

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.

[Back to top](#)

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 | | |

[Back to top](#)

A02 Ampl, Phase vs Freq: PASSED

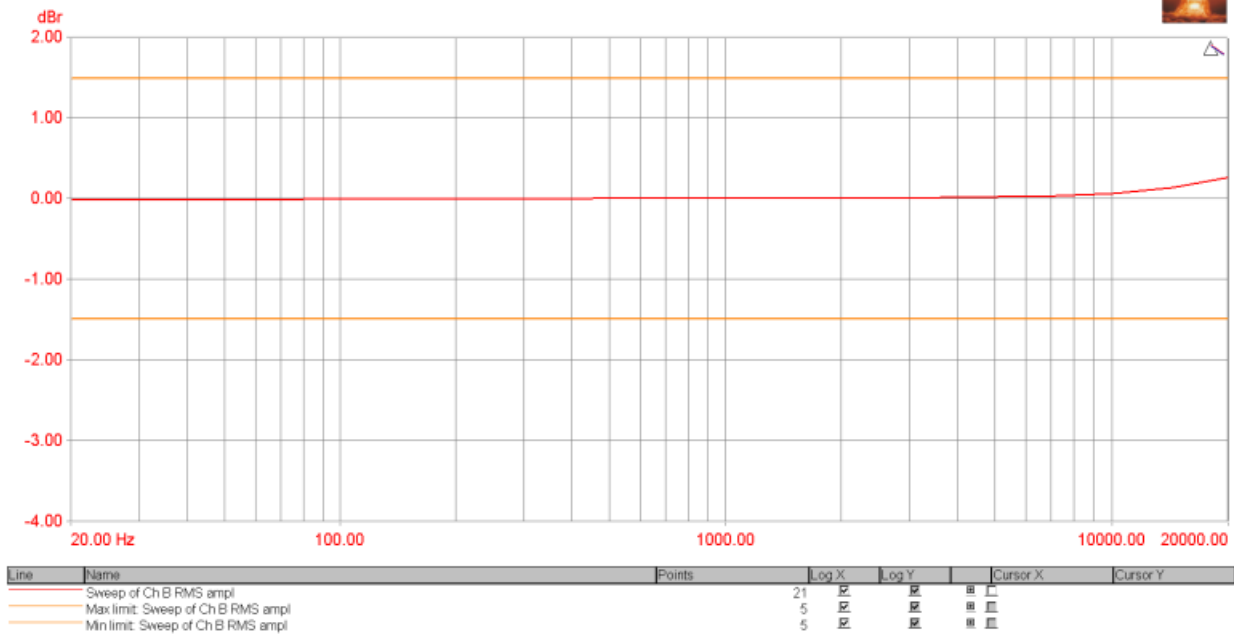
Measured at 6/27/2023 7:04:59 PM

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

Frequency Response and Inter-channel Phase



Frequency Response and Inter-channel Phase



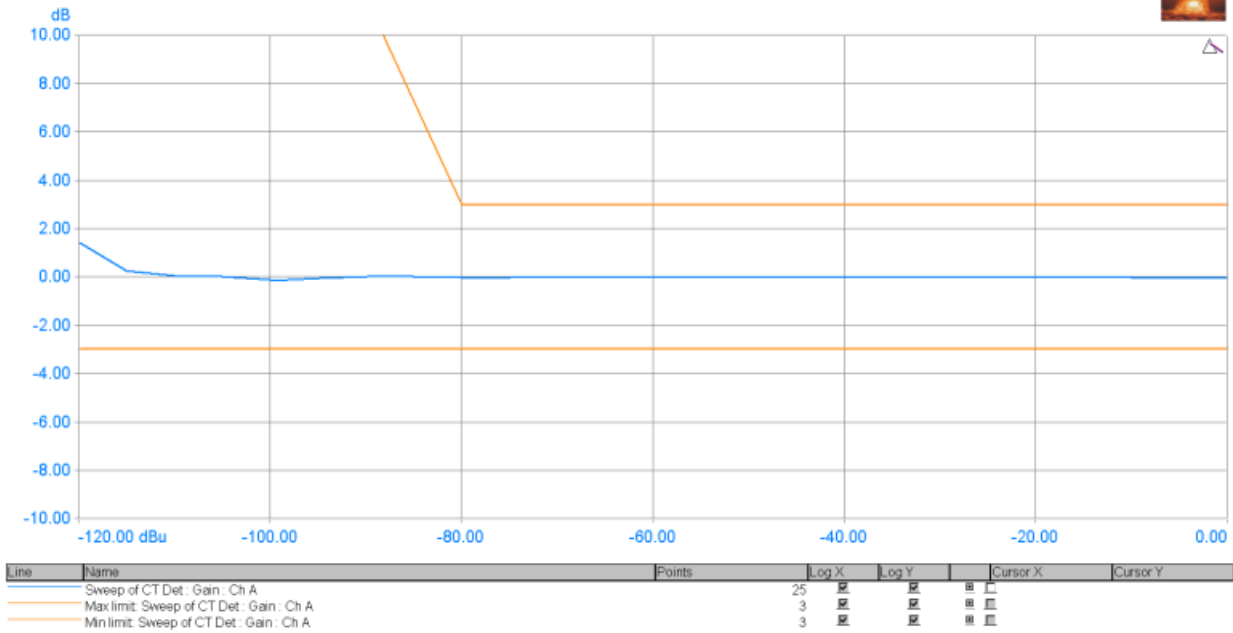
[Back to top](#)

A03 Gain vs Ampl: PASSED

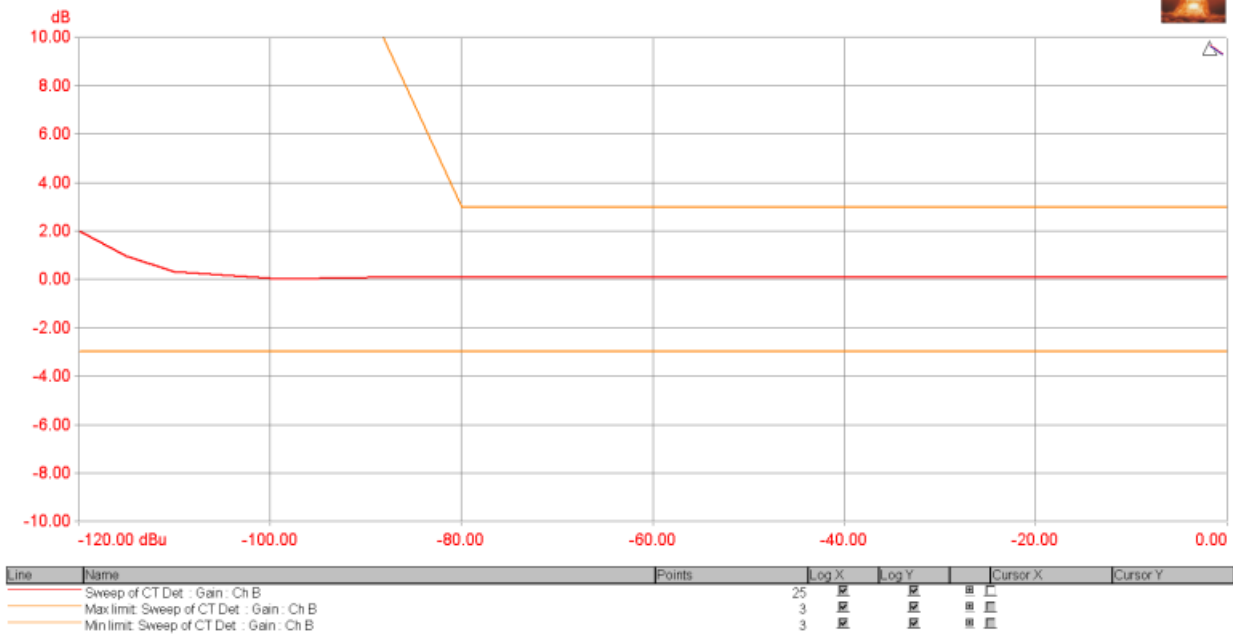
Measured at 6/27/2023 7:05:06 PM

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

Gain vs Amplitude



Gain vs Amplitude



[Back to top](#)

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 | | |

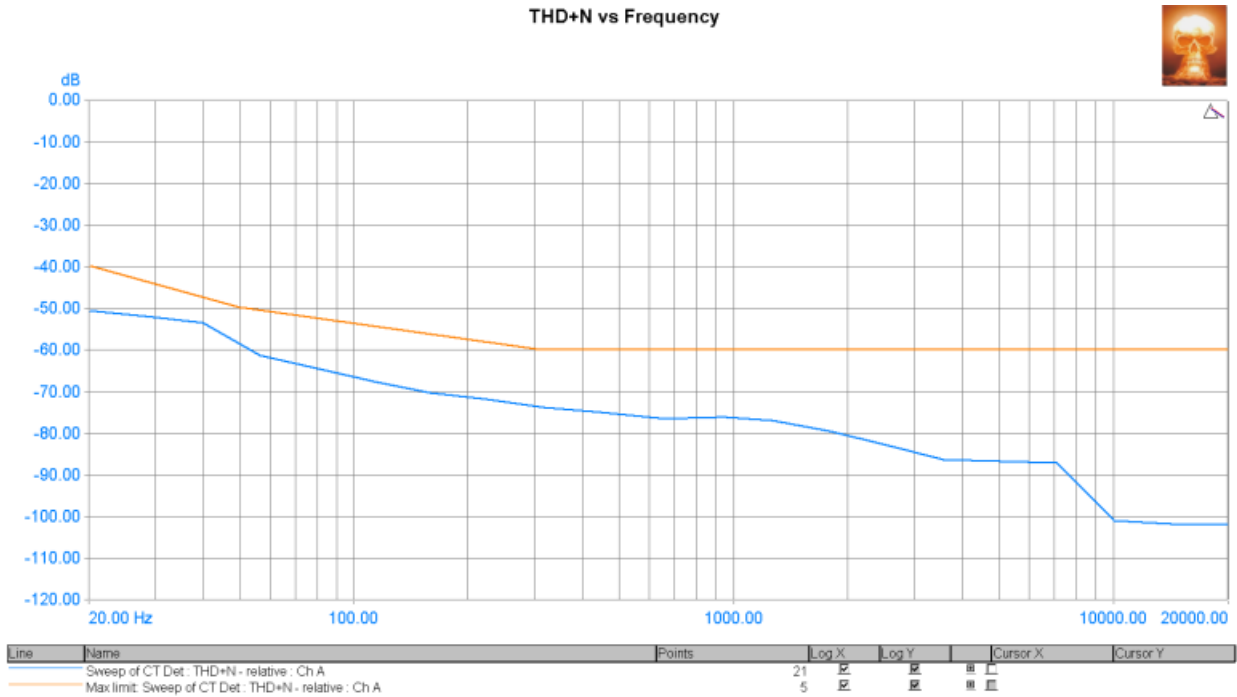
| FFT Detector Readings | | |
|---|-----------|---------------------|
| THD (Channel A) | 0.01662 % | <200 % >0 % |
| THD (Channel B) | 0.01679 % | <200 % >0 % |
| FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-pass notch filters from the 2nd to 10th harmonics | | |
| 2nd Harmonic 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 | | |

[Back to top](#)

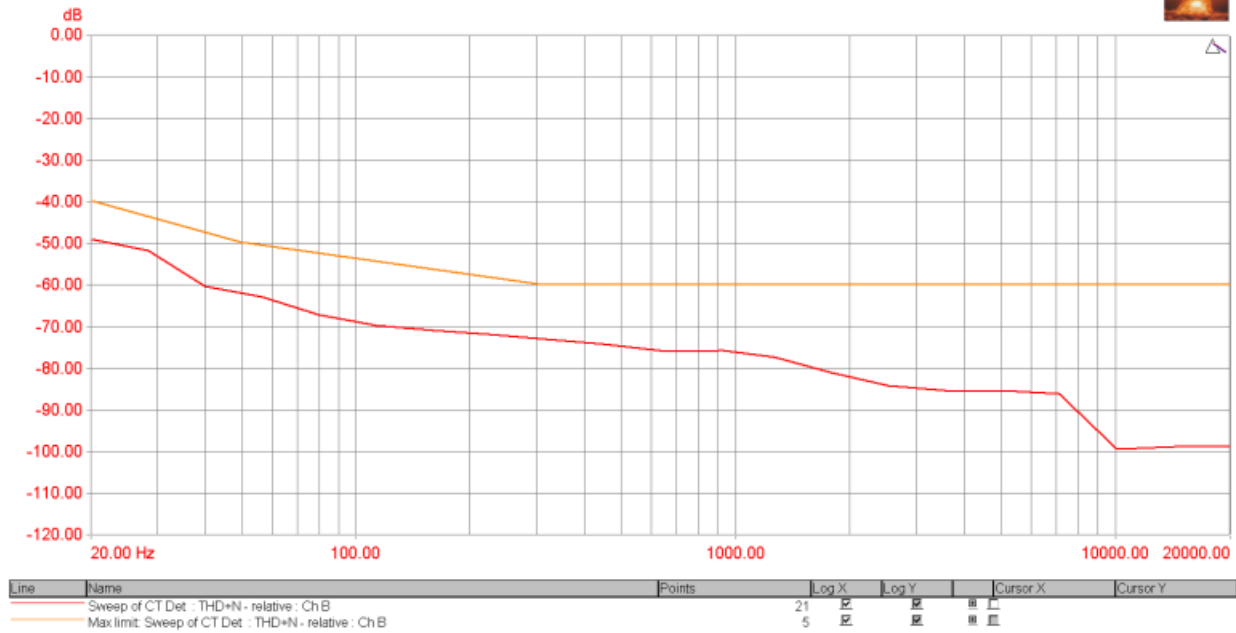
A05 THD+N vs Freq: PASSED

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

[Back to top](#)

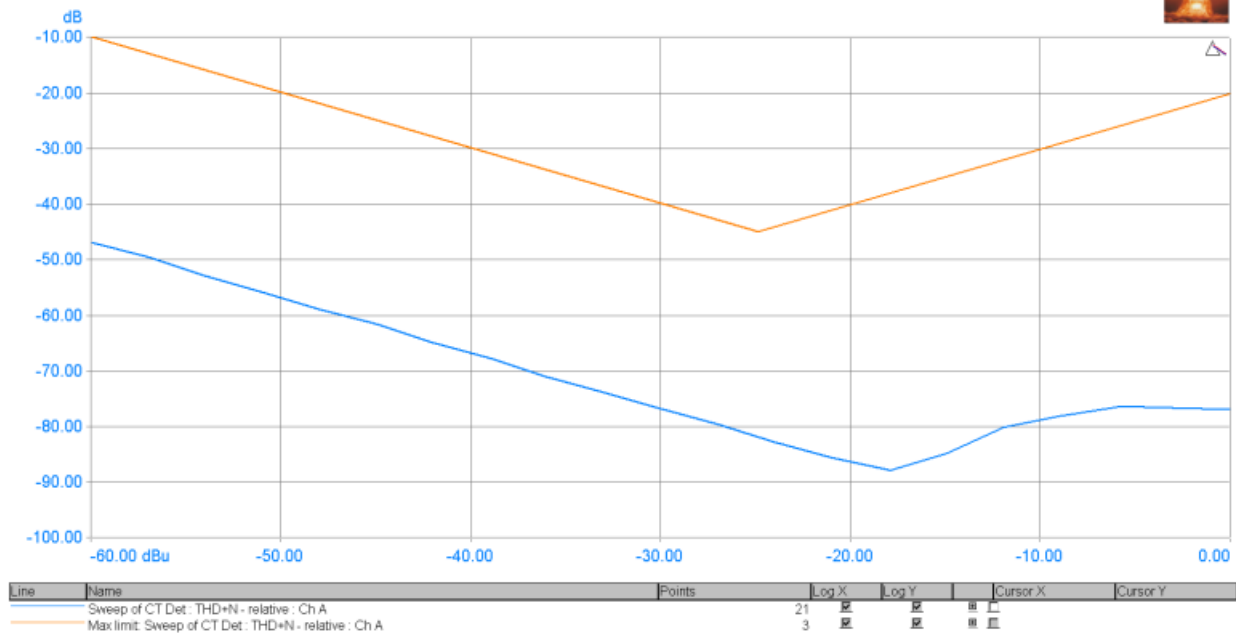
A06 THD+N vs Ampl: PASSED

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


[Back to top](#)

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 | | |

[Back to top](#)

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 | | |

[Back to top](#)

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 ARMS)

-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

[Back to top](#)

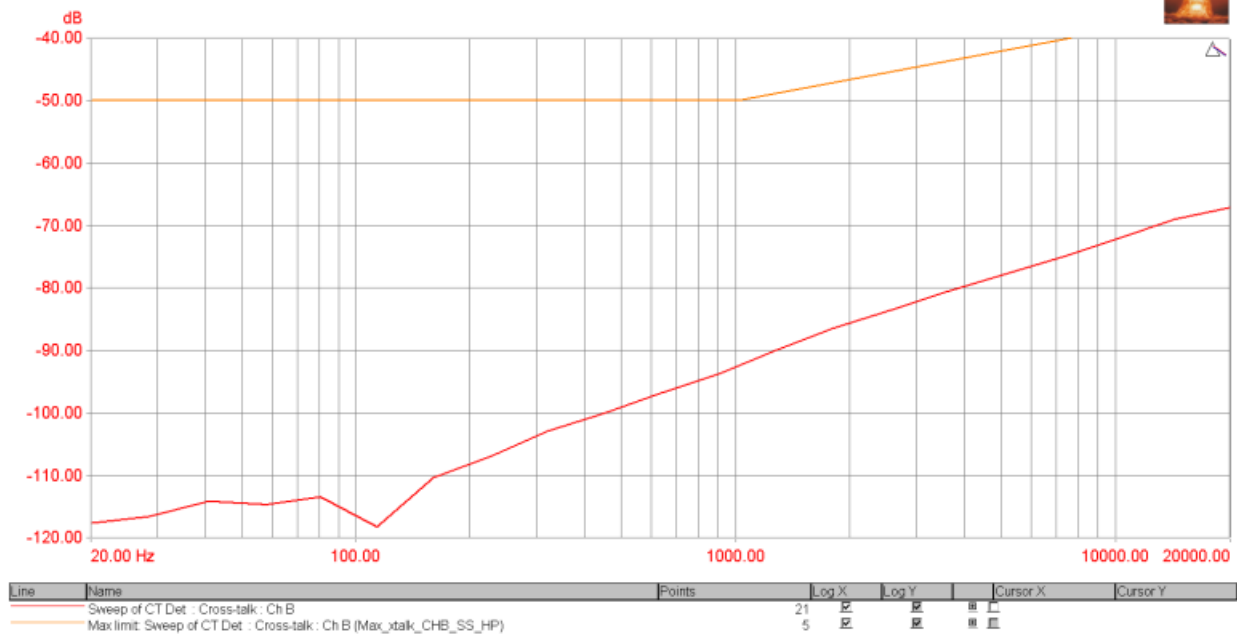
A10 Crosstalk A to B vs Freq: PASSED

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



[Back to top](#)

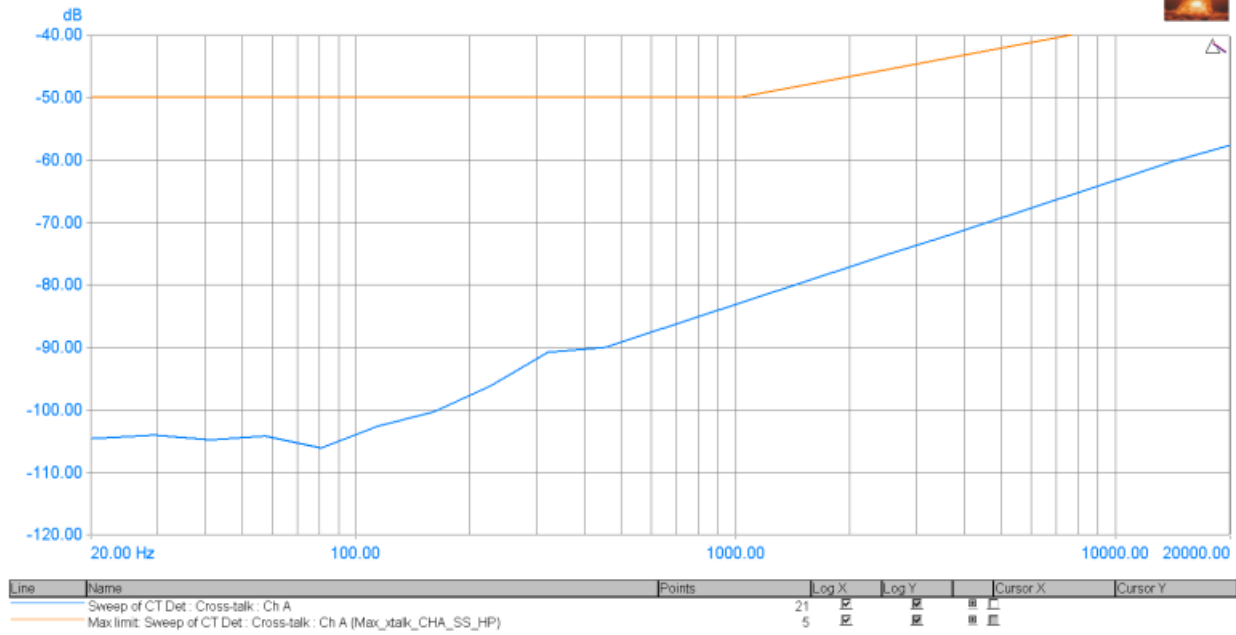
A11 Crosstalk B to A vs Freq: PASSED

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



[Back to top](#)

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 |

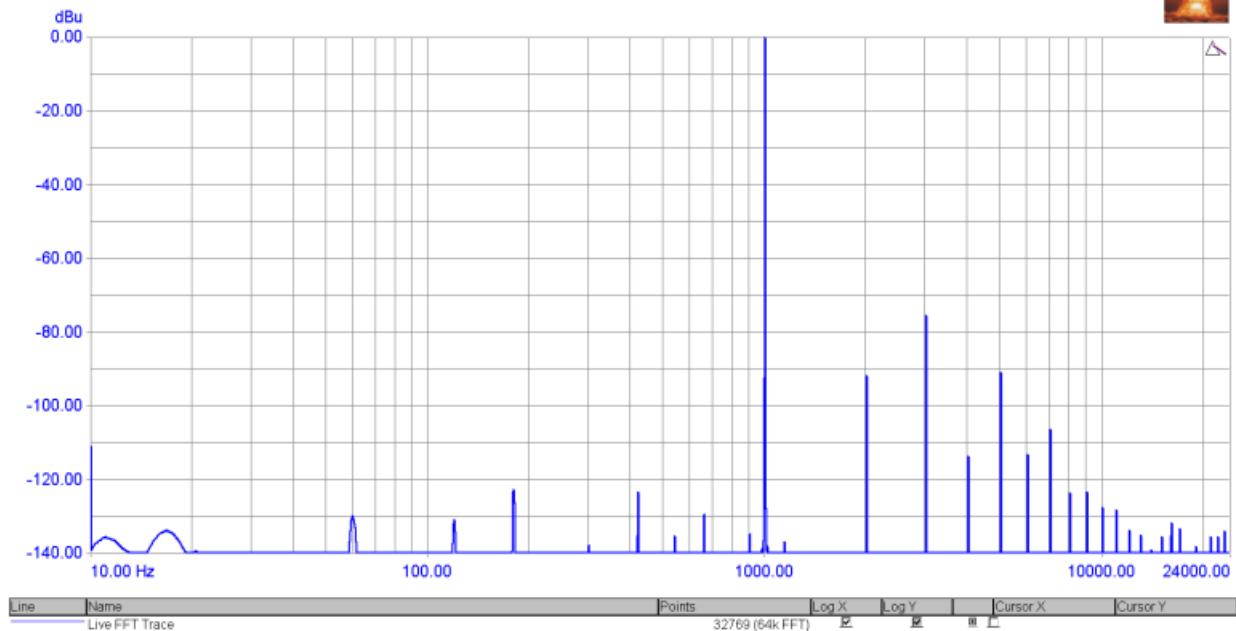
Signal Analyzer Readings

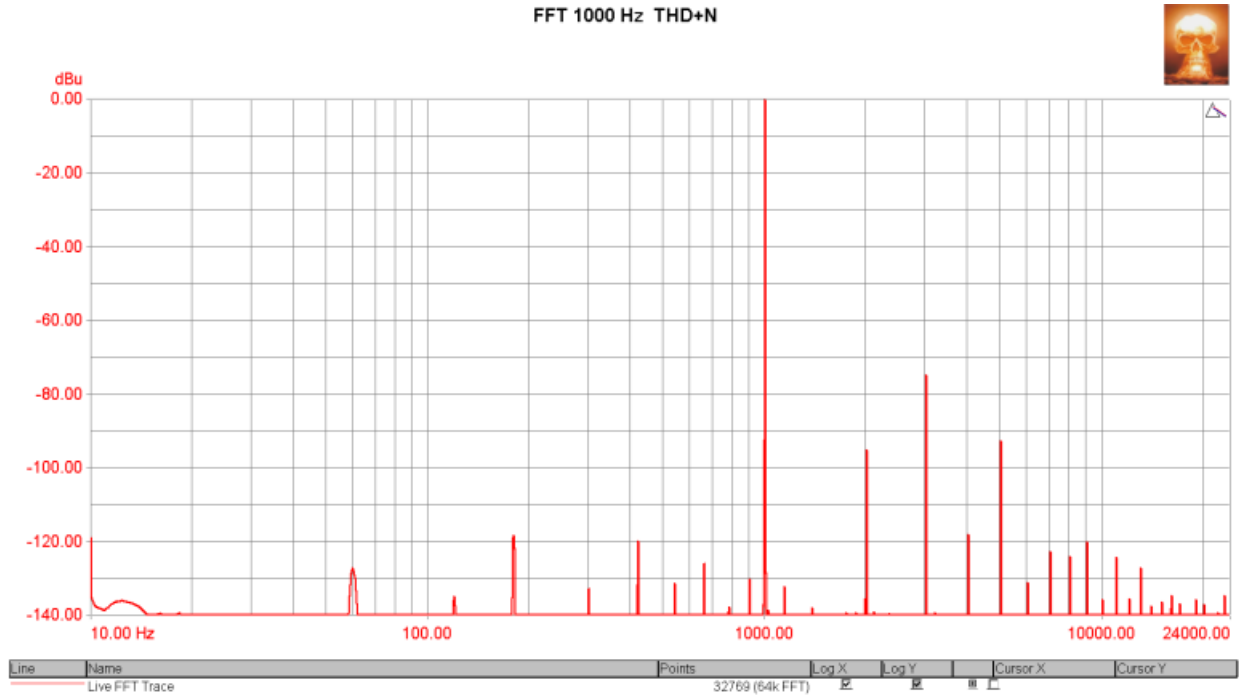
| | | |
|-------------------------------------|------------|--------------------|
| RMS amplitude (Selected : Ch A) | -0.074 dBu | Not limit checked. |
| RMS amplitude (Non-selected : Ch A) | 0.073 dBu | Not limit checked. |

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





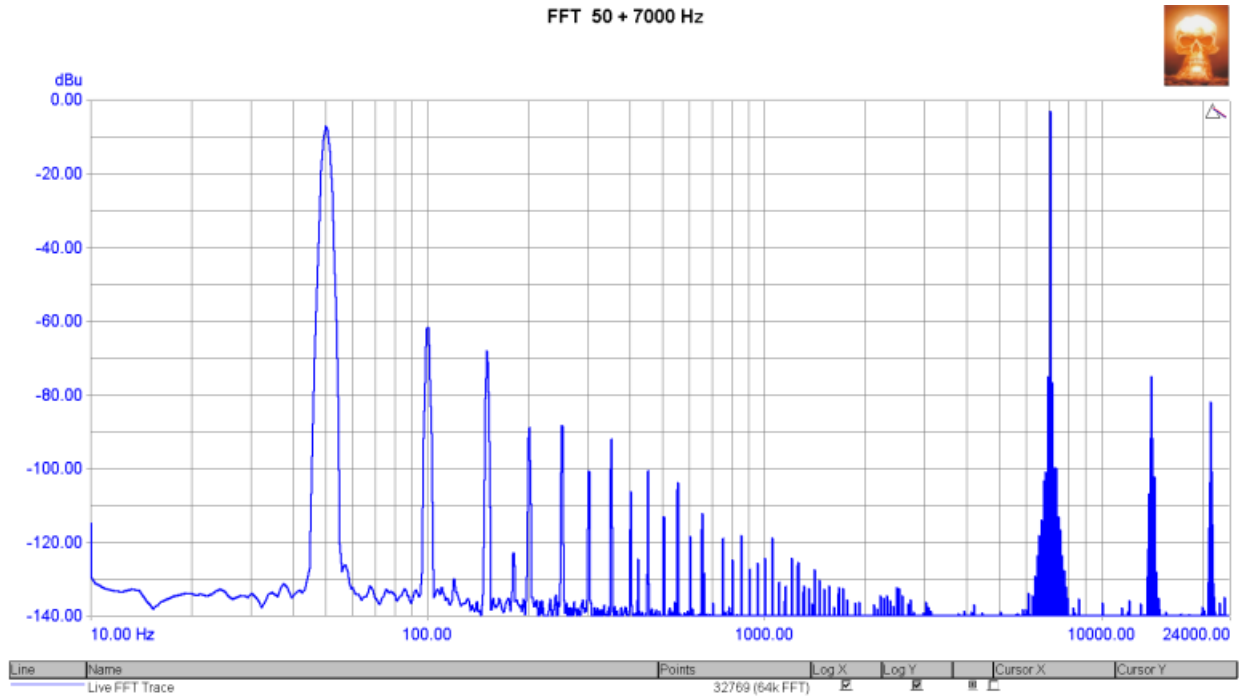
[Back to top](#)

A13 FFT 50+7000Hz: PASSED

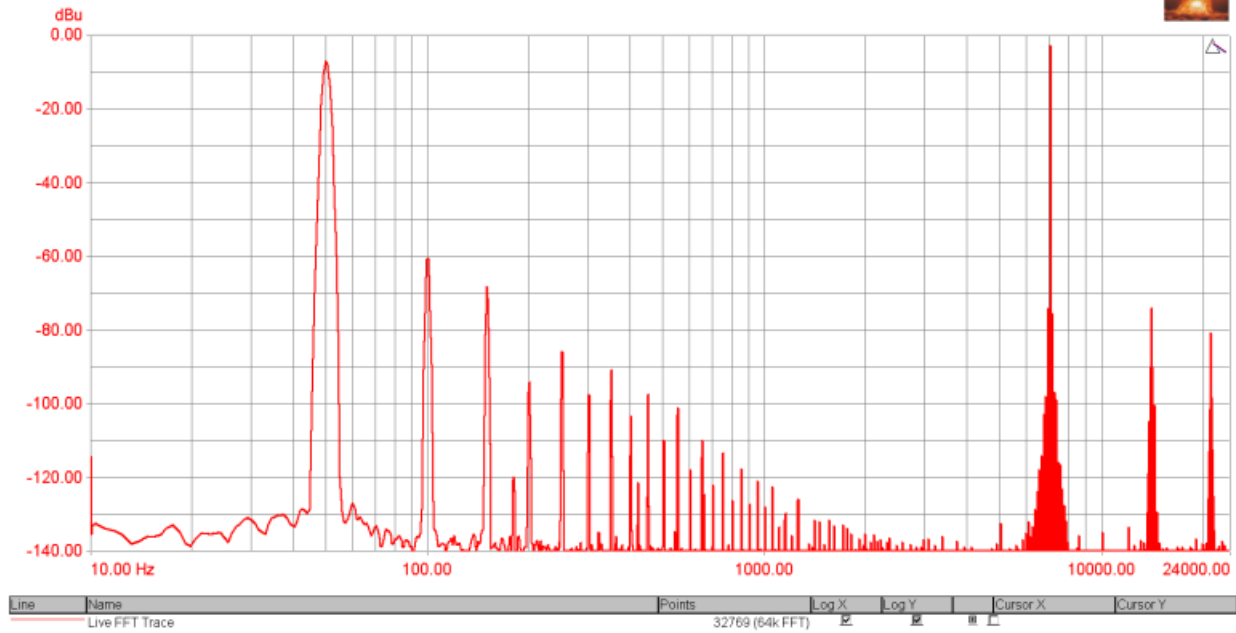
Measured at 6/27/2023 7:08:17 PM

| 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 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 | | |

[Back to top](#)

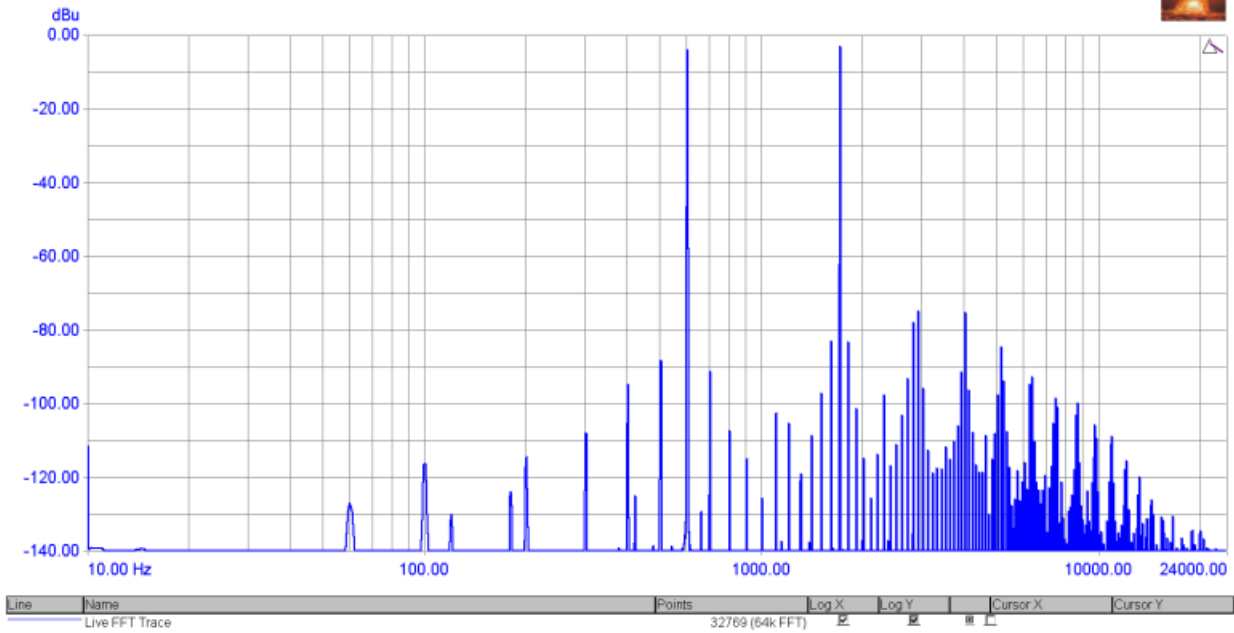
A14 FFT 600+1700 Hz: PASSED

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

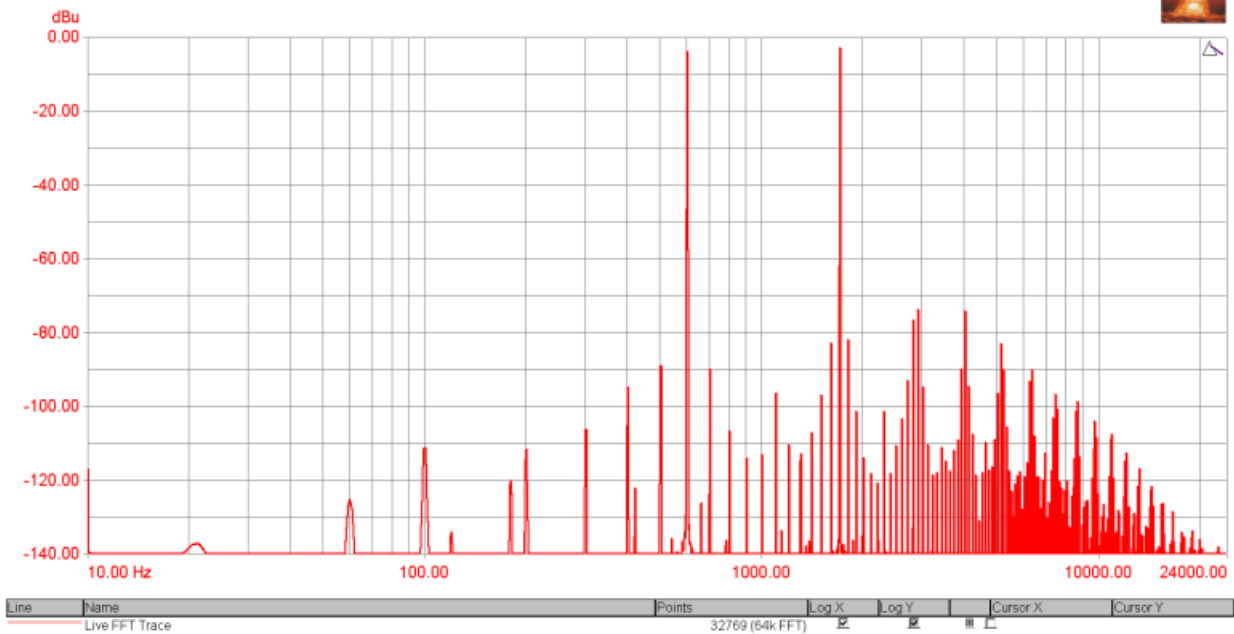
| Generator Settings | |
|--------------------|--|
| Channel A: | Twin-tone, 0 dBu at 600 Hz and 1 amplitude ratio at 1700Hz |
| Channel B: | Twin-tone, 0 dBu at 600 Hz and 1 amplitude ratio at 1700Hz |

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

[Back to top](#)

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 %

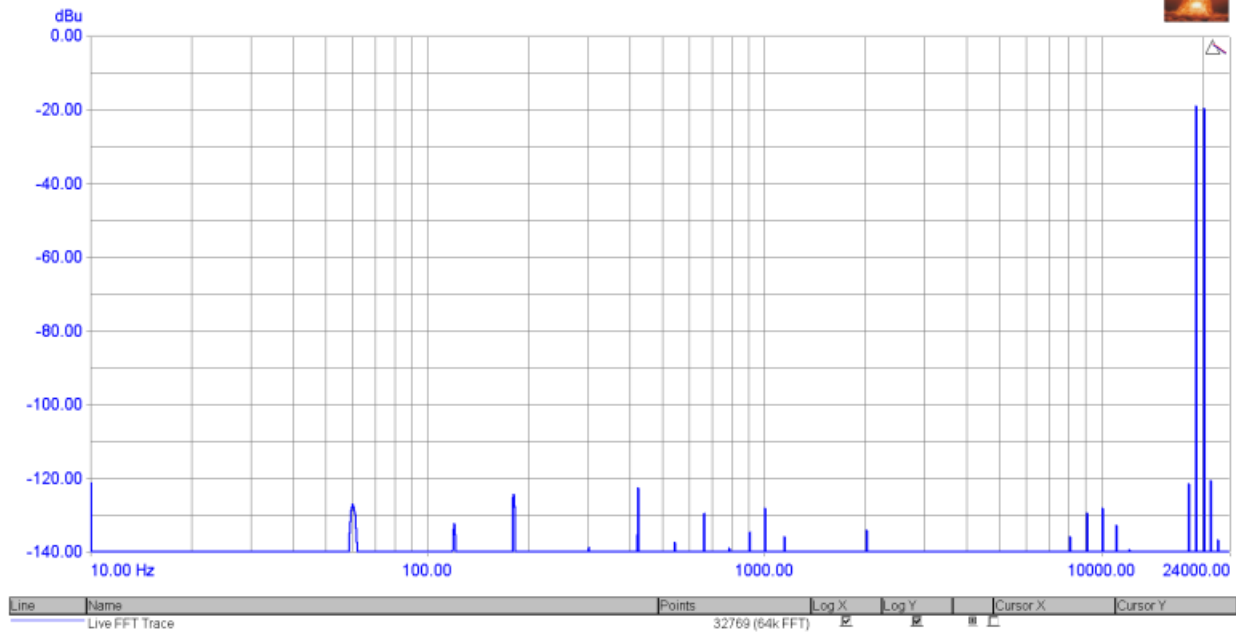
IMD CCIF (Channel B RMS)

0.00017 %

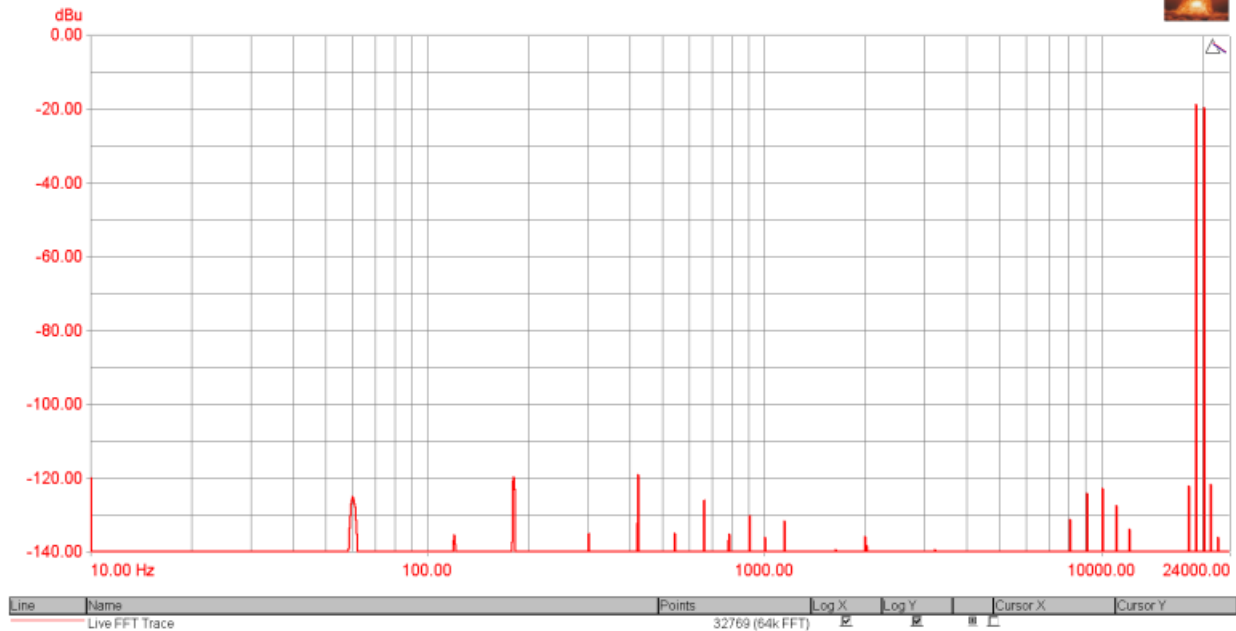
< 1 %

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

[Back to top](#)

A16 FFT residual noise: PASSED

Measured at 6/27/2023 7:12:22 PM

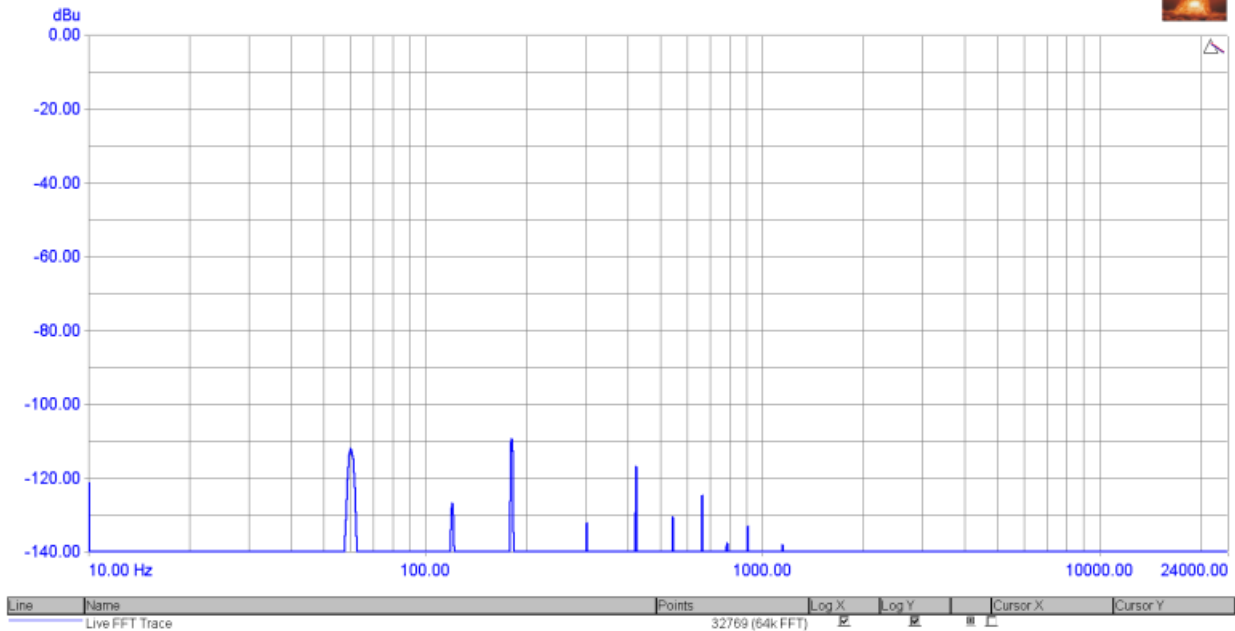
Generator Settings

| | |
|------------|-----|
| Channel A: | Off |
| Channel B: | Off |

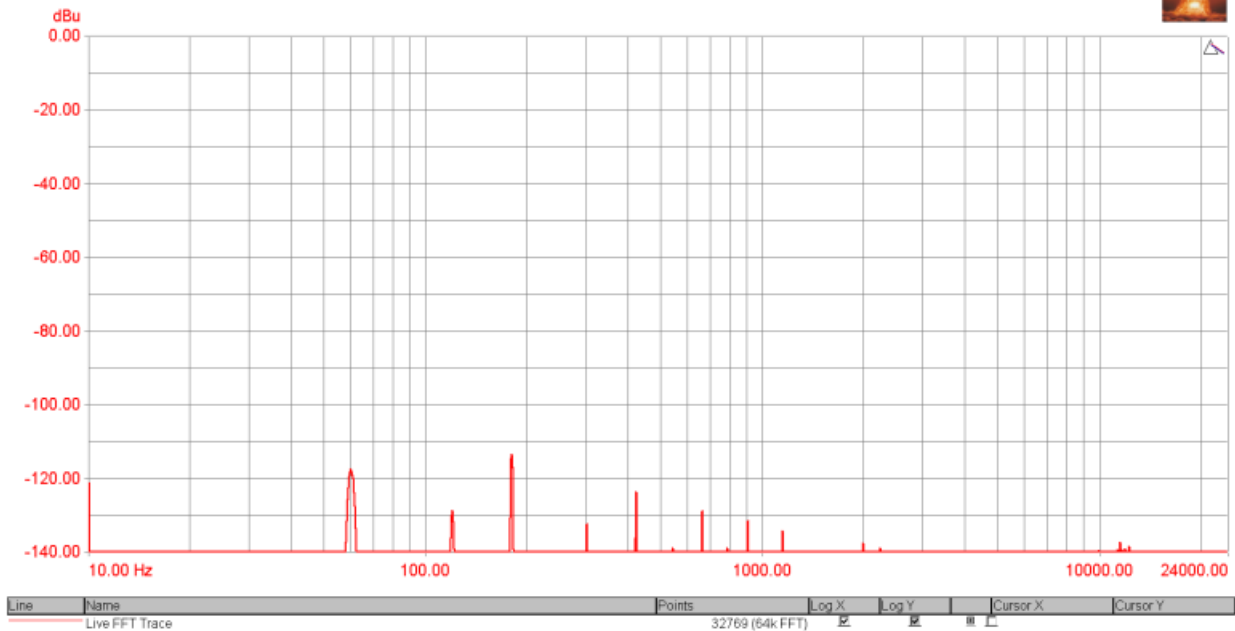
Signal Analyzer Readings

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

FFT residual noise



FFT residual noise



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