Description of Operation

Date: 2007/4/19

EUT is the WLAN AP that acts as a communication hub for users of a wireless device to connect to a wired LAN. APs are important for providing heightened wireless security and for extending the physical range of service a wireless user has access and use the IEEE 802. 11a network with 11 channels (5180MHz~5320MHz, 5500MHz~5700MHz, Space 20MHz). It allows you to connect to other WLAN device.

This device must be professionally installed. The intended use is generally not for the general public. It is generally for industry/commercial use.

General Operational Description:

1. Time base of the transmission frequency:
   For IF and RF frequency, Crystal is a clock reference.

2. Synthesizer:
   Synthesizer inside Transceiver IC and operate frequency in 2.4GHz and 5GHz Band. Internal voltage controlled oscillator (VCO) provides the desired LO signal base on the phase-locked loop (PLL) with a relatively wide tuning range for this application.

3. Transmission:
   BBP IC has DSSS (BPSK/QPSK/CCK) and OFDM (BPSK/QPSK/16QAM/64QAM) modulation function, it provides transmission data rate are 1, 2, 5.5, 11 Mbps on DSSS and 6, 12, 18, 24, 36, 48, 54, 108 Mbps on OFDM. Digital data signal will be converted to analog (TX IQ) signals through DAC in BBP IC, TX IQ pass through to low pass filter. TX I/Q signal use direct conversion (zero-IF) architecture converter to generate carrier frequency signal. Transceiver IC and external PA magnify output power.

4. Receiver:
   Reverse direction isolation of LNA inside Transceiver IC suppresses unwanted radiation. Then 2.4GHz and 5GHz RF signal will be directly down to IF signal (RX IQ) and high frequency spurious emissions are suppressed by LPF. At last RX IQ signal will be demodulated digital data.

5. Base band Processing:
   Channel Selection: Channel selection is controlled by BBP IC.
   Data Modulation: DSSS (BPSK/QPSK/CCK) and OFDM (BPSK/QPSK/16QAM/64QAM) modulation type is controlled by BBP IC.
   Power Control Level: BBP IC has the power leveling loop table are calibrated by manufacturer, then uses closed-loop power control function to limit RF output power level. Power leveling step accuracy is ±0.5dB.
   Transmit/Receive Switch: EUT has Transmit/Receive Switch and Antenna switch
   Data Link Layer:
   Firmware implements the full IEEE 802.11 Wireless LAN MAC protocol. It supports BSS and IBSS operation under DCF, and operation under the optional Point Coordination Function (PCF). Lower level protocol functions such as RTS/CTS generation and acknowledgment, fragmentation and de-fragmentation, and automatic beacon monitoring are handled without host intervention. Active scanning is performed autonomously once initiated by host command. Host interface command and status handshakes allow

concurrent operations from multi-threaded I/O drivers.

6. Interface: POE / Console / Antenna

7. Channel Selection Restriction: For product available in the USA/Canada/Taiwan market, only channel 1～11 can be operated. Selection of other channels is not possible. But product also could be available in the Europe/Japan market, channel 1～13 can be operated under the manufacturer change the different firmware.

8. Power: Input 100-240VAC and output 48VDC from POE. This power is provided to regulator components to regulated DC power.

9. Product Details

Items	Description
Product Type	WLAN
Radio Type	Intentional Transceiver
Power Type	POE
Interface Type	POE / Console / Antenna
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54/108)
Frequency Range	5150 ～ 5350MHz / 5470～5725MHz
Channel Number	11a: 6
Channel Band Width (99%)	11a: 21.92 MHz ; 11a Turbo: 33.80MHz
Conducted Output Power	Band 1: 16.86 dBm ; Band 2: 21.22 dBm ; Band 3: 21.49 dBm

10. Table for Filed Antenna

For 5GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	FDP-ACBSMA-GG	Dipole Antenna	Reversed-SMA	5.00

11. Hardware of this product is designed with turbo mode function, however, the fucntion will be closed when marketing of this product.

12. This device is a transceiver. The data length as well as the timing is well controlled and acknowledged between Tx and Rx. Information or operational fail will terminate the transmission and re-bulild the link immediately.

13. EUT has been verified, no Ad Hoc mode is provided.