

Measurement of EMC Parameters

Measuring the Transfer Impedance (TI), Screening Attenuation (AS) and Coupling Attenuation (AC) of cables by using the triaxial method



DESCRIPTION

Due to increasing electromagnetic disturbances of all kinds, along with higher requirements and new applications, the investigation of the electromagnetic behaviour of electric and electronic equipment becomes more and more important. This is highly valid for cables with respect to their electromagnetic performance and screening behaviour.

Even if different test methods exist, the triaxial test method is the favoured one in the cable industry. Both, coaxial and balanced cables can be measured with this method. The frequency range is from 30 kHz to 3 GHz or above depending on the setup and the parameters.

The EMC measurements require perfect skills in the RF domain, due to the fact that the precision of the results depends heavily on the care given to cable preparation and test fixture connection.

KEY FEATURES

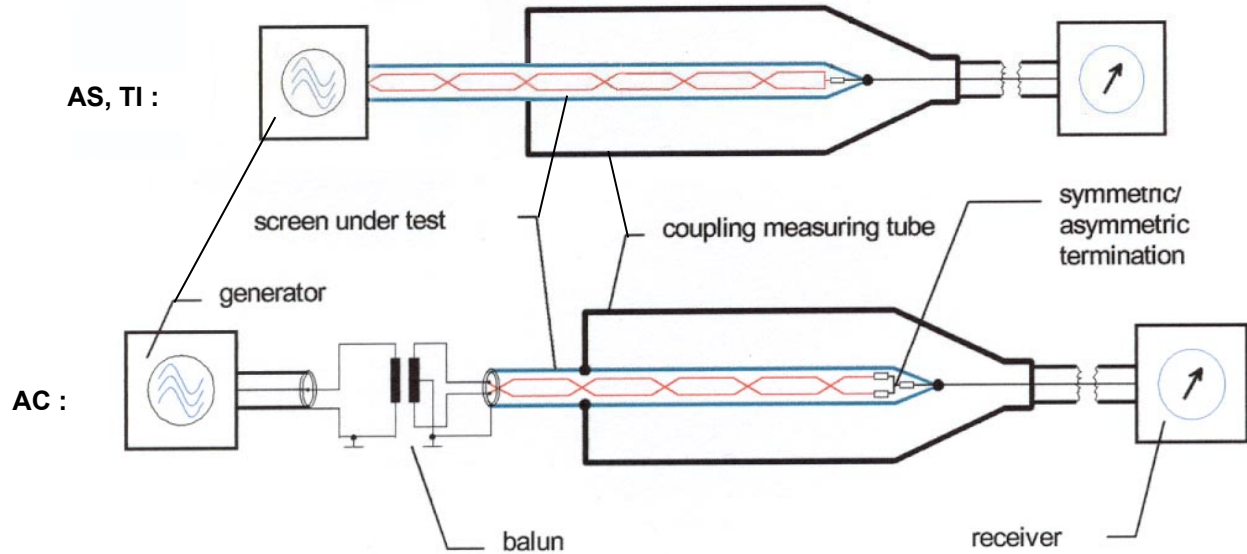
- Insensitive against electromagnetic disturbances from outside
- No radiation of electromagnetic signals to the environment
- High dynamic range > 125 dB
- High reproducibility
- Fast preparation of cable samples
- Compatible with AESA test equipment means:
 - ➔ Can be used as an option for any HF AESA testing equipment (including PC and VNA)
 - ➔ Consolidated test reports, calibration management, data storage, ... and more (see OptiTest)



AESA Cortailod

METHOD

The configuration of the measurement is shown below:



TECHNICAL SPECIFICATIONS

Sweep type	linear or logarithmic scale; 30s @ IF BW 30 Hz (depending on the VNA)
Range	30 kHz to 3 GHz (depending on the VNA and the selected parameter)
Number of points	No restriction
Accuracy	± 2 dB on the limit line from 30 kHz to 30 MHz and ± 3 dB up to 3 GHz
Measuring length	0.5 m for TI, 3 m for AS and AC
Standards	Performs all EMC test procedures listed in: <ul style="list-style-type: none"> • ANSI/TIA-568.2-D • IEC 61196-X; IEC 61156-X • YD/T 1019-2013
Components	<ul style="list-style-type: none"> • Hardware package to prepare the sample and take care of the impedance adaptation • AESA OptiTest measurement software
Article No	51.0001.0072.0 for the Model CoMeT 40 from Ø 2.3 to 9.8 mm 51.0001.0073.0 for the Model CoMeT 90 from Ø 6 to 22 mm

mΩ/m	300 to 1000	100 to 300	30 to 100	10 to 30	3 to 10	1 to 3	<1
Accuracy	15%	10%	10%	10%	15%	20%	50%
dB Level	-60	-70	-80	-90	-100	-110	-120

REQUIRED COMPONENTS

The system must be completed with:

- Vector Network Analyzer (VNA). This can be provided by AESA or by the customer;
- or
- Scorpius 1 DT, fully integrated system with embedded VNA, PC and software;
- or
- Using it as an option for an existing AESA test equipment (ATE).

AVAILABLE OPTIONS

The equipment can be completed with:

- Extension to Ø 42 mm available for Model CoMeT 90
- Extension to Ø 65 mm available for Model CoMeT 40 or 90
- Special test adapter to measure Coupling and Screening Attenuation of an unscreened pair.

Options

1. Extension up to \varnothing 42 mm available for the Model CoMeT 90

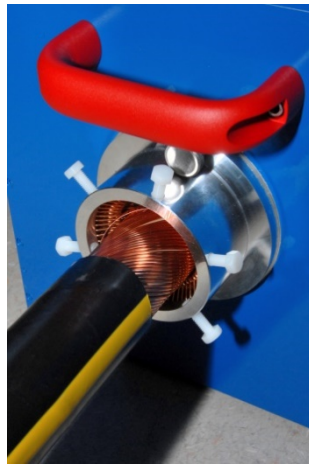
Article No: 51.0001.0093.0

This extension is to measure cables with a diameter from 22mm to 42mm. It includes 7 sets of rings.

2. Extension up to \varnothing 65 mm available for the Model CoMeT 40 or 90

Article No: 51.0001.0091.0

This extension (including triaxial cell) is to measure cables with a diameter up to 65mm



Remark:

Different VNA types can be proposed upon request.

Our Scorpius 1 DT is recommended. This fully integrated device includes an embedded VNA, computer and software. It has a female N-type 50 Ohm interface to connect quickly the EMC tube connections.

