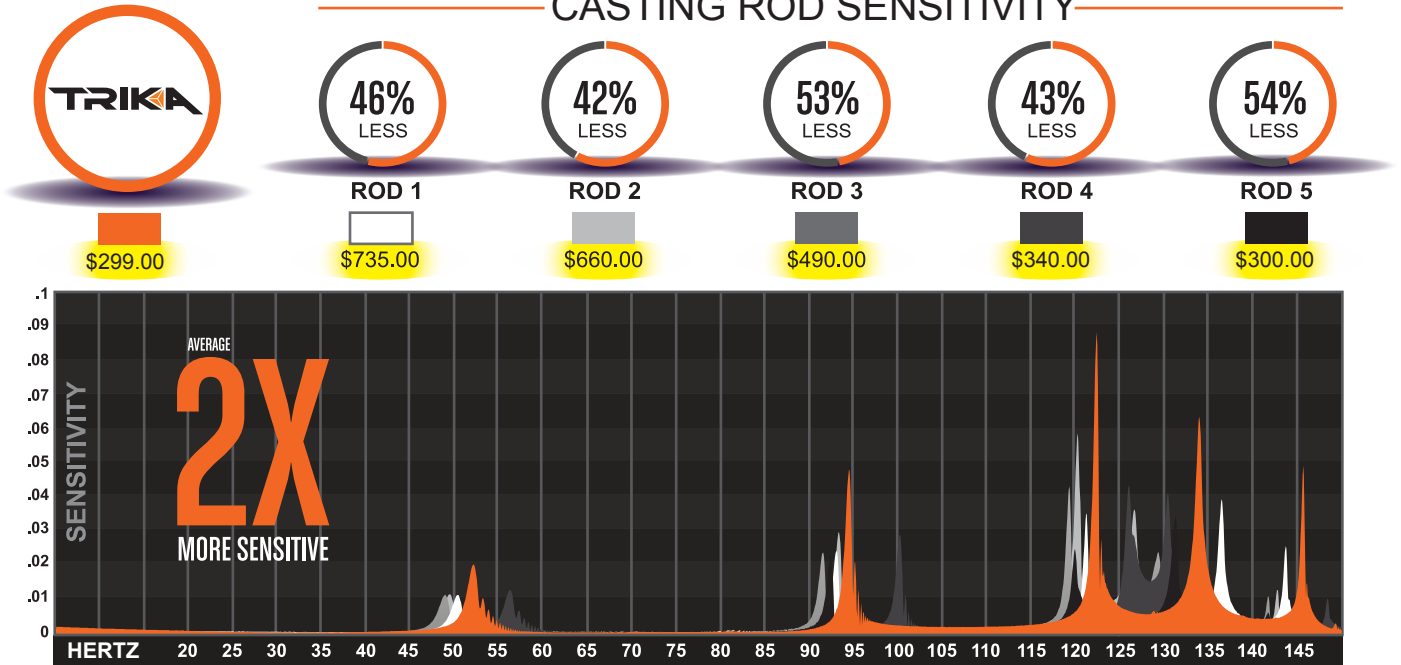


# EXECUTIVE OVERVIEW

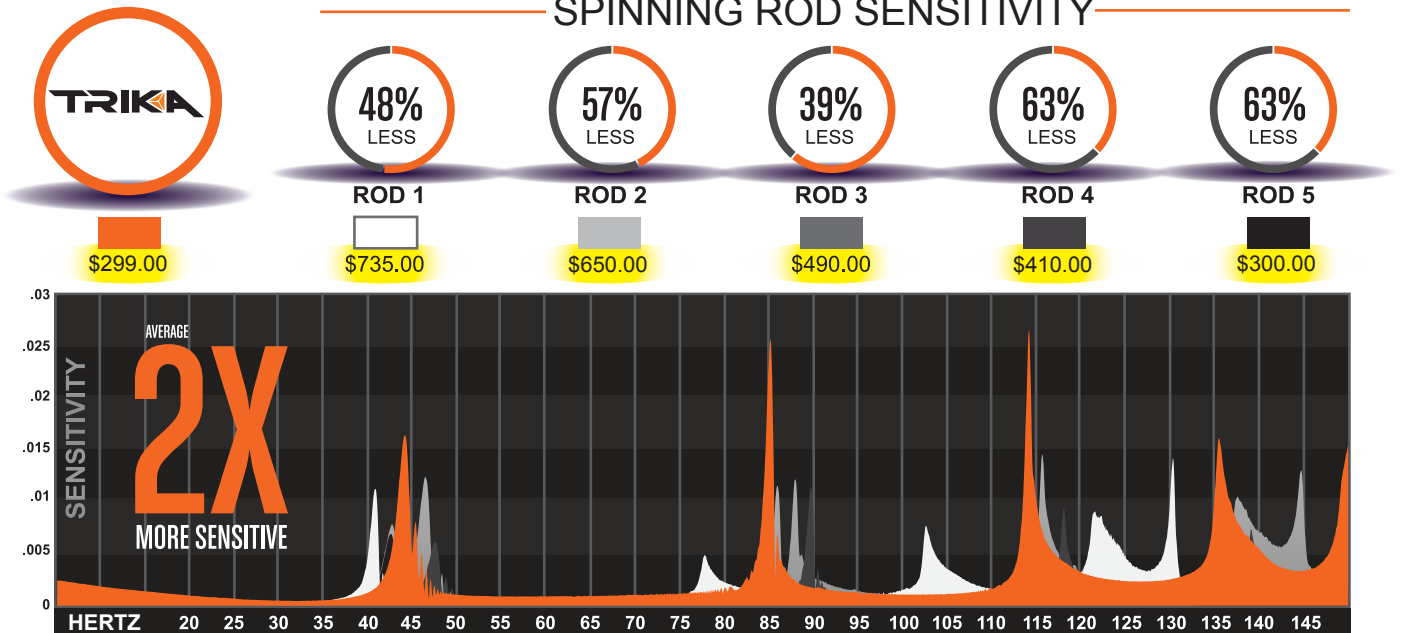
This page is a summary of the data collected on Trika rods. All testing was done with 7' MF spinning and 7' MHF casting rods. The Actual detail from the analysis follows for review.

**Sensitivity:** Trika rods are on average 2X (twice as sensitive) as other high end fishing rods that were tested. The retail price of the competitive rods tested ranged from \$299 to \$735. The testing was done by an independent lab. The test covers the entire range of Hertz the human hand can generally feel from 5Hz – 150Hz. Every rod has a few frequencies where they perform well but our test was done as a sweep over all Hertz ranges to get an overall view of sensitivity. (See full test results on pages 3-23 of this report)

## CASTING ROD SENSITIVITY



## SPINNING ROD SENSITIVITY



**Weight:** Trika rods are on average 7% lighter than the competition. Testing was done on a certified scale.

**Casting:** Trika rods are on average cast 26% farther than the competition. The testing data was taken in an outdoor environment using the same reel on all rods with the same line, weight and drag settings. (See full casting results on page 2 of this report)

# ROD CASTING RESULTS

## CASTING RODS

**RODS TESTED** - CASTING 7' MHF  
**REEL USED** - SHIMANO ALDEBARAN 50HG  
**LINE USED** - VARIVAS ABSALUT CB NYLON 12#  
**WEIGHT** - 1 OZ.

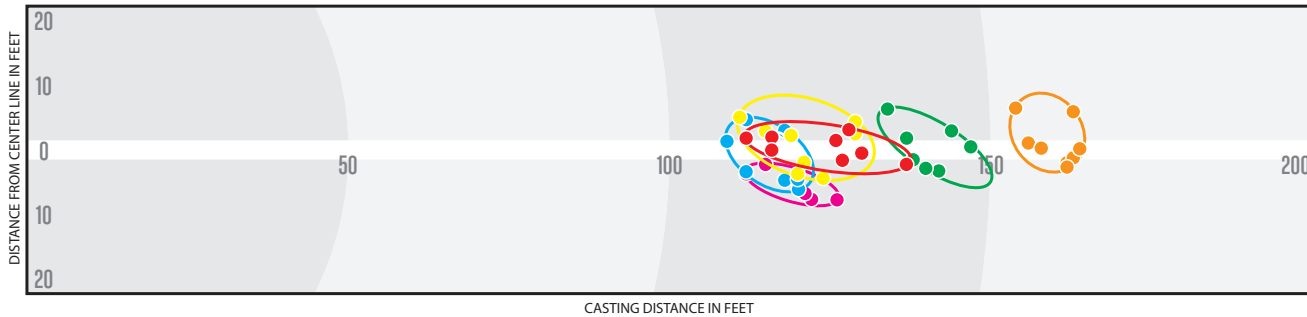
**TEMPERATURE** - 86 DEGREES  
**WIND** - 0-3 MPH  
**FORECAST** - SUNNY  
**SURFACE** - FLAT GRASS

1. All rods were casted 10 times eliminating the best and worst cast from each rod to get the average from 8 casts.
2. Every cast was used with the same reel, line, settings and the weight measured 20" from tip of rod.
3. The same momentum and motion was used on each cast from the same point of the casting area.
4. A straight line with measurements was used to run down the center of the casting area and each cast was measured for total distance and distance from center line.

ROD	COST	CAST 1	CAST 2	CAST 3	CAST 4	CAST 5	CAST 6	CAST 7	CAST 8	AVG. FT.
TRIKA	\$299	162	163	162	156	158	154	164	163	<b>160.3</b>
ROD 1	\$735	112	116	126	128	116	127	130	137	<b>124.0</b>
ROD 2	\$660	134	144	137	147	142	140	150	138	<b>141.5</b>
ROD 3	\$490	129	121	120	124	119	129	115	111	<b>121.0</b>
ROD 4	\$340	112	118	109	117	112	118	120	120	<b>115.8</b>
ROD 5	\$300	122	115	121	122	126	0	0	0	<b>121.2*</b>

\*Rod broke during cast 6 and average is from the first 5 casts

### CASTING ROD RESULTS



## SPINNING RODS

**RODS TESTED** - SPINNING 7' MF  
**REEL USED** - SHIMANO NASCI 2500  
**LINE USED** - DIAWA J-BRAID HV 15#  
**WEIGHT** - 1/2 OZ.

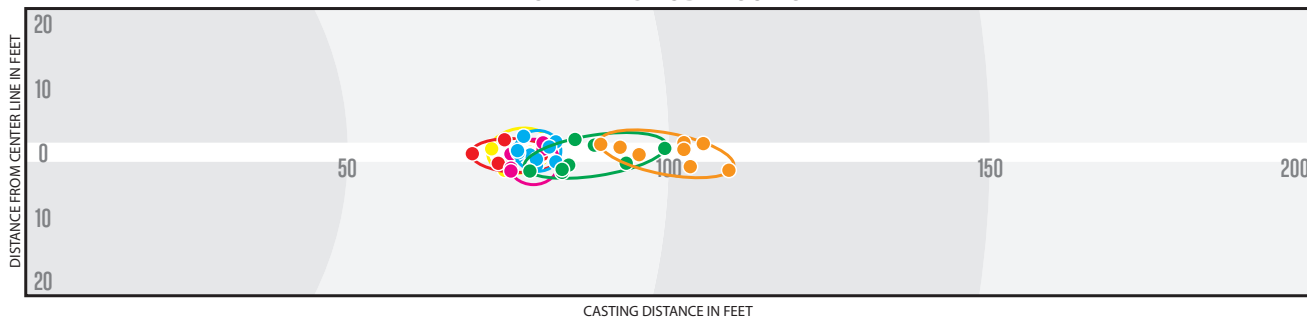
**TEMPERATURE** - 86 DEGREES  
**WIND** - 0-3 MPH  
**FORECAST** - SUNNY  
**SURFACE** - FLAT GRASS

1. All rods were casted 10 times eliminating the best and worst cast from each rod to get the average from 8 casts.
2. Every cast was used with the same reel, line, settings and the weight measured 20" from tip of rod.
3. The same momentum and motion was used on each cast from the same point of the casting area.
4. A straight line with measurements was used to run down the center of the casting area and each cast was measured for total distance and distance from center line.

ROD	COST	CAST 1	CAST 2	CAST 3	CAST 4	CAST 5	CAST 6	CAST 7	CAST 8	AVG. FT.
TRIKA	\$299	98	101	108	108	111	109	95	115	<b>105.6</b>
ROD 1	\$735	86	80	84	75	79	85	88	82	<b>82.4</b>
ROD 2	\$650	105	94	90	89	89	99	84	91	<b>92.6</b>
ROD 3	\$490	78	78	87	85	86	80	87	84	<b>83.1</b>
ROD 4	\$410	88	87	83	88	82	84	88	85	<b>85.6</b>
ROD 5	\$300	88	86	86	81	82	81	82	81	<b>83.4</b>

\*Rod broke on last cast and cast was removed from calculation

### SPINNING ROD RESULTS



# Independent Lab Vibration Test Results

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### 1 Subject

Vibration transmissibility testing of fishing rods

### 2 Material – Units Under Test (UUT)

Casting Rods:

- One (1) Trika
- One (1) Competitor #1
- One (1) Competitor #2
- One (1) Competitor #3
- One (1) Competitor #4
- One (1) Competitor #5

Spinning Rods:

- One (1) Trika
- One (1) Competitor #1
- One (1) Competitor #2
- One (1) Competitor #3
- One (1) Competitor #4
- One (1) Competitor #5

Note that the competitor's rod numbers do not correlate between the casting rod and spinning rod test sets. For example, the Competitor #1 casting rod is not necessarily the same make and model as the Competitor #1 spinning rod.

### 3 Background and Objective

The above listed units were brought to us to perform side-by-side vibration transmissibility testing of the Trika rods versus competing rods.

### 4 Test Setup and Procedure

To perform a “head-to-head” comparison a test method was devised in which a Trika rod and a competing rod of the same type (casting or spinning) would be tested simultaneously, receiving the same input from an electrodynamic shaker. The rods were mounted to a rigid test fixture using a reel adapter with the rod ends hanging over the shaker oriented in the vertical axis as shown in Figures 4-1 and 4-2. Fishing line, Power Pro 20 lbs. test braided line, was anchored to the test fixture, passed through all rod guides, and affixed to the shaker. To place uniform tension on each line a 41.9-gram weight was hung from the tip of each rod and the distance measured from the tip to the shaker plate using calipers. The weight would then be removed, and the line tensioned to match the measured displacement. A tri-axial accelerometer was placed on each rod using beeswax in the approximate location where the user's thumb would rest. Zip ties

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were also used in the instances where the beeswax would not bond with the surface material (carbon fiber, cork, foam, etc.).

For each test a Trika rod and a corresponding competing rod were subjected to a 0.2 g acceleration sinusoidal sweep at 1 octave/minute from 5 Hz to 150 Hz. This produced an acceleration vs. frequency response plot for direct performance comparison of the two rods. This process was repeated for each competing rod and type.



**Figure 4-1:** The test configuration for the spinning type rods. The accelerometers are indicated as Control, Accel. 1 (Channels 2 - 4) and Accel. 2 (Channels 5 - 7). Shown are the Trika rod on the right and the Competitor #2 on the left.

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**Figure 4-2:** The test configuration for the casting type rods. The accelerometers are indicated as Control, Accel. 1 (Channels 2 - 4) and Accel. 2 (Channels 5 – 7). Shown are the Trika rod on the right and the Competitor #1 on the left.

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## 5 Results

**Table 5.3-1: Casting rod comparison**

Casting Set	Averaged Total Acceleration	Percent Change
Trika	0.003975	86.9
Competitor #1	0.002127	
Trika	0.004073	73.2
Competitor #2	0.002352	
Trika	0.004011	110.8
Competitor #3	0.001903	
Trika	0.004027	116.8
Competitor #4	0.001858	
Trika	0.003976	74.7
Competitor #5	0.002276	

**Table 5.3-2: Spinning rod comparison**

Spinning Set	Averaged Total Acceleration	Percent Change
Trika	0.003019	93.1
Competitor #1	0.001563	
Trika	0.002678	131.5
Competitor #2	0.001156	
Trika	0.002988	63.7
Competitor #3	0.001826	
Trika	0.002649	167.6
Competitor #4	0.00099	
Trika	0.002621	168.8
Competitor #5	0.000975	

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## 6 Conclusion

The above listed components were sent to us for to perform vibration transmissibility testing per the protocol outlined above.

The units were returned upon completion of the testing herein.

## 7 Equipment Used

**Table 7-1:** Calibrated equipment used

Identification	Asset #	Calibration Due Date
Shaker Amplifier	ATS-05687	08/02/2022
Accelerometer	ATS-08216	08/10/2022
Tri-Axial Accelerometer	ATS-4121-B	10/13/2022
Tri-Axial Accelerometer	ATS-4121-D	10/13/2022
Scale	ATS-04148	11/15/2022

## 8 Revision History

06/16/2022: Initial release

07/15/2022: Reformatted report and updated rod designations

09/22/2022: Reformatted report

11/28/2022: Reformatted charts

# CASTING ROD TEST RESULTS

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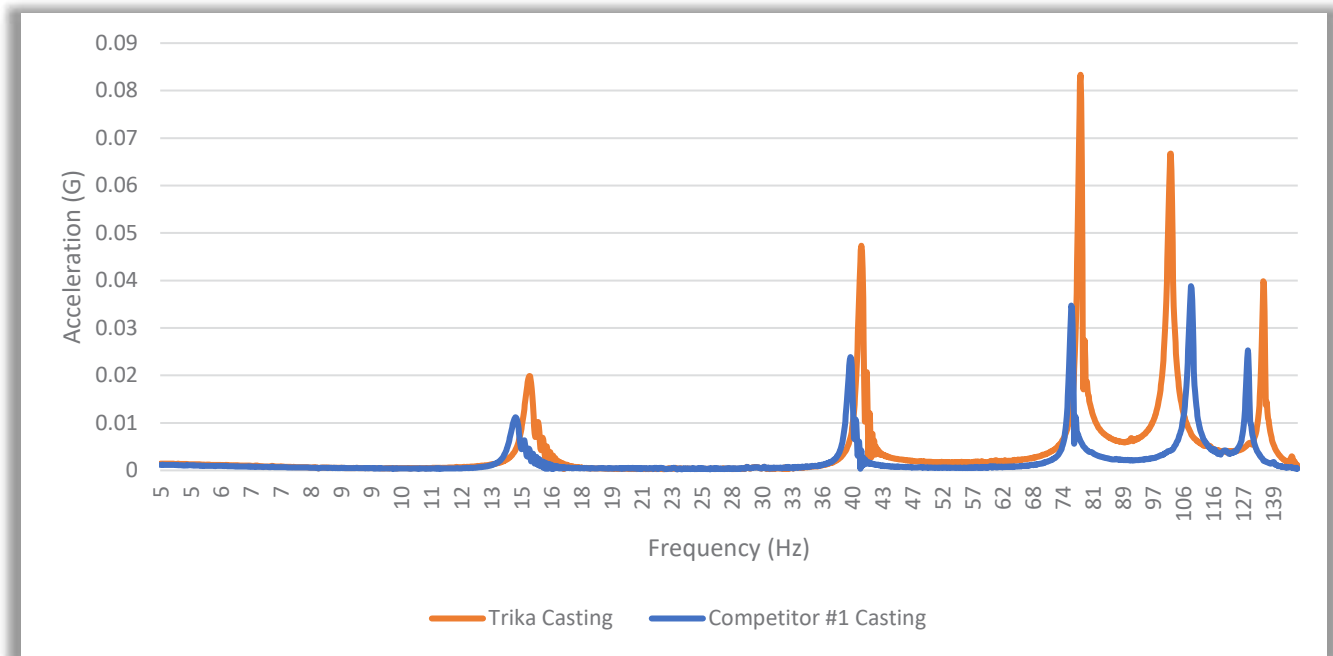
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Data captures of each test and comparison charts and tables showing the total acceleration,  $a_{total} = \sqrt{x^2 + y^2 + z^2}$ , are provided in the following sections.



**Figure A-1:** Total Acceleration – Trika vs. Competitor #1 casting rod



# CASTING ROD TEST RESULTS

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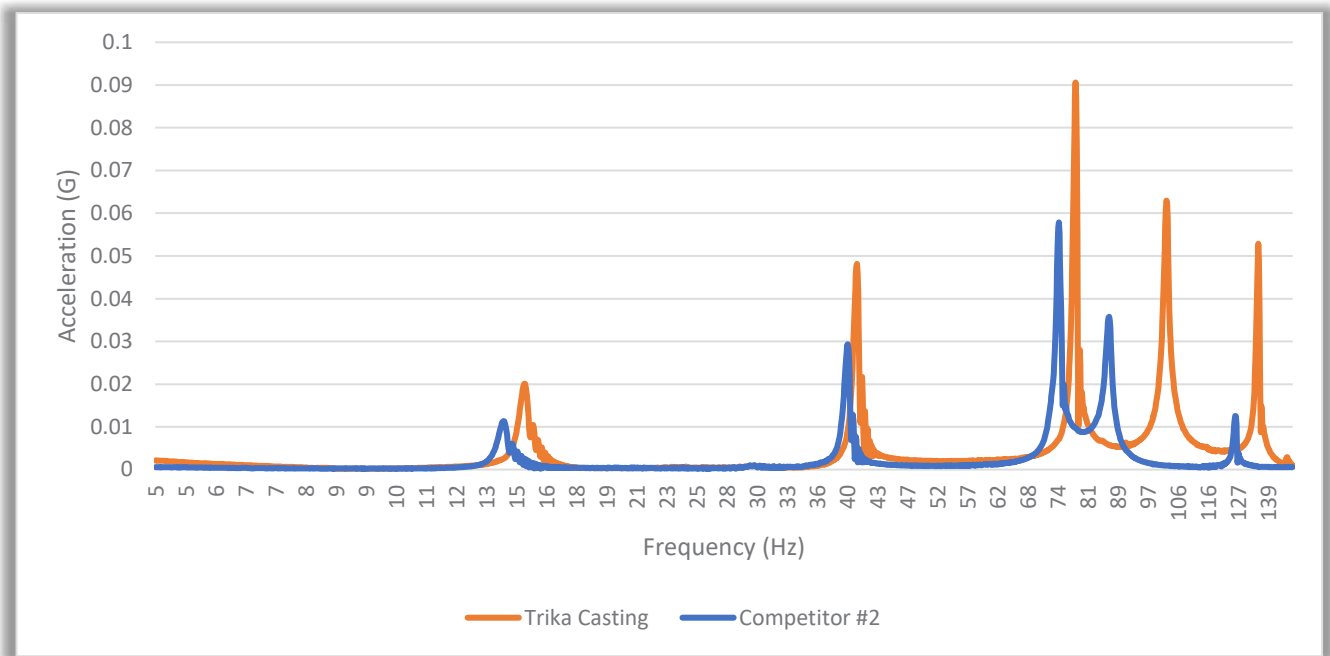


Figure A-2: Total Acceleration – Trika vs. Competitor #2 casting rod

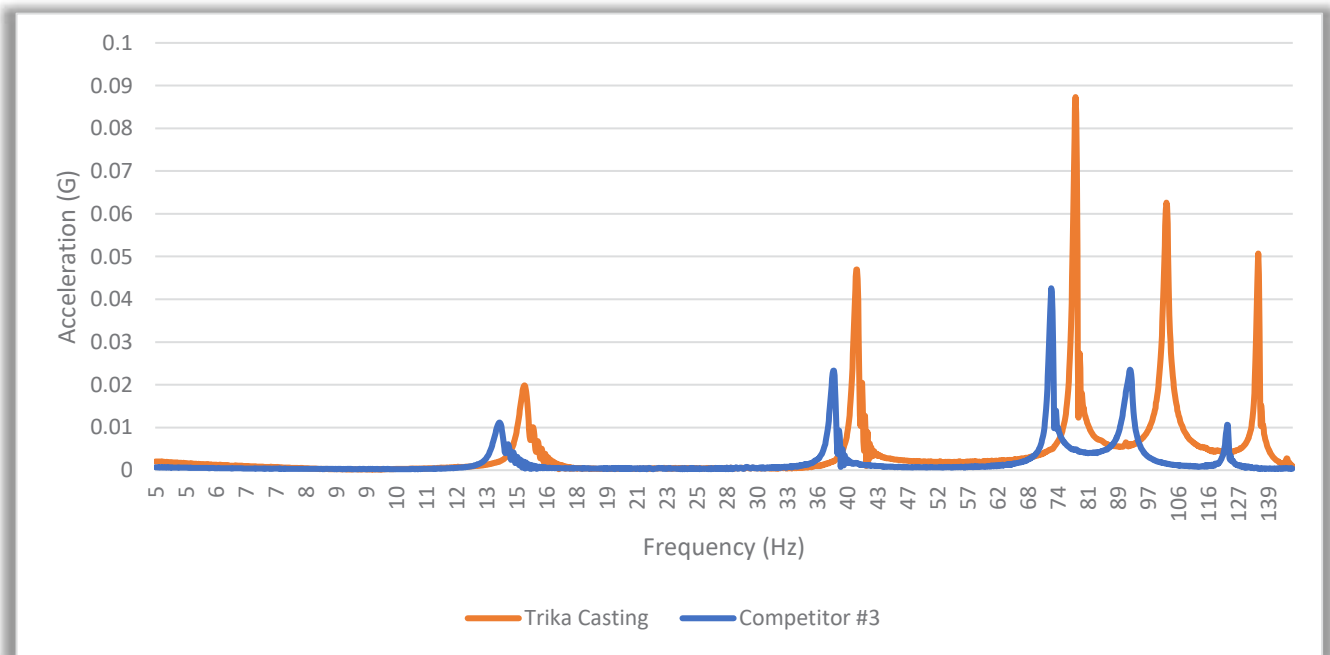


Figure A-3: Total Acceleration – Trika vs. Competitor #3 casting rod

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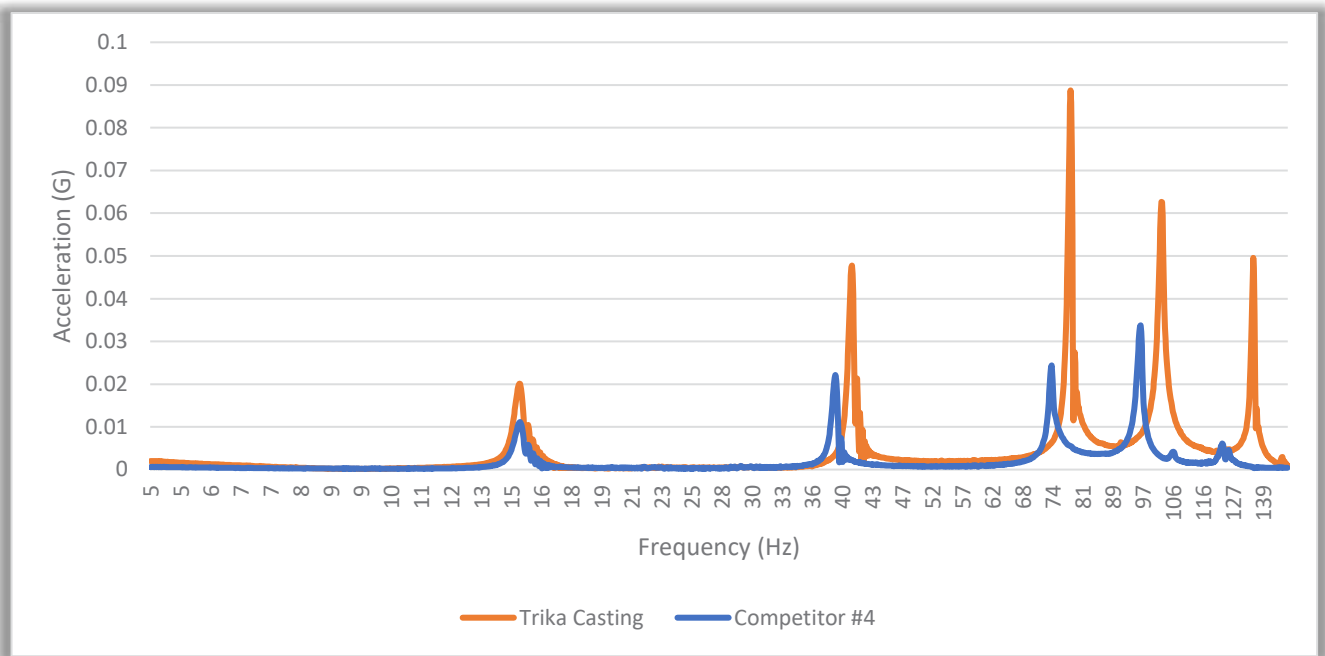
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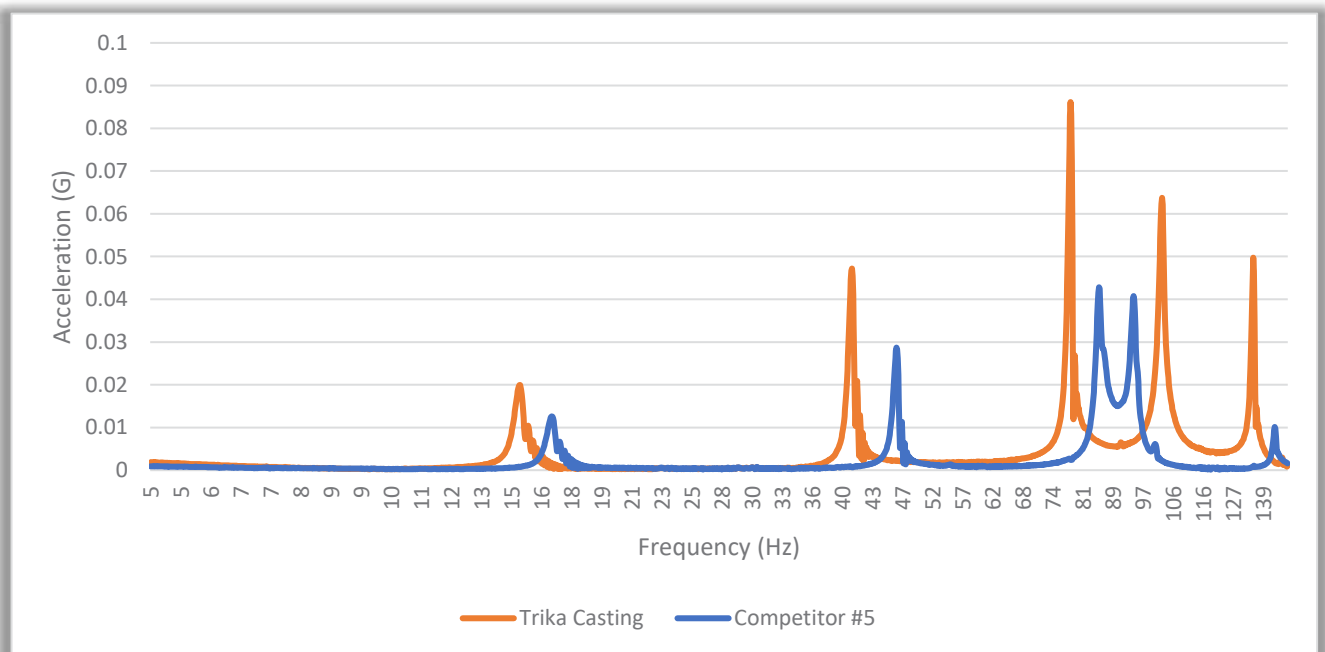
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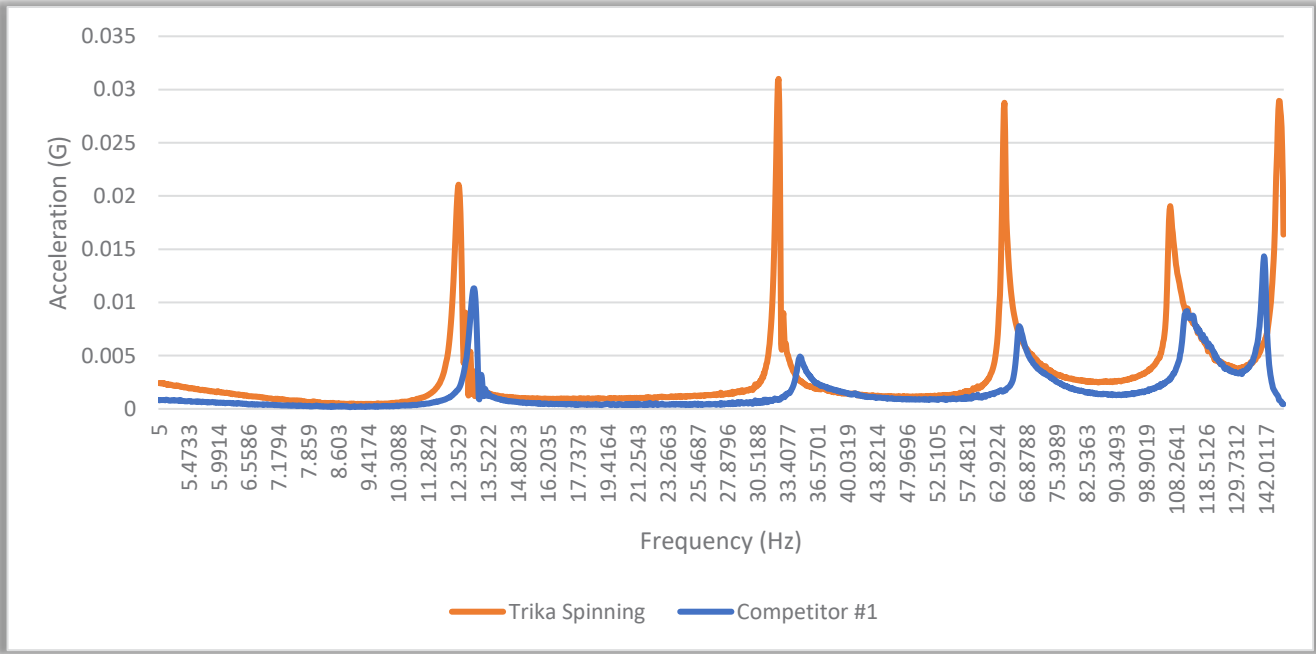
**Figure A-4:** Total Acceleration – Trika vs. Competitor #4 casting rod



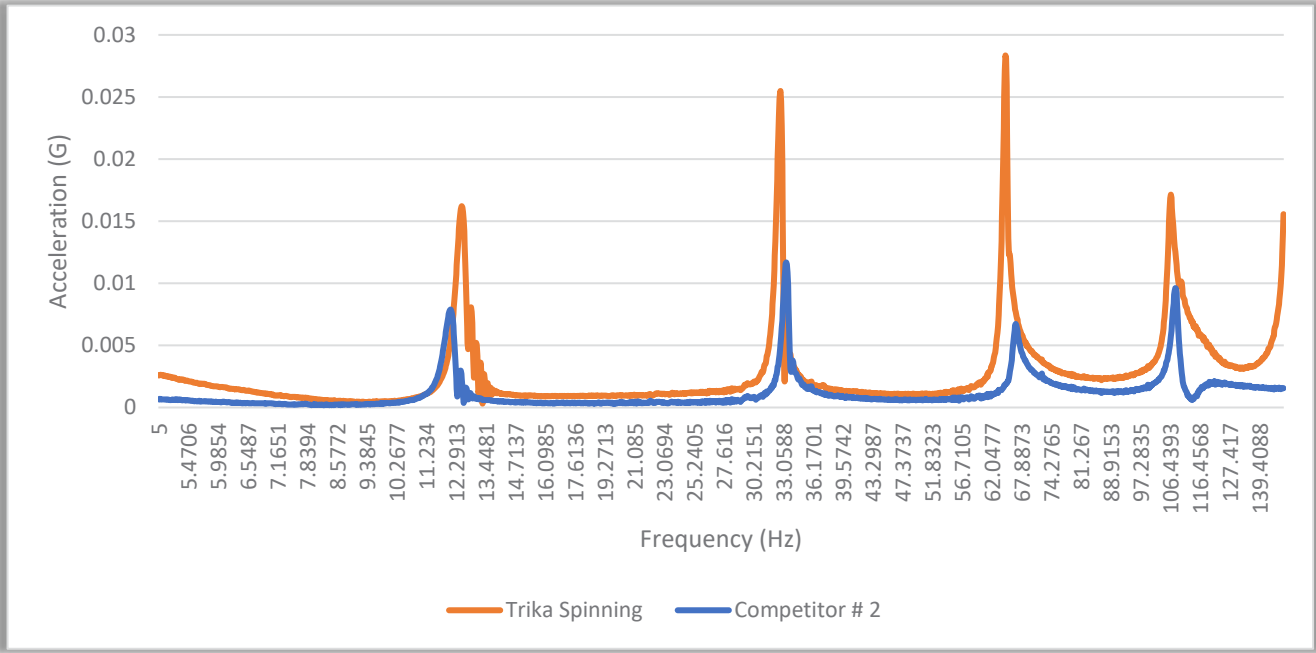
**Figure A-5:** Total Acceleration – Trika vs. Competitor #5 casting rod

# SPINNING ROD TEST RESULTS

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**Figure B-1:** Total Acceleration – Trika vs. Competitor #1 spinning rod



**Figure B-2:** Total Acceleration – Trika vs. Competitor #2 spinning rod

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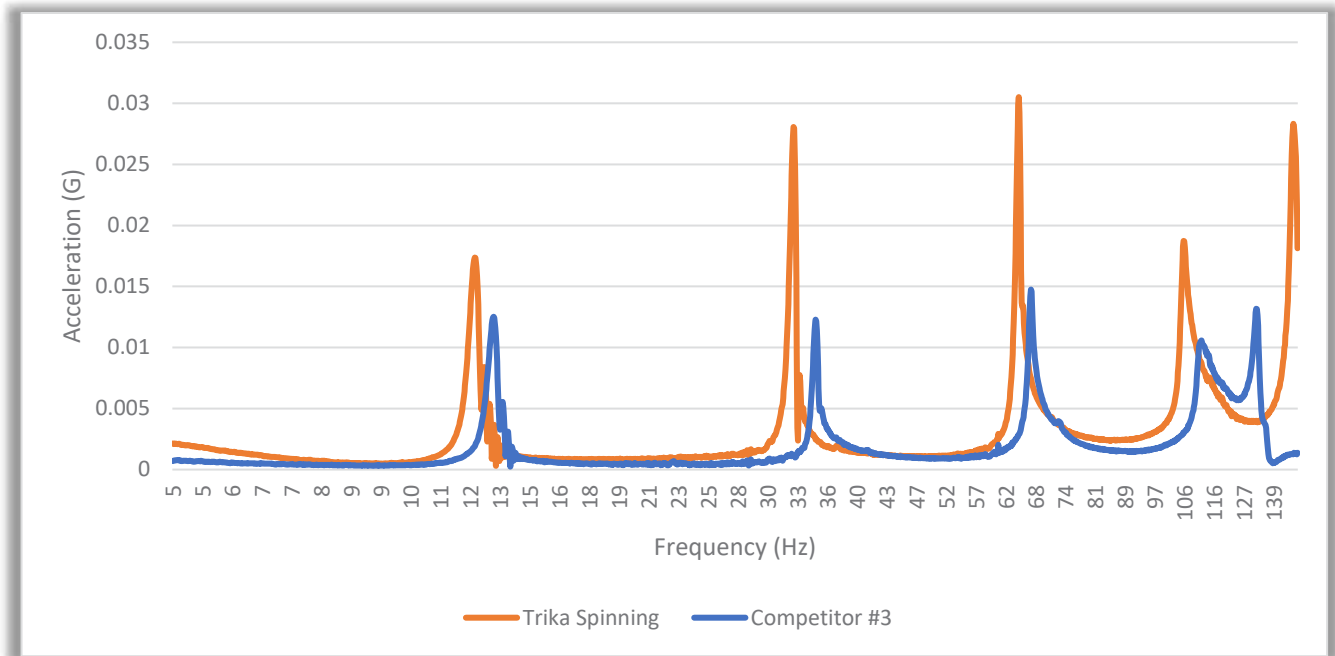


Figure B-3: Total Acceleration – Trika vs. Competitor #3 spinning rod

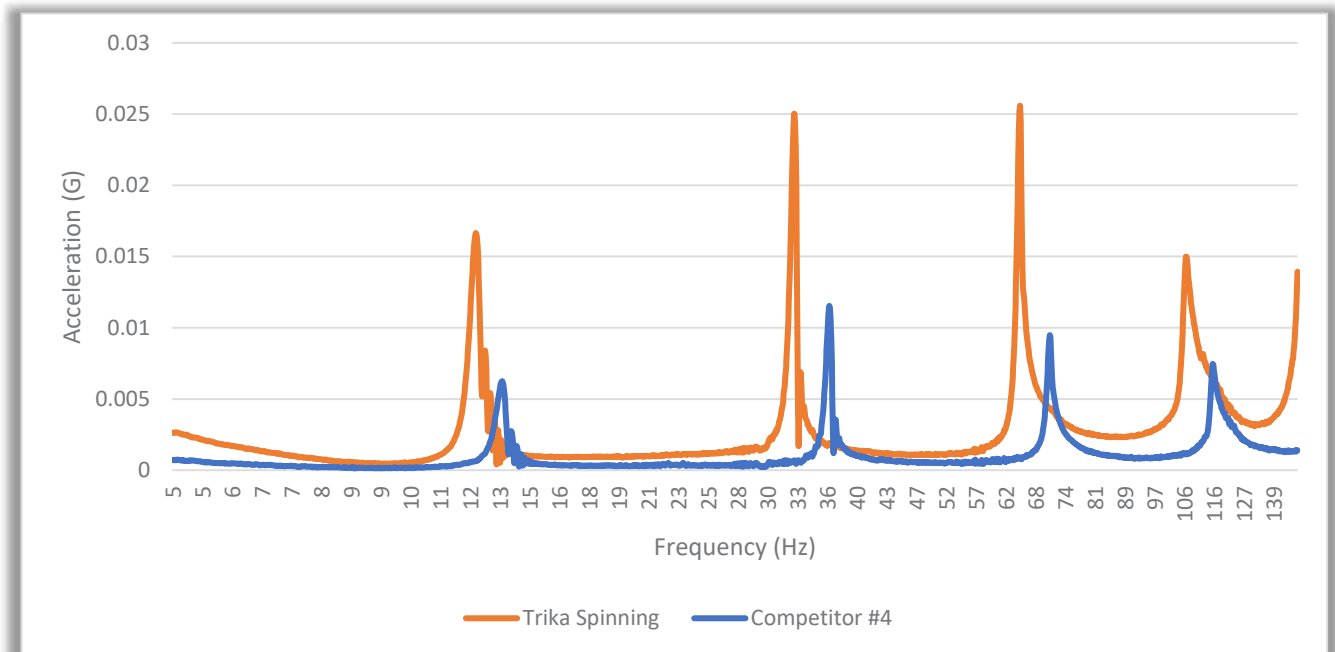


Figure B-4: Total Acceleration – Trika vs. Competitor #4 spinning rod

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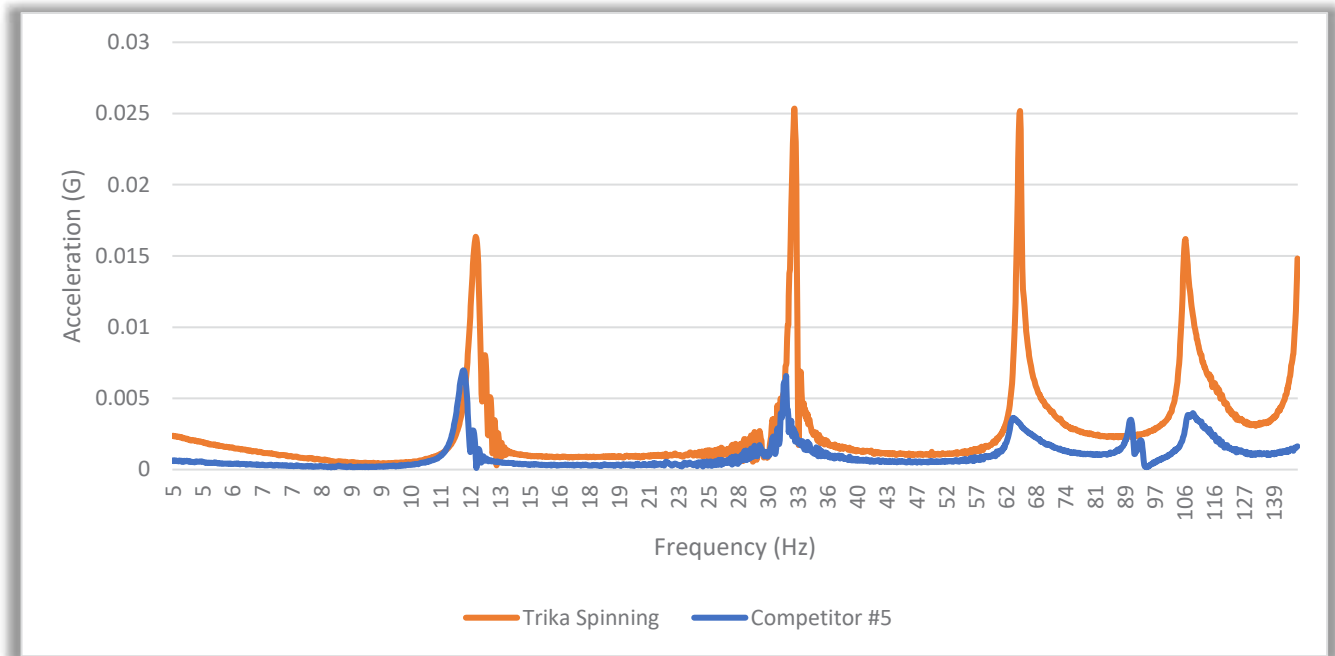


Figure B-5: Total Acceleration – Trika vs. Competitor #5 spinning rod

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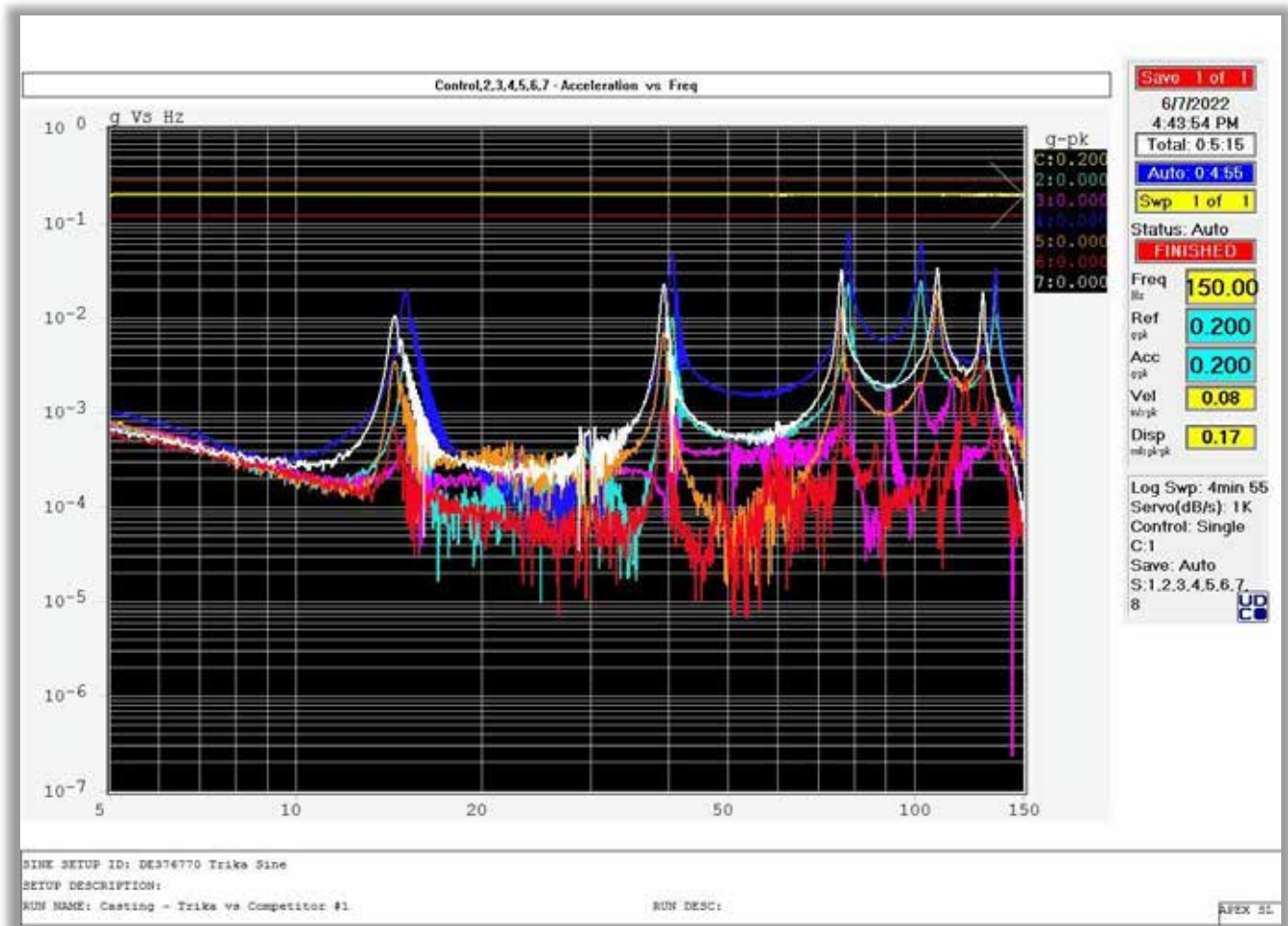


Figure C-1: Data Capture – Trika vs. Competitor #1 casting rod

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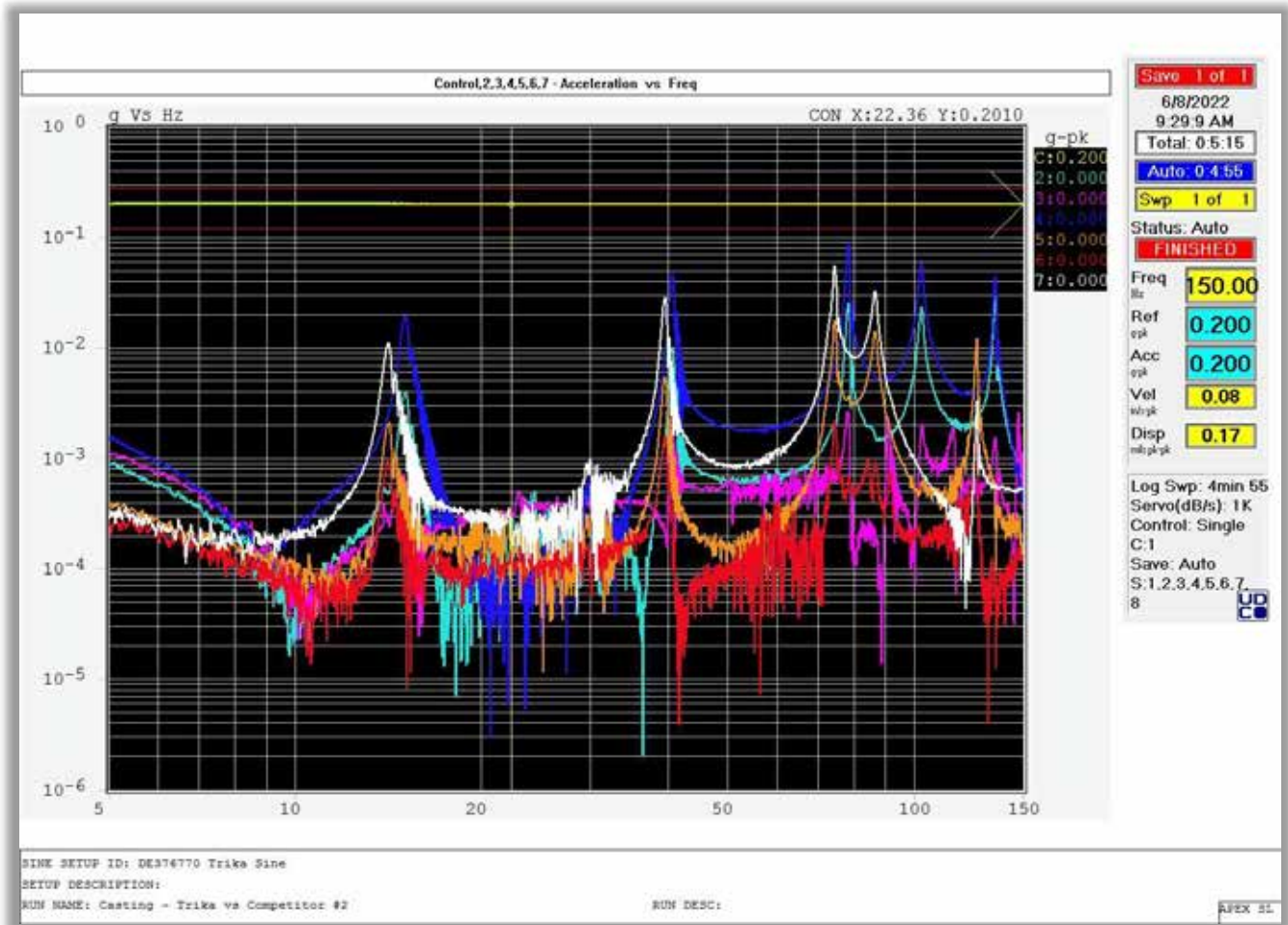


Figure C-2: Data Capture – Trika vs. Competitor #2 casting rod

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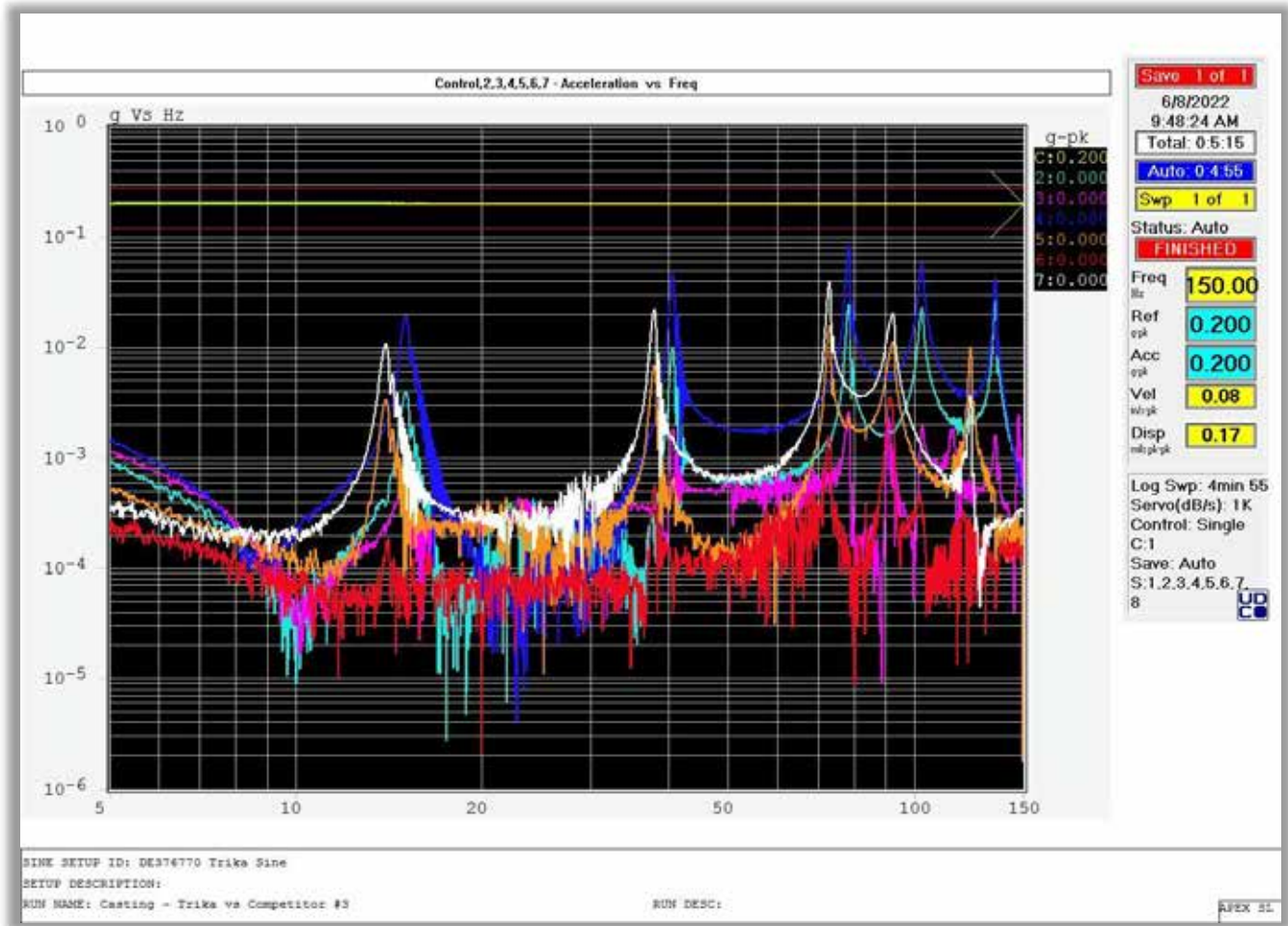


Figure C-3: Data Capture – Trika vs. Competitor #3 casting rod



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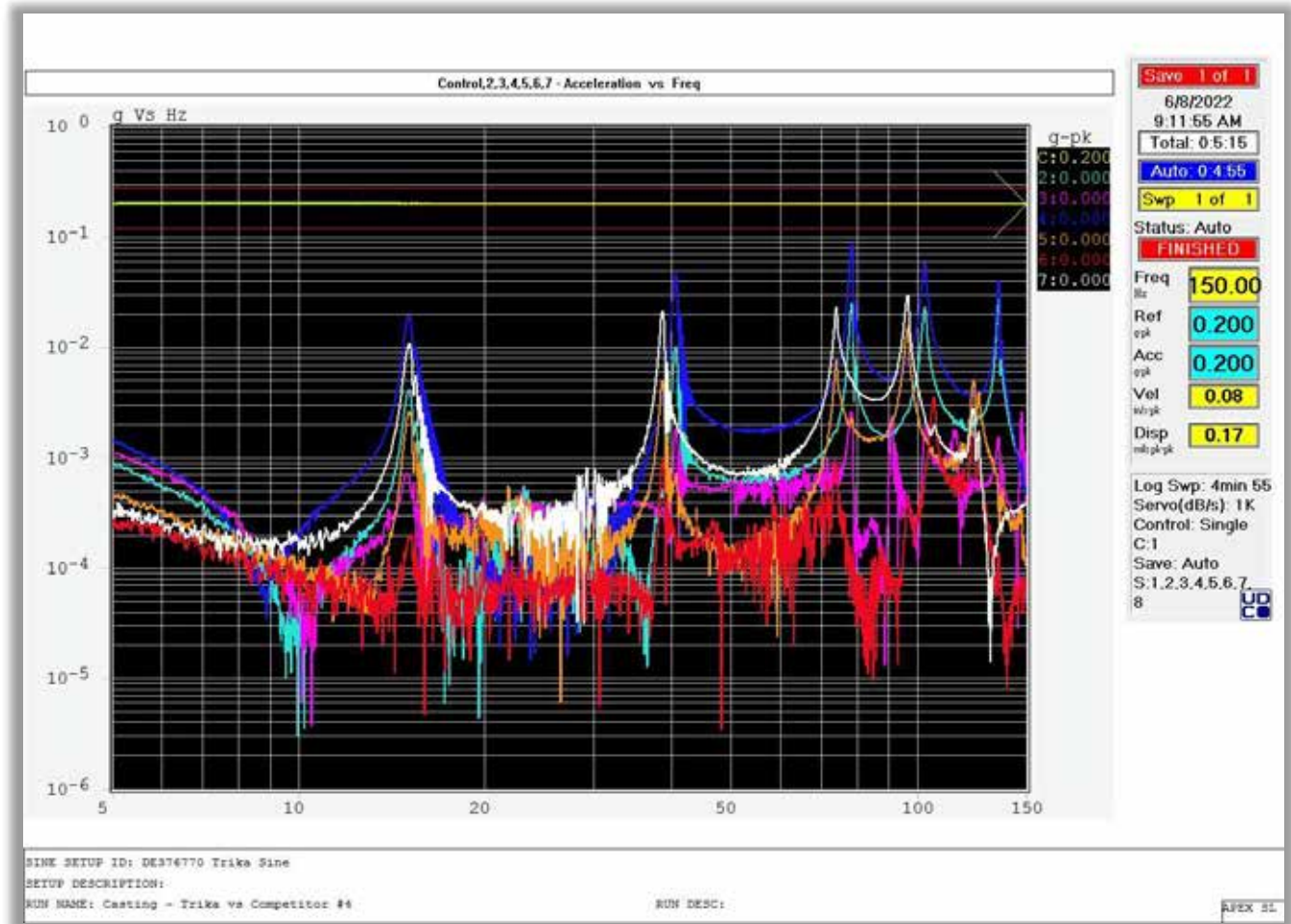


Figure C-4: Data Capture – Trika vs. Competitor #4 casting rod

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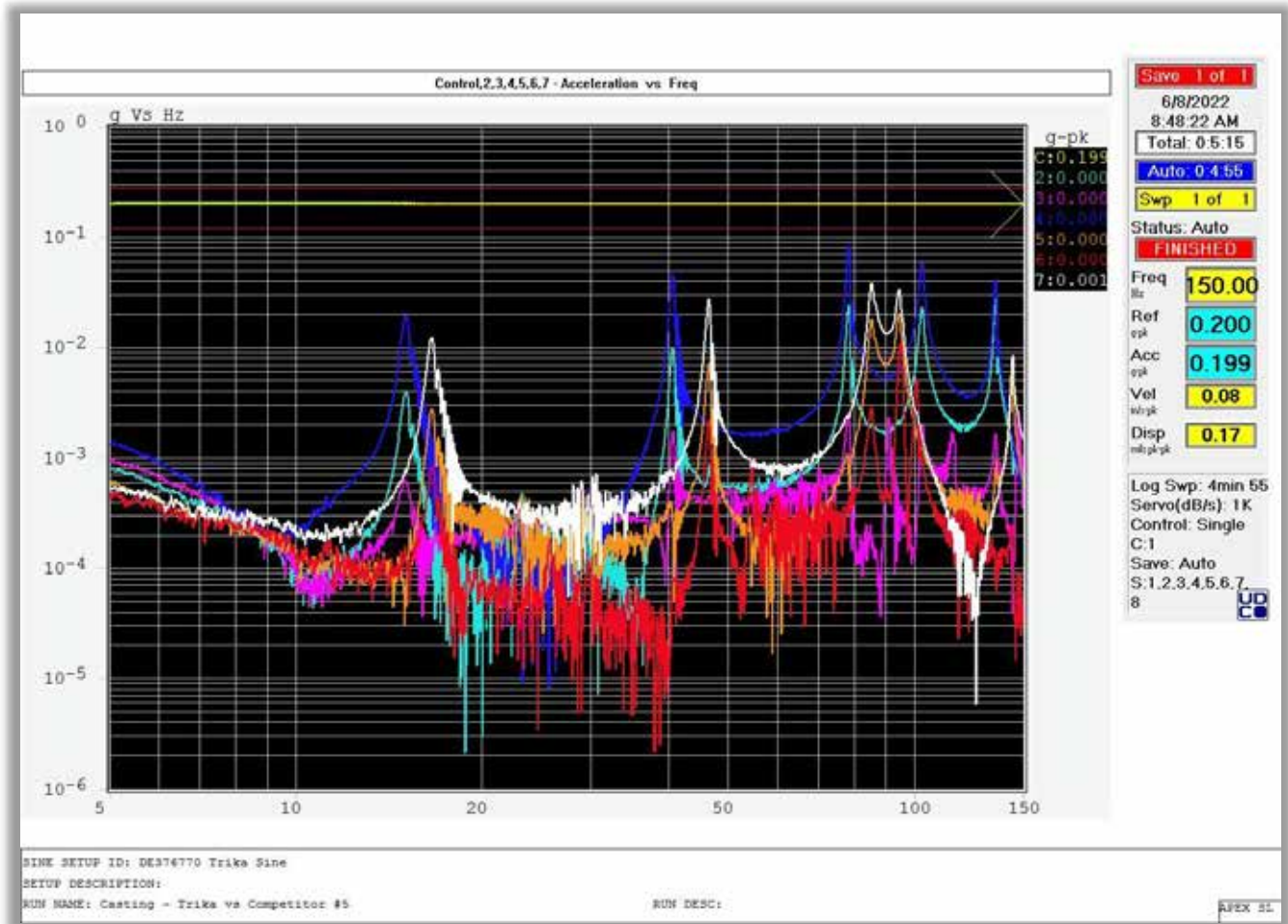


Figure C-5: Data Capture – Trika vs. Competitor #5 casting rod

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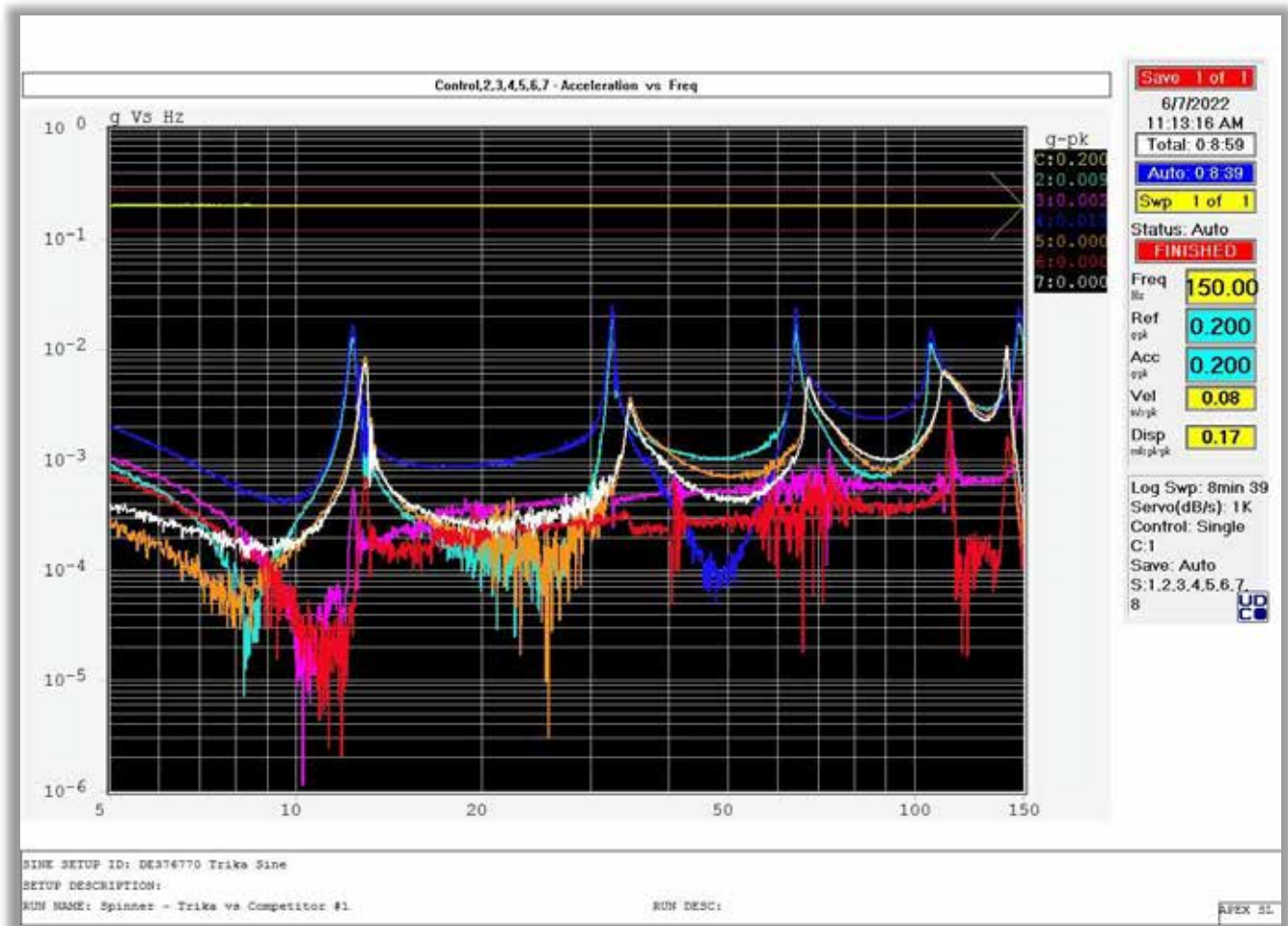


Figure D-1: Data Capture – Trika vs. Competitor #1 spinning rod

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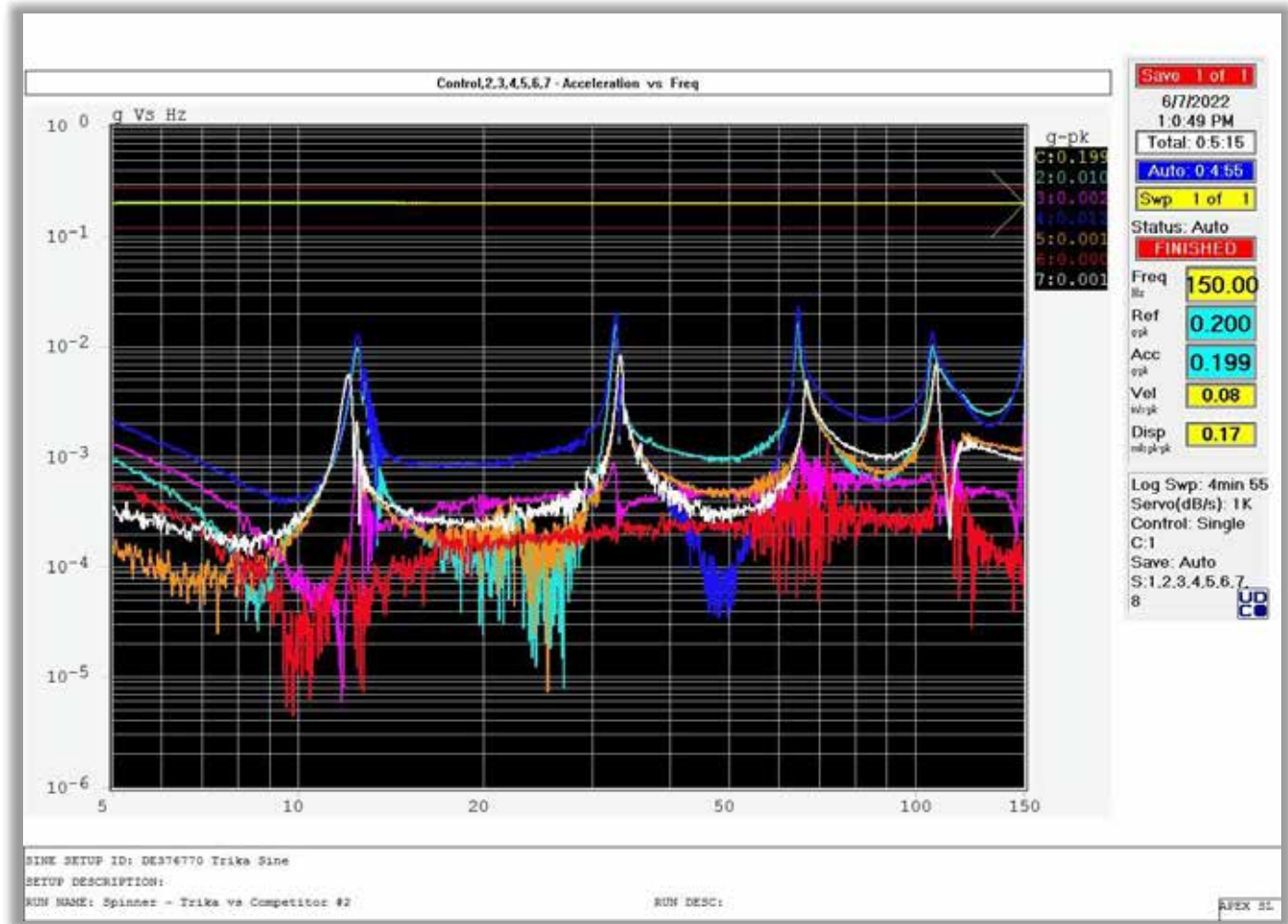


Figure D-2: Data Capture – Trika vs. Competitor #2 spinning rod

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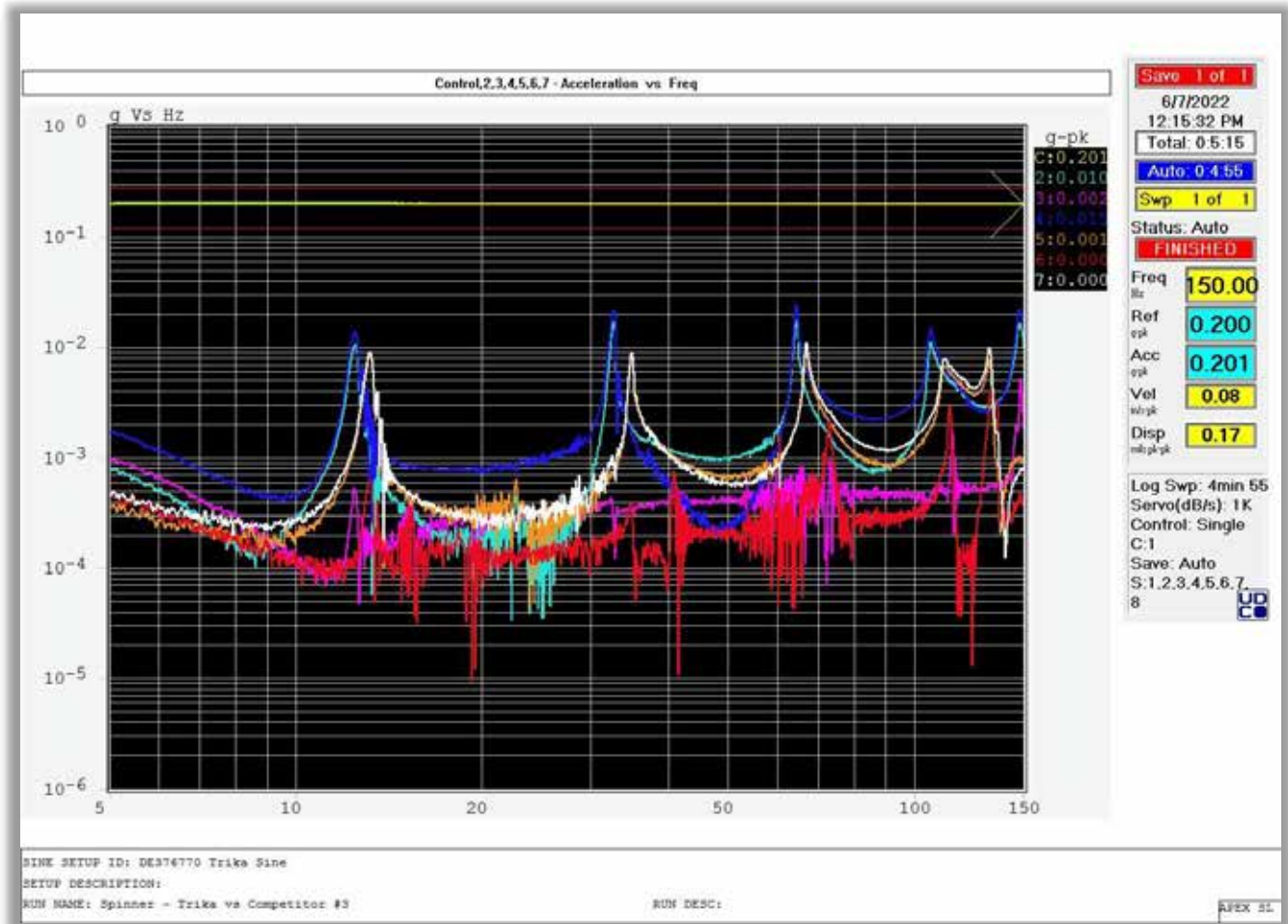


Figure D-3: Data Capture – Trika vs. Competitor #3 spinning rod

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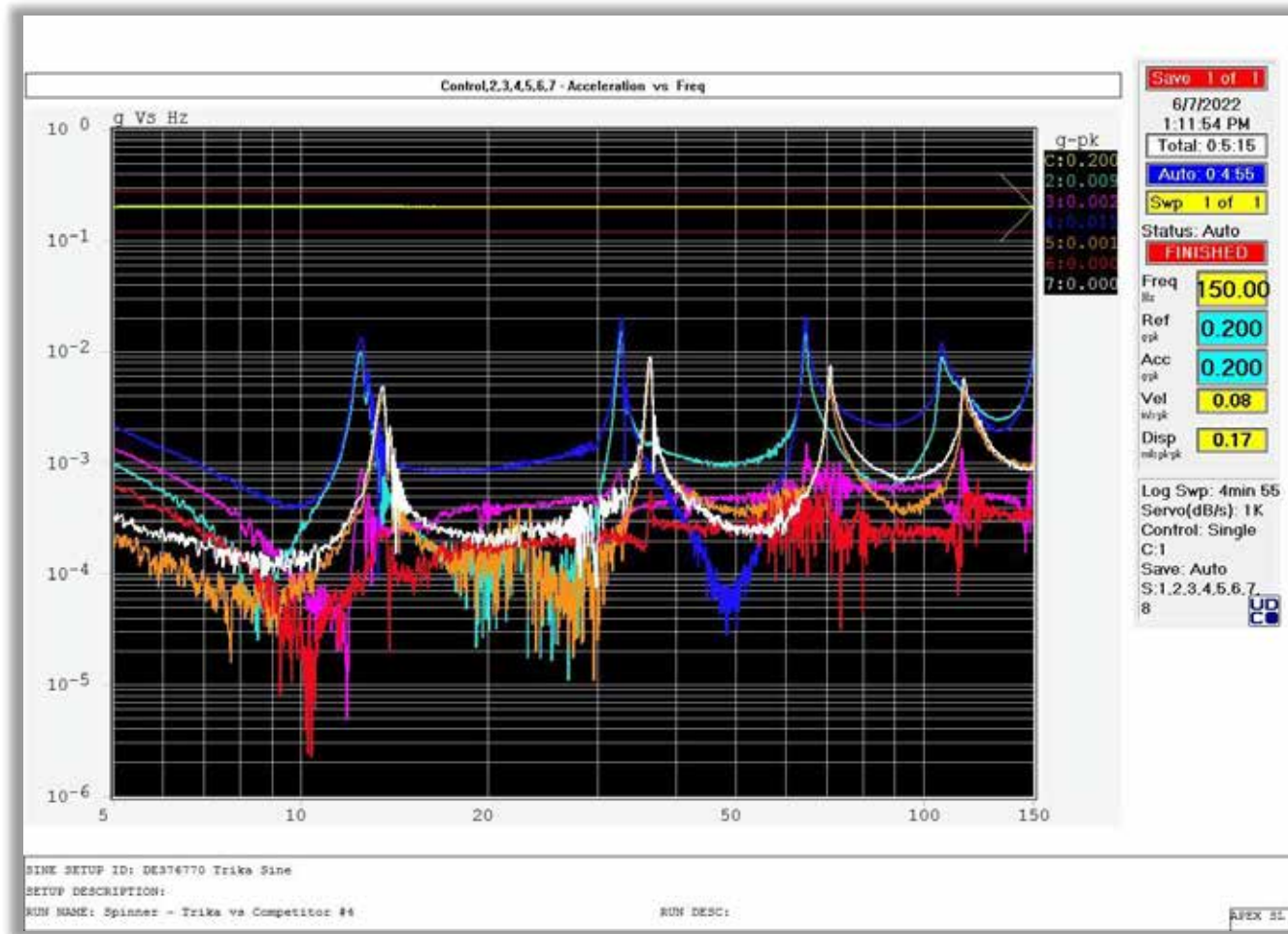


Figure D-4: Data Capture – Trika vs. Competitor #4 spinning rod

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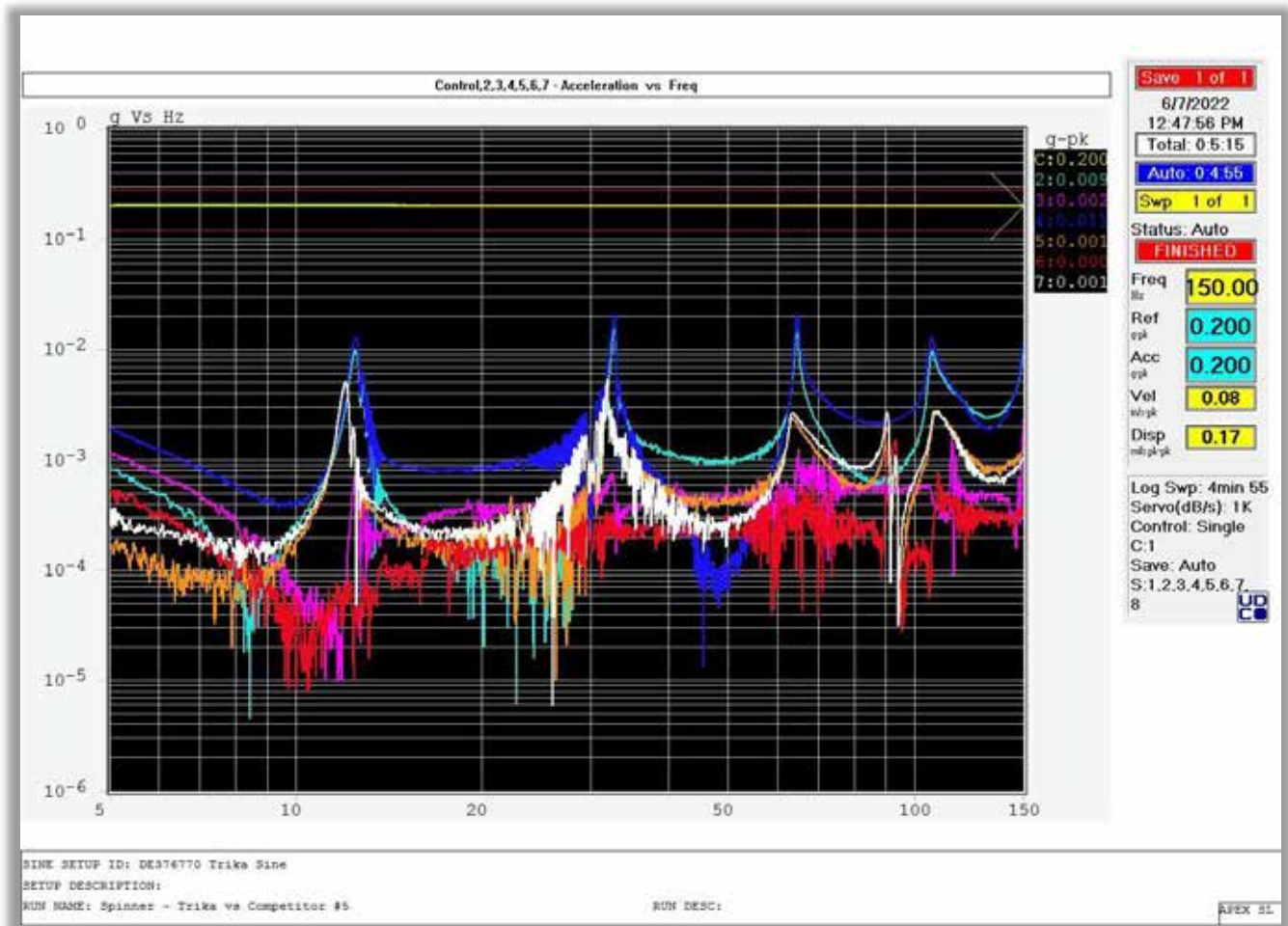


Figure D-5: Data Capture – Trika vs. Competitor #5 spinning rod