

Advanced LIGO Engineering Change Request (ECR)

ECR Title: ECR: Replacement of the coil-series resistors in the HAM-Aux and Tip/Tilt coil drivers

DCC No: E1201027-v1

Date: November 15, 2012

Requester: David Feldbaum

Impacted Subsystem(s):

IO, ISC, SUS

Description of Proposed Change(s):

D1100117-v2 HAM-A coil drivers, replace the "series resistors" R_{11} and R_{33} from 100 Ohm to 1.2 kOhm

(Note: This coil driver is used for both HAM Auxiliary and Tip/Tilt suspensions.)

Reason for Change(s):

The 100 Ohm resistors which are presently installed provide an actuation range that is a factor 10 larger than can be observed by the OSEMs. Such large actuation range is not useful, and only contributes to the noise.

Estimated Cost: \$100 for the materials (250 surface mount 3 W metal film resistors)

Schedule Impact Estimate: The full replacement job will probably take 1 to 2 days per site, but can be performed when the system in question is not used (i.e. vent).

Nature of Change (check all that apply):

- Safety
- Correct Hardware
- Correct Documentation

- Improve Hardware
- Improve/clarify Documentation
- Change Interface
- Change Requirement

Importance:

- Desirable for ease of use, maintenance, safety
- Desirable for improved performance, reliability
- Essential for performance, reliability
- Essential for function
- Essential for safety

Urgency:

- no urgency
- desirable by the time the Recycling Cavity is being aligned
- Essential by date/event: _____
- Immediately (ASAP)

Impacted Hardware (select all that apply):

Repair/modify. List part & SNs: D1100117, all SNs

Scrap & Replace. List part & SNs: _____

Installed units? List IFO, part & SNs: LLO D1100117, all SNs

Future units to be built

Impacted Documentation (list all dwgs, design reports, test reports, specifications, etc.):

[D1100117-v2](#) HAM-A coil driver schematics

[T1100084-v1](#) HAM-A coil driver prototype test plan

[T1200264-v2](#) HAM-A coil driver design study

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Disposition (to be completed by Systems Engineering):

TRB

CCB

Approved

Additional information required. Define:

[Requester re-submits with new information with the same DCC E-number for the ECR but the next version number.]

Concurrence by Project Management: (Acknowledged Electronically in DCC)

Project Systems Engineer: Dennis Coyne

Project Systems Scientist: Peter Fritschel