Multitel
Railway Certification

ERTMS TOOLS
On Track Balises Analyzer

The Railway Certification department of Multitel is specialized in ERTMS testing solutions. It gives support to the certification, provides performance and reliability test solutions to railway industry and offers maintenance solutions, train/track validation and validation support of ERTMS deployment to railway infrastructure managers.

On Track Balises Analyzer is able to check up to 10 balises behaviour simulteaneously, on site, without any interference with operational railway exploitation.

OTA can acquire uplink or downlink signal. Both are analyzed to determine if each balise has standard performance.

Each analysis is recorded in an embedded database. If a failed result is observed, a 3G/4G message is sent to user and raw data from uplink and downlink signals are saved.

OTA is the right tool to analyze balises and BTM associated behaviour.

Track installation

Antennas and its supports must be installed below the balise under test, connected to hardware system

Hardware installation

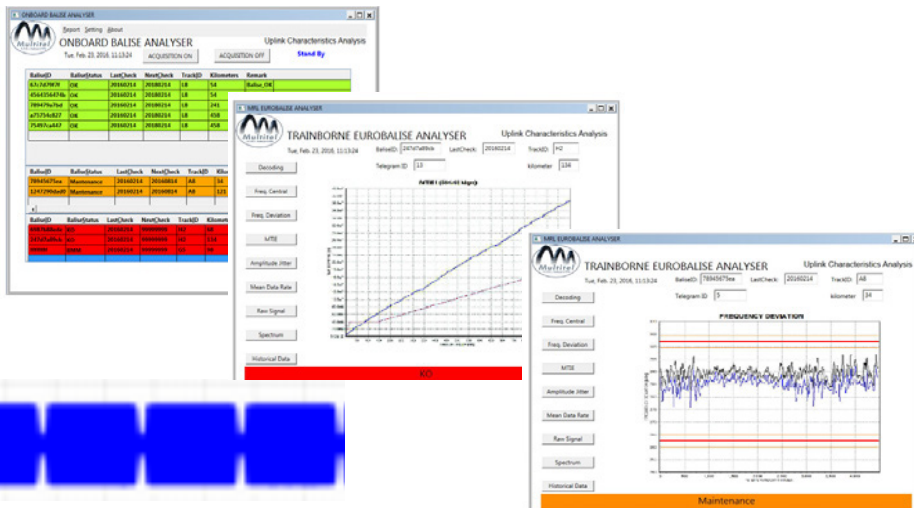2 rack 6U must be installed on railway side

■ Functionalities

OTA can be configured to choose 10 acquisition channels among downlink on uplink coming from 10 balises maximum.

OTA detects telepowering, or uplink to start acquisition.

A correlation is done between telepowering and uplink. An ERTMS balise must answer to CW signals but not for toggled and non toggled signals.

Uplink signal (if present) is analyzed in fully automatic mode: Telegram Decoding, Center frequency, Amplitude Jitter, Frequency Deviation, Mean Data Rate, Maximum Time Interval Error. Thresholds for analysis are configurable by user.
If correlation between uplink, telepowering and balise analysis succeed, data and results are stored in embedded data base. If one of them fails, raw data are saved and an alert 3G/4G message is sent to user.

■ Technical specifications

OTAModel	MRL -OTA-V1.0
Data Base	< 6 months (auto software limitation)
Analyse duration	< 3 minutes
Number of raw data for failed results	> 500
Interface for raw data recovering	USB 3.0
Connectivity	3G/4G
Distance balises/Hardware	< 50 m
Telepowering Frequency	27,095 MHz
Uplink Frequencies	4,237 MHz ± 200Hz
Acquisitions sampling	Up to 500MSamples
Acquisition Delay	< 10 ms
Size	Rack 19'', 12U
Temperature	-20˚C; +60˚C
External Power Supply	220V/230V, 50Hz/60Hz

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