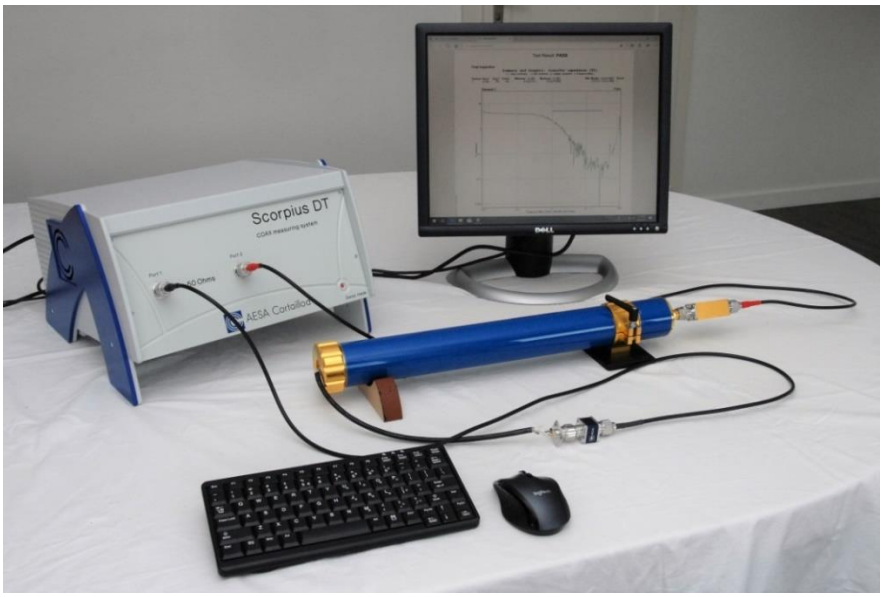
Scorpius DT 1

High frequency measuring system well suited for EMC parameters or coaxial cables



DESCRIPTION

Scorpius DT 1 automatic test equipment (ATE) is designed to measure high frequency parameters of coaxial cables. Coupled with a tri-axial tube it is also the perfect solution to measure EMC parameters (Transfer Impedance, Screening and Coupling Attenuation) of telecom cables.

Our dedicated N-type (N50 and N75/F75) interfaces let you quickly connect your different products while ensuring perfect contact of both the core and the shield of your coaxial cable.

This fully integrated ATE is not only offering operating comfort, but is also providing high measurement accuracy.

KEY FEATURES

- Complete solution
  - Embedded VNA (Vector Network Analyser)
  - Integrated computer and software
- For any type of coaxial cable
  - 50 and 75 Ohms
  - ∅ 2 to 9 mm
- High Accuracy
  - checked against traceable calibration standards according to ISO/IEC 17025
- Easy to operate
  - “Gating” and “RL fitting” software functions included to remove the effects of the connector and cable preparation
- Fast measurements
- Overall accuracy
  - specifications related to the whole system, not the VNA only

AESA Cortaillod

TECHNICAL SPECIFICATIONS

Measuring range	100 kHz – 1.3 GHz
Diameter range	∅ 2 to 9 mm on shield
Accuracy	See table below
Integrated equipment	• Network Analyser for HF measurements • Embedded windows based PC with Windows 10 operating system
Standards	Performs all electrical tests on cables responding to: • ANSI/TIA-568.4-D for Broadband Coaxial Cabling and Component Standard • IEC 61196-x • EN 50117-x
Supply voltage	100 - 240 VAC / 50-60Hz
Interfaces	6 x USB (e.g. for printer) 1 x VGA Display Port connector for external monitor (delivered with the system) 1 x DVI Display Port 1 x HDMI 1 x RJ45 for LAN connection
Components	• Embedded network analyser • Embedded PC with Windows operating system, external display, keyboard & mouse • 1 license OptiTest, AESA measurement and result management software • Power supply, interface and connecting cables
Dimensions	400 x 410 x 250 mm (15.8” x 16.1” x 9.9”)
Weight	≈ 11 kg (24 lbs)
Article No	20.9701.0001.00 (50Ω and 75Ω outputs) 20.9701.0002.00 (50Ω or 75Ω output)

ACCURACY

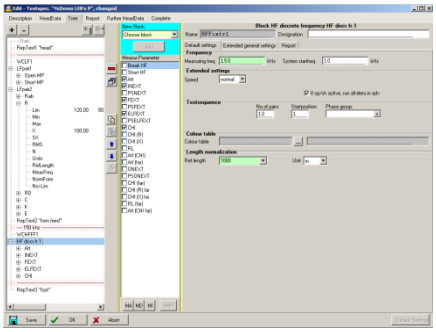
	From	To		100 kHz 100 MHz	100 MHz 500 MHz	500 MHz 1.3 GHz
S21 transmission (Attenuation, NEXT) corrected at 20°C	-80	-50	dB	± 1.5 dB	± 1.7 dB	± 1.9 dB
	-50	-25	dB	± 0.5 dB	± 0.6 dB	± 0.7 dB
	-25	-10	dB	± 0.2 dB	± 0.3 dB	± 0.4 dB
	-10	0	dB	± 0.2 dB	± 0.2 dB	± 0.4 dB
Impedance	50	50	Ω	± 0.5 Ω	± 0.7 Ω	± 1.0 Ω
	75	75	Ω	± 0.75 Ω	± 1.2 Ω	± 1.5 Ω

OPTIONS

- Calibration kits N50, N75, F75
- Low frequency option
- Printer
- Maintenance contract
- EMC parameters (Electro Magnetic Compatibility)
  (Transfer Impedance TI, Screening Attenuation AS)
- Mode Conversion parameters (TCL, ELTCTL, …)
- Baluns kit
  (manual method to characterize communication cable)
- 9800 HF standards (50Ω SMA)
- Universal connector (for a fast and reliable connection
- Fastcon
  (customized connector for a fast and reliable connection)

AESA proposes other specific equipment for high frequency measurement.

KEY BENEFITS



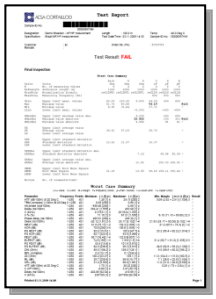
USER-FRIENDLY

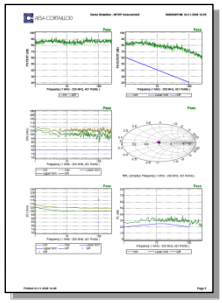
- Optitest software is multilingual
- Direct results without post calculation
- Calibration automatically managed/saved by computer
- Test orders library

ISO 17025 ACCREDITED

ACCURATE

- The equipment is checked against traceable calibration standards according to ISO/IEC 17025
- The risk of human error is reduced to its minimum





SMART

- All data (results and conditions) are saved in its internal PC
- Reports can be printed
- Data can be exported through the LAN in an ASCII or XLS file

UNIVERSAL

- All Coax can be measured (∅ 2 to 9 mm on shield)

Options

1. *LF 9100 measuring parameters option*

Article No: 50.0001.00078.0

The low frequency parameters measuring technology provides a self-calibration. Different measuring frequencies (from 12.5Hz to 1'000Hz) are integrated in the capacitance bridge in two versions: one version provides measurements at 12.5Hz, 125Hz and 800Hz, the second one at 12.5Hz, 125Hz and 1'000Hz. Please specify which type you prefer when ordering.

Description	Designation	Accuracy	Scale
Resistance (core and screen)	Ra, Rb	± 0,1% + 10 mΩ	0 - 19,999 kΩ
Capacitance	C	± 0,25% ± 10pF @800 Hz / 1kHz ± 0,25% ± 10pF @125 Hz ± 0,25% ± 50pF @12,5Hz	0 – 2'000nF

Calculated parameters at 800Hz – 1 kHz

- Attenuation
- Characteristic Impedance
- Phase
- Velocity of propagation (VOP)

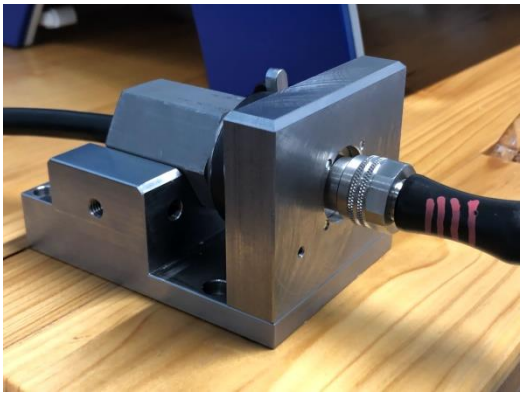
Statistical parameters

- Maximum and minimum measured values
- Absolute minimum measured value
- Average value
- Quadratic average
- Standard deviation
- Quality factor up
- Quality factor down
- RC product
- Standard deviation RC
- Variance

2. *Universal Connector*

Article No: 50.0100.0019.0

AESA proposes universal connector covering ∅ 4 to 16mm (on shield) for a fast and reliable connection of your coax to the N-type ports



3. *Fastcon Connectors*

Article No: 50.0100.0013.0

AESA proposes customized connectors for a fast and reliable connection of your coax to the N-type ports

4. EMC Parameters *(Transfer Impedance, Screening/Coupling Attenuation)*

To perform EMC measurements with the tri-axial method, following accessories are required :
- the hardware package to prepare the sample and take care for the impedance adaptation
- the software package (specific measurement module)

These accessories allow measuring the transfer impedance, the screening attenuation and coupling attenuation according to IEC 62153-4-9 when knowing the impedance of the internal coaxial cable created with the sample under test.

- **Transfer Impedance Kit, Ø 2.3 - 9.8 mm** — Article No: 50.0001.0072.0
- **Transfer Impedance Kit, Ø 6 - 22 mm** — Article No: 50.0001.0073.0

5. *Mode Conversion parameters TCL & ELTCTL*

To perform Mode conversion parameters measurements, following accessories are required

- One hardware connecting frame with special balun
- One software package (specific measurement module)

These accessories allow measuring all Mode conversion parameters like TCL, TCTL, LCL, LCTL, EL LCTL and EL TCTL.

- **TCL & ELTCTL option 4 pairs for UTP cables** — Article No: 51.0001.0024.0
- **TCL & ELTCTL option 4 pairs shielded version for FTP cables** — Article No: 51.0001.0089.0

6. Baluns Kits

To characterize communication cables, Baluns (impedance transformers) are required to measure impedance, attenuation, crosstalk and all related parameters. The various frequency ranges allow testing of, for example, Cat 5, 6 and 7 cables against international standards.
The Baluns are presented in a heavy duty plain aluminium package. To measure shielded products, the shield can be connected to the Balun in order to maintain the floor noise down to 90dB. Cable preparation is also very important to respect the technical constraints when measuring in the high frequency range.

- 600 MHz version : Article No: 50.0001.0020.0
- 1.2 GHz version : Article No: 50.0001.0030.0

7. Calibration Kits

➢ Calibration kit type N 50 or 75 Ohms

Type N:

The calibration kit contains of a male-male thru cable, a male load and a one-piece male open/short circuit.

- 50 Ohms 6GHz: Article No: 45.8503.0008.0
- 75 Ohms 3GHz: Article No: 45.8503.0009.0

Type F:

The calibration kit contains of male and female loads, opens and shorts and a female-female thru.

- 75 Ohms 3GHz : Article No: 45.8503.0005.0

8. Printer

Article No: 55.0500.0021.0

LaserJet printer.

9. Maintenance contract

Article No: 60.0100.0002.0

Details upon request.