

Full-size PCIe MINI CARD WLE200NX

Dual-band 802.11n MIMO 2 x 2 mini PCIe

Features

- Atheros XB92 reference design
- Atheros XSPAN family chipset，P/N AR9280
- IEEE 802.11n compliant and backward compatible with 802.11a/b/g
- Dual-band 2 x 2 MIMO spatial multiplexing technique
- Maximum output power 18dBm@802.11a / 20dBm MIMO aggregate
- Supports up to 300Mbps physical data rates
- 4.9GHz support (Optional) ①
- Delivers up to 10 times the throughput and nearly twice the range of legacy 802.11a and 802.11b/g networks
- Transmission Power Control (IEEE 802.11h TPC)
- Dynamic Frequency Selection (DFS)
- Multi-Country Roaming Supported (IEEE802.11d Global Harmonization Standard)
- 2 x U.FL Antenna Connector
- Complaint with PCI-Express Mini Card 1.1 Standard
- Supports 802.11x authentication, 64/128/152Bit WEP, IEEE802.11i encryption
- Supports Windows 7, Windows Vista, Windows XP, Windows 2000 operating system

Technical Specifications										
Chipset	AR9280									
Host Interface	PCI-Express 1.1 Standard									
Operating Voltage	3.3 VDC									
Power Consumption [2T2R]	11b Cont. Tx @5.5M	2.3W								
	11g Cont. Tx @6M	2.7W								
	11a Cont. Tx @6M	2.5W								
	11ng Cont. Tx@HT20 MCS0	2.7W								
	11ng Cont. Tx@HT40 MCS0	2.5W								
	11na Cont. Tx@HT20 MCS0	2.7W								
	11na Cont. Tx@HT40 MCS0	2.5W								
	11g Cont. Rx	1.3W								
	11a Cont. Rx	1.3W								
	Standby	1W								
Antenna Connector	2 x U.FL Antenna Connector									
Data Rate	IEEE 802.11a :	54Mbps	48Mbps	36Mbps	24Mbps	18Mbps	12Mbps	9Mbps	6Mbps	
	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	IEEE802.11b/g/n:	2.412GHz ~ 2.462GHz (US & Canada)								
		2.412GHz ~ 2.472GHz (Europe)								
		2.412GHz ~ 2.484GHz (Japan)								
	IEEE 802.11a/n:	5.150 ~ 5.350 GHz,5.470 ~ 5.725GHz, 5.725 ~ 5.850 GHz (US & Canada)								
		5.150 ~ 5.350 GHz,5.470 ~ 5.725GHz, 5.725 ~ 5.875 GHz (Europe)								
		5.150 ~ 5.250 GHz,5.250 ~ 5.350GHz, 5.470 ~ 5.725GHz(Japan)								
Modulation Techniques	OFDM: BPSK, QPSK, 16-QAM, 64-QAM DSSS: DBPSK, DQPSK, CCK									
Radio & EMC Certification	CE, FCC									
RoHS Compliance	Yes									
Temperature Range	Operating: -20ºC to 70ºC(Industrial-grade:-40ºC to 70ºC) Storage: -40ºC to 90ºC									
Humidity	Operating:5% to 95% (non-condensing) Storage: Max.90% (non-condensing)									
Dimensions	50.95mm x 30 mm x 3.2 mm (H x W x D)									

WLE200NX PCIe Mini CARD RADIO

TX SPECIFICATIONS

	DataRate	2.437GHz (per chain)	2.437GHz (2 chains)	Tolerance
802.11b	1Mbps	18dBm	21dBm	+1.5/-2.0 dB
	5.5Mbps	18dBm	21dBm	+1.5/-2.0 dB
	11Mbps	18dBm	21dBm	+1.5/-2.0 dB

	DataRate	2.437GHz (per chain)	2.437GHz (2 chains)	Tolerance
802.11g	6-24Mbps	17dBm	20dBm	+1.5/-2.0 dB
	36Mbps	17dBm	20dBm	+1.5/-2.0 dB
	48Mbps	16dBm	19dBm	+1.5/-2.0 dB
	54Mbps	15dBm	18dBm	+1.5/-2.0 dB

	DataRate	2.437GHz (per chain)	2.437GHz (2 chains)	Tolerance
2.4GHz 11n HT20	MCS 0/8	17dBm	20dBm	+1.5/-2.0 dB
	MCS 1/9	17dBm	20dBm	+1.5/-2.0 dB
	MCS 2/10	17dBm	20dBm	+1.5/-2.0 dB
	MCS 3/11	17dBm	20dBm	+1.5/-2.0 dB
	MCS 4/14	17dBm	20dBm	+1.5/-2.0 dB
	MCS 5/13	17dBm	20dBm	+1.5/-2.0 dB
	MCS 6/14	14dBm	17dBm	+1.5/-2.0 dB
	MCS 7/15	10dBm	13dBm	+1.5/-2.0 dB

	DataRate	2.437GHz (per chain)	2.437GHz (2 chains)	Tolerance
2.4GHz 11n HT40	MCS 0/8	17dBm	20dBm	+1.5/-2.0 dB
	MCS 1/9	17dBm	20dBm	+1.5/-2.0 dB
	MCS 2/10	17dBm	20dBm	+1.5/-2.0 dB
	MCS 3/11	17dBm	20dBm	+1.5/-2.0 dB
	MCS 4/14	17dBm	20dBm	+1.5/-2.0 dB
	MCS 5/13	17dBm	20dBm	+1.5/-2.0 dB
	MCS 6/14	14dBm	17dBm	+1.5/-2.0 dB
	MCS 7/15	9dBm	12dBm	+1.5/-2.0 dB

	DataRate	5.500GHz (per chain)	5.500GHz (2 chains)	Tolerance
802.11a	6-24Mbps	17dBm	20dBm	+1.5/-2.0 dB
	36Mbps	15dBm	18dBm	+1.5/-2.0 dB
	48Mbps	13dBm	16dBm	+1.5/-2.0 dB
	54Mbps	12dBm	15dBm	+1.5/-2.0 dB

	DataRate	5.500GHz (per chain)	5.500GHz (2 chains)	Tolerance
5GHz 11n HT20	MCS 0/8	17dBm	20dBm	+1.5/-2.0 dB
	MCS 1/9	17dBm	20dBm	+1.5/-2.0 dB
	MCS 2/10	17dBm	20dBm	+1.5/-2.0 dB
	MCS 3/11	17dBm	20dBm	+1.5/-2.0 dB
	MCS 4/14	17dBm	20dBm	+1.5/-2.0 dB
	MCS 5/13	16dBm	19dBm	+1.5/-2.0 dB
	MCS 6/14	12dBm	15dBm	+1.5/-2.0 dB
	MCS 7/15	8dBm	11dBm	+1.5/-2.0 dB

	DataRate	5.500GHz (per chain)	5.500GHz (2 chains)	Tolerance
5GHz 11n HT40	MCS 0/8	17dBm	20dBm	+1.5/-2.0 dB
	MCS 1/9	17dBm	20dBm	+1.5/-2.0 dB
	MCS 2/10	17dBm	20dBm	+1.5/-2.0 dB
	MCS 3/11	17dBm	20dBm	+1.5/-2.0 dB
	MCS 4/14	17dBm	20dBm	+1.5/-2.0 dB
	MCS 5/13	16dBm	19dBm	+1.5/-2.0 dB
	MCS 6/14	12dBm	15dBm	+1.5/-2.0 dB
	MCS 7/15	8dBm	11dBm	+1.5/-2.0 dB

RX SPECIFICATIONS

	DataRate	Sensitivity (2 chains)	Tolerance
802.11b	1M	-93dBm	±2dB
	5.5M	-93dBm	±2dB
	11M	-91dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
802.11a	6M	-94dBm	±2dB
	9M	-94dBm	±2dB
	12M	-93dBm	±2dB
	18M	-90dBm	±2dB
	24M	-86dBm	±2dB
	36M	-83dBm	±2dB
	48M	-79dBm	±2dB
	54M	-75dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
802.11g	6M	-94dBm	±2dB
	9M	-94dBm	±2dB
	12M	-93dBm	±2dB
	18M	-90dBm	±2dB
	24M	-86dBm	±2dB
	36M	-83dBm	±2dB
	48M	-80dBm	±2dB
	54M	-78dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
5GHz 11n HT20	MCS0	-93dBm	±2dB
	MCS1	-91dBm	±2dB
	MCS2	-87dBm	±2dB
	MCS3	-85dBm	±2dB
	MCS4	-82dBm	±2dB
	MCS5	-77dBm	±2dB
	MCS6	-75dBm	±2dB
	MCS7	-72dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
2.4GHz 11n HT20	MCS0	-93dBm	±2dB
	MCS1	-92dBm	±2dB
	MCS2	-90dBm	±2dB
	MCS3	-86dBm	±2dB
	MCS4	-83dBm	±2dB
	MCS5	-78dBm	±2dB
	MCS6	-76dBm	±2dB
	MCS7	-73dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
5GHz 11n HT40	MCS0	-90dBm	±2dB
	MCS1	-88dBm	±2dB
	MCS2	-85dBm	±2dB
	MCS3	-82dBm	±2dB
	MCS4	-79dBm	±2dB
	MCS5	-76dBm	±2dB
	MCS6	-72dBm	±2dB
	MCS7	-70dBm	±2dB

	DataRate	Sensitivity (2 chains)	Tolerance
2.4GHz 11n HT40	MCS0	-90dBm	±2dB
	MCS1	-89dBm	±2dB
	MCS2	-86dBm	±2dB
	MCS3	-82dBm	±2dB
	MCS4	-80dBm	±2dB
	MCS5	-76dBm	±2dB
	MCS6	-73dBm	±2dB
	MCS7	-71dBm	±2dB

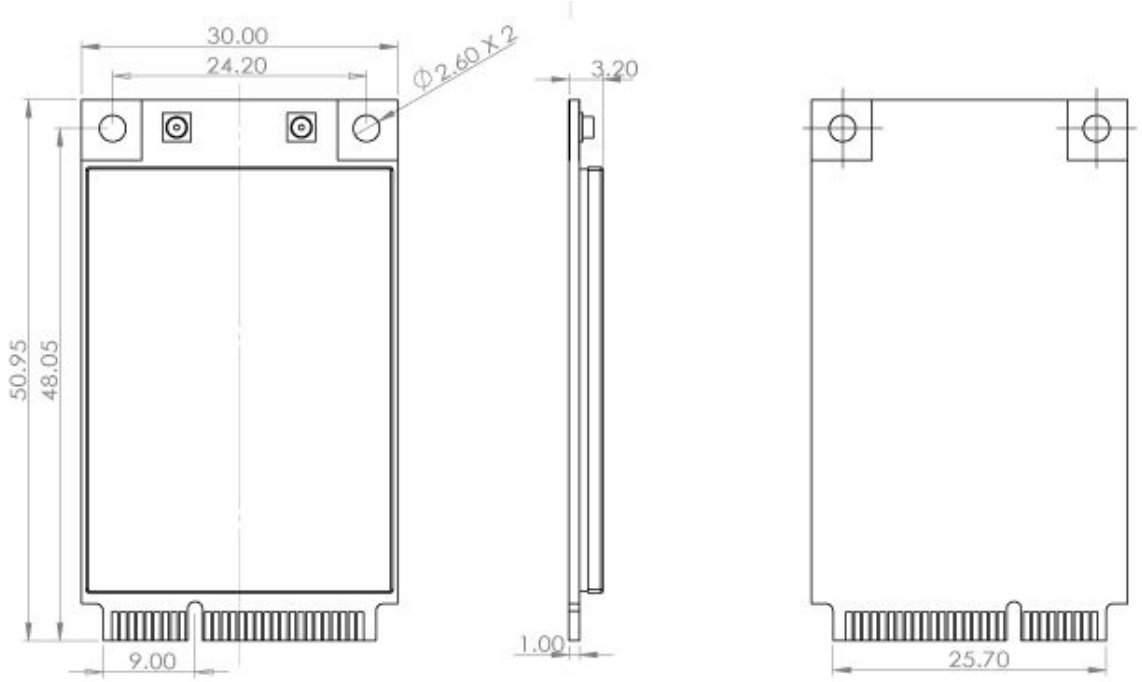
Ordering Information ①

Model Code	Chipset	Form Factor	CARD INFORMATIONS
WLE200NX 7A0000	AR9280	Full Size	802.11 a/b/g/n PCIe mini card
WLE200NX 7A0000-4.9	AR9280	Full Size	802.11 a/b/g/n PCIe mini card
WLE200NX 7A0000-I	AR9280	Full Size	802.11 a/b/g/n PCIe mini card

① Depends on Order Configuration

② Configurations are subject to change without notice,
Please contact Compex sales representatives for other available configurations

DIMENSIONS DRAWING



WLM SERIES MINIPCI

WLM54 series miniPCI (legacy a/b/g card)								
MODEL	WLM 54G-20dBm	WLM 54G-23dBm	WLM 54G-23 ESD	WLM 54G-26dBm	WLM54G-30 ESD	WLM 54AG – 20dBm	WLM 54AG – 23dBm	WLM 54A – 26 ESD
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)	AR 5413/5414 (AR5006X/XS)	AR 5413/5414 (AR5006X/XS)	AR5414 (AR5006XS)
SPEED	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 54/108Mbps	UP TO 108Mbps
OUTPUT POWER								
802.11a	-	-	-	-	-	20dBm@6-24Mbps 17dBm@36Mbps 16dBm@48Mbps 13dBm@54Mbps	23dBm@6-24Mbps 21dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	26dBm@6-24Mbps 24dBm@36Mbps 22Bm@48Mbps 20dBm@54Mbps
802.11b	20dBm@1-11Mbps	23dBm@1-11Mbps	23dBm@1-11Mbps	26dBm@1-11Mbps	30Bm@1-11Mbps	20dBm@1-11Mbps	23dBm@1-11Mbps	-
802.11g	20dBm@6-24Mbps 19dBm@36Mbps 17dBm@48Mbps 16dBm@54Mbps	23dBm@6-24Mbps 22dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	23dBm@6-24Mbps 22dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	26dBm@6-24Mbps 25dBm@36Mbps 24dBm@48Mbps 23dBm@54Mbps	30dBm@6-24Mbps 28dBm@36Mbps 27dBm@48Mbps 25dBm@54Mbps	20dBm@6-24Mbps 18dBm@36Mbps 17dBm@48Mbps 15dBm@54Mbps	23dBm@6-24Mbps 21dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	- - - -
Receiver Sensitivity								
802.11a						-93dBm @ 6Mbps -72dBm @ 54Mbps	-93dBm @ 6Mbps -72dBm @ 54Mbps	-96dBm @ 6Mbps -76dBm @ 54Mbps
802.11b	-96dBm@ 6Mbps -90dBm @11Mbps	-96dBm@ 6Mbps -90dBm @11Mbps	-93dBm@ 6Mbps -90dBm @11Mbps	-93dBm@ 6Mbps -90dBm @11Mbps	-96dBm@ 6Mbps -90dBm @11Mbps	-96dBm@ 6Mbps -90dBm @11Mbps	-96dBm@ 6Mbps -90dBm @11Mbps	
802.11g	-93dBm @ 6Mbps -74dBm @ 54Mbps	-93dBm @ 6Mbps -74dBm @ 54Mbps	-93dBm @ 6Mbps <-72dBm @ 54Mbps	-93dBm @ 6Mbps <-72dBm @ 54Mbps	-93dBm @ 6Mbps -74dBm @ 54Mbps	-93dBm @ 6Mbps -96dBm@ 6Mbps	-93dBm @ 6Mbps -96dBm@ 6Mbps	-93dBm @ 6Mbps
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)		
Interface	PCI Interface v2.3 (Type III-B Mini PCI Form Factor)							32-bit mini-PCI Type IIIA+ (1.85mm longer than IIIA type)
Input Power	3.3V DC							
Operating Temperature	-20ºC to 70ºC							

WLM200 series miniPCI (11n MIMO 2*2 card)					
MODEL	WLM200N2	WLM200N2-26dBm	WLM200NX	WLM200N5-23 ESD	WLM200N5-26 ESD
CHIPSET	AR9223	AR9223	AR9220	AR9220	AR9220
SPEED	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates	UP TO 300Mbps physical data rates
OUTPUT POWER					
802.11a	-	-	18dBm@6-24Mbps 18dBm@36Mbps 17dBm@48Mbps 16dBm@54Mbps	23dBm@6-24Mbps 22dBm@36Mbps 21dBm@48Mbps 20dBm@54Mbps	26dBm@6-24Mbps 25dBm@36Mbps 24dBm@48Mbps 23dBm@54Mbps
5G HT20			18dBm @MCS0 12dBm @MCS7	23dBm @MCS0 17dBm @MCS7	25dBm @MCS0 20dBm @MCS7
5G HT40			16.5dBm @MCS0 9dBm @MCS7	21dBm @MCS0 14dBm @MCS7	24dBm @MCS0 17dBm @MCS7
802.11b	20dBm@1-11Mbps	26dBm@1-11Mbps	20dBm@1-11Mbps		
802.11g	20dBm@6-24Mbps 20dBm@36Mbps 16dBm@48Mbps 15dBm@54Mbps	26dBm@6-24Mbps 26dBm@36Mbps 22dBm@48Mbps 21dBm@54Mbps	20dBm@6-24Mbps 19.5dBm@36Mbps 18.5dBm@48Mbps 17dBm@54Mbps		
2.4G HT20	17dBm @MCS0 14dBm @MCS7	23dBm @MCS0 20dBm @MCS7	18dBm @MCS0 15dBm @MCS7		
2.4G HT40	16dBm @MCS0 14dBm @MCS7	22dBm @MCS0 20dBm @MCS7	18dBm @MCS0 14.5dBm @MCS7		
Receiver Sensitivity					
802.11a			-94dBm@6M -77dBm@54M	-97dBm@6M -80dBm@54M	-96dBm@6M -79dBm@54M
5G HT20			-93dBm@MCS0 -74dBm@MCS7	-97dBm@MCS0 -77dBm@MCS7	-95dBm@MCS0 -75dBm@MCS7
5G HT40			-90dBm@MCS0 -72dBm@MCS7	-92dBm@MCS0 -74dBm@MCS7	-92dBm@MCS0 -74dBm@MCS7
802.11b	-94dBm@1M -92dBm@11M	-94dBm@1M -92dBm@11M	-94dBm@1M -94dBm@11M		
802.11g	-94dBm@6M -78dBm@54M	-94dBm@6M -74dBm@54M	-94dBm@6M -78dBm@54M		
2.4G HT20	-93dBm@MCS0 -76dBm@MCS7	-92dBm@MCS0 -73dBm@MCS7	-93dBm@MCS0 -74dBm@MCS7		
2.4G HT40	-90dBm@MCS0 -73dBm@MCS7	-90dBm@MCS0 -71dBm@MCS7	-90dBm@MCS0 -72dBm@MCS7		
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)		
Interface	PCI Interface v2.3 (Type III-A Mini PCI form factor)				32-bit mini-PCI Type IIIA+ (6.55mm longer than IIIA type)
Input Power	3.3V DC				
Operating Temperature	-20ºC to 70ºC				

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