

# Datasheet

REV.0.1

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## History

<b>Version</b>	<b>Date</b>	<b>Note</b>
Preliminary	2017-8-29	Initial Release
V0.1	2017-11-30	Update RF performance (Page4)

### Notes:

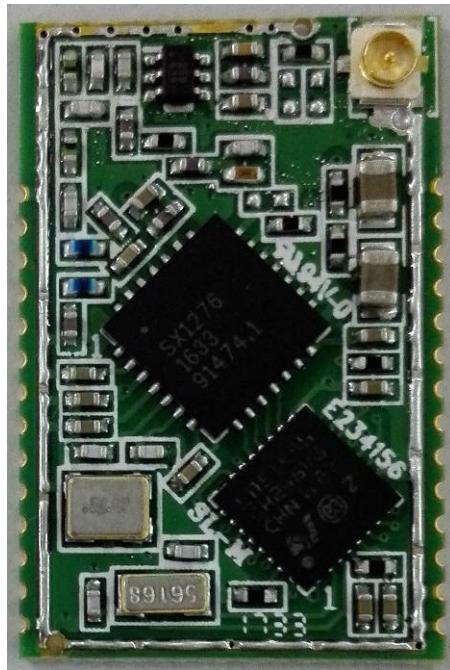
Hardware version 0.1  
61R100H6801 V0.1

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## Product Description



The Lora RF module R100H offered by NETVOX is low power consumption transceiver based on the SX1276 chip LoRa™ solution.

The R100H is designed to be SMD-mounted onto a host PCB. SMD-mounting provides the best RF performance at the lowest cost. Additionally the R100H is designed to occupy minimal board space on the host PCB, which already includes plentiful interfacing ports and power management circuits. So it can be easily integrated into other device without the need for RF experience and expertise.

## Applications

- Automated Meter Reading
- Home and Building Automation
- Wireless Alarm and Security Systems
- Industrial Monitoring and Control
- Long range Irrigation Systems

## Key Features

- High performance and low power 32-bit ARM Cortex-M0 microprocessor
- Powerful and flexible development tools available

## Electric Specifications

### Performance

<b>Outdoor range</b>	TBD
<b>RF Data rate</b>	1.2~300kbps
<b>Frequency Band</b>	902MHZ ~ 928MHz
<b>Mode of emission</b>	LoRa/FSK
<b>Receiver Sensitivity</b>	-121dBm (Frequency deviation=5kHz, Bit Rate=1.2kb/s)

### DC Characteristics

<b>Support Voltage</b>	2xAAA battery ,3 V DC
<b>RX Current</b>	11mA (typical value)
<b>TX Current</b>	120mA (typical value)
<b>Normal Current (no Radio)</b>	2mA (typical value)
<b>Deep Sleep (including internal RC oscillator)</b>	8uA

## Absolute Maximum Ratings

Parameter	Min	Max	Unit
Supply voltage	-0.5	3	V
Voltage on any pin	-0.3	VCC+0.3	V
Frequency stability			ppm
RF Input Power		10	dBm
Storage temperature	-55	115	°C
Operating temperature	-20	85	°C



### Caution !

ESD sensitive device.

Precaution should be used when handling the device in order to prevent permanent damage.

## Block diagram

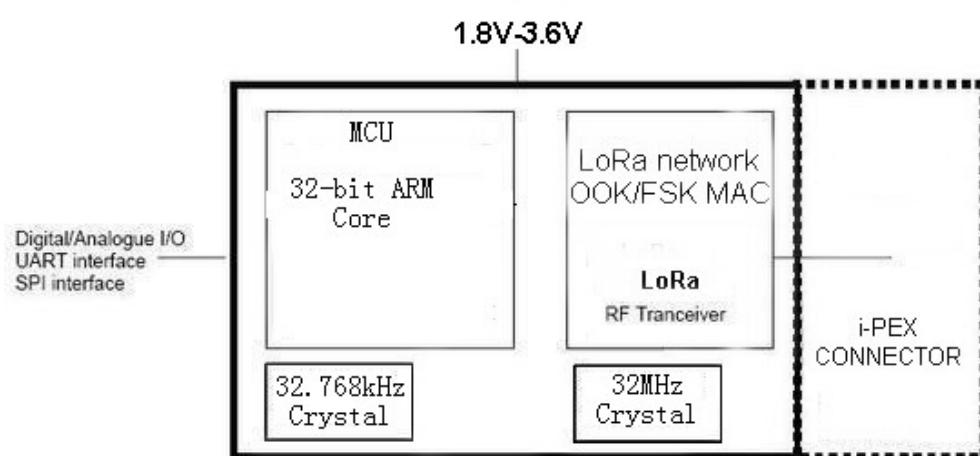


Figure 2 Block diagram

## Pin Assignment

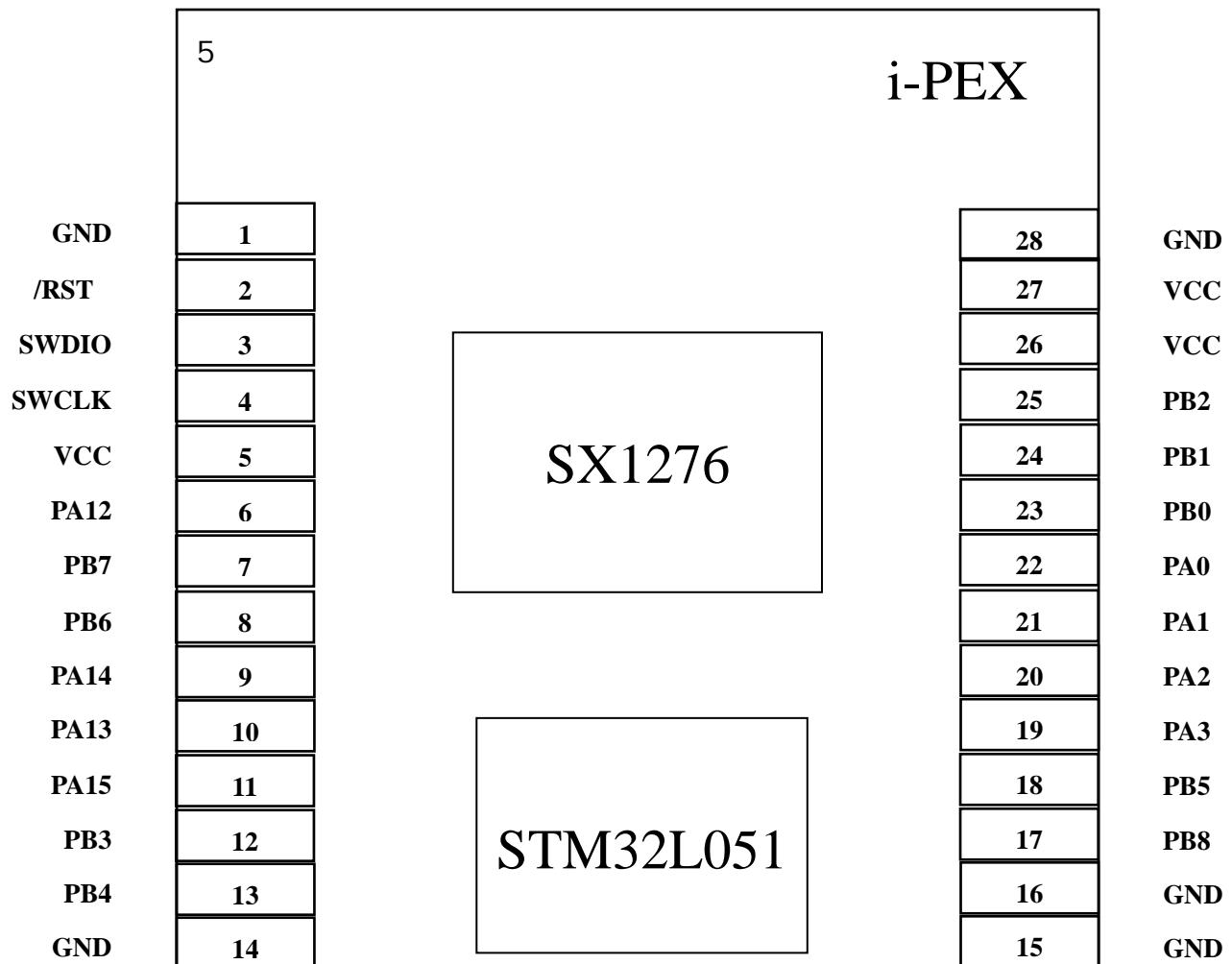


Figure 3 Pin assignment

## Pin Description

Pin NO.	Pin name	Pin type	Description
1	GND	Ground	GND
2	/RST	I	Active low chip reset
3	SWDIO	I/O	Programming and debug interface
4	SWCLK	I/O	Programming and debug interface
5	VCC	Power	1.8V-3.6V DC power supply
6	PA12	Digital I/O	GPIO
7	PB7	Digital I/O	GPIO / MI / RXD
8	PB6	Digital I/O	GPIO / MO / TXD
9	PA14	Digital I/O	GPIO / CLK
10	PA13	Digital I/O	GPIO / SS
11	PA15	Digital I/O	GPIO
12	PB3	Digital I/O	GPIO
13	PB4	Digital I/O	GPIO
14	GND	Ground	GND
15	GND	Ground	GND
16	GND	Ground	GND
17	PB8	Digital I/O	GPIO
18	PB5	Digital I/O	GPIO
19	PA3	Digital I/O	GPIO
20	PA2	Digital I/O	GPIO
21	PA1	Digital I/O	GPIO
22	PA0	Digital I/O	GPIO
23	PB0	Digital I/O	GPIO
24	PB1	Digital I/O	GPIO
25	PB2	Digital I/O	GPIO
26	VCC	Power	1.8V-3.6V DC power supply
27	VCC	Power	1.8V-3.6V DC power supply
28	GND	Ground	GND

## Debugging interface

Pin3~4 of the module are arranged for burning and debugging interface.

## Mechanical Drawing and Dimensions

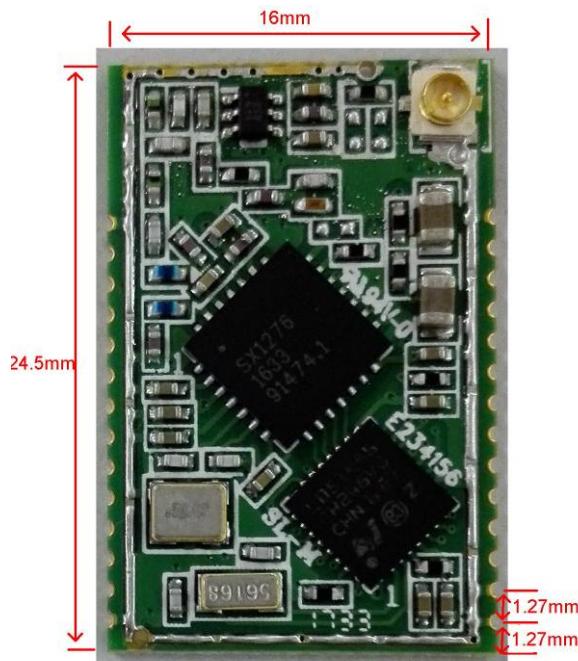


Figure 4 Mechanical Drawing and Dimensions  
The module size is 16.0\*24.5\*3.0mm (including shielding case)

FCC Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following

two conditions: (1) This device may not cause harmful interference, and (2) this device

must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital

device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the

user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the party responsible

for compliance could void the user's authority to operate the equipment.

The modules FCC ID is not visible when installed in the host, or if the host is marketed so that end users do not have straight forward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module: Contains Transmitter Module FCC ID: NRH-LR-R100H or Contains FCC ID: NRH-LR-R100H must be used.