

MEMORANDUM

DATE: December 16, 2021

TO: ISC team
FROM: Daniel Sigg
SUBJECT: Modifications to the VCO source boards (initial build)
Refer to: LIGO-E2100544-v1

Version 3 of VCO source boards, , as originally built, need the following modifications to reduce oscillations in the low noise power supply units.

Capacitors need to be NP0/COG or film, resistors need to be metal film.

Change 1:

Add improved compensation to PVCO supply.

R69 → 15 Ω

C112 → 470 pF

Change 2:

Add improved compensation to P20 supply.

R70 → 15 Ω

C113 → 470 pF

C93 → 2.2 μF

Change 3:

Add improved compensation to VCC supply.

R52 → 1 kΩ

C87 → 470 pF

C88 → 47 μF

BOM (for 1 board):

Qty	Item	Distributor	Description
3	399-C0805C471J5GAC7210CT-ND	Digi-Key	C112/C113/C87, 470 pF
2	RR1220Q-150-D	Digi-Key	R69/R70, 15 Ω
1	P1.0KDACT-ND	Digi-Key	R52, 1 kΩ
1	1276-3137-1-ND	Digi-Key	C88, 2.2 μF, 50V
1	490-5528-1-ND	Digi-Key	C88, 47 μF, 10V