WiFi Module

Name: WiFi Module

Model NO.: WG217

Revision: V1.05

Revision History

Revision	Description	Approved	Date
V1.01	Initial Release	George He	2017.07.25
V1.02	Update Performance Specification	George He	2017.11.21
V1.03	Update Performance Specification	George He	2017.12.01
V1.04	Update Performance Specification	George He	2017.12.13
V1.05	Update Top View Photo	George He	2018.01.09

Contents

1. General Description

WG217 is a highly integrated USB Wi-Fi module which supports 433Mbps PHY rate. It is compliant with IEEE 802.11ac draft specification, offering feature-rich wireless connectivity and reliable throughput from an extended distance.
WG217 is designed to support standard based features in the areas of security, quality of service and international regulations, giving end users the greatest performance any time and in any circumstance.

2. Applications

- IP Camera
- IP TV
- IP DVD(Internet VOD Player)
- Set Top Box
- Home Gateways
- Gaming Consoles
- DVR

Figure 1: WG217 Top View

3. Features

- IEEE 802.11a/b/g/n/ac WLANs
- 2.4G /5G ITIR mode
- With support of 433Mbps PHY rate
- IEEE 802.11e QoS Enhancement(WLAN)
- USB LPM/Selective Suspend support
- Fully compliance with USB2.0 High-speed mode.
- IEEE 802.11i(WPA, WPA2). Open, shared key, and pair-wise key authentication services
- Supports for Windows XP 32/64, 2000, Vista 32/64bit, Windows 7 32/64bit, Linux, Android
- RoHS compliance meets nvironment-friendly requirement.
- FCC,CE compliance
- 36.0(L) x 15.0(W) x 3.2mm small dimension

4. Application Block Diagram

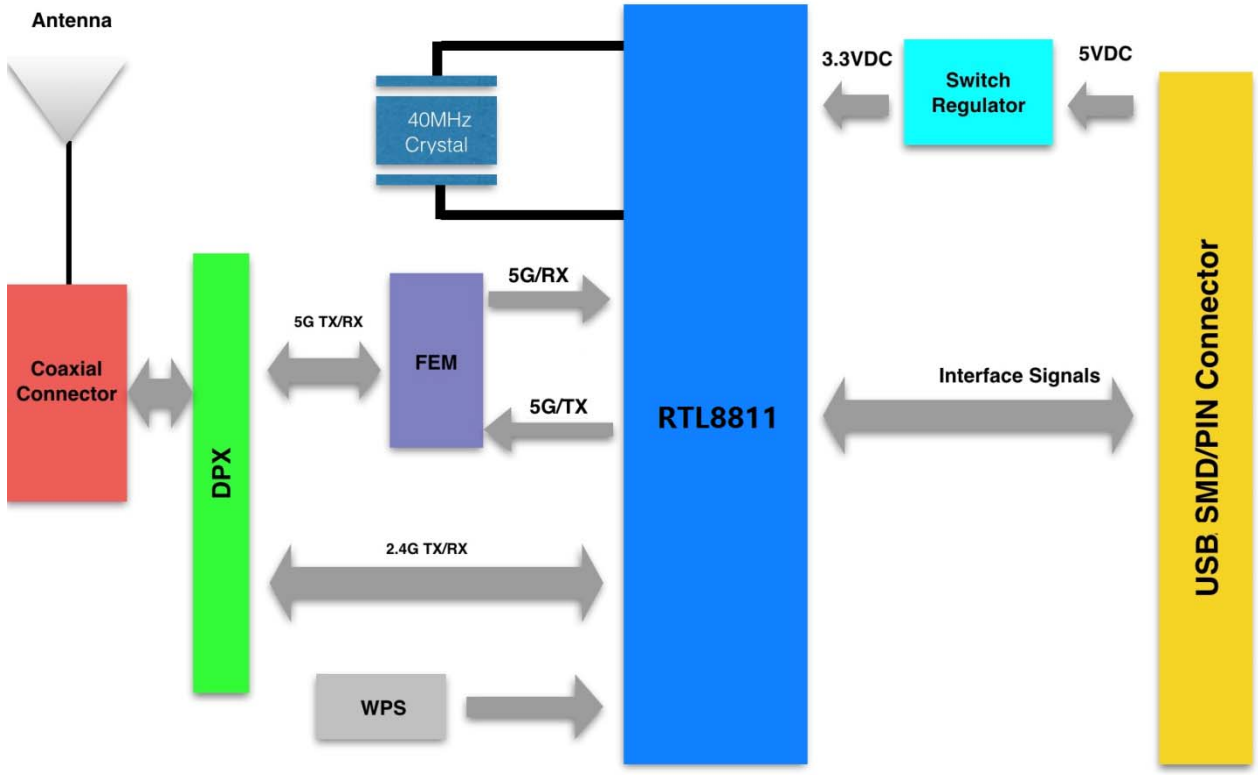


Figure 2: WG217 Block Diagram

5. Module Pinout and Pin Description

WG217 _XX

- Package: S–SMD; 6–6pin conenctor; 4–4pin conenctor
- Antenna Type: E–IPEX; P–PCB antenna

6. Performance Specification

Hardware Features

Model	WG217
ANTENNA TYPE	IPEX connecter or PCB antenna
Voltage	3.5—5.5V
DIMENTIONS(W×D)	36mm*15mm
Wireless Features	
WIRELESS STANDARDS	IEEE 802.11 a/b/g/n/ac
FREQUENCY RANGE	2.4/5GHz
DATA RATES	IEEE 802.11a Standard Mode: 6,9,12,18,24,36,48,54Mbps IEEE 802.11 b Standard Mode: 1,2,5.5,11Mbps
	IEEE 802.11g Standard Mode: 6,9,12,18,24,36,48,54Mbps
	IEEE 802.11n/Draft 2.0 Mode: 130Mbps @ HT20
	150Mbps @ HT40 IEEE 802.11ac Standard Mode: 433Mbps @VHT80
2.4G RECEIVE SENSITIVITY	HT40 MCS15: -69dBm@10% PER(MCS7)
	HT20 MCS15 : -72dBm@10% PER(MCS7)
	54M: -74dBm@10% PER
	11M: -89dBm@ 8% PER
5G RECEIVE SENSITIVITY	VHT80 MCS15: -59dBm@10% PER(MCS9)
	HT40 MCS15: -68dBm@10% PER(MCS7)
	OFDM 54M: -75dBm@10% PER
	OFDM 6M: -90dBm@ 8% PER
MODULATION TECHNOLOGY	802.11 Legacy b/g/n
	DSSS (DBPSK, DQPSK, CCK)
	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

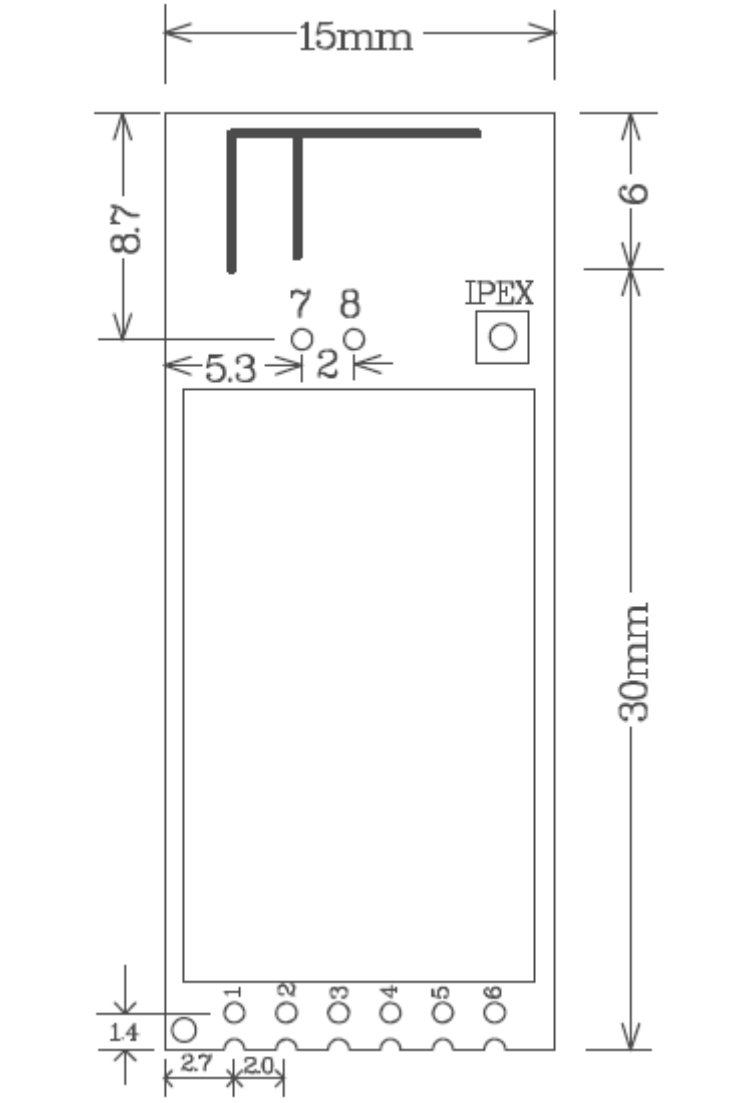
	802.11ac			
	OFDM (256-QAM)			
WIRELESS SECURITY	Supports WEP64/128, WPA, WPA2, TKIP, WAPI, and AES hardware encryption			
5GHZ TRANSMIT POWER	IEEE 802.11ac: 11-14dBm @AC80 MCS7			
2.4GHZ TRANSMIT POWER	IEEE 802.11n: 14-17dBm @HT40 MCS7 14-17dBm@HT20 MCS7			
	IEEE 802.11g: 15-17dBm			
	IEEE 802.11b: 16-20dBm			
WORK MODE	AP/Ad-Hoc / Infrastructure mode			
Others				
POWER Consumption@25 °C	Status	POWER	2.4G/mA	5G/mA
	Transmission HT40/MCS 15	5.0V	150	160
	Receiving HT40/MCS15	5.0V	90	90
SYSTEM REQUIREMENTS	Windows 7(32/64bits), Windows Vista(32/64bits), Windows XP(32/64bits), Windows 2000,Linux,Android			
ENVIRONMENT	Operating Temperature: -10℃~70℃			
	Storage Temperature: -40℃~125℃			
	Operating Humidity: 10%~90% non-condensing			
	Storage Humidity: 5%~90% non-condensing			

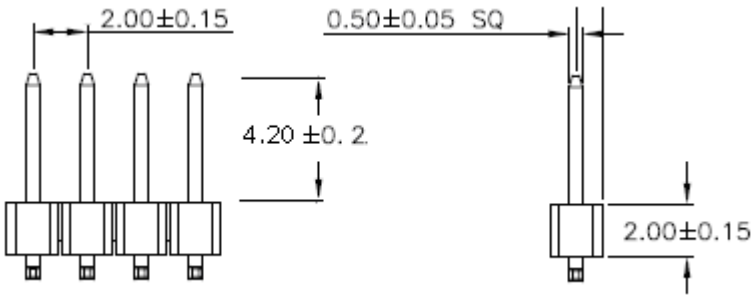
7. Module Pinout

8. Electrical Characteristics

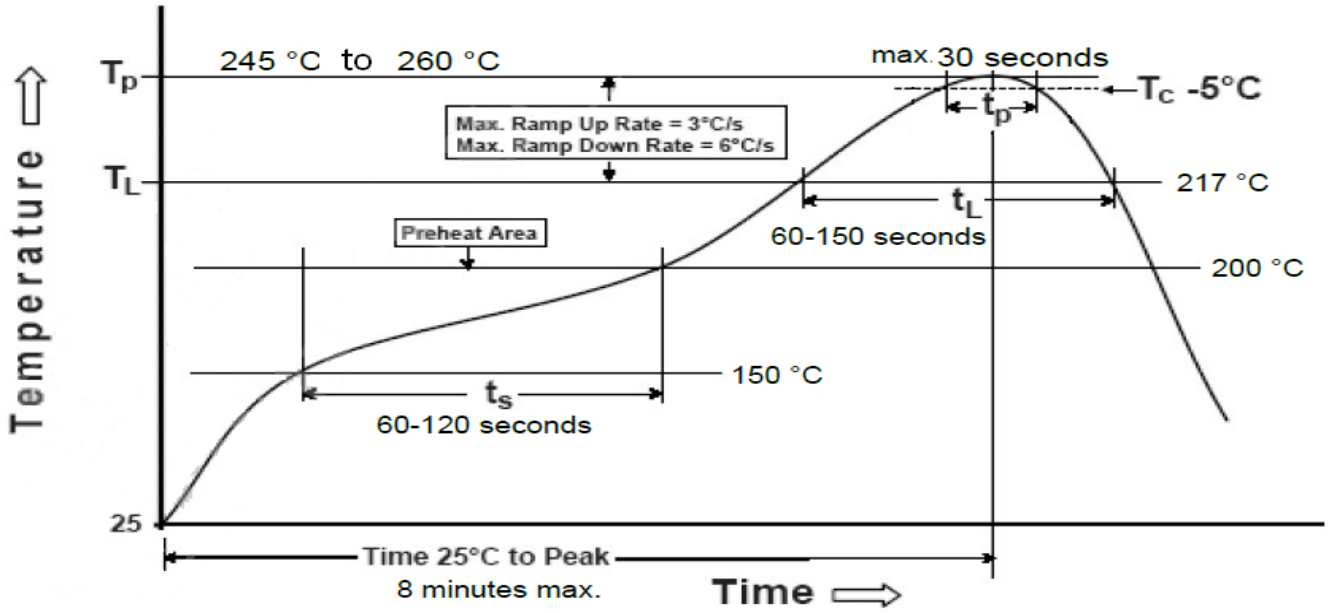
Pin No.	Pin name	I/O	Description	Remark
1	LED	O	LED pin	
2	GND	G	Ground	
3	D+	I/O	USB Interface DP	
4	D-	I/O	USB Interface DM	
5	VCC	P	Module Power Supply	
6	WPS	I	WPS pin	
7	NC			
8	NC			

9. PCB Footprint and Dimensions





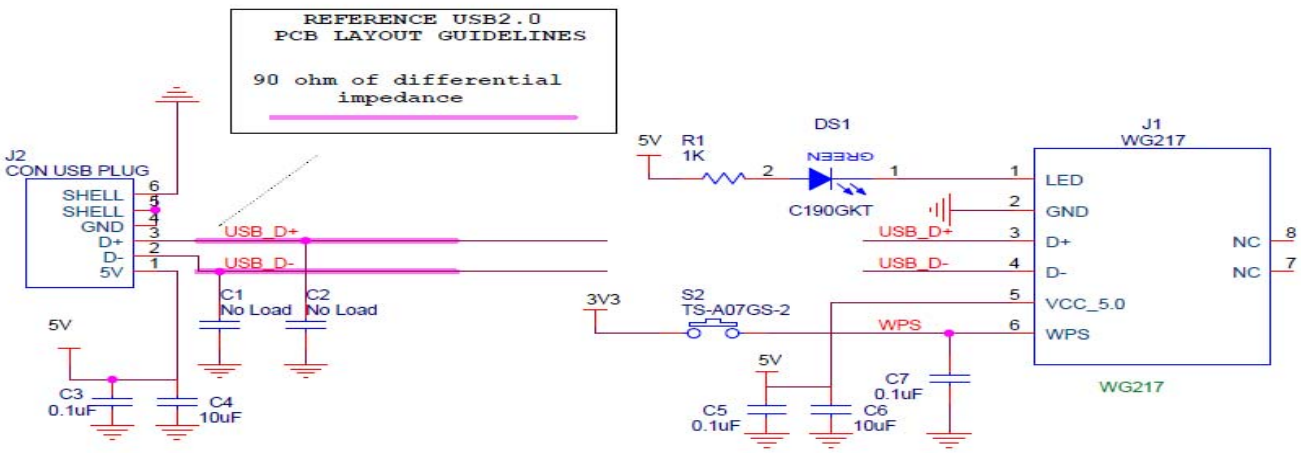
10. Manufacturing Process Recommendations



WG217 Typical Leadfree Soldering Profile

Note : The final soldering temperature chosen at the factory depends on additional external factors like choice of soldering paste，size，thickness and properties of the baseboard，etc. Exceeding the maximum soldering temperature in the recommended soldering profile may permanently damage the module.

11. Reference Design Schematic



WARNING:

Herby, Skylab M&C Technology Co., Ltd declares that this USB WIFI module，WG217 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Use the WG217 in the environment with the temperature between -10℃ and +70℃,

This modular must be installed and operated with a minimum distance of 20cm between the radiator and user body

12. Contact Information

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FCC Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
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
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 power exceeds the limit and the distance Over 20cm distance in actual use between the device and user is compliant with the requirement

FCC RF Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. this equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

Notice to OEM integrator
The end user manual shall include all required regulatory information/warning as show in this manual.
The OEM integrator is responsible for testing their end-product for any additional compliance requirements required with this module installed.

If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. The end product shall haves the words “Contains Transmitter Module FCC ID: 2ACOE-WG217” .

The device must be professionally installed

The intended use is generally not for the general public.It is generally for industry/ commercial use. The connector is within the transmitter enclosure and can only be accessed by disassembly of the transmitter that is not nomally required. the user has no access to the connector. Installation must be controlled. Installation requires special training