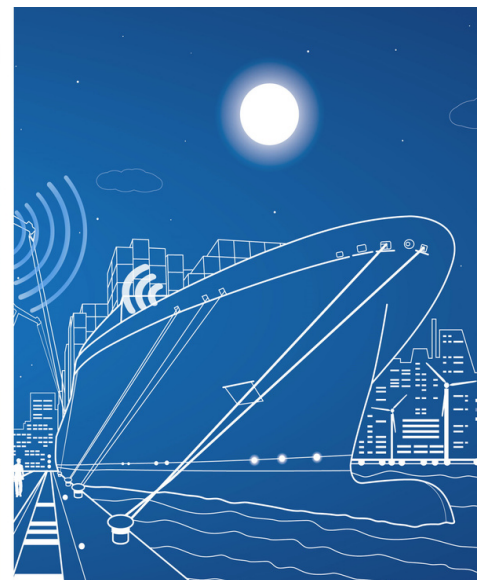


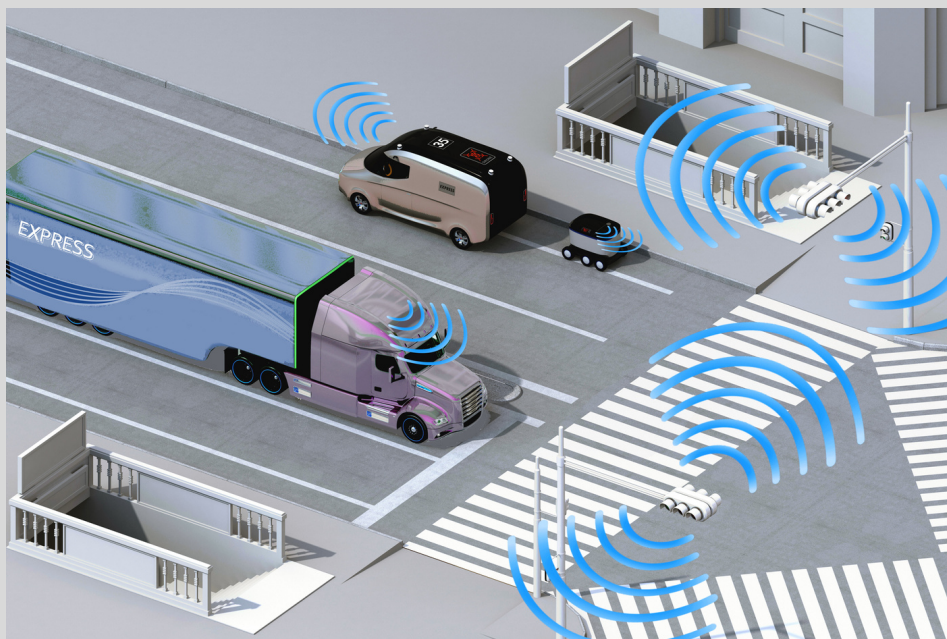
10 GBPS WIRELESS RADIO LINK SOLUTION FOR DRIVERLESS VEHICLES

MobiBridge 10G is an exceptional mmWave wireless connectivity solution providing a full-duplex true 10 Gbps link between the driverless vehicles (also known as self-driving cars, an autonomous vehicles) and a network. Other applications include a wireless connection of train carriages within inter-train network, public transport communications at stops and under move, wideband Internet access for cruise ships and ferries moored to the piers, wideband Internet access to aircrafts at airports and for other short-range ultra-wideband applications.

The radios support up to 7 sub-bands of unlicensed V-band (57 to 71 GHz) and are equipped with a built-in electronically scanned antenna with auto-connect functionality. This V-band mmWave solution assures operational efficiency, ease of use and IP65/IP68 all-weather protection.



DATA DOWNLOAD/UPLOAD AT CROSSROADS, STOPS AND ON THE WAY



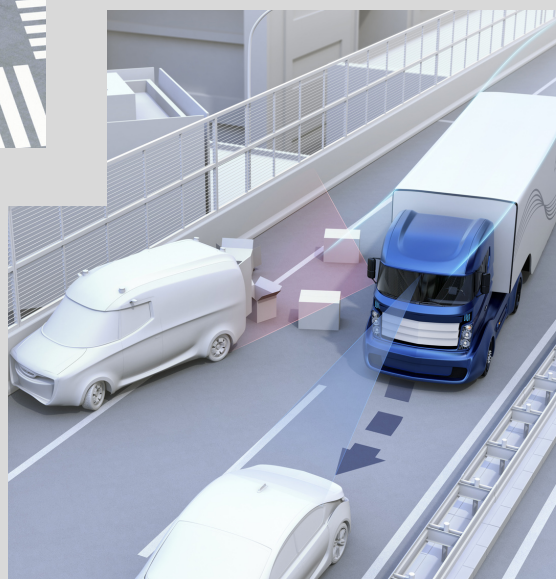
ELVA-1 MobiBridge 10G radios provide 10-Gigabit data exchange for conventional and driverless vehicles using wireless network infrastructure at crossroads, road sign stands and lighting poles.

For unmanned vehicles, this solution guarantees the prompt loading of data to keep the navigation updated according to the traffic situation.

The radio allows a vehicle to exchange data with the network at stops and on the way:

- Up to 50 GB of data can be downloaded during a typical 40-second stop at a traffic light @10 Gbps connection speed.
- Up to 1 TB of data download within just 14 minutes — for example, at a battery charging stop (or at a gas station).

When installing the MobiBridge 10G along the roads, it is possible to create broadband access mmWave zones along the entire route for the public transport or driverless cars.



The compact dimensions allow to install the radio under a plastic bumper, behind the radiator grille or the vehicle roof fairing.

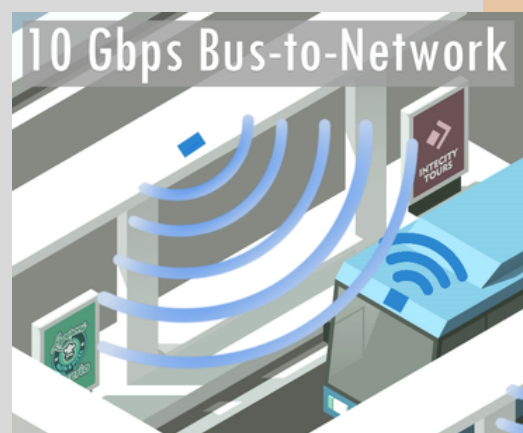
PUBLIC TRANSPORT VIDEO SURVEILLANCE DATA DOWNLOAD AT STOPS



Public transport is widely equipped with video surveillance systems for the passenger cabin, driver's workplace and front / rear dash cams for recording the traffic situation. Additionally, the technical status of various vehicle systems is recorded.

After the bus/tram arrives at the station, it needs to quickly enter the station's network to upload the data, which includes the video files from the dashcam, cabin video, the driver's operation monitoring video, and the vehicle tech data.

The volume of vehicle data is up to hundreds of gigabytes, which must be quickly uploaded to the station network. Since a hundred buses and trams can arrive at the station at the same time, they have a very short time slot till the next departure, and the best way to get these data is ultra-broadband wireless access.



2 MINUTES TO DOWNLOAD

The most common are video recording systems with data saved to a flash memory, which is then uploaded to the network of the transport company at the end of the route or in a depot.

With MobiBridge 10G radio, 128 GB of data from a flash memory card can be downloaded to the operator's network within 2 minutes at Bus Central (Tram Station) or at any stop on the route.

BROADBAND INTERNET ACCESS IN PORTS AND MARINAS



The MobiBridge 10G radios are convenient for organizing broadband Internet access for moored passenger ships and for deploying IT infrastructure in private yacht marina areas. Using IP68 design it ensures operation in high humidity areas.

Renting MobiBridge 10G equipment from a telecom operator that serves the port can provide convenient access for ships arriving for a guest visit.

Passengers on cruise liners, ferries and private yachts consume a huge amount of multimedia traffic on board, so access to the Internet at a speed of 10 Gbps allows to meet their high expectations for modern communications and online entertainment.

Yacht owners can rent or purchase MobiBridge 10G equipment and install it on board and in a pier, organizing broadband access zones for their passengers and guests.

For example, with a connection speed of 10 Gbps, a Full HD movie can be downloaded within about 20 seconds.



INTER-CARRIAGE AND STATION OR DEPOT OFFLOAD CONNECTIVITY

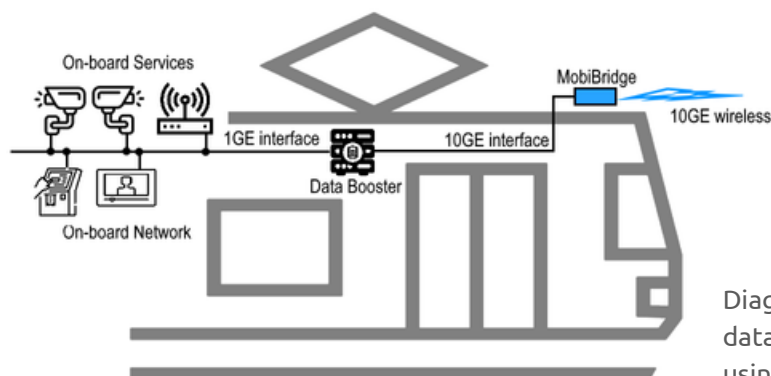
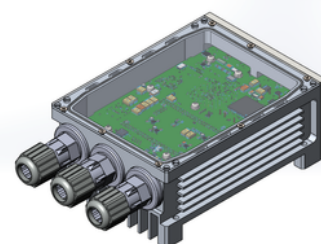


Diagram of 10 Gbps data offload in depot using MobiBridge radio

MobiBridge 10G is the industry's first 10 Gbps per channel radio designed to download and upload video, data and other content at railway stations and depots, at metro stations, as well as on high-speed tram stops and along the routes.

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.

The MobiBridge radios are shipped to customers as unpackaged or in a weather-proof IP65/IP68 enclosure for installation at gas/electric charging stations, bus stops, railway stations and depots, on berths, etc. The exact case type is determined by the customer's requirements.



MobiBridge 10G Specifications

| | |
|-------------------------|---|
| Maximum throughput | 10 Gbps full duplex |
| Distance range | 1 - 10 m for 10 Gbps, up to 400 m with less bandwidth |
| Unlicensed band | 57 to 71 GHz |
| Occupied bandwidth | up to 2000 MHz with adaptive modulation QAM-128 to BPSK |
| Ethernet ports | 1 × SFP + 10GBase-LR / SR, service 1xCopper 1000/100Base-Tx |
| Antenna type | Built-in electronically scanned |
| Antenna scanning sector | ± 45° horizontal with 18° fixed vertical sector |
| Ethernet data streams | Transparent for all services Ethernet, Flow Control 802.3x, PTP |
| Power over Ethernet | PoE cable 20 W, 12 - 75 V (optional) |
| Enclosure protection | IP-65 (optionally IP-68) |
| Ambient temperature | -50 to + 60 °C / -58 to 140 °F |
| Relative humidity | up to 99% |
| Enclosure size | According to customer's requirements |