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| **ECR Title: ECR:**  **Frequency Counter for PLL error signal** | | | DCC No: E1200936-v1 |
| Date: 9/17/2012 |
| **Requester:**  Daniel Sigg | **Impacted Subsystem(s):**  ISC | |  |
| **Description of Proposed Change(s):**  Add frequency counter capability to the PLL error signal. Since the timing system already has a frequency counter, this request only covers an additional preamplifier in the PLL error signal. The design of the preamplifier can be found [here](https://awiki.ligo-wa.caltech.edu/aLIGO/RfPreAmplifier). | | | |
| **Reason for Change(s):**  When the ALS laser frequency is far away from the fiber reference, we typically use a local spectrum analyzer to roughly adjust the NPRO temperature before trying to engage the PLL. To automate this process for day-by-day operations, we like to replace the local spectrum analyzer with a remote-readout frequency counter. | | | |
| **Estimated Cost:** 8 units at a cost of $1.5k each, total $12k | | | |
| **Schedule Impact Estimate:**  None. | | | |
| **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 date/event: \_Feb 2013\_\_\_\_**  **Essential by date/event: \_\_\_\_\_\_\_\_\_\_\_\_**  **Immediately (ASAP)** | |
| **Impacted Hardware (select all that apply):**  **Repair/modify. List part & SNs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Scrap & Replace. List part & SNs:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Installed units? List IFO, part & SNs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **Future units to be built** | | **Impacted Documentation** (list all dwgs, design reports, test reports, specifications, etc.):  D1002803, D1001423, D1100670, E1200146 | |
| **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 |  | | | | |