Belden



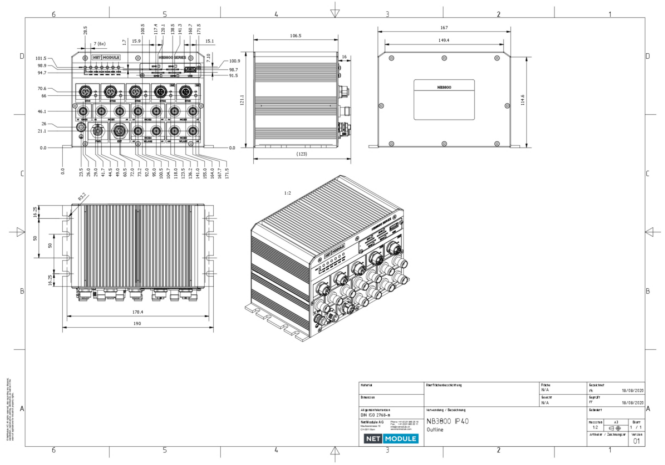
Product: NB3800-LWac2D-GVi

Railway Router with 2x GbE, 3x FE, -40..+70°C, LTE cat.4, Wi-Fi AC, GNSS, 24-48VDC, 2x DIO

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 4 modem. 802.11ac Wi-Fi modem. Global Navigation Satellite System (GNSS). Powered by 24 V DC. Two times Digital I/O.

Technical Drawing



Technical Specifications

Product Overview

Name:	NB3800-LWac2D-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
I/O Connection:	2x Digital IO; 1x Terminal block header 3.5mm (screw locking)

I/O Port Functionality:	Input Level: Low 0-5 VDC, High 9-60 VDC; Isolation 1500 VDC; Output Level: 0-60 VDC/1A; Relay with Normally Open, Normally Closed, COM;
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	GSM/GPRS/EDGE Bands: B3 (1800), B8 (900)	DC-HSPA+/UMTS Bands: B1 (2100), B3 (1800), B8 (900)	LTE Cat. 4 Bands: B1, B3, B7, B8, B20, B28A	2x2 MIMO	4G: 2x TNC female;	CSFB; VoLTE;				
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:	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
942998293	NB3800-LWac2D-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.