

Radio Module Features

- Multi-country Roaming (802.11d) support - Automatically adjusts regulatory domain to operate in different countries.
- Data Rates – (Auto-rate capable) 802.11a/Part 90Y : 6, 9, 12, 18, 24, 36, 48, 54 & 108Mbps(Turbo Mode)
802.11g : 6, 9, 12, 18, 24, 36, 48 & 54Mbps.
802.11b : 1, 2, 5.5, 11Mbps.
- Network Standards - WECA (Wi-Fi & Wi-Fi5), IEEE802.11, IEEE802.11a, IEEE802.11g draft, IEEE802.11b, draft IEEE 802.11e, f, h, and i standards
- Compliance - FCC Part 15 Class B, ETSI 300.328, ETSI 300 826, CE mark, FCC Part 90Y

Receive Sensitivity - HR-WRAPDX-2x model

802.11a :	802.11b/g :
-90dBm @ 6Mbps	-96dBm @ 1Mbps
-89dBm @ 9Mbps	-96dBm @ 2Mbps
-88dBm @ 12Mbps	-96dBm @ 5.5Mbps
-87dBm @ 18Mbps	-92dBm @ 6Mbps
-84dBm @ 24Mbps	-91dBm @ 9Mbps
-79dBm @ 36Mbps	-92dBm @ 11Mbps
-77dBm @ 48Mbps	-90dBm @ 12Mbps
-74dBm @ 54Mbps	-87dBm @ 18Mbps
	-85dBm @ 24Mbps
	-80dBm @ 36Mbps
	-78dBm @ 48Mbps
	-76dBm @ 54Mbps

Transmit Output Power (Typical) – HR-WRAPDX-2x model

802.11a :	802.11g :
20dBm+/-2 @6-24Mbps	26dBm +/-2dBm@6-24Mbps
19dBm+/-2 @36Mbps	25dBm +/-2dBm @ 36 Mbps
18dBm+/-2 @48Mbps	24dBm +/-2dBm @ 48 Mbps
17dBm+/-2 @54Mbps	23dBm +/-2dBm @ 54 Mbps
17dBm+/-2 @108Mbps	
	802.11b :
	26dBm +/-2dBm for all rates

Receive Sensitivity – HR-WRAPDX-4/5x model

802.11a/FCC Part 90Y :

-94dBm @ 6Mbps
-93dBm @ 9Mbps
-92dBm @ 12Mbps
-90dBm @ 18Mbps
-86dBm @ 24Mbps
-83dBm @ 36Mbps
-77dBm @ 48Mbps
-74dBm @ 54Mbps

Transmit Output Power (Typical) – HR-WRAPDX-4/5x model

802.11a/FCC Part 90Y:

26dBm+/-2 @6-24Mbps
24dBm+/-2 @36Mbps
22dBm+/-2 @48Mbps
21dBm+/-2 @54Mbps
21dBm+/-2 @108Mbps

Receive Sensitivity – HR-WRAPDX-9x model

900-928Mhz :

-93dBm @ 1Mbps
-91dBm @ 2Mbps
-88dBm @ 5.5Mbps
-90dBm @ 6Mbps
-89dBm @ 9Mbps
-88dBm @ 11Mbps
-87dBm @ 12Mbps
-86dBm @ 18Mbps

Transmit Output Power (Typical) – HR-WRAPDX-9x model

900-928Mhz :

28dBm +/-2dBm@1-24Mbps

HauteSpot HR-WRAPDX Dual Radio 900MHz, 2.3-2.5GHz, 4.9GHz or 5.1-6.1 GHz Routing Repeater or Access Point



This is a complete outdoor wireless solution with two wireless interfaces – use one for wireless backhaul and one for Access Point, or create a dual band Access Point, or a high performance repeater. Combine with the antennas and pigtail connectors of your choice for a customized solution. A waterproof enclosure and POE injector are included in this package, so you can install the unit next to antennas and provide power by standard UTP Ethernet cable.

Solution Features:

- Models supporting operation in any combination of either 2.3-2.5GHz, 4.9GHz (FCC Part 90Y Public Safety), 5.1-6.1GHz or 900MHz
- X86 architecture processor
- 64MB DSRAM
- One 10/100 Ethernet Port
- NEMA 6 Aluminum Outdoor Case
- PoE Power supply (7-18VDC input voltage to router)
- HauteRouteOS software license installed on Compact Flash
- 1 Type N Antenna Connector

Applications

The HR-WRAPDX is specially designed for point-to-multipoint applications to provide an easy solution for connecting many locations through wireless. It also includes second wireless interface for backhaul to a primary distribution hub such as an HR-IXP-DX wireless router. The Wireless Access Point delivers Internet service to your clients' network. You can use this package to provide high data rates and superior throughput for data-intensive, line-of-sight applications. Multiple sites can share a single, high-speed connection to the Internet. The feature rich HauteRouterOS software allows you to apply the most advanced firewall, NAT, bandwidth shaping, and other technologies to create a smart and manageable network. It is possible to set a WEP private key for each client and choose whether to authenticate him and whether to forward frames received from him back to the wireless infrastructure (in order to allow/disallow communication between clients of wireless network). Spanning Tree Bridging is available for all connected APs and clients in the same SSID group.

Access Point Features

- Access Control (MAC table)
- MAC repeater settings for each client (enable/disable for each MAC address)
- MAC Firewall
- Client statistics (current signal level/quality, rate tx/rx, bytes tx/rx, radio rate)
- 64 and 128 bit WEP and WPA support
- Authentication via remote RADIUS server using captive portal
- IP filtering
- Routing for RIP, BGP, OSPF
- DNS relay
- DHCP server or relay
- SNMP/SSH/Telnet/Java Client
- WDS (wireless distribution service) for transparent bridging – no need to wire

The HR-WRAP Packet Processing Platform

The HR-WRAP is a medium capacity wireless routing platform which is ideal for customer premise or neighborhood repeater applications. The router provides cost-effective, high-performance and secure service for connecting and setting up multiple WLAN architectures. It supports policy-based routing and sophisticated data rate management and you can use it as a stateful inspection firewall to ensure security of your network. In addition, the HR-WRAP performs HotSpot and VPN router functions and supports many popular tunnel standards like PPTP, L2TP and IPsec security protocol.

Feature Specifications:

- AMD SC1100 system on a chip CPU (Pentium MMX architecture)
- 64MB SDRAM SoDIMM
- 2 Mbit Flash BIOS on board
- CompactFlash 64MB with HauteRouterOS license installed
- one 10/100 Mbps Ethernet using the NSC DP83816 (DP83815 driver compatible)
- one Serial port with DB9 connector
- Power LED, Mini UPS LED, 4 user LED
- CPU area temp, PCI area temp, LM87 health monitor chip area temp
- CPU core, +3.3v, +5v, +12v voltage monitor
- LCD out header
- six GPIO pins
- ACCESS.bus (I₂O)
- watchdog controller
- Power over Ethernet with 7-18VDC input (pins 4-5/7-8)
- onboard power jack 7-18v DC in
- board size 105 mm x 215 mm (4.13 inch by 8.46 inch)
- weight 209 g (7.4 oz)
- operating temperature in enclosed case 0°C to +50°C
- 70% operational relative humidity (non-condensing)
- HauteRoute BIOS v1.11

-5 Radio Module Option- 26dBi 5Ghz Band Atheros Radio Module Specifications:

Frequencies: 5.1-6.1 GHz
Main Chipset: MAC: Atheros AR5214; PHY: Atheros AR5111
Modulation Technique: 802.11a: OFDM (BPSK,QPSK, 16-QAM, 64-QAM)
Host Interface: Mini-PCI form factor; Mini-PCI Version 1.0 type 3B
Operation Voltage: 3.3V +/- 5% DC
Output Power: 26 dBm at 5Ghz
Receive Sensitivity: -94 dBi at 5.8Ghz

Main Chipset: MAC: Atheros AR5414; PHY: Atheros AR5411
Modulation Technique: 802.11b/g: DSSS (DBPSK, DQPSK, CCK), OFDM for data rate >20 Mbps
 802.11a: OFDM (BPSK,QPSK, 16-QAM, 64-QAM)
Host Interface: Mini-PCI form factor; Mini-PCI Version 1.0 type 3B
Operation Voltage: 3.3V +/- 5% DC
Output Power: 26 dBm at 2.4Ghz 20 dBm at 5.8Ghz
Receive Sensitivity: -96 dBi at 2.4Ghz, -90 dBi at 5.8Ghz

-4 Radio Module Option- 26dBi 4.9Ghz FCC Part 90Y Atheros Radio Module Specifications:

Frequencies: 4.9 GHz
Main Chipset: MAC: Atheros AR5214; PHY: Atheros AR5111
Modulation Technique: OFDM (BPSK,QPSK, 16-QAM, 64-QAM)
Host Interface: Mini-PCI form factor; Mini-PCI Version 1.0 type 3B
Operation Voltage: 3.3V +/- 5% DC
Output Power: 26 dBm at 4.9Ghz
Receive Sensitivity: -94 dBi at 4.9Ghz

-9 Radio Module Option- 28dBi 900MHz Band Atheros Radio Module Specifications:
Frequencies: 900-924MHz
Main Chipset: MAC: Atheros AR5214; PHY: Atheros AR5111
Modulation Technique: OFDM (BPSK,QPSK, 16-QAM, 64-QAM)
Host Interface: Mini-PCI form factor; Mini-PCI Version 1.0 type 3B
Operation Voltage: 3.3V +/- 5% DC
Output Power: 28 dBm at 900MHz
Receive Sensitivity: -94 dBi at 5.8Ghz

-2 Radio Module Option- 26dBi 2.4Ghz Dual Band Atheros Radio Module Specifications:

Frequencies: 2.3-6.1 GHz

Supported OS: HauteRouterOS
Operation Mode: Infrastructure, WDS, WDS Slave, Station, Bridge, Nstreme, & Ad-hoc mode

Variety of Antenna Options

The HR-WRAPDX can be configured for use with a variety of antenna options.

For point to multipoint links (base stations/omni direction):

- ✓ DB05-0-MFN – 2.4 or 5.8GHz 5dBi gain multi polarized omni antenna. Good for short range outdoor use where obstructions are a problem.
- ✓ DB08-0-MFN – 2.4 or 5.8GHz 8dBi gain multi polarized omni antenna. Good for short range outdoor use where obstructions are a problem.
- ✓ 9009-0-HFN - 900MHz 9dBi omni antenna with horizontal polarity perfect for use in base station, especially where mounting space is limited
- ✓ 90011-0-VFN - 900MHz 11dBi omni antenna perfect for use in base station, although length (11 feet) makes some applications more difficult
- ✓ 2415-0-VFN – 2.4GHz 15dBi gain omni for long range coverage. Good general purpose omni where interference is not too severe.
- ✓ 2416-120-VFN(m) – 2.4GHz 16dBi 120 degree sector antenna perfect for use in three radio array for sector coverage.
- ✓ 2417-90-VFN(m) – 2.4GHz 17dBi 90 degree sector antenna perfect for use in four radio array for sector coverage.
- ✓ 5812-0-VFN – 5.8GHz 12dBi omni directional antenna which is a good general purpose base station antenna.
- ✓ 5816-120-HFN – 5.8GHz 16dBi 120 degree sector antenna with horizontal polarity perfect for use in three radio array for sector coverage where interference is an issue.
- ✓ 5817-90-VFN(m)– 5.8 GHz 17dBi gain 90 degree sector antenna perfect for use in four radio array for sector coverage.

For point to point links (remote end/directional):

- ✓ 90011-20-DFN – 900 MHz 11dBi panel antenna with 20 degree spread which can be aligned for vertical or horizontal polarity
- ✓ 90018-35-DFN – 900MHz 18dBi yagi antenna with 35 degree spread
- ✓ 2412-60-MFN - 2.4 GHz 12dBi gain multi polarized sector antenna with 60 degree spread. Good for moderate range outdoor links through trees, snow or over water.
- ✓ 2417-40-MFN - 2.4 GHz 17dBi gain multi polarized sector antenna with 40 degree spread. Good for longer range outdoor links through trees, snow or over water.
- ✓ 2418-18-DFN (m) – 2.4GHz 18dBi panel antenna with 18 degree spread which can be aligned for vertical or horizontal polarity
- ✓ 2424-10-DFN(Grid) - 2.4GHz 24dBi parabolic grid antenna with 10 degree spread which can be aligned for vertical or horizontal polarity
- ✓ 5824-8-DFN - 5.8 GHz 24dBi panel antenna with 8 degree spread which can be aligned for vertical or horizontal polarity
- ✓ 5829-5-DFN(Grid) – 5.8 GHz 29dBi gain parabolic grid with 5 degree spread which can be aligned for vertical or horizontal polarity
- ✓ 5832-4-V-FN(Solid) – 5.8 GHz 32dBi gain parabolic dish with 4 degree spread which can be aligned for vertical or horizontal polarity

All antennas connect to the HR-IXP420SXP using the MNWBC195MN-2 2 foot long RF pigtail.
Use our Wireless Installations calculator spreadsheet to select the correct antenna for your application. Radio gain may need to be adjusted to remain within regulatory requirements. Consult your local regulatory agency for specific requirements.

Ordering Information

- HR-WRAPDX-22** Two 2.3-2.5GHz radio modules
- HR-WRAPDX-44** Two 4.9 GHz radio modules
- HR-WRAPDX-55** Two 5.1-6.1GHz radio modules
- HR-WRAPDX-99** Two 900MHz radio modules
- HR-WRAPDX-24** One 2.3-2.5GHz radio module and One 4.9GHz radio module
- HR-WRAPDX-25** One 2.3-2.5GHz radio module and One 5.1-6.1GHz radio module
- HR-WRAPDX-29** One 2.3-2.5GHz radio module and One 900MHz radio module
- HR-WRAPDX-59** One 5.1-6.1GHz radio module and One 900MHz radio module

HauteSpot Networks

3450 Sacramento Drive
Suite A
San Luis Obispo, CA 93401
Phone: 805-541-WISP (9477)
Fax: 805-456-3829

Electronic components warranted for 1 year.
Antennas are warranted for 5 years.

