

A Test Report

For

Polycom Inc

On

VVX 301, VVX 311, VVX 401, VVX 411, VVX 501, VVX 601

Report No. TRA-026995AUS2

4th November 2015

Element Test Report: TRA-026995AUS2

Applicant: Polycom Inc
6001 America Center Drive
San Jose
CA 95002
USA

Apparatus: VVX 301, VVX 311, VVX 401, VVX 411, VVX 501, VVX 601

Assessment: 47 CFR Part 68 & CS-03 Part V

Authorised by: 
D M Parrish, Senior Engineer

Date of issue: 4th November 2015

Authorised copy no. : PDF

Total number of pages: 19

Report Summary

Samples of the VVX 301, VVX 311, VVX 401, VVX 411, VVX 501, VVX 601 were submitted for assessment against specifications detailed in Section 3 and were found to be fully compliant.

This report supersedes TRA-026995AUS1. The photographs of the EUT were removed at the request of the applicant.

Contents

Report Summary	3
Section 1 : Introduction	5
1.1 Laboratory	5
1.2 Author	5
1.3 General	5
Section 2 : Product Assessed	6
2.1 Identification Present on Product	6
2.2 Identifying Declarations	6
2.3 Subassemblies Assessed	6
2.4 Telecommunications Interfaces Assessed	7
2.5 Samples Submitted	7
Section 3 : Test Schedule	8
3.1 Specifications	8
3.2 Special Notes to Test Schedule	8
3.3 Test Applicability	8
3.4 Apparatus feature list	8
Section 4 : Observations	9
4.1 Modifications performed during assessment	9
4.2 Record of technical judgements	9
4.3 Deviations from laboratory test procedures	9
4.4 Record of EUT behaviour	9
4.5 Details of Non-compliances	9
Section 5 : Results Summary	10
5.1 47 CFR Part 68	11
5.2 CS-03 Part V	11
Appendix A : 47 CFR PART 68 and CS-03 Part V – Test Results	12
HEARING AID COMPATABILITY – HAC	13
HEARING AID COMPATABILITY – HAC	14
HEARING AID COMPATABILITY – HAC	15
HEARING AID COMPATABILITY – HAC	16
HEARING AID COMPATABILITY – VOLUME CONTROL	17
HEARING AID COMPATABILITY – VOLUME CONTROL	18
EQUAL ACCESS TO COMMON CARRIERS	19

Section 1 : Introduction

1.1 Laboratory

Element Materials Technology,
Unit E, South Orbital Trading Estate,
Hedon Road,
Hull, HU9 1NJ
United Kingdom

Telephone: +44 (0) 1482 801801
Fax: +44 (0) 1482 801806
Email: telecoms@element.com
Web site: <http://www.element.com/>

1.2 Author

Richard D Cooper, Department Manager- Telecoms

1.3 General

This report contains an assessment of apparatus carried out on samples submitted to the laboratory. The results in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This assessment has been performed in accordance with the accreditation requirements of UKAS.

All tests were performed under the following environmental conditions:

Temperature range	:	15 - 25 °C
Humidity range	:	5 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	228 - 252 Vrms

All results in this report have been assessed in accordance with ADLNB Guidance Notes GN/WG2/1 with respect to marginal values.

When Element Materials Technology generates CD Reports, only the report stored on the CD is the official authorised copy. Element Materials Technology are not responsible for the content of paper versions, printed or electronic copies of the report generated from the official CD copies.

This report must not be reproduced except in full without prior written permission of Element Materials Technology.

Section 2 : Product Assessed

2.1 Identification Present on Product

Manufacturer's Name:	Polycom
Trade name/mark/model:	VVX 301
Part No.(s):	Not Present
Trade name/mark/model:	VVX 411
Part No.(s):	Not Present
Trade name/mark/model:	VVX 501
Part No.(s):	Not Present
Trade name/mark/model:	VVX 601
Part No.(s):	Not Present

2.2 Identifying Declarations

Trade name/mark/model:	VVX 301
Part No.(s):	2201-48300-001
Trade name/mark/model:	VVX 311
Part No.(s):	2201-48350-001
Trade name/mark/model:	VVX 401
Part No.(s):	2201-48400-001
Trade name/mark/model:	VVX 411
Part No.(s):	2201-48450-001
Trade name/mark/model:	VVX 501
Part No.(s):	2201-48500-001
Trade name/mark/model:	VVX 601
Part No.(s):	2201-48600-001

2.3 Subassemblies Assessed

Trade name/mark/model:	Not applicable
Part No.(s):	Not applicable

2.4 Telecommunications Interfaces Assessed

Physical Interfaces: Ethernet (VoIP calls)

Software affecting compliance: VVX 301, 311, 401 & 411 Version: 5.4.1.6722
VVX 501 & 601 Version: 5.4.1.7237

User adjustable parameters affecting compliance: None declared

Host for assessment: Tested using Vega 400 Gateway

2.5 Samples Submitted

Sample no.	Description	Serial no.
TRA- 026995S01	VVX 411	64167F01005A
TRA- 026995S02	VVX 601	64167F03001D
TRA- 026995S03	Switching power adaptor	H4340000026
TRA- 026995S04	Switching power adaptor	H4340000049
TRA- 026995S05	VVX 601	64167F030077
TRA- 026995S06	VVX 501	64167F02000C
TRA- 026995S07	VVX 301	64167F00000F
TRA- 026995S08	VVX 501	64167F02001D
TRA- 026995S09	VVX 301	64167F000032
TRA- 026995S10	VVX 411	64167F010072
TRA- 026995S11	VVX 501	64167F02015C
TRA- 026995S12	VVX 501	64167F020126
TRA- 026995S13	VVX 601	64167F030132
TRA- 026995S14	VVX 601	64167F0300DD
TRA- 026995S15	Switching power adaptor	H4340000031

The samples were first received on 22nd July 2015 and the final samples were received and commissioned on 28th September 2015.

Section 3 : Test Schedule

3.1 Specifications

The apparatus was assessed against the following specifications:

47 CFR Part 68 : October 2010
CS-03 Part V: Issue 9

3.2 Special Notes to Test Schedule

- a) The apparatus has been assessed as a VoIP Handset and as such only the applicable tests, as defined by TSB31-B and CS-03, have been performed.
- b) The apparatus was provided with an Ethernet connection. The Ethernet was connected to a Vega 400 Gateway to convert IP to a 0dB ISDN connection. This allowed the voice channel to be measured.

3.3 Test Applicability

The following tests were deemed to be Not Applicable due to the functionality of the apparatus

47 CFR Part 68

Clause	Reason
68.318(b)	The apparatus did not directly connect to the PSTN network
68.318(c)	The apparatus did not transmit a recorded message to line
68.318(d)	The apparatus did not possess facsimile transmission

3.4 Apparatus feature list

Supported features

VoIP telephony

Section 4 : Observations

4.1 Modifications performed during assessment

The following modification was performed prior to the 47 CFR Part 68 & CS-03 assessment:

4.1.1 Modification State 1

28th September 2015

S004 Acoustic Shock

The VVX301 was very loud and exceeded the acoustic shock limits for Australia. The software was modified for the above. All testing covered by this assessment was done in modification state 1.

4.2 Record of technical judgements

4.2.1 VVX 301, VVX 311, VVX 401 & VVX 411

The applicant declared that the VVX 301 was identical to the VVX 401 apart from the number of programmable lines and screen size. The applicant also declared that the VVX 311 was identical to the VVX 411 apart from the number of programmable lines and screen size. To show compliance for all the above four models, full testing was performed on the supplied VVX 301 and VVX 411 VOIP handsets. The models tested were found to be fully compliant. It was deemed that the compliance of the VVX 301 and VVX 411 also proved the compliance of the VVX 401 and VVX 311.

4.3 Deviations from laboratory test procedures

No deviations were made from laboratory test procedures.

4.4 Record of EUT behaviour

No unusual EUT behaviour was observed.

4.5 Details of Non-compliances

No non-compliant results were recorded.

Section 5 : Results Summary

This section contains the following results summaries:

- 5.1 47 CFR Part 68
- 5.2 CS-03 Part V: Issue 9

The following abbreviations are used in the 'Results' column:

- PASS Apparatus satisfied the requirements of the clause.
- FAIL Apparatus failed to satisfy the requirements of the clause.
- N/A Clause was deemed not applicable due to functionality based on the information received. Refer to section 3.3
- N/T The clause was not tested at the request of the applicant. Refer to section 3.2

These results apply to the apparatus in the final modified state.

5.1 47 CFR Part 68

Clause	Test Description	Required	Results
68.316	Hearing Aid Compatibility	YES	PASS
68.317	Hearing Aid Compatibility Volume Control	YES	PASS
68.318(a)	General	NOTED	
68.318(b)	Equipment with Automatic Dialling Capability	YES	N/A
68.318(c)	Line Seizure by automatic telephone dialling systems	YES	N/A
68.318(d)	Telephone facsimile machines	YES	N/A
68.318(e)	Equal access to common carriers	YES	PASS

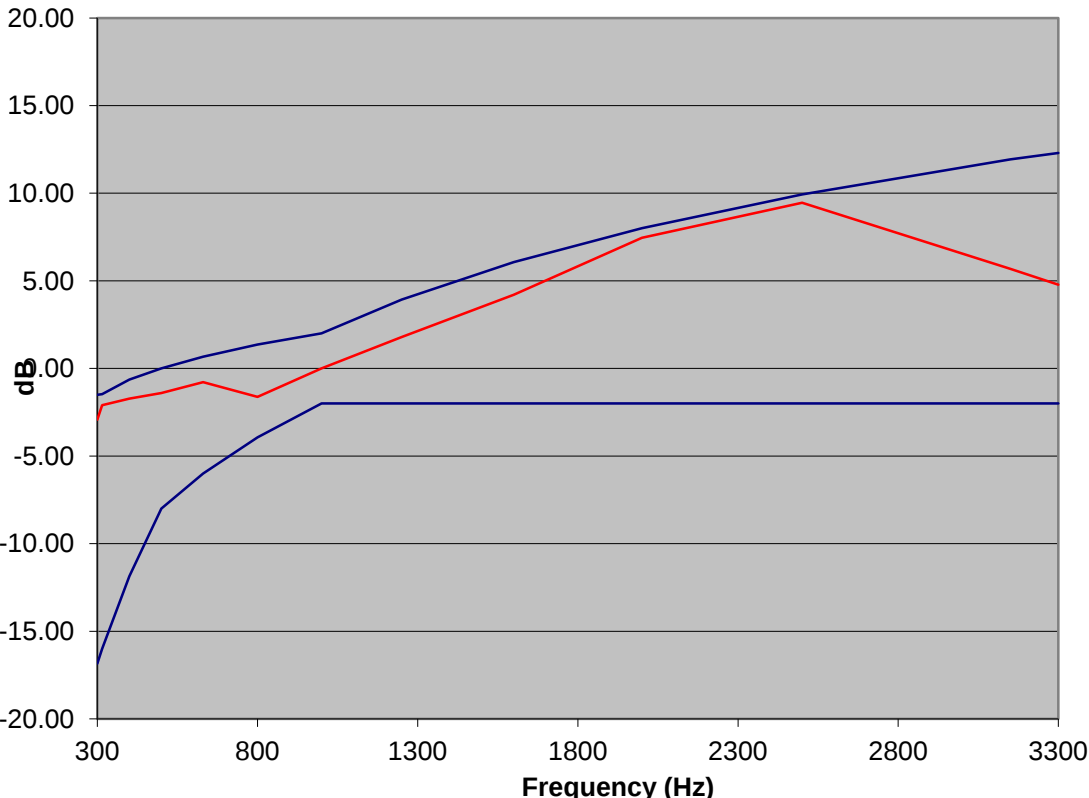
5.2 CS-03 Part V

Clause	Test Description	Required	Results
4	Hearing Aid Compatibility	YES	PASS
6	Hearing Aid Compatibility Volume Control	YES	PASS

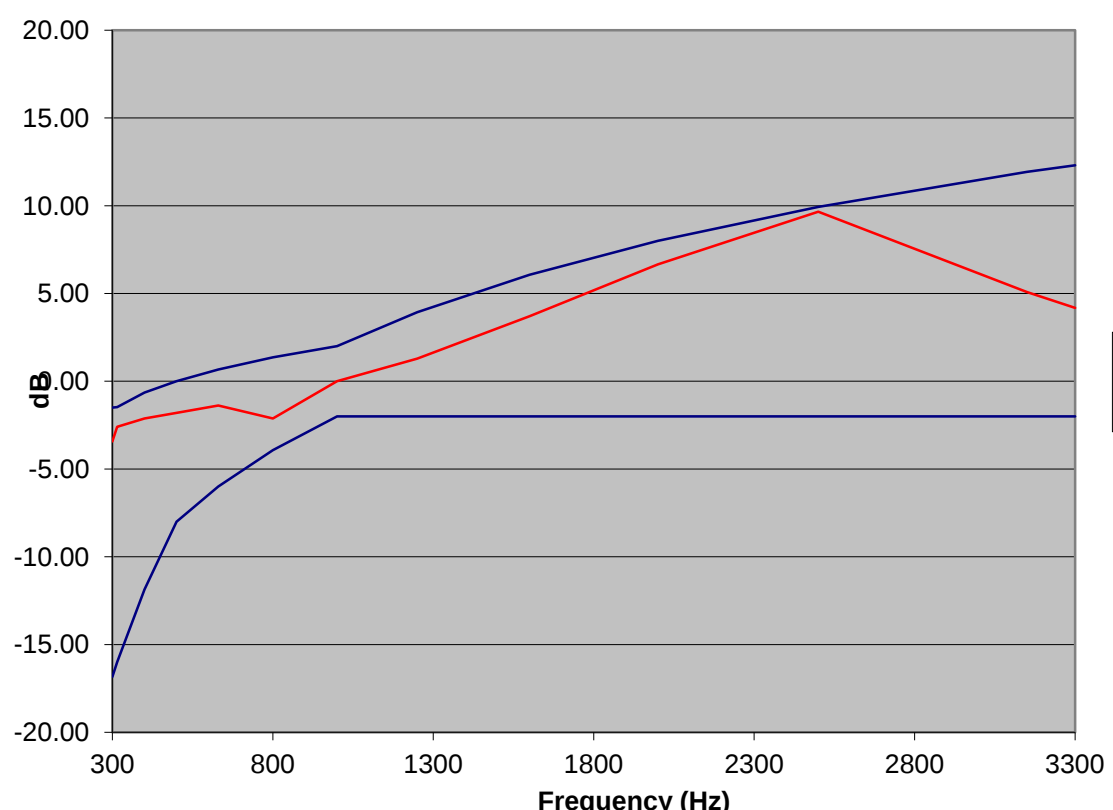
Appendix A : 47 CFR PART 68 and CS-03 Part V – Test Results

These results apply to the apparatus in the final modified state.

68.316/ CS-03 HAC	HEARING AID COMPATABILITY – HAC	68.316/ CS-03 HAC
----------------------	---------------------------------	----------------------

FCC Part 68 Clause 68.316 CS-03 Part V Clause 4		Measured before surge simulation		
HAC (Sample S01)				
Probe 1	Measured	Probe Sensitivity	Corrected Resp	Result
Axial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	
1000	-79.80	-59.12	-20.68	Pass
HAC 				
Probe 2	Measured	Probe Sensitivity	Corrected Resp	Angle
Radial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	(Degrees)
1000	-82.50	-59.07	-23.43	0.00
1000	-82.30	-59.07	-23.23	90.00
1000	-82.80	-59.07	-23.73	180.00
1000	-83.30	-59.07	-24.23	270.00
Overall Result		PASS		
Comments: Maximum Volume				

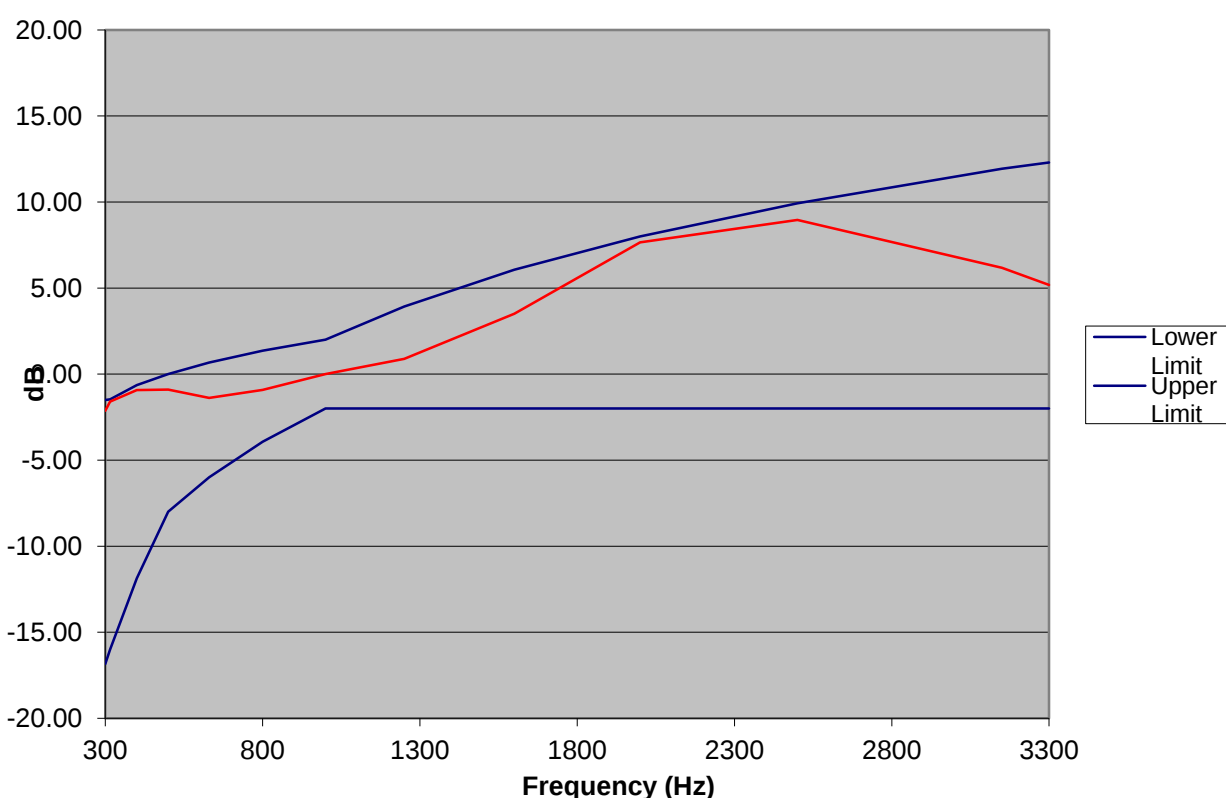
68.316/ CS-03 HAC	HEARING AID COMPATABILITY – HAC	68.316/ CS-03 HAC
----------------------	---------------------------------	----------------------

FCC Part 68 Clause 68.316 CS-03 Part V Clause 4		Measured before surge simulation		
HAC (Sample S09)				
Probe 1	Measured	Probe Sensitivity	Corrected Resp	Result
Axial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	
300	-80.30	-59.12	-21.18	Pass
HAC 				
Probe 2	Measured	Probe Sensitivity	Corrected Resp	Angle
Radial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	(Degrees)
1000	-83.10	-59.07	-24.03	0.00
1000	-84.00	-59.07	-24.93	90.00
1000	-83.30	-59.07	-24.23	180.00
1000	-83.70	-59.07	-24.63	270.00
Overall Result		PASS		
Comments: Nominal Volume				

68.316/ CS-03 HAC	HEARING AID COMPATABILITY – HAC	68.316/ CS-03 HAC
----------------------	---------------------------------	----------------------

FCC Part 68 Clause 68.316 CS-03 Part V Clause 4		Measured before surge simulation																																																											
HAC (Sample S12)																																																													
Probe 1	Measured	Probe Sensitivity	Corrected Resp	Result																																																									
Axial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))																																																										
300	-79.70	-59.12	-20.58	Pass																																																									
HAC The graph displays the Hearing Aid Compatibility (HAC) results. The Y-axis represents the response in dB, ranging from -20.00 to 20.00. The X-axis represents the frequency in Hz, ranging from 300 to 3300. A red line shows the measured response, and a blue line shows the limit. The measured response is consistently below the limit, indicating a pass result. <table><caption>HAC Data Points (Estimated from Graph)</caption><thead><tr><th>Frequency (Hz)</th><th>Measured Response (dB)</th><th>Limit (dB)</th></tr></thead><tbody><tr><td>300</td><td>-20.58</td><td>-15.00</td></tr><tr><td>400</td><td>-18.00</td><td>-10.00</td></tr><tr><td>500</td><td>-15.00</td><td>-5.00</td></tr><tr><td>600</td><td>-12.00</td><td>-2.00</td></tr><tr><td>800</td><td>-8.00</td><td>0.00</td></tr><tr><td>1000</td><td>-5.00</td><td>2.00</td></tr><tr><td>1200</td><td>-2.00</td><td>4.00</td></tr><tr><td>1400</td><td>0.00</td><td>6.00</td></tr><tr><td>1600</td><td>2.00</td><td>8.00</td></tr><tr><td>1800</td><td>4.00</td><td>10.00</td></tr><tr><td>2000</td><td>6.00</td><td>12.00</td></tr><tr><td>2200</td><td>8.00</td><td>14.00</td></tr><tr><td>2400</td><td>10.00</td><td>16.00</td></tr><tr><td>2600</td><td>8.00</td><td>18.00</td></tr><tr><td>2800</td><td>6.00</td><td>20.00</td></tr><tr><td>3000</td><td>4.00</td><td>22.00</td></tr><tr><td>3200</td><td>2.00</td><td>24.00</td></tr><tr><td>3300</td><td>0.00</td><td>26.00</td></tr></tbody></table>					Frequency (Hz)	Measured Response (dB)	Limit (dB)	300	-20.58	-15.00	400	-18.00	-10.00	500	-15.00	-5.00	600	-12.00	-2.00	800	-8.00	0.00	1000	-5.00	2.00	1200	-2.00	4.00	1400	0.00	6.00	1600	2.00	8.00	1800	4.00	10.00	2000	6.00	12.00	2200	8.00	14.00	2400	10.00	16.00	2600	8.00	18.00	2800	6.00	20.00	3000	4.00	22.00	3200	2.00	24.00	3300	0.00	26.00
Frequency (Hz)	Measured Response (dB)	Limit (dB)																																																											
300	-20.58	-15.00																																																											
400	-18.00	-10.00																																																											
500	-15.00	-5.00																																																											
600	-12.00	-2.00																																																											
800	-8.00	0.00																																																											
1000	-5.00	2.00																																																											
1200	-2.00	4.00																																																											
1400	0.00	6.00																																																											
1600	2.00	8.00																																																											
1800	4.00	10.00																																																											
2000	6.00	12.00																																																											
2200	8.00	14.00																																																											
2400	10.00	16.00																																																											
2600	8.00	18.00																																																											
2800	6.00	20.00																																																											
3000	4.00	22.00																																																											
3200	2.00	24.00																																																											
3300	0.00	26.00																																																											
Probe 2	Measured	Probe Sensitivity	Corrected Resp	Angle																																																									
Radial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	(Degrees)																																																									
1000	-84.40	-59.07	-25.33	0.00																																																									
1000	-83.30	-59.07	-24.23	90.00																																																									
1000	-83.10	-59.07	-24.03	180.00																																																									
1000	-83.60	-59.07	-24.53	270.00																																																									
Overall Result		PASS																																																											
Comments: Nominal Volume																																																													

68.316/ CS-03 HAC	HEARING AID COMPATABILITY – HAC	68.316/ CS-03 HAC
----------------------	---------------------------------	----------------------

FCC Part 68 Clause 68.316 CS-03 Part V Clause 4		Measured before surge simulation		
HAC (Sample S13)				
Probe 1	Measured	Probe Sensitivity	Corrected Resp	Result
Axial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	
300	-80.30	-59.12	-21.18	Pass
HAC				
				
Probe 2	Measured	Probe Sensitivity	Corrected Resp	Angle
Radial	Resp. (dBV)	(dBV/(A/m))	(dBV/(A/m))	(Degrees)
1000	-83.60	-59.07	-24.53	0.00
1000	-83.40	-59.07	-24.33	90.00
1000	-84.00	-59.07	-24.93	180.00
1000	-83.60	-59.07	-24.53	270.00
Overall Result		PASS		
Comments: Nominal Volume				

68.317/CS-03	HEARING AID COMPATABILITY – VOLUME CONTROL	68.317/CS-03
---------------------	---	---------------------

FCC Part 68 Clause 68.317 CS-03 Part V Clause 6 HAC Volume Control (Sample S01)			Measured ROLR values		
Line Length	ROLR Upper Limit	ROLR Lower Limit	Nominal Volume	Max Volume	Gain
(US) Digital	+46dB	+56dB	48.9	33.9	15.0
(Canada) Digital	+43.5dB	+53.5dB	48.9	33.9	15.0
Overall Result			Pass	Pass	Pass
Comments:					

FCC Part 68 Clause 68.317 CS-03 Part V Clause 6 HAC Volume Control (Sample S12)			Measured ROLR values		
Line Length	ROLR Upper Limit	ROLR Lower Limit	Nominal Volume	Max Volume	Gain
(US) Digital	+46dB	+56dB	51.6	39.6	12.0
(Canada) Digital	+43.5dB	+53.5dB	51.6	39.6	12.0
Overall Result			Pass	Pass	Pass
Comments:					

FCC Part 68 Clause 68.317 CS-03 Part V Clause 6 HAC Volume Control (Sample S13)			Measured ROLR values		
Line Length	ROLR Upper Limit	ROLR Lower Limit	Nominal Volume	Max Volume	Gain
(US) Digital	+46dB	+56dB	51.0	39.0	12.0
(Canada) Digital	+43.5dB	+53.5dB	51.0	39.0	12.0
Overall Result			Pass	Pass	Pass
Comments:					

68.317/CS-03	HEARING AID COMPATABILITY – VOLUME CONTROL	68.317/CS-03
--------------	---	--------------

FCC Part 68 Clause 68.317 CS-03 Part V Clause 6 HAC Volume Control (Sample S09)			Measured ROLR values		
Line Length	ROLR Upper Limit	ROLR Lower Limit	Nominal Volume	Max Volume	Gain
(US) Digital	+46dB	+56dB	49.7	34.7	15.0
(Canada) Digital	+43.5dB	+53.5dB	49.7	34.7	15.0
Overall Result			Pass	Pass	Pass
Comments:					

68.318(e)	EQUAL ACCESS TO COMMON CARRIERS	68.318(e)
------------------	--	------------------

FCC Part 68, Subpart D Clause 318e - Additional Limitations (Sample S01)	
Common Carrier Access Requirements	Result
TE is not labelled / marked as being only suitable for connection to a specific carrier or set of carriers.	PASS
TE includes both Loop-disconnect (LD) and Dual Tone Multi-Frequency (DTMF) signalling.	DTMF through host gateway
The TE does not pre-fix or limit the dialled digits	PASS
Overall Result	PASS
Comments:	