Operational Description

Overview

This device is a WLAN 11n Mini Router, which operates in the 2.4GHz ISM band. The system is compliant with IEEE Wireless LAN standards 802.11b/g/n draft 2.0.
It uses OFDM technique that the maximum data rate could up to 300Mbps. If the signal to noise ratio is too poor which could not support 300Mbps, the 11Mbps data rate with DSSS technique will be applied.

System Structure

The Wireless LAN network interface controller (RTL8190) implements multiple inputs, multiple output (MIMO), orthogonal frequency division multiplexing (OFDM) with 2 transmits and 2 receive paths and is compatible with 802.11n Draft specification 2.0. It also included two spatial streams transmission, short guard interval of 400ns, spatial spreading, and transmission over 20 MHz and 40 MHz bandwidth. At the receiver, extended range and good minimum sensitivity is achieved by having receiver diversity up to 2 antennas. The 40MHz crystal oscillator feeds to the RTL8190.
The RF transceiver (RTL8256) is a fully integrated MISO RF transceiver consisting two receivers and one transmitter. The RTL8256 uses a direct conversion /zero-IF architecture. An internal Voltage Controlled Oscillator (VCO) drives the modulator and demodulator. The VCO is phase-locked by an internal 3-wire-interfaced PLL.
The switching gateway controller (RTL8651C) provides 5 ports, integrated with five MAC and five physical layer transceivers for 10Base-T and 100Base-TX. One port was configured as WAN port, four ports was configured as LAN port. It also support USB 2.0 host controller with 1 interface port for access to USB-supported peripherals such as mass storage. The RTL8651C need 25MHz crystal clock input for system PLL.

The antennas are dipole antennas without any connector.

Power Supply

The EUT is powered by 12Vdc from the AC/DC power adapter.

For more detailed information, please take a look at the user’s manual.