

Radio module



WLM200N2-26 MINIPCI

2 x 2 802.11N 2.4GHz Single-band MIMO miniPCI

Features

- Atheros XSPAN family chipset
- 2.4GHz IEEE 802.11n draft compliant and backward compatible with 802.11b/g
- 2.4GHz single-band 2x2 MIMO spatial multiplexing technique
- Maximum 26dBm output (per antenna port) - 29dBm aggregate
- Supports up to 300Mbps physical data rates
- Delivers 10 times the throughput and nearly twice the range of legacy 802.11b/g network
- Transmission Power Control (IEEE 802.11h TPC)
- Multi-Country Roaming Supported (IEEE802.11d Global Harmonization Standard)
- 2 x MMCX Antenna Connectors

Technical Specifications											
Chipset	AR9223										
Host Interface	PCI Interface v2.3 (Type III-A Mini PCI form factor)										
Operating Voltage	3.3 VDC										
Power Consumption [2T2R]	11b Cont. Tx@5.5M	5 W									
	11g Cont. Tx@6M	5W									
	11ng Cont. Tx@HT20 MCS0	4.5W									
	11ng Cont. Tx@HT40 MCS0	4W									
	11g Cont. Rx	1W									
	Standby	0.7W									
Antenna Connector	2 x MMCX										
Standards	IEEE 802.11b:	11Mbps	5.5Mbps	2Mbps	1Mbps						
	IEEE 802.11g:	54Mbps	48Mbps	36Mbps	24Mbps	18Mbps	12Mbps	9Mbps	6Mbps		
		Automatically fallback to 5.5Mbps, 2Mbps, 1Mbps									
	IEEE 802.11n:	20MHz	1Nss: 65Mbps @ 800GI, 72.2Mbps @ 400GI (Max.)								
			2Nss: 130Mbps @ 800GI, 144.4Mbps @ 400GI (Max.)								
40MHz		1Nss: 135Mbps @ 800GI, 150Mbps @ 400GI (Max.)									
		2Nss: 270Mbps @ 800GI, 300Mbps @ 400GI (Max.)									
Frequency Range	IEEE 802.11b/g	2.412GHz ~ 2.462GHz (US & Canada)									
		2.412GHz ~ 2.472GHz (Europe)									
		2.412GHz ~ 2.484GHz (Japan)									
Modulation Techniques	OFDM: BPSK, QPSK, 16QAM, 64QAM DSSS: DBPSK, DQPSK, CCK										
Radio & EMC Certificate	FCC Part 15.247 (2.400 ~ 2.4835GHz), FCC CFR Title 47 Part 15 Subpart C: Section 15.207 FCC CFR Title 47 Part 15 Subpart C: Section 15.209 FCC CFR Title 47 Part 15 Subpart C: 15.215(c) FCC CFR Title 47 Part 15 Subpart B: Class B ANSI C63.4 FCC OET 65 Limited module level approval ETSI, EN 300 328, EN 301 489-1/17, EN 50392, EN 55022, EN 55024, EN 61000-3-2/3, EN 61000-4-3/4/5/6/11										
RoHS Compliance	Yes										
Environment Specifications	Operating: -20°C to 70°C Storage: -40°C to 90°C										
Humidity	5% to 95% (non-condensing)										
Dimension	59.6 x 51 x 9 mm										

WLM200N2-26 MIMO MINIPCI CARD RADIO														
TX SPECIFICATIONS											TX SPECIFICATIONS			
	DataRate	TX Power		Tolerance				DataRate	TX Power		Tolerance			
802.11b	11Mbps	26dBm		±2dB				802.11g	6-24Mbps	26dBm		±2dB		
	5.5Mbps	26dBm		±2dB					36Mbps	26dBm		±2dB		
	2Mbps	26dBm		±2dB					48Mbps	22dBm		±2dB		
	1Mbps	26dBm		±2dB					54Mbps	21dBm		±2dB		
	DataRate	TX Power (per chain)		Tolerance					DataRate	TX Power (per chain)		Tolerance		
2.4GHz 11n HT20	MCS 0/8	23dBm		±2dB				2.4GHz 11n HT40	MCS 0/8	22dBm		±2dB		
	MCS 1/9	23dBm		±2dB					MCS 1/9	22dBm		±2dB		
	MCS 2/10	23dBm		±2dB					MCS 2/10	22dBm		±2dB		
	MCS 3/11	23dBm		±2dB					MCS 3/11	22dBm		±2dB		
	MCS 4/12	23dBm		±2dB					MCS 4/12	22dBm		±2dB		
	MCS 5/13	22dBm		±2dB					MCS 5/13	22dBm		±2dB		
	MCS 6/14	21dBm		±2dB					MCS 6/14	21dBm		±2dB		
	MCS 7/15	20dBm		±2dB					MCS 7/15	20dBm		±2dB		

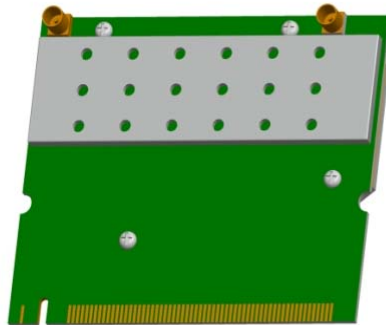
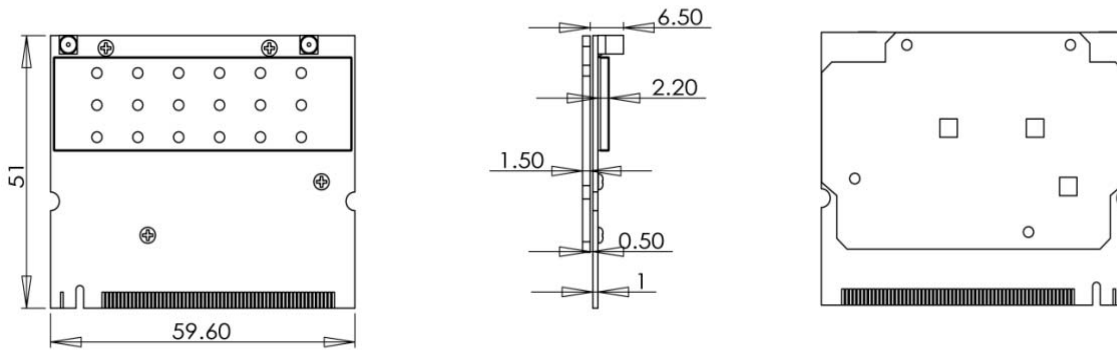
WLM200N2-26 MIMO MINIPCI CARD RADIO							
RX SPECIFICATIONS				RX SPECIFICATIONS			
	DataRate	Sensitivity (2 chains)	Tolerance		DataRate	Sensitivity (2 chains)	Tolerance
802.11g	6 Mbps	-94dBm	±2dB	802.11b	1 Mbps	-94dBm	±2dB
	9 Mbps	-94dBm	±2dB		5.5Mbps	-94dBm	±2dB
	12 Mbps	-94dBm	±2dB		11 Mbps	-92dBm	±2dB
	18 Mbps	-92dBm	±2dB				
	24Mbps	-88dBm	±2dB				
	38Mbps	-82dBm	±2dB				
	48Mbps	-76dBm	±2dB				
2.4GHz 11n HT20	54Mbps	-74dBm	±2dB	2.4GHz 11n HT40	MCS0	-90dBm	±2dB
	MCS0	-92dBm	±2dB		MCS1	-86dBm	±2dB
	MCS1	-91dBm	±2dB		MCS2	-85dBm	±2dB
	MCS2	-89dBm	±2dB		MCS3	-82dBm	±2dB
	MCS3	-86dBm	±2dB		MCS4	-79dBm	±2dB
	MCS4	-81dBm	±2dB		MCS5	-75dBm	±2dB
	MCS5	-78dBm	±2dB		MCS6	-74dBm	±2dB
MCS6	-76dBm	±2dB	MCS7	-71dBm	±2dB		
MCS7	-73dBm	±2dB					

Ordering Information ^①

CODES	SPEED	Carton Dimension
WLM200N2-26 6AA1100	Up to 300Mbps physical data rates	For 50pcs (pcs/ctn), 0.40m * 0.22m * 0.085m / 0.006 = 1.5KG For 250pc (pcs/ctn), 0.45m * 0.45m * 0.24m / 0.006 = 8.1KG
WLM200N2-26 6AA1300	Up to 300Mbps physical data rates	

① Configurations are subjected to change without notice

Dimensions Drawing



WLM FAMILY SERIES OF MINIPCI

b / g (2.4GHz)								a / b / g (2.4/5GHz)				
MODEL	WLM 54G-20dBm	WLM 54G-23dBm	WLM 54G-26dBm	WLM 54G-28dBm	WLM54G-30dBm	WLM200N2	WLM200N2-26dBm	WLM 54AG – 20dBm	WLM 54AG – 23dBm	WLM 54A – 26dBm	WLM200NX	WLM200N5-26
CHIPSET	AR 2413/2414 (AR5005G/GS)	AR 2413/2414 (AR5005G/GS)	AR 2413/2414 (AR5005G/GS)	AR 2413/2414 (AR5005G/GS)	AR 2413/2414 (AR5005G/GS)	AR9223	AR9223	AR 5413/5414 (AR5006X/XS)	AR 5413/5414 (AR5006X/XS)	AR5414 (AR5006XS)	AR9220	AR9220
SPEED	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 108Mbps	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates
OUTPUT POWER (Average)												
802.11a								20dBm@6-24Mbps	23dBm@6-24Mbps	26dBm@6-24Mbps	20dBm@6-24Mbps	26dBm@6-24Mbps
								17dBm@36Mbps	21dBm@36Mbps	24dBm@36Mbps	17dBm@36Mbps	26dBm@36Mbps
								16dBm@48Mbps	19dBm@48Mbps	22dBm@48Mbps	16dBm@48Mbps	25dBm@48Mbps
								13dBm@54Mbps	17dBm@54Mbps	20dBm@54Mbps	13dBm@54Mbps	19dBm@54Mbps
802.11b	20dBm@1-11Mbps	23dBm@1-11Mbps	26dBm@1-11Mbps	28dBm@1-11Mbps	30dBm@1-11Mbps	20dBm@1-11Mbps	26dBm@1-11Mbps	20dBm@1-11Mbps	23dBm@1-11Mbps	-	20dBm@1-11Mbps	-
802.11g	20dBm@6-24Mbps	23dBm@6-24Mbps	26dBm@6-24Mbps	28dBm@6-24Mbps	30dBm@6-24Mbps	20dBm@6-24Mbps	26dBm@6-24Mbps	20dBm@6-24Mbps	23dBm@6-24Mbps	-	20dBm@6-24Mbps	-
	19dBm@36Mbps	22dBm@36Mbps	25dBm@36Mbps	26dBm@36Mbps	28dBm@36Mbps	19.5dBm@36Mbps	26dBm@36Mbps	18dBm@36Mbps	21dBm@36Mbps	-	18dBm@36Mbps	-
	17dBm@48Mbps	19dBm@48Mbps	24dBm@48Mbps	25dBm@48Mbps	27dBm@48Mbps	18.5dBm@48Mbps	22dBm@48Mbps	17dBm@48Mbps	19dBm@48Mbps	-	17dBm@48Mbps	-
	16dBm@54Mbps	17dBm@54Mbps	22dBm@54Mbps	23dBm@54Mbps	25dBm@54Mbps	17dBm@54Mbps	21dBm@54Mbps	15dBm@54Mbps	17dBm@54Mbps	-	15dBm@54Mbps	-
Interface	PCI Interface v2.3 (Type III-B Mini PCI Form Factor)					PCI Interface v2.3 (Type III-A Mini PCI Form Factor)		PCI Interface v2.3 (Type III-B Mini PCI Form Factor)			PCI Interface v2.3 (Type III/A Mini PCI Form Factor)	
Receiver Sensitivity	802.11g -94dBm @ 6Mbps 802.11b <-73dBm @ 54Mbps -94dBm @ 6Mbps -91dBm @ 11Mbps	802.11g -96dBm @ 6Mbps <-83dBm @ 54Mbps 802.11b -96dBm @ 6Mbps -91dBm @ 11Mbps					802.11g -96dBm @ 6Mbps 802.11b <-83dBm @ 54Mbps -96dBm @ 6Mbps -91dBm @ 11Mbps	802.11g -94dBm @ 6Mbps 802.11b <-73dBm @ 54Mbps -94dBm @ 6Mbps -91dBm @ 11Mbps 802.11a -94dBm @ 6Mbps <-73dBm @ 54Mbps	-94dBm @ 6Mbps -73dBm @ 54Mbps	Refer to datasheet	Refer to datasheet	
Operating Channels	IEEE 802.11g: 11 Channel (US & Canada) 13 Channel (Europe) 14 Channel (Japan)					IEEE 802.11a: 13 Channel (US & Canada) 19 Channel (Europe) 10 Channel (Japan)						
Input Power	3.3V DC											
Operating Temperature	-20°C to 70°C											

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