

## VME Intensity Monitor - Feature #12159

Milestone # 11650 (Closed): Mar 2016 Release A - 201603A

### Scaling filter for PXIE Ring Pickup

04/05/2016 09:35 AM - John Diamond

<b>Status:</b>	Closed	<b>Start date:</b>	04/05/2016
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	John Diamond	<b>% Done:</b>	100%
<b>Category:</b>	Fliter	<b>Estimated time:</b>	3.00 hours
<b>Target version:</b>		<b>Spent time:</b>	3.00 hours
<b>Description</b>			
This device has non-linear scaling that's not supported by the available common transforms. Develop a scaling filter that we can use.			

#### History

##### #1 - 04/05/2016 09:37 AM - John Diamond

From e-mail's with Ning:

We would need something like this:  $X' = C1 * EXP + C4$

Could you make the Primary Unit Reading  $X = e^{(RAW * C0)}$ , with RAW being the digitizer's raw reading, and C0 a configurable setting? If making C0 programmable is a hassle, we can set it to a fixed value,  $C0 = 0.0000030189$ , as well. Then Brian and I can do the scaling part of  $X' = C1 * X / C2 + C3$  on D80 according to our calibration data like the rest of the devices.

##### #2 - 04/05/2016 10:15 PM - John Diamond

- % Done changed from 0 to 90

Implemented a CLI command for selecting the input (Intensity or Current) to a filter chain:

```
vmeintFilterChainDAQSource chain_id, source_str
```

Implemented ExpScaleFilter, a scaling filter that uses the function:  $f(x) = c1 * \exp(c2 * x + c3)$

```
vmeintFilterExpScaleFactorCreate chain_id, filter_idx, c1_str, c2_str, c3_str, scale_name_str
```

Create Z:M01EPC for testing.

##### #3 - 04/06/2016 04:42 PM - John Diamond

- Parent task set to #11650

##### #4 - 04/06/2016 04:42 PM - John Diamond

- Status changed from Assigned to Closed

- % Done changed from 90 to 100