Command:LOCK (LK)

This command has slightly different usage for CRISP, Phototrack, and SERVOLOCK_TTL, and very different use for TGPMT card.

CRISP usage

Tiger Syntax

Shortcut	LK
Format	[Addr#]LK [X] [Y] [Z=lock_offset] [F=code] [M=logAmp_cal] [T=sum]
Type	Card-Addressed
Required Firmware Module	CRISP
Remembered	Using [Addr#]SS Z

MS2000 and RM2000 Syntax

Shortcut	LK
Format	LK [X] [Y] [Z=lock_offset] [F=code] [M=logAmp_cal] [T=sum]
Required Firmware Module	CRISP
Remembered	Using SS Z

The LOCK command without any arguments advances to the next system state just as would a short-press of the @ button.

X [crisp_state]: LK X? returns the single character indicating the current CRISP system state as described in the table CRISP System States. For historical reasons, do not use LK X to set the current state, instead use LK F.

Y [error_number]: LK Y? returns the current value of the focus error which is also shown on the LCD display. As of Tiger 3.39 and MS2000 9.2n this command returns the exact value on the LCD, previously it didn't account for the system state and only returned the relative focus error.

Z [lock_offset]: LK Z? returns the current value of the focus error lock_offset. The offset is automatically determined during calibration and is modified when the command wheel on the controller is used to focus a locked system. The offset is also reset with a >10 sec. press of the @ button. A particular value of lock_offset may be set using LK Z=lock_offset.

F [crisp_state]: LK F=code will unconditionally set the focus state. Code is the ASCII decimal equivalent for the 'state' character that is displayed on the LCD. For example, to unconditionally enter the B state the command would be LK F=66. Not all states are best entered directly. See the CRISP System States table for the appropriate ASCII code to enter a particular state gracefully.

M [logAmp_cal]: LK M? will query the value set by the logAmp calibration routine (entered using LK F=72). You can use LK M=# to set it manually, which is only advised if you have previously calibrated and know the correct value. See Saving Calibration and Offsets for more

details. Available on Tiger v3.39 and MS2000 9.2n firmware.

T [sum]: LK T? returns the current CRISP sum value which is also shown on the LCD display. Available on Tiger v3.40 and MS2000 9.2o firmware.

Note: The results of LK Y? and LK T? can change depending on the system state, more information can be found in the LCD Display section of the CRISP manual. For the most part you don't have to worry about it, as the results only change in the diagnostic states A, B, and M.

Example:

```
LK X?
:A R
```

Shows that CRISP is in the READY state.

SERVOLOCK_TTL usage

Tiger Syntax

Shortcut	LK
Format	[Addr#]LK [X] [F=code]
Type	Card-Addressed
Remembered	Using [Addr#]SS Z

The LOCK command without any arguments toggles the SERVOLOCK_TTL function from active to inactive. As short-press of the @ button will also do unless the firmware build also has CRISP, in which case CRISP takes priority. See full documentation of SERVOLOCK_TTL firmware module.

LK X? returns the single character indicating the current state, which for SERVOLOCK_TTL is the letter T for enabled and Z for disabled. If CRISP is also present in the firmware module then those states will also appear. LK F=code will unconditionally set the focus state. Use LK F=84 (ASCII letter T) to enable SERVOLOCK_TTL control and LK F=90 (ASCII letter Z) to disable it when done

TGPMT usage

Shortcut	LK
Format	[Addr#]LK [X] [Y] or [Addr#]LK [X?] [Y?]
Type	Card-Addressed
Remembered	Using [Addr#]SS Z

This command has a different function on a TGPMT card. Here its used to check the status of PMT (overloaded or not). Then if it is overloaded, issue a reset pulse to clear the overload. Duration of the reset pulse is set with the RT Y command

[addr#] LK X?, Query **PMT0**'s status. Controller return a **0** if Overloaded, and **1** if not overloaded.

`[addr#]` LK Y?, Query **PMT1**'s status. Controller return a **0** if Overloaded, and **1** if not overloaded.

`[addr#]` LK X, Issue a reset pulse to **PMT0**.

`[addr#]` LK Y, Issue a reset pulse to **PMT1**.

Alternately, the status of the PMTs is also indicated by the LEDs on the TGPMT card (Green is ok, Red is overloaded). And the reset button can be pressed to clear the overload state.

Example

```
7lock x?
:A 0
```

Query the status of **PMT0** on TGPMT card at address **7** for status. **0** is returned, indication PMT0 is overloaded

```
7lock x
:A
```

Issue reset pulse to PMT0 on TGPMT card at address 7.

```
7lock x?
:A 1
```

Overloaded was cleared, Query the status of **PMT0** on TGPMT card at address 7 for status again. **1** is returned, indication PMT0 is NOT overloaded

On Phototrack systems

Shortcut	LK
Format	LK [X] [Y] [Z=sum_min] [F=quad_order]
Remembered	Using SS Z

LK with no argument performs same action as “@” short press.

LK X performs same action as “@” long press.

LK Y performs same action as “HOME” very long press.

Use *sum_min* to set the minimum sum-signal level required for tracking the sample. If the sum signal is less than *sum_min*, tracking will PAUSE.

The *quad_order* is the relative orientation of the PMT assembly and is normally set during calibration.

commands, tiger, ms2000, crisp, tgpmt, phototrack, servolock ttl