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TEST REPORT

Test Report No.: 1-1238/16-02-13-A

DAkkS Deutsche Akkreditierungsstelle D-PL-12076-01-01

Testing Laboratory

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Accredited Testing Laboratory:
The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) 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-12076-01-01

Area of Testing: Acoustics

Applicant

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10997 Berlin/Deutschland
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Contact: Andreas Papke
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Fax:

Manufacturer

Mitel Deutschland GmbH
Zeughofstr. 1
10997 Berlin/Deutschland

Test standard/s

CS-03 Part V, Issue 9, Amendment 1	**Part V: Requirements and Test Methods for Magnetic Output from Handset; Telephones for Hearing Aid Coupling**

Product

Kind of product: Mitel 600 DECT Phone (3rd Gen)
Product name: Mitel 612d v2
Mitel 622d v2

This test report is electronically signed and valid without handwritten signature. The public keys can be requested at the test laboratory to verify the electronic signatures.

Test Report authorised:

cn=Oleg Fallmann, o=CTC advanced GmbH, ou=FMN-161207, email=Oleg.Fallmann@ctcadvanced.com, c=DE
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Oleg Fallmann

Radio Communications & EMC

Test performed:

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Jörg Langer

Radio Communications & EMC

1 Table of contents

2 General information

2.1 Notes and disclaimer

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This test report replaces the test report with the number 1-1238/16-02-13 and dated 2017-02-15

2.2 Application details

Date of receipt of order:	2016-09-28
Date of receipt of test item:	2017-02-06
Start of test:	2017-02-06
End of test:	2017-02-08
Person(s) present during the test:	Mr. Papke, Mr. Gonschorrek

3 Test standard/s

Test standard	Version	Test standard description
CS-03 Part V, Issue 9, Amendment 1	2009-01	Part V: Requirements and Test Methods for Magnetic Output from Handset; Telephones for Hearing Aid Coupling

4 Test environment

Temperature:	18-28°C
Relative humidity content:	40-80%
Atmospheric pressure:	813-1063hPa
Power supply:	230 V / 50 Hz

5 Test laboratories sub-contracted

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6 Test setup

6.1 Used Artificial Ears

Test Head Type 1:

Ear Type 1: IEC 60318	✓
Ear Type 3.2: IEC 60711 + Simplified Pinna Simulator (High Leakage)	
Ear Type 3.2: IEC 60711 + Simplified Pinna Simulator (Low Leakage)	

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)	

6.2 Used Audio Codec(s)

Narrowband:

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

Wideband:

G.722	
G.729.1	

7 Information about product

7.1 Test item (equipment under test – EUT)

Kind of product:	Mitel 600 DECT Phone (3rd Gen)
Product identification:	Mitel 612d v2, Mitel 622d v2
Tested item:	Mitel 622d v2
Serial number:	170118-07
Hardware version:	beta
Software version:	7.0 SP4_2_try_and_2dB_Step7
Additional information:	
Equivalent variants as declared by the manufacturer are listed in Annex E	

8 Summary of measurement results

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

8.1 AS/ACIF S040:2001 Requirements Table

No	Test description	Reference AS/ACIF S040	Selected	Verdict
1	Frequency Response	5.1.2	✓	**PASS**
2	Magnetic field strength	5.1.3	✓	**PASS**
3	Tactile indicators on keypads	5.2	✓	**PASS**
	Total			**PASS**

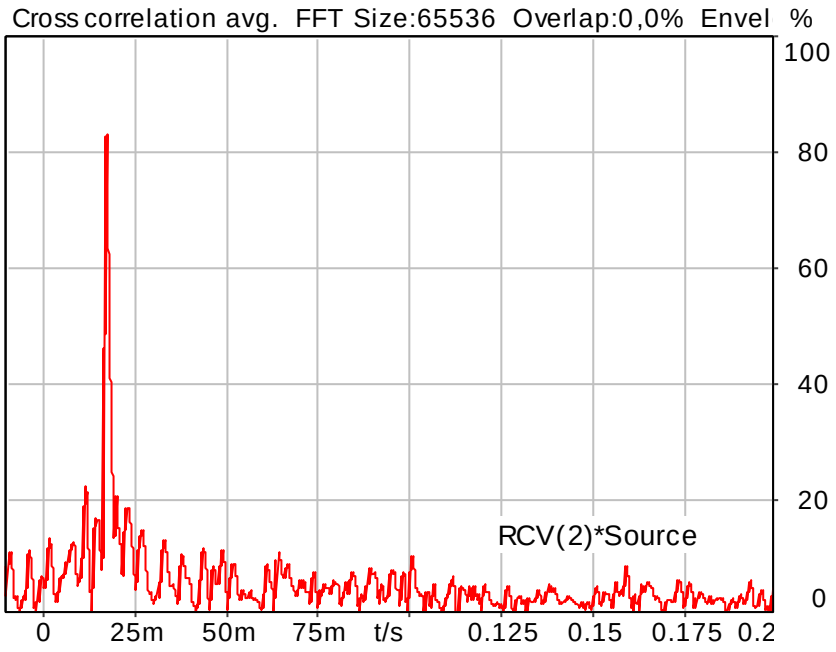
9 Detailed Test Results

Status Overview

SMD	Status	Single Value Description	Single Value
Delay in Receiving Direction	Done	Delay (Cross) [ms]	17.46
Reference Measurement 0 dBPa Vol: 2/7	Done	Level [dBPa]. 0	0.12
Ref_Gain	Done	Calculated Value	-1.50
4.1.2 Axial Field Intensity	Ok	Level [dB (A/m)]. 0	-21.91
4.1.3 Radial Field Intensity 0 Degree	Ok	Level [dB (A/m)]. 0	-25.78
4.1.3 Radial Field Intensity 90 Degree	Ok	Level [dB (A/m)]. 0	-25.62
4.1.3 Radial Field Intensity 180 Degree	Ok	Level [dB (A/m)]. 0	-25.96
4.1.3 Radial Field Intensity 270 Degree	Ok	Level [dB (A/m)]. 0	-26.20
4.1.4.2 Magnetic Field Response >= -22 dB	Ok	Max. Peak value [dB (A/m)]. 1406.3 Hz	-33.44
5.1a Telephone receive Volume Control (unamplified) Vol: 2/7	Done	RLR [dB]	43.18
5.1b Telephone receive Volume Control (maximum)	Done	RLR [dB]	28.54
5.1c Calculating maximum Gain	Ok	Calculated Value	14.64

Delay in Receiving Direction.

HAC for VoIP Phones

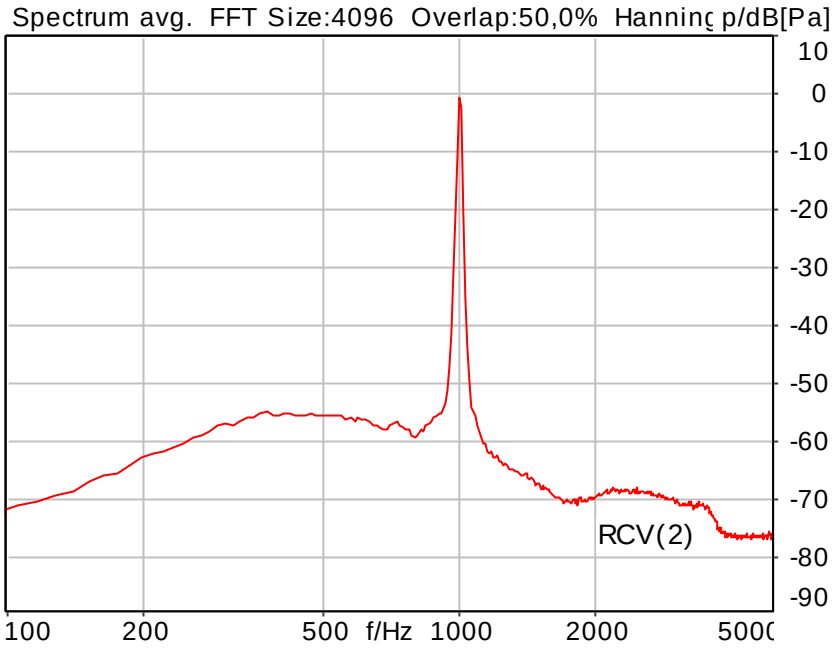


Delay (Cross): 17.5 ms

Reference Measurement 0 dBPa.

HAC for VoIP Phones

Vol: 2/7



Level RCV(2): 0.12 dBPa

Ref_Gain.

HAC for VoIP Phones

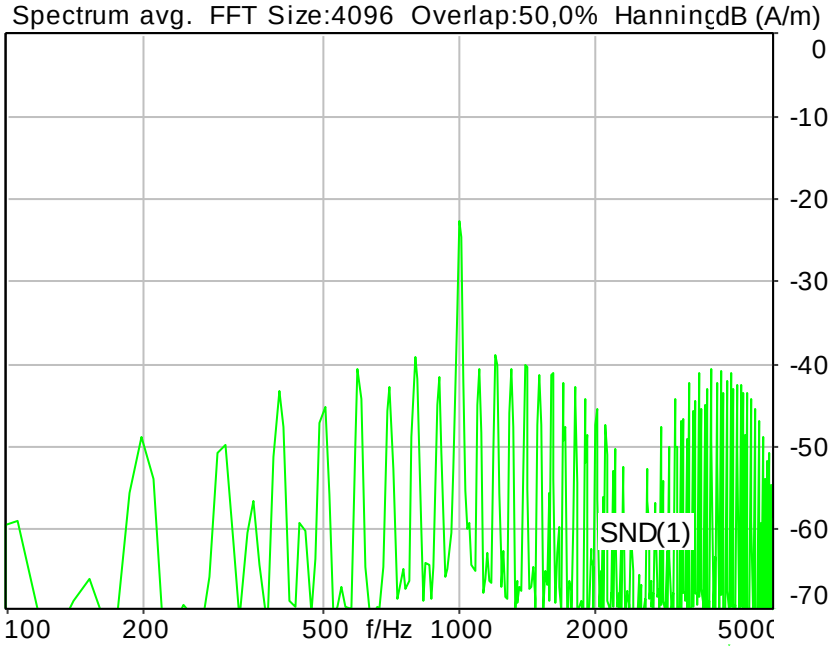
Correction

Ref_Gain	-1.500	2017-02-08	User defined	

Ref_Gain

Calculated Value: -1.50

4.1.2 Axial Field Intensity.



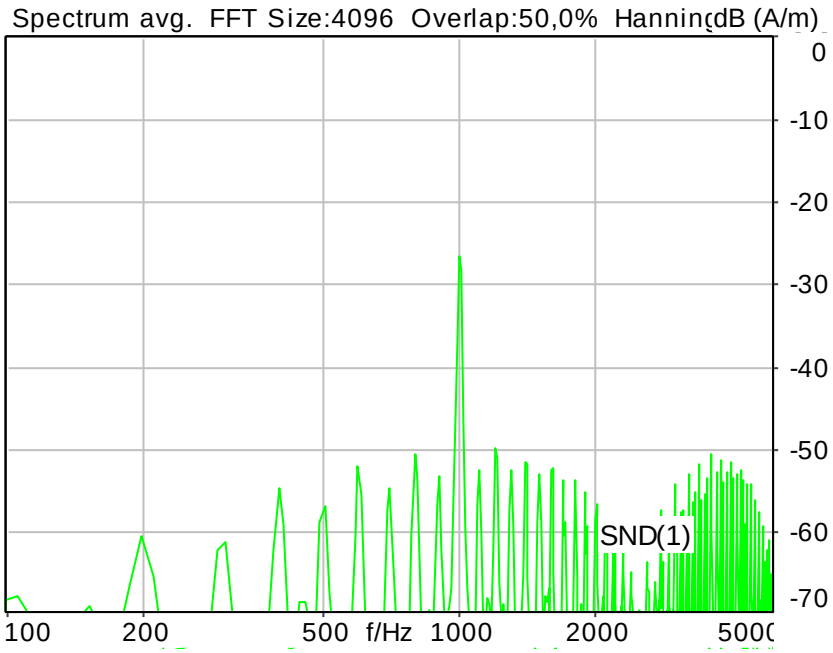
Level SND(1): -21.91 dB (A/m) Ok

Ok

Limits

	lower
Run 1	-22.00 dB (A/m)

4.1.3 Radial Field Intensity 0 Degree.



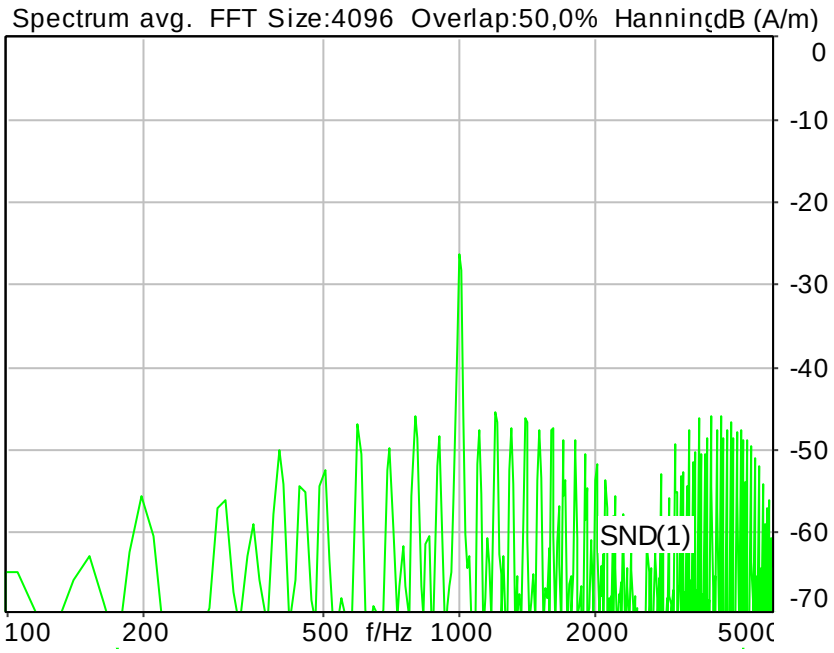
Level SND(1): -25.78 dB (A/m) Ok

Ok

Limits

	lower
Run 1	-27.00 dB (A/m)

4.1.3 Radial Field Intensity 90 Degree.



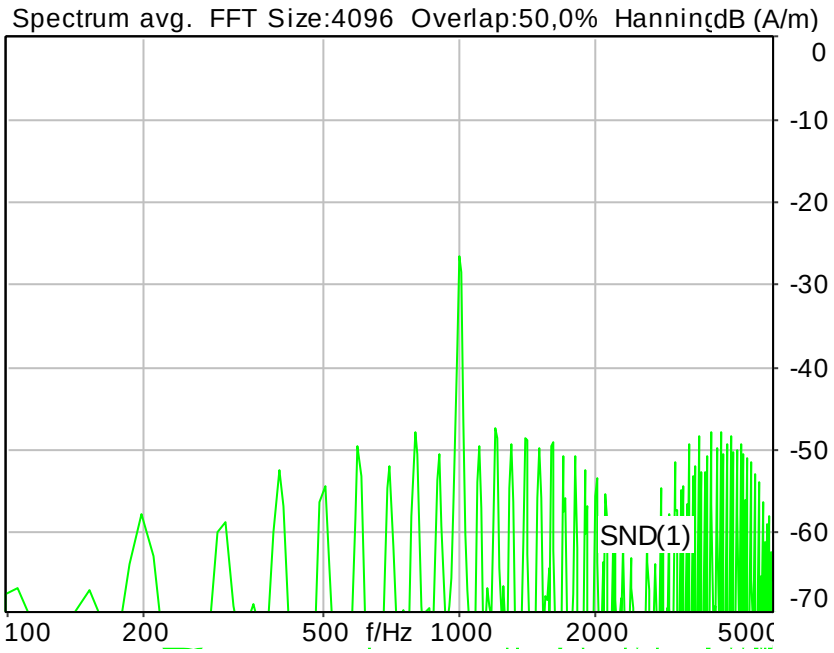
Level SND(1): -25.62 dB (A/m) Ok

Ok

Limits

	lower
Run 1	-27.00 dB (A/m)

4.1.3 Radial Field Intensity 180 Degree.



Level SND(1): -25.96 dB (A/m) Ok

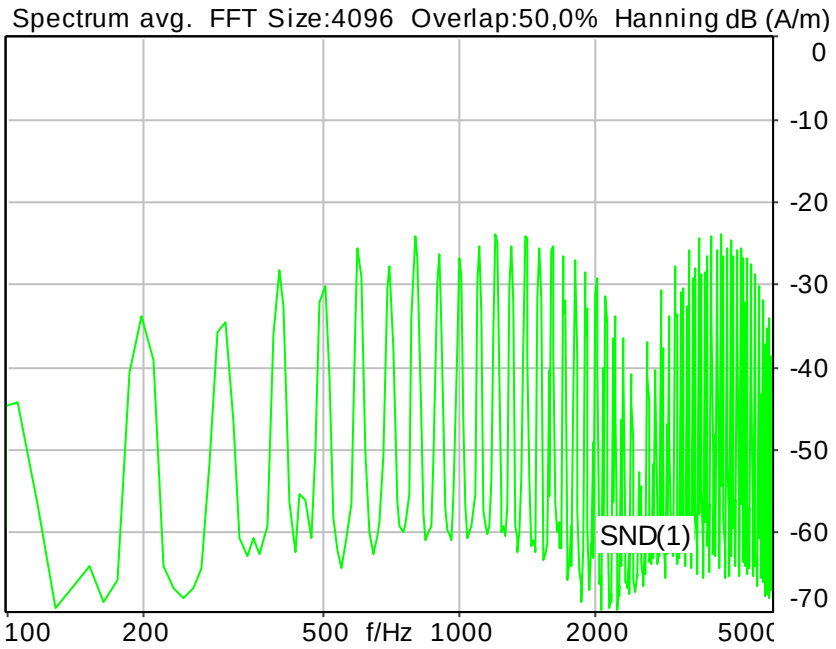
Ok

Limits

	lower
Run 1	-27.00 dB (A/m)

Meas. Setting _Previous

4.1.3 Radial Field Intensity 270 Degree.



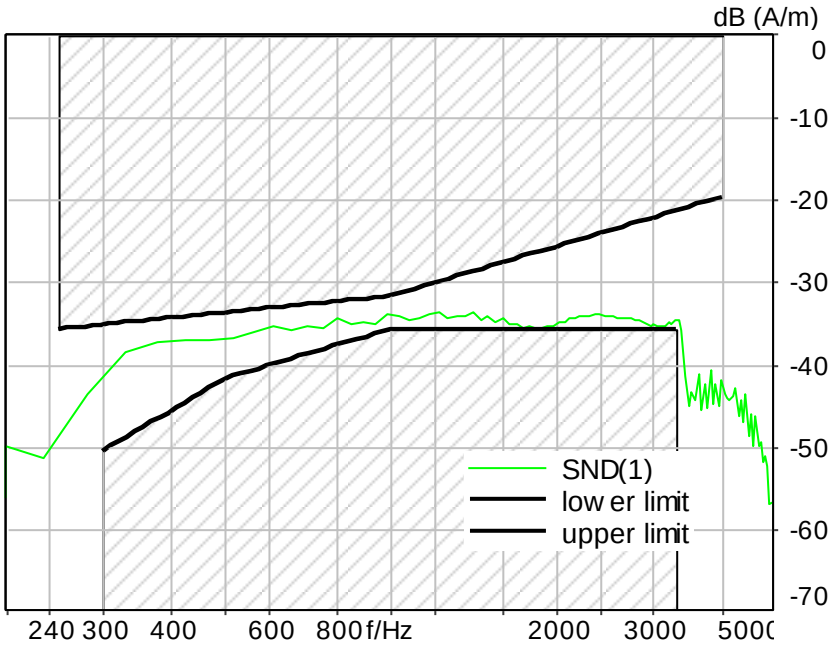
Level SND(1): -26.20 dB (A/m) Ok

Ok

Limits

	lower
Run 1	-27.00 dB (A/m)

4.1.4.2 Magnetic Field Response >= -22 dB.



Max. Peak value SND(1): -33.44 dB (A/m) at 1406.3 Hz Ok

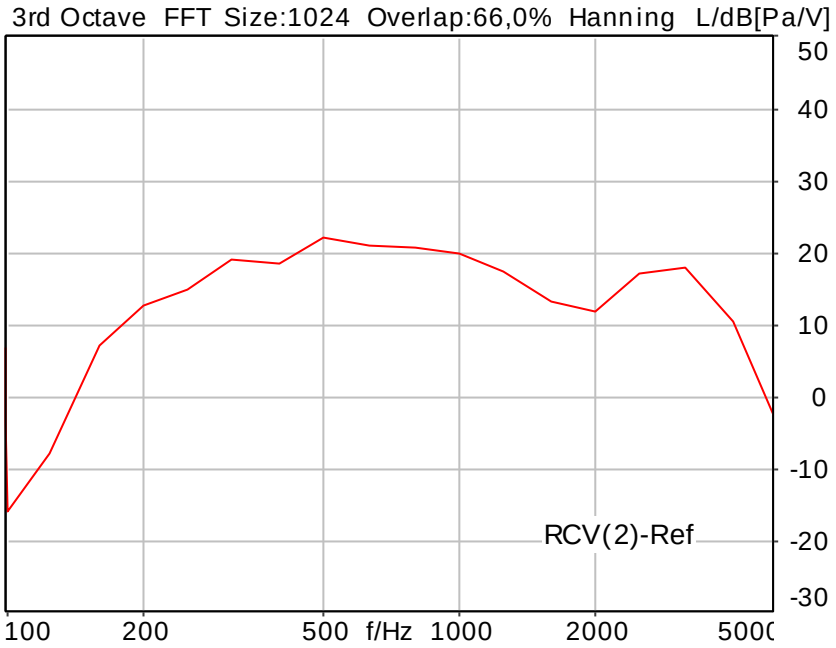
Ok

Limits

	upper
Run 1	0.00 dB

5.1a Telephone receive Volume Control (unamplified).

Vol: 2/7

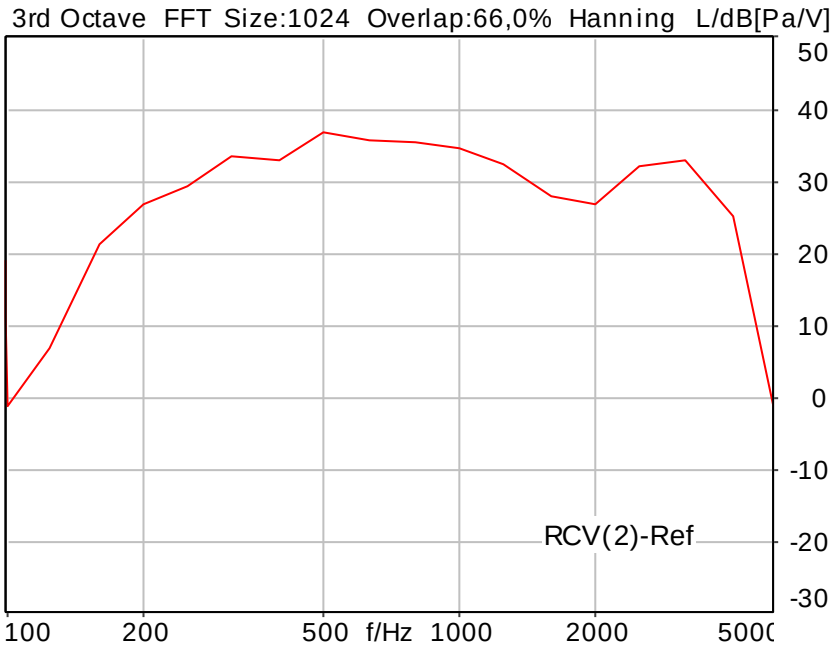


Correction

X+51

RLR: -7.82 dB
Corrected RLR: 43.18 dB

5.1b Telephone receive Volume Control (maximum).



Correction

X+51

RLR: -22.46 dB
Corrected RLR: 28.54 dB

5.1c Calculating maximum Gain.

Correction

HS_RLR_max_CS03	28.540 dB	2017-02-08	Measured	5.1b Telephone receive Volume Control (maximum)
HS_RLR_min_CS03	43.180 dB	2017-02-08	Measured	5.1a Telephone receive Volume Control (unamplified)

HS_RLR_min_CS03 - HS_RLR_max_CS03

Calculated Value: 14.64 Ok

Ok

Limits

	lower	upper
Run 1	12.00 dB	18.00 dB

10 Test equipment and ancillary equipment used for tests

Software:

No.	Name	Manufacturer	Version	ICT Number
1	ACQUA	HEADacoustics	3.0.110	300003467
2	HAE-BGN	HEADacoustics	2.1.100	300003820

Used software : 1

Hardware

No.	Description	Manufacturer	Type	ICT Number
1	Artificial mouth	B & K	4227	300000917
2	Testhead Type 1	B & K	4602	300000960
3	HATS	HEADacoustics	HMS II.3	300003469
4	Acoustic chamber	IAC	1205-A	300000950
5	Reference Microphone	B & K	2669 + 4134	400000101
6	Intern. Feeding bridge	ESP	ISB 1000	300000967
7	Calibrator	B & K	4231	300000970
8	Digital Equalizer	HEADacoustics	PEQ V	300003817
9	Digital Equalizer	HEADacoustics	PEQ V	300003818
10	Digital Equalizer	HEADacoustics	PEQ V	300003819
11	GSM/UMTS Simulator	R&S	CMU 200	300003346
12	Analog USB Front End	HEADacoustics	MFE VI.1	300003824
13	Digital Front End for VoIP	HEADacoustics	MFE VIII	400000362
14	Digital Front End for DECT	HEADacoustics	MFE X	300004015
15	HAC Probe - Axial	Communication Certification Laboratory	Model A-100	400001215-0000
16	HAC Probe - Radial	Communication Certification Laboratory	Model R-100	400001215-0001

Used components of test equipment : 1, 2, 4, 5, 7, 12, 14

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: Volume control measurement set-up

Photo 2: Volume control measurement set-up (close-up)

Photo 3: Axial field intensity measurement set-up

Photo 4: Radial field intensity measurement set-up (0 degree)

Annex B Photographs of the EUT

Photo 5: EUT front

Photo 6: EUT rear

Photo 7: EUT in parts

Annex C Document history

Version	Applied changes	Date of release
---	Initial release	2017-02-15
-A	Revision A -product description and model name changed **This test report replaces the test report with the number 1-1238/16-02-13 and dated 2017-02-15**	2017-03-15

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

Annex E Statement of Type-Equality

Mitel

Mitel Deutschland GmbH · Zeughofstraße 1 · 10997 Berlin

STATEMENT OF TYPE-EQUALITY

With this is confirmed, that the DECT handsets

Mitel 622d v2

Mitel 612d v2

regarding the acoustic parameters are type equal products.

Berlin, November 17, 2016

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