

# NETNode2x2W-5PT

## NETNode IP Mesh Radio Phase 5 (Plain Tri-Band)

### Overview:

Phase 5 is the latest generation of DTC's NETNode IP Mesh Radio family, offering built-in dual HD video encoders and MIMO capability, providing our highest ever data capacities and maximum frequency flexibility. The latest Tri-Band product offers increased frequency agility with support for high L-band, S-band and C-band, provided by one physical unit.

NETNode IP Mesh Radios can be combined in a fluid self-forming, self-healing mesh network containing up to 20 nodes. The Tri-Band radios exchange bidirectional IP data in a single RF channel, or can utilise different frequency channels for the uplink and downlink traffic, thereby, simplifying frequency management in a complex network. The entire mesh can operate in a bandwidth from 1.25MHz to 20MHz, employing DTC's unique COFDM modulation scheme. Multiple Input Multiple Output (MIMO) technology transmits two signals in the same channel, almost doubling the available data capacity, can also be configured in standard Mesh.



### Features and Benefits:

- Self-forming, self-healing mesh architecture
- Ideal for use for wide area coverage & multi-hop, mobile applications such as robotics and city wide infrastructure
- Tri Band capability offered in L-band (1.7-1.85GHz), S-band (2.2-2.5GHz) and C-band (4.4-4.9GHz)
- 4G IP connectivity for additional backhaul offering beyond mesh
- Low latency IP communication
- Fan cooled with three 25mm fans
- Inbuilt Field Controller interface
- Software configurable RF bandwidth from 1.25MHz to 20MHz
- Interlink mode for enhanced capability and large scale systems
- 64Gb of on-board storage with store & forward functionality
- Built in encryption (DES as standard, AES128/256 available subject to export control)
- Mission Commander compatibility

### Product Information:

#### Product Includes

CA0002	12VDC power lead Lemo 3m
CA0023	12V power block, requires IEC cable

#### Accessory Options (sold separately)

AP000481	UK IEC power supply cable
AP001483	US IEC power supply cable
AP004634	EU IEC power supply cable
AP007192	AU IEC power supply cable
AP009131	USB GPS receiver, GlobalSat BU-353-S4
CA3302	Mesh 26-way FCON USB cable
CA3303	Mesh 26-way control cable 1m
CA3304	Mesh 26-way talkback audio cable 1m
CA3305	Mesh 26-way second Ethernet cable 150mm
MISCDRTAC	Mission Commander Tactical application for desktop or tablet - refer to datasheet
MCS	Mission Commander Strategic advanced client/server application - refer to datasheet
SOL8SDI	HDMI or composite video to SDI converter

#### Related Documents

High Bandwidth Mesh – P5	Phase 4 and 5 Mesh Comparison
Resource ID 100232	NETNode Phase 5 Hardware Guide

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### Technical Specification:

#### Interfaces

COFDM RF interfaces	SMA x 4 (2 x TX/RX, 2 x RX)
USB type-A	USB type A
Power	4-way Lemo 0B
Ethernet	RJ45 and on 26-way D-type
Config & data	26-way high density D-type
LED	Bi-colour
Control interface	Internal FCON based controller
HD-SDI video	DIN 1.0/2.3 x 2

#### Typical Range

NLOS light urban	800-1400m typical
LOS (e.g. ground to air)	50km+

#### RF Interfaces

Antenna A	Channel 1 receive only
Antenna B	Channel 1 switched transmit/receive
Antenna C	Channel 2 receive only
Antenna D	Channel 2 switched transmit/receive

#### RF and Modulation

Tuning step size	125kHz step
Output power	+33dBm per channel in 0.25dB step (4W total)
Bandwidth	1.25, 1.5, 1.75, 2.5, 3.0, 3.5, 5.0, 6.0, 7.0, 8.0, 10.0MHz (video and IP Mesh) 12.0, 14.0, 16.0, 20.0MHz (IP Mesh only)
Mesh capacity	Up to 87Mbps MIMO, 17Mbps standard Mesh
Modulation	COFDM 360 carrier modulation
Carrier modulation	BPSK/QPSK/16QAM/64QAM (adaptive)
FEC rate	FEC 1/2, FEC 2/3 (adaptive)
Receive diversity	Maximum ratio combining
Receive sensitivity	-98dBm (BW 2.5MHz/BPSK 1/2)

#### IP Interface

Primary Ethernet	1Gbit/s Ethernet
Secondary Ethernet	10/100 Ethernet
IP address allocation	DHCP dynamic IP addressing/static IP

#### Streaming

Format	UDP multicast/unicast RTSP/RTP/UDP multicast/unicast ONVIF Profile S
MJPEG	TCP/HTTP

#### Video

Video input	Video streams via IP camera and HD-SDI inputs
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#### Store and Forward Options

Storage format	SD card interface (Secure Digital card) - not user accessible
Record options	Continuous or triggered (Milestone)
Files download	From web browser interface/RTSP
Video and audio clip size	30 seconds

#### Encryption

DES	Standard
AES128/AES256	Licensed (subject to export control)

#### Data Interface

RS232/RS485 bi-directional data (shared with user camera control)	1K2 to 115K2 baud switchable with UDP and TCP routing protocol
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### Technical Specification (con't):

#### PTZ Camera Interface

User camera type	IP camera
User camera control	Mission Commander PC application using VISCA, PELCOD or PELCOP

#### Control

Local control	LEDs power and Mesh status FCON front panel
Remote control	Web browser GUI Mission Commander - control of all parameters in a map based application

#### Power

DC input (12V)	8-18V
Power consumed (non-MIMO)	12W approx.
Power consumed (MIMO)	25W (40W pk) approx.

#### Physical

Size	135mm x 89mm x 35mm (421cu cm, 25.7 cu inch)
Weight	550g

#### Environment

Temperature range	-20°C to +50°C
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#### Frequency

NETNode2x2W-5PT-175500T	Tri-band - L-band (1.7-1.85GHz), S-band (2.2-2.5GHz), C-band (4.4-4.9GHz)
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#### Software License Code

Silver (included)	Standard Mesh, MIMO Mesh, DES encryption, recording and streaming
Gold	Silver plus SD H.264 encoder
Platinum	Gold plus HD H.264 encoder
AES128NN	AES NETNode 128 bit decryption
AES256NN	AES NETNode 256 bit decryption

Export of encrypted products is subject to United Kingdom regulatory export controls.

For further information contact your Sales Account Manager, one of our Regional Sales Offices, or email [solent.enquiries@domotactical.com](mailto:solent.enquiries@domotactical.com)

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