



# **NB1601-R**

#### Industrial Router with 4x ETH

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



## Keyfeatures

Ethernet	4x Fast Ethernet	
10	2x Digital I/O	
Serial / Fieldbus	1x RS-232 Console	
Operation Temperature	-40°C to +70 °C	
Software	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates	
Compliance	CE (RED), UKCA (RER), UL/IEC/EN 62368-1, FCC	
Modularity	Extensions on request	

#### **Product description**

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

## **Applications**

- Industrial Security Factory Automation

# **Specifications**

Mobile / Cellular	Region	United States of America (USA)
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	Туре	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 miniPCle / extension combo (USB), 1x Shield

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 Watchdoo

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

Power

Input Voltage

12, 24 VDC

Nominal voltages 12, 24 VDC

**Absolute voltages** 12 VDC to 24 VDC (-20 % / +20 %) 1x Terminal block header 3.5 mm (screw locking)

Connector Consumption

WxHxD

3 W (average), 5 W (max)

Mounting

DIN-Rail

Dimensions

Width 45 mm x height 124/134 mm x depth 110/121 mm

Weight

450 g

**Environment** 

Operating Temperature Ingress Protection Level -40°C to +70°C

IP40

MTBF

300'000 h / 34.2 years, according SN29500 at environmental temperature 40  $^{\circ}\text{C}$ 

Scope of delivery

Device, General safety instructions, Terminal block

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-R