BB-WB360/361 Datasheet

Amp’ed RF Technology, Inc.

BB-WF360/BB-WB361/BB-WB362

Product Specification

Description

Amp'ed RF Technology offers Wi-Fi development systems based on the Beagle Bone Black platform in three cape options: BB-WF360, BB-WB361, and BB-WB362. These platforms are intended for in-depth evaluation, Linux development, and to help customers shorten product development time. It's fully compatible with Linux operating systems and our ACC1340 Linux drivers.

For detail usage instructions see:
WiFi_Dev_GettingStarted

WLAN

- 802.11a/b/g/n, 802.11d, 802.11r
- Dual band: 2.5GHz and 5GHz
- Output Power, +21.5dBm
- Interface, SDIO 2.0, SPI
- Wi-Fi Direct (concurrent)
- Wi-Fi Display
- Wi-Fi Protected Setup
- Soft Access Point
- Hotspot 2.0
- Security: WPAI/WPA2, AES, WEP

Bluetooth

BB-WB360

- No Bluetooth

BB-WB361

- Bluetooth v4.0 + BLE
- Protocol Stack, up to HCI
- Output Power, +13dBm
- Wi-Fi coexistence for BT Classic and BLE

BB-WB362

- BLE
- Output Power, +8dBm

Hardware

- Serial interfaces: UART, PCM, SDIO, USB

1. Selected RF Characteristics

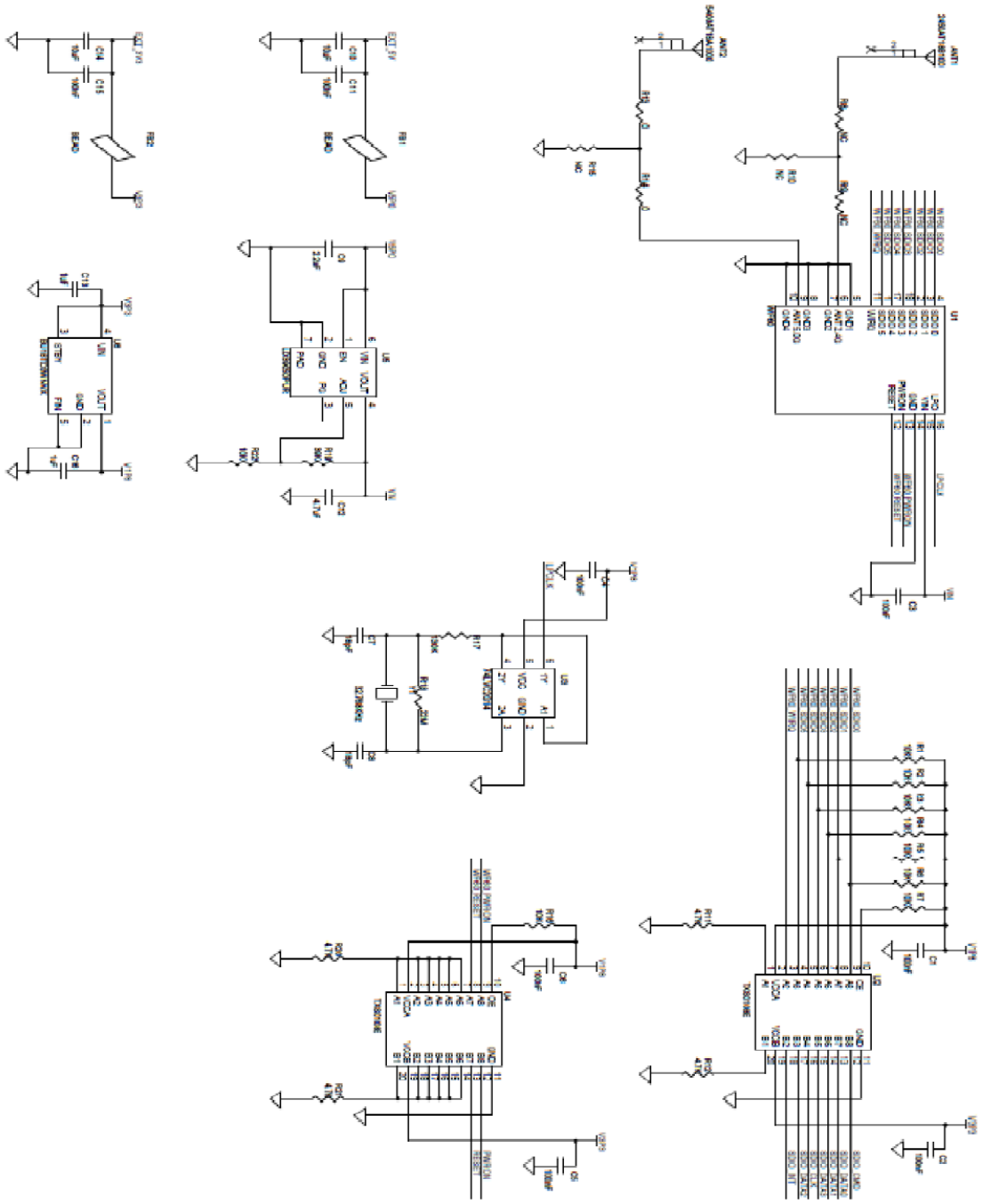
Parameters	Conditions	Typical	Unit
Antenna load		50	ohm
Wi-Fi Receiver			
Sensitivity	DSSS 1Mbps@FER<8%	-98	dBm
Sensitivity	DSSS 2Mbps@FER<8%	-95	dBm
Sensitivity	CCK 5.5Mbps@FER<8%	-93	dBm
Sensitivity	CCK 11Mbps@FER<8%	-91	dBm
Sensitivity	BPSK 6Mbps@PER<10%	-93.5	dBm
Sensitivity	BPSK 9Mbps@PER<10%	-91.5	dBm
Sensitivity	QPSK 12Mbps@PER<10%	-90.5	dBm
Sensitivity	QPSK 18Mbps@PER<10%	-88	dBm
Sensitivity	16QAM 24Mbps@PER<10%	-85	dBm
Sensitivity	16QAM 36Mbps@PER<10%	-82	dBm
Sensitivity	64QAM 48Mbps@PER<10%	-78	dBm
Sensitivity	64QAM 54Mbps@PER<10%	-76.5	dBm
Sensitivity	BPSK 6.5Mbps@PER<10%	-92	dBm
Sensitivity	QPSK 13Mbps@PER<10%	-89	dBm
Sensitivity	QPSK 19.5Mbps@PER<10%	-86.5	dBm
Sensitivity	16QAM 26Mbps@PER<10%	-84	dBm
Sensitivity	16 QAM 39Mbps@PER<10%	-80.5	dBm
Sensitivity	64QAM 52Mbps@PER<10%	-76.5	dBm
Sensitivity	64QAM 58.5Mbps@PER<10%	-74.5	dBm
Sensitivity	64QAM 65Mbps@PER<10%	-73	dBm
Wi-Fi Receiver 5GHz 11n			
Sensitivity	BPSK 6.5Mbps@PER<10%,Nss=1	-91	dBm
Sensitivity	QPSK 13Mbps@PER<10%, Nss=1	-88	dBm
Sensitivity	16QAM 26MbpsPER<10%,Nss=1	-83	dBm
Sensitivity	64QAM 65MbpsPER<10%,Nss=1	-72.5	dBm
Wi-Fi Transmitter			
Output Power	802.11b/g DSSS/CCK	21.25	dBm
Output Power	802.11b/g BPSK 1/2	21.25	dBm
Output Power	802.11b/g BPSK 3/4	21.25	dBm
Output Power	802.11b/g QPSK 1/2	21.25	dBm
Output Power	802.11b/g QPSK 3/4	21.25	dBm
Output Power	802.11b/g 16QAM 1/2	21.25	dBm
Output Power	802.11b/g 16QAM 3/4	20.25	dBm
Output Power	802.11b/g 64QAM 2/3	19.25	dBm
Output Power	802.11b/g 64QAM 3/4	18.25	dBm
Output Power	802.11n MCS-0	21.25	dBm
Output Power	802.11n MCS-1	21.25	dBm
Output Power	802.11n MCS-2	21.25	dBm

Output Power	802.11n MCS-3	21.25	dBm
Output Power	802.11n MCS-4	20.25	dBm
Output Power	802.11n MCS-5	19.25	dBm
Output Power	802.11n MCS-6	18.25	dBm
Output Power	802.11n MCS-7	17.00	dBm
Wi-Fi Transmitter 5GHz, 11n			
Output Power	802.11n MCS-0	19.5	dBm
Output Power	802.11n MCS-7	14.5	dBm
Bluetooth Receiver			
Receiver sensitivity (clean transmitter)	FSK (1Mbps), BER≤0.1%	-92	dBm
Receiver sensitivity (dirty transmitter)	FSK (1Mbps), BER≤0.1%	-91	dBm
EDR sensitivity 2 Mbps (clean transmitter)	PSK(2Mbps and 3Mbps), BER≤0.01%	-92	dBm
EDR sensitivity 3 Mbps (clean transmitter)	PSK(2Mbps and 3Mbps), BER≤0.01%	-86	dBm
EDR sensitivity 2 Mbps (dirty transmitter)	PSK(2Mbps and 3Mbps), BER≤0.1%	-91	dBm
EDR sensitivity 3 Mbps (dirty transmitter)	PSK(2Mbps and 3Mbps), BER≤0.1%	-85	dBm
Bluetooth Transmitter			
Frequency range		2400~ 2483.5	MHz
Maximum output power	FSK(1Mbps)	13	dBm
Minimum output power	FSK(1Mbps)	-20	dBm
Minimum output power in inquiry mode	FSK(1Mbps)	-30	dBm
Output power accuracy	FSK(1Mbps)	±2	dB
Maximum output power	PSK(2 Mbps)	10	dBm
Maximum output power	PSK(3 Mbps)	10	dBm
EDR relative transmit power	PSK(2Mbps and 3Mbps)	0	dB
Minimum output power	PSK(2Mbps and 3Mbps)	-20	dBm
BLE Transmitter			
Maximum output power		13	dBm
Minimum output power		-20	dBm
Minimum output power in advertising mode		-30	dBm
Output power accuracy		±2	dB
BLE Receiver			
Receiver sensitivity	PER<30.8%	-93	dBm

(clean transmitter)			
Receiver sensitivity (dirty transmitter)	PER<30.8%	-92	dBm

2. Reference Design Example

The follow circuits are examples of typical Linux based platform connections to the WF60 module. Note that this is a reference design only, and not the actual circuit of the BB-WF360.



3. Ordering Information

Part Name	Description
BB-WF360	Dual band, two external antennas for 2.4GHz and 5GHz
BB-WB361	Dual band, two external antennas for 2.4GHz, 5GHz one external antenna for Bluetooth 4.0 and BLE
BB-WB362	Dual band, 2 external antennas for 2.4GHz and 5GHz, external PA for 5GHz, one external antenna for Bluetooth 4.0 and BLE

Note, this product is typically order with a Beagle Bone Black development platform:

Part number: BBB-WiFi, Beagle Bone Black development platform with Amped RF ACC1340 Linux driver for WiFi installed.