

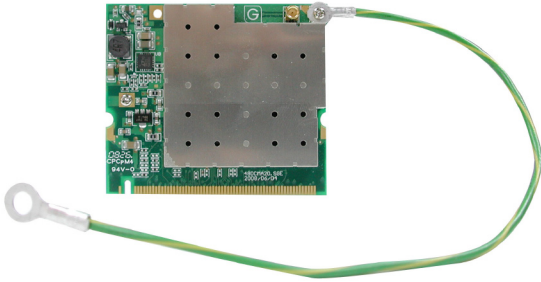


Industrial-grade, high-power 4.9GHz wifi mini-PCI module w/ESD and Surge Protection, AR5414A-B2B

ESD 14KV

-40°C 80°C

Model: DCMA-85



DCMA-85 is the best industrial-grade, high-power 4.9GHz wifi mini-PCI module with accurate high (24.5dBm) and lower (2.5dBm) power control from $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ temperature range and integrated RF ESD/Surge protection circuit designed specially for military and government public safety applications.

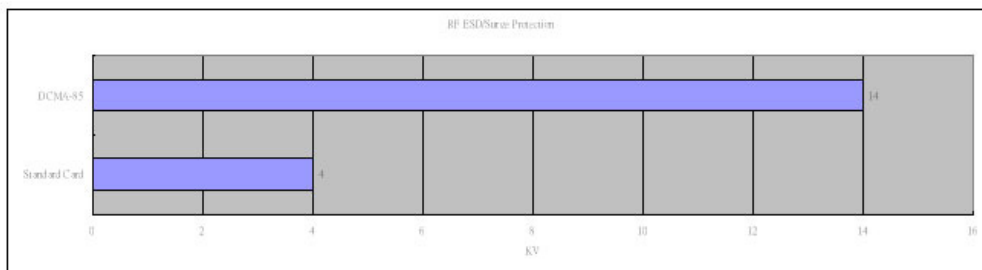
Both high and lower power control accuracy in $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ temperature range can be used to reduce in-band frequency interference of RF signal sources to dramatically improve the data throughput and range performance of Access Points and Clients in high-density WiFi deployments.

RF ESD/Surge protection up to 14KV ensures highest levels of performance and reliability applications in the harshest outdoor environment such as mesh networking, military, bridging, and infrastructure applications.

Leveraging RF expertise, continuous RD innovation, highly successful DCMA-86 series, DCMA-85 is the only and the best choice of licensed band 4.9GHz high-power mini-PCI WiFi module with built-in ESD/Surge protection circuit valid in the market.

Key Features:

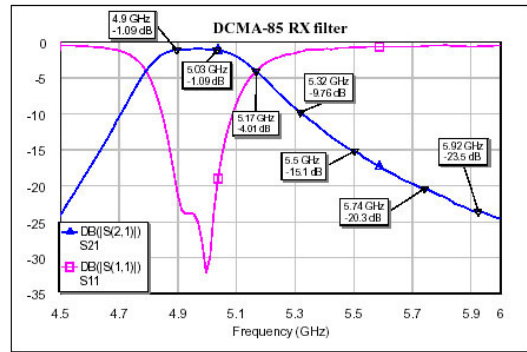
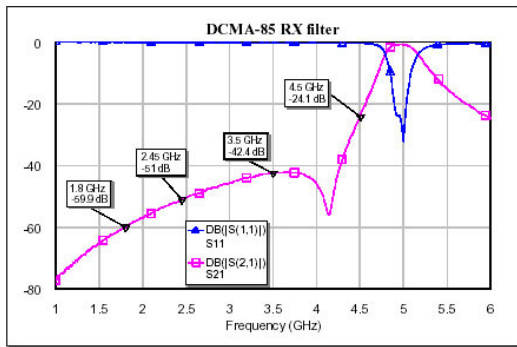
- The first industrial-grade high-power licensed 4.9GHz public safety band mini-PCI integrated RF ESD and Surge Protection ensure highest levels of performance and reliability in the harshest outdoor mesh/military deployments.



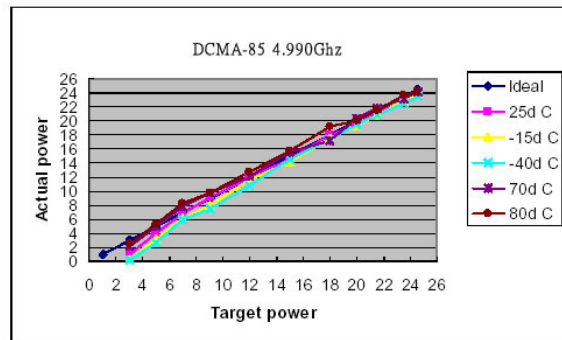
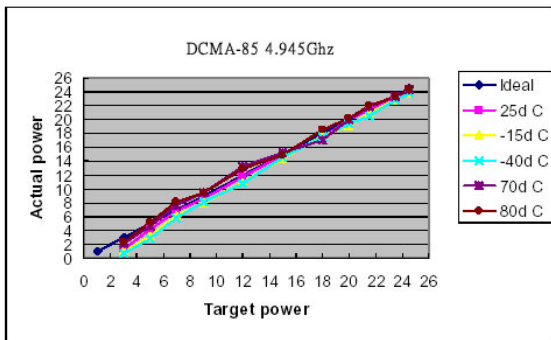
- High rejection filter used to reduce out-of-band interference.
- Real industrial-grade chipset and components used plus unique design know-how and production calibration reach power control accuracy from 2.5dBm \sim 24.5dBm in $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ temperature range.
- Average power up to 280mW (24.5dBm) with superior sensitivity provide better than average wifi transmission coverage.
- PA damage protection circuit enables direct antenna switch behind the MMCX connector.
- Dual power supply plus heat sink design makes critical components temperature cooler by up to 10°C , significantly reduces components aging caused by thermal in high power application to secure long-term performance reliability.
- Low noise amplifier (LNA) dramatically improves sensitivity provide better than average wifi transmission coverage.
- Less than 50mV output ripple design ensures high performance while remaining conscious of power efficiency.
- PA fine-tuning gains balance of linearity and power consumption with enough margin while maintaining adequate Tx power to ensure no major performance degradation over time.
- Same EVM on both light and heavy loading maintain lower packet error to increase channel efficiency.
- Mini-PCI Type IIIA form factor with screw hole is ideal for solid mounting onto motherboard.
- Linux driver source code sub-license available by project.
- Supports 64/128/152-bit WEP encryption, IEEE 802.1x authentication, AES & TKIP, and CCX3.0 encryption.
- One DIP type MMCX RF connector enables robust assembly and lower loss for external antenna.
- RoHS compliance meets environment-friendly requirement.
- Flexible power supply design to easily change from 3.3Vdc (default) to 3.3Vdc+5Vdc by only one on-board resistor shift to meet power budget requirement of different platforms.

Why DCMA-85 is the best 4.9GHz mini-PCI for military and government public safety applications?

1. Frequency Response of DCMA-85



2. Power control accuracy from 2.5dBm ~ 24.5dBm in -40°C ~ +80°C temperature range.



3. Dual power supply plus heat sink design makes critical components temperature cooler by up to 10°C , significantly reduces components aging caused by thermal in high power application to secure long-term performance reliability.

Specifications:					
Chipset	Atheros AR5414A-B2B				
Frequency Range	4.9 ~ 5.0GHz				
Channel Bandwidth	40MHz, 20MHz, 10MHz, and 5MHz				
Interface	32-bit mini-PCI Type IIIA				
Operation Voltage	3.3V ± 5%				
Modulation Technique	OFDM with BPSK, QPSK, 16-QAM, and 64-QAM				
Data Rate	<ul style="list-style-type: none"> ▪ 20MHz BW: 6, 9, 12, 18, 24, 36, 48, 54Mbps ▪ 10MHz BW: 3, 4.5, 6, 9, 12, 18, 24, 27Mbps ▪ 5MHz BW: 1.5, 2.75, 3, 4.5, 6, 9, 12, 13.5Mbps 				
Transmit Power		4900MHz Ave./Peak	5000MHz Ave./Peak		
	6M	24.5/29.5 dBm	24.5/29.5 dBm		
	9M	24.5/29.5 dBm	24.5/29.5 dBm		
	12M	24.5/29.5 dBm	24.5/29.5 dBm		
	18M	24.5/29.5 dBm	24.5/29.5 dBm		
	24M	24.5/29.5 dBm	24.5/29.5 dBm		
	36M	23.5/28.5 dBm	23.5/28.5 dBm		
	48M	21.0/26.0 dBm	21.0/26.0 dBm		
	54M	20.0/25.0 dBm	20.0/25.0 dBm		
Sensitivity	20MHz BW	6Mbps	Min.(-40°C)	Typical(+25°C)	Max.(+80°C)
			-95dBm	-92dBm	-89dBm
		9Mbps	-95dBm	-92dBm	-89dBm
		12Mbps	-93dBm	-90dBm	-87dBm
		18Mbps	-91dBm	-88dBm	-85dBm
		24Mbps	-88dBm	-85dBm	-82dBm
		36Mbps	-84dBm	-81dBm	-78dBm
		48Mbps	-79dBm	-76dBm	-73dBm
	54Mbps	-78dBm	-75dBm	-72dBm	
	10MHz BW	3Mbps	-98dBm	-95dBm	-92dBm
		4.5Mbps	-98dBm	-95dBm	-92dBm
		6Mbps	-96dBm	-93dBm	-90dBm
		9Mbps	-94dBm	-91dBm	-88dBm
		12Mbps	-91dBm	-88dBm	-85dBm
		18Mbps	-88dBm	-85dBm	-82dBm
		24Mbps	-83dBm	-80dBm	-77dBm
		27Mbps	-81dBm	-78dBm	-75dBm
	5MHz BW	1.5Mbps	-102dBm	-99dBm	-96dBm
		2.75Mbps	-101dBm	-98dBm	-95dBm
		3Mbps	-100dBm	-97dBm	-94dBm
		4.5Mbps	-98dBm	-95dBm	-92dBm
		6Mbps	-94dBm	-91dBm	-88dBm
		9Mbps	-91dBm	-88dBm	-85dBm
		12Mbps	-86dBm	-83dBm	-80dBm
		13.5Mbps	-84dBm	-81dBm	-78dBm

Specifications:																																											
Power Consumption	3.3V power supply only:																																										
	<table border="1"> <thead> <tr> <th></th> <th>25°C</th> <th>70°C</th> <th>80°C</th> <th>-15°C</th> <th>-40°C</th> </tr> </thead> <tbody> <tr> <td>Cont. Tx @ 24.5dBm 6M</td> <td>1.52A</td> <td>1.55A</td> <td>1.56A</td> <td>1.34A</td> <td>1.30A</td> </tr> <tr> <td>Cont. Tx @ 20dBm 54M</td> <td>1.10A</td> <td>1.12A</td> <td>1.14A</td> <td>1.00A</td> <td>0.97A</td> </tr> <tr> <td>Cont. Tx @ 15dBm 54M</td> <td>0.89A</td> <td>0.92A</td> <td>0.93A</td> <td>0.82A</td> <td>0.79A</td> </tr> <tr> <td>Cont. Tx @ 10dBm 54M</td> <td>0.78A</td> <td>0.80A</td> <td>0.81A</td> <td>0.73A</td> <td>0.70A</td> </tr> <tr> <td>Cont. Rx</td> <td>0.25A</td> <td>0.25A</td> <td>0.25A</td> <td>0.25A</td> <td>0.25A</td> </tr> <tr> <td>Idle</td> <td>0.29A</td> <td>0.29A</td> <td>0.29A</td> <td>0.29A</td> <td>0.29A</td> </tr> </tbody> </table>		25°C	70°C	80°C	-15°C	-40°C	Cont. Tx @ 24.5dBm 6M	1.52A	1.55A	1.56A	1.34A	1.30A	Cont. Tx @ 20dBm 54M	1.10A	1.12A	1.14A	1.00A	0.97A	Cont. Tx @ 15dBm 54M	0.89A	0.92A	0.93A	0.82A	0.79A	Cont. Tx @ 10dBm 54M	0.78A	0.80A	0.81A	0.73A	0.70A	Cont. Rx	0.25A	0.25A	0.25A	0.25A	0.25A	Idle	0.29A	0.29A	0.29A	0.29A	0.29A
		25°C	70°C	80°C	-15°C	-40°C																																					
	Cont. Tx @ 24.5dBm 6M	1.52A	1.55A	1.56A	1.34A	1.30A																																					
	Cont. Tx @ 20dBm 54M	1.10A	1.12A	1.14A	1.00A	0.97A																																					
	Cont. Tx @ 15dBm 54M	0.89A	0.92A	0.93A	0.82A	0.79A																																					
	Cont. Tx @ 10dBm 54M	0.78A	0.80A	0.81A	0.73A	0.70A																																					
	Cont. Rx	0.25A	0.25A	0.25A	0.25A	0.25A																																					
	Idle	0.29A	0.29A	0.29A	0.29A	0.29A																																					
	3.3+5V power supply @ 25C:																																										
<table border="1"> <thead> <tr> <th></th> <th>3.3V</th> <th>5.0V</th> </tr> </thead> <tbody> <tr> <td>Cont. Tx @ 24.5dBm 6M</td> <td>0.6A</td> <td>0.48A</td> </tr> <tr> <td>Cont. Tx @ 20dBm 54M</td> <td>0.54A</td> <td>0.30A</td> </tr> <tr> <td>Cont. Tx @ 15dBm 54M</td> <td>0.51A</td> <td>0.21A</td> </tr> </tbody> </table>		3.3V	5.0V	Cont. Tx @ 24.5dBm 6M	0.6A	0.48A	Cont. Tx @ 20dBm 54M	0.54A	0.30A	Cont. Tx @ 15dBm 54M	0.51A	0.21A																															
	3.3V	5.0V																																									
Cont. Tx @ 24.5dBm 6M	0.6A	0.48A																																									
Cont. Tx @ 20dBm 54M	0.54A	0.30A																																									
Cont. Tx @ 15dBm 54M	0.51A	0.21A																																									
Antenna	one DIP MMCX RF connector for robust antenna assembly																																										
MAC Protocol	CSMA/CA with ACK architecture 32-bit MAC																																										
Security	<ul style="list-style-type: none"> 64-bit, 128-bit and 152-bit WEP encryption 802.1x authentication AES-CCM & TKIP encryption CCX3.0 																																										
Operation Systems Supported	Windows XP, Windows Vista, Windows 7; Linux driver source code sub-license by project request.																																										
Dimension	59.6 mm(L) x 50.8mm(W) x 7.5mm(H)																																										
Operation Temperature Range	-40°C ~ +80°C Remark: the throughput may degrade 15% for modulation QAM16 and QAM64 at -40°C)																																										
Storage Temperature Range	-45°C ~ +85°C																																										
Operating Humidity	10% - 95%, non-condensing																																										
Storage Humidity	max. 95%, non-condensing																																										
Environment-Friendly Compliance	RoHS																																										

Ordering Information:	
DCMA-85	Industrial-grade, high-power 4.9GHz wifi mini-PCI module w/ESD and Surge Protection, AR5414A-B2B
ESD Cable	UL 1007 18AWG, length 19cm, for ground end to enclosure point tied to Earth Ground.



Unex Technology Corp.
- Durable Bridge to Wireless

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