COMLAB
radio frequency technology

KEY ADVANTAGES AT A GLANCE

– High degree of technical expertise throughout the entire process

– Comprehensive, complete solutions from a single source

– Reliable systems and components with practical demonstration of MTBF values

– Systems of renowned Swiss quality at attractive prices

– Individual solutions tailored to meet your needs

– Experienced graduate engineers providing personal attention

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INTRAIN SYSTEMS

COMLAB is your ideal partner for professional solutions in the RF sector. Our core business includes broadcasting, PMR and communication systems for railway and road tunnels, as well as building lighting, extensive outdoor radio coverage and specialised solutions.

SOLUTIONS THAT DELIVER FULL COVERAGE

For over thirty years, we at COMLAB have focused on radio frequency (RF) technology. Our involvement includes design, development, production and installation of turnkey high-frequency radio systems. Our considerable expertise and many years of experience mean that we are able to competently support our customers in discovering solutions for all of their problems.

TARGET SEGMENT

– Safety and Emergency Organisation
– Army, Border Guard and Civil Protection
– Mobile Network Operator
– Radio and TV Station
– Railway and Subway Operator
– Radio and Network Operator
– Public Authorities, Authority
– Private, Industry, Enterprise

APPLICATION

– Road and Motorway tunnels
– Traffic and Escape routes
– Railway tunnels, Subway lines
– Football stadiums, Malls, Car parks, Stations
– Hospitals, Clinics
– Military and Civil Protection installations
– Intrain, Airports
– Industrial areas, Construction zones

GUARANTEED QUALITY

COMLAB's systems demonstrate excellent MTBF (mean time between failures) values. Optimum product and system quality ensures fewer faults and hence lower life cycle costs.

USAGE

COMLAB presents a highly modular and expandable *Intrain Repeater System* to provide excellent communication quality inside trains. It compensates high signal penetration loss due to modern carriage design.

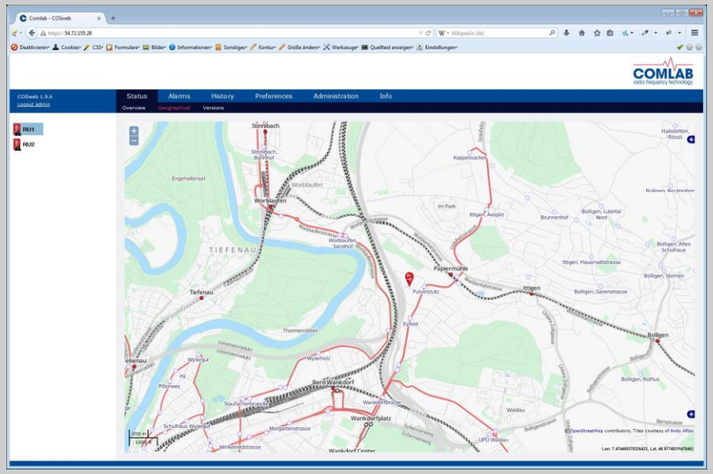
The *Intrain Repeater System* suits the requirements for all multi-operator applications. It is based on the product family RUD19-5.

COMLAB has a flexible supervision concept which allows not only local alarm handling, i.e. integration into the train supervision system but also remote access via a wireless high speed data modem.

FUNCTION

An external antenna picks up the outside provider signals. The onboard digital repeater system amplifies and re-distributes the signal via leaky feeder cables or antennas inside the carriage. Highly flexible digital sub band filtering provides excellent signal quality and flexible configuration for changing requirements. Different frequency bands can be integrated into one unit.

The sub band ALC as well as the DL controlled UL Gain, avoids the uplink desensitization of the base stations and enhances the overall system performance.

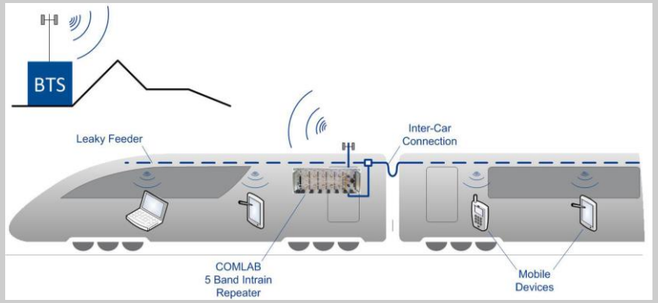


SYSTEM PARTS

RUD19-5-25/25
Offair Repeater for Intrain applications
380…2680 MHz

COSweb
Client Monitoring Software

– 19" Rack x 455 mm, 4HU fits into common railway carriage hardware compartments
– Up to 5 Digital Radio Modules for different frequency bands in one unit
– Expandable to more bands
– Sub band ALC
– Automatic power control
– Radio Distribution Modules for passive band multiplexing
– GPS receiver
– GPS data based configuration
– High Speed Data Modem
– Power supply DC or AC
– Web based software



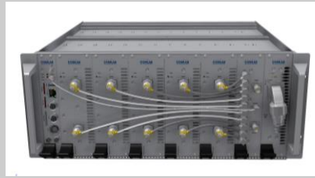
SERVICES

Vehicle integration
On site integration, measurement and approval

– Engineering, transport, mounting
– Radiation measurements

After Sales Support (Option)
1st and 2nd Level Support on site on request.

– Training Administrator, Observer
– On site support
– Maintenance, software updates



USER GUI

COSweb
Web based configuration and monitoring software

– Remote configuration of provider BTS-RUD relation
– Monitoring of all connected units
– Setting of RUD gain and output power
– Checking of logged data of all units connected to a system

SPECIFICATIONS

Key Advantages

– Multiple band, multiple operator
– Application modulation independent
– Five bands in one RUD enclosure
– Highest power efficiency
– More than 16 sub-bands
– Software defined radio applied
– Auto setup
– Band specific configuration
– Intrain signal distribution via leaky Feeder cables or antennas
– Web based configuration
– Remote control by HSDM
– Best total cost of ownership

Life cycle
– 10 year part availability

Frequency range	380…2680 MHz
Services	TETRA390 TETRA410 LTE800 GSM/LTE-R900 EGSM/UMTS900 GSM/LTE1800 UMTS2100 LTE2600
Signal Power	Each band 25 dBm UL 25 dBm DL (Intrain)
Power Supply	18…64 VDC 50.4…137 VDC 90…264 VAC
Size	19" Rack 450 mm, 4HU
Weight	30 kg
Enclosure	19" Rack IP20
Environment	-25..+70°C, 95% HU
Cooling	active FAN horizontal airflow