SY1-NBZ-50S Bluetooth Module Specification

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Review：**Fan.Li** **Date**： **2019-4-12**

Approval：**Nianfa.Li** **Date**： **2019-4-12**

1. Product Introduction

1.1 Brief information

SY1-NBZ-50S BT Module is design by Shenzhen Shenyong Technology Co., Ltd. It based on TLSR825X chipset and haveultra low energy consumption and support up to the latest BLE 5.0 protocol. Devices can be connected with Mesh network. With this module, can make traditional equipment become smart.

Feature:

（1）Small size ,easy to install

（2）UART/SPI/ADC/GPIO supported

（3）On board Antenna supported

1.2 Parameters

（1）Max Voltage Range：DC 2.7-3.6V

Recommend Voltage：DC 3.3V ±5%

（2）Power Consumptions：

TX current (Max output)：20mA

RXcurrent： 5.3mA

Sleep current： 3uA

Deep Sleep current：1.7uA

（3）Storage：512KB internal

（4）Interface：

5 PWM

UART/SPI/ADC

Up to 16GPIOs

Interface Voltage：3.3VTTL

（5）RF Spec：

Protocol：BLE 5.0/BLE Mesh

Data Rate： 1Mbps /2Mbps/250Kbps

Power output：+9dBm

Receive sensitivity：-94.5dBm@BLE 1Mbps

（6）Transmit distance: more than 100 meters

(Open Distance)

（7）Working Temperature：-40℃ - +85℃

（8）Outline Dimension

24.8±0.2*16.0±0.2*3.6±0.2mm（With Shield Case）

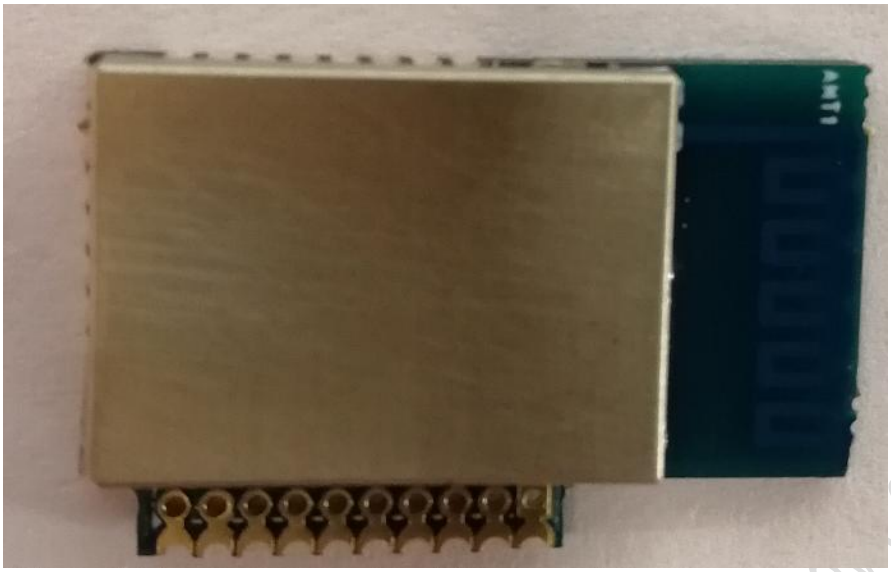
1.3Typical Application

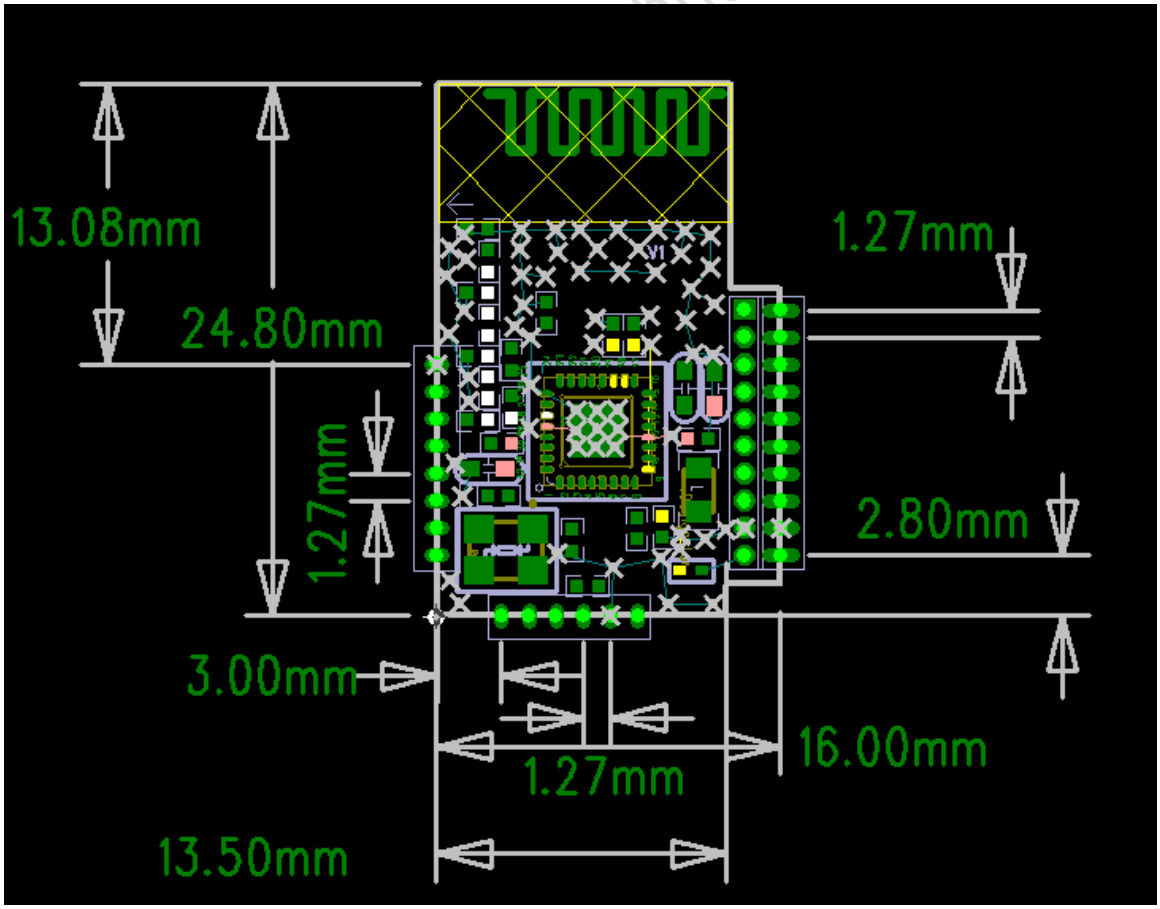
（1） Smart Lighting system

（2） Smart Control system

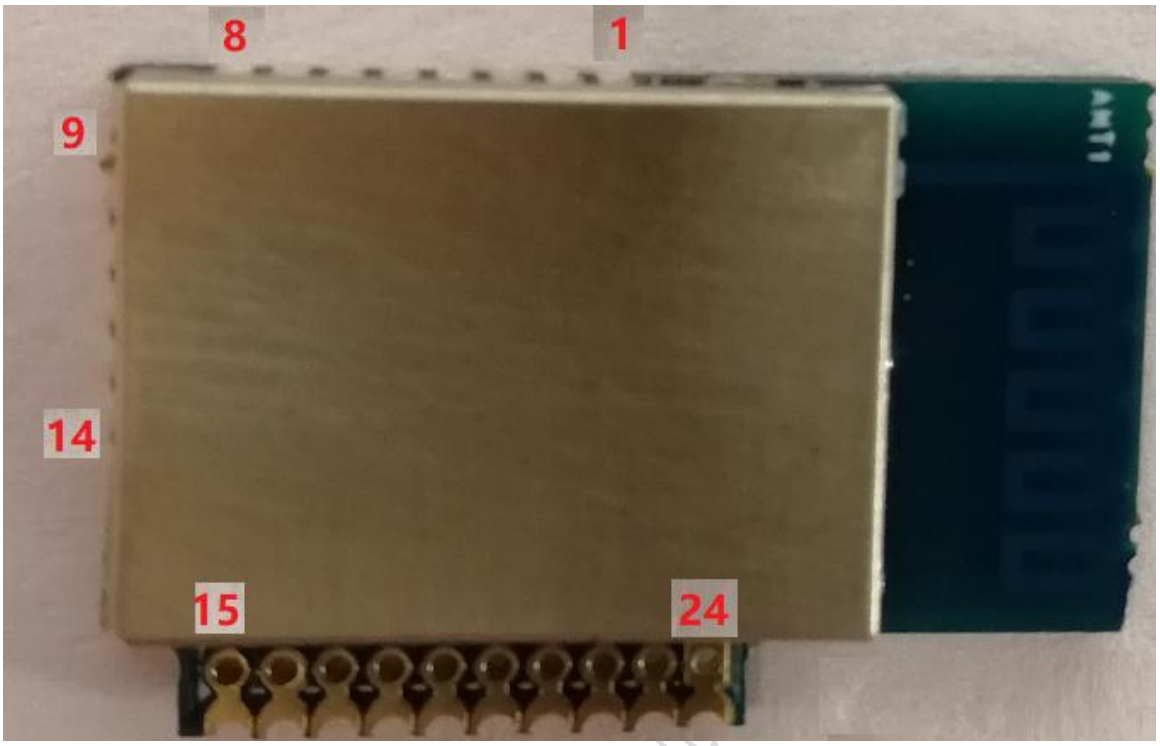
2. Module Description

2.1 Module Photo





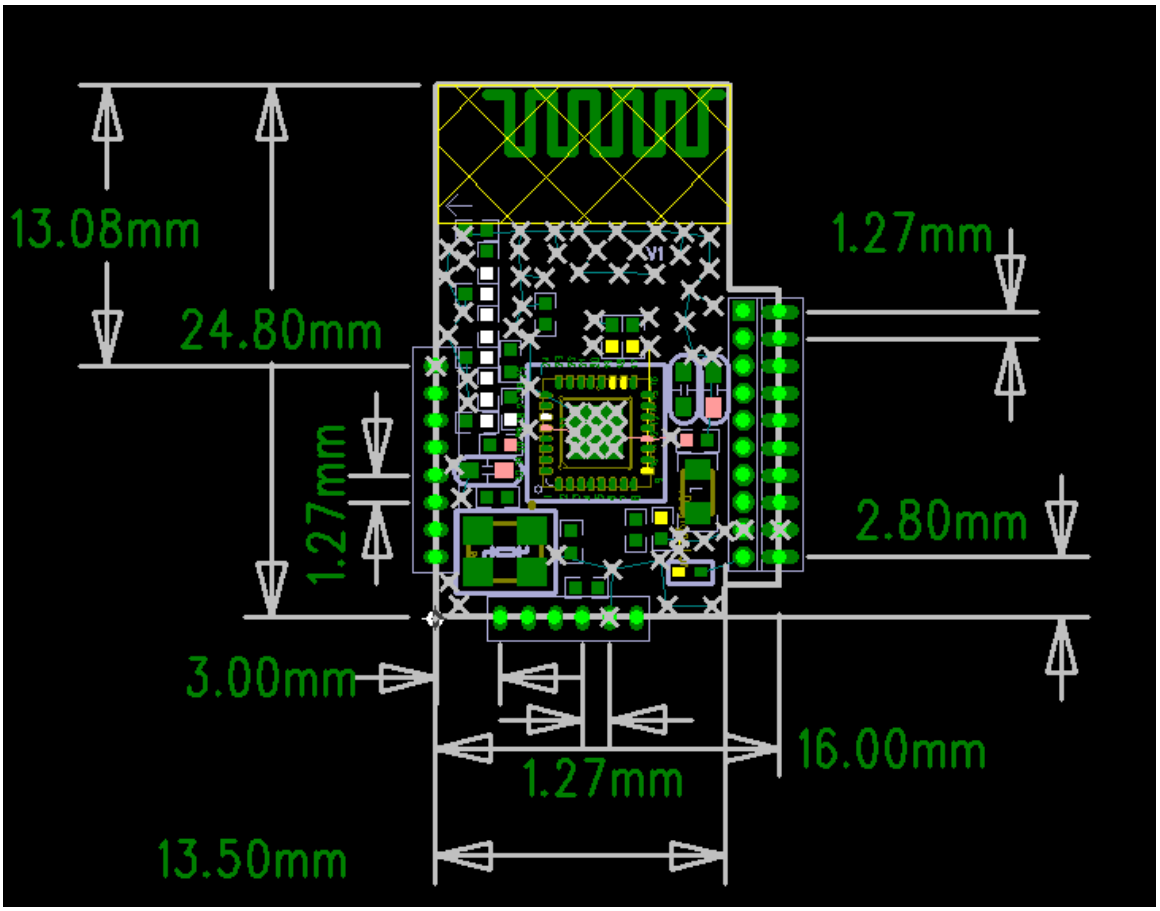
2.2 Pin Definition



NO.	Name	Description
1	GND	GND
2	RST	Reset
3	D2	GPIO
4	D3	GPIO
5	D4	GPIO
6	D7	GPIO
7	A0	GPIO

8	A1	GPIO
9	B1	GPIO
10	C0	GPIO
11	PA7_SWS	GPIO
12	SWS	SWS ,debug interface
13	GND	GND
14	+3.3V	Power input
15	+3.3V	Power input
16	GND	GND
17	PWM_R	PWM,GPIO
18	PWM_G	PWM,GPIO
19	PWM_B	PWM,GPIO
20	PWM_W	PWM,GPIO
21	PWM_C	PWM,GPIO
22	SAR_ADC	ADC input
23	UART_TX	UART_TX
24	UART_RX	UART_RX

2.3 PCB Decal information



3. Contact us

For module Purchasing or Technology consult, Contact us with in business hours,we will serve for you with all sincerity!

Business hours: Monday to Friday, 9:00-18:00

Phone:+86-755-23504740

Address:905 2Building 67th Area Zhongliangchuangzhi Factory,XinanStreet,BaoanDistrict, Shenzhen. China

INTEGRATION INSTRUCTIONS:

FCC rules

The SY1-NBZ-50S is a Bluetooth Low Energy (BLE) 5.0 Data Pass-through Module with frequency hopping using an LoRa modulation. It operates on the 2402MHz-2480MHz band and, therefore, is within U.S. FCC part 15.247 standard.

Modular installation instruction

Please pay attention to the installation direction (pin direction). If you have any questions, please contact us directly.

Trace antenna designs

Not Applicable

RF exposure considerations

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

Antennas

SY1-NBZ-50S is an Bluetooth Low Energy (BLE) 5.0 Data Pass-through Module beams signals and communicates with its antenna, which is PCB Antenna.The Antenna gain is 0dBi

LABEL OF THE END PRODUCT

The final end product must be labeled in a visible area with the following " Contains FCC ID: 2ALOVSY1-NBZ-50S. If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

Information on test modes and additional testing requirements

Data transfer module demo board can control the EUT work in RF test mode at specified test channel.

Additional testing, Part 15 Subpart B disclaimer

The module without unintentional-radiator digital circuit, so the module does not required an evaluation by FCC Part 15 Subpart B. The host should be evaluated by the FCC Subpart B.

FCC WARNING

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. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 generate, 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.