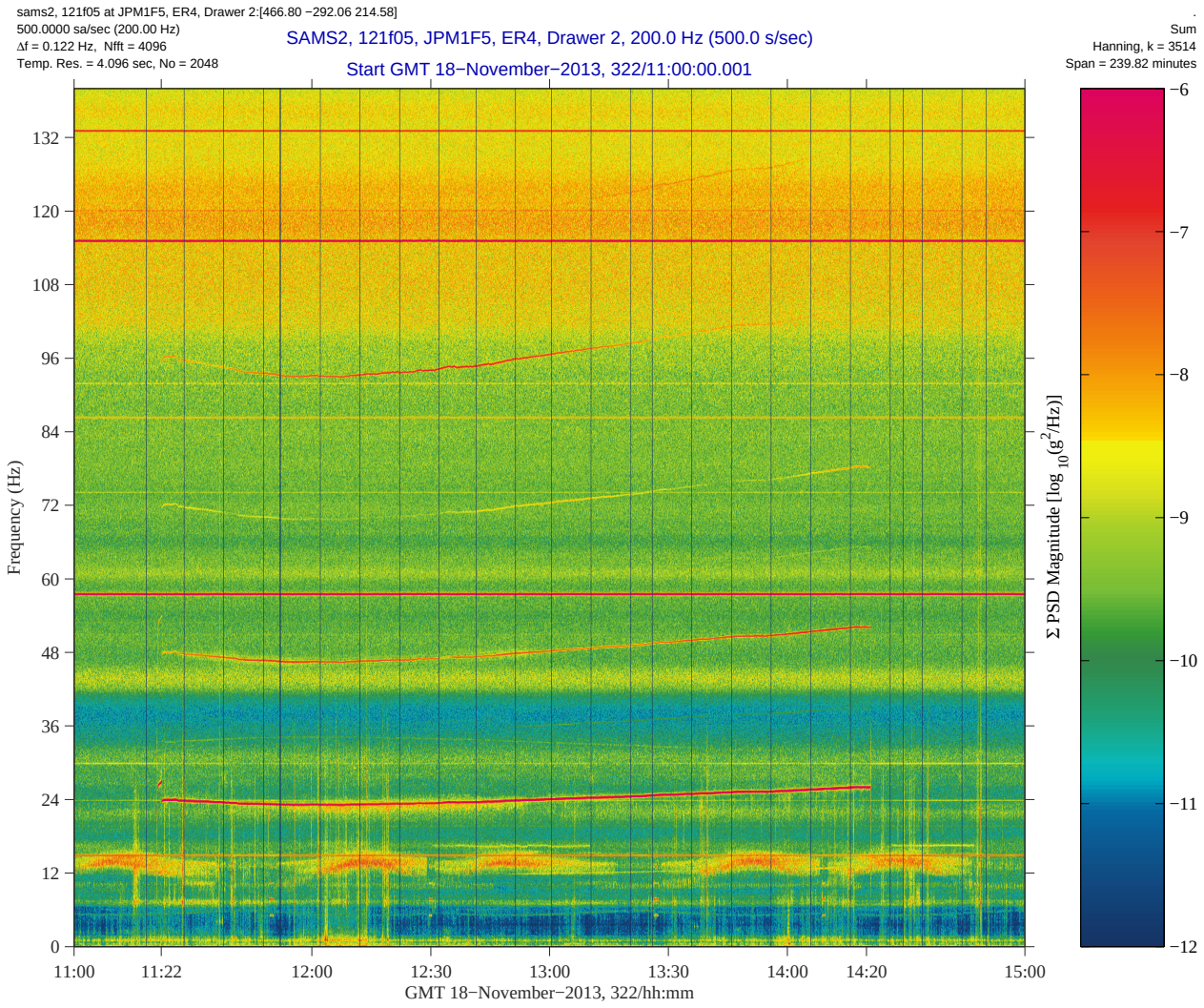
JEM Airlock Vacuum Pump Qualify



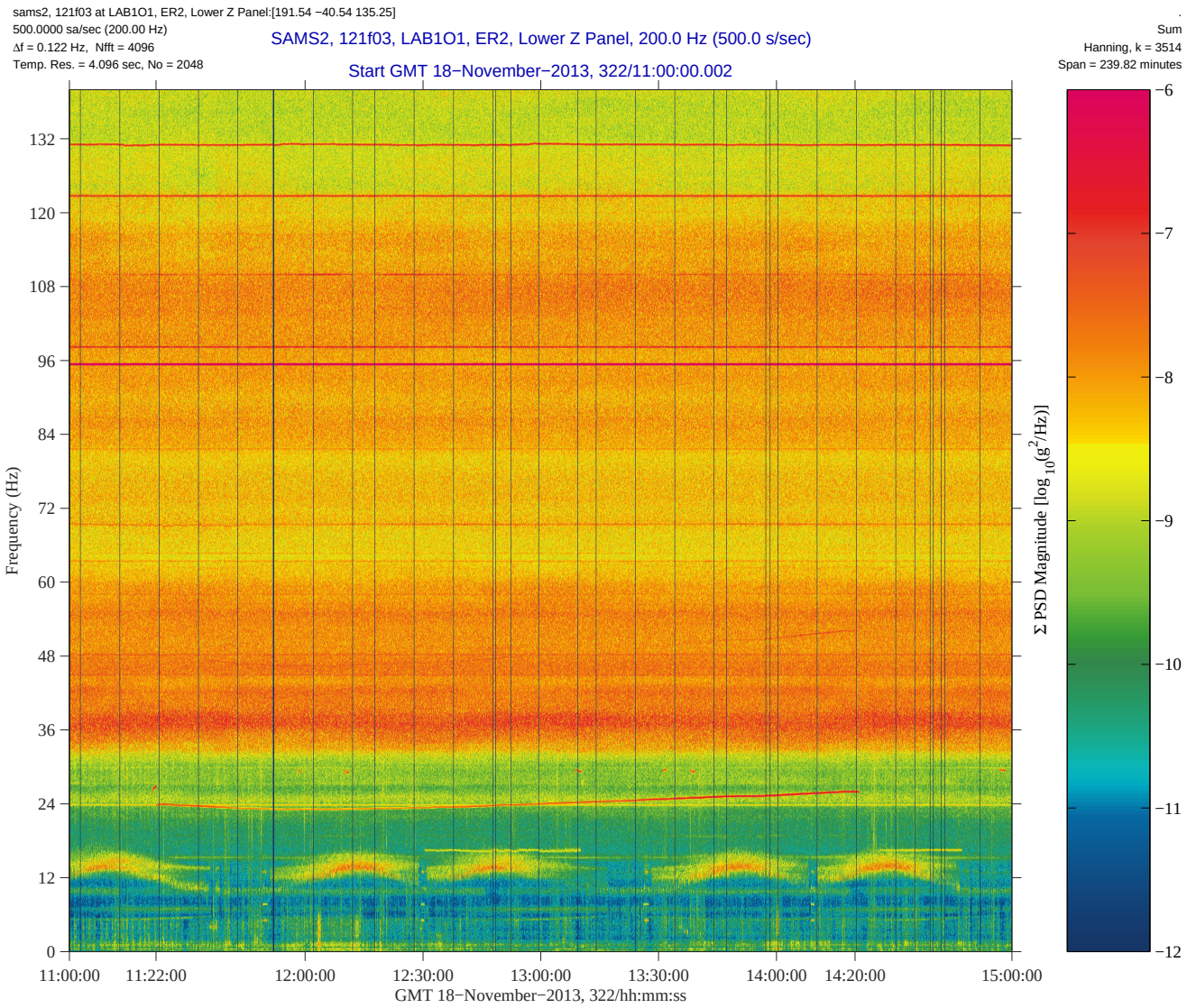
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	Spectrogram

Notes:

- This SAMS spectrogram clearly shows the JEM Airlock Vacuum Pump activity between about GMT 11:22 and 14:20.
- The signature for this activity seems to primarily be the spectral peaks around 24 Hz, with 2nd through 4th harmonics. These are seen as the horizontal red streaks at those frequencies starting at about GMT 11:22.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

JEM Airlock Vacuum Pump Qualify



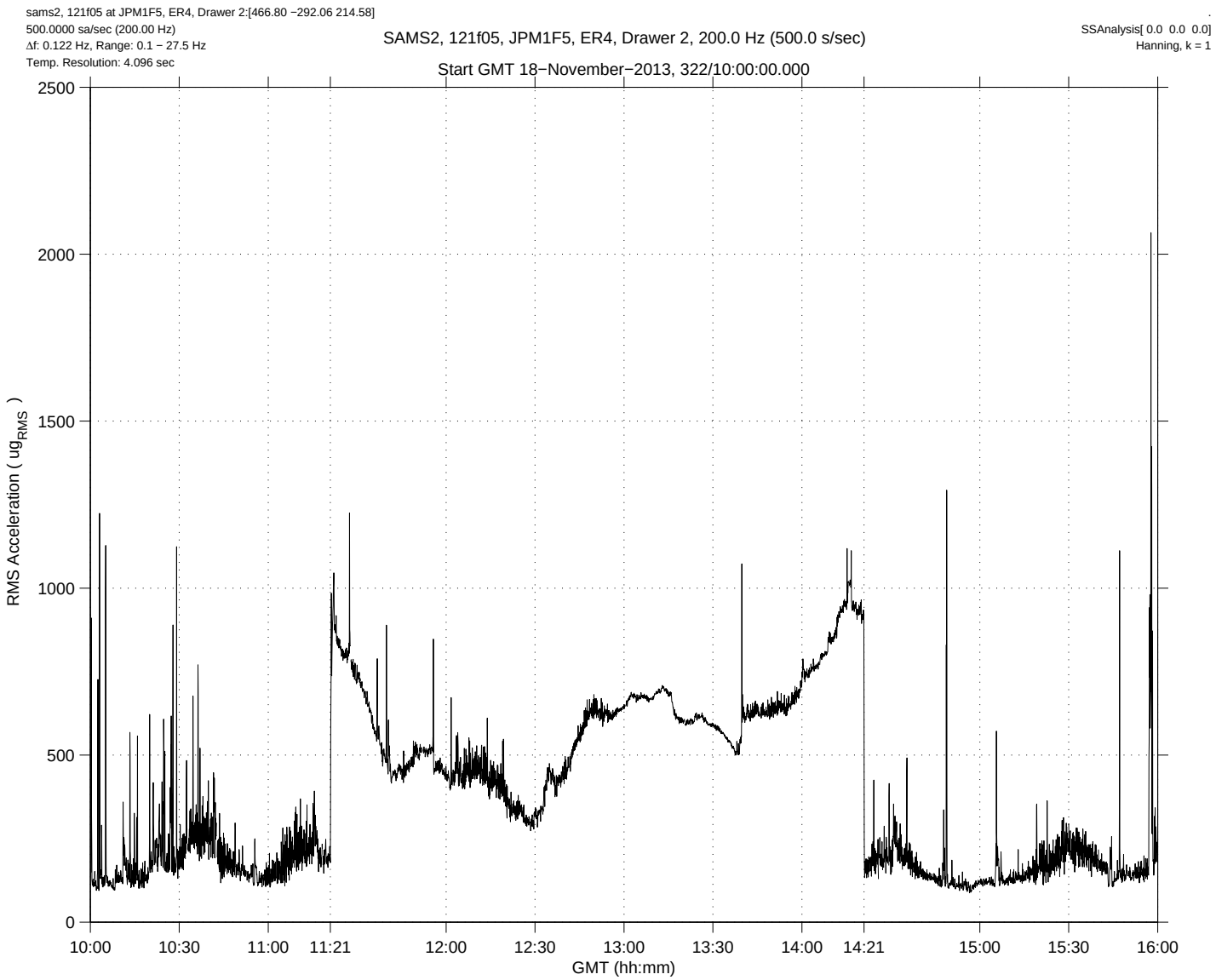
Description	
Sensor	SAMS 121f03 500.0 sa/sec, 200.0 Hz
Location	LAB1O1, ER2, Lower Z Panel
Plot Type	Spectrogram

Notes:

- This SAMS spectrogram again shows the JEM Airlock Vacuum Pump activity between about GMT 11:22 and 14:20.
- This SAMS sensor, however, was remotely located in the US Lab.
- The signature for this activity from measurements made in the US Lab appears to be the spectral peak of the fundemental frequency at around 24 Hz, seen starting at about GMT 11:22.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

JEM Airlock Vacuum Pump Quantify



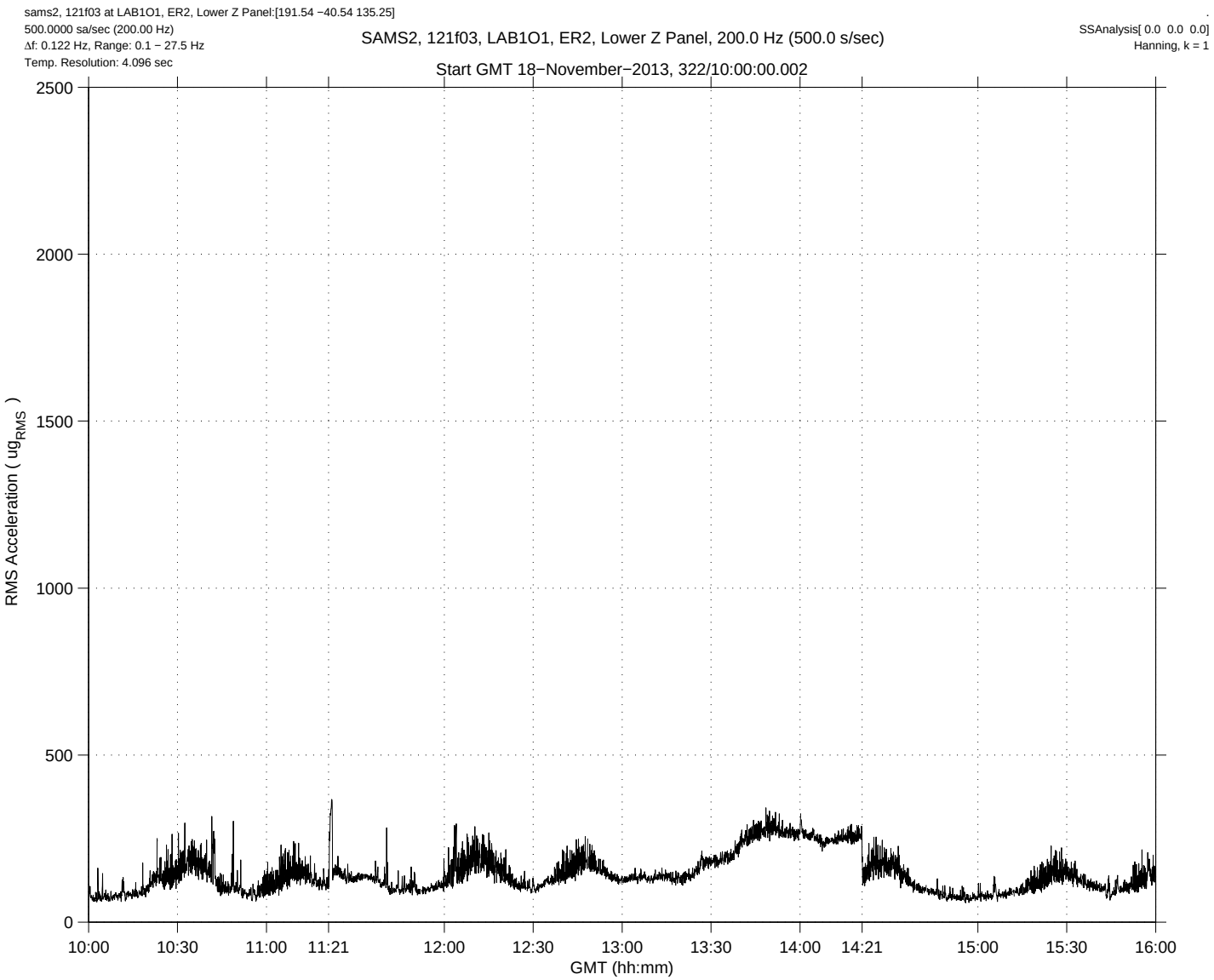
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	RMS vs. Time

Notes:

- In order to quantify this pump activity, we examine RMS values calculated from SAMS measurements in the JEM for the frequency range from 0.1 to 27.5 Hz.
- This plot shows the step up in RMS values during pump activity from about 11:21 to about 14:21.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

JEM Airlock Vacuum Pump Quantify



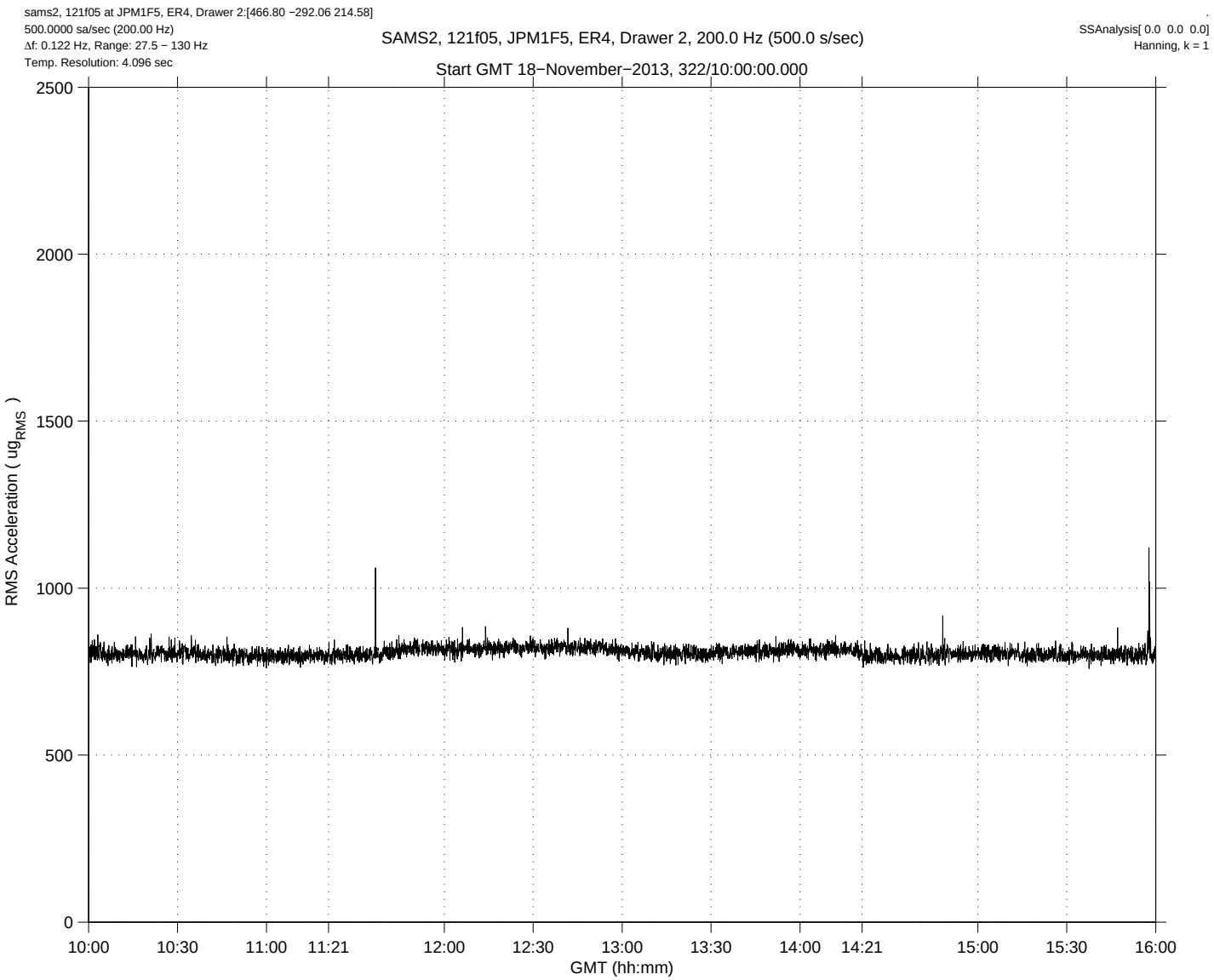
Description	
Sensor	SAMS 121f03 500.0 sa/sec, 200.0 Hz
Location	LAB1O1, ER2, Lower Z Panel
Plot Type	RMS vs. Time

Notes:

- In order to do a quantitative comparison of this pump activity, we now examine RMS values calculated from SAMS measurements in the US Lab for the frequency range from 0.1 to 27.5 Hz.
- This plot shows a noticeable step down in RMS values at the end of pump activity near about 14:21, but the start-up is a bit tougher to discern.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

JEM Airlock Vacuum Pump Quantify



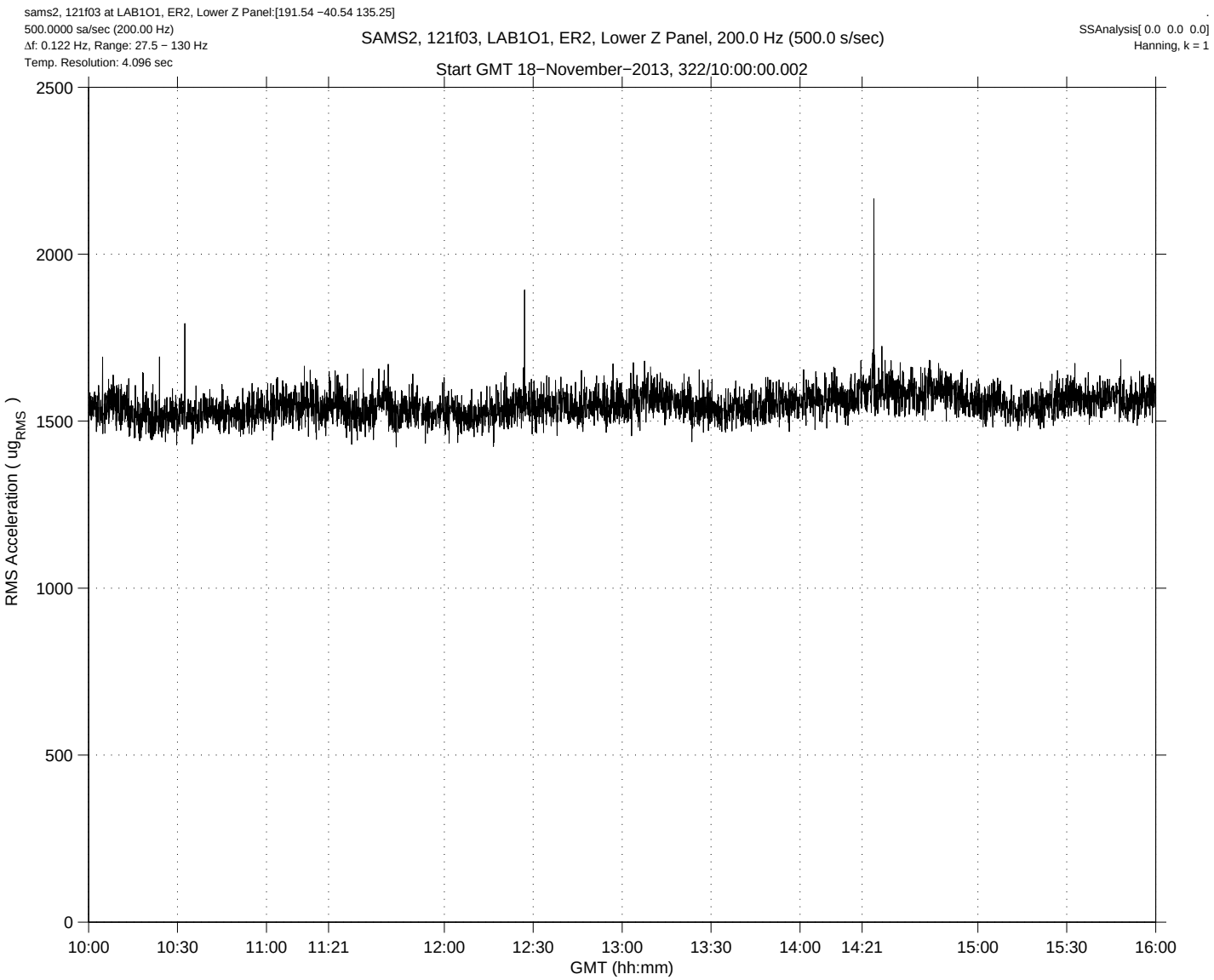
Description	
Sensor	SAMS 121f05 500.0 sa/sec, 200.0 Hz
Location	JPM1F5, ER4, Drawer 2
Plot Type	RMS vs. Time

Notes:

- In order to quantify this pump activity at higher frequencies (from 27.5 to 130 Hz), we examine RMS values calculated from SAMS measurements in the JEM again.
- This plot shows only a very slight elevation in RMS values during pump activity from about 11:21 to about 14:21.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

JEM Airlock Vacuum Pump Quantify



Description	
Sensor	SAMS 121f03 500.0 sa/sec, 200.0 Hz
Location	LAB1O1, ER2, Lower Z Panel
Plot Type	RMS vs. Time

Notes:

- To round out a quantitative comparison, this plot shows SAMS data from the US Lab that is analogous to the previous page's plot of SAMS data in the JEM.
- For this higher frequency range from 27.5 to 130 Hz, we do not see good correlation between vibrations and the pump activity start or stop times.

Regime:	Vibratory
Category:	Vehicle
Source:	JEM Airlock Vacuum Pump

A more in-depth comparison of RMS levels relative to JEM airlock pump activity times is shown in the table below. Note the most dramatic shift in RMS levels occurs for the fundamental pump frequency (near 24 Hz), which is in the range from 0.1 to 27.5 Hz.

FREQ. RANGE	ROW	LAB	SENSOR	MEAN ugRMS		
				BEFORE	DURING	AFTER
0.1 < f < 27.5 Hz	1	JEM	121f05	196	593	174
	2	COL	121f02	158	132	98
	3	USL	121f03	120	170	114
27.5 < f < 130 Hz	4	JEM	121f05	801	813	802
	5	COL	121f02	468	337	352
	6	USL	121f03	1532	1546	1571