

# yggdrasil\_LIM AES 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     |
| 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 8/25/2022 11:49:00 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) | 14.315 dBu | < 24 dBu<br>> -20 dBu |
| RMS amplitude (Channel B) | 14.316 dBu | < 24 dBu<br>> -20 dBu |
| Inter-channel phase       | -0.04 °    | < 10 °<br>> -10 °     |

| CTA Readings   |          |                     |
|--|----------|---------------------|
| Gain (Channel A RMS)   | 0.000 dB | < 20 dB<br>> -40 dB |
| Gain (Channel B RMS)   | 0.001 dB | < 20 dB<br>> -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

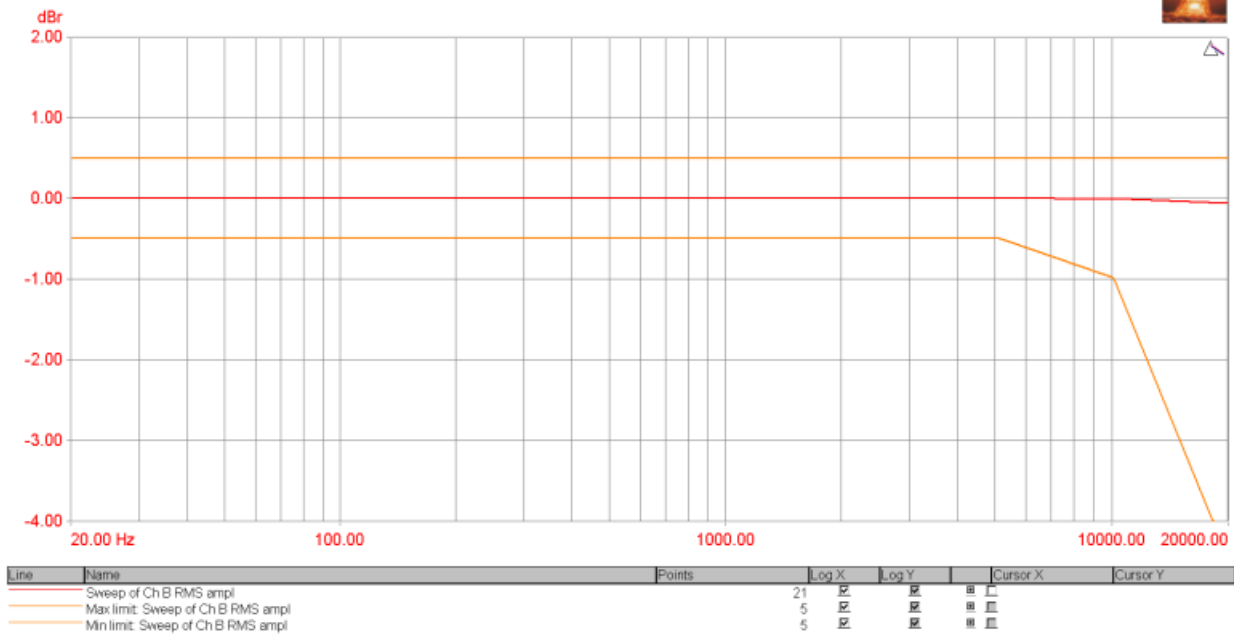
Measured at 8/25/2022 11:49:03 AM

| 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



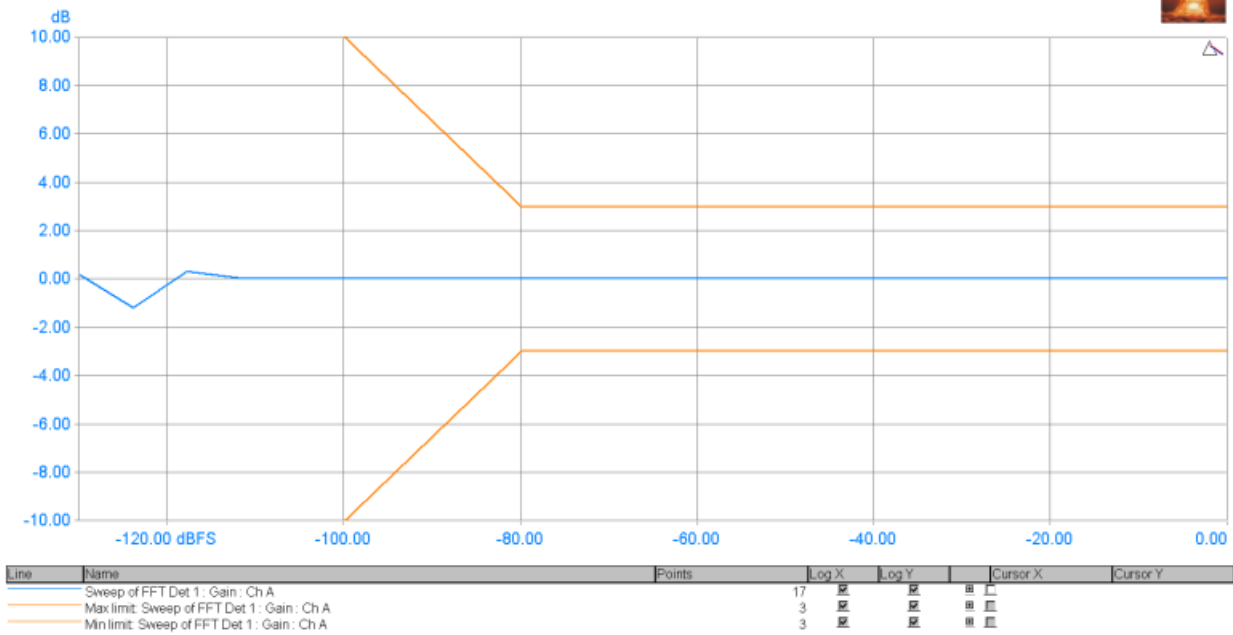
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**A03 Gain vs Ampl: PASSED**

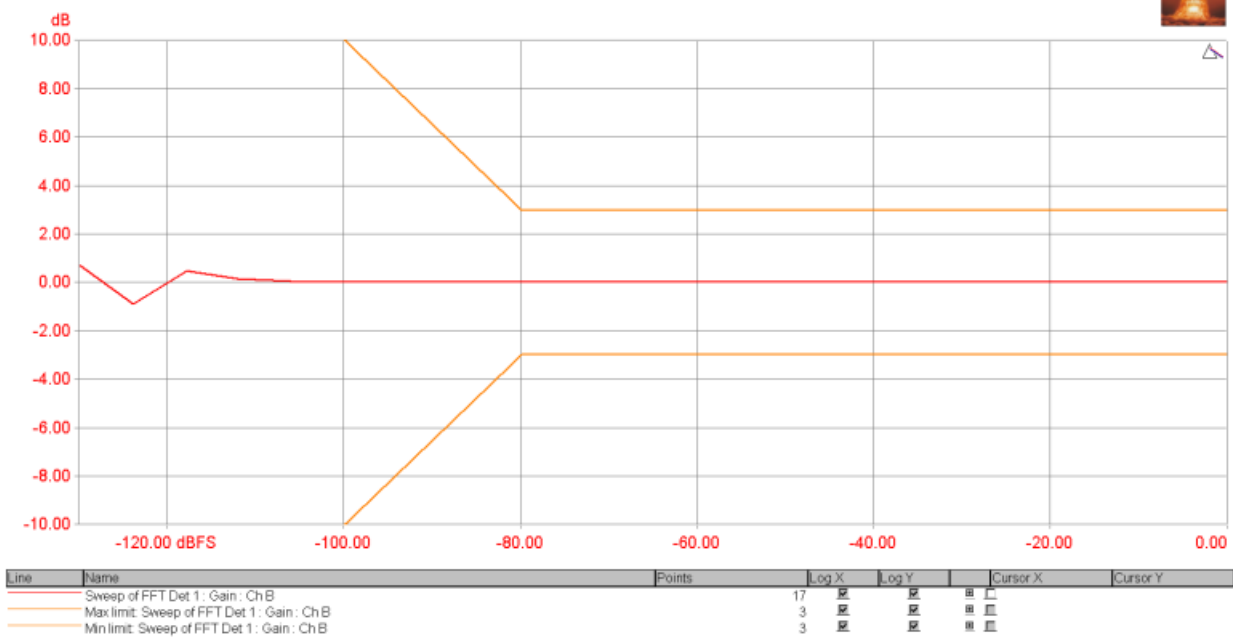
Measured at 8/25/2022 11:49:10 AM

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

### Gain vs Amplitude



### Gain vs Amplitude



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

Measured at 8/25/2022 11:50:15 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)  | 0.00122 % | <200 %<br>>0 % |
| THD+N - relative (Channel B RMS)  | 0.00176 % | <200 %<br>>0 % |
| Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/12th octave band-reject filter at the generator frequency |           |                |

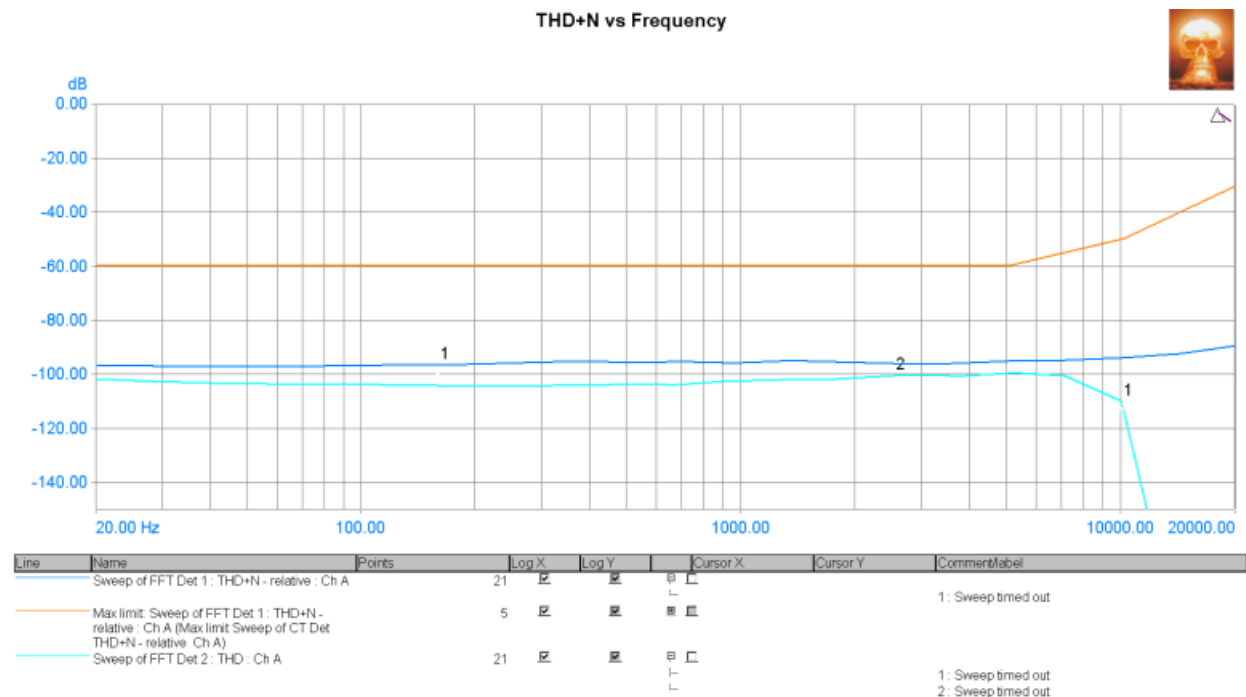
| FFT Detector Readings   |           |                |
|---|-----------|----------------|
| THD (Channel A)   | 0.00056 % | <200 %<br>>0 % |
| THD (Channel B)   | 0.00120 % | <200 %<br>>0 % |
| FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filters from the 2nd to 10th harmonics           |           |                |
| 2nd Harmonic Distortion (Channel A)   | 0.00026 % | <200 %<br>>0 % |
| 2nd Harmonic Distortion (Channel B)   | 0.00050 % | <200 %<br>>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)   | 0.00021 % | <200 %<br>>0 % |
| 3rd Harmonic Distortion (Channel B)   | 0.00104 % | <200 %<br>>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)  | 0.00097 % | <200 %<br>>0 % |
| THD+N - relative (Channel B)  | 0.00154 % | <200 %<br>>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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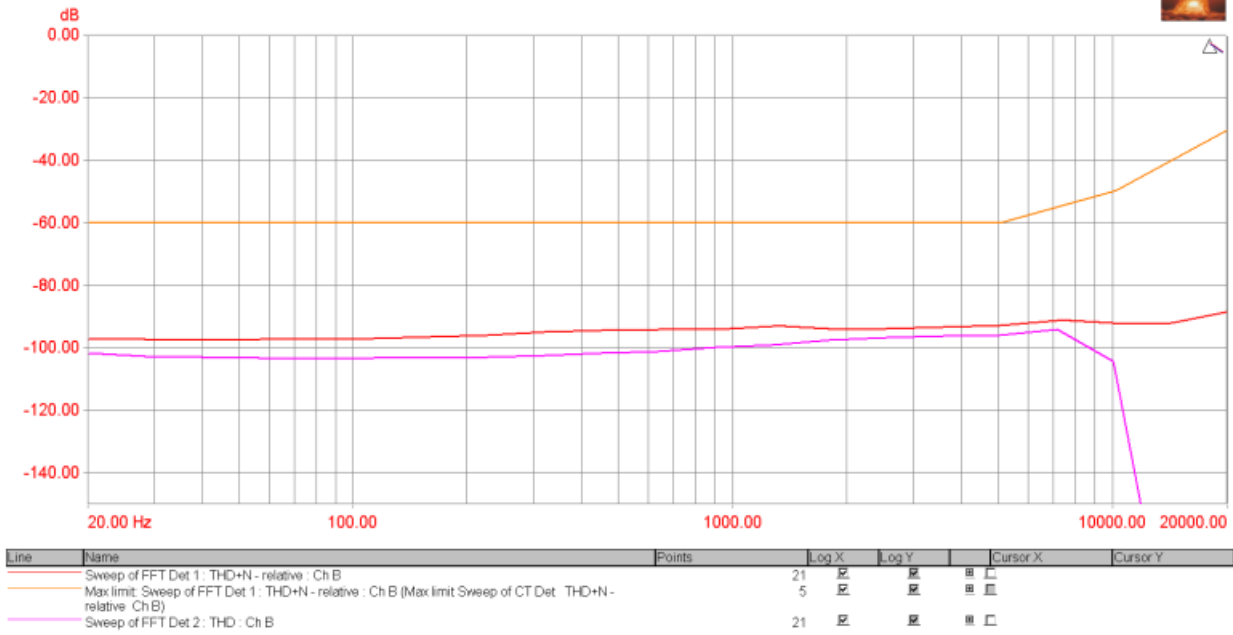
A05 THD+N vs Freq: PASSED

Measured at 8/25/2022 11:50:27 AM

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



# THD+N vs Frequency



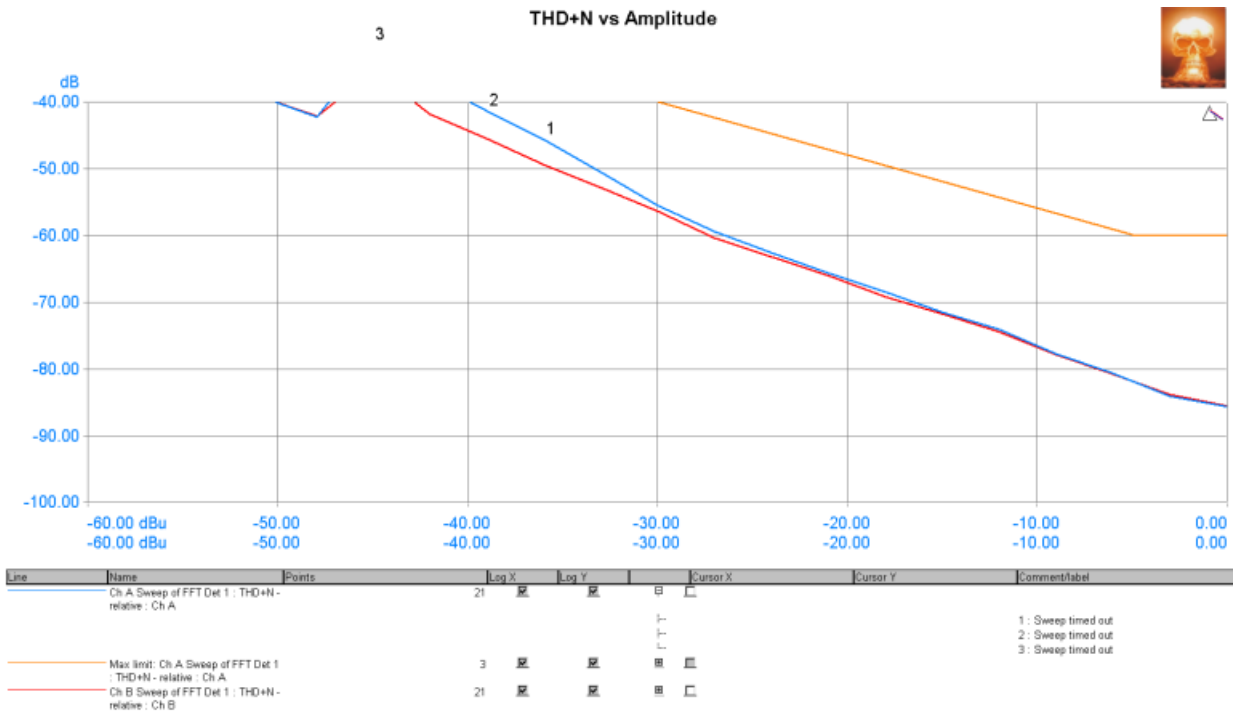
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## A06 THD+N vs Ampl: PASSED

Measured at 8/25/2022 11:51:42 AM

| 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 8/25/2022 11:52:24 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)  | -44.623 dB  | Not limit checked.  |
| THD+N - relative (Channel B)  | -47.297 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)  | -90.545 dBu | Not limit checked.  |
| Noise (residual) (Channel B)  | -93.495 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  | 104.867 dB  | < 150 dB<br>> 60 dB |
| DAC DNR Residual Async  | 107.814 dB  | < 150 dB<br>> 60 dB |
| FFTD 3 Settings: User: DAC SNR Residual Async   |             |                     |

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## A08 Crosstalk A to B: PASSED

Measured at 8/25/2022 11:52:42 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)   | -133.463 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 8/25/2022 11:52:48 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)   | -145.431 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 |             |          |

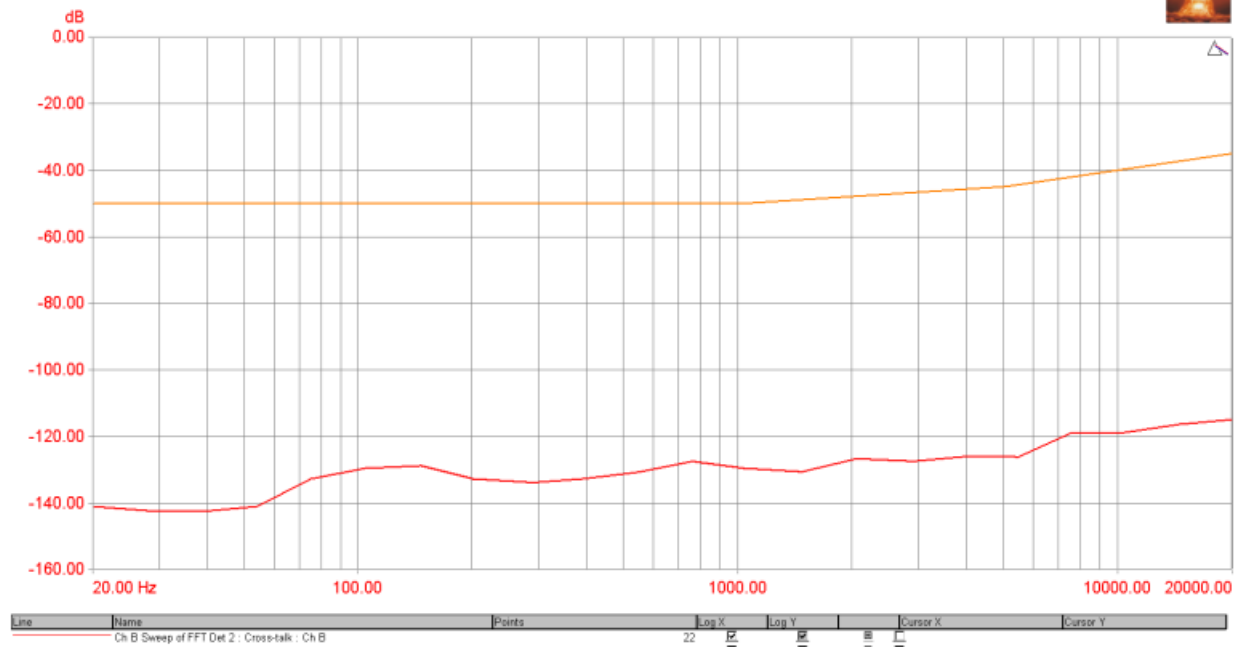
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## A10 Crosstalk A to B vs Freq: PASSED

Measured at 8/25/2022 11:52:53 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


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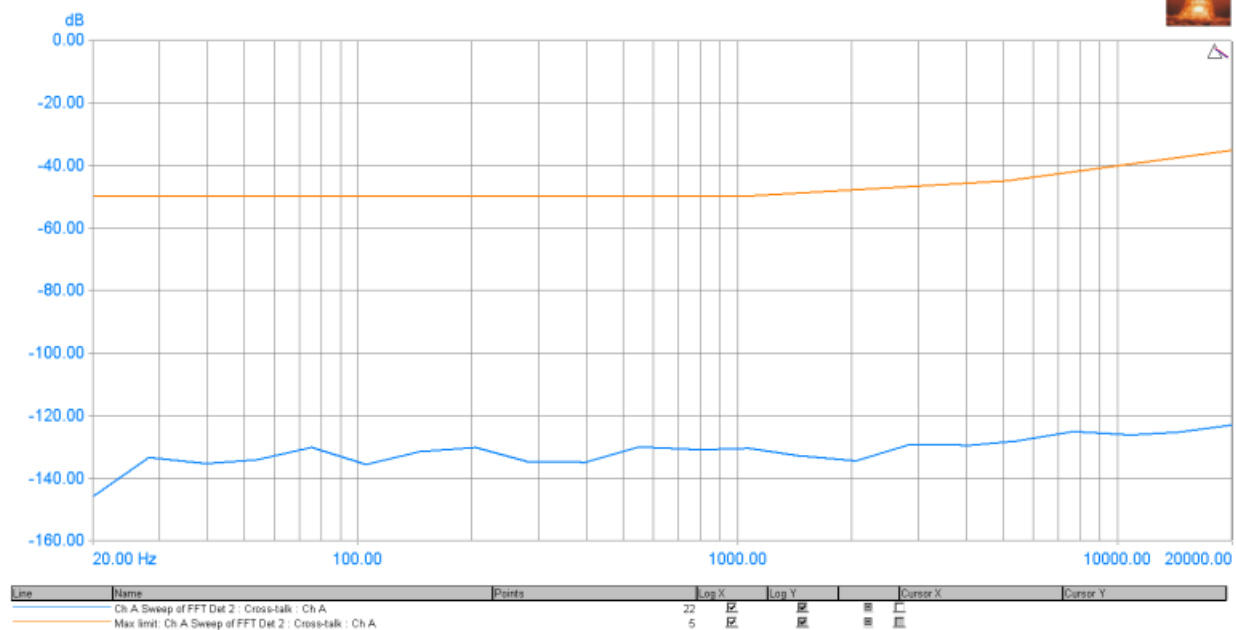
### A11 Crosstalk B to A vs Freq: PASSED

Measured at 8/25/2022 11:53:46 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


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

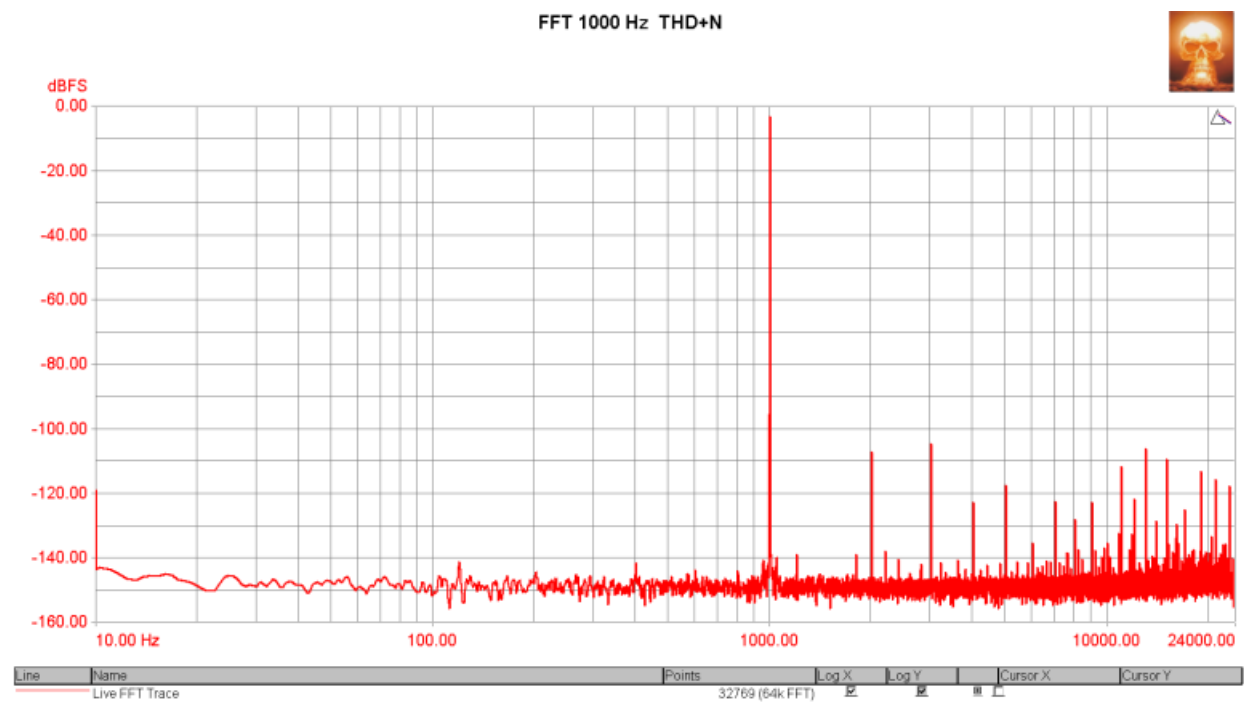
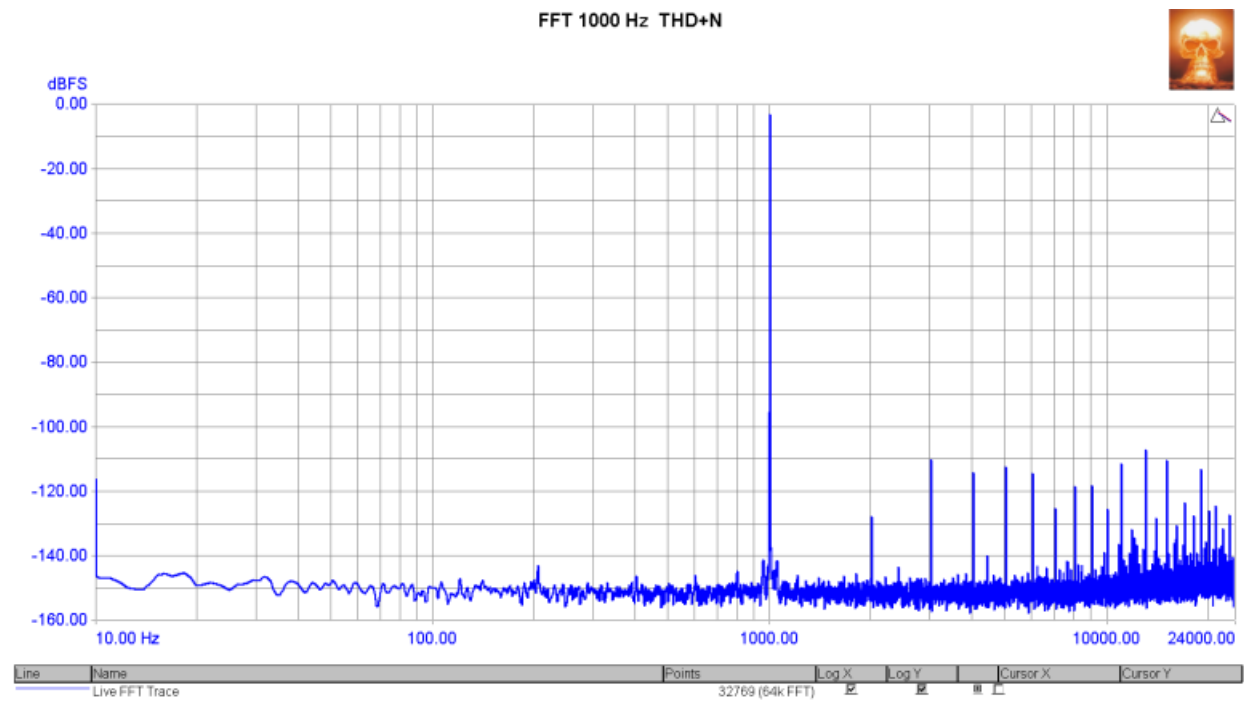
Measured at 8/25/2022 11:54:40 AM

#### 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)     | 11.315 dBu | Not limit checked. |
| RMS amplitude (Non-selected : Ch A) | 11.316 dBu | Not limit checked. |

| CTA Readings   |           |                             |
|--|-----------|-----------------------------|
| THD+N - relative (Selected : Ch ARMS)  | 0.00155 % | < 0.075 %<br>> 0.00000001 % |
| THD+N - relative (Non-selected : Ch ARMS)  | 0.00184 % | < 0.075 %<br>> 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)  | 0.00124 % | Not limit checked. |
| THD+N - relative (Channel B)  | 0.00155 % | 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 |           |                    |

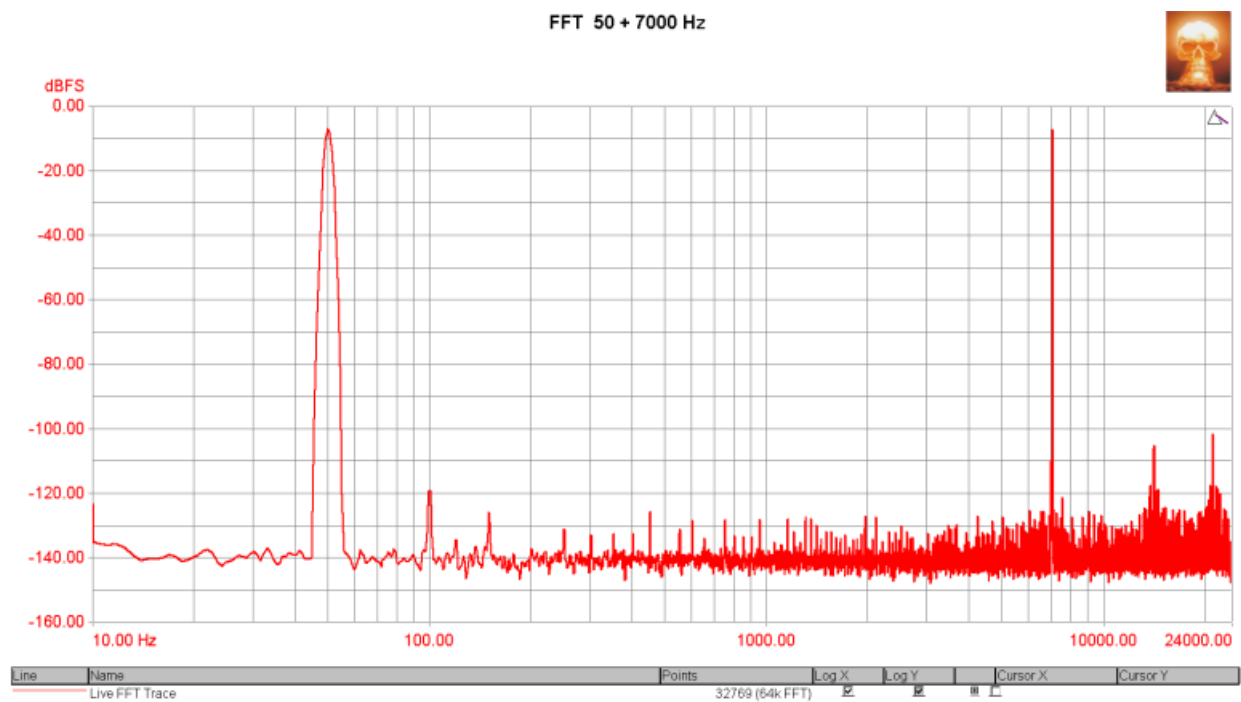
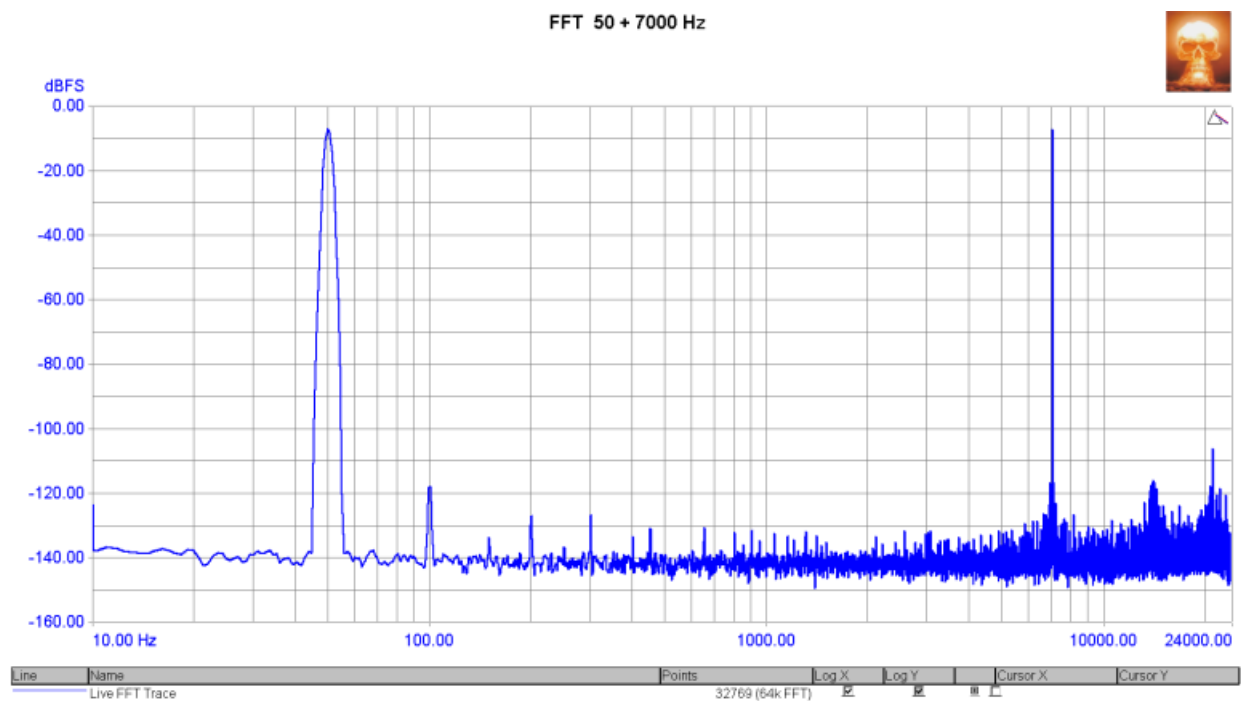


Measured at 8/25/2022 11:56:01 AM

| 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) | 10.320 dBu | Not limit checked. |
| RMS amplitude (Channel B) | 10.319 dBu | Not limit checked. |

| CTA Readings  |           |                   |
|---|-----------|-------------------|
| IMD SMPTE-DIN (Channel A RMS)   | 0.00050 % | < 0.05 %<br>> 0 % |
| IMD SMPTE-DIN (Channel B RMS)   | 0.00073 % | < 0.05 %<br>> 0 % |
| Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation. |           |                   |



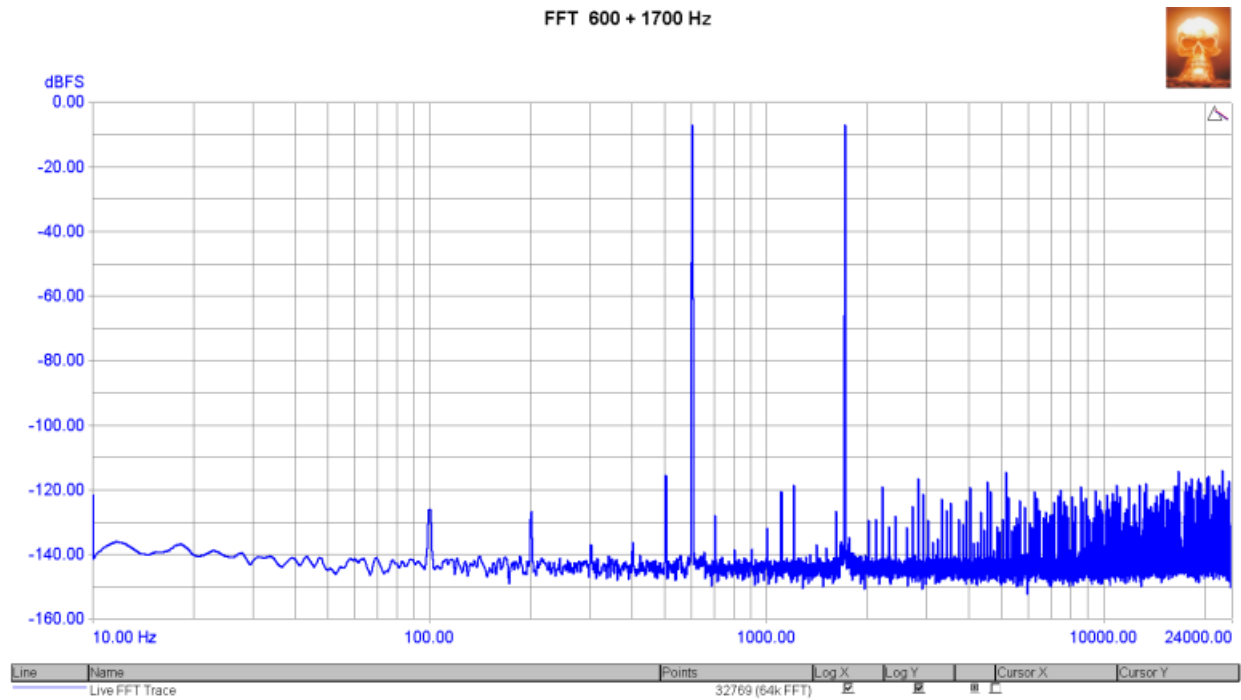
A14 FFT 600+1700 Hz: PASSED

Measured at 8/25/2022 11:56:24 AM

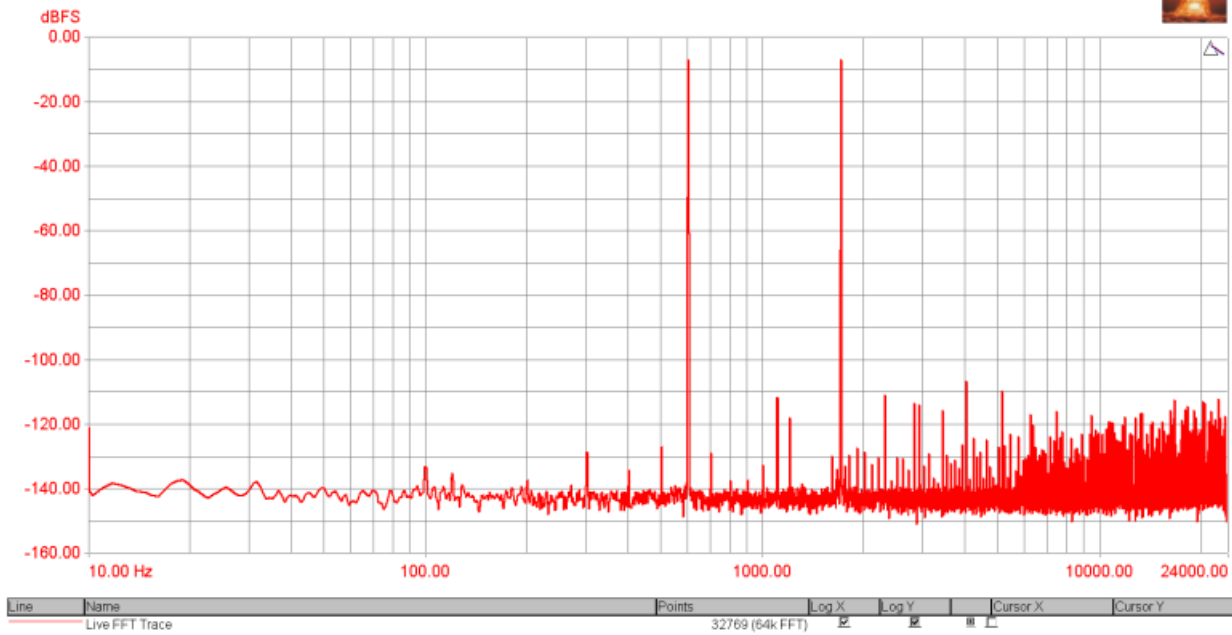
| Generator Settings |  |
|--------------------|--|
| Channel A:         | Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz |
| Channel B:         | Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz |

| Signal Analyzer Readings  |            |                    |
|---------------------------|------------|--------------------|
| RMS amplitude (Channel A) | 10.314 dBu | Not limit checked. |
| RMS amplitude (Channel B) | 10.315 dBu | Not limit checked. |

| CTA Readings  |           |                   |
|---|-----------|-------------------|
| IMD SMPTE-DIN (Channel A RMS)   | 0.01276 % | < 0.02 %<br>> 0 % |
| IMD SMPTE-DIN (Channel B RMS)   | 0.01271 % | < 0.02 %<br>> 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 8/25/2022 11:56:46 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**

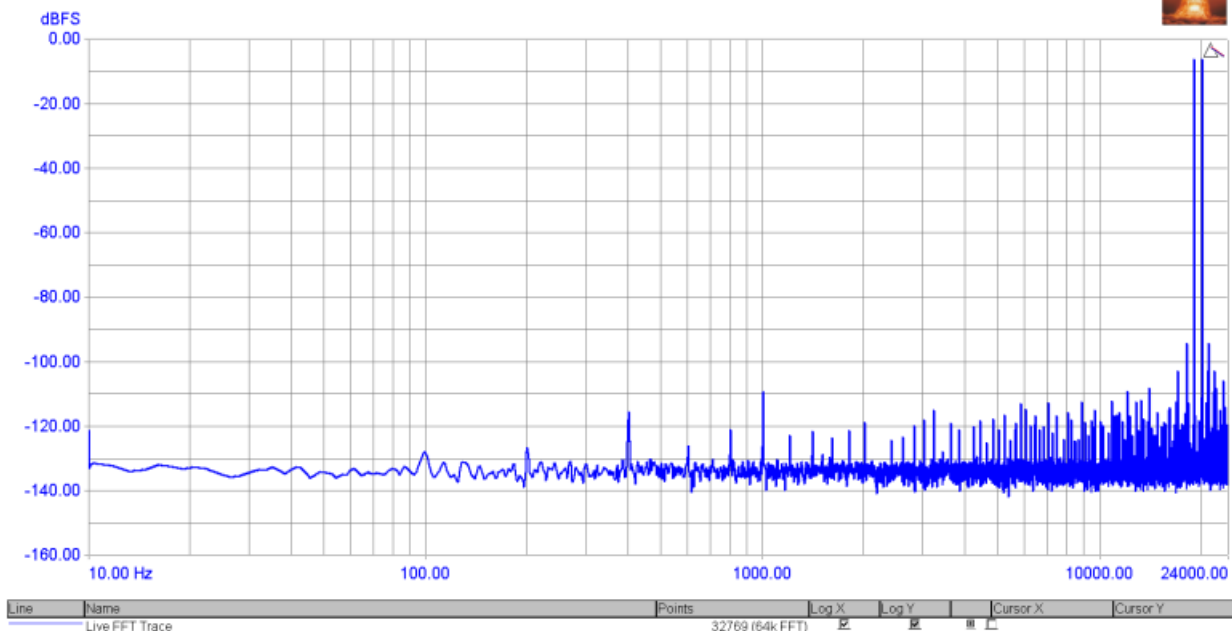
|                           |            |                    |
|---------------------------|------------|--------------------|
| RMS amplitude (Channel A) | 11.219 dBu | Not limit checked. |
| RMS amplitude (Channel B) | 11.190 dBu | Not limit checked. |

**CTA Readings**

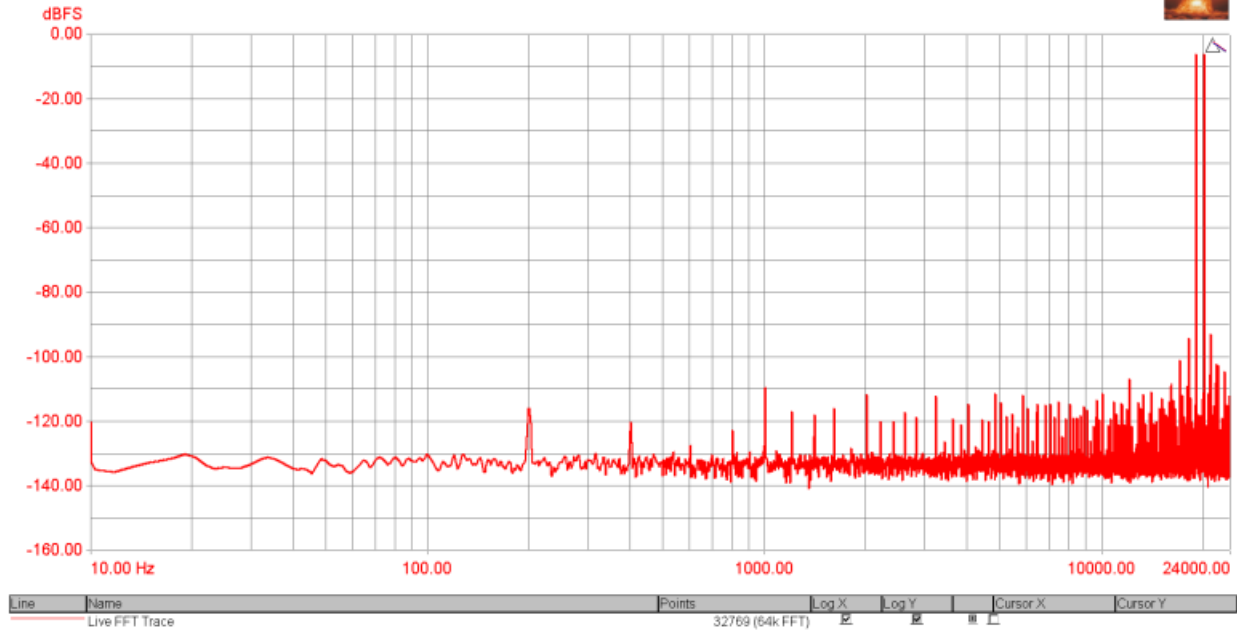
|                          |           |         |
|--------------------------|-----------|---------|
| IMD CCIF (Channel A RMS) | 0.00060 % | < 0.1 % |
| IMD CCIF (Channel B RMS) | 0.00061 % | < 0.1 % |

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)  | 0.00048 % | < 0.1 % |
| IMD CCIF (Channel B)  | 0.00046 % | < 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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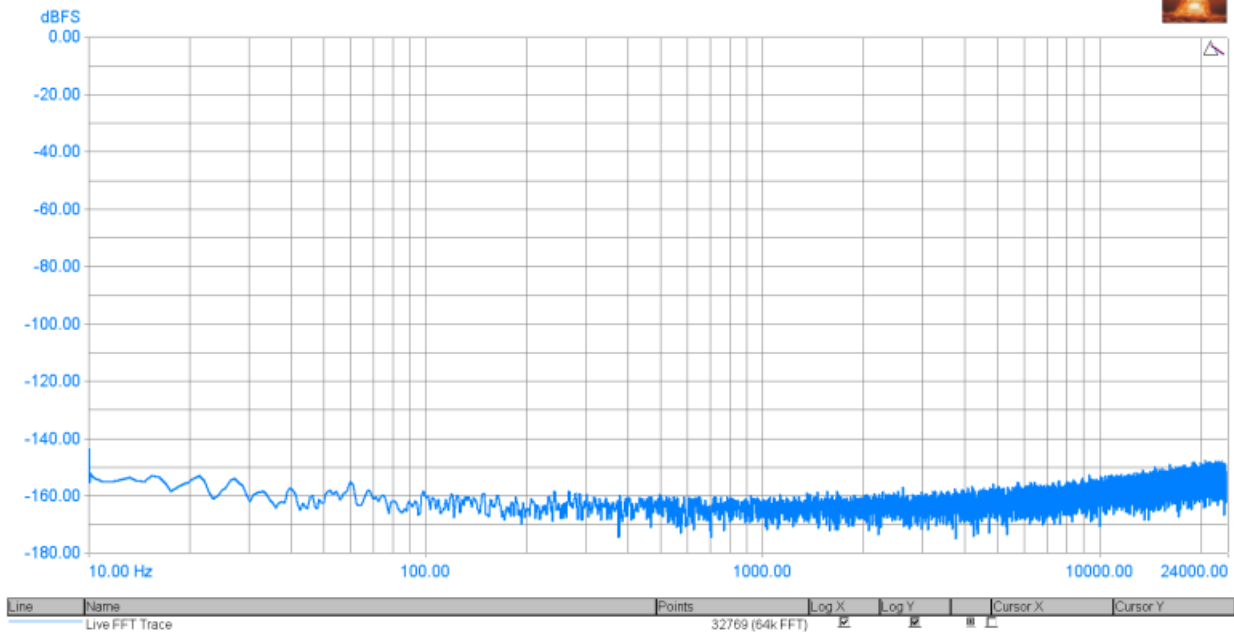
A16 FFT residual noise: PASSED

Measured at 8/25/2022 11:57:07 AM

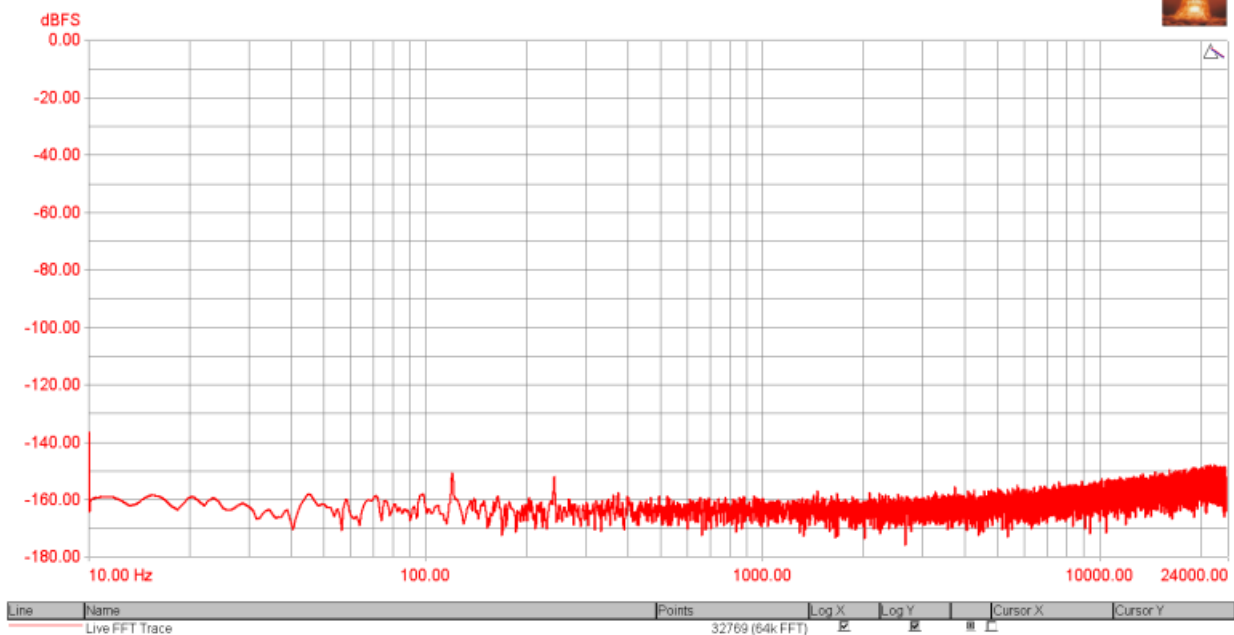
| Generator Settings |  |     |
|--------------------|--|-----|
| Channel A:         |  | Off |
| Channel B:         |  | Off |

| Signal Analyzer Readings  |             |                    |
|---------------------------|-------------|--------------------|
| RMS amplitude (Channel A) | -90.279 dBu | Not limit checked. |
| RMS amplitude (Channel B) | -90.223 dBu | Not limit checked. |

# FFT residual noise - DAC xxx in yyy out



# FFT residual noise - DAC xxx in yyy out



| FFT Detector Readings  |               |                           |
|--|---------------|---------------------------|
| Noise (residual) (Channel A)   | -116.163 dBFS | < -60 dBFS<br>> -150 dBFS |
| Noise (residual) (Channel B)   | -116.163 dBFS | < -60 dBFS<br>> -150 dBFS |
| FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic |               |                           |

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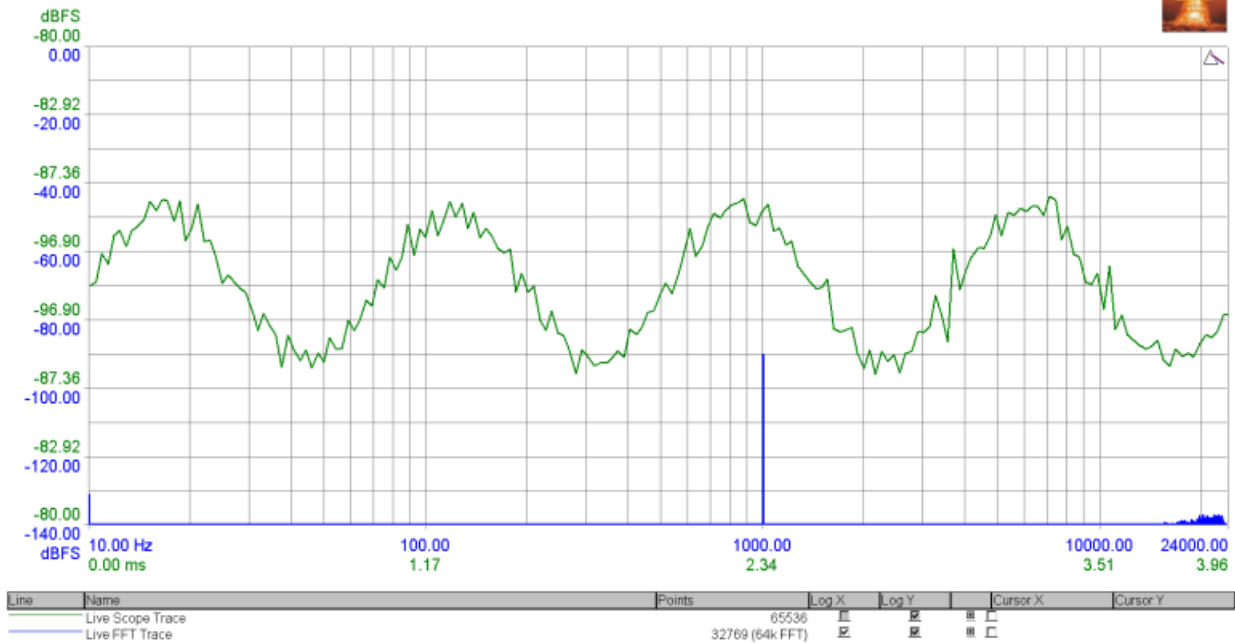
**A17 FFT -90 dBFS:** Not limit checked.

Measured at 8/25/2022 11:59:07 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) | -75.545 dBu | Not limit checked. |

# FFT -90 dBFS



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

Measured at 8/25/2022 11:59:35 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) | -75.300 dBu | Not limit checked. |

# FFT -90 dBFS - 16 bit

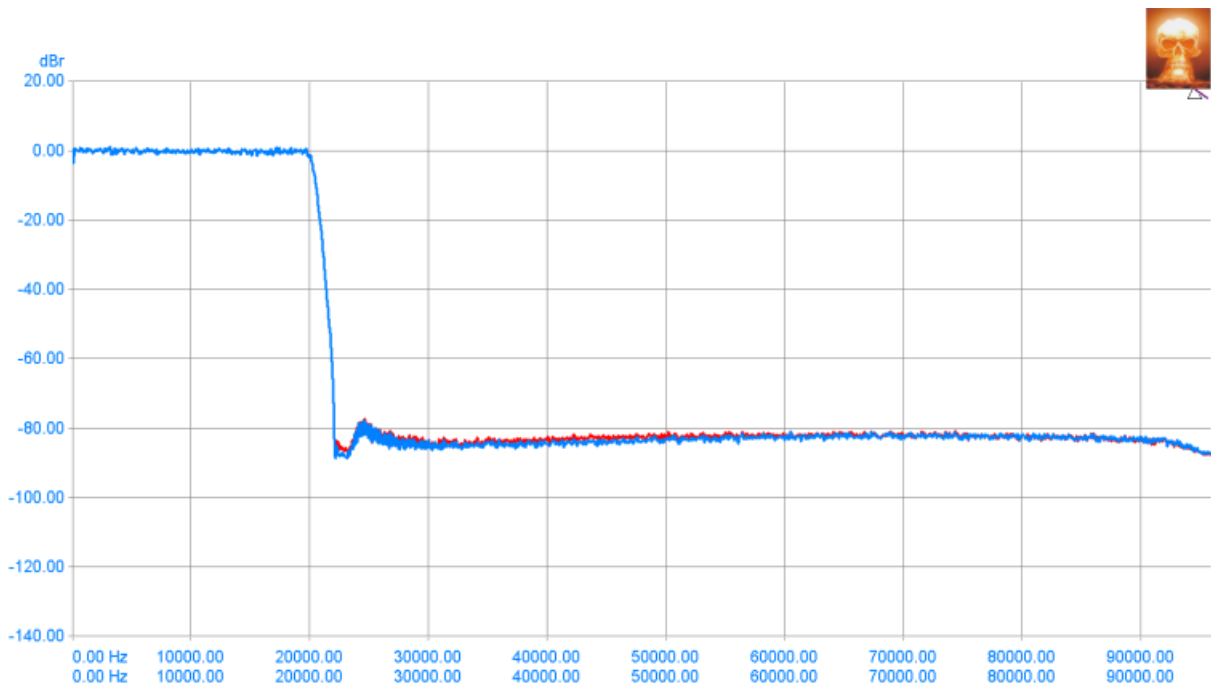


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**A19 FFT imaging:** Not limit checked.

Measured at 8/25/2022 11:59:49 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 8/25/2022 12:00:17 PM

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

