

# NB2810-NWac2CmDf-GViFlx

**Vehicle Router with 5G + WLAN-ac + 2x GbE-M12 + 2x CAN-passive + 1 TB SSD + GNSS + Virtualization + FMS2IP + ITxPT + E-Mark**

High-performance and modular mobile router for wireless Internet access in vehicles.



## Keyfeatures

<b>Mobile / Cellular</b>	1x 5G-NR, LTE-A Pro, UMTS
<b>SIM</b>	4x Micro SIM
<b>WiFi / WLAN</b>	1x IEEE 802.11a/b/g/n/ac (Wi-Fi 5), 100 Clients in Access Point Mode
<b>Ethernet</b>	2x Gigabit Ethernet M12
<b>Serial / Fieldbus</b>	2x CAN passive (read access only) with FMS to IP Gateway
<b>Extended Storage</b>	1 TB SSD
<b>Power</b>	12 VDC to 48 VDC, Ignition Sense
<b>Positioning</b>	Multi-GNSS
<b>Operation Temperature</b>	-25 °C to +70 °C
<b>Software</b>	Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, LXC Virtualization, FSM2IP, free updates
<b>Compliance</b>	CE (RED), Vehicle (UNECE-R118), ITxPT
<b>Modularity</b>	Extensions on request

## Product description

The NB2810 provides in-vehicle wireless Internet access.

## Applications

- Fleet Management
- Passenger WiFi
- Passenger Infotainment
- Ticketing
- CCTV
- Telematics

## Specifications

Mobile / Cellular	Standard	
		1x Multimode 5G-NR, LTE-A Pro, UMTS
		<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
		<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
		<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)
		<b>5G NR Modes</b> Sub-6 FDD and TDD
		<b>LTE Category</b> Cat. 20 up to 7CA
		<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
		<b>Antenna ports</b> 4
		<b>Power Class</b> 23dBm (Power Class 3)
		<b>Data rate down / up (max)</b> up to 5.5 Gbps DL / 2.7 Gbps UL
		<b>Operation Mode</b> 5G Core SA and NSA operations
		<b>3GPP</b> 4G/5G Rel. 15, 3G HSPA+ Rel. 18
		<b>FCC ID</b> R17FN980
		<b>Voice</b> -
		<b>Region</b> Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)
		* future Module Firmware release
	<b>Region</b>	Europe
	<b>Connectors</b>	4x FAKRA D-coded male
	<b>SIM</b>	4x Micro SIM - 3FF

<b>WiFi / WLAN</b>	<b>Standard</b>	<p>1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)  <b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5)  <b>Frequency</b> 2.4/5 GHz  <b>Diversity</b> 2x2 MIMO  <b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)  <b>Modes</b> Client or access point (up to 100 clients)  <b>FCC ID</b> TK4WLE600VX</p>
	<b>Connector</b>	2x FAKRA I-coded male
<b>Ethernet</b>	<b>Standard</b>	<p>2x Gigabit Ethernet  <b>Ethernet standard</b> 1000BASE-T, Auto MDIX  <b>Speed</b> 10/100/1000 Mbps</p>
	<b>Connector</b>	2x M12 X-coded female
<b>Positioning</b>	<b>Standard</b>	<p>1x Multi-GNSS  <b>Receiver</b> BeiDou, Galileo, GLONASS, GPS  gpsOne Gen 9  <b>Antennas</b> Active or passive  <b>Sensitivity</b> Up to -161 dBm  <b>CEP (Circular Error Probability)</b> &lt;2m (Open sky conditions. Standalone)  <b>Min Update Rate</b> 1Hz  <b>Services</b> Standalone</p>
	<b>Connector</b>	1x FAKRA C-coded male
<b>USB</b>	<b>Standard</b>	1x USB 3.0 Host
	<b>Connector</b>	1x Type A
<b>Serial, Fieldbus</b>	<b>Protocol</b>	<p>1x RS-232  <b>Protocol</b> EIA-232  <b>Signals</b> TX, RX  <b>Signal level</b> High &gt; 5 VDC, low &lt; -5 VDC  <b>Bit rate</b> Up to 115 200 Bit/s  2x CAN  <b>Protocol</b> Controller Area Network V2.0B (ISO 11898)  <b>Signals</b> CANH, CANL  <b>Signal level</b> High &gt; 2.75 V, low &lt; 2.0 V  <b>Frames/s</b> Up to 8000 Frames/s  <b>Isolation</b> 1500 VDC  <b>Termination</b> No internal bus termination  <b>Bus access</b> Passive - read access only  Optional: Active - read and write access on request (Productoption-2Cn)</p>
	<b>Connector</b>	1x Terminal block header 3.5 mm (screw locking), 1x M12 A-coded female
<b>Extended Storage</b>		<p>1 TB SSD  <b>Capacity</b> 1 TB  <b>Technology</b> SSD  <b>Data</b> Application data such as logs, media content, ...</p>
<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 miniPCIe (USB)

<b>Software</b>	<b>Features</b>	<p>NetModule Router Software (supported features depending on product variant)</p> <p><b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.</p> <p><b>General</b> Fail-safe update (FOTA), upgrade via USB, HTTP(S), (S)FTP or TFTP, remote CLI &amp; WebGUI, RADIUS authentication, Simple Certificate Enrollment Protocol (SCEP), Hardware- und Software Watchdog</p> <p><b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS</p> <p><b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)</p> <p><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</p> <p><b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,</p> <p><b>Services</b> 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><b>Routing</b> 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><b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service</p> <p><b>Firewall</b> Stateful firewall, connection tracking, NAT, NAPT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)</p> <p><b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)</p> <p><b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)</p> <p><b>Programmability</b> SDK</p> <p><b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test</p>
	<b>Licenses</b>	<p>GNSS,</p> <p><b>Enabled service</b> GNSS location service Server with JSON-, NMEA stream ITxPT,</p> <p><b>Enabled services</b> Inventory, Time, FMS2IP (requires -F option), Vehicle2IP (requires -F option), Location (requires -G option)</p> <p><b>Standard</b> ITxPT software compliance LXC virtualization,</p> <p><b>Enabled service</b> Linux Container (LXC) environment to integrate customer specific applications, isolated from the router functionalities FMS2IP</p> <p><b>Enabled services</b> Automatic translation of CAN messages into IP datagrams according to FMS Standard.</p> <p><b>Services</b> FMStoIP, VEHICLEtoIP</p> <p><b>Compliance</b> According to ITxPT</p>
<b>Power</b>	<b>Input Voltage</b>	<p>12, 24, 48 VDC</p> <p><b>Nominal voltages</b> 12, 24, 48 VDC</p> <p><b>Absolute voltages</b> 12 VDC to 48 VDC (-25 % / +25 %)</p> <p><b>Ignition sense</b> Input with delayed shutdown</p>
	<b>Ignition Sense</b>	Yes
	<b>Connector</b>	1x Terminal block header 3.5 mm (screw locking)
	<b>Consumption</b>	20 W (max)
<b>Mounting</b>		Bracket
<b>Dimensions</b>	<b>W x H x D</b>	Width 164/190 mm x height 58 mm x depth 139.5 mm
<b>Weight</b>		800 g
<b>Environment</b>	<b>Operating Temperature</b>	-25°C to +70°C
	<b>Ingress Protection Level</b>	IP40
<b>MTBF</b>		170'000 h / 19.4 years, according SN29500 at environmental temperature 40 °C
<b>Scope of delivery</b>		Device, General safety instructions, Terminal block
<b>Certifications</b>	<b>Compliance</b>	CE according to 2014/53/EU (RED), Vehicle according to UNECE-R10, UNECE-R118, ITxPT (hardware compliance requires adapter cables)
	<b>Domain</b>	Vehicle
<b>Order Code</b>		NB2810-NWac2CmDf-GVIFlx