

NETNode2x2W-5P

NETNode IP Mesh Radio Phase 5 (Plain)

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 for our highest ever data capacities.

NETNode IP radios can be combined in a fluid self-forming, self-heading Mesh network containing up to 20 nodes. The radios exchange bidirectional IP data in a single RF channel, simplifying frequency management. The entire Mesh can operate in a bandwidth between 1.25 and 20MHz and employs DTC's unique COFDM modulation scheme offering excellent RF penetration and performance in the presence of multipath. Multiple Input Multiple Output (MIMO) technology transmits two signals in the same channel almost doubling the available data capacity.

The Plain variant is ideal for rack mounting or vehicle deployment and offers standard connectors for ease of integration and connectivity.



Features and Benefits:

- Self-forming, self-healing mesh architecture
- Ideal for use for wide area coverage & multi-hop, mobile applications such as robotics
- Low latency IP communication
- Dual HD video encoders
- Data capacity of 87Mb/s of IP data possible
- Mission Commander compatible
- Software configurable RF bandwidth between 1.25MHz and 20MHz
- IP backhaul/central receive systems
- 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)
- Rack mountable (with accessories)

Product Information:

Product Includes

AP000481	UK IEC power supply cable
CA0649	12VDC power supply unit 1m
CA2787	DC power cable 3m to bananas

Accessory Options (sold separately)

CA0474	Control cable 1m
AP001483	US IEC power supply cable, for use with CA0649
AP004634	EU IEC power supply cable, for use with CA0649
AP007192	AU IEC power supply cable, for use with CA0649
AP006819	Cavity filter, 2305-2395MHz, 35dBm (Wi-MaxFilter)
AP009131	USB GPS receiver, GlobalSat BU-353-S4
MW2479	Rack mount ear (two required)
MISCDRTAC**	Mission Commander Tactical network management software for desktop or tablet
MCS**	Mission Commander Strategic advanced management client/server software
PRORXCPLKT-1RU	Coupler kit 1RU
SOL8SDI	HDMI or composite video to SDI converter

** See separate datasheet

Related Documents

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

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Technical Specification

Interfaces

RF interfaces	SMA female x 4 (2 x Tx/Rx, 2 x Rx)
12-18V DC input	4-pin XLR
Ethernet 1	RJ45
Ethernet 2	RJ45
USB	Type A
SDI/HD-SDI input 1	DIN 1.0/2.3 75Ω female
SDI/HD-SDI input 2	DIN 1.0/2.3 75Ω female
Config & data	15-way D-sub
Microphone/line input (stereo)	3.5mm socket (4-pole)
Headphone output (stereo)	3.5mm socket (4-pole)

IP Interface

Primary and secondary Ethernet	100/1000Base-T
IP address allocation	DHCP dynamic IP addressing/static IP

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

Output frequency	Frequency variant dependent
Tuning step size	125kHz step
Output power	+33dBm (2W) per chan. 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	FEC1/2, FEC2/3 (adaptive)
Receive diversity	Maximum ratio combining
Receive sensitivity	-98dBm (BW 2.5MHz/BPSK 1/2)

Typical Range

NLOS light urban	500-700m typ.
LOS (e.g. ground to air)	30km+

Streaming

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

Video

Video input	Two video streams Max total throughput of 1920x1080p30 Two HD inputs at half resolution or frame rate
Input format	1920x1080i 60/59.94/50Hz 1920x1080p 30/29.97/25/24/23.97Hz 1920x1080psf 30/29.97/25/24/23.97Hz 1280x720p 60/59.94/50Hz 720x576i 50Hz or 720x480i 59.94Hz
H.264 compression	AVC/H.264/MPEG-4 Part 10 High profile level 4.0
Coding options	Horizontal scaling of 3/4, 2/3, 1/2, 1/4 Vertical scaling of 1/2, 1/4 Sub-frame rate of 1/2, 1/4, 1/8, 1/24
Encoder delay	1s to 10ms (mode dependent)
Encoder bitrates	0.25Mbps to 32Mbps

Audio

Analogue audio input	High gain microphone stereo pair
Digital audio input	SD/HD-SDI two digital stereo pairs
Sample rate	16kHz-48kHz
Coding modes	4 channels stereo or mono MPEG Audio Layer 1 64-448kbps MPEG Audio Layer 2 32-384kbps MPEG Audio Layer 3 8-256kbps

Store and Forward Options

Storage format	SD card interface (Secure Digital card) 64Gb SD card built in
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)

Open Audio Comms Channel (shared voice channel)

Multi-user audio comms channel	Interface microphone level/headphone o/p
Compression	G726 32kbit audio 8kHz sampling and mute

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Technical Specification (con't):

GPS

Dedicated GPS interface	RS232/RS485
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Data Interface

RS232/RS485 data input (shared with user camera control)	1K2 to 115K2 baud switchable with UDP and TCP routing protocol
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PTZ Camera Interface (with AVI fitted)

User camera type	PAL or NTSC
User camera control	Mission Commander PC application using VISCA, PELCOD or PELCOP User supplied desk controller (requires RS232/RS485 interface)

Triggers

Trigger source	Video motion detection Brightness
Trigger action	Enable Mesh Record

Control

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

Environment

Sealing	IP31
Temperature range	-20°C to +50°C

Power

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

Physical

Dimensions	L 165mm, W 160mm, H 43mm
Mounting options base unit	1U rack mounting kit included as standard
Weight	1kg

Frequency

032047	320-470MHz
120170	1.20-1.70GHz
165240	1.65-2.40GHz
198255	1.98-2.55GHz
300370*	3.00-3.70GHz
440500	4.40-5.00GHz

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

* Future Development

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

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