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LIGO E-TRAVELER

E-Traveler DCC Number & Revision D080251-00-C	Schematic DCC Number & Revision D020241 / D030452	Board Title ISS Intensity Stabilization Servo / ISS Photodiode	Board Serial Number 112
PCB Revision Rev D	Cognizant Design Engineer (COG) Ben Abbott	E-Traveler Originator & Institution Stefan Ballmer	Date May 2, 2008

Printed Circuit Board Fabrication Notes

Upon receipt of printed circuit board, note discrepancies and any required repair. Examples include fixing silkscreen, through-hole size correction etc.

See also Hanford ilog by Stefan Ballmer, (4/28/208 - 5/2/2008)

Performed By:	Date

Board Modifications made during initial manufacture to conform with existing DCNs. Cite applicable DCN numbers.

Switched U6, U54, U20, U64 to THS4131.
 Additional 2.1 kHz pole: Added C=150nF in parallel to R31 (499Ohm)
 Lower AC coupling pole by 2: C25 --> 2 uF
 Move pole:zero pair to 10x lower frequency (30Hz:0.8Hz): C2 --> 10 uF
 Add 20Hz:2Hz pole:zero pair: C1 --> 47 uF, R1 --> 169 Ohm, (R21 stays at 1.54k)
 Add 870Hz:8.6kHz pole:zero pair: C51 --> 330 nF, R51 --> 56.2 Ohm, (R58 stays at 499 Ohm)

(Continued in discrepancy section)

Performed By:	Date
Stefan Ballmer	May 2, 2008

Acceptance Testing

Test Procedure DCC Number & Revision

Performed By:	Date

List any discrepancies or deviations from limits established in the test procedure

By-pass U22 and add passive offset network at the output (see picture below). This gives an offset adjust between 0.44 V and 0.64 V.
 TP13 --- 422 Ohm ---x--- 0 to 500 Ohm --- 1 kOhm --- +15V --- 4.7uF --- GND
 |
 ----- to 50 Ohm load (AOM driver)

ISS photodiode (SN 123,124,132,134)
 - Added 10uF in parallel to C4 (total C4=11 uF)
 - Added 100 Ohm resistor in sensing ground line & R3 to 100 Ohm / Ccomp=68pF

LIGO E-TRAVELER

E-Traveler DCC Number & Revision

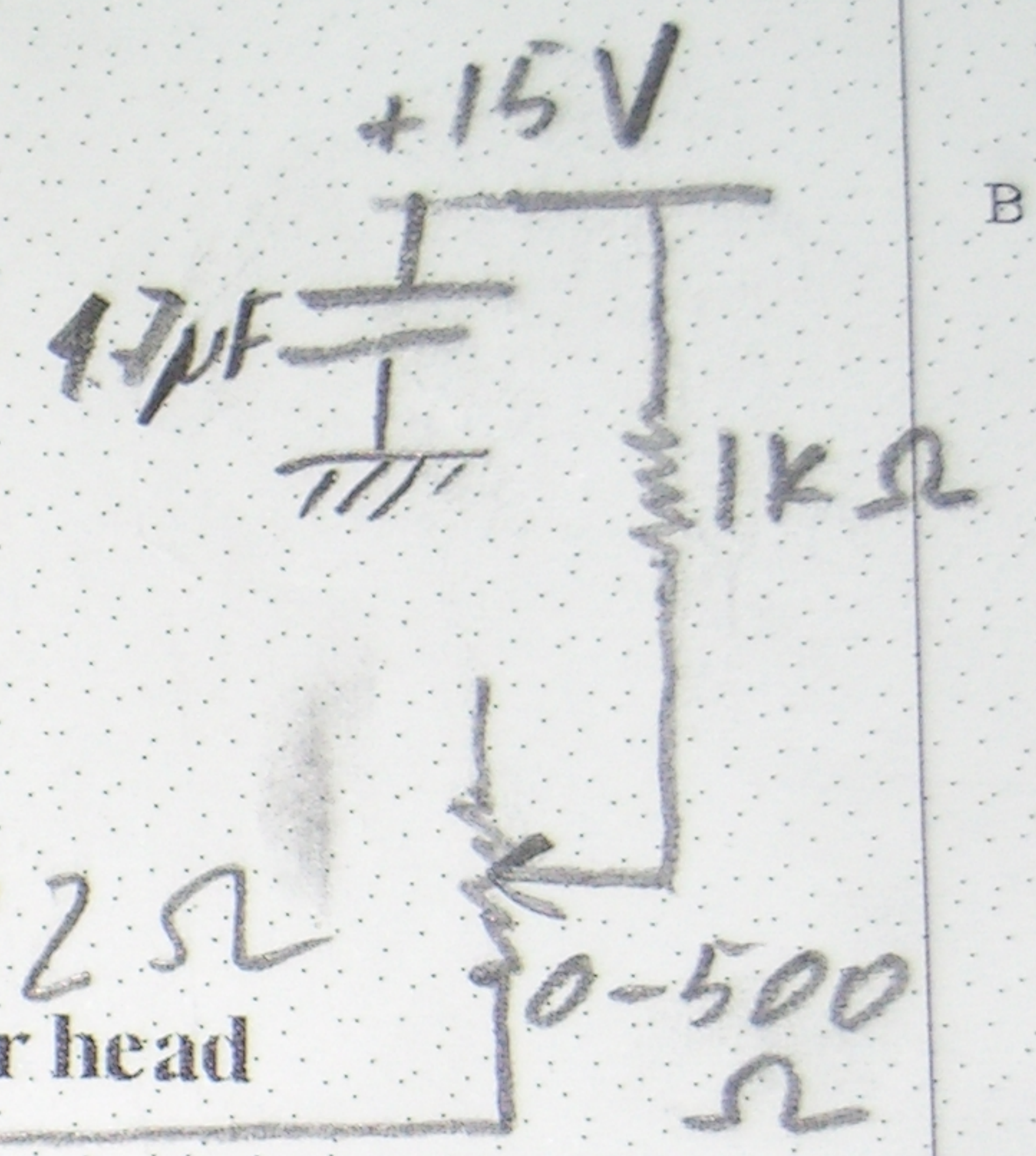
Schematic DCC Number & Revision

Board Title

Board Serial Number

0. Ohm)

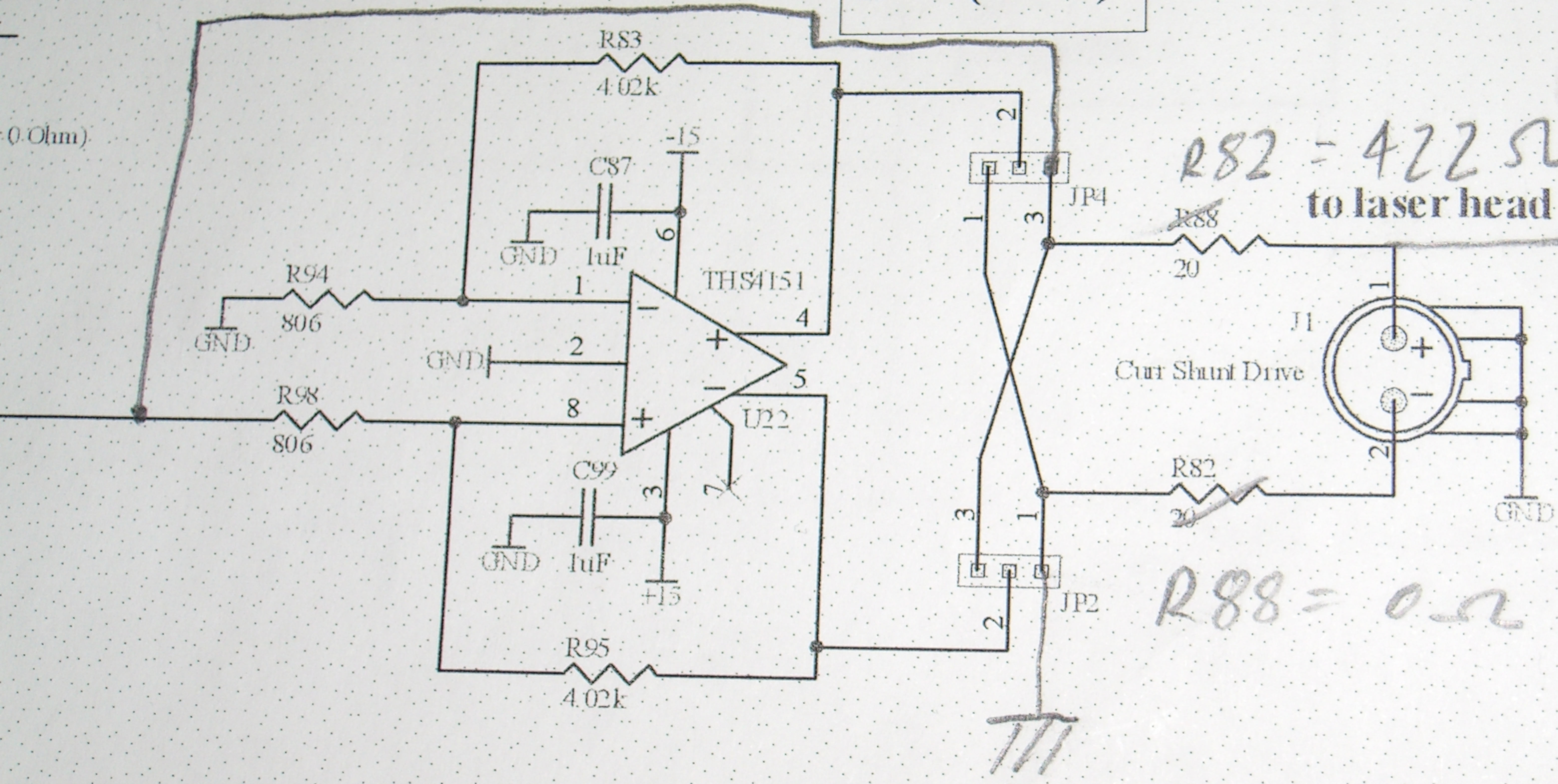
A = 5 (14 dB)



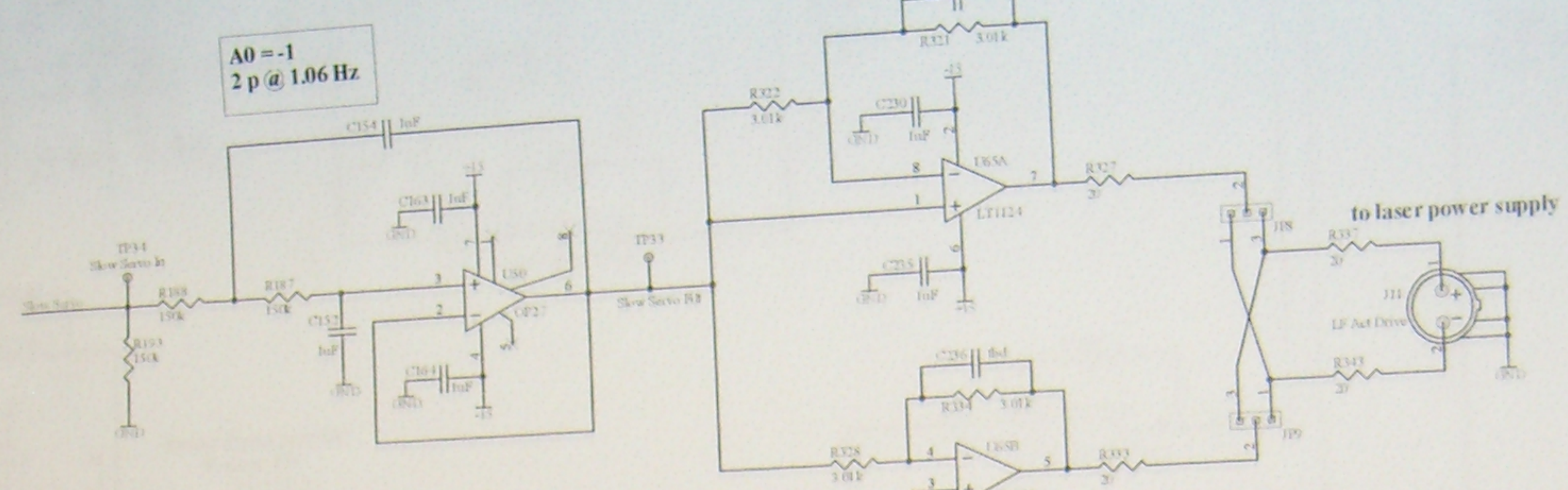
B

$R82 = 422 \Omega$
to laser head

$R88 = 0 \Omega$



A0 = -1
2 p @ 1.06 Hz



Test Out Ch1

2.1 kHz pole

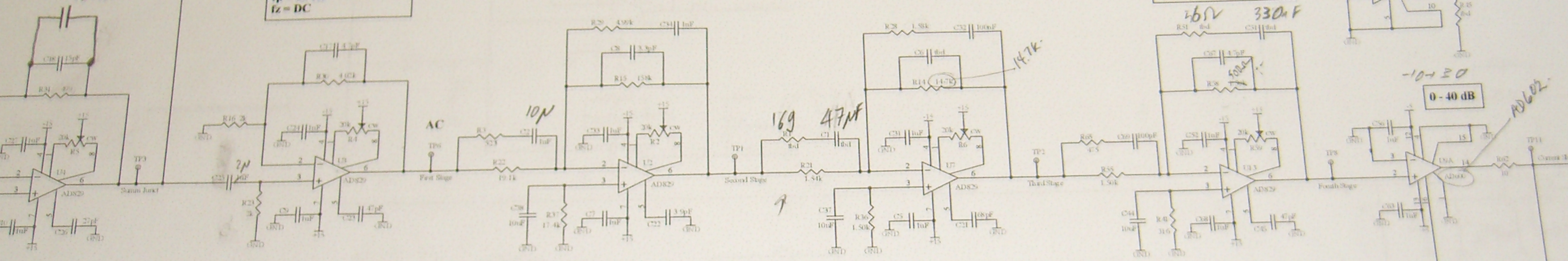
150 nF

2 616
A @ 110k = 8 (9.54 dB)
fp = 80 Hz
fz = DC

A0 = 8.32 (18.4 dB)
fp = 300 Hz, 1 kHz
fz = 8 Hz, 32 kHz
A @ 100k = 9.50 (19.6 dB)

A0 = 9.55 (19.6 dB)
fp = 97.8 Hz
fz = 1 kHz
A @ 100k = 0.92 (-0.66 dB)

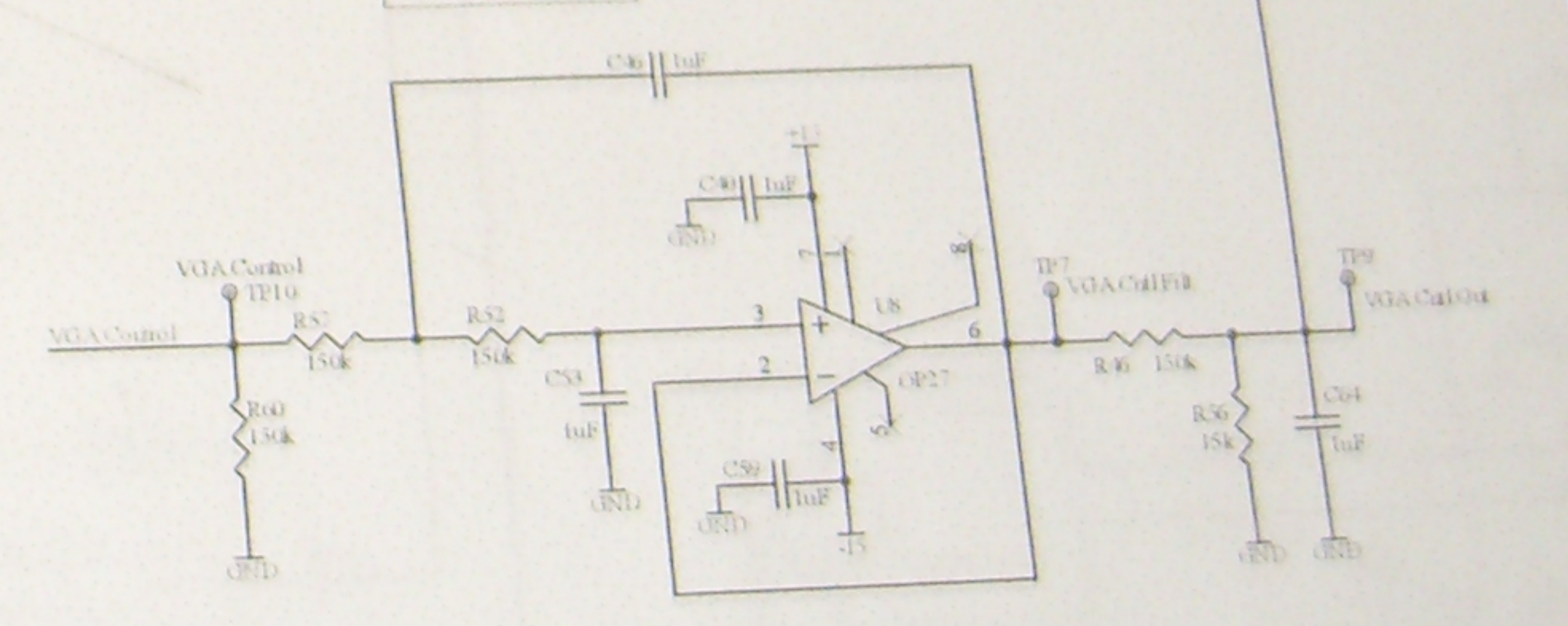
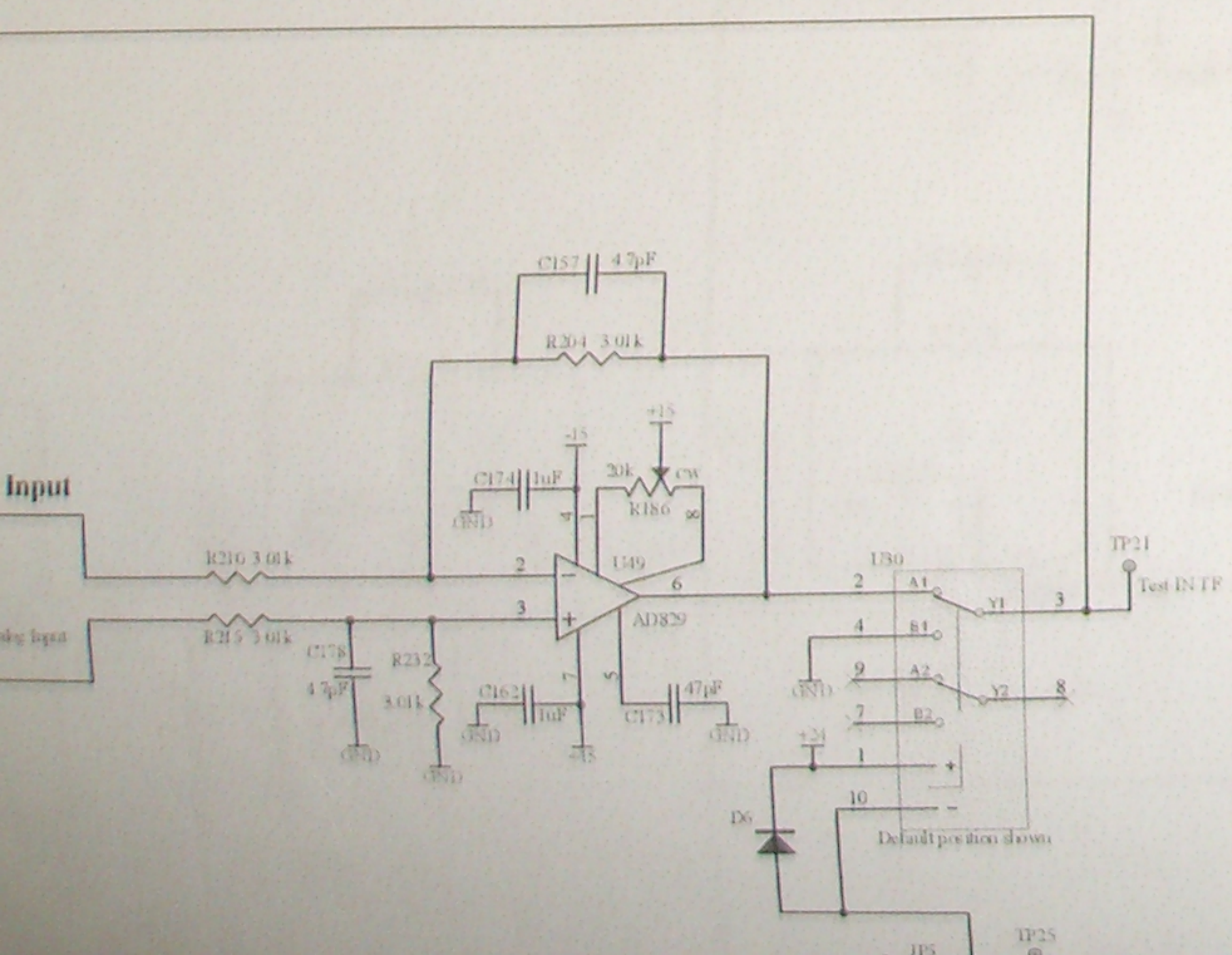
A0 = 1 (0 dB)
fp = 3.35 MHz
fz = 806 kHz
A @ 100k = A0

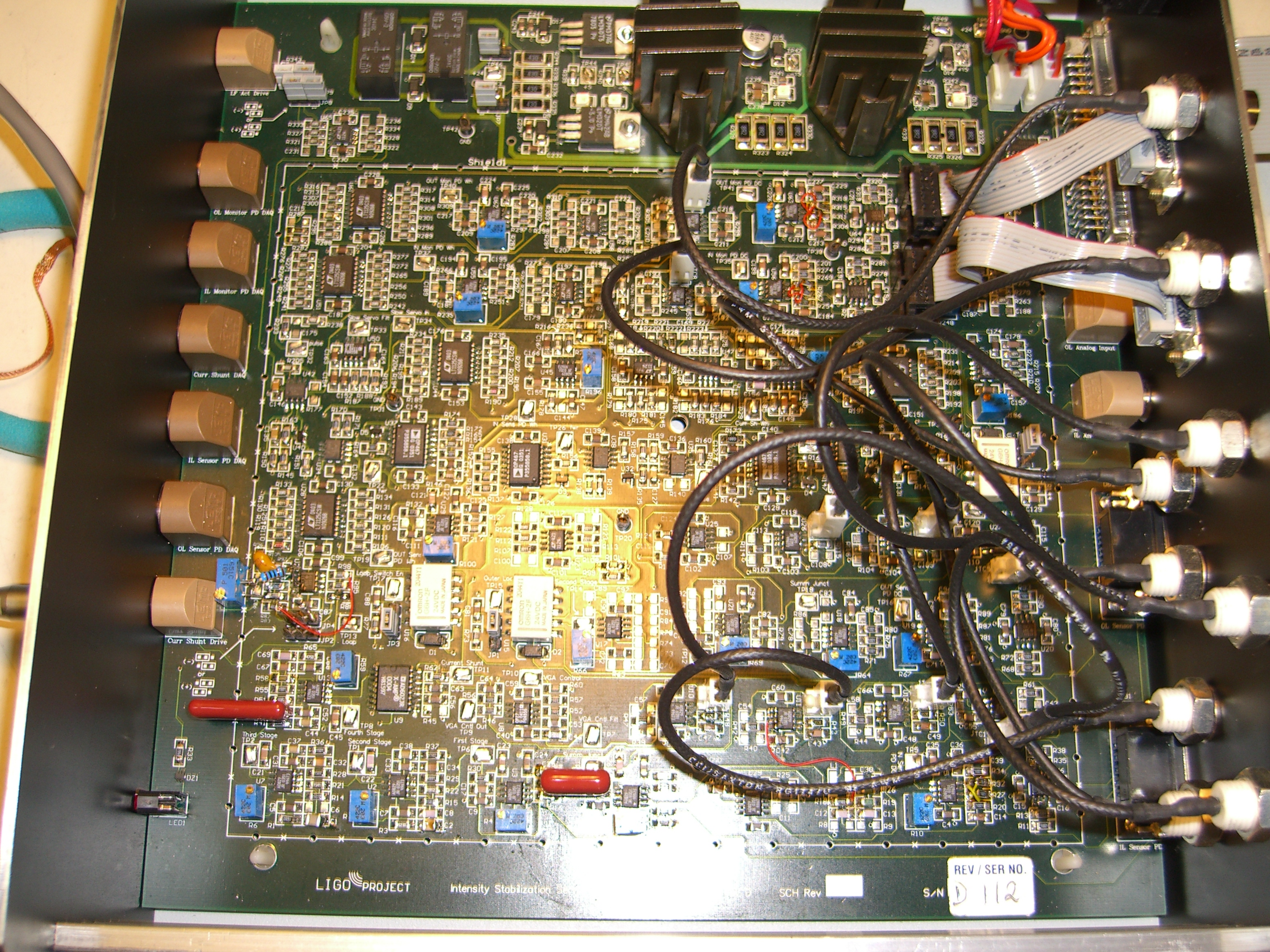


20 Hz
2 Hz

100 Hz
20 kHz

A0 = -1
2 p @ 1.06 Hz





LF Act Drive
OL Monitor PD DAQ
IL Monitor PD DAQ
Curr Shunt DAQ
IL Sensor PD DAQ
OL Sensor PD DAQ
Curr Shunt Drive

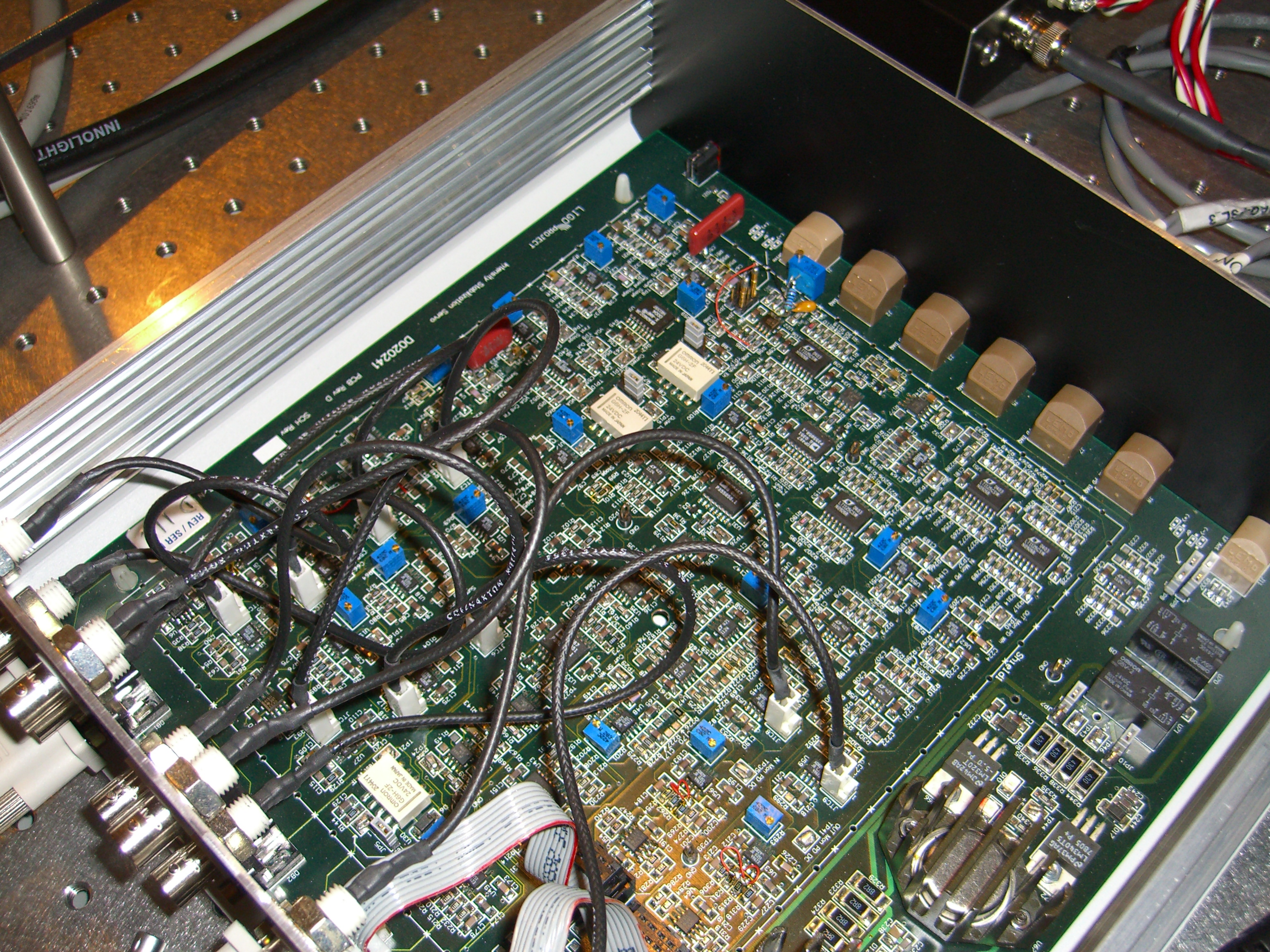
Shield

LIGO PROJECT

Intensity Stabilization System

SCH Rev

REV / SER NO.
S/N D112



INNOLIGHT

D020241

REV / SER

LI00 PROJECT

Mainly Substation Series

SCM Rev D

Shield

GM216
W340T3
7805 P4

GM216
W340T3
7805 P4

GM216
W340T3
7805 P4

Shield

GM216
W340T3
7805 P4

GM216
W340T3
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W340T3
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