

DSHA-3FN 32R Bal input 0dBu 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 2 3 4 - THD+N minus 2nd and 3rd harmonics	✓
A05 THD+N vs Freq	✓
A06 THD+N vs Ampl	✓
A07 Noise, SNR	✓
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	✓

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 6/27/2023 7:04:57 PM

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

Signal Analyzer Readings		
RMS amplitude (Channel A)	-0.072 dBu	< 3 dBu > -3 dBu
RMS amplitude (Channel B)	0.075 dBu	< 3 dBu > -3 dBu
Inter-channel phase	0.01 °	< 10 ° > -10 °

CTA Readings		
Gain (Channel A RMS)	-0.072 dB	< 3 dB > -3 dB
Gain (Channel B RMS)	0.075 dB	< 3 dB > -3 dB
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

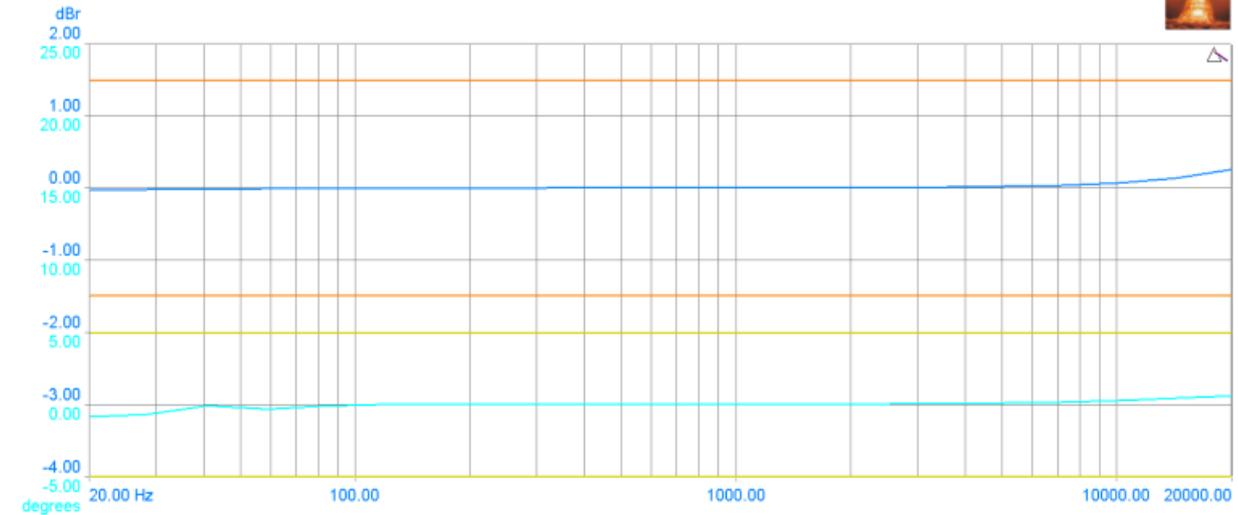
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A02 Ampl, Phase vs Freq: PASSED

Measured at 6/27/2023 7:04:59 PM

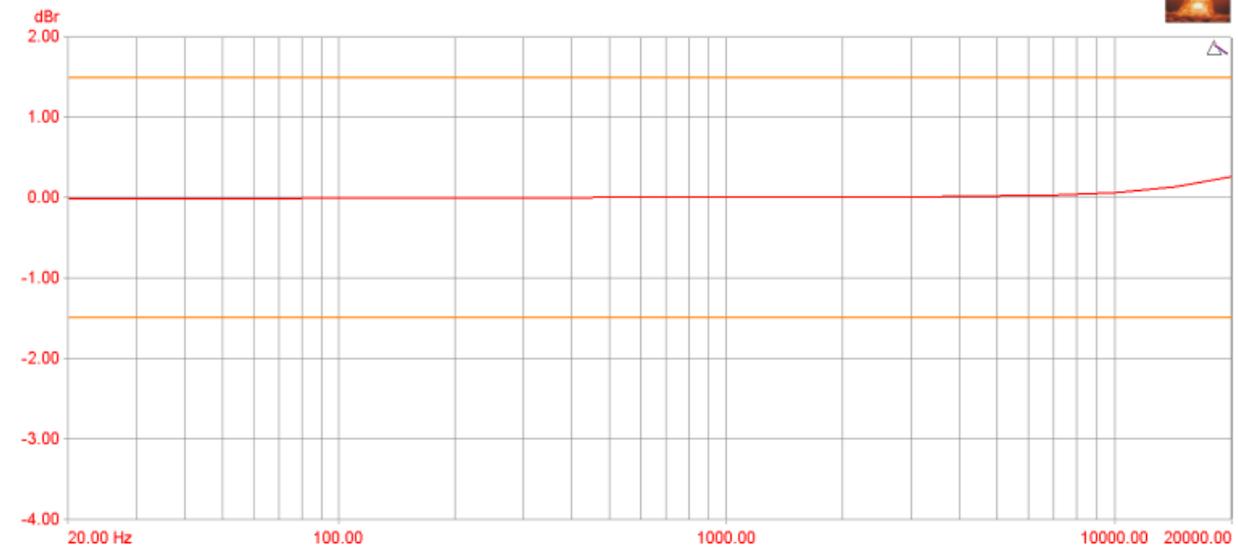
Generator Settings	
Channel A:	sine, -3 dBFS at 1000 Hz
Channel B:	sine, -3 dBFS at 1000 Hz

Frequency Response and Inter-channel Phase



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
—	Sweep of Ch A RMS ampl	21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Max limit: Sweep of Ch A RMS ampl	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Min limit: Sweep of Ch A RMS ampl	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Sweep of Phase	21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Max limit: Sweep of Phase	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Min limit: Sweep of Phase	5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Frequency Response and Inter-channel Phase



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
—	Sweep of Ch B RMS ampl	21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Max limit: Sweep of Ch B RMS ampl	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
—	Min limit: Sweep of Ch B RMS ampl	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

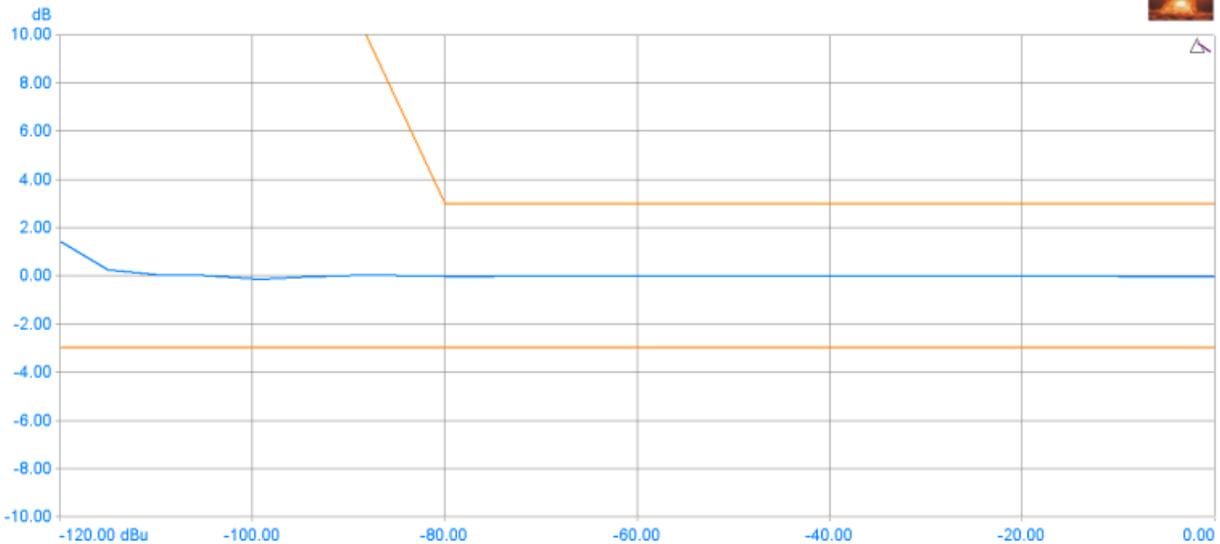
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A03 Gain vs Ampl: PASSED

Measured at 6/27/2023 7:05:06 PM

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

Gain vs Amplitude



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Sweep of CT Det : Gain : Ch A	25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Max limit: Sweep of CT Det : Gain : Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Min limit: Sweep of CT Det : Gain : Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Gain vs Amplitude



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Sweep of CT Det : Gain : Ch B	25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Max limit: Sweep of CT Det : Gain : Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Min limit: Sweep of CT Det : Gain : Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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A04 THD+N,THD, nth-HD 2 3 4 - THD+N minus 2nd and 3rd harmonics: PASSED

Measured at 6/27/2023 7:05:15 PM

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

Signal Analyzer Readings		
RMS amplitude (Channel A)	-0.073 dBu	Not limit checked.
RMS amplitude (Channel B)	0.075 dBu	Not limit checked.

CTA Readings		
THD+N - relative (Channel A RMS)	0.01472 %	< 200 % > 0 %
THD+N - relative (Channel B RMS)	0.01434 %	< 200 % > 0 %

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

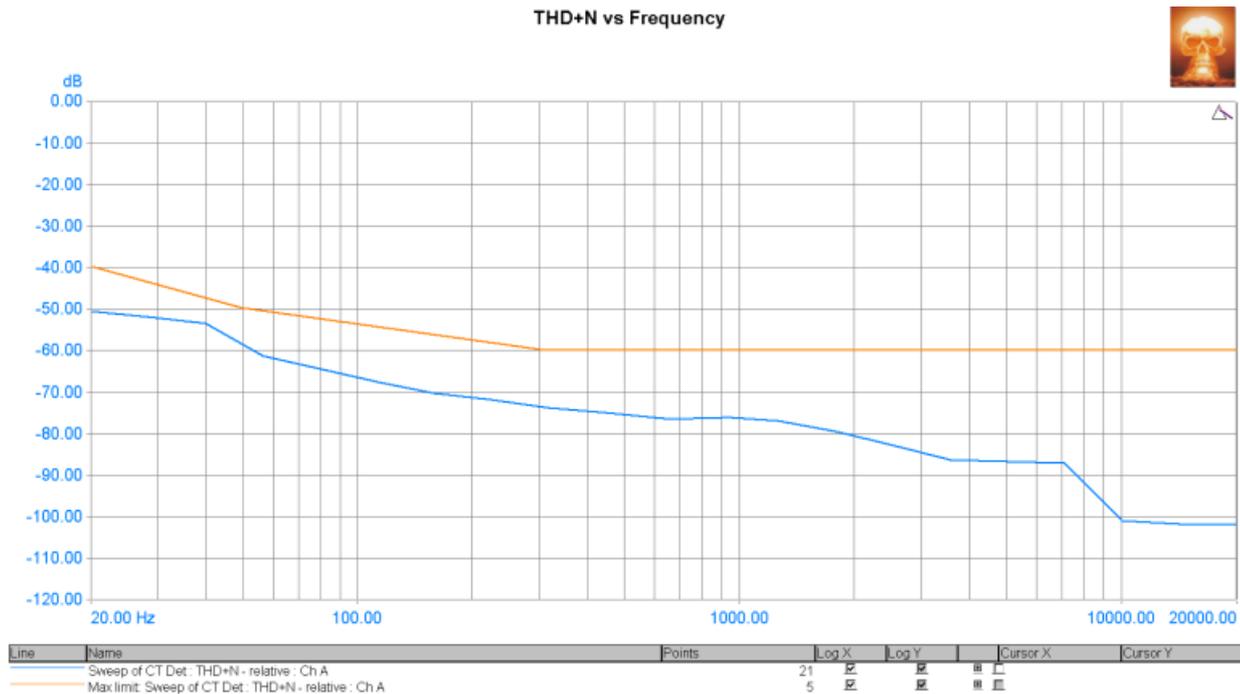
FFT Detector Readings		
THD (Channel A)	0.01662 %	<200 % >0 %
THD (Channel B)	0.01679 %	<200 % >0 %
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.00093 %	<200 % >0 %
2nd Harmonic Distortion (Channel B)	0.00190 %	<200 % >0 %
FFTD 2 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 2nd harmonic		
3rd Harmonic Distortion (Channel A)	0.01627 %	<200 % >0 %
3rd Harmonic Distortion (Channel B)	0.01654 %	<200 % >0 %
FFTD 3 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 3rd harmonic		
4th Harmonic Distortion (Channel A)	0.00053 %	Not limit checked.
4th Harmonic Distortion (Channel B)	0.00012 %	Not limit checked.
FFTD 4 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 4th harmonic		
5th Harmonic Distortion (Channel A)	0.00316 %	Not limit checked.
5th Harmonic Distortion (Channel B)	0.00217 %	Not limit checked.
FFTD 5 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filter at the 5th harmonic		
4+HD + N (Channel A)	0.00329 %	<0.05 % >0 %
4+HD + N (Channel B)	0.00222 %	<0.05 % >0 %
FFTD 6 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 3rd harmonic		
Hum (Channel A)	0.00003 %	<0.017783 % >0 %
Hum (Channel B)	0.00005 %	<0.017783 % >0 %
FFTD 7 Settings: Self relative, 22 Hz - 22 kHz, unweighted with window notch (14 bins) band-pass filter at 60 Hz		
Noise (residual) (Channel A)	0.00037 %	<0.017783 % >0 %
Noise (residual) (Channel B)	0.00040 %	<0.017783 % >0 %
FFTD 8 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		

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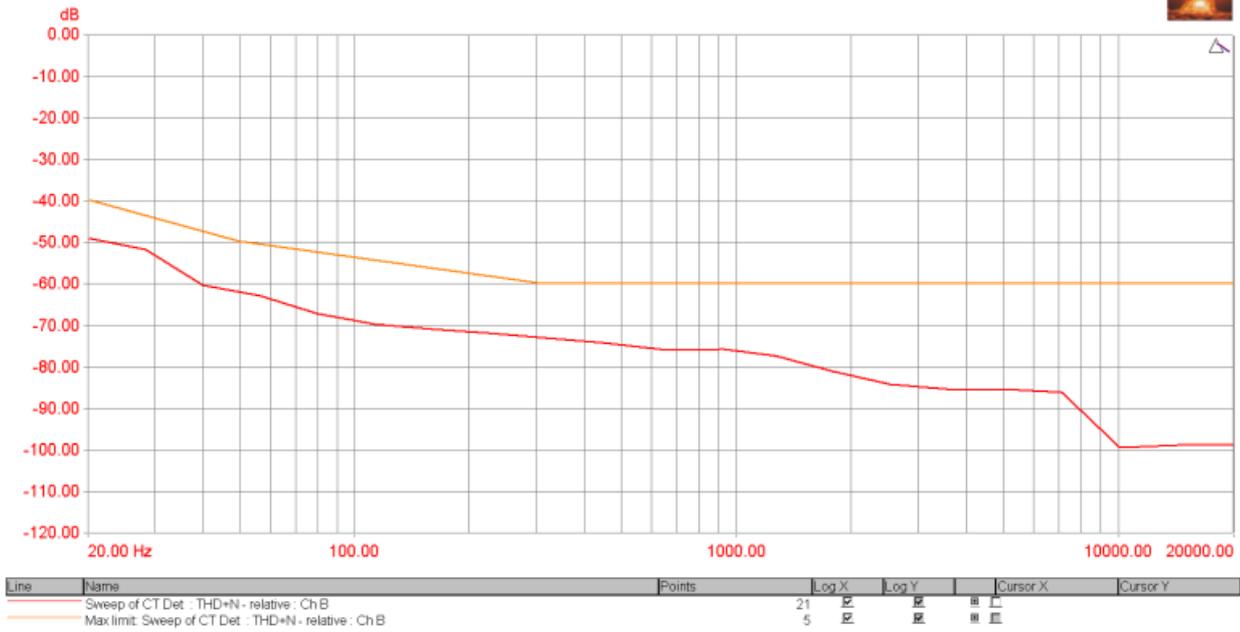
A05 THD+N vs Freq: PASSED

Measured at 6/27/2023 7:06:17 PM

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



THD+N vs Frequency



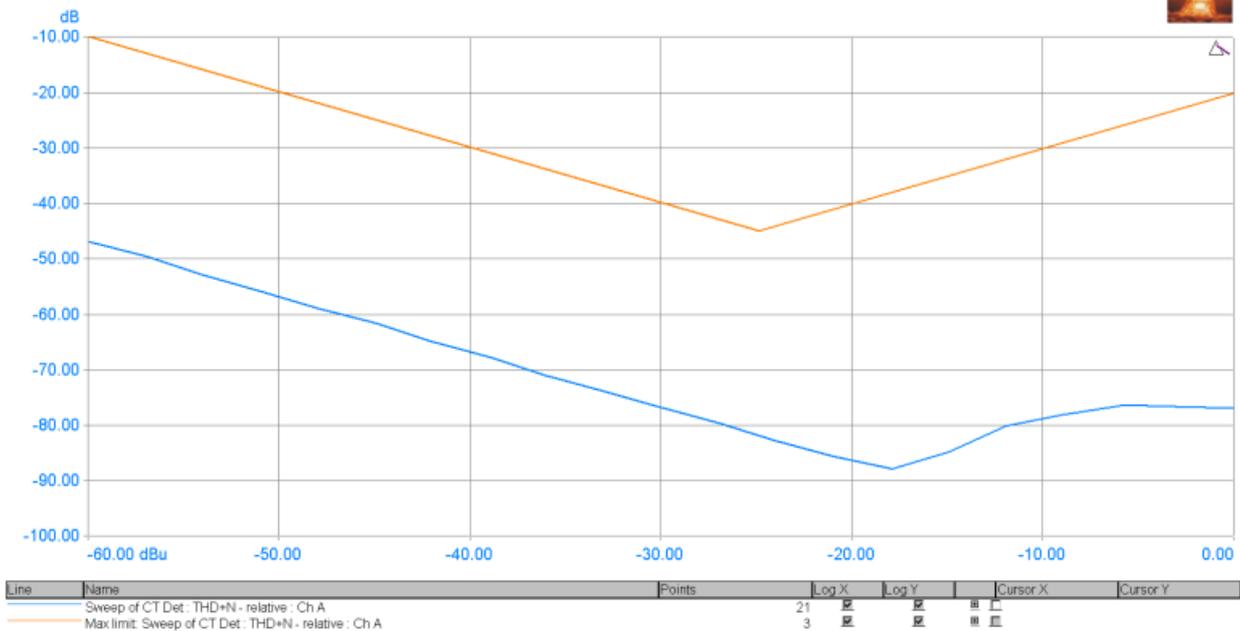
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A06 THD+N vs Ampl: PASSED

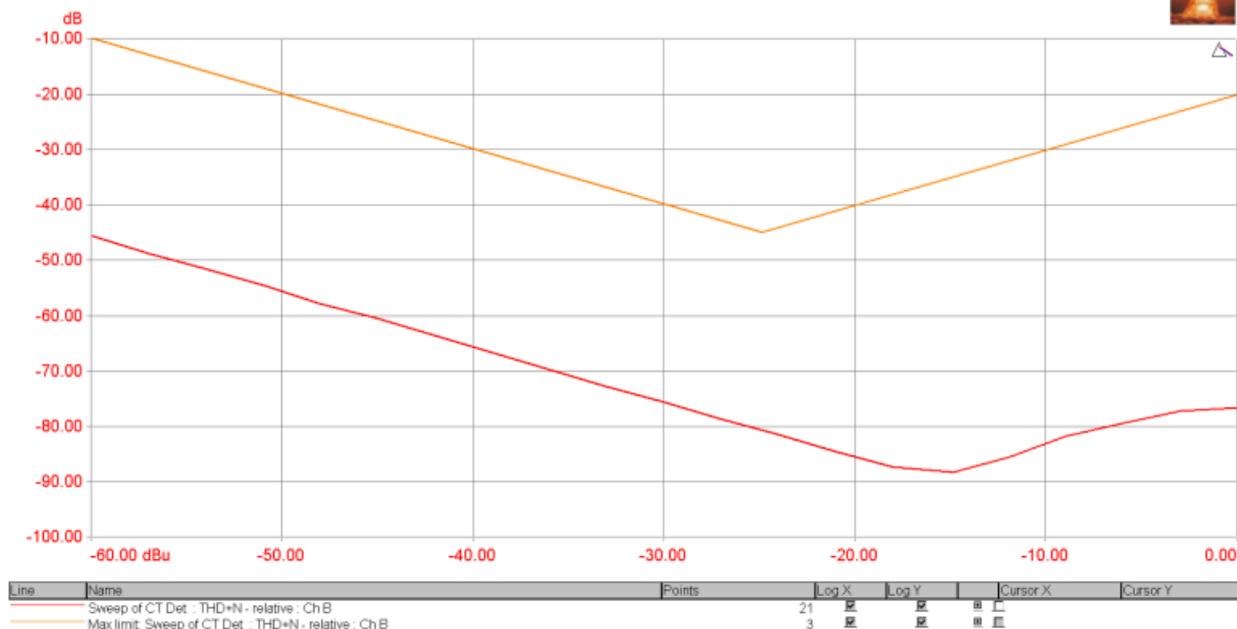
Measured at 6/27/2023 7:06:26 PM

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

THD+N vs Amplitude



THD+N vs Amplitude



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A07 Noise, SNR: PASSED

Measured at 6/27/2023 7:06:35 PM

Generator Settings	
Channel A:	sine, -60 dBFS at 1000 Hz
Channel B:	sine, -60 dBFS at 1000 Hz

FFT Detector Readings		
Noise (unweighted) (Channel A)	-122.493 dBr	< 200 dBr > -200 dBr
Noise (unweighted) (Channel B)	-122.284 dBr	< 200 dBr > -200 dBr
FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with window notch (14 bins) band-reject filter at the generator frequency		
SNR (Channel A)	-122.645 dBr	< 200 dBr > -200 dBr
SNR (Channel B)	-122.555 dBr	< 200 dBr > -200 dBr
FFTD 2 Settings: 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the generator frequency		

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A08 Crosstalk A to B: PASSED

Measured at 6/27/2023 7:06:38 PM

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

CTA Readings		
Cross-talk (Channel B RMS)	-94.637 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 6/27/2023 7:06:40 PM

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

CTA Readings

Cross-talk (Channel A RMS)

-83.052 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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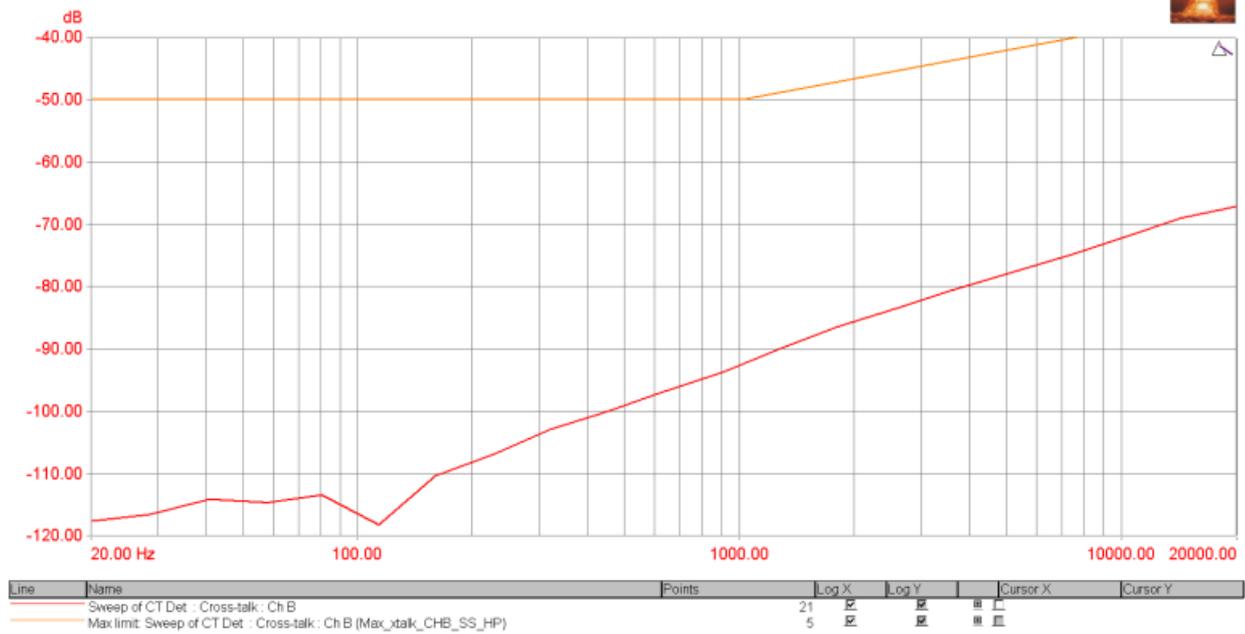
A10 Crosstalk A to B vs Freq: PASSED

Measured at 6/27/2023 7:06:42 PM

Generator Settings

Channel A:	sine, 0 dBu at 1000 Hz
Channel B:	sine, 0 dBu at 1000 Hz

Cross-talk A to B vs Frequency



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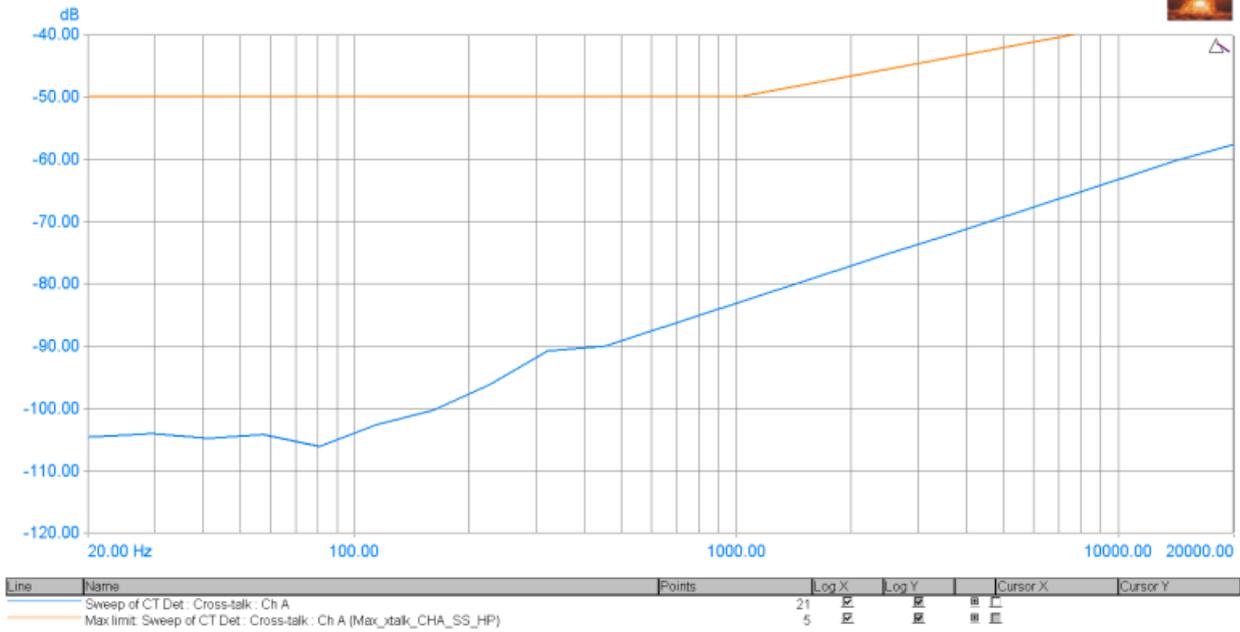
A11 Crosstalk B to A vs Freq: PASSED

Measured at 6/27/2023 7:06:49 PM

Generator Settings

Channel A:	sine, 0 dBu at 1000 Hz
Channel B:	sine, 0 dBu at 1000 Hz

Cross-talk B to A vs Frequency



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A12 FFT 1000 Hz THD+N: PASSED

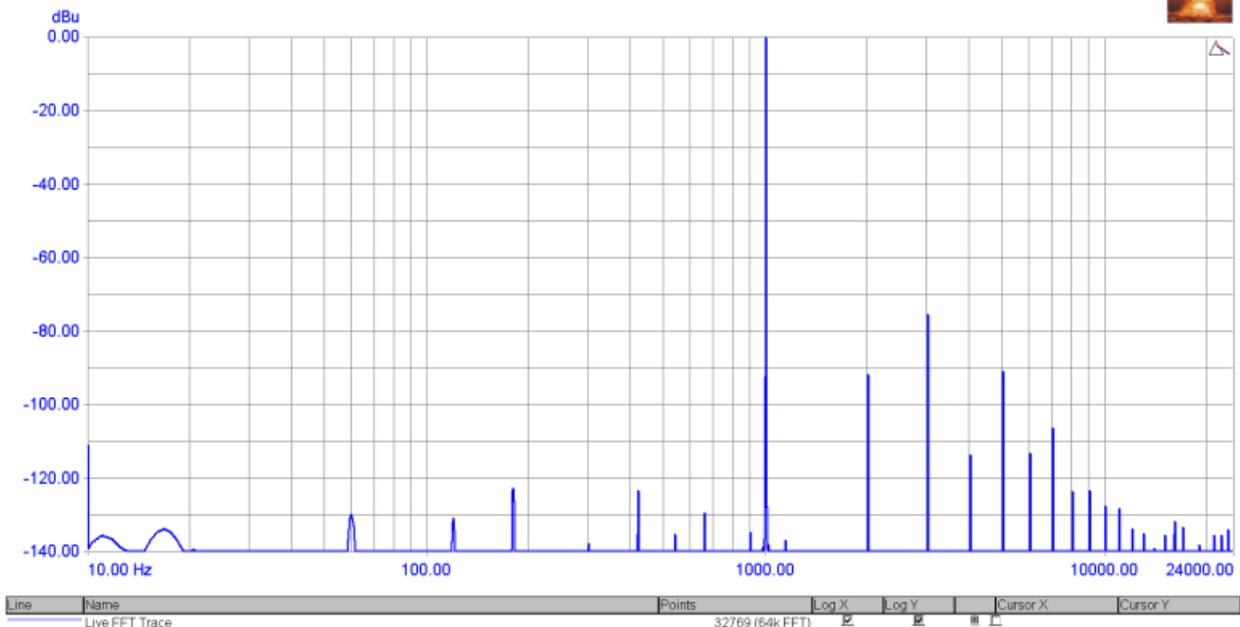
Measured at 6/27/2023 7:06:55 PM

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

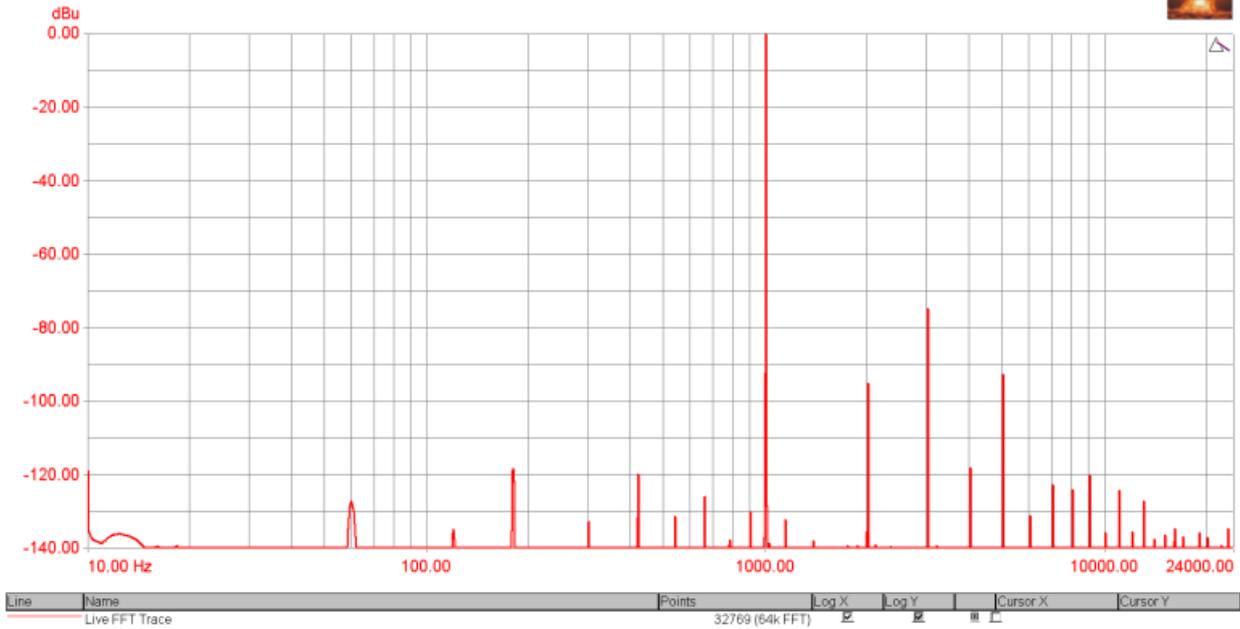
Signal Analyzer Readings		
RMS amplitude (Selected : Ch A)	-0.074 dBu	Not limit checked.
RMS amplitude (Non-selected : Ch A)	0.073 dBu	Not limit checked.

CTA Readings		
THD+N - relative (Selected : Ch ARMS)	0.01455 %	< 5 %
THD+N - relative (Non-selected : Ch ARMS)	0.01477 %	< 5 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-reject filter at the input frequency		

FFT 1000 Hz THD+N



FFT 1000 Hz THD+N



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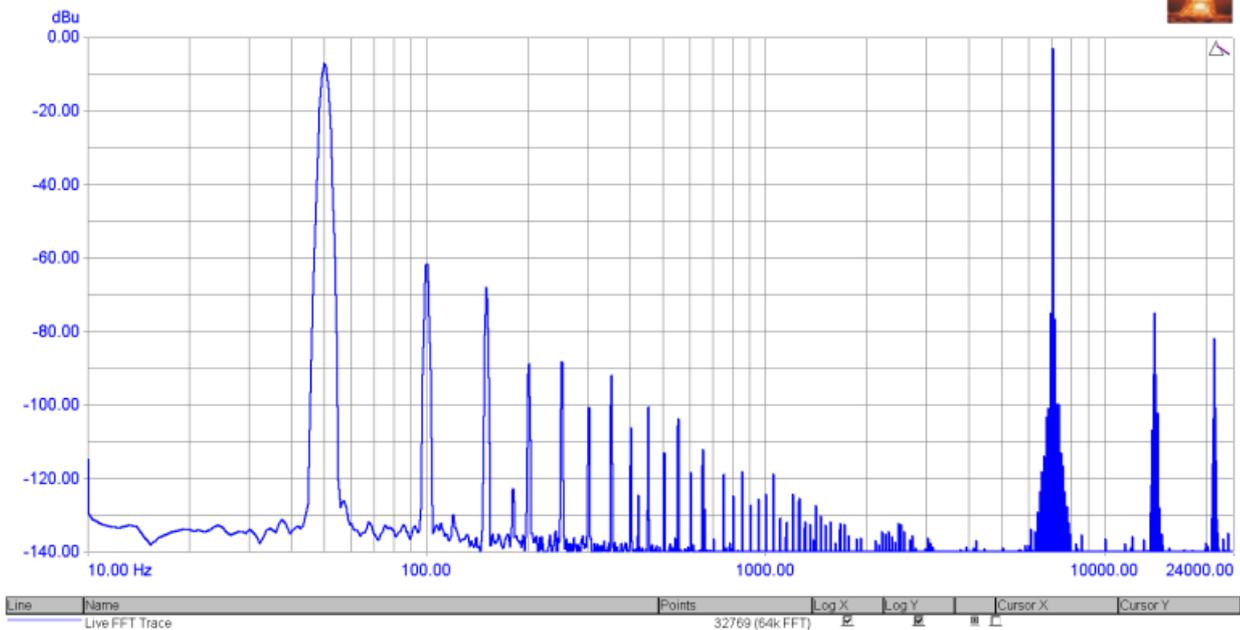
A13 FFT 50+7000Hz: PASSED

Measured at 6/27/2023 7:08:17 PM

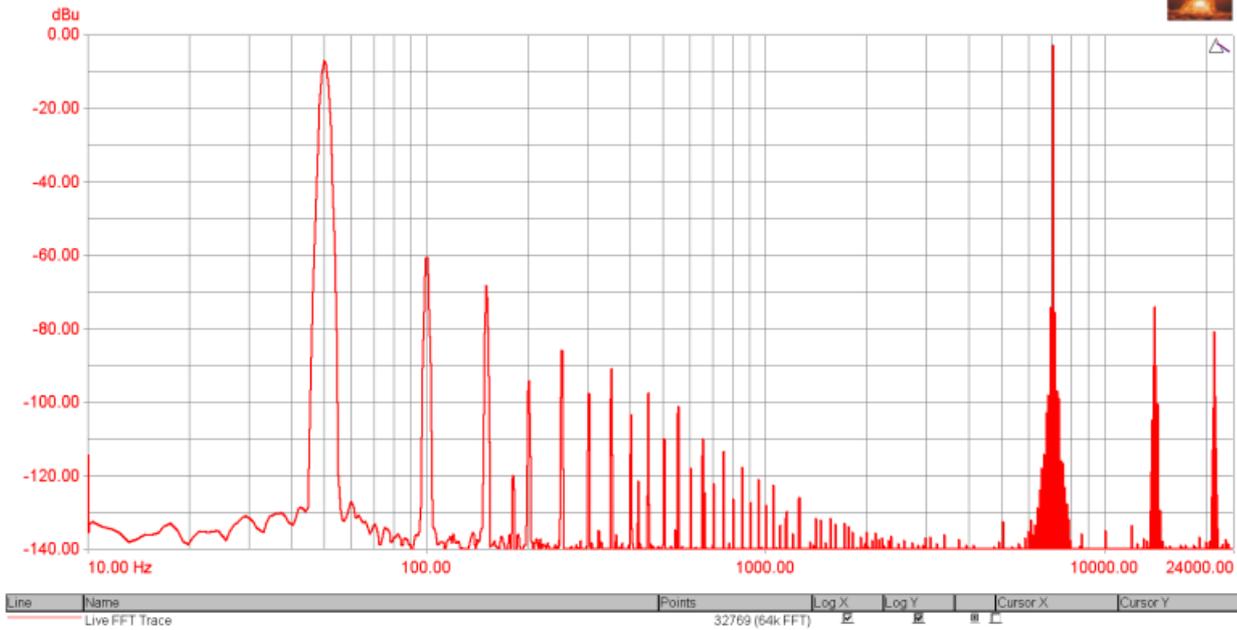
Generator Settings	
Channel A:	Twin-tone, 0 dBu at 50 Hz and 1 amplitude ratio at 7000Hz
Channel B:	Twin-tone, 0 dBu at 50 Hz and 1 amplitude ratio at 7000Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	2.943 dBu	Not limit checked.
RMS amplitude (Channel B)	3.089 dBu	Not limit checked.

FFT 50 + 7000 Hz



FFT 50 + 7000 Hz



FFT Detector Readings		
IMD SMPTE-DIN (Channel A)	0.03184 %	<7%
IMD SMPTE-DIN (Channel B)	0.03484 %	<7%
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with intermodulation notch band reject		

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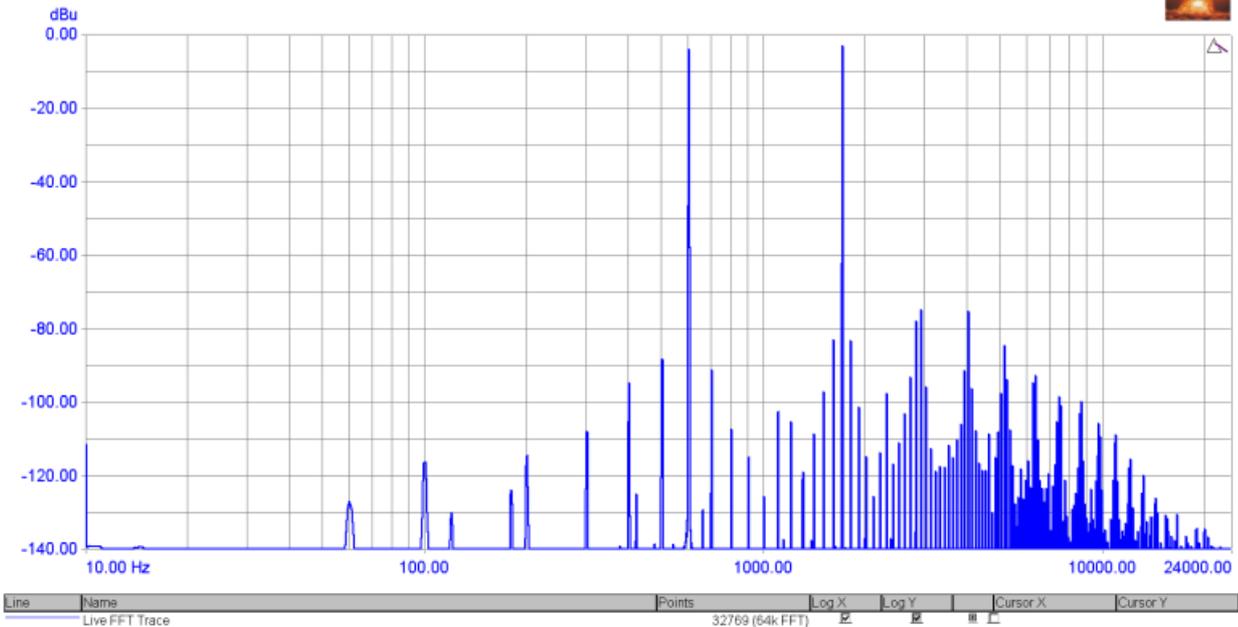
A14 FFT 600+1700 Hz: PASSED

Measured at 6/27/2023 7:09:38 PM

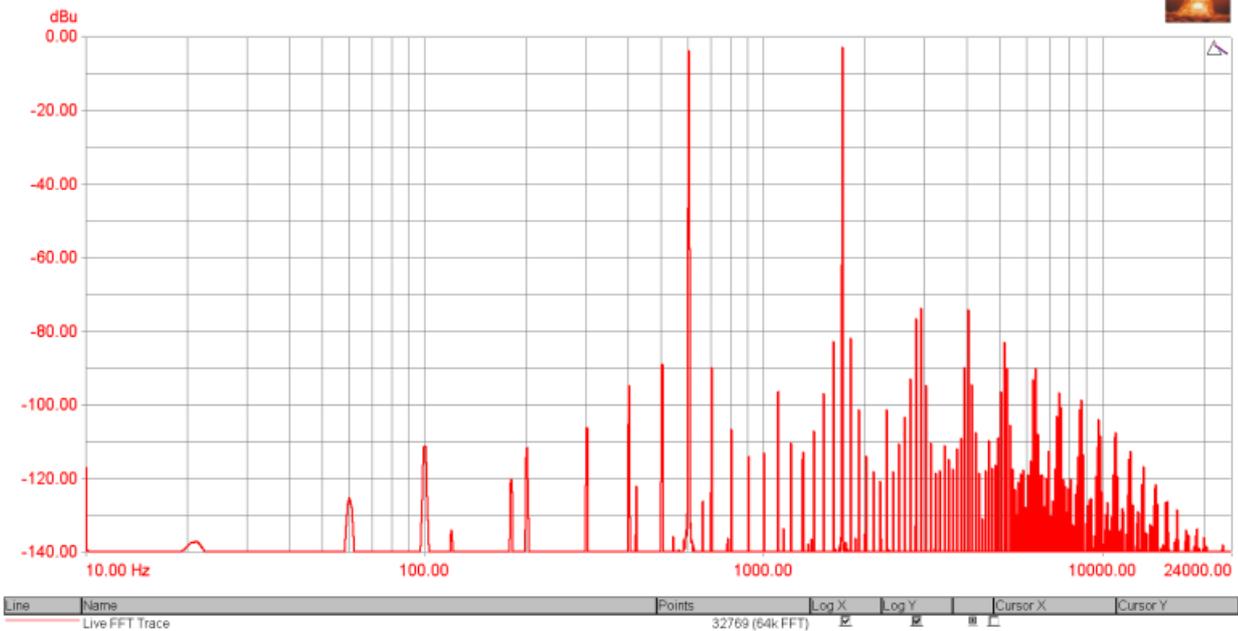
Generator Settings	
Channel A:	Twin-tone, 0 dBu at 600 Hz and 1 amplitude ratio at 1700Hz
Channel B:	Twin-tone, 0 dBu at 600 Hz and 1 amplitude ratio at 1700Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	2.915 dBu	Not limit checked.
RMS amplitude (Channel B)	3.111 dBu	Not limit checked.

FFT 600 + 1700 Hz



FFT 600 + 1700 Hz



FFT Detector Readings

IMD SMPTE-DIN (Channel A)	0.01670 %	< 7% > 0%
IMD SMPTE-DIN (Channel B)	0.01785 %	< 7% > 0%
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with intermodulation notch band reject		

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A15 FFT 19+20 KHz: PASSED

Measured at 6/27/2023 7:11:00 PM

Generator Settings

Channel A:	Twin-tone, -16 dBu at 19000 Hz and 1 amplitude ratio at 1000 Hz offset
Channel B:	Twin-tone, -16 dBu at 19000 Hz and 1 amplitude ratio at 1000 Hz offset

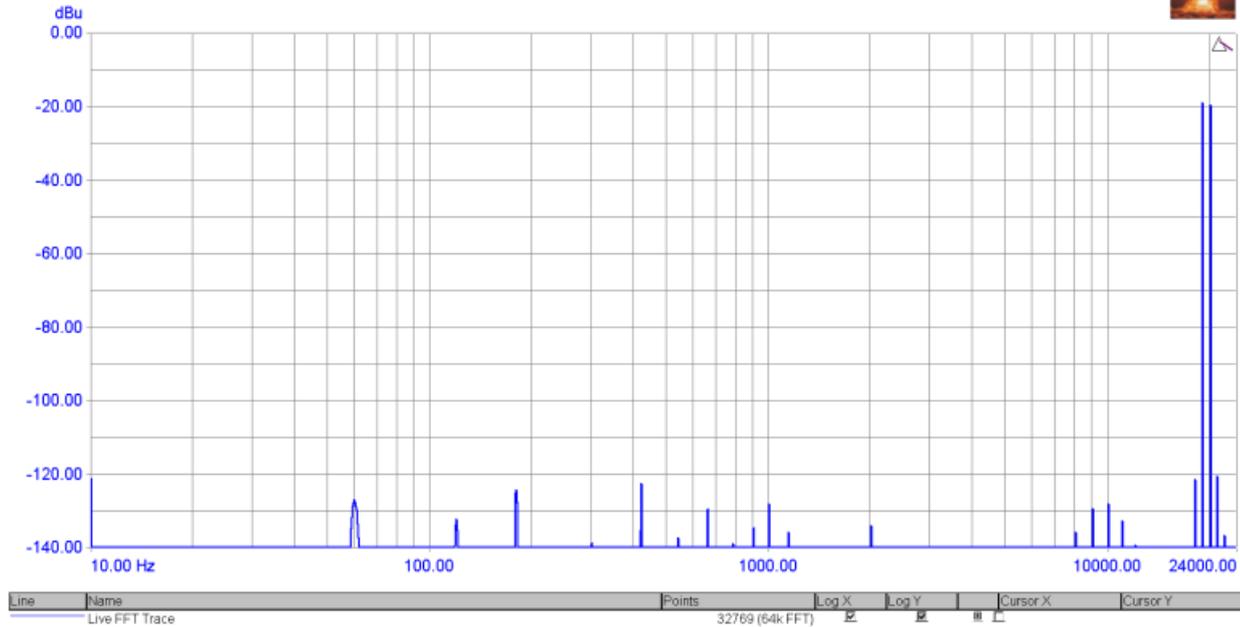
Signal Analyzer Readings

RMS amplitude (Channel A)	-12.789 dBu	Not limit checked.
RMS amplitude (Channel B)	-12.688 dBu	Not limit checked.

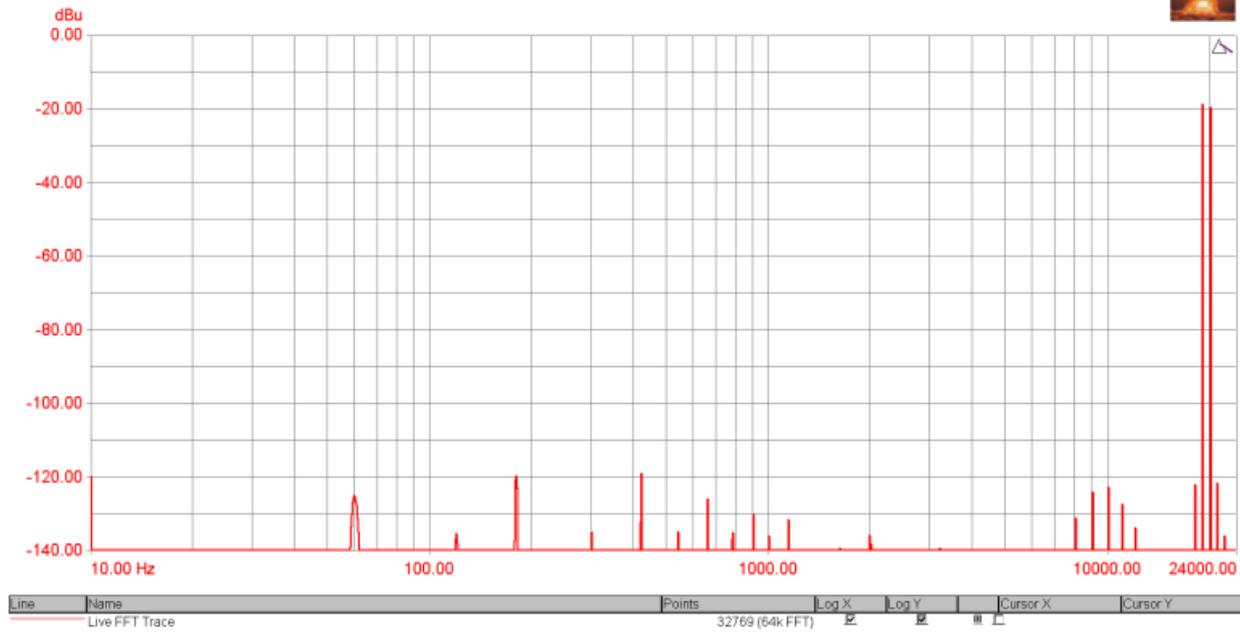
CTA Readings

IMD CCIF (Channel A RMS)	0.00034 %	< 1 %
IMD CCIF (Channel B RMS)	0.00017 %	< 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)	0.00030 %	< 1 %
IMD CCIF (Channel B)	0.00012 %	< 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 6/27/2023 7:12:22 PM

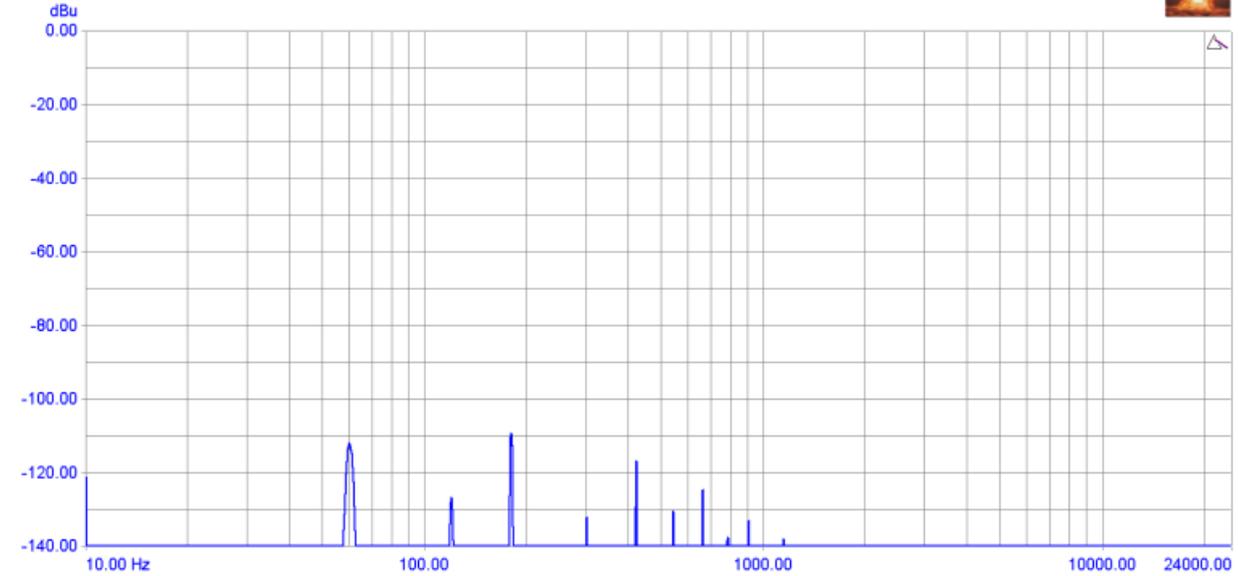
Generator Settings

Channel A:	Off
Channel B:	Off

Signal Analyzer Readings

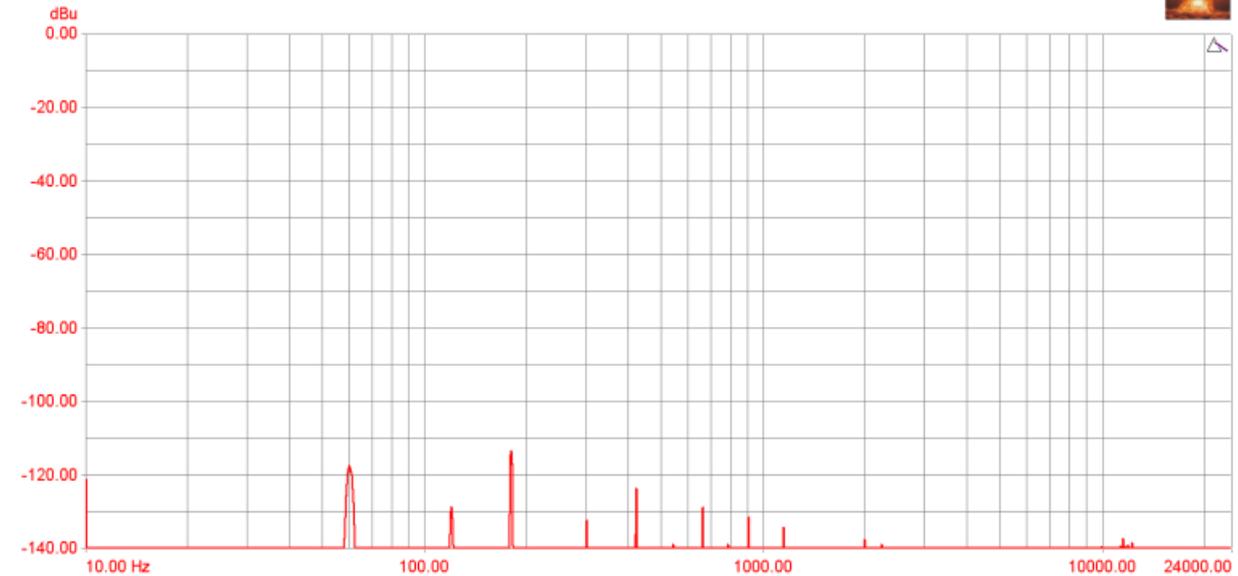
RMS amplitude (Channel A)	-98.973 dBu	Not limit checked.
RMS amplitude (Channel B)	-102.188 dBu	Not limit checked.

FFT residual noise



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Live FFT Trace	32769 (64k FFT)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

FFT residual noise



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Live FFT Trace	32769 (64k FFT)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

FFT Detector Readings

Noise (residual) (Channel A)	-105.764 dBu	< -80 dBu > -140 dBu
Noise (residual) (Channel B)	-110.299 dBu	< -80 dBu > -140 dBu

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