NB3800 MediaRail+

High-Performance EN50155 Router with Quad LTE Advanced and WiFi 802.11ac

Applications

- Passenger WiFi
- Condition & remote monitoring
- Entertainment
- Multimedia server
- Digital signage
- Remote access
- Electronic payment systems
- Ticketing
- CCTV

The NB3800 MediaRail+ provides wireless Internet access over multiple LTE Advanced (Cat. 6) and WiFi connections for data-intensive applications like passenger WiFi and information or condition monitoring. Numerous additional communication interfaces guarantee an excellent interaction with onboard electronics.

With its outstanding routing performance, the MediaRail enables next generation passenger WiFi, passenger information, digital signage and multimedia applications. The performant CPU achieves data rates up to 1Gbit/s via the Gigabit Ethernet ports to process data from the train network backbone.

The built-in SSD disk with up to 1TB storage keeps documents, pictures, audio, and video files as well as application specific web page content. A powerful Web server for own web pages, WiFi captive portal software and a media server for streaming audio, pictures and videos is also included.

Equipped with up to four LTE Advanced (Cat. 6) modules which can be bundled, the total bandwidth can be extended to the needs of the intended applications. Especially with passenger entertainment applications, the increased total throughput generates a great user experience. The quad SIM feature and the sophisticated WAN link manager are offering load balancing to achieve maximum connection availability using multiple network providers.The in-vehicle WiFi coverage is enhanced by providing up to two WiFi access points with latest IEEE 802.11ac 2x2 MIMO standard.

Thanks to its port-based subnetting feature, the NB3800 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 transfer.

Available options include interfaces for CAN, RS-232, RS-485, Audio Line In/ Out, GSM-R, IBIS and GNSS Advanced.

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 interpreter 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 may be developed via a sophisticated SDK.

The router is qualified for operating under harsh environmental conditions defined by EN 50155 and fulfills fire safety requirements by EN 45545.

Key Features

- EN 50155
- EN 45545
- ITxPT compliant
- 1-4 LTE Advanced (Cat. 6)
- 1-2 WiFi IEEE 802.11a/b/g/n/ac
- Quad SIM
- 2 Gigabit Ethernet M12
- 3 Fast Ethernet M12
- Up to 1TB local storage
- VLAN, RSTP, LLDP
- Multipath routing, load balancing, QoS
- Options: audio, RS-232, CAN, GNSS Advanced, etc.

Performance

- Dual-Core, 1.3GHz ARM CPU
- 1000 Mbps ETH to ETH routing
- >200 Mbps LTE to WiFi/LAN

Specifications

Mobile / Cellular	1-4 Multimode Multimode LTE Advanced, UMTS/3G modules with seamless hand-over LTE Advanced Bands: B30 (2300 WCS), B41 (TDD 2500), B29 (US 700de Lower), B26 (US 850 Ext), B25 (1900), B5 (850), B20 (800DD), B13 (700c), B12 (700ac), B7 (2600), B4 (AWS), B3 (1800), B2 (1900), B1 (2100) 3G - DC-HSPA+/UMTS: 1800, 1700, 900, 850, 1900, 2100 LTE Advanced Cat. 6 max. 300 Mbps downlink / 50 Mbps uplink, DC-HSPA+ 42/5.76 TNC female antenna connectors 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/ac up to 867 Mbps 2.4/5GHz 2x2 MIMO, access point or client TNC connectors female supporting MIMO or standard antennas
Ethernet	5 Ethernet ports: 2x 10/100/1000Mbps (GbE) auto MDX, M12 connector 8 poles X-coded female, 3x 10/100Mbps (FE) auto MDX, M12 connector 4 poles D-coded female
GPS / GNSS	GPS/GLONASS data server with JSON or NMEA data stream, tracking sensitivity -154dBm (typical); TNC connector, support for active and passive antennas Optional: GPS/GLONASS/BeiDu/Galileo, –160 dBm, 72-channel, 2m accuracy
USB	USB 2.0 Host; USB A connector type
Extension port	Standard: RS-232 serial interface Optional: CAN, isol. RS-232 or RS-485, IBIS or Audio M12 connector 8 poles A-coded female
Extended Storage	Optional: Up to 1TB SSD
Power	Standard - Nominal voltages: 24VDC, 36VDC, 48VDC according to EN50155; Voltage range 24VDC-48DC -30% / +30% Option - Nominal voltages: 72VDC, 96VDC and 110VDC according to EN50155; Voltage range 72VDC-110VDC -30% / +30% Power Interruption Class S2: interruptions up to 10ms are tolerated, no batteries; M12 connector, 4 poles, A-coded male, Pin1 +, Pin3 - Max. power consumption depending on model: 25W
Environment	24-48VDC: Temp. range EN50155 TX (-40 °C to +70 °C) with max. 4 radio modules 24-48VDC Temp. range EN50155 T1 (-25 °C to +55 °C) with max. 6 radio modules 72-110VDC: Temp. range EN50155 TX (-40 °C to +70 °C) with max. 4 radio modules 72-110VDC: Temp. range EN50155 T2 (-40 °C to +55 °C) with max. 5 radio modules Storage temperature: -40 °C to +85°C Conformal coating, IP40 with SIM / USB cover mounted, IP52 option
Dimensions, weight	Width 167/190mm x height 121.1mm x depth 106.5mm, ca. 1'900g
MTBF	117'000h-296'000h depending on model
Compliance	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS), 2012/19/EU (WEEE), 1907/2006/EC (REACH); FCC according to 47 CFR, Part 15B; Railway according to EN 50155; ITxPT
Standards	EN 300 328, EN 300 440-2, EN 301 489-1, EN 301 489-17, EN 301 489-7, EN 301 489-24, EN 301 511, EN 301 893, EN 55032, EN 61000-6-2, EN 61000-6-3, EN 50121-3-2, EBA EMV 06, EN 62311, EN 62368-1, EN 45545-2
Order numbers NB3800-2Ld2Wac-G NB3800-4Ld-G NB3800-4Ld2WacDf-GVi	(contact sales for more models, options or project specific adaptations) Dual-LTE Advanced, Dual-WLAN-ac Router + GPS Quad-LTE Advanced Router + GPS Quad-LTE Advanced, Dual WLAN-ac Router + 1TB Data Storage + GPS + Virtualization

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