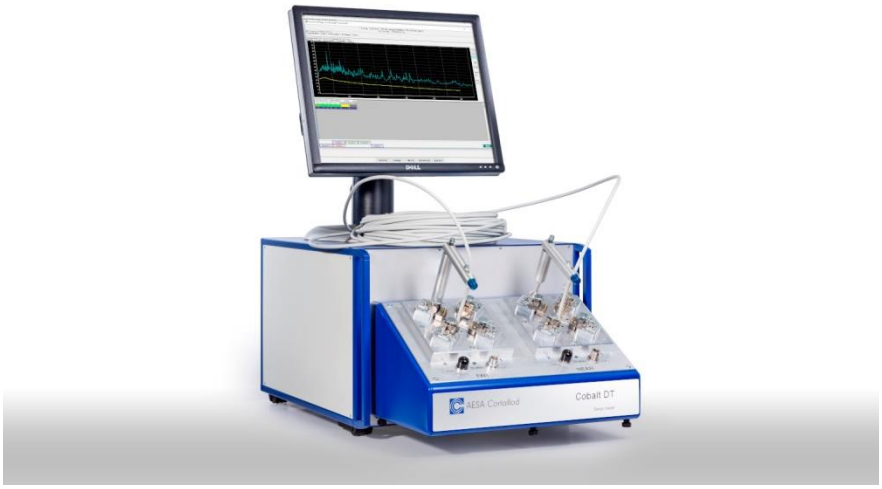
Cobalt 4 DT

Desktop fully integrated automatic test system for data cables



DESCRIPTION

Copper Communication Cables are specified for increasingly broader frequency ranges. Conventional balun based test equipment cannot measure more than three frequency decades, and that is the reason why the cable industry is looking for an alternative measuring method which overcomes this limitation. AESA unique automatic balunless test system based on the modal decomposition mathematical algorithm is your perfect solution.

By conducting measurements on individual wires and not just on pairs, Cobalt 4 DT allows measurement of a particularly wide range of parameters that cannot generally be tested by conventional methods. This fully integrated equipment is a valuable tool also to assist you in cable development. Equally important, final cable testing is rendered simpler and more reliable as it is fully automated, thus eliminating the need for the operator to conduct very cumbersome tasks with the associated risks of handling errors.

KEY FEATURES

- **Integrated solution**
  - 4 pair connecting frame
  - Embedded VNA (Vector Network Analyser)
  - Integrated computer and software
- **High-Tech**
  - Balunless technology (modal decomposition mathematical algorithm)
  - Executive HF switches using MIL standardized relays
- **Performant**
  - More than 170 parameters (including LCL measurement with integrated common mode)
  - Performs all electric tests on cables responding to major standards
  - checked against traceable calibration standards according to ISO/IEC 17025
- **Go over the limits**
  - Very broad frequency range (<3GHz) for cat 8 and higher
  - Full dynamic range available
  - Short cable length (10m)

AESA Cortaillod

TECHNICAL SPECIFICATIONS

Measuring range	100 kHz – 3 GHz (Frequency extension upon request)
Integrated equipment	• 4 pair connecting frame for HF measurements • Embedded Network Analyser for HF measurements • Embedded windows based PC with operating system Windows 10 • 1 license OptiTest, AESA measurement and result management software • Power supplies, interfaces, connecting cables and measurement accessories
Standards	Performs all electrical tests on cables responding to: • ANSI/TIA-568-C.2 for Category 3, 5e, 6 and 6A • ANSI/TIA-568-C.2-1 for Category 8 • IEC 61156-5/-6 for Category 5e, 6, 6A, 7 and 7A • IEC 61156-7/-8 for cables up to 1200MHz • IEC 61156-9/-10 for Category 8.1 and 8.2
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
Dimensions	750 x 450 x 325 mm (29.5” x 17.7” x 12.8”)
Weight	≈ 35 kg (78 lb)
Article No	30.3504.0005.0

ACCURACY

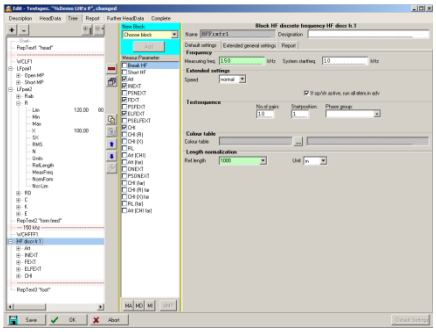
	100 kHz - 10 MHz	**10 MHz - 100 MHz**	**100 MHz - 200 MHz**	**200 MHz - 400 MHz**	**400 MHz - 750 MHz**	**750 MHz - 1.5 GHz**	**1.5 GHz - 3 GHz**
-80 to -50 dB	± 1.3 dB	± 1.5 dB	± 1.7 dB	± 1.9 dB	± 3 dB	± 4 dB	± 6 dB
-50 to -25 dB	± 0.5 dB	± 0.6 dB	± 0.6 dB	± 0.7 dB	± 0.9 dB	± 1.5 dB	± 2 dB
-25 to -10 dB	± 0.2 dB	± 0.2 dB	± 0.3 dB	± 0.4 dB	± 0.8 dB	± 1.3 dB	± 1.7 dB
-10 to 0 dB	± 0.2 dB	± 0.2 dB	± 0.2 dB	± 0.4 dB	± 0.8 dB	± 1.3 dB	± 1.5 dB
-90 to -60 dB	± 2 dB	± 2 dB	± 2 dB	± 2.5 dB	± 4 dB	± 6 dB	± 8 dB
-60 to -30 dB	± 1.6 dB	± 1.4 dB	± 1.4 dB	± 1.6 dB	± 1.8 dB	± 4 dB	± 6 dB
-30 to -10 dB	± 0.5 dB	± 0.8 dB	± 0.8 dB	± 1 dB	± 1.5 dB	± 2 dB	± 3 dB
70 Ω - 90 Ω	± 1 Ω	± 1.5 Ω	± 2 Ω	± 2 Ω	± 3 Ω	± 4.5 Ω	± 6 Ω
90 Ω - 110 Ω	± 0.75 Ω	± 1 Ω	± 1.5 Ω	± 1.5 Ω	± 2 Ω	± 4 Ω	± 5 Ω
110 Ω - 130 Ω	± 1 Ω	± 1.5 Ω	± 2 Ω	± 2 Ω	± 3 Ω	± 4.5 Ω	± 6 Ω

OPTIONS

- Low frequency parameters measuring unit
- 50 / 75 Ω switch for coaxial cable or option
- Alien Crosstalk
- Connecting frame for connectors (e.g. RJ45)
- Gating
- Printer
- EMC parameters (Transfer Impedance TI, Screening Attenuation AS, Coupling Attenuation AC)
- Set of High Frequency calibration standards AESA 9800
- Set of Low Frequency calibration standards AESA 9000
- Maintenance contract

AESA proposes other specific equipment for high frequency measurement.

KEY BENEFITS

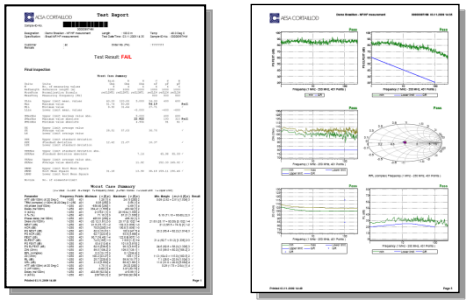


USER-FRIENDLY

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

ACCURATE

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



SMART

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

Options

1. 9800 HF Standards

Article No: 45.9800.0001.0

➢ Set of HF calibration standards (attenuators and loads) type AESA 9800

With each sold measuring system, AESA delivers a "daily" calibration kit to create the different calibration files necessary to measure LAN cables. These easy-to-use standards have obviously been developed in the symmetrical way to get the maximum accuracy. However, these "daily" standards cannot be referenced to primary standards. But AESA has developed its HF technology by using hi-tech strategic components. These miniaturized resistors are sorted and guaranteed up to 3GHz. Tolerance: 1% (50 ppm/deg.) for values between 50 and 200Ω.

ISO 17025 ACCREDITED

During a quality control calibration, the symmetric elements have to be replaced by 50Ω coaxial standards which are this time certified. In fact, with an appropriate set of terminations and attenuators, it is possible to prove within a certain tolerance that our Cobalt DT system (Vector Network Analyser + HF multiplexer + connecting frame) is measuring correctly. It is also possible to verify that the calibration done for the measurement of LAN cables has been done correctly.

The kit of certified HF calibration standards is composed of:

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

2. Coax Option

Specific output (N-connectors) for coax measurement. The solution includes the equipment modification and related software module.

- **50 ohms coaxial option** — Article No: 50.0001.0031.0
- **50 and 75 ohms coaxial option** — Article No: 50.0001.0029.0

3. EMC Parameters

Article No: 51.0001.0035.0

➢ Transfer Impedance Kit, including Coupling and Screening Attenuation 2.3-9.8 mm

To perform EMC measurements with the triaxial 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)

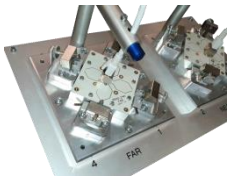
This option allows measuring the transfer impedance, the screening attenuation and coupling attenuation according to IEC 62153-4-9 when knowing the impedance of the internal coaxial cable created with the sample under test.

It is possible to add a multiplexer with a coaxial 50Ω and 75Ω switch allowing connecting the cable under test to a different port. This is mainly to avoid numerous manipulations on the expensive output ports of the Network Analyser.

4. RJ45 Option

Article No: 50.0001.0070.0

RJ45 patch cord testing: easy and direct adaptation to the Cobalt frame.



5. Spare Parts

AESA recommends following set of spare parts for an operation safety of two years:

Cobalt Type	HF measurement only (Mini kit)	Including optional LF measurement (Full kit)
1 CKE measuring bridge type KM		✓
1 R measuring bridge type RM		✓
1 LF relay matrix board type AZU		✓
1 CPU board		✓
2 test heads (4 if two different connecting frames)	✓	✓
2 HF relays (3 if two different connecting frames)	✓	✓
1 control boards set	✓	✓
1 set of HF cable	✓	✓
1 set of different mechanical and electronic hardware	✓	✓
Article No	50.0900.0003.0	50.0900.0002.0

6. Printer

Article No: 55.0500.0012.0

LaserJet printer.

7. Maintenance contract

Article No: 60.0100.0002.0

Details on request.