TG-1000 Phototargeting

The ASI scanner can be used as a photo-targeting device, for example for FRAP, photo-uncaging, optogenetic stimulation, etc.

A special firmware module MM_TARGET for the micro-mirror card exists for this application. The vast majority of commands are the same, but differences and special functions are outlined here. The MM_TARGET module is reported in the list of firmware modules by the [Addr#]BU X command and also Bit#3 of the axis property as reported by the comm card's response to BU X.

The laser trigger signal is provided on the TTL output; this is different from the SPIM firmware which uses two backplane lines. The characteristics of the TTL signal are controlled by the RT command consistent with other firmware builds. The TTL output mode is set using TTL Y. TTL output mode 11 has been added for phototargeting and the laser trigger signal will not behave as described below unless it is set properly (by default for MM_TARGET builds it is set to 11). The laser can be turned on indefinitely by setting the TTL output mode to 1.

As of Tiger v3.12 the correct output mode is TTL output mode 21, which is the default for new firmware.

Triggering the ring buffer can be controlled using the TTL input as usual (not yet tested)

We adapt the AIJ command originally from the ARRAY firmware module for the MM_TARGET module. Thus these two firmware modules are mutually exclusive and should not be used together. The same axis property bit (Bit3) is set high when the MM_TARGET module is present as when the ARRAY module is present. (It is a safe assumption for the foreseeable future that the ARRAY firmware will not be used on a micro-mirror card, so if Bit3 of the axis property is set and the axis type code is 'u' then the MM_TARGET module is present.)

TG-1000 Command Set for Phototargeting with Micro-mirror cards

- Command:AIJ 2016/03/14 17:52
- Command:RTIME (RT) 2016/02/22 19:30
- Command:WAIT (WT) 2016/03/17 14:36

manual, tiger