

WG203 2.4/5G 2X2 MIMO WLAN Module Datasheet

Name: 802.11b/g/n 2x2 WLAN System Module

Model NO.: WG203

Revision: V3.01

Revision History:

Revision	Description	Approved	Date
V1.01	Initial Release	George	20130529
V2.01	Add Ordering Information	George	20140215
V3.01	Update Packing	George	20140226

General Description

WG203 is a highly integrated for 2.4/5G IEEE 802.11n 2x2 MIMO WLAN for CE application, It implements half-duplex OFDM, CCK, and DSSS baseband processing, supporting 130Mbps for 20MHz and 300Mbps for 40MHz channel and IEEE 802.11b/g data rates. It supports two transmit traffic stream and two receive traffic stream using two Tx chain and two receive chain for high throughput and range performance.

Applications

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

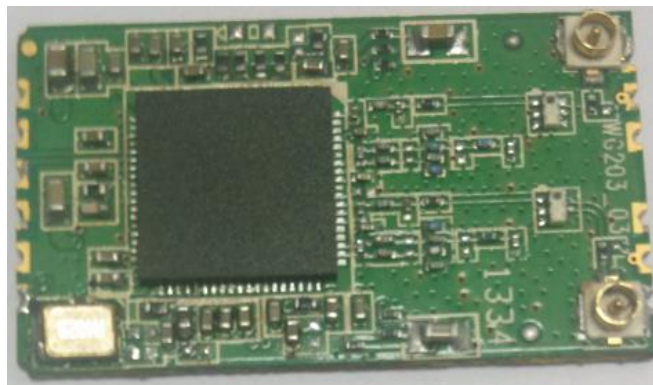


Figure 1: WG203 Top View

Features

- 2.4/5G GHz Compliant to IEEE 802.11b/g/n 2x2 WLANs
- Supports USB 2.0 interface
- 2T2R Mode with support for a 300Mbps TX/RX PHY rate.
- Security: WEP 64/128, WPA, WPA2, TKIP, AES, WAPI
- Supports for Windows XP 32/64, 2000, Vista 32/64bit, Windows 7 32/64bit, Linux, Android
- MIMO power save.
- Data rates of up to 54 Mbps for 802.11g and 144.4 for 802.11n HT20, 300 Mbps for HT40.
- RoHS compliance meets environment-friendly requirement.
- 29(L) x 17(W) x 2.80(H) mm small dimension

Applications Block Diagram

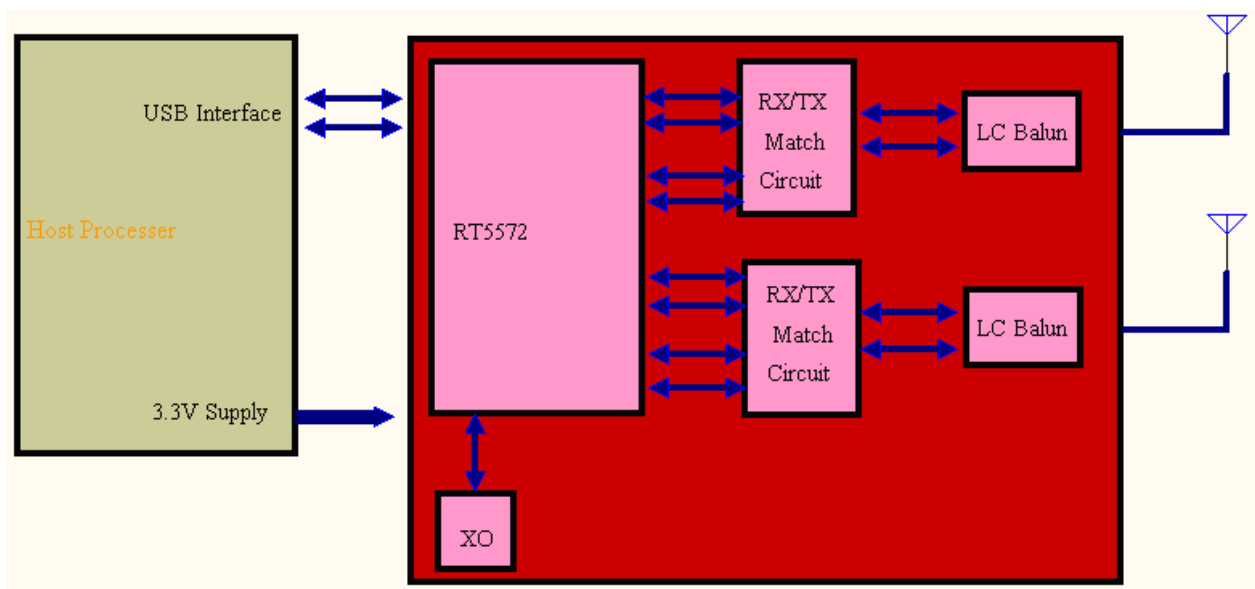


Figure 2: WG203 Block Diagram

Ordering Information

Module NO.	RF Connector Type	Antenna Option
WG203_E	IPEX Connector	Ext Antenna
WG203_P	PCB PIN	Ext Antenna

Performance Specification

Hardware Features	
Model	WG203
Antenna Type Chipset solution	IPEX1 connect(antenna 0) or PCB pin
	IPEX2 connect(antenna 1) or PCB pin
Voltage	RT5572
Dimentions(W xD)	3.3.0V+/-10%
Model	29mm*17mm
Wireless Features	

Wireless Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b			
Frequency Range	2.4/5GHz			
Data Rates	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			
	300Mbps @ HT40			
2.4G Receiver Sensitivity	HT40 MCS7: -66dBm@10% PER(MCS7)			
	HT20 MCS7 : -71dBm@10% PER(MCS7)			
	54M: -74dBm@10% PER			
	11M: -90dBm@ 8% PER			
5G Receiver Sensitivity	HT40 MCS15: -65dBm@10% PER(MCS7)			
	HT20 MCS15: -71dBm@10% PER(MCS7)			
	OFDM 54M: -75dBm@10% PER			
	OFDM 6M: -90dBm@ 8% PER			
Modulation Technique	802.11 Legacy b/g/n			
	DSSS (DBPSK, DQPSK, CCK)			
	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)			
WIRELESS SECURITY	Supports WEP64/128, WPA, WPA2, TKIP, WAPI, and AES encryption			
WIRELESS TRANSMIT POWER	IEEE 802.11n: 12-15dBm @HT40 MCS7			
With ±2dBmtolerance	12-15dBm@HT20 MCS7			
	IEEE 802.11g: 15dBm			
	IEEE 802.11b: 17dBm			
WORK MODE	AP/Ad-Hoc / Infrastructure mode			
Others				
Certification	RoHS			
Power Consumption@25 °C	Status	POWER	2.4G/mA	5G/mA
	Transmission HT40/MCS 15	1.5V	185	290
		3.3V	400	530

	Receiving HT40/MC 15	1.5V	460	485
		3.3V	35	35
System Requirements	Windows 7(32/64bits), Windows Vista(32/64bits), Windows XP(32/64bits), Windows 2000, Linux, Android			
Environment	Operating Temperature: 0°C~110°C			
	Storage Temperature: -40°C~125°C			
	Operating Humidity: 10%~90% non-condensing			
	Storage Humidity: 5%~90% non-condensing			

Module Pinout

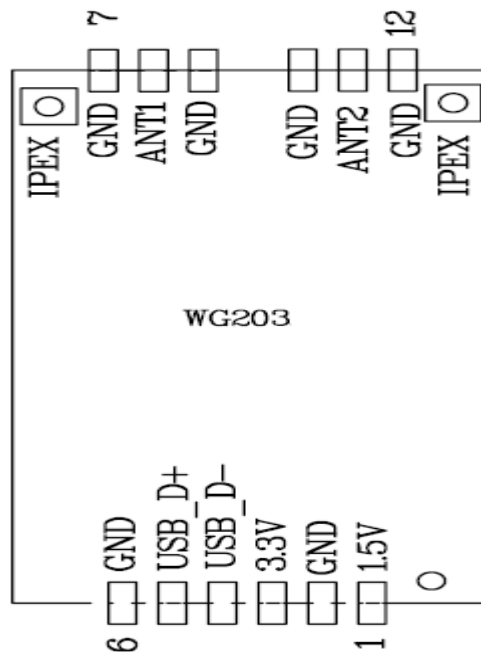


Figure 3: WG203 Pin Package

Pin Description

Pin No.	Pin name	I/O	Description	Remark
1	1.5V	P	Module Power Supply	
2	GND	G	Ground	
3	3.3V	P	Module Power Supply	
4	USB_D-	I/O	USB Interface DM	
5	USB_D+	I/O	USB Interface DP	
6	GND	G	Ground	
7	GND	G	Ground	
8	ANT1	RF	Antenna1	50 OHM
9	GND	G	Ground	
10	GND	G	Ground	
11	ANT2	RF	Antenna2	50 OHM
12	GND	G	Ground	

PCB Footprint and Dimensions

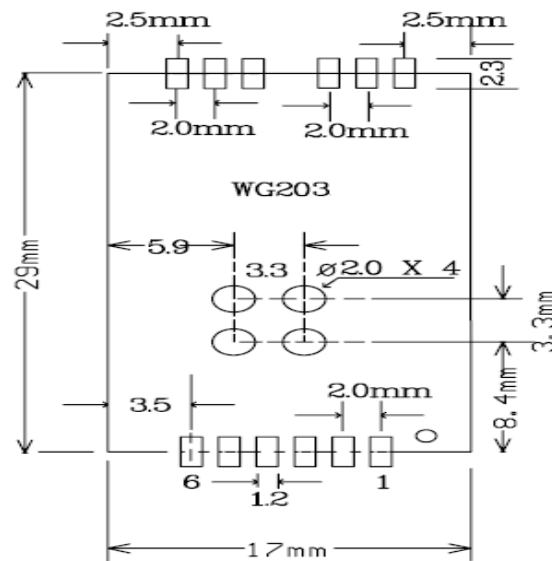


Figure 4: WG203 Footprint

Manufacturing Process Recommendations

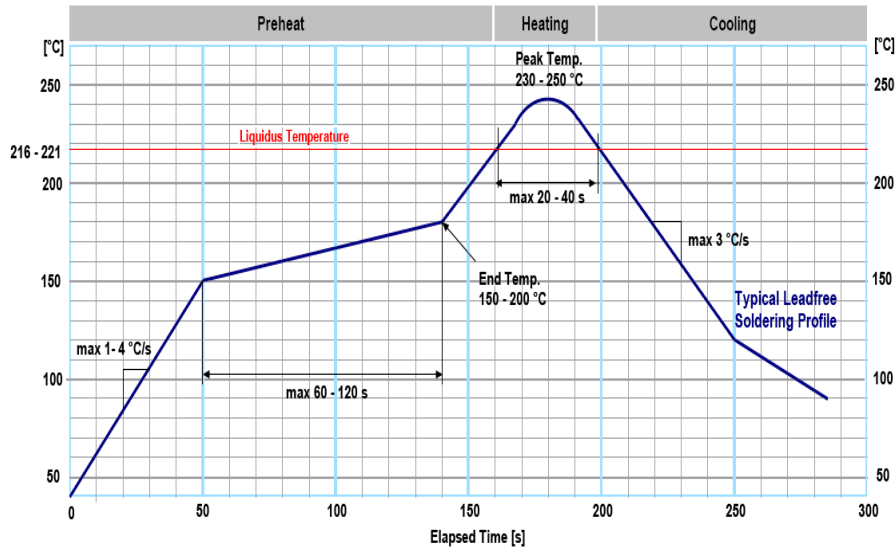


Figure 5: WG203 Typical Leadfree Soldering Profile

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.

Packaging Specification

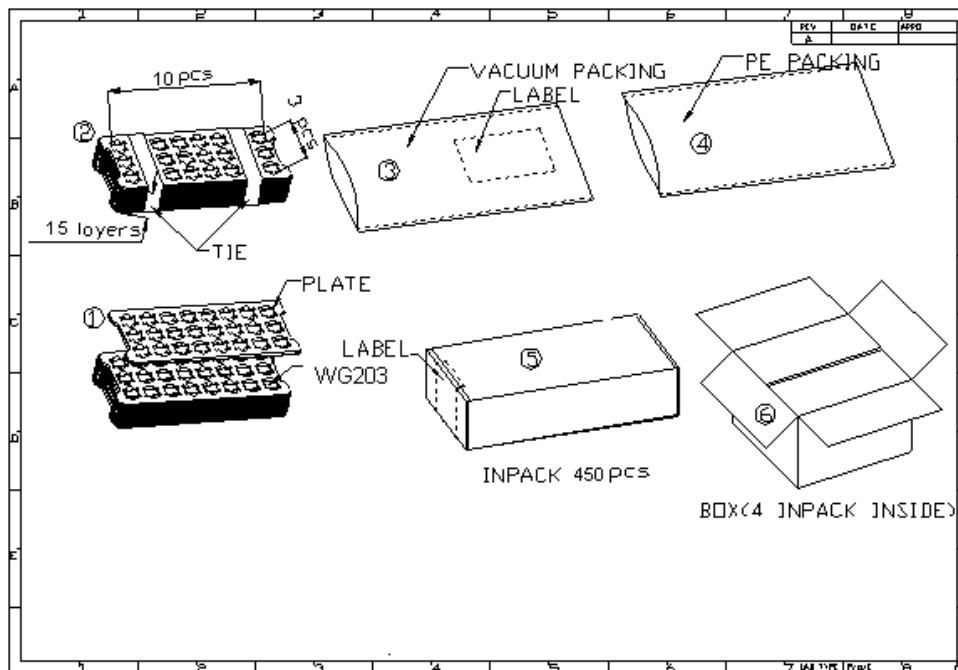


Figure 6: WG203 Packaging

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