NetFortis

Smart, Secure, and Reliable Point-to-Multi-Point Radio Communication for Industrial Monitoring and Control

Product Highlights

- Single unit configurable as BS, client or repeater
- VHF / UHF licensed bands
- RS-232 and IEEE 802.3 protocols
- 12.5 kHz, 25 kHz channel sizes
- Up to 19.2 kbit/s data rate
- 256 bit AES encryption
- 4-CPFSK modulation
- Dual antenna port option
- Protected station option
- –40 to +70 °C operational temperature
- Single or dual frequency, half duplex
- Variety of mounting options

Applications

- Radio connectivity for all industrial control solutions
- Remote sensor data accusation systems
- Offshore rigs and onshore pump jacks
- Transmission pipelines
- Electricity generation plants and turbines
- Power storage and distribution
- Water and waste processing plants
- Traffic control systems

Secure: With its defence in depth approach, including AES encryption, authentication, address filtering and user access control, NetFortis protects against vulnerabilities and malicious attacks.

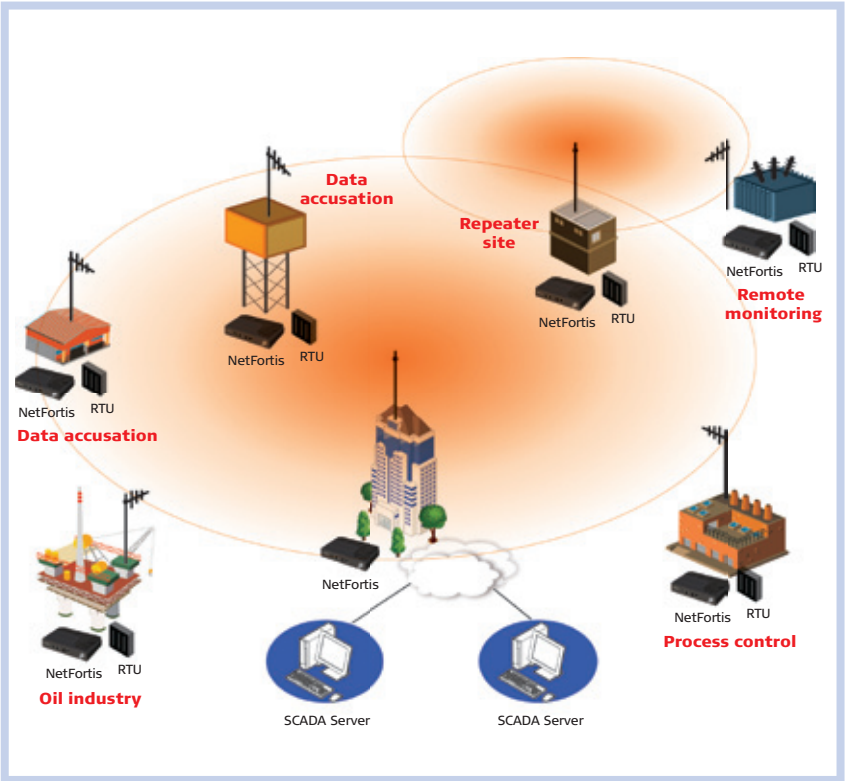
Future-proof: NetFortis supports serial, Ethernet and IP interfaces in a single, compact form factor, and is standards-based for long term incorporation into SCADA networks while protecting the legacy investment in serial devices.

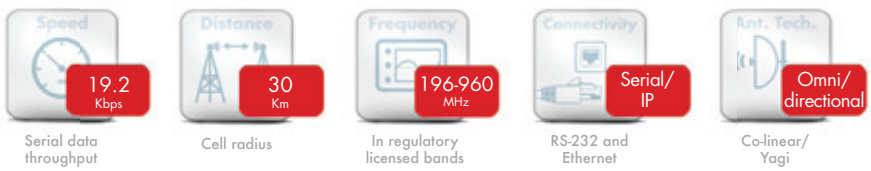
Efficient: The ability to configure detailed radio parameters means that network performance and efficiency can be optimized for the exact network topology, however complex.

Flexible: NetFortis integrates into a range of network topologies, with each unit configurable as a base station, repeater or remote unit.

Easily managed: An easy to use GUI supports local element management via HTTPS and remote element management over the air, and SNMP support allows network-wide monitoring and control via a third party network management system.

Reliable and robust: NetFortis requires no manual component tuning and maintains its high power output and performance over a wide temperature range.





Specifications

General	
Network topology	Point-to-multipoint; Repeater
Network integration	Serial and / or L2 Ethernet

Protocols	
Ethernet	IEEE 802.3
Serial	Legacy RS-232 transport
Wireless	Proprietary

Radio	Freq Band	Tuning Range	Synth Step
Frequency range	136 MHz 400 MHz	136 – 174 MHz 400 – 470 MHz	3.125 kHz 6.25 kHz
Channel size	12.5 kHz, 25 kHz		
Duplex	Single frequency, half duplex Dual frequency, half duplex		
Synthesizer lock time	< 1.5 ms (5 MHz step)		
Frequency stability	± 1.0 ppm		
Frequency aging	< 1 ppm / annum		

Transmitter	
Power output	0.1 – 5.0 W (20 – 37 dBm, in 1 dB steps)
Adjacent channel power	< –60 dBC
Transient adjacent channel power	< –50 dBC
Spurious emissions	< –37 dBm
Attack time	< 1.5 ms
Release time	< 1.5 ms
Data turnaround time	< 10 ms

Receiver	12.5 kHz	25 kHz
Sensitivity (BER < 10^{-2})	–117 dBm	–114 dBm
Adjacent channel selectivity	> 60 dB	> 66 dB
Co-channel rejection	> –12 dB	
Intermodulation response rejection	> 70 dB	
Blocking or desensitization	> 84 dB	
Spurious response rejection	> 75 dB	

Modem	12.5 kHz	25 kHz
Gross data rate	9.6 kbit/s	19.2 kbit/s
Modulation	4-CPFSK	
Forward error correction	¾ trellis code	

Security	
Data encryption	256 bit AES
Data authentication	CCM

Interfaces	
Ethernet	2-port RJ45 10/100Base-T switch
Serial	1 x RJ45 RS-232
Management	1 x USB micro type B (device port) 1 x USB standard type A (host port)
Antenna	1 x TNC 50 ohm female (2 x TNC for dual antenna port)
LEDs	Status: OK, DATA, CPU, RF, AUX Diagnostics: RSSI
Test button	Toggles LEDs between diagnostics / status

Product Options	
Dual Antenna Port	Separate transmit and receive antenna ports
Protected Station	Provides redundant hardware switching

Power & Electricals	
Input Voltage	10 – 30 VDC (13.8 VDC nominal)
Receive	< 430 mA (< 6 W), Full Ethernet activity < 330 mA (< 4.5 W), No Ethernet activity
Transmit	< 1630 mA (< 22.5 W), 5 W output < 540 mA (< 7.5 W), 1 W output

Mechanical	
Dimensions	177 mm (W) x 110 mm (D) x 41.5 mm (H)
Weight	720 g
Mounting	Wall, rack or DIN rail

Environmental	
Operating temperature	–40 to +70 °C
Humidity	Maximum 95 % non-condensing

Management & Diagnostics	
Local	Web server with full control / diagnostics Partial diagnostics via LEDs and test button Firmware upgrade via USB memory stick
Remote	Over-the-air remote element management with control / diagnostics
Network	SNMPv2 support for integration with external network management systems

Compliance	
RF	EN 300 113
EMC	EN 301 489 Parts 1 and 5
Safety	EN 60950
Environmental	ETS 300 019 Class 3.4

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