

# Hyrax-1000 Series

## SAFETY INFORMATION

### REVISION

Revision	1.0
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### LEGAL INFORMATION

Detailed technical characteristics and legal information as well as effective license provisions can be found in the Download Center (<https://downloadcenter.eltec.de/login>) on our website [www.eltec.com](http://www.eltec.com).

#### EU Declaration of Conformity



Hereby, Westermo Eltec GmbH declares that the radio equipment type Hyrax-1000 series is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <https://downloadcenter.eltec.de/login>

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## SAFETY INFORMATION

- Please read the configuration and installation manuals carefully before installing and using any of our products, especially for output power and frequency bands of the radio modules. You can download the manuals after registration in the Download Center (<https://downloadcenter.eltec.de/login>) on our website [www.eltec.com](http://www.eltec.com).
- Allow only appropriately trained personnel to handle the devices and observe the Electrostatic Discharge (ESD) protective measurements. Also, the internal SIM cards are only allowed to be installed, taken into operation and replaced by qualified and trained staff. Furthermore, ESD protection measures must be taken.
- Usage restriction: The designated product may only be used in an industrial environment (Class A product) in accordance to the specifications stated in the manuals.
- The device can become very hot during operation ( $> 80^{\circ}\text{C}$ ).
  - Make sure the device is protected from accidental contact.
  - The device must be installed inaccessible to children.
  - For optimal heat dissipation the connectors should face downwards.
- Do not install the device close to any sources of heat, such as radiators or heating ducts.
- Keep the device away from any liquids and avoid exposure to dripping or splashing. The protection class of the housing is IP 40.
- The device can be operated with voltages higher than 60 VDC.
  - Incorrect handling can cause a fatal electrical shock.
  - Before connecting the power supply, connect the device to protective earth.
- To prevent the risk of electric shock, turn off the external power supply and remove the power supply cable from the electrical outlet before handling or disassembling the system.
- When connecting or disconnecting devices to or from the system ensure that the power cables of the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before connecting the device.
- Before connecting or removing signal cables ensure that all power cables are unplugged.
- When using LTE, WLAN or GNSS interfaces connect an appropriate antenna to the QLS/RP-SMA built-in socket.
- At least 20 cm separation distance between the antenna and the user's body must be always maintained.
- This device is designed for use in all countries of the European Union and in Switzerland, Norway, Liechtenstein, Iceland and the United Kingdom.

## RADIO FREQUENCIES AND TRANSMITTING POWER

WLAN	RANGE	MAX. POWER (E.I.R.P.)
2.4 GHz	2.4 - 2.483 GHz	20 dBm (100 mW)
5 GHz	5.15 - 5.35 GHz	23 dBm (200 mW)
	5.47 - 5.725 GHz	30 dBm (1000 mW)
5.8 GHz	5.725 - 5.875 GHz	14 dBm (25 mW) (SRD)

LTE	DOWNLINK (DL)	UPLINK (UL)	MAX. POWER (E.I.R.P.)
B1	2110 - 2170 MHz	1920 - 1980 MHz	23 dBm (200 mW)
B3	1805 - 1880 MHz	1710 - 1785 MHz	23 dBm (200 mW)
B7	2620 - 2690 MHz	2500 - 2570 MHz	23 dBm (200 mW)
B8	925 - 960 MHz	880 - 915 MHz	23 dBm (200 mW)
B20	791 - 821 MHz	832 - 862 MHz	23 dBm (200 mW)

UMTS (WCDMA)	DOWNLINK (DL)	UPLINK (UL)	MAX. POWER (E.I.R.P.)
B1	2110 - 2170 MHz	1920 - 1980 MHz	24 dBm (250 mW)
B3	1805 - 1880 MHz	1710 - 1785 MHz	24 dBm (250 mW)
B8	925 - 960 MHz	880 - 915 MHz	24 dBm (250 mW)



The following restrictions are effective in the EU member states AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK.

- 5.15 - 5.25 GHz: intended only for indoor use including trains. 16 dBm (40 mW) maximum mean e.i.r.p. applies for installations inside train carriages with an attenuation loss on average of less than 12 dB.
- 5.25 - 5.35 GHz: intended only for indoor use inside buildings.
- 5.47 - 5.725 GHz: installations in trains are not permitted.

### Recommended antenna type and gain

WLAN	Dipole antenna - 4.5 dBi (2.4 GHz) & 7.0 dBi (5 GHz)
LTE   UMTS	Dipole antenna - 3.0 dBi

For further details about the setting of transmit powers please refer to the configuration manual.