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April 7, 2009

Bill Lin VisualOn, Inc. 959 S Winchester Blvd, Suite 201A Campbell, CA 95008

#### Dear Bill Lin:

Please see the enclosed engineering report number DDCD7259 for the voAC3Dec made by VisualOn, Inc., which performs 5.1-channel Dolby Digital decoding.

The performance of the voAC3Dec met all of our requirements for 5.1-channel Dolby Digital decoding, and we are pleased to give the design our approval. Congratulations! The voAC3Dec is now approved for 5.1-channel Dolby Digital decoding.

Please send us the data sheet for your implementation, along with any other name(s) that will appear on your final product to be released to manufacturers. This will allow our Product Evaluation Group to easily trace this name to an approved implementation.

Please send the above information and any questions you may have regarding this report to me at tegge@dolby.com. We wish you great success in marketing your implementation.

Sincerely,

Tim Eggerding

Implementation Engineer Implementation Group

**Dolby Laboratories Licensing Corporation** 



# Dolby Laboratories Licensing Corporation EVALUATION REPORT NO. DDCD7259

Evaluation Report on the voAC3Dec which implements 5.1-channel Dolby Digital decoding made by VisualOn, Inc.

Approved
Implementation satisfies all applicable requirements

Written by: Tim Eggerding 7 Apr 2009

Information in this report is confidential and may not be divulged to any third party without the prior consent of Dolby Laboratories Licensing Corporation.





#### **Supported Features:**

The voAC3Dec has been approved for 5.1-channel Dolby Digital decoding with the following features supported:

- 16 bit output
- All DRC modes
- Lt/Rt and Lo/Ro outputs
- Karaoke capable

The voAC3Dec is compliant with version 3.0 of the 5.1-channel Dolby Digital decoding development kit.

### Implementation Identification

Report # 7259 Version # 1.0

Manufacturer VisualOn, Inc. Date Testing Began March 30, 2009

Implementation Name/Number voAC3Dec Tested by MCH

Signed

#### Implementation Type

#### **Implementation Details**

☐ ASIC

DSP

Software

Other:

2

OS:

Microsoft
Static Library

Output Bit Resolution: 16

**Performance Tests** 

#### 2.1 Reference Level

 L
 20.004
 dBFS
 R
 20.004
 dBFS

 C
 20.004
 dBFS
 LFE
 20.147
 dBFS

 Ls
 20.004
 dBFS
 RS
 20.004
 dBFS

Comments: Pass

#### 2.2 Frequency Response

Response Limits:

#### 2.3 THD+N vs. Frequency

L \_-93.5 dBFS
C \_-93.6 dBFS
Ls \_-93.5 dBFS
Comments: Pass

☐ difmus 1–6 Comments: Pass

2.4	THD+N	l vs. Lev	vel (at 20	seconds	s)			
16-bit:			18-bit:			20-bit:		
C Ls	94.1 94.3 94.2 nents:	dBFS dBFS	L		dBFS	L .		dBFS
2.5	Noise	Modulat	tion vs. L	_evel				
			18-bit:			20-bit:		
L <u>-</u>	<b>-</b> /–	dB	L	+/-	dB	L	+/-	dB
		dB						
	+/ <del>-</del>	dB						
Comm	ienis:							
	-	nic Rang	-					
			18-bit:			20-bit:		
			L		dBFS	L _		dBFS
C	93.3 93.2	_ dBFS						
	nents:	_						
2.7	Comm  Multito  16  18  20	200 2 k 20 ents: <u>F</u>	Hz @ -6 ) Hz @ - 	60 dBFS 16-bit 18-bit 20-bit 0 dBFS				
2.9	<ul><li>✓ 1</li><li>✓ 1</li></ul>	Noise (C 6-bit 8-bit 0-bit ents: F	Pass					
3	Liste	ning T	ests					
3.1	Difficu	It Music	<b>:</b>					

3.2	Difficult I	<b>Nultitone</b>							
	difmlt 1-15	Commen	ts:						
3.3	Error Co	ncealment							
$\boxtimes$	ec1.ac3	Commen	ts: Pas	ss					
$\boxtimes$	ec2.ac3	Commen	ts: Pas	SS					
$\boxtimes$	ec3.ac3	Commen	ts: Pas	SS					
	ec4.ac3	Commen	ts: Pas	ss					
$\boxtimes$	ec5.ac3	Commen	ts: Pas	SS					
3.4	Advance	d Bitstreams							
$\boxtimes$	advnc 1-4	Commen	ts: Pas	SS					
3.5	Encoder/	Decoder Con	npatibili	ity					
$\boxtimes$	Dolby Digita Consumer E		nments:	Pass					
$\boxtimes$	Dolby Digita Interactive C Encoder	l Content	nments:	Pass					
3.6	Extended	Bitstream C	ompatil	bility					
$\boxtimes$	dmm.ac3	Comments:	Pass						
$\boxtimes$	exm.ac3	Comments:	Pass						
$\boxtimes$	dhm.ac3	Comments:	Pass						
	adct.ac3	Comments:	Pass						
4	Functio	onal Tests							
4.1	Audio Co	oding Mode							
$\boxtimes$	1+1		$\boxtimes$	3_0		Sweep			
$\boxtimes$	1_0		$\boxtimes$	3_1		•			
		∠2	$\boxtimes$	3_2					
Con	nments:	Pass							
4.2	Data Rate	e (kbps)							
$\boxtimes$	32 40 48 56		$\boxtimes$	128	$\boxtimes$	256	$\boxtimes$	512	
$\boxtimes$	40	⊠ 80	$\boxtimes$	160	$\boxtimes$	320	$\boxtimes$	576	
$\boxtimes$	48		$\boxtimes$	192	$\boxtimes$	384	$\boxtimes$	640	
$\boxtimes$	56		$\boxtimes$	224	$\boxtimes$	448		Sweep	
Con	nments:	Pass							
4.3	Sample F	Rate							
$\boxtimes$	32 kHz		z	48 kHz		Sweep			
Con	nments:	Pass							

#### 4.4 Dialog Normalization

Line Mode: Plot resembles a staircase which decreases by 1 dB every 2 seconds

Custom 0 Mode: Plot is a flat line at 0 dBFS

Comments: Pass

#### 4.5 Dynamic Range Compression

Custom 0 Mode Comments: Pass

☐ Custom 1 Mode☐ Comments: Pass☐ RF Mode☐ Comments: Pass

#### 4.6 Output Mode (Downmix)

#### 4.6.1 Stereo Downmix Cancellation

2/0 (Lo/Ro)

2/0 (Lt/Rt)

Comments: Pass

#### 4.6.2 Output Mode Levels

#### **⊠** 3/2

	Left	Right	Center	Ls	Rs
dwnm5.ac3		☑ 4 kHz @ –20	☑ 2 kHz @ –20	⊠ 500 Hz @ –23	☑ 500 Hz @ –23

#### **3/0**

Bitstream	Left	Right	Center	Ls	Rs
dwnm1.ac3				□ none     □	none
	⊠ 500 Hz @ <i>–</i> 23	☑ 8 kHz @ –23			
dwnm4.ac3			☑ 2 kHz @ –20	□ none     □	□ none
	⊠ 500 Hz @ <i>–</i> 26	☑ 8 kHz @ –26			
dwnm5.ac3		☑ 4 kHz @ –20	☑ 2 kHz @ –20	□ none     □	□ none
	⊠ 500 Hz @ –26	⊠ 500 Hz @ –26			
dwnm6.ac3		☑ 4 kHz @ –20	☑ 2 kHz @ –20	□ none     □	□ none

#### **⊠** 2/2

Bitstream	Left	Right	Center	Ls	Rs
dwnm1.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	⊠ 500 Hz @ –20	☑ 8 kHz @ –20
		☑ 2 kHz @ –23			
dwnm2.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	⊠ 500 Hz @ –20	☑ 8 kHz @ –20
	☑ 2 kHz @ –24.5	☑ 2 kHz @ –24.5			
dwnm3.ac3			□ none	⊠ 500 Hz @ –20	8 kHz @ −20
	☑ 2 kHz @ –26	☑ 2 kHz @ –26			

	· ·				
Bitstream	Left	Right	Center	Ls	Rs
dwnm1.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none     □	□ none     □
	☑ 2 kHz @ –23	☑ 2 kHz @ –23			
	☑ 8 kHz @ -23	☑ 8 kHz @ –23			

Bitstream	Left	Right	Center	Ls	Rs
dwnm1.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none
	☑ 2 kHz @ –23	☑ 2 kHz @ –23			
	☑ 500 Hz @ –23	☑ 8 kHz @ –23			
dwnm2.ac3		☑ 4 kHz @ –20	□ none	□ none	□ none
	☑ 2 kHz @ –24.5	☑ 2 kHz @ –24.5			
	☑ 500 Hz @ –23	☑ 8 kHz @ –23			
dwnm3.ac3		☑ 4 kHz @ –20	□ none	□ none	□ none
	☑ 2 kHz @ –26	☑ 2 kHz @ –26			
	☑ 500 Hz @ –23	☑ 8 kHz @ –23			
dwnm4.ac3	1 kHz @ −20		□ none	□ none	□ none
	☑ 2 kHz @ –23	☑ 2 kHz @ –23			
	⊠ 500 Hz @ –26	図 8 kHz @ –26			

Bitstream	Left	Right	Center	Ls	Rs
dwnm1.ac3	□ none	⊠ none	☑ 2 kHz @ -20 [-29]	□ none	
			☑ 1 kHz @ –23 [–26]		
			☑ 4 kHz @ –23 [–26]		
			☑ 500 Hz @ –26 [–29]		
			☑ 8 kHz @ –26 [–29]		
dwnm2.ac3	□ none	□ none	☑ 2 kHz @ –21.5 [–30.5]	□ none	□ none
			☑ 1 kHz @ –23 [–26]		
			☑ 4 kHz @ –23 [–26]		
			☑ 500 Hz @ –26 [–29]		
			図 8 kHz @ −26 [−29]		
dwnm3.ac3	□ none	□ none	☑ 2 kHz @ –23 [–32]	□ none	□ none
			☑ 1 kHz @ –23 [–26]		
			☑ 4 kHz @ –23 [–26]		
			☑ 500 Hz @ –26 [–29]		
			図 8 kHz @ −26 [−29]		
dwnm4.ac3	□ none	□ none	☑ 2 kHz @ –20 [–29]	□ none	□ none
			☑ 4 kHz @ –23 [–26]		
			☑ 500 Hz @ –29 [–32]		
I			☑ 8 kHz @ –29 [–32]		

#### 4.7 Dual Mono

#### 1+1 acmod

Bitstream	Dual Mono Mode	Left	Right	Center
dwnm7.ac3	Stereo		☑ 4 kHz @ –24	<ul><li>✓ 1 kHz @ -26</li><li>✓ 4 kHz @ -30</li></ul>
dwnm7.ac3	Dual Left	☑ 1 kHz @ –23 [–26]	☑ 1 kHz @ –23 [–26]	1 kHz @ −20
dwnm7.ac3	Dual Right	☑ 4 kHz @ –27 [–30]	☑ 4 kHz @ –27 [–30]	☑ 4 kHz @ –24
dwnm7.ac3	Dual Mixed	<ul><li>✓ 1 kHz @ -26</li><li>✓ 4 kHz @ -30</li></ul>	<ul><li>✓ 1 kHz @ -26</li><li>✓ 4 kHz @ -30</li></ul>	<ul><li>✓ 1 kHz @ -26</li><li>✓ 4 kHz @ -30</li></ul>

#### 4.8 Coupling

Plots of coupling on and coupling off are nearly identical

Comments: Pass

#### 4.9 Initiation of Decoding

Start: All five bursts are reproduced at the beginning

Stop: All five bursts are reproduced at the end

Comments: Pass

#### 4.10 Extended Bitstream Capable

#### 4.10.1 Stereo Downmix Levels

	2/0 Lo/Ro	2/0 Lt/Rt
Center Mix Level	$\boxtimes$	$\boxtimes$
Surround Mix Level		$\boxtimes$

Comments Pass

#### 4.10.2 Preferred Stereo Downmix

Comments Pass

#### 4.10.3 Overload Protection

2/0 Lt/Rt: No observable distortion, saturation, or wraparound in the wave form
 2/0 Lo/Ro: No observable distortion, saturation, or wraparound in the wave form

Comments Pass

4.11 Dol	by Surrou	and Flag	Recognition
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	Detection of surround flag
Comm	ents

### 5 Optional Features

#### 5.1 Karaoke

**Note**: If panning is implemented as in the Dolby Digital C source code, results will be different from those listed here. Please refer to the Karaoke Capable section in *Dolby Digital FAQs* for more information.

☐ Karaoke	e Aware: 2/0 Lt/Rt C	Output			
Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	none	none	none
	☐ 2 kHz @ -23	☐ 2 kHz @ -23			
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara2.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	none	none	none
	☐ 2 kHz @ -24.5	☐ 2 kHz @ -24.5			
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara3.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	none	none	none
	☐ 2 kHz @ -26	☐ 2 kHz @ -26			
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara4.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	none	none	none
	☐ 2 kHz @ -23	☐ 2 kHz @ -23			
	☐ 500 Hz @ -26	■ 8 kHz @ –26			
	e Aware: 3/2 Output	t			
Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	☐ 2 kHz @ –20	none	none
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara2.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	☐ 2 kHz @ -20	none	none
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara3.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	☐ 2 kHz @ -20	none	none
	☐ 500 Hz @ -23	■ 8 kHz @ -23			
kara4.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	☐ 2 kHz @ –20	none	none
	☐ 500 Hz @ -26	☐ 8 kHz @ -26			
kara5.ac3	☐ 1 kHz @ -20	☐ 4 kHz @ –20	☐ 500 Hz @ -23	none	none
kara6 ac3	□ 1 kHz @ -20	□ 4 kHz @ –20	□ 500 Hz @ -26	□none	□none

Karaoke Capable: None Mode, 2/0 Lt/Rt Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none     □
	☑ 2 kHz @ –23	☑ 2 kHz @ –23			
kara2.ac3			□ none	□ none	□ none     □
	☐ 2 kHz @ -24.5	☐ 2 kHz @ -24.5			
kara3.ac3	☑ 1 kHz @ –20	☑ 4 kHz @ –20	□ none	□ none	⊠ none
	☐ 2 kHz @ –26	☐ 2 kHz @ –26			

Karaoke Capable: None Mode, 3/2 Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	☑ 1 kHz @ –20	☑ 4 kHz @ –20		□ none	□ none     □

Karaoke Capable: V1 Mode, 2/0 Lt/Rt Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	1 kHz @ −20		□ none     □	□ none	□ none
	☑ 2 kHz @ –23	☑ 2 kHz @ –23			
		⊠ 500 Hz @ –23			
kara2.ac3	1 kHz @ −20	☐ 4 kHz @ -20	□ none	□ none	□ none
	☐ 2 kHz @ -24.5	☐ 2 kHz @ -24.5			
		⊠ 500 Hz @ –23			
kara3.ac3			□ none	□ none	
	☐ 2 kHz @ -26	☐ 2 kHz @ -26			
		☑ 500 Hz @ –23			

Karaoke Capable: V1 Mode, 3/2 Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3			☑ 2 kHz @ –20	□ none	□ none

Karaoke Capable: V2 Mode, 2/0 Lt/Rt Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none
	□ 2 kHz @ -23	☑ 2 kHz @ –23			
	☑ 8 kHz @ -23	☑ 8 kHz @ –23			
kara2.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none
	☐ 2 kHz @ -24.5	☐ 2 kHz @ –24.5			
	☑ 8 kHz @ –23	☑ 8 kHz @ –23			
kara3.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none
	☐ 2 kHz @ -26	☐ 2 kHz @ –26			
	☑ 8 kHz @ –23	☑ 8 kHz @ –23			

Karaoke Capable: V2 Mode, 3/2 Output

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3	☑ 1 kHz @ –20	☑ 4 kHz @ –20	☑ 2 kHz @ –20	□ none	□ none
			⊠ 8 kHz @ –20		

Karaoke Capable: V1 + V2 Mode, 2/0 Lt/Rt Output

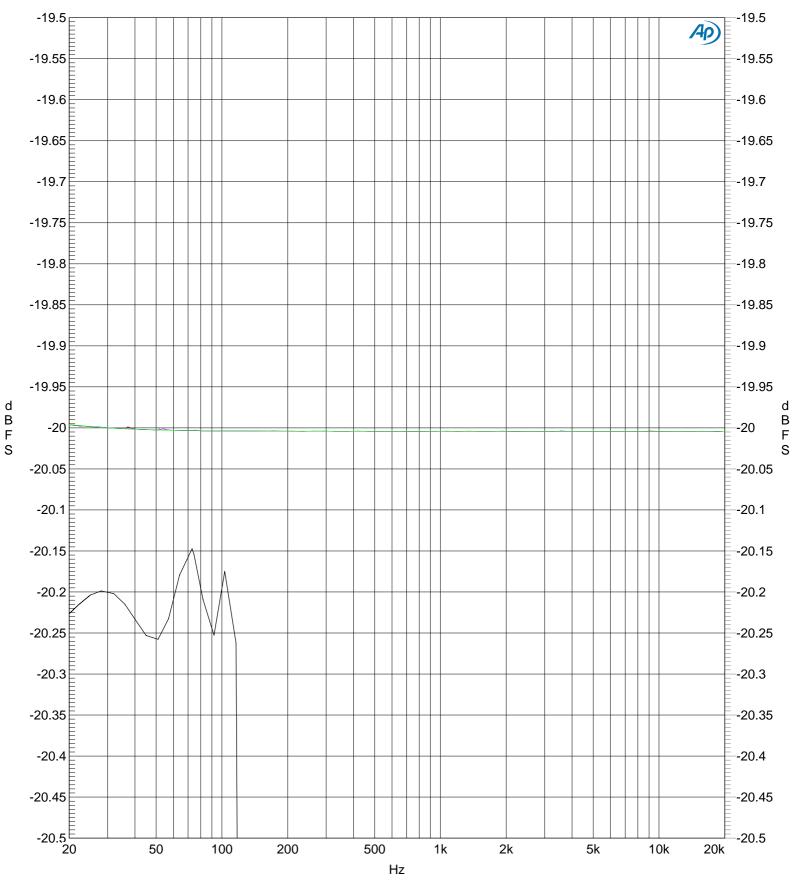
Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3			□ none	□ none	□ none
	☐ 2 kHz @ -23	☐ 2 kHz @ –23			
	⊠ 500 Hz @ –20	☑ 8 kHz @ –20			
kara2.ac3		☑ 4 kHz @ –20	□ none	□ none	□ none
	☐ 2 kHz @ -24.5	☐ 2 kHz @ -24.5			
	⊠ 500 Hz @ –20	☑ 8 kHz @ –20			
kara3.ac3	1 kHz @ −20	☑ 4 kHz @ –20	□ none	□ none	□ none
	☐ 2 kHz @ -26	☐ 2 kHz @ -26			
	⊠ 500 Hz @ –20	☑ 8 kHz @ –20			

Bitstream	Left	Right	Center	Ls	Rs
kara1.ac3				□ none	□ none
		☑ 8 kHz @ –20			

5.2	T:	D-1
~ /	IIMA	IIAIAV
J.Z	1 111110	Delay

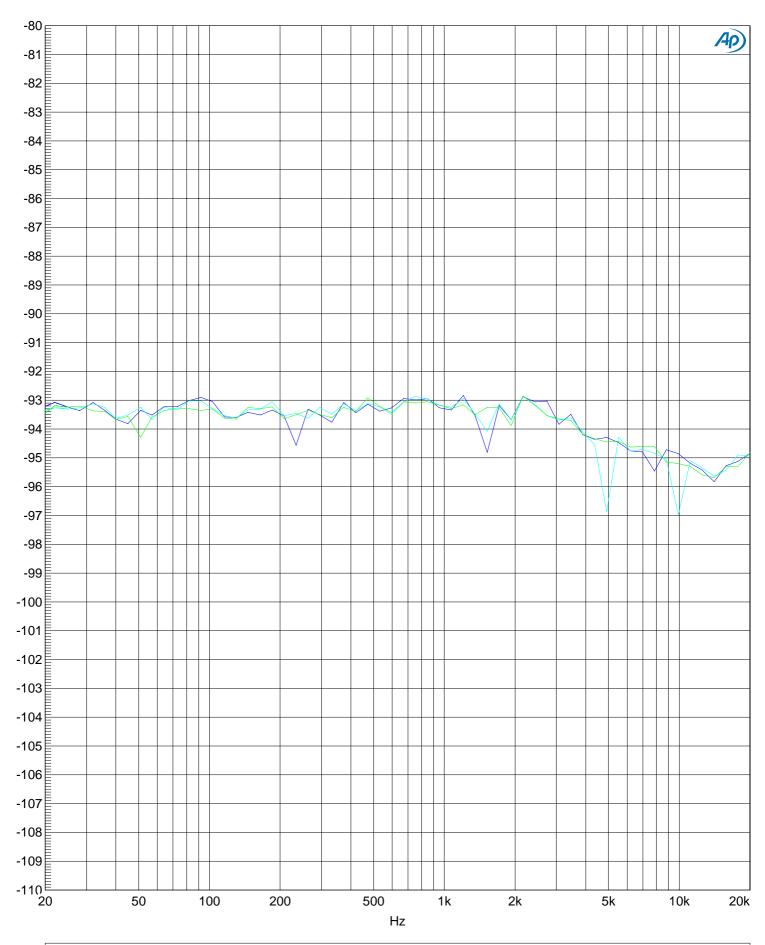
Center Channel Fixed		_ ms	S	urround Cha ] Fixed	nnel	ms
Variable				] Variable		
Max		ms		Max		ms
Min		ms		Min		ms
Step Size		ms		Step Size		ms
<b>Bass Man</b> See Figures: Comments:	agement					
5.4 Calibratio	n Noise					
Bandpass fil	tered noise	center	ed between 50	0 and 1,000 h	Hz	
<u></u>	dBFS	R	dB	FS		
c	dBFS	LFE	dB	FS		
	dBFS	Rs	dB	FS		
Commonts:						

## Frequency Response Test [ 2.2 ]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Dot	5	DSP Anlr.Level A	Left	Left
1	2	Red	Dot	5	DSP Anlr.Level B	Right	Right
2	1	Cyan	Dot	5	DSP Anlr.Level A	Left	Ls
2	2	Magenta	Dot	5	DSP Anlr.Level B	Right	Rs
3	1	Green	Dot	5	DSP Anlr.Level A	Left	Center
3	2	Black	Dash DotDot	8	DSP Anlr.Level B	Right	LFE

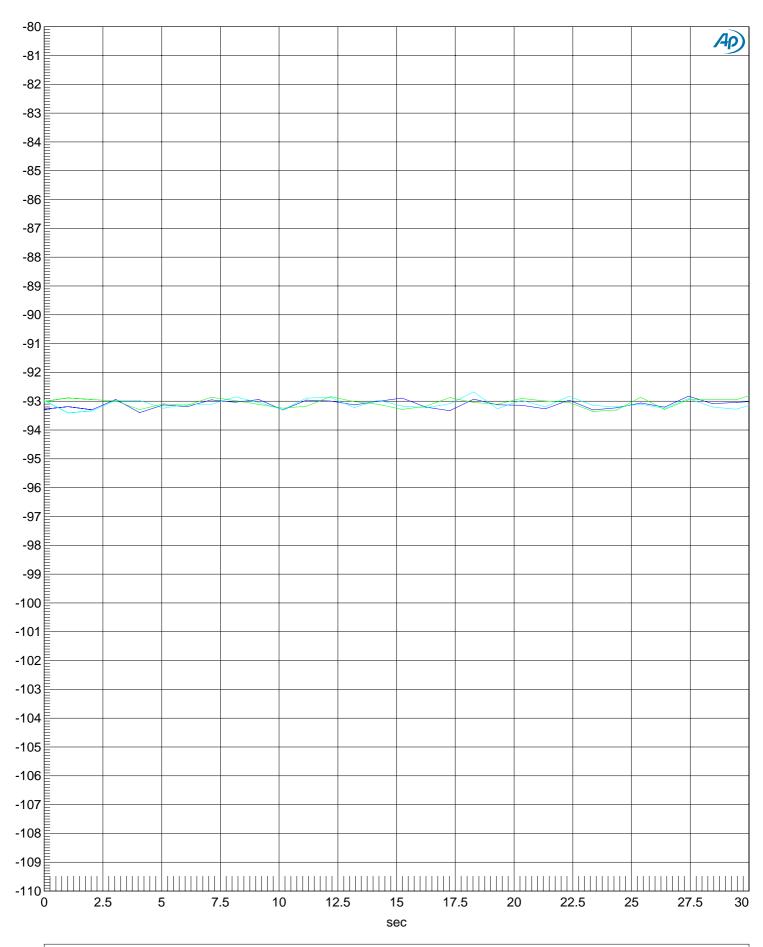
### THD vs. Frequency Test [ 2.3 ]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1 2 3	1 1 1	Blue Cyan Green	Dot Dot Dot	5 5 5	DSP Anir.THD+N Ampi A DSP Anir.THD+N Ampi A DSP Anir.THD+N Ampi A	Left	Ls
License	ee: Visua	lOn Inc.,	Implementati	on: voA0	C3Dec , Evaluation Number:	7259	

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Dot	5	DSP Anir.THD+N Ampl A	Left	Left
2	1	Cyan	Dot	5	DSP Anlr.THD+N Ampl A	Left	Ls
3	1	Green	Dot	5	DSP Anlr.THD+N Ampl A	Left	Center

### Dynamic Range Test [ 2.6 ]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Dot	5	DSP Anir.THD+N Ampl A	Left	Left
2	1	Cyan	Dot	5	DSP Anlr.THD+N Ampl A	Left	Ls
3	1	Green	Dot	5	DSP Anlr.THD+N Ampl A	Left	Center

d

B F

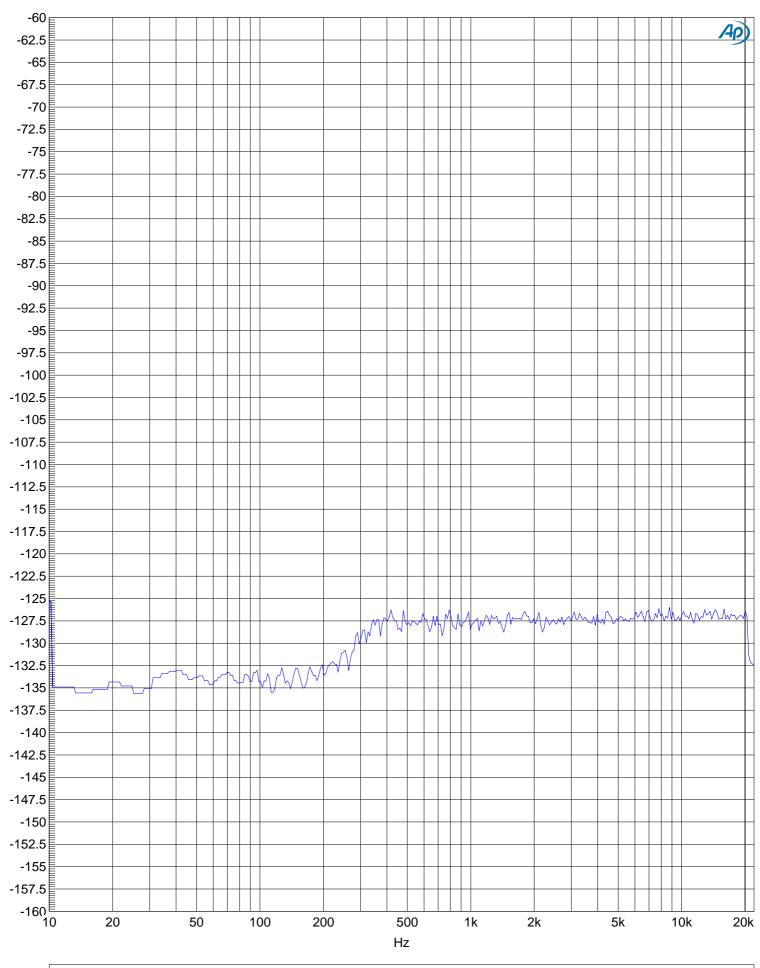
S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment				
1	1 2	Blue Red	Dot Dot	5 5	Fft.Ch.1 Ampl Fft.Ch.2 Ampl		Left Right				
License	Licensee: VisualOn Inc., Implementation: voAC3Dec , Evaluation Number: 7259										

d B F S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	5	Fft.Ch.1 Ampl	Left	Left
1	2	Red	Dot	5	Fft.Ch.2 Ampl	Right	Right
2	1	Cyan	Solid	5	Fft.Ch.1 Ampl	Left	Ls
2	2	Magenta	Dot	5	Fft.Ch.2 Ampl	Right	Rs
3	1	Green	Solid	5	Fft.Ch.1 Ampl	Left	Center
3	2	Black	Dot	5	Fft.Ch.2 Ampl	Right	LFE
License	ee: Visua	lOn Inc., Im	plementation	: voAC3I	Dec , Evaluation	Number:	7259

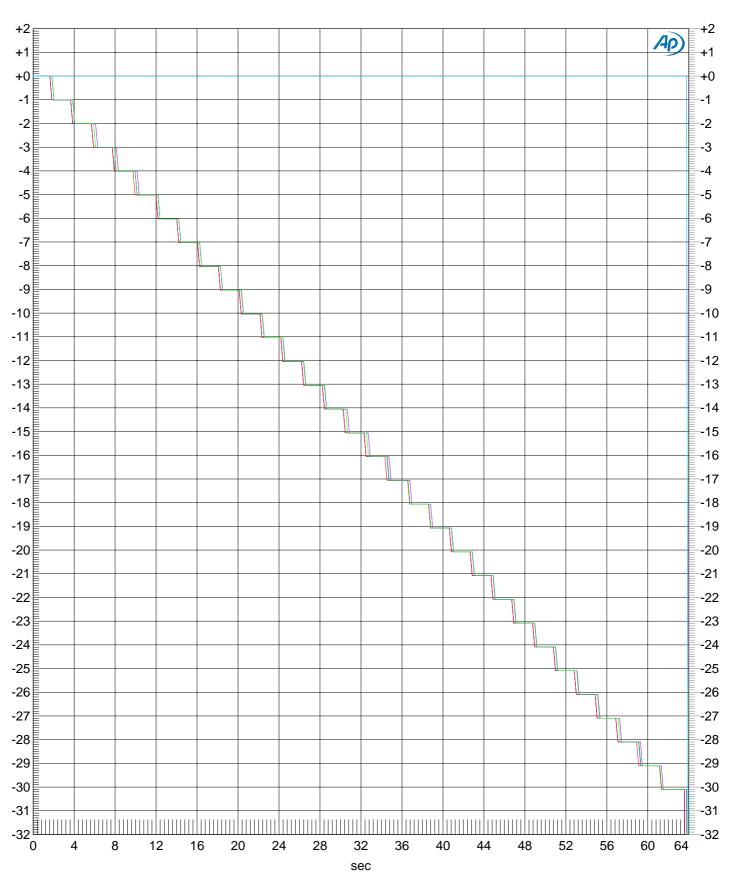
### TPDF Test [ 2.9 ]



B F

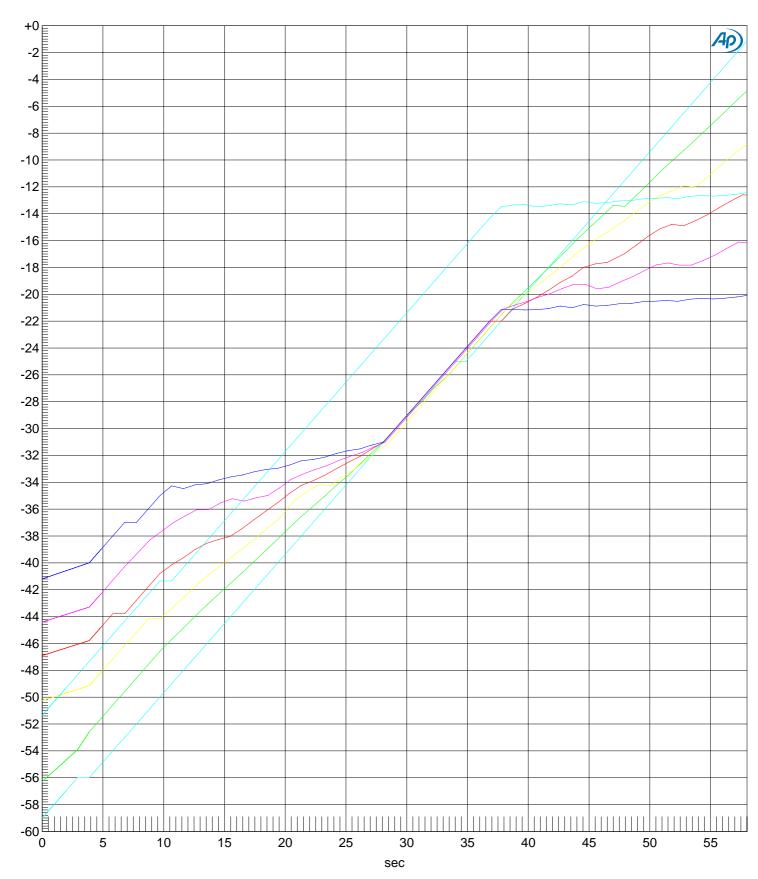
S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	5	Fft.Ch.1 Ampl	Left	
Licen	see: Visua	ılOn Inc.,	Implementat	ion: voA	C3Dec , Evaluati	on Num	ber: 7259



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Dot	5	DSP Anlr.Level A	Left	Left DRC Line Mode
1	2	Red	Dot	5	DSP Anlr.Level B	Right	Right
2	1	Cyan	Dot	5	DSP Anlr.Level A	Left	Ls
2	2	Magenta	Dot	5	DSP Anlr.Level B	Right	Rs
3	1	Green	Dot	5	DSP Anlr.Level A	Left	Center
4	1	Magenta	Dot	5	DSP Anlr.Level A	Left	Left DRC Custom 0
4	2	Cyan	Dot	5	DSP Anlr.Level B	Right	Right

### Line Mode Compression Test [ 4.5.1 ]

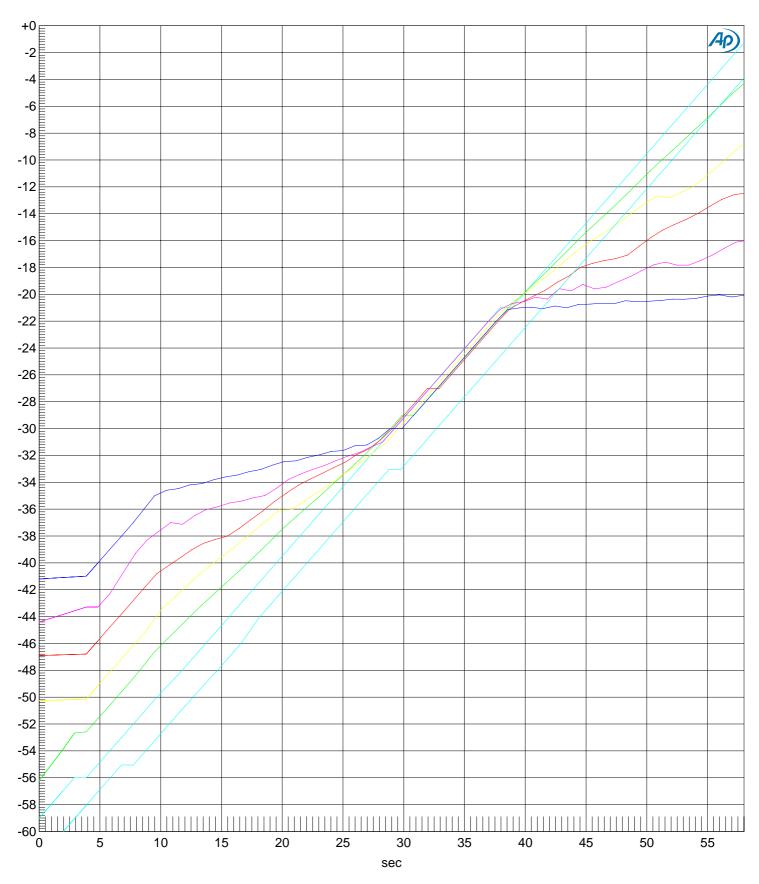


d B F S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0
2	1	Green	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.2
3	1	Yellow	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.4
4	1	Red	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.6
5	1	Magenta	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.8
6	1	Blue	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 1.0
7	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0 ACMOD 2/0

Licensee: VisualOn Inc., Implementation: voAC3Dec , Evaluation Number: 7259

### Custom Mode 0 Compression Test [ 4.5.2 ]

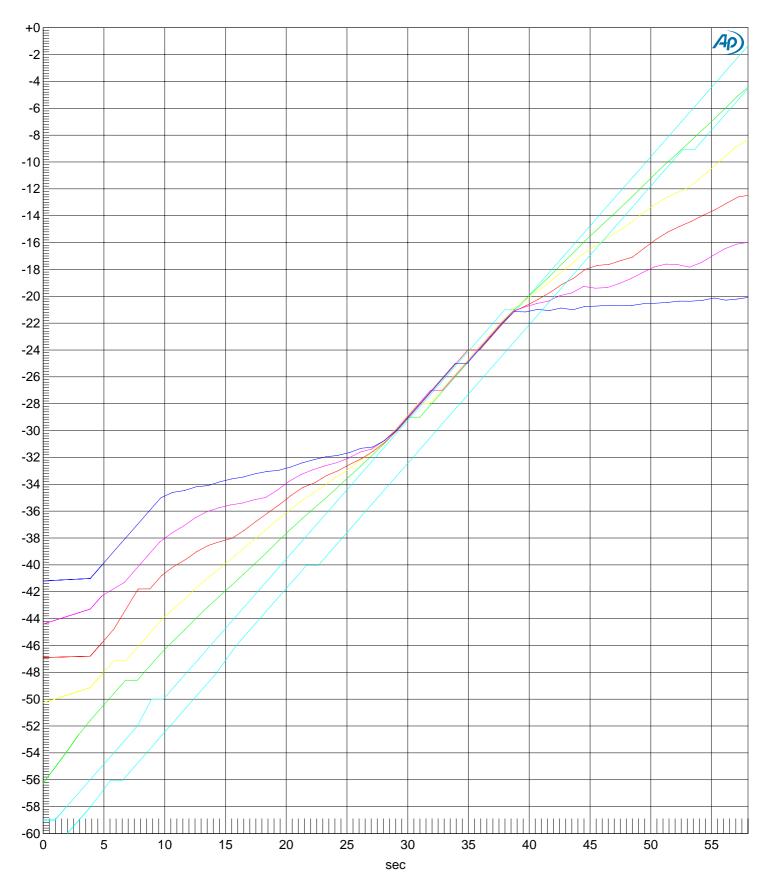


d B F S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0
2	1	Green	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.2
3	1	Yellow	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.4
4	1	Red	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.6
5	1	Magenta	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.8
6	1	Blue	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 1.0
7	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0 ACMOD 2/0

 $\label{licensee: VisualOn Inc., Implementation: voAC3Dec\ , Evaluation\ Number:\ 7259$ 

### Custom Mode 1 Compression Test [ 4.5.3 ]

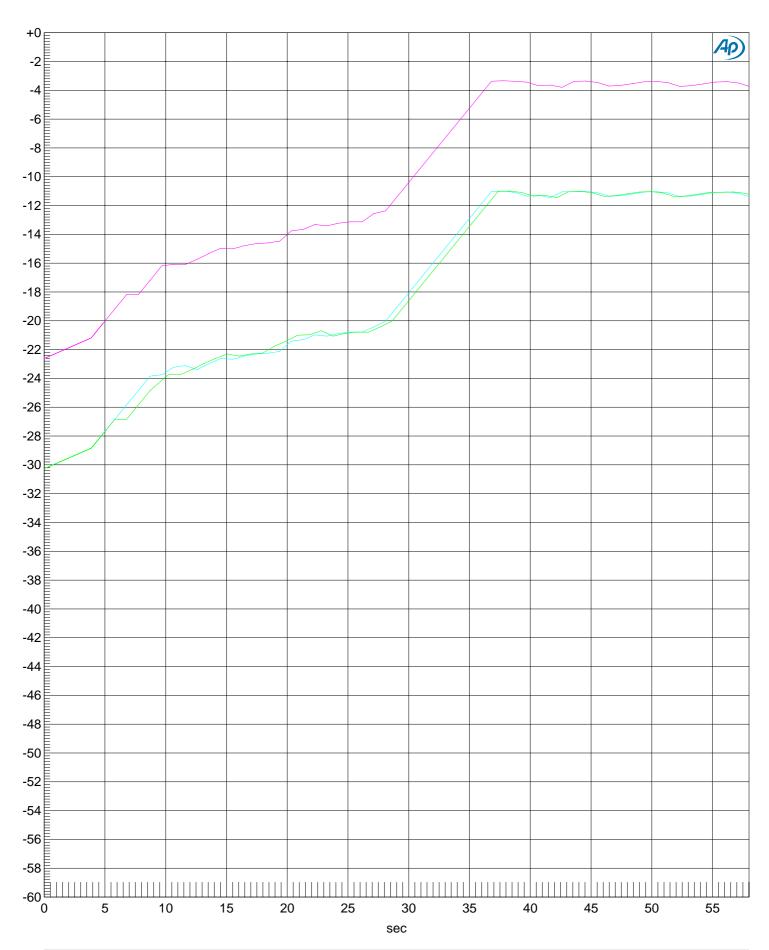


d B F S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0
2	1	Green	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.2
3	1	Yellow	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.4
4	1	Red	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.6
5	1	Magenta	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.8
6	1	Blue	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 1.0
7	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0 ACMOD 2/0

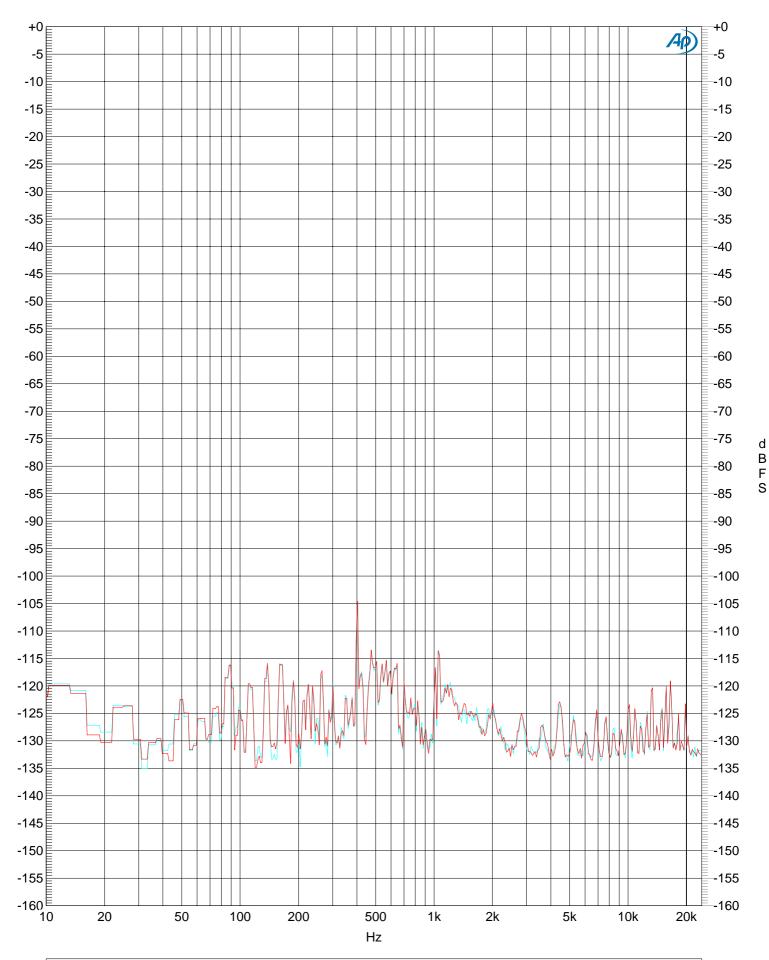
 $\label{linear_$ 

### RF Mode Compression test [ 4.5.4 ]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0
2	1	Green	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 1.0
3	1	Magenta	Dot	5	DSP Anlr.Ampl A	Left	Left DRC Cut / Boost = 0.0 ACMOD 2/0

### Lo/Ro Downmix Test [ 4.6.1.1 ]



B F

S

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1 2	Cyan Red		5 5			Left Right
License	ee: Visua	lOn Inc.,	Implementat	tion: voA	C3Dec , Evaluati	on Numl	per: 7259

+0<sub>E</sub>

d B F

S

-160<sup>≜</sup> 10

20

50

100

200

-160

20k

Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1 2	Red Cyan	Dot Dot	5 5	Fft.Ch.1 Ampl Fft.Ch.2 Ampl		Left Right
License	ee: Visua	lOn Inc.,	Implementat	ion: voA	C3Dec , Evaluati	on Numl	per: 7259

500

Hz

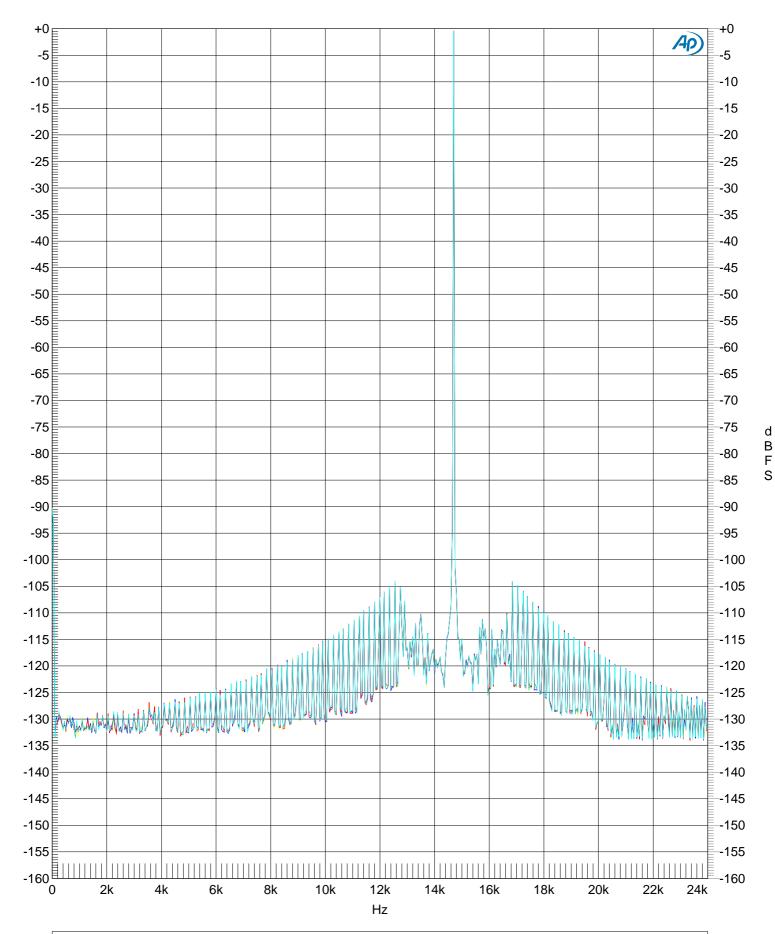
1k

2k

5k

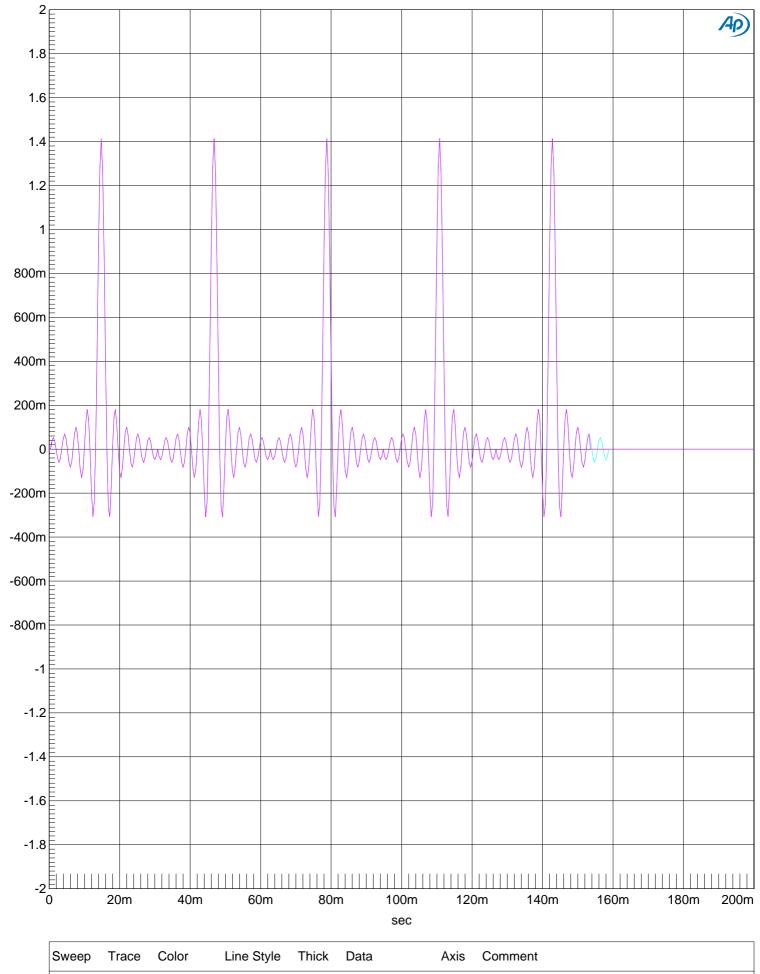
10k

### Coupling Test [4.8]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1 1 2 2	1 2 1 2	Yellow Blue Red Cyan	Dot Dot Dot Dot	5 5 5 5	Fft.Ch.1 Ampl Fft.Ch.2 Ampl Fft.Ch.1 Ampl Fft.Ch.2 Ampl	Left Right Left Right	Left Cuplon On Right Left Cuplon Off Right
License	ee: Visua	lOn Inc., I	mplementation	on: voAC	3Dec , Evaluatio	n Numbe	er: 7259

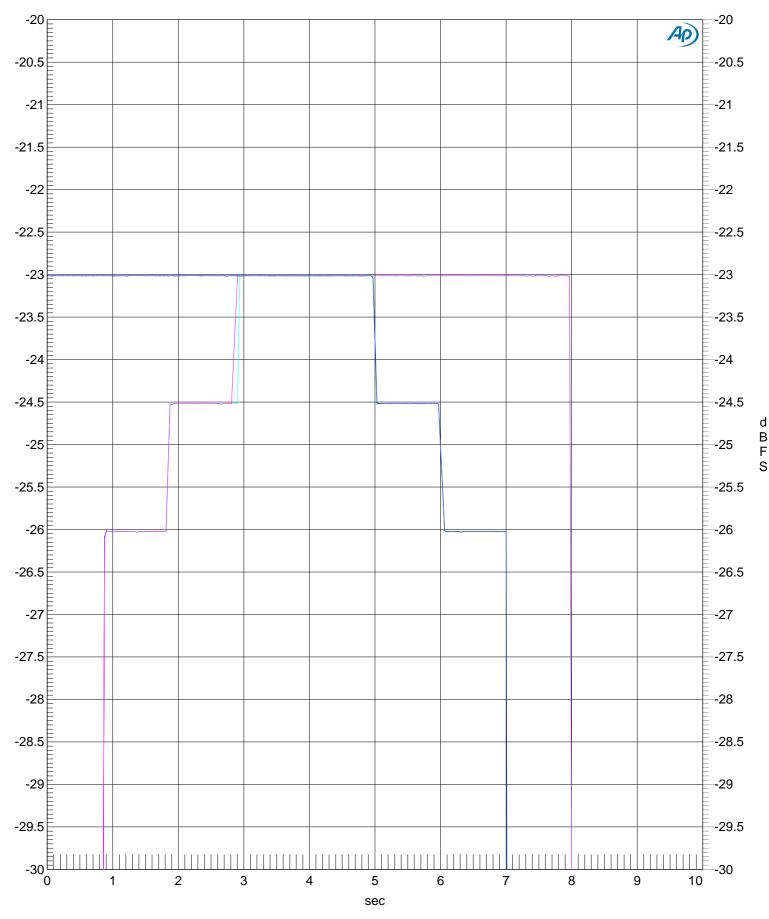
### Startstop Test [ 4.9 ]



F F S

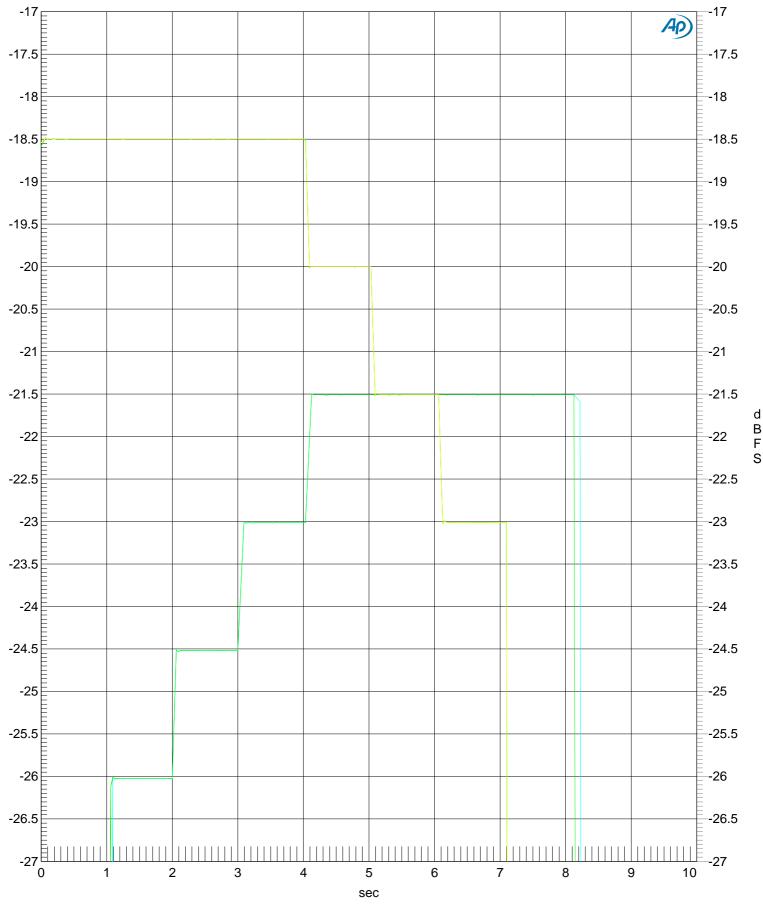
Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1 2	1	Cyan Magenta	Dot Dot	5 5	Fft.Ch.1 Ampl Fft.Ch.1 Ampl		
License	ee: Visua	lOn Inc., Im	plementation	: voAC3I	Dec , Evaluation l	Numbe	r: 7259

### Center Channel Sweep Test [4.10.1.1]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Level A	Left	Left Lo/Ro
1	2	Magenta	Dot	5	DSP Anlr.Level B	Right	Right
2	1	Green	Dot	5	DSP Anlr.Level A	Left	Left Lt/Rt
2	2	Blue	Dot	5	DSP Anlr.Level B	Right	Right

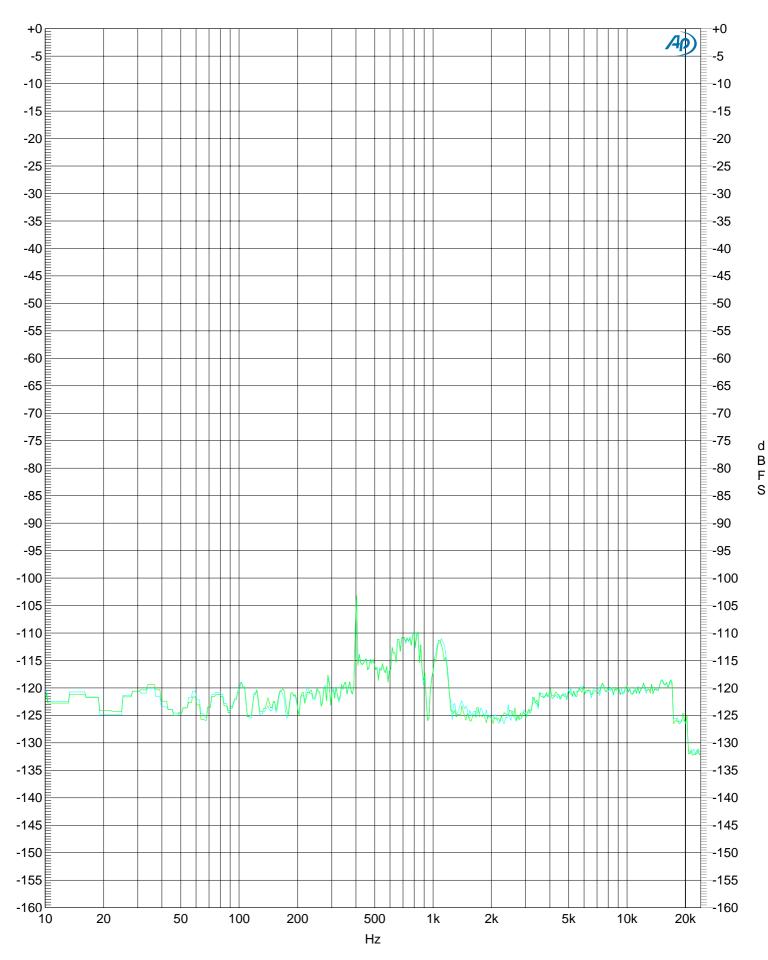
### Surround Channel Sweep Test [4.10.1.2]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Dot	5	DSP Anlr.Level A	Left	Left Lo/Ro
1	2	Green	Dot	5	DSP Anlr.Level B	Right	Right
2	1	Green	Dot	5	DSP Anlr.Level A	Left	Left Lt/Rt
2	2	Yellow	Dot	5	DSP Anlr.Level B	Right	Right

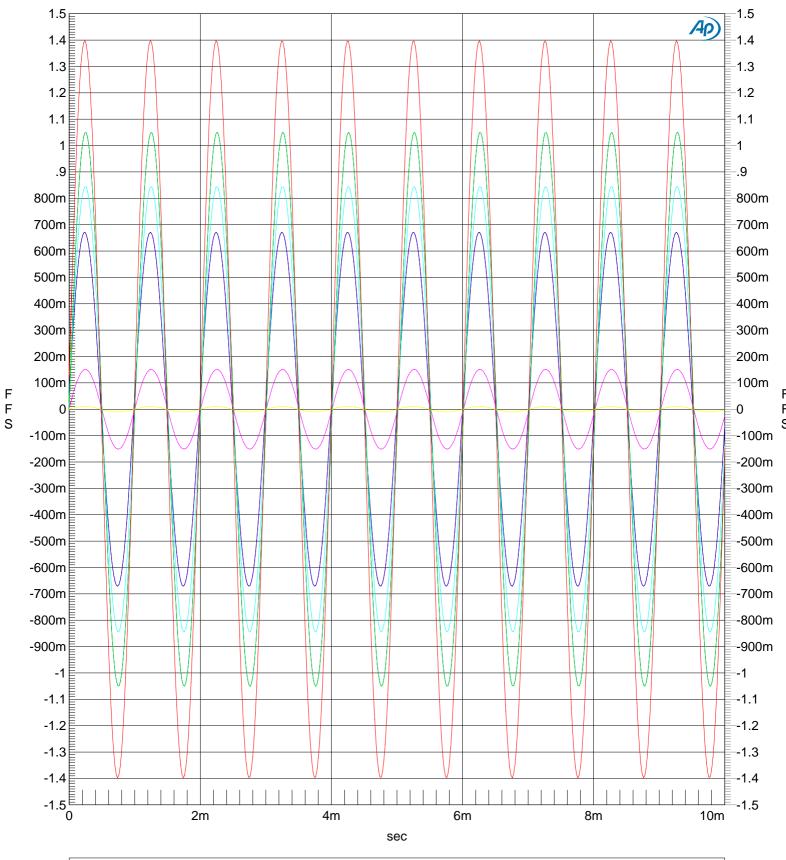


d



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1 2	Cyan Green	Solid Solid	5 5	Fft.Ch.1 Ampl Fft.Ch.2 Ampl		
License	ee: Visua	IOn Inc.,	Implementati	on: voAC	C3Dec , Evaluatio	n Numb	er: 7259

### Overload Protection Test [4.10.3]



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
5	1	Red	Dot	5	Fft.Ch.1 Ampl	Left	Left Lo/Ro Over1
5	2	Blue	Dot	5	Fft.Ch.2 Ampl	Right	Right
6	1	Magenta	Dot	5	Fft.Ch.1 Ampl	Left	Left Lt/Rt Over1
6	2	Cyan	Dot	5	Fft.Ch.2 Ampl	Right	Right
7	1	Blue	Dot	5	Fft.Ch.1 Ampl	Left	Left Lo/Ro Over2
7	2	Green	Dot	5	Fft.Ch.2 Ampl	Right	Right
8	1	Yellow	Dot	5	Fft.Ch.1 Ampl	Left	Left Lt/Rt Over2
8	2	Red	Dot	5	Fft.Ch.2 Ampl	Right	Right