ED-GW1303S REV1.0

LORAWAN GATEWAY MODULE

SX1303 + SX1250, MINI PCIE, SPI, US915 / EU868

2021-11-11

EDA TECHNOLOGY CO.,LTD



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Revision History

Date	Version	Description	Note
2021-11-11	Draft	Initial release.	

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Chapter 1 Overview

ED-GW1303S module is a new generation of LoRaWAN gateway module in mini-PCIe form-factor with SPI interfaces based on Semtech® SX1303 and SX1250. It features extremely low power consumption, outstanding performance with CE, FCC certified.

ED-GW1303S LoRaWAN gateway module support both US915 and EU868 frequency bands, enable you to have a wide-range of LoRaWAN frequency plans options to choose including EU868, US915, AS923, AS920, AU915, KR920, and IN865.

ED-GW1303S is designed for M2M and IoT applications and can be widely applied in LPWAN gateway supported scenarios. It would be a perfect choice for you to significantly reduce the technical difficulties and time-consumption when developing the LoRa gateway devices, including LoRaWAN gateway, miner hotspots, etc.

1.1 Features

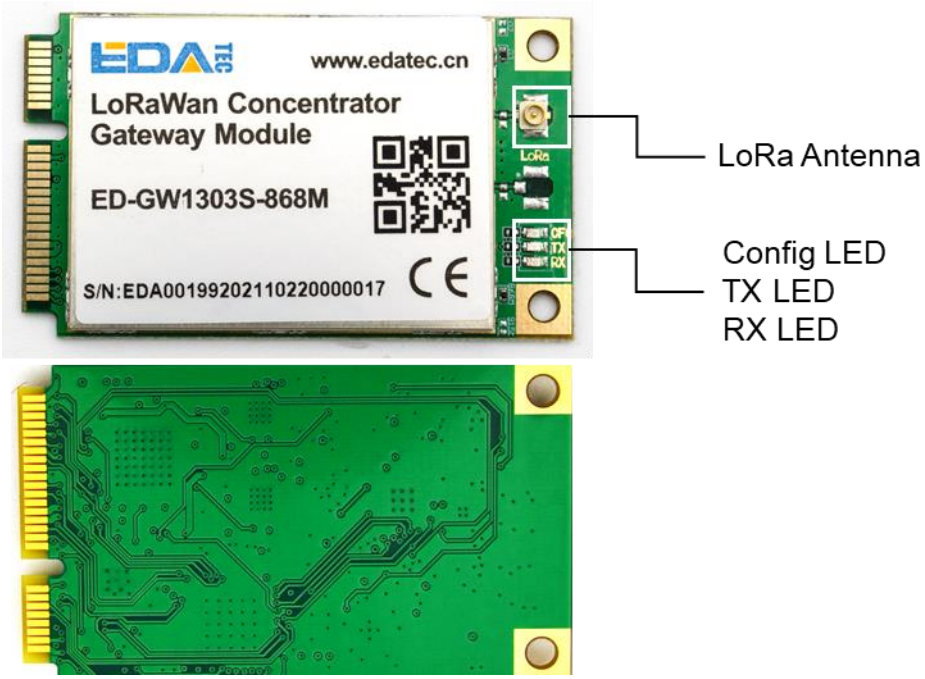
- Mini PCIe form factor with SPI interfaces
- Powered by Semtech® SX1303 baseband processor
- Ultra-low operating temperature without additional heat dissipation needed
- High sensitivity with Semtech® SX1250 TX/RX front-end; TX power up to 25 dBm @3.3V
- Supports global license-free frequency band including EU868, US915, AS923, AU915, KR920 and IN865
- Certified with CE, FCC

1.2 Ordering Code

Code	Description
ED-GW1303S-915M	US915
ED-GW1303S-868M	EU868

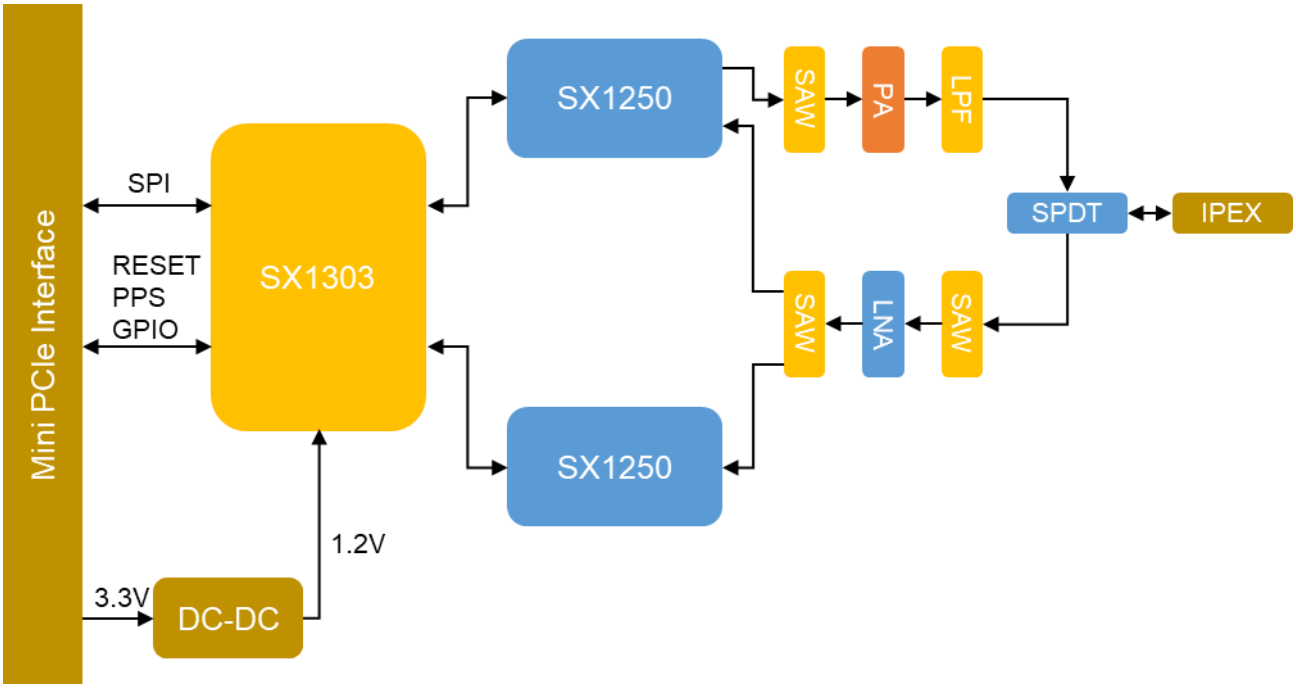
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1.3 Interface Diagram



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1.4 Block Diagram



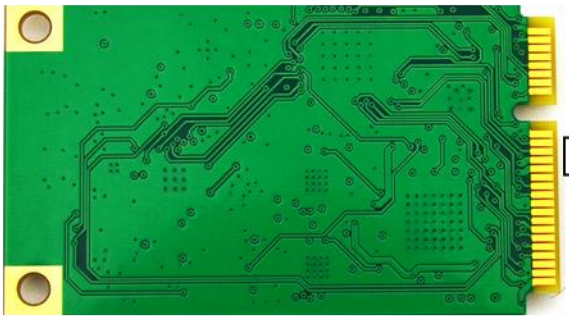
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Chapter 2 Interfaces

2.1 Pinout

RESERVED	1			2	VCC_3V3
NC	3			4	GND
NC	5			6	NC
NC	7			8	NC
GND	9			10	RESERVED
RESERVED	11			12	RESERVED
RESERVED	13			14	NC
GND	15			16	NC
NC	17			18	GND
PPS	19			20	NC
GND	21			22	NRESET
RESERVED	23			24	VCC_3V3
NC	25			26	GND
GND	27			28	NC
GND	29			30	NC
RESERVED	31			32	NC
NC	33			34	GND
GND	35			36	RESERVED
GND	37			38	RESERVED
VCC_3V3	39			40	GND
VCC_3V3	41			42	RX_ON
GND	43			44	TX_ON
SX_SCK	45			46	CFG_ON
SX_MISO	47			48	NC
SX_MOSI	49			50	GND
SX_CSN	51			52	VCC_3V3





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2.2 Power

Pin Name	Pin ID	Pin Type	Description
GND	4,9,15,18,21,26,27,29,34,35,37,40,43,50		
3.3V	2,24,39,41,52	PI	Power In

The power in voltage of ED-GW1303S is 3.3V. Under TX mode, the max current can be 400mA.

2.3 SPI Interface

Pin Name	Pin ID	Pin Type	Description
SX_CLK	45	DI	SPI Clock
SX_MISO	47	DO	SPI MISO
SX_MOSI	49	DI	SPI MOSI
SX_CSN	51	DI	SPI CS

2.4 Control Signals

Pin Name	Pin ID	Pin Type	Description
PPS	11	DI	GPS PPS
NRESET	13	DI	RESET Pin
RX_ON	42	DO	RX Indicate
TX_ON	44	DO	TX Indicate
CFG_ON	46	DO	CONFIG Indicate

2.4.1 PPS

Support GPS-PPS, this can be used to receive data packets with timestamps.

2.4.2 NRESET

This signal can be used to reset the module, active HIGH.

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2.4.3 RX_ON

When receive is enabled, the RX_ON signal will output HIGH, and the RX LED will on.

2.4.4 TX_ON

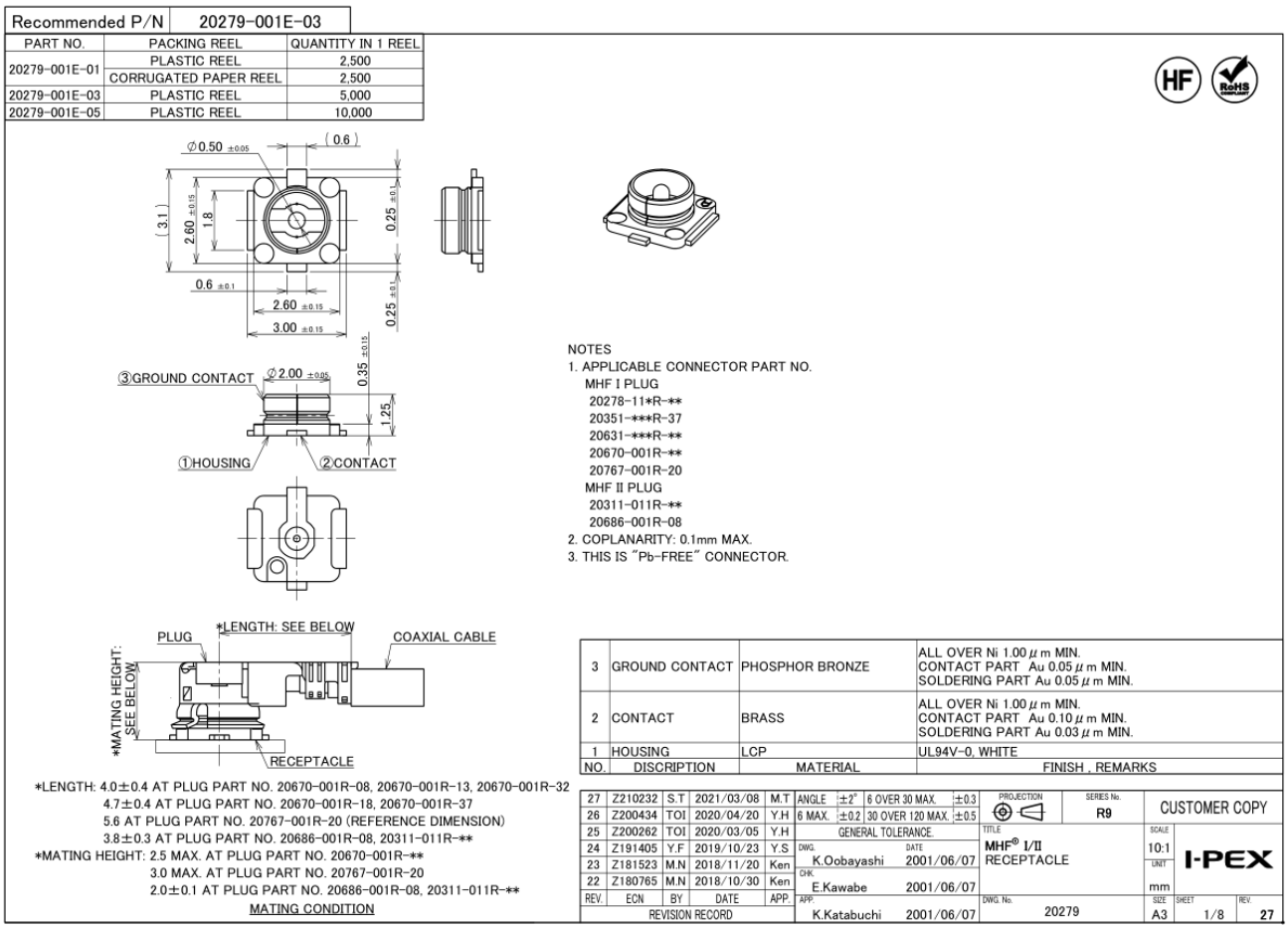
When transmit is enabled, the TX_ON signal will output HIGH, and the TX LED will on.

2.4.5 CFG_ON

When the module is configurated successful, the CFG_ON signal will output HIGH, and the CFG LED will on.

2.5 Antenna Connector

The Antenna connector is compatible with I-PEX 1 standard.



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Chapter 3 Electrical Characteristics

3.1 Power

Parameter	Description	Min	Type	Max	Unit
VCC	Power In	3.0	3.3	3.6	V

3.2 IO

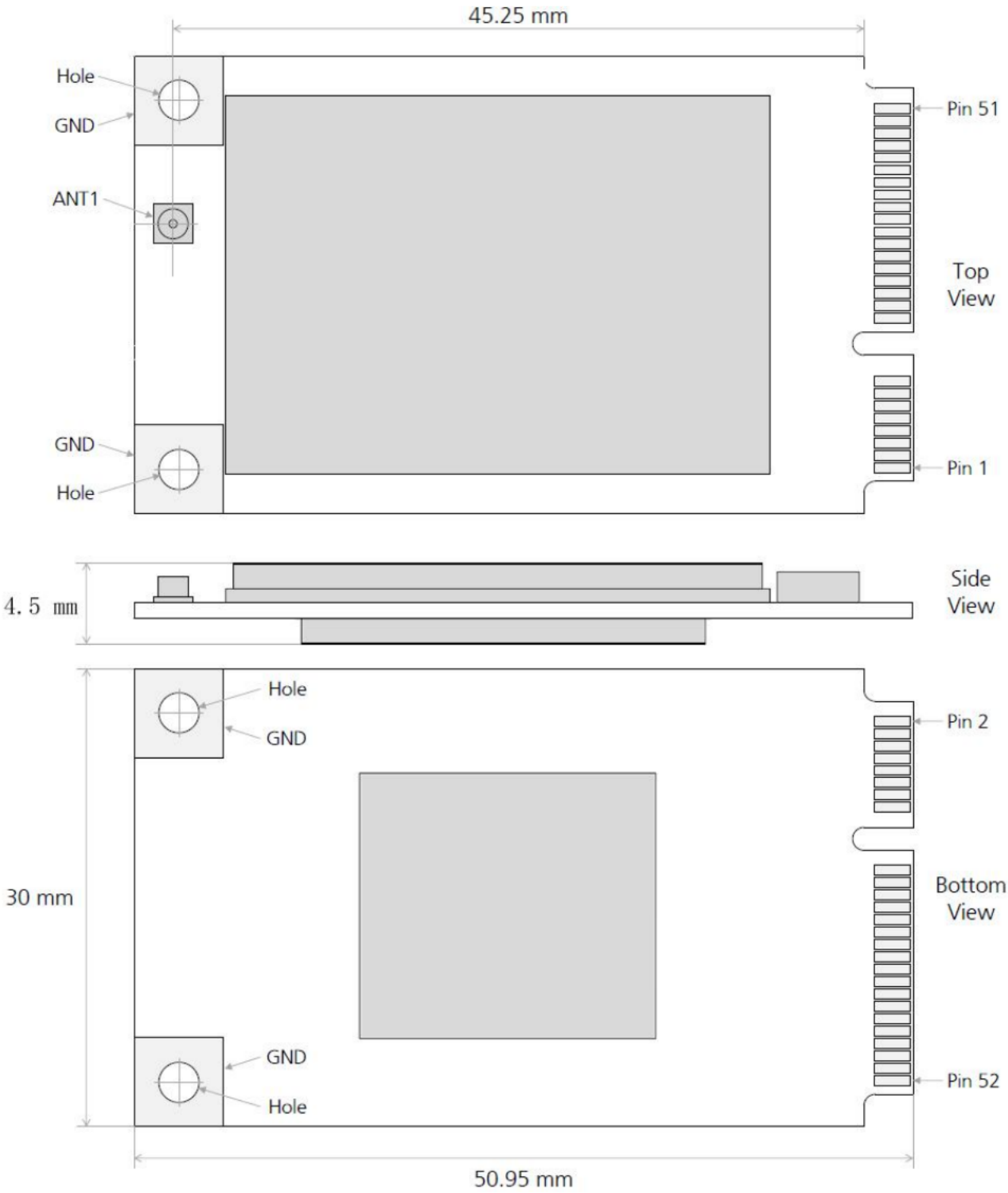
Parameter	Description	Min	Max	Unit
VIH	Input High Voltage	0.7 * VCC	VCC + 0.3	V
VIL	Input Low Voltage	-0.3	0.3 * VCC	V
VOH	Output High Voltage	VCC – 0.5	VCC	V
VOL	Output Low Voltage	0	0.4	V

3.3 Current

Parameter	Operation Mode	Type	Unit
RX	RX Enable, TX Disable	54	mA
TX / RX	RX Enable, TX@25dBm	360	mA
IDLE	RX Disable, TX Disable	27	mA

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Chapter 4 Dimension



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Chapter 5 Contact

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5.1 About EDATEC

EDA Technology Co.,Ltd is located in Shanghai, it is one of Raspberry Pi's Global Design Partners. Our vision is to offer the hardware solutions for IoT, Industrial Control, Automation, Green Energy & Artificial Intelligence solutions based on Raspberry Pi Technology platform.

We provide the standard hardware solution, custom design &manufacturing services that accelerate the electronic product development and time to market.

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