

# 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.

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## A01 Ampl, Phase, Gain: PASSED

Measured at 3/18/2021 5:00:05 PM

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)	13.507 dBu	< 24 dBu > -20 dBu
RMS amplitude (Channel B)	13.511 dBu	< 24 dBu > -20 dBu
Inter-channel phase	-0.02 °	< 10 ° > -10 °

CTA Readings		
Gain (Channel A RMS)	0.004 dB	< 20 dB > -40 dB
Gain (Channel B RMS)	0.007 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		

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## A02 Ampl, Phase vs Freq: PASSED

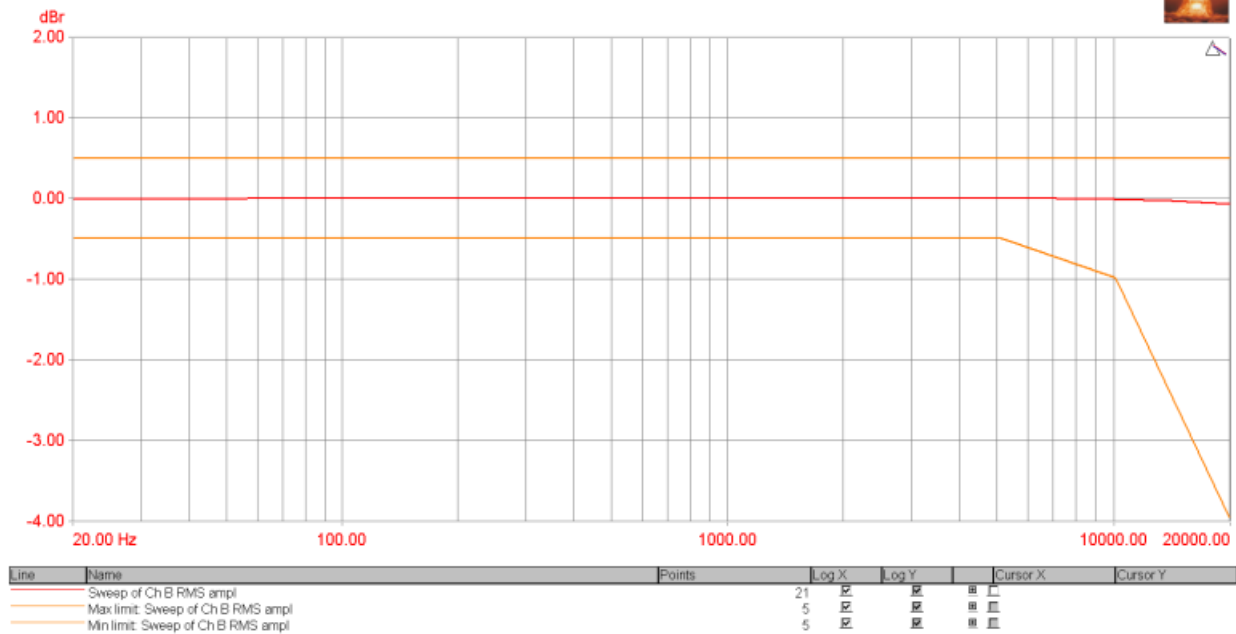
Measured at 3/18/2021 5:00:07 PM

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



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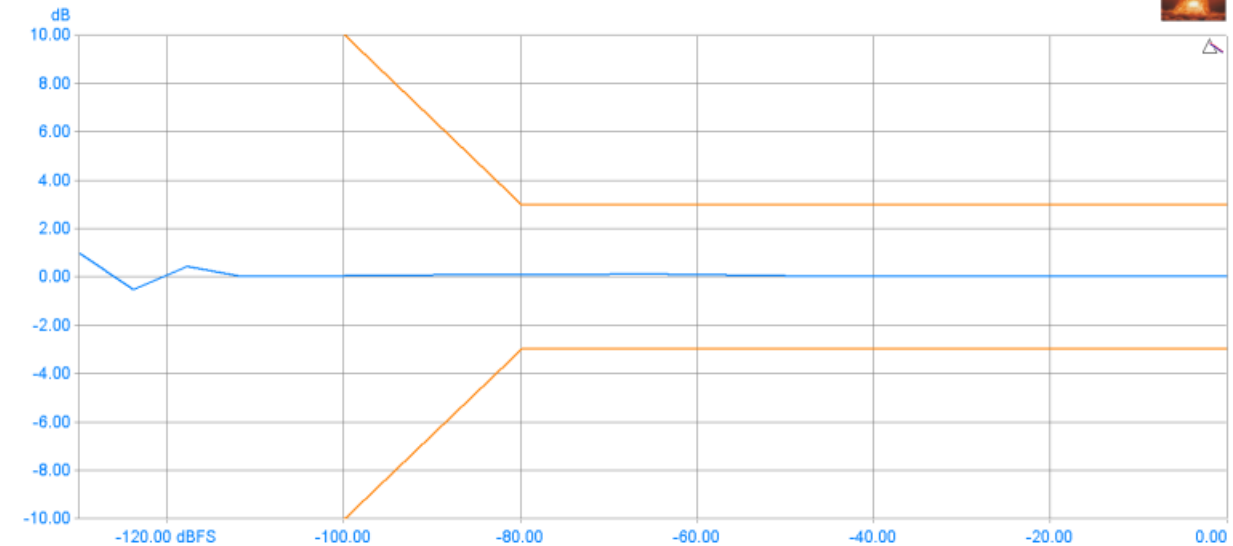
**A03 Gain vs Ampl: PASSED**

Measured at 3/18/2021 5:00:14 PM

## Generator Settings

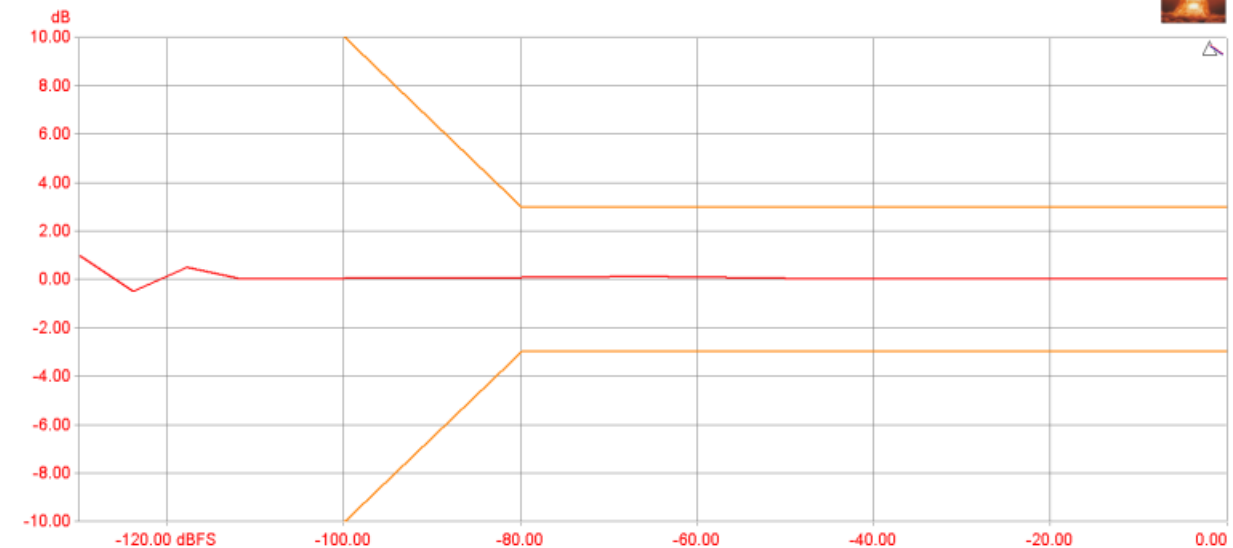
Channel A:	sine, -6 dBFS at 1000 Hz
Channel B:	sine, -6 dBFS at 1000 Hz

### Gain vs Amplitude



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
17	Sweep of FFT Det 1: Gain: Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Max limit: Sweep of FFT Det 1: Gain: Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Min limit: Sweep of FFT Det 1: Gain: Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

### Gain vs Amplitude



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
17	Sweep of FFT Det 1: Gain: Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Max limit: Sweep of FFT Det 1: Gain: Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Min limit: Sweep of FFT Det 1: Gain: Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

Measured at 3/18/2021 5:01:17 PM

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)	0.00293 %	<200 % >0 %
THD+N - relative (Channel B RMS)	0.00205 %	<200 % >0 %
Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/12th octave band-reject filter at the generator frequency		

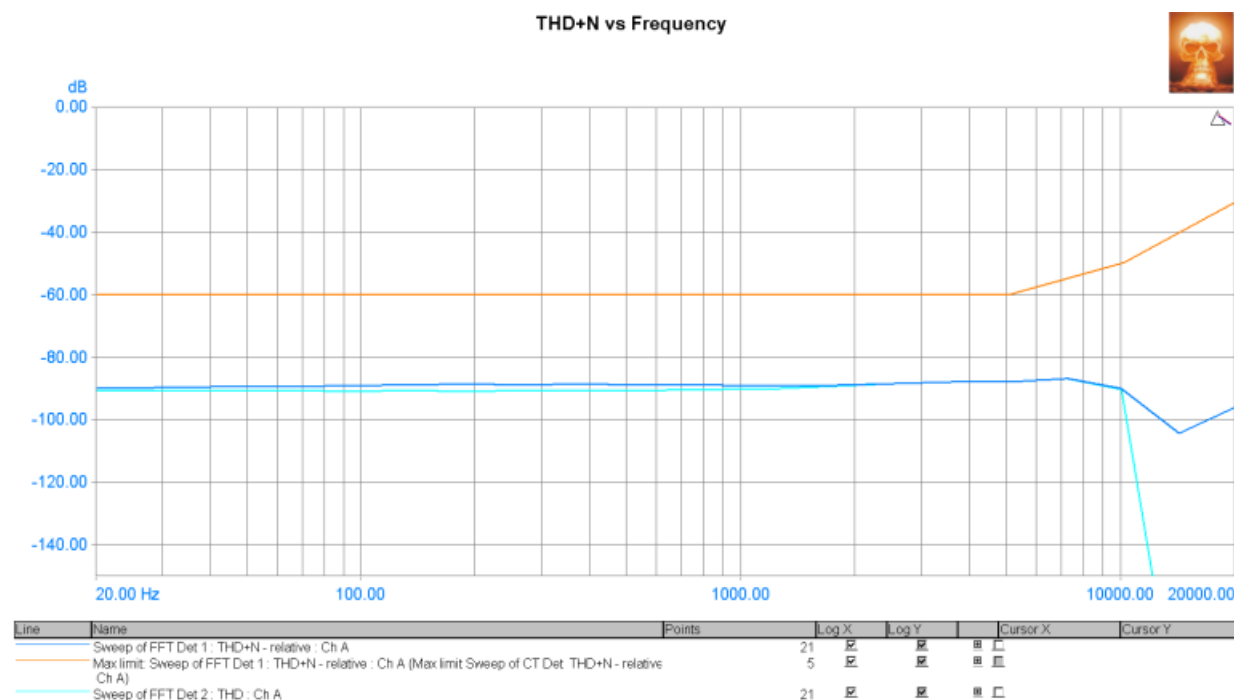
FFT Detector Readings		
THD (Channel A)	0.00276 %	<200 % >0 %
THD (Channel B)	0.00179 %	<200 % >0 %
FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.00252 %	<200 % >0 %
2nd Harmonic Distortion (Channel B)	0.00136 %	<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)	0.00065 %	<200 % >0 %
3rd Harmonic Distortion (Channel B)	0.00036 %	<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)	0.00289 %	<200 % >0 %
THD+N - relative (Channel B)	0.00203 %	<200 % >0 %
FFTD 4 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with window notch (14 bins) band-reject filter at the input frequency		

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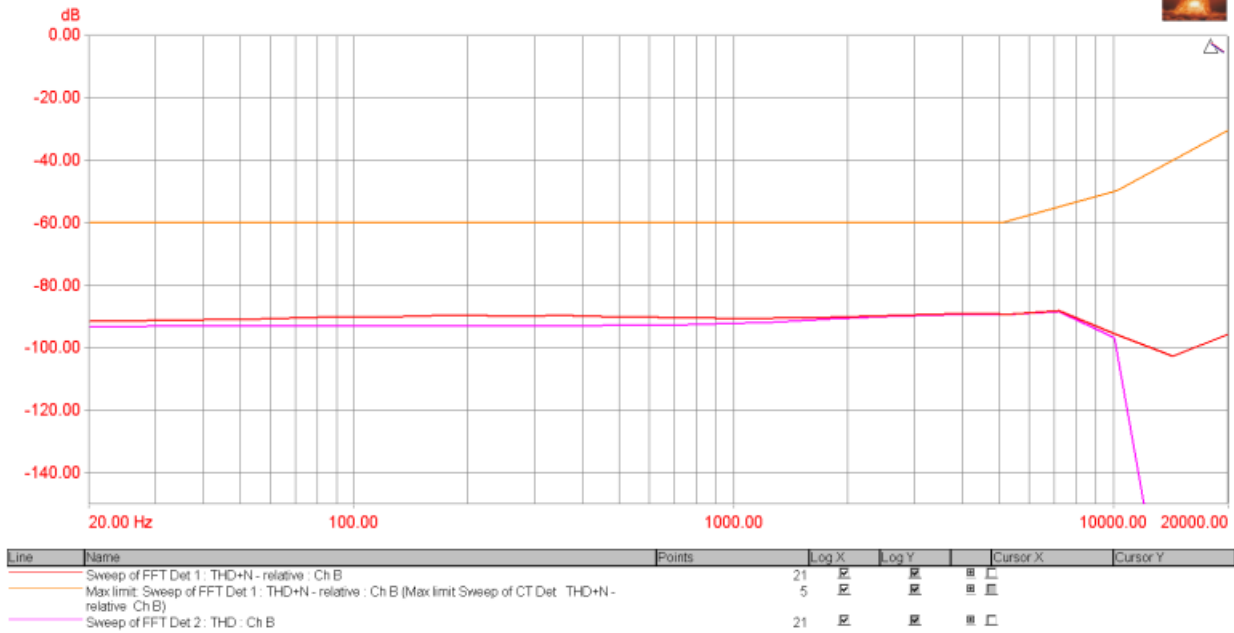
## A05 THD+N vs Freq: PASSED

Measured at 3/18/2021 5:01:29 PM

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



THD+N vs Frequency


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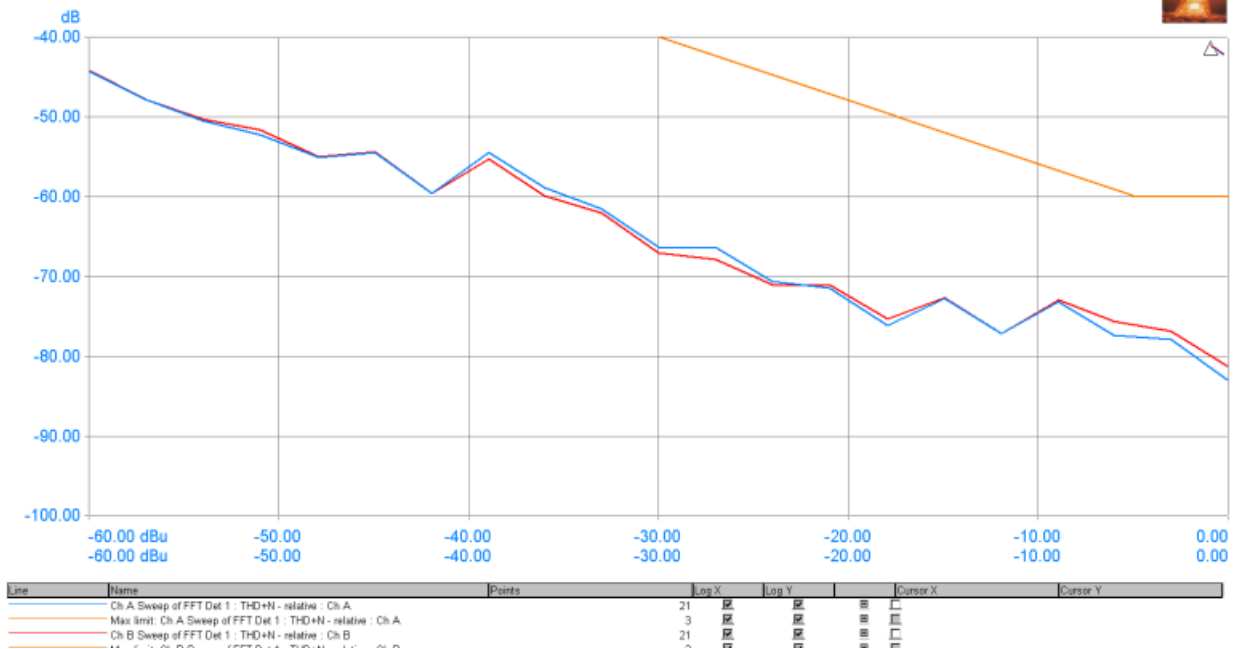
## A06 THD+N vs Ampl: PASSED

Measured at 3/18/2021 5:02:25 PM

## Generator Settings

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

THD+N vs Amplitude


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## A07 Noise, DNR: PASSED

Measured at 3/18/2021 5:02:48 PM

## 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)	-54.089 dB	Not limit checked.
THD+N - relative (Channel B)	-54.085 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)	-108.552 dBu	Not limit checked.
Noise (residual) (Channel B)	-108.336 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	122.101 dB	< 150 dB > 60 dB
DAC DNR Residual Async	121.888 dB	< 150 dB > 60 dB
FFTD 3 Settings: User: DAC SNR Residual Async		

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## A08 Crosstalk A to B: PASSED

Measured at 3/18/2021 5:03:06 PM

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)	-142.888 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		

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## A09 Crosstalk B to A: PASSED

Measured at 3/18/2021 5:03:13 PM

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)	-138.802 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		

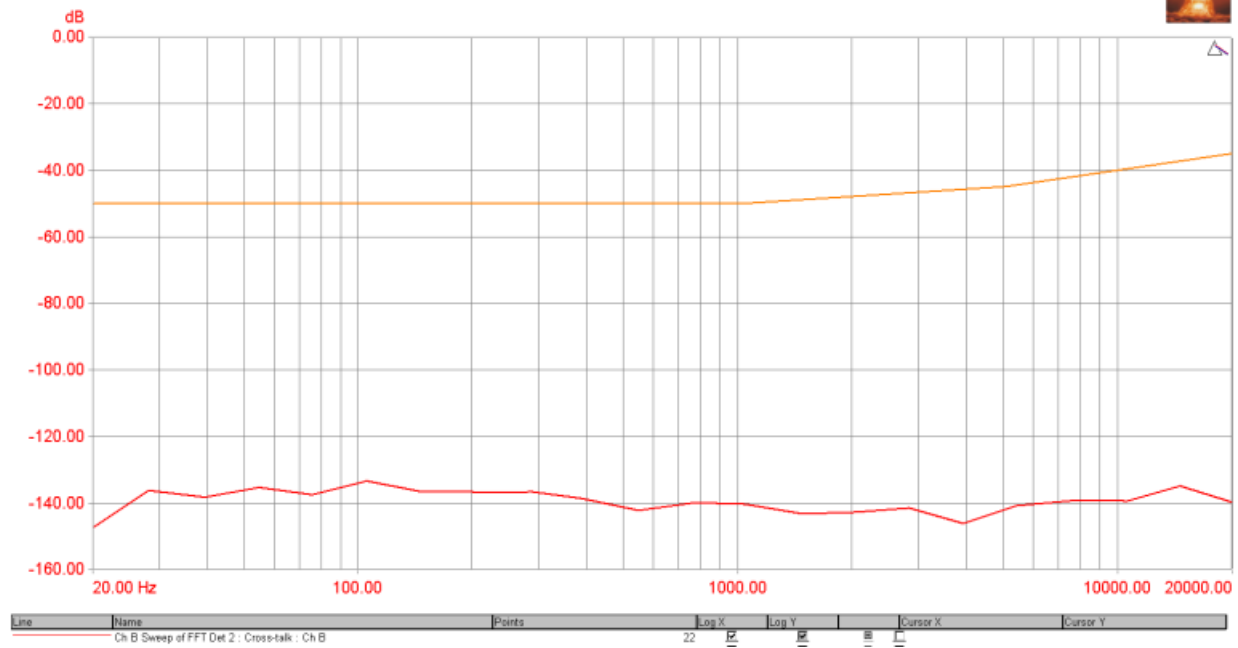
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## A10 Crosstalk A to B vs Freq: PASSED

Measured at 3/18/2021 5:03:18 PM

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


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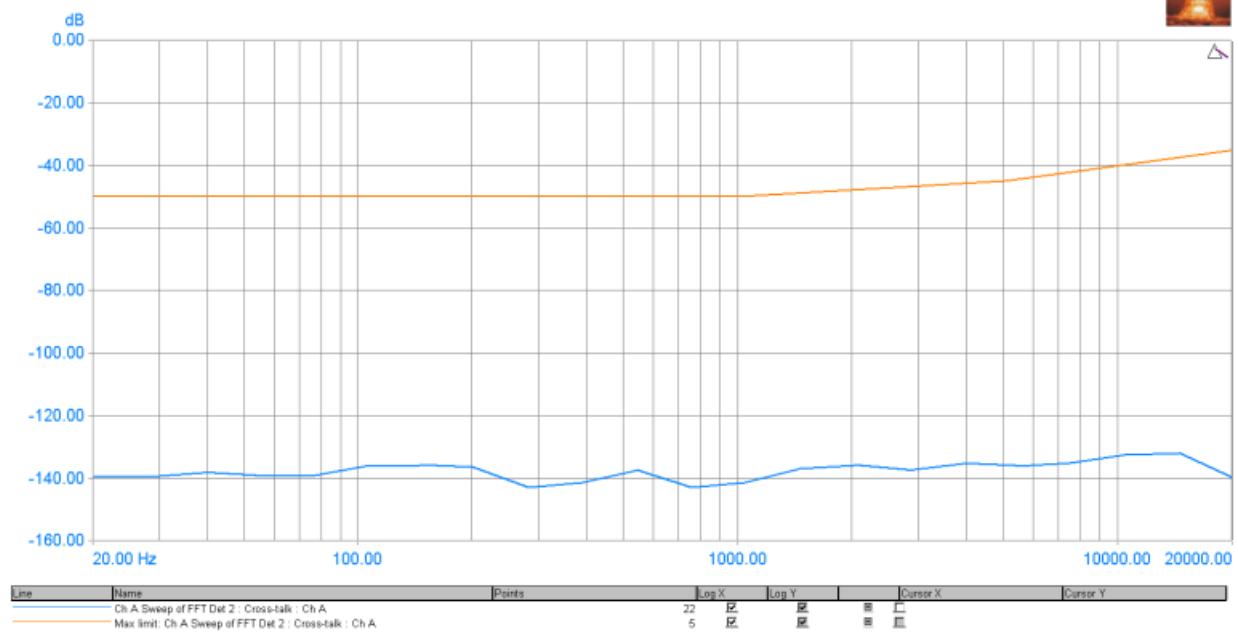
### A11 Crosstalk B to A vs Freq: PASSED

Measured at 3/18/2021 5:04:13 PM

#### 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


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

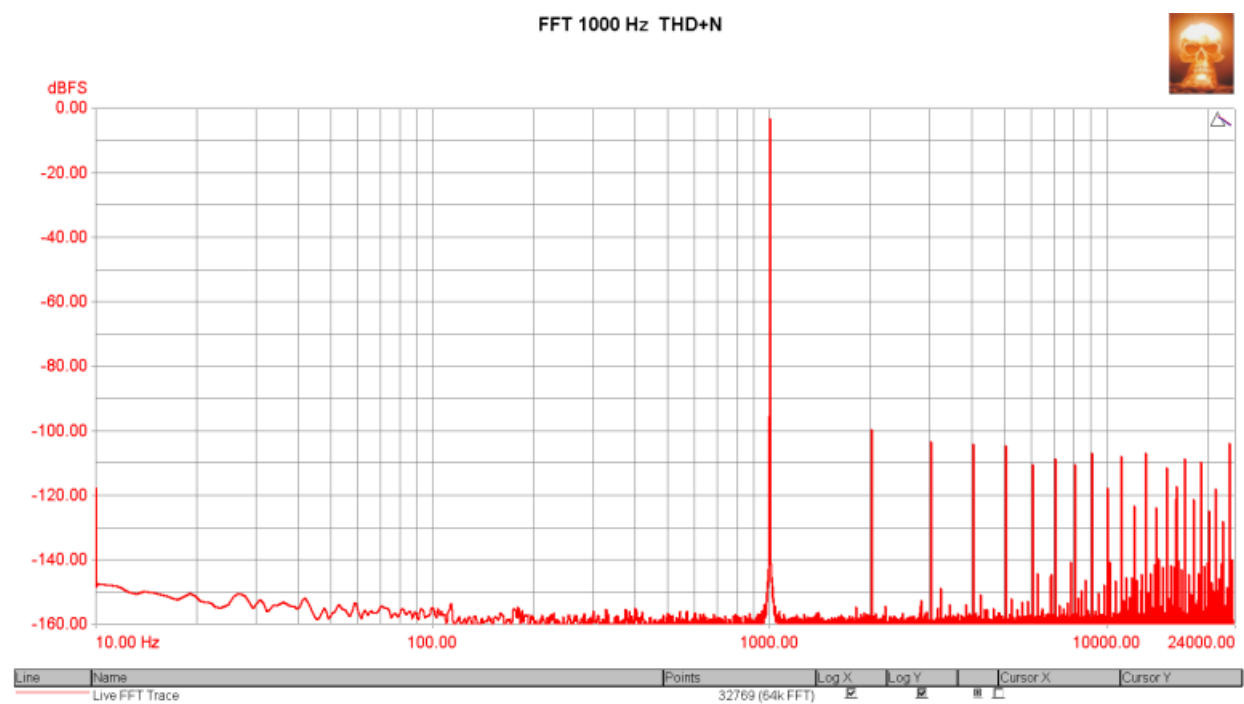
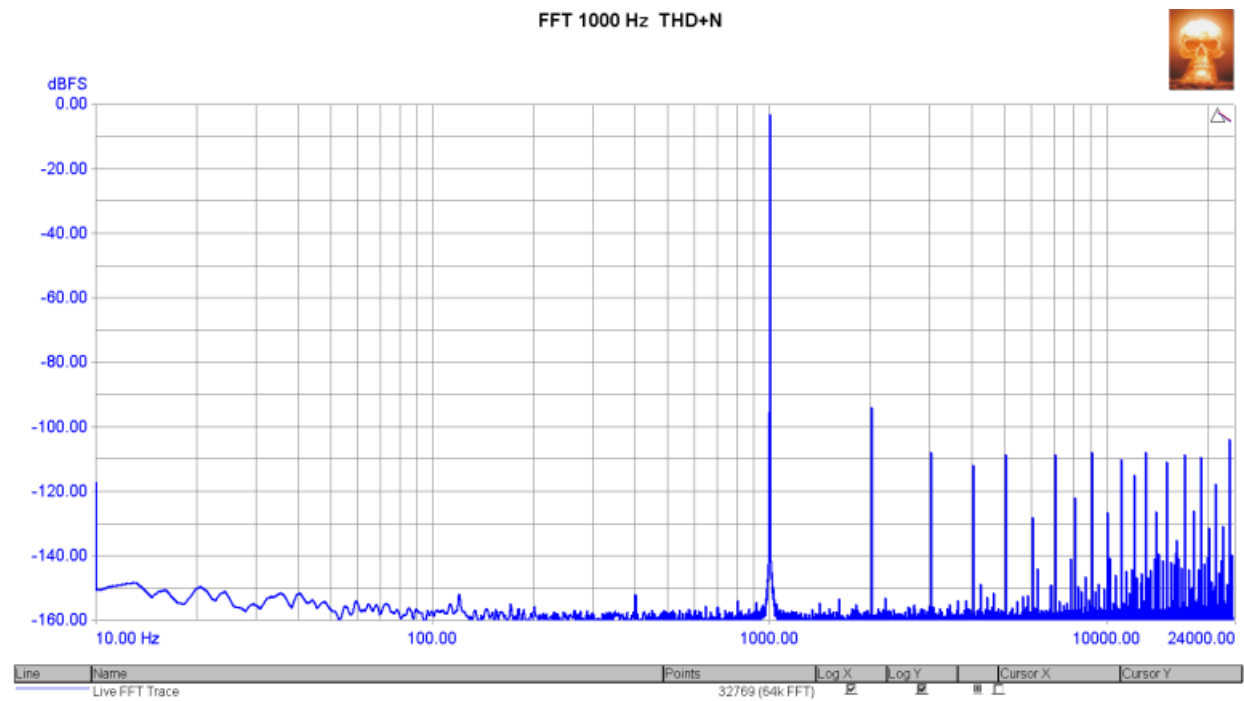
Measured at 3/18/2021 5:05:06 PM

#### 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)	10.507 dBu	Not limit checked.
RMS amplitude (Non-selected : Ch A)	10.510 dBu	Not limit checked.

CTA Readings		
THD+N - relative (Selected : Ch ARMS)	0.00309 %	< 0.075 % > 0.00000001 %
THD+N - relative (Non-selected : Ch ARMS)	0.00264 %	< 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)	0.00321 %	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		

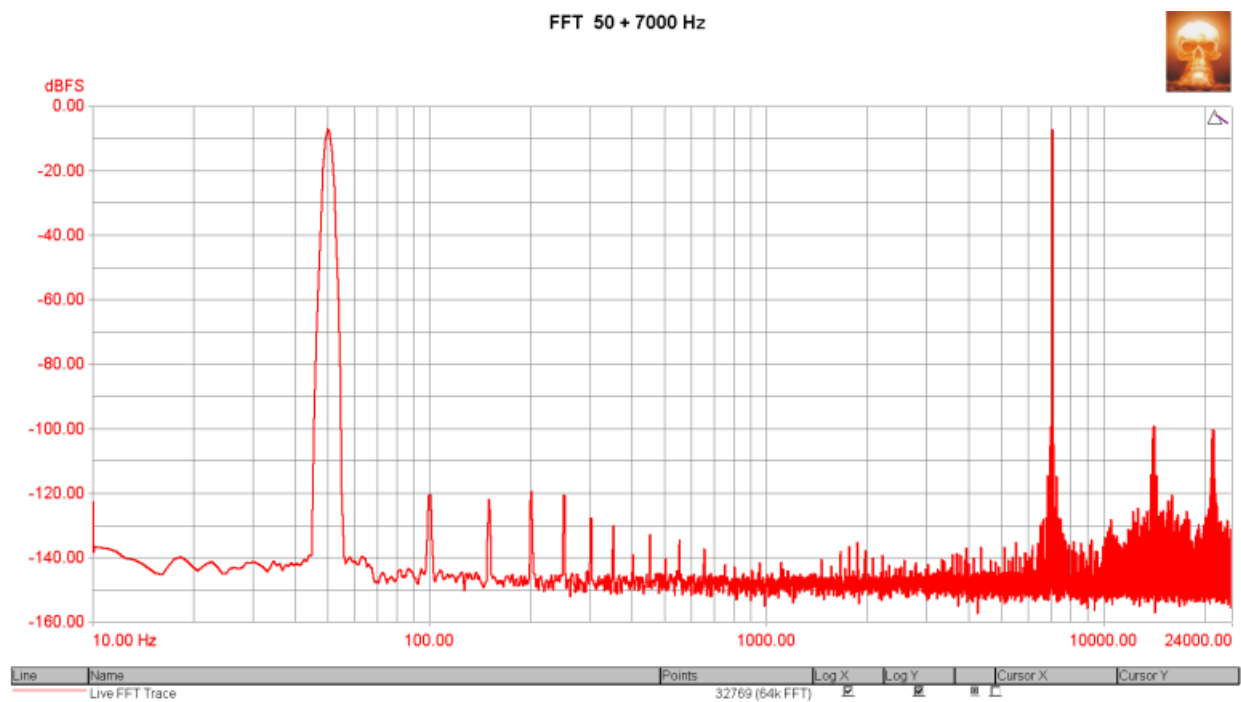
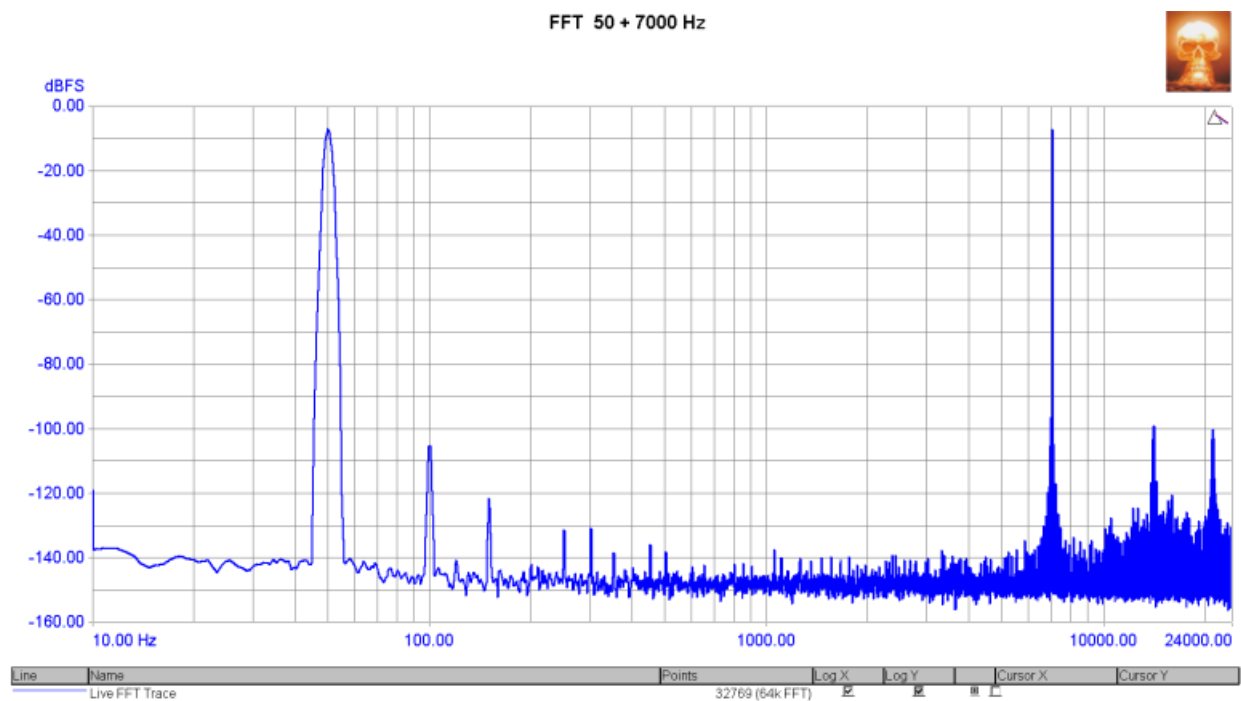


Measured at 3/18/2021 5:06:27 PM

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)	9.507 dBu	Not limit checked.
RMS amplitude (Channel B)	9.510 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.00328 %	< 0.05 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.00239 %	< 0.05 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		



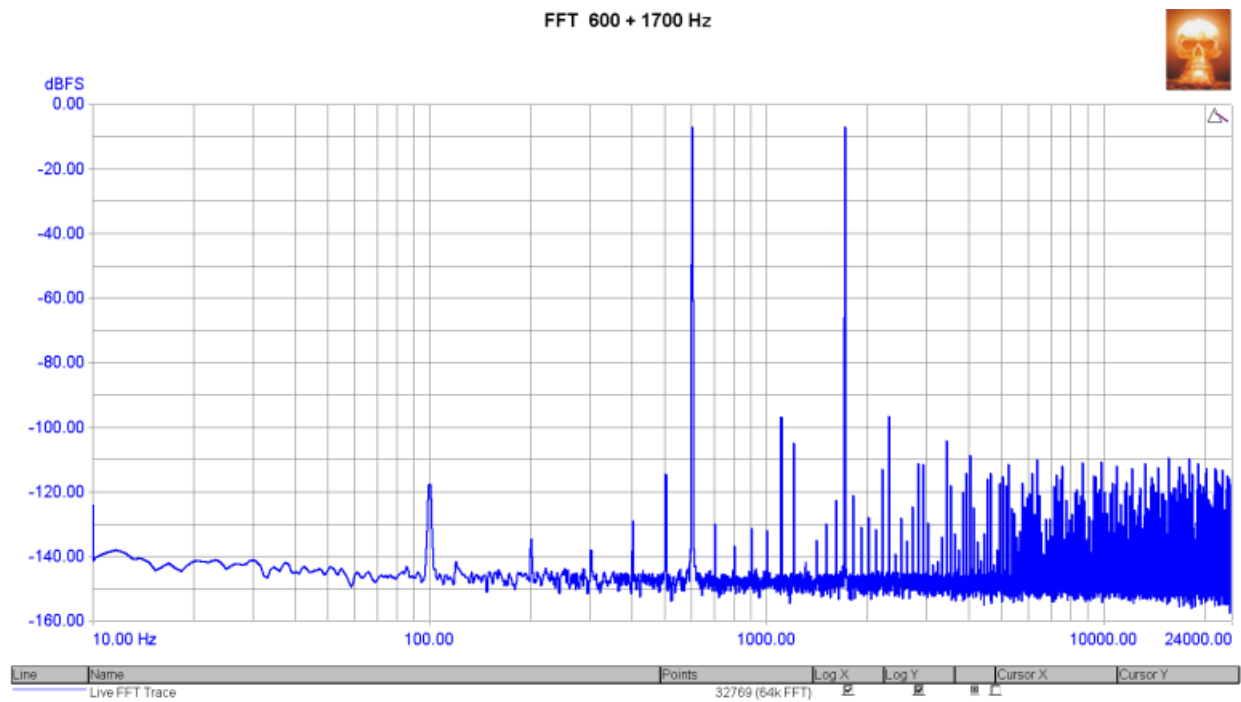
A14 FFT 600+1700 Hz: PASSED

Measured at 3/18/2021 5:06:50 PM

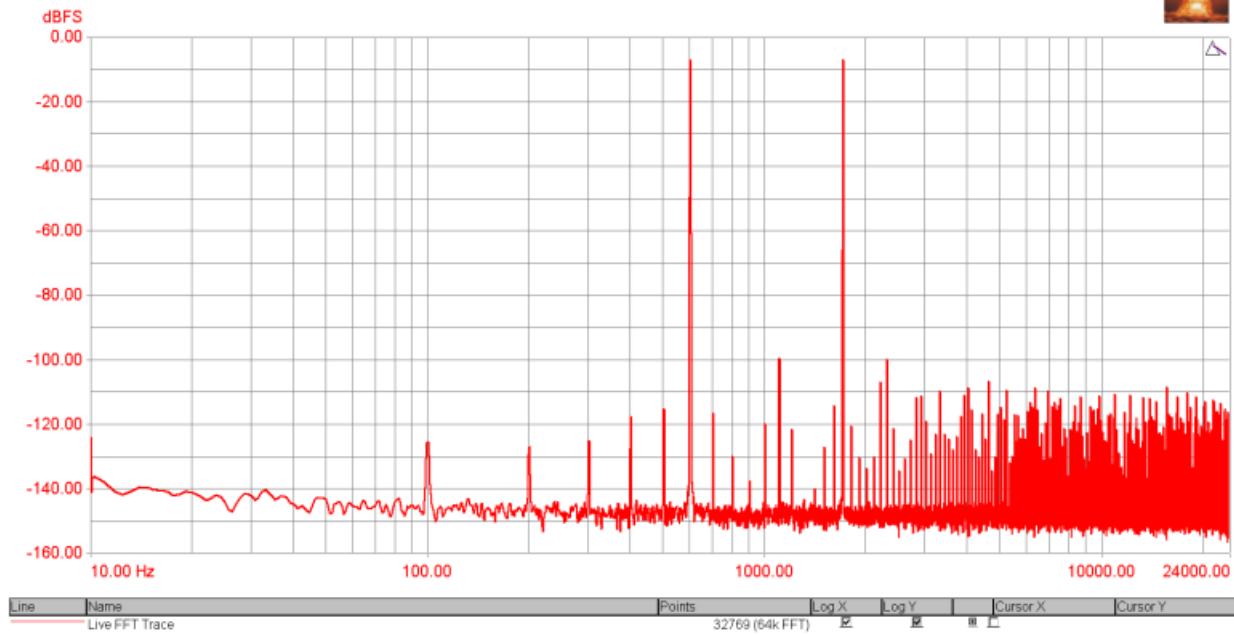
Generator Settings	
Channel A:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz
Channel B:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	9.503 dBu	Not limit checked.
RMS amplitude (Channel B)	9.550 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.01279 %	< 0.02 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.01275 %	< 0.02 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		



FFT 600 + 1700 Hz


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### A15 FFT 19+20 KHz: PASSED

Measured at 3/18/2021 5:07:13 PM

#### 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

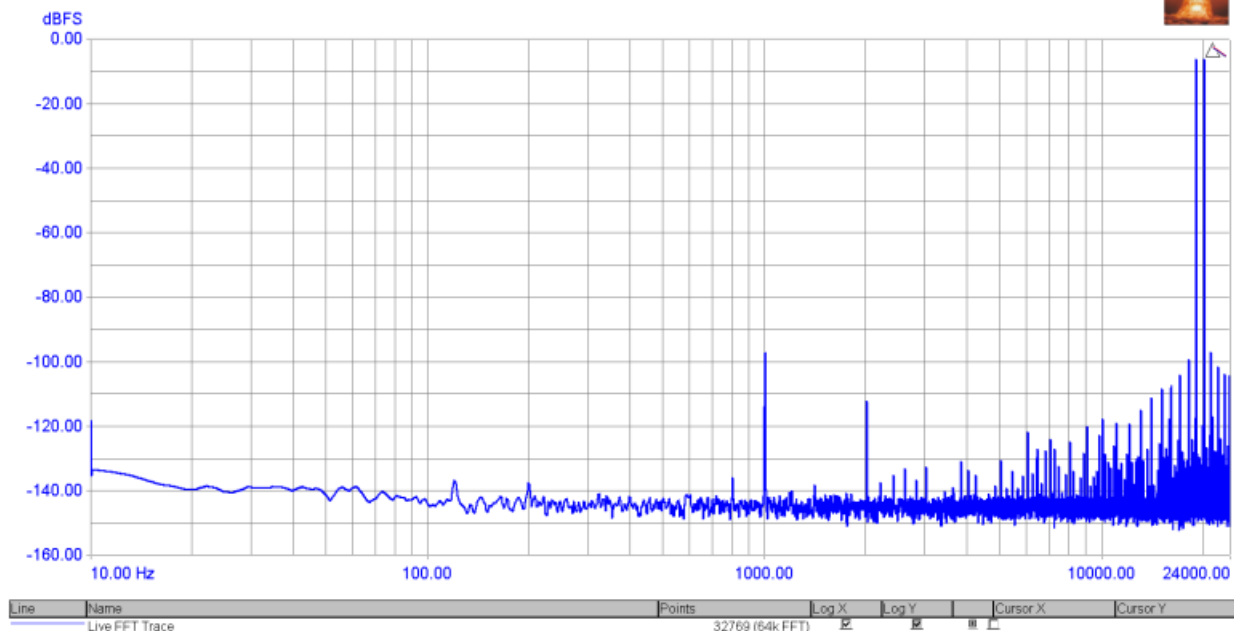
RMS amplitude (Channel A)	10.436 dBu	Not limit checked.
RMS amplitude (Channel B)	10.365 dBu	Not limit checked.

#### CTA Readings

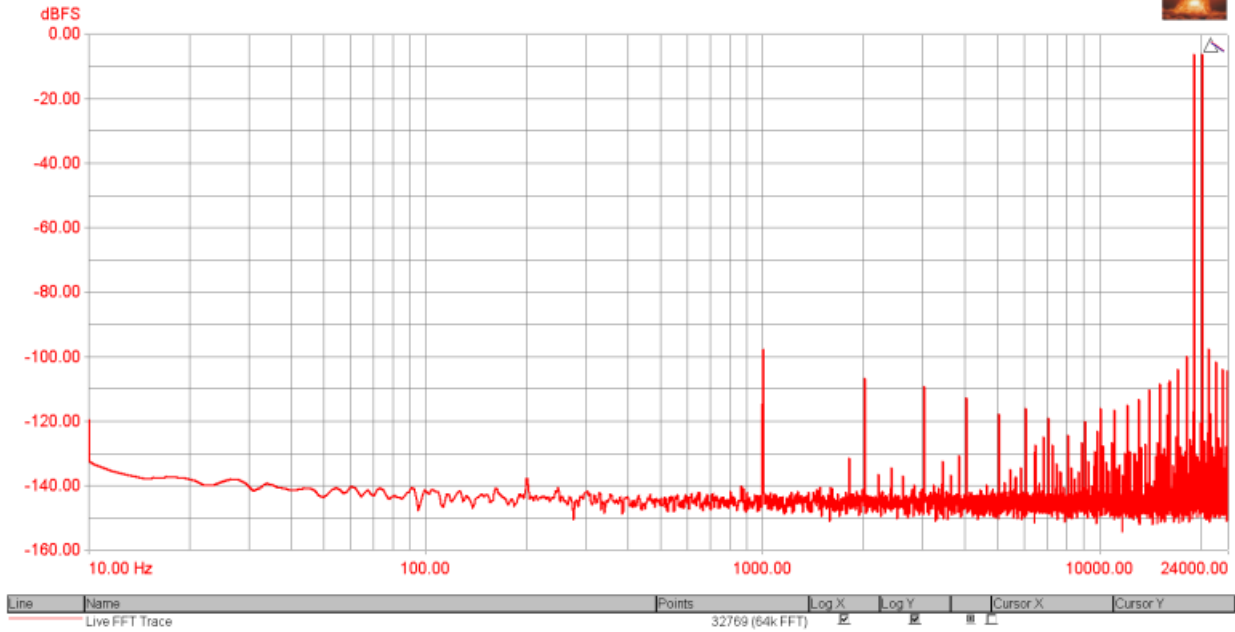
IMD CCIF (Channel A RMS)	0.00199 %	< 0.1 %
IMD CCIF (Channel B RMS)	0.00187 %	< 0.1 %

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)	0.00196 %	< 0.1 %
IMD CCIF (Channel B)	0.00183 %	< 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		

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**A16 FFT residual noise: PASSED**

Measured at 3/18/2021 5:07:34 PM

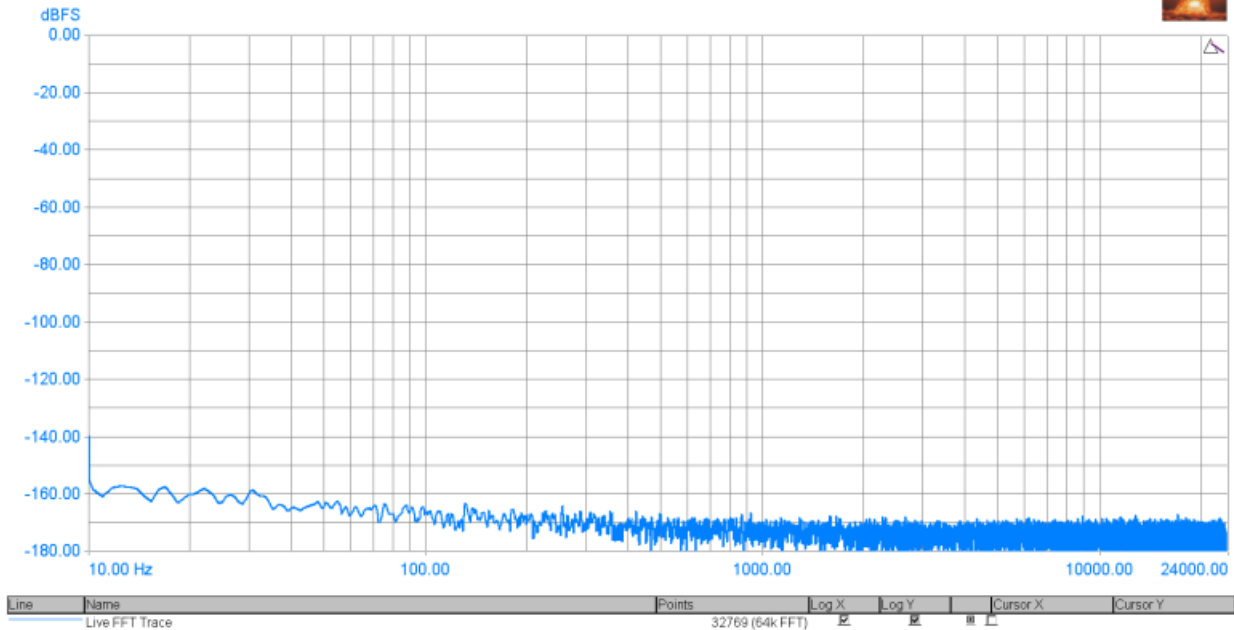
## Generator Settings

Channel A:	Off
Channel B:	Off

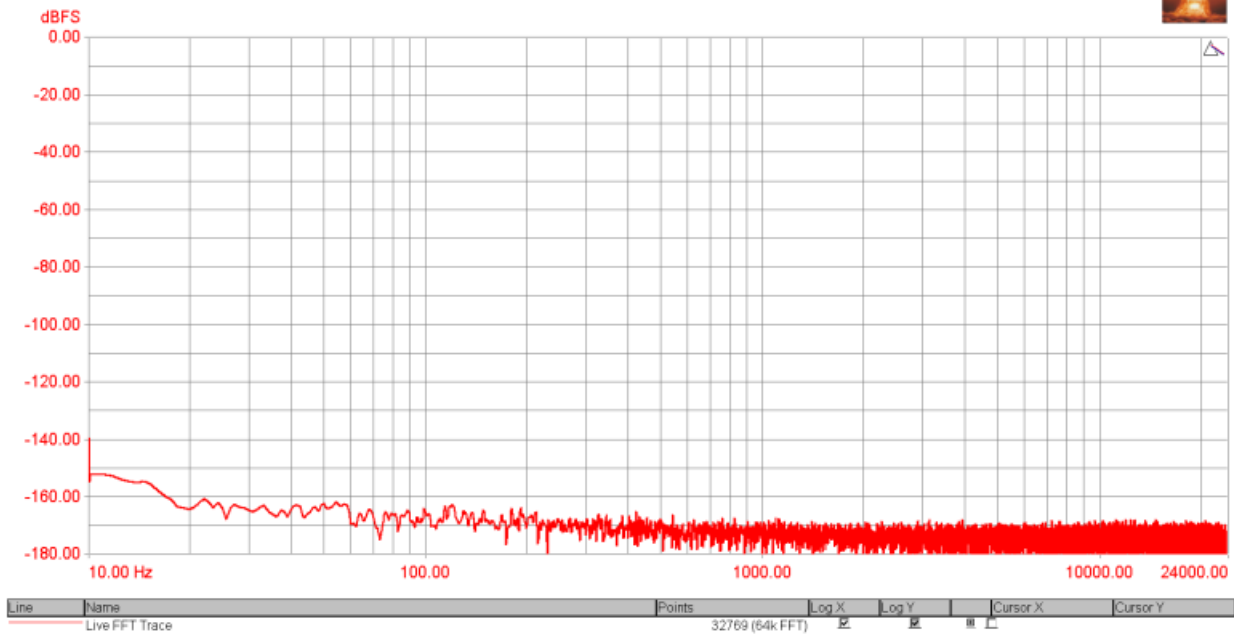
## Signal Analyzer Readings

RMS amplitude (Channel A)	-108.137 dBu	Not limit checked.
RMS amplitude (Channel B)	-107.995 dBu	Not limit checked.

# FFT residual noise



# FFT residual noise



## FFT Detector Readings

Noise (residual) (Channel A)	-132.949 dBFS	< -60 dBFS > -150 dBFS
Noise (residual) (Channel B)	-132.943 dBFS	< -60 dBFS > -150 dBFS

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

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

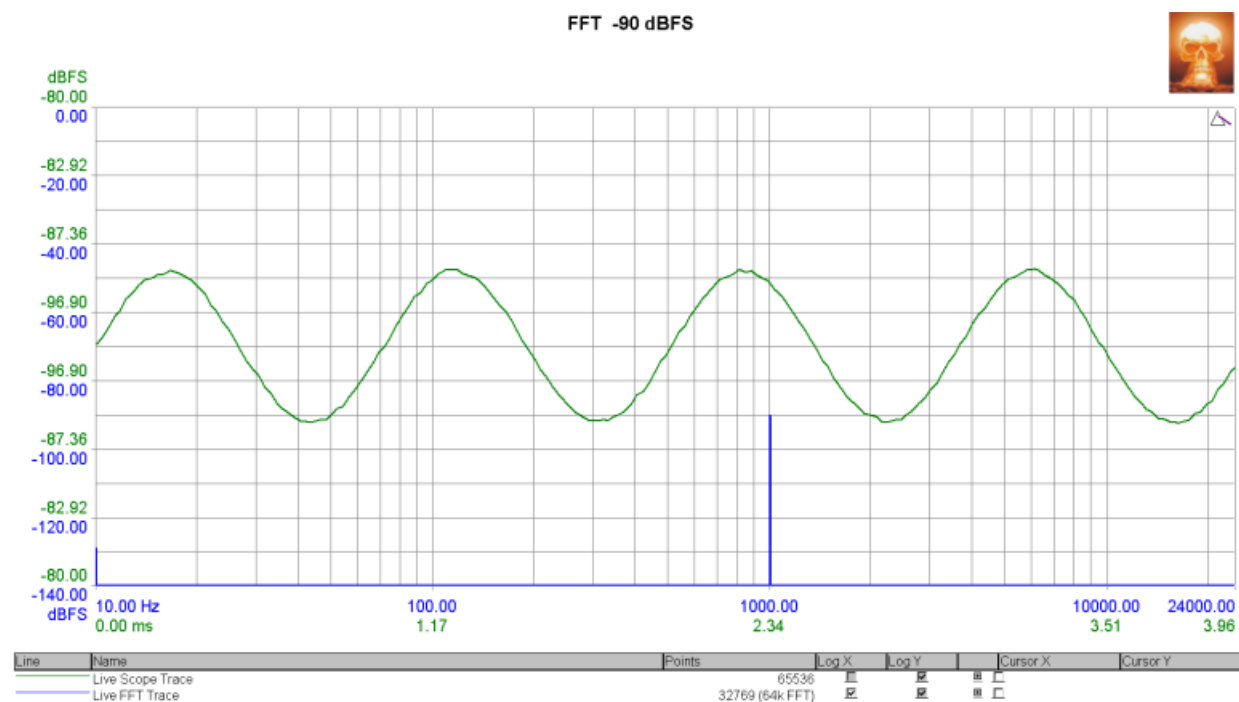
Measured at 3/18/2021 5:09:35 PM

## 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)	-76.424 dBu	Not limit checked.
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**A17a FFT -120 dBFS:** Not limit checked.

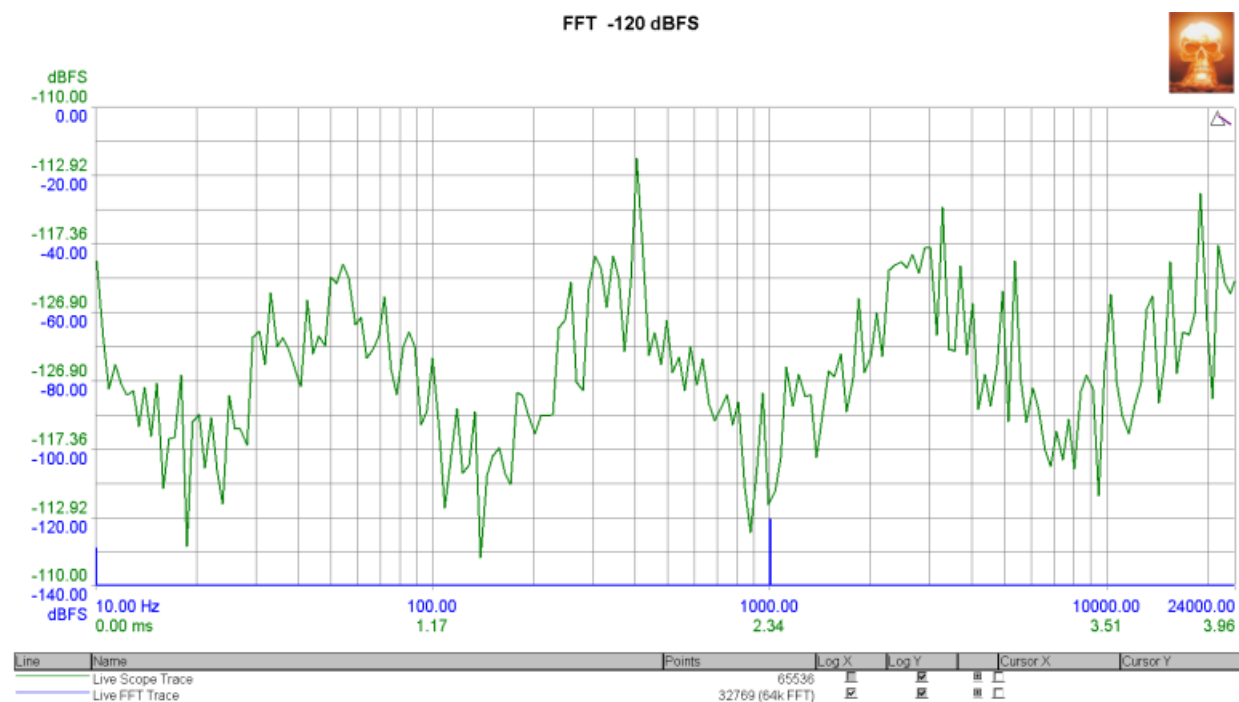
Measured at 3/18/2021 5:09:48 PM

#### 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)	<b>-104.735 dBu</b>	Not limit checked.
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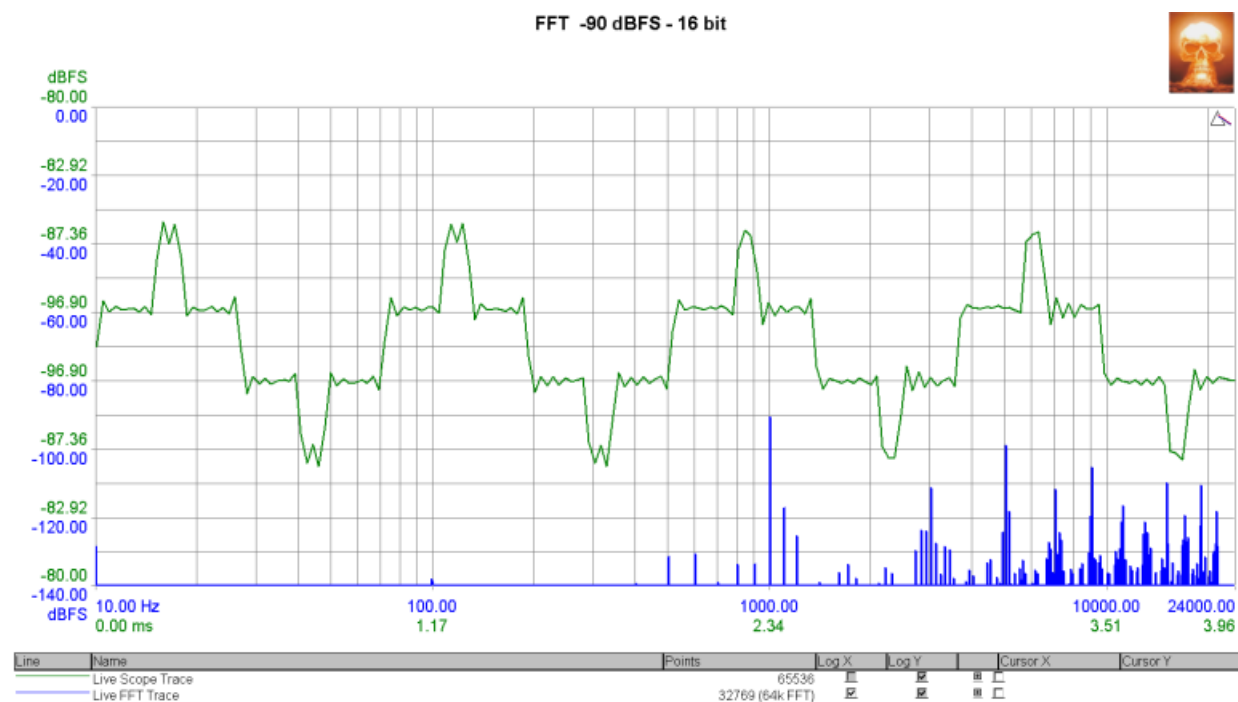
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**A18 FFT -90 dBFS 16 bit:** Not limit checked.

Measured at 3/18/2021 5:10:02 PM

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.

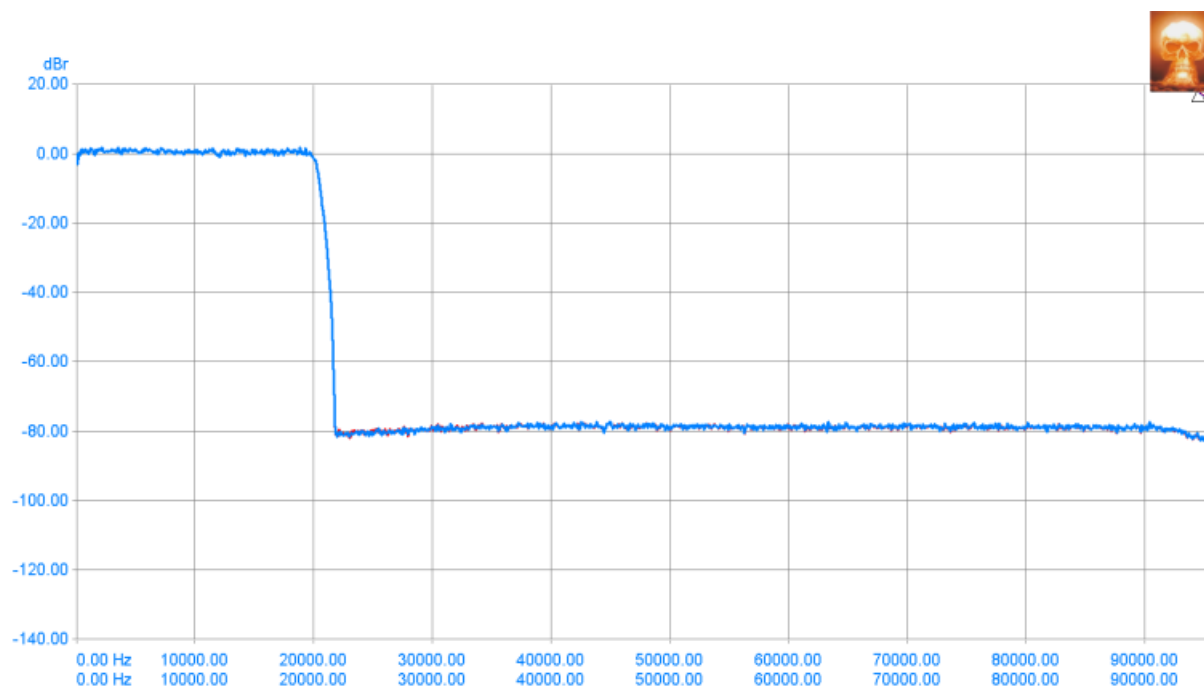


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**A19 FFT imaging:** Not limit checked.

Measured at 3/18/2021 5:10:16 PM

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



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A20 FFT inferred jitter: Not limit checked.

Measured at 3/18/2021 5:10:38 PM

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

