

# NB2800-2LWacAp-GV

## Vehicle Router with 2x LTE + WLAN-ac + 2x GbE + GNSS + PTT + Voice + E-Mark

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



### Keyfeatures

<b>Mobile / Cellular</b>	2x LTE, UMTS, GSM
<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
<b>Voice</b>	1x Voice with Push to Talk
<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, Call Handling, free updates
<b>Compliance</b>	CE (RED), Vehicle (UNECE-R10, UNECE-R118), ITxPT optional
<b>Modularity</b>	Extensions on request

### Product description

The NB2800 provides in-vehicle wireless Internet access.

### Applications

- Fleet Management
- Passenger Infotainment
- Ticketing
- Telematics
- Voice Communication
- Emergency Services

### Specifications

<b>Mobile / Cellular</b>	<b>Standard</b>	2x Multimode LTE, UMTS, GSM for EMEA <b>4G - LTE</b> B1, B3, B7, B8, B20, B28A <b>3G - DC-HSPA+/UMTS</b> B1 (2100), B3 (1800), B8 (900) <b>2G - GSM/GPRS/EDGE</b> B3 (1800), B8 (900) <b>Category</b> LTE Cat 4 <b>Antenna ports</b> 2x2 MIMO <b>Data rate down / up (max)</b> 150 Mbps / 50 Mbps <b>Voice</b> CSFB, VoLTE (with optional Software License) <b>FCC ID</b> - <b>Region</b> Europe
	<b>Region</b> <b>Connectors</b> <b>SIM</b>	Europe 4x FAKRA D-coded male 4x Micro SIM - 3FF
<b>WiFi / WLAN</b>	<b>Standard</b>	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
	<b>Connector</b>	2x FAKRA I-coded male
<b>Ethernet</b>	<b>Standard</b>	2x Gigabit Ethernet <b>Ethernet standard</b> 1000BASE-T, Auto MDIX <b>Speed</b> 10/100/1000 Mbps
	<b>Connector</b>	2x RJ45

<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>Tracking Sensitivity</b> Up to -160 dBm  <b>Services</b> Standalone  <b>CEP (Circular Error Probability)</b> &lt; 2m (CEP 50), (Open sky conditions, Horizontal)</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</p>
	<b>Connector</b>	1x Terminal block header 5 mm
<b>Voice Communication</b>	<b>Protocols</b>	<p>1x Push-to-talk (voice + digital I/O)  <b>Protocol</b> Voice analog audio interface  <b>Signals</b> Line in +/-, line out: +/-  <b>Line in</b> 21 kΩ, signal level 1.9 Vpp, 100 Hz- 15 kHz  <b>Line out</b> 600 Ω, signal level 3.6 Vpp, 300 Hz- 4 kHz  <b>Protocol</b> Digital I/O  <b>DI signals</b> +, -  <b>DI level</b> Low 0 - 5 VDC, high 7.2 - 60 VDC  <b>DO signals</b> Relay outputs with NO, COM (normally open)  <b>DO level</b> 0 - 60 VDC/1A  <b>DO isolation</b> 100 VDC</p>
	<b>Connector</b>	1x RJ45
<b>System</b>	<b>Core</b>	1.3 GHz dual-core, 1 GB RAM, 4 GB flash
	<b>Module Slots</b>	2x miniPCle (PCle + USB), 2x miniPCle (USB)
<b>Software</b>	<b>Features</b>	<p>NetModule Router Software (supported features depending on product variant)  <b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.  <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  <b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS  <b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)  <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  <b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,  <b>Services</b> DHCP Client/Server, DNS Caching Server, Email, SMS Service, NTP Client/Server, SNMP 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  <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  <b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, L2TP, CSD dial-in, Certificate revocation service  <b>Firewall</b> Stateful firewall, connection tracking, NAT, NAT, masquerading, bridge filtering, Adress translation (based on SRC and DST ports)  <b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)  <b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)  <b>Programmability</b> SDK  <b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test</p>
	<b>Licenses</b>	<p>GNSS,  <b>Enabled service</b> GNSS location service  Server with JSON-, NMEA stream  Voice gateway  <b>Enabled service</b> Versatile voice gateway for seamless call routing  <b>Protocols</b> 2G/3G/4G, POTS, VoIP, PTT (if supported by hardware)</p>

<b>Power</b>	<b>Input Voltage</b>	12, 24, 48 VDC <b>Nominal voltages</b> 12, 24, 48 VDC <b>Absolute voltages</b> 12 VDC to 48 VDC (-25 % / +25 %) <b>Ignition sense</b> Input with delayed shutdown
	<b>Ignition Sense</b>	Yes
	<b>Connector</b>	1x Terminal block header 5 mm
	<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>		200'000 h / 22.8 years, according SN29500 at environmental temperature 40 °C
<b>Scope of delivery</b>		Device, General safety instructions, Terminal block
<b>Certifications</b>	<b>Compliance Domain</b>	CE according to 2014/53/EU (RED), Vehicle according to UNECE-R10, UNECE-R118 Vehicle
<b>Order Code</b>		NB2800-2LWacAp-GV