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Accreditation No.: **SCS 0108**

Client

**Sporton**  
Taoyuan

Certificate No.

**MAGPy-8H3D-3059**

## CALIBRATION CERTIFICATE

Object

**MAGPy-8H3D+E3DV2 SN:3059**  
**MAGPy-DASV2 SN:3064**

Calibration procedure(s)

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

Calibration date

**May 15, 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  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID                 | Cal Date (Certificate No.) | Scheduled Calibration |
|----------------------------|--------------------|----------------------------|-----------------------|
| Oscilloscope               | SN: 112135         | 25-Sep-23 (No. 17A1162175) | Sep-24                |
| Reference 20 dB Attenuator | SN: CC2552 (20x)   | 26-Mar-24 (No. 217-04046)  | Mar-25                |
| Type-N mismatch            | SN: 310982 / 06327 | 26-Mar-24 (No. 217-04047)  | Mar-25                |

| 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: 6028I      | In house check: Nov-23 | In house check: Nov-24 |
| Resonator (160kHz)      | SN: 6030I      | In house check: Nov-23 | In house check: Nov-24 |

|               | Name               | Function            | Signature |
|---------------|--------------------|---------------------|-----------|
| Calibrated by | Aldonia Georgiadou | Laboratory Engineer |           |
| Approved by   | Sven Kühn          | Technical Manager   |           |

Issued: May 15, 2024

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



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## 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  $\theta$ , 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  $\theta$ , 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%.

## Measurement Conditions

|                        |                                  |              |
|------------------------|----------------------------------|--------------|
| Unit Type              | MAGPy-8H3D+E3DV2 (SP MGY 303 AA) | 3059         |
|                        | MAGPy-DASV2 (SE UMS 303 AC)      | 3064         |
|                        | MAGPy FPGA Board                 | WP000211     |
| Adjustment Date        | Last MAGPy Adjustment            | May 15, 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     |                |
| 0.370                 | 0.360 | 0.350 | 0.390                 | 0.380 | 0.350 | 0.46            | 0.47  | 0.00  | ±1.00          |
| 0.510                 | 0.490 | 0.470 | 0.500                 | 0.510 | 0.480 | -0.17           | 0.35  | 0.18  | ±1.00          |
| 0.700                 | 0.670 | 0.650 | 0.690                 | 0.680 | 0.650 | -0.12           | 0.13  | 0.00  | ±1.00          |
| 0.910                 | 0.880 | 0.850 | 0.910                 | 0.870 | 0.850 | 0.00            | -0.10 | 0.00  | ±1.00          |
| 1.23                  | 1.19  | 1.15  | 1.25                  | 1.18  | 1.16  | 0.14            | -0.07 | 0.08  | ±1.00          |
| 1.69                  | 1.63  | 1.57  | 1.69                  | 1.64  | 1.59  | 0.00            | 0.05  | 0.11  | ±1.00          |
| 2.25                  | 2.17  | 2.09  | 2.25                  | 2.19  | 2.12  | 0.00            | 0.08  | 0.12  | ±0.20          |
| 3.01                  | 2.91  | 2.80  | 3.01                  | 2.92  | 2.82  | 0.00            | 0.03  | 0.06  | ±0.20          |
| 4.08                  | 3.95  | 3.81  | 4.08                  | 3.95  | 3.82  | 0.00            | 0.00  | 0.02  | ±0.20          |
| 5.53                  | 5.34  | 5.15  | 5.53                  | 5.35  | 5.16  | 0.00            | 0.02  | 0.02  | ±0.20          |
| 7.44                  | 7.19  | 6.93  | 7.46                  | 7.20  | 6.95  | 0.02            | 0.01  | 0.03  | ±0.20          |
| 9.94                  | 9.60  | 9.26  | 9.95                  | 9.61  | 9.26  | 0.01            | 0.01  | 0.00  | ±0.20          |
| 13.4                  | 13.0  | 12.5  | 13.4                  | 13.0  | 12.5  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 18.1                  | 17.5  | 16.9  | 18.1                  | 17.5  | 16.9  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 24.4                  | 23.8  | 22.8  | 24.5                  | 23.6  | 22.8  | 0.04            | 0.00  | 0.00  | ±0.20          |
| 32.6                  | 31.5  | 30.4  | 32.8                  | 31.7  | 30.6  | 0.05            | 0.05  | 0.06  | ±0.20          |
| 44.1                  | 42.6  | 41.1  | 44.3                  | 42.8  | 41.2  | 0.04            | 0.04  | 0.02  | ±0.20          |
| 59.6                  | 57.6  | 55.6  | 60.0                  | 58.1  | 56.0  | 0.06            | 0.08  | 0.06  | ±0.20          |
| 82.2                  | 79.4  | 76.6  | 81.8                  | 79.1  | 76.2  | -0.04           | -0.03 | -0.05 | ±0.20          |
| 108                   | 104   | 100   | 107                   | 104   | 99.9  | -0.08           | 0.00  | -0.01 | ±0.20          |
| 148                   | 143   | 138   | 147                   | 142   | 137   | -0.06           | -0.06 | -0.06 | ±0.20          |
| 206                   | 199   | 192   | 205                   | 198   | 191   | -0.04           | -0.04 | -0.05 | ±0.20          |
| 286                   | 276   | 266   | 287                   | 271   | 267   | 0.03            | -0.16 | 0.03  | ±0.20          |
| 424                   | 410   | 395   | 416                   | 404   | 388   | -0.17           | -0.13 | -0.16 | ±0.20          |
| 588                   | 568   | 548   | 582                   | 565   | 542   | -0.09           | -0.05 | -0.10 | ±0.20          |
| 884                   | 854   | 823   | 885                   | 858   | 823   | 0.01            | 0.04  | 0.00  | ±0.20          |
| 1350                  | 1300  | 1250  | 1370                  | 1330  | 1270  | 0.13            | 0.20  | 0.14  | ±0.30          |
| 1850                  | 1790  | 1720  | 1890                  | 1840  | 1760  | 0.19            | 0.24  | 0.20  | ±0.30          |
| 3030                  | 2930  | 2820  | 3140                  | 3050  | 2920  | 0.31            | 0.35  | 0.30  | ±0.50          |
| 3630                  | 3500  | 3370  | 3780                  | 3660  | 3510  | 0.35            | 0.39  | 0.35  | ±0.50          |

SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     |                |
| 0.370                 | 0.360 | 0.360 | 0.400                 | 0.380 | 0.380 | 0.68            | 0.47  | 0.47  | ±1.00          |
| 0.510                 | 0.490 | 0.490 | 0.540                 | 0.520 | 0.490 | 0.50            | 0.52  | 0.00  | ±1.00          |
| 0.700                 | 0.680 | 0.670 | 0.710                 | 0.710 | 0.660 | 0.12            | 0.37  | -0.13 | ±1.00          |
| 0.910                 | 0.880 | 0.870 | 0.920                 | 0.900 | 0.870 | 0.09            | 0.20  | 0.00  | ±1.00          |
| 1.23                  | 1.20  | 1.18  | 1.26                  | 1.20  | 1.18  | 0.21            | 0.00  | 0.00  | ±1.00          |
| 1.69                  | 1.65  | 1.63  | 1.70                  | 1.65  | 1.64  | 0.05            | 0.00  | 0.05  | ±1.00          |
| 2.25                  | 2.19  | 2.17  | 2.28                  | 2.21  | 2.19  | 0.12            | 0.08  | 0.08  | ±0.20          |
| 3.01                  | 2.93  | 2.90  | 3.03                  | 2.94  | 2.91  | 0.06            | 0.03  | 0.03  | ±0.20          |
| 4.09                  | 3.98  | 3.94  | 4.10                  | 4.01  | 3.96  | 0.02            | 0.07  | 0.04  | ±0.20          |
| 5.53                  | 5.39  | 5.33  | 5.54                  | 5.42  | 5.36  | 0.02            | 0.05  | 0.05  | ±0.20          |
| 7.44                  | 7.25  | 7.17  | 7.46                  | 7.27  | 7.20  | 0.02            | 0.02  | 0.04  | ±0.20          |
| 9.94                  | 9.68  | 9.58  | 9.95                  | 9.69  | 9.62  | 0.01            | 0.01  | 0.04  | ±0.20          |
| 13.4                  | 13.1  | 12.9  | 13.4                  | 13.1  | 13.0  | 0.00            | 0.00  | 0.07  | ±0.20          |
| 18.1                  | 17.6  | 17.4  | 18.1                  | 17.6  | 17.5  | 0.00            | 0.00  | 0.05  | ±0.20          |
| 24.4                  | 23.8  | 23.6  | 24.5                  | 23.8  | 23.6  | 0.04            | 0.00  | 0.00  | ±0.20          |
| 32.6                  | 31.8  | 31.4  | 32.8                  | 31.9  | 31.6  | 0.05            | 0.03  | 0.06  | ±0.20          |
| 44.1                  | 42.9  | 42.5  | 44.3                  | 43.1  | 42.7  | 0.04            | 0.04  | 0.04  | ±0.20          |
| 59.6                  | 58.1  | 57.5  | 60.0                  | 58.5  | 57.9  | 0.06            | 0.06  | 0.06  | ±0.20          |
| 82.2                  | 80.0  | 79.2  | 81.9                  | 79.7  | 78.8  | -0.03           | -0.03 | -0.04 | ±0.20          |
| 108                   | 105   | 104   | 107                   | 104   | 103   | -0.08           | -0.08 | -0.08 | ±0.20          |
| 148                   | 144   | 143   | 148                   | 144   | 142   | 0.00            | 0.00  | -0.06 | ±0.20          |
| 206                   | 200   | 198   | 205                   | 200   | 198   | -0.04           | 0.00  | 0.00  | ±0.20          |
| 286                   | 278   | 275   | 287                   | 273   | 276   | 0.03            | -0.16 | 0.03  | ±0.20          |
| 424                   | 413   | 409   | 417                   | 407   | 401   | -0.14           | -0.13 | -0.17 | ±0.20          |
| 588                   | 573   | 567   | 582                   | 569   | 560   | -0.09           | -0.06 | -0.11 | ±0.20          |
| 884                   | 861   | 851   | 885                   | 865   | 852   | 0.01            | 0.04  | 0.01  | ±0.20          |
| 1350                  | 1310  | 1300  | 1370                  | 1340  | 1320  | 0.13            | 0.20  | 0.13  | ±0.30          |
| 1850                  | 1800  | 1780  | 1890                  | 1850  | 1820  | 0.19            | 0.24  | 0.19  | ±0.30          |
| 3030                  | 2950  | 2920  | 3140                  | 3070  | 3020  | 0.31            | 0.35  | 0.29  | ±0.50          |
| 3630                  | 3530  | 3490  | 3780                  | 3690  | 3640  | 0.35            | 0.39  | 0.37  | ±0.50          |

### SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     |                |
| 0.370                 | 0.370 | 0.360 | 0.400                 | 0.380 | 0.380 | 0.68            | 0.23  | 0.47  | ±1.00          |
| 0.510                 | 0.500 | 0.490 | 0.510                 | 0.520 | 0.510 | 0.00            | 0.34  | 0.35  | ±1.00          |
| 0.700                 | 0.680 | 0.680 | 0.690                 | 0.700 | 0.690 | -0.12           | 0.25  | 0.13  | ±1.00          |
| 0.910                 | 0.890 | 0.880 | 0.900                 | 0.910 | 0.880 | -0.10           | 0.19  | 0.00  | ±1.00          |
| 1.23                  | 1.20  | 1.20  | 1.25                  | 1.21  | 1.18  | 0.14            | 0.07  | -0.15 | ±1.00          |
| 1.68                  | 1.65  | 1.64  | 1.68                  | 1.64  | 1.63  | 0.00            | -0.05 | -0.05 | ±1.00          |
| 2.24                  | 2.20  | 2.19  | 2.25                  | 2.21  | 2.20  | 0.04            | 0.04  | 0.04  | ±0.20          |
| 3.00                  | 2.94  | 2.93  | 3.00                  | 2.95  | 2.92  | 0.00            | 0.03  | -0.03 | ±0.20          |
| 4.07                  | 4.00  | 3.97  | 4.08                  | 3.99  | 3.97  | 0.02            | -0.02 | 0.00  | ±0.20          |
| 5.52                  | 5.41  | 5.38  | 5.53                  | 5.42  | 5.39  | 0.02            | 0.02  | 0.02  | ±0.20          |
| 7.42                  | 7.28  | 7.23  | 7.44                  | 7.28  | 7.23  | 0.02            | 0.00  | 0.00  | ±0.20          |
| 9.91                  | 9.72  | 9.67  | 9.91                  | 9.71  | 9.66  | 0.00            | -0.01 | -0.01 | ±0.20          |
| 13.4                  | 13.1  | 13.1  | 13.4                  | 13.1  | 13.1  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 18.1                  | 17.7  | 17.6  | 18.1                  | 17.7  | 17.6  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 24.4                  | 23.9  | 23.8  | 24.4                  | 23.9  | 23.9  | 0.00            | 0.00  | 0.04  | ±0.20          |
| 32.5                  | 31.9  | 31.8  | 32.7                  | 32.0  | 31.9  | 0.05            | 0.03  | 0.03  | ±0.20          |
| 43.9                  | 43.1  | 42.9  | 44.1                  | 43.3  | 43.0  | 0.04            | 0.04  | 0.02  | ±0.20          |
| 59.5                  | 58.3  | 58.0  | 59.9                  | 58.8  | 58.4  | 0.06            | 0.07  | 0.06  | ±0.20          |
| 81.9                  | 80.3  | 79.9  | 81.6                  | 80.0  | 79.6  | -0.03           | -0.03 | -0.03 | ±0.20          |
| 107                   | 105   | 105   | 107                   | 105   | 104   | 0.00            | 0.00  | -0.08 | ±0.20          |
| 148                   | 145   | 144   | 147                   | 144   | 143   | -0.06           | -0.06 | -0.06 | ±0.20          |
| 205                   | 201   | 200   | 205                   | 201   | 200   | 0.00            | 0.00  | 0.00  | ±0.20          |
| 285                   | 279   | 278   | 286                   | 274   | 279   | 0.03            | -0.16 | 0.03  | ±0.20          |
| 423                   | 415   | 413   | 415                   | 409   | 405   | -0.17           | -0.13 | -0.17 | ±0.20          |
| 587                   | 575   | 572   | 580                   | 572   | 566   | -0.10           | -0.05 | -0.09 | ±0.20          |
| 882                   | 864   | 859   | 882                   | 869   | 860   | 0.00            | 0.05  | 0.01  | ±0.20          |
| 1340                  | 1320  | 1310  | 1360                  | 1340  | 1330  | 0.13            | 0.13  | 0.13  | ±0.30          |
| 1840                  | 1810  | 1800  | 1890                  | 1860  | 1840  | 0.23            | 0.24  | 0.19  | ±0.30          |
| 3020                  | 2960  | 2940  | 3140                  | 3090  | 3050  | 0.34            | 0.37  | 0.32  | ±0.50          |
| 3620                  | 3540  | 3520  | 3770                  | 3710  | 3670  | 0.35            | 0.41  | 0.36  | ±0.50          |

### SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

### 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     |                |
| 0.370                 | 0.360 | 0.350 | 0.370                 | 0.380 | 0.370 | 0.00            | 0.47  | 0.48  | ±1.00          |
| 0.500                 | 0.490 | 0.480 | 0.490                 | 0.520 | 0.490 | -0.18           | 0.52  | 0.18  | ±1.00          |
| 0.680                 | 0.680 | 0.660 | 0.680                 | 0.680 | 0.670 | 0.00            | 0.00  | 0.13  | ±1.00          |
| 0.890                 | 0.890 | 0.860 | 0.900                 | 0.880 | 0.870 | 0.10            | -0.10 | 0.10  | ±1.00          |
| 1.21                  | 1.20  | 1.17  | 1.24                  | 1.21  | 1.18  | 0.21            | 0.07  | 0.07  | ±1.00          |
| 1.66                  | 1.65  | 1.60  | 1.68                  | 1.67  | 1.62  | 0.10            | 0.10  | 0.11  | ±1.00          |
| 2.21                  | 2.19  | 2.13  | 2.24                  | 2.20  | 2.17  | 0.12            | 0.04  | 0.16  | ±0.20          |
| 2.95                  | 2.93  | 2.85  | 2.98                  | 2.93  | 2.89  | 0.09            | 0.00  | 0.12  | ±0.20          |
| 4.01                  | 3.98  | 3.88  | 4.02                  | 3.99  | 3.89  | 0.02            | 0.02  | 0.02  | ±0.20          |
| 5.43                  | 5.39  | 5.24  | 5.43                  | 5.37  | 5.27  | 0.00            | -0.03 | 0.05  | ±0.20          |
| 7.31                  | 7.25  | 7.05  | 7.31                  | 7.27  | 7.11  | 0.00            | 0.02  | 0.07  | ±0.20          |
| 9.77                  | 9.68  | 9.43  | 9.75                  | 9.72  | 9.49  | -0.02           | 0.04  | 0.06  | ±0.20          |
| 13.2                  | 13.1  | 12.7  | 13.2                  | 13.1  | 12.8  | 0.00            | 0.00  | 0.07  | ±0.20          |
| 17.8                  | 17.6  | 17.2  | 17.8                  | 17.6  | 17.2  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 24.0                  | 23.8  | 23.2  | 24.0                  | 23.8  | 23.2  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 32.0                  | 31.8  | 31.0  | 32.2                  | 31.9  | 31.1  | 0.05            | 0.03  | 0.03  | ±0.20          |
| 43.3                  | 43.0  | 41.8  | 43.4                  | 43.2  | 42.0  | 0.02            | 0.04  | 0.04  | ±0.20          |
| 58.6                  | 58.1  | 56.6  | 59.0                  | 58.6  | 57.0  | 0.06            | 0.07  | 0.06  | ±0.20          |
| 80.7                  | 80.1  | 78.0  | 80.4                  | 79.8  | 77.7  | -0.03           | -0.03 | -0.03 | ±0.20          |
| 106                   | 105   | 102   | 105                   | 104   | 102   | -0.08           | -0.08 | 0.00  | ±0.20          |
| 145                   | 144   | 141   | 145                   | 144   | 140   | 0.00            | 0.00  | -0.06 | ±0.20          |
| 202                   | 201   | 195   | 202                   | 200   | 195   | 0.00            | -0.04 | 0.00  | ±0.20          |
| 281                   | 278   | 271   | 282                   | 273   | 272   | 0.03            | -0.16 | 0.03  | ±0.20          |
| 416                   | 413   | 402   | 409                   | 408   | 395   | -0.15           | -0.11 | -0.15 | ±0.20          |
| 578                   | 573   | 558   | 571                   | 570   | 552   | -0.11           | -0.05 | -0.09 | ±0.20          |
| 868                   | 861   | 838   | 869                   | 865   | 839   | 0.01            | 0.04  | 0.01  | ±0.20          |
| 1320                  | 1310  | 1280  | 1340                  | 1340  | 1300  | 0.13            | 0.20  | 0.13  | ±0.30          |
| 1820                  | 1800  | 1750  | 1860                  | 1850  | 1800  | 0.19            | 0.24  | 0.24  | ±0.30          |
| 2980                  | 2950  | 2870  | 3090                  | 3050  | 2980  | 0.31            | 0.29  | 0.33  | ±0.40          |
| 3560                  | 3530  | 3440  | 3710                  | 3640  | 3580  | 0.36            | 0.27  | 0.35  | ±0.50          |

SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

### 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     |                |
| 0.370                 | 0.370 | 0.360 | 0.390                 | 0.390 | 0.370 | 0.46            | 0.46  | 0.24  | ±1.00          |
| 0.500                 | 0.500 | 0.490 | 0.520                 | 0.520 | 0.500 | 0.34            | 0.34  | 0.18  | ±1.00          |
| 0.690                 | 0.690 | 0.680 | 0.700                 | 0.710 | 0.680 | 0.12            | 0.25  | 0.00  | ±1.00          |
| 0.890                 | 0.900 | 0.880 | 0.890                 | 0.910 | 0.880 | 0.00            | 0.10  | 0.00  | ±1.00          |
| 1.21                  | 1.22  | 1.19  | 1.21                  | 1.22  | 1.20  | 0.00            | 0.00  | 0.07  | ±1.00          |
| 1.66                  | 1.68  | 1.64  | 1.67                  | 1.68  | 1.66  | 0.05            | 0.00  | 0.11  | ±1.00          |
| 2.22                  | 2.23  | 2.18  | 2.22                  | 2.24  | 2.20  | 0.00            | 0.04  | 0.08  | ±0.20          |
| 2.96                  | 2.99  | 2.91  | 2.97                  | 2.98  | 2.93  | 0.03            | -0.03 | 0.06  | ±0.20          |
| 4.02                  | 4.05  | 3.96  | 4.02                  | 4.06  | 3.99  | 0.00            | 0.02  | 0.07  | ±0.20          |
| 5.44                  | 5.49  | 5.36  | 5.44                  | 5.49  | 5.39  | 0.00            | 0.00  | 0.05  | ±0.20          |
| 7.32                  | 7.38  | 7.21  | 7.32                  | 7.38  | 7.24  | 0.00            | 0.00  | 0.04  | ±0.20          |
| 9.79                  | 9.85  | 9.63  | 9.77                  | 9.86  | 9.66  | -0.02           | 0.01  | 0.03  | ±0.20          |
| 13.2                  | 13.3  | 13.0  | 13.2                  | 13.3  | 13.0  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 17.8                  | 17.9  | 17.6  | 17.8                  | 18.0  | 17.5  | 0.00            | 0.05  | -0.05 | ±0.20          |
| 24.1                  | 24.2  | 23.7  | 24.1                  | 24.2  | 23.7  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 32.1                  | 32.4  | 31.6  | 32.3                  | 32.5  | 31.8  | 0.05            | 0.03  | 0.05  | ±0.20          |
| 43.4                  | 43.7  | 42.7  | 43.6                  | 43.9  | 42.9  | 0.04            | 0.04  | 0.04  | ±0.20          |
| 58.7                  | 59.2  | 57.8  | 59.1                  | 59.6  | 58.2  | 0.06            | 0.06  | 0.06  | ±0.20          |
| 80.9                  | 81.5  | 79.6  | 80.6                  | 81.2  | 79.3  | -0.03           | -0.03 | -0.03 | ±0.20          |
| 106                   | 107   | 104   | 105                   | 106   | 104   | -0.08           | -0.08 | 0.00  | ±0.20          |
| 146                   | 147   | 144   | 145                   | 146   | 143   | -0.06           | -0.06 | -0.06 | ±0.20          |
| 203                   | 204   | 199   | 202                   | 204   | 199   | -0.04           | 0.00  | 0.00  | ±0.20          |
| 281                   | 283   | 277   | 282                   | 278   | 278   | 0.03            | -0.15 | 0.03  | ±0.20          |
| 417                   | 421   | 411   | 410                   | 415   | 404   | -0.15           | -0.12 | -0.15 | ±0.20          |
| 579                   | 584   | 570   | 572                   | 581   | 564   | -0.11           | -0.04 | -0.09 | ±0.20          |
| 870                   | 877   | 856   | 870                   | 882   | 856   | 0.00            | 0.05  | 0.00  | ±0.20          |
| 1330                  | 1340  | 1310  | 1350                  | 1360  | 1320  | 0.13            | 0.13  | 0.07  | ±0.30          |
| 1820                  | 1830  | 1790  | 1860                  | 1890  | 1830  | 0.19            | 0.28  | 0.19  | ±0.30          |
| 2980                  | 3010  | 2930  | 3100                  | 3140  | 3040  | 0.34            | 0.37  | 0.32  | ±0.50          |
| 3570                  | 3590  | 3510  | 3720                  | 3760  | 3660  | 0.36            | 0.40  | 0.36  | ±0.50          |

SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     |                |
| 0.370                 | 0.370 | 0.370 | 0.380                 | 0.380 | 0.380 | 0.23            | 0.23  | 0.23  | ±1.00          |
| 0.500                 | 0.500 | 0.510 | 0.510                 | 0.520 | 0.520 | 0.17            | 0.34  | 0.17  | ±1.00          |
| 0.690                 | 0.690 | 0.690 | 0.690                 | 0.710 | 0.700 | 0.00            | 0.25  | 0.12  | ±1.00          |
| 0.890                 | 0.900 | 0.900 | 0.890                 | 0.920 | 0.920 | 0.00            | 0.19  | 0.19  | ±1.00          |
| 1.21                  | 1.22  | 1.22  | 1.23                  | 1.24  | 1.25  | 0.14            | 0.14  | 0.21  | ±1.00          |
| 1.66                  | 1.68  | 1.68  | 1.68                  | 1.70  | 1.71  | 0.10            | 0.10  | 0.15  | ±1.00          |
| 2.21                  | 2.24  | 2.24  | 2.24                  | 2.27  | 2.28  | 0.12            | 0.12  | 0.15  | ±0.20          |
| 2.96                  | 2.99  | 3.00  | 2.98                  | 3.04  | 3.03  | 0.06            | 0.14  | 0.09  | ±0.20          |
| 4.02                  | 4.06  | 4.07  | 4.04                  | 4.10  | 4.09  | 0.04            | 0.09  | 0.04  | ±0.20          |
| 5.44                  | 5.50  | 5.51  | 5.47                  | 5.53  | 5.53  | 0.05            | 0.05  | 0.03  | ±0.20          |
| 7.32                  | 7.40  | 7.41  | 7.35                  | 7.44  | 7.43  | 0.04            | 0.05  | 0.02  | ±0.20          |
| 9.78                  | 9.88  | 9.90  | 9.79                  | 9.93  | 9.92  | 0.01            | 0.04  | 0.02  | ±0.20          |
| 13.2                  | 13.3  | 13.4  | 13.2                  | 13.4  | 13.4  | 0.00            | 0.07  | 0.00  | ±0.20          |
| 17.8                  | 18.0  | 18.0  | 17.8                  | 18.1  | 18.1  | 0.00            | 0.05  | 0.05  | ±0.20          |
| 24.0                  | 24.3  | 24.3  | 24.1                  | 24.4  | 24.4  | 0.04            | 0.04  | 0.04  | ±0.20          |
| 32.1                  | 32.4  | 32.5  | 32.2                  | 32.6  | 32.7  | 0.03            | 0.05  | 0.05  | ±0.20          |
| 43.3                  | 43.8  | 43.9  | 43.5                  | 44.1  | 44.1  | 0.04            | 0.06  | 0.04  | ±0.20          |
| 58.6                  | 59.3  | 59.5  | 59.0                  | 59.8  | 59.9  | 0.06            | 0.07  | 0.06  | ±0.20          |
| 80.8                  | 81.7  | 81.9  | 80.5                  | 81.4  | 81.5  | -0.03           | -0.03 | -0.04 | ±0.20          |
| 106                   | 107   | 107   | 105                   | 107   | 107   | -0.08           | 0.00  | 0.00  | ±0.20          |
| 146                   | 147   | 148   | 145                   | 147   | 147   | -0.06           | 0.00  | -0.06 | ±0.20          |
| 202                   | 205   | 205   | 202                   | 204   | 204   | 0.00            | -0.04 | -0.04 | ±0.20          |
| 281                   | 284   | 284   | 282                   | 279   | 286   | 0.03            | -0.15 | 0.06  | ±0.20          |
| 417                   | 422   | 423   | 410                   | 416   | 415   | -0.15           | -0.12 | -0.17 | ±0.20          |
| 578                   | 585   | 586   | 572                   | 581   | 579   | -0.09           | -0.06 | -0.10 | ±0.20          |
| 869                   | 879   | 880   | 870                   | 883   | 880   | 0.01            | 0.04  | 0.00  | ±0.20          |
| 1330                  | 1340  | 1340  | 1350                  | 1360  | 1360  | 0.13            | 0.13  | 0.13  | ±0.30          |
| 1820                  | 1840  | 1840  | 1860                  | 1890  | 1880  | 0.19            | 0.23  | 0.19  | ±0.30          |
| 2980                  | 3010  | 3010  | 3090                  | 3140  | 3130  | 0.31            | 0.37  | 0.34  | ±0.50          |
| 3570                  | 3600  | 3610  | 3720                  | 3760  | 3760  | 0.36            | 0.38  | 0.35  | ±0.50          |

### SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     |                |
| 0.370                 | 0.370 | 0.370 | 0.380                 | 0.390 | 0.380 | 0.23            | 0.46  | 0.23  | ±1.00          |
| 0.510                 | 0.510 | 0.500 | 0.520                 | 0.530 | 0.500 | 0.17            | 0.33  | 0.00  | ±1.00          |
| 0.690                 | 0.690 | 0.680 | 0.710                 | 0.720 | 0.680 | 0.25            | 0.37  | 0.00  | ±1.00          |
| 0.910                 | 0.900 | 0.890 | 0.920                 | 0.930 | 0.880 | 0.09            | 0.28  | -0.10 | ±1.00          |
| 1.22                  | 1.22  | 1.20  | 1.25                  | 1.22  | 1.19  | 0.21            | 0.00  | -0.07 | ±1.00          |
| 1.68                  | 1.68  | 1.65  | 1.68                  | 1.68  | 1.63  | 0.00            | 0.00  | -0.11 | ±1.00          |
| 2.24                  | 2.24  | 2.20  | 2.23                  | 2.27  | 2.19  | -0.04           | 0.12  | -0.04 | ±0.20          |
| 2.99                  | 3.00  | 2.94  | 2.99                  | 3.00  | 2.92  | 0.00            | 0.00  | -0.06 | ±0.20          |
| 4.07                  | 4.07  | 4.00  | 4.08                  | 4.09  | 3.97  | 0.02            | 0.04  | -0.07 | ±0.20          |
| 5.51                  | 5.51  | 5.41  | 5.51                  | 5.52  | 5.39  | 0.00            | 0.02  | -0.03 | ±0.20          |
| 7.41                  | 7.41  | 7.27  | 7.43                  | 7.42  | 7.26  | 0.02            | 0.01  | -0.01 | ±0.20          |
| 9.90                  | 9.89  | 9.72  | 9.91                  | 9.91  | 9.72  | 0.01            | 0.02  | 0.00  | ±0.20          |
| 13.4                  | 13.4  | 13.1  | 13.4                  | 13.4  | 13.1  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 18.0                  | 18.0  | 17.7  | 18.0                  | 18.0  | 17.7  | 0.00            | 0.00  | 0.00  | ±0.20          |
| 24.3                  | 24.3  | 23.9  | 24.4                  | 24.3  | 23.9  | 0.04            | 0.00  | 0.00  | ±0.20          |
| 32.5                  | 32.5  | 31.9  | 32.6                  | 32.6  | 32.1  | 0.03            | 0.03  | 0.05  | ±0.20          |
| 43.9                  | 43.9  | 43.1  | 44.0                  | 44.1  | 43.3  | 0.02            | 0.04  | 0.04  | ±0.20          |
| 59.4                  | 59.4  | 58.4  | 59.8                  | 59.8  | 58.8  | 0.06            | 0.06  | 0.06  | ±0.20          |
| 81.8                  | 81.8  | 80.4  | 81.5                  | 81.5  | 80.1  | -0.03           | -0.03 | -0.03 | ±0.20          |
| 107                   | 107   | 105   | 107                   | 107   | 105   | 0.00            | 0.00  | 0.00  | ±0.20          |
| 147                   | 147   | 145   | 147                   | 147   | 144   | 0.00            | 0.00  | -0.06 | ±0.20          |
| 205                   | 205   | 201   | 204                   | 204   | 201   | -0.04           | -0.04 | 0.00  | ±0.20          |
| 284                   | 284   | 279   | 286                   | 279   | 281   | 0.06            | -0.15 | 0.06  | ±0.20          |
| 422                   | 422   | 415   | 414                   | 417   | 407   | -0.17           | -0.10 | -0.17 | ±0.20          |
| 586                   | 586   | 575   | 579                   | 582   | 569   | -0.10           | -0.06 | -0.09 | ±0.20          |
| 880                   | 880   | 864   | 881                   | 885   | 865   | 0.01            | 0.05  | 0.01  | ±0.20          |
| 1340                  | 1340  | 1320  | 1360                  | 1370  | 1340  | 0.13            | 0.19  | 0.13  | ±0.30          |
| 1840                  | 1840  | 1810  | 1890                  | 1890  | 1850  | 0.23            | 0.23  | 0.19  | ±0.30          |
| 3020                  | 3020  | 2960  | 3130                  | 3140  | 3070  | 0.31            | 0.34  | 0.32  | ±0.50          |
| 3610                  | 3610  | 3540  | 3760                  | 3770  | 3700  | 0.35            | 0.38  | 0.38  | ±0.50          |

### SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     |                |
| 0.370                 | 0.370 | 0.350 | 0.400                 | 0.390 | 0.360 | 0.68            | 0.46  | 0.24  | ±1.00          |
| 0.510                 | 0.500 | 0.480 | 0.540                 | 0.520 | 0.490 | 0.50            | 0.34  | 0.18  | ±1.00          |
| 0.700                 | 0.680 | 0.660 | 0.710                 | 0.690 | 0.640 | 0.12            | 0.13  | -0.27 | ±1.00          |
| 0.910                 | 0.890 | 0.860 | 0.910                 | 0.900 | 0.850 | 0.00            | 0.10  | -0.10 | ±1.00          |
| 1.23                  | 1.20  | 1.16  | 1.22                  | 1.22  | 1.16  | -0.07           | 0.14  | 0.00  | ±1.00          |
| 1.69                  | 1.65  | 1.60  | 1.69                  | 1.67  | 1.62  | 0.00            | 0.10  | 0.11  | ±1.00          |
| 2.26                  | 2.20  | 2.13  | 2.27                  | 2.25  | 2.14  | 0.04            | 0.20  | 0.04  | ±0.20          |
| 3.02                  | 2.95  | 2.85  | 3.01                  | 2.97  | 2.85  | -0.03           | 0.06  | 0.00  | ±0.20          |
| 4.10                  | 4.00  | 3.87  | 4.09                  | 4.03  | 3.89  | -0.02           | 0.06  | 0.04  | ±0.20          |
| 5.55                  | 5.41  | 5.23  | 5.55                  | 5.45  | 5.25  | 0.00            | 0.06  | 0.03  | ±0.20          |
| 7.46                  | 7.28  | 7.04  | 7.46                  | 7.32  | 7.07  | 0.00            | 0.05  | 0.04  | ±0.20          |
| 9.97                  | 9.72  | 9.41  | 9.97                  | 9.76  | 9.46  | 0.00            | 0.04  | 0.05  | ±0.20          |
| 13.5                  | 13.1  | 12.7  | 13.5                  | 13.2  | 12.8  | 0.00            | 0.07  | 0.07  | ±0.20          |
| 18.2                  | 17.7  | 17.1  | 18.2                  | 17.7  | 17.2  | 0.00            | 0.00  | 0.05  | ±0.20          |
| 24.5                  | 23.9  | 23.1  | 24.6                  | 24.0  | 23.2  | 0.04            | 0.04  | 0.04  | ±0.20          |
| 32.7                  | 31.9  | 30.9  | 32.9                  | 32.1  | 31.1  | 0.05            | 0.05  | 0.06  | ±0.20          |
| 44.2                  | 43.1  | 41.8  | 44.4                  | 43.4  | 41.9  | 0.04            | 0.06  | 0.02  | ±0.20          |
| 59.8                  | 58.4  | 56.5  | 60.2                  | 58.8  | 56.9  | 0.06            | 0.06  | 0.06  | ±0.20          |
| 82.4                  | 80.4  | 77.8  | 82.1                  | 80.1  | 77.5  | -0.03           | -0.03 | -0.03 | ±0.20          |
| 108                   | 105   | 102   | 107                   | 105   | 101   | -0.08           | 0.00  | -0.09 | ±0.20          |
| 148                   | 145   | 140   | 148                   | 144   | 140   | 0.00            | -0.06 | 0.00  | ±0.20          |
| 206                   | 201   | 195   | 206                   | 201   | 194   | 0.00            | 0.00  | -0.04 | ±0.20          |
| 286                   | 280   | 270   | 288                   | 275   | 272   | 0.06            | -0.16 | 0.06  | ±0.20          |
| 425                   | 415   | 402   | 418                   | 409   | 394   | -0.14           | -0.13 | -0.17 | ±0.20          |
| 590                   | 576   | 557   | 583                   | 572   | 551   | -0.10           | -0.06 | -0.09 | ±0.20          |
| 886                   | 865   | 837   | 887                   | 869   | 837   | 0.01            | 0.04  | 0.00  | ±0.20          |
| 1350                  | 1320  | 1280  | 1370                  | 1340  | 1290  | 0.13            | 0.13  | 0.07  | ±0.30          |
| 1850                  | 1810  | 1750  | 1900                  | 1860  | 1790  | 0.23            | 0.24  | 0.20  | ±0.30          |
| 3040                  | 2970  | 2870  | 3150                  | 3090  | 2970  | 0.31            | 0.34  | 0.30  | ±0.50          |
| 3640                  | 3540  | 3430  | 3790                  | 3710  | 3580  | 0.35            | 0.41  | 0.37  | ±0.50          |

### SPEAG H-field linearity tolerance criteria<sup>1</sup>:

- ±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

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%)

## 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     |
| 0.340                 | 0.220 | 0.090 | 0.360                 | 0.220 | 0.100 | 0.50            | 0.00  | 0.92  | ±5.00          | ±5.00 | ±5.00 |
| 0.460                 | 0.300 | 0.130 | 0.480                 | 0.290 | 0.150 | 0.37            | -0.29 | 1.24  | ±5.00          | ±5.00 | ±5.00 |
| 0.630                 | 0.410 | 0.170 | 0.670                 | 0.400 | 0.170 | 0.53            | -0.21 | 0.00  | ±5.00          | ±5.00 | ±5.00 |
| 0.830                 | 0.530 | 0.230 | 0.860                 | 0.540 | 0.230 | 0.31            | 0.16  | 0.00  | ±5.00          | ±5.00 | ±5.00 |
| 1.12                  | 0.720 | 0.300 | 1.16                  | 0.760 | 0.320 | 0.30            | 0.47  | 0.56  | ±5.00          | ±5.00 | ±5.00 |
| 1.54                  | 0.980 | 0.420 | 1.58                  | 0.990 | 0.450 | 0.22            | 0.09  | 0.60  | ±5.00          | ±5.00 | ±5.00 |
| 2.05                  | 1.31  | 0.560 | 2.11                  | 1.30  | 0.550 | 0.25            | -0.07 | -0.16 | ±1.00          | ±5.00 | ±5.00 |
| 2.74                  | 1.75  | 0.740 | 2.80                  | 1.76  | 0.730 | 0.19            | 0.05  | -0.12 | ±1.00          | ±5.00 | ±5.00 |
| 3.72                  | 2.38  | 1.01  | 3.77                  | 2.41  | 1.01  | 0.12            | 0.11  | 0.00  | ±1.00          | ±1.00 | ±5.00 |
| 5.04                  | 3.22  | 1.37  | 5.14                  | 3.24  | 1.36  | 0.17            | 0.05  | -0.06 | ±1.00          | ±1.00 | ±5.00 |
| 6.78                  | 4.33  | 1.84  | 6.87                  | 4.36  | 1.81  | 0.11            | 0.06  | -0.14 | ±1.00          | ±1.00 | ±5.00 |
| 9.05                  | 5.78  | 2.46  | 9.18                  | 5.78  | 2.41  | 0.12            | 0.00  | -0.18 | ±1.00          | ±1.00 | ±1.00 |
| 12.2                  | 7.81  | 3.32  | 12.4                  | 7.81  | 3.27  | 0.14            | 0.00  | -0.13 | ±1.00          | ±1.00 | ±1.00 |
| 16.5                  | 10.5  | 4.48  | 16.7                  | 10.5  | 4.40  | 0.10            | 0.00  | -0.16 | ±1.00          | ±1.00 | ±1.00 |
| 22.3                  | 14.2  | 6.05  | 22.6                  | 14.2  | 5.95  | 0.12            | 0.00  | -0.14 | ±1.00          | ±1.00 | ±1.00 |
| 29.7                  | 19.0  | 8.07  | 30.1                  | 19.0  | 7.97  | 0.12            | 0.00  | -0.11 | ±1.00          | ±1.00 | ±1.00 |
| 40.2                  | 25.6  | 10.9  | 40.6                  | 25.7  | 10.8  | 0.09            | 0.03  | -0.08 | ±1.00          | ±1.00 | ±1.00 |
| 54.4                  | 34.7  | 14.8  | 55.0                  | 34.9  | 14.6  | 0.10            | 0.05  | -0.12 | ±1.00          | ±1.00 | ±1.00 |
| 74.9                  | 47.8  | 20.3  | 75.0                  | 47.5  | 19.9  | 0.01            | -0.05 | -0.17 | ±1.00          | ±1.00 | ±1.00 |
| 98.1                  | 62.7  | 26.6  | 98.1                  | 62.2  | 26.1  | 0.00            | -0.07 | -0.16 | ±1.00          | ±1.00 | ±1.00 |
| 135                   | 86.1  | 36.6  | 135                   | 85.4  | 36.0  | 0.00            | -0.07 | -0.14 | ±1.00          | ±1.00 | ±1.00 |
| 187                   | 120   | 51.0  | 187                   | 119   | 50.0  | 0.00            | -0.07 | -0.17 | ±1.00          | ±1.00 | ±1.00 |
| 260                   | 166   | 70.7  | 261                   | 166   | 70.0  | 0.03            | 0.00  | -0.09 | ±1.00          | ±1.00 | ±1.00 |
| 386                   | 247   | 105   | 384                   | 234   | 104   | -0.51           | -0.47 | -0.08 | ±1.00          | ±1.00 | ±1.00 |
| 536                   | 342   | 146   | 508                   | 327   | 146   | -0.47           | -0.39 | 0.00  | ±1.00          | ±1.00 | ±1.00 |
| 806                   | 514   | 219   | 772                   | 498   | 222   | -0.37           | -0.27 | 0.12  | ±1.00          | ±1.00 | ±1.00 |
| 1230                  | 785   | 334   | 1190                  | 769   | 343   | -0.29           | -0.18 | 0.23  | ±1.00          | ±1.00 | ±1.00 |
| 1680                  | 1080  | 458   | 1650                  | 1070  | 475   | -0.16           | -0.08 | 0.32  | ±1.00          | ±1.00 | ±1.00 |
| 2760                  | 1760  | 751   | 2750                  | 1770  | 752   | -0.03           | 0.05  | 0.01  | ±1.00          | ±1.00 | ±1.00 |
| 3300                  | 2110  | 898   | 3300                  | 2130  | 905   | 0.00            | -0.08 | 0.07  | ±1.00          | ±1.00 | ±1.00 |

SPEAG E-field linearity tolerance criteria<sup>1</sup>:

±5.0dB for applied E-field < 2 V/m

±1.0dB for applied E-field ≥ 2 V/m

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.46                  | 1.47 | 1.47 | -0.12           | -0.06 | -0.06 | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.47                  | 1.49 | 1.49 | 0.00            | 0.12  | 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                  | 1.45 | 1.45 | 1.44                  | 1.43 | 1.46 | -0.06           | -0.12 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.44                  | 1.44 | 1.44 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.42                  | 1.42 | 1.42 | -0.06           | -0.06 | -0.06 | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.42                  | 1.42 | 1.42 | -0.06           | 0.00  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.29                  | 4.23 | 4.21 | 0.02            | 0.00  | -0.02 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.26                  | 4.22 | 4.23 | -0.02           | -0.04 | -0.02 | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.25                  | 4.23 | 4.22 | -0.06           | -0.02 | -0.04 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.29                  | 4.26 | 4.26 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.29                  | 4.26 | 4.25 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.27 | 4.26 | -0.04           | -0.02 | -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    | 4.28                  | 4.26 | 4.26 | 4.28                  | 4.25 | 4.26 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.27                  | 4.25 | 4.25 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.26                  | 4.24 | 4.24 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.25                  | 4.22 | 4.23 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.24                  | 4.22 | 4.21 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.20 | 4.20 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.20                  | 4.18 | 4.18 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.17 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.13 | 4.13 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.11                  | 4.10 | 4.10 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.08                  | 4.06 | 4.06 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.04 | 4.04 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.01 | 4.01 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.97 | 3.97 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.93 | 3.92 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.92 | 3.91 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.89 | 3.89 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.89 | 3.88 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.87                  | 3.87 | 3.86 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.82                  | 3.82 | 3.81 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.76 | 3.76 | 0.00            | -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                  | 3.69 | 3.69 | 0.02            | 0.00  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.59                  | 3.60 | 3.59 | -0.02           | 0.02  | -0.02 | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.43 | 3.45 | -0.03           | -0.03 | 0.03  | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.27                  | 3.29 | 3.28 | -0.08           | -0.03 | -0.05 | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:

±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup>Calibration uncertainty not taken into account (shared risk 50%)

## 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     | 1.48                  | 1.48 | 1.48 | 1.46                  | 1.47 | 1.48 | -0.12           | -0.06 | 0.00  | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.46                  | 1.49 | 1.48 | -0.06           | 0.12  | 0.06  | ±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                  | 1.45 | 1.45 | 1.43                  | 1.44 | 1.45 | -0.12           | -0.06 | 0.00  | ±0.3           |
| 5600     | 1.44                  | 1.44 | 1.44 | 1.44                  | 1.44 | 1.43 | 0.00            | 0.00  | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.42                  | 1.43 | 1.43 | -0.06           | 0.00  | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.42                  | 1.43 | 1.42 | -0.06           | 0.06  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.28                  | 4.23 | 4.20 | 0.00            | 0.00  | -0.04 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.27                  | 4.24 | 4.24 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.25 | -0.06           | 0.00  | 0.02  | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.27                  | 4.25 | 4.25 | -0.06           | -0.02 | -0.02 | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.27                  | 4.25 | 4.26 | -0.06           | -0.02 | 0.00  | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.28 | 4.27 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.27                  | 4.27 | 4.27 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.26                  | 4.27 | 4.27 | -0.04           | 0.02  | 0.02  | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.25 | 4.25 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.24 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.23                  | 4.23 | 4.24 | -0.04           | 0.00  | 0.02  | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.22                  | 4.21 | 4.22 | -0.04           | -0.02 | 0.00  | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.19 | 4.20 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.19                  | 4.18 | 4.18 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.17                  | 4.17 | 4.17 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.14 | 4.14 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.11                  | 4.10 | 4.10 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.06 | 4.07 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.05 | 4.05 | -0.02           | 0.02  | 0.02  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.02 | 4.03 | -0.02           | 0.00  | 0.04  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.98 | 3.97 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.92                  | 3.92 | 3.93 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.91                  | 3.92 | 3.93 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 1193800  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.89 | 3.90 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.88 | 3.88 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.88                  | 3.86 | 3.86 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.83                  | 3.82 | 3.81 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.77                  | 3.76 | 3.76 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.76                  | 3.76 | 3.75 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.69                  | 3.69 | 3.70 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.59                  | 3.58 | 3.59 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.44 | 3.40 | -0.03           | 0.00  | -0.10 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.32                  | 3.32 | 3.31 | 0.05            | 0.05  | 0.03  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.48                  | 1.47 | 1.48 | 0.00            | -0.06 | 0.00  | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.47                  | 1.49 | 1.48 | 0.00            | 0.12  | 0.06  | ±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                  | 1.45 | 1.45 | 1.44                  | 1.44 | 1.46 | -0.06           | -0.06 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.44                  | 1.44 | 1.43 | 0.00            | 0.00  | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.42                  | 1.42 | 1.43 | -0.06           | -0.06 | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.43                  | 1.42 | 1.42 | 0.00            | 0.00  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.29                  | 4.21 | 4.21 | 0.02            | -0.04 | -0.02 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.26                  | 4.22 | 4.23 | -0.02           | -0.04 | -0.02 | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.27                  | 4.23 | 4.22 | -0.02           | -0.02 | -0.04 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.25 | 4.26 | -0.04           | -0.02 | 0.00  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.24 | 4.26 | -0.04           | -0.04 | 0.00  | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.29                  | 4.26 | 4.27 | -0.02           | -0.04 | 0.00  | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.29                  | 4.26 | 4.26 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.29                  | 4.25 | 4.26 | 0.02            | -0.02 | 0.00  | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.25 | 4.25 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.24 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.24                  | 4.22 | 4.22 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.23                  | 4.21 | 4.21 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.19 | 4.20 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.19                  | 4.18 | 4.18 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.17                  | 4.17 | 4.17 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.13 | 4.13 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.12                  | 4.09 | 4.09 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.06 | 4.07 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.04 | 4.04 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.01 | 4.01 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.97 | 3.97 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.92 | 3.92 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.92 | 3.91 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.91                  | 3.89 | 3.89 | 0.02            | 0.00  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.89 | 3.88 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 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 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.84                  | 3.82 | 3.81 | 0.02            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.76 | 3.77 | 0.00            | -0.02 | 0.02  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.76                  | 3.76 | 3.76 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.70                  | 3.69 | 3.69 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.60                  | 3.60 | 3.60 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.43 | 3.42 | -0.03           | -0.03 | -0.05 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.28                  | 3.29 | 3.29 | -0.05           | -0.03 | -0.03 | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:

±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

### 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     | 1.48                  | 1.48 | 1.48 | 1.47                  | 1.48 | 1.47 | -0.06           | 0.00  | -0.06 | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.47                  | 1.48 | 1.49 | 0.00            | 0.06  | 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                  | 1.45 | 1.45 | 1.43                  | 1.43 | 1.46 | -0.12           | -0.12 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.45                  | 1.44 | 1.43 | 0.06            | 0.00  | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.43                  | 1.42 | 1.43 | 0.00            | -0.06 | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.42                  | 1.43 | 1.42 | -0.06           | 0.06  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.29                  | 4.21 | 4.22 | 0.02            | -0.04 | 0.00  | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.26                  | 4.24 | 4.22 | -0.02           | 0.00  | -0.04 | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.27                  | 4.23 | 4.22 | -0.02           | -0.02 | -0.04 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.27 | 4.27 | -0.04           | 0.02  | 0.02  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.29                  | 4.28 | 4.24 | -0.02           | 0.04  | -0.04 | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.27 | 4.27 | -0.04           | -0.02 | 0.00  | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.28                  | 4.27 | 4.26 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.27                  | 4.25 | 4.25 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.24 | 4.24 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.23 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.24                  | 4.23 | 4.22 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.23                  | 4.21 | 4.21 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.22                  | 4.19 | 4.19 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.19                  | 4.17 | 4.18 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.17 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.13 | 4.13 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.10                  | 4.11 | 4.09 | -0.04           | 0.02  | -0.02 | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.06 | 4.06 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.04 | 4.04 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.01 | 4.01 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.97 | 3.97 | 0.00            | -0.02 | -0.00 | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.93 | 3.93 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.92 | 3.91 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.89 | 3.89 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.88                  | 3.88 | 3.88 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.87                  | 3.86 | 3.87 | -0.02           | -0.02 | 0.02  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.85                  | 3.85 | 3.85 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.83                  | 3.82 | 3.81 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.77 | 3.77 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.77                  | 3.76 | 3.75 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.70                  | 3.70 | 3.69 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.60                  | 3.59 | 3.60 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.44 | 3.42 | -0.03           | 0.00  | -0.05 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.32                  | 3.28 | 3.32 | 0.05            | -0.05 | 0.05  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.47                  | 1.47 | 1.45 | -0.06           | -0.06 | -0.18 | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.46                  | 1.49 | 1.47 | -0.06           | 0.12  | 0.00  | ±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                  | 1.45 | 1.45 | 1.44                  | 1.44 | 1.46 | -0.06           | -0.06 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.44                  | 1.43 | 1.43 | 0.00            | -0.06 | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.42                  | 1.42 | 1.43 | -0.06           | -0.06 | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.42                  | 1.42 | 1.42 | -0.06           | 0.00  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.26                  | 4.19 | 4.22 | -0.04           | -0.08 | 0.00  | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.26                  | 4.23 | 4.25 | -0.02           | -0.02 | 0.02  | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.24 | -0.06           | 0.00  | 0.00  | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.24 | 4.27 | -0.04           | -0.04 | 0.02  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.26 | 4.25 | -0.04           | 0.00  | -0.02 | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.27 | 4.27 | -0.04           | -0.02 | 0.00  | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.28                  | 4.26 | 4.26 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.27                  | 4.25 | 4.26 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.25 | 4.25 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.23 | 4.24 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.24                  | 4.22 | 4.22 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.22                  | 4.21 | 4.21 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.20 | 4.19 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.19                  | 4.18 | 4.17 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.17 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.14 | 4.14 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.11                  | 4.10 | 4.10 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.07 | 4.06 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.05 | 4.04 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.03                  | 4.02 | 4.01 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.98 | 3.97 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.92 | 3.93 | 0.00            | -0.02 | 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 | 3.90                  | 3.89 | 3.89 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.88 | 3.87 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.87                  | 3.87 | 3.87 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.83                  | 3.82 | 3.81 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.76 | 3.77 | 0.00            | -0.02 | 0.02  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.76                  | 3.76 | 3.75 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.70                  | 3.70 | 3.70 | 0.00            | 0.02  | 0.02  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.57                  | 3.59 | 3.60 | -0.07           | 0.00  | 0.00  | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.45                  | 3.44 | 3.40 | 0.00            | 0.00  | -0.10 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.27                  | 3.32 | 3.32 | -0.08           | 0.05  | 0.05  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.46                  | 1.47 | 1.48 | -0.12           | -0.06 | 0.00  | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.46                  | 1.48 | 1.48 | -0.06           | 0.06  | 0.06  | ±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                  | 1.45 | 1.45 | 1.44                  | 1.44 | 1.46 | -0.06           | -0.06 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.43                  | 1.44 | 1.43 | -0.06           | 0.00  | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.41                  | 1.42 | 1.42 | -0.12           | -0.06 | -0.06 | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.42                  | 1.42 | 1.42 | -0.06           | 0.00  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.25                  | 4.22 | 4.21 | -0.06           | -0.02 | -0.02 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.28                  | 4.25 | 4.22 | 0.02            | 0.02  | -0.04 | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.26                  | 4.23 | 4.22 | -0.04           | -0.02 | -0.04 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.25 | 4.25 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.25 | 4.25 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.27 | 4.26 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.27                  | 4.27 | 4.26 | -0.04           | 0.00  | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.27                  | 4.26 | 4.25 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.25 | 4.24 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.23 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.23                  | 4.22 | 4.22 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.22                  | 4.21 | 4.21 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.19 | 4.19 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.18                  | 4.18 | 4.18 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.16 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.14                  | 4.13 | 4.13 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.12                  | 4.10 | 4.09 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.06 | 4.06 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.04 | 4.04 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.01 | 4.01 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.97 | 3.97 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.92 | 3.92 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.91 | 3.92 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.89 | 3.90 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.88 | 3.88 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.88                  | 3.86 | 3.86 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.85                  | 3.85 | 3.84 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.83                  | 3.82 | 3.81 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.77 | 3.77 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.76                  | 3.76 | 3.75 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.69                  | 3.69 | 3.69 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.60                  | 3.57 | 3.60 | 0.00            | -0.05 | 0.00  | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.45                  | 3.44 | 3.41 | 0.00            | 0.00  | -0.08 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.29                  | 3.30 | 3.32 | -0.03           | 0.00  | 0.05  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.52                  | 1.47 | 1.46 | 0.23            | -0.06 | -0.12 | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.46                  | 1.49 | 1.47 | -0.06           | 0.12  | 0.00  | ±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                  | 1.45 | 1.45 | 1.44                  | 1.44 | 1.45 | -0.06           | -0.06 | 0.00  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.44                  | 1.43 | 1.44 | 0.00            | -0.06 | 0.00  | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.42                  | 1.42 | 1.43 | -0.06           | -0.06 | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.43                  | 1.42 | 1.43 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.28                  | 4.20 | 4.21 | 0.00            | -0.06 | -0.02 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.27                  | 4.22 | 4.23 | 0.00            | -0.04 | -0.02 | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.26                  | 4.22 | 4.23 | -0.04           | -0.04 | -0.02 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.26 | 4.26 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.29                  | 4.26 | 4.25 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.29                  | 4.26 | 4.27 | -0.02           | -0.04 | 0.00  | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.28                  | 4.26 | 4.26 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.26                  | 4.25 | 4.25 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.26                  | 4.24 | 4.24 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.23 | 4.24 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.24                  | 4.22 | 4.23 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.22                  | 4.21 | 4.21 | -0.04           | -0.02 | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.19 | 4.19 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.18                  | 4.18 | 4.17 | -0.04           | 0.00  | -0.02 | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.16 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.13 | 4.13 | -0.02           | -0.02 | -0.02 | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.11                  | 4.09 | 4.10 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.06 | 4.06 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.04 | 4.04 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.01 | 4.01 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.97 | 3.97 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.92 | 3.92 | 0.00            | -0.02 | -0.02 | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.91 | 3.92 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.89 | 3.89 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.89 | 3.88 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.88                  | 3.86 | 3.86 | 0.00            | -0.02 | 0.00  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.84                  | 3.82 | 3.81 | 0.02            | 0.00  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.77                  | 3.77 | 3.76 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.75                  | 3.76 | 3.75 | -0.05           | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.69                  | 3.69 | 3.69 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.60                  | 3.59 | 3.59 | 0.00            | 0.00  | -0.02 | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.44 | 3.43 | -0.03           | 0.00  | -0.03 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.29                  | 3.29 | 3.34 | -0.03           | -0.03 | 0.10  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## 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     | 1.48                  | 1.48 | 1.48 | 1.47                  | 1.46 | 1.46 | -0.06           | -0.12 | -0.12 | ±0.3           |
| 3200     | 1.47                  | 1.47 | 1.47 | 1.46                  | 1.48 | 1.48 | -0.06           | 0.06  | 0.06  | ±0.3           |
| 4000     | 1.46                  | 1.46 | 1.46 | 1.45                  | 1.45 | 1.46 | -0.06           | -0.06 | 0.00  | ±0.3           |
| 5200     | 1.45                  | 1.45 | 1.45 | 1.43                  | 1.43 | 1.46 | -0.12           | -0.12 | 0.06  | ±0.3           |
| 6600     | 1.44                  | 1.44 | 1.44 | 1.43                  | 1.42 | 1.43 | -0.06           | -0.12 | -0.06 | ±0.3           |
| 8200     | 1.43                  | 1.43 | 1.43 | 1.41                  | 1.42 | 1.43 | -0.12           | -0.06 | 0.00  | ±0.3           |
| 9000     | 1.43                  | 1.42 | 1.43 | 1.41                  | 1.42 | 1.42 | -0.12           | 0.00  | -0.06 | ±0.3           |
| 10600    | 4.28                  | 4.23 | 4.22 | 4.28                  | 4.24 | 4.20 | 0.00            | 0.02  | -0.04 | ±0.3           |
| 13400    | 4.27                  | 4.24 | 4.24 | 4.26                  | 4.22 | 4.24 | -0.02           | -0.04 | 0.00  | ±0.3           |
| 17000    | 4.28                  | 4.24 | 4.24 | 4.25                  | 4.24 | 4.23 | -0.06           | 0.00  | -0.02 | ±0.3           |
| 21400    | 4.30                  | 4.26 | 4.26 | 4.29                  | 4.27 | 4.26 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 27200    | 4.30                  | 4.26 | 4.26 | 4.28                  | 4.25 | 4.27 | -0.04           | -0.02 | 0.02  | ±0.3           |
| 34400    | 4.30                  | 4.28 | 4.27 | 4.28                  | 4.28 | 4.26 | -0.04           | 0.00  | -0.02 | ±0.3           |
| 40000    | 4.29                  | 4.27 | 4.27 | 4.26                  | 4.27 | 4.26 | -0.06           | 0.00  | -0.02 | ±0.3           |
| 43600    | 4.28                  | 4.26 | 4.26 | 4.27                  | 4.26 | 4.25 | -0.02           | 0.00  | -0.02 | ±0.3           |
| 55400    | 4.27                  | 4.25 | 4.25 | 4.25                  | 4.25 | 4.25 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 70000    | 4.26                  | 4.24 | 4.24 | 4.25                  | 4.25 | 4.23 | -0.02           | 0.02  | -0.02 | ±0.3           |
| 88800    | 4.25                  | 4.23 | 4.23 | 4.24                  | 4.22 | 4.23 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 112400   | 4.24                  | 4.22 | 4.22 | 4.22                  | 4.22 | 4.21 | -0.04           | 0.00  | -0.02 | ±0.3           |
| 142400   | 4.22                  | 4.20 | 4.20 | 4.21                  | 4.20 | 4.20 | -0.02           | 0.00  | 0.00  | ±0.3           |
| 161750   | 4.20                  | 4.18 | 4.18 | 4.18                  | 4.18 | 4.18 | -0.04           | 0.00  | 0.00  | ±0.3           |
| 180400   | 4.19                  | 4.17 | 4.17 | 4.18                  | 4.17 | 4.18 | -0.02           | 0.00  | 0.02  | ±0.3           |
| 228400   | 4.16                  | 4.14 | 4.14 | 4.15                  | 4.15 | 4.14 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 289400   | 4.12                  | 4.10 | 4.10 | 4.11                  | 4.09 | 4.10 | -0.02           | -0.02 | 0.00  | ±0.3           |
| 366400   | 4.08                  | 4.06 | 4.06 | 4.07                  | 4.07 | 4.07 | -0.02           | 0.02  | 0.02  | ±0.3           |
| 400000   | 4.06                  | 4.04 | 4.04 | 4.05                  | 4.05 | 4.04 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 464000   | 4.03                  | 4.02 | 4.01 | 4.02                  | 4.03 | 4.01 | -0.02           | 0.02  | 0.00  | ±0.3           |
| 587800   | 3.98                  | 3.98 | 3.97 | 3.98                  | 3.98 | 3.98 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 744200   | 3.93                  | 3.93 | 3.93 | 3.93                  | 3.94 | 3.93 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 942600   | 3.92                  | 3.92 | 3.92 | 3.92                  | 3.92 | 3.93 | 0.00            | 0.00  | 0.02  | ±0.3           |
| 1193600  | 3.90                  | 3.89 | 3.89 | 3.90                  | 3.90 | 3.89 | 0.00            | 0.02  | 0.00  | ±0.3           |
| 1511600  | 3.89                  | 3.88 | 3.88 | 3.89                  | 3.89 | 3.87 | 0.00            | 0.02  | -0.02 | ±0.3           |
| 1914400  | 3.88                  | 3.87 | 3.86 | 3.88                  | 3.87 | 3.86 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 2424400  | 3.86                  | 3.85 | 3.85 | 3.86                  | 3.85 | 3.85 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 3070200  | 3.83                  | 3.82 | 3.81 | 3.84                  | 3.83 | 3.81 | 0.02            | 0.02  | 0.00  | ±0.3           |
| 3888000  | 3.78                  | 3.77 | 3.76 | 3.78                  | 3.76 | 3.77 | 0.00            | -0.02 | 0.02  | ±0.3           |
| 4000000  | 3.77                  | 3.76 | 3.75 | 3.75                  | 3.76 | 3.75 | -0.05           | 0.00  | 0.00  | ±0.3           |
| 4923800  | 3.70                  | 3.69 | 3.69 | 3.70                  | 3.69 | 3.69 | 0.00            | 0.00  | 0.00  | ±0.3           |
| 6235400  | 3.60                  | 3.59 | 3.60 | 3.59                  | 3.60 | 3.61 | -0.02           | 0.02  | 0.02  | ±0.3           |
| 7896400  | 3.45                  | 3.44 | 3.44 | 3.44                  | 3.43 | 3.41 | -0.03           | -0.03 | -0.08 | ±0.3           |
| 10000000 | 3.30                  | 3.30 | 3.30 | 3.29                  | 3.32 | 3.34 | -0.03           | 0.05  | 0.10  | ±0.3           |

SPEAG H-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied H-fields at calibration points from 3kHz to 10MHz

<sup>1</sup> Calibration uncertainty not taken into account (shared risk 50%).

## Frequency Response, E-field, Channel 0

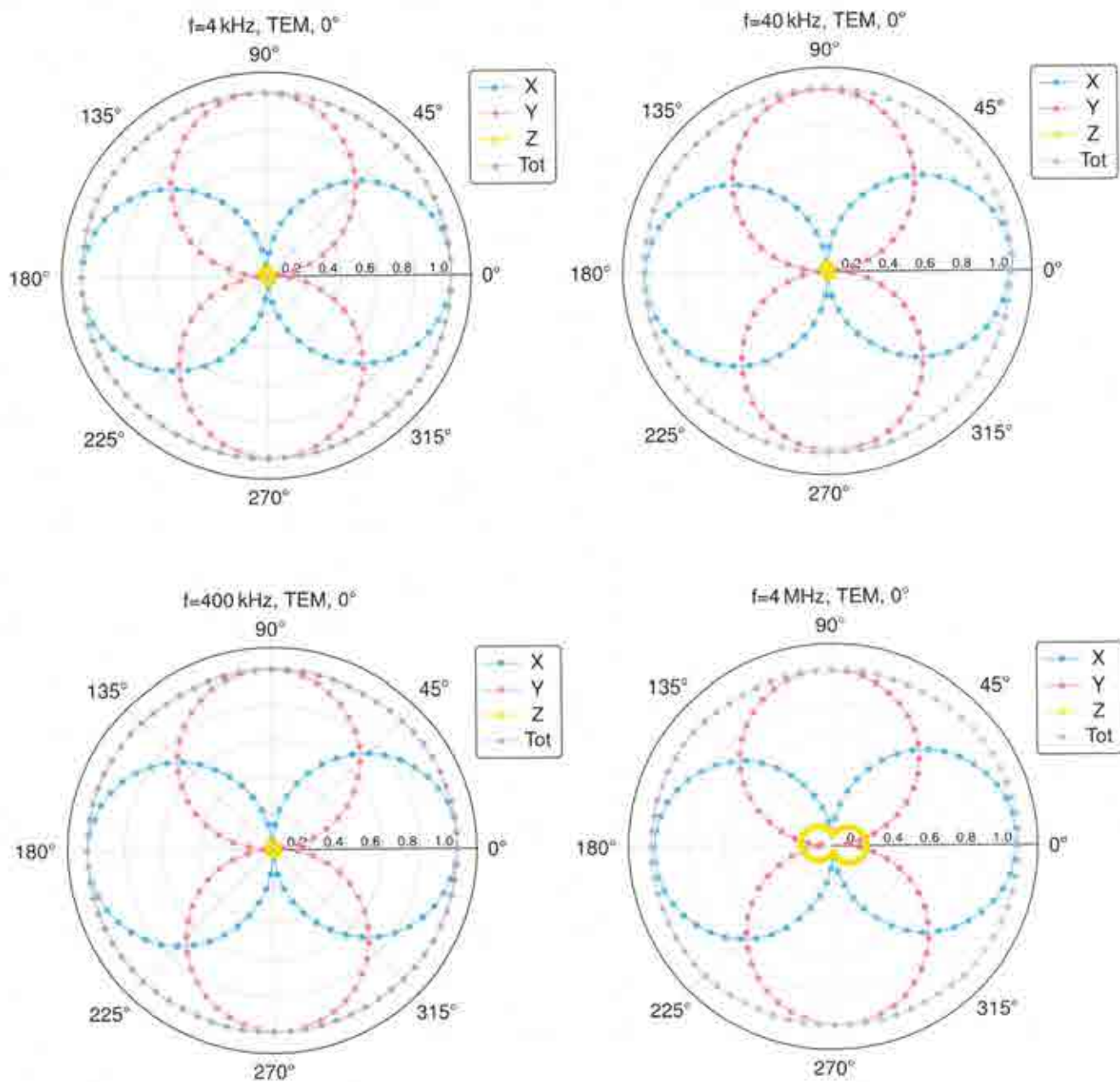
| f/(Hz)   | E-field/(V/m) Applied |     |     | E-field/(V/m) Reading |     |     | Difference/(dB) |      |       | Tolerance/(dB) |
|----------|-----------------------|-----|-----|-----------------------|-----|-----|-----------------|------|-------|----------------|
|          | x                     | y   | z   | x                     | y   | z   | x               | y    | z     |                |
| 3000     | 169                   | 169 | 172 | 170                   | 170 | 172 | 0.05            | 0.05 | 0.00  | ±0.3           |
| 3200     | 167                   | 167 | 162 | 167                   | 169 | 163 | 0.00            | 0.10 | 0.05  | ±0.3           |
| 4000     | 175                   | 175 | 170 | 175                   | 175 | 170 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 5200     | 165                   | 165 | 163 | 166                   | 165 | 163 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 6600     | 163                   | 163 | 160 | 163                   | 163 | 160 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 8200     | 162                   | 162 | 159 | 163                   | 162 | 159 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 9000     | 163                   | 163 | 164 | 164                   | 163 | 164 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 10600    | 166                   | 166 | 159 | 167                   | 166 | 159 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 13400    | 163                   | 163 | 162 | 164                   | 164 | 161 | 0.05            | 0.05 | -0.05 | ±0.3           |
| 17000    | 161                   | 161 | 163 | 162                   | 162 | 163 | 0.05            | 0.05 | 0.00  | ±0.3           |
| 21400    | 157                   | 157 | 158 | 158                   | 157 | 158 | 0.06            | 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 | 163                   | 162 | 159 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 40000    | 161                   | 161 | 161 | 162                   | 161 | 161 | 0.05            | 0.00 | 0.00  | ±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 | 162                   | 162 | 160 | 0.05            | 0.05 | 0.00  | ±0.3           |
| 112400   | 161                   | 161 | 160 | 162                   | 161 | 160 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 142400   | 162                   | 162 | 160 | 163                   | 162 | 160 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 161750   | 163                   | 163 | 162 | 164                   | 163 | 162 | 0.05            | 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 | 166                   | 166 | 163 | 0.05            | 0.05 | 0.00  | ±0.3           |
| 289400   | 166                   | 166 | 164 | 166                   | 166 | 164 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 366400   | 166                   | 166 | 165 | 167                   | 166 | 165 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 400000   | 167                   | 167 | 165 | 168                   | 167 | 165 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 464000   | 168                   | 168 | 166 | 169                   | 169 | 166 | 0.05            | 0.05 | 0.00  | ±0.3           |
| 587800   | 169                   | 169 | 167 | 170                   | 169 | 167 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 744200   | 169                   | 169 | 167 | 170                   | 170 | 168 | 0.05            | 0.05 | 0.05  | ±0.3           |
| 942600   | 170                   | 170 | 168 | 171                   | 170 | 168 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 1193600  | 171                   | 171 | 169 | 171                   | 171 | 169 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 1511600  | 170                   | 170 | 169 | 171                   | 170 | 169 | 0.05            | 0.00 | 0.00  | ±0.3           |
| 1914400  | 170                   | 170 | 168 | 170                   | 170 | 168 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 2424400  | 170                   | 170 | 168 | 170                   | 170 | 168 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 3070200  | 171                   | 171 | 169 | 171                   | 171 | 169 | 0.00            | 0.00 | 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 | 170 | 0.00            | 0.00 | 0.05  | ±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 | 179 | 0.00            | 0.00 | 0.00  | ±0.3           |
| 10000000 | 201                   | 201 | 199 | 201                   | 201 | 199 | 0.00            | 0.00 | 0.00  | ±0.3           |

SPEAG E-field frequency response tolerance criteria<sup>1</sup>:  
±0.3dB for applied E-fields at calibration points from 3kHz to 10MHz

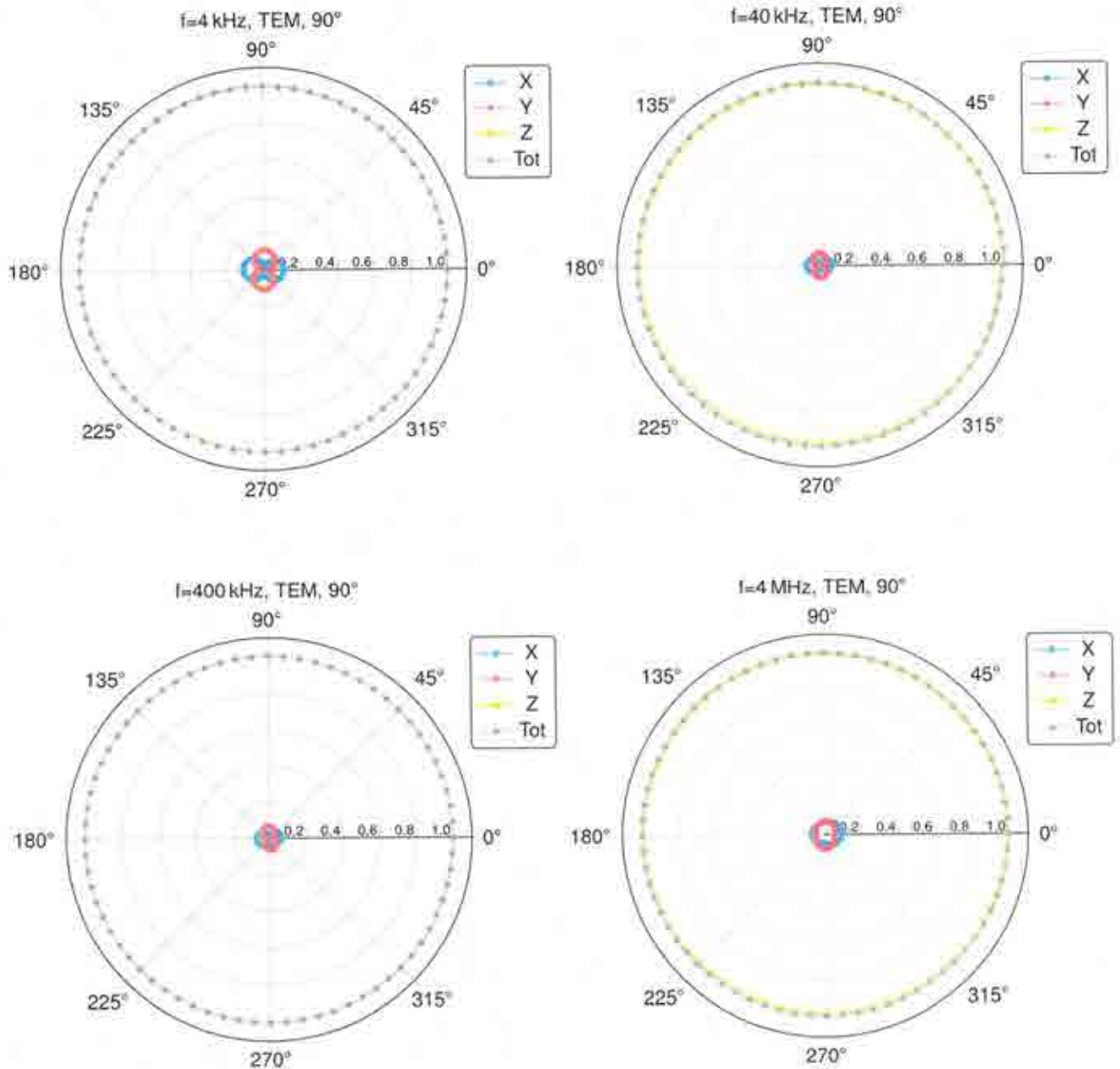
<sup>1</sup>Calibration uncertainty not taken into account (shared risk 50%).

## Isotropy H-Field

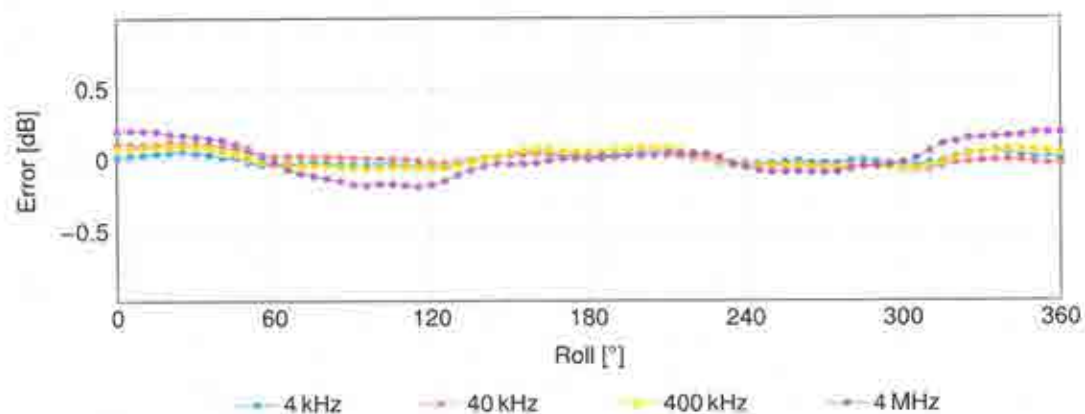
### H-Field Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$



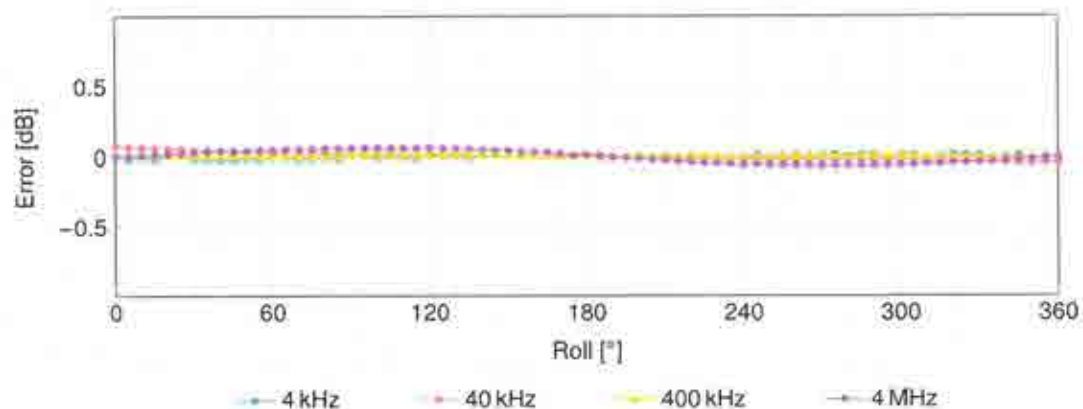
### H-Field Receiving Pattern ( $\phi$ ), $\theta = 90^\circ$



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



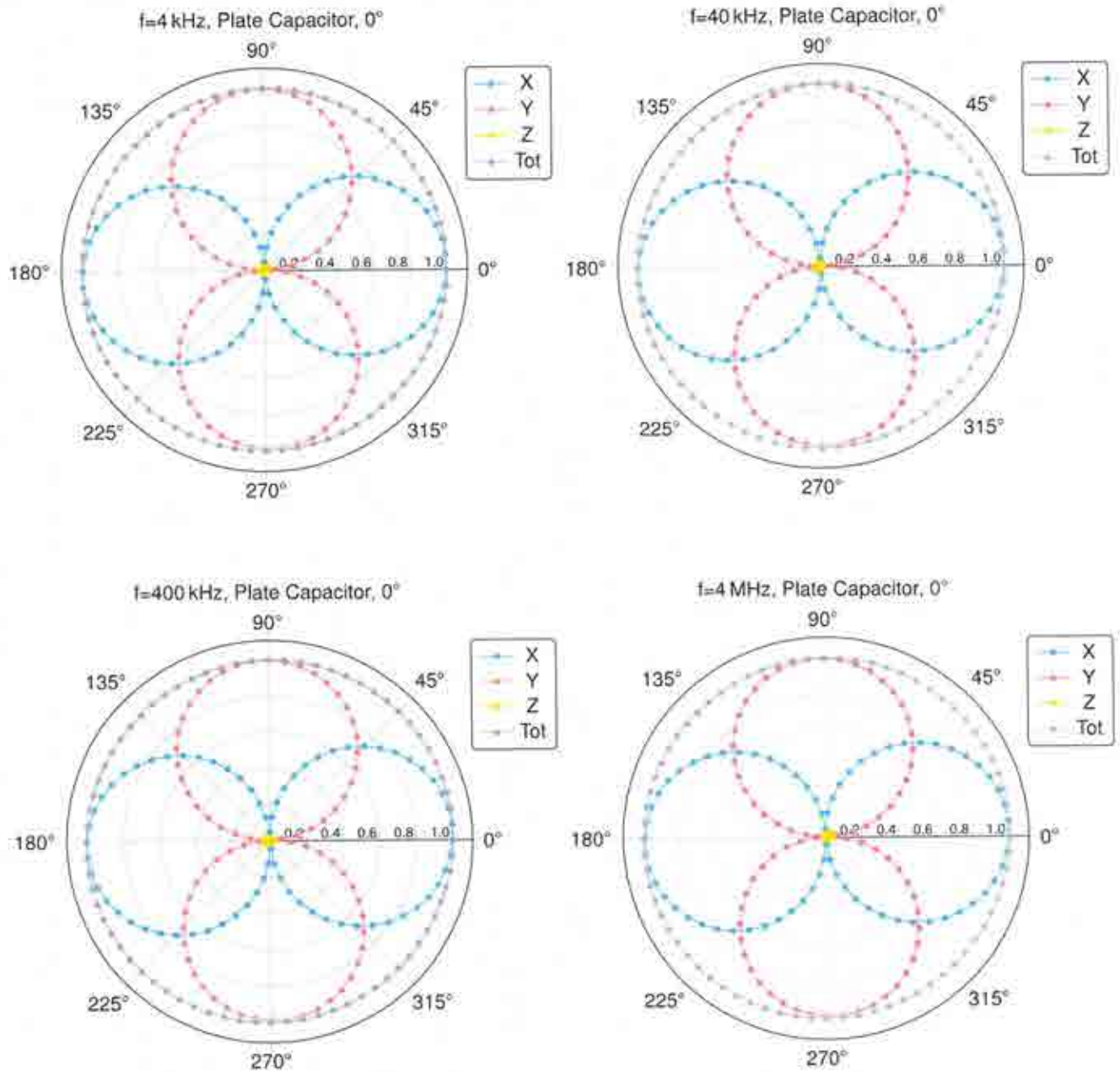
### H-Field Receiving Pattern ( $\phi$ ), $\theta = 90^\circ$



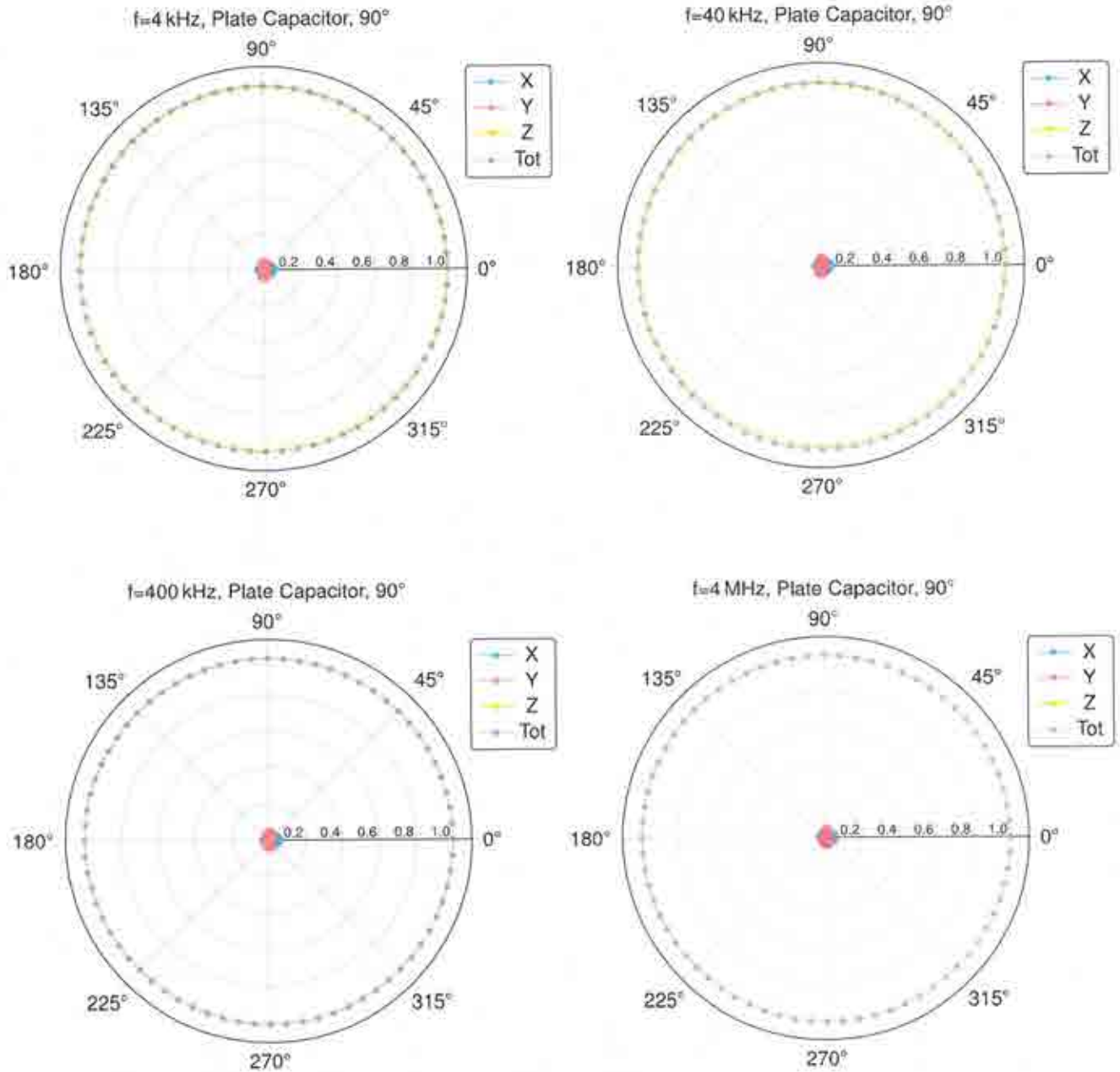
SPEAG axial deviation from the ideal response tolerance for H-field:  $\pm 0.6$  dB

## Isotropy E-Field

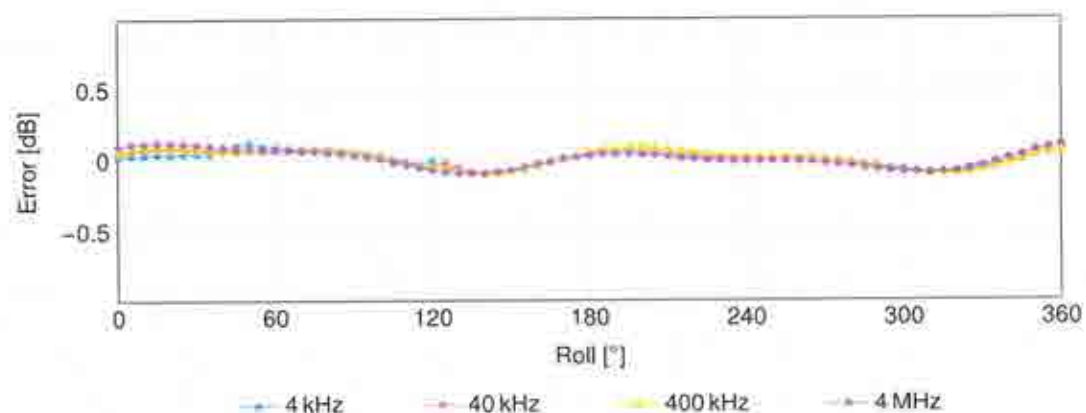
### E-Field Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$



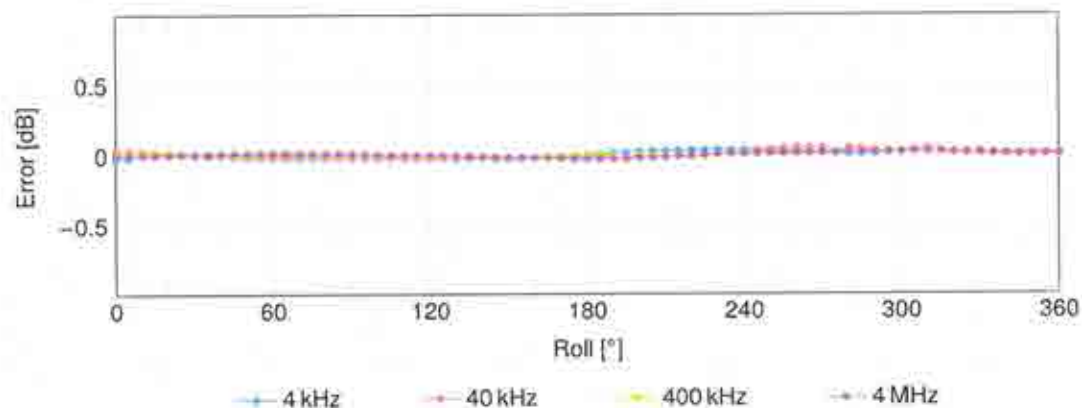
**E-Field Receiving Pattern ( $\phi$ ),  $\vartheta = 90^\circ$**



### E-Field Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$



### E-Field Receiving Pattern ( $\phi$ ), $\vartheta = 90^\circ$



SPEAG axial deviation from the ideal response tolerance for E-field:  $\pm 0.8$  dB

Client **Sporton**  
**Taoyuan**

Certificate No: **V-Coil350/85V2-**  
**1023\_May24**

## CALIBRATION CERTIFICATE

Object **V-Coil350/85V2 - SN: 1023**

Calibration procedure(s) **QA CAL-47.v13**  
**Calibration Procedure for WPT Verification & Validation Sources**

Calibration date: **May 22, 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  $(22 \pm 3)^{\circ}\text{C}$  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: 3089/3079 | 17-Nov-23 (MAGPy-8H3D+E3D-3089) | Nov-24                |

| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
|---------------------|------|-----------------------|-----------------|
|---------------------|------|-----------------------|-----------------|

|                | Name        | Function          | Signature                                                                             |
|----------------|-------------|-------------------|---------------------------------------------------------------------------------------|
| Calibrated by: | Jingtian Xi | Project Leader    |  |
| Approved by:   | Sven Kühn   | Technical Manager |  |

Issued: May 29, 2024

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

**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      | 2.4.0.2                          |
|                   | Sim4Life          | 7.2.4                            |
| Scan setup        | Grid dimensions   | x: 477 mm, y: 389 mm, z: 36.7 mm |
|                   | Grid resolutions  | dx, dy, dz: 7.33 mm              |
| Nominal frequency | 85 kHz            |                                  |

## Calibrated Quantities

| Distance (relative to source surface) (mm) | Peak H-field (A/m) | Uncertainty (k=2) (dB) |
|--------------------------------------------|--------------------|------------------------|
| 0                                          | 208                | 1.13                   |
| 2                                          | 189                | 1.13                   |

## Appendix (Additional assessments outside the scope of SCS 0108)

### Peak values of induced fields<sup>1</sup>

| Distance<br>(relative to<br>source surface)<br>(mm) | Induced<br>peak current<br>density, 1cm <sup>2</sup> area<br>avg. (A/m <sup>2</sup> ) | Induced peak E-field (V/m) |       |                  | peak spatial SAR (mW/kg) |          |
|-----------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------|-------|------------------|--------------------------|----------|
|                                                     |                                                                                       | 2mm cube<br>avg.           | Local | 5mm line<br>avg. | 1g avg.                  | 10g avg. |
| 0                                                   | 2.35                                                                                  | 3.35                       | 3.38  | 3.39             | 6.50                     | 4.84     |
| 2                                                   | 2.22                                                                                  | 3.15                       | 3.18  | 3.19             | 5.81                     | 4.38     |

### Voltage measurement

| Total voltage (V) | Voltages at harmonics (dBc)                                        |
|-------------------|--------------------------------------------------------------------|
| 0.414             | Highest harmonic: -40.1<br>2 <sup>nd</sup> highest harmonic: -48.0 |

<sup>1</sup> determined for a virtual half-space phantom with tissue properties  $\epsilon_r = 55$ ,  $\sigma = 0.75$  S/m,  $\rho = 1000$  kg/m<sup>3</sup>

# Measurement report

## cDASY6 Module WPT Measurement Report

### Device under test

Info:  
V-Coil350/85

Serial number:  
1023

Scenario:  
source calibration

### Tool info

DASY software version:  
cDASY6 Module WPT 2.4.0.4346

Probe model, serial no. and configuration data:  
MAGPy-8H3D+E3Dv2, WP000231, 2024/01/10

Software version:  
2.0.49, backend: 2.2.3

### Scan info

Center location:  
x: -48.08 mm, y: -119.86 mm, z: 35.63 mm

Dimensions:  
x: 477.0 mm, y: 398.0 mm, z: 36.7 mm

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

Completed on:  
2024/05/22 21:39:05

### Measurement results

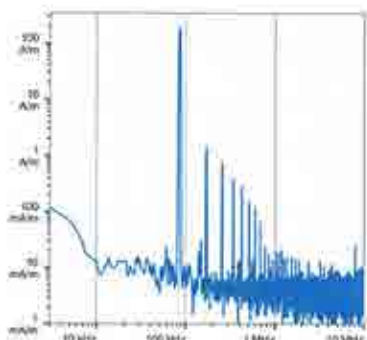
Maximum H-field [rms]:  
MAGNITUDE: 131.92 A/m  
x: 113.01 A/m, y: 32.68 A/m, z: 59.70 A/m

Maximum H-field location relative to DUT:  
x: 157.67 mm, y: -25.67 mm, z: 8.50 mm

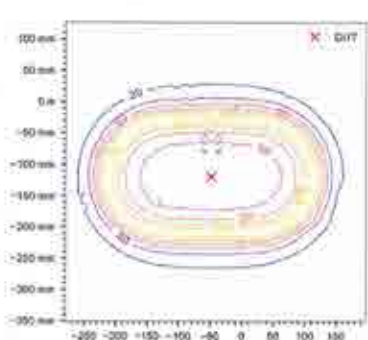
Distance to -20.0 dB boundary:  
51.33 mm

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 quantities in the anatomical model ( f = 85.00 MHz,  $\sigma = 0.750 \text{ S/m}$ , tissue density =  $1.000 \text{ kg/m}^3$  )

| Distance [mm] | Peak incident fields [rms] | Peak $E_{\text{ind}}$ [V/m, rms] |       |           | Peak $J_{\text{ind}}$ [ $\text{A/m}^2$ , rms] | psSAR [mW/kg] |          | H-field extent     | Sign | Vector potential | Errors Boundary offset |
|---------------|----------------------------|----------------------------------|-------|-----------|-----------------------------------------------|---------------|----------|--------------------|------|------------------|------------------------|
|               | $H_{\text{inc}}$ [A/m]     | Cube avg.                        | Local | Line avg. | Surface avg.                                  | 1g avg.       | 10g avg. | -20 dB radius [mm] |      |                  |                        |
| 0.0           | 208.0                      | 3.35                             | 3.38  | 3.39      | 2.35                                          | 6.5           | 4.84     | 182.0              | 1%   | 0.7%             | 36%                    |
| 2.0           | 189.0                      | 3.15                             | 3.18  | 3.19      | 2.22                                          | 5.81          | 4.38     | 184.0              | 1%   | 0.7%             | 38%                    |

### Standard compliance evaluation, Absolute

| Distance | ICNIRP 2010/2020 |                  |         | ICNIRP 1998      |                    |         | IEEE 2019        |                  |         | FCC              |                  |         | HC Code 6        |                  |         |
|----------|------------------|------------------|---------|------------------|--------------------|---------|------------------|------------------|---------|------------------|------------------|---------|------------------|------------------|---------|
|          | RL [rms]         | BR [rms]         | psSAR   | RL [rms]         | BR [rms]           | psSAR   | ERL [rms]        | DRL [rms]        | psSAR   | MPE [rms]        | BR [rms]         | psSAR   | RL [rms]         | BR [rms]         | psSAR   |
| 0.0      | $H_{\text{inc}}$ | $E_{\text{ind}}$ |         | $H_{\text{inc}}$ | $J_{\text{ind}}$   |         | $H_{\text{inc}}$ | $E_{\text{ind}}$ |         | $H_{\text{inc}}$ | $E_{\text{ind}}$ |         | $H_{\text{inc}}$ | $E_{\text{ind}}$ |         |
| [mm]     | [A/m]            | [V/m]            | [mW/kg] | [A/m]            | [ $\text{A/m}^2$ ] | [mW/kg] | [A/m]            | [V/m]            | [mW/kg] | [A/m]            | [V/m]            | [mW/kg] | [A/m]            | [V/m]            | [mW/kg] |
| 0.0      | 208.0            | 3.35             | 4.84    | 208.0            | 2.35               | 4.84    | 208.0            | 3.39             | 4.84    | 208.0            | N/A              | 6.5     | 208.0            | 3.38             | 6.5     |
| 2.0      | 189.0            | 3.15             | 4.38    | 189.0            | 2.22               | 4.38    | 189.0            | 3.19             | 4.38    | 189.0            | N/A              | 5.81    | 189.0            | 3.18             | 5.81    |

### Standard compliance evaluation, Relative

| Distance | ICNIRP 2010/2020 [dB] |                  |       | ICNIRP 1998 [dB] |                  |       | IEEE 2019 [dB]   |                  |       | FCC [dB]         |                  |       | HC Code 6 [dB]   |                  |       |
|----------|-----------------------|------------------|-------|------------------|------------------|-------|------------------|------------------|-------|------------------|------------------|-------|------------------|------------------|-------|
|          | RL                    | BR               | psSAR | RL               | BR               | psSAR | ERL              | DRL              | psSAR | MPE              | BR               | psSAR | RL               | BR               | psSAR |
| [mm]     | $H_{\text{inc}}$      | $E_{\text{ind}}$ |       | $H_{\text{inc}}$ | $J_{\text{ind}}$ |       | $H_{\text{inc}}$ | $E_{\text{ind}}$ |       | $H_{\text{inc}}$ | $E_{\text{ind}}$ |       | $H_{\text{inc}}$ | $E_{\text{ind}}$ |       |
| 0.0      | 19.9                  | -10.7            | -26.2 | 32.4             | 22.6             | -26.2 | 2.1              | -14.4            | -26.2 | 7.3              | N/A              | N/A   | 27.7             | -10.6            | -23.9 |
| 2.0      | 19.1                  | -11.2            | -26.6 | 31.5             | 22.3             | -26.6 | 1.3              | -14.9            | -26.6 | 6.4              | N/A              | N/A   | 26.8             | -11.1            | -24.4 |

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