

NB1601-LSc

Industrial Router with LTE + 4x ETH + RS-232/485 + DIO

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



Keyfeatures

Mobile / Cellular	1x LTE, UMTS, GSM
SIM	2x Micro SIM
Ethernet	4x Fast Ethernet
10	4x Digital I/O
Operation Temperature	-40°C to +70 °C
Serial / Fieldbus	1x RS-232/485, 1x RS-232 Console
Software	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, free updates
Compliance	CE (RED)
Customizable	Extensions on request

Product description

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

Applications

- Condition MonitoringRemote Management
- Smart Buildings
 Environmental Monitoring
 Digital Signage
 Smart Grid

- Smart Grid
 Oil & Gas
 Renewable Energy
 Ticketing
 CCTV

Specifications

Mobile / Cellular	Standard	1x Multimode LTE, UMTS, GSM for EMEA
		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)
		Category LTE Cat 4
		Antenna ports 2x2 MIMO
		Data rate down / up (max) 150 Mbps / 50 Mbps
		Voice CSFB (with optional Software License)
		FCC ID XPYTOBYL210
	Region	Europe, Middle East and Africa (EMEA)
	Connectors	2x SMA female
	SIM	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	1х Туре А

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
		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	2x Terminal block header 3.5 mm (screw locking)
lOs	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
		2x Digital I/O Signals 1x Dl, 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	Module COM-I/O shield 2x Terminal block header 3.5 mm (screw locking)
	connector	2X Terminal block neader 5.5 min (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	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
Power	Input Voltage	12, 24 VDC
	input voitage	Nominal voltages 12, 24 VDC
		Absolute voltages 12 VDC to 24 VDC (-20 % / +20 %)
	Connector	1x Terminal block header 3.5 mm (screw locking)
	Consumption	7 W (average), 10 W (max)
Mounting		DIN-Rail
Dimensions	W×H×D	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 $^{\circ}\text{C}$
Certifications	Compliance Domain	CE according to 2014/53/EU (RED), 2011/65/EU (RoHS) Industrial
Order Code		NB1601-LSc