

# NB3800-LWacA-GV

## Bahn-Router mit 2x LTE + WLAN-ac + 5x ETH + Audio + GNSS + Sprache + EN50155

Leistungstarker und modularer Mobilfunk-Router mit 5-Port Ethernet Switch für drahtlosen Internetzugang im Fahrzeug.



### Hauptmerkmale

|                           |   |
|---------------------------|---|
| <b>Mobilfunk</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 im Access Point Mode                          |
| <b>Ethernet</b>           | 2x Gigabit Ethernet, 3x Fast Ethernet   |
| <b>Sprache</b>            | 1x Analog Audio   |
| <b>Speisung</b>           | 24 VDC bis 48 VDC   |
| <b>Ortung</b>             | Multi-GNSS  |
| <b>Betriebstemperatur</b> | -40 °C bis +70 °C, EN 50155 class OT4/ST0   |
| <b>Software</b>           | Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, VoIP Gateway, freie Updates |
| <b>Konformität</b>        | CE (RED), Bahn (EN50155, EN45545) , ITxPT optional  |
| <b>Modularität</b>        | Erweiterungen auf Anfrage   |

### Produktbeschreibung

Der leistungsstarke NB3800 ist mit seiner Ausstattung, seinen Bahnzulassungen und Schnittstellen zur Bordelektronik z.B. ideal für Flottenmanagement, Kommunikation oder Passagierinfotainment geeignet.

### Anwendungen

- Flottenmanagement
- Passagier-Infotainment
- Fahrkartensysteme
- Videoüberwachung
- Kommunikation

### Spezifikation

|                          |                   |   |
|--------------------------|-------------------|---|
| <b>Mobile / Cellular</b> | <b>Standard</b>   | 1x Multimode LTE, UMTS, GSM for EMEA<br><b>4G - LTE</b> B1, B3, B7, B8, B20, B28A<br><b>3G - DC-HSPA+/UMTS</b> B1 (2100), B3 (1800), B8 (900)<br><b>2G - GSM/GPRS/EDGE</b> B3 (1800), B8 (900)<br><b>Category</b> LTE Cat 4<br><b>Antenna ports</b> 2x2 MIMO<br><b>Data rate down / up (max)</b> 150 Mbps / 50 Mbps<br><b>Voice</b> CSFB, VoLTE (mit optionaler Software-Lizenz)<br><b>FCC ID</b> - |
|                          | <b>Region</b>     | Europe, Middle East and Africa (EMEA)   |
|                          | <b>Connectors</b> | 2x TNC female   |
|                          | <b>SIM</b>        | 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)<br><b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5)<br><b>Frequency</b> 2.4/5 GHz<br><b>Diversity</b> 2x2 MIMO<br><b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)<br><b>Modes</b> Client or access point (up to 100 clients)<br><b>FCC ID</b> TK4WLE600VX   |
|                          | <b>Connector</b>  | 2x TNC female   |
| <b>Ethernet</b>          | <b>Standard</b>   | 2x Gigabit Ethernet<br><b>Ethernet standard</b> 1000BASE-T, Auto MDIX<br><b>Speed</b> 10/100/1000 Mbps<br>3x Fast Ethernet<br><b>Ethernet standard</b> 100BASE-TX, Auto MDIX<br><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<br/> <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS<br/> gpsOne Gen 9<br/> <b>Antennas</b> Active or passive<br/> <b>Tracking Sensitivity</b> Up to -160 dBm<br/> <b>Services</b> Standalone<br/> <b>CEP (Circular Error Probability)</b> &lt; 2m (CEP 50), (Open sky conditions, Horizontal)</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>Voice Communication</b> | <b>Protocols</b>                       | <p>1x Analog voice (audio)<br/> <b>Channels</b> Line in: left + right, line out: left + right<br/> <b>Line in</b> Left: +/-, right: +/-<br/> <b>Line out</b> Left +, right +, COM<br/> <b>Input</b> 21 kΩ, signal level 1.9 Vpp, 100 Hz- 15 kHz<br/> <b>Output</b> 600 Ω, signal level 3.6 Vpp, 300 Hz- 4 kHz</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<br/> <b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.<br/> <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<br/> <b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS<br/> <b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)<br/> <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<br/> <b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,<br/> <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<br/> <b>Routing</b> 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<br/> <b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service<br/> <b>Firewall</b> Stateful firewall, connection tracking, NAT, NAT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)<br/> <b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)<br/> <b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)<br/> <b>Programmability</b> SDK<br/> <b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test<br/> GNSS/GPS,<br/> <b>Services</b> Server with JSON-, NMEA stream<br/> Voice gateway<br/> <b>Enabled service</b> Versatile voice gateway for seamless call routing<br/> <b>Protocols</b> 2G/3G/4G, POTS, VoIP, PTT (if supported by hardware)</p> |
|                            | <b>Licenses</b>                        |   |
| <b>Power</b>               | <b>Input Voltage</b>                   | <p>24, 48 VDC<br/> <b>Nominal voltages</b> 24, 48 VDC<br/> <b>Absolute voltages</b> 24 VDC to 48 VDC (-30 % / +30 %)<br/> <b>Galvanic isolation</b> 1500 VDC<br/> <b>Standard</b> EN 50155 class S2/C1</p>  |
|                            | <b>Connector</b><br><b>Consumption</b> | <p>1x M12 A-coded male<br/> 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  |

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|-----------------------|--------------------------|--|
| <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  |

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