Scorpius DT 6

Compact system to measure the cable high frequency parameters up to 6 GHz

DESCRIPTION

Scorpius DT 6 automatic test equipment (ATE) is designed to measure high frequency parameters of coaxial 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 coax cable.

This fully integrated automatic testing equipment (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 Ohms
  - 75 Ohms
  - ∅ 2 to 9 mm
- High Accuracy
  - checked against traceable calibration standards according ISO/IEC 17025
- Easy to operate
- Fast measurements
- Overall accuracy
  - specifications related to the whole system, not the VNA only

AESA Cortaillod

TECHNICAL SPECIFICATIONS

Measuring range	100 kHz – 6 GHz (frequency extension on request)
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	20.9706.0001.00 (50Ω and 75Ω outputs) 20.9706.0002.00 (50Ω or 75Ω output)

ACCURACY

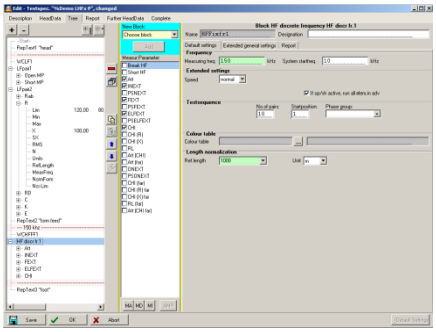
	From	To		100 kHz 100 MHz	100 MHz 500 MHz	500 MHz 1 GHz	1 GHz 3 GHz	3 GHz 6 GHz
S21 transmission (Attenuation, NEXT) corrected at 20°C	-80	-50	dB	± 1.5 dB	± 1.7 dB	± 1.9 dB	± 2.4 dB	± 3.0 dB
	-50	-25	dB	± 0.5 dB	± 0.6 dB	± 0.7 dB	± 0.9 dB	± 1.5 dB
	-25	-10	dB	± 0.2 dB	± 0.3 dB	± 0.4 dB	± 0.8 dB	± 1.3 dB
	-10	0	dB	± 0.2 dB	± 0.2 dB	± 0.4 dB	± 0.8 dB	± 1.3 dB
Impedance	50	50	Ω	± 0.5 Ω	± 0.7 Ω	± 1.0 Ω	± 1.5 Ω	± 4.0 Ω
	75	75	Ω	± 0.75 Ω	± 1.2 Ω	± 1.5 Ω	± 2.0 Ω	± 6.0 Ω

OPTIONS

- Calibration kits N50, N75, F75
- Low frequency option
- Regularity of Impedance
- Printer
- Maintenance contract
- Gating (to remove the connector influence)
- Universal connector (for a fast and reliable connection
- Fastcon (customized connector for a fast and reliable connection)
- EMC parameters (Electro Magnetic Compatibility) (Transfer Impedance TI, Screening Attenuation AS)
- Mode Conversion parameters (TCL, ELTCTL, …)
- 9800 HF standards (50Ω SMA)

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

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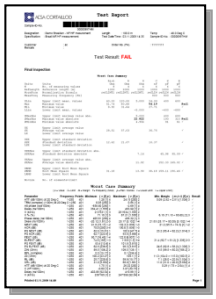
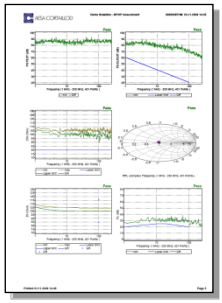
ACCURATE

- 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 12.5 to 1000 Hz) are integrated in the capacitance bridge in two versions: one version provides measurements at 12.5, 125 and 800Hz, the second one at 12.5, 125 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

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. *Gating option*

Article No: 52.0001.0009.0

Gating for cables is used to remove the connector influence. This function allows to selectively remove or reduce unexpected mismatches in transmission occurring out of the defined gate. Gating is a function designed to set a measuring “gate” in the “time domain”, meaning to set start and stop positions.

3. *Regularity of Impedance*

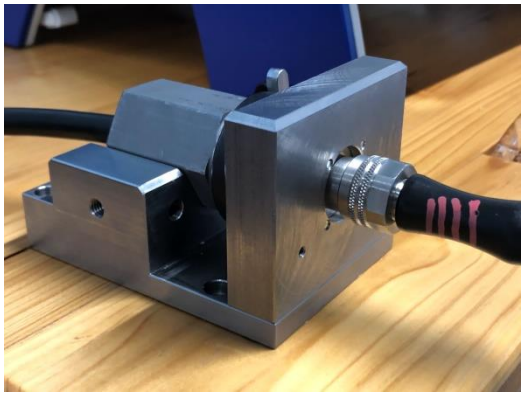
Article No: 52.0001.0010.0

Regularity of impedance for coaxial cables is used to measure the impedance along the cable length, means in the time domain. As described in IEC 62153-1-1(Measurement of the pulse/step return loss in the frequency domain using the Inverse Discrete Fourier Transformation (IDFT)), the measurement in frequency domain is transformed into time domain by IDFT. The maximum measured length is 500m for measurements from one side and 1000m for measurements applied from both sides.

4. 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



5. 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

6. 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, ∅ 2.3 - 9.8 mm Article No: 50.0001.0072.0

- Transfer Impedance Kit, ∅ 6 - 22 mm Article No: 50.0001.0073.0

7. 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

8. Calibration Kits

➢ *Mini 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

9. *Set of ISO 17025 certified HF standards type AESA 9800* Article No: 45.9800.0001.0

This set of "coaxial" primary standards, certified ISO 17025, allows the periodic calibration, thus proving the accuracy of the complete measurement system (Vector Network Analyzer + RF multiplexer + connecting frame).
This set of "coaxial" primary standards should not be mixed up with the "symmetrical" zero correction kit, delivered with the ATE, which is used to carry out the periodical zero correction files of the equipment, required to measure LAN cables.
The set of certified HF standards is composed of:

- 2 attenuation references type 9801 – 3dB
- 2 attenuation references type 9802 – 6dB
- 2 attenuation references type 9803 –10dB
- 2 attenuation references type 9804 –20dB
- 2 attenuation references type 9805 –30dB
- 2 x 50Ω terminations
- 2 special connectors for the terminations
- 4 HF connecting cables for the attenuation
- 1 set of miscellaneous HF material

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10. Printer

Article No: 55.0500.0021.0

LaserJet printer.

11. Maintenance contract

Article No: 60.0100.0002.0

Details upon request.