

# NB3800 Railway Router

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 Product Information NB3800  
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High-Performance Wireless Router with Multiple LTE Advanced, WLAN, Ethernet, GNSS, SSD Storage, ITxPT and EN 50155



## Key Features

<b>Mobile / Cellular</b>	1 - 4x LTE Advanced, UMTS, GSM
<b>SIM</b>	4x Mini SIM
<b>WiFi / WLAN</b>	1 - 2x Dual-band IEEE 802.11ac (Wi-Fi 5)
<b>Ethernet</b>	2x Gigabit Ethernet 3x Fast Ethernet
<b>Extended Storage</b>	Up to 1TB SSD
<b>Positioning</b>	Multi-GNSS
<b>Temperature</b>	-40°C to +70 °C
<b>Software</b>	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, LXC, SDK, free updates
<b>Compliance</b>	CE (RED), Railway (EN 50155, EN 45545), ITxPT
<b>Modularity</b>	Extensions on request

## Product Description

The NB3800 is a high-speed and ruggedized cellular router designed for rail environments. Its rail industry approvals, versatility, security features and performance make it ideal for applications such as Passenger WiFi, Passenger Infotainment or eMobility .

Its features include multiple LTE Advanced modules which can be bundled, two WiFi access points with latest IEEE 802.11ac (Wi-Fi 5) standard, GNSS for positioning , 2 Gigabit and 3 Fast Ethernet ports and up to 1TB internal storage capacity .

The router is compliant with the mandatory requirements of EN 50155 and EN 45545. Communications interfaces include hardened connectors, including M12 for Ethernet, as well as TNC connectors for antenna connections.

The software is based on well proven components including an embedded Linux operating system and a powerful communication protocol suite. Customer specific software extensions may be implemented via a sophisticated SDK or Linux containers (LXC).

## Applications

- Passenger WiFi
- Passenger Infotainment
- CCTV
- Voice Communication
- eMobility

## Specifications

### 1 - 4x Mobile / Cellular (optional)

#### Multimode LTE, UMTS and GSM 4G - LTE

B1 (2100), B3 (1800), B5 (850), B7 (2600), B8 (900), B20 (800)

#### 3G - DC-HSPA+/UMTS

B1 (2100), B2 (1900), B5 (850), B8 (900)

#### 2G - GSM/GPRS/EDGE

B2 (1900), B3 (1800), B5 (850), B8 (900)

#### LTE Specification

LTE Cat 4, 2x2 MIMO  
DL 150 Mbps / UL 50 Mbps

#### Voice

CSFB

#### Region

EMEA (APAC or NA on request)

OR

#### Multimode LTE Advanced, UMTS 4G - LTE

B1 (2100), B2 (1900), B3 (1800), B4 (AWS), B7 (2600), B12 (700ac), B13 (700c), B20 (800DD), B5 (850), B25 (1900), B26 (850), B29 (700), B41 (TDD2500), B30 (WCS)

#### 3G - DC-HSPA+/UMTS

B1 (2100), B2 (1900), B3 (1800), B4 (1700), B5 (850), B8 (900)

#### LTE Specification

LTE Cat 6, 2x2 MIMO  
DL 300 Mbps / UL 50 Mbps

#### Region

EMEA, NA (APAC on request)

#### Connector

2 - 8x TNC female

#### SIM

4x Mini SIM - 2FF

### 1 - 2x WiFi / WLAN (optional)

#### Standard

IEEE 802.11a/b/g/n/ac (Wi-Fi 5)  
Dual-band 2.4/5 GHz  
2x2 MIMO

#### Bit rate (max)

300 Mbps 2.4 GHz, 866 Mbps 5 GHz

#### Modes

Client or Access Point (max. 100 Cl.)

#### Connector

2 - 4x TNC female

### 5x Ethernet

2x Gigabit Ethernet  
3x Fast Ethernet

#### Standard

1000Base-TX, Auto MDIX  
100Base-TX, Auto MDIX

#### Connector

2x M12 X-coded female  
3x M12 D-coded female

### 1x USB

USB 2.0 Host Port

#### Connector

1x Type A

### Positioning (optional)

GNSS Receiver (depending on model)  
BeiDou, Galileo, GLONASS, GPS/QZSS

#### Sensitivity

Up to -167 dBm, up to 2.5m CEP

#### Antennas

Active or passive

#### Connector

1x TNC female

### 1x Serial, Fieldbus

#### Protocol

RS-232

#### Signals

TX, RX

#### Bit rate

Up to 1 Mbps

#### Connector

1x M12 A-coded female

### 1 - 2x Module Options

Instead of Serial, Fieldbus

#### Options

RS-232I, RS-485I, CAN, Audio, IBIS,  
Digital-I/O, GSM-R

#### Connector

1x M12 A-coded female

### System

#### Core

1.3 GHz dual-core, 1 GB RAM, 4 GB flash

#### Extended Storage

Up to 1TB SSD

### Power

#### Input voltages

24, 36, 48 VDC (-30 % / +30 %)

Optional:

72, 96, 110 VDC (-30 % / +30 %)

#### Maximal Power Consumption

25 W

#### Standard

EN 50155 class S2 / C1

### Connector

1x M12 A-coded male

### Other

#### Mounting

Brackets (wall mounting)

#### Dimensions

Width 167/190 mm x height 121.1 mm x  
depth 106.5 mm

#### Weight

ca. 2000 g (with SSD storage)  
ca. 1800g (without SSD storage)

### Environment

Operating Temperature (depending on  
model)

-40 °C to +70 °C

EN 50155 class OT4/STO

#### Ingress Protection Level

IP40

#### MTBF

125'000 h / 14.3 years - 170'000 h  
/ 19.4 years (depending on model),  
according SN29500 at environmental  
temperature 40 °C

### Software

#### Features

Routing, Network Services, VPN,  
Firewall, Link Management, Supervisor,  
SDK, free updates

#### Licenses (optional)

Voice Gateway, OpenVPN- and  
DynDNS Server, GNSS, LXC  
Virtualization, ITxPT, Enhanced RF  
Configuration, FMS2IP

### Certifications

#### Compliance

CE according to 2014/53/EU (RED),  
2011/65/EU (RoHS)  
Railway according to EN 50155,  
EN 45545-2  
ITxPT (requires license)  
Vehicle according to UNECE-R118,  
UNECE-R10 (on request)

#### Standards

EN 300328, EN 300440, EN 301489-1,  
EN 301489-17, EN 301511, EN 301893,  
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, EN 50155, EN 301908-1,  
EN 300413, EN 301489-3,  
EN 301489-52, EN 301908-2,  
EN 301908-13, UNECE-R118

### Ordering options

Contact our sales team for our standard  
models, options or project specific  
adaptations