

# 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 10:00:05 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)	13.508 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)	0.005 dB	< 20 dB > -40 dB
Gain (Channel B RMS)	0.008 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

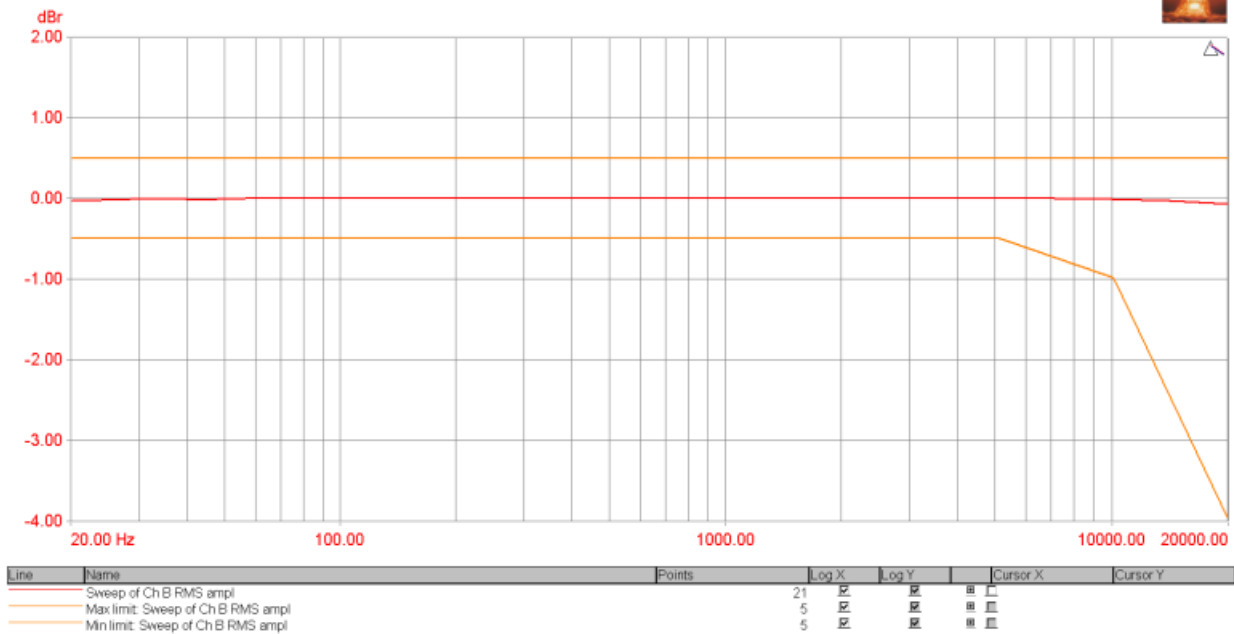
Measured at 3/18/2021 10:00:08 AM

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



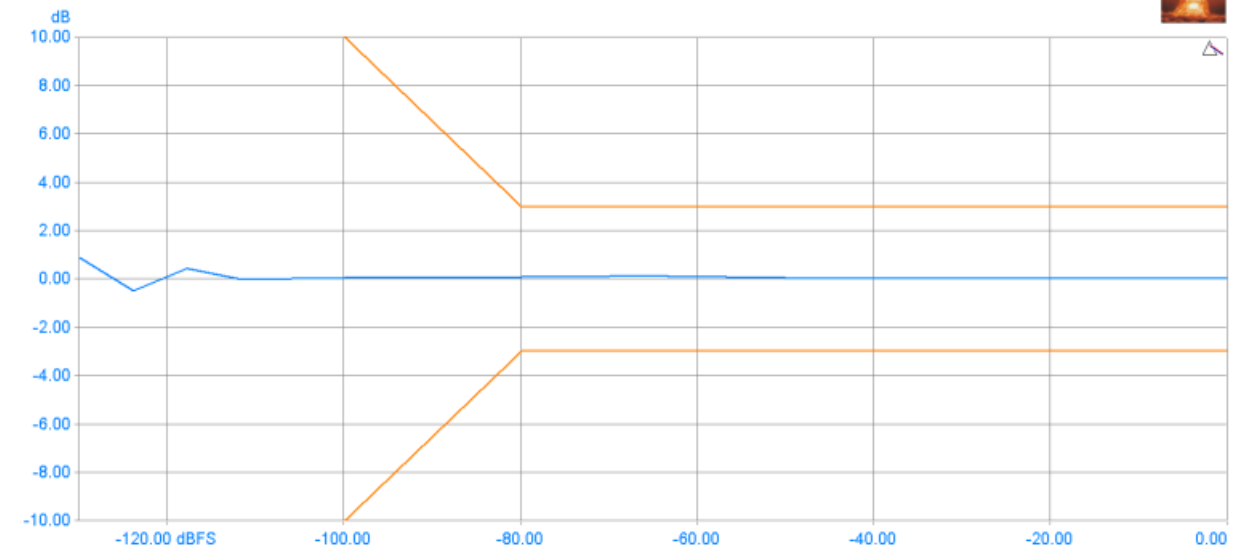
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**A03 Gain vs Ampl: PASSED**

Measured at 3/18/2021 10:00:15 AM

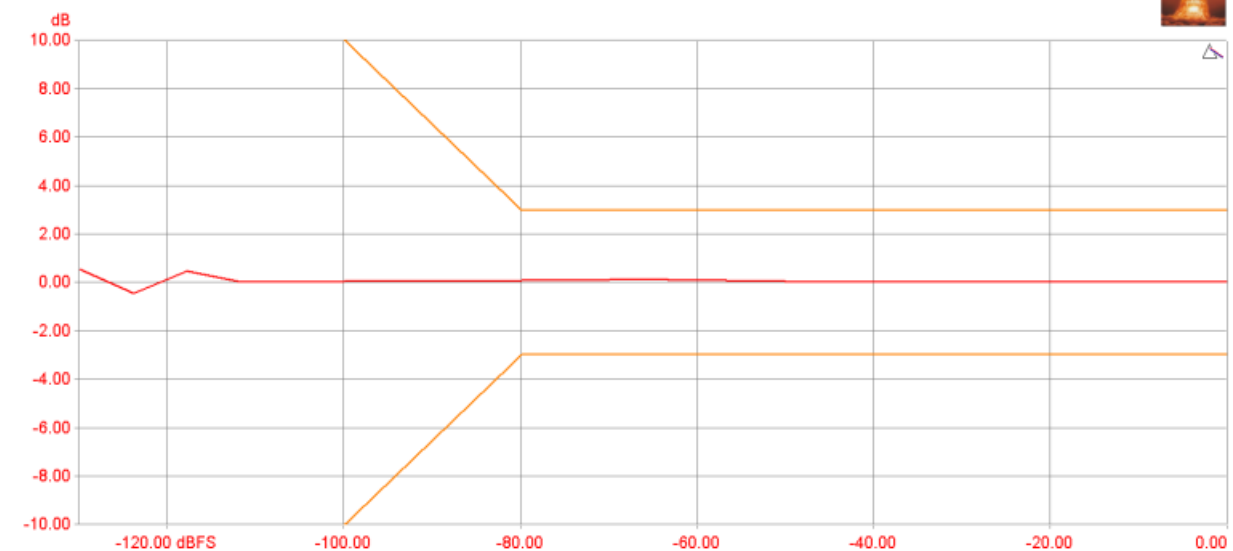
Generator Settings	
Channel A:	sine, -6 dBFS at 1000 Hz
Channel B:	sine, -6 dBFS at 1000 Hz

### 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 type="checkbox"/>	<input type="checkbox"/>
3	Max limit: Sweep of FFT Det 1: Gain: Ch A	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Min limit: Sweep of FFT Det 1: 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
17	Sweep of FFT Det 1: Gain: Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Max limit: Sweep of FFT Det 1: Gain: Ch B	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Min limit: Sweep of FFT Det 1: 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: **PASSED**

Measured at 3/18/2021 10:01:18 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)	0.00280 %	<200 % >0 %
THD+N - relative (Channel B RMS)	0.00191 %	<200 % >0 %
Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/12th octave band-reject filter at the generator frequency		

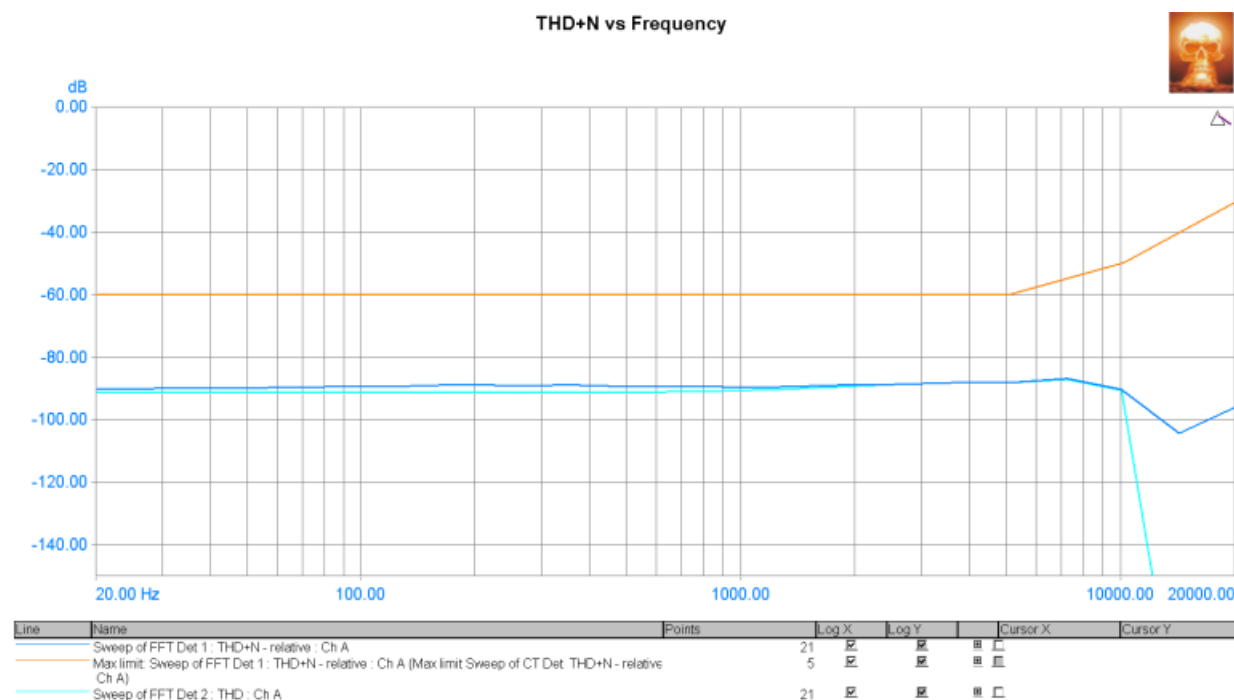
FFT Detector Readings		
THD (Channel A)	0.00265 %	<200 % >0 %
THD (Channel B)	0.00166 %	<200 % >0 %
FFTD 1 Settings: Self relative, 22 Hz - 20kHz AES17, unweighted with band-pass notch filters from the 2nd to 10th harmonics		
2nd Harmonic Distortion (Channel A)	0.00240 %	<200 % >0 %
2nd Harmonic Distortion (Channel B)	0.00123 %	<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)	0.00064 %	<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)	0.00279 %	<200 % >0 %
THD+N - relative (Channel B)	0.00191 %	<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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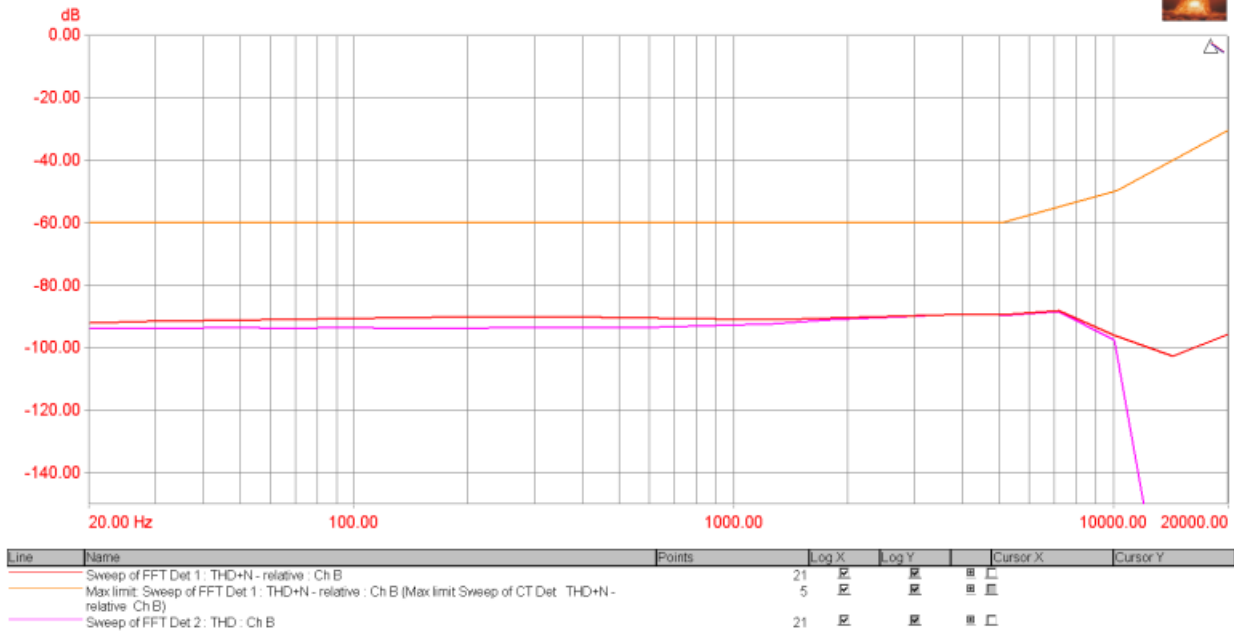
## A05 THD+N vs Freq: PASSED

Measured at 3/18/2021 10:01:30 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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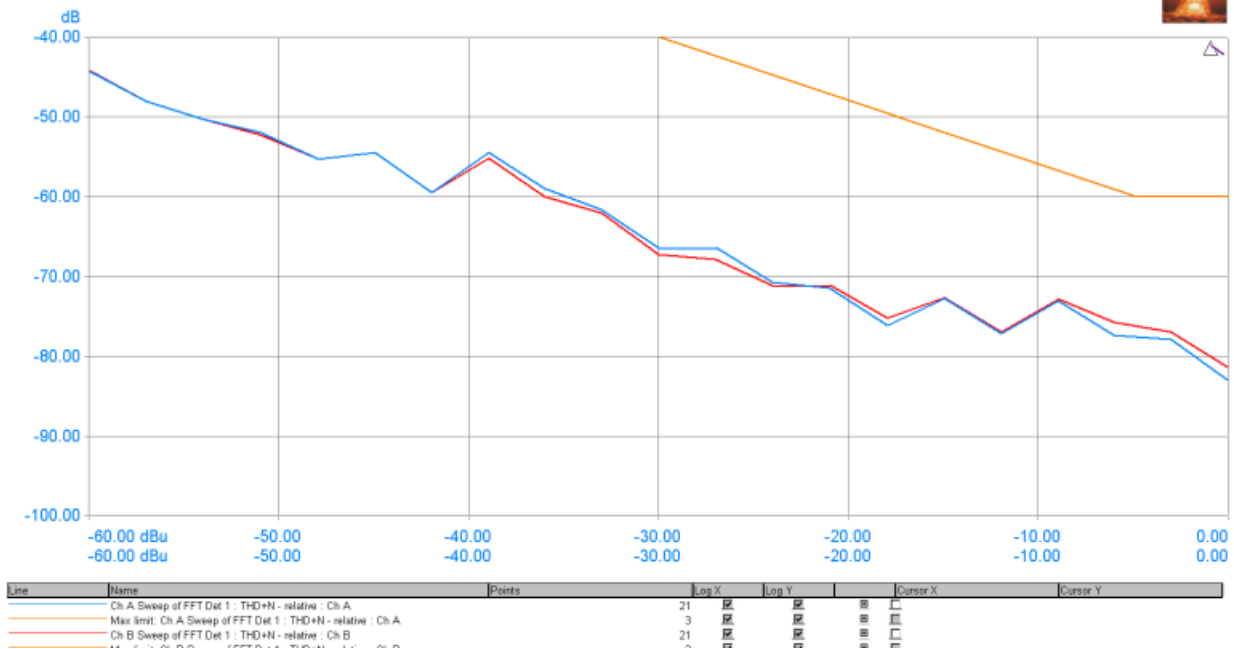
## A06 THD+N vs Ampl: PASSED

Measured at 3/18/2021 10:02:27 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 3/18/2021 10:02:51 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)	-54.109 dB	Not limit checked.
THD+N - relative (Channel B)	-54.126 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)	-108.538 dBu	Not limit checked.
Noise (residual) (Channel B)	-108.277 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	122.087 dB	< 150 dB > 60 dB
DAC DNR Residual Async	121.830 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 10:03:09 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)	-144.364 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 10:03:15 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)	-138.054 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		

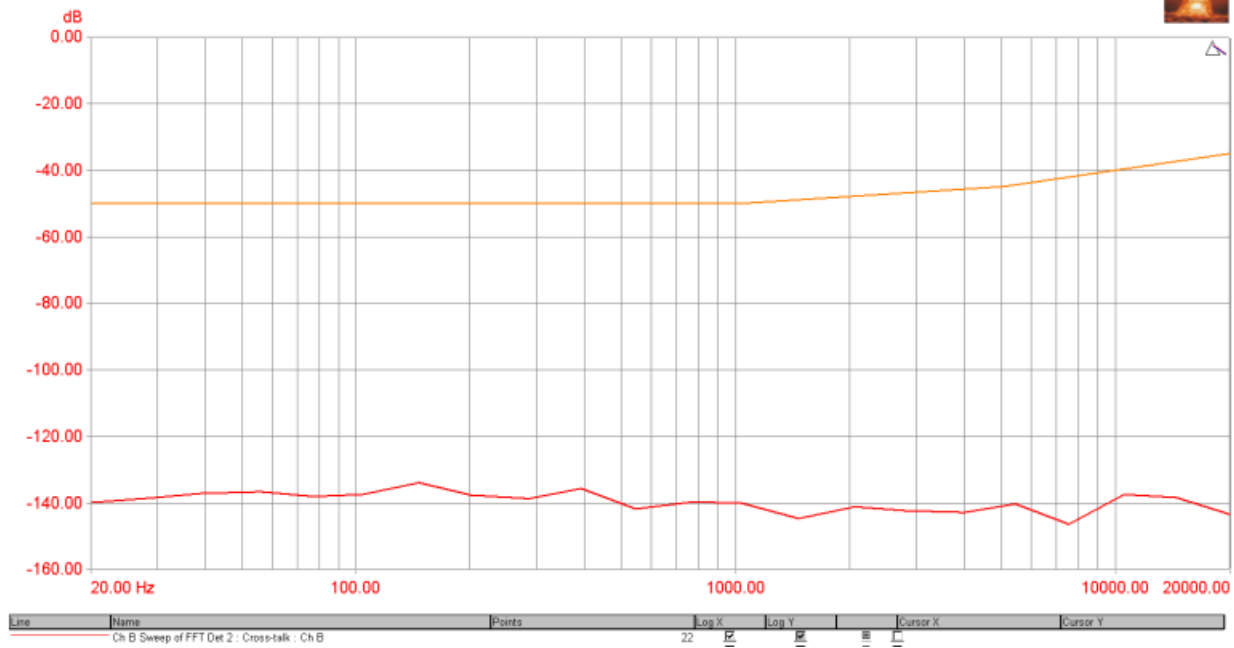
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## A10 Crosstalk A to B vs Freq: PASSED

Measured at 3/18/2021 10:03:21 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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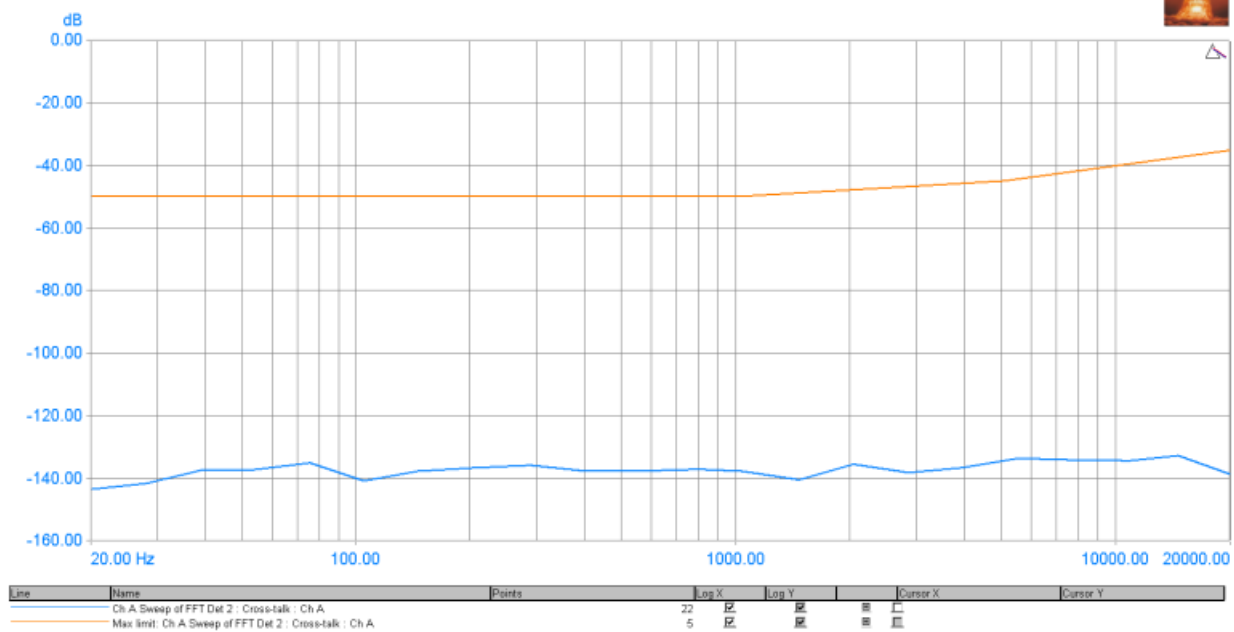
### A11 Crosstalk B to A vs Freq: PASSED

Measured at 3/18/2021 10:04:15 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 3/18/2021 10:05:08 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)

10.507 dBu

Not limit checked.

RMS amplitude (Non-selected : Ch A)

10.511 dBu

Not limit checked.

**CTA Readings**

THD+N - relative (Selected : Ch ARMS)

0.00298 %

< 0.075 %  
> 0.00000001 %

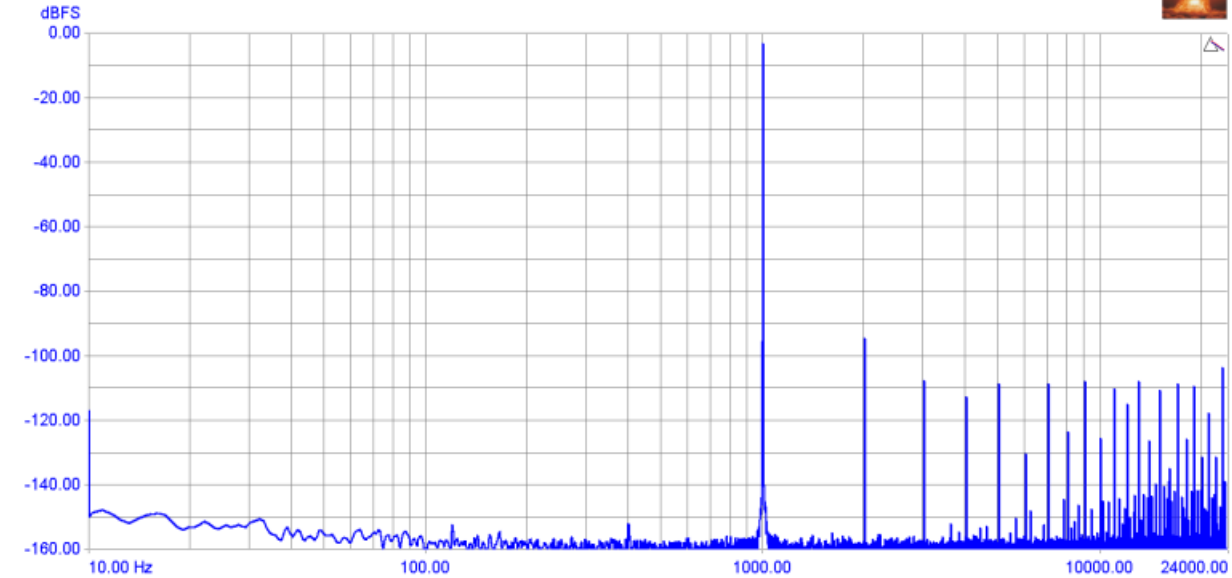
THD+N - relative (Non-selected : Ch ARMS)

0.00255 %

< 0.075 %  
> 0.00000001 %

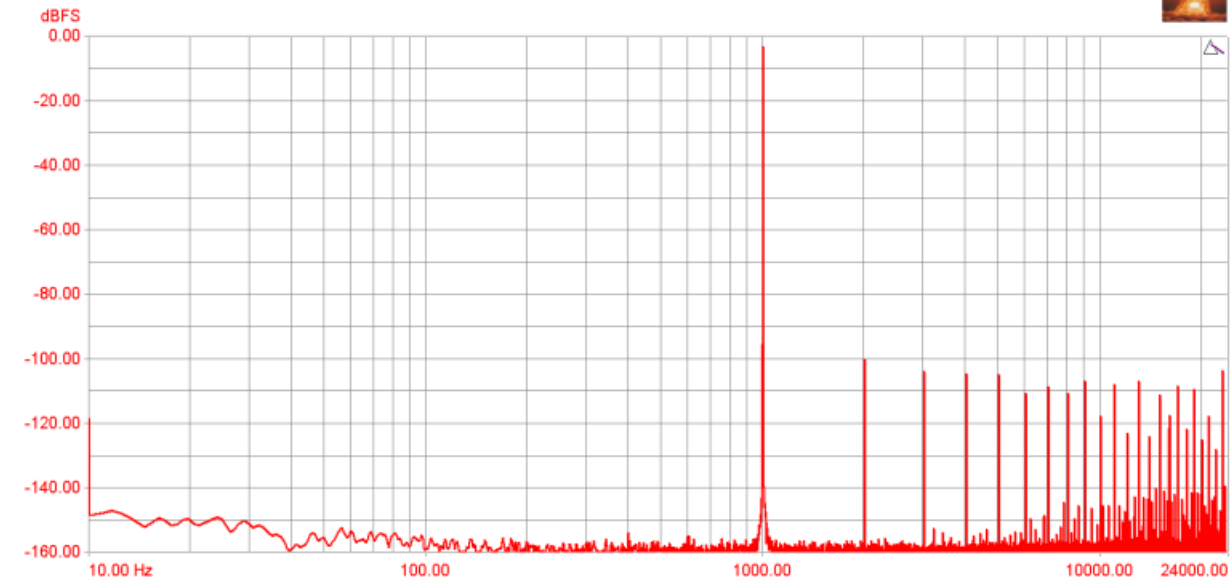
Settings: Self relative, 22 Hz - 20kHz AES17, unweighted RMS with 1/3rd octave band-reject filter at the input frequency

FFT 1000 Hz THD+N



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Live FFT Trace	32769 (64k FFT)				

FFT 1000 Hz THD+N



Line	Name	Points	Log X	Log Y	Cursor X	Cursor Y
1	Live FFT Trace	32769 (64k FFT)				

**FFT Detector Readings**

THD+N - relative (Channel A)

0.00311 %

Not limit checked.

THD+N - relative (Channel B)

0.00255 %

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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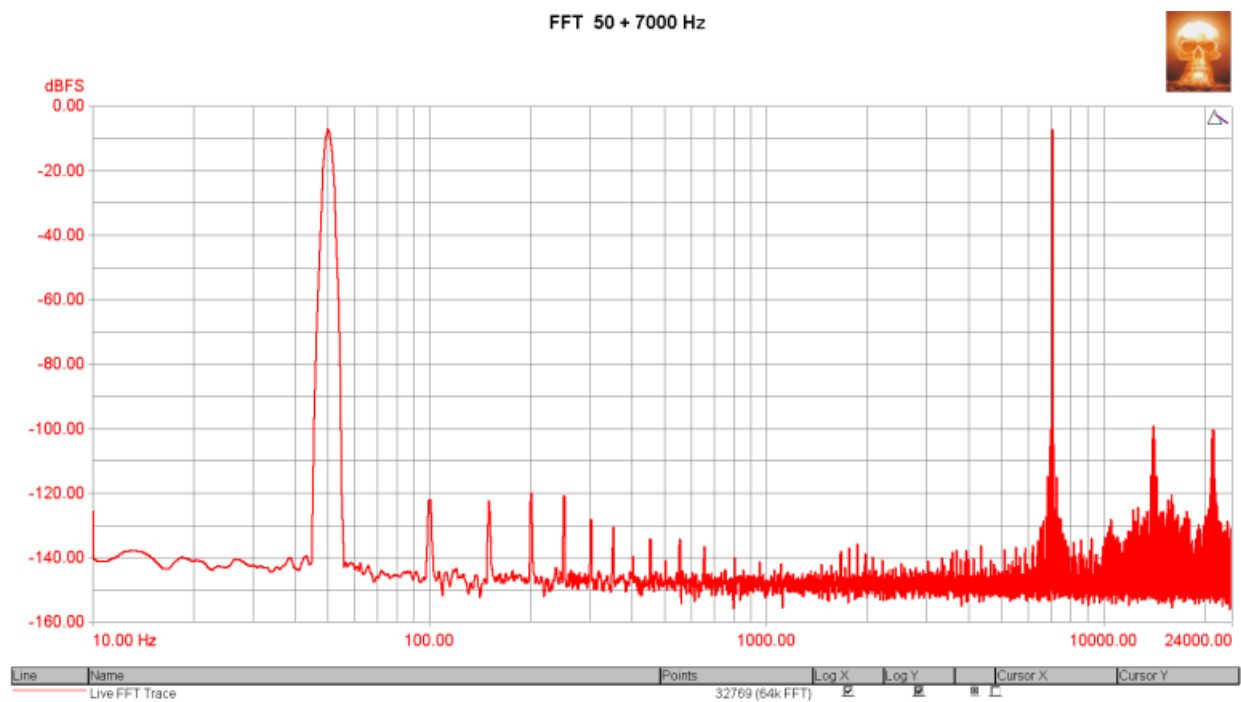
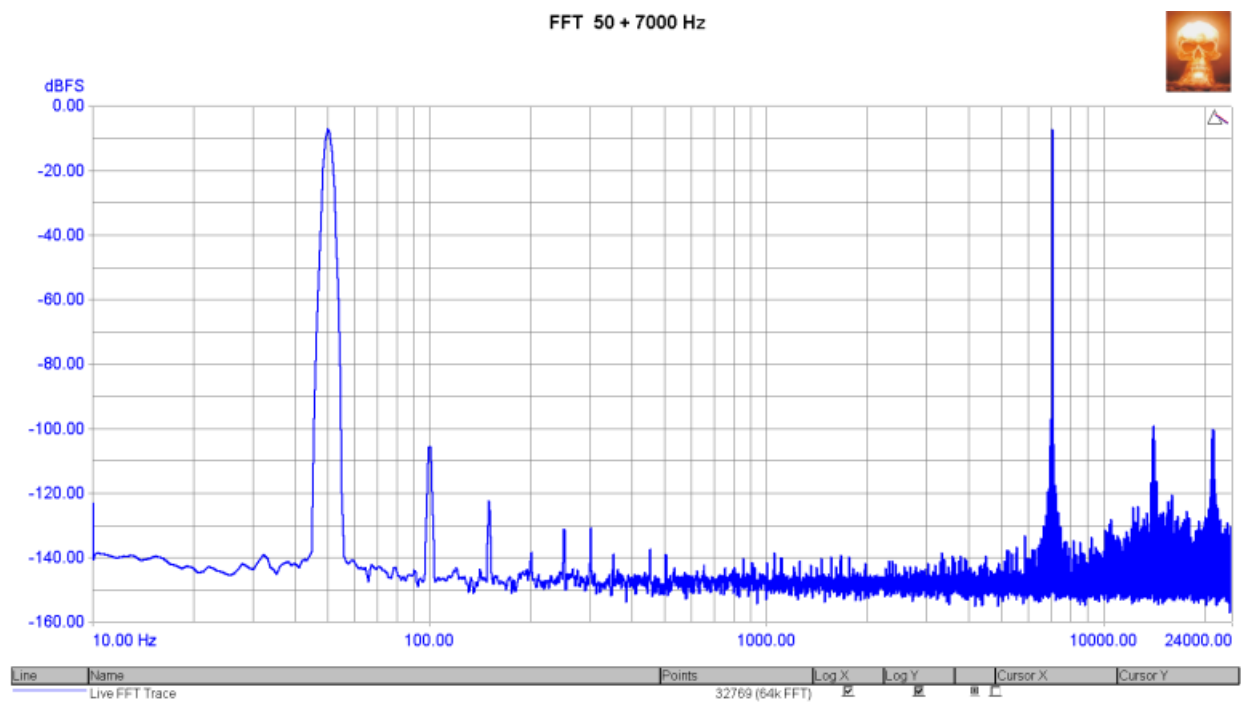


Measured at 3/18/2021 10:06:29 AM

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

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.00307 %	< 0.05 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.00224 %	< 0.05 % > 0 %
Settings: Self relative, 22 Hz - 22 kHz, unweighted RMS using SMPTE-DIN IMD demodulation.		



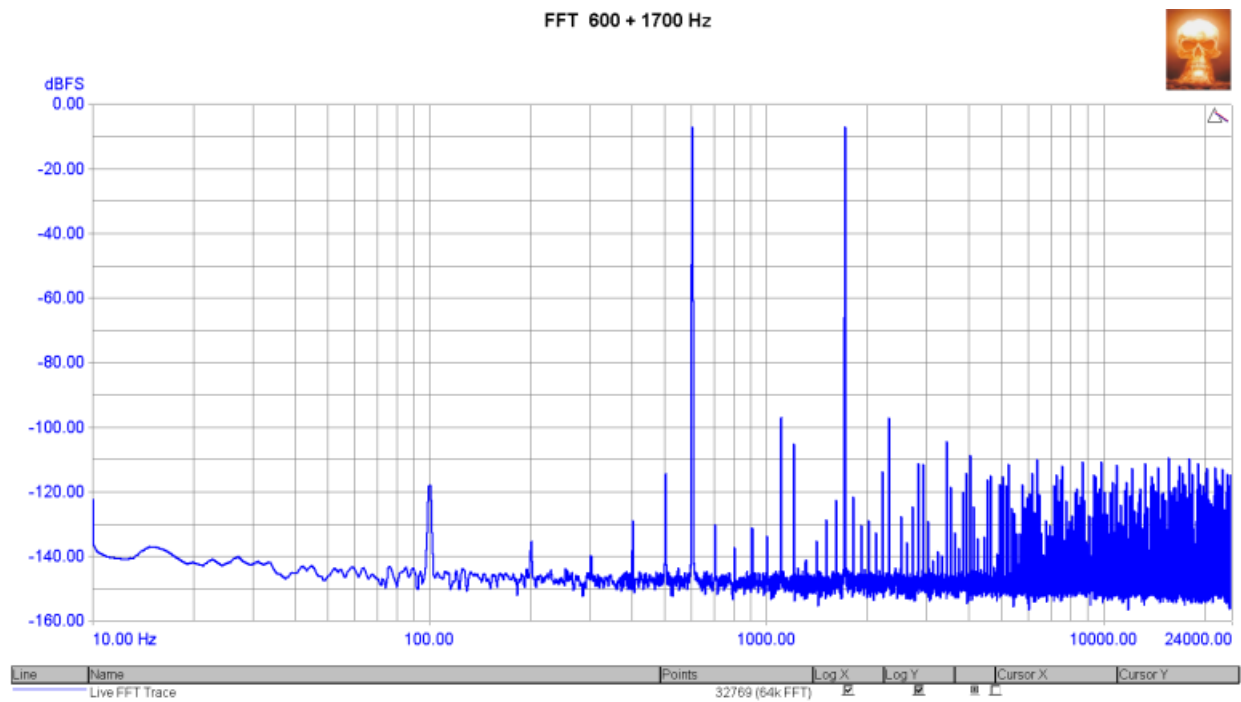
A14 FFT 600+1700 Hz: PASSED

Measured at 3/18/2021 10:06:52 AM

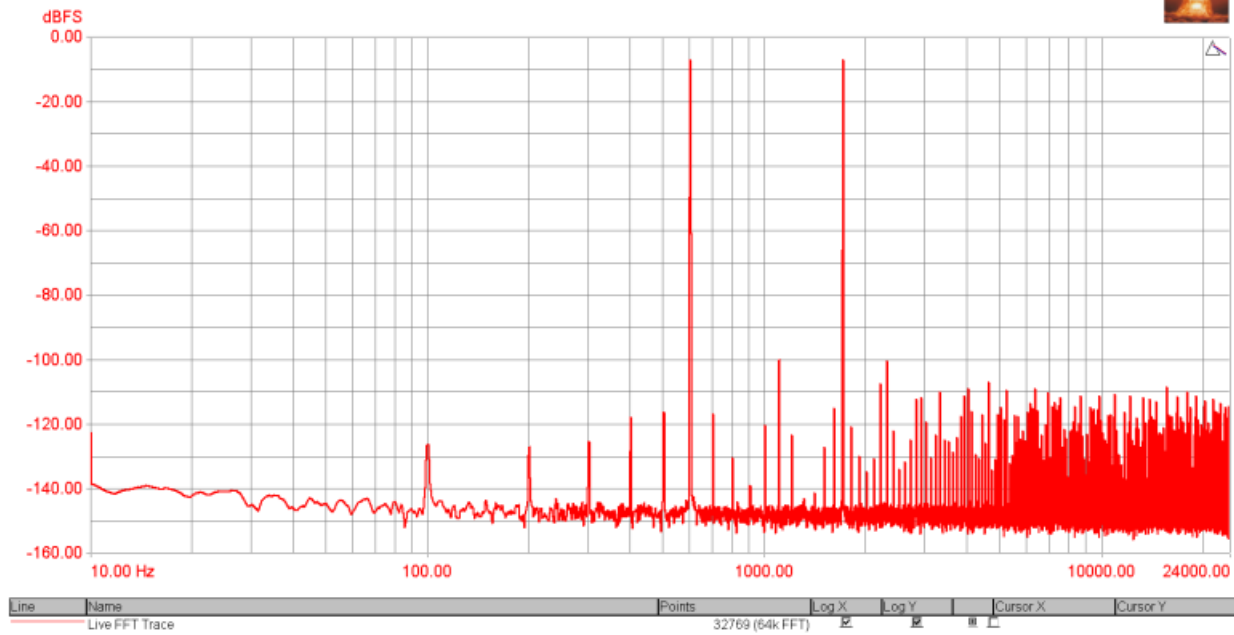
Generator Settings	
Channel A:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz
Channel B:	Twin-tone, -7 dBFS at 600 Hz and 1 amplitude ratio at 1700Hz

Signal Analyzer Readings		
RMS amplitude (Channel A)	9.525 dBu	Not limit checked.
RMS amplitude (Channel B)	9.509 dBu	Not limit checked.

CTA Readings		
IMD SMPTE-DIN (Channel A RMS)	0.01269 %	< 0.02 % > 0 %
IMD SMPTE-DIN (Channel B RMS)	0.01279 %	< 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 10:07:15 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

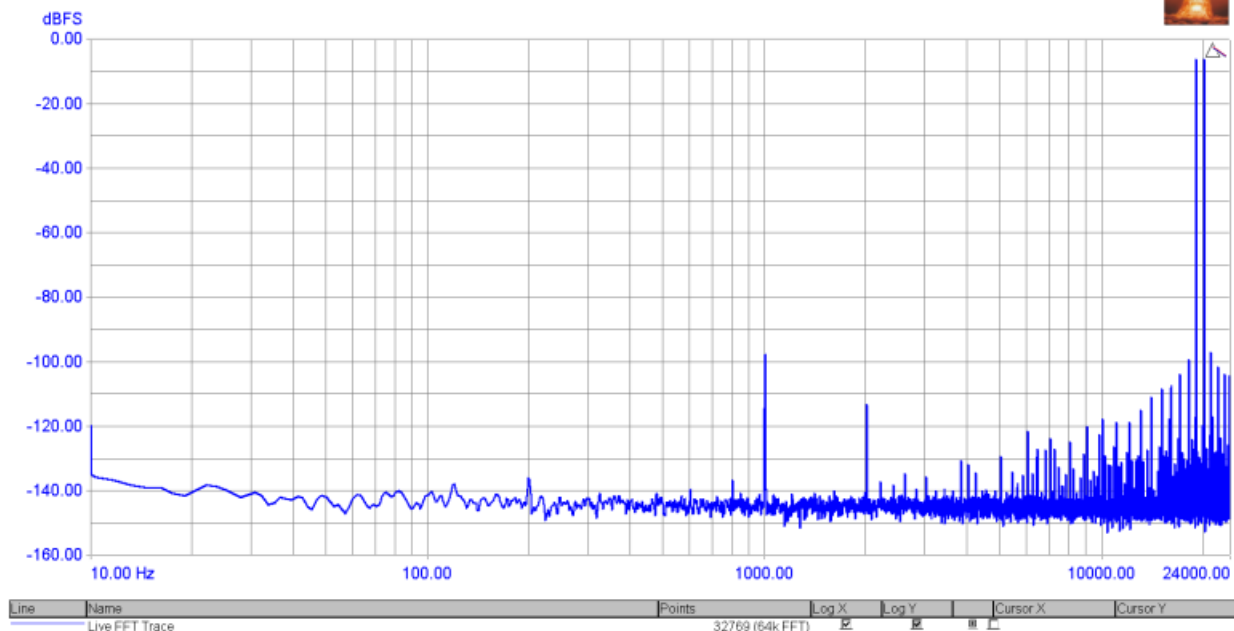
RMS amplitude (Channel A)	10.427 dBu	Not limit checked.
RMS amplitude (Channel B)	10.420 dBu	Not limit checked.

#### CTA Readings

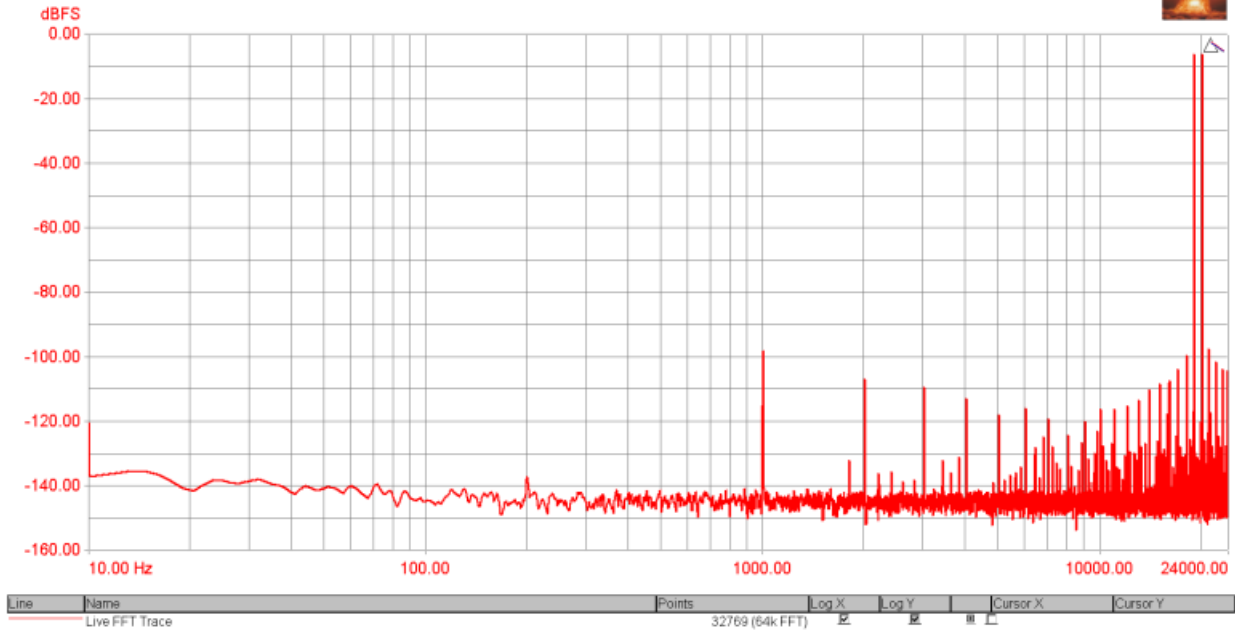
IMD CCIF (Channel A RMS)	0.00188 %	< 0.1 %
IMD CCIF (Channel B RMS)	0.00177 %	< 0.1 %

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)	0.00185 %	< 0.1 %
IMD CCIF (Channel B)	0.00173 %	< 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 10:07:36 AM

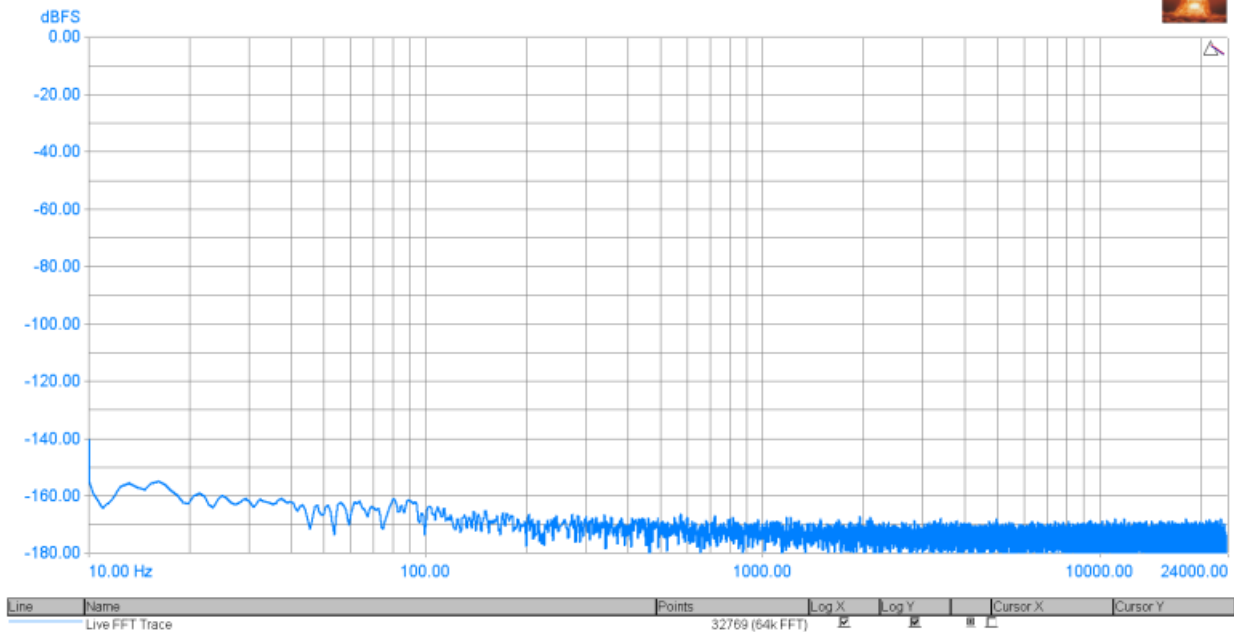
## Generator Settings

Channel A:	Off
Channel B:	Off

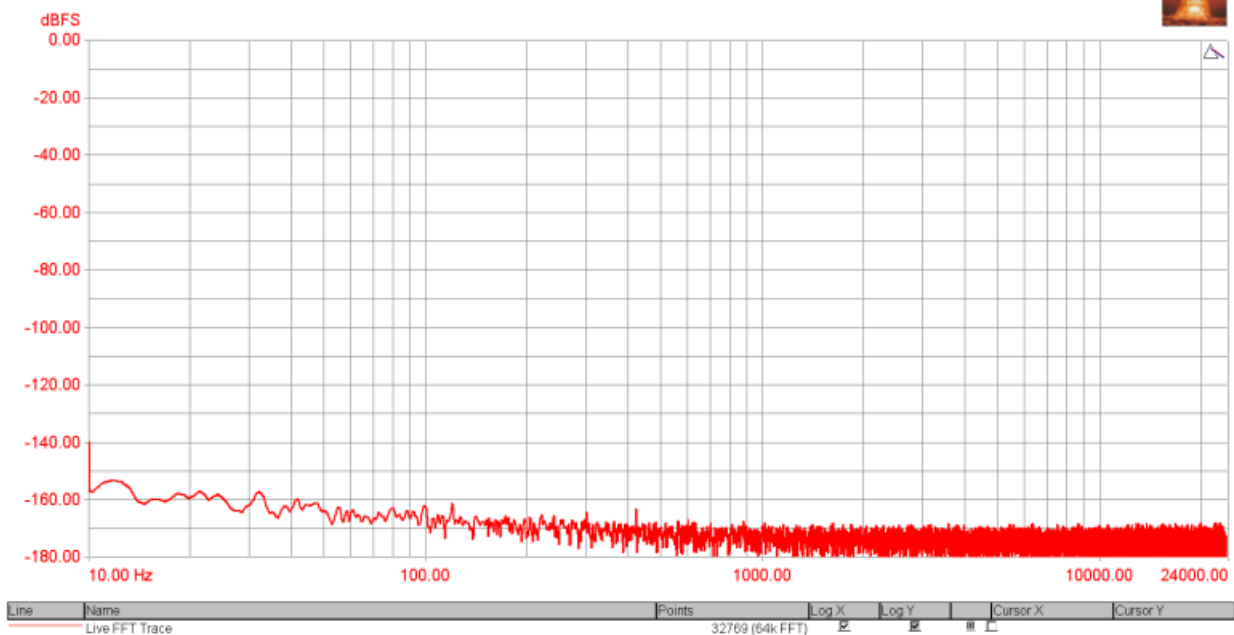
## Signal Analyzer Readings

RMS amplitude (Channel A)	-107.981 dBu	Not limit checked.
RMS amplitude (Channel B)	-108.129 dBu	Not limit checked.

# FFT residual noise



# FFT residual noise



## FFT Detector Readings

Noise (residual) (Channel A)	-132.934 dBFS	< -60 dBFS > -150 dBFS
Noise (residual) (Channel B)	-132.929 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 10:09:36 AM

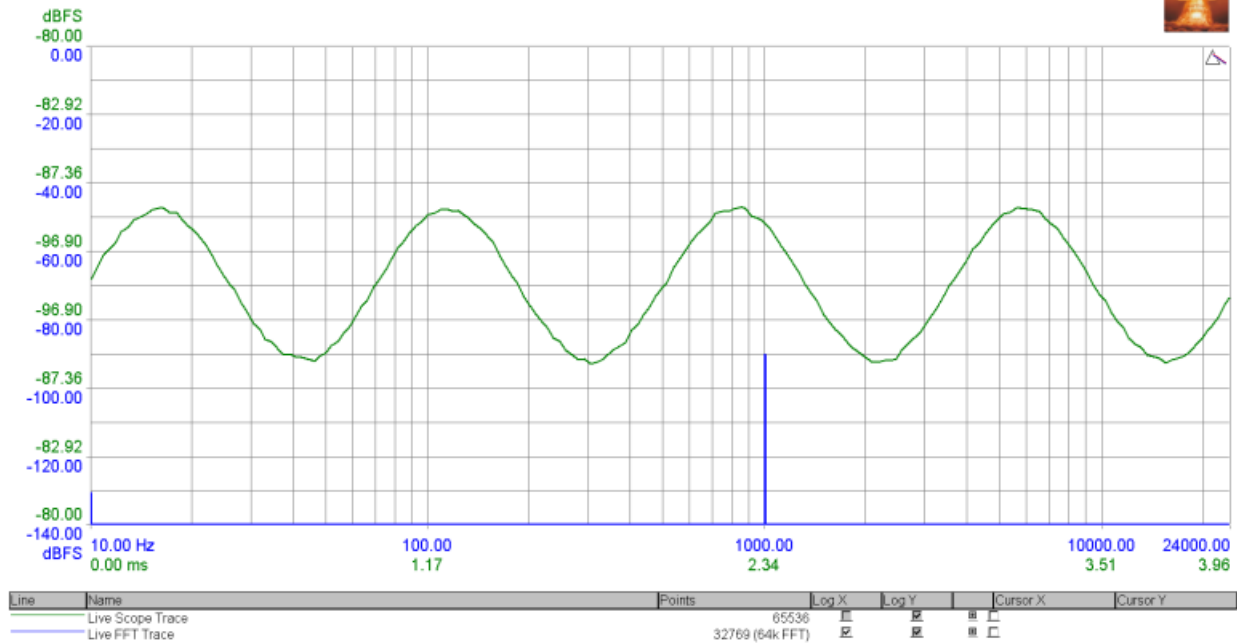
## Generator Settings

Channel A:	sine, -90 dBFS at 1000 Hz
Channel B:	sine, -90 dBFS at 1000 Hz

## Signal Analyzer Readings

RMS amplitude (Selected : Ch A)	-76.413 dBu	Not limit checked.
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# FFT -90 dBFS



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**A17a FFT -120 dBFS:** Not limit checked.

Measured at 3/18/2021 10:09:50 AM

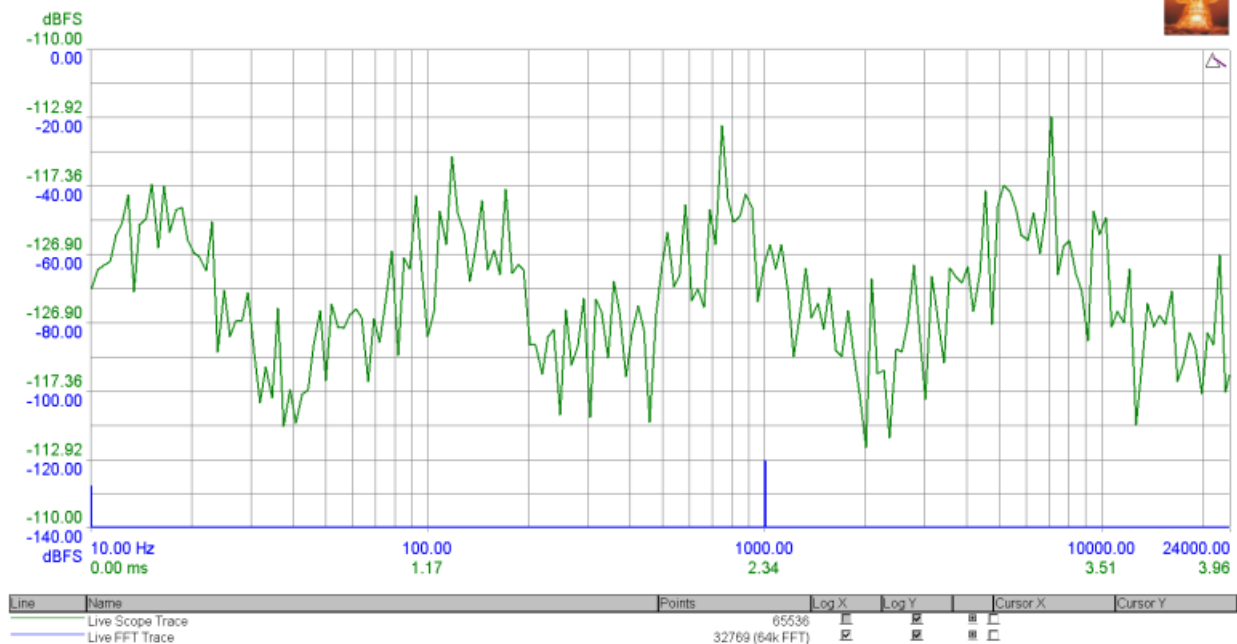
## Generator Settings

Channel A:	sine, -120 dBFS at 1000 Hz
Channel B:	sine, -120 dBFS at 1000 Hz

## Signal Analyzer Readings

RMS amplitude (Selected : Ch A)	-104.359 dBu	Not limit checked.
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# FFT -120 dBFS



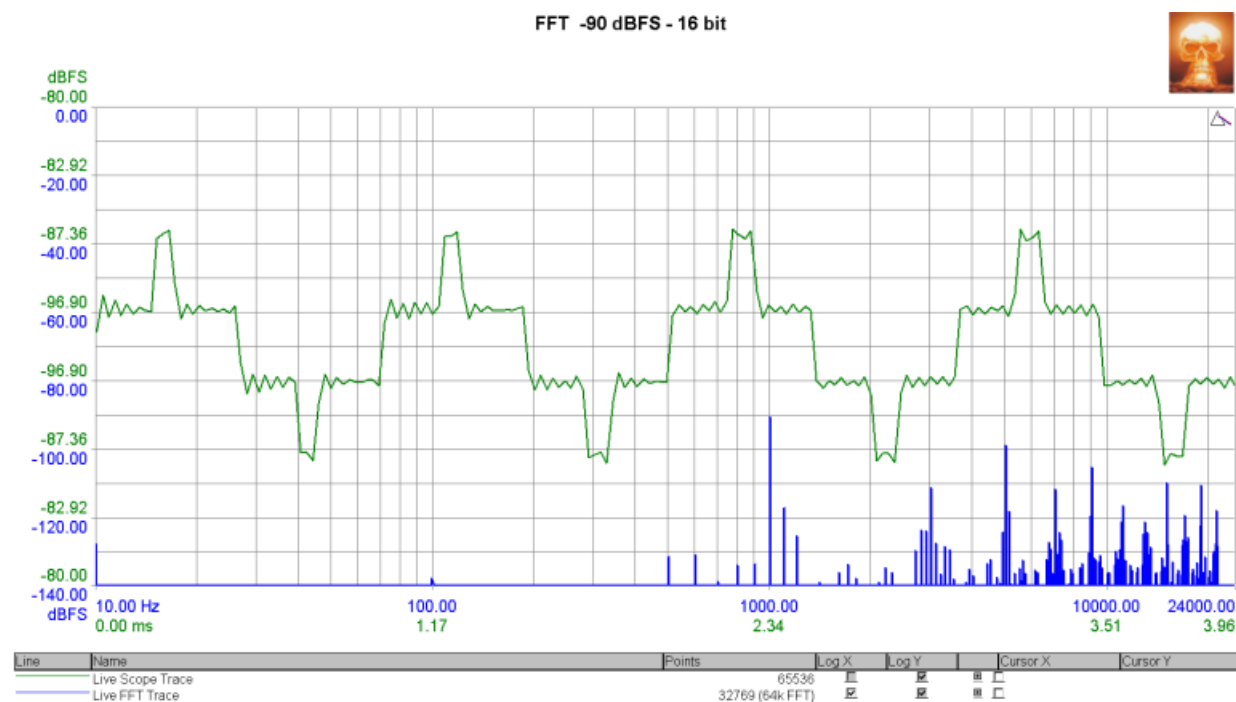
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**A18 FFT -90 dBFS 16 bit:** Not limit checked.

Measured at 3/18/2021 10:10:04 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)	-76.062 dBu	Not limit checked.

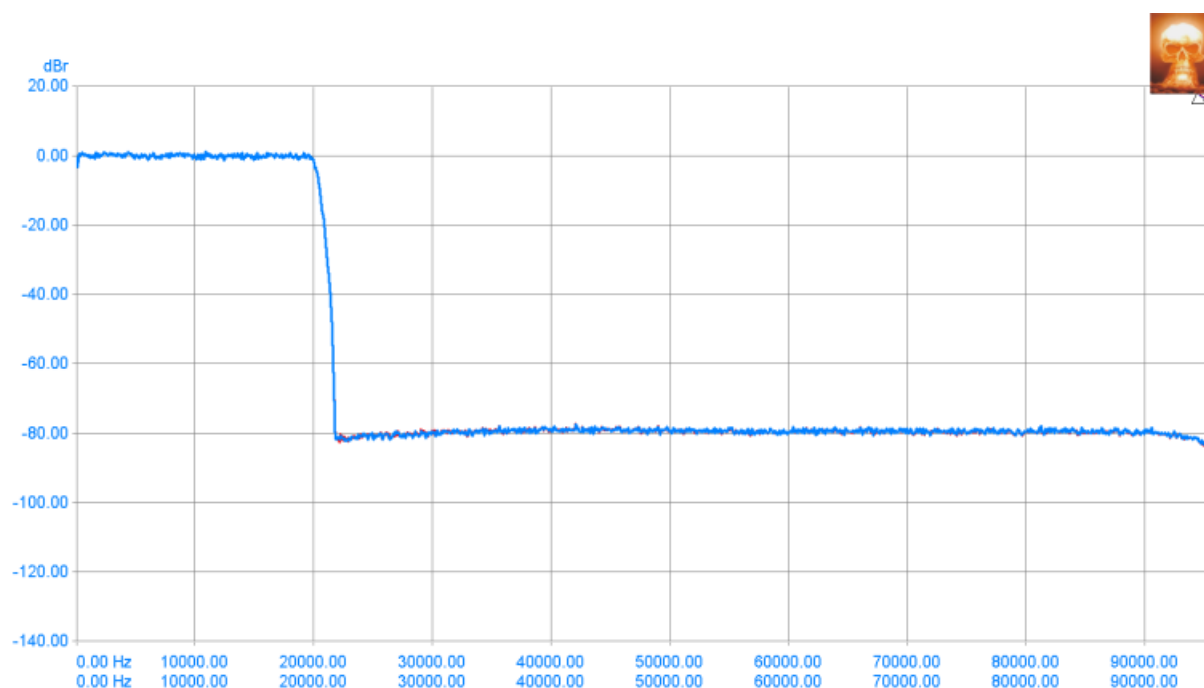


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**A19 FFT imaging:** Not limit checked.

Measured at 3/18/2021 10:10:18 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 3/18/2021 10:10:40 AM

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

