

SW51+ Mullard EF184 300R DISTORTION UNBAL REPORT

Overall Result: PASS

SUMMARY:	RESULT
A01 Tube Freq Resp 5Hz - 96KHz 0dBu	OK
A04 THD+N,THD, nth-HD 2 3 4 - THD+N minus 2nd and 3rd harmonics	✓
A07 Noise, SNR	✓
A16 FFT residual noise	✓
A17 Tube THD+N and 4+HD+N vs Ampl +10dBu start unBal	OK
A18 - gain linearity 4+HD+N - unBal output - 440Hz	OK
A19 - gain linearity 4+HD+N - unBal output - 40Hz	OK
A20_MT_Analogue_31Tones	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.

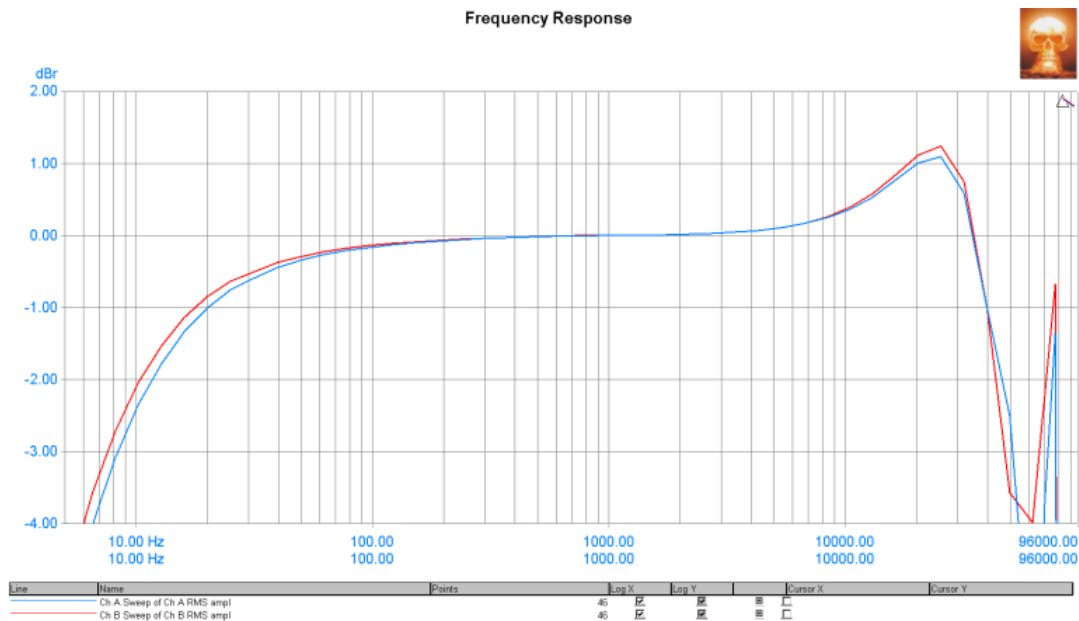
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A01 Tube Freq Resp 5Hz - 96KHz 0dBu: Not limit checked.

Measured at 10/31/2020 2:20:14 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	-0.208 dBu	Not limit checked.
RMS amplitude (Channel B)	0.206 dBu	Not limit checked.

CTA Readings		
Gain (Channel A RMS)	-0.209 dB	Not limit checked.
Gain (Channel B RMS)	0.206 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		



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

Measured at 10/31/2020 2:20:32 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	-0.204 dBu	Not limit checked.
RMS amplitude (Channel B)	0.209 dBu	Not limit checked.

CTA Readings

THD+N - relative (Channel A RMS)

0.36088 %

< 200 %

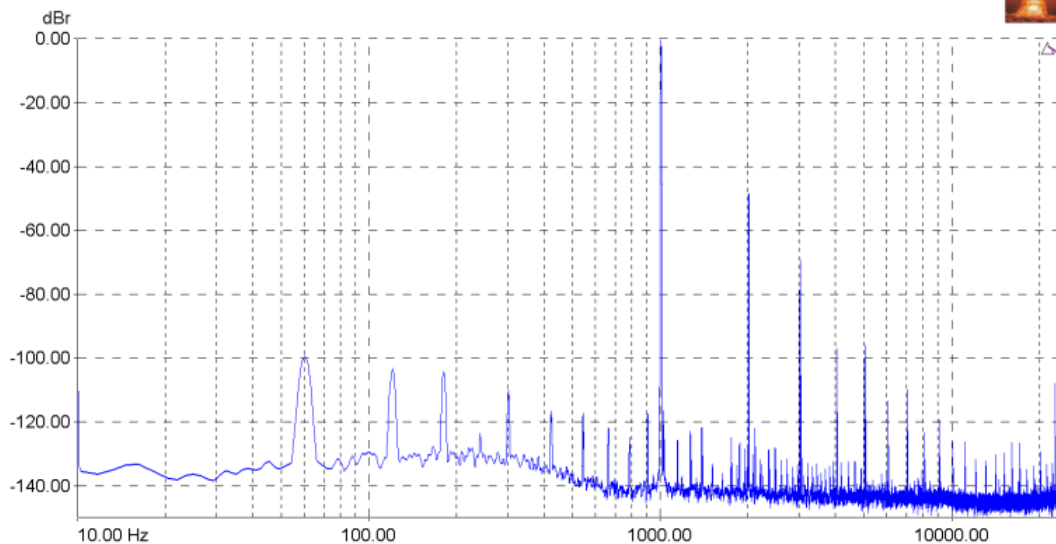
THD+N - relative (Channel B RMS)

0.41719 %

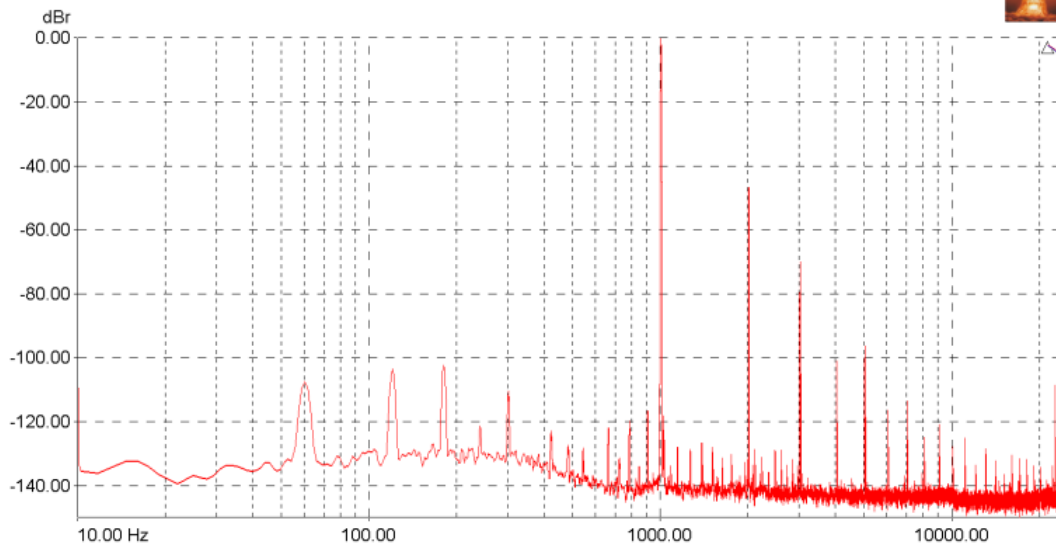
< 200 %

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

Distortion 1 KHz



Distortion 1 KHz



FFT Detector Readings		
THD (Channel A)	0.38894 %	< 200 % > 0 %
THD (Channel B)	0.44741 %	< 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)	0.38740 %	< 200 % > 0 %
2nd Harmonic Distortion (Channel B)	0.44641 %	< 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)	0.03451 %	< 200 % > 0 %
3rd Harmonic Distortion (Channel B)	0.02987 %	< 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)	0.00145 %	Not limit checked.
4th Harmonic Distortion (Channel B)	0.00086 %	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)	0.00161 %	Not limit checked.
5th Harmonic Distortion (Channel B)	0.00150 %	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)	0.00275 %	< 0.05 % > 0 %
4+HD + N (Channel B)	0.00217 %	< 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)	0.00110 %	< 0.017783 % > 0 %
Hum (Channel B)	0.00040 %	< 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)	0.00165 %	< 0.017783 % > 0 %
Noise (residual) (Channel B)	0.00128 %	< 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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A07 Noise, SNR: PASSED

Measured at 10/31/2020 2:21:35 PM

CTA Readings		
Amplitude (Channel A RMS)	-42.203 dBu	Not limit checked.
Amplitude (Channel B RMS)	-41.785 dBu	Not limit checked.
Settings: 22 Hz - 22 kHz, unweighted RMS		

FFT Detector Readings		
Noise (unweighted) (Channel A)	-106.941 dBr	< 200 dBr > -200 dBr
Noise (unweighted) (Channel B)	-109.218 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)	-107.030 dBr	< 200 dBr > -200 dBr
SNR (Channel B)	-109.346 dBr	< 200 dBr > -200 dBr
FFTD 2 Settings: 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the generator frequency		

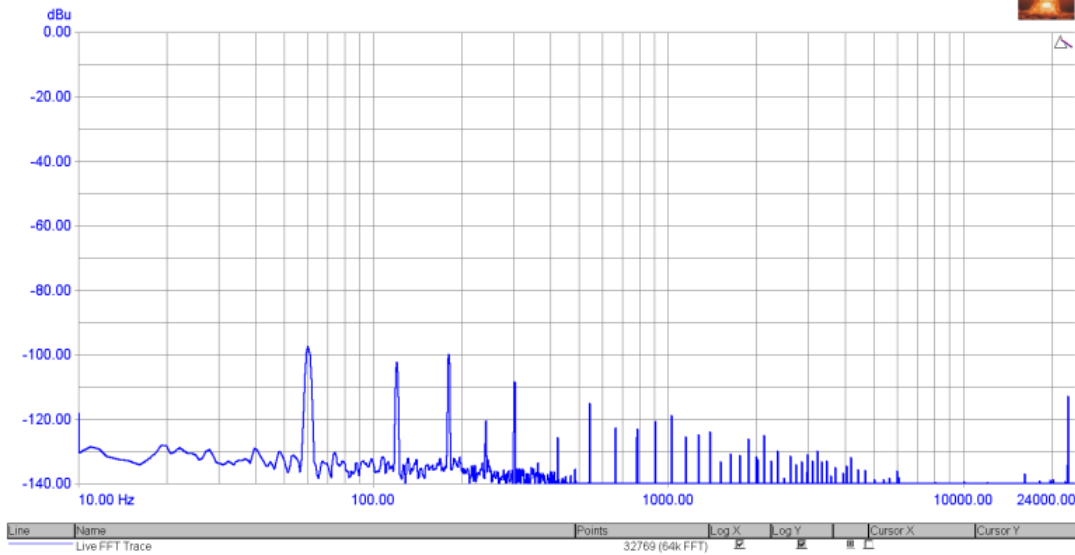
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A16 FFT residual noise: PASSED

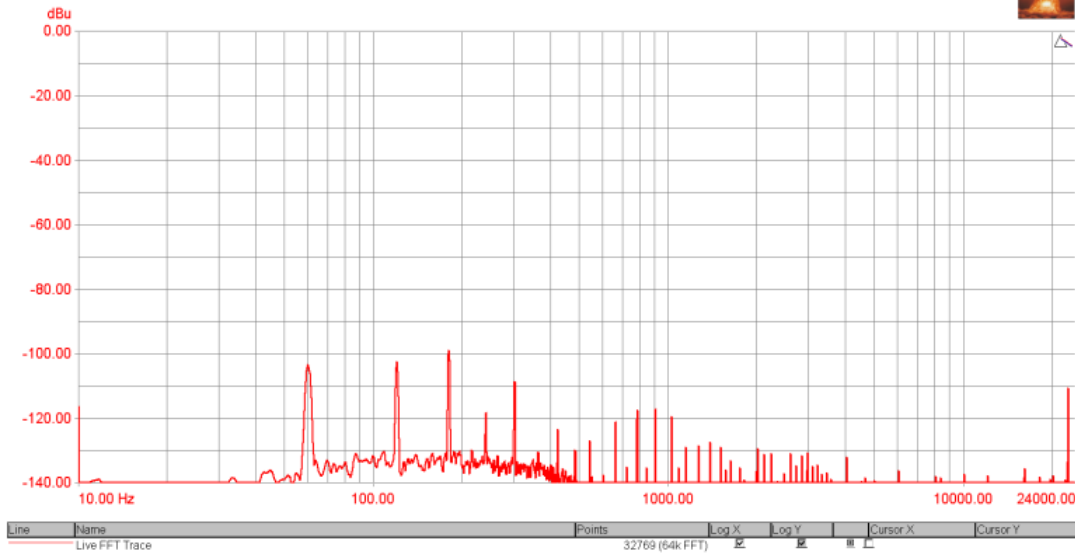
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Signal Analyzer Readings		
RMS amplitude (Channel A)	-88.679 dBu	Not limit checked.
RMS amplitude (Channel B)	-90.321 dBu	Not limit checked.

FFT residual noise



FFT residual noise



FFT Detector Readings

Noise (residual) (Channel A)	-94.169 dBu	< -80 dBu > -140 dBu
Noise (residual) (Channel B)	-95.636 dBu	< -80 dBu > -140 dBu
FFTD 1 Settings: 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 10th harmonic		

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A17 Tube THD+N and 4+HD+N vs Ampl +10dBu start unBal: Not limit checked.

Measured at 10/31/2020 2:22:59 PM

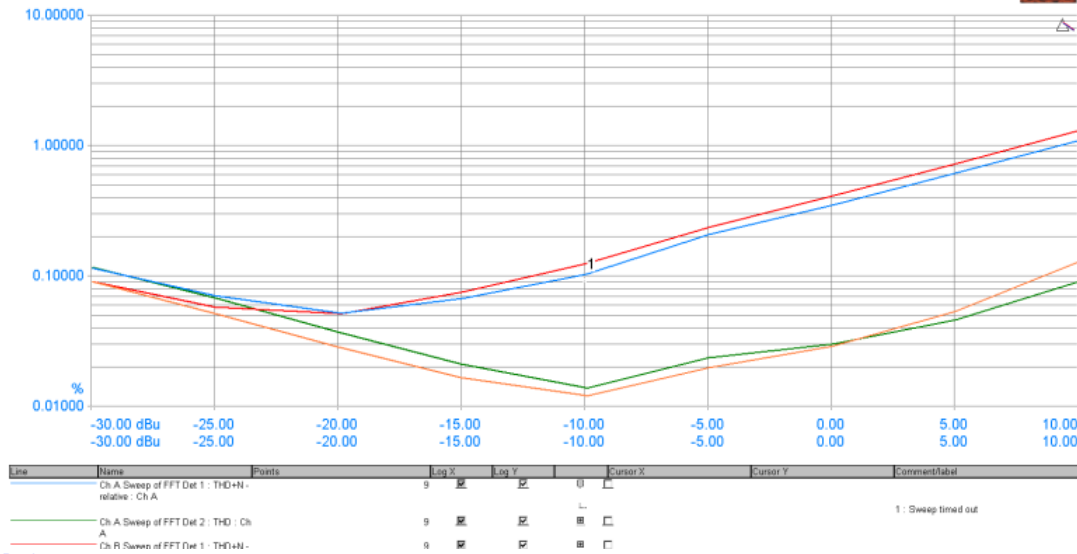
CTA Readings

Amplitude (Channel A RMS)	-0.203 dBu	Not limit checked.
Amplitude (Channel B RMS)	0.213 dBu	Not limit checked.
Settings: 22 Hz - 22 kHz, unweighted RMS		

FFT Detector Readings

THD+N - relative (Channel A)	0.351 %	Not limit checked.
THD+N - relative (Channel B)	0.424 %	Not limit checked.
FFTD 1 Settings: Self relative, 22 Hz - 22 kHz, unweighted with 1/3rd octave band-reject filter at the input frequency		
4+HD+N	0.022 %	Not limit checked.
4+HD+N	0.024 %	Not limit checked.
FFTD 2 Settings: Self relative, 22 Hz - 22 kHz, unweighted with band-reject notch filters, fundamental to the 2nd harmonic		

THD+N and 4+HD+N vs Amplitude


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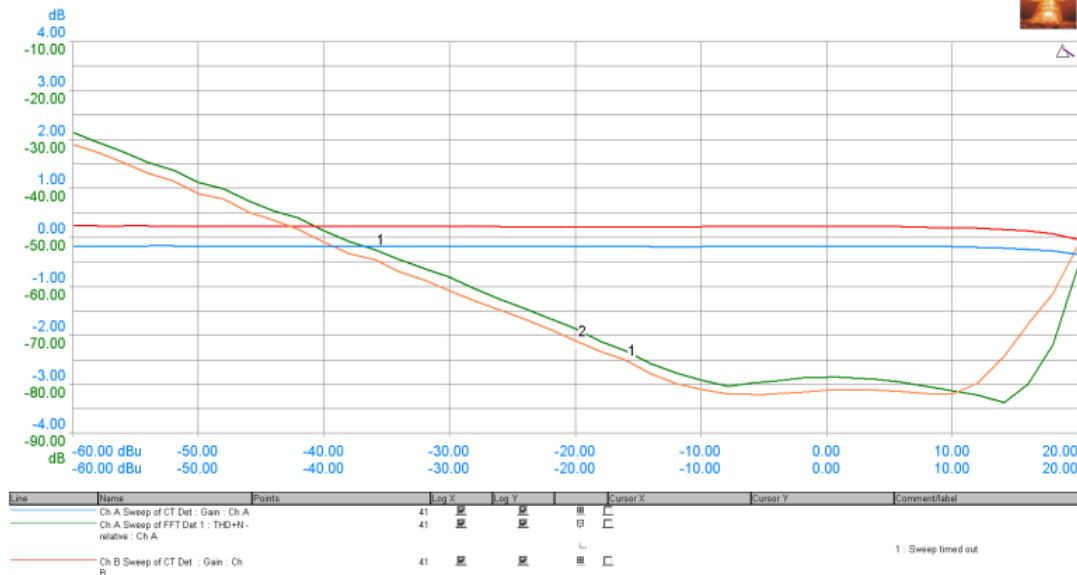
A18 - gain linearity 4+HD+N - unBal output - 440Hz: Not limit checked.

Measured at 10/31/2020 2:24:07 PM

Signal Analyzer Readings		
Frequency (Channel A)	440.000 Hz	Not limit checked.

CTA Readings		
Gain (Channel A RMS)	-0.199 dB	Not limit checked.
Gain (Channel B RMS)	0.220 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

Gain Linearity and 4+HD+N vs Amplitude - 440 Hz

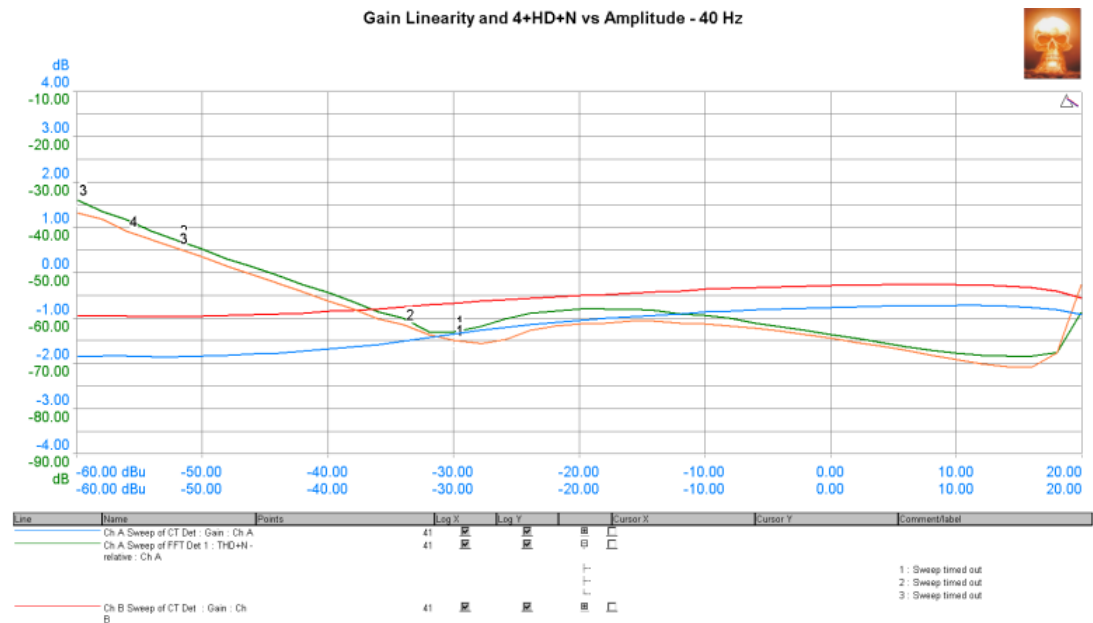

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A19 - gain linearity 4+HD+N - unBal output - 40Hz: Not limit checked.

Measured at 10/31/2020 2:25:22 PM

Signal Analyzer Readings		
Frequency (Channel A)	40.000 Hz	Not limit checked.

CTA Readings		
Gain (Channel A RMS)	-0.776 dB	Not limit checked.
Gain (Channel B RMS)	-0.293 dB	Not limit checked.
Settings: Generator relative, 22 Hz - 22 kHz, unweighted RMS with 1/3rd octave band-pass filter at the generator frequency		

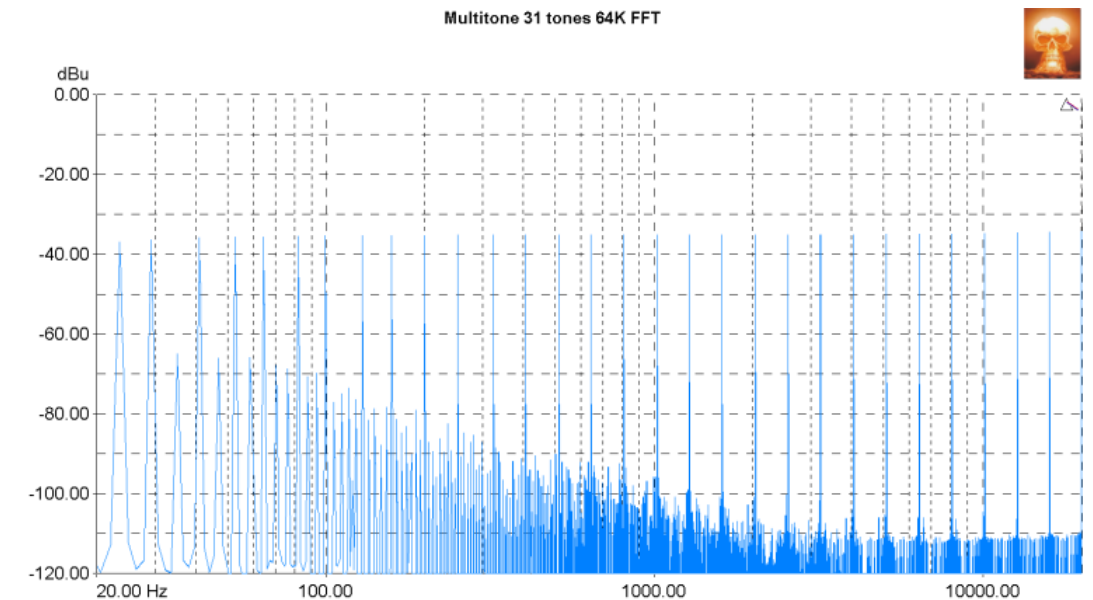


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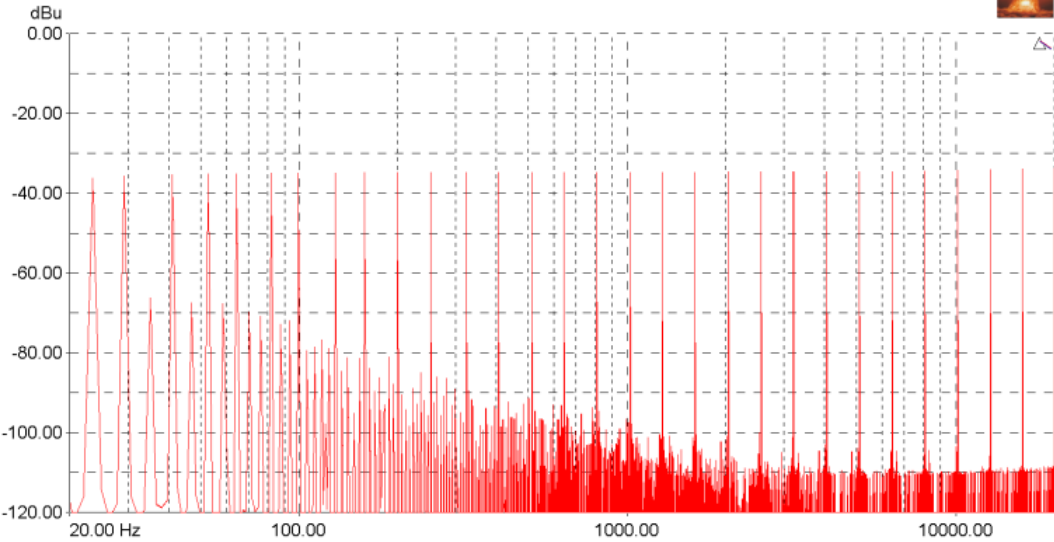
A20_MT_Analogue_31Tones: Not limit checked.

Measured at 10/31/2020 2:26:35 PM

Signal Analyzer Readings		
RMS amplitude (Channel A)	-21.089 dBu	Not limit checked.
RMS amplitude (Channel B)	-18.887 dBu	Not limit checked.



Multitone 31 tones 64K FFT



FFT Detector Readings		
User: TD (Channel A)	106.615 dB	Not limit checked.
User: TD (Channel B)	104.630 dB	Not limit checked.
FFTD 1 Settings: User: TD		
User: Noise (Channel A)	-83.963 dBu	Not limit checked.
User: Noise (Channel B)	-84.461 dBu	Not limit checked.
FFTD 2 Settings: User: Noise		
User: TD+N (Channel A)	106.615 dB	Not limit checked.
User: TD+N (Channel B)	104.630 dB	Not limit checked.
FFTD 3 Settings: User: TD+N		
User: LF Rolloff (Channel A)	-10.291 dB	Not limit checked.
User: LF Rolloff (Channel B)	-16.850 dB	Not limit checked.
FFTD 4 Settings: User: LF Rolloff		
User: HF Rolloff (Channel A)	1.534 dB	Not limit checked.
User: HF Rolloff (Channel B)	-2.010 dB	Not limit checked.
FFTD 5 Settings: User: HF Rolloff		