NET MODULE

NB1800-NWac-G

Industrial Router with 5G + WLAN-ac + 2x GbE + SFP + GNSS

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

Keyfeatures

Mobile / Cellular	1x 5G-NR, LTE A-Pro, UMTS
SIM	2x Micro SIM
WiFi / WLAN	1x Dual-band IEEE 802.11a/b/g/n/ac (Wi-Fi 5), 100 Clients in Access Point Mode
Ethernet	1x SFP, 2x Gigabit Ethernet
Extended Storage	1x SD Card
Serial / Fieldbus	1x RS-232/485
Positioning	Multi-GNSS
Operation Temperature	-40 °C to +70 °C
Software	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates
Compliance	CE (RED)
Modularity	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

Mobile / Cellular	Standard	
		1x Multimode 5G-NR, LTE-A Pro, UMTS
		5G - NR n1, n3, n7, n8, n20, n28, n38, n40, n77, n78
		4G - LTE-A Pro B1, B3, B7, B8, B20, B28, B38, B40
		3G - DC-HSPA+/UMTS B1 (2100), B3 (1800), B8 (900)
		5G NR Modes Sub-6 FDD and TDD
		LTE Category Cat. 20 up to 7CA
		MIMO 4x4 MIMO in 5G-NR support on n1, n3, n7, n38, n40, n77, n78 and LTE B1, B3, B7, B38, B40
		Antenna ports 4
		Power Class 23dBm (Power Class 3)
		Data rate down / up (max) up to 5.5 Gbps DL / 2.7 Gbps UL
		Operation Mode 5G Core SA and NSA operations
		3GPP 4G/5G Rel. 15, 3G HSPA+ Rel. 18
		FCC ID RI7FN980
		Voice -
		Region Europe, Middle East and Africa (EMEA), on request: North America (NA), Asia and Pacific (APAC)
	Region	Europe, Middle East and Africa (EMEA)
	Connectors	4x SMA female
	SIM	2x Micro SIM - 3FF

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WiFi / WLAN	**Standard**	1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)
		Wireless standard IEEE 802.11a/b/g/n/ac (Wi-Fi 5)
		Frequency 2.4/5 GHz
		Diversity 2x2 MIMO
		Data rate (max) 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)
		Modes Client or access point (up to 100 clients)
		FCC ID TK4WLE600VX
	Connector	2x SMA female

Ethernet	**Standard**	2x Gigabit Ethernet
		Ethernet standard 1000BASE-T, Auto MDIX
		Speed 10/100/1000 Mbps
		1x SFP
		SFP standard Depending on module
		Speed 10/100/1000 Mbps
	Connector	2x RJ45, 1x SFP cage (mini GBIC)

Positioning	**Standard**	1x Multi-GNSS
		Receiver BeiDou, Galileo, GLONASS, GPS
		gpsOne Gen 9
		Antennas Active or passive
		Sensitivity Up to –161 dBm
		CEP (Circular Error Probability) <2m (Open sky conditions. Standalone)
		Min Update Rate 1Hz
		Services Standalone
	Connector	1x SMA female

| **USB** | **Standard** | 1x USB 2.0 Host |
| | **Connector** | 1x Type A |

Serial, Fieldbus	**Protocol**	1x RS-232/485 combo (software switchable)
		Protocol EIA-232
		Signals TX, RX
		Signal level High > 5 VDC, low < -5 VDC
		Bit rate Up to 115 200 Bit/s
		Protocol EIA-485
		Signals A, B
		Signal level Differential output voltage, loaded 1.5 VDC – 3.6 VDC
		Bit rate Up to 115 200 Bit/s
		Termination 120 Ω for RS-485 configurable by software
	Connector	1x Terminal block header 3.5 mm (screw locking)

Extended Storage		SD Card
		Slot type microSD
		Speed (read / write) 600 kByte / s
		Application Store user and logging data of SDK or LXC applications
		SD card not included

| **System** | **Core** | 1.3 GHz dual-core, 1 GB RAM, 4 GB flash |
| | **Module Slots** | 2x miniPCIe (PCIe + USB), 2x Extension (USB) |

Software	**Features**	NetModule Router Software (supported features depending on product variant)
		Package The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.
		General 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
		Remote Management Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS
		Cellular Networking Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)
		Wireless LAN 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
		Link Management Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,
		Services DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNTP 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
		Routing Destination, policy, multipath, mobile-IP, OSPF, BGP, multicast, TCP-MSS clamping, bridging discovery protocols LLDP, CDP, SONMP, EDP, FDP, IRDP, VRRP, STP/RSTP, VRRP, VLAN, PPPoE, VXLAN
		VPN OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service
		Firewall Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)
		Encryption supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)
		Quality of Service Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)
		Programmability SDK
		Troubleshooting Logging, Ping, Traceroute, Tcpdump, Speed-test
	Licenses	GNSS
		Enabled service GNSS location service
		Server with JSON-, NMEA stream
Power	**Input Voltage**	12, 24, 48 VDC
		Nominal voltages 12, 24, 48 VDC
		Absolute voltages 12 VDC to 48 VDC (-25 % /+10 %)
	Connector	1x Terminal block header 3.5 mm (screw locking)
	Consumption	11 W (average), 20 W (max)
Mounting		DIN-Rail
Dimensions	**W x H x D**	Width 61 mm x height 128/140 mm x depth 121 mm
Weight		800 g
Environment	**Operating Temperature**	-40°C to +70°C
	Ingress Protection Level	IP40
MTBF		240'000 h / 27.4 years, according SN29500 at environmental temperature 40 °C
Certifications	**Compliance**	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS)
	Domain	Industrial
Order Code		NB1800-NWac-G