

V2X/V2N MobiBridge-10G Datasheet



10 GBPS V-BAND WIRELESS LINK FOR DATA OFFLOADING TO/FROM PUBLIC TRANSPORT

MobiBridge-10G is an exceptional mm-wave wireless connectivity solution, providing a full-duplex true 10 Gbps link between light rail or buses and a network (V2N, vehicle to network). Other applications include wireless connections of train carriages within inter-train networks, public transport communications at stops, wideband Internet access for cruise ships and ferries moored to piers, also for aircraft at airports, and for other short-range wideband applications.

3D beamforming is crucial for establishing a reliable point-to-point V2N link, as the vehicle and the depot spot can be in any position relative to each other. Thus, MobiBridge-10G features wide-range, 90° horizontal and 40° vertical beamforming using a built-in antenna with auto-connect functionality. The radio operates in two of the 7x 2GHz frequency channels allocated within the unlicensed V-band (57 to 71 GHz).

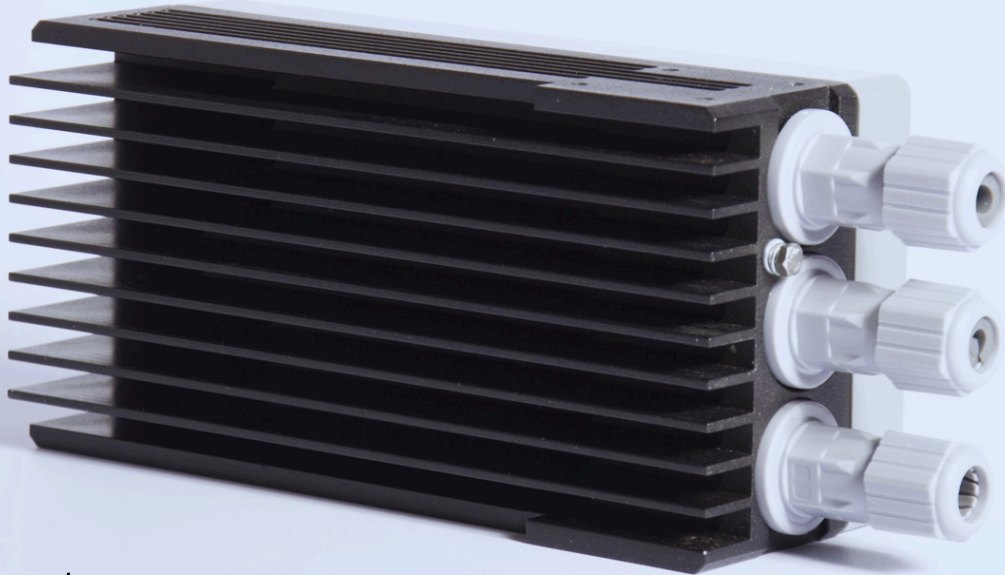
The radio supports up to 10 Gbps in both uplink and downlink directions. This V-band mm-wave solution ensures operational efficiency, ease of use, and IP65/IP68 all-weather protection.

- Unlicensed frequency band 57 to 71 GHz
- Max 10 Gbps data transfer rate
- Full duplex mode
- 600 GB of data offloading in 10 minutes
- 3D beamforming
- Subbands @2000 MHz
- Adaptive modulation up to QAM-128
- Automatic configuration
- IP65 / IP68 case and open-frame versions



APPEARANCE, CONNECTORS AND MOUNTING POINTS

Aluminium case with radiator sections
for good cooling of electronic components



The phased array antenna
has removable
radio-transparent cover

Case dimensions (with sockets):

- Height 294 mm
- Length 88 mm
- Width 120 mm

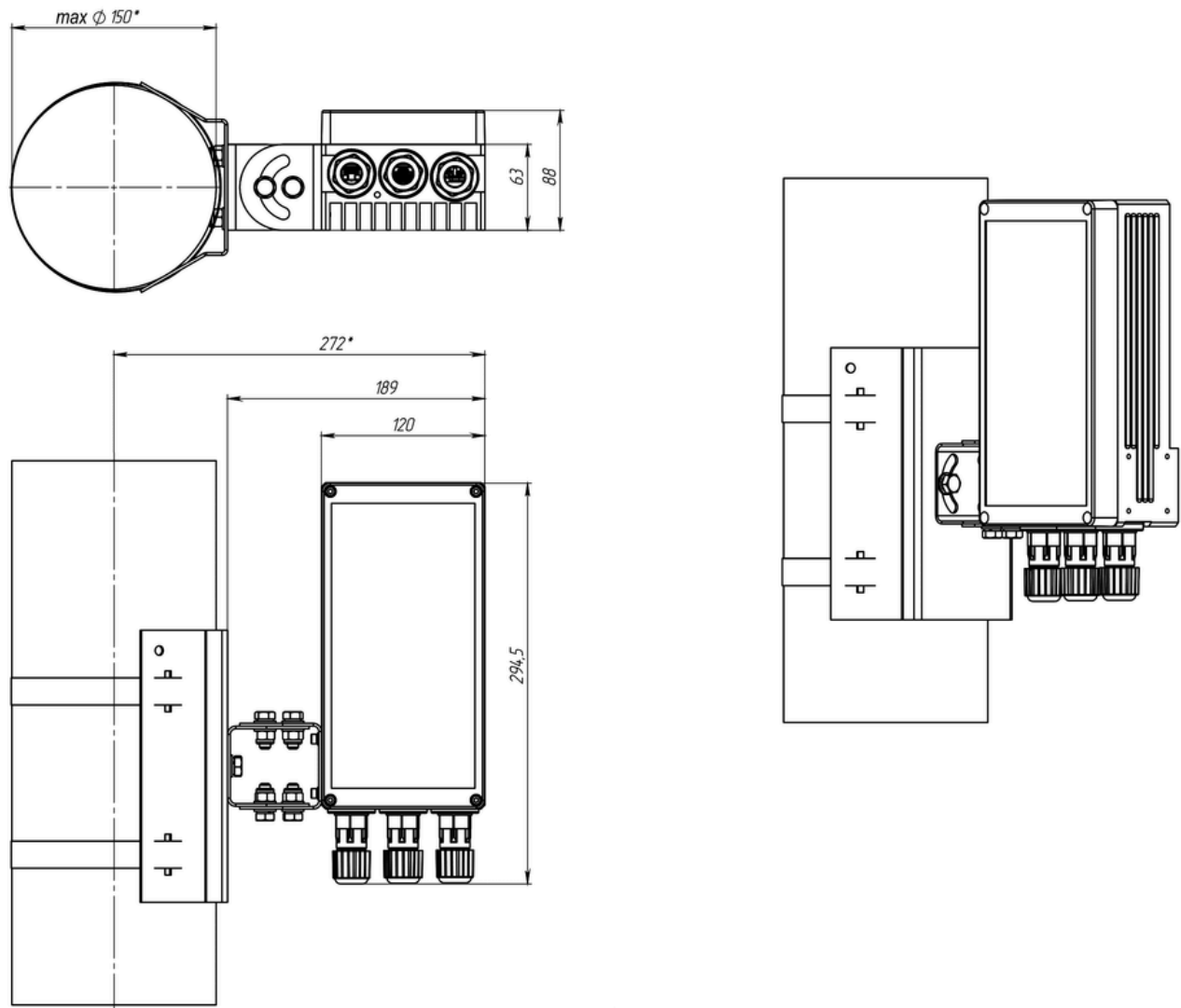


Three sealed cable outlets
with connectors according to
IP-65/IP-68 protection class:

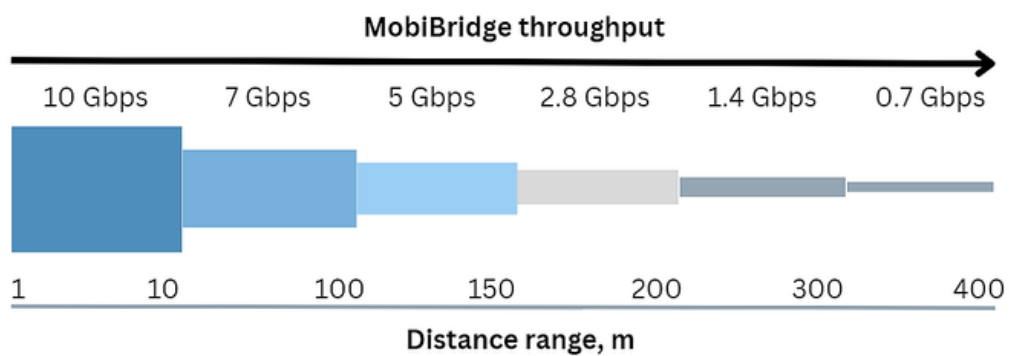
- SFP+ 10GBase-LR/SR data socket
- 1000Base-Tx monitoring socket (PoE enabled)
- DC power socket

- The standard case has 4 points for fasteners with Ø5 mm holes from both sides
- A custom case according to a vehicle design could be manufactured

DIMENSIONAL DRAWING OF PRODUCT IN A STANDARD CASE



Distance Range vs. Full Duplex Throughput



10 GBPS WIRELESS UPLOAD/DOWNLOAD CONNECTIVITY AT DEPOT



MobiBridge-10G is the industry-first 10 Gbps wireless V-band radio designed to download and upload video and data to/from light rail, ferries, metro trains and buses at depots and ports, as well as on stops along the routes. The 90° horizontal and 40° vertical beamforming helps establish a point-to-point connection for any wireless path.

Railway operators can install radios between carriages to create an end-to-end 10 Gigabit network throughout the train. Due to the compact size of MobiBridge-10G, it is convenient for frequent rearrangement of carriages depending on the needs of a particular route.



MobiBridge-10G Specifications

| | |
|-----------------------------|---|
| Maximum throughput | 10 Gbps full duplex (within 0.5 to 10 m range) |
| Distance range | 0.5 to 400 m |
| Unlicensed band | 57 to 71 GHz (V-band) |
| Occupied bandwidth | 2x 2000 MHz within 7 available subbands |
| Adaptive modulation | QAM-128 to BPSK |
| Ethernet ports | 1 × SFP + 10GBase-LR / SR, service 1xCopper 1000/100Base-Tx |
| Antenna type | Built-in antenna with electronic beam steering |
| Antenna 3D scanning sectors | ±45° horizontal with ±20° vertical |
| Ethernet data streams | Transparent for all services Ethernet, Flow Control 802.3x, PTP |
| Power over Ethernet | PoE cable 30 W, 12 - 75 V DC |
| Enclosure protection | IP-65 (optionally IP-68) |
| Ambient temperature | -50 to + 60 °C / -58 to 140 °F |
| Relative humidity | up to 99% |
| Enclosure size | 294x120x88 mm or custom-designed |

