

## 1.2. Operational Description

EUT is a Notebook P.C. with a built-in 2.4GHz and 5GHz transceiver. There are 11 channels in 2412 – 2462MHz and 5 channels in 5745 – 5825MHz, and 3 channel of 802.11n.

The channels are separated by 5MHz in 2.4GHz band and 20MHz in 5GHz band.

This Notebook P.C. supports the data rates of 1, 2, 5.5, 11Mbps in 802.11b mode(TX Ch.A and TX Ch. B) , 6, 9, 12, 18, 24, 36, 48, 54Mbps in 802.11a/g mode(TX Ch.A and TX Ch. B), 13, 26, 39, 52, 78, 104, 117, 130, 144 Mbps in 2.4 & 5.0 GHz frequency bands is under 20MHz bandwidth (TX Ch.A and TX Ch. B and TX Ch.A + Ch. B) and 27, 54, 81, 108, 162, 216, 243, 270, 300 Mbps in 5.0 GHz frequency bands is under 40MHz bandwidth (TX Ch.A and TX Ch. B and TX Ch.A + Ch. B)

The signals are modulated by DSSS in 802.11b mode and OFDM in 802.11a/g/n mode. The antennas are Connector and use diversity to improve the receiving sensitivity.

So far the Notebook P.C.would be on the market with two kinds of Antenna, for Antenna A is Tyco and Antenna B is Acon. Within 2.4GHz frequency band, Antenna in Tyco gets the higher gain value than Antenna in Acon. On the contrary, within 5GHz frequency band antenna in Acon gets the higher gain Value then antenna in Tyco. In the report we will pick the higher gain value in each frequency band for test.

This Notebook P.C., complied with IEEE 802.11b, IEEE 802.11g/n, and IEEE 802.11a/n, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without network wires. Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b, IEEE 802.11g/n, and IEEE 802.11a/n network.

Following are the test modes corresponding to the transmit antenna:

Mode1: TX Ch.A and TX Ch. B for Antenna B

Mode2: TX Ch.A and TX Ch. B for Antenna A

Mode3: TX Ch.A and TX Ch. B for Antenna A

Mode4: TX Ch.A and TX Ch. B and TX Ch.A+Ch.B

2.4GHz band for Antenna A, 5GHz band for Antenna B

Mode5: TX Ch.A and TX Ch. B and TX Ch.A+Ch.B