Subsystem	Parameter	What it does	Description	Type	Default value	Range
BPD	**bpd ab**	Input weighting of the proportional gain for the PID controller for laser A	The input weighting of the proportional gain for the PID controller for laser A. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	1.0	0.0 to 15.0
	bpd aki	Integral gain for the PID controller for laser A	The integral gain for the PID controller for laser A. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.01 V/um/ms	-5.0 to 5.0 V/um/ms
	bpd akp	Proportional gain for the PID controller for laser A	The proportional gain for the PID controller for laser A. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.1 V/um	-10.0 to 10.0 V/um
	bpd ascendoffseta	Ascending offset for the "A" beam-pointing actuator	The ascending offset for the "A" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um	-6000.0 to 6000.0 um
	bpd ascendoffsetb	Ascending offset for the "B" beam-pointing actuator	The ascending offset for the "B" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um	-6000.0 to 6000.0 um
	bpd ascendslopea	Ascending slope for the "A" beam-pointing actuator	The ascending slope for the "A" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um/volt	-100.0 to 100.0 um/volt
	bpd ascendslopeb	Ascending slope for the "B" beam-pointing actuator	The ascending slope for the "B" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um/volt	-100.0 to 100.0 um/volt
	bpd b	Input weighting of the proportional gain for the PID controller for the centroid	The input weighting of the proportional gain for the PID controller for the centroid. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	1.0	0.0 to 15.0
	bpd bb	Input weighting of the proportional gain for the PID controller for laser B	The input weighting of the proportional gain for the PID controller for laser B. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	1.0	0.0 to 15.0
	bpd bki	Integral gain for the PID controller for laser B	The integral gain for the PID controller for the laser B. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.01 V/um/ms	-5.0 to 5.0 V/um/ms

Subsystem	Parameter	What it does	Description	Type	Default value	Range
BPD Cont'd	**bpd bkp**	Proportional gain for the PID controller for laser B	The proportional gain for the PID controller for laser B. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.1 V/um	-10.0 to 10.0 V/um
	bpd dbpsconfig	Differential beam-pointing sensor configuration	The differential beam-pointing sensor configuration determines the orientation of the differential beam-pointing sensor. If the differential beam-pointing sensor configuration is zero (or "Normal"), the differential beam-pointing sensor "sees" laser A in quadrants a/d and laser B in quadrants b/c. If the differential beam-pointing sensor configuration is one (or "Reversed"), the differential beam-pointing sensor "sees" laser A in quadrants b/c and laser B in quadrants a/d. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd xtalk.	Integer	0	0 to 1
	bpd descendoffseta	Descending offset for the "A" beam-pointing actuator	The descending offset for the "A" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um	-6000.0 to 6000.0 um
	bpd descendoffsetb	Descending offset for the "B" beam-pointing actuator	The descending offset for the "B" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um	-6000.0 to 6000.0 um
	bpd descendslopea	Descending slope for the "A" beam-pointing actuator	The descending slope for the "A" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um/volt	-100.0 to 100.0 um/volt
	bpd descendslopeb	Descending slope for the "B" beam-pointing actuator	The descending slope for the "B" beam-pointing actuator. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd characterize [(a|b)].	real	0.0 um/volt	-100.0 to 100.0 um/volt
	bpd diffcal	Calibration factor for the differential beam-pointing sensor	The calibration factor for the differential beam-pointing sensor converts the differential beam-pointing sensor readings from A/D counts to microns. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd cal diffsensor.	real	130.0	25.0 to 300.0
	bpd doffset	Differential offset for the for the beam-pointing control loop	Configures the differential offset for the beam-pointing control loop. This parameter sets the relative positions of laser A and laser B. Changes to this parameter take affect when the control mode of the beam-pointing driver is initialized to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately.	real	0.0 um	-1000.0 to 1000.0 um
	bpd ki	Integral gain for the PID controller for the centroid	The integral gain for the PID controller for the centroid. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.01 um/um/ms	-5.0 to 5.0 um/um/ms
	bpd kp	Proportional gain for the PID controller for the centroid	The proportional gain for the PID controller for the centroid. Changes to this parameter take affect when the control mode of the beam-pointing driver is set to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd tune [(a|b|c)].	real	0.1 um/um	-10.0 to 10.0 um/um

Subsystem	Parameter	What it does	Description	Type	Default value	Range
BPD Cont'd	**bpd offset**	Position offset for the beam-pointing control loop	Configures the position offset for the beam-pointing control loop. This parameter is set during integration to provide the best contrast. Changes to this parameter take affect when the control mode of the beam-pointing driver is initialized to "On". If the control mode of the beam-pointing driver is already "On", then this parameter takes affect immediately.	real	0.0 um	-1000.0 to 1000.0 um
	bpd psdoffset	PSD offset for the PSD sensor	The PSD offset calibrates the PSD sensor using the differential beam-pointing sensor. Changes to this parameter take affect immediately. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd cal diffsensor.	real	0.0 um	-500 to 500 um
	bpd sensormode	Sets the sensor mode of the beam-pointing system	The "bpd sensormode" parameter selects how the beam-pointing sensors are used in controlling the write laser position. When set to '0' the sensors are used in the 'normal' mode where the differential position is controlled using the differential sensor and the position of the centroid of the combined lasers is controlled using the feedback from the PSD sensor. When set to '1' the sensors are used in the 'diff' mode, where the differential and centroid position of the combined lasers are controlled using only the differential sensor. When set to '2' the sensors are used in the 'psd' mode, where a single laser position is controlled using feedback from the PSD sensor. Only a single laser can operate in this sensormode.	boolean	false	True or false
	bpd xtalkab	Crosstalk co-efficient for the differential beam-pointing sensor	A crosstalk co-efficient for the differential beam-pointing sensor that determines the proportion of laser A that affects the differential beam-pointing sensor for laser B. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd xtalk.	real	0.0	0.0 to 1.0
	bpd xtalkba	Crosstalk co-efficient for the differential beam-pointing sensor	A crosstalk co-efficient for the differential beam-pointing sensor that determines the proportion of laser B that affects the differential beam-pointing sensor for laser A. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd xtalk.	real	0.0	0.0 to 1.0
	bpd xtalkdira	Crosstalk co-efficient for the differential beam-pointing sensor	A crosstalk co-efficient for the differential beam-pointing sensor that determines the proportion of laser A that affects the differential beam-pointing sensor for laser A. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd xtalk.	real	1.0	0.0 to 2.0
	bpd xtalkdirb	Crosstalk co-efficient for the differential beam-pointing sensor	A crosstalk co-efficient for the differential beam-pointing sensor that determines the proportion of laser B that affects the differential beam-pointing sensor for laser B. Note that this parameter is automatically calibrated by the monitor commands bpd setup [(a|b)] and bpd xtalk.	real	1.0	0.0 to 2.0
FOC	**foc Bandwidth**	Closed-loop position servo bandwidth	Autofocus closed-loop bandwidth	real	250.0 Hz	10.0 to 500.0 Hz
	foc CurrentLimit	Current limit of voice coil lens tube actuator	Autofocus system current limit	real	1.000 A	0.020 to 2.000 A
	foc DmodSync	Focus laser demodulator delay	Demodulation synchronization value	real	70.0 ns	-500.0 to 500.0 ns
	foc ForceConstant	Actuator Force Constant	Autofocus actuator force constant	real	9.000 kN/A	5.000 to 30.000 kN/A
	foc LaserFreq	Focus laser frequency	Focus laser frequency	real	800.0 kHz	800.0 to 1600.0 kHz

Subsystem	Parameter	What it does	Description	Type	Default value	Range
FOC Cont'd	**foc ObserverBW**	Observer natural frequency	Observer bandwidth	real	100.0 Hz	100.0 to 1000.0 Hz
	foc PayloadMass	Mass of lens tube assembly	Total moving mass in autofocus servo system	real	100.0 g	50.0 to 250.0 g
	foc PositionSensitivity	Lens tube position sensitivity	Lens position sensor calibration	real	234.6 mV/V/mm	200.0 to 300.0 mV/V/mm
	foc TransmitGain	Focus laser power gain to compensate for transmissivity	It is generally desirable to specify the focus laser power in terms of the power incident on media. However, the thermal head is only able to read the laser power at the laser diode itself. The focus laser power set for any given media is adjusted by TransmitGain to ensure expected power on media.	real	0.1	0.5 to 0.15
MED	**med <media index> beampiston**	Link the target profiles for the beam-balance	Variable: media index. Selects the media index from 0 to 63. The beam piston defined by the copy of the media parameters where the copy is selected by the media index. When performing a beam-balance, the beam piston specifies the link between the target profiles. The beam-balance algorithm will adjust the stroke values to create a relationship between the average power of the target profile for the high polarity and the average power of the target profile for the low polarity. The value of the piston specifies the difference between the average power of the target profile for the high polarity and the average power of the target profile for the low polarity expressed as a percentage of the average power.	real	0.000 %	-50.000 to 50.000 %
	med <media index> focuspower	The focus laser power reaching the surface of the media	Variable: media index. Selects the media index from 0 to 63. The power of the focus laser diode is much higher than the power that actually reaches the surface of any given media. Many power losses occur in the focus beam path through the head. The focuspower is divided by the 'transmitgain' parameter in the imaging head to arrive at a laser diode power which will ensure the specified focuspower reaches the media surface.	real	10.0 mWpp	0.0 to 1.0 mWpp
	med <media index> imagemode	The image mode for identifying media	Selects the media index from 0 to 63. The image mode defined by the copy of the media parameters where the copy is selected by the media index. Since some hosts and heads attempt to match the media based on the image mode (and the media name and media color), the image mode must be an accepted value and it must match a media slot on the host side. Note that the host / exposure head will attempt to match the media based on the media name, media color and image mode media parameters. The actual media index is not relevant when attempting to match media.	integer	0	0 to 65535
	med <media index> mdiff	The diffusivity of the media	Variable: media index. Selects the media index from 0 to 63. The diffusivity of the media.	real	0.5	0.0 to 1.0
	med <media index> scorr <polarity / spot quad>	The stroke correction table for the media	Variable: media index. Selects the media index from 0 to 63. Variable: polarity / spot quad. Selects the spot quad from 0 to 231 (0 to 115 are high, 116 to 231 are low). The scorr (stroke correction) table defined by the copy of the media parameters where the copy is selected by the media index. When performing a beam-balance, the scorr table specifies the target profile corrections. The beam-balance algorithm will adjust individual stroke values as determined by the scorr table to compensate the pixel power.	real	0.00 %	-50.00 to 50.00 %

Subsystem	Parameter	What it does	Description	Type	Default value	Range
MED Cont'd	**med <media index> stroke <polarity / spot quad>**	The stroke table for the media	Variable: media index. Selects the media index from 0 to 63. Variable: polarity / spot quad. Selects the spot quad from 0 to 231 (0 to 115 are high, 116 to 231 are low). The stroke table defined by the copy of the media parameters where the copy is selected by the media index. When performing a plot, the pixel levels and thus the pixel powers are configured using the stroke table. If successful, a beam-balance will calculate and initialize the stroke table. The target profile is determined by the NVS parameters med <media index > beamslope <polarity>, med <media index> beamcurve <polarity>, med <media index> beampiston and med <media index> scorr <polarity / spot quad>.	integer	0	0 to 255
SYS	**sys annealaccrual**	The accrual time for the light valve annealing	When the write laser is on, the accrual time for the light valve annealing is calculated. The high polarity of the light valve increases the accrual time, the low polarity of the light valve decreases the accrual time and the interleave polarity of the light valve has no affect on the accrual time. The accrual time for the light valve is updated either every five minutes or when the write laser is turned off. When performing a plot, the polarity type specifies the polarity of the light valve. When annealing the light valve, the setpoint time for the light valve annealing is compared to the accrual time for the light valve annealing to determine both the required annealing time for the light valve and the required polarity of the light valve. Note that required annealing times of less than two minutes are ignored.	float	0.0 seconds	-86400.0 to 86400 seconds
	sys annealsetpoint	The setpoint time for the light valve annealing	When the write laser is on, the accrual time for the light valve annealing is calculated. The high polarity of the light valve increases the accrual time, the low polarity of the light valve decreases the accrual time and the interleave polarity of the light valve has no affect on the accrual time. The accrual time for the light valve is updated either every five minutes or when the write laser is turned off. When performing a plot, the polarity type specifies the polarity of the light valve. When annealing the light valve, the setpoint time for the light valve annealing is compared to the accrual time for the light valve annealing to determine both the required annealing time for the light valve and the required polarity of the light valve. Note that required annealing times of less than two minutes are ignored.	float	0.0 seconds	-86400.0 to 86400 seconds
	sys imagedata	Configure the source for the image data	Specifies the source for the image data. The source of the image data will be one of the following: • The test pattern generator is 0. • The gigabit fiber interface is 1.	integer	0	0 to 1
	sys imagetiming	Configure the source for the image timing	Specifies the source for the image timing. The source of the image timing will be one of the following: • The gigabit fiber interface is 0. • The RS-422 connector is 1. • The internal engine synthesizer is 2.	integer	0	0 to 2

Subsystem	Parameter	What it does	Description	Type	Default value	Range
SYS Cont'd	**sys laseranneal**	Enable/disable the light valve annealing	Specifies whether light valve annealing is enabled or disabled. If light valve annealing is enabled (this NVS parameter is true), the exposure head will calculate the accrual time for the light valve annealing and will perform light valve annealing when requested by the host. If light valve annealing is disabled (this NVS parameter is false), the exposure head will calculate the accrual time for the light valve annealing but will ignore the light valve annealing request from the host. Note that either the NVS parameter sys plotenable, the NVS parameter sys bipolarcal or the NVS parameter sys laserenable will disable the write laser and stroke calibration.	boolean	false	
	sys laserstandby	Enable/disable the write laser standby	Specifies whether write laser standby is enabled or disabled. If write laser standby is enabled (this NVS parameter is true), the exposure head will leave the write laser on between plots when requested by the host. If write laser standby is disabled (this NVS parameter is false), the exposure head will ignore the write laser standby request from the host. Note that either the NVS parameter sys plotenable, the NVS parameter sys bipolarcal or the NVS parameter sys laserenable will disable the write laser and stroke calibration.	boolean	false	
	sys polarity	Configure the polarity type	When performing a plot, the polarity type specifies the polarity of the light valve. The polarity types are defined as follows: • Polarity type 0 plots in high polarity only. • Polarity type 1 plots in low polarity only. • Polarity type 2 plots in both high and low polarity (a polarity switch occurs at the end of every swath). • Polarity type 3 plots in both high and low polarity (a polarity switch occurs between plots).	integer	0	0 to 3
	sys ratedpower	Set rated power for the exposure head (at full stroke width).	The rated power will normally be set during integration of the exposure head and should not be changed in the field. Modifying this NVS parameter does not change the actual capabilities of the exposure head. Attempting to exceed the rated power will reduce the lifetime of the exposure head.	real	45.000 Watts	0.000 to 65.000 Watts
	sys standbyperiod	Period for the write laser standby	When the plot is complete and requested by the host, the exposure head will leave the write laser on between plots to extend the lifetime of the exposure head. To prevent affecting the accrual time of the light valve, the light valve polarity is alternated periodically.	float	60.0 Seconds	5.0 to 600.0 Seconds
	sys standbythreshold	Threshold for the write laser standby	When the plot is complete and requested by the host, the exposure head will leave the write laser on between plots to extend the lifetime of the exposure head. However if the laser current is below the standby threshold, laser life is best extended by turning the laser off.	float	40.0 Amps	0.0 to 90.0 Amps
	sys standbytimeout	Timeout for the write laser standby	When the plot is complete and requested by the host, the exposure head will leave the write laser on between plots to extend the lifetime of the exposure head. Upon timeout of the write laser standby, the exposure head will automatically turn off the write laser.	float	600.0 Seconds	30.0 to 3600.0 Seconds
	sys tpgpattern	Configure the TGP pattern	Specifies the TPG pattern. The monitor command plt list will display the supported TPG patterns.	Integer	0	0 to 65535