SmallDSP AES17 Measurements:

0 dBFS = 2VRMS

6.2.1 Maximum input level:
Test setup max input level used.
ChA: 8.224 dBu; 1.9966 VRMS
ChB: 8.227 dBu; 1.9972 VRMS

6.X.X Input Full-scale amplitude:
ChA: 7.355 dBu; 1.8064 VRMS
ChB: 7.351 dBu; 1.8057 VRMS

6.2.2 Gain:
ChA: -0.591 dB
ChB: -0.676 dB

6.2.3 Frequency response:
Ch_X_Frequency_response.csv

6.2.4 Gain matching between channels:
TODO (calculate out of frequency response)

6.2.5 Gain Stability:
TODO (>1h)

6.2.6 Maximum output level:
ChA: 7.241 dBu; 1.7830 VRMS
ChB: 7.168 dBu; 1.7681 VRMS

6.X.X Input Full-scale amplitude:
ChA: 6.737 dBu; 1.6824 VRMS
ChB: 6.672 dBu; 1.6698 VRMS

6.X.X Maximum level:
measured against frequency (Ch_X Max_level_vs_freq.csv)
Note: ChA 0.3dB compression at 20kHz.

6.2.7 Inter-channel phase response:
Inter-channel_phase_response.csv

6.2.8 Polarity:
ChA: Non-inverting
ChB: Non-inverting

6.3.2 THD+N vs frequency:
Ch_X_THD+N_vs_freq_at_-XX_dBFS.csv

6.X.X THD+N vs level:
Ch_X_THD+N_vs_level.csv

6.3.5 Difference-frequency distortion:
ChA:
2nd order (2kHz): -70.370 dB
lower 3rd order (16kHz): -61.711 dB
upper 3rd order (22kHz): -60.935 dB
lower fundamental (18kHz): -2.977 dB
ChB:
2nd order (2kHz): -70.389 dB
lower 3rd order (16kHz): -63.099 dB
upper 3rd order (22kHz): -61.894 dB
lower fundamental (18kHz): -2.981 dB

6.3.6 Modulation distortion:
ChA:
Lower modulation sideband (7.952kHz): -80.490 dB
Upper fundermental (7.993kHz): -12.303 dB
Upper modulation sideband (8.034kHz): -80.160 dB
ChB:
Lower modulation sideband (7.952kHz): -80.355 dB
Upper fundermental (7.993kHz): -12.304 dB
Upper modulation sideband (8.034kHz): -80.006 dB

6.3.7 Gain non-linearity:
Ch_X_Gain_non-linearity.csv
Worst case deviation from gain at -5 dBFS input:
ChA: -0.331 dB
ChB: -0.097 dB

6.4.1 Signal-to-noise ratio:
ChA: -98.252 dBFS CCIR-RMS
ChB: -98.475 dBFS CCIR-RMS

6.4.2 Idle channel noise:
ChA: -98.12 dBFS CCIR-RMS
ChB: -97.98 dBFS CCIR-RMS
Spectrum: Ch_X_Idle_channel_noise.csv

6.4.3 Out-of-band noise and spurious level:
ChA: -99.086 dBFS
ChB: -98.270 dBFS

6.4.4 Signal modulation noise:
TODO

6.4.5 Low-level noise modulation:

Ch_X_Low-level_noise_modulation.csv

Worst case:

ChA: 5.143 dB

ChB: 4.036 dB

6.5.1 Power line (mains) related products:

ChA: -117.621 dBFS; 2.6uVRMS

ChB: -117.487 dBFS; 2.7uVRMS

6.5.2 Inter-channel crosstalk ratio:

Ch_X_from_X_Crosstalkseparation.csv

6.5.3 Non-linear crosstalk: High frequency:

ChA:

2nd order IM component (3kHz): -52.823 dB

3rd order IM component (6kHz): -66.221 dB

ChB:

2nd order IM component (3kHz): -51.706 dB

3rd order IM component (6kHz): -66.088 dB

6.5.4 Non-linear crosstalk: Low frequency:

ChA:

2nd order IM component (10.040kHz): -55.030 dB

3rd order IM component (10.080kHz): -58.143 dB

ChB:

2nd order IM component (10.040kHz): -55.218 dB

3rd order IM component (10.080kHz): -58.180 dB

6.5.5 input-to-output leakage:

Test setup input-to-output leakage used.

Ch_X_Input-to-output_leakage.csv

6.6.6 Attenuation of alias products:

Ch_X_Attenuation_of_alias_products.csv

6.6.7 Attenuation of image products:

Ch_X_Attenuation_of_image_products.csv

Worst case:

ChA: -95.379 dBFS

ChB: -94.938 dBFS

6.6.8 Overload behaviour:

ChA:

Overload distortion: 37.998 dB

THD+N reading at +3 dBFS: -15.268 dB

THD+N reading at -3 dBFS: -53.256 dB

ChB:

Overload distortion: 39.486 dB

THD+N reading at +3 dBFS: -15.656 dB

THD+N reading at -3 dBFS: -55.142 dB

6.8.2 Delay through device:

1.26ms

6.8.3 Input-to-output phase response:

Ch_X_Input-to-output_phase_response.csv

ChB TODO

6.8.4 Group delay vs frequency:

compute out of 6.8.3

TODO