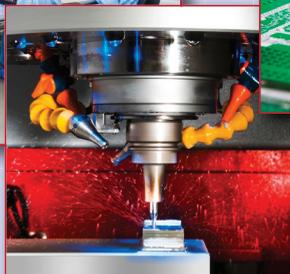


FAB S and LAB S

Rohde & Schwarz – Producing the Goods



Rohde & Schwarz is a familiar name with a well known, established portfolio. However, in facilities not generally on the radar, a lot goes on behind-the-scenes with its production that customers, competitors and the RF and microwave industry at large are unaware of.

The company's philosophy, since it was founded over 80 years ago, has been to locate development and production in close proximity to one another. That is why most products are manufactured near the company's Munich headquarters, at its plants in Memmingen and Teisnach in Germany and at Vimperk in the Czech Republic. Globally, production facilities in Singapore and Malaysia ensure that production is close to the Rohde & Schwarz R&D activities at its Asian headquarters, while the company has been manufacturing broadcast transmitters for the local market in China since 2010 and in Brazil since late 2012.

The depth, scope and capacity of Rohde & Schwarz' production capability is illustrated by the Teisnach plant, which is the competency center for mechanical and electronic manufacturing within the company's network of production plants. Its broad spectrum of products includes enclosures, shielding components, antennas, printed circuit boards (PCB), precision micromechanical parts and custom electromechanical products of all types. As the competency center for transmitters and systems, the plant produces and supplies all TV and radio broadcast transmitters, as well as customized radiocommunications systems.

The Teisnach plant offers its microproduction customers a comprehensive 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.

As the manufacturer of all Rohde & Schwarz PCBs, the plant utilizes the latest technology for production, with the capacity to deliver prototypes, functional samples and series-produced parts. The product range includes double-sided boards, conventional multilayers, RF multilayers and high density interconnect (HDI) multilayers.

Cable production includes ribbon cables, multiconductor connecting cables and cable harnesses, as well as rigid and flexible coaxial cables. Capabilities include the processing of semi-rigid SUCOFORM cables up to 67 GHz, automated 3D bending of metallic sheaths, automated induction soldering, production of control lines—testing up to 4,736 connections—preparation of computer-aided design (CAD) documentation, lead-free soldering in line with Waste Electrical and Electronic Equipment (WEEE) and RoHs and manual production of design models and very small series runs.

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

Over 300 square meters, the 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, while the clean room temperature remains a constant 21°C. The relative humidity is held at 50 percent, and the air in the room is filtered 25x per hour. Forty-four measurement points monitor particles to ensure that the maximum allowable size is not exceeded. There is another clean room that is compliant with ISO class 8, where the employees have been certified to European Space Agency (ESA) specification HL3 for the production of highly reliable hand-soldered components.

Having been founded in 1969 with just 39 employees on leased premises, and then expanding and moving to a new 6,000 square meter production building with 130 employees a year later, the Teisnach plant has mirrored the growth of Rohde & Schwarz with a number of reincarnations, the latest being in 2013, when the total effective area grew to 65,000 square meters with the transition to production building VI.

www.rohde-schwarz.com