EN 50155 WLAN 2x2 Client/Bridge/AP
RT-220-HV

- Compact WLAN node
  - Configurable as Access Point, Client or Bridge
  - 2x2 MIMO
  - 2.4 GHz and 5 GHz
  - Flexible and easy set-up
  - Special ICL mode for stable and secure inter-consist link
- Designed and built for extreme operational environments
  - Extended operating temperature range with guaranteed performance across the range
  - High-level isolation enables direct mains connectivity
  - EN 50155 approved for usage onboard trains and locomotives
- High-end radio design for mission-critical capability
  - Low power consumption
  - Robust DFS (radar detection) features
  - Disturbance free operation close to other radio devices

CE EN 45545-2 Fire Protection | EN 50121-4 Railway Trackside | EN 50155 On Board Rail | NFPA 130 Fire Protection

The Westermo RT-220-HV is a Wireless LAN Node for on-board and stationary applications. It ensures reliable connection for applications such as video transmission and TCMS, especially useful for transparent inter-consist links (ICL) with automatic reconfiguration.

The RT-220-HV, along with the application-specific ICL antenna, is designed to withstand the tough environment on-board trains, exposing equipment to constant vibration, extreme temperatures, humidity and a demanding electromagnetic environment.

The radio module is calibrated to ensure high RF sensitivity (even at high data rates/modulations), stable RF links, optimised DFS handling, etc.

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 (powering over PoE is also avaliable). 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 & outdoor installations and low lifecycle cost.

Thorough type testing at independent labs certifies the compliance to a wide range of standards, not least EN 50155, FCC and EN 300440 (the latter opening the possibility to use the 5.8 GHz band in the EU region).

Meeting the requirements of the railcar market, the RT-220-HV is very well suited for deployment in any other application with severe operating conditions and tough environments, for instance in the mining or shipping industry.

Ordering Information	
Art.no	**Description**
3623-072301	RT-220-HV EU, EN 50155 WLAN 2x2 Client/Bridge/Access Point
3623-072302	RT-220-HV NA, EN 50155 WLAN 2x2 Client/Bridge/Access Point
3623-0797	Inter-Consist Link Antenna 5 GHz (Accessory)
3623-0795	Factory Reset Plug D-code (Accessory)

Specifications RT-220-HV

Functionality	802.11n solution for Public Transportation, Outdoor and Industrial applications
Operating modes	Access Point, Client, Bridge, Inter-carriage Link
Operating temp. range	-40 to +70 °C
Power feed	72-110 VDC Isolated, 0.2 A max
Size and weight	Approx. 52 x 110 x 193 mm (H x W x L) and approx. 1,2 kg, without antennas
Environmental protection	IP66
MTBF	500,000 hours (IEC 62380)
Wireless standards supported	IEEE 802.11b, 802.11g, 802.11a and 802.11n
Frequency range	2.400 to 2.4835 GHz, 5.150 to 5.350 GHz, 5.470 to 5.725 GHz, 5.725 to 5.850 GHz Note: Additional licensed bands can be also supported
Occupied channel bandwith	According to IEEE 802.11
Data rates supported	802.11b: 1 Mbit/s, 2, 5.5 & 11 Mbit/s 802.11g & 802.11a: 6 Mbit/s, 9, 12, 18, 24, 36, 48 & 54 Mbit/s 802.11n 20 MHz BW, Long GI/Short GI: from MCS0 6.5/7.2 Mbit/s to MCS15 130/144.44 Mbit/s 802.11n 40 MHz BW, Long GI/Short GI: from MCS0 13.5/15 Mbit/s to MCS15 270/300 Mbit/s
RF transmit power 2.4 GHz (for dual ports, add 3 dBm)	Max. +12dBm conducted transmit power per antenna port: HT20:+12dBm (MCS0..4, 8..12), +12dBm (MCS5,13), +12dBm (MCS6,14), +12dBm (MCS7,15) HT40:+12dBm (MCS0..4, 8..12), +12dBm (MCS5,13), +12dBm (MCS6,14), +12dBm (MCS7,15) Note: Depending on regulatory limitations
RF transmit power 5 GHz (for dual ports, add 3 dBm)	Max. +15dBm conducted transmit power per antenna port: HT20:+15dBm (MCS0..4, 8..12), +15dBm (MCS5,13), +15dBm (MCS6,14), +15dBm (MCS7,15) HT40:+15dBm (MCS0..4, 8..12), +15dBm (MCS5,13), +15dBm (MCS6,14), +15dBm (MCS7,15) Note: Depending on regulatory limitations
RF antenna interfaces	2 x QMA compatible antenna connectors, 2x2 MIMO
Receiver sensitivity	802.11ng HT20: -93 dBm (MCS0), -74 dBm (MCS7), -71 dBm (MCS15) 802.11na HT20: -93 dBm (MCS0), -74 dBm (MCS7), -71 dBm (MCS15) 802.11ng HT40: -90 dBm (MCS0), -71 dBm (MCS7), -68 dBm (MCS15) 802.11na HT40: -90 dBm (MCS0), -71 dBm (MCS7), -68 dBm (MCS15)
MIMO features supported	Space Time Block Coding (STBC), RX Low Density Parity Check (LDPC), Maximum Likelihood Demodulation (MLD), Maximum Ratio Combining (MRC)
Security	WPA2 (CCMP), WPA3-Personal (SAE/OWE), WPA3-Enterprise (Suite-B), 802.11w, 802.1X, 802.11r
Ethernet interface	2 x 10/100Base-T, 2 x M12 D-coded connectors
Ethernet routing/networking	Fixed fallback IP, IP aliases, MAC address control lists, Port forwarding, Routing, Multicast Routing, DHCP Server/Client, NAT, VLAN support, Multi BSSID, NTP client, SNMP v2c and v3 with USM authentication and encryption support, SNMP Traps, RSTP
Monitoring features	Built-in monitoring sensors and diagnostics
Device management	SNMP, HTTP/HTTPS with user authentication, CLI (SSH and Telnet)
Standards supported	CE, FCC 47 CFR Part 15, EN 301 893, EN 300 328, EN 300 440, EN 301 489-1/-17, EN 60950, EN 50121-3-2, EN 50121-4, EN 50155, EN 45545-2, NFPA 130

* Note: Depending on the regulatory limitations and selected antennas