

# NB3800-4Ld-G

## Railway Router with 4x LTE-Adv + 5x ETH + GNSS + EN50155

Railway approved, modular onboard communication platform for future proof IP solutions.



### Keyfeatures

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

### Product description

The powerful NB3800, with its equipment, rail approvals and interfaces to on-board electronics, is ideal for applications such as video surveillance, voice communication or Smart Traffic.

### Applications

- CCTV
- Voice Communication
- Smart Traffic

### Specifications

<b>Mobile / Cellular</b>	<b>Standard</b>	4x Multimode LTE Advanced, UMTS for EMEA, NA <b>4G - LTE B1</b> (2100), B2 (1900, B3 (1800), B4 (AWS), B7 (2600), B12 (700ac), B13 (700c), B20 (800DD), B5 (850), B25 (1900), B26 (850), B29 (700), B41 (TDD2500), B30 (WCS) <b>3G - DC-HSPA+/UMTS B1</b> (2100), B2 (1900), B3 (1800), B4 (1700), B5 (850), B8 (900) <b>2G - GSM/GPRS/EDGE</b> n.a. <b>Category</b> LTE Cat 6 <b>Antenna ports</b> 2x2 MIMO <b>Data rate down / up (max)</b> 300 Mbps / 50 Mbps <b>Voice</b> n.a.
	<b>Region</b>	Europe
	<b>Connectors</b>	8x TNC female
	<b>SIM</b>	4x Mini SIM - 2FF
<b>Ethernet</b>	<b>Standard</b>	2x Gigabit Ethernet <b>Ethernet standard</b> 1000BASE-T, Auto MDIX <b>Speed</b> 10/100/1000 Mbps 3x Fast Ethernet <b>Ethernet standard</b> 100BASE-TX, Auto MDIX <b>Speed</b> 10/100 Mbps
	<b>Connector</b>	2x M12 X-coded female, 3x M12 D-coded female
<b>Positioning</b>	<b>Standard</b>	1x GNSS <b>Receiver</b> BeiDou, GLONASS, GPS <b>Antennas</b> Active or passive <b>Sensitivity</b> -160 dBm <b>Services</b> Standalone, assisted GPS Data server with JSON, NMEA data stream
	<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 miniPCIe (PCIe + USB), 4x miniPCIe (USB)
<b>Software</b>	<b>Features</b>	<p>NetModule Router Software (supported features depending on product variant)</p> <p><b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.</p> <p><b>General</b> Fail-safe update (FOTA), upgrade via USB, HTTP(S), (S)FTP or TFTP, remote CLI &amp; WebGUI, RADIUS authentication, Simple Certificate Enrollment Protocol (SCEP), Hardware- und Software Watchdog</p> <p><b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS</p> <p><b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)</p> <p><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</p> <p><b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,</p> <p><b>Services</b> DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNT 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</p> <p><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</p> <p><b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service</p> <p><b>Firewall</b> Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)</p> <p><b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)</p> <p><b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)</p> <p><b>Programmability</b> SDK</p> <p><b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test</p>
	<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>		NB3800-4Ld-G