



Package Solution

MIMOClassic MMC543

WIRELESS 54/108/300Mbps^① Indoor Access Point

Features

- MIPS 24K-family 300MHz network processor
- Atheros XSPAN technology
- Support CompeX WLM200 series Mini-PCI Radio
- IEEE 802.11n/a/b/g
- Support Power-over-Ethernet (Passive PoE)
- Embedded NOR flash, and support NAND flash memory expansion
- Support up to 2 miniPCI slots^①
- Support 64/128-bit WEP, TKIP, AES, IEEE802.1x authentication
- Antenna Alignment
- Surge arrestor support(Optional)

TECHNICAL SPECIFICATIONS

SYSTEM INFORMATION	
Processing Specifications	Atheros AR7130/300MHz
Memory Size	32MB SDRAM
NOR Flash	4MB (up to 16MB)
NAND Flash	Optional (From 32MB to 128 MB max)
WAN Interface	-
LAN Interface	1 x 10/100 BASE-T Ethernet Port
Antenna	2 x 2dBi detachable SMA antenna
Max power consumption	4 Watts(bare board only)
Power Supply	12-24V DC, Supply and injector included
Power method	Passive Power over Ethernet or DC Jack
Certification	FCC, CE Mark
ROHS Compliant	Yes
Weight	260 grams (estimated)
Operating Temperature	-20°C to 70°C
Dimension	145 x 132 x 41mm (H x W x D)

WLM 200N2 MIMO MINIPCI CARD OPERATING FREQUENCY 2.4GHz							
TX SPECIFICATIONS				TX SPECIFICATIONS			
	DataRate	TX Power	Tolerance		DataRate	TX Power	Tolerance
802.11b	11Mbps	20dBm	±2dB	802.11g	6-24Mbps	20dBm	±2dB
	5.5Mbps	20dBm	±2dB		36Mbps	20dBm	±2dB
	2Mbps	20dBm	±2dB		48Mbps	16dBm	±2dB
	1Mbps	20dBm	±2dB		54Mbps	15dBm	±2dB
2.4Ghz 11n HT20	MCS 0	17dBm	±2dB	2.4Ghz 11nHT40	MCS 0	16dBm	±2dB
	MCS 1	17dBm	±2dB		MCS 1	16dBm	±2dB
	MCS 2	17dBm	±2dB		MCS 2	16dBm	±2dB
	MCS 3	17dBm	±2dB		MCS 3	16dBm	±2dB
	MCS 4	17dBm	±2dB		MCS 4	16dBm	±2dB
	MCS 5	16dBm	±2dB		MCS 5	16dBm	±2dB
	MCS 6	15dBm	±2dB		MCS 6	15dBm	±2dB
	MCS 7	14dBm	±2dB		MCS 7	14dBm	±2dB
	MCS 8	17dBm	±2dB		MCS 8	16dBm	±2dB
	MCS 9	17dBm	±2dB		MCS 9	16dBm	±2dB
	MCS 10	17dBm	±2dB		MCS 10	16dBm	±2dB
	MCS 11	17dBm	±2dB		MCS 11	16dBm	±2dB
	MCS 12	17dBm	±2dB		MCS 12	16dBm	±2dB
	MCS 13	16dBm	±2dB		MCS 13	16dBm	±2dB
	MCS 14	15dBm	±2dB		MCS 14	15dBm	±2dB
MCS 15	14dBm	±2dB	MCS 15	14dBm	±2dB		

WLM 200N2 MIMO MINIPCI CARD OPERATING FREQUENCY 2.4GHz							
RX SPECIFICATIONS				RX SPECIFICATIONS			
	DataRate	Sensitivity (Maximum/Typical 2Rx)	Tolerance		DataRate	Sensitivity (Maximum/Typical 2Rx)	Tolerance
802.11g	6 Mbps	-96/-92dBm	±2dB	802.11b	1 Mbps	-96/-92dBm	±2dB
	9 Mbps	-96/-92dBm	±2dB		5.5Mbps	-94/-90dBm	±2dB
	12 Mbps	-96/-92dBm	±2dB		11 Mbps	-91/-87dBm	±2dB
	18 Mbps	-95/-91dBm	±2dB				
	24Mbps	-92/-88dBm	±2dB				
	38Mbps	-89/-85dBm	±2dB				
	48Mbps	-85/-81dBm	±2dB				
	54Mbps	-83/-79dBm	±2dB				
	DataRate	Sensitivity (Maximum/Typical 2Rx)	Tolerance		DataRate	Sensitivity (Maximum/Typical 2Rx)	Tolerance
2.4Ghz 11n HT20	MCS0	-96/-92dBm	±2dB	2.4Ghz 11nHT40	MCS0	-90/-86dBm	±2dB
	MCS1	-95/-91dBm	±2dB		MCS1	-90/-86dBm	±2dB
	MCS2	-93/-89dBm	±2dB		MCS2	-89/-85dBm	±2dB
	MCS3	-90/-86dBm	±2dB		MCS3	-87/-82dBm	±2dB
	MCS4	-87/-81dBm	±2dB		MCS4	-84/-79dBm	±2dB
	MCS5	-83/-76dBm	±2dB		MCS5	-79/-75dBm	±2dB
	MCS6	-81/-76dBm	±2dB		MCS6	-78/-74dBm	±2dB
	MCS7	-79/-73dBm	±2dB		MCS7	-75/-71dBm	±2dB
	MCS8	-95/-91dBm	±2dB		MCS8	-90/-86dBm	±2dB
	MCS9	-93/-89dBm	±2dB		MCS9	-89/-85dBm	±2dB
	MCS10	-90/-86dBm	±2dB		MCS10	-87/-83dBm	±2dB
	MCS11	-87/-83dBm	±2dB		MCS11	-84/-80dBm	±2dB
	MCS12	-84/-80dBm	±2dB		MCS12	-81/-77dBm	±2dB
	MCS13	-79/-75dBm	±2dB		MCS13	-76/-72dBm	±2dB
	MCS14	-77/-73dBm	±2dB		MCS14	-74/-68dBm	±2dB
MCS15	-75/-71dBm	±2dB	MCS15	-71/-67dBm	±2dB		

WLM 200NX MIMO MINIPCI CARD OPERATING FREQUENCY 5GHz							
TX SPECIFICATIONS							
	DataRate		TX Power			Tolerance	
802.11a	6-24Mbps		18dBm			±2dB	
	36Mbps		18dBm			±2dB	
	48Mbps		17dBm			±2dB	
	54Mbps		16dBm			±2dB	
5 GHz 11n HT20	MCS 0	18dBm	±2dB	5 GHz 11n HT40	MCS 0	16.5dBm	±2dB
	MCS 1	18dBm	±2dB		MCS 1	16.5dBm	±2dB
	MCS 2	17.5dBm	±2dB		MCS 2	16.5dBm	±2dB
	MCS 3	17.5dBm	±2dB		MCS 3	16.5dBm	±2dB
	MCS 4	16.5dBm	±2dB		MCS 4	16.5dBm	±2dB
	MCS 5	16dBm	±2dB		MCS 5	14.5dBm	±2dB
	MCS 6	15dBm	±2dB		MCS 6	14dBm	±2dB
	MCS 7	12dBm	±2dB		MCS 7	9dBm	±2dB
	MCS 8	18dBm	±2dB		MCS 8	16.5dBm	±2dB
	MCS 9	18dBm	±2dB		MCS 9	16.5dBm	±2dB
	MCS 10	17.5dBm	±2dB		MCS 10	16.5dBm	±2dB
	MCS 11	17.5dBm	±2dB		MCS 11	16.5dBm	±2dB
	MCS 12	16.5dBm	±2dB		MCS 12	16.5dBm	±2dB
	MCS 13	16dBm	±2dB		MCS 13	14.5dBm	±2dB
	MCS 14	15dBm	±2dB		MCS 14	14dBm	±2dB
MCS 15	12dBm	±2dB	MCS 15	9dBm	±2dB		

WLM 200NX MIMO MINIPCI CARD OPERATING FREQUENCY 5GHz									
RX SPECIFICATIONS									
	Data Rate		Sensitivity (Maximum/Typical 2Rx)		Tolerance				
802.11a	6M		-95/-91dBm		±2dB				
	9M		-95/-91dBm		±2dB				
	12M		-95/-91dBm		±2dB				
	18M		-94/-90dBm		±2dB				
	24M		-90/-86dBm		±2dB				
	36M		-87/-83dBm		±2dB				
	48M		-83/-79dBm		±2dB				
54M		-82/-78dBm		±2dB					
RX SPECIFICATIONS(802.11n)				RX SPECIFICATIONS (802.11n)					
	Data Rate	Sensitivity (Maximum/Typical 2Rx)		Tolerance		Data Rate	Sensitivity (Maximum/Typical 2Rx)		Tolerance
5GHz 11n HT20	MCS0	-95/-91dBm		±2dB	5GHz 11n HT40	MCS0	-91/-87dBm		±2dB
	MCS1	-94/-90dBm		±2dB		MCS1	-90/-86dBm		±2dB
	MCS2	-92/-88dBm		±2dB		MCS2	-88/-84dBm		±2dB
	MCS3	-88/-84dBm		±2dB		MCS3	-85/-81dBm		±2dB
	MCS4	-85/-81dBm		±2dB		MCS4	-82/-78dBm		±2dB
	MCS5	-81/-77dBm		±2dB		MCS5	-78/-74dBm		±2dB
	MCS6	-80/-76dBm		±2dB		MCS6	-77/-73dBm		±2dB
	MCS7	-77/-73dBm		±2dB		MCS7	-74/-70dBm		±2dB
	MCS8	-94/-90dBm		±2dB		MCS8	-91/-87dBm		±2dB
	MCS9	-92/-87dBm		±2dB		MCS9	-88/-84dBm		±2dB
	MCS10	-89/-85dBm		±2dB		MCS10	-86/-82dBm		±2dB
	MCS11	-86/-82dBm		±2dB		MCS11	-83/-79dBm		±2dB
	MCS12	-83/-79dBm		±2dB		MCS12	-80/-76dBm		±2dB
	MCS13	-78/-74dBm		±2dB		MCS13	-75/-71dBm		±2dB
	MCS14	-77/-73dBm		±2dB		MCS14	-73/-69dBm		±2dB
MCS15	-74/-69dBm		±2dB	MCS15	-70/-66dBm		±2dB		

Firmware Information(11n Modules only)

Multiple SSID

- Supports up to 4 virtual access points (VAP) per radio, with unique BSSID. Traffic from each VAP can be tagged with a unique VLAN and channeled down to the Ethernet port. The tagged packets from Ethernet port are then channeled back to the respective VAP with the tag removed. Each VAP will be able to configure their own security (WEP, TKIP, and AES).

Long Range Support

- Suitable for long-range wireless deployment with Proprietary Long Distance Algorithm for ACK and CTS timeout adjustment support.
- Provides recommended values for the parameters and at the same time allow for manual fine-tuning for optimal performance.

Antenna Alignment

- Antenna Alignment feature allows the system integrator to align the antenna for best signal strength.

FIRMWARE INFORMATION					
Operating Modes	<ul style="list-style-type: none"> • Access Points • Client • RootAP / Transparent Client • Repeater • Wireless Adapter • Wireless Routing Client • Gateway 				
WAN Type	Static IP	Dynamic IP	PPPoE	PPTP	L2TP
Device Management	<ul style="list-style-type: none"> • HTTP / HTTPs Web Server • SNMP V2c • Telnet / Secure Shell (SSH) 				
Data Capture & Notification	<ul style="list-style-type: none"> • Event Login (Syslog) • Detailed Statistics per Client 				
Virtual Access Point (VAP)	<ul style="list-style-type: none"> • Up to 16 SSIDs with unique MAC Addresses (BSSID) • 802.1q VLAN tag per VAP bridging with Ethernet • Configurable Security (WEP, TKIP, AES, MAC Filtering) per VAP 				
Advanced Features	<ul style="list-style-type: none"> • Built-in DHCP server • Transmission Power Control (One dB per step) • Closed System (Suppress SSID) • Transmission Rate Control • Spanning Tree Protocol 				

OTHER PROMINENT FEATURES	DESCRIPTION
Long Range Parameter Settings	Suitable for Long Range wireless deployment with high receiver sensitivity.
CPE Point-to-Point (PtP)	Ideal as CPE device connecting PtP with a central AP
Power with Passive PoE	Device power from PoE through ethernet cable provide flexible installation.
IEEE 802.11h (DFS & TPC)	Enables worldwide operation through support for standards-based Dynamic Frequency Selection (DFS) and Transmission Power Control (TPC)
SNMP Trap	SNMP Traps enable an agent to notify the management station of significant events by way of an unsolicited event.
Antenna Alignment	Allows user to adjust their external antenna to receive the optimum throughput.
DHCP Relay (Only in Gateway or Wireless Routing Client Mode)	Allows DHCP Clients on different subnets to get IP address from central DHCP server.
Remote Upgrade of Firmware	Allows user to upgrade their firmware through Telnet/SSH
Parallel Bandwidth I(Only in Routing Mode)	Provide scalable Internet bandwidth with Load Balancing and Fail-Over Redundancy.
RIP 1 / 2 (Only in Gateway or Wireless Routing Client Mode)	Routing Information Protocol Version 1 / 2

Customizable Features[®]

CUSTOMIZABLE FEATURES	DESCRIPTION
Web Page Customization	Customize webpage for OEM customers.

Product Information ^③

MODE NAME	NOR Flash	NAND Flash	MiniPCI slot
MMC 6A	256KB	32MB	1
MMC 6B(MOQ needed)	256KB	32MB	2
MMC 6C	4MB		1
MMC 6D(MOQ needed)	4MB		2
MMC 6E(MOQ needed)	8MB		1
MMC 6F(MOQ needed)	8MB		2
MMC 6G(MOQ needed)	16MB		1
MMC 6H(MOQ needed)	16MB		2

Order Configuration ^④

CODES	ANTENNA	NOR Flash	NAND FLASH	MiniPCI	RADIO OUTPUT POWER	CARTON DIMENSIONS
MMC 6A N2-20	2dBi 2.4GHz detachable	256KB	32MB	WLM200N2	20dBm	For 10 pcs/carton, 0.78m*0.38m*0.25m/0.006= 12.35KG
MMC 6A NX-18	2dBi 5GHz detachable	256KB	32MB	WLM200NX	18dBm	
MMC 6C N2-20	2dBi 5GHz detachable	4MB -		WLM200N2	20dBm	
MMC 6C NX-18	2dBi 5GHz detachable	4MB		WLM200NX	18dBm	
WC XX XX-XX	2.4GHz/5GHz	4/8/16MB -	OPTIONAL	Available with WLM200 Series of miniPCI	18-26dBm	

- ① Depends on Order Configuration
- ② Features Not Available on the Firmware. Please contact salesperson for customization. Subjected to approval
- ③ Configurations are subjected to change without notice
- ④ Contact sales person for ordering configurations for different miniPCI & firmware.

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