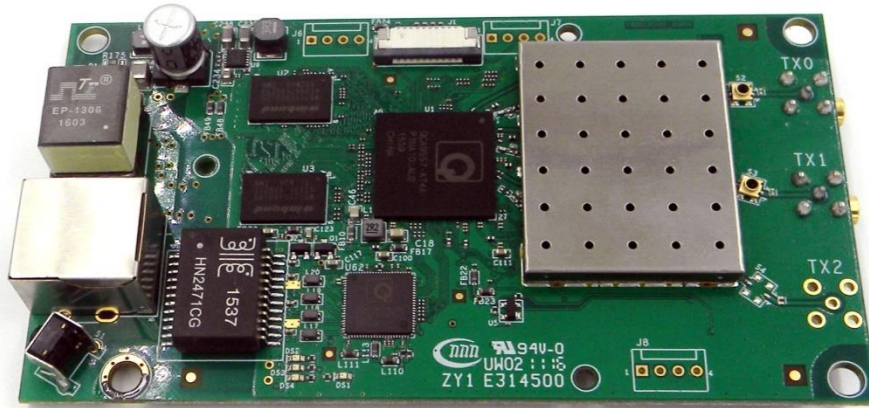




## FWBD-2900 has 802.11N 2x2 radio supporting up to 300 Mbps data-rate

The FWBD-2900 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 802.11a/b/g 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

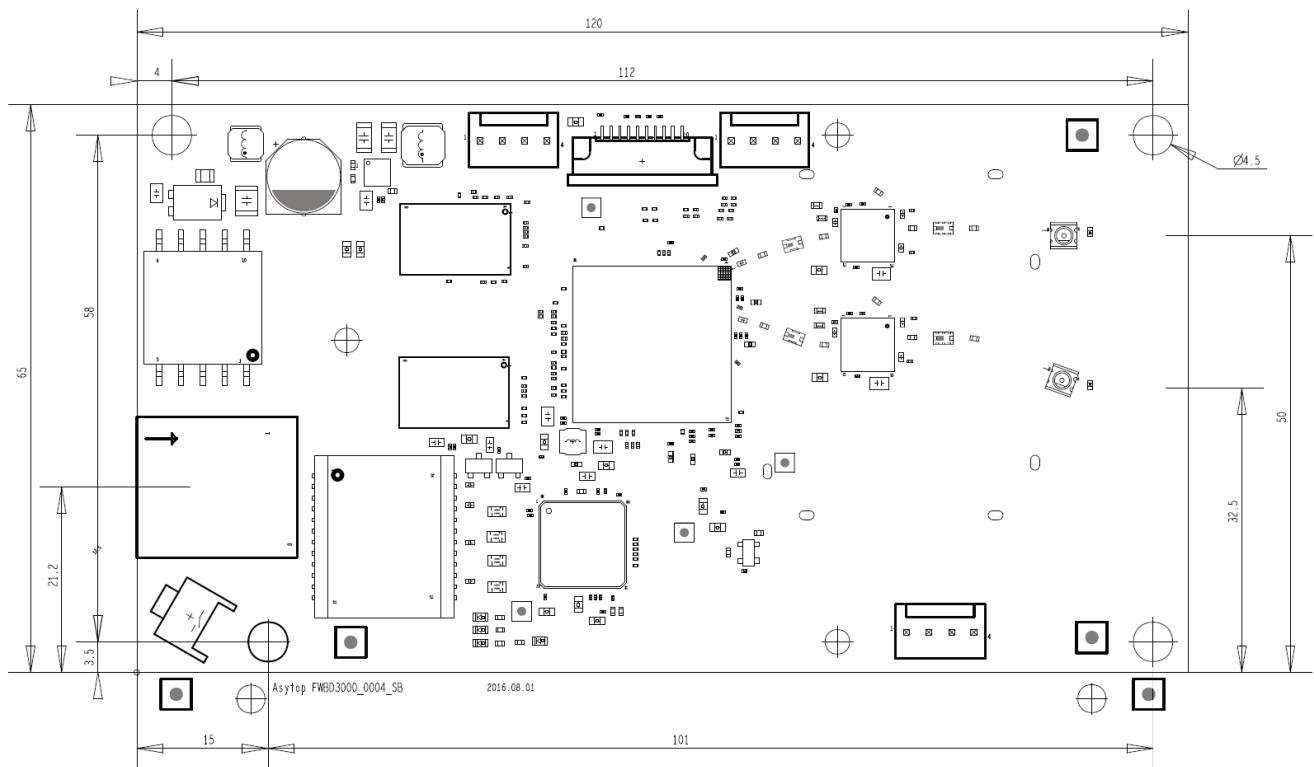
QCA9557 has integrated 2T2R MAC, BBP and RF. Each TX/RX chain only needs out-of-band rejection filters, Low noise power amplifier, Power amplifier and a switch to switch between transmission and reception mode. The switch and LNA on/off are controlled by the QCA9557 BBP integra

## Specification

| Feature            | Description                                                                                                                                                |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating band     | IEEE 802.11a: 5180MHz-5240MHz, 5745MHz-5825MHz<br>IEEE 802.11nHT20: 5180MHz-5240MHz, 5745MHz-5825MHz<br>IEEE 802.11nHT40: 5190MHz-5230MHz, 5755MHz-5795MHz |
|                    | QCA9557                                                                                                                                                    |
|                    | 128MB                                                                                                                                                      |
|                    | 128MB                                                                                                                                                      |
| CPU                | Built into CPU                                                                                                                                             |
| RAM                | Connected to GPIO                                                                                                                                          |
| Flash memory       | 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                                                                                                                    |
|                    |                                                                                                                                                            |

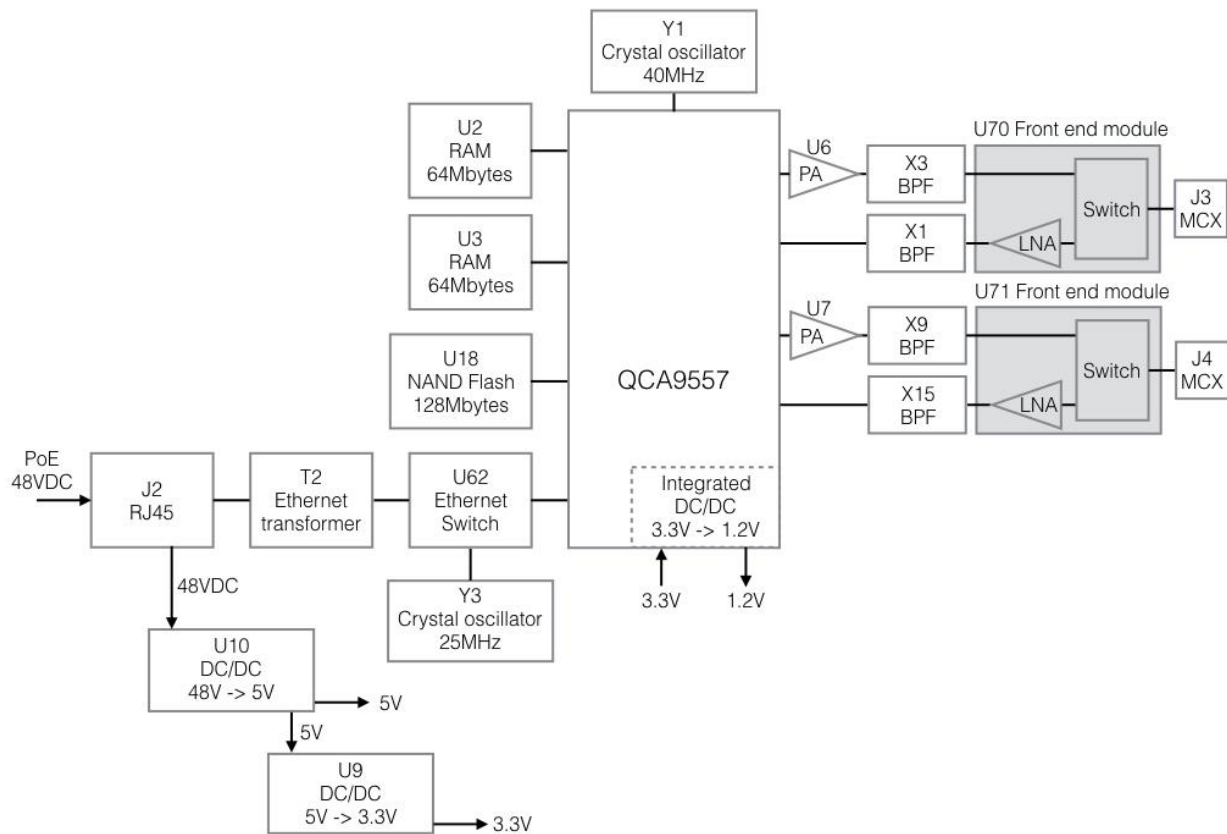
## Module dimensions

Unit : mm

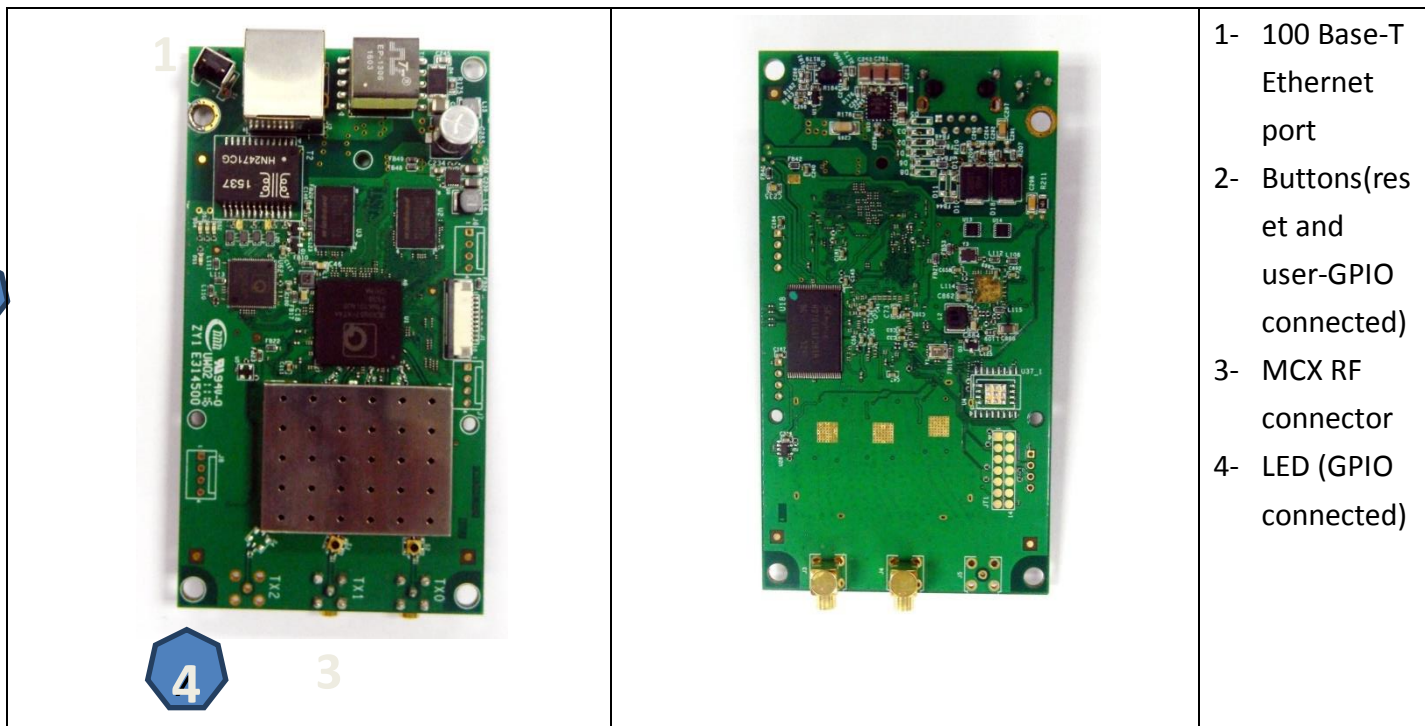


## Block diagram

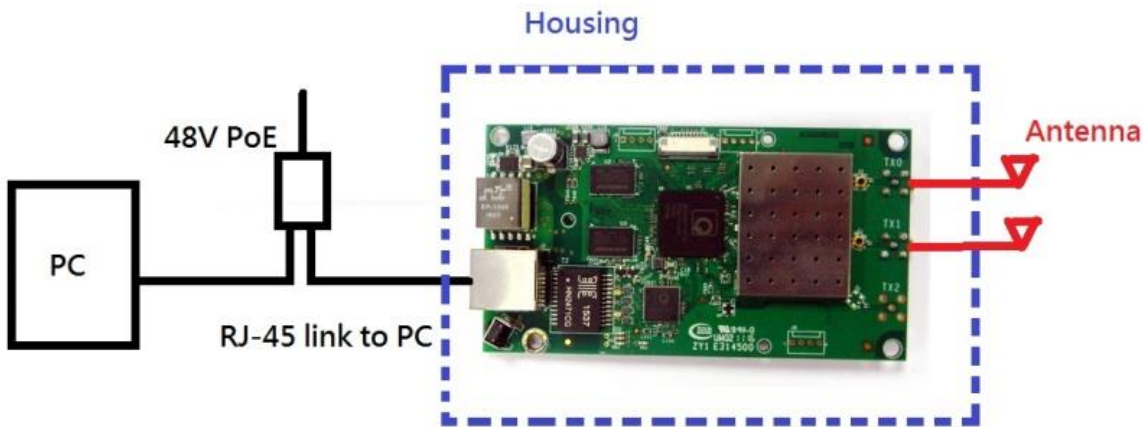
FWBD-2900 | Product brief



## Module



## Hardware Setup



## Software Source

Software of FWBD-2900 module base on OpenWrt Linux, OpenWrt source code be used for FWBD-2900

The Product is a FIXED Point to Point Operating DEVICE ONLY, and it shall be installed by professional installer, and can also work within the temperature of -30 °C to 50 °C.

The EUT has the ability to be maintained within the authorized band within a Max tolerance of  $\pm 116\text{KHz}$  of centre frequency.

### Antenna Type:

**LigoDLB PRO sector antenna:**

**Manufacture: LigoWave**

**Model : FWA-40**

**17dBi sector antenna with two antennas, directional gain 20dBi.**

**PTP5-23 PRO panel antenna:**

**Manufacture: LigoWave**

**Model : FWA-1-1**

**20dBi panel antenna with two antennas, directional gain 23dBi.**

**Dish antenna:**

**Manufacture: ARC Wireless LLC**

**Model : ARC-DA5830SD1**

**27dBi dish antenna with two antennas, directional gain 30dBi**

## 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 fix devices only.

### 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 **2.8m** 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-2900 Or Contains FCC ID: V2V-2900"

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 : 15.407 and 15.209 requirement, Only if the test result comply with FCC part 15C : 15.407 and 15.209 requirement, then the host can be sold legally.