NET MODULE

NB3800-3LWac-G

Railway Router with 3x LTE + WLAN-ac 5x ETH + GNSS + EN50155

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

Keyfeatures

Mobile / Cellular	3x LTE, UMTS, GSM
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
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, free updates
Compliance	CE (RED), Railway (EN50155, EN45545), ITxPT optional
Modularity	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 passenger WiFi, passenger information or CCTV.

Applications

- Passenger WiFi
- Passenger Infotainment
- Ticketing
- CCTV

Specifications

Mobile / Cellular	Standard	3x Multimode LTE, UMTS, GSM for EMEA
		4G – LTE B1, B3, B7, B8, B20, B28A
		3G - DC-HSPA+/UMTS B1 (2100), B3 (1800), B8 (900)
		2G - GSM/GPRS/EDGE B3 (1800), B8 (900)
		Category LTE Cat 4
		Antenna ports 2x2 MIMO
		Data rate down / up (max) 150 Mbps / 50 Mbps
		Voice CSFB, VoLTE (with optional Software License)
		FCC ID -
	Region	Europe, Middle East and Africa (EMEA)
	Connectors	6x TNC female
	SIM	4x Mini SIM - 2FF

WiFi / WLAN	Standard	1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)
		Wireless standard IEEE 802.11a/b/g/n/ac (Wi-Fi 5)
		Frequency 2.4/5 GHz
		Diversity 2x2 MIMO
		Data rate (max) 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)
		Modes Client or access point (up to 100 clients)
		FCC ID TK4WLE600VX
	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 **Tracking Sensitivity** Up to -160 dBm **Services** Standalone
	Connector	1x TNC female
USB	**Standard**	1x USB 2.0 Host
	Connector	1x Type A
Serial, Fieldbus	**Protocol**	1x RS-232 **Protocol** EIA-232 **Signals** TX, RX **Signal level** High > 5 VDC, low < -5 VDC **Bit rate** Up to 115 200 Bit/s
	Connector	1x M12 A-coded female
System	**Core**	1.3 GHz dual-core, 1 GB RAM, 4 GB flash
	Module Slots	2x miniPCIe (PCIe + USB), 4x miniPCIe (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 LLDP, 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	1x M12 A-coded male
	Consumption	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		150'000 h / 17.1 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	NB3800-3LWac-G