

# NETNode5W-4R

## NETNode IP Mesh Radio Phase 4 (Robust) - 5W

### Overview:

NETNode IP Radios can be combined in a fluid self-forming, self-healing mesh containing up to sixteen 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 (1.25, 1.5, 1.75, 2.5, 3.0, 3.5, 5.0, 6.0, 8.0 and 10MHz also available). The NETNode radios employ the unique DTC COFDM modulation scheme and therefore offer excellent RF penetration and performance in the presence of multipath.

The NETNode mesh radios can provide up to 14.6Mb/s of IP data (data rate depends on mode, number of nodes and range between nodes). This available bit-rate can be used to exchange IP data traffic between nodes.



### Product Information:

#### Product Includes

|         |   |
|---------|---|
| CA0406* | Control and data cable 2m                       |
| CA2240* | Microphone/headphone and control/debug cable 1m |
| CA3229  | Screened XLR power/Ethernet cable (see options) |
| CA3256  | Short bananas to XLR power cable                |

\*UHF variants are supplied with screened cables - see options

#### Accessory Options (sold separately)

|           |  |
|-----------|--|
| AP000481  | UK IEC power supply cable for use with CA0649            |
| 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            |
| CA0649    | 12VDC power supply unit - for use with CA3229            |
| CA2581    | Control & data screened cable 2m                         |
| CA2585    | Microphone/headphone and control/debug screened cable 1m |
| CA3185    | GPS and talkback cable                                   |
| CA3254    | 5m XLR to XLR extension for use with CA3229              |
| CA3255    | 10m XLR to XLR extension for use with CA3229             |
| MISCDRTAC | Mission Commander control interface                      |
| NETR-MB   | NETNode Robust mounting bracket                          |

#### Related Documents

|                          |  |
|--------------------------|--|
| 100115                   | NETNode Phase 3 and 4 User Guide       |
| 100130                   | NETNode Phase 3 and 4 Operations Guide |
| Available on DTC website | Maritime IP Mesh Brochure              |
| Available on DTC website | Maritime Mesh Networking White Paper   |

### Features and Benefits:

5W transmit power

COFDM waveform for excellent NLOS & multipath performance

Flexible RF channel bandwidths (1.25,1.5,1.75,2.5,3,3.5, 5,6,7,8,10 MHz)

Range of frequency variants across public and private bands

Up to 14.6Mbps UDP data capacity in a Mesh

Up to 16 nodes in Mesh

Built in encryption (DES as standard, AES128/256 available subject to Export Control)

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### Technical Specification:

#### Interfaces

|                      |                             |
|----------------------|-----------------------------|
| RF interfaces        | N-Type x 3 (Rx A, Rx B, Tx) |
| Power and Ethernet   | Amphenol 38999 Series 3     |
| Control and misc I/O | Amphenol 38999 Series 3     |

#### Typical Range

|               |           |
|---------------|-----------|
| Line of sight | 60km+     |
| Light urban   | Circa 5km |

#### RF Interfaces

|                |                        |
|----------------|------------------------|
| Antenna - Rx A | Receive antenna [Ch A] |
| Antenna - Tx   | Transmit antenna       |
| Antenna - Rx B | Receive antenna [Ch B] |

#### RF and Modulation

|                     |  |
|---------------------|--|
| Tuning step size    | 125kHz step  |
| Output power        | +37 to +10dBm in 0.25dB steps                                |
| Bandwidth           | 1.25, 1.5, 1.75, 2.5, 3.0, 3.5, 5.0, 6.0, 7.0, 8.0, 10.0 MHz |
| Mesh capacity       | Up to 14.6Mb/s (10MHz)                                       |
| Modulation          | COFDM 360 carrier modulation                                 |
| Carrier modulation  | BPSK/QPSK/16QAM (adaptive)                                   |
| FEC rate            | 1/2 - 2/3 (adaptive)   |
| Receive diversity   | Maximum ratio combining                                      |
| Receive sensitivity | -98dBm for most robust mode (BW 2.5MHz)                      |

#### IP Interface

|   |   |
|---|---|
| Primary and secondary Ethernet electrical | 100BaseT Ethernet                       |
| IP address allocation                     | DHCP dynamic IP addressing<br>Static IP |
| Video and audio                           | Multicast VLC compatible                |
| Streaming format                          | RTSP support                            |

#### Store and Forward Options\*

|                       |   |
|-----------------------|---|
| Storage format        | SD card interface (Secure Digital card) |
| Record options        | Continuous or triggered (Milestone)     |
| Files download        | From web browser interface/RTSP         |
| Video/audio clip size | 30 seconds                              |

#### 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 |

#### Encryption

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

#### GPS

|                         |             |
|-------------------------|-------------|
| Dedicated GPS interface | RS232/RS485 |
|-------------------------|-------------|

#### Data Interface

|  |  |
|--|--|
| RS232/RS485 data input (shared with user camera control) | 1K2 to 115K2 baud switchable with UDP and TCP routing protocol |
|--|--|

#### Control

|                |   |
|----------------|---|
| Local control  | LEDs power and mesh status  |
| Remote control | Mission Commander - control of all parameters in a map based application<br>Web browser control |

#### Power

|                 |                                       |
|-----------------|---------------------------------------|
| DC input        | 12-14V                                |
| Power consumed  | 60W max                               |
| Output power 5W | +37 to 10dBm in 0.25dB steps (+/-1dB) |

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### Technical Specification (con't):

#### Physical

|                         |   |
|-------------------------|---|
| Dimensions              | H 78mm, W 145mm, D 309mm                                    |
| Mounting options - base | M5 blind holes on base and 5mm dia. through holes on flange |
| Weight                  | 2.56kg  |

#### Environment

|                   |                               |
|-------------------|-------------------------------|
| Temperature range | -20°C to 50°C (-4°F to 122°F) |
| Sealing           | IP66 Minimum                  |

#### Frequency

|         |              |
|---------|--------------|
| 034047* | 340-470MHz   |
| 114140  | 1.14-1.40GHz |
| 200250  | 2.00-2.50GHz |
| 440500  | 4.40-5.00GHz |

#### Licensing Options

|          |                       |
|----------|-----------------------|
| AES128NN | 128bit AES Encryption |
| AES256NN | 256bit AES Encryption |

\* 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](mailto:solent.enquiries@domotactical.com)

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