

SC MPS GUI

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U.S. DEPARTMENT OF
ENERGY

Stanford
University

SLAC NATIONAL
ACCELERATOR
LABORATORY

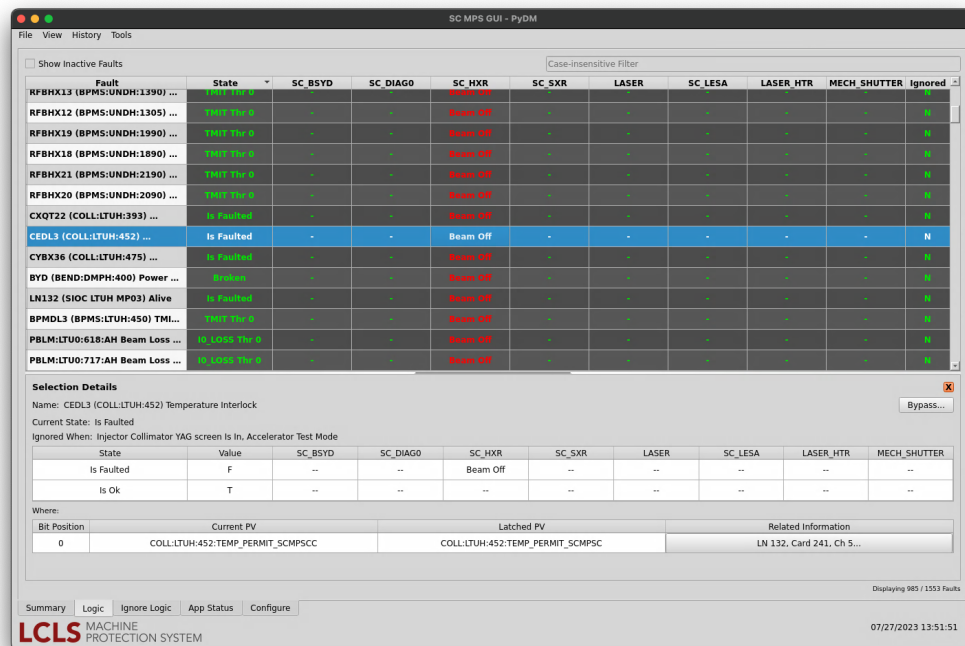
What is the SC MPS GUI?

Displaying information:

- SC Beam Permits
- Faulted devices
- Ignore conditions & status
- MPS Applications

Device Control and Management:

- Bypass devices
- Configure thresholds on BPMs



The screenshot displays the SC MPS GUI - PyOM interface. The main window shows a table of faults with columns for Fault, State, SC_BSYD, SC_DIAGO, SC_HXR, SC_SXR, LASER, SC_LESA, LASER_HTR, MECH_SHUTTER, and Ignored. The row for CEDL3 (COLL:LTUH:452) is highlighted in blue, indicating it is the selected fault. Below the table, the Selection Details section shows the Name: CEDL3 (COLL:LTUH:452) Temperature Interlock, Current State: Is Faulted, and Ignored When: Injector Collimator YAG screen is In. Accelerator Test Mode. A table below this section shows the State, Value, SC_BSYD, SC_DIAGO, SC_HXR, SC_SXR, LASER, SC_LESA, LASER_HTR, and MECH_SHUTTER for the selected fault. The table shows that the State is Is Faulted, Value is F, SC_BSYD is --, SC_DIAGO is --, SC_HXR is Beam Off, SC_SXR is --, LASER is --, SC_LESA is --, LASER_HTR is --, and MECH_SHUTTER is --. Below this table, the When section shows the Bit Position, Current PV, Latched PV, and Related information. The table shows that the Bit Position is 0, Current PV is COLL:LTUH:452:TEMP_PERMIT_SCMPSCC, Latched PV is COLL:LTUH:452:TEMP_PERMIT_SCMPSCC, and Related information is LN 132, Card 241, Ch 5... The bottom of the window shows the LCLS MACHINE PROTECTION SYSTEM logo and the date 07/27/2023 13:51:51.

Fault	State	SC_BSYD	SC_DIAGO	SC_HXR	SC_SXR	LASER	SC_LESA	LASER_HTR	MECH_SHUTTER	Ignored
RFBHX13 (BPMS:UNDH:1390) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
RFBHX12 (BPMS:UNDH:1305) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
RFBHX19 (BPMS:UNDH:1990) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
RFBHX18 (BPMS:UNDH:1890) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
RFBHX21 (BPMS:UNDH:2190) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
RFBHX20 (BPMS:UNDH:2090) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
CKQT22 (COLL:LTUH:393) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
CEDL3 (COLL:LTUH:452) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
CYBX36 (COLL:LTUH:475) ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
BYD (BEND:DMPH:400) Power ...	Beam On	--	--	Beam Off	--	--	--	--	--	N
LN132 (SIOC:LTUH:MP03) Alive	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
BPMDL3 (BPMS:LTUH:450) TMI...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
PBLM:LTUO:618:AH Beam Loss ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N
PBLM:LTUO:717:AH Beam Loss ...	Is Faulted	--	--	Beam Off	--	--	--	--	--	N

Selection Details

Name: CEDL3 (COLL:LTUH:452) Temperature Interlock

Current State: Is Faulted

Ignored When: Injector Collimator YAG screen is In. Accelerator Test Mode

State	Value	SC_BSYD	SC_DIAGO	SC_HXR	SC_SXR	LASER	SC_LESA	LASER_HTR	MECH_SHUTTER
Is Faulted	F	--	--	Beam Off	--	--	--	--	--
Is Ok	T	--	--	--	--	--	--	--	--

When:

Bit Position	Current PV	Latched PV	Related information
0	COLL:LTUH:452:TEMP_PERMIT_SCMPSCC	COLL:LTUH:452:TEMP_PERMIT_SCMPSCC	LN 132, Card 241, Ch 5...

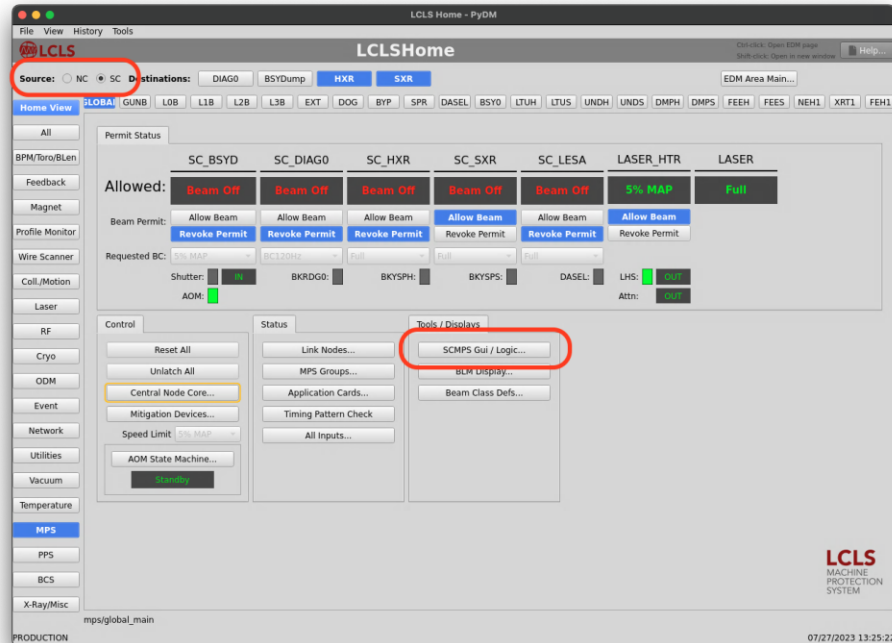
Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

07/27/2023 13:51:51

Location:

- lclshome → Source: SC → MPS | Global → SCMPS Gui / Logic...



Topics of Discussion

R1.1.0	10/03/22	Check Engine Lights	<ul style="list-style-type: none">• MPS Central Node status
R2.0.0	11/30/22	Configure Tab	<ul style="list-style-type: none">• Set thresholds of MPS Devices
R2.1.0	12/07/22	CUD Mode	<ul style="list-style-type: none">• Quick reference for operators• Continuously Updating Display
R3.0.0	01/27/23	Ignore Logic Tab	<ul style="list-style-type: none">• Determine which faults are ignored & when
R4.0.0	03/07/23	App Status Tab	<ul style="list-style-type: none">• Display MPS Application information
-	-	Minor Updates	<ul style="list-style-type: none">• Smaller improvements / features

Check Engine Lights

R1.1.0

SLAC

The screenshot displays the SC MPS GUI - PyDM interface. At the top, there are six status panels for different components: SC BSYD, SC DIAGO, SC HXR, SC SXR, LASER, and SC LESA. Each panel shows a large status indicator (e.g., 'Beam Off' or 'Full') and a 'Timing Rate' value. Below these is a 'Faulted Devices' table with columns for Fault, State, and various components. A 'Check Engine Lights' dialog box is open, showing a red circle for MP01 and a list of error types: Software Error, Timeout Error, Drop Count, and Rx Error. A second dialog box lists specific error types: Timeout Enabled, Eval Enabled, Software Error, Timeout Error, Drop Count, Message Pause, Over Count, and Rx Error. The bottom left corner features the LCLS logo and 'MACHINE PROTECTION SYSTEM' text, and the bottom right shows the date and time: 07/27/2023 15:07:26.

Fault	State	SC BSYD	SC DIAGO	SC HXR	SC SXR	LASER	SC LESA	LASER_HTR	MECH_SHUTTER
PBLM at CYBP26 (COLL:BN26:424) Bea...	10_LOSS Thr 0	Beam Off	Beam Off	Beam Off	Beam Off	-	Beam Off	-	Beam Off
BPMP26 (BPM5:BN26:400) TMIT Fault	TMIT Tbr 0	Beam Off	Beam Off	Beam Off	Beam Off	-	Beam Off	-	Beam Off
SBLM at Gun Window (SBLM:GUNB:753) ...	10_LOSS Thr 2	BC10Hz	BC10Hz	BC10Hz	BC10Hz	-	BC10Hz	-	BC10Hz
BPMP26 (BPM5:BN26:400) X Orbit Fault	X Thr 0	Diagnostic	Diagnostic	Diagnostic	Diagnostic	-	Diagnostic	-	Diagnostic
BPMP26 (BPM5:BN26:400) Y Orbit Fault	Y Thr 0	Diagnostic	Diagnostic	Diagnostic	Diagnostic	-	Diagnostic	-	Diagnostic
PRDAS12 (PROF:DASEL:440) Position	Moving	-	-	-	-	-	Beam Off	-	-
PRDAS14 (PROF:DASEL:655) Position	Moving	-	-	-	-	-	Beam Off	-	-
PRDAS17 (PROF:DASEL:818) Position	Moving	-	-	-	-	-	Beam Off	-	-
VVPG DASEL 559 Position	-	-	-	-	-	-	Beam Off	-	-
VVPG DASEL 898 Position	-	-	-	-	-	-	Beam Off	-	-

- Display status of Central Nodes
- Main lights show if an error occurred
- Minor lights show which error occurred

Purpose / Use:

- Display information for device(s)
 - Location, link node, crate, slot, application, channels, thresholds
- Configure BPMS (only supported device type for now)
 - Configure max/min thresholds for Orbit & TMIT signals
 - Single and Batch functionality

Configure Tab: Single Device Configuration

R2.0.0

SLAC

The screenshot displays the SC MPS GUI - PyDM interface. On the left, a table lists 'All Devices' with columns for 'Device' and 'Device Type'. The device 'BPMDOG2 (BPMS.DOG:135)' is selected and highlighted in blue. Below this table, the 'Selected Device(s)' section shows 'BPMDOG2 (BPMS.DOG:135)' with its 'Device Type' as 'BPMS'. A red arrow points from the selected device in the 'All Devices' table to the 'Selected Device(s)' section.

On the right side of the interface, the configuration for the selected device is shown. At the top, it indicates 'LN: 70' and 'L2KG07-3831'. Below this is a table for slot configurations:

Slot	Application	Channel
Slot 7	Application: 101	Channel:
Slot 6	Application: 100	Channel:
Slot 5	Application: 99	Channel: 1
Slot 4	Application: 98	Channel: 0, 1
Slot 3	Application: Slot Empty	Channel:
Slot 2	Application: Slot Empty	Channel:
RTM	Application: 376	Channel: 32

Below the slot table, the configuration for 'cpu-13b-sp04' is shown. It includes sections for 'X Orbit', 'Y Orbit', and 'TMIT', each with 'Thr 0' through 'Thr 4' settings. The 'X Orbit' and 'Y Orbit' sections have 'Min' and 'Max' values in mm, and checkboxes for 'Thr 0' and 'Thr 1'. The 'TMIT' section has 'Min' and 'Max' values in 'Nel' and checkboxes for 'Thr 0' through 'Thr 4'. A red arrow points from the 'Thr 2' row in the 'TMIT' section to the 'Thr 2' row in the 'Y Orbit' section.

At the bottom of the interface, there are tabs for 'Summary', 'Logic', 'Ignore Logic', 'App Status', and 'Configure'. The 'Configure' tab is currently active. The bottom left corner shows the 'LCLS MACHINE PROTECTION SYSTEM' logo, and the bottom right corner shows the date and time '07/28/2023 09:09:17'.

Configure Tab: Batch Device Configuration

R2.0.0



SC MPS GUI - PyDM

File View History Tools

All Devices

Device	Device Type
CMB35 (BPMS:L3B:3583)	BPMS
CMB34 (BPMS:L3B:3483)	BPMS
BPMX02 (BPMS:EXT:748)	BPMS
BPMX01 (BPMS:EXT:351)	BPMS
BPMDOG2 (BPMS:DOG:135)	BPMS
BPMDOG1 (BPMS:DOG:120)	BPMS
BPMDOG3 (BPMS:DOG:150)	BPMS
BPMDOG6 (BPMS:DOG:200)	BPMS
BPMDOG8 (BPMS:DOG:230)	BPMS
BPMDOG7 (BPMS:DOG:215)	BPMS
BPML2P (BPMS:DOG:280)	BPMS
BPML4P (BPMS:DOG:355)	BPMS
BPML3P (BPMS:DOG:335)	BPMS
BPML5P (BPMS:DOG:405)	BPMS
BPMBP10 (BPMS:DOG:575)	BPMS

Selected Device(s)

Device	Device Type
BPMDOG2 (BPMS:DOG:135)	BPMS
BPMDOG8 (BPMS:DOG:230)	BPMS

	Set Value To	BPMS:DOG:135	BPMS:DOG:230
Link Node	-	70	71
Crate Location	-	L2KG07-3831	L2KG08-3A33
Application Card	-	98	105
Channel(s)	-	0	0
X Orbit Thr0	Min: <input type="text" value="-100.00"/> <input checked="" type="checkbox"/> Max: <input type="text" value="100.00"/> <input checked="" type="checkbox"/>	Min: -2.00 <input checked="" type="checkbox"/> Max: 2.00 <input checked="" type="checkbox"/>	Min: -100.00 <input checked="" type="checkbox"/> Max: 100.00 <input checked="" type="checkbox"/>
Y Orbit Thr0	Min: <input type="text" value="-100.00"/> <input checked="" type="checkbox"/> Max: <input type="text" value="100.00"/> <input checked="" type="checkbox"/>	Min: -6.00 <input checked="" type="checkbox"/> Max: 6.00 <input checked="" type="checkbox"/>	Min: -100.00 <input checked="" type="checkbox"/> Max: 100.00 <input checked="" type="checkbox"/>
TMIT Thr0	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>
TMIT Thr1	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>
TMIT Thr2	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>
TMIT Thr3	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>
TMIT Thr4	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>
TMIT Thr5	Min: <input type="text" value="0.00"/> <input type="checkbox"/> Max: <input type="text" value="0.00"/> <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>	Min: 0.00 <input type="checkbox"/> Max: 0.00 <input type="checkbox"/>

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

07/28/2023 09:09:23

Configure Tab: Default & Error Pages

R2.0.0

SLAC

The screenshot shows a web interface for configuring devices. On the left, there is a vertical list of 15 items, each labeled 'BPMS'. Above this list is a dropdown menu labeled 'Device Type' with a downward arrow. Below the list is a button labeled 'Clear Selection' and another dropdown menu labeled 'Device Type'. The main area of the interface is a large grey rectangle with the text 'Select Devices to Configure' centered in it. Below this text, it says 'Supported Device Types: - BPMS'. At the bottom right of the interface, there is a timestamp: '07/31/2023 14:50:58'.

The screenshot shows the same web interface as the previous one, but with an error message. The 'Device Type' dropdown menu is now open, showing a list of options: 'BPMS', 'BLM', and 'BPMS'. The first 'BPMS' option is highlighted in blue. The main area of the interface is a large grey rectangle with the text 'ERROR:' centered in it. Below this text, it says 'Select a supported Device Type: - BPMS' followed by '~ or ~'. Below that, it says 'Multiple Types of Devices Selected Select devices of the same type to configure them all at once.' At the bottom right of the interface, there is a timestamp: '07/31/2023 14:50:42'.

- Modified Summary tab
- Shows limited fault data
 - Name, State, & Relevant Beam Paths
- Highlights important beam permits
- Use `-c` flag on startup script

LCLS MACHINE PROTECTION SYSTEM

BSYD Beam Off 0 Hz | DIAGO Beam Off 0 Hz | HXR Beam Off 0 Hz | SXR Beam Off 0 Hz | LESA Beam Off 0 Hz

MP01 (Green) | MP02 (Green) | MP03 (Red) | MPS Shutter IN

Fault	State	SC_BSYD	SC_DIAGO
SBLM at Gun Window (SBLM:GUNB:753) Beam Loss Fault	10_LOSS Thr 2	BC10Hz	BC10Hz
LN73 (SIOC DOG MP02) Alive	TIMEOUT	TIMEOUT	TIMEOUT
LBLM:L3B:3578:A Beam Loss Fault	TIMEOUT	TIMEOUT	TIMEOUT
BPML5P (BPMS:DOG:405) X Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT
BPML5P (BPMS:DOG:405) Y Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT
BPML5P (BPMS:DOG:405) TMIT Fault	TIMEOUT	TIMEOUT	TIMEOUT
PRDAS12 (PROF:DASEL:440) Position	Moving	-	-
PRDAS14 (PROF:DASEL:655) Position	Moving	-	-
PRDAS17 (PROF:DASEL:818) Position	Moving	-	-
VVPG DASEL 559 Position	Is Faulted	-	-

BYPASSED FAULTS 7/28/2023 10:54:08

Fault	State	Bypass Exp Date

* Created by Operator Zack Buschmann

Fault	State	Ignored	TEST_MODE	TEST_MODE2	TEST_MODE3	YAG01B	TDUND	TDUNDB	SXRSS	ST3K4_IN	MR1K1_IN	MR1K1_OUT	ST1K2_IN
AOM Permit Test ...	-	Not Ignored	Is In	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
BC1B (BMLN:BC1...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BC2B (BLMN:BC2...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX11 ...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX11 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX21 ...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX21 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCXH1 (BEND:HT...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCXH1 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCXSS ...	Off	Ignored	Is In	-	-	Is In	-	Is In	-	-	-	-	-
BKRDGO ...	-	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BKYSP1H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSP15 ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSP2H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSP25 ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSP3H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSP35 ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BLEN Gap Diode ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BLEN Pyro ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
RI MH11 HV2 ...	In a Stop-Block	Not Ignored	Is In	-	-	Is In	Is In	-	-	-	-	-	-

Displays information

- Ignore Condition statuses
- Fault Ignored status
- Fault Ignore Conditions

Additional Functionality

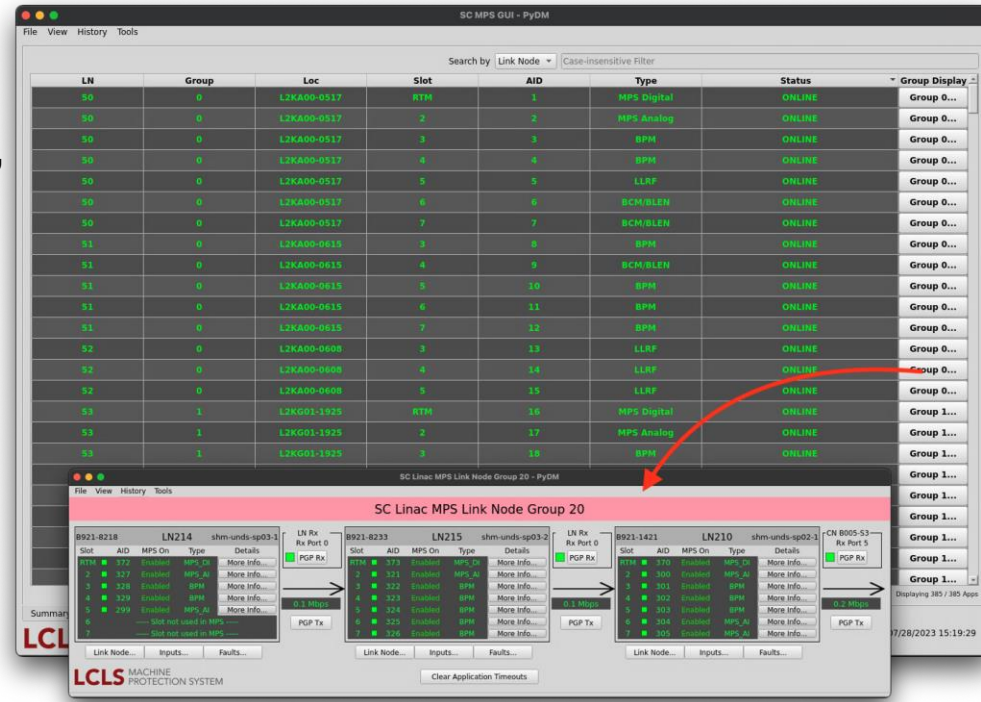
- Search & Filter
- Open fault in Logic tab

Displays Application information

- Link node, group, location, slot, ID, type, & status

Additional Functionality

- Search & Filter
- Link Node Group Related Display



Features

- Right-click to open fault in logic table
- Add TIMEOUT & DB_ERROR fault statuses
- Middle-click table rows to display PV tooltip and copy PV
 - Mimics PyDM middle-click

Improvements

- Logic table uses Model/View
- Tables can be sorted by clicking the header
- Dynamically populate beam paths (was hard coded)
- Add flag to script to specify database file (-d)
- Selection Details & Summary table sizes are adjustable

And bug fixes galore

Questions?

Extra Slides: Summary Tab

SC MPS GUI - PyDM

File View History Tools

SC_BSYD
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

SC_DIAG0
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

SC_HXR
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

SC_SXR
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

LASER
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

SC_LESA
MPS Permit

Beam Off

Timing BC
Beam: 0%

Timing Rate
0 Hz

Faulted Devices

Fault	State	SC_BSYD	SC_DIAG0	SC_HXR	SC_SXR	LASER	SC_LESA	LASER_HTR	MECH_SHUTTER
LBLM:BPNI5:410:A Beam Loss Fault	10_LOSS_Thr 0	Beam Off	Beam Off	Beam Off	Beam Off	-	Beam Off	-	Beam Off
LBLM:BPNI7:517:A Beam Loss Fault	10_LOSS_Thr 0	Beam Off	Beam Off	Beam Off	Beam Off	-	Beam Off	-	Beam Off
SBLM at Gun Window (SBLM:GUNB:753) ...	10_LOSS_Thr 2	BC10Hz	BC10Hz	BC10Hz	BC10Hz	-	BC10Hz	-	BC10Hz
BPME203 (BPMS:EMIT2:800) X Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
BPME203 (BPMS:EMIT2:800) Y Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
BPME203 (BPMS:EMIT2:800) TMIT Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
BPME202 (BPMS:EMIT2:300) X Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
BPME202 (BPMS:EMIT2:300) Y Orbit Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
BPME202 (BPMS:EMIT2:300) TMIT Fault	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT	TIMEOUT
PRDAS12 (PROF:DASEL:440) Position	Moving	-	-	-	-	-	Beam Off	-	-
PRDAS14 (PROF:DASEL:655) Position	Moving	-	-	-	-	-	Beam Off	-	-
PRDAS17 (PROF:DASEL:818) Position	Moving	-	-	-	-	-	Beam Off	-	-

Check Engine Lights

- MP01 ●
- MP02 ●
- MP03 ● Timeout Error

Bypassed Faults

Fault	State	Bypass Exp Date

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

07/28/2023 16:20:00

Extra Slides: Logic Tab & Selection Details

SC MPS GUI - PyDM

File View History Tools

Show Inactive Faults Case-insensitive Filter

Fault	State	SC_BSYD	SC_DIAGO	SC_HXR	SC_SXR	LASER	SC_LESA	LASER_HTR	MECH_SHUTTER	Ignored
RFBHX13 (BPMS:UNDH:1390) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
RFBHX12 (BPMS:UNDH:1305) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
RFBHX19 (BPMS:UNDH:1990) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
RFBHX18 (BPMS:UNDH:1890) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
RFBHX21 (BPMS:UNDH:2190) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
RFBHX20 (BPMS:UNDH:2090) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
CXQT22 (COLL:LTUH:393) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
CEDL3 (COLL:LTUH:452) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
CYBX36 (COLL:LTUH:475) ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
BYD (BEND:DMPH:400) Power ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
LN132 (SIOC LTUH MP03) Alive	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
BPMDL3 (BPMS:LTUH:450) TMI...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
PBLM:LTUO:618:AH Beam Loss ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N
PBLM:LTUO:717:AH Beam Loss ...	Is Faulted	-	-	Beam Off	-	-	-	-	-	N

Selection Details X

Name: CEDL3 (COLL:LTUH:452) Temperature Interlock Bypass...

Current State: Is Faulted

Ignored When: Injector Collimator YAG screen Is In, Accelerator Test Mode

State	Value	SC_BSYD	SC_DIAGO	SC_HXR	SC_SXR	LASER	SC_LESA	LASER_HTR	MECH_SHUTTER
Is Faulted	F	--	--	Beam Off	--	--	--	--	--
Is Ok	T	--	--	--	--	--	--	--	--

Where:

Bit Position	Current PV	Latched PV	Related Information
0	COLL:LTUH:452:TEMP_PERMIT_SCMPSCC	COLL:LTUH:452:TEMP_PERMIT_SCMPSCC	LN 132, Card 241, Ch 5...

Displaying 985 / 1553 Faults

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM 07/27/2023 13:51:51

Extra Slides: Ignore Logic Tab

SC MPS GUI - PyDM

File View History Tools

TEST_MODE
 TEST_MODE1
 TEST_MODE2
 YAG01B
 TDUND
 TDUNDB
 SXRSS
 ST3K4_IN
 MR1K1_IN
 MR1K1_OUT
 ST1K2_IN

Beampath: All Show Inactive Faults

Fault	State	Ignored	TEST_MODE	TEST_MODE1	TEST_MODE2	YAG01B	TDUND	TDUNDB	SXRSS	ST3K4_IN	MR1K1_IN	MR1K1_OUT	ST1K2_IN
AOM Permit Test ...	-	Not Ignored	Is In	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS_NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS_NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
Accelerator Test ...	IS_NOT_IGNORED	Not Ignored	-	-	-	-	-	-	-	-	-	-	-
BC1B (BMLN:BC1...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BC2B (BLMN:BC2...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX11 ...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX11 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX21 ...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCX21 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCXH1 (BEND:HT...	On	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BCXH1 Magnet ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BKRDG0 ...	-	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BKYSF1H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSF1S ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSF2H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSF2S ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSF3H ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BKYSF3S ...	-	Not Ignored	Is In	-	Is In	-	-	-	-	-	-	-	-
BLN Gap Diode ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BLN Pyro ...	Is OK	Not Ignored	Is In	Is In	-	-	-	-	-	-	-	-	-
BLMH33 HXR ...	IO_LOSS_Thr 0	Not Ignored	Is In	-	-	Is In	Is In	-	-	-	-	-	-
RI MH34 HXR ...	IO_LOSS_Thr 0	Not Ignored	Is In	-	-	Is In	Is In	-	-	-	-	-	-

Displaying 985 / 1353 Faults

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

07/28/2023 16:20:19

Extra Slides: App Status Tab

SC MPS GUI - PyDM

File View History Tools

Search by Link Node Case-insensitive Filter

LN	Group	Loc	Slot	AID	Type	Status	Group Display
50	0	L2KA00-0517	RTM	1	MPS Digital	ONLINE	Group 0...
50	0	L2KA00-0517	2	2	MPS Analog	ONLINE	Group 0...
50	0	L2KA00-0517	3	3	BPM	ONLINE	Group 0...
50	0	L2KA00-0517	4	4	BPM	ONLINE	Group 0...
50	0	L2KA00-0517	5	5	LLRF	ONLINE	Group 0...
50	0	L2KA00-0517	6	6	BCM/BLN	ONLINE	Group 0...
50	0	L2KA00-0517	7	7	BCM/BLN	ONLINE	Group 0...
51	0	L2KA00-0615	3	8	BPM	ONLINE	Group 0...
51	0	L2KA00-0615	4	9	BCM/BLN	ONLINE	Group 0...
51	0	L2KA00-0615	5	10	BPM	ONLINE	Group 0...
51	0	L2KA00-0615	6	11	BPM	ONLINE	Group 0...
51	0	L2KA00-0615	7	12	BPM	ONLINE	Group 0...
52	0	L2KA00-0608	3	13	LLRF	ONLINE	Group 0...
52	0	L2KA00-0608	4	14	LLRF	ONLINE	Group 0...
52	0	L2KA00-0608	5	15	LLRF	ONLINE	Group 0...
53	1	L2KG01-1925	RTM	16	MPS Digital	ONLINE	Group 1...
53	1	L2KG01-1925	2	17	MPS Analog	ONLINE	Group 1...
53	1	L2KG01-1925	3	18	BPM	ONLINE	Group 1...
53	1	L2KG01-1925	4	19	BPM	ONLINE	Group 1...
53	1	L2KG01-1925	5	20	BPM	ONLINE	Group 1...
53	1	L2KG01-1925	6	21	BPM	ONLINE	Group 1...
53	1	L2KG01-1925	7	22	Wire Scanner	ONLINE	Group 1...
54	1	L2KG01-1931	RTM	23	MPS Digital	ONLINE	Group 1...
54	1	L2KG01-1931	2	24	MPS Analog	ONLINE	Group 1...

Displaying 385 / 385 Apps

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

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Extra Slides: Configure Tab (Single Device)

The screenshot displays the SC MPS GUI - PyDM interface. The main window is titled "SC MPS GUI - PyDM" and has a menu bar with "File", "View", "History", and "Tools".

All Devices: A list of devices is shown with columns for "Device" and "Device Type". The device "BPMC011 (BPMS:COL0:880)" is selected and highlighted in blue. Other devices listed include BPMD007, BPMDG001, BPMD012, CMBH2, CMBH1, CMB03, BPMD101, BPM11B, BPMD102, BPM1C01, BPMD104, BPMD103, BPMD108, and BPMD107.

Selected Device(s): A smaller table below shows the selected device: "BPMC011 (BPMS:COL0:880)" with "Device Type" as "BPMS".

Configuration Panel: The right side of the window shows configuration for LN: 56 (L2KG01-2037). It includes a table for slot applications:

Slot	Application	Channel
Slot 7	Slot Empty	
Slot 6	36	
Slot 5	35	
Slot 4	34	0.1
Slot 3	33	1
Slot 2	Slot Empty	
RTM	353	32

Below the table, the configuration is for "cpu-col0-sp01". It shows parameters for X Orbit, Y Orbit, and TMIT:

- X Orbit:** Thr 0 Min: -2.00 mm, Max: 2.00 mm. Checkmarks are present for both Min and Max.
- Y Orbit:** Thr 0 Min: -2.00 mm, Max: 2.00 mm. Checkmarks are present for both Min and Max.
- TMIT:** Thr 0 Min: 0.00 Nel, Max: 249997056.00 Nel. Checkmarks are present for both Min and Max. Thr 1, 2, 3, and 4 all have Min and Max values of 0.00 Nel and no checkmarks.

At the bottom of the window, there are tabs for "Summary", "Logic", "Ignore Logic", "App Status", and "Configure". The "Configure" tab is active. The LCLS MACHINE PROTECTION SYSTEM logo is in the bottom left, and the date/time "07/28/2023 16:20:36" is in the bottom right.

Extra Slides: Configure Tab (Multiple Devices)

The screenshot displays the SC MPS GUI - PyDM interface. On the left, a list of devices is shown, with 'CMBH2 (BPMS:L1B:H283)' selected. Below this, a 'Selected Device(s)' section lists the chosen devices. On the right, a configuration table is visible, showing parameters for 'BPMS:COL0:880' and 'BPMS:L1B:H283'. The table includes columns for 'Link Node', 'Crate Location', 'Application Card', 'Channels', and various threshold settings (X Orbit Thr0, Y Orbit Thr0, TMIT Thr0-5) with 'Min' and 'Max' values and checkboxes for 'Set Value To'.

Link Node	Set Value To	BPMS:COL0:880	BPMS:L1B:H283
Crate Location	-	56	57
Application Card	-	L2KG01-2037	L2KG02-2209
Channels	-	34	39
		1	0
X Orbit Thr0	Min: 2.90 ✓	Min: -2.00 ✓	Min: -2.90 ✓
	Max: 2.90 ✓	Max: 2.00 ✓	Max: 2.90 ✓
Y Orbit Thr0	Min: 2.90 ✓	Min: -2.00 ✓	Min: -2.90 ✓
	Max: 2.90 ✓	Max: 2.00 ✓	Max: 2.90 ✓
TMIT Thr0	Min: 2.90 ✓	Min: 0.00 ✓	Min: 0.00 ✓
	Max: 2.90 ✓	Max: 12499970! ✓	Max: 0.00 ✓
TMIT Thr1	Min: 2.90 []	Min: 0.00 []	Min: 0.00 []
	Max: 2.90 []	Max: 0.00 []	Max: 0.00 []
TMIT Thr2	Min: 2.90 []	Min: 0.00 []	Min: 0.00 []
	Max: 2.90 []	Max: 0.00 []	Max: 0.00 []
TMIT Thr3	Min: 2.90 []	Min: 0.00 []	Min: 0.00 []
	Max: 2.90 []	Max: 0.00 []	Max: 0.00 []
TMIT Thr4	Min: 2.90 []	Min: 0.00 []	Min: 0.00 []
	Max: 2.90 []	Max: 0.00 []	Max: 0.00 []
TMIT Thr5	Min: 2.90 []	Min: 0.00 []	Min: 0.00 []
	Max: 2.90 []	Max: 0.00 []	Max: 0.00 []

Summary Logic Ignore Logic App Status Configure

LCLS MACHINE PROTECTION SYSTEM

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