

## QTM840-5S1-GEVK Evaluation Board User's Manual

### Introduction

QTM840-5S1-GEVK is Wi-Fi® reference module for Quantenna® QT3840BC chipset. This module can be integrated with different Residential GW SoCs to provide up to 1.7 Gbps PHY/Data Link Speed in 80 MHz mode. It consists of one 11ac digital baseband chip and one 4 chain 5 GHz RFIC with Skyworks SKY85717-11 FEM.

### Description

The QT3840BC chipset supports the 802.11ac/n/a standards and 4 streams in 4x4 MU-MIMO configuration. QT3840BC communicates with test board through RGMII interface via mPCIe connector.

### I/O Interfaces and Features

- Explicit and Implicit Digital Transmit Beamforming
- Advanced MIMO Features STBC and Channel State Aware Link Management for Sustained Link Robustness
- Two ARC-based Network Processors with Hardware Assist to Manage Multiple Simultaneous
- 802.11a/n/ac Connections
- DSP Engine to Hardware Accelerate Aggregation, De-aggregation, and Packet Re-ordering
- MU-MIMO Support
- SuperDFS Support
- Expanded Support for 128 Users
- LDPC Support
- Works with Quantenna 4x4 5 GHz RFIC (QT2518B)
- DDR2/DDR3 Memory Support
- PCIe Gen2.0 with Embedded DMA
- Standards: 802.11ac/n/a  
802.11i (WEP, WPA/WPA2, RADIUS)  
802.11d  
802.11e (WMM, WMM-PS)  
802.11w  
802.11h  
802.11k
- Operating Frequencies: 4.9–5.85 GHz
- Maximum Data Rate (per Stream) – Rates are for 256 QAM Operation
  - ◆ 80 MHz: 1.7 Gbps (433.33 Mbps)
  - ◆ 40 MHz: 800 Mbps (200 Mbps)
  - ◆ 20 MHz: 346.8 Mbps (86.7 Mbps)



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## EVAL BOARD USER'S MANUAL



Figure 1. QTM840-5S1-GEVK Photo

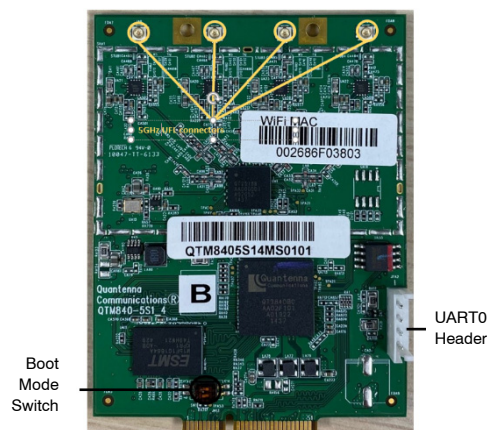


Figure 2. QTM840-5S1-GEVK Description

## APPLICATIONS INFORMATION

### Power Configuration

QTM840-5S1-GEVK is designed to be powered externally. The external power supply should be 12 V DC. When the board is powered on, the power LED will be steady green.

### Reset to Default Button (NP/MB)

Reserved (Reset to default Button).

### WPS Button (NP/MB)

Reserved (WPS Button).

### AP/STA Switch

Reserved (AP/STA Switch).

### WLAN Disable Button

Reserved (WLAN Disable Switch).

### WLAN Disable Switch

Reserved (WLAN Disable Switch).

### RGMII Port

RGMII supports 1 Gbps/100 Mbps/10 Mbps UTP speed.

### Mini-B USB Serial Port (NP/MB)

The Serial port is mainly used for debug purpose.

**Table 1. SERIAL PORT SETTING**

Baud Rate	115200
Data	8 bit
Parity	None
Stop	1 bit
Flow Control	None

### Boot Mode Switch

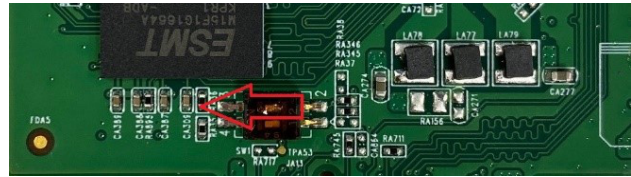
Boot mode switch controls serial port mode.

**Table 2. BOOT MODE SWITCH DEFINITION**

State	Definition
00	bootm
10	SPI-0 (Default)



**Figure 3. Default Setting (SPI-0)**



**Figure 4. Bootm Setting**

## BOARD POWER UP

### Console Display When QTM840-5S1-GEVK Successfully Boots Up

When QTM840-5S1-GEVK successfully boots up, it will show “quantenna #”.

```
COM14 - Tera Term VT
File Edit Setup Control Window Help
[ 24.555000] MAC address 1: 00:00:00:00:00:00
[ 24.560000] Recommended U-Boot: v37.4.0.136
Carrier ID 0, uboot update flag 0
MU-MIMO is not supported on this device
PTA disabled
'monitor temperature' is not enabled/set
MAUI service started
/scripts/cmdloop starting /sbin/qharvestd, at 00:00:26 up 0 min, load average: 0
-48.011:0.03
Jan 1 00:00:26 qharvestd[1128]: qharvestd[notice]: qharvestd v1.31 started
Jan 1 00:00:26 qharvestd[1128]: qharvestd[error]: client-id: not set or not num
eric
DHCP client disabled
Starting httpd
starting pid 1146, tty '/dev/console': '/bin/sh -l'

BusyBox v1.10.3 (2018-02-28 23:18:42 PST) built-in shell (ash)
Enter 'help' for a list of built-in commands.

quantenna #
```

**Figure 5. QTM840-5S1-GEVK Successfully Boots Up**

### Web GUI

QTM840-5S1-GEVK default IP address is 192.168.1.200.

```
COM14 - Tera Term VT
File Edit Setup Control Window Help

quantenna # ifconfig
br0
Link encap:Ethernet HWaddr 00:26:86:F0:D0:5D
inet addr:192.168.1.200 Bcast:192.168.1.255 Mask:255.255.255.0
inet6 addr: fe80::484:81d5:64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:6 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueue:0
RX bytes:0 (0.0 B) TX bytes:468 (468.0 B)

eth1_0
Link encap:Ethernet HWaddr 00:26:86:F0:D0:5D
UP BROADCAST PROMISC MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:2 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueue:0
RX bytes:0 (0.0 B) TX bytes:156 (156.0 B)
Interrupt:20

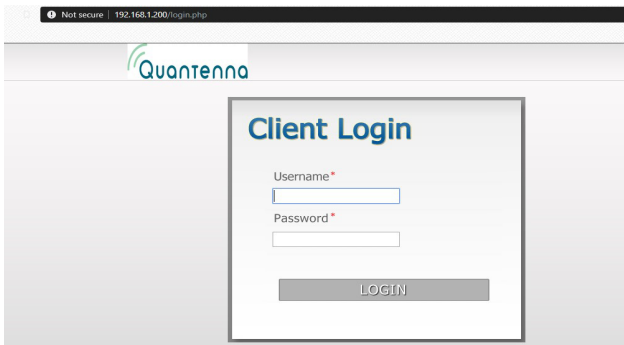
eth1_1
Link encap:Ethernet HWaddr 00:26:86:F0:D0:5D
UP BROADCAST PROMISC MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueue:0
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
Interrupt:19

lo
Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueue:0
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

vif10
Link encap:Ethernet HWaddr 00:26:86:F0:D0:9A
UP BROADCAST PROMISC MULTICAST MTU:1500 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueue:1024
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

quantenna #
```

**Figure 6. Default IP Address**

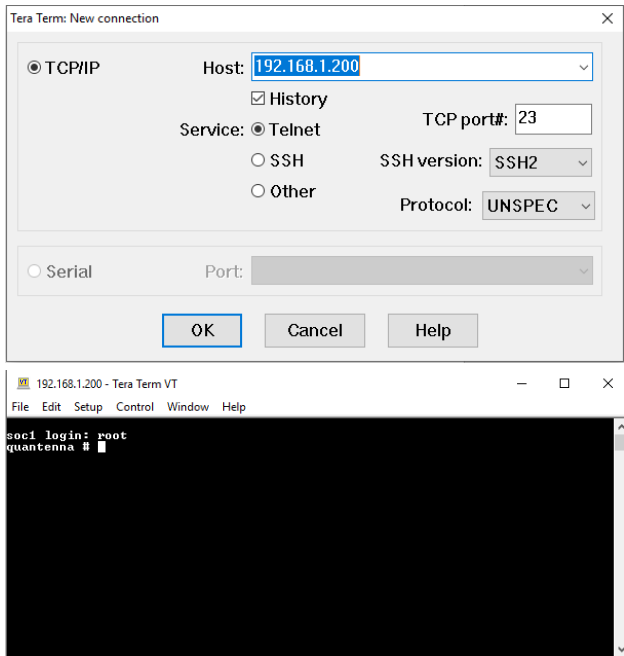


Web GUI      username: super  
password: super

**Figure 7. Web GUI Username and Password**

### Telnet

QTM840-5S1-GEVK could also be accessed through telnet. Use board IP address and the login username is “root”.



**Figure 8. Access Through Telnet**

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