

Trackside WLAN Access Point

Ibex-RT-280 series

- **Infrastructure WLAN Access Point**
 - 2 x 2 MIMO
 - 2.4 GHz and 5 GHz
 - Separate RF environment monitoring antenna
 - Dual fibre ports for ring installations
 - Flexible and easy set-up
- **Designed and built for operational environments**
 - Extended operating temperature range with guaranteed performance across the range
 - High-level isolation enables direct mains connectivity
- **High-end radio design for mission-critical capability**
 - High power and high sensitivity for extended range and reliable wireless coverage
 - Interruption-free use of 5 GHz radar bands through advanced DFS (radar detection) features
 - Disturbance free operation close to other radio devices



EN 45545-2
Fire Protection

EN 50121-4
Railway Trackside

NFPA 130
Fire Protection

Ibex-RT-280 is a wireless LAN infrastructure access point for industrial or trackside network infrastructure. With its dual fibre Ethernet ports, it can be directly installed as part of a FRNT ring or used in a daisy chained setup.

Ibex-RT-280 is designed to withstand the tough environment in, for instance, trackside applications, exposing the access point to constant vibration, extreme temperatures, humidity and a demanding electromagnetic environment.

A GORE-TEX® membrane prevents internal condensation and high-level isolation protects against overvoltage and spikes/surges. Ibex-RT-280 comes with built-in 100-240 VAC mains power supply and IP66 environmental protection for water and dust, further simplifying installation and reducing external component needs. N-type radio connectors allow direct connectivity of thick low-loss feeder type RF cables.

The device comes with a high power radio interface calibrated to ensure high output power and excellent receiver sensitivity. It maintains high-speed data rates and reliable connection to industrial wireless clients even if the communication distance is increased.

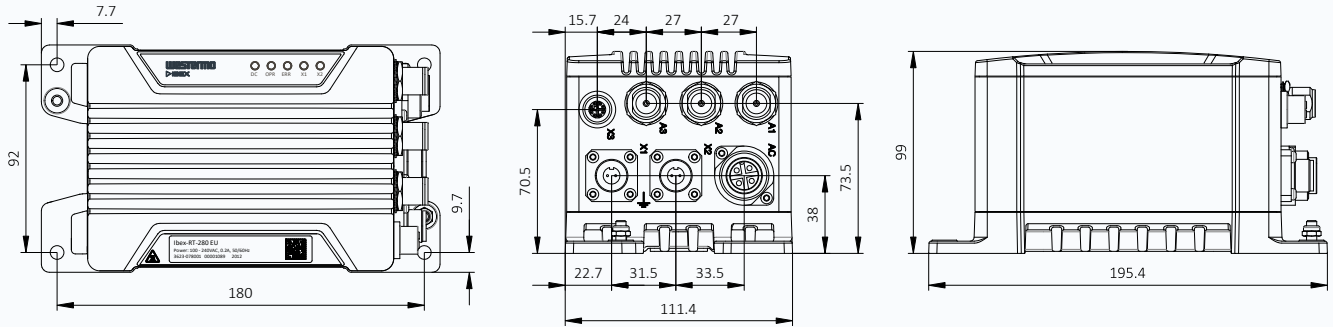
Ibex-RT-280 provides an additional monitoring interface for out-of-band radar detection and monitoring, allowing surrounding WLAN devices and other interferences along the whole frequency band can be monitored, without adversely affecting the communication performance. Due to this, the device provides uninterrupted operation also on 5 GHz outdoor bands with radar detection (DFS) requirements.

An overall optimised design results in a compact form factor in combination with very high MTBF for easy integration and low lifecycle cost. Thorough type testing at independent labs certifies the compliance to a wide range of standards, including FCC.

Meeting the requirements of the railway and signalling market, Ibex-RT-280 is very well suited for deployment in any other application with severe operating conditions and tough environments, for instance in the mining and shipping industry.

Specifications - Ibex-RT-280 series

Dimensional drawing



Technical data

Dimensions (W x H x D)	195.4 x 99 x 111.4mm (7.69 x 3.90 x 4.39 inches)
Housing	Full metal
Weight	2 kg without antennas
Operating temperature	-40 to +70°C (-40 to +158°F)
Ingress protection	IP66
MTBF	233,000 hours (IEC 62380)
Power feed	100-240 VAC, 0.2 A, 50-60 Hz

Interface

RF antenna	2 x N-type connectors for communication 1 x N-type connectors for monitoring
Ethernet	1 x 10/100/1000 Base-T with M12 X-code with M12 connector 2 x 100 Base-FX with ODC connector

Wireless

Operating modes	Access Point, Client, Bridge
Wireless standards supported	IEEE 802.11b, 802.11g, 802.11a, 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 5.875 GHz
Data rates supported	802.11b: 1 Mbit/s, 2, 5.5 and 11 Mbit/s 802.11g and 802.11a: 6 Mbit/s, 9, 12, 18, 24, 36, 48 and 54 Mbit/s 802.11n 20 MHz BW, LGI/SGI: from MCS0 6.5/7.2 Mbit/s to MCS15 130/144.4 Mbit/s 802.11n 40 MHz BW, LGI/SGI: from MCS0 13.5/15 Mbit/s to MCS15 270/300 Mbit/s
RF transmit power 2400 to 2483.5 MHz ^a	Max. conducted transmit power, 802.11b/g/n: 1 port: +22 dBm for all data rates 2 ports: +25 dBm for all data rates
RF transmit power 5150 to 5350 MHz ^a	Max. conducted transmit power, 802.11a/n: 1 port: BPSK, QPSK and 16QAM: +22 dBm, 64QAM: +20 dBm 2 ports: BPSK, QPSK and 16QAM: +25 dBm, 64QAM: +23 dBm
RF transmit power 5470 to 5850 MHz ^a	Max. conducted transmit power, 802.11a/n: 1 port: +22 dBm for all data rate 2 port: +22 dBm for all data rates
Receiver sensitivity (typical)	802.11g: -95 dBm (6 Mbit/s), -85 (36Mbit/s), -80 dBm (54 Mbit/s) 802.11a: -95 dBm (6 Mbit/s), -85 (36Mbit/s), -80 dBm (54 Mbit/s) 802.11ng HT20: -95 dBm (MCS0), -76 dBm (MCS7), -73 dBm (MCS15) 802.11na HT20: -95 dBm (MCS0), -76 dBm (MCS7), -73 dBm (MCS15) 802.11ng HT40: -92 dBm (MCS0), -73 dBm (MCS7), -70 dBm (MCS15) 802.11na HT40: -92 dBm (MCS0), -73 dBm (MCS7), -70 dBm (MCS15)
MIMO features supported	Maximum Likelihood Demodulation (MLD), Maximum Ratio Combining (MRC)

^aDepending on the regulatory limitations and selected antennas

Features	
Security	WPA2 (CCMP), WPA3-Personal (SAE/OWE), WPA3-Enterprise (Suite-B), 802.11w, 802.1X, 802.11r
Ethernet routing/networking and VPN	Fixed fallback IP, IP aliases, MAC address control lists, Port forwarding, Routing, Multicast Routing, DHCP Server/Client, NAT, VLAN support, NTP client, SNMP v2c and v3 with USM authentication and encryption support, SNMP Traps, RSTP, Firewall, IP Masquerading (NAT/NAPT), Port Forwarding, Stateless NAT (1-1 NAT), SSL VPN (Client and Server, Certificate Authentication, Pre-shared Key (PSK) Point-to-Point Mode, Layer-2 and Layer-3 VPN, Layer-2 VPN bridging, Address pool and address per CN, TLS Authentication), Generic Routing Encapsulation (GRE), FRNT (pending)
Monitoring features	Built-in monitoring sensors and diagnostics, Advanced interference and radar monitoring features with dedicated monitoring interface, Wireless Manager feature
Device management	SNMP, HTTP/HTTPS with user authentication, CLI (SSH and Telnet)
SNMP MIB Support	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

Approvals and Standards	
Climate	EN 50125-3, Railway applications – Environmental conditions for equipment, Part 3: Equipment for signalling and telecommunications
EMC	- EN 50121-4, Railway applications - Electromagnetic compatibility. Part 4: Emission and immunity of the signalling and telecommunications apparatus - ETSI EN 301 489-1, Electromagnetic compatibility (EMC) and Radio spectrum Matters (ERM) for radio equipment and services - Part 1: Common technical requirements - 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
Mechanical (Shock and vibration)	EN 50125-3, Outside the track
Insulation (Coordination and test)	EN 50124-1, Railway applications – Insulation coordination
Radio communication	- ETSI EN 300 328, Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques - ETSI EN 301 893, 5 GHz RLAN - IEEE 802.11, Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - FCC-47-15, Radio frequency devices
Safety	- EN/IEC 62368-1, Safety Requirements for audio/video, information and communication technology equipment - EN 45545-2, Fire protection on railway vehicles - NFPA 130, Fire protection for fixed guideway transit and passenger rail system

Ordering information	
Art. no.	Description
3623-078001	Ibex-RT-280 EU
3623-078002	Ibex-RT-280 NA
3623-0799	Factory Reset Plug X-code (Accessory)