

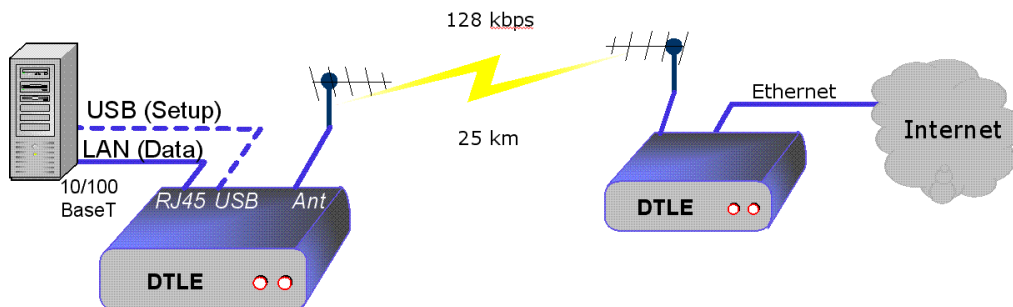
DTLE (Digital Transparent Line Extender)

Point-to-Point Long-Range Wireless Communication Solutions

DTLE technology is a simple and powerful approach to provide internet and other data services to people in remote places.

Reliable, cost-effective high-speed connectivity wireless is becoming the preferred technology for enterprises, public authorities and service providers delivering advanced and ad-hoc voice, video and data applications.

A **DTLE** link is an easy-to-install, performance and stability oriented point-to-point radio system which provides distant facilities with high-speed data communication. **DTLE** may be considered a long-range wireless Ethernet bridge or simply a “virtual cable”.



DTLE delivers flexible, interference-resistant, high-speed connectivity to residential, business, institutional, government and municipal locations. The platform combines reliability with performance, ease-of-use, quick deployment and reduced maintenance at a very competitive price.

A **DTLE** link consists of a master and a slave unit. While the master unit is connected to a local network access point (Ethernet), the slave unit gains remote wireless network access which is completely transparent to the user.

Between the **DTLE** units, a full duplex, symmetric, optionally scrambled, data channel is established using low-cost aerials, similar to terrestrial TV antennas, mounted at elevated locations to create a line of sight (LOS). Typically, these antennas will be erected on high-rise buildings or antenna masts. Because of the ease of installation, a **DTLE** link can be rapidly installed and used for emergency or other temporary applications.

DTLE facilitates long-range internet access at very reasonable costs. There are no major investments in equipment or software. **DTLE's** low acquisition, installation, operation and maintenance expenses result in very low total costs of ownership.



Applications

DTLE is an excellent means of infrastructure improvement, providing internet access for rural schools, connecting police or emergency units to their headquarters, allowing remote facilities such as coal mines, river dams, oil rigs and even military bases to with secure access to private or public networks.

DTLE has specifically been designed for the Russian market place, including the former CIS (Commonwealth of Independent States), however, it can be adapted internationally to other local specifications and regulations.

Technology

DTLE utilizes the modern and highly efficient multi-carrier C-OFDM (**Coded Orthogonal Frequency-Division Multiplexing**). This digital technology ensures exceptionally good adjustability of the data channel to the link properties, resulting in optimal bandwidth usage, high information density and reliable transmission.

The **DTLE** system can easily be adapted by software to any set of frequencies between 300MHz and 350MHz as well as wider channel bandwidths. The **DTLE** team is currently working on upgrading the system to a much wider range of carrier frequencies (~160MHz ... ~400MHz).

Technical Specifications

- Modulation: C-OFDM multi-carrier modulation with QAM-4 to QAM- 4096 with up to 108 sub-carriers
- Frequency range: 307.5 – 308.0 MHz and 343.5 – 344.0 MHz
Adjustable to other national regulations
- Operation mode: Full duplex in FDD mode, duplex spacing 36 MHz
- Channel spacing: 25 kHz (optionally 12.5kHz)
- RF output power: +28 dBm (max), +17 dBm (mean)
- Antenna gain: typ. 12 dB (high-gain version)
- Loss in Antenna feeder: ≤ 3 dB
- Noise factor: 5 dB
- Receiver sensitivity: better than -90 dBm
- Frequency stability : ≤1 ppm
- Temperature range: -5°C to +45°C
- Dimensions: 325 mm x 203 mm x 84 mm
- Weight: ca. 1500 g
- Power supply: 12VDC, 20 VA (max)

Performance

- Range (LOS): up to 50 km
- Data Rates: up to 169 kbps (Bandwidth = 25 kHz)
- Effective Data Rates: 87 kbps (distance ≤ 50km, ~30mls)
128 kbps (distance ≤ 25km, ~15mls)
169 kbps (distance ≤ 10km, ~6mls)
- System Protocol overhead: < 8%

Data Interface

- Ethernet 10/100 BaseT via RJ-45 connector

Configuration and Management Interface

- via USB (locally)
- SNMP (optional)

DTLE is a joint venture project of the following renowned German companies:

RADIODATA GmbH (Berlin), www.radiodata.biz

TL Advanced Engineering UG & Co. KG (haftungsbeschränkt) (Frankfurt), www.tl-group.de

A.R. Bayer DSP Systeme GmbH (Düsseldorf), www.dsp-sys.de

Note: Specifications are subject to change without prior notice. We reserve the right to make changes to the product at any time to deliver the most up-to-date technology.