

DATASHEET BATmode 3B / 3S / 3S+

Version 1.1

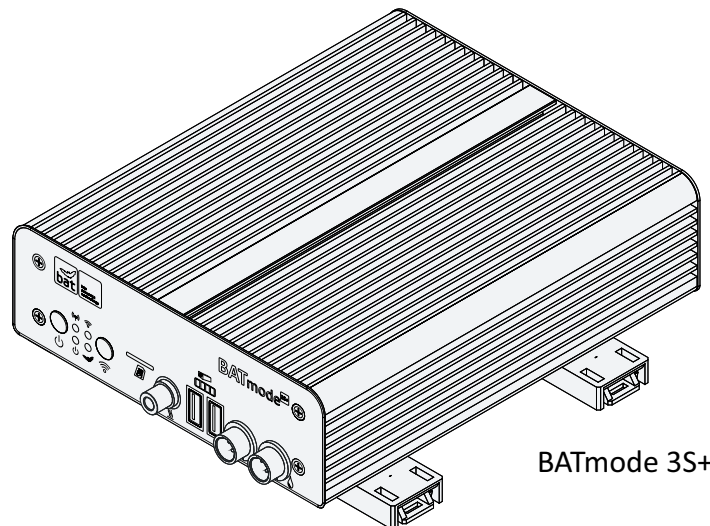


bat bioacoustictechnology GmbH

The BATmode is the main unit of the BATmode system – a bat detection system especially designed for long-term studies in challenging environments like wind turbines. The device is used in combination with the ultrasonic audio interface UltraSoundGate from Avisoft Bioacoustics. To support as many installation scenarios as possible various microphones are available, like the GM90 microphone disc for installation in the floor of a wind turbine nacelle or the TM20 for installation in the tower wall. During development a major focus was on the remote accessibility to reduce on-site maintenance as far as possible.

To provide cost efficient solutions for different use cases, the third generation of the BATmode is available in three variants. Major differences are depicted in the following table.

	BATmode 3B	BATmode 3S	BATmode 3S+
Ethernet Remote Access	✓	✓	✓
SMS Remote Access	x	✓	✓
Cellular Data Remote Access	x	✓	✓
WIFI Remote Access	x	x	✓
Meteorological Sensor Input	x	x	✓
Disc Capacity	500 GB	500 GB	1 TB
Real-Time-Curtailment	✓	✓	✓
AI Species Identification	✓	✓	✓



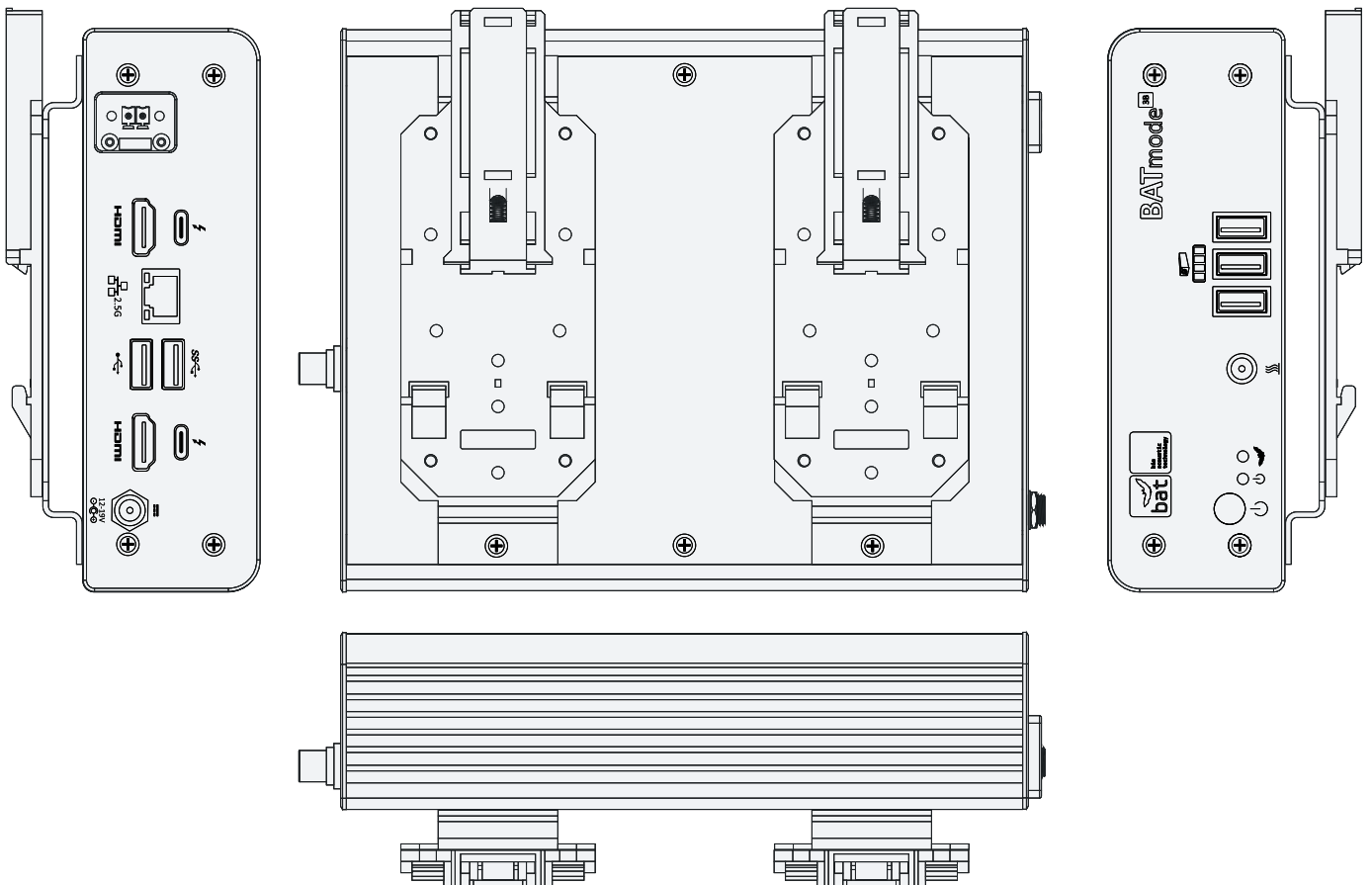
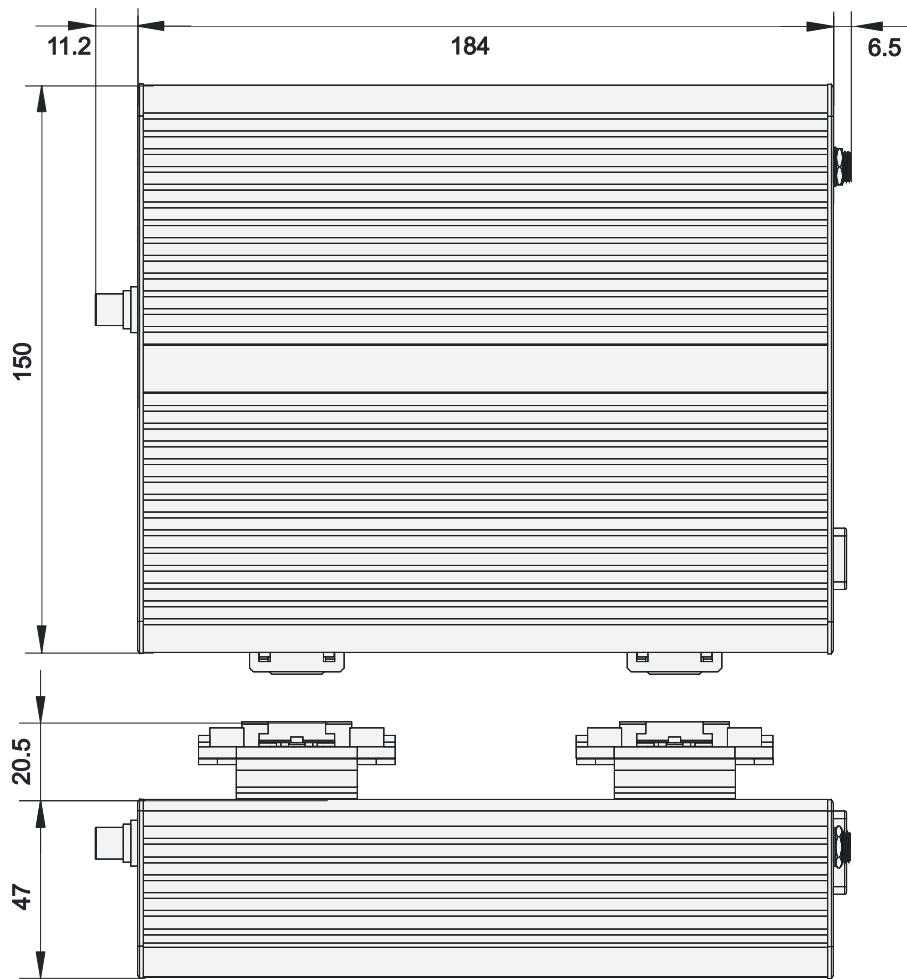
	BATmode 3B	BATmode 3S	BATmode 3S+
Processor	Intel® Core™ i3-1315U	Intel® Core™ i3-1315U	Intel® Core™ i3-1315U
RAM	8 GB	8 GB	8 GB
SSD	500 GB	500 GB	1 TB
Cellular Module		SIM7600G-H-M2 LTE Cat 4	SIM7600G-H-M2 LTE Cat 4
WIFI Module			Intel® Wi-Fi 6E1 AX211
Front LEDs	Power Status 4x UltraSoundGate Status	Power Status Mobile Service 4x UltraSoundGate Status	Power Status Mobile Service WIFI Hotspot 4x UltraSoundGate Status
Front Buttons	Power On-Off	Power On-Off	Power On-Off WIFI Hotspot On-Off
Front Panel Ports	3x USB 2.0 for UltraSoundGates 1x Chinch Heating Connector	2x USB 2.0 for UltraSoundGates 1x Chinch Heating Connector 1x Micro SIM Slot	2x USB 2.0 for UltraSoundGates 1x Chinch Heating Connector 1x Micro SIM Slot 2x Mini-XLR for Temperature and Precipitation Sensor
Back Panel Ports	2x Thunderbolt/USB C 1x 2.5 Gb/s LAN 2x HDMI 2.1 TDMS Display 1x USB 3.2 Gen 2 1x USB 2.0 1x DC Power Supply Connector 1x DC Power Supply Block	2x Thunderbolt/USB C 1x 2.5 Gb/s LAN 2x HDMI 2.1 TDMS Display 1x USB 3.2 Gen 2 1x USB 2.0 1x DC Power Supply Connector 2x SMA Cellular Antenna Connector	2x Thunderbolt/USB C 1x 2.5 Gb/s LAN 2x HDMI 2.1 TDMS Display 1x USB 3.2 Gen 2 1x USB 2.0 1x DC Power Supply Connector 2x RP-SMA Cellular Antenna Connector 1x RP-SMA WIFI Antenna Connector

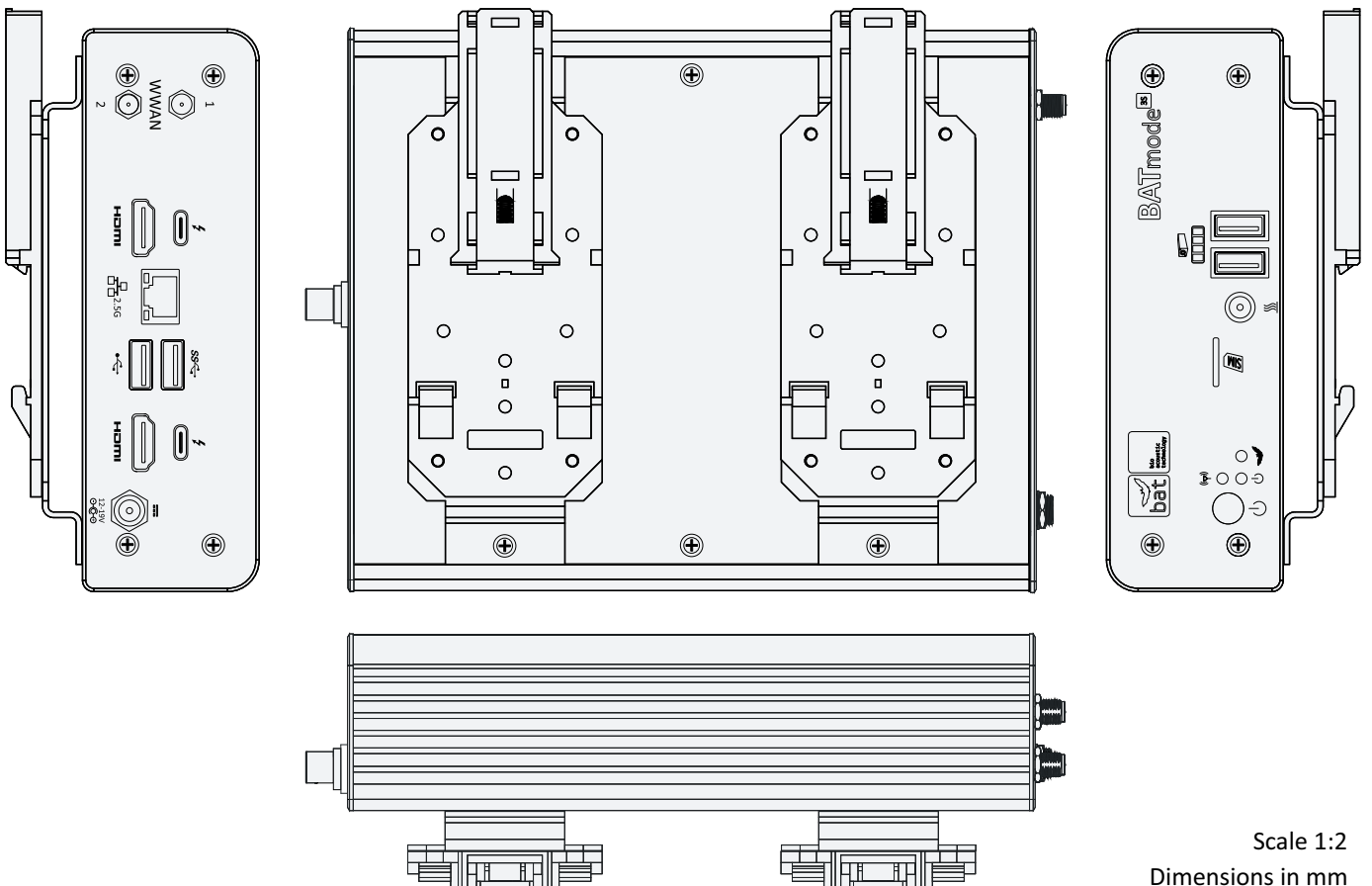
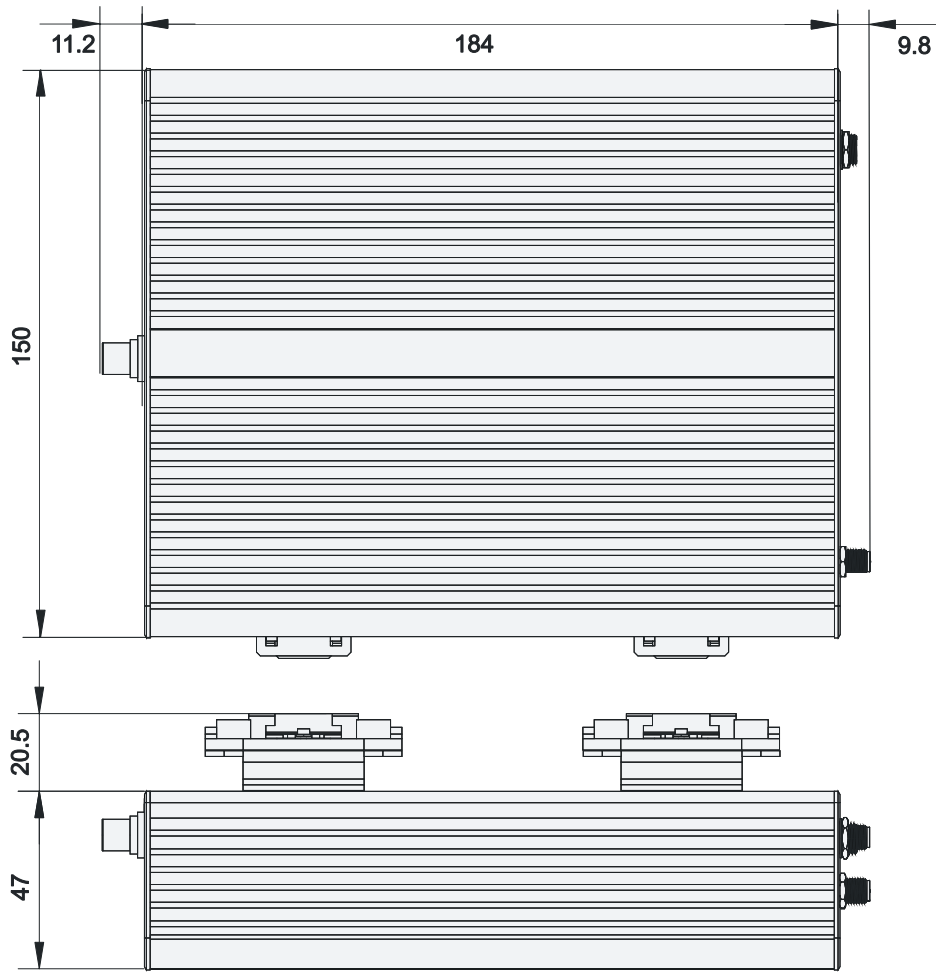
Operating System	Windows® 11 IoT Enterprise
Control Software	BATcontrol
Recording Software	Avisoft-RECORDER

	BATmode 3B	BATmode 3S	BATmode 3S+
Measurement Channels	1 - 4	1 - 4	1 - 4
Supported UltraSoundGates	116Hnbnm, 116Hnmb-r, 416Hnbnm, 116Hnbbm, 116Hnbbm-r	116Hnbnm, 116Hnmb-r, 416Hnbnm, 116Hnbbm, 116Hnbbm-r	116Hnbnm, 116Hnmb-r, 416Hnbnm, 116Hnbbm, 116Hnbbm-r
LAN Remote Access (Status-Email, Remote Desktop, TeamViewer, Anydesk, etc.)	✓	✓	✓
LAN Data Download (FTP, Dropbox, Google Drive, etc.)	✓	✓	✓
Cellular LTE Remote Access (Status-Email, Remote Desktop, TeamViewer, Anydesk, etc.)	x	✓	✓
Cellular LTE Data Download (FTP, Dropbox, Google Drive, etc.)	x	✓	✓
SMS Remote Access (Status-SMS, SMS Remote Control)	x	✓	✓
WIFI Remote Access (Remote Desktop)	x	x	✓
myBAT Cloudservice	✓	✓	✓
Daily Backup	✓	✓	✓
MQTT-Connection (Real-Time Curtailment)	✓	✓	✓
AI Species Identification	✓	✓	✓
Simultaneous Bird Recording with Broadband Microphone	✓	✓	✓

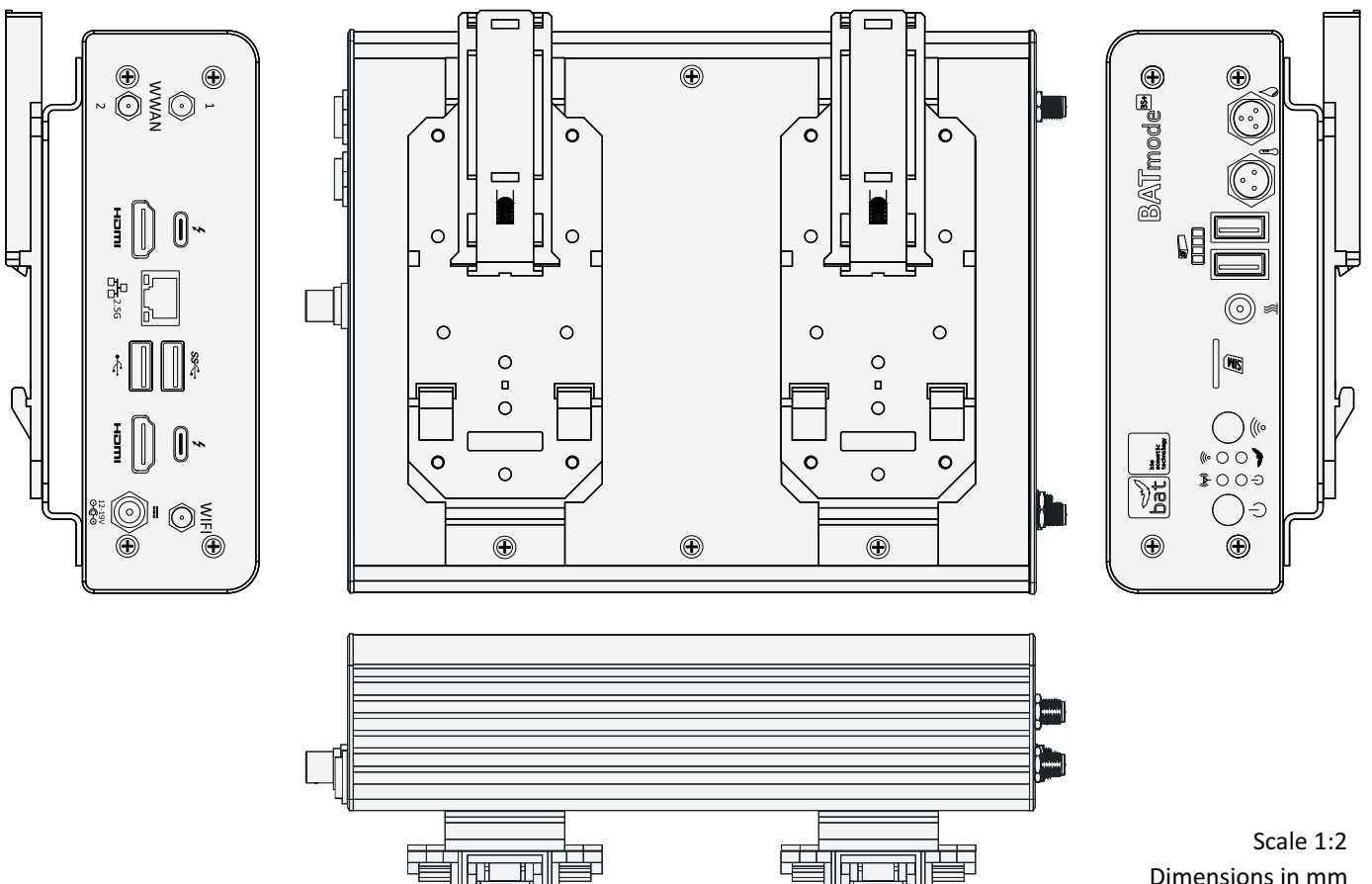
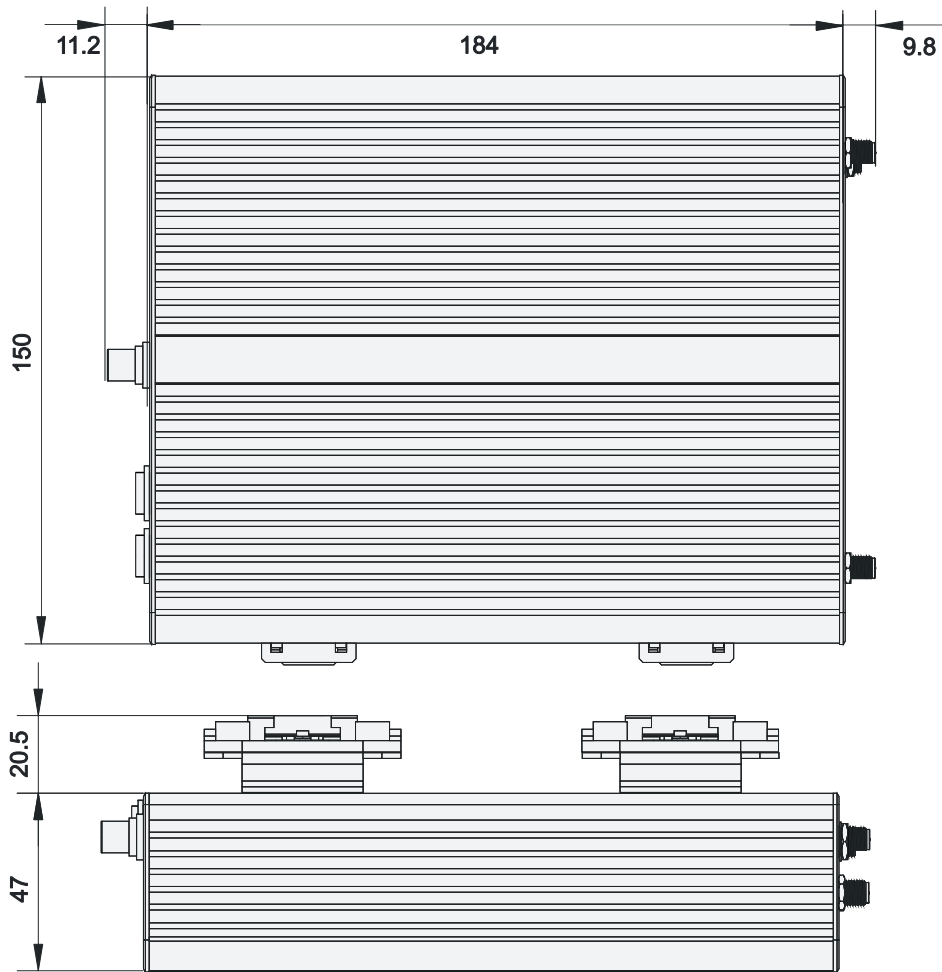
	BATmode 3B	BATmode 3S	BATmode 3S+
Power Supply	12-20V DC ($\pm 5\%$), max. 10A Typical 15W in one channel configuration Power Connector: 5.5 mm / 2.5 mm Power Block: Phoenix Contact 1829345 Power Block can be used as output to power auxiliary devices (12-20V DC, max. 10W)	12-20V DC ($\pm 5\%$), max. 10A Typical 15W in one channel configuration Power Connector: 5.5 mm / 2.5 mm	12-20V DC ($\pm 5\%$), max. 10A Typical 15W in one channel configuration Power Connector: 5.5 mm / 2.5 mm
Heating Output	12-20V DC / 500 mA	12-20V DC / 500 mA	12-20V DC / 500 mA
Temperature Sensor Input			Sampling Rate: 128 Hz Resolution: 12 bits Input Impedance: 8 MOhm
Precipitation Sensor Input			Shunt: 200 Ohm Sampling Rate: 128 Hz Resolution: 12 bits Input Impedance: 8 MOhm
Cellular Antenna		Magnetic Base Antenna Frequency Range: 850/900/1800/1900 MHz Gain: 2 dBi Cable Length: 3 m Diameter of Magnetic Base: 32 mm Operation Temperature: -10 – 55 °C	Antenna Disc Frequency Range: 791– 960 MHz, 1710 – 2170 MHz, 2500 – 2700 MHz Gain: 2 – 3,5 dBi or Magnetic Base Antenna Frequency Range: 850/900/1800/1900 MHz Gain: 2 dBi Cable Length: 3 m Diameter of Magnetic Base: 32 mm Operation Temperature: -10 – 55 °C

	BATmode 3B	BATmode 3S	BATmode 3S+
WIFI Antenna			Antenna Disc WLAN 802.11 a/b/g/n Gain: 5 – 7 dBi directional
Temperature Sensor			Antenna Disc Accuracy: ± 0.3 °C typical Local Sensor Accuracy (Max): : ± 2.7 °C
Operation Temperature	0 – 40 °C Ensure proper air flow to ensure sufficient cooling	0 – 40 °C Ensure proper air flow to ensure sufficient cooling	0 – 40 °C Ensure proper air flow to ensure sufficient cooling
Mounting	DIN Rail 35mm	DIN Rail 35mm	DIN Rail 35mm
Weight	1.72 kg	1.73 kg	1.73 kg





Scale 1:2
Dimensions in mm



Scale 1:2
Dimensions in mm