

Appendix A. System check Plot

cDASY6 Module WPT Measurement Report

Device under test

Info:
V-Coil50/400

Serial number:
1026

Scenario:
source calibration

Tool info

DASY software version:
cDASY6 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000240, 2024/04/03

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 61.54 mm, y: -33.85 mm, z: 36.70 mm

Dimensions:
x: 168.5 mm, y: 168.8 mm, z: 36.7 mm

Resolution:
x: 7.33 mm, y: 7.33 mm, z: 7.33 mm

Completed on:
2025/01/23 09:22:06

Measurement results

Maximum H-field [rms]:
MAGNITUDE: 125.93 A/m
x: 12.02 A/m, y: 24.34 A/m, z: 122.97 A/m

Maximum H-field location relative to DUT:
x: -3.67 mm, y: -3.67 mm, z: 8.50 mm

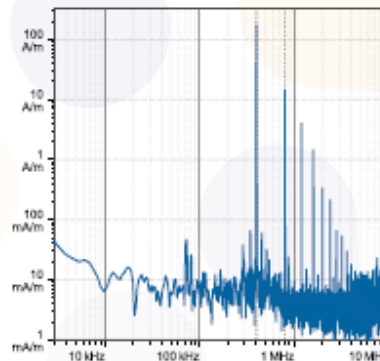
Maximum E-field [rms]:
MAGNITUDE: 48.97 V/m
x: 22.46 V/m, y: 10.72 V/m, z: 42.18 V/m

Maximum E-field location relative to DUT:
x: 7.33 mm, y: -29.33 mm, z: 0.00 m

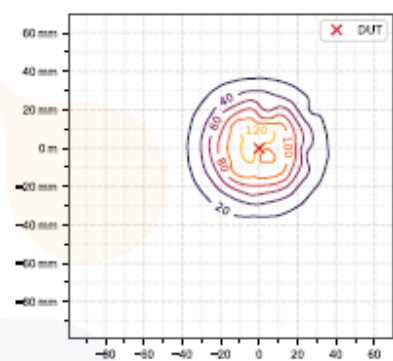
Distance to -20.0 dB boundary:
39.49 mm

Offset relative to DUT:
x: 0.00 m, y: 0.00 m, z: 1.00 mm

H-field magnitude [rms] at maximum location



H-field magnitude [rms] at lowest plane



Incident fields and induced fields in the homogeneous phantom at the peak frequency ($f = 400.00$ kHz, $\sigma = 0.760$ S/m, tissue density = $1,000$ kg/m³)

Distance [mm]	Peak incident fields [rms]		Peak E _{ind} [V/m, rms]			Peak J _{ind} [A/m ² , rms]	psSAR [mW/kg]		H-field extent	Warnings		
	H _{inc} [A/m]	E _{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.	1g avg.	10g avg.	-20 dB radius [mm]	Sign	Vector potential	Boundary effect
0.00	247	49.0	4.15	4.28	4.28	2.56	6.40	3.17	39.4	6%	15%	18%
2.00	217	45.5	3.52	3.64	3.65	2.18	4.68	2.36	39.7	6%	15%	19%

Compliance evaluation (Field values at the peak frequency) ($f = 400.00$ kHz, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL [rms]	BR [rms]	RL [rms]	BR [rms]	ERL [rms]	DRL [rms]	MPE [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]
0.00	247	49.0	4.15	3.17	247	49.0	2.57	3.17	247	49.0	4.28	3.17	247	49.0	N/A	6.40	247	49.0	4.29	6.40
2.00	217	45.5	3.52	2.36	217	45.5	2.18	2.36	217	45.5	3.65	2.36	217	45.5	N/A	4.68	217	45.5	3.65	4.68

Compliance evaluation (Exposure ratios) (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL	BR	RL	BR	ERL	DRL	MPE	BR	RL	BR	RL	BR	RL	BR	RL	BR	RL	BR	RL	BR
0.00	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH
2.00	11.2	18.2	127.023.9	0.09	<0.01	122.0173.04.06	<0.01	1.45	2.46	17.2	57.4	0.06	<0.01	134.048.1	N/A	<0.01	12.97	139.0137.0290.00.11	<0.01	<0.01

Appendix B. Measurement Plot

1)

cDASY6 Module WPT Measurement Report

Device under test

Info:
SM-X358U

Serial number:
R32Y1001ZZE

Scenario:
Digitizer 593 75

Tool info

DASY software version:
cDASY6 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000240, 2024/04/03

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 55.31 mm, y: -32.59 mm, z: 12.01 mm

Dimensions:
x: 258.7 mm, y: 257.1 mm, z: 36.7 mm

Resolution:
x: 7.33 mm, y: 7.33 mm, z: 7.33 mm

Completed on:
2025/01/23 12:28:11

Measurement results

Maximum H-field [rms]:

MAGNITUDE: 1.08 A/m

x: 901.54 mA/m, y: 9.89 mA/m, z: 599.30 mA/m

Maximum H-field location relative to DUT:

x: 3.67 mm, y: -55.00 mm, z: 8.50 mm

Maximum E-field [rms]:

MAGNITUDE: 662.73 mV/m

x: 41.52 mV/m, y: 39.07 mV/m, z: 660.27 mV/m

Maximum E-field location relative to DUT:

x: 7.33 mm, y: 88.00 mm, z: 0.00 mm

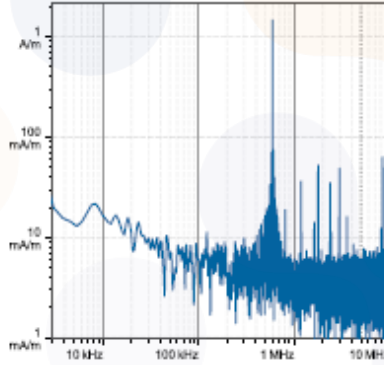
Distance to -20.0 dB boundary:

36.67 mm

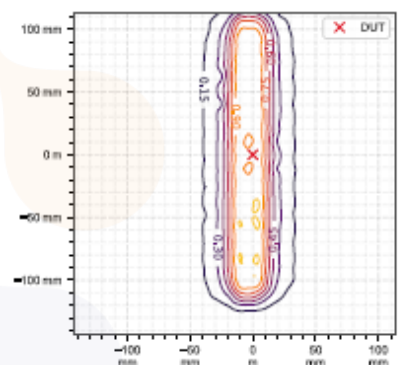
Offset relative to DUT:

x: 0.00 m, y: 0.00 m, z: 1.00 mm

H-field magnitude [rms] at maximum location



H-field magnitude [rms] at lowest plane



Incident fields and induced fields in the homogeneous phantom at the peak frequency ($f = 693.75$ kHz, $\sigma = 0.760$ S/m, tissue density = $1,000$ kg/m³)

Distance [mm]	Peak incident fields [rms]		Peak E _{ind} [V/m, rms]			Peak J _{ind} [A/m ² , rms]	psSAR [mW/kg]		H-field extent	Warnings		
	H _{inc} [A/m]	E _{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.	1g avg.	10g avg.	-20 dB radius [mm]	Sign	Vector potential	Boundary effect
0.00	2.51	0.663	0.057	0.059	0.059	0.035	0.001	0.000	71.7	5%	212%	81%

Compliance evaluation (Field values at the peak frequency) ($f = 693.75$ kHz, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL [rms]	BR [rms]	PE _{inc}	psSAR	RL [rms]	BR [rms]	PJ _{inc}	psSAR	PE _{inc}	BR [rms]	PE _{inc}	psSAR	PE _{inc}	BR [rms]	PE _{inc}	psSAR	PE _{inc}	BR [rms]	PE _{inc}	psSAR
0.00	2.51	0.663	0.058	0.000	2.51	0.663	0.035	0.000	2.51	0.663	0.059	0.000	2.51	0.663	N/A	0.001	2.51	0.663	0.059	0.001

Compliance evaluation (Exposure ratios) (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH
0.00	0.12	0.30	0.71	0.44	<0.01	<0.01	0.04	0.73	0.04	<0.01	0.02	0.04	0.10	0.77	<0.01	<0.01	11.54	0.53	N/A	<0.01

2)

cDASY6 Module WPT Measurement Report

Device under test

Info:
SM-X358U

Serial number:
R32Y1001ZZE

Scenario:
Digitizer 593.75 8.5 mm

Tool info

DASY software version:
cDASY6 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000240, 2024/04/03

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 55.31 mm, y: -32.59 mm, z: 12.01 mm

Dimensions:
x: 256.7 mm, y: 257.1 mm, z: 36.7 mm

Resolution:
x: 7.33 mm, y: 7.33 mm, z: 7.33 mm

Completed on:
2025/01/23 12:28:11

Measurement results

Maximum H-field [rms]:
MAGNITUDE: 1.08 A/m
x: 901.54 mA/m, y: 9.89 mA/m, z: 599.30 mA/m

Maximum H-field location relative to DUT:
x: 3.67 mm, y: -55.00 mm, z: 8.50 mm

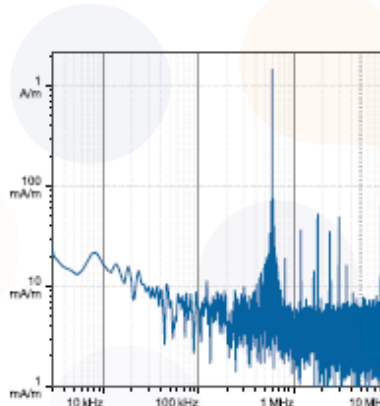
Maximum E-field [rms]:
MAGNITUDE: 662.73 mV/m
x: 41.52 mV/m, y: 39.07 mV/m, z: 660.27 mV/m

Maximum E-field location relative to DUT:
x: 7.33 mm, y: 88.00 mm, z: 0.00 mm

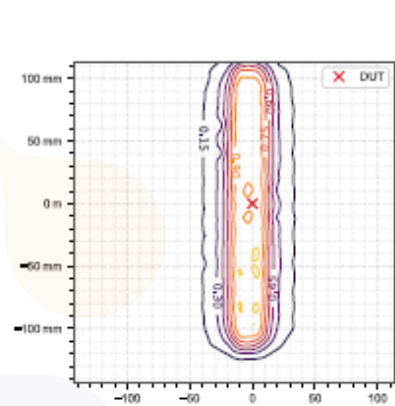
Distance to -20.0 dB boundary:
36.67 mm

Offset relative to DUT:
x: 0.00 m, y: 0.00 m, z: 1.00 mm

H-field magnitude [rms] at maximum location



H-field magnitude [rms] at lowest plane



Incident fields and induced fields in the homogeneous phantom at the peak frequency (f = 593.75 kHz, $\sigma = 0.760 \text{ S/m}$, tissue density = $1,000 \text{ kg/m}^3$)

Distance [mm]	Peak incident fields [rms]		Peak E_{ind} [V/m, rms]			Peak J_{ind} [A/m ² , rms]		psSAR [mW/kg]		H-field extent -20 dB radius [mm]	Warnings		
	H_{inc} [A/m]	E_{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.		1g avg.	10g avg.		Sign	Vector potential	Boundary effect
8.50	1.04	0.222	0.026	0.027	0.027	0.016		0.000	0.000	78.6	5%	212%	91%

Compliance evaluation (Field values at the peak frequency) (f = 593.75 kHz, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	H_{inc}	E_{inc}	E_{ind}	psSAR	H_{inc}	E_{inc}	J_{ind}	psSAR	H_{inc}	E_{inc}	E_{ind}	psSAR	H_{inc}	E_{inc}	E_{ind}	psSAR	H_{inc}	E_{inc}	E_{ind}	psSAR
8.50	1.04	0.222	0.026	0.000	1.04	0.222	0.016	0.000	1.04	0.222	0.027	0.000	1.04	0.222	N/A	0.000	1.04	0.222	0.027	0.000

Compliance evaluation (Exposure ratios) (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6									
	RL		BR		RL		BR		ERL		DRL		MPE		BR		RL		BR							
	pH_{inc}	pE_{inc}	pE_{ind}	psSAR	pH_{inc}	pE_{inc}	pJ_{ind}	psSAR	pH_{inc}	pE_{inc}	pE_{ind}	psSAR	pH_{inc}	pE_{inc}	pE_{ind}	psSAR	pH_{inc}	pE_{inc}	pE_{ind}	psSAR						
NS	TH	NS	TH	NS	TH	N/A	N/A	NS	TH	NS	TH	NS	TH	NS	TH	N/A	N/A	NS	TH	NS	TH					
8.50	0.05	0.13	0.24	0.15	<0.01	<0.01	0.85	0.25	0.02	<0.01	<0.01	0.02	0.03	0.26	<0.01	<0.01	0.64	0.18	N/A	<0.01	0.01	0.85	0.24	0.57	<0.01	<0.01

3)

cDASY6 Module WPT Measurement Report

Device under test

Info:
SM-X358U

Serial number:
R32Y1001ZZE

Scenario:
Digitizer 593 75 17 mm

Tool info

DASY software version:
cDASY6 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000240, 2024/04/03

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 55.32 mm, y: -32.58 mm, z: 21.51 mm

Dimensions:
x: 256.7 mm, y: 257.1 mm, z: 36.7 mm

Resolution:
x: 7.33 mm, y: 7.33 mm, z: 7.33 mm

Completed on:
2025/01/23 16:25:58

Measurement results

Maximum H-field [rms]:

MAGNITUDE: 389.44 mA/m

x: 225.69 mA/m, y: 14.66 mA/m, z: 292.12 mA/m

Maximum H-field location relative to DUT:

x: -3.67 mm, y: -77.00 mm, z: 8.50 mm

Maximum E-field [rms]:

MAGNITUDE: 194.05 mV/m

x: 25.08 mV/m, y: 46.56 mV/m, z: 186.70 mV/m

Maximum E-field location relative to DUT:

x: 14.67 mm, y: 88.00 mm, z: 0.00 mm

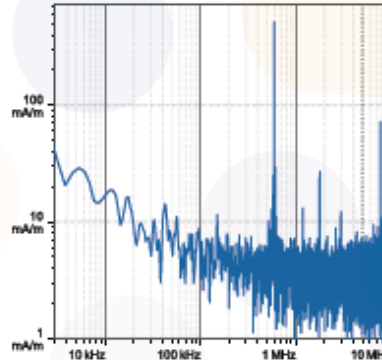
Distance to -20.0 dB boundary:

51.33 mm

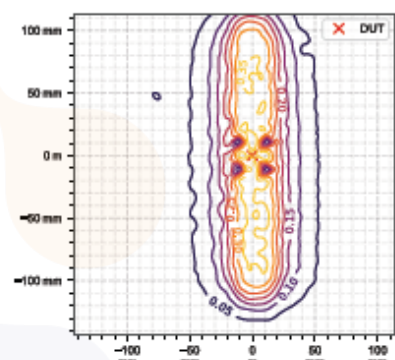
Offset relative to DUT:

x: 0.00 m, y: 0.00 m, z: 1.00 mm

H-field magnitude [rms] at maximum location



H-field magnitude [rms] at lowest plane



Incident fields and induced fields in the homogeneous phantom at the peak frequency (f = 601.73 kHz, $\sigma = 0.760$ S/m, tissue density = 1,000 kg/m³)

Distance [mm]	Peak incident fields [A/m]		Peak E _{ind} [V/m, A/m]			Peak J _{ind} [A/m ² , A/m]	psSAR [mW/kg]		H-field extent	Warnings		
	H _{inc} [A/m]	E _{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.	1g avg.	10g avg.	-20 dB radius [mm]	Sign	Vector potential	Boundary effect
0.00	0.752	0.194	0.025	0.026	0.026	0.016	0.000	0.000	84.2	5%	163%	73%

Compliance evaluation (Field values at the peak frequency) (f = 601.73 kHz, total field evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL [rms]	BR [rms]	RL [rms]	BR [rms]	ERL [rms]	DRL [rms]	MPE [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]
0.00	0.752	0.194	0.025	0.000	0.752	0.194	0.016	0.000	0.752	0.194	0.026	0.000	0.752	0.194	N/A	0.000	0.752	0.194	0.026	0.000

Compliance evaluation (Exposure ratios) (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020						ICNIRP 1998				IEEE 2019				FCC				HC Code 6							
	RL			BR			RL		BR		ERL		DRL		MPE		BR		RL			BR				
	pH _{inc}		pE _{inc}	pE _{ind} pSAR		pH _{inc}	pE _{inc}	pJ _{ind}	pSAR	pH _{inc}		pE _{inc}	pE _{ind} pSAR	pH _{inc}		pE _{inc}	pE _{ind} pSAR	pH _{inc}		pE _{inc}	pE _{ind} pSAR					
	NS	TH	NS	TH	NS	TH	N/A	N/A	NS	TH	NS	TH	NS	TH	NS	TH	N/A	N/A	N/A	TH	NS	TH	NS	TH	NS	TH
0.00	0.04	0.09	0.13	1.03	<0.01	<0.01	0.62	0.15	0.01	<0.01	<0.01	0.01	0.02	0.91	<0.01	<0.01	0.46	0.03	N/A	<0.01	<0.01	0.62	0.13	7.57	<0.01	<0.01

Appendix C. Calibration Certificate

Appendix C.1 Probe Calibration Certificate

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client
Eurofins KCTL
Gyeonggi-do, Republic of Korea

Certificate No.
MAGPy-8H3D-3085

CALIBRATION CERTIFICATE

Object
MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

Calibration procedure(s)
QA CAL-46.v1
Calibration Procedure for MAGPy-8H3D+E3D
Near-field Electric and Magnetic Field Sensor System

Calibration date
March 20, 2024

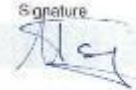
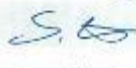
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment: temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&E critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Oscilloscope	SN: 112135	29-Sep-23 (No. 17A1162175)	Sep-24
Reference 20 dB Attenuator	SN: CC2552 (20x)	04-Apr-23 (No. 217-03527)	Apr-24
Type-N mismatch	SN: 310932 / 06327	04-Apr-23 (No. 217-03529)	Apr-24

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Network Analyzer E5061B	SN: MY49810822	In house check: Nov-23	In house check: Nov-24
TEM Cell	SN: S6029i	In house check: Nov-23	In house check: Nov-24
Plate Capacitor	SN: 6028	In house check: Nov-23	In house check: Nov-24
Resonator (160kHz)	SN: 6030	In house check: Nov-23	In house check: Nov-24

Calibrated by	Name Aldona Georgiadou	Function Laboratory Engineer	Signature 
Approved by	Name Sven Kühn	Function Technical Manager	Signature 

Issued: March 20, 2024

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Calibration Laboratory of
Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary

MAGPy-8H3D-E3D Magnetic Amplitude and Gradient Probe – Eight H-field Sensors, Single E-field sensor
MAGPy-DAS Magnetic Amplitude and Gradient Data Acquisition System

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1309-2013, "IEEE Standard for calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 GHz", November 2013

Methods Applied and Interpretation of Parameters

- Calibration has been performed after the adjustment of the device.
- **Linearity:** Calibration of the linearity of the field reading over the specified dynamic range at 161.75 kHz. Influence of offset voltage is included in this measurement.
- **Frequency response:** Calibration of the field reading over the specified frequency range from 3.0 kHz to 10.0 MHz.
- **Receiving Pattern:** Assessed for H-field polarizations θ , and $\phi = 0^\circ \dots 360^\circ$; $\theta = 90^\circ$, and $\phi = 0^\circ \dots 360^\circ$; for the XYZ sensors (in TEM-Cell at 4 kHz, 40 kHz, 400 kHz and 4 MHz).
- **Receiving Pattern:** Assessed for E-field polarizations θ , and $\phi = 0^\circ \dots 360^\circ$; $\theta = 90^\circ$, and $\phi = 0^\circ \dots 360^\circ$; for the XYZ sensor (in parallel plate capacitor at 4 kHz, 40 kHz, 400 kHz and 4 MHz).

Calibration Uncertainty

The calibration uncertainty is 0.7 dB for the H-field readings and 1.06 dB for the E-field readings. The calibration uncertainty is specified over the frequency range from 3.0 kHz to 10.0 MHz and a dynamic range from 0.1 A/m to 3200 A/m and from 0.08 V/m to 2000 V/m respectively.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Measurement Conditions

Unit Type	MAGPy-8H3D+E3D (SP MGY 303 AA)	3085
	MAGPy-DAS (SE UMS 303 AC)	3087
	MAGPy FPGA Board	WP000240
Adjustment Date	Last MAGPy Adjustment	March 20, 2024
Firmware SW Version	MAGPy Firmware	Ver. 1.00
Backend SW Version	MAGPy Backend	Ver. 1.0.2
Calibration SW Version	MAGACAP	Ver. 1.0

Dynamic Range

Dynamic Range, H-field, Channel 0

H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
x	y	z	x	y	z	x	y	z	
0.400	0.390	0.380	0.410	0.400	0.390	0.21	0.22	0.23	±1.00
0.550	0.530	0.510	0.540	0.530	0.520	-0.16	0.00	0.17	±1.00
0.750	0.730	0.700	0.760	0.720	0.700	-0.23	-0.12	0.00	±1.00
0.980	0.950	0.910	0.970	0.960	0.900	-0.09	0.09	0.10	±1.00
1.32	1.29	1.23	1.32	1.28	1.22	0.00	-0.07	-0.07	±1.00
1.81	1.77	1.69	1.80	1.77	1.69	-0.05	0.00	0.00	±1.00
2.41	2.35	2.26	2.42	2.36	2.26	0.04	0.04	0.00	±0.20
3.23	3.14	3.01	3.22	3.15	3.01	-0.03	0.03	0.00	±0.20
4.38	4.27	4.10	4.38	4.28	4.12	0.00	-0.02	0.04	±0.20
5.93	5.78	5.54	5.93	5.77	5.61	0.00	-0.02	0.11	±0.20
7.97	7.78	7.45	7.96	7.78	7.53	-0.01	0.00	0.09	±0.20
10.7	10.4	9.95	10.6	10.4	10.0	-0.08	0.00	0.04	±0.20
14.4	14.0	13.4	14.4	14.0	13.5	0.00	0.00	0.05	±0.20
19.4	18.9	18.1	19.4	18.9	18.2	0.00	0.00	0.05	±0.20
26.2	25.5	24.4	26.2	25.6	24.5	0.00	0.03	0.04	±0.20
34.9	34.0	32.6	35.1	34.2	32.8	0.05	0.05	0.05	±0.20
47.1	46.0	44.1	47.3	46.2	44.3	0.04	0.04	0.04	±0.20
63.8	62.3	59.7	64.2	62.7	60.0	0.05	0.06	0.04	±0.20
87.7	85.6	82.1	87.4	85.3	81.8	-0.03	-0.03	-0.03	±0.20
115	112	107	114	112	107	-0.08	0.00	0.00	±0.20
158	154	146	157	153	147	0.00	0.06	-0.06	±0.20
218	213	205	218	213	204	0.00	0.00	-0.04	±0.20
302	295	283	296	290	278	-0.17	-0.15	-0.15	±0.20
445	435	418	440	429	412	-0.10	-0.12	-0.13	±0.20
612	599	575	609	594	572	-0.04	-0.07	-0.05	±0.20
911	891	854	895	884	859	0.04	0.03	0.05	±0.20
1370	1340	1290	1400	1370	1310	0.19	0.19	0.13	±0.30
1980	1940	1770	1940	1900	1820	0.27	0.28	0.24	±0.30
3040	2980	2860	3170	3100	2980	0.36	0.34	0.36	±0.50
3690	3610	3470	3880	3790	3650	0.44	0.42	0.44	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0 A/m
- ±0.2dB for applied H-fields ≥ 2.0 A/m and < 1000 A/m
- ±0.3dB for applied H-fields ≥ 1000 A/m and < 2000 A/m
- ±0.4dB for applied H-fields ≥ 2000 A/m and < 3000 A/m
- ±0.5dB for applied H-fields ≥ 3000 A/m

¹ Calibration uncertainty not taken into account (shared risk 53%).

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MAGPy-DAS SN:3087

March 20, 2024

Dynamic Range, H-field, Channel 1

H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
x	y	z	x	y	z	x	y	z	
0.410	0.390	0.390	0.410	0.420	0.400	0.00	0.04	0.22	±1.00
0.560	0.530	0.520	0.550	0.540	0.540	-0.16	0.16	0.33	±1.00
0.760	0.730	0.720	0.750	0.730	0.710	0.00	0.00	-0.12	±1.00
0.990	0.960	0.940	1.01	0.960	0.920	0.17	0.00	-0.19	±1.00
1.34	1.29	1.27	1.34	1.31	1.28	0.00	0.13	-0.07	±1.00
1.84	1.78	1.74	1.85	1.78	1.74	0.05	0.00	0.00	±1.00
2.46	2.37	2.32	2.46	2.39	2.31	0.00	0.07	-0.04	±0.20
3.28	3.16	3.10	3.29	3.18	3.09	0.03	0.05	-0.03	±0.20
4.46	4.30	4.21	4.47	4.30	4.19	0.02	0.00	-0.04	±0.20
6.03	5.81	5.69	6.04	5.83	5.67	0.01	0.03	-0.03	±0.20
8.10	7.82	7.64	8.12	7.84	7.63	0.02	0.02	-0.01	±0.20
10.8	10.4	10.2	10.8	10.4	10.2	0.00	0.00	0.00	±0.20
14.6	14.1	13.8	14.7	14.1	13.8	0.06	0.00	0.00	±0.20
19.7	19.0	18.8	19.7	19.0	18.6	0.00	0.00	0.00	±0.20
26.6	25.7	25.1	26.6	25.7	25.1	0.00	0.00	0.00	±0.20
35.5	34.2	33.5	35.7	34.4	33.7	0.05	0.05	0.05	±0.20
47.9	46.3	45.3	48.1	46.4	45.5	0.04	0.02	0.04	±0.20
64.9	62.7	61.2	65.3	63.0	61.6	0.05	0.04	0.06	±0.20
89.2	86.1	84.2	89.9	86.8	83.9	-0.03	-0.03	-0.03	±0.20
117	113	110	118	112	110	0.07	0.00	0.00	±0.20
160	155	152	160	154	151	0.00	-0.06	-0.06	±0.20
222	215	210	222	214	209	0.00	-0.04	-0.04	±0.20
307	297	290	301	292	285	-0.17	-0.15	-0.15	±0.20
453	438	429	447	432	423	-0.12	-0.12	-0.12	±0.20
623	602	590	619	598	586	-0.06	-0.06	-0.06	±0.20
926	896	877	931	900	882	0.05	0.04	0.05	±0.20
1400	1350	1320	1420	1380	1350	0.12	0.19	0.20	±0.30
1910	1850	1820	1970	1910	1870	0.27	0.28	0.24	±0.30
3090	2990	2930	3220	3120	3060	0.36	0.37	0.38	±0.50
3760	3690	3570	3940	3810	3740	0.41	0.42	0.40	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0 A/m
- ±0.2dB for applied H-fields ≥ 2.0 A/m and < 1000 A/m
- ±0.3dB for applied H-fields ≥ 1000 A/m and < 2000 A/m
- ±0.4dB for applied H-fields ≥ 2000 A/m and < 3000 A/m
- ±0.5dB for applied H-fields ≥ 3000 A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

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March 20, 2024

Dynamic Range, H-field, Channel 2

H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
x	y	z	x	y	z	x	y	z	
0.400	0.390	0.390	0.430	0.410	0.420	0.63	0.43	0.22	±1.00
0.550	0.530	0.530	0.560	0.530	0.530	0.16	0.00	0.00	±1.00
0.750	0.730	0.730	0.750	0.720	0.730	0.12	-0.12	0.00	±1.00
0.980	0.960	0.950	0.950	0.950	0.970	0.09	-0.09	0.18	±1.00
1.33	1.29	1.29	1.32	1.31	1.29	-0.07	0.13	0.00	±1.00
1.82	1.78	1.77	1.83	1.78	1.78	0.05	0.00	0.05	±1.00
2.43	2.37	2.36	2.44	2.38	2.37	0.04	0.04	0.04	±0.20
3.25	3.16	3.15	3.24	3.18	3.16	-0.03	0.05	0.03	±0.20
4.41	4.29	4.28	4.41	4.29	4.28	0.00	0.00	0.00	±0.20
5.96	5.81	5.79	5.98	5.81	5.81	0.03	0.00	0.03	±0.20
8.01	7.82	7.78	8.02	7.81	7.79	0.01	-0.01	0.01	±0.20
10.7	10.4	10.4	10.7	10.4	10.4	0.00	0.00	0.00	±0.20
14.5	14.1	14.1	14.5	14.1	14.1	0.00	0.00	0.00	±0.20
19.5	19.0	19.0	19.4	19.0	19.0	-0.04	0.00	0.00	±0.20
26.3	25.7	25.6	26.3	25.7	25.6	0.00	0.00	0.00	±0.20
35.1	34.2	34.1	35.3	34.4	34.3	0.05	0.05	0.05	±0.20
47.4	46.2	46.1	47.6	46.4	46.3	0.04	0.04	0.04	±0.20
64.2	62.6	62.4	64.5	63.0	62.8	0.04	0.06	0.06	±0.20
88.2	86.1	85.8	87.9	85.8	85.5	-0.03	-0.03	-0.03	±0.20
115	113	112	115	112	112	0.00	-0.06	0.00	±0.20
159	155	154	158	154	154	-0.05	-0.06	0.00	±0.20
220	215	214	219	214	213	-0.04	-0.04	-0.04	±0.20
304	297	296	298	291	291	-0.17	-0.18	-0.15	±0.20
448	438	436	442	432	430	-0.12	-0.12	-0.12	±0.20
616	602	601	612	598	596	-0.06	-0.06	-0.07	±0.20
916	895	893	920	900	897	0.04	0.05	0.04	±0.20
1380	1350	1350	1410	1370	1370	0.19	0.13	0.13	±0.30
1890	1850	1850	1950	1910	1900	0.27	0.28	0.23	±0.30
3060	2960	2980	3180	3120	3110	0.36	0.37	0.37	±0.50
3710	3630	3630	3900	3810	3810	0.43	0.42	0.42	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0 A/m
- ±0.2dB for applied H-fields ≥ 2.0 A/m and < 1000 A/m
- ±0.3dB for applied H-fields ≥ 1000 A/m and < 2000 A/m
- ±0.4dB for applied H-fields ≥ 2000 A/m and < 3000 A/m
- ±0.5dB for applied H-fields ≥ 3000 A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

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Dynamic Range, H-field, Channel 3

H-field:(A/m) Applied			H-field:(A/m) Reading			Difference:(dB)			Tolerance:(dB)
x	y	z	x	y	z	x	y	z	
0.400	0.390	0.380	0.420	0.410	0.410	0.42	0.43	0.65	+1.00
0.550	0.530	0.520	0.540	0.540	0.550	0.16	0.16	0.49	+1.00
0.750	0.730	0.710	0.750	0.730	0.720	0.00	0.00	0.12	+1.00
0.980	0.950	0.930	0.980	0.940	0.920	0.00	-0.09	-0.09	+1.00
1.33	1.29	1.25	1.32	1.30	1.26	-0.07	0.07	0.07	+1.00
1.82	1.77	1.72	1.82	1.77	1.71	0.00	0.00	-0.05	+1.00
2.43	2.36	2.29	2.42	2.36	2.30	-0.04	0.00	0.04	+0.20
3.24	3.15	3.06	3.22	3.15	3.07	-0.05	0.00	0.03	+0.20
4.40	4.28	4.16	4.39	4.27	4.17	-0.02	-0.02	0.02	+0.20
5.95	5.79	5.63	5.95	5.79	5.65	0.00	0.00	0.03	+0.20
8.00	7.79	7.56	8.00	7.79	7.53	0.00	0.00	0.02	+0.20
10.7	10.4	10.1	10.7	10.4	10.1	0.00	0.00	0.00	+0.20
14.4	14.0	13.7	14.4	14.1	13.7	0.00	0.06	0.00	+0.20
19.5	19.0	18.4	19.4	18.9	18.4	-0.04	-0.05	0.00	+0.20
26.3	25.6	24.8	26.3	25.6	24.9	0.00	0.00	0.03	+0.20
35.1	34.1	33.2	35.2	34.3	33.3	0.02	0.05	0.03	+0.20
47.3	46.1	44.8	47.5	46.3	45.0	0.04	0.04	0.04	+0.20
64.1	62.4	60.6	64.4	62.8	61.0	0.04	0.06	0.06	+0.20
88.1	85.6	83.3	87.6	85.5	83.0	-0.03	-0.03	-0.03	+0.20
115	112	109	115	112	109	0.00	0.00	0.00	+0.20
158	154	150	158	154	149	0.00	0.00	-0.06	+0.20
219	214	208	219	213	207	0.00	-0.04	-0.04	+0.20
303	296	287	298	290	282	-0.14	-0.18	-0.15	+0.20
447	436	424	441	430	419	-0.12	-0.12	-0.10	+0.20
615	600	584	612	596	580	-0.04	-0.06	-0.06	+0.20
915	892	868	920	896	873	0.05	0.04	0.05	+0.20
1380	1350	1310	1410	1370	1340	0.19	0.13	0.20	+0.30
1890	1850	1800	1950	1900	1850	0.27	0.23	0.24	+0.30
3050	2980	2900	3190	3090	3030	0.39	0.31	0.33	+0.50
3710	3620	3530	3900	3760	3710	0.43	0.33	0.43	+0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0A/m
- ±0.2dB for applied H-fields ≥ 2.0A/m and < 1000A/m
- ±0.3dB for applied H-fields ≥ 1000A/m and < 2000A/m
- ±0.4dB for applied H-fields ≥ 2000A/m and < 3000A/m
- ±0.5dB for applied H-fields ≥ 3000A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

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Dynamic Range, H-field, Channel 4

H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
x	y	z	x	y	z	x	y	z	
0.400	0.400	0.390	0.410	0.410	0.390	0.21	0.21	0.03	±1.00
0.550	0.540	0.530	0.560	0.540	0.540	0.16	0.00	0.16	±1.00
0.750	0.740	0.720	0.760	0.750	0.740	0.12	0.12	0.24	±1.00
0.980	0.970	0.940	0.990	0.970	0.970	0.09	0.00	0.27	±1.00
1.32	1.31	1.28	1.32	1.31	1.31	0.00	0.00	0.20	±1.00
1.81	1.80	1.75	1.81	1.80	1.78	0.00	0.00	0.15	±1.00
2.41	2.40	2.34	2.41	2.41	2.38	0.00	0.04	0.07	±0.20
3.23	3.20	3.12	3.22	3.21	3.15	-0.03	0.03	0.08	±0.20
4.38	4.34	4.24	4.38	4.35	4.27	0.00	0.02	0.06	±0.20
5.92	5.87	5.74	5.93	5.89	5.77	0.01	0.03	0.05	±0.20
7.97	7.91	7.71	8.00	7.91	7.73	0.03	0.00	0.02	±0.20
10.7	10.6	10.3	10.7	10.6	10.3	0.00	0.00	0.00	±0.20
14.4	14.2	13.9	14.5	14.3	14.0	0.06	0.06	0.06	±0.20
19.4	19.2	18.8	19.4	19.2	18.8	0.00	0.00	0.00	±0.20
26.2	26.0	25.3	26.2	26.0	25.4	0.00	0.00	0.03	±0.20
34.9	34.6	33.8	35.1	34.8	34.0	0.05	0.05	0.05	±0.20
47.1	46.8	45.7	47.3	46.9	45.9	0.04	0.02	0.04	±0.20
63.8	63.4	61.8	64.2	63.7	62.2	0.05	0.04	0.06	±0.20
87.7	87.1	85.0	87.4	86.8	84.7	-0.03	-0.03	-0.03	±0.20
115	114	111	114	114	111	0.06	0.00	0.00	±0.20
158	157	153	157	156	152	-0.06	-0.06	-0.06	±0.20
218	217	212	218	216	211	0.00	-0.04	-0.04	±0.20
302	300	293	296	295	288	-0.17	-0.15	-0.15	±0.20
445	443	433	439	437	427	-0.12	-0.12	-0.12	±0.20
612	609	595	608	606	592	-0.06	-0.04	-0.04	±0.20
910	906	885	914	911	890	0.04	0.05	0.05	±0.20
1370	1370	1340	1400	1390	1360	0.19	0.13	0.13	±0.30
1880	1883	1830	1940	1930	1890	0.27	0.23	0.26	±0.30
3040	3053	2960	3170	3160	3090	0.35	0.36	0.37	±0.50
3690	3660	3600	3870	3860	3780	0.41	0.41	0.42	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0A/m
- ±0.2dB for applied H-fields ≥ 2.0A/m and < 1000A/m
- ±0.3dB for applied H-fields ≥ 1000A/m and < 2000A/m
- ±0.4dB for applied H-fields ≥ 2000A/m and < 3000A/m
- ±0.5dB for applied H-fields ≥ 3000A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

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March 20, 2024

Dynamic Range, H-field, Channel 5

H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
x	y	z	x	y	z	x	y	z	
0.400	0.400	0.400	0.410	0.430	0.410	0.21	0.63	0.21	±1.00
0.550	0.550	0.550	0.540	0.560	0.550	-0.16	0.16	0.00	±1.00
0.750	0.750	0.750	0.750	0.750	0.750	0.00	0.00	0.00	±1.00
0.980	0.970	0.970	0.970	0.970	1.00	-0.09	0.00	0.26	±1.00
1.32	1.32	1.32	1.33	1.33	1.35	0.07	0.07	0.07	±1.00
1.81	1.81	1.81	1.81	1.81	1.82	0.00	0.00	0.05	±1.00
2.42	2.42	2.41	2.41	2.43	2.42	-0.04	0.04	0.04	±0.20
3.23	3.23	3.22	3.22	3.24	3.23	-0.03	0.03	0.03	±0.20
4.39	4.38	4.38	4.37	4.40	4.38	-0.04	0.04	0.00	±0.20
5.93	5.93	5.92	5.93	5.94	5.92	0.00	0.01	0.00	±0.20
7.97	7.96	7.96	7.96	7.98	7.97	0.01	0.00	0.01	±0.20
10.7	10.6	10.6	10.7	10.7	10.7	0.00	0.00	0.00	±0.20
14.4	14.4	14.4	14.4	14.4	14.4	0.00	0.00	0.00	±0.20
19.4	19.4	19.4	19.4	19.4	19.4	0.00	0.00	0.00	±0.20
26.2	26.2	26.1	26.2	26.2	26.2	0.00	0.00	0.03	±0.20
34.9	34.9	34.9	35.1	35.1	35.1	0.05	0.05	0.05	±0.20
47.1	47.2	47.2	47.3	47.4	47.4	0.04	0.04	0.04	±0.20
63.8	63.9	63.8	64.2	64.3	64.2	0.05	0.05	0.05	±0.20
87.8	87.9	87.7	87.4	87.5	87.4	-0.04	-0.04	-0.03	±0.20
115	115	115	114	115	114	-0.08	0.00	0.00	±0.20
158	158	158	157	157	157	-0.06	-0.06	0.00	±0.20
218	219	219	218	218	218	0.00	-0.04	-0.04	±0.20
302	303	302	296	297	297	-0.17	-0.17	-0.15	±0.20
445	447	446	439	441	440	-0.12	-0.12	-0.12	±0.20
613	615	614	629	611	610	-0.06	-0.06	-0.06	±0.20
911	914	913	915	918	917	0.04	0.04	0.04	±0.20
1370	1380	1380	1400	1400	1400	0.19	0.12	0.12	±0.30
1880	1890	1890	1840	1950	1950	0.27	0.27	0.27	±0.30
3040	3050	3050	3170	3180	3180	0.36	0.36	0.36	±0.50
3700	3710	3710	3880	3890	3900	0.41	0.41	0.43	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0 A/m
- ±0.2dB for applied H-fields ≥ 2.0 A/m and < 1000 A/m
- ±0.3dB for applied H-fields ≥ 1000 A/m and < 2000 A/m
- ±0.4dB for applied H-fields ≥ 2000 A/m and < 3000 A/m
- ±0.5dB for applied H-fields ≥ 3000 A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

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Dynamic Range, H-field, Channel 6

H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
x	y	z	x	y	z	x	y	z	
0.410	0.400	0.400	0.420	0.420	0.410	0.21	0.42	0.21	+1.00
0.550	0.540	0.540	0.560	0.560	0.550	0.16	0.32	0.16	+1.00
0.760	0.750	0.740	0.760	0.750	0.750	0.00	0.00	0.12	+1.00
0.990	0.970	0.960	1.00	0.960	0.970	0.09	-0.09	0.05	+1.00
1.34	1.32	1.30	1.34	1.31	1.31	0.00	-0.07	0.07	+1.00
1.84	1.81	1.79	1.85	1.82	1.79	0.05	0.05	0.00	+1.00
2.45	2.41	2.38	2.46	2.41	2.40	0.04	0.00	0.07	+0.20
3.28	3.22	3.18	3.28	3.24	3.19	0.00	0.05	0.03	+0.20
4.45	4.38	4.32	4.44	4.39	4.34	-0.02	0.02	0.04	+0.20
6.01	5.92	5.84	6.02	5.94	5.86	0.01	0.03	0.03	+0.20
8.08	7.97	7.85	8.09	7.97	7.86	0.01	0.00	0.01	+0.20
10.8	10.6	10.5	10.8	10.6	10.5	0.00	0.00	0.00	+0.20
14.6	14.4	14.2	14.6	14.4	14.2	0.00	0.00	0.00	+0.20
19.7	19.4	19.1	19.7	19.4	19.2	0.00	0.00	0.05	+0.20
26.6	26.2	25.8	26.6	26.2	25.9	0.00	0.00	0.03	+0.20
35.4	34.9	34.4	35.6	35.1	34.6	0.05	0.05	0.05	+0.20
47.8	47.1	46.5	48.0	47.3	46.7	0.04	0.04	0.04	+0.20
64.7	63.9	62.9	65.1	64.2	63.3	0.05	0.04	0.06	+0.20
89.0	87.8	86.6	89.7	87.4	86.2	-0.03	-0.04	-0.04	+0.20
116	115	113	116	114	113	0.00	-0.08	0.00	+0.20
160	158	156	159	157	155	-0.05	-0.08	-0.06	+0.20
222	219	216	221	218	215	-0.04	-0.04	-0.04	+0.20
306	302	298	301	297	293	-0.14	-0.15	-0.15	+0.20
452	446	440	446	440	434	-0.12	-0.12	-0.12	+0.20
621	614	606	617	609	602	-0.06	-0.07	-0.06	+0.20
924	913	901	928	917	906	0.04	0.04	0.05	+0.20
1390	1380	1360	1420	1400	1380	0.19	0.12	0.13	+0.30
1910	1890	1870	1970	1940	1920	0.27	0.23	0.23	+0.30
3080	3050	3010	3210	3180	3140	0.36	0.36	0.37	+0.50
3750	3720	3660	3930	3880	3850	0.41	0.41	0.44	+0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0 A/m
- ±0.2dB for applied H-fields ≥ 2.0 A/m and < 1000 A/m
- ±0.3dB for applied H-fields ≥ 1000 A/m and < 2000 A/m
- ±0.4dB for applied H-fields ≥ 2000 A/m and < 3000 A/m
- ±0.5dB for applied H-fields ≥ 3000 A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

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MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Dynamic Range, H-field, Channel 7

H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
x	y	z	x	y	z	x	y	z	
0.410	0.400	0.380	0.430	0.420	0.380	-0.21	0.42	0.00	±1.00
0.550	0.540	0.520	0.530	0.570	0.510	-0.32	0.47	-0.17	±1.00
0.760	0.740	0.710	0.760	0.760	0.710	0.00	0.23	0.00	±1.00
0.990	0.960	0.930	1.00	0.970	0.940	0.09	0.09	0.09	±1.00
1.33	1.30	1.25	1.34	1.29	1.27	0.07	-0.07	0.14	±1.00
1.83	1.79	1.72	1.84	1.79	1.73	0.05	0.00	0.05	±1.00
2.44	2.38	2.29	2.46	2.39	2.33	0.07	0.04	0.15	±0.20
3.26	3.18	3.07	3.27	3.18	3.09	0.03	0.00	0.06	±0.20
4.43	4.32	4.17	4.45	4.34	4.18	0.04	0.04	0.02	±0.20
5.98	5.84	5.63	6.01	5.89	5.65	0.04	0.07	0.03	±0.20
8.05	7.86	7.57	8.05	7.90	7.60	0.01	0.04	0.03	±0.20
10.8	10.5	10.1	10.8	10.5	10.2	0.00	0.00	0.00	±0.20
14.5	14.2	13.7	14.5	14.2	13.7	0.00	0.00	0.00	±0.20
19.6	19.1	18.4	19.6	19.1	18.5	0.00	0.00	0.00	±0.20
26.4	25.8	24.9	26.4	25.9	24.9	0.00	0.03	0.00	±0.20
35.3	34.4	33.2	35.5	34.6	33.4	0.05	0.05	0.05	±0.20
47.6	46.5	44.9	47.8	46.7	45.0	0.04	0.04	0.02	±0.20
64.4	63.0	60.7	64.8	63.4	61.0	0.05	0.05	0.04	±0.20
88.6	86.6	83.5	88.2	86.3	83.1	-0.04	-0.03	-0.04	±0.20
116	113	109	115	113	109	-0.08	0.00	0.00	±0.20
159	156	150	159	155	149	0.00	-0.06	-0.06	±0.20
221	216	208	220	215	207	-0.04	-0.04	-0.04	±0.20
305	298	288	299	293	283	-0.17	-0.15	-0.15	±0.20
450	440	425	443	434	419	-0.14	-0.12	-0.12	±0.20
619	606	584	614	601	580	-0.07	-0.07	-0.06	±0.20
920	901	869	923	905	872	0.03	0.04	0.03	±0.20
1390	1360	1310	1410	1380	1330	0.12	0.13	0.13	±0.30
1900	1860	1800	1960	1920	1850	0.27	0.28	0.24	±0.30
3070	3010	2900	3200	3140	3030	0.36	0.37	0.36	±0.50
3730	3660	3530	3810	3690	3700	0.41	0.39	0.41	±0.50

SPEAG H-field linearity tolerance criteria¹:

- ±1.0dB for applied H-fields < 2.0A/m
- ±0.2dB for applied H-fields ≥ 2.0A/m and < 1000A/m
- ±0.3dB for applied H-fields ≥ 1000A/m and < 2000A/m
- ±0.4dB for applied H-fields ≥ 2000A/m and < 3000A/m
- ±0.5dB for applied H-fields ≥ 3000A/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Dynamic Range, E-field, Channel 0

E-field(V/m) Applied			E-field(V/m) Reading			Difference(dB)			Tolerance(dB)		
x	y	z	x	y	z	x	y	z	x	y	z
0.350	0.210	0.070	0.340	0.220	0.070	-0.25	0.40	0.00	+5.00	+5.00	+5.00
0.480	0.290	0.100	0.480	0.280	0.110	0.00	-0.30	0.83	+5.00	+5.00	+5.00
0.660	0.400	0.130	0.660	0.410	0.140	0.00	0.21	0.64	+5.00	+5.00	+5.00
0.860	0.520	0.170	0.870	0.520	0.180	0.10	0.00	0.50	+5.00	+5.00	+5.00
1.16	0.700	0.240	1.16	0.710	0.240	0.00	0.12	0.00	+5.00	+5.00	+5.00
1.59	0.970	0.320	1.61	0.970	0.320	0.11	0.00	0.00	+5.00	+5.00	+5.00
2.12	1.29	0.430	2.13	1.29	0.440	0.04	0.00	0.20	+1.00	+5.00	+5.00
2.83	1.72	0.580	2.85	1.72	0.580	0.06	0.00	0.00	+1.00	+5.00	+5.00
3.84	2.34	0.780	3.88	2.34	0.770	0.09	0.00	-0.11	+1.00	+1.00	+5.00
5.20	3.16	1.06	5.23	3.15	1.00	0.05	-0.03	-0.51	+1.00	+1.00	+5.00
7.00	4.25	1.42	7.03	4.24	1.36	0.04	-0.02	-0.25	+1.00	+1.00	+5.00
9.34	5.67	1.90	9.36	5.66	1.86	0.04	-0.02	0.18	+1.00	+1.00	+5.00
12.6	7.66	2.57	12.7	7.65	2.51	0.07	-0.01	-0.21	+1.00	+1.00	+1.00
17.0	10.3	3.46	17.1	10.3	3.37	0.05	0.00	-0.23	+1.00	+1.00	+1.00
23.0	14.0	4.67	23.1	14.0	4.54	0.04	0.00	-0.25	+1.00	+1.00	+1.00
30.6	18.6	6.23	30.9	18.7	6.07	0.08	0.05	-0.23	+1.00	+1.00	+1.00
41.4	25.2	8.40	41.8	25.3	8.20	0.08	0.03	-0.21	+1.00	+1.00	+1.00
56.1	34.1	11.4	56.6	34.2	11.1	0.08	0.03	-0.23	+1.00	+1.00	+1.00
77.1	45.8	15.7	77.2	46.6	15.1	0.01	-0.04	-0.34	+1.00	+1.00	+1.00
101	61.3	20.5	101	61.0	19.8	0.00	-0.04	-0.30	+1.00	+1.00	+1.00
139	84.2	28.1	139	83.7	27.2	0.00	-0.05	-0.28	+1.00	+1.00	+1.00
192	117	39.0	192	116	37.8	0.00	-0.07	-0.27	+1.00	+1.00	+1.00
266	161	53.9	267	161	52.7	0.03	0.00	-0.20	+1.00	+1.00	+1.00
392	238	79.5	376	227	78.0	-0.36	-0.41	-0.17	+1.00	+1.00	+1.00
539	328	109	521	315	108	-0.30	-0.35	-0.08	+1.00	+1.00	+1.00
802	487	162	785	474	162	-0.19	-0.24	0.00	+1.00	+1.00	+1.00
1210	735	245	1200	724	248	-0.07	-0.13	0.11	+1.00	+1.00	+1.00
1660	1010	336	1670	1010	344	0.05	0.00	0.20	+1.00	+1.00	+1.00
2660	1630	542	2730	1650	534	0.16	0.11	0.13	+1.00	+1.00	+1.00
3250	1980	659	3340	2010	654	0.21	0.13	-0.07	+1.00	+1.00	+1.00

SPEAG E-field linearity tolerance criteria¹:
±5.0dB for applied E-field < 2V/m
±1.0dB for applied E-field ≥ 2V/m

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response

Frequency Response, H-field, Channel 0

f/(Hz)	H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.46	1.47	1.47	0.06	0.00	0.00	±0.3
3200	1.46	1.46	1.46	1.46	1.47	1.48	0.00	0.06	0.12	±0.3
4000	1.46	1.46	1.46	1.46	1.46	1.45	0.00	0.00	-0.06	±0.3
5200	1.45	1.44	1.44	1.44	1.45	1.44	-0.06	0.06	0.00	±0.3
6600	1.43	1.43	1.43	1.43	1.44	1.44	0.00	0.06	0.06	±0.3
8200	1.42	1.42	1.42	1.42	1.43	1.42	0.00	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.43	1.42	0.00	0.06	0.00	±0.3
10600	4.28	4.23	4.22	4.32	4.26	4.24	0.08	0.06	0.04	±0.3
13400	4.28	4.25	4.24	4.28	4.25	4.23	0.00	0.00	0.02	±0.3
17000	4.28	4.25	4.24	4.28	4.24	4.24	0.00	-0.02	0.00	±0.3
21400	4.30	4.27	4.26	4.29	4.28	4.27	-0.02	0.02	0.02	±0.3
27200	4.30	4.27	4.26	4.30	4.27	4.26	0.00	0.00	-0.02	±0.3
34400	4.30	4.28	4.27	4.30	4.29	4.28	0.00	0.02	0.02	±0.3
40000	4.29	4.27	4.27	4.29	4.28	4.27	0.00	0.02	0.00	±0.3
43600	4.29	4.27	4.26	4.28	4.26	4.26	-0.02	-0.02	0.00	±0.3
55400	4.28	4.26	4.25	4.28	4.26	4.25	0.00	0.00	0.00	±0.3
70000	4.26	4.25	4.24	4.27	4.25	4.24	0.02	0.00	0.00	±0.3
88800	4.25	4.23	4.23	4.25	4.24	4.24	0.00	0.02	0.02	±0.3
112400	4.24	4.22	4.22	4.24	4.22	4.22	0.00	0.00	0.00	±0.3
142400	4.22	4.21	4.20	4.23	4.21	4.20	0.02	0.00	0.00	±0.3
161750	4.20	4.19	4.18	4.21	4.20	4.18	0.02	0.02	0.00	±0.3
180400	4.19	4.18	4.17	4.20	4.18	4.18	0.02	0.00	0.02	±0.3
228400	4.16	4.14	4.14	4.17	4.15	4.13	0.02	0.02	-0.02	±0.3
289400	4.12	4.11	4.10	4.12	4.11	4.11	0.00	0.00	0.02	±0.3
368400	4.08	4.07	4.06	4.08	4.08	4.07	0.00	0.02	0.02	±0.3
400000	4.05	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.03	4.02	0.02	0.02	0.02	±0.3
587800	3.99	3.98	3.97	3.99	3.99	3.97	0.00	0.02	0.00	±0.3
744200	3.94	3.93	3.93	3.94	3.94	3.93	0.00	0.02	0.00	±0.3
942600	3.92	3.92	3.92	3.93	3.93	3.91	0.02	0.02	-0.02	±0.3
1193600	3.90	3.89	3.89	3.91	3.91	3.89	0.02	0.04	0.00	±0.3
1511800	3.90	3.89	3.88	3.90	3.90	3.89	0.00	0.02	0.02	±0.3
1914400	3.88	3.87	3.86	3.88	3.88	3.87	0.00	0.02	0.02	±0.3
2424400	3.86	3.85	3.85	3.87	3.86	3.85	0.02	0.02	0.00	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.82	0.02	0.02	0.00	±0.3
3886000	3.77	3.76	3.76	3.78	3.77	3.77	0.02	0.02	0.02	±0.3
4000000	3.77	3.76	3.76	3.78	3.76	3.76	0.02	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.70	3.71	3.70	0.00	0.05	0.02	±0.3
6235400	3.60	3.59	3.59	3.60	3.59	3.59	0.00	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.46	3.46	3.45	0.00	0.03	0.00	±0.3
10000000	3.32	3.31	3.31	3.32	3.31	3.32	0.00	0.00	0.03	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

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MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 1

f(Hz)	H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.47	1.48	0.00	0.00	-0.06	±0.3
3200	1.46	1.46	1.46	1.47	1.46	1.48	0.06	0.00	-0.12	±0.3
4000	1.46	1.46	1.46	1.46	1.46	1.46	0.00	0.00	0.00	±0.3
5200	1.45	1.44	1.44	1.43	1.45	1.43	-0.12	0.06	-0.06	±0.3
6600	1.43	1.43	1.43	1.44	1.44	1.43	0.06	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.44	1.43	1.42	0.12	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.42	1.42	0.00	0.00	0.00	±0.3
10600	4.28	4.23	4.22	4.28	4.20	4.22	0.00	-0.06	0.00	±0.3
13400	4.28	4.25	4.24	4.28	4.23	4.24	0.00	-0.04	0.00	±0.3
17000	4.28	4.25	4.24	4.27	4.24	4.23	-0.02	-0.02	-0.02	±0.3
21400	4.30	4.27	4.26	4.30	4.27	4.27	0.00	0.00	0.00	±0.3
27200	4.30	4.27	4.26	4.30	4.27	4.28	0.00	0.00	0.02	±0.3
34400	4.30	4.28	4.27	4.30	4.28	4.28	0.00	0.00	0.00	±0.3
40000	4.29	4.27	4.27	4.30	4.27	4.27	0.02	0.00	0.00	±0.3
43600	4.29	4.27	4.26	4.31	4.27	4.28	0.04	0.00	0.02	±0.3
55400	4.28	4.26	4.25	4.28	4.28	4.25	0.00	0.00	0.00	±0.3
70000	4.28	4.25	4.24	4.28	4.24	4.25	0.00	-0.02	0.02	±0.3
88800	4.25	4.23	4.23	4.27	4.24	4.23	0.04	0.02	0.00	±0.3
112400	4.24	4.22	4.22	4.24	4.22	4.22	0.00	0.00	0.00	±0.3
142400	4.22	4.21	4.20	4.23	4.21	4.20	0.02	0.00	0.00	±0.3
161750	4.20	4.19	4.18	4.21	4.19	4.18	0.02	0.00	0.00	±0.3
180400	4.19	4.18	4.17	4.20	4.18	4.17	0.02	0.00	0.00	±0.3
228400	4.16	4.14	4.14	4.16	4.15	4.14	0.00	0.02	0.00	±0.3
289400	4.12	4.11	4.10	4.12	4.11	4.10	0.00	0.00	0.00	±0.3
366400	4.08	4.07	4.06	4.09	4.08	4.07	0.02	0.02	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.02	4.02	0.02	0.00	0.02	±0.3
567800	3.99	3.98	3.97	4.00	3.98	3.98	0.02	0.00	0.02	±0.3
744200	3.94	3.93	3.93	3.94	3.93	3.93	0.00	0.00	0.00	±0.3
942600	3.92	3.92	3.92	3.93	3.92	3.92	0.02	0.00	0.00	±0.3
1193600	3.90	3.89	3.89	3.90	3.90	3.89	0.00	0.02	0.00	±0.3
1511600	3.90	3.89	3.88	3.90	3.90	3.89	0.00	0.02	0.02	±0.3
1914400	3.88	3.87	3.86	3.89	3.88	3.87	0.02	0.02	0.02	±0.3
2424400	3.86	3.85	3.85	3.88	3.86	3.85	0.04	0.02	0.00	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.82	0.02	0.02	0.00	±0.3
3888000	3.77	3.76	3.76	3.79	3.76	3.77	0.05	0.00	0.02	±0.3
4000000	3.77	3.76	3.75	3.77	3.76	3.76	0.00	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.71	3.70	3.70	0.02	0.02	0.02	±0.3
6235400	3.60	3.59	3.59	3.61	3.59	3.59	0.02	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.46	3.46	3.45	0.00	0.03	0.00	±0.3
10000000	3.32	3.31	3.31	3.32	3.34	3.31	0.00	0.08	0.00	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR25-SPF0018
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MAGPy-8H3D-E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 2

f/(Hz)	H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.47	1.46	0.00	0.00	-0.06	±0.3
3200	1.46	1.46	1.46	1.47	1.46	1.48	0.06	0.00	0.12	±0.3
4000	1.46	1.46	1.46	1.46	1.46	1.46	0.00	0.00	0.00	±0.3
5200	1.45	1.44	1.44	1.44	1.44	1.43	-0.06	0.00	-0.06	±0.3
6600	1.43	1.43	1.43	1.43	1.44	1.43	0.00	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.43	1.43	1.42	0.06	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.42	1.41	0.00	0.00	-0.06	±0.3
10600	4.26	4.23	4.22	4.27	4.25	4.23	-0.02	0.04	0.02	±0.3
13400	4.26	4.25	4.24	4.27	4.23	4.24	-0.02	-0.04	0.00	±0.3
17000	4.26	4.25	4.24	4.29	4.26	4.25	0.02	0.02	0.02	±0.3
21400	4.30	4.27	4.26	4.29	4.27	4.26	-0.02	0.00	0.04	±0.3
27200	4.30	4.27	4.26	4.31	4.26	4.26	0.02	0.02	0.00	±0.3
34400	4.30	4.28	4.27	4.31	4.28	4.28	0.02	0.00	0.02	±0.3
40000	4.29	4.27	4.27	4.30	4.27	4.27	0.02	0.00	0.00	±0.3
43600	4.29	4.27	4.26	4.29	4.27	4.27	0.00	0.00	0.02	±0.3
55400	4.29	4.26	4.25	4.29	4.26	4.26	0.02	0.00	0.02	±0.3
70000	4.25	4.25	4.24	4.27	4.25	4.25	0.02	0.00	0.02	±0.3
88800	4.25	4.23	4.23	4.25	4.24	4.23	0.00	0.02	0.00	±0.3
112400	4.24	4.22	4.22	4.25	4.22	4.22	0.02	0.00	0.00	±0.3
142400	4.22	4.21	4.20	4.23	4.21	4.21	0.02	0.00	0.02	±0.3
161750	4.20	4.19	4.18	4.21	4.19	4.19	0.02	0.00	0.02	±0.3
180400	4.19	4.18	4.17	4.20	4.18	4.18	0.02	0.00	0.02	±0.3
228400	4.18	4.14	4.14	4.17	4.15	4.14	0.02	0.02	0.00	±0.3
289400	4.12	4.11	4.10	4.13	4.11	4.11	0.02	0.00	0.02	±0.3
366400	4.08	4.07	4.06	4.09	4.07	4.07	0.02	0.00	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.03	4.02	4.03	0.00	0.00	0.04	±0.3
587800	3.99	3.98	3.97	4.00	3.98	3.97	0.02	0.00	0.00	±0.3
744200	3.94	3.93	3.93	3.94	3.93	3.93	0.00	0.00	0.00	±0.3
942600	3.90	3.92	3.92	3.94	3.92	3.92	0.04	0.00	0.00	±0.3
1193600	3.90	3.89	3.89	3.91	3.90	3.90	0.02	0.02	0.02	±0.3
1511600	3.90	3.89	3.88	3.90	3.90	3.89	0.00	0.02	0.02	±0.3
1914400	3.88	3.87	3.86	3.88	3.88	3.87	0.00	0.02	0.02	±0.3
2424400	3.86	3.85	3.85	3.86	3.86	3.87	0.04	0.02	0.05	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.83	0.02	0.02	0.02	±0.3
3888000	3.77	3.76	3.76	3.78	3.77	3.77	0.02	0.02	0.02	±0.3
4000000	3.77	3.76	3.75	3.78	3.76	3.76	0.02	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.71	3.70	3.70	0.02	0.02	0.02	±0.3
6235400	3.60	3.59	3.59	3.61	3.59	3.59	0.02	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.47	3.46	3.44	0.03	0.03	-0.03	±0.3
10000000	3.32	3.31	3.31	3.33	3.32	3.32	0.03	0.03	0.03	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-f elds at calibration points from 3kHz to 10MHz

¹Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-BH3D-E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 3

f(Hz)	H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.47	1.47	0.00	0.00	0.00	+0.3
3200	1.46	1.46	1.46	1.46	1.46	1.46	0.00	0.00	0.12	+0.3
4000	1.46	1.46	1.46	1.46	1.46	1.46	0.00	-0.06	0.00	+0.3
5200	1.45	1.44	1.44	1.44	1.44	1.44	-0.06	0.00	0.00	+0.3
6600	1.45	1.43	1.43	1.44	1.44	1.43	0.06	0.06	0.00	+0.3
8200	1.42	1.42	1.42	1.42	1.43	1.42	0.00	0.06	0.00	+0.3
9000	1.42	1.42	1.42	1.42	1.42	1.42	0.00	0.00	0.00	+0.3
10600	4.28	4.23	4.22	4.29	4.24	4.24	0.02	0.02	0.04	+0.3
13400	4.28	4.25	4.24	4.26	4.23	4.23	-0.04	-0.04	-0.02	+0.3
17000	4.28	4.25	4.24	4.29	4.25	4.24	0.02	0.00	0.00	+0.3
21400	4.30	4.27	4.26	4.31	4.26	4.27	0.02	-0.02	0.02	+0.3
27200	4.30	4.27	4.26	4.32	4.27	4.26	0.04	0.00	0.00	+0.3
34400	4.30	4.28	4.27	4.32	4.28	4.26	0.04	0.00	0.02	+0.3
40000	4.29	4.27	4.27	4.29	4.28	4.26	0.00	0.02	-0.02	+0.3
43600	4.29	4.27	4.26	4.29	4.26	4.25	0.00	-0.02	-0.02	+0.3
55400	4.26	4.26	4.25	4.28	4.25	4.25	0.00	-0.02	0.00	+0.3
70000	4.26	4.25	4.24	4.28	4.24	4.24	0.04	-0.02	0.00	+0.3
88800	4.25	4.23	4.23	4.26	4.23	4.23	0.02	0.00	0.00	+0.3
112400	4.24	4.22	4.22	4.25	4.22	4.22	0.02	0.00	0.00	+0.3
142400	4.22	4.21	4.20	4.23	4.21	4.20	0.02	0.00	0.00	+0.3
161750	4.20	4.19	4.18	4.21	4.19	4.19	0.02	0.00	0.02	+0.3
180400	4.19	4.18	4.17	4.20	4.18	4.17	0.02	0.00	0.00	+0.3
228400	4.16	4.14	4.14	4.17	4.14	4.14	0.02	0.00	0.00	+0.3
289400	4.12	4.11	4.10	4.13	4.11	4.10	0.02	0.00	0.00	+0.3
366400	4.08	4.07	4.06	4.09	4.07	4.07	0.02	0.00	0.02	+0.3
400000	4.06	4.05	4.04	4.07	4.05	4.05	0.02	0.00	0.02	+0.3
464000	4.03	4.02	4.01	4.04	4.02	4.02	0.02	0.00	0.02	+0.3
587800	3.99	3.98	3.97	3.99	3.98	3.98	0.00	0.00	0.02	+0.3
744200	3.94	3.93	3.93	3.94	3.93	3.93	0.00	0.00	0.00	+0.3
942600	3.92	3.92	3.92	3.93	3.92	3.92	0.02	0.00	0.00	+0.3
1193600	3.90	3.89	3.89	3.91	3.90	3.89	0.02	0.02	0.00	+0.3
1511600	3.90	3.89	3.88	3.91	3.89	3.89	0.02	0.00	0.02	+0.3
1914400	3.86	3.87	3.86	3.89	3.87	3.87	0.02	0.00	0.02	+0.3
2424400	3.86	3.85	3.85	3.87	3.86	3.85	0.02	0.02	0.00	+0.3
3070200	3.83	3.82	3.82	3.84	3.82	3.83	0.02	0.00	0.02	+0.3
3888000	3.77	3.76	3.76	3.79	3.77	3.76	0.05	0.02	0.00	+0.3
4000000	3.77	3.76	3.75	3.78	3.76	3.75	0.02	0.00	0.00	+0.3
4923800	3.70	3.69	3.69	3.71	3.71	3.69	0.02	0.05	0.00	+0.3
6235400	3.60	3.59	3.59	3.61	3.59	3.59	0.02	0.00	0.00	+0.3
7896400	3.49	3.45	3.45	3.47	3.45	3.45	0.03	0.00	0.00	+0.3
10000000	3.32	3.31	3.31	3.34	3.30	3.26	0.05	-0.03	-0.06	+0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

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MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 4

f(Hz)	H-field(A/m) Applied			H-field(A/m) Reading			Difference(dB)			Tolerance(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.46	1.48	0.00	-0.06	0.06	±0.3
3200	1.46	1.46	1.46	1.47	1.47	1.49	0.06	0.06	0.16	±0.3
4000	1.46	1.46	1.46	1.45	1.46	1.46	0.06	0.00	0.00	±0.3
5200	1.45	1.44	1.44	1.44	1.45	1.44	-0.06	0.06	0.00	±0.3
6600	1.43	1.43	1.43	1.43	1.44	1.43	0.00	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.43	1.43	1.42	0.06	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.42	1.42	0.00	0.00	0.00	±0.3
10600	4.28	4.23	4.22	4.29	4.22	4.24	0.02	-0.02	0.04	±0.3
13400	4.28	4.25	4.24	4.26	4.25	4.23	0.00	0.00	-0.02	±0.3
17000	4.28	4.25	4.24	4.27	4.25	4.25	-0.02	0.00	0.00	±0.3
21400	4.30	4.27	4.26	4.30	4.25	4.26	0.00	-0.04	0.04	±0.3
27200	4.30	4.27	4.26	4.31	4.27	4.27	0.02	0.00	0.00	±0.3
34400	4.30	4.28	4.27	4.31	4.28	4.28	0.02	0.00	0.00	±0.3
40000	4.29	4.27	4.27	4.31	4.28	4.27	0.04	0.02	0.00	±0.3
43600	4.29	4.27	4.26	4.30	4.26	4.27	0.02	-0.02	0.02	±0.3
55400	4.26	4.26	4.25	4.28	4.26	4.26	0.00	0.00	0.02	±0.3
70000	4.26	4.25	4.24	4.27	4.25	4.25	0.02	0.00	0.02	±0.3
88800	4.25	4.23	4.23	4.26	4.23	4.24	0.02	0.00	0.02	±0.3
112400	4.24	4.22	4.22	4.25	4.22	4.22	0.02	0.00	0.00	±0.3
142400	4.22	4.21	4.20	4.22	4.20	4.21	0.00	0.02	0.02	±0.3
161750	4.20	4.19	4.18	4.21	4.19	4.18	0.02	0.00	0.00	±0.3
180400	4.19	4.18	4.17	4.20	4.18	4.18	0.02	0.00	0.02	±0.3
228400	4.16	4.14	4.14	4.17	4.14	4.14	0.02	0.00	0.00	±0.3
289400	4.12	4.11	4.10	4.13	4.10	4.11	0.02	-0.02	0.02	±0.3
366400	4.08	4.07	4.06	4.09	4.08	4.07	0.02	0.02	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.05	4.05	0.02	0.00	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.02	4.02	0.02	0.00	0.02	±0.3
587800	3.98	3.98	3.97	4.00	3.98	3.98	0.02	0.00	0.02	±0.3
744200	3.94	3.93	3.93	3.95	3.93	3.93	0.02	0.00	0.00	±0.3
942600	3.92	3.92	3.92	3.93	3.92	3.92	0.02	0.00	0.00	±0.3
1193600	3.90	3.89	3.89	3.91	3.90	3.90	0.02	0.02	0.02	±0.3
1511600	3.90	3.89	3.88	3.90	3.89	3.89	0.00	0.00	0.02	±0.3
1914400	3.88	3.87	3.86	3.89	3.88	3.87	0.02	0.02	0.02	±0.3
2424400	3.86	3.85	3.85	3.87	3.86	3.85	0.02	0.02	0.00	±0.3
3070200	3.83	3.82	3.82	3.84	3.82	3.83	0.02	0.00	0.02	±0.3
3888000	3.77	3.76	3.76	3.78	3.77	3.77	0.02	0.02	0.02	±0.3
4000000	3.77	3.76	3.75	3.78	3.77	3.75	0.02	0.02	0.00	±0.3
4923800	3.70	3.69	3.69	3.72	3.70	3.70	0.05	0.00	0.00	±0.3
6235400	3.60	3.59	3.59	3.61	3.59	3.59	0.02	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.47	3.45	3.45	0.03	0.00	0.00	±0.3
10000000	3.32	3.31	3.31	3.36	3.31	3.32	0.10	0.00	0.00	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 5

f/(Hz)	H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.47	1.47	0.00	0.00	0.00	±0.3
3200	1.46	1.46	1.46	1.47	1.47	1.47	0.06	0.06	0.06	±0.3
4000	1.46	1.46	1.46	1.46	1.45	1.45	0.00	-0.06	0.00	±0.3
5200	1.45	1.44	1.44	1.44	1.44	1.44	-0.06	0.00	0.00	±0.3
6600	1.43	1.43	1.43	1.44	1.44	1.43	0.06	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.44	1.43	1.42	0.12	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.42	1.42	0.00	0.00	0.00	±0.3
10600	4.28	4.23	4.22	4.30	4.26	4.24	0.04	0.06	0.04	±0.3
13400	4.28	4.25	4.24	4.26	4.24	4.24	0.00	-0.02	0.00	±0.3
17000	4.28	4.25	4.24	4.26	4.25	4.24	0.00	0.00	0.00	±0.3
21400	4.30	4.27	4.26	4.31	4.26	4.25	0.02	-0.02	-0.02	±0.3
27200	4.30	4.27	4.26	4.31	4.27	4.27	0.02	0.00	0.02	±0.3
34400	4.30	4.28	4.27	4.30	4.28	4.28	0.00	0.00	0.02	±0.3
40000	4.29	4.27	4.27	4.29	4.27	4.27	0.00	0.00	0.00	±0.3
43600	4.29	4.27	4.26	4.29	4.27	4.27	0.00	0.00	0.02	±0.3
55400	4.28	4.26	4.25	4.28	4.26	4.26	0.00	0.00	0.02	±0.3
70000	4.26	4.25	4.24	4.27	4.25	4.24	0.02	0.00	0.00	±0.3
88800	4.25	4.23	4.23	4.25	4.24	4.23	0.00	0.02	0.00	±0.3
112400	4.24	4.22	4.22	4.24	4.23	4.22	0.00	0.02	0.00	±0.3
142400	4.22	4.21	4.20	4.23	4.21	4.21	0.02	0.00	0.02	±0.3
161750	4.20	4.19	4.18	4.21	4.18	4.19	0.02	-0.02	0.02	±0.3
180400	4.19	4.18	4.17	4.19	4.18	4.18	0.00	0.00	0.02	±0.3
228400	4.16	4.14	4.14	4.17	4.15	4.14	0.02	0.02	0.00	±0.3
289400	4.12	4.11	4.10	4.12	4.11	4.11	0.00	0.00	0.02	±0.3
366400	4.08	4.07	4.06	4.08	4.07	4.07	0.00	0.00	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.02	4.02	0.02	0.00	0.02	±0.3
587800	3.96	3.98	3.97	3.99	3.98	3.98	0.00	0.00	0.02	±0.3
744200	3.94	3.93	3.93	3.96	3.93	3.93	0.04	0.00	0.00	±0.3
942600	3.92	3.92	3.92	3.92	3.92	3.92	0.00	0.00	0.00	±0.3
1193600	3.90	3.89	3.89	3.91	3.90	3.89	0.02	0.02	0.00	±0.3
1511600	3.90	3.89	3.88	3.90	3.89	3.89	0.00	0.00	0.02	±0.3
1914400	3.86	3.87	3.86	3.88	3.87	3.87	0.00	0.00	0.02	±0.3
2424400	3.86	3.85	3.85	3.87	3.86	3.85	0.02	0.02	0.00	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.82	0.02	0.02	0.00	±0.3
3888000	3.77	3.76	3.76	3.79	3.77	3.77	0.05	0.02	0.02	±0.3
4000000	3.77	3.78	3.75	3.76	3.76	3.76	0.02	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.71	3.70	3.70	0.02	0.02	0.02	±0.3
6235400	3.60	3.59	3.59	3.60	3.59	3.59	0.00	0.00	0.03	±0.3
7896400	3.46	3.45	3.45	3.46	3.46	3.45	0.00	0.03	0.00	±0.3
10000000	3.32	3.31	3.31	3.32	3.31	3.37	0.00	0.00	0.16	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 6

f(Hz)	H-field/(A/m) Applied			H-field/(A/m) Reading			Difference/(dB)			Tolerance/(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.46	1.47	0.00	-0.06	0.00	±0.3
3200	1.46	1.46	1.46	1.45	1.46	1.48	-0.06	0.00	0.12	±0.3
4000	1.46	1.46	1.46	1.46	1.46	1.45	0.00	0.00	-0.06	±0.3
5200	1.45	1.44	1.44	1.44	1.44	1.43	-0.06	0.00	-0.06	±0.3
6600	1.43	1.43	1.43	1.44	1.44	1.43	0.06	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.43	1.43	1.42	0.06	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.42	1.42	0.00	0.00	0.00	±0.3
10600	4.28	4.23	4.22	4.31	4.23	4.24	0.06	0.00	0.04	±0.3
13400	4.28	4.25	4.24	4.27	4.24	4.23	-0.02	-0.02	-0.02	±0.3
17000	4.28	4.25	4.24	4.27	4.25	4.24	-0.02	0.00	0.00	±0.3
21400	4.30	4.27	4.26	4.30	4.28	4.26	0.00	0.02	0.00	±0.3
27200	4.30	4.27	4.26	4.31	4.26	4.27	0.02	-0.02	0.02	±0.3
34400	4.30	4.28	4.27	4.30	4.28	4.28	0.00	0.00	0.02	±0.3
40000	4.29	4.27	4.27	4.29	4.27	4.27	0.00	0.00	0.00	±0.3
43600	4.29	4.27	4.26	4.30	4.27	4.27	0.02	0.00	0.02	±0.3
55400	4.28	4.26	4.25	4.28	4.26	4.25	0.00	0.00	0.00	±0.3
70000	4.26	4.25	4.24	4.26	4.24	4.25	0.00	-0.02	0.02	±0.3
88800	4.25	4.23	4.23	4.25	4.23	4.23	0.00	0.00	0.00	±0.3
112400	4.24	4.22	4.22	4.24	4.22	4.22	0.00	0.00	0.00	±0.3
142400	4.22	4.21	4.20	4.22	4.20	4.21	0.00	-0.02	0.02	±0.3
161750	4.20	4.19	4.18	4.20	4.20	4.18	0.00	0.02	0.00	±0.3
180400	4.19	4.18	4.17	4.20	4.18	4.17	0.02	0.00	0.00	±0.3
228400	4.18	4.14	4.14	4.17	4.15	4.15	0.02	0.02	0.02	±0.3
289400	4.12	4.11	4.10	4.13	4.11	4.11	0.02	0.00	0.02	±0.3
366400	4.08	4.07	4.06	4.09	4.07	4.07	0.02	0.00	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.03	4.02	0.02	0.02	0.02	±0.3
587800	3.96	3.98	3.97	3.99	3.98	3.98	0.00	0.06	0.02	±0.3
744200	3.94	3.93	3.93	3.94	3.93	3.93	0.00	0.06	0.00	±0.3
942600	3.92	3.92	3.92	3.93	3.92	3.92	0.02	0.00	0.00	±0.3
1193600	3.90	3.89	3.89	3.91	3.90	3.89	0.02	0.02	0.00	±0.3
1511600	3.90	3.89	3.88	3.91	3.89	3.89	0.02	0.00	0.02	±0.3
1914400	3.88	3.87	3.86	3.89	3.87	3.87	0.02	0.00	0.02	±0.3
2424400	3.85	3.85	3.85	3.87	3.85	3.86	0.02	0.00	0.02	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.82	0.02	0.02	0.00	±0.3
3888000	3.77	3.76	3.76	3.78	3.77	3.77	0.02	0.02	0.02	±0.3
4000000	3.77	3.76	3.75	3.78	3.76	3.76	0.02	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.71	3.70	3.69	0.02	0.02	0.00	±0.3
6235400	3.60	3.59	3.59	3.60	3.59	3.59	0.00	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.47	3.46	3.44	0.03	0.03	-0.03	±0.3
10000000	3.32	3.31	3.31	3.33	3.33	3.29	0.03	0.05	-0.05	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, H-field, Channel 7

f(Hz)	H-field(A/m) Applied			H-field(A/m) Reading			Difference:(dB)			Tolerance:(dB)
	x	y	z	x	y	z	x	y	z	
3000	1.47	1.47	1.47	1.47	1.46	1.47	0.00	-0.06	0.00	±0.3
3200	1.46	1.46	1.46	1.47	1.46	1.48	0.06	0.00	0.12	±0.3
4000	1.46	1.46	1.46	1.45	1.45	1.45	0.06	0.06	-0.06	±0.3
5200	1.45	1.44	1.44	1.44	1.44	1.44	-0.06	0.00	0.00	±0.3
6600	1.43	1.43	1.43	1.44	1.44	1.43	0.06	0.06	0.00	±0.3
8200	1.42	1.42	1.42	1.43	1.43	1.42	0.06	0.06	0.00	±0.3
9000	1.42	1.42	1.42	1.42	1.41	1.42	0.00	-0.06	0.00	±0.3
10600	4.28	4.23	4.22	4.28	4.24	4.21	0.00	0.02	-0.02	±0.3
13400	4.28	4.25	4.24	4.27	4.24	4.23	-0.02	-0.02	-0.02	±0.3
17000	4.28	4.25	4.24	4.28	4.25	4.24	0.00	0.00	0.00	±0.3
21400	4.30	4.27	4.28	4.31	4.27	4.28	0.02	0.00	0.00	±0.3
27200	4.30	4.27	4.28	4.32	4.27	4.27	0.04	0.00	0.02	±0.3
34400	4.30	4.28	4.27	4.31	4.28	4.28	0.02	0.00	0.02	±0.3
40000	4.29	4.27	4.27	4.30	4.28	4.28	0.02	0.02	-0.02	±0.3
43600	4.29	4.27	4.28	4.28	4.27	4.27	-0.02	0.00	0.02	±0.3
55400	4.28	4.26	4.25	4.28	4.25	4.25	0.00	-0.02	0.00	±0.3
70000	4.26	4.25	4.24	4.27	4.25	4.25	0.02	0.00	0.02	±0.3
88800	4.25	4.23	4.23	4.26	4.24	4.23	0.02	0.02	0.00	±0.3
112400	4.24	4.22	4.22	4.24	4.23	4.22	0.00	0.02	0.00	±0.3
142400	4.22	4.21	4.20	4.23	4.20	4.20	0.02	-0.02	0.00	±0.3
161750	4.20	4.19	4.18	4.21	4.19	4.19	0.02	0.00	0.02	±0.3
180400	4.19	4.18	4.17	4.20	4.19	4.18	0.02	0.02	0.02	±0.3
228400	4.16	4.14	4.14	4.17	4.16	4.14	0.02	0.04	0.00	±0.3
289400	4.12	4.11	4.10	4.12	4.11	4.10	0.00	0.00	0.00	±0.3
366400	4.08	4.07	4.06	4.09	4.08	4.07	0.02	0.02	0.02	±0.3
400000	4.06	4.05	4.04	4.07	4.06	4.05	0.02	0.02	0.02	±0.3
464000	4.03	4.02	4.01	4.04	4.02	4.02	0.02	0.00	0.02	±0.3
587800	3.99	3.98	3.97	3.99	3.99	3.98	0.00	0.02	0.02	±0.3
744200	3.94	3.93	3.93	3.95	3.94	3.94	0.02	0.02	0.02	±0.3
942800	3.92	3.92	3.92	3.94	3.93	3.92	0.04	0.02	0.00	±0.3
1193600	3.90	3.89	3.89	3.90	3.90	3.90	0.00	0.02	0.02	±0.3
1511600	3.90	3.89	3.88	3.91	3.89	3.89	0.02	0.00	0.02	±0.3
1914400	3.88	3.87	3.86	3.89	3.87	3.87	0.02	0.00	0.02	±0.3
2424400	3.86	3.85	3.85	3.87	3.86	3.85	0.02	0.02	0.00	±0.3
3070200	3.83	3.82	3.82	3.84	3.83	3.82	0.02	0.02	0.00	±0.3
3888000	3.77	3.76	3.76	3.79	3.77	3.77	0.05	0.02	0.02	±0.3
4000000	3.77	3.76	3.75	3.78	3.76	3.76	0.02	0.00	0.02	±0.3
4923800	3.70	3.69	3.69	3.71	3.70	3.70	0.02	0.02	0.02	±0.3
6235400	3.60	3.59	3.59	3.61	3.59	3.59	0.02	0.00	0.00	±0.3
7896400	3.46	3.45	3.45	3.47	3.46	3.45	0.03	0.03	0.00	±0.3
10000000	3.32	3.31	3.31	3.33	3.33	3.34	0.03	0.05	0.08	±0.3

SPEAG H-field frequency response tolerance criteria¹:
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

Frequency Response, E-field, Channel 0

f(Hz)	E-field(V/m) Applied			E-field(V/m) Reading			Difference(dB)			Tolerance(dB)
	x	y	z	x	y	z	x	y	z	
3000	169	169	172	169	169	171	0.00	0.00	-0.05	±0.3
3200	167	167	162	167	170	162	0.00	0.15	0.00	±0.3
4000	175	175	170	173	175	170	0.00	0.00	0.00	±0.3
5200	165	165	163	165	165	161	0.00	0.00	-0.11	±0.3
6600	163	163	160	163	163	160	0.00	0.00	0.00	±0.3
8200	162	162	159	161	162	159	-0.05	0.00	0.00	±0.3
9000	163	163	164	163	163	163	0.00	0.00	-0.05	±0.3
10600	166	166	159	166	167	159	0.00	0.05	0.00	±0.3
13400	163	163	162	163	163	162	0.00	0.00	0.00	±0.3
17000	161	161	163	161	161	163	0.00	0.00	0.00	±0.3
21400	157	157	158	157	157	158	0.00	0.00	0.00	±0.3
27200	158	158	157	158	158	157	0.00	0.00	0.00	±0.3
34400	162	162	159	162	162	159	0.00	0.00	0.00	±0.3
40000	161	161	161	161	161	160	0.00	0.00	-0.05	±0.3
43600	162	162	160	162	162	160	0.00	0.00	0.00	±0.3
55400	161	161	159	161	161	159	0.00	0.00	0.00	±0.3
70000	162	162	160	162	162	160	0.00	0.00	0.00	±0.3
88800	161	161	160	161	161	160	0.00	0.00	0.00	±0.3
112400	161	161	160	161	161	160	0.00	0.00	0.00	±0.3
142400	162	162	160	162	162	160	0.00	0.00	0.00	±0.3
161750	163	163	162	163	163	162	0.00	0.00	0.00	±0.3
180400	164	164	162	164	164	162	0.00	0.00	0.00	±0.3
228400	165	165	163	165	165	163	0.00	0.00	0.00	±0.3
289400	166	166	164	166	166	164	0.00	0.00	0.00	±0.3
366400	166	166	165	166	166	164	0.00	0.00	-0.05	±0.3
400000	167	167	165	167	167	165	0.00	0.00	0.00	±0.3
464000	168	168	166	168	168	166	0.00	0.00	0.00	±0.3
587800	169	169	167	169	169	167	0.00	0.00	0.00	±0.3
744200	169	169	167	169	169	167	0.00	0.00	0.00	±0.3
942600	170	170	168	170	170	168	0.00	0.00	0.00	±0.3
1193600	171	171	169	170	171	169	-0.05	0.00	0.00	±0.3
1511600	170	170	169	170	170	168	0.00	0.00	-0.05	±0.3
1914400	170	170	168	170	170	168	0.00	0.00	0.00	±0.3
2424400	170	170	168	170	170	169	0.00	0.00	0.00	±0.3
3070200	171	171	169	170	170	169	-0.05	-0.05	0.00	±0.3
3888000	171	171	169	171	171	169	0.00	0.00	0.00	±0.3
4000000	171	171	169	171	171	169	0.00	0.00	0.00	±0.3
4923800	172	172	170	172	172	170	0.00	0.00	0.00	±0.3
6235400	174	174	172	174	174	172	0.00	0.00	0.00	±0.3
7896400	180	180	179	180	180	178	0.00	0.00	-0.05	±0.3
10000000	201	201	199	200	200	198	-0.04	-0.04	0.00	±0.3

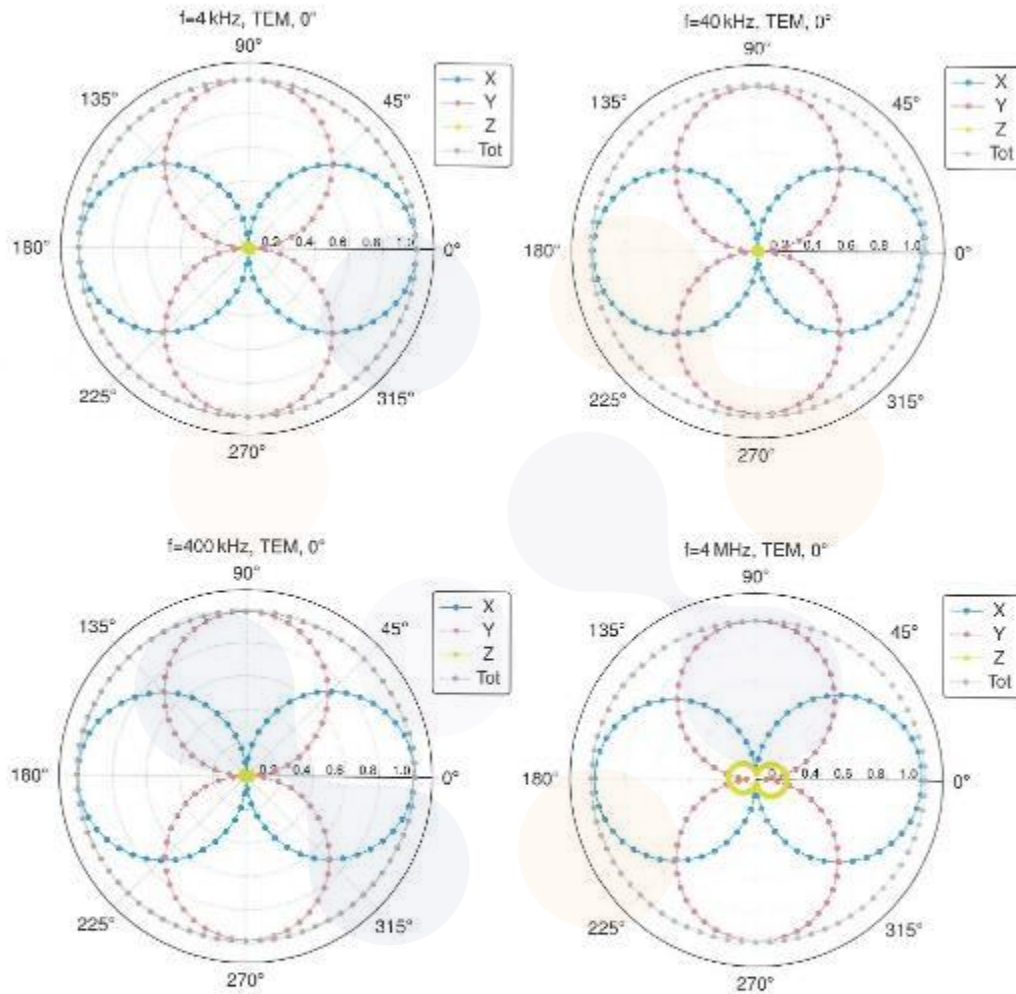
SPEAG E-field frequency response tolerance criteria¹:
±0.3dB for applied E-fields at calibration points from 3kHz to 10MHz

¹ Calibration uncertainty not taken into account (shared risk 50%).

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

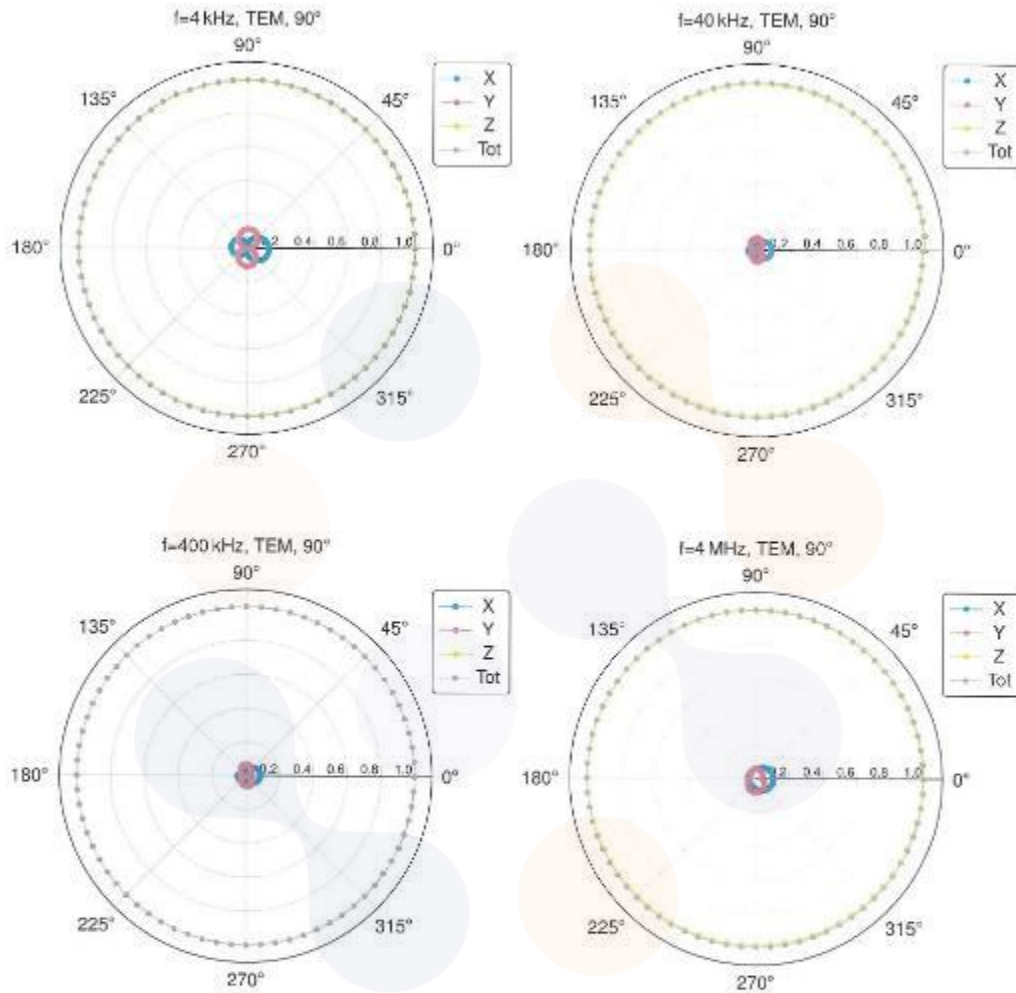
March 20, 2024

Isotropy H-Field

H-Field Receiving Pattern (ϕ), $\theta = 0^\circ$ 

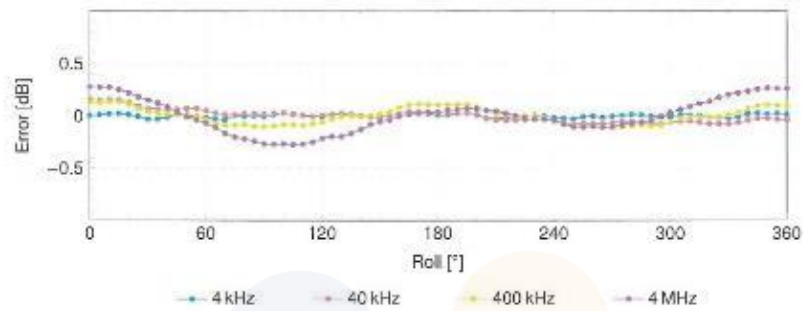
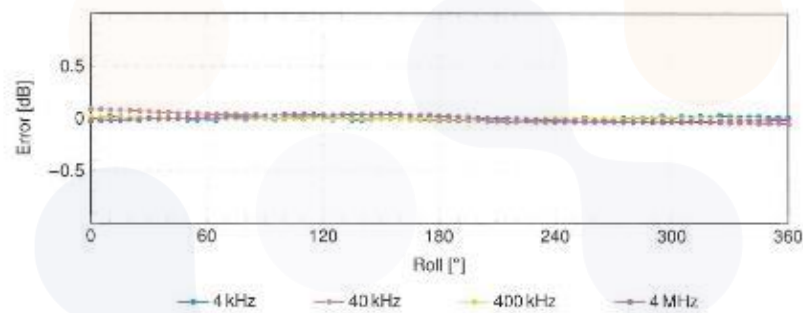
MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

H-Field Receiving Pattern (ϕ), $\theta = 90^\circ$ 

MAGPy-8H3D+E3D SN:3085
MAGPy DAS SN:3087

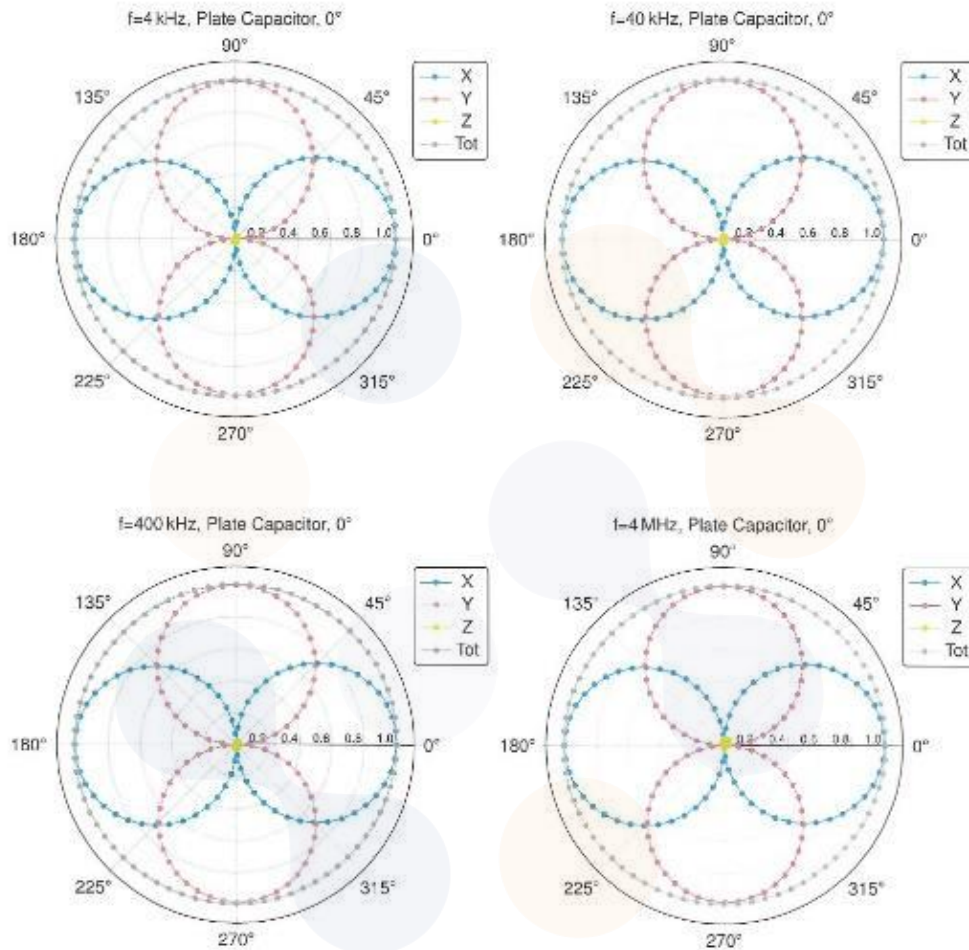
March 20, 2024

H-Field Receiving Pattern (ϕ), $\theta = 0^\circ$ H-Field Receiving Pattern (ϕ), $\theta = 90^\circ$ SPEAG axial deviation from the ideal response tolerance for H-field: ± 0.6 dB

MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3057

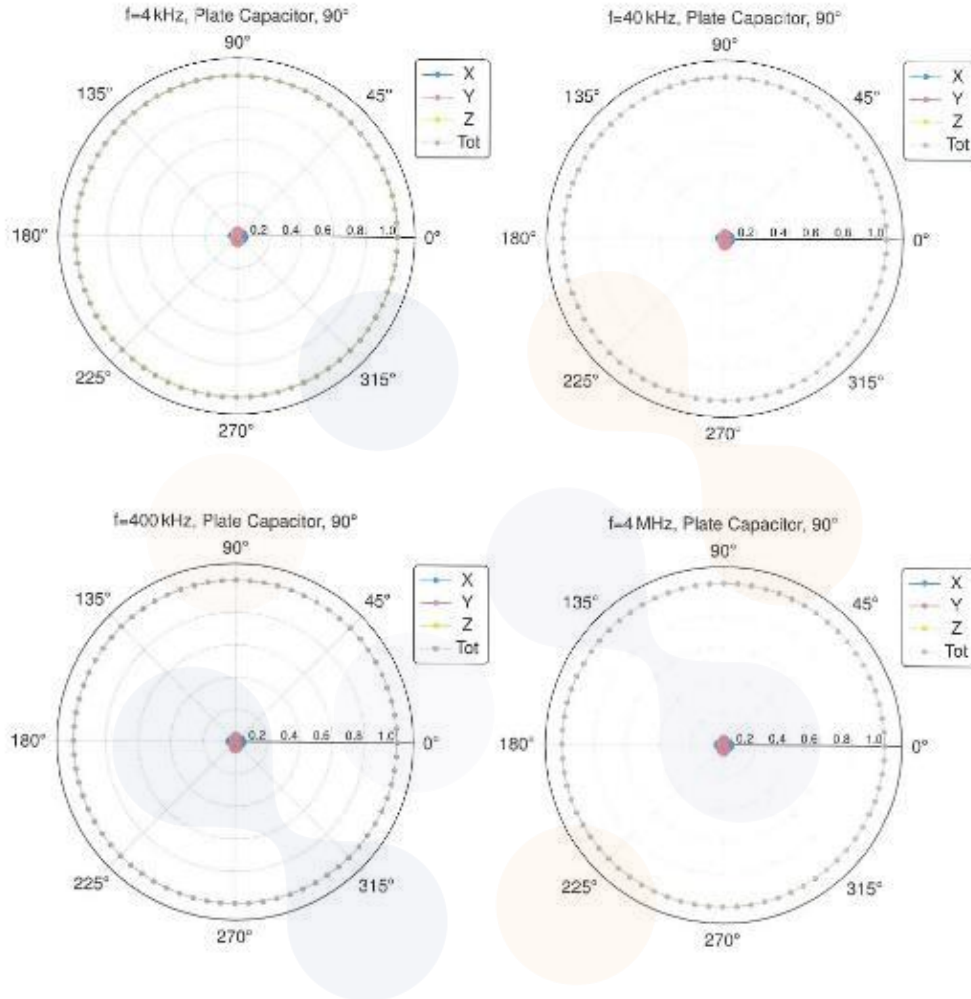
March 20, 2024

Isotropy E-Field

E-Field Receiving Pattern (ϕ), $\theta = 0^\circ$ 

MAGPy-8H3D-E3D SN:3085
MAGPy-DAS SN:3087

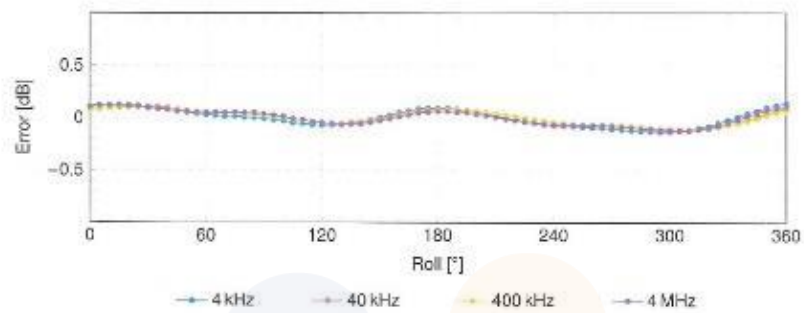
March 20, 2024

E-Field Receiving Pattern (ϕ), $\theta = 90^\circ$ 

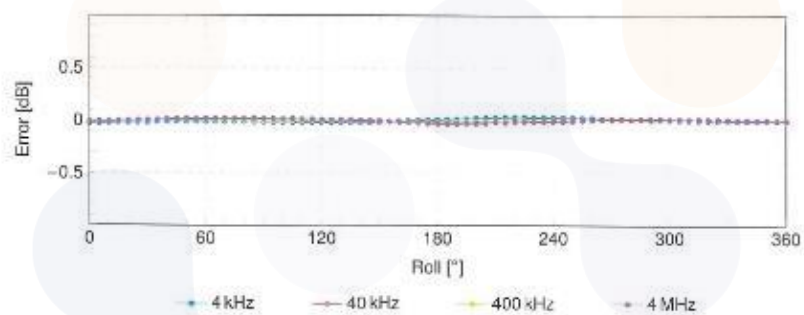
MAGPy-8H3D+E3D SN:3085
MAGPy-DAS SN:3087

March 20, 2024

E-Field Receiving Pattern (ϕ), $\theta = 0^\circ$



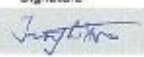
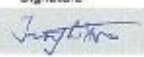
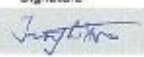
E-Field Receiving Pattern (ϕ), $\theta = 90^\circ$



SPEAG axial deviation from the ideal response tolerance for E-field: ± 0.8 dB

Appendix C.2 V-Coil Calibration Certificate (V-Coil 50/400)

Calibration Laboratory of
Schmid & Partner
Engineering AG
 Zeughausstrasse 43, 8004 Zurich, Switzerland

Client: Eurofins KCTL Gyeonggi-do, Republic of Korea		Certificate No: V-Coil50/400V2-1026 Apr24									
CALIBRATION CERTIFICATE											
Object	V-Coil50/400V2 - SN: 1026										
Calibration procedure(s)	QA CAL-47.v13 Calibration Procedure for WPT Verification & Validation Sources										
Calibration date:	April 2, 2024										
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 75%. Calibration Equipment used (M&STE critical for calibration)											
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration								
MAGPy-8H3D+E3D/DAS	SN: 3060/3078	22-Nov-23 (MAGPy-8H3D+E3D-3065)	Nov-24								
Secondary Standards	ID #	Check Date (in house)	Scheduled Check								
<table border="0"> <tr> <td>Calibrated by:</td> <td>Name: Jingtian Xi</td> <td>Function: Project Leader</td> <td>Signature: </td> </tr> <tr> <td>Approved by:</td> <td>Sven Kühn</td> <td>Technical Manager</td> <td></td> </tr> </table>				Calibrated by:	Name: Jingtian Xi	Function: Project Leader	Signature: 	Approved by:	Sven Kühn	Technical Manager	
Calibrated by:	Name: Jingtian Xi	Function: Project Leader	Signature: 								
Approved by:	Sven Kühn	Technical Manager									
			Issued: April 4, 2024								
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.											

Certificate No: V-Coil50/400V2-1026_Apr24

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Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

Glossary:

WPT wireless power transfer
V&V verification & validation

Calibration is Performed According to the Following Standards:

- Internal procedure QA CAL-47 Calibration procedure for WPT verification & validation sources from 3 kHz to 10 MHz
- IEC/IEEE 63164, "Assessment methods of the human exposure to electric and magnetic fields from wireless power transfer systems – Models, instrumentation, measurement and computational methods and procedures (Frequency range 3 kHz to 30 MHz)", draft standard, 2023

Additional Documentation:

- a) cDASY6/DASY8 Module WPT Manual

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* The V&V source is switched on for at least 30 minutes.
- *Source Positioning:* The V&V source is placed in the center of the UniPV1 phantom such that the source surface is parallel to phantom surface. The probe location used for DUT teaching is the top center of the coil (marked on the source casing). The probe distance is verified using mechanical gauges placed on the source surface.
- *H-field distribution:* H-field is measured in the volume above the V&V source in a rectilinear grid with a uniform grid step of 7.33 mm.

Calibrated Quantity

- Spatial peak of H-field (RMS value) at d mm from the DUT surface (extrapolated from measurements)

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

Software version	cDASY6 Module WPT	2.4.0.4346
	Notebook GUI	2.4.0.5
	Sim4Life	7.2.4
Scan setup	Grid dimensions	x: 124.7 mm, y: 124.7 mm, z: 36.7 mm
	Grid resolutions	dx, dy, dz: 7.33 mm
Nominal frequency	400 kHz	

Calibrated Quantities

Distance (relative to source surface) (mm)	Peak H-field (A/m)	Uncertainty (k=2) (dB)
0	253	1.13
2	222	1.13

Appendix (Additional assessments outside the scope of SCS 0108)

Peak values of induced fields¹

Distance (relative to source surface) (mm)	Induced peak current density, 1cm ² area avg. (A/m ²)	Induced peak E-field (V/m)			peak spatial SAR (mW/kg)	
		2mm cube avg.	Local	5mm line avg.	1g avg.	10g avg.
0	2.55	4.01	4.11	4.10	6.44	3.22
2	2.18	3.48	3.58	3.57	4.74	2.41

Voltage measurement

Total voltage (V)	Voltages at harmonics (dBc)
0.406	Highest harmonic: -20.9 2 nd highest harmonic: -32.9

¹ determined for a virtual half-space phantom with tissue properties $\epsilon_r = 55$, $\sigma = 0.75$ S/m, $\rho = 1000$ kg/m³

Measurement report

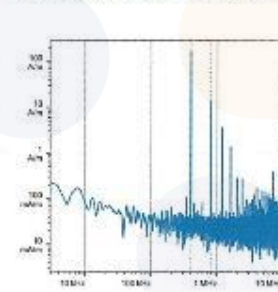
cDASY6 Module WPT Measurement Report

Device under test	Tool info	Scan info
Info: V-Coil50400	DASY software version: cDASY6 Module WPT 2.4.0.4345	Cable location: x: -4.43 mm, y: -3.35 mm, z: 88.50 mm
Serial number: 1026	Probe model, serial no. and configuration date: MAGPy-SH30-E3Dv2, WPM00250, 2024/01/10	Dimensions: x: 124.6 mm, y: 124.7 mm, z: 35.2 mm
Scenario: source calibration	Software version: 2.0.52, backend: 2.2.4	Resolution: x: 7.33 mm, y: 7.33 mm, z: 7.33 mm
		Completed on: 2024/04/02 17:22:20

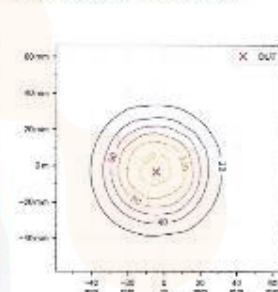
Measurement results

Maximum H-field [A/m]:
MAGNITUDE: 123.88 A/m
x: 22.87 A/m, y: 11.16 A/m, z: 121.24 A/m
Maximum H-field location relative to DUT:
x: -3.67 mm, y: 3.67 mm, z: 8.50 mm
Distance to -20.0 dB boundary:
39.48 mm
Offset relative to DUT:
x: 0.00 m, y: 0.00 m, z: 1.00 mm

H-field magnitude [rms] at maximum location



H-field magnitude [rms] at lowest plane



Incident fields, and induced quantities in the anatomical model

Distance [mm]	Peak incident fields [V/m]		Peak E_{ind} [V/m, rms]			Peak H_{ind} [A/m, rms]			psSAR [mW/kg]		H-field vector		Errors	
	H_{inc} [A/m]	Cube avg.	Local	Line avg.	Surface avg.	H_{inc} [A/m]	Cube avg.	Local	1g avg.	10g avg.	-20 dB radius [mm]	Sign	Vector potential	Boundary effect
3.8	253.0	4.01	4.11	4.1	2.55	8.44	3.22	39.2	1%	7%	24%			
3.8	222.0	3.48	3.58	3.57	2.18	4.74	2.41	39.4	1%	7%	27%			

Standard compliance evaluation, Absolute

Distance [mm]	ICNIRP 2010/2020			ICNIRP 1998			IEEE 2019			FCC			HC Code 8		
	PL [V/m]	BR [V/m]	psSAR [mW/kg]	PL [V/m]	BR [V/m]	psSAR [mW/kg]	PL [V/m]	BR [V/m]	psSAR [mW/kg]	PL [V/m]	BR [V/m]	psSAR [mW/kg]	PL [V/m]	BR [V/m]	psSAR [mW/kg]
0.0	253.0	4.03	3.22	253.0	2.57	3.22	253.0	4.13	3.22	253.0	N/A	6.44	253.0	4.14	6.44
2.0	222.0	3.5	2.41	222.0	2.2	2.41	224.0	3.5	2.41	222.0	N/A	4.74	222.0	3.61	4.74

Standard compliance evaluation, Relative

Distance [mm]	ICNIRP 2010/2020 [dB]			ICNIRP 1998 [dB]			IEEE 2019 [dB]			FCC [dB]			HC Code 8 [dB]		
	PL	BR	psSAR	PL	BR	psSAR	PL	BR	psSAR	PL	BR	psSAR	PL	BR	psSAR
0.0	26.3	-21.1	-27.9	42.8	11.8	-27.9	8.9	-24.7	-27.9	N/A	N/A	-23.9	42.8	-20.8	-23.9
2.0	25.7	-22.2	-29.2	41.7	10.6	-29.2	7.8	-25.8	-29.2	N/A	N/A	-25.3	41.7	-22.0	-25.3

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