



NOMADIC COMMUNICATIONS

NMX920 MOBITEX® RADIO MODEM

TECHNICAL SPECIFICATION

November 1999.

Overview

The NMX920 is a 900MHz Mobitex® Radio Packet Modem designed for integration into third party OEM equipment. The NMX920 is a compact, single board design housed in an EMI shielded enclosure with MMCX antenna connector and single power and data connector. Integration of the NMX920 into existing and new designs is simplified by the use of a single 30 way Flexible Printed Circuit (FPC), Board to Board connector or cable for data, control and power signals.

Key Features

- Compatible with 900MHz Mobitex® networks in North America.
- Low power consumption for prolonged battery life.
- Flexible packaging configurations with optional connector styles and casing options.
- Certified MIS conformance
- 2 W nominal power transmitter for effective indoor and fringe area use.
- High tolerance to EMI produced by close proximity electronics, or coupled through signalling interface.



Approvals

- Mobitex® compliant to MIS 4A, including R14N and WSM
- FCC (Pending)
- Industry Canada (Pending)

Radio Transceiver Specification

General	Dual conversion receiver, directly modulated transmitter utilising common antenna and solid state transmit/receive RF switch.
Modulation Technique	NRZ GMSK (BT=0.3)
Transmitter Frequency Range	895 – 905 MHz (800 channels)
Receive Frequency Range	931 – 941 MHz (800 channels)
Channel Spacing	12.5 kHz
Frequency Accuracy	±1.2 kHz over full operating temperature range
Receiver Sensitivity	-116 dBm
Transmitter Power (typical)	2 W @ 6.5 – 7.5 VDC into matched 50Ω antenna load at 20°C
Transmitter Power Control	4 level transmit power control (0, -6dB, -12dB and -18dB)
Antenna Cable Connector	MMCX Female

Environmental Specification

Operating Temperature	-10°C to +55°C
Storage Temperature	-35°C to +80°C
Cooling Method	Convection and thermal conduction of an enclosed environment
Operating Humidity	5% to 95% non-condensing relative humidity at +50°C for at least 8 hours

Physical Specification

Overall dimensions	100 mm x 55mm x 12 mm (standard enclosure) including connectors and mounting lugs
Weight	50 g including standard enclosure
Mounting Method	M2 Screws at 3 positions
Housing	High density metal impregnated plastic clamshell
Grounding	Continuous-edge pressure fit grounding from case to PCB

Power Requirements

Supply Voltage	6.5 – 7.5 VDC
Supply Ripple	Less than 35mV rms
All modes – Transmitting high power	1400 mA (typical) @ 7.0 VDC into matched 50Ω antenna at 20°C
Express Mode – Receiving	130 mA (typical) @ 7.0 VDC into matched 50Ω antenna at 20°C
Battery Saving Mode – Receiving	85 mA (ave) (typical) @ 7.0 VDC into matched 50Ω antenna at 20°C
Power-off Mode	250 uA (typical) @ 7.0 VDC

Device Interface

Connector	30-way 0.50 mm pitch FPC socket, or 2 x 15 x 2mm Board to Board Connector, or cable
Data link protocol	Mobitex® Asynchronous Communications Protocol (MASC1)
Data port	RS-232 or TTL (Manufacturing Option)
Data rate	1200 – 9600bps

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