



Experimental Physics and Industrial Control System



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Subject: Re: Motion controls alternatives to MAXv?

From: "J. Lewis Muir" <jlmuir@anl.gov>

To: EPICS Tech-Talk <tech-talk@aps.anl.gov>

Date: Thu, 12 Aug 2010 09:59:28 -0500

On 8/12/10 8:48 AM, Dirk Zimoch wrote:

> Hi all,

>

> I am looking for an alternative to our current MAXv motion controller
> solution.

>

> Can anyone tell me about experiences with

>

> * DeltaTau pmac

> * Newport XPS

> * Galil

> * other systems?

Hi, Dirk.

At 17-ID at the APS we use two Delta Tau Turbo PMAC2 VME Ultralite boards and two Delta Tau UMAC MACRO stations. (We don't use Delta Tau controllers exclusively, but we do use these.) Each Ultralite board is connected via two fiber optic cables to one UMAC MACRO station. The UMAC MACRO stations may be deployed at a physical location fairly far away from the VME boards if desired. The only cabling between them is the two fiber optic cables.

The Delta Tau Turbo PMAC2 VME Ultralite supports multi-axis coordinated motion, motion programs, and PLC programs.

The Delta Tau software development suite is called PMAC Executive Pro2 Suite. In my opinion, it is poorly written and buggy. However, you can do a lot with it and we use it.

We use tpmac <<http://www.gmca.anl.gov/TPMAC2/>> for EPICS control. The tpmac web site has more information about the hardware and setup.

Sergey Stepanov and Oleg Makarov at GM/CA-CAT at the APS have a lot of expertise with this. (There are a number of people at the DLS who have a lot of expertise with Delta Tau PMAC2 controllers too.)

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I would say the Ultralite board is **very** complex. It takes a **lot** of work just to configure the Ultralite and the UMAC MACRO station. That can be a negative if you just want to plug something in and go like you can w/ the MAXv, or it can be a positive if it gives you the power to do something you couldn't do with some other controller.

One nice thing about the Delta Tau Turbo PMAC2 VME Ultralite is that there are various products from Delta Tau in the PMAC2 motion controller family. For example, there's a Turbo PMAC2 PCI Ultralite that is a PCI-bus card. There's also a small-form-factor board called the Turbo PMAC Clipper. We use the Clipper for our goniometer control and exposure shutter synchronization with our crystal rotation axis at 17-ID. So, if you do spend the time to learn all about configuring and programming the PMAC2, you at least have the possibility of applying that knowledge to other applications.

One annoyance is that there's no officially supported way to explicitly set a motor's position. While I tend toward the belief that one should always home a motor to determine its true position, not everyone believes that, and there are some cases where one just wants to set the motor's position without homing it. There are some workarounds to setting a motor's position, and we use them sometimes at 17-ID, but they are all a bit of a hack.

Lewis

--

J. Lewis Muir
Software Engineer
IMCA-CAT

Replies:

[RE: Motion controls alternatives to MAXv?](#) *matthew.pearson*

References:

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