CyBox RT 2-A

AUTOMOTIVE WIRELESS ROUTER WITH LTE CAT-7 AND WI-FI 5

KEY FEATURES

- Up to two LTE interfaces for channel-bundled WAN access
- Up to two SIM cards for each LTE interface
- Up to two IEEE802.11ac Wi-Fi interfaces for dual band mode, 3x3 MIMO with up to 1300 Mbps
- Integrated 5-port Gigabit Ethernet switch
- Simultaneous Wi-Fi operation on 2.4 GHz and 5 GHz bands
- CAN expansion module
- Optional internal SSD storage up to 960 GB
- Integrated automotive power supply 12 to 24 VDC
- Integrated GNSS
- Built-in cyber security
- Maintenance-free design
- -40 °C to +75 °C operating temperature
- E1 compliant

TYPICAL APPLICATIONS

- Passenger Wi-Fi
- Passenger Entertainment
- Passenger Information
- Vehicle-to-Ground Communication
- Vehicle Data Logging

HIGH-END WIRELESS COMMUNICATION

The CyBox RT 2-A is a robust wireless communication router for automotive applications. It offers stable, secure, and broadband LTE connections for data exchange via vehicle-to-ground connections and high-speed internet. The device hosts multiple LTE interfaces for parallel LTE channel use and thus maximized throughput, multiple Wi-Fi interfaces to connect to client devices such as mobile phones, as well as five Gigabit Ethernet ports to attach the device to a backbone network. Country-specific LTE and Wi-Fi standards are adopted for worldwide use in every type of vehicle.

MULTIPLE RADIOS

There is mounting space for up to four radio modules within the CyBox RT 2-A. The radios can operate in different standards, including LTE and its predecessors. Each LTE module can be provided with up to two SIM cards for an optimal net coverage and maximum provider flexibility. The Wi-Fi interfaces allow for connecting clients at high data rates on each interface to boost network efficiency and maximize data throughput.

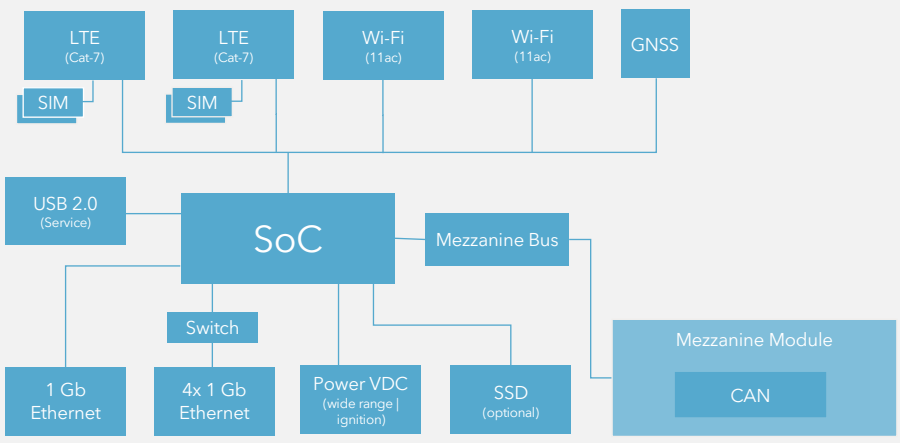
DATA STORAGE

To enhance the CyBox RT 2-A media server capabilities with internal storage, mounting space for a M.2 solid state drive is supplied. It can be used for local content or data storage.

USER-INTERFACE AND SECURITY FEATURES

The CyBox RT 2-A firmware provides a convenient management interface via a web service. Besides global setup parameters the open source software OpenWrt allows the configuration of the radio interfaces, including provider information and the login dialog, as well as the setup of the stateful firewall. The access point and router configurations as well as the management firmware can be updated remotely. Furthermore, the built-in fully configurable stateful firewall and multi-VPN support with hardware-accelerated encryption ensures communication security.

BLOCK DIAGRAM



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TECHNICAL DATA

PHYSICAL INTERFACES	
System Architecture	Dual-Core CPU T1023, 1200 MHz 1 GB RAM, 128 MB Flash
Software	Linux OS OpenWrt
Antenna	QLS connectors
LAN	5x 10/100/1000BaseT(X), RJ45
USB	USB Type-A, USB 2.0
Power Input	3-pin male / ignition contact
Reset Switch	available on the front panel

ELECTRICAL SPECIFICATIONS	
Power Supply	12 to 24 VDC, wide-range power supply (compliant to E1)
Interruptions of Voltage Supply	compliant to ISO 16750-2
Power Consumption	12 W typ., 30 W max.

ENVIRONMENTAL CONDITIONS	
Ambient Temperature	depending on temperature class of Wi-Fi module -40.. +75 °C operating or -25.. +75 °C operating (+65 °C operating when using an SSD) -40.. +85 °C storage
Humidity	max. 95 % non-condensing operating and storage
Altitude	up to +2000 m

RELIABILITY	
MTBF	approx. ~220.000 h (acc. to IEC 62380)
Mission Profile	40 °C ambient temperature, 75 % working time ratio with 365 days annual cycle

MECHANICAL SPECIFICATIONS	
Dimensions	251 (284) mm x 70 mm x 170 mm (w h d) (width mounting points)
Weight	up to 2800 g
Housing	IP40, aluminum, wall-mount, conductive cooling

MODULES

LTE INTERFACE CAT-7 ADVANCED	
Transfer Rates	up to 300 Mbps download / 150 Mbps upload
4G (LTE) Bands	B1, B3, B7, B8, B20, B28, B32, B38, B40, B41, B42, B43
3G Bands	B1, B5, B8
Antenna	with Diversity and MIMO

WI-FI INTERFACE IEEE 802.11 a/b/g/n/ac	
Transfer Rates	up to 1300 Mbps
Frequency Range	2.412 GHz to 2.472 GHz, or 4.920 GHz to 5.825 GHz, selectable band
RF	3x RF antennas, 3x3 MIMO technology
Encryption	AES, TKIP, WPA, WPA2, WPA3
Operational Feature	up to 128 clients per radio
Security	stateful firewall with multi-level client isolation

GNSS INTERFACE	
Frequency Band	GPS (L1), GLONASS (L1, FDMA), Galileo (E1) ready, Beidou
Protocol Standards	NMEA, RTCM 104
Accuracy	up to 1.5 m
Time To First Fix	cold start < 35 s, warm start 1 s

STANDARDS AND SPECIFICATIONS

Standards	ISO 16750-1, -2, -3, -4, -5
E1 Type Approval	UN ECE R10, R118
RED – 2014/53/EU	EMC
	radio spectrum
	health & safety

OPTIONS

Modules	various combinations of Wi-Fi and LTE modules
Antenna Connectors	optional FAKRA
Interfaces	CAN

Order numbers on standard configuration sheet and www.eltec.com

EVALUATION KIT

ORDER NO.	DESCRIPTION
EVRTA-2000V0	based on model CYRTA-2000V0
	2x LTE, 2x Wi-Fi 802.11ac, 5x 1 Gb ETH (RJ45), 120 GB SSD, CAN, GNSS

All kits incl. antennas, adapters, cables and power supply in ruggadized suitcase

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