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PCIe MINI CARD
WLE200N5-23ESD

2 x 2 802.11N Single-band MIMO mini-PCIe

Features

- Atheros XSPAN family chipset
- 5GHz IEEE 802.11n compliant and backward compatible with 802.11a
- 5GHz Single-band MIMO 2x2 spatial multiplexing technique
- Maximum 23dBm output (per chain)/26dBm aggregate
- Built-in ESD Protection with ESD/EMP Immunity Threshold: 15KeV ①
- Supports up to 300Mbps physical data rates
- Delivers 10 times the throughput and nearly twice the range of legacy 802.11a network
- Transmission Power Control (IEEE 802.11h TPC)
- Dynamic Frequency Selection (DFS)
- Multi-Country Roaming Supported (IEEE802.11d Global Harmonization Standard)
- 2 x MMCX or 2 x U.FL Antenna Connectors ②

Technical Specifications									
Chipset	AR9280								
Host Interface	PCI –Express 1.1 Standard								
Operating Voltage	3.3 VDC								
Power Consumption	11a Cont. Tx @6M	2.6W							
	11na Cont. Tx@HT20 MCS0	2.8W							
	11na Cont. Tx@HT40 MCS0	2.8W							
	11a Cont. Rx	1.2W							
	Standby	1.1W							
Antenna Connector	2 x MMCX or 2 x U.FL ②								
Data Rate	IEEE 802.11a :	54Mbps	48Mbps	36Mbps	24Mbps	18Mbps	12Mbps	9Mbps	6Mbps
	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 802.11a/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, 16QAM, 64QAM								
RoHS Compliance	Yes								
Temperature Range	Operating: -20ºC to 70ºC Storage: -40ºC to 90ºC								
Humidity	Operating:5% to 95% (non-condensing) Storage: Max.90% (non-condensing)								
Dimension	59.6mm x 51.5mm x 6mm								

WLE200N5-23 ESD MIMO MINIPCI CARD RADIO			
TX SPECIFICATIONS			
	DataRate	**TX Power**	**Tolerance**
802.11a	6-24Mbps	23dBm	±2dB
	36Mbps	21dBm	±2dB
	48Mbps	20dBm	±2dB
	54Mbps	19dBm	±2dB

	DataRate	**TX Power** (per chain)	**Tolerance**		**DataRate**	**TX Power** (per chain)	**Tolerance**
5GHz 11n HT 20	MCS 0/8	23dBm	±2dB	**5GHz 11n HT 40**	MCS 0/8	21.5dBm	±2dB
	MCS 1/9	22dBm	±2dB		MCS 1/9	21dBm	±2dB
	MCS 2/10	21dBm	±2dB		MCS 2/10	20dBm	±2dB
	MCS 3/11	20dBm	±2dB		MCS 3/11	19dBm	±2dB
	MCS 4/12	19dBm	±2dB		MCS 4/12	18dBm	±2dB
	MCS 5/13	18dBm	±2dB		MCS 5/13	17dBm	±2dB
	MCS 6/14	17dBm	±2dB		MCS 6/14	16dBm	±2dB
	MCS 7/15	14dBm	±2dB		MCS 7/15	13dBm	±2dB

RX SPECIFICATIONS							
	Data Rate	**Sensitivity** (2 chains)	**Tolerance**		**Data Rate**	**Sensitivity** (2 chains)	**Tolerance**
802.11a	6M	-96dBm	±2dB	**802.11a**	24M	-90dBm	±2dB
	9M	-96dBm	±2dB		36M	-87dBm	±2dB
	12M	-95dBm	±2dB		48M	-83dBm	±2dB
	18M	-93dBm	±2dB		54M	-80dBm	±2dB
5GHz 11n HT 20	MCS0	-96dBm	±2dB	**5GHz 11n HT 40**	MCS0	-92dBm	±2dB
	MCS1	-94dBm	±2dB		MCS1	-90dBm	±2dB
	MCS2	-92dBm	±2dB		MCS2	-87dBm	±2dB
	MCS3	-87dBm	±2dB		MCS3	-84dBm	±2dB
	MCS4	-84dBm	±2dB		MCS4	-82dBm	±2dB
	MCS5	-80dBm	±2dB		MCS5	-78dBm	±2dB
	MCS6	-79dBm	±2dB		MCS6	-76dBm	±2dB
	MCS7	-77dBm	±2dB		MCS7	-74dBm	±2dB

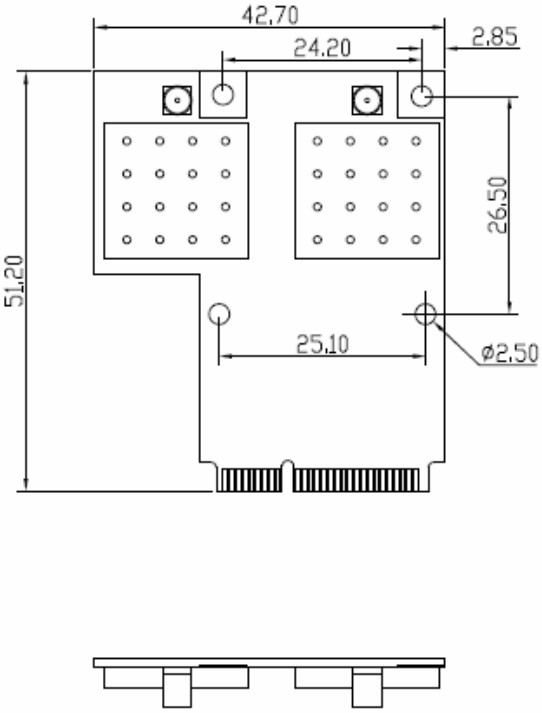
ESD CABLE SPECIFICATION	
Cable Dimensions	26cm length
Terminal Material	Copper
Attachment Procedure	End of ESD Cable tied to Earth Ground

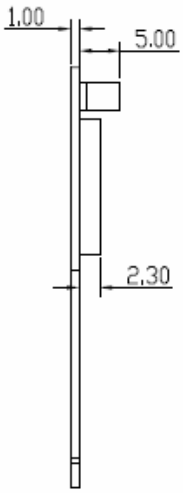
Ordering Information③

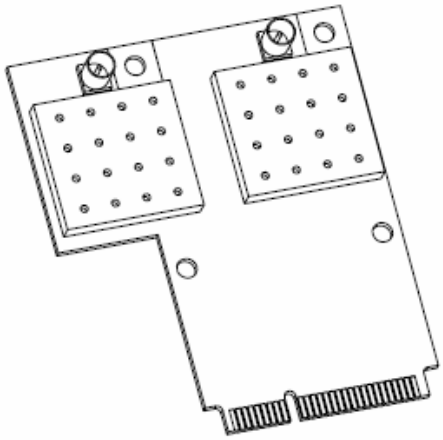
CODES	Antenna Connectors type	Carton Dimension
WLE200N5-23ESD 8A0000	U.FL	For 50pcs (pcs/ctn), 0.40m * 0.22m * 0.085m / 0.006 = 1.5KG For 250pc (pcs/ctn), 0.45m * 0.45m * 0.24m / 0.006 = 8.1KG
WLE200N5-23ESD 8B0000	MMCX	

① Module grounding cable included
② Depends on your order configuration
③ Configurations are subject to change without notice
Please contact Compex sales representatives for other available configurations

DIMENSIONS DRAWING







WLM SERIES 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 17dBm@36Mbps 16dBm@48Mbps 13dBm@54Mbps	23dBm@6-24Mbps 21dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	26dBm@6-24Mbps 24dBm@36Mbps 22Bm@48Mbps 20dBm@54Mbps	20dBm@6-24Mbps 17dBm@36Mbps 16dBm@48Mbps 13dBm@54Mbps	26dBm@6-24Mbps 26dBm@36Mbps 25Bm@48Mbps 19dBm@54Mbps
802.11b	20dBm@1-11Mbps	23dBm@1-11Mbps	26dBm@1-11Mbps	28dBm@1-11Mbps	30Bm@1-11Mbps	20dBm@1-11Mbps	26dBm@1-11Mbps	20dBm@1-11Mbps	23dBm@1-11Mbps	-	20dBm@1-11Mbps	-
802.11g	20dBm@6-24Mbps 19dBm@36Mbps 17dBm@48Mbps 16dBm@54Mbps	23dBm@6-24Mbps 22dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	26dBm@6-24Mbps 25dBm@36Mbps 24dBm@48Mbps 22dBm@54Mbps	28dBm@6-24Mbps 26dBm@36Mbps 25dBm@48Mbps 23dBm@54Mbps	30dBm@6-24Mbps 28dBm@36Mbps 27dBm@48Mbps 25dBm@54Mbps	20dBm@6-24Mbps 19.5dBm@36Mbps 18.5dBm@48Mbps 17dBm@54Mbps	26dBm@6-24Mbps 26dBm@36Mbps 22dBm@48Mbps 21dBm@54Mbps	20dBm@6-24Mbps 18dBm@36Mbps 17dBm@48Mbps 15dBm@54Mbps	23dBm@6-24Mbps 21dBm@36Mbps 19dBm@48Mbps 17dBm@54Mbps	- - - -	20dBm@6-24Mbps 18dBm@36Mbps 17dBm@48Mbps 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 < -73dBm @ 54Mbps 802.11b -94dBm@ 6Mbps -91dBm @11Mbps		802.11g -96dBm @ 6Mbps < -83dBm @ 54Mbps 802.11b -96dBm@ 6Mbps -91dBm @11Mbps			802.11g -96dBm @ 6Mbps < -83dBm @ 54Mbps 802.11b -96dBm@ 6Mbps -91dBm @11Mbps		802.11g -94dBm @ 6Mbps <-73dBm @ 54Mbps 802.11b -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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Specification is subject to change without notice. DS V: 1.0.7 Alex 130530