

# NB3800-2NPb-G

## Railway Router with 2x 5G + 5x ETH + 110V + GNSS + EN50155

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



### Keyfeatures

<b>Mobile / Cellular</b>	2x 5G-NR, LTE-A Pro, UMTS
<b>SIM</b>	4x Mini SIM
<b>Ethernet</b>	2x Gigabit Ethernet, 3x Fast Ethernet
<b>Power</b>	72 VDC to 110 VDC
<b>Positioning</b>	Multi-GNSS
<b>Temperature Range</b>	-40 °C bis +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 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

<b>Mobile / Cellular</b>	<b>Standard</b>	2x Multimode 5G-NR, LTE-A Pro, UMTS <b>5G - NR</b> n1, n2, n3, n5, n7, n8, n12, n13, n14, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n71, n77, n78 <b>4G - LTE Advanced Pro</b> 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 <b>3G - DC-HSPA+/UMTS</b> B1, B2, B4, B5, B8 <b>5G -NR Modes</b> Sub-6 FDD and TDD for global deployment <b>LTE Category</b> Cat. 19 up to 5CA <b>MIMO</b> 4x4 MIMO <b>Antenna ports</b> 4, 4x RX/TX on every port <b>Power Class</b> 23 dBm (Power Class 3) 26 dBm (Power Class 2) on B41 29 dBm (Power class 1.5) on n41, n77, n78 <b>Module Data rate down / up (max)</b> 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 <b>Operations Modes</b> 5G SA and NSA operations <b>3GPP</b> 5G/4G Rel. 16, 3G HSPA+ Rel. 8 <b>Voice -</b> <b>FCC ID</b> R17FN990A28HP <b>Region</b> Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)
	<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>	<p>1x Multi-GNSS  <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS  gpsOne Gen 9  <b>Antennas</b> Active or passive  <b>Tracking Sensitivity</b> Up to -161 dBm  <b>CEP (Circular Error Probability)</b> &lt;2m (Open sky conditions. Standalone)  <b>Min update rate</b> 1Hz  <b>Services</b> Standalone</p>
	<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>	<p>1x RS-232  <b>Protocol</b> EIA-232  <b>Signals</b> TX, RX  <b>Signal level</b> High &gt; 5 VDC, low &lt; -5 VDC  <b>Bit rate</b> Up to 115 200 Bit/s</p>
	<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)  <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 &amp; 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 Interval 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, Adress 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</p>
	<b>Licenses</b>	<p>GNSS  <b>Enabled service</b> GNSS location service  Server with JSON-, NMEA stream</p>
<b>Power</b>	<b>Input Voltage</b>	<p>72, 96, 110 VDC  <b>Nominal voltages</b> 72, 96, 110 VDC  <b>Absolute voltages</b> 72 VDC to 110 VDC (-30 % / +30 %)  <b>Galvanic isolation</b> 1500 VDC  <b>Standard</b> EN 50155 class S2/C1</p>
	<b>Connector</b> <b>Consumption</b>	<p>1x M12 A-coded male  25 W (max)</p>
<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>		132'212 h / 15.09 years, according SN29500 at environmental temperature 40 °C

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**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

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**Order Code**

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