

HOLY10T-17081-NRF51822AC

BLE 4.2 module

User Manual

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Holyiot-17081-NRF51822AC

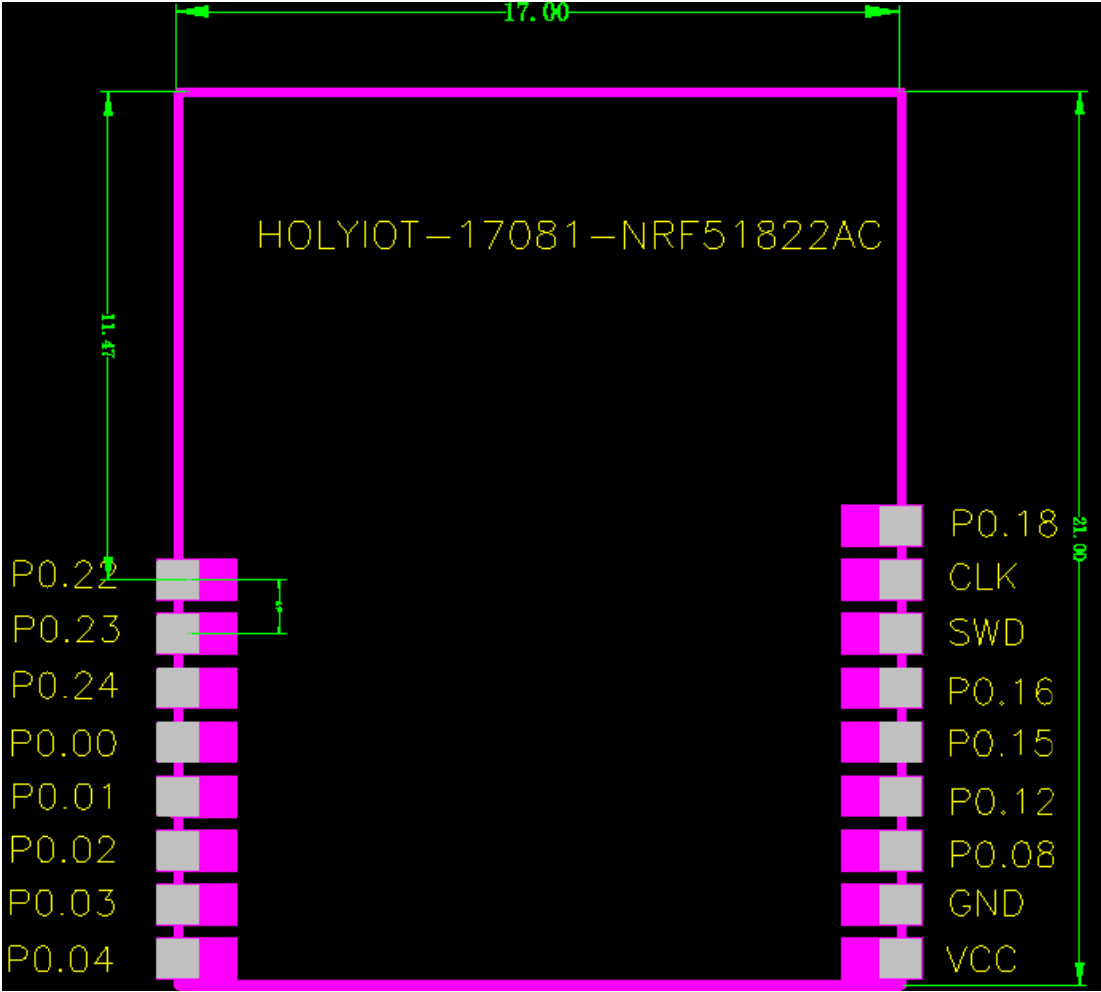
Introductions

HOLY10T-17081-NRF51822AC BLE module which we produced that on 2017. This module use nRF51822 QFAC chip , HOLY10T-17081-NRF51822AC BLE module is a powerful, highly flexible multiprotocol SoC ideally suited for Bluetooth® low energy and 2.4GHz ultra low-power wireless applications. The nRF51822 is built around a 32-bit ARM® Cortex™ M0 CPU with 256kB flash + 32kB RAM for improved application performance. The embedded 2.4GHz transceiver supports both Bluetooth low energy and the Nordic Gazell 2.4 GHz protocol stack which is on air compatible with the nRF24L series products from Nordic Semiconductor.

FEATURES

- ✓ Single chip, highly flexible, 2.4 GHz multi-protocol device
- ✓ 32-bit ARM Cortex M0 CPU core
- ✓ 256kB flash + 16kB RAM
- ✓ Supports Bluetooth low energy protocol stacks
- ✓ Thread safe and run-time protected
- ✓ Event driven API
- ✓ On air compatible with nRF24L series
- ✓ 3 data rates (2Mbps/1Mbps/250kbps)
- ✓ +5.43dBm output power (max)
- ✓ -93dBm sensitivity, Bluetooth low energy
- ✓ PPI system for maximum power-efficient applications and code simplification
- ✓ Flexible power management system with automatic power management of each peripheral
- ✓ Configurable I/O mapping for analog and digital I/O
- ✓ Operating temperature range: -40℃ ~ +85℃
- ✓ Operating voltage :2.0V~3.6V

Size



Pins define

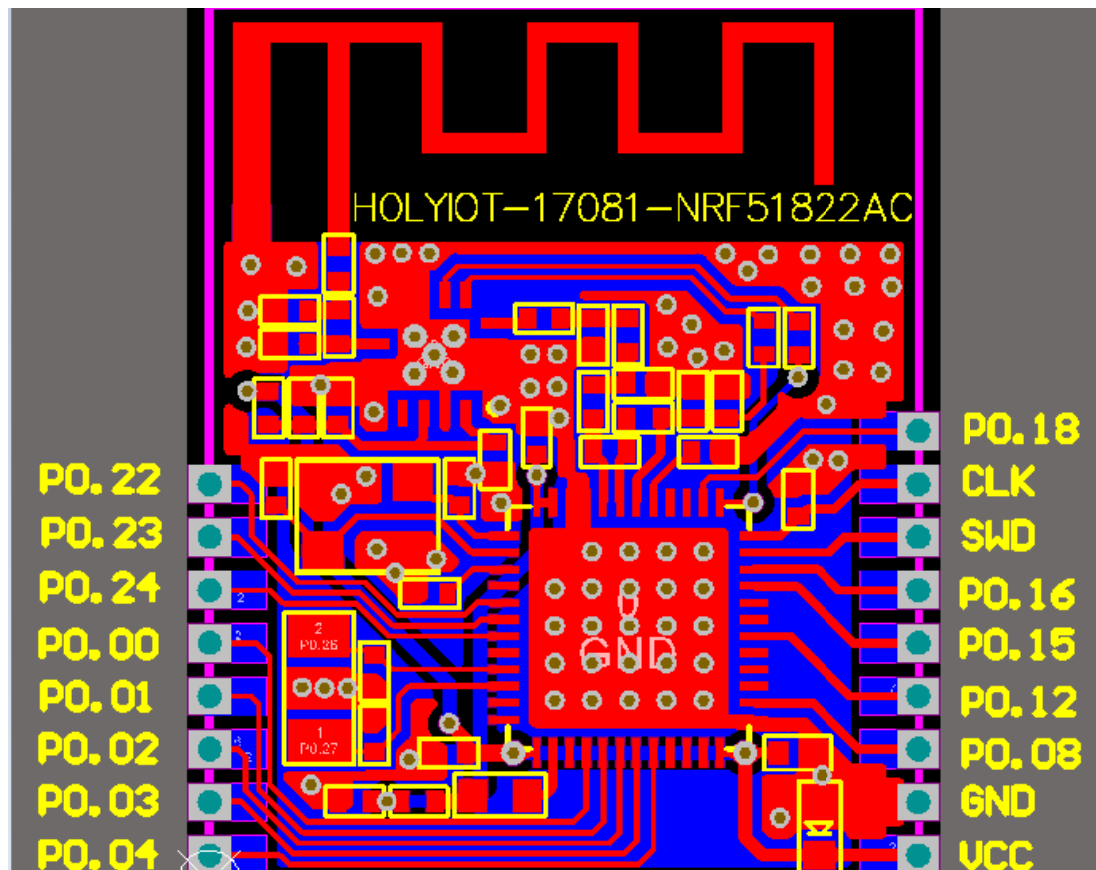


表 1

No	Name	discriptions	Note
Pin1	VCC	Power	Voltage :3.3V
Pin2	GND	Power the device	
Pin3	P0.08	I/O	
Pin4	P0.12	I/O	
Pin5	P0.15	I/O	
Pin6	P0.16	I/O	
Pin7	SWD	DEBUG	
Pin8	CLK	DEBUG	
Pin9	P0.18	I/O	
Pin10	P0.04	I/O	
Pin11	P0.03	I/O	
Pin12	P0.02	I/O	
Pin13	P0.01	I/O	
Pin14	P0.00	I/O	
Pin15	P0.24	I/O	
Pin16	P0.23	I/O	
Pin17	P0.22	I/O	

set the PA function:

When the TXEN running, the VDD_PA=1

RXEN P0.17=1 the BLE can communicate with each other

Current consumption

APPLICATIONS

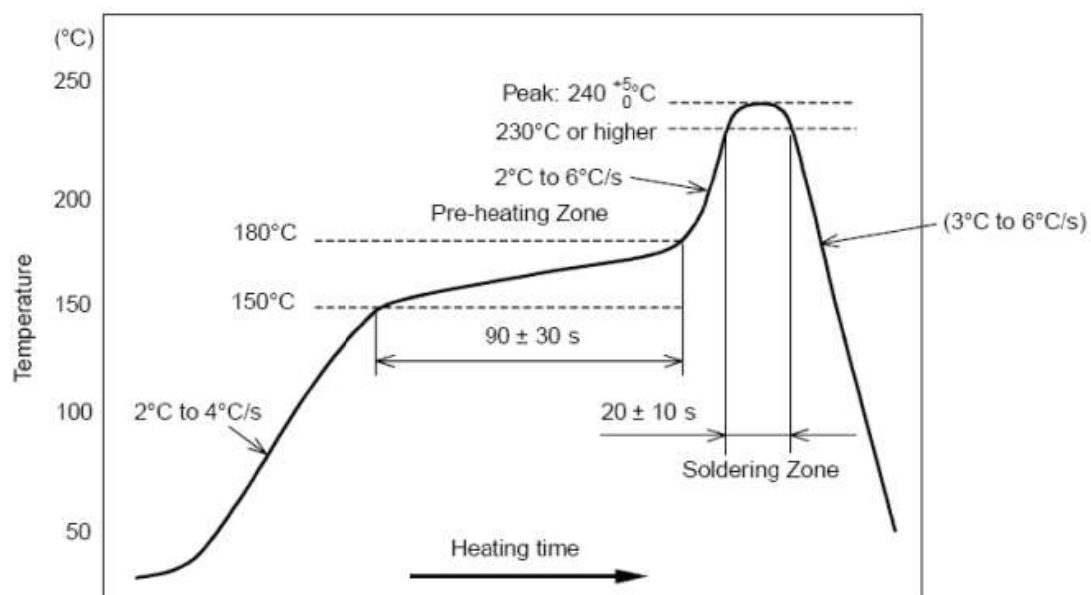
Support multiprotocol	
protocol	Bluetooth 4.0, BLuetooth 4.2,BLUethoosh mesh,ANT,2.4Ghz
Data Encryption safety	AES-128 bit Encryption safety
RF	
Frequency	2.360Ghz~2.500Ghz
modulation	GFSK@ 1Mbps , 2 Mbps, 250kps
Antenna	PCB Antenna
Tx power	5.43dBm (Max)
receiver sensitivity	-93dBm(BLE low power model)
Current consumption	
TX @-4dBm @ DC/DC 3V	6.3mA
TX @0dBm @ DC/DC 3V	8.0mA
TX @+4dBm @DC/DC 3V	11.8mA
TX @0dBm no (DC/DC)	10.5mA
RX DC/DC , 3V	9.7mA
Rx 1Mbps No DC/DC	13mA
System off No RAM	0.6uA
System off 8kB Ram	1.2uA
System on GPIO don't work	2.6 uA
3V OFF mode	600nA
Working	
Voltage range	2.0V~3.6V
Operate working temperature	-40℃ ~ +85℃

- ✓ Mobile phone accessories
- ✓ Wearables
- ✓ Beacons
- ✓ Rezenec wireless charging monitoring
- ✓ PC peripherals
- ✓ Consumer Electronics (CE) remote controls
- ✓ Proximity/Alert sensors
- ✓ Smart Home
- ✓ Sports, fitness and healthcare sensors
- ✓ Smart RF tags

- ✓ Toys and electronic games
- ✓ Intelligent domestic appliances
- ✓ Industrial and commercial sensors
- ✓ Lighting

Reflow Soldering Test Standard

- 1 , The highest temperature is 245°C
2. Using the IR testing or normal testing
3. Please see the temperature diagram as below



About us

We are a company who located in shenzhen, China . we have already develop a lot of IOT products , such as smart jump rope , smart pets training, pets fitness and health tracking ,key finder for anti-lost. Smart bluetooth tag , smart sexy product. We cooperation with a lot of customers . Like south Korea, USA, Germany, Greece , Israel . We help our partner to work with the firmware code via BLE solutions . Help them solve the distance range , and let the products more low energy and battery will be last longer. We are focus on iBeacon ,eddystone , BLE bluetooth 4.0 with different sensor like temperature sensor , humidity sensor , pressure sensor , air quality sensor , accelerometer sensor (motion) such as 3-axis accekerometer 6-axis accelerometer , 9- acceleromter sensor (Gyroscope) . Barometric pressure sensor . And so on . We provide BLE solutions ,RF solutions for our customer . We can customize different firmware for our client . We provide one- stop service . Like PCB design ,PCBA layout ,PCBA produce, firmware and case design . And work with the app developer to complete the whole solutions . From app, web applications to compatible with our firmware.

Do you want fast prototype development . Why not choose us? Believe us , we have 8 years experience for RF solutions

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.

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 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.

Warning: Changes or modifications to this unit not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following "Contains TX FCC ID:" XAO-BLU", and the FCC part 15.19 statement has to be available on the label: 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.

If the end product is so small or for such use that it is not practicable to place the statement specified, the statement shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed.

RF Exposure

The device has been evaluated to meet general RF exposure requirement.

The device can be used in portable exposure condition without restriction.

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

This device is intended only for OEM integrators under the following conditions:

(1) This module has been designed to operate with a internal antenna having a maximum gain of 2dBi.

(2) Integration is strictly restricted to Grantee himself or dedicated OEM integrators under control of the Grantee.

Any host platform(s) always need to evaluate via FCC Class II Permissive Change (C2PC) to the Limited Modular Approval as appropriate, this includes the need for additional testing.

The OEM integrator will be responsible to satisfy SAR/RF Exposure requirements, when the module integrated into any (portable, mobile, fixed) host device.

The module has no shielding cover; it is tested and approved as Limited modular approval.

The module must in the end-product be installed in such manner that the authorized antennas can be used, any change of the antenna will void the certification.