

NB1601-Gr

Industrial Router with GSM-R + 4x ETH

Modular mobile router with 4-port Ethernet switch to connect remote locations.



Keyfeatures

Mobile / Cellular	1x GSM-R
SIM	2x Micro SIM
Ethernet	4x Fast Ethernet
IO	2x Digital I/O
Operation Temperature	-40°C to +55 °C
Serial / Fieldbus	1x RS-232 Console
Software	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates
Compliance	CE (RED), UKCA (RER), UL/IEC/EN 62368-1
Customizable	Extensions on request

Product description

The NB1601 offers the key technologies for stationary applications that require reliable Internet access.

Applications

- Fleet Management
- Ticketing
- Telematics
- Smart Traffic

Specifications

Mobile / Cellular	Standard	1x GSM-R for EMEA 4G - LTE n.a. 3G - DC-HSPA+/UMTS n.a. 2G - GSM/GPRS GSM-R (876-880 / 921-925), B8 (900), B3 (1800) Category GPRS Multislot class 10 Output Power GSM-R Power Class 4 (2W) Antenna ports SISO Data rate down / up (max) 85.6 kbps / 42.8 kbps Voice GSM (HR/FR/EFR/AMR) ASCI n.a.
	Region Connectors SIM	Europe, Middle East and Africa (EMEA) 1x SMA female 2x Micro SIM - 3FF
Ethernet	Standard	4x Fast Ethernet Ethernet standard 100BASE-TX, Auto MDIX Speed 10/100 Mbps
	Connector	4x RJ45
USB	Standard	1x USB 2.0 Host
	Connector	1x Type A
Serial, Fieldbus	Protocol	1x RS-232 Protocol EIA-232 Signals TX, RX Signal level High > 5 VDC, low < -5 VDC Bit rate Up to 115 200 Bit/s
	Connector	1x Terminal block header 3.5 mm (screw locking)

IOs	Type	2x Digital I/O Signals 1x DI, 1x DO DI signals +, - DI level Low: 0 - 3 VDC, high: 9 - 32 VDC DO signals Relay outputs with NO, NC, COM (normally open, normally closed) DO level 0 - 32 VDC/1A Isolation 1'500 VDC
	Connector	1x Terminal block header 3.5 mm (screw locking)
System	Core	600 MHz (HW Rev. A) or 1 GHz (HW Rev. B02) single core, 512 MB RAM, 4 GB flash
	Module Slots	1x miniPCIe / extension combo (USB), 1x Shield
Software	Features	<p>NetModule Router Software (supported features depending on product variant)</p> <p>Package The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.</p> <p>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</p> <p>Remote Management Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS</p> <p>Cellular Networking Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)</p> <p>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</p> <p>Link Management Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,</p> <p>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</p> <p>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</p> <p>VPN OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service</p> <p>Firewall Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)</p> <p>Encryption supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)</p> <p>Quality of Service Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)</p> <p>Programmability SDK</p> <p>Troubleshooting Logging, Ping, Traceroute, Tcpdump, Speed-test</p>
		Power
Mounting		DIN-Rail
Dimensions	W x H x D	Width 45 mm x height 124/134 mm x depth 110/121 mm
Weight		450 g
Environment	Operating Temperature	-40°C to +55°C
	Ingress Protection Level	IP40
MTBF		300'000 h / 34.2 years, according SN29500 at environmental temperature 40 °C
Certifications	Compliance	CE according to 2014/53/EU (RED); UKCA according to Radio Equipment Regulations 2017 No. 1206 (RER); UL/IEC/EN 62368-1; 2011/65/EU (RoHS)
	Domain	Industrial
Order Code		NB1601-Gr