

Appendix A 6/13/05

GLAT 1837
GLAT 1838
GLAT 1839

Accelerometer Sensitivities and Charge Amp Settings



GLAST LAT Project TEM/TPS Vibration Testing

Accelerometer Sensitivities and Charge Amp Settings

Accel. #	Ch. #	S/N	Model	Sensitivity [pC/g]	F.S. Range [g]	Tape Gain [mV]	Sensitivity [mV/g]
CZ1		13048	2271AM20	12.43	3	3000	1000
AZ1	6	AHK02	2226C	3.038	30	3000	100
AZ2	10	16139	2226C	3.027	30	3000	100
AZ3	3	16017	2226C	3.030	50	3000	100
AZ4	2	AHK09	2226C	3.006	30	3000	100
AZ5	5	30798	2222C	1.747	30	3000	100
AZ6	8	30443	2222C	1.595	100	3000	30
CX1		13048	2271AM20	12.43	3	3000	1000
AX1	5	30798	2222C	1.747	30	3000	100
AX2	10	16139	2226C	3.027	30	3000	100
AX3	2	AHK09	2226C	3.006	30	3000	100
AX4	3	EF52	2220D	2.575	30	3000	100
CY1		13048	2271AM20	12.43	3	3000	1000
AY1	5	30798	2222C	1.747	30	3000	100
AY2	10	16139	2226C	3.027	30	3000	100
AY3	2	AHK09		3.006	30	3000	100
AY4	3	EF52	2220D	2.575	30	3000	100

2.575

Appendix B – Test Log



GLAST LAT Project TEM/TPS Vibration Testing

Test Log

Date	Time	Unit #	Axis	Sine or Random	Level [g]/[grms]	Frequency [Hz]	File Name	Remarks
6/13	10:25	1839	X	SINE	0.15	5-2000	.15g 5-2000 Acceptance	X_030.rsn
	10:45	1839	X	Random	6.8grms	5-2000	6.8grms TEM/TPS Acceptance	X_019.rsn
	10:55	1839	X	SINE	0.15	5-2000		X_031.rsn
	11:15	1839	Y	SINE				Y_019.rsn Y_019.rsn
	11:25	1839	Y	Random				Y_012.rsn
	11:30	1839	Y	SINE				Y_020.rsn
	11:45	1837	X	SINE				X_032.rsn
	11:55	1837	X	Random				X_020.rsn
	12:05	1837	X	SINE				X_033.rsn
	12:25	1837	Y	SINE				Y_021.rsn
	12:30	1837	Y	Random				Y_013.rsn
	12:38	1837	Y	SINE				Y_022.rsn
	12:55	1838	X	SINE				X_034.rsn
	1:05	1838	X	Random				X_021.rsn
	1:10	1838	X	SINE				X_035.rsn
	1:30	1838	Y	SINE				Y_023.rsn
	1:40	1838	Y	Random				Y_014.rsn
	1:50	1838	Y	SINE				Y_024.rsn
	2:50	1838	Z	SINE				Z_018.rsn
	3:05	1838	Z	Random				Z_024.rsn
	3:15	1838	Z	SINE				Z_019.rsn
	3:40	1837	Z	SINE				Z_020.rsn
	3:50	1837	Z	Random				Z_025.rsn
	3:59	1837	Z	SINE				Z_021.rsn
	4:20	1839	Z	SINE				Z_022.rsn
	4:30	1839	Z	Random				Z_026.rsn
	4:45	1839	Z	SINE				Z_023.rsn

Appendix C – Procedure Variation



GLAST LAT Project TEM/TPS Vibration Testing Installation Steps and Procedure Variations

Date	Axis	Test Setup	Installation Step Description	RE/QA Approval
6/13	N/A		Incoming Visual inspection (e.g. ensure taped gaps are still sealed)	
6/13	Z		Torque vibration fixture bolts to shaker to 25 ft-lbf (300 in-lbf)	
6/13	Z		Torque TEM/TPS to vibration fixture to 167 in-lbf	
6/13	Z		Confirm accelerometer installation	
6/13	X		Torque vibration fixture bolts to shaker to 25 ft-lbf	
6/13	X		Torque TEM/TPS to vibration fixture to 167 in-lbf	
6/13	X		Confirm accelerometer installation	
6/13	Y		Torque vibration fixture bolts to shaker to 25 ft-lbf	
6/13	Y		Torque TEM/TPS to vibration fixture to 167 in-lbf	
6/13	Y		Confirm accelerometer installation	
Date	Axis	Test Setup	Test Variation Description	RE/QA Approval

Appendix D – Test Data Package Checklist



GLAST LAT Project TEM/TPS Vibration Testing

Qualification/Acceptance Test Data Package Checklist (Items supplied by Wyle Labs at end of test)

Item	✓	Description / Location
1	DS	Calibrated Equipment List
2	DS	Vibration Test plots (Pre- and Post test signature overlays and random vibration test data for Z, X, and Y axes)
3	DS	Electronic Data in UFF or equivalent format, if available
4	DS	Photographs of test setup
5	DS	Procedure data sheets (Appendices A, B, and C)
6	DS	Visual Inspection Report
7	DS	Test Control System Software Setup Sheets



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STANFORD LINEAR ACCELERATOR CENTER
2575 SAND HILL ROAD
MENLO PARK, CALIFORNIA 94025

SHIPPING MEMORANDUM

NUMBER
122230

DATE
6/24/05

VIA
U.S. MAIL

ATTN: DAVID TARKINGTON

SHIP FROM
~~XXXXXXXXXXXX~~
~~XXXXXXXXXXXX~~
~~XXXXXXXXXXXX~~
5452 BETSY ROSS DRIVE
SANTA CLARA, CA 95054
408/764-5500

CUSTOMER ORDER NO. SLAC0000056030 JOB NUMBER 49995.52036 PARTIAL COMPLETE OUR P.O. NO.

ITEM NO.	QUANTITY	DESCRIPTION
1	1 SET	<p>ORIGINAL TEST DATA ON AS FOLLOWS:</p> <p>3 EACH TEM & TPS (SEE INITIAL VISUAL)</p> <p>POST RANDOM AND SINE VIBRATION TESTING PER CUSTOMER INSTRUCTION</p>

CERTIFICATE OF CONFORMANCE

This is to certify that test data and/or certifications proving conformance to purchase order number N/A are on file and available for examination at WYLE LABORATORIES, under Job number N/A

Quality Assurance Signature

SHIPMENT AUTHORIZED BY:

RECEIVED BY
Mail

DATE
6/24/05

NAME
T. KLAWITTER

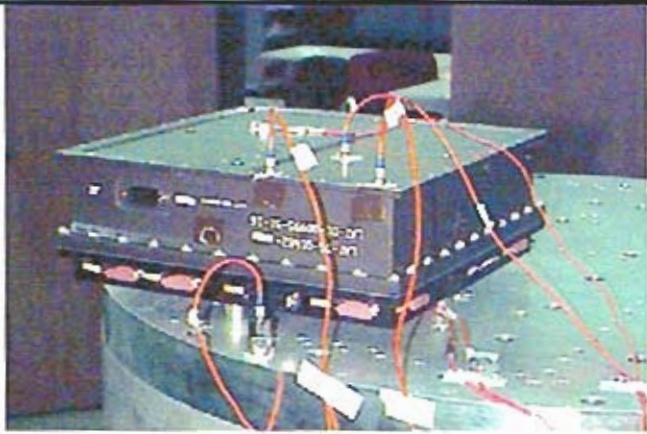


TEST DATA

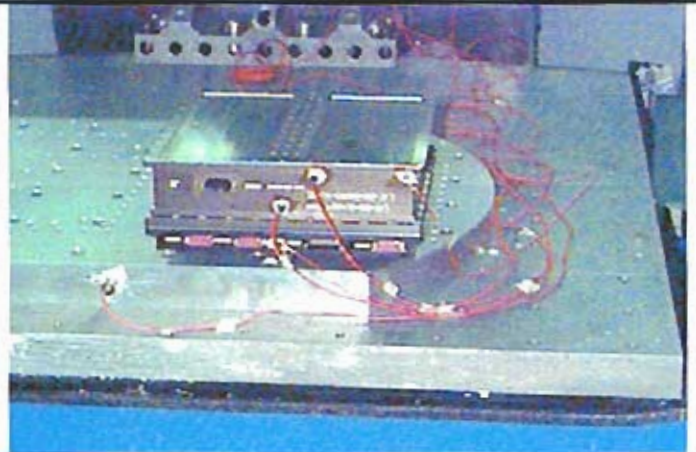
DATE STARTED 06-13-05		CUSTOMER Stanford Linear Accelerator			TECHNICIAN (SIGNATURE) <i>D. Wiltshire</i>
DATE COMPLETED 06-13-05		SPECIMEN DESCRIPTION TEM & TPS			ENGINEER (SIGNATURE) <i>S. Chesney</i>
TEMPERATURE 73°F		TYPE OF TEST VISUAL EXAMINATION - Initial			ENGINEER <i>S. Chesney</i>
HUMIDITY 38% R.H.		MANUFACTURER Stanford Linear Accelerator			JOB NUMBER 49995.52036
SPECIMEN NUMBER 1 - 3		TEST SPECIFICATION SOP 6-08, REV. L			
SPECIMEN NUMBER	SERIAL NUMBER	PART OR MODEL NUMBER	LOT NUMBER	DATE CODE	REMARKS
1	GLAT1839	-	-	-	
2	GLAT1837	-	-	-	
3	GLAT1838	-	-	-	
					Note: No discrepancies noted.

TEST DATA

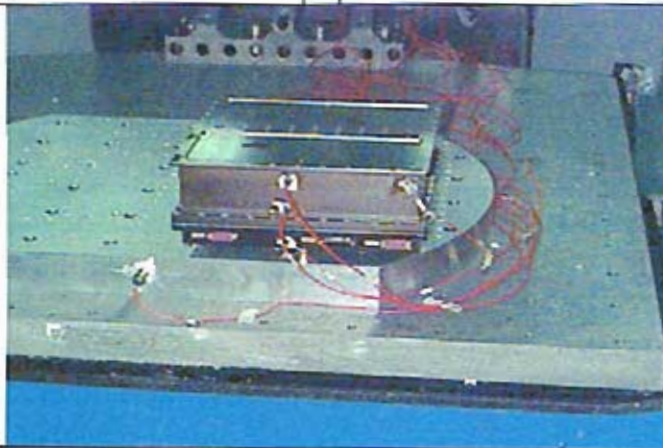
DATE STARTED 06-13-05	CUSTOMER Stanford Linear Accelerator	TECHNICIAN (SIGNATURE) <i>D. Wiltshire</i> WSC T-21
DATE COMPLETED 06-13-05	SPECIMEN DESCRIPTION TEM & TPS { See Initial Visual }	ENGINEER (SIGNATURE) <i>S. McChesney</i> WSC C-02
TEMPERATURE 73°F	TYPE OF TEST SET-UP - Detail	ENGINEER <i>S. McChesney</i>
HUMIDITY 38% R.H.	MANUFACTURER Stanford Linear Accelerator	JOB NUMBER 49995.52036
SPECIMEN NUMBER 1 - 3	TEST SPECIFICATION See Vibration Data	



Z - Axis



X - Axis



Y - Axis



TEST DATA

DATE STARTED 06-13-05		CUSTOMER Stanford Linear Accelerator			TECHNICIAN (SIGNATURE) <i>A. Wittahine</i> [Stamp]	
DATE COMPLETED 06-13-05		SPECIMEN DESCRIPTION TEM / TPS { See Initial Visual }			ENGINEER (SIGNATURE) <i>Shane Cheney</i> [Stamp]	
TEMPERATURE 73°F		TYPE OF TEST VIBRATION - Sine and Random - Non-Op.			ENGINEER <i>Shane Cheney</i> [Stamp]	
HUMIDITY 38% R.H.		MANUFACTURER Stanford Linear Accelerator			JOB NUMBER 49995.52036	
SPECIMEN NUMBER 1 - 3		TEST SPECIFICATION SLAC LAT-TD-05649 & Customer Instruction				
SPECIMEN NUMBER	DATE	AXIS	TIME START	TIME STOP	VIBRATION FREQUENCIES AND LEVELS	REMARKS
-	06-13-05	X	0947	+0:04:18	Sine - Search 20 - 2000Hz @ 0.15g 2 octaves / minute 1 sweep up / axis Random - Accept 20Hz @ 0.01 G ² /Hz 80 - 500Hz @ 0.04 G ² /Hz 2000Hz @ 0.01 G ² /Hz 6.79 Grms overall 1 minute / axis	Sine Search; Fixture Only
-		X	1001	+0:01:01		Random Accept.; Fixture Only
1		X	1036	+0:04:18		Sine Search
		X	1048	+0:01:00		Random Accept.
		X	1055	+0:04:18		Sine Search
		Y	1115	+0:04:18		Sine Search
		Y	1126	+0:01:00		Random Accept.
1		Y	1131	+0:04:18		Sine Search
2		X	1149	+0:04:18		Sine Search
		X	1159	+0:01:00		Random Accept.
		X	1204	+0:04:18		Sine Search
		Y	1224	+0:04:18		Sine Search
		Y	1233	+0:01:00		Random Accept.
2	06-13-05	Y	1239	+0:04:18		Sine Search



TEST DATA

DATE STARTED 06-13-05		CUSTOMER Stanford Linear Accelerator			TECHNICIAN (SIGNATURE) <i>D. Wiltshire</i> WSC T-21	
DATE COMPLETED 06-13-05		SPECIMEN DESCRIPTION TEM / TPS { See Initial Visual }			ENGINEER (SIGNATURE) <i>Shane Atkinson</i> WSC Q-02	
TEMPERATURE 73°F		TYPE OF TEST VIBRATION - Sine and Random - Non-Op.			ENGINEER <i>Shane Atkinson</i>	
HUMIDITY 38% R.H.		MANUFACTURER Stanford Linear Accelerator			JOB NUMBER 49995.52036	
SPECIMEN NUMBER 1 - 3		TEST SPECIFICATION SLAC LAT-TD-05649 & Customer Instruction				
SPECIMEN NUMBER	DATE	AXIS	TIME START	TIME STOP	VIBRATION FREQUENCIES AND LEVELS	REMARKS
3	06-13-05	X	1258	+0:04:18	Sine - Search 20 - 2000Hz @ 0.15g 2 octaves / minute 1 sweep up / axis Random - Accept. 20Hz @ 0.01 G ² /Hz 80 - 500Hz @ 0.04 G ² /Hz 2000Hz @ 0.01 G ² /Hz 6.79 Grms overall 1 minute / axis	Sine Search
		X	1308	+0:01:01		Random Accept.
		X	1314	+0:04:18		Sine Search
		Y	1332	+0:04:18		Sine Search
		Y	1344	+0:01:00		Random Accept.
		Y	1349	+0:04:18		Sine Search
		Z	1457	+0:04:18		Sine Search
		Z	1510	+0:01:01		Random Accept.
3		Z	1518	+0:04:18		Sine Search
2		Z	1539	+0:04:18		Sine Search
		Z	1551	+0:01:01	Random Accept.	
2		Z	1557	+0:04:18	Sine Search	
1		Z	1622	+0:04:18	Sine Search	
1	06-13-05	Z	1633	+0:01:01	Random Accept.	



TEST DATA

DATE STARTED 06-13-05	CUSTOMER Stanford Linear Accelerator	TECHNICIAN (SIGNATURE) <i>D. Wiltshire</i> WSC [E-21]
DATE COMPLETED 06-13-05	SPECIMEN DESCRIPTION TEM / TPS { See Initial Visual }	ENGINEER (SIGNATURE) <i>Sime Cheney</i> WSC [Q-02]
TEMPERATURE 73°F	TYPE OF TEST VIBRATION - Sine and Random - Non-Op.	ENGINEER <i>Sime Cheney</i>
HUMIDITY 38% R.H.	MANUFACTURER Stanford Linear Accelerator	JOB NUMBER 49995.52036
SPECIMEN NUMBER 1 - 3	TEST SPECIFICATION SLAC LAT-TD-05649 & Customer Instruction	

SPECIMEN NUMBER	DATE	AXIS	TIME START	TIME STOP	VIBRATION FREQUENCIES AND LEVELS	REMARKS
1	06-13-05	Z	1643	+0:04:18	Sine - Search 20 - 2000Hz @ 0.15g 2 octaves / minute 1 sweep up / axis Random - Accept. 20Hz @ 0.01 G ² /Hz 80 - 500Hz @ 0.04 G ² /Hz 2000Hz @ 0.01 G ² /Hz 6.79 Grms overall 1 minute / axis	Sine Search Note: No external physical damage noted due to this test.

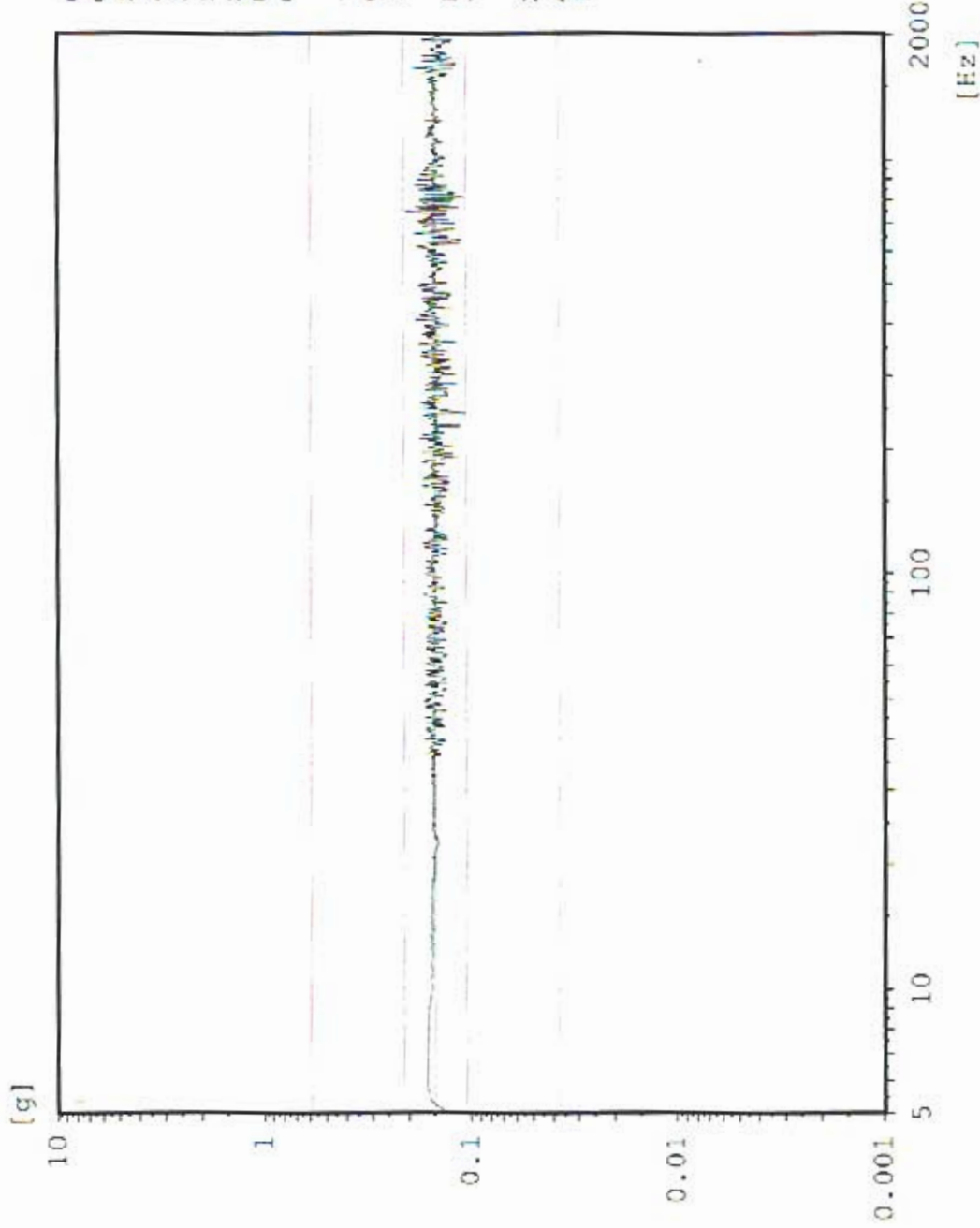
Sine CX1 X-Axis Control

Sine

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

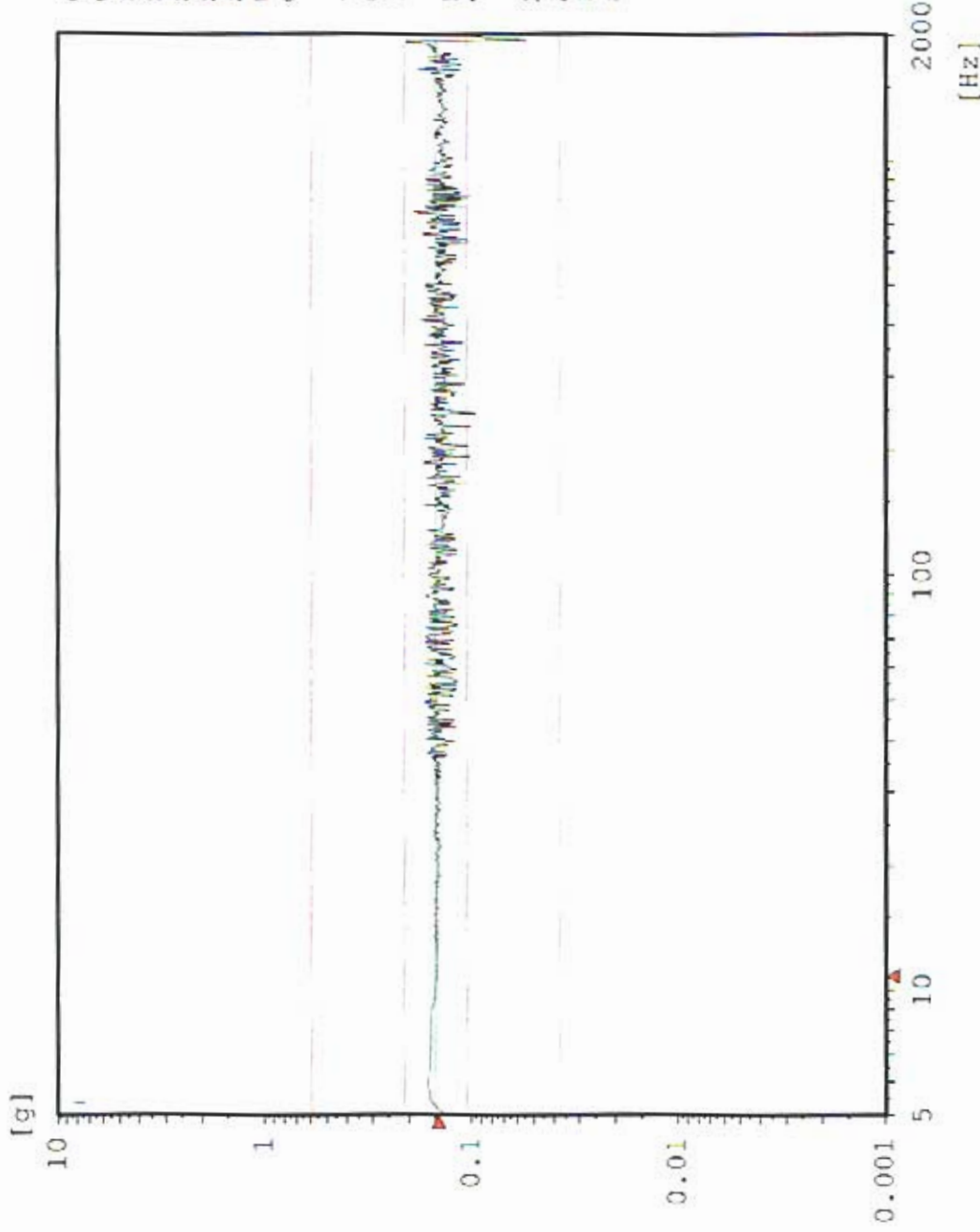
Date: 06-13-05
Time: 09:52:10

X - axis Pre Random
Acceptance Unit
Fixture Only

GLAT 1839

AX4 TPS top edge

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 3
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 00:04:18
 remaining: 00:06:00

Date: 06-13-05
 Time: 09:52:10

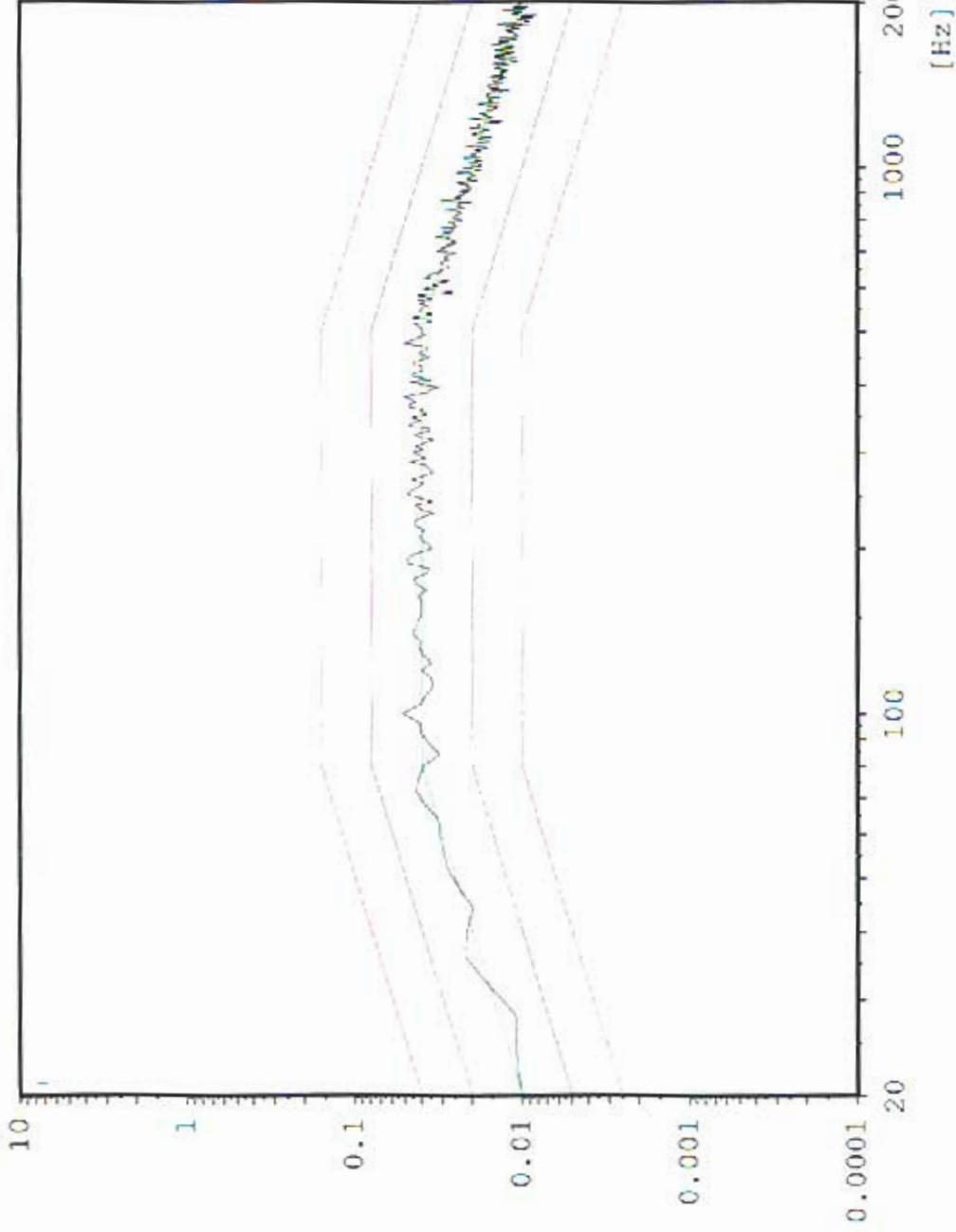
X - axis Pre Random
 Acceptance Unit
 Fixture Only
 accel.mounted next to Control

Random CX1 X-Axis Control

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 1
Chan.type: C
DOF: 126
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 6.856 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 10:02:21

X - Axis
Acceptance Unit:
Fixture Only

AX3 TPS Top Edge

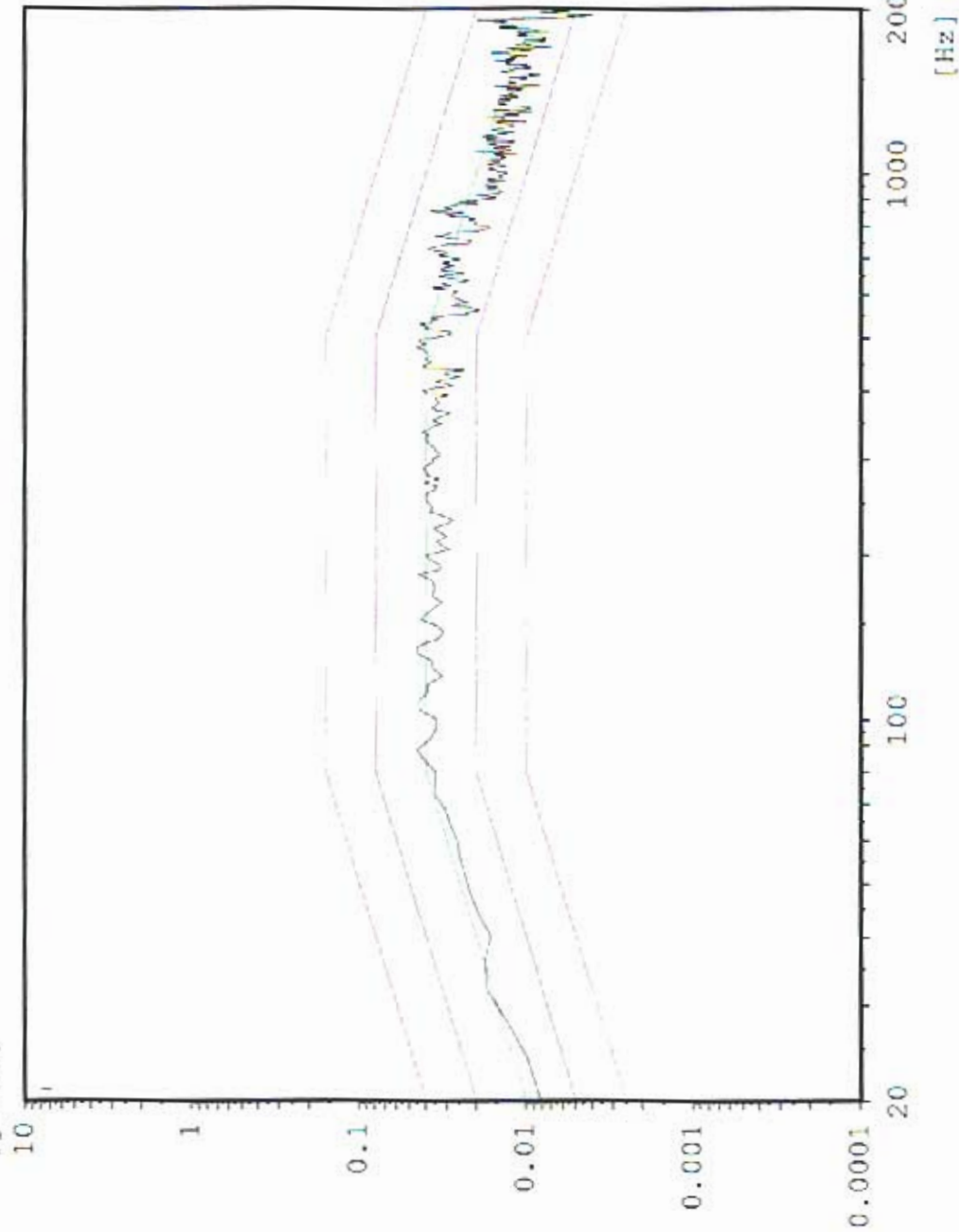
Random

Stanford Linear Accelerator

J/N 49995.52036

TEM & TPS

[g²/Hz]



Chan.no: 3 M
Chan.type: 100
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 6.44 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:06:-1

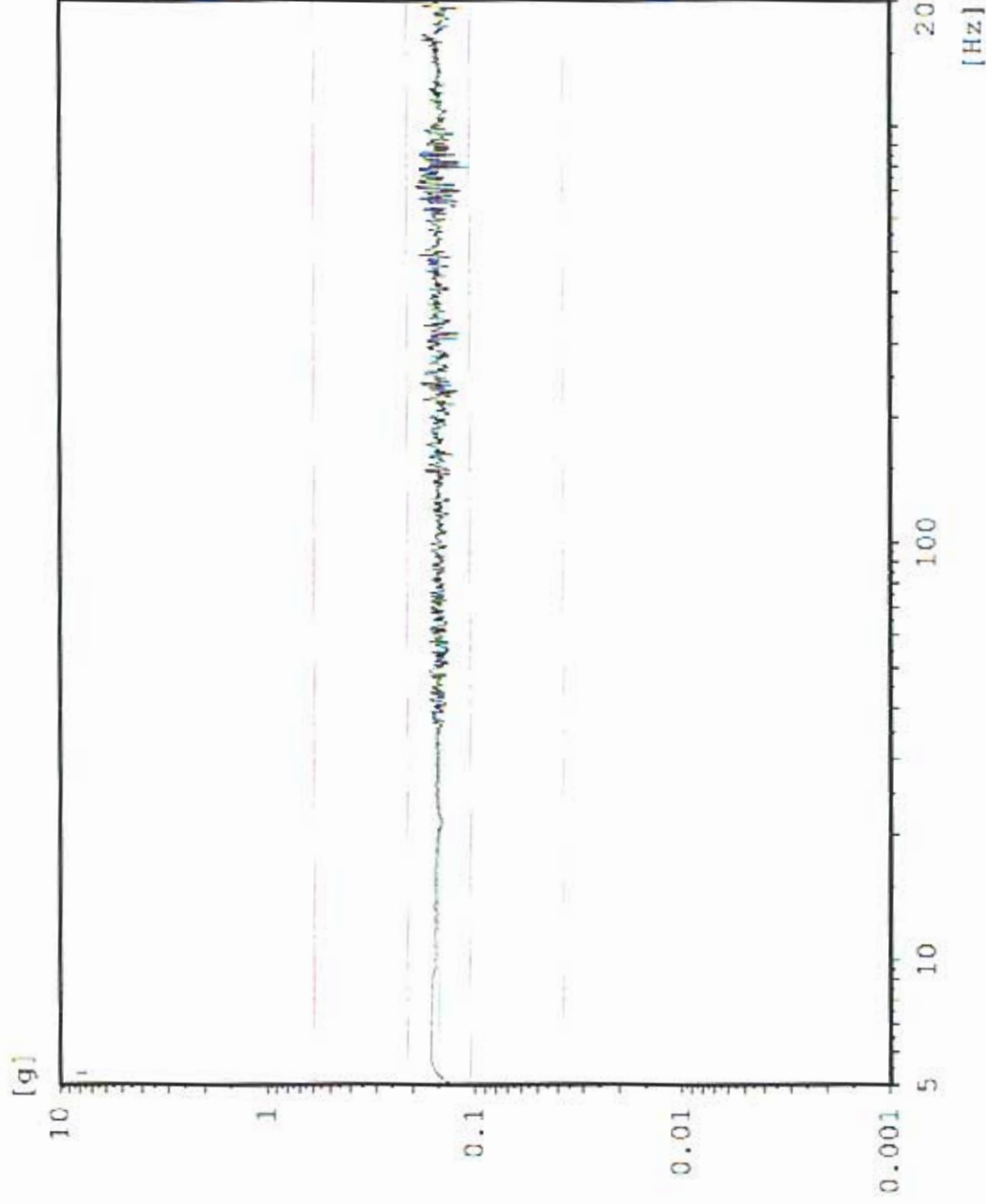
-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 10:02:21

X - Axis
Acceptance Unit
Fixture Only
accel.mounted next to Contro

Sine CX1 X-Axis Control

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

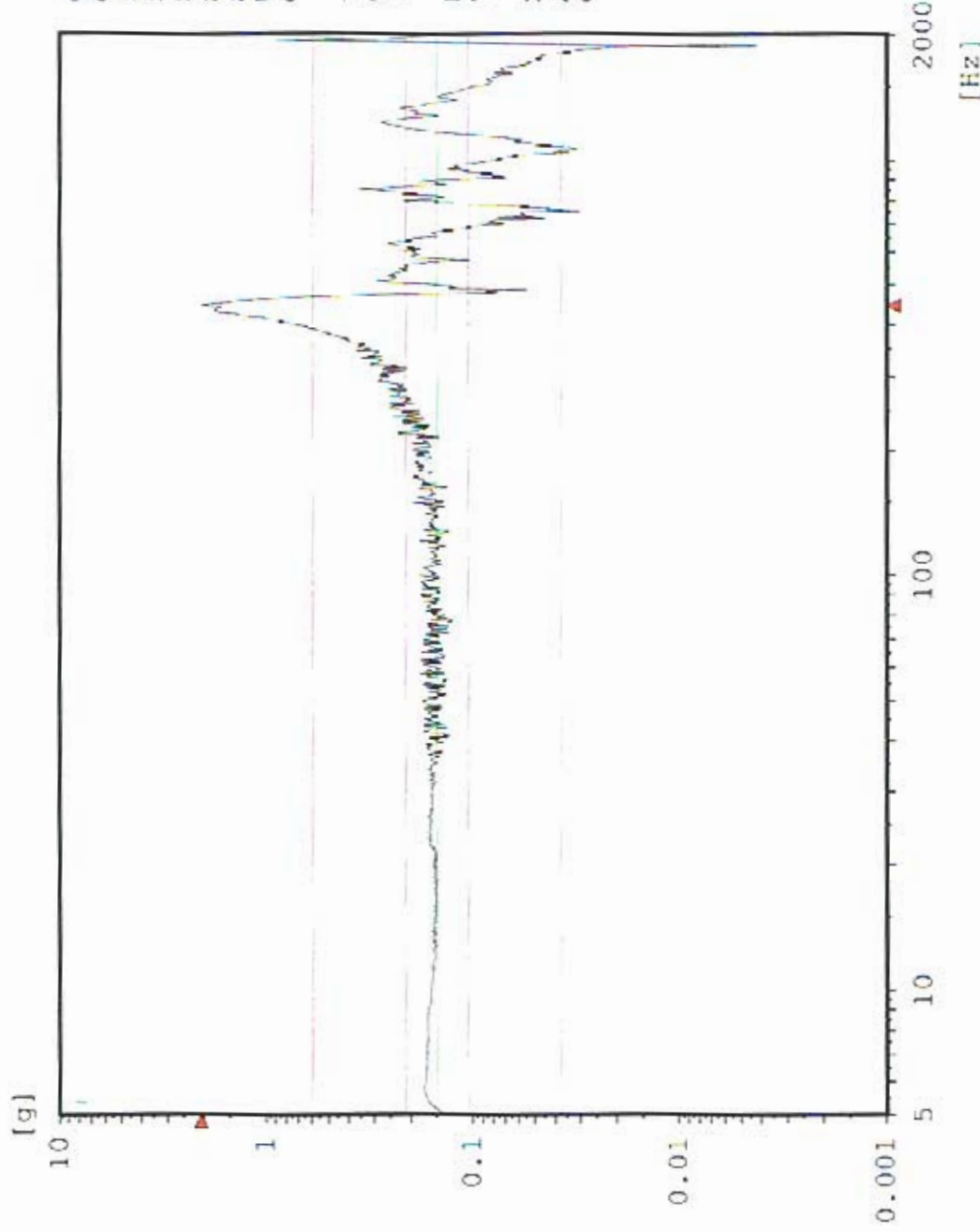
-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 10:40:19

X - axis Pre Random
Acceptance Unit
GLAT 1839

Sine AX3 TPS top center

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 2
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

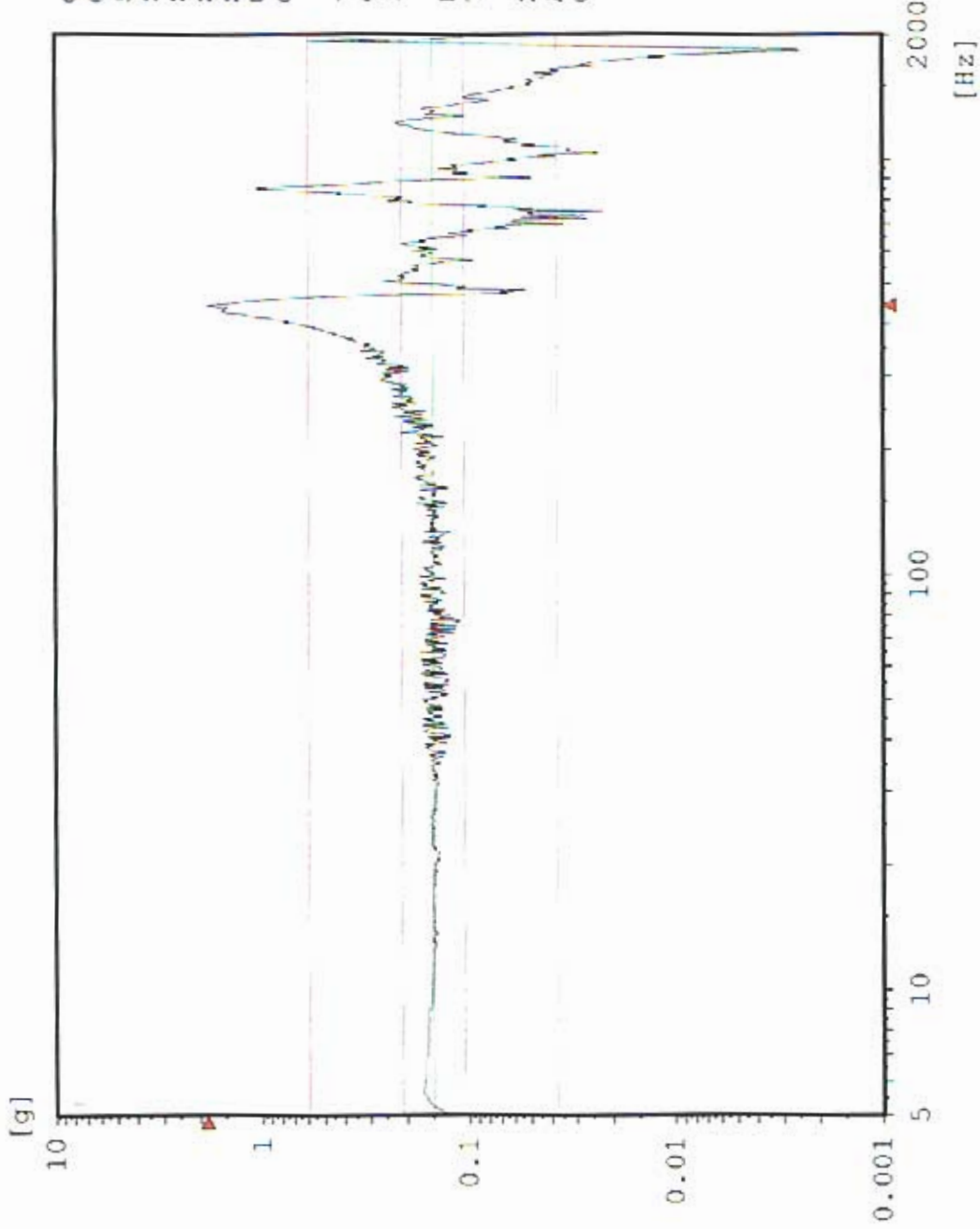
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 10:40:18

X - axis Pre Random
 Acceptance Unit
 GLAT 1829

Sine AX4 TPS top edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 3
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

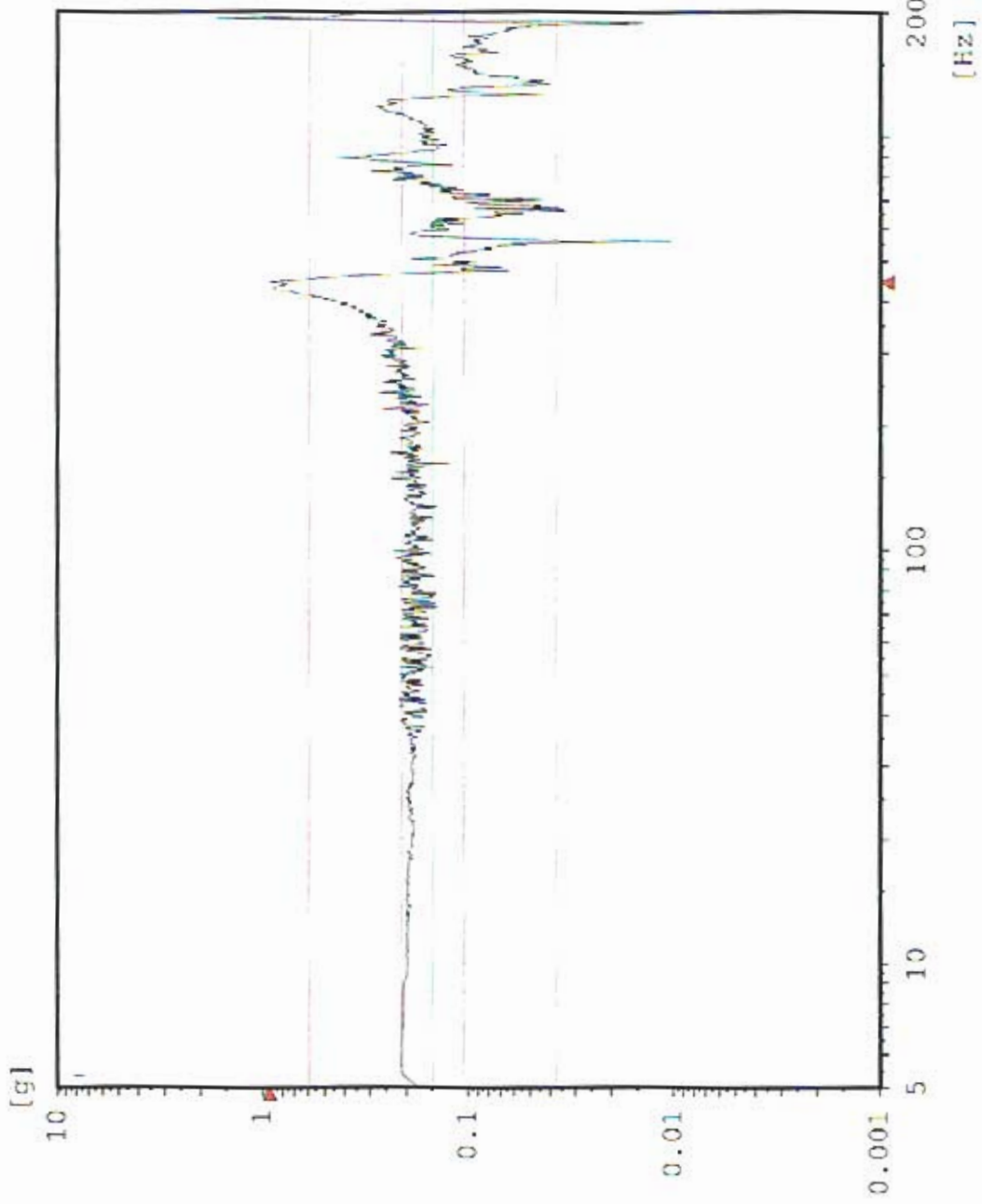
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:06:00

Date: 06-13-05
 Time: 10:40:18

X - axis Pre Random
 Acceptance Unit
 GLAT 1839

Sine AX1 TEM center edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 5
 Chan.type: K Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

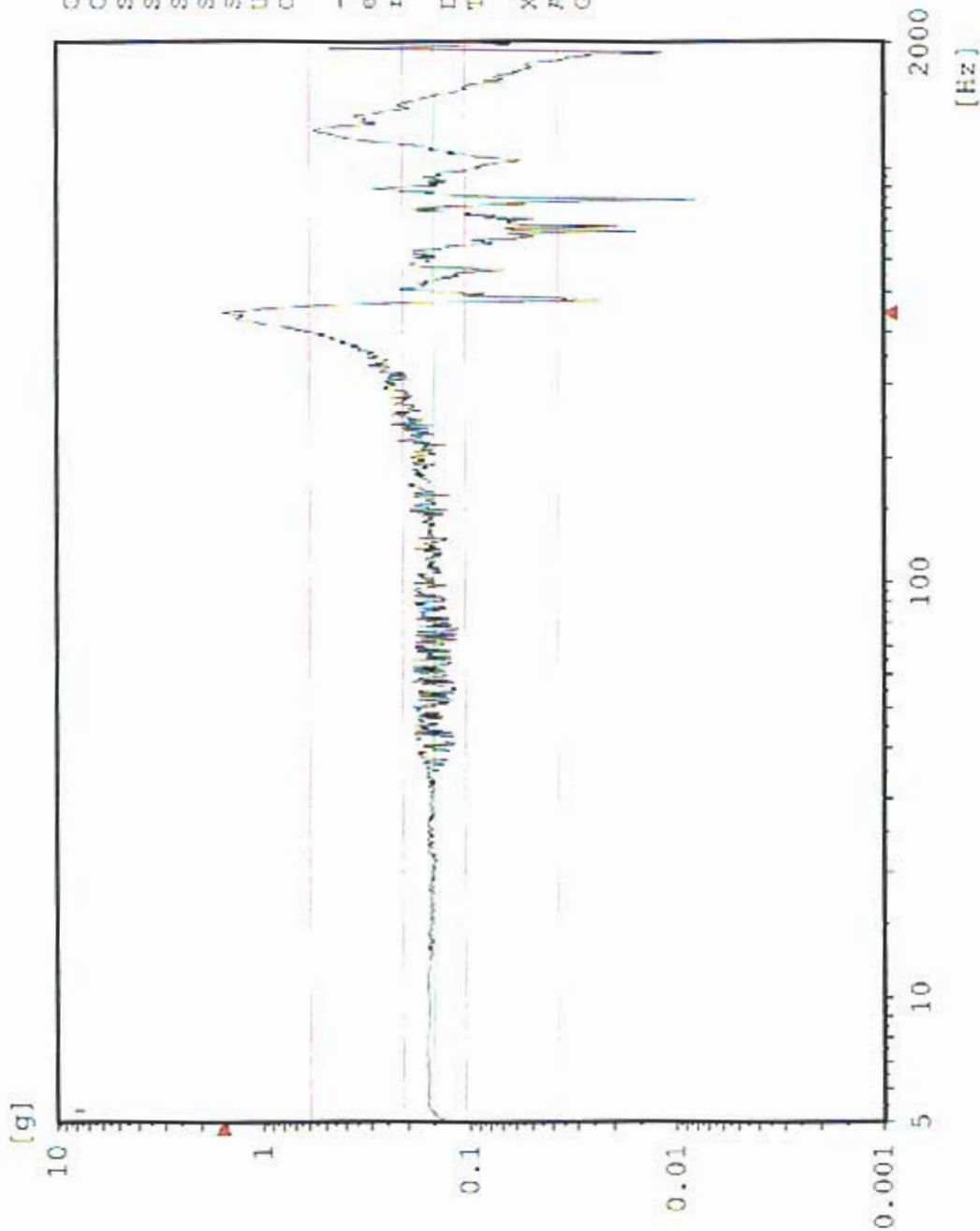
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 10:40:18

X - axis Pre Random
 Acceptance Unit
 GLAT 1839

Sine AX2 TPS CG

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 10
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 10:40:18

X - axis Pre Random
 Acceptance Unit
 GLAT 1839

Random

CX1 X-Axis Control

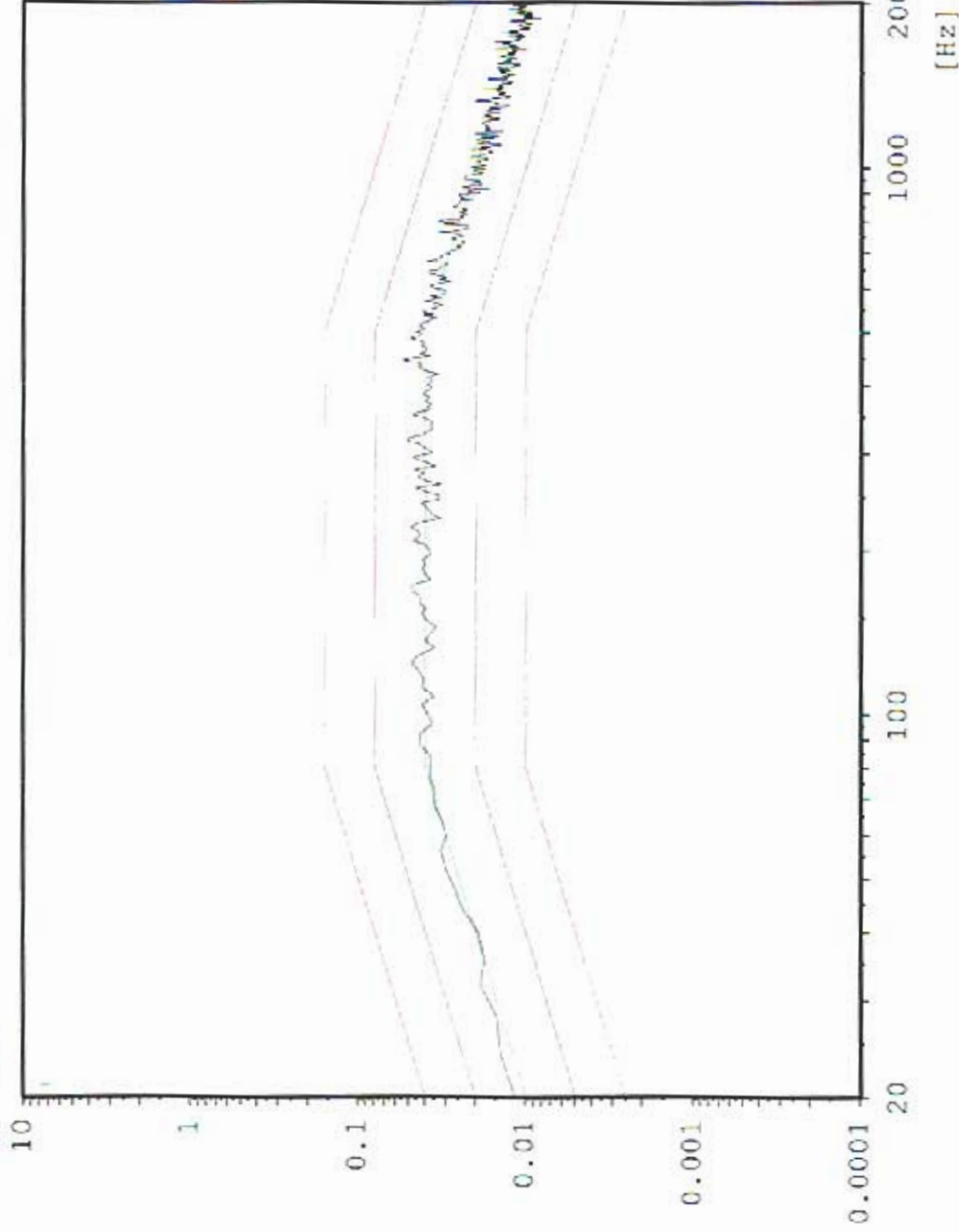
Stanford Linear Accelerator

J/N 49995.52036

TEM & TPS



[g²/Hz]



Chan.no: 1
Chan.type: C
DOF: 126
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 6.825 g
RMS (req.): 6.787 g
Contr.strat.: closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 10:49:45

X - Axis
Acceptance Unit
GLAT 1839

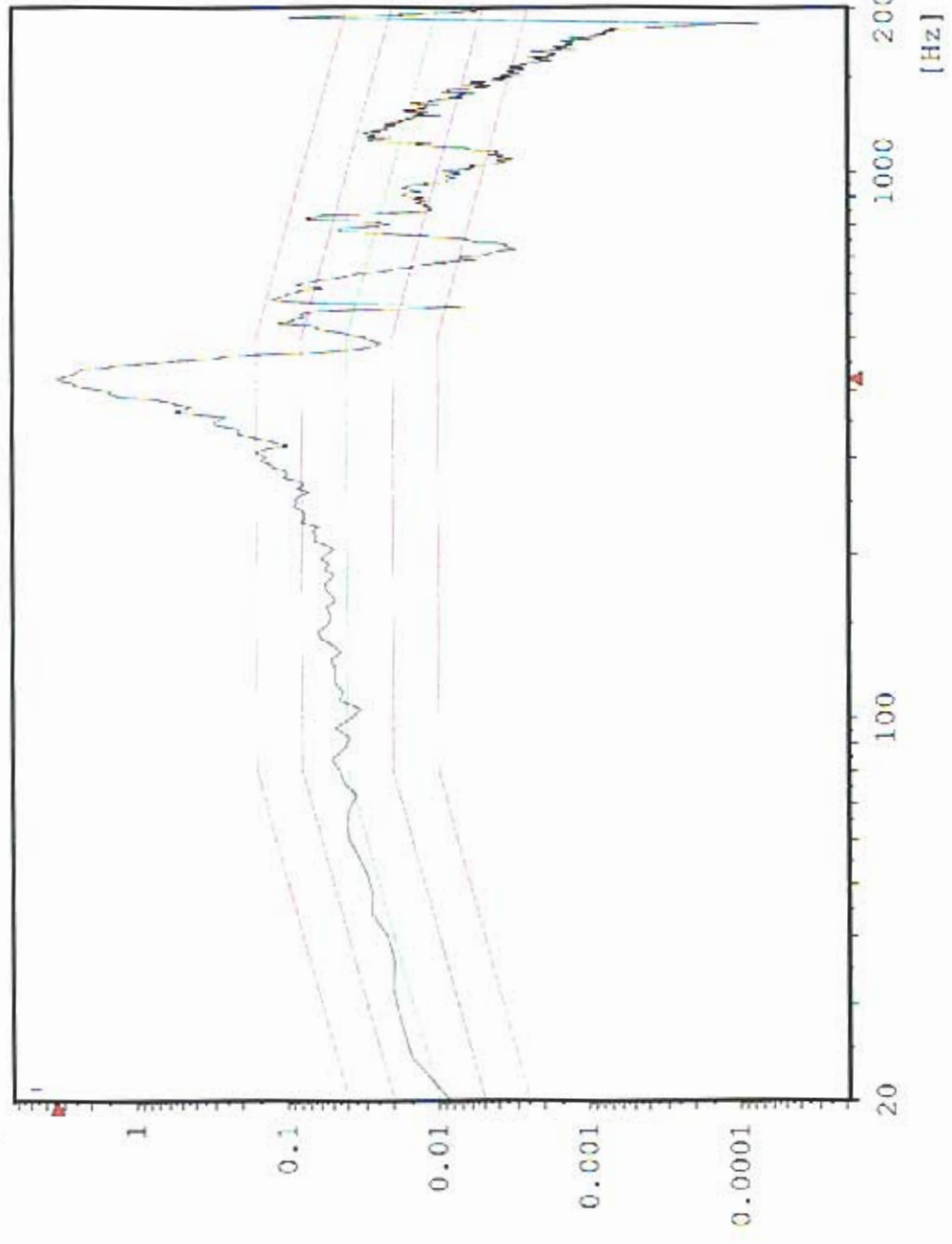
Max: 420 Hz 3.364 g²/Hz

Random AX4 TPS Top Center

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 2
Chan.type: M
DOF: 100
Level: 0.9 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 14.42 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 10:49:45

X - Axis
Acceptance Unit
GLAT 1839

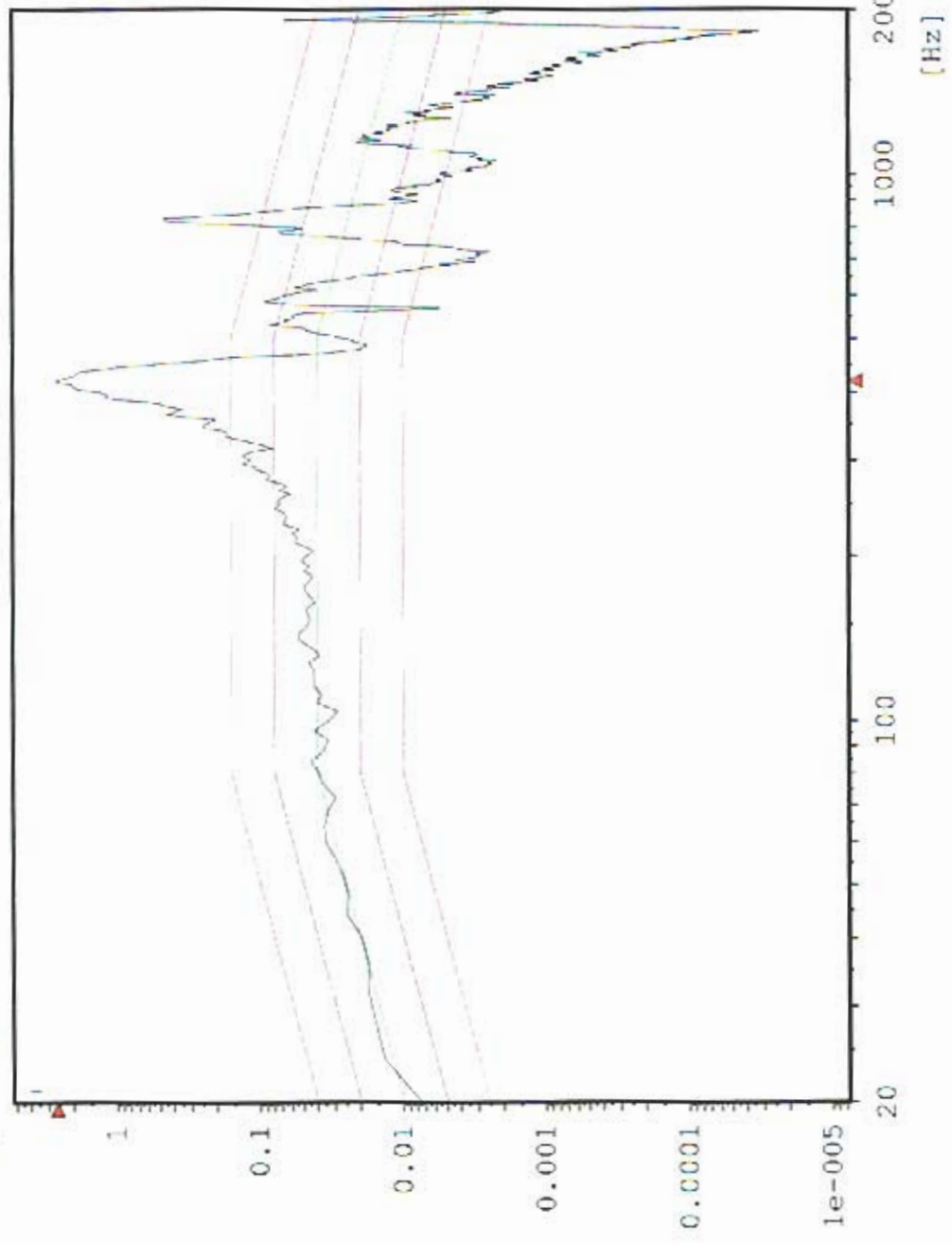
Max: 420 Hz 2.636 g²/Hz

Random AX3 TPS Top Edge

Random
Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 3
 Chan.type: M
 DOF: 100
 Level: 0.0 dB
 Resolution: 4 Hz
 Unit: g²/Hz
 RMS (act.): 13.31 g
 RMS (req.): 6.787 g
 Contr.strat.: Closed loop

-- Time on act. level --
 elapsed: 000:01:00
 remaining: 000:00:00

-- Time total --
 elapsed: 000:02:53
 remaining: 000:00:00

Date: 06-13-05
 Time: 10:49:45

X - Axis
 Acceptance Unit
 GLAT 1839

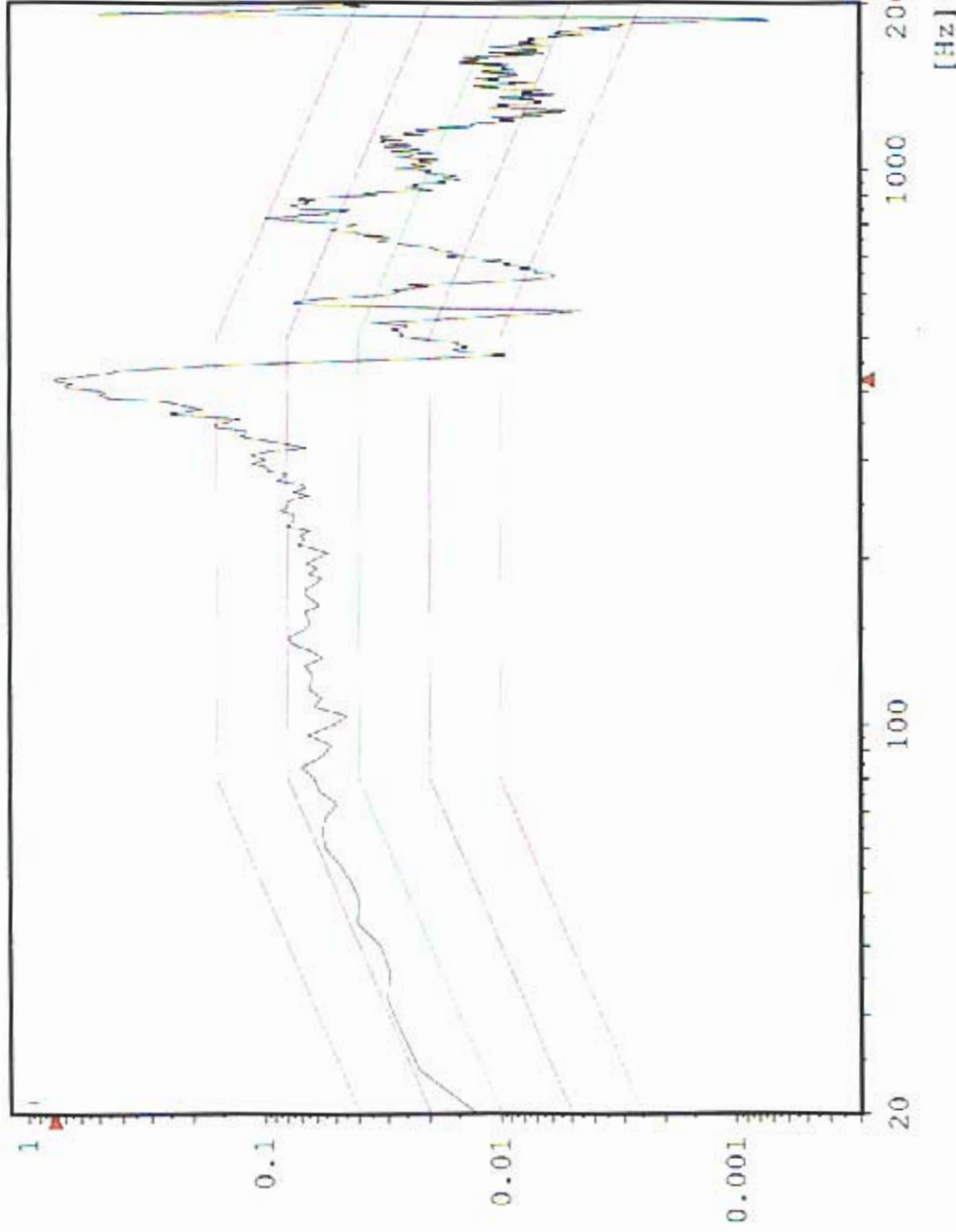
Max: 420 Hz 0.776 g²/Hz

Random CH# 5 TEM center edge

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 5
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 10.13 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 10:49:45

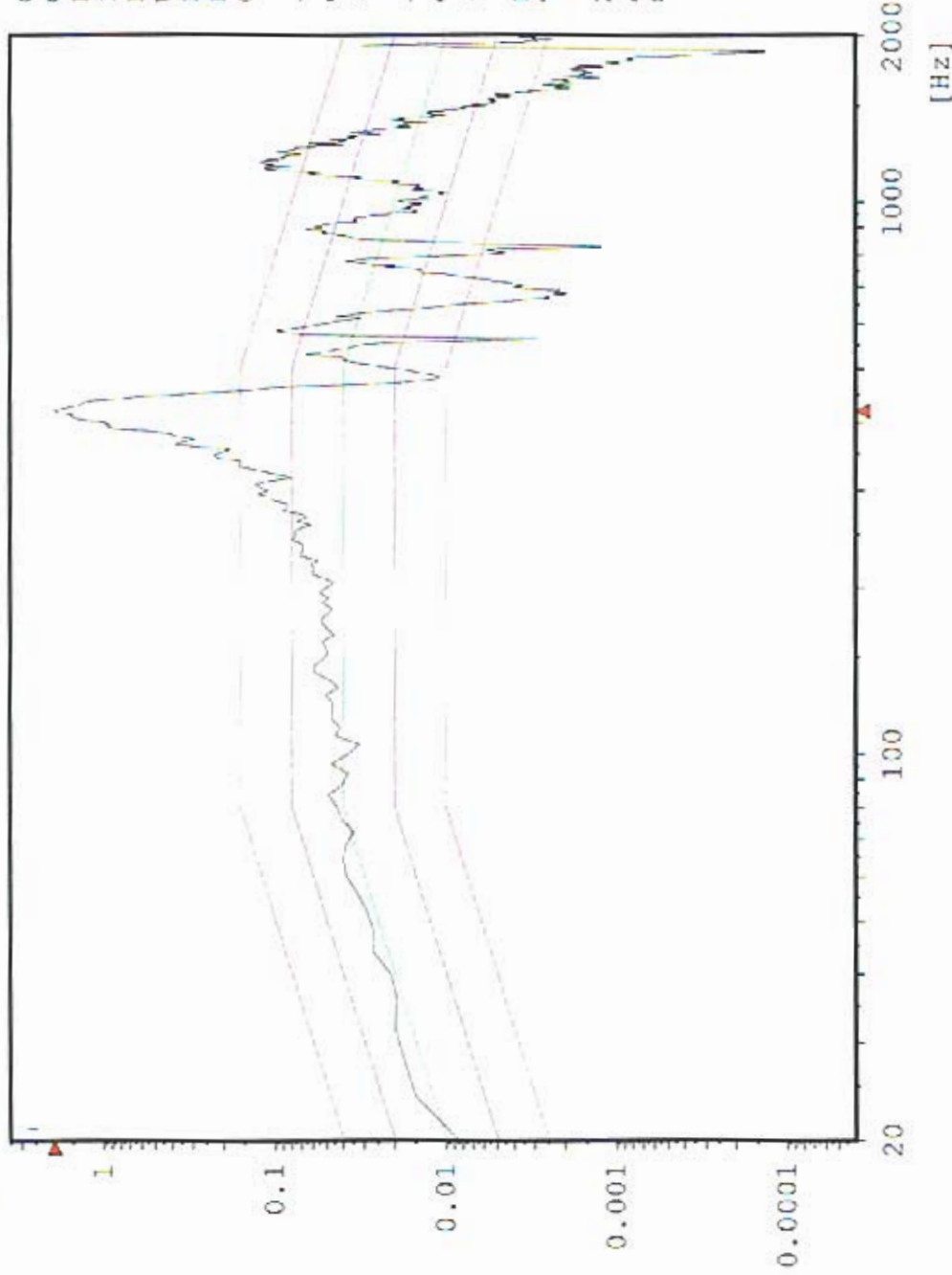
X - Axis
Acceptance Unit
GLAT 1839

Max: 420 Hz 1.947 g²/Hz

Random AX2 TPS Bottom center

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS

[g²/Hz]



Chan.no: 10
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 12.24 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 10:49:45

X - Axis
Acceptance Unit
GLAT 1839

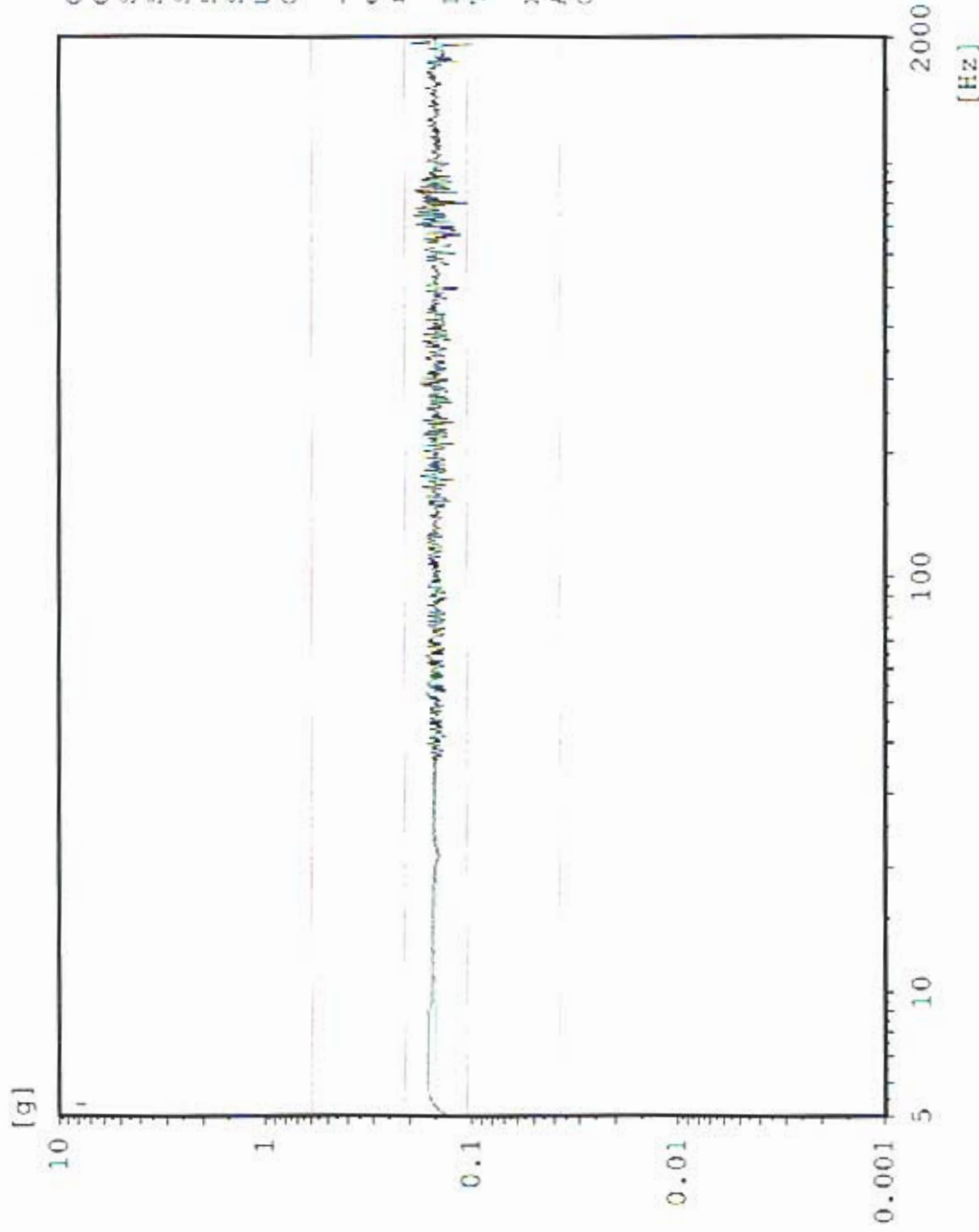
CX1 X-Axis Control

Sine

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

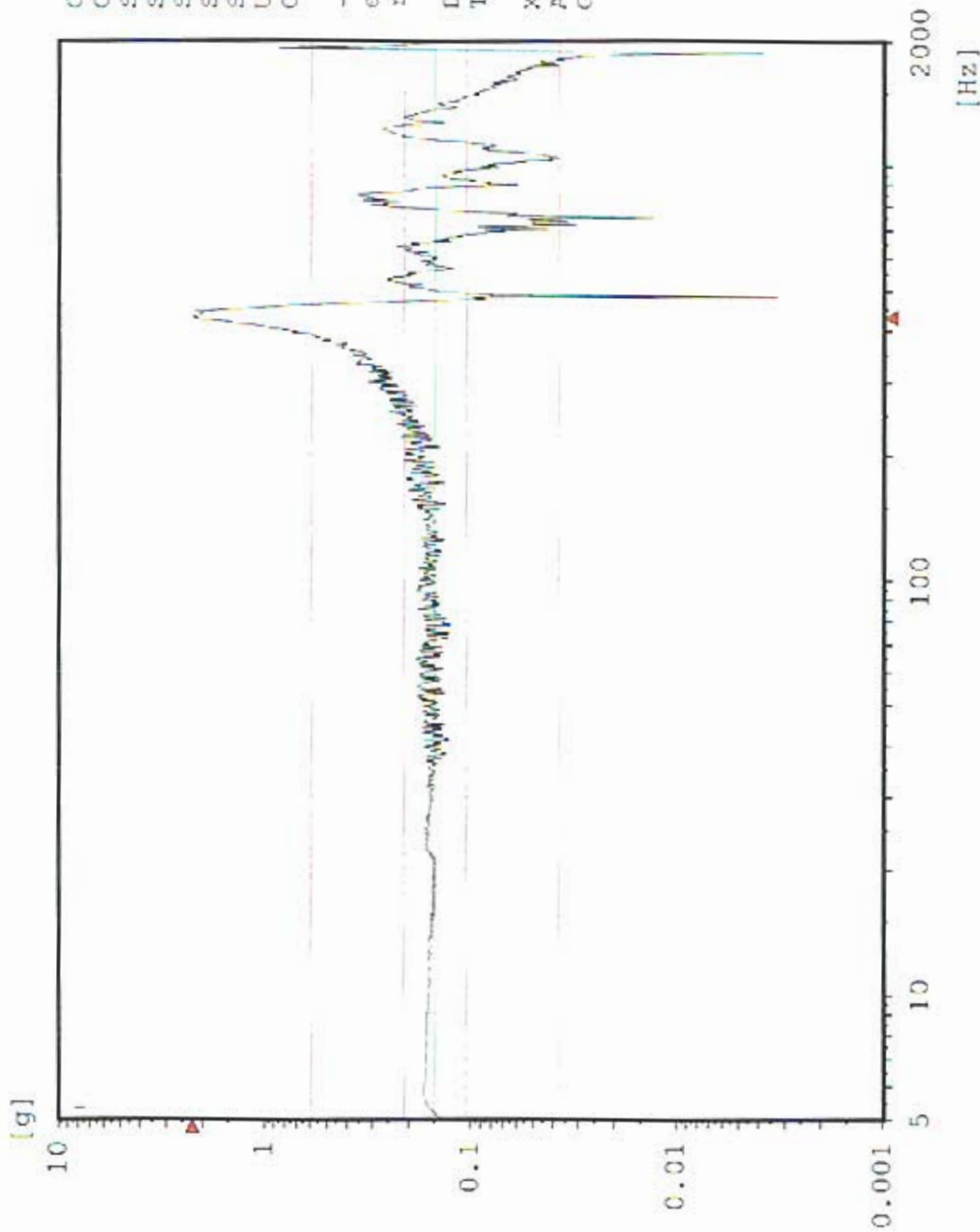
-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 11:00:10

X - axis Post Random
Acceptance Unit
GJAT 1839

Sine AX3 TPS top center

Stanford Linear Accelerator
J/N 4995.52036
TEM / TPS



Chan.no: 2
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:00:10

X - axis Post Random
 Acceptance Unit
 GLAT 1839

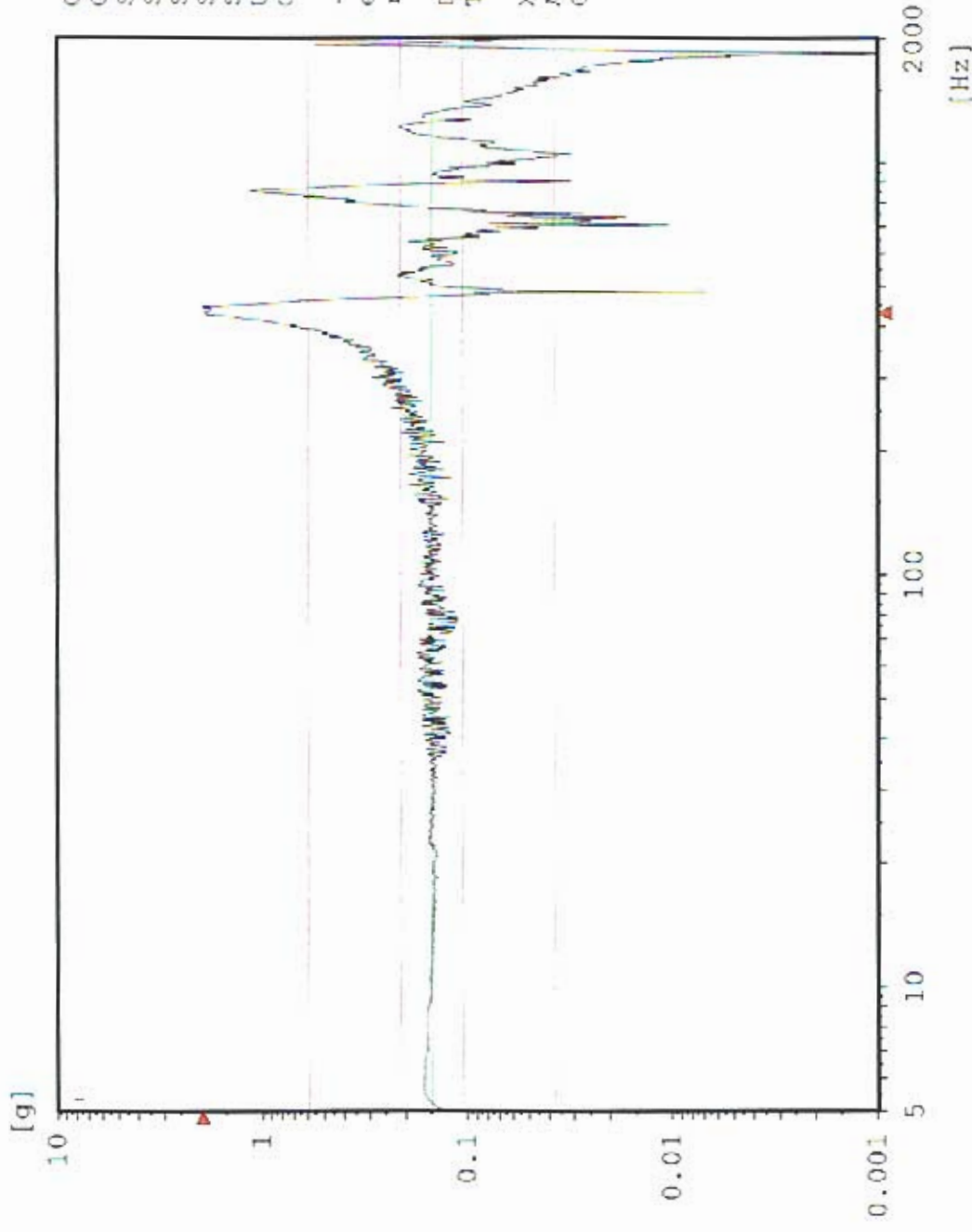
AX4 TPS top edge

Sine

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 3
 Chan.type: X Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

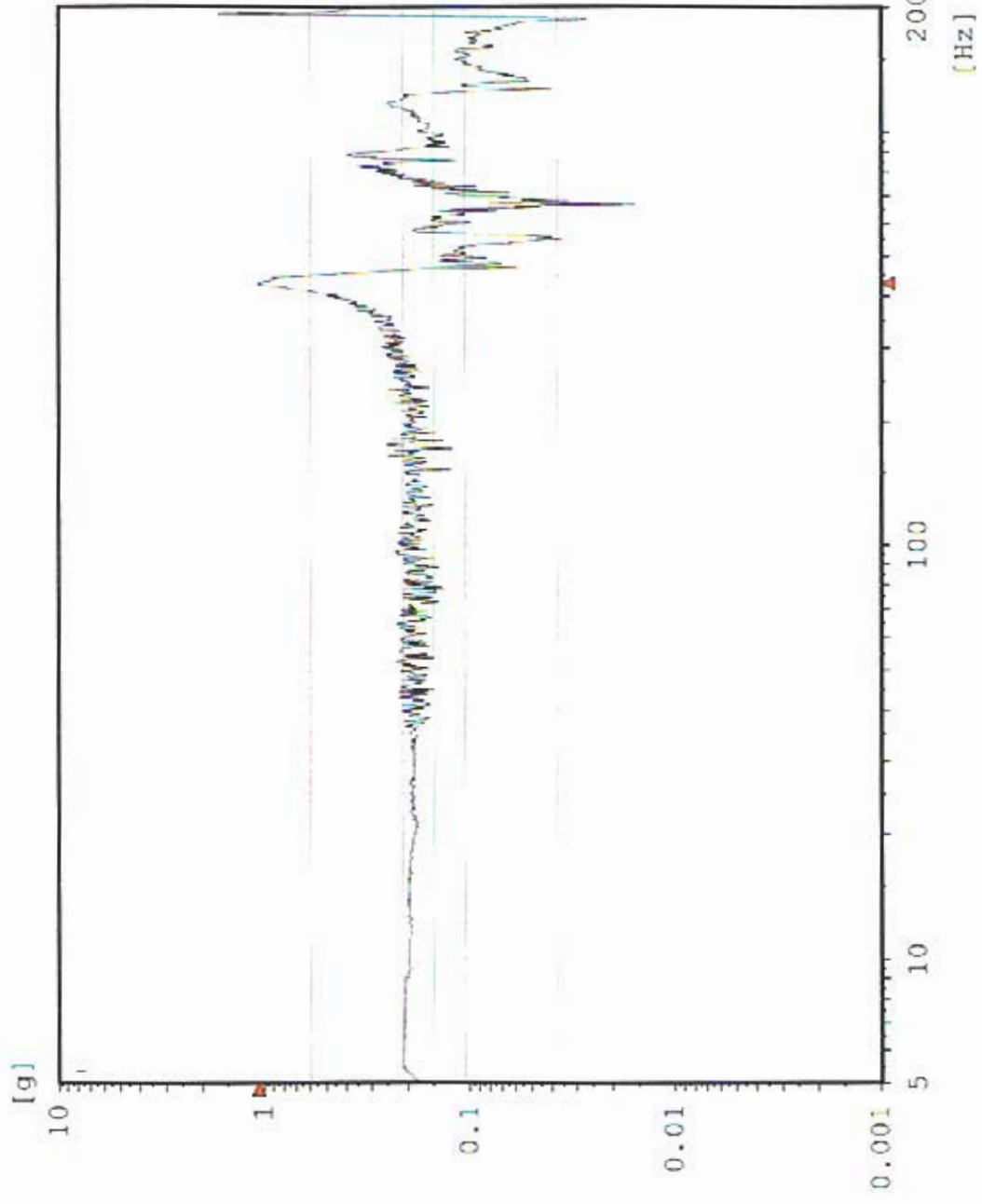
-- Testing time --
 elapsed: 000:04:16
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:00:10

X - axis Post Random
 Acceptance Unit
 GLAT 1839

Sine AXI TEM center edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 5
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

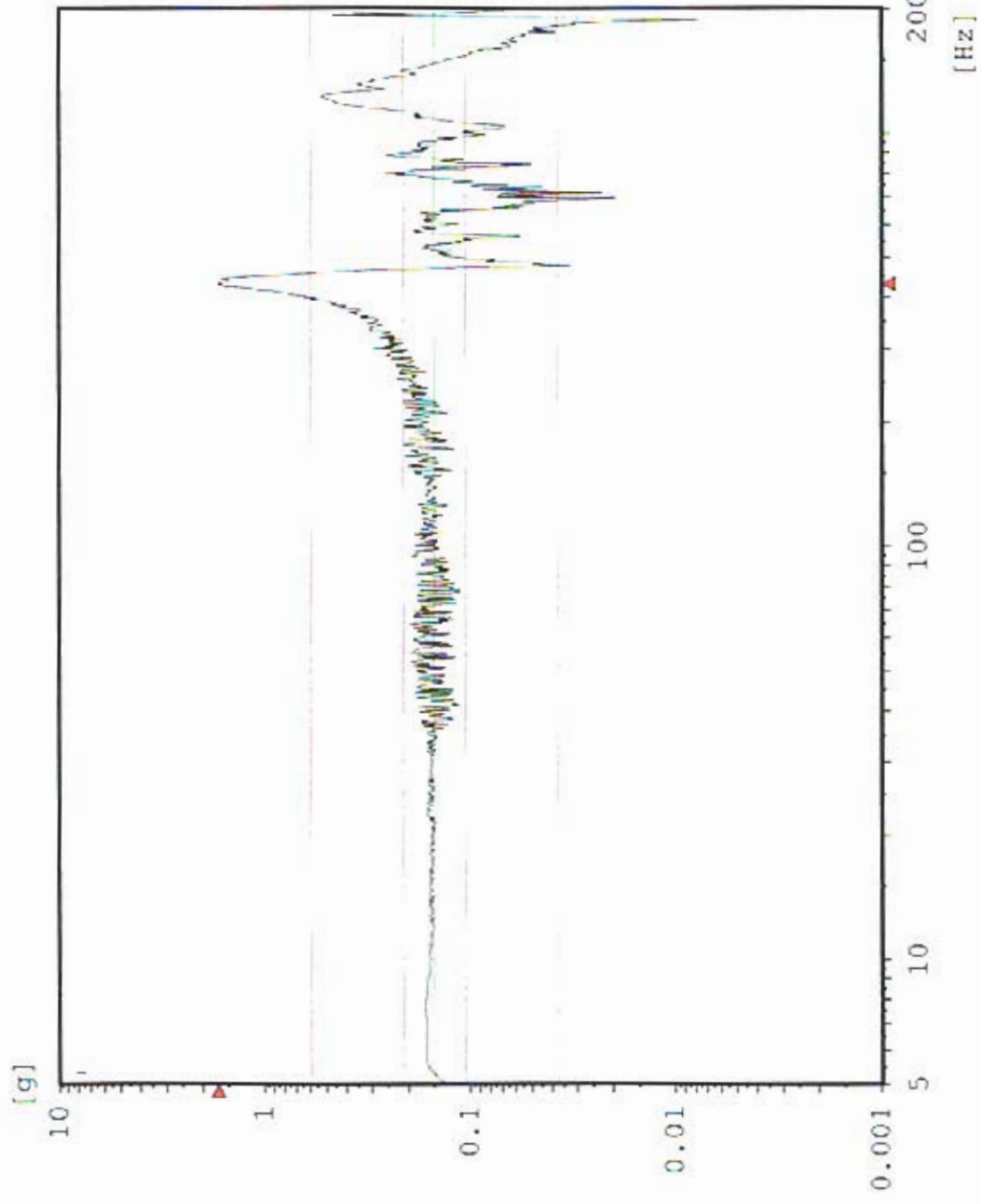
Date: 06-13-05
 Time: 11:00:10

X - axis Post Random
 Acceptance Unit
 GLAT 1839

AX2 TPS CG



Sine
Stanford Linear Accelerator
J/N 4995.52036
TEM / TPS



Chan.no: 10
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

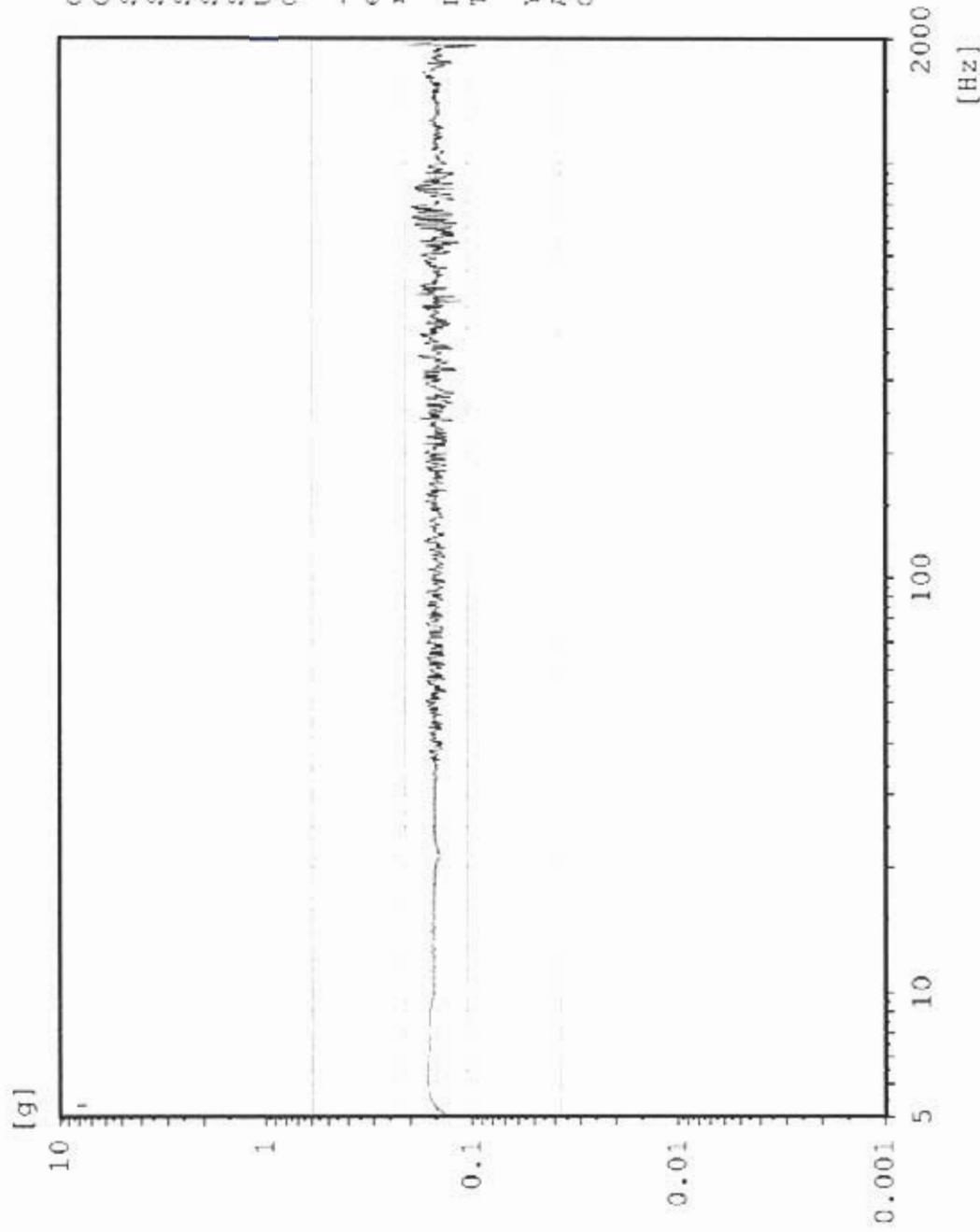
-- Testing time --
 elapsed: 00:04:18
 remaining: 00:00:00

Date: 06-13-05
 Time: 11:00:10

X - axis Post Random
 Acceptance Unit
 GLAT 1839

Sine CY1 Y-Axis Control

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 11:26:05

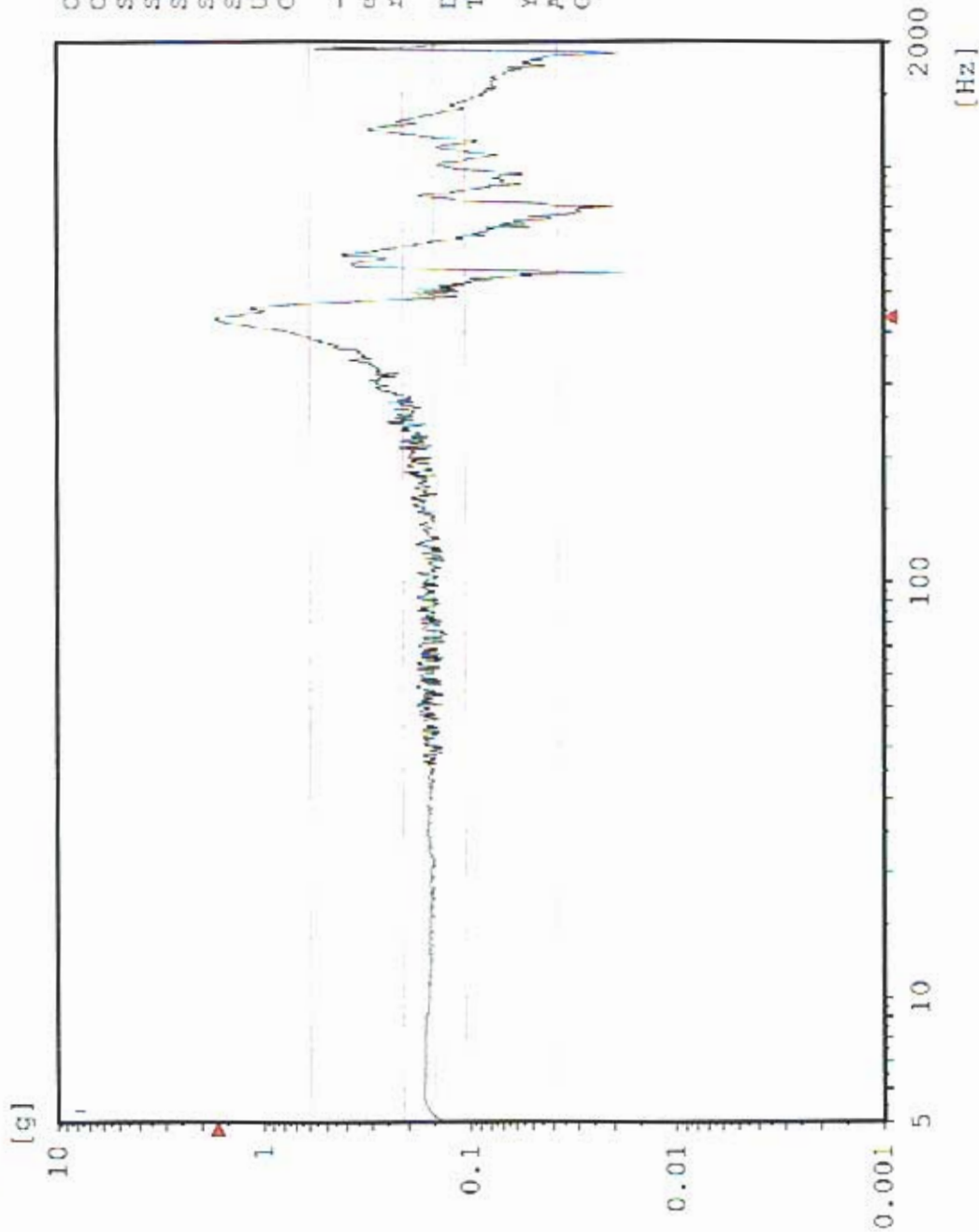
Y - axis Pre Random
Acceptance Unit
GLAT 1839

Sine AY3 TPS Top Center

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 2
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct./min
 Unit: g
 Contr.strat.: Closed loop

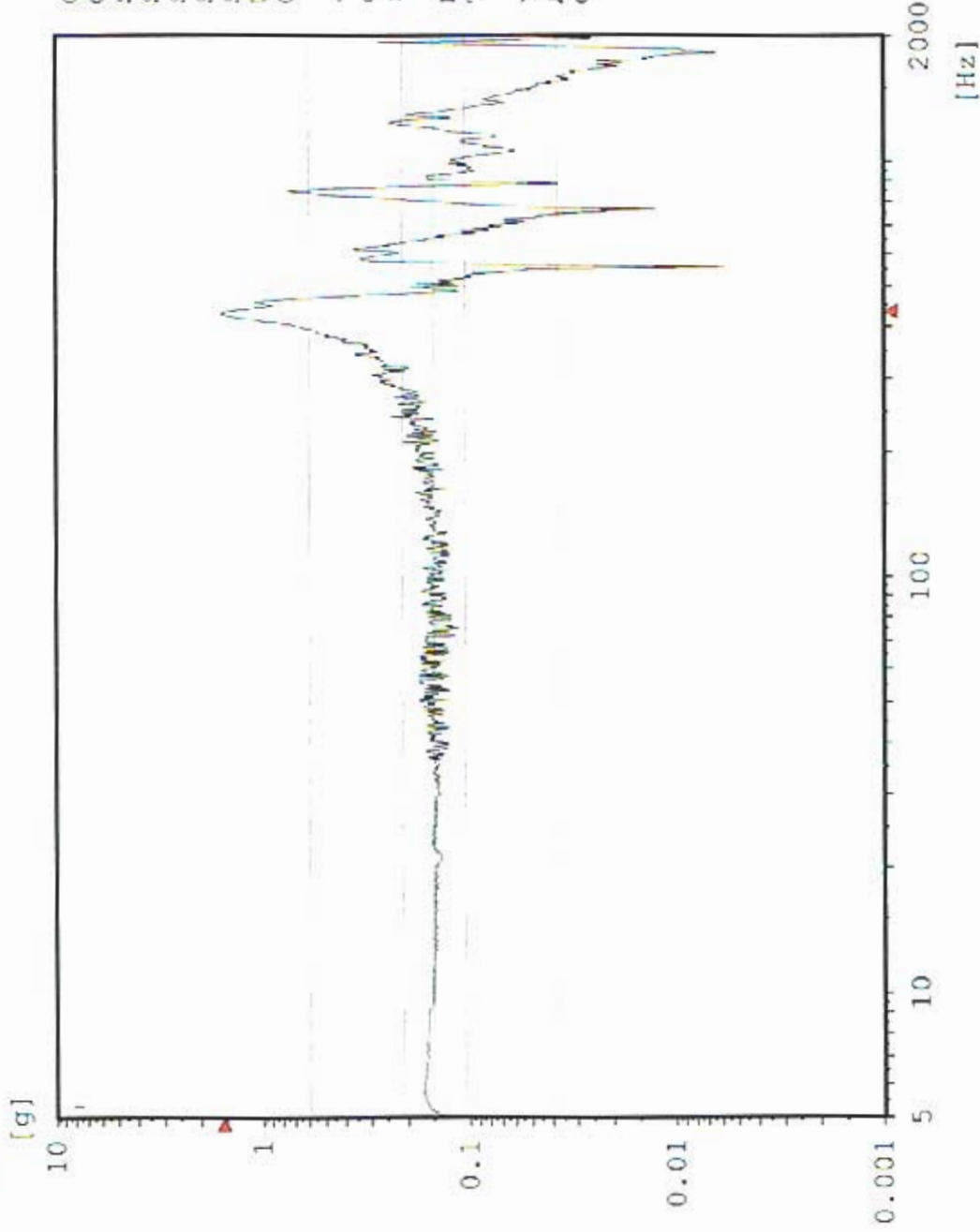
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:20:05

Y - axis Pre Random
 Acceptance Unit
 GLAT 1839

AY4 TPS Top Edge

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 3
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

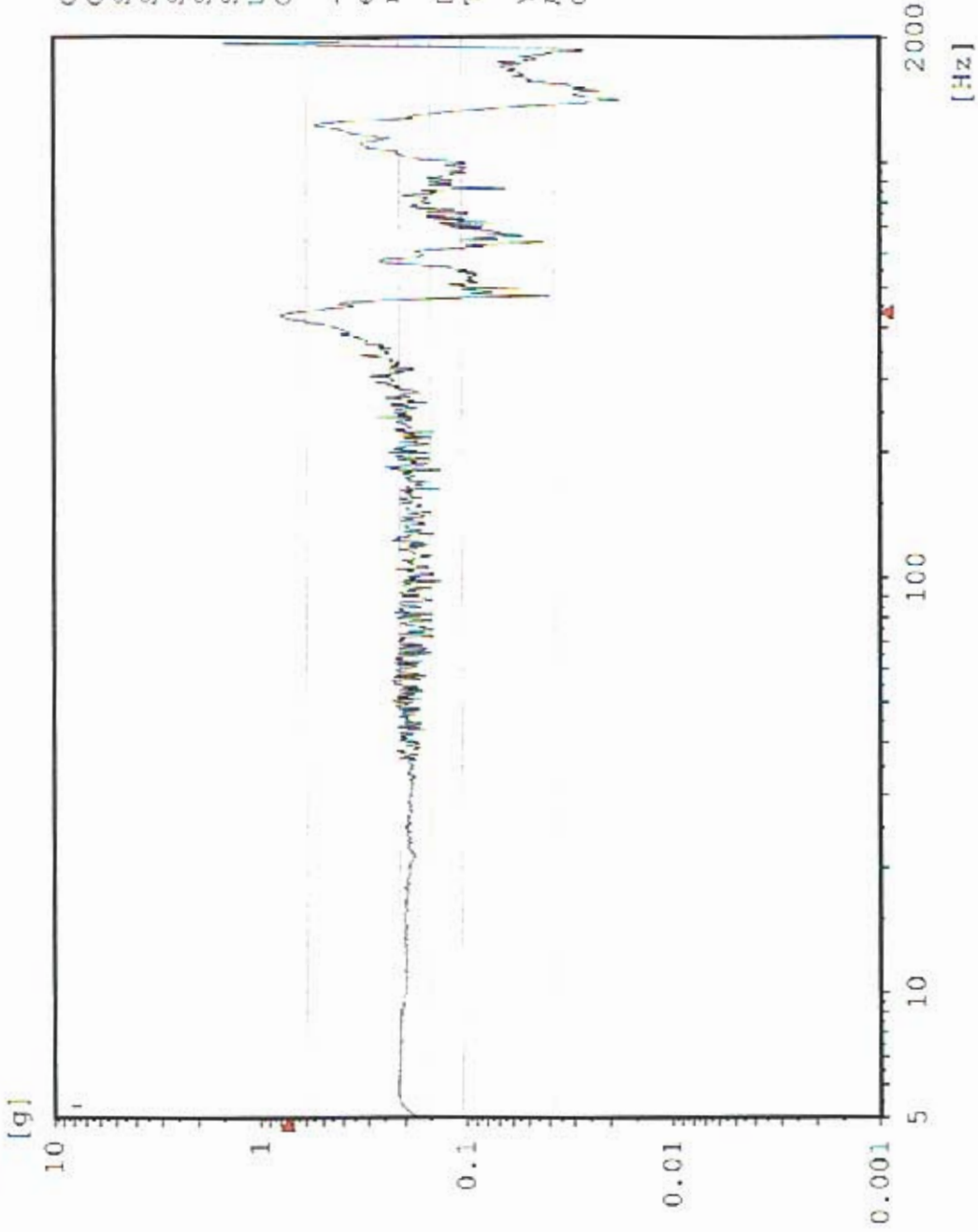
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:20:05

Y - axis Pre Random
 Acceptance Unit
 GLAT 1839

Sine AY1 TEM Center Edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 5
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

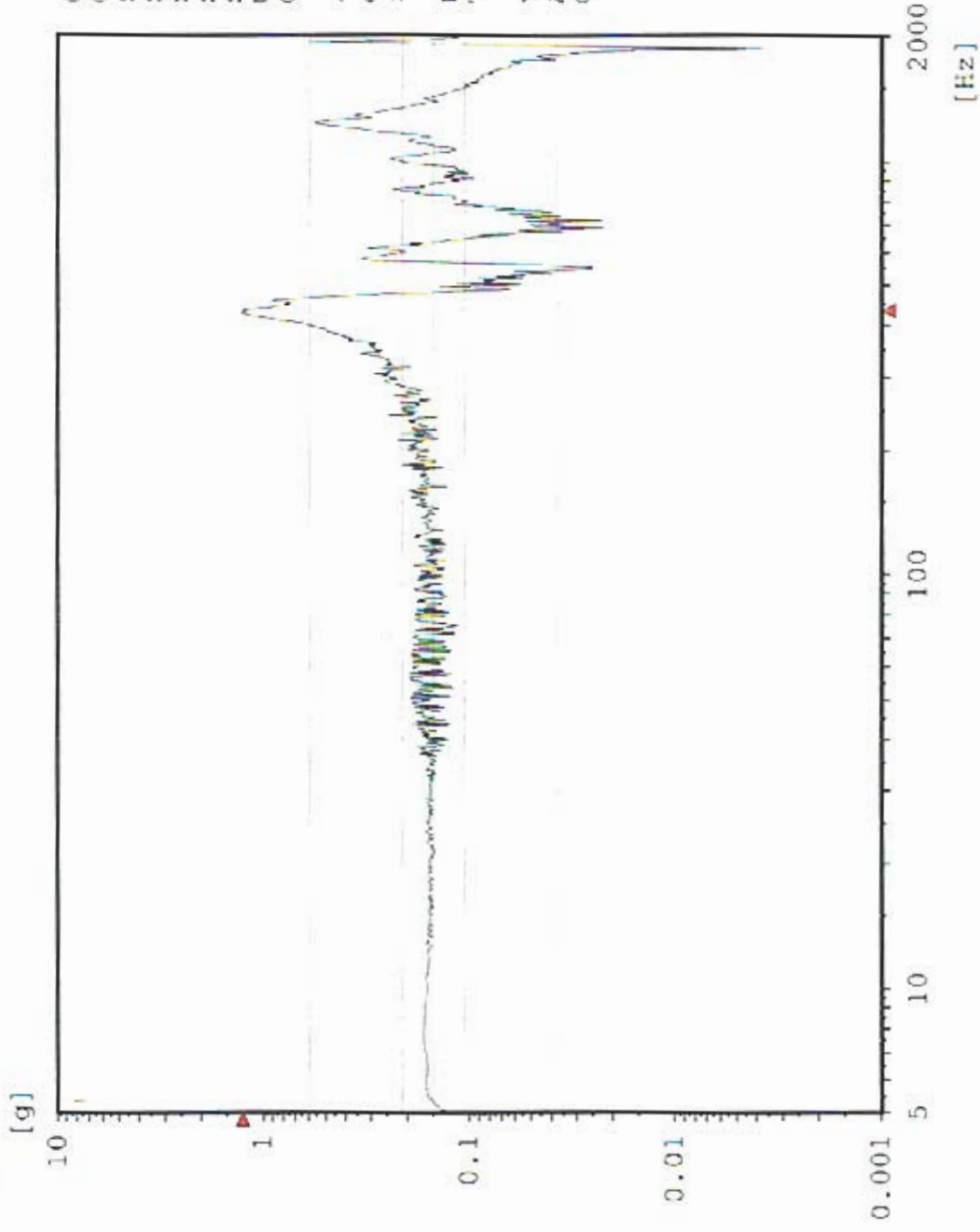
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:20:05

Y - axis Pre Random
 Acceptance Unit
 GLAT 1839

Sine AY2 TPS CG

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 10 M Filtered
 Chan.type: logarithmic
 Sweep type: 1
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:20:05

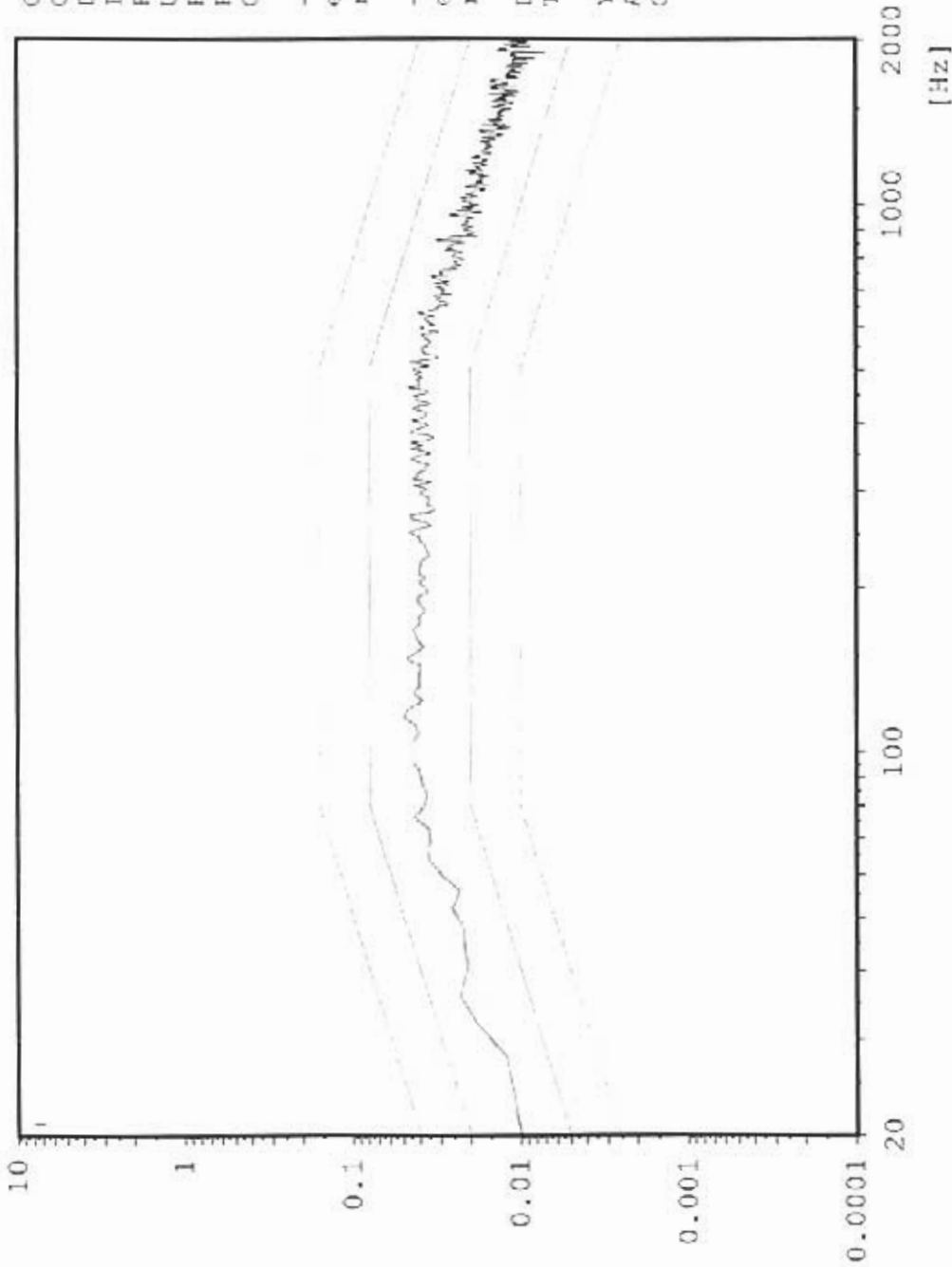
Y - axis Pre Random
 Acceptance Unit
 GLAT 1839

CY1 Y-Axis Control

Random
Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 1
Chan.type: C
DOF: 126
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 6.809 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 11:27:48

Y - Axis
Acceptance Unit
GLAT 1839

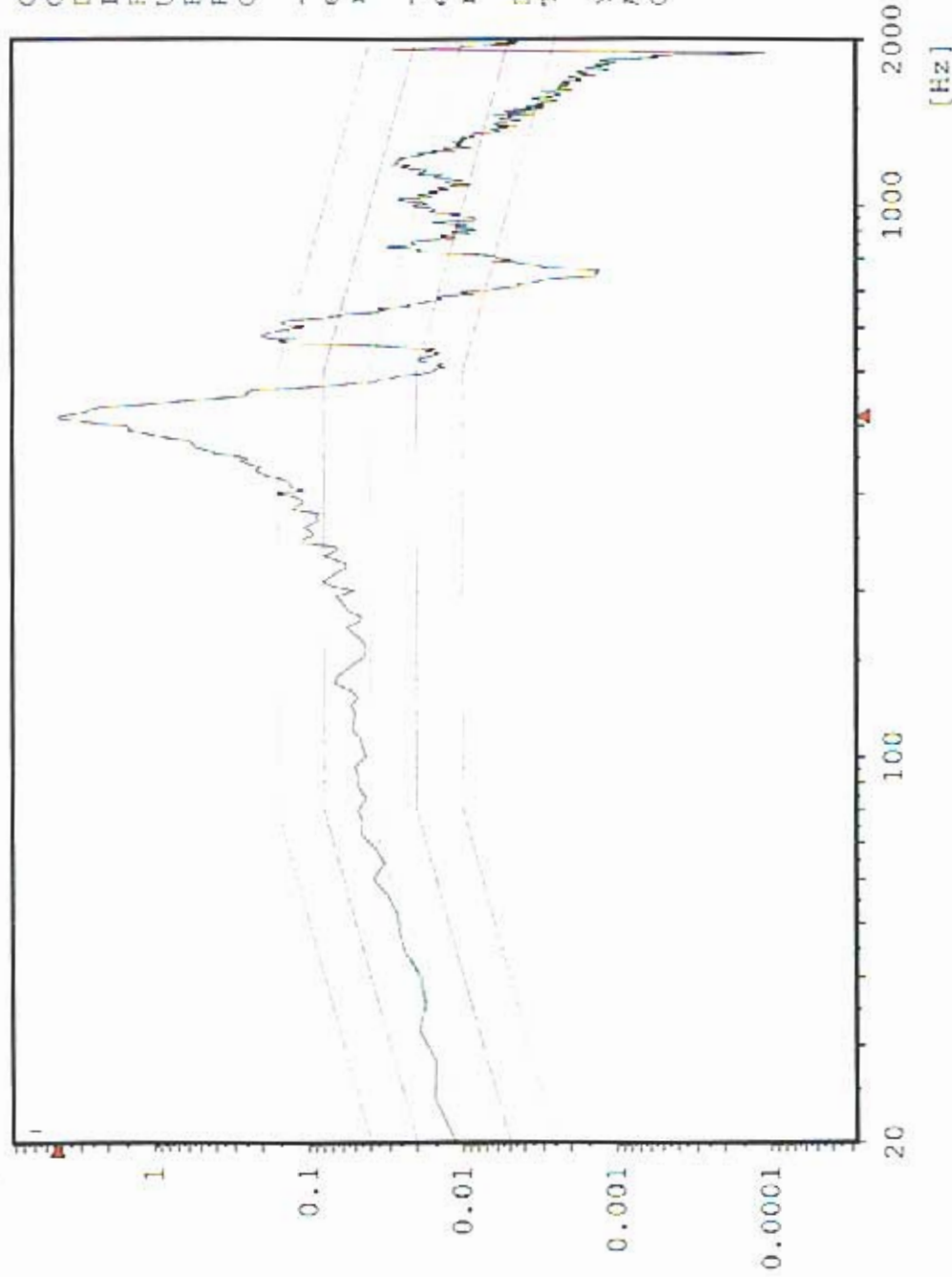
Max: 416 Hz 4.301 g²/Hz

Random AY3 TPS Top Center

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 2
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 14.5 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 11:27:48

Y - Axis
Acceptance Unit
GLAT 1839

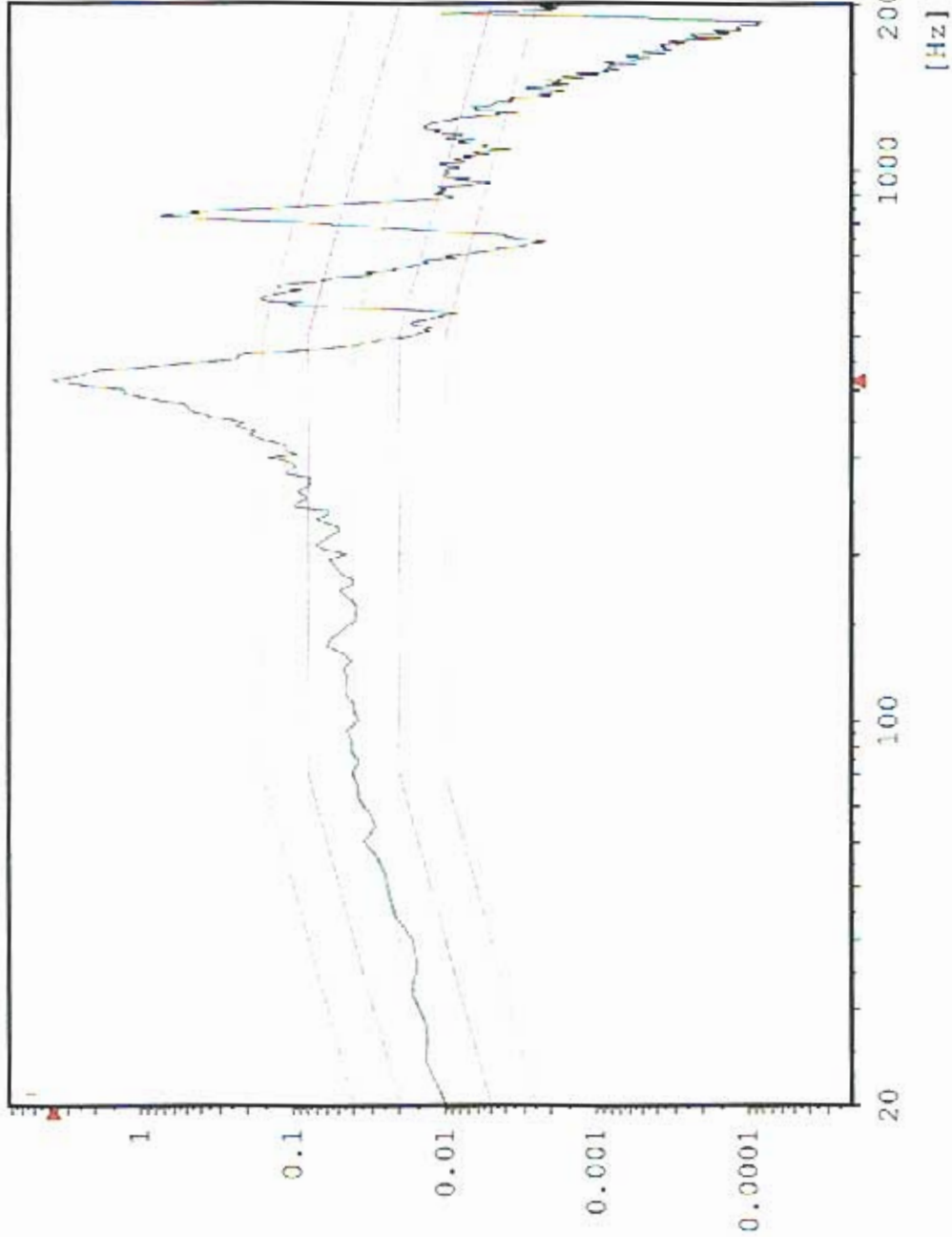
Max: 416 Hz 3.792 g²/Hz

Random AY4 TPS Top Edge

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 3
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 14.21 g
RMS (req.): 6.787 g
Contr.strat.: Closed Loop

-- Time on act. level --
elapsed: 000:01:00
remaining: 000:00:00

-- Time total --
elapsed: 000:02:53
remaining: 000:00:00

Date: 06-13-05
Time: 11:27:48

Y - Axis
Acceptance Unit
GLAT 1839

Cursor: 416 Hz 0.811 g²/Hz

Random AY1 TEM Center Edge

Stanford Linear Accelerator

J/N 49995.52036

TEM & TPS



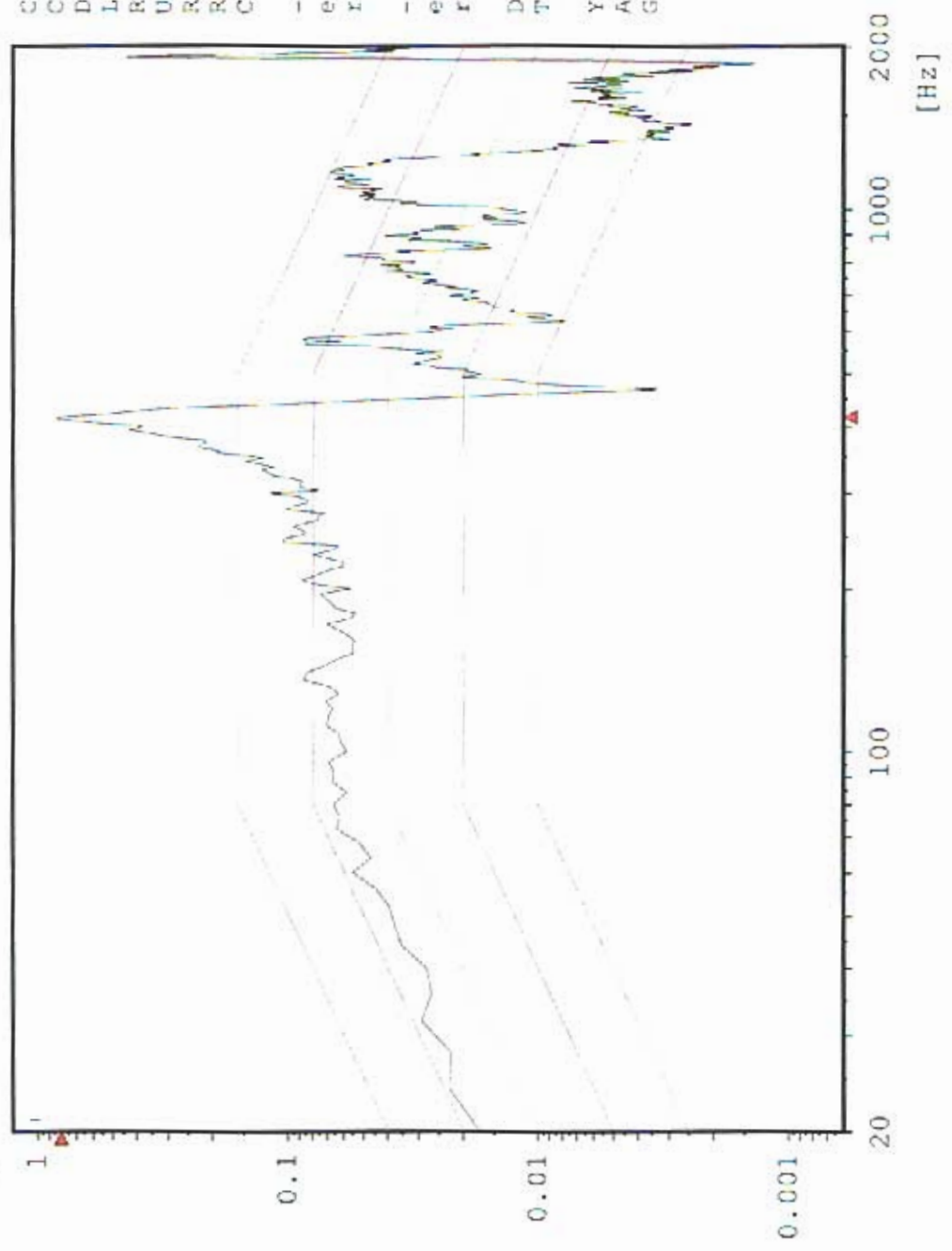
Chan.no: 5 X
 Chan.type: 100
 DOF: 0.0 dB
 Level: 4 Hz
 Resolution: g²/Hz
 Unit: 9.961 g
 RMS (act.): 6.787 g
 RMS (req.): closed loop
 Contr.strat.:

-- Time on act. level --
 elapsed: 000:01:00
 remaining: 000:00:00

-- Time total --
 elapsed: 000:02:53
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:27:48

Y - Axis
 Acceptance Unit
 GLAT 1839



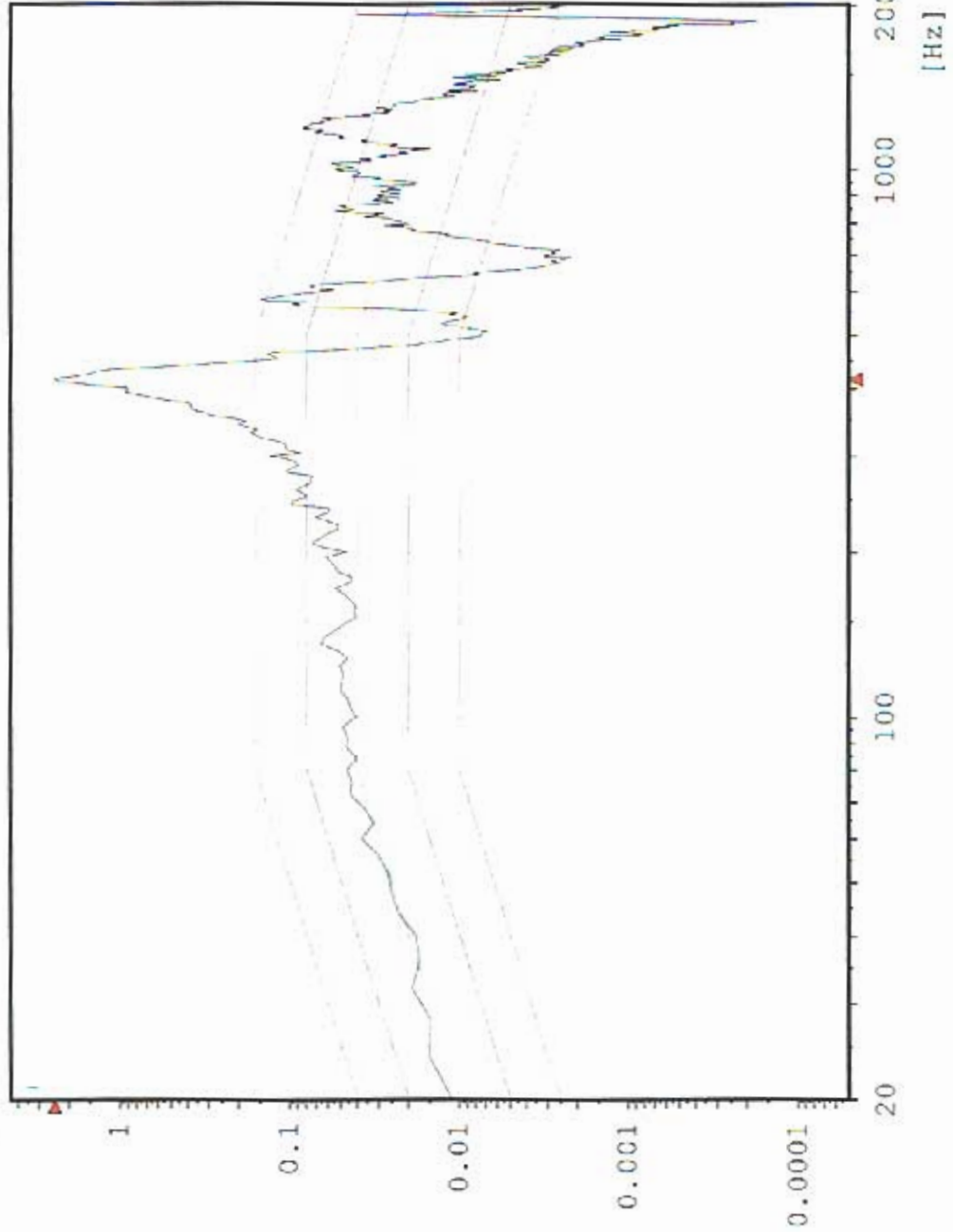
Max: 416 Hz 2.442 g²/Hz

Random AY2 TPS CG

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 10
 Chan.type: M
 DOF: 100
 Level: 0.0 dB
 Resolution: 4 Hz
 Unit: g²/Hz
 RMS (act.): 12.13 g
 RMS (req.): 6.787 g
 Contr.strat.: Closed loop

-- Time on act. level --
 elapsed: 000:01:00
 remaining: 000:00:00

-- Time total --
 elapsed: 000:02:53
 remaining: 000:00:00

Date: 06-13-05
 Time: 11:27:48

Y - Axis
 Acceptance Unit
 GLAT 1839

Sine CY1 Y-Axis Control

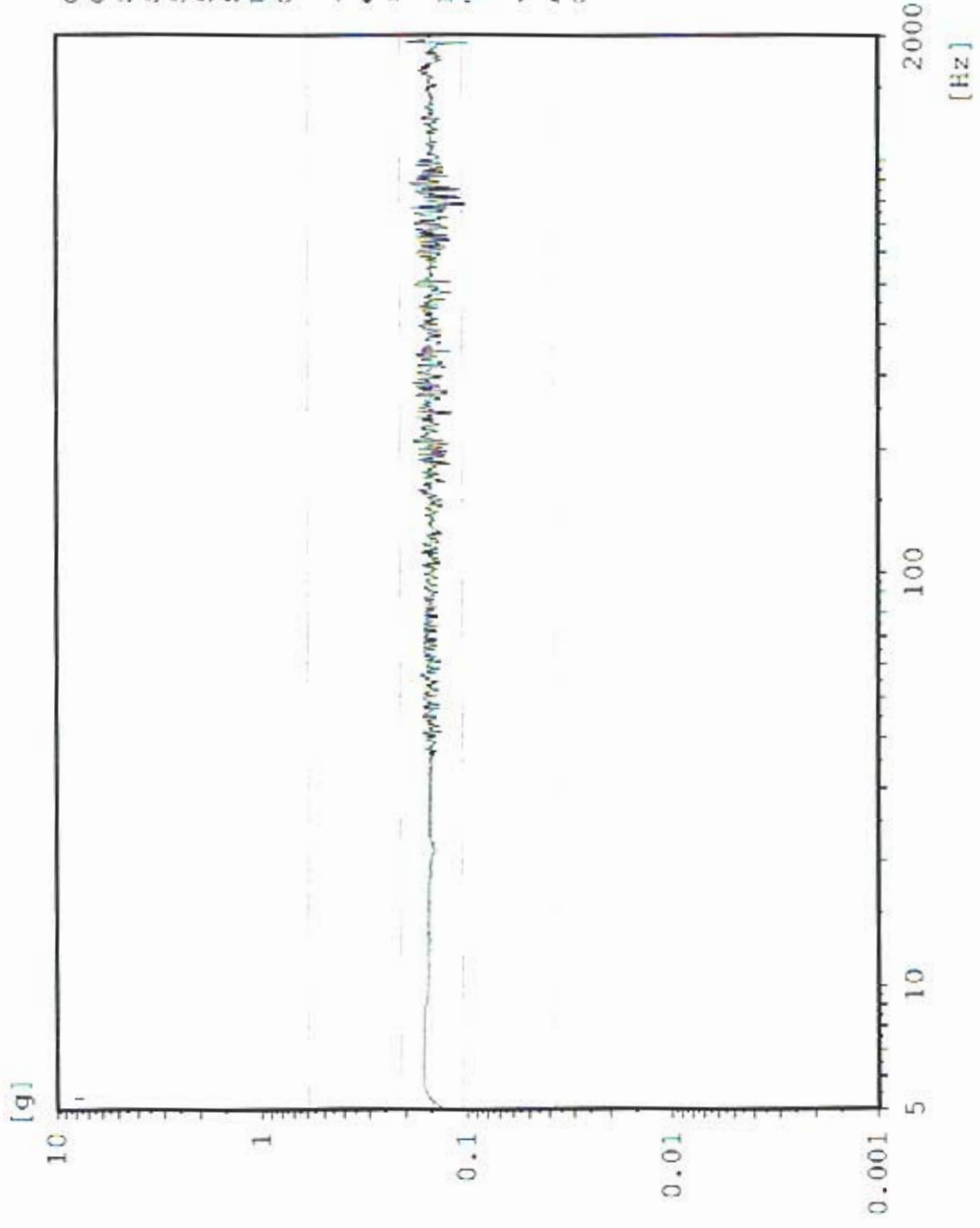
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00
Date: 06-13-05
Time: 11:36:07

Y - axis Post Random
Acceptance Unit
GLAT 1839



Sine AY3 TPS Top Center

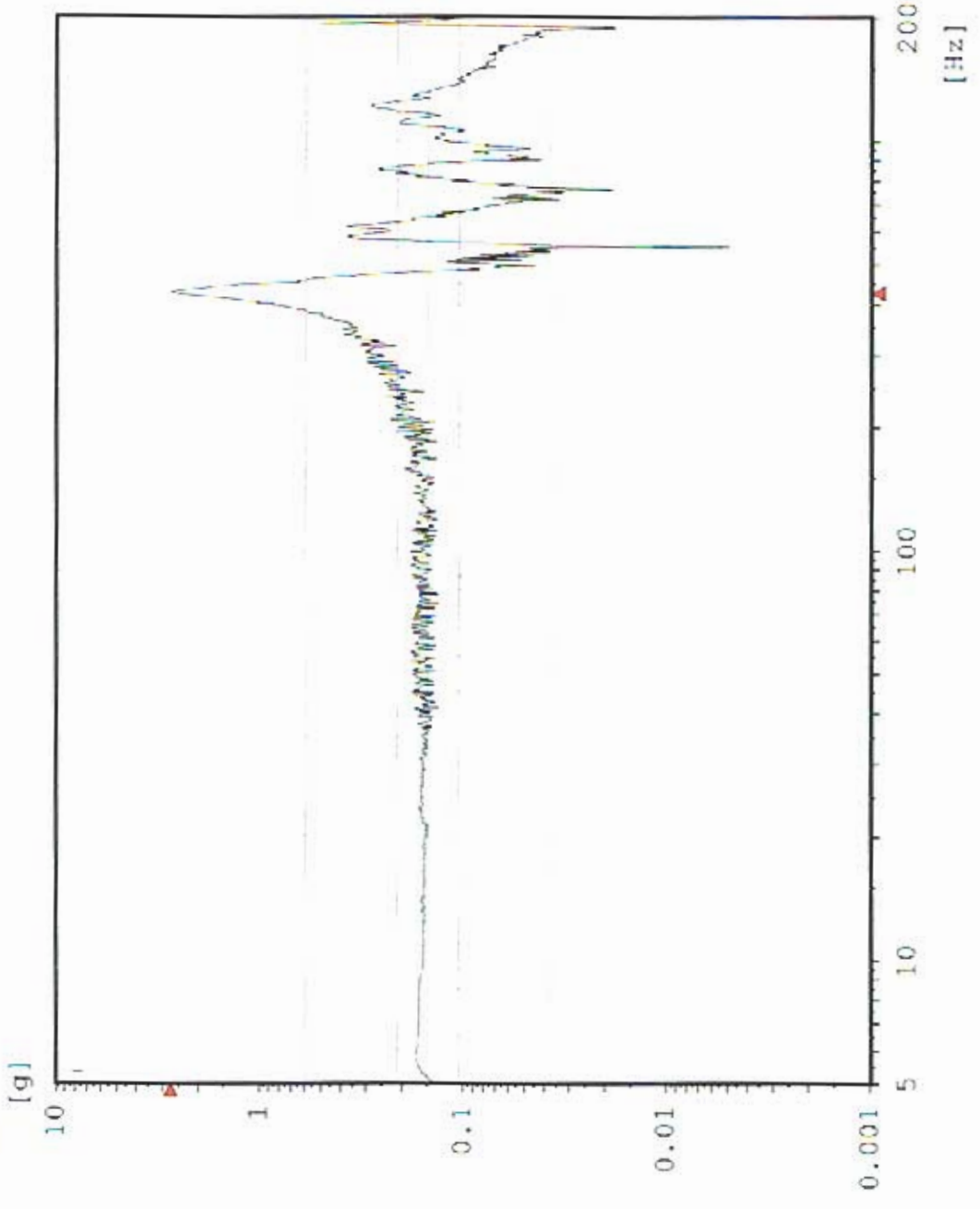
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.nc: 2
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

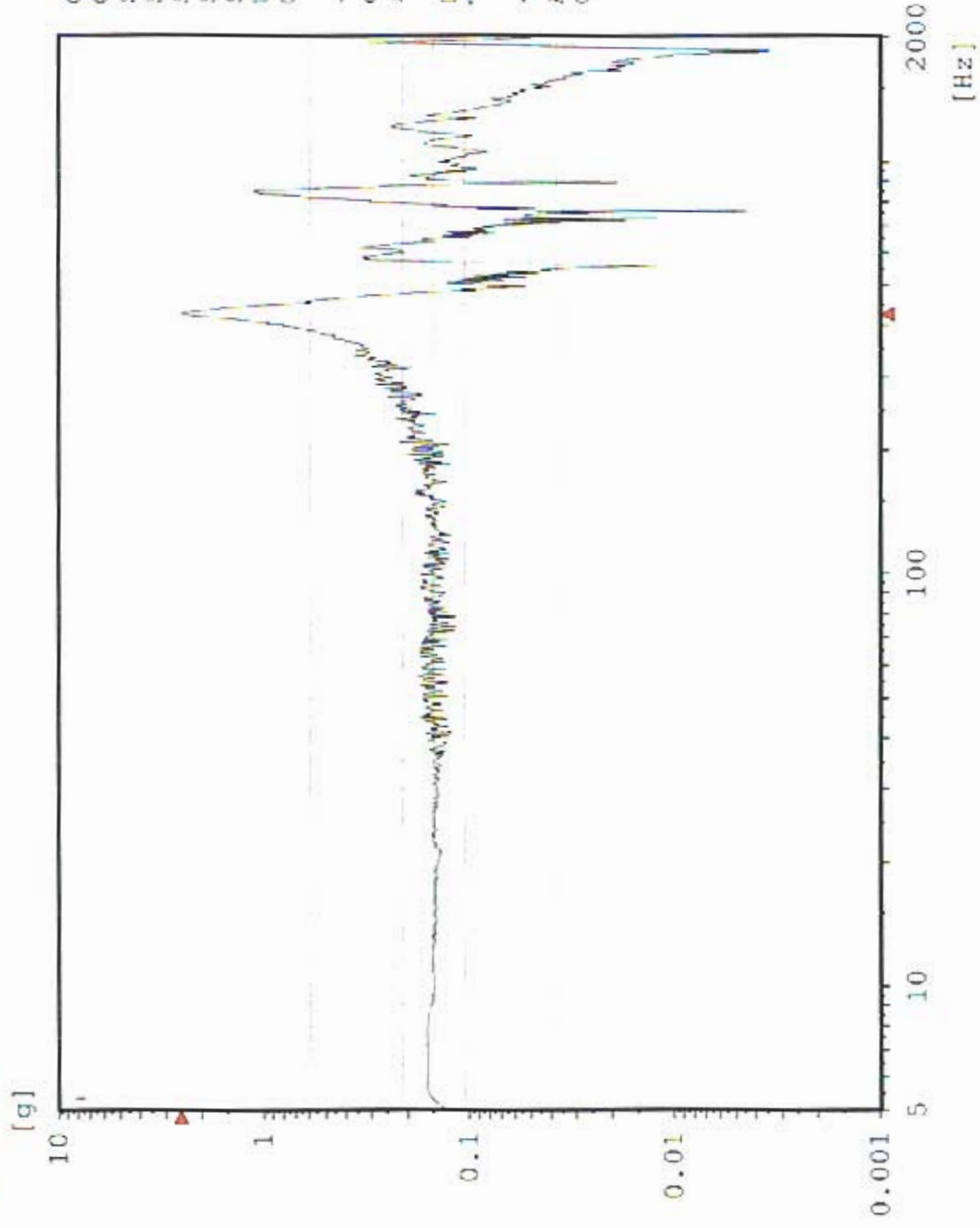
-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00
Date: 06-13-05
Time: 11:36:07

Y - axis Post Random
Acceptance Unit
GLAT 1839



AY4 TPS Top Edge

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 3
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

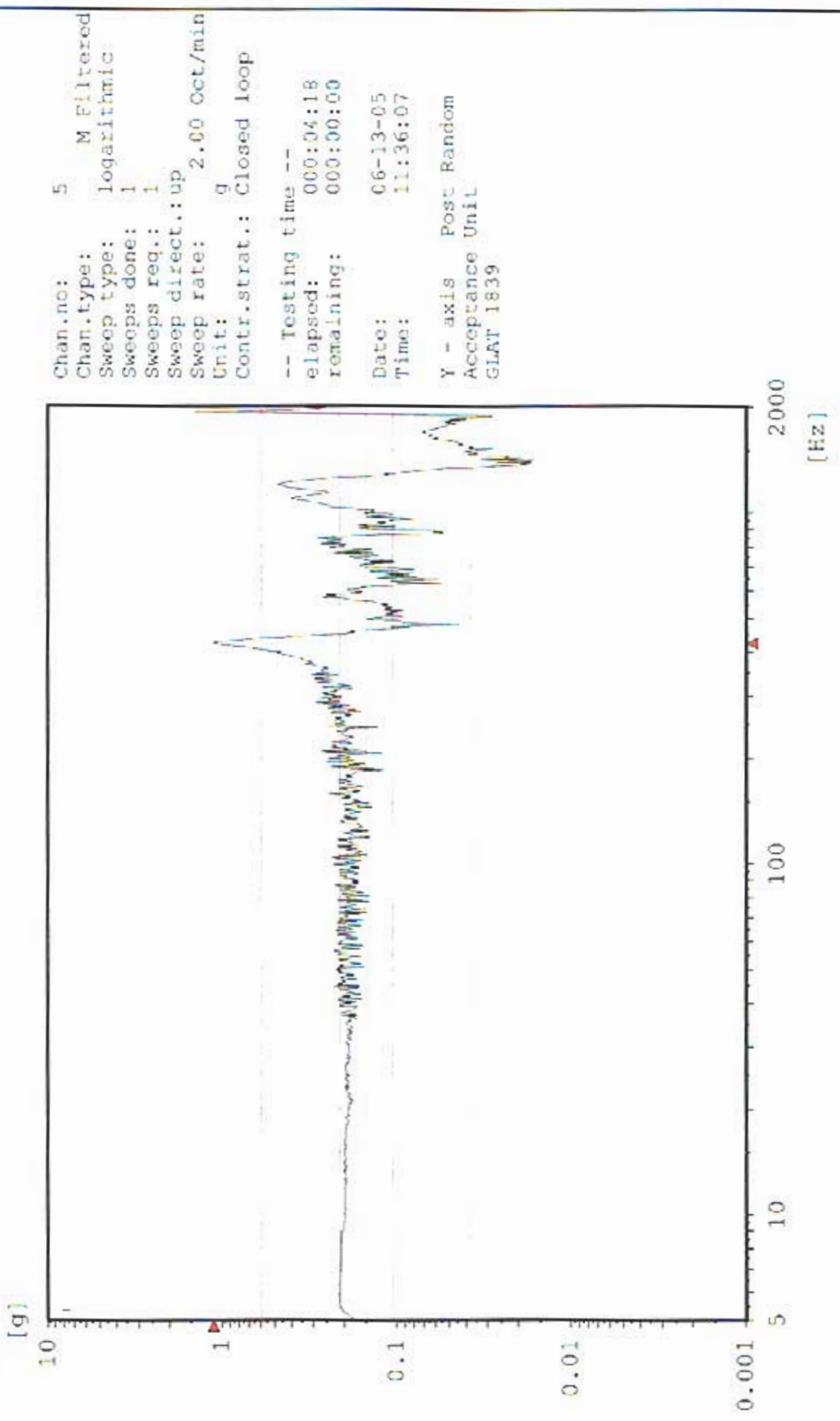
-- Testing time --
 elapsed: 000:04:18
 remaining: 000:09:00

Date: 06-13-05
 Time: 11:36:07

Y - axis Post Random
 Acceptance Unit
 GLAT 1839

Sine AY1 TEM Center Edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Max: 426.1 Hz 2.026 g

AY2 TPS CG

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS

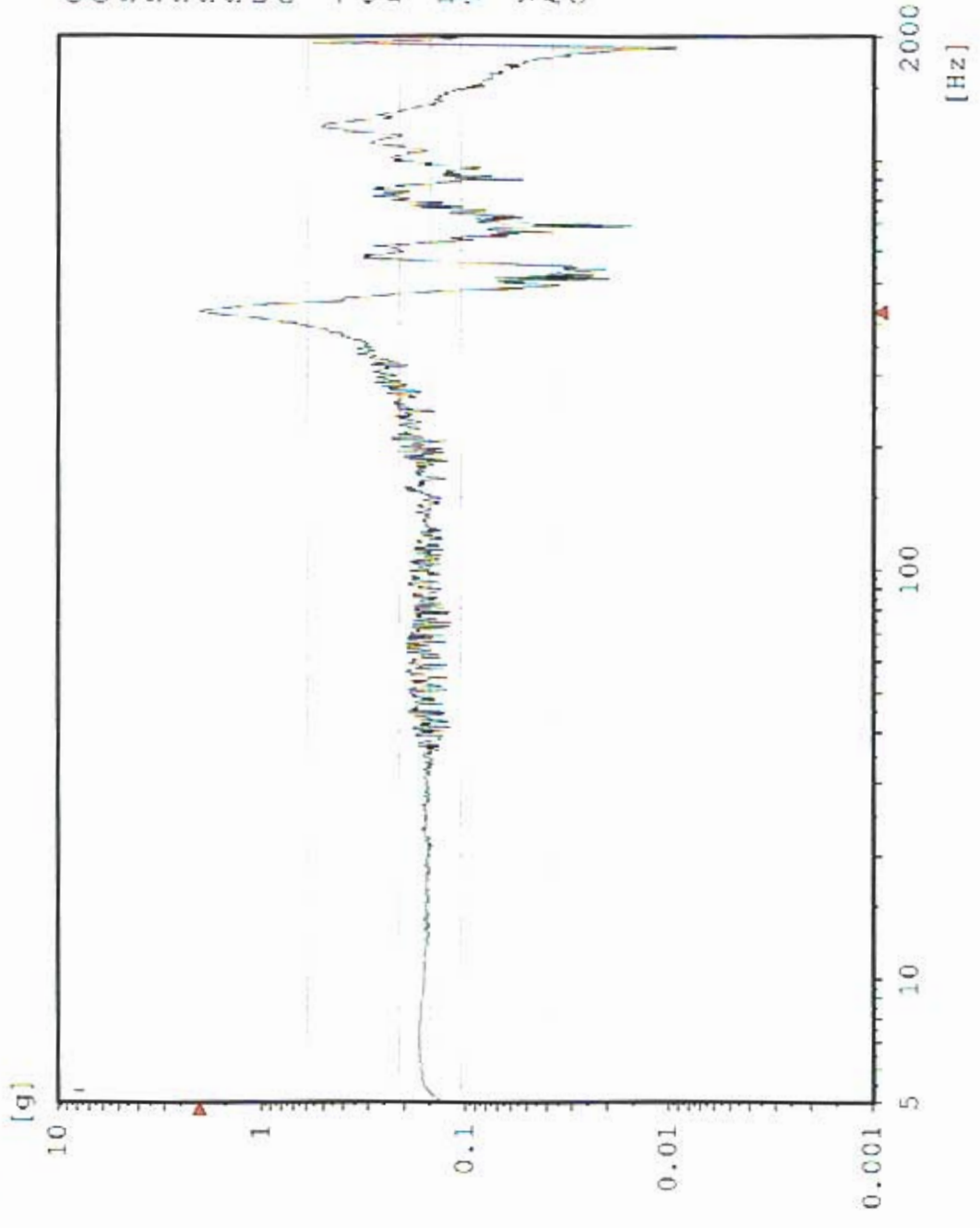


Chan.no: 10
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 11:36:07

Y - axis Post Random
Acceptance Unit
GLAT 1839



CZ1 Z-Axis Control

Sine

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS

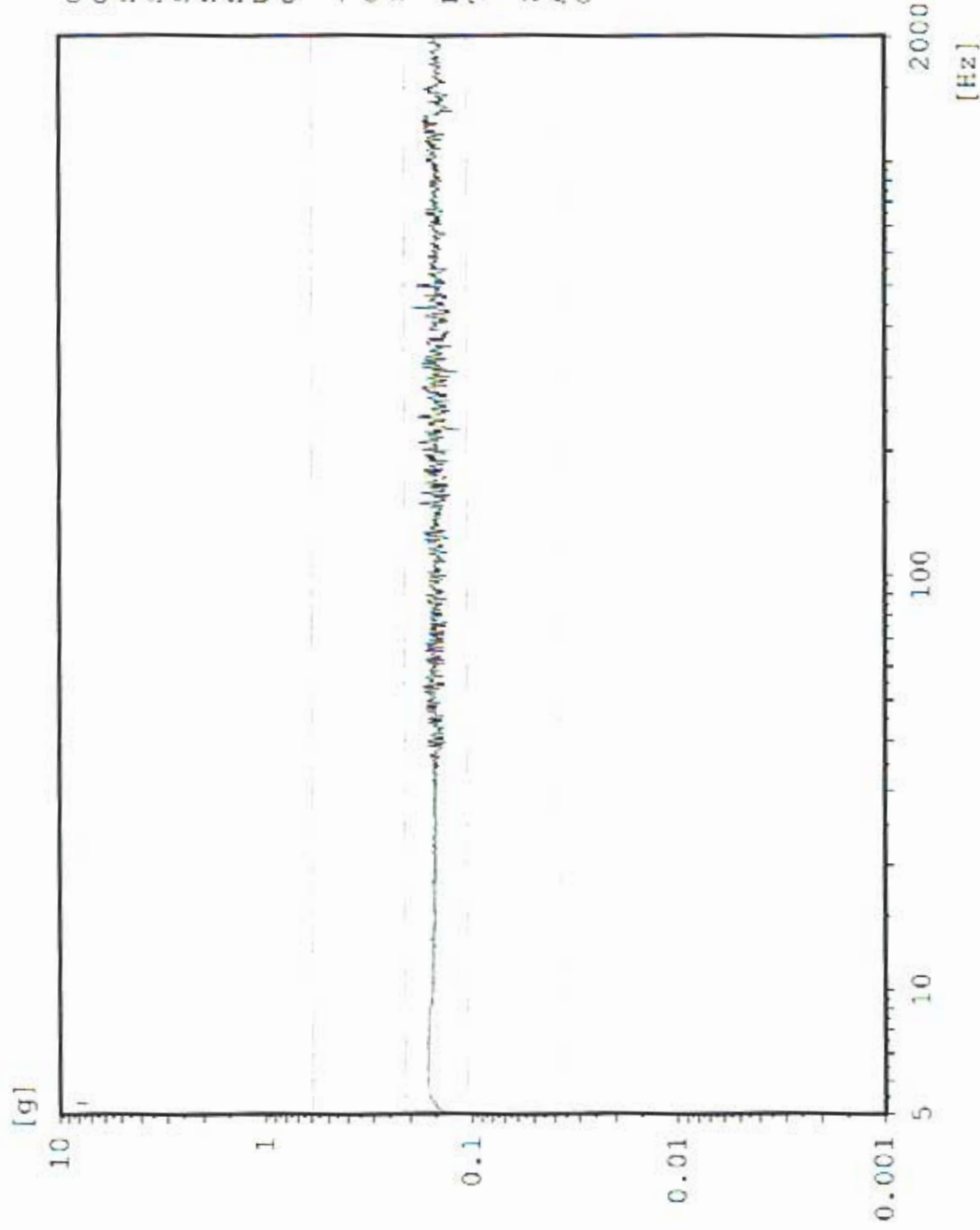


Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

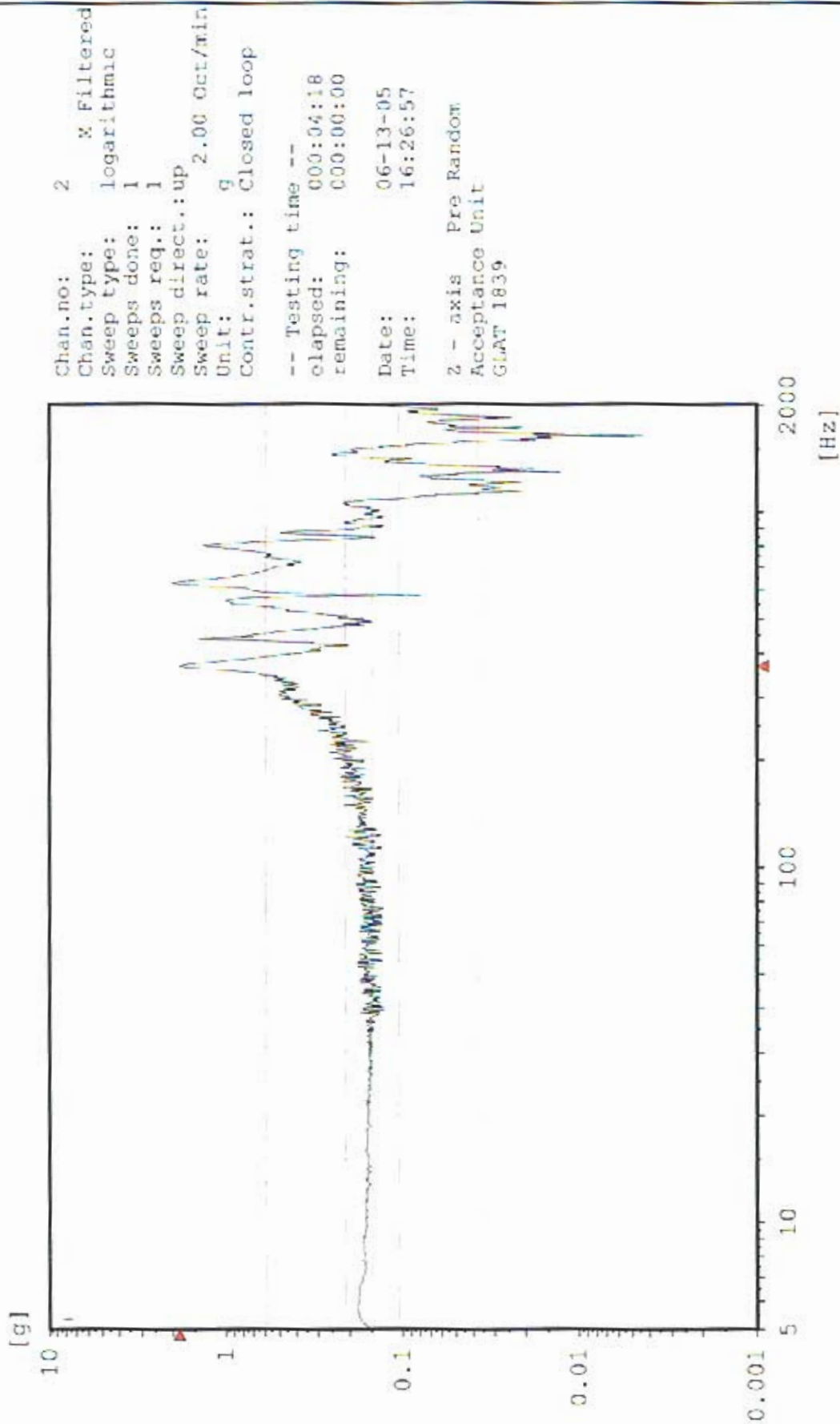
Date: 06-13-05
Time: 16:26:57

Z - axis Pre Random
Acceptance Unit
GLAT 1839



AZ4 TPS Boss 2

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 2 M Filtered
 Chan.type: logarithmic
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 16:26:57

Z - axis Pre Random
 Acceptance Unit
 GLAT 1839

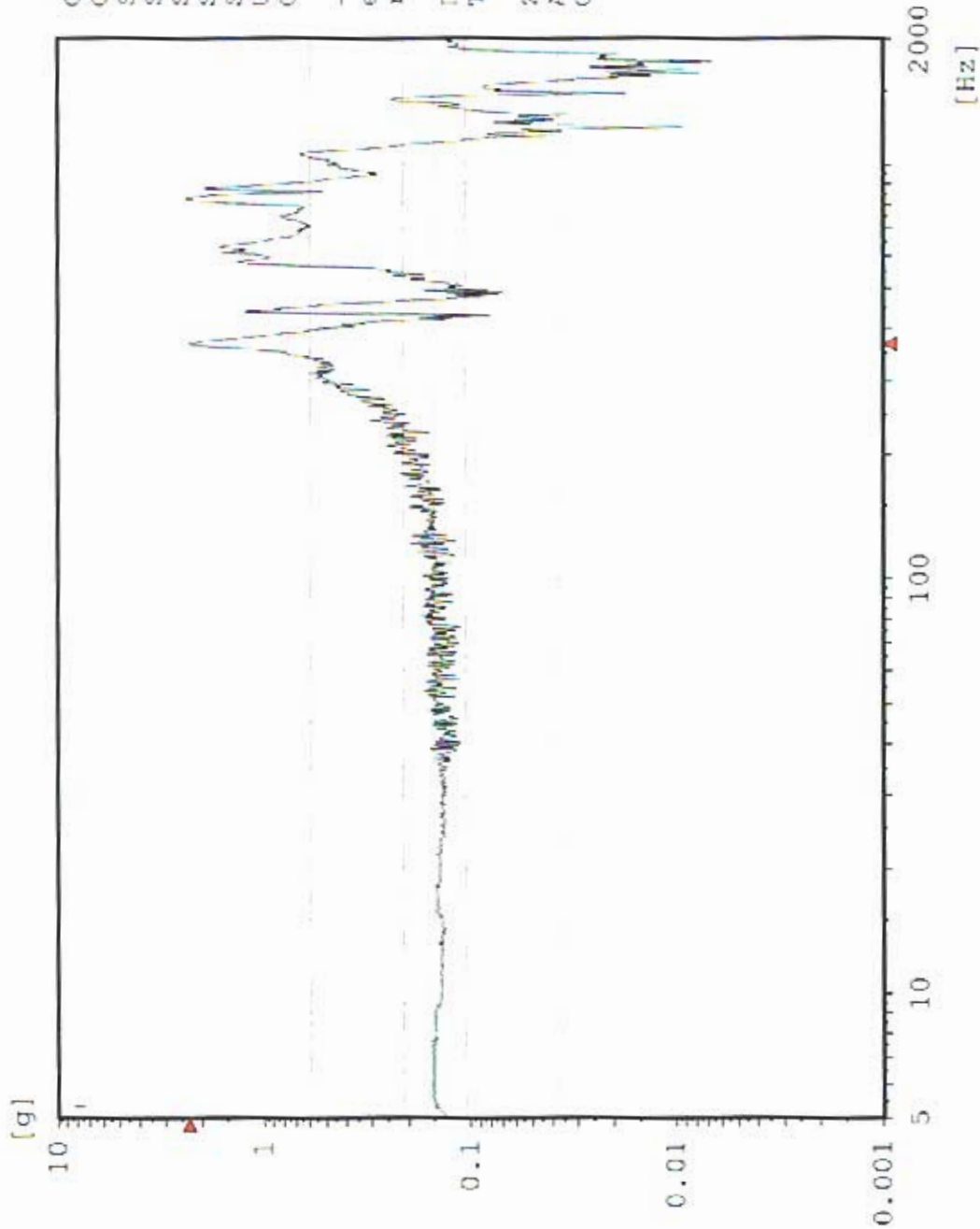
AZ3 TPS Boss 1

Sine

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 3 M Filtered
 Chan.type: logarithmic
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct./min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 16:26:57

Z - axis Pre Random
 Acceptance Unit
 GLAT 1839

Max: 441.4 Hz 0.6515 g

Sine AZ5 TEM Bottom Edge

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS

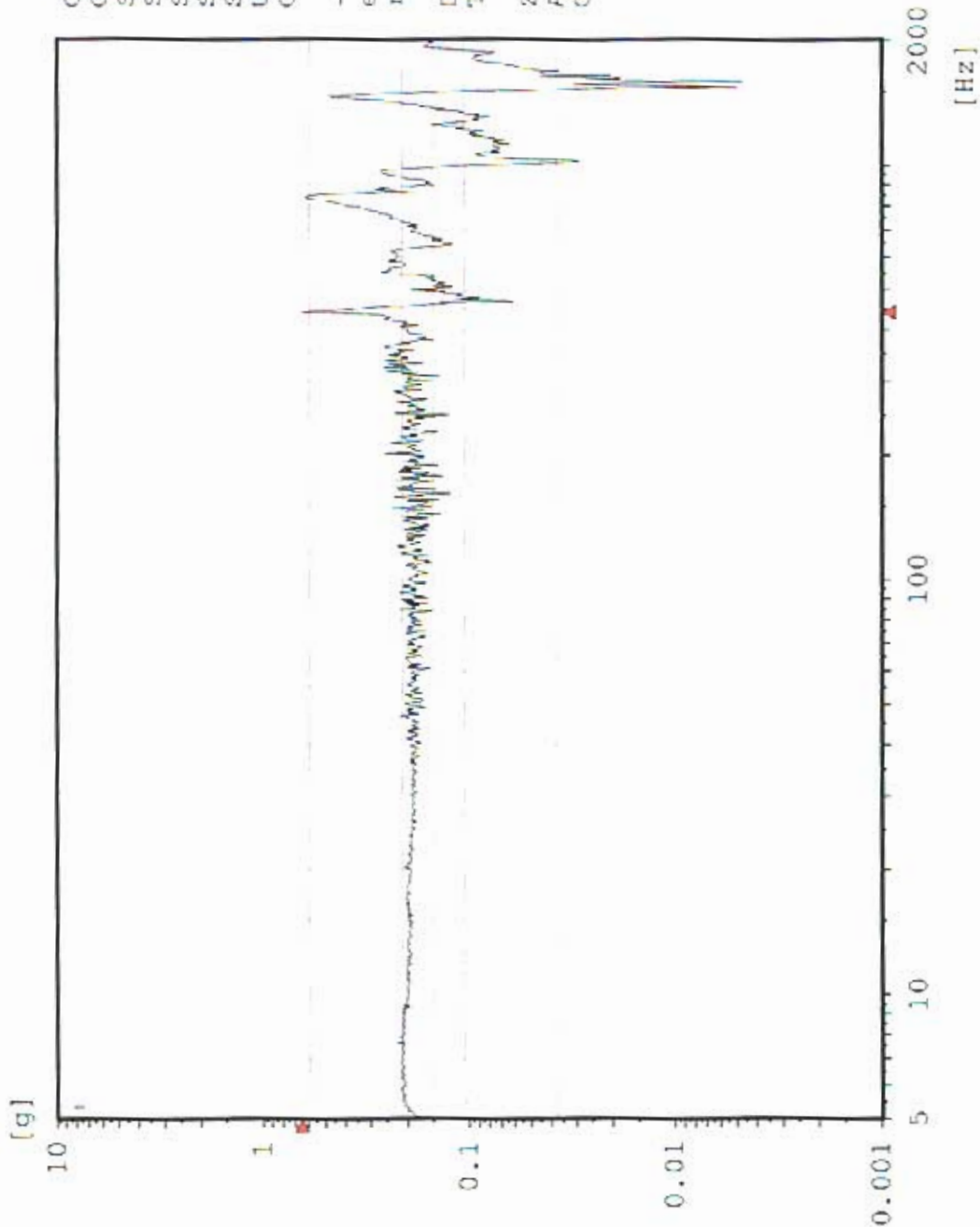


Chan.no: 5 M Filtered
Chan.type: logarithmic
Sweep type: 1
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 16:26:57

Z - axis Pre Random
Acceptance Unit:
GLAT 1839



Max: 441.4 Hz 1.181 g

Sine AZ1 TPS Edge Center

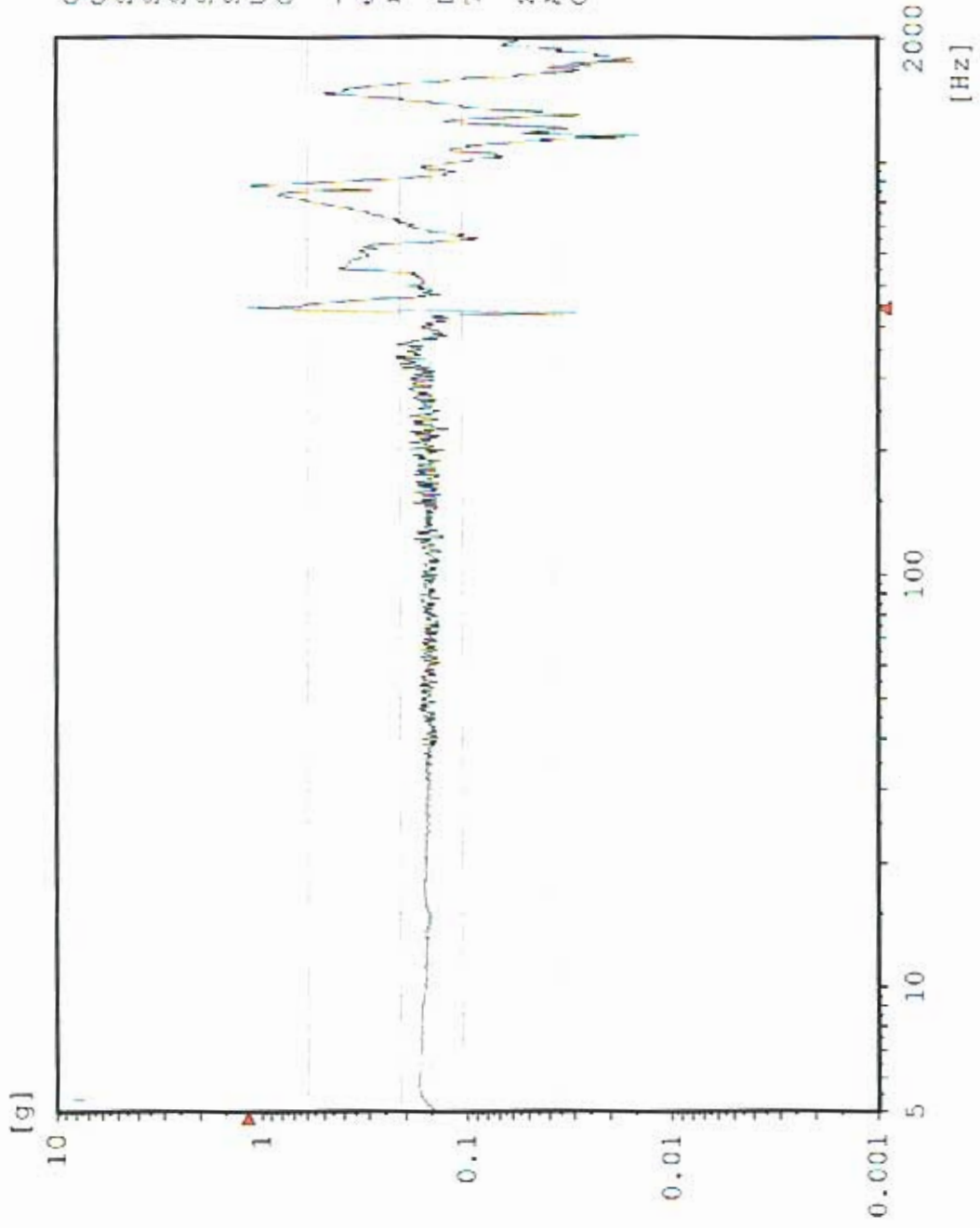
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 6 M Filtered
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00
Date: 06-13-05
Time: 16:26:57

Z - axis Pre Random
Acceptance Unit
GLAT 1839

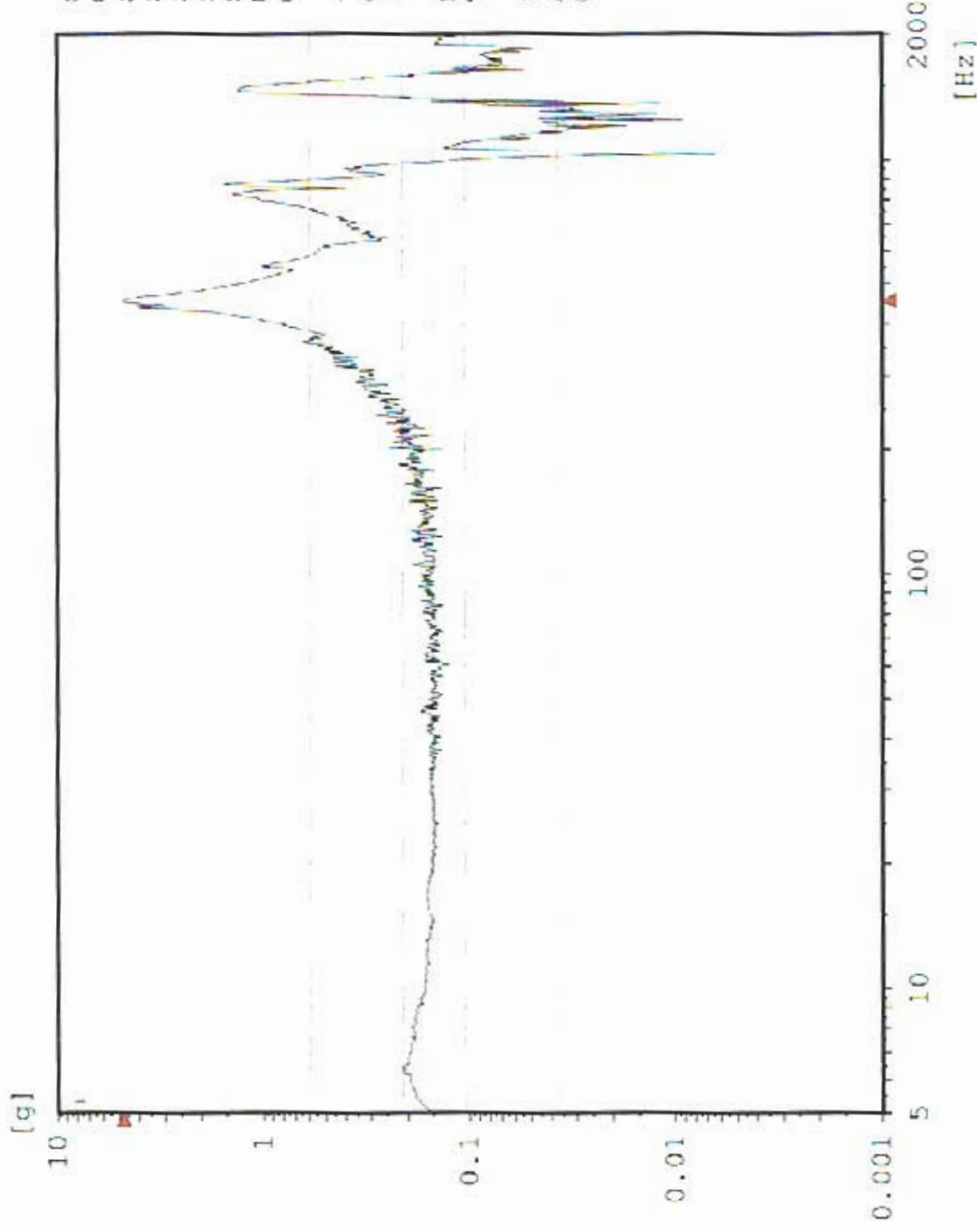


Sine AZ6 TEM Bottom Center

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 8
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: 9
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00

Date: 06-13-05
 Time: 16:26:57

Z - axis Pre Random
 Acceptance Unit
 GLAT 1839

Max: 441.4 Hz 1.526 g

AZ2 TPS Corner

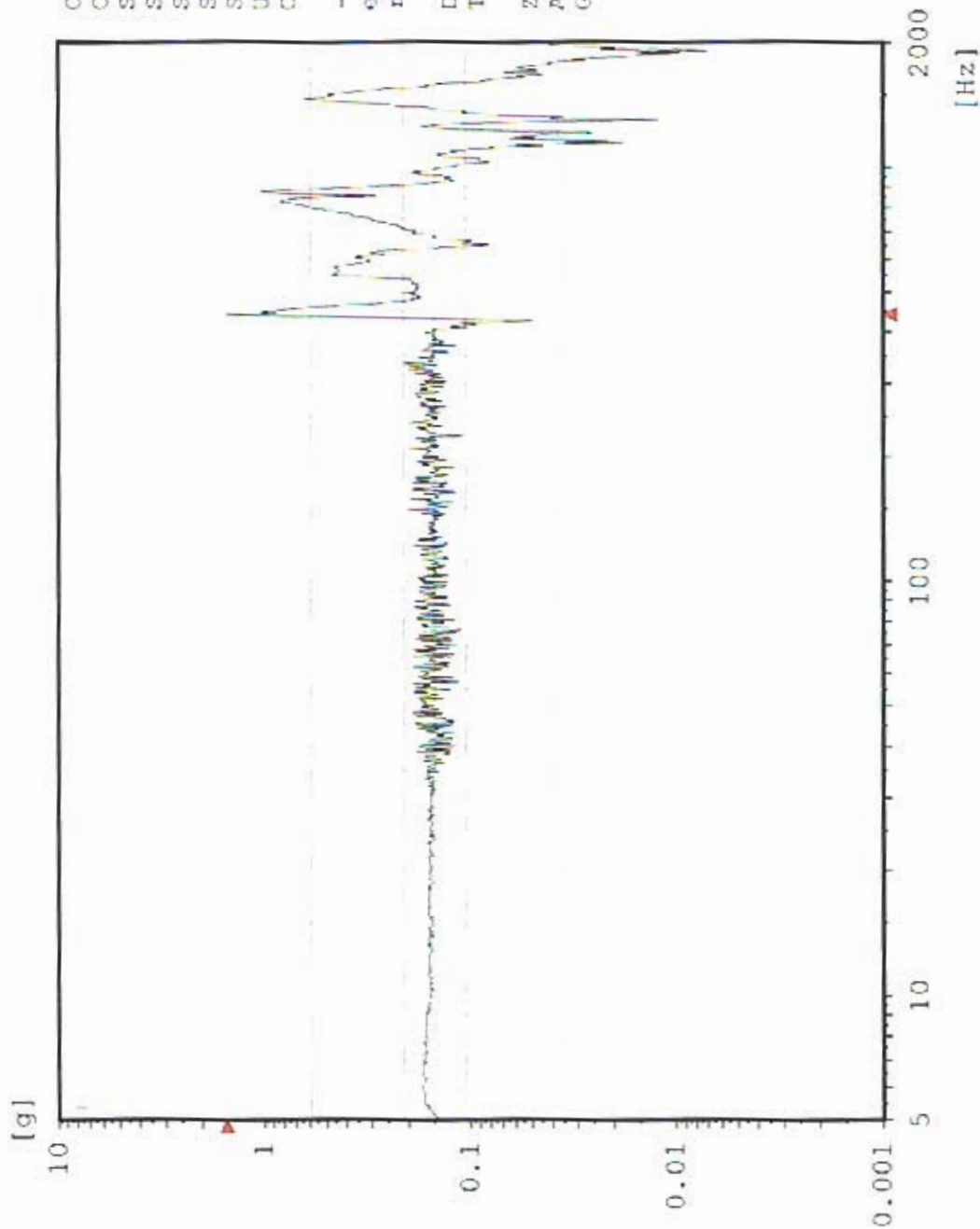
Sine

Stanford Linear Accelerator

J/N 4995.52036

TEM / TPS

wyle
Laboratories



Chan.no: 10
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 16:26:57

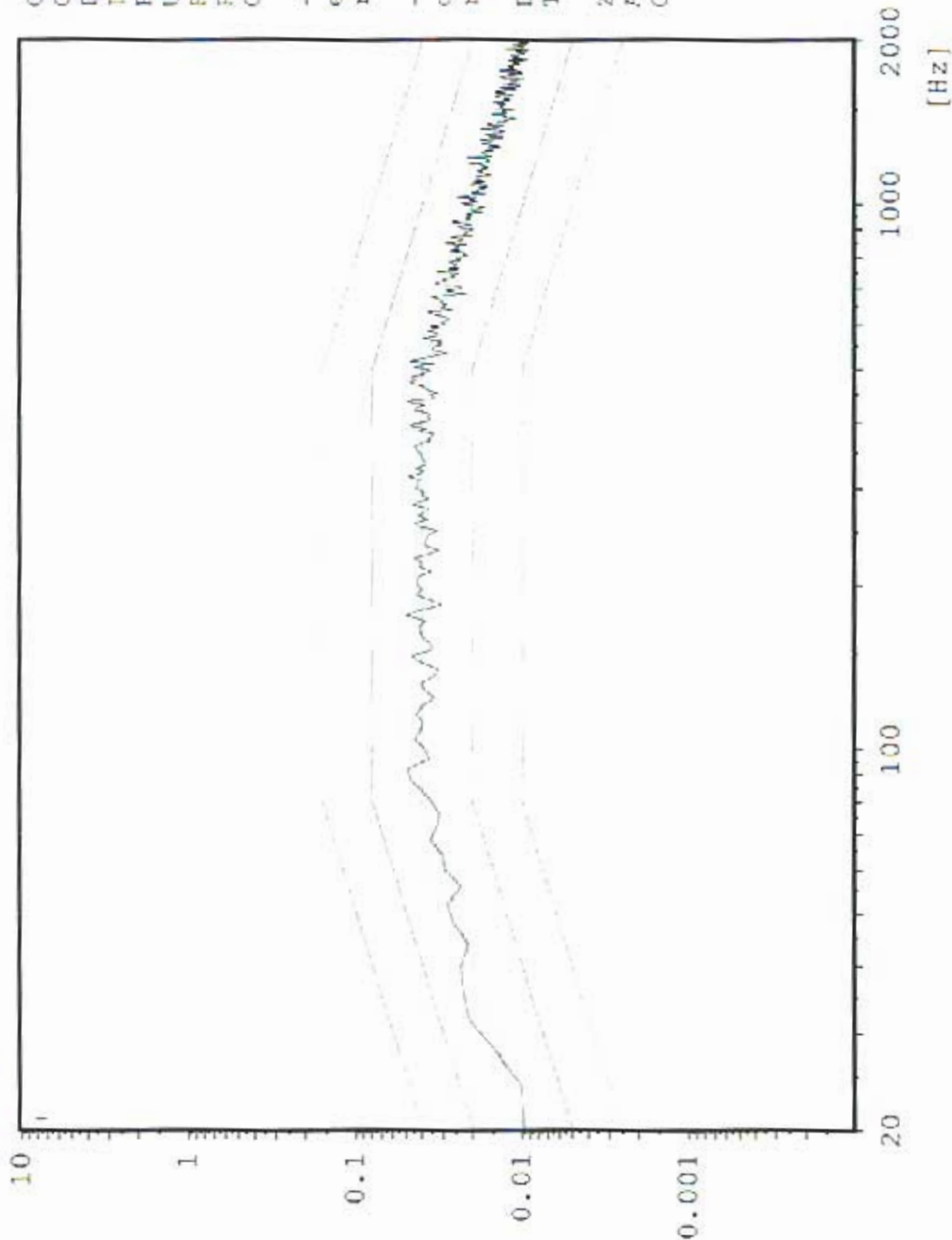
Z - axis Pre Random
Acceptance Unit
GLAT 1839

CZ1 Z-Axis Control

Random
Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 1
Chan.type: C
DOF: 126
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 6.795 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

Z - Axis
Acceptance Unit
GLAT 1839

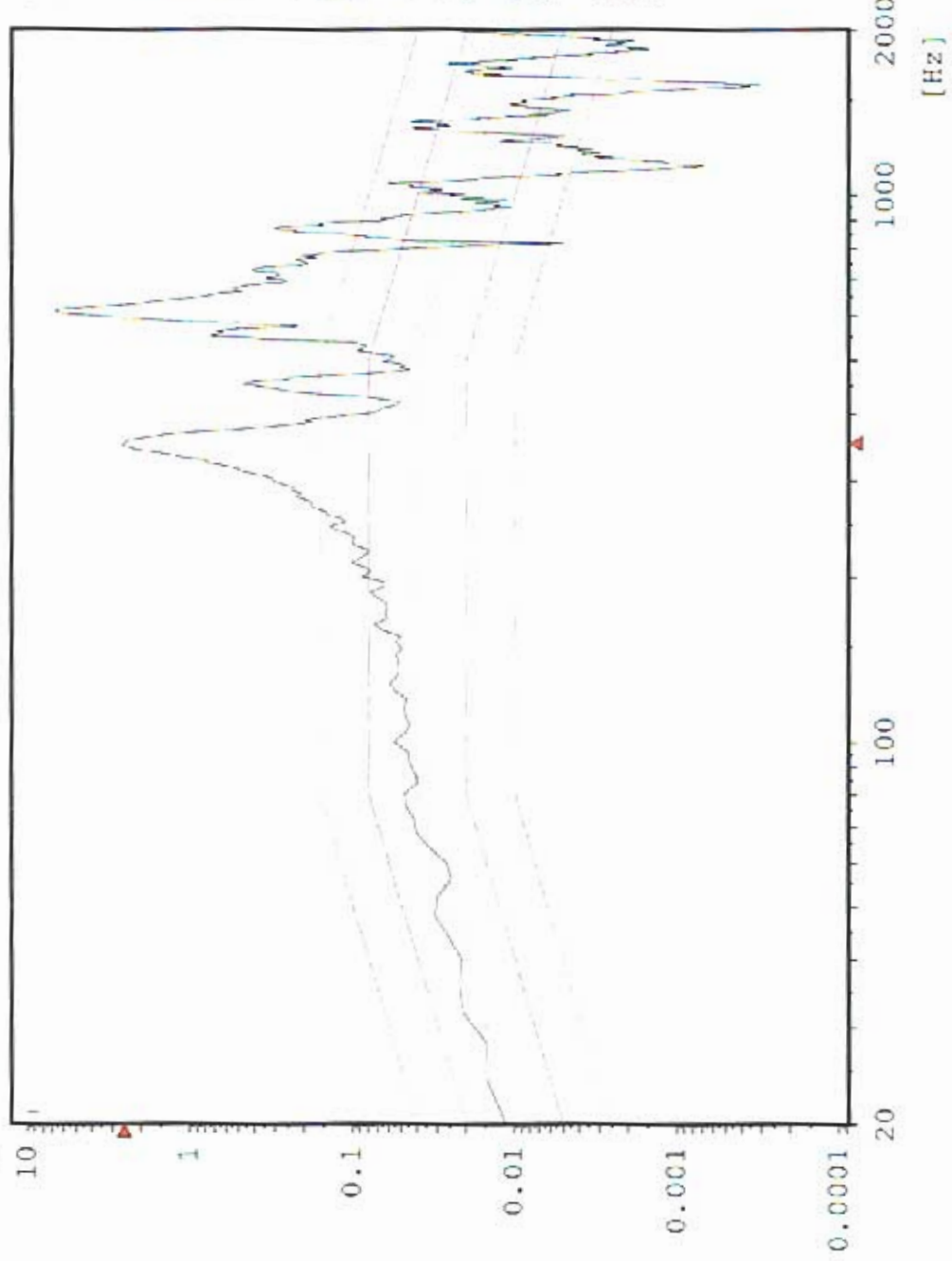
Cursor: 352 Hz 2.557 g²/Hz

Random AZA TPS Boss 2

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 2
 Chan.type: M
 DOF: 100
 Level: 0.0 dB
 Resolution: 4 Hz
 Unit: g²/Hz
 RMS (act.): 21.2 g
 RMS (req.): 6.787 g
 Contr.strat.: Closed loop

-- Time on act. level --
 elapsed: 000:01:01
 remaining: 000:00:-1

-- Time total --
 elapsed: 000:02:55
 remaining: 000:00:-1

Date: 06-13-05
 Time: 16:34:38

Z - Axis
 Acceptance Unit
 GLAT 1839

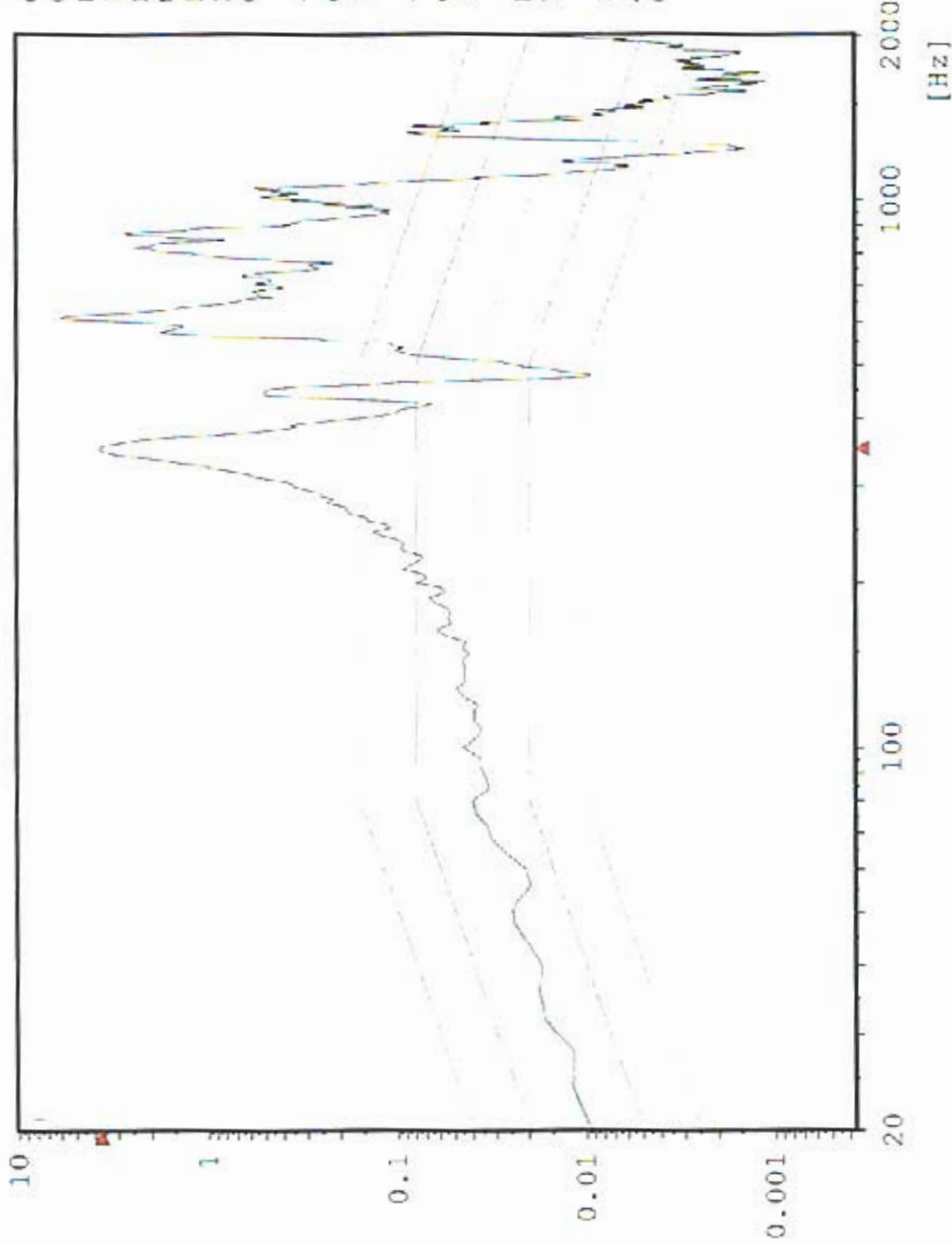
Cursor: 352 Hz 3.745 g²/Hz

Random AZ3 TPS Boss 1

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 3
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 26.39 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

Z - Axis
Acceptance Unit
GLAT 1839

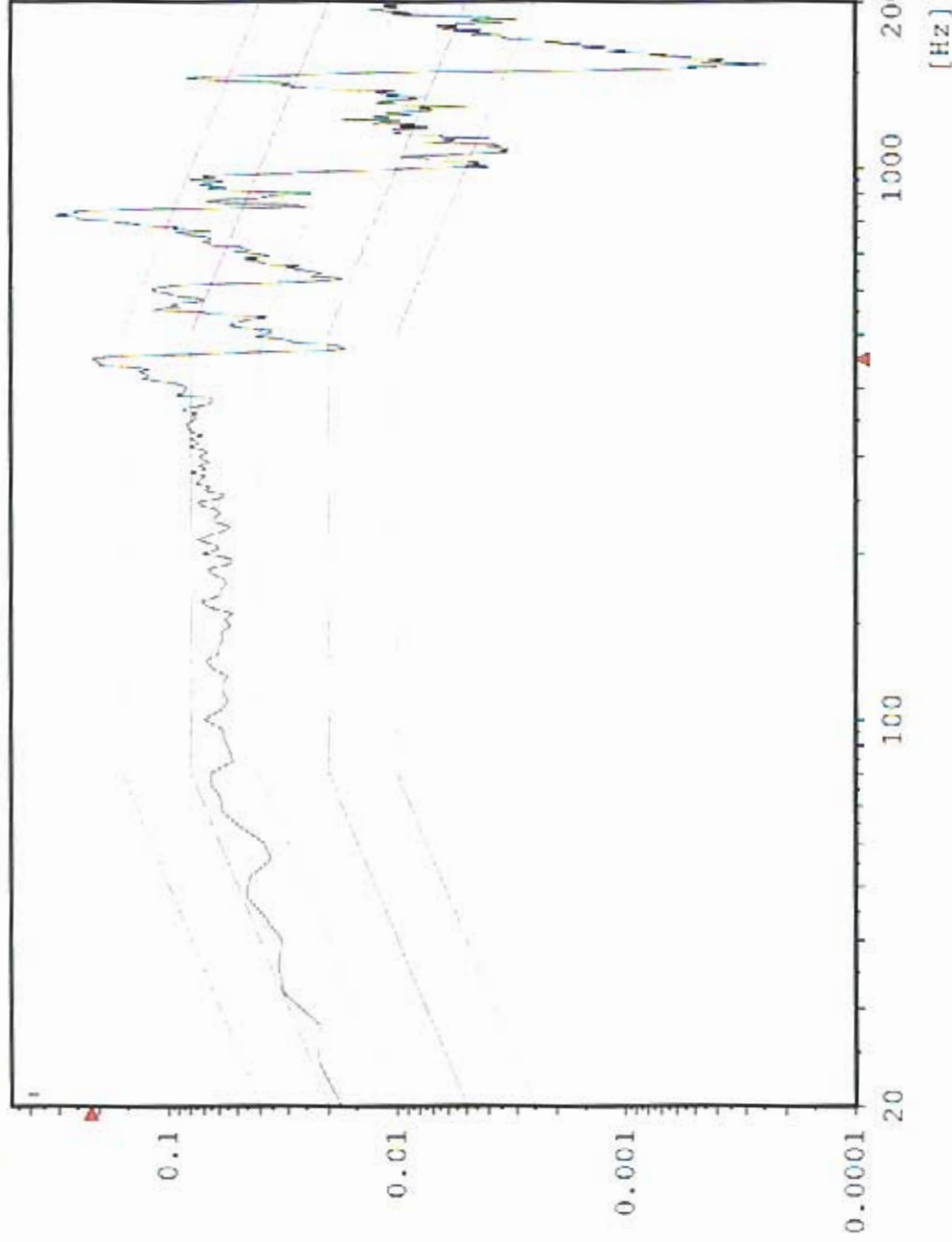
Cursor: 452 Hz 0.2192 g²/Hz

Random AZ5 TEM Bottom Edge

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 5
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 8.982 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

Z - Axis
Acceptance Unit
GLAT 1839

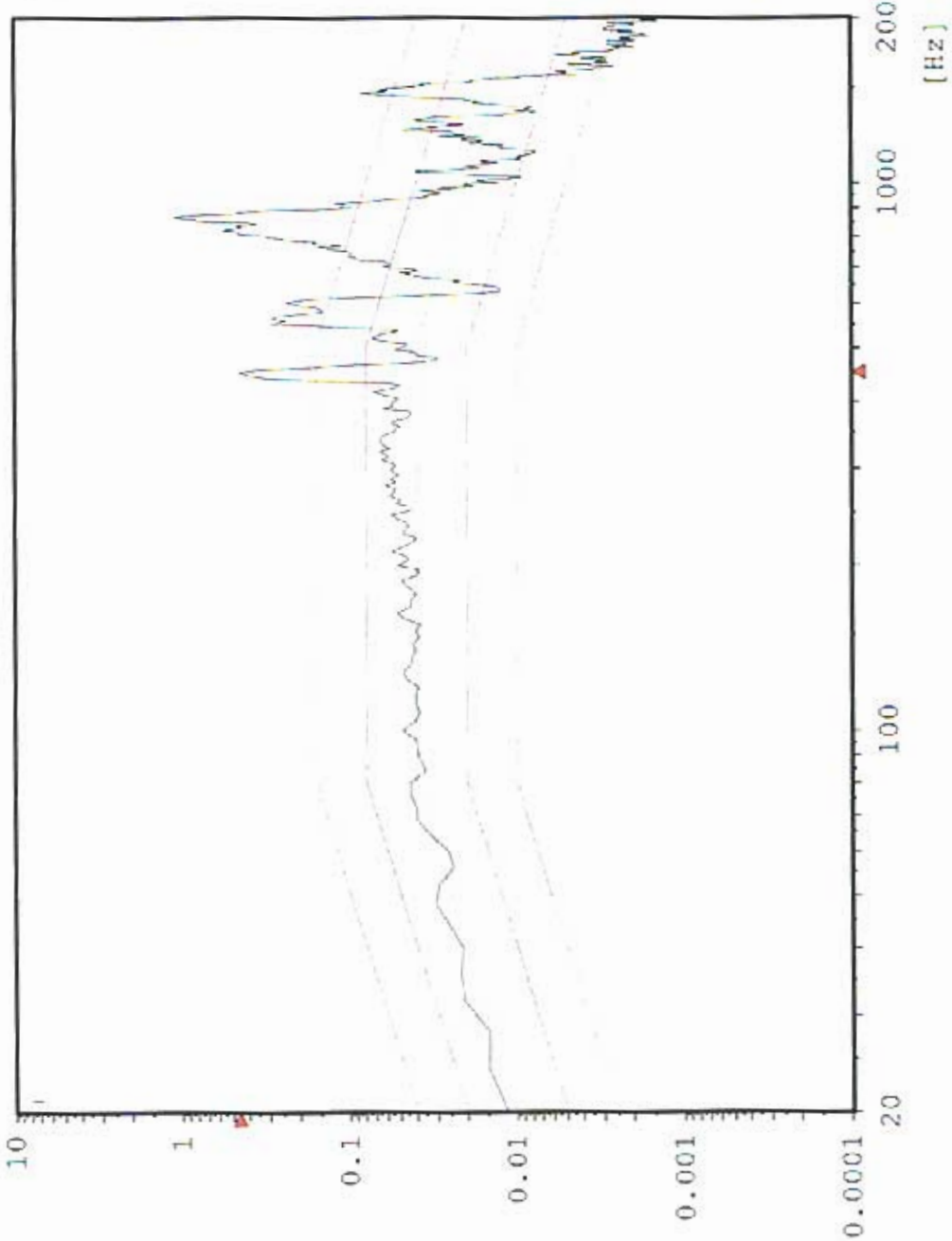
Cursor: 452 Hz 0.459 g²/Hz

Random AZ1 TPS Edge Center

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 6 M
Chan.type: 100
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 11.76 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

Z - Axis
Acceptance Unit
GLAT 1839

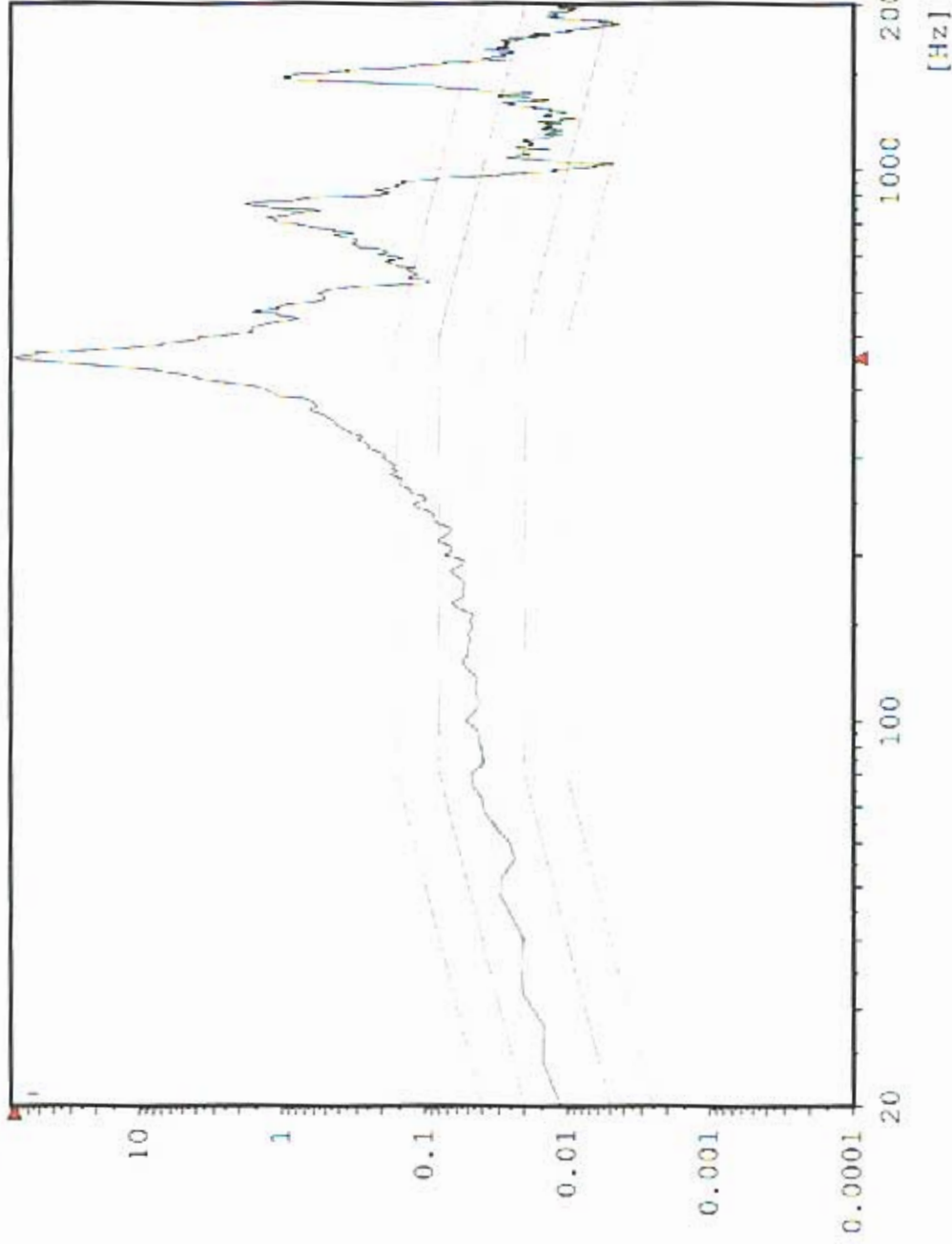
Max: 456 Hz 75.81 g²/Hz

Random AZ6 TEM Bottom Center

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 8
Chan.type: M
DCF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 48.43 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:00:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

2 - Axis
Acceptance Unit
GLAT 1839

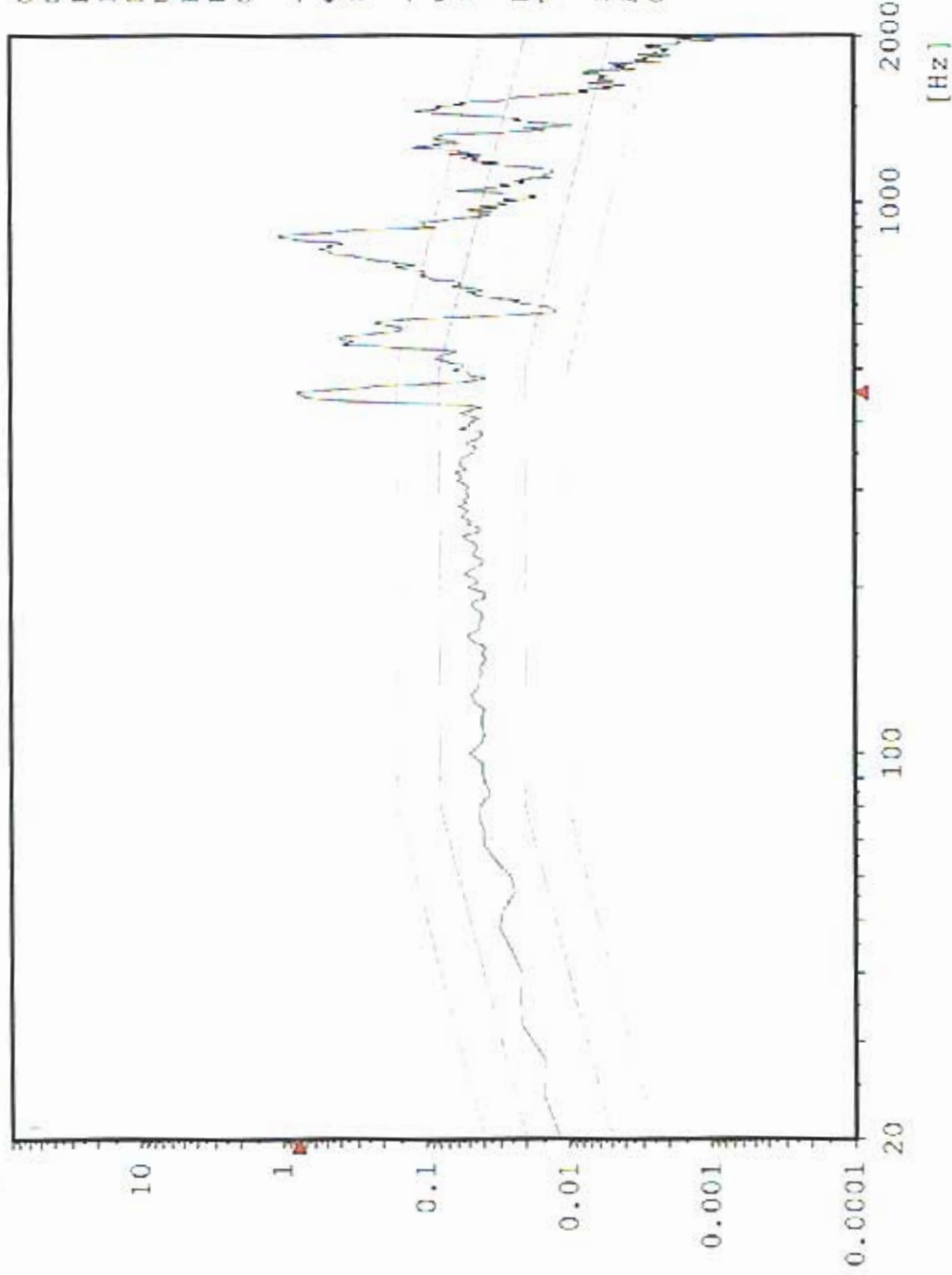
CURSOR: 452 Hz 0.798 g²/Hz

Random AZ2 TPS Corner

Stanford Linear Accelerator
J/N 49995.52036
TEM & TPS



[g²/Hz]



Chan.no: 10
Chan.type: M
DOF: 100
Level: 0.0 dB
Resolution: 4 Hz
Unit: g²/Hz
RMS (act.): 12.65 g
RMS (req.): 6.787 g
Contr.strat.: Closed loop

-- Time on act. level --
elapsed: 000:01:01
remaining: 000:30:-1

-- Time total --
elapsed: 000:02:55
remaining: 000:00:-1

Date: 06-13-05
Time: 16:34:38

Z - Axis
Acceptance Unit
GLAT 1839

Sine CZ1 Z-Axis Control

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS

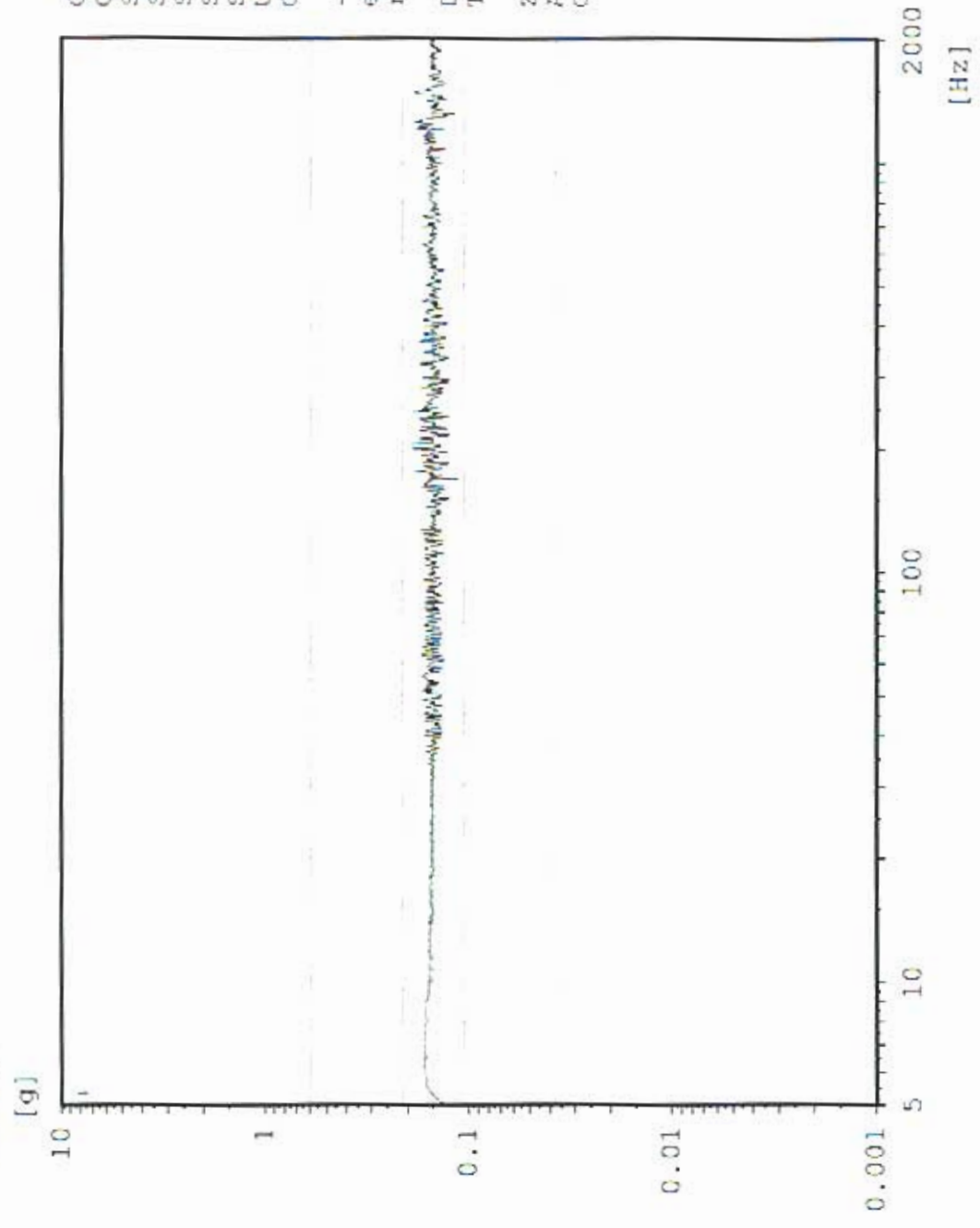


Chan.no: 1
Chan.type: CW Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 16:47:27

Z - axis Post Random
Acceptance Unit
GLAT 1839



AZ4 TPS Boss 2

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS

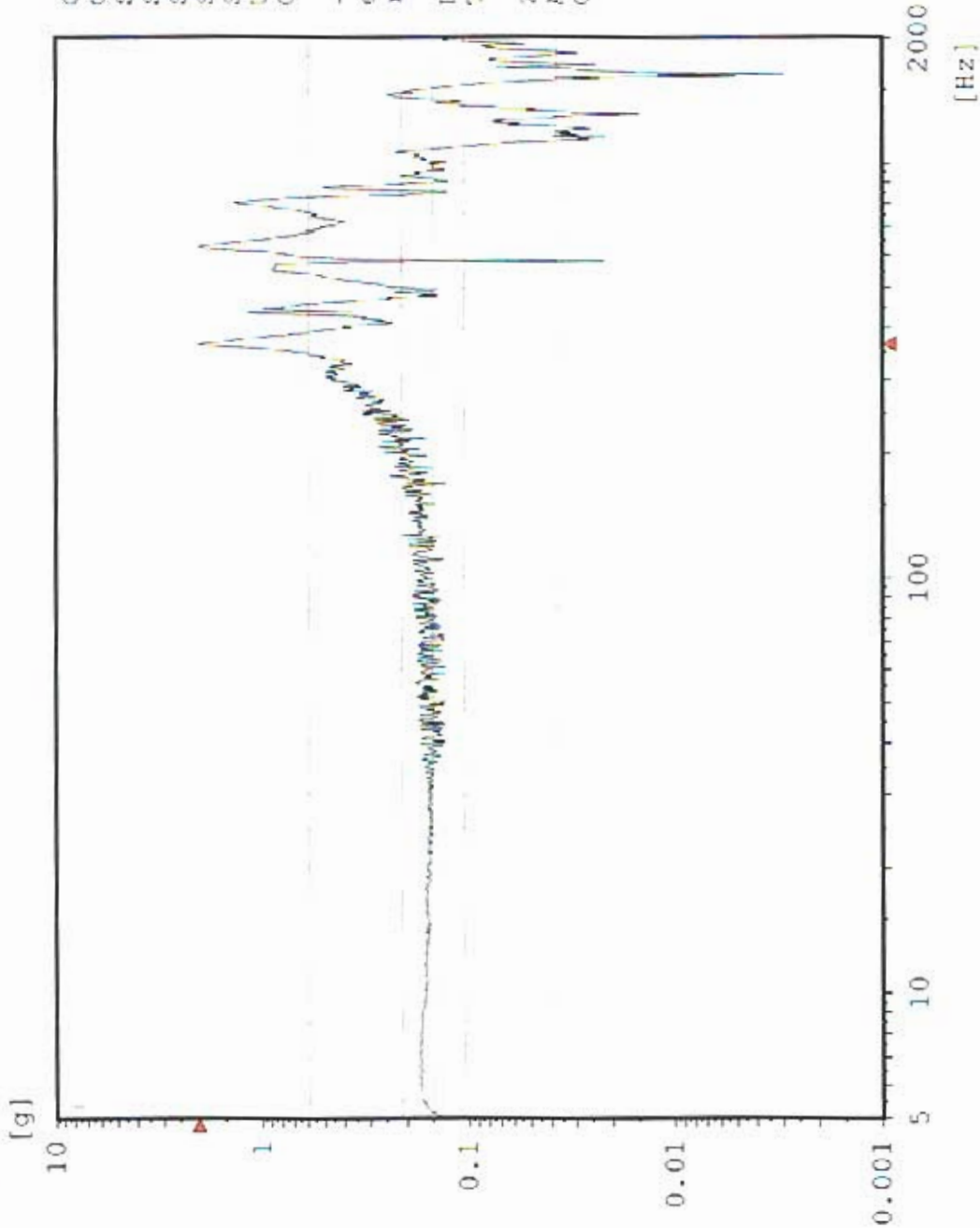


Chan.no: 2
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 16:47:27

2 - axis Post Random
Acceptance Unit
GLAT 1839



AZ3 TPS Boss 1

Sine
Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS

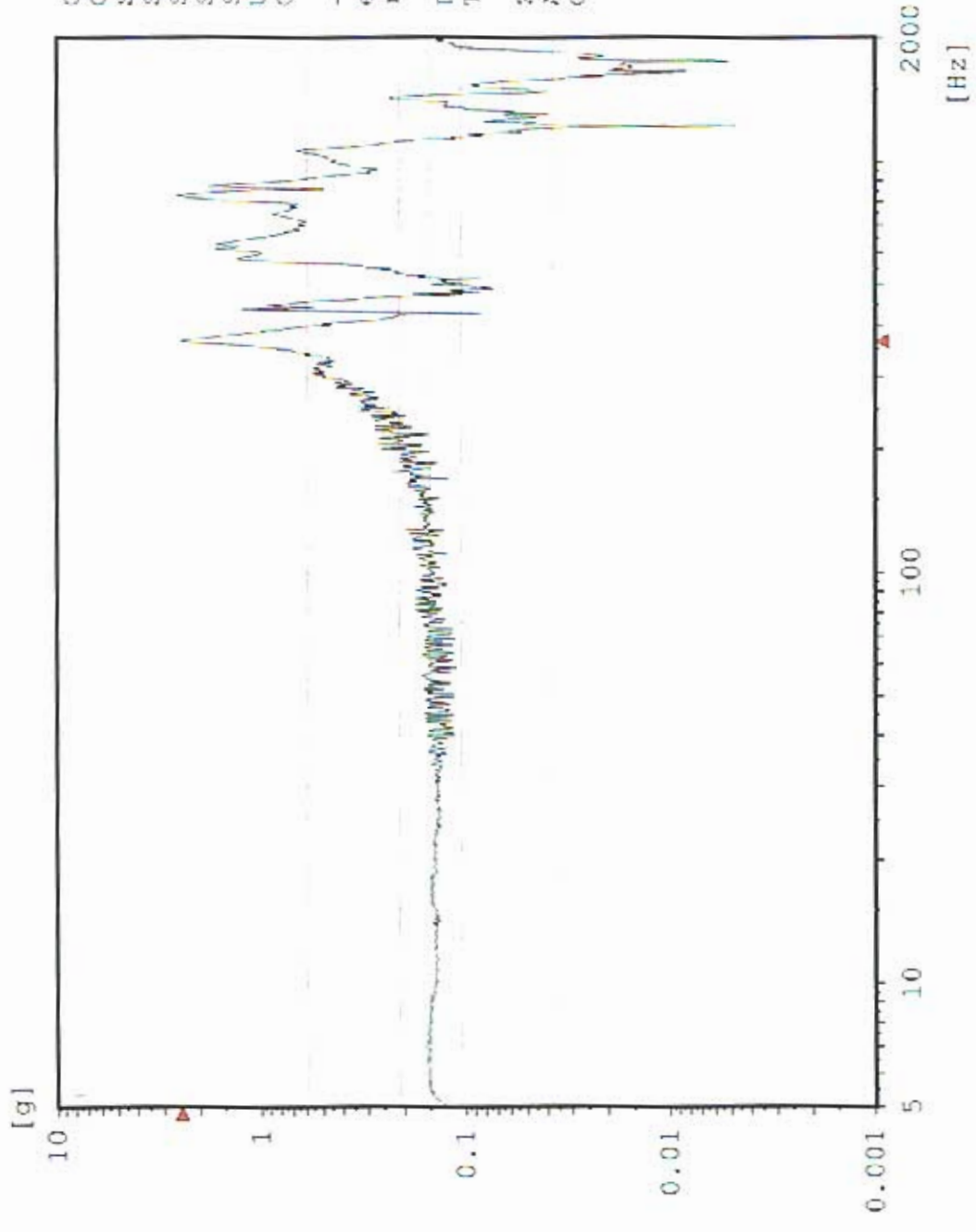


Chan.no: 3 M Filtered
Chan.type: logarithmic
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

Date: 06-13-05
Time: 16:47:27

Z - axis Post Random
Acceptance Unit
GLAT 1839



Sine AZ5 TEM Bottom Edge

Stanford Linear Accelerator
J/N 4995.52036
TEM / TPS

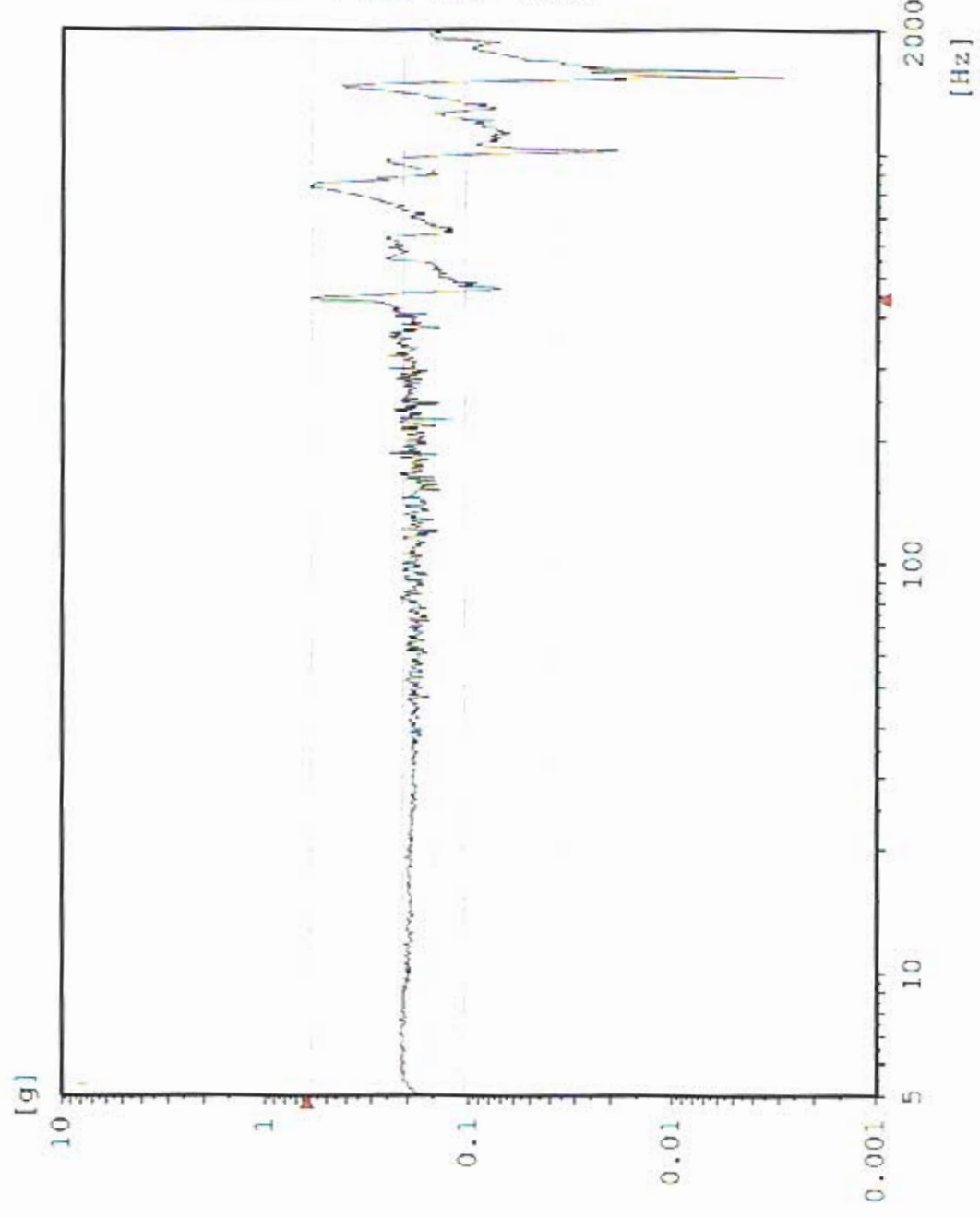


Chan.no: 5 M Filtered
Chan.type: logarithmic
Sweep type: 1
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.strat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

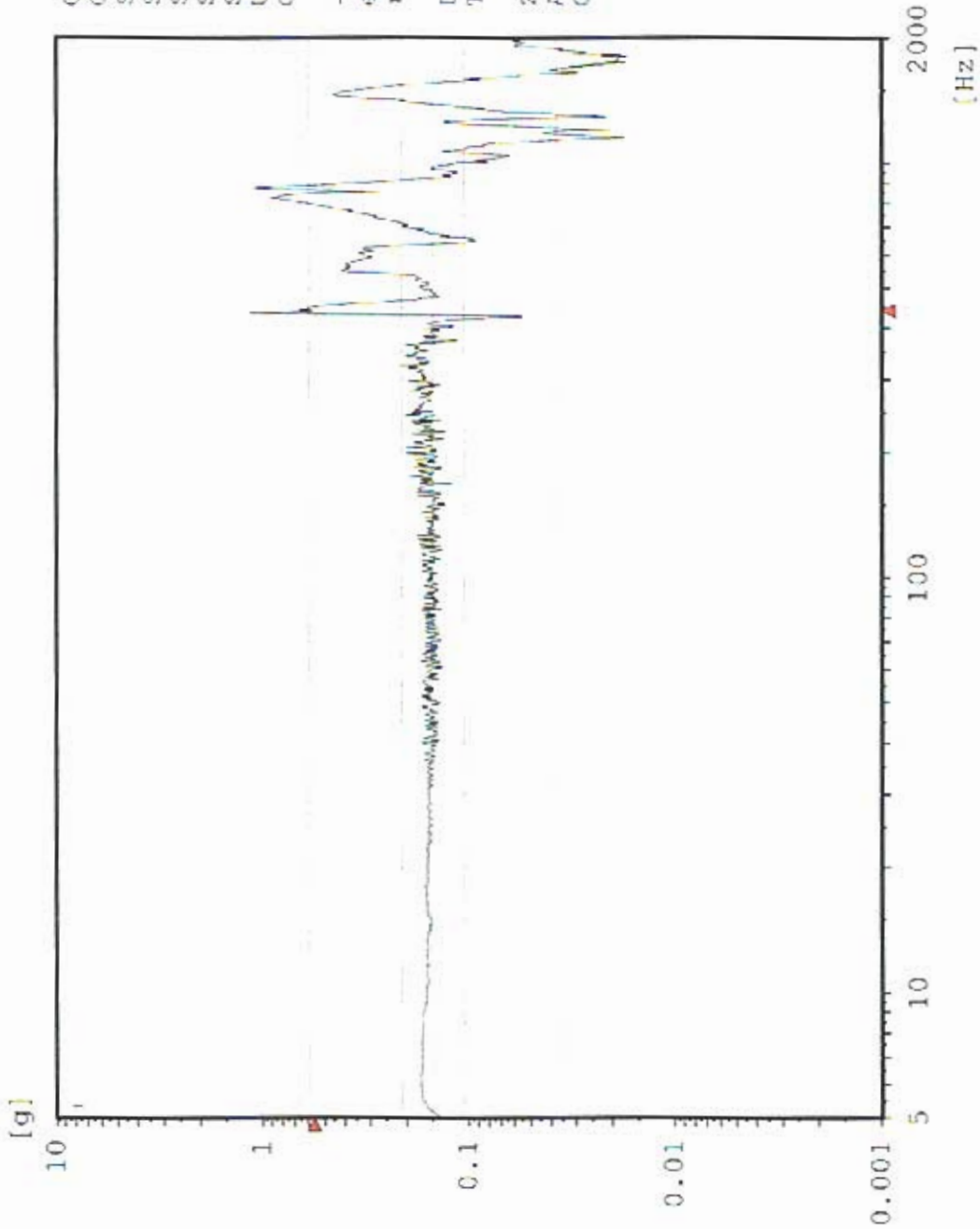
Date: 06-13-05
Time: 16:47:27

Z - axis Post Random
Acceptance Unit
SLAT 1839



Sine AZ1 TPS Edge Center

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS



Chan.no: 6
 Chan.type: M Filtered
 Sweep type: logarithmic
 Sweeps done: 1
 Sweeps req.: 1
 Sweep direct.: up
 Sweep rate: 2.00 Oct/min
 Unit: g
 Contr.strat.: Closed loop

-- Testing time --
 elapsed: 000:04:18
 remaining: 000:00:00
 Date: 06-13-05
 Time: 16:47:27

Z - axis Post Random
 Acceptance Unit
 GLAT 1839

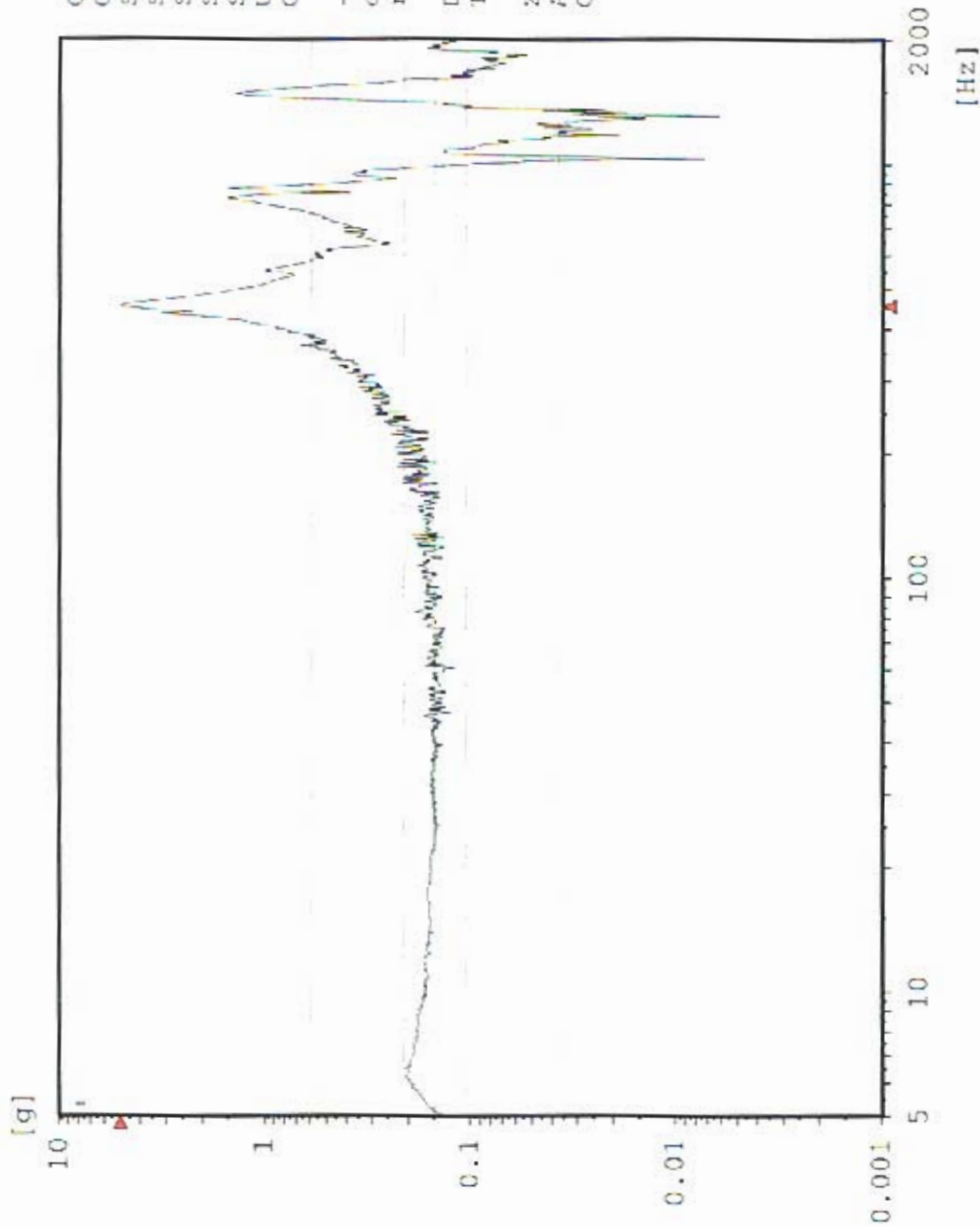
Max: 454.5 Hz 5.03 g

Sine AZ6 TEM Bottom Center

Stanford Linear Accelerator

J/N 49995.52036

TEM / TPS



Chan.no: 8
Chan.type: M Filtered
Sweep type: logarithmic
Sweeps done: 1
Sweeps req.: 1
Sweep direct.: up
Sweep rate: 2.00 Oct/min
Unit: g
Contr.stat.: Closed loop

-- Testing time --
elapsed: 000:04:18
remaining: 000:00:00

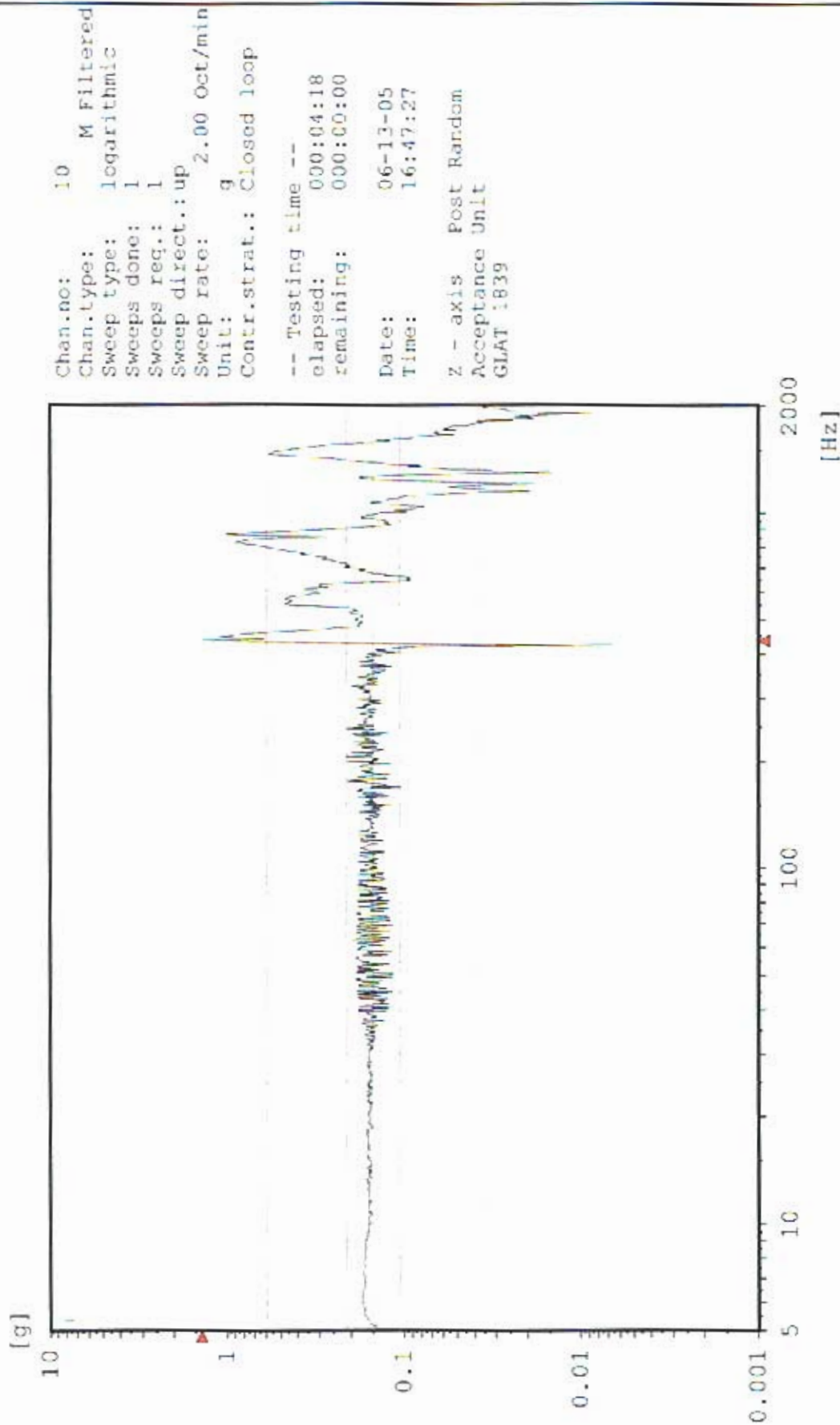
Date: 06-13-05
Time: 16:47:27

Z - axis Post Random
Acceptance Unit
GLAT 1839

Max: 436.2 Hz 1.398 g

Sine AZ2 TPS Corner

Stanford Linear Accelerator
J/N 49995.52036
TEM / TPS





EQUIPMENT LIST

JOB NUMBER 49995.52036

TEST DESCRIPTION Random & Sine Vibration

EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL NUMBER	ASSET NUMBER	RANGE	ACCURACY	CALIBRATION DATE	CALIBRATION PERIOD
Vibration System	Unholtz-Dickie	T1000	4-6242	17,500 Force Lbs. 2Hz -3KHz	± 10%	06-13-05	T.O.T
Accelerometer	Endevco Corp.	2271A	4-42129	1,000 g's Max; 2Hz - 5.5KHz	± 5%	11-01-04	1 Yr.
	Endevco Corp.	2220D	4-6442	1,000 g's Max; 2Hz - 10KHz	± 5%	08-26-04	1 Yr.
	Endevco Corp.	2226C	4-64096	1,000 g's Max; 3Hz - 6KHz	± 5%	04-14-05	1 Yr.
	Endevco Corp.	2222C	4-42138	1,000 g's Max; 5Hz - 8KHz	± 5%	06-18-04	1 Yr.
	Endevco Corp.	2226C	4-64082	1,000 g's Max; 3Hz - 6KHz	± 5%	04-14-05	1 Yr.
	Endevco Corp.	2226C	4-6555	1,000 g's Max; 3Hz - 6KHz	± 5%	06-18-04	1 Yr.
	Endevco Corp.	2222C	4-42143	1,000 g's Max; 5Hz - 8KHz	± 5%	11-01-04	1 Yr.
Charge Amp.	Unholtz-Dickie	D22-8	4-64032	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6539	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6540	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6458	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6559	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6548	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
	Unholtz-Dickie	D22-8	4-6457	Freq. Response: 5Hz - 5KHz	± 2%	03-04-05	6 Mo.
Digital Vibration Control System	M + P International / Agilent	VXI E8408A	4-62092	Freq. Range: 23KHz Sample Rate: 51.2Ksa/sec. Dynamic Range: 90dB Voltage: 10v Pk. Resolution: 20 Bit / 3200 lines Channels: 16; COLA, 1v Pk.	± 1%	03-14-05	2 Yr.