Contract manufacturer with a passion

25 years as your specialist for mechanical and electronic components

Rohde & Schwarz GmbH & Co. KG Teisnach plant

Additional information is available on the Internet at www.teisnach.rohde-schwarz.com
Rohde & Schwarz Teisnach has been providing services to external customers for 25 years. As an experienced contract manufacturer, we possess very wide-ranging expertise in the domain of production engineering.

Our in-house manufacturing depth covers all imaginable options, from production of individual items such as a complex tool to high-volume production runs.

We have satisfied customers in a very diverse array of industry sectors and we provide services that range from product development to complete production and worldwide delivery. Upon request, we can also provide comprehensive on-site services.

Our customers (partial list)
- Agfa-Gevaert HealthCare GmbH
- Arnold & Richter Cine Technik GmbH & Co. Betriebs KG
- Airbus Helicopters GmbH & Co. KG
- Bauerfeind AG
- BTG Instruments GmbH
- Dornier MedTech Systems GmbH
- Preh IMA Automation Amberg GmbH
- Instrument Systems Optische Messtechnik GmbH
- Mavig GmbH
- ND SatCom GmbH
- Qioptiq GmbH
- Rodenstock GmbH
- Tesat-Spacecom GmbH & Co. KG

As a customer of the Rohde & Schwarz Teisnach plant, you have access to a broad spectrum of production services that is difficult to find anywhere else on the market.

We look forward to discussing our services with you. Our trained field service employees will gladly visit your site to learn more about your special production requirements and work with you to determine the right solution.

You can take advantage of the following services:
- Electronic and mechanical development and construction
- Enclosure technologies
- Precision mechanical engineering
- Surface treatment
- Printed board and multilayer production and assembly
- Micro engineering, clean room and ESD production
- Waveguide development and production
- Toolmaking, systems engineering, fixture and test equipment construction
- Micro injection molding
- Cables and wire-wrap parts
- Transmitter production
- System integration and testing, vehicle installations
- RF simulation technologies
- Software development and technical documentation
- EMC and T&M equipment
- Quality management in line with ISO and MIL standards
- Worldwide system implementation and servicing
- Purchasing and logistics

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Rohde & Schwarz Teisnach offers comprehensive services for all parts that require cutting machining. We can perform turning, milling and drilling processes precisely to your specifications. All parts are built based on your sketches, and our engineers can provide consulting in the area of production-ready design.

Our diversified and highly advanced machinery allows us to economically produce both single items and high-volume series, and also to process six-sided workpieces. We are able to obtain a high quality level with very short turnaround times.

One particular area of expertise in our plant is high-speed production of light alloys in the range of thousandths of a millimeter. We can easily process parts with dimensions up to 1000 mm (x-, y- and z-axis).

Our strengths:
- Production of mechanical RF components
- High-precision machining and cutting
- Electroforming technology
- Production of milled and soldered waveguides
- Cutting machining of RF shielding components

We can process parts made of brass, steel, aluminum and plastic. Special materials can be used upon request.
RF waveguide technology

Waveguides are used for data transmission via RF signals in satellite systems. Due to their outstanding electrical characteristics, these precision aluminum components can transport data with practically no losses – unlike cable connections.

Our waveguides are produced on five-axis milling machines using flange profiles and commercially available aluminum round stock. Standard components are soldered and brazed together. Upon customer request, we will silver plate parts to achieve excellent electrical characteristics. The exterior of the waveguide is protected using RAL colors. A powder coating to improve thermal characteristics is also available.

All waveguides we produce meet the most stringent quality standards and also fulfill aerospace industry requirements.

Available parts
- Milled waveguide (straight, bent, switch)
- Waveguide runs (soldered, brazed, soldered and brazed)

Standard sizes
WR28, WR34, WR42, WR51, WR62, WR75, WR90, WR112, WR229

Rohde & Schwarz Teisnach offers its microproduction customers full service from start to finish – from the selection of materials and heat treatment to mechanical processing, electroplating and micro injection molding to final assembly and electrical functional tests.

Our injection molding technology meets the most stringent requirements for the production of precision parts, including very low shot weights, high-precision tools with tolerances in the thousandths of a millimeter range and image processing for inspecting parts during the manufacturing process.

In addition to our excellent technical facilities, the key is the expertise of our employees – especially in the area of micro injection molding. Our specialists manage the entire process, all the way through quality inspection. They use specialized equipment in a complex process to produce microparts from plastics such as PEEK or PA66.

Our components are used in the electronics, building and medical industries. We maintain part tolerances of ±7 µm and achieve a cavity precision of ±5 µm.

Contact terminal

Rocker switch frame

Switch enclosures

Waveguide after surface treatment
In addition to laser welding and robot welding, Rohde & Schwarz Teisnach also offers all types of sheet forming. We can edge, punch, stamp, countersink, harden, level, tumble, screw, rivet, weld, crimp and laser up to 2.5 m x 1.25 m sheet metal with a maximum thickness of 6 mm. Rohde & Schwarz Teisnach offers a full range of metalworking services.

We have extraordinary in-house manufacturing depth. If a completed part needs a special surface treatment after sheet forming, we’re happy to do this for you.

Our paintshop, electroplating department and digital printing service are just a few steps away and can put the final touch on your product. Our machinery is available for production jobs around the clock six days a week, so we have no problem handling rush orders that involve sheet-metal work.

**Laser welding**

If you are looking for high speed, narrow and precise welding seams and low thermal distortion when welding stainless steel parts, we have the ideal solution: laser welding.

**Robot welding**

Robots are adept at continuously, efficiently and precisely welding with consistent quality. This technology is ideal for repetitive production processes where consistent quality is required at a reasonable cost.
Printed board production

As the manufacturer of all Rohde & Schwarz printed boards, we ensure extremely high-quality using the latest technology for printed board production. We can deliver prototypes, functional samples and series-produced parts. Rush orders can be processed upon request.

We can meet your most demanding requirements with our comprehensive product range:

- Double-sided printed boards
- Conventional multilayers
- RF multilayers
- HDI multilayers

Our 100 % testing policy ensures that we deliver defect-free products to all our customers. Tests during development as well as certifications are part of our service.

We use the base materials FR4 with Tg 135 °C, FR4 with Tg 170 °C, PTFE and ceramic for RF applications as well as other special materials. We produce ultrafine conductors as small as 75 µm.

Technologies

- Through holes
- Controlled depth drilling/milling
- Blind vias (mechanically drilled)
- Blind vias (laser-drilled)
- Semi-blind vias
- Buried vias

Surface finishes

- Chemical tin
- Chemical silver
- Chemical nickel/gold
- Partial galvanic gold-plating

Printed board drilling

Our surface treatment department takes charge when it is necessary to protect metal surfaces or to affix your information or state-of-the-art design.

Electroplating

Our standard selection of plating metals includes copper, nickel, tin, zinc, silver, gold and rhodium. The size of the treated parts depends on the desired finishing metal. Electroplating includes electrolytic and chemical treatment as well as passivation of stainless steel and pickling and anodization of aluminum. We perform these processes on your behalf with the world-famous Rohde & Schwarz reliability.

Finishing

We offer two very high-quality finishing processes:

- Wet coating of parts made of a diverse range of materials with finishes that dry under the influence of air or heat
- Cost-effective powder coating for conductive and temperature-resistant base materials

In both of these processes, different surface structures can be obtained, e.g. smooth, fine or coarse.

For the rear panels of equipment, reverse printing is a possibility. It seals the surface and affixes the desired information in one finishing step, eliminating the need for a second one.

Digital printing

We also have an advanced digital flatbed printer that we can use to provide custom printing in formats up to 2600 mm x 1500 mm in accordance with customer requirements. The digital printer is equipped with the most advanced printheads, allowing us to achieve optimum print quality and brilliance.

Screen printing

In the area of screen printing, we are very adept at printing single or multicolor front panels with a high level of detail.

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Assembly of electromechanical modules

Rohde & Schwarz Teisnach is a specialist in the assembly of electromechanical modules. Our range of services extends from assembly of simple modules to expert construction of complex electromechanical systems, including state-of-the-art electronics.

In Teisnach, we have more than 20,000 m² of assembly space available to meet your needs. Robotic assistance can be used to cost-effectively manage larger lot sizes.

All of the mechanical, electromechanical and electronic components produced in our departments form the basis of our module assembly processes. These components can be combined in any desired manner.

We also handle the planning and production of the necessary cables and cable harnesses. For everything from individual parts to fully assembled devices or systems, we are capable of meeting all your needs from a single source. We can produce prototypes, individual parts and complete series runs.

Naturally, we take care of all necessary acceptance testing and product certifications, including EMC testing, CE inspections and TÜV certification.

Clean room production

From microassembly and adjustment to bonding processes, the growing trend toward miniaturization of components is placing higher demands on work environments. That is why Rohde & Schwarz Teisnach microassembly now has a new integrated clean room that is compliant with ISO 14644-1:1999/ISO 7.

Our over 300 m² clean room includes a wet area for pretreatment of individual parts awaiting assembly and three production areas equipped for various technologies. Sensitive devices are protected against electrostatic discharge (ESD). Separate personnel and material locks minimize the amount of contaminants introduced into the facility.

The clean room temperature is maintained at a constant 21 °C. The relative humidity is held at 50 percent. The air in the room is filtered 25 times per hour. 44 measurement points monitor particles to ensure that the maximum allowable size is not exceeded.

A fully integrated lighting system provides 1000 lux of illumination to the 40 assembly and soldering stations in the work rooms. Parts with a frontal offset of 0.01 mm and a tolerance in the 0.001 mm range are bonded under a microscope.

We also have a clean room that is compliant with ISO class 8. The employees working in this area have been certified in line with ESA specification HL3 for the production of highly reliable hand-soldered components.
Rohde & Schwarz Teisnach
Contract manufacturer with a passion

Rohde & Schwarz cable production capabilities include ribbon cables, multiconductor connecting cables and cable harnesses as well as rigid and flexible coaxial cables.

Our highly qualified employees will handle all stages of the project, from planning and design to cable production. The production process will reliably meet your requirements for quality and fast delivery.

Capabilities
- Processing of semi-rigid SUCOFORM cables up to 67 GHz
- Automated 3D bending of metallic sheaths
- Automated induction soldering
- Production of control lines as required, with testing of up to 4736 connections
- Preparation of CAD documentation
- Lead-free soldering in line with WEEE and RoHs
- Manual production of design models and very small series runs
- Automation for cost-effective production

All cables are assembled to conform to your exact requirements. We can meet all your needs in the following areas:

- Cable labeling
- Screw and plug-in connections
- Bending of rigid coaxial cables
- Cable testing and documentation

We offer our customers solutions in the complexity needed for their cable production requirements.
Rohde & Schwarz Teisnach has years of specialized experience in the installation of communications, T&M and radio location systems in vehicles and containers. As a certified installer for TETRA-BOS digital radio, we help you prepare for the radio network of the future.

Our competencies
- Design and in-house production of custom components
- Review and modification of onboard electronics
- Individualized testing, including acceptance testing and TÜV certification
- Optimal vehicle loading

Partner for fire departments
- 1000 m² of production and assembly space
- Equipment installation of multiple vehicles in parallel by specialist personnel at our plant or at the customer site
- Service center with expert long-term technical support
- Comprehensive documentation
- TÜV certification at our plant or at the customer site

Control center installation
- 25 years as exclusive supplier to the German air traffic control authority
- Integrated approach to radio systems
- Conceptual planning, project management and project implementation from a single source
- Collocation assessments for all affected frequencies
- Selection of the appropriate antennas, filters, circulators, etc.
- Service/support via a corporate-wide service structure

As your service provider, high-quality work and process results are a matter of course at Rohde & Schwarz Teisnach. The globally active electronics company is ISO 9001:2008, ISO 14001:2004 and DIN EN 9100:2009 certified.

We are internationally recognized as a strong partner in the domain of test and measurement equipment.

Our advanced test machinery includes:
- Coordinate measuring machines
- Multisensor and coating thickness measuring systems
- Optical 3D coordinate measuring system

Our highly qualified staff is capable of performing a very broad spectrum of demanding tests and material analyses.

Any defects are handled in an uncompromising manner using the 8D method. We focus on effective elimination of defects.

We don’t just talk about quality – we produce it!
Rohde & Schwarz
Teisnach plant

For more than 80 years, the Rohde & Schwarz name has been synonymous with quality, precision and innovation in all aspects of wireless communications technology.

The globally active private corporation develops, manufactures and sells a wide range of electronic capital goods for industry, infrastructure operators and government agencies.

Rohde & Schwarz ranks among the market leaders in all of its business fields, including wireless communications and EMI test equipment, terrestrial TV broadcasting equipment and equipment for monitoring and analyzing radio signals.

Since 1969, the Teisnach plant has been the competency center for mechanical and electronic manufacturing within the Rohde & Schwarz network of production plants.

Its broad spectrum of products includes enclosures, shielding components, antennas, printed boards, precision micromechanical parts and custom electromechanical products of all types.

As the competency center for transmitters and systems, the Teisnach plant produces and supplies all TV and radio broadcast transmitters as well as customized radiocommunications systems.

Its comprehensive range of services has made Rohde & Schwarz Teisnach a respected partner for contract manufacturing over the past 25 years.

Awards Teisnach plant

- Factory of the Year 2014 for Excellence in Control of Manufacturing Depth
- Bavarian Quality Award 2014
- Best Factory Award 2013
- Factory of the Year 2010 for Excellent Small Series Production

A success story since 1969

1969 The Teisnach plant is founded. 39 employees begin production of mechanical parts on leased premises.

1970 130 employees move into a new 6000 m² production building. The municipality dedicates a street name to Rohde & Schwarz

1971 Paintshop and electroplating department begin operations

1974 Purchase of a numerically controlled drilling and milling machine allows the start of NC production

1978 Upon completion of production building II, the total effective area grows to 11,000 m²

1984 The plant begins automated production of RF shielding technology.

1986 Upon completion of production building III, the total effective area extends to 25,000 m²

1992 Printed board production is expanded and the wastewater system is modernized

1997 New aluminum electroplating goes into operation

1999 Long-time plant manager Johann Bühler hands over responsibility to Reinhard Fischl

2003 Competency center for transmitter production and new logistics center with over 6000 m² are built; bringing the total effective area to 42,000 m².

2004 Johann Kraus replaces Reinhard Fischl as plant manager

2009 A new anodizing system is set up

2013 Move into production building VI; total effective area grows to 62,000 m²

2015 Printed board production is reorganized

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