

TESTING / INSPECTION REPORT

REPORT NO : VT-120608-6

COMPANY : Apacer Technology Inc.

ADDRESS : 3F, No.83, Kur Wong Rd., Aspire Park, Lung Tan Hsiang,
Tao Yuan Hsien, Taiwan,

TEL : 886-2-2698-2888

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SPECIMEN : Serial ATA Flash Drive

DATE OF RECEIVED : 2012/04/26

DATE OF TESTED : 2012/05/31

TEST / INSPECTION ITEMS : Temperature 、 Vibration 、 Shock Test

REMARKS :

- The laboratory is accredited by ISO/IEC 17025 General Requirements for the Competence of Calibration and Testing Laboratory.
- The results only apply to the device under test.
- This report is 32 pages, and no part of it may be abstracted or reproduced.

Test Engineer : <i>Yi-Kai Lai</i>	
Approval Signatory : <i>2012.6.13 David Lee</i>	Laboratory Head : <i>Hein Tai Chang</i>

金頓科

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TESTING EQUIPMENT :

1.Vibration Tester	: KING DESIGN KD-9363EM-600F2K-50N120, S/N : KDS11054986
2.Controller	: DACTRON Front-End Box, S/N:4529465
3.Control Accelerometer	: Wilcoxon Research WR-777, S/N:4208
4.Vibration Tester	: KING DESIGN KD-9363EM-600F2K-50N120, S/N : KDS11054986
5.Controller	: DACTRON Front-End Box, S/N:4529465
6.Control Accelerometer	: Wilcoxon Research WR-777, S/N:4208
7.Shock Testing System	: KING DESIGN DP-1200-60, S/N:R2110086489
8.Controller	: KING DESIGN KD-1200-03C, S/N:KD674
9.Accelerometer	: B&K 4398, S/N:2209044
10.Shock Testing System	: KING DESIGN DP-1200-18, S/N:KDS02197998
11.Controller	: KING DESIGN DP-1200-03C, S/N:KD674
12.Accelerometer	: DYTRAN3200B2T, S/N:2657
13.Chamber	: TMJ-9712C, S/N : T-12-050709
14.Chamber	: KING SON KS-9001, S/N : 001

TEST ENVIRONMENT :

Temperature	: 23.2°C (25±10°C)
Relative Humidity	: 60% RH (50±25% RH)

SPECIMEN :

Model	: SAFD25P-M
Quantity	: 1 unit

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TEST SPECIFICATION(1) :

As per applicant's requirement

Temperature Test (Non-Operating Test)

Step	Temperature (°C)	Duration
1	-40	96 hrs

Test Cycle : 1 cycle

Total Test Time : 96 hrs

TEST SPECIFICATION(2) :

As per applicant's requirement

Temperature Test (Non-Operating Test)

Step	Temperature (°C)	Duration
1	100	96 hrs

Test Cycle : 1 cycle

Total Test Time : 96 hrs

TEST SPECIFICATION(3) :

As per applicant's requirement

Temperature Test (Operating Test)

Step	Temperature (°C)	Duration
1	-40	96 hrs

Test Cycle : 1 cycle

Total Test Time : 96 hrs

TEST SPECIFICATION(4) :

As per applicant's requirement

Temperature Test (Operating Test)

Step	Temperature (°C)	Duration
1	85	96 hrs

Test Cycle : 1 cycle

Total Test Time : 96 hrs

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TEST SPECIFICATION(5) :

As per applicant's requirement

Sine Vibration test (Non-Operating)

Frequency	: 10 Hz to 2,000 Hz
Displacement	: 1.52 mm (10Hz to 70Hz)
Accelerate	: 15 g (70Hz to 2,000Hz)
Sweep rate	: 20 min/cycle
Test Axis	: X, Y, Z axis
Test Time	: 1 hr (Each axis)
Total Test Time	: 3 hrs

TEST SPECIFICATION(6) :

Reference to MIL-STD 810G 514.6 category 24

Random Vibration test (Operating)

Frequency	: 20 Hz to 2,000 Hz
Accelerate	: 7.69 g rms
P.S.D.	: 0.04 g ² /Hz (for 20Hz to 1,000Hz)
	: -6 dB/Oct (for 1,000Hz to 2,000Hz)
Test Axis	: X, Y, Z axis
Test Time	: 1 hr (Each axis)
Total Test Time	: 3 hrs

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TEST SPECIFICATION(7) :

As per applicant's requirement

Wave Form : Half sine wave (Non-Operating)
 Acceleration : 1,500 g
 Duration Time : 0.5 mS
 No. of Shock : Each axis 3 times
 Shock Direction : $\pm X$, $\pm Y$, $\pm Z$ axis

TEST SPECIFICATION(8) :

As per applicant's requirement

Wave Form : Half sine wave (Operating)
 Acceleration : 50 g
 Duration Time : 11 mS
 No. of Shock : Each axis 3 times
 Shock Direction : $\pm X$, $\pm Y$, $\pm Z$ axis

TEST RESULT :

Describe	PASS	FAIL	Non-Judgment
Function judgment ⁽¹⁾	√	---	---
Appearance check ⁽²⁾	√	---	---
(1)—Burn in function was normal after the test.			
(2)—No visible damages were found after the test.			

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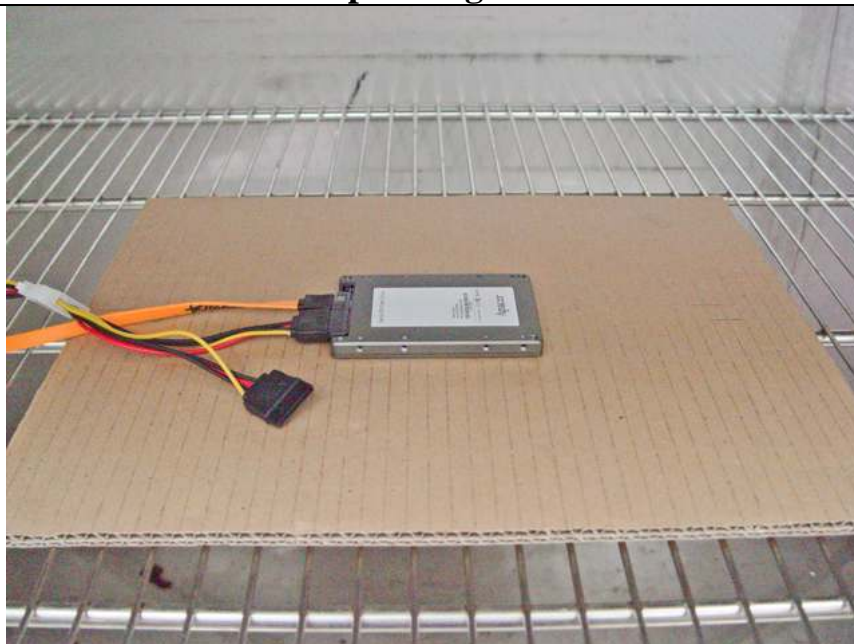
TESTING / INSPECTION REPORT

Testing photos (test specification 1 & 2 & 3 & 4)






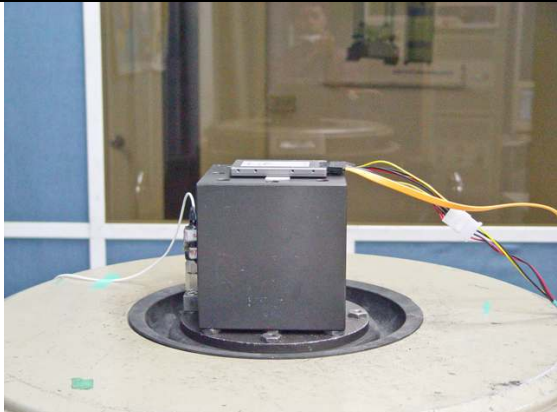
Non-Operating test



Operating test

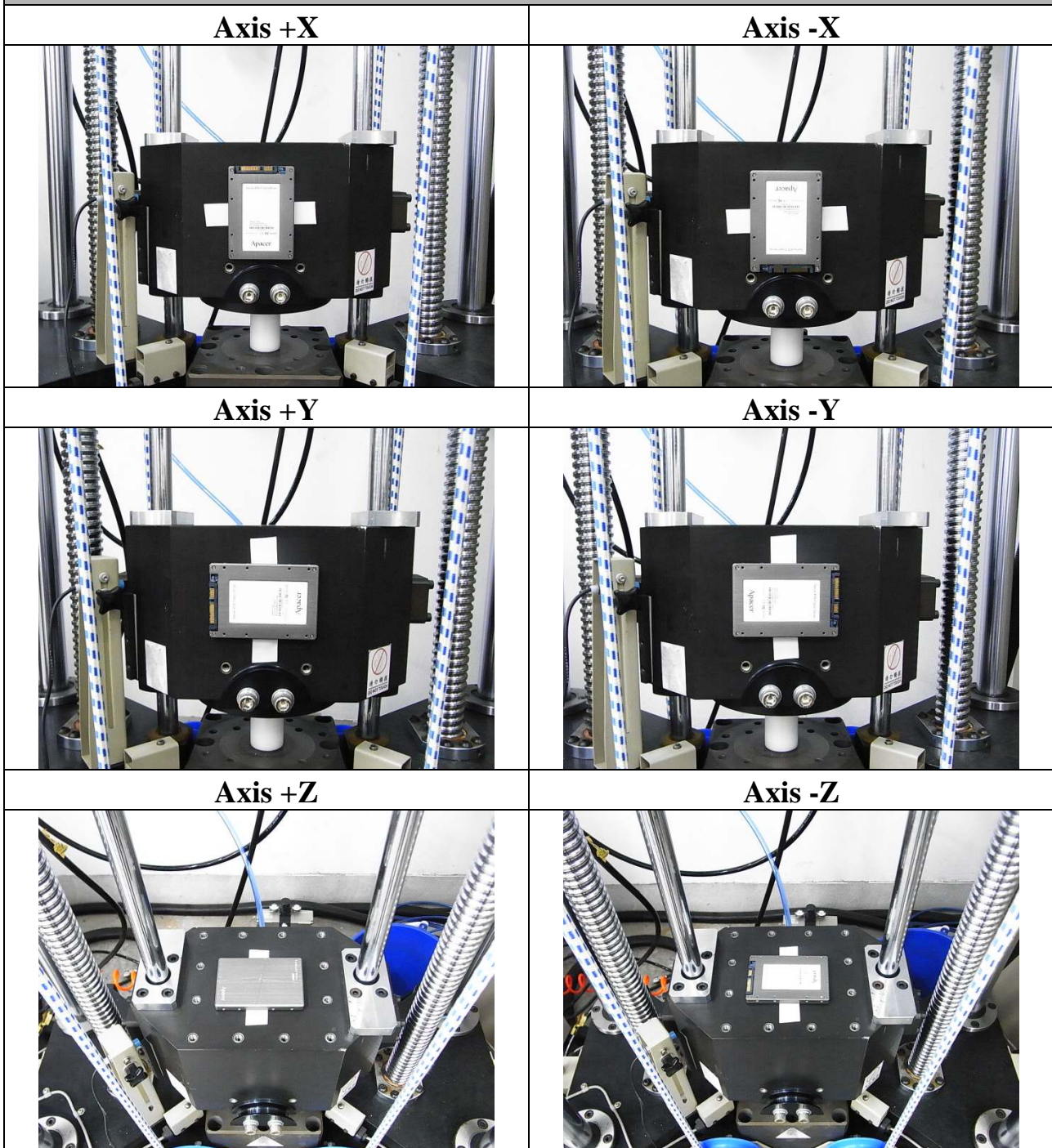


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Testing photos (test specification 5 & 6)	
Axis X (non-operating)	Axis X (operating)
	
Axis Y (non-operating)	Axis Y (operating)
	
Axis Z (non-operating)	Axis Z (operating)
	

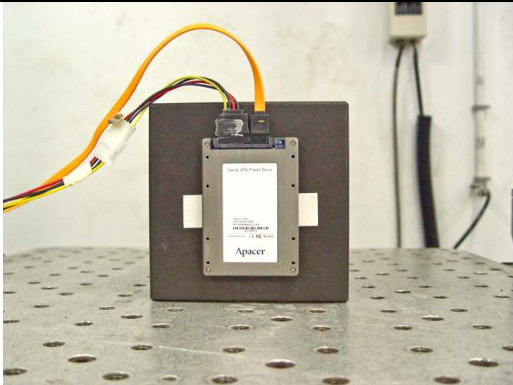
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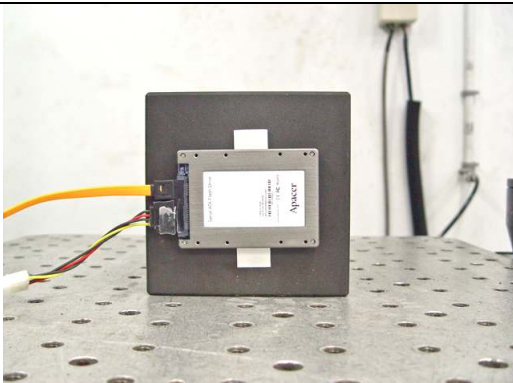
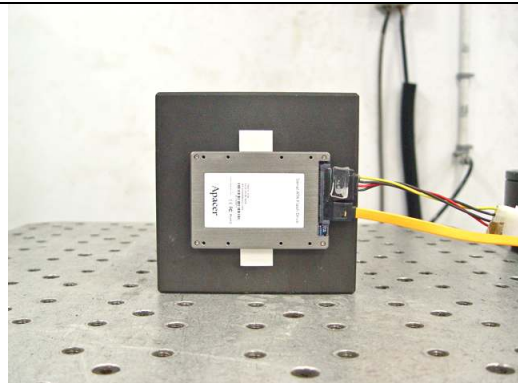
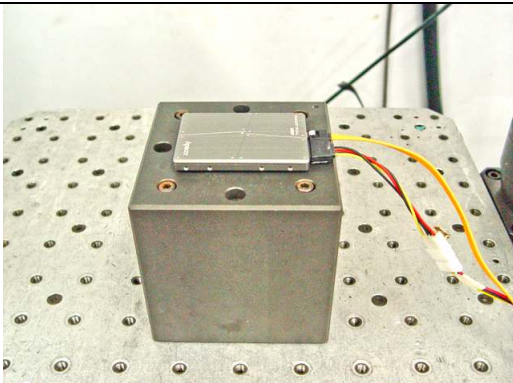
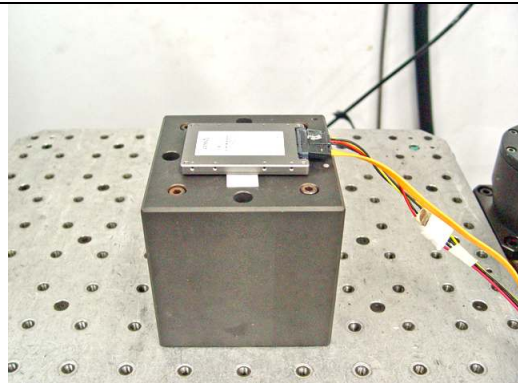
Testing photos (test specification 7)



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Testing photos (test specification 8)

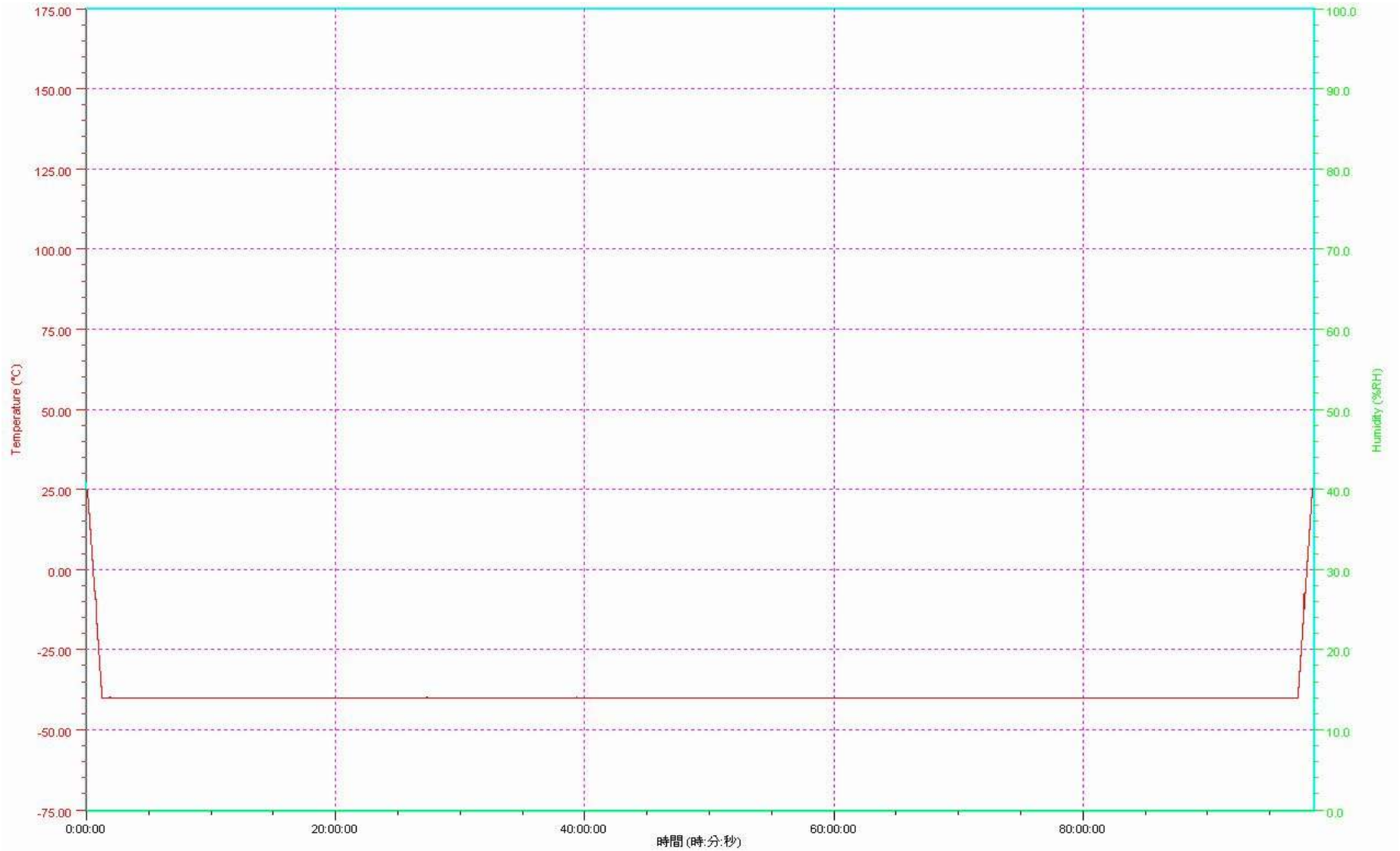
Axis +X

Axis -X

Axis +Y

Axis -Y

Axis +Z

Axis -Z


Temperature Test (-40°C Non-operating Test)

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Temperature Test (100°C Non-operating Test)

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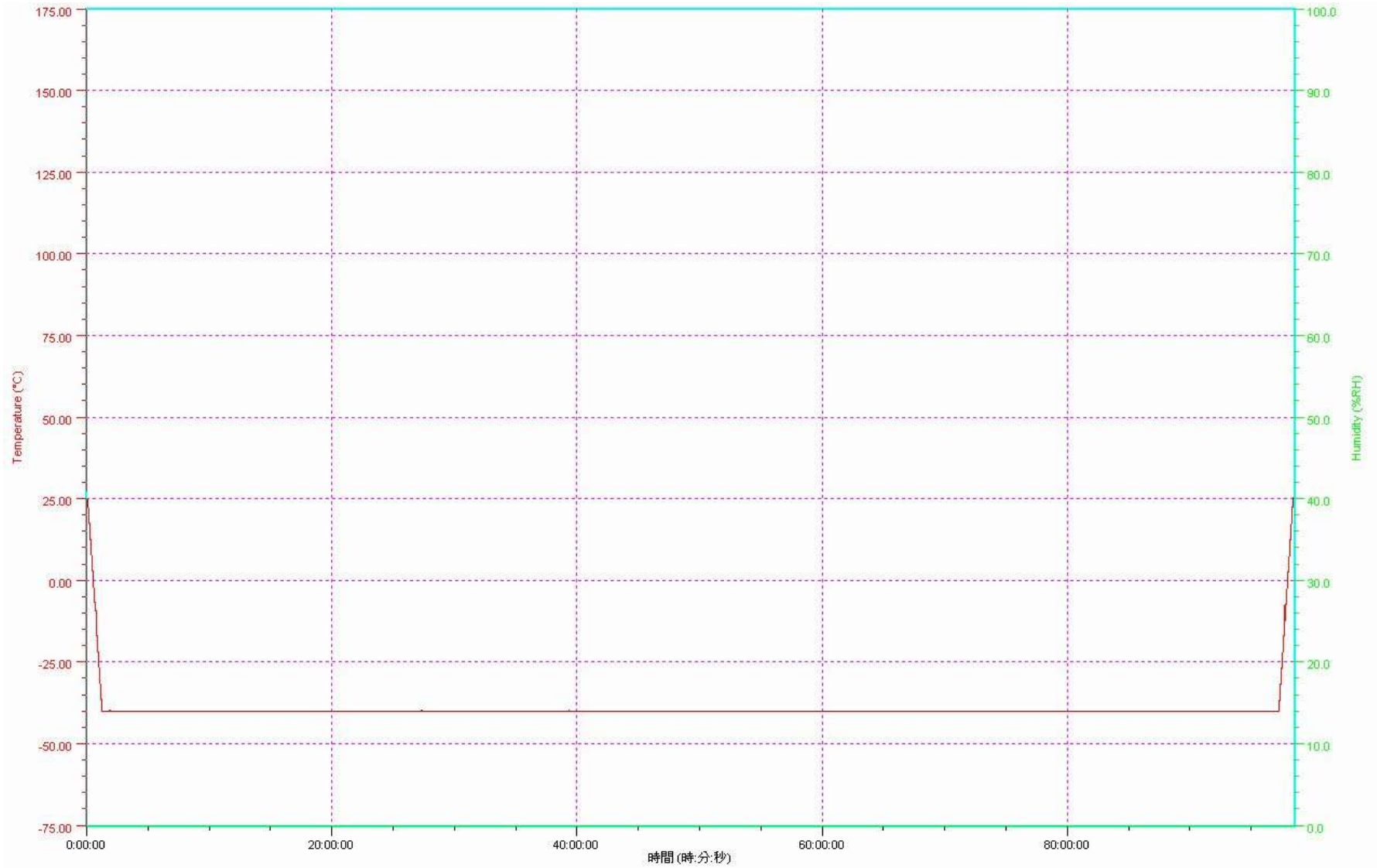
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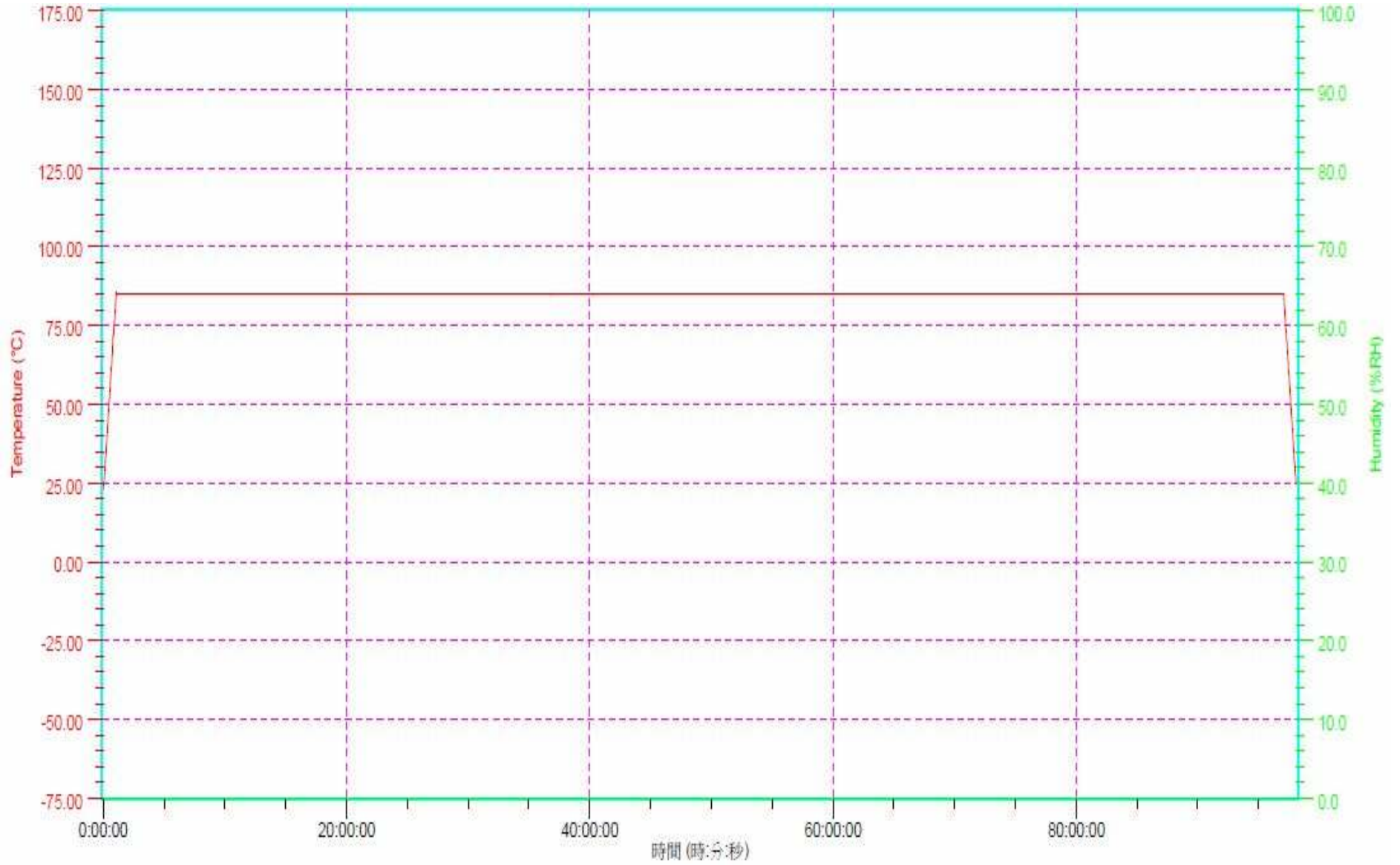
Temperature Test (-40°C Operating Test)

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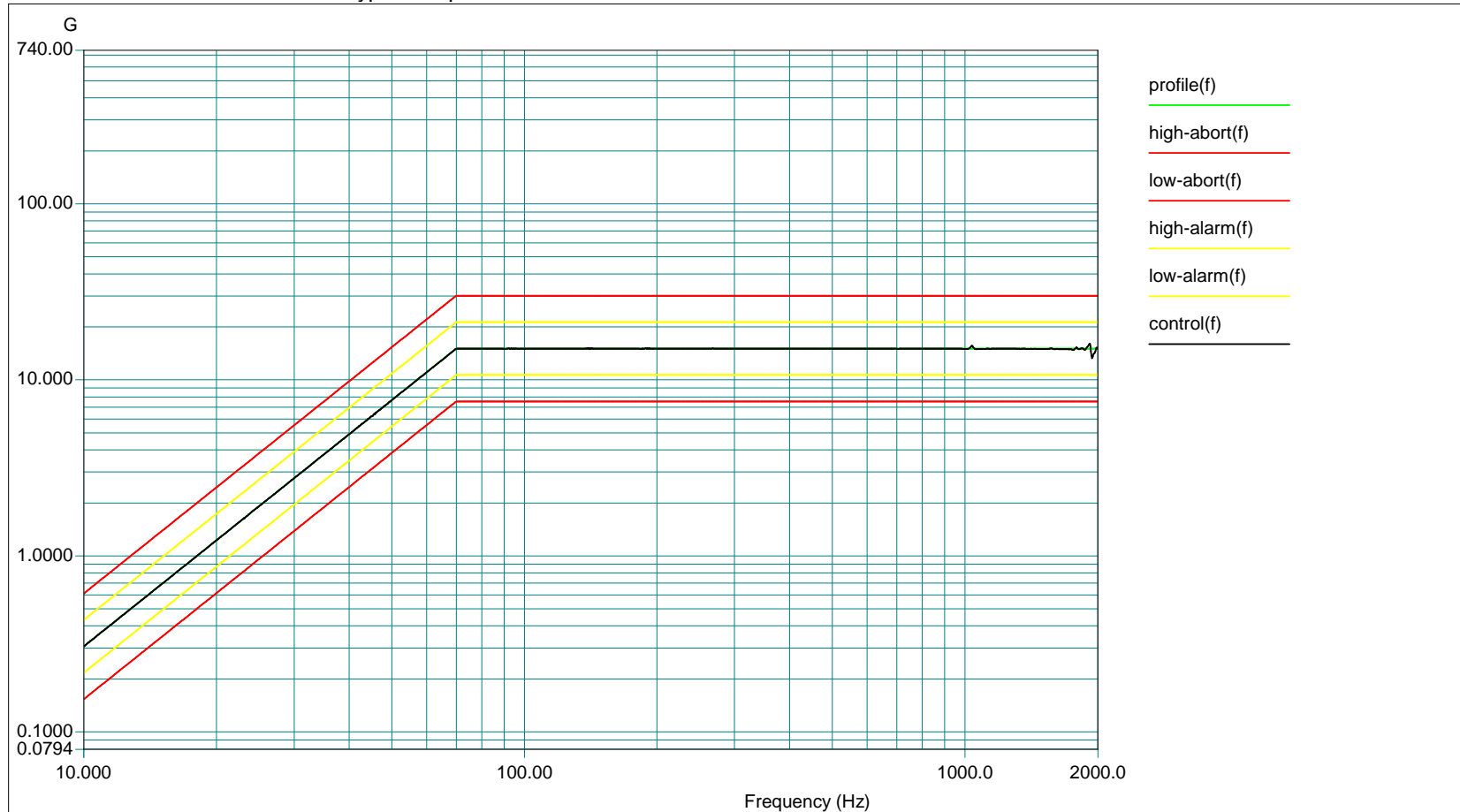
Temperature Test (85°C Operating Test)



X Axis

Project File Name: 宇瞻 10-2000Hz 1.52mm 15g.prj

Profile Name: Test Type: Swept Sine Run Folder:

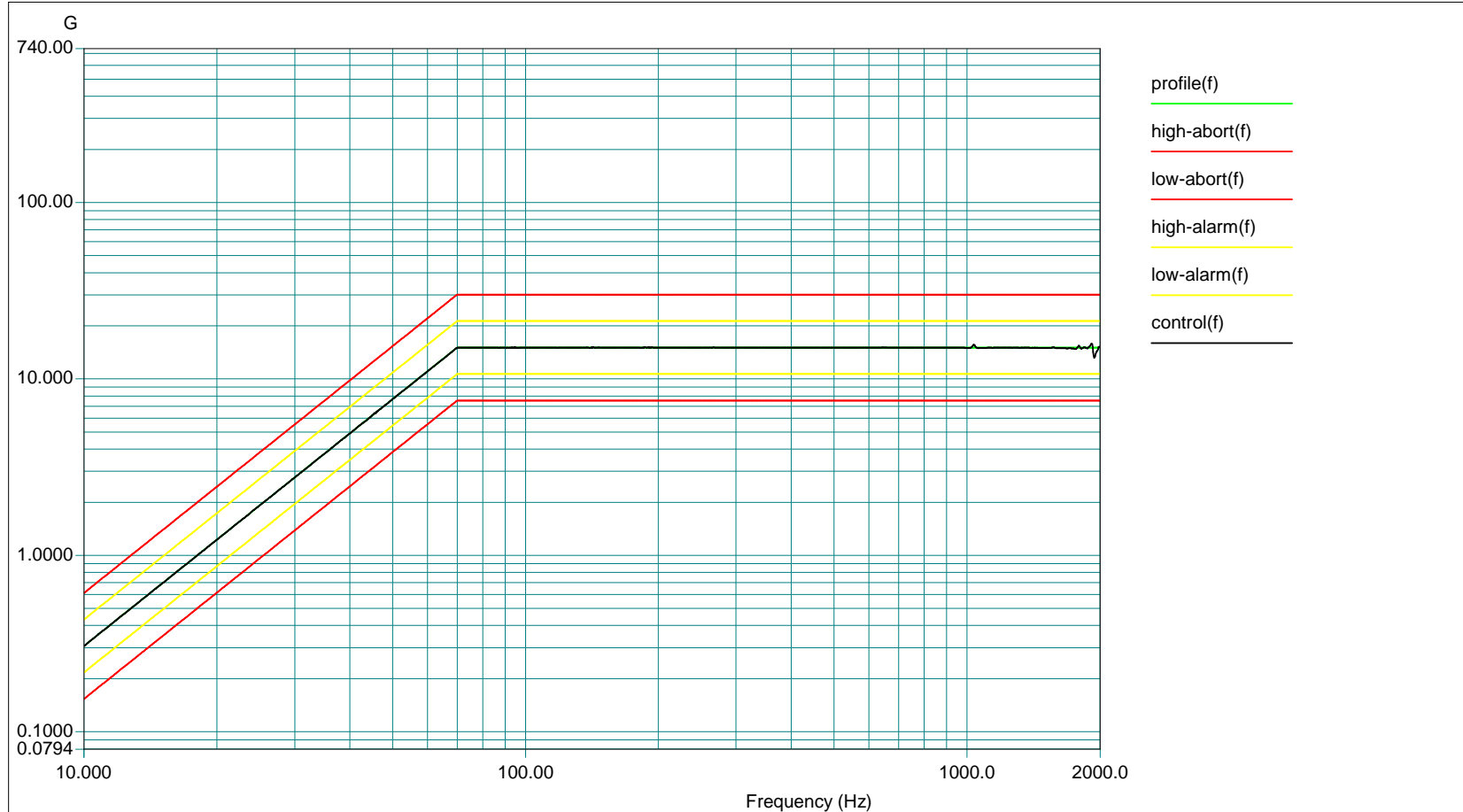


Level: 100 % Control Peak: 0.307131 G Full Level Time: 00:59:59 Sweep Type: Logarithmic
 Frequency: 10.031109 Hz Demand Peak: 0.307748 G Time Remaining: 00:00:00 Sweep Rate: 0.764 Oct/Min

Y Axis

Project File Name: 宇瞻 10-2000Hz 1.52mm 15g.prj

Profile Name: Test Type: Swept Sine Run Folder:

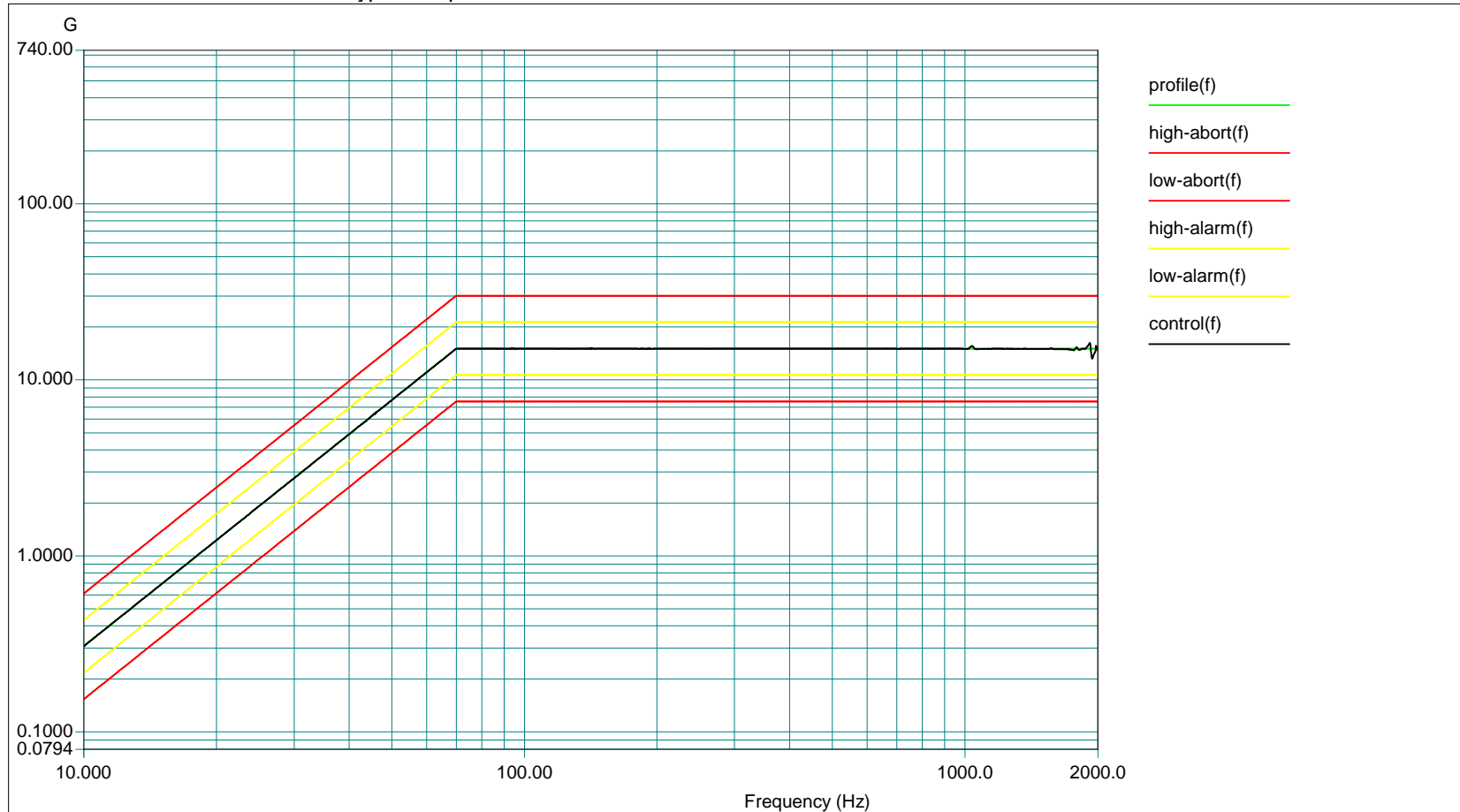


Level: 100 % Control Peak: 0.307039 G Full Level Time: 00:59:59 Sweep Type: Logarithmic
 Frequency: 10.034885 Hz Demand Peak: 0.307748 G Time Remaining: 00:00:00 Sweep Rate: 0.764 Oct/Min

Z Axis

Project File Name: 宇瞻 10-2000Hz 1.52mm 15g.prj

Profile Name: Test Type: Swept Sine Run Folder:

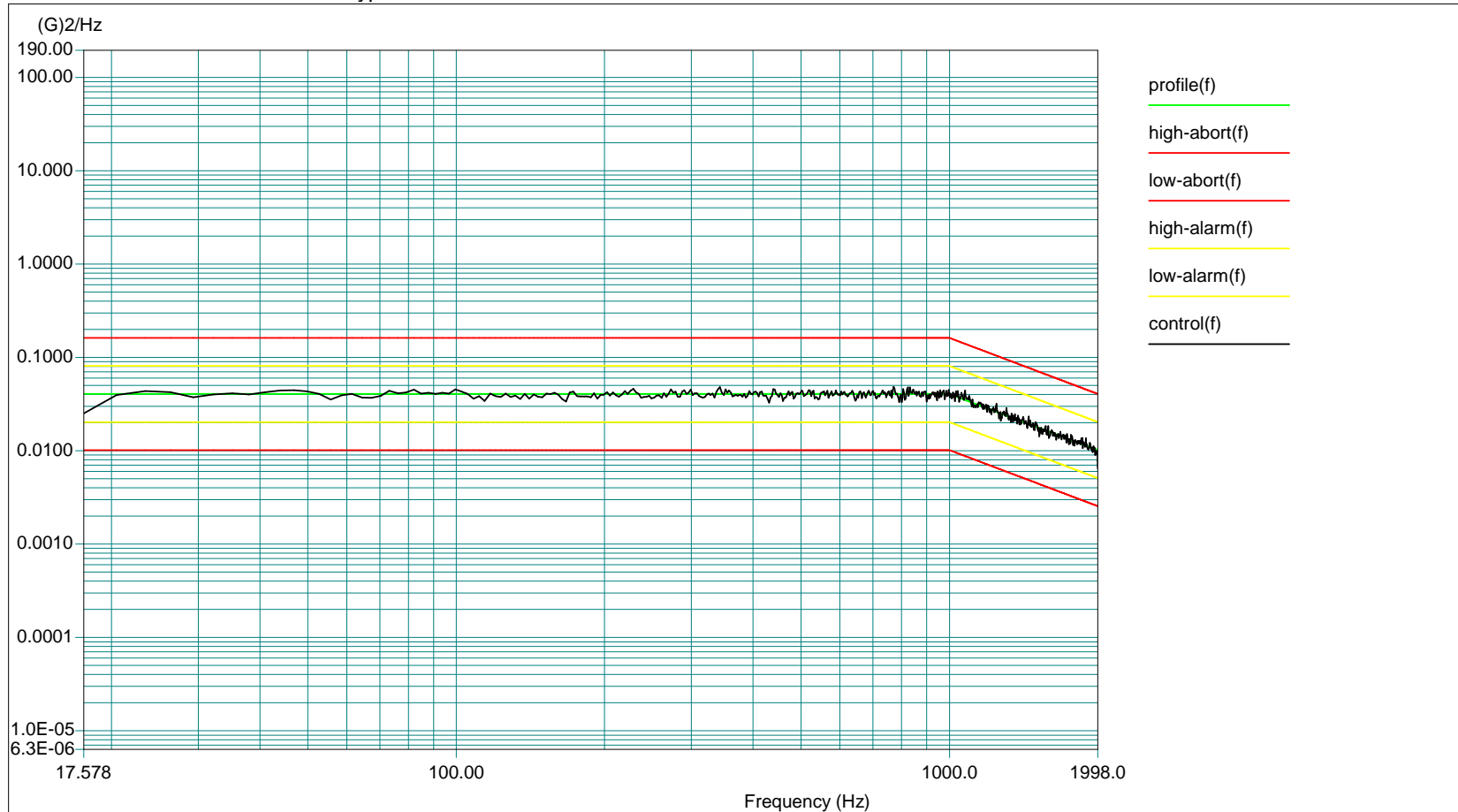


Level: 100 % Control Peak: 0.307071 G Full Level Time: 00:59:59 Sweep Type: Logarithmic
 Frequency: 10.031109 Hz Demand Peak: 0.307748 G Time Remaining: 00:00:00 Sweep Rate: 0.764 Oct/Min

X Axis

Project File Name: MIL-STD 810G Category 24.prj

Profile Name: Test Type: Random Run Folder:



Level: 100 %

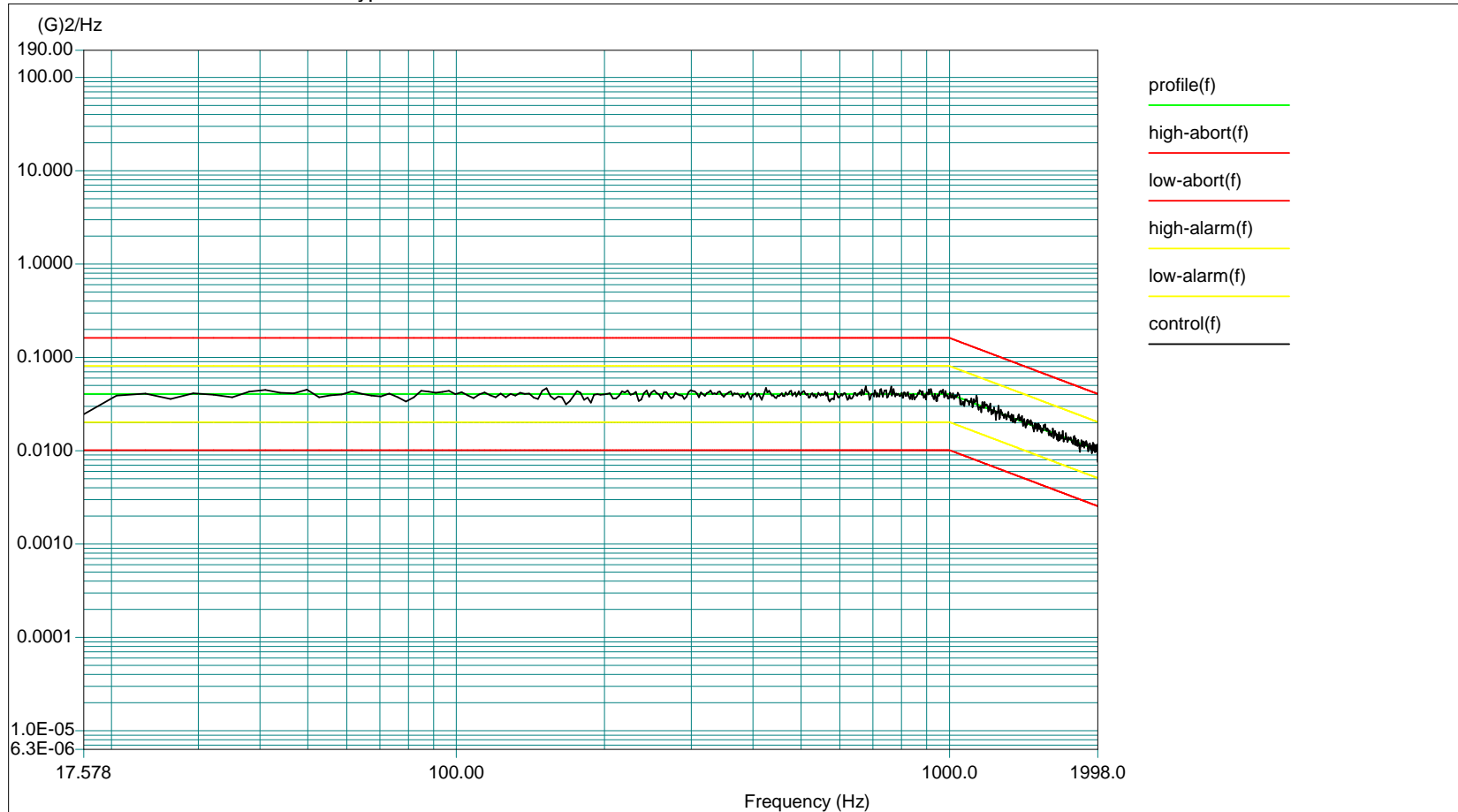
Control RMS: 7.700426 G Full Level Elapsed Time: 00:59:59 Lines: 900 Frame Time: 0.341333 Seconds

Demand RMS: 7.702085 G Remaining Time: 00:00:00 DOF: 154 dF: 2.929688 Hz

Y Axis

Project File Name: MIL-STD 810G Category 24.prj

Profile Name: Test Type: Random Run Folder:



Level: 100 %

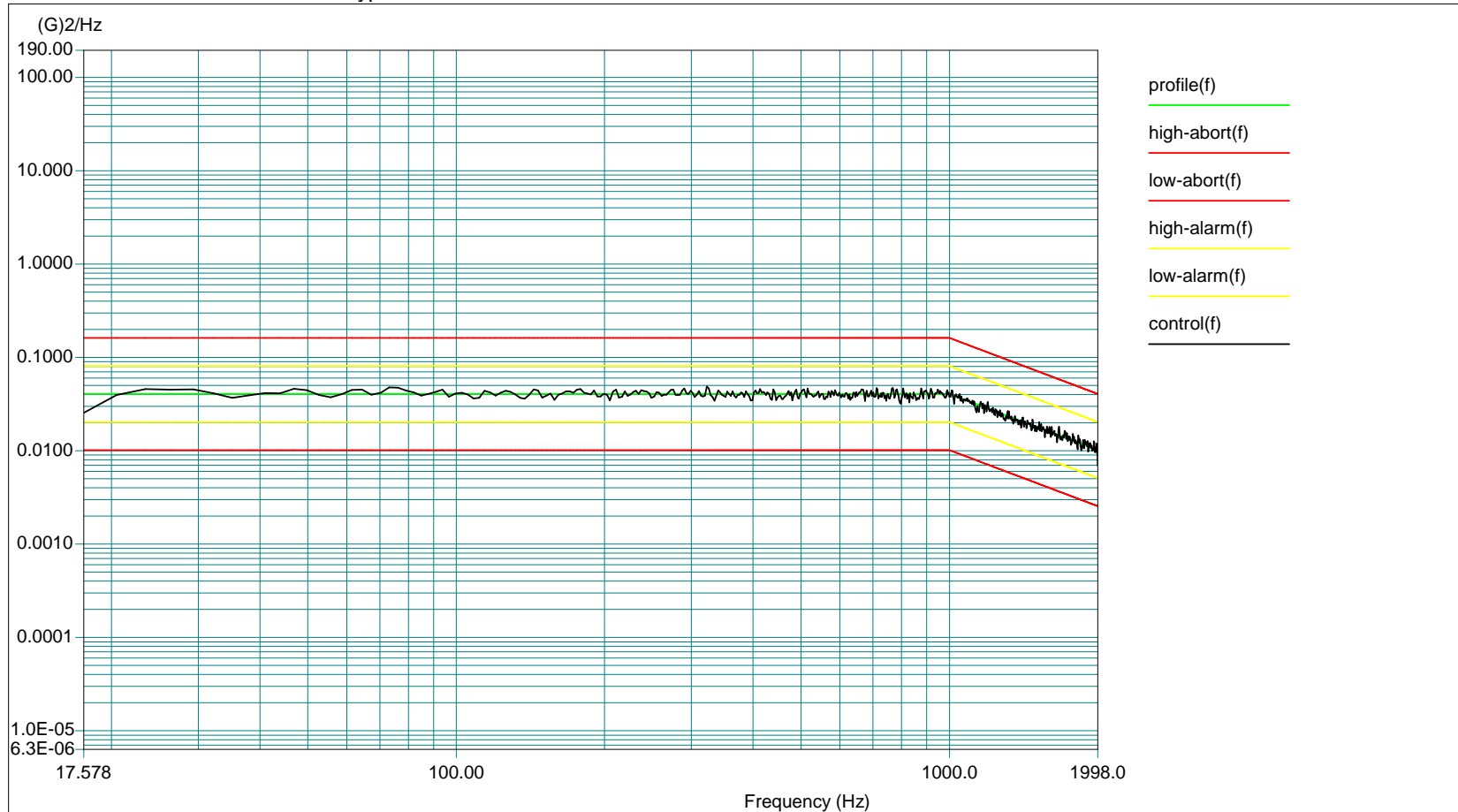
Control RMS: 7.678869 G Full Level Elapsed Time: 00:59:59 Lines: 900 Frame Time: 0.341333 Seconds

Demand RMS: 7.702085 G Remaining Time: 00:00:00 DOF: 154 dF: 2.929688 Hz

Z Axis

Project File Name: MIL-STD 810G Category 24.prj

Profile Name: Test Type: Random Run Folder:



Level: 100 %

Control RMS: 7.695282 G Full Level Elapsed Time: 00:59:59 Lines: 900 Frame Time: 0.341333 Seconds

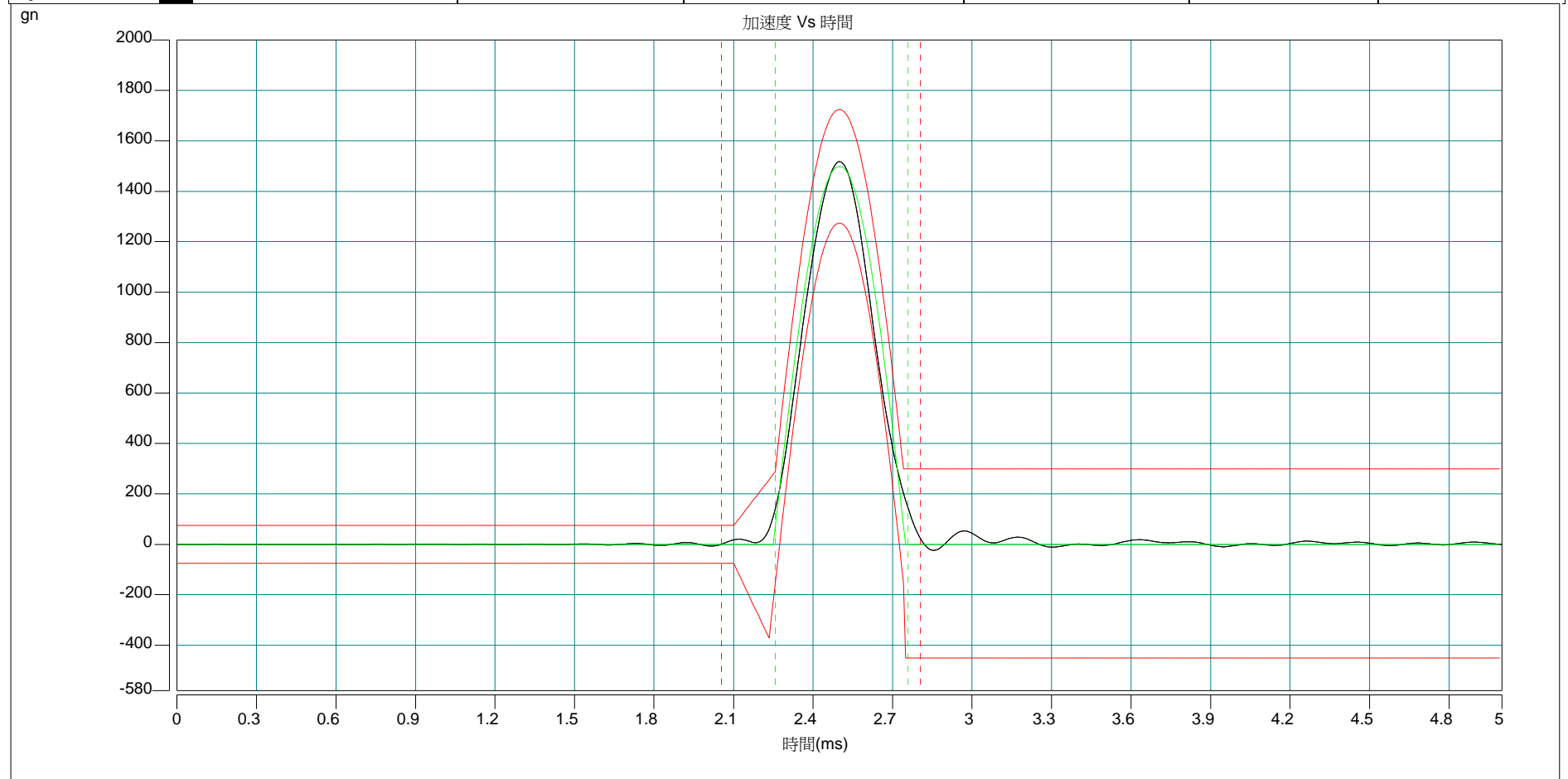
Demand RMS: 7.702085 G Remaining Time: 00:00:00 DOF: 154 dF: 2.929688 Hz

+X Axis

加速度 Vs 時間

(2012/05/30 14:55:12)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1518.49	0.50	4.49	5000.00	1518.49	-23.23

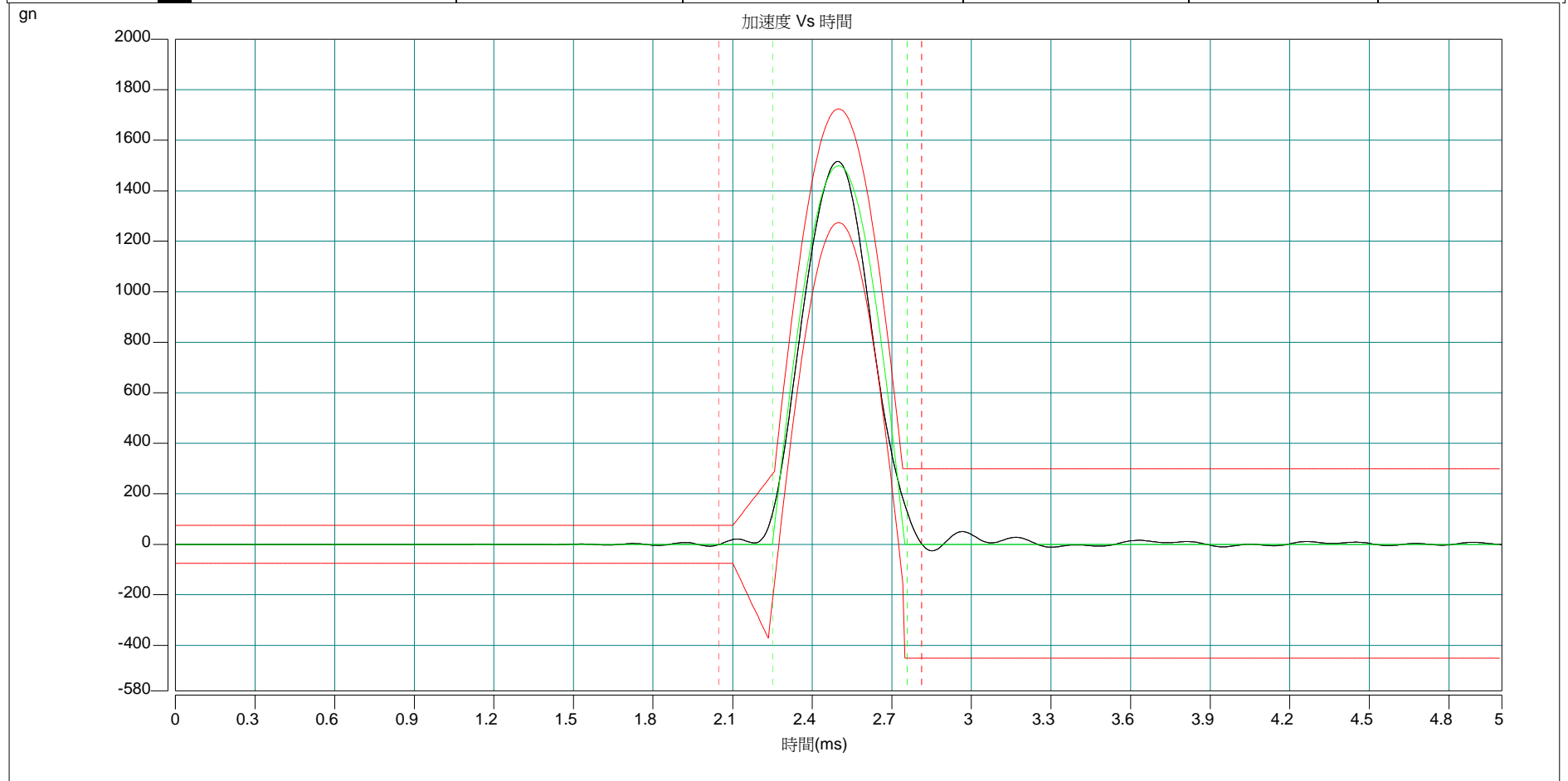


-X Axis

加速度 Vs 時間

(2012/05/30 14:59:47)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1516.78	0.49	4.47	5000.00	1516.78	-25.68

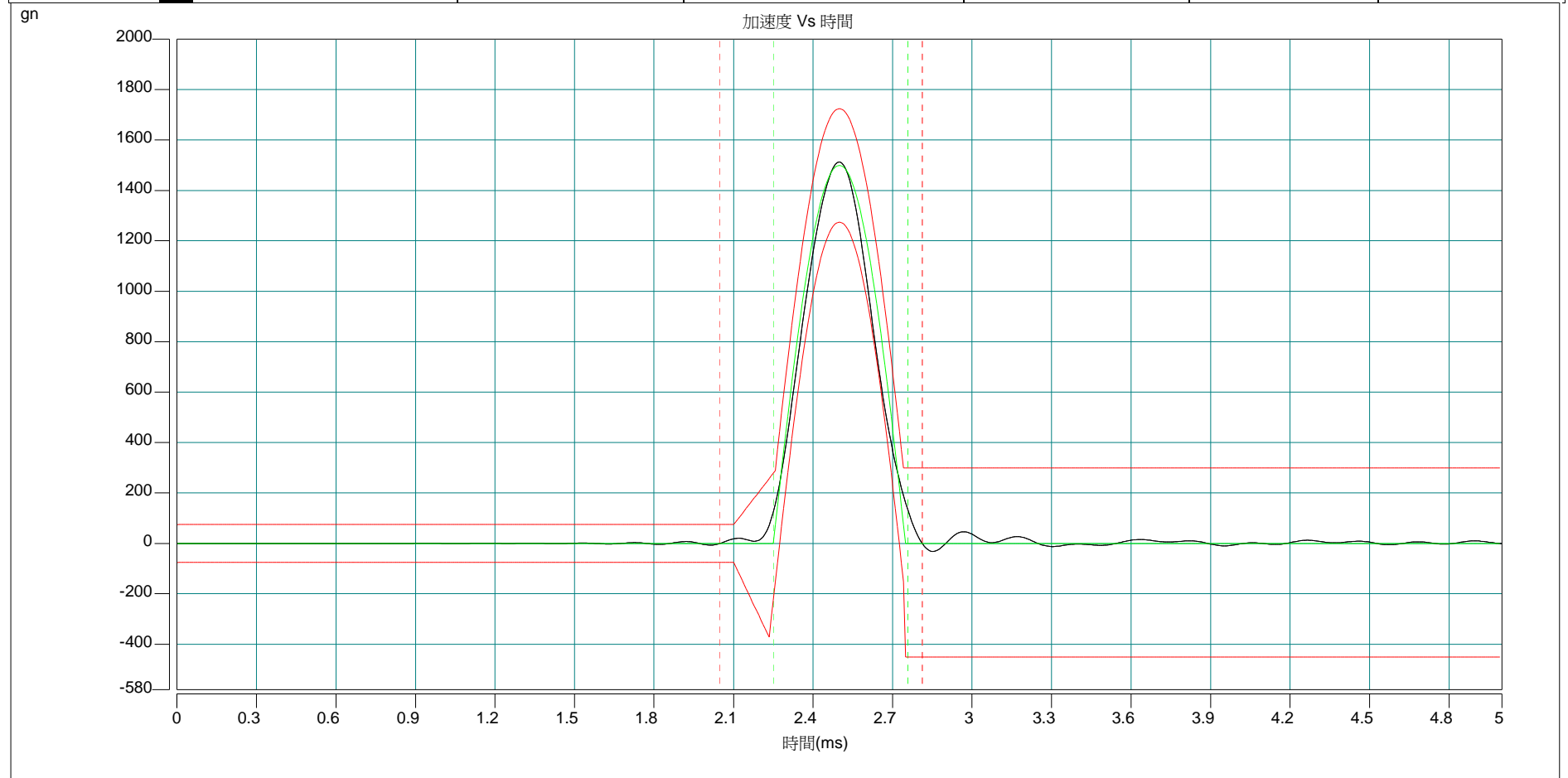


+Y Axis

加速度 Vs 時間

(2012/05/30 15:08:35)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1513.53	0.50	4.48	5000.00	1513.53	-31.38

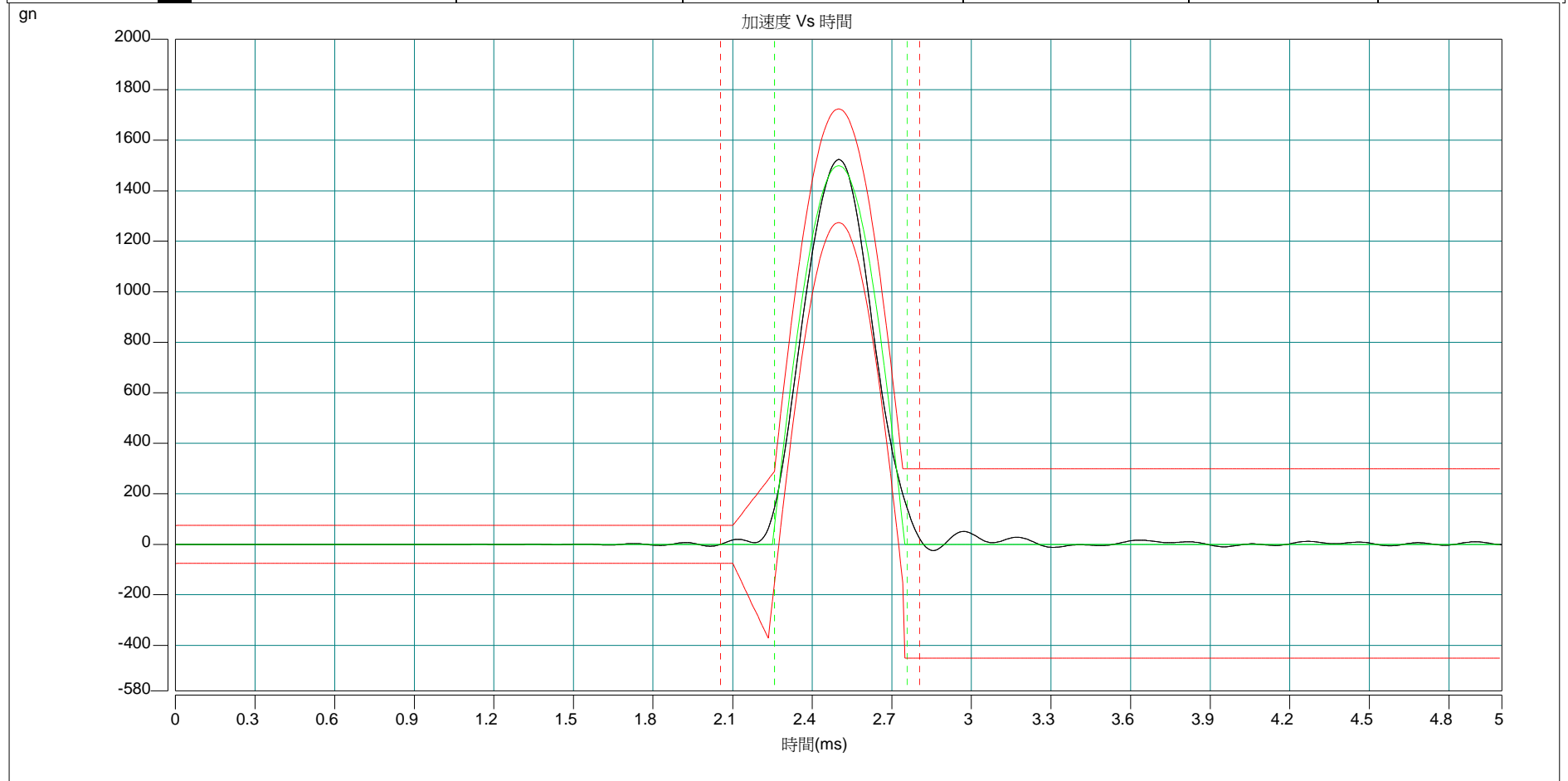


-Y Axis

加速度 Vs 時間

(2012/05/30 15:40:22)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1524.59	0.50	4.51	5000.00	1524.59	-24.10

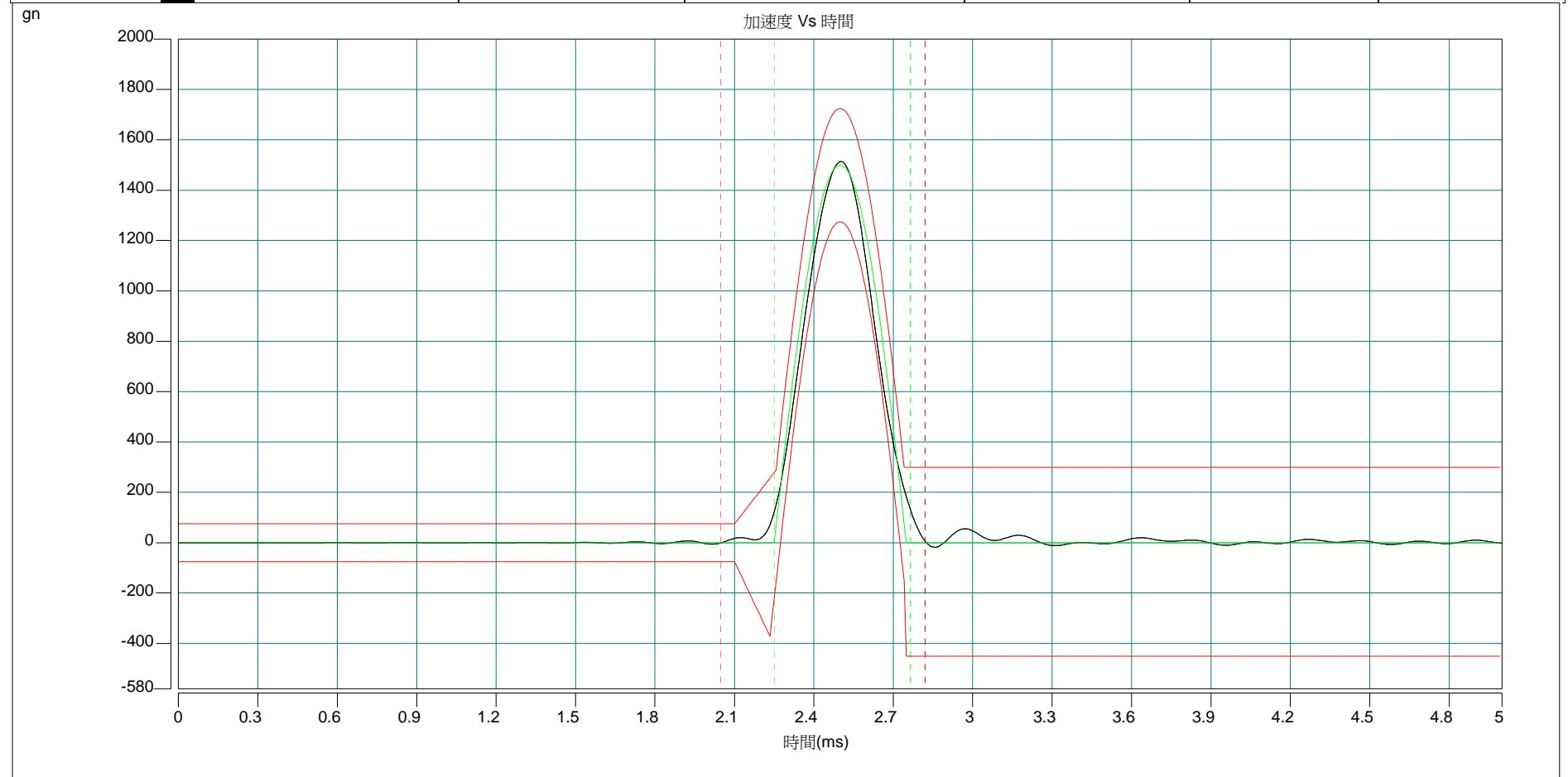


+Z Axis

加速度 Vs 時間

(2012/05/30 15:50:20)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1514.13	0.50	4.52	5000.00	1514.13	-17.58

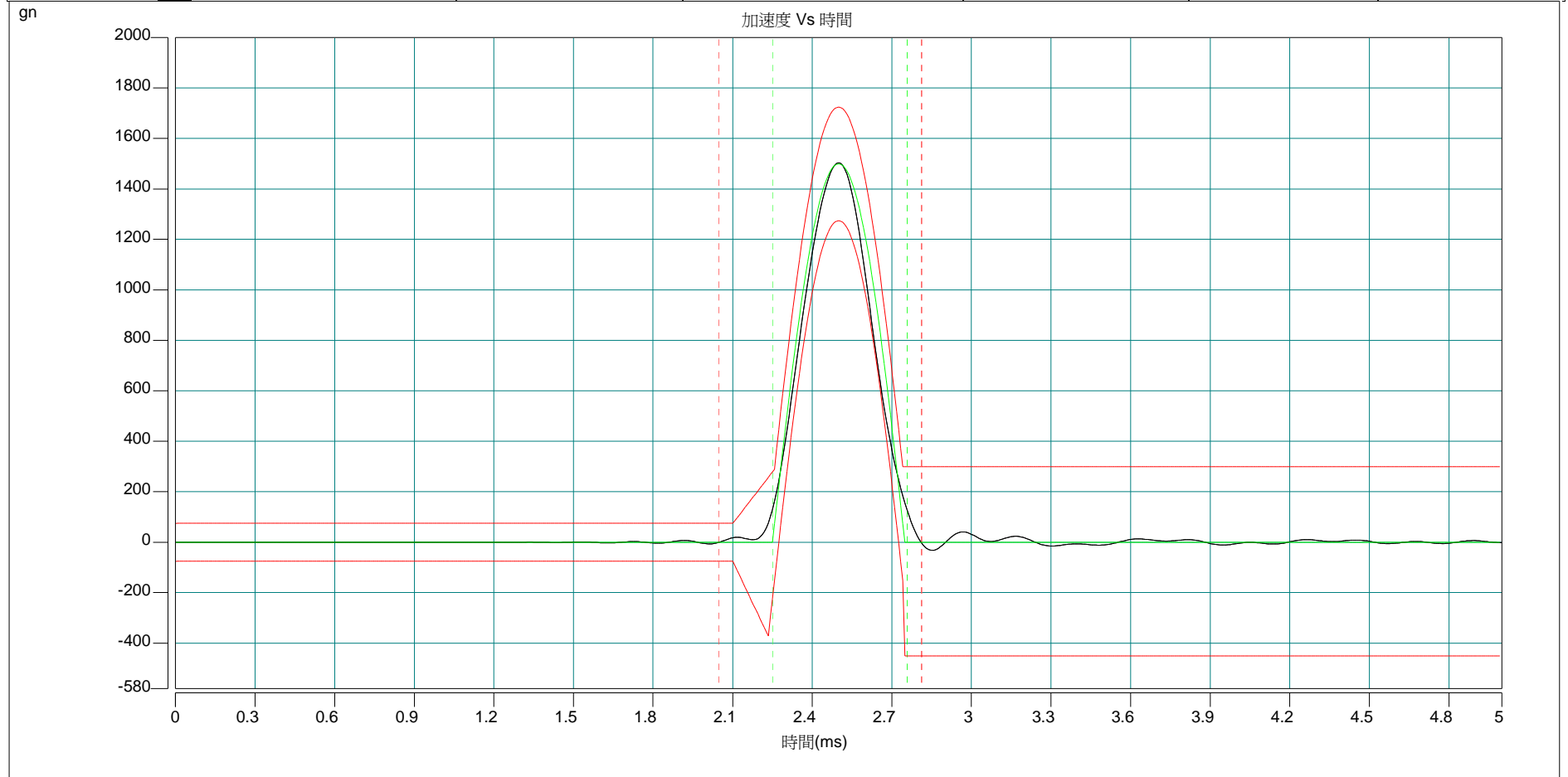


-Z Axis

加速度 Vs 時間

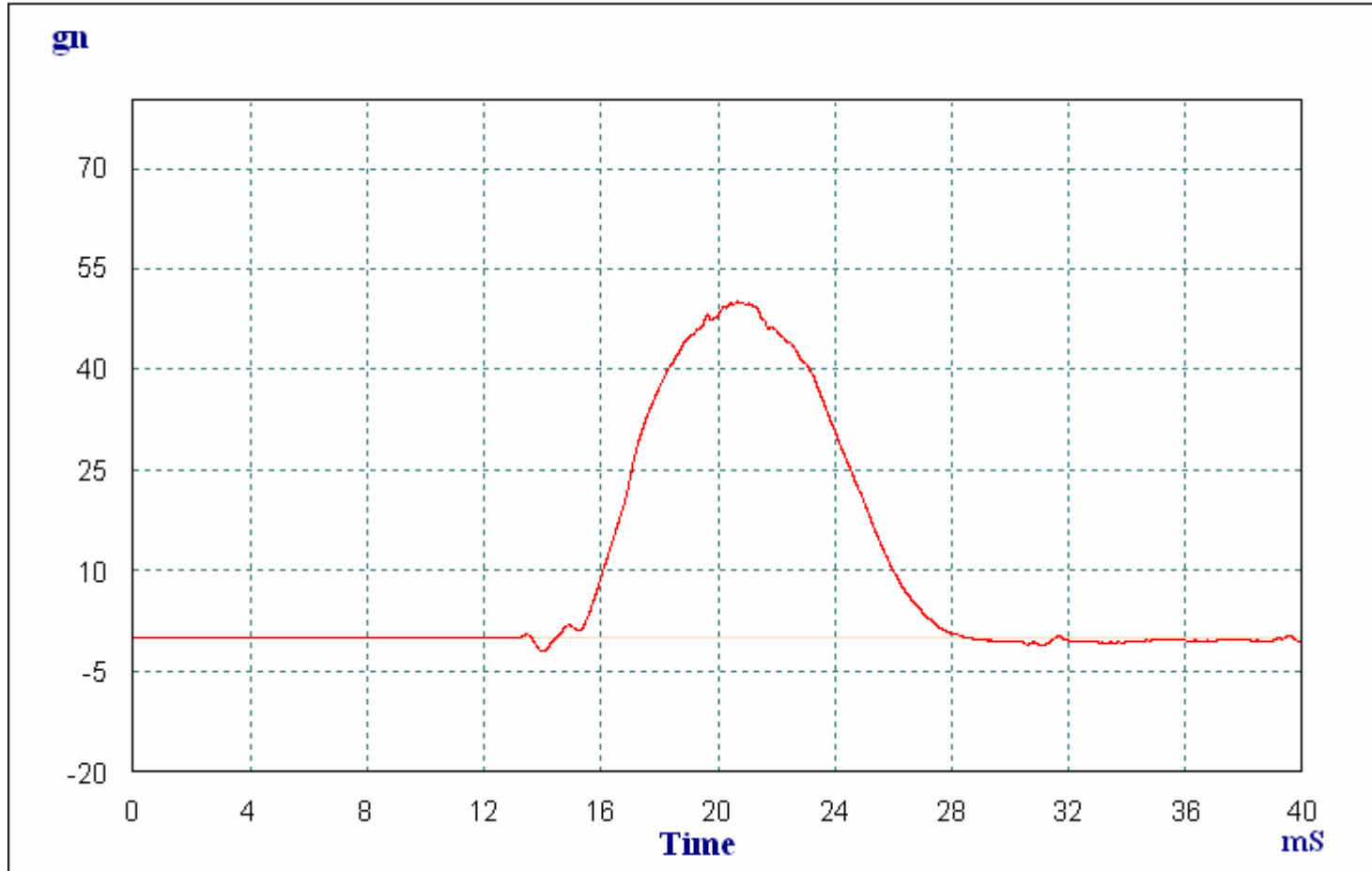
(2012/05/30 16:03:05)

訊號名稱	加速度 (gn)	作動時間 (ms)	速度變化率 (m/s)	低通濾波 (Hz)	最大加速度	最小加速度
Input1 (t)	1504.50	0.50	4.46	5000.00	1504.50	-32.30



SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

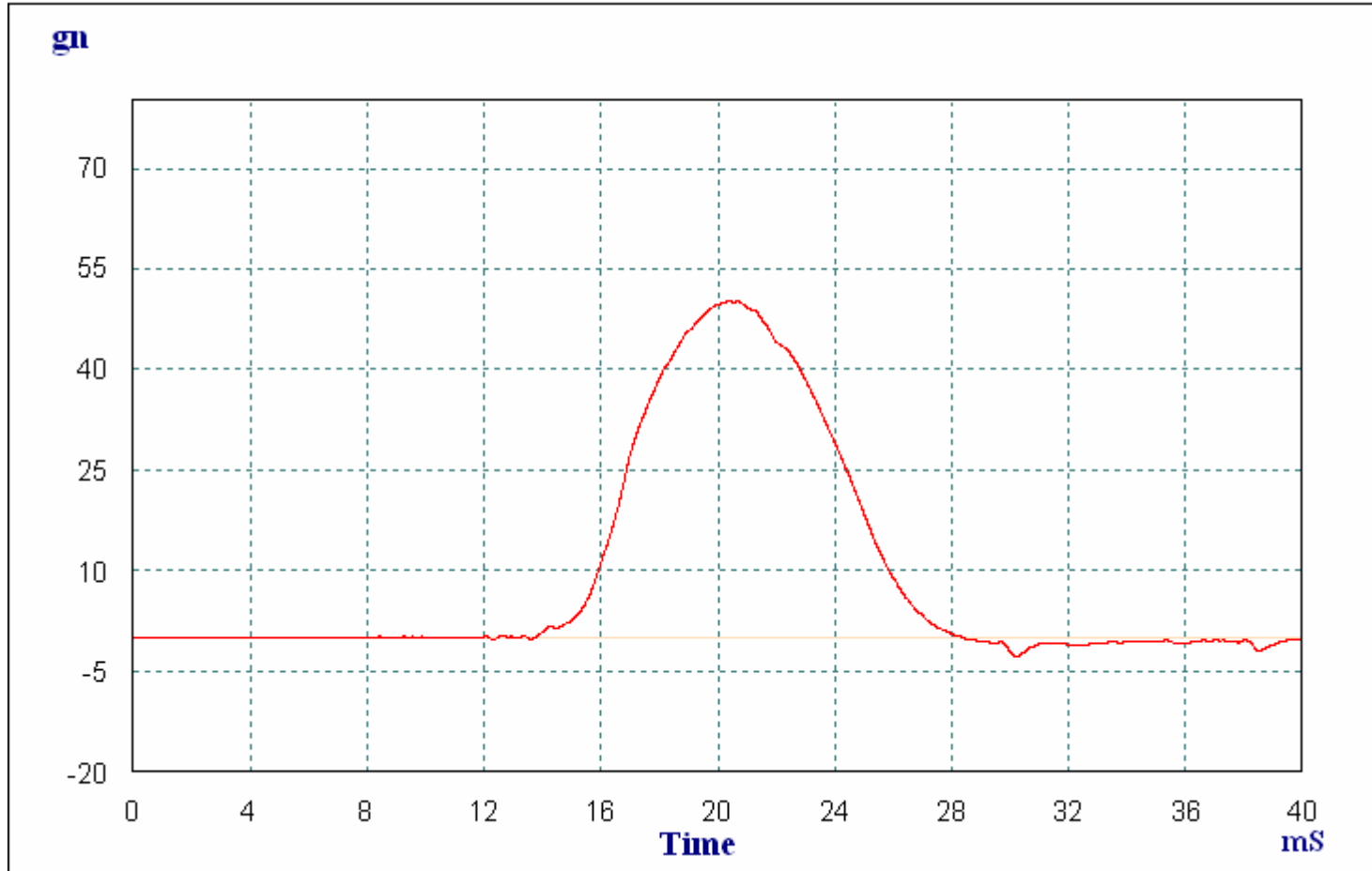
Testing at : 2012/05/31 上午 09-48-25 25 Data saved at : 2012/05/31 上午 09-48-25 25



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis +X (Ch 0)	50.1	11.08	140.6	500

SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

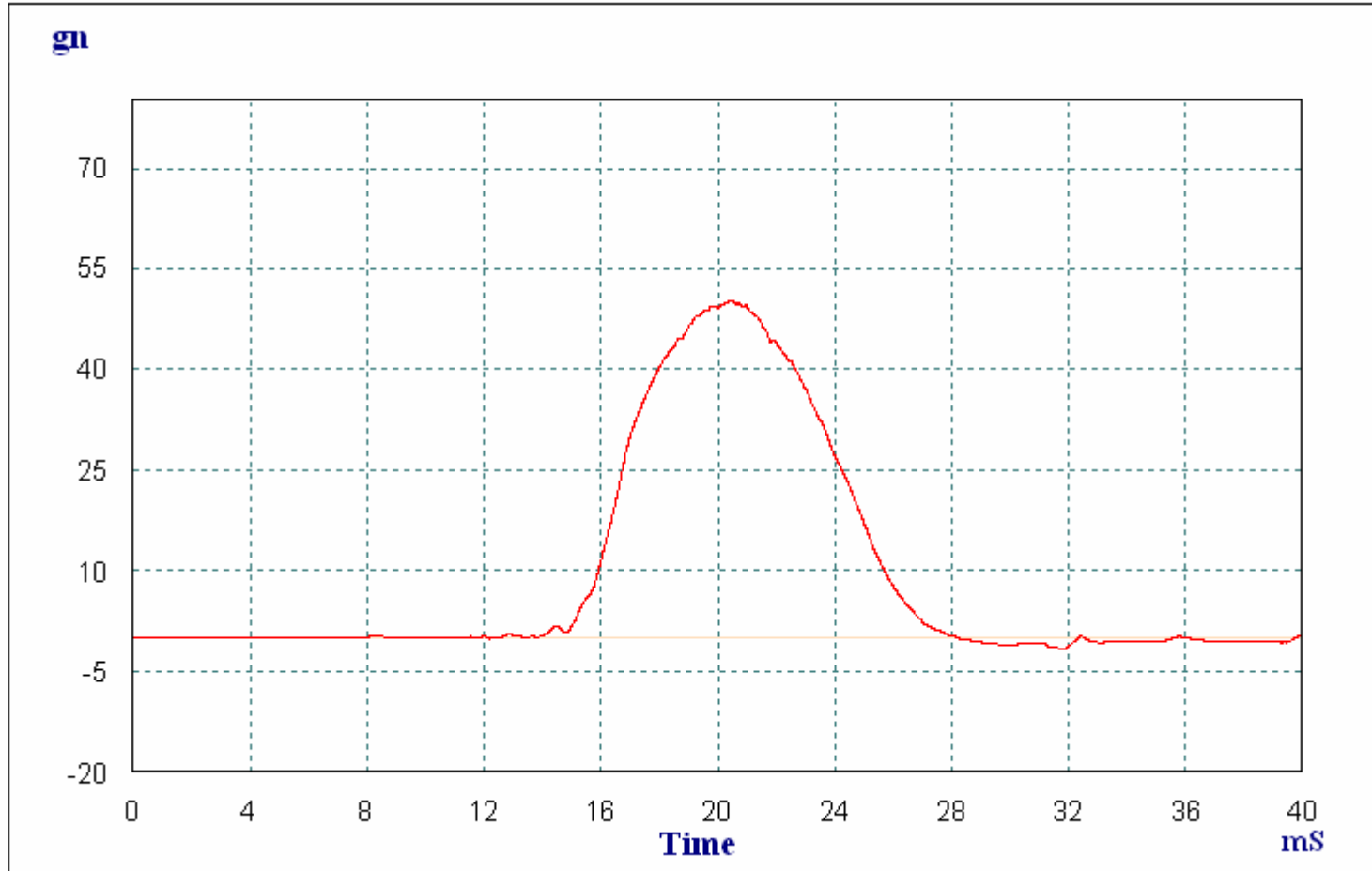
Testing at : 2012/05/31 上午 09-52-36 36 Data saved at : 2012/05/31 上午 09-52-37 37



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis -X (Ch 0)	50.3	11.17	141.0	500

SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

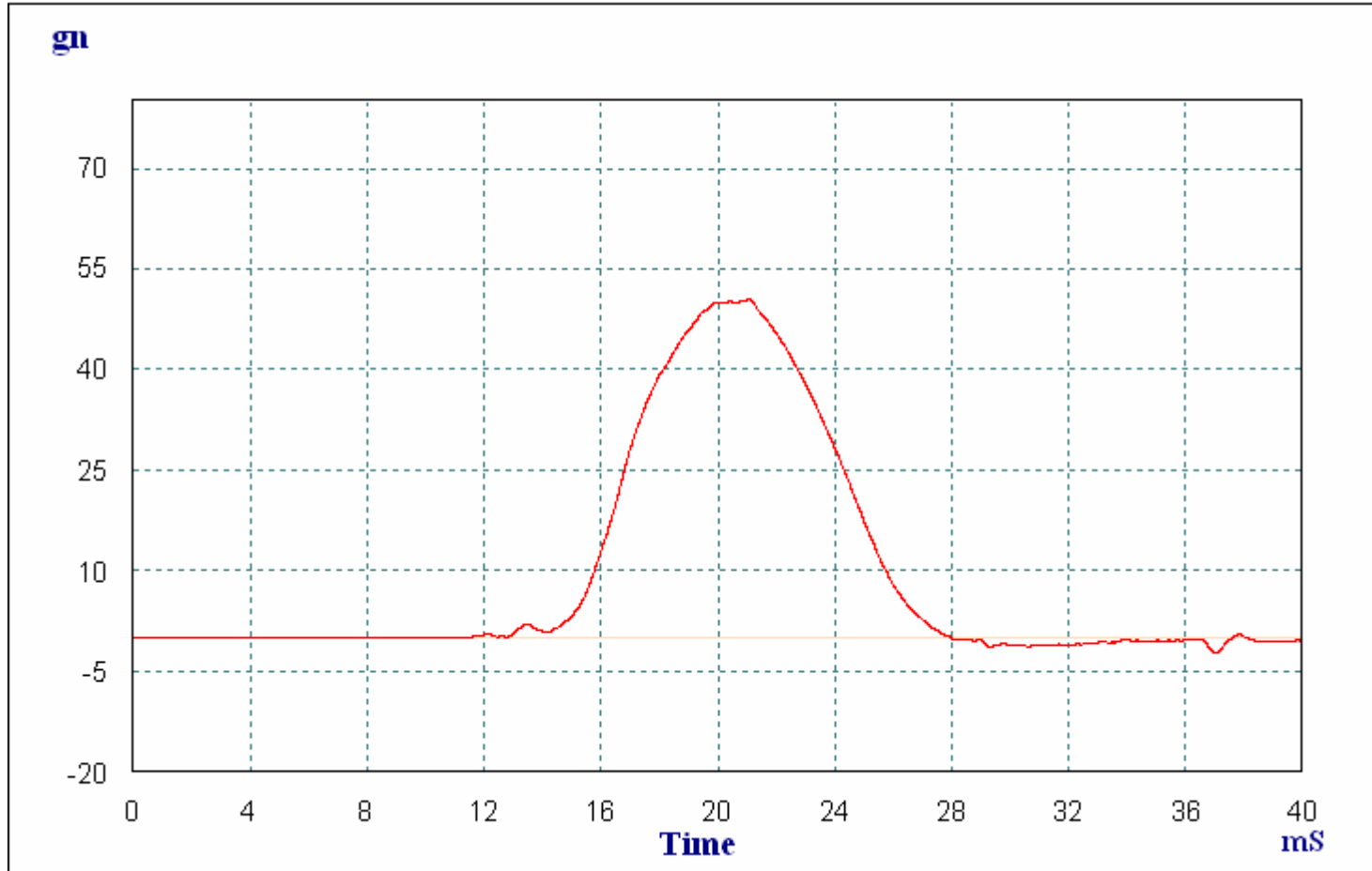
Testing at : 2012/05/31 上午 09-40-40 40 Data saved at : 2012/05/31 上午 09-40-41 41



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis +Y (Ch 0)	50.3	11.09	140.0	500

SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

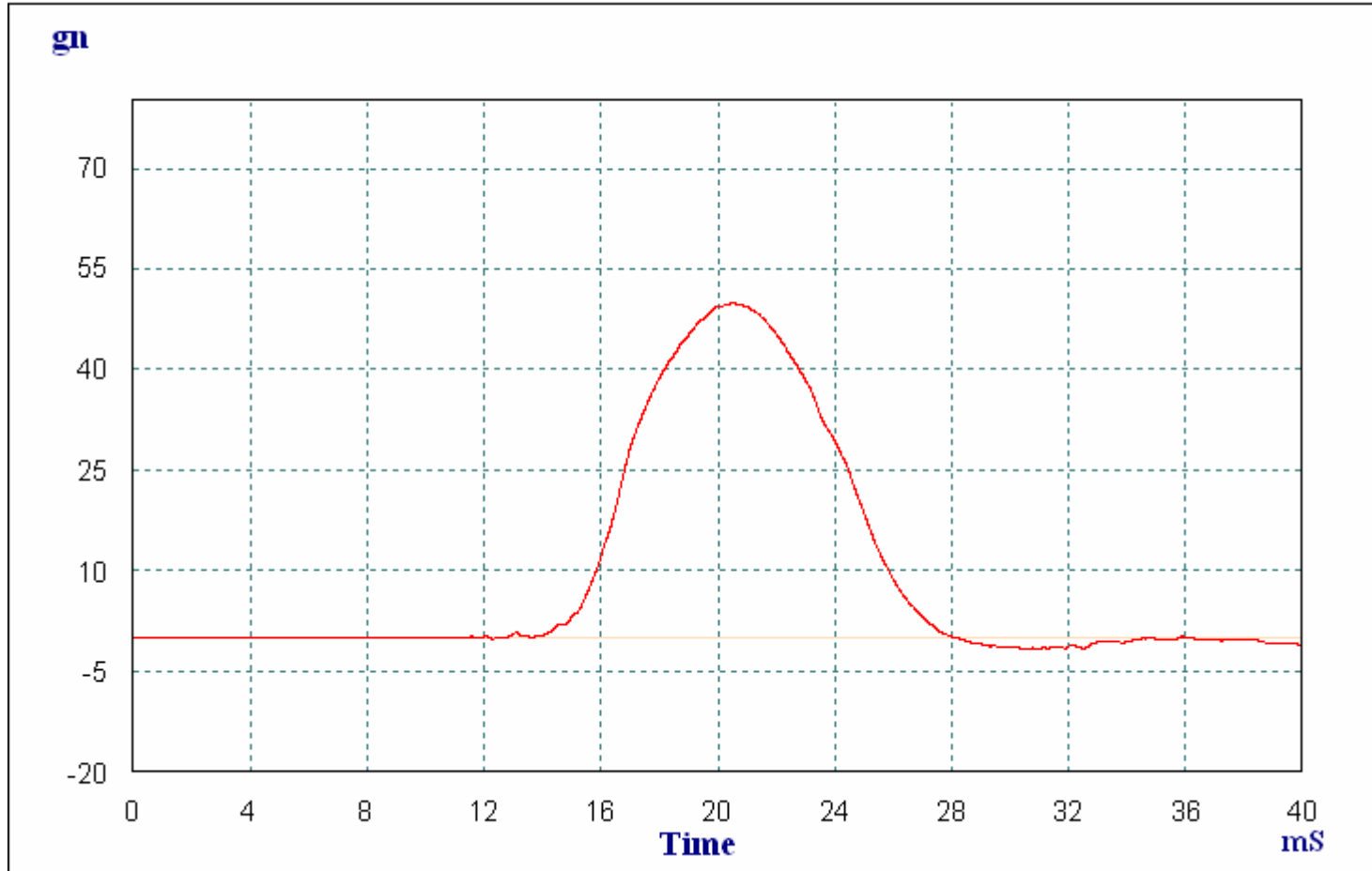
Testing at : 2012/05/31 上午 09-44-23 23 Data saved at : 2012/05/31 上午 09-44-24 24



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis -Y (Ch 0)	50.4	11.16	141.7	500

SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

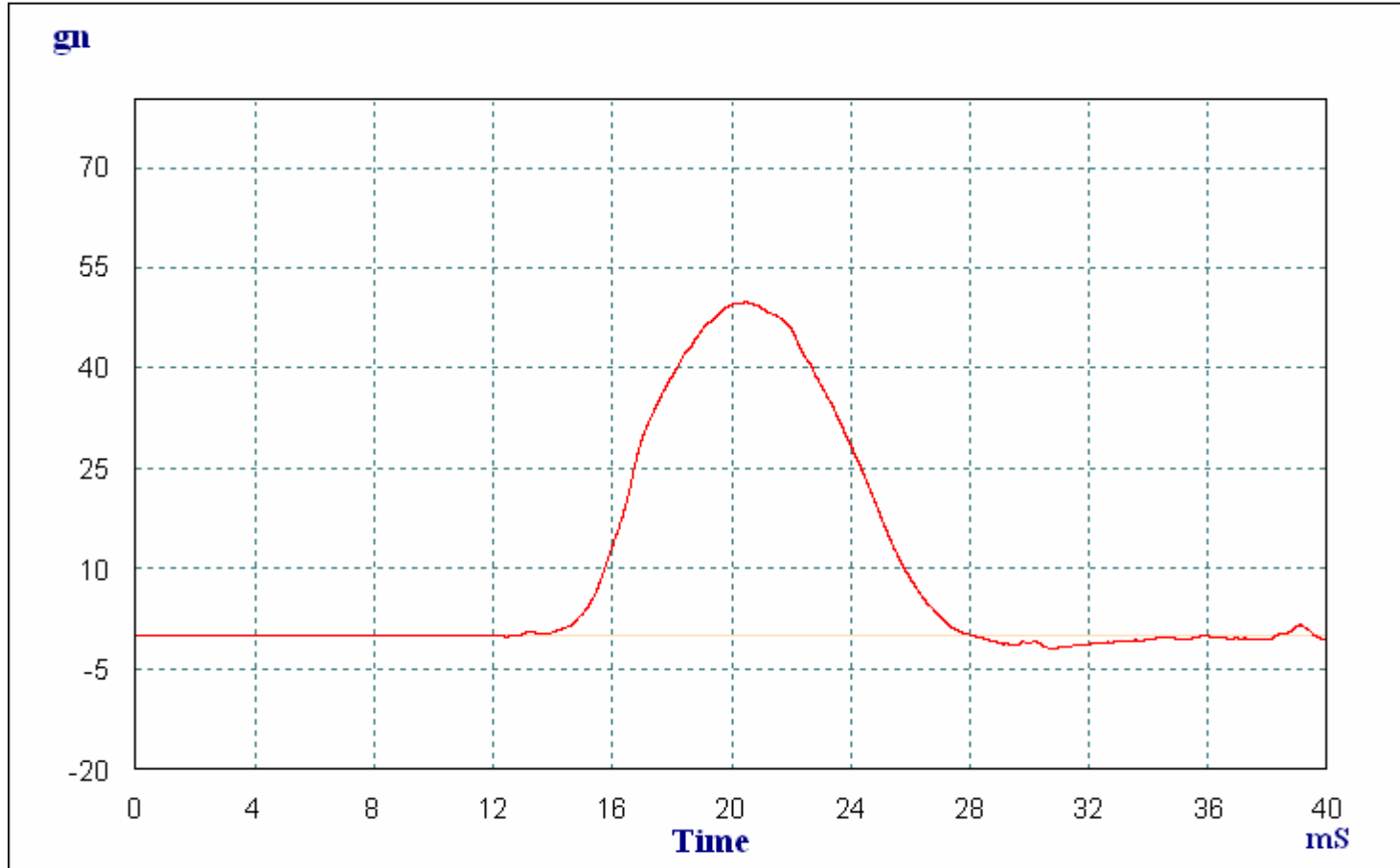
Testing at : 2012/05/31 上午 09-24-22 22 Data saved at : 2012/05/31 上午 09-24-22 22



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis +Z (Ch 0)	50.0	11.26	141.8	500

SHOCK TEST SPECIFICATION : 50 g 11 mS HEIGHT : 234 mm CYCLE OF TEST : 3/3

Testing at : 2012/05/31 上午 09-34-51 51 Data saved at : 2012/05/31 上午 09-34-52 52



	Acceleration(gn)	Duration time(ms)	Velocity(inch/sec)	Filter(Hz)
Axis -Z (Ch 0)	49.9	11.29	142.0	500

-END-