

# NB2810-LpWacGd2Cm-ViFlx

**Fahrzeug-Router mit LTE-A Pro + WLAN-ac + 2x GbE-M12 +GNSS-DR + 2x CAN-passiv + Virtualisierung + FMS2IP+ ITxPT + E-Mark**

Leistungsstarker und modularer Mobilfunk-Router für drahtlosen Internetzugang im Fahrzeug.



## Hauptmerkmale

|                           |                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Mobilfunk</b>          | 1x 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 im Access Point Mode                                                   |
| <b>Ethernet</b>           | 2x Gigabit Ethernet M12                                                                                                |
| <b>Serial / Fieldbus</b>  | 2x CAN passiv (Lesezugriff) mit FMS zu IP Gateway                                                                      |
| <b>Power</b>              | 12 VDC bis 48 VDC, Zündungserkennung                                                                                   |
| <b>Ortung</b>             | Multi-GNSS mit Dead Reckoning                                                                                          |
| <b>Betriebstemperatur</b> | -25 °C bis +70 °C                                                                                                      |
| <b>Software</b>           | Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, LXC Virtualisierung, FSM2IP, freie Updates |
| <b>Konformität</b>        | CE (RED), Fahrzeug (UNECE-R10, UNECE-R118), ITxPT                                                                      |
| <b>Modularität</b>        | Erweiterungen auf Anfrage                                                                                              |

## Produktbeschreibung

Der NB2810 bietet drahtlosen Internetzugang im Fahrzeug.

## Anwendungen

- Flottenmanagement
- Passagier-WLAN
- Passagier-Infotainment
- Fahrkartensysteme
- Videoüberwachung
- Telematik

## Spezifikation

|                          |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <b>Mobile / Cellular</b> | <b>Standard</b>  | <p>1x Multimode LTE-A Pro, UMTS</p> <p><b>4G - LTE Advanced Pro</b> B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B38, B39, B40, B41, B42, B43, B48 (CBRS), B66, B71</p> <p>2014/53/EU (RED): B1, B3, B7, B8, B20, B28, B38, B40</p> <p><b>3G - DC-HSPA+/UMTS</b> B1, B2, B4, B5, B6, B8, B9, B19</p> <p>2014/53/EU (RED): B1, B8</p> <p><b>Category</b> LTE Cat 12</p> <p><b>Antenna ports</b> 2x2 MIMO</p> <p><b>Data rate down / up (max)</b> 600 Mbps / 150 Mbps</p> <p><b>3GPP</b> 4G Rel. 12, 3G DC-HSPA+</p> <p><b>Voice</b> -</p> <p><b>FCC ID</b> R17LN920</p> <p><b>Region</b> Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)</p> <p>Europe</p> <p><b>Connectors</b> 2x FAKRA D-coded male</p> <p><b>SIM</b> 4x Micro SIM - 3FF</p> |
|                          | <b>Region</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>WiFi / WLAN</b>       | <b>Standard</b>  | <p>1x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)</p> <p><b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5)</p> <p><b>Frequency</b> 2.4/5 GHz</p> <p><b>Diversity</b> 2x2 MIMO</p> <p><b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)</p> <p><b>Modes</b> Client or access point (up to 100 clients)</p> <p><b>FCC ID</b> TK4WLE600VX</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                          | <b>Connector</b> | 2x FAKRA I-coded male                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

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| <b>Ethernet</b>         | <b>Standard</b>     | 2x Gigabit Ethernet<br><b>Ethernet standard</b> 1000BASE-T, Auto MDIX<br><b>Speed</b> 10/100/1000 Mbps                                                                                                                                                                                                                                                                                                                                                                             |
|                         | <b>Connector</b>    | 2x M12 X-coded female                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Positioning</b>      | <b>Standard</b>     | 1x Multi-GNSS with Automotive Dead Reckoning<br><b>Receiver</b> BeiDou, Galileo, GLONASS, GPS/QZSS<br>72-channel u-blox M8 engine<br>3 concurrent GNSS channels<br>Integrated motion sensors<br><b>Antennas</b> Active or passive<br><b>Accuracy</b> Up to 2.5 m CEP<br><b>Sensitivity</b> Up to -160 dBm<br><b>Services</b> Standalone, assisted GPS<br>3D Dead Reckoning<br>Data server with JSON, NMEA data stream                                                              |
|                         | <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>     | 1x RS-232<br><b>Protocol</b> EIA-232<br><b>Signals</b> TX, RX<br><b>Signal level</b> High > 5 VDC, low < -5 VDC<br><b>Bit rate</b> Up to 115 200 Bit/s<br>2x CAN<br><b>Protocol</b> Controller Area Network V2.0B (ISO 11898)<br><b>Signals</b> CANH, CANL<br><b>Signal level</b> High > 2.75 V, low < 2.0 V<br><b>Frames/s</b> Up to 8000 Frames/s<br><b>Isolation</b> 1500 VDC<br><b>Termination</b> No internal bus termination<br><b>Bus access</b> Passive - read access only |
|                         | <b>Connector</b>    | 1x Terminal block header 3.5 mm (screw locking), 1x M12 A-coded female                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Extended Storage</b> |                     | 1 TB SSD<br><b>Capacity</b> 1 TB<br><b>Technology</b> SSD<br><b>Data</b> Application data such as logs, media content, ...                                                                                                                                                                                                                                                                                                                                                         |
| <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)                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| Software       | Features                 | <p>NetModule Router Software</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> |
|                | Licenses                 | <p>GNSS/GPS,</p> <p><b>Services</b> Server with JSON-, NMEA stream</p> <p>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</p> <p>LXC virtualization,</p> <p><b>Enabled service</b> Linux Container (LXC) environment to integrate customer specific applications, isolated from the router functionalities</p> <p>FMS2IP</p> <p><b>Enabled services</b> Automatic translation of CAN messages into IP datagrams according to FMS Standard.</p> <p><b>Services</b> FMStolP, VEHICLEtolP</p> <p><b>Compliance</b> According to ITxPT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Power          | Input Voltage            | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                | Ignition Sense           | Ja                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                | Connector                | 1x Terminal block header 3.5 mm (screw locking)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                | Consumption              | 20 W (max)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mounting       |                          | Bracket                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Dimensions     | W x H x D                | Width 164/190 mm x height 58 mm x depth 139.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Weight         |                          | 800 g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Environment    | Operating Temperature    | -25°C to +70°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                | Ingress Protection Level | IP40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| MTBF           |                          | 170'000 h / 19.4 years, according SN29500 at environmental temperature 40 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Certifications | Compliance               | CE according to 2014/53/EU (RED), Vehicle according to UNECE-R10, UNECE-R118, ITxPT (hardware compliance requires adapter cables)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                | Domain                   | Vehicle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Order Code     |                          | NB2810-LpWacGd2Cm-ViFlx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |