



Approval Sheet



(V1.9)

Model Name: DCMA-82
WNC P/N:
Customer P/N:
Description: 802.11abg high power MiniPCI card
PCB Ver.:
Prepared By: Abber Lee
Checked By: Robin Wu
Approved By: Robin Wu

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<i>Edition #</i>	<i>Reason for revision</i>	<i>Issue date</i>
V1.0	● Initial Document	10/11,2006
V1.1	● Correct LED naming of pin definition	11/2, 2006
V1.2	● Highlight the throughput may degrade 15% at -40 degrees C	12/26, 2006
V1.3	<ul style="list-style-type: none"> ● Add description for pin BT_ACTIVE and pin WLAN_ACTIVE ● Add Turbo, half, and quarter rate sensitivity ● Update target power table ● Add current consumption under chariot TP test 	2/5, 2007
V1.4	<ul style="list-style-type: none"> ● Add the 4.9Ghz safety band support ● Add DFS2 support in SW spec. ● Add power accuracy highlight for temp below -15 and over +65 degrees C 	3/21, 2007
V1.5	● Add antenna installation notice in last page	3/30, 2007
V1.6	● Add FCC Part90 Notification	4/30, 2007
V1.7	● Update antenna installation notice in last page	5/24, 2007
V1.8	● Correct data rate typo of quarter rate Mode	10/08,2008
V1.9	<ul style="list-style-type: none"> ● Add the notice of additional sorting needed for 10MHz & 5MHz application ● Update target power accuracy to +1.5/-2.0 dBm @ page 16 ● Update sensitivity spec. 	04/09,2009

1. Introduction

DCMA-82 is a mini PCI solution for IEEE 802.11a/b/g wireless LAN. It was designed specially for the outdoor Access Point or embedded market.

The key features and benefits including,

- ✓ High power design — Average power up to 23dBm (200mW) and peak power up to 28dBm (600mW).
- ✓ MMCX RF connector — To provide the robust assembly & lower loss for external antenna.
- ✓ Heat sink design — To provide the reliable high radio power.
- ✓ Industrial grade — Operation temp from -40 to +80 degrees C.
- ✓ Robust assembly — Extra screw hole for solid mounting on mother board.
- ✓ FCC Safety band support

1.1. Scope

This document describes the hardware architecture and specification for the DCMA-82.

1.2. Product Features

- ✓ High speed for wireless LAN connection: IEEE802.11b 11Mbps data rate by incorporating Direct Sequence Spread Spectrum (DSSS); IEEE802.11a 54Mbps data rate with Orthogonal Frequency Division Multiplexing (OFDM) and up to 108Mbps with Turbo mode; IEEE802.11g 54Mbps data rate with OFDM (108Mbps in Turbo mode) and 11Mbps with DSSS. Provide seamless roaming within the IEEE 802.11a/b WLAN infrastructure
- ✓ IEEE 802.11a/b/g compatible: allowing inter-operation among multiple vendors
- ✓ 64-bit, 128-bit, or 152-bit WEP encryption, set by ASCII and Hexadecimal mode
- ✓ Smart selection function
- ✓ Mini PCI Type 3A form factor
- ✓ Site survey function.
- ✓ Hardware Radio on/off function
- ✓ Support MicroSoft Windows XP, 2000, ME, and 98SE
- ✓ Interoperability – Complying with WiFi
- ✓ WPA, WPA-PSK
- ✓ Super A/G.

2. Hardware Architecture

2.1 Hardware Block Diagram

The major internal components and external interfaces of the DCMA-82 are illustrated in Figure 1-1.

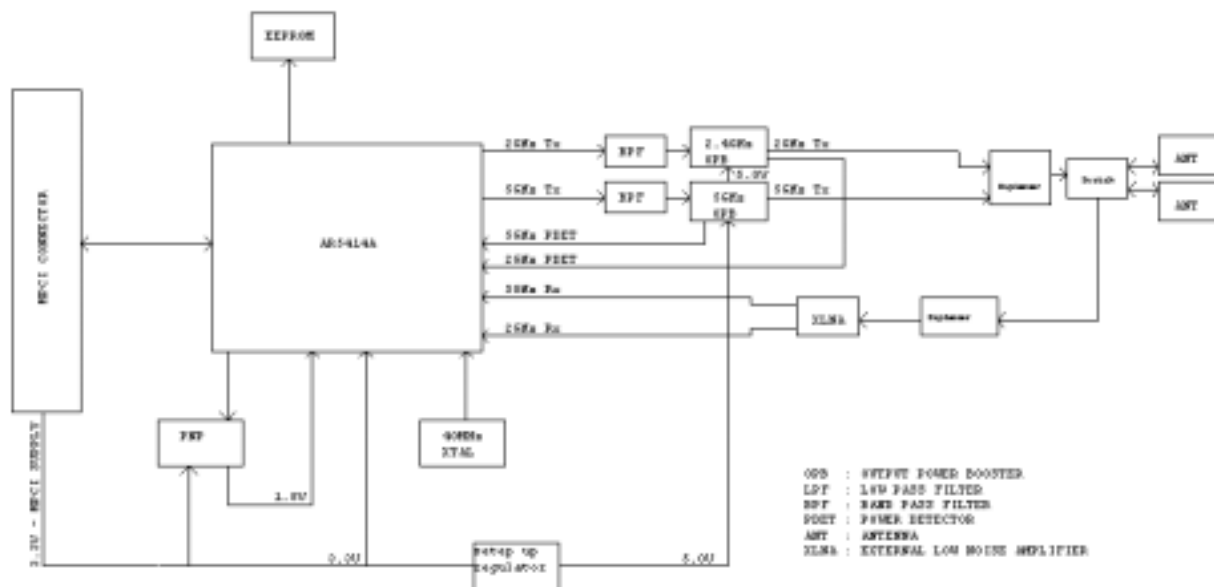


Figure 1-1 DCMA-82 Major Component and System Interface

2.2 Main Chipset Information

Item	Vender	Model #
MAC/BBP/Transceiver	Atheros	AR5414A-B2B or AR5414A

* AR5414A is commercial grade chip

*AR5414A-B2B is industrial grade chip

2.2.1 MAC/Baseband Processor

The Atheros AR5414A is part of the AR5006 solutions for 5GHz and 2.4GHz wireless local area networks. The AR5414A integrates multi-protocol media access control, a baseband processor, and a PCI/Cardbus host interface, analog-to-digital, and digital-to-analog converters.

2.2.2 Radio Transceiver

The AR5414A chip also integrates CMOS radio transceiver that supports the IEEE 802.11a, 802.11b, and 802.11g standard. The chip supports connection to an external output booster for higher performance.

2.3 Antenna Connector

Two antenna connectors (**MMCX**) are provided to support antenna diversity.

2.4 LED Function

State	LED_0	LED_1
Power save mode	Slow-rate blink	OFF
Awake from power save mode, can be used to indicate power is applied.	ON	OFF
Looking for network association	Alternate blink between LED_0 and LED_1	Alternate blink between LED_0 and LED_1
Associated or joined with network; no activity	Slow-rate blink	Slow-rate blink
Associated or joined with network; blink rate increases with activity	Blink	Blink
Power off	OFF	OFF

2.5 Pin Definition

Pin Number	Pin Name	Pin I/O Type	Description
1	TIP	NC	No use
2	RING	NC	No use
3	8PMJ-3	NC	No use
4	8PMJ-1	NC	No use
5	8PMJ-6	NC	No use
6	8PMJ-2	NC	No use
7	8PMJ-7	NC	No use
8	8PMJ-4	NC	No use
9	8PMJ-8	NC	No use
10	8PMJ-5	NC	No use
11	LED1_GRNP	Output, 12mA	LED0 anode
12	LED2_YELP	Output, 12mA	LED1 anode
13	RF_Disable	Input,	Connect to GND (drive low) to disable RF, open (drive high) to enable RF.
14	LED2_YELN	Input,	Direct connect to GND
15	CHSGND	Ground	Digital Ground

16	RESERVED	NC	Reserved
17	INTB#	NC	No use
18	5V	5V	Optional 5V for 5Ghz and 2.4Ghz PA
19	3.3V	Power	3.3V+/-10%
20	INTA#	CMOS, Output	PCI bus Interrupt A
21	RESERVED	NC	Reserved
22	RESERVED	NC	Reserved
23	GROUND	Ground	Digital ground
24	3.3VAUX	Power	3.3V+/-10%
25	CLK	Input, Weak pull down	Providing timing for all transactions on the PCI bus
26	RST#	Input, Weak pull up	PCI reset
27	GROUND	Ground	Digital ground
28	3.3V	Power	3.3V+/-10%
29	REQ#	Output	PCI bus request
30	GNT#	Input, Weak pull high	PCI bus grant
31	3.3V	Power	3.3V+/-10%
32	GROUND	Ground	Digital ground
33	AD[31]	BiDir., Weak pull down	PCI address/data bus bit 31
34	PME#	Output	Power Management Event Output
35	AD[29]	BiDir., Weak pull down	PCI address/data bus bit 29
36	RESERVED	NC	Reserved (BT_ACTIVE)
37	GROUND	Ground	Digital ground
38	AD[30]	BiDir., Weak pull down	PCI address/data bus bit 30
39	AD[27]	BiDir., Weak pull down	PCI address/data bus bit 27
40	3.3V	Power	3.3V+/-10%
41	AD[25]	BiDir., Weak pull down	PCI address/data bus bit 25
42	AD[28]	BiDir., Weak pull down	PCI address/data bus bit 28

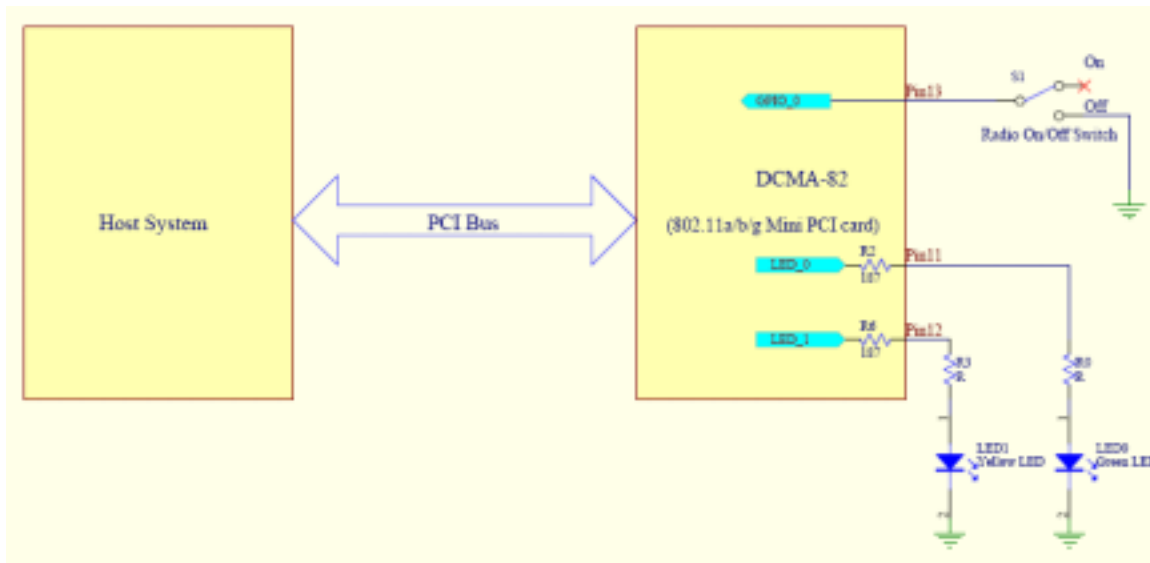
43	RESERVED	NC	Reserved (WLAN_ACTIVE)
44	AD[26]	BiDir., Weak pull down	PCI address/data bus bit 26
45	C/BE[3]#	BiDir., Weak pull up	PCI bus commands and byte 3 enables
46	AD[24]	BiDir., Weak pull down	PCI address/data bus bit 24
47	AD[23]	BiDir., Weak pull down	PCI address/data bus bit 23
48	IDSEL	Input, Weak pull down	Initialization device select
49	GROUND	Ground	Digital ground
50	GROUND	Ground	Digital ground
51	AD[21]	BiDir., Weak pull down	PCI address/data bus bit 21
52	AD[22]	BiDir., Weak pull down	PCI address/data bus bit 22
53	AD[19]	BiDir., Weak pull down	PCI address/data bus bit 19
54	AD[20]	BiDir., Weak pull down	PCI address/data bus bit 20
55	GROUND	Ground	Digital ground
56	PAR	BiDir, Weak pull up	PCI bus parity
57	AD[17]	BiDir., Weak pull down	PCI address/data bus bit 17
58	AD[18]	BiDir., Weak pull down	PCI address/data bus bit 18
59	C/BE[2]#	BiDir., Weak pull up	PCI bus commands and byte 2 enables
60	AD[16]	BiDir., Weak pull down	PCI address/data bus bit 16
61	IRDY#	BiDir., Weak pull up	PCI initiator ready
62	GROUND	Ground	Digital ground
63	3.3V	Power	3.3V+/-10%
64	FRAME#	BiDir., Weak pull down	PCI frame.
65	CLKRUN#	Input, Weak pull up	Control signal for PCI clock
66	TRDY#	BiDir., Weak pull up	PCI target ready
67	SERR#	BiDir, Weak pull up	PCI system error
68	STOP#	BiDir, Weak pull up	PCI cycle stop signal
69	GROUND	Ground	Digital ground

70	3.3V	Power	3.3V+/-10%
71	PERR#	BiDir, Weak pull up	PCI bus parity
72	DEVSEL#	BiDir, Weak pull up	PCI device select
73	C/BE[1]#	BiDir, Weak pull down	PCI bus commands and byte 1 enables
74	GROUND	Ground	Digital ground
75	AD[14]	BiDir, Weak pull down	PCI address/data bus bit 14
76	AD[15]	BiDir, Weak pull down	PCI address/data bus bit 15
77	GROUND	Ground	Digital ground
78	AD[13]	BiDir, Weak pull down	PCI address/data bus bit 13
79	AD[12]	BiDir, Weak pull down	PCI address/data bus bit 12
80	AD[11]	BiDir, Weak pull down	PCI address/data bus bit 11
81	AD[10]	BiDir, Weak pull down	PCI address/data bus bit 10
82	GROUND	Ground	Digital ground
83	GROUND	Ground	Digital ground
84	AD[09]	BiDir, Weak pull down	PCI address/data bus bit 9
85	AD[08]	BiDir, Weak pull down	PCI address/data bus bit 8
86	C/BE[0]#	BiDir, Weak pull up	PCI bus commands and byte 0 enables
87	AD[07]	BiDir, Weak pull down	PCI address/data bus bit 7
88	3.3V	Power	3.3V+/-10%
89	3.3V	Power	3.3V+/-10%
90	AD[06]	BiDir, Weak pull down	PCI address/data bus bit 6
91	AD[05]	BiDir, Weak pull down	PCI address/data bus bit 5
92	AD[04]	BiDir, Weak pull down	PCI address/data bus bit 4
93	RESERVED	NC	Reserved
94	AD[02]	BiDir, Weak pull down	PCI address/data bus bit 2
95	AD[03]	BiDir, Weak pull down	PCI address/data bus bit 3
96	AD[00]	BiDir, Weak pull down	PCI address/data bus bit 0

97	5V	5V	Optional 5V for 5Ghz and 2.4Ghz PA
98	RESERVED_WIP4	NC	Reserved
99	AD[01]	BiDir, Weak pull down	PCI address/data bus bit
100	RESERVED_WIP4	NC	Reserved
101	GROUND	Ground	Digital ground
102	GROUND	Ground	Digital ground
103	AC_SYNC	NC	No use
104	M66EN	NC	PCI 66MHz Enable, no use
105	AC_SDATA_IN	NC	No use
106	AC_SDATA_OUT	NC	No use
107	AC_BIT_CLK	NC	No use
108	AC_CODEEC_ID0#	NC	No use
109	AC_CODEEC_ID1#	NC	No use
110	AC_RESET#	NC	No use
111	MOD_AUDIO_MON	NC	No use
112	RESERVED	NC	Reserved
113	AUDIO_GND	Ground	Analog ground
114	GROUND	Ground	Digital ground
115	SYS_AUDIO_OUT	NC	No use
116	SYS_AUDIO_IN	NC	No use
117	SYS_AUDIO_OUT GND	NC	No use
118	SYS_AUDIO_IN GND	NC	No use
119	AUDIO_GND	NC	No use
120	AUDIO_GND	Ground	Analog ground
121	RESERVED	NC	Reserved
122	MPCIACT#	NC	Mini PCI function active, no support
123	VCC5VA	NC	No use

124	3.3VAUX	Power	3.3V+/-10%
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2.6 Radio On/Off Mechanism Suggestion:



Note:

The value of R2 and R6 are 187 ohm. The value of R0 and R3 are user defined for LED current limitation.

3. Software Specification

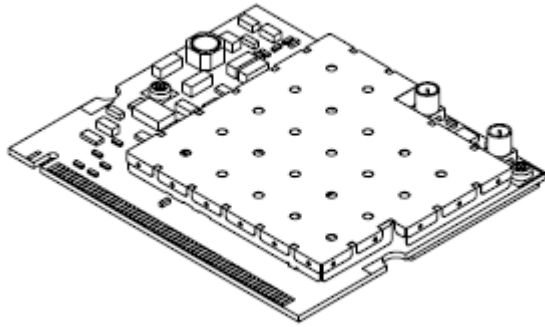
General Function	
Operation System Support	Windows® 98SE, Me, 2000, XP,
Network Access Mode	IEEE 802.11a Infrastructure / Ad-Hoc Mode, IEEE 802.11b Infrastructure / Ad-Hoc Mode , and IEEE 802.11g Infrastructure / Ad-Hoc Mode
Site Survey	Support Access Points and IEEE 802.11a/b/g Ad-Hoc Networks Scanning Capability
Information List	Selected Profile Information, Link Information, and TCP/IP Information
Profile	Configuration Name
Network Name (SSID)	This is the name of the IEEE 802.11a/b/g wireless network
Network Connection	Define whether the STA is configured for an ad-hoc or infrastructure network
Power Saving	Allow the power management options: Off, Normal, and Maximum
Wireless Mode	Specify 802.11a mode, 802.11b mode, 802.11g mode, or Auto-Select operation
Start Ad-Hoc Network	Specify a band to establish an Ad-Hoc network
QoS	Cooperate in a network using Quality of Service
Country Code Selector	Change Regulatory Domains

Security Setting	
Encryption Type	WEP, AES, and TKIP
Unique Key	Define the unique encryption key for security for the current network configuration
Shared Keys	Define a set of shared encryption keys
Shared Key Length	Full rate 40-bit, 104-bit, and 128-bit WEP encryption and decryption. Full rate 128-bit AES encryption and decryption

Feature	
Smart Select --- Automatically scanning available either 802.11a, 802.11b, or 802.11g Access Point and switching connection by desire	
Automatically fall back data rate if signal strength become weakness	
Seamless roaming cross 802.11a, 802.11b, and 802.11g Access Point covered distance	
Future support 802.11d(Regulatory Domain), 802.11e(Quality of Service, WMM), and 802.11h(TPC/DFS/DFS2) by software upgraded	
Automatic data rate and channel selection	
Vivid and user-friendly configuration tool	
802.11a --- High speed data rate at 54Mbps,	
Wi-Fi / WPA compliant	
Support 802.1x authentication, WPA, WPA2	
Support WEP-64, WEP-128, WEP-152 and 128bit AES, and TKIP encryption	
Support CCX3.0	

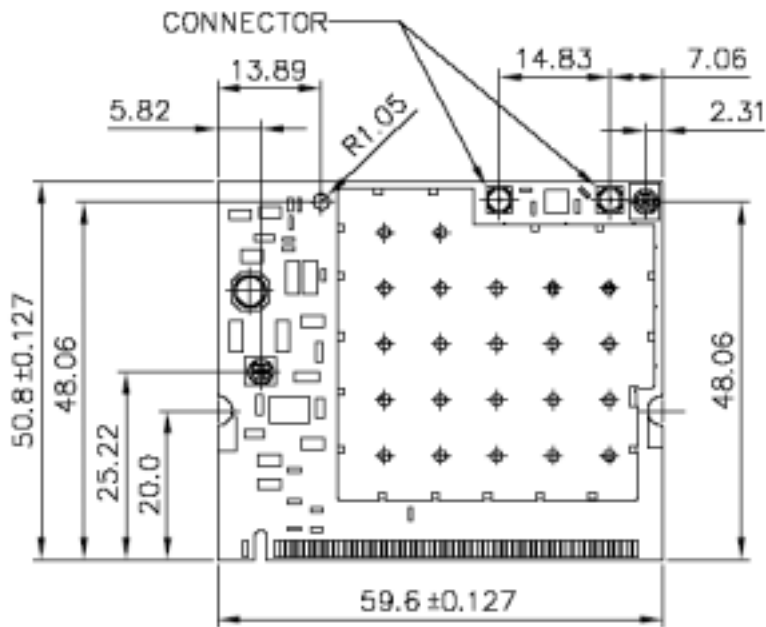
4. Appearance

4.1.1 3D View

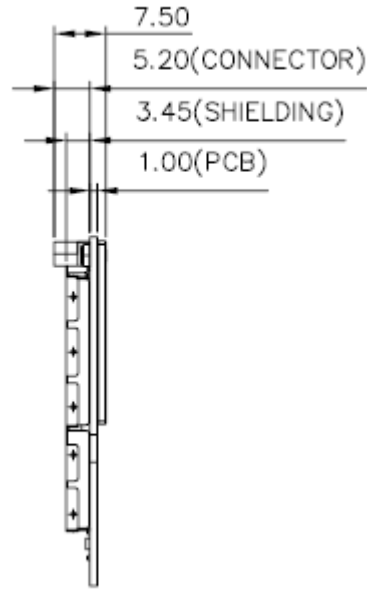


ANT Installation Notice: Plug into MMCX connector vertically!

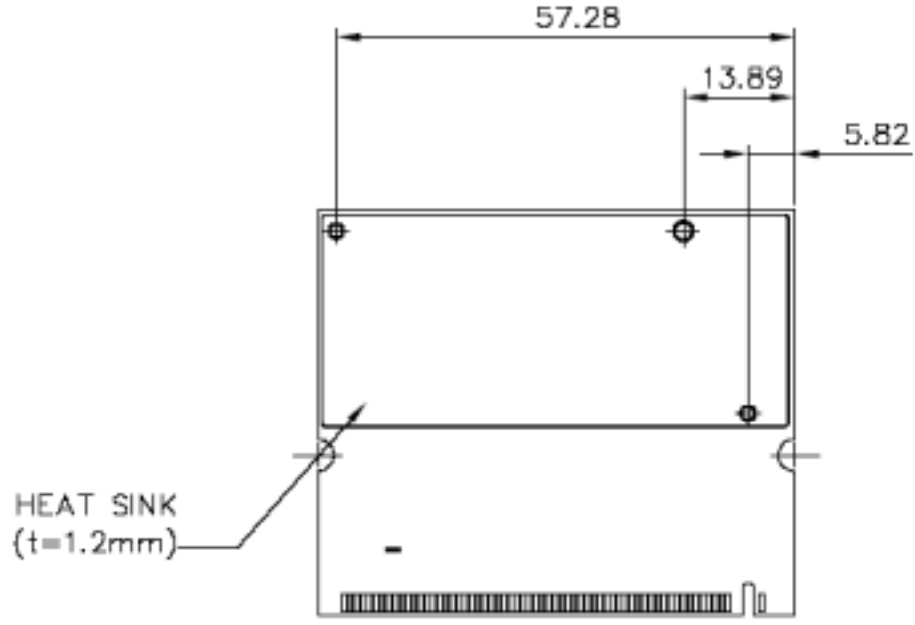
4.1.2 Top View



4.1.3 Side View

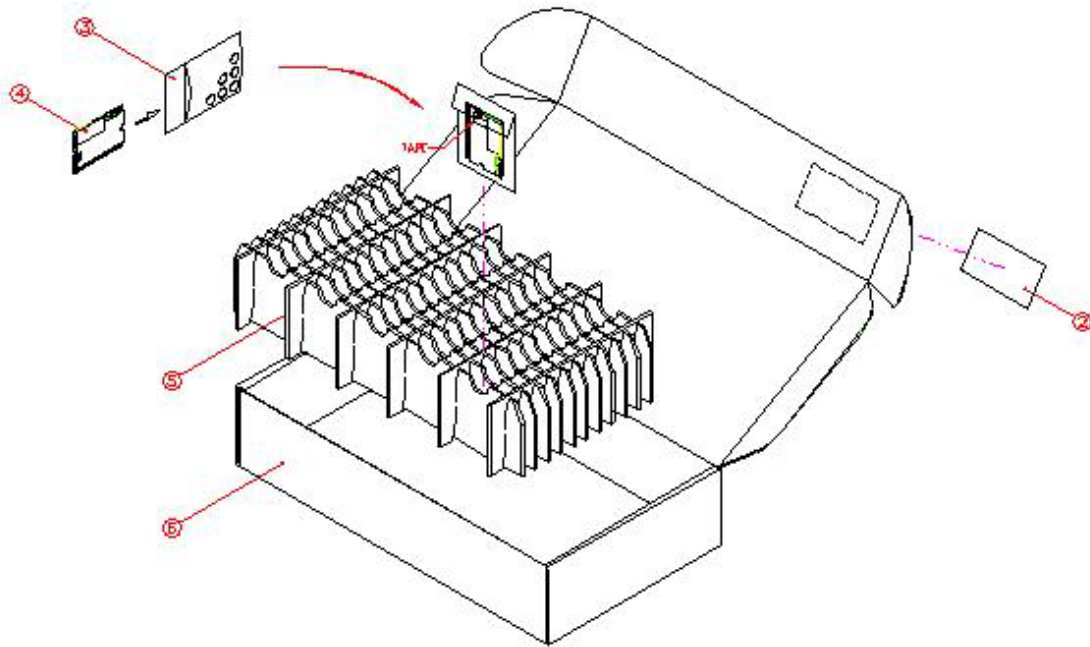


4.1.4 Bottom View

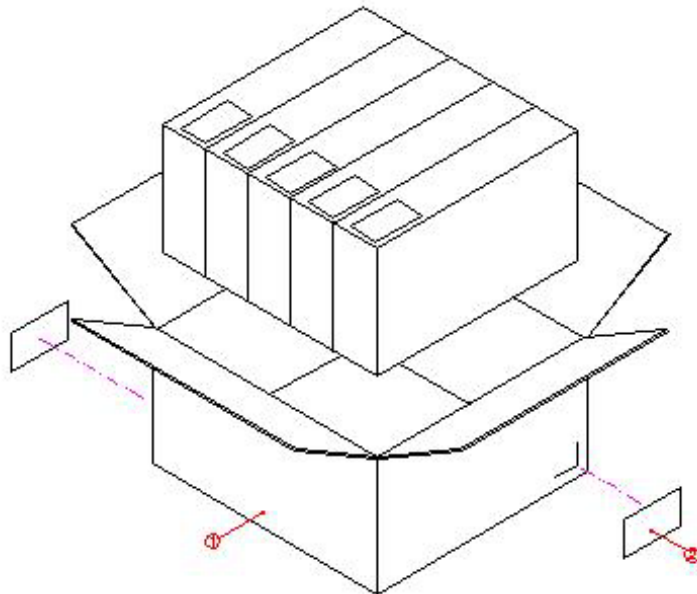


5. Packing Standard

5.1 Packing Box



5.2 Carton



6. Specifications

6.1 Wireless LAN

- Form Factor: Mini PCI Type 3A (50.8*59.6mm)
- Frequency band:
 - A Mode: 5.15~5.35 & 5.725~ 5.825 GHz for US
4.9~5.35 GHz for Japan (Subject to change)
5.15~5.35 & 5.47~5.725 GHz for ETSI
 - B/G Mode: 2400~2483.5 MHz (for US, Canada, ETSI, and Japan)
 - Safety band: 4950~4980MHz (20Mhz Ch BW)
4945~4985MHz (10Mhz Ch BW)
4942.5~4987.5Mhz(5Mhz Ch BW)
- Channel BW:
 - A Mode: 40Mhz, 20MHz, 10Mhz, and 5Mhz
 - B Mode: 20MHz
 - G Mode: 40Mhz, 20MHz, 10Mhz, and 5Mhz
- Modulation:
 - A Mode: OFDM with BPSK, QPSK, QAM, and 64QAM
 - B Mode: DSSS with DBPSK, DQPSK, and CCK
 - G Mode: OFDM with BPSK, QPSK, QAM, and 64QAM
DSSS with DBPSK, DQPSK, and CCK
- Host interface: Mini PCI V1.0
- Channels Support:
 - A Mode: US: 12 (Ch:36,40,44,48,52,56,60,64,149,153,157, 161)
Japan: 5.17, 5.19, 5.21, 5.23Ghz (Ch:34,38,42,46) for J52
5.18, 5.20, 5.22, 5.24, 5.26, 5.28, 5.30, 5.32Ghz
(Ch : 36, 40, 44, 48, 52, 56, 60, 64) for W52 & W53
4.92, 4.94, 4.96, 4.98, 5.04, 5.06, 5.08GHz for 4.9Ghz band
ETSI:19(Ch:36,40,44,48,52,56,60,64,100,104,108,

112,116,120,124,128,132,136,140)

US(safety band) : 4940~4990Mhz

The 4.9GHz products will have separate ordering codes and will be available only to customers who have applied and received authorization by the FCC to use the public safety band.

- B/G Mode: US/Canada: 11 (1~11)
ETSI: 13 (1~13)
France: 4 (10~13)
Japan: 14 (1~14) for 11b mode
Japan: 13(1~13) for 11g mode
- Supply Voltage: **3.3V±10% DC**
- Current Consumption:
 - A Mode: Cont. Tx: 1100mA (typical)~1300mA (max)
Cont. Rx: 250mA (typical)~270mA (max)
Stand by: 280mA (typical)~290mA (max)
 - B Mode: Cont. Tx: 730mA (typical)~780mA (max)
Cont. Rx: 200mA (typical)~220mA (max)
Stand by: 230mA (typical)~240mA (max)
 - G Mode: Cont. Tx: 730mA (typical)~780mA (max)
Cont. Rx: 240mA (typical)~260mA (max)
Stand by: 280mA (typical)~290mA (max)
 - Power saving: 35mA (typical)~55mA (max)
 - Radio off: 40mA (typical)~50mA (max)
 - A Mode(Chariot Tx : Throughput.scr)
22dBm output power 6Mbps @ 5.825Ghz : 870mA(Typ.)
19.5dBm output power 36Mbps @ 5.825Ghz : 630mA(Typ.)
18dBm output power 54Mbps @ 5.825Ghz : 550mA(Typ.)
 - G Mode(Chariot Tx : Throughput.scr)
24.5dBm output power 6Mbps @ 2.437Ghz : 780mA(Typ.)
21dBm output power 54Mbps @ 2.437Ghz : 480mA(Typ.)
 - B Mode(Chariot Tx : Throughput.scr)
24.5dBm output power 11Mbps @ 2.437Ghz : 750mA(Typ.)
24dBm output power 1Mbps @ 2.437Ghz : 830mA(Typ.)

- Target power Table (measured power tolerance is +1.5/-2dBm at production)

- A Mode : (unit : dBm)

- Commercial grade :

test_frequencies	6-24_target	36_target	48_target	54_target
4900	23	22	19.5	18
5040	23	22.5	19.5	18.5
5180	22	22	19.5	18.5
5320	22	22	19.5	18.5
5500	24	22.5	20	19
5745	24	23.5	21	20
5785	24	23	20.5	19.5
5825	23	22	19.5	18

- Industrial grade : (power accuracy is +2.5/-2dBm with ambient temp below -15 degrees C and over. 65 degrees C)

test_frequencies	6-24_target	36_target	48_target	54_target
4900	23	21.5	18.5	17.5
5040	23	22.0	19.0	18.0
5180	22	22	19.0	18.0
5320	22	22	19.0	18.0
5500	24	22.5	19.5	18.5
5745	24	23	20.5	19
5785	24	22.5	20.5	19
5825	23	21	19	18

- G Mode: (unit : dBm)

- Commercial grade :

test_frequencies	6-24_target	36_target	48_target	54_target
2412	24.5	24	22	21
2457	24.5	24	22	21
2472	24	23.5	21	20

Industrial grade : (power accuracy is +2.5/-2dBm with ambient temp below -15 degrees C and over. 65 degrees C)

test_frequencies	6-24_target	36_target	48_target	54_target
2412	24.5	22.5	21.5	21
2457	24.5	22.5	21.5	21
2472	24	22.0	20.5	19.5

■ B Mode: (unit : dBm)

Commercial grade :

test_frequencies	1_target	2_target	5.5_target	11_target
2412	23.5	23.5	24.5	24.5
2484	23.5	23.5	24.5	24.5

Industrial grade grade : (power accuracy is +2.5/-2dBm with ambient temp below -15 degrees C and over. 65 degrees C)

test_frequencies	1_target	2_target	5.5_target	11_target
2412	23.5	23.5	24.5	24.5
2484	23.5	23.5	24.5	24.5

● Sensitivity:

(PER<10% at PSDU length of 1000 bytes for 11a/g ; PER<8 % at PSDU length of 1000 bytes for 11a/g)

TYP : the general sensitivity at 25 degrees C

MAX : the general sensitivity at 80 degrees C

Min : the general sensitivity at -40 degrees C

Frequency difference between both side radios need to be controlled less than 20ppm@10MHz BW and 10ppm@5MHz respectively. It requires the additional sorting. (This sorting process isn't included in generic DCMA-82)

Normal mode(Ch BW = 20Mhz)

Sensitivity	Condition	MIN	TYP	MAX	UNITS
11a	6Mbps	-93	-91	-88	dBm
	9Mbps	-92	-90	-88	
	12Mbps	-92	-90	-88	
	18Mbps	-90	-88	-86	
	24Mbps	-87	-85	-83	
	36Mbps	-84	-82	-79	
	48Mbps	-78	-76	-73	
	54Mbps	-74	-72	-69	
11g	6Mbps	-93	-91	-89	dBm
	9Mbps	-92	-90	-88	
	12Mbps	-92	-89	-87	
	18Mbps	-91	-87	-85	
	24Mbps	-87	-84	-82	
	36Mbps	-84	-80	-78	
	48Mbps	-79	-76	-73	
	54Mbps	-75	-74	-71	
11b	1Mbps	-99	-97	-95	dBm
	2Mbps	-94	-93	-91	
	5.5Mbps	-93	-92	-89	
	11Mbps	-90	-88	-85	

Turbo mode(Ch BW = 40Mhz)

Sensitivity	Condition	MIN	TYP	MAX	UNITS
11a	12Mbps	-91	-88	-86	dBm
	18Mbps	-90	-87	-85	
	24Mbps	-89	-86	-84	
	36Mbps	-87	-83	-81	
	48Mbps	-84	-80	-78	
	72Mbps	-80	-76	-73	
	96Mbps	-75	-71	-68	
	108Mbps	-73	-68	-65	
11g	12Mbps	-91	-88	-86	dBm
	18Mbps	-90	-86	-84	
	24Mbps	-89	-85	-83	
	36Mbps	-87	-82	-79	
	48Mbps	-84	-80	-77	
	72Mbps	-80	-76	-73	
	96Mbps	-76	-72	-69	
	108Mbps	-74	-70	-67	

Half rate mode(Ch BW = 10Mhz)

Sensitivity	Condition	MIN	TYP	MAX	UNITS
11a	3Mbps	-97	-94	-90	dBm
	4.5Mbps	-97	-94	-90	
	6Mbps	-95	-92	-89	
	9Mbps	-93	-90	-87	
	12Mbps	-91	-87	-83	
	18Mbps	-87	-83	-79	
	24Mbps	-82	-78	-74	
	27Mbps	-79	-75	-71	
11g	3Mbps	-98	-95	-91	dBm
	4.5Mbps	-97	-94	-90	
	6Mbps	-95	-92	-88	
	9Mbps	-94	-91	-87	
	12Mbps	-91	-87	-83	
	18Mbps	-87	-84	-80	
	24Mbps	-83	-79	-75	
	27Mbps	-81	-77	-73	

Quarter rate mode(Ch BW = 5Mhz)

Sensitivity	Condition	MIN	TYP	MAX	UNITS
11a	1.5Mbps	-101	-98	-96	dBm
	2.25Mbps	-100	-97	-95	
	3Mbps	-98	-95	-93	
	4.5Mbps	-96	-93	-91	
	6Mbps	-93	-90	-88	
	9Mbps	-90	-87	-84	
	12Mbps	-84	-80	-77	
	13.5Mbps	-83	-79	-76	
11g	1.5Mbps	-101	-98	-96	dBm
	2.25Mbps	-100	-97	-95	
	3Mbps	-98	-95	-93	
	4.5Mbps	-96	-93	-91	
	6Mbps	-93	-90	-88	
	9Mbps	-90	-87	-85	
	12Mbps	-86	-82	-79	
	13.5Mbps	-83	-79	-76	

- Operating Range(**The range are subject to the environment**)

- A Mode: Indoor: 45~120 meter @ 6Mbps
Outdoor: over 350 meter @ 6Mbps
- B Mode: Indoor: 45~120 meter @ 11Mbps
Outdoor: over 400 meter @ 11Mbps
- G Mode: Indoor: 45~120 meter @ 6Mbps
Outdoor: over 400 meter @ 6Mbps

- Media Access Protocol: CSMA/CA with ACK

5.2 Environmental Spec.

- Operating Temperature Range: 0degree C~70degree C (for AR5414A)
-40degree C~80degree C (for AR5414A-B2B)

(The throughput may be degraded by 15% for modulation QAM16 and QAM64 at -40 degrees C)

- Storage Temperature Range: -20degree C~80degree C (for AR5414A)
-45degree C~85degree C (for AR5414A-B2B)
- Operating Humidity Range: 10%~90%

5.3 Antenna installation notice :

1)_AP code or NDIS driver need to be set at “antenna diversity off” mode for single antenna application.

2)_Never left antenna port being open during TX.

DCMA-82 have two antenna ports(MMCX conn.) for diversity function. Please make sure to install two antennas on these two antenna ports. For single antenna application, please make sure to install a 50 Ohm terminator on the other antenna port. This is a high power module, the PA will be damaged and cause DC-shortcd if leave antenna port open during transmission.