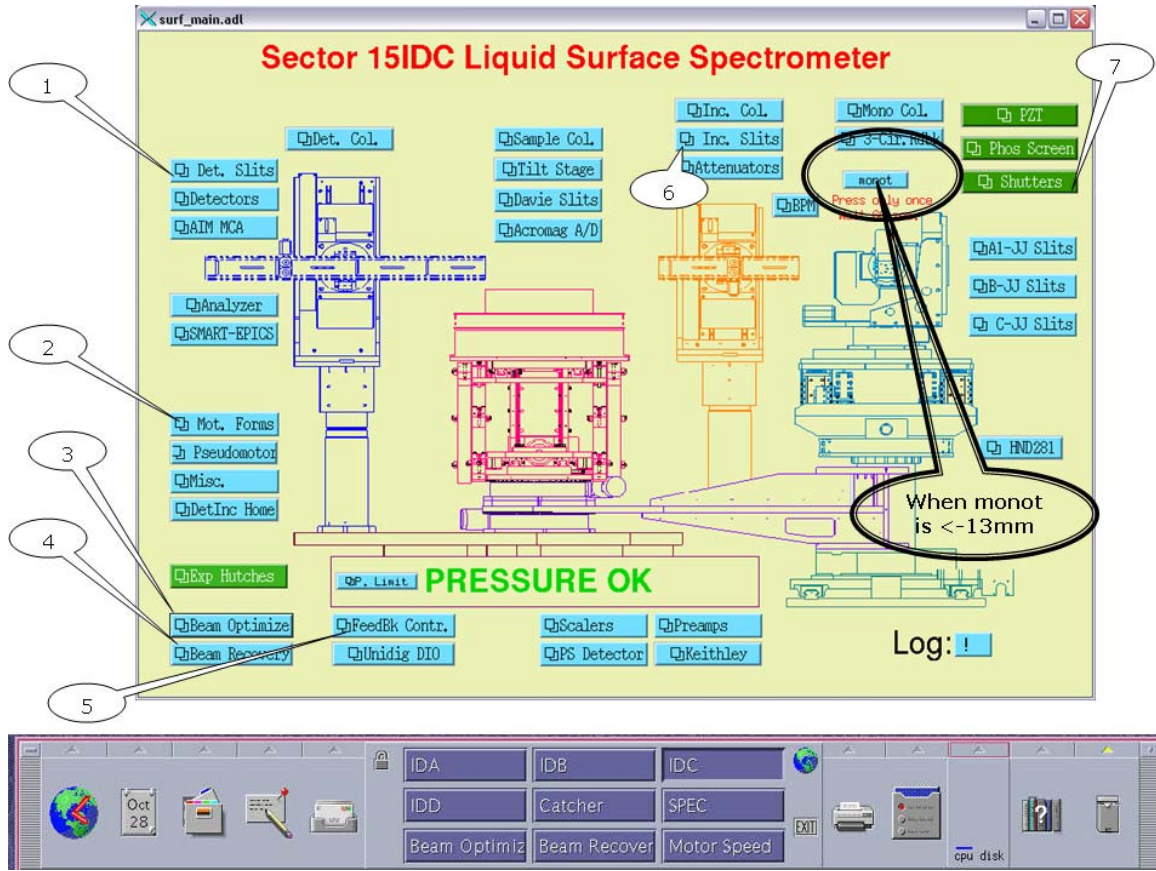


Liquid Surface X-ray Scattering User Help

Software

EPICS (MEDM windows for users)

IDC Liquid Surface Spectrometer Main Page



Liquid Surface X-ray Scattering User Help

SPEC Command Window

The screenshot displays the SPEC control software interface. On the left, the 'surface_detectors.adt' window shows four detector monitors (B, C, D, and Oxford) with their respective count rates and sensitivities. A callout labeled '1. Detectors' points to this window. A central callout box provides instructions for the Monocromator (Monc): 'Monc: normalization detector: 1: keep count rate between 5k cps and 500k cps 2: keep dark current <100cps 3: Check N₂ supply'. To the right, the 'Remote Shutter' window shows controls for the Front End Shutter and Exp. Shutter, with callouts '6. attenuator' and '7. Remote Shutter'. Below these is the 'Feed Back Set' window. At the bottom center, the 'Console' window displays a command prompt with the text 'SPEC command window (if freezes, get a new Console from cpu)'. A red circle highlights the 'Console' option in the system tray, with a red arrow pointing to the console window. The system tray at the bottom includes buttons for IDA, IDB, IDC, IDD, Catcher, SPEC, Beam Optimiz, Beam Recover, and Motor Speed.

1. Detectors

Monc: normalization detector:
1: keep count rate between 5k cps and 500k cps
2: keep dark current <100cps
3: Check N₂ supply

6. attenuator

7. Remote Shutter

5. Surface Feedback

SPEC command window
(if freezes, get a new Console from cpu)

Console

Liquid Surface X-ray Scattering User Help

Beam Optimization Window

3. Beam Optimization

To optimize the beam when
 1) Intensity drifts
 2) Intensity feedback is off
 3) after recovering from a beam dump

15IDC Surface Beam Optimize X: 0.013 Y: 0.003

1 Turn Feedback off Feedback: On

2 Set DAC voltage to 0 0.9566

3 Set this to 3.00 → 0.600
 Tweak this: MonoTheta2
 Readback: 7.06907 arcsec
 Set this value to 0.01. → 0.01000
 to maximize this: 330632 MONP
 Set this to 0.60 → 0.600

4 Tweak this: Mirror2 Theta
 Readback: 2.200 arcrad
 Set this value to 0.001. → 0.001
 to maximize this: 216949 MONP

5 Tweak this: SLOWLY Mirror2 Chi
 Readback: 1.500 arcrad
 Set this value to 0.2. → 0.200
 to maximize this: 216949 MONP

6 Set to 100 → Press button → Fdbk Setpoint
 90.000 100% Scale 90.000

7 Set DAC voltage to 5 Turn Feedback On
 DAC Voltage: 0.9566 Feedback: On

Beam Info: Beam Current = 101.4 A
 Pinhole Position: Xp = 1.000 Yp = 36.000

H SIZE	V SIZE	H SIZE	V SIZE	H SIZE	V SIZE
10.000	10.000	3.000	0.600	3.000	0.300
10.000	10.000	3.000	0.600	3.000	0.300
H CENTER	V CENTER	H CENTER	V CENTER	H CENTER	V CENTER
-0.000	38.244	-0.045	37.805	-0.000	-0.000
0.000	38.244	0.045	37.605	0.000	-0.000

Beam Dump Recovery Window

4 Beam Recovery

After the beam comes back from a dump, follow the procedure to recover the beam

dumpRecover2.adt

1 If the FE valve is closed or EPS is in FAULT, call a beamline scientist.
 If ok, continue to step 2.

2 Check machine current (if 0 no beam). Current: 102.2 ma Lifetime: 7.1 Hours
 Machine status (should be user operations). Machine Status: USER OPERATIONS
 Check operating mode (should be beam delivered). Operating Mode: Delivered Beam
 Check shutter status (should be enabled). Shutter Status: Shutters Enabled
 If all of the above are correct goto step 3.
 Otherwise ask floor coordinator when beam will return. If long time, go home.

3 Check to see if FE and FOE shutters are open. If not go to PSS panel on Hutch and open them.
 Station A: FE Shutter Open
 Station B: FOE Shutter Open

4 Check gap and energy to make sure that it is closed to the proper energy. If not, close gap.
 Gap (mm) Energy (keV)
 Start Stop
 Access Mode: User

5 Insert Phosphor Screen Low High → Turn off feedback → Adjust to maximize beam intensity
 Out of Beam

6 Go to Beam Optimization screen Or click button to call up screen → Beam Optimize

EPS FAULT STATUS
 EPS-major Ok
 Vacuum Ok
 FE Valve Open

Energy [keV]
 Current 30.217
 Check 15IDA Logbook for the desired value
 Place value here → 30.221

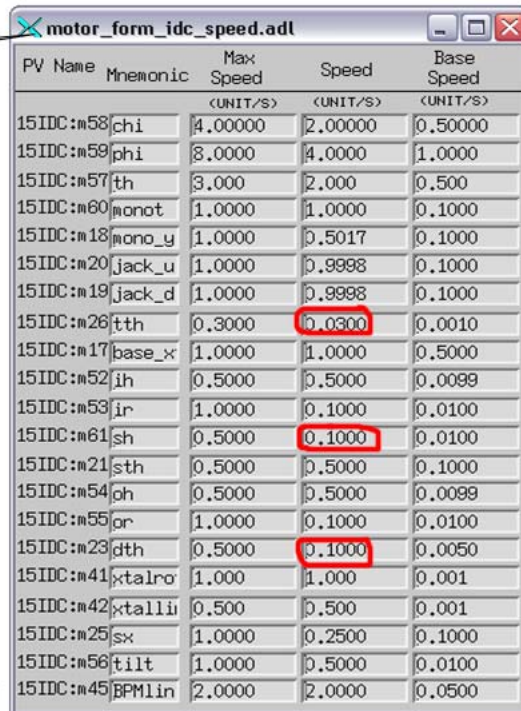
Liquid Surface X-ray Scattering User Help

Surface Motor Speed

2. Motor Speeds

Check or change the speeds circled in red; the setting indicated are for sample scans which are slower than in alignment

Note: do not change Max speed and Base speed



PV Name	Mnemonic	Max Speed (UNIT/S)	Speed (UNIT/S)	Base Speed (UNIT/S)
15IDC:m58	chi	4.00000	2.00000	0.50000
15IDC:m59	phi	8.0000	4.0000	1.0000
15IDC:m57	th	3.000	2.000	0.500
15IDC:m60	monot	1.0000	1.0000	0.1000
15IDC:m18	mono_y	1.0000	0.5017	0.1000
15IDC:m20	jack_u	1.0000	0.9998	0.1000
15IDC:m19	jack_d	1.0000	0.9998	0.1000
15IDC:m26	tth	0.3000	0.0300	0.0010
15IDC:m17	base_x	1.0000	1.0000	0.5000
15IDC:m52	ih	0.5000	0.5000	0.0099
15IDC:m53	ir	1.0000	0.1000	0.0100
15IDC:m61	sh	0.5000	0.1000	0.0100
15IDC:m21	sth	0.5000	0.5000	0.1000
15IDC:m54	ph	0.5000	0.5000	0.0099
15IDC:m55	or	1.0000	0.1000	0.0100
15IDC:m23	dth	0.5000	0.1000	0.0050
15IDC:m41	xtalro	1.000	1.000	0.001
15IDC:m42	xtalii	0.500	0.500	0.001
15IDC:m25	sx	1.0000	0.2500	0.1000
15IDC:m56	tilt	1.0000	0.5000	0.0100
15IDC:m45	BPMlin	2.0000	2.0000	0.0500

