

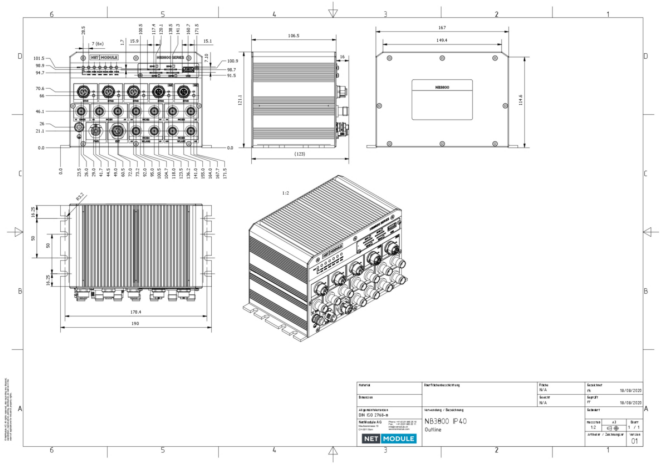
# Product: NB3800-3L2WacDd-GVi

Railway Router with 2x GbE, 3x FE, -25..+55°C, 3x LTE cat.4, 2x Wi-Fi AC, GNSS, 24-48VDC,

## Product Description

Railway approved, modular onboard communication platform for future proof IP solutions. 2x Gigabit Ethernet. 3x Fast Ethernet. Temperature range -25…+70°C.With three times LTE category 4 modem. With two times 802.11ac Wi-Fi modem. Global Navigation Satellite System (GNSS). Powered by 24 V DC.

## Technical Drawing



## Technical Specifications

### Product Overview

| | |
|---|---|
| Name: | NB3800-3L2WacDd-GVi |
| 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, Receiver BeiDou, Galileo, GLONASS, GPS, gpsOne Gen 9, Antennas: active or passive, Sensitivity: Down to -161 dBm, CEP (Circular Error Probability) ≤2m (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 | 2G | 3G | 4G | MIMO | Antenna Connector | Additional Radio Features | Radio Protocol | Frequency Band | Access Point Functionality | Client / STA Functionality |
|---|---|---|---|---|---|---|---|---|---|---|
| Module 1 | | | | | GNSS: 1x TNC female; | | | | | |
| Module 2 | On each (3x) 4G module: GSM/GPRS/EDGE Bands: B3 (1800), B8 (900) | On each (3x) 4G module: DC-HSPA+/UMTS Bands: B1 (2100), B3 (1800), B8 (900) | On each (3x) 4G module: LTE Cat. 4 Bands: B1, B3, B7, B8, B20, B28A | On each (3x) 4G module: 2x2 MIMO | On each (2x) 4G: 2x TNC female; | On each (3x) 4G module: CSFB; VoLTE; | | | | |
| Module 4 | | | | On each (2x) WLAN module: 2x2 MIMO | On each (2x) WLAN: 2x TNC female | | On each (2x) WLAN module: 802.11 a/b/g/n/ac (Wi-Fi 5) | On each (2x) WLAN module: WLAN 2.4/5 GHz | On each (2x) WLAN module: 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; | On each (2x) WLAN module: 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: | -25-+55 °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 OT1/ST2 |
| Wireless standards: | 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 |
|---|---|
| 942998308 | NB3800-3L2WacDd-GVi |

© 2026 Belden, Inc

All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.