

# NB2800-2Lp2Wac-G

**Fahrzeug-Router mit 2x LTE-A Pro + 2x WLAN-ac + 2x GbE + GNSS + E-Mark**

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



## Hauptmerkmale

|                           |                                                                                                 |
|---------------------------|-------------------------------------------------------------------------------------------------|
| <b>Mobilfunk</b>          | 2x LTE-A Pro, UMTS                                                                              |
| <b>SIM</b>                | 4x Micro SIM                                                                                    |
| <b>WiFi / WLAN</b>        | 1x Dual-Band IEEE 802.11a/b/g/n/ac (Wi-Fi 5), 100 Clients im Access Point Mode                  |
| <b>Ethernet</b>           | 2x Gigabit Ethernet                                                                             |
| <b>Speisung</b>           | 12 VDC bis 48 VDC, Zündungserkennung                                                            |
| <b>Ortung</b>             | Multi-GNSS                                                                                      |
| <b>Betriebstemperatur</b> | -25 °C bis +55 °C                                                                               |
| <b>Software</b>           | Routing, Network Services, VPN, Firewall, Link Management, Supervisor, SDK, freie Updates       |
| <b>Konformität</b>        | CE (RED), Fahrzeug (UNECE-R10, UNECE-R118), ITxPT optional, UL/IEC/EN 62368-1, FCC, PTCRB, AT&T |
| <b>Modularität</b>        | Erweiterungen auf Anfrage                                                                       |

## Produktbeschreibung

Der NB2800 bietet drahtlosen Internetzugang im Fahrzeug.

## Anwendungen

- Passagier-Infotainment
- Videoüberwachung
- Fahrkartensysteme
- Intelligenter Verkehr
- Blaulichtorganisationen

## Spezifikation

|                          |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mobile / Cellular</b> | <b>Standard</b>                                  | 2x Multimode LTE-A Pro, UMTS<br><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<br>2014/53/EU (RED): B1, B3, B7, B8, B20, B28, B38, B40<br><b>3G - DC-HSPA+/UMTS</b> B1, B2, B4, B5, B6, B8, B9, B19<br>2014/53/EU (RED): B1, B8<br><b>Category</b> LTE Cat 12<br><b>Antenna ports</b> 2x2 MIMO<br><b>Data rate down / up (max)</b> 600 Mbps / 150 Mbps<br><b>3GPP</b> 4G Rel. 12, 3G DC-HSPA+<br><b>Voice</b> -<br><b>FCC ID</b> RI7LN920<br><b>Region</b> Europe, Middle East and Africa (EMEA), North America (NA), Asia and Pacific (APAC)<br>Europe, Vereinigten Staaten von Amerika (USA) |
|                          | <b>Region</b><br><b>Connectors</b><br><b>SIM</b> | 4x FAKRA D-coded male<br>4x Micro SIM - 3FF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>WiFi / WLAN</b>       | <b>Standard</b>                                  | 2x WLAN 2.4/5 GHz a/b/g/n/ac (Wi-Fi 5)<br><b>Wireless standard</b> IEEE 802.11a/b/g/n/ac (Wi-Fi 5)<br><b>Frequency</b> 2.4/5 GHz<br><b>Diversity</b> 2x2 MIMO<br><b>Data rate (max)</b> 300 Mbps (2.4 GHz) / 866 Mbps (5 GHz)<br><b>Modes</b> Client or access point (up to 100 clients)<br><b>FCC ID</b> TK4WLE600VX                                                                                                                                                                                                                                                                                                                                                                                                   |
|                          | <b>Connector</b>                                 | 4x FAKRA I-coded male                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <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 RJ45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| Positioning      | Standard                                   | 1x Multi-GNSS<br><b>Receiver</b> BeiDou, Galileo, GLONASS, GPS<br>gpsOne Gen 9<br><b>Antennas</b> Active or passive<br><b>Tracking Sensitivity</b> Up to -158 dBm<br><b>CEP (Circular Error Probability)</b> < 2m (CEP 50), (Open sky conditions, Horizontal)<br><b>Services</b> Standalone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                  | Connector                                  | 1x FAKRA C-coded male                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| USB              | Standard                                   | 1x USB 3.0 Host                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                  | Connector                                  | 1x Type A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Serial, Fieldbus | Protocol                                   | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                  | Connector                                  | 1x Terminal block header 5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| System           | Core                                       | 1.3 GHz dual core, 1 GB RAM, 4 GB flash                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                  | Module Slots                               | 2x miniPCle (PCle + USB), 2x miniPCle (USB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Software         | Features                                   | NetModule Router Software<br><b>Package</b> The standard software package includes an intuitive user interface, covering all modern routing protocols and enables efficient mass deployment.<br><b>General</b> 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<br><b>Remote Management</b> Manage and monitor devices with SNMP V1/V2/V3, Netmodule vendor MIB, telnet, SSH, or HTTP/HTTPS<br><b>Cellular Networking</b> Multi-SIM / eSIM support (optional license), multi-APN support, signal strength monitoring, dedicated bearers, CSFB/VoLTE calls (optional license)<br><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<br><b>Link Management</b> Link prioritization, link aggregation, load balancing, multipath-TCP, IP-passthrough, link supervision,<br><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<br><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<br><b>VPN</b> OpenVPN, IPsec (IKEv1 and IKEv2), PPTP, GRE, LZTP, CSD dial-in, Certificate revocation service<br><b>Firewall</b> Stateful firewall, connection tracking, NAT, NATP, masquerading, bridge filtering, Address translation (based on SRC and DST ports)<br><b>Encryption</b> supporting password protected PKCS12 files, integrated random certificate key generator, "Let's encrypt" certificate, ECC (Certificates with Elliptic Cryptography)<br><b>Quality of Service</b> Diffserv, SFQ, HTB, Priority-based Queuing, Netflow (Softflow)<br><b>Programmability</b> SDK<br><b>Troubleshooting</b> Logging, Ping, Traceroute, Tcpdump, Speed-test |
|                  | Licenses                                   | GNSS/GPS<br><b>Services</b> Server with JSON-, NMEA stream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Power            | Input Voltage                              | 12, 24, 48 VDC<br><b>Nominal voltages</b> 12, 24, 48 VDC<br><b>Absolute voltages</b> 12 VDC to 48 VDC (-25 % / +25 %)<br><b>Ignition sense</b> Input with delayed shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                  | Ignition Sense<br>Connector<br>Consumption | Ja<br>1x Terminal block header 5 mm<br>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 +55°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                  | Ingress Protection Level                   | IP40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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| <b>MTBF</b>           |                          | 230'000 h / 26.3 years, according SN29500 at environmental temperature 40 °C                                              |
| <b>Lieferumfang</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, UL/IEC/EN 62368-1, FCC, PTCRB, AT&T Vehicle |
| <b>Order Code</b>     |                          | NB2800-2Lp2Wac-G                                                                                                          |