
K-Meter
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Implementation of a K-System meter according to Bob Katz' specifications

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FLAC-compressed wave file (44.1 kHz, 16 bit, stereo)
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Please verify correctness of meter ballistics programmatically. Calculated values are only valid in “RMS” mode. Small differences due to time granularity of validation logging are acceptable.

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00:00.000 - 00:02.000  silence
00:02.000 - 00:12.000  sine wave (2 kHz, 0.0 dB FS peak)
00:12.000 - 00:12.600  silence

00:12.600              [check fall time of average meters]

00:12.600 - 00:14.600  sine wave (2 kHz, 0.0 dB FS peak)
00:14.600 - 00:24.600  silence
00:24.600 - 00:25.200  sine wave (2 kHz, 0.0 dB FS peak)

00:25.200              [check rise time of average meters]

00:25.200 - 00:27.200  silence
00:27.200 - 00:37.200  sine wave (2 kHz, 0.0 dB FS peak)
00:37.200 - 00:40.200  silence

00:40.200              [check fall/rise time of peak meters]

00:40.200 - 00:42.200  sine wave (2 kHz, 0.0 dB FS peak)
00:42.200 - 00:44.200  silence
```

Validation settings
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File: meter_ballistics.flac
Host SR: 44 100 Hz
Channel: All
Display: [x] Average meter level
          [x] Peak meter level
          [ ] Maximum peak level
          [ ] Stereo meter value
          [ ] Phase correlation

Metering minima
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-90.01 dB (see “MeterBallistics::fMeterMinimumDecibel”)

Fall time of average meters (sine wave, 0.0 dB FS peak)
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99% of final reading in 600 ms integration time

K-20 = 20.00 dB - 90.01 dB * 99% = -69.11 dB
K-14 = 14.00 dB - 90.01 dB * 99% = -75.11 dB
K-12 = 12.00 dB - 90.01 dB * 99% = -77.11 dB
Norm = 0.00 dB - 90.01 dB * 99% = -89.11 dB

Rise time of average meters (sine wave, 0.0 dB FS peak)
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99% of final reading in 600 ms integration time

K-20 = 20.00 dB - 90.01 dB * 1% = 19.10 dB
K-14 = 14.00 dB - 90.01 dB * 1% = 13.10 dB
K-12 = 12.00 dB - 90.01 dB * 1% = 11.10 dB
Norm = 0.00 dB - 90.01 dB * 1% = -0.90 dB

Fall time of peak meters (sine wave, 0.0 dB FS peak)
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-26 dB in 3 seconds

K-20 = 20.00 dB - 26.00 dB = -6.00 dB
K-14 = 14.00 dB - 26.00 dB = -12.00 dB
K-12 = 12.00 dB - 26.00 dB = -14.00 dB
Norm = 0.00 dB - 26.00 dB = -26.00 dB

Rise time of peak meters (sine wave, 0.0 dB FS peak)
==========
immediate (one sample)

K-20 = 20.00 dB
K-14 = 14.00 dB
K-12 = 12.00 dB
Norm = 0.00 dB