

NB3800-N2L-G

Railway Router with 1x 5G + 2x LTE + 5x ETH + GNSS + EN50155

With excellent 5G mobile radio technology for wireless internet access in the vehicle incl. 5-port Ethernet switch.



Keyfeatures

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|--------------------------|--|
| Mobile / Cellular | 1x 5G-NR, LTE-A Pro, UMTS 2x LTE, UMTS, GSM |
| SIM | 4x Mini SIM |
| Ethernet | 2x Gigabit Ethernet, 3x Fast Ethernet |
| Power | 24 VDC to 48 VDC |
| Positioning | Multi-GNSS |
| Temperature Range | -40 °C to +70 °C, EN 50155 class OT4/ST0 |
| Software | Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates |
| Compliance | CE (RED), Railway (EN50155, EN45545), ITxPT optional |
| Modularity | Extensions on request |

Product description

The powerful NB3800 with its features, railway approvals and interfaces to on-board electronics, is ideal for applications like passenger WiFi, passenger information systems or video surveillance.

Applications

- Fleet Management
- Mining
- Passenger Infotainment
- Ticketing
- CCTV
- Telematics

Specifications

| Mobile / Cellular | Standard | |
|-------------------|-------------------|---|
| | | 1x Multimode 5G-NR, LTE-A Pro, UMTS |
| | | 5G - NR n1, n2, n3, n5, n7, n8, n12, n13, n14, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n71, n77, n78 |
| | | 4G - LTE Advanced Pro B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B20, B25, B26, B28, B30, B34, B38, B40, B41, B42, B43, B48, B66, B71 |
| | | 3G - DC-HSPA+/UMTS B1, B2, B4, B5, B8 |
| | | 5G -NR Modes Sub-6 FDD and TDD for global deployment |
| | | LTE Category Cat. 19 up to 5CA |
| | | MIMO 4x4 MIMO |
| | | Antenna ports 4, 4x RX/TX on every port |
| | | Power Class 23 dBm (Power Class 3) 26 dBm (Power Class 2) on B41 29 dBm (Power class 1.5) on n41, n77, n78 |
| | | Module Data rate down / up (max) 5G NSA up to: 3.4 Gbps DL / 0.46 Gbps UL 5G SA up to: 2.5 Gbps DL / 0.90 Gbps UL 4G up to: 1.6 Gbps DL / 211 Mbps UL 3G up to: 42 DL/11 UL Mbps |
| | | Operations Modes 5G SA and NSA operations |
| | | 3GPP 5G/4G Rel. 16, 3G HSPA+ Rel. 8 |
| | | Voice - |
| | | FCC ID RI7FN990A28HP |
| | | Region Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC) |
| | | 2x Multimode LTE, UMTS, GSM for EMEA |
| | | 4G - LTE B1, B3, B7, B8, B20, B28A |
| | | 3G - DC-HSPA+/UMTS B1 (2100), B3 (1800), B8 (900) |
| | | 2G - GSM/GPRS/EDGE B3 (1800), B8 (900) |
| | | Category LTE Cat 4 |
| | | Antenna ports 2x2 MIMO |
| | | Data rate down / up (max) 150 Mbps / 50 Mbps |
| | | Voice CSFB, VoLTE (with optional Software License) |
| | | FCC ID - |
| | | Region Europe |
| | | Europe |
| | | 8x TNC female |
| | | 4x Mini SIM - 2FF |
| | Region | |
| | Connectors | |
| | SIM | |

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| Ethernet | Standard | 2x Gigabit Ethernet Ethernet standard 1000BASE-T, Auto MDIX Speed 10/100/1000 Mbps |
| | Connector | 3x Fast Ethernet Ethernet standard 100BASE-TX, Auto MDIX Speed 10/100 Mbps 2x M12 X-coded female, 3x M12 D-coded female |
| Positioning | Standard | 1x Multi-GNSS Receiver BeiDou, Galileo, GLONASS, GPS gpsOne Gen 9 Antennas Active or passive Sensitivity Up to -161 dBm CEP (Circular Error Probability) <2m (Open sky conditions. Standalone) Min Update Rate 1Hz Services Standalone |
| | Connector | 1x TNC female |
| USB | Standard | 1x USB 2.0 Host |
| | Connector | 1x Type A |
| Serial, Fieldbus | Protocol | 1x RS-232 Protocol EIA-232 Signals TX, RX Signal level High > 5 VDC, low < -5 VDC Bit rate Up to 115 200 Bit/s |
| | Connector | 1x M12 A-coded female |
| System | Core | 1.3 GHz dual-core, 1 GB RAM, 4 GB flash |
| | Module Slots | 2x miniPCIe (PCIe + USB), 4x miniPCIe (USB) |
| Software | Features | NetModule Router Software (supported features depending on product variant) Package The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment. General Fail-safe update (FOTA), upgrade via USB, HTTP(S), (S)FTP or TFTP, remote CLI & WebGUI, RADIUS authentication, Simple Certificate Enrollment Protocol (SCEP), Hardware- und Software Watchdog Remote Management Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS Cellular Networking Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license) Wireless LAN Access Point, Client Mode, Mesh Point or Dual Modes (Mesh Access Point / Access Point - Client), WLAN Pseudo-Bridge Client Mode: Multiple Client SSID Profile, Encryption: Open, WEP, WPA1/2/3-Personal, WPA1/2/3-Enterprise. Fast Roaming: Fast BSS Transition (802.11r), PreAuthentication, Protected Management Frames (802.11w) AP Mode: Multi-SSIDs (up to 8) Encryption: Open WPA1/2/3-Personal, WPA1/2/3-Enterprise Fast Roaming: Fast BSS Transition (802.11r), PreAuthentication, DFS support Protected Management Frames (802.11w) Client Tracking, Band Steering, Hide SSID broadcasting, Isolate Clients, Accounting, Short guard Intervall Mesh Mode (802.11s): Encryption: None, SAE. Gateway announcements Link Management Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision, Services DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNMP Server, DynDNS, SSH Server, SNMP Agent, HTTP/HTTPS/FTP Server, IPv6 for WAN, 802.1x over Ethernet, MQTT Broker Voice Gateway (SIP, Call Routing, Audio with optional license) Coovachilli Hotspot Routing Destination, policy, multipath, mobile-IP, OSPF, BGP, multicast, TCP-MSS clamping, bridging discovery protocols LLDAP, CDP, SONMP, EDP, FDP, IRDP, VRRP, STP/RSTP, VRRP, VLAN, PPPoE, VXLAN VPN OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service Firewall Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports) Encryption supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography) Quality of Service Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow) Programmability SDK Troubleshooting Logging, Ping, Traceroute, Tcpdump, Speed-test |
| | Licenses | GNSS Enabled service GNSS location service Server with JSON-, NMEA stream |
| Power | Input Voltage | 24, 48 VDC Nominal voltages 24, 48 VDC Absolute voltages 24 VDC to 48 VDC (-30 % / +30 %) Galvanic isolation 1500 VDC Standard EN 50155 class S2/C1 |
| | Connector | 1x M12 A-coded male |
| | Consumption | 25 W (max) |
| Dimensions | W x H x D | Width 167/190 mm x height 121.1 mm x depth 106.5 mm |

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| Weight | | 1800 g |
| Environment | Operating Temperature | -40°C to +70°C |
| | Ingress Protection Level | IP40 |
| MTBF | | 150'000 h / 17.1 years, according SN29500 at environmental temperature 40 °C |
| Certifications | Compliance Domain | CE according to 2014/53/EU (RED), 2011/65/EU (RoHS), Railway according to EN 50155 class OT4/ST0, EN 45545 Railway |
| Order Code | | NB3800-N2L-G |