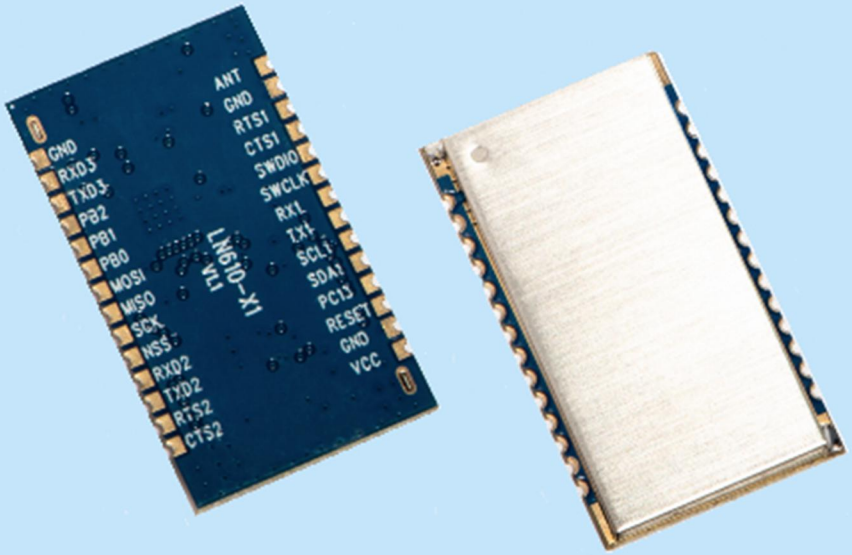
Wireless Data transmission module

LoRaWAN Node module

Product Specification



Catalog

Note: Revision History

Revision	Date	Comment
V1.0	2018-5	First release
V1.1	2021-1	Update format

1. Overview

LN610-X1 is a LoRaWAN node module. LG1301-PF/ LG1301-SE are LoRaWAN gateways. LN610-X1 can work with LG1301 to build a LoRaWAN system if it has firmware inside.

LN610-X1 is a hardware module. It has an MCU inside but no firmware implemented. If firmware is implemented, the feature below can be supported and either LG1301-PF or LG1301-SE can work with LN610-X1. The detail of these two gateways refer to the datasheet of gateway.

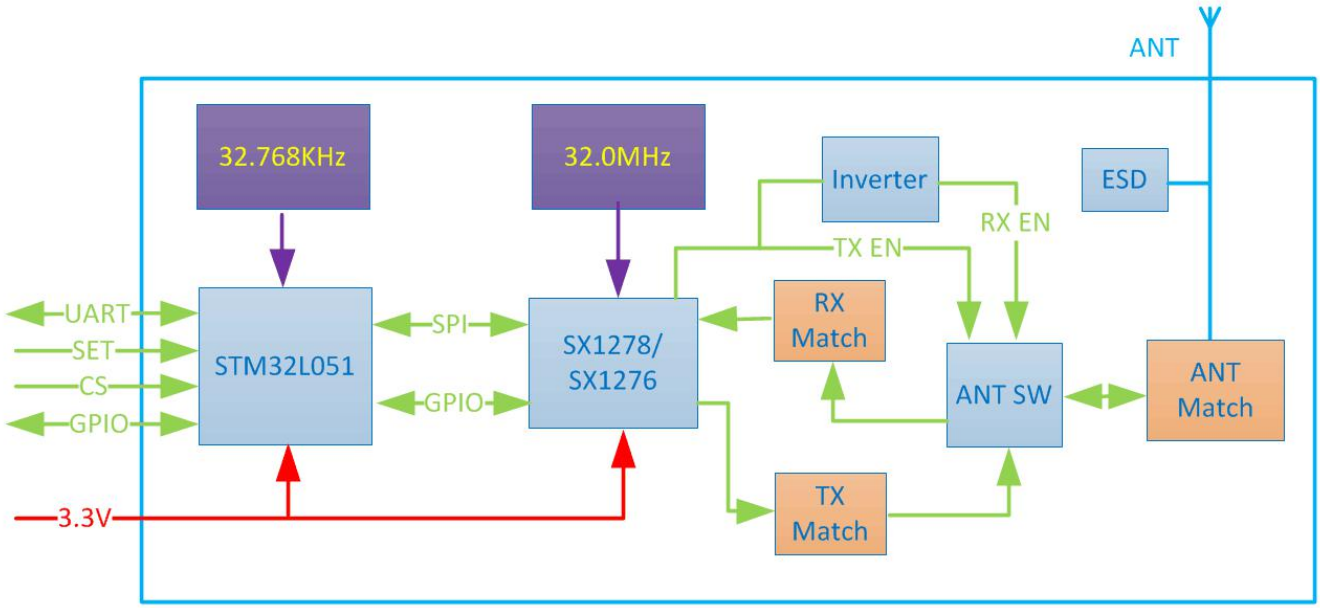
2. Feature

- LoRaWAN protocol supported
- 8 channel communication simultaneously
- OTAA & ABP
- Long range & Small size
- ADR
- EU433M / EU868M / KR920M / AS923M CN780M/ CN470M / US915M / AS915M

3. Application

- Smart city
- Smart Metering (Water, Electric, Gas meter)
- Agricultural Monitoring
- Irrigation control
- Internet of Things (IoT)
- M2M
- Wireless Sensors
- Wireless Alarm and Security Systems

4. Block Diagram



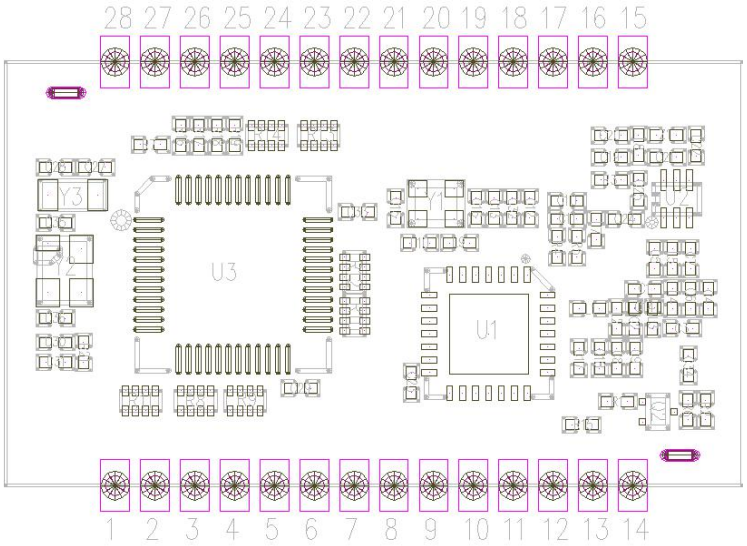
5. Electrical Characteristics

★ **Note:**

- **No LDO on board, the power supply should be : 1.8 –3.6V . 3.3V is suggested .**
- **The following parameters is VCC=3.3V, with 50 ohm copper axis test instrumentation.**

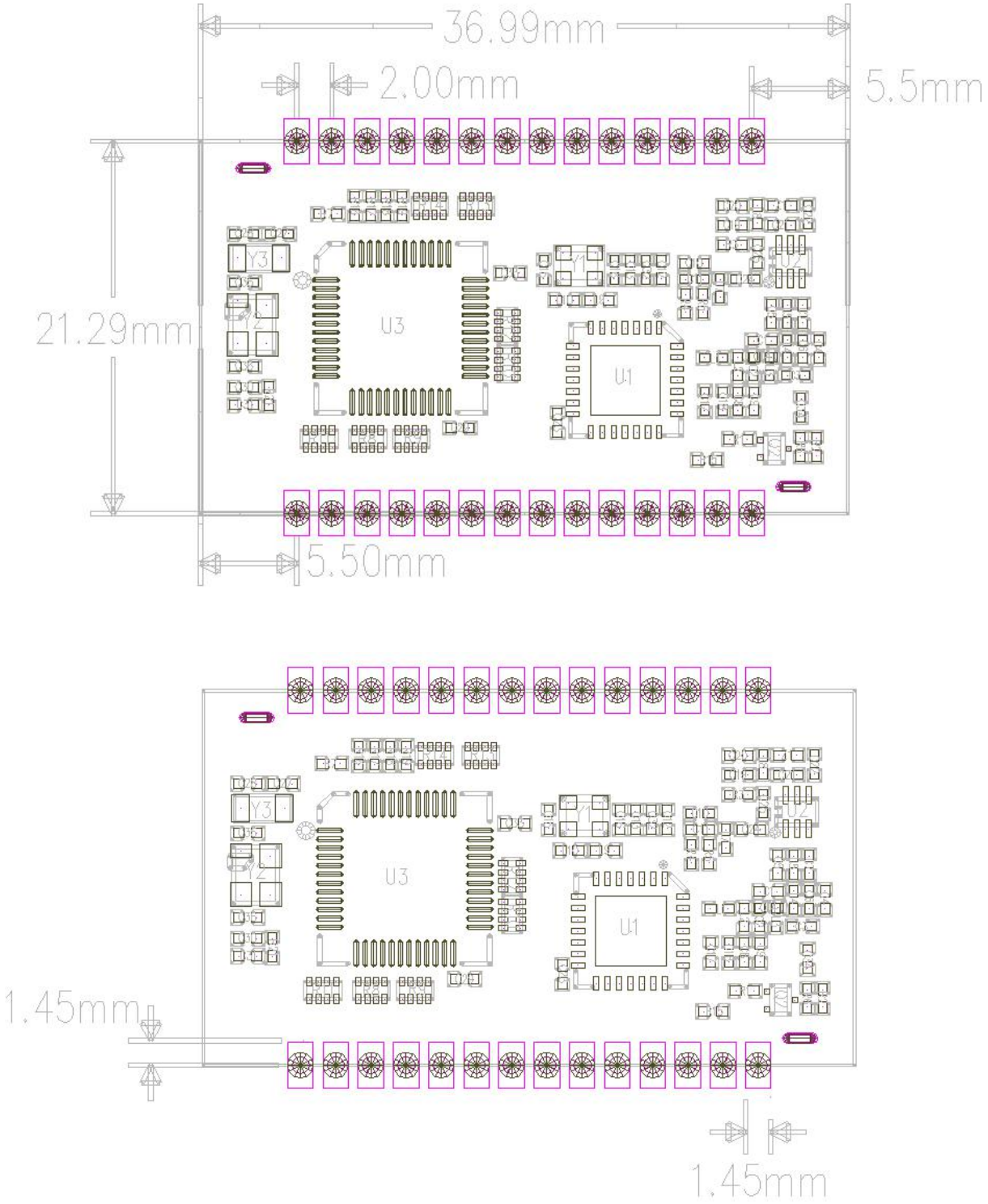
Parameter	Min	Typ	Max	Unite	Condition
Working Condition					
Working voltage range	1.8	3.3	3.6	V	
Temperature voltage	-40		85	℃	
Current Consumption					
Receiving current		18		mA	@Vcc=3.3V
Transmitting current	110	120	130	mA	Vcc=3.3V,Tx=20dBm
Sleep current		< 2	3	uA	CS Active H
RF Parameter					
TX Power	4	18	20	dBm	
Receiving sensitivity	-131	-132	-133	dBm	@BW=125KHz,SF=10
2nd Harmonic radations		-45		dBm	
3rd Harmonic radiations		-50		dBm	

6. Pin definition



Pin	Pin Name	Type	Description
1	CTS2	I/O	UART2_CTS / GPIO
2	RTS2	I/O	UART2_RTS / GPIO
3	TXD2	I/O	UART2_TXD / GPIO
4	RXD2	I/O	UART2_RXD / GPIO
5	NSS	I/O	SPI1_NSS / GPIO
6	SCK	I/O	SPI1_SCK / GPIO
7	MISO	I/O	SPI1_MISO / GPIO
8	MOSI	I/O	SPI1_MOSI / GPIO
9	PB0	I/O	GPIO
10	PB1	I/O	GPIO
11	PB2	I/O	GPIO
12	TXD3	I/O	UART3_TXD / GPIO
13	RXD3	I/O	UART3_RXD / GPIO
14、16、27	GND	GND	Ground
15	ANT	Antenna	Connect with 50 ohm coaxial antenna
17	RTS1	I/O	USART1_RTS / GPIO
18	CTS1	I/O	USART1_CTS / GPIO
19	SWDIO	I/O	Firmware download / Debug
20	SWCLK	I/O	Firmware download / Debug
21	RX1	I/O	USART1_RXD1 / GPIO
22	TX1	I/O	USART1_TXD1 / GPIO
23	SCL1	I/O	I2C1_SCL / GPIO
24	SDA1	I/O	I2C1_SDA / GPIO
25	PC13	I/O	GPIO
26	RESET	Input	Reset of MCU
28	VCC	Power (VCC)	Power Supply(Typical voltage)

7. Mechanical dimension(Unit:mm)



Maximum height： 2.7mm