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IP906SM Operation Principle

1. CPU, U6, 88W8510H 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 (88W8030), Flash IC and LED. This chip also has MII interface integrated to communicate with 10/100 Ethernet Switch.
2. FLASH, U13, MX29LV800BTTC-70EC, 8Mbits Flash, bottom sector, 70ns. It is used to store the normal and test firmware.
3. Integrated 2.4GHz & 5GHz ISM Band RF-Baseband Transceiver, U1, 88W8030 is fully integrated RF to baseband transceiver that operation in both the 2.4GHz ISM radio band for 802.11g/b WLAN applications and the 5GHz UNII radio band for 802.11a WLAN applications. It contains all the active circuitry to support both receive and transmit operations.
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. U23, MP1410 is used to transfer DC12V to DC3V3; U26, MP1410 is used to transfer DC12V to DC5V; U8 AME8805 are used to transfer DC3V3 to DC2V5; U4, 1117-ADJ is used to transfer DC3V3 to DC1V6.
6. LED part:

Item	Color	Control by	Description
Power	Green	FW	On: Power
			Off: no Power
Status	Red	FW	On - Error condition.
			Off - Normal operation
			Blinking - This LED blinks during start up.
LAN (10/100)	Orange	HW	On - Link at 100Mbps
			Off - Link at 10Mbps
(Activity)	Green	HW	Blinking - receiving/ transmitting data
WAN	Green	FW	On - WAN connection is established

			Off - No WAN connection available
			Blinking - data is being transmitted or received via the WAN port.
802.11a	Green	HW	On – 802.11a Wireless on
			Blinking- data is being transmitted or received via the 802.11a Wireless po
802.11g	Green	HW	On – 802.11g Wireless on
			Blinking- data is being transmitted or received via the 802.11g Wireless po

7. Switch button, SW1, it is used to reset the 88W8510H.