

EMF Evaluation Report

Date of Report	25/02/2026	Client's Contact person:	Pablo Martin
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Tested device	Norm System		
Related reports:	-		
Testing has been carried out in accordance with:	680106 D01 RF Exposure Wireless Charging App v04 RF exposure considerations for low power consumer wireless power transfer applications 447498 D01 General RF Exposure Guidance v06 RF exposure procedures and equipment authorization policies for mobile and portable devices 47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document		

Date and signatures: 25.02.2026

Miia Nurkkala

Laboratory Manager

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1. SUMMARY OF EMF TEST REPORT

1.1 Test Details

Equipment under Test (EUT):

Product:	Norm System
Manufacturer:	FIRE1
Model:	PN1100-X
FW/HW Version:	FW version: PN1901 rev.02 HW version: PN1600 rev. 02 Mobile App – TPN1300 Rev. 02
Serial Number:	PN1100-S (small belt) – TL822-01-03e PN1100-L (small belt) – TL821-04-474
FCC ID:	FCC ID of Norm Belt: 2BQVN-NORMHF01 Norm Belt contains BLE module with FCC ID S9NBNRGM2SP
Battery Type used in testing:	N/A
State of the Sample:	Production sample

Testing information:

Testing performed:	13.06.2024
Notes:	-
Document ID:	FCC EMF Test Report_FIRE1 Heart Monitor_ID6636_25022026.docx
Document history & changes:	This report replaces report ID "FCC EMF Test Report_FIRE1 Heart Monitor_ID6636_16072024.docx". Updated FCC ID information.
Measurement performed by:	Kalle Orava
Temperature °C	22±2 / Controlled
Humidity RH%	30±20 / Controlled
Testing Laboratory:	Verkotan Oy
FCC Test Firm Designation Number:	FI0005

1.2 Maximum Results

1.2.1 Standalone exposure

The maximum reported Incident E-field and Incident H-field values are shown in tables below. The device conforms to the requirements of the standards when the maximum measurement value is less than the MPE limits specified in Table 1 to § 1.1310(e)(1).

Measured Quantity	Frequency [MHz]	Reference period [minutes]	Distance to EUT* [mm]	Measured Value	MPE Limit	Result
Incident E-field	2.53	Instantaneous	0	3.34 V/m	326 V/m	PASS
Incident H-field	2.53	Instantaneous	0	0.173 V/m	0.866 A/m	PASS

*Simulated distance

1.2.2 Simultaneous Transmission

Simultaneous Transmission Exposure	Summed Ratio to the Limit	Limit	Result
Bluetooth LE + Proprietary RF Link	0.37	1	PASS

1.2.3 Measurement Uncertainty

DASY8 Module WPT Peak Incident H-Field:

Expanded Uncertainty (k=2)	±16.6 %
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DASY8 Module WPT Peak Incident E-Field:

Expanded Uncertainty (k=2)	±24.4 %
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DASY8 Module WPT Peak Local E_{ind} :

Expanded Uncertainty (k=2)	±18.2 %
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DASY8 Module WPT psSAR 1g:

Expanded Uncertainty (k=2)	±33.9 %
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2. DESCRIPTION OF THE DEVICE UNDER TEST (DUT)

The Norm System includes a belt, a sensor implant and a mobile app for heart failure management.

The sensor implant is utilized in the inferior vena cava (IVC), and it can be energised by an external antenna implemented in the belt. The belt generates a burst of radio-frequency energy. This energy creates an alternating magnetic field in the local area surrounding it, which energises the implanted sensor.

The sensor is comprised of a coil of wire with a capacitor. The alternating magnetic field charges and causes the sensor to 'ring' at a resonant frequency. The resonant frequency is dependent on its inductance, which in turn is dependent on the geometry of the sensor. The 'ringing' of the sensor is detected externally and decoded by the belt, thus providing an indication of the internal geometry of the sensor and thus the IVC of the patient.

The level of radiated field depends on both the size of the belt employed and the frequency of the transmitter output. The measurements were conducted using a PN1100-L, the largest belt stretched to its maximum specified circumference and a PN1100-S, the smallest belt stretched to its minimum specified circumference.

The transmitter frequency is updated within the system as part of the reading initiation step to match the resonant frequency of the sensor. The resonant frequency of the sensor is a function of its cross-sectional area. Both belts were tested using the minimum diameter (14 mm) and maximum diameter (28 mm) of the sensor implant.

Tested combinations of the DUT are shown in a table below.

Norm Belt	Belt fixture	Fixture circumference [mm]	Char. tube	Char. tube diam [mm]
PN1100-S	EQ517-SS	690	EQ 255	14
PN1100-S	EQ517-SS	690	EQ 256	28
PN1100-L	EQ517-LS/LM	1430	EQ 255	14
PN1100-L	EQ517-LS/LM	1430	EQ 256	28

Device Category	Portable
Exposure Environment	Uncontrolled

2.1 Supported Frequency Bands and Operational Modes

TX Frequency bands	Modes of Operation	Transmitter Frequency Range [MHz]
	Proprietary RF Link	1.9 – 2.6
	Bluetooth 5.2	2402 – 2480

2.2 Test Exclusions

According to Appendix A of 447498D01 V06 the SAR test exclusion power threshold for 2450MHz is 10mW at ≤5mm separation distance. The maximum output power of the Bluetooth LE transmitter is 8 dBm i.e. 6.3 mW thus it is below the test exclusion threshold.

2.3 Simultaneous transmission

The DUT supports following simultaneous transmission combinations:

- Bluetooth LE + Proprietary RF Link

2.4 Calculated Bluetooth Low Energy SAR results

For simultaneous transmission evaluation the Bluetooth LE standalone SAR value is estimated according to the following equation:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})/x}] \text{ W/kg}$, where $x = 7.5$ for 1-g SAR.

Bluetooth LE SAR_{1g} = $(6.3\text{mW}/5\text{mm}) \cdot (2.4835\text{GHz})^{1/2}/7.5 = 0.265 \text{ W/kg}$

3. TEST EQUIPMENT

DASY8 Module WPT is a unique solution for high-precision evaluations in the laboratory. Integrating the MAGPy system with the DASY robotics system and Sim4Life simulation platform ensures high precision.

DASY8 Module WPT manufactured by SPEAG was used to measure electric and magnetic fields. MAGPy-8H3D+E3D Version 2 probe (with the integrated data acquisition system MAGPy-DAS) was attached to MAGPy-ES emergency stop system and then mounted to the DASY8 Robot. MAGPy-RA ϕ V2 reference probe was connected to the MAGPy probe and used as a phase reference. The H-field distributions can be analyzed directly, and the values are compared to the reference level, or they are converted into Maxwell field and used as excitations for determining the basic restriction quantities for further dosimetric analysis with the Magneto Quasi-Static (MQS) solver.

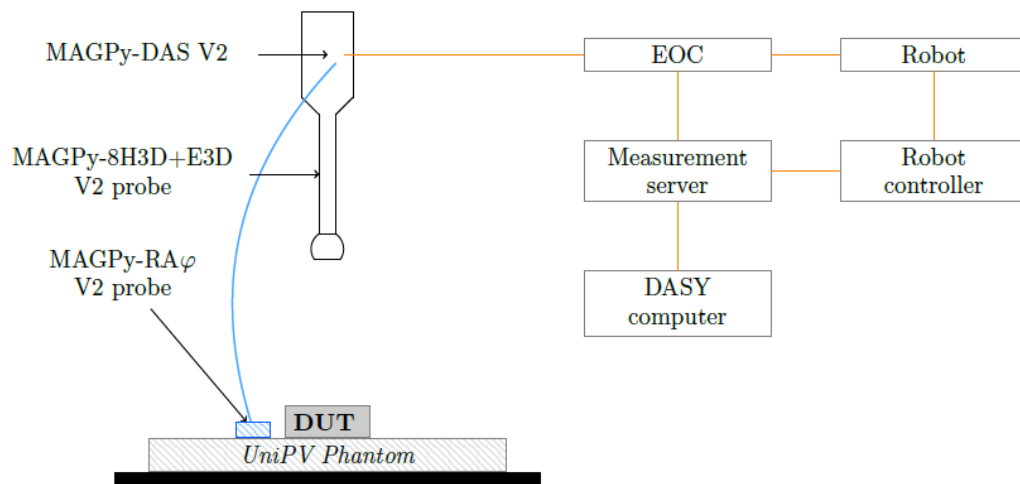


Figure 1 Schematic Laboratory Picture

3.1 Test Equipment List

Test Equipment	Model	Serial Number	Calibration Date	Interval [years]
DASY8 Software	DASY8 Module WPT V2.6.0.5002	-	NA	NA
Data Acquisition System	MAGPy-DAS V2	3060	31.08.2023	1
E & H Field Probe	MAGPy-8H3D+E3D V2	3037	31.08.2023	1
WPT Verification & Validation Source	V-Coil50/400	1023	03.01.2024	1

3.1.1 MAGPy-8H3D+E3D V2 probe specifications

Probe design	
Probe head diameter	60 mm
H-field sub-probes	8 isotropic H-field sub-probes Concentric loops of 1 cm ² arranged at the corners of a 22 mm cube ¹
E-field sub-probes	1 isotropic E-field sub-probe Orthogonal dipole/monopole (arm length: 50 mm)
Temperature range	0–40 °C
Dimensions	110 mm×635 mm×35 mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2)
H-field measurement specifications	
Frequency range	3 kHz–10 MHz
Dynamic range	0.1–3200 A/m (0.12 µT–4 mT)
E-field measurement specifications	
Frequency range	3 kHz–10 MHz
Dynamic range	0.08–2000 V/m

3.2 System Performance Check

Test	Date	WPT Verification & Validation Source	Frequency [kHz]	Measured Value	Target Value	Deviation [%]	Plot #
Peak Incident H-Field	12.06.2024	V-Coil50/400	400	293	284.0 [A/m, RMS]	3.17	1
Peak Induced Local E-field				4.94	4.72 [V/m, RMS]	4.66	
psSAR				9.14	8.38 [mW/kg]	9.07	

4. TEST PROCEDURE

Testing was conducted in accordance to KDB 680106 D01 RF Exposure Wireless Charging App v04 and Application Note "Testing Compliance of WPT Devices with DASY8/6 Modules SAR and WPT according to FCC KDB 447498/680106" issued by SPEAG. Step-by-step measurement procedure is shown in Figure 2.

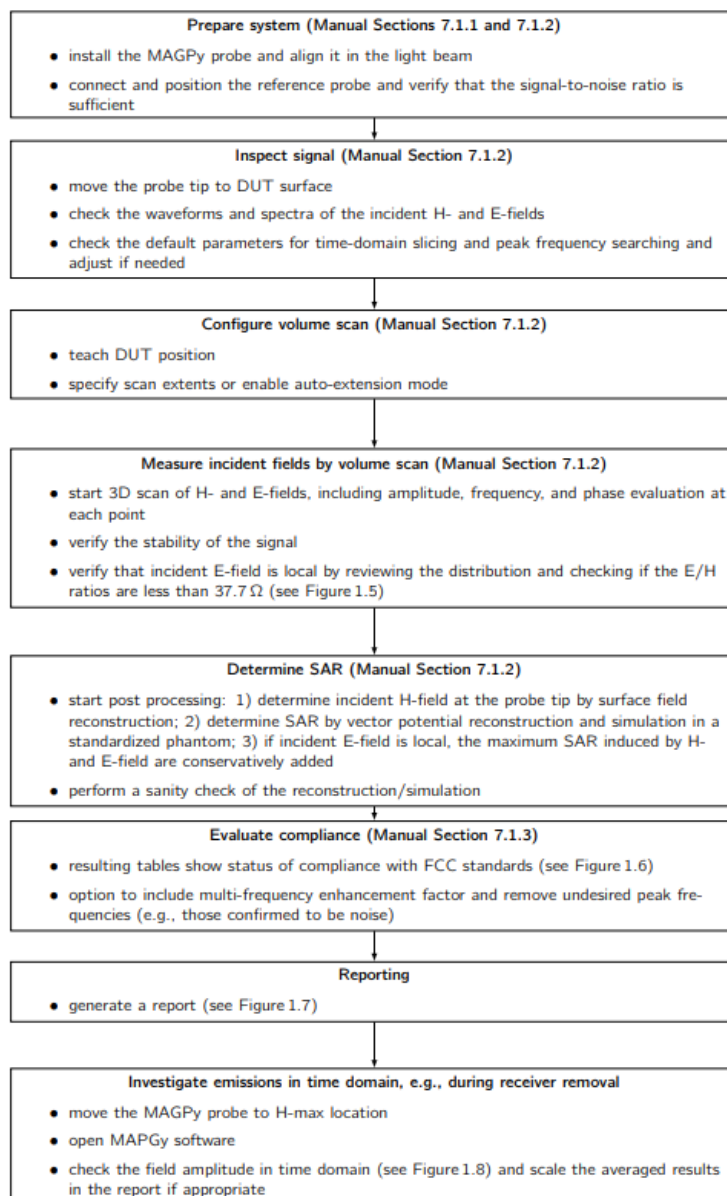


Figure 2 DASY8 Module WPT step-by-step measurement procedure

4.1 Test Positions

The tested belt was stretched over a plastic test fixture that mimics the chest of the user. To be able to test the fields that are radiated towards the user, the belt was positioned the intended innersurface facing outwards. The test fixture was placed on top of a Rohacell support structures, free of metal objects.

Two locations of the belt were scanned for maximum fields: The belt clasp and the belt fabric.

The probe was positioned at 0 mm separation distance from the DUT surface. The test system always increases the separation distance by 1 mm when a measurement is started to avoid collisions, thus actual measurement distance was 1 mm. The distance is measured as the distance from the edge of the DUT to the edge of the measurement probe. After the measurements were completed, a simulation using Sim4Life was performed to evaluate the field values at 0 mm separation distance.

Photos of the test setup are shown in Appendix A.

4.2 Scan Procedures

A volume scan was measured with scan dimensions (radius, height) configured to cover the investigated area. Auto extend was enabled where the measurement system checks the decays at all four sides (at $\pm x$ and $\pm y$), and extends the grid until the field decays at all four sides meet the 20 dB decay criteria or the fields at all four sides are below the noise floor. The lowest measurement plane of the volume scan was measured at 8.5mm distance from the separation distance, which equals to 7.5mm sensor offset plus 1.0mm probe-tip-to-DUT-surface to avoid collisions. The values in the latter combined with the scan resolution of 7.33mm provide the actual dimensions of the scanned volume.

The Sim4Life plug-in was used to simulate the Incident E-field and Incident H-field values, at 0mm separation distance to the DUT. Distances are defined as the distances between the DUT and the surface of the probe tip. The measured incident E-field was also contributing to the compliance evaluation by enabling Total Field Evaluation. For induced quantities, a magneto quasi-static (MQS) simulation is automatically setup to solve for a lossy half-space Phantom setup. The lossy half-space has muscle tissue dielectric properties ($\sigma = 0.75 \text{ S/m}$, $\rho = 1000 \text{ kg/m}^3$). The MQS solver performs an extrapolation of the H-field towards the source on the Z-side and a reconstruction of the vector potential A before the finite element solver is launched.

4.3 Limits

The operating frequency of the DUT is 1.9 – 2.6 MHz.

5.1 Exposure limits and exposure conditions

Compliance was assessed by measuring incident E-field and incident H-field against MPE limits specified in Table 1 of § 1.1310(e)(1). For § 2.1091-Mobile devices and § 2.1093-Portable devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310.

TABLE 1 TO § 1.1310(e)(1)—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/ $\underline{f}$	4.89/ $\underline{f}$	*(900/ $\underline{f}^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			$\underline{f}/300$	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/ $\underline{f}$	2.19/ $\underline{f}$	*(180/ $\underline{f}^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			$\underline{f}/1500$	<30
1,500-100,000			1.0	<30

$\underline{f}$ = frequency in MHz. * = Plane-wave equivalent power density.

Figure 3. Limits for Maximum Permissible Exposure (MPE)

5. MEASUREMENT UNCERTAINTY

DASY8 Uncertainty Budget for Peak 1 cm ² Area-Average J _{ind} according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c _f)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	√3	1	0.35
3	Probe dynamic linearity	0.2	R	√3	1	0.12
4	Probe frequency domain response	0.3	R	√3	1	0.17
5	Probe frequency linear interp. fit	0.15	R	√3	1	0.09
6	Spatial averaging	0.1	R	√3	1	0.06
7	Parasitic E-field sensitivity	0.1	R	√3	1	0.06
8	Detection limit	0.15	R	√3	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.3	N	1	1	0.3
Numerical simulations						
13	Grid resolution	0.12	R	√3	1	0.07
14	Tissue parameters	0	R	√3	1	0
15	Exposure position	0	R	√3	1	0
16	Source representation	0.1	N	1	1	0.1
17	Convergence and power budget	0	R	√3	1	0
18	Boundary conditions	0.1	R	√3	1	0.06
19	Phantom loading/backscattering	0.1	R	√3	1	0.06
Combined uncertainty (k = 1)						0.68
Expanded uncertainty (k = 2)						1.36 (17.0%)

DASY8 Uncertainty Budget for Peak Incident <i>H</i> -field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(<i>c_i</i>)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E-field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.10
12	Surface field reconstruction	0.3	N	1	1	0.3
Combined uncertainty (<i>k</i> = 1)						0.67
Expanded uncertainty (<i>k</i> = 2)						1.33 (16.6%)

DASY8 Uncertainty Budget for Incident <i>E</i> -field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(<i>c_i</i>)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.53	N	1	1	0.53
2	Probe anisotropy	0.8	R	$\sqrt{3}$	1	0.46
3	Probe dynamic linearity	1	R	$\sqrt{3}$	1	0.58
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Parasitic H-field sensitivity	0.2	R	$\sqrt{3}$	1	0.12
7	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
8	Readout electronics	0	N	1	1	0
9	Repeatability	0.1	N	1	1	0.10
Combined uncertainty (<i>k</i> = 1)						0.95
Expanded uncertainty (<i>k</i> = 2)						1.89 (24.4%)

6. TEST RESULTS

Measurement plots of the worst-case test results are shown in appendix C.

6.1 Incident E-field Results

Belt /fixture	Char. tube diameter [mm]	Frequency [MHz]	Measurement location	Separation distance* [mm]	Peak Incident E-Field [V/m]	FCC E-field Limit [V/m] 6min	Result Ratio to Limit	Plot #
PN1100-S/EQ517-SS	14	2.53	belt clasp	0	3.12	326	0.010	-
PN1100-S/EQ517-SS	14	2.53	belt fabric	0	3.34	326	0.010	2
PN1100-S/EQ517-SS	28	2.15	belt clasp	0	1.35	383	0.004	-
PN1100-S/EQ517-SS	28	2.15	belt fabric	0	1.51	383	0.004	-
PN1100-L/EQ517-LS/LM	14	2.53	belt clasp	0	3.17	326	0.010	-
PN1100-L/EQ517-LS/LM	14	2.53	belt fabric	0	1.87	326	0.006	-
PN1100-L/EQ517-LS/LM	28	2.15	belt clasp	0	3.26	383	0.009	-
PN1100-L/EQ517-LS/LM	28	2.15	belt fabric	0	0.96	383	0.003	-

*simulated distance

6.2 Incident H-field Results

Belt /fixture	Char. tube diameter [mm]	Frequency [MHz]	Measurement location	Separation distance* [mm]	Peak Incident H-Field [A/m]	FCC H-field Limit [A/m] 6min	Result Ratio to Limit	Plot #
PN1100-S/EQ517-SS	14	2.53	belt clasp	0	0.125	0.866	0.144	-
PN1100-S/EQ517-SS	14	2.53	belt fabric	0	0.108	0.866	0.125	-
PN1100-S/EQ517-SS	28	2.15	belt clasp	0	0.077	1.019	0.076	-
PN1100-S/EQ517-SS	28	2.15	belt fabric	0	0.08	1.019	0.079	-
PN1100-L/EQ517-LS/LM	14	2.53	belt clasp	0	0.113	0.866	0.131	-
PN1100-L/EQ517-LS/LM	14	2.53	belt fabric	0	0.173	0.866	0.200	3
PN1100-L/EQ517-LS/LM	28	2.15	belt clasp	0	0.121	1.019	0.119	-
PN1100-L/EQ517-LS/LM	28	2.15	belt fabric	0	0.196	1.019	0.192	-

*simulated distance

6.3 Simultaneous transmission analysis

Following simultaneous transmission combinations are supported:

- Bluetooth LE + Proprietary RF Link

Simultaneous transmission was evaluated using BLE module with FCC ID S9NBNRGM2SP.

Transmission mode	Evaluation Result Ratio to Limit
Proprietary RF Link	0.2
Bluetooth LE	0.166
Summed Ratio	0.37

The sum of simultaneously transmitting radios is below 1 thus the result is **PASS**.

APPENDIX A: PHOTOS OF THE DUT

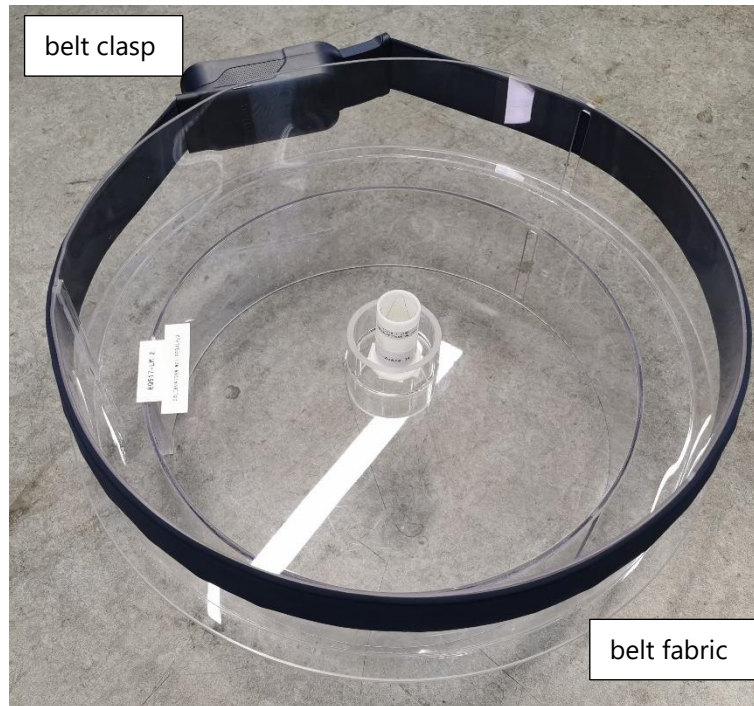


Figure 4. Naming convention

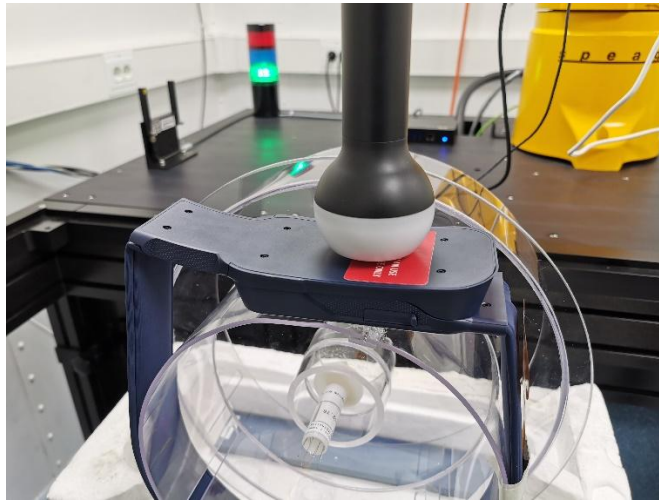


Figure 5. PN1100-S/EQ517-SS, belt clasp, Char. tube 14 mm, separation distance 0 mm



Figure 6. PN1100-S/EQ517-SS, belt fabric, Char. tube 14 mm, separation distance 0 mm

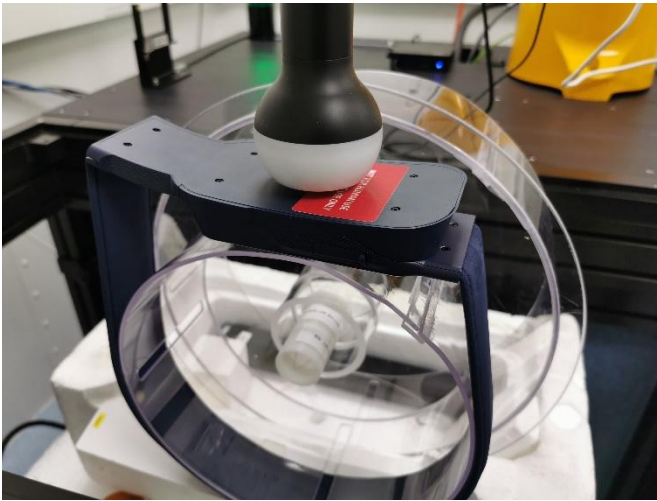


Figure 7. PN1100-S/EQ517-SS, belt clasp, Char. tube 28 mm, separation distance 0 mm

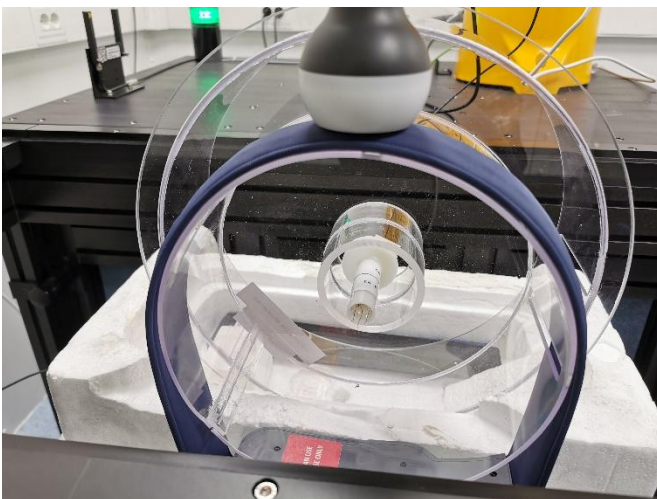


Figure 8. PN1100-S/EQ517-SS, belt fabric, Char. tube 28 mm, separation distance 0 mm

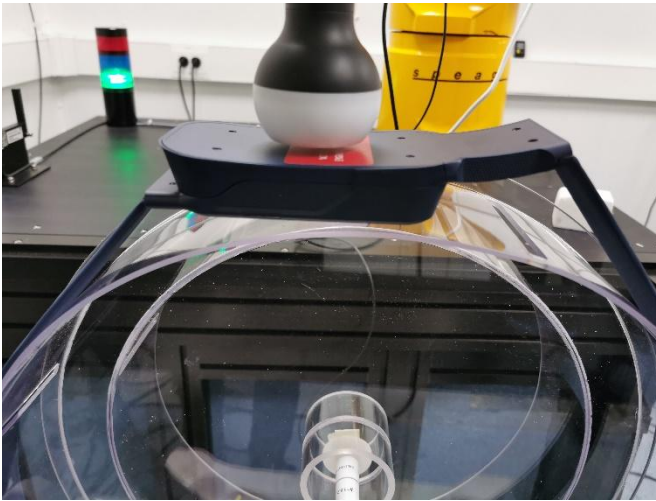


Figure 9. PN1100-L/EQ517-LS/LM, belt clasp, Char. tube 14 mm, separation distance 0 mm

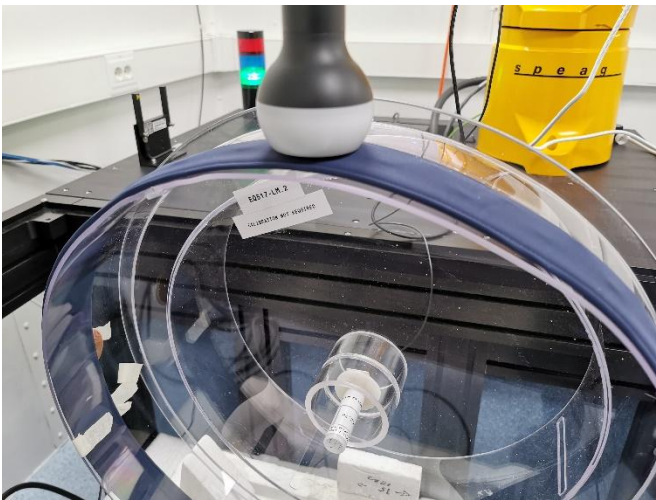


Figure 10. PN1100-L/EQ517-LS/LM, belt fabric, Char. tube 14 mm, separation distance 0 mm

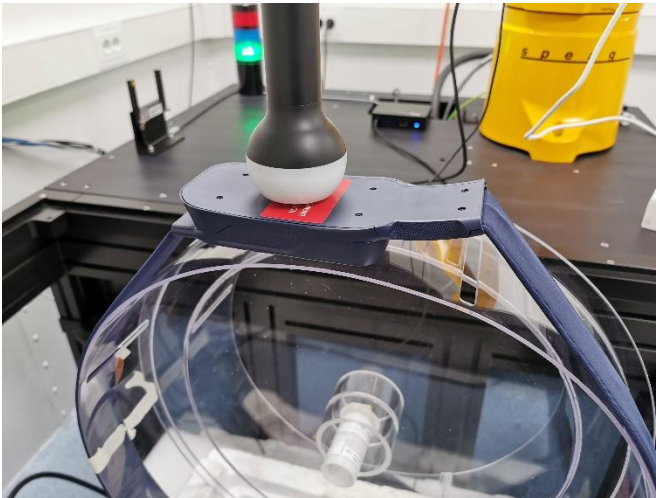


Figure 11. PN1100-L/EQ517-LS/LM, belt clasp, Char. tube 28 mm, separation distance 0 mm

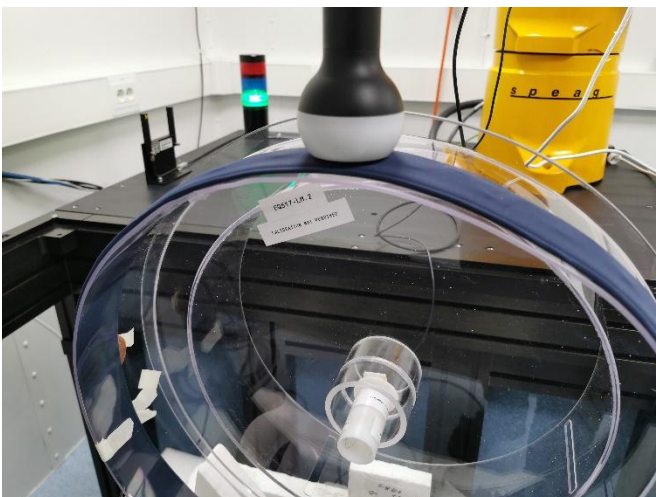


Figure 12. PN1100-L/EQ517-LS/LM, belt fabric, Char. tube 28 mm, separation distance 0 mm

APPENDIX B: SYSTEM PERFORMANCE CHECK SCAN

Plot 1

DASY8 Module WPT Measurement Report

Device under test

Info:
not set

Serial number:
not set

Scenario:
not set

Tool info

DASY software version:
DASY8 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000226, 2023/09/04

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: -13.85 mm, y: -750.00 μ m, z: 36.08 mm

Dimensions:
x: 124.6 mm, y: 124.6 mm, z: 36.6 mm

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

Completed on:
2024/06/12 08:41:56

Measurement results

Maximum H-field [RMS]:
MAGNITUDE: 146.69 A/m
x: 26.17 A/m, y: 17.56 A/m, z: 143.26 A/m

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

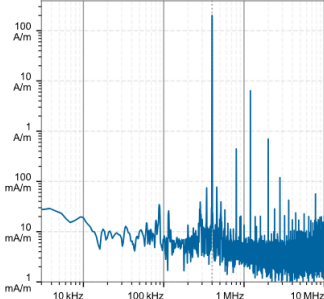
Maximum E-field [RMS]:
MAGNITUDE: 62.23 V/m
x: 27.27 V/m, y: 13.30 V/m, z: 54.33 V/m

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

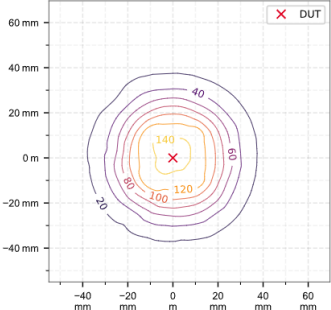
Distance to -20.0 dB boundary:
37.39 mm

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, σ = 0.750 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 -20 dB radius [mm]	Sign	Vector potential	Warnings Boundary effect
	H _{inc} [A/m]	E _{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.	1g avg.	10g avg.				
0.00	293	62.2	4.81	4.94	4.94	3.04	9.14	4.54	39.0	6%	8%	24%

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

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL [rms]	BR [rms]	RL [rms]	BR [rms]	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]
	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
	[A/m]	[V/m]	[V/m]	[mW/kg]	[A/m]	[V/m]	[A/m ²]	[mW/kg]	[A/m]	[V/m]	[V/m]	[mW/kg]	[A/m]	[V/m]	[V/m]	[mW/kg]	[A/m]	[V/m]	[V/m]	[mW/kg]
0.00	293	62.2	25.9	4.54	293	62.2	3.05	4.54	293	62.2	14.6	4.54	293	62.2	N/A	9.14	293	62.2	37.6	9.14

Coverage factors: $W_{E_{ind}, cube avg} = [5.38]$, $W_{E_{ind}, local} = [7.61]$, $W_{E_{ind}, line avg} = [2.95]$

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

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL	BR	RL	BR	RL	BR	RL	BR	ERL	DRL	MPE	BR	RL	BR	RL	BR	RL	BR	RL	BR
	NS	TH	NS	TH	NS	TH	N/A	N/A	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH
0.00	14.4	24.1	513.0	205.0	0.58	<0.01	162.0	902.0	8.41	<0.01	1.86	3.25	69.3	551.0	0.24	<0.01	180.0	310.0	N/A	<0.01

Coverage factors: $W_{E_{ind}, cube avg} = [5.38]$, $W_{E_{ind}, local} = [7.61]$, $W_{E_{ind}, line avg} = [2.95]$

Document generated at 2024/06/12 08:48:35, simulation performed at 2024/06/12 08:45:19 using Sim4Life version 8.0.1.15446

APPENDIX C: MEASUREMENT SCANS

Plot 2

DASY8 Module WPT Measurement Report

Device under test

Info:
not set

Serial number:
PN1100-S/EQ517-SS

Scenario:
Char. tube 14 mm, separation distance 0 mm.

Tool info

DASY software version:
DASY8 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000226, 2023/09/04

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 169.63 mm, y: -5.73 mm, z: 44.14 mm

Dimensions:
x: 80.0 mm, y: 80.6 mm, z: 36.7 mm

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

Completed on:
2024/06/12 10:48:28

Measurement results

Maximum H-field [rms]:
MAGNITUDE: 66.31 mA/m
x: 57.55 mA/m, y: 6.07 mA/m, z: 32.37 mA/m

Maximum H-field location relative to DUT:
x: -25.67 mm, y: 3.67 mm, z: 8.50 mm

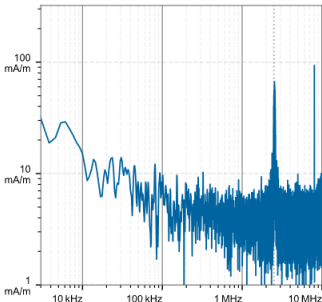
Maximum E-field [rms]:
MAGNITUDE: 3.34 V/m
x: 88.48 mV/m, y: 39.79 mV/m, z: 3.33 V/m

Maximum E-field location relative to DUT:
x: -36.67 mm, y: 0.00 m, z: 0.00 m

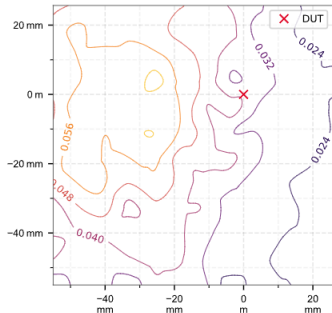
Distance to -20.0 dB boundary:
NaN

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 = 2.54 MHz, $\sigma = 0.750$ S/m, tissue density = 1,000 kg/m³)

	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]		Vector potential	Warnings Boundary effect
Distance [mm]	H _{inc} [A/m]	E _{inc} [V/m]	Cube avg.	Local	Line avg.	Surface avg.	1g avg.	10g avg.		Sign		
0.00	0.108	3.34	0.023	0.023	0.023	0.015	0.000	0.000	46.3	18%	31%	70%

Compliance evaluation (Field values at the peak frequency) (f = 2.54 MHz, total field evaluation, coverage evaluation)

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL [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]	RL [rms]	BR [rms]	RL [rms]	BR [rms]	RL [rms]	BR [rms]
0.00	0.108	3.34	0.129	0.000	0.108	3.34	0.016	0.000	0.108	3.34	0.073	0.000	0.108	3.34	N/A	0.000	0.108	3.34	0.186	0.000

Coverage factors: $W_{E_{ind}, cube avg} = [5.49]$, $W_{E_{ind}, local} = [7.76]$, $W_{E_{ind}, line avg} = [3.00]$

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

Distance [mm]	ICNIRP 2010/2020				ICNIRP 1998				IEEE 2019				FCC				HC Code 6			
	RL	BR	RL	BR	RL	BR	RL	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

Coverage factors: $W_{E_{ind}, cube avg} = [5.49]$, $W_{E_{ind}, local} = [7.76]$, $W_{E_{ind}, line avg} = [3.00]$

Plot 3

DASY8 Module WPT Measurement Report

Device under test

Info:
not set

Serial number:
PN1100-L/EQ517-LS/LM

Scenario:
Char. tube 14 mm, separation distance 0 mm.

Tool info

DASY software version:
DASY8 Module WPT 2.6.0.5002

Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000226, 2023/09/04

Software version:
2.0.61, backend: 2.2.22

Scan info

Center location:
x: 168.02 mm, y: 77.75 mm, z: 145.44 mm

Dimensions:
x: 81.0 mm, y: 80.2 mm, z: 37.0 mm

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

Completed on:
2024/06/12 16:08:40

Measurement results

Maximum H-field [RMS]:

MAGNITUDE: 91.59 mA/m

x: 86.26 mA/m, y: 30.69 mA/m, z: 2.45 mA/m

Maximum H-field location relative to DUT:

x: -40.33 mm, y: 11.00 mm, z: 8.50 mm

Maximum E-field [RMS]:

MAGNITUDE: 1.87 V/m

x: 66.95 mV/m, y: 61.54 mV/m, z: 1.87 V/m

Maximum E-field location relative to DUT:

x: -44.00 mm, y: -36.67 mm, z: 0.00 m

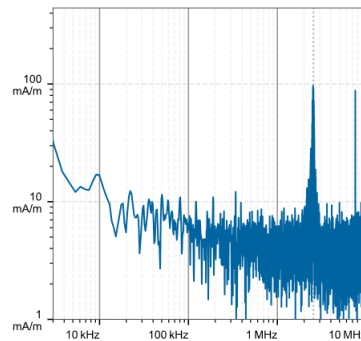
Distance to -20.0 dB boundary:

NaN

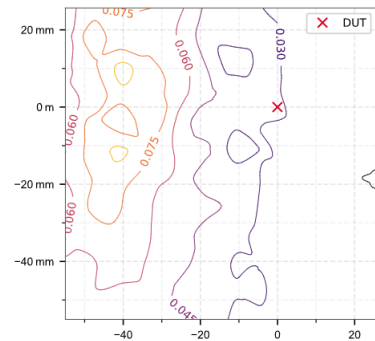
Offset relative to DUT:

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 ($f = 2.53$ MHz, $\sigma = 0.750$ 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	0.173	1.87	0.028	0.029	0.029	0.018	0.000	0.000	45.5	16%	22%	68%	

Compliance evaluation (Field values at the peak frequency) ($f=2.53$ MHz, total field evaluation, coverage 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]	
	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
0.00	0.173	1.87	0.159	0.000	0.173	1.87	0.019	0.000	0.173	1.87	0.090	0.000	0.173	1.87	N/A	0.000	0.173	1.87	0.230	0.000

Coverage factors: $w_{E_{ind}, cube avg.} = [5.48]$, $w_{E_{ind}, local} = [7.74]$, $w_{E_{ind}, line avg.} = [2.99]$

Compliance evaluation (Exposure ratios) (with multi-frequency enhancement, total field evaluation, coverage 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					
	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH	NS	TH				
0.00	<0.01	0.09	0.02	<0.01	<0.01	<0.01	<0.01	0.60	0.03	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.20	<0.01	N/A	N/A	<0.01	<0.01	<0.01	0.60	0.02	0.03	<0.01	<0.01		

Coverage factors: $w_{E_{ind}, cube avg.} = [5.48]$, $w_{E_{ind}, local} = [7.74]$, $w_{E_{ind}, line avg.} = [2.99]$

Document generated at 2024/06/12 16:12:34, simulation performed at 2024/06/12 16:09:51 using Sim4Life version 8.0.1.15446

APPENDIX D: PROBE CALIBRATION CERTIFICATES

Calibration Laboratory of
Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



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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 **Verkotan**
Oulu, Finland

Certificate No. **MAGPy-8H3D-3073**

CALIBRATION CERTIFICATE

Object **MAGPy-8H3D+E3D SN:3073**
MAGPy-DAS SN:3060

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

Calibration date **August 31, 2023**

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&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Oscilloscope	SN: 110918	22-Oct-22 (No. 1335.8794K04)	Oct-23
Reference 20 dB Attenuator	SN: CC2552 (20x)	04-Apr-23 (No. 217-03527)	Apr-24
Type-N mismatch	SN: 310982 / 06327	04-Apr-23 (No. 217-03528)	Apr-24

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Network Analyzer E5061B	SN: MY49810822	In house check: Nov-22	In house check: Nov-23
TEM Cell	SN: S6029i	In house check: Nov-22	N.A
Plate Capacitor	SN: 6028i	In house check: Nov-22	In house check: Nov-23
Resonator (160kHz)	SN: 6030i	In house check: Nov-22	In house check: Nov-23

	Name	Function	Signature
Calibrated by	Mischa Sabathy	Laboratory Engineer	
Approved by	Sven Kühn	Technical Manager	
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

Issued: August 31, 2023

Calibration Laboratory of

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



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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:3073
MAGPy-DAS SN:3060

August 31, 2023

Measurement Conditions

Unit Type	MAGPy-8H3D+E3D (SP MGY 303 AA)	3037
	MAGPy-DAS (SE UMS 303 AC)	3060
	MAGPy FPGA Board	WP000226
Adjustment Date	Last MAGPy Adjustment	August 31, 2023
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	
0.450	0.390	0.370	0.470	0.400	0.380	0.38	0.22	0.23	±1.00
0.600	0.530	0.510	0.600	0.550	0.520	0.00	0.32	0.17	±1.00
0.820	0.730	0.690	0.810	0.740	0.700	-0.11	0.12	0.12	±1.00
1.06	0.950	0.900	1.06	0.970	0.900	0.00	0.18	0.00	±1.00
1.42	1.29	1.22	1.43	1.28	1.21	0.06	-0.07	-0.07	±1.00
1.94	1.76	1.67	1.92	1.74	1.67	-0.09	-0.10	0.00	±1.00
2.57	2.34	2.23	2.56	2.34	2.21	-0.03	0.00	-0.08	±0.20
3.41	3.12	2.97	3.40	3.13	2.96	-0.03	0.03	-0.03	±0.20
4.60	4.24	4.03	4.59	4.23	4.02	-0.02	-0.02	-0.02	±0.20
6.19	5.73	5.46	6.18	5.72	5.44	-0.01	-0.02	-0.03	±0.20
8.28	7.69	7.33	8.27	7.69	7.32	-0.01	0.00	-0.01	±0.20
11.0	10.3	9.78	11.0	10.2	9.75	0.00	-0.08	-0.03	±0.20
14.8	13.9	13.2	14.8	13.9	13.2	0.00	0.00	0.00	±0.20
19.9	18.7	17.9	19.9	18.7	17.8	0.00	0.00	-0.05	±0.20
26.9	25.2	24.1	26.8	25.2	24.1	-0.03	0.00	0.00	±0.20
35.7	33.6	32.1	35.8	33.8	32.3	0.02	0.05	0.05	±0.20
48.1	45.4	43.4	48.2	45.6	43.5	0.02	0.04	0.02	±0.20
64.9	61.4	58.6	65.1	61.7	59.0	0.03	0.04	0.06	±0.20
88.9	84.4	80.7	88.7	84.1	80.4	-0.02	-0.03	-0.03	±0.20
116	110	106	116	110	105	0.00	0.00	-0.08	±0.20
159	152	145	159	151	144	0.00	-0.06	-0.06	±0.20
220	211	201	220	210	201	0.00	-0.04	0.00	±0.20
303	291	278	298	286	273	-0.14	-0.15	-0.16	±0.20
446	429	410	440	423	405	-0.12	-0.12	-0.11	±0.20
614	592	566	610	588	563	-0.06	-0.06	-0.05	±0.20
912	882	844	914	885	847	0.02	0.03	0.03	±0.20
1370	1330	1280	1400	1360	1300	0.19	0.19	0.13	±0.30
1880	1830	1750	1930	1880	1800	0.23	0.23	0.24	±0.30
3030	2970	2840	3140	3080	2950	0.31	0.32	0.33	±0.50
3640	3570	3430	3790	3720	3570	0.35	0.36	0.35	±0.50

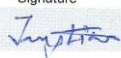
SPEAG H-field linearity tolerance criteria¹:

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

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

APPENDIX E: WPT VERIFICATION & VALIDATION SOURCE CALIBRATION CERTIFICATES

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

Client	Verkotan Oulu, Finland			Certificate No:	V-Coil50/400-1023_Jan24
CALIBRATION CERTIFICATE					
Object	V-Coil50/400 - SN: 1023				
Calibration procedure(s)	QA CAL-47.v13 Calibration Procedure for WPT Verification & Validation Sources				
Calibration date:	January 3, 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&TE critical for calibration)					
Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration		
MAGPy-8H3D+E3D/DAS	SN: 3065/3056	06-Apr-23 (MAGPy-8H3D+E3D-3065)	Apr-24		
Secondary Standards	ID #	Check Date (in house)	Scheduled Check		
Calibrated by:	Name Jingtian Xi	Function Project Leader	Signature 		
Approved by:	Sven Kühn	Technical Manager			
Issued: February 2, 2024					
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.					

Certificate No: V-Coil50/400-1023_Jan24

Page 1 of 5

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	2.2.0.3801
	Notebook GUI	2.2.0.4
	Sim4Life	7.2.4
Scan setup	Grid dimensions	x: 169 mm, y: 169 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	284	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	2.92	4.59	4.72	4.71	8.38	4.21

Voltage measurement

Total voltage (V)	Voltages at harmonics (dBc)
0.430	Highest harmonic: -29.0 2 nd highest harmonic: -42.9

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

Info:
V-Coil50/400Serial number:
1023Scenario:
source calibration

Tool info

DASY software version:
cDASY6 Module WPT 2.2.0.3801Probe model, serial no. and configuration date:
MAGPy-8H3D+E3Dv2, WP000030, 2023/06/16Software version:
2.0.44, backend: 2.2.3

Scan info

Center location:
x: 11.89 mm, y: -4.58 mm, z: 86.45 mmDimensions:
x: 80.7 mm, y: 80.7 mm, z: 36.7 mmResolution:
x: 7.33 mm, y: 7.33 mm, z: 7.33 mmCompleted on:
2024/01/03 12:29:06

Measurement results

Maximum H-field [rms]:

MAGNITUDE: 141.69 A/m

x: 19.36 A/m, y: 23.80 A/m, z: 138.33 A/m

Maximum H-field location relative to DUT:

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

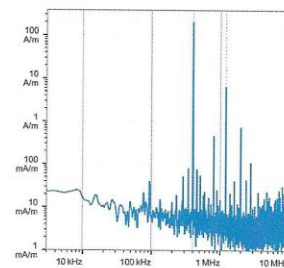
Distance to -20.0 dB boundary:

37.39 mm

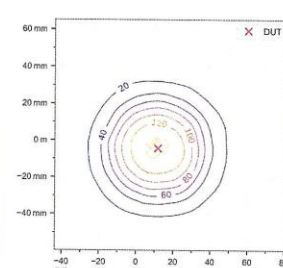
Offset relative to DUT:

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 ($f = 400.00 \text{ kHz}$, $\sigma = 0.750 \text{ S/m}$, tissue density = $1,000 \text{ kg/m}^3$)

Distance [mm]	Peak incident fields H_{inc} [A/m, rms]	Peak E_{avg} [V/m, rms]			Peak J_{ind} [A/m ² , rms]	psSAR [mW/kg]		H-field extent -20 dB radius [mm]	Errors		
		Cube avg.	Local	Line avg.		1g avg.	10g avg.		Sign	Vector potential	Boundary effect
0.0	284.0	4.59	4.72	4.71	2.92	8.38	4.21	39.0	1%	6%	24%

Standard compliance evaluation (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020 [dB]			ICNIRP 1998 [dB]			IEEE 2019 [dB]			FCC [dB]			HC Code 6 [dB]		
	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak J_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR
0.0	27.4	-20.5	-26.8	43.9	12.3	-26.8	10.2	-24.1	-26.8	N/A	N/A	-22.8	43.9	-20.3	-22.8

Standard compliance evaluation (coverage factor-adjusted) (with multi-frequency enhancement, total field evaluation)

Distance [mm]	ICNIRP 2010/2020 [dB]			ICNIRP 1998 [dB]			IEEE 2019 [dB]			FCC [dB]			HC Code 6 [dB]		
	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak J_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR	Peak H_{inc}	Peak E_{ind}	psSAR
0.0	27.4	-6.5	-26.8	43.9	12.3	-26.8	10.2	-15.2	-26.8	N/A	N/A	-22.8	43.9	-3.3	-22.8

Coverage factors: $W_{E_{ext}, \text{cube avg.}} = [5.39]$, $W_{E_{ext}, \text{line avg.}} = [2.65]$

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