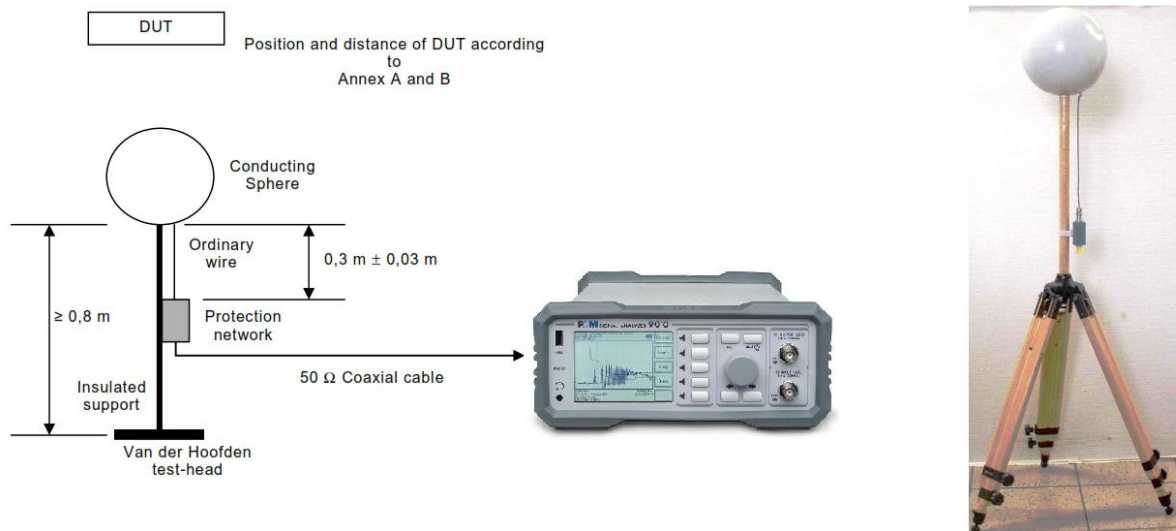


APPLICATION NOTE

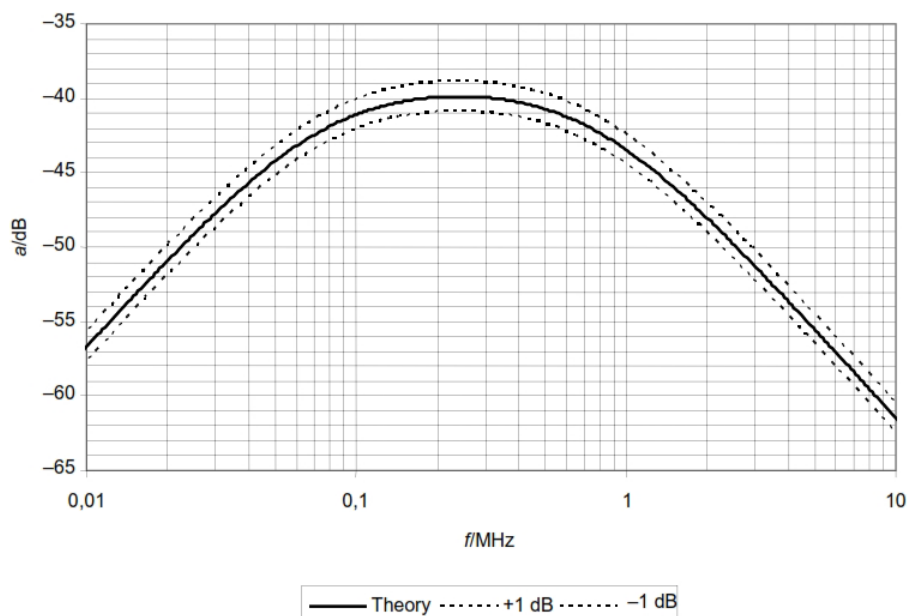
VAN DER HOOFDEN TEST-HEAD VDH-01

The test-head is composed by four parts:

- A conductive sphere of 210 mm diameter simulating the human head
- A connecting wire simulating the neck
- An impedance-matching network into 50 Ω , also used as overload protection for the receiver
- A suitable support (wooden tripod) with minimum height of 80 cm



The transfer function of the impedance-matching network (also called “protection network”) must be defined very precisely (± 1 dB) and represents the calibration curve of the test-head:



Purpose of the test is measuring currents induced in the test-head in the frequency range from 20 kHz to 10 MHz and according the receiver settings as stated in these tables:

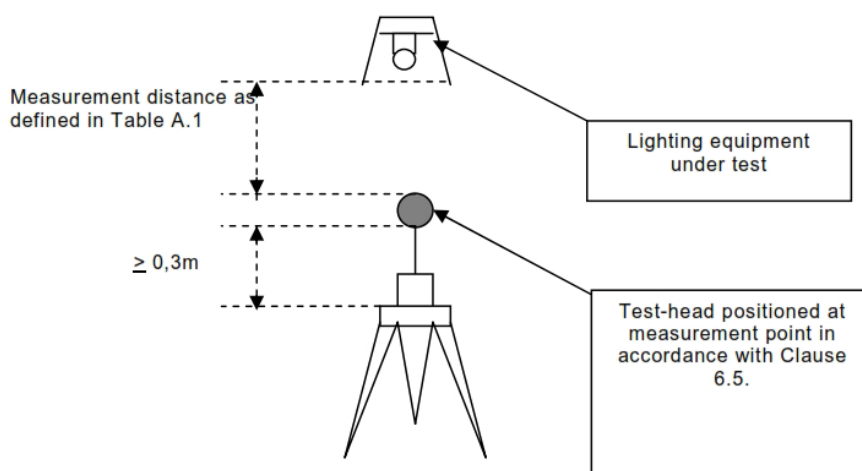
Table 2 – Receiver settings

Frequency range	B_6 according to CISPR 16-1-1	Measurement time	f_{step}	Detector
20 kHz – 150 kHz	200 Hz	100 ms	220 Hz	Peak
150 kHz – 10 MHz	9 kHz	20 ms	10 kHz	Peak

Table D.3 – Frequency steps

Frequency range	B_6 according to CISPR 16-1-1	$f_{\text{step_ampl}}$
20 kHz – 150 kHz	200 Hz	220 Hz
150 kHz – 10 MHz	9 kHz	10 kHz

Typical measurement set-up:



Further examples are presented in the IEC 62493, Annex B.

Assessment method

The assessment method requires:

1. Converting the RF voltage (in dB μ V) measured by the EMI receiver into current density (A/m²)
2. Rating the current density with the limit
3. Summing the results for the frequency range 20 kHz – 10 MHz

to obtain the factor “F” as a result.

For compliance, this factor shall not exceed the value of **0.85**.

The complete process is described in the IEC 62493, Annex E.

If calculations are done manually, this method results time-consuming and error-prone.

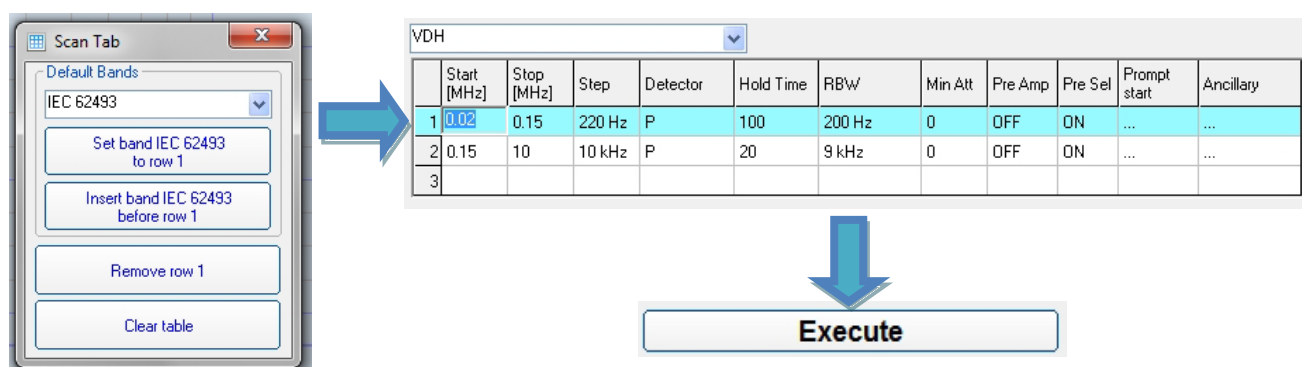
In order to make faster, error-free measurements a specific function has been added to the PES (PMM Emission Suite) Release 2.00 providing for:

- Preset receiver settings
- Automatic calculation of the factor F

In addition, the delayed start function of the PES allows for the lamp warm-up (15-30 min) as required by the Chapter 6, measurement procedure.

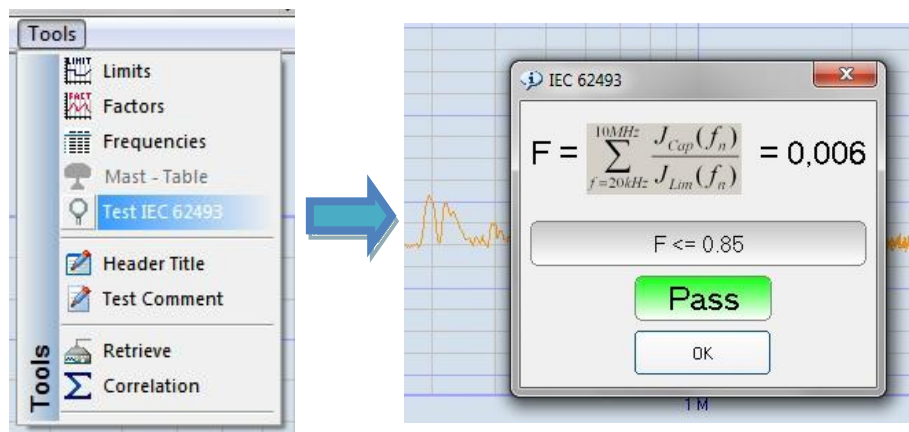
Just few clicks are required to carry out the measurement:

Enter the IEC 62493 preset scan table and start the sweep:



Select the IEC 62493 function in “Tools” and get the result:

Easy, safe!



*This extremely user-friendly procedure is specific of the PMM Emission Suite - no competition!
Download the current PES version 2.00 from our web page.*

Remark

The VDH-01 can be used with any existing EMI receiver, obviously full CISPR 16-1-1 compliant; in such cases, the factor F shall have to be computed manually.