

**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 <sup>-5</sup> BER  | -93 dBm for 10 <sup>-5</sup> BER | -99dBm for 10 <sup>-5</sup> BER |
| Power Requirements    | 9 Vdc 160mA typ. 750mA surge   |                                  |                                 |
| Serial Data Interface | Async. RS-232  |                                  |                                 |

# Discontinued

## 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     |



# Discontinued

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 available. 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 Murata SNAP2410 family of products, the HN-210 provides a cost-effective link from remote devices to Ethernet/IP-based applications. These applications include Intranet-based 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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