Wavelight USB 44K Bal 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, X = Test fails, OK = Test has run but has no limit checking, (X) = Test has failed to run or has not completed,
[√] = Test passes but is not required, [X] = 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 5/27/2021 10:02:00 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)	17.514 dBu	< 24 dBu > -20 dBu
RMS amplitude (Channel B)	17.514 dBu	< 24 dBu > -20 dBu
Inter-channel phase	-0.03 °	< 10 ° > -10 °

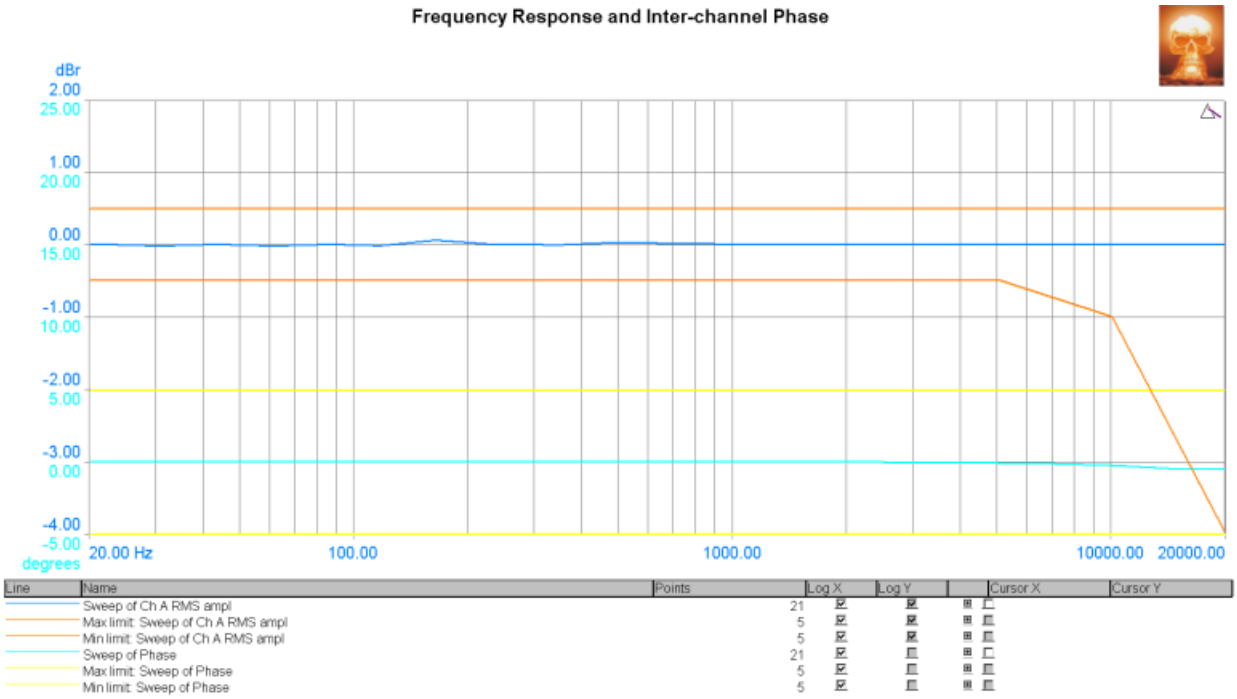
CTA Readings		
Gain (Channel A RMS)	0.000 dB	< 20 dB > -40 dB
Gain (Channel B RMS)	0.001 dB	< 20 dB > -40 dB
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

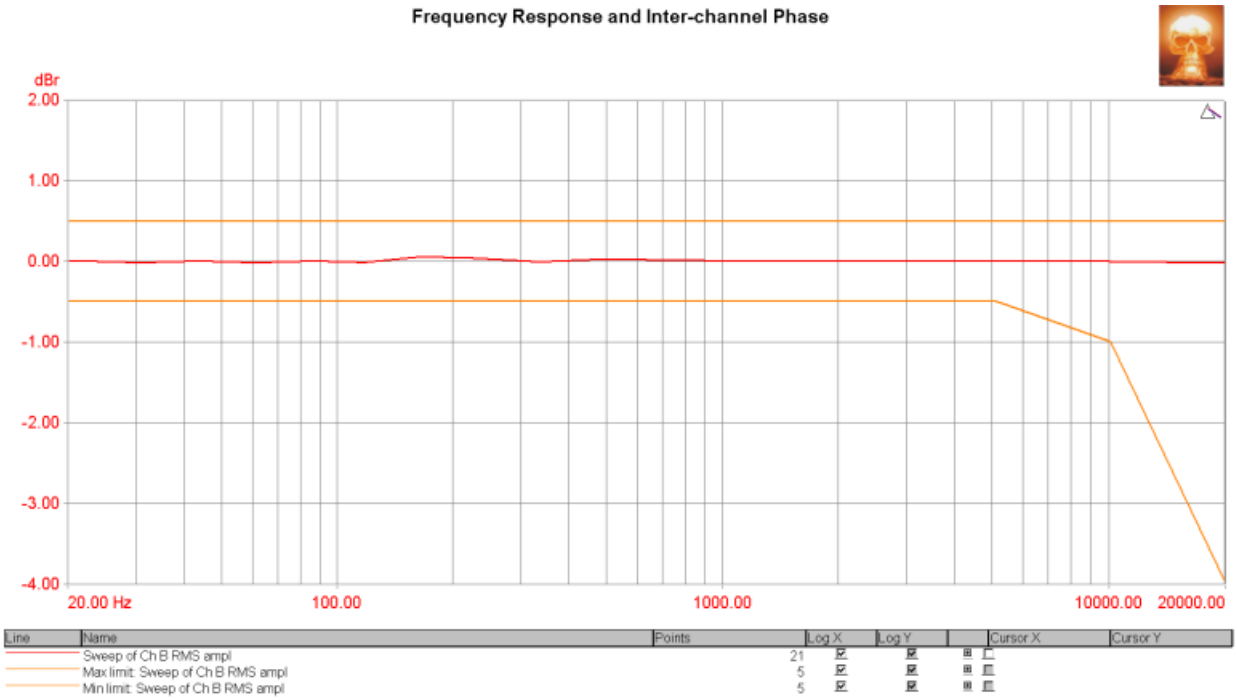
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A02 Ampl, Phase vs Freq: PASSED

Measured at 5/27/2021 10:02:05 AM

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



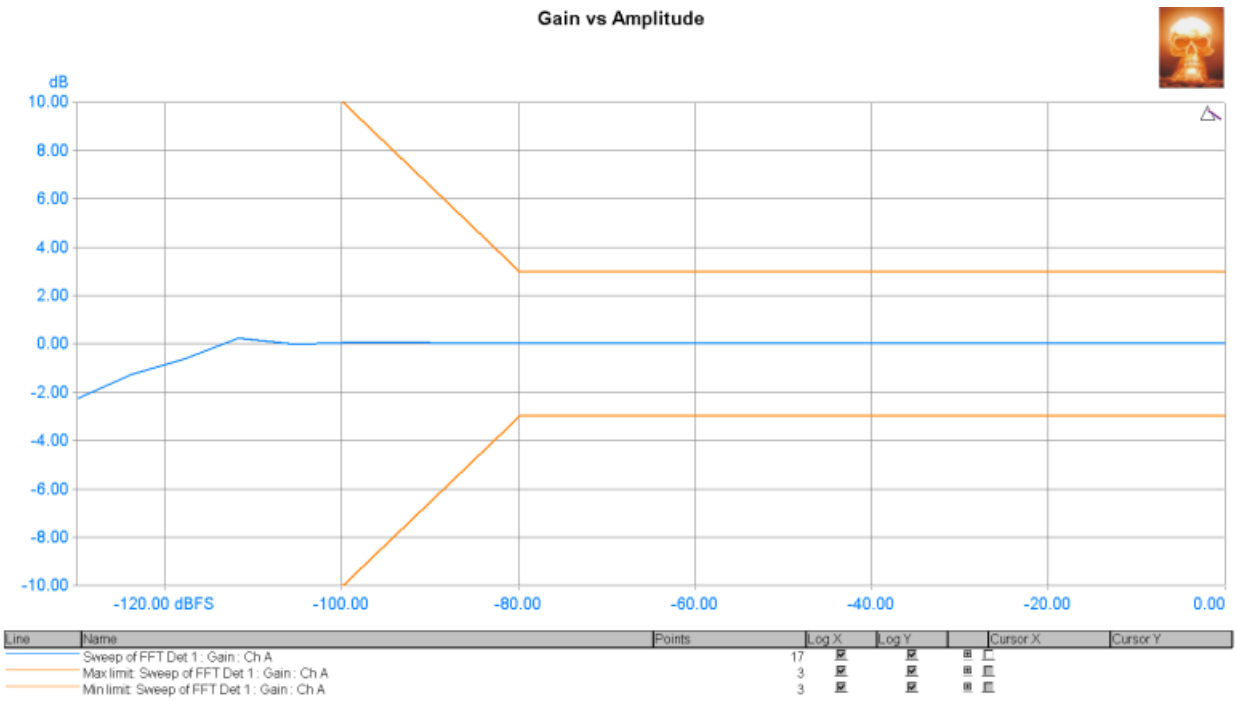


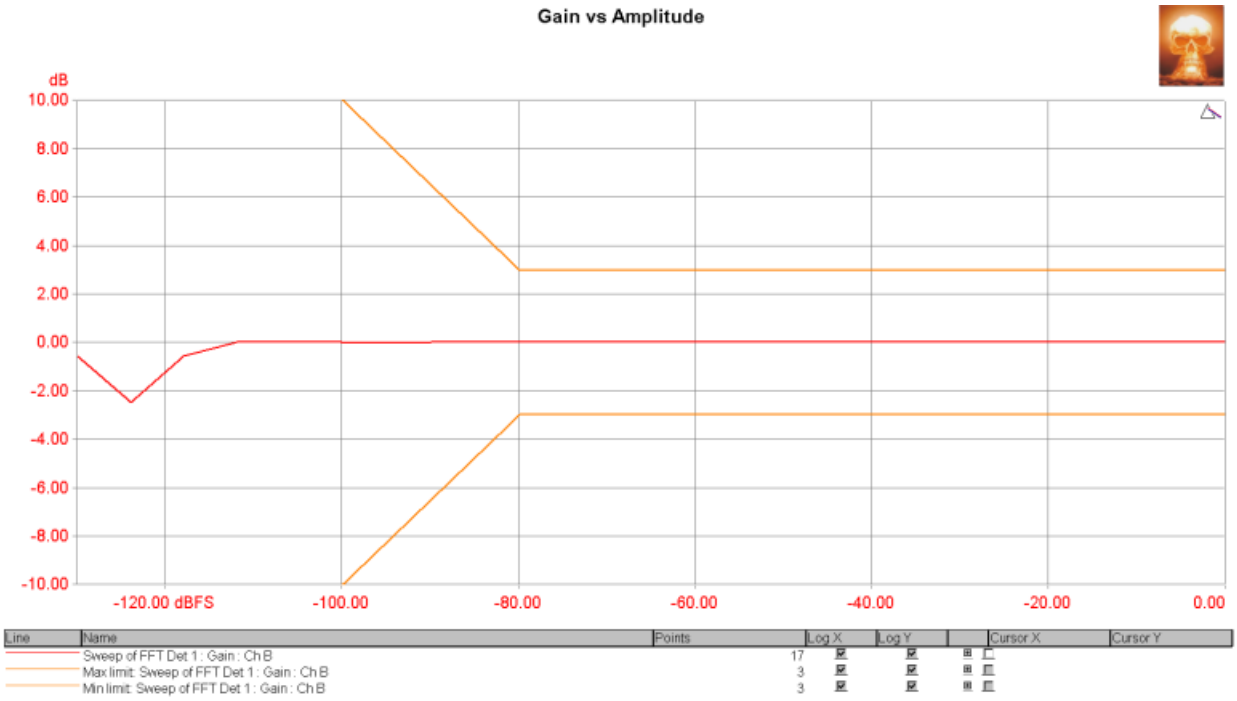
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A03 Gain vs Ampl: PASSED

Measured at 5/27/2021 10:02:15 AM

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





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

Measured at 5/27/2021 10:03:20 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)	0.00538 %	< 200 % > 0 %
THD+N - relative (Channel B RMS)	0.00605 %	< 200 % > 0 %
Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/12th octave band-reject filter at the generator frequency		

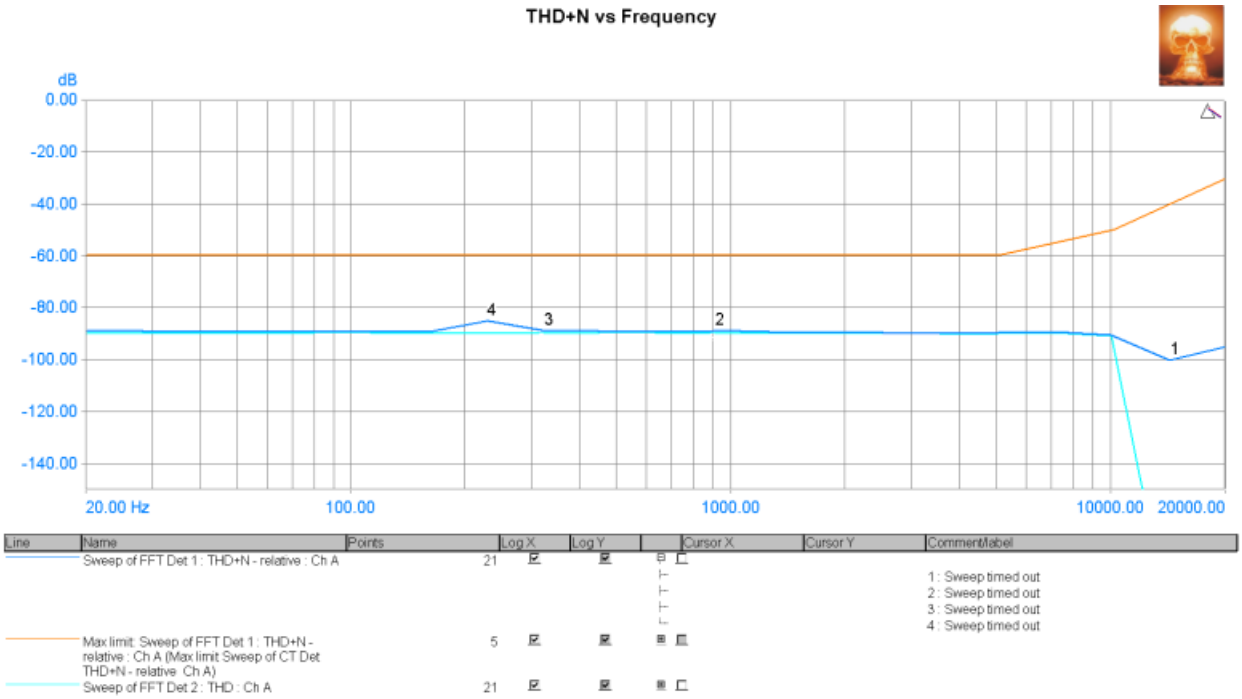
FFT Detector Readings		
THD (Channel A)	0.00529 %	< 200 % > 0 %
THD (Channel B)	0.00599 %	< 200 % > 0 %
FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.00310 %	< 200 % > 0 %
2nd Harmonic Distortion (Channel B)	0.00416 %	< 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)	0.00427 %	< 200 % > 0 %
3rd Harmonic Distortion (Channel B)	0.00430 %	< 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)	0.00531 %	< 200 % > 0 %
THD+N - relative (Channel B)	0.00601 %	< 200 % > 0 %
FFTD 4 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with window notch (14 bins) band-reject filter at the input frequency		

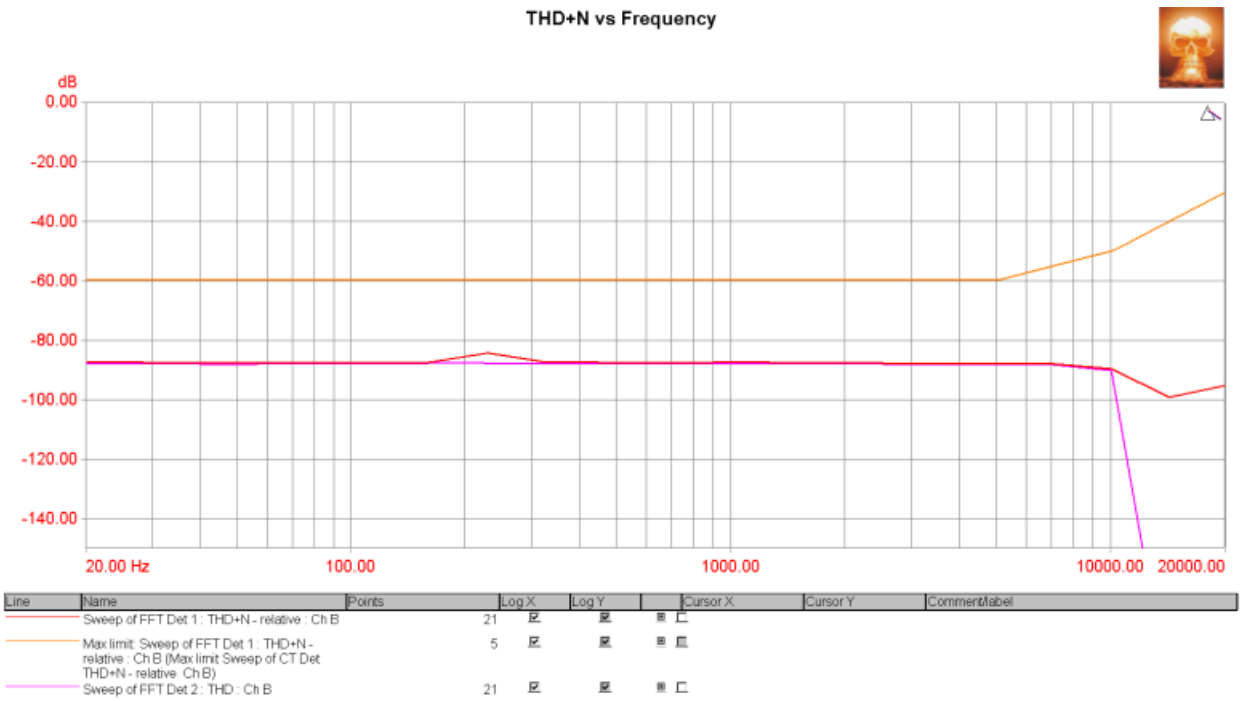
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A05 THD+N vs Freq: PASSED

Measured at 5/27/2021 10:03:34 AM

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



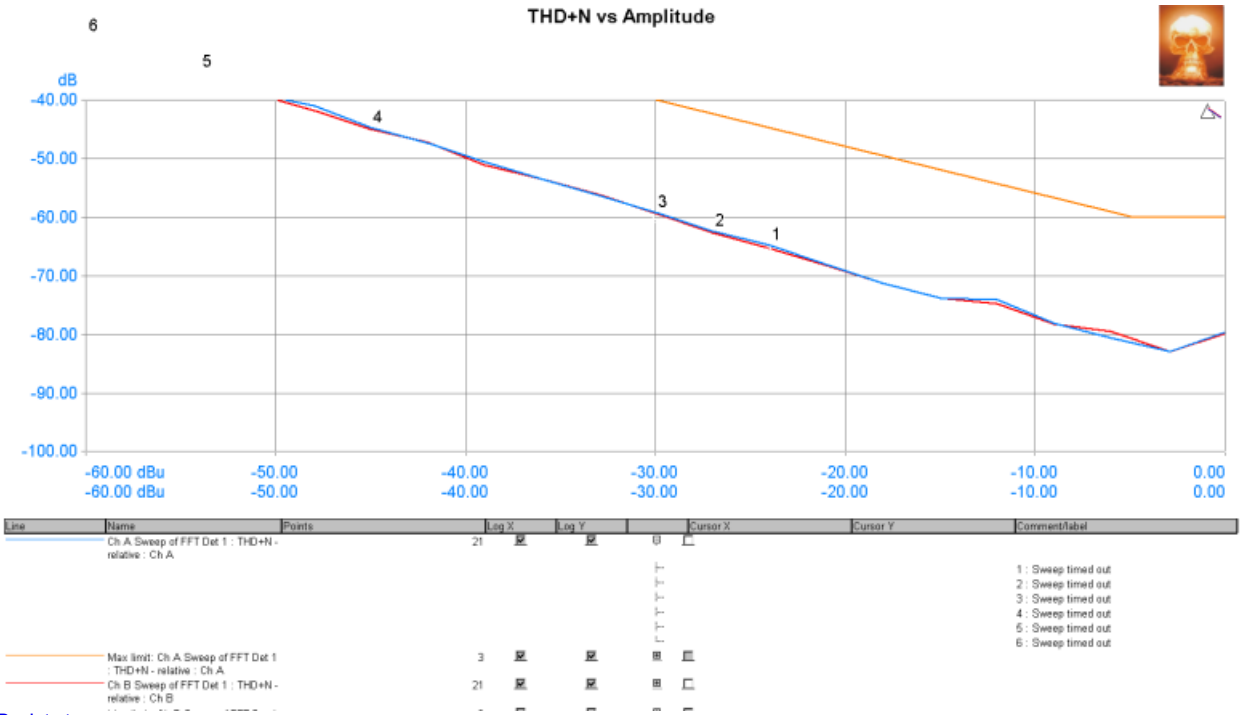


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A06 THD+N vs Ampl: PASSED

Measured at 5/27/2021 10:04:44 AM

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



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A07 Noise, DNR: PASSED

Measured at 5/27/2021 10:05:36 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)	-58.395 dB	Not limit checked.
THD+N - relative (Channel B)	-58.902 dB	Not limit checked.
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the generator frequency		
Noise (residual) (Channel A)	-103.247 dBu	Not limit checked.
Noise (residual) (Channel B)	-103.359 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	120.767 dB	< 150 dB > 60 dB
DAC DNR Residual Async	120.880 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 5/27/2021 10:05:56 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)	-100.263 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 5/27/2021 10:06:01 AM

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

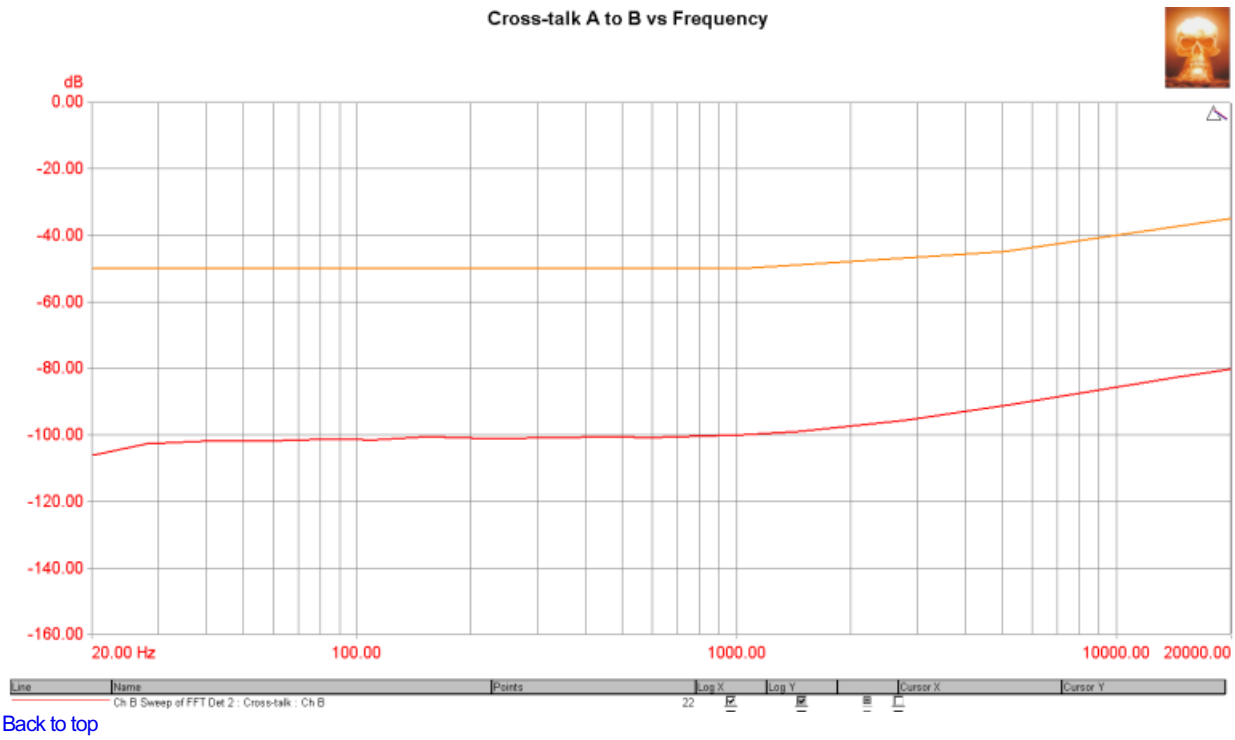
CTA Readings		
Cross-talk (Channel A RMS)	-99.053 dB	< -45 dB
Settings: Channel relative, 22 Hz - 22 kHz, unweighted RMS with 1/24th octave band-pass filter at the opposite channel generator frequency		

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A10 Crosstalk A to B vs Freq: PASSED

Measured at 5/27/2021 10:06:06 AM

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

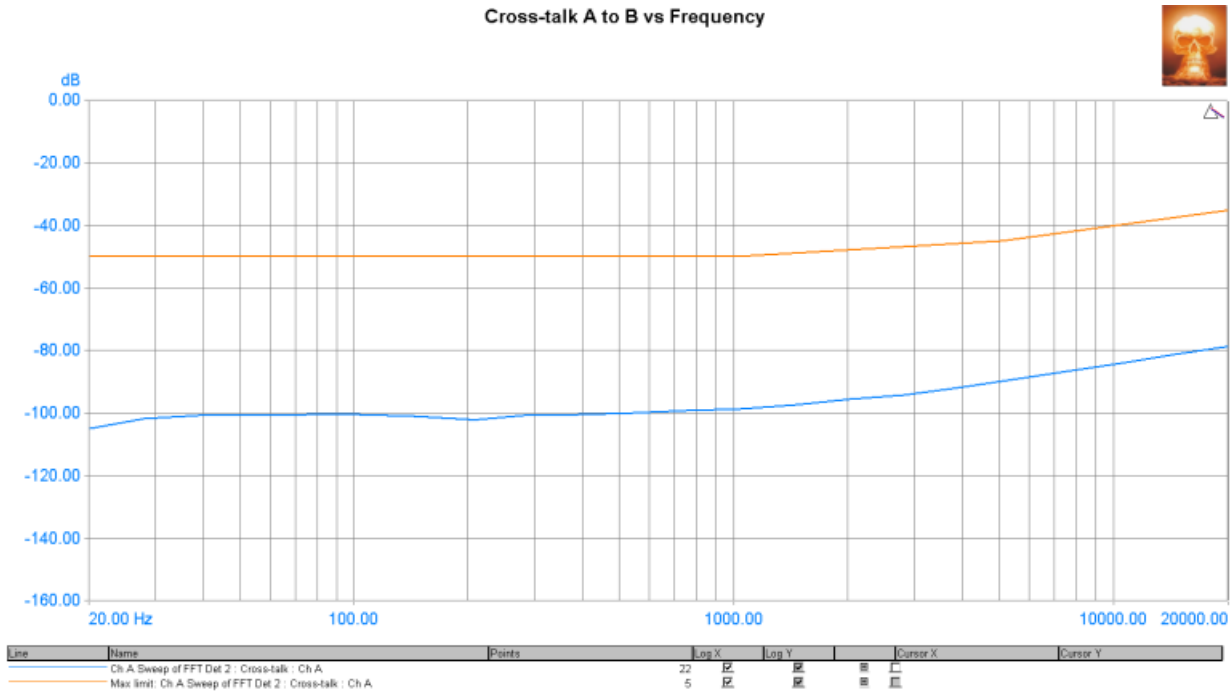


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A11 Crosstalk B to A vs Freq: PASSED

Measured at 5/27/2021 10:07:02 AM

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



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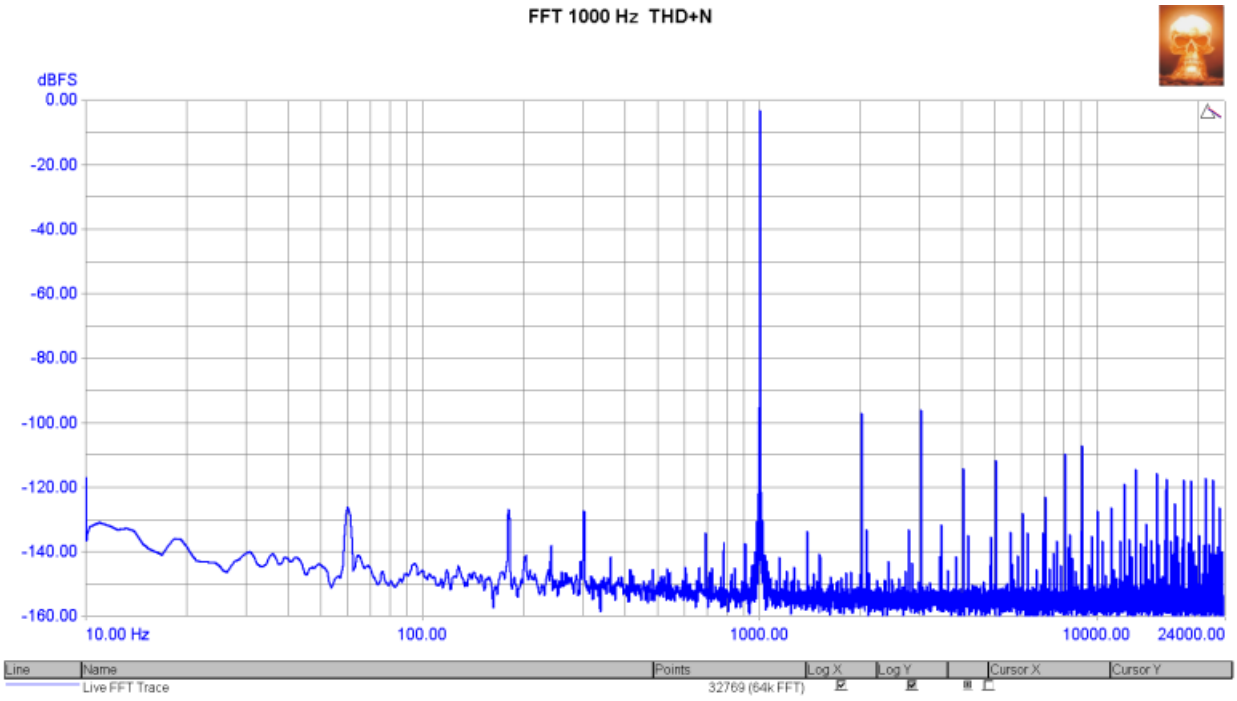
A12 FFT 1000 Hz THD+N: PASSED

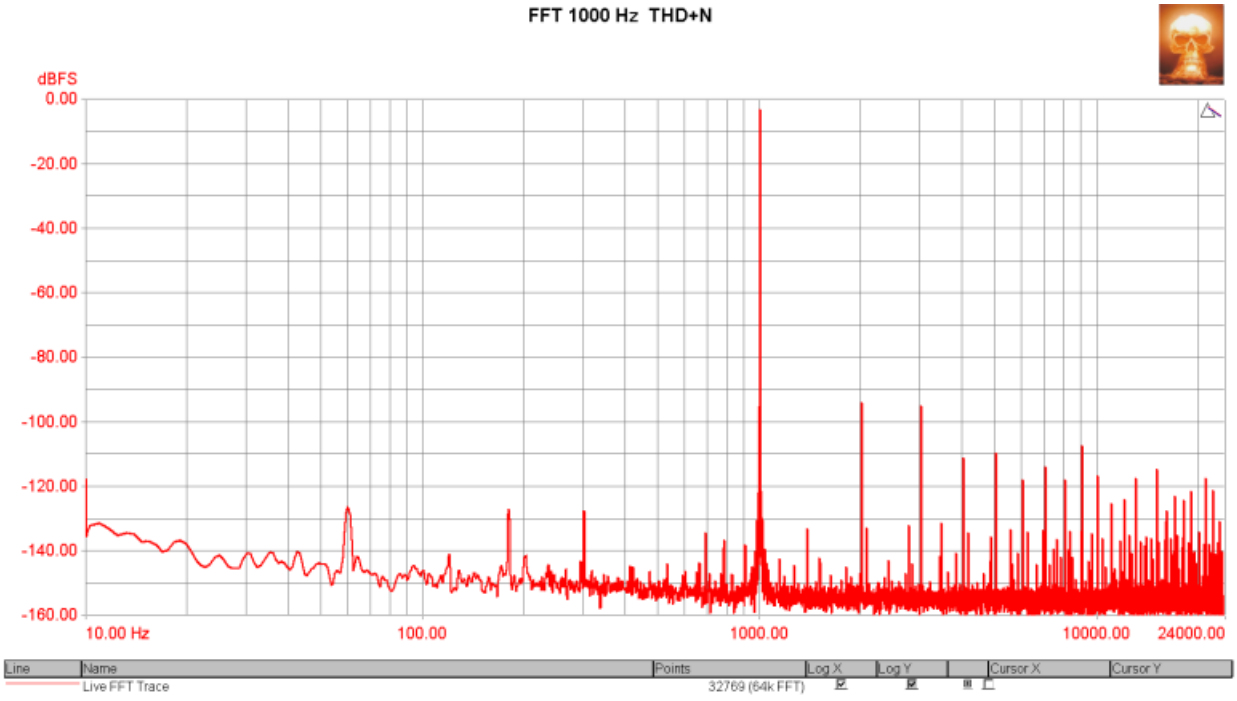
Measured at 5/27/2021 10:07:58 AM

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)	14.513 dBu	Not limit checked.
RMS amplitude (Non-selected : Ch A)	14.513 dBu	Not limit checked.

CTA Readings		
THD+N - relative (Selected : Ch A RMS)	0.00315 %	< 0.075 % > 0.00000001 %
THD+N - relative (Non-selected : Ch A RMS)	0.00377 %	< 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)	0.00314 %	Not limit checked.
THD+N - relative (Channel B)	0.00384 %	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		

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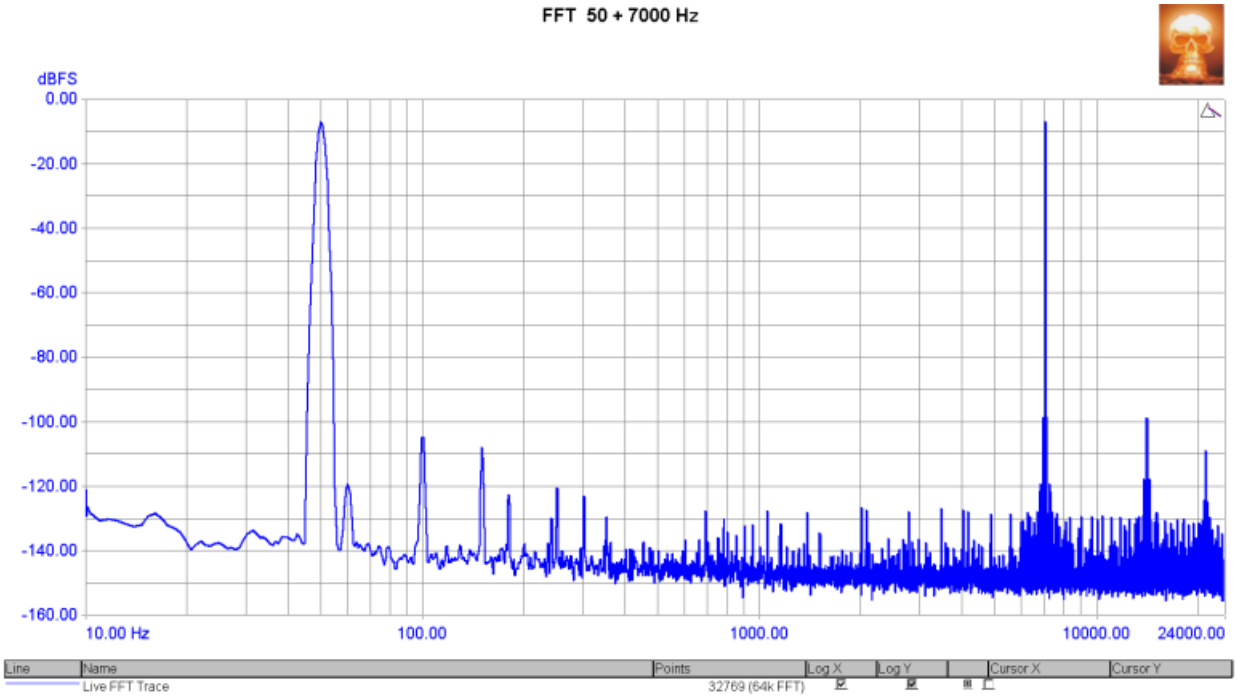
A13 FFT 50+7000Hz: PASSED

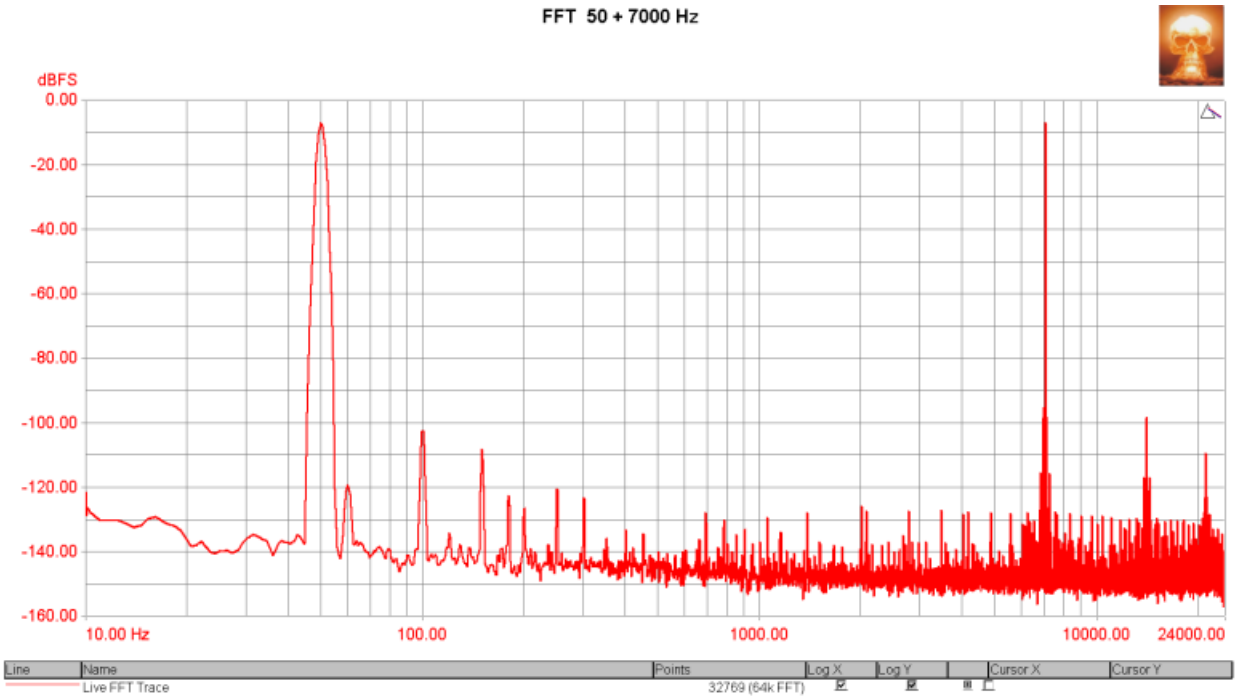
Measured at 5/27/2021 10:09:22 AM

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)	13.522 dBu	Not limit checked.
RMS amplitude (Channel B)	13.521 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.00359 %	< 0.02 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.00462 %	< 0.02 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		





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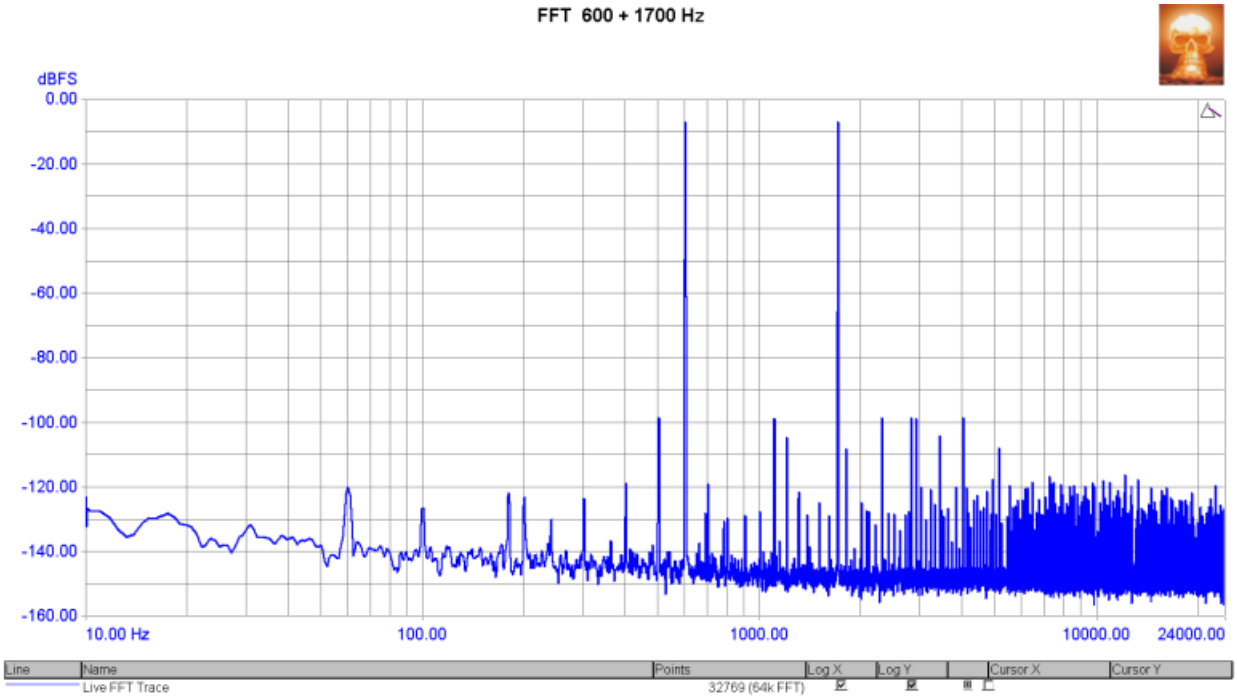
A14 FFT 600+1700 Hz: PASSED

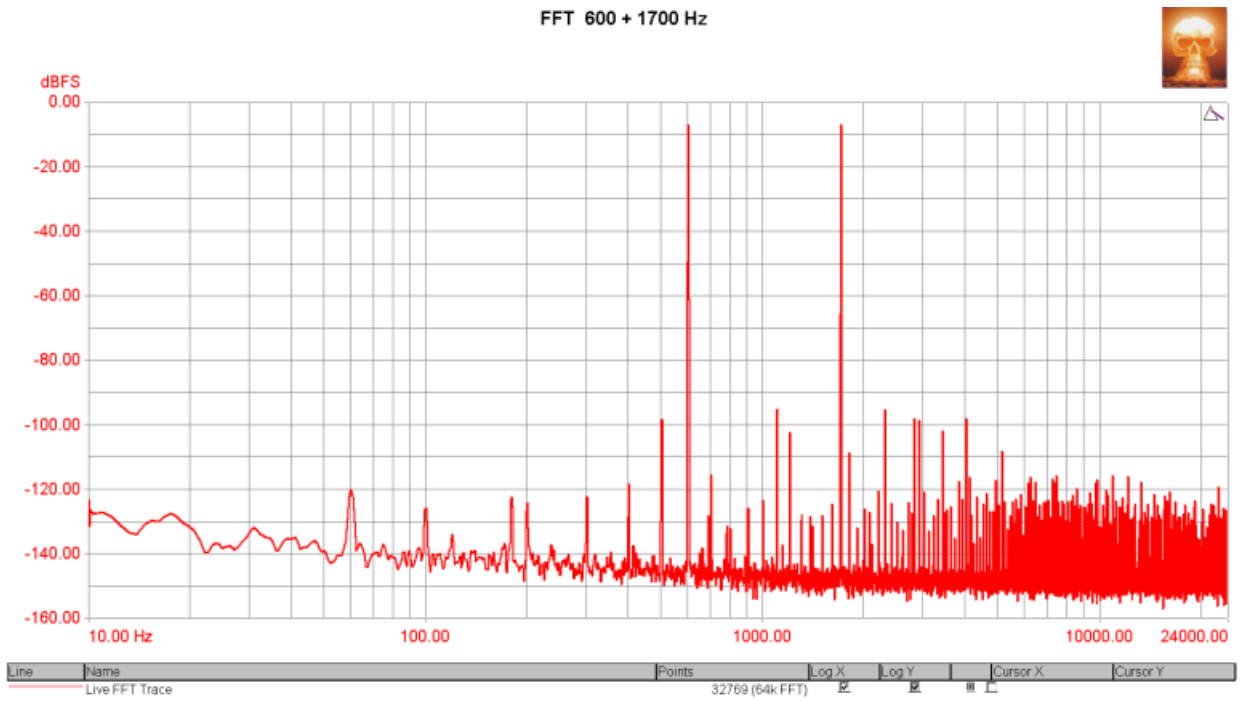
Measured at 5/27/2021 10:09:47 AM

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)	13.510 dBu	Not limit checked.
RMS amplitude (Channel B)	13.531 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.01290 %	< 0.02 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.01288 %	< 0.02 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		





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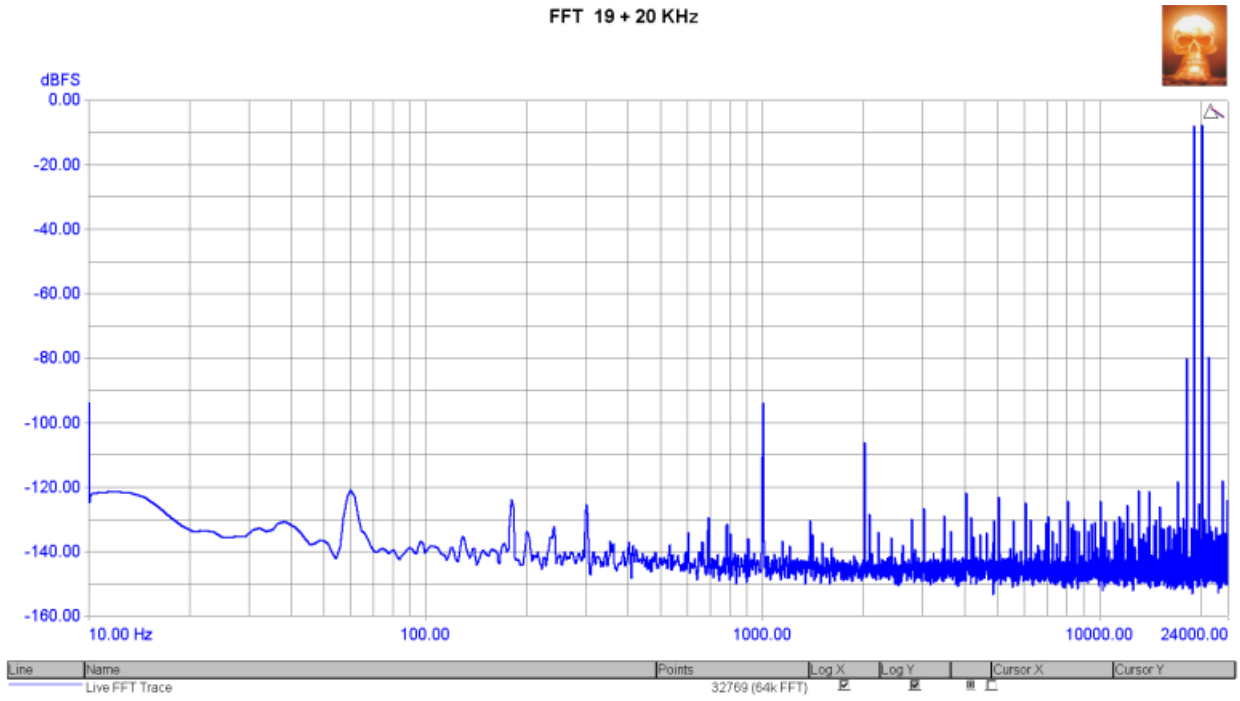
A15 FFT 19+20 KHz: PASSED

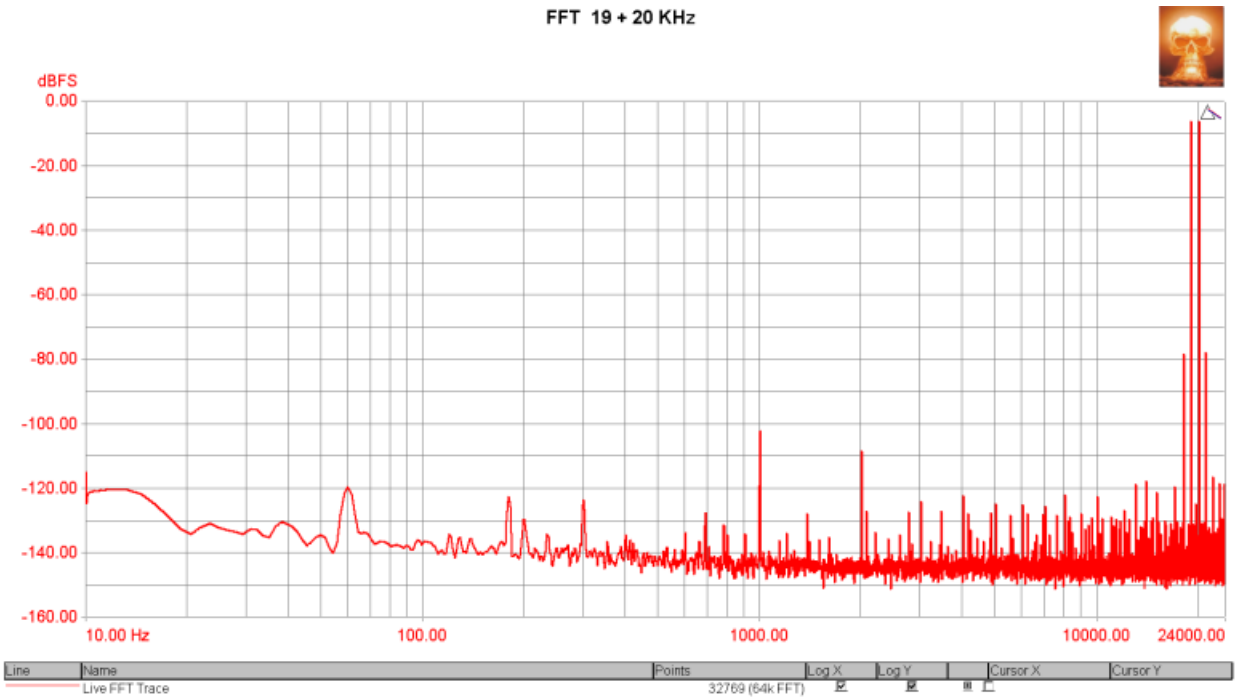
Measured at 5/27/2021 10:10:12 AM

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)	14.522 dBu	Not limit checked.
RMS amplitude (Channel B)	14.461 dBu	Not limit checked.

CTA Readings		
IMD CCIF (Channel A RMS)	0.00345 %	< 0.1 %
IMD CCIF (Channel B RMS)	0.00112 %	< 0.1 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS with 1/24th octave band-pass filter at the intermodulation difference frequency		





FFT Detector Readings		
IMD CCIF (Channel A)	0.00278 %	< 0.1 %
IMD CCIF (Channel B)	0.00107 %	< 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		

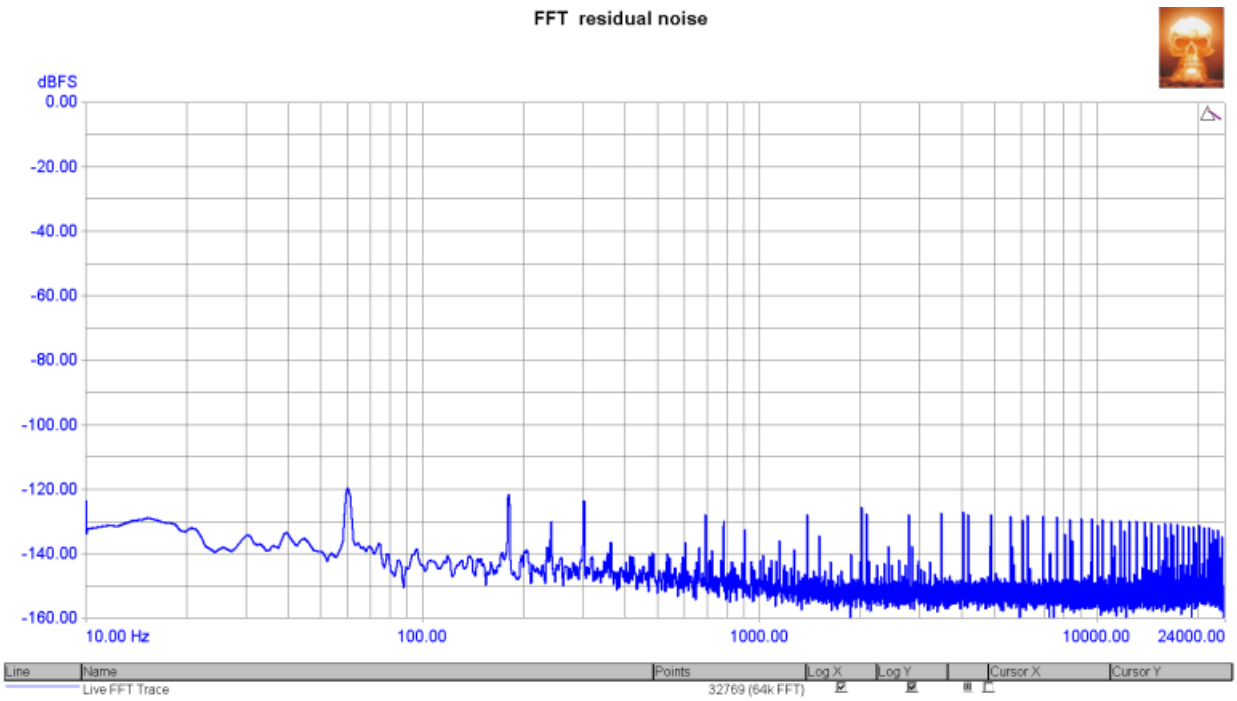
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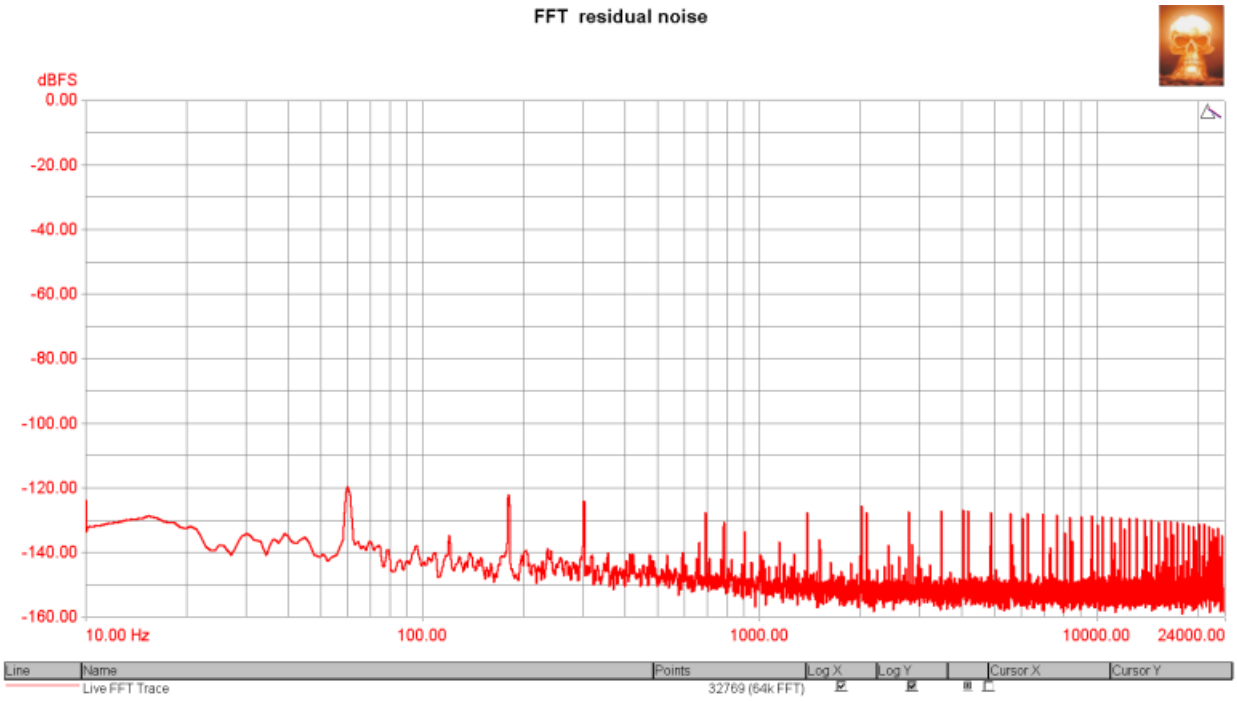
A16 FFT residual noise: PASSED

Measured at 5/27/2021 10:10:36 AM

Generator Settings	
Channel A:	Off
Channel B:	Off

Signal Analyzer Readings		
RMS amplitude (Channel A)	-90.190 dBu	Not limit checked.
RMS amplitude (Channel B)	-90.013 dBu	Not limit checked.





FFT Detector Readings		
Noise (residual) (Channel A)	-107.709 dBFS	< -60 dBFS > -150 dBFS
Noise (residual) (Channel B)	-107.820 dBFS	< -60 dBFS > -150 dBFS
FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		

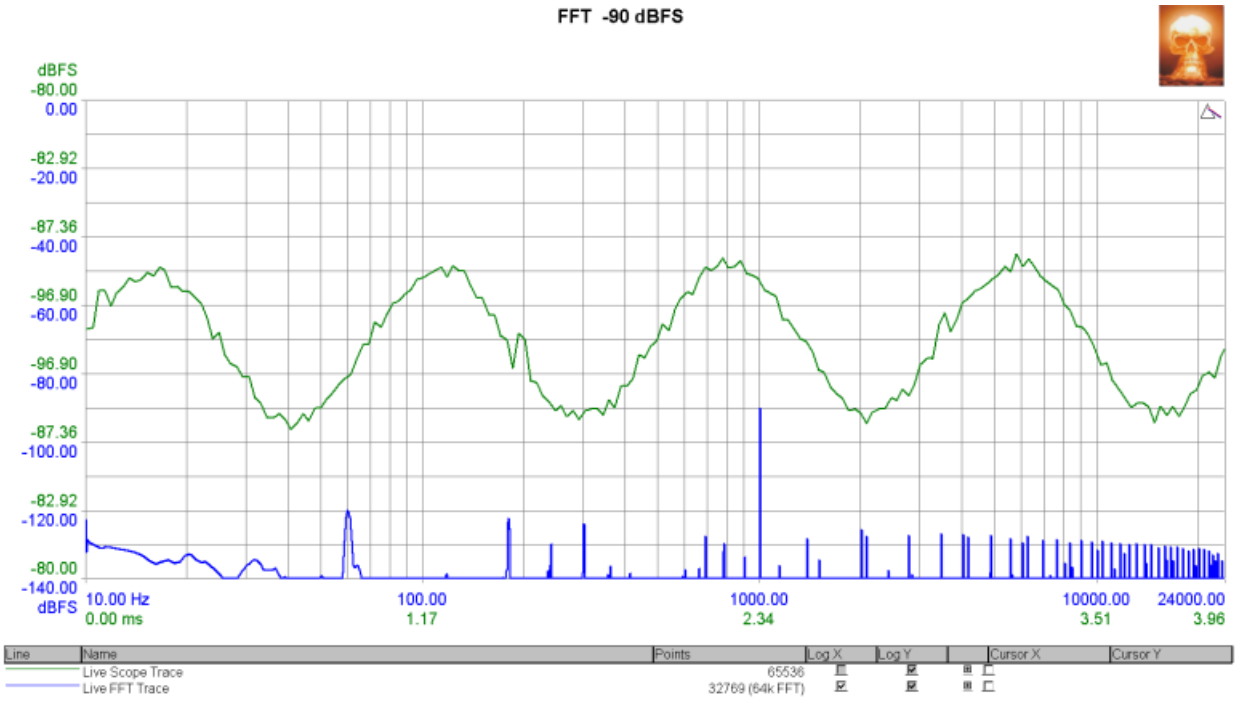
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A17 FFT -90 dBFS: Not limit checked.

Measured at 5/27/2021 10:11:02 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)	-72.386 dBu	Not limit checked.



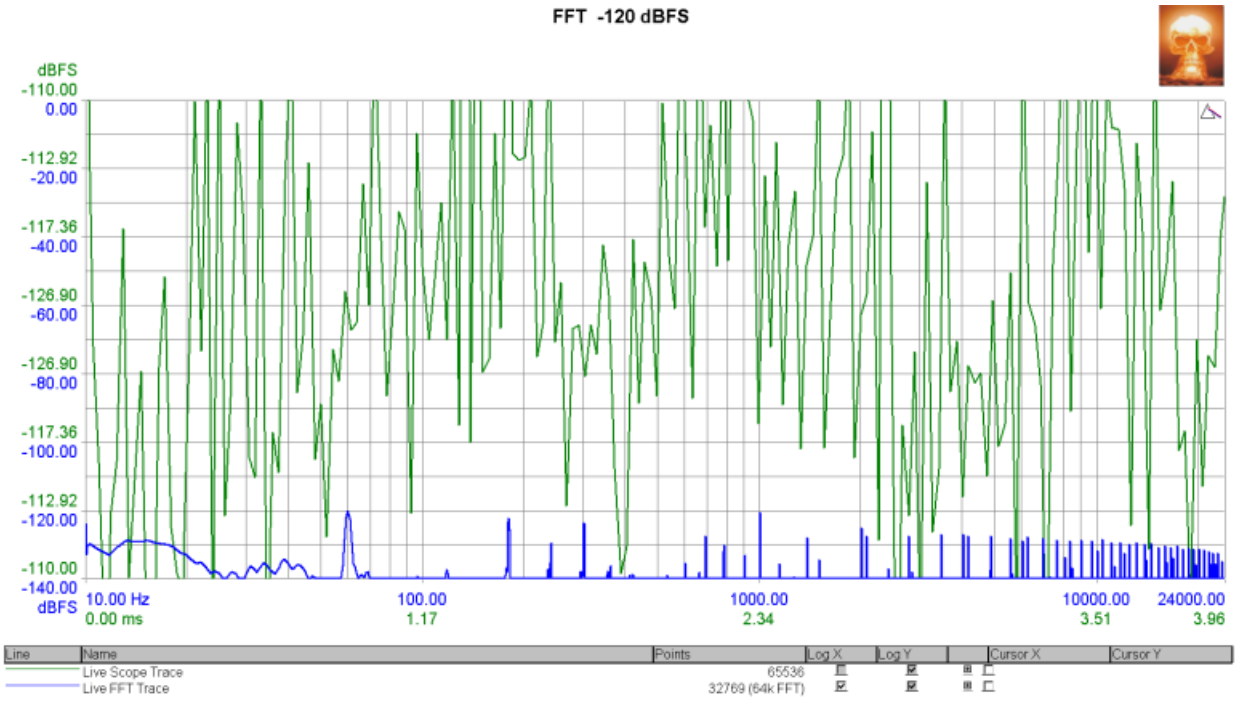
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A17a FFT -120 dBFS: Not limit checked.

Measured at 5/27/2021 10:11:19 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)	-88.594 dBu	Not limit checked.



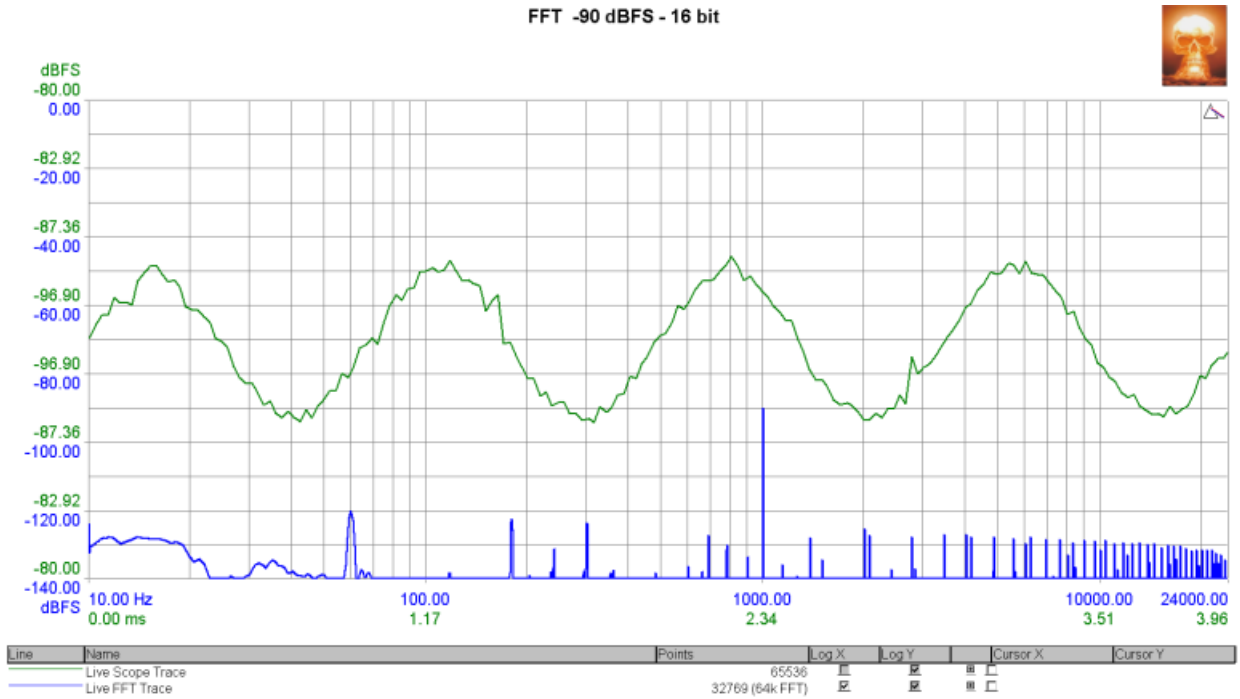
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A18 FFT -90 dBFS 16 bit: Not limit checked.

Measured at 5/27/2021 10:11:36 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)	-72.387 dBu	Not limit checked.

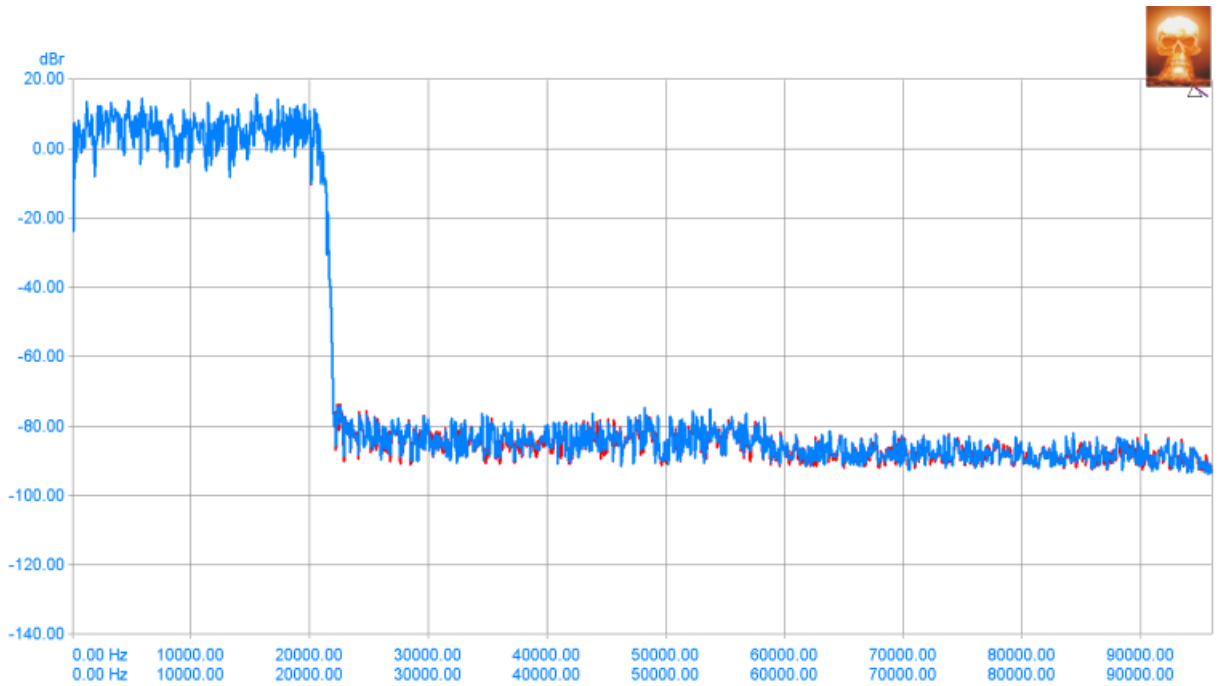


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A19 FFT imaging: Not limit checked.

Measured at 5/27/2021 10:11:52 AM

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 5/27/2021 10:12:17 AM

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

