



Wireless COFDM

Intelligent Surveillance and Communication Solutions

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RINICOM

Rinicom Ltd is a UK based, privately owned global technology company specialising in providing state-of-the-art solutions for wireless broadband communications, intelligent surveillance and first responder applications.

Incorporated in 2002, Rinicom gained recognition as the leading edge technology company providing bespoke solutions with outstanding customer support. In 2013 Rinicom has received The Queen's Awards for Enterprise for outstanding achievement in international trade.



PodNode

Wireless COFDM Ad-Hoc IP Mesh Technology



rinicom
secure communications

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PodNode - Wireless COFDM Ad-Hoc IP Mesh Technology

The PodNode technology is the latest innovation in the portfolio of Rinicom Ltd. It allows up to 12 portable mesh nodes to be rapidly connected into a self-forming, self-healing mesh network. It offers non-line-of-sight operation due to use of coded orthogonal frequency division multiplexing (COFDM), making the system truly dynamic and mobile, thus ensuring secure and robust communications in the most challenging and rapidly changing environments.

Unlike conventional legacy wireless solutions, Rinicom's PodNode COFDM IP Ad-Hoc Mesh System constantly monitors channel state information and reconfigures communication paths according to the predefined criteria. The system is intrinsically capable of self-healing, meaning that if one node can no longer operate or its communication link is not suitable for the selected service (for example, real-time video transmission), the other nodes in the network can still communicate with each other - directly or through one or more intermediate nodes, this is done with the help of Rinicom's PodNode smart routing algorithm.

The Ad-Hoc mesh topology ensures data communications in a point-to-point or point-to-multipoint modes, where range is no longer a limiting factor as it can be extended by using nodes as repeaters.

With Rinicom's PodNode technology, any "shape" of wireless broadband network can be installed rapidly:

A chain network: Ideal for perimeter and border control operations, this type of network can be maintained whilst mobile, for example in a convoy of vehicles where each vehicle is acting as a mobile node. Unlike some competing solutions, Rinicom's PodNode IP mesh network doesn't require a central bi-directional relay point, and so ensures high reliability and

robustness in hostile environments;

A random network: evolves organically to any shape, where individual nodes select the best possible available connection ensuring pre-defined criteria for communications performance are maintained;

A hybrid network: a network of many sub-networks, extremely useful when large-scale installation is required or if first responders from various countries operate on the scene with not-compatible equipment.

PodNode system comes in several variants: PodNode-I, PodNode-R, PodNode-M and PodNode-OEM.

PodNode-I is a robust aluminum enclosed PodNode module that is ideal for integration into other systems, or standalone stationary operation.

PodNode-R is a rugged PodNode unit with an integrated battery, that can be used for rapid deployments and mobile applications. PodNode-R comes in three types: PodNode-R, PodNode-R-SD and PodNode-R-HD. The -R version is the basic PodNode-R unit, -SD has got an integrated SD IP video encoder, allowing to connect any analogue camera to the unit and stream it via the PodNode IP network. Similarly, the -HD version has got a built-in HD video encoder.

PodNode-M is a PodNode unit specially designed for body-worn applications. It has a built-in battery and allows any IP device to be connected to it.

PodNode-OEM is a two-board PCB solution designed for system integrators.

Technical features

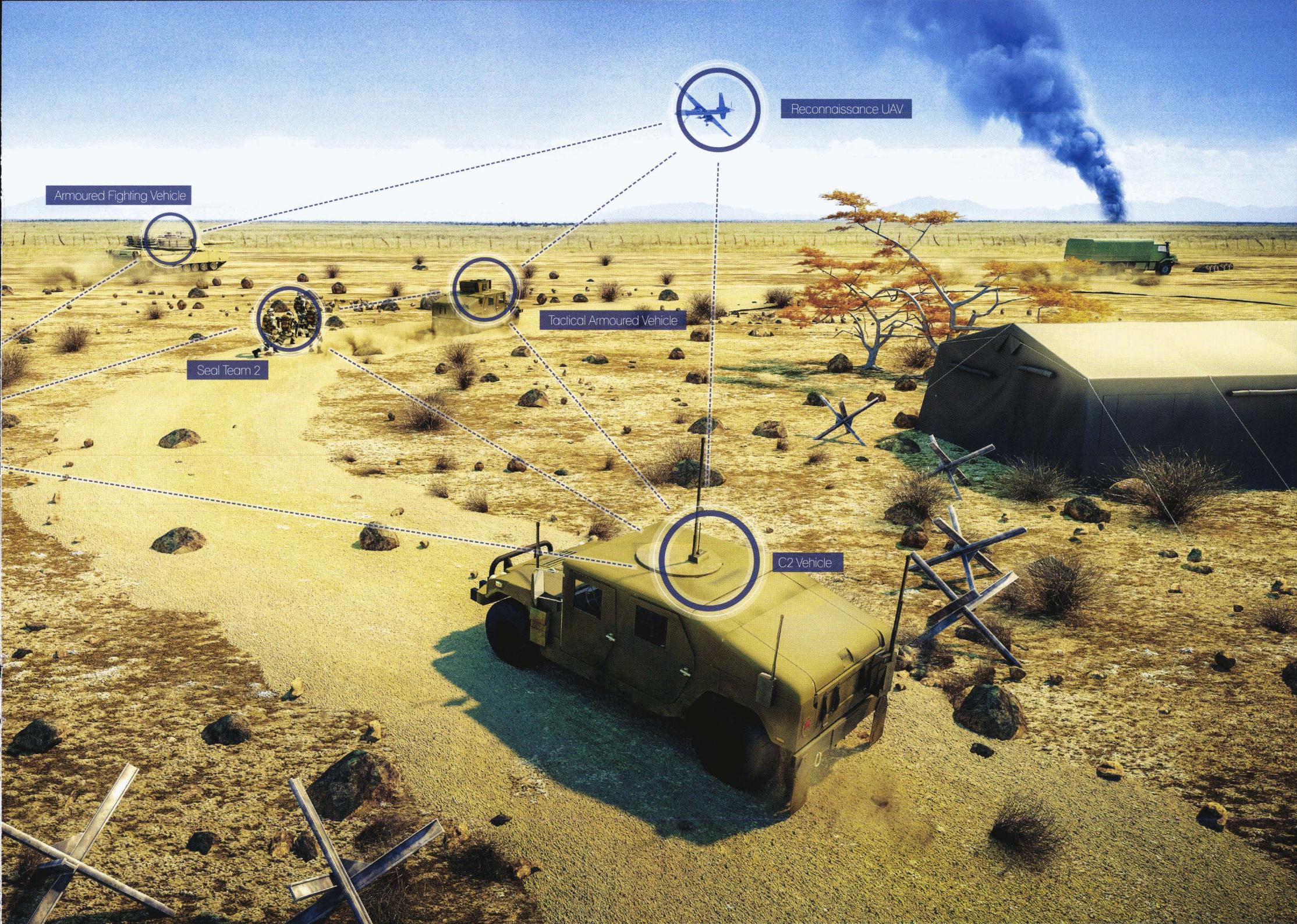
Rinicom's PodNode technology operates in a time division multiple access (TDMA) mode, which allows all nodes in the network operate on the same frequency.

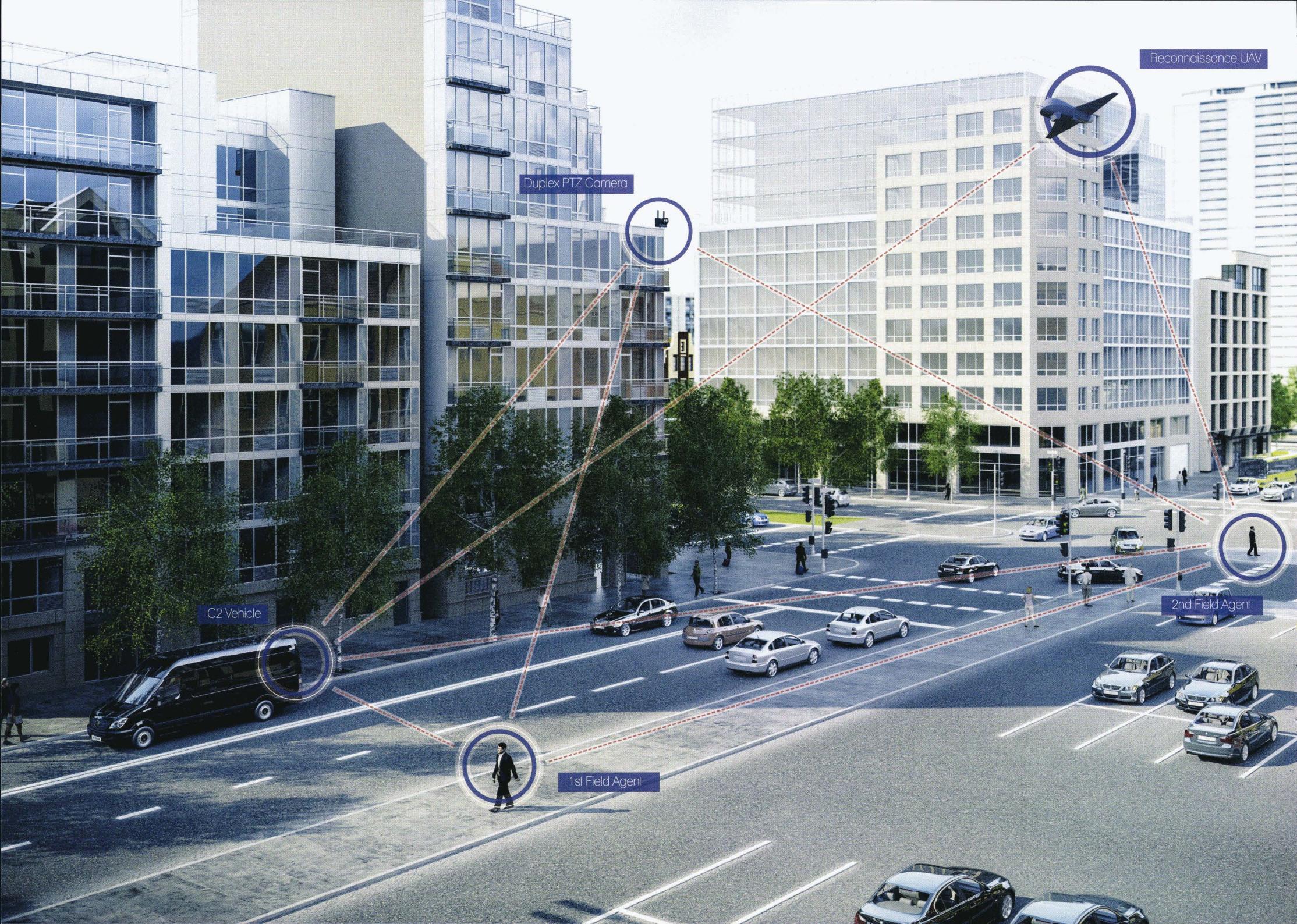
This ensures efficient utilisation of the most valuable communications resource – frequency bandwidth, which is regulated by Governmental bodies (OFCOM in the UK). The required bandwidth can be tuned from 5 MHz to 20 MHz in 1 MHz steps, ensuring great flexibility and adaptation to different services (for example, low bandwidth for data and voice only communications and high bandwidth for video surveillance). The RF output power can also be tuned by the user up to maximum of +27dBm in 0.5dB steps. The security of the entire mesh network is guaranteed by the use of the optional 168bit 3DES encryption.

Control of the deployed network is achieved via a dedicated network management system, which also allows PTZ controls of all installed cameras.

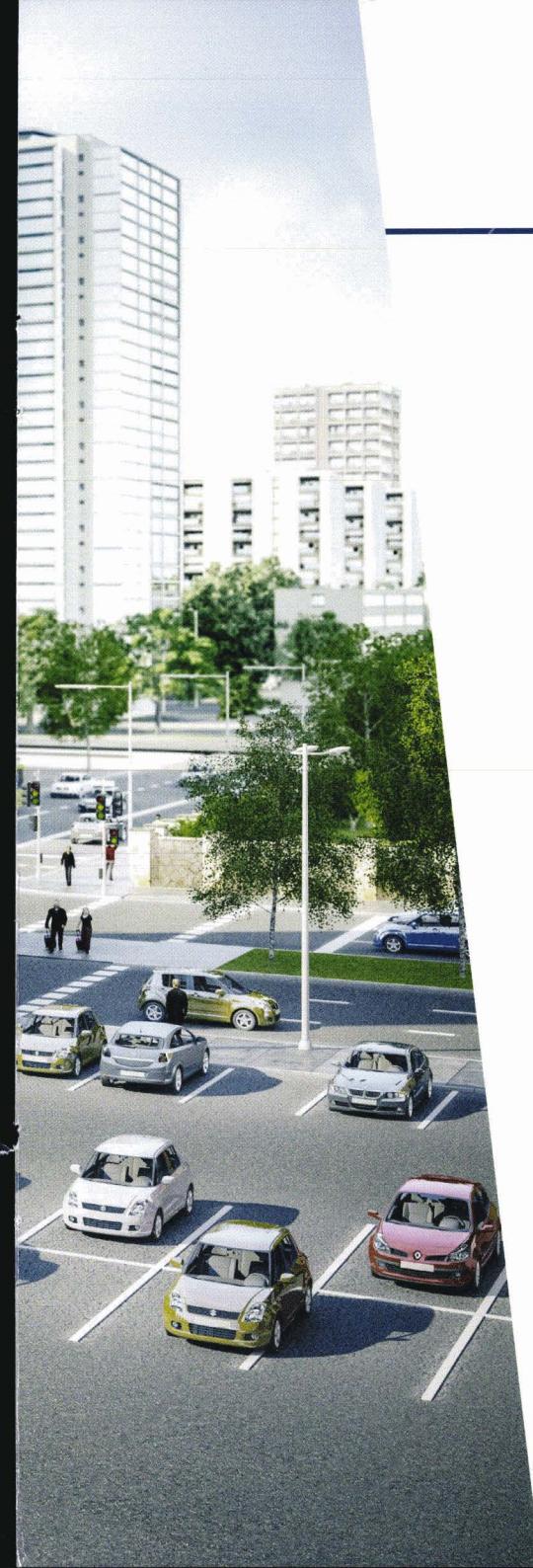
The PodNode-I, PodNode-R and PodNode-M are supplied in a rugged weather-proof chassis and are safe for operations in the most challenging environments.







Technical Specification



	PodNode-I	PodNode-M	PodNode-R
RF Interface	Antenna 1	TDMA transmit and receive	
	RF frequency	UHF, L-Band, S-Band	
	Frequency tuning	1MHz	
	Modulation	COFDM	
	Subcarrier modulation	QPSK, 16 QAM, 64 QAM (adaptive)	
	Output power	+27dBm Max	
	Output power tuning	0.5dB steps	
	Bandwidth	5 to 20 MHz	
	Bandwidth tuning	1 MHz	
	MESH capacity	Up to 50 Mbps	
Physical	Dimensions	162 mm x 127 mm x 40 mm	120 mm x 34 mm x 168 mm
	Weight (excl. battery)	480g	651g
	Weight (incl. battery)		891g
	Enclosure	IP rated	IP rated
	Mount	Free standing/tripod mount	Free standing/tripod mount
Battery	Operating temperature	-10°C to +40°C	-10°C to +45°C
	Operating humidity	0 to 90%	0 to 90%
	Weight		240g
	Voltage		14.8V
	Capacity	N/A	2.6AH
Power	Duration		3 hours
	Fixing		Clip in
	DC input		9-16VDC
Mesh	Power consumed @ +27dBm	14W	14W
	Number of nodes		Up to 12
	MESH configuration		Ad-hoc, P2MP, P2P
	Routing		Smart routing

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Duplex PTZ

A Fully Integrated, IP67 Day / Night Optical & Thermal Camera



- ✓ Fully Integrated PTZ
- ✓ IP67 Rated
- ✓ 640 x 480 Thermal Imager
- ✓ 36x Optical Zoom
- ✓ Dual Stream COFDM
- ✓ Integrated Positioning Sensors
- ✓ Small Size (200mm Cube)
- ✓ Light Weight (<5000g)

The device provides fully sealed integration of a complete, all weather, day/night, optical and thermal PTZ, married to a dual stream COFDM video link, UHF encrypted telemetry.

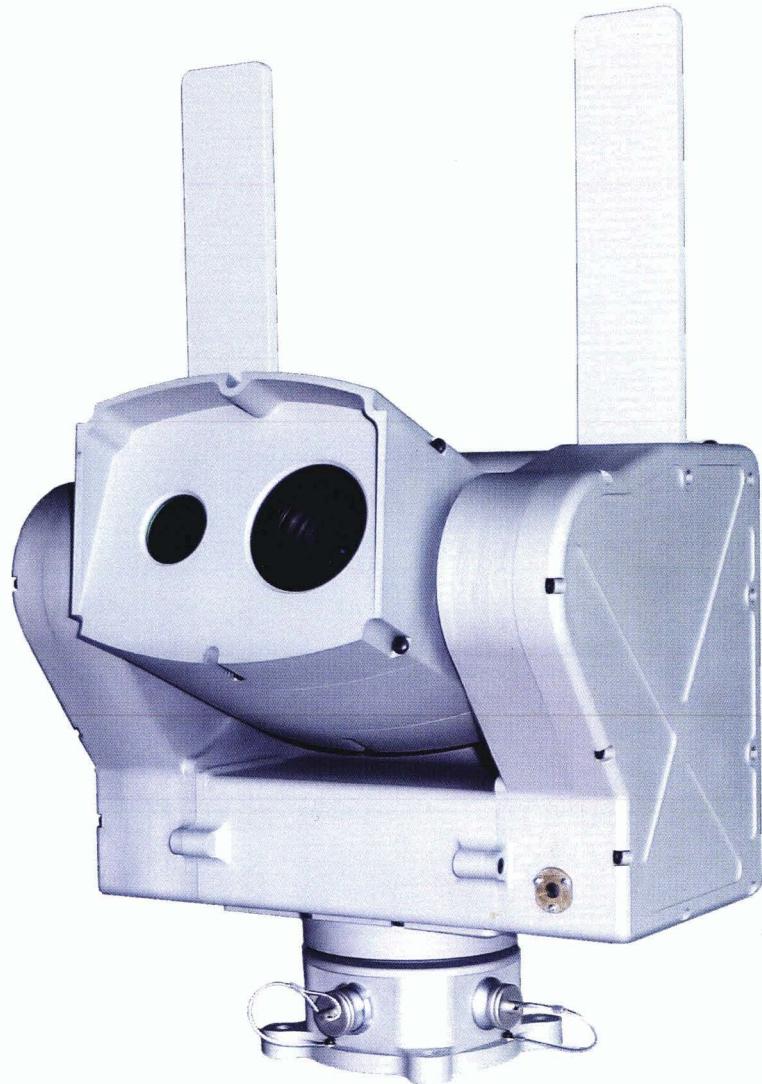
It is a standalone surveillance system. The Duplex PTZ is designed to support cameras from a variety of manufacturers. This unit is fitted with a 25mm lens, providing NATO target detection out to 1610m.

The optical payload as standard is the Sony FCB-1020D 36x optical zoom block camera. This camera exceeds 520 TVL resolution and operates under several low light modes.

The video outputs of both cameras are transmitted simultaneously via a built in dual stream COFDM transmitter. This outputs one RF channel, with two separate program streams, one for each camera.

Camera control is performed over a UHF telemetry radio link, giving the full range of pan, tilt and zoom functions, presets and control over a wide range of camera parameters.

The Duplex PTZ Camera also incorporate an internal power supply, allowing standalone operation for over 2 hours.



Duplex PTZ Datasheet

Optical Sensor

Sensor	1.4" EX-View HAD CCD
Resolution	>520 TVL
Lux	<0.7 (501RE)
SNR	>50dB

Thermal Sensor

Core type	640 x 480 pixel uncooled microbolometer
Thermal spectral range	8-14um
Thermal sensitivity	<50mK
Thermal digital zoom	X2, X4
Pixel pitch	17μ

COFDM

RF output power	+30 dBm MAX
Bandwidth	2.5-8 MHz
Frequency	UHF, L-Band, S-Band, C-Band

Physical

Pan & tilt range	270° tilt, cont. pan
Pan & tilt drive train	Low noise stepper
Dimensions	220 x 180 x 150 mm
Weight	5,700g
Enclosure	IP67
Casing	Machined aluminium

Electrical

Input voltage	24VDC
Power consumption	12W

Telemetry

Frequency	UHF
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Accessories & Compatible Products

External Battery
RapidNet
R1000 HHR

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RiniLink R1000 HHR

Mobile Daylight Viewable Hand Held COFDM Receiver



- ✓ Rapid Deployment
- ✓ DVB-T and Narrow Bandwidth Modes
- ✓ Supports MPEG2, MPEG4
- ✓ HD Option Available
- ✓ Non Line of Sight Operation
- ✓ Encrypted
- ✓ Supports 300MHz up to 8GHz
- ✓ Outdoor Viewable Screen

The RiniLink R1000 HHR is a fully portable addition to the Rinicom range of digital video products. It contains an integrated digital receiver for use with R1000 transmitter units.



Compact, battery powered and light weight, the R1000 HHR is designed for customers who require a discrete and completely portable surveillance solution.

The intelligent design of the R1000 HHR reduces setup time and ensures reliable reception of video, audio and data in non line of sight conditions.

The R1000 HHR is suitable for line of sight and non line of sight transmission. Further range may be achieved by selecting reception mode, booster amplifiers and antenna type. The unit can be combined with a variety of antennas and other RF accessories in order to achieve greater range.

Video is transmitted using an R1000 COFDM transmitter. See the RiniLink R1000 Tx product brief for configuration options.



RiniLink R1000 HHR Datasheet

Connectors

Data/audio out/control	Lemo, female, 8pin
Video out/in	BNC, female
RF	TNC, N-type, quick release

RF Interfaces

RF frequency	UHF, L-Band, S-Band, C-Band
Frequency tuning	250kHz steps
Modulation	COFDM
Adjacent channel rejection	60 dB (QPSK FEC2/3)
RF lock time	1 sec

Narrow Band Mode

Bandwidth	2.5MHz (1.25MHz optional)
Modulation	QPSK or 16QAM
FEC	2/3 or 1/3
Sensitivity	-104dB plus

Wide Band Mode

Bandwidth	8, 7 and 6 MHz
Modulation	QPSK, 16QAM and 64QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Sensitivity	-95dB plus

Encryption

Encryption control	ABS 32bit key, AES128/256bit key (optional)
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Video Encoding

Output format	PAL, NTSC, RS170 and SVideo
Line standard	525/625
Coding mode	MPEG2 and MPEG4
MPEG2 frame rate	Full frame rate
MPEG4 frame rate	Full or 1/2, 1/4, 1/8, 1/24
Delay	500ms to 43ms (mode dependant)

Audio Interface

Output	Line level, +7dBu max output level
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Data Interface

RS232 data out	1k2 to 115k2 baud switchable
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System Control

Fan power	Built-in control menu
Node control	Built-in control menu/through software
Frequency control	Through software
Encryption control	Through software
Channel control	Built-in control menu/through software

Control Interface

RS232 control	From PC GUI application
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Physical

Screen size	7"
Dimensions excl. battery	140 mm x 250 mm x 95 mm
Weight excl. ant & battery	1320g
Weight incl. ant & battery	2100g
Enclosure	IP rated
Temperature	-10°C to +50°C
Operating humidity	0 to 90%

Power

DC input	5.9-16VDC
Power consumption	20W

Accessories & Compatible Products

Neck Strap
Additional Battery
R1000 Tx
Antennas

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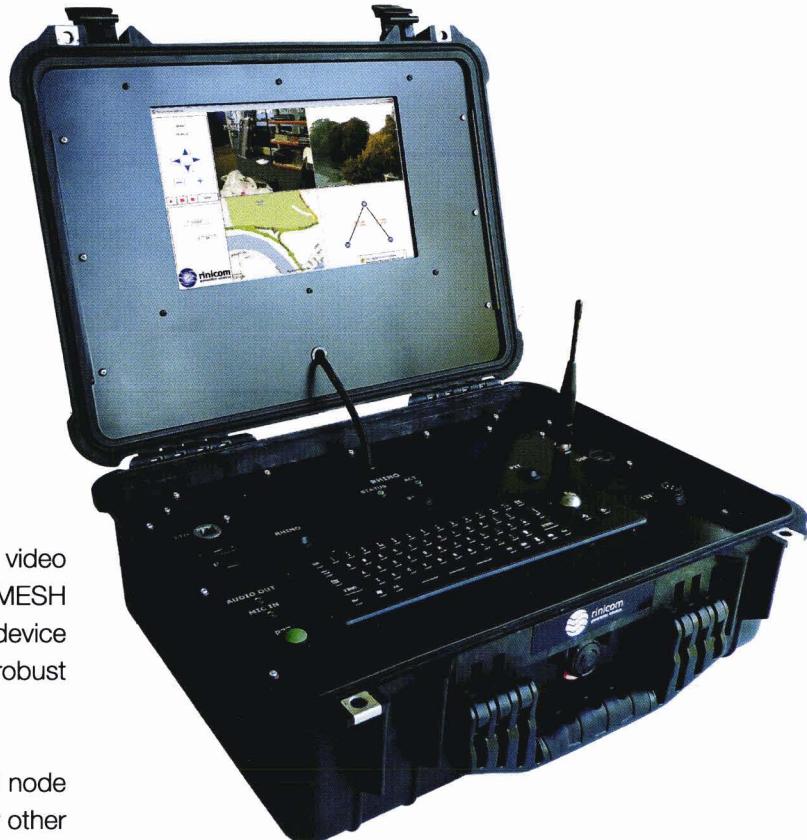
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RapidNet

Surveillance and Communications Control Station



- ✓ Wireless Video System
- ✓ Supports Multiple Cameras
- ✓ Multiple Wireless Networks
- ✓ Supports Pan/Tilt/Zoom
- ✓ IP Based
- ✓ COFDM, PodNode, WiFi



The RapidNet is a fully integrated wireless MESH video communication system. Based on the PodNode MESH networking node, each additional wireless network device strengthens the network, resulting in an increasingly robust and self configuring/healing network.

The long range PodNode MESH networking COFDM node enables multiple wireless cameras to be linked to any other PodNode. Additional modules may also be integrated into the RapidNet, such as push to talk, diversity COFDM video receivers, WiFi, GPS and 3G.

The RapidNet system and components are rapidly deployable, delivering a robust, secure and private wireless network.

The RapidNet control system incorporates a PC, powered with Rinicom's open architecture software allowing for the support of third party video encoders and other sensors.

Rinicomm's innovative software is bespoke and may easily be configured to allow for expansion or supplementary operational requirements. The case and hardware are robust and ruggedised and ideally suited to harsh environments.

Typical scenarios include first responders, monitoring crowds or riots, in C2 vehicle-based surveillance operations and remote site monitoring.



RapidNet Datasheet

Base Unit

Screen	LCD 12.1" touch screen
Keyboard	Full, robust
PC	Integrated PC

Physical

Enclosure	Robust Pelican Case
Dimensions	50cm x 20cm x 40cm
Weight	Configuration dependent
Temperature	-10°C to +45°C

Electrical

External power	220/240 VAC, 12 VDC
Internal battery	LiON, to 20 hours operation
Power consumption	From 20W

Connectors

RF connectors	N-Type, female
Ethernet	RJ-45
Serial	RS-232
Video	AV
Audio in	3.5mm
Audio out	3.5mm, loudspeaker

IP Interface

Ethernet electrical	100BaseT Ethernet
Encryption	168bit, 3DES
Standards compliance	IEEE 802.3u, 802.1

Optional Integrated Modules

PodNode	COFDM MESH IP Node
WiFi	802.11n basestation
R1000 Rx	COFDM P2P video receiver
R1000 Tx	COFDM P2P video transmitter
P2T	Push to talk over IP unit
GPS	GPS receiver
DVR	16 channel digital video recorder
PTZ Control	PTZ joystick

Software

Simultaneous video	Up to 16
GPS tracking	Integrated, with map overlay
MESH configuration	Integrated
MESH NMS	Integrated
Video recording/playback	Full, continuous, to HDD
Camera control	Resolution, PTZ, frame rate
Link monitoring	Signal degradation monitor/alarm
PodNode configuration	Integrated
Audio	Communication and volume indicator
OS	Windows XP, Vista, 7, 8

Accessories & Compatible Products

Podnode-I (-R, -R-SD, -M)
P2T
External battery
Cables
Antennas
Mobile viewing clients
R1000 Tx
R1000 HHR

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PodNode-I

Robust Ad-Hoc IP MESH COFDM Radio



- ✓ Ad-Hoc Network Secure COFDM
- ✓ Multi-Channel Wireless IP System
- ✓ Robust Reliable Wireless IP network
- ✓ Ruggedised Design
- ✓ Instant Ad-Hoc Networks
- ✓ Non Line of Sight
- ✓ Operates Between Fast Moving Vehicles
- ✓ 168 bit DES/3DES Encryption



The PodNode-I COFDM IP MESH radio is a powerful addition to any wireless communication system. PodNodes in the same network automatically connect to other PodNodes to create a self-healing, mobile and dynamic IP mesh network. Each PodNode automatically routes data around the wireless network, and may easily be configured to operate without user intervention. This makes the system ideal for rapid deployment scenarios.

A PodNode MESH network can support up to 50Mbps data throughput, making it possible to transmit true realtime 1080p HD video. PodNodes support any third party IP device, and thus may be used to expand an existing LAN or MAN. Using Rinicom's powerful COFDM modulation, the PodNode provides robust RF communication in a variety of harsh environments. Multiple PodNodes as part of the same network naturally expand the range of the overall network.

PodNodes operate both in mobile and fixed deployments. Typical fixed deployments include first responder, rapidly deployable wireless networks, surveillance applications and long range wireless IP networks. Mobile applications include vehicle mounted convoy applications, body worn, mobile and advanced ground robot control.

Each PodNode may be controlled remotely through Rinicom's web interface, allowing the network operator to control each PodNode independently, or simply to monitor network status. With or without operator control, a PodNode MESH network 'simply works'.

PodNode-I is based on Rinicom's robust PodNode COFDM IP MESH technology, and is fully compatible with other PodNode MESH products in the range.



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PodNode-I Datasheet

Connectors

Ethernet/power out	RJ45
RF connectors	SMA female

RF Interfaces

Antenna 1	TDMA transmit and receive
RF frequency	UHF, L-Band, S-Band
Frequency tuning	1MHz
Modulation	COFDM
Subcarrier modulation	QPSK, 16 QAM, 64 QAM (adaptive)
Output power	+27dBm Max
Output power tuning	0.5dB steps
Bandwidth	5 to 20 MHz
Bandwidth tuning	1 MHz
MESH capacity	Up to 50 Mbps

IP Interface

Ethernet electrical	100BaseT Ethernet
Encryption	168bit, 3DES
Standards compliance	IEEE 802.3u, 802.1

Physical

Dimensions	162 mm x 127 mm x 40 mm
Weight	480g
Enclosure	Aluminium with mounting holes
Temperature	-10°C to +40°C
Operating humidity	0 to 90% (non-condensing)

Power

DC input	9-16VDC
Power consumed @ 0.5W	14W

System Control

RF power	Through web interface
Node control	Through web interface
Frequency control	Through web interface
Encryption control	Through web interface

MESH

Number of nodes	Up to 12
MESH configuration	Ad-hoc, P2MP, P2P
Routing	Automatic routing

Accessories & Compatible Products

Power cable
Antennas
PodNode-R
PodNode-M

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Gooseneck Cam

High Quality Video in a Remarkably Small Package



- ✓ Tiny SOC Camera
- ✓ IP65 Rated
- ✓ High Dynamic Range
- ✓ Low Power Requirement
- ✓ PAL & NTSC Versions
- ✓ Low Light Operation
- ✓ Small Size
- ✓ Light Weight



The Gooseneck camera forms part of a line of highly integrated surveillance products. The device incorporates a tiny, system-on-chip (SOC) sensor, and it's necessary ancillary circuitry into a weatherproof package measuring just 23 x 12.5 x 12.5 mm.

The camera itself is a marvel of miniaturisation, producing a resolution of 520 TVL. Other features of the camera include wide dynamic range and excellent low light performance (0.008 lux).

The camera is offered in two formats, PAL or NTSC and comes with a rigid flexible neck, allowing the camera head to be pointed to any direction without having to change the position of the transmitter. Standard cables lengths are 300mm, although custom lengths can be prepared. The maximum semi-rigid length is 400mm, other lengths are available at request.

As part of the Rinicom security products line, the camera is compatible with all of our transmitters and controllers. In standard trim the camera is supplied with our standard 12 way Neutrik connector, the unit can be supplied with bare wires, or customer specific connections.



Gooseneck Cam Datasheet

Video Camera

Sensor	1/3" CMOS	Physical	
Resolution	>520 TVL	Length	400mm length, other lengths available
Lux	<0.008	Weight	62g
SNR	>50dB	Enclosure	IP65
Focal length	4.0mm	Type	Gooseneck - semi rigid mount
Aperture	F2.0	Temperature	-10°C to +45°C
Field of view	62°	Operating humidity	0 to 90%
Electrical		Accessories & Compatible Products	
DC input	5VDC 12V Optional	R1000 Tx	
Power consumption	0.35W	PodCam-R/SD	

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RiniLink R1000 Tx

SPTZ - Small and Lightweight with Fast Zoom Control



- ✓ Light Weight
- ✓ Body Worn/UAV Applications
- ✓ DVB-T and Narrow Bandwidth Modes
- ✓ Supports MPEG2, MPEG4, H.264
- ✓ HD Option Available
- ✓ Data Transmission
- ✓ Non Line of Sight Operation
- ✓ Encrypted
- ✓ Supports 300MHz to 8GHz
- ✓ May be Battery Powered
- ✓ Available as OEM

The RiniLink R1000 Tx is a powerful solution for applications requiring high quality wireless transmission of video, audio and data.

There are many options for the R1000 Tx depending on the required deployment scenario. Example transmitters include vehicle and pole mounted units as well as miniature models for body worn and UAV type applications.

The R1000 Tx product range supports various options for frequency band, output power, channel bandwidth and video encoding. Transmitters are available from 300MHz up to 8GHz. The use of an 8MHz channel bandwidth will give broadcast quality video, with narrowband options available for deployments requiring a higher spectral efficiency. Video encoding options include MPEG2 and MPEG4.

The R1000 Tx is suitable for line of site and non line of site transmission. Increased range may be achieved by selecting transmission mode, booster amplifiers and antenna type.

The video is received using an R1000 COFDM diversity receiver. See the RiniLink R1000 Rx product brief for R1000 Rx options.



RiniLink R1000 Tx Datasheet

Connectors

Control/power in	Binder 620 Series, male, 8 pin
Video/audio in, power out	Hirose HR10A, female, 6 pin
RF	SMA female

RF Interfaces

RF frequency	UHF, L-Band, S-Band, C-Band
Frequency tuning	1MHz steps
Modulation	COFDM
Output power	+30dBm Max
Output power tuning	0.01dB steps

Narrow Band Mode

Bandwidth	2.5MHz (1.25MHz optional)
Modulation	QPSK or 16QAM
FEC	2/3 or 1/3

Wide Band Mode

Bandwidth	8, 7 and 6 MHz
Modulation	QPSK, 16QAM and 64QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8

Encryption

Encryption control	ABS 32bit key, AES128/256bit key (optional)
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Video Encoding

Input format	PAL, NTSC, RS170 and SVideo
Narrow band encoding	MPEG2 (MPEG4 optional)
Wide band encoding	MPEG2 only
MPEG2 frame rate	Full frame rate
MPEG4 frame rate	Full or 1/2, 1/4, 1/8, 1/24
Delay	500ms to 43ms (mode dependant)

Audio Interface

Input	Line level or microphone switchable, -2dBu Max input level
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Data Interface

RS232 data in	1k2 to 115k2 baud switchable
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Control Interface

RS232 control	From PC GUI application
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System Status

LED 1	System power on
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System Control

Unit power	Through software
RF power	Through software
Node control	Through software
Frequency control	Through software
Encryption control	Through software

Physical

Dimensions (HxWxD)	125 mm x 55 mm x 35 mm
Weight (excl. antenna)	356g
Enclosure	IP67
Temperature	-10°C to +45°C
Operating humidity	0 to 90%

Power

DC input	5.9-16VDC
Power consumption	9.2W @ 30dBm

Accessories & Compatible Products

External battery	
Antennas	
R1000 HHR	
Gooseneck Camera	
SPTZ Camera	
Other receivers available	

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PodNode-R

Robust Ad-Hoc IP MESH COFDM Video Surveillance



- ✓ Ad-Hoc MESH Network
- ✓ Rapidly Deployable Wireless Surveillance System
- ✓ Robust Reliable Wireless IP network
- ✓ Ruggedised Design
- ✓ Instant Ad-Hoc Networks
- ✓ Non Line of Sight
- ✓ Operates Between Fast Moving Vehicles
- ✓ 168 bit DES/3DES Encryption



The PodNode-R MESH video surveillance system is a powerful addition to any wireless communication surveillance system. Each PodNode in the same network automatically connect to other PodNode based equipment to create a self-healing, mobile and dynamic surveillance mesh network. Each PodNode-R automatically routes video, voice and data around the wireless network, and may easily be configured to operate without user intervention. This makes the system ideal for static or vehicle mounted scenarios. PodNode-Rs are supported by our extensive and powerful range of video cameras.

Using Rinicom's proprietary COFDM modulation, PodNode technology provides robust RF communication in a variety of harsh environments. Multiple PodNodes as part of the same network naturally expand the range of the overall network.

The PodNode-R operates both in mobile and fixed deployments. Typical fixed deployments include first responders and rapidly deployable surveillance networks. Mobile applications include vehicle mounted convoy applications and advanced ground robot control. Units may be left unattended or solar powered and enabled remotely.

Each PodNode-R in a network may be controlled remotely through Rinicom's web interface, allowing the network operator to control the PodNode independently, or simply to monitor the network status. With or without operator control, a PodNode network 'simply works'. Networked PodNodes automatically connect to other PodNode-Rs to create a self-healing, ad-hoc, mobile and dynamic surveillance mesh network. Each PodNode-R automatically routes video, voice and data around the wireless network, and may easily be configured to operate autonomously. This makes the system ideal for static or vehicle mounted scenarios.

For high quality standard definition video, the H.264 enabled PodNode-R-SD offers superb quality with low latency. For full high definition video transmission, the PodNode-R-HD offers the ability to transmit multiple HD video streams.

The PodNode-R is based on Rinicom's robust COFDM IP MESH PodNode technology, and is fully compatible with other PodNode MESH products in the range.



PodNode-R Datasheet

Connectors

Camera	12 pin female (Neutrik MRF12)
Network / Aux	12 pin male (Neutrik MRM12)
RF connectors	N-Type female
Battery	4 pin male (Binder 99 9207 00 04)

RF Interfaces

Antenna 1	TDMA transmit and receive
RF frequency	UHF, L-Band, S-Band
Frequency tuning	1MHz
Modulation	COFDM
Subcarrier modulation	QPSK, 16 QAM, 64 QAM (adaptive)
Output power	+27dBm Max
Output power tuning	0.5dB steps
Bandwidth	5 to 20 MHz
Bandwidth tuning	1 MHz
MESH capacity	Up to 50 Mbps

Video Encoder (PodNode-R-SD)

Video compression	MJPEG / H.264 (MPEG-4 Part 10/AVC)
Resolutions	167x120 to 720x576
Frame rate H.264	30/25 (NTSC/PAL) fps in all resolutions
Frame rate motion JPEG	30/25 (NTSC/PAL) fps in all resolutions
Audio streaming	Two way, full duplex
Audio compression	AAC-LC 8kHz 32 kbit/s, 16kHz 64 kbit/s, G.711 PCM 8kHz 64 kbit/s, G.726 ADPCM 8 kHz 32 or 24 kbit/s

System Status

LED 1	Ethernet activity
LED 2	MESH link
LED 3	Power on
LED 4-6	RF transmit power

Physical

Dimensions	202 mm x 120 mm x 56 mm
Weight (excl. battery)	1047g
Weight (incl. battery)	1618g
Enclosure	IP rated
Mount	Free standing/tripod mount
Temperature	-10°C to +45°C
Operating humidity	0 to 90%

Battery

Weight	571g
Voltage	14.8V
Capacity	6Ah
Duration	up to 4 hours
Fixing	Clip in

Power

DC input	9-16VDC
Power consumed @ +27dBm	22W Max (PodNode-R-SD)

System Control

Unit power	On/off button
RF power	Through web interface and button
Node control	Through web interface
Frequency control	Through web interface
Encryption control	Through web interface

MESH

Number of nodes	Up to 12
MESH configuration	Ad-hoc, P2MP, P2P
Routing	Smart routing

Accessories & Compatible Products

Additional Battery
Ethernet Interface Cable
Audio/Video Cable
Gooseneck Camera
SPTZ Camera
PodNode-I
PodNode-M

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For further information on this product or other products, please contact:

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SPTZ Camera



SPTZ - Small and Lightweight Camera with Fast Zoom Control

- ✓ P&T camera
- ✓ Stepped Zoom Function
- ✓ Continuous Pan (Slip Ring)
- ✓ Roll Compensation Option
- ✓ Choice of Lens Payload
- ✓ Very Small Size
- ✓ Light Weight

The SPTZ forms part of a line of highly integrated surveillance products. Based around micro camera technology, the SPTZ provides a step zoom, pan and tilt camera in a 55mm diameter package.

The pan and tilt carries four micro cameras, each with a different focal length lens. Issuing a zoom command to the unit instructs it to flip the video output from camera to camera. As standard the four lens focal lengths are 4, 8, 16 and 35mm giving a very useable range of zoom angles.

Other than the obvious size advantage, using prime lenses over a varifocal or zoom lens provides a faster lens (hence better low light performance) as well as eliminating the small low torque drives often found in zoom lenses which have a tendency to vibrate on vehicle applications, causing picture degradation.

The unit is mounted in an environmentally sealed, CNC machined housing, with full integrated control over pan, tilt and zoom via standard controllers.



SPTZ Camera Datasheet

Video Camera

Sensor	4 x 1/3" CMOS
Resolution	>520 TVL
Lux	0.008
SNR	>50dB
Focal length	4, 8, 16 & 35mm
Field of view	60°-7.5° (horizontal)
Aperture	f2-f5
Lens type	S mount (M12)
Pan & tilt range	270° tilt, continuous pan
Pan & tilt drive train	DC servo
DC input	6-18VDC
Power consumption	2W
Connection	Binder

Physical

Dimensions	55 x 55 x 70 mm
Weight	148g
Enclosure	IP66
Casing	CNC machined Delrin

Accessories & Compatible Products

PodCam-R-SD
R1000 Tx
External Battery

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PodNode-M

Robust Ad-Hoc IP MESH COFDM Radio



- ✓ Ad-Hoc Network Secure COFDM
- ✓ Multi-Channel Wireless IP System
- ✓ Robust Reliable Wireless IP network
- ✓ Ruggedised Design
- ✓ Instant Ad-Hoc Networks
- ✓ Non Line of Sight
- ✓ Operates Between Fast Moving Vehicles
- ✓ 168 bit DES/3DES Encryption

The PodNode-M MESH video surveillance system is a powerful addition to any wireless communication surveillance system. Each PodNode in the same network automatically connect to other PodNode based equipment to create a self-healing, mobile and dynamic surveillance mesh network. Each PodNode-M automatically routes video, voice and data.

The PodNode-M COFDM IP MESH radio is a powerful addition to any wireless communication system. PodNode-Ms in the same network automatically connect to other PodNode-Ms to create a self-healing, mobile and dynamic IP mesh network. Each PodNode-M automatically routes data around the wireless network, and may easily be configured to operate without user intervention. This makes the system ideal for body worn and vehicle mounted scenarios.

A PodNode-M MESH network can support up to 50Mbps data throughput, making it possible to transmit true real-time 1080p HD video. The PodNode-M supports any third party IP device, and thus may be used to expand an existing LAN or MAN. Using Rinicom's powerful COFDM modulation, PodNode-M units provide robust RF communication in a variety of harsh environments. Multiple PodNode-Ms as part of the same network naturally expand the range of the overall network.

PodNode-M operates both in mobile and fixed deployments. Typical fixed deployments include first responder rapidly deployable wireless networks, surveillance applications and long range wireless IP networks. Mobile applications include vehicle mounted convoy applications, body worn, mobile and advanced ground robot control. Units may be left unattended or solar powered and enabled remotely.

Each PodNode-M may be controlled remotely through Rinicom's advanced software control, allowing the network operator to control each PodNode-M independently, or simply to monitor network status. With or without operator control, a PodNode-M MESH network 'simply works'.

The PodNode-M is based on Rinicom's robust PodNode COFDM IP MESH technology, and is fully compatible with other PodNode MESH products in the range.



PodNode-M Datasheet

Connectors

Ethernet/power out	Binder 620 Series, female, 8 pin
RF connectors	N-Type female

RF Interfaces

Antenna 1	TDMA transmit and receive
RF frequency	UHF, L-Band, S-Band
Frequency tuning	1MHz
Modulation	COFDM
Subcarrier modulation	QPSK, 16 QAM, 64 QAM (adaptive)
Output power	+27dBm Max
Output power tuning	0.5dB steps
Bandwidth	5 to 20 MHz
Bandwidth tuning	1 MHz
MESH capacity	Up to 50 Mbps

System Status

LED 1	Ethernet activity
LED 2	MESH link
LED 3	Power on
LED 4-6	RF transmit power

Physical

Dimensions	120 mm x 34 mm x 168 mm
Weight (excl. battery)	651g
Weight (incl. battery)	891g
Enclosure	IP rated
Mount	Free standing/tripod mount (with add-on)
Temperature	-10°C to +45°C
Operating humidity	0 to 90%

Battery

Weight	240g
Voltage	14.8V
Capacity	2.6AH
Duration	3 hours
Fixing	Clip in

Power

DC input	9-16VDC
Power consumed @ +27dBm	14W

System Control

Unit power	On/off button
RF power	Through web interface and button
Node control	Through web interface
Frequency control	Through web interface
Encryption control	Through web interface

MESH

Number of nodes	Up to 12
MESH configuration	Ad-hoc, P2MP, P2P
Routing	Automatic routing

Accessories & Compatible Products

Tactical Vest
Binder - RJ45 cable
Additional antennas
Additional battery
Power/Control cable
Gooseneck camera
SPTZ camera
PodNode-I
PodNode-R

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