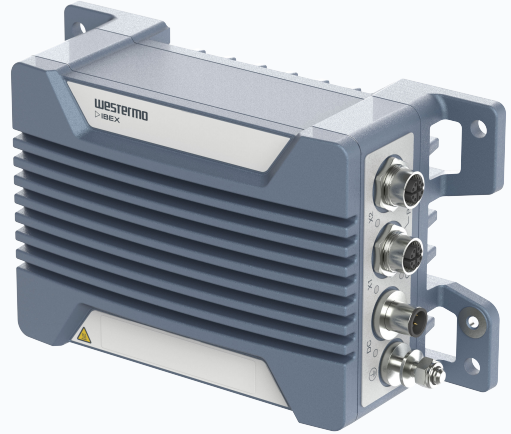


# EN 50155 Wi-Fi 6 Access Point

## Ibex-1510 series

- **Reliable, compact and secure WLAN access point**
  - Dual Wi-Fi 6 802.11ax WLAN interfaces
  - Concurrent 2.4 GHz and 5 GHz
  - Low power consumption
  - Cybersecurity features supporting critical infrastructure installations
- **Designed for onboard usage**
  - EN 50155 and EN 45545-2 certified
  - Compact design with M12 interfaces
  - IP66 and -40° - +70°C operating range
- **Latest generation 802.11 design**
  - IEEE 802.11ax for maximum efficiency
  - Client management features
  - Flexible and easy setup



**EN 45545-2**  
Fire Protection

**EN 50155**  
On Board Rail

The Ibex-1510 is a concurrent dual-band 802.11ax Wi-Fi 6 access point and client product for onboard and stationary applications. It provides reliable efficient high-speed data transfers, airtime fairness, band steering, client steering and multi-AP steering. This enables optimized use for passenger hotspot applications, remote maintenance access, data offloading or it can be part of a TCMS network.

The Ibex-1510 is designed to withstand the tough environment on-board trains, exposed to constant vibration, extreme temperatures, humidity and a demanding electromagnetic environment.

A GORE-TEX® membrane prevents internal condensation. High-level isolation between all interfaces enables direct connectivity to vehicle auxiliary power and protects against overvoltage and spikes/surge. IP66 protection prevents ingress of water and dust even at the quick connect QMA connectors.

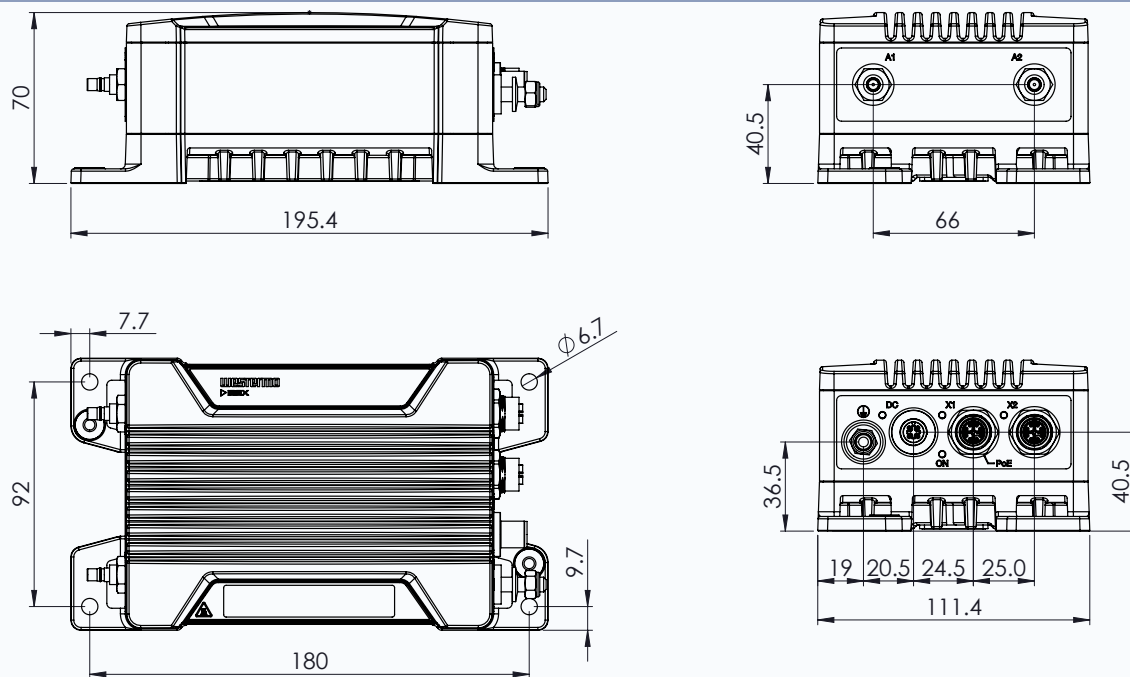
An overall optimised design results in a compact form factor in combination with very high MTBF for easy integration in space restricted installations and low lifecycle cost.

Thorough type testing at independent labs certifies the compliance to a wide range of standards, including EN 50155.

The Ibex-1510 is running Westermo's robust and easy to use Linux based IbexOS operating system with latest cybersecurity features and updates.

## Specifications - Ibex-1510 series

### Dimensional drawing



### Technical data

<b>Dimensions (W x H x D)</b>	195 x 70 x 111 mm (7.68 x 2.76 x 4.37 inches)
<b>Housing</b>	Full metal
<b>Weight</b>	1.45 kg without antennas
<b>Operating temperature</b>	-40 to +70°C (-40 to +158°F)
<b>Ingress protection</b>	IP66
<b>MTBF</b>	424.000 hours 538.000 hours (PoE only)
<b>Rated voltage<sup>a</sup></b>	24 to 110 VDC or PoE IEEE 802.3 Class 4
<b>Rated power</b>	14 W
<b>PoE</b>	PoE Class 4 (IEEE 802.3at type 1 and 2 PD)

<sup>a</sup>DC power supply not included in "PoE only" product variants

### Interface

<b>RF antenna</b>	2 x QMA compatible antenna connector for Wi-Fi 6 2.4 GHz and 5 GHz (combiner)
<b>Ethernet</b>	2 x 10/100/1000/2.5G Base-T with M12 X-coded connectors

### Wireless

<b>Operating modes</b>	Access Point, Client, Bridge
<b>Interfaces</b>	Dual-Band Concurrent 2x2 MU-MIMO (total 4 Spatial Streams)
<b>Standards supported</b>	IEEE 802.11g, 802.11a, 802.11n, 802.11ac, 802.11ax
<b>Frequency range</b>	2.400 to 2.4835 GHz (2x2 MU-MIMO) 5.150 to 5.350 GHz, 5.470 to 5.725 GHz, 5.725 to 5.875 GHz (2x2 MU-MIMO)
<b>Data rates supported</b>	2.4 GHz: Up to 802.11ax 40 MHz 2SS BW HE11: 573 MBit/s 5 GHz: Up to 802.11ax 80 MHz 2SS BW HE11: 1201 MBit/s
<b>RF transmit power 2.4 GHz<sup>a</sup></b>	Max. conducted transmit power: 25 dBm, per port: 22 dBm
<b>RF transmit power 5 GHz<sup>a</sup></b>	Max. conducted transmit power: 25 dBm, per port: 22 dBm
<b>Receiver sensitivity per radio<sup>b</sup></b>	20 MHz: -94 dBm (HE0), -68 dBm (HE9), -63 dBm (HE11) 40 MHz: -91 dBm (HE0), -65 dBm (HE9), -61 dBm (HE11) 80 MHz: -88 dBm (HE0), -63 dBm (HE9), -58 dBm (HE11)

<sup>a</sup>Depending on the regulatory limitations and selected antennas

<sup>b</sup>Typical, all antenna chains connected, temperature 25° C

**westermo**

Features	
<b>Security</b>	Wi-Fi Security Open, WPA2-Personal (CCMP), WPA2-Enterprise, WPA3-Personal (SAE/OWE), WPA3-Enterprise (Suite-B), WPA2/3-Hybrid-Mode (SAE+PSK), 802.11w, 802.1X, Security Log (persistent)
<b>Networking</b>	Fixed fallback IP, IP Aliases, MAC override, VLAN support, Interface Port Protection, Routing Static/Policy/Multicast, Multi WAN support, CARP, DHCP Server/Client/Relay, DNS Server/Client, NTP Server/Client, RSTP, Firewall Filter/Mangle (L2 stateless/L3 stateful), IP Masquerading (NAT/NAPT), Port Forwarding (DNAT/SNAT), Stateless NAT (1-1 NAT)
<b>Wireless</b>	Up to 8 SSID assignments per radio, up to 512 client connections per radio, SSID Hide, AP Client Isolation, 802.11e (WME/WMM), 802.11r, 4addr, QoS (L2/L3 mapping), Access Control (ACL), Automated Channel Selection (ACS), static/dynamic VLAN per SSID, BSSID override
<b>VPN</b>	SSL Server/Client, IPsec, OpenVPN Client, Wireguard, GRE/GRETAP, VXLAN
<b>Discovery</b>	LLDP, SSDP, mDNS
<b>Client management</b>	ATF (Air Time Fairness), Client Steering and Load Balancing between 2.4 GHz and 5 GHz, Multi-AP Client Steering, 802.11k, 802.11v
<b>Monitoring</b>	Built-in monitoring sensors and diagnostics, SNMP notifications (TRAP/INFO), Syslog, CLI
<b>Management</b>	SNMP v2c/v3 with USM authentication and encryption support, HTTP/HTTPS web interface and WebAPI with user authentication (local or LDAP), CLI (SSH and Telnet), Certificate Management (SCEP), Dual Firmware Primary/Backup
<b>SNMP MIB Support</b>	MIB-2, RFC1213, HOST-RESOURCES, BRIDGE, ETHERLIKE, IF-MIB, LLDP-MIB, UCD-SNMP-MIB, WESTERMO-SW6-MIB, WESTERMO-SW6-BRIDGE-MIB, WESTERMO-SW6-FIREWALL-MIB, WESTERMO-SW6-ICL-MIB, WESTERMO-SW6-NWM-MIB, WESTERMO-SW6-PWN-MIB

Approvals and Standards	
<b>Climate</b>	<ul style="list-style-type: none"> <li>EN 50155, class OT4 Railway applications - Electronic equipment used on rolling stock</li> </ul>
<b>EMC</b>	<ul style="list-style-type: none"> <li>EN 50155, Railway applications - Electronic equipment used on rolling stock</li> <li>EN 50121-3-2, Railway applications - Electromagnetic compatibility, Part 3-2: Rolling stock - Apparatus</li> <li>ETSI EN 301 489-1, Electromagnetic compatibility (EMC) and Radio spectrum Matters (ERM) for radio equipment and services - Part 1: Common technical requirements</li> <li>ETSI EN 301 489-17, Electromagnetic compatibility (EMC) and Radio spectrum Matters (ERM) for radio equipment - Part 17: Specific conditions for Broadband Data Transmission Systems</li> </ul>
<b>Mechanical (Shock and vibration)</b>	<ul style="list-style-type: none"> <li>EN 61373, category 1, class B</li> </ul>
<b>Insulation (Coordination and test)</b>	<ul style="list-style-type: none"> <li>EN 50155, Railway applications - Electronic equipment used on rolling stock</li> </ul>
<b>Radio communication</b>	<ul style="list-style-type: none"> <li>ETSI EN 300 328, Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques</li> <li>ETSI EN 301 893, 5 GHz RLAN</li> <li>ETSI EN 300 440, 5.8GHz, Short Range Devices</li> <li>IEEE802.11, Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications</li> <li>FCC-47-15, Radio frequency devices</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>EN/IEC 61010-1, Safety requirements for electrical equipment for measurement, control, and laboratory use</li> <li>EN 45545-2, Fire protection on railway vehicles</li> </ul>

Ordering information		
Art. no.	Model	Description
3628-15101	Ibex-1510-T2G2.5 EU	Dual EN 50155 Wi-Fi 6 Access Point, 24...110 VDC, PoE PD
3628-15102	Ibex-1510-T2G2.5 NA	Dual EN 50155 Wi-Fi 6 Access Point, 24...110 VDC, PoE PD
3628-15111	Ibex-1510-T2G2.5-PoE EU	Dual EN 50155 Wi-Fi 6 Access Point, PoE PD
3628-15112	Ibex-1510-T2G2.5-PoE NA	Dual EN 50155 Wi-Fi 6 Access Point, PoE PD
3623-0799	Factory Reset Plug X-code	Accessory