

Hioki 8801 Memory Hi Corder

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1986 SN. 23812 240V

4-channel analog inputs to digital recording with thermal paper roll.

1Meg inputs, 8-bit, DC to 100kHz, 100V max.

From 1983: RECORDING PAPER 9221: Roll type, 110 mm × 30 m, 10 rolls/set

8-bit digital acquisition and only local processing and use for paper plotting make the digital side of the instrument a boat-anchor. However the four separate analog input modules have potential for re-use as analog signal interfaces with settable gain/divider, along with low noise, low offset and drift, and hopefully low distortion with a DC-100kHz bandwidth.

Each analog input channel module:

Analog section

- 4mm banana input
- RN60D precision resistors (100ppm/C)
- LT1055 single opamp
- 2x LF411 single opamps
- C251C dual opamp
- M5230L tracking voltage regulator
- 79L05 reg
- trimmer caps

Digital section

- 78005V regulator
- 74LS96P x2
- 74LS00
- TLP552 x3
- D7003 ADC - in socket

Power supply

- +/-12V to 15V unregulated

LT1055 input opamp with divide and gain for 100mV/div FS output. Dividers are capacitor compensated for frequency. Offset voltage trimmed to zero with a 100k potentiometer between the balance terminals and the wiper tied to V+. Offset voltage drift over months could be adjusted to zero. At least 100kHz full signal bandwidth.

LF411 opamps each provide 2x gain, so total of 4x to D7003, with external adjustment for balance on first opamp, and gain trim on second opamp.

- With 10 divisions the FS analog signal is $10 \times 0.1 \times 4 = 4V$. D7003 uses 4.0V reference, with 8-bit for 16mV resolution.

7905 reg and C251 opamps generate settable DC offsets which are combined with output signal.

M5230L: Regulated pos and neg outputs at +/- 8.4V, so raw input supplies > +/-11.4V.

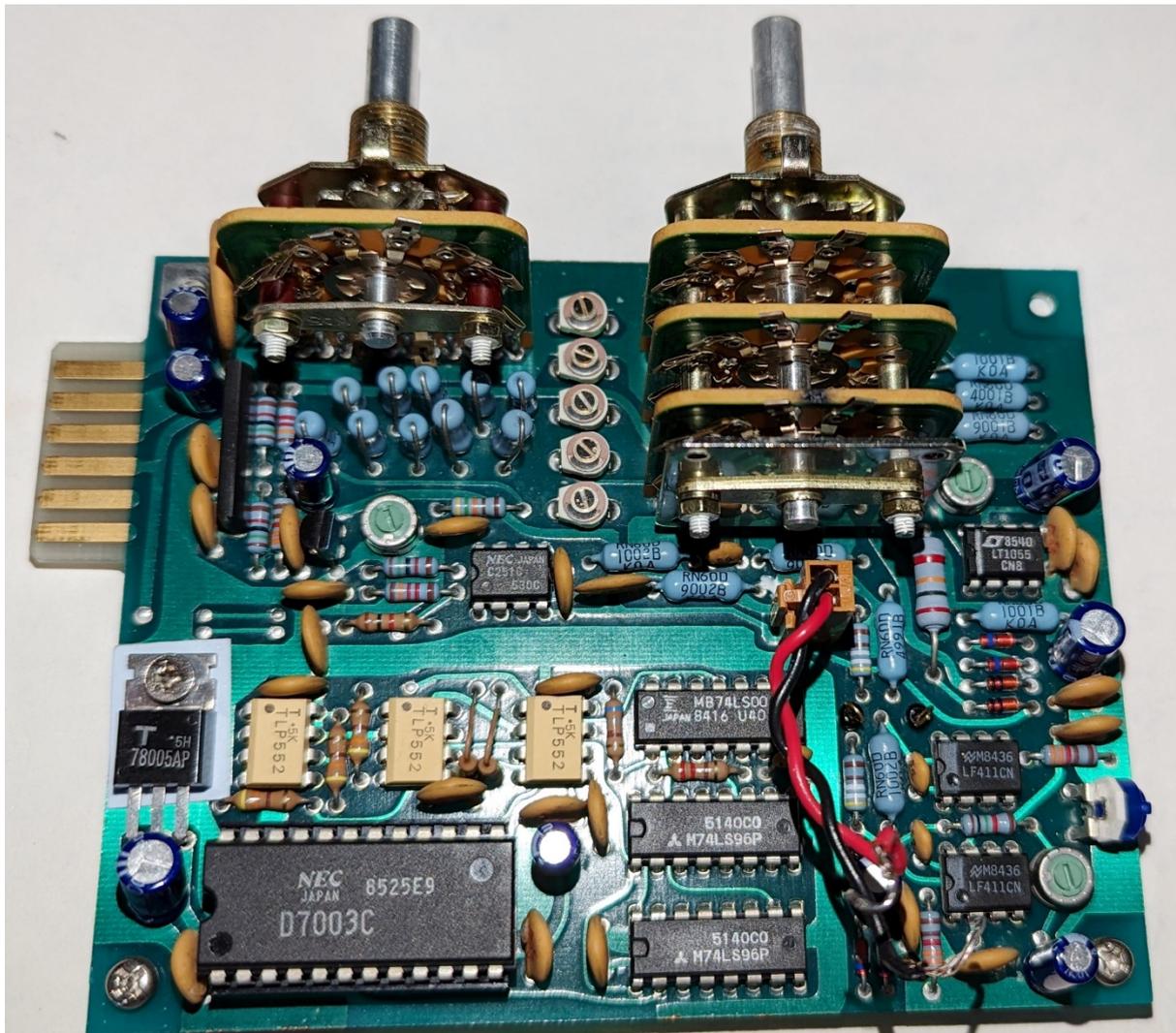
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Analog rail e-caps are 3x 16V and 4x 25V.

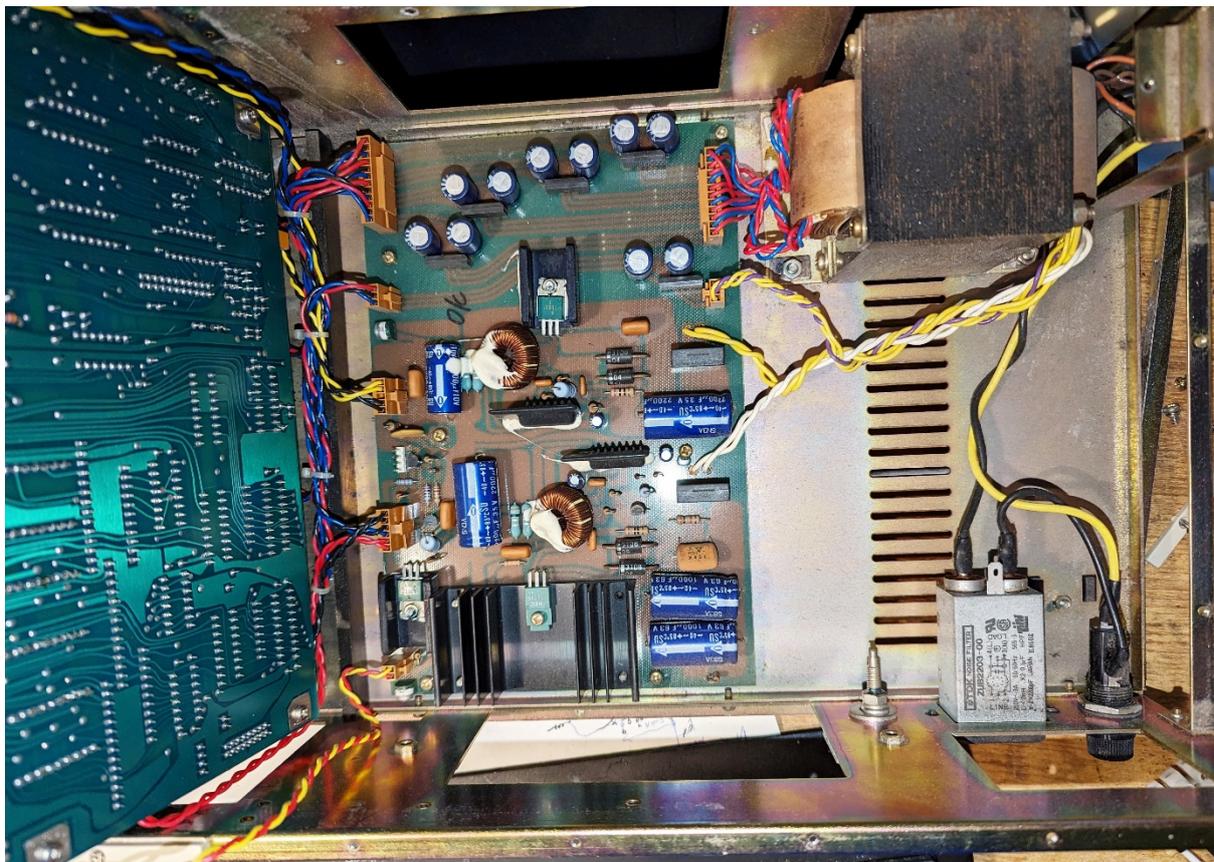
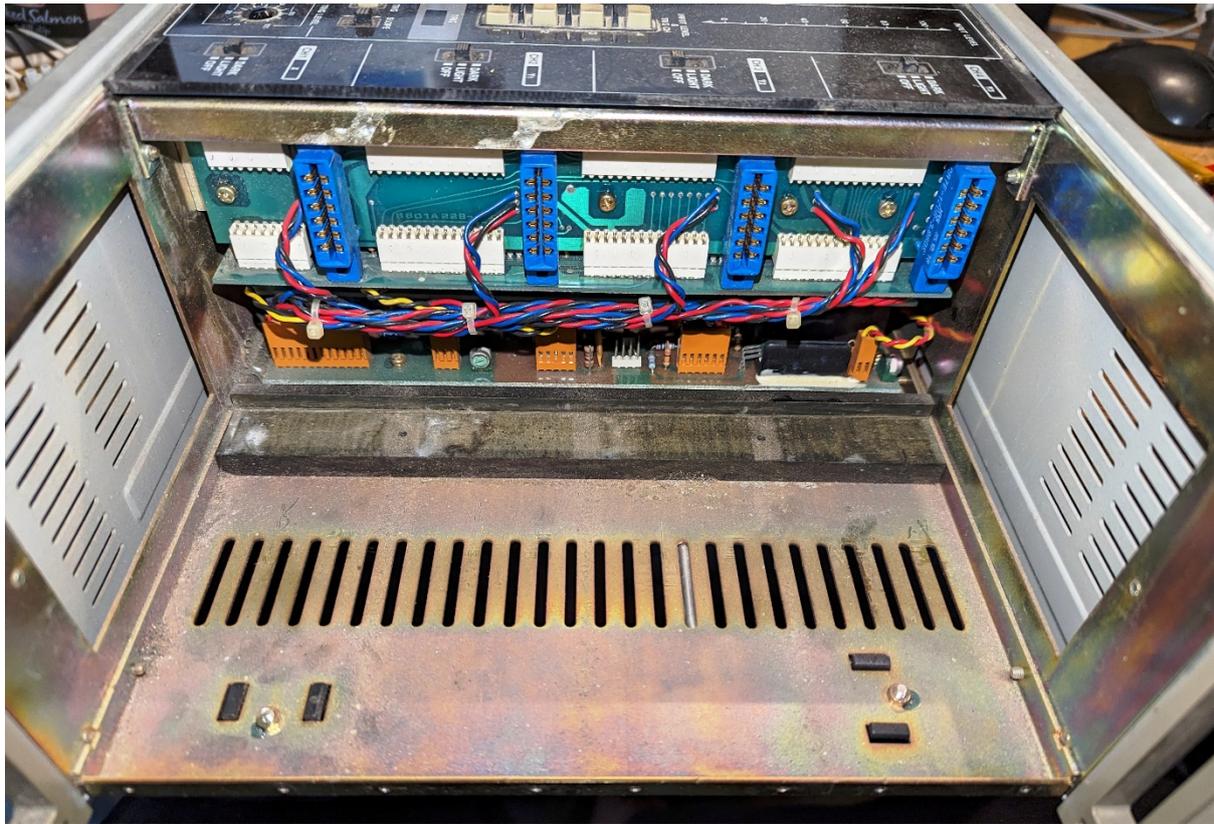
Options for module:

Reduce internal temp rise by disabling unwanted circuitry, such as all digital circuitry by lifting input leg of 7805.

Output zero DC offset (used for plotting) is not likely required, so could lift 4k99 for lower noise floor.



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HIOKI 8801 SIGNAL INPUT MODULE

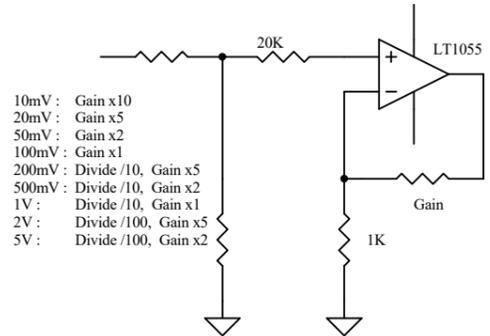
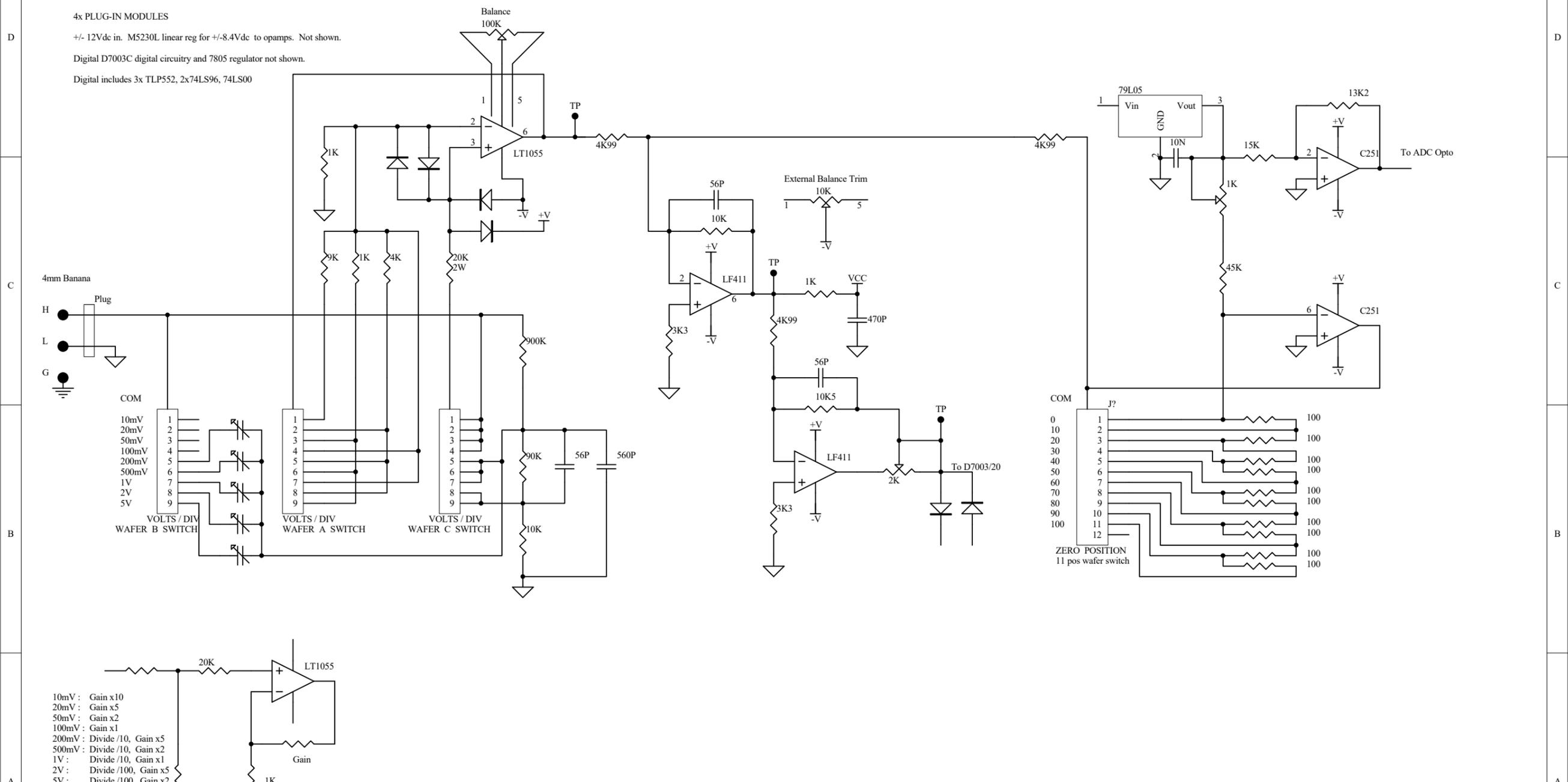
8801A-203B PCB

4x PLUG-IN MODULES

+/- 12Vdc in. M5230L linear reg for +/-8.4Vdc to opamps. Not shown.

Digital D7003C digital circuitry and 7805 regulator not shown.

Digital includes 3x TLP552, 2x74LS96, 74LS00



- 10mV : Gain x10
- 20mV : Gain x5
- 50mV : Gain x2
- 100mV : Gain x1
- 200mV : Divide /10, Gain x5
- 500mV : Divide /10, Gain x2
- 1V : Divide /10, Gain x1
- 2V : Divide /100, Gain x5
- 5V : Divide /100, Gain x2

Title HIOKI 8801		
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