Scorpius R 6

Automatic measuring system for coaxial cable high frequency parameters up to 6 GHz

DESCRIPTION

Scorpius R 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 cables.

This fully automatic testing equipment (ATE) is not only offering operating comfort, but is also providing high measurement accuracy.

KEY FEATURES

- For any type of coaxial cable
  - 50 Ohms
  - 75 Ohms
  - ∅ 2 to 9 mm
- High Accuracy
  - checked against traceable calibration standards according to ISO/IEC 17025
- Easy to operate
- Fast measurements
- Protect the Vector Network Analyser
  - No direct connection to the VNA ports

AESA Cortaillod

TECHNICAL SPECIFICATIONS

Measuring range	30 kHz – 6 GHz depending on the VNA (frequency extension upon request)
Diameter range	∅ 2 to 9 mm on shield
Accuracy	See table below
Standards	Performs 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 hardware with 1 or 2 x N ports output (50Ω and/or 75Ω) with automatic switching depending on the selected test order for HF measurements up to 6GHz • Computer with Windows operating system, external display, keyboard & mouse • 1 license OptiTest, AESA measurement and result management software • Power supply, interface and connecting cables
Article No	20.9700.0003.0 (50 or 75 Ω version with 1 N port) 20.9700.0001.0 (50 and 75 Ω version with 2 N ports)

ACCURACY

	From	To		30 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

REQUIRED COMPONENTS

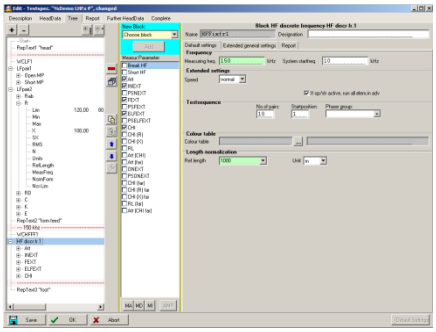
- Vector Network Analyzer (VNA)
  - can be supplied by AESA as an option.
  - an analyzer provided by the customer can be integrated by AESA (upon request)

OPTIONS

- Calibration kits N50, N75, F75
- Low frequency option
- Printer
- Maintenance contract
- 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)
- 9800 HF standards (50Ω SMA)

AESA proposes other specific equipment for high frequency measurement.

KEY BENEFITS

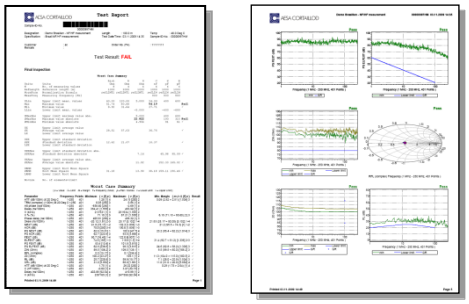


USER-FRIENDLY

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

ACCURATE

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



SMART

- All data (results and conditions) are saved in the computer
- 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. *Network Analyser*

- Keysight E5080B 2 ports (9 kHz – 6.5 GHz) Article No: 51.0001.0098.0
- Rohde & Schwarz ZNB4 (9 kHz – 4.5 GHz) Article No: 51.0001.0061.0

Other types can be proposed upon request.
We can also integrate an analyzer provided by the customer.

2. *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

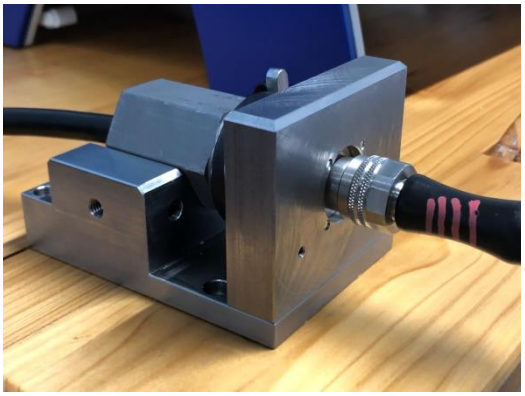
Statistical parameters

- 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

3. *Universal connector*

Article No: 50.0010.00019.0

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



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4. *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

5. *EMC Parameters (TI, AS, AC)*

To perform EMC measurements (Transfer Impedance, Coupling Attenuation, Screening Attenuation) with the tri-axial method, following accessories are required:

- One hardware package to prepare the sample and take care for the impedance adaptation
- One software package (specific measurement module)

These accessories allow measuring the transfer impedance, the screening attenuation and the 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: 51.0001.0072.0

- Transfer Impedance Kit, ∅ 6 - 22 mm Article No: 51.0001.0073.0

6. *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
- ➢ 75 Ohms 12GHz: Article No: 45.8503.0002.0

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

7. *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

ISO 17025 ACCREDITED

8. *Printer*

Article No: 55.0500.0021.0

LaserJet printer.

9. *Maintenance contract*

Article No: 60.0100.0002.0

Even the most reliable systems require regular, planned and preventive maintenance as well as periodical calibrations. AESA proposes service packages to extend the operating lifetime of your equipment, control of your maintenance costs and ensure optimal performances.