

R3500

The fully flexible on train solution



- Rugged system design
- Fully Rail certified
- Expandable CompactPCI design
- Unlimited wireless connection options including 3GPP HSPA / EDGE / GPRS, CDMA & other Wireless backhaul Interfaces
- 20 Channel GPS module
- 14 simultaneous cellular modems
- Internal 802.11 a/b/g/n WiFi Access Point or client devices
- Automatic recovery & rollback on updates
- Encrypted communication between train & NOC
- Ability for configuration to any specification requirement

Introducing the ultimate in broadband technology for the rail sector, the CCU R3500 from Nomad is our flagship product in our leading edge R3000 series. For any rail fleet, broadband communications can deliver a host of operational and security application, as well as enhanced passenger services. These applications deliver increased revenue, reduced costs and increased passenger satisfaction.

Nomad's R3500 is equipped with leading technology to enable constant connectivity from train to shore. Using a range of WAN backhaul networks, including 3G HSPA, EDGE / GPRS, CDMA-2000 EV-DO RevA, and both mobile WiMAX and 802.11 6d, the R3500 is capable of high speed, low latency connections to ensure a high quality of service throughout a train's journey, whilst maintaining a seamless secure connection.

With its ruggedized design, which is fully compliant with all rail EMC, shock and vibration standards, the R3500 performs in the most challenging environments. Complete with a range of power supplies, the R3500 can be deployed in any train fleet.

A range of interfaces including 10/100 BaseT Ethernet ports, the RS232 serial ports and USB 2.0 enable a number of applications, such as Passenger Information Systems, ticketing applications and CCTV to be connected. The R3500 is equipped with the ability for connectivity with R3400 Carriage Boxes and Access Points to create a Local Area Network connection for operational staff and passengers to enjoy a reliable WiFi service at high speeds. In tandem with the Nomad Fleetmanager system, the R3500 enables total remote management and monitoring of the on board service.

The ability of the R3500 even extends to caching information, such as train operational data or web traffic for passengers. The R3500 is fully expandable with the ability to add two more dedicated processors, enabling such applications as media serving, interactive portal and on-train diagnostics.

The R3500 comes complete with leading edge GPS technology, with an optional accelerometer device to enhance GPS accuracy, monitor infrastructure condition and identify train on track orientation. This is fully compatible with Nomad's Fleetmanager, providing a wealth of operational data to rail operators.

Specifications

Dimensions

19 inch 3U Rack mount
483mm (W) x 240mm (D) x 133mm (H)

General

Rugged system design
No moving parts
Full railway rolling stock compliance

Weight

5.3kg (dependent on options)

Materials

Aluminium Case

Power Input

Range of power supplies all with EN50155 tolerance
24vDC, 36vDC, 72vDC, 110vDC
Input connection via Harting Q5

Power Consumptions

Maximum 100 watts (dependent on options)

Interface Connections

RF connections via N-Type, TNC, SMA or QMA
Ethernet via DSub, M12 or Lemo

Processor

Intel Core 2 Duo 2.26 GHz - 64 bit
up to 4GB RAM
CompactFlash Slot

Protocols and Services

VLAN (IEEE 802.1Q)
Traffic prioritization (up to four packet queues)
Configurable NAT/non-NAT routing
Fully customised firewall
Remote management and diagnostics
Certificate or password based administrative access control

GPS Accuracy (SBAS)

Horizontal: - < 2 metres (50%), 4 metres (90%)
Altitude: - < 3 metres (50%), < 5 metres (90%)
Velocity: - 0.06m/s

GPS Sensitivity

Acquisition: - 155dBm
Navigation: - 157dBm
Tracking: - 159dBm

GPS Acquisition

Hot Start: 3 seconds
Warm Start: 32 seconds
Cold Start: 38 seconds

WAN Interfaces (not limited to)

3GPP HSPA+ | EDGE | GPRS
WiMAX 802.16e, 802.16d
WiFi 802.11
CDMA-2000 EV-DO RevA
Satellite
Proprietary radio technology

Wifi Features

802.11 a/b/g/n, 2.4GHz and 5GHz
Multiple SSID, 802.1Q client to client isolation

Gateway Services

Nomad proprietary radio management

MTBF

circa 50,000 hours

Environmental

IP65 rated
-25C to +70C operation
-30C to +85C storage

Compliance

EN 50155
EN 50121-3-2
EN 60571
EN 50124
IEC 60529
BS 6853

Patents

GB 2455976
GB 2461386
GB 2462910
GB 2464480
GB 2463009
GB 2472537



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