Multitel
Railway Certification

Eurobalise / BTM Laboratory's tools

Multitel develops its own hardware and software tools to perform test and validation of Eurobalise/BTM according to full UNISIG SUBSET-036 and SUBSET-085. All measurements are performed with high quality calibrated RF instruments and a special attention is given to accuracy, precision and repeatability of measurements.

 Multitel is ISO 17025 (BELAC 427-TEST) accredited for EVC test (UNISIG SUBSET-026, SUBSET-076 and SUBSET-094) and Eurobalise/BTM test (UNISIG SUBSET-036 and SUBSET-085).
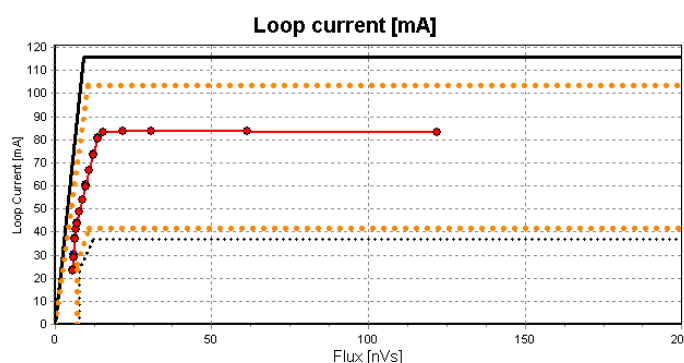
■ Eurobalise/BTM test bench

The Eurobalise/BTM test bench of Multitel can perform Eurobalise/BTM tests according to full UNISIG SUBSET-036 and SUBSET-085 (any version). Moreover, it is fully flexible and can be adapted according to customer special needs. It is ideal to be used to test during development and pre-certification phases for Eurobalise/BTM ETCS components development. This test bench can also test a number of relevant but non mandatory Eurobalise/BTM tests.


1 of the 2 Eurobalise/BTM Labs of Multitel

■ Eurobalise production test bench

The 'Multitel Eurobalise production Testbench' is able to perform the most important tests of the Eurobalise Mandatory and non Mandatory tests from the Subset-085: Balise Input to Output Characteristics, Centre Frequency, Frequency Deviation, Mean Data Rate, Decoding Telegram, Amplitude Jitter, Maximum Time Interval Error and more ...
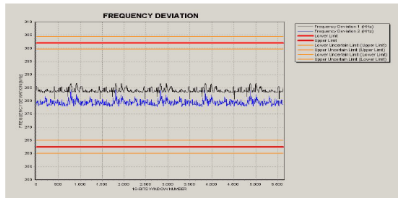

Automatic impedance curve of the Eurobalise Lab

With its user friendly interface, you easily select the tests to be performed on the balise. Put the balise in the Multitel Eurobalise production Testbench, just a click and the Eurobalise analysis is ongoing and less than 10 minutes, all test results will be ready!
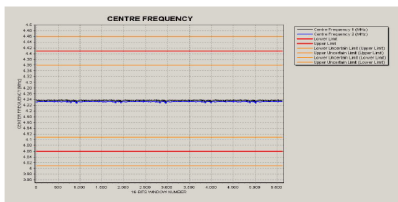

PASS

PASS

Clear validation result for operators

Compact design

■ Onboard Balise Analyser (OBA)

At the onboard unit, the only information available is the information after being processed by the BTM. If the signal coming from the Eurobalise is weak or malformed, it is not possible to recover the information or to detect from where the problem comes from. With our OBA that fits in the BTM, we can detect the raw signal sent by the Eurobalise and perform validation, check the communication protocol up to SRS variable level and detect the quality of the signal. Therefore, our analysis tool can be used as a way to do preventive maintenance of Eurobalise and anticipate failure, thus saving direct and indirect cost due to operating signaling failure.
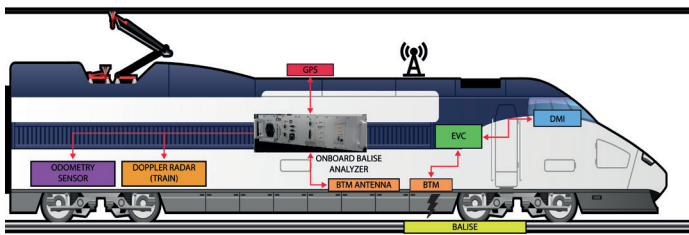
Modular design of maintenance tools

Other hardware tools:
– Mobile Antenna Positioning Tool (M-APT) (XYZ Cartesian Robot)
– Fixed Antenna Positioning Tool (F-APT) (fixed support for Test and BTM Antenna)
– Standard and reduced size reference loops
– Fully compliant SUBSET 085 Tests Antennas
– ...

Other software tools:
– Laboratory Time and Odometer
– Module (LTOM)
– Laboratory Reference Receiver Tool (LRRT)
– Off-line Telegram Generator (OLTG)
– Eurobalise Simulator Scenario Controller
– Eurobalise Validation Tools (balise I/O characteristics, uplink electrical characteristics…)
– ...