

malletStation Gain Offset Adjuster v18

Firmware required for app to run: malletStation_v1.0.12_bl.syx

Contents

- I. Save bladder calibration data to CSV, then set all bars to unity gain
- II. Set up for Learn Mode
- III. Reupload bladder calibration data to device

I. Save bladder calibration data to CSV, then set all bars to unity gain

This only needs to be done once for each unit. Skip this section if this has already been completed for the unit you are using. In order to generate appropriate gain and negative velocity offset values for the learn mode algorithm, you'll need to clear the bladder calibration data on the device. These steps walk you through saving the current bladder calibration data to a CSV, and then clearing the bladder data on device (setting all bars to unity gain). If you're not sure whether or not these steps have been performed yet, it is okay to redo them (if it has been already done, you'll see all bars set to unity (128) in Step 3).

1. With the malletStation plugged in, open the marimba_GainOffsetAdjuster_v18.app
 - a. If you are prohibited from opening the app by the OS, try right clicking (or control + click) the app, and clicking Open from the dropdown. https://support.apple.com/kb/ph25088?locale=en_US
2. Click the bang next to "1. Start parsing incoming sysex", then click *p temporarySetupPatch*

999 = value not set
Note: gain/-offset values above only display data pulled from device. If not updating, check device for issues.

Execute these two steps each time you open patch / switch out units

1. Start parsing incoming sysex
2. Request data currently on malletStation

first click this button to start receiving SYSEX

3. Select bar to perform learn mode algo, and update bar parameters

Manually set bar parameters

Bar num: 0

bar down threshold: 1

bar up threshold: 1

gain: 0

- offset: 0

Learn Mode

low high

Record

shortcut (above tab) shortcut: tab

Num bar hits recorded: 5/5

Last recorded velocities for bar

0 min

0 max

Set bar down thresh for all bars: 1 send

Set bar up thresh for all bars: 1 send

Set bar gain for all bars: 0 send

Set bar -offset for all bars: 0 send

p settings <- click to open patch settings

p openVisualizer <- View Tare, Avg Low, Avg High visualizer

p csvTools <- upload/save gain, -velocity offset, and tare CSVs

p temporarySetupPatch <- Saves Bladder Calibration to CSV

p uploadCalibrationCSV <- Restore Bladder Calibration from CSV

... then click "p temporarySetupPatch" to open bladder calibration CSV saving window

Debug

```

/init : {
/init : 0,
/init : 0,
/init : 0,
/init : 0,
/init : 0
}
  
```

node.script debug tool

Monitor Process Stats Global Stats

Process Running

Node Process successfully started and running

3. Follow the instructions in the window that pops up.

follow instructions found in this window

Saving calibration data to file, and erasing bladder calibration

- Step 1: Bang to set unit to "Calibrate Mode"
- Step 2: Bang to fetch current calibration values.

Bladder calibration per bar Global calibration gain

- Step 3: Bang to create CSV of values. This will save to ~/Desktop/ with filename "bladderCalibration_UNITNUM_TIMESTAMP"

It is okay to rename the filename after it's created

- Step 4: Check that calibration CSV was created on Desktop.
- Step 5: If created, bang to erase calibration data on device. Repeat Step 2 to verify unit at unity gain (all bar gain should be 128, and Global calibration gain should equal 0)

	A	B
1	bladder calibration data	
2		147
3		150
4		130
5		200
6		123
7		164
8		109
9		90
10		124
11		124
12		128
13		192
14		128
15		178
16		134
17		145
18		122
19		80
20		87
21		190
22		200
23		130
24		120
25		210
26		123
27		142
28		120

calibration_2019_7_3

Sheet 1 of 1

The CSV created after step 2 should look something like this →
The "Global Calibration Gain" should be recorded at the bottom of the CSV

Do not click the button labeled "bang to erase calibration data on device" if the CSV was not created properly (this CSV is necessary to restore the bladder calibration on the device)

II. Set up for Learn Mode

These steps should be performed every time the app is opened

1. Once the app is opened, click the button labeled “Start parsing incoming sysex”

999 = value not set
Note: gain/-offset values above only display data pulled from device. If not updating, check device for issues.

Execute these two steps each time you open patch / switch out units

1. Start parsing incoming sysex
2. Request data currently on malletStation

3. Select bar to perform learn mode algo, and update bar parameters

Manually set bar parameters

Bar num: 0

bar down threshold: 1

bar up threshold: 1

gain: 0

-offset: 0

Learn Mode

low high

Record

shortcut: (above tab) shortcut: tab

Num bar hits recorded 5/5

Last recorded velocities for bar

0 min

0 max

Set bar down thresh for all bars: 1 send

Set bar up thresh for all bars: 1 send

Set bar gain for all bars: 0 send

Set bar -offset for all bars: 0 send

p settings Open patch settings

p openVisualizer Open Tare, Avg Low, Avg High visualizer

p csvTools Open CSV upload and saving tool

p temporarySetupPatch Open Calibration Table saving patch

Debug

Clear recorded data Firmware Mode Learn

```

/init : {
  /init : 0,
  /init : 0,
  /init : 0,
  /init : 0
}

```

node.script debug tool

Monitor Process Stats Global Stats

No Process Info

2. Once completed, the node.script box in the Debug section should show a green “Process Running” message. Now click the button labeled “Request data currently on malletStation”

999 = value not set
Note: gain/-offset values above only display data pulled from device. If not updating, check device for issues.

Execute these two steps each time you open patch / switch out units

1. Start parsing incoming sysex
2. Request data currently on malletStation

3. Select bar to perform learn mode algo, and update bar parameters

Manually set bar parameters

Bar num: 0

bar down threshold: 1

bar up threshold: 1

gain: 0

-offset: 0

Learn Mode

low high

Record

shortcut: (above tab) shortcut: tab

Num bar hits recorded 5/5

Last recorded velocities for bar

0 min

0 max

Set bar down thresh for all bars: 1 send

Set bar up thresh for all bars: 1 send

Set bar gain for all bars: 0 send

Set bar -offset for all bars: 0 send

p settings Open patch settings

p openVisualizer Open Tare, Avg Low, Avg High visualizer

p csvTools Open CSV upload and saving tool

p temporarySetupPatch Open Calibration Table saving patch

Debug

Clear recorded data Firmware Mode Learn

```

/init : {
  /init : 0,
  /init : 0,
  /init : 0,
  /init : 0
}

```

node.script debug tool

Monitor Process Stats Global Stats

Process Running

Node Process successfully started and running

3. Wait as the visualizer collects the current bar gains, negative velocity offsets, tares, bar down thresholds, and bar up thresholds from the device. Once complete. The visualizer should look something like this (the only 999 values should be in the low and high tared boxes).

The top part of the image shows a row of 8 bar parameters. Each bar has a unique color and contains several numerical values. The values for the 8 bars are:

Bar	1	2	3	4	5	6	7	8
Top	999	999	32	999	999	999	999	999
Second	999	999	76	999	999	999	999	999
Third	999	999	44	999	999	999	999	999
Fourth	170	122	140	157	170	157	114	153
Fifth	20	20	20	20	20	20	20	20
Sixth	5	5	5	5	5	5	5	5
Seventh	1.00	1.00	1.81	1.00	1.00	2.27	1.00	1.00
Eighth	6	6	8	6	6	6	6	6
Ninth	12	14	16	18	20	22	24	26

The bottom part of the image shows a control panel for bar 16. The title is "3. Select bar to perform learn mode algo, and update bar parameters".

Manually set bar parameters

- Bar num: 16
- bar down threshold: 20
- bar up threshold: 5
- gain: 1.
- offset: 6.

Learn Mode

- low:
- high:
- shortcut ` (above tab):
- shortcut: tab:
- Record button

Num bar hits recorded 5/5

Last recorded velocities for bar

min	max
165 178 171 176 174	218 210 216 216 224

Troubleshooting

- If you are having trouble triggering the bar while Recording,
 - try lowering the *bar down threshold* via the “Manually set bar parameters” section
 - In the Settings window (p settings), increase the “Recording gain value” (this is a temporary gain value sent to the bar during Recording).
- If device is not responding to changes in bar down/up thresholds, gain, or -offset:
 - Try re-initializing the patch by re-clicking the “Start parsing incoming data” and “Request data currently on malletStation” buttons.

