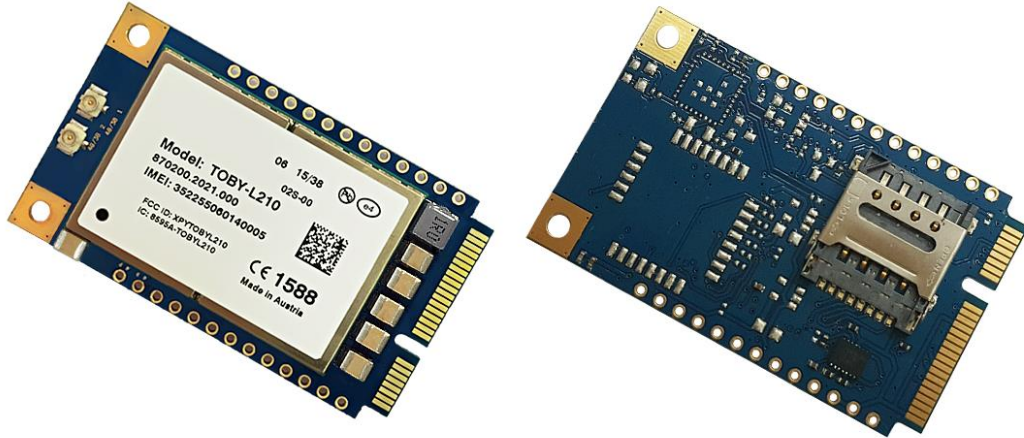


RYT2000 Series

4G LTE mini PCIe card

Datasheet



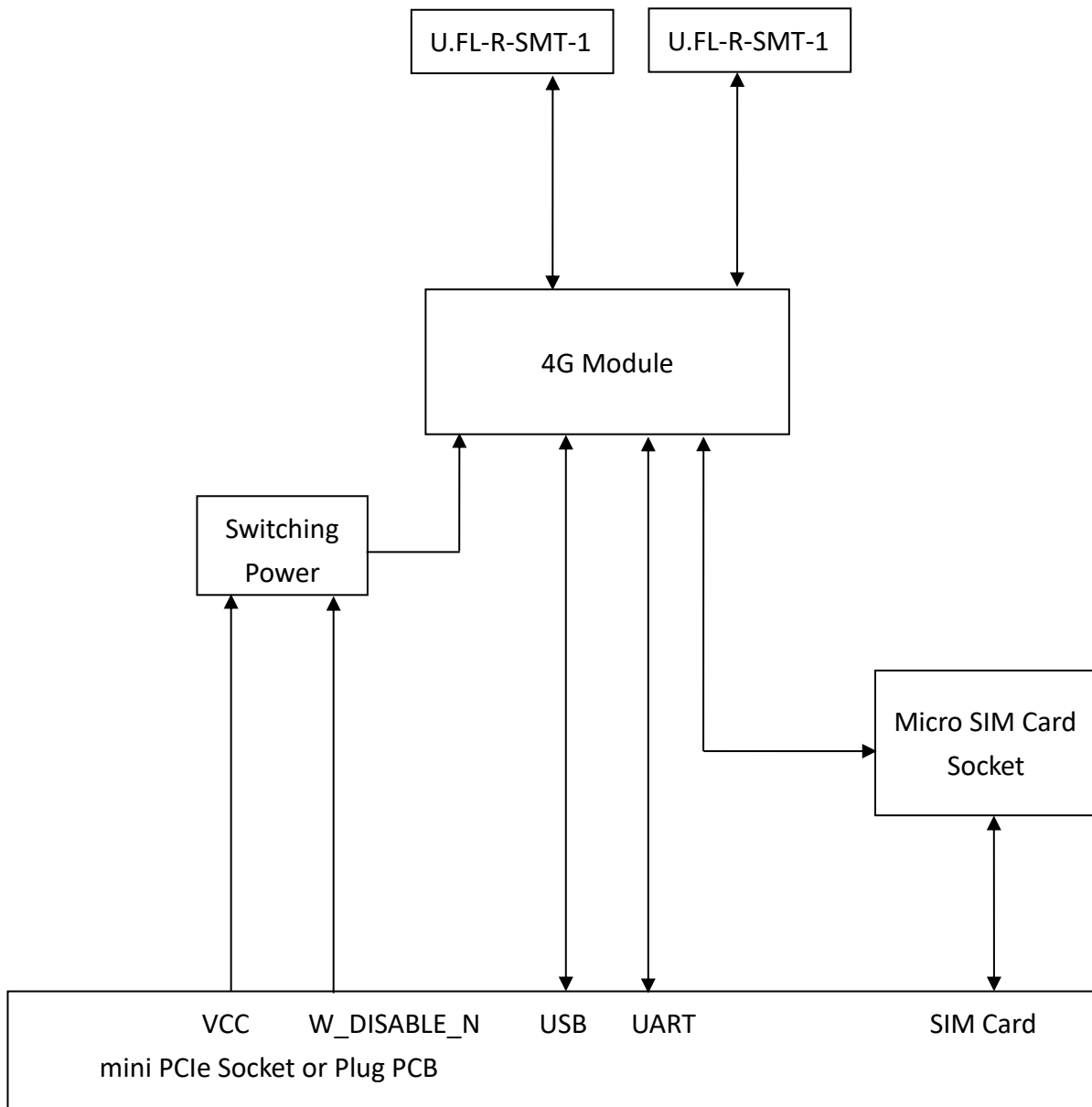
PRODUCT DESCRIPTION

The RYT2000 series is based on the PCI Express Mini Card standard with a USB 2.0 interface.

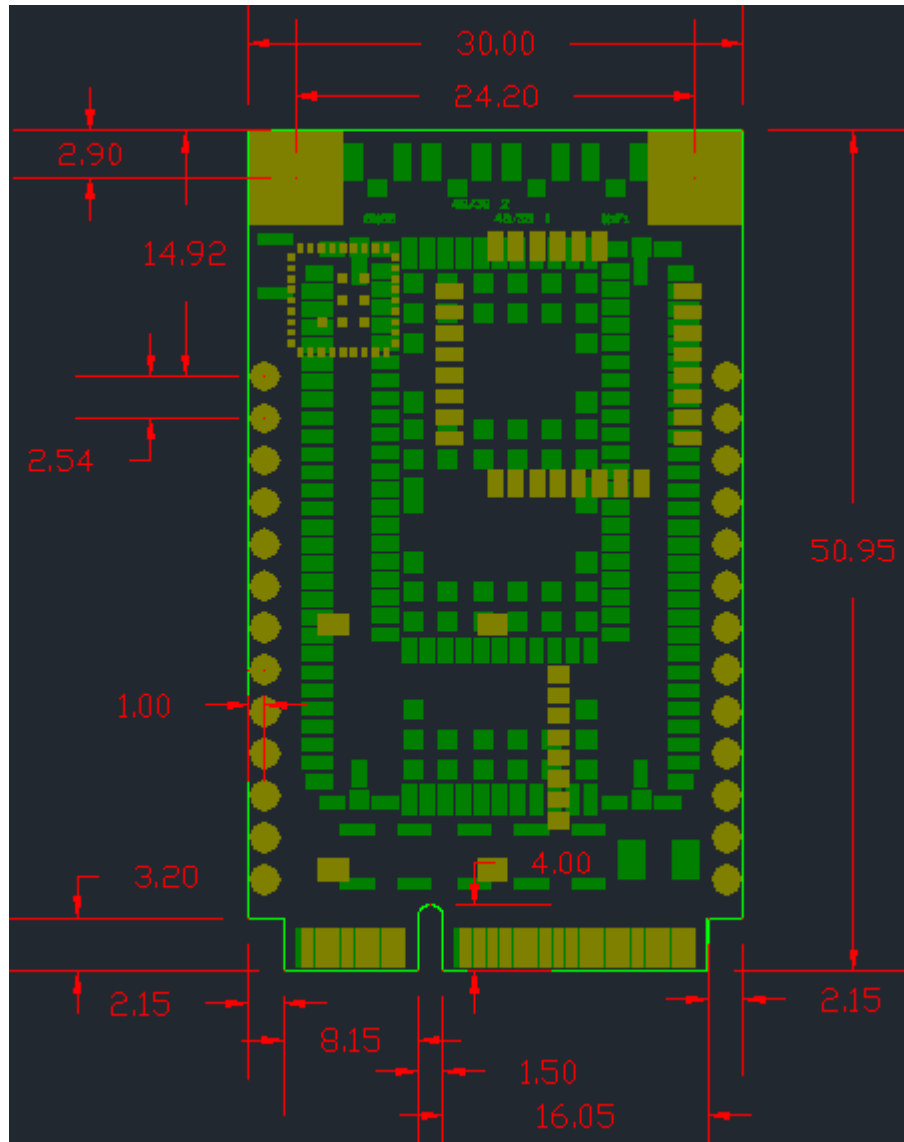
FEATURES

- TOBY-L2 Series 4G LTE engine.
- Build-in micro SIM card holder.
- Standard mini PCIe and plug PCB design.
- Temperature range: -40 to +85°C.
- Manufactured in ISO/TS 16949 certified production sites.
- Mini PCIe Signal Type USB2.0.

BLOCK DIAGRAM

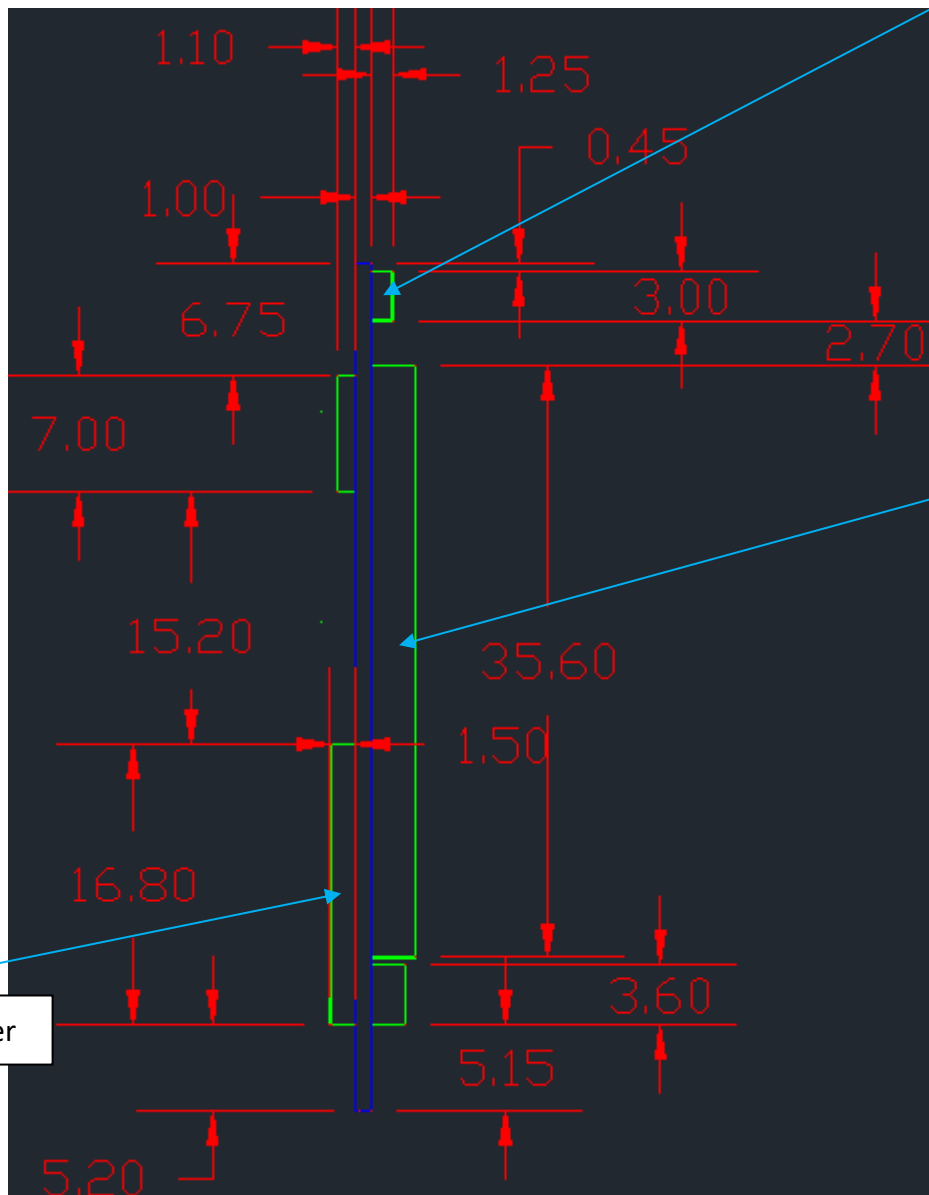


DIMENSIONS



unit: mm

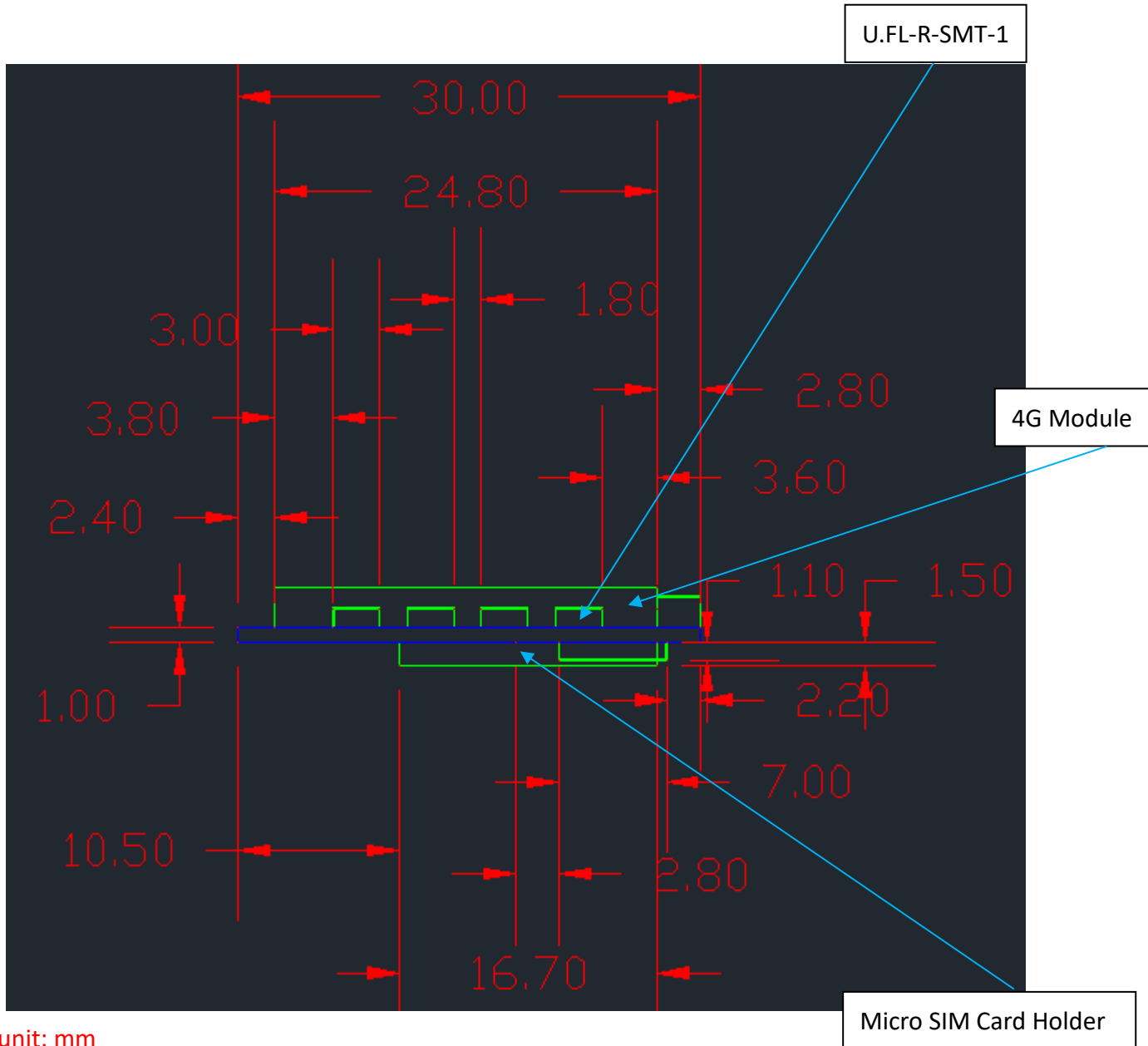
U.FL-R-SMT-1



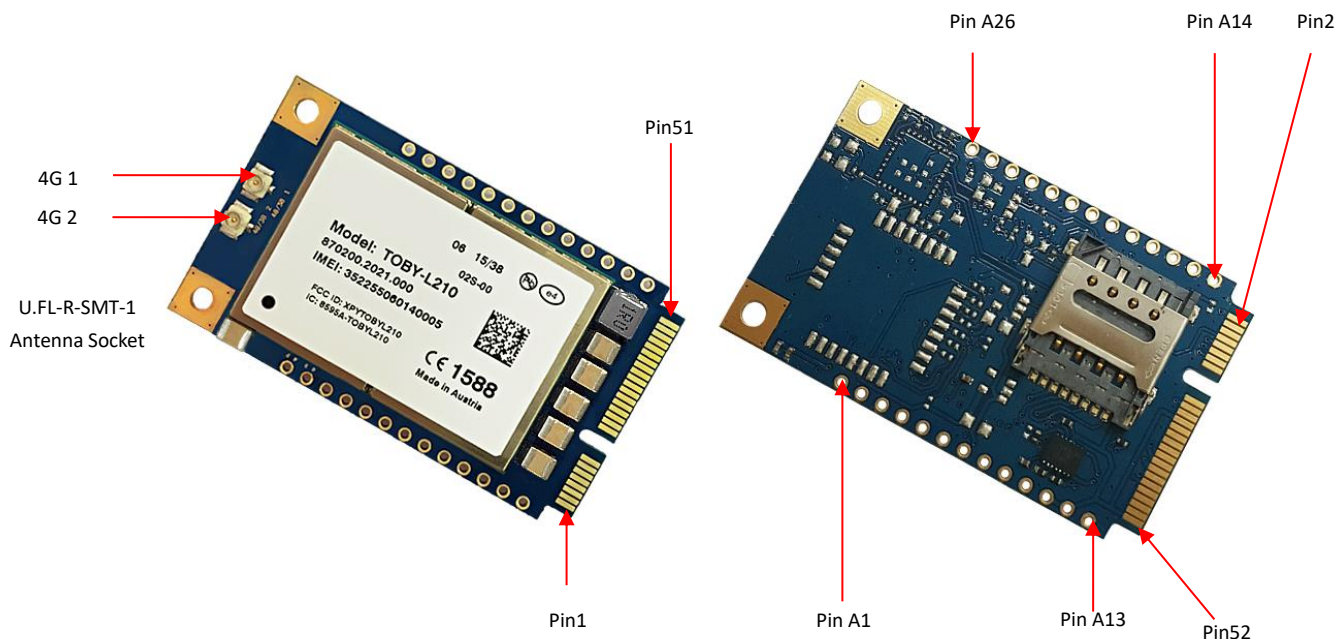
4G Module

Micro SIM Card Holder

unit: mm



PIN CONNECTOR



PIN DESCRIPTION

Pin	Name	Input/Output	Description
1	NC		Not connected
2	VCC	Power	Power Input
3	NC		Not connected
4	GND		Power Ground
5	NC		Not connected
6	NC		Not connected
7	NC		Not connected
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	NC		Not connected
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

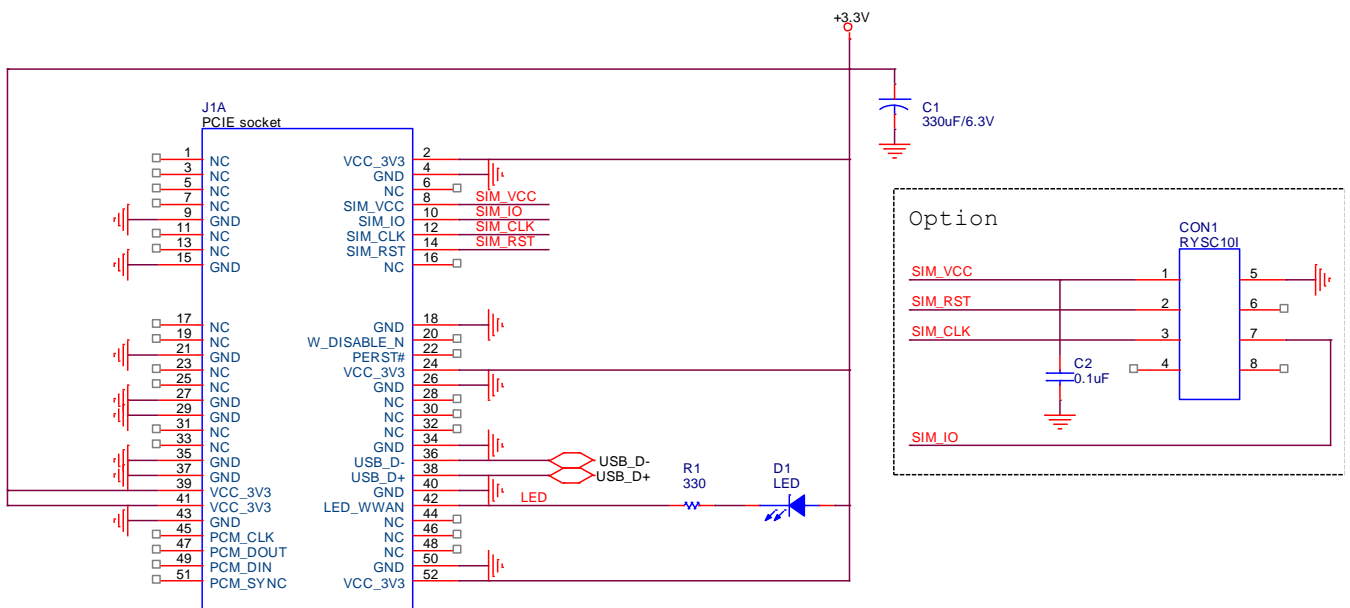
17	NC		Not connected
18	GND		Power Ground
19	NC		Not connected
20	W_DISABLE_N	Input	H : Enable L : Disable If this pin is unused, keep open.
21	GND		Power Ground
22	NC		Not connected
23	NC		Not connected
24	VCC	Power	Power Input
25	NC		Not connected
26	GND		Power Ground
27	GND		Power Ground
28	NC		Not connected
29	GND		Power Ground
30	NC		Not connected
31	NC		Not connected
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	Default: high impedance; LED setting flash via AT command port AT+UGPIOC=16,2,1
43	GND		Power Ground
44	NC		Not connected
45	NC		Not connected
46	NC		Not connected
47	NC		Not connected
48	NC		Not connected
49	NC		Not connected

50	GND		Power Ground
51	NC		Not connected
52	VCC	Power	Power Input
DIP A1~A26 1.8V I/O Interface			
A1	SIM_VCC	Power	External SIM signal – Power supply for the SIM
A2	SIM_RST	Output	External SIM signal – Reset
A3	SIM_IO	Input/Output	External SIM signal – Data I/O
A4	SIM_CLK	Output	External SIM signal – Clock
A5	GNSS_ENABLE	Input	H : Enable GNSS Power L : Disable GNSS Power
A6	GNSS_RXD	Input	GNSS Serial interface
A7	GNSS_TXD	Output	GNSS Serial interface
A8	W_DISABLE_N	Input	H : Enable Power L : Disable Power
A9	LED_WWAN	Output	Default: high impedance; LED setting flash via AT command port AT+UGPIOC=16,2,1
A10	RESET_N	Input	4G External reset input
A11	VCC	Power	Power Input
A12	VCC	Power	Power Input
A13	GND		Power Ground
A14	GND		Power Ground
A15	USB_DP	Input/Output	USB Data Positive
A16	USB_DN	Input/Output	USB Data Negative
A17	PWR_ON	Input	4G Power-on input
A18	RXD	Output	UART received data
A19	TXD	Input	UART transmitted data
A20	CTS	Output	UART clear to send
A21	RTS	Input	UART ready to send
A22	DTR	Input	UART data terminal ready
A23	DCD	Output	UART data carrier detect
A24	RI	Output	UART ring indicator
A25	DSR	Output	UART data set ready
A26	V_BCKP	Power	RTC Backup supply

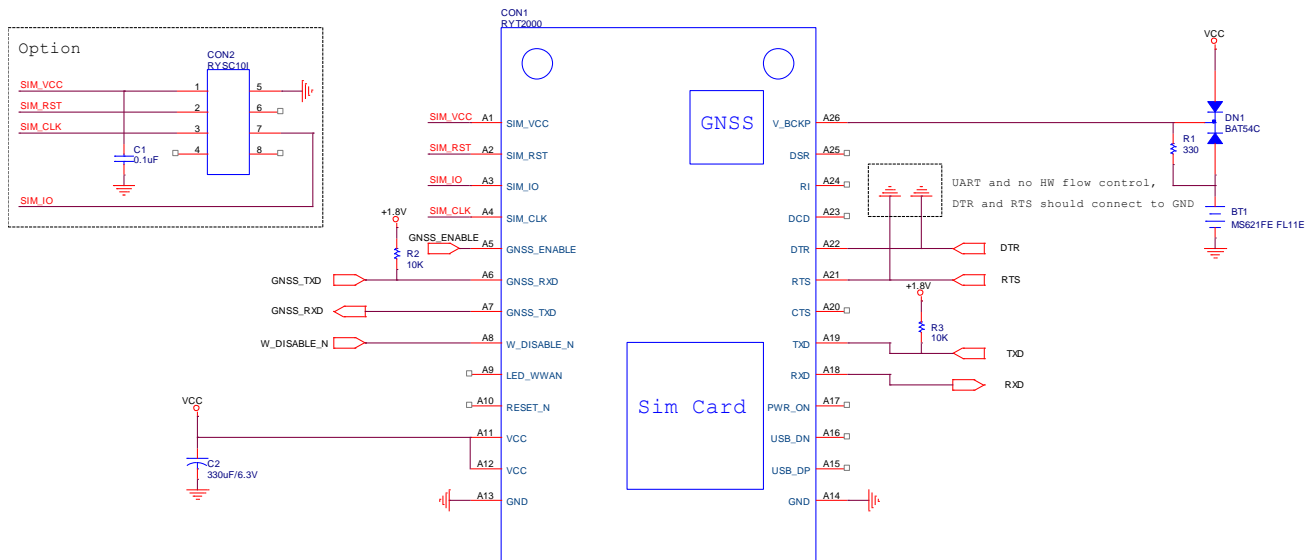
SPECIFICATION

Item	Min.	Typ	Max.	Unit	Description
4G TOBY-L2 Series					
LTE Bands		2,4,5,7,17			TOBY-L200
		2,4,5,13,17			TOBY-L201
		1,3,5,7,8,20			TOBY-L210
		1,3,5,8,19			TOBY-L220
		1,3,5,7,8,28			TOBY-L280
UMTS Bands		850/1900		MHz	TOBY-L201
		850/900 /2100		MHz	TOBY-L220
		850/900/ 1900/2100		MHz	TOBY-L200 TOBY-L210 TOBY-L280
LTE FDD Category		4			
Downlink Speed		150		Mb/s	
Uplink Speed		50		Mb/s	
General					
Operating Voltage Power Input	3	3.3	5.5	V	VCC
RTC Backup supply	1.4	3.3	3.6	V	V_BCKP
USB Interface					V2.0
Operating Temperature Range	-40	25	+85	°C	
Dimension					mini PCIe Standard 50.95mm*30mm
Antenna Connector		4			U.FL-R-SMT-1
Weight		10		g	

APPLICATION CIRCUIT REFERENCE : MINI PCIe CARD



APPLICATION CIRCUIT REFERENCE : PLUG PCB TYPE



ORDER INFORMATION

Ordering No.	4G Engine
RYT2000	TOBY-L200
RYT2010	TOBY-L201
RYT2100	TOBY-L210
RYT2200	TOBY-L220
RYT2800	TOBY-L280



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