* 1. List of Commands

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | CLREE | None or 1:[0] | Restore Default Settings  in non-volatile memory | None |
| P | FWRESET | None | Firmware reset | None |
| P | GETACCCURMAX | None | Get the maximum current setpoint in ACC mode. A zero value indicates no special limit in ACC mode than the one returned by  GETLDLIM | 1: : Maximum Current in ACC mode, integer, mA |
| P | GETACTEFF  (For Laser with OutPwr Efficiency Protection.) | None | Get Actual Laser Efficiency values. | 1: Actual Current, float, mA 2: Actual Power, float, mW  3: Actual Efficiency, float, W/A |
| P | GETACTNOM  (For Laser with OutPwr Efficiency Protection.) | None | Get actual Nominal Laser  Current and Power used to calculate laser efficiency. | 1: Current, float, mA  2: Power, float, mW |
| P | GETAINUM | None | Get the number of analog  input signals | 1: Number, integer |
| P | GETAISYM | 1: Index, integer | Get the analog input symbol name that has the  given index | 1: Symbol, string |
| P | GETAIVAL | 1: Analog input  signal [0..6] | Get specified analog input  value | 1: Value, float |
| P | GETALARM | 1: Alarm case [0..4] | Get specified alarm state | 1: Flag [0, 1] |
| P | GETALR | None | Get alarms | 1: SHG Temperature,  flag [0, 1]  2: TEC Temperature,  flag [0, 1]  3: Pump Bias, flag[0,1] 4: Loss Of Output,  flag [0, 1]  5:Case Temperature, flag[0,1] |
| P | GETALRLOG  Version 2.3.0.0 or later | 1: Alarm case [0..4] | Get specified alarm accumulated elapsed time | 1: # of Hours, integer [0..11930046]  2: # of seconds, integer [0..3599] |
| P | GETCASELIM | 1: LDD Board [1-3] | Get laser diode Case Temperature limit  parameters for the specified pump | 1: Minimum Temperature, float °Celsius  2: Maximum Temperature, float  °Celsius |
| P | GETCASETHR | None | Get laser diode Case Index and Case Temperature thresholds to generate alarm | 1: LDD Board [1-3]  2: Low Temperature, float  °Celsius  3: High Temperature, float °Celsius |
| P | GETCHKEFF  (For Laser with OutPwr Efficiency Protection.) | 1: Check Index: [0: Last Check, 1: Min Eff. Check] | Get Laser Efficiency values for the specified Check Index. | 1: Current, float, mA 2: Power, float, mW  3: Efficiency, float, W/A |

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | GETCHKSTATE  (For Laser with OutPwr Efficiency Protection.) | None | Get Laser Efficiency ACTUAL Check State.  The State is OFF if the laser not running in APC.  The State is Low if actual current is below the Nominal Current.  The State is High if actual current is above the Nominal Current and laser Efficiency is being checked.  The State is Fault if the laser Efficiency has been below OutPwr Fault Threshold for a significant time and laser  has automatically shutdown. | 1: State, integer [0:Off, 1:Low, 2: High, 3: Fault] |
| P | GETFAULT | 1: Fault case [0..4] or  [0..5] (For Laser with OutPwr Efficiency Protection.) | Get specified fault | 1: Flag [0, 1] |
| P | GETFLT | None | Get faults | 1: SHG temperature,  flag [0, 1]  2: Tec temperature,  flag [0, 1]  3: Laser diode current, flag [0, 1]  4: Watchdog timeout,  flag [0, 1]  5: Case temperature,  flag [0, 1]  6: OutPwr Efficiency,  flag [0, 1]  (For Laser with OutPwr Efficiency Protection.) |
| P | GETFLTLOG  Version 2.3.0.0 or later | 1: Fault case [0..4] or  [0..5] (For Laser with OutPwr Efficiency Protection.) | Get specified fault accumulated latched counts | 1: Fault Count, integer [0..65535] |
| P | GETFWREV | None | Get laser controller  firmware revision | 1: Version, string |
| P | GETINPUT | 11: Input index: [0: Interlock input,  1: Hardware Bootload input,  Only for Key version : 2: Key OFF input | Get specified physical input actual state | 1: Flag [0:Off, 1: On] |
| P | GETLASERSTATE | None | Get laser actual state | 1: Laser State Code, integer |
| P | GETLASERSTATENUM | None | Get the number of laser  different states | 1: Number, integer |

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | GETLASERSTATESYM | 1:Index, integer | Get the laser state code and symbol name for the specified index | 1; Laser State Code, integer  2: Laser State Symbol, string |
| P | GETLDCUR | 1: LD pump [1-3] | Get specified laser diode  current set point when laser in manual mode | 1: Current, integer, mA |
| P | GETLDENABLE | None | Get laser software enable  flag value | 1: Flag [0: Disable, 1:  Enable] |
| P | GETLDLIM | 1: LD pump [1-3] | Get laser diode limit parameters for the specified pump | 1: Minimum Current, integer, mA  2: Maximum Current, integer, mA  3: Current Protection Threshold, integer, |
| P | GETLDMODE  Only for VFL MOPA | 1: LD pump [1: Seed, 2:PreAmp, 3:Booster] | Get laser diode control mode when laser in automatic mode | 1:Mode, integer,[ 0: ACC, 1: APC] |
| P | GETLDSTATE | 1: LD pump [1-3] | Get the State for the  specified laser diode driver | 1: State [0: Off, 1:On, 2:  Turning Off, 3:Turning On, 4: Fault] |
| P | GETLOOLIM | None | Get the Low and High power difference relative to the output power set point (In APC mode to  declare the LOS output Alarm | 1: Low power, Float, dB 2: High Power Float, dB |
| P | GETLOOLIMPC | None | Get the Low and High power difference relative to the output power set point (In APC mode to  declare the LOS output Alarm | 1: Low power, Float, % 2: High Power Float, % |
| P | GETMINEFFPC  (For Laser with OutPwr Efficiency Protection.) | None | Get Percent of Nominal  Laser Efficiency Minimum Threshold to generate OutPwr Efficiency Fault. | 1: Percent of Nominal  Efficiency, integer, % [0..100] |
| P | GETMODEL | None | Get laser model number | 1: Model, string |
| P | GETNOMCUR  (For Laser with OutPwr Efficiency Protection.) | None | Get BOL Nominal Laser Current used as a target to calculate laser efficiency. | 1: Current, float, mA |
| P | GETNOMEFF  (For Laser with OutPwr Efficiency Protection.) | None | Get BOL Nominal Laser Efficiency used as a  Reference value to generate OutPwr Efficiency Fault. | 1: Efficiency, float, W/A |
| P | GETOUT | None | Get outputs | 1: Fault  flag [0, 1]  2: Laser ON,  flag [0, 1]  3: Laser Warming up and not ready to operate.  flag [0, 1]  4: Service Affected,  flag [0, 1] |
| P | GETPOWER | 1: 0 | Get laser output power  set point in APC mode | 1: Power, float,  mW |

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | GETPOWERENABLE | None | Get laser mode | 1:Mode, integer,[ 0: ACC,  1: APC] |
| P | GETPOWERSETPTLIM | 1: 0 | Get limit parameters for the laser output power set point | 1: Minimum Power, float, mW  2: Maximum Power, float, mW |
| P | GETSHGCMD  Only for SHG Temp Tuning version | None | Get SHG actual  command | 1: SHG Command [0: No  command executing, 1:SHG Tuning w/prerequisites initiated, 2: SHG Tuning aborting, 99: SHG Tuning w/out  prerequisites initiated ] |
| P | GETSHGTEMP | None | Get SHG sensor  temperature set point | 1: Float, °Celsius |
| P | GETSHGTUNERDY | None | Get SHG Ready for Tuning state and left time | 1: State [0: SHG Tuning w/prerequisites Not Ready, 1:SHG Tuning w/prerequisites Ready]  2: # of Hours of laser operation left before next scheduled SHG Tuning,    3: # of Seconds of laser operation left before end of warm-up at actual output power, integer,  [0..65535] |
| P | GETSHGTUNESTATE | None | Get SHG Tuning state and error status | 1: State [0: Tuning OFF, 1:Tuning Completed, 2:Tuning Aborted, 3: Tuning In Progress]  2:Error Status Bitmap [0..31] where:  0: No Error,  1: Laser not running in espected state,  2: SHG Temp not set, 4: SHG Temp not stabilized,  8: Output Power not stabilized in APC mode 16: SHG Temp out of limits]  32: LD Current not stabilized in ACC mode, 64: No Power Peak  detected in ACC mode |
| P | GETSN | None | Get laser serial number | 1: Serial #, string |
| P | GETSTATE | None | Get laser controller state | 1: State, integer [0:Init, 1:  Normal, 2: ALS] |
| P | GETSTATUS | 1: LDD Board [1-3] | Get the State for the specified laser diode driver board | 1: LDD Alarms [0..511]  2: LDD Faults [0..1023]  3: LDD state [0:Init, 1:Normal, 2:ALS] |

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | GETTECSETPT | 1: TEC driver [1-3: TEC1-  3, 4:SHG, 5:TEC5] | Get specified TEC driver  temperature set point | 1: Temperature, Float,  °Celsius |
| P | GETTECSTATE | 1: TEC driver [1-3: TEC1-  3, 4:SHG, 5:TEC5] | Get the State for the specified TEC driver | 1: State [0: Off, 1:On, 2:  Turning Off, 3:Turning On, 4: Fault] |
| P | GETTIMEOP | None | Get Time of Operation of laser head | 1: # of Hours, integer [0..11930046]  2: # of seconds, integer [0..3599]  3: # of msec, integer [0.999] |
| P | GETTIMEOPCTRL | None | Get Time of Operation of  laser controller | 1: # of Hours, integer  [0..11930046]  2: # of seconds, integer [0..3599]  3: # of msec, integer [0.999] |
| P | LASERSTATE  Only for VFL MOPA | 1: Laser Stage [1: Seed, 2:PreAmp, 3:Booster] | Get specified laser stage actual state flag | 1: Flag [0 : Output not OK  , 1 : Output OK] |
| P | LDCURRENT | 1: LD pump [1-3] | Get specified laser diode  actual current | 1: Current, integer,  mA |
| P | LDTEMP | 1: LD pump [1: LD1] | Get specified laser diode  actual case temperature | 1: Temperature, Float,  °Celsius |
| P | NOOPERATION | None | Do nothing . | None |
| P | POWER | 1: Power INDEX  [0:Output, 1-3: LD1-3] | Get laser monitored powers | 1: Power, float, mW |
| P | POWERENABLE | 1:Mode, integer,[ 0: ACC,  1: APC] | Set laser mode | None |
| P | RSTEFF  (For Laser with OutPwr Efficiency Protection.) | None | Reset Laser Efficiency Last and Min Eff. Check stats. | None |
| P | SAVEALL | None or 1:[0] | Save actual settings in  non-volatile memory | None |
| P | SETCASETHR | 1: LDD Board [1-3]  2: Low Temperature, float  °Celsius  3: High Temperature, float °Celsius | Set laser diode Case Index and Case Temperature thresholds to generate alarm | None |
| P | SETLDCUR | 1: LD pump [1-3]  2: Current, integer, mA | Set specified laser diode current set point when  laser in manual mode | None |
| P | SETLDENABLE | 1: Flag [0: Disable, 1: Enable] | Set laser software enable flag value | None |
| P | SETLOOLIM | 1: Low power, Float, dB 2: High Power Float, dB | Set the Low and High power difference relative to the output power set point (In APC mode to declare the LOS output  Alarm | None |

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| **Command**  Outgoing request submitted from HyperTerminal | | | | **Reply**  Incoming positive response returned by the  amplifier |
| **P/T** | **Name** | **Arguments** | **Description** | **Arguments** |
| P | SETLOOLIMPC | 1: Low power, Float, % 2: High Power Float, % | Set the Low and High power difference relative to the output power set point (In APC mode to declare the LOS output  Alarm | None |
| P | SETPOWER | 1: 0  2: Power, float, mW | Set laser output power set point in APC mode | None |
| P | SETSHGCMD | 1: SHG Command [1:Initiate SHG Tuning w/prerequisites, 2: Abort SHG Tuning, 99: Initiate  SHG Tuning w/out prerequisites] | Set SHG command | None |
| P | SETSHGTEMP | 1: Float, °Celsius | Set SHG sensor  temperature set point | None |
| P | SHAI | None | Show analog input signals |  |
| P | SHALR | None | Show alarms |  |
| P | SHFAULT | None | Show faults |  |
| P | SHGTEMP | None | Get SHG sensor actual  temperature | 1: Float, °Celsius |
| P | SHLASER | None | Show Laser settings and  measurements |  |
| P | TECCURRENT | 1: TEC driver [1-3: TEC1-  3, 4:SHG, 5:TEC5] | Get specified TEC driver  actual current | 1: Current, integer,  mA |
| P | TECTEMP | 1: TEC driver [1-3: TEC1-  3, 4:SHG, 5:TEC5] | Get specified TEC sensor  actual temperature | 1: Float, °Celsius |
| P | VCCMON | 1: LD pump [1]  2:VCC index[1:12Volt VCC, 2:5Volt VCC] | Get the specified VCC voltage | 1: Voltage, float, Volt |

* + 1. MCU and LDD States

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| **Code** | **Symbol** | **Meaning** |
| 0 | ST\_INIT | Initialization state |
| 1 | ST\_NORMAL | Operational state |
| 2 | ST\_ALS | Fault state |

* + 1. Laser States

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| **Code** | **Symbol** | **Meaning** |
| 0 | OFF | Laser driver disabled by user. TEC drivers are enabled. |
| 6 | KEYLOCK | Laser driver disabled. Key must be switched OFF then ON. (Only for  KEY version) |
| 7 | INTERLOCK | Laser driver disabled by interlock input signal |
| 8 | FAULT | Laser in fault conditions |
| 20 | STARTUP | Laser driver ready to start up. |
| 31 | MANUAL\_TURNING\_ON | Laser driver turning on in manual mode. |
| 41 | MANUAL\_ON | Laser driver running in manual mode. |
| 42 | AUTO\_ON | Laser driver running in automatic mode Only for not VFL MOPA |