

# NB3701-LWac-G

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

Modularer Mobilfunk-Router mit 5-Port Ethernet Switch für drahtlosen Internetzugang im Fahrzeug.



### Hauptmerkmale

<b>Mobilfunk</b>	1x LTE, UMTS, GSM
<b>SIM</b>	2x 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>	5x Fast Ethernet
<b>IO</b>	4x Digitale I/O
<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, freie Updates
<b>Konformität</b>	CE (RED), Bahn (EN50155, EN45545)
<b>Modularität</b>	Erweiterungen auf Anfrage

### Produktbeschreibung

Der NB3701 ist der kompakte Router für die Bahn und andere Einsatzgebiete, wo ähnliche Anforderungen an die Hardware bestehen. Er ist das passende Gerät für Anwendungen wie Mining oder Passagier-WLAN.

### Anwendungen

- Intelligenter Verkehr
- Mining
- Passagier-WLAN
- Passagier-Infotainment
- Videüberwachung

### Spezifikation

<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 (mit optionaler Software-Lizenz) <b>FCC ID</b> - <b>Region</b> Europe
	<b>Region</b>	Europe
	<b>Connectors</b>	2x TNC female
	<b>SIM</b>	2x 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> 5x Fast Ethernet <b>Ethernet standard</b> 100BASE-TX, Auto MDIX <b>Speed</b> 10/100 Mbps
	<b>Connector</b>	5x 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 -160 dBm  <b>Services</b> Standalone  <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>IOs</b>	<b>Type</b>	<p>4x Digital I/O  <b>Signals</b> 2x DI, 2x DO  <b>DI signals</b> +, -  <b>DI level</b> Low: 0 - 5 VDC, high: 7.2 - 40 VDC  <b>DO signals</b> Relay outputs with NO, NC, COM (normally open, normally closed)  <b>DO level</b> 0 - 60 VDC/1A, maximum switching capacity: 60 W  <b>Isolation</b> 1'500 VDC</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)
<b>Software</b>	<b>Features</b>	<p>NetModule Router Software  <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 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 LLDAP, 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, NAPT, 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/GPS  <b>Services</b> Server with JSON-, NMEA stream</p>
<b>Power</b>	<b>Input Voltage</b>	<p>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</p>
	<b>Connector</b> <b>Consumption</b>	<p>1x M12 A-coded male  15 W (max)</p>
<b>Mounting</b>		Bracket
<b>Dimensions</b>	<b>W x H x D</b>	Width 165/190 mm x height 85 mm x depth 104 mm
<b>Weight</b>		1100 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>		210'000 h / 24 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>		NB3701-LWac-G

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