

# NB3850-NWacGa - Preliminary Specification

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

Unser leistungsstarker Evaluationsrouter für das 5G-Mobilfunknetz im Bahnbereich.



### Hauptmerkmale

<b>Mobilfunk</b>	1x 5G NR, LTE, UMTS
<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>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 (ausstehend)
<b>Software</b>	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, freie Updates
<b>Konformität</b>	CE (RED) (ausstehend), Bahn EN50155 (ausstehend) und EN45545
<b>Modularität</b>	Erweiterungen auf Anfrage

### Produktbeschreibung

Der NB3850 ist ein Evaluierungsrouter, der es erlaubt, die Leistungsfähigkeit von 5G zu testen sowie die Installation und Anwendung von 5G-Routern in den öffentlichen Verkehrsmitteln vorzubereiten.

### Anwendungen

- Flottenmanagement
- Mining
- Passagier-Infotainment
- Fahrkartensysteme
- Videoüberwachung
- Telematik

### Spezifikation

<b>Mobile / Cellular</b>	<b>Standard</b>	<p>1x Multimode 5G-NR, LTE, UMTS</p> <p><b>5G - NR</b> n1 (2100), n2/n25 (1900), n3 (1800), n5 (850), n7 (2600), n8 (900), n20 (800), n28 (700), n38 (2600), n40 (2300), n41 (2500), n66 (1700-2100), n71 (600), n77 (3700), n78 (3500), n79 (4700)</p> <p><b>4G - LTE</b> B1 (2100), B2/B25/B39 (1900), B3 (1800), B4/B66 (1700), B5/B18/B19/B26 (850), B7/B38 (2600), B8 (900), B12/B13/B14/B17/B28/B29 (700), B20 (800), B30/B40 (2300), B32 (1500), B34 (2000), B41 (2500), B42/B48 (3500), B46 (5200), B71 (600)</p> <p><b>3G - DC-HSPA+/UMTS</b> B1 (2100), B2 (1900), B3 (1800), B4/B9 (1700), B5 (850), B6/B19 (800), B8 (900)</p> <p><b>5G-NR Modes</b> Sub-6 FDD and TDD</p> <p><b>5G Core</b> SA and NSA operations</p> <p><b>LTE Category</b> Cat. 20 up to 7CA</p> <p><b>MIMO</b> 4x4 MIMO in 5G NR and LTE / UL-MIMO in n78 (3500)</p> <p><b>Antenna ports</b> 4</p> <p><b>Power Class</b> 23dBm (Power Class 3)</p> <p><b>Data rate down / up (max)</b> up to 5.5 Gbps DL / 1.5 Gbps UL</p> <p><b>3GPP</b> 4G/5G Rel. 15, 3G HSPA+ Rel. 18</p> <p>Europe, Middle East and Africa (EMEA), Asia and Pacific (APAC), North America (NA)</p>
	<b>Region Connectors SIM</b>	<p>4x TNC female</p> <p>4x Mini SIM - 2FF</p>
<b>WiFi / WLAN</b>	<b>Standard</b>	<p>1x Dual-band WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)</p> <p><b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5)</p> <p><b>Frequency</b> 2.4/5 GHz</p> <p><b>Diversity</b> 2x2 MIMO</p> <p><b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)</p> <p><b>Modes</b> Client or access point (up to 100 clients)</p> <p><b>FCC ID</b> TK4WLE600VX</p>
	<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
	<b>Connector</b>	3x Fast Ethernet <b>Ethernet standard</b> 100BASE-TX, Auto MDIX <b>Speed</b> 10/100 Mbps 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/QZSS 72-channel u-blox M8 engine 3 concurrent GNSS channels <b>Antennas</b> Active or passive <b>Accuracy</b> Up to 2.5 m CEP <b>Sensitivity</b> Up to -167 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 1 Mbps
	<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>	1x M.2, 5x miniPCIe
<b>Software</b>	<b>Features</b>	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 & WebGUI, RADIUS authentication, Simple Certificate Enrollment Protocol (SCEP), logging <b>Remote Management</b> Manage and monitor devices with SNMP, telnet, SSH, or HTTP/HTTPS <b>Cellular Networking</b> Multi-SIM / soft-SIM support, multi-APN support, signal strength monitoring, dedicated bearers, GSM/CSFB calls <b>Wireless LAN</b> Client or Access Point mode, multi client support, multi / hidden SSID, WPA-PSK/WPA2-PSK, WPA-RADIUS, WPA-EAP-TLS, IEEE 802.11w, RADIUS accounting, CAPWAP <b>Link Management</b> Link prioritisation, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision <b>Network Services</b> DHCP Client, DNS server, email, SMS service, NTP Client, NTP server, DynDNS, SSH server, SNMP agent, HTTP/HTTPS/FTP server, voice gateway, SIP call routing, coovachilli hotspot <b>Routing</b> Destination, policy, multipath, mobile-IP, OSPF, BGP, TCP-MSS clamping, STP/RSTP, bridging, LLDP, CDP, SONMP, EDP, FDP, IRDP, VRRP, VLAN, PPPoE <b>VPN</b> OpenVPN, IPsec, PPTP, GRE, CSD dial-in <b>Firewall</b> Stateful firewall, connection tracking, NAT, masquerading, bridge filtering
	<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) - to be confirmed
<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>		1900 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 (to be confirmed)

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<b>Certifications</b>	<b>Compliance</b>	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS), Railway according to EN 50155 class OT4/ST0, EN 45545 - Certifications pending
	<b>Domain</b>	Railway

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<b>Order Code</b>	NB3850-NWacGa
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