ARM804 Operation Principle

1. CPU, U6, 88W8500 have a 32-bit RISC processor integrated, operation frequency is 132MHz. It needs an external 44MHz crystal for reference frequency; this crystal is also used for RF module. This chip is responsible to control RF-Baseband Transceiver (88W8000), Flash IC and LED. This chip also has MII interface integrated to communicate with 10/100 Ethernet Switch.
2. FLASH, U13, AM29LV800BT-70EC, 8Mbits Flash, bottom sector, 70ns. It is used to store the normal and test firmware.
3. Integrated 2.4GHz ISM Band RF-Baseband Transceiver, U9, 88W8000 which is integrated all RF-Baseband receive and Transmit function. On-Chip Power Amplifier (PA) with up to +20 dBm output power at the antenna port. It is also integrated programmable frequency synthesizers with integrated VCOs, I/Q generation and CMOS up/down conversion mixers.
4. 10/100 Ethernet Switch, U10, 88E6060 support automatic MDI/MDIX crossover for 100BASE-TX and 10 BASE-T ports. Port 5 has dedicated, always on, MAC Mode (Forward) and PHY Mode (Reverse) RMII/MII/SNI interface for management and firewall applications. Each port works at 10Mbps or 100Mbp, full-duplex or half-duplex mode (forced or auto-negotiated). Flexible LED support for Link, Speed, Duplex Mode, Collision, and TX/RX Activities.
5. Power part: there are several regulators are used on the board. U18, AP34063 is used to transfer DC12V to DC3V3; U1, U8 and U12 AME8805 are used to transfer DC3V3 to DC2V5; U20, 1117-ADJ is used to transfer DC3V3 to DC1V8. The core of CPU is operate at 1.5V.
6. LED part:

LED	Color	Controlled by	Description
Power/Test (Double color LED)	Amber (Test)	FW	**On** - Error condition. **Off** - Normal operation **Blinking** - This LED blinks during start up/ Upgrade F/W
	Green (Power)	F/W (TI CPU use H/W)	**On** – System booting complete and then turn it on
LAN (Double color LED)	Amber (10)	HW	**On** - Link at 10Mbps **Blinking** – receiving/ transmitting data
	Green (100)	HW	**On** - Link at 100Mbps **Blinking** – receiving/ transmitting data
Internet (Double color LED)	Amber (10)	HW	**On** - Link at 10Mbps **Blinking** – receiving/ transmitting data
	Green (100)	HW	**On** - Link at 100Mbps **Blinking** – receiving/ transmitting data
WLAN	Green	FW	**On** - Wireless connection available; Wireless Access Point is ready for use. **Off** - No Wireless connection available. **Blinking** - Data is transmitted or received via the Wireless access point. This includes "network traffic" as well as user data.

7. Switch button, SW1, it is used to reset the 88W8500.

8. Multi-layer Chip Band-Pass Filters, BP1, BF2520-B2R4CACT, Freq. Range: 2.4-2.5GHz; IL@BW: 1.5dB

9. Multi-layer Chip Band-Pass Filters, BP2, BF2520-B2R4CABT, Freq. Range: 2.4-2.5GHz; IL@BW: 2.5dB

10. GaAs IC SPDT Switch, U7, AS179-92, features low insertion loss and positive voltage operation with very low DC power consumption.