

# dac2541-13 AES 44K Bal Lin 160dBFS REPORT

Overall Result: **PASS**

SUMMARY:	RESULT
A01 Ampl, Phase, Gain	✓
A02 Ampl, Phase vs Freq	✓
A03 Gain vs Ampl	✓
A04 THD+N, THD, nth-HD	✓
A05 THD+N vs Freq	✓
A06 THD+N vs Ampl	✓
A07 Noise, DNR	✓
A08 Crosstalk A to B	✓
A09 Crosstalk B to A	✓
A10 Crosstalk A to B vs Freq	✓
A11 Crosstalk B to A vs Freq	✓
A12 FFT 1000 Hz THD+N	✓
A13 FFT 50+7000Hz	✓
A14 FFT 600+1700 Hz	✓
A15 FFT 19+20 KHz	✓
A16 FFT residual noise	✓
A17 FFT -90 dBFS	OK
A17a FFT -120 dBFS	OK
A18 FFT -90 dBFS 16 bit	OK
A19 FFT imaging	OK
A20 FFT inferred jitter	OK

**KEY:** ✓ = Test passes, ✗ = Test fails, OK = Test has run but has no limit checking, (✗) = Test has failed to run or has not completed, [✓] = Test passes but is not required, [✗] = Test fails but is not required, ? = Test is required but has not been run.  
- = Test is not required.

[Back to top](#)

## A01 Ampl, Phase, Gain: PASSED

Measured at 3/20/2021 10:01:28 AM

Generator Settings	
Channel A:	sine, 0 dBFS at 1000 Hz
Channel B:	sine, 0 dBFS at 1000 Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	13.509 dBu	< 24 dBu > -20 dBu
RMS amplitude (Channel B)	13.512 dBu	< 24 dBu > -20 dBu
Inter-channel phase	-0.03 °	< 10 ° > -10 °

CTA Readings		
Gain (Channel A RMS)	0.005 dB	< 20 dB > -40 dB
Gain (Channel B RMS)	0.009 dB	< 20 dB > -40 dB
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

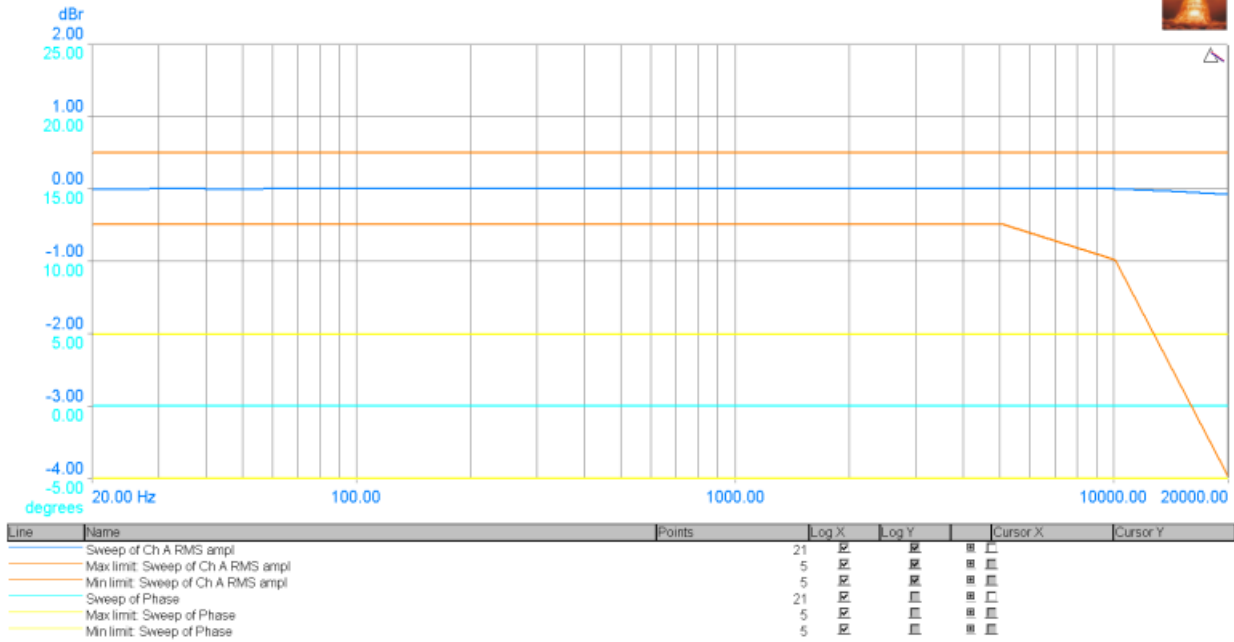
[Back to top](#)

## A02 Ampl, Phase vs Freq: PASSED

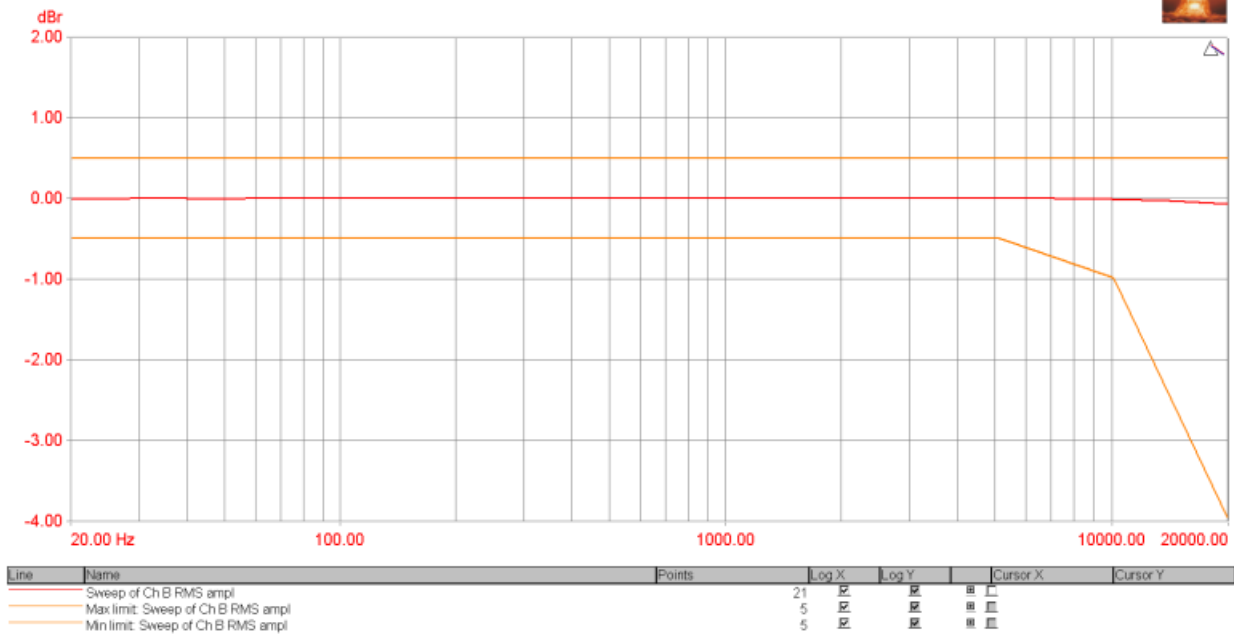
Measured at 3/20/2021 10:01:31 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

# Frequency Response and Inter-channel Phase



# Frequency Response and Inter-channel Phase



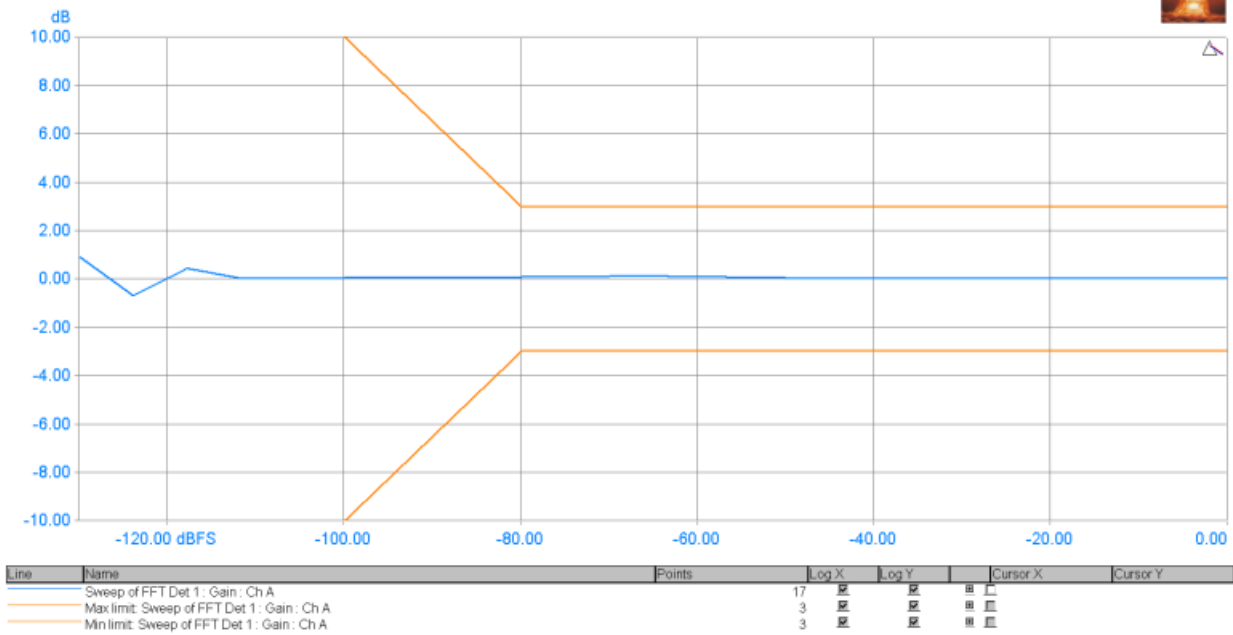
[Back to top](#)

**A03 Gain vs Ampl: PASSED**

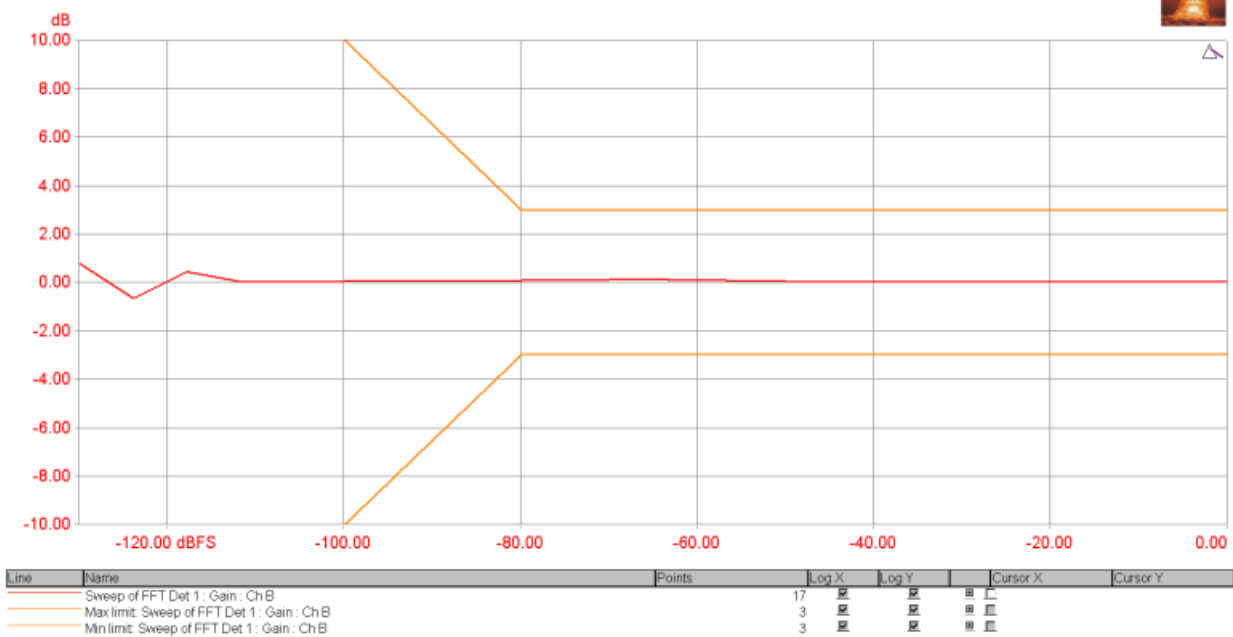
Measured at 3/20/2021 10:01:37 AM

Generator Settings	
Channel A:	sine, -6 dBFS at 1000 Hz
Channel B:	sine, -6 dBFS at 1000 Hz

### Gain vs Amplitude



### Gain vs Amplitude



[Back to top](#)

A04 THD+N, THD, nth-HD: **PASSED**

Measured at 3/20/2021 10:02:41 AM

Generator Settings	
Channel A:	sine, 0 dBFS at 1000 Hz
Channel B:	sine, 0 dBFS at 1000 Hz

CTA Readings		
THD+N - relative (Channel A RMS)	0.00287 %	<200 % >0 %
THD+N - relative (Channel B RMS)	0.00200 %	<200 % >0 %
Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/12th octave band-reject filter at the generator frequency		

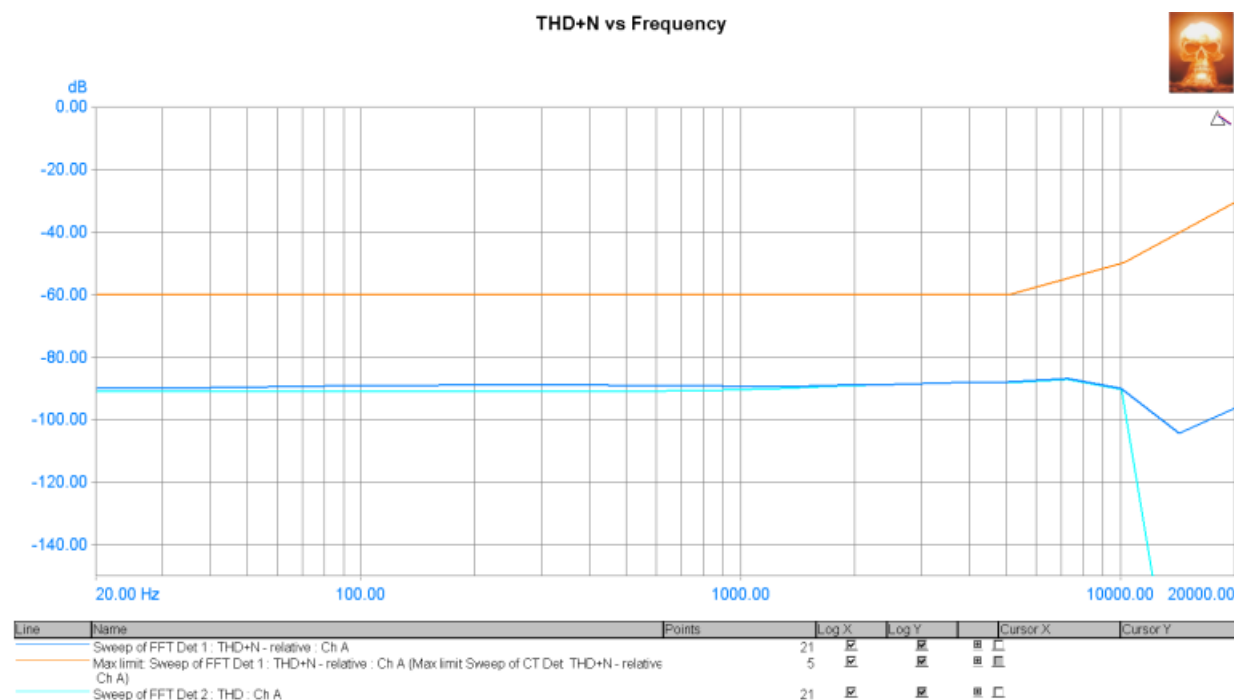
FFT Detector Readings		
THD (Channel A)	0.00271 %	<200 % >0 %
THD (Channel B)	0.00171 %	<200 % >0 %
FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.00247 %	<200 % >0 %
2nd Harmonic Distortion (Channel B)	0.00130 %	<200 % >0 %
FFTD 2 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filter at the 2nd harmonic		
3rd Harmonic Distortion (Channel A)	0.00063 %	<200 % >0 %
3rd Harmonic Distortion (Channel B)	0.00035 %	<200 % >0 %
FFTD 3 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filter at the 3rd harmonic		
THD+N - relative (Channel A)	0.00282 %	<200 % >0 %
THD+N - relative (Channel B)	0.00192 %	<200 % >0 %
FFTD 4 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with window notch (14 bins) band-reject filter at the input frequency		

[Back to top](#)

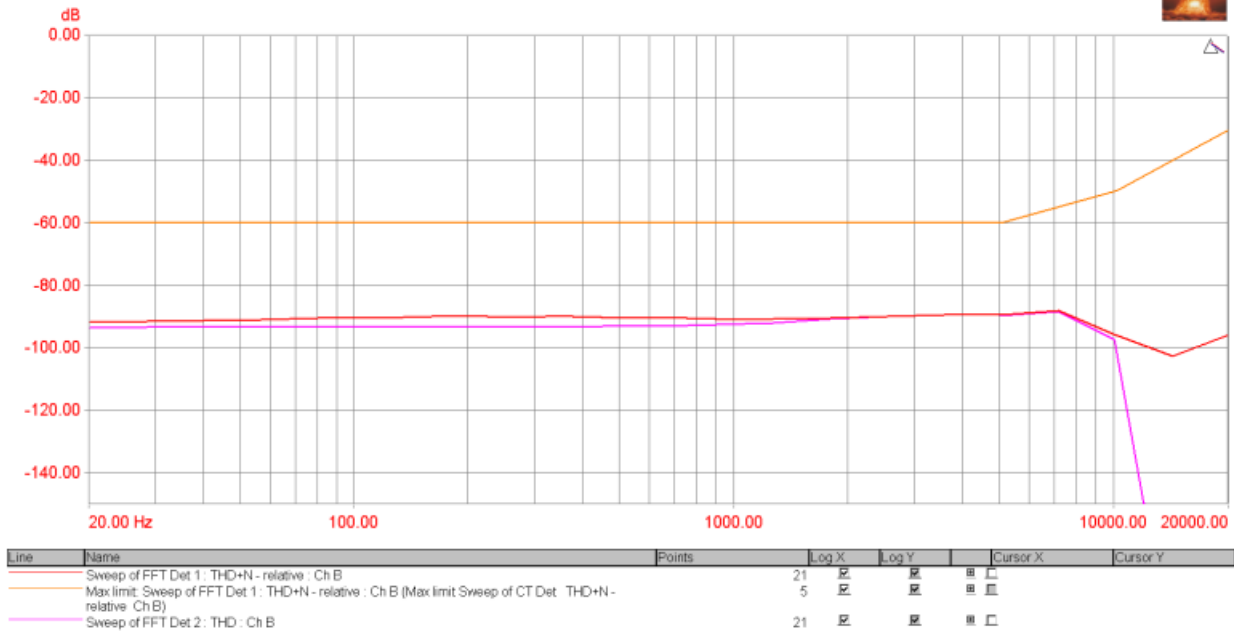
## A05 THD+N vs Freq: PASSED

Measured at 3/20/2021 10:02:52 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz



THD+N vs Frequency

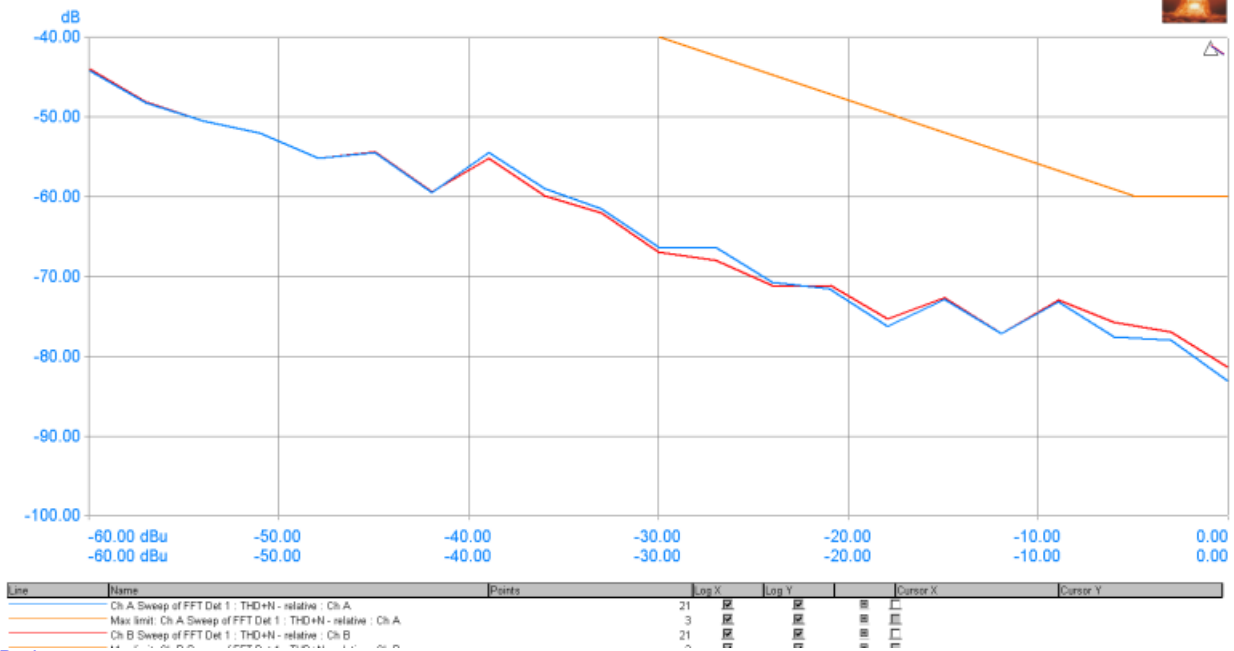

[Back to top](#)

### A06 THD+N vs Ampl: PASSED

Measured at 3/20/2021 10:03:51 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

THD+N vs Amplitude


[Back to top](#)

### A07 Noise, DNR: PASSED

Measured at 3/20/2021 10:04:15 AM

Generator Settings	
Channel A:	sine, -60 dBFS at 1000.488 Hz
Channel B:	sine, -60 dBFS at 1000.488 Hz

FFT Detector Readings		
THD+N - relative (Channel A)	-54.082 dB	Not limit checked.
THD+N - relative (Channel B)	-54.089 dB	Not limit checked.
FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with 1/3rd octave band-reject filter at the generator frequency		
Noise (residual) (Channel A)	-108.584 dBu	Not limit checked.
Noise (residual) (Channel B)	-108.280 dBu	Not limit checked.
FFTD 2 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		
DAC DNR Residual Async	122.134 dB	< 150 dB > 60 dB
DAC DNR Residual Async	121.834 dB	< 150 dB > 60 dB
FFTD 3 Settings: User: DAC SNR Residual Async		

[Back to top](#)

## A08 Crosstalk A to B: PASSED

Measured at 3/20/2021 10:04:32 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

CTA Readings		
Cross-talk (Channel B RMS)	-145.741 dB	< -45 dB
Settings: Channel relative, 22 Hz - 22 kHz, unweighted RMS with 1/24th octave band-pass filter at the opposite channel generator frequency		

[Back to top](#)

## A09 Crosstalk B to A: PASSED

Measured at 3/20/2021 10:04:37 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

CTA Readings		
Cross-talk (Channel A RMS)	-144.593 dB	< -45 dB
Settings: Channel relative, 22 Hz - 22 kHz, unweighted RMS with 1/24th octave band-pass filter at the opposite channel generator frequency		

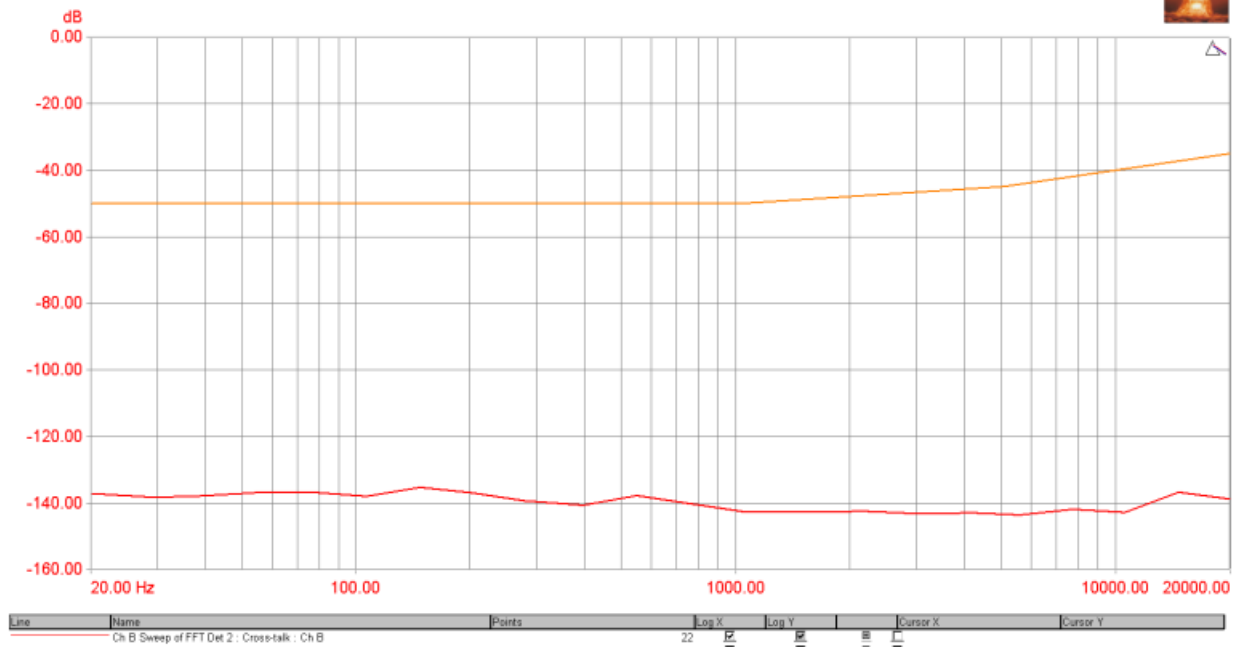
[Back to top](#)

## A10 Crosstalk A to B vs Freq: PASSED

Measured at 3/20/2021 10:04:43 AM

Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

Cross-talk A to B vs Frequency


[Back to top](#)

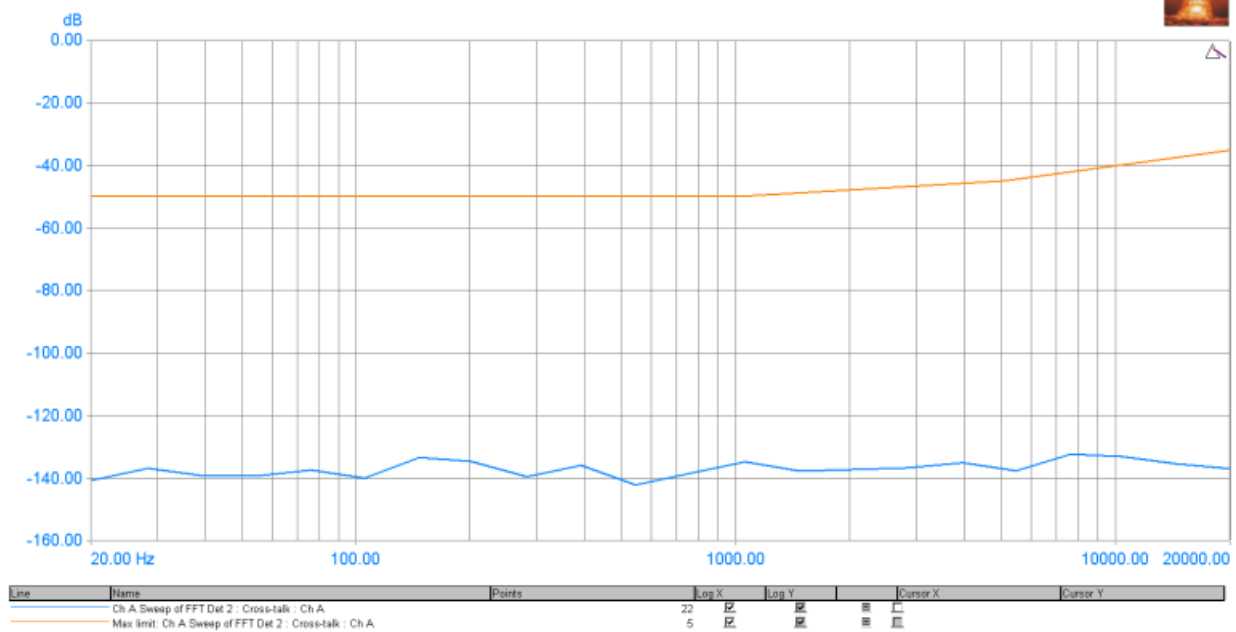
### A11 Crosstalk B to A vs Freq: PASSED

Measured at 3/20/2021 10:05:36 AM

#### Generator Settings

Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

Cross-talk A to B vs Frequency


[Back to top](#)

### A12 FFT 1000 Hz THD+N: PASSED

Measured at 3/20/2021 10:06:29 AM

#### Generator Settings

Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

### Signal Analyzer Readings

RMS amplitude (Selected : Ch A)

10.508 dBu

Not limit checked.

RMS amplitude (Non-selected : Ch A)

10.511 dBu

Not limit checked.

### CTA Readings

THD+N - relative (Selected : Ch ARMS)

0.00304 %

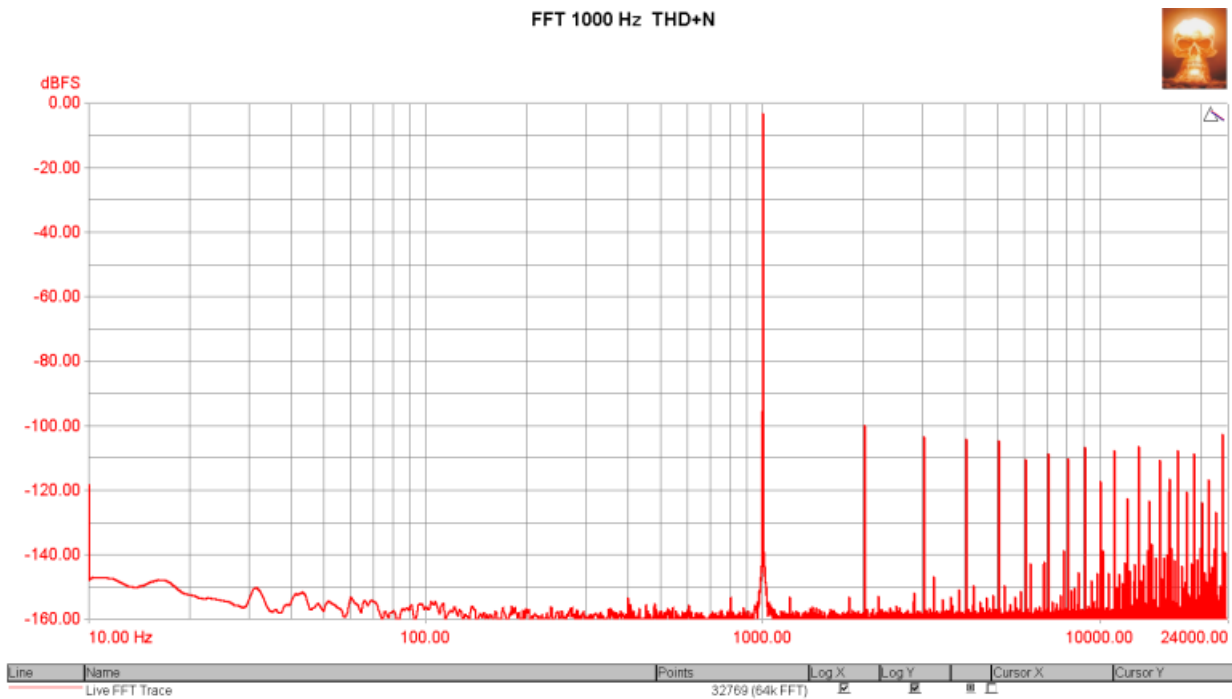
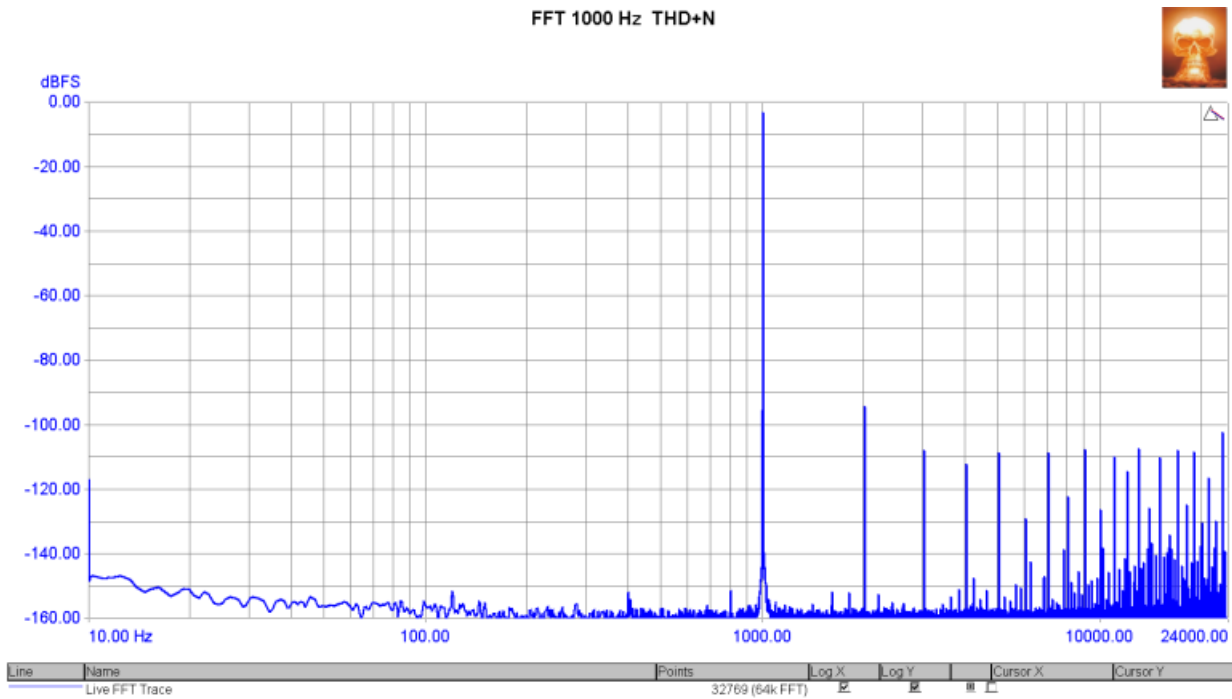
< 0.075 %  
> 0.00000001 %

THD+N - relative (Non-selected : Ch ARMS)

0.00259 %

< 0.075 %  
> 0.00000001 %

Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/3rd octave band-reject filter at the input frequency



### FFT Detector Readings

THD+N - relative (Channel A)

0.00320 %

Not limit checked.

THD+N - relative (Channel B)

0.00265 %

Not limit checked.

FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with window notch (14 bins) band-reject filter at the input frequency

[Back to top](#)

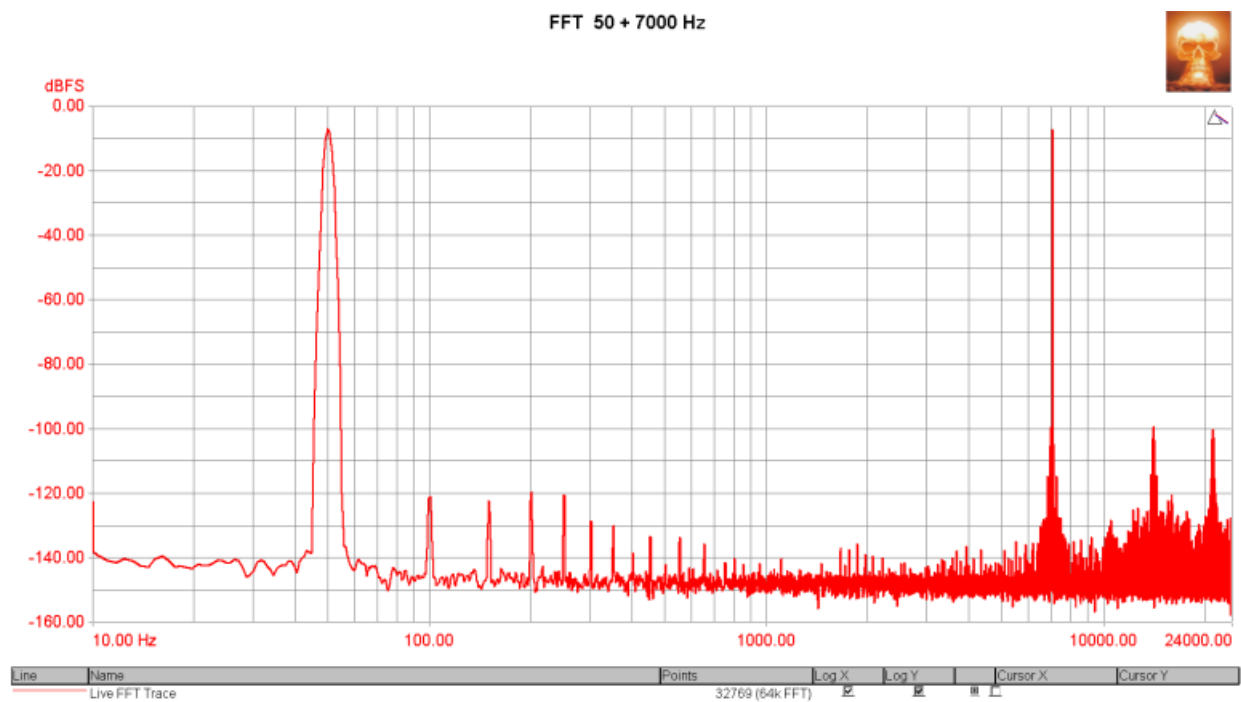
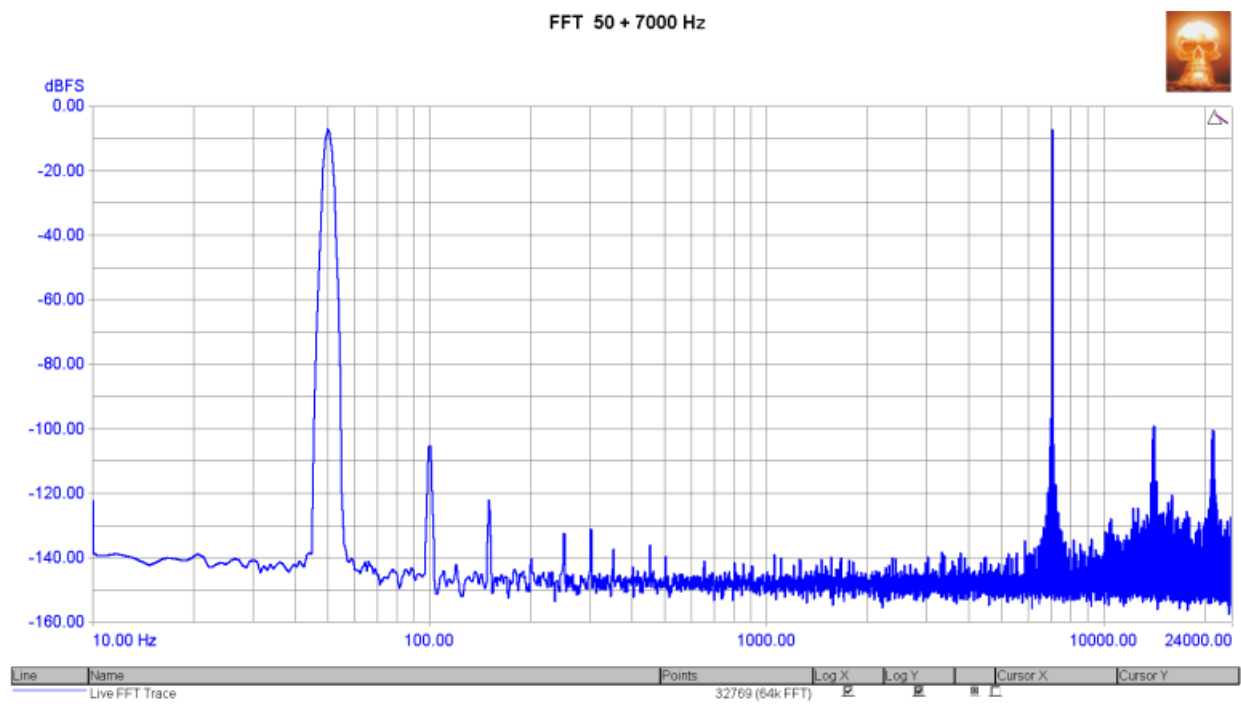


Measured at 3/20/2021 10:07:51 AM

Generator Settings	
Channel A:	Twin-tone, -7 dBFS at 50 Hz and 1 amplitude ratio at 7000Hz
Channel B:	Twin-tone, -7 dBFS at 50 Hz and 1 amplitude ratio at 7000Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	9.509 dBu	Not limit checked.
RMS amplitude (Channel B)	9.511 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.00319 %	<0.05 % >0 %
IMD SMPTE-DIN (Channel B RMS)	0.00231 %	<0.05 % >0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		



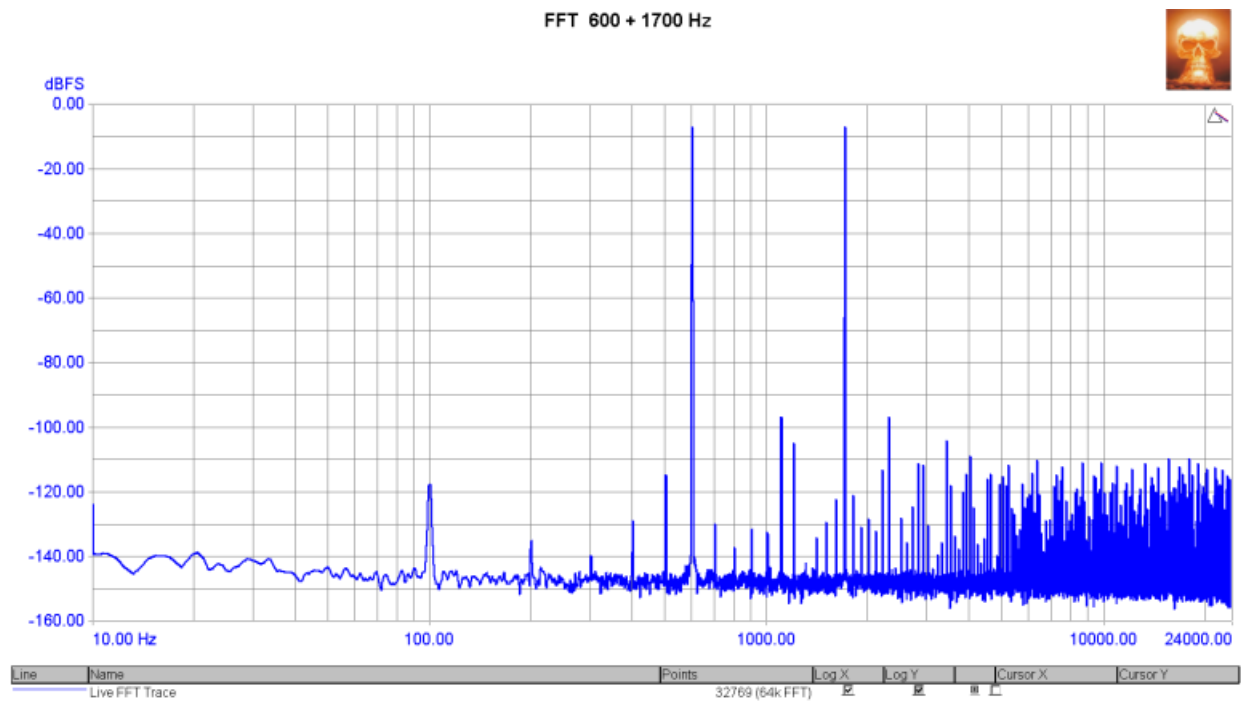
A14 FFT 600+1700 Hz: PASSED

Measured at 3/20/2021 10:08:14 AM

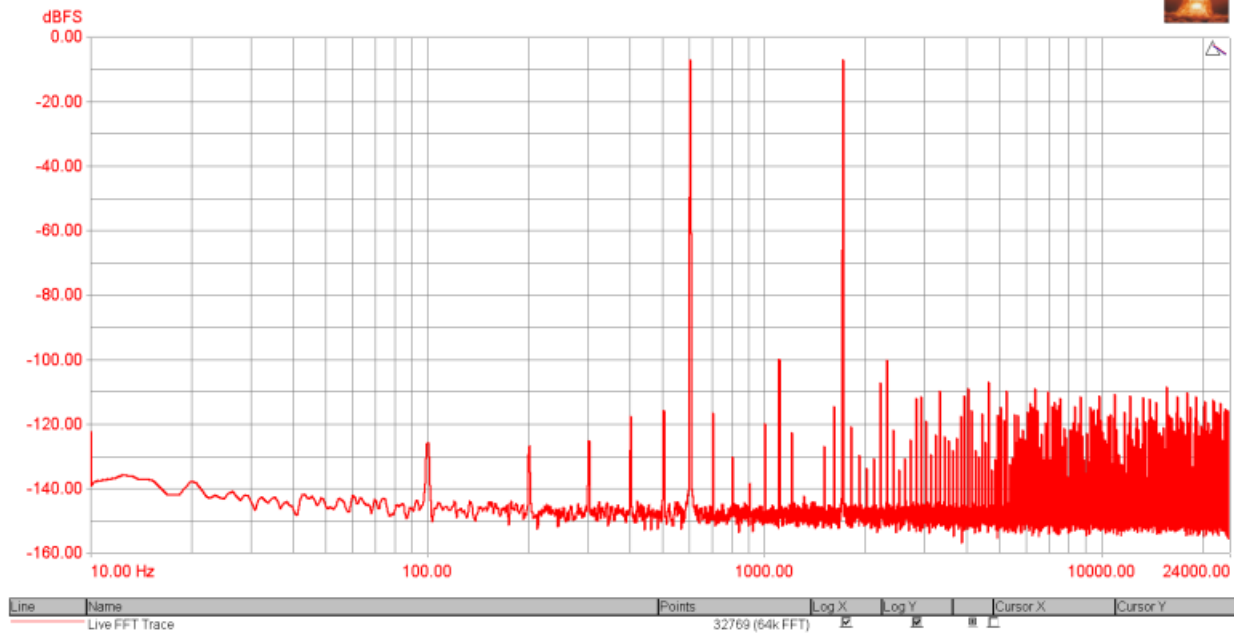
Generator Settings	
Channel A:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz
Channel B:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz

Signal Analyzer Readings			
RMS amplitude (Channel A)		9.515 dBu	Not limit checked.
RMS amplitude (Channel B)		9.508 dBu	Not limit checked.

CTA Readings			
IMD SMPTE-DIN (Channel A RMS)		0.01270 %	< 0.02 % > 0 %
IMD SMPTE-DIN (Channel B RMS)		0.01279 %	< 0.02 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.			



FFT 600 + 1700 Hz


[Back to top](#)

### A15 FFT 19+20 KHz: PASSED

Measured at 3/20/2021 10:08:37 AM

#### Generator Settings

Channel A:	Twin-tone, -6.03 dBFS at 19000 Hz and 0 dB offset at 1000 Hz offset
Channel B:	Twin-tone, -6.03 dBFS at 19000 Hz and 0 dB offset at 1000 Hz offset

#### Signal Analyzer Readings

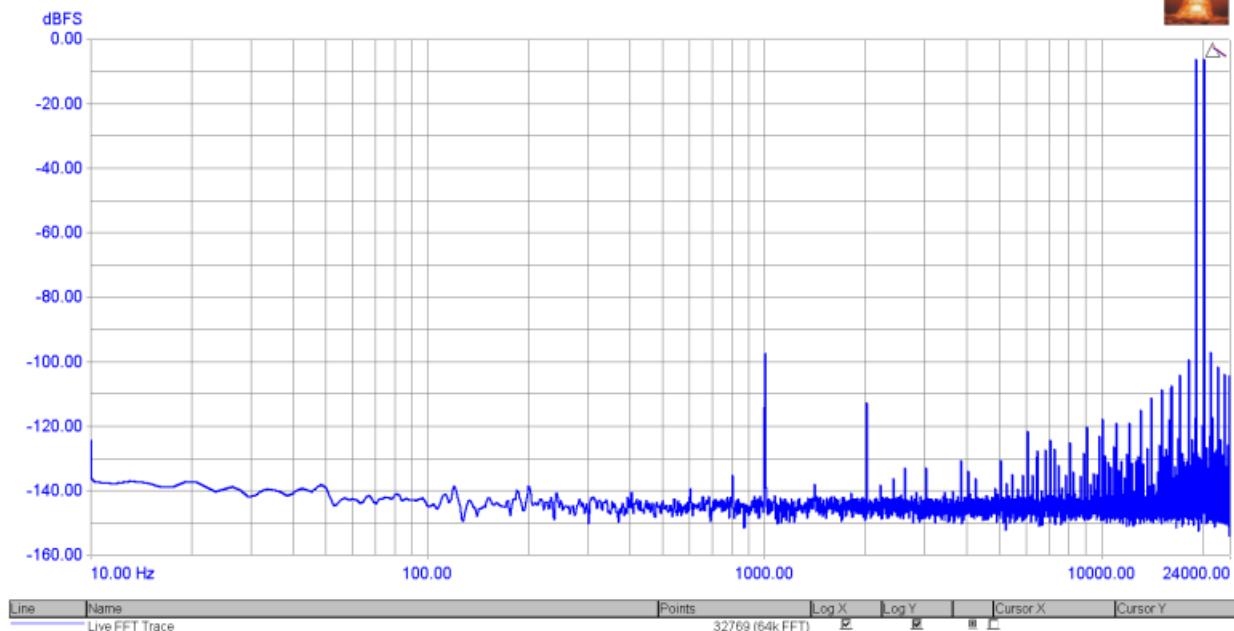
RMS amplitude (Channel A)	10.391 dBu	Not limit checked.
RMS amplitude (Channel B)	10.412 dBu	Not limit checked.

#### CTA Readings

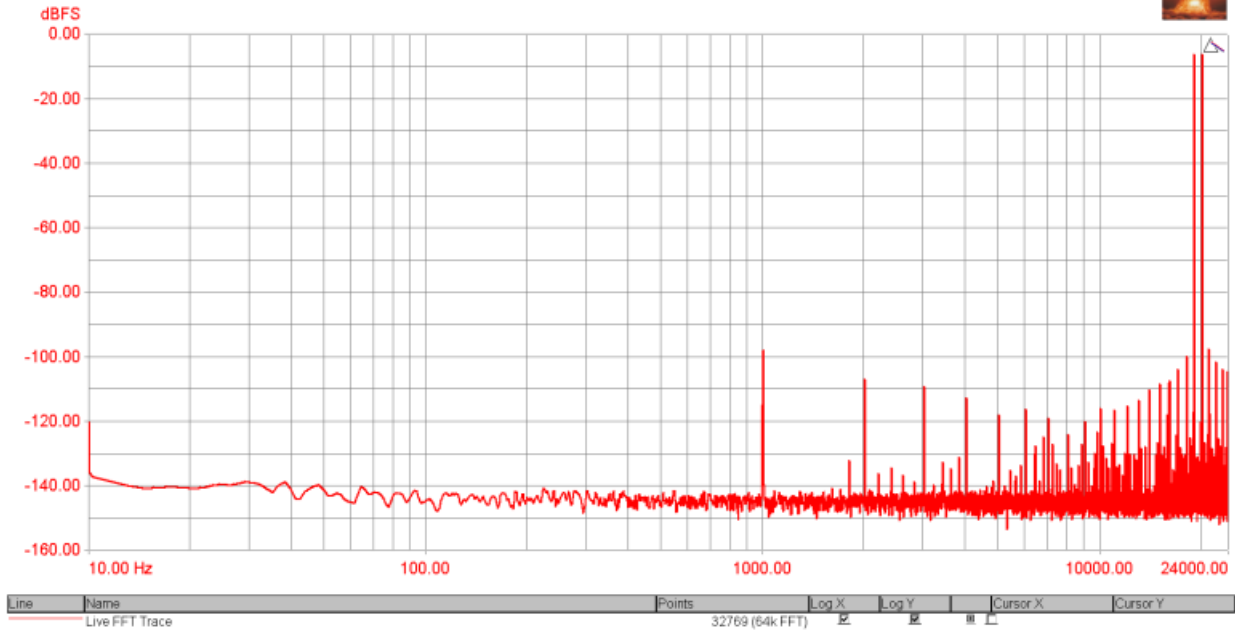
IMD CCIF (Channel A RMS)	0.00195 %	< 0.1 %
IMD CCIF (Channel B RMS)	0.00181 %	< 0.1 %

Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS with 1/24th octave band-pass filter at the intermodulation difference frequency

FFT 19 + 20 KHz



# FFT 19 + 20 KHz



## FFT Detector Readings

IMD CCIF (Channel A)	0.00191 %	< 0.1 %
IMD CCIF (Channel B)	0.00178 %	< 0.1 %
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with window notch (14 bins) band-pass filter at the intermodulation difference frequency		

[Back to top](#)

**A16 FFT residual noise: PASSED**

Measured at 3/20/2021 10:08:58 AM

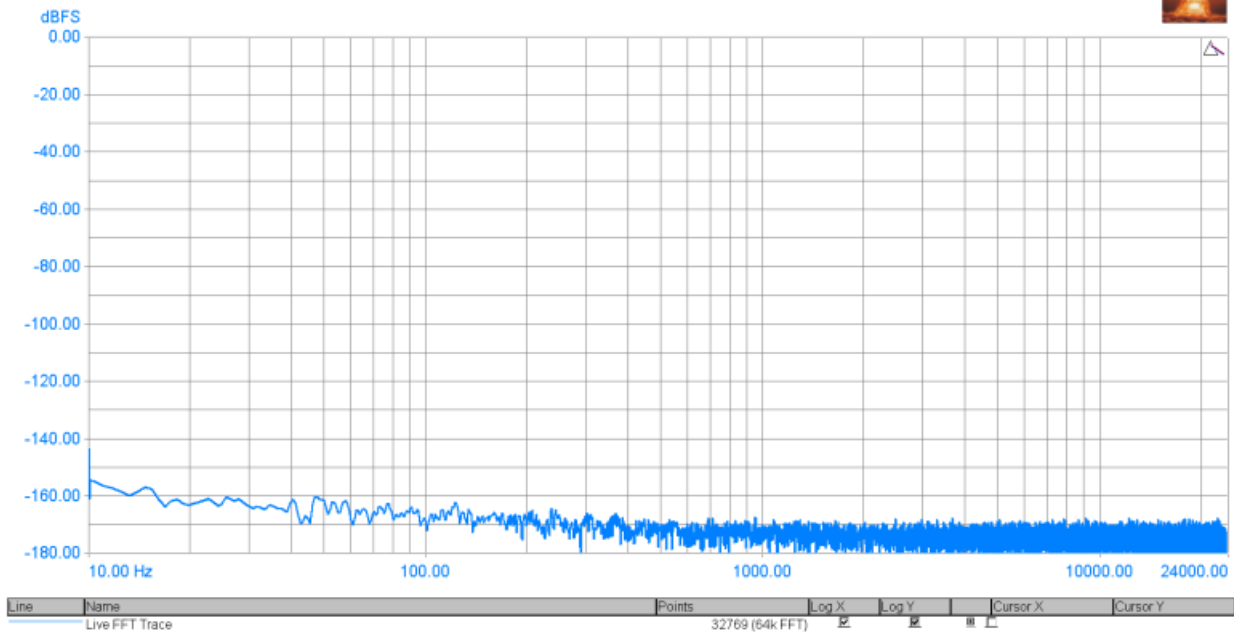
## Generator Settings

Channel A:	Off
Channel B:	Off

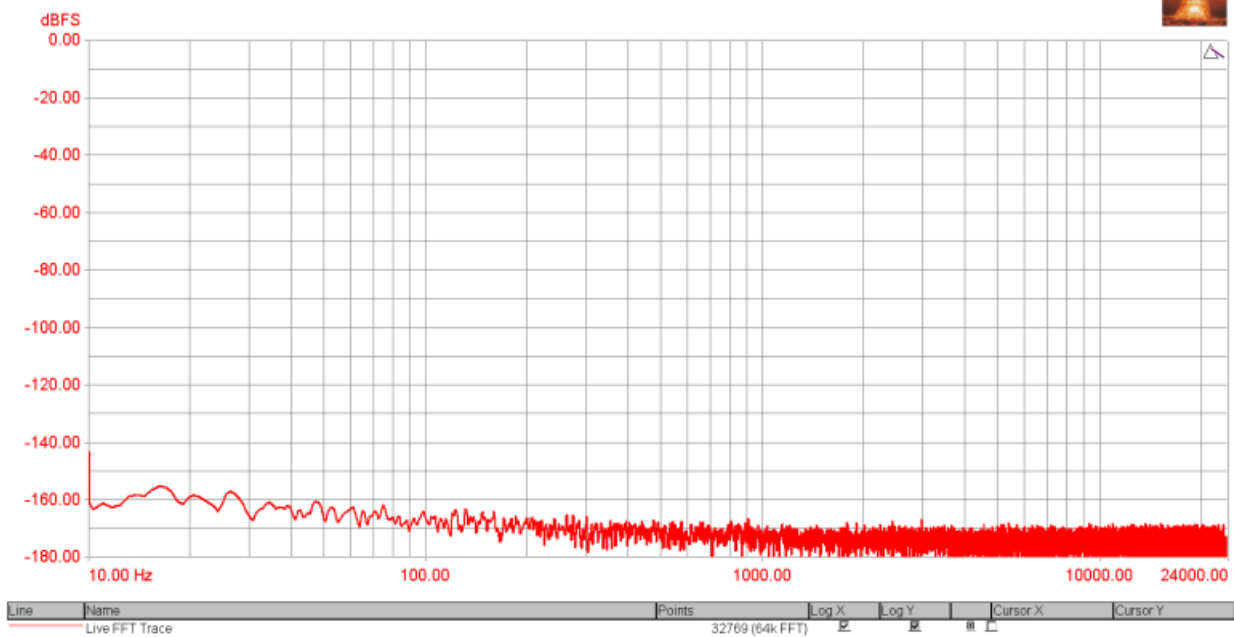
## Signal Analyzer Readings

RMS amplitude (Channel A)	-108.031 dBu	Not limit checked.
RMS amplitude (Channel B)	-108.317 dBu	Not limit checked.

# FFT residual noise



# FFT residual noise



## FFT Detector Readings

Noise (residual) (Channel A)	-132.927 dBFS	< -60 dBFS > -150 dBFS
Noise (residual) (Channel B)	-132.961 dBFS	< -60 dBFS > -150 dBFS

FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic

[Back to top](#)

**A17 FFT -90 dBFS:** Not limit checked.

Measured at 3/20/2021 10:10:59 AM

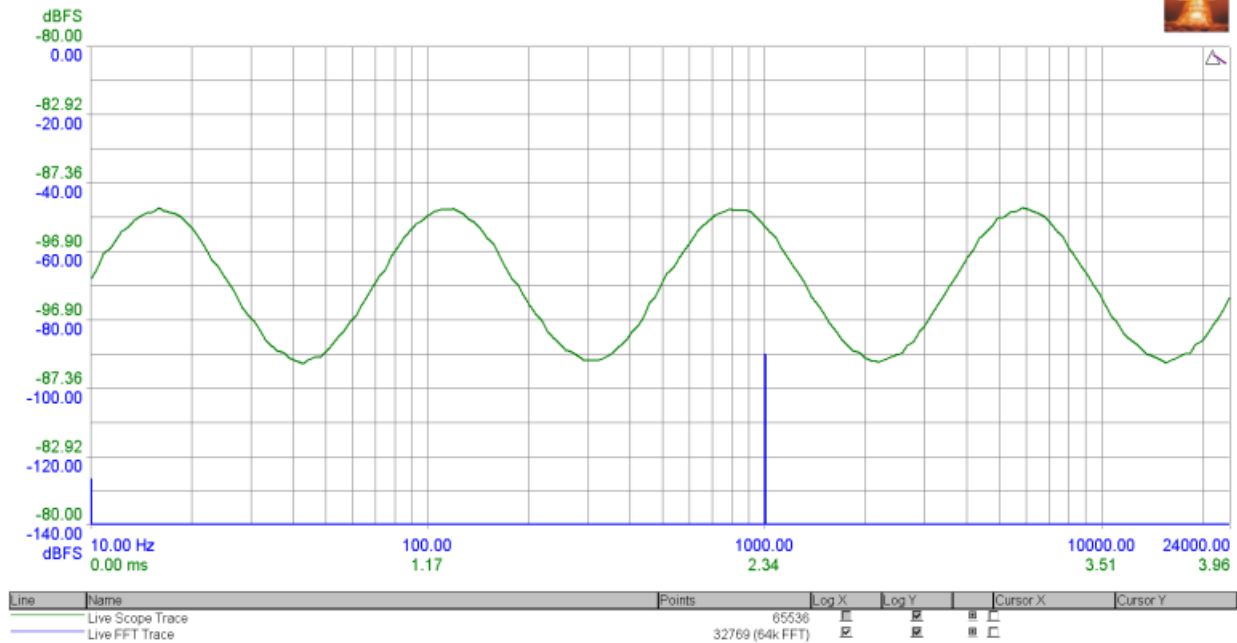
## Generator Settings

Channel A:	sine, -90 dBFS at 1000 Hz
Channel B:	sine, -90 dBFS at 1000 Hz

## Signal Analyzer Readings

RMS amplitude (Selected : Ch A)	-76.434 dBu	Not limit checked.
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# FFT -90 dBFS



[Back to top](#)

**A17a FFT -120 dBFS:** Not limit checked.

Measured at 3/20/2021 10:11:12 AM

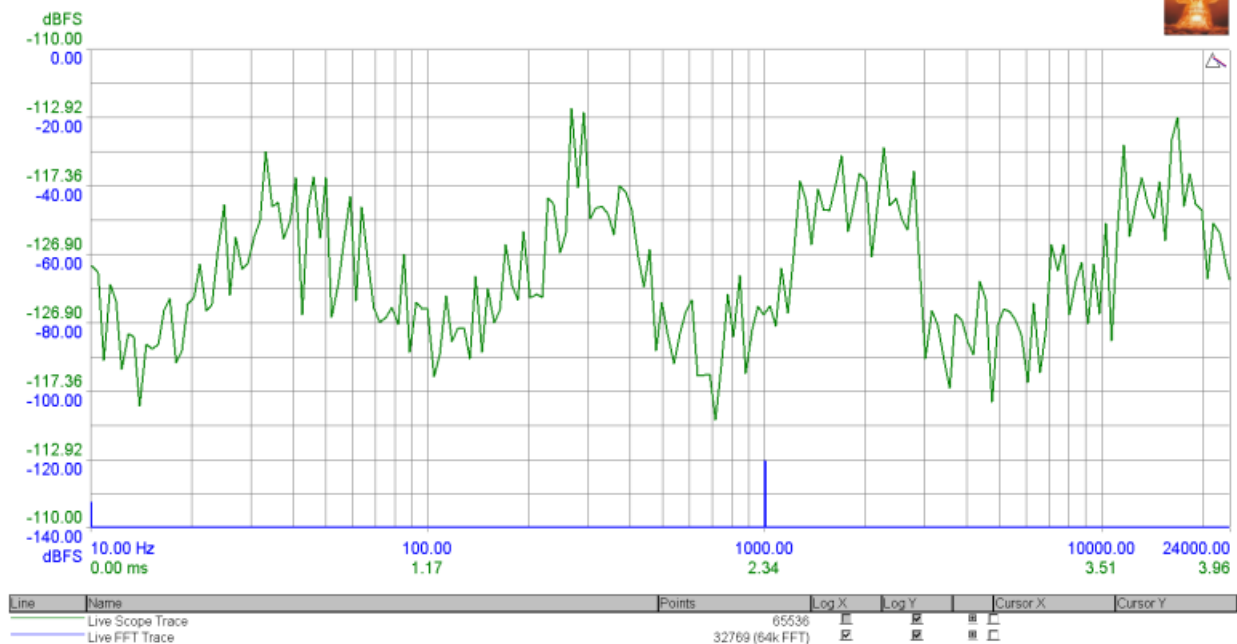
## Generator Settings

Channel A:	sine, -120 dBFS at 1000 Hz
Channel B:	sine, -120 dBFS at 1000 Hz

## Signal Analyzer Readings

RMS amplitude (Selected : Ch A)	-104.535 dBu	Not limit checked.
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# FFT -120 dBFS



[Back to top](#)

**A18 FFT -90 dBFS 16 bit:** Not limit checked.

Measured at 3/20/2021 10:11:26 AM

### Generator Settings

Channel A:	sine, -90 dBFS at 1000 Hz
Channel B:	sine, -90 dBFS at 1000 Hz

### Signal Analyzer Readings

RMS amplitude (Selected : Ch A)	-76.085 dBu	Not limit checked.
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FFT -90 dBFS - 16 bit



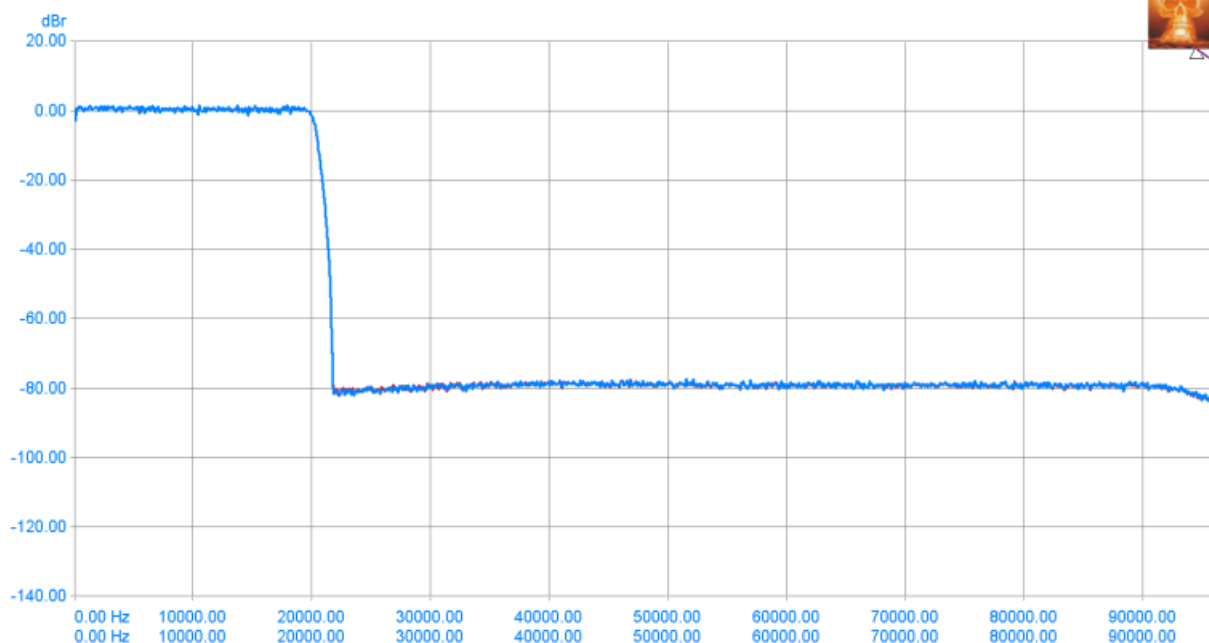
[Back to top](#)

**A19 FFT imaging:** Not limit checked.

Measured at 3/20/2021 10:11:40 AM

### Generator Settings

Channel A:	white noise, -6 dBFS
Channel B:	white noise, -6 dBFS (inverted)



[Back to top](#)

A20 FFT inferred jitter: Not limit checked.

Measured at 3/20/2021 10:12:03 AM

Generator Settings	
Channel A:	sine, -6 dBFS at 11025 Hz
Channel B:	sine, -6 dBFS at 11025 Hz (inverted)

