MTX-9450.
5.9 GHz Transceiver.

The 5.9 GHz transceiver MTX-9450 is a compact road-side infrastructure device utilizing wireless communications in the 5.9 GHz Dedicated Short Range Communication (DSRC) band. MTX-9450 supports the 802.11p WAVE standard for information exchange with on-board equipment in multi and single-lane environments. In combination with the Kapsch road-side controller, the MTX-9450 transceiver supports USDOT safety pilot applications including required IEEE 1609.2 security protocols. MTX-9450´s built-in directed DSRC antenna enables reduced interference from adjacent receivers. Additionally, the transceiver supports external antennas.

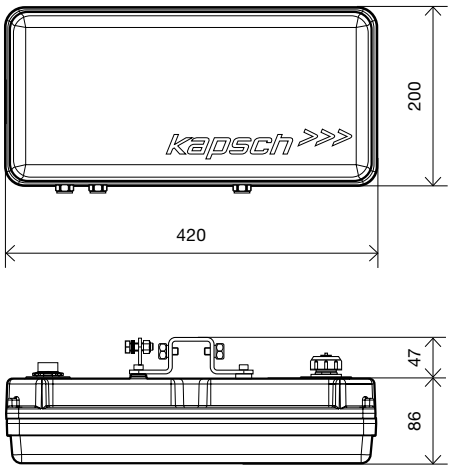
The design concept and basic technologies are derived from extensive experience in developing and producing microwave devices dedicated to road tolling applications. MTX-9450 transceivers are part of Kapsch TrafficCom's 9000 series communication devices intended for 5.9 GHz applications. They are provided on a hardware platform designed and optimized for harsh roadside environments.

5.9 GHz radio section and antenna array.
Built-in directional antenna arrays provide radio coverage within an application specific communication zone. The radio section provides flexible parameterization to adapt to specific site conditions.

Host controller.
The powerful micro controller manages communication with vehicle on-board devices and exchanges transactions with the host system. It also handles authentication and encryption security in cooperation with the built-in SAM. The transceiver operating system is Linux based.

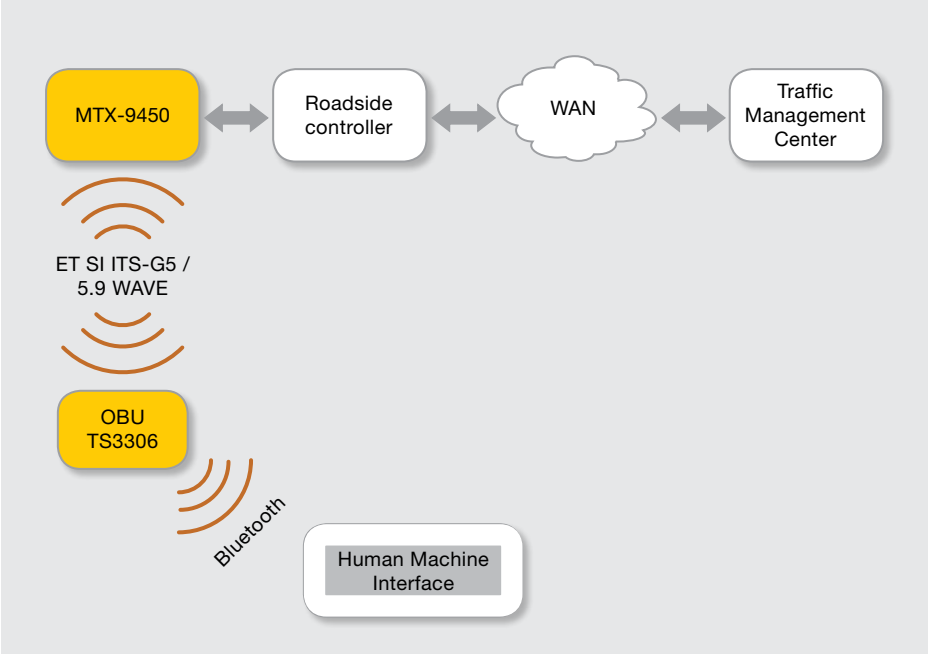
Mechanical design.

All components are integrated in a rugged aluminium die cast. The surface finish of all metal parts resists all environmental stresses defined in the related standards.



(All dimensions in mm).

Internal functional modules of the MTX-9450:



Technical Features

Mechanical
- Dimensions: 420 x 200 x 86 mm
- Enclosure: Aluminium die-cast
- Weight approx.: 6 kg

Electrical
- Frequency band:
  - 5.850 – 5.925 GHz
  - 10 MHz Channels:
  - 172, 174, 178, 180, 182,184
- 20 MHz Channels:
  - 173, 175, 177, 179, 181, 183
  - Radiated power: +33dBm EIRP maximum, adjustable
  - Supply voltage: 24/48V nominal
  - Power consumption: max. 24W

Antenna
- Built-in directional
- External via Type N connector

Interfaces
- 2 x 10/100 Ethernet
- 2 x Serial RS4222
- 2 x external WAVE Antenna N connector female
- 1 x external GPS N connector female
- USB 2.0
- Secure Access Module – SAM

Environmental Conditions
- Operating temperature range:
  - (-34 °C to +74°C)
- Storage temperature range:
  - (-40° C to +85° C)
- Protection classification: NEMA 4X, IP67
- Vibrations: MIL-STD 810F Method 514,
  - I, Category 24
- Shock: MIL-STD 810F Method 516.5,
- Proc IV
  - Salt mist: IEC 60068-2-56 Cb and 60068-2-30Db
  - MTBF: ≥ 200,000 h under normal environmental conditions

Security (digital signature and encryption)
- 3DES, AES, ECC (optional)

Protocol standards
- IEEE 802.11p and IEEE 1609

Kapsch Group.

Kapsch is one of Austria's most successful technology corporations, specialized in the future-oriented market segments of Intelligent Transportation Systems (ITS), Railway and Public Operator Telecommunications as well as Information and Communications Technology (ICT). Kapsch. Always one step ahead.

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