CK-W-R188EUS-UM

IEEE 802.11b/g/n 1T1R USB WLAN Module

Datasheet

2012-9-28

A. General Description

CK-W-R188EUS-UM is a WLAN 11 b/g/n USB module, which fully supports the features and functional compliance of IEEE 802.11 b/g/n standards. It supports up to 150Mbps high-speed wireless network connections. It is designed to provide excellent performance with low power Consumption and enhance the advantages of robust system and cost-effective. It is targeted at competitive superior performance, better power Management applications.

B. Features

General

  6-pins Φ 1.524 mm Pin, Total Size 12.9 x 12.2mm

  IEEE 802.11b/g/n compatible WLAN

  Complete 802.11n solution for 2.4GHz band

  72.2Mbps receive PHY rate and 72.2Mbps transmit PHY rate using 20MHz bandwidth

  150Mbps receive PHY rate and 150Mbps transmit PHY rate using 40MHz bandwidth

  Compatible with 802.11n specification

  Backward compatible with 802.11b/g devices while operating in 802.11n mode

Host Interface

  Complies with USB Specification Revision 2.0

Standards Supported

  IEEE 802.11b/g/n compatible WLAN

  IEEE 802.11e QoS Enhancement (WMM)

  IEEE 802.11h TPC, Spectrum Measurement

  802.11i (WPA, WPA2). Open, shared key, and pair-wise key authentication services

Standards General Specification

Table 1. Standards General Specification

Model	CK-W-R188EUS-UM
Product Name	WLAN 11b/g/n USB module
Standard	802.11b/g/n, 802.3, 802.3u
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps
Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM
Frequency Band	2.4GHz ISM Band
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)
RF Output Power	< 13dBm@11n,< 17dBm@11b,< 15dBm@11g
Operation Mode	Ad hoc, Infrastructure
Receiver Sensitivity	11Mbps -86dBm@8%,54Mbps -73dBm@10%,130Mbps -66dBm@10%
Operation Range	Up to 180 meters in open space

LED	NA
OS Support	Windows XP /Vista /Mac /Linux/Android
Security	WEP, TKIP, AES, WPA, WPA2
Interface	USB 2.0
Power Consumption	DC3.3V Maximum power dissipation in 80mA
Operating Temperature	-10 – 50° C ambient temperature
Storage Temperature	-15 ~ 70°C ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
Dimension	12.9x 12.2 x 3 mm (L x W x H)

C. Application

- Mobile handsets
- Personal digital assistants
- Desktop and laptop personal computers
- Automotive Telematics Systems
- Computer peripheral devices (USB dongles)

D. Functional Block Diagram
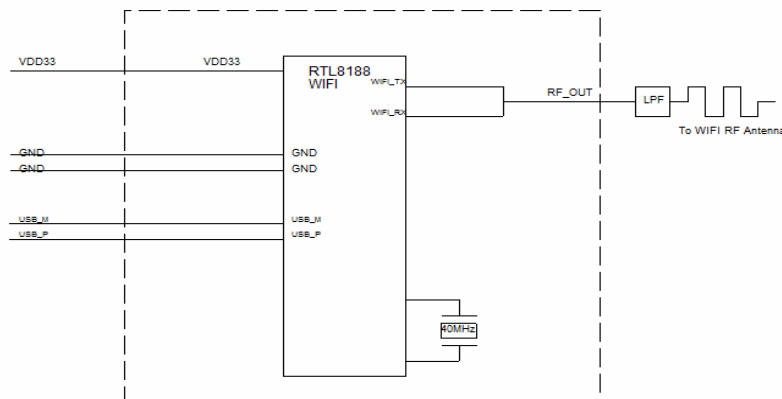
Figure 1: Functional Block Diagram

E. Electrical and Thermal Characteristics

Table 2. DC Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Units
VD33A, VD33D	3.3V I/O Supply Voltage	3.135	3.3	3.465	V
IDD33	3.3V Rating Current	-	80	120	mA

F. Pin definition

Table 3. Pin definition

Pin number	Name	Type	Description
1	Power	Power	3.3V Power input (5V is not allowed)
2	USB_D-	Analog	USB Differential signal
3	USB_D+	Analog	USB Differential signal
4	GND	Power	Ground
5	GND	Power	RF Ground
6	RFOUT	Analog	RF input/output

Figure 2: Pin definition（Top View）
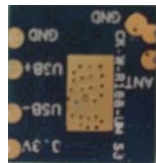
Figure 3: Pin definition（Bottom View）

G. Recommend Antenna Matching Circuit
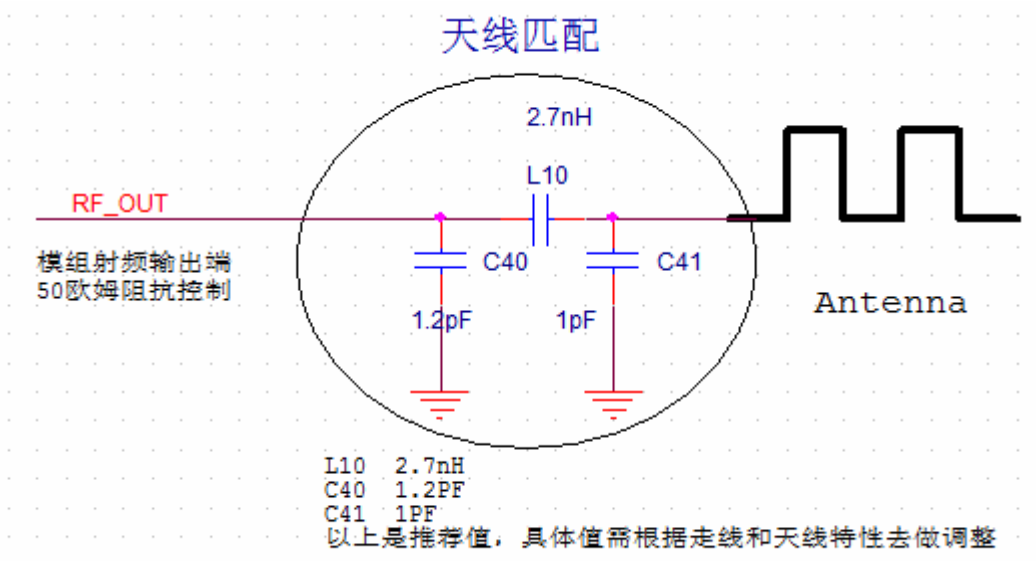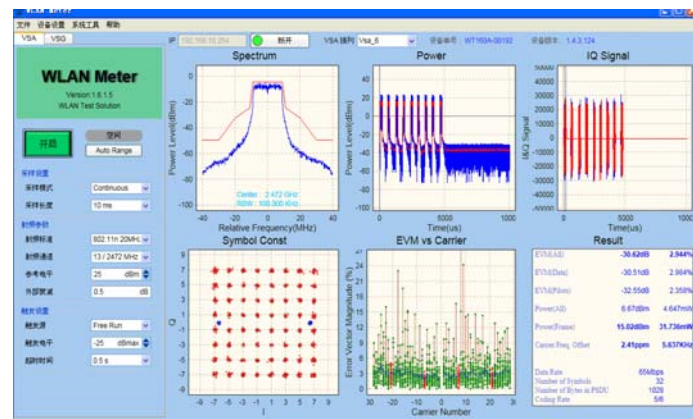

Figure 5: Recommend Ante
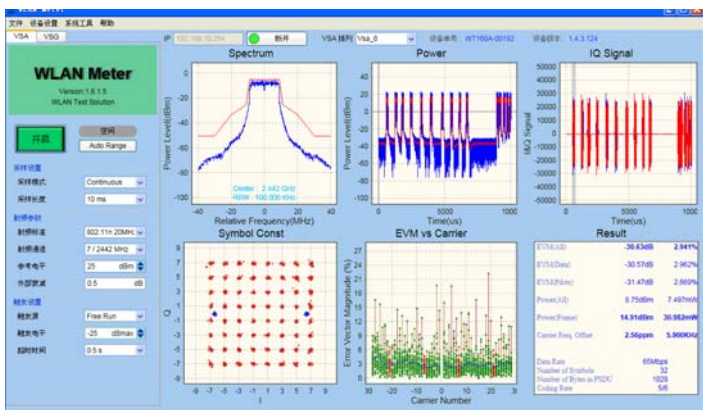
H. Test Result

802.11g (7)-54M

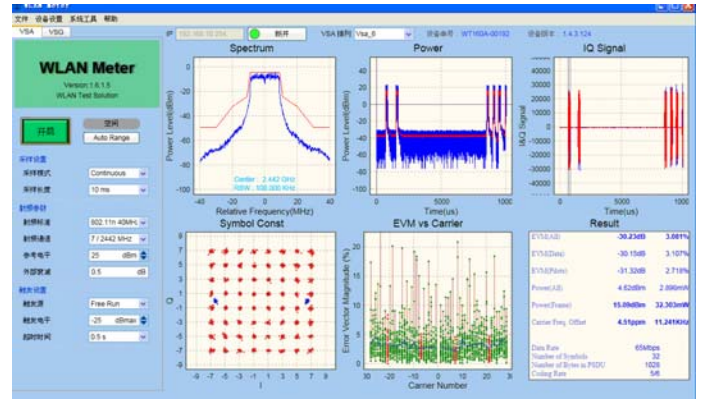## 802.11g (13)-54M

802.11n-20M (1)-11M
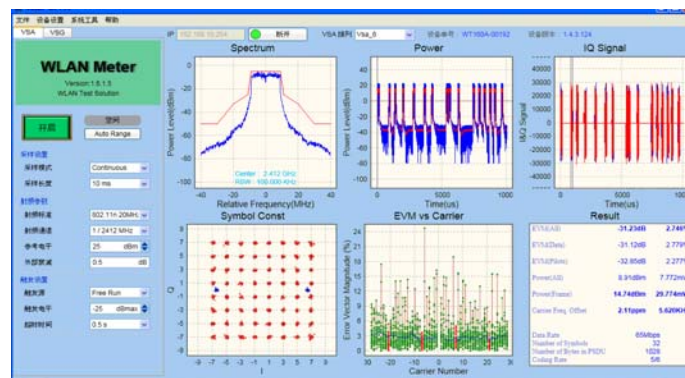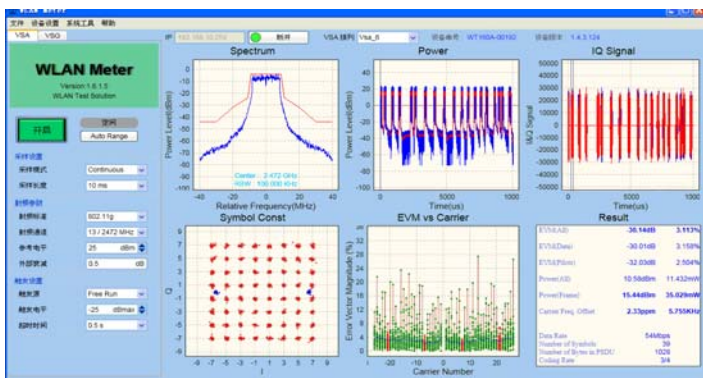
802.11n-20M (7)-11M

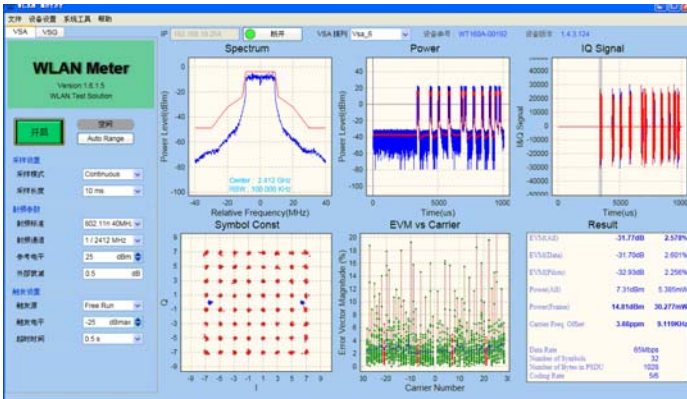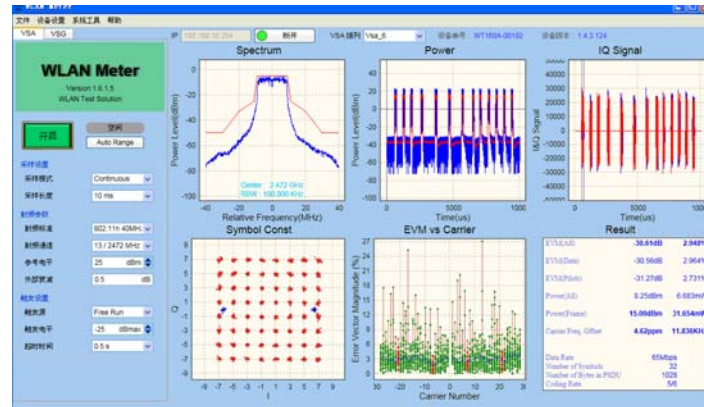## 802.11n-20M (13)-11M

802.11n-40M (1)-MCS7

802.11n-40M (7)-MCS7

802.11n-40M (13)-MCS7

I. Ordering Information

Table 4: Ordering Information				
Part Number	Interface	Operating Temperature Range	Package	MOQ (pcs)
CK-W-R188EUS-UM	USB	-10 °C to 50 °C	Tape & Reel	1500