# R-905
## LOS Radio Relay

Transport problems
*are a thing*
*of the past*

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# *Line-of-sight radio relay for tactical and strategic applications*

**The latest transportable line-of-sight radio relay stations permit dependable transmission of your information**

The radio relay station R-905 has been specially designed for use in dynamic field operations. Application of the latest technologies has created a compact, highly integrated microwave station. The station operates in band V (15 GHz), and it transmits bit rates of 512 kbit/s, up to 8448 kbit/s (self-adapting), over large distances with excellent quality.

**High mobility, fast commissioning**

The microwave station R-905 satisfies the high mobility requirements of modern armies; fast installation and flexible use permit timely commands to platoons and combat formations. The transportable kit comprises all the equipment needed for a microwave station. It breaks down into several convenient transport packs.
A light vehicle is sufficient for transport. On site, the station can be set up and commissioned in a few minutes.

*Installation, operation, dismounting, transfer – the R-905 is designed with mobility in mind*

**Versatile use**

The transceiver with integrated antenna can also be operated readily from vehicles. Mast mounting provides great tactical freedom. If larger radio distances have to be bridged or in the absence of a line-of-sight link, the R-905 can also be used as a relay station.

*Versatile application for mobile and stationary missions in terminal or relay mode*

**Excellent performance, even under the most extreme conditions**

The microwave station R-905 demonstrates its high availability and dependability even under particularly tough mission and environmental conditions.
It is equipped with special electronic protection measures which guarantee high resistance to electronic warfare. A hermetically sealed casing with shock absorbers permits operation under tough field conditions. All the components are resistant to environmental influences such as impact, vibration, sand, snow and water. They remain serviceable even at extreme temperatures.

*Sand, wind, snow – it's all the same to the R-905*

**High reliability through high integration and automatic fault localization**
The high dependability of each device component means our equipment is of optimal quality. The built-in monitoring and test feature allows a precise diagnostic of all functions. The station is designed for remote control; it has a remote monitoring facility and can therefore be incorporated into a network management system.
The built-in diagnostic of the optical cable localizes fiber breaks to the meter, which allows the cable to be repaired directly and quickly.

**New feature: integrated optical interface**
With the development of an optical interface and a lightweight but extremely strong fiber optic field cable, the R-905 permits electrical interfaces to be used over long distances. The transmission capacity of the full-duplex single-fiber system can be upgraded up to 34 Mbit/s. The same fiber optic field cable links two microwave stations in relay mode.

*Remote operation over long distances at a high transmission rate*

**The R-905 line-of-sight radio relay station satisfies the high mobility requirements of modern armies; fast installation and flexible use allow timely adaptations to today's battlefield requirements.**

### Great tactical freedom

Whether base unit, mast and radio relay station are close together, or whether the base unit is 4 km from the relay station, connected via integrated interface and optical cable – the R-905 makes high tactical freedom possible.

### High mobility

Small, compact, can be set up and commissioned by a two-man team in a few minutes. Fulfills the requirements of dynamic operations in the field.

### High flexibility

Can be operated on a tripod or mast.

### Ergonomic operation

Simple operation – locally or with full remote-control.

### High resistance to interference

Proven ECCM features.

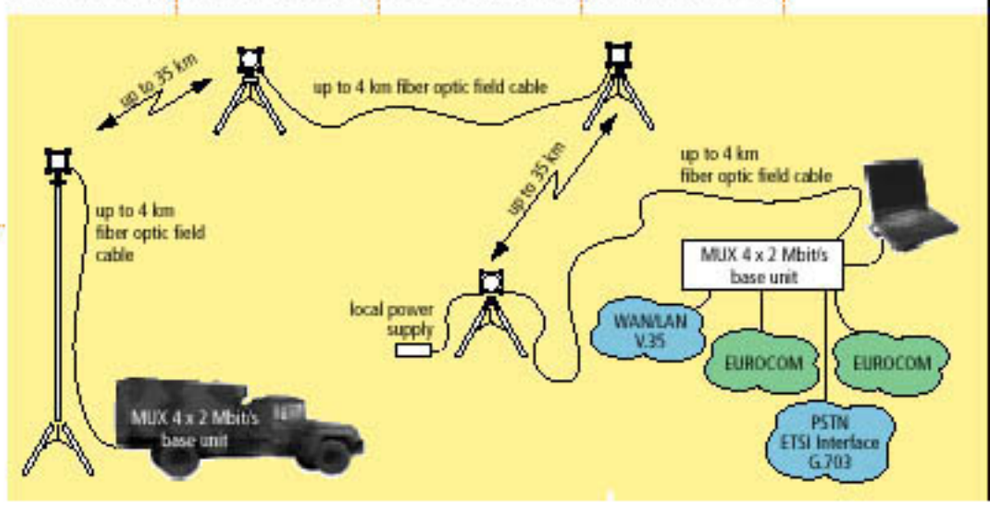
### Standards compatibility

In accordance with military standards for mobile applications.

**Technical data**

| | | |
|---|---|---|
| Frequency range | | 15 GHz (band V)<br>(band IV planned) |
| Frequency steps | | 500 kHz |
| Duplex separation | | variable |
| Guaranteed output power | | -20... +20 dBm<br>(autotransmission power control) |
| Modulation | | 4-QAM |
| Receiver sensitivity for a BER of $10^{-6}$ | | – 93 dBm at 2 Mbit/s<br>– 89 dBm at 8 Mbit/s |
| Power supply<br>Power consumption | | 24 V DC<br>< 60 W |
| Interfaces | | |
| • Electrical interfaces | | EUROCOM A, ITU-T G.703, V.35<br>0.5, 1, 2 Mbit/s and 4 x 2 Mbit/s |
| • Optical connection | | – for bidirectional transmission on one single-mode fiber<br>– distance between radio unit and base unit up to 4 km with built-in fault localization |
| • Optical field cable | | with effective protection against attacks by rats, martens and other animals |
| Engineering order wire | | 64 kbit/s with selective call |
| Network management capability | | full remote control and supervision of all parameters |
| Temperature range | | -35...+60 °C |
| Protection against | | climatic influences<br>mechanical influences<br>electronic warfare through built-in ECCM<br>electrical influences |
| ECCM | | – Frequential selectivity (Diplexor)<br>– Spatial selectivity<br>– Automatic Power Control (APC)<br>– Error Corrector Codes<br>– Remoted equipment secured by fiber optic cable |
| Maintenance | | BITE |
| Reliability | MTBF | 10000 hours |
| System gain | | 178 dB typically at 8 Mbps |

**Example of the application of the R-905 station in a tactical network**





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