OPERATIONAL DESCRIPTION OF SB 3001 WLAN CARD

SB 3001 is a wireless LAN card operating with 802 .11 a , g specs in frequency bands 2.400 ~ 2.483 GHz , 5.25 ~ 5.35 GHz , 5.47 ~ 5.725 GHz band with OFDM modulation at different data rates 54 MBPs to 6 MBPs selected automatically .

It consists of a MAC (Media Access Controller) , RF converter , filters , power amplifier , Transmit Receive switch and RF output connectors for 2.400 - 2.483 GHz Lo Band and 5.25 ~ 5.35 , 5.47 ~ 5.725 GHz Hi Band (FL type)

Transmit Path :

The MAC controller takes the Data signals coming from the mini PCI port of a PC or other unit like NEXUS 3010 , NEXUS 3020 , NEXUS 3040 . It converts the Digital signals with headers and security wep keys to conform to 802.11a , g specs . The signal flows to the baseband processor which is part of the MAC controller and gets converted into differential OFDM signals . The OFDM data rates are controlled by the MAC controller depending upon the noise conditions in the wireless transmission path .

The differential OFDM signals are applied to the RF converter . RF converter is of Zero IF type and uses an external VCO running at 11 ~ 12 GHz . Output is at 2.400 ~ 2.483 GHz , 5.25 ~ 5.35 GHz , 5.47 GHz ~ 5.725 GHz in Transmit mode.

RF output from the RF converter is passed through attenuator and filter to the dual band power amplifiers . Power amplifiers provide the output power required in Lo Band (2.4 GHz) and Hi Band (5.25 ~ 5.35 , 5.47 ~ 5.725 GHz).

Output of the power amplifier is taken through a Band Pass Filter , Transmit Receive Switch to the RF connector .

Receive Path :

Received RF signals are taken from the Lo band RF connector for 2.400 ~ 2.483 GHz and Hi Band RF connector for 5.25 ~ 5.35 , 5.47 ~ 5.725 GHz , through the Transmit Receive Switches to the receiver Band Pass Filters and Low Noise pre Amplifiers .

The RF signal passes to the RF converter IC . The RF converter converts the RF to baseband signals in the Receive mode . Simultaneous Transmit and Receive actions are not allowed in the RF converter IC .

The MAC controller receives the baseband signals . The baseband signals are decoded and headers and security keys removed and retrieved digital signals are applied to the PCI connector from where it flows into the PC or NEXUS 3010 unit .