

ShakeTune 2.6.0-1 update

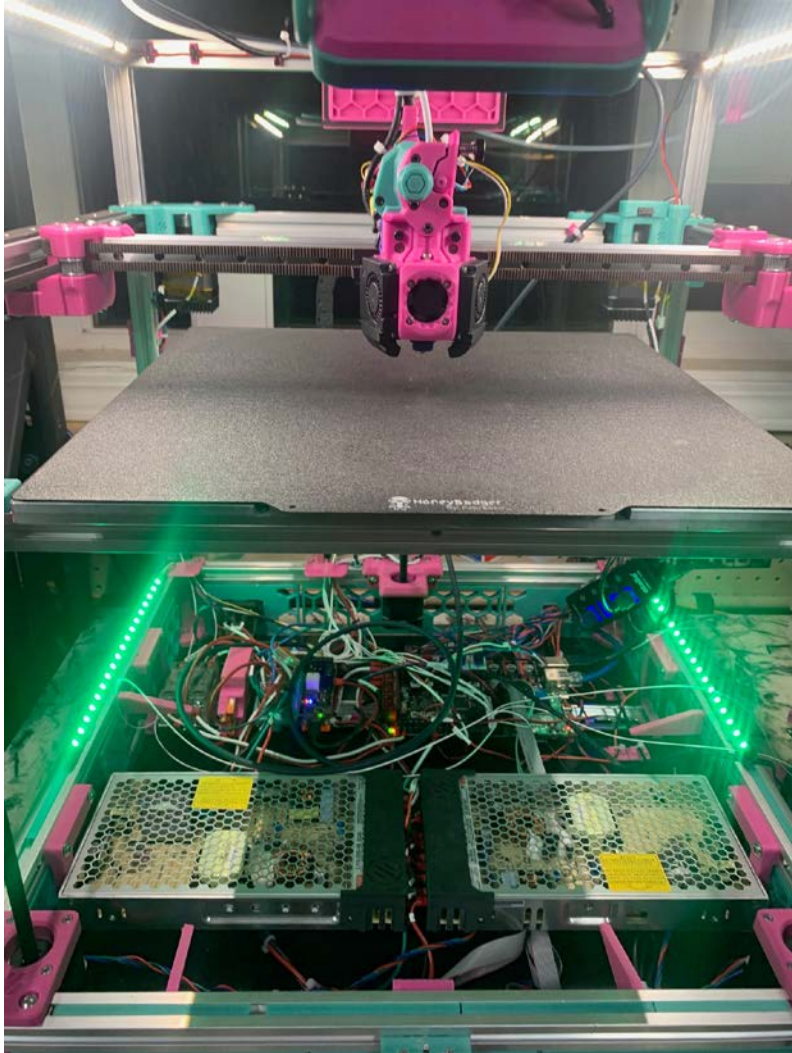
Klipper Update

- **scripts: Added shaper tuning parameters to calibrate_shaper script #6487**
- <https://github.com/Klipper3d/klipper/pull/6487>
- <https://github.com/Klipper3d/klipper/commit/72b301a2859c3f7ed26d802dd52fc495eef6c353>

Why the update

- Klipper added the ability to incorporate square_corner_velocity (SCV), and damping ratios to the built-in test_resonances command.
- Frix_x took advantage of this and updated ShakeTune
- What are the improvements:
 - ability to set a SCV velocity that we are actually using, or want to test, to determine smoothing.
 - Ability to set a max smoothing values and iterate through different SCV
 - Feeding the actual damping ratio (zeta) back into Klipper to get a more accurate shaper recommendations.

Pictures/ State of the printer



Voron Trident 350 – serial 1190

Mods:

Canbus

BTT Ebb36

Xol

Plastic Tap R8 (voron standard)

Inverted electronics

Bowden tube holder thingy

BFI front idlers

G2SA

48V XY

XY motors: ldo-42sth48-2804ac

ADXL.cfg

#####

Ebb36 canbus board

#####

[adxl345]

cs_pin: toolhead:CS_ADXL

spi_software_sclk_pin: toolhead:ADXL

SCLK spi_software_mosi_pin:

toolhead:ADXLMOSI

spi_software_miso_pin:

toolhead:ADXLMISO

#####

reasonance tester

#####

[resonance_tester]

accel_chip: adxl345

probe_points: 175, 175, 20

accel_per_hz: 100

<> calibrate

EXCITATE AXIS AT FREQ

BELTS SHAPER CALIBRATION

AXES SHAPER CALIBRATION

VIBRATIONS CALIBRATION

AXES MAP CALIBRATION

FREQ_START

5

FREQ_END

133.3

HZ_PER_SEC

1

AXIS

all

SCV

None

MAX_SMOOTHING

None

KEEP_N_RESULTS

3

KEEP_CSV

True

SEND

<> Material

FILAMENT LIST

FILAMENT

MATERIAL LIST

MATERIAL

> Console

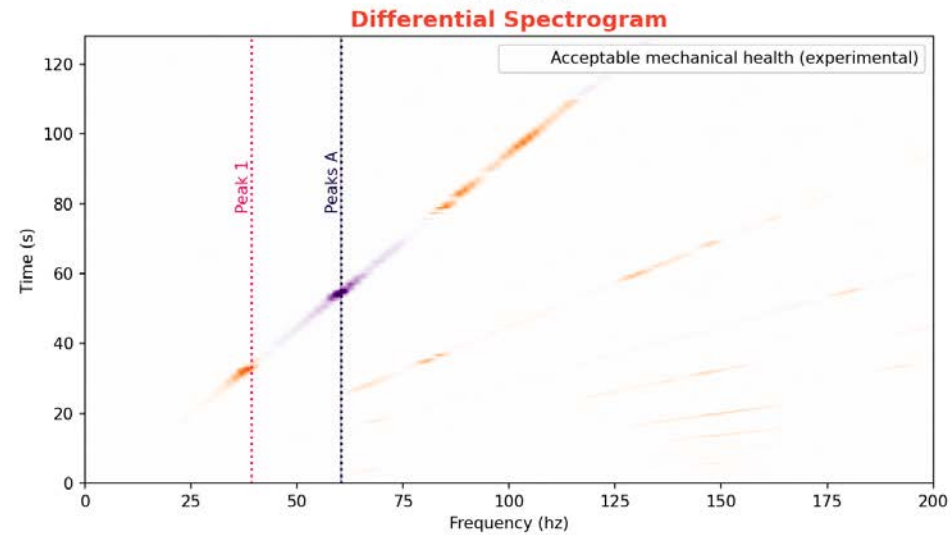
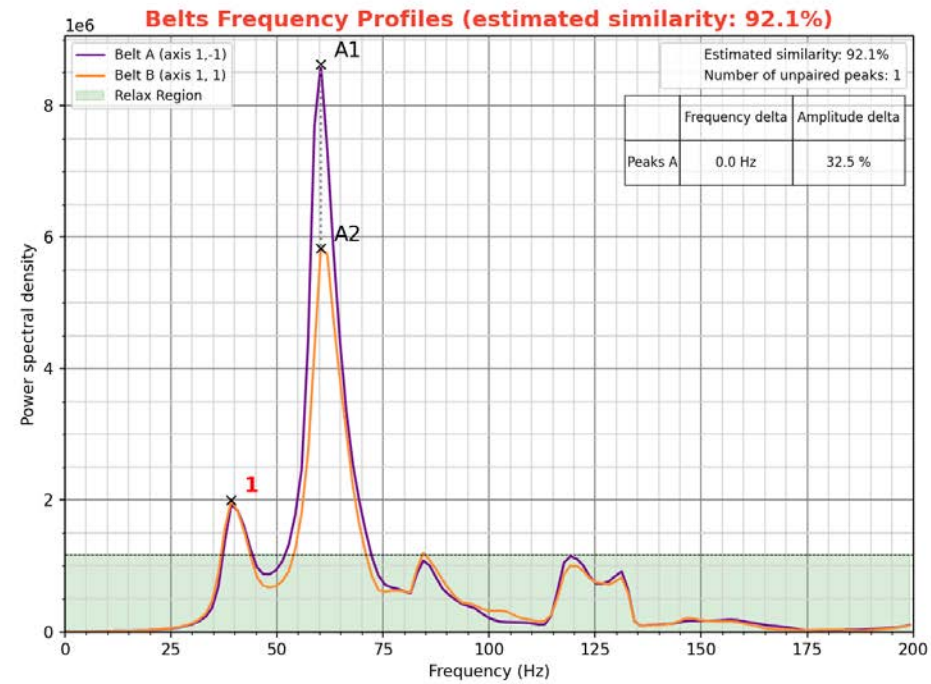
Send code...



RELATIVE BELT CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 12:59:25

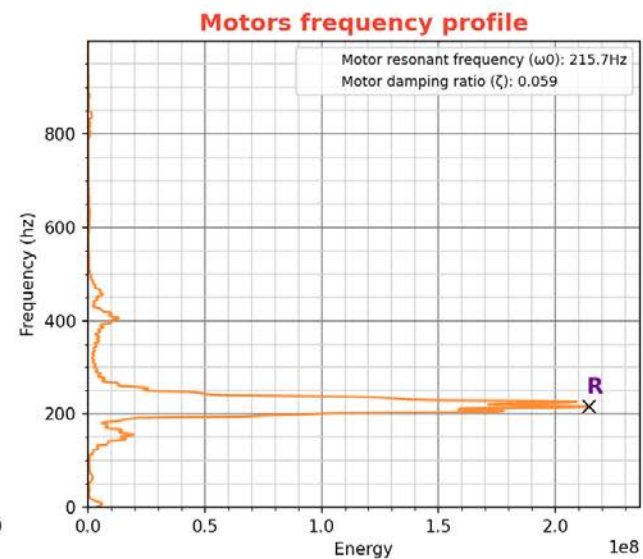
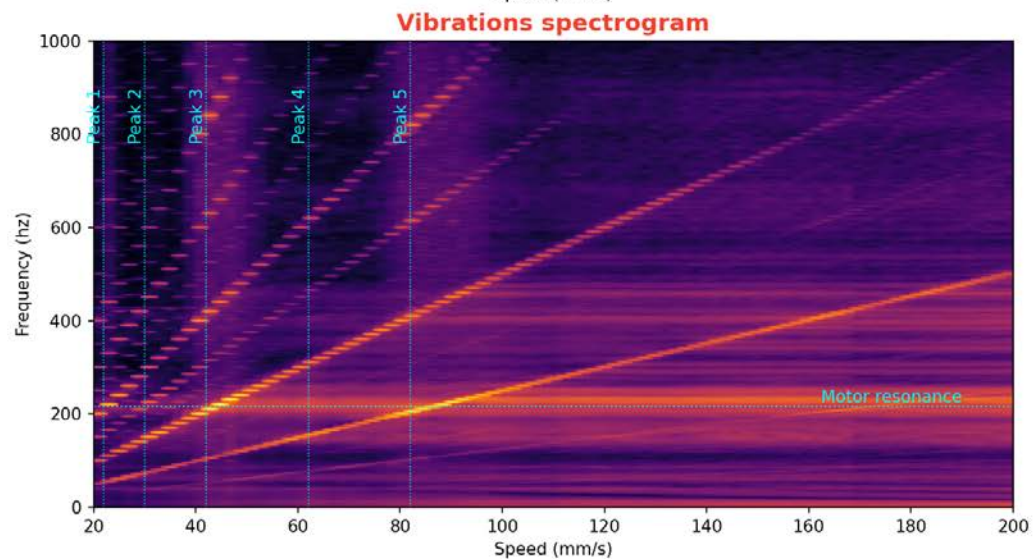
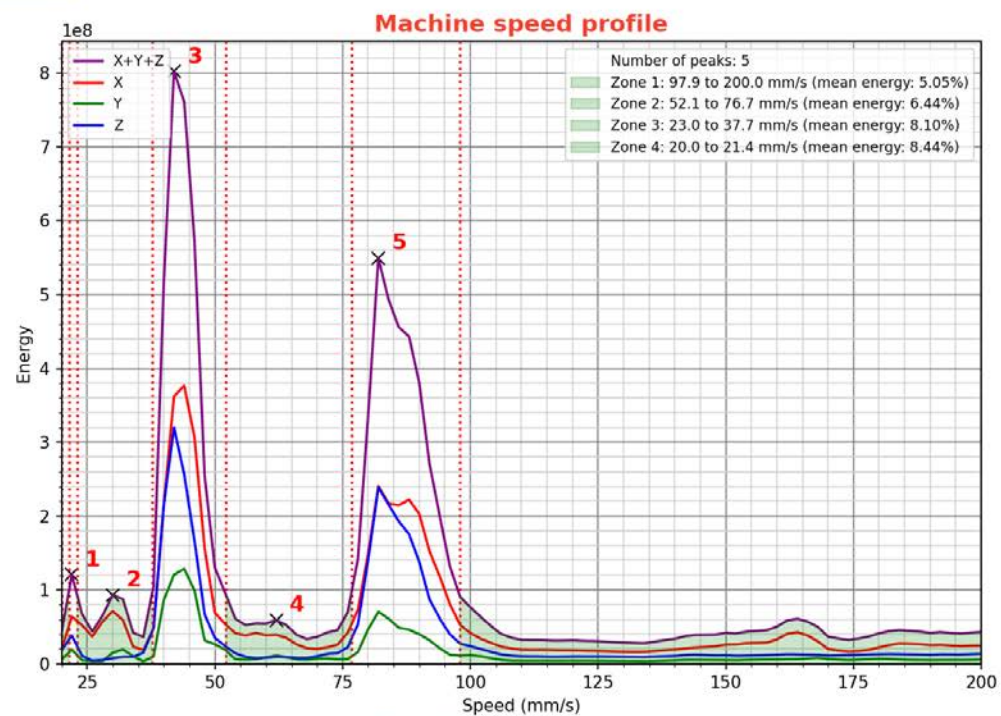




VIBRATIONS MEASUREMENT TOOL

20/02/24 13:34:52 -- XY axis at 3000 mm/s²

v2.6.0-1-gf4e700a



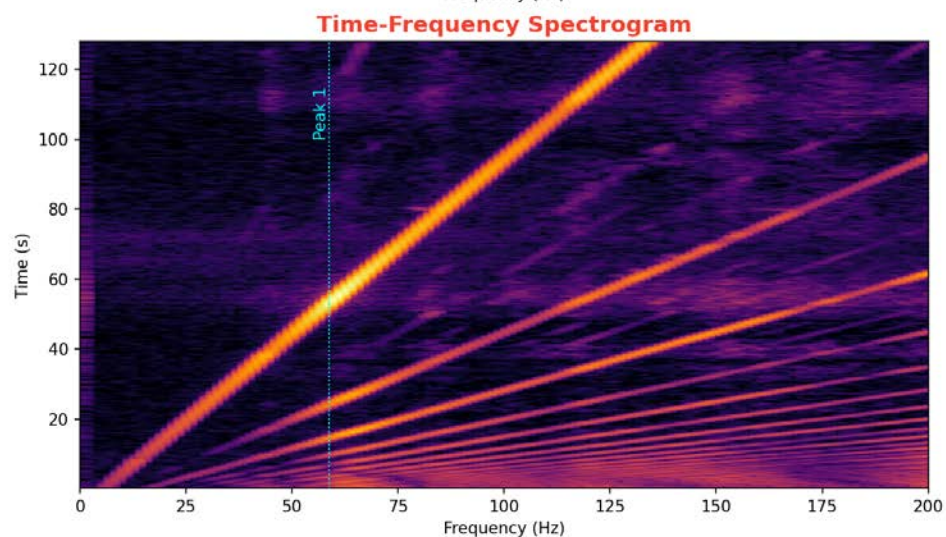
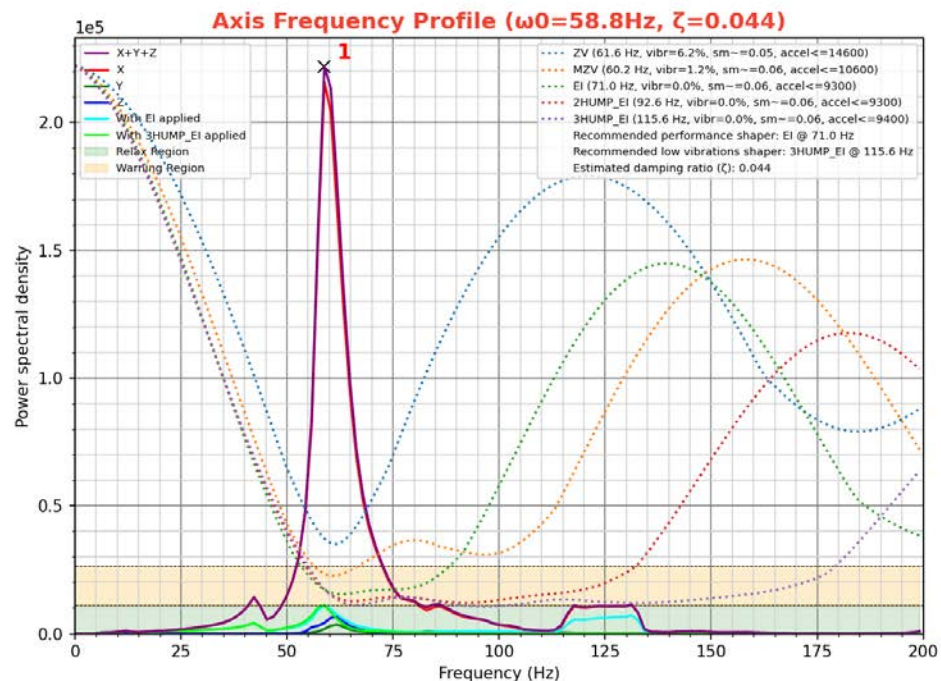


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:01:51 -- X axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: None

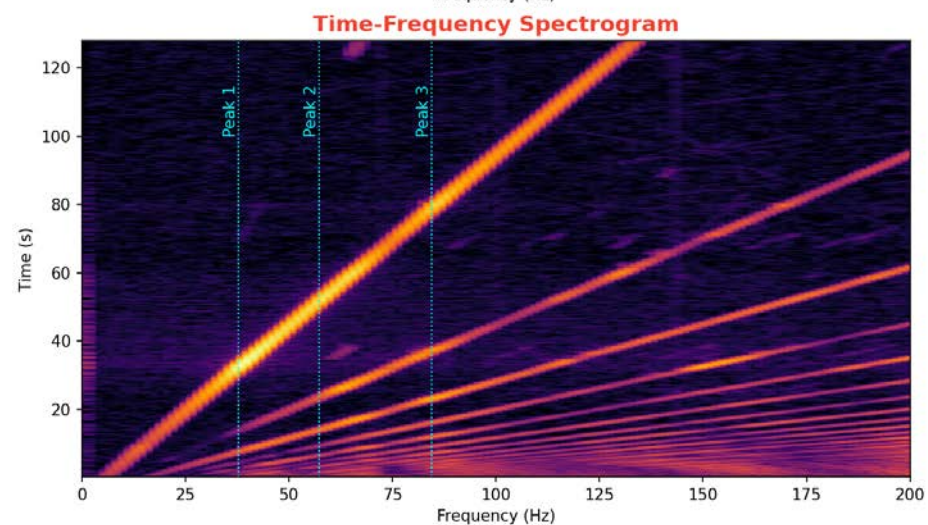
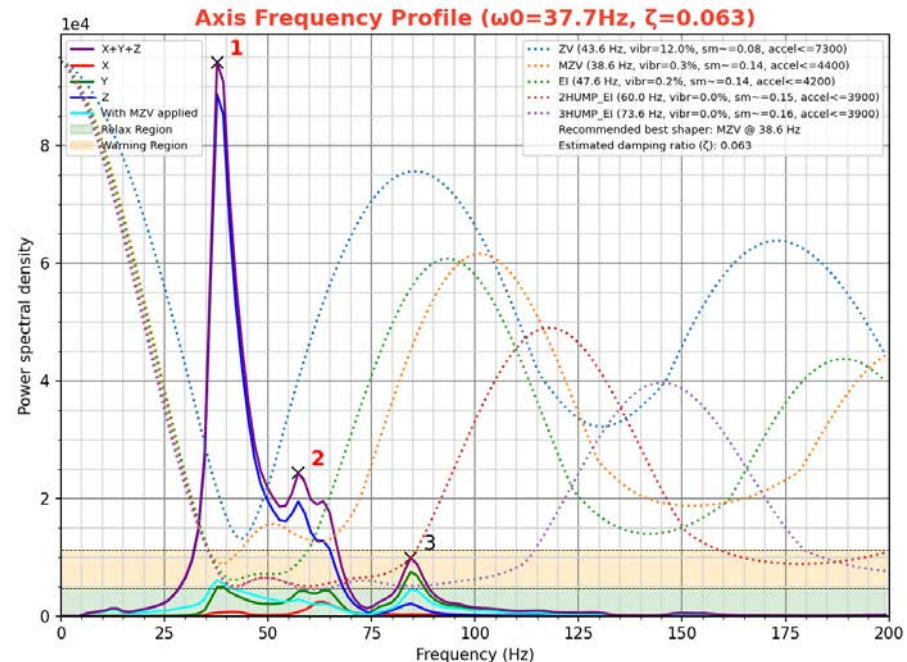


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:04:17 -- Y axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: None



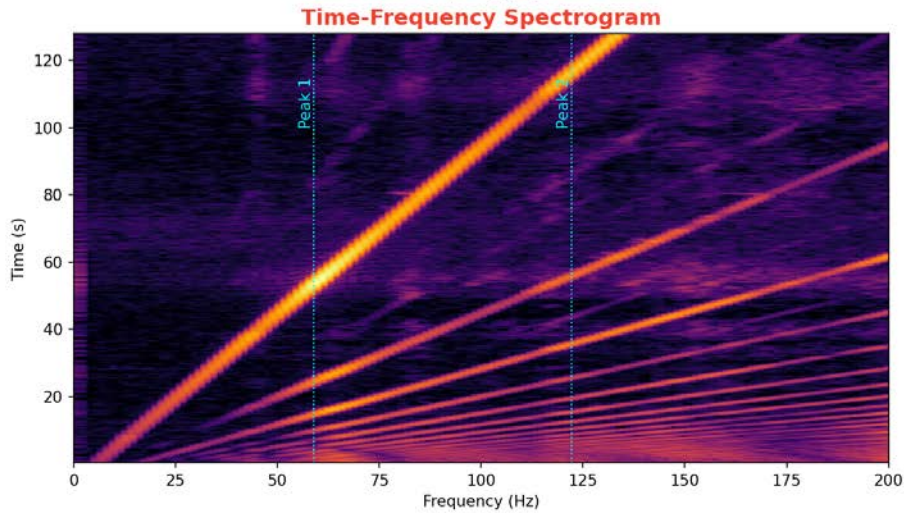
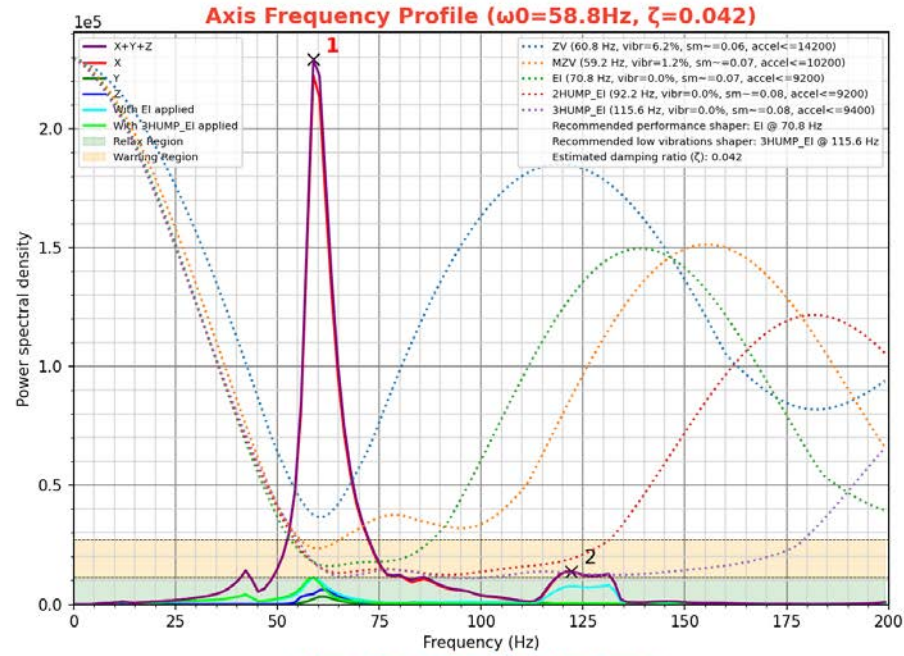


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:09:43 -- X axis

Square corner velocity: 10.0mm/s
Max allowed smoothing: 0.2

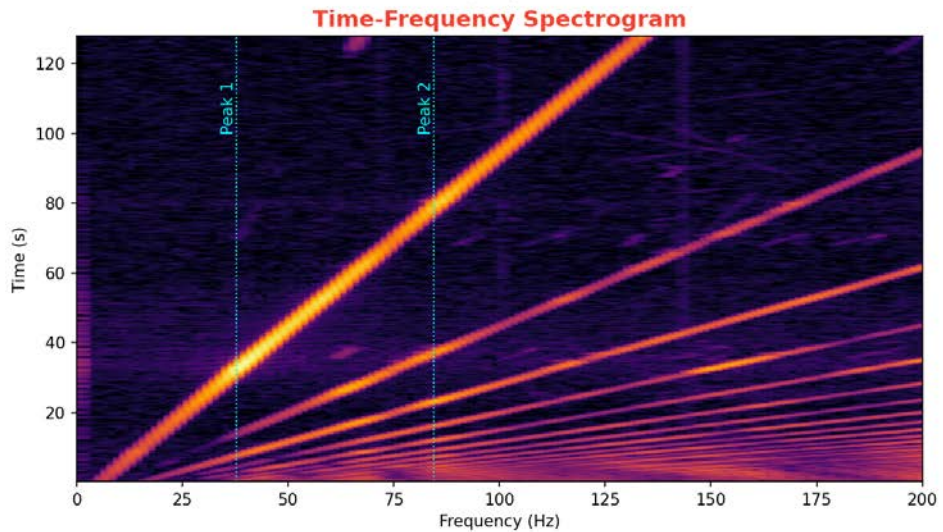
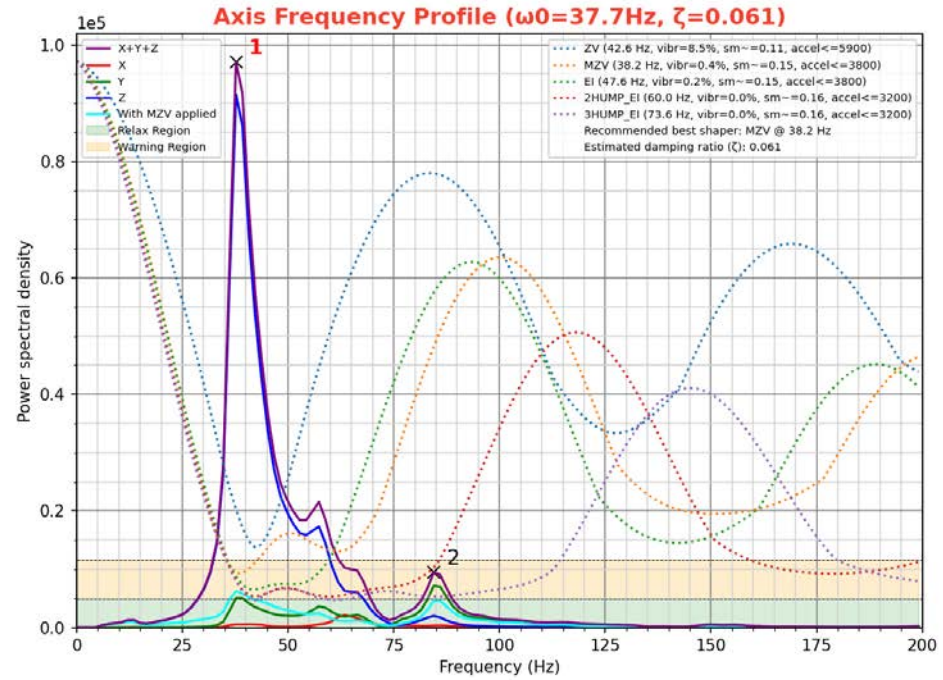


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:12:08 -- Y axis

Square corner velocity: 10.0mm/s
Max allowed smoothing: 0.2



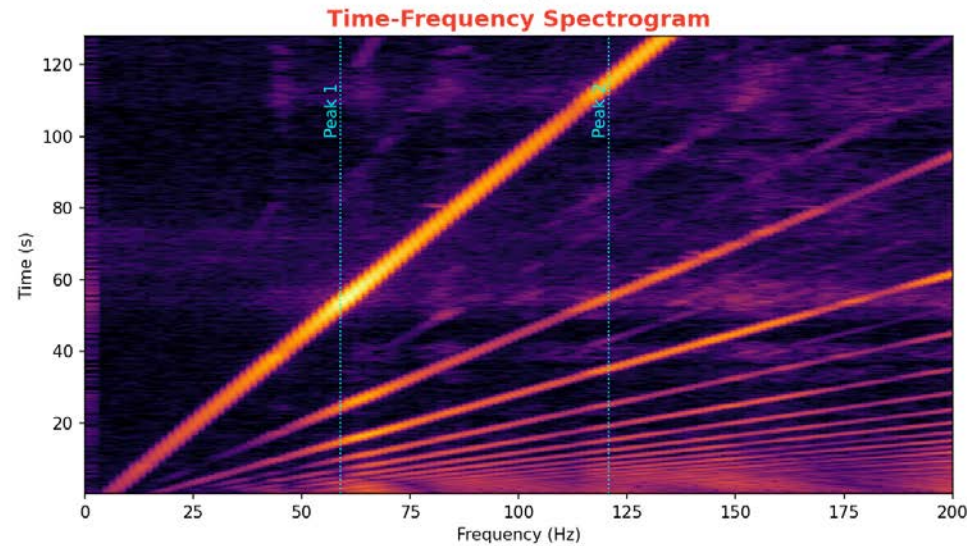
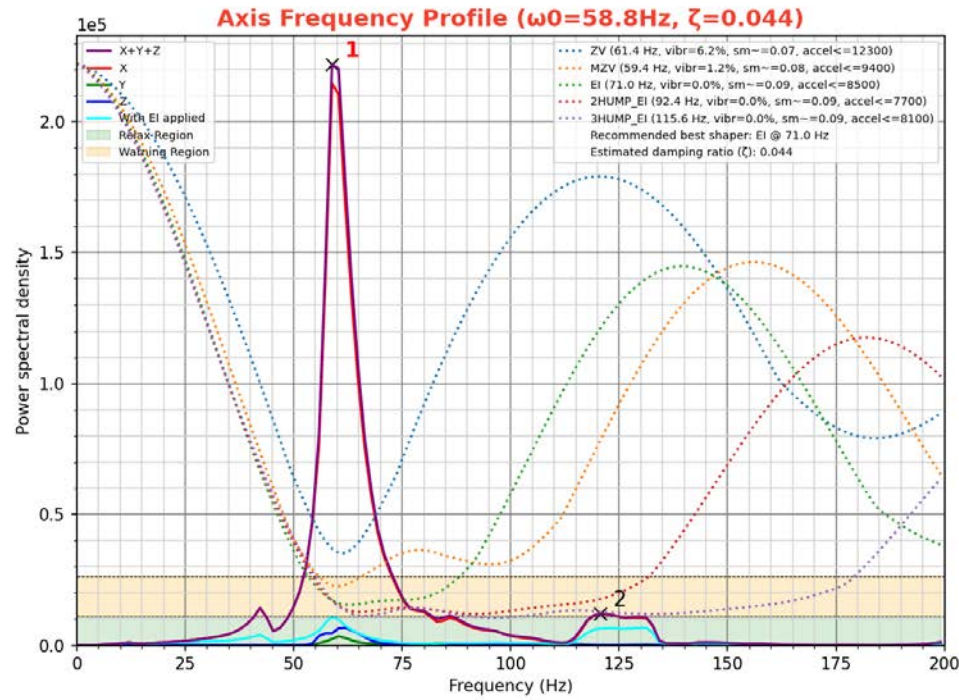


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:25:48 -- X axis

Square corner velocity: 15.0mm/s
Max allowed smoothing: 0.2

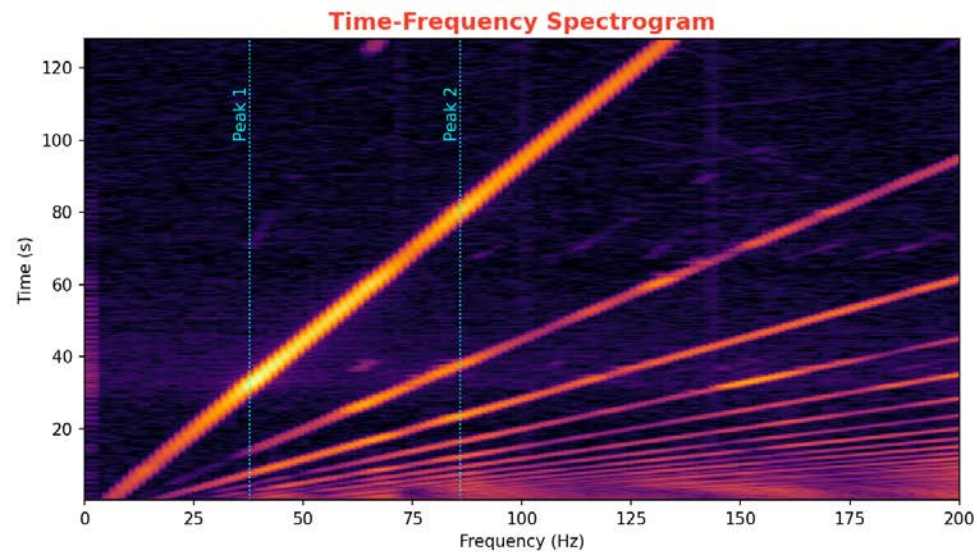
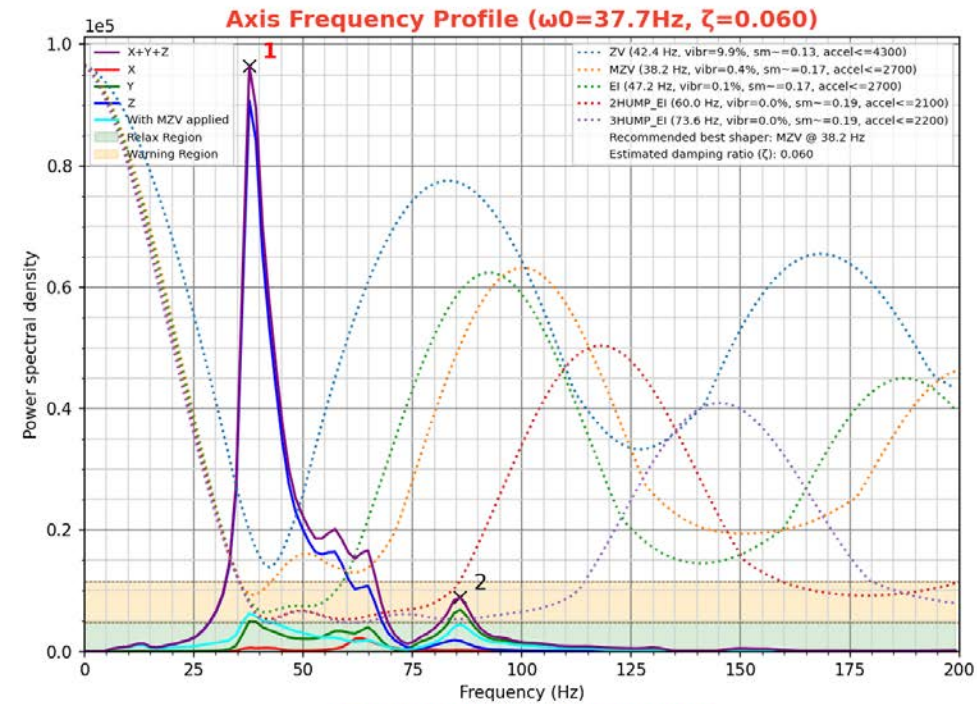


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:28:12 -- Y axis

Square corner velocity: 15.0mm/s
Max allowed smoothing: 0.2



- Standard SCV: 5-8
- Max SCV: 10-12
- Rough Calculated SCV – max accel on shaper/1000
 - $4400/1000 = 4.4$

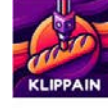
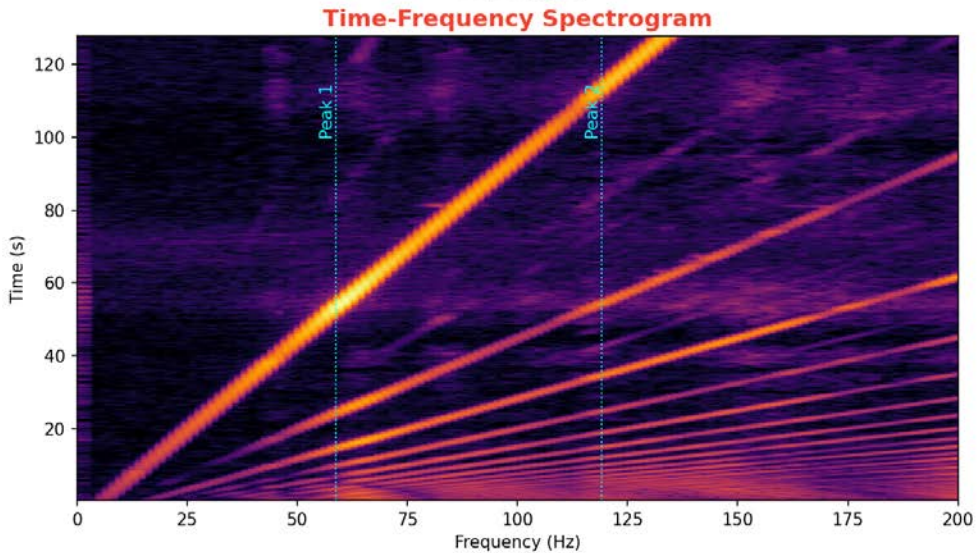
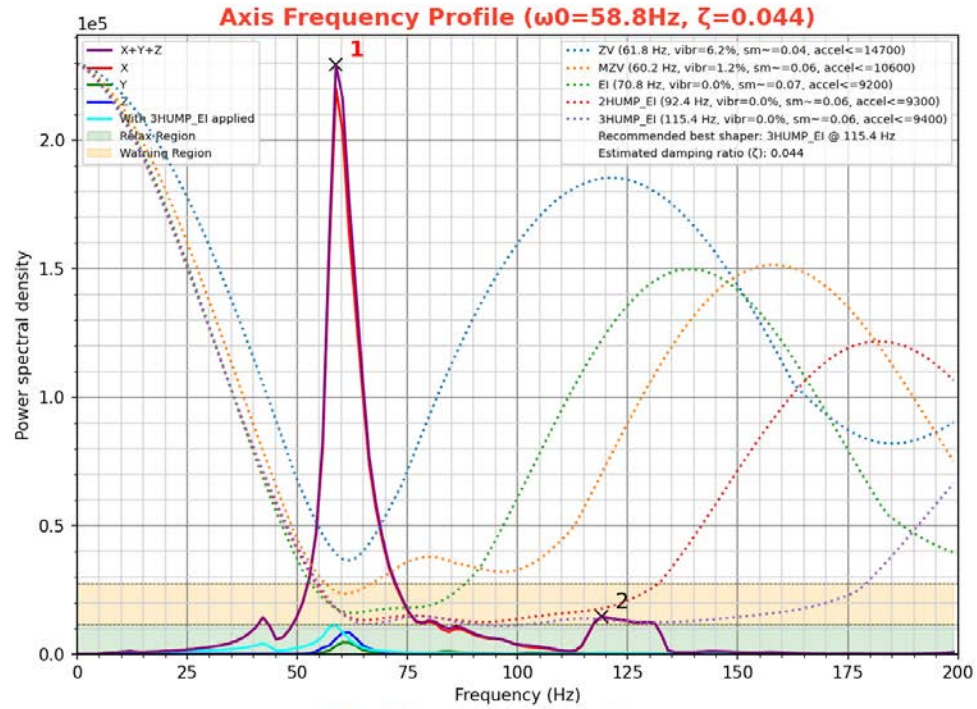


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 14:28:29 -- X axis

Square corner velocity: 4.4mm/s
Max allowed smoothing: None

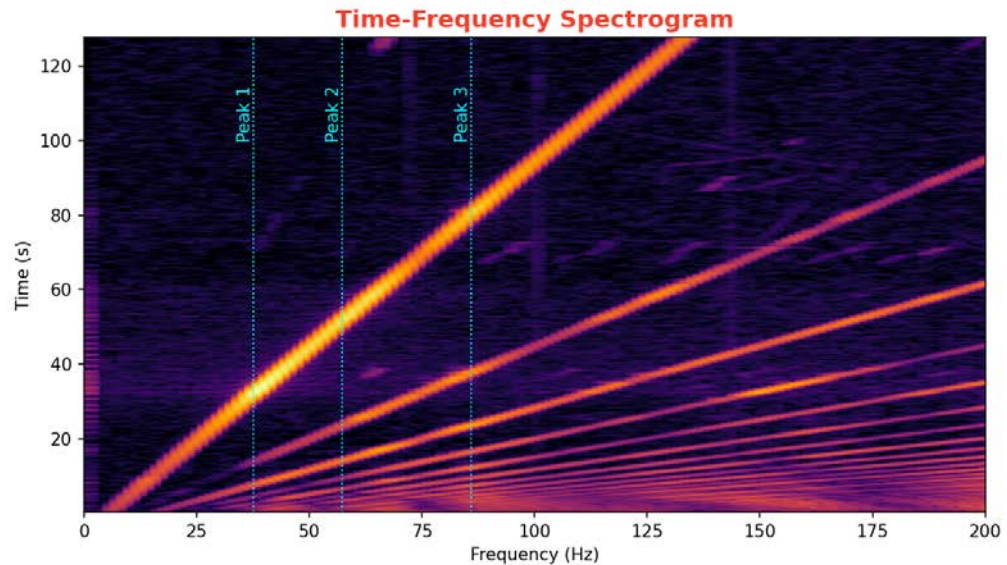
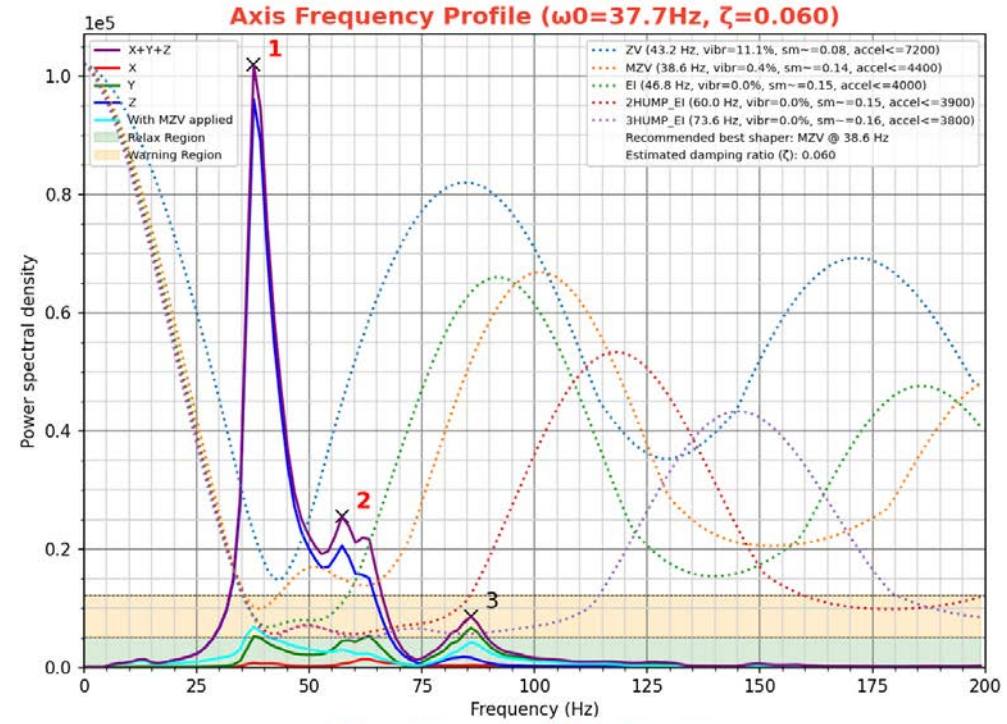


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 14:30:54 -- Y axis

Square corner velocity: 4.4mm/s
Max allowed smoothing: None



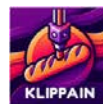
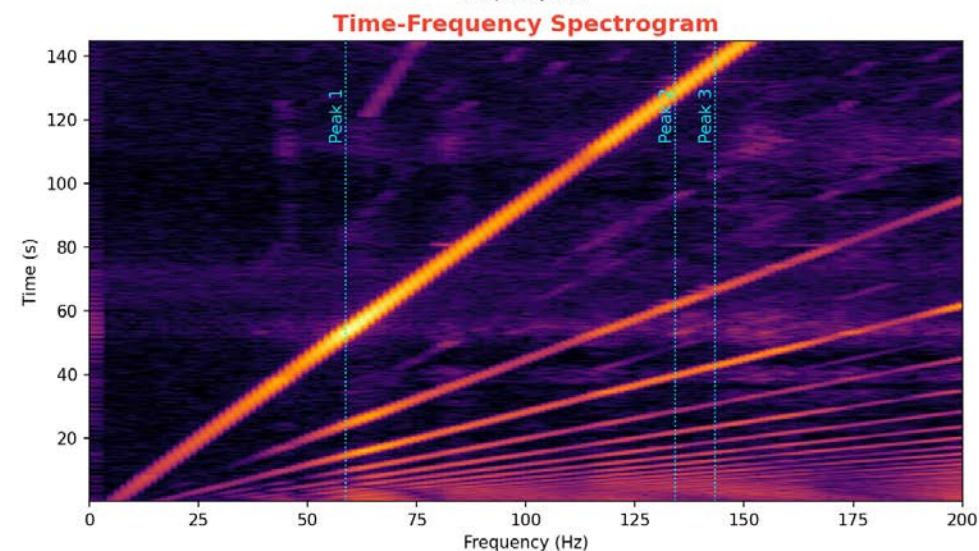
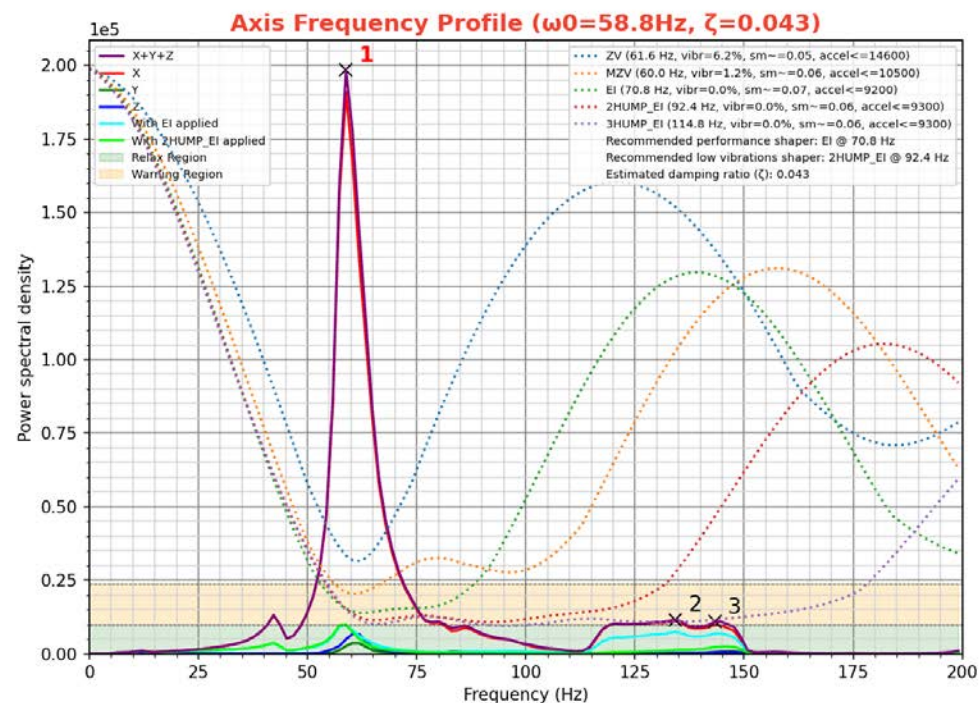


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:46:04 -- X axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: None

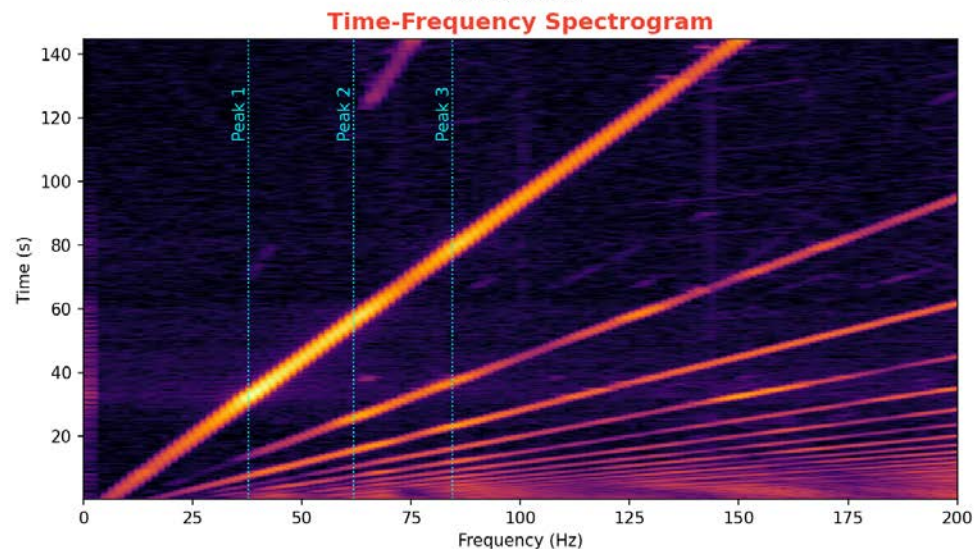
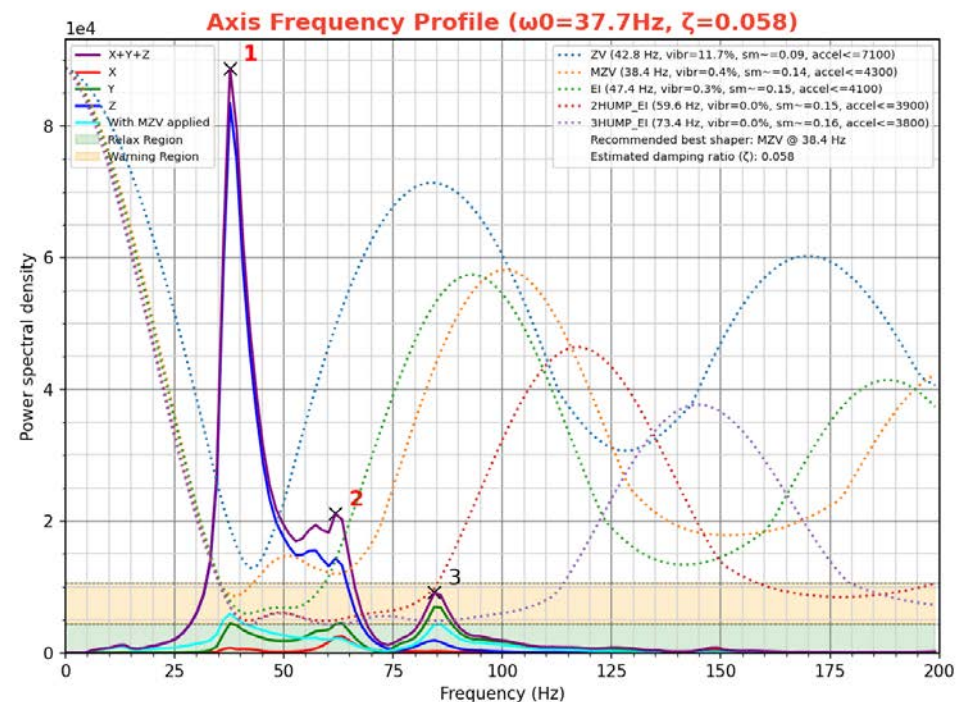


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 13:48:49 -- Y axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: None



Changed
freq_end to
150

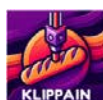
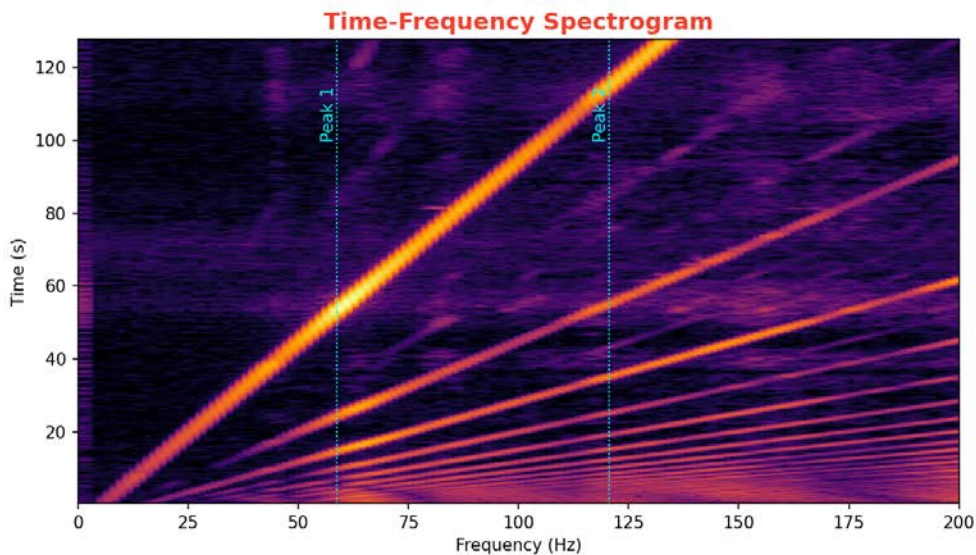
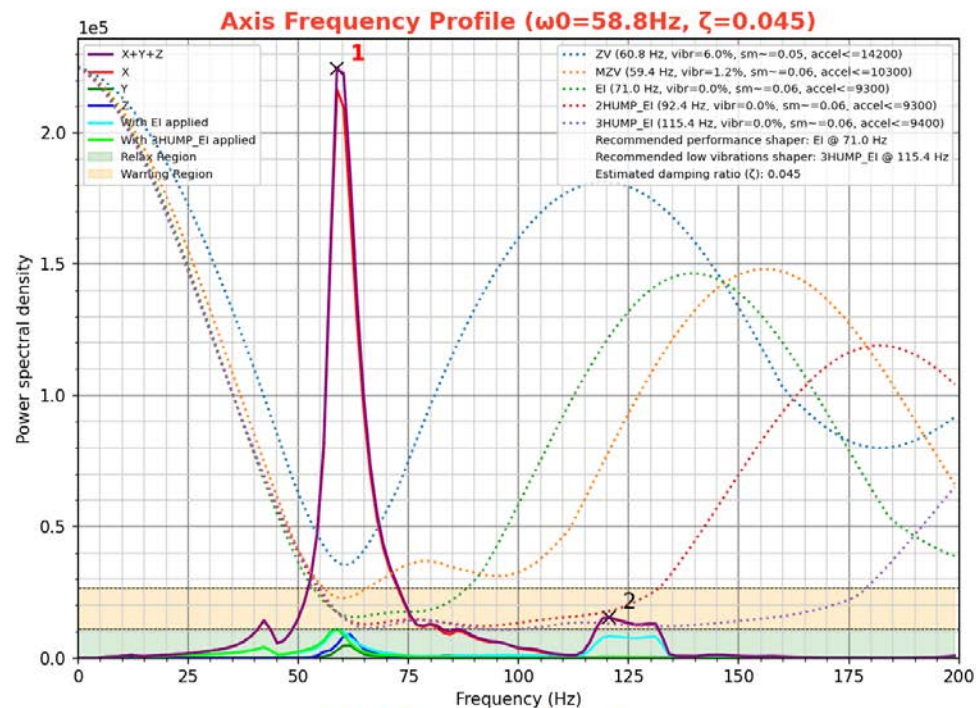


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 14:14:24 -- X axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: 0.1

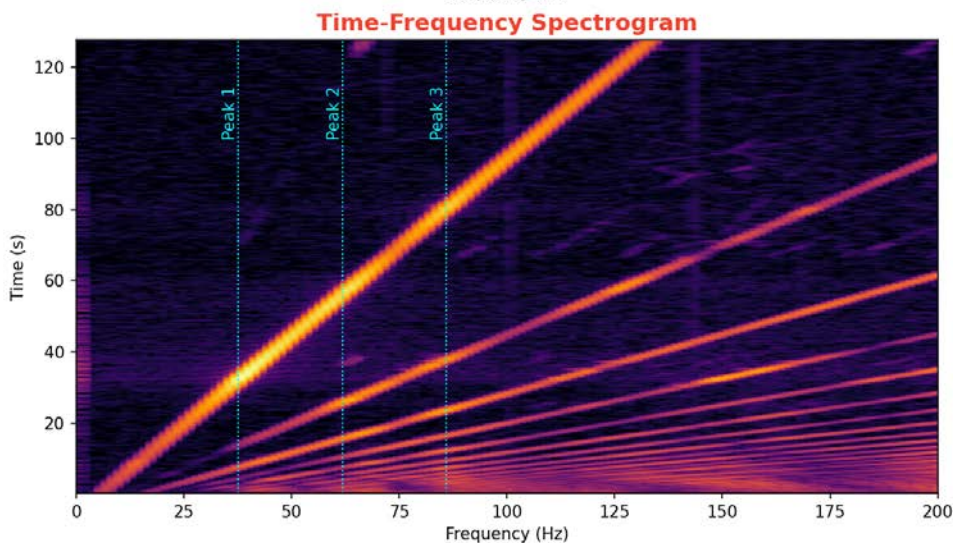
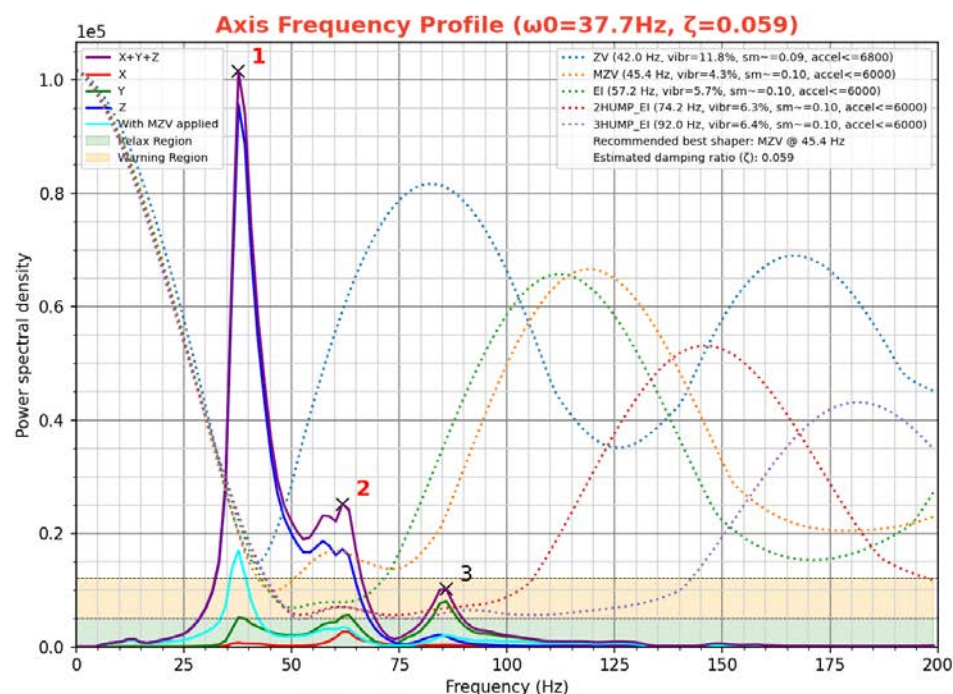


INPUT SHAPER CALIBRATION TOOL

v2.6.0-1-gf4e700a

20/02/24 14:16:48 -- Y axis

Square corner velocity: 5.0mm/s
Max allowed smoothing: 0.1



Limit
sm to
0.1