

# NB3800-LWacA-GV

## Railway Router with 2x LTE + WLAN-ac + 5x ETH + Audio + GNSS + Voice + EN50155

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



### Keyfeatures

<b>Mobile / Cellular</b>	1x LTE, UMTS, GSM
<b>SIM</b>	4x Mini SIM
<b>WiFi / WLAN</b>	1x Dual Band IEEE 802.11a/b/g/n/ac (Wi-Fi 5), 100 Clients in Access Point Mode
<b>Ethernet</b>	2x Gigabit Ethernet, 3x Fast Ethernet
<b>Voice</b>	1x Analog Audio
<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, Voice Gateway, 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 fleet management, voice communication or passenger infotainment.

### Applications

- Fleet Management
- Passenger Infotainment
- Ticketing
- CCTV
- Voice Communication

### Specifications

<b>Mobile / Cellular</b>	<b>Standard</b>	1x Multimode LTE, UMTS, GSM for EMEA <b>4G - LTE</b> B1, B3, B7, B8, B20, B28A <b>3G - DC-HSPA+/UMTS</b> B1 (2100), B3 (1800), B8 (900) <b>2G - GSM/GPRS/EDGE</b> B3 (1800), B8 (900) <b>Category</b> LTE Cat 4 <b>Antenna ports</b> 2x2 MIMO <b>Data rate down / up (max)</b> 150 Mbps / 50 Mbps <b>Voice</b> CSFB, VoLTE (with optional Software License) <b>FCC ID</b> -
	<b>Region</b> <b>Connectors</b> <b>SIM</b>	Europe, Middle East and Africa (EMEA) 2x TNC female 4x Mini SIM - 2FF
<b>WiFi / WLAN</b>	<b>Standard</b>	1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5) <b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5) <b>Frequency</b> 2.4/5 GHz <b>Diversity</b> 2x2 MIMO <b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz) <b>Modes</b> Client or access point (up to 100 clients) <b>FCC ID</b> TK4WLE600VX
	<b>Connector</b>	2x TNC female
<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 Multi-GNSS <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS gpsOne Gen 9 <b>Antennas</b> Active or passive <b>Tracking Sensitivity</b> Up to -160 dBm <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>Voice Communication</b>	<b>Protocols</b>	1x Analog voice (audio) <b>Channels</b> Line in: left + right, line out: left + right <b>Line in</b> Left: +/-, right: +/- <b>Line out</b> Left +, right +, COM <b>Input</b> 21 kΩ, signal level 1.9 Vpp, 100 Hz- 15 kHz <b>Output</b> 600 Ω, signal level 3.6 Vpp, 300 Hz- 4 kHz
	<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>	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, LZTP, CSD dial-in, Certificate revocation service <b>Firewall</b> Stateful firewall, connection tracking, NAT, NAPT, 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 Voice gateway <b>Enabled service</b> Versatile voice gateway for seamless call routing <b>Protocols</b> 2G/3G/4G, POTS, VoIP, PTT (if supported by hardware)
<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>		170'000 h / 19.4 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-LWacA-GV