

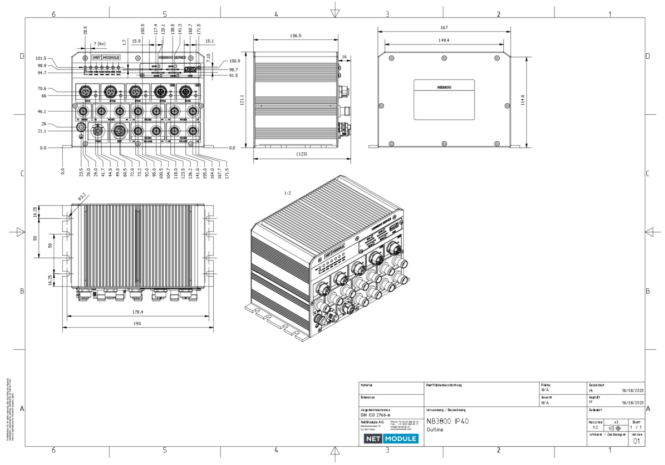
Product: NB3800-LpWacGd

Railway Router with 2x GbE, 3x FE, -40..+70°C, LTE cat. 12, Wi-Fi AC,GNSS, with automotive dead reckoning, 24-48VDC,

Product Description

Railway approved, modular onboard communication platform for future proof IP solutions. 2x Gigabit Ethernet. 3x Fast Ethernet. Temperature range -40…+70°C. LTE category 12 modem. 802.11ac Wi-Fi modem. Global Navigation Satellite System (GNSS). Powered by 24 V DC.

Technical Drawing



Technical Specifications

Product Overview

Name:	NB3800-LpWacGd
WAN:	IPv4; IPv6; IP Passthrough; DynDNS Client; PPPoE; Voice Gateway (SIP, Call Routing, Audio);
License:	NRSW 5.0 and newer version, included, if the hardware is capable: Vi(virtualization);V(voice);Ix(ITxPT);F(FMS2IP);Se(eSIM consum.);S(openVPN server);

Product Life Cycle

Life Cycle:	Active - Product is available

General Information

Scope of delivery:	Device, General safety instructions

More Interfaces

USB interface:	1 x USB 2.0 socket to connect an approved USB storage device, USB Type A socket
SIM Cards:	4x Mini SIM (2FF)
Local Management and Device Replacement:	Management via Web (HTTPs); Command Line Interface (CLI) over SSH/Serial/Web; SNMP v1/v2c/v3; Discovery via LLDP, CDP, FDP, SONMP, EDP, IRDP
Ethernet Connector Type:	2x Gigabit Ethernet (1000Base-T, Auto MDIX, 10/100/1000 Mbps, M12 X-coded female); 3x Fast Ethernet (100Base-TX, Auto MDIX, 10/100 Mbps, M12 D-coded female)
Power Supply:	1x M12 A-coded; EN50155 class S2/C1;
Serial:	1x M12 A-coded female; RS-232; Protocol EIA-232; Signals TX, RX; Signal levels: High (≥5 VDC), Low (≤ -5VDC); Bit rate up to 115kbps
GPS (global positioning system):	Multi-GNSS, BeiDou, Galileo, GLONASS, GPS/QZSS 72-channel u-blox M8 engine 3 concurrent GNSS channels Integrated motion sensors, Antennas: active or passive, Sensitivity: Down to -160 dBm, CEP (Circular Error Probability) ≤2.5 m (Open sky conditions, Standalone), Min Update Rate: 1Hz, Services: Standalone, GNSS Stream NMEA or JSON
CPU:	1.3 GHz dual-core

Memory:	1 GB RAM
Storage:	4 GB flash
LEDs:	7 LEDs (STAT, MOBx, WLANx, …)
Reset Function:	Pin-hole push button for reboot and factory reset

Radio technology

Modules

Description	3G	4G	MIMO	Antenna Connector	Radio Protocol	Frequency Band	Access Point Functionality	Client / STA Functionality
Module 1				GNSS: 1x TNC female;				
Module 3	DC-HSPA+/UMTS Bands: B1, B2, B4, B5, B6, B8, B9, B19 2014/53/EU (RED): B1, B8	LTE Cat. 12 Rel 12 up to 5CA LTE Advanced Pro Bands: B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B38, B39, B40, B41, B42, B43, B48 (CBRS), B66, B71 2014/53/EU (RED): B1, B3, B7, B8, B20, B28, B38, B40	2x2 MIMO;	4G: 2x TNC female;				
Module 4			2x2 MIMO	WLAN: 2x TNC female	802.11 a/b/g/n/ac (Wi-Fi 5)	WLAN 2.4/5 GHz	Access Point (8 SSIDs, 128 clients total); Mesh (802.11s); Bridged; Routed; IAPP; 802.11r (FT); DFS supported; Client Tracking; Band Steering; Isolate Clients Function; Accounting; Coovachilli Hotspot;	Client; 802.11r (FT); Roaming Thresholds; Background Scan; Multiple Client SSID Profiles;

Load Balance:	Link Prioritizatoin and Aggregation; Load Balancing; Diffserv; SFQ; HTB; Priority based Queuing

Power requirements

Operating Voltage:	24 … 48 VDC (±30%);
Power Consumption:	max. 25W

Diagnostics features

Alarm and event actions:	Email; SMS sending
Monitoring:	Watchdogs (Hard- and Software); Link Supervision; MQTT Broker

Security features

Multipoint VPN:	VXLAN, CSD dial-in, OpenVPN, IPSec, GRE, L2TP, PPTP, IKEv1/v2

Service

Other services:	DNS Cache;

Software

Firmware Storage:	Fail-safe update (FOTA); Software Update via USB, HTTP(s) (push), FTP (pull), SFTP (pull), TFTP (pull)
Radius Server:	External Radius Server Management User Authentication
Software features:	Software Development Kit (SDK);
Software Version:	5.0 (updates free of charge)
Operating system:	NRSW (NetModule Router Software)
Switching:	VLAN (802.1Q)
Redundancy:	Multipath TCP, VRRP (Virtual Router Redundancy Protocol), RSTP (Rapid Spanning Tree Protocol)
Diagnostics:	Netflow (Softflow), Ping, Traceroute, Tcpdump, Speed TestGNSS Diagnostics
Configuration:	DHCP Client and Server
Security:	Certificate Management (SCEP Client, Signing Requests), Certificate formats: PKCS12, PKCS7, PEM/DER, RSA/Ed25519 (OpenSSH/Dropbear), "Let's encrypt" support, Elliptic Curve Certificates (ECC), 802.1x for LAN, Stateful Firewall, Connection Tracking, Bridge Filtering
Time synchronisation:	NTP Client and Server, SNTP Server
Routing:	Destination, Policy, Multipath, OSPF, BGP, Multicast, TCP-MSS Clamping, NAT, NAPT, Masquerading, Mobile-IP
Management Software:	Compatible with "Connectivity Suite"
Cellular Functions:	Multi-APN; Signal Strength Monitoring; Dedicated Bearers

Ambient conditions

Degree of Protection when Installed:	IP40
Operating temperature:	-40-+70 °C

Mechanical construction

Dimensions (WxHxD):	167/190 mm x 121.1 mm x 106.5 mm
Weight:	1800 g

Mount Type:	Flat surface mounting
Mating Side:	all from front

EMC emitted immunity

EMV 06:	Yes

Approvals

Basis Standard:	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS)
Transportation:	EN 45545, EN 50155 class OT4/ST0
Wireless standards:	4G FCC ID: RI7LN920; WLAN FCC ID: TK4WLE600VX;
UK Regulation Compliance:	UKCA Mark
Suitability - Indoor:	Yes

Reliability

Guarantee:	5 years

WLAN Access Point

Security:	WPA3/2/1, WPA Personal (TKIP, CCMP), WPA Enterprise (Radius: EAP-PEAP/MSCHAPv2, EAP-TLS), Opportunistic Wireless Encryption (OWE), Mesh (Open, SAE)

WLAN Client

Security:	WPA3/2/1, WPA Personal (TKIP, CCMP), WPA Enterprise (Radius: EAP-PEAP/MSCHAPv2, EAP-TLS)

Further Instructions

Software Download:	https://share.netmodule.com/public/system-software/latest/

History

Update and Revision:	Revision Number: 0.22 Revision Date: 08-11-2026

Variants

Item #	Type
942998688	NB3800-LpWacGd

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