

CYBOX AP 2-W

RAILWAY ACCESS POINT WITH WI-FI 5 DUAL RADIO

ELTEC

systems

WESTERMO

MADE
IN
GERMANY



KEY FEATURES

- IEEE802.11ac compliant with 3x3 MIMO
- Up to two Wi-Fi interfaces for dual band mode
- Backwards compatible with 802.11a/b/g/n
- Dual 1 Gigabit Ethernet on M12 X-coded connectors
- Optional internal high-speed Ethernet switch
- Optional bypass relays
- Power over Ethernet (PoE+) according to IEEE 802.3at
- Ultra-wide-range power supply 24 to 110 VDC
- Built-in cyber security
- Maintenance-free design
- -40 °C to +70 °C operating temperature
- EN 50155 compliant

TYPICAL APPLICATIONS

- Passenger Wi-Fi
- Passenger Entertainment
- Passenger Information
- Ticketing System
- Fleet Management
- Video Surveillance

HIGH-END WIRELESS COMMUNICATION

The CyBox AP 2-W is a member of the CyBox family – robust access points for railway applications. It is particularly designed to meet the requirements of rolling stock applications. It offers stable, secure, and high bandwidth connections between the local Ethernet and wireless clients. With the assistance of the access point, multiple mobile Wi-Fi-compatible devices in a passenger train or subway have the possibility to communicate with the Internet or access local data, such as timetable information and multimedia data.

BACKBONE CONNECTIVITY

On the fixed network side, the access point features two Gigabit Ethernet ports which are, as an option, internally connected to an unmanaged switch and can be used either for redundancy to increase the availability of services, or to connect a second CyBox AP 2-W. The bypass relay option ensures a high-speed connection even if the access point is powered down.

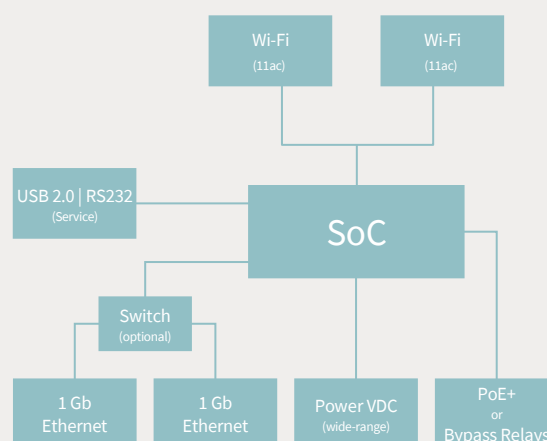
MULTIPLE POWER OPTIONS

The CyBox AP 2-W provides flexible powering options by either an internal power supply or Power-over-Ethernet (PoE+). The PoE daisy chaining offers wireless connectivity with two access points using just one cable – a noticeable cost saving factor especially in retrofit programs.

USER-INTERFACE AND SECURITY FEATURES

The CyBox AP 2-W 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, 1200 MHz |
| Software | Linux OS OpenWrt |
| Antenna | QLS connectors |
| LAN | 2x 10/100/1000BaseT(X), M12 X-coded |
| USB/Serial Port | M12 8-pin female A-coded, USB 2.0, RS232 |
| Power Input | M12 4-pin male A-coded |
| Reset Switch | available on the front panel |

ELECTRICAL SPECIFICATIONS

| | |
|---------------------------------|--|
| Power Supply | 24 to 110 VDC, wide-range power supply (compliant to EN 50155) |
| Power over Ethernet | PoE+, Class-4 powered device, IEEE 802.3at |
| Interruptions of Voltage Supply | EN 50155, Class S2 |
| Power Consumption | 15 W typ., 25 W max. |

ENVIRONMENTAL CONDITIONS

| | |
|---------------------|--|
| Ambient Temperature | Class TX, -40.. +70 °C (85 °C) operating, -40.. +85 °C storage |
| Humidity | max. 95 % non-condensing operating and storage |
| Altitude | Class AX, up to +2000 m |
| PCB Protection | conformal coating |

RELIABILITY

| | |
|------|--------------------|
| MTBF | approx. ~370.000 h |
|------|--------------------|

MECHANICAL SPECIFICATIONS

| | |
|------------|--|
| Dimensions | 105 (130) mm x 55 mm x 206 mm (w h d), (incl. mounting points) |
| Weight | up to 1350 g |
| Housing | IP40, aluminum, wall-mount, conductive cooling |

STANDARD CONFIGURATIONS

| ART. NO. | MODEL | DESCRIPTION |
|-----------|------------|--|
| 3200-0000 | CYAPW-1050 | 2x Wi-Fi 802.11ac, 2x 1 Gb ETH (M12X), PoE+ |
| 3200-0010 | CYAPW-1053 | 2x Wi-Fi 802.11ac, 2x 1 Gb ETH (M12X), bypass relays |
| 3200-0030 | CYAPW-1062 | 2x Wi-Fi 802.11ac, 2x 1 Gb ETH (M12X), ETH switch, bypass relays |

Further models and information on www.westermo.com and www.eltec.com

MODULES

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 |
| Operational Feature | up to 128 clients per radio |
| Security | stateful firewall with multi-level client isolation |

STANDARDS AND SPECIFICATIONS

| | |
|----------------------|--------------------------------|
| Directive 2008/57/EC | EN 50155 (IEC 60571) |
| | EN 45545-2 (HL 1 to HL 3) |
| | EN 61373 (Category 1, Class B) |
| RED – 2014/53/EU | EMC |
| | radio spectrum |
| | health & safety |
| FCC | Title 47 CFR Part 15B |

OPTIONS

| | |
|--------------------|---------------------------------------|
| Modules | various combinations of Wi-Fi modules |
| Antenna Connectors | QLS to SMA adapter |
| Evaluation Kit | available |