

DIDI 837

SONY VFET DIFFERENTIAL INPUT

TRIODE CONNECTED 837 DIFFERENTIAL  
OUTPUT

PURE CLASS A - CONSTANT CURRENT

WIDEBAND TRANSFORMER COUPLED

ASYMMETRIC BALANCED SINGLE ENDED

AUTOBIAS AMPLIFIER

MONOBLOCK

AGUSTINSEIJASLAB.COM

## TEST REPORT

FREQUENCY RESPONSE (POWER BAND -3 DB)

THD

IMD

PHASE SHIFT

GAIN (FULL BANDWIDTH)

OUTPUT NOISE ( 22HZ TO 22KHZ )

(400HZ TO 22KHZ)

### TEST INSTRUMENTS:

AUDIO PRECISION SYSTEM ONE &/OR SYSTEM ONE PLUS

STANFORD RESEARCH SR 770 FFT ANALYZER

LECROY WAVERUNNER 500 MHZ/10GS DSO

[Agustinseijaslab.com](http://Agustinseijaslab.com)

| GEN   | FREQ | AMPL  | A   | GEN   | FREQ | AMPL  | A   | GEN       | FREQ | AMPL | A   | Ap |
|-------|------|-------|-----|-------|------|-------|-----|-----------|------|------|-----|----|
| 20.00 | Hz   | -0.03 | dBr | 244.2 | Hz   | -0.01 | dBr | 2.982     | kHz  | 0.01 | dBr |    |
| 21.00 | Hz   | -0.03 | dBr | 256.5 | Hz   | -0.01 | dBr | 3.133     | kHz  | 0.01 | dBr |    |
| 22.06 | Hz   | -0.03 | dBr | 269.4 | Hz   | -0.01 | dBr | 3.290     | kHz  | 0.01 | dBr |    |
| 23.17 | Hz   | -0.03 | dBr | 282.9 | Hz   | -0.01 | dBr | 3.456     | kHz  | 0.01 | dBr |    |
| 24.33 | Hz   | -0.03 | dBr | 297.2 | Hz   | -0.01 | dBr | 3.629     | kHz  | 0.01 | dBr |    |
| 25.56 | Hz   | -0.03 | dBr | 312.1 | Hz   | -0.01 | dBr | 3.812     | kHz  | 0.01 | dBr |    |
| 26.84 | Hz   | -0.03 | dBr | 327.8 | Hz   | -0.01 | dBr | 4.004     | kHz  | 0.01 | dBr |    |
| 28.19 | Hz   | -0.02 | dBr | 344.3 | Hz   | -0.01 | dBr | 4.205     | kHz  | 0.01 | dBr |    |
| 29.61 | Hz   | -0.02 | dBr | 361.6 | Hz   | -0.01 | dBr | 4.417     | kHz  | 0.01 | dBr |    |
| 31.10 | Hz   | -0.02 | dBr | 379.8 | Hz   | -0.01 | dBr | 4.639     | kHz  | 0.01 | dBr |    |
| 32.66 | Hz   | -0.02 | dBr | 398.9 | Hz   | -0.01 | dBr | 4.872     | kHz  | 0.01 | dBr |    |
| 34.31 | Hz   | -0.02 | dBr | 419.0 | Hz   | -0.01 | dBr | 5.117     | kHz  | 0.01 | dBr |    |
| 36.03 | Hz   | -0.02 | dBr | 440.1 | Hz   | -0.01 | dBr | 5.374     | kHz  | 0.01 | dBr |    |
| 37.84 | Hz   | -0.02 | dBr | 462.2 | Hz   | -0.01 | dBr | 5.645     | kHz  | 0.01 | dBr |    |
| 39.75 | Hz   | -0.02 | dBr | 485.4 | Hz   | 0.00  | dBr | 5.929     | kHz  | 0.01 | dBr |    |
| 41.75 | Hz   | -0.02 | dBr | 509.9 | Hz   | 0.00  | dBr | 6.227     | kHz  | 0.01 | dBr |    |
| 43.85 | Hz   | -0.02 | dBr | 535.5 | Hz   | 0.00  | dBr | 6.540     | kHz  | 0.01 | dBr |    |
| 46.05 | Hz   | -0.02 | dBr | 562.4 | Hz   | 0.00  | dBr | 6.869     | kHz  | 0.01 | dBr |    |
| 48.37 | Hz   | -0.02 | dBr | 590.7 | Hz   | 0.00  | dBr | 7.214     | kHz  | 0.00 | dBr |    |
| 50.80 | Hz   | -0.02 | dBr | 620.4 | Hz   | 0.00  | dBr | 7.577     | kHz  | 0.00 | dBr |    |
| 53.36 | Hz   | -0.02 | dBr | 651.6 | Hz   | 0.00  | dBr | 7.958     | kHz  | 0.00 | dBr |    |
| 56.04 | Hz   | -0.02 | dBr | 684.4 | Hz   | 0.00  | dBr | 8.359     | kHz  | 0.00 | dBr |    |
| 58.86 | Hz   | -0.02 | dBr | 718.8 | Hz   | 0.00  | dBr | 8.779     | kHz  | 0.00 | dBr |    |
| 61.82 | Hz   | -0.02 | dBr | 755.0 | Hz   | 0.00  | dBr | 9.221     | kHz  | 0.00 | dBr |    |
| 64.93 | Hz   | -0.02 | dBr | 793.0 | Hz   | 0.00  | dBr | 9.684     | kHz  | 0.00 | dBr |    |
| 68.19 | Hz   | -0.02 | dBr | 832.8 | Hz   | 0.00  | dBr | 10.171kHz |      | 0.00 | dBr |    |
| 71.62 | Hz   | -0.02 | dBr | 874.7 | Hz   | 0.00  | dBr | 10.683kHz |      | 0.00 | dBr |    |
| 75.23 | Hz   | -0.02 | dBr | 918.7 | Hz   | 0.00  | dBr | 11.220kHz |      | 0.01 | dBr |    |
| 79.01 | Hz   | -0.02 | dBr | 964.9 | Hz   | 0.00  | dBr | 11.785kHz |      | 0.01 | dBr |    |
| 82.98 | Hz   | -0.02 | dBr | 1.013 | kHz  | 0.00  | dBr | 12.377kHz |      | 0.01 | dBr |    |
| 87.16 | Hz   | -0.02 | dBr | 1.064 | kHz  | 0.00  | dBr | 13.000kHz |      | 0.01 | dBr |    |
| 91.54 | Hz   | -0.02 | dBr | 1.118 | kHz  | 0.00  | dBr | 13.654kHz |      | 0.01 | dBr |    |
| 96.15 | Hz   | -0.02 | dBr | 1.174 | kHz  | 0.00  | dBr | 14.340kHz |      | 0.01 | dBr |    |
| 100.9 | Hz   | -0.02 | dBr | 1.233 | kHz  | 0.00  | dBr | 15.061kHz |      | 0.01 | dBr |    |
| 106.0 | Hz   | -0.02 | dBr | 1.295 | kHz  | 0.00  | dBr | 15.819kHz |      | 0.01 | dBr |    |
| 111.3 | Hz   | -0.02 | dBr | 1.360 | kHz  | 0.00  | dBr | 16.615kHz |      | 0.01 | dBr |    |
| 117.0 | Hz   | -0.02 | dBr | 1.428 | kHz  | 0.00  | dBr | 17.450kHz |      | 0.01 | dBr |    |
| 122.8 | Hz   | -0.01 | dBr | 1.500 | kHz  | 0.00  | dBr | 18.328kHz |      | 0.01 | dBr |    |
| 129.0 | Hz   | -0.02 | dBr | 1.576 | kHz  | 0.00  | dBr | 19.250kHz |      | 0.01 | dBr |    |
| 135.5 | Hz   | -0.01 | dBr | 1.655 | kHz  | 0.00  | dBr | 20.218kHz |      | 0.01 | dBr |    |
| 142.3 | Hz   | -0.01 | dBr | 1.738 | kHz  | 0.00  | dBr | 21.234kHz |      | 0.02 | dBr |    |
| 149.5 | Hz   | -0.01 | dBr | 1.826 | kHz  | 0.00  | dBr | 22.302kHz |      | 0.02 | dBr |    |
| 157.0 | Hz   | -0.01 | dBr | 1.918 | kHz  | 0.00  | dBr | 23.424kHz |      | 0.02 | dBr |    |
| 164.9 | Hz   | -0.01 | dBr | 2.014 | kHz  | 0.00  | dBr | 24.602kHz |      | 0.02 | dBr |    |
| 173.2 | Hz   | -0.01 | dBr | 2.115 | kHz  | 0.00  | dBr | 25.839kHz |      | 0.02 | dBr |    |
| 181.9 | Hz   | -0.01 | dBr | 2.222 | kHz  | 0.00  | dBr | 27.139kHz |      | 0.03 | dBr |    |
| 191.1 | Hz   | -0.01 | dBr | 2.334 | kHz  | 0.00  | dBr | 28.504kHz |      | 0.03 | dBr |    |
| 200.7 | Hz   | -0.01 | dBr | 2.451 | kHz  | 0.00  | dBr | 29.937kHz |      | 0.03 | dBr |    |
| 210.8 | Hz   | -0.01 | dBr | 2.574 | kHz  | 0.00  | dBr | 31.500kHz |      | 0.02 | dBr |    |
| 221.4 | Hz   | -0.01 | dBr | 2.704 | kHz  | 0.00  | dBr |           |      |      |     |    |
| 232.5 | Hz   | -0.01 | dBr | 2.840 | kHz  | 0.01  | dBr |           |      |      |     |    |

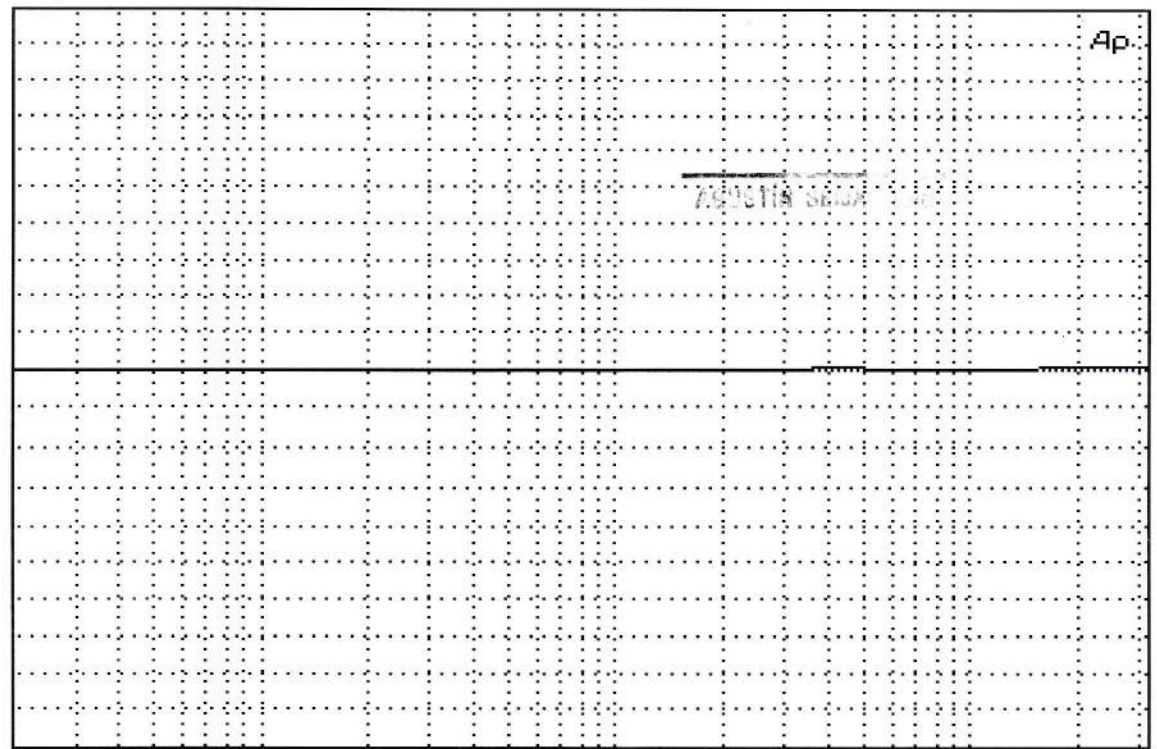
AUSTIN SIGNAL LAB

0 dBr=5.104 V

5.00 dBr

AMPL A  
0 dBr

-5.00 dBr

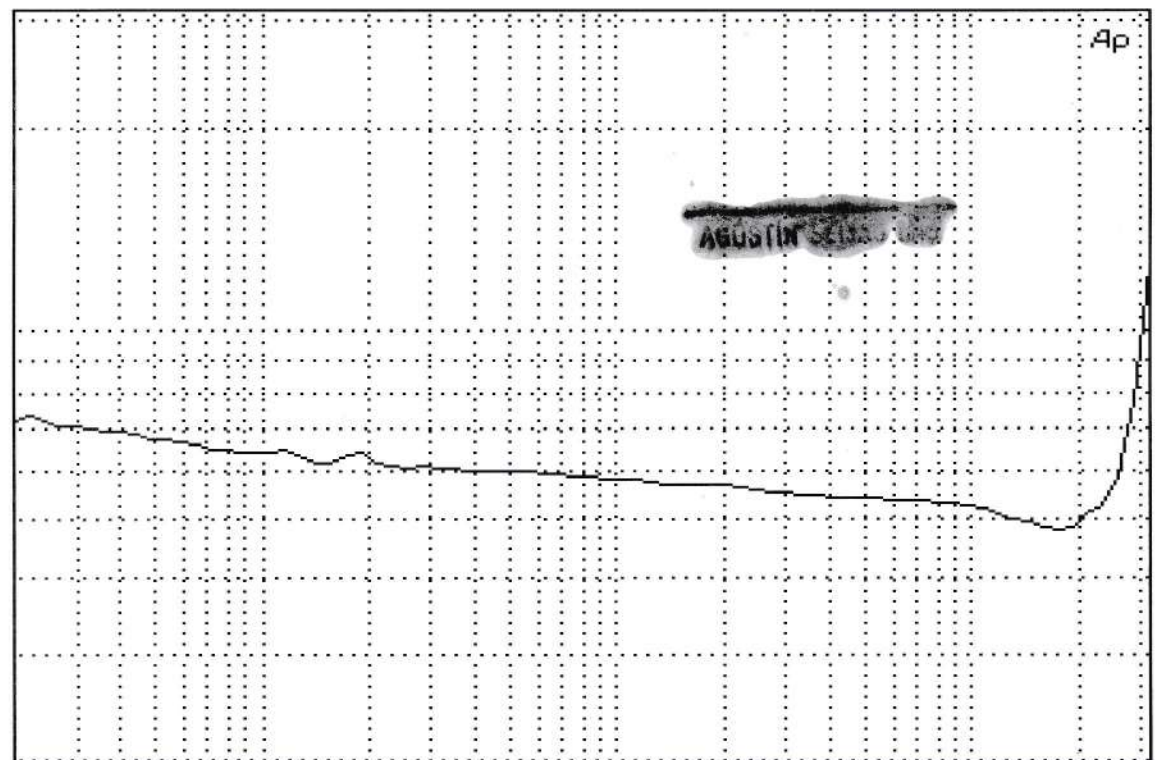


20.000 Hz LOG FREQUENCY 31.500kHz  
SETTINGS( UN-WTD <10 Hz - >300 kHz GEN:SINE 742.0 mV )

3.15 %

LOG  
THD+N A

0.200 %



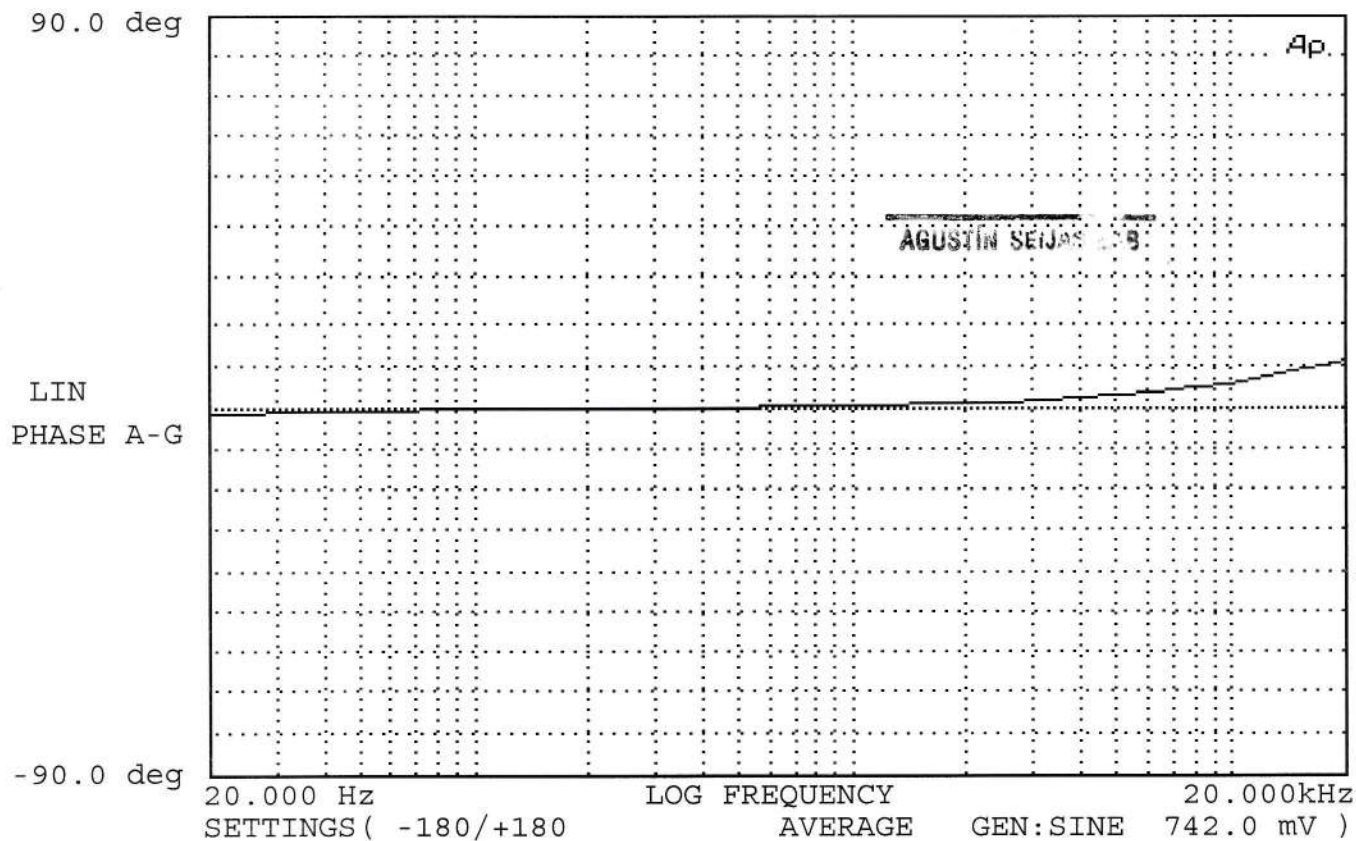
20.000 Hz LOG FREQUENCY 31.500kHz  
SETTINGS ( AVERAGE <10 Hz - 80 kHz GEN:SINE 742.0 mV )

| GEN FREQ | THD+N   | A | GEN FREQ  | THD+N   | A | GEN FREQ  | THD+N   | A | Ap |
|----------|---------|---|-----------|---------|---|-----------|---------|---|----|
| 20.00 Hz | 0.721 % |   | 256.6 Hz  | 0.606 % |   | 3.294 kHz | 0.547 % |   |    |
| 22.06 Hz | 0.738 % |   | 283.1 Hz  | 0.607 % |   | 3.634 kHz | 0.546 % |   |    |
| 24.33 Hz | 0.723 % |   | 312.3 Hz  | 0.604 % |   | 4.009 kHz | 0.542 % |   |    |
| 26.84 Hz | 0.707 % |   | 344.5 Hz  | 0.601 % |   | 4.422 kHz | 0.540 % |   |    |
| 29.61 Hz | 0.709 % |   | 380.1 Hz  | 0.597 % |   | 4.878 kHz | 0.539 % |   |    |
| 32.67 Hz | 0.700 % |   | 419.3 Hz  | 0.596 % |   | 5.381 kHz | 0.538 % |   |    |
| 36.04 Hz | 0.692 % |   | 462.5 Hz  | 0.596 % |   | 5.937 kHz | 0.535 % |   |    |
| 39.75 Hz | 0.694 % |   | 510.2 Hz  | 0.595 % |   | 6.549 kHz | 0.535 % |   |    |
| 43.86 Hz | 0.687 % |   | 562.9 Hz  | 0.595 % |   | 7.224 kHz | 0.535 % |   |    |
| 48.38 Hz | 0.675 % |   | 620.9 Hz  | 0.592 % |   | 7.970 kHz | 0.531 % |   |    |
| 53.37 Hz | 0.674 % |   | 685.0 Hz  | 0.591 % |   | 8.792 kHz | 0.527 % |   |    |
| 58.87 Hz | 0.669 % |   | 755.6 Hz  | 0.587 % |   | 9.698 kHz | 0.525 % |   |    |
| 64.95 Hz | 0.662 % |   | 833.6 Hz  | 0.585 % |   | 10.699kHz | 0.518 % |   |    |
| 71.65 Hz | 0.650 % |   | 919.6 Hz  | 0.582 % |   | 11.802kHz | 0.509 % |   |    |
| 79.04 Hz | 0.646 % |   | 1.014 kHz | 0.579 % |   | 13.020kHz | 0.500 % |   |    |
| 87.19 Hz | 0.643 % |   | 1.119 kHz | 0.577 % |   | 14.362kHz | 0.491 % |   |    |
| 96.18 Hz | 0.638 % |   | 1.234 kHz | 0.574 % |   | 15.844kHz | 0.485 % |   |    |
| 106.1 Hz | 0.638 % |   | 1.361 kHz | 0.570 % |   | 17.478kHz | 0.478 % |   |    |
| 117.0 Hz | 0.646 % |   | 1.502 kHz | 0.566 % |   | 19.281kHz | 0.485 % |   |    |
| 129.1 Hz | 0.630 % |   | 1.657 kHz | 0.565 % |   | 21.269kHz | 0.513 % |   |    |
| 142.4 Hz | 0.613 % |   | 1.828 kHz | 0.565 % |   | 23.463kHz | 0.524 % |   |    |
| 157.1 Hz | 0.618 % |   | 2.016 kHz | 0.567 % |   | 25.883kHz | 0.582 % |   |    |
| 173.3 Hz | 0.637 % |   | 2.224 kHz | 0.559 % |   | 28.552kHz | 0.774 % |   |    |
| 191.2 Hz | 0.641 % |   | 2.454 kHz | 0.557 % |   | 31.500kHz | 1.24 %  |   |    |
| 210.9 Hz | 0.613 % |   | 2.707 kHz | 0.553 % |   |           |         |   |    |
| 232.6 Hz | 0.608 % |   | 2.986 kHz | 0.549 % |   |           |         |   |    |

IMD A LEVEL A  
1.83 % 4.198 V

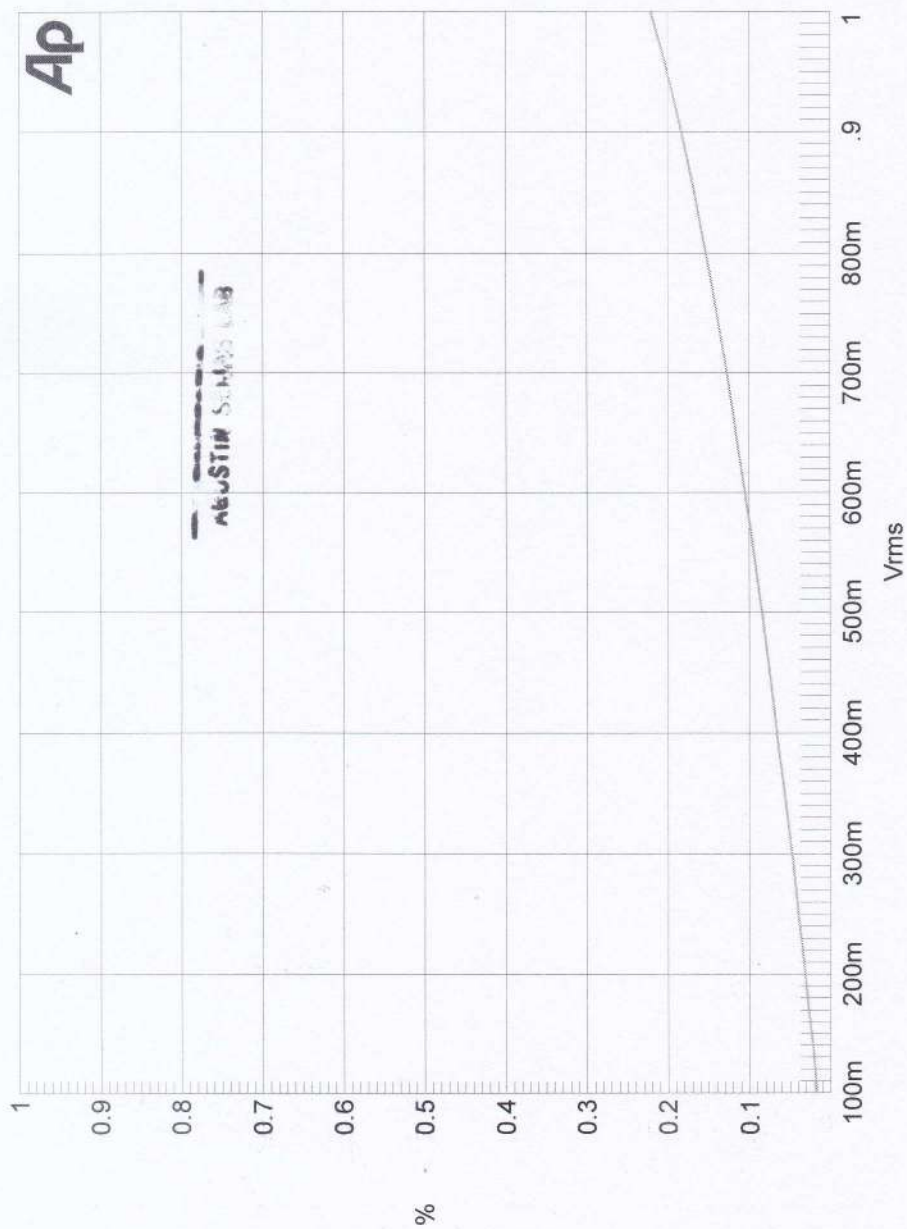
GEN:IMD 742.0 mV 70Hz/8kHz

Ap



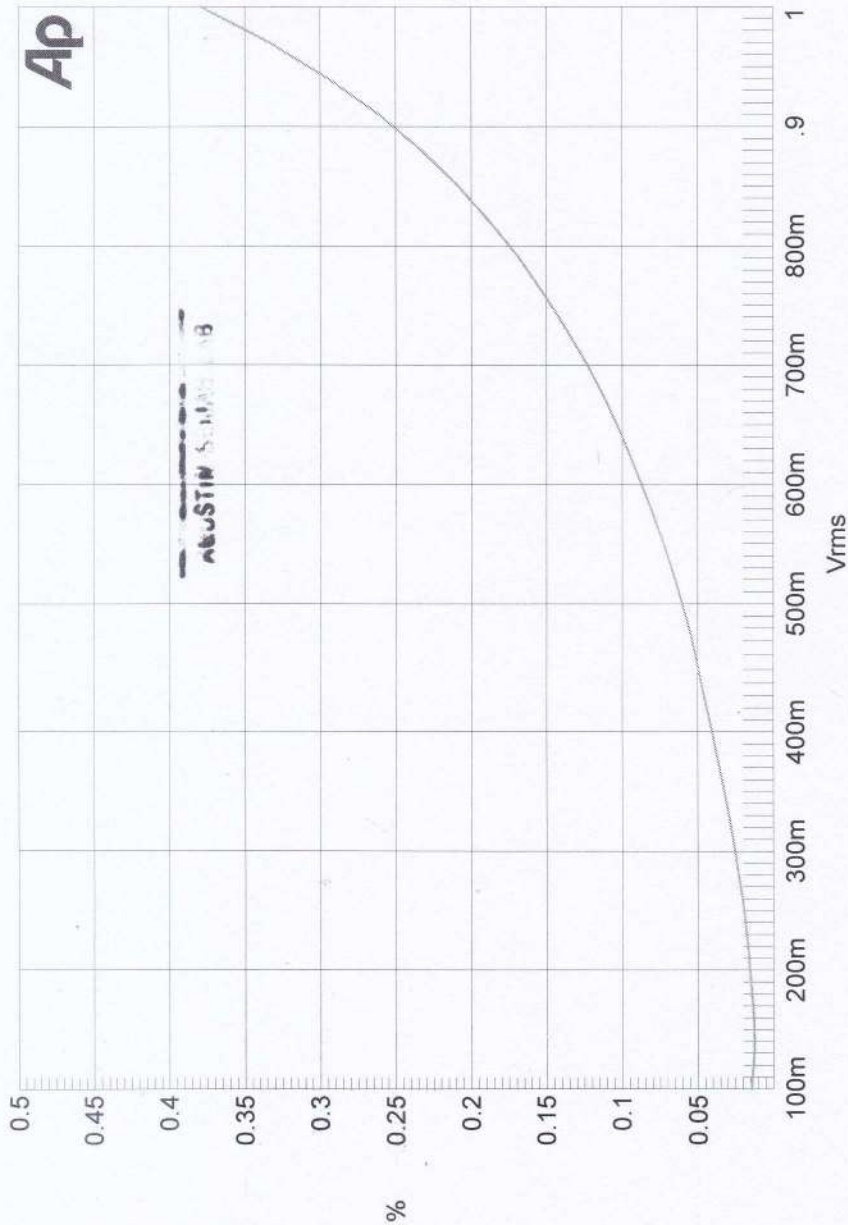
| GEN FREQ | PHASE A-G | GEN FREQ  | PHASE A-G | GEN FREQ  | PHASE A-G | Ap |
|----------|-----------|-----------|-----------|-----------|-----------|----|
| 20.00 Hz | -1.7 deg  | 250.0 Hz  | -0.1 deg  | 3.150 kHz | 1.8 deg   |    |
| 25.00 Hz | -1.4 deg  | 315.0 Hz  | 0.0 deg   | 4.000 kHz | 2.3 deg   |    |
| 31.50 Hz | -1.1 deg  | 400.0 Hz  | 0.0 deg   | 5.000 kHz | 2.9 deg   |    |
| 40.00 Hz | -0.9 deg  | 500.0 Hz  | 0.1 deg   | 6.300 kHz | 3.7 deg   |    |
| 50.00 Hz | -0.7 deg  | 630.0 Hz  | 0.2 deg   | 8.000 kHz | 4.7 deg   |    |
| 63.00 Hz | -0.6 deg  | 800.0 Hz  | 0.3 deg   | 10.000kHz | 5.9 deg   |    |
| 80.00 Hz | -0.4 deg  | 1.000 kHz | 0.4 deg   | 12.500kHz | 7.3 deg   |    |
| 100.0 Hz | -0.4 deg  | 1.250 kHz | 0.6 deg   | 16.000kHz | 9.4 deg   |    |
| 125.0 Hz | -0.3 deg  | 1.600 kHz | 0.8 deg   | 20.000kHz | 11.8 deg  |    |
| 160.0 Hz | -0.2 deg  | 2.000 kHz | 1.1 deg   |           |           |    |
| 200.0 Hz | -0.1 deg  | 2.500 kHz | 1.4 deg   |           |           |    |

|           |           |    |          |                   |           |    |
|-----------|-----------|----|----------|-------------------|-----------|----|
| RATIO A/G | FREQ      | GA | GEN:SINE | 742.0 mV          | 1.000 kHz | Ap |
| 16.69dB   | 996.29 Hz |    |          |                   |           |    |
| NOISE A   |           |    | UN-WTD   | 22 Hz - 22 kHz    |           | Ap |
| 72.40 uV  |           |    | GEN:SINE | 742.0 mV          | 1.000 kHz |    |
| NOISE A   |           |    | UN-WTD   | 400 Hz - 22 kHz   |           | Ap |
| 21.35 uV  |           |    | GEN:SINE | 742.0 mV          | 1.000 kHz |    |
| NOISE A   |           |    | UN-WTD   | 400 Hz - 30 kHz   |           | Ap |
| 23.36 uV  |           |    | GEN:SINE | 742.0 mV          | 1.000 kHz |    |
| NOISE A   |           |    | UN-WTD   | 400 Hz - 80 kHz   |           | Ap |
| 33.74 uV  |           |    | GEN:SINE | 742.0 mV          | 1.000 kHz |    |
| NOISE A   |           |    | UN-WTD   | 400 Hz - >300 kHz |           | Ap |
| 39.93 uV  |           |    | GEN:SINE | 742.0 mV          | 1.000 kHz |    |

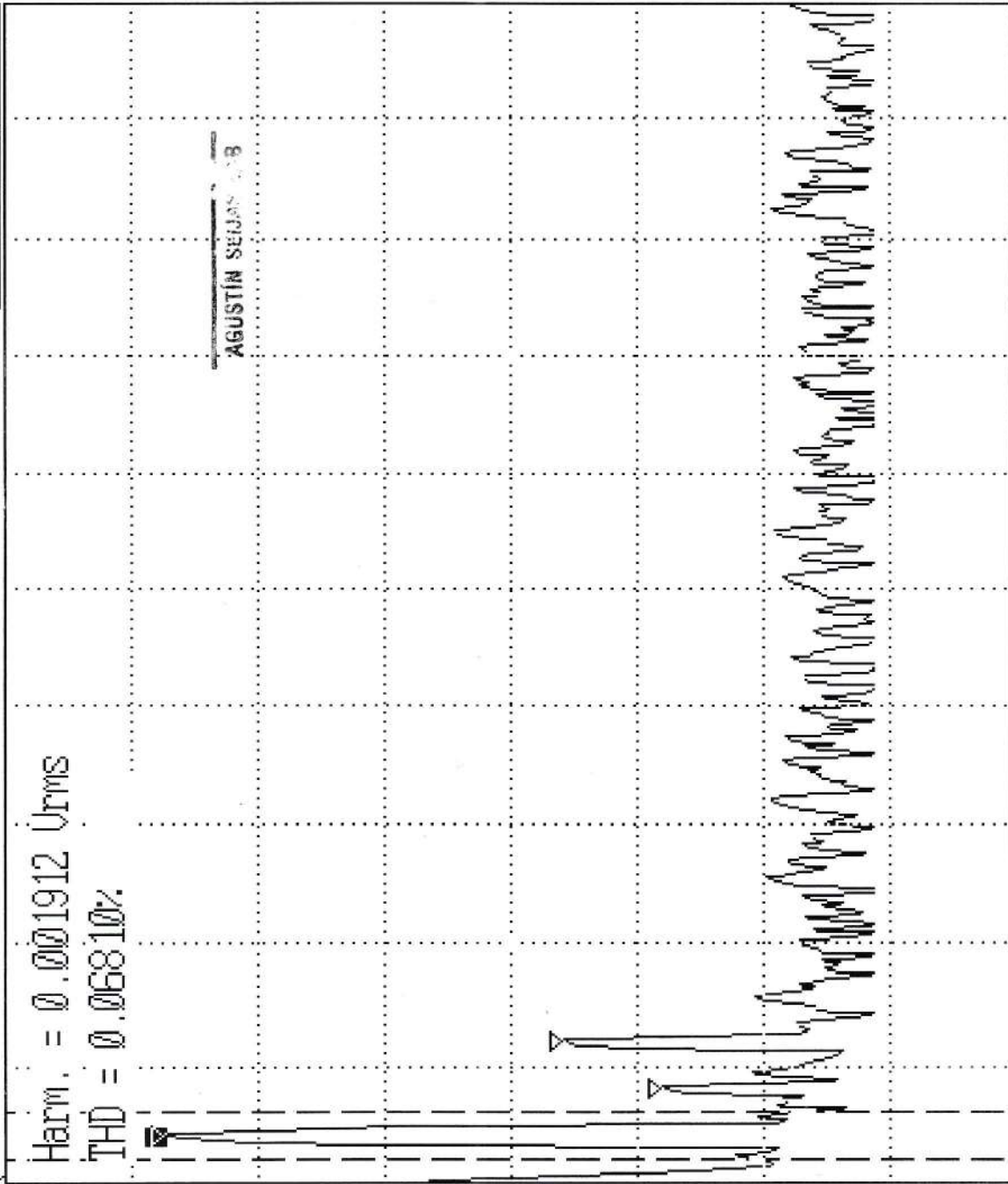


| Sweep | Trace | Color | Line Style | Thick | Data      | Axis | Comment |
|-------|-------|-------|------------|-------|-----------|------|---------|
| 1     | 1     | Cyan  | Solid      | 7     | Anlr.CCIF | Left |         |

IMD option required. The Analog Analyzer Function meter is set to CCIF. The Sys One CCIF IM analyzer measuring only the amplitude of the difference product (f2 - f1) 4 kLds in this mode



| Sweep                                                                                                                                                                                                                   | Trace | Color | Line Style | Thick | Data     | Axis | Comment |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|------------|-------|----------|------|---------|
| 1                                                                                                                                                                                                                       | 1     | Cyan  | Solid      | 7     | Anlr.DIM | Left |         |
| Requires IMD option. The Analog Analyzer Function meter is set to DIM. The DIM intermod analyzer measures the spectrum between 750 Hz and 2.4 kHz - includes 5th and 6th order IM products of the sine-and-square wave. |       |       |            |       |          |      |         |



0.0 kHz 12.5000 kHz 25.0000 kHz  
Top = 50.1187 Urms 20 dB/div Wnda: BMH  
File= Live

Span 25 kHz

Linewidth 62.5 Hz

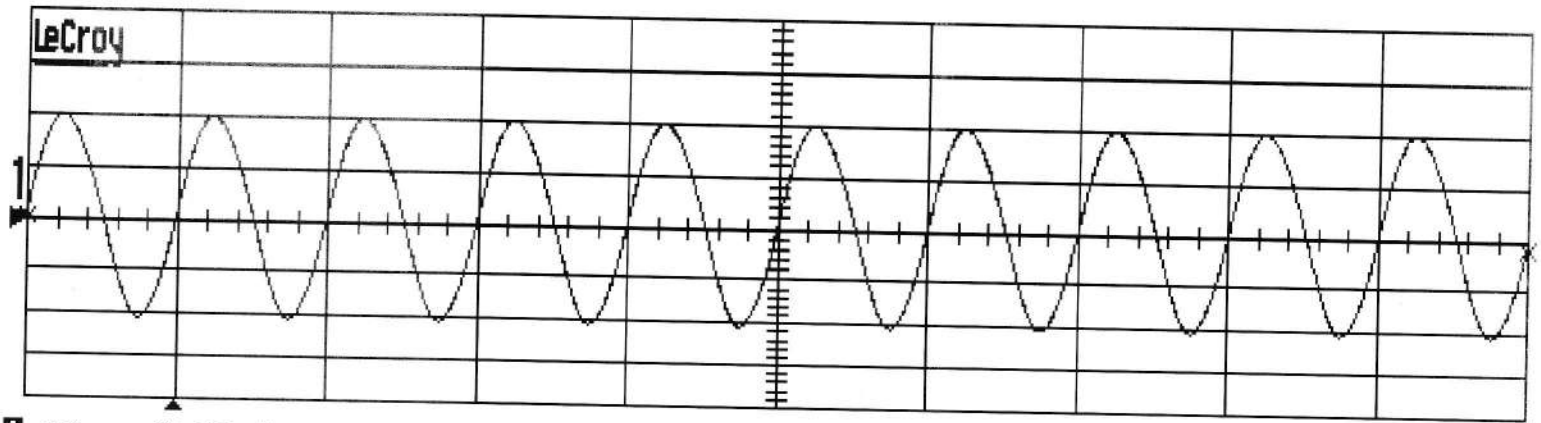
Acq. Time 16.00 ms

Full Span:

Start Freq. 0.0 kHz

Center Freq. 12.5000 kHz

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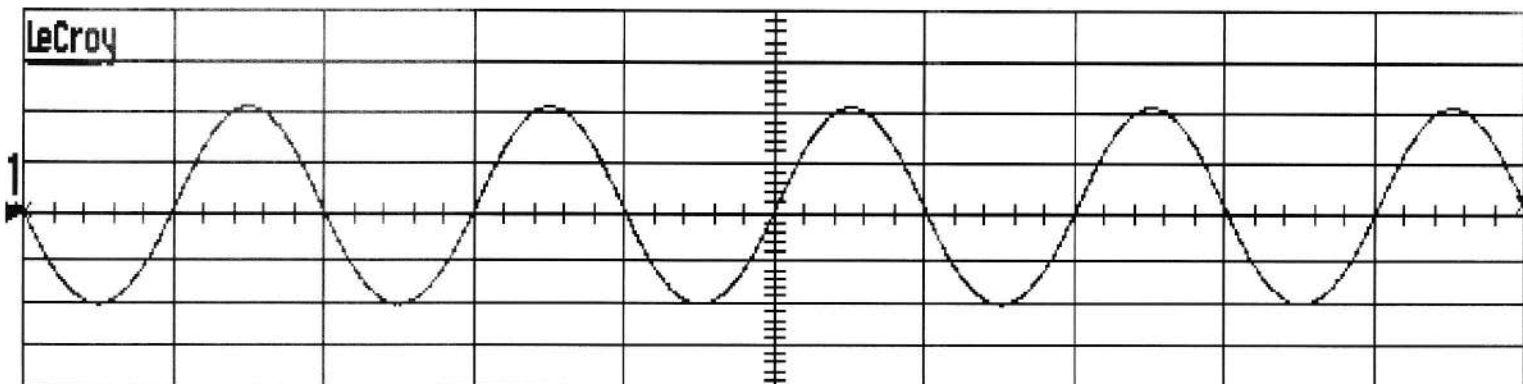
1 10 μs 2.00 V

|            |              |            |             |
|------------|--------------|------------|-------------|
| pkpk(1)    | 8.25 V       | Freq(1)    | 99.810 kHz  |
| sdev(1)    | 2.810 V      | period(1)  | 10.0190 μs  |
| rms(1)     | 2.810 V      | width(1)   | 4.7224 μs   |
| cmean(1) ∫ | -32mV        | rise(1)    | 2.8083 μs   |
| csdev(1) ∫ | 2.807 V      | Fall(1)    | 3.0313 μs   |
| crms(1) ∫  | 2.807 V      | r20-80%(1) | 2.0045 μs   |
| top(1)     | 3.76 V       | F80-20%(1) | 2.1876 μs   |
| base(1)    | -4.19 V      | over+(1)   | 1.94 %      |
| ampl(1)    | 7.95 V       | over-(1)   | 1.88 %      |
| mean(1)    | -32mV        | xamn(1)    | -2.45840 μs |
| minimum(1) | -4.34 V      | xamx(1)    | -7.58191 μs |
| maximum(1) | 3.91 V       | delay(1)   | -4.8116 μs  |
| area(1)    | -3.19863 μVs | cycles(1)  | 9           |

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1 50 ms 2.00 V

|                                                                                            |              |            |               |
|--------------------------------------------------------------------------------------------|--------------|------------|---------------|
| pkpk(1)                                                                                    | 8.38 V       | Freq(1)    | 9.98 Hz       |
| sdev(1)                                                                                    | 2.891 V      | period(1)  | 100.249 ms    |
| rms(1)                                                                                     | 2.891 V      | width(1)   | 49.9470 ms    |
| cmean(1)  | -28mV        | rise(1)    | 28.9640 ms    |
| csdev(1)  | 2.888 V      | Fall(1)    | 28.9538 ms    |
| crms(1)   | 2.888 V      | r20-80%(1) | 20.0435 ms    |
| top(1)                                                                                     | 4.04 V       | F80-20%(1) | 19.9830 ms    |
| base(1)                                                                                    | -4.04 V      | over+(1)   | 1.55 %        |
| ampl(1)                                                                                    | 8.08 V       | over-(1)   | 2.15 %        |
| mean(1)                                                                                    | -29mV        | xamn(1)    | -24.8575 ms   |
| minimum(1)                                                                                 | -4.21 V      | xamx(1)    | 25.1989 ms    |
| maximum(1)                                                                                 | 4.16 V       | delay(1)   | 363.0 $\mu$ s |
| area(1)                                                                                    | -14.4334 mVs | cycles(1)  | 4             |

Waveform Analysis  
AutoStop

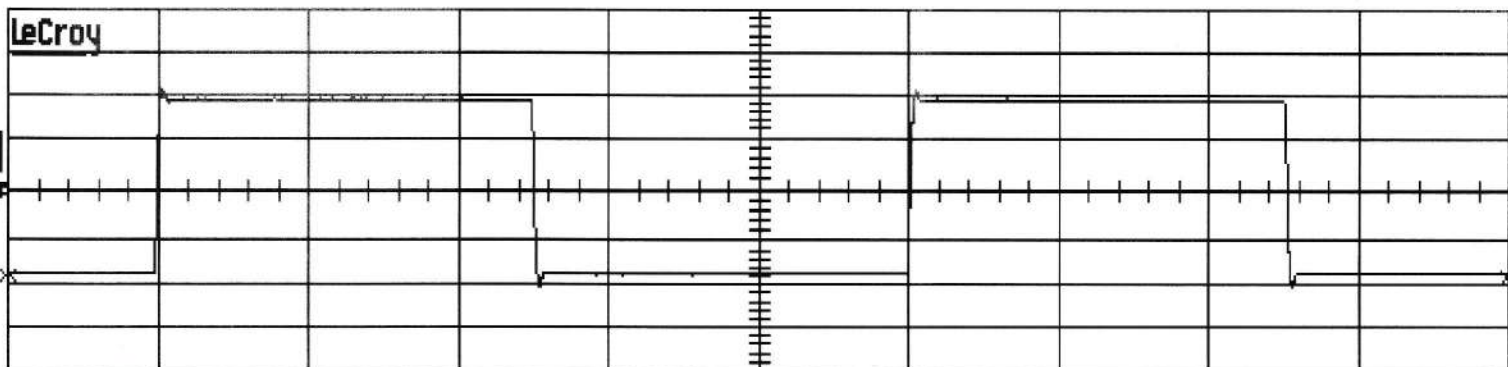
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1

1 .5 ms 2.00 V

|                   |                   |            |                  |
|-------------------|-------------------|------------|------------------|
| pkpk(1)           | 9.94 V            | Freq(1)    | 1.04674 kHz      |
| sdev(1)           | 2.812 V           | period(1)  | 955.350 $\mu$ s  |
| rms(1)            | 2.814 V           | width(1)   | 478.345 $\mu$ s  |
| cmean(1) $\sim$   | -2mV              | rise(1)    | 384.824 $\mu$ s  |
| csdev(1) $\sim$   | 2.839 V           | Fall(1)    | 384.758 $\mu$ s  |
| crms(1) $\sim$    | 2.839 V           | r20-80%(1) | 285.940 $\mu$ s  |
| top(1) $\approx$  | 4.97 V            | F80-20%(1) | 286.556 $\mu$ s  |
| base(1) $\approx$ | -4.96 V           | over+(1)   | 0.00 %           |
| ampl(1) $\approx$ | 9.94 V            | over-(1)   | 0.00 %           |
| mean(1)           | -79mV             | xamn(1)    | -235.265 $\mu$ s |
| minimum(1)        | -4.96 V           | xamx(1)    | 242.334 $\mu$ s  |
| maximum(1)        | 4.97 V            | delay(1)   | 2.498 $\mu$ s    |
| area(1)           | -396.656 $\mu$ Vs | cycles(1)  | 4                |

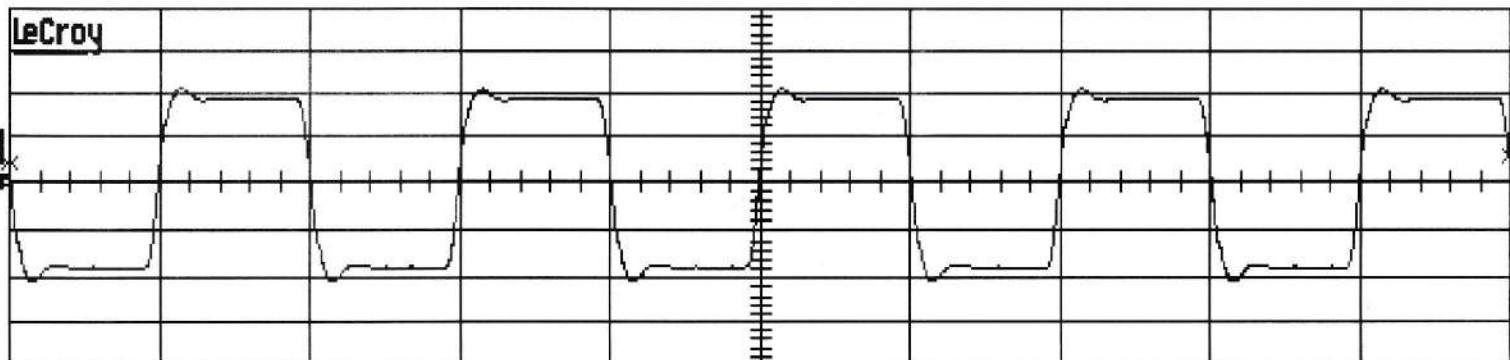


1 .2 ms 5.0 V

|                 |            |            |                 |
|-----------------|------------|------------|-----------------|
| pkpk(1)         | 20.78 V    | Freq(1)    | 996.29 Hz       |
| sdev(1)         | 8.964 V    | period(1)  | 1.00372 ms      |
| rms(1)          | 8.963 V    | width(1)   | 502.558 $\mu$ s |
| cmean(1) $\sim$ | -28mV      | rise(1)    | 5.440 $\mu$ s   |
| csdev(1) $\sim$ | 8.963 V    | Fall(1)    | 6.010 $\mu$ s   |
| crms(1) $\sim$  | 8.963 V    | r20-80%(1) | 3.360 $\mu$ s   |
| top(1)          | 8.92 V     | F80-20%(1) | 3.730 $\mu$ s   |
| base(1)         | -9.04 V    | over+(1)   | 6.95 %          |
| ampl(1)         | 17.97 V    | over-(1)   | 8.70 %          |
| mean(1)         | 0mV        | xamn(1)    | 511.051 $\mu$ s |
| minimum(1)      | -10.61 V   | xamx(1)    | 8.3046 $\mu$ s  |
| maximum(1)      | 10.17 V    | delay(1)   | 61 ns           |
| area(1)         | 449.96 nVs | cycles(1)  | 1               |

AGUSTIN BENITO 1.83

□ AUTO

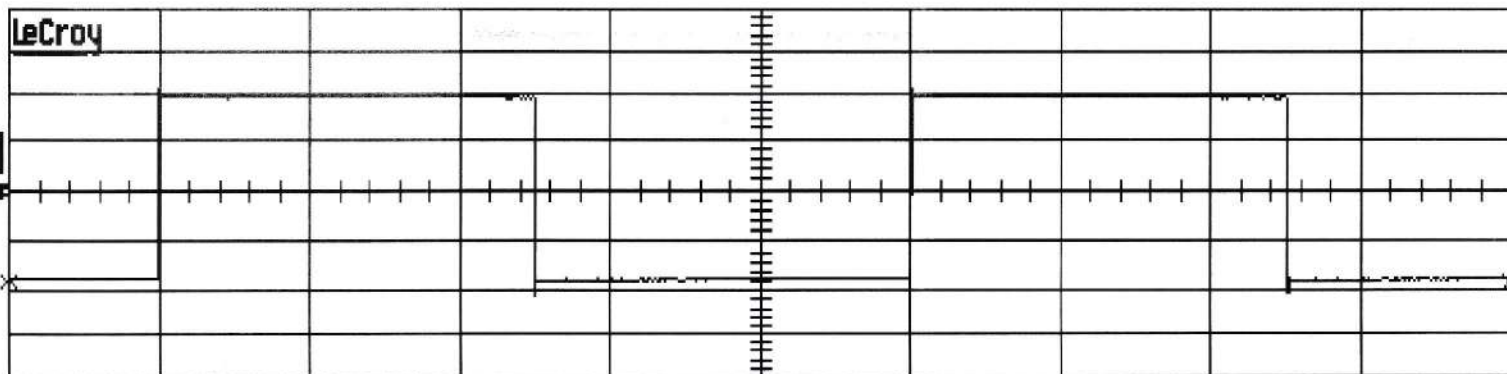


1 50  $\mu$ s 5.0 V

|                             |                   |            |                  |
|-----------------------------|-------------------|------------|------------------|
| pkpk(1)                     | 21.09 V           | Freq(1)    | 9.9928 kHz       |
| sdev(1)                     | 8.714 V           | period(1)  | 100.073 $\mu$ s  |
| rms(1)                      | 8.714 V           | width(1)   | 50.6256 $\mu$ s  |
| cmean(1) $\curvearrowright$ | -51mV             | rise(1)    | 5.4249 $\mu$ s   |
| csdev(1) $\curvearrowright$ | 8.711 V           | Fall(1)    | 5.9415 $\mu$ s   |
| crms(1) $\curvearrowright$  | 8.711 V           | r20-80%(1) | 3.3760 $\mu$ s   |
| top(1)                      | 8.92 V            | F80-20%(1) | 3.6831 $\mu$ s   |
| base(1)                     | -9.20 V           | over+(1)   | 7.76 %           |
| ampl(1)                     | 18.13 V           | over-(1)   | 8.62 %           |
| mean(1)                     | -51mV             | xamn(1)    | -41.5139 $\mu$ s |
| minimum(1)                  | -10.76 V          | xamx(1)    | 8.88463 $\mu$ s  |
| maximum(1)                  | 10.33 V           | delay(1)   | -4.4 ns          |
| area(1)                     | -25.5102 $\mu$ Vs | cycles(1)  | 4                |

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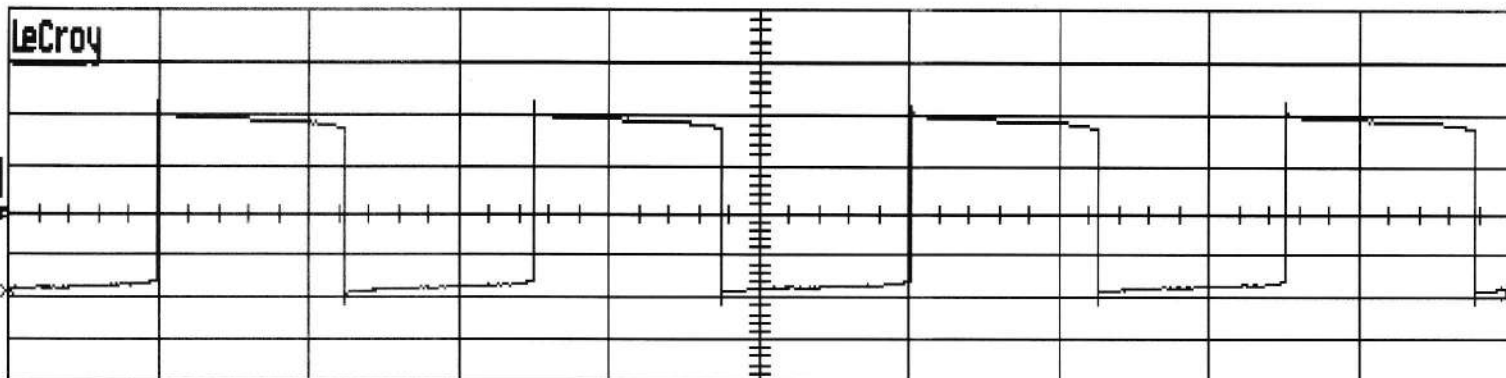


1 2 ms 5.0 V

|                 |                  |            |               |
|-----------------|------------------|------------|---------------|
| pkpk(1)         | 21.09 V          | Freq(1)    | 99.68 Hz      |
| sdev(1)         | 9.069 V          | period(1)  | 10.0318 ms    |
| rms(1)          | 9.069 V          | width(1)   | 5.01603 ms    |
| cmean(1) $\sim$ | -10mV            | rise(1)    | 5.60 $\mu$ s  |
| csdev(1) $\sim$ | 9.070 V          | Fall(1)    | 5.58 $\mu$ s  |
| crms(1) $\sim$  | 9.070 V          | r20-80%(1) | 3.42 $\mu$ s  |
| top(1)          | 9.08 V           | F80-20%(1) | 3.81 $\mu$ s  |
| base(1)         | -9.10 V          | over+(1)   | 6.01 %        |
| ampl(1)         | 18.18 V          | over-(1)   | 9.98 %        |
| mean(1)         | 20mV             | xamn(1)    | 5.02465 ms    |
| minimum(1)      | -10.92 V         | xamx(1)    | 8.806 $\mu$ s |
| maximum(1)      | 10.17 V          | delay(1)   | 0.09 $\mu$ s  |
| area(1)         | 402.468 $\mu$ Vs | cycles(1)  | 1             |

Waveform 1

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20 ms 5.0 V

|                                                                                            |              |            |              |
|--------------------------------------------------------------------------------------------|--------------|------------|--------------|
| pkpk(1)                                                                                    | 22.19 V      | Freq(1)    | 19.93 Hz     |
| sdev(1)                                                                                    | 9.028 V      | period(1)  | 50.1826 ms   |
| rms(1)                                                                                     | 9.028 V      | width(1)   | 25.0666 ms   |
| cmean(1)  | -62mV        | rise(1)    | 5.3 $\mu$ s  |
| csdev(1)  | 9.028 V      | Fall(1)    | 6.0 $\mu$ s  |
| crms(1)   | 9.029 V      | r20-80%(1) | 3.6 $\mu$ s  |
| top(1)                                                                                     | 9.01 V       | F80-20%(1) | 4.0 $\mu$ s  |
| base(1)                                                                                    | -9.00 V      | over+(1)   | 9.94 %       |
| ampl(1)                                                                                    | 18.01 V      | over-(1)   | 13.26 %      |
| mean(1)                                                                                    | -28mV        | xamn(1)    | 25.0749 ms   |
| minimum(1)                                                                                 | -11.39 V     | xamx(1)    | 8.83 $\mu$ s |
| maximum(1)                                                                                 | 10.80 V      | delay(1)   | 0.0 $\mu$ s  |
| area(1)                                                                                    | -5.65469 mVs | cycles(1)  | 3            |

AbuSTH 4/2/2019

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GUARANTEE:

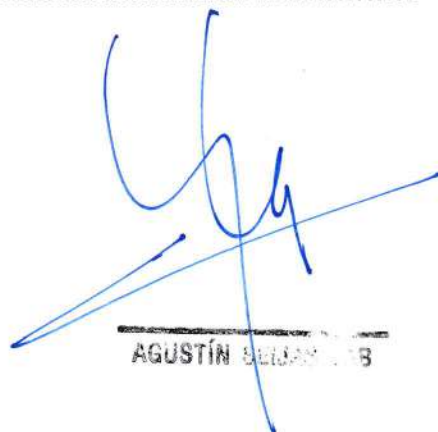
THIS EQUIPMENT IS GUARANTEED AGAINST ANY DEFECT  
IN MATERIAL OR WORKMANSHIP FOR A PERIOD OF FIVE  
(5) YEARS FROM DATE OF PURCHASE.

ELECTRON TUBES: 90 DAYS OF GUARANTEE.

SPARE PARTS AVAILABILITY: TEN (10) YEARS.

NUMBER: D12A / 12A

DATE: 5/26



AGUSTÍN BELJAN

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