Description of Operation

Date: 2005/8/22

EAP2316A is a WLAN AP with 11 channels (2412MHz~2462MHz, Space 5MHz). It allows you to connect to other WLAN device.

General Operational Description:

1. Time base of the transmission frequency:
   For IF and RF frequency, Crystal is a clock reference.
2. Synthesizer:
   Synthesizer inside AR2316 Transceiver IC and operate frequency in 2.4GHz ISM 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:
   AR2316 IC has DSSS (BPSK/QPSK/CCK) modulation function, it provides transmission data rate are 1, 2, 5.,11,12,18,24,36,48,54Mbps. 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 suppresses unwanted radiation. Then 2.4GHz 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 AR2316 IC.
   Data Modulation: DSSS (BPSK/QPSK/CCK) modulation type is controlled by AR2316 IC.
   Power Control Level: AR2316 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: EAP2316A has Transmit/Receive Switch and Antenna switch
   Data Link Layer:
   Firmware implements the full IEEE 802.11b/g 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: RJ-45
7. Power: Input 5Vdc from DC adapter or POE from RJ-45. This power is provided to regulator components to regulated DC power.

Features of Equipment under Test

Items	Description
Type of Modulation	DSSS (CCK / DQPSK / DBPSK) OFDM (16QAM / 64QAM / DQPSK / DBPSK)
Number of Channels	11
Frequency Band	2400 MHz ~ 2483.5 MHz
Carrier Frequency Range	2412 MHz ~ 2462 MHz
Data Rate	1, 2, 5.5, 11 Mbps - DSSS 6, 12, 18, 24, 36, 48, 54 Mbps – OFDM 108 Mbps- OFDM - Turbo Mode
Channel Bandwidth	5 MHz
Max. Conducted Output Power	DSSS : 17.84 dBm OFDM : 19.87 dBm 11g Turbo Mode : 18.56 dBm
Communication Type	Half-Duplex
Testing Duty Cycle	100.00%
Power Rating (DC/AC, Voltage)	5.00V DC from power adapter
Adapter Information	Brand: DVE, Model: DSA-0101F-05UP, Input: 100~240Vac 50/60Hz, Output: 5Vdc)
Test Power Source	120.00V AC
Temperature Range (Operating)	0 ~55 °C

Antenna Description

No.	Antenna Type	Gain (dBi)
1	Integral Antenna	2.50