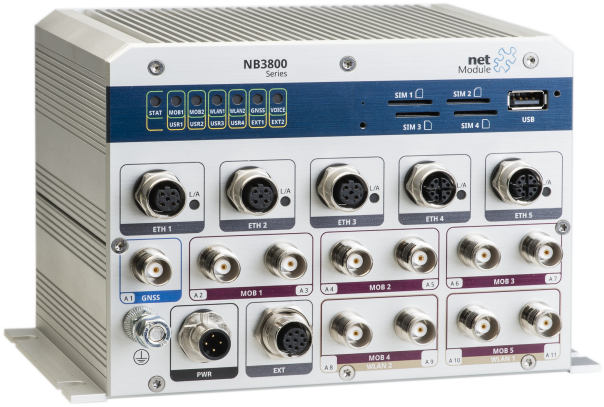
# NB3800 MediaRail

## High-Performance EN50155 Router with LTE, WiFi 802.11ac and Internal Storage




**The NB3800 MediaRail provides wireless Internet access over LTE and media server capabilities. The integrated storage up to 1 TB and fastest WiFi access points enable data-intensive applications like entertainment and WiFi for passengers.**

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 UMTS/LTE 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 dead reckoning GNSS.

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.

### Applications

- Passenger WiFi
- Entertainment
- Multimedia server
- Digital signage
- Remote access
- Electronic payment systems
- Ticketing
- CCTV

### Key Features

- EN 50155
- EN 45545
- 1-4 LTE/UMTS/GSM
- 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 with Dead Reckoning, 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 LTE, UMTS and GSM module with seamless hand-over<br>4G - LTE/FDD Bands: B1(2100), B2(1900), B3(1800), B5(850), B7(2600), B8(900), B20(800)<br>3G - DC-HSPA+/UMTS: B5(850), B8(900), B2(1900), B1(2100)<br>2G - EDGE/GPRS/GSM: B5(850), B8(900), B3(1800), B2(1900)<br>Data rates: LTE max. 100 Mbps downlink / 50 Mbps uplink (DC-HSPA+ 42/5.76)<br>TNC female antenna connectors supporting MIMO or standard antennas<br>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<br>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<br>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 |
| Extension port | Standard: RS-232 serial interface<br>Optional: CAN, isol. RS-232 or RS-485, IBIS or Audio<br>M12 connector 8 poles A-coded female |
| Extended Storage | Optional: Up to 1TB SSD |
| Power | Standard - Nominal voltages: 24VDC, 36VDC and 48VDC according to EN50155; Voltage range: 24VDC to 60VDC, -30% / +5%, Max. power consumption: 25W<br>Option - Nominal voltages: 72VDC, 96VDC and 110VDC according to EN50155; Voltage range: 72VDC to 110VDC, -30% / +25%, Max. power consumption: 20W<br>Power Interruption Class S2: interruptions up to 10ms are tolerated, no batteries; M12 connector, 4 poles, A-coded male, Pin1 +, Pin3 - |
| Environment | 1 - 4 radio modules: Temperature range EN50155 TX (-40°C to +70°C, 10 minutes 85°C)<br>5 - 6 radio modules: Temperature range EN50155 T1 (-25°C to +55°C, 10 minutes 70°C)<br>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)<br>FCC according to 47 CFR, Part 15B<br>Railway according to EN 50155 |
| 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 | (contact sales for more models, options or project specific adaptations) |
| NB3800-2LWac-G | Dual-LTE, WLAN-ac Router + GPS |
| NB3800-2L2Wac-G | Dual-LTE, Dual-WLAN-ac Router + GPS |
| NB3800-2L2WacPb-G | Dual-LTE, Dual-WLAN-ac Router + 72-110V PS + GPS |
| NB3800-3LWac-G | Triple-LTE, WLAN-ac Router + GPS |
| NB3800-2LWacDf-GVi | Dual-LTE, WLAN-ac Router + 1TB Data Storage + GPS + Virtualization |
| NB3800-4L2Wac-G | Quad-LTE, Dual-WLAN-ac Router + GPS |