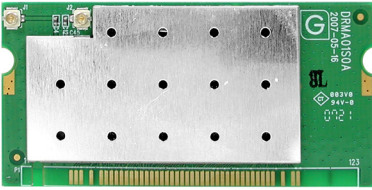




## 802.11 b/g 54Mbps wifi mini-PCI module, half-size, MB55/AR2417

### Model: DRMA-81



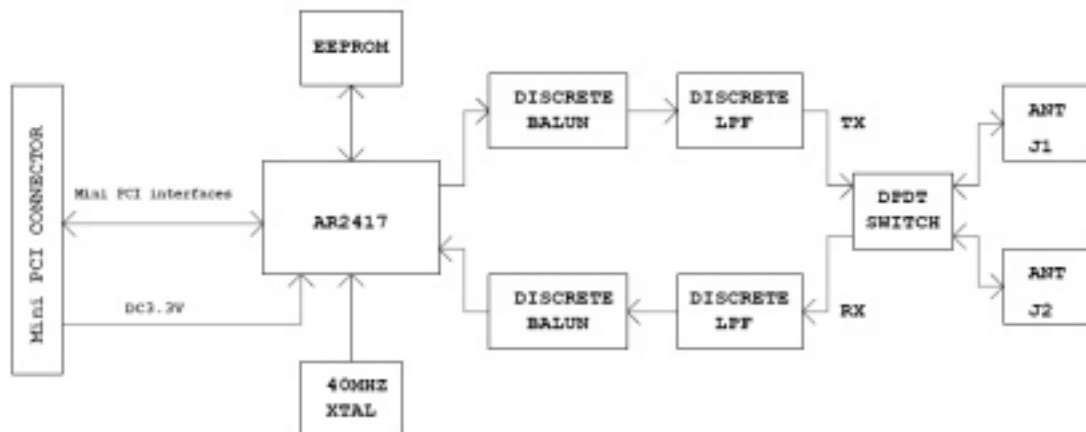
DRMA-81 is an IEEE802.11 b/g 54Mbps wifi mini-PCI module in half-size type IIIA form factor with two U.FL connectors designed specifically for integration in performance-critical applications with space limitation. Supporting 802.11g 54Mbps, DRMA-81 has the capability of full size mini-PCI in half-size IIIA form factor at competitive price. It is ideal for embedding into new or existing ergonomic devices such as gateway/routers, notebooks, and application-specific devices (ASDs) used in vertical market.

Linux 2.6 AP/Router driver reference code support enables gateway/router manufacturers to provide products that enjoy improved wifi performance and time to market through trouble-free WiFi integration.

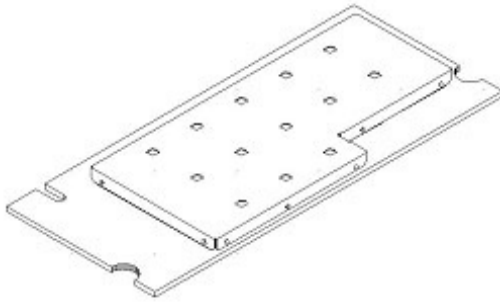
### Key Features:

- Half-size mini-PCI Type IIIA form factor is ideal for embedding into new or existing performance-critical applications with space limitation.
- Windows 98SE/ME/2000/XP/Vista driver and comprehensive client utility supports provide immediate 11b/g wifi and management capability.
- Linux 2.6 AP/Router driver reference code enables trouble-free AP/Gateway design.
- Supported by MADWiFi providing Linux kernel drivers for industrial, academic, or personal projects at highest flexibility and lowest cost.
- Supports 802.11g/11b auto fallback data rate and seamless roaming between 802.11b, and 802.11g multiple AP wifi networks.
- Future support of 802.11d (Regulatory Domain), 802.11e (Quality of Service, WMM), and 802.11h (TPC/DFS/DFS2) by software upgrade.
- Country code selector provides flexibility to change regulatory domains.
- Hardware radio on/off mechanism provides highest design flexibility for integrators.
- Hardware encryption of WEP/WPA/WPA2 security is ideal for performance-critical devices.
- Supports WEP/WPA/WPA2, IEEE802.1x (EAP-TLS, EAP-PEAP, LEAP), and LEAP/CCX3.0 providing advanced level of LAN security.
- Dual Hirose U.FL antenna connectors enable transmit and receive diversity for flexible RF design.
- RoHS 2002/95/EC compliance meets environment-friendly requirement.

### Hardware Block Diagram



**Mechanical Outline**



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	LED anode
12	LED2_YELP	Output, 12mA	No use
13	LED1_GRNN	Input, LED	anode
14	LED2_YELN	Input,	No use
15	CHSGND	Ground	Digital Ground
16	RESERVED	NC	Reserved
17	INTB#	NC	No use
18	5V	NC	5V, no use
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	BT_ACTIVE	Reserved

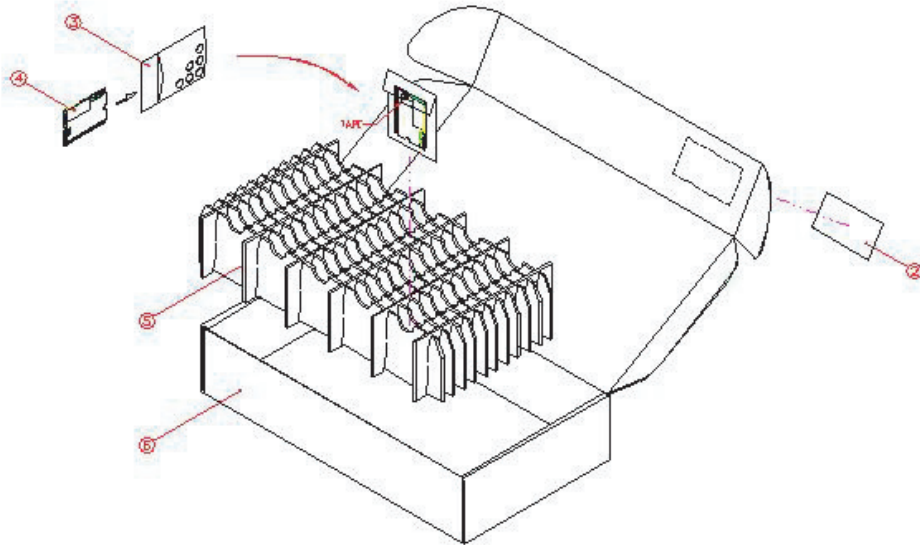
**Pin Definition:**

Pin Number	Pin Name	Pin I/O Type	Description
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	RX_CLEAR (WLAN)	Reserved
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

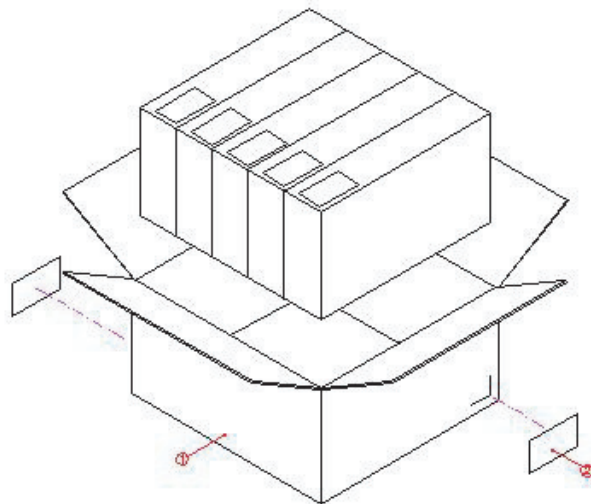
<b>Pin Definition:</b>			
<b>Pin Number</b>	<b>Pin Name</b>	<b>Pin I/O Type</b>	<b>Description</b>
92	AD[04]	BiDir, Weak pull down	PCI address/data bus bit 4
93	RESERVED	NC	Reserved
94	AD[02]	BiDir, Weak pull down	PCI address/data bus bit 2
95	AD[03]	BiDir, Weak pull down	PCI address/data bus bit 3
96	AD[00]	BiDir, Weak pull down	PCI address/data bus bit 0
97	5V	NC	No use
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_CODEC_ID0#	NC	No use
109	AC_CODEC_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%

**Mechanical Outline**

**Packing Box: Q' Ty= 50pcs/Box**



**Carton: 250pcs**



<b>Specifications:</b>																						
<b>Standard Conformance</b>	IEEE 802.11b, 802.11g																					
<b>Frequency Range</b>	2.400 ~ 2.4835GHz for US, Canada, Japan, ETSI, and China																					
<b>Channel Spacing</b>	5MHz																					
<b>Interface</b>	half-size mini-PCI Type IIIA																					
<b>Operation Voltage</b>	3.3VDC ± 10%																					
<b>Modulation Technique</b>	<ul style="list-style-type: none"> <li>▪ 802.11b: <ul style="list-style-type: none"> <li>◦ DSSS with CCK, DQPSK, and DBPSK</li> </ul> </li> <li>▪ 802.11g: <ul style="list-style-type: none"> <li>◦ OFDM with BPSK, QPSK, 16-QAM, and 64-QAM</li> <li>◦ DSSS with CCK, DQPSK, and DBPSK</li> </ul> </li> </ul>																					
<b>Data Rate</b>	<ul style="list-style-type: none"> <li>▪ 802.11b (normal mode): 11, 5.5, 2, 1Mbps, auto-fallback</li> <li>▪ 802.11g (normal mode): 54, 48, 36, 24, 18, 12, 9, 6Mbps, auto-fallback</li> <li>▪ 802.11g (Super mode): up to 108Mbps</li> </ul>																					
<b>Operating Range (subject to the environment and antenna)</b>	<ul style="list-style-type: none"> <li>▪ 802.11b <ul style="list-style-type: none"> <li>◦ outdoor: over 300 meters @ 11Mbps</li> <li>◦ indoor: 35-100 meters @ 11Mbps</li> </ul> </li> <li>▪ 802.11g <ul style="list-style-type: none"> <li>◦ outdoor: over 300 meters @ 6Mbps</li> <li>◦ indoor: 35-100 meters @ 6Mbps</li> </ul> </li> </ul>																					
<b>Operating Channels</b>	<ul style="list-style-type: none"> <li>▪ 802.11b/g <ul style="list-style-type: none"> <li>◦ USA/Canada: 11 (1~11)</li> <li>◦ Major Europe Countries: 13 (1~13)</li> <li>◦ France: 4 (10~13)</li> <li>◦ Japan: 14 for 802.11b (1~13 or 14th), 13 for 802.11g (1~13)</li> <li>◦ China: 13 (1~13)</li> </ul> </li> </ul>																					
<b>Power Consumption</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">802.11b</th> <th style="text-align: center;">802.11g</th> </tr> <tr> <th></th> <th style="text-align: center;">Typical/Max. (mA)</th> <th style="text-align: center;">Typical/Max. (mA)</th> </tr> </thead> <tbody> <tr> <td>Continue Tx</td> <td style="text-align: center;">568/607</td> <td style="text-align: center;">563/613</td> </tr> <tr> <td>Continue Rx</td> <td style="text-align: center;">205/274</td> <td style="text-align: center;">205/274</td> </tr> <tr> <td>Standby mode</td> <td style="text-align: center;">typical 203/28, max. 210/32</td> <td style="text-align: center;">typical 206/26, max. 218/27</td> </tr> <tr> <td>Power saving</td> <td style="text-align: center;">typical 207/19, max. 212/21</td> <td style="text-align: center;">typical 207/19, max. 212/21</td> </tr> <tr> <td>Radio off</td> <td style="text-align: center;">19/21</td> <td style="text-align: center;">19/21</td> </tr> </tbody> </table>		802.11b	802.11g		Typical/Max. (mA)	Typical/Max. (mA)	Continue Tx	568/607	563/613	Continue Rx	205/274	205/274	Standby mode	typical 203/28, max. 210/32	typical 206/26, max. 218/27	Power saving	typical 207/19, max. 212/21	typical 207/19, max. 212/21	Radio off	19/21	19/21
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Power saving	typical 207/19, max. 212/21	typical 207/19, max. 212/21																				
Radio off	19/21	19/21																				
<b>Transmit Power Settings</b>	<ul style="list-style-type: none"> <li>▪ +19 dBm@ 1, 2, 5.5, 11Mbps</li> <li>▪ +18 dBm@ 6,9,12,18,24Mbps</li> <li>▪ +17dBm@ 36Mbps</li> <li>▪ +15dBm@48Mbps</li> <li>▪ +13dBm@54Mbps</li> </ul>																					
<b>Sensitivity</b>	<ul style="list-style-type: none"> <li>▪ 802.11b <ul style="list-style-type: none"> <li>◦ 2412: -95~-91dBm@1Mbps , -87~-83dBm@11Mbps</li> <li>◦ 2442: -94~-90dBm@1Mbps , -86~-82dBm@11Mbps</li> <li>◦ 2484: -95~-91dBm@1Mbps , -87~-83dBm@11Mbps</li> </ul> </li> <li>▪ 802.11g <ul style="list-style-type: none"> <li>◦ 2412: -89~-85dBm@1Mbps , -72~-68dBm@11Mbps</li> <li>◦ 2442: -88~-84dBm@1Mbps , -71~-67dBm@11Mbps</li> <li>◦ 2472: -89~-85dBm@1Mbps , -72~-68dBm@11Mbps</li> </ul> </li> </ul>																					
<b>Antenna</b>	two U.FL antenna connectors for diversity function																					
<b>MAC Protocol</b>	CSMA/CA with ACK architecture 32-bit MAC																					
<b>Security</b>	<ul style="list-style-type: none"> <li>▪ 64-bit, 128-bit and 152-bit WEP encryption</li> <li>▪ 802.1x authentication, WPA, and WPA2</li> <li>▪ 128-bit AES &amp; TKIP encryption</li> <li>▪ CCX3.0</li> </ul>																					
<b>Operation Systems Supported</b>	Windows 98SE, Windows Me, Windows 2000, Windows XP, Windows Vista, MADWiFi Linux																					
<b>WHQL</b>	Windows 2000, XP																					
<b>Wi-Fi Compliance</b>	WECA compliance																					
<b>Radio Option</b>	hardware radio On/Off support																					
<b>Dimension</b>	59.6 mm(L) x 29.2mm(W) x 2.1mm(H)																					
<b>Operation Temperature Range</b>	-0°C ~ +60°C																					
<b>Storage Temperature Range</b>	-20°C ~ +80°C																					
<b>Operating Humidity</b>	10% ~ 90%, non-condensing																					

<b>Specifications:</b>	
<b>Storage Humidity</b>	max. 90%, non-condensing
<b>Environment-Friendly Compliance</b>	RoHS

<b>Ordering Informations:</b>	
DRMA-81	802.11 b/g 54Mbps wifi mini-PCI module, half-size, MB55/AR2417



**Unex Technology Corp.**  
- Durable Bridge to Wireless

sales-a@unex.com.tw  
<http://www.unex.com.tw>