MUST
Multitel Uplink Signal Test (for BTM Production Test)
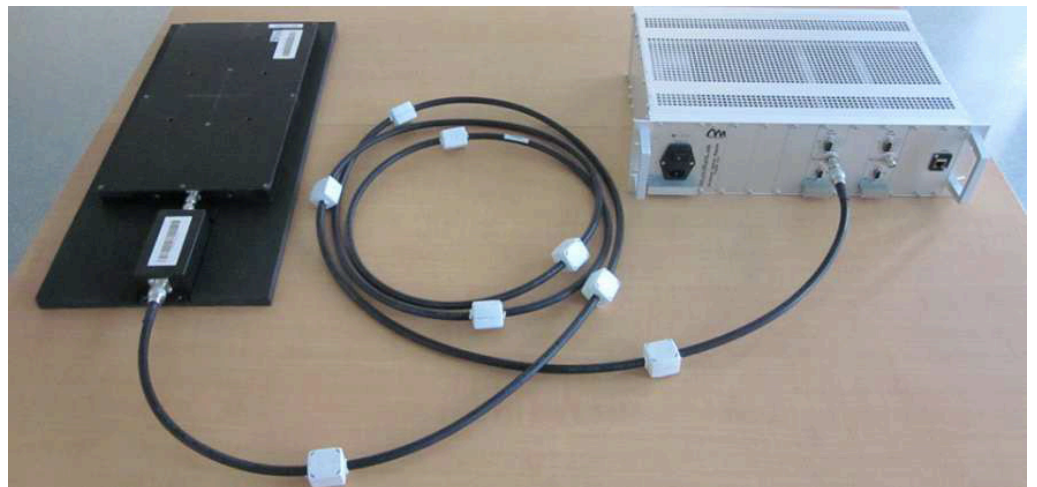
Multitel
Railway Certification

The BTM is a unit that has many analog components, therefore is particularly necessary to check the acceptance of the Uplink signal.

Multitel Uplink Signal Test

The MUST (Multitel Uplink Signal Test) Tool Kit is designed to provide a fast and reliable test environment for BTM units after production.

MUST is capable of sending uplink signals to the BTM antenna and receive the feedback from the BTM unit through the interface V (in particular the Interface V4 as defined in Subset- 085).

Picture of MUST with reference loop.

Functionnal Test List :

MUST can check if the BTM tough the feedback of Interface V signals at limit conditions defined by the user, where the parameters that can be controlled are:

- Uplink power (0 to 21 dbm)
- Central Frequency
  - High Frequency (from 4.2 Mhz up to 4.8Mhz)
  - Low Frequency (from 3.7Mhz up to 4.2Mhz)
- Bit rate (from 550kpbs up to 580kpbs)
- Speed (from 0 km/h up to 600 km/h)

MUST Configuration

MUST supports up to 3 indepedent BTM units test.

MUST pack list:

- 1 rack with 220-240V power supply and ETH interface;
- 1 (optionnally up to 3) BM interfaces, including:
  - Eurobalise Interface
  - Interface V module
  - Reference loop, Balun, Cabling kit.
- 1 control PC (Microsoft Windows© - English).

MUST can test all Subset- 085 telegrams and supports a number of additionnal telegrams (user configurable).

MUST Interface Description

MUST provides the following interfaces for each BTM Antenna and Unit:

- Interface V2 can accept signals as defined in Subset-094 and
- Interface V4 can be both a RS422 or RS485 Interface.

Interface V can be configured to comply with proprietary protocols, including ETH.

MUST can be controlled through an external ETH protocol for integration

Certification, norms and requirements

MUST is developed in compliance with EN50155.

Its reference loop, Balun and cables are delivered with calibraion and in compliancy with Subset-085 requirements.

Multitel is Certified ISO 9001 for its all activities. Multitel is accredited ISO 17025 (427 - TEST BELAC) for Subset-076 and Subset-085 tests.

EVC tests(Subset 076, Subset 094),
EUROBALISE/BTM tests (Subset-085)

ISO 9001
BUREAU VERITAS
Certification

BUREAU VERITAS
1828

PUB/CER/017

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