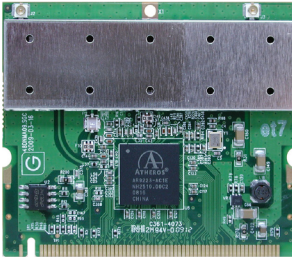




802.11n b/g wifi 2x2 mini-PCI module, MB91/AR9223 **N 2x2**

Model: DNMA-91



DNMA-91 is an 802.11n b/g wifi 2x2 mini-PCI module designed specifically for cost-effective 2.4GHz integration on DSL motherboards, easing carrier manufacturer's design cycles to accelerate time-to-market that demand robust link quality and maximum price/performance ratio. Setting new standards in price/performance ratio, range, reliability, and power consumption, DNMA-91 delivers the ultimate wireless triple play experience for video, voice, and data transmission in the home, for the business, and on the road.

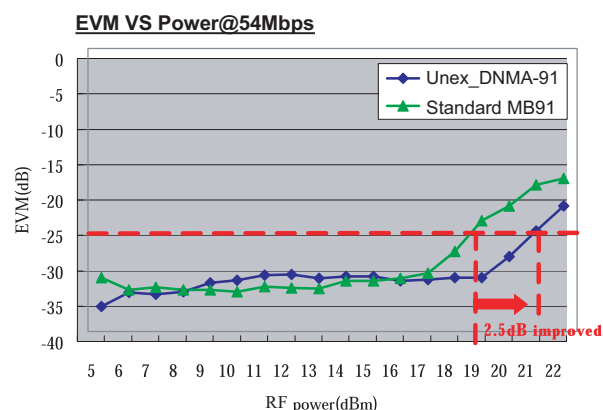
Atheros AR9223 single-chip and 2 antennas design supports 2 simultaneous traffic MIMO streams using up to 2 integrated Tx and Rx assuring a higher quality experience to enhance user's satisfaction.

Key Features:

- Mini-PCI Type-III A form factor in 2Tx/2Rx design is ideal for embedding into new or existing ergonomic devices.
- Windows 2000/XP/Vista and Linux drivers enable manufacturers to quickly and easily bring new bandwidth intensive applications to market with trouble-free WiFi integration.
- RF ESD and Surge protection up to 10KV ensure highest levels of performance and reliability in the harshest outdoor mesh/military deployments.
- 802.11n compliance effectively interoperates with other chipsets.
- Enables bandwidth of up to 300Mbps link rate for 40MHz channel, six times the throughput of 802.11g.
- Supports IEEE 802.11b/802.11g backward compatibility allowing inter-operability among multiple wifi networks.
- XSPAN™ with Signal-Sustain Technology (SST) 2Tx/2Rx design architecture optimizes for higher and greater reliable throughputs over range.
- Two Hirose U.FL antenna connectors support MIMO functionality.
- One screw hole design to firmly assemble with main board.
- RoHS 2002/95/EC compliance meets environment-friendly requirement.

Higher Performance than MB91 Reference Design:

- 2.5dB Tx linearity improvement than standard MB91 design at 54Mbps.



Specifications:													
Main Chipset	Atheros® AR9223												
Standard Conformance	802.11b, 802.11g, and 802.11n												
Frequency Range	<ul style="list-style-type: none"> ▪ USA: 2.400 ~ 2.483GHz ▪ Europe: 2.400 ~ 2.483GHz ▪ Japan: 2.400 ~ 2.497GHz ▪ China: 2.400 ~ 2.483GHz 												
Interface	32-bit mini-PCI Type IIIA												
Operation Voltage	3.3V ± 5%												
Modulation Technique	<ul style="list-style-type: none"> ▪ DSSS with CCK, DQPSK, DBPSK ▪ OFDM with BPSK, QPSK, 16QAM, 64QAM 												
Data Rate	<ul style="list-style-type: none"> ▪ 802.11b: 1, 2, 5.5 and 11Mbps ▪ 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps ▪ 802.11n: <ul style="list-style-type: none"> ◦ 20MHz channel: <ul style="list-style-type: none"> ◦ 1Nss: 65Mbps @ 800GI, 72.2Mbps @ 400GI (Max.) ◦ 2Nss: 130Mbps @ 800GI, 144.4Mbps @ 400GI (Max.) ◦ 40MHz channel: <ul style="list-style-type: none"> ◦ 1Nss: 135Mbps @ 800GI, 150Mbps @ 400GI (Max.) ◦ 2Nss: 270Mbps @ 800GI, 300Mbps @ 400GI (Max.) 												
Operating Channels	<ul style="list-style-type: none"> ▪ USA/Canada: 11 (1~11) ▪ Major Europe Countries: 13 (1~13) ▪ France: 4 (10~13) ▪ Japan: 14 for 802.11b (1~13 or 14th), 13 for 802.11g (1~13) ▪ China: 13 (1~13) 												
Power Consumption of 2T2R	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: right; font-weight: normal;">Avg./Max. (mA)</th> </tr> </thead> <tbody> <tr> <td>Continue Tx @ 23dBm 1M</td> <td style="text-align: right;">570/650</td> </tr> <tr> <td>Continue Tx @ 25dBm 6M</td> <td style="text-align: right;">700/750</td> </tr> <tr> <td>Continue Tx @ 23dBm HT20 MCS0</td> <td style="text-align: right;">650/700</td> </tr> <tr> <td>Continue Tx @ 21dBm HT40 MCS0</td> <td style="text-align: right;">600/650</td> </tr> <tr> <td>Continue Rx</td> <td style="text-align: right;">150/200</td> </tr> </tbody> </table>		Avg./Max. (mA)	Continue Tx @ 23dBm 1M	570/650	Continue Tx @ 25dBm 6M	700/750	Continue Tx @ 23dBm HT20 MCS0	650/700	Continue Tx @ 21dBm HT40 MCS0	600/650	Continue Rx	150/200
	Avg./Max. (mA)												
Continue Tx @ 23dBm 1M	570/650												
Continue Tx @ 25dBm 6M	700/750												
Continue Tx @ 23dBm HT20 MCS0	650/700												
Continue Tx @ 21dBm HT40 MCS0	600/650												
Continue Rx	150/200												
Antenna	two SMT Hirose U.FL ultra-miniature coaxial antenna connectors												
Transmit Power Settings	<ul style="list-style-type: none"> ▪ 802.11b: <ul style="list-style-type: none"> ◦ +23dBm ▪ 802.11g: <ul style="list-style-type: none"> ◦ +25dBm @ 6, 9, 12,18,24Mbps ◦ +25dBm @ 36Mbps ◦ +22dBm @ 48Mbps ◦ +21dBm @ 54Mbps ▪ 802.11n 2.4GHz/HT20: <ul style="list-style-type: none"> ◦ +23dBm @ MCS 0/8 ◦ +23dBm @ MCS 1/9 ◦ +23dBm @ MCS 2/10 ◦ +23dBm @ MCS 3/11 ◦ +23dBm @ MCS 4/12 ◦ +22dBm @ MCS 5/13 ◦ +21dBm @ MCS 6/14 ◦ +20dBm @ MCS 7/15 ▪ 802.11n 2.4GHz/HT40: <ul style="list-style-type: none"> ◦ +21dBm @ MCS 0/8 ◦ +21dBm @ MCS 1/9 ◦ +21dBm @ MCS 2/10 ◦ +21dBm @ MCS 3/11 ◦ +21dBm @ MCS 4/12 ◦ +21dBm @ MCS 5/13 ◦ +21dBm @ MCS 6/14 ◦ +20dBm @ MCS 7/15 												

Specifications:

Receiver Sensitivity	Data Rate	IEEE Spec(1 Rx dBm)	Typical/Maximum(2Rx dBm)	
802.11b	1M	-82	-95/-94	
	5.5M	-80	-94	
	11M	-76	-92	
	802.11g	6M	-82	-95/-94
		9M	-81	-95/-94
		12M	-79	-95/-94
		18M	-77	-93/-92
		24M	-74	-89
		36M	-70	-86
		48M	-66	-82
		54M	-65	-80
	802.11b/g/n HT20	MCS0	-82	-95/-94
		MCS1	-79	-93
		MCS2	-77	-91
		MCS3	-74	-88
		MCS4	-70	-85
		MCS5	-66	-81
		MCS6	-65	-80/-79
	802.11b/g/n HT40	MCS7	-64	-78/-77
		MCS0	-79	-91
MCS1		-76	-91/-90	
MCS2		-74	-89/-88	
MCS3		-71	-85	
MCS4		-67	-82	
MCS5		-63	-78	
MCS6	-62	-77		
MCS7	-61	-74		
Operation Distance	Outdoor	Indoor		
802.11b	• 150m @ 11Mbps	• 30m @ 11Mbps		
	• 300m @ 1Mbps	• 100m @ 1Mbps		
802.11g	• 50m @ 54Mbps	• 30m @ 54Mbps		
	• 300m @ 6Mbps	• 100m @ 6Mbps		
802.11n	• 30m @ 300Mbps	• 20m @ 300Mbps		
	• 30m @ 130Mbps	• 20m @ 130Mbps		
	• 250m @ 6.5Mbps	• 100m @ 6.5Mbps		
MAC Protocol	CSMA/CA with ACK architecture 32-bit MAC			
Operation System Supported	Windows 2000/XP/Vista, Linux			
Wi-Fi Compliance	Wi-Fi 2.4GHz by request			
Dimension	59.6 x 50.08 x 1.0mm			
Operation Temperature Range	0°C ~ +60°C			
Storage Temperature Range	-20°C ~ +80°C			
Operating Humidity	15% ~ 95%, non-condensing			
Storage Humidity	max. 95%, non-condensing			
Environment-Friendly Compliance	RoHS			

Ordering Information:

DNMA-91	802.11n b/g wifi 2x2 mini-PCI module, MB91/AR9223
----------------	---



Unex Technology Corp.

- Durable Bridge to Wireless

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