# GETTERS
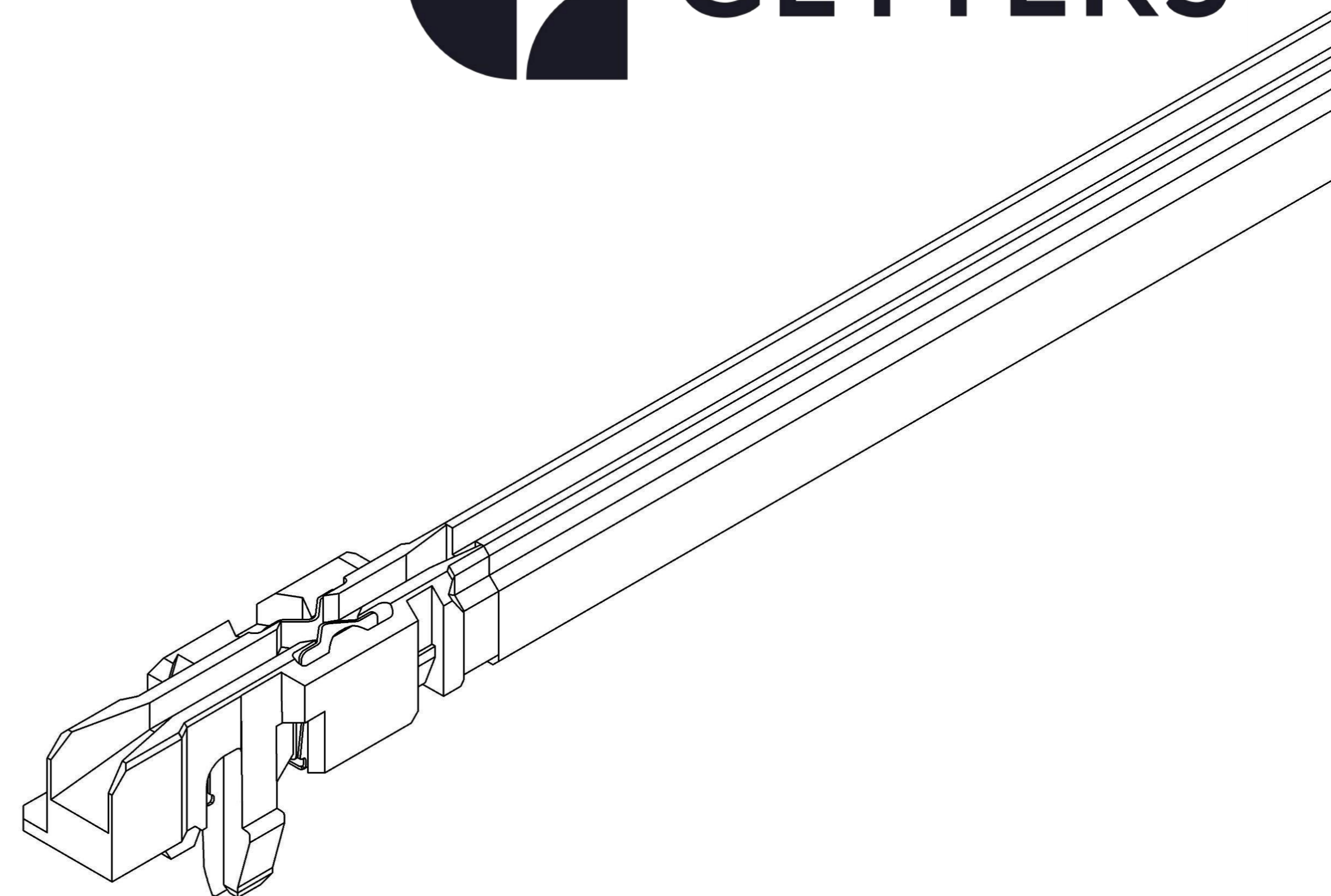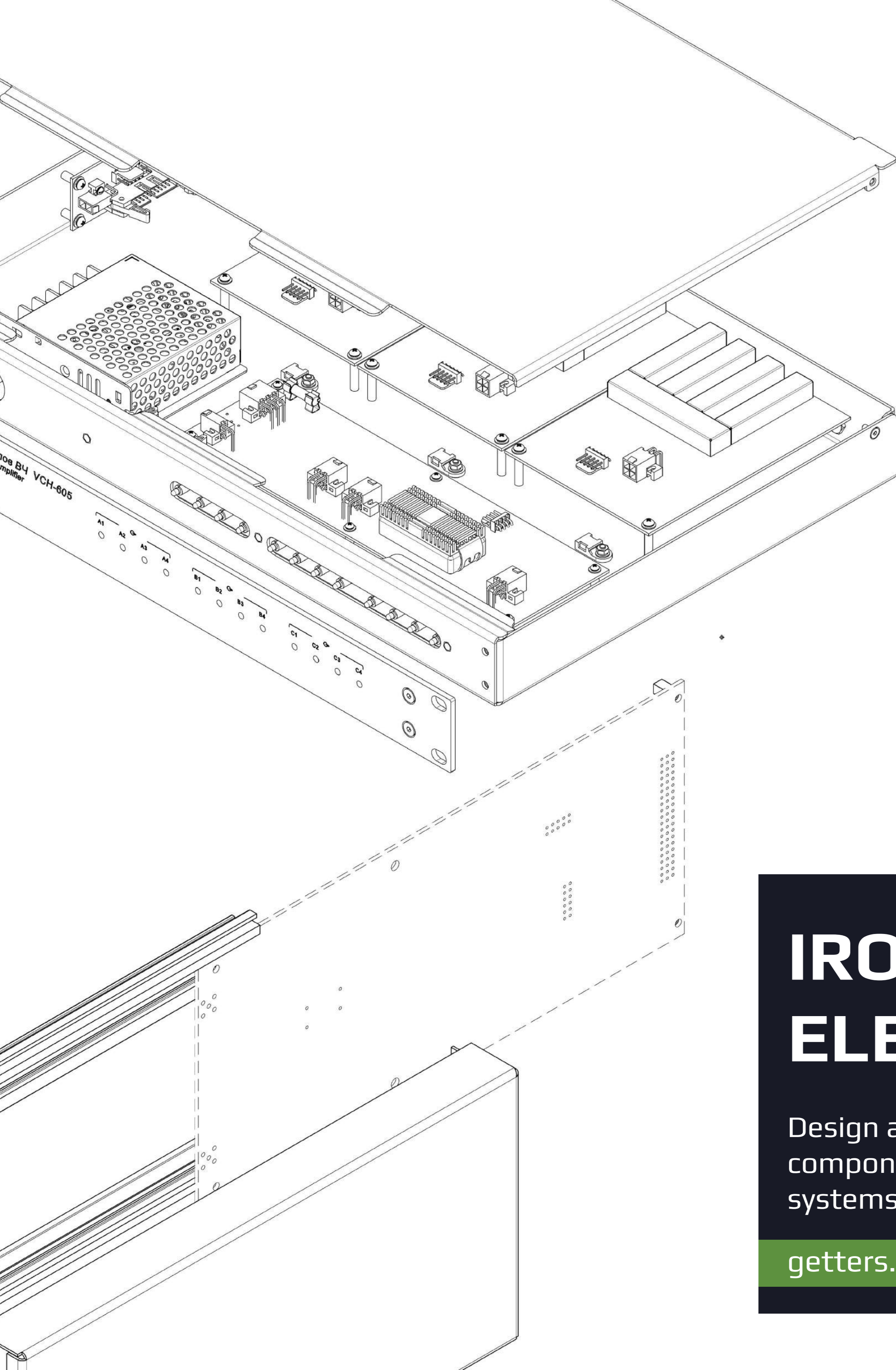
# IRONCLAD SOLUTIONS FOR ELECTRONICS PROTECTION

Design and manufacturing of Subracks, Desktop Cases, RF Shields and components to safeguard your critical communications and electronic systems for a wide range of applications.

getters.by

# GETTERS COMPANY

GETTERS

## 2017

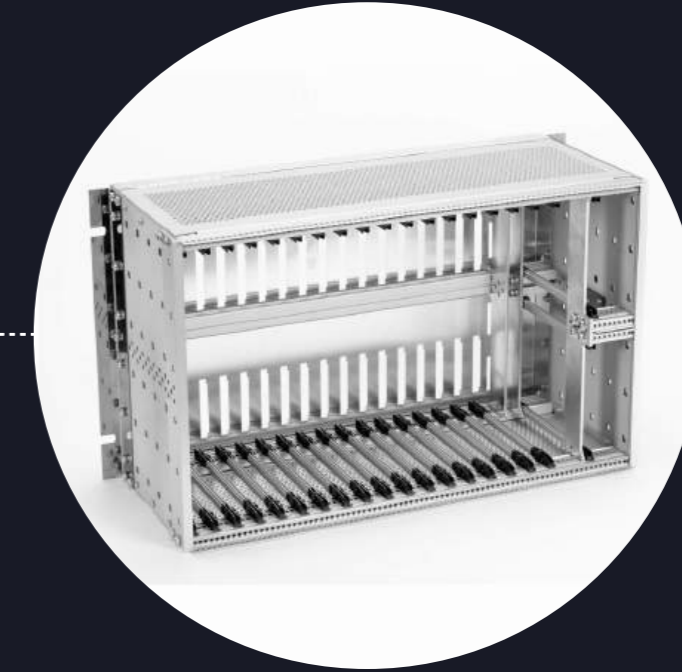Brand creation. First production site in Minsk.

## 2018

Unique equipment for the production of RF Screens. The first seven-type product line.

## 2019

The first domestic block frame of metric construction conforming to the standard GOST R IEC 60917-2-1-2011.

## 2020

First block frame of 19-inch construction, complying with GOST R IEC 60297-3-101-2006 standard.

## 2021

A mould has been developed for the production of a 19-inch desktop enclosure - an analogue of the Comptec range.
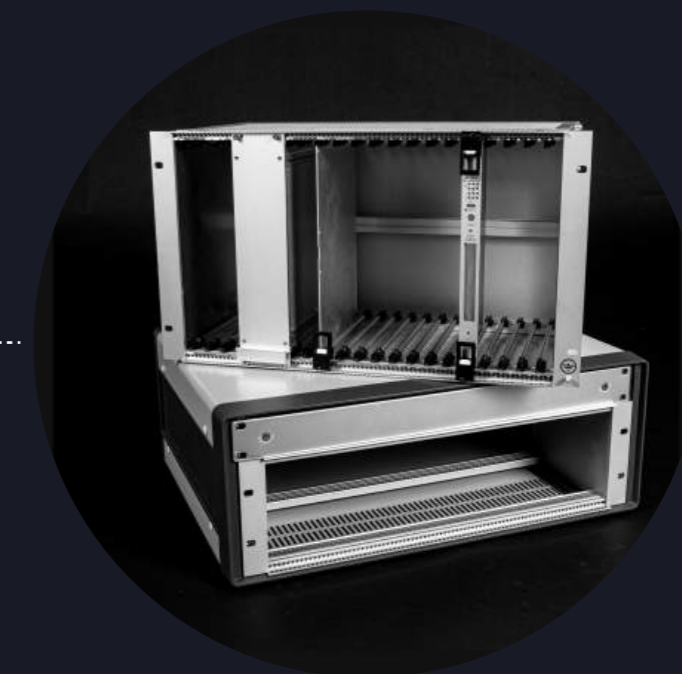
## 2022

A desktop enclosure based on block frames - an analogue of RatiopacPRO - was launched into serial production.
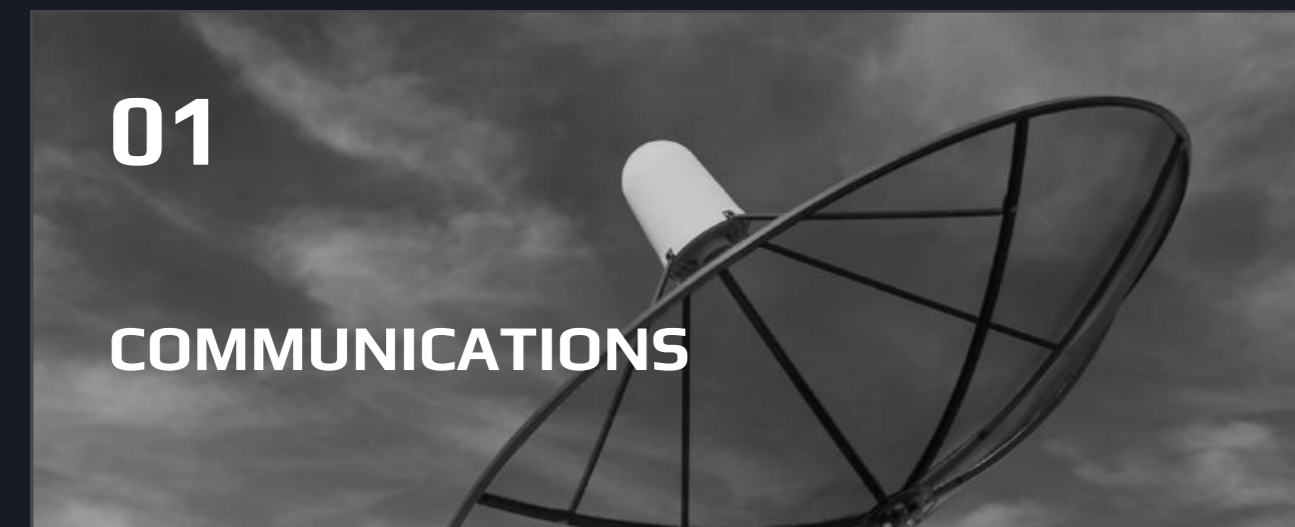
## 2023

A new range of front panels for 19' frames with EMC shielding capability.

## 2024

Expansion of the product catalogue, participation in international exhibitions, 100 thousandth product, delivered in the CIS market.

# BROAD SELECTION OF BRANCH SOLUTIONS

**GETTERS**

**01 COMMUNICATIONS**

We manufacture product test samples and series for national telecommunications and server equipment producers in support of export substitution in the industry.

**05 MEDICINE**

We maintain close cooperative ties with manufacturers of medical instruments for diagnostic equipment, intensive care units as well as life support appliances offering innovative sub rack/block chassis solutions.

**02 RAILWAYS AND METRO**

We produce frames, chassis and components for movement control and train security systems. In cooperation with partners, we develop electronic solutions to be implemented at the Russian Railways and Moscow Metro facilities.

**06 AUTOMOBILE TRANSPORTATION, LOGISTICS**

We offer 19" block chassis solutions for electronic equipment adapted to the automobile industry demands where reliable, long-lasting and failure-proof instrumentation is required.

**03 AEROSPACE**

Company has successfully implemented a number of projects in cooperation with leading Russian research institutes in the field of space engineering . We offer EMI- and seismic-resistant rigid block-chassis capable of absorbing considerable blast impacts.

**07 CONSTRUCTION INDUSTRY**

Our partners are manufacturers of measuring devices. Together we develop solutions for electronics protection in wireless data transmission networks with low energy consumption.

**04 MANUFACTURING**

In cooperation with partners, we develop and manufacture block chassis resistant against weather and mechanical impacts with high endurance level within the complex industrial production environment.

# 19" SUBRACK (EUROPACPRO EQUIVALENT)

**GETTERS**



19''Block chassis by REZOLUT is identical in design and manufacture to the EuropacPRO leading branch-item. The chassis is based on a modular platform, has a broad size range and easily meets individual customer requirements including various options for internal equipment, customized configuration of installed components as well as additional cut-outs and openings.

## BRIEF DESCRIPTION

- Individual configuration of separate components, assembly (per customer request if more than one item is ordered)
- Broad variant choice in terms of height, width and depth
- Rails for various applications
- Shielding components for EMI-protection improvement
- Possibility of internal equipment installation by virtue of assembly panel
- Internal equipment variant choice
- Possibility of additional changes, e.g. additional cut-outs and openings

## CHARACTERISTICS

- Product Type: Subrack/Chassis
- Product Line: EuropacPRO equivalent
- Rack Height: 2 U, 3 U, 4 U, 5 U, 6 U
- Rack Width: 84 HP (possible 20 HP, 28 HP, 40 HP, 42 HP, 63 HP)
- Depth: 175 mm, 235 mm, 295 mm, 355 mm, 415 mm, 475 mm
- Material: Aluminum
- Static Load: 15 kg
- Mounting: Rack

## ADDITIONAL INFORMATION

- Subracks are delivered in assembled form
- Additional option: plus back panel
- Disassembled delivery is agreed upon additionally

# DELIVERY SET

**GETTERS**
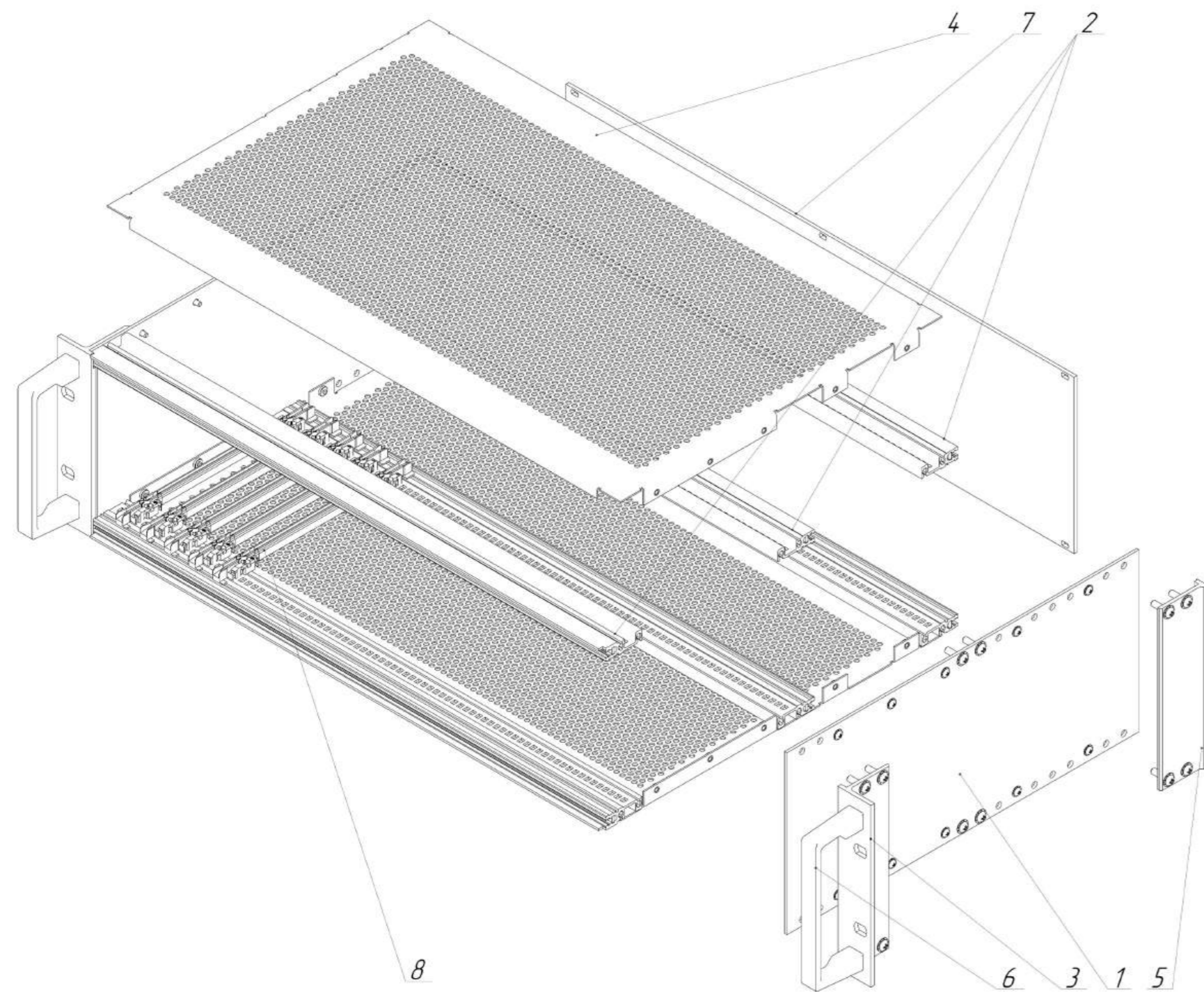
## ACCESSORIES/COMPONENTS

| Position | Designation | Description |
|---|---|---|
| Pos. 1 | Lateral panel | Determines subrack height and depth. Material is 2 mm- aluminum. Standard option without perforation. Multi-purpose perforation possible for accessory mounting (ordered additionally) |
| Pos. 2 | Horizontal rail | Determines subrack width. Material is aluminum profile with openings for railing and insertion grooves |
| Pos. 3 | Bracket | 19" bracket for a textile EMS-gasket |
| Pos. 4 | Protection cover | Perforated, mechanical protection and EMS-shielding |
| Pos. 5 | Back-corner profile | Back-corner profile, EMS-gasket (textile) |
| Pos. 7 | Back/front panel | Back/front panel |
| Pos. 8 | Rails | Connect subracks and printed circuit boards. Intended for use with circuit boards of different forms and sizes, plastic and metallic, with possible additional encoding accessories and ESD-clamps for electrostatic grounding |
| Pos. 6 | Handles | Are mounted onto 19" brackets |
| | EMI-shielding (no picture) | Wide component range for subrack shielding depending on application |
| | 5.08 threaded bar (no picture) | For front panel mounting onto horizontal rails, tinned steel |
| | Internal components (no picture) | Multi-purpose internal components for various equipment installation variants |

# 19" CHASSIS

**GETTERS**

One of the block chassis options is a 19"-chassis especially designed for horizontal board insertion and non-standard component installation like transformers and other heavy-load accessories that are usually mounted on a support panel. REZOLUT offers sheet steel chassis (aluzink coated) with 3 mm-aluminum profile front panel, customer-configured, as well as aluminum chassis.

## CHARACTERISTICS

- Product type: Subrack/Chassis
- Product line: Chassis
- Rack Height: 1 U, 2 U
- Depth: 160 mm, 220 mm, 280 mm, 340 mm, 400 mm, 460 mm
- Mounting: Rack

## SHEET STEEL CHASSIS ALUZINK COATED WITH 3 MM-ALUMINUM PROFILE FRONT PANEL

- Chassis material: sheet steel
- For horizontal standard 19"-board and non-standard component installation
- Ideal solution for compact-size electronics
- Individual configuration in compliance with customer specification

## ALUMINUM CHASSIS

- Chassis material: aluminum
- Removable front and back panels for assembly and fine tuning convenience
- IP 20 in accordance with IEC 60529
- Possibility of additional changes, e.g. additional cut-outs and openings, various finish variants and sizes
- Possibility of mounting on telescopic rails

## ADDITIONAL INFORMATION

- Depth modification possibility up to 600 mm
- Fine tuning possibility in accordance with customer documentation (painting according to RAL-color set, engraving, additional cut-outs for equipment installation)

# COMPONENTS



### RAIL FRONT, TYPE T-DK

- Extruded aluminum profile, anodized surface, electricity-conducting
- Product Type: Horizontal Rail
- Product Line: equivalent EuropacPRO; equivalent RatiopacPRO
- Type: T-DK, reinforced
- Rack Width: 20 HP, 28 HP, 32 HP, 36 HP, 40 HP, 42 HP, 63 HP, 84 HP
- Length: from 30 mm up to 1000 mm
- Package Quantity: 10



### RAIL FRONT, TYPE T-KK

- Extruded aluminum profile, anodized surface, electricity-conducting
- Product Type: Horizontal Rail
- Product Line: equivalent EuropacPRO; equivalent RatiopacPRO
- Type: T-KK, reinforced
- Rack Width: 20 HP, 28 HP, 32 HP, 36 HP, 40 HP, 42 HP, 63 HP, 84 HP
- Length: from 30 mm up to 1000 mm
- Package Quantity: 10



### RAIL REAR, TYPE T-PM

- Extruded aluminum profile, anodized surface, electricity-conducting
- Product Type: Horizontal Rail
- Product Line: equivalent EuropacPRO; equivalent RatiopacPRO
- Type: T-PM, reinforced
- Rack Width: 20 HP, 28 HP, 32 HP, 36 HP, 40 HP, 42 HP, 63 HP, 84 HP
- Length: from 30 mm up to 1000 mm
- Horizontal rail, Type T-PM, provides direct assembly of connecting board
- Package Quantity: 10



### RAIL MIDDLE REAR, TYPE PM

- Extruded aluminum profile, anodized surface, electricity-conducting
- Product Type: Horizontal Rail
- Product Line: equivalent EuropacPRO; equivalent RatiopacPRO
- Type: PM, reinforced
- Rack Width: 20 HP, 28 HP, 32 HP, 36 HP, 40 HP, 42 HP, 63 HP, 84 HP
- Length: from 30 mm up to 1000 mm
- Horizontal rail, Type PM, provides direct assembly of connecting board
- Package Quantity: 10



### PCB-SUPPORT BRACKETS

- Provide for printed board connection with front panel
- Material: zink, molded under pressure
- Package Quantity: 50
- Thread Size: M2.5
- Tread Type: metric
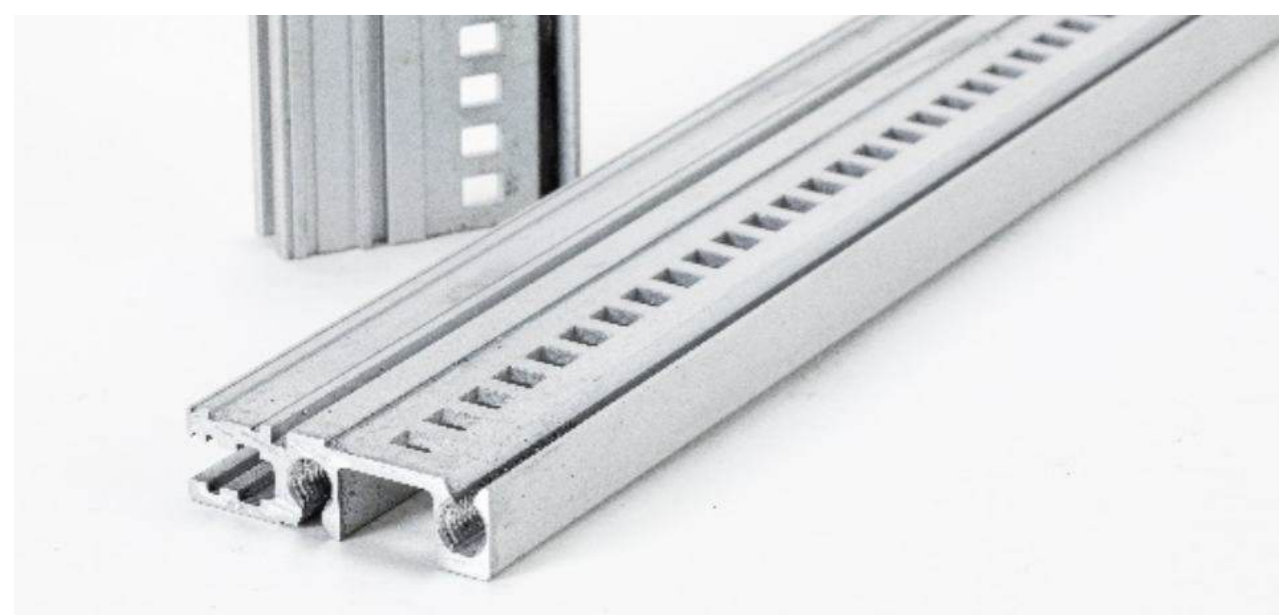- Delivery quantity: bulk consignment only



### GUIDE RAIL

- New generation of PCB- and insert block Guide Rails. Provides reliable connection between mechanical block chassis components and sub-assemblies.
- Product Type: Guide Rail
- Board Depth: 160 mm, 220 mm, 280 mm, 340 mm
- Material: guide rail - aluminium, plastic end - PBT-polymer, UL 94 V-0
- Groove Width: 2 mm



### CURRENT CONDUCTING GASKET, 6U TEXTILE

- Textile current conducting gasket is attached sidewise to the front panel or mounted in the right profile slot if required
- Profile gasket is glued to the contact surface of the 19" bracket or to the back corner and provides current conducting connection with U-shaped front panels
- Temperature range: -40 °C ... +70 °C
- Textile current conducting gasket consists of: TPE-foam as a filler; textile CuNi-sheathing as a hose



### M2.5 THREADED INSERTION PIECE FOR HORIZONTAL RAILS

- Used for all types of horizontal rails
- Rack Width: 20 HP, 28 HP, 32 HP, 36 HP, 40 HP, 42 HP, 63 HP, 84 HP
- Package Quantity: 10

# 19" DESKTOP CASE (COMPTEC EQUIVALENT)

GETTERS

Desktop case (Comptec equivalent) is compatible with the 19" Subrack and used for installation of such units as crates, 19" ventilator blocks or 19" front panels. As a rule, the case is intended for desktop devices.

## BRIEF DESCRIPTION

- Desktop case (assembled)
- No shielding
- Ventilator openings in bottom panel
- Front and back frames are aluminum cast under pressure
- Upper and bottom covers, back panel are steel-made
- In accordance with DIN EN 62368-1

## CHARACTERISTICS

- Product type: Case
- Product line: Comptec equivalent
- Type: Case for 19" Subrack and 19" Chassis
- Rack Height: 3 U, 4 U
- Height: 153 mm, 195 mm
- Rack Width: 84 HP
- Width: 520 mm
- Usable Width: 451 mm
- Depth: 200 mm, 300 mm, 400 mm, 500 mm, 600 mm
- Static Load: 40 kg
- Protection Rating: IP 20
- Front Frame Construction: Single Piece

## ADDITIONAL INFORMATION

- Cases are delivered in assembled form. There is possibility of depth modification up to 1000 mm

## DELIVERY SET

| Item | Description | Quantity |
|------|-------------|----------|
| 1 | Forward frame, aluminum, cast under pressure, RAL 7016, 19"-assembly profile | 1 |
| 2 | Back frame, cast under pressure, RAL 7016, 19"-assembly profile | 1 |
| 3 | Lateral panel, vertical racks: aluminum profile, RAL 7016 | 2 |
| 4 | Cover, steel, 1 mm, RAL 9006, with grounding terminal | 1 |
| 5 | Bottom panel, steel, 1 mm, RAL 9006, with grounding terminal | 1 |
| 6 | Back panel, steel, 1 mm, RAL 9006, with grounding terminal | 1 |
| 7 | Case leg with slip protection, PC, black, UL 94 V-0 | 4 |
| 8 | Assembly set (no picture) | 1 |

# 19" DESKTOP CASE



Desktop Case for installation of internal 19" components according to MEK 60297-3-101-200 state standard, e.g. insertion modules and euroboards. Compatible with 19" Subrack and used for installation of such units as crates, 19" ventilator blocks or 19" front panels. As a rule, the chassis is intended for desktop devices.

## BRIEF DESCRIPTION

- Ventilation openings in bottom cover
- Back panel with perforation
- Front panel with engraving per customer request
- Design option with 19" assembly brackets and front handles
- Possibility of height modification from 2 U to 9 U
- Possibility of width modification from 28 HP to 84 HP
- Possibility of color selection according to RAL color set
- Individual solutions (cut-outs in upper cover, bottom panel and lateral panels)

## CHARACTERISTICS

- Product type: Case
- Product line: Case for individual electronic components installation
- Type: Case for 19" Subrack and 19" Chassis
- Rack Height: 2 U, 3 U, 4 U, 5 U, 6 U
- Material: aluminum
- Rack Width: 28 HP, 42 HP, 63 HP, 84 HP
- Depth: 175 mm, 235 mm, 295 mm, 355 mm, 415 mm, 475 mm
- Static Load: 25 kg
- Protection Rating: IP 20

## ADDITIONAL INFORMATION

- Chassis are delivered in assembled form
- Possibility of depth modification up to 1000 mm
- Possibility of width modification up to 1000 mm

## DELIVERY SET

| Item | Description | Quantity |
|---|---|---|
| 1 | Horizontal front rail with installed threaded bars | 2 |
| 2 | Horizontal back rail with installed threaded bars | 2 |
| 3 | Lateral panel, aluminum, 2 mm | 2 |
| 4 | 19" bracket with extraction and carrying handle | 2 |
| 5 | Back corner profile for EMI-protection (textile) | 2 |
| 6 | Solid aluminum upper cover | 1 |
| 7 | Perforated aluminum bottom panel | 1 |
| 8 | Case legs for desktop use | 4 |

# 19" DECKTOP CASE (RATIOPACPRO EQUIVALENT)

**GETTERS**

Instrumental case and 19"sub-block in one, light and compact design. Ventilation openings in bottom panel, which provides for additional cooling. Possibility of supplying perforated back panel and front handles, width and depth modification.

## BRIEF DESCRIPTION

- Desktop case for installation of internal 19" components according to MEK 60297-3-101 state standard, e.g. insertion modules and euroboards
- Ventilation openings in bottom cover
- Back panel with perforation
- Front panel with engraving per customer request
- Design option with front handles and without
- Possibility of height modification from 3 U to 4 U
- Possibility of width modification from 28 HP to 84 HP
- Possibility of color selection according to RAL color set
- Individual solutions (cut-outs in upper cover, bottom panel and lateral panels)

## CHARACTERISTICS

- Product type: Case
- Product line: RATIOPACPRO equivalent
- Type: Case for 19" Subrack and 19" Chassis
- Rack Height: 3 U, 4 U
- Rack Width: 28 HP, 42 HP, 63 HP, 84 HP
- Depth: 175 mm, 235 mm, 295 mm, 355 mm, 415 mm, 475 mm
- Material: aluminum
- Static Load: 25 kg
- Protection Rating: IP 20
- Color: Ral 7024 (possible change of color according Ral color set)

## ADDITIONAL INFORMATION

- Chassis are delivered in assembled form
- Possibility of color modification (according to Ral color set)

## DELIVERY SET

| Item | Description | Quantity |
|------|-------------|----------|
| 1 | Horizontal T-KK front rail with installed threaded bars | 2 |
| 2 | Horizontal T-PM back rail with installed threaded bars | 2 |
| 3 | Lateral panel, aluminum, 2 mm, passivated | 2 |
| 4 | Lateral panel, aluminum, 1 mm, visible surfaces powder coated , RAL 9006 | 2 |
| 5 | Back cover, aluminum, cast under pressure, powder coated, RAL 7016 | 2 |
| 6 | Front handle, aluminum, cast under pressure, powder coated, RAL 7016 | 2 |
| 7 | Solid aluminum upper cover | 1 |
| 8 | Perforated bottom panel | 1 |
| 9 | Case legs for desktop use | |

# FRONT PANEL WITHOUT HANDLE

**GETTERS**



Front Panels play a key role in housing and protecting PCB, and also provide convenient I/O when they are mounted in a subrack or case.

The front panels form the aesthetic appearance of the device. Although their design is largely standardized, the appearance of their front side can be quite varied due to the possibility of applying various coatings, engraving, multi-color screen printing or digital laser printing.

## BRIEF DESCRIPTION

- Front Panel without shielding
- Anodized facial surface
- Current-conducting rear surface
- The panel is mounted on horizontal rails threaded bars
- Possible supply of mounting components (sleeves, grooved screws)

## CHARACTERISTICS

- Product Type: Front Panel without handle
- Product Line: Front Panel
- Mounting: Screw-on Front
- Material: Aluminum
- Front Finish: Anodized
- Rear Finish: Conductive
- Package Quantity: 5

## ADDITIONAL INFORMATION

Possibility of fine tuning according to customer requirements, e.g.:
- Purpose-specific cut-outs
- Engraving
- Possibility of width modification up to 1000 mm
- Utilizing aluminum of various sizes (3 mm, 4 mm)

# FRONT PANEL WITH IEL, IET, TYPE 1 EXTRACTOR HANDLES



Front Panels play a key role in housing and protecting PCB, and also provide convenient I/O when they are mounted in a subrack or case.
The front panels form the aesthetic appearance of the device. Although their design is largely standardized, the appearance of their front side can be quite varied due to the possibility of applying various coatings, engraving, multi-color screen printing or digital laser printing.

## BRIEF DESCRIPTION

- Front panel without shielding
- Anodized facial surface
- Current-conducting rear surface
- The panel is mounted on horizontal rails threaded bars
- Possible supply of mounting components (sleeves, grooved screws)

## CHARACTERISTICS

- Product Type: Front Panel with handle
- Product Line: Front Panel
- Mounting: Screw-on Front
- Material: Aluminum
- Front Finish: Anodized
- Rear Finish: Conductive
- Package Quantity: 5

## ADDITIONAL INFORMATION

Possibility of fine tuning according to customer requirements, e.g.:
- Purpose-specific cut-outs
- Engraving
- Utilizing aluminum of various sizes (3 mm, 4 mm)

# DELIVERY SET

**GETTERS**

| Item | Description | Qty IEL, 3U | Qty IEL, 6U | Qty IET, 3U | Qty IET, 6U | Qty Type 1, 3U | Qty Type 1, 6U |
|---|---|---|---|---|---|---|---|
| 1 | Front panel (U-shaped profile), aluminum, anodized facial surface, current-conducting rear surface | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | EMI-protection (textile), foamed isolation tube with copper-nickel coating as a basis | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | Bottom handle with a built-in alignment pin (IEL, IET) for perforated ribbon and guide rails; plastic lever, PC, black, RAL 9005; plastic button, PC, pale-grey color, RAL 7035 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3a | Upper handle with a built-in alignment pin (IEL, IET) for perforated ribbon and guide rails; plastic lever, PC, black, RAL 9005; plastic button, PC, pale-grey color, RAL 7035 | - | 1 | - | 1 | - | 1 |
| 4 | Printed board holder, zinc molded under pressure | 1 | - | 1 | - | 1 | - |
| 5 | Screw with a hidden cap M2.5×8, steel, for printed board holder bracing (no picture) | 1 | - | 1 | - | 1 | - |
| 6 | Sleeve, polyamide, grey color | 1 | - | 1 | - | 1 | 1 |
| 7 | Screw with a groove and cross slot M2.5×12,3, steel, for printed board bracing | 2 | 2 | 2 | 2 | 2 | 2 |
| 8 | Screw with a spherical cylindrical cap, Torx/slot, M2.5×6, tinned steel, self-locked, for printed board bracing (no picture) | 2 | 2 | 2 | 2 | 2 | 2 |
| 9 | Washer A2.7, DIN 125, nickel coated steel (no picture) | 1 | 2 | 1 | 2 | 1 | 2 |
| 10 | Screw with a spherical cylindrical cap, Torx/slot, M2.5×7, steel, for handle attachment to the panel | 1 | 2 | 1 | 2 | 1 | 2 |
| 11 | Alignment pin | 1 | - | 1 | - | 1 | 1 |

# SEMI-FRAMED CASSETTES

GETTERS

Plug-in modules are sets of front panels that include not only the panel itself, but also a handle and all the necessary fasteners for installation in a block frame, housing or other system.
Frame-type plug-in units, also known as cassettes, are similar to conventional plug-in modules, but offer complete protection of the printed circuit boards installed in them from mechanical and electromagnetic influences, including radio frequency radiation.

## BRIEF DESCRIPTION

- Consist of three components only (front cover, left-side lateral panel, semi-frame with a built-in back panel).
- Suitable for one printed board installation only.
- Cassettes have a semi-frame with an integral back panel
- Cassettes are inserted into a block-chassis on two guide rails (left-side lateral panel)

## CHARACTERISTICS

- Product Type: Cassette
- Product Line: Semi-framed Cassettes
- Handle Type: Trapezoid
- Rack Height: 3 U – 6 U
- Rack Width: 5 HP – 14 HP
- Depth: 167 mm, 227 mm
- Cover Plate Type: Hood
- Material: Aluminum
- Rear Panel Type: Single Connector Cut-Out
- Front Finish: Anodized
- Rear Finish: Anodized

## ADDITIONAL INFORMATION

Possibility of fine tuning according to customer requirements, e.g.:
- Purpose-specific cut-outs
- Engraving
- Depth modification up to 400 mm

# COMPOSITE CASSETTES
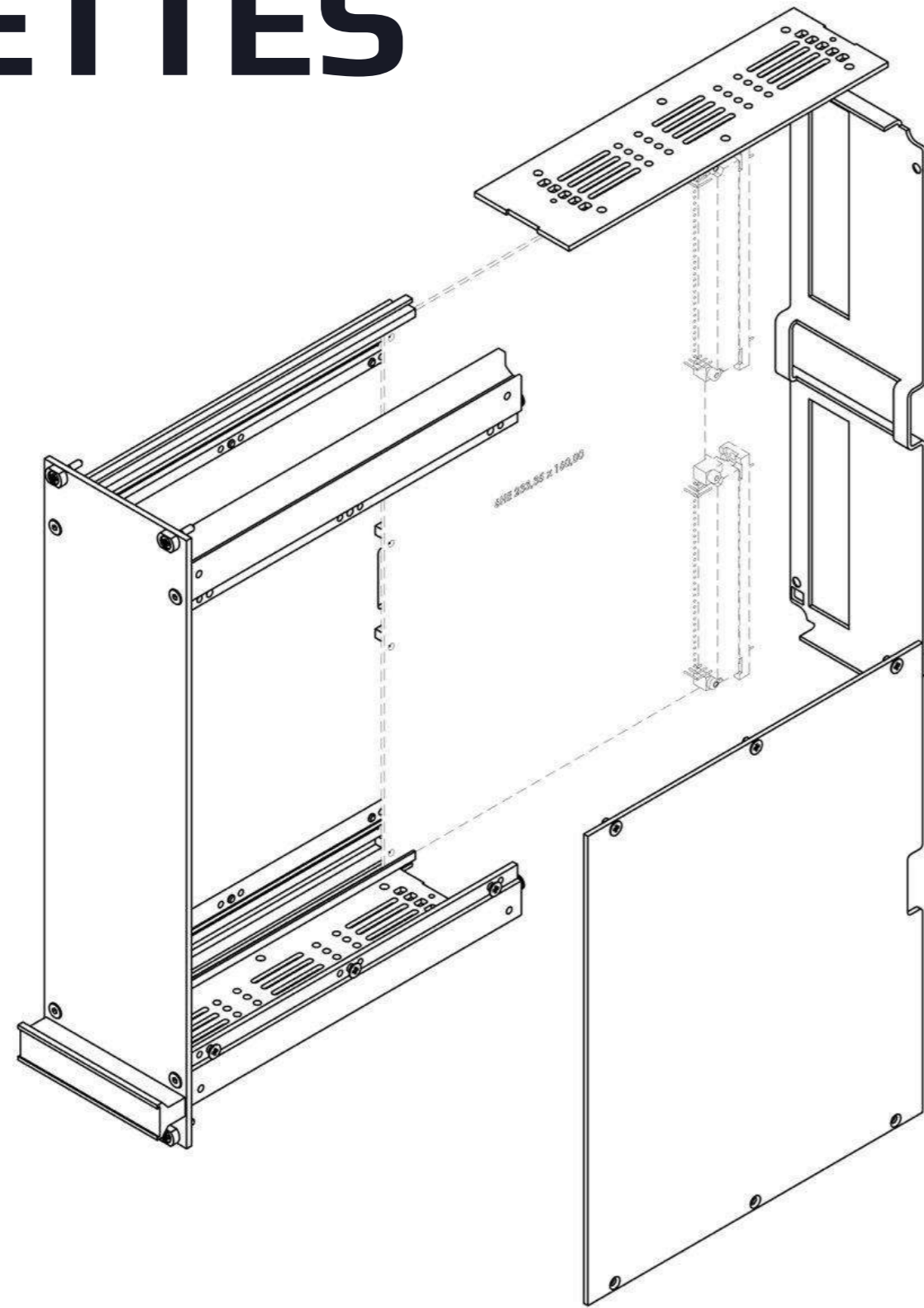


## BRIEF DESCRIPTION

- Shielding possibility
- Installation of a single or several printed boards, single or several connectors
- Removable upper covers for a swift assembly
- Handles screwed on up front, simple attachment
- Three cover variants (solid, perforated, perforated on guide rails)
- Convenient fastening of printed boards within the cassette (only two screws per board are required)
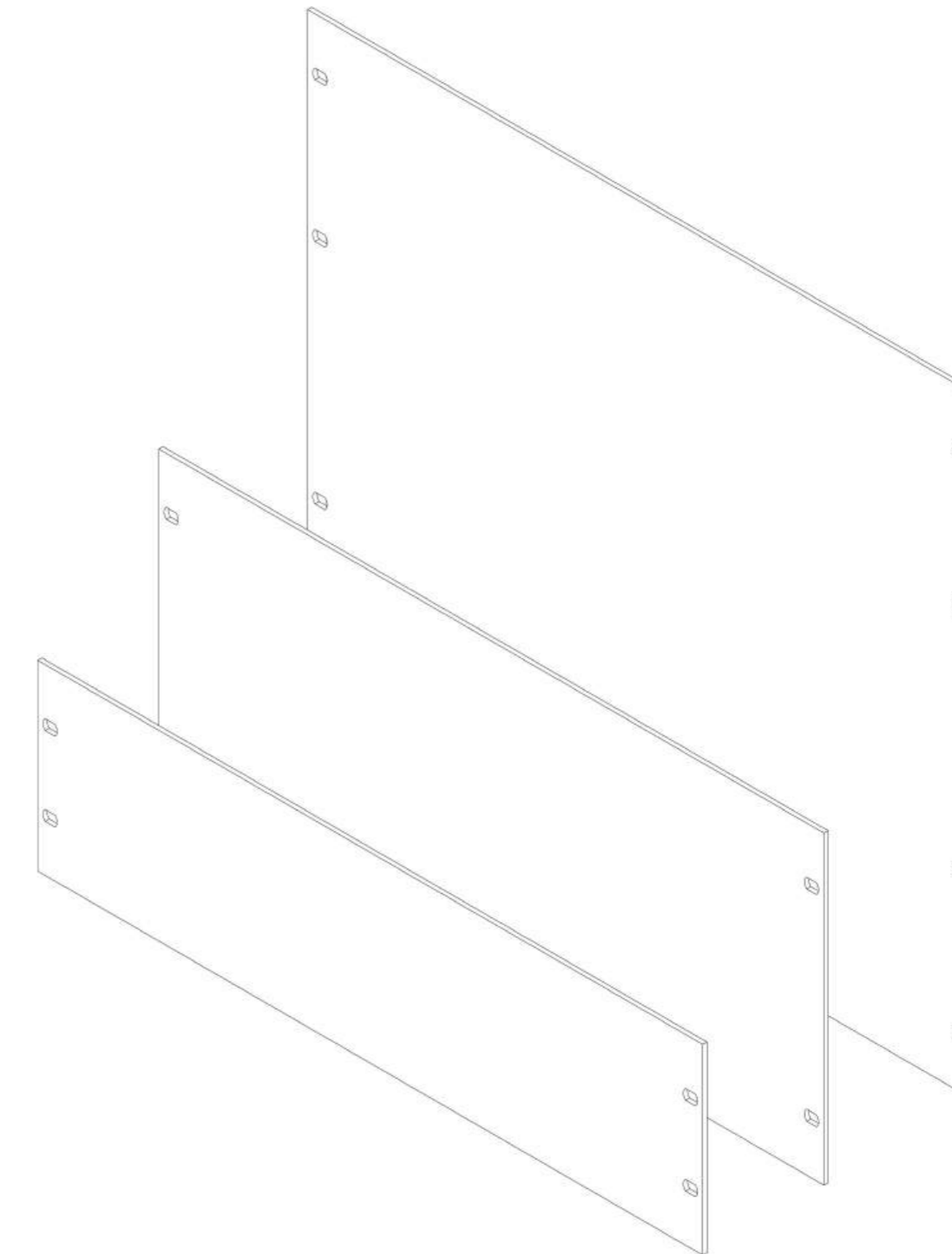
## ADDITIONAL INFORMATION

Possibility of fine tuning according to customer requirements, e.g.:
- Purpose-specific cut-outs
- Engraving
- Nonstandard-sized item manufacturing (4 U, 5 U)
- Depth modification up to 400 mm

## CHARACTERISTICS

- Product Type: Cassette
- Product Line: PRO frame-type insertion module
- Handle Type: Trapezoid
- Rack Height: 3 U – 6 U
- Rack Width: 8 HP – 42 HP
- Depth: 167 mm, 227 mm
- Rear Panel Type: Single Connector Cut-Out
- Cover Plate Type: Cover Plate without perforation
- Material: Aluminum
- Front Finish: Anodized
- Rear Finish: Anodized

# 19" FRONT PANELS



## BRIEF DESCRIPTION

- Front panels are aluminum-anodized,
- Pale-grey color (RAL 7035). Possible color modification according to RAL-color set when ordered more than 100 piece.

## ADDITIONAL INFORMATION

Possibility of fine tuning according to customer requirements, e.g.:
- Purpose-specific cut-outs
- Engraving
- Using aluminum of different thickness (2.5 mm, 4 mm)

## CHARACTERISTICS

- Product Type: Front Panel
- Product Line: 19" Front Panel
- Mounting: Screw-on Front
- Material: Aluminum
- Front Finish: Anodized
- Rear Finish: Anodized
- Rack Height: from 1 U to 10 U
- Height: from 43,6 mm to 443,7 mm
- Depth: 3 mm
- Package Quantity: 5

# RF SHIELDS
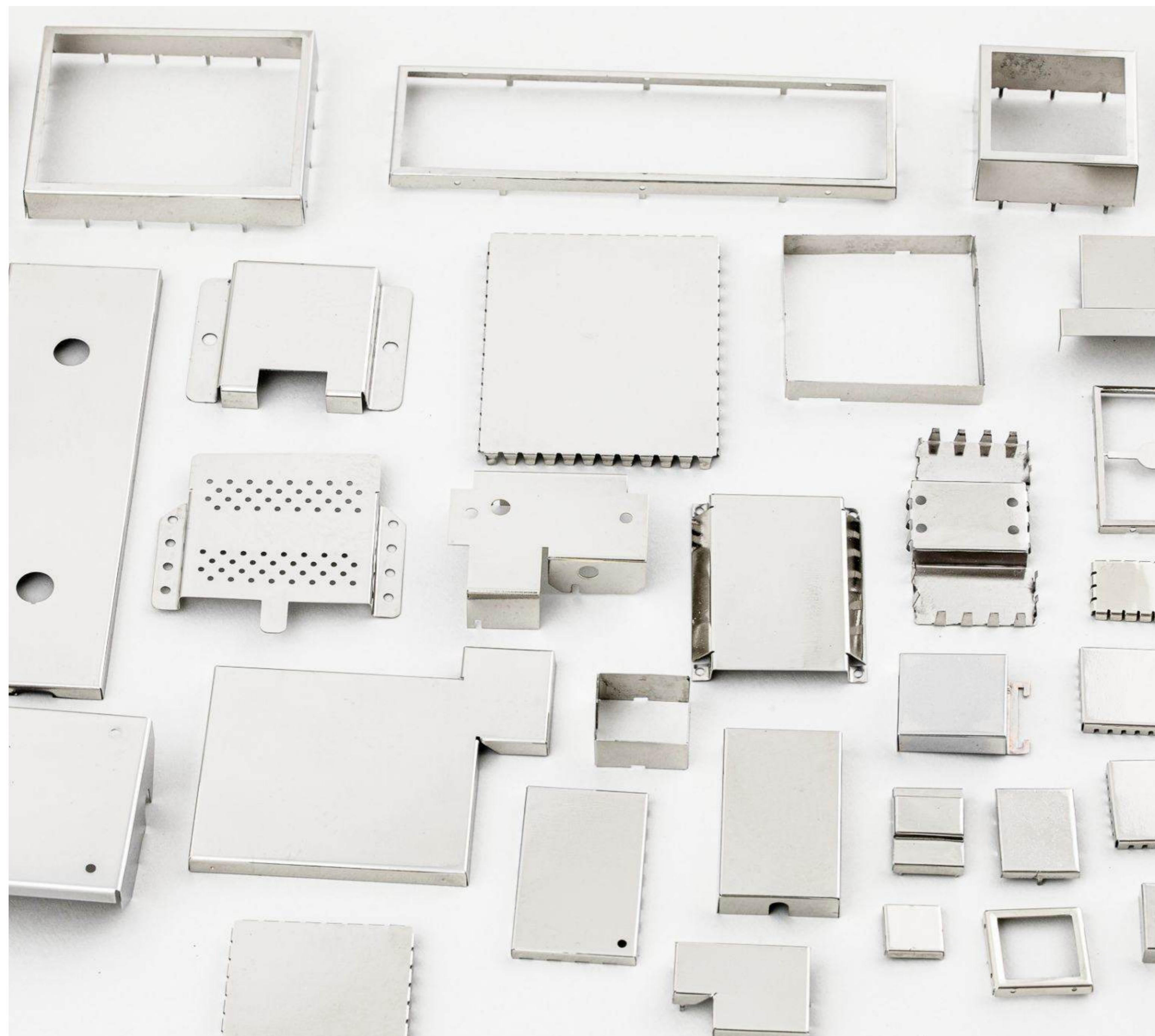
REZOLUT Company is a manufacturer of RF Shields for printed board protection against electromagnetic fields and EM-interference in high-frequency circuits.
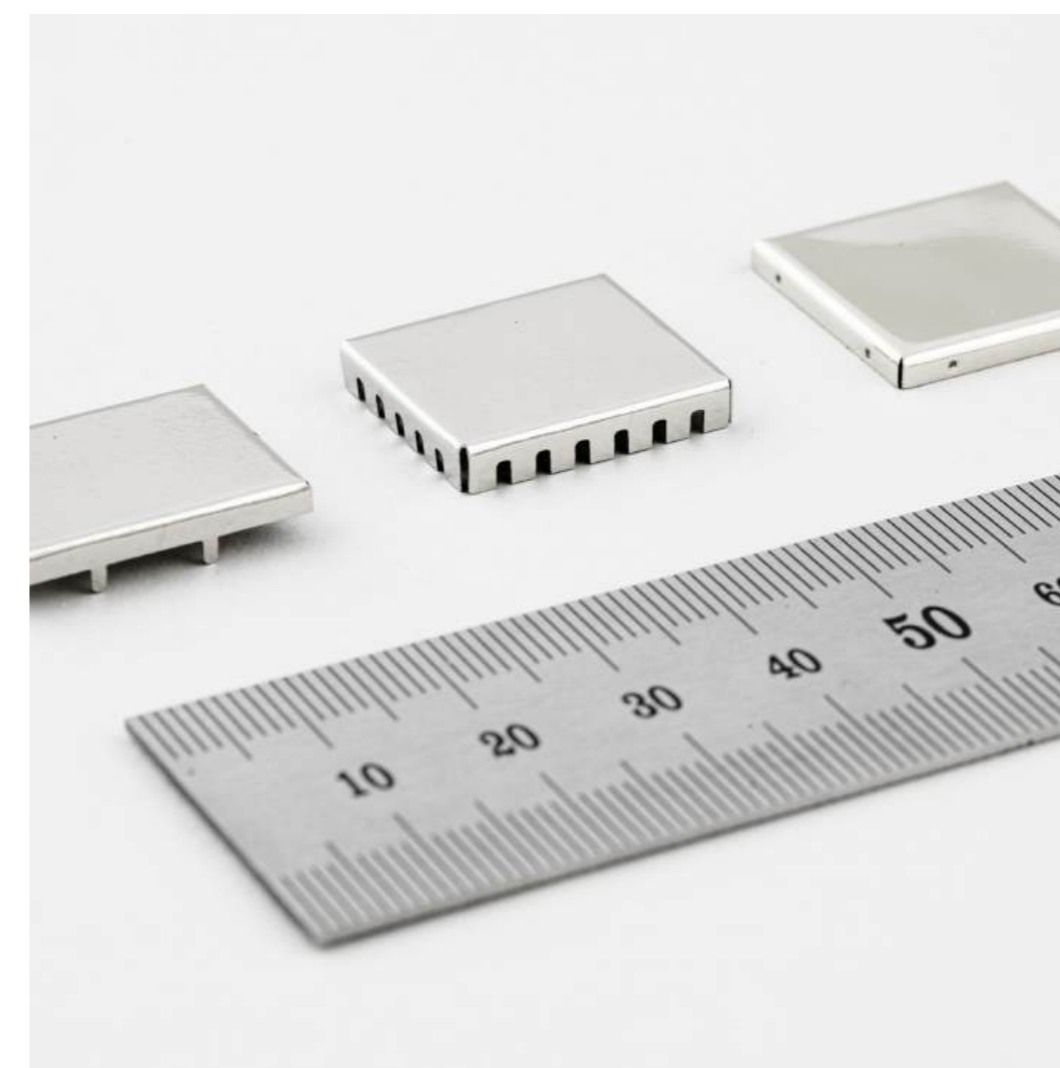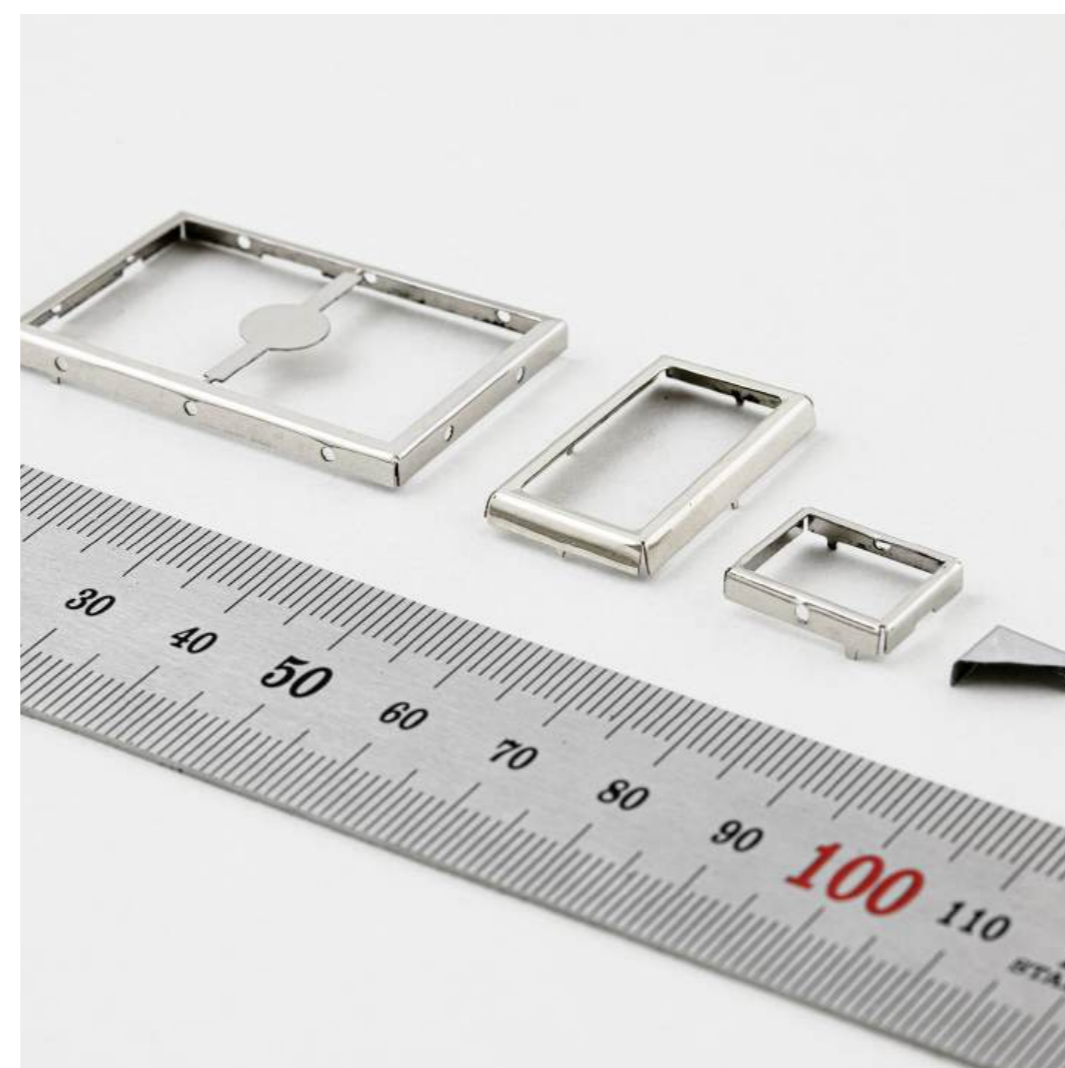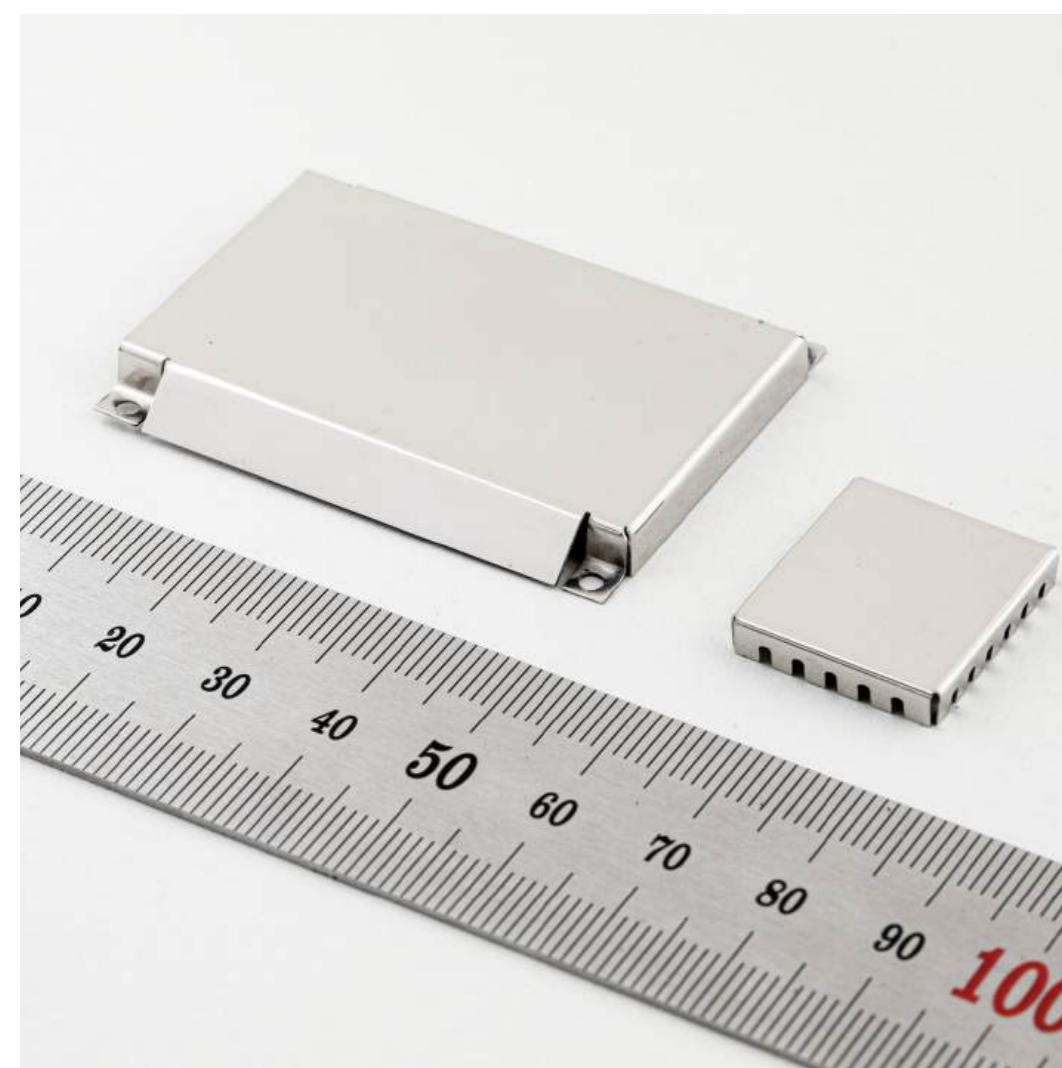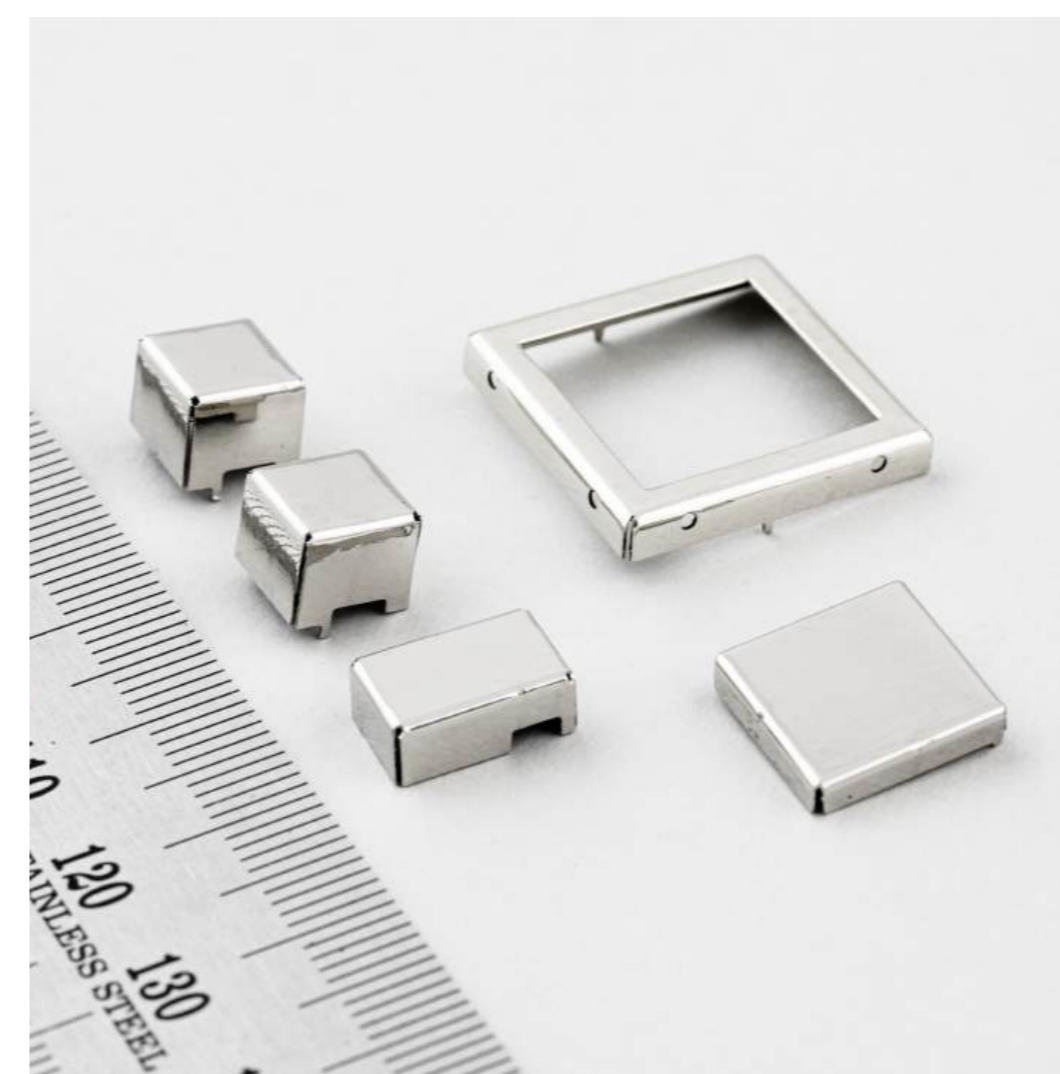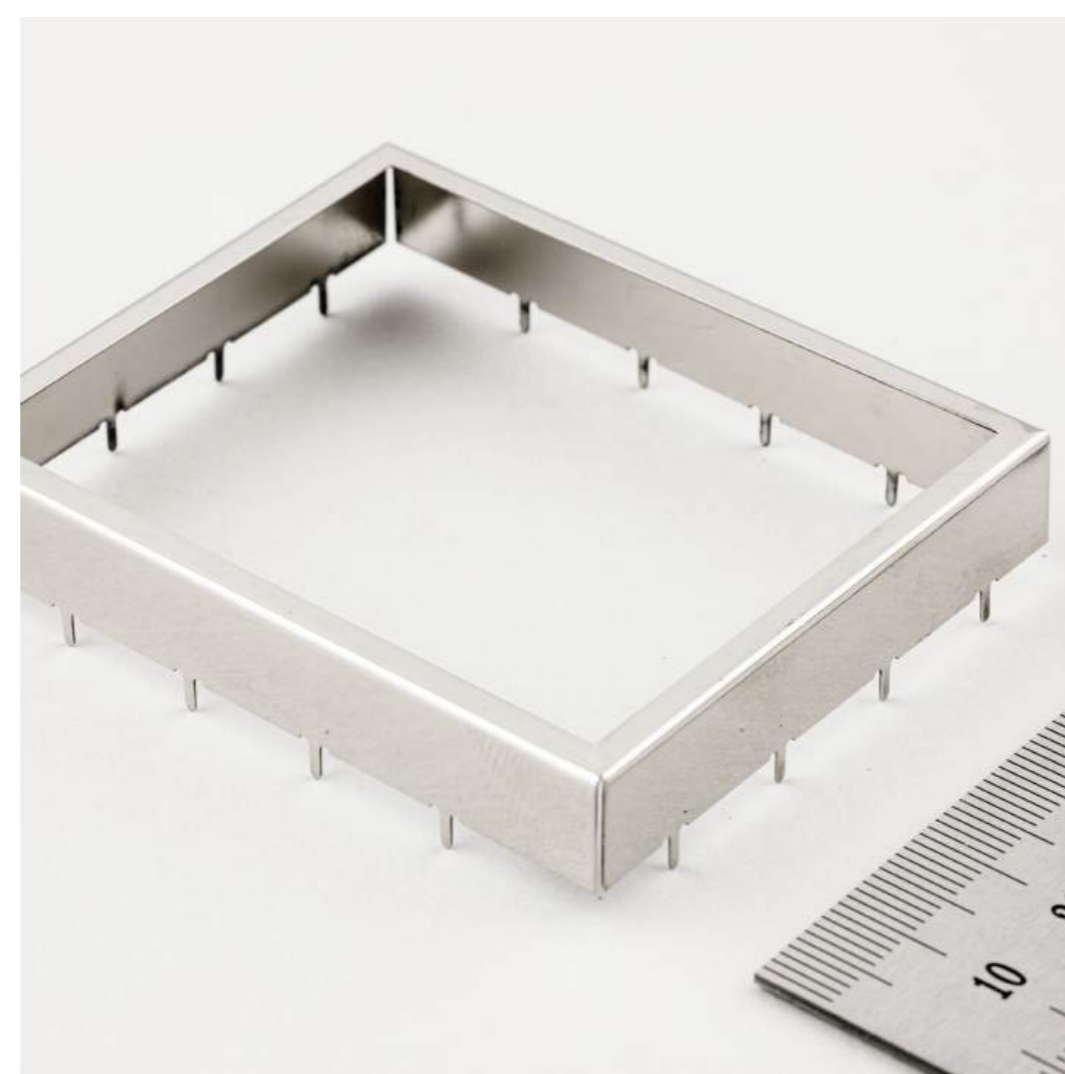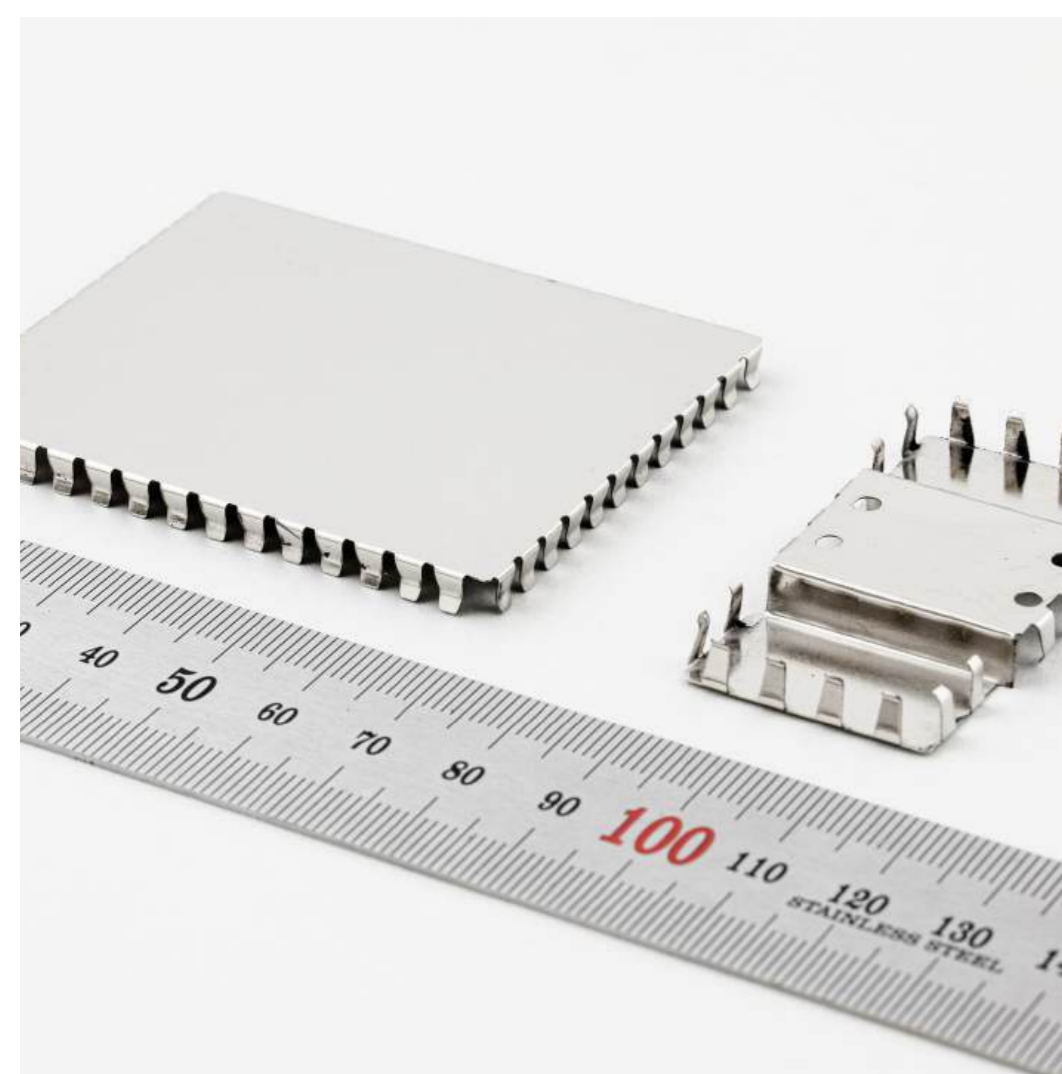
## MATERIAL OF RF SHIELDS

- Cold-rolled annealed sheet steel with a thickness of 0.10–0.36 mm (according to GOST R 52204–2004) with applied protective coatings of tin or special coatings, such as varnish, zinc, chromium and others
- Nickel silver is an alloy of zinc, copper and nickel. Brands MNC 15–20, MNCS 16–29–1.8
- Corrosion-resistant steel
- Aluminum coated with tin alloy - bismuth O-Vi-(99.8)
- Brass
- Copper
- Bronze
- Steel coated with tin alloy - bismuth O-Vi (99.8), Nickel, - Nickel-boron, etc.

## TYPES OF RF SHIELDS

One-component molded
RF Shields

One-component solid-drawn
RF Shields

One-component molded L- and
T-shaped RF Shields

One-component multi-angular
molded RF Shields

Two-component molded
RF Shields

Two-component molded L- and
T-shaped RF Shields

Two-component molded multi-
sectional RF Shields

# RF SHIELDS

## ADDITIONAL INFORMATION

- We are not limited by standard sizes

- We can produce RF Shields using any technology and patterns required for your device

- Thickness of the selected material can vary within the range of 0.15 to 0.6 mm, and the RF Shield height from 3 to 15 mm

- Corners are joined either arbitrarily or using "jalousie"-method and by virtue of laser welding

- There is a possibility of copper, aluminum or titanium spraying as well as logo- and serial number application by way of silk-screen- and UV-printing and laser marking.

# SERVICES

## 02

### RAPID PROTOTYPING

Understanding the unique nature of each project, we aim at implementing customized solutions precisely meeting your requirements.
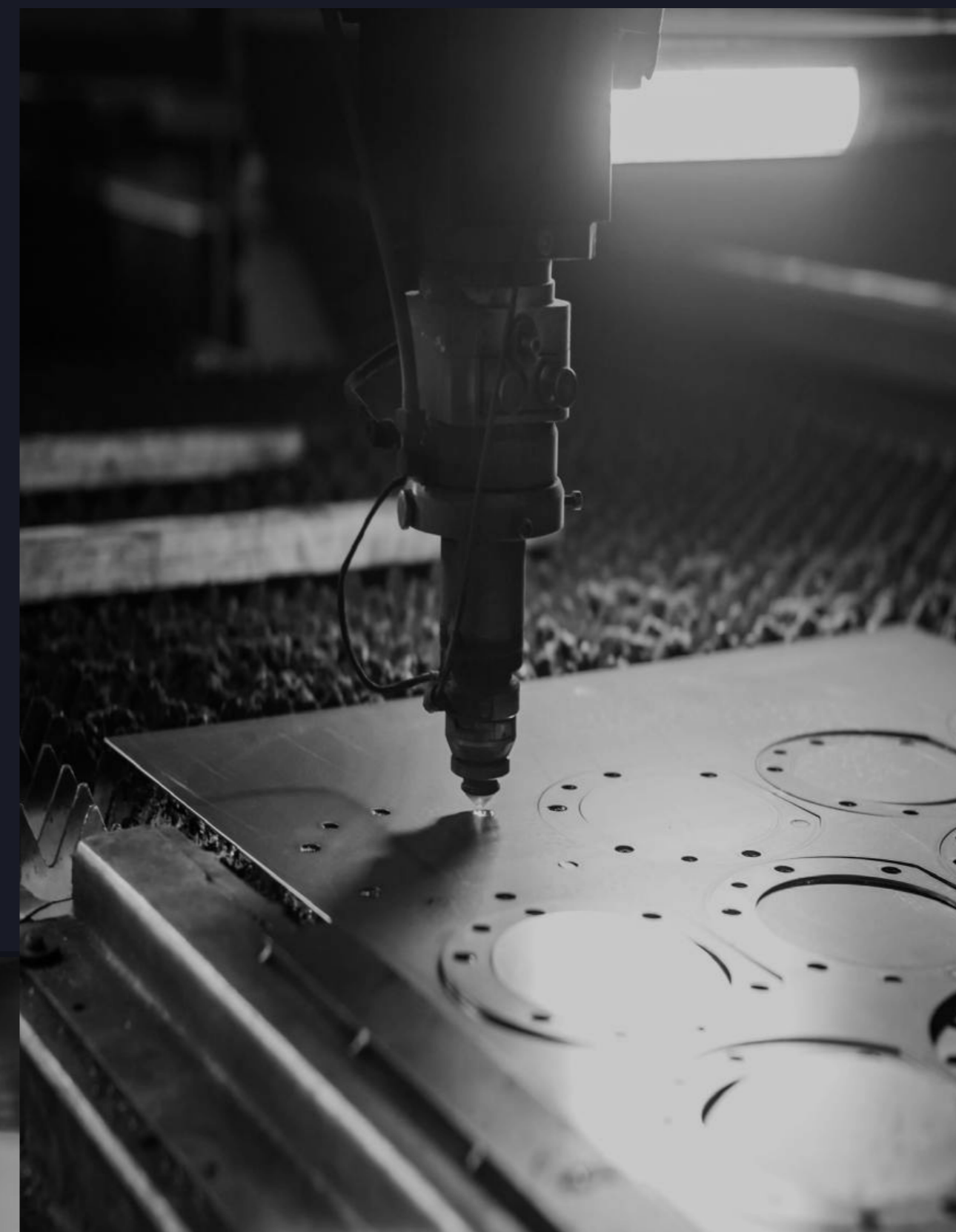
## 04

### ASSEMBLY AND TESTING

Our team is ready to render additional services that are in high demand among customers: device assembly, requirement compliance testing, individual improvements, component addition etc.

## 01

### COLLABORATIVE DESIGN

Our engineers possess profound skills in the field of computer design which allows for optimal complex solutions.
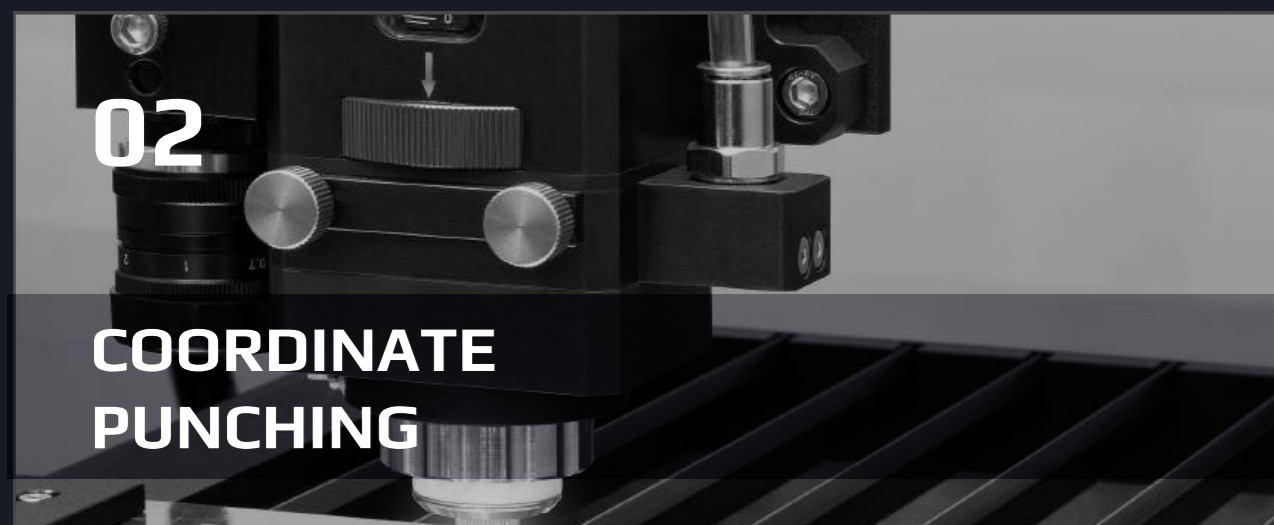
## 03

### METALWORKING SERVICES

Broad equipment assortment allows for laser cutting and welding, bending, coordinate punching etc. at high quality and speed levels.

# METALWORKING SERVICES

**01**
**LASER CUTTING OF METALS**

We possess unique technologies of processing metals 0.05 mm thick and above.

**02**
**COORDINATE PUNCHING**

Two-edge countersink shaping, bulging and flanging, jalousie creation, other types of shaping operations.

**03**
**METAL BENDING**

Our equipment allows us to provide a minimum bending radius (from 0.2 mm), bending super-thin metals (from 0.1 mm).

**04**
**LASER WELDING**
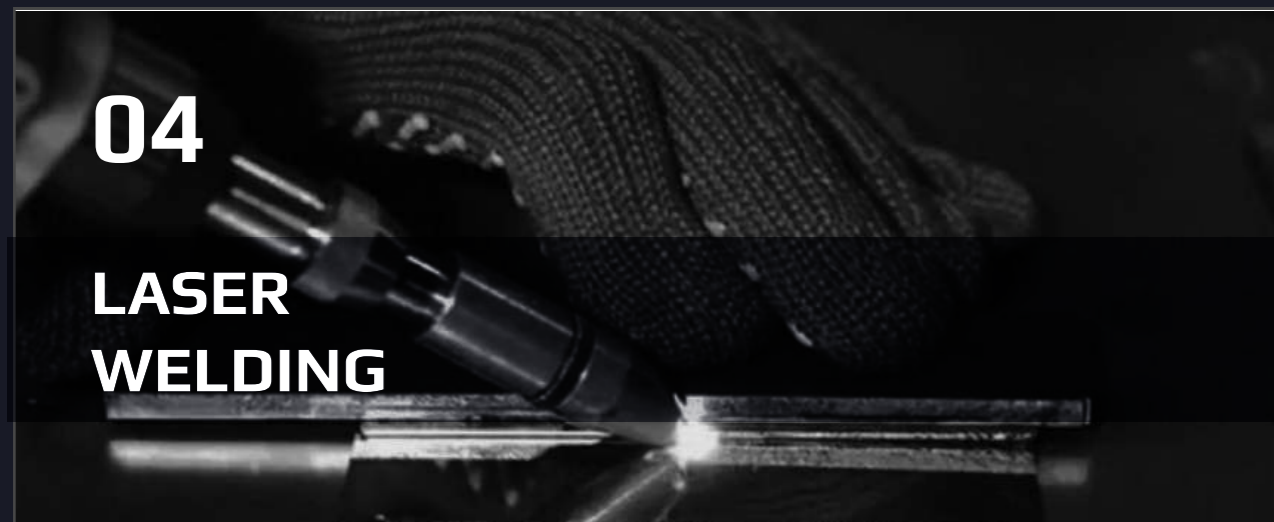
The equipment allows welding at speeds of up to 18 m/min without loss of seam quality. Our company also offers a full cycle of work on installing a laser welding station at your production site.

**05**
**GALVANIC COATING**
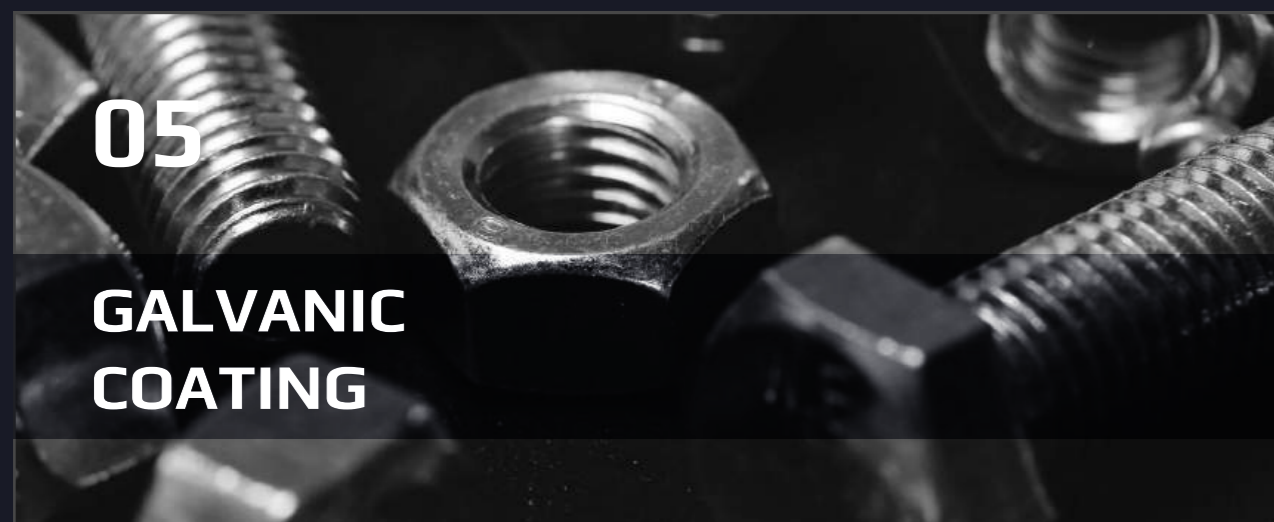
We provide galvanic coatings that not only protect, but also give your products an aesthetic appearance.

**06**
**POWDER SPRAYING**

REZOLUT has a broad partner network in Russia and Belarus who could provide powder spraying services. Longtime cooperation, rigorous technical inspections and supervision ensure high-quality end-result.

**07**
**LASER MARKING**

With 0.01mm positioning accuracy across a wide range of metals, you can bring your ideas to life with outstanding precision and style.

**08**
**METALWORKING ACTIVITIES**

A wide range of locksmith services including turning, milling, drilling, grinding and much more. We are able to perform a wide variety of tasks in the field of metalworking.

**09**
**TURNING AND MILLING WORKS**
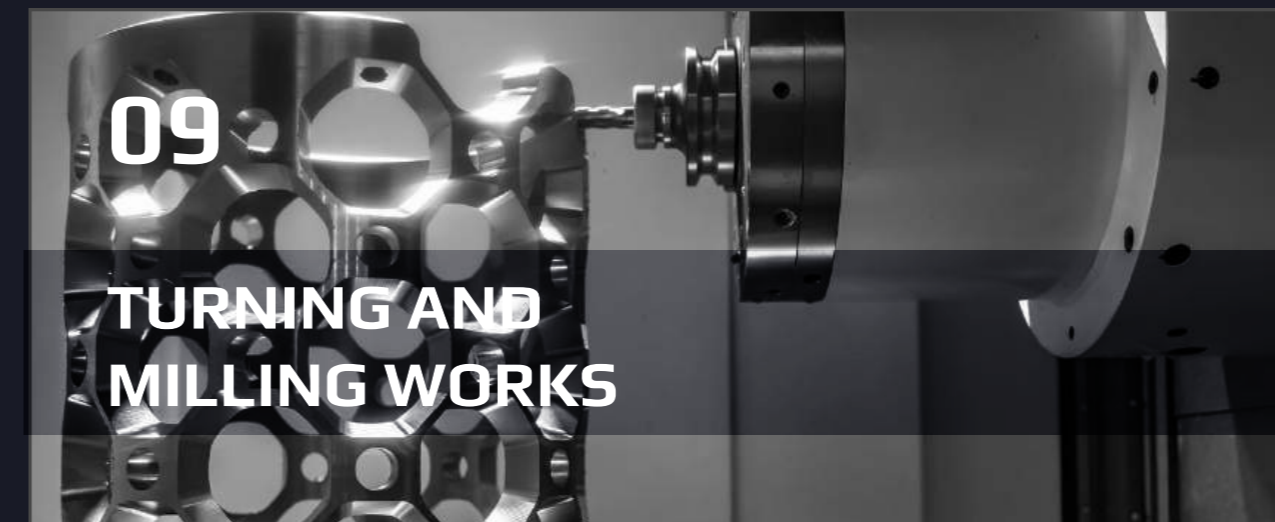
Our experienced turning and milling specialists provide a high standard of quality and attention to detail, ensuring that every machined part meets customer expectations.
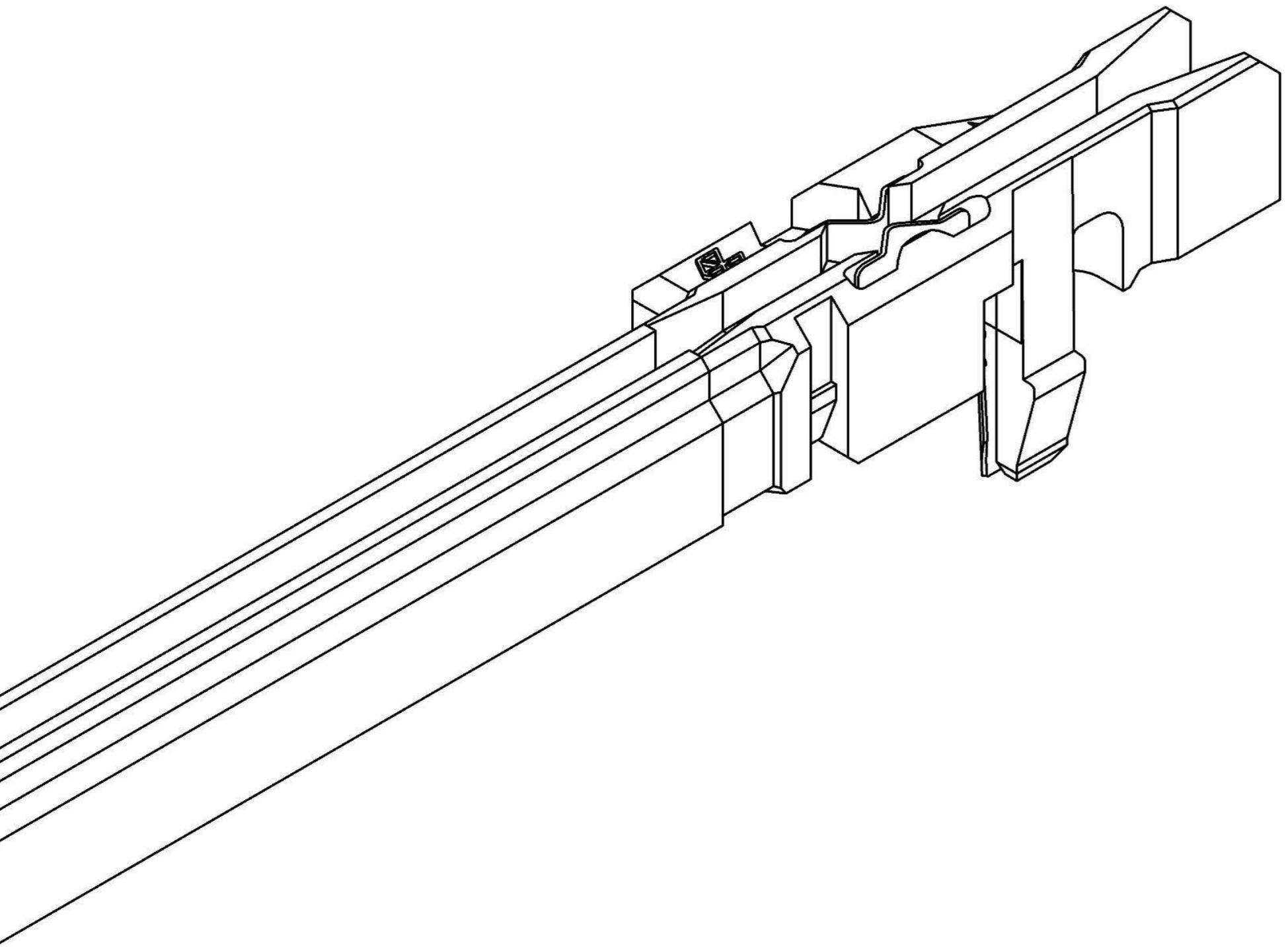
# GETTERS

web
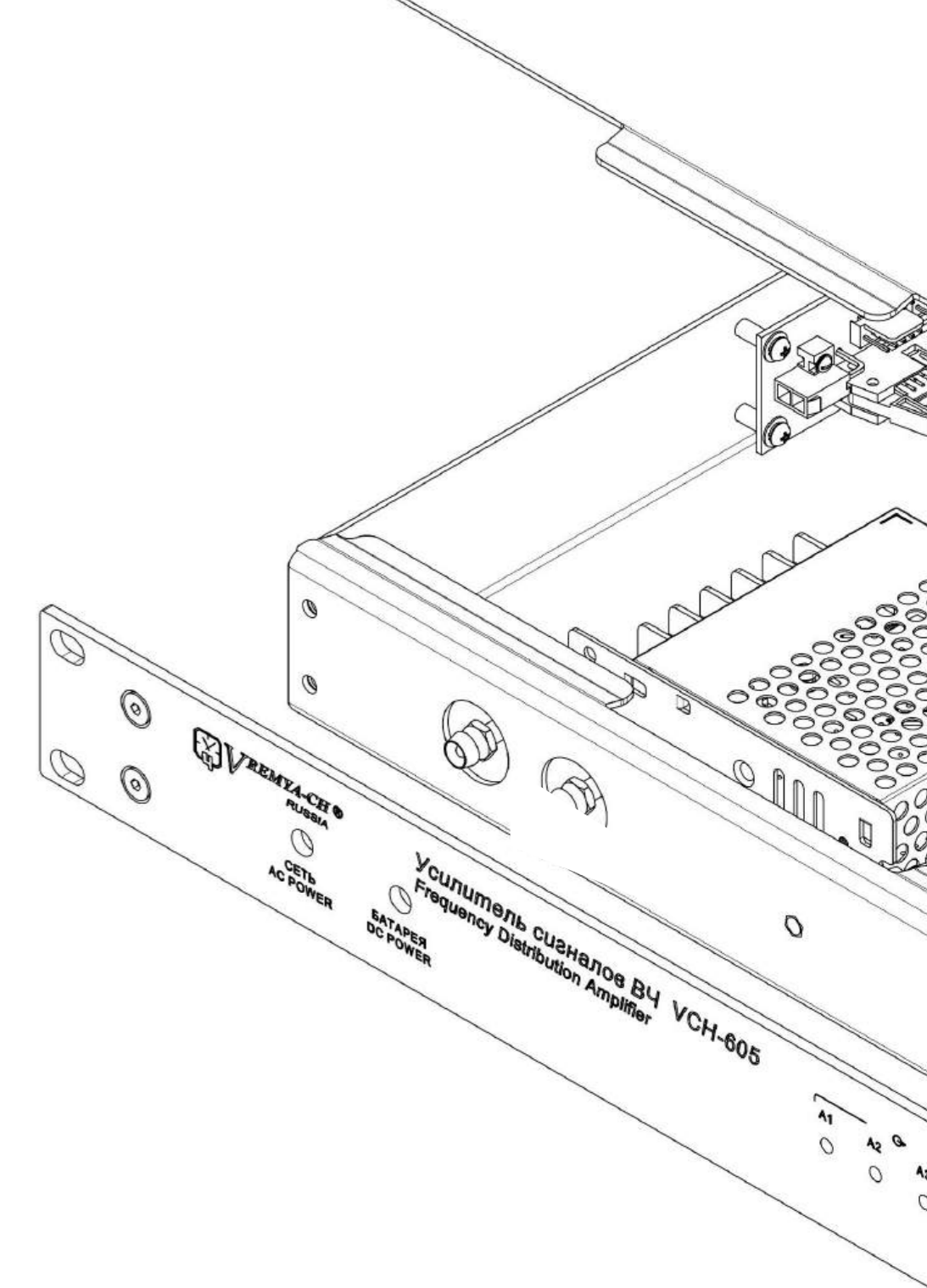
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