

RYR2000 Series

4G LTE CAT1 & GNSS mini PCIe card

Datasheet



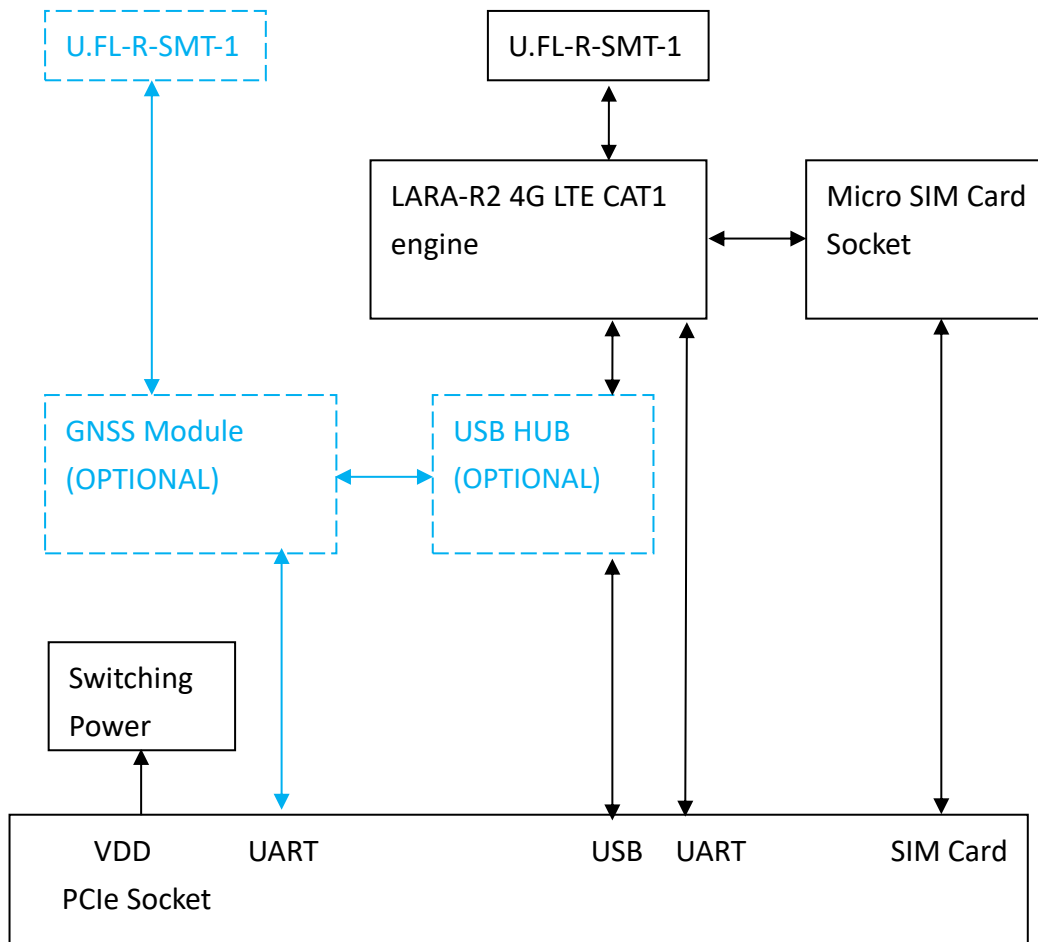
PRODUCT DESCRIPTION

The RYR2000 series is based on the PCI Express Mini Card standard with a USB 2.0 interface.

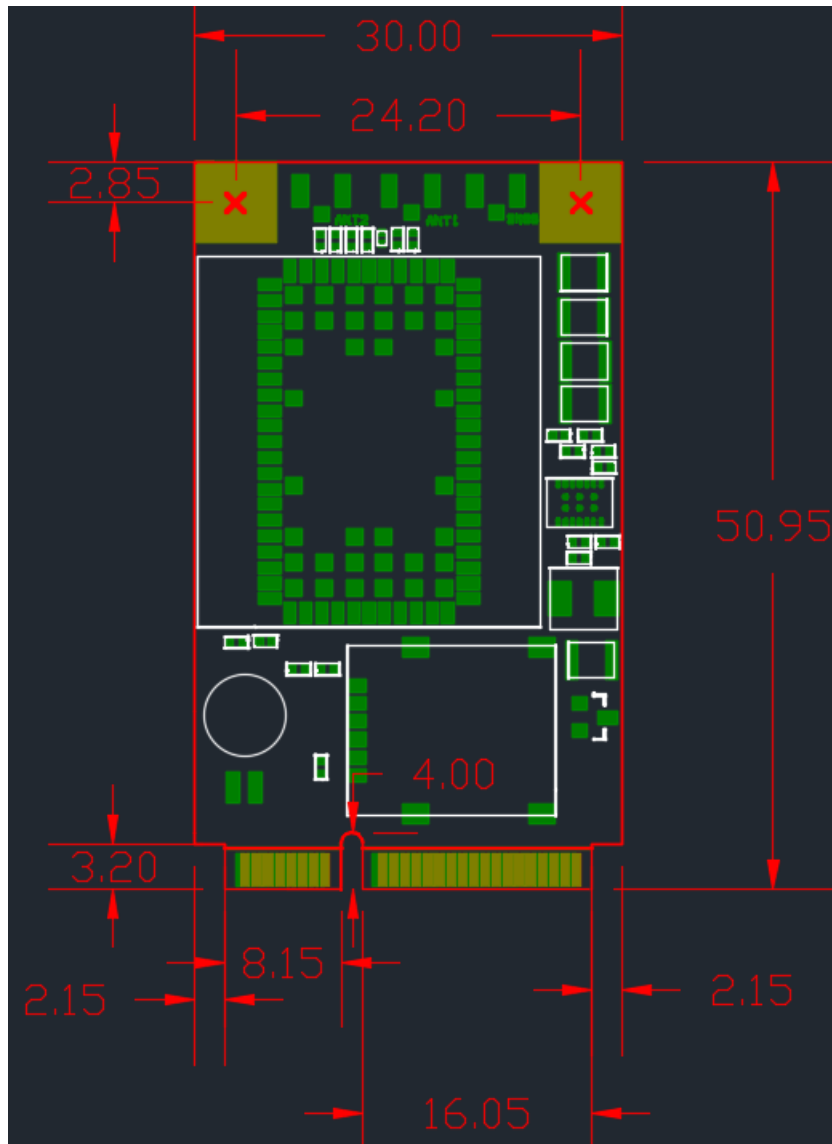
FEATURES

- LARA-R2 Series 4G LTE CAT1 engine.
- Build-in nano SIM card holder.
- Standard mini PCIe and plug PCB design.
- Temperature range: -40 to +85°C.
- 72-channel EVA-M8M-0 GNSS engine. (OPTIONAL)
- Manufactured in ISO/TS 16949 certified production sites.
- Mini PCIe Signal Type USB2.0.

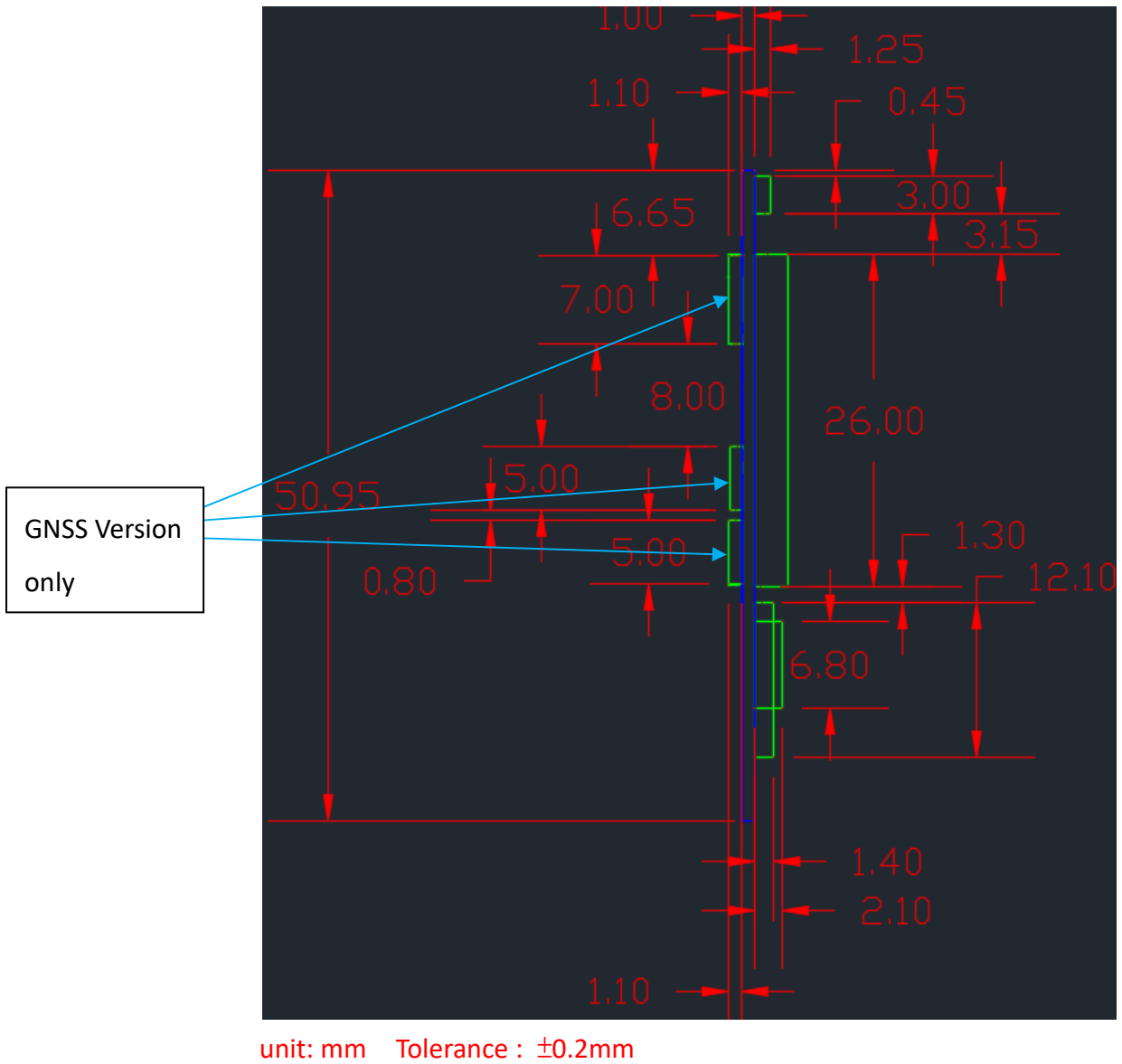
BLOCK DIAGRAM



DIMENSIONS

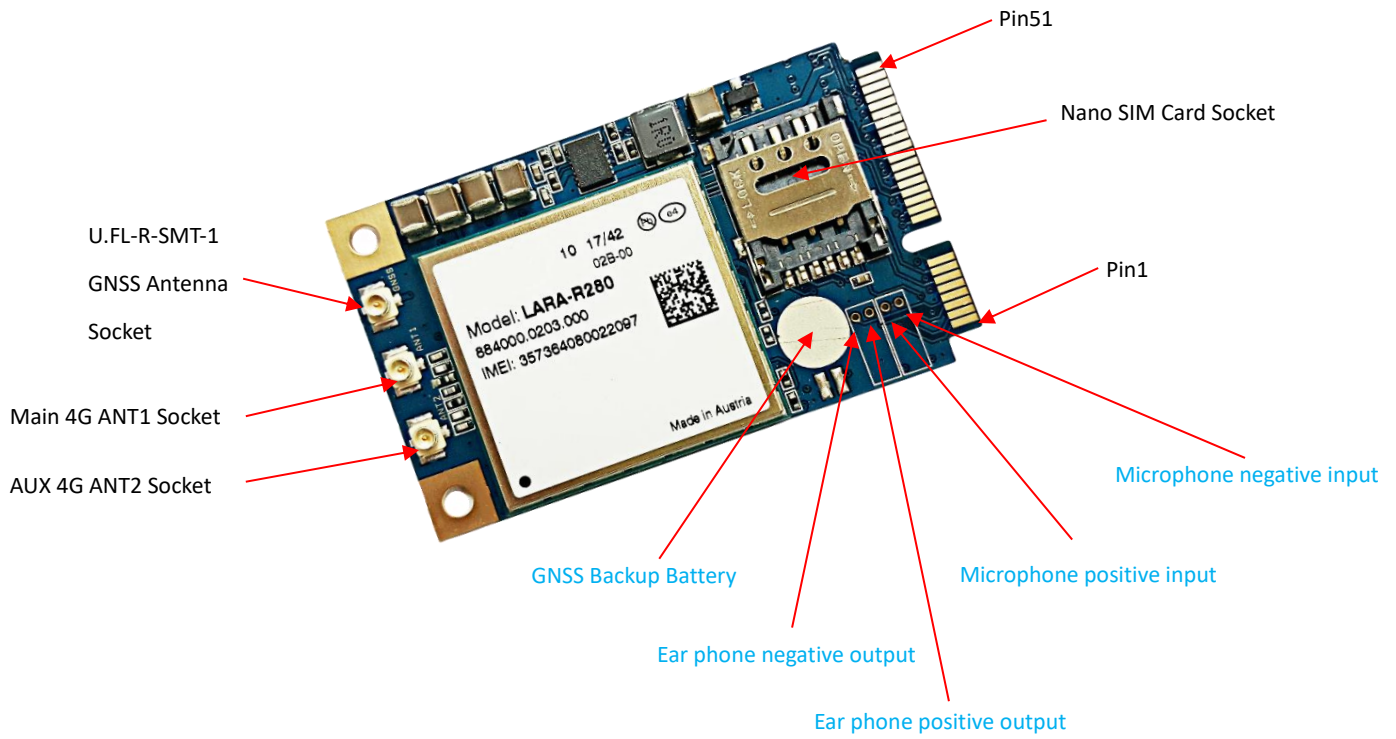


unit: mm Tolerance : ± 0.2 mm



PIN CONNECTOR

*The blue string is the customize version only, The standard version is "NC"



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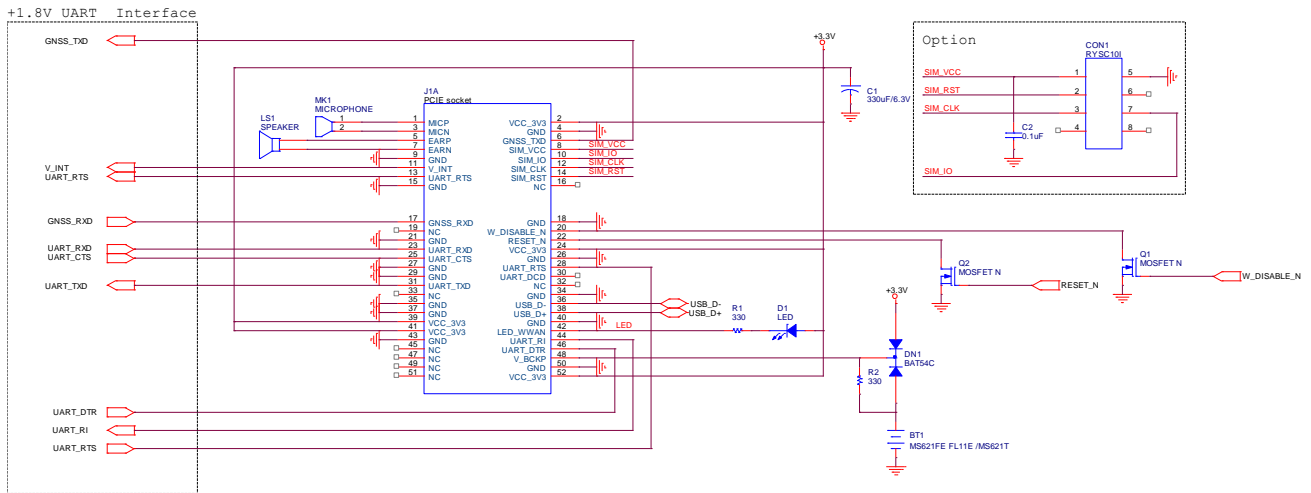
Pin	Name	Input/Output	Description
1	MICP	Input	Microphone positive input (Audio version only)
2	VCC	Power	Power Input
3	MICN	Input	Microphone negative input (Audio version only)
4	GND		Power Ground
5	EARP	Output	Ear phone positive output (Audio version only)
6	GNSS_TXD	Output	+1.8V Serial Data Output (UART Version only)
7	EARN	Output	Ear phone negative output (Audio version only)
8	SIM_VCC		External SIM signal – Power supply for the SIM
9	GND		Power Ground
10	SIM_IO	Input/Output	External SIM signal – Data I/O
11	V_INT	Output	+1.8V Power Output LARA-R2 pin4 (UART Version only)
12	SIM_CLK	Output	External SIM signal – Clock
13	NC		Not connected
14	SIM_RST	Output	External SIM signal – Reset
15	GND		Power Ground
16	NC		Not connected
17	GNSS_RXD	Input	+1.8V Serial Data Input (UART Version only)
18	GND		Power Ground
19	NC		Not connected
20	W_DISABLE_N	Input	H : Enable (Internal Pull up resistor) L : Disable
21	GND		Power Ground
22	RESET_N	Input	LARA-R2 External reset input
23	UART_RXD	Input	+1.8V UART data input LARA-R280 pin12 (UART Version only)
24	VCC	Power	Power Input

25	UART_CTS	Output	+1.8V UART clear to send LARA-R280 pin11 (UART Version only)
26	GND		Power Ground
27	GND		Power Ground
28	UART_RTS	Input	+1.8V UART ready to send LARA-R280 pin10 (UART Version only)
29	GND		Power Ground
30	UART_DCD	Output	+1.8V UART data carrier detect LARA-R280 pin8 (UART Version only)
31	UART_TXD	Output	+1.8V UART data output LARA-R280 pin13 (UART Version only)
32	NC		Not connected
33	NC		Not connected
34	GND		Power Ground
35	GND		Power Ground
36	USB_DN	Input/Output	USB Data Negative
37	GND		Power Ground
38	USB_DP	Input/Output	USB Data Positive
39	VCC	Power	Power Input
40	GND		Power Ground
41	VCC	Power	Power Input
42	LED_WWAN	Output	LED setting flash via AT command port AT+UGPIOC=16,2,1
43	GND		Power Ground
44	UART_RI	Output	+1.8V UART ring indicator LARA-R2 pin7 (UART Version only)
45	NC		Not connected
46	UART_DTR	Input	+1.8V UART data terminal ready LARA-R2 pin9 (UART Version only)
47	NC		Not connected
48	V_BCKP	Input	Real Time Clock supply input/output LARA-R2 pin2 (UART Version only)
49	NC		Not connected
50	GND		Power Ground
51	NC		Not connected
52	VCC	Power	Power Input

SPECIFICATION

Item	Min.	Typ	Max.	Unit	Description
4G LARA-R2 Series					
LTE Bands		2,4,5,12			LARA-R202
		2,4,12			LARA-R203
		4,13			LARA-R204
		3, 7, 20			LARA-R211
		1,19			LARA-R220
		3, 8, 28			LARA-R280
UMTS Bands		850/1900 MHz			LARA-R202
		2100MHz			LARA-R280
GSM Bands		900/1800 MHz			LARA-R211
LTE FDD Category		1			
Downlink Speed		10		Mb/s	
Uplink Speed		5		Mb/s	
General					
Operating Voltage Power Input	3	3.3	5.5	V	VCC
USB Interface					V2.0
Operating Temperature (Extended range)	-40	25	+85	°C	Refer to the LARA-R2 specification
Dimension					mini PCIe Standard 50.95mm*30mm
Antenna Connector		3			U.FL-R-SMT-1
Weight		10		g	

UART APPLICATION CIRCUIT REFERENCE : MINI PCIe CARD



DRIVER AND CONFIGURATION TOOLS

Complete software along with host driver for various operating systems such as Windows, Linux, Windows CE, and Android.

Please download the driver and documents from <http://www.u-blox.com> .

ORDER INFORMATION

Ordering No.	4G Engine	GNSS Engine
RYR2020	LARA-R202	
RYR2028	LARA-R202	EVA-M8M-0
RYR2030	LARA-R203	
RYR2038	LARA-R203	EVA-M8M-0
RYR2040	LARA-R204	
RYR2048	LARA-R204	EVA-M8M-0
RYR2110	LARA-R211	
RYR2118	LARA-R211	EVA-M8M-0
RYR2220	LARA-R220	
RYR2228	LARA-R220	EVA-M8M-0
RYR2800	LARA-R280	
RYR2808	LARA-R280	EVA-M8M-0

*If you need UART or Audio version, please contact us.