

FWBD-3000 has 802.11N 2x2 radio supporting up to 300 Mbps data-rate

The FWBD-3000 is consisting of two major sections, Digital section and Analog Section

DIGITAL SECTION

The section is made up of:

- QCA9557
- DDR2 Memory
- Flash Memory
- Power Supplies

QCA9557

The Qualcomm Atheros QCA9557 is a highly integrated and feature-rich IEEE 802.11n 2x2 2.4/5 GHz System-on-a-Chip (SoC) for advanced WLAN AP/router platforms.

The QCA9557 supports 802.11n operations up to 144.4 Mbps for 20 MHz and 300 Mbps for 40 MHz, and 802.11b/g/n data rates.

Additional features include Low-Density Parity Check (LDPC), Maximal Ratio Combining (MRC), Tx Beamforming (TxBF), and On-Chip One-Time Programmable (OTP) memory.

Power Supplies

The 48V/0.5A DC input voltage is regulated to the following voltages for various purposes:

- +1.2V for CPU core voltage
- +3.3V for CPU, Flash, DDR
- +5V RF

ANALOG SECTION

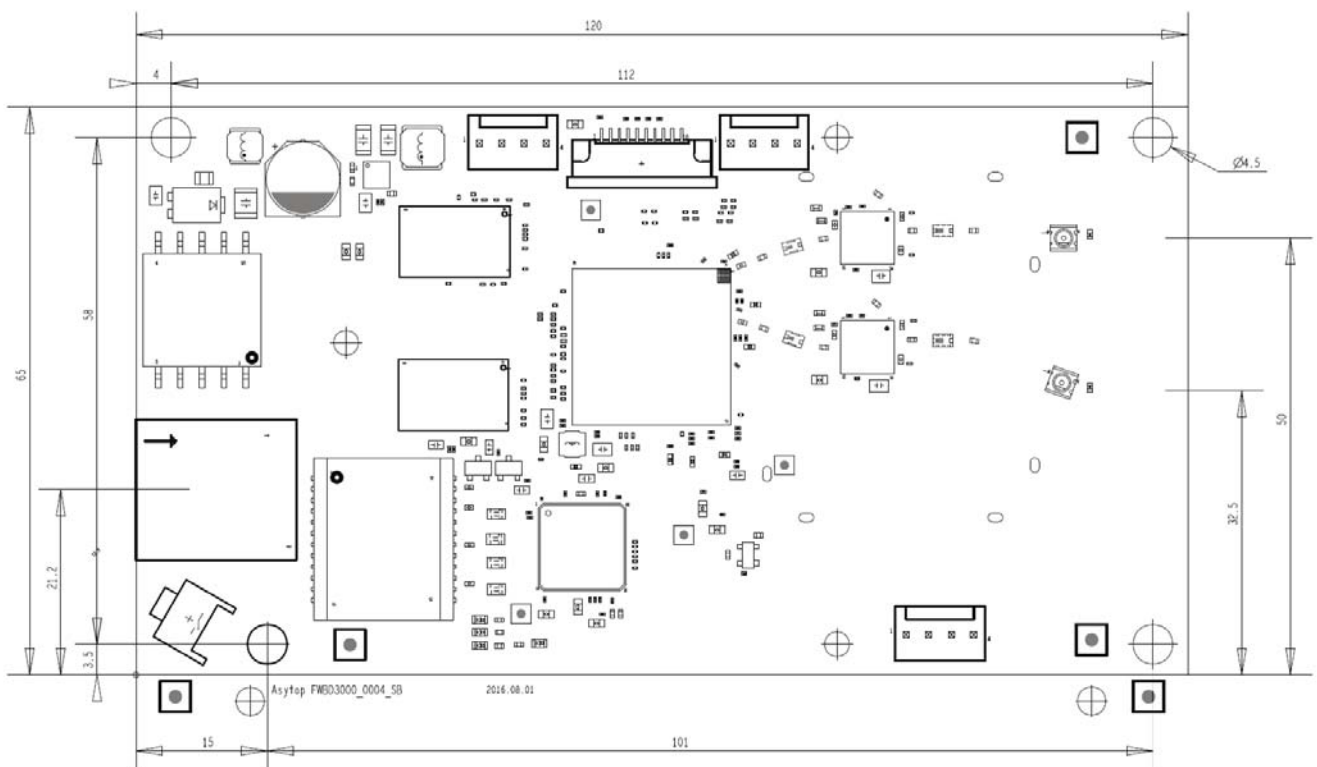
QCA9557 has integrated 2T2R MAC, BBP and RF. Each TX/RX chain only needs out-of-band rejection filters, Low noise power amplifier, Power amplifier and a switch to switch between transmission and reception mode. The switch and LNA on/off are controlled by the QCA9557 BBP integra

Specification

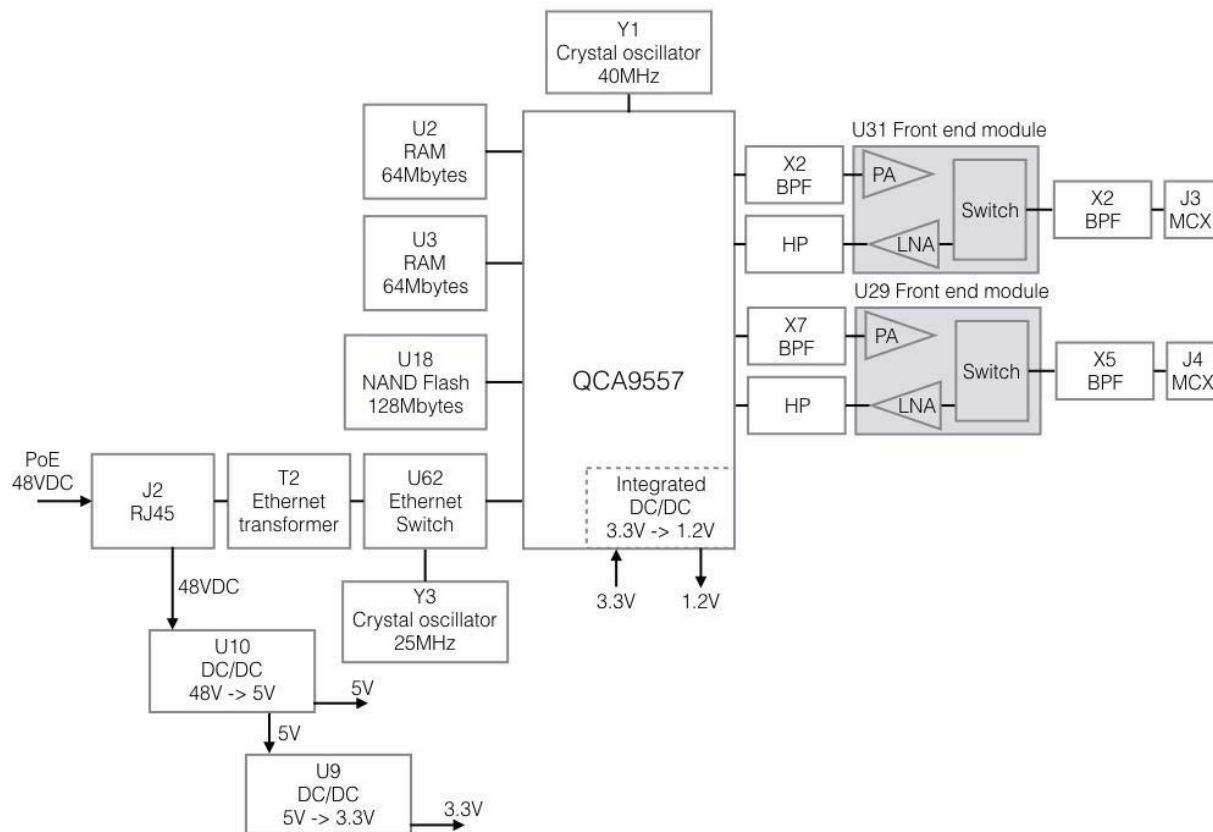
Feature	Description
Operating band	2.4GHz 802.11 b/g/n
CPU	QCA9557
RAM	128MB
Flash memory	128MB
Watchdog timer	Built into CPU
Reset push button	Connected to GPIO
LED's	Special connector to connect external LED board
Ethernet	One 10/100/1000 Ethernet port
Power options	802.3af/at PoE (RJ45)
Power supply range	48-56V
Serial port (UART)	3.3V TTL level, not end user accessible
Operating temperature range	From -40°C to 70°C

Module dimensions

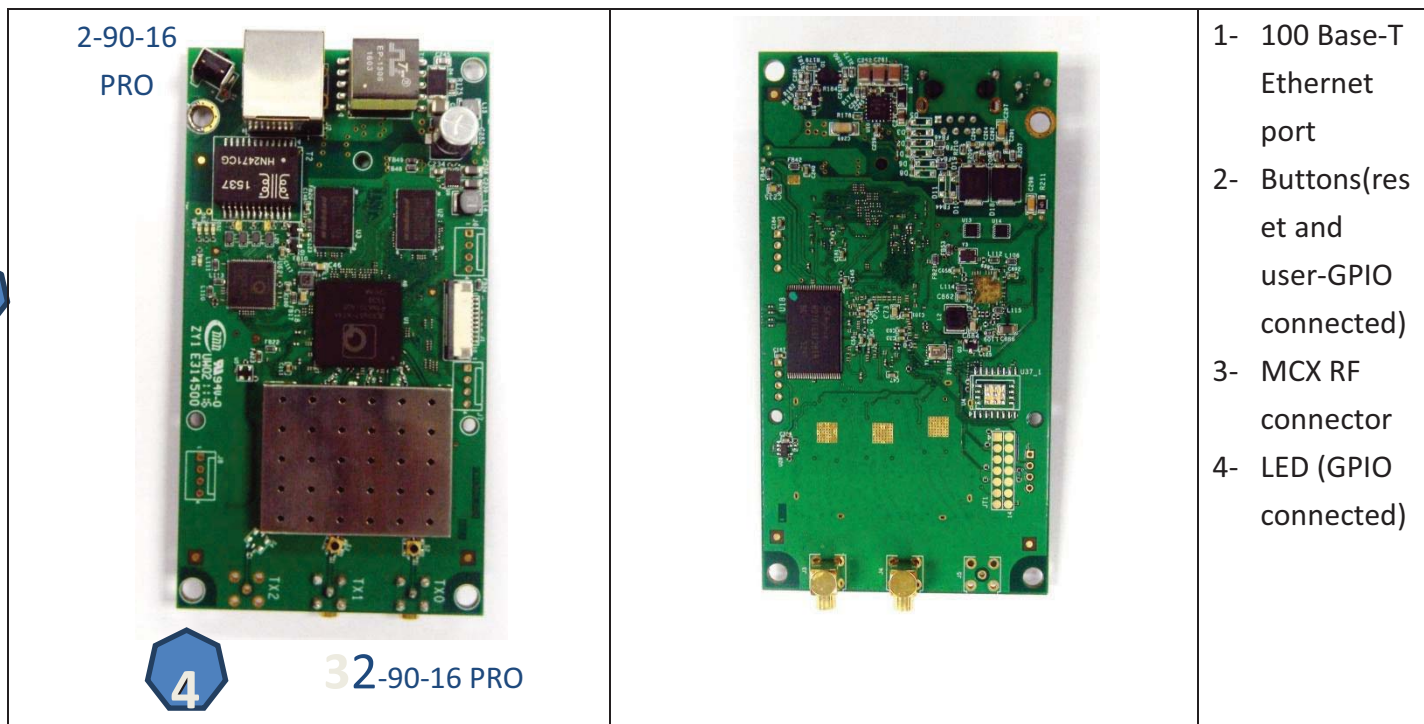
Unit : mm



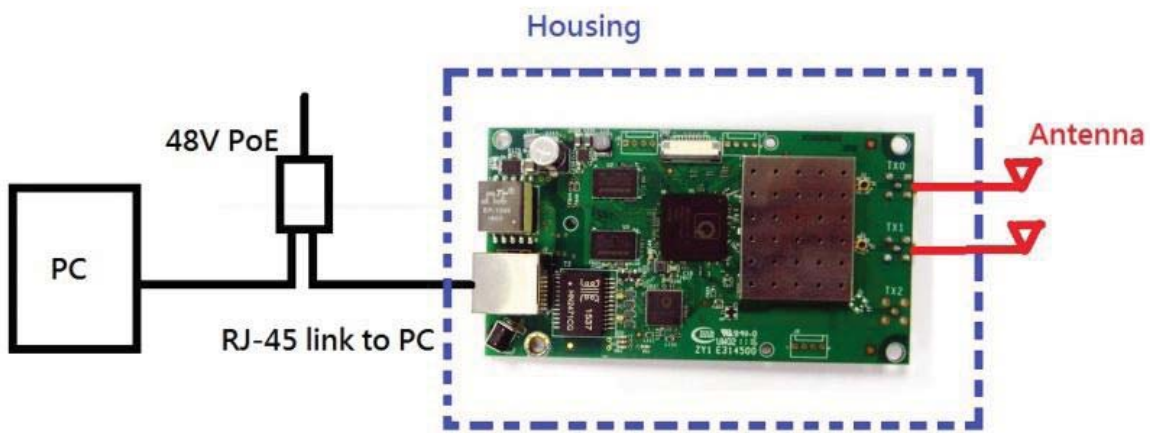
Block diagram



Module



Hardware Setup



Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	B&T	RPSMA 3dBi	Omni antenna	MCX	3dBi
2	LigoWave	FWA-37	Sector Antenna	MCX	16dBi

MIMO Technology

Directional gain of ANT 1:6.01dBi

Directional gain of ANT 2:19.01dBi

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device, for example, USB dongle like transmitters is forbidden.

FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 50 cm between the radiator and user body.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: V2V-3000 Or Contains FCC ID: V2V-3000”

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular with limit modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C : 15.247 and 15.209 requirement, Only if the test result comply with FCC part 15C : 15.247 and 15.209 requirement, then the host can be sold legally.

IC STATEMENT

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux CNR exemptes de licence d'Industrie Canada . Son fonctionnement est soumis aux deux conditions suivantes :

- (1) Ce dispositif ne peut causer d'interférences ; et
- (2) Ce dispositif doit accepter toute interférence , y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

IC Radiation Exposure Statement

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device, for example, USB dongle like transmitters is forbidden.

This modular complies with IC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 50 cm between the radiator and user body. Cette modulaire doit être installé et utilisé à une distance minimum de 50 cm entre le radiateur et le corps de l'utilisateur.

If the IC number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains IC: 7607A-3000"

when the module is installed inside another device, the user manual of this device must contain below warning statements;

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- (1) This device may not cause interference; and
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