

# NB1800-N-G

## Industrial Router with 5G + 2x GbE + SFP + GNSS

High-performance and modular mobile router with Gigabit Ethernet and SFP port for use in industrial environment.



### Keyfeatures

<b>Mobile / Cellular</b>	1x 5G-NR, LTE A-Pro, UMTS
<b>SIM</b>	2x Micro SIM
<b>Ethernet</b>	1x SFP, 2x Gigabit Ethernet
<b>Extended Storage</b>	1x SD Card
<b>Serial / Fieldbus</b>	1x RS-232/485
<b>Positioning</b>	Multi-GNSS
<b>Operation Temperature</b>	-40 °C to +70 °C
<b>Software</b>	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates
<b>Compliance</b>	CE (RED)
<b>Modularity</b>	Extensions on request

### Product description

The NB1800 is a powerful and robust cellular router designed for use in industrial environments.

### Applications

- Industrial Security
- Point of Sale
- Public WiFi
- Smart Grid
- Oil & Gas
- Renewable Energy
- Factory Automation
- Mining
- CCTV
- Smart Traffic

### Specifications

<b>Mobile / Cellular</b>	<b>Standard</b>	<p>1x Multimode 5G-NR, LTE-A Pro, UMTS</p> <p><b>5G - NR</b> n1, n2, n3, n5, n7, n8, n12*, n20, n25, n28, n38, n40, n41, n48, n66, n71, n77, n78, n79 2014/53/EU (RED): n1, n3, n7, n8, n20, n28, n38, n40, n77, n78</p> <p><b>4G - LTE-A Pro</b> B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29DL, B30, B32, B34, B38, B39, B40, B41, B42, B43*, B46(LAA), B48(CRS), B66, B71 2014/53/EU (RED): B1, B3, B7, B8, B20, B28, B38, B40</p> <p><b>3G - DC-HSPA+/UMTS</b> B1, B2, B3, B4, B5, B6, B8, B9, B19 2014/53/EU (RED): B1 (2100), B3 (1800), B8 (900)</p> <p><b>5G NR Modes</b> Sub-6 FDD and TDD</p> <p><b>LTE Category</b> Cat. 20 up to 7CA</p> <p><b>MIMO</b> 4x4 MIMO in 5G-NR support on n1, n2 n3, n7, n25, n38, n40, n41, n48, n66, n77, n78, n79 and LTE B1, B2, B3, B4, B7, B25, B30, B38, B39, B40, B41, B42, B43, B46, B48, B66</p> <p><b>Antenna ports</b> 4</p> <p><b>Power Class</b> 23dBm (Power Class 3)</p> <p><b>Data rate down / up (max)</b> up to 5.5 Gbps DL / 2.7 Gbps UL</p> <p><b>Operation Mode</b> 5G Core SA and NSA operations</p> <p><b>3GPP</b> 4G/5G Rel. 15, 3G HSPA+ Rel. 18</p> <p><b>FCC ID</b> R17FN980</p> <p><b>Voice -</b></p> <p><b>Region</b> Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)</p> <p>* future Module Firmware release</p> <p>Europe, Middle East and Africa (EMEA)</p>
	<b>Region</b>	
	<b>Connectors</b>	4x SMA female
	<b>SIM</b>	2x Micro SIM - 3FF

<b>Ethernet</b>	<b>Standard</b>	2x Gigabit Ethernet <b>Ethernet standard</b> 1000BASE-T, Auto MDIX <b>Speed</b> 10/100/1000 Mbps 1x SFP <b>SFP standard</b> Depending on module <b>Speed</b> 10/100/1000 Mbps
	<b>Connector</b>	2x RJ45, 1x SFP cage (mini GBIC)
<b>Positioning</b>	<b>Standard</b>	1x Multi-GNSS <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS gpsOne Gen 9 <b>Antennas</b> Active or passive <b>Tracking Sensitivity</b> Up to -158 dBm <b>CEP (Circular Error Probability)</b> < 2m (CEP 50), (Open sky conditions, Horizontal) <b>Services</b> Standalone
	<b>Connector</b>	1x SMA female
<b>USB</b>	<b>Standard</b>	1x USB 2.0 Host
	<b>Connector</b>	1x Type A
<b>Serial, Fieldbus</b>	<b>Protocol</b>	1x RS-232/485 combo (software switchable) <b>Protocol</b> EIA-232 <b>Signals</b> TX, RX <b>Signal level</b> High > 5 VDC, low < -5 VDC <b>Bit rate</b> Up to 115 200 Bit/s <b>Protocol</b> EIA-485 <b>Signals</b> A, B <b>Signal level</b> Differential output voltage, loaded 1.5 VDC – 3.6 VDC <b>Bit rate</b> Up to 115 200 Bit/s <b>Termination</b> 120 Ω for RS-485 configurable by software
	<b>Connector</b>	1x Terminal block header 3.5 mm (screw locking)
<b>Extended Storage</b>		SD Card <b>Slot type</b> microSD <b>Speed (read / write)</b> 600 kByte / s <b>Application</b> Store user and logging data of SDK or LXC applications SD card not included
<b>System</b>	<b>Core</b>	1.3 GHz dual-core, 1 GB RAM, 4 GB flash
	<b>Module Slots</b>	2x miniPCIe (PCIe + USB), 2x Extension (USB)
<b>Software</b>	<b>Features</b>	NetModule Router Software (supported features depending on product variant) <b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment. <b>General</b> 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 <b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS <b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license) <b>Wireless LAN</b> 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 <b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision, <b>Services</b> DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNMP 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 <b>Routing</b> Destination, policy, multipath, mobile-IP, OSPF, BGP, multicast, TCP-MSS clamping, bridging discovery protocols LLDAP, CDP, SONMP, EDP, FDP, IRDP, VRRP, STP/RSTP, VRRP, VLAN, PPPoE, VXLAN <b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service <b>Firewall</b> Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports) <b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography) <b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow) <b>Programmability</b> SDK <b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test
	<b>Licenses</b>	GNSS <b>Enabled service</b> GNSS location service Server with JSON-, NMEA stream

<b>Power</b>	<b>Input Voltage</b>	12, 24, 48 VDC <b>Nominal voltages</b> 12, 24, 48 VDC <b>Absolute voltages</b> 12 VDC to 48 VDC (-25 % / +10 %)
	<b>Connector Consumption</b>	1x Terminal block header 3.5 mm (screw locking) 11 W (average), 20 W (max)
<b>Mounting</b>		DIN-Rail
<b>Dimensions</b>	<b>W x H x D</b>	Width 61 mm x height 128/140 mm x depth 121 mm
<b>Weight</b>		800 g
<b>Environment</b>	<b>Operating Temperature</b>	-40°C to +70°C
	<b>Ingress Protection Level</b>	IP40
<b>MTBF</b>		240'000 h / 27.4 years, according SN29500 at environmental temperature 40 °C
<b>Certifications</b>	<b>Compliance Domain</b>	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS)
		Industrial
<b>Order Code</b>		NB1800-N-G