

NB3710 MultiRail

EN50155 Certified Router for Multiple 4G and WiFi 802.11abgn Links



The NB3710 MultiRail enables wireless Internet access for applications like passenger WiFi & information and condition monitoring. Numerous additional communication interfaces guarantee an excellent interaction with onboard electronics.

NB3710 is an all-in-one router for railway and other fields with highest demands on the hardware. Equipped with up to four 3G/4G modules, the total bandwidth can be extended to the needs of the applications. Especially in passenger entertainment applications the increased total throughput gives a better user experience. The quad SIM feature and the sophisticated WAN link manager are offering load balancing, highest connection availability using multiple network providers.

Thanks to its unique port-based subnetting feature, the NB3710 is able to separate different application networks, thus avoiding interferences and guaranteeing dedicated communication paths. Quality of Service support allows prioritizing the traffic to avoid that less important tasks are blocking high priority data. The router is qualified for operating under harsh environmental conditions defined by EN50155.

Available options include interfaces for CAN, IBIS, RS-485 and Audio Line In/Out. The device is also available with extended input voltage (72 - 110V).

The router software is based on well proven components including an embedded Linux operating system and a powerful communication protocol suite. The device is managed via web browser, command line or SNMP. Self-provisioning for new software or new configuration is possible. The device can be configured remotely by customer programs via a powerful application interface. Customer specific software extensions are possible via SDK.

Applications

- Passenger Wi-Fi
- Condition monitoring
- Passenger information systems
- Passenger counting systems
- Electronic payment systems
- Ticketing
- Driver communication
- Emergency calls
- CCTV

Key Features

- EN50155 TX / EN45545
- Multiple LTE/UMTS modems
- Quad SIM
- Multiple WiFi AP/clients
- 5 Ethernet M12
- VLAN, RSTP, LLDP
- Multipath outing, load balancing, QoS
- Options: audio, RS-232, RS-485, CAN, IBIS
- Option: extended input voltage range 72, 96, 110V

Specifications

Mobile / Cellular	1-4 Multimode LTE, UMTS and GSM module with seamless hand-over 4G - LTE/FDD Bands: B1(2100), B2(1900), B3(1800), B5(850), B7(2600), B8(900), B20(800) 3G - DC-HSPA+/UMTS: B5(850), B8(900), B2(1900), B1(2100) 2G - EDGE/GPRS/GSM: B5(850), B9(900), B3(1800), B2(1900) Data rates: LTE max. 100 Mbps downlink / 50 Mbps uplink (DC-HSPA+ 42/5.76) Antenna connector: 4 TNC female supporting MIMO or standard antennas SIM slots: 4 Mini-SIM ISO/IEC 7810:2003, ID-000
WLAN / WiFi	1-2 IEEE 802.11 a/b/g/n up to 300 Mbps 2.4/5GHz MIMO, Access Point or Client mode Max clients: 100, no limitation by software Antenna connector: 4 TNC female supporting MIMO or standard antennas
Ethernet	5 port Ethernet switch 10/100 Mbps, auto MDX, M12 connector 4 poles D-coded female
GPS / GNSS	GPS/GLONASS data server with JSON or NMEA data stream, tracking sensitivity -154 dBm (typical); TNC connector, support for active and passive antennas Optional: GPS/GLONASS/BeiDu/(Galileo ready), -160 dBm, 72-channel, 2m accuracy, dead reckoning with onboard 3D accelerometer and 3D gyroscope
USB	USB 2.0 Host; USB A connector type
Digital I/O	2 digital inputs, level 0 (not set): 0-4.0 VDC level 1 (set): 7.2-40 VDC 2 digital outputs, 0-60 VDC/1A, maximum switching capacity: 60 W Connector: M12 8 poles A-coded female
Extension port	Standard: RS-232 serial interface / Optional: CAN, RS-485, IBIS or Audio M12 connector 8 poles A-coded female
Dimensions, weight	Width 190mm x height 105mm x depth 104mm, approx. 1'250g
Power	Standard - Nominal voltages: 24VDC, 36VDC and 48VDC according to EN50155; Voltage range 12VDC to 60VDC, -15% / +5% Option - Nominal voltages: 72VDC, 96VDC and 110VDC according to EN50155; Voltage range 50VDC to 136VDC, ±10% Max. power consumption: 15W Compliant with EN50155 class S2/C1: interruptions up to 10ms are tolerated, no batteries Connector type: M12, 4 poles, A-coded male, Pin1 +, Pin3 -
Environment	Operational temperature: -40 °C to +70 °C Storage temperature: -40 °C to +85°C Conformal coating, IP40 with SIM / USB cover mounted, IP52 option
MTBF	117'000h-296'000h depending on model
EMC standards	EN 55022:2010, EN 50121-3-2:2006, CFR 47 Part 15B, EN 301 489 (Emission) EN 50121-3-2:2006, EN 301 489 (Immunity)
Type Approvals	CE according to R&TTE, FCC Railway: EN50155:2007, EN 45545-2:2013
Order numbers NB3710-LWA-GV NB3710-LWC-G NB3710-LWI-G NB3710-2LW-G	(contact sales for more models, options or project specific adaptations) LTE, WLAN Router + Audio + GPS + Voice LTE, WLAN Router + CAN + GPS LTE, WLAN Router + IBIS + GPS Dual-LTE, WLAN Router + GPS