

Anritsu and SWISSto12 Material Measurement Solution

Material measurements are integral when developing solutions in the millimeter-wave (mmWave) frequency range. PCB, antenna, radar measurement, and automotive/aeronautical engineers along with metrology and research institutes must characterize various materials to better understand their effects on how the electromagnetic waves travel through them (dielectric constant, tan delta, etc.). These material measurements are also becoming more critical for the Aerospace and Defense industry as well. Anritsu and SWISSto12 deliver a comprehensive material measurement solution ideal for lab, manufacturing, and university environments.

Anritsu and SWISSto12

The Anritsu VectorStar™ and ShockLine™ vector network analyzers (VNAs) are compatible with the SWISSto12 MCK systems, and are ideal for active and passive material measurements. Combining the ground-breaking VectorStar VNA's 70 kHz to 220 GHz single-sweep capability with the state-of-the-art SWISSto12 hardware and software technology, users now have a precise and accurate solution that can measure any material under test (MUT) from 25 GHz to 1.1 THz.

Note: Option 2, Time Domain must be ordered with the Anritsu VNA.

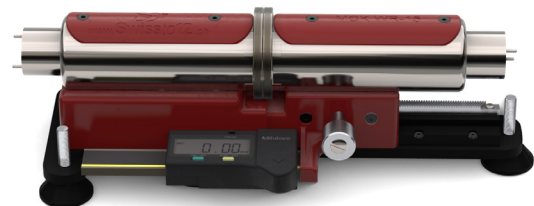
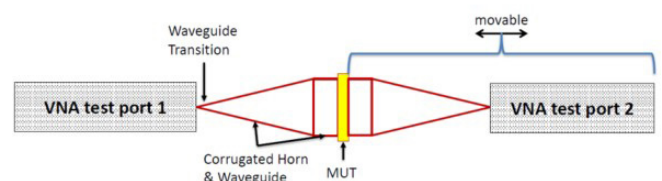
Capable of Measuring

- Solid sample
- Soft sample and foam
- Liquid samples and powders
- Thin films
- Dielectric coatings and multilayer material

Specifications

Frequency Range:	25 GHz to 1.1 THz
Measureable Permittivity Range:	1 to 100
Measureable Tan Delta:	0.0005 to 2
Accuracy for Permittivity and Tan Delta:	1% for permittivity, 5% for Tan Delta
Specimen Size and Thickness:	Recommended lateral dimensions 50 x 50 mm, thickness up to 20 mm
Software Algorithms:	Frequency independent and frequency dependent fitting available
Upgrade Kits:	a) Soft Samples & Foams; b) Liquids & Powders; c) Coatings & Multilayered Materials

MCK Working Principle



Software Capabilities

SWISSto12 has developed the WebMCK software that easily interfaces via PC to the Anritsu VectorStar or ShockLine solutions to enable easy extraction of material properties. This software offers various upgrade options that can be selected based on user requirements.



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Ordering Information Anritsu



VectorStar VNA Family



ShockLine E-Band VNA



ShockLine VNA Family

SWISSto12 MCK Model List

WR-28	25 to 40 GHz	WR-6.5	110 to 170 GHz
WR-22	33 to 50 GHz	WR-5.1	140 to 220 GHz
WR-19	40 to 60 GHz	WR-4.3	170 to 260 GHz
WR-15	47 to 75 GHz	WR-3.4	220 to 330 GHz
WR-12	55 to 90 GHz	WR-2.2	330 to 500 GHz
WR-10	67 to 110 GHz	WR-1.5	500 to 750 GHz
WR-8	90 to 140 GHz	WR-1.0	750 to 1100 GHz

A recommended size for a solid sample is 50 x 50 x 5 mm. Boundary case: 18 x 18 mm - minimal surface, 21 mm - maximum thickness. Recommended and boundary sizes may vary with a model and type of material.

