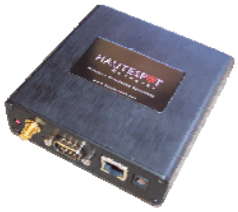
HR-IXPSXPi High Performace Indoor Modular Wireless Bridge

Features

- ✓ **High Performance Intel® XScale® IXP Network Processor for near wire speed packet forwarding**
- ✓ **Compact indoor design**
- ✓ **Reliable and secure on-board flash for booting the HauteRoute OS™ operating system**
- ✓ **Simple to configure browser management interface**
- ✓ **Choice of radio modules supporting 900Mhz at up to 700mW, 2.4Ghz at up to 400mW, 4.9 GHz 400mW or 5Ghz at up to 400mW**
- ✓ **10/100 Base-TX Ethernet port (with auto MDI/MDIX)**
- ✓ **Full feature transparent bridging using the HauteLine™ high performance, low latency protocol for rates of up to 68Mbps actual throughput**
- ✓ **Passive Power Over Ethernet supporting 9 to 48VDC (outdoor) or 6 to 20VDC (indoor) input voltage range. Can be solar powered!**
- ✓ **Reverse voltage and transient protection**
- ✓ **6W typical operating power with radios at full power.**
- ✓ **0°C to 70°C operating temperature**
- ✓ **0 to 90% Operating Humidity**
- ✓ **32Mbytes SDRAM**
- ✓ **Voltage and temperature monitor**
- ✓ **Watchdog timer**
- ✓ **Real Time Clock**
- ✓ **Serial Over IP for remote control of devices such as Pan, Tilt, Zoom controllers**

Web Management Interface



Up to 68Mbps of actual TCP/IP throughout with full multicast support makes this the ideal bridge for surveillance, broadcast and VoIP applications

The HR-IXPSXPi Point to Point Indoor Modular Bridge is a complete, turn key solution for creating wireless broadband links between buildings, HDTV cameras or remote locations.

Just attach any IP capable Ethernet device to its wired port and you can create a high performance wireless link at long distances with near line of sight or even non line of sight operation (depending on frequency used), with performance rivaling wired connections. Devices like MPEG/MJPEG video encoders, IP ready cameras, audio encoders, or VoIP PBXs can be connected directly to the HR-IXPSXP, extending their range and making them much more flexible.

The HR-IXPSXPi is built using a high performance network processor. It incorporates your choice of one radio module operating on either 900 MHz, 2.4, 4.9GHz, or 5 GHz bands. It uses HauteSpot Networks' high speed HauteLine™ protocol which delivers over twice the speed of other wireless solutions with no jitter and consistent delay variation.

The HR-IXPSXP comes in a small form factor enclosure, which allows for it to be placed in a variety of locations from camera tripod legs, to an office wiring closet, to the passenger compartment or trunk of a truck, RV, or boat. The 1"x4"x4" lightweight black aluminum enclosure is perfect for mounting to cameras, worn in pocket belts, or attached to tripods.

Integrated Serial Over IP allows any serial device such as a camera PTZ controller to be remotely controlled over the wireless link.

The modularity of the radio elements of the HR-IXPSXP allow it to be field upgradeable to new technologies such as the Ultra Wide Band, WiMAX or EVDO when available.

The high performance hardware is paired with state of the art software specifically designed for simplicity of use and robustness of features. These elements combine to create a solution which is scalable, extensible, highly reliable, and very flexible.

The HR-IXPSXPi also comes with one 10/100 Base-TX Ethernet channel, 32Mbytes SDRAM, Power over Ethernet (PoE), watchdog timer and a voltage/temperature monitor. Program storage consists of 16Mbytes of on-board Flash which hosts the HauteRoute OS™ operating system.

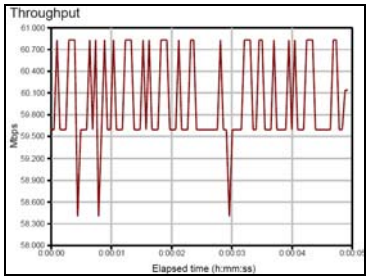
Software includes a complete embedded highly reliable operating system, and a feature rich wireless driver stack.

Processor Board Hardware Features:

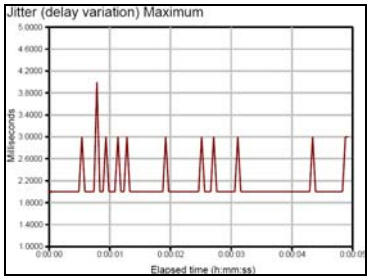
- Intel XScale IXP Network Processor
- 10/100 Base-TX Ethernet Ports (with Auto MDI/MDIX)
- 32Mbytes High Performance SDRAM
- On-board, non-removeable, secure flash storage
- 2 Type III Mini PCI Slots
- RS-232 Serial Management Port
- 5 Bits General Purpose Digital I/O
- Voltage/Temperature Monitor
- Watch-Dog Timer
- Serial EEPROM
- Wide Input Voltage (9 to 48VDC)
- Supports Power Over Ethernet (PoE)
- 0°C to 70°C Operating Temperature

Wireless Radio Features:

- 900 MHz, 2.4GHz, 4.9GHz and 5GHz operation using high performance HauteLine™ protocol
- Up to 68Mbps actual throughput using HauteLine™ protocol - Capable of handling heavy data payloads such as MPEG video streaming
- Up to 152-bit WEP data encryption with TKIP, WiFi Protected Access (64,128,152-WEP with TKIP)
- AES (Advance Encryption Security) Support



Throughput Test Results For 60Mbps RTP stream



Jitter Variation for 60Mbps RTP stream

Ordering Information

HR-IXPSXPi-9 – 900MHz indoor case

HR-IXPSXPi-2 – 2.4 GHz indoor case

HR-IXPSXPi-4 – 4.9 GHz indoor case (For sale to Law Enforcement or export only

HR-IXPSXPi-5 – 5GHz indoor case

Electronic components warranted for 1 year.

High Performance Streaming

The HR-IXPSXPi is ideal for demanding streaming applications such as uni-cast, multi-cast or point to point RTP streaming, IPTV, and other related applications.

The HR-IXPSXPi uses a combination of a high performance embedded network processor, high gain/high performance radio modules available for either 900 MHz, 2.4 GHz or 5 GHz, the HauteRoute OS™ operating system which is optimized for high performance wireless devices like the HR-IXPSXPi, and the HauteLine™ high performance wireless protocol which is specifically designed for streaming media.

In real world testing, the HR-IXPSXPi, in a point to point bridge configuration, was able to achieve actual RTP stream throughput of 60Mbps with no data loss and no jitter on the 5 GHz band. Seven simultaneous RTP streams of 10Mbps were also tested and showed the same results: no jitter and no data loss.

The HR-IXPSXPi achieves these amazing results through the use of a non-blocking hardware architecture where the CPU, the wireless MAC/PHY, and the on-board system bus are all matched to one another. All elements of the architecture are balanced for maximum performance and throughput. The hardware is packaged in a rugged waterproof enclosure and is powered by 802.3af compliant Power Over Ethernet (PoE).

The hardware architecture is complimented by the HauteRoute OS™ firmware operating system which provides a stable, well tested environment which is optimized to the hardware platform and provides a set of simple Web management interfaces to users, allowing for simple installation and configuration.

Finally, the HauteLine™ wireless protocol, which is designed specifically to leverage the capabilities of the radio modules and HauteRoute OS™ operating system used in the HR-IXPSXP provides reliable, high performance throughput without jitter, data delay or packet loss.

Typical wireless applications using 802.11 or 802.16 protocols suffer from delay and stream interruption due to management overhead such as beaconing, polling and other functions. Management has been redesigned in the Hauteline™ protocol to not interrupt streaming.

The ability for the HR-IXPSXPi to operate on a variety of frequencies using the identical software and operating system means that customers can train their installers and operators once and deploy everywhere. 900 MHz operation allows for non-line-of-sight operations, 2.4 GHz allow for global operation without licensing, 4.9 GHz allows for use by Public Safety Agencies, and 5 GHz operation allows for maximum throughput with limited noise. A simple module change is all that is required to move bands.

With the ability to vary channel width from 5 to 10 to 20 to 40 MHz, point to multipoint users can scale from 6 to 20 channels, without overlap, depending on band, allowing for many remotes (feature available on certain models, call for details).

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