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VIBRATION TEST LABORATORY

<http://www.kdi.tw><http://www.vibration.com.tw>E-mail: service@kdi.tw

TESTING / INSPECTION REPORT

REPORT NO : VT-180828-1

COMPANY : Apacer Technology Inc.

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TEL : 886-2-2267-8000

FAX : 886-2-2267-2261

SPECIMEN : SATA Flash Drive

DATE OF RECEIVED : 2018/08/17

DATE OF TESTED : 2018/08/22

TEST / INSPECTION ITEMS : 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 26 pages, and no part of it may be abstracted or reproduced.

金頓科

Test Engineer :	
<i>Peter Peng</i>	
Approval Signatory	Laboratory Head :
<i>David Lee</i>	<i>Hein Tai Chang</i>

2018.8.30

TESTING / INSPECTION REPORT

TESTING EQUIPMENT :

- | | |
|-------------------------|---|
| 1.Vibration Tester | : KING DESIGN KD-9363EM-600F2K-50N120,
S/N : KDS11054986 |
| 2.Controller | : VCS-913 ⁺ , S/N : 1312384 |
| 3.Control Accelerometer | : Wilcoxon Research WR-777, S/N : 4207 |
| 4.Shock Testing System | : KING DESIGN DP-1200-60, S/N : R2110086489 |
| 5.Controller | : DAS-105, S/N : 263210255 |
| 6.Accelerometer | : B&K 4398, S/N : 2209044 |
| 7.Shock Testing System | : KING DESIGN DP-1200-18, S/N : KDS02197998 |
| 8.Controller | : DAS-105, S/N : 263210255 |
| 9.Accelerometer | : B&K 8339-001 S/N : 55869 |

TEST ENVIRONMENT :

- | | |
|-------------------|----------------------|
| Temperature | : 25°C (25±10°C) |
| Relative Humidity | : 65% RH (50±25% RH) |

SPECIMEN :

- | | |
|----------|----------------|
| Model | : S(M/U)230-25 |
| Quantity | : 1 unit |

TESTING / INSPECTION REPORT

TEST SPECIFICATION(1) :

Comply with MIL-STD 810G 514.6 category 7

Random Vibration test (Non-Operating)

Frequency : 15 Hz to 2,000 Hz

Accelerate : 4.02 g rms

P.S.D. : 0.01 g²/Hz (15Hz)

0.01 g²/Hz (105.94Hz)

+6 dB/Oct (105.94Hz to 150Hz)

0.02 g²/Hz (150Hz)

0.02 g²/Hz (500Hz)

-6 dB/Oct (500Hz to 2,000Hz)

0.0013 g²/Hz (2,000Hz)

Test Axis : X, Y, Z axis

Test Time : 1 hr (Each axis)

Total Test Time : 3 hrs

TEST SPECIFICATION(2) :

Comply with 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 g²/Hz (20Hz to 1,000Hz)

: -6 dB/Oct (1,000Hz to 2,000Hz)

Test Axis : X, Y, Z axis

Test Time : 1 hr (Each axis)

Total Test Time : 3 hrs

TESTING / INSPECTION REPORT

TEST SPECIFICATION(3) :

Comply with MIL-STD-883K, Method 2002.5

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(4) :

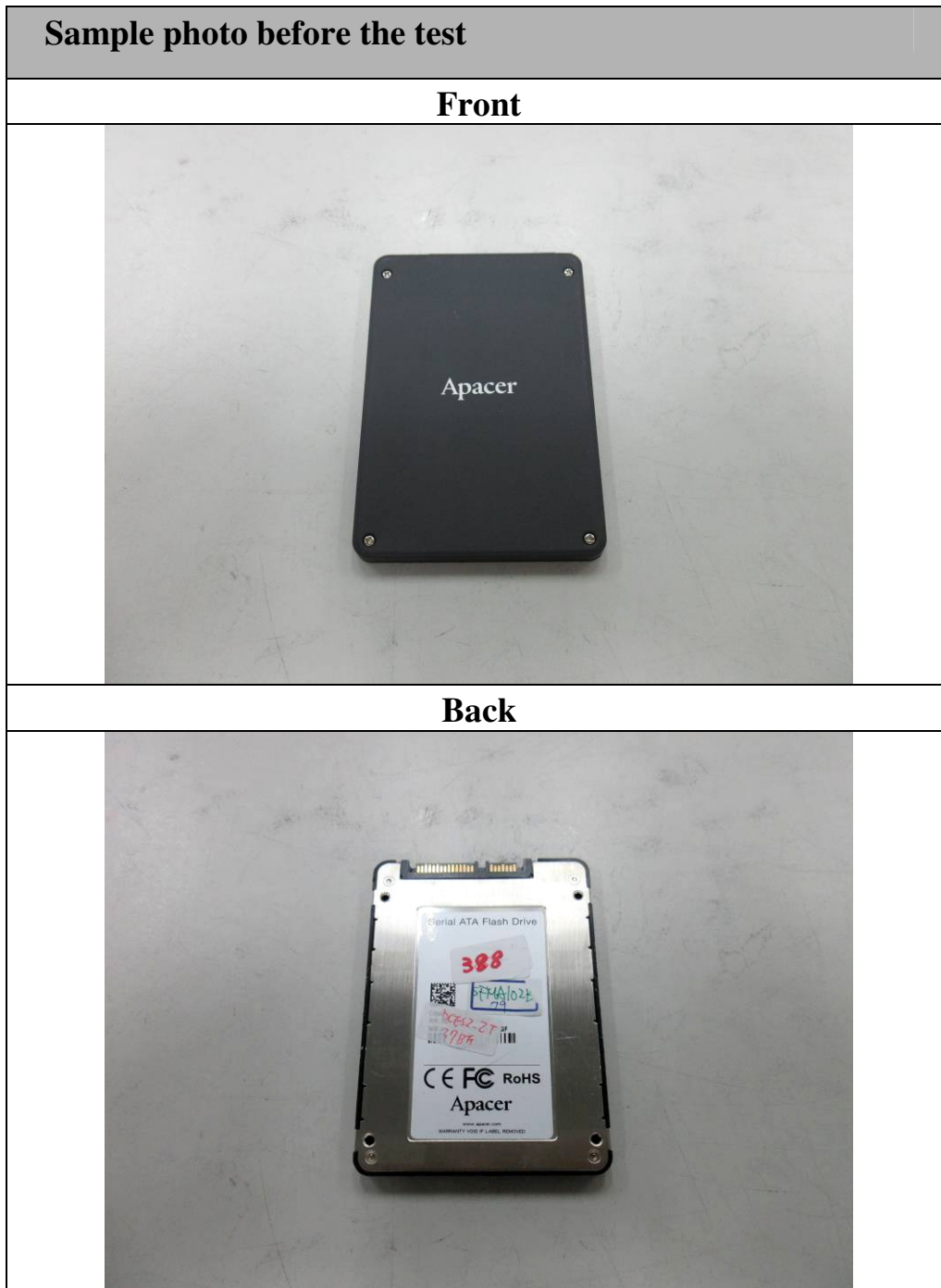
Comply with MIL-STD-202G, Method 213-B

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





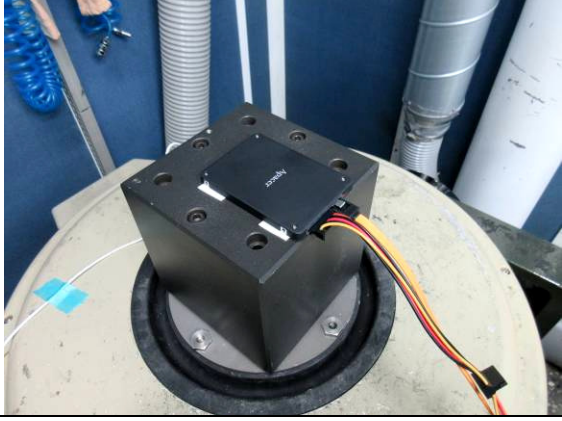
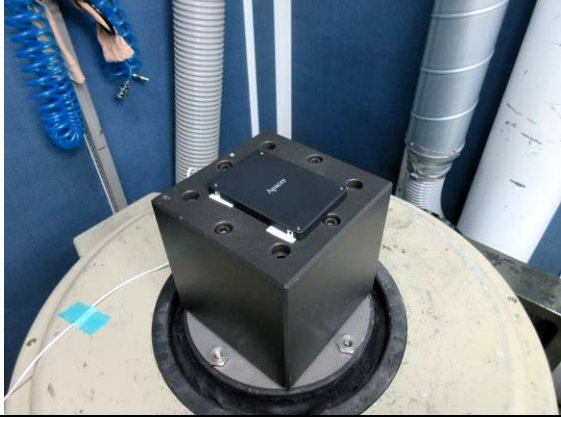
TEST RESULT :

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.			

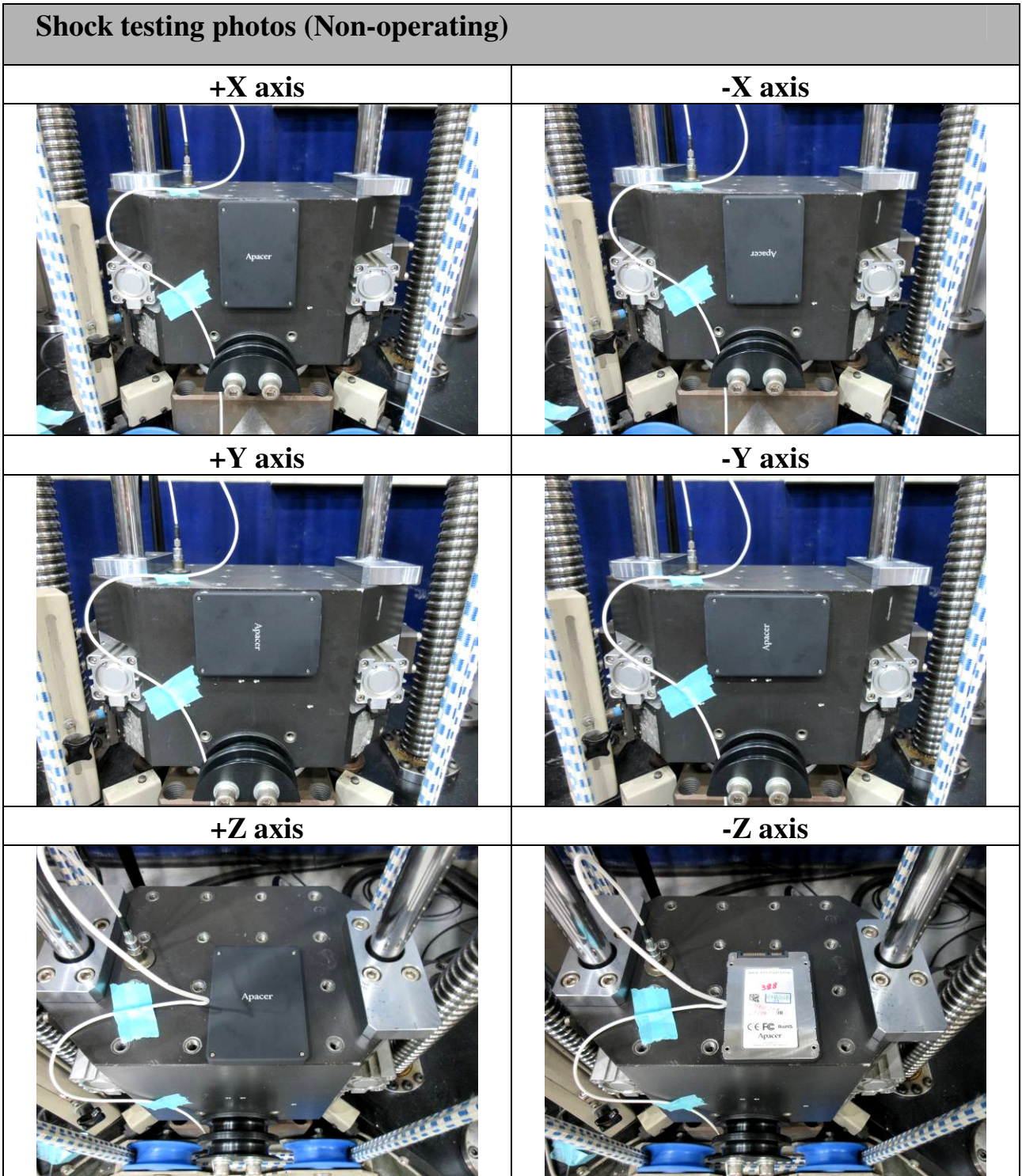
TESTING / INSPECTION REPORT



TESTING / INSPECTION REPORT

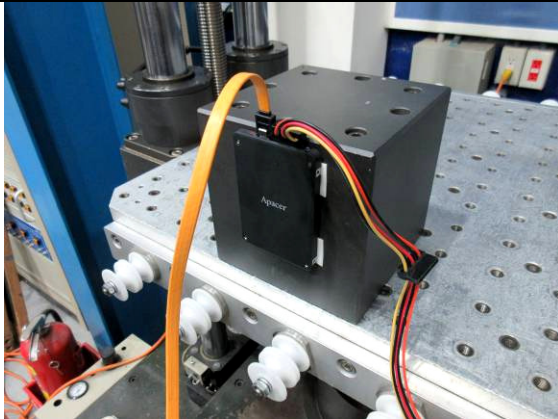
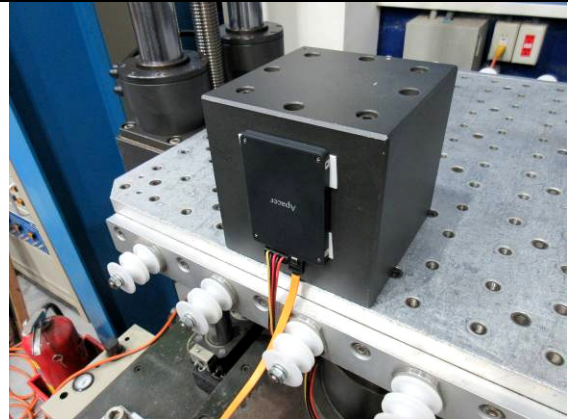
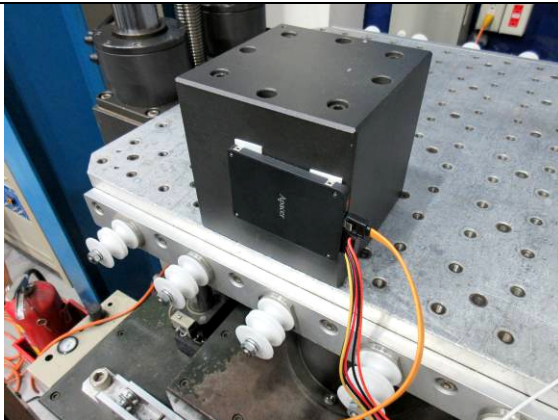
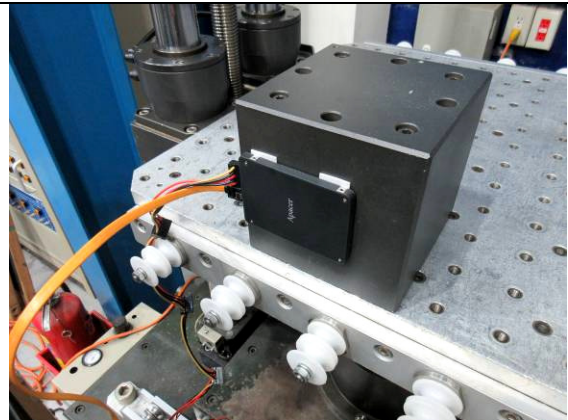
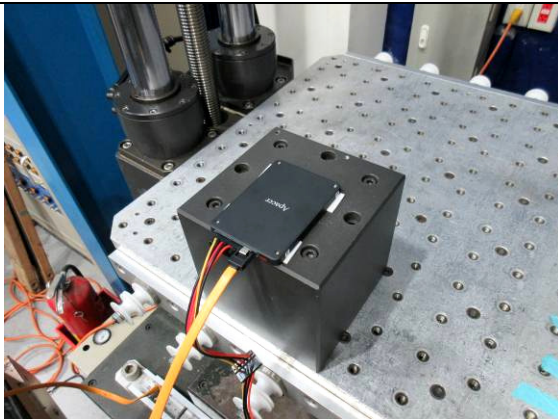
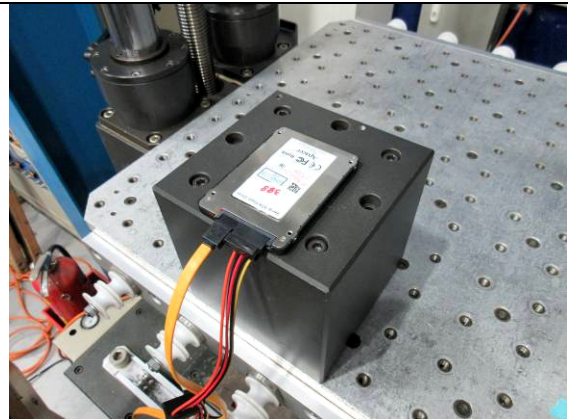
Vibration testing photos	
X axis (Operating)	X axis (Non-Operating)
	
Y axis (Operating)	Y axis (Non-Operating)
	
Z axis (Operating)	Z axis (Non-Operating)
	

TESTING / INSPECTION REPORT

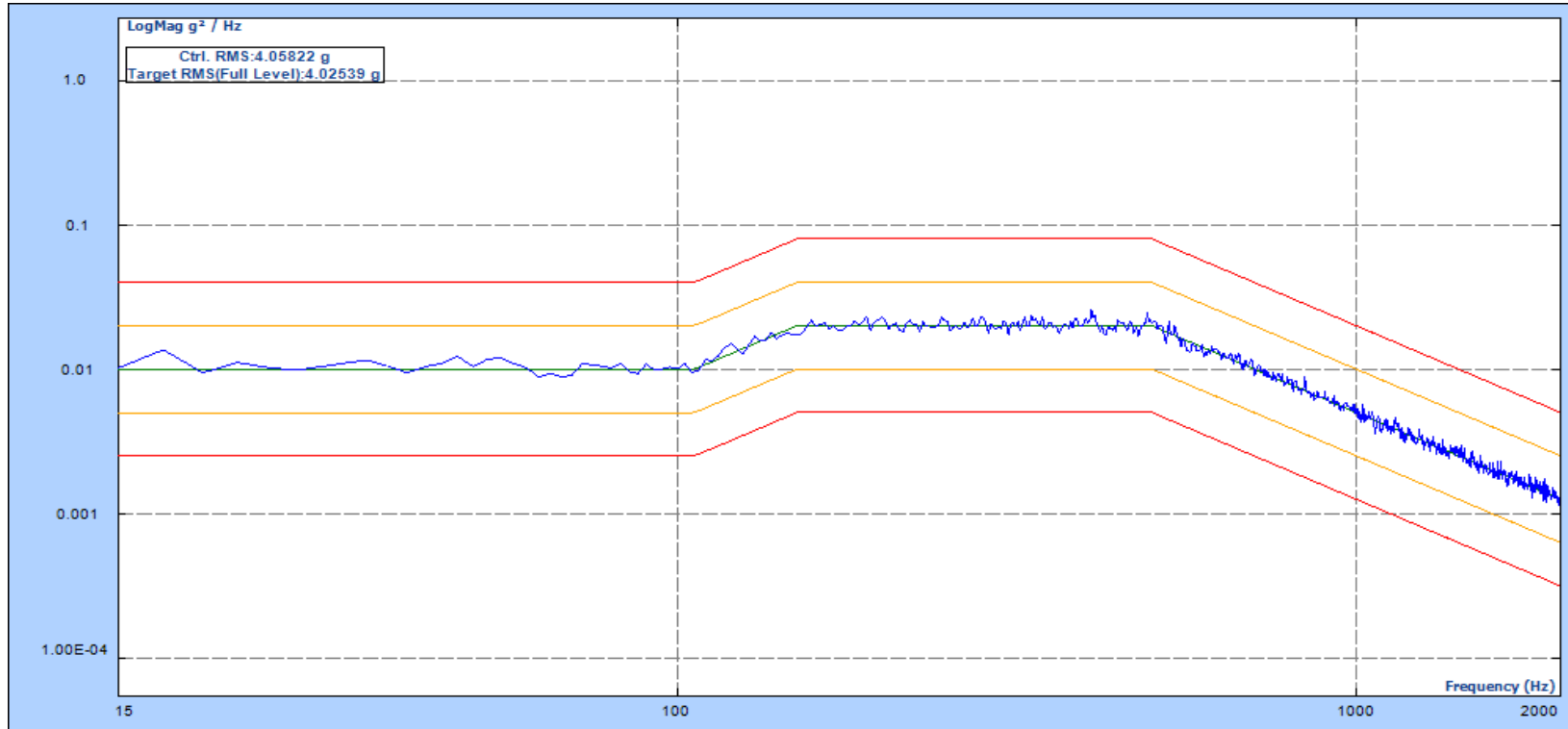


TESTING / INSPECTION REPORT

Shock testing photos (Operating)

+X axis

-X axis

+Y axis

-Y axis

+Z axis

-Z axis


X axis

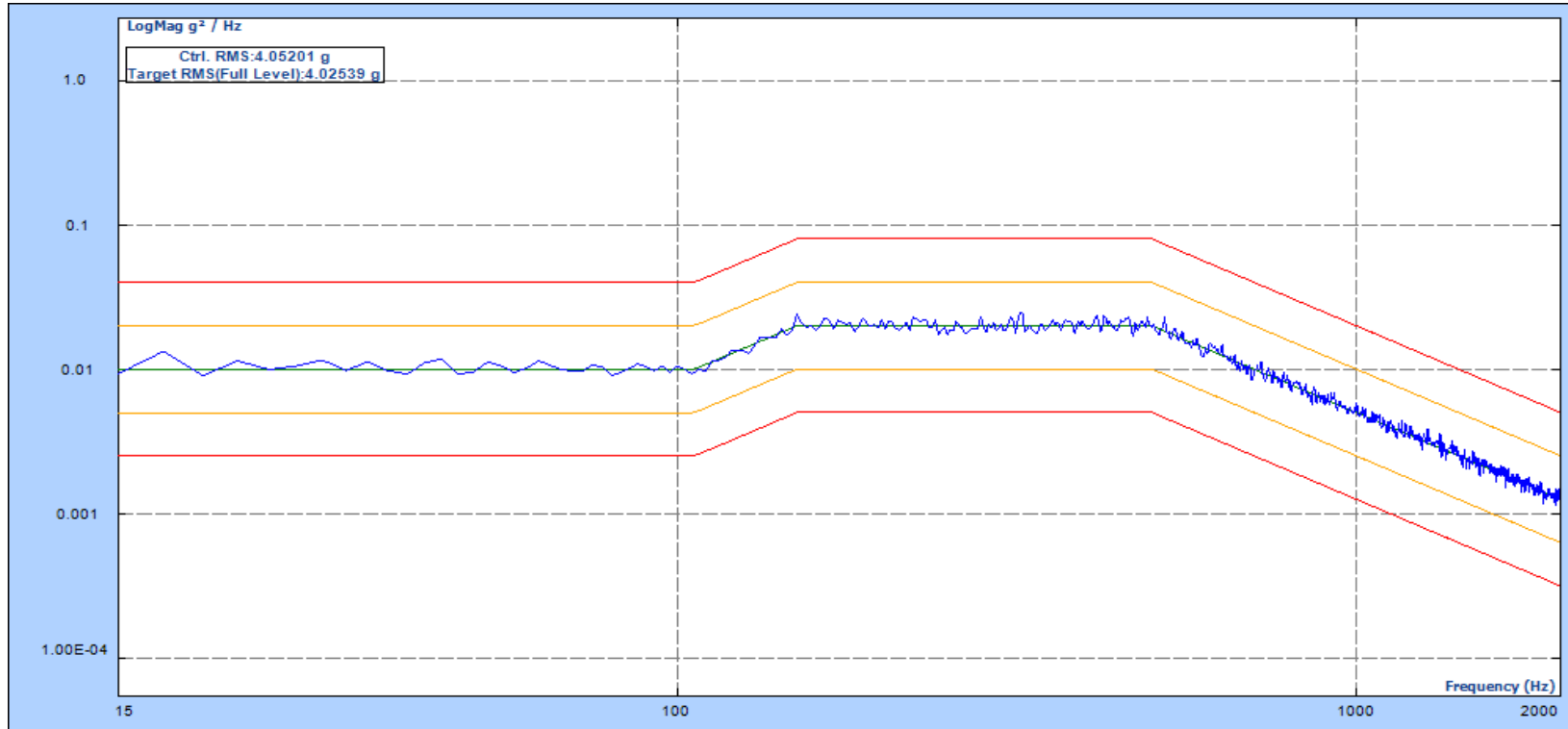


Level: 100.00 %
 Velocity Pk: 135.9 mm/s
 Remaining: 00:00:00

Drive Pk: 0.505V
 Control RMS: 4.058 g
 Total Elapsed: 01:01:01

Est. Disp. : 1.772 mm Pk-Pk
 Target RMS: 4.020 g
 Full Level Elapsed: 01:00:00

Y axis

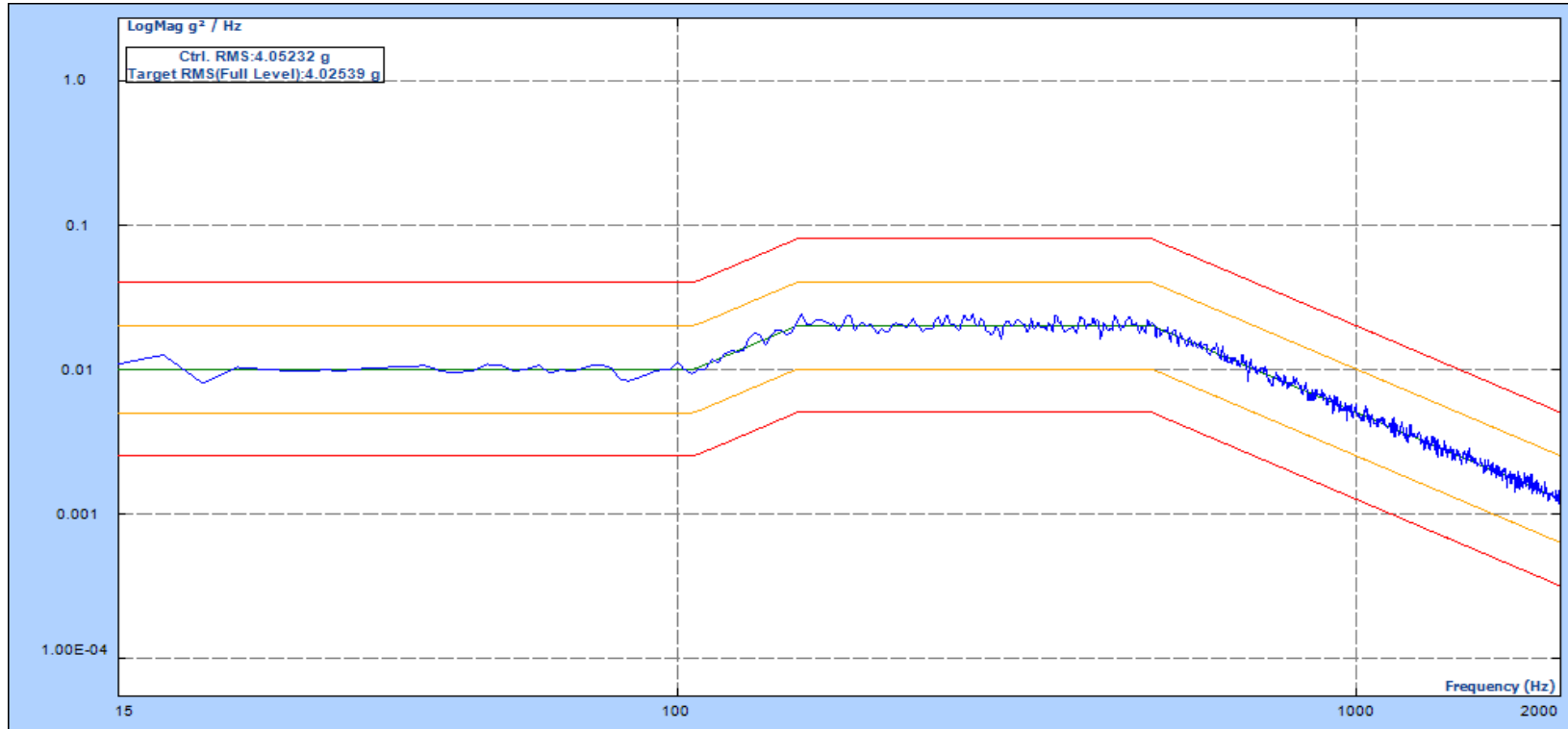


Level: 100.00 %
 Velocity Pk: 134.1 mm/s
 Remaining: 00:00:00

Drive Pk: 0.508V
 Control RMS: 4.052 g
 Total Elapsed: 01:01:01

Est. Disp. : 1.729 mm Pk-Pk
 Target RMS: 4.020 g
 Full Level Elapsed: 01:00:00

Z axis

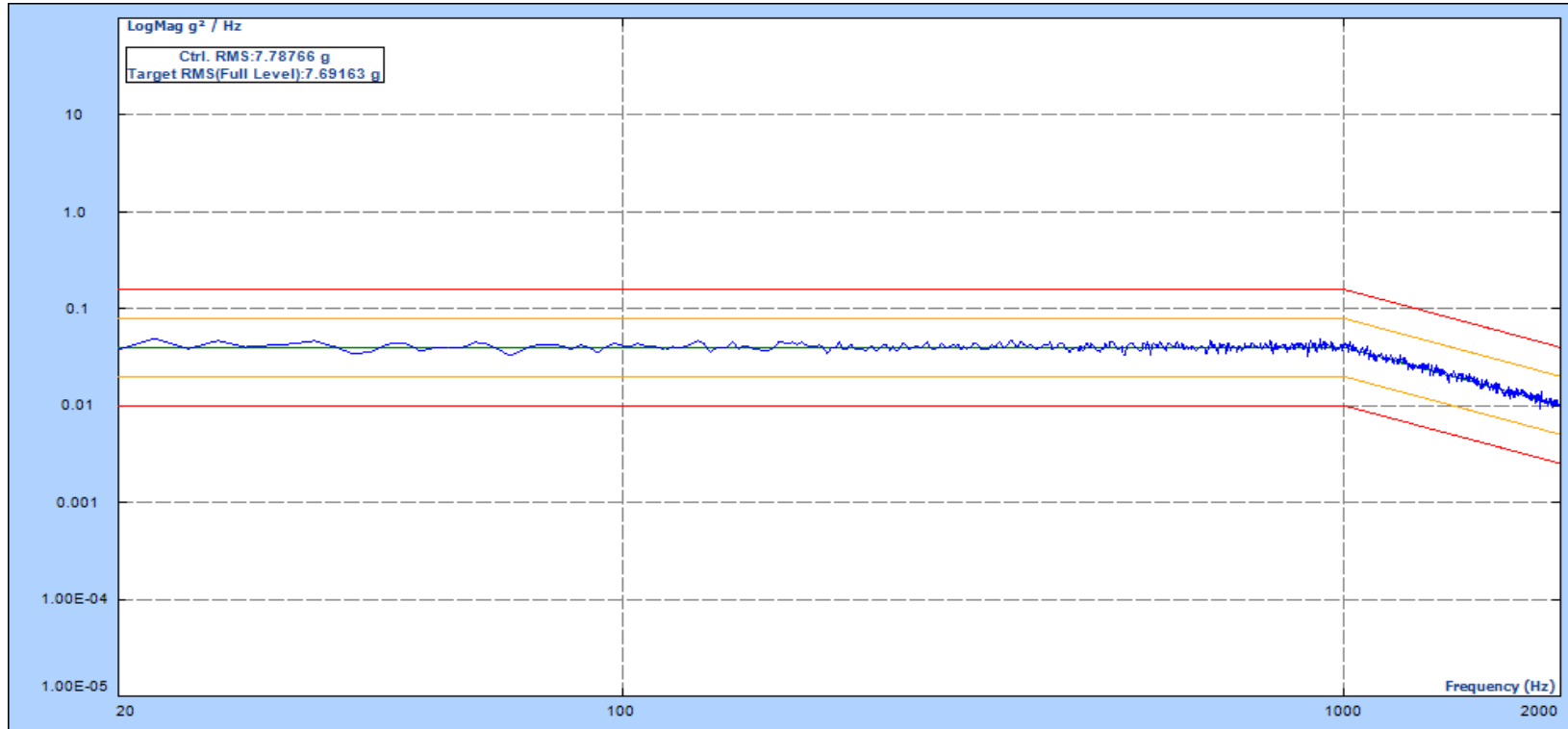


Level: 100.00 %
 Velocity Pk: 133.5 mm/s
 Remaining: 00:00:00

Drive Pk: 0.544V
 Control RMS: 4.052 g
 Total Elapsed: 01:01:01

Est. Disp. : 1.753 mm Pk-Pk
 Target RMS: 4.020 g
 Full Level Elapsed: 01:00:00

X axis

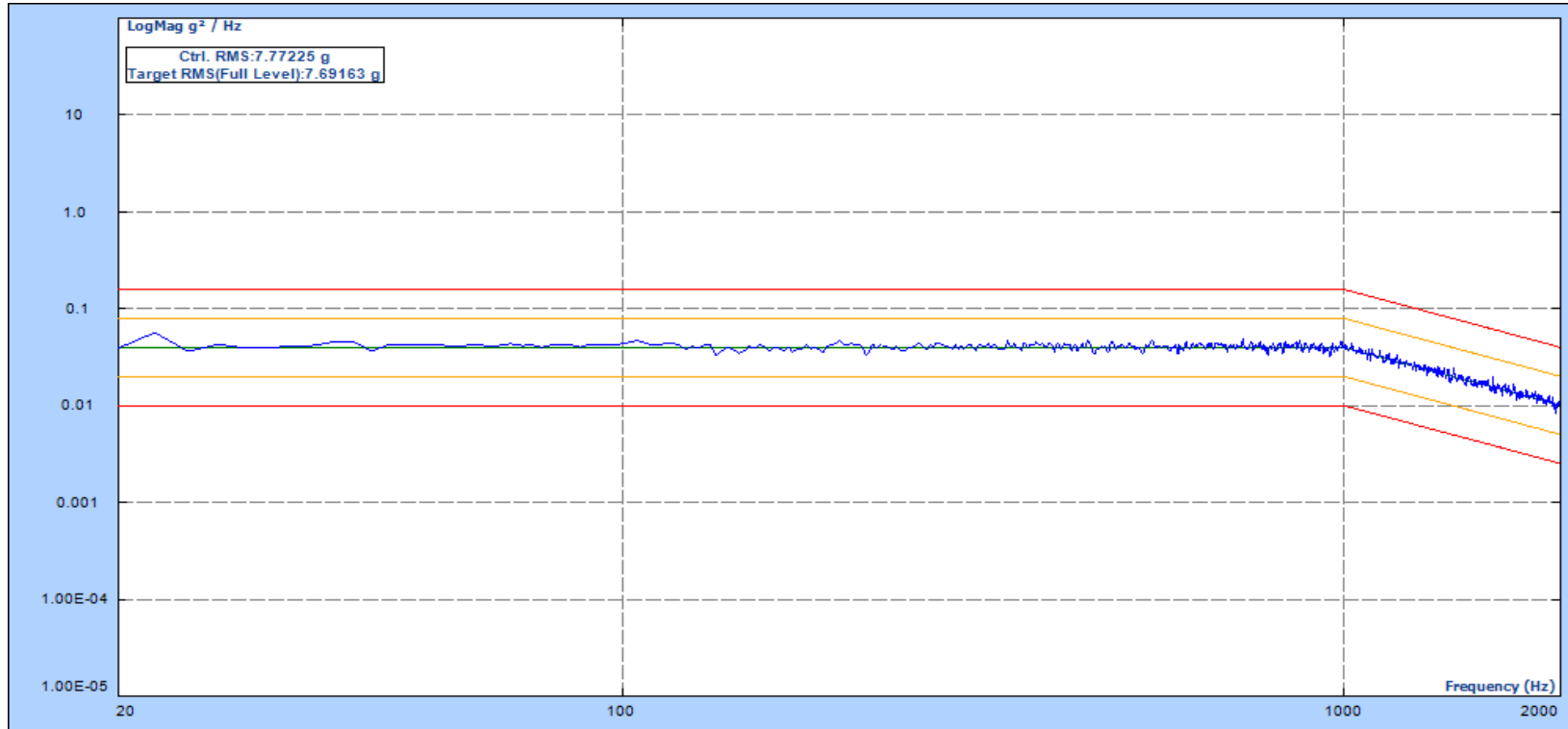


Level: 100.00 %
Velocity Pk: 219.0 mm/s
Remaining: 00:00:00

Drive Pk: 0.952V
Control RMS: 7.788 g
Total Elapsed: 01:01:25

Est. Disp. : 2.165 mm Pk-Pk
Target RMS: 7.690 g
Full Level Elapsed: 01:00:00

Y axis

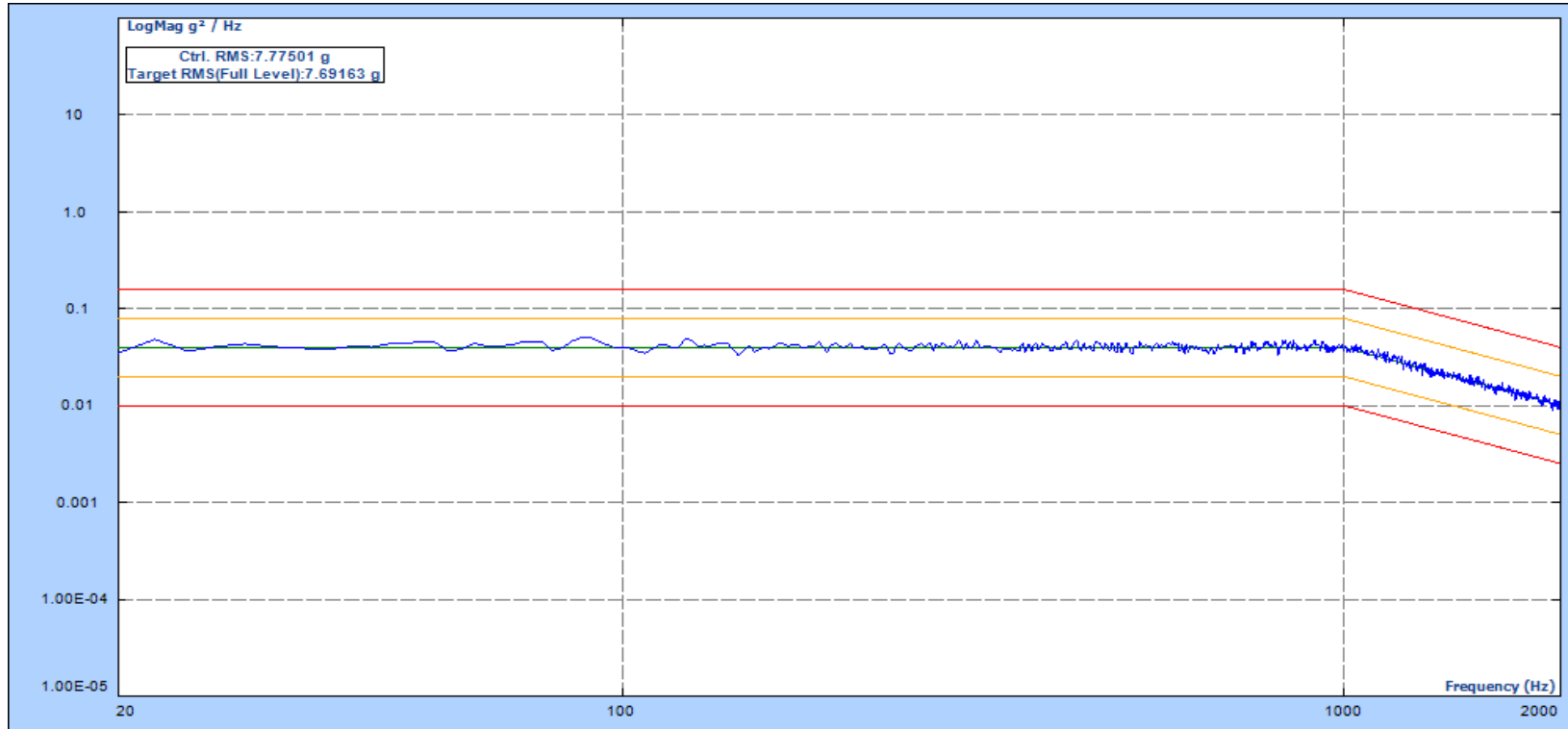


Level: 100.00 %
 Velocity Pk: 221.5 mm/s
 Remaining: 00:00:00

Drive Pk: 0.816V
 Control RMS: 7.772 g
 Total Elapsed: 01:01:02

Est. Disp. : 2.214 mm Pk-Pk
 Target RMS: 7.690 g
 Full Level Elapsed: 01:00:00

Z axis



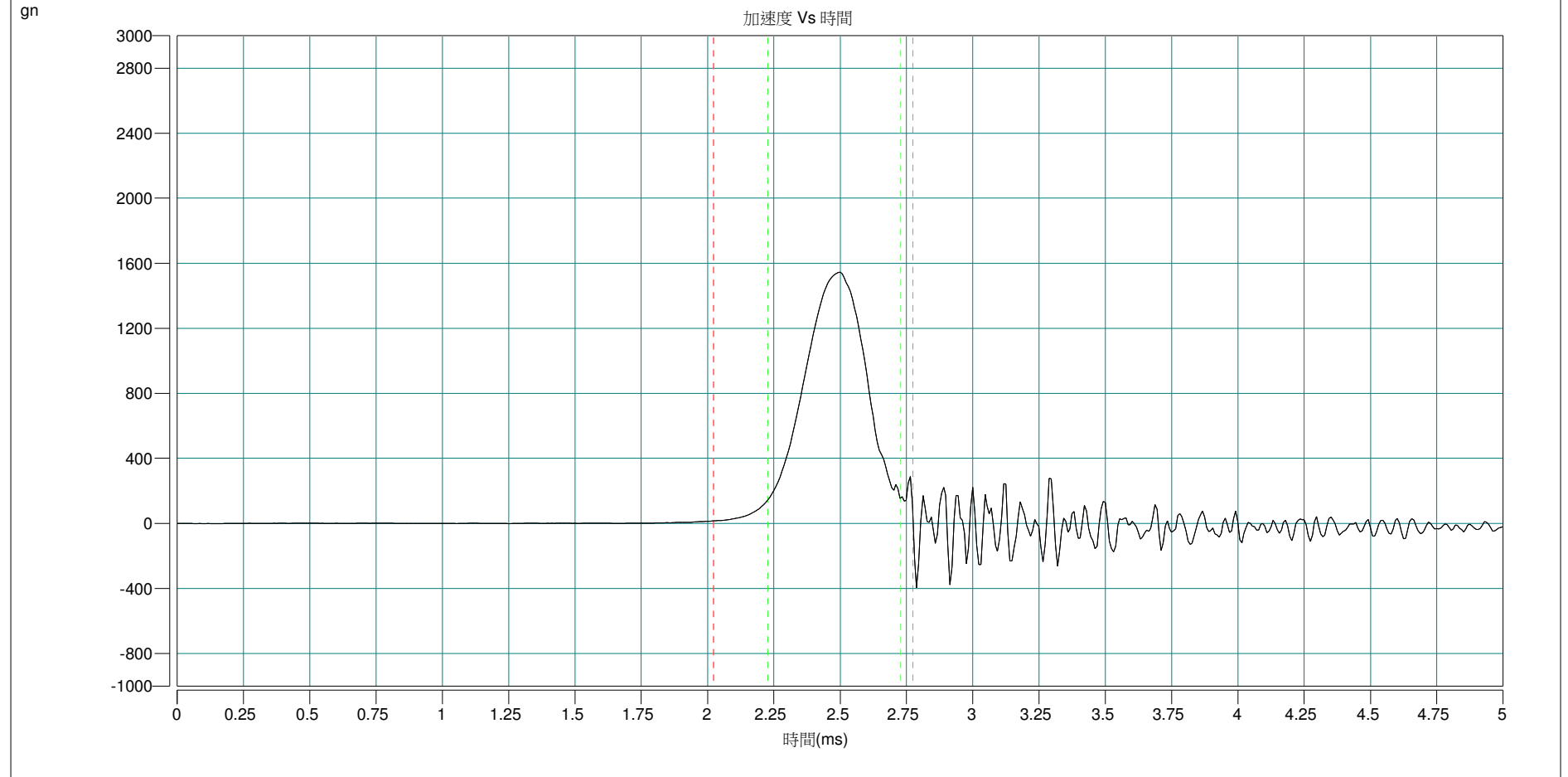
Level: 100.00 %
 Velocity Pk: 218.7 mm/s
 Remaining: 00:00:00

Drive Pk: 0.878V
 Control RMS: 7.775 g
 Total Elapsed: 01:01:02

Est. Disp. : 2.150 mm Pk-Pk
 Target RMS: 7.690 g
 Full Level Elapsed: 01:00:00

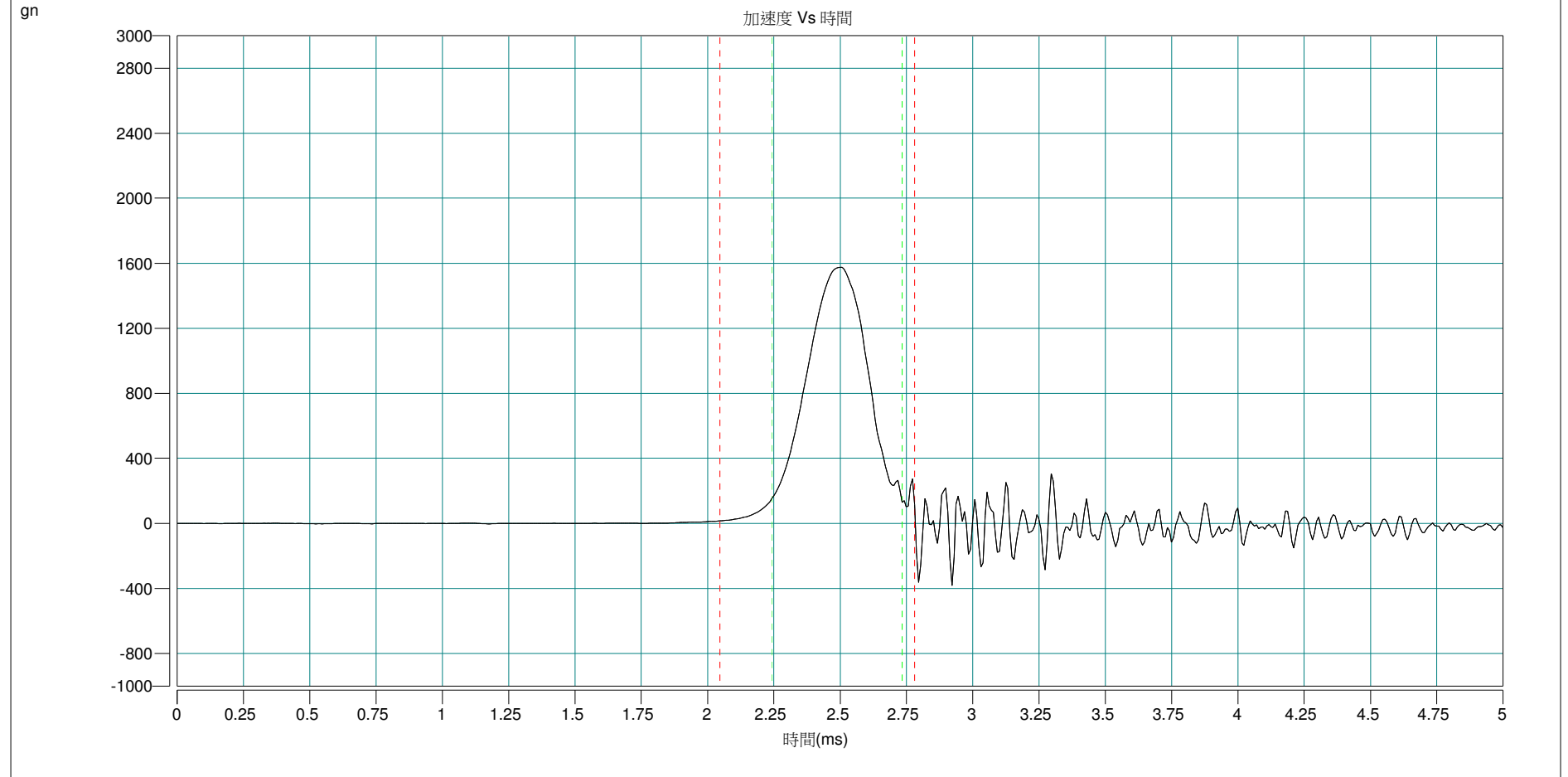
+X axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1545.37	0.49	4.36	10000.00	1545.37	-396.53



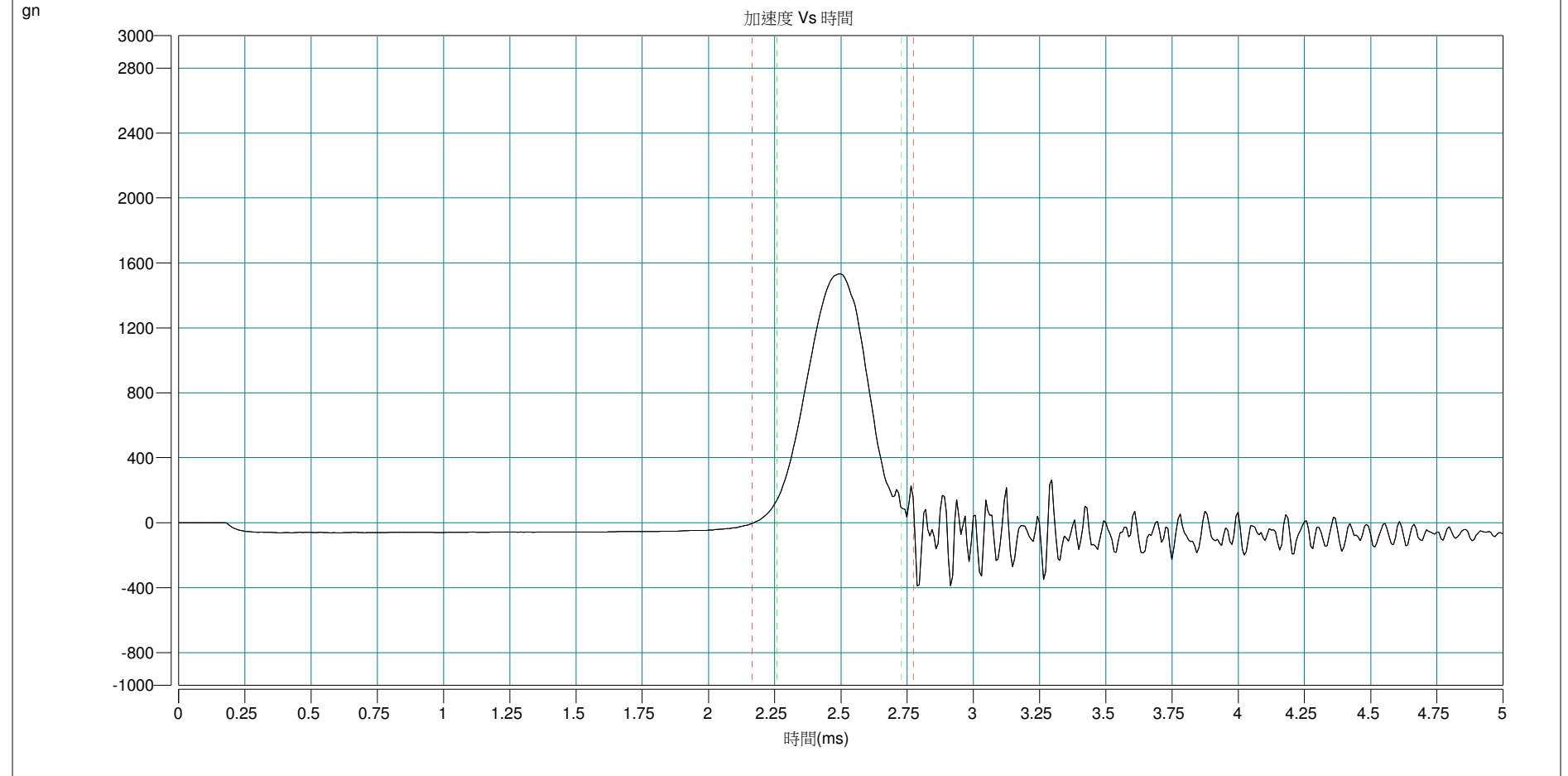
-X axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1576.37	0.49	4.38	10000.00	1576.37	-380.98



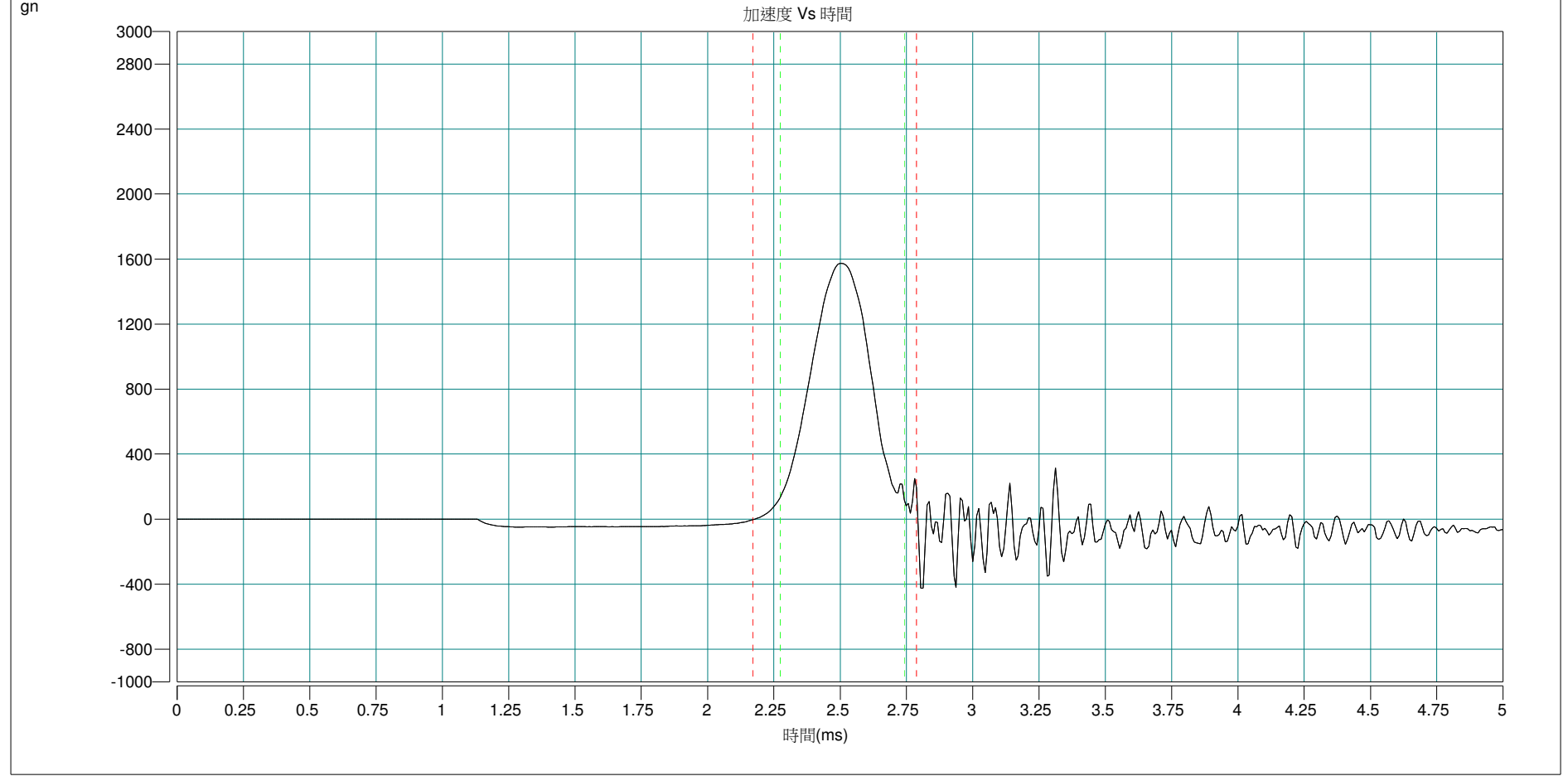
+Y axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1532.52	0.46	4.00	10000.00	1532.52	-388.96



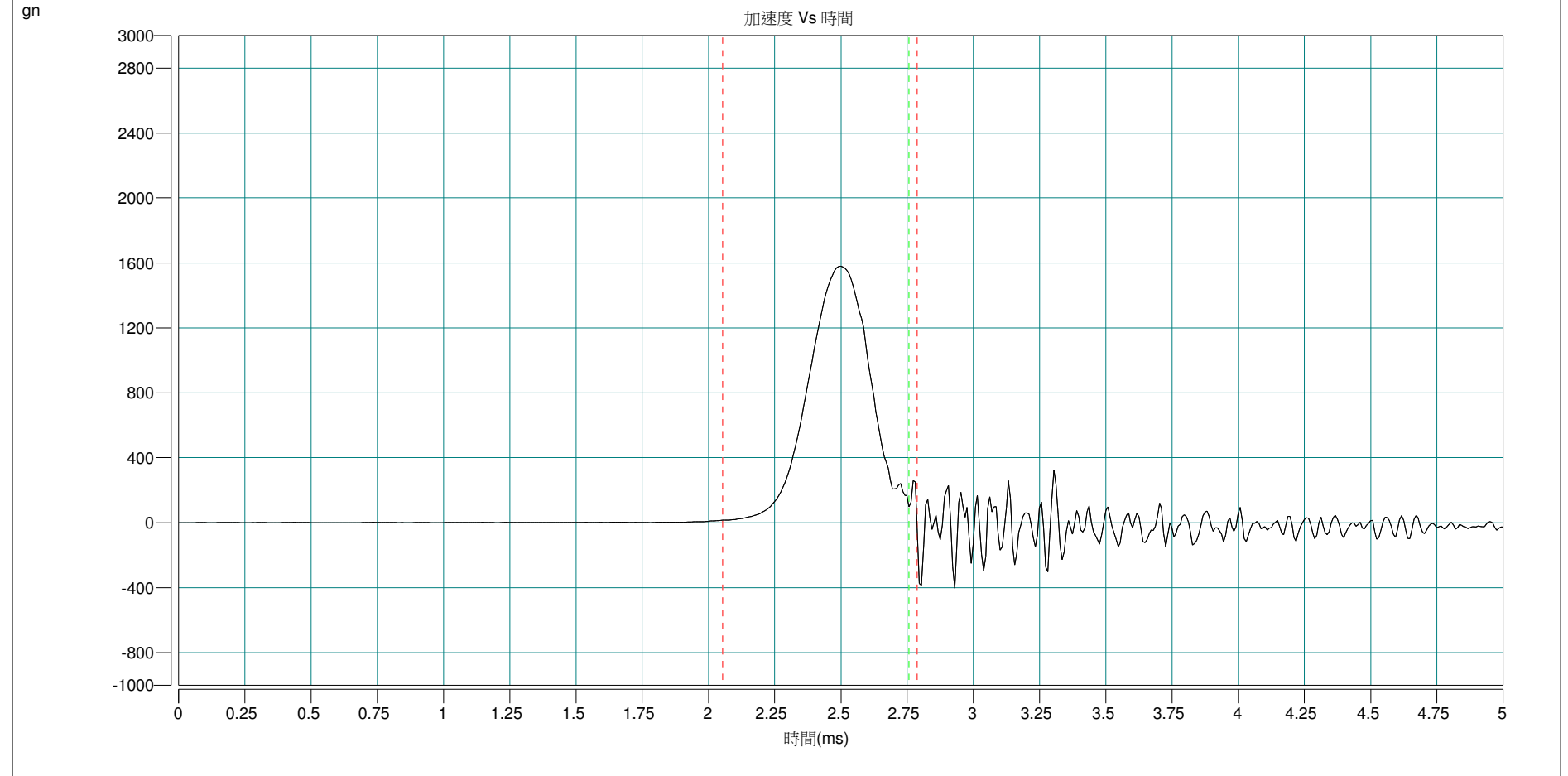
-Y axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1573.28	0.46	4.09	10000.00	1573.28	-424.62



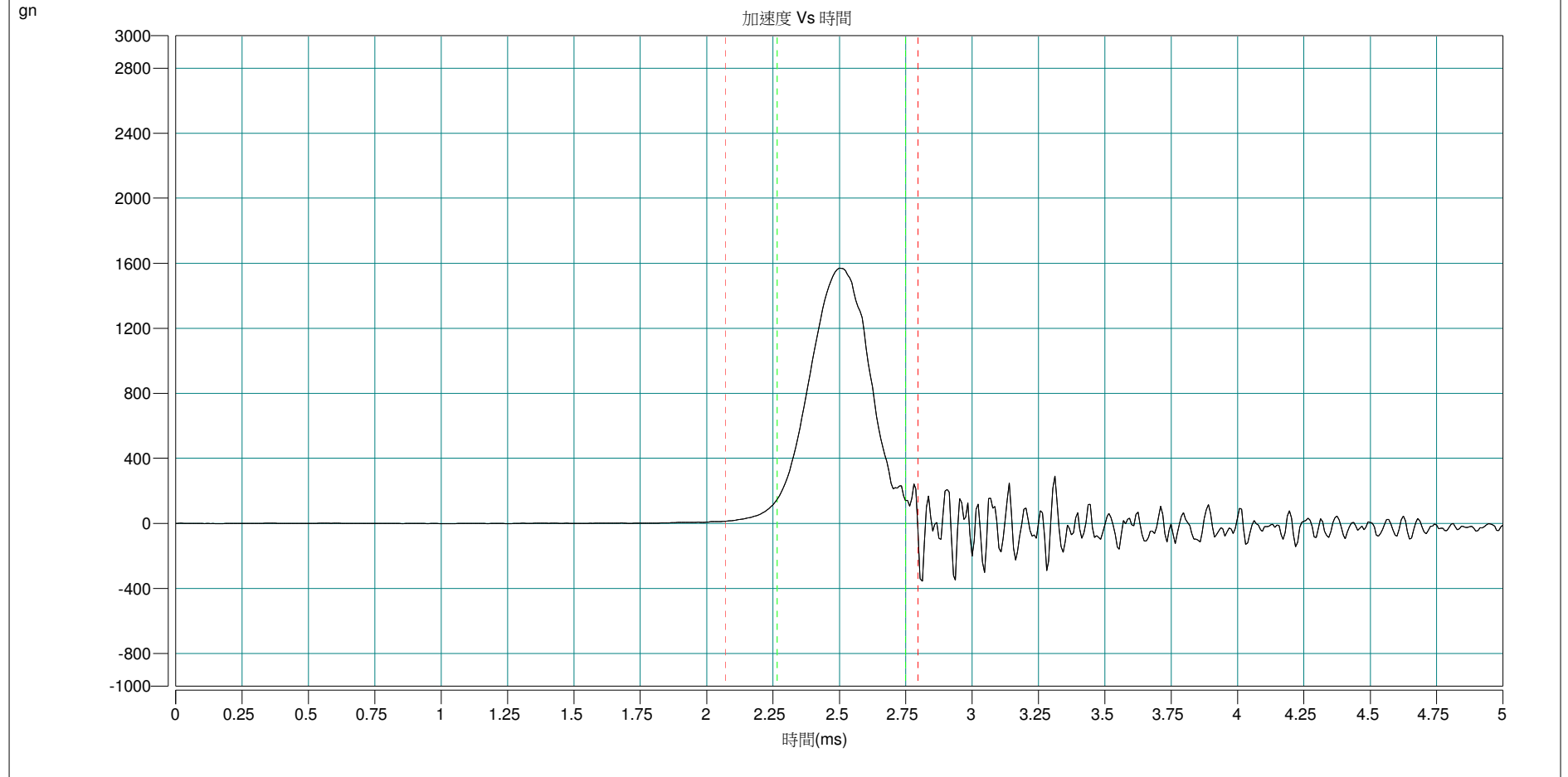
+Z axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1567.60	0.49	4.29	10000.00	1567.60	-403.01



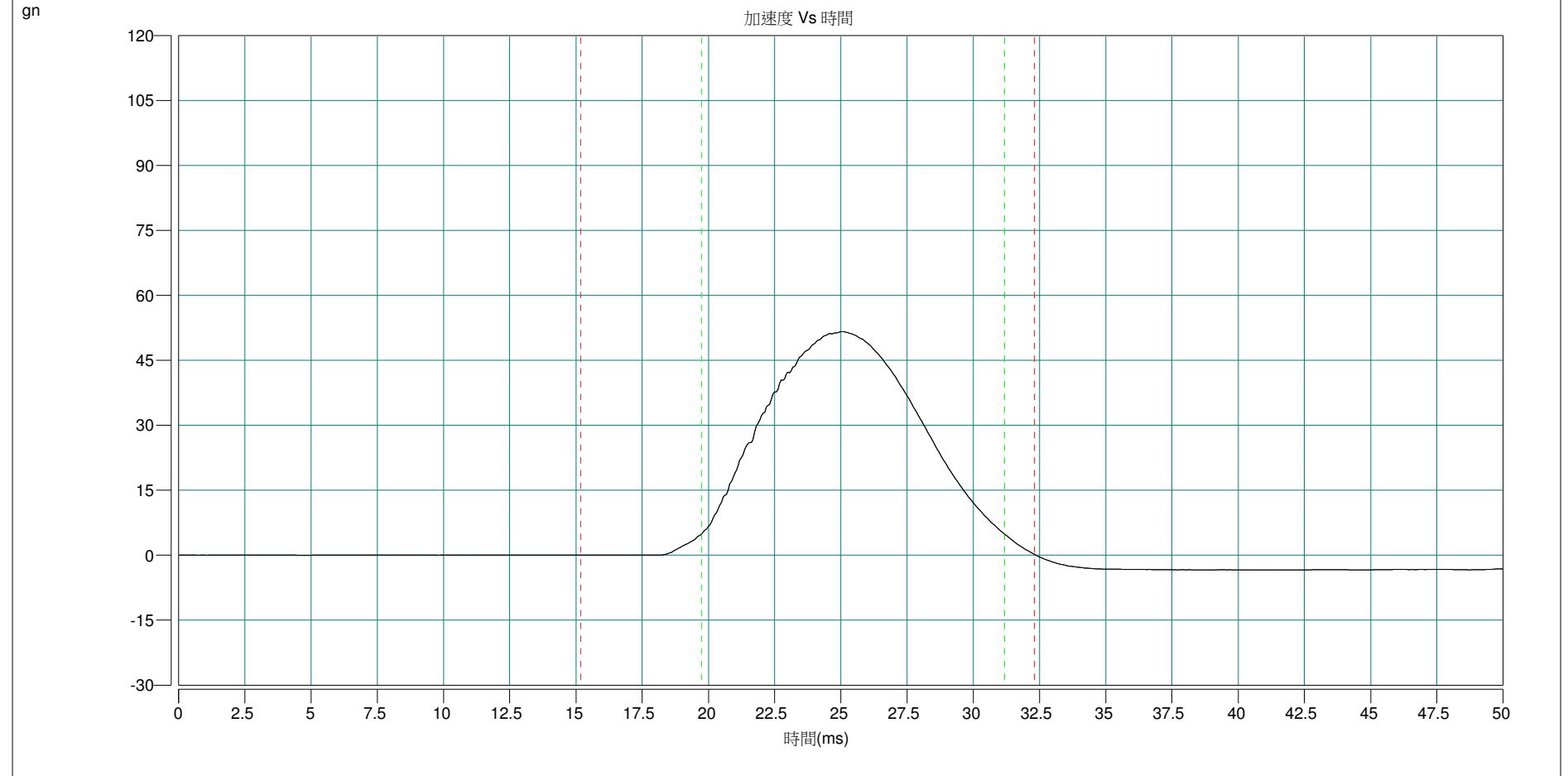
-Z axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	1569.87	0.48	4.25	10000.00	1569.87	-356.04



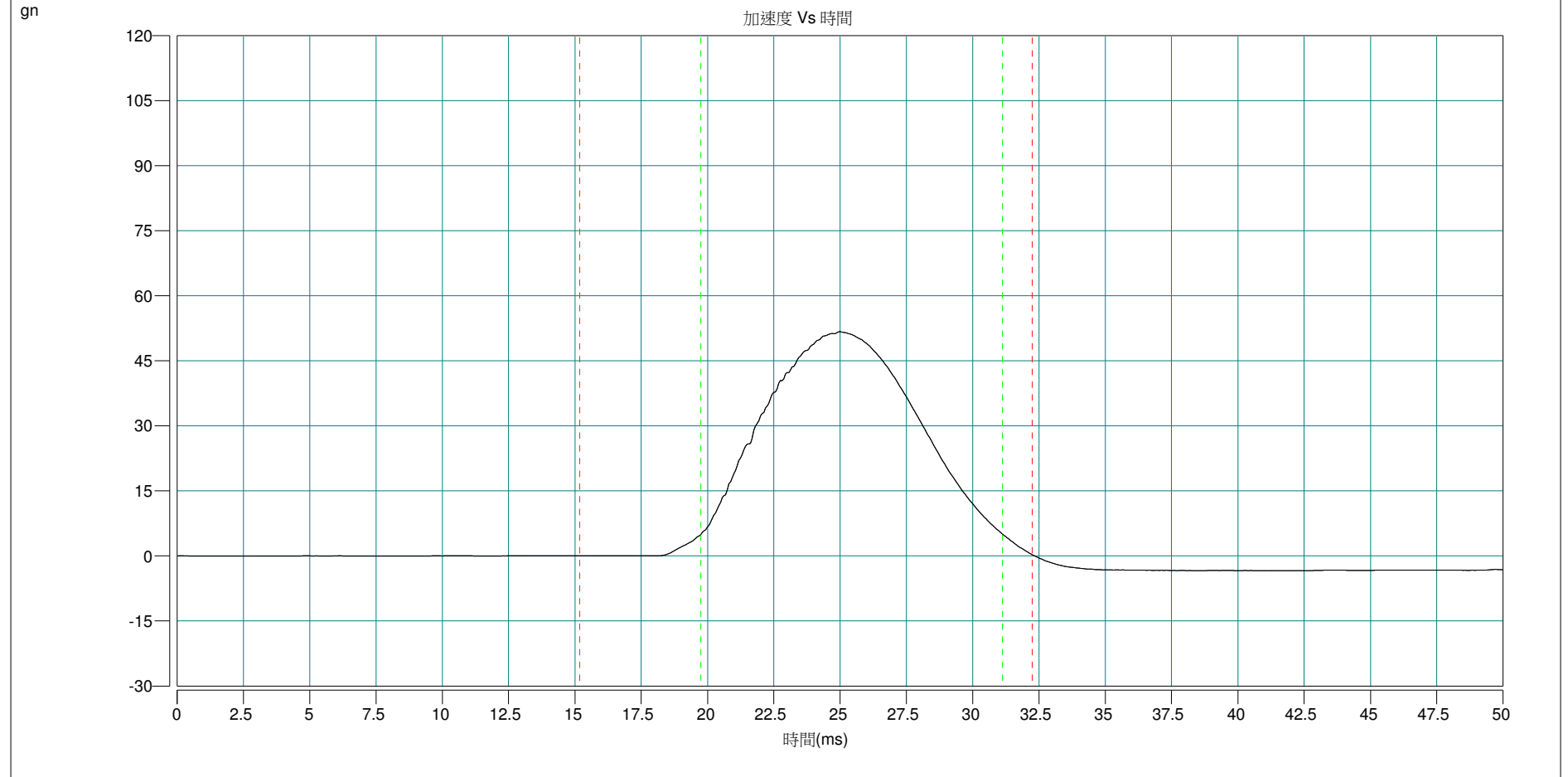
+X axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	51.65	11.34	3.57	500.00	51.65	-3.39



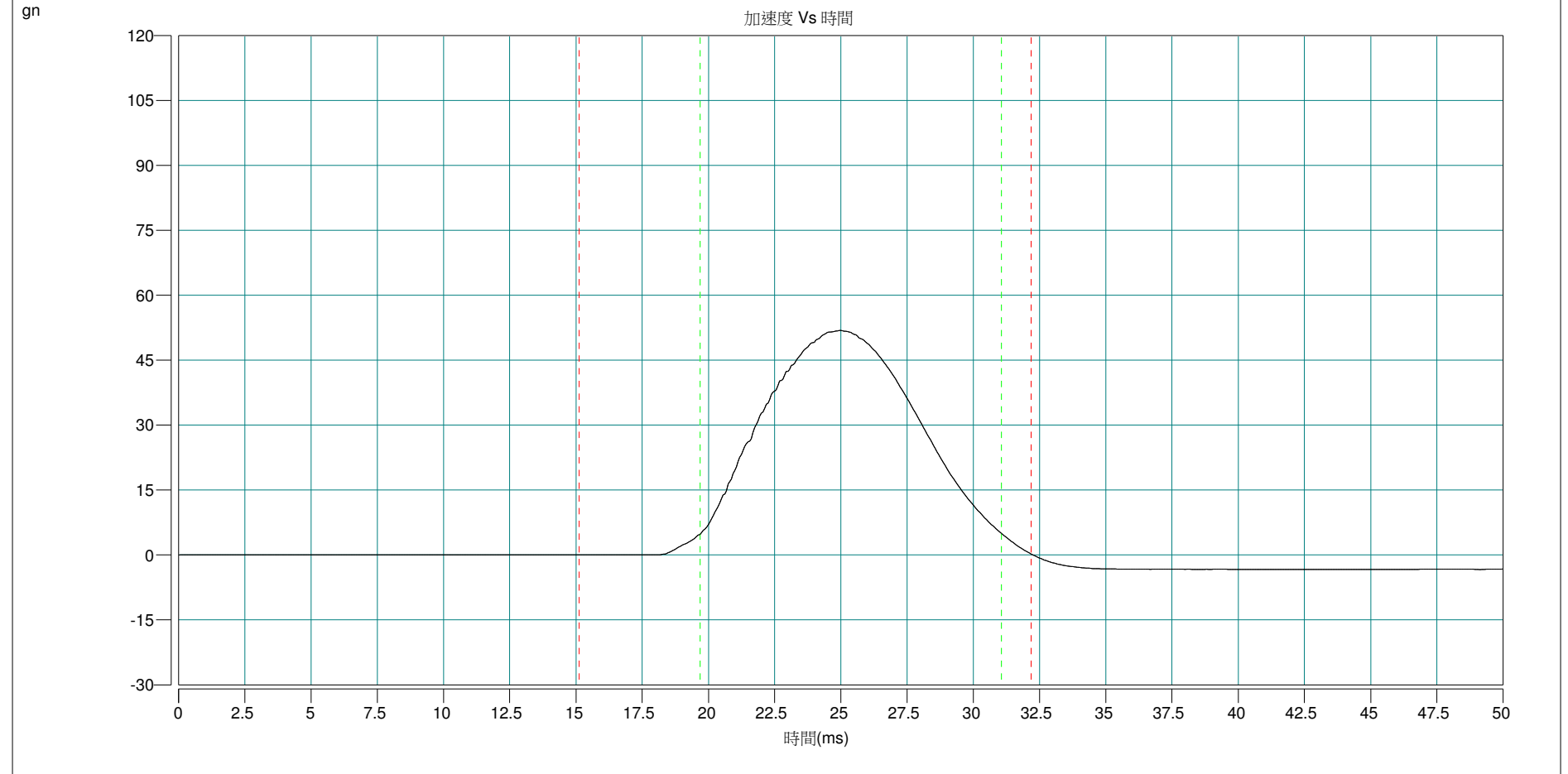
-X axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	51.74	11.33	3.57	500.00	51.74	-3.39



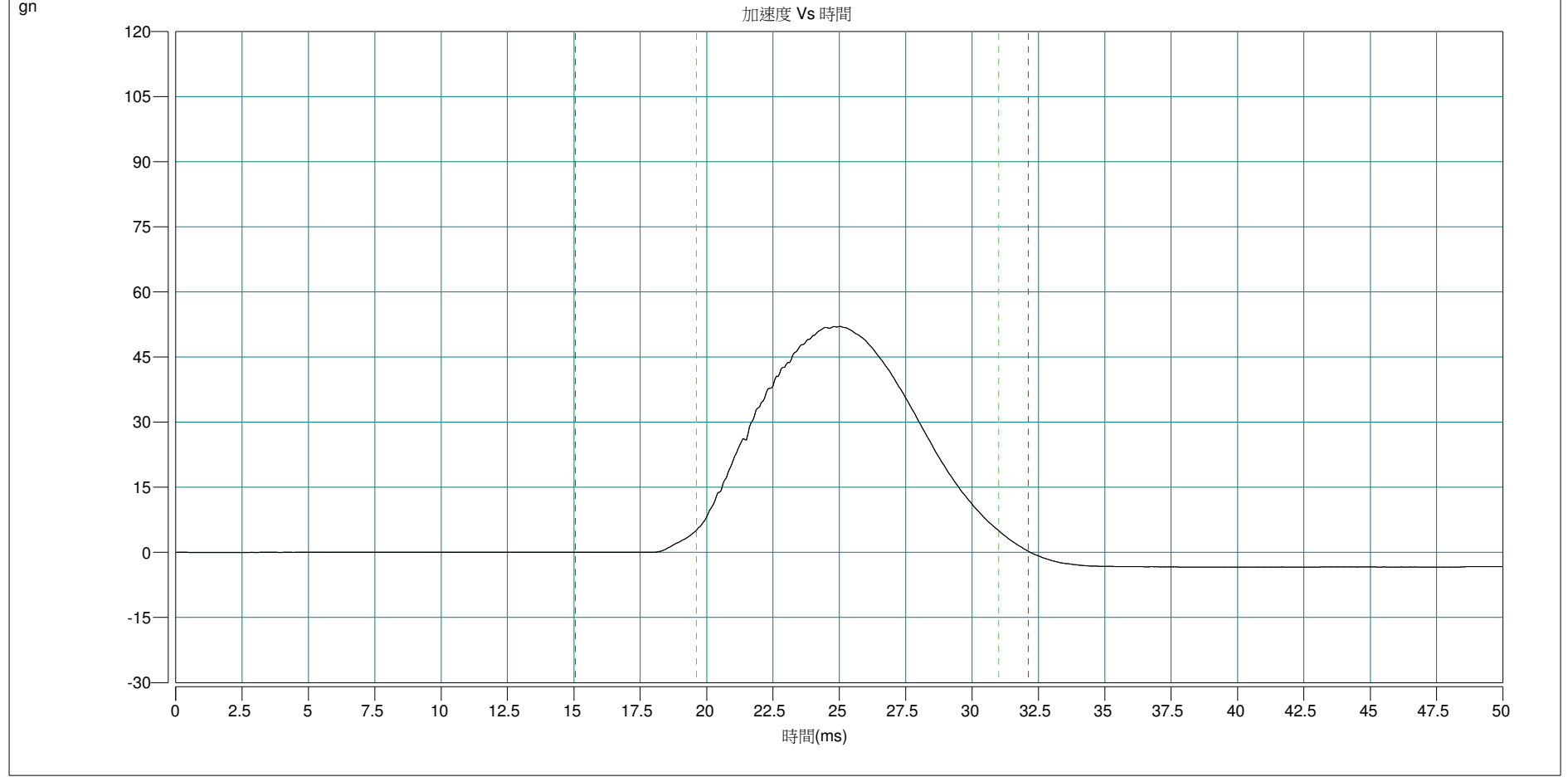
+Y axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	51.86	11.28	3.57	500.00	51.86	-3.36



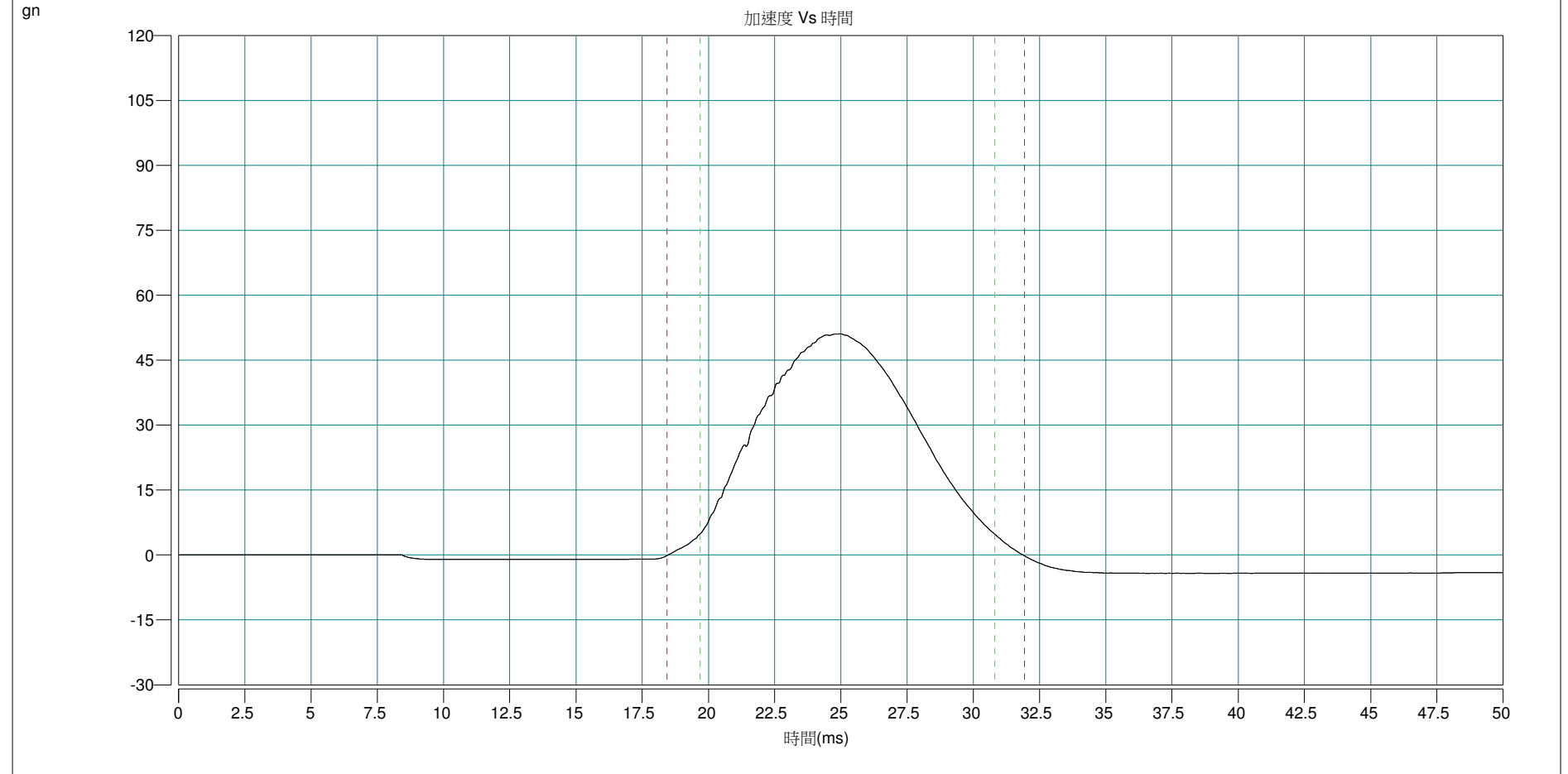
-Y axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	52.08	11.32	3.59	500.00	52.08	-3.42



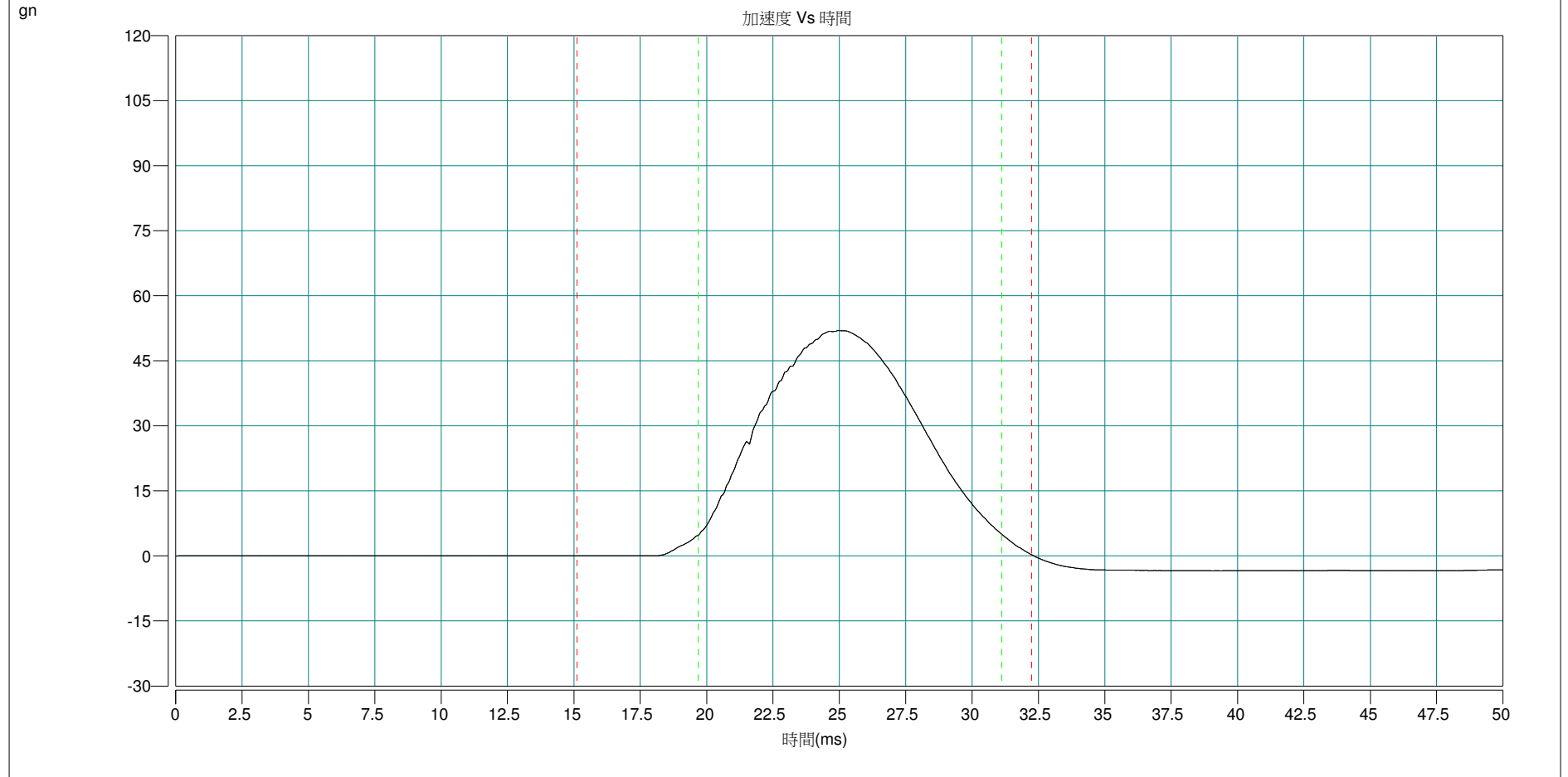
+Z axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	51.10	11.02	3.46	500.00	51.10	-4.25



-Z axis

Signal	Acceleration (gn)	Duration (ms)	Velocity (In/s)	Filter (Hz)	Max Acc (gn)	Min Acc (gn)
Input1(t)	52.02	11.34	3.59	500.00	52.02	-3.43



-END-