DEVELOPER KIT
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HN-210

2.4 GHz Frequency Hopping Wireless Data Modem

Features:
- ***2.4GHz frequency hopping spread spectrum technology***
- ***460Kbps over the air and 115Kbps I/O data rates***
- ***64 hopping patterns***
- ***FCC certified and CE marked***
- ***Integral 6dB patch antenna***
- ***RS-232 asynchronous or USB serial interface***

Benefits:
- ***Exceptional immunity to multipath fading and jamming***
- ***Supports high speed applications needing long range***
- ***Co-location of multiple networks without interference***
- ***License-free application worldwide***
- ***Cost-effective, simple installation***
- ***Connects to PC serial ports***



The HN-210 is a versatile, low cost, multi-purpose 2.4 GHz frequencyhopping wireless data modem. The HN-210 communicates through a serial port with over the air of 460.8Kbps and supports both point-to-point and point-to-multipoint networks.

Specifications

	HN-210	HN-210X	HN-214
Frequency Band	2401 - 2471 MHz (USA) — 2448 - 2480 MHz (France, Spain) 2473 - 2495 MHz (Japan) — 2452 - 2478 MHz (Canada)		
Licensing	Unlicensed under FCC Part 15, ETSI 300.328		
Number of Channels	75 USA; 25 Canada, France, Spain & Japan		
Hopping Patterns	User configurable, 64 patterns (networks) available		
I/O Data Rates	Up to 115.2 Kbps Asynchronous		
RF Channel Rate	460 Kbps		
Line of Site Range	> 5 miles		
RF Bandwidth	750 KHz		
Modulation Type	GFSK		
Output Impedance	50 ohms		
Network Protocol	Dynamically assigned TDMA with ARQ		
Transmit Power	EIRP: +16dBm/+24dBm	+18dBm	EIRP: +16dBm/+24dBm
Receive Sensitivity	-99dBm for 10^{-5} BER	-93 dBm for 10^{-5} BER	-99dBm for 10^{-5} BER
Power Requirements	9 Vdc 160mA typ. 750mA surge		
Serial Data Interface	Async. RS-232		

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Mechanical Specifications

	HN-210	HN-210X	HN-214
Antenna	Integrated 6dB patch	n/a	Integrated 6dB patch
Case Materials	Polycarbonate, NEMA 4X		
Dimensions (mm)	130 x 79 x 35 (excl. flange)		
Weight excl. cable	235g		
Antenna Connector	n/a	TNC	male n/a
Data Connector	9-pin D/USB B		
Power Connector	2 pin DIN		

Environmental Specifications

Temperature Range	-30°C to +70°C (radio enclosure)
Humidity	95% at +40°C, Non-condensing



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Built around the WIT2410 radio, the HN-210 has an integral 6dB patch antenna creating a "single piece" modem. Communication with the HN-210 is through a 115.2Kbps asynchronous serial port supporting a standard RS-232 interface; a USB version is also avaiable. The HN-210 communicates over the air at 460.8Kbps and supports both point-to-point and point-to-multipoint networks. With a NEMA 4X weatherproof enclosure and aluminum mounting flange, the HN-210 is simple to install on the side of a building or attached to a mast. With no antenna to connect, the HN-210 is simply mounted where the antenna would ordinarily be mounted. This removes the need for long antenna cable runs, expensive in terms of both cost and performance.

The HN-210 comes with a 50-foot cable that connects to an indoor serial adapter box (included) that provides a standard RS-232 serial 9-pin D connection. The HN-214 comes with a 4-foot cable for use when long cable runs are not needed. The serial adapter box also provides power to the HN-210 through a universal 110/220 50/60 wall-mount power supply (also included).

The integral 6dB patch antenna provides a line-of-site range of several miles, making the HN-210 ideal for a variety of "last mile" applications. For applications requiring more antenna gain, the HN-210X replaces the built-in patch antenna with an external TNC connector.

When paired with the RFM SNAP2410 family of products, the HN-210 provides a cost-effective link from remote devices to Ethernet/IP-based applications. These applications include Intranetbased applications as well as Internet access. The HN-210 also is ideal for use in SCADA applications as remote modems in multipoint configurations and is an extremely cost-effective solution for point-to-point installations. Selectable transmit power levels of 10mW and 100mW allow the HN-210 to be used worldwide, even with the gain of the patch antenna.

Based on the M WIT2410 spread spectrum frequency-hopping radio, the HN-210 has exceptional multipath fade rejection as well as immunity to jamming. The WIT2410 is a field proven performer that delivers robust, reliable, real-world performance.

The HN-210 is both FCC and CE marked. Operating in the 2.4GHz ISM band, the HN-210 can be deployed around the world without a license.

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