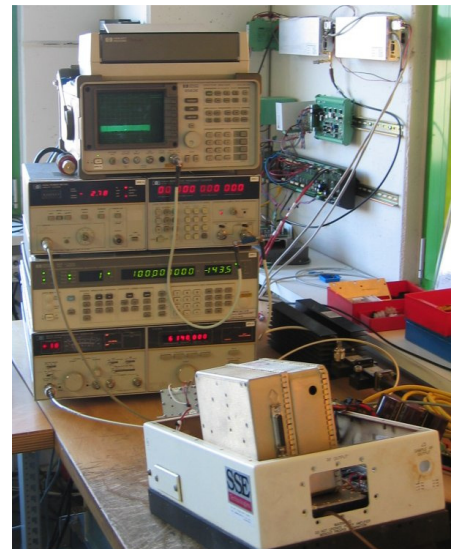


SatService Company Facilities & Equipment

The company SatService GmbH is working in a two floor building with more than 400m² working space. The space is divided in office rooms and two laboratories for software and hardware development and testing. In its RF/Microwave laboratory, SatService owns all necessary RF and microwave testing instruments. These give SatService the possibility to develop, test and verify all satellite ground stations and the related equipment. The following table gives an overview of some of the available measurement instruments at SatService.

RF Analyzer and Measurement equipment

| | |
|--|---------------------------------|
| Vectorial Network Analyzer 20GHz | Wiltron Model 360 |
| Vectorial Network Analyzer 3GHz | Agilent E5062A |
| Scalar Network Analyzer | HP8756A and HP 8341A |
| Microwave Link Analyzer | W&G RM5 / RM5S |
| Noise Figure Meter | HP8970B |
| Spectrum Analyzer 3GHz | Advantest R3131 |
| Spectrum Analyzer 26.5GHz | HP8563E |
| Spectrum Analyzer 30GHz | R&S FSV30 |
| Synthesizer 3GHz | HP8648B |
| Synthesizer 2060MHz | HP8657B |
| Synthesizer 18GHz | HP8672A |
| Synthesizer 26,5GHz | HP 8341A |
| Frequency Sweep Oscillators with different plug-ins from 2 to 18GHz | HP 8620C |
| Power Meter | HP436A with HP8481A and HP8484A |
| Oscilloscope | HP54503A |
| Oscilloscope | HP54645A |
| Bit-error-Analyzer 20KBit | Wandel & Goltermann PF-20 |
| Bit-error-Analyzer 64KBit | Wandel & Goltermann DF-64 |
| Bit-error-Analyzer 2MBit | Wandel & Goltermann PF-2 |
| Digital Transmission Analyzer 140MBit | HP 3764 A |
| Radio Link Measurement Set for amplitude and Group Delay Measurement | RMS-5 and RME-5 |



| | |
|-------------------------------------|---------------|
| Logic Analyzer | HP 1630 |
| Two Climatic Exposure Test Cabinets | -30° to 80° C |
| Analyzer | HP8563E |
| Multimeter | HP 3478 |
| Frequency Counter 20 GHz | HP5350A |
| Frequency Counter 18 GHz | HP5342A |
| Frequency Counter 1 GHz | HP5384A |

Audio Analyzer

| | |
|-----------------------|---------------|
| Audio Oscillator | Lindows LA101 |
| Audio Measurement Set | Lindows LA102 |

Stability Test Equipment and automated Test System



Test System

for automated tests of DC and RF-PCBs of *sat-nms* product series for example *sat-nms* LFRXTX Fiber Optical Links and *sat-nms* LSM L-Band Switch Matrix.

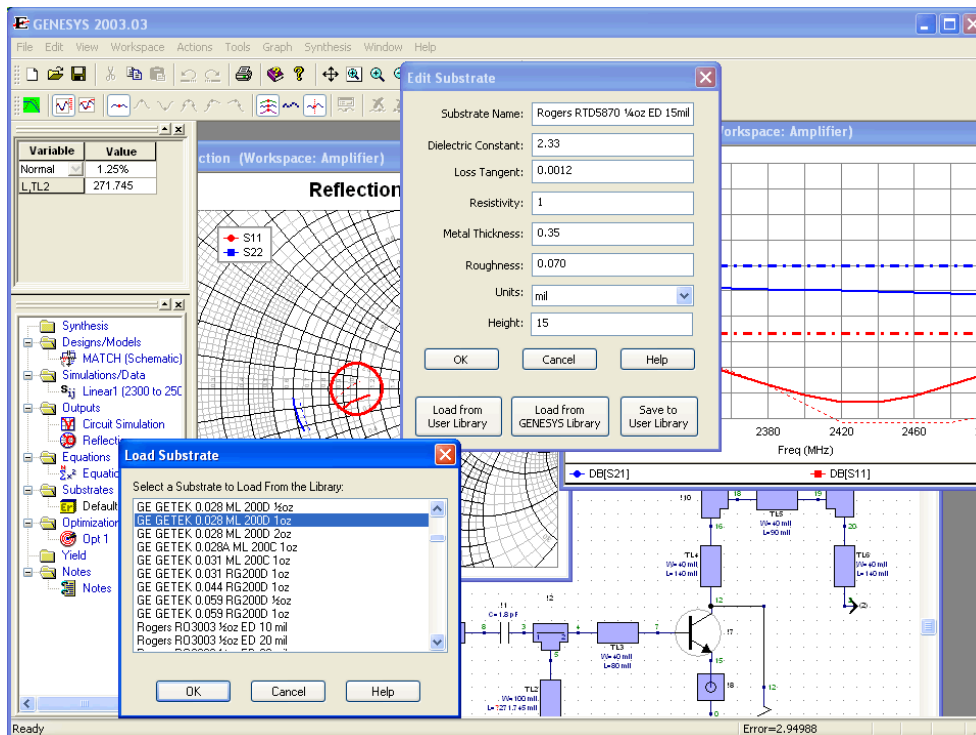
- The Test-System consists of:
- Network Analyzer E5062A
 - Synthesizer 8657B Qty. 2
 - Multimeter 3478A
 - Spectrum Analyzer R3131A
 - RF-Switch Box for L-Band
 - Different Power Supplies

Software development / Programming Language

| | |
|-------------------------|--|
| Java / Eclipse Platform | <i>sat-nms</i> MNC Software (Client / Server) |
| | Automatic Measurement Software |
| Delphi | Automatic Measurement Software |
| | Simulations |
| C/C++ | Beck IPC Microcontroller with integrated Web Server Applications |

Computer Aided Engineering

For its development activities, SatService makes use of the well-known analog CAE Simulation Tool GENESYS from Eagleware, one of the leading suppliers of CAE simulation software for RF and microwave developments. This software was selected by SatService GmbH as it does not only allow the simulation of any analog circuit between DC up to the microwave frequency bands but also allows the seamless generation of layouts for the printed circuit board production.



PCB Layout

Eagle PCB layout and Routing Software