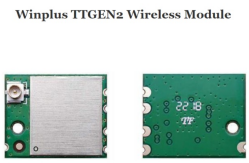


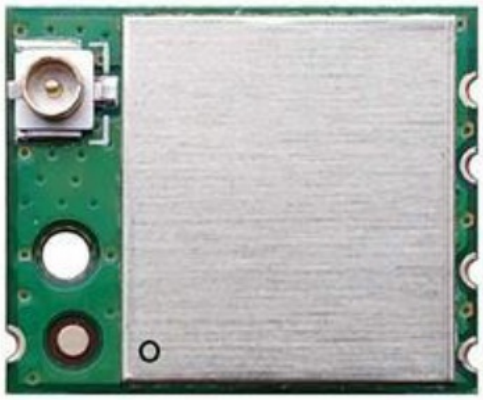
Winplus TTGEN2 Wireless Module User Manual

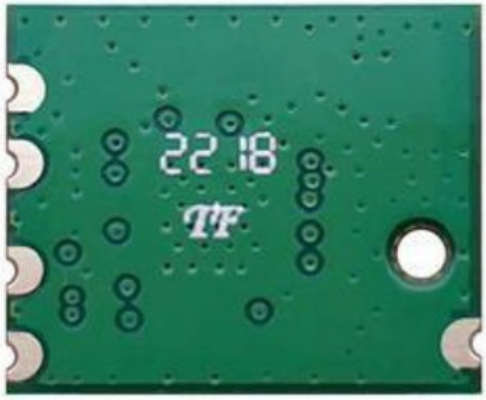
Contents

1 Winplus TTGEN2 Wireless Module
2 Product Information
3 TTGEN2 Specification
4 General Description
5 Feature
6 Specification
7 Drawing
8 Remark
9 FCC Information
10 IC Information
11 Documents / Resources
11.1 References

Winplus

Winplus TTGEN2 Wireless Module





Specifications

- **Module:** TTGEN2
- **File name:** Product specification
- **Version:** V1.2
- **Editor:** Henry Ho
- **Finished date:** 2024-03-21
- **Participator:** Valid from 2024-03-21

Product Information

B828 wireless module is designed based on B828 chipset. This wireless module can support communication over 100 meters. It operates at 2412-2462MHz with a high wireless data rate.

Note: *The above pictures are for reference only.*

Features
Functional Block Diagram

Detailed Specifications

Specification:

- Wireless module based on B828 chipset
- Supports communication over 100 meters
- Operates at 2412-2462MHz
- High wireless data rate

Storage Temperature and Humidity

1. Storage Condition: Moisture barrier bag must be stored under 30°C, humidity under 85% RH. Shelf life for dry packed product is 12 months from the bag seal date.
2. If humidity indicator cards read > 30%, temp < 30°C, humidity < 70% RH, products require baking before mounting. Baking condition: 125°C, 12 hours.

FCC Information
This module complies with Part 15 of the FCC rules. It must not cause harmful interference and must accept any interference received. Changes or modifications not approved by the responsible party could void the user's authority to operate the equipment.

RF Exposure Information
The equipment complies with FCC RF radiation exposure limits. Human proximity to the antenna should not be less than 20cm during normal operation.

Antenna Information
It is a 2.4GHz Copper tube antenna (IPEX port), model number CH16HL.

Installation Instructions

- Power supply range: DC 3.1V~3.5V

- When connecting to the host device, ensure it is powered off.
- Ensure correct installation of module pins.
- Module should not allow users to replace or dismantle.

Usage Instructions

1. Ensure the product is stored in the specified conditions.
2. Follow FCC guidelines for operation and interference.
3. Maintain safe distance from the antenna during operation.
4. Follow installation notes for proper integration with host devices.

FAQ

Q: Can the module be used for external purposes?
A: No, this module is for internal use only and should not be sold outside.

MODULE OF TTGEN2

TTGEN2 Specification

File status • [ ] Draft • [√] Published • [ ] Pending	File name	Product specification
	Version	*V1.2*
	Editor	**Henry Ho**
	Finished date	2024-03-21

Version	Editor	Participator	Valid from	Remark
V1.2	**Henry Ho**		2024-03-21	

0 Amendment

General Description

- B828 wireless module is designed base on B828 chipset. This wireless module can support far than 100M communication. It operates at 2412-2462MHz and high wireless data rate.

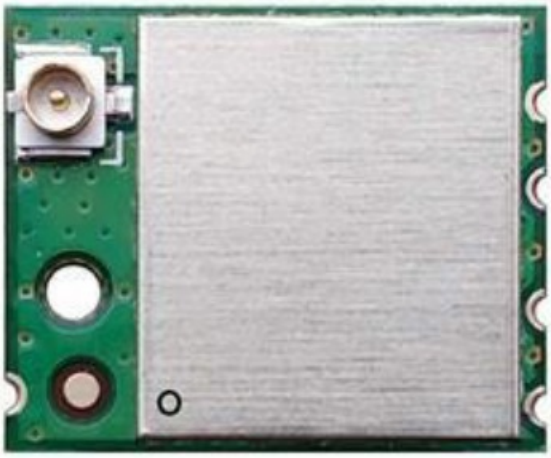


Figure 1-Top View

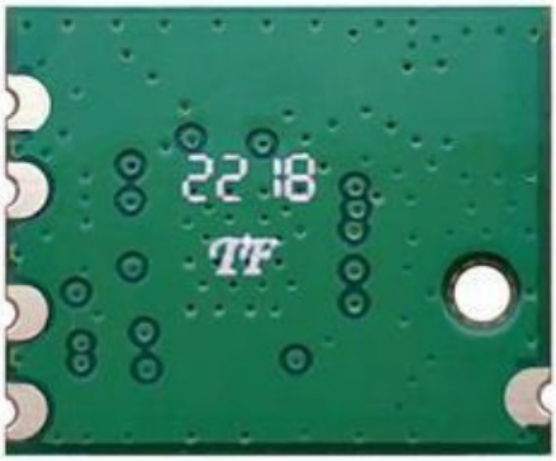


Figure 2-Bottom View

- **Note:** The above pictures are for reference only

Feature

- Operating Frequencies: 2.412~2.462GHz
- Host Interface is USB, complies with USB2.0
- Connect to the external antenna through the IPEX connector
- Power Supply:3.3V±0.2V

Functional Block Diagram

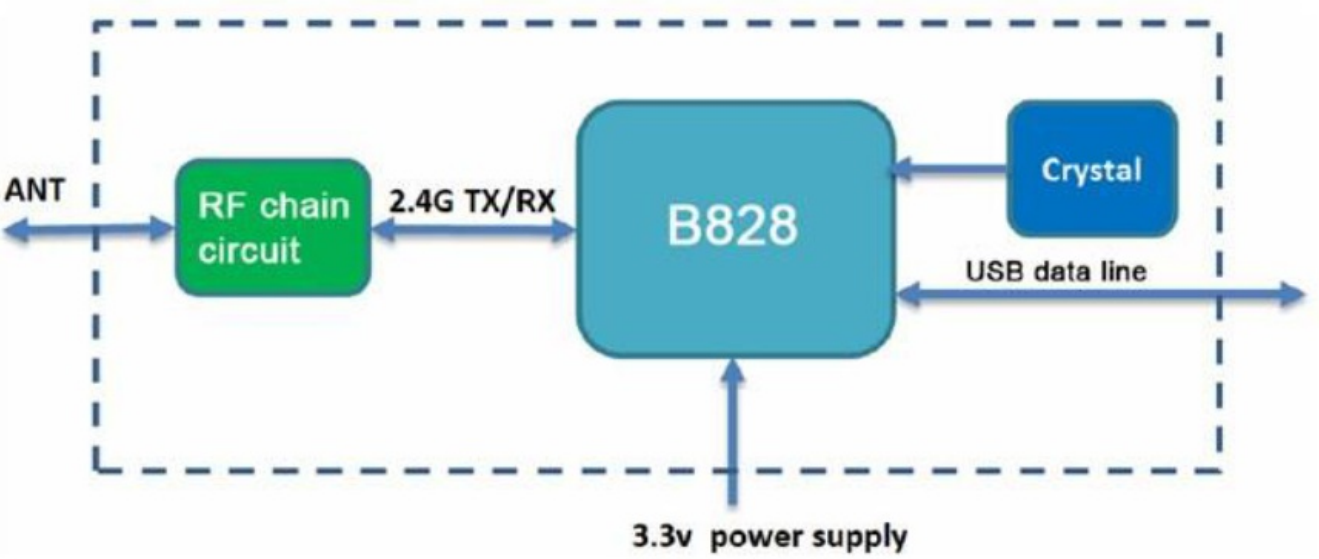


Figure 3-B828 A-I-V1.0 block diagram

Specification

3.1 General Specifications

Item	Description
Product Name	B828
Main Chip	B828
Host Interface	USB2.0
Operating Frequencies	2.412GHz~2.462GHz
Modulation	CCK, DQPSK, DBPSK 64-QAM,16-QAM, QPSK, BPSK
Rx Sensitivity	-94dBm (Min)
Antenna Type	Connect to the external antenna through the IPEX connector
Dimension(L*W*H)	15.7x 13x 2.1mm (L*W*H), Tolerance: ±0.15mm
Power Supply	3.3V±0.2V
Power Consumption	monitor mode: 101mA@3.3V (Max) TX mode: 266mA@3.3V (Max)
Clock Source	40MHz
Working Temperature	-30° C to +85° C
Storage Temperature	-40° C to +85° C

ESD CAUTION: Although this module is designed to be as robust as possible, Electrostatic Discharge (ESD) can damage this module. It must be protected from ESD at all times and handled under the protection of ESD.

3.2 DC Characteristics

Absolute Maximum Ratings

Symbol	Parameters	Maximum rating	Unit
VDD33	3.3V Supply Voltage	3.5	V
VESD	ESD protection（HBM）	2000	V

Recommended Operating range

At room temperature 25℃				
Symbol	**Min.**	**Typ.**	**Max.**	**Unit**
VDD33	3.1	3.3	3.5	V

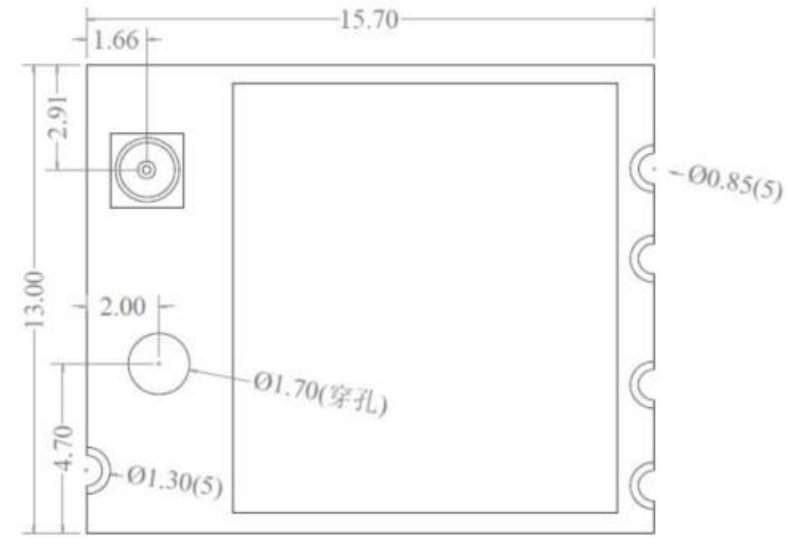
3.3 DC Power Consumption

VDD=3.3V，Ta = 25 °C，unit: mA				
Supply current	Typ.		Max	
Standby (RF disabled)	97		101	
	DBPSK		CCK	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	255	266	225	238
monitor RX mode	98	105	98	105
	BPSK		64QAM	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	255	264	138	144
monitor RX mode	98	105	98	105
40MHz mode	BPSK		64QAM	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	252	262	134	145
monitor RX mode	98	105	98	105

Drawing

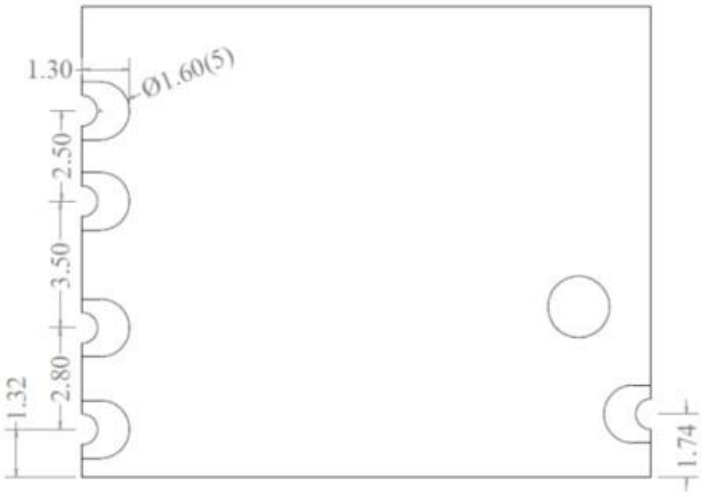
Mechanical Specifications

Module dimension: Typical (L*W*H): 15.7*13.0*2.1mm Tolerance: +/-0.15mm



top view

side view



bottom view

Figure 6-Module dimension

Remark

Storage Temperature and Humidity

1. Storage Condition: Moisture barrier bag must be stored under 30°C, humidity under 85% RH.
   The calculated shelf life for the dry packed product shall be a 12-months from the bag seal date. Humidity indicator cards must be blue, 30% .
2. Products require baking before mounting if humidity indicator cards reads > 30% temp < 30°C, humidity < 70% RH, over 96 hours.
    1. **Baking condition:** 125°C, 12 hours. Baking

2. **times:** 1 time.

FCC Information

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.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or change to this equipment. Such modifications or change 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 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.

RF Exposure Information:

- This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.
- This module is for internal use only and not sold outside.

Antenna Information

- It is 2.4GHz Copper tube antenna(IPEX port), model number CH16HL.
- The modular must be installed in the host that assign by Company name: Winplus Co., Ltd.
- **Product/PMN:** MODULE OF TTGEN2
- **Model no./HVIN:** TTGEN2 if other host types used would need further evaluation and possible C2PC if they are not significantly similar to the one tested.

Module procedures:

- The module has its own RF shielding, which belong to signal module Standard requires: Clear and specific instructions describing the conditions, limitations and procedures for third-parties to use and/or integrate the module into a host device (see Comprehensive integration instructions below).
- Resolve: Supply example as follows:

Installation Notes:

1. TTGEN2 Module Power supply range is DC 3.1V~3.5V, when you use TTGEN2 Module design product, the power supply cannot exceed this range.
2. When connect TTGEN2 Module to the host device, the host device must be power off.
3. Make sure the module pins correctly installed.
4. Make sure that the module does not allow users to replace or demolition.

Trace antenna designs: Not applicable.
The system integrator must place an exterior label on the outside of the final product housing the TTGEN2 Modules. Below is the content that must be included on this label. The host product

Labeling Requirements:

- **NOTICE:** The host product must make sure that FCC labeling requirements are met. This includes clearly visible exterior label on the outside of the final product housing that displays the contents shown in below:
- **Contains FCC ID:** WUI-TTGEN2
- Specification Information on test modes and additional testing requirements: When testing host product, the host manufacture should follow FCC KDB Publication 996369 D04 Module Integration Guide for testing the host products. The host manufacturer may operate their product during the measurements. In setting up the configurations, if the pairing and call box options for testing does not work, then the host product manufacturer should coordinate with the module manufacturer for access to test mode software.
  Additional testing, Part 15 Subpart B disclaimer:
- The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.247) list on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed when contains digital circuity.
- **Information on test modes and additional testing requirements:**
  When testing host product, the host manufacture should follow FCC KDB Publication 996369 D04 Module Integration Guide for testing the host products. The host manufacturer may operate their product during the measurements.

IC Information

- This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s license-exempt RSS(s).
- **Operation is subject to the following two conditions:**
  - This device may not cause interference.
  - This device must accept any interference, including interference that may cause undesired operation of the device.

- This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

TTGEN2

- MODULE OF TTGEN2
- Responsible Party:
- Horizon Brands
- 2975 Red Hill Ave., Ste. 100, Costa
- Mesa, CA 92626, U.S.A.
- **Tel:** 1.866.294.9244

Documents / Resources

	Winplus TTGEN2 Wireless Module [pdf] User Manual TTGEN2 Wireless Module, TTGEN2, Wireless Module, Module

References

- User Manual