NB3701-L-G

Railway Router with LTE + 5x ETH + GNSS + EN50155

Proven multi-service onboard router for light rail and railways.

Keyfeatures

Mobile / Cellular	1x LTE, UMTS, GSM
SIM	2x Mini SIM
Ethernet	5x Fast Ethernet
IO	4x Digital I/O
Speisung	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)
Modularity	Extensions on request

Product description

The NB3701 is the compact router for railways and other applications where similarly high demands are placed on the hardware. It is the right device for fleet management or telematics.

Applications

- Smart Traffic
- Fleet Management
- Tracking
- Passenger Infotainment
- Ticketing
- Telematics
- CCTV

Specifications

Mobile / Cellular	Standard	1x 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	2x TNC female
	SIM	2x Mini SIM - 2FF

Ethernet	Standard	5x Fast Ethernet
		Ethernet standard 100BASE-TX, Auto MDIX
		Speed 10/100 Mbps
	Connector	5x 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

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IOs	**Type**	4x Digital I/O **Signals** 2x DI, 2x DO **DI signals** +, - **DI level** Low: 0 - 5 VDC, high: 7.2 - 40 VDC **DO signals** Relay outputs with NO, NC, COM (normally open, normally closed) **DO level** 0 - 60 VDC/1A, maximum switching capacity: 60 W **Isolation** 1'500 VDC
	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)

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	15 W (max)
Mounting		Bracket
Dimensions	**W x H x D**	Width 165/190 mm x height 85 mm x depth 104 mm
Weight		1100 g
Environment	**Operating Temperature**	-40°C to +70°C
	Ingress Protection Level	IP40
MTBF		210'000 h / 24 years, according SN29500 at environmental temperature 40 °C
Certifications	**Compliance**	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS), Railway according to EN 50155 class OT4/ST0, EN 45545
	Domain	Railway
Order Code		NB3701-L-G