



Mobile FSO unit

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Description – The FSO (Free-Space Optics) mobile unit has been designed for point-to-point optical communication. The unit combines an optical transmitter, an optical receiver and a stabilization and navigation system.

Basic parameters:

- Quick connection installation with support for automated opposite station detection and initial pointing. GPS assistance and auxiliary radio channel between units.
- Active stabilization of optical beam.
- Narrow optical beam with a divergence of 1 – 2 mrad.
- Receiving aperture with a diameter of 125 mm.
- Transparent optical connection on L2 in 1550 nm band.
- Network interface: optical or metallic 1 Gb/s.
- Azimuth setting range: not limited, elevation range: $\pm 45^\circ$.
- Motorized pointing speed greater than 10 mrad/s.
- Output power up to 20 dBm, receiver sensitivity -25 dBm (on aperture).



The basis of the FSO unit is a photonic receiver and transmitter, whose interface is an optical fiber. The unit is connected to the external network via an L2 switch with exchangeable SFP modules. An EDFA type fiber optic amplifier with an output power of up to 20 dBm is used to obtain sufficient output power. The unit is controlled by a pair of microcontrollers, which provide signal processing and basic control of all blocks, communication with navigation and radio modules and communication with the operator.

The unit is powered by 48 V with galvanic isolation and an additional RS-485 interface for basic management functions.