

# Operational Description

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## **FCC ID: WPT-ICOP-4000**

EUT can be used for WLAN nodes. Every node has a unique network address. Main function is a type of local-area network node that uses high-frequency radio waves rather than wires to communicate between nodes. Use the IEEE 802.11b/g network with 11 channels (2412MHz~2462MHz, Space 5MHz)

### ***Time base of the transmission frequency:***

For IF and RF frequency, Crystal is a clock reference.

### ***Synthesizer:***

Synthesizer inside Transceiver. Internal voltage controlled oscillator (VCO) provides the desired LO signal based on the phase-locked loop (PLL) with a relatively wide tuning range for this application.

### ***Transmission:***

Base-band Processing (BBP) IC has DSSS (BPSK/QPSK/CCK) and OFDM (BPSK/QPSK/16QAM/64QAM) modulation function, it provides transmission data rates are 1, 2, 5.5, 11 Mbps on DSSS and 6, 12, 18, 24, 36, 48, 54, 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 uses direct conversion (zero-IF) architecture converter to generate carrier frequency signal. Transceiver IC and external PA magnify output power.

### ***Receiver:***

Reverse direction isolation of LNA inside Transceiver IC suppresses unwanted radiation. Then 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.

### ***Base band Processing:***

1. *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.

2. *Power Control Level:* BBP IC has the power leveling loop table calibrated by manufacturer, then uses closed-loop power control function to limit RF output power level. Power leveling step accuracy is  $\pm 0.5\text{dB}$ .

*Transmit/Receive Switch:* EUT has Transmit/Receive Switch and Antenna switch. End user can't select any power setting.

### ***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.

Items	Description
Power Type	12V from adapter
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz
Channel Number	11
Channel Band Width (99%)	11b: 15.08 MHz ; 11g: 16.44 MHz
Conducted Output Power	11b: 17.84 dBm ; 11g: 14.27 dBm

Ant.	Antenna Type	Connector	Gain (dBi)
1	Dipole Antenna	Reverse-SMA	2.00