

NETNode IP Mini Mesh Radio (Plain)

COFDM – Video, Audio Telemetry and IP Products

COBHAM

September 2012 Data Sheet

The most important thing we build is trust



Cobham NETNode IP mesh radios are the latest innovations in the expanding range of Cobham Tactical Communications and Surveillance solutions that feature Cobham technology at their core.

NETNode IP radios can be combined in a fluid self forming, self healing mesh containing up to twelve radios. The NETNode radios within the mesh exchange data on a single frequency, simplifying frequency management. The entire mesh occupies just 2.5MHz of bandwidth (3.0, 3.5, 5.0 and 6.0MHz also available). The NETNode radios employ the unique Cobham COFDM modulation scheme and therefore offer excellent RF penetration and performance in the presence of multipath.

The NETNode Phase 3 mesh radios (including Mini Mesh) can provide over 5.0 (6.0)Mb/s of IP data (data rate depends on mode, number of nodes and range between nodes). This available IP data rate can be used to exchange IP data traffic between nodes.

The highly flexible mesh topology means that data can be exchanged between nodes in a point-to-point or multi-point fashion, range can be extended by using nodes as repeaters. The self-forming, self-healing mesh architecture makes the NETNode product ideal for use in mobile surveillance applications, command and control, or advanced robotics.

The NETNode can be connected to third party IP cameras.

Security of the entire mesh network can be ensured by the use of the optional AES128 or AES256 encryption.

Control of the deployed mesh is achieved using the inbuilt web browser or comprehensive Mission Commander PC application. This software suite, based around a mapping display, is used to configure and monitor the mesh, and to control its nodes and cameras.

The mini mesh radio has been specifically influenced for size limited applications creating the flexibility for deployment by its unique weight of just 340 grams. Output power is 100mW which also suits bodyworn application providing much needed IP connectivity real time to the users.

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Specification:

Interfaces

RF Interfaces (Antenna 1 and 2)	SMA
Power	Lemo
Ethernet 1	Lemo
Ethernet 2	Lemo
Amp Power Enable	Lemo
Control and misc I/O	DType

Typical range

NETNode100mW-3P-217250	100mW Non Line of Sight urban 500M Line of Sight 1km+
NETNode100mW-3P-440500	100mW Non Line of Sight urban 500M Line of Sight 1km+

RF Interfaces

Antenna 1	Switched transmit receive antenna
Antenna 2	Receive only antenna
RF and modulation	
Output frequency	2.17 to 2.5GHz, 4.4 to 5.0GHz
Tuning step size	125kHz step
Output power	100mW
Bandwidth	2.5, 3.0, 3.5, 5.0 (6.0)MHz
Mesh capacity	Up to 6.0 Mb/s Mini mesh Only
Modulation	COFDM 360 carrier modulation
Carrier Modulation	BPSK, QPSK or 16QAM (adaptive)
FEC rate	FEC1/2
Receive diversity	Maximum Ratio Combining
Receive sensitivity	-98dBm for most robust mode

IP interface

Primary and secondary ethernet electrical	100BaseT Ethernet
IP address allocation	DHCP dynamic IP addressing
Video and audio streaming format	Multicast VLC compatible RTSP Support

Open Audio comms channel (shared voice channel)

Multi-user audio comms channel	Interface microphone level/headphone o/p
Compression	G726 32kbit audio

Encryption

Type	AES128 or AES256 (both optional)
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GPS

Dedicated GPS interface	RS232/RS422
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Data interface

RS232/RS422 data input (shared with user camera control)	1K2 to 115K2 baud switchable With UDP and TCP routing protocol
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Control

Local control	LED power and mesh status (Bi colour)
Remote control	Mission Commander PC application Full control of all parameters in a map based application

Physical

Sealing	Designed to meet IP 54 - Splash Proof
Dimensions	98 x 93 x 35 mm
Mounting options base unit	Through hole screws on flange base.
Weight	340g

Power

DC input	12-14V
Power consumed W	8W typical.

Environment

Temperature range	-10 to 50 deg C
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Connectors:

Power: Female Lemo 4 pin 0B	Pin 1 +12VDC Pin 2 +12VDC Pin 3 GND Pin 4 GND
Ethernet 1: RJ45 connector	Ethernet OP Ethernet ON Ethernet IP Ethernet IN
Ethernet 2: RJ45 connector	Secondary Ethernet OP Secondary Ethernet ON Secondary Ethernet IP Secondary Ethernet IN
DB-15 (male)	Pin 1 RS485 TX+ Pin 2 RS485 TX- Pin 3 GND Pin 4 RS485 RX+ Pin 5 RS485 RX- Pin 6 +12V Pin 7 Engineering use RS232TX1 Pin 8 Engineering use RS232RX1 Pin 9 GNS Pin 10 RS232 Control TX2 Pin 11 RS232 Control RX2 Pin 12 GND Pin 13 RS232 TX Pin 14 RS232 RX Pin 15 GND/RS232 GND
Talkback: Female Lemo 6 pin	Audio In 1 Audio In 2 Audio 1 GND Audio Out 1 Audio Out 2 Audio 2 GND

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Product Code:

*NETNode-MP-034047	COFDM IP Mini Node Plain 100mW 340-430 MHz excl ANTs incl PSU
*NETNode-MP-115140	COFDM IP Mini Node Plain 100mW 1.15-1.40GHz excl ANTs incl PSU
NETNode-MP-165238	COFDM IP Mini Node Plain 100mW 1.65-2.38GHz excl ANTs incl PSU
NETNode-MP-217250	COFDM IP Mini Node Plain 100mW 2.17-2.50GHz excl ANTs incl PSU
NETNode-MP-440500	COFDM IP Mini Node Plain 100mW 4.40-5.00GHz excl ANTs incl PSU

Product Code Includes

1 x CA0588	NETNode Plain Microphone/Headphone Cable
1 x CA0481	NETNode Plain External Cable Bundle.
1 x PSU12/1	AC Power supply for Plain Mesh node

Accessory Options

MISCDR (Mission Commander)	Control Interface (Levels - Bronze/Silver/Gold)
CAMPTZ*	Pan, Tilt and Zoom camera for NETNode
NETBAT-P	Battery Pack, 14.8V (5.2Ah) 4-pin Lemo
NETBATCH-P	Battery Charger for NETBAT-P

Licensing Options

AES128NN	128bit AES Encryption
AES256NN	256bit AES Encryption

* Starred items in italics will be supported in future releases

Products are available to security users only, in licensed frequency bands. These products are not approved for use by unlicensed users. Commercial products are available to unlicensed users - contact Cobham Tactical Communications and Surveillance direct for details

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