

MEMORANDUM

DATE: October 18, 2017

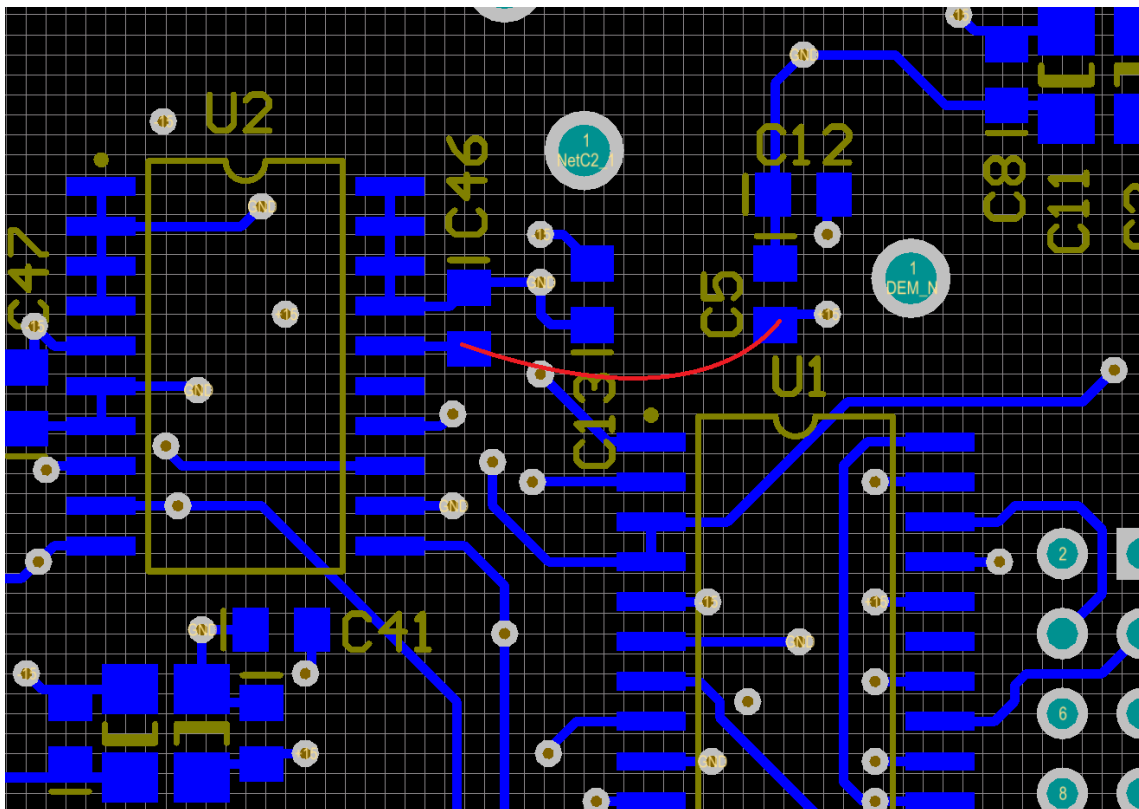
TO: SQZ team
FROM: Daniel Sigg, Marc Pirello
SUBJECT: Modifications to the common mode boards
Refer to: LIGO-E1700364-v1

This document lists the modifications to the 4th generation TTFSS, based on PCB D1700346-v1 and on schematics [D1700077](#), [D1700076](#) and [D1700078](#).

Board modifications

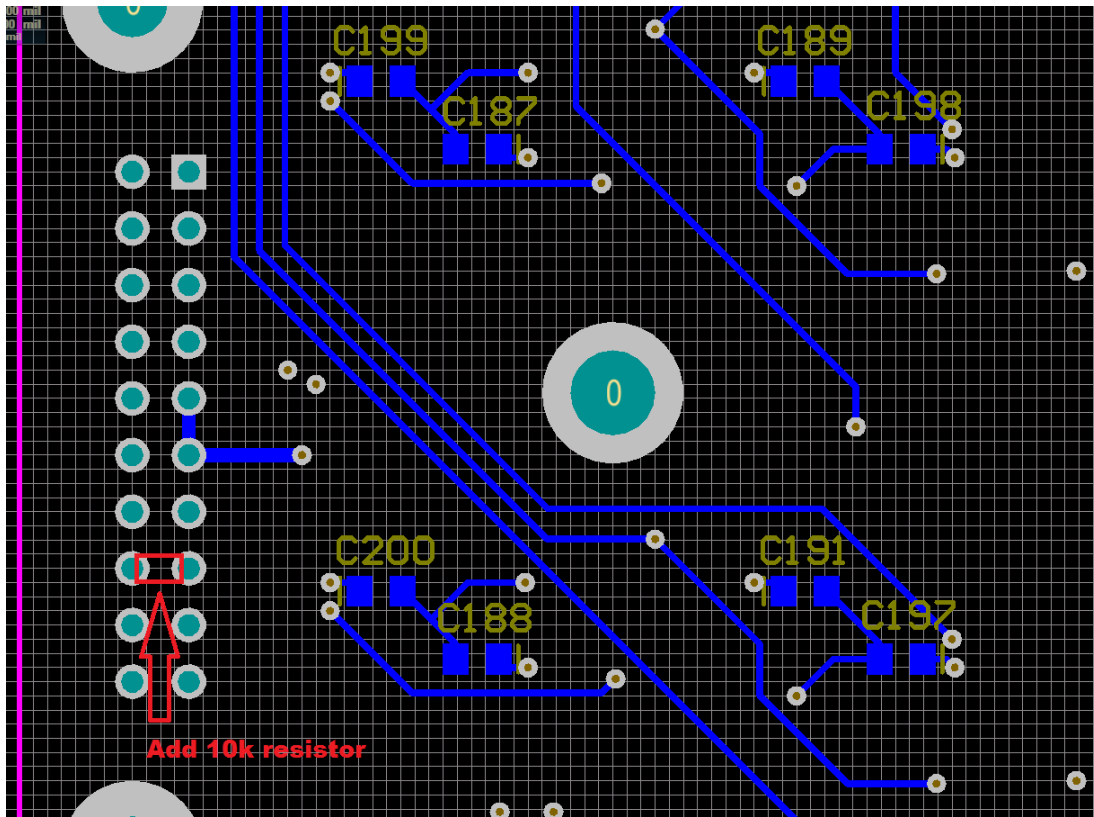
Change 1:

U2 is missing the +15V rail. Add a jumper wire between the C5 pad towards U1 and the C46 pad towards U1 (D1700077, bottom).



Change 2:

Input to U26 is floating when OPT4 is selected without an option board. Add a 10 k Ω resistor between pins 8 and 18 of header JP1 (D1700077, bottom).



Part modifications:

Change 3:

A couple of AD829 operational amplifiers are missing a small capacitor in the feedback path to make them stable (D1700077, top).

- C66 → 4.7 pF
- C52 → 27 pF
- C53 → 27 pF
- C101 → 10 pF
- C153 → 4.7 pF

Change 4:

The output of the EOM high voltage stage needs a higher output impedance to limit the maximum current drive (D1700076, top).

R99 → 470 Ω (350V)

C63 → 100 pF (500V)

BOM (for 6 units):

Qty	Item	Distributor	Description
10	P10KDACT-ND	Digi-Key	Change 2; 10 kΩ
20	478-1300-1-ND	Digi-Key	C66,153; 4.7 pF
10	311-1099-1-ND	Digi-Key	C101; 10pF
20	311-1104-1-ND	Digi-Key	C52,53; 27pF
10	1135-1606-ND	Digi-Key	R99; 470 Ω
10	80-C1206C101FBG	Mouser	C63; 100 pF