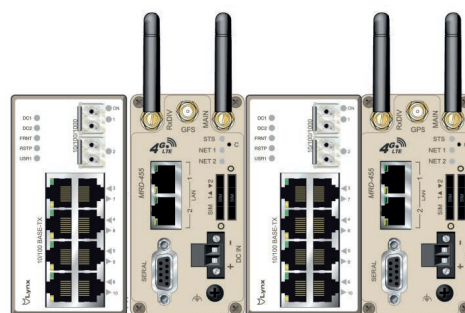




ComSwing RADIOBOX

Wireless transmission system for railway signalling via public GSM

- Instant substitute of cable connection
- Interconnection of signalling technology parts by Ethernet network
- Failsafe data transmission “point to point” in 3rd category network according to EN 50159
- Reliability (continuous operation) ensured by double-channel transmission



GENERAL DESCRIPTION

ComSwing RADIOBOX system (further RADIOBOX) is designed for data transmission among railway signalling systems via open transmission environment of 3rd category according to EN 50159 (open network).

RADIOBOX supplements transmitted data originally designed for network of 2nd category (closed intranet) by parameters preventing cyber attack on signalling system using “open” transmission network for communication among its decentralised objects.

RADIOBOX consists of two independent data channels interconnecting signalling systems data interface.

Each data channel consists of two nested IPsec tunnels connecting SIM cards with private APN (Access Point Name) within public GSM network.

ZÁKLADNÍ TECHNICKÝ POPIS

RADIOBOX consists of the following units:

Location A

- 2 LTE routers for external IPsec tunnel
- 2 L3 switches for internal IPsec tunnel

Location B

- LTE router for external IPsec tunnel
- 2 L3 switches for internal IPsec tunnel

LTE routers and L3 switches form local network zone – LAN, demilitarized zone – DMZ and communicate with APN and WAN operator’s zone.

Data is secured within local network and also the direct connection of signalling system and RADIOBOX is provided for maximum safety. Data transfer endpoints are located in environment secured against unauthorised access.

For monitoring of possible connection failure, diagnostic information are continuously transmitted to electronic interlocking (StationSwing ESA) and diagnostic system (DiagSwing LDS-3).

RADIOBOX is supplied by 12–48V DC source, when located in interlocking room.

All components (LTE routers and L3 switches) can be restarted periodically by disconnection from power supply (by time-switch) based on requirements of public GSM operator. Restart is performed in sequence, provided that at least one channel is always in operation.





BASIC TECHNICAL PARAMETERS

Requirements for user terminal

Packet timing	160 ms
Transmission speed	128 kBit/s

Requirements for SIM operator

Transmission speed	384 kBit/s
Recommended tariff	15 GByte/month
Encryption	IPSec, AES256 – SHA1
Supply voltage	12–48 V DC

