

RYN2000 series

NB-IoT Full / Half-size mini PCIe Card

Datasheet



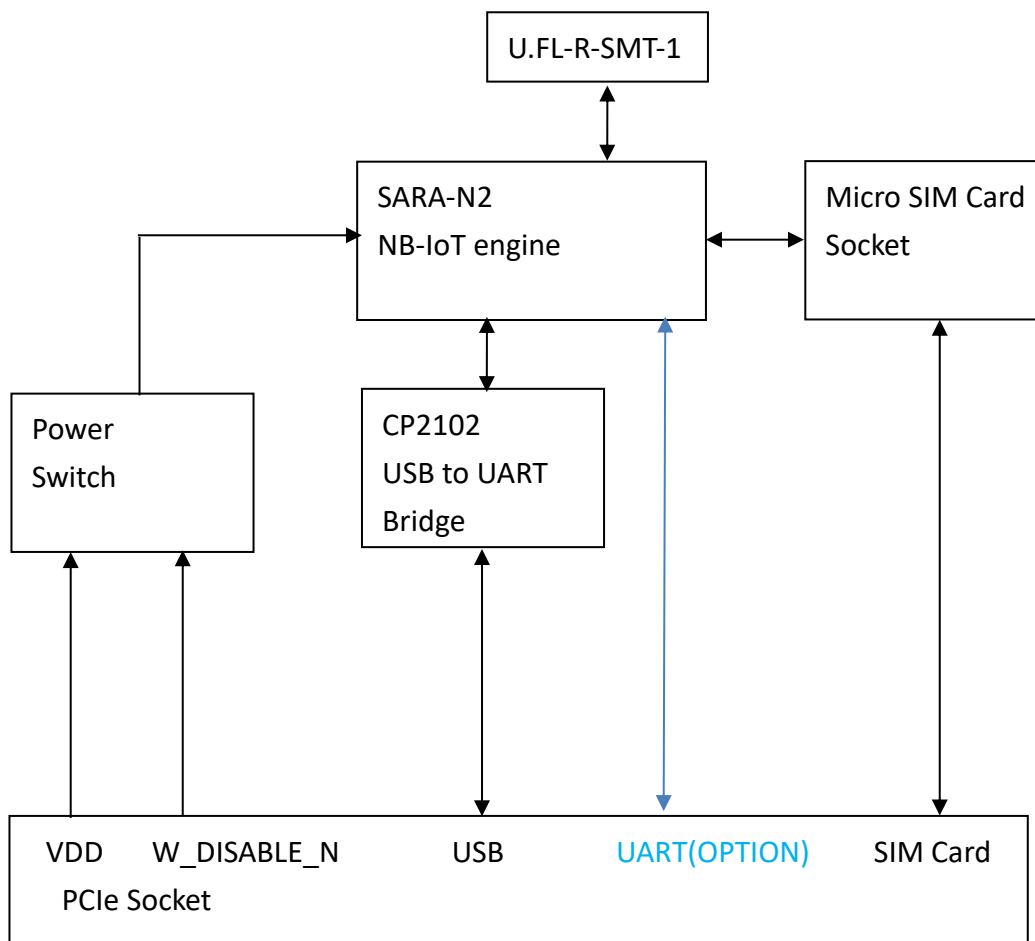
PRODUCT DESCRIPTION

The RYN2000 series is based on the PCI Express Mini Card standard with a USB 2.0 interface.

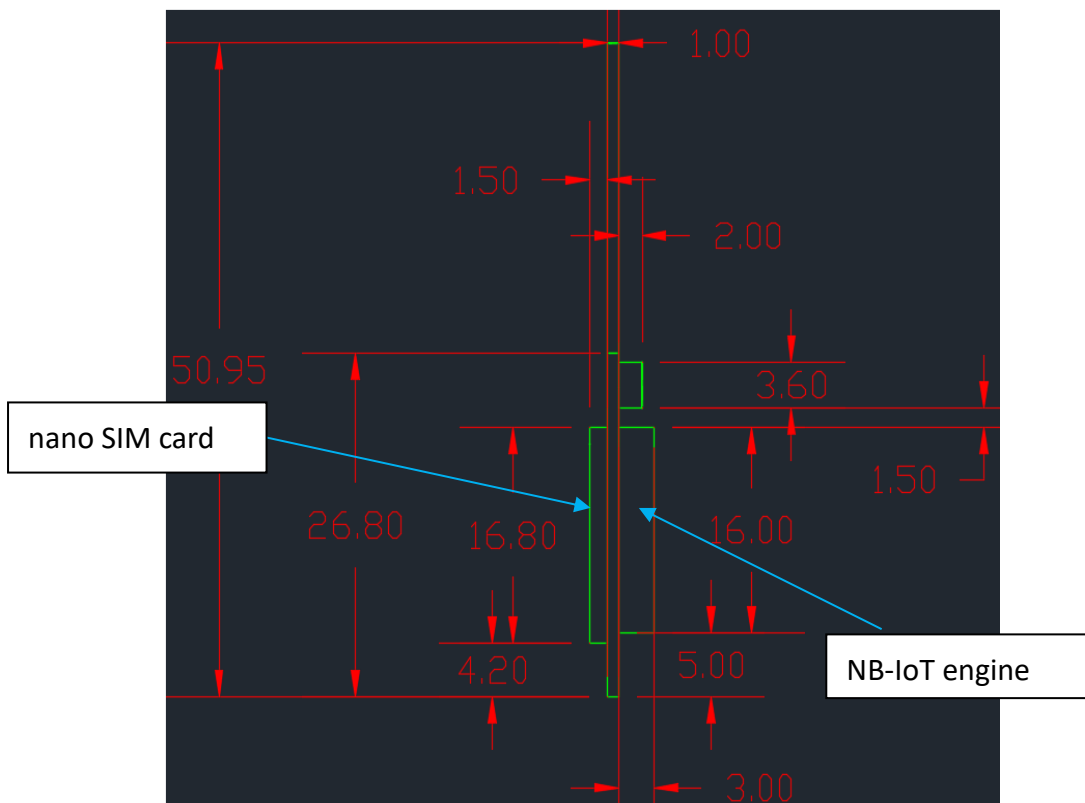
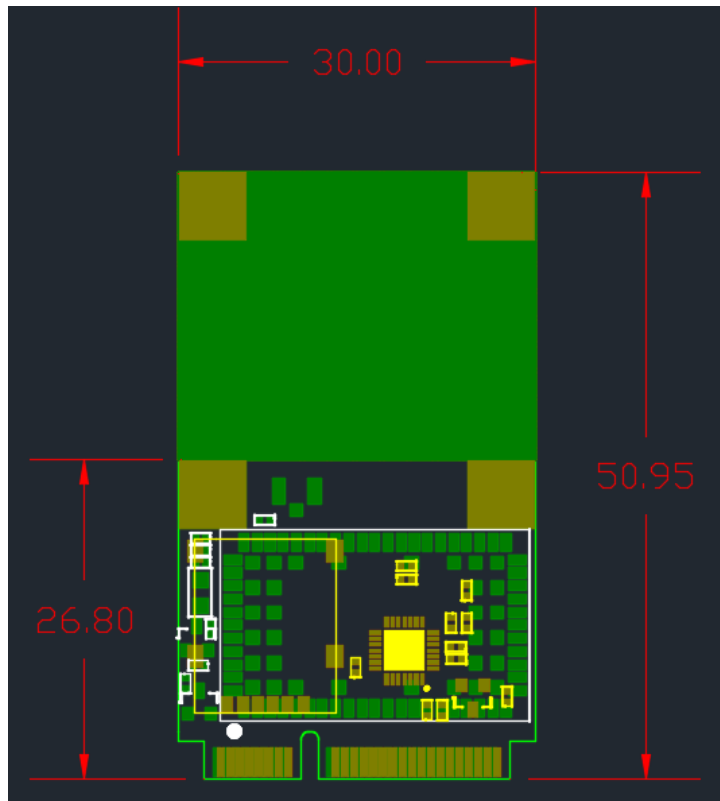
FEATURES

- SARA-N2 engine.
- Bands = 5/8/20/28
- Build-in a micro SIM card holder.
- Standard mini PCIe full-size 30mm*50.95mm / half-size 30mm*26.8mm.
- Low idle mode current.
- Temperature range: -40 to +85°C.
- Manufactured in ISO/TS 16949 certified production sites.
- Mini PCIe Signal Type UART/USB2.0.

BLOCK DIAGRAM



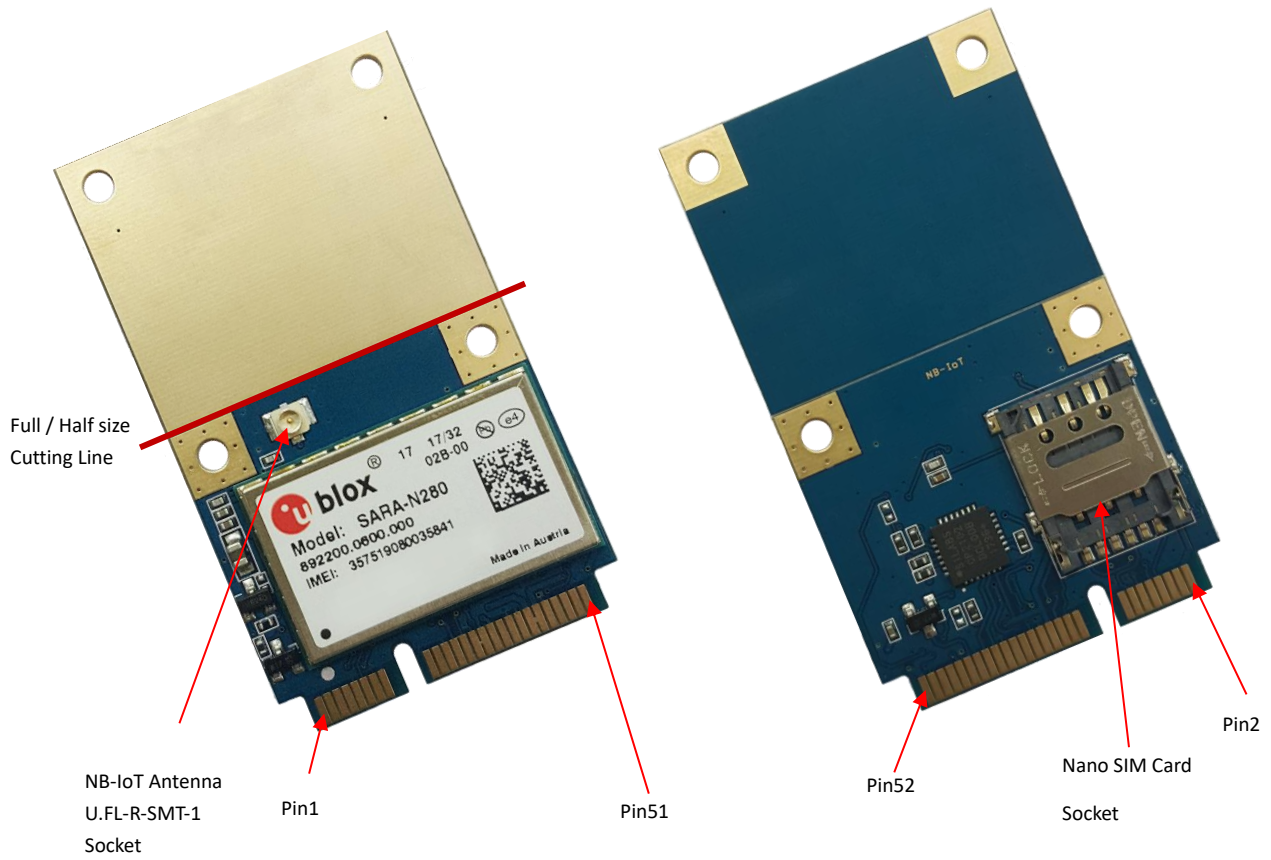
DIMENSIONS



unit: mm

Thickness 1mm

PIN CONNECTOR



PIN DESCRIPTION

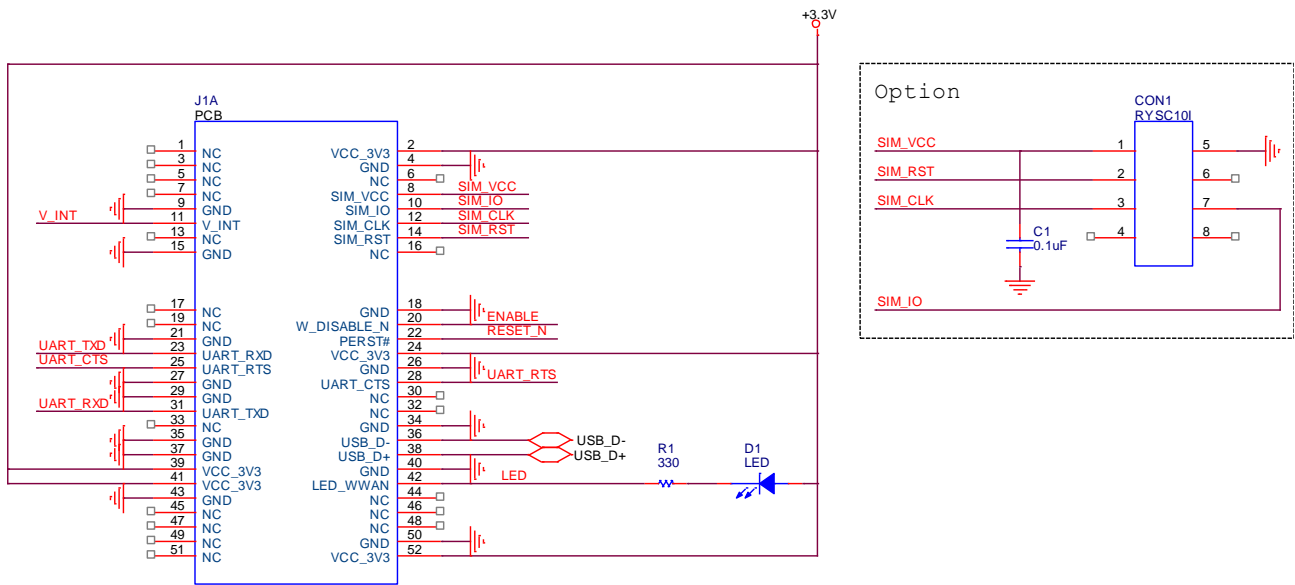
Pin	Name	Input/Output	Description
1	NC		Not connected
2	VCC_3V3	Power	Power Input
3	NC		Not connected
4	GND		Power Ground
5	NC		Not connected
6	NC		Not connected
7	NC		Not connected
8	SIM_VCC		External SIM signal – Power supply for the SIM
9	GND		Power Ground
10	SIM_IO	Input/Output	External SIM signal – Data I/O
11	V_INT	Output	+1.8V Power Output <small>SARA-N2 pin4</small>
12	SIM_CLK	Output	External SIM signal – Clock
13	NC		Not connected
14	SIM_RST	Input	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	Hi or Open : Enable the power Low : Disable the power
21	GND		Power Ground
22	RESET_N	Input	SARA-R4 External reset input <small>SARA-N2 pin18</small>
23	UART_RXD	Input	+1.8V UART data input <small>SARA-N2 pin12</small>
24	VCC_3V3	Power	Power Input
25	UART_RTS	Output	+1.8V UART clear to send <small>SARA-N2 pin11</small>
26	GND		Power Ground
27	GND		Power Ground
28	UART_CTS	Input	+1.8V UART ready to send <small>SARA-N2 pin10</small>
29	GND		Power Ground
30	NC		Not connected
31	UART_TXD	Output	+1.8V UART data output <small>SARA-R4 pin13</small>
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_3V3	Power	Power Input
40	GND		Power Ground
41	VCC_3V3	Power	Power Input
42	NC		Not connected
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_3V3	Power	Power Input

SPECIFICATION

Item	Min.	Typ	Max.	Unit	Description
NB1 SARA-N2					
NB-IoT bands		8 5 20 8,20 28			RYN2000 RYN2010 RYN2100 RYN2110 RYN2800
Downlink Speed		62.5		kb/s	
Uplink Speed		27.2		kb/s	
Tx mode Current			230	mA	
Rx mode Current			46	mA	
CP2102 USB to UART Bridge Current		20		mA	
Operating Voltage Power Input VCC_3V3	3.1	3.3	3.6	V	
USB Interface					V2.0
Operating Temperature Range	-40	25	+85	°C	
Antenna Connector		1			U.FL-R-SMT-1
Weight		6		g	

APPLICATION CIRCUIT REFERENCE



CERTIFICATIONS AND APPROVALS

RYN2000 CE / RED, CCC, NCC, SRRC

RYN2010 CCC, SRRC

RYN2100 CE / RED

RYN2110 CE / RED, NCC, ATEX, GCF

RYN2800 NCC, Anatel, RCM

DRIVER AND CONFIGURATION TOOLS

Complete software along with host driver for various operating systems such as Windows, Please download the CP2102 USB to UART Bridge driver from www.silabs.com

ORDER INFORMATION

Ordering No.	NB-IoT Engine
RYN2000	SARA-N200
RYN2010	SARA-N201
RYN2100	SARA-N210
RYN2110	SARA-N211
RYN2800	SARA-N280



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