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AOSense Integrated Laser Controller (ILC)

Application Programming Interface (API)

Date	Rev	Change	Author
02/05/2016	A	Initial release	Alex Radnaev

WARNING: BY USING API YOU ACKNOWLEDGE AOSENSE PRODUCT TERMS AND CONDITIONS.

PARTICULARLY, USING COMMANDS WHICH ARE NOT DOCUMENTED IN THIS DOCUMENT

VOIDS WARRANTY.

AOSense ILC can be controlled via USB virtual COM port communication using the following settings:

Below is the Allowed command list:

Category	Command	Access	Description
1	ALERTS [A]	no admin needed	show [all/]pending alerts
1	TREG [<val.ue>|ON|OFF]	no admin needed	set/show TempReg enabled
1	LASER [ON|OFF]	no admin needed	show/enable/disable laser current
1	PZT [ON|OFF]	no admin needed	show/enable/disable PZT voltage
1	PZTFF [ON|OFF]	no admin needed	show/enable/disable PZT feed-forward
1	ILMOD [ON|OFF]	no admin needed	show/enable/disable laser current modulation
1	PZMOD [ON|OFF]	no admin needed	show/enable/disable PZT modulation
1	TST [<val.ue>]	no admin needed	set/show set temperature

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1	ILA [<val.ue>]	no admin needed	set/show laser set current
1	UPZ [<val.ue>]	no admin needed	set/show PZT set voltage
1	PFF [<val.ue>]	no admin needed	set/show PZT feed forward gain
1	TCU	no admin needed	show current temperature
1	MON.ILA	no admin needed	show monitored laser current
1	MON.UPZ	no admin needed	show monitored PZT voltage
1	MON.ITEC	no admin needed	show monitored TEC current
1	MON.UPZP	no admin needed	show monitored PZT power voltage
1	LOAD	no admin needed	load all knobs from NV-RAM
1	SAVE [0|1]	no admin needed	save all knobs/trims to NV-RAM (1=force)
1	TSF.MIN [<val.ue>]	need admin to set	set/show minimum safe temperature
1	TSF.MAX [<val.ue>]	need admin to set	set/show maximum safe temperature
1	TST.MIN [<val.ue>]	need admin to set	set/show minimum target temperature
1	TST.MAX [<val.ue>]	need admin to set	set/show maximum target temperature
1	ILA.MIN [<val.ue>]	need admin to set	set/show laser current minimum limit
1	ILA.MAX [<val.ue>]	need admin to set	set/show laser current maximum limit
1	ILA.ERR [<val.ue>]	need admin to set	set/show laser current error limit
1	ULC [<val.ue>]	need admin to set	set/show laser clamp voltage
1	UPZ.MAX [<val.ue>]	need admin to set	set/show PZT voltage limit
1	UPZ.ERR [<val.ue>]	need admin to set	set/show PZT voltage error limit
1	LSN [<sernum>]	need admin to set	show/set laser serial number
1	VSAVE [0|1]	no admin needed	save all valves to NV-RAM (1=force)
1	HCONN [ON|OFF]	no admin needed	show/connect (1) or disconnect (0) Laser Head
2	SYSTIME	no admin needed	show current system time
2	FLAG	no admin needed	show detail flags information
2	AMONS	no admin needed	show current/voltage monitors
2	TMON	no admin needed	monitor TempReg progress
2	TCHA <from> <to> <step> <min-time>	no admin needed	characterize TempReg
2	MON.UTEC	no admin needed	show monitored TEC voltage
2	MON.UILP	no admin needed	show monitored ILA power voltage

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2	MON.IPZP	no admin needed	show monitored PZT power current
2	TLC [<val.ue>]	need admin to set	set/show cooling drive limit
2	TLH [<val.ue>]	need admin to set	set/show heating drive limit
2	TLS [<val.ue>]	need admin to set	set/show drive slew rate limit
3	VERSION	no admin needed	show version information
3	FLAGS	no admin needed	show status flags summary
3	TICK	no admin needed	show system tick count since reset
3	TCIX	no admin needed	show temp regulator cycle index
3	TRP	no admin needed	show temp regulator P component
3	TRI	no admin needed	show temp regulator I component
3	TRD	no admin needed	show temp regulator D component
3	TOUT	no admin needed	show temp regulator output
3	TDRV	no admin needed	show temp regulator drive
3	TSIX	no admin needed	show temp regulator settling index
3	PGEN	no admin needed	show profile generation
3	LLIFE	no admin needed	show laser accrued life
3	MON.5VP	no admin needed	show monitored 5V power voltage
3	MON.4VP	no admin needed	show monitored 4V power voltage
3	MON.13VP	no admin needed	show monitored 13V power voltage
3	LNAME [<name>]	no admin needed	show/set laser name
3	TRIMS	no admin needed	show all laser trims
3	KNOBS	no admin needed	show all laser knobs
3	GAGES	no admin needed	show all laser gages
3	ONCYC	no admin needed	wait for next cycle
3	VALVES.64	no admin needed	show all controller valves (base 64)
3	TRIMS.64	no admin needed	show all laser trims (base 64)
3	KNOBS.64	no admin needed	show all laser knobs (base 64)
3	GAGES.64	no admin needed	show all laser gages (base 64)
3	FLINFO	no admin needed	show Flash info
3	EEINFO	no admin needed	show EEPROM info
4	ILA.RS [<val.ue>]	need admin to set	set/show laser current shunt resistor
4	ILA.GM [<val.ue>]	need admin to set	set/show laser current monitor gain
4	ILA.RR [<val.ue>]	need admin to set	set/show laser current regulator ratio