May 21, 2020

Service Bulletin

SB20-002

PRODUCT LINE: SSL
MODEL: EverGreen / EverGreen II
PART DESCRIPTION: _____
PART NUMBER: EVGXXXXX

Type:
- ■ Product improvements
- □ Safety related
- ■ Documentation changes
- □ Repair and Maintenance related
- ■ Information only

Criticality:
- □ Recommended
- □ Required
- □ Critical / Safety

SUMMARY OF BULLETIN:

Evergreen vs Evergreen II Firmware Change Highlights

INFORMATION DETAILS OR ACTIONS REQUIRED:

This is a summary of the changes from the existing Gen I Evergreen (PSVERS 1.16 or "2.03", FVERS 1.3, & LVERS 0.34) compared to the Evergreen II (PSVERS 5.08, FVERS 2.5, & LVERS 0.47.) The focus of this document is on the serial interface because those changes may have the largest impact to customers or software written for the existing Evergreen. However, many of these serial interface changes also pertain to changes on the front panel and/or system behavior. Most of the changes only add new functionality but some change or eliminate some existing functions (significantly changed or reduced functionality is shown in orange colored text) as they pertain to the Evergreen configuration.

Evergreen to Evergreen II Command Changes:

	EVERGREEN	EVERGREEN II	Comments
Existing Commands Comparison	PIVDLY	PIVDLY	Now the command is floating point with 0.001 µsec resolution and has a minimum of PIVMINDL. This command maintains backward compatibility except for the new minimum.
	OVEN1	OVEN1	No longer customer accessible (query only.)
	FREQ (1,2,5,10,15, SS)	FREQ (PRFMIN to PRFMAX integer values)	The valid input values have changed. Single shot vs normal PRF mode selection has been removed from this command and is now selected with the PRFMODE command. Related front panel changes are described in manual.

Service Bulletin

SB20-002

	EVERGREEN	EVERGREEN II	Comments
New Evergreen II Only Commands		QSDIVBY	New command for setting divide by count (applies to PRFMODE DIV)
		PRFMODE	New command to switch between: SS, MAX, and DIV modes
		TEXTS	New command for a verbose fault/warning status query. This command will automatically clear latched faults or warnings just like STATUS does.
		PIVMINDL	New factory command, floating point minimum for PIVDLY (also 0.001 µsec resolution, default 0.040 µsec)

Command Migration Examples:

EVERGREEN	EVERGREEN II	Comments
$FREQ SS	$PRFMODE SS ($FREQ 15)	Set the mode to single shot (now applies EI trigger mode in addition to II)
$FREQ 15	$FREQ 15 ($PRFMODE MAX)	This is the same as it was
$FREQ 10	(no equivalent)	Use external triggering if 10 Hz is necessary
$FREQ 2	(no equivalent)	Use external triggering if 2 Hz is necessary
$FREQ 5	$FREQ 15 $QSDIVBY 3 $PRFMODE DIV	Not an exact equivalent but should produce a better result at 5 Hz.
$FREQ 1	$FREQ 15 $QSDIVBY 15 $PRFMODE DIV	Not an exact equivalent but should produce a better result at 1 Hz.

New STATUS (also now available from TEXTS query) Information:

EVERGREEN	EVERGREEN II	Comments
	PRF Too Low	Added warning bit **A0** to indicate that the input trigger rate is below the PRFMIN value.
	Laser head Memory read Fault	Added fault bit **D6** to indicate a memory read fail in Laser head.
	Laser head Incompatible	Added fault bit **D0** to indicate an incompatible Laser head type for the connected ICE.

Service Bulletin

SB20-002

Compatibility Troubleshooting (when swapping Laser heads):

Problem	Possible Cause	Solution/Suggestion
Laser head compatibility fault D0	An Evergreen DRL Laser head is connected to an Evergreen II power supply.	Replace Laser head with an Evergreen II Laser head that has a matching PRF rate. Or, find an Evergreen DRL power supply to connect to the DRL Laser head.
	A Gen I Evergreen Laser head is connected to an Evergreen II power supply.	Replace Laser head with an Evergreen II Laser head that has a matching PRF rate. Or, find the correct Gen I Evergreen power supply to connect to the Gen I Evergreen Laser head.
Laser head compatibility fault D0 and PRFMAX query responds with "incompatible head"	The PRF rate of the connected Laser head is not compatible with the Evergreen II power supply.	Although both the power supply and the Laser head are both Evergreen II types, the PRF rates are not compatible (head PRF must be less than 1.1 x the power supply PRF to be compatible.) Replace Laser head with an Evergreen II Laser head with a **matching PRF rate**. Or, find an Evergreen II power supply capable of running the PRF rate required by the Evergreen II Laser head.
Laser head self-test fault D4	An Evergreen II Laser head is connected to a Gen I Evergreen power supply.	Replace the Gen I Evergreen power supply with an Evergreen II power supply that has a matching PRF rate. Note: **This is a new possible cause for the D4 fault, there are other causes**.

For additional help contact Customer Service at: International 33-1-6929-1700, USA and Canada: 1-800-914-8216 or visit us online at www.quantel-laser.com .