

Wireless Sensing System

2.4 GHz Wireless Base Stations



Introduction

2.4 GHz Base Stations are designed to operate as an integral part of any **Microstrain**® Wireless Sensing System high speed wireless sensor network. They provide seamless communication between a host PC, Single Board Computer or microcontroller and remote wireless nodes, including the **V-Link**® wireless voltage node, **SG-Link**® wireless strain node, **SG-Link**® OEM wireless module, **G-Link**® wireless accelerometer node and **TC-Link**® wireless thermocouple node.

The USB Base Station provides a plug-and-play USB connection. It is light-weight, easily-mountable, has a small footprint and can communicate individually with any **MicroStrain**® wireless node while issuing network instructions to multiple wireless nodes.

The Analog Base Station provides a plug-and-play USB or RS-232 connection. It has a small footprint, can be deployed as a stand-alone (without host PC) and can communicate individually with any wireless node as well as issue network instructions to multiple wireless nodes. It can also provide channelized data to analog data acquisition equipment in hybrid or legacy systems.

The Serial Base Station provides a plug-and-play RS-232 connection. It is light-weight, easily-mountable, has a small footprint and can communicate individually with any wireless node as well as issue network instructions to multiple wireless nodes.

Optional range extending antennas are available on request.

Features & Benefits

- 2.4 GHz direct sequence spread spectrum radio is license free worldwide
- IEEE 802.15.4 open communication architecture
- multiple base stations support simultaneous streaming from multiple nodes to PC
- support real-time streaming rates up to 4 KHz
- analog base station re-creates analog voltage for input into DAQ
- communication range up to 70 m line-of-sight, 300 m with high-gain antennas

Applications

- condition-based monitoring of machines
- health monitoring of civil structures and vehicles
- smart structures and materials
- experimental test and measurement
- robotics and machine automation
- vibration and acoustic noise testing
- sports performance and sports medicine analysis
- distributed security networks





Specifications

USB Base Station MD-TxRx-2400-BASE-USB	
Host communication interface	USB 2.0
Cable	3 feet
Power	powered by host USB port
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz), 16 channels, radiated power 0 dBm (1mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	70 m line-of-sight, up to 300 m with optional high gain antenna
Operating temperature	-20 to +60°C with standard enclosure, -40 to +85°C electronics only
Dimensions	102 mm x 27 mm x 24 mm without antenna, 200 mm x 27 mm x 24 mm with antenna for dimensional print go to www.microstrain.com
Weight	59 grams
Enclosure material	ABS plastic
Software	Node Commander® Windows XP/Vista compatible
Analog Base Station MD-TxRx-2400-BASE-AU	
Host communication interface	USB 2.0, RS232, 115.2 Kbaud
Cables	6 foot cable with male/female USB connectors and 6 foot cable with male/female DB9 connectors
Power	powered by host USB port, external 6-9 volt VDC power source (9 VDC 500 mA adapter included) or 9 volt internal battery
Analog outputs	supports one wireless node with up to 8 channels or 8 wireless nodes with 1 channel, provides 0 to 3 or 0 to 5 volt referenced output (user selectable) and checksum channel
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz), 16 channels, radiated power 0 dBm (1mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	70 m line-of-sight, up to 300 m with optional high gain antenna
Analog Latency	1 active channel – 2.5 ms, 4 active channels – 3.5 ms, 8 active channels – 4.5 ms
Operating temperature	-20 to +60°C with standard enclosure, -40 to +85°C electronics only
Dimensions	200 mm x 66 mm x 156 mm without antenna, for dimensional print go to www.microstrain.com
Weight	878 grams
Enclosure material	ABS plastic
Software	Node Commander® Windows XP/Vista compatible
Serial Base Station MD-TxRx-2400-BASE-232	
Host communication interface	RS232, 115.2 Kbaud
Cable	6 foot cable with male/female DB9 connectors
Power	Powered by external 6-9 volt VDC power source (9 VDC 500 mA adapter supplied) or 9 volt internal battery
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz), 16 channels, radiated power 0 dBm (1mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	70 m line-of-sight, up to 300 m with optional high gain antenna
Operating temperature	-20 to +60°C with standard enclosure, -40 to +85°C electronics only
Dimensions	133 mm x 84mm x 36 mm without antenna, for dimensional print go to www.microstrain.com
Weight	170 grams
Enclosure material	ABS plastic



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Patents Pending