REYAX
TECHNOLOGY CORPORATION, LTD

18-DEC-2019 56312E37

RYLR895

UART Interface
868/915MHz Lora
Transceiver Module

Datasheet

PRODUCT DESCRIPTION

The RYLR895 transceiver module feature the Lora long range modem that provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption.

FEATURES

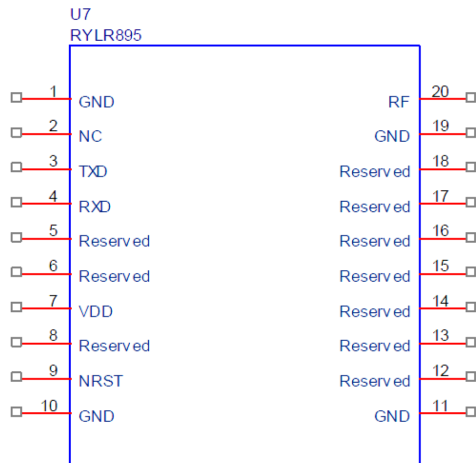
- Semtech SX1276 Engine
- Excellent blocking immunity
- Low Receive current
- High sensitivity
- Control easily by AT commands
- 127 dB Dynamic Range RSSI
- AES128 Data encryption

APPLICATIONS

- IoT Applications
- Mobile Equipment
- Home Security
- Industrial Monitoring and Control Equipment
- Car Alarm

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

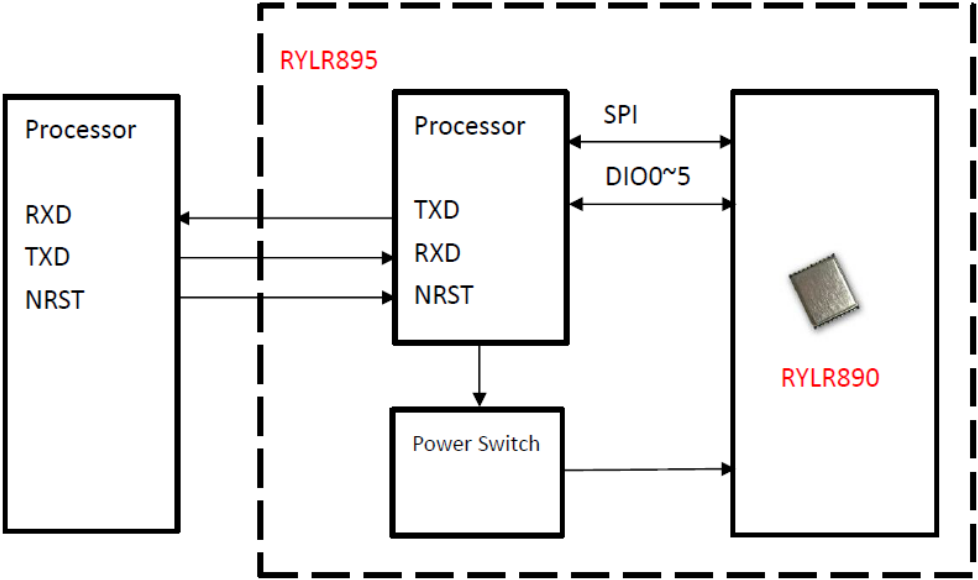
PIN DESCRIPTION



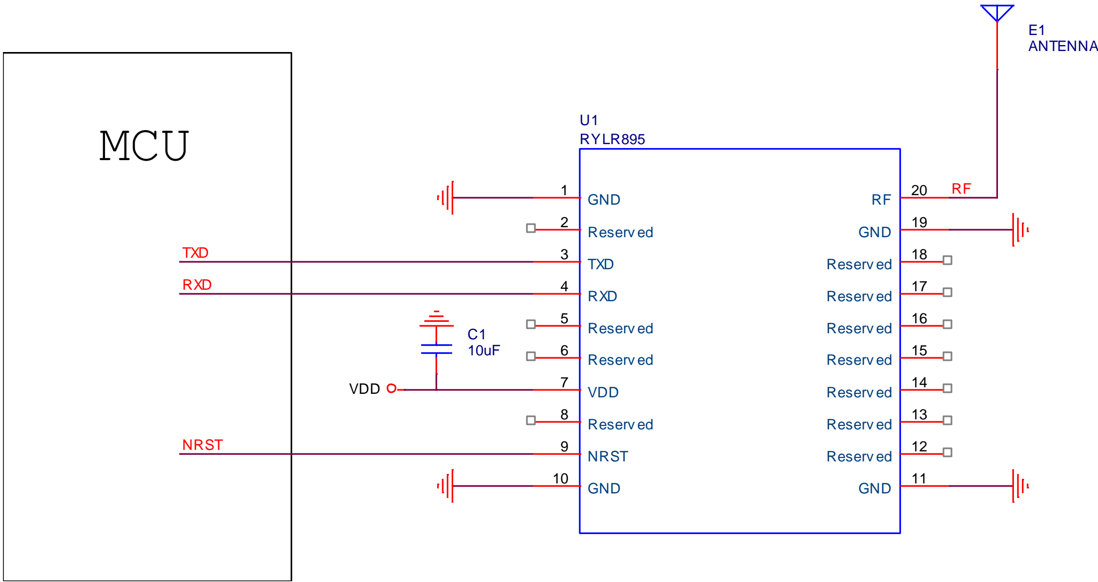
Pin	Name	I/O	Condition
1	GND	-	Ground
2	Reserved	-	Reserved I/O
3	TXD	O	UART Data Output
4	RXD	I	UART Data Input
5	Reserved	-	Reserved I/O
6	Reserved	-	Reserved I/O
7	VDD	I	Power Supply
8	Reserved	-	Reserved I/O
9	NRST	I	RESET(Active Low)
10	GND	-	Ground
11	GND	-	Ground
12	Reserved	-	Reserved I/O
13	Reserved	-	Reserved I/O
14	Reserved	-	Reserved I/O
15	Reserved	-	Reserved I/O
16	Reserved	-	Reserved I/O
17	Reserved	-	Reserved I/O
18	Reserved	-	Reserved I/O
19	GND	-	Ground
20	RF	I/O	RF Input/Output

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

BLOCK DIAGRAM



APPLICATION SCHEMATIC



Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

SPECIFICATION

Item	Min.	Typical	Max.	Unit	Condition
VDD Power Supply	2	3.3	3.6	V	VDD
RF Output Power Range	-4		15	dBm	
Filter insertion loss	1	2	3	dB	
RF Sensitivity	-148			dBm	
RF Input Level			10	dBm	
Frequency Range	862	868/915	1020	MHz	
Frequency Accuracy		±2		ppm	
Communication Range		4.5	15	KM	Depend on RF parameter
Transmit Current		43		mA	RFOP = +15 dBm
Receive Current		16.5		mA	AT+MODE=0
Sleep Current		0.5		uA	AT+MODE=1
Baud rate	300	115200	115200	bps	8, N, 1
Digital Input Level High	0.7*VDD		VDD	V	VIH
Digital Input Level Low	0		0.3*VDD	V	VIL
Digital Output Level High	0.9		VDD	V	VOH
Digital Output Level Low			0.1	V	VOL
NRST reset time	100			ms	100KΩ Internal pull up
Cycling (erase / write) EEPROM data memory		300		K	Cycles
Weight		4		g	
Operating Temperature	-40	25	+85	˚C	

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

REFLOW SOLDERING

Consider the "IPC-7530 Guidelines for temperature profiling for mass soldering (reflow and wave) processes, published 2001.

Preheat phase

Initial heating of component leads and balls. Residual humidity will be dried out. Please note that this preheat phase will not replace prior baking procedures.

- Temperature rise rate: max. 3 °C/s If the temperature rise is too rapid in the preheat phase it may cause excessive slumping.
- Time: 60 - 120 s If the preheat is insufficient, rather large solder balls tend to be generated. Conversely, if performed excessively, fine balls and large balls will be generated in clusters.
- End Temperature: 150 - 200 °C If the temperature is too low, non-melting tends to be caused in areas containing large heat capacity.

Heating/ Reflow phase

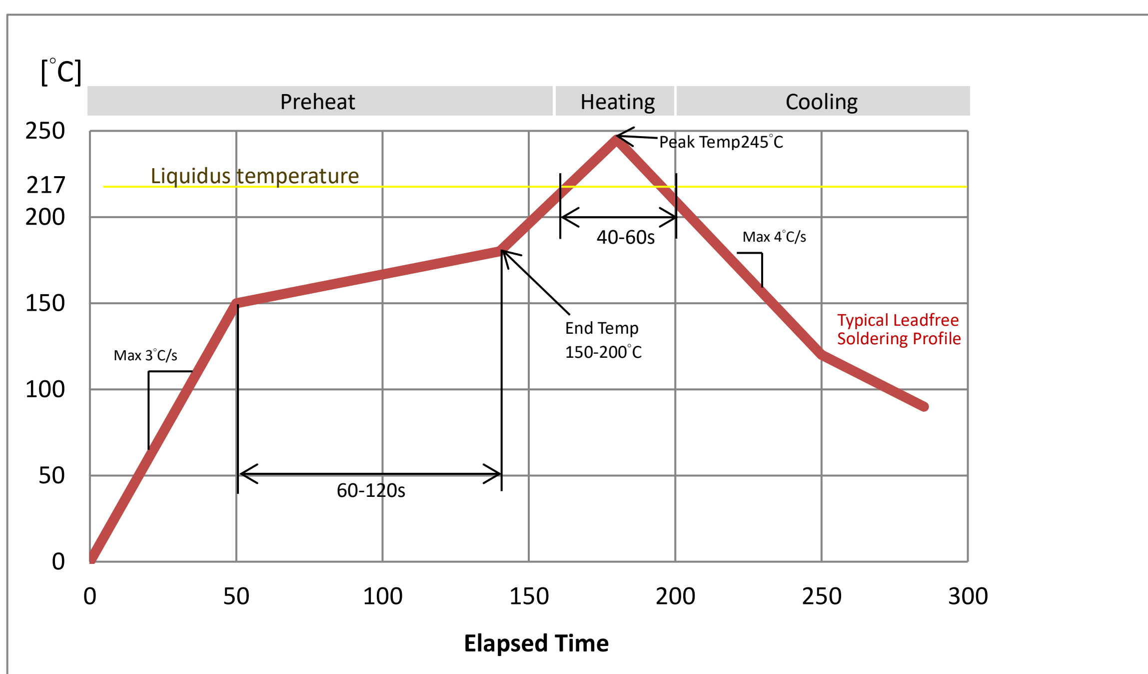
The temperature rises above the liquidus temperature of 217°C. Avoid a sudden rise in temperature as the slump of the paste could become worse.

- Limit time above 217 °C liquidus temperature: 40 - 60 s
- Peak reflow temperature: 245 °C

Cooling phase

A controlled cooling avoids negative metallurgical effects (solder becomes more brittle) of the solder and possible mechanical tensions in the products. Controlled cooling helps to achieve bright solder fillets with a good shape and low contact angle.

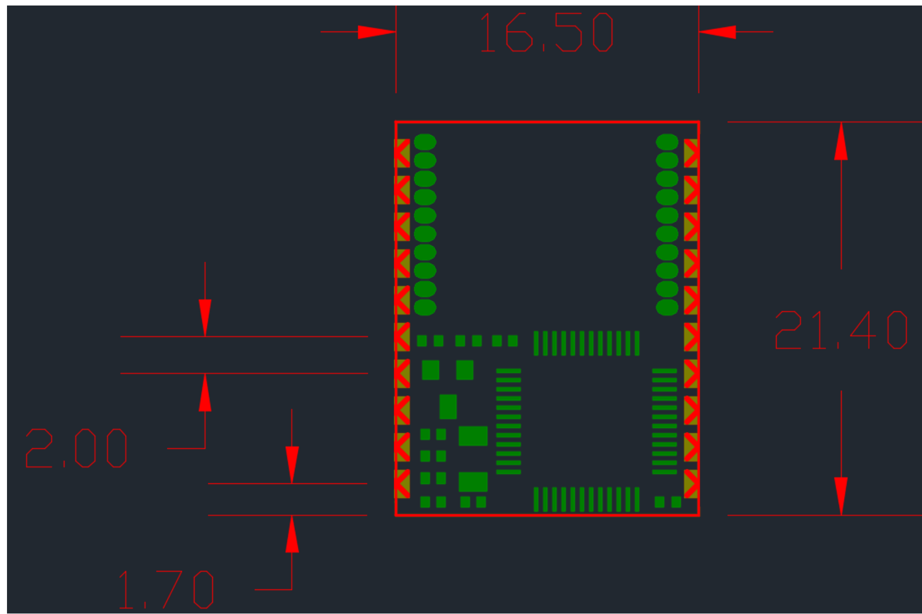
- Temperature fall rate: max 4 °C/s To avoid falling off, the REYAX RYB070I module should be placed on the topside of the motherboard during soldering.

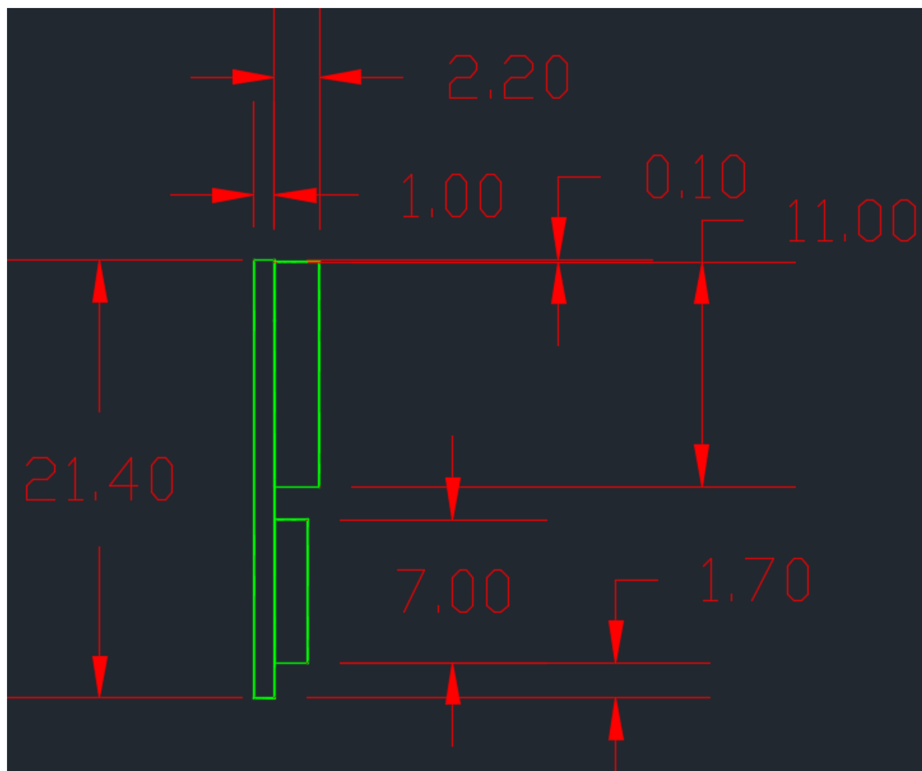


Recommended soldering profile

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

DIMENSIONS

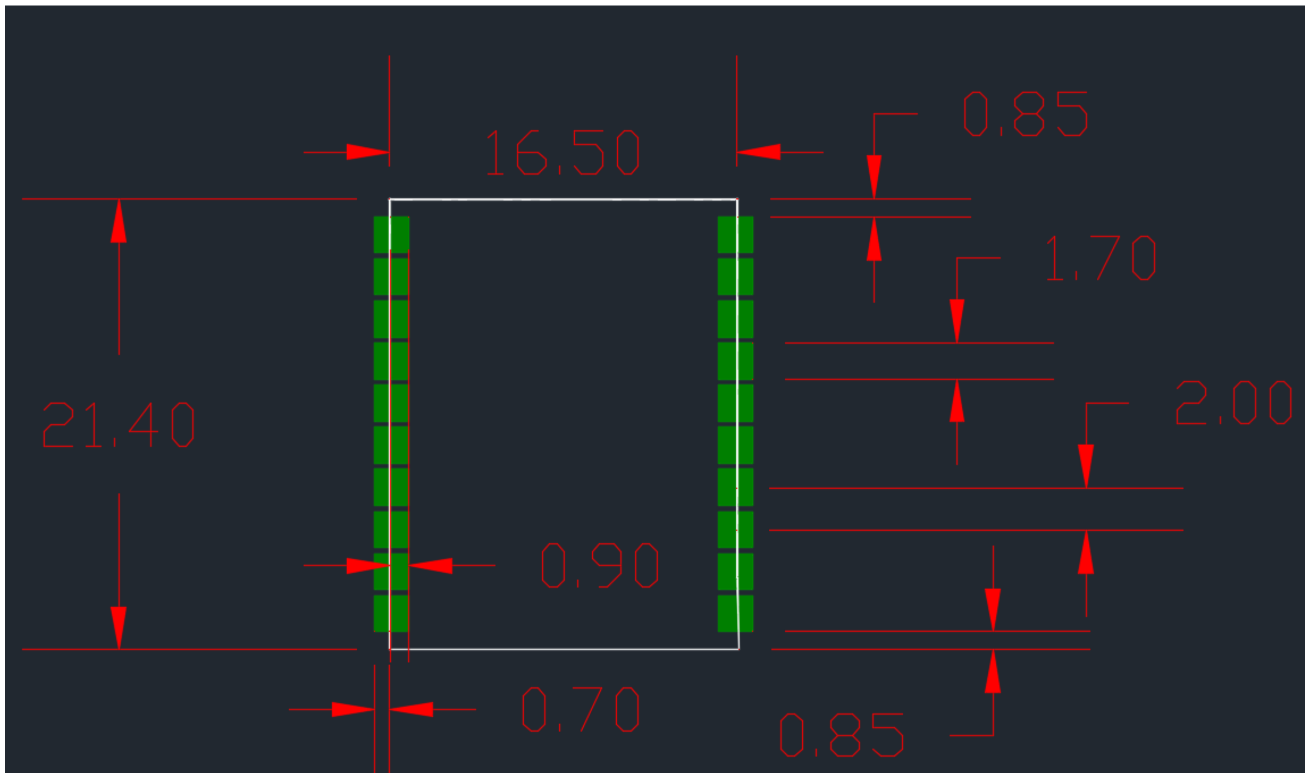




Unit : mm

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.

LAYOUT FOOTPRINT RECOMMENDATIONS



Unit : mm

REYAX
TECHNOLOGY CORPORATION, LTD

Taiwan: sales@reyax.com
China: sales@reyax.com.cn
http://reyax.com

Copyright © 2019, REYAX TECHNOLOGY CO., LTD.