



Summary

Signal Path1

| | | |
|-------------------------------|---|--------|
| Level and Gain | ✓ | PASSED |
| Frequency | ✓ | PASSED |
| THD+N | ✓ | PASSED |
| SINAD | ✓ | PASSED |
| Multitone Analyzer | ✓ | PASSED |
| Stepped Level Sweep | ✓ | PASSED |
| Dynamic Range - AES17 | ✓ | PASSED |
| Stepped Frequency Sweep | ✓ | PASSED |
| IMD Frequency Sweep (SMPTE) | ✓ | PASSED |
| IMD Level Sweep (SMPTE) | ✓ | PASSED |

Multitone @ 192kHz

| | | |
|---------------------------|---|--------|
| Multitone Analyzer | ✓ | PASSED |
| IMD Level Sweep (SMPTE) | ✓ | PASSED |

Sequence Result:

APx Instrument

| | |
|-------------------|---------|
| Instrument ID: | --- |
| Calibration Date: | --- |
| APx Version: | 8.0.4.7 |



Signal Path1 : Signal Path Setup

Output Connector: ASIO
Asio Device: ASIO Fireface USB
Scaling Mode: Digital
Output Sample Rate: 44,1000 kHz
Output Latency: Auto
Buffer Size: 1024
Clock Source: Settings
Input 1: Analog Balanced
Measure: Auto
Channels: Auto (2 Channels)
Ch1 Data from Ch1, Sensitivity = 0,00 dB, Gain = 0,00 dB
Ch2 Data from Ch2, Sensitivity = 0,00 dB, Gain = 0,00 dB
Input Bandwidth: AC (<10 Hz) - 20 kHz (44.1 kHz SR)
Input EQ: None
Termination: 200 kohm
Input 2: None
Device Delay: 0,000 s

- References

dBr G: -20,000 dBFS
Shared Frequency 1,00000 kHz
Reference:
Analog Input
dBrA: 340,0 mVrms
dBrB: 1,000 Vrms
dBrA Offset: 0,000 dB
dBrB Offset: 0,000 dB
dBSPL1: 10,00 mVrms
dBSPL2: 10,00 mVrms
dBSPL1 Calibrator 94,000 dB SPL
Level:
dBSPL2 Calibrator 94,000 dB SPL
Level:
dBm (Input Power): 600,0 ohm
W(watts) (Input Power): 8,000 ohm

- DCX

DCX is not detected.
Input: Ch1 and Ch2



Signal Path1 : Level and Gain

Waveform: Sine
Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Frequency: 1,00000 kHz
Low-pass Filter: Signal Path

RMS Level

| | | |
|-----|-------|------|
| Ch1 | 3,400 | Vrms |
| Ch2 | 3,402 | Vrms |

Signal Path1 : Frequency

Waveform: Sine
Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Frequency: 1,00000 kHz

Frequency

| | | |
|-----|-----------|----|
| Ch1 | 1,00001 k | Hz |
| Ch2 | 1,00001 k | Hz |

Signal Path1 : THD+N

Waveform: Sine
Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Frequency: 1,00000 kHz
High-pass Filter: Elliptic
High-pass Frequency: 20 Hz
Low-pass Filter: Elliptic
Low-pass Frequency: 20 kHz
Weighting Filter: Signal Path
Notch Tuning Mode: Measured Frequency

THD+N Ratio

| | | |
|-----|----------|---|
| Ch1 | 0,002829 | % |
| Ch2 | 0,002929 | % |



Signal Path1 : SINAD

Waveform: Sine (1 kHz)
Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Frequency: 1,00000 kHz
High-pass Filter: Elliptic
High-pass Frequency: 20 Hz
Low-pass Filter: Elliptic
Low-pass Frequency: 20 kHz
Weighting Filter: Signal Path
Notch Tuning Mode: Measured Frequency

SINAD

| | | |
|-----|--------|----|
| Ch1 | 90,946 | dB |
| Ch2 | 90,651 | dB |

ENOB

| | |
|-----|------|
| Ch1 | 14,8 |
| Ch2 | 14,8 |



Signal Path1 : Multitone Analyzer

Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Name: 7-tone, 44.1k, 20k BW
Sample Rate: 44,1000 kHz
Length: 4400
Min Frequency: 20,0455 Hz
Max Frequency: 19,9953 kHz
Step Type: Custom
Tones: 7
Crest Factor (A): 2,807 x/y / 8,964 dB
Crest Factor (B): 2,919 x/y / 9,304 dB
High-pass Filter: Signal Path
Low-pass Filter: Signal Path
TD+N Filter: Signal Path
Averages: 4
Phase Ref Channel: Ch1
Trigger: Free Run
Trigger Delay: 200,0 ms
Frequency: Enabled
Correction:
Max Frequency Shift: 3,00 %
Skirt Width: 1,00 %
Record Acquisition: False
Recording Type: Multi-channel PCM (.wav)
Measured 1 16.01.2024 13:26:38

TD+N Ratio

| | | |
|-----|---------|----|
| Ch1 | -86,782 | dB |
| Ch2 | -86,725 | dB |

TD+N Ratio Parameters

Ratio Type: RMS Level

Total Level

| | | |
|-----|-------|------|
| Ch1 | 1,597 | Vrms |
| Ch2 | 1,602 | Vrms |



Tone Level (20,0455 Hz)

| | | |
|-----|---------|------|
| Ch1 | 604,3 m | Vrms |
| Ch2 | 604,9 m | Vrms |

Tone Level (20,0455 Hz) Parameters

Selected Tone: 20,0455 Hz

Maximum Level (20,0455 Hz)

| | | |
|-----|-------|------|
| Ch1 | 3,398 | Vrms |
| Ch2 | 3,402 | Vrms |

Maximum Level (20,0455 Hz) Parameters

Selected Tone: 20,0455 Hz

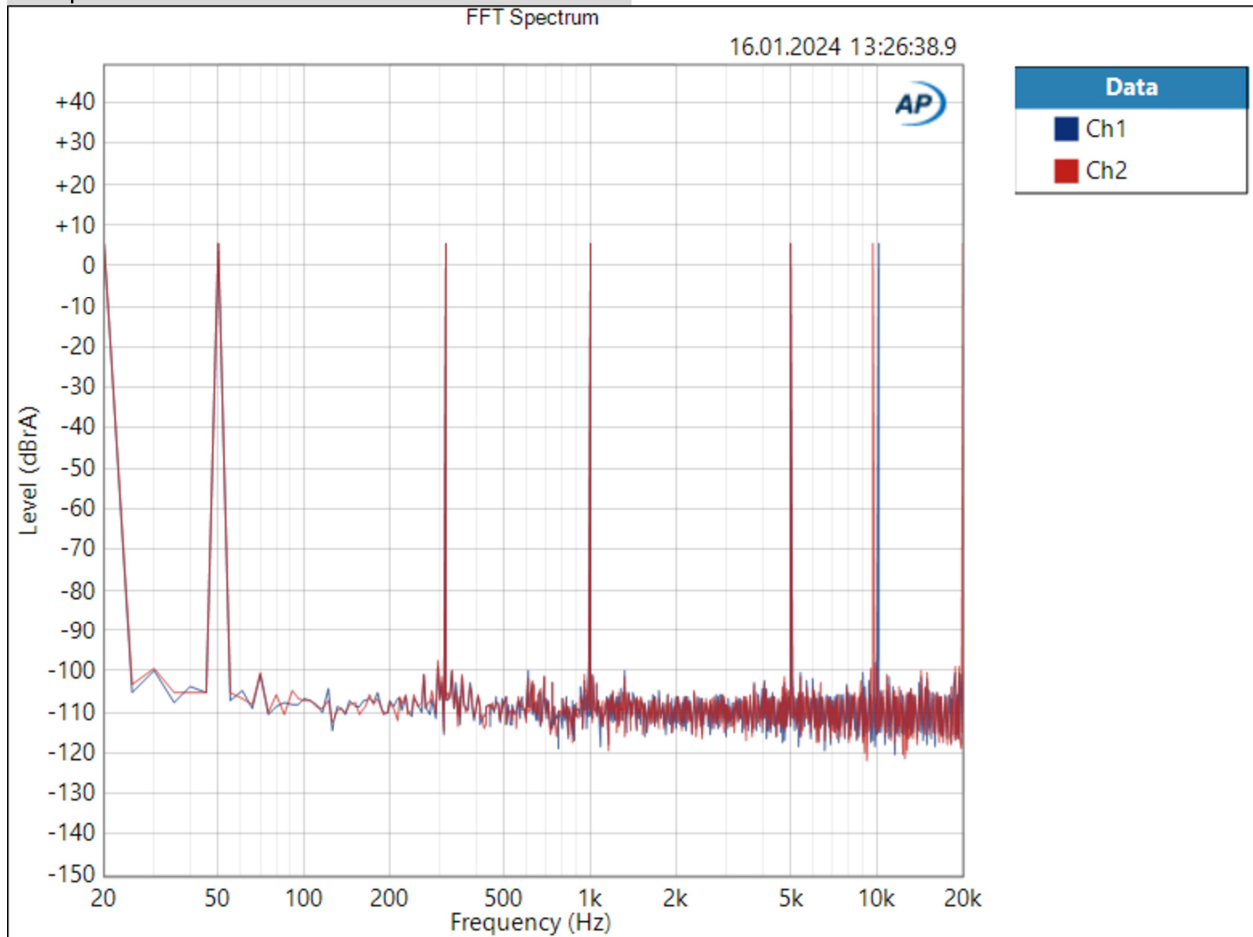
Signal to Noise Ratio

| | | |
|-----|--------|----|
| Ch1 | 87,203 | dB |
| Ch2 | 87,204 | dB |

Signal to Noise Ratio Parameters

Ratio Type: RMS Level

FFT Spectrum

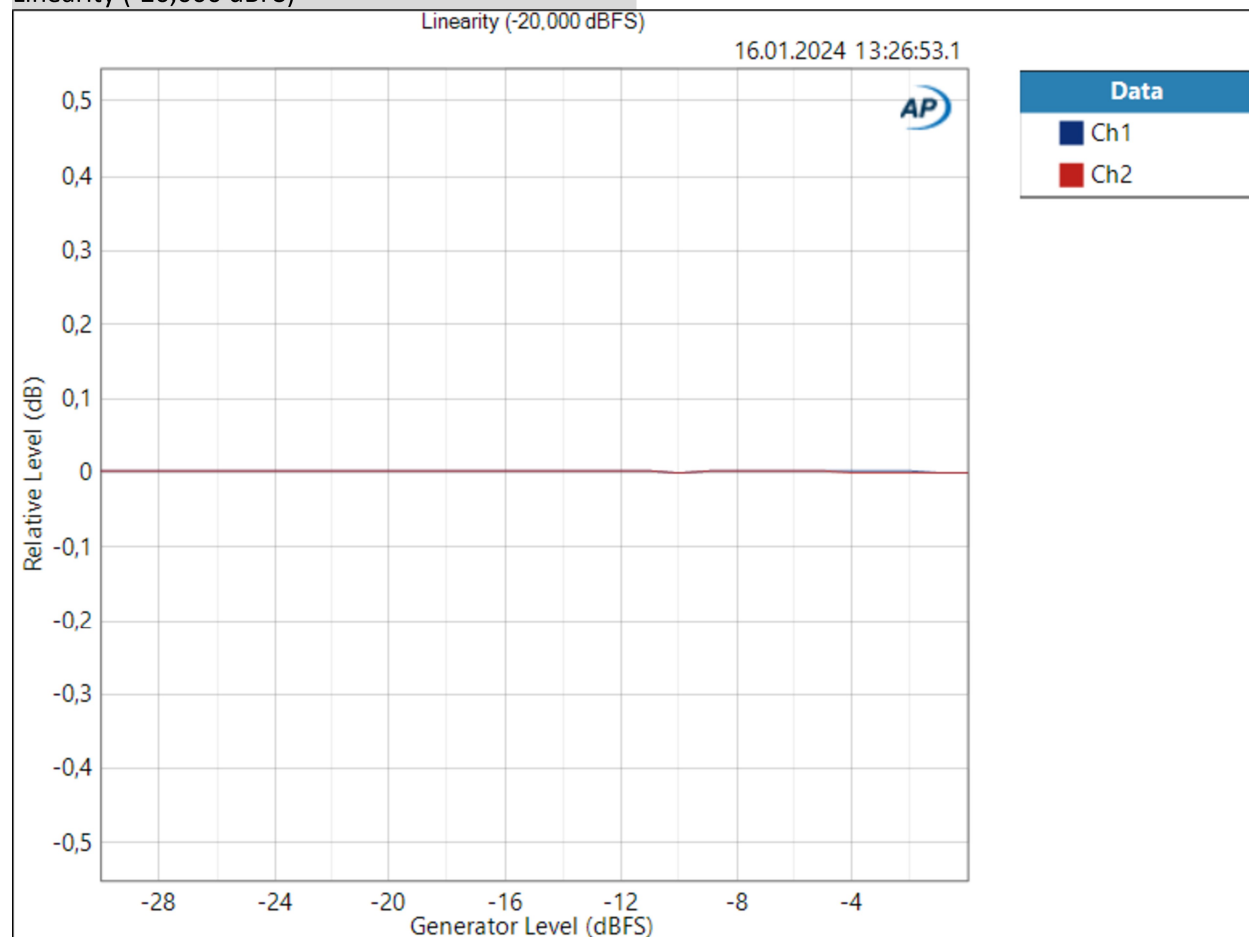




Signal Path1 : Stepped Level Sweep

| | |
|----------------------|---------------------|
| Waveform: | Sine |
| Frequency: | 1,00000 kHz |
| Start Level: | -30,000 dBFS |
| Stop Level: | -0,000 dBFS |
| Step Type: | Linear |
| Number of Points: | 31 |
| Step Size: | 1,000 dBFS |
| Offset: | 0,000 D |
| High-pass Filter: | Elliptic |
| High-pass Frequency: | 20 Hz |
| Low-pass Filter: | Elliptic |
| Low-pass Frequency: | 20 kHz |
| Weighting Filter: | Signal Path |
| Notch Tuning Mode: | Generator Frequency |
| Measured 1 | 16.01.2024 13:26:53 |

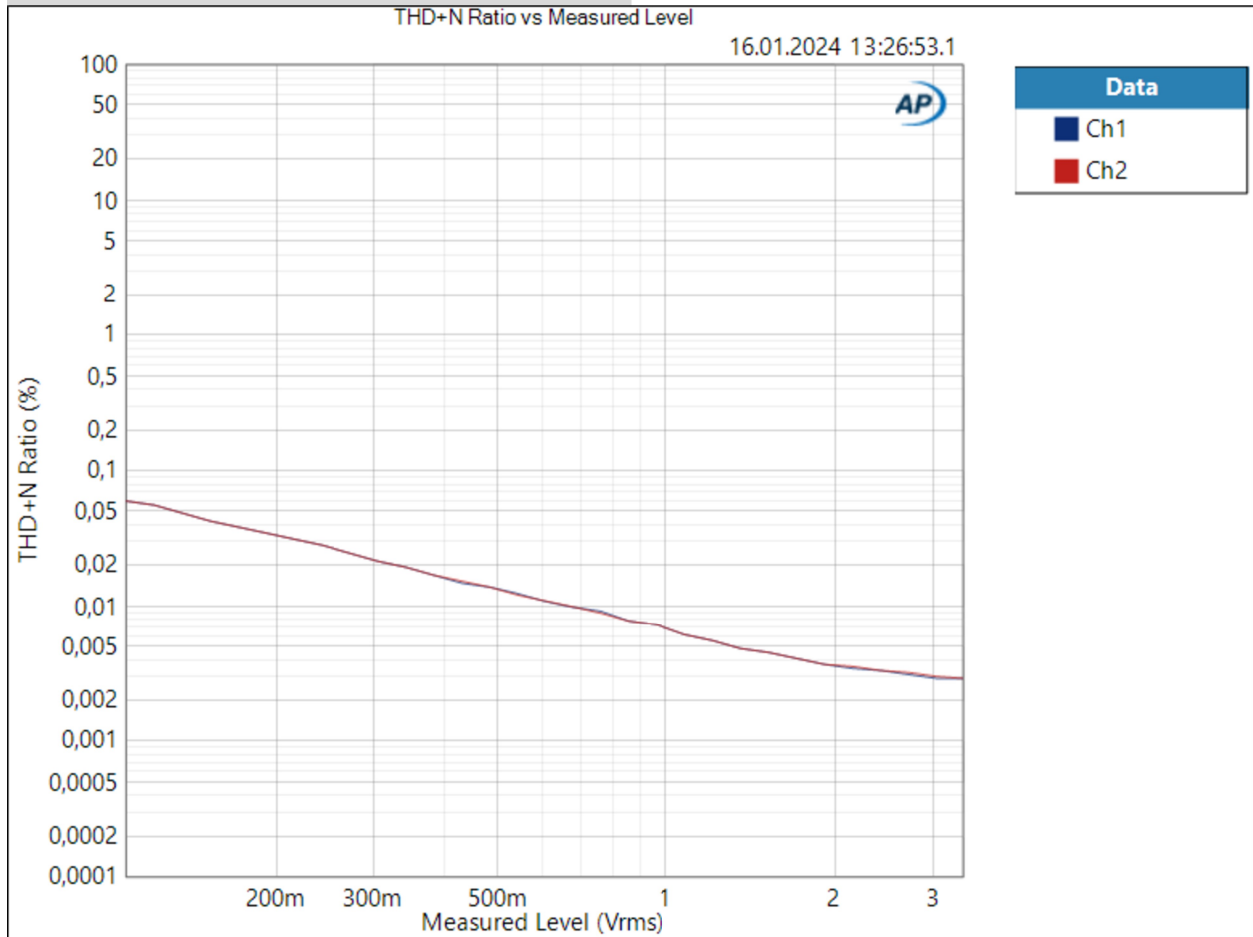
Linearity (-20,000 dBFS)



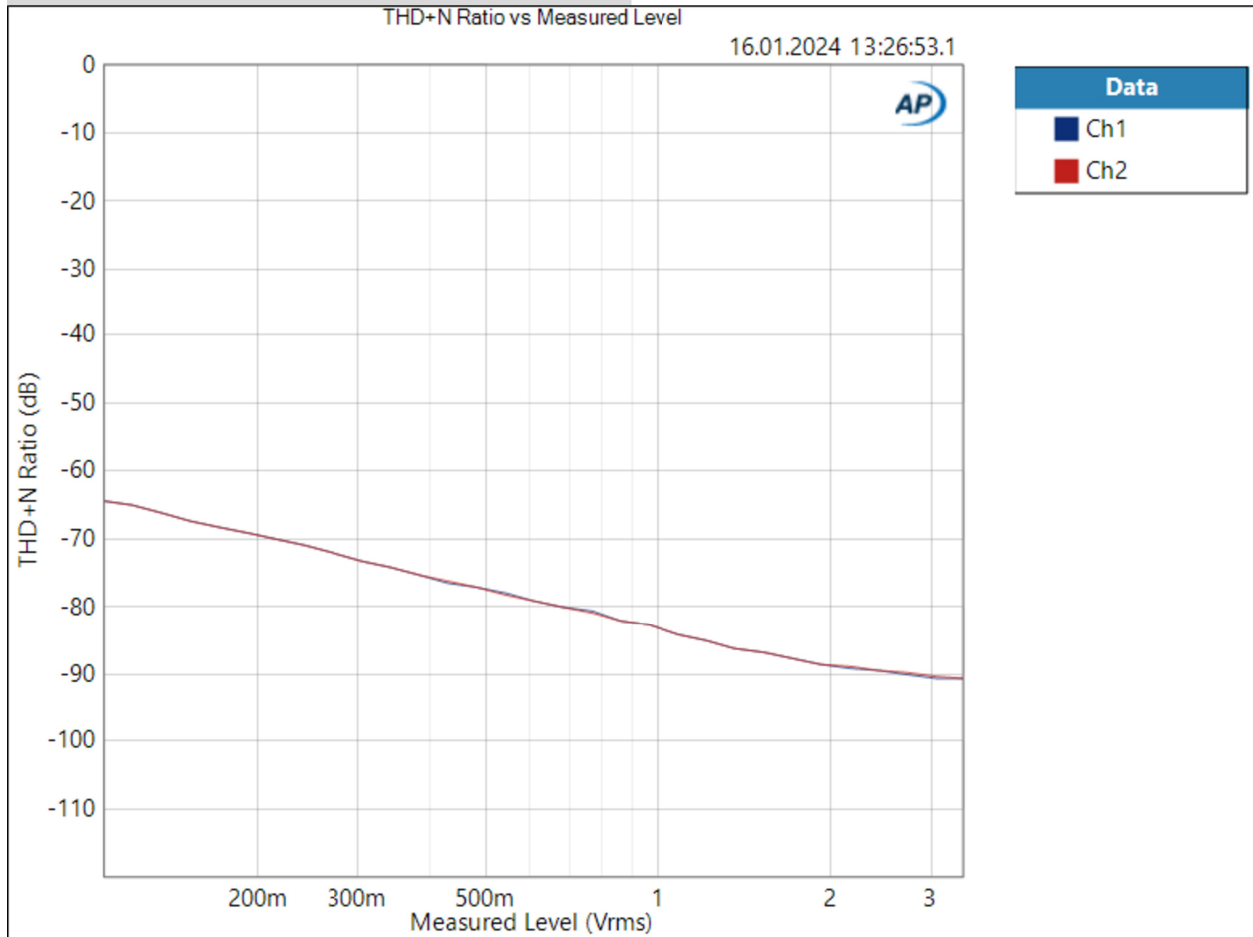
Linearity (-20,000 dBFS) Parameters

Mode: Normalized at Reference
Relative Level: -20,000 dBFS

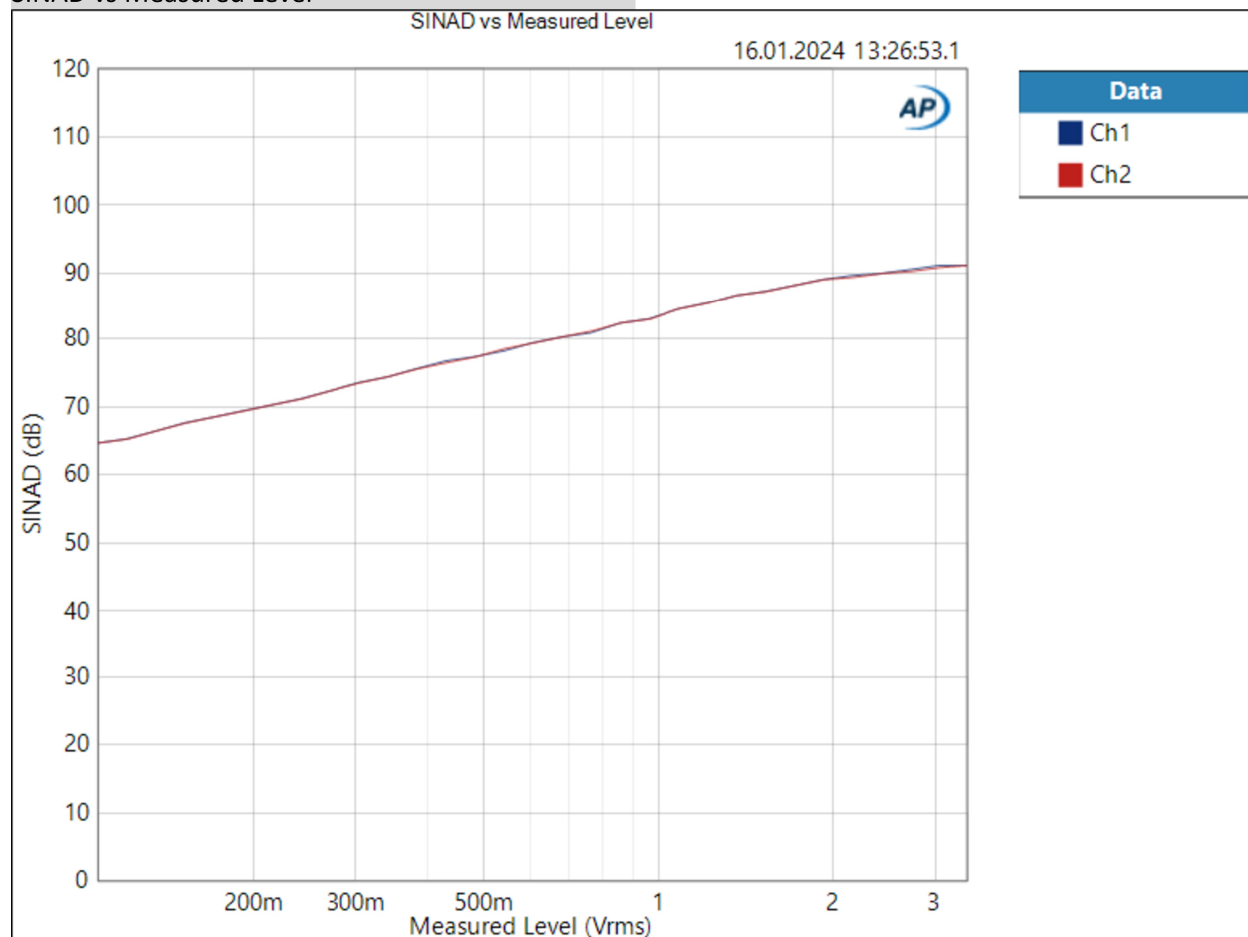
THD+N Ratio vs Measured Level



THD+N Ratio vs Measured Level



SINAD vs Measured Level



Signal Path1 : Dynamic Range - AES17

Waveform: Sine
 Generator Level: -0,000 dBFS
 DC Offset: 0,000 D
 Frequency: 0,99700 kHz
 Level Ratio: -60,000 dB
 High-pass Filter: Signal Path
 Low-pass Filter: Elliptic
 Low-pass Frequency: 20 kHz
 Weighting Filter: CCIR-2k

Dynamic Range - AES17

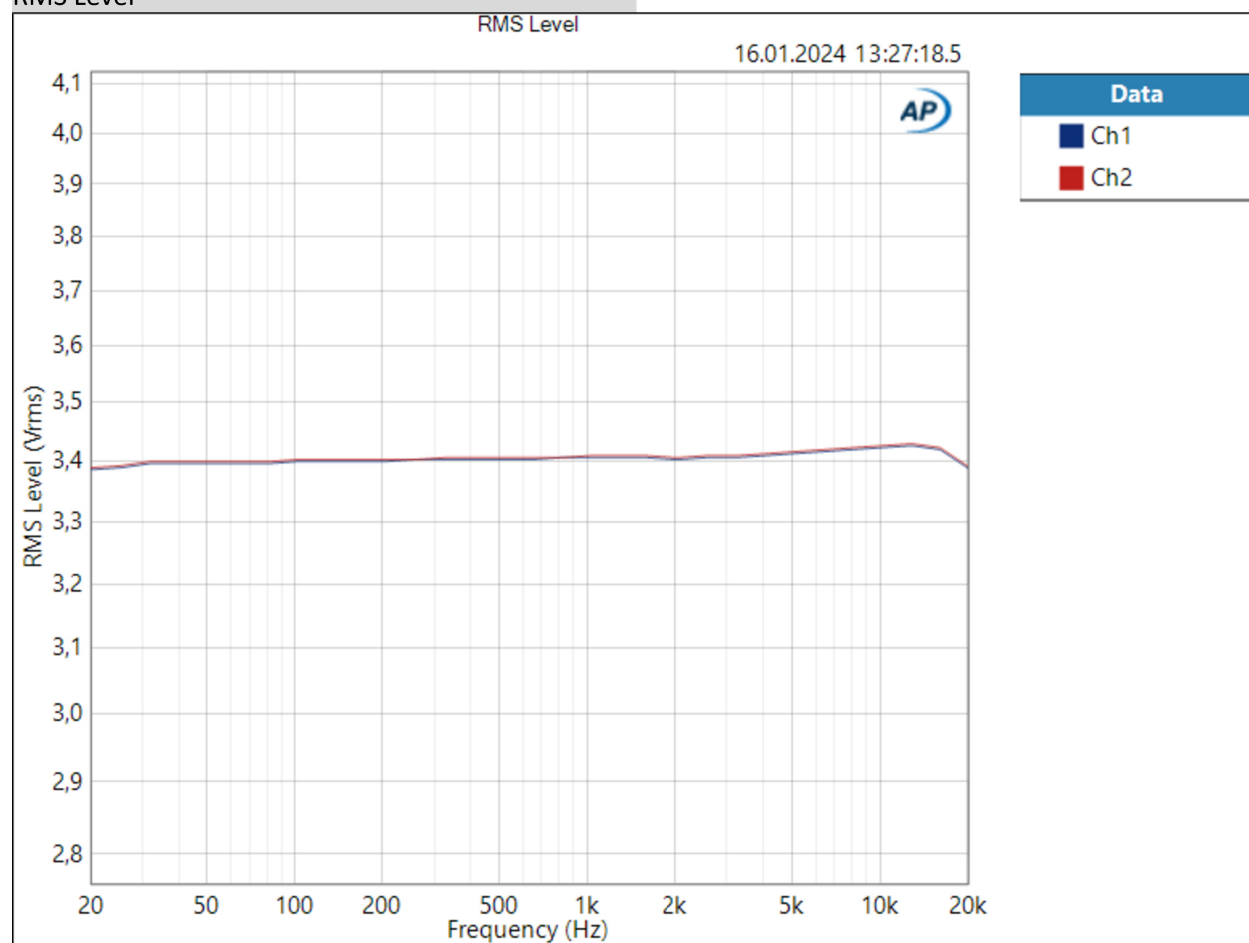
| | | |
|-----|--------|----|
| Ch1 | 92,606 | dB |
| Ch2 | 92,596 | dB |



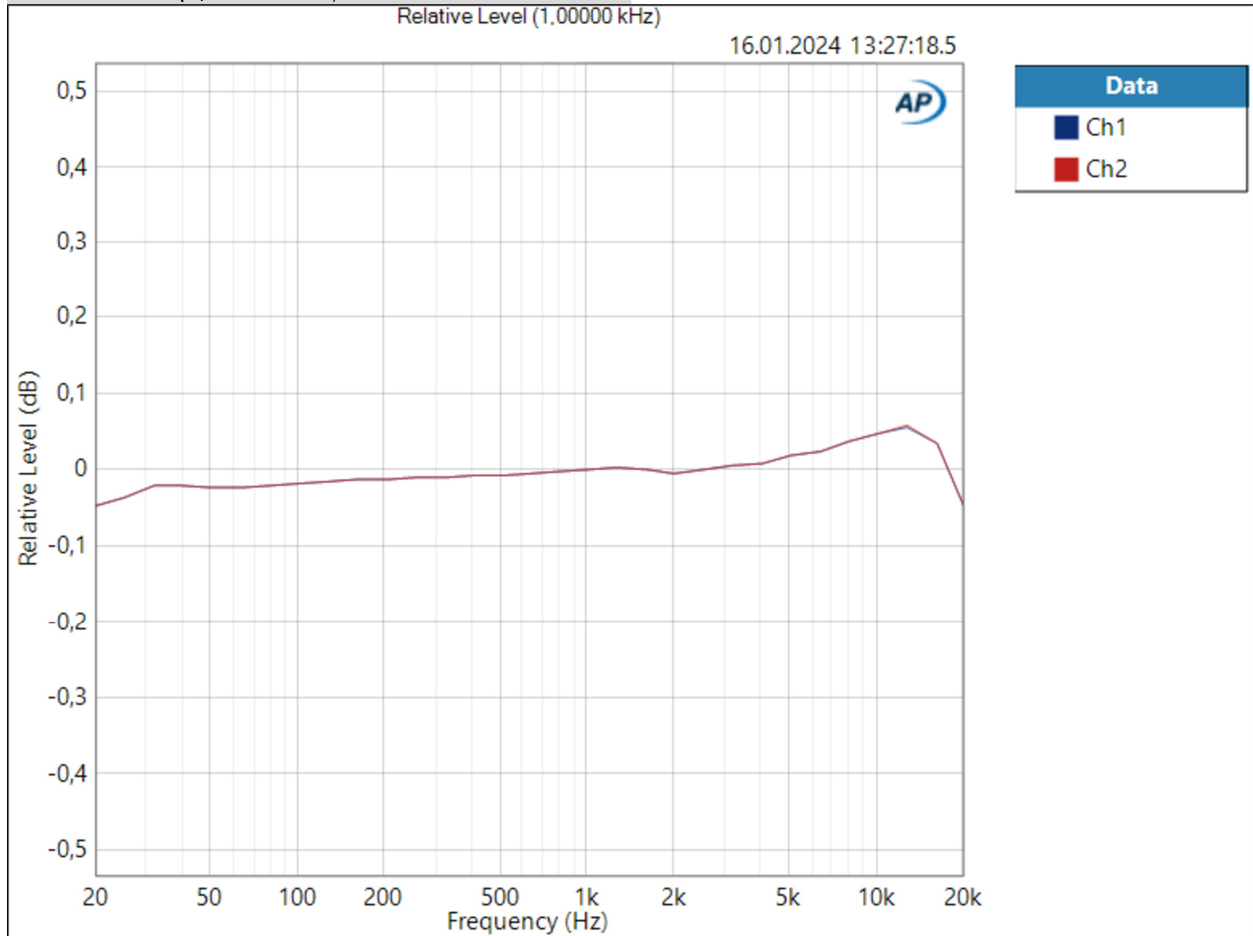
Signal Path1 : Stepped Frequency Sweep

Waveform: Sine
Generator Level: -0,000 dBFS
DC Offset: 0,000 D
EQ: None
Start Frequency: 20,0000 kHz
Stop Frequency: 20,0000 Hz
Step Type: Logarithmic
Number of Points: 31
High-pass Filter: Elliptic
High-pass Frequency: 20 Hz
Low-pass Filter: Signal Path
Weighting Filter: Signal Path
Phase Ref Channel: Ch1
Measured 1 16.01.2024 13:27:18

RMS Level



Relative Level (1,00000 kHz)

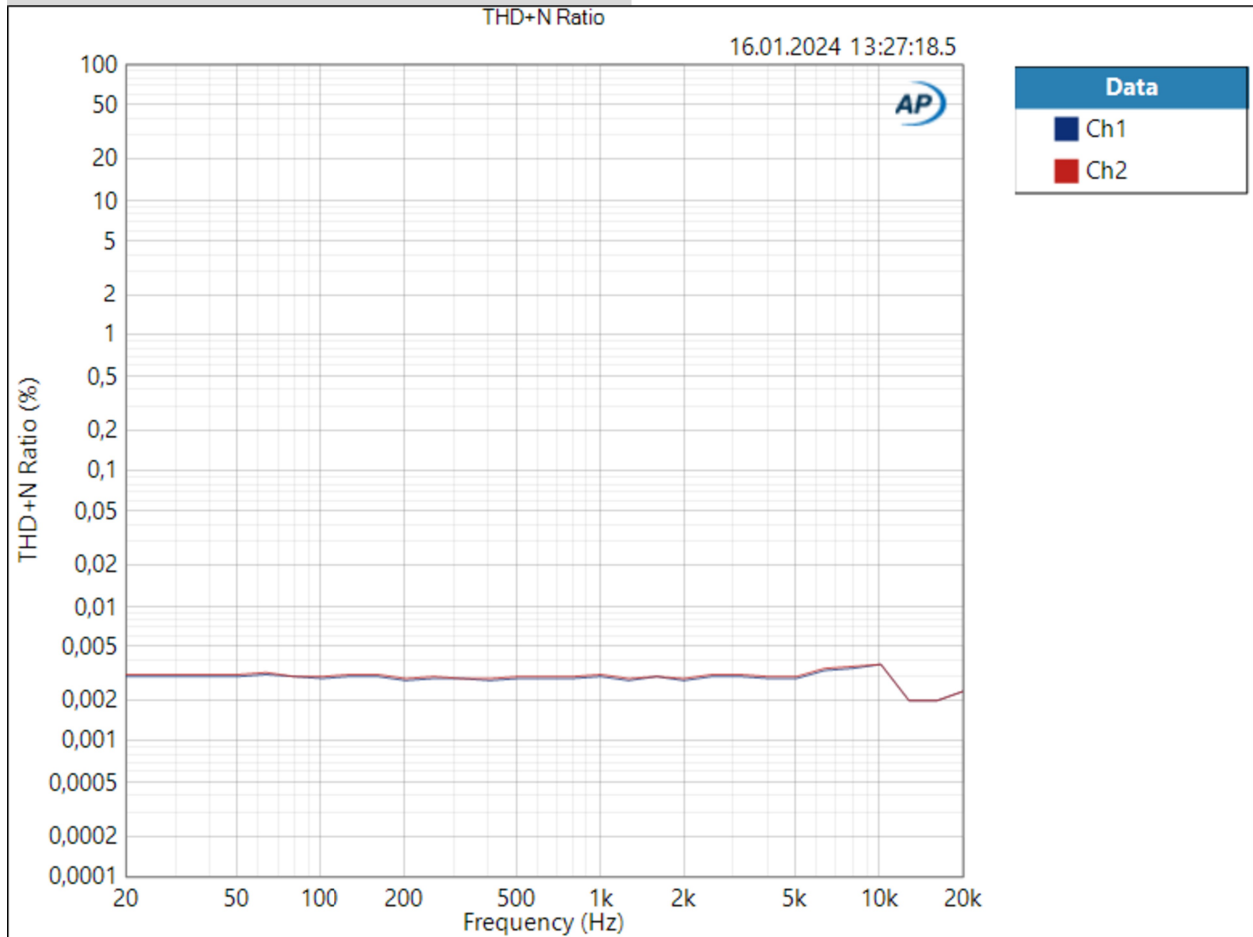


Relative Level (1,00000 kHz) Parameters

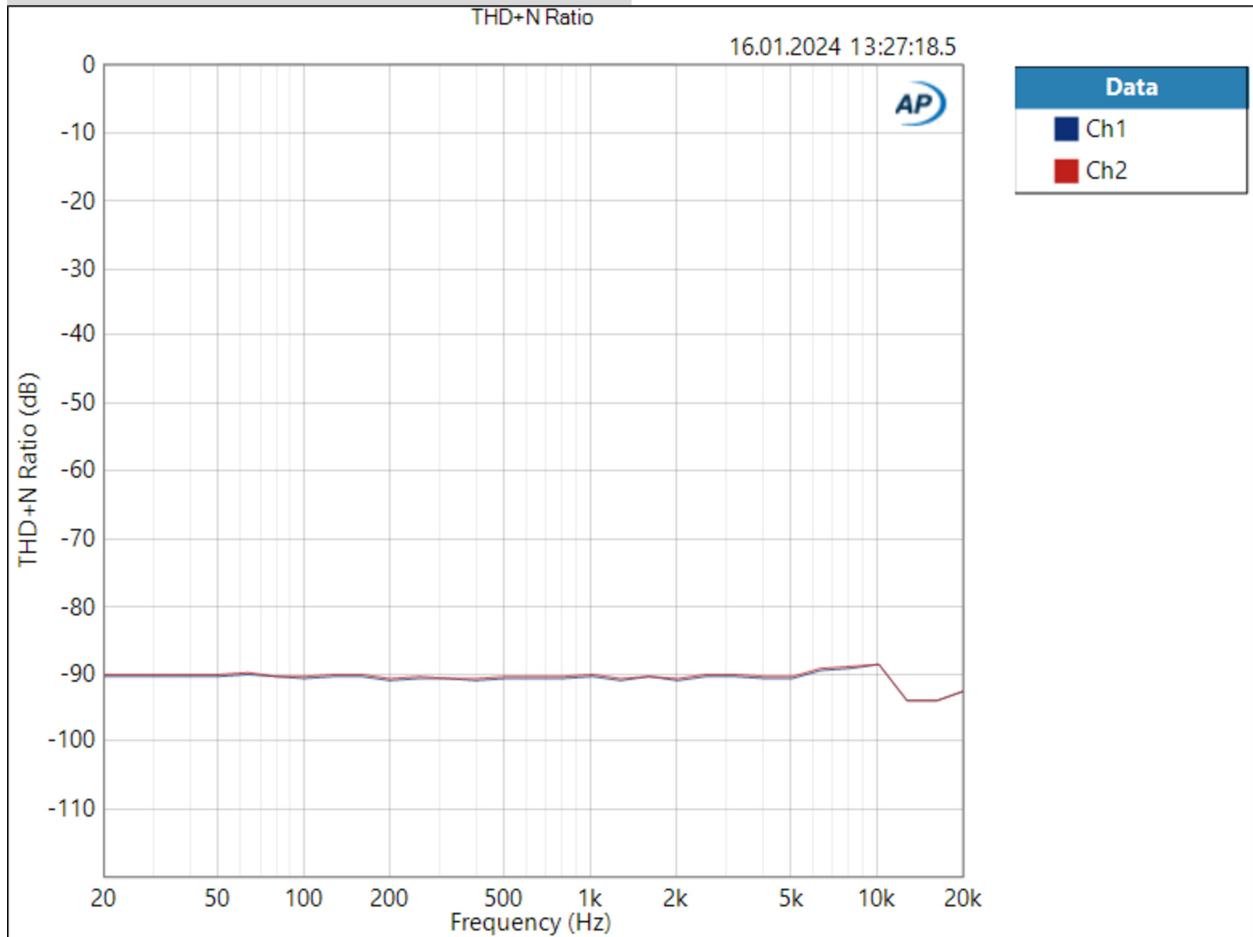
Mode: Normalized at Reference

Ref Frequency: 1,00000 kHz

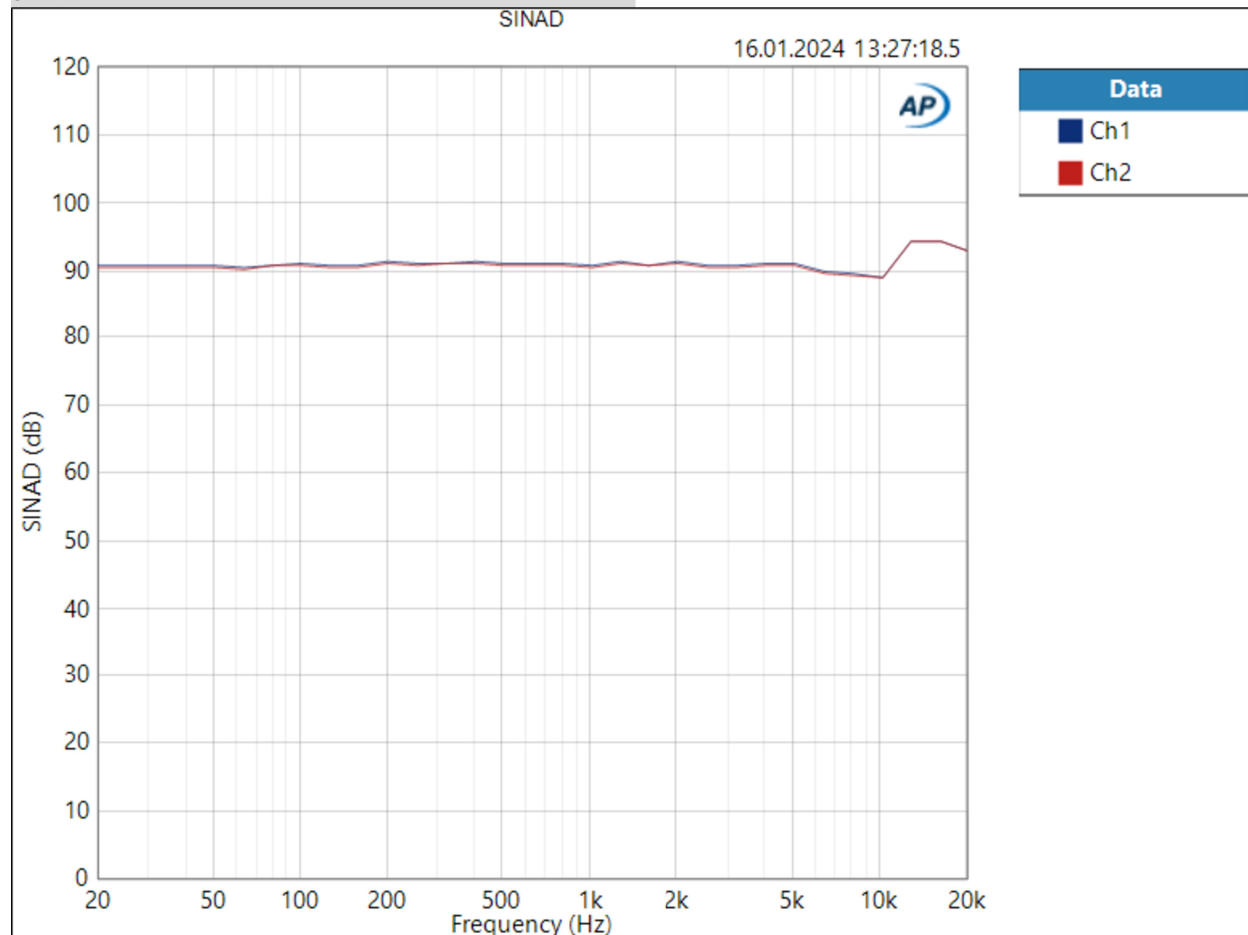
THD+N Ratio



THD+N Ratio



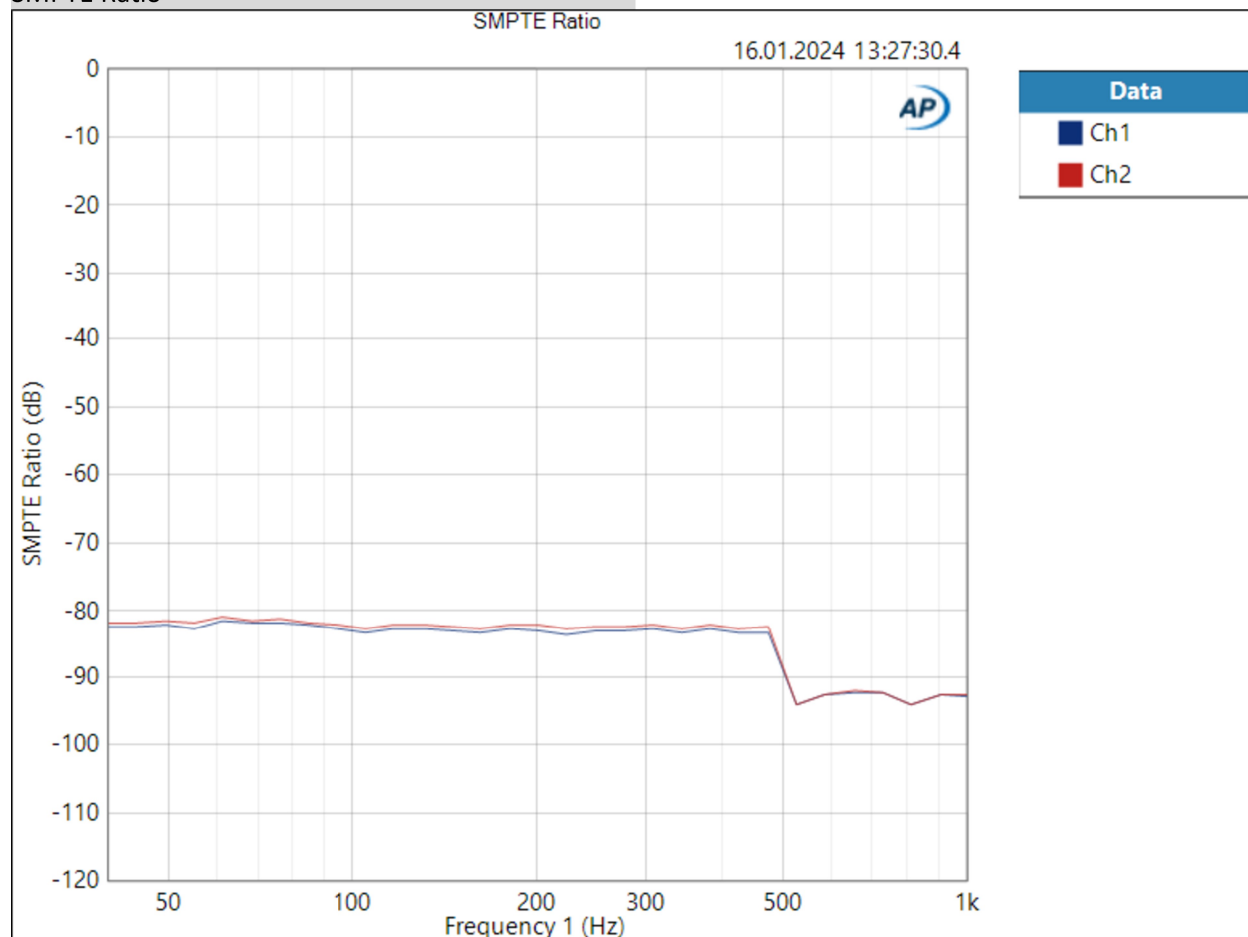
SINAD



Signal Path1 : IMD Frequency Sweep (SMPTE)

Generator Level: -0,000 dBFS
 DC Offset: 0,000 D
 Sweep Frequency: Frequency 1
 Frequency 2: 7,00000 kHz
 Frequency Ratio: 4:1
 IMD Split: False
 Start Frequency: 1,00000 kHz
 Stop Frequency: 40,0000 Hz
 Step Type: Logarithmic
 Number of Points: 31
 Measured 1 16.01.2024 13:27:30

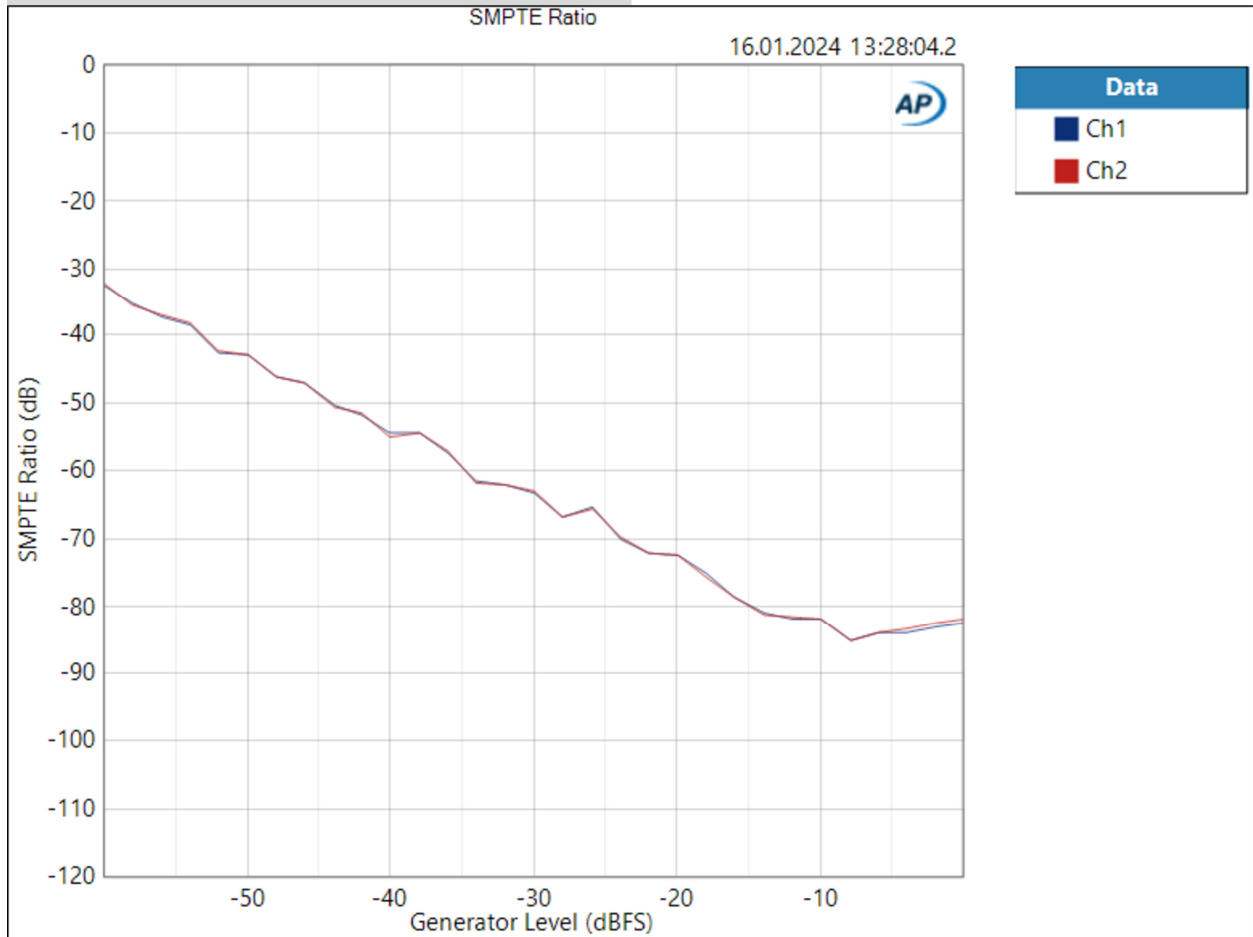
SMPTE Ratio



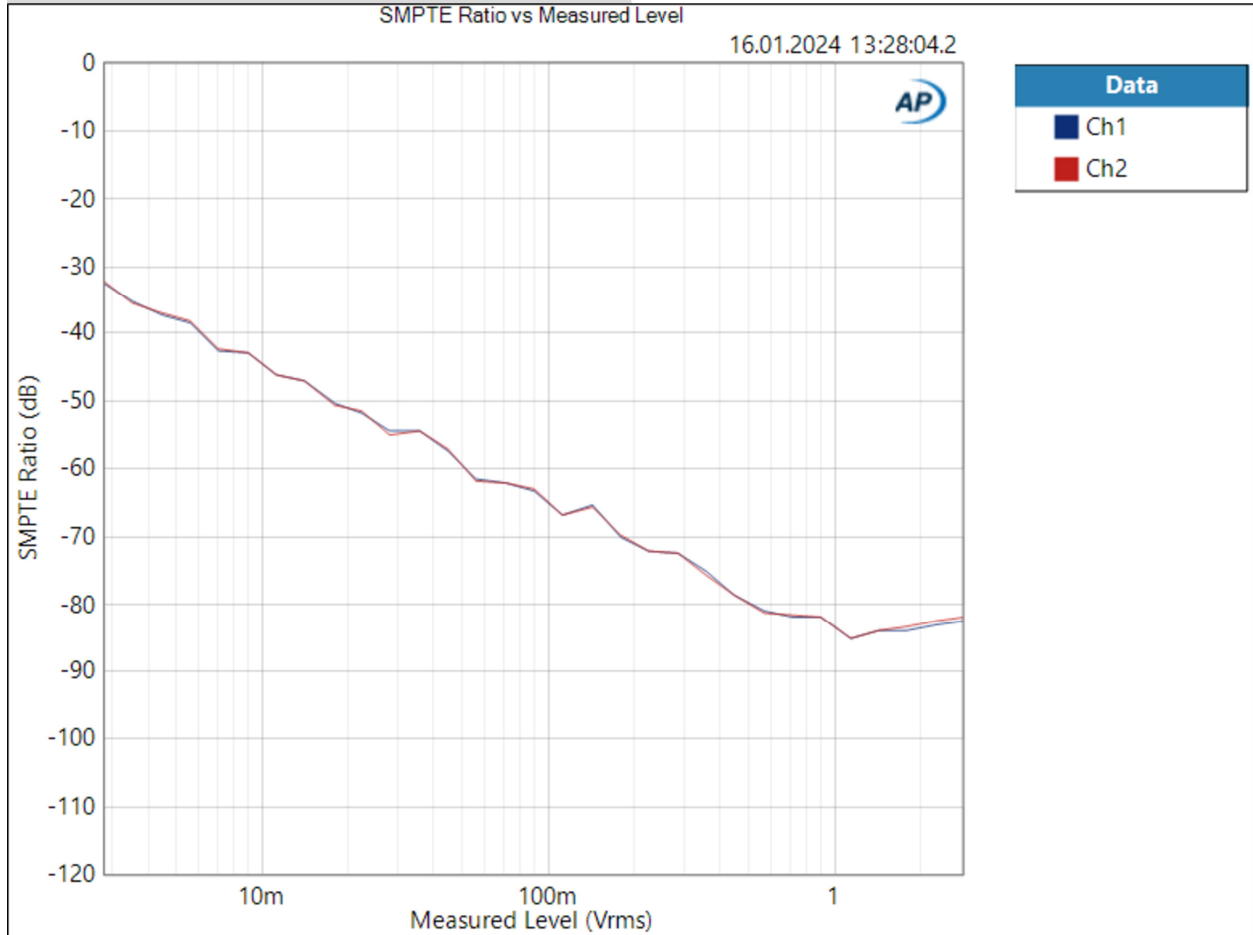
Signal Path1 : IMD Level Sweep (SMPTE)

IMD Type: SMPTE
 Frequency 1: 60,0000 Hz
 Frequency 2: 7,00000 kHz
 Frequency Ratio: 4:1
 IMD Split: False
 Start Level: -60,000 dBFS
 Stop Level: -0,000 dBFS
 Step Type: Linear
 Number of Points: 31
 Step Size: 2,000 dBFS
 Measured 1 16.01.2024 13:28:04

SMPTE Ratio



SMPTE Ratio vs Measured Level





Multitone @ 192kHz : Multitone Analyzer

Generator Level: -0,000 dBFS
DC Offset: 0,000 D
Name: APx 32-tone
Sample Rate: 192,000 kHz
Length: 65536
Min Frequency: 14,6484 Hz
Max Frequency: 20,0010 kHz
Step Type: Custom
Tones: 32
Crest Factor: 4,481 x/y / 13,028 dB
High-pass Filter: Signal Path
Low-pass Filter: Signal Path
TD+N Filter: Signal Path
Averages: 4
Phase Ref Channel: Ch1
Trigger: Free Run
Trigger Delay: 200,0 ms
Frequency: Enabled
Correction:
Max Frequency Shift: 3,00 %
Skirt Width: 1,00 %
Record Acquisition: False
Recording Type: Multi-channel PCM (.wav)
Measured 1 16.01.2024 13:28:14

TD+N Ratio

| | | |
|-----|---------|----|
| Ch1 | -80,107 | dB |
| Ch2 | -80,079 | dB |

TD+N Ratio Parameters

Ratio Type: RMS Level

Total Level

| | | |
|-----|-------|------|
| Ch1 | 1,441 | Vrms |
| Ch2 | 1,442 | Vrms |

Tone Level (0,99902 kHz)

| | | |
|-----|---------|------|
| Ch1 | 254,7 m | Vrms |
| Ch2 | 254,9 m | Vrms |

Tone Level (0,99902 kHz) Parameters

Selected Tone: 0,99902 kHz



Maximum Level (0,99902 kHz)

| | | |
|-----|-------|------|
| Ch1 | 3,397 | Vrms |
| Ch2 | 3,399 | Vrms |

Maximum Level (0,99902 kHz) Parameters

Selected Tone: 0,99902 kHz

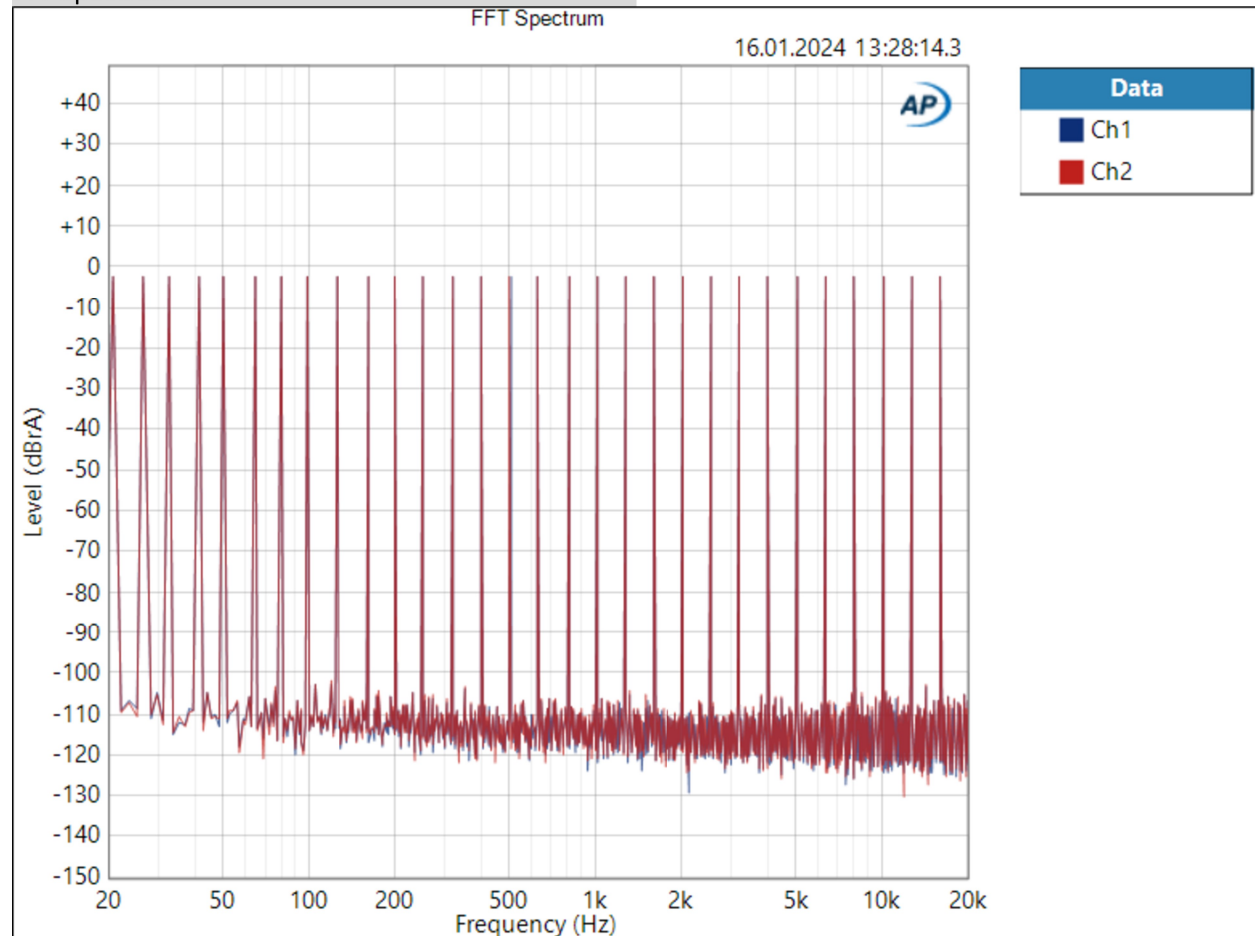
Signal to Noise Ratio

| | | |
|-----|--------|----|
| Ch1 | 80,292 | dB |
| Ch2 | 80,284 | dB |

Signal to Noise Ratio Parameters

Ratio Type: RMS Level

FFT Spectrum

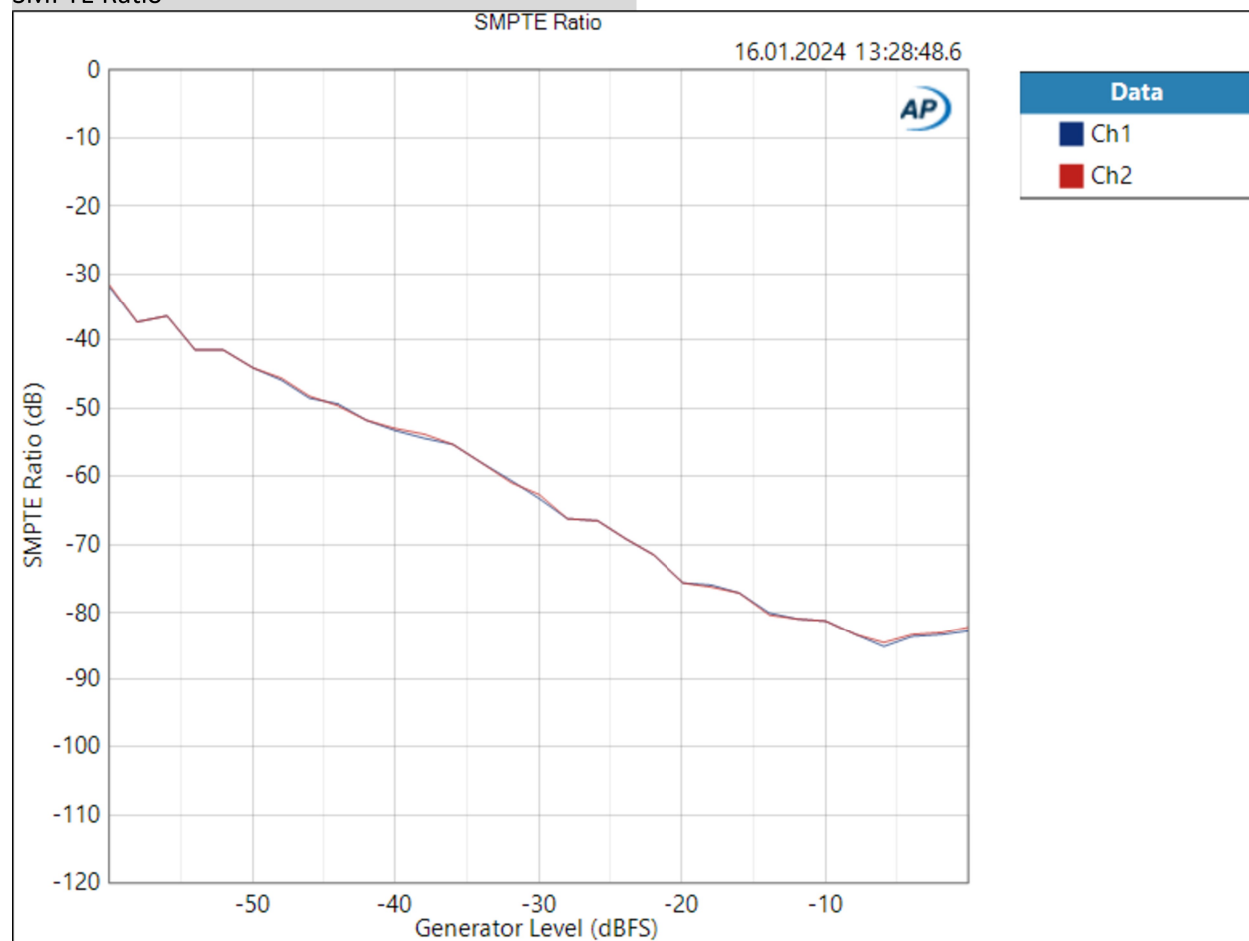




Multitone @ 192kHz : IMD Level Sweep (SMPTE)

IMD Type: SMPTE
Frequency 1: 60,0000 Hz
Frequency 2: 7,00000 kHz
Frequency Ratio: 4:1
IMD Split: False
Start Level: -60,000 dBFS
Stop Level: -0,000 dBFS
Step Type: Linear
Number of Points: 31
Step Size: 2,000 dBFS
Measured 1 16.01.2024 13:28:48

SMPTE Ratio



SMPTE Ratio vs Measured Level

