



VNT9285BE000

PCIE MINICARD MODULE SPEC

Revision 1.0

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VIA TECHNOLOGIES, INC.

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Offices:

USA Office:

940 Mission Court
Fremont, CA 94539
USA
Tel: (510) 683-3300
Fax: (510) 683-3301 or (510) 687-4654
Web: www.viatech.com

Taipei Office:

8th Floor, No. 533
Chung-Cheng Road, Hsin-Tien
Taipei, Taiwan ROC
Tel: (886-2) 2218-5452
Fax: (886-2) 2219-8461
Web: www.via.com.tw



Revision History

Release	Date	Revision	Initials
1.0	2010-07-14	Initial Release	Troy

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1.0 Scope

1.1 Document

This document describe the product requirements for **802.11N** PCIe minicard module(Model No.: VNT9285BE000). The PCIe minicard module is based on **Atheros** AR9285 chip solution. The VNT9285BE000 product complied with IEEE 802.11b/g/n standard from 2.4~2.5GHz.

VNT9285BE000 offers absolute interoperability with different vendors' 802.11b/g/n access points through the wireless LAN with seamless roaming, fully interoperability, and advanced security with WEP/WPA/WPA2.0 standard.

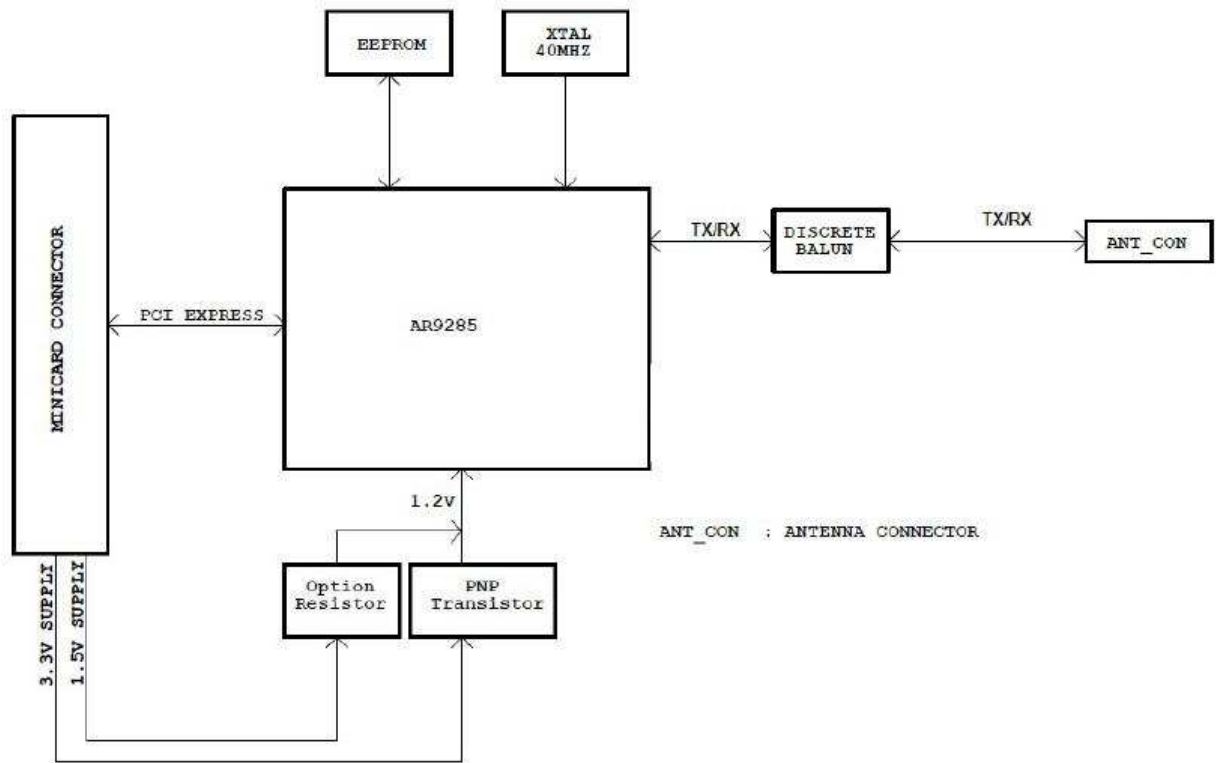
1.2 Product Features

- Compatible with IEEE 802.11b/g/n standard
- Operation at 2.4 ~ 2.5GHz frequency band to meet worldwide regulations
- Support 802.11e WMM(WiFi MultiMedia QoS Standard).
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports infrastructure networks via Access Point and ad-hoc network via peer-to-peer communication
- Supports WEP, WPA, WPA2 and 802.1X security mode.
- Friendly user configuration and utilities
- Drivers support Windows XP, Vista and Win7, Linux.

2.0 Requirements

The following sections identify the detailed requirements of the VNT9285BE000

2.1 Functional Block Diagram



2.2 General Requirement

2.2.1 Wireless Parameter

Item	Feature	Detailed Description
2.2.1	Standard	<ul style="list-style-type: none"> IEEE 802.11b/g/n
2.2.1.2	Frequency Band	<ul style="list-style-type: none"> 2400 ~ 2483.5MHz ISM band
2.2.1.3	Data Transfer Rates	<ul style="list-style-type: none"> Lite-N: 135/121.5/108/81/54/40.5/27/13.5Mbps 130/117/104/78/52/39/26/13Mbps 65/58.5/52/39/26/19.5/13/6.5Mbps 11g: 54/48/36/24/18/12/9/6 Mbps (Dynamic) 11b: 11/5.5/3/2/1 Mbps (Dynamic)
2.2.1.4	Channel	<ul style="list-style-type: none"> 1 ~13 Channel
2.2.1.5	Extend Frequency	<ul style="list-style-type: none"> DSSS
2.2.1.6	Modulation Type	<ul style="list-style-type: none"> OFDM
	Maximum RF Power	<ul style="list-style-type: none"> 15dBm - 11N(HT40)
	Receive Sensitivity	<ul style="list-style-type: none"> 130M: -68dBm@10% PER 108M: -68dBm@10% PER 54M: -68dBm@10% PER 11M: -85dBm@8% PER 6M: -88dBm@10% PER 1M: -90dBm@8% PER
	Wireless Security	<ul style="list-style-type: none"> 64/128/152 bit WEP WPA/WPA2, WPA-PSK/WPA2-PSK

2.2.2 General Section

Item	Feature	Detailed Description
2.2.4.1	Antenna connector Type	<ul style="list-style-type: none"> One(1) coaxial cable antenna connector
2.2.4.2	Operating Voltage	<ul style="list-style-type: none"> 3.3 VDC +/- 10%
2.2.4.3	Power Consumption	<ul style="list-style-type: none"> Transmit - 20MHz < 500mA; 40MHz < 520mA; Receive - 20MHz < 200mA; 40MHz < 250mA; Radio Off mode : 110~130mA; Suspend Mode : ~8mA ;
2.2.4.4	Form Factor and Interface	<ul style="list-style-type: none"> PCIe miniCard

2.3 Software Requirements

The Software supports Microsoft Windows XP, Vista and Win7 and includes following functions :

- **Information**
Information allows you to monitor network status.
- **Security**
Supports enhanced security WEP, WPA, WPA2.0 and 802.1X.

2.3.1 Information

Item	Feature	Detailed Description
2.3.1.1	General Information	<ul style="list-style-type: none"> • General Information shows the name of Wireless Adapter, Adapter MAC Address, Regulatory Domain
2.3.1.2	Current Link Information	<ul style="list-style-type: none"> • Current Link Information shows the Current Setting ESSID, Channel Number, Associated BSSID, Network Type (infrastructure or Ad-hoc network), WEP Status (enable or disable), Link Status (Connect or Disconnect), and Link Quality.
2.3.1.3	Site survey	<ul style="list-style-type: none"> • To search the neighboring access points and display the information of all access points.

2.3.2 Configuration

Item	Feature	Detailed Description
2.3.2.1	ESS ID	<ul style="list-style-type: none"> • Input an SSID number if the roaming feature is enabled. • Supports for ASCII printable characters.
2.3.2.2	Network Type	<ul style="list-style-type: none"> • Ad-hoc Mode and 802.11 Ad-hoc Mode for network configurations that do not have any access points. • Infrastructure Mode for network configurations with access points.
2.3.2.3	Power Save	<ul style="list-style-type: none"> • Extend the battery life of clients by allowing the client to sleep for short periods of time while the Access Point buffers the messages.
2.3.2.4	Roaming	<ul style="list-style-type: none"> • Support Automatic or Manual Rescan to associate with access point.

2.4 Mechanical Requirements

2.4.1 Information

Item	Feature	Detailed Description
2.4.1	Length	<ul style="list-style-type: none"> Half size miniCard and Full Size miniCard compatible
2.4.2	Width	<ul style="list-style-type: none"> 30mm

2.4.2 Mechanical Drawing

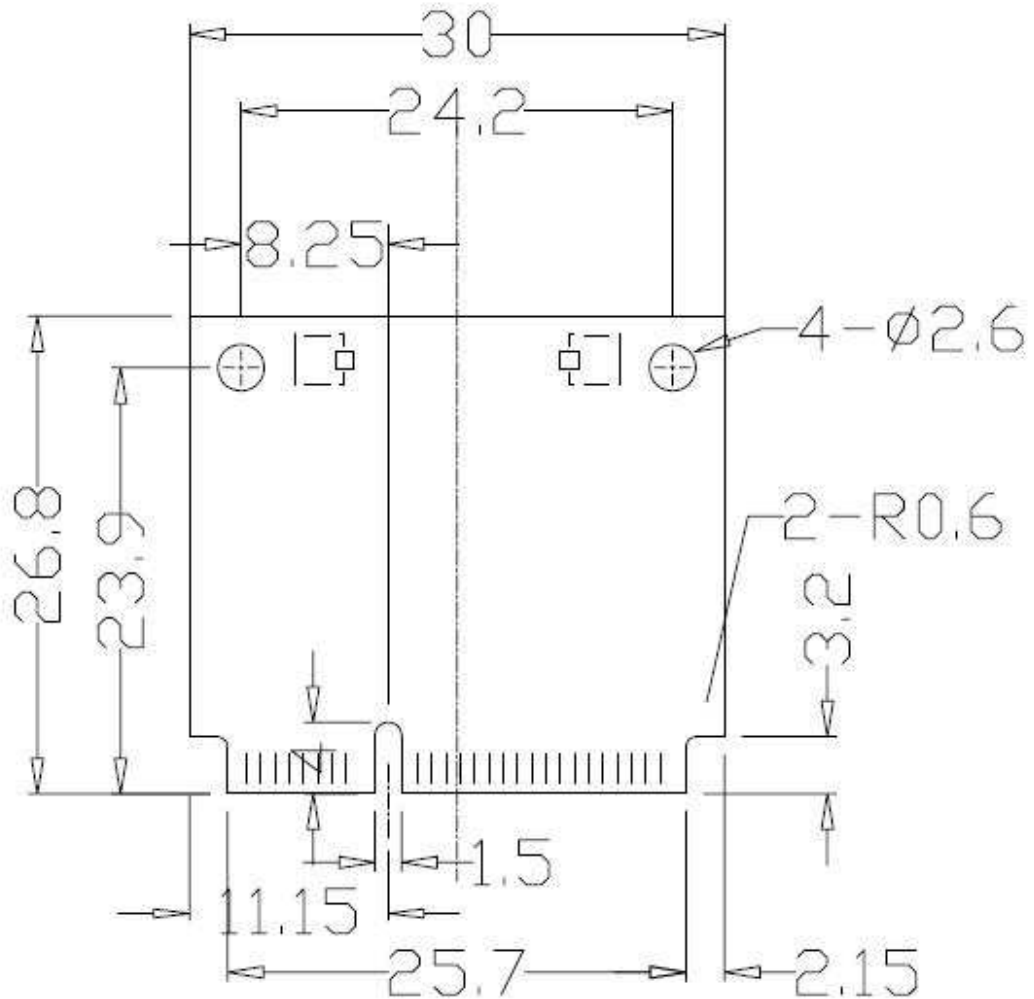


Fig 2.4.1



2.5 Requirements of Reliability, Maintainability and Quality

Item	Feature	Detailed Description
2.5.1	Maintainability	<ul style="list-style-type: none">• There is no scheduled preventive maintenance required
2.5.3	Quality	<ul style="list-style-type: none">• The product quality is followed-up by VIA factory quality control system



2.6 Environmental Requirements

Item	Feature	Detailed Description
2.6.1	Operating Temperature	0°C ~80°C Note - Ambient Temperature in immediate(<0.635cm) environment of miniCard.
2.6.2	Storage Temperature	-40°C ~100°C
2.6.3	Operating Temperature	10%~90% non-condensing
2.6.4	Operating Temperature	5%~90% non-condensing

2.7 Module Pin Definition

2.7.1 VNT9285BE000

Table 2.7.1 Hardware Pin-Out Definition

Pin No.	Symbol	Description
1	WAKE_L	Request to service a function-initiated wake event, open drain
2	+3.3V	3.3V power supply
3	Reserved	NC
4	GND	Tide to GND
5	Reserved	NC
6	+1.5V	1.5V power supply
7	CLKREQ_L	Reference clock request, open drain
8	Reserved	NC
9	GND	Tide to GND
10	Reserved	NC
11	REFCKL-	Differential reference clock(100 MHz)
12	Reserved	NC
13	REFCKL+	Differential reference clock(100 MHz)
14	Reserved	NC
15	GND	Tide to GND
16	Reserved	NC
17	Reserved	NC
18	GND	Tide to GND
19	Reserved	NC
20	WLAN_DISABLE	WLAN disable with weak pull down
21	GND	Tide to GND
22	PERSL_L	Reset for the AR9285
23	PERN0	Differential receive
24	+3.3Vaux	3.3V power supply
25	PERP0	Differential receive
26	GND	Tide to GND
27	GND	Tide to GND
28	+1.5V	1.5V power supply
29	GND	Tide to GND
30	Reserved	NC
31	PETN0	Differential transmit
32	Reserved	NC
33	PETP0	Differential transmit
34	GND	Tide to GND
35	GND	Tide to GND
36	Reserved	NC
37	GND	Tide to GND
38	Reserved	NC
39	+3.3Vaux	3.3V power supply
40	Reserved	NC
41	+3.3Vaux	3.3V power supply
42	Reserved	NC
43	GND	Tide to GND
44	MPCIE_WLAN_LED	Use to control the WLAN LED
45	Reserved	NC
46	Reserved	NC
47	Reserved	NC
48	+1.5V	1.5V power supply
49	Reserved	NC
50	GND	Tide to GND
51	Reserved	NC
52	+3.3V	3.3V power supply



3.0 Appendix

3.1 Worldwide Certification

Covers over 50 countries.