

Risultati delle prove di vibrazione sul modello del FDM

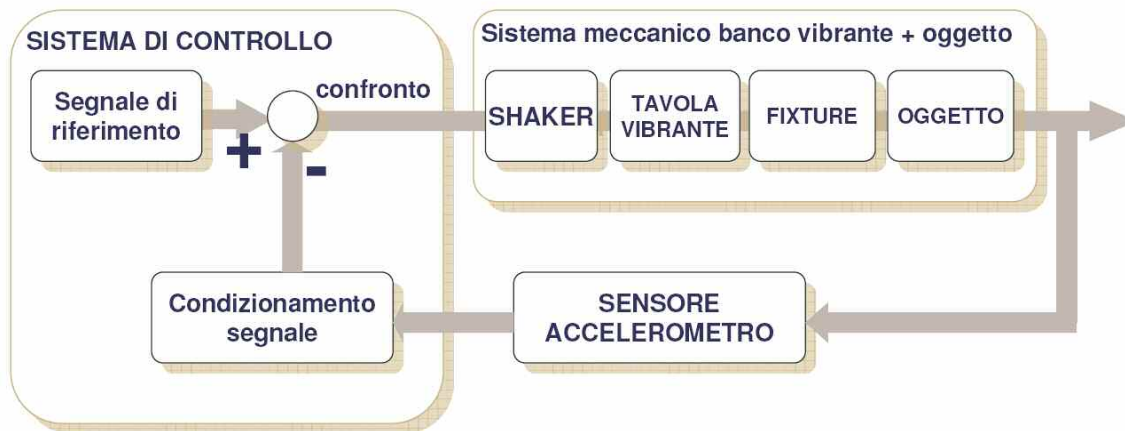


I risultati numerici delle prove di ricerca delle risonanze si trovano nel file “prove_risonanza_txt.zip”

PRINCIPIO DEL TEST DI VIBRAZIONE

Il test di vibrazione è basato sul concetto di:

SISTEMA RETROAZIONATO A LOOP CHIUSO



| Unit Axis | Resonance Research | Sine | Random |
|-------------|--------------------|------|--------|
| X Y Z | O | | |
| | | O | |
| | O | | O |
| | O | | |

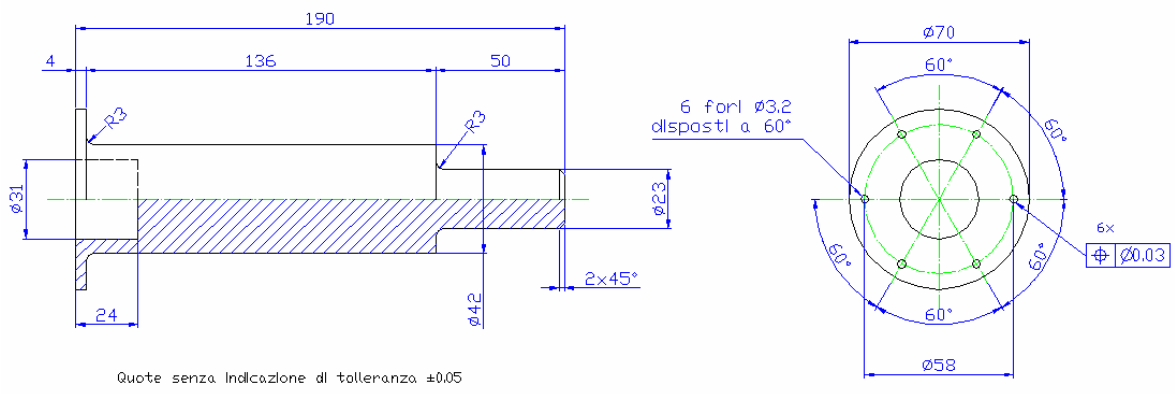
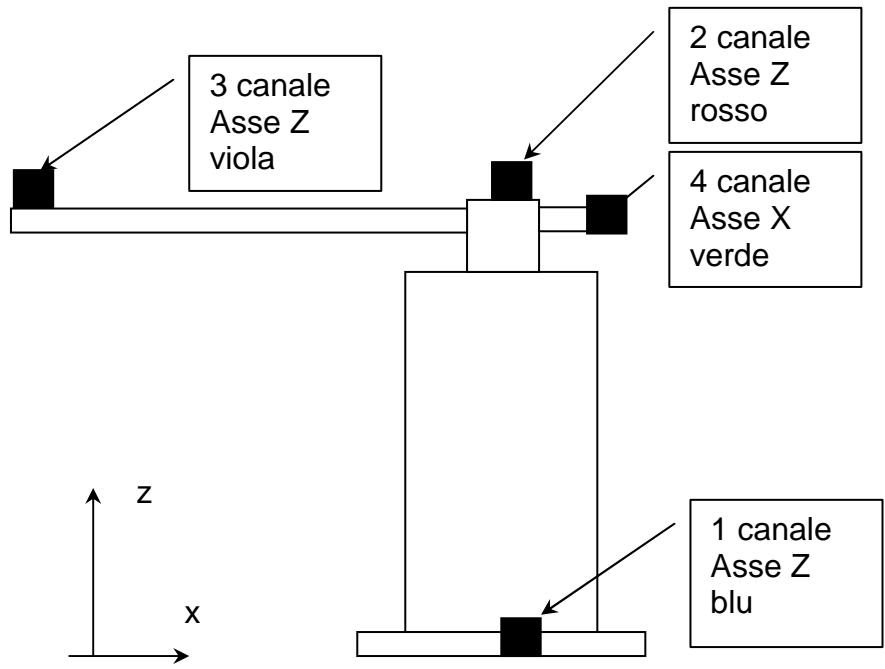
Sequenza dei test di vibrazione

| Frequency [hz] | Level [g] | Displacement [in] |
|----------------|-----------|-------------------|
| 10 | | 0.1 |
| 30 | | 0.2 |
| 100 | 10 | |

Specifiche di prova per i test di vibrazioni sinusoidali lungo i tre assi

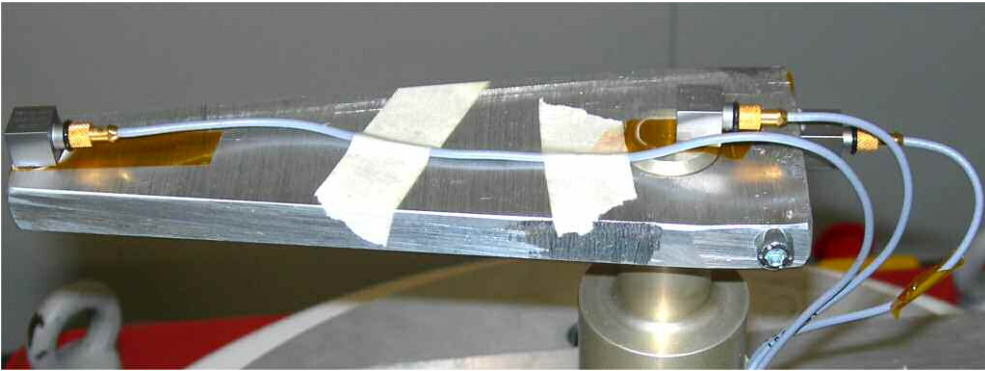
| Frequency [hz] | Level [g ² /hz] | Slope [dB/oct] |
|----------------|----------------------------|----------------|
| 20 | | +3 |
| 100 | 0.05 | |
| 200 | 0.05 | |
| 2000 | | -9 |

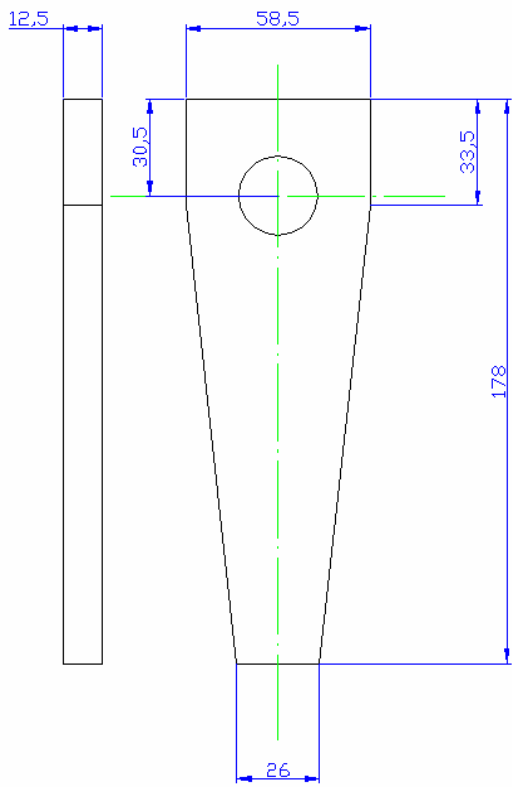
Specifiche di prova per i test di vibrazioni random lungo i tre assi



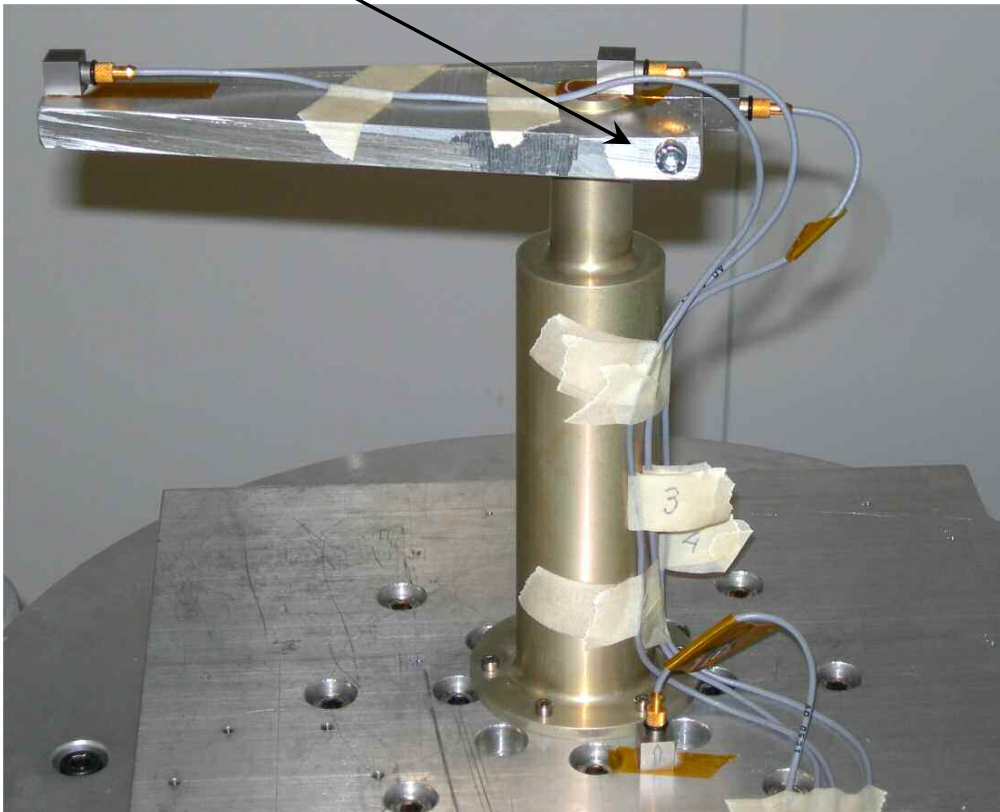
Quote senza indicazione di tolleranza ± 0.05
 Materiale 6061 T6

C.I.S.A.S. UPD
 data: 27/01/9





Coppia di serraggio nominale del morsetto 4,6 Nm



Channel Definition

| | Name | Serial # | Type | Loop Chk | Sensitivity (mv/EU) | Weighting (dB) | RMS Abort (GRMS) | ICP | Coupling | dB Reference | Reference Chans |
|----|-------|----------|----------|----------|---------------------|----------------|------------------|-----|----------|--------------|-----------------|
| 1 | CH 1 | | Control | On | 98.000 | 0.00 | 30.0000 | On | AC | 1 | NONE |
| 2 | CH 2 | | Measure | On | 96.000 | 0.00 | 30.0000 | On | AC | 1 | NONE |
| 3 | CH 3 | | Measure | On | 96.000 | 0.00 | 30.0000 | On | AC | 1 | NONE |
| 4 | CH 4 | | Measure | On | 99.300 | 0.00 | 30.0000 | On | AC | 1 | NONE |
| 5 | CH 5 | | Inactive | Off | 249.400 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 6 | CH 6 | | Inactive | Off | 241.700 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 7 | CH 7 | | Inactive | Off | 252.200 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 8 | CH 8 | | Inactive | Off | 209.500 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 9 | CH 9 | | Inactive | Off | 228.600 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 10 | CH 10 | | Inactive | Off | 264.800 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 11 | CH 11 | | Inactive | Off | 260.000 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 12 | CH 12 | | Inactive | Off | 243.800 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 13 | CH 13 | | Inactive | Off | 247.300 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 14 | CH 14 | | Inactive | Off | 250.800 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 15 | CH 15 | | Inactive | Off | 100.000 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |
| 16 | CH 16 | | Inactive | Off | 100.000 | 0.00 | 30.0000 | Off | Ground | 1 | NONE |

File Name: C:\IAS@\lab2\canali.chn

Description:

Save As Load New OK Cancel Help

Impostazione dei canali di controllo e di misura

Control 1

| Status | Frequency (Hz) | Type | G | in/s | in | - Alarm (dB) | + Alarm (dB) | - Abort (dB) | + Abort (dB) |
|--------|----------------|--------------|--------|----------|----------|--------------|--------------|--------------|--------------|
| 1 On | 10.000 | Acceleration | 0.5000 | 3.072391 | 0.097796 | 3.0 | 3.0 | 6.0 | 6.0 |
| 2 On | 2000.000 | Acceleration | 0.5000 | 0.015362 | 0.000002 | 3.0 | 3.0 | 6.0 | 6.0 |
| 3 Off | | | | | | | | | |
| 4 Off | | | | | | | | | |
| 5 Off | | | | | | | | | |
| 6 Off | | | | | | | | | |
| 7 Off | | | | | | | | | |
| 8 Off | | | | | | | | | |
| 9 Off | | | | | | | | | |
| 10 Off | | | | | | | | | |

Reference Parameters

Max Test Level: 0 (dB) | Min. Freq: 10 | Transducer Crossover (Hz): 0 | Alarm Width (%): 3 | Abort Width (%): 5 | Min. Freq: 10 | Max Freq: 2000

Units Selection: m/s² - m/s - mm | g - in/s - in | g - m/s - mm

File Name: C:\Laboratorio\IAS 2006\Shaker\Ricerca risonanze\ricerc

Description:

OK Cancel Apply Help

Impostazione del profilo ricerca delle risonanze

Puma - Local - [RicercaRison.sin]

Test Status: Stopped
Elapsed Time: 0000:00:00
Elapsed Sweeps:

Sweep Status: 0.0000 Oct / Min
Sweep Rates: Quiet, Flat, Full

Control Status: Test Frequency: 0 Hz, Control Level: 000.000 g, Drive Level: 000.000 V

Spectral Dynamic's Viewer - [RicercaRison.sin.sgt]

Channel: Control | Location: Off | Ref Channel: | Data Only

Graph: G (Log) vs Hz (Log). Test Level: 0.0000 dB. Peaks at 2000 Hz (0.537891), 2000 Hz (0.754328), 2000 Hz (4.93304), 2000 Hz (0.376391).

Channel Status (in Gs):
Ch 1: 0.000, Ch 3: 0.000
Ch 2: 0.000, Ch 4: 0.000

Abort

For Help, press F1 NUM

Ricerca delle risonanze (prima prova)

Control 1

| Status | Frequency (Hz) | Type | G | in/s | in | - Alarm (dB) | + Alarm (dB) | - Abort (dB) | + Abort (dB) |
|--------|----------------|--------------|---------|-----------|----------|--------------|--------------|--------------|--------------|
| On | 10.000 | Displacement | 0.5113 | 3.141593 | 0.100000 | 3.0 | 3.0 | 6.0 | 6.0 |
| On | 30.000 | Displacement | 9.2028 | 18.849556 | 0.200000 | 3.0 | 3.0 | 6.0 | 6.0 |
| On | 100.000 | Acceleration | 10.0000 | 6.144782 | 0.019559 | 3.0 | 3.0 | 6.0 | 6.0 |
| Off | | | | | | | | | |
| Off | | | | | | | | | |
| Off | | | | | | | | | |
| Off | | | | | | | | | |
| Off | | | | | | | | | |
| Off | | | | | | | | | |
| Off | | | | | | | | | |

Reference Parameters

Max Test Level: 0 (dB) | Min. Freq: 10 | Transducer Crossover (Hz): 0 | Alarm Width (%): 3 | Abort Width (%): 5

Alarm-Abort Range: Min. Freq: 10 | Max Freq: 100

Units Selection: m/s² - m/s - mm | g - in/s - in | g - m/s - mm

File Name: C:\Laboratorio\IAS 2006\Shaker\Ricerca risonanze\ricerc

Description:

New Load Save As

Impostazione del profilo prova seno

Puma - Local - [Sin.sin_paolo.sin]

Test Status: Stopped | Elapsed Time: 0000:00:00 | Elapsed Sweeps: 0

Sweep Status: 0.0000 Oct / Min | Sweep Rates: Quarter, Half, Full

Control Status: Test Frequency: 0 Hz | Control Level: 000.000 g | Drive Level: 000.000 V

Spectral Dynamic's Viewer - [Sin.sin_paolo.sin.sgt]

Channel: Control | Location: Off | Ref Channel: G | Sine | Data Only

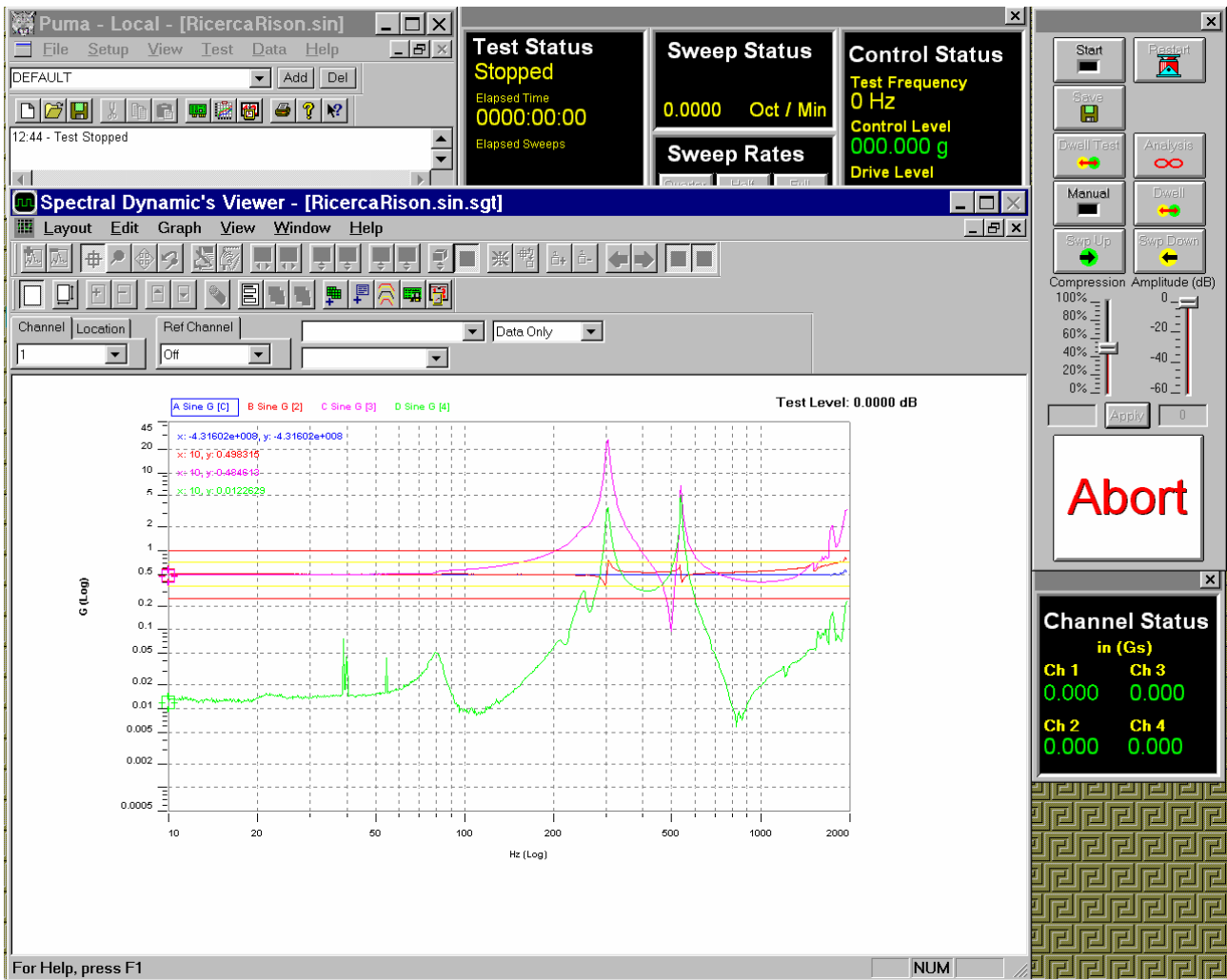
Test Level: 0.0000 dB

Channel Status (in Gs):

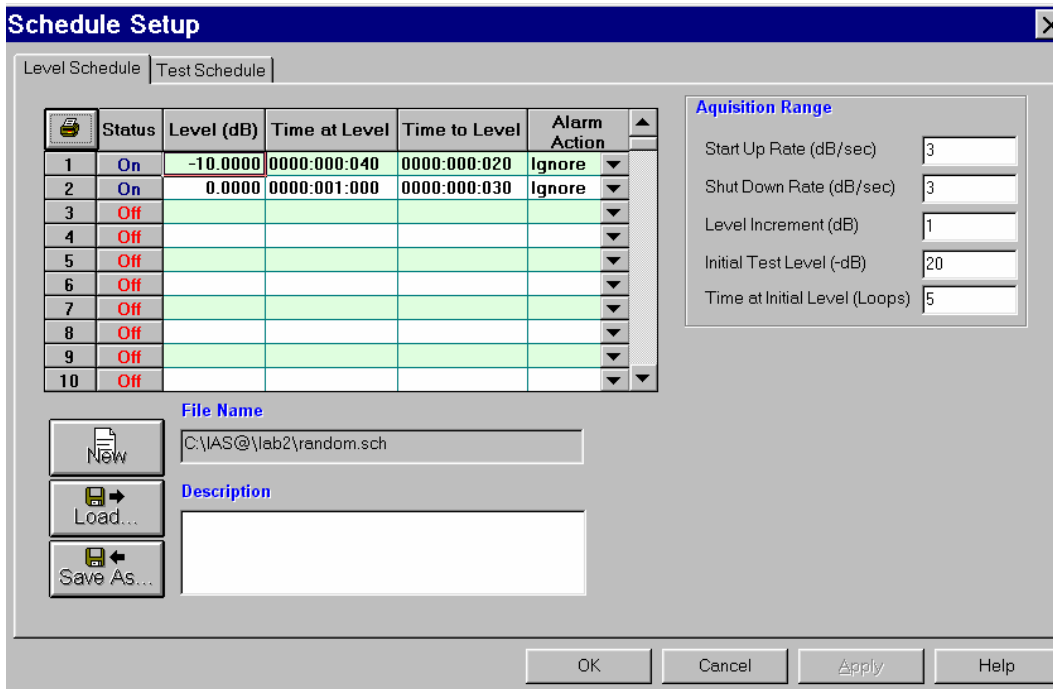
| | | | |
|------|-------|------|-------|
| Ch 1 | 0.000 | Ch 3 | 0.000 |
| Ch 2 | 0.000 | Ch 4 | 0.000 |

Abort

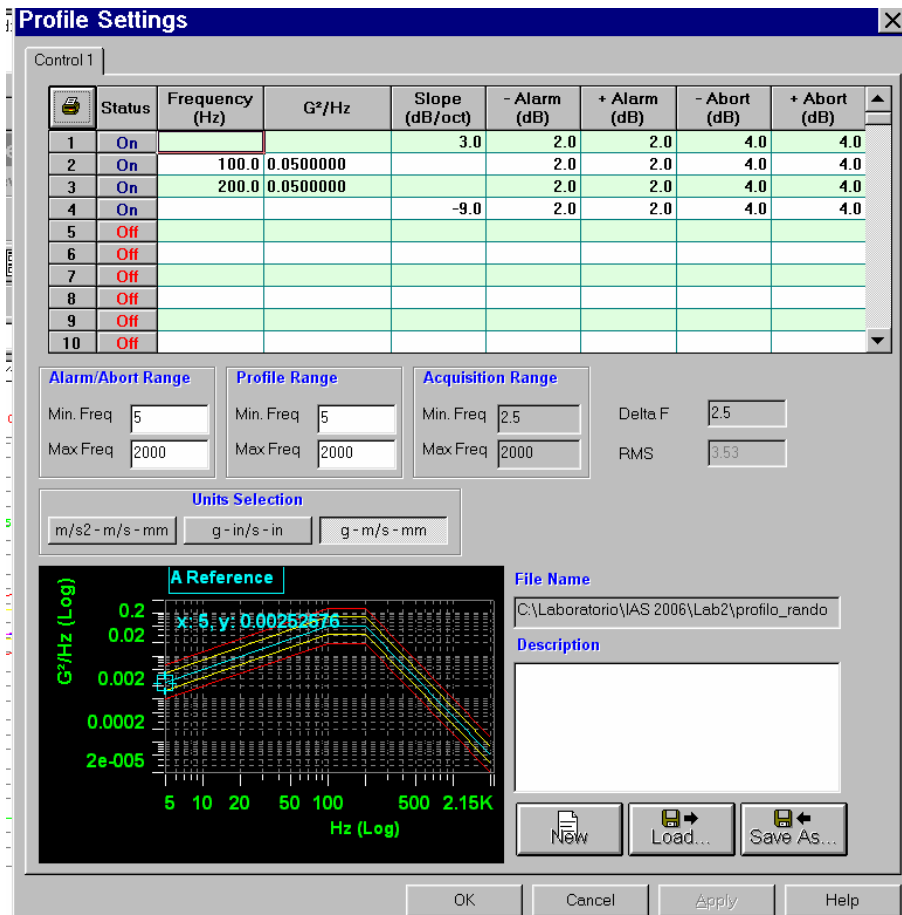
prova seno



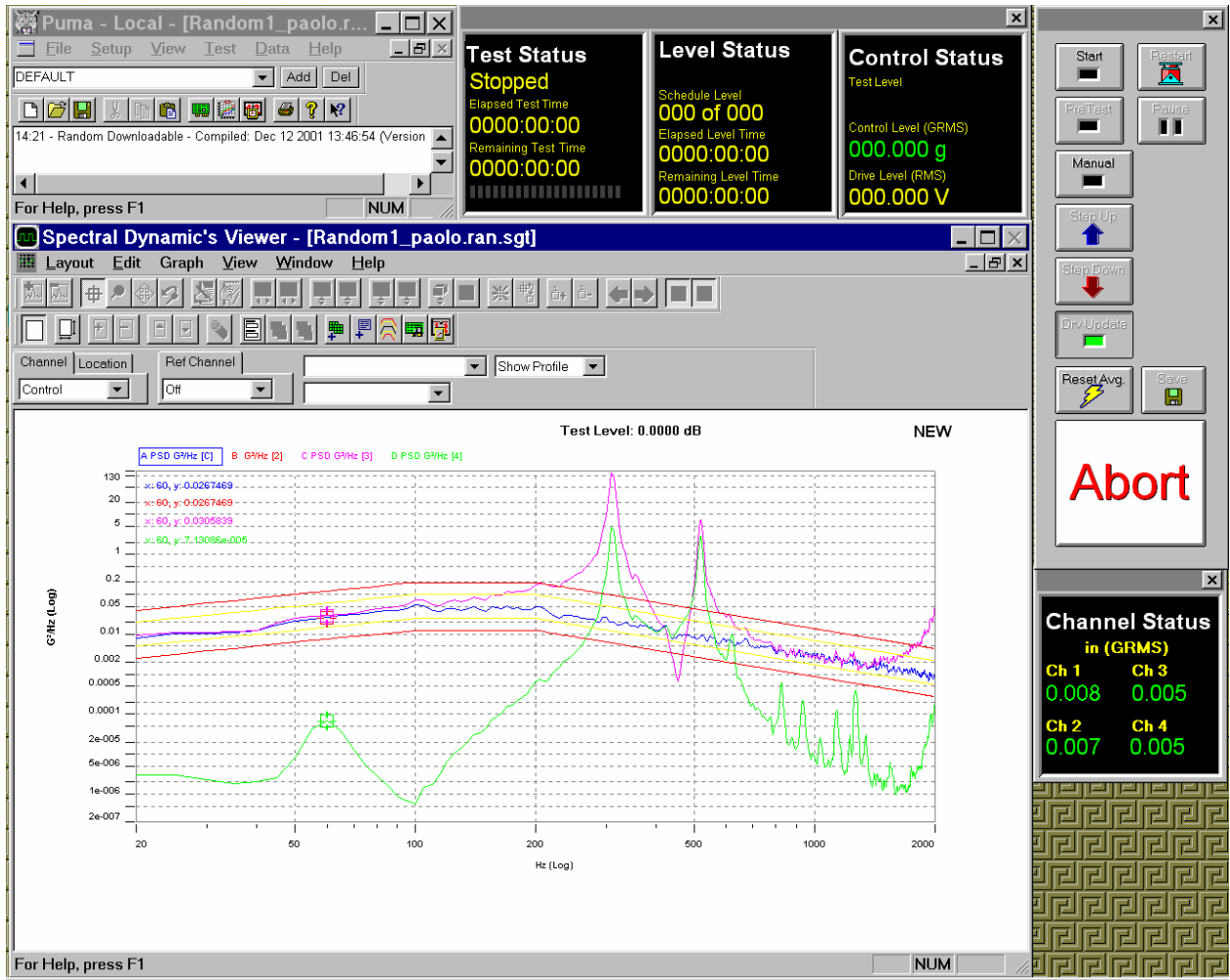
ricerca risonanze (seconda prova)



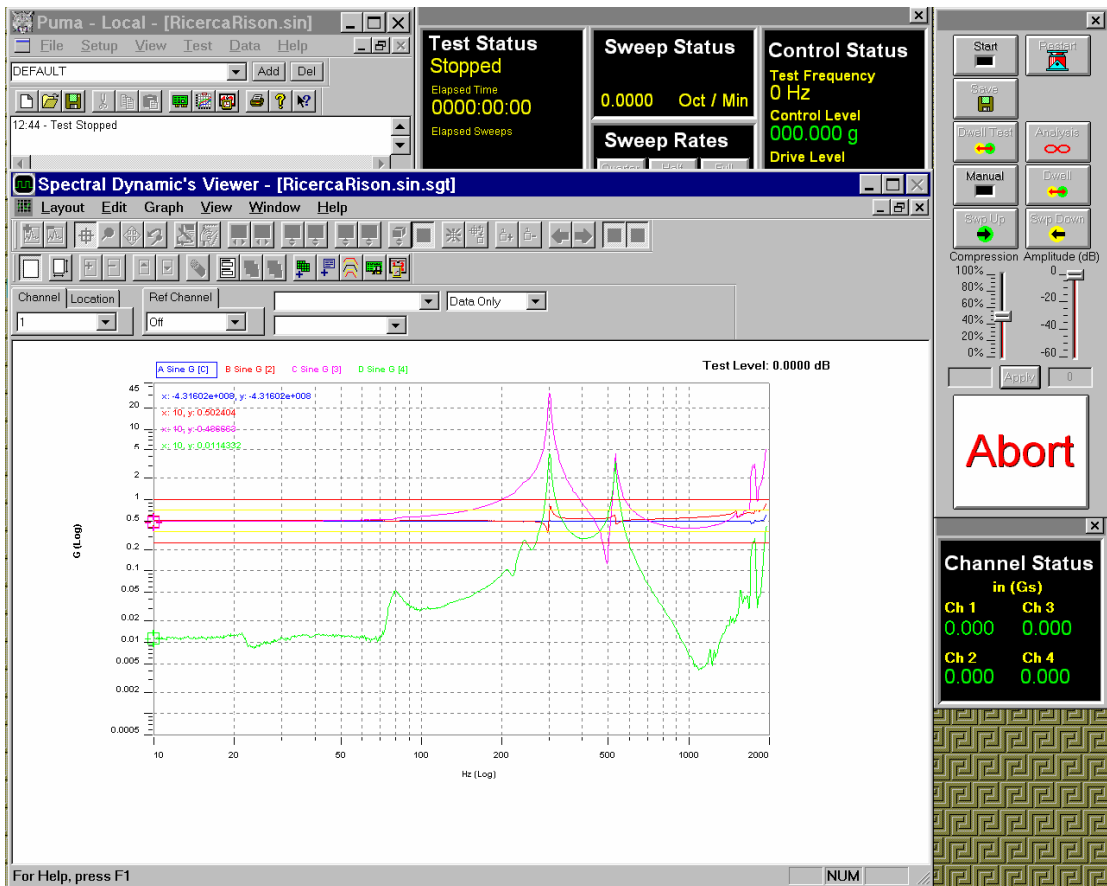
Schedula prova random



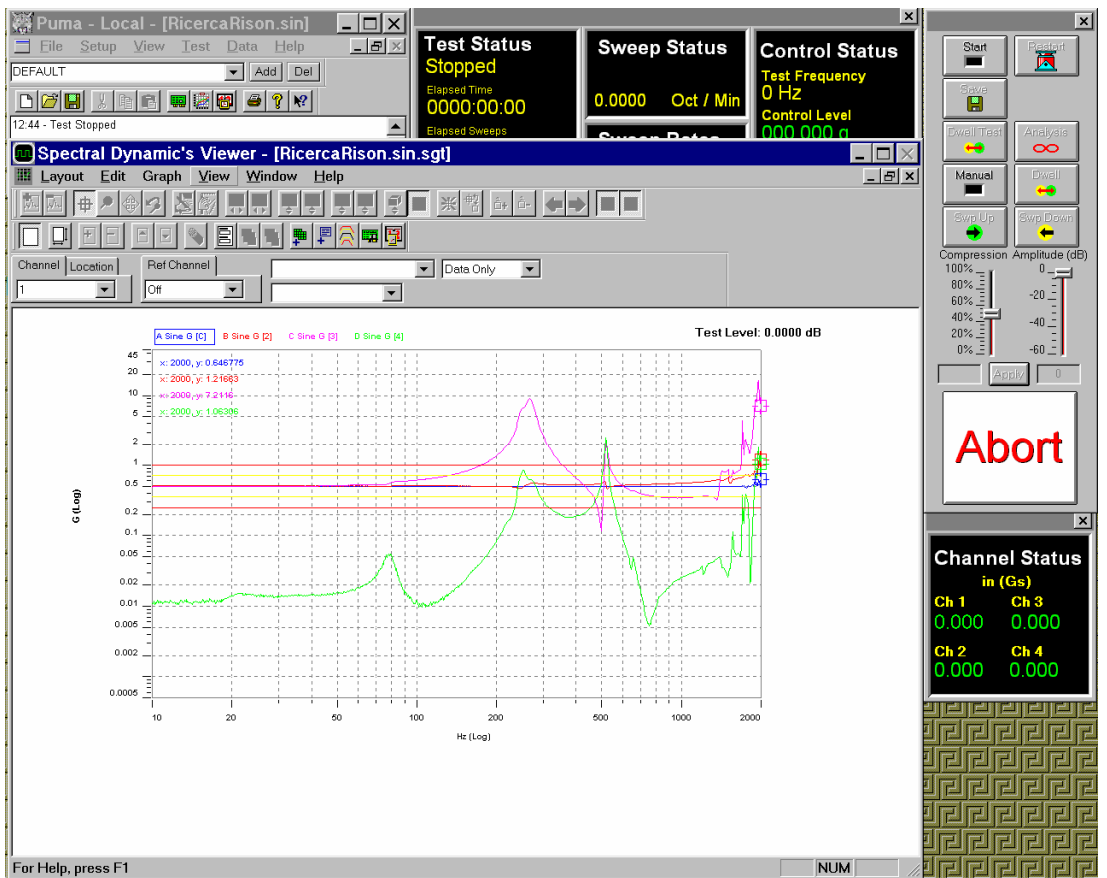
Impostazione del profilo prova random



Prova random



ricerca risonanze (terza prova)



ricerca risonanze (quarta prova) (coppia serraggio morsetto pari a 2,2 Nm)