



COMOHAC T-coil Probe Calibration Report

Ref : ACR.41.3.25.BES.A

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CHINA
MVG COMOHAC T-COIL PROBE
SERIAL NO.: SN 07/17 TCP38

Calibrated at MVG
Z.I. de la pointe du diable
Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 02/05/2025



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Summary:

This document presents the method and results from an accredited COMOHAC T-coil Probe calibration performed at MVG, using the COMOHAC test bench, for use with a MVG COMOHAC system only. The test results covered by accreditation are traceable to the International System of Units (SI).



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	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
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	<i>Customer Name</i>
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<i>Issue</i>	<i>Name</i>	<i>Date</i>	<i>Modifications</i>
A	Pedro Ruiz	2/10/2025	Initial release



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1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOHAC T-COIL PROBE
Manufacturer	MVG
Model	STCOIL
Serial Number	SN 07/17 TCP38
Product Condition (new / used)	Used
Frequency Range of Probe	200-5000 Hz

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

MVG's COMOHAC T-coil Probes are built in accordance to the ANSI C63.19 and IEEE 1027 standards.



Figure 1 – MVG COMOHAC T-coil Probe

Coil Dimension	6.55 mm length * 2.29 mm diameter
DC resistance	860.6 Ω
Wire size	51AWG
Inductance at 1 kHz	132.1 mH at 1 kHz

3 MEASUREMENT METHOD

All methods used to perform the measurements and calibrations comply with the ANSI C63.19 and IEEE 1027 standards. All measurements were performed using a Helmholtz coil built according to the specifications outlined in ANSI C63.19 and IEEE 1027.

3.1 SENSITIVITY

The T-coil was positioned within the Helmholtz coil in axial orientation. Using an audio generator connected to the input of the Helmholtz coil, a known field (1 A/m) was generated within the coil and the T-coil probe reading recorded over the frequency range of 100 Hz to 1000 Hz.

3.2 LINEARITY

The T-coil probe was positioned within the Helmholtz coil in axial orientation. The audio generator connected to the input of the Helmholtz coil was adjusted to obtain a field within the coil from 0 dB A/m to -50 dB A/m and the T-coil reading recorded at each power level (10 dB steps).



3.3 SIGNAL TO NOISE MEASUREMENT OF THE CALIBRATION SYSTEM

The T-coil probe was positioned within the Helmholtz coil in axial orientation. The audio generator connected to the input of the Helmholtz coil was adjusted to obtain a field of -50 dB A/m. The T-coil reading was recorded. The audio generator is then turned off and the T-coil reading recorded.

4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the ANSI C63.19 and IEEE 1309 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique.

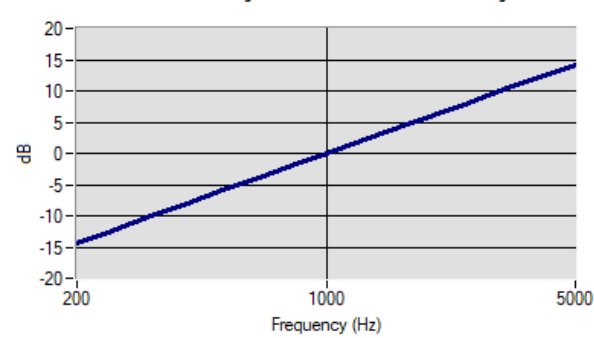
The estimated expanded uncertainty (k=2) in calibration for the sensitivity dB (V/(A/m)) is +/-0.42 dB with respect to measurement conditions.

5 CALIBRATION RESULTS

Calibration Parameters	
Lab Temperature	20 +/- 1°C
Lab Humidity	30-70 %

5.1 SENSITIVITY

Probe coil sensitivity relative to sensitivity at 1000 Hz

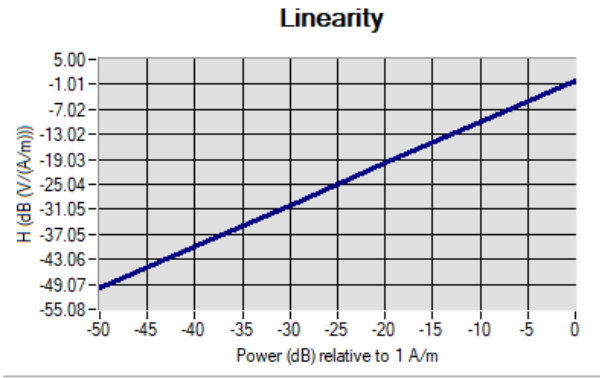


	Measured	Required
Sensitivity at 1 kHz	-61.66 dB (V/(A/m))	-60.5 +/- 0.5 dB (V/(A/m))
Max. deviation from Sensitivity	0.33 dB	+/- 0.5 dB



6 VERIFICATION RESULTS

6.1 LINEARITY



	Measured	Required
Linearity Slope	0.08 dB	+/- 0.5 dB

6.2 SIGNAL TO NOISE MEASUREMENT OF THE CALIBRATION SYSTEM

	Measured	Required
Signal to Noise	13.38 dB	'Reading with -50 dB A/m in coil' – 'no signal applied' > 10 dB



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7 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
COMOHAC Test Bench	Version 2	NA	Validated. No cal required.	Validated. No cal required.
Audio Generator	National Instruments	15222AE	11/2021	11/2025
Multimeter	Keithley 2000	4013982	02/2023	02/2026
Helmholtz Coil	MVG	HC07 SN47/10	Validated. No cal required.	Validated. No cal required.
Temperature / Humidity Sensor	Testo 184 H1	44225320	10/2024	10/2027