

## DESCRIPTION WIRELESS LAN IEEE802.11A/B/G CARDBUS PCCARD

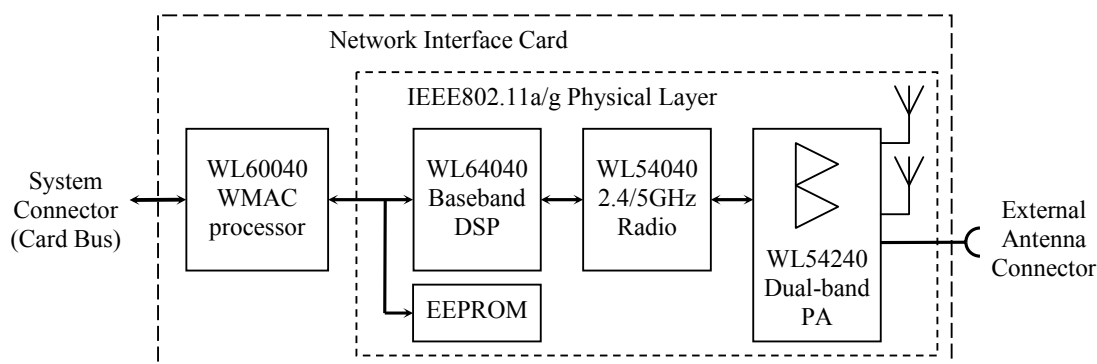
### A. General

This document specifies an IEEE802.11a/b/g Wireless LAN Network Interface Card, with CardBus interface, based on the Agere WaveLAN 802.11a/b/g chipset solution. It operates in frequency bands 2.4 GHz and 5 GHz (see section B2)

Figure 1 shows the functional block diagram of the IEEE802.11a/b/g Network Interface PC Card based on the WaveLAN 802.11a/b/g Chipset. The main blocks are:

- WL60040, Wireless Medium Access Control (WMAC) processor
- off-the-shelf EEPROM
- WL64040, PHY (DSP)
- WL54040, 2.4GHz/5GHz dual-band integrated radio
- WL54240, dual-band PA (Power Amplifier)
- integrated antennas

The Physical layer (PHY) part consists of the DSP, Radio, PA, Supply, integrated antennae and EEPROM. Not shown on below block diagram are: the RF output power detector, RF filters and antenna switches.



**Figure 1: IEEE802.11a/b/g Network Interface CardBus PC Card architecture**

The Network Interface Card is capable to transmit and receive from either of the two internal antennas. The Network Interface Card has an optional external antenna connector having a nominal port impedance of 50 Ohm with a maximum VSWR of 2:1 in the applied frequency bands. The internal antennae are disabled when a plug is mated on this connector.

**B. Technical Characteristics:**

1. Power supply: 3.3 Vdc
2. Technology and Data Rates:
  - a. to IEEE 802.11b, 2.4 GHz band:
    - DSSS, at 1, 2, 5.5 and 11 Mbps
  - b. to IEEE 802.11g, 2.4 GHz band:
    - OFDM, at 6, 9, 12, 18, 24, 36, 48, 54 Mbps
  - c. to IEEE 802.11a, 5 GHz bands \*:
    - OFDM, at 6, 9, 12, 18, 24, 36, 48, 54 Mbps

\*: band and selection of channel in the band is determined by the band availability in the applicable country and by the operation mode; in ESS mode under control of an installed AccessPoint (AP) (in both 2.4 and 5 GHz bands) or in IBSS Mode where user has limited choice of band/channel (only in 2.4 GHz band!).

5 GHz Bands for this card include:

- 5150-5250 MHz
- 5150-5350 MHz
- 5725-5850 MHz

3. Output power \*
  - a. in band 2400 to 2483.5 MHz: < 23 dBm. maximum  
(the integrated antenna has 3 dBi gain)
  - b. in bands
    - 5150 to 5350 MHz: < 11 dBm max
    - 5725 to 5875 MHz: < 17 dBm max.  
(the integrated antenna has 4 dBi gain)

\*: actual maximum levels are prepared in factory and can defer per region or country

4. Encryption: WEP or WPA

- 5 Standards:
  - USA : FCC Part 15.247 and 15.407
  - Canada: RSS 210-6.2.2