



Common Amplifier Format

Rane MA 4

As Measured
As Given

General	
Serial #:	(21)00439279
# Channels:	4
Topology:	Class D Switch-mode
Sample Rate:	48 kHz
Mfg Website:	www.rane.com

Physical	
Height:	1 RU
Depth:	9.25/23.5 in./cm.
AC Mains:	100-240 VAC
Power Draw:	500 W Max
Weight:	3.6/8 kg/lbs
UL Wire Class:	2

Tested by	
Company:	www.etcinc.us
Tech:	Pat Brown
Date:	JUL 2014

Instrumentation	
Audio Precision APx515 Voltmeter	
Hioki 3334 Power Analyzer	
NTI XL2 SLM	
NTI MA220 Preamp	
ACO 7052 Microphone	

Ref	Plot	Specification	As Measured	As Given
1	A	Input Sensitivity (1 kHz, 8 ohms)	1.1 Vrms	3.4 dBu
2	A	Voltage Gain	26 dB	
3	A	Maximum Output Voltage (1 kHz, 8 ohms)	27 Vrms	38 Vpeak
4		Maximum Input Voltage (@ min sens)	9.3 Vrms	21.6 dBu
5	K	Noise Floor (20 Hz - 20 kHz)	-42 dBu	
6		Dynamic Range (1 kHz A-wtd)	82 dB	
7	C	Frequency Response Deviation (20 Hz - 20 kHz 4 ohms)	+/-2.1 dB	
8	G	Latency (1 kHz)	1.53 ms	
9	I	CMRR @ 1 kHz (see Plot H)	48 dB	
10		Input Impedance (1 kHz)	10 kohms	
11	M	Fan Noise (Front, Rear)	25, 26 dBA-Slow ref. 1 m	

	Plots	I/O Matrix
A	Input vs. Output Level	
B	Frequency Response (20 Hz - 20 kHz)	Mono 1ch
C	Frequency Response (2 Hz - 80 kHz)	Mono 4ch
D	THD Ratio vs. Frequency	70V/100V
E	IMD Difference Frequency Distortion	
F	Excess Phase Response	
G	Group Delay vs. Frequency	
H	Crosstalk	
I	Common-Mode Rejection Ratio (CMRR)	
J	Noise Floor Spectrum	
K	Pin 1 Response	
L		
M	Short-Circuit Behavior	

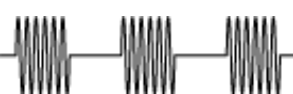
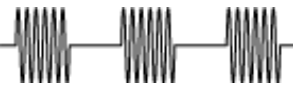




Links to Data

I/O Matrix

[To Main Page](#)

Mode: Mono (4 ch)
 Channels: 1
 Line Vrms: 120



Ref	A	B	C	D	E	F	G	H	I	J	K	L	M				
	Audio (per channel)							Supply (total)			Thermal Output						
Stimulus	Stimulus	Crest Factor	Load R	dBu In	Vrms Out	Loading Eff. (dB)	Rated Watts	Meas. Watts	Meas. dBW	Amps	Watts	Power Factor	BTU/hr	kCal/hr			
1	Burst CEA2006 1 kHz 	17	8	3.4	27	0	100	91	20								
			4	3.4	26	0	100	169	22								
			2														
	1% THD																
2	Burst CEA2006 50 Hz 	17	8	3.4	25	0		78	19								
			4	3.4	23	-1		132	21								
			2														
	3% THD																
3	Tone 1 kHz 15 sec 	3	8	3.4	27	0		91	20	1.4	166	0.99	257	65			
			4	1.0	18	-4		81	19	1.4	139	0.83	199	50			
			2														
4	Tone 50 Hz 15 sec 	3	8	3.4	26	0		85	19	1.4	165	0.98	273	69			
			4	0.5	18	-3		81	19	1.4	163	0.97	280	70			
			2														
5	Noise Pink 60 sec 	9	8	-3	10	0		13	11	0.5	56	0.94	150	38			
			4	-3	8	-2		16	12	0.5	57	0.95	140	35			
			2														
	1/4 Power																
6	Noise Pink 60 sec 	12	8	-6	7	0		6	8	0.4	44	0.92	130	33			
			4	-6	7	0		12	11	0.5	56	0.94	151	38			
			2														
	1/8 Power																
7	Inrush Current																
8	Idle ("On" but no signal)												0.64	52	0.68	178	45
9	Standby																
Ref	A	B	C	D	E	F	G	H	I	J	K	L	M				

Mode: 70V/100V with MT-4 Transformer Option

[To Main Page](#)

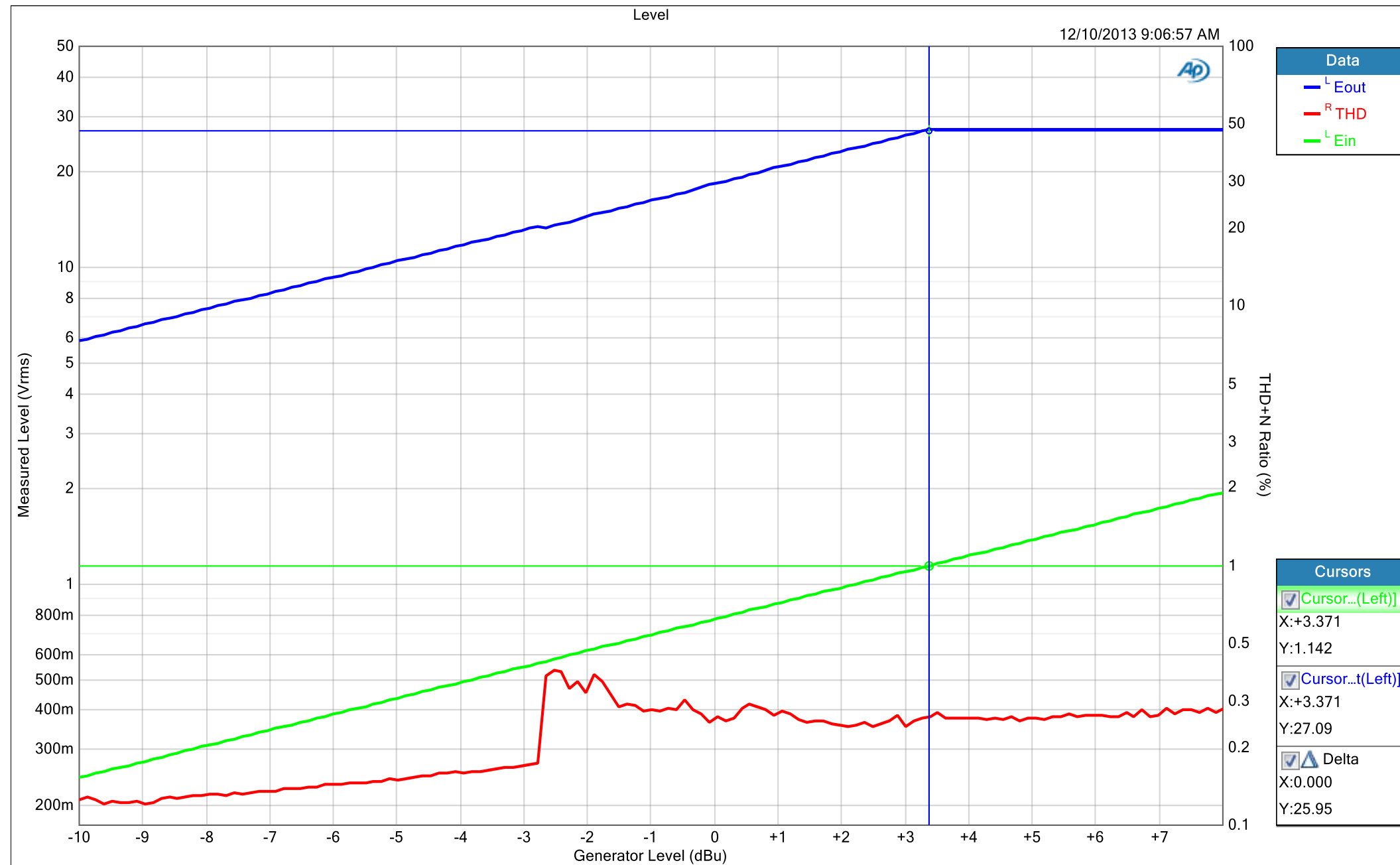
Channels: 1/4

Units: Linear

Line Vrms: 120

Ref	Stimulus	Stimulus	CF	Min Load R	Audio (per channel)			Supply (total)			Thermal Output		
					dBu In	Vrms Out	Meas. Watts	Rated Watts	Amps	Watts	PF	BTU/hr	kCal/hr
70 V (1 ch driven)													
1	Burst	CEA2006 1 kHz	17	50	3.4	70	98	100					
2	Noise	Pink 60 sec (1/4 pwr)	9	50	-3.0	32	20		0.6	65	0.95	152	38
3	Noise	Pink 60 sec (1/8 pwr)	12	50	-6.0	23	11		0.4	49	0.93	131	33
70 V (4 ch driven)													
4	Burst	CEA2006 1 kHz	17	50	22.2	84	141	100					
5	Noise	Pink 60 sec (1/4 pwr)	9	50	-3.0	32	20		1.4	161	0.96	271	68
6	Noise	Pink 60 sec (1/8 pwr)	12	50	-6.0	23	11		0.8	97	0.96	186	47
100 V (1 ch driven)													
7	Burst	CEA2006 1 kHz	17	100	3.4	94	88	100					
8	Noise	Pink 60 sec (1/4 pwr)	9	100	-3.0	45	20		0.6	63	0.94	146	37
9	Noise	Pink 60 sec (1/8 pwr)	12	100	-6.0	32	10		0.4	48	0.93	129	32
100 V (4 ch driven)													
10	Burst	CEA2006 1 kHz	17	100	3.4	94	88	100					
11	Noise	Pink 60 sec (1/4 pwr)	9	100	-3.0	45	20		1.3	150	0.96	373	94
12	Noise	Pink 60 sec (1/8 pwr)	12	100	-6.0	36	13		0.8	94	0.96	145	37

CF - Crest Factor
 PF - Power Factor

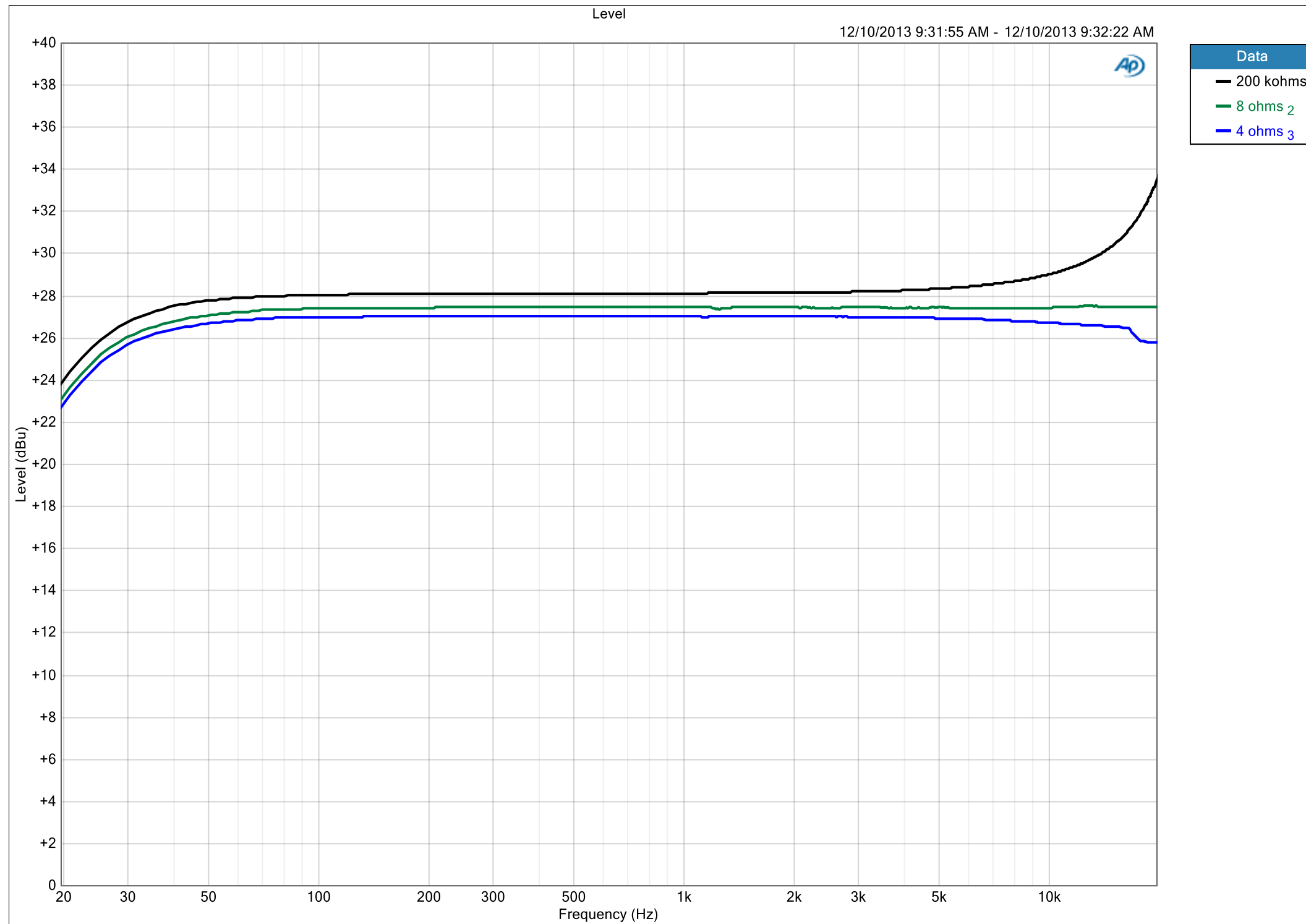


Note: The cursors are set for the determination of input sensitivity, maximum linear output voltage, and voltage gain.

See CAF Reference for measurement setup.

B Frequency Response Magnitude (20 Hz - 20 kHz at -3 dB re. rated sensitivity)

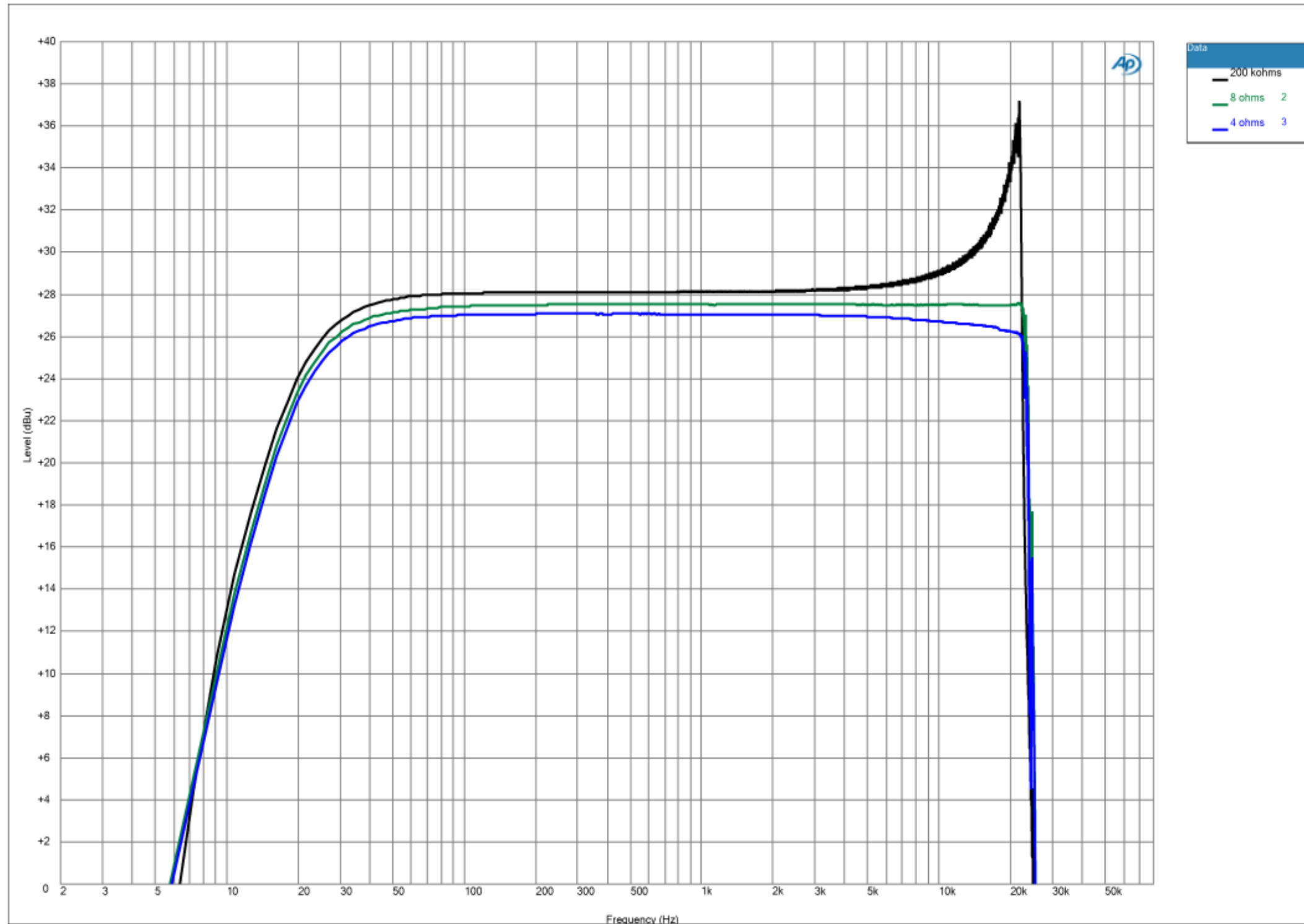
[To Main Page](#)



See CAF Reference for measurement setup.

C Frequency Response Magnitude (2 Hz - 80 kHz at -3 dB re. rated sensitivity)

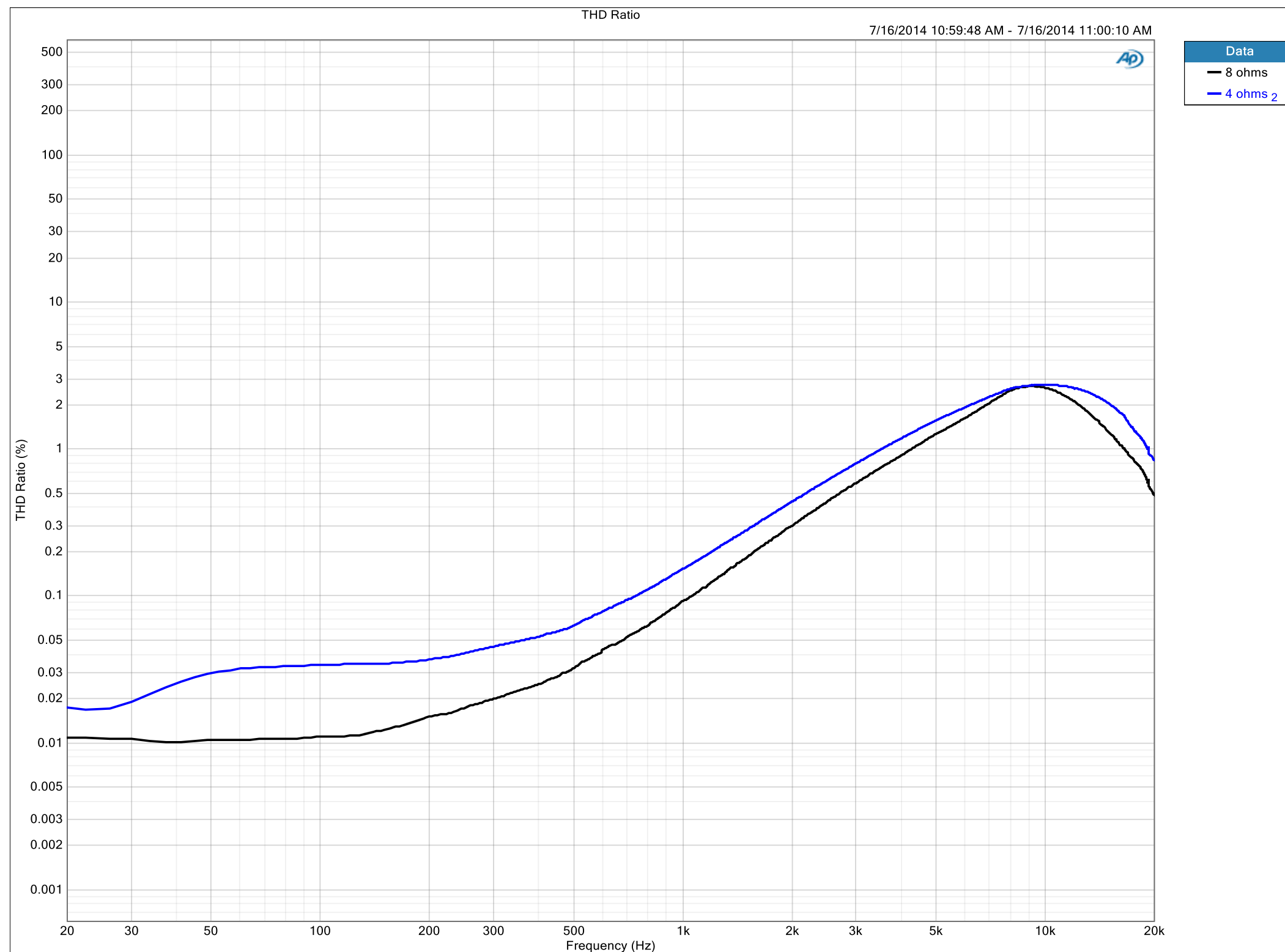
[To Main Page](#)



See CAF Reference for measurement setup.

D THD Ratio vs. Frequency (20 Hz - 20 kHz at -3 dB re. rated sensitivity)

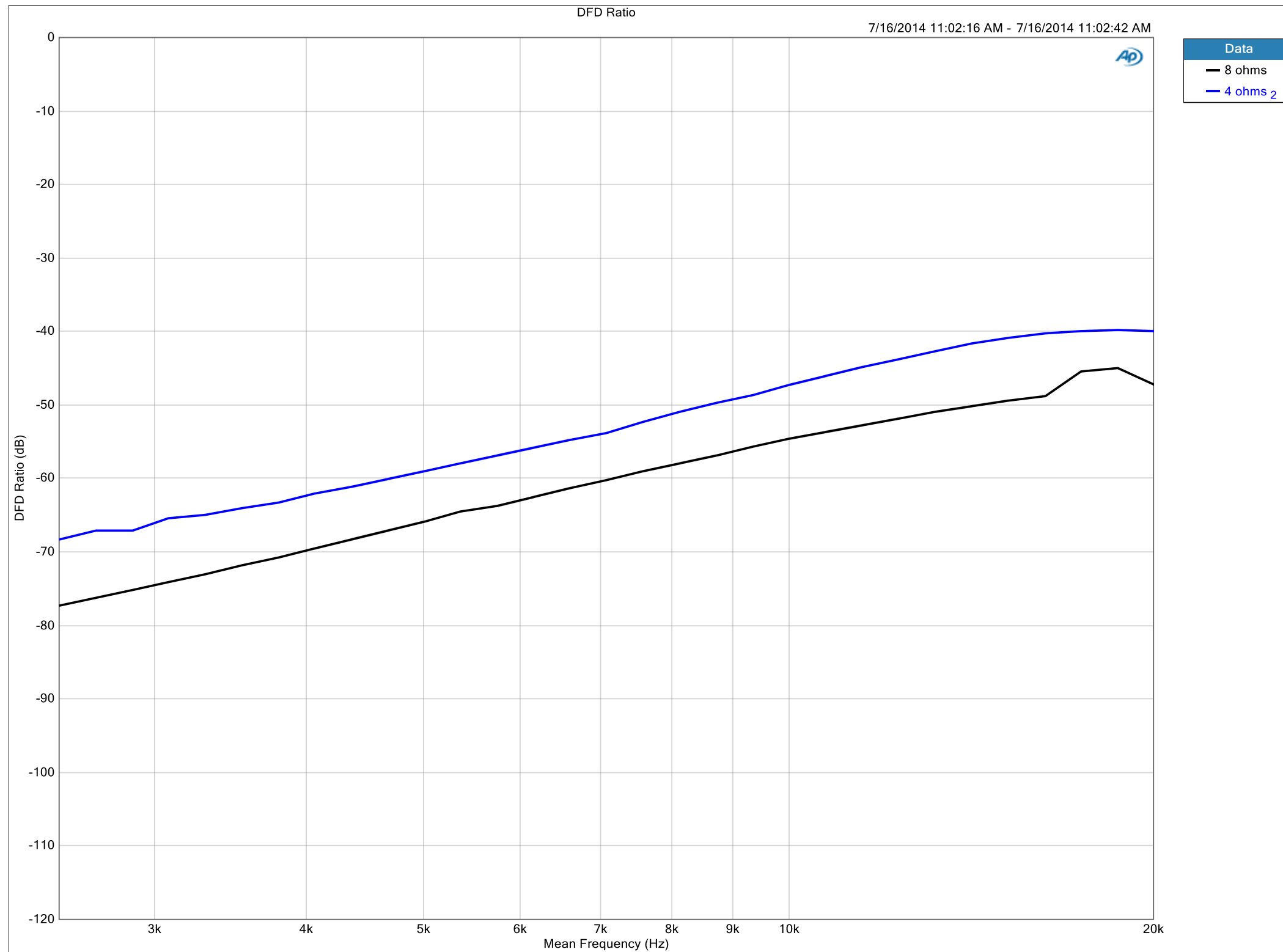
[To Main Page](#)



See CAF Reference for measurement setup.

E IMD Difference Frequency Distortion (20 Hz - 20 kHz at -3 dB re. rated sensitivity)

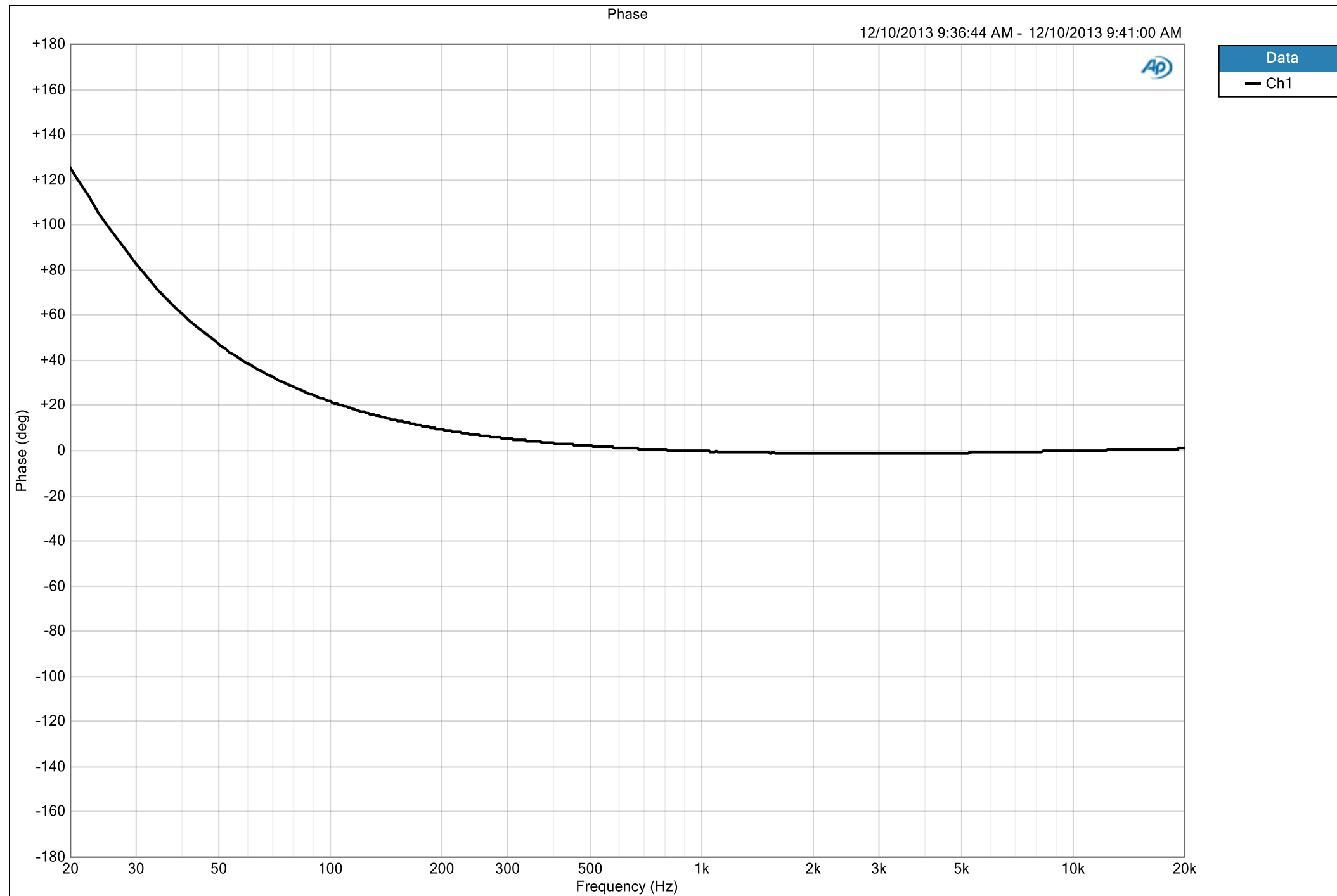
[To Main Page](#)



See CAF Reference for measurement setup.

F Excess Phase (20 Hz - 20 kHz at -3 dB re. rated sensitivity)

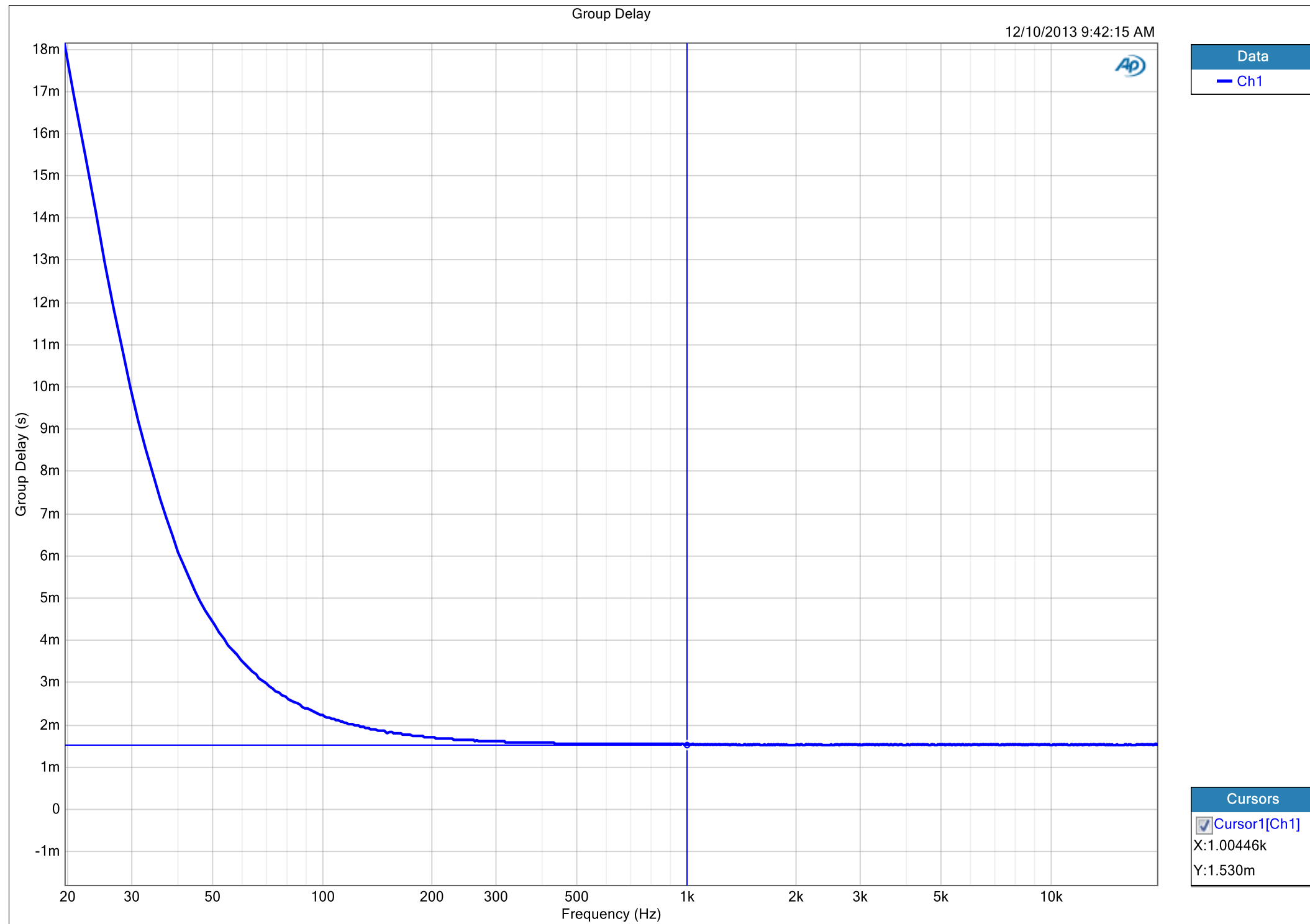
[To Main Page](#)



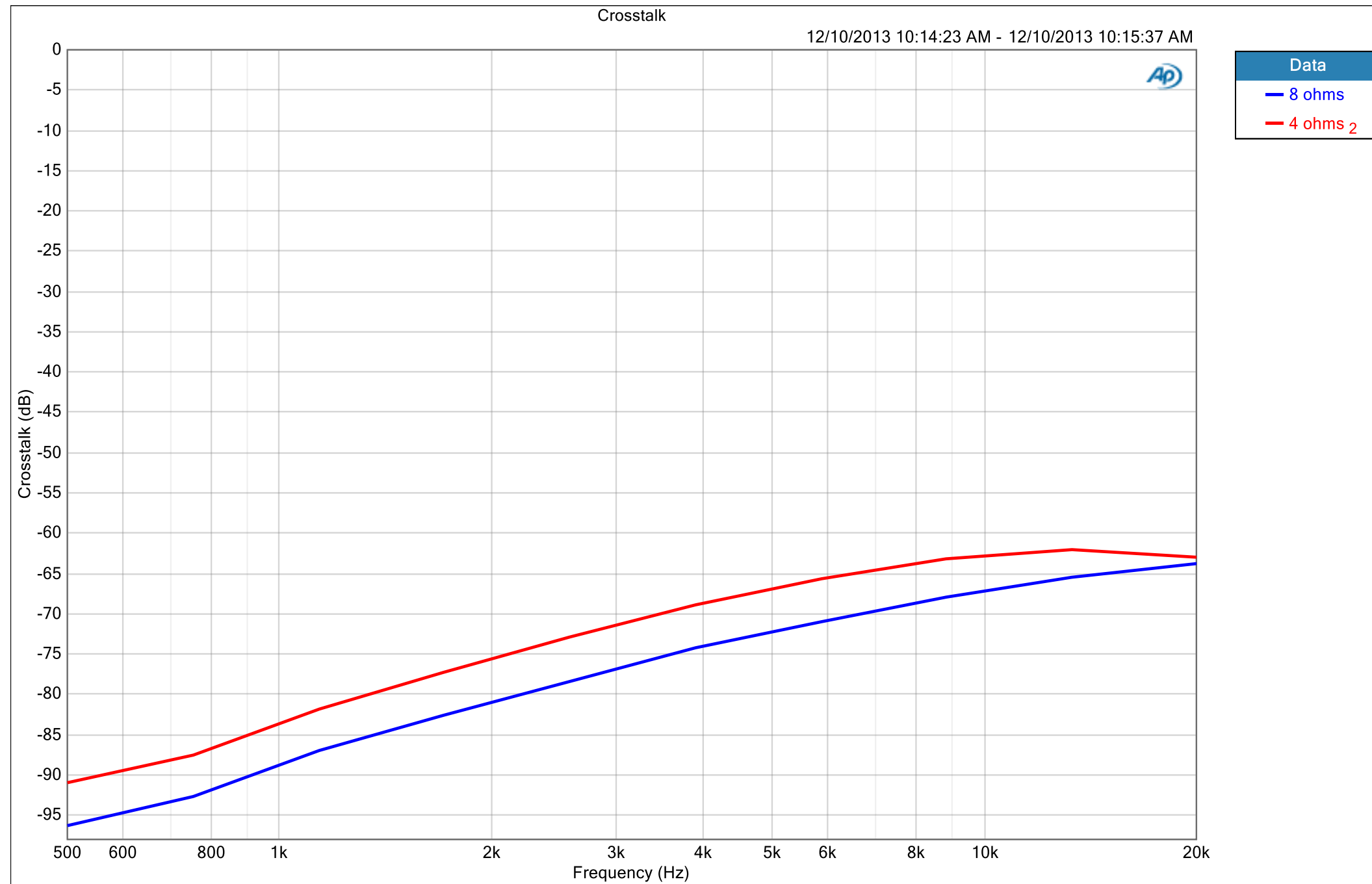
See CAF Reference for measurement setup.

G Group Delay (20 Hz - 20 kHz at -3 dB re. rated sensitivity)

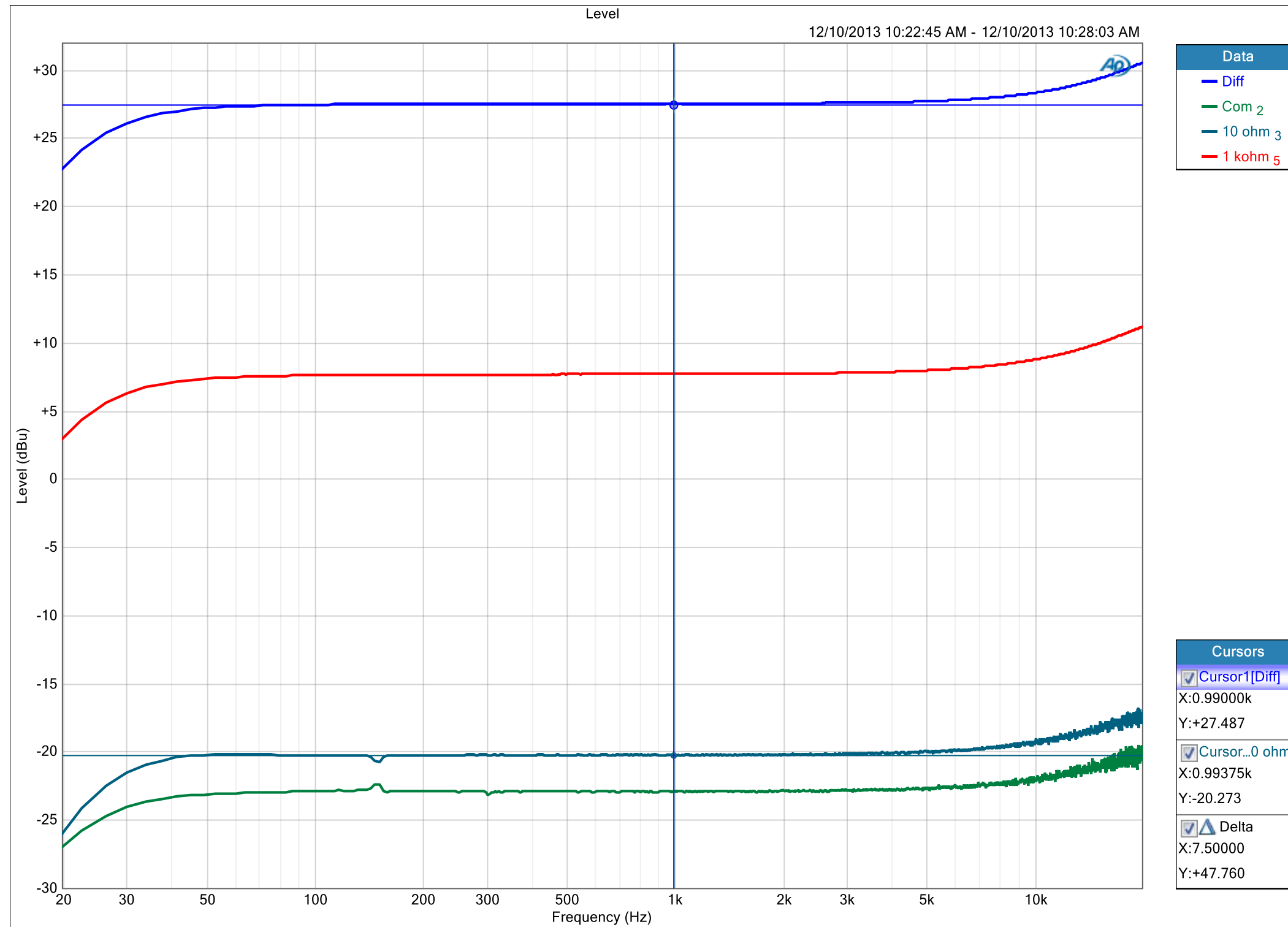
[To Main Page](#)



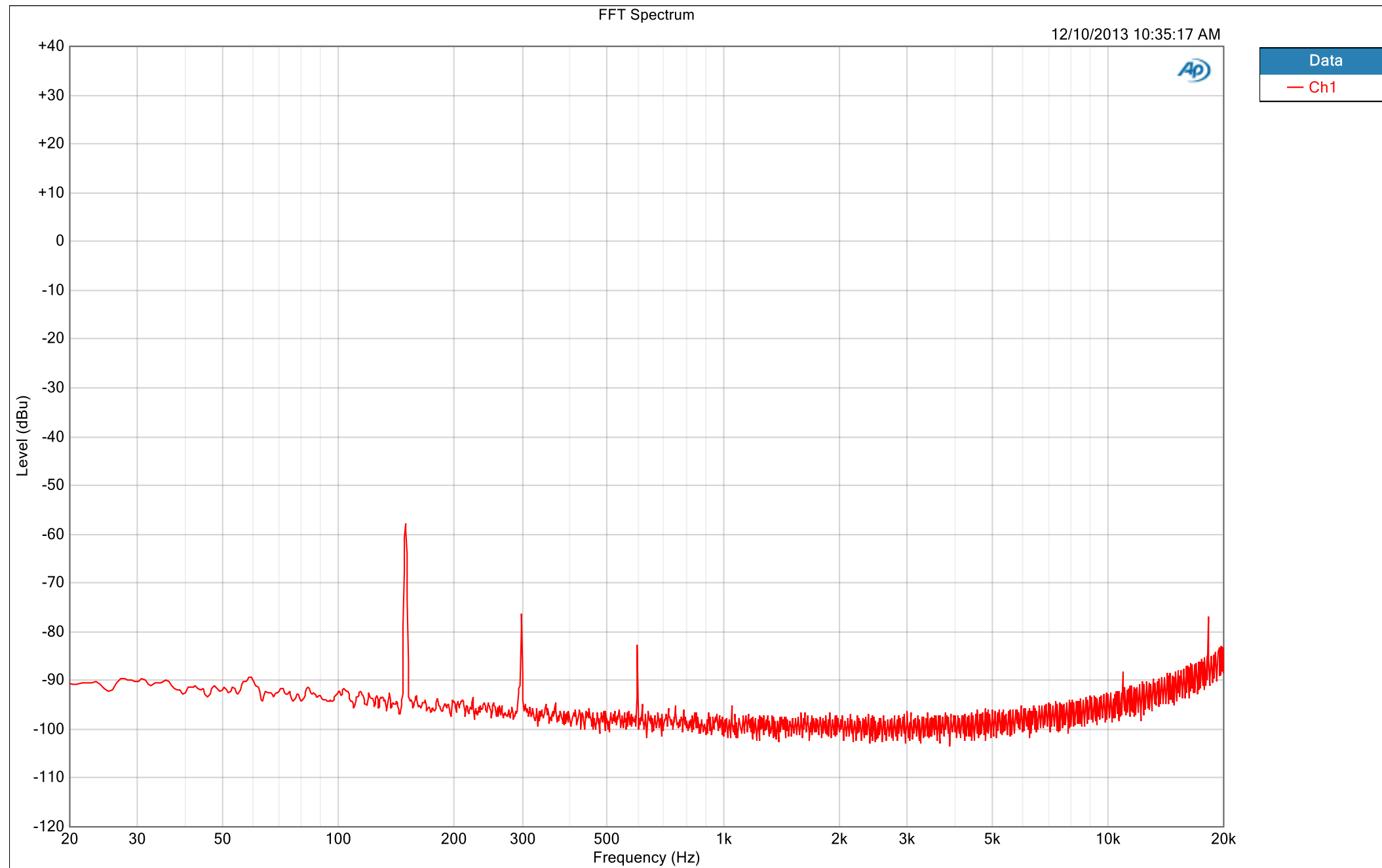
See CAF Reference for measurement setup.



See CAF Reference for measurement setup.

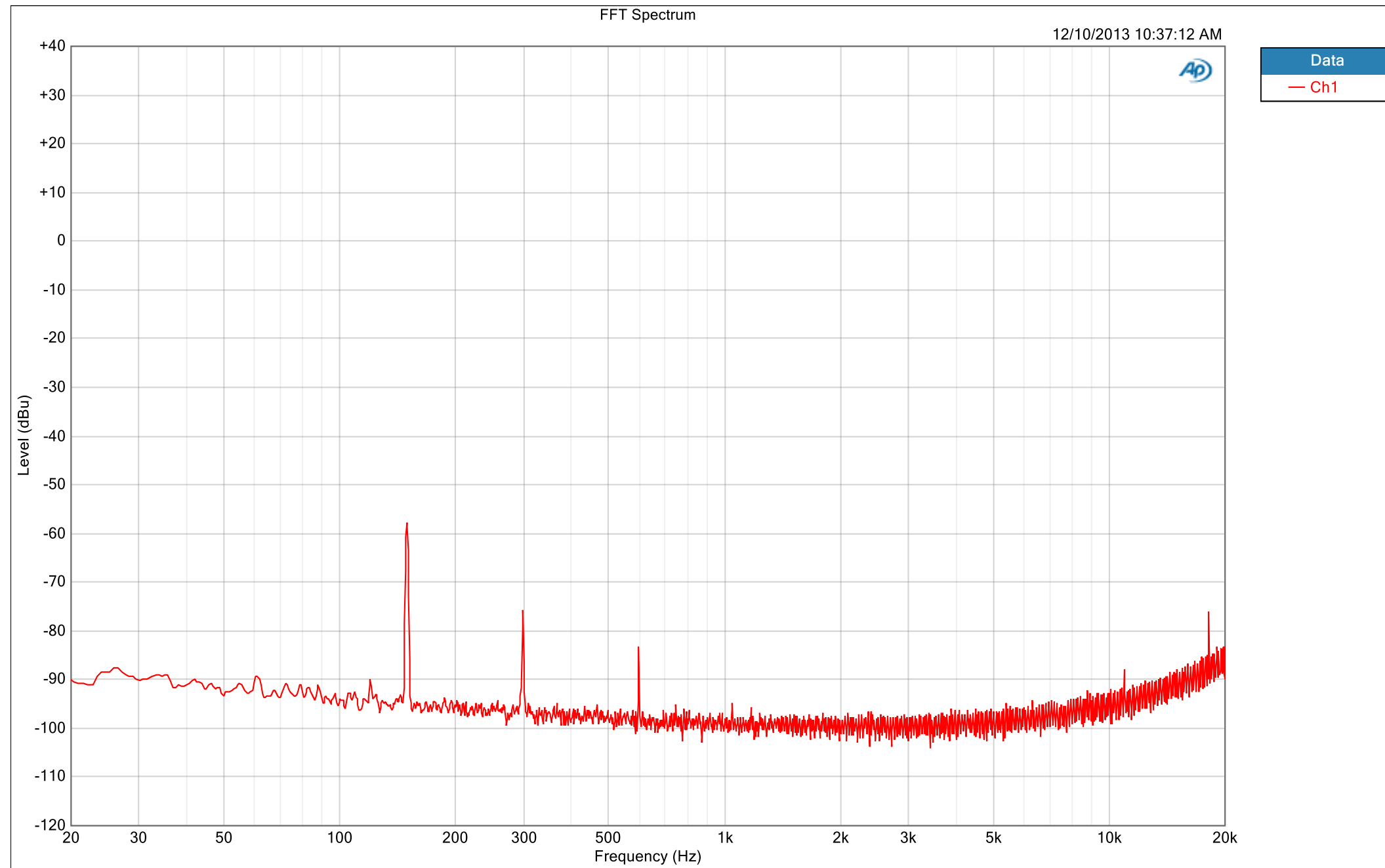


See CAF Reference for measurement setup.



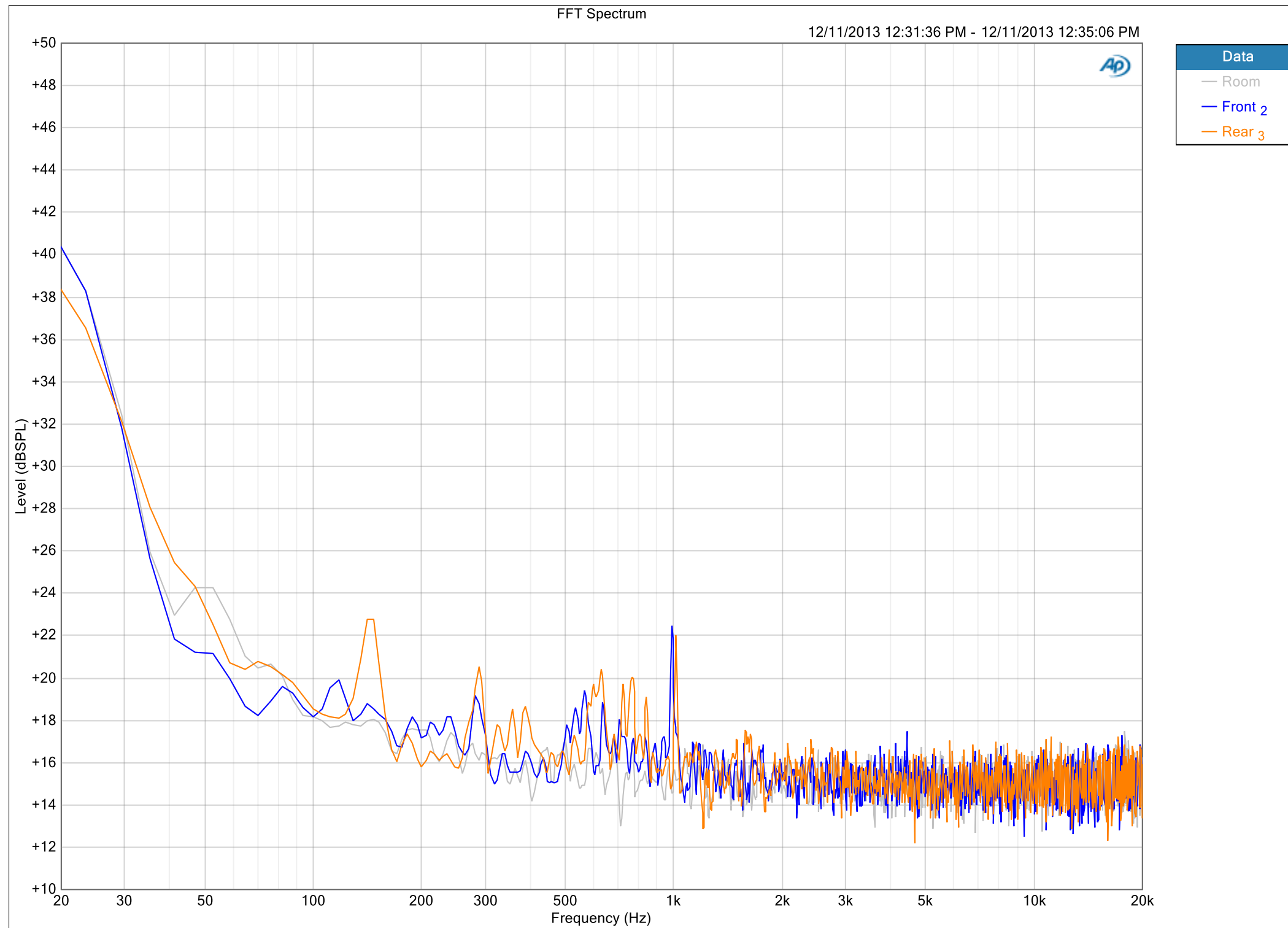
FFT Size: 300k
#Averages: 20
Window: AP-Equiripple

See CAF Reference for measurement setup.

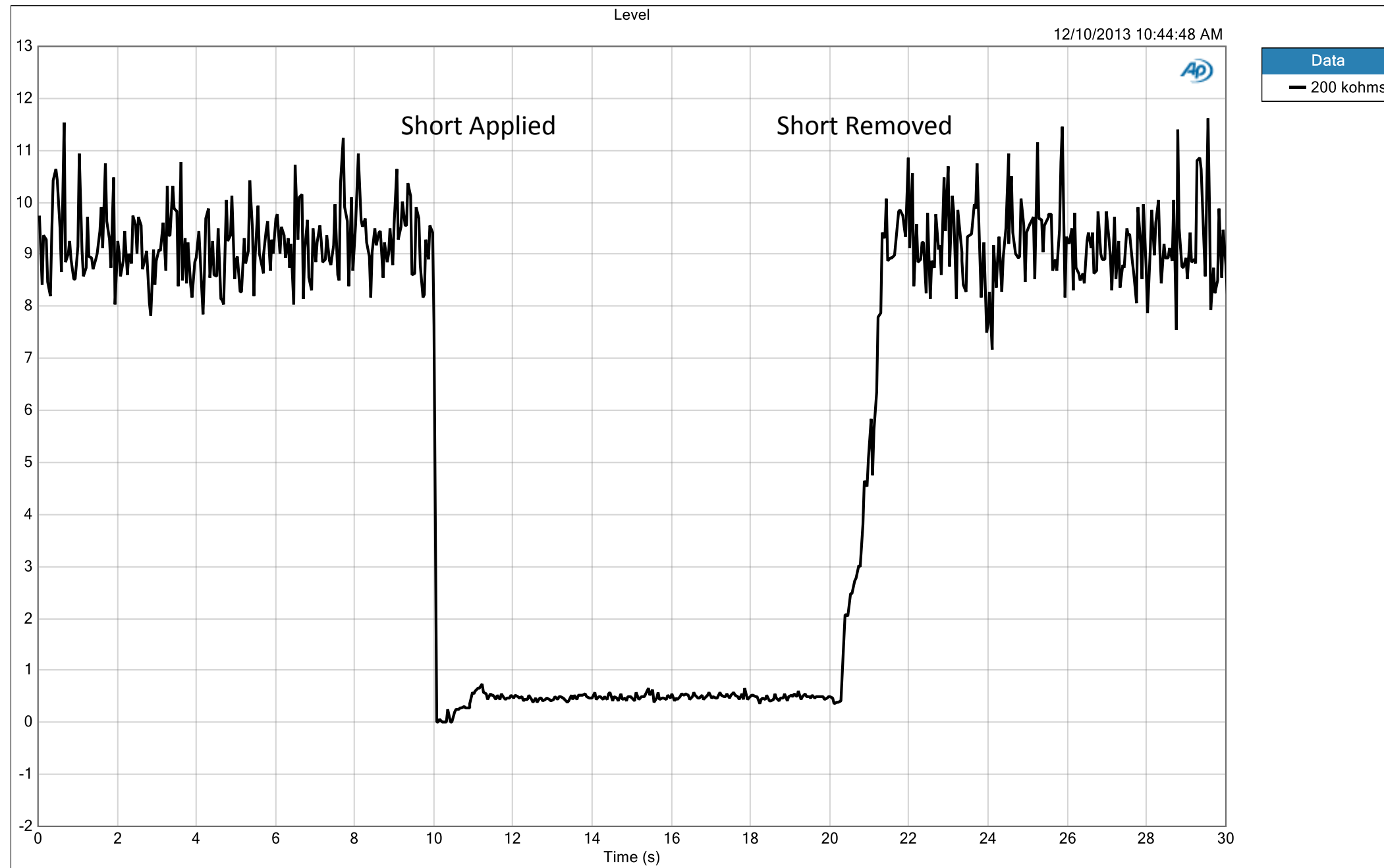


FFT Size: 300k
#Averages: 20
Window: AP-Equiripple

See CAF Reference for measurement setup.



See CAF Reference for measurement setup.



Output goes to minimal value when short applied. Returns to normal when short removed.

See CAF Reference for measurement setup.