

NB3800-NWac2D-G

Railway Router with 5G-NR + 1x WLAN-ac 5x ETH + 2x DIO + GNSS + EN50155

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



Keyfeatures

Mobile / Cellular	1x 5G-NR, LTE-A Pro, UMTS
SIM	4x Mini SIM
WiFi / WLAN	1x Dual Band IEEE 802.11a/b/g/n/ac (Wi-Fi 5), 100 Clients in Access Point Mode
Ethernet	2x Gigabit Ethernet, 3x Fast Ethernet
DIO	2x DIO
Power	24 VDC to 48 VDC
Positioning	Multi-GNSS
Temperature Range	-40 °C to +70 °C, EN 50155 class OT4/ST0
Software	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, FMS2IP, free updates
Compliance	CE (RED), Railway (EN50155, EN45545)
Modularity	Extensions on request

Product description

The NB3800, with its railway approvals and its interfaces to on-board electronics, is the ideal device for e.g. WLAN and passenger information or production data acquisition.

Applications

- Passenger WiFi
- Passenger Infotainment
- Smart Traffic
- Telematics
- CCTV

Specifications

Mobile / Cellular	Standard	<p>1x Multimode 5G-NR, LTE-A Pro, UMTS</p> <p>5G - NR n1, n2, n3, n5, n7, n8, n12, n13, n14, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n71, n77, n78</p> <p>4G - LTE Advanced Pro 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</p> <p>3G - DC-HSPA+/UMTS B1, B2, B4, B5, B8</p> <p>5G - NR Modes Sub-6 FDD and TDD for global deployment</p> <p>LTE Category Cat. 19 up to 5CA</p> <p>MIMO 4x4 MIMO</p> <p>Antenna ports 4, 4x RX/TX on every port</p> <p>Power Class 23 dBm (Power Class 3) 26 dBm (Power Class 2) on B41 29 dBm (Power class 1.5) on n41, n77, n78</p> <p>Module Data rate down / up (max) 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</p> <p>Operations Modes 5G SA and NSA operations</p> <p>3GPP 5G/4G Rel. 16, 3G HSPA+ Rel. 8</p> <p>Voice -</p> <p>FCC ID R17FN990A28HP</p> <p>Region Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)</p>
	Region	Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)
	Connectors	4x TNC female
	SIM	4x Mini SIM - 2FF
WiFi / WLAN	Standard	<p>1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)</p> <p>Wireless standard IEEE 802.11a/b/g/n/ac (Wi-Fi 5)</p> <p>Frequency 2.4/5 GHz</p> <p>Diversity 2x2 MIMO</p> <p>Data rate (max) 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)</p> <p>Modes Client or access point (up to 100 clients)</p> <p>FCC ID TK4WLE600VX</p>
	Connector	2x TNC female

Ethernet	Standard	2x Gigabit Ethernet Ethernet standard 1000BASE-T, Auto MDIX Speed 10/100/1000 Mbps 3x Fast Ethernet Ethernet standard 100BASE-TX, Auto MDIX Speed 10/100 Mbps
	Connector	2x M12 X-coded female, 3x M12 D-coded female
Positioning	Standard	1x Multi-GNSS Receiver BeiDou, Galileo, GLONASS, GPS gpsOne Gen 9 Antennas Active or passive Sensitivity Up to -161 dBm CEP (Circular Error Probability) <2m (Open sky conditions. Standalone) Min Update Rate 1Hz Services Standalone
	Connector	1x TNC female
USB	Standard	1x USB 2.0 Host
	Connector	1x Type A
Serial, Fieldbus	Connector	1x M12 A-coded female
IOs	Type	2x Digital I/O Signals 2x DI, 2x DO DI signals +, - DI level Low: 0 - 5 VDC, high 9 - 60 VDC DI isolation 1'500 VDC DO level 0 - 60 VDC/1A DO signals Relay outputs with NO, NC, COM (normally open, normally closed) DO isolation 1'500 VDC
	Connector	1x M12 A-coded female
System	Core	1.3 GHz dual-core, 1 GB RAM, 4 GB flash
	Module Slots	2x miniPCle (PCle + USB), 4x miniPCle (USB)
Software	Features	NetModule Router Software (supported features depending on product variant) Package The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment. General 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 Remote Management Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS Cellular Networking Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license) Wireless LAN 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 Link Management Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision, Services 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 Routing 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 VPN OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service Firewall Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports) Encryption supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography) Quality of Service Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow) Programmability SDK Troubleshooting Logging, Ping, Traceroute, Tcpdump, Speed-test
	Licenses	GNSS Enabled service GNSS location service Server with JSON-, NMEA stream

Power	Input Voltage	24, 48 VDC Nominal voltages 24, 48 VDC Absolute voltages 24 VDC to 48 VDC (-30 % / +30 %) Galvanic isolation 1500 VDC Standard EN 50155 class S2/C1
	Connector Consumption	1x M12 A-coded male 25 W (max)
Dimensions	W x H x D	Width 167/190 mm x height 121.1 mm x depth 106.5 mm
Weight		1800 g
Environment	Operating Temperature	-40°C to +70°C
	Ingress Protection Level	IP40
MTBF		182'000 h / 20.8 years, according SN29500 at environmental temperature 40 °C
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
Order Code		NB3800-NWac2D-G