

## QHS840-5S5-GEVK Evaluation Board User's Manual

### Overview

QHS840-5S5-GEVK is Dual RGMII hardware 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 SKY85405 + SKY85605 FEM.

### Description

The QT3840BC chipset supports the 802.11ac/n/a standards and 4 streams in 4x4 MU-MIMO configuration. QHS840-5S5-GEVK has dual RGMII ports, which support 1 Gbps/100 Mbps/10 Mbps separately.

### 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. QHS840-5S5-GEVK Photo

# EVBUM2680/D

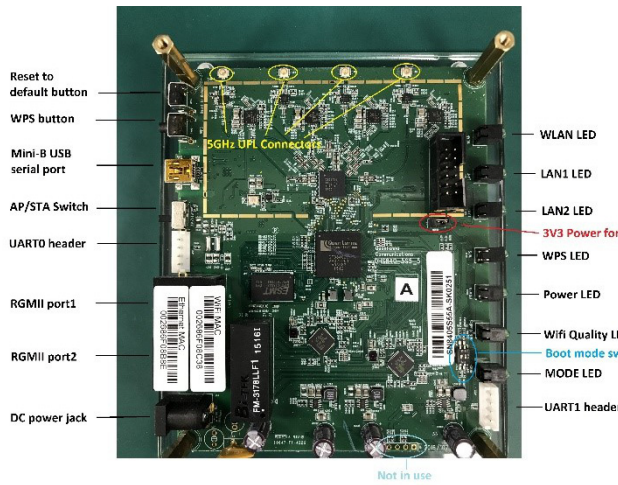


Figure 2. QHS840-5S5-GEVK Photo and Description

## APPLICATIONS INFORMATION

### Power Configuration

QHS840-5S5-GEVK is designed to be powered externally. The external power supply should be 5 V DC. When the board is powered on, the power LED will be steady green.

### Reset to Default Button

Reserved (Reset to default Button).

### WPS Button

Reserved (WPS Button).

### AP/STA Switch

Reserved (AP/STA Switch)

### RGMII Port 1/2

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

### Mini-B USB Serial Port

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)

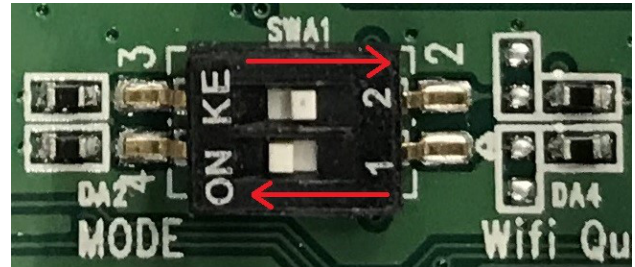


Figure 3. Default Setting (SPI-0)

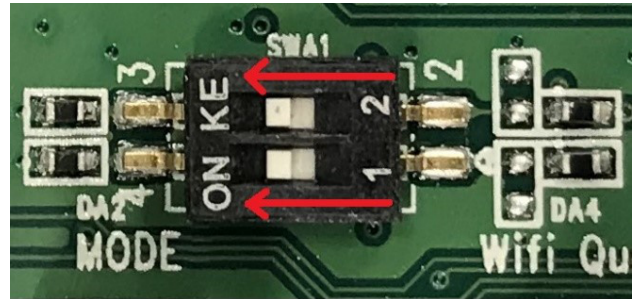


Figure 4. Bootm Setting

## EVBUM2680/D

### BOARD POWER UP

#### LED Indication When QHS840-5S5-GEVK Powers Up



Figure 5. LED Indication When QHS840-5S5-GEVK Powers Up

#### Console Display When QHS840-5S5-GEVK Successfully Boots Up

When QHS840-5S5-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
M0U1 service started
/scripts/cmdloop starting /sbin/qharvestd, at 00:00:26 up 0 min, load average: 0
.48, 0.11, 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
DNCP 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 6. QHS840-5S5-GEVK Successfully Boots Up

### Web GUI

QHS840-5S5-GEVK default IP address is 192.168.1.200.

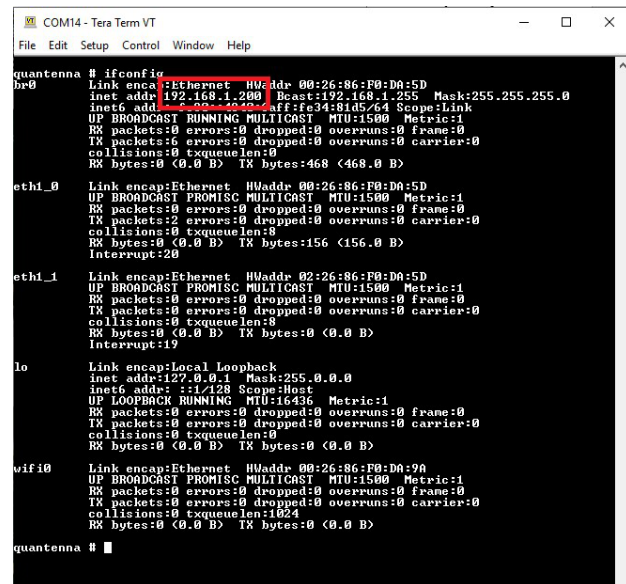


Figure 7. Default IP Address

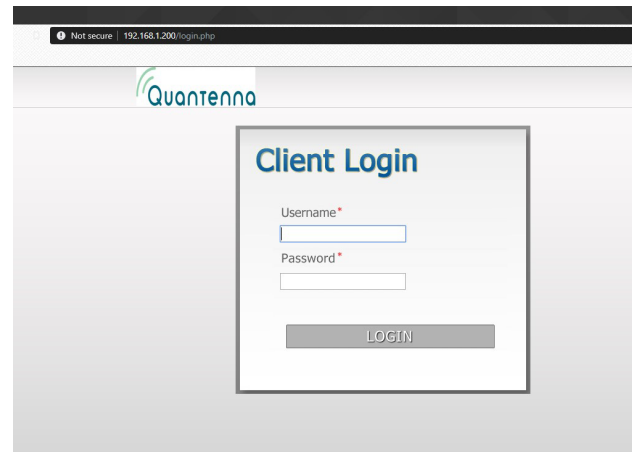
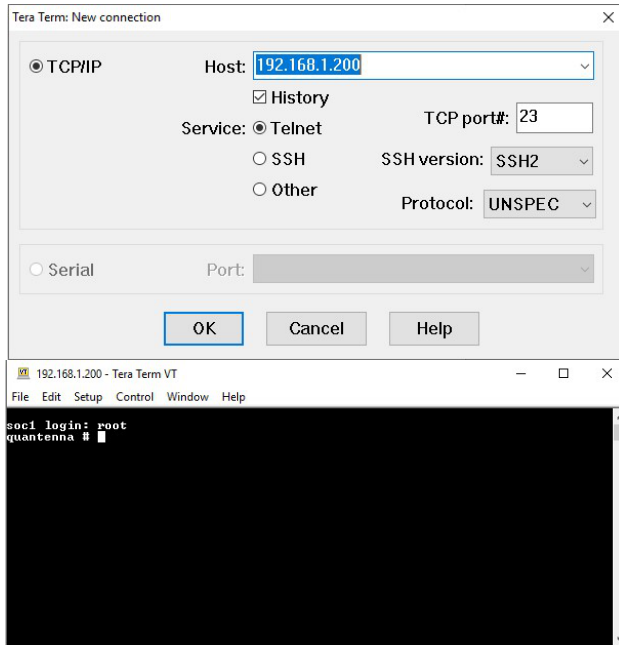


Figure 8. Web GUI Username and Password

Web GUI username: super  
password: super

**Telnet**

QHS840-5S5-GEVK could also be accessed through telnet. Use board IP address and the login username is “root”.



**Figure 9. Access Through Telnet**



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