching power ON or OFF	47KΩ	Pull Up to VBATT
18	AXE	I	Handsfree switching	100KΩ	CMOS 2.8V
19	SIMIO	I/O	External SIM signal - Data I/O		1.8V/3V ONLY
20	C103/TXD	I	Serial data input (TXD) from DTE		CMOS 2.8V
21	PWRMON	O	Module Status ON indication	1KΩ	CMOS 2.8V
22	SIMVCC	-	External SIM signal – Power (3)		1.8V/3V ONLY
23	RESET	I	Reset input		-
24	SIMRST	O	External SIM signal – Reset		1.8V/3V ONLY
25	RESERVED	-	Reserved		-
26	SIMCLK	O	External SIM signal – Clock		1.8V/3V ONLY
27	SIMIN	I/O	External SIM signal – Presence (active low)	47KΩ	CMOS 2.8V
28	GPO2 / JDR	O	General purpose output (Open Collector) / Jammer Detect Report		Open Collector
29	C106/CTS	O	Output for Clear to send signal (CTS) to DTE		CMOS 2.8V
30	C125/RING	O	Output for Ring indicator signal (RI) to DTE		CMOS 2.8V
31	GPI1	I	General purpose input		transistor base
32	GPIO8	I/O	Configurable general purpose I/O pin		CMOS 2.8V
33	C107/DSR	O	Output for Data set ready signal (DSR) to DTE		CMOS 2.8V
34	GPIO9	I/O	Configurable general purpose I/O pin		CMOS 2.8V

35	TX_TRACE	O	RESERVED on GM862-QUAD, Python Debug on GM862-QUAD-PY (TX data)		CMOS 2.8V
36	C109/DCD	O	Output for Data carrier detect signal (DCD) to DTE		CMOS 2.8V
37	C104/RXD	O	Serial data output to DTE		CMOS 2.8V
38	GPIO10	I/O	Configurable general purpose I/O		CMOS 2.8V
39	STAT_LED	O	Status indicator led		Open Collector
40	GPIO11	I/O	Configurable general purpose I/O pin	4.7 Kohm	CMOS 2.8V
41	RX_TRACE	I	RESERVED on GM862-QUAD, Python Debug on GM862-QUAD-PY (RX data)		CMOS 2.8V
42	GPIO12	I/O	Configurable general purpose I/O pin	47 Kohm	CMOS 2.8V
43	C108/DTR	I	Input for Data terminal ready signal (DTR) from DTE		CMOS 2.8V
44	GPIO13	I/O	Configurable general purpose I/O pin		CMOS 2.8V
45	C105/RTS	I	Input for Request to send signal (RTS) from DTE		CMOS 2.8V
46	GPIO3	I/O	Configurable general purpose I/O pin	47 Kohm	CMOS 2.8V
47	GPIO4	I/O	Configurable general purpose I/O pin / TX Disable Control	4.7 Kohm	CMOS 2.8V
48	GPIO5 / RFTXMON	I/O	Configurable general purpose I/O pin / Transmitter ON Monitor		CMOS 2.8V
49	GPIO6 / ALARM	I/O	Configurable general purpose I/O pin / ALARM		CMOS 2.8V
50	GPIO7 / BUZZER	I/O	Configurable general purpose I/O pin / BUZZER		CMOS 2.8V