Belden



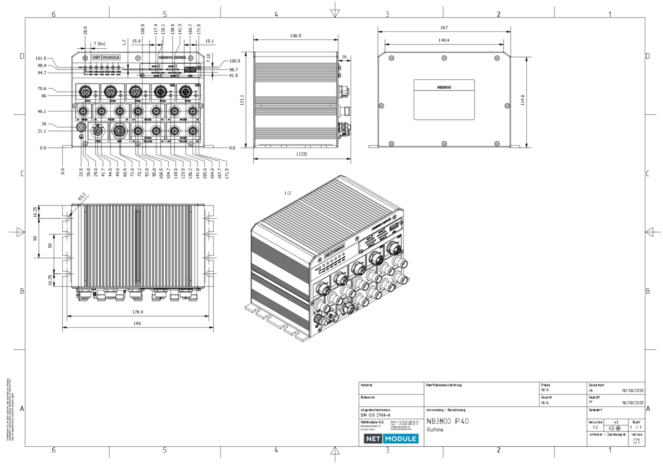
Product: NB3800-NWacI-G

Railway Router with 2x GbE, 3x FE, -40..+70°C, 5G, Wi-Fi AC, GNSS, 24-48VDC, IBIS,

Product Description

Railway approved, modular onboard communication platform for future proof IP solutions. 2x Gigabit Ethernet. 3x Fast Ethernet. Temperature range -40…+70°C. 5G cellular modem.802.11ac Wi-Fi modem. Global Navigation Satellite System (GNSS). Powered by 24 V DC. IBIS Bus.

Technical Drawing



Technical Specifications

Product Overview

Name:	NB3800-NWacI-G
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
IBIS Bus:	1x IBIS Slave; Protocol: VDV 300; Signals: WBED, WBME, WBSD, WBMS; Signal level: High ≥ 5 VDC, Low ≤ -5 VDC; Bit rate 1200 bps; Isolation up to 1500 VDC;
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	3G	4G	5G	MIMO	Antenna Connector	Radio Protocol	Frequency Band	Access Point Functionality	Client / STA Functionality
Module 1	DC-HSPA+/UMTS Rel. 8 Bands B1, B2, B4, B5, B8	LTE Cat. 19 up to 5CA LTE Advanced Pro Bands 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	Rel 16 SA/NSA Up to 3.4Gbps Downlink / 460 Mbps Uplink sub-6 FDD/TDD Bands n1, n2, n3, n5, n7, n8, n12, n13, n14, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n71, n77, n78	4x4 MIMO	5G: 4x TNC female; GNSS: 1x 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:	5G FCC ID: RI7FN990A28HP; 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
942998637	NB3800-NWacI-G

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