Point-to-point wireless communication system **farLink**

The best way to transmit your data over long distances
farLink is a modern generation of UHF/VHF point-to-point wireless communication system. It provides TDM and Ethernet data transmitting over incredible long-range distances. Previously one could establish a connection to the mainland only through the expensive satellites. Now the connectivity becomes much more affordable thanks to farLink.

**Up to 100 km by one hop**

farLink provides effective operation even in non-line-of-sight (NLOS) due to UHF/VHF frequency bands and a high output power. More than that, every farLink has modem and radio unit designed inside the outdoor unit. This combination eliminates cable signal attenuation and keeps the real system gain value at extremely high level.

**Effective spectrum usage**

System spectral efficiency reaches up to 5 bpsHz — a top-level of the whole equipment class. The farLink is able to transfer the information with up to 17 Mbps capacity using only 3.5 MHz bandwidth.

**High communication channels reliability**

Automatic power control feature and Error Control Coding allow operating even in heavy industrial noise environment. For pulse noise protection farLink has a genuinely simple and amazingly effective method of time diversity spacing. The basic idea of this feature is that a 1+1 configuration transmits data with a predefined delay in one channel. As a result, even if the data is corrupted in both transceivers the integrity of the information will be saved.

**1.5+0.5 configuration:**

**Reliable as 1+1 configuration with 150% capacity**

By virtue of this configuration a partial traffic can be transferred in the 1+1 hot standby mode and the rest traffic - by means of 1+0 configuration. It allows users of farLink to increase capacity from 1.01 to 1.99 times with the same degree of reliability for priority traffic.

**OPEX and CAPEX saving**

farLink uses antennas with low wind profile, which requires small site preparation and reduces capital and operational costs.
Rural mobile backhaul in 2G & 3G networks

- Traffic transfer from the base stations GSM and 3G
- NLOS and nLOS traffic transfer
- Ethernet and TDM traffic transfer on one channel

Rural backhaul for fixed telecom and ISP providers

- Up to 17 Mbps capacity
- Web-control and software Master management

Remote video surveillance

- Up to eight high definition cameras connection
- Video channel high reliability
- Two-way video with minimal delay

Temporary communications

- Easy installation on the mobile platform
- Robust communication in heavy industrial noise

Smart grid and corporate transport networks

- Reliable transmitting of telemetry, Ethernet and voice
- Connection to remote production platforms, shrubs, stations to the common control system
Currently farLink equipment is operated by major telecom providers, oil & gas companies.

**farLink specifications**

<table>
<thead>
<tr>
<th>Equipment type</th>
<th>farLink P</th>
<th>farLink E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>Outdoor + indoor (ODU+IDU)</td>
<td>full outdoor (ODU)</td>
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<tr>
<td>Frequency</td>
<td>394-410 MHz and 434-450 MHz (+ any other from 150 MHz to 3 GHz on request)</td>
<td></td>
</tr>
<tr>
<td>Bandwidth</td>
<td>1.75 and 3.5 MHz</td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>@1.75 MHz up to 9.3 Mbps</td>
<td>@3.5 MHz up to 17 Mbps</td>
</tr>
<tr>
<td>Interfaces</td>
<td>4xE1 + Ethernet</td>
<td>Ethernet</td>
</tr>
<tr>
<td>Modulation</td>
<td>OFDM, adaptive modulation form QPSK to 64QAM</td>
<td></td>
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<tr>
<td>Output power</td>
<td>up to 35 dBm</td>
<td></td>
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<tr>
<td>System gain</td>
<td>up to 131 dB (QPSK, 1.75 MHz, BER=10^-6)</td>
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</tr>
<tr>
<td>Antennas</td>
<td>Yagi antennas (up to 17 dBi)</td>
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<tr>
<td>Error coding</td>
<td>LDPC, FEC</td>
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<tr>
<td>Configuration</td>
<td>1+0, 1+1, 2+0, 1.5+0.5</td>
<td>1+0</td>
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<tr>
<td>Environmental conditions</td>
<td>ODU</td>
<td>-50...+50 °C</td>
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<tr>
<td></td>
<td>IDU</td>
<td>+5...+45 °C</td>
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</table>

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**MICRAN**

Micran is a leading microwave telecommunication and measurement equipment manufacturer in Russia and CIS. It was founded in 1991 and has gained a reputation as a reliable partner in many fields. The company offers a wide range of wireless solutions for telecommunication networks to telecom operators, service providers, fuel and energy enterprises, railway and river transport companies, federal executive authorities, and integrators.

Micran has successfully deployed microwave links throughout Russia, CIS and Asian countries and supports the operation and maintenance of the equipment quickly and effectively.