

The logo for MTS Systemtechnik features the letters 'MTS' in a large, bold, blue sans-serif font. The letter 'M' is stylized with a thick, diagonal stroke on its left side. Below 'MTS', the word 'Systemtechnik' is written in a smaller, bold, black sans-serif font. The logo is positioned on a white background with a decorative pattern of thin, parallel grey lines on the left side.

MTS
Systemtechnik

// Competence Quality Reliability



Your partner company for customised solutions - "Development, Production & Service" all from one source.

- // High-frequency technology
- // EMC technology
- // CNC milling technology



// *The Company*

Development and manufacture of customized products

Telecommunications industry

An important sector is the telecommunication industry for which we manufacture Shielding Boxes, Relay Switch Units, Standard Coupling Units and Air Interface Adapters (Air Interface Emulation). For the control of our devices and systems, we offer software solutions and integrate desired program sequences.

High frequency and measurement technology

Our high frequency components include e.g. programmable attenuators, semiconductor switches, hybrid couplers, power dividers, RF filters, coaxial relays, etc.

For EMC measurement technology we sell relay switching units and other accessories.

CNC milling technology

We produce high-precision milled parts in our modern CNC production centers. From prototypes to series production, especially according to customer specifications. Our mechanical product range also includes standard aluminum enclosures such as profile enclosures, milling cassettes and 19" racks.

// *The Company*

The company history at a glance

Foundation of MTS Mikrotechnik
as a developing and producing
company in the field of
Electronic Warfare

1980

1995

2005

2020

Relocation of the company
into a new company building
in Mertingen

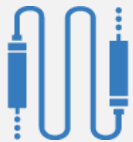
Change of the company name
MTS Mikrotechnik to
MTS Systemtechnik with
new shareholders

25 years of MTS Systemtechnik

// *Main products*



Systems for the distribution of LF, video and RF signals in the fields of tele- and satellite communication as well as radio surveillance.



Development and production of active and passive components for high-frequency technology



Manufacture of mechanical components for the aerospace, high-frequency and optical industries



// **Competences**

- // In-house development, simulation and production of high-frequency components and systems
- // Software and hardware laboratory
- // System integration
- // EMC absorber chamber
- // CAD services
- // CNC machining centre
- // Modern production processes
- // Quality standard DIN EN ISO 9001

// *Our markets*



Our customers are developers and manufacturers of highly sensitive equipment in the market sectors of mobile communications, telecommunications, aerospace, defense technology, medicine, automotive and electronics.

MTS Systemtechnik represents the highest technology, absolute reliability, discretion, transparent processes and certified quality.



2G

3G

4G

5G

MTS radio field
emulations for
mobile communication



Brings
reality
into your
test area

// Radio Field Emulation



Current approach (Over-the-Air-Testing)

Basic development takes place in the company, functional tests and integration take place in the field. Use cases such as range test, cell change, interoperability, dynamic movement, aborts, etc. are simulated under different climatic conditions. Equipment, the test objects themselves and personnel have to be transported to different locations (test labs, training area, different climatic zones, ...). This testing method is called OTA Testing (Over-The-Air) and is currently standard.

// Radio Field Emulation AIAD



Procedure with MTS AIAD series

With the AIAD (Air Interface Adapter), any transmission situations, states or problem cases can be reproduced in the laboratory. This is possible because we do not operate the radio "over-the-air", but exclusively wired. All propagation possibilities and models are reproduced in a network of cables, filters, splitters/combiners and attenuators etc. in the AIAD. This brings reality into the lab or test room. For the test objects, it really looks as if they are in a real radio environment.

// **Radio Field Emulation AIAD**

Advantages

- // Any application, situation and/or problem case can be simulated in the laboratory.
- // Scalable number of participants (ports) and configuration possible.
- // Field trials are reduced to a minimum – this reduces the test times.
- // Even wireless devices with extreme transmitting powers of 10 W and more can be connected directly to the AIAD solution.
- // It is easily possible to attenuate signal levels below to the UE's sensitivity threshold.
- // Independent reproducible results.
- // Extremely wide frequency range of 50 - 8000 MHz (other frequencies on request).
- // Wireless devices without RF connection can simply be placed in shielding boxes. These are available customized.

// **Radio Field Emulation AIAD**

What AIAD devices are used for

- // For the functional test of mobile radio systems in product development.
- // For certification of mobile radio components by network operators.
- // To reproduce critical cases in development and integration.

Possible radio standards include

- // Mobile radio (2G, 3G, 4G, 5G), IoT, C2X, Wi-Fi, TETRA or even
- // Military radio technology in the range of 30 - 1000 MHz

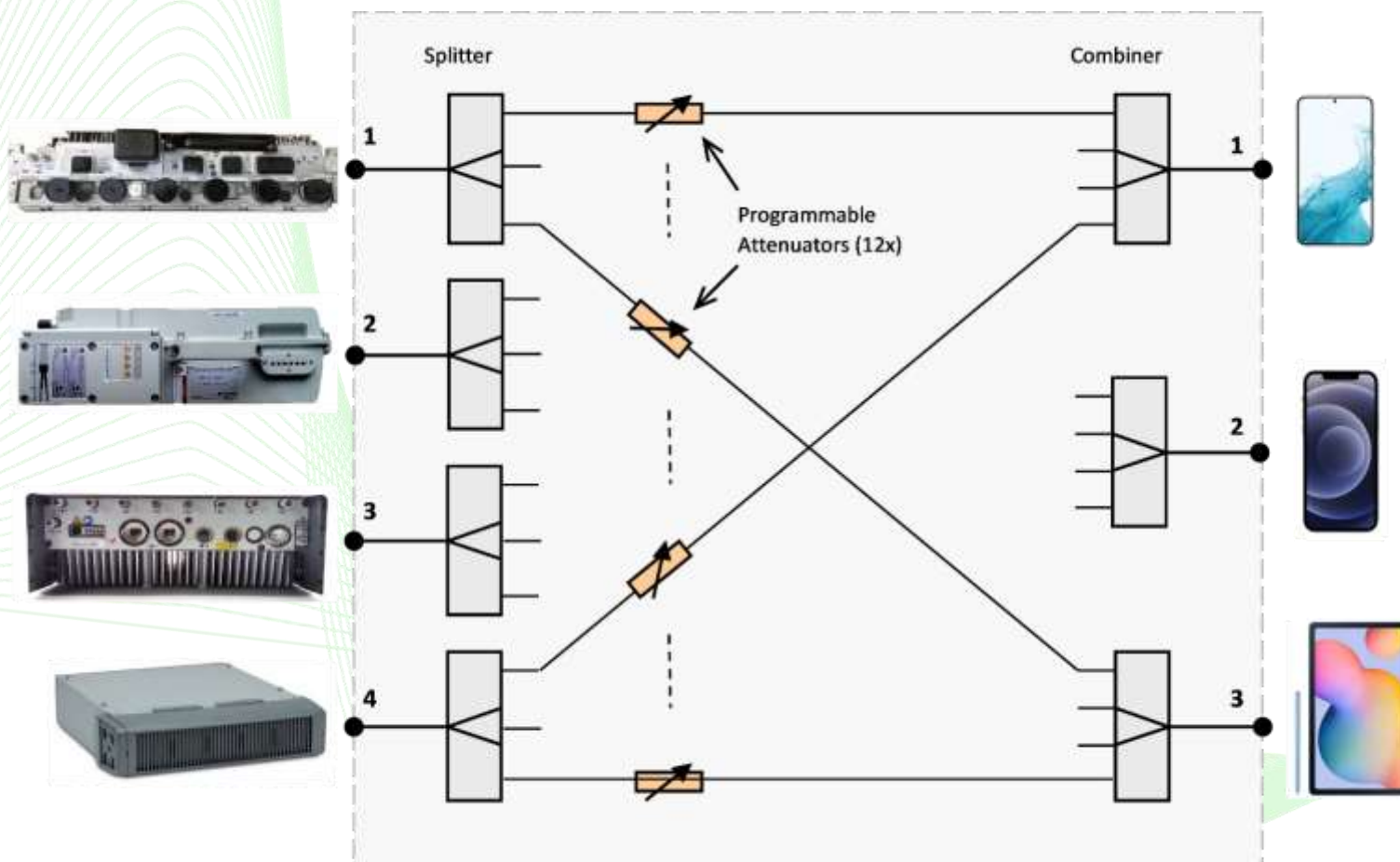
// **Radio Field Emulation AIAD**

Specifics of AIAD devices

- // A programmable attenuator is available in each path of the radio field emulation.
- // Attenuation setting from 0 to 95 dB in 1 dB steps is possible as standard.
- // Extended range from 0 to 122 dB possible for e.g. IoT applications.
- // Switching of the attenuation levels takes place continuously and without interruption.
- // The selected attenuation is the same in the uplink and downlink directions.
- // Alternatively, partially meshed or unbalanced networks are also possible (e.g. only 2 neighboring cells can be addressed at a time or only 2 ports are connected to all others).

// Radio Field Emulation AIAD

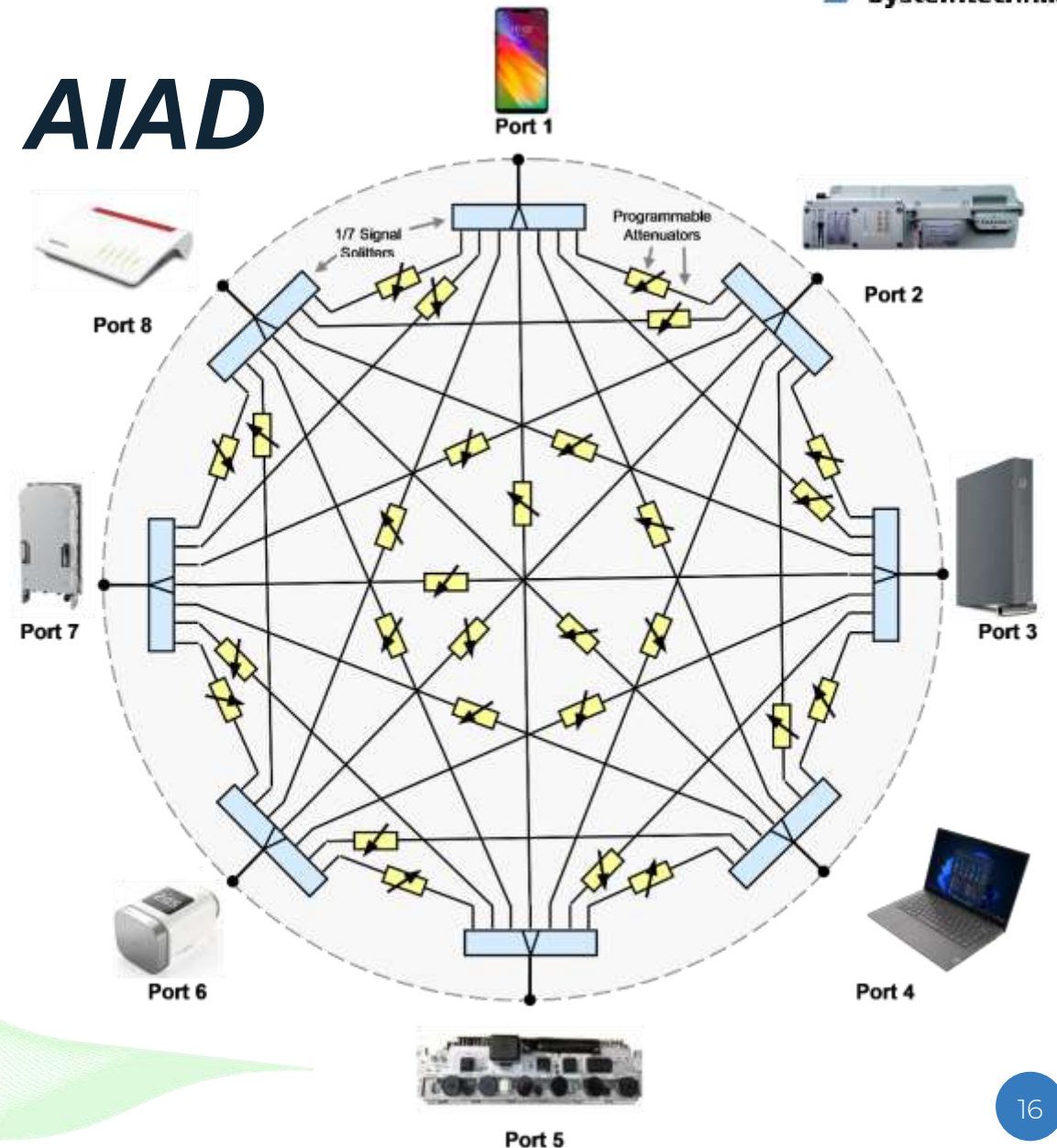
Example AIAD configured with 4 inputs and 3 outputs



// Radio Field Emulation AIAD

Example AIAD+ configured with 8 ports

- // Ring system according to block diagram.
- // The inputs are fully meshed in all directions.
- // Communication also possible between UEs.
- // Number of connections according to customer requirements.



// *Radio Field Emulation AIAD*

Summary

With AIAD type system solutions, any state of a radio environment can be generated dynamically. For the systems involved, it really looks as if they are actively moving through a given terrain formation or area. Likewise, the neighboring systems or interferers can be integrated.



We bring reality to your test area -
individual and customized

// 19" Rack Solutions



MTS Rack Solutions

The sensitivity of mobile devices increases the last year dramatically. 4G or 5G devices could detect till -130 dBm, NB IOT applications even more till -145 dBm. To test these technologies under defined conditions very high RF shielding level are necessary. MTS rack systems series SRK is a solution which offer around 120 dB throughout. The key features are a box in shell system, filtered interfaces adjusted RF cabling inclusive and the complete installation in and onside.

// 19" Rack Solutions



MTS Rack Solutions

- // 19" Rack system, Height up to 47 U
- // Width 600 or 800 mm, depth 600 or 800 mm
- // Integrated fans in the roof
- // Connection panel in the roof for HF connections (N, SMA or 4.3-10)
- // Connection panel on the rear for e.g. LAN, USB, fibre optic, 230V, DC etc.

// Accessory

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



Other configuration possible on request!

5G

// Autonomous solution
for radio measurements,
monitoring, Jammer,
Drone Defense and
Wiretaps



// *Measuring vehicle*

The autonomous solution for mobile, measuring, monitoring and communication vehicles

S
T
H
G
L
H
G
H

Universal equipment carrier

5G Testing (First vehicle for 5G test!)

All types of radio measurements

Radio optimization

Benchmarking

Troubleshooting / Debugging

IMSI Catcher

Optional radio direction finder

authorities and organizations with security tasks applications

Self-sufficient power supply, can be used almost anywhere

// **Measuring vehicle**

Further application possibilities:

- // Jammer Technology
- // Drone defense
- // Monitoring
- // Wiretaps



// Main customers





// *Contact us*

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