



Modular Switch Unit

An overview of the systems from
MTS Systemtechnik GmbH

Individual EMC technology



Concepted and build in Germany.



Your partner for customised solutions -
„Development, Production & Service“
all from a single source.

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

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// About MTS Systemtechnik

Tailor-made solutions for high frequency technology, EMC, electronics and mechanics

Our customers include manufacturers of highly sensitive equipment in the market segments of mobile communications, telecommunications, aerospace, defense, medical, automotive and electronics. Our devices, systems and components are used worldwide by leading, internationally active companies.

For over 25 years, MTS Systemtechnik stands for state-of-the-art technology, absolute reliability, discretion, transparent processes and certified quality according to DIN EN ISO 9001.

With about 50 employees we develop and manufacture individual and high-quality devices, systems and components „Made in Germany“, as well as customer-specific products.

Our electronic products include coax relays, attenuators, power splitters, systems for the distribution of LF-, video-, RF-signals, RF matrices, assembled coax cables, etc. complex switching and distribution tasks in the high frequency range have made us a leading manufacturer of relay switching units, air interface emulators, power splitter units and matrices.

For the mobile radio and telecommunications industry we supply customised shielding boxes, air interface emulators for various test scenarios and smart antenna simulators.

With our modern CNC production centre we manufacture customer-specific precision milled parts for the aerospace, optical and high-frequency industries.

The distribution of coaxial connectors from IMS Connectors and the assembly of coaxial cables complete our product range.



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



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



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

// Description

MTS Modular Switch Unit Series KRE-4000

Application

- // Test and measurement automatisaton
- // Switch unit for RF-generators, amplifiers and antennas at EMC test laboratories
- // RF matrix
- // Filter, diplexer, attenuator noise generator etc. selection unit
- // Any automated routing of measurement equipment at test benches
- // Step attenuator unit
- // Customised solutions available

Description

The Switch Unit, series KRE-4000 is for the switching of almost every kind of RF signals. Due to the modular design, the electrical characteristics of the switches can be adapted to versatile demands. In combination with attenuators, splitters and other modules the usability can be extended. The KRE-4000 can be controlled by different interfaces. Extensive measurement procedures and scripts can be generated by the user and stored on the device as an option.

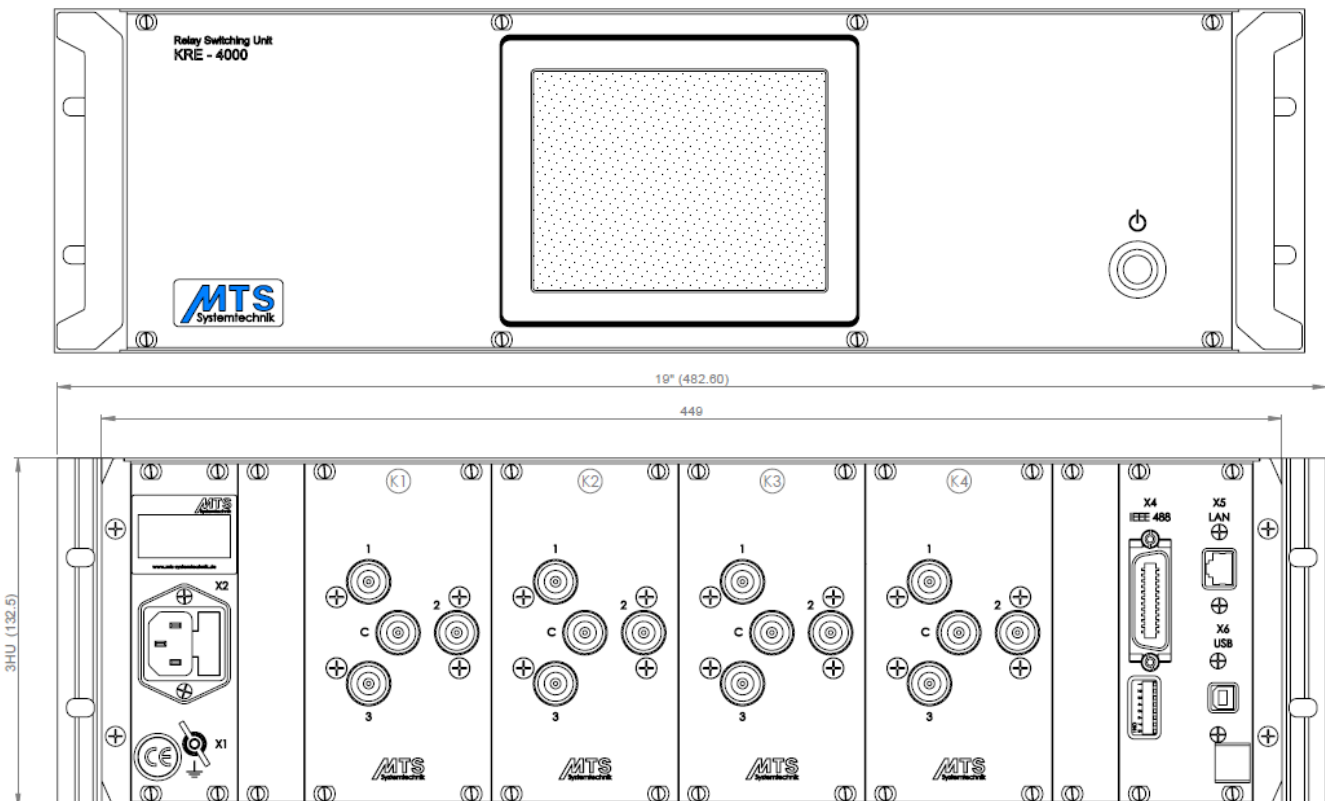
Characteristics

- // Switch application DC to 50GHz
- // Numerous RF components can be placed on the front or rear panel
- // Table top units (84TE/63TE/42TE)
- // 19" rack mount cases
- // Opportunity for upgrades
- // Customised solutions

Available Control Options

- // LAN-Interface
- // USB-interface
- // IEC-Bus (IEEE-488)
- // Fibre Optic Interface
- // Interlock
- // Touch panel display
- // Windows control program

Dimensions Standard Unit



// Applications

New applications for Relay Switching Units

Relay Switching Units as series KRE-4000 from MTS Systemtechnik can be equipped with a wide range of different RF relays according to customer specifications. In addition, it is also possible to integrate additional components for special applications.

For example, a 4-range switchable LNA amplifier bank was implemented for antenna measurements from 100 kHz to 18 GHz. The operation can be carried out with a remote touch panel display which is connected via fiber optic. In addition, three high-pass filters are included to protect the LNA amplifier inputs.

The KRE-4000 can also be used for switching of RF power amplifiers. By installing power relays with 7/16 connections, for example, it is also possible to transmit up to 2 kW at 1 GHz and up to 800 W at 6 GHz. In addition to the functions SPDT and DPDT, internal connection of several relays enables also SP3T, SP4T, etc. functions to be achieved at high power levels.

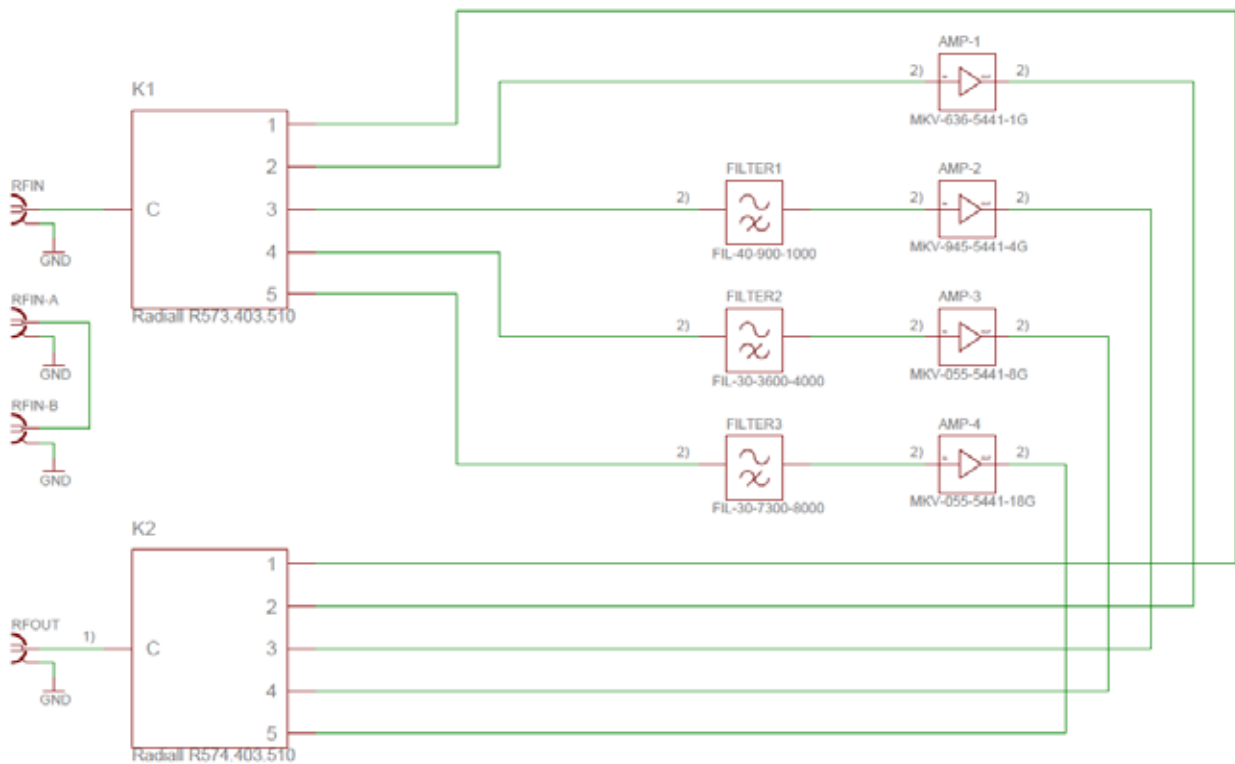
Example Amplifier Switching Unit KVE-1/5/1-TFRO

For the measurement of transient emissions at EMC test laboratories, a number of pre-amplifiers are often required to be used inside of the anechoic chamber for covering a vast frequency range with good precision. The cabling of these pre-amplifiers in the daily business is very timeconsuming and failure prone. With the Control Unit CU-03-TSCI in combination with the Amplifier Switching Unit KVE-1/5/1-TFRO it is possible to switch four built-in pre-amplifiers from 100 kHz up to 18 GHz in an automated test environment to save time and reduce sources of failures.

KVE-1/5/1-TFRO



Block diagram KVE-1/5/1-TFRO



// Applications

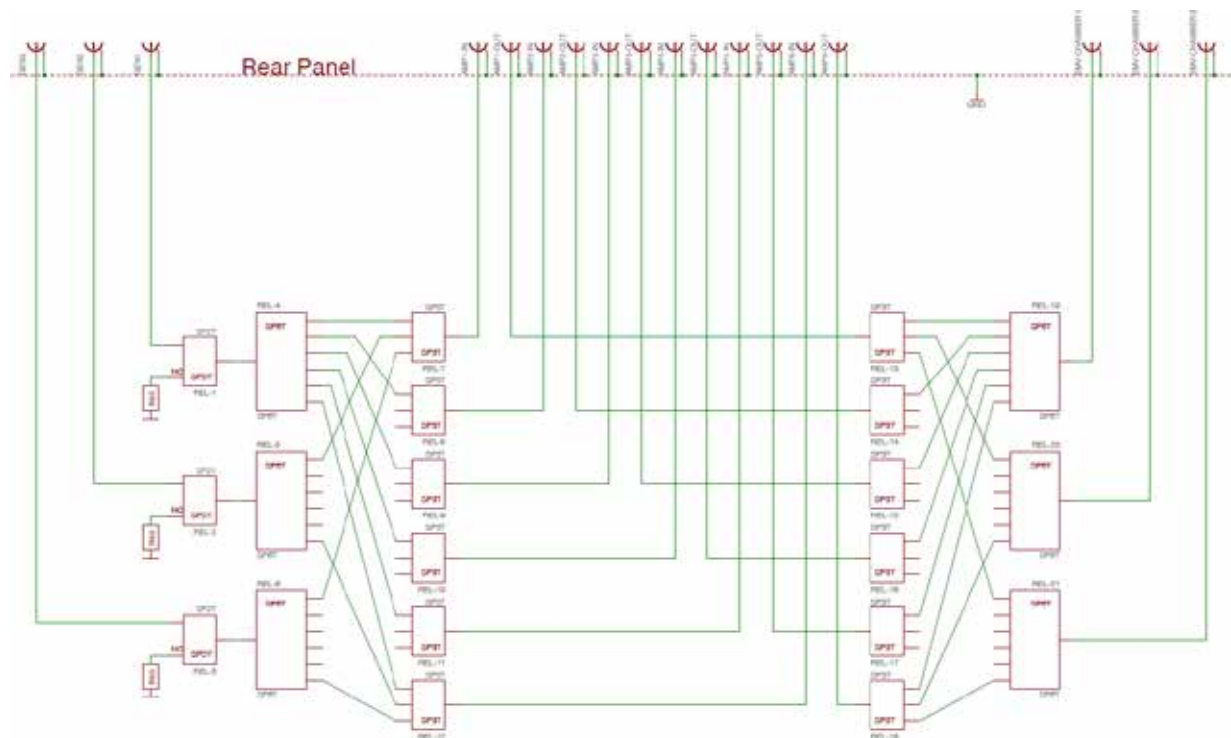
MTS RF Matrix System (MX-Series)

Application

The RF-matrix can be used for several applications, for example:

- // Switching Unit for RF-generators, amplifiers and antennas at EMC test laboratories
- // Filter, diplexer attenuator etc. selection unit
- // Any automated routing of measurement equipment at test benches

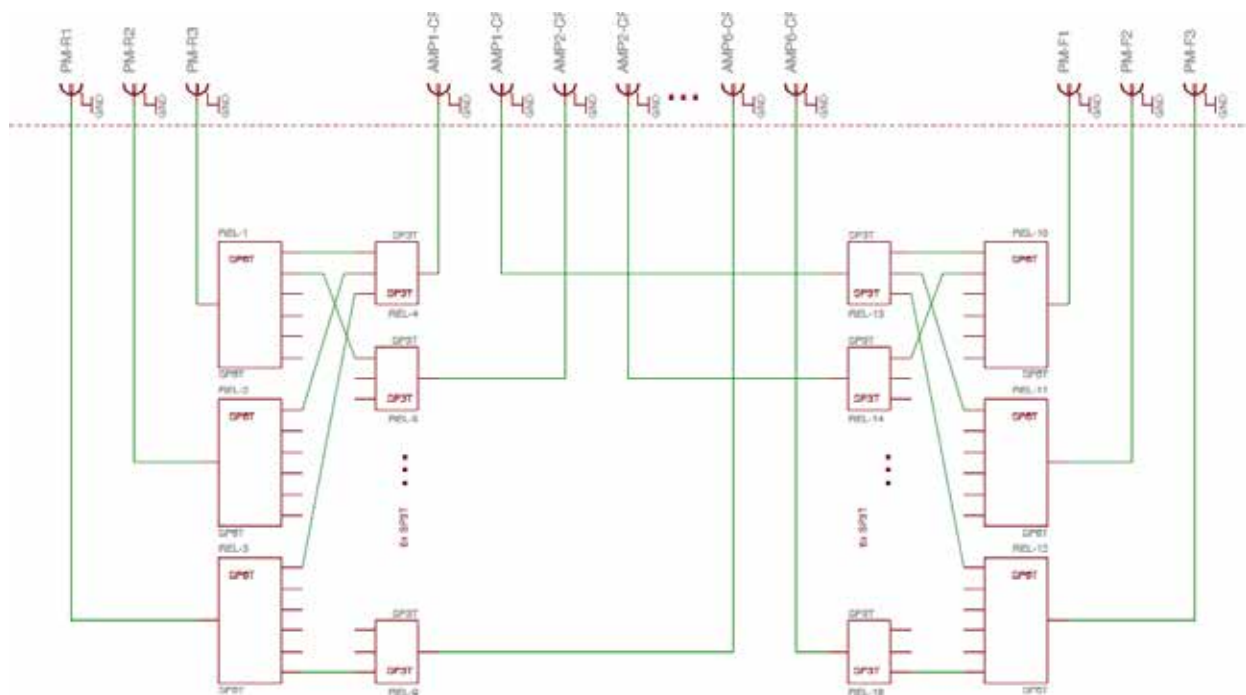
MX-3/6/3-Master block diagram



Description

The RF-matrix is for the switching of almost every kind of signals. Due to the modular design, the electrical characteristics of the switches can be adapted to versatile demands. RF-matrices are available with full fan-out, full fan-in and blocking function. The design is with coaxial relays or with solid state switches possible. In combination with attenuators, splitters and other modules the usability can be extended.

MX-2x6/3-Slave block diagram

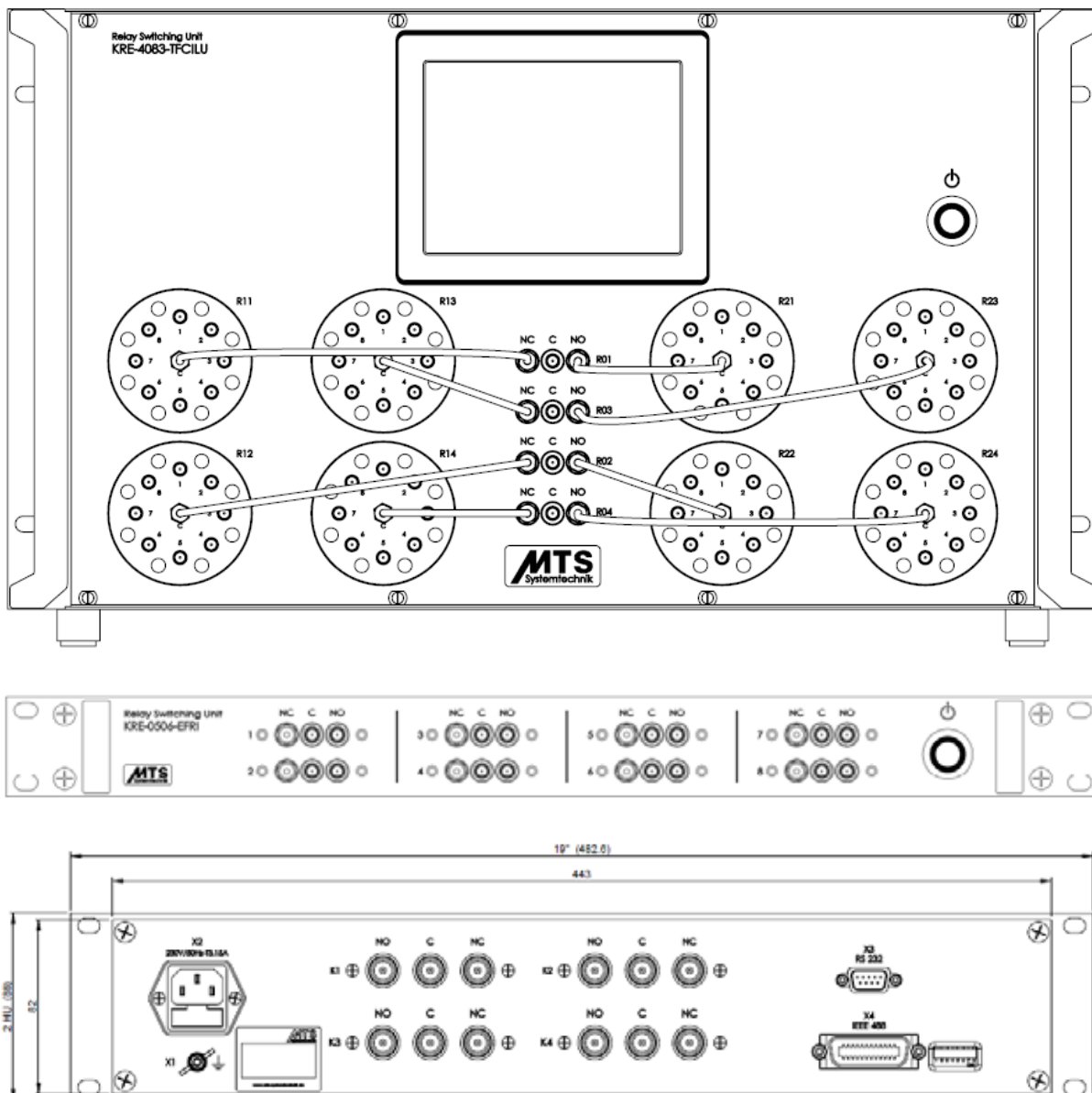


MTS Special Models of Relay Switching Units

The MTS Systemtechnik switching units can also be customised with other configurations and designs.

- // Different sizes of housing
- // Different types of relays (DC - 50 GHz)
- // Different types of connectors (SMA, N, TNC, SC, BNC, 7-16, 4.3-10, etc.)
- // Relays with high power handling
- // Different types of wiring

Dimensions examples:



MTS Relay Switching Module Series KRM

Cassette modules of the type „KRM“ can be used to switch various signals and represent a low cost alternative to relay switching units series KRE. The built-in relay can be controlled via IEEE-488- and/or LAN-interface. The IEEE-488-device address can be adjusted via a DIP-switch. LED is at the front panel show the status of the cassette and the relays. Different types of relays are available.

Examples:



Extract from our product range

Components

- // Coaxial relays
- // Multi channel switches
- // Videorelays
- // Feedthrough terminations
- // DC-blocks
- // Fixed attenuators
- // Terminations
- // Semiconductor -switches & -attenuators
- // Delay line
- // Coaxial short circuits, Bias tees
- // Power attenuators and power terminations
- // Signal dividers, power splitter and combiners
- // Directional coupler, Hybrid Coupler
- // Programmable step attenuators
- // Coaxial cable assemblies - Customised
- // Impedance matching modules
- // PC controlled components
- // Amplifiers

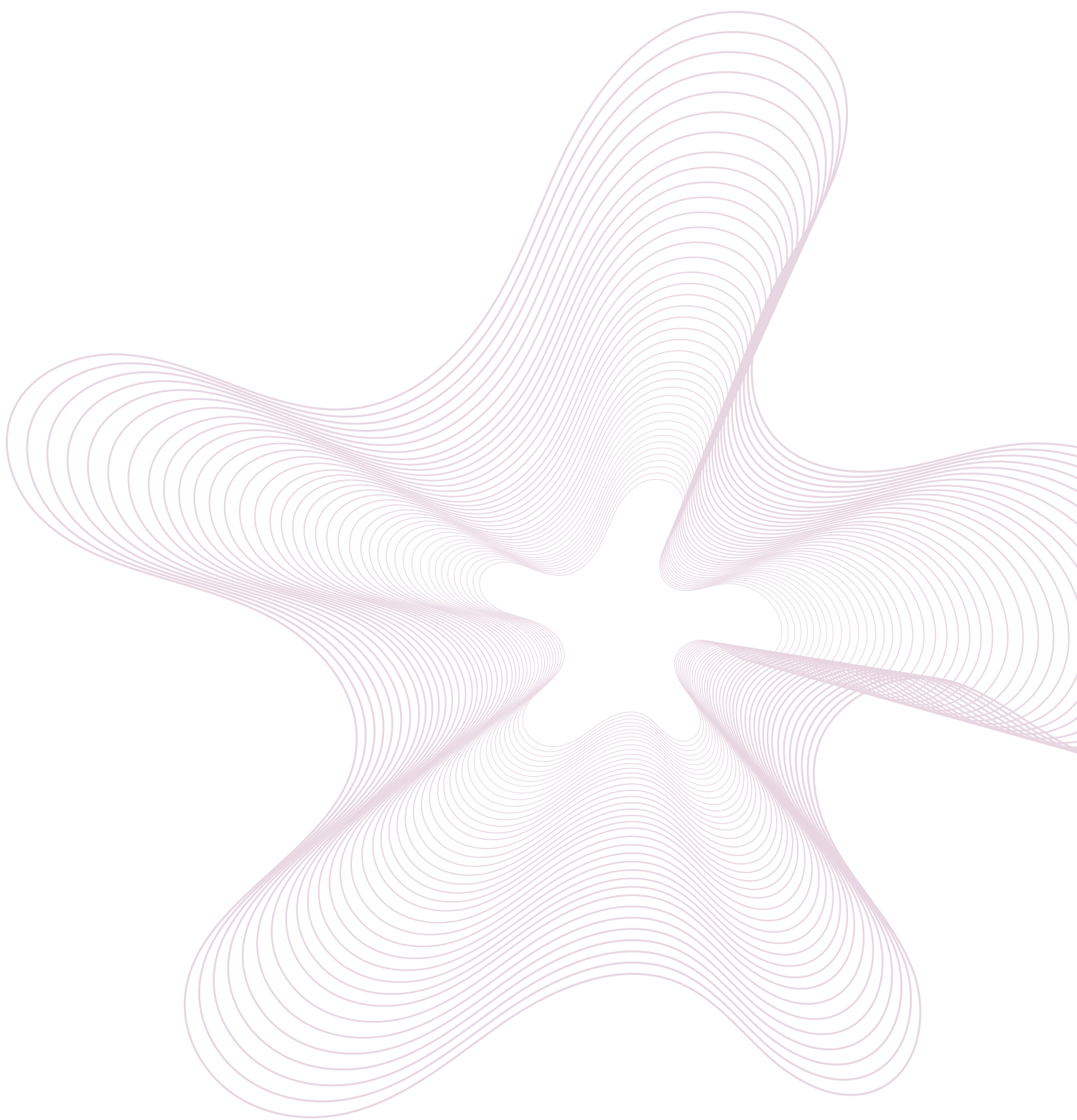
Mechanical Modules

- // RF shielded enclosures
- // Structural enclosures
- // Customer specified enclosures
- // Milled components and cassettes
- // Cassette enclosures
- // 19“-racks

Systems and Units

- // Antenna- / Signal distribution units
- // Remote controlled switching units
- // Filter units
- // Ventilation units
- // Matrices
- // Coupling units
- // Air Field Emulation serie AIAD
- // Shielding Boxes serie MSB

and much more.





Gewerbepark Ost 8
86690 Mertingen

Fon: +49(0)9078.91294-0

Fax: +49(0)9078.91294-70

info@mts-systemtechnik.de

www.mts-systemtechnik.de