# EVBUM2678/D

# QBOX840-5S7-GEVK User's Manual

# Overview

QBOX840–5S7–GEVK is a Dual RGMII repeater with Quantenna<sup>®</sup> QT3840BD chipset. This repeater can 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.

# Description

QBOX840-5S7-GEVK supports the 802.11ac/n/a standards and 4 streams in 4x4 MU-MIMO configuration. QBOX840-5S7-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
- 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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Figure 1. QBOX840-5S7-GEVK Photo

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Figure 2. QBOX840-5S7-GEVK Side Photo

# **APPLICATIONS INFORMATION**

## **Power Configuration**

QBOX840–5S7–GEVK use 5 V DC power supply. When the board is powered on, the power LED will be steady green.

## **Reset to Default Button**

Reserved (Reset to default Button).

#### **WPS Button**

By pressing WPS button, associate with other Wi– $\mathrm{Fi}^{\circledast}$  devices.

### **AP/STA Switch**

Switch between Access Point and Station mode.

#### LAN port 0/1

LAN 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

## **BOARD POWER UP**

LED Indication When QBOX840-5S7-GEVK Powers Up



Figure 3. Console Display When QBOX840-5S7-GEVK Successfully Boots Up

When QBOX840–5S7–GEVK successfully boots up, it will show "quantenna #".

COM14 - Tera Term VT File Edit Setup Control Window Help		-		×
Carrier ID 0, uboot update flag 0 MU-MIMO is not supported on this dev PTA disabled	v37.4.0.136 ice			
′nonitor_temperature' is not enabled MAUI service started ∕scripts/cmdloop starting ∕sbin/qhar .48, 0.11, 0.03 Jan 1 00:00:26 qharvestd[1128]: qha Jan 1 00:00:26 qharvestd[1128]: qha	vestd, at 00:00:26 up 0 mi rvestd[notice]: gharvestd	v1.31 sta	arted	
eric DHCP client disabled Starting httpd starting pid 1146, tty '/dev/console	': '/bin/sh -1'			
BusyBox v1.10.3 <2018-02-28 23:18:42 Enter 'help' for a list of built-in guantenna #				

Figure 4. QBOX840–5S7–GEVK Successfully Boots Up

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# Telnet

QBOX840–5S7–GEVK could also be accessed through telnet. Use board IP address and the login username is "root".

● TCP/IP	Host:	192.168.1.200			~
	Service:	<ul> <li>✓ History</li> <li>● Telnet</li> <li>○ SSH</li> </ul>	TCP po SSH version:		~
		○ Other	Protocol:	UNSPEC	~
) Serial	Port:				
	ОК	Cancel	Help		
	00 - Tera Term				
e Edit Set	up Control	Window He	lp		
1 login:	root				
c1 login: antenna #	root				

Figure 5. Access Through Telnet

## Web GUI

QBOX840-5S7-GEVK default IP address is 192.168.1.200.

Term VT			×
Control Window Help			
fconfig k enca fithernet HV-adr 00:26:86:F0:DA:5D t addr 122.168.1.200 Bcast:192.168.1.255 Ma t6 addr 22.00:40:40-64 Scope:L BROADCAST RUNNING HULIICAST MIU:1500 Metric packets:0 errors:0 dropped:0 overruns:0 frame packets:6 errors:0 dropped:0 overruns:0 carri Disions:0 txqueuelen:0 bytes:0 (20.0 B) TX bytes:468 (468.0 B)	:1 :0	5.0	,
k encap:Ethernet HVaddr 00:26:86:F0:DA:5D BNODDCAST PROHISC MULTICAST MTU:1500 Metric packets:0 errors:0 dropped:0 overruns:0 frame packets:2 errors:0 dropped:0 overruns:0 carri lisions:0 txqueuelen:8 bytes:0 (0.0 B) TX bytes:156 (156.0 B) prrupt:20	:0		
k encap:Ethernet HUaddr 02:26:06:F0:D0:SD BROADCAST PROMISC MULTICAST MTU:1500 Metric packets:0 errors:0 dropped:0 overruns:0 frame packets:0 errors:0 dropped:0 overruns:0 carric lisions:0 txqueuelen:0 bytes:0 (0.0 B) IX bytes:0 <0.0 B) prrupt:19	:0		
k encap:Local Loopback t addri:27.0.01 Mask:255.0.0.0 t6 addr: ::1/128 Scope:Host LOOPBACK RUNNING MTU:16436 Metric:1 packets:0 errors:0 dropped:0 overruns:0 frame packets:0 errors:0 dropped:0 overruns:0 carri Jisions:0 txqueuelen:0 Sytes:0 (20.0 B) TX bytes:0 (0.0 B)			
k encap:Ethernet HWaddr 00:26:86:F0:DA:9A BRODDCRST PROHISC HULIICAST HIV:1500 Metric packets:0 errors:0 dropped:0 overruns:0 frame packets:0 errors:0 dropped:0 overruns:0 carric lisions:0 txqueuelen:1024 bytes:0 (0.0 B) IX bytes:0 (0.0 B)	:0		

Figure 6. Default IP Address

Quanten	na
	Client Login
	Username*
	LOGIN

Figure 7. Web GUI Username and Password

Web GUI	username: super
	password: super

# Status

Status shows QBOX840–5S7–GEVK basic information and current mode.

Status	STATUS - DEV	/ICE
Device Wireless Networking	Device Name: Software Version:	Quantenna Wireless Adapter aagrawal_bbic4_main-cl31256
Config Wireless WPS Networking	Uptime: Device Mode:	9min []Access Point (AP) [X] Station (STA)
Tools		Refresh
Log Command Admin Ubootinfo Restore Power		
System		
Upgrade Reboot		

Figure 8. Status – Device

# Config

Network setting and device association could be configured at Config part, more detailed settings is showed in *Advanced*.

# Quantenna

Device Vireless	CONFIG - WI	RELESS
Networking C <b>onfig</b>	Device Mode:	Station •
Wireless WPS Networking	ESSID: Channel:	Scan AP
Log Command Admin Jbootinfo Restore	PMF: Encryption:	Disabled • NONE-OPEN •
Power System Jpgrade Reboot		

Networking WDS MBSS	Device Mode:	Access Point
Config	ESSID:	Quantenna
Vireless	Broadcast SSID:	æ
WPS MAC Filter	Channel:	Auto  Current Channel:132
Networking NDS MBSS 302.11u Hotspot	PMF: Encryption: Passphrase:	Disabled  VWPA2-AES Vqtn01234
Tools	Group Key interval(in sec):	0
_og Command Admin Jbootinfo Restore Power		Save Cancel
System Jpgrade Reboot		

Figure 9. Config – Wireless

# Tools

Tools are used for QBOX840–5S7–GEVK debug purpose.

Status	TOOLS - 0	COMMA	ND	
Device Wireless Networking WDS MBSS	call_qcsapi 🔻			Send
Config Wireless WPS MAC Filter Networking WDS MBSS 802.11u Hotspot				
Tools				
Log Command Admin Ubootinfo Restore Power				
System Upgrade Reboot				

Figure 10. Tools – Command

# System

System is used for QBOX840–5S7–GEVK firmware update and maintenance.

Status	SYSTEM - UPGRADE
Device Wireless Networking WDS MBSS	Choose a file: Choose File No file chosen
Config	Upgrade
Wireless WPS MAC Filter Networking WDS MBSS 802.11u Hotspot	
Tools	
Log Command Admin Ubootinfo Restore Power	
System	
Upgrade Reboot	

Figure 11. System – Upgrade

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