1394 Firmware Upgrade Monitoring Instructions
(Catalog Numbers 1394-SJT05, -SJT10, and -SJT22)

This document describes how to monitor the current CPU values for the 1394 GMC system modules (Catalog Numbers 1394-SJT05, -SJT10, and -SJT22).

This product contains a version of firmware that may be several versions higher than what is being replaced. The new firmware contains enhancements that increase CPU utilization. As a result, program speed execution might be affected. A change in program speed might affect application performance. If application performance is not the same after replacing the firmware, check the CPU utilization and CPU utilization peak variables.

CPU Utilization Overview

If your CPU utilization exceeds 70-80%, program execution might be affected. Reaching the utilization threshold can cause the program to stop executing. The utilization threshold is dependent on the Servo Update Rate parameter (D47) and whether you are using RIO and/or AxisLink.

For example, if the Servo Update Rate parameter is set to 500 Hz (factory default), the time between ticks on the clock is 2 ms. As CPU utilization exceeds 70-80% and the Servo Update Rate parameter is set to 500, program execution may stop and RIO communication might fail.

Figure 1
Time Sequence
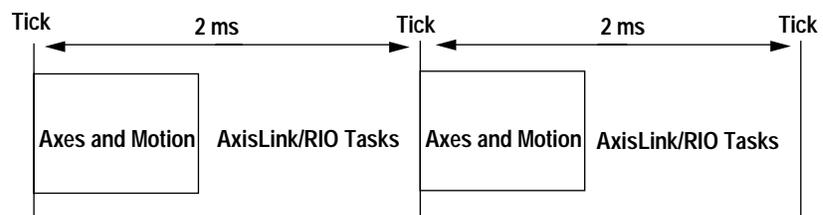
Checking CPU Utilization

If you notice a change in application performance, use GML™ or GML Commander software to measure CPU utilization.

1. From the Diagram window select **General System Variables** in the Tag Explorer. You will find non-axis-related information relating to the CPU, task, I/O communication program, and fault conditions.

2. Scroll down to CPU_ultilization and CPU_ultilization_peak variables. The CPU utilization and CPU utilization peak variables are listed. If the values listed are 70-80% of the CPU utilization, the program might stop executing. Refer to the following section to reduce CPU utilization.

Reducing CPU Utilization (if required)

If the CPU utilization in your application exceeds the thresholds listed in the table below, program execution speed will decrease and RIO communication might fail.

If RIO is:	And AxisLink is:	Then the threshold is:
not used	not used	90%
not used	used	80%
used	not used	80%
used	used	70%

To reduce CPU utilization do one or more of the following:

- decrease the servo update rate
- retain your current firmware level

For more information refer to our web site: www.ab.com/motion

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