30 years MTS Systemtechnik

Innovation Meets Precision:
Electronics Manufacturer for Radio Technology

Premium Partner for Tailored Test Solutions
Meeting the Highest Demands in the Fields of
Mobile Communications, Automotive and Defence
– Development – Manufacturing – Service –
Made in Germany

MTS Radio Field Emulations for Realistic Testing of Military Communication

Field Tests Possible On-Site

// Radio Field Emulation AIAD

Development or Integration of Tactical Communication Systems

Current testing standard: OTA (Over-the-Air-Testing)

The fundamental development and initial functional tests are carried out by the manufacturer in accordance with applicable guidelines or standards. System integration and testing in the operational environment are conducted through OTA field tests. Only such tests allow reliable verification of aspects such as range, handover, interoperability, dynamic movement, and multi-user scenarios under realistic conditions.
However, these tests are associated with significant costs – including equipment, personnel, and suitable testing areas. The time investment for this testing method is also considerable.

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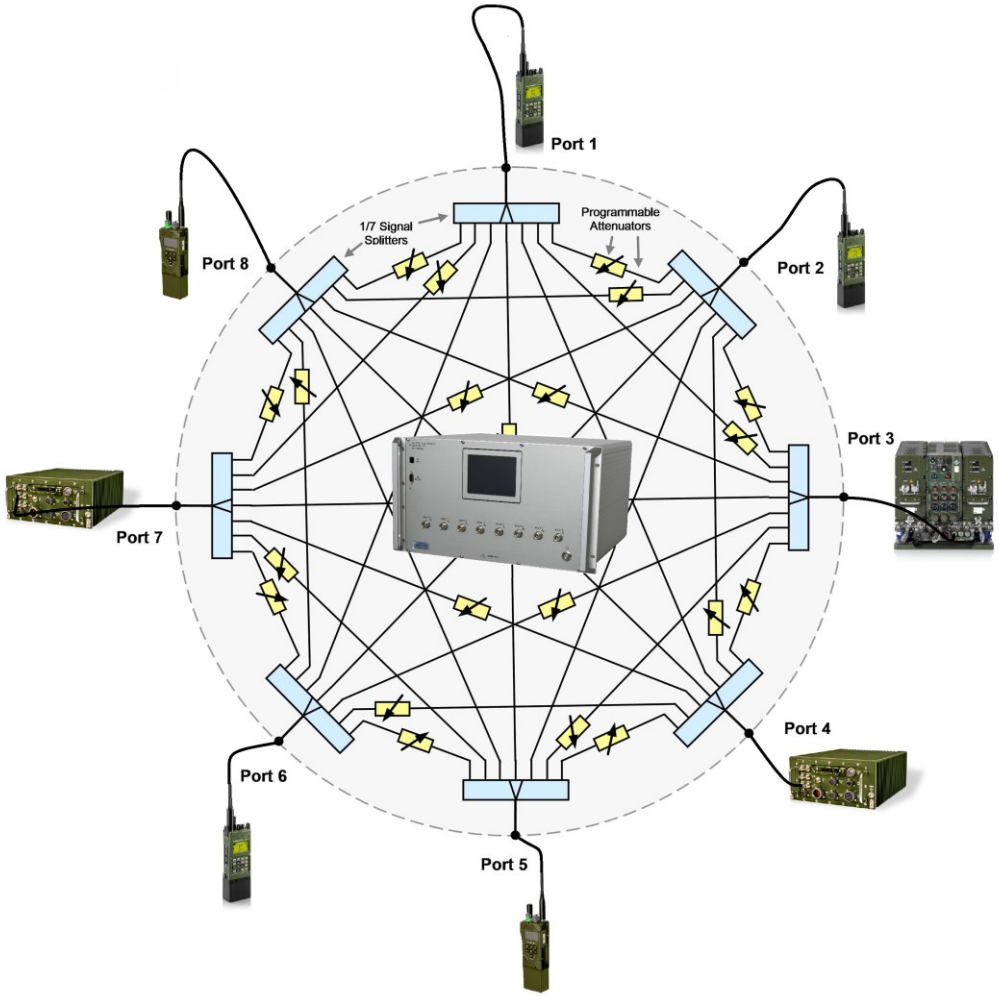

Development or Integration of Tactical Communication Systems

Method with the MTS AIAD series:

With our AIAD systems, any transmission scenarios, states, or interference scenarios typical of field trials can be realistically simulated in advance. Unlike traditional Over-the-Air testing, our approach involves fully wired radio transmission.
The transmission characteristics of a radio connection are precisely replicated through a network of RF components. For the tested systems, the environment behaves like a real open-field scenario in terms of radio technology – thus creating true reality in the test laboratory.

"Realistic radio environments – controlled, reproducible, location-independent."

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Development or Integration of Tactical Communication Systems

Our solution offers a realistic and efficient testing environment – entirely in the laboratory:

- **Simulation of any applications, scenarios, and disturbances** – practical, flexible, and controlled
- **Scalable system architecture** – variable number of participants (ports) and freely configurable network topologies
- **Reduction of field trials to a minimum** – significant savings in time, effort, and resources
- **Direct connection of high-performance systems** – also suitable for devices with > 10 W transmission power (AIAD+)
- **Vendor-independent and reproducible results** – guaranteed objective comparability
- **Extremely wide frequency range** – enabling simultaneous use of various radio technologies

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Replacement of Obsolete Systems or Certification of New Products

Current approach (Over-the-Air-Testing):

Functionality tests are currently conducted on demonstrators or in highly simplified test environments, which are often customised or cover only a limited range of functions.
Testing under real conditions with existing technology generally does not take place – or can only be performed with significant personnel and material effort.
The challenge is similar to that encountered in development or system integration.

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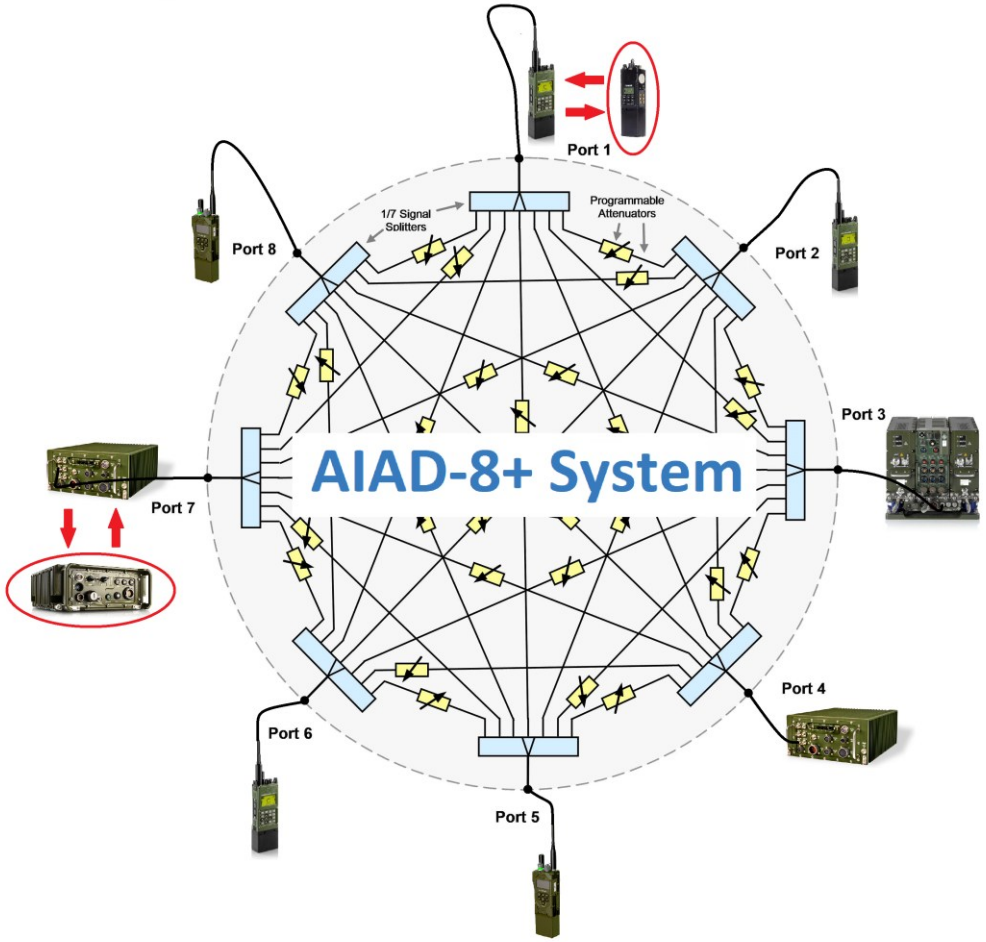

Replacement of Obsolete Systems or Certification of New Products

Solution approach with the MTS AIAD series:

The radio field emulations of the MTS AIAD series enable the realistic simulation of any scenarios, operating conditions, or fault situations in the laboratory.
Newly developed or obsolete systems are directly connected to the network via RF cables.
A quick and straightforward exchange of various brands or device types is easily achievable.
Moreover, device specifications can be measured independently of the manufacturer and with high precision.

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Replacement of Obsolete Systems or Certification of New Products

- Critical scenarios and known problem cases can be specifically and reproducibly recreated in the laboratory.
- The performance of new systems can be thoroughly tested under realistic conditions using real equipment.
- Manufacturer-independent testing ensures objective results.
- Field trials are only required for mechanical stress testing.
- The validation process is significantly shortened.
- The readiness of new systems is greatly accelerated.

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Education and training

Modern teaching methodology for maximum practical relevance:

Fundamental theoretical and practical content is traditionally taught in lectures or through practical models.
However, sustainable learning only occurs through continuous application and repetition.
Extreme situations or rare events are difficult to convey in traditional training formats, as a realistic operational environment is usually absent.
True routines and operational confidence are only developed through practical exercises involving all participating units.

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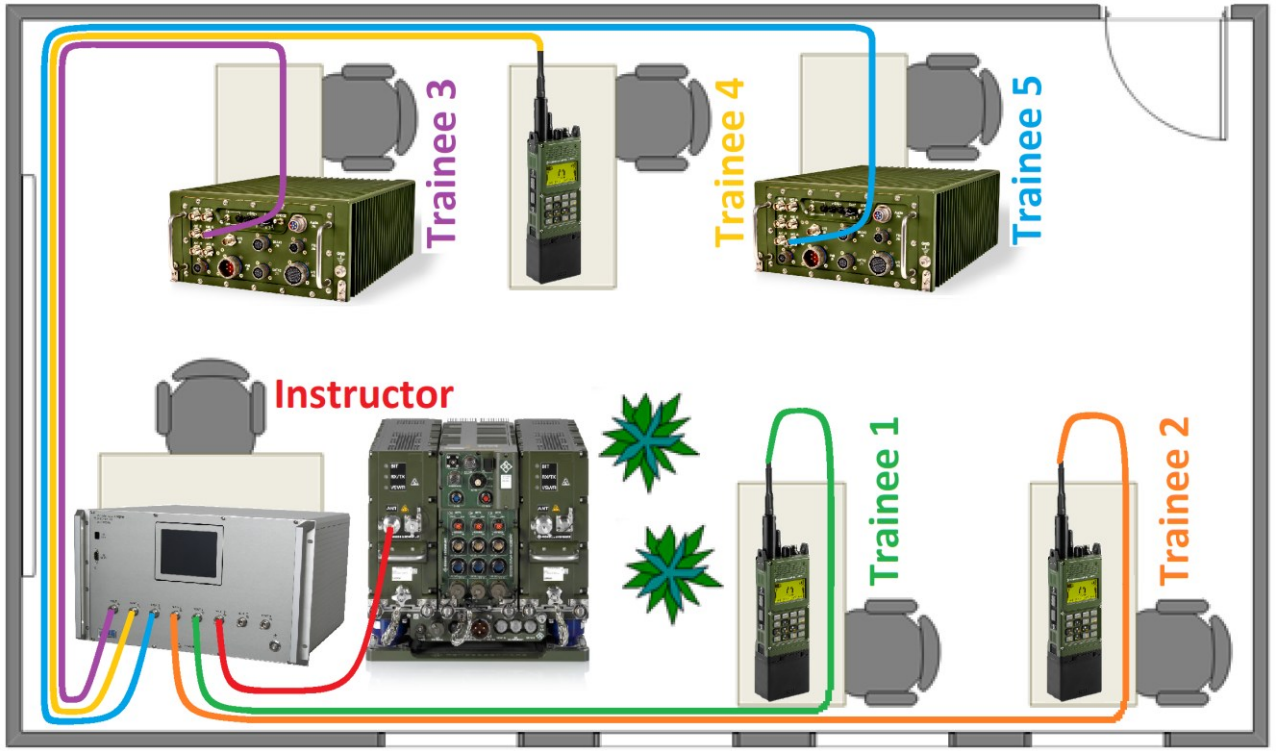

Education and training

Use of the MTS AIAD series in training:

The MTS AIAD Series enables the realistic simulation of any scenarios, operating conditions, or extreme situations in the training room.
The technical structure is identical to that used in operational applications – ensuring the learning experience remains practical and sustainable.
All participants are connected via the AIAD network, while the instructor can dynamically create a variety of configurations and operational scenarios in real-time.
Knowledge can be targeted and assessed, learning checks conducted efficiently, and even complex operational or combat simulations can be realised – all without leaving the training room.

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Education and training – Efficient training with the MTS AIAD series

- Real situations can be quickly and precisely recreated in the training room by the instructor.
- Training objectives are achieved in the shortest time – through scenarios that can be repeated as often as needed.
- Learning success can be flexibly and comprehensively assessed.
- Extensive field trials are almost redundant.
- Intuitive operation simplifies handling for instructors.
- Time- and resource-efficient training operations.
- New scenarios and challenges can be easily integrated.

Reality in the Lab – with the MTS AIAD Series

Our AIAD systems simulate any conceivable radio environment – dynamically, precisely, and under full control.
This allows you to test your systems under realistic conditions – reliably, repeatably, and directly on site.

We bring the radio environment to you.

// Accessory

- // RF components
- // Shielding boxes series MSB
- // Shielded racks series SRK
- // Installation service
- // RF cable assembly
- // Mechanics

Other configuration possible on request!

MTS Systemtechnik

// *Together towards the right solution – Contact us*

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