



DASY5 E-field Result

Date: 24.08.2021

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 2450 MHz; Type: CD2450V3; Serial: CD2450V3 - SN: 1021

Communication System: UID 0 - CW ; Frequency: 2450 MHz Medium parameters used: $\sigma = 0$ S/m, $\epsilon_r = 1$; $\rho = 0$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

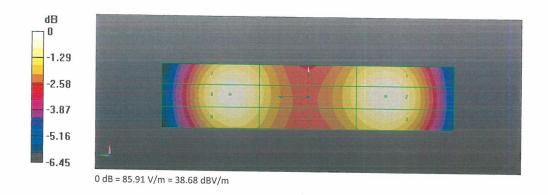
DASY52 Configuration:

- Probe: EF3DV3 SN4013; ConvF(1, 1, 1) @ 2450 MHz; Calibrated: 28.12.2020
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 23.12.2020
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole E-Field measurement @ 2450MHz/E-Scan - 2450MHz d=15mm/Hearing Aid Compatibility Test (41x181x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm Device Reference Point: 0, 0, -6.3 mm

Reference Value = 74.90 V/m; Power Drift = -0.00 dB Applied MIF = 0.00 dB RF audio interference level = 38.68 dBV/m Emission category: M2

MIF scaled E-fi	eld	
Grid 1 M2 38.52 dBV/m	1	Grid 3 M2 38.44 dBV/m
Grid 4 M2 37.64 dBV/m		Grid 6 M2 37.55 dBV/m
Grid 7 M2 38.42 dBV/m		Grid 9 M2 38.3 dBV/m



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Certificate No: CD2450V3-1021_Aug21

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Dipole 2600 MHz

•	ervice (SAS) ne of the signatories to	the EA	editation No.: SCS 0108
nt CTTL (Auden)	nition of calibration cer	Certificate No: (CD2600V3-1017_Aug21
ALIBRATION CE	RTIFICATE		
oject	CD2600V3 - SN: 1	017	
alibration procedure(\$)	QA CAL-20.v7 Calibration Procee	dure for Validation Sources in air	
alibration date:	August 24, 2021		
he measurements and the uncertai	nties with confidence pro	nal standards, which realize the physical units obability are given on the following pages and y facility: environment temperature (22 ± 3)°C	
Calibration Equipment used (M&TE			
Primary Standards		Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22 Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344) 28-Dec-20 (No. EF3-4013_Dec20)	Dec-21
Probe EF3DV3 DAE4	SN: 4013 SN: 781	23-Dec-20 (No. DAE4-781_Dec20)	Dec-21
Secondary Standards	ID #	Check Date (in house)	Scheduled Check In house check: Oct-23
Power meter Agilent 4419B	SN: GB42420191	09-Oct-09 (in house check Oct-20)	In house check: Oct-23
Power sensor HP E4412A	SN: US38485102	05-Jan-10 (in house check Oct-20) 09-Oct-09 (in house check Oct-20)	In house check: Oct-23
	SN: US37295597	10-Jan-19 (in house check Oct-20)	In house check: Oct-23
Power sensor HP 8482A	SN: 837633/005 SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-21
Power sensor HP 8482A RF generator R&S SMT-06		Function	Signature
Power sensor HP 8482A	Name	Laboratory Technician	Saller
Power sensor HP 8482A RF generator R&S SMT-06	Name Leif Klysner	Laboratory recumotar	
Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	and the second	Technical Manager	N.Kos
Power sensor HP 8482A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by:	Leif Klysner		N. 4655 Issued: August 25, 2021





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



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

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

References

- ANSI-C63.19-2019 (ANSI-C63.19-2011) [1]
- American National Standard, Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 15 mm above the top metal edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E-field distribution: E field is measured in the x-y-plane with an isotropic E-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 15 mm (in z) above the metal top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any nonparallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, in the plane above the dipole surface.

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%.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

Jii page 1.	
DASY5	V52.10.4
HAC Test Arch	
15 mm	
dx, dy = 5 mm	
2600 MHz ± 1 MHz	
< 0.05 dB	
	DASY5 HAC Test Arch 15 mm dx, dy = 5 mm 2600 MHz ± 1 MHz

Maximum Field values at 2600 MHz

E-field 15 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW input power	85.5 V/m = 38.64 dBV/m
Maximum measured above low end	100 mW input power	85.0 V/m = 38.59 dBV/m
Averaged maximum above arm	100 mW input power	85.2 V/m ± 12.8 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters

Frequency	Return Loss	Impedance
2450 MHz	24.2 dB	44.3 Ω + 1.2 jΩ
2550 MHz	22.5 dB	57.0 Ω + 3.9 jΩ
2600 MHz	20.8 dB	59.5 Ω - 3.2 jΩ
2650 MHz	19.6 dB	55.3 Ω - 9.7 jΩ
2750 MHz	15.3 dB	41.0 Ω - 12.9 jΩ

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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Impedance Measurement Plot

ile <u>V</u> iew	<u>C</u> hannel	Sw <u>e</u> ep	Calibration	<u>Trace</u> <u>S</u> ca	ale M <u>a</u> rker	System	<u>W</u> indow	Help		
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2.00		-						- 21	2.550000 GHz	22.538 d8
-3.00							-	> 3; 4;	2.600000 GHz 2.650000 GHz	<u>-20.760 dE</u> -19.626 dE
-8.00								5	-2 50000 GHz	-15.626 06 -15.346 dF
-13.00			-				-	-		
-18.00										
-23.00				1						
				2	2					
-28.00										
-33.00										
-38.00										
43.00	Ch 1 Avg =									
Ch1: 9	Start 2.10000	GHz —							Stop	3.10000 GH
										0.10000 011
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				/	$\langle \rangle$	F	A	1:	2.450000 GHz 76.801 pH 2.550000 GHz	44.316 0 1.1823 0 57.002 0
						Ð	A	2:	2.450000 GH₂ 76.801 pH 2.550000 GH₂ 240.74 pH	44.316 0 1.1823 0 57.002 0 3.8571 0
					K	F			2.450000 GHz 76.801 pH 2.550000 GHz 240.74 pH 2.600000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G
			iteration and a second s		Æ	F.		2:	2.450000 GH₂ 76.801 pH 2.550000 GH₂ 240.74 pH	44.316 0 1.1823 0 57.002 0 3.8571 0 59.518 0 -3.1898 0
				6	X	E A		2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240.74 pH 2.600000 GHz 13.190 pF 2.650000 GHz 6.2104 pF	44.316 0 1.1823 0 57.002 0 3.8571 0 59.518 0 -3.1898 0 55.331 0 -9.6706 0
				6	X	E C C C C C C C C C C C C C C C C C C C		2: >3:	2.450000 GHz 76.801 pH 2.550000 GHz 240,74 pH 2.600000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
				6	X			2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240.74 pH 2.600000 GHz 13.190 pF 2.650000 GHz 6.2104 pF	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
				6	X			2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240,74 pH 2.600000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
								2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240,74 pH 2.600000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
					X			2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240,74 pH 2.600000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
	Ch 1 Avra =	20			X			2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240,74 pH 2.600000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz	44.316 G 1.1823 G 57.002 G 3.8571 G 59.518 G -3.1898 G 55.331 G -9.6706 G 40.981 G
Ch1: 5	Ch 1 Avg = Start 2.10000				X			2: >3: 4:	2.450000 GHz 76.801 pH 2.550000 GHz 240.74 pH 2.650000 GHz 19.190 pF 2.650000 GHz 6.2104 pF 2.750000 GHz 4.5028 pF	44.316 G 1.1823 G 57.002 (3.8571 G 58.518 G -3.1886 (55.331 G -55.331 G -9.6706 G 40.981 G -12.853 G

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DASY5 E-field Result

Date: 24.08.2021

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 2600 MHz; Type: CD2600V3; Serial: CD2600V3 - SN: 1017

Communication System: UID 0 - CW ; Frequency: 2600 MHz Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

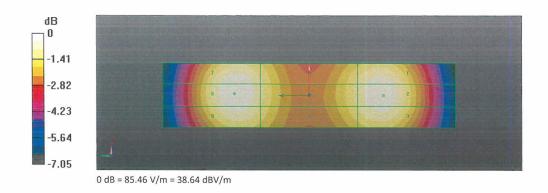
- Probe: EF3DV3 SN4013; ConvF(1, 1, 1) @ 2600 MHz; Calibrated: 28.12.2020
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 23.12.2020
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole E-Field measurement @ 2600MHz/E-Scan - 2600MHz d=15mm/Hearing Aid Compatibility Test (41x181x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm

Device Reference Point: 0, 0, -6.3 mm Reference Value = 67.89 V/m; Power Drift = 0.01 dB Applied MIF = 0.00 dB RF audio interference level = 38.64 dBV/m **Emission category: M2**

MIF scaled E-field

Grid 1 M2	Grid 2 M2	Grid 3 M2
	38.59 dBV/m	
Grid 4 M2	Grid 5 M2	Grid 6 M2
37.84 dBV/m	37.9 dBV/m	37.76 dBV/m
Grid 7 M2	Grid 8 M2	Grid 9 M2
38.53 dBV/m	38.64 dBV/m	38.39 dBV/m



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Dipole 2600 MHz

Schweizerischer Kalibrierdienst S Calibration Laboratory of Service suisse d'étalonnage С Servizio svizzero di taratura Schmid & Partner ac-MR S Swiss Calibration Service Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland Accreditation No.: SCS 0108 Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates Certificate No: CD3500V3-1008_Aug21 CTTL (Auden) Client CALIBRATION CERTIFICATE CD3500V3 - SN: 1008 Object QA CAL-20.v7 Calibration Procedure for Validation Sources in air Calibration procedure(s) August 24, 2021 Calibration date: This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate. All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%. Calibration Equipment used (M&TE critical for calibration) Scheduled Calibration Cal Date (Certificate No.) ID # Primary Standards Apr-22 09-Apr-21 (No. 217-03291/03292) SN: 104778 Apr-22 Power meter NRP 09-Apr-21 (No. 217-03291) Power sensor NRP-Z91 SN: 103244 Apr-22 09-Apr-21 (No. 217-03292) SN: 103245 Power sensor NRP-Z91 Apr-22 09-Apr-21 (No. 217-03343) SN: BH9394 (20k) Reference 20 dB Attenuator Apr-22 09-Apr-21 (No. 217-03344) SN: 310982 / 06327 Type-N mismatch combination Dec-21 28-Dec-20 (No. EF3-4013_Dec20) SN: 4013 Dec-21 Probe EF3DV3 23-Dec-20 (No. DAE4-781_Dec20) SN: 781 DAE4 Scheduled Check Check Date (in house) ID # In house check: Oct-23 Secondary Standards 09-Oct-09 (in house check Oct-20) SN: GB42420191 Power meter Agilent 4419B In house check: Oct-23 05-Jan-10 (in house check Oct-20) SN: US38485102 In house check: Oct-23 Power sensor HP E4412A 09-Oct-09 (in house check Oct-20) SN: US37295597 Power sensor HP 8482A In house check: Oct-23 10-Jan-19 (in house check Oct-20) SN: 837633/005 In house check: Oct-21 RF generator R&S SMT-06 31-Mar-14 (in house check Oct-20) SN: US41080477 Network Analyzer Agilent E8358A Signature Function Name Laboratory Technician Leif Klysner Calibrated by: Technical Manager Katja Pokovic Approved by: Issued: August 27, 2021 This calibration certificate shall not be reproduced except in full without written approval of the laboratory Page 1 of 5 Certificate No: CD3500V3-1008_Aug21





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



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

Accreditation No.: SCS 0108

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References

American National Standard, Methods of Measurement of Compatibility between Wireless Communications ANSI-C63.19-2019 (ANSI-C63.19-2011) [1] Devices and Hearing Aids.

Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1], the measurement planes (probe sensor center) are selected to be at a distance of 15 mm above the top metal edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy
- Feed Point Impedance and Return Loss: These parameters are measured using a Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E-field distribution: E field is measured in the x-y-plane with an isotropic E-field probe with 100 mW forward power to the antenna feed point. In accordance with [1], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 15 mm (in z) above the metal top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any nonparallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, in the plane above the dipole surface.

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%.

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Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.4
Phantom	HAC Test Arch	
Distance Dipole Top - Probe Center	15 mm	
Scan resolution	dx, dy = 5 mm	
Frequency	3500 MHz ± 1 MHz	
Input power drift	< 0.05 dB	

Maximum Field values at 3500 MHz

E-field 15 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW input power	84.4 V/m = 38.53 dBV/m
Maximum measured above low end	100 mW input power	83.4 V/m = 38.42 dBV/m
Averaged maximum above arm	100 mW input power	83.9 V/m ± 12.8 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters

Frequency	Return Loss	Impedance
3300 MHz	18.6 dB	62.6 Ω + 3.9 jΩ
3400 MHz	23.3 dB	55.5 Ω - 4.7 jΩ
3500 MHz	23.9 dB	52.5 Ω - 6.1 jΩ
3600 MHz	21.2 dB	46.7 Ω - 7.8 jΩ
3700 MHz	20.2 dB	41.3 Ω - 2.1 jΩ

3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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Impedance Measurement Plot

<u>File ⊻</u> iew	<u>C</u> hannel	Sw <u>e</u> ep	Calibration	<u>T</u> race <u>S</u> cal	le M <u>a</u> rker	S <u>y</u> stem	<u>W</u> indow	<u>H</u> elp		
9.00	dB S11						1	1:	3.300000 GHz	-18.611 dB
4.00								2: >3)	3.\$00000 GHz	-23.871 dB
-1.00		1						4:	3.800000 GHz	-21.209 dB
-6.00								5:	3 350000 GHz	-19 407 dB
-11.00		-					_			-
-16.00			-							
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-41.00 Ch1+S	Ch 1 Avg = tart 3.00000 (l			- Chur	4.20000 GHz
	tan 5.00000 (una							SLOP	4.20000 GH2
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				h	$I \propto$	X	11	> 3:	3.500000 GHz	-4.7142 Ω 52.496 Ω
					$\angle \searrow$	X			3.500000 GHz 7.4764 pF	52.496 Ω -6.0823 Ω
				h	44	A	5A	> 3: 4:	3.500000 GHz 7.4764 pF 3.600000 GHz	52.496 Ω -6.0823 Ω 46.749 Ω
				A	4	X			3.500000 GHz 7.4764 pF	52.496 Ω -6.0823 Ω
				A		X		4:	3,500000 GHz 7,4764 pF 3,600000 GHz 5,6724 pF	52,496 Ω -6,0823 Ω -46,749 Ω -7,7939 Ω
				A	Æ		Ì	4:	3.500000 GHz 7.4764 pF 3.600000 GHz 5.6724 pF 3.950000 GHz	52,496 Ω -6,0823 Ω 46,749 Ω -7,7939 Ω 52,553 Ω
				P	X		Ì	4:	3.500000 GHz 7.4764 pF 3.600000 GHz 5.6724 pF 3.950000 GHz	52,496 Ω -6,0823 Ω 46,749 Ω -7,7939 Ω 52,553 Ω
				Q		X	Ì	4:	3.500000 GHz 7.4764 pF 3.600000 GHz 5.6724 pF 3.950000 GHz	52,496 Ω -6,0823 Ω 46,749 Ω -7,7939 Ω 52,553 Ω
	Ch 1 Avg =			Q	X		Ì	4:	3.500000 GHz 7.4764pF 3.600000 GHz 5.6724pF 3.950000 GHz 432.67pH	52,496 Ω 46,0823 Ω 46,749 Ω -7,7939 Ω 52,553 Ω 10,738 Ω
Ch1: S	Ch 1 Avg≈ tart 3.00000		-	Q				4:	3.500000 GHz 7.4764pF 3.600000 GHz 5.6724pF 3.950000 GHz 432.67pH	52,496 Ω -6,0823 Ω 46,749 Ω -7,7939 Ω 52,553 Ω

Certificate No: CD3500V3-1008_Aug21

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DASY5 E-field Result

Date: 24.08.2021

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 3500 MHz; Type: CD3500V3; Serial: CD3500V3 - SN: 1008

Communication System: UID 0 - CW ; Frequency: 3500 MHz Medium parameters used: $\sigma = 0$ S/m, $\varepsilon_r = 1$; $\rho = 0$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

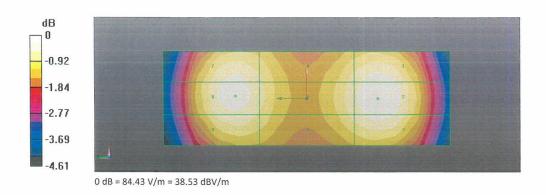
- Probe: EF3DV3 SN4013; ConvF(1, 1, 1) @ 3500 MHz; Calibrated: 28.12.2020
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 23.12.2020
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Reference Dipole E-Field measurement @ 3500MHz/E-Scan - 3500MHz d=15mm/Hearing Aid Compatibility Test (41x121x1): Interpolated grid: dx=0.5000 mm, dy=0.5000 mm Device Reference Point: 0, 0, -6.3 mm

Reference Value = 35.48 V/m; Power Drift = 0.02 dB Applied MIF = 0.00 dB RF audio interference level = 38.53 dBV/m Emission category: M2

MIF scaled E-field

C.1.1.4 842	0.110.000	0.112.042
Grid 1 M2	Grid 2 M2	Grid 3 M2
38.4 dBV/m	38.53 dBV/m	38.33 dBV/m
Grid 4 M2	Grid 5 M2	Grid 6 M2
38.08 dBV/m	38.18 dBV/m	38.02 dBV/m
Grid 7 M2	Grid 8 M2	Grid 9 M2
38.33 dBV/m	38.42 dBV/m	38.17 dBV/m



Certificate No: CD3500V3-1008_Aug21

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The photos of HAC test are presented in the additional document:

Appendix to test report No.I22Z60589-SEM01/02

The photos of HAC test