

TEST REPORT

Test Report No.: 1-8286/23-02-05_TR1-R01



Deutsche
Akkreditierungsstelle
D-PL-12047-01-00

Testing Laboratory

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Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2018-03) by the Deutsche Akkreditierungsstelle GmbH (DAkkS).

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12047-01-00.

ISED Testing Laboratory Recognized Listing Number: DE0001

FCC designation number: DE0002

Applicant

Gigaset Technologies GmbH

Frankenstr. 2

46395 Bocholt/GERMANY

Phone: +49 2871 91-0

Contact: Timo Saturna

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Manufacturer

Gigaset Technologies GmbH

Frankenstr. 2

46395 Bocholt/GERMANY

Test standard/s

**CS-03, Part V, Issue 9,
Amendment 3 August 2021**

**Requirements and Test Methods for Magnetic Output from Handset Telephones for
Hearing Aid Coupling and for Receive Volume Control**

FCC - Title 47 CFR Part 68

**Subpart D, Conditions for Terminal Equipment Approval,
§ 68.316 Hearing aid compatibility: Technical Requirements,
§ 68.317 Hearing aid compatibility volume control: technical standards**

Product

Kind of product: DECT Device (PP)

Product name: Gigaset R700H PRO US, Gigaset R700H PROTECT PRO US



Test report authorised:



Luckenbill, Andreas
Head of Radio and SAR Services

Test performed:



Wolf, Joachim
Head of New Services

1 Table of contents

1	Table of contents.....	2
2	General information.....	3
3	Test standard/s	3
4	Test environment	4
5	Test laboratories sub-contracted.....	4
6	Test setup	5
7	Information about product	9
8	Summary of measurement results	10
9	Detailed test results.....	11
10	Observations.....	24
Annex A	Photographs of the test set-up	25
Annex B	Photographs of the EUT.....	27
Annex C	Document history	28
Annex D	Further information	28

2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. cetecom advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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2.2 Application details

Date of receipt of order:	2024-12-10
Date of receipt of test item:	2025-01-02
Start of test:	2025-01-09
End of test:	2025-01-15
Person(s) present during the test:	%

3 Test standard/s

Test standard	Version	Test standard description
CS-03, Part V, Issue 9, Amendment 3 August 2021	01.08.2021	Requirements and Test Methods for Magnetic Output from Handset Telephones for Hearing Aid Coupling and for Receive Volume Control
FCC - Title 47 CFR Part 68		Subpart D, Conditions for Terminal Equipment Approval, § 68.316 Hearing aid compatibility: Technical Requirements, § 68.317 Hearing aid compatibility volume control: technical standards

4 Test environment

Temperature:	18-28°C
Relative humidity content:	10-80%
Atmospheric pressure:	813-1063hPa
Power supply:	230 V / 50 Hz

5 Test laboratories sub-contracted

6 Test setup

6.1 Used Equipment

Diagram for acoustic measurements:

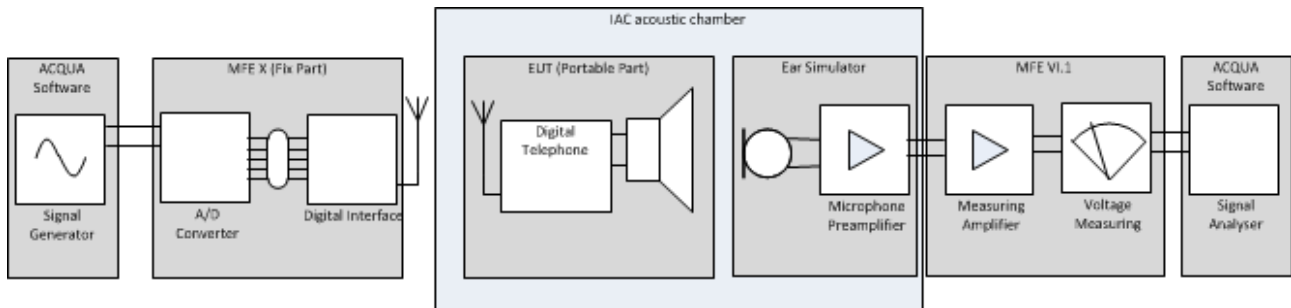
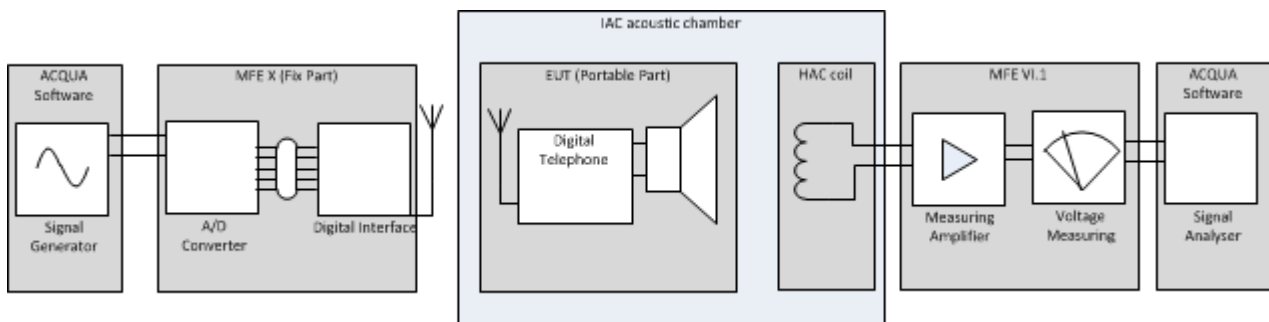


Diagram for inductive measurements:



Software:

No.	Name	Manufacturer	Version
1	ACQUA	HEADacoustics	4.0.200

Hardware:

No.	Equipment	Manufacturer	Type	Serial-No.	Kind of Calib.	Last Calib.	Next Calib.
1	HATS	HEADacoustics	HMS II.3	12306143	Vlkl!	2020-09-28	2025-09-27
2	Analog USB Front End	HEADacoustics	MFE VI.1	64626004	vlkl!	2023-12-05	2025-12-05
3	Digital Front End for DECT	HEADacoustics	MFE X	64680007	ne	--	--
4	HAC Probe - Axial	Communication Certification Laboratory	Model A-100	0123	ne	--	--
5	HAC Probe - Radial	Communication Certification Laboratory	Model R-100	0123	ne	--	--
6	Audio Analyzer	Rohde & Schwarz	UPV	104301	k	2024-01-10	2026-01-10
7	Audio Magnetic Calibration Coil	Schmid & Partner	AMCC	1007	ne	--	--

Agenda: Kind of Calibration

k calibration / calibrated
 ne not required (k, ev, izw, zw not required)
 ev periodic self verification
 Ve long-term stability recognized
 vlkl! Attention: extended calibration interval
 NK! Attention: not calibrated

EK limited calibration
 zw cyclical maintenance (external cyclical maintenance)
 izw internal cyclical maintenance
 g blocked for accredited testing
 *) next calibration ordered / currently in progress

6.2 Measurement uncertainty (MU) budgets

6.2.1 MU budget for 0dB Pa adjustment and maximum gain measurement

Symbol	Source X_i	$U(x_i)$ in dB	Distribution	Divisor	$u(x_i)$ in dB	c_i	$c_i u_i(y)$	$c_i^2 u_i(y)^2$
K_{mic_offset}	Correction value of the analyzer for dB (SPL/V) correction	0.00	Normal	2	0.000	1	0.000	0.000
K_{ear}	Correction value for ear simulator	0.1	Normal	2	0.05	1	0.05	0.003
L_{Va}	Voltage level analyzer	0.05	Normal	2	0.025	1	0.025	0.001
L_{Vg}	Voltage level generator	0.05	Normal	2	0.025	1	0.025	0.001
$\sum c_i^2 u_i(y)^2$								0.004
$u(y) = \sqrt{\sum c_i^2 u_i(y)^2}$								0.061
Expanded MU $U = u(y) \times k, k = 2$								0.122 dB

6.2.2 MU budget for magnetic field measurement

Symbol	Source X_i	$U(x_i)$ in dB	Distribution	Divisor	$u(x_i)$ in dB	c_i	$c_i u_i(y)$	$c_i^2 u_i(y)^2$
K_{ind_offset}	Correction value for HAC coil	0.13	Normal	2	0.065	1	0.065	0.004
L_{Va}	Voltage level analyzer	0.05	Normal	2	0.025	1	0.025	0.001
L_{Vg}	Voltage level generator	0.05	Normal	2	0.025	1	0.025	0.001
$\sum c_i^2 u_i(y)^2$								0.005
$u(y) = \sqrt{\sum c_i^2 u_i(y)^2}$								0.074
Expanded MU $U = u(y) \times k, k = 2$								0.148 dB

6.3 Used Artificial Ears

HATS (Head and Torso Simulator):

Ear Type 3.3: IEC 60711 + Pinna simulator (anatomically shaped)	✓
Ear Type 3.4: IEC 60711 + Pinna simulator (simplified anatomically shaped)	

6.4 Used Audio Codec(s)

Narrowband:

G.711 a-law	
G.711 u-law	
G.726	✓
G.729	

Wideband:

G.722	
G.729.1	

6.5 HAC probe verification

The HAC probes were validated with a Schmid & Partner AMCC Audio Magnetic Calibration Coil in combination with a Rohde & Schwarz UPV audio analyzer.

Probe Type	Reference Field Strength	Probe Sensitivity
A-100	1 A/m	-59.6 dBV / (A/m)
R-100	1 A/m	-59.6 dBV / (A/m)

7 Information about product

Kind of product:	DECT Device (PP)		
Test Item:	Gigaset R700H PRO US, Gigaset R700H PROTECT PRO US		
Serial number:	HAC sample		
Hardware version:	-/-		
Software version:	-/-		
MECRP	delta from ECRP		
	y-axis	0mm	
	x-axis	0mm	
Angle settings	delta from standard angle		
	A	0°	
	B	0°	
	C	0°	
Application force	10 N		
Operating mode:			
Narrow band call has been established			
Additional information:			
-/-			

8 Summary of measurement results

☒	No deviations from the technical specifications were ascertained
☐	There were deviations from the technical specifications ascertained

8.1 Requirements Table

No	Test description	Reference CS-03 Part V	Reference FCC part 68	Selected	Verdict
1	Axial Field intensity	8.1.1	§ 68.316	✓	PASS
2	Radial Field intensity	8.1.2	§ 68.316	✓	PASS
3	Magnetic Field Intensity Frequency Response	8.1.3	§ 68.316	✓	PASS
4	Telephone Receive Volume Control	9.1	§ 68.317	✓	PASS
	Total				PASS

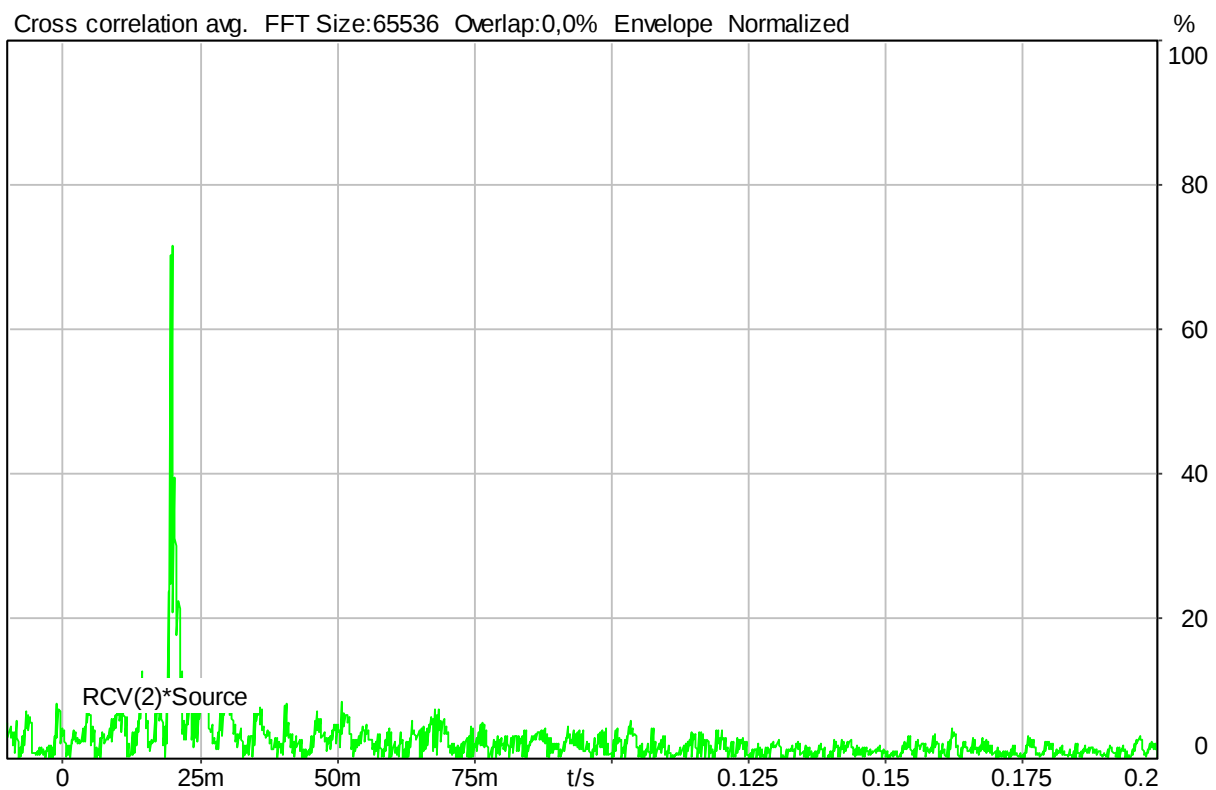
9 Status Overview

SMD	Status	Single Value Description	Single Value
Delay in Receiving Direction	Done	Delay (Cross) [ms]	20.1
Ref_Gain	Done	Calculated Value	-6.30
Reference Measurement 0 dBPa	Done	Level [dBPa]. 0	0.02
8.1.1 Axial Field Intensity	Ok	Level [dBV]. 0	-12.49
8.1.2 Radial Field Intensity 0 Degree	Ok	Level [dBV]. 0	-23.65
8.1.2 Radial Field Intensity 90 Degree	Ok	Level [dBV]. 0	-20.97
8.1.2 Radial Field Intensity 180 Degree	Ok	Level [dBV]. 0	-22.33
8.1.2 Radial Field Intensity 270 Degree	Ok	Level [dBV]. 0	-23.62
8.1.3 Magnetic Field Response ≥ -19 dB	Done	Max. Peak value [dB[V]]. 3363.3 Hz	-24.87
8.1.3 Magnetic Field Response rel. to 1kHz	Ok	Min. dist. to tolerance scheme [V], 984,4 Hz	2.05
9.1 max. Conversational Gain	Ok	Corrected value [dB20 μ Pa]. 0	22.92

10 Detailed test results

Delay in Receiving Direction	13
Ref_Gain	14
Reference Measurement 0 dBPa	15
8.1.1 Axial Field Intensity	16
8.1.2 Radial Field Intensity 0 Degree.....	17
8.1.2 Radial Field Intensity 90 Degree.....	18
8.1.2 Radial Field Intensity 180 Degree.....	19
8.1.2 Radial Field Intensity 270 Degree.....	20
8.1.3 Magnetic Field Response ≥ -19 dB	21
8.1.3 Magnetic Field Response rel. to 1kHz	22
9.1 max. Conversational Gain	23

Delay in Receiving Direction



Delay (Cross): 20,1 ms

Ref Gain

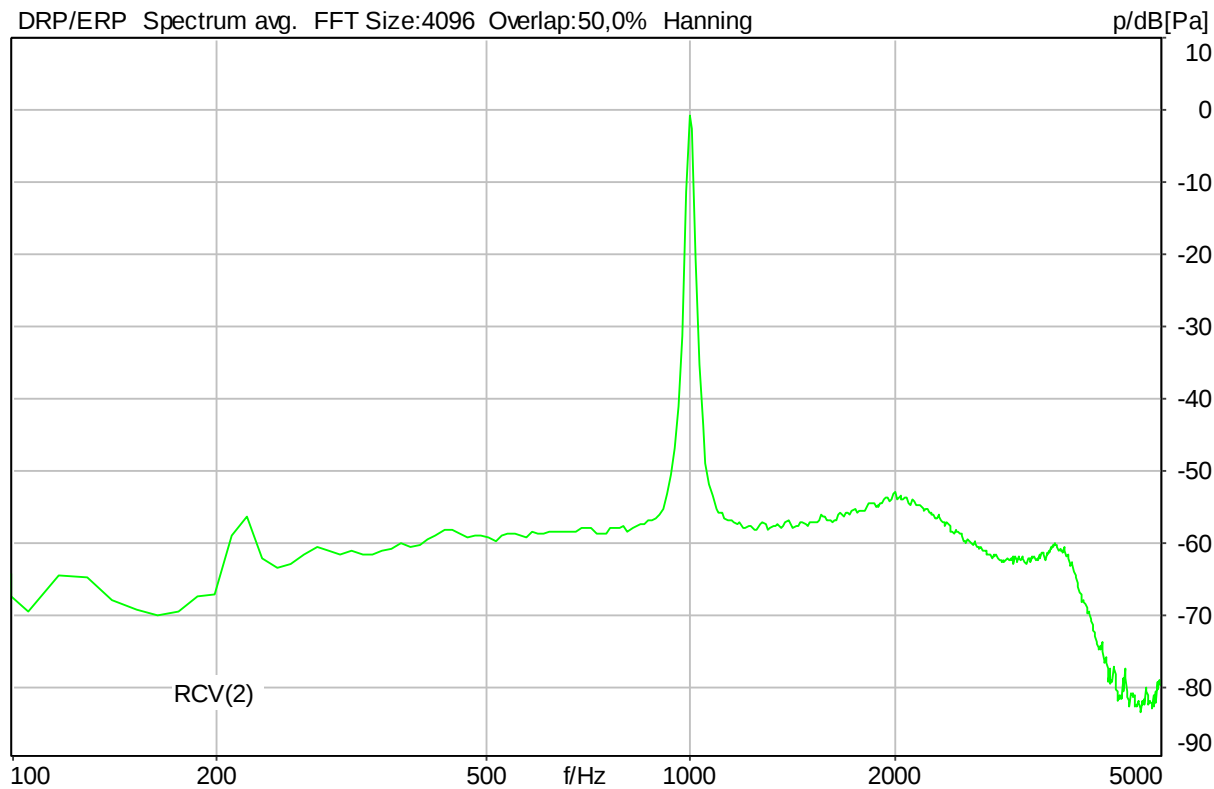
Correction

Ref Gain	-6.300	09.01.2025	User defined	
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Calculated Value: -6.3

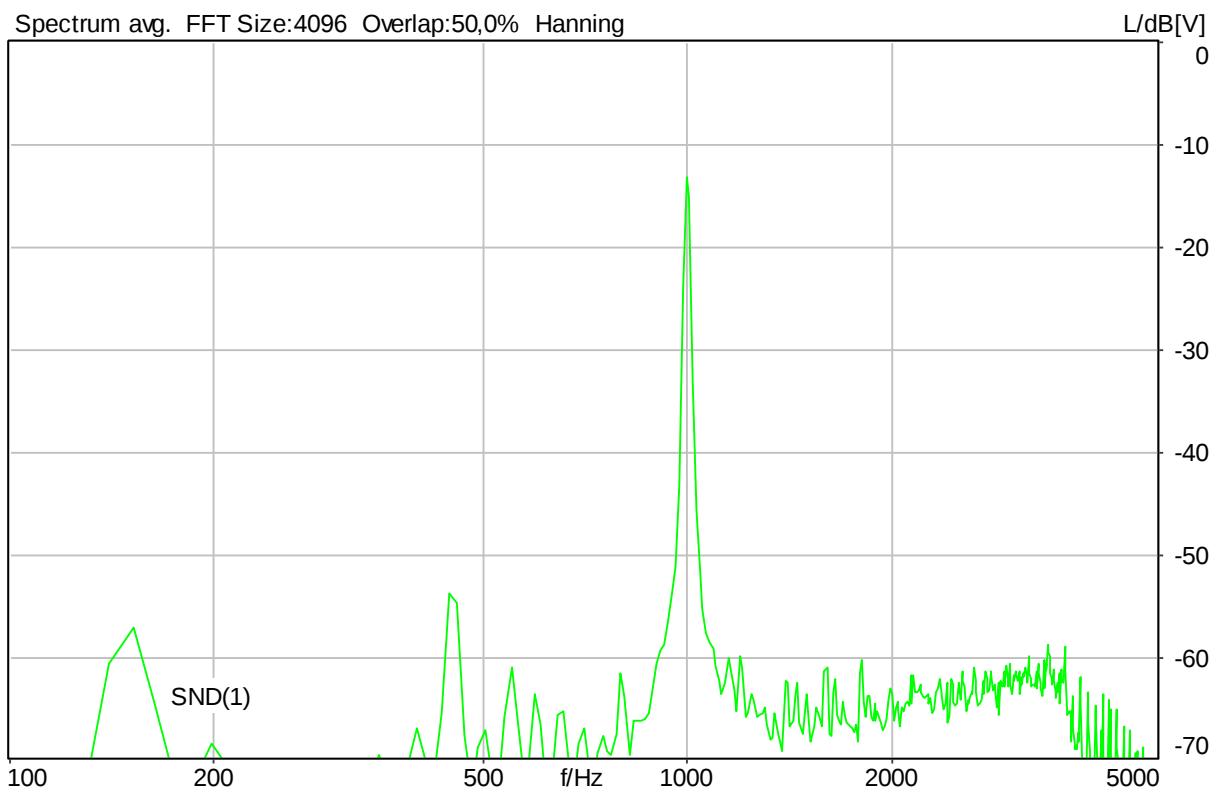
Reference Measurement 0 dBPa

Vol 3/5



Level RCV(2): 0.02 dBPa

8.1.1 Axial Field Intensity

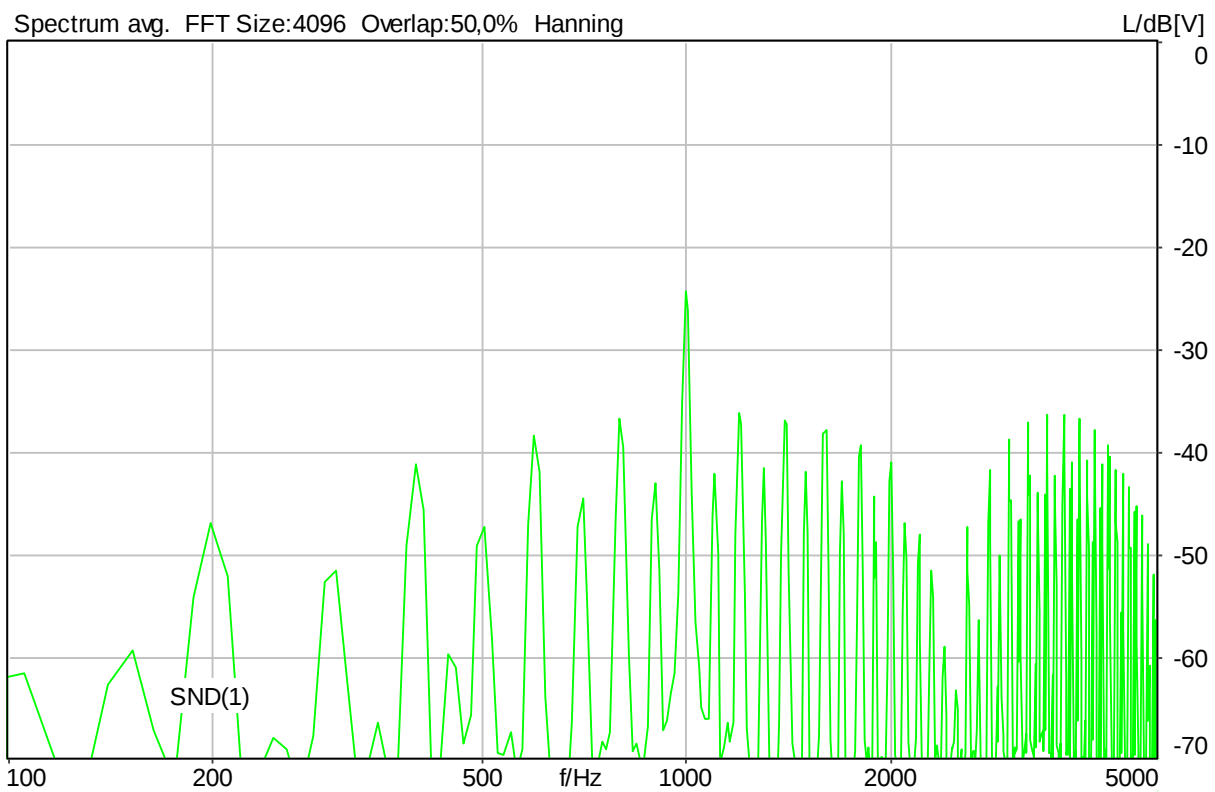


Ok

Limits

	lower
Run 1	-22.00 dBV

8.1.2 Radial Field Intensity 0 Degree

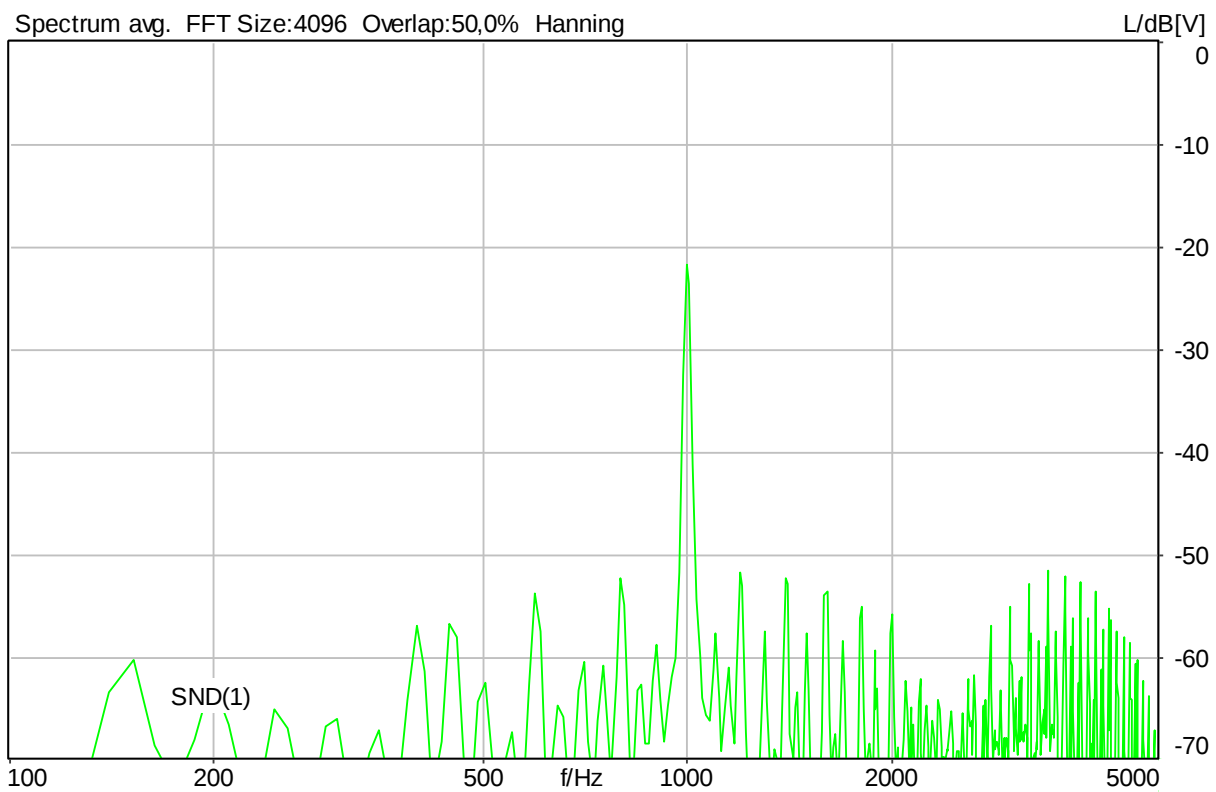


Ok

Limits

	lower
Run 1	-27.00 dBV

8.1.2 Radial Field Intensity 90 Degree

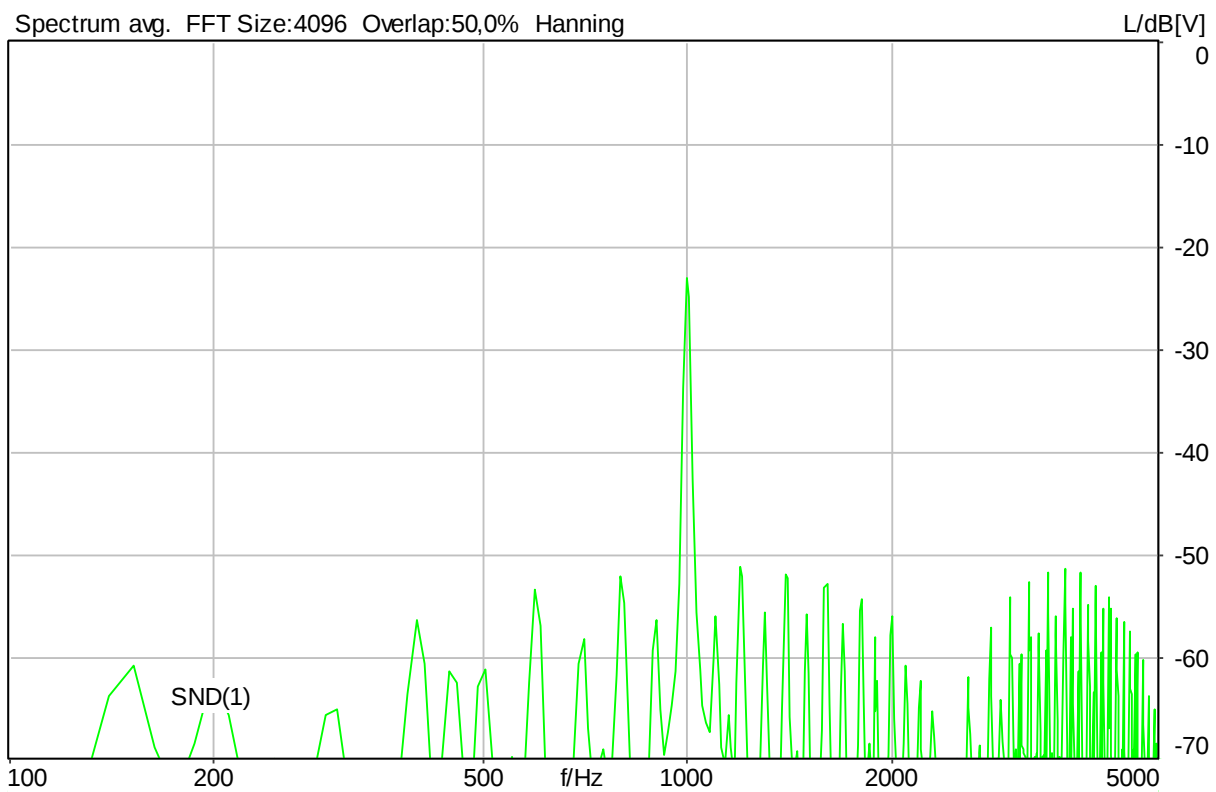


Ok

Limits

	lower
Run 1	-27.00 dBV

8.1.2 Radial Field Intensity 180 Degree

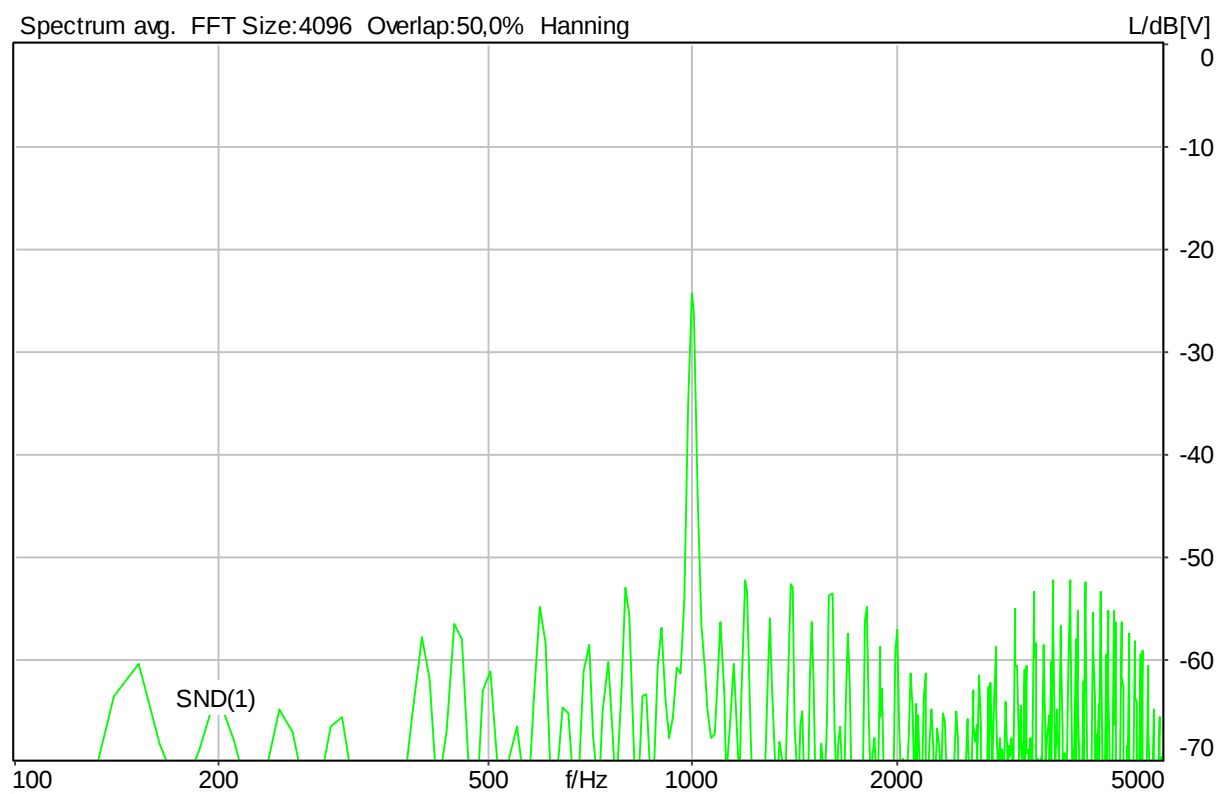


Ok

Limits

	lower
Run 1	-27.00 dBV

8.1.2 Radial Field Intensity 270 Degree

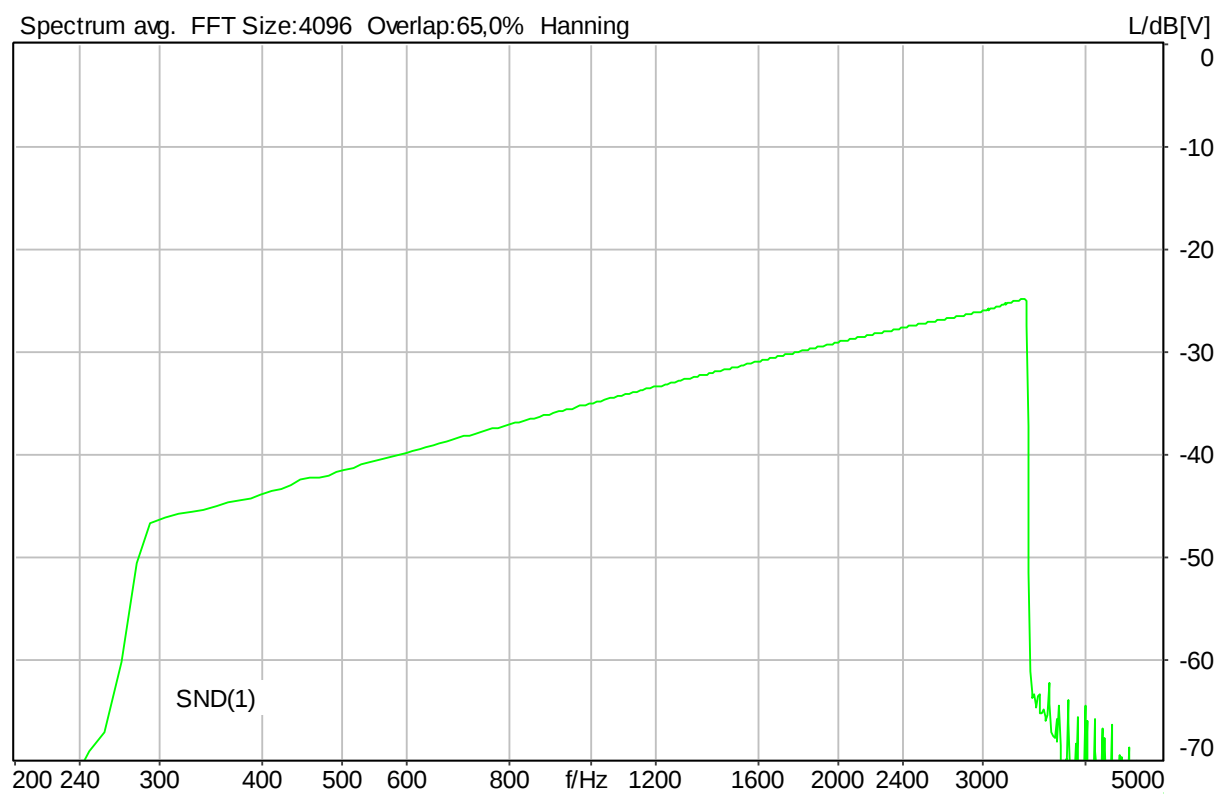


Ok

Limits

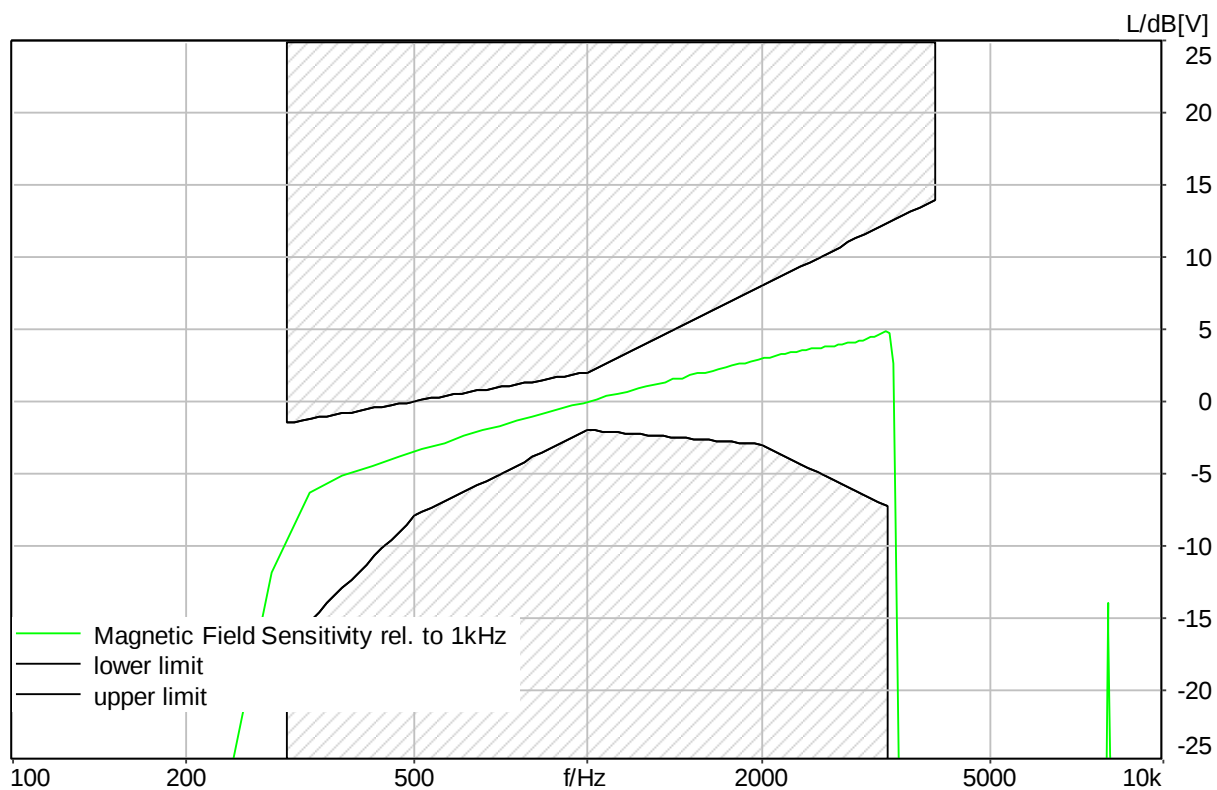
	lower
Run 1	-27.00 dBV

8.1.3 Magnetic Field Response >= -19 dB



Max. Peak value SND(1): -24.87 dB[V] at 3363.3 Hz

8.1.3 Magnetic Field Response rel. to 1kHz



Minimal distance to lower limit
2.05 dB at 984.4 Hz

Minimal distance to upper limit
2.05 dB at 984.4 Hz

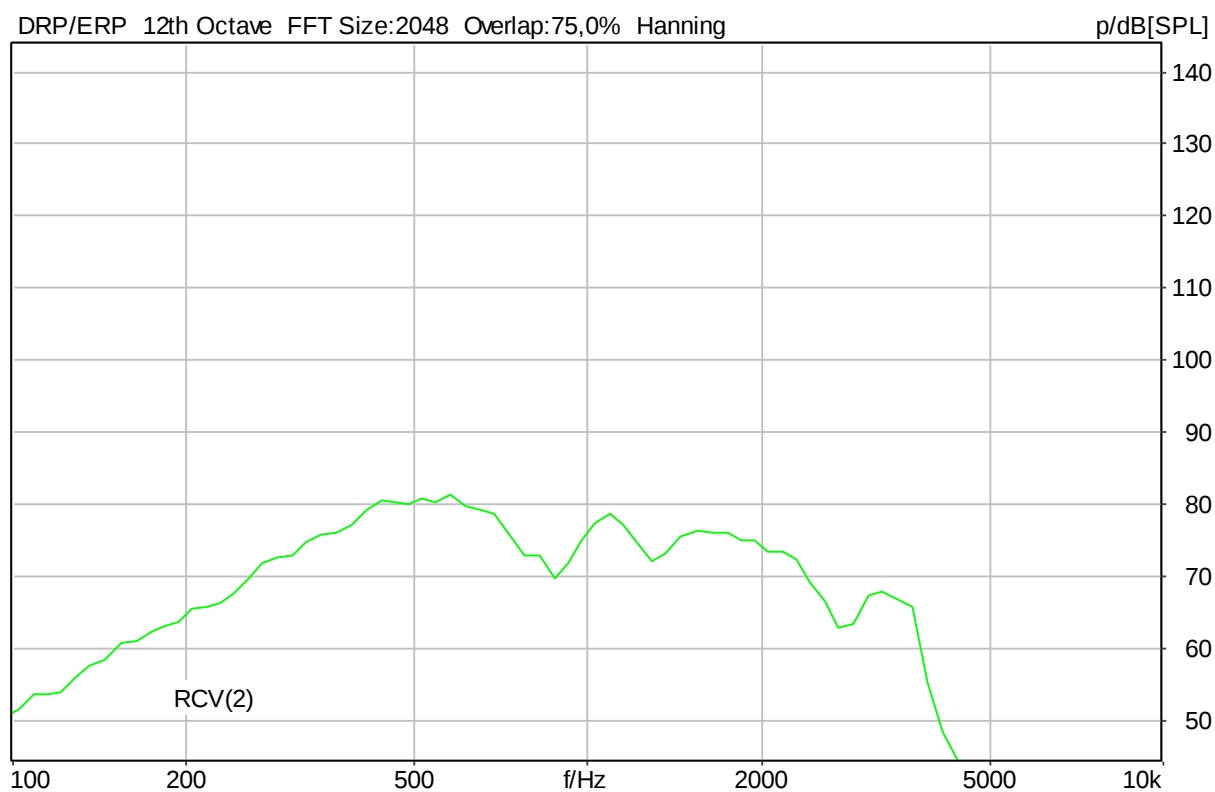
Absolute minimal distance
2.05 dB at 984.4 Hz Ok

Ok

Limits

	lower
Run 1	Fit into tolerance

9.1 max. Conversational Gain



Correction

CG-70

Level RCV(2): 92.92 dB20μPa Ok

Corrected value RCV(2): 22.92 dB20μPa Ok

Ok

Limits

	lower	upper
Run 1	18.00 dB20uPa	24.00 dB20uPa

11 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A Photographs of the test set-up

Photo 1: test setup for volume control



Photo 2: test setup for volume control (close-up view)



Photo 3: test setup for axial field intensity and magnetic field intensity frequency response



Photo 4: test setup for Radial field intensity (0 degree)



Annex B Photographs of the EUT

Photo 5: Top side of EUT



Photo 6: Bottom side of EUT



Annex C Document history

Version	Applied changes	Date of release
R01	Initial release	2025-01-23

Annex D Further information**Glossary**

EUT	-	Equipment Under Test
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
HW	-	Hardware
SW	-	Software
%	-	none