NB2800 MediaVehicle

High-Performance E-Mark Router with 4G, WiFi 802.11ac, Internal Storage and GbE

net Module

The NB2800 MediaVehicle provides wireless Internet access over LTE and media server capabilities. The integrated storage up to 1 TB and fastest WiFi access points enable Entertainment and WiFi for passengers.

The MediaVehicle with its E-mark certification is the optimal device for passenger WiFi and entertainment as well as condition monitoring and remote management. With its powerful CPU, the NB2800 achieves data rates up to 1 Gbps and enables gigabit routing.

Equipped with up to three 3G/4G modules which can be bundled, the total bandwidth can be extended to the needs of the intended applications. Especially with passenger entertainment applications, the increased total throughput generates a great user experience. The quad SIM feature and the sophisticated WAN link manager are offering load balancing to achieve maximum connection availability using multiple network providers. Thanks to its port-based subnetting feature, the NB2800 is able to separate different application networks, thus avoiding interferences and guaranteeing dedicated communication paths. Quality of Service support allows traffic prioritization to avoid that less important tasks are blocking high priority data transfers.

The in-vehicle WiFi coverage is enhanced by providing up to two WiFi access points with latest IEEE 802.11ac standard and 2x2MIMO beam forming technology.

The optional built-in SSD disk with up to 1TB storage keeps – regardless of the internet connectivity - documents, pictures, audio, and video files as well as application specific web page content, and thus enables varied entertainment for travelers. Other available extensions include interfaces for CAN, RS-232, RS-485, Audio Line In/Out, IBIS and dead reckoning GNSS.

The router software is based on well proven components including an embedded Linux operating system and a powerful communication protocol suite. The device is managed via web browser, command line interpreter or SNMP. Self-provisioning for new software or new configuration is possible. The device can be configured remotely by customer programs via a powerful application interface. Customer specific software extensions may be developed via a sophisticated SDK.

The integrated ignition sense allows the NB2800 to remain powered on after the vehicle has stopped, so that every task can safely be completed. The time delay between ignition off and power down is configurable.

Key Features

- Automotive E1-Mark
- Ignition sense
- Conductive cooling concept
- WiFi portal, media and web server
- Up to 1TB local storage
- Multiple LTE modems
- Quad SIM
- Multiple WiFi-ac AP/clients
- 2 Gigabit Ethernet ports
- VLAN, RSTP, LLDP
- Multipath routing, load balancing

Performance

- Dual-Core, 1.3GHz ARM CPU
- 1000 Mbps ETH to ETH routing
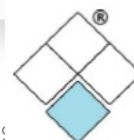- >200 Mbps LTE to WiFi/LAN

Specifications

Mobile / Cellular	1-3 Multimode LTE, UMTS and GSM module with seamless hand-over 4G - LTE/FDD Bands: B1(2100), B2(1900), B3(1800), B5(850), B7(2600), B8(900), B20(800) 3G - DC-HSPA+/UMTS: B5(850), B8(900), B2(1900), B1(2100) 2G - EDGE/GPRS/GSM: B5(850), B8(900), B3(1800), B2(1900) Data rates: LTE max. 100 Mbps downlink / 50 Mbps uplink (DC-HSPA+ 42/5.76) 2 or 4 FAKRA D (bordeaux, plug) antenna conntectors supporting MIMO or standard antennas Optional: SMA connectors SIM slots: 4 Micro-SIM (3FF) ISO/IEC 7810:2003, ID-000
WLAN / WiFi	1-2 IEEE 802.11 a/b/g/n/ac up to 867 Mbps 2.4/5GHz 2x2 MIMO, Access Point or Client Clients in access point mode: at least 100, no limitation by software 2 or 4 FAKRA I (beige, plug) antenna conntectors supporting MIMO or standard antennas. Optional: SMA connectors
Ethernet	2 Ethernet ports 10/100/1000 Mbps (GbE), auto MDX, RJ45
GPS / GNSS	GPS/GLONASS data server with JSON or NMEA data stream, tracking sensitivity -154 dBm (typical) Antenna connector: FAKRA C (blue, plug), support for active and passive antennas. Optional: SMA Optional: GPS/GLONASS/BeiDu/(Galileo ready), –160 dBm, 72-channel, 2m accuracy, dead reckoning with onboard 3D accelerometer and 3D gyroscope
USB	USB 3.0 Host; USB A connector type
Serial	Protocol: RS-232 3-wire. Connector: 3 pins of the 6-pin terminal block
Mass Storage	Up to 1TB SSD disk for content like web pages, pictures, audio, and video files
Ignition Sense	Configurable time delay between ignition off and power down. Connector: 1 pin of terminal block
Dimensions, Weight	Width 164/190mm x height 58mm x depth 139.5mm, approx. 1'000g
Power	Nominal voltages: 24VDC, 36VDC and 48VDC; Input voltage: 12V DC to 48V DC - 25% /+ 20%; Max. power cons.: 20W Connector: 3 pins of the 6-pin terminal block (V+, GND, ignition sense)
Environment	Operational temperature: -25 °C to +70 °C; Storage temperature: -40 °C to +85°C IP40 with SIM / USB cover mounted
MTBF	180'000h - 280'000h depending on model
EMC Standards	EN 55022:2010, EN 61000-6-3: 2007+A1:2012, EN 50121-3-2: 2006+AC:2008, CFR 47 Part 15B, EN 301 489 (Emission) EN 50121-3-2: 2006+AC:2008, EN 301 489 (Immunity)
Type Approval	CE according R&TTE, FCC according to 47 CFR, Part 15B Automotive: E1 according to Regulation No. 10
Order numbers NB2800-R NB2800-Wac NB2800-LWac-G NB2800-2LWac-G NB2800-2LWacGe NB2800-2LWacDf-G	(contact sales for more models, options or project specific adaptations) Wireline + VPN Router WLAN-ac Router LTE, WLAN-ac Router + GPS Dual-LTE, WLAN-ac Router + GPS Dual-LTE, WLAN-ac Router + GNSS with dead reckoning Dual-LTE, WLAN-ac Router + 1TB Flash + GPS