Navigator II

MULTIFUNCTIONAL WIRELESS DATA TRANSCEIVER

The Navigator II™ is a multifunctional industrial wireless data transceiver designed for advanced serial and serial to IP networks. The Navigator II enables simultaneous wireless connectivity for up to three serial devices, discrete inputs/outputs and optional GPS at each remote node. The Navigator II's long-range, secure, wireless capabilities provide connectivity for a broad set of fixed and mobile data applications.

FUNCTIONALITY AND FLEXIBILITY

The Navigator II offers the capability and flexibility to meet a variety of wireless networking challenges. Utilizing frequency hopping spread spectrum (FHSS) technology, the Navigator II provides long-range data transport up to 115 Kbps. Designed to serve primarily as the remote node within a network, the Navigator II offers the flexibility to serve as a repeater, remote/repeater, as well as the base station component of the network. Highly flexible and configurable features include data prioritization, error correction, remote network monitoring, and bandwidth optimization

utilizing Intuicom's Adaptive Multipoint™ protocol. Optional embedded SmartGPS™ technology enables position and time to be included in the wireless data stream. Discrete inputs and outputs enable remote sensing of state or switch closures as well as control of remote devices.

SCALABLE NETWORK SOLUTION

Used within an Intuicom wireless network, the Navigator II can meet the needs of small as well as complex communication challenges. Ease of integration, robust performance and a broad set of support tools including network wide diagnostics provide for rapid deployment of a network, under even the most adverse environments. The Navigator II networking capability bridges remote data into easy to manage IP sockets for access from almost any designated network.

APPLICATIONS

Whether monitoring pipeline performance in real-time, or tracking your fleet in the Nevada desert, the Navigator II can support your fixed or mobile communication needs. Common commercial and industrial applications include:

- Scientific and Environmental Monitoring
- Survey, Mapping and GIS
- Defense and Security Applications
- Intelligent Transportation and AVL
- Utilities and Public Infrastructure
- Marine Communications and Positioning

To learn more about enabling wireless networking for your applications, contact us at: info@intuicom.com

FEATURES

- Data throughput to 115.2 KBaud
- Long range operation (60+ miles)
- Supports multiple serial channels and discrete I/O
- Simultaneous full duplex communications
- Optional SmartGPS™ embedded technology
- Low power consumption
- Network-wide diagnostics, remote monitoring and control
- Proven rugged industrial design

FEATURES OF INTUICOM WIRELESS DATA NETWORKS

- Available bundled with a variety of Intuicom products and solutions
- Networks range from facility to state-wide levels
- TCP/IP data streams provide a standard interface for third-party software
- Intuicom expertise for planning and design of your wireless network

Intuicom

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GENERAL SPECIFICATIONS

Enclosure	Ruggedized extruded aluminum with rubber traction bumpers
Size	H: 53 mm (2.1") x W: 167 mm (6.6") x L: 143 mm (5.6")
Weight	850.5 g (1.88 lbs.)
Temperature Operating Environment (non-condensing)	-30° C to + 75° C
Connectors/Signals	
Wireless Transceiver	N Type female
GPS Antenna	TNC female
Data	3—DB9 5-wire serial ports (TXD, RXD, CTS, RTX, GND)
Discrete	4—inputs, 3—outputs available on DB9 (3rd serial port not available when using all discretes)
GPS PPS	Available on pin 1 of each DB9
Input Voltage	6-30 VDC (900 MHz), 9.5-30 VDC (2.4 GHz)
Power Consumption	Average at full RF transmit power, 12VDC, 900 MHz model

No GPS:		With GPS:	
Idle	98 mA	Idle	122 mA
Rx	114 mA	Rx	136 mA
Tx	266 mA	Tx	272 mA

WIRELESS TRANSCEIVER

SPECIFICATIONS	900 MHZ	2.4 GHZ
Frequency Range	902-928 MHz	2.4-2.485 GHz
Operating Modes	Adaptive Multipoint, TDMA, Point-to-Point, Store-and-Forward repeater	
Transmitter		
Output Power	1 Watt	500 mW
Range, Line of Sight	60 Miles	20 Miles
Modulation	Spread Spectrum GFSK, 120 kBs—170 kBs	
Occupied Bandwidth	230 KHz	
Receiver		
Sensitivity	-108 dBm at 10^{-6} BER -110 dBm at 10^{-4} BER	-108 dBm at 10^{-6} raw BER
Selectivity	20 dB at fc ± 115 KHz 60 dB at fc ± 145 KHz	40 dB at fc ± 230 KHz 60 dB at rfc ± 460 KHz
Data Transmission		
Error Detection	32 Bit CRC, resend on error	
Data Encryption	Substitution, dynamic key	
Link Throughput*	115.2 KBaud	

*uncompressed throughput assuming 75% frequency availability, no repeaters

OPTIONAL SMARTGPS TRANSCEIVERS

SPECIFICATIONS	L1 ONLY	L1 WAAS (OPTION)
Channels	12 "all-in-view"	10+2 SBAS Config.
Frequency	L1 C/A code and carrier	L1 C/A code
Update Rate	1 Hz**	1 Hz
PPS	Yes	Yes
Speed	514 m/s (1000 knots)	
Altitude	18,288m (60,000 ft.)	
Position Accuracy		
Autonomous Horiz. CEP	<5m	3m
DGPS Horiz. CEP	1m	<1m
WAAS/EGNOS Horiz. CEP	n/a	1m
Acquisition Time		
Hot Start	15 sec	<10 sec
Warm Start	45 sec	<45 sec
Cold Start	120 sec	<150 sec
Reacquisition Time		
Total SV blockage <20 sec	1 sec	1-2 sec
Communications		
Standard NMEA Output	GGA, GSV, GSA, RMC, VTG, GLL, ZDA	
DGPS Input	RTCM-104 Message 1, 2, 9	RTCM-104 v2.2 Message 1, 3, 9

**optional 10Hz carrier phase available