

MEMORANDUM

DATE: August 26, 2015

TO: ISC team
FROM: Daniel Sigg, Koji Arai
SUBJECT: EOM/AOM Diver Modifications
Refer to: LIGO-E1500353-v1

This modifications apply to [D0900761-B](#), [D0900847-B](#), [D0900848-C](#) and [D1000216-B](#) to bring them to revisions C, C, D and C, respectively.

The affected serial numbers are S1500117 to S1500128.

Power Board [D0900848-C](#)

Change 1:

Capacitors need to be added to prevent the AD829 driving the pass transistor from oscillating.

C20, C35, C36, C37, C50, C51, C52, and C63 → 1nF

C91 → add a 100pF between U6 op27 (PIN6) and VREFP (PIN7)
should fit between the pads of C22 and R32

W1 → remove solder jumper

Change 2:

Remove the protection diodes which are no longer needed with the use of the power sequencing relays

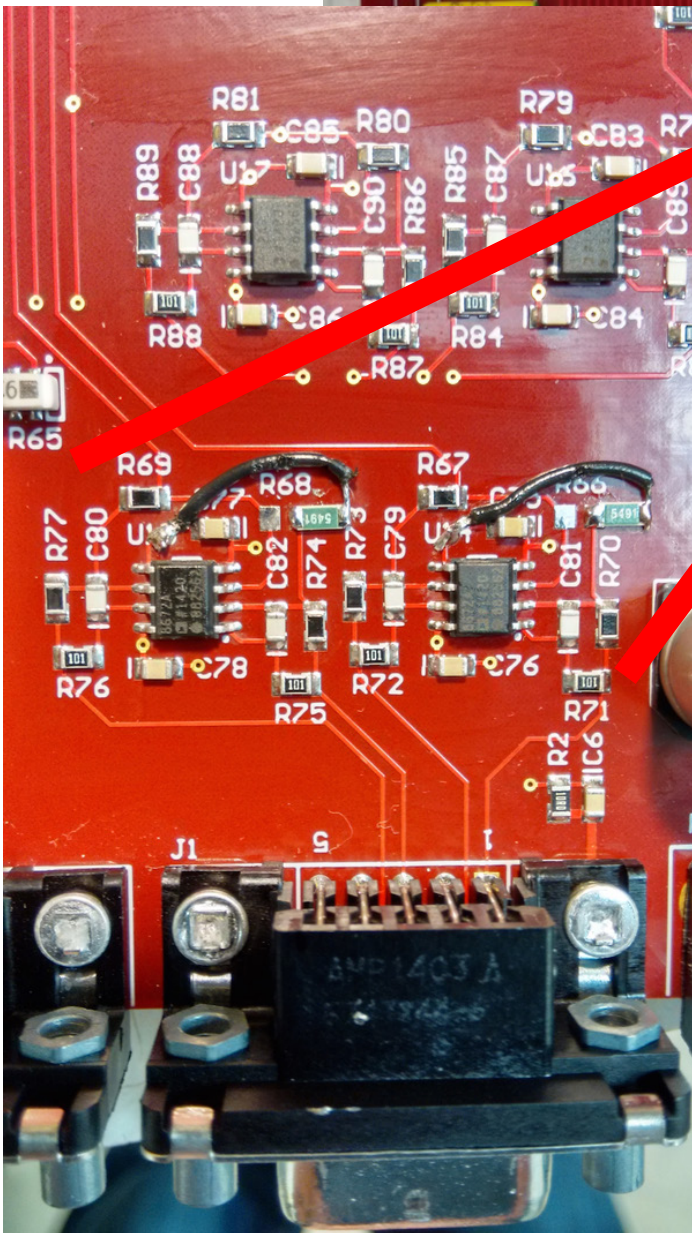
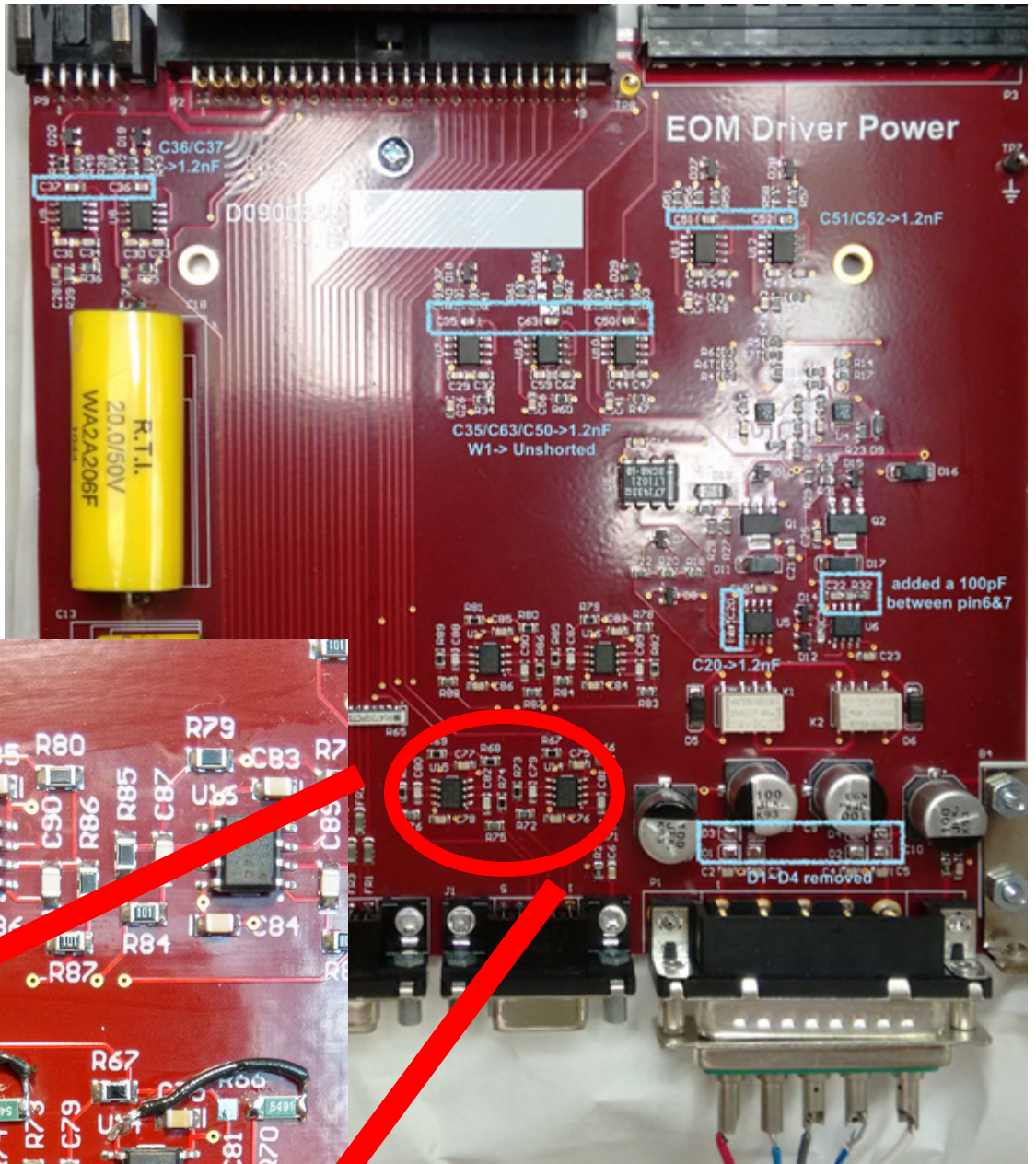
D1, D2, D3, D4 → remove

Change 3:

Fix the gain in the differential output stages.

R66, R68 → 5.49K, shift and use only the pad above R70 and R74

J1, J2 → add a jumper wire from the free end to ground (see pic)



Servo Board [D0900847-B](#)

Change 1:

Reduce the high frequency gain of the servo to allow for better phase margin.

R69 → 200
C49 → 1nF
R71 → 3.3K
R67 → 3.3K

Change 2:

Add capacitor at the output drive to ground to reduce the backfeed of RF from the attenuator board.

C58 → 1nF, add between signal and ground pin of SMA connector J5

Attenuator Board [D1000216-B](#)

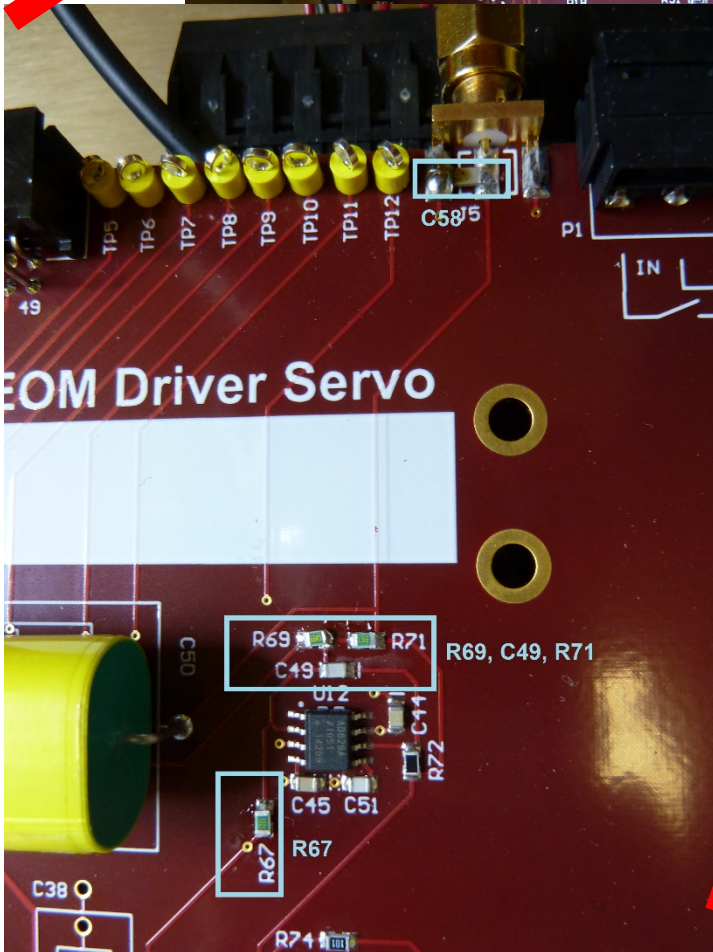
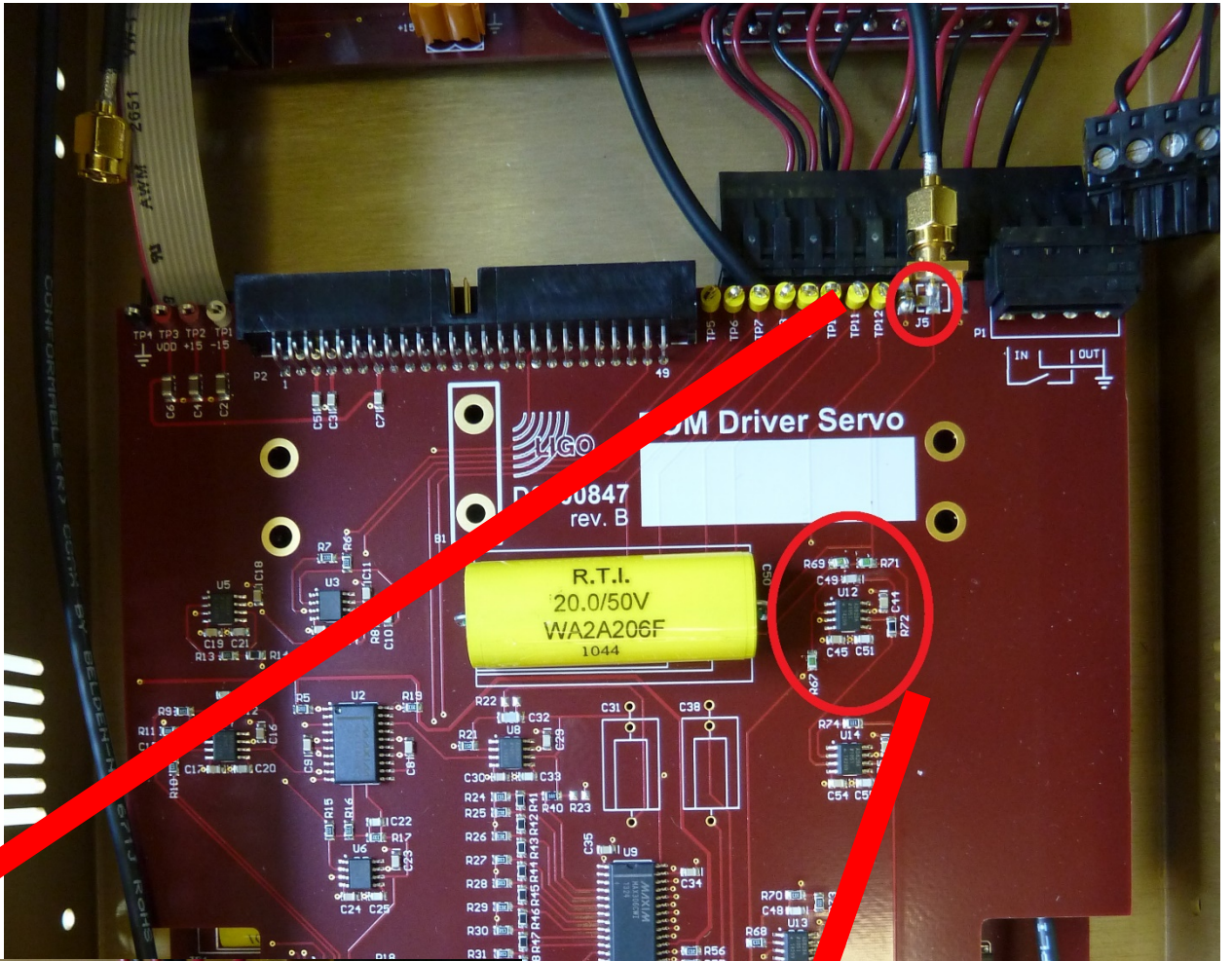
Change 1:

Add capacitor at the control input to ground to reduce the backfeed of RF to the servo board.

C2 → 1nF, add between signal and ground pin of SMA connector J3

Controller Board [D0900761-B](#)

No change.



BOM (for 12 units):

Qty	Item	Distributor	Description
108	311-1122-1-ND	Digi-Key	1nF, 0805, NPO Power board: C20, C35, C36, C37, C50, C51, C52, and C63 Servo board: C49
12	311-1111-1-ND	Digi-Key	100pF, 0805, NPO Power board: C91
24	P5.49KDACT-ND	Digi-Key	5.49K, 0805, 0.1% Power board: R66, R68
12	P200DACT-ND	Digi-Key	200, 0805, 0.1% Servo board: R69
24	P3.3KDACT-ND	Digi-Key	3.3K, 0805, 0.1% Servo board: R67, R71
24	478-1492-1-ND	Digi-Key	1nF, 1206, NPO Servo board: C58 Attenuator board: C2
1	6710 BK005-ND	Digi-Key	Hook-up wire