What causes error messages in the dmesg log such as "Regained communication with time source" and "Timecode features not working" and why does the 10G-PCIE2-8C2-2S-SYNC stop working when they occur?

Model:

ARC Series C adapters (10G-PCIE2-8C2-2S)

Software:

DBL and Sniffer V3 software

Operating Systems:

Linux

Information:

When using a 10G-PCIE2-8C2-2S-SYNC adapter connected to a time source generator, it is imperative that one has a stable time source.

If the time source generator encounters an intermittent loss of connectivity with the GPS signal, timing discontinuities will cause one or both of the following two symptoms:
Loss of synchronization with time source requiring re-synchronization.
Link up/down issues.

The first symptom is the expected behavior with timing discontinuities. The kernel log will contain messages indicating the resynchronization. If the resynchronization fails, the kernel log will contain repeated messages indicating "Regained communication with time source" and the message "Timecode features not working". If you see messages like these in your logs, you likely have an older timestamp microcontroller firmware on the SYNC adapter and should upgrade to the newest firmware to avoid having the adapter permanently fail in its synchronization with the time source. With the upgraded firmware there will still be a loss of synchronization and a resync, but it will not cause the permanent failure. This problem only manifests itself in the presence of timing discontinuities in the input time source.

To upgrade the timestamp microcontroller's firmware on the adapter, you will need to use the **cf_prog** tool in the **SYNC Adapter Tool Kit.** Contact CSPi Technical Support (**support@cspi.com**)
If The second symptom (link up/down issues) occurs, you will additionally see messages in the kernel log like

so:

```
[Fri Jan 3 22:39:25 2014] myri_dbl INFO: eth5: Link0 is DOWN
[Fri Jan 3 22:39:27 2014] myri_dbl INFO: eth5: Link0 is UP
```

There is no hardware workaround for this issue. Please investigate why you are having time discontinuities with your GPS time source. We have only seen discontinuities such as these when we disconnected the time source's antenna for a while and then plugged it back in. Potential explanations could be: your GPS antenna not being situated with a full view of the sky, bad antenna cabling, or interference from some other source.
Both issues can be avoided by having a stable time source; one that does not have timing discontinuities.

Revision	Date	Change
1	7/18/16	Initial Draft