

X-Altra Mini // Discrete Line Stage

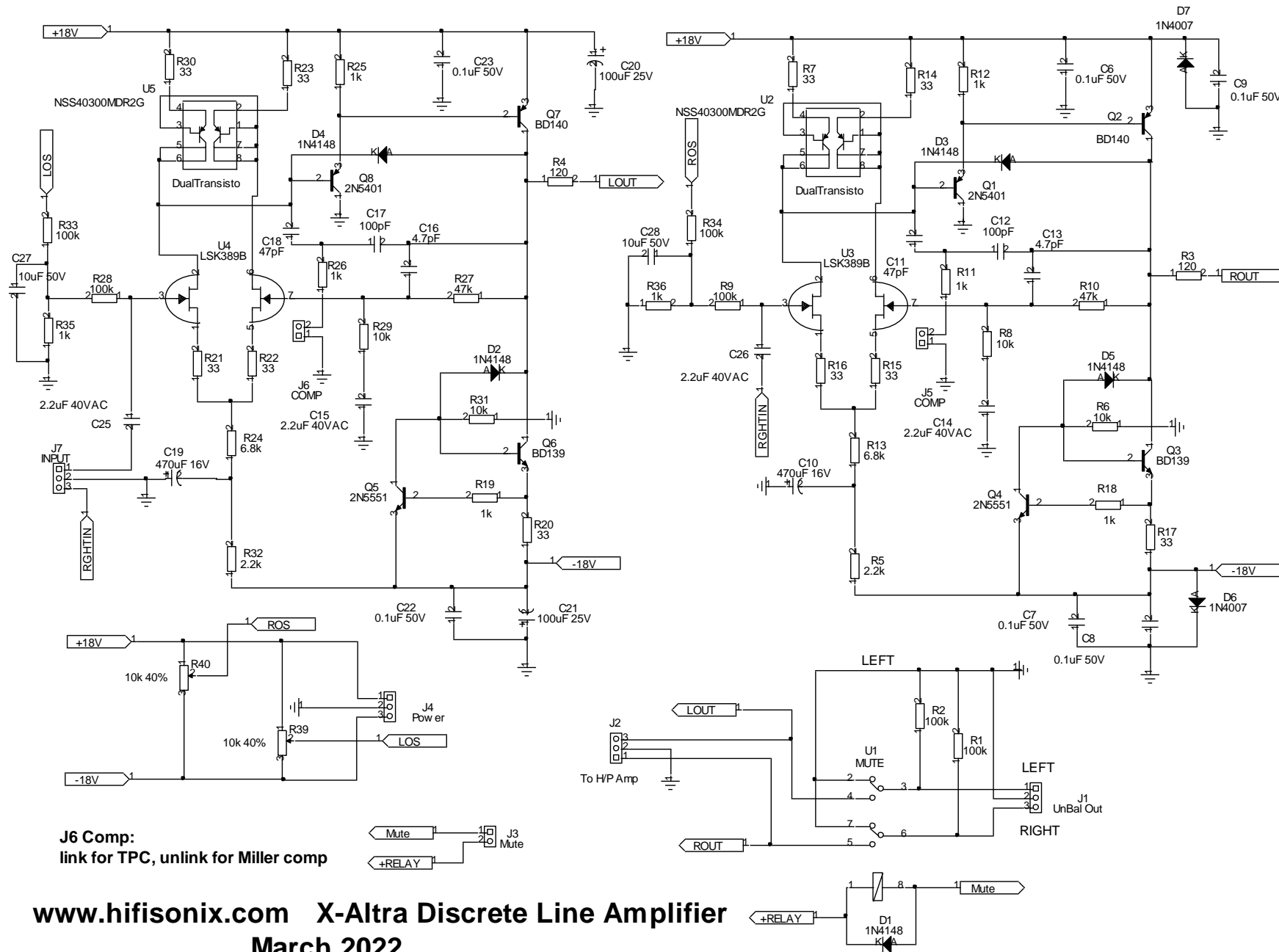
All measurements taken on 15 January 2022

All measurements taken with 2k load

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General Remarks – X-ultra Mini // class A Discrete Line Stage

- All measurements with 2k Load and TPC
- Measured distortion below 12ppm for outputs up to 9 V RMS at 1kHz
- Distortion <3.5ppm at 2.5 V RMS out into 2k
- Below 5V RMS out, distortion components 2, 3rd and 4th
- 19kHz+20kHz IMD at 2V RMS output c. -120 dB
- Gain is 5.7x
- dBV/rt Hz Spot noise floor (50 Ohm Rsource) ref 1V RMS out is -135 dB at 1kHz
- Noise floor (50 Ohm Rsource) ref 2 V RMS out -143 dB at 1kHz
- 20 Hz-20kHz +0 dB -0.1dB
- Current consumption is 25mA per channel
- Supply voltage +-18V



FFT: 256k
Avg: 16 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

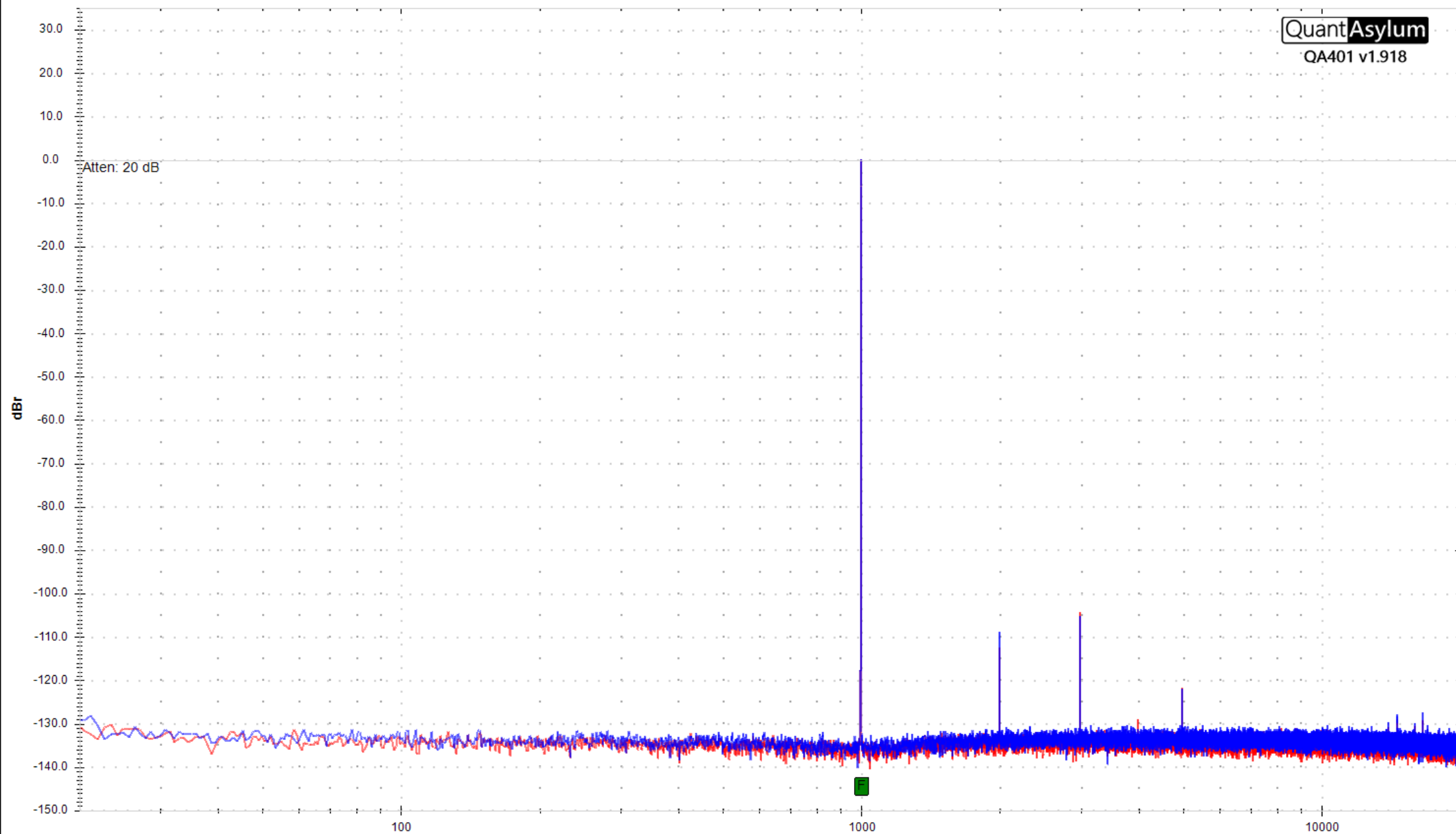
Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

Peak L: 0.00 dBr
Peak R: 0.01 dBr
Peak L: 5.253 Vrms
Peak R: 5.257 Vrms
THD L: -103.5 dB/ 0.00067%
THD R: -103.5 dB/ 0.00067%

Gen 1: 999.0234 Hz @ 5.6 dBr
Gen 2: 20.00024 KHz @ 5.6 dBr

Phase L: 0.32 deg
Phase R: 0.30 deg
Delay L: 9.22 uSec
Delay R: 9.25 uSec
Gain L: 14.42 dB
Gain R: 14.42 dB

TPC Compensation



FFT: 256k
Avg: 31 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

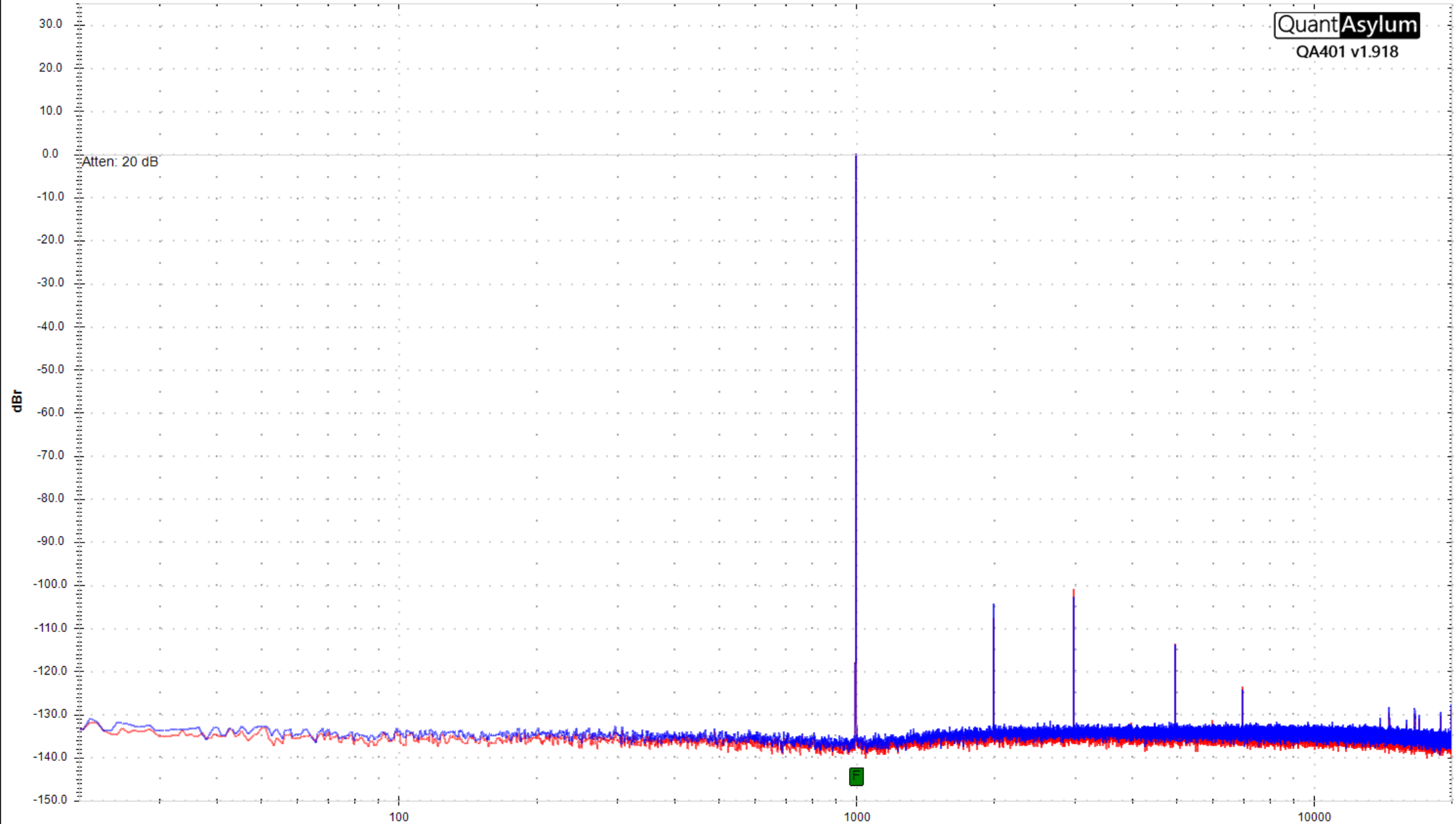
Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

Peak L: 0.00 dBr
Peak R: 0.01 dBr
Peak L: 9.203 Vrms
Peak R: 9.210 Vrms
THD L: -100.3 dB/ 0.00096%
THD R: -99.9 dB/ 0.00102%

Gen 1: 999.0234 Hz @ 5.6 dBr
Gen 2: 20.00024 KHz @ 0.7 dBr

Phase L: 0.32 deg
Phase R: 0.30 deg
Delay L: 9.22 uSec
Delay R: 9.25 uSec
Gain L: 14.42 dB
Gain R: 14.42 dB

TPC Compensation



FFT: 256k
Avg: 32 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

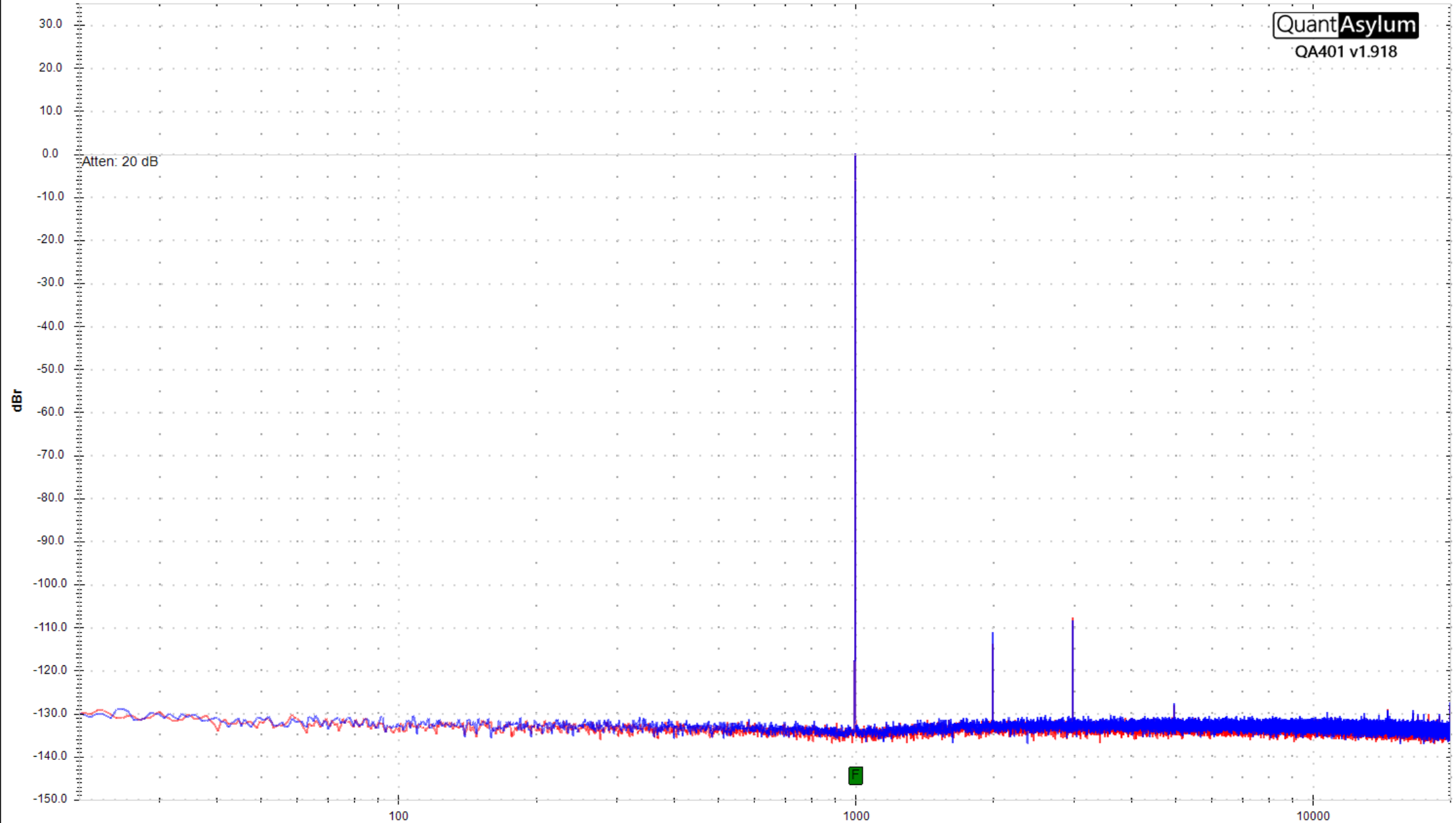
Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

Peak L: 0.00 dBr
Peak R: 0.01 dBr
Peak L: 3.719 Vrms
Peak R: 3.722 Vrms
THD L: -106.3 dB/ 0.00049%
THD R: -106.5 dB/ 0.00047%

Gen 1: 999.0234 Hz @ 5.6 dBr
Gen 2: 20.00024 KHz @ 8.6 dBr

Phase L: 0.32 deg
Phase R: 0.30 deg
Delay L: 9.22 uSec
Delay R: 9.25 uSec
Gain L: 14.42 dB
Gain R: 14.42 dB

TPC Compensation



FFT: 256k
Avg: 26 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

Peak L: 0.00 dBr
Peak R: 0.01 dBr
Peak L: 2.632 Vrms
Peak R: 2.635 Vrms
THD L: -109.2 dB/ 0.00034%
THD R: -110.1 dB/ 0.00031%

Gen 1: 999.0234 Hz @ 5.6 dBr
Gen 2: 20.00024 KHz @ 11.6 dBr

Phase L: 0.32 deg
Phase R: 0.30 deg
Delay L: 9.22 uSec
Delay R: 9.26 uSec
Gain L: 14.42 dB
Gain R: 14.42 dB

TPC Compensation



FFT: 256k
Avg: 43 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

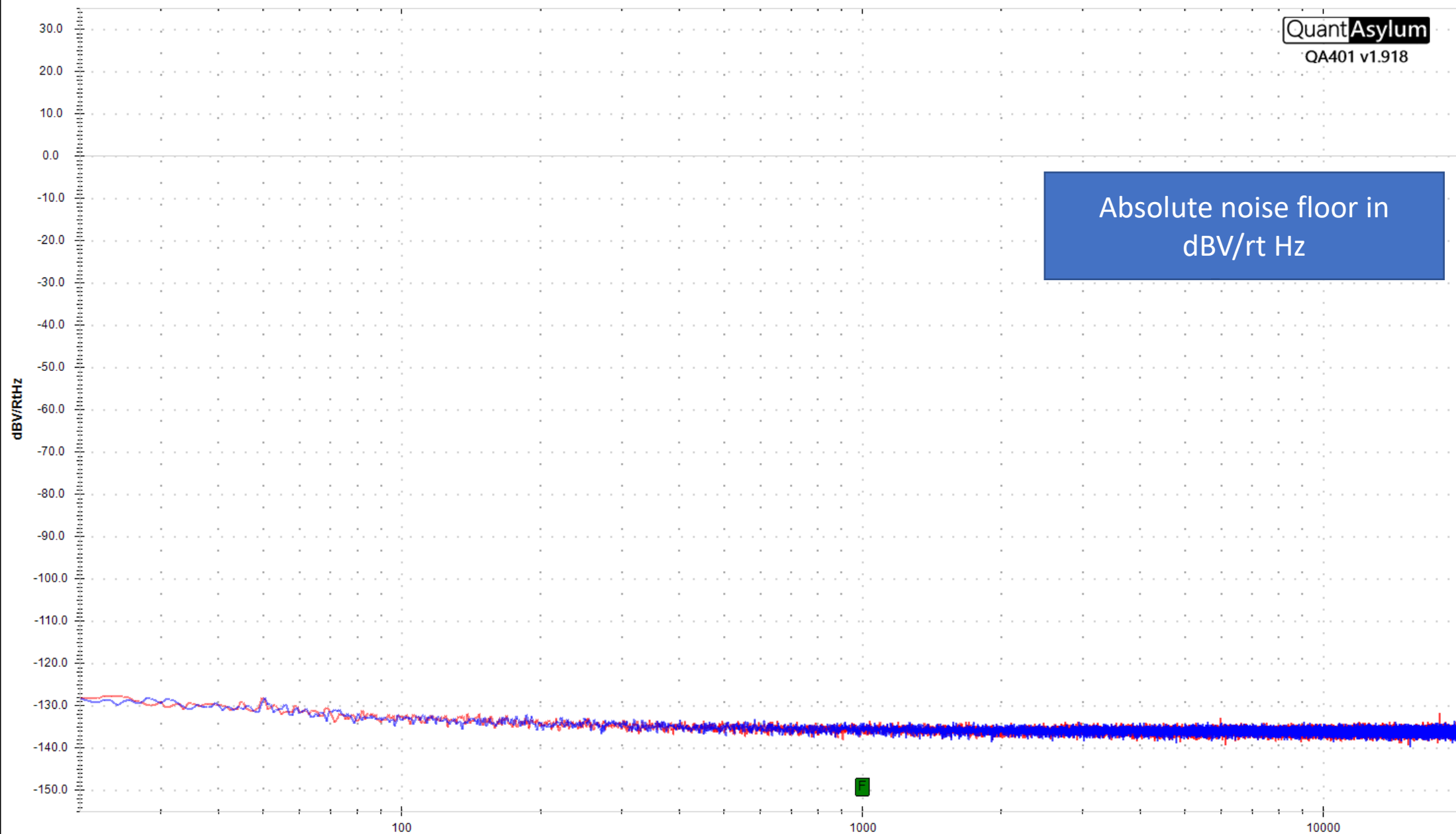
Peak L: -88.42 dBV
Peak R: -81.85 dBV
Peak L: 37.93 uVrms
Peak R: 80.77 uVrms
THD L: -- dB/ -- %
THD R: -- dB/ -- %

Gen 1: 999.0234 Hz @ -6.0 dBV
Gen 2: 20.00024 KHz @ 0.0 dBV

TPC Compensation

QuantAsylum
QA401 v1.918

Absolute noise floor in
dBV/rt Hz



FFT: 256k
Avg: 50 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz

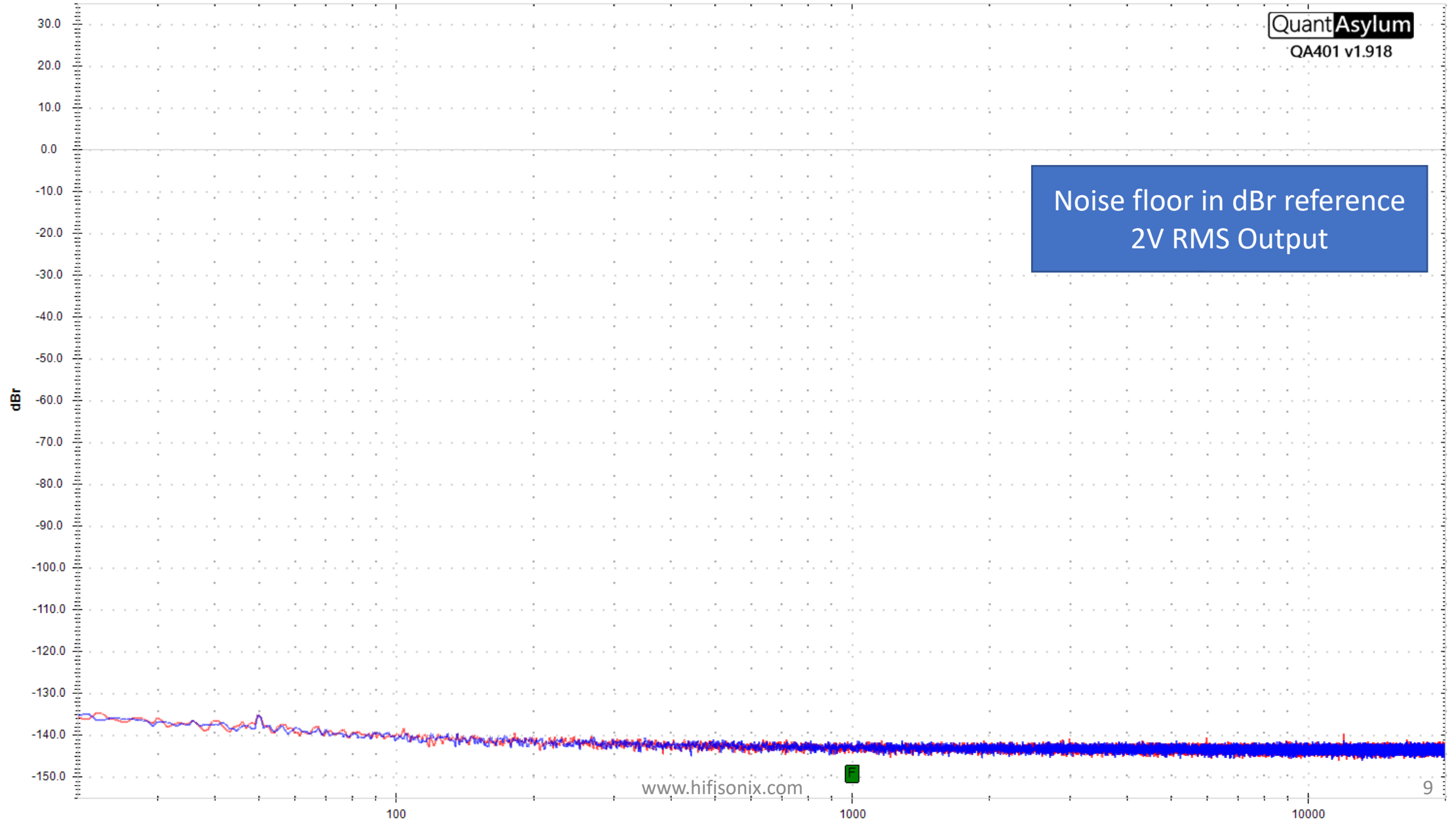
Peak L: -115.65 dBr
Peak R: -110.25 dBr
Peak L: 3.287 uVrms
Peak R: 6.121 uVrms
THD L: --- dBr/ ---%
THD R: --- dBr/ ---%

Gen 1: 999.0234 Hz @ -14.5 dBr
Gen 2: 20.00024 KHz @ -6.0 dBr

TPC Compensation

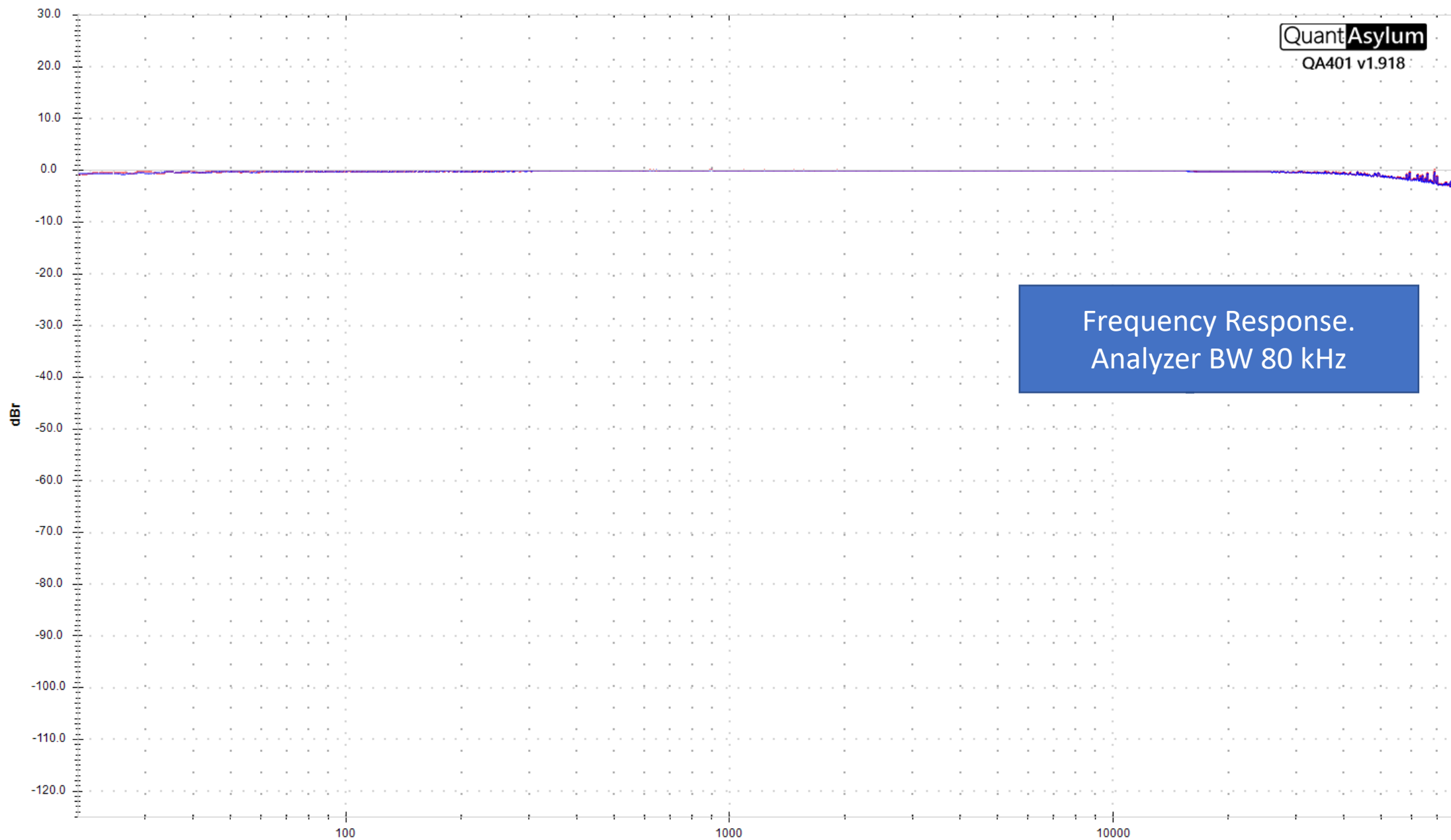
QuantAsylum
QA401 v1.918

Noise floor in dBr reference
2V RMS Output



FFT: 256k Meas Start: 20.0 Hz Peak L: -0.16 dBr FR Gen: -14.7 dBr
Avg: 49 of 50 Meas Stop: 20.0 KHz Peak R: 0.03 dBr
Res: 732 mHz Peak L: 2.679 mVrms
Fs: 192 KHz Peak R: 2.739 mVrms
Win: Hann
Weight: None

TPC Compensation



FFT: 256k
Avg: 23 of 50
Res: 732 mHz
Fs: 192 KHz
Win: Hann
Weight: None

Meas Start: 20.0 Hz
Meas Stop: 20.0 KHz
Peak L: 0.00 dBr
Peak R: 0.02 dBr
Peak L: 1.933 Vrms
Peak R: 1.937 Vrms
THD L: $-\infty$ dB/ 0.000000%
THD R: $-\infty$ dB/ 0.000000%

Gen 1: 18.90014 KHz @ 5.8 dBr
Gen 2: 20.00024 KHz @ 5.8 dBr

TPC Compensation

