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IP802SM Operation Principle

1. CPU, U6, 88W8510 have a 32-bit RISC processor integrated, operation frequency is 160MHz. 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 (88W8000G), Flash IC and LED. This chip also has MII interface integrated to communicate with 10/100 Ethernet Switch.

2. FLASH, U13, MX29LV800TTC-70, 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, 88W8000G which is integrated all RF-Baseband receive and Transmit function. On-Chip Power Amplifier (PA) with up to 31mW 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. Components:

Ethernet port (10/100BaseT)	CONNECT THE 10/100BASET CABLING (RJ45 CONNECTOR) FOR THE EXTERNAL LAN, WAN,
Reset Button	Used to reboot, reset to factory default,
Power Jack	Connect the power adapter here.
4 stop manual switch	Use to set different operation mode, client mode, AP mode, AP/NAT mode, config mode

5. Power part: there are several regulators are used on the board. U17, AZ1084S-3 is used to transfer DC5V to DC3V3; U1, U8 AME8805 are used to transfer DC3V3 to DC2V5; U20, 1117-ADJ is used to transfer DC3V3 to DC1V62. The core of CPU is operating at 1.5V.

6. LED part:

LED		Color	Controlled by	Description
Power		Green	FW	**On** - power on **Off** - no power
Ethernet Link/Act		Green	HW	**On – Ethernet is connected** **Off – no Ethernet connection** **Blinking –** receiving/ transmitting data
WLAN	Link/Act	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 88W8510.

8. Multi-layer Chip Band-Pass Filters, BP2,BP1, LCB22BM2450B1, Freq. Range: 2.4~2.5GHz; IL@BW: 1.7dB

9. GaAs IC SPDT Switch, U7, HWS314, features low insertion loss and positive voltage operation with very low DC power consumption.