

# NB3800-N-G

## Railway Router with 1x 5G + 5x ETH + GNSS + EN50155

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



### Keyfeatures

Mobile / Cellular	1x 5G-NR, LTE-A Pro, UMTS
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	<div>1x Multimode 5G-NR, LTE-A Pro, UMTS</div> <div>5G - NR n1, n3, n7, n8, n20, n28, n38, n40, n77, n78</div> <div>4G - LTE-A Pro B1, B3, B7, B8, B20, B28, B38, B40</div> <div>3G - DC-HSPA+/UMTS B1 (2100), B3 (1800), B8 (900)</div> <div>5G NR Modes Sub-6 FDD and TDD</div> <div>LTE Category Cat. 20 up to 7CA</div> <div>MIMO 4x4 MIMO in 5G-NR support on n1, n3, n7, n38, n40, n77, n78 and LTE B1, B3, B7, B38, B40</div> <div>Antenna ports 4</div> <div>Power Class 23dBm (Power Class 3)</div> <div>Data rate down / up (max) up to 5.5 Gbps DL / 2.7 Gbps UL</div> <div>Operation Mode 5G Core SA and NSA operations</div> <div>3GPP 4G/5G Rel. 15, 3G HSPA+ Rel. 18</div> <div>FCC ID R17FN980</div> <div>Voice -</div> <div>Region Europe, Middle East and Africa (EMEA), on request: North America (NA), Asia and Pacific (APAC)</div> <div>Europe, Middle East and Africa (EMEA)</div> <div>4x TNC female</div> <div>4x Mini SIM - 2FF</div>
Ethernet	Standard	<div>2x Gigabit Ethernet</div> <div>Ethernet standard 1000BASE-T, Auto MDIX</div> <div>Speed 10/100/1000 Mbps</div> <div>3x Fast Ethernet</div> <div>Ethernet standard 100BASE-TX, Auto MDIX</div> <div>Speed 10/100 Mbps</div>
	Connector	<div>2x M12 X-coded female, 3x M12 D-coded female</div>

<b>Positioning</b>	<b>Standard</b>	1x Multi-GNSS <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS gpsOne Gen 9 <b>Antennas</b> Active or passive <b>Sensitivity</b> Up to -161 dBm <b>CEP (Circular Error Probability)</b> <2m (Open sky conditions. Standalone) <b>Min Update Rate</b> 1Hz <b>Services</b> Standalone
	<b>Connector</b>	1x TNC female
<b>USB</b>	<b>Standard</b>	1x USB 2.0 Host
	<b>Connector</b>	1x Type A
<b>Serial, Fieldbus</b>	<b>Protocol</b>	1x RS-232 <b>Protocol</b> EIA-232 <b>Signals</b> TX, RX <b>Signal level</b> High > 5 VDC, low < -5 VDC <b>Bit rate</b> Up to 115 200 Bit/s
	<b>Connector</b>	1x M12 A-coded female
<b>System</b>	<b>Core</b>	1.3 GHz dual-core, 1 GB RAM, 4 GB flash
	<b>Module Slots</b>	2x miniPCle (PCle + USB), 4x miniPCle (USB)
<b>Software</b>	<b>Features</b>	NetModule Router Software (supported features depending on product variant) <b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment. <b>General</b> 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 <b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS <b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license) <b>Wireless LAN</b> 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 <b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision, <b>Services</b> DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNTP 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 <b>Routing</b> Destination, policy, multipath, mobile-IP, OSPF, BGP, multicast, TCP-MSS clamping, bridging discovery protocols LLDP, CDP, SONMP, EDP, FDP, IRDP, VRRP, STP/RSTP, VRRP, VLAN, PPPoE, VXLAN <b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service <b>Firewall</b> Stateful firewall, connection tracking, NAT, NAT, masquerading, bridge filtering, Address translation (based on SRC and DST ports) <b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography) <b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow) <b>Programmability</b> SDK <b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test
	<b>Licenses</b>	GNSS <b>Enabled service</b> GNSS location service Server with JSON-, NMEA stream
<b>Power</b>	<b>Input Voltage</b>	24, 48 VDC <b>Nominal voltages</b> 24, 48 VDC <b>Absolute voltages</b> 24 VDC to 48 VDC (-30 % / +30 %) <b>Galvanic isolation</b> 1500 VDC <b>Standard</b> EN 50155 class S2/C1
	<b>Connector</b> <b>Consumption</b>	1x M12 A-coded male 25 W (max)
<b>Dimensions</b>	<b>W x H x D</b>	Width 167/190 mm x height 121.1 mm x depth 106.5 mm
<b>Weight</b>		1800 g
<b>Environment</b>	<b>Operating Temperature</b>	-40°C to +70°C
	<b>Ingress Protection Level</b>	IP40
<b>MTBF</b>		150'000 h / 17.1 years, according SN29500 at environmental temperature 40 °C

<b>Certifications</b>	<b>Compliance Domain</b>	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS), Railway according to EN 50155 class OT4/ST0, EN 45545 Railway
<b>Order Code</b>		NB3800-N-G