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Masate, 4 Febbraio 2016

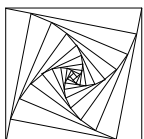
COPERTINA

elaborato per : S.P.I.I. S.p.A.
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 inizio prove : 21 Settembre 2015
 in presenza di : Ing Francesco COLOMBO SPIL

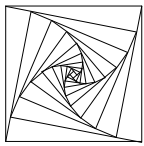
prova eseguita da : Mr Alessandro SANTOBUONO
 elaborato da : Ing. Marco SANNICANDRO
 approvato da : Ing. Barbara GABELLA

Test eseguito a: Centrotecnica S.r.l.
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2. DESCRIZIONE DELL'HARDWARE

2.1 CAMPIONI

Gli oggetti da sottoporre alle prove sono descritti nel seguito:

EUT: EARTHING SWITCH E402A CAF

TIPO: D344640

S/N: A1506999

DWG N.: D344639

Codice Centrotecnica: P21672

Dimensioni dell'oggetto:

Lunghezza: 381 mm

Larghezza: 300 mm

Altezza: 430 mm

Massa: 59 kg

2.2 FIXTURE

Per interfacciare gli oggetti con l'armatura dello shaker e con la slip table durante i test, è stata utilizzata la seguente fixture:

Fixture n. 69

Tipo : Expander

Materiale : Magnesio

Dimensioni:

Lunghezza : 750 mm

Larghezza : 750 mm

Altezza : 268 mm

Massa : 73 kg

Montaggio : 29 viti M8

Fixture n. 157

Tipo : Piastra

Materiale : Alluminio

Dimensioni:

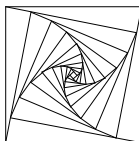
Lunghezza : 240 mm

Larghezza : 335 mm

Altezza : 20 mm

Massa : kg

Montaggio : viti M8

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3. SCOPO DELLA SESSIONE DI PROVE

Questa prova viene effettuata per sottoporre il campione alle specifiche descritte nel seguito, in accordo con il programma del Cliente.

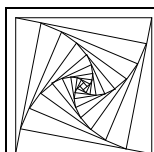
3.1 SPECIFICHE

NORMA DI RIFERIMENTO	PROFILI
CEI EN 61373 2010 Ed.2 CAT.1 – CLASS B ⁽¹⁾ ⁽³⁾	Initial and final measure ⁽²⁾ IM/FM
	Random endurance E.
	Shock test SH.

⁽¹⁾ In accordo con la richiesta del cliente il test sarà eseguito applicando i livelli più alti di vibrazioni e shock descritti in IEC 61373 for Category 1 – Class B, profile di vibrazione vertical e profilo di shock longitudinale

⁽²⁾ In accordo con la norma di riferimento le initial and final measures saranno eseguite applicando il profilo “random endurance”

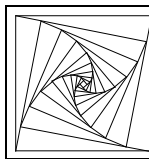
⁽³⁾ In accordo con la richiesta del cliente random functional test non sarà eseguito

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3.1.1 PROFILO DEI TEST

E) RANDOM ENDURANCE VIBRATION – PROFILO VERTICALE

Profile Parameters						
Profile Acceleration RMS:		5.581423 m/s ²				
Profile Velocity RMS:		0.063741 m/s				
Profile Displacement RMS:		1.279999 mm				
Profile Expected Acceleration (Peak):		16.744270 m/s ²				
Profile Expected Velocity (Peak):		0.191224 m/s				
Profile Expected Displacement (Peak-Peak):		7.679991 mm-mm				
RMS Limits:		Calculated based on table				
High Abort:		7.883968 m/s ² (3.00 dB)				
High Alarm:		6.633535 m/s ² (1.50 dB)				
Profile:		5.581423 m/s ²				
Low Alarm:		4.696182 m/s ² (-1.50 dB)				
Low Abort:		3.951345 m/s ² (-3.00 dB)				
Profile Table:						
Frequency	Acceleration	Slope	High Abort	High Alarm	Low Alarm	Low Abort
Hz	(m/s ²) ² /Hz	dB/Oct	dB	dB	dB	dB
5.0	0.964	0	3.00	1.50	-1.50	-3.00
20.0	0.964	-6	3.00	1.50	-1.50	-3.00
150.0	0.0173757		3.00	1.50	-1.50	-3.00
Schedule Parameters						
0:0:30 at Level -12.0 dB						
0:0:20 at Level -9.0 dB						
0:0:15 at Level -6.0 dB						
0:0:15 at Level -3.0 dB						
05: 0:0 at Level 0.0 dB						
Save All Panes						
Auto-Save Signals						
Quick Report						

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Control Parameters

Test Parameters

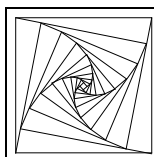
Number of Spectral Lines:	200
Max. Test Frequency:	150.00 Hz
Measurement Strategy:	Single Channel
Line Abort Ratio:	0.10
Line Abort Number:	20
Averaging Number:	77
Drive Limit:	2.00 Volts
Sigma Clip Number:	3.00
Data Points/Frame:	512
Frame Time:	1.365333 Seconds
Sampling Rate:	375 Hz
DOF:	154
dT:	0.002667 Seconds
dF:	0.732422 Hz

Pre-test Parameters

Method of Acquiring the Loop Frequency Response Function:	Measure During Pre-Test
Initial Peak Drive:	0.008000 Volts
Ramp-Up Rate:	Fast
Response Level Goal:	-12.00 dB
Maximum Peak Drive:	0.700000 Volts

Preferences Parameters

Abort Rate	20 (dB/Second)
Level Log Change Rate	20 (dB/Second)
On-Line Level Change	10 (%)
Resume from Abort	Active
Automatic disable the Low-abort checking for Control Signal during notching	Yes
Enable float profile display	No

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SH) SHOCK TEST – PROFILO LONGITUDINALE

Profile Parameters

Pulse Type:	Half Sine
Amplitude:	50.00 m/s ²
Pulse Width:	30.00 ms
Main Pulse Tails:	IEC 60068-2-27 Standard
Compensation Template:	Displacement Optimum
Abort Setting:	IEC 60068-2-27 Standard

Schedule Parameters

5 Pulses at Level -12.00 dB
3 Pulses at Level -9.00 dB
2 Pulses at Level -6.00 dB
1 Pulses at Level -3.00 dB
3 Pulses at Level 0.00 dB
Auto-Save Signals
Save All Panes
Quick Report

Control Parameters

Test Parameters

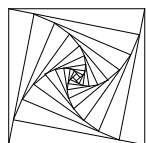
Block Size:	Auto
Averaging Number:	4
Drive Limit:	2.00 Volts
Pulse Interval:	5.000 seconds
Point Abort Ratio:	0.10
Low-Pass Filter Type:	Apply filter using user-defined cutoff frequency
Filter Cutoff Frequency:	300.000000Hz
Data Points/Frame:	2048
Frame Time:	0.682667 Seconds
Sampling Rate:	3000 Hz
dT:	0.000333333 Seconds
Maximum Analysis Frequency:	1318.36 Hz
SRS Analysis:	Disable

Pre-test Parameters

Method of Acquiring the Loop Frequency Response Function:	Measure during close-loop pre-test
Initial Peak Drive:	0.008000 Volts
Ramp-Up Rate:	Fast
Response Level Goal:	-20.00 dB
Maximum Peak Drive:	0.700000 Volts

Preferences Parameters

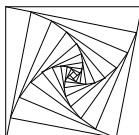
Abort Rate	20 (dB/Second)
Level Log Change Rate	20 (dB/Second)
On-Line Level Change	10 (%)
Resume from Abort	Active

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3.2 SEQUENZA DEI TEST

<u>ASSE*</u>	<u>INITIAL MEASURE</u>	<u>ENDURANCE</u>	<u>SHOCK TEST</u>	<u>FINAL MEASURE</u>
	<u>IM</u>	<u>E</u>	<u>SH</u>	<u>FM</u>
Z	X			
		X		
			UP	
			DOWN	
				X
Y	X			
		X		
			UP	
			DOWN	
				X
X	X			
		X		
			UP	
			DOWN	
				X

* Vedi paragrafo 4.3 per la corrispondenza degli assi.

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4. DESCRIZIONE DELLE PROVE

4.1 PREPARAZIONE DELL'HARDWARE

Il campione è stato montato sulla piastra n.157 con 6 viti M8.
Per eseguire i test sull'asse Z, la piastra con il campione è stata montata sull'expander n.69, il quale è stato precedentemente montato sull'armatura dello shaker V850; mentre per eseguire i test sugli assi X e Y la piastra con il campione è stata montata direttamente sulla slip table dello shaker V850.

Condizioni ambientali misurate all'inizio del test::

Temperatura: 24.2 °C +/- 1°C

Umidità relativa : 42.7 % +/- 5%

4.2 PROCEDURE DI MONTAGGIO DEGLI ACCELEROMETRI

Gli accelerometri sono stati fissati mediante colla cianoacrilica o mediante appositi bolli biadesivi.

La procedura di montaggio degli accelerometri è in accordo con la normativa UNI ISO 5348 "Montaggio meccanico degli accelerometri".

4.3 STRATEGIE GENERALI DI CONTROLLO E MISURA. CARATTERIZZAZIONE DEI TEST POINT (T.P.).

Durante i test sono stati impiegati un accelerometro monoassiale per mantenere il controllo dei livelli di vibrazione e due accelerometri monoassiali per acquisire i livelli di vibrazione dell' unità.

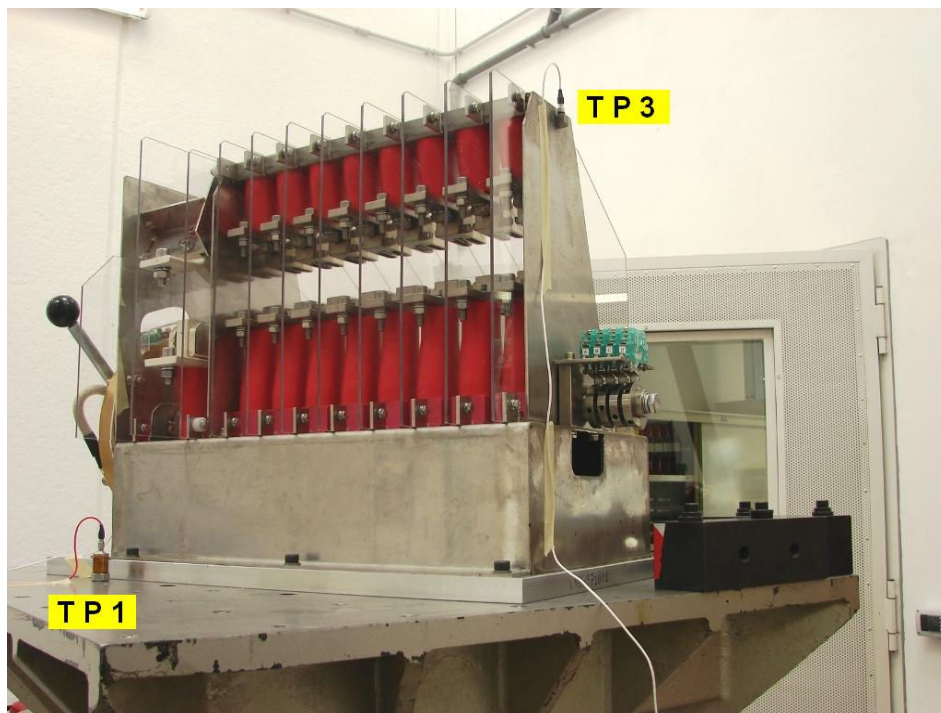
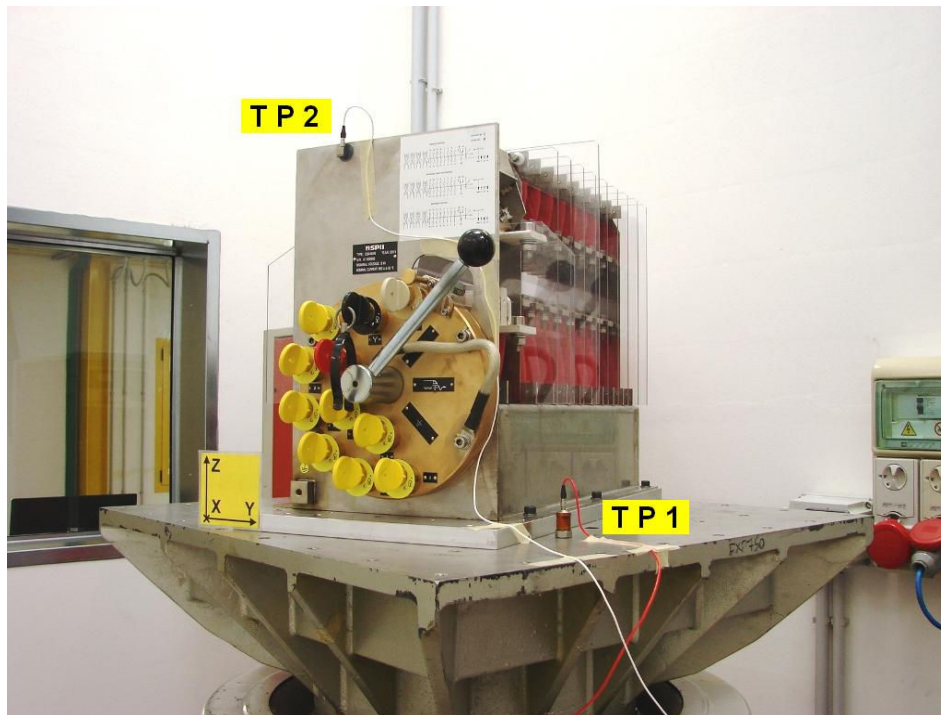
La seguente tabella, insieme alle fotografie del paragrafo 4.4, chiarisce la disposizione del Test Point per i test effettuati.

Input	Type	Analysis	mv/(EU)	Weighting	Coupling	I.D.	Label
1	Control	Filter	9.5800mv/(m/s ²)	1.0000	ICP	TP1-Z-CTRL-FIXTURE BASE TP4-XY-CTRL-FIXTURE / SLIP TABLE	CPA 74
2	Monitor	Filter	1.0100mv/(m/s ²)	1.0000	ICP	TP2-Z/Y/X-MEASURE-EUT KEY BLOCK SIDE	CPA 98
3	Monitor	Filter	1.0100mv/(m/s ²)	1.0000	ICP	TP3-Z/Y/X-MEASURE-EUT BACK SIDE	CPA 120

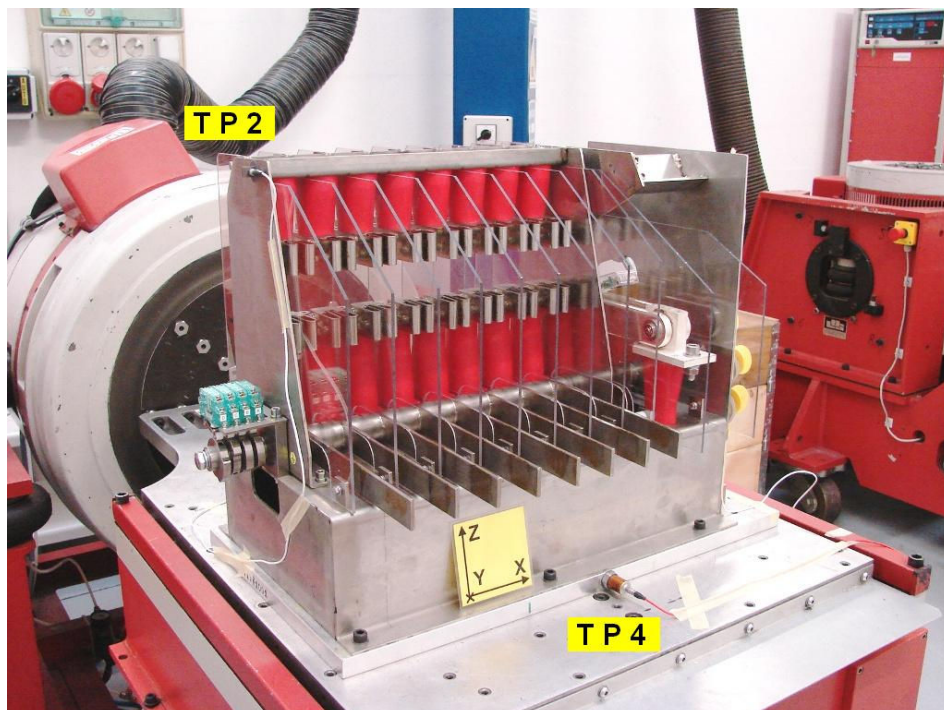
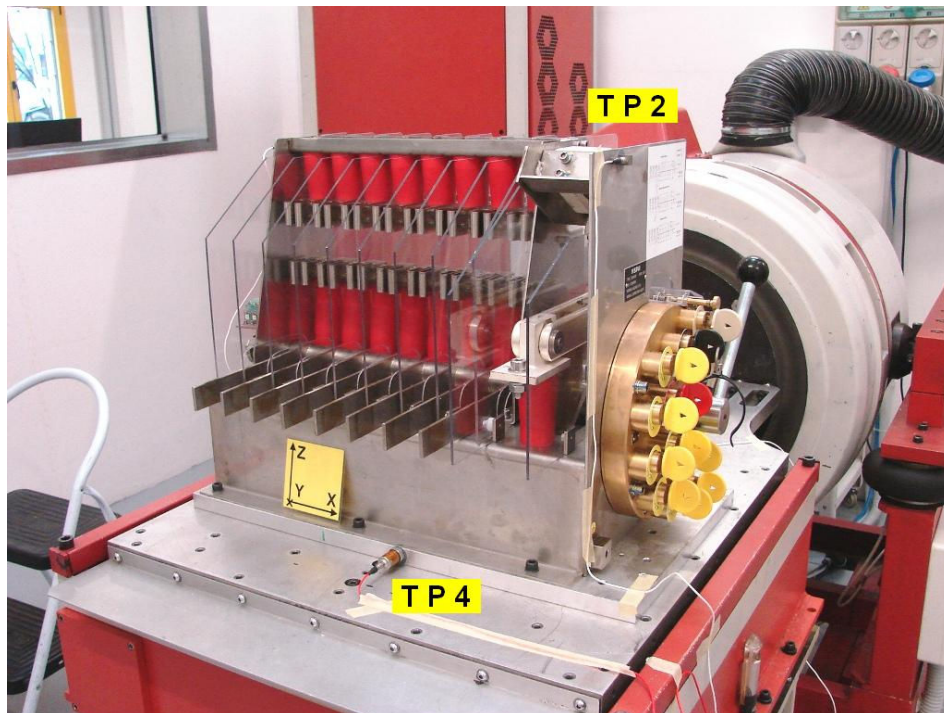
* Si veda il seguente paragrafo 7 per la corrispondenza tra prove svolte e numerazione dei run.

4.4 FOTOGRAFIE

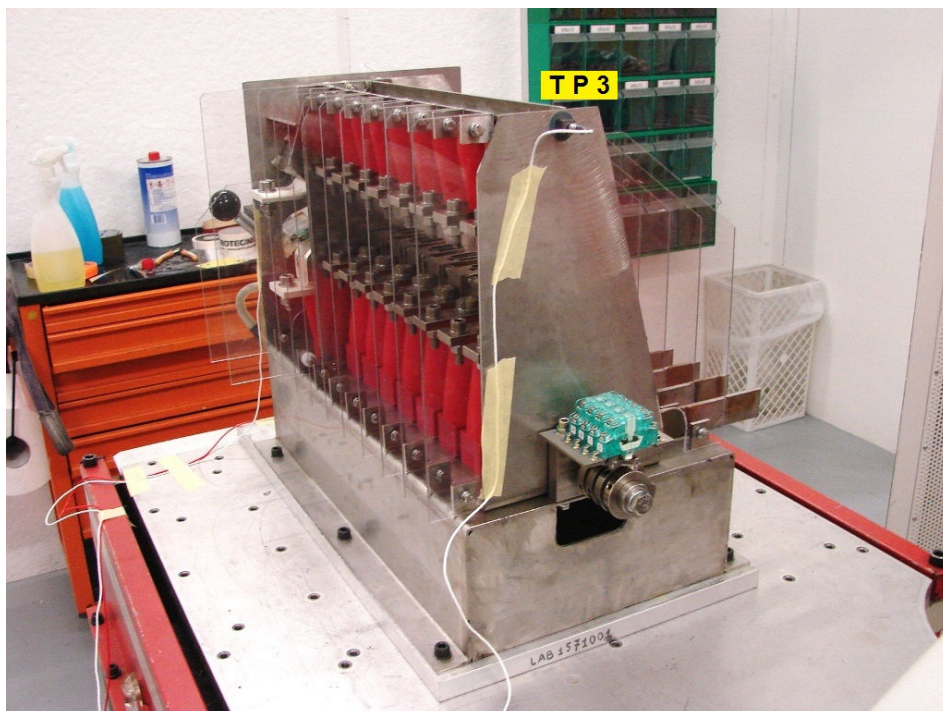
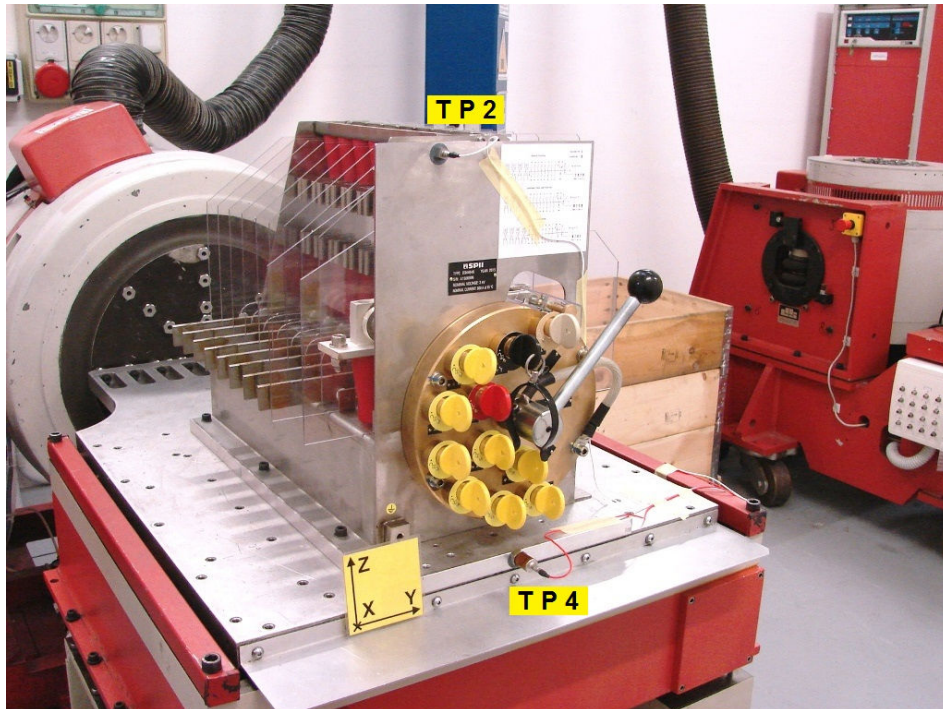
4.4.1 HARDWARE SETUP SULL'ASSE Z

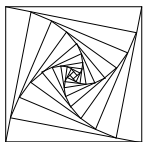


4.4.2 HARDWARE SETUP SULL'ASSE Y

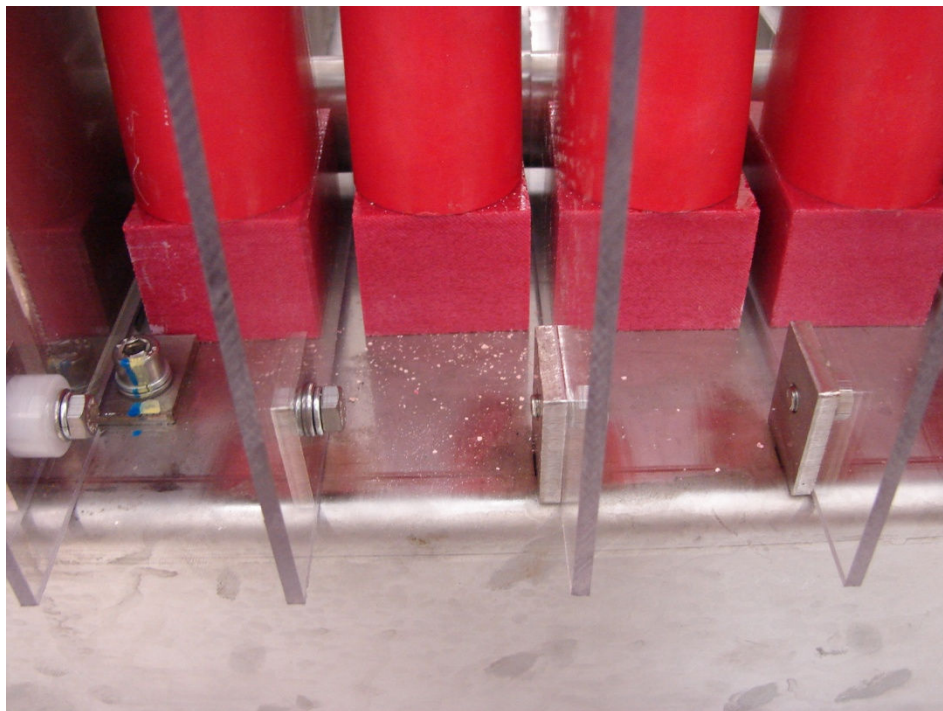


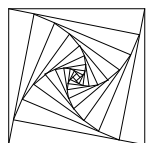
4.4.3 HARDWARE SETUP SULL'ASSE X



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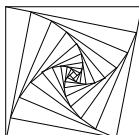
4.4.4 POLVERE SUL CAMPIONE A FINE TEST



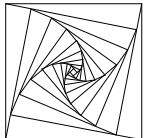
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5. TEST HISTORY

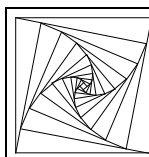
DATA	ORA	RUN	PROFILO TEST	NOTE
21 Set '15	09.30			Arrivo del cliente
	09.45			Montaggio dell'expander sull'armatura dello shaker
	10.02			Montaggio della piastra n.157 sull'expander
	10.27			Montaggio del campione sulla piastra
	11.01			Setup degli accelerometri in TP1, TP2 e TP3
	11.16			Programmazione del controllore
	11.18	01	IM	Inizio dell'initial measurements sull'asse verticale (Z)
	11.23			Analisi dei grafici
	11.25			Programmazione del controllore
	11.28	02	E	Inizio della random endurance sull'asse verticale (Z)
	16.31			Controllo visivo del campione
	16.47			Programmazione del controllore
	16.49	03	SH	Inizio del test di shock sull'asse verticale (Z) – Direzione UP – Profilo dell'asse longitudinale
	16.53	04	SH	Inizio del test di shock sull'asse verticale (Z) – Direzione DOWN – Profilo dell'asse longitudinale
	16.55			Controllo visivo del campione
	16.56			Programmazione del controllore
	16.57	05	FM	Inizio del final measurements sull'asse verticale (Z)
	17.03			Analisi dei grafici
	17.05			Controllo visivo e rimozione del campione
	17.18			Rimozione della fixture
	17.30			Fine della giornata
22 Set '15	09.00			Rimozione dell'expander
	09.10			Rotazione dello shaker
	09.18			Montaggio della piastra n.157 sulla slip table
	09.21			Montaggio del campione sulla piastra
	09.30			Setup degli accelerometri in TP4, TP2 e TP3

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DATA	ORA	RUN	PROFILO TEST	NOTE
22 Set '15	09.38			Programmazione del controllore
	09.40	06	IM	Inizio dell'initial measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	09.45			Analisi dei grafici
	09.47			Programmazione del controllore
	09.48	07	E	Inizio della random endurance sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	14.52			Controllo visivo del campione
	15.01			Programmazione del controllore
	15.02	08	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione UP – Profilo dell'asse longitudinale
	15.06	09	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione DOWN – Profilo dell'asse longitudinale
	15.07			Controllo visivo del campione
	15.09			Programmazione del controllore
	15.10	10	FM	Inizio del final measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	15.15			Analisi dei grafici
	15.18			Controllo visivo e rimozione del campione
	15.42			Rotazione della fixture sulla slip table
	16.01			Montaggio del campione sulla piastra
	16.32			Setup degli accelerometri in TP4, TP2 e TP3
	17.00			Fine della giornata
23 Set '15	09.00			Programmazione del controllore
	09.09	11	IM	Inizio dell'initial measurements sull'asse longitudinale (X) – Profilo endurance sull'asse verticale
	09.13			Analisi dei grafici
	09.15			Programmazione del controllore
	09.16	12	E	Inizio della random endurance sull'asse longitudinale (X) – Profilo endurance sull'asse verticale
	14.20			Controllo visivo del campione

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DATA	ORA	RUN	PROFILO TEST	NOTE
23 Set '15	14.42			Programmazione del controllore
	14.43	13	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione UP – Profilo dell'asse longitudinale
	14.45	14	SH	Inizio del test di shock sull'asse trasversale (Y) – Direzione DOWN – Profilo dell'asse longitudinale
	14.47			Controllo visivo del campione
	14.48			Programmazione del controllore
	14.49	15	FM	Inizio del final measurements sull'asse trasversale (Y) – Profilo endurance sull'asse verticale
	14.54			Analisi dei grafici
	15.12			Controllo visivo e rimozione del campione dalla fixture: polvere sulla base del campione (vedi par. 4.4.4)
	15.34			Rimozione delle fixture
	16.00			Fine dei test

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6. CONCLUSIONI

Dopo essere stati sottoposti ai test ambientali come descritto in questo documento, da una ispezione visiva non sono stati evidenziati danneggiamenti meccanici sul campione

EUT: EARTHING SWITCH E402A CAF

Tipo: D344640

S/N: A1506999

DWG N.: D344639

7. ATTREZZATURE UTILIZZATE

Shaker

LDS V850-440T air cooled / LDS SPA 56/32 K v3 V850

Strumentazione di controllo

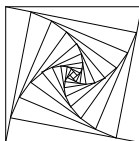
Dactron LaserUSB Shaker Controller S/N 6857009 – Ver. 8.1

ULTIMA CALIBRAZIONE	:	14/04/2015
DATA SCADENZA	:	04/2016
CALIBRATO DA	:	Belotti Sistemi s.a.s.
CERTIFICATO N.	:	2015-0259

Chiave dinamometria

BETA MOD. 606/6 S/N 7603008

ULTIMA CALIBRAZIONE	:	20/03/2013
DATA SCADENZA	:	03/2016
CALIBRATO DA	:	STI Lat 172
CERTIFICATO N.	:	C0033/13

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Accelerometri

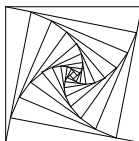
ETICHETTA	COSTRUTTORE	MODELLO	NUMERO SERIE	SENSIBILITÀ	MASSA g	DATA CALIB.	CERTIF. NUMERO
74	WILCOXON	726T	5636	9.58 mV/(m/s ²)	34	12/01/20 15	29727
98	BRUEL&KJAER	4508 001	30289	1.01 mV/(m/s ²)	4.8	12/01/20 15	29725
120	BRUEL & KJAER	4508 001	30552	1.01 mV/(m/s ²)	4.8	23/09/20 14	28888

Tutti gli accelerometri sono calibrati da: CENTROTECNICA S.r.l.
CENTRO LAT N. 111

Termoigrometro

PCE MOD. PCE-THB 40 S/N Q755479

ULTIMA CALIBRAZIONE : 30/10/2013
DATA SCADENZA : 10/2016
CALIBRATO DA : Camar
RAPP. TARATURA N : 13-RU-045

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.	
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Tolleranza sull'ampiezza di vibrazione

Le incertezze di misura definite in questo documento sono state determinate in accordo ai documenti ISO/IEC Guide 98 e EA-4/02.

Il calcolo è stato effettuato come incertezza estesa ottenuta moltiplicando l'incertezza standard per il fattore di copertura $k=2$ corrispondente ad un livello di confidenza di circa 95%.

L'incertezza calcolata per l'accelerazione è 10%.

Moti trasversali

I moti trasversali dello shaker sono stati misurati e sono in accordo con i requisiti di IEC 60068-2-6:2009-11 par 4.1.2.1, IEC 60068-2-64:2008 par 4.3 and IEC 60068-2-27:2008 di seguito riportati:

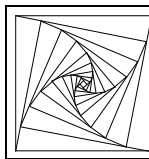
vibrazione sinusoidale – non superiore al 50% dell'ampiezza specificata fino a 500Hz e al 100% fino 2000 Hz

vibrazione random – non superiore a -3db rispetto al valore specificato fino a 500 Hz e a 0 db fino a 2000 Hz

valore rms non superiore al 50% del valore specificato

shock test - no superior al 30% del valore specificato

In caso di oggetti molto grandi i valori sopra indicati potrebbero dover essere verificati durante i test.

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ALLEGATI

TEST SULL'ASSE VERTICALE (Z)

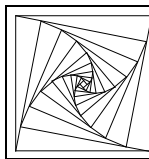
- 1.1 - INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE
- 1.2 - ENDURANCE TEST - PROFILO VERTICALE
- 1.3 - SHOCK TEST - UP DIRECTION - PROFILO LONGITUDINALE
- 1.4 - SHOCK TEST - DOWN DIRECTION - PROFILO LONGITUDINALE
- 1.5 - FINAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE

TEST SULL'ASSE TRASVERSALE (Y)

- 2.1 - INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE
- 2.2 - ENDURANCE TEST - PROFILO VERTICALE
- 2.3 - SHOCK TEST - UP DIRECTION - PROFILO LONGITUDINALE
- 2.4 - SHOCK TEST - DOWN DIRECTION - PROFILO LONGITUDINALE
- 2.5 - FINAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE

TEST SULL'ASSE LONGITUDINALE (X)

- 3.1 - INITIAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE
- 3.2 - ENDURANCE TEST - PROFILO VERTICALE
- 3.3 - SHOCK TEST - UP DIRECTION - PROFILO LONGITUDINALE
- 3.4 - SHOCK TEST - DOWN DIRECTION - PROFILO LONGITUDINALE
- 3.5 - FINAL MEASUREMENTS - PROFILO ENDURANCE VERTICALE

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ALLEGATO 1.1

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

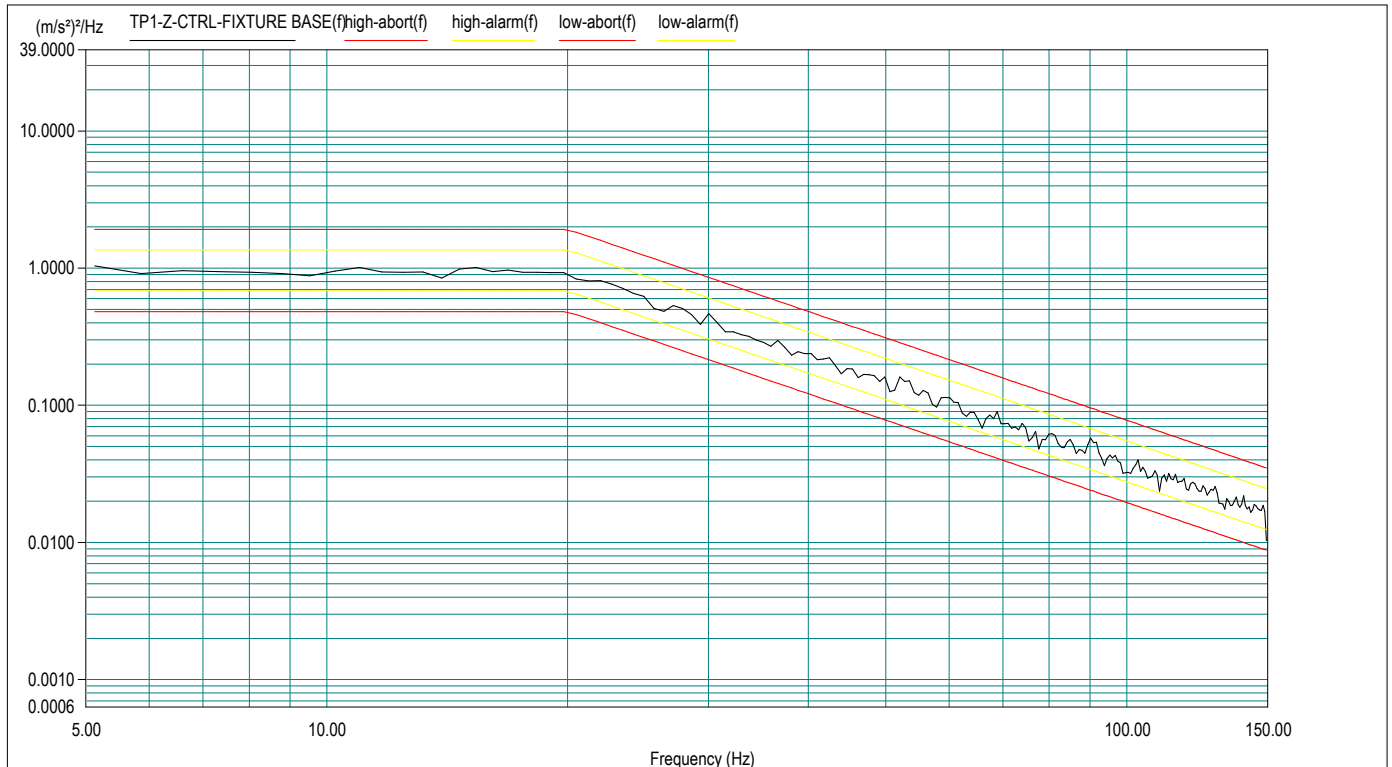
DWG N.: D344639

ASSE VERTICALE (Z)

INITIAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

Project File Name: VERTAIL Z - INITIAL MEASURE.prj
 Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54

Test Type: Random Run



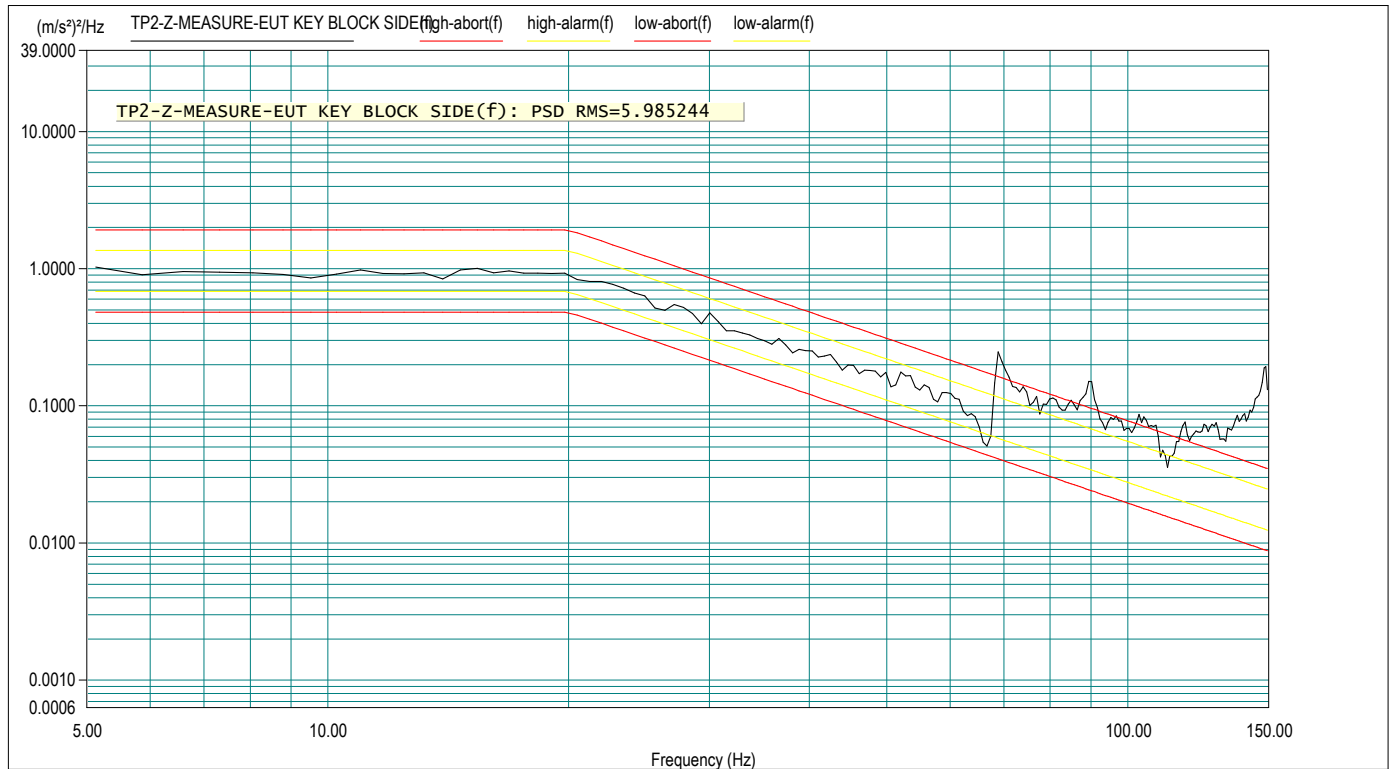
Level: 0 dB
 Control RMS: 5.569189 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time: 1.365333 Seconds
 Demand RMS: 5.626909 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:27 , lunedì, settembre 21, 2015

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj
 Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54

Test Type: Random Run



Level: 0 dB				
Control RMS: 5.569189 m/s²	Full Level Elapsed Time: 00:02:00	Lines: 200	Frame Time:	
1.365333 Seconds				
Demand RMS: 5.626909 m/s²	Remaining Time: 00:00:00	DOF: 154	dF:	
0.732422 Hz				

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:27 , lunedì, settembre 21, 2015

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

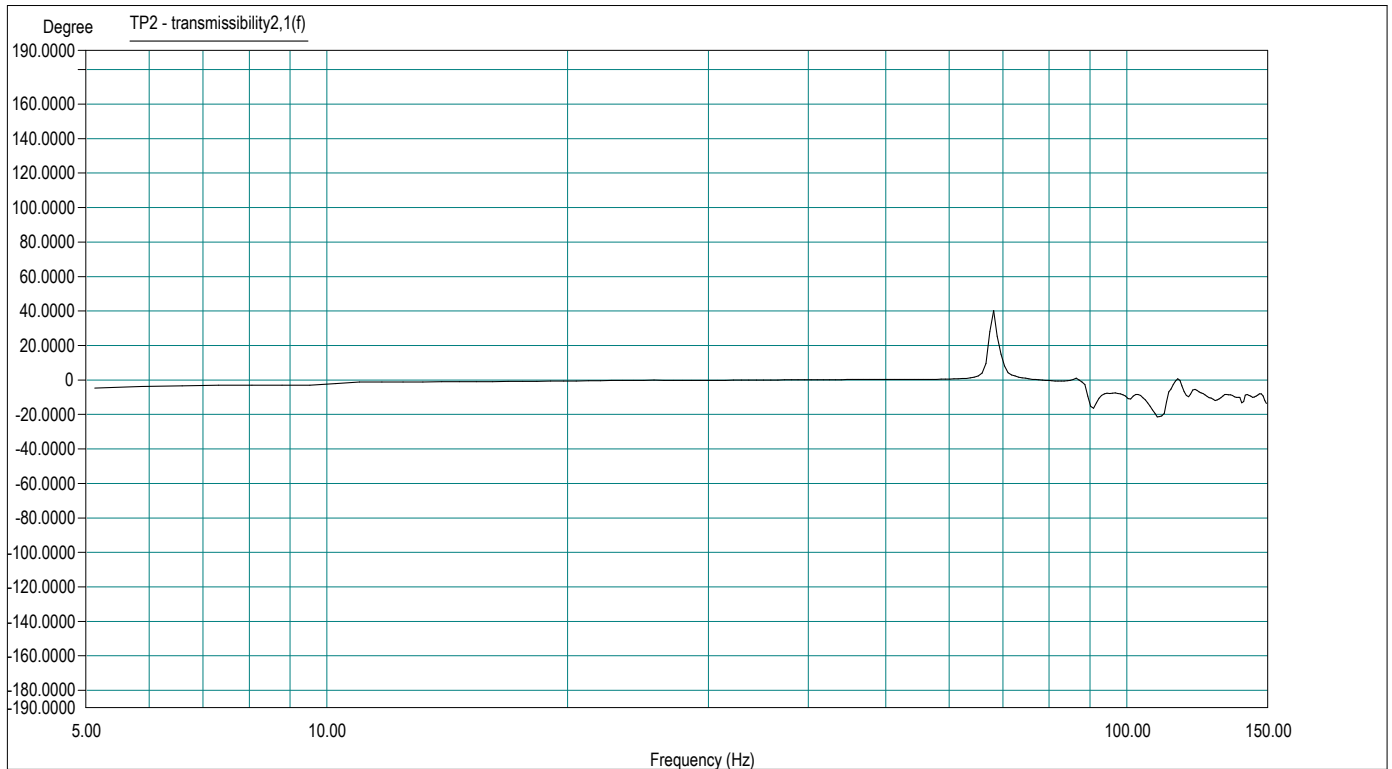
Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)

Test Type:

Random

Run

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Control RMS: 5.569189 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626909 m/s²
0.732422 Hz

Remaining Time:

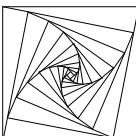
00:00:00

DOF: 154

dF:

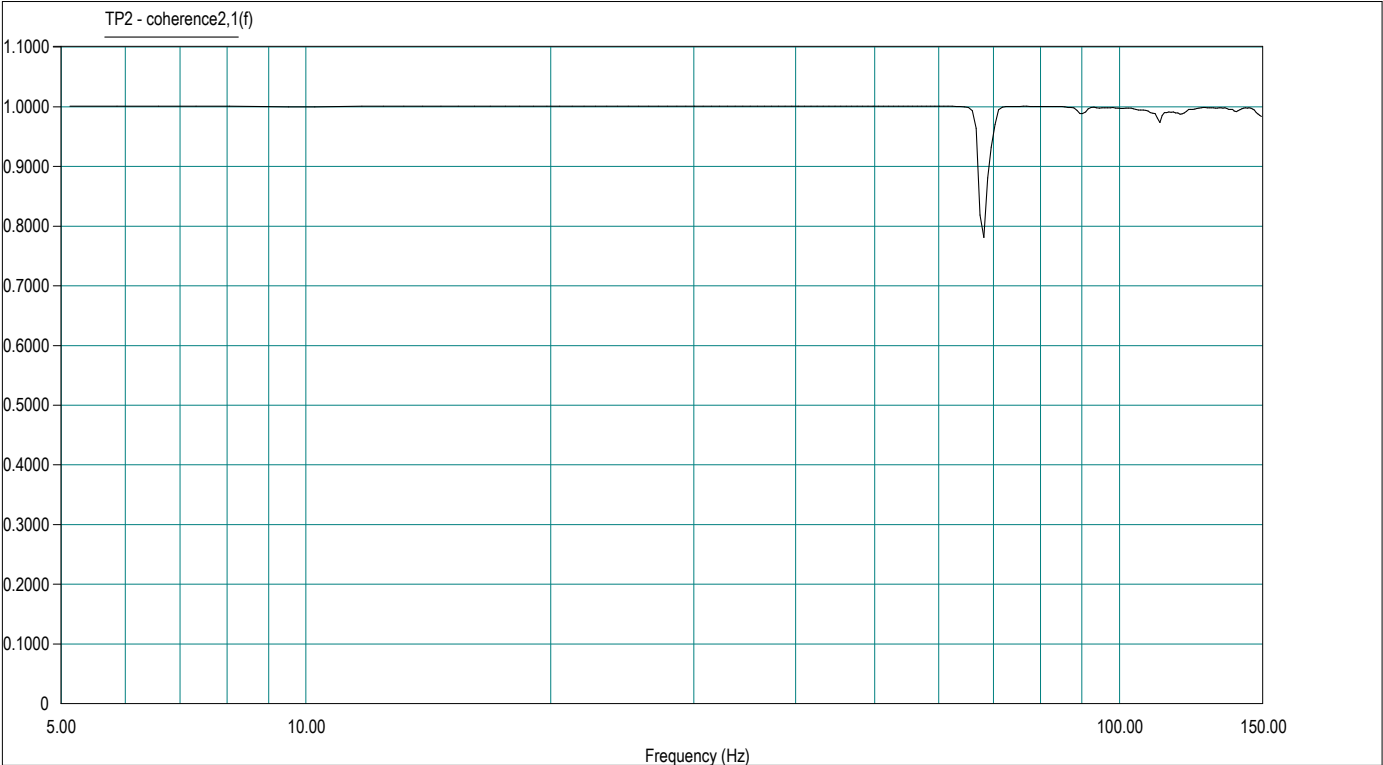
Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:28 , lunedì, settembre 21, 2015

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Project File Name: VERTCAIL Z - INITIAL MEASURE.prj
 Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54

Test Type: Random Run



Level: 0 dB
 Control RMS: 5.569189 m/s²
 1.365333 Seconds
 Demand RMS: 5.626909 m/s²
 0.732422 Hz

Full Level Elapsed Time: 00:02:00
 Remaining Time: 00:00:00

Lines: 200
 DOF: 154
 dF:

Frame Time:

Data saved at 11:23:24 AM, Monday, September 21, 2015
 Report created at 11:23:28 , lunedì, settembre 21, 2015

*I risultati riportati nel presente rapporto di prova si riferiscono unicamente ai campioni descritti nel paragrafo 2.1
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Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

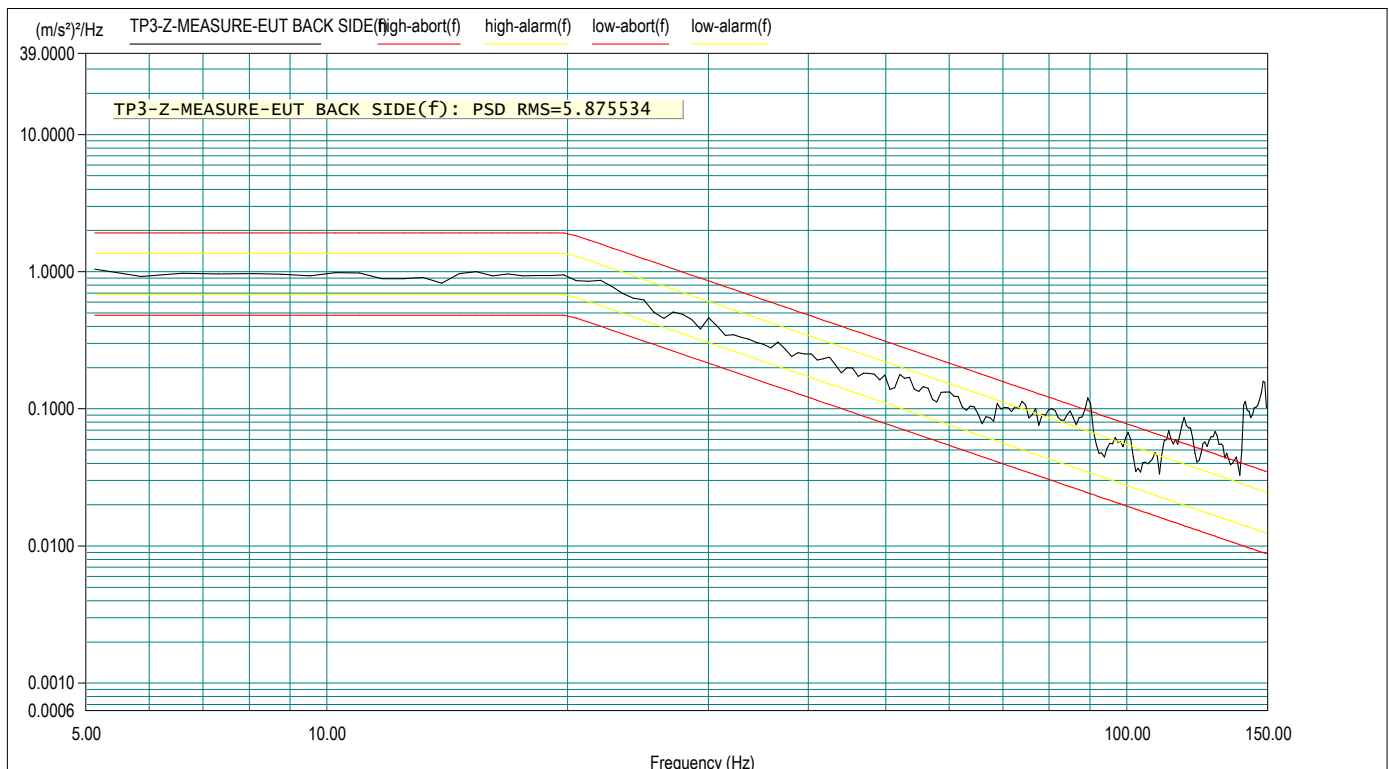
Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)

Test Type:

Random

Run

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Control RMS: 5.569189 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626909 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:28 , lunedì, settembre 21, 2015

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj

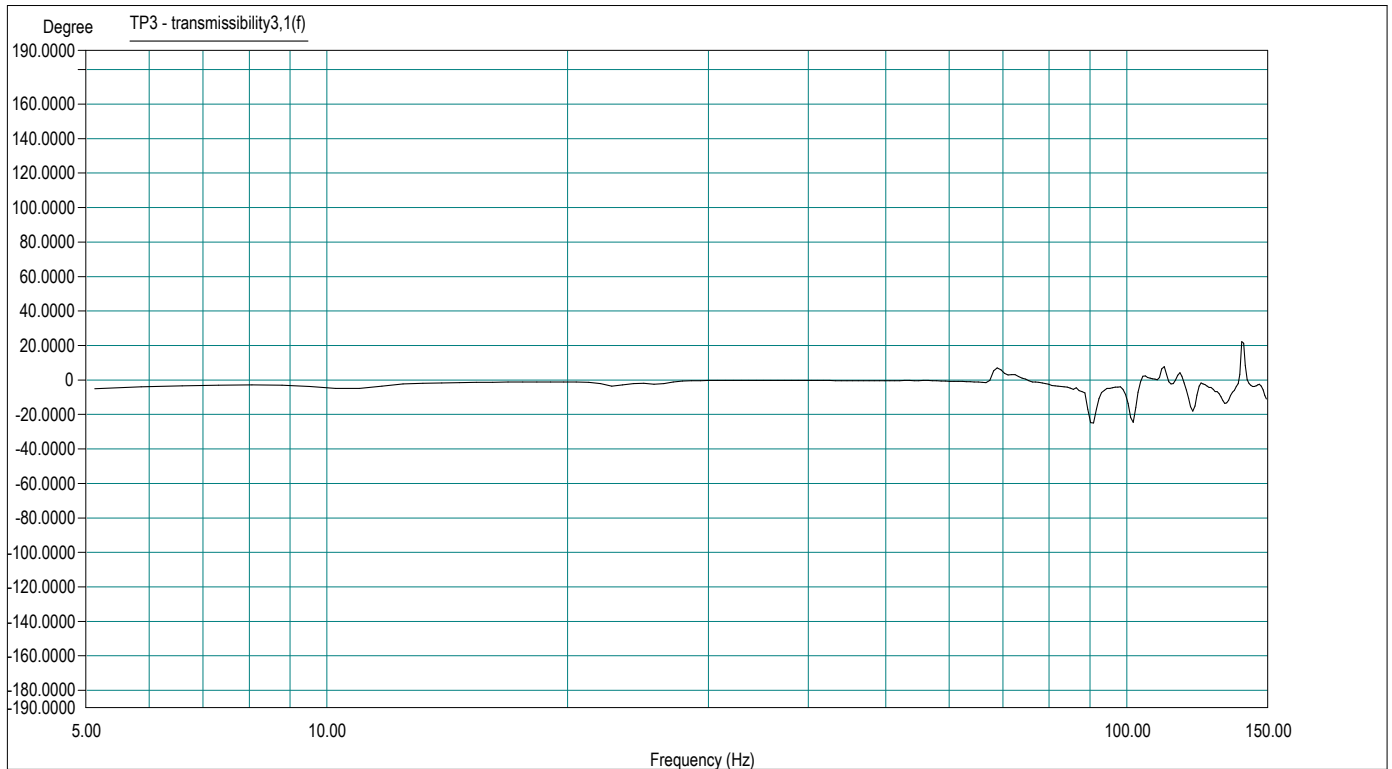
Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)

Test Type:

Random

Run

Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54



Level: 0 dB

Control RMS: 5.569189 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626909 m/s²
0.732422 Hz

Remaining Time:

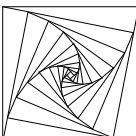
00:00:00

DOF: 154

dF:

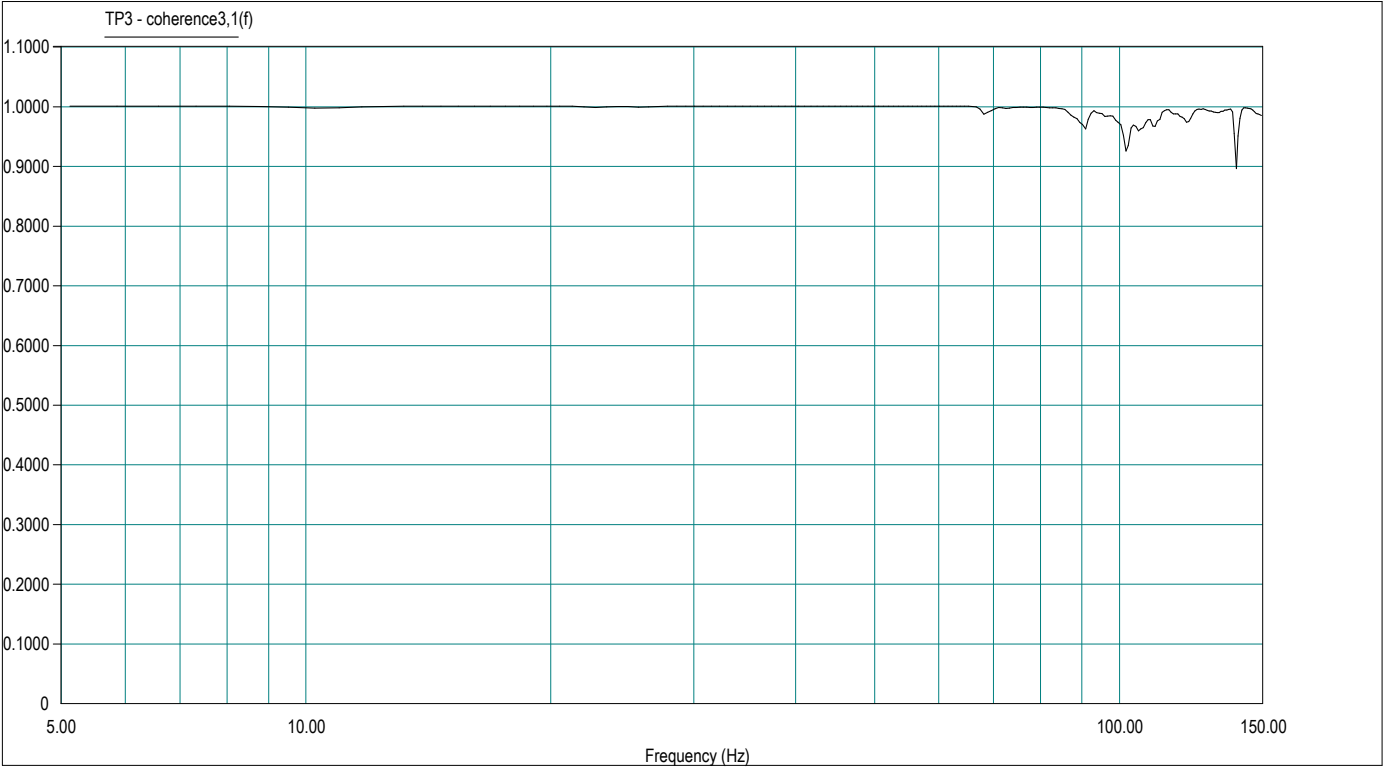
Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:29 , lunedì, settembre 21, 2015

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	Documento: VR1527001SPMA-ITA.doc	Rev. 0

Project File Name: VERTCAIL Z - INITIAL MEASURE.prj
 Profile Name: RUN 01 INITIAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 01 I.M. - Z Sep 21, 2015 11-18-54

Test Type: Random Run



Level: 0 dB
 Control RMS: 5.569189 m/s²
 1.365333 Seconds
 Demand RMS: 5.626909 m/s²
 0.732422 Hz

Full Level Elapsed Time: 00:02:00
 Remaining Time: 00:00:00

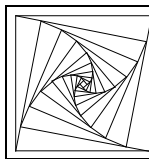
Lines: 200
 DOF: 154
 dF:

Frame Time:

Data saved at 11:23:24 AM, Monday, September 21, 2015

Report created at 11:23:29 , lunedì, settembre 21, 2015

*I risultati riportati nel presente rapporto di prova si riferiscono unicamente ai campioni descritti nel paragrafo 2.1
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ALLEGATO 1.2

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

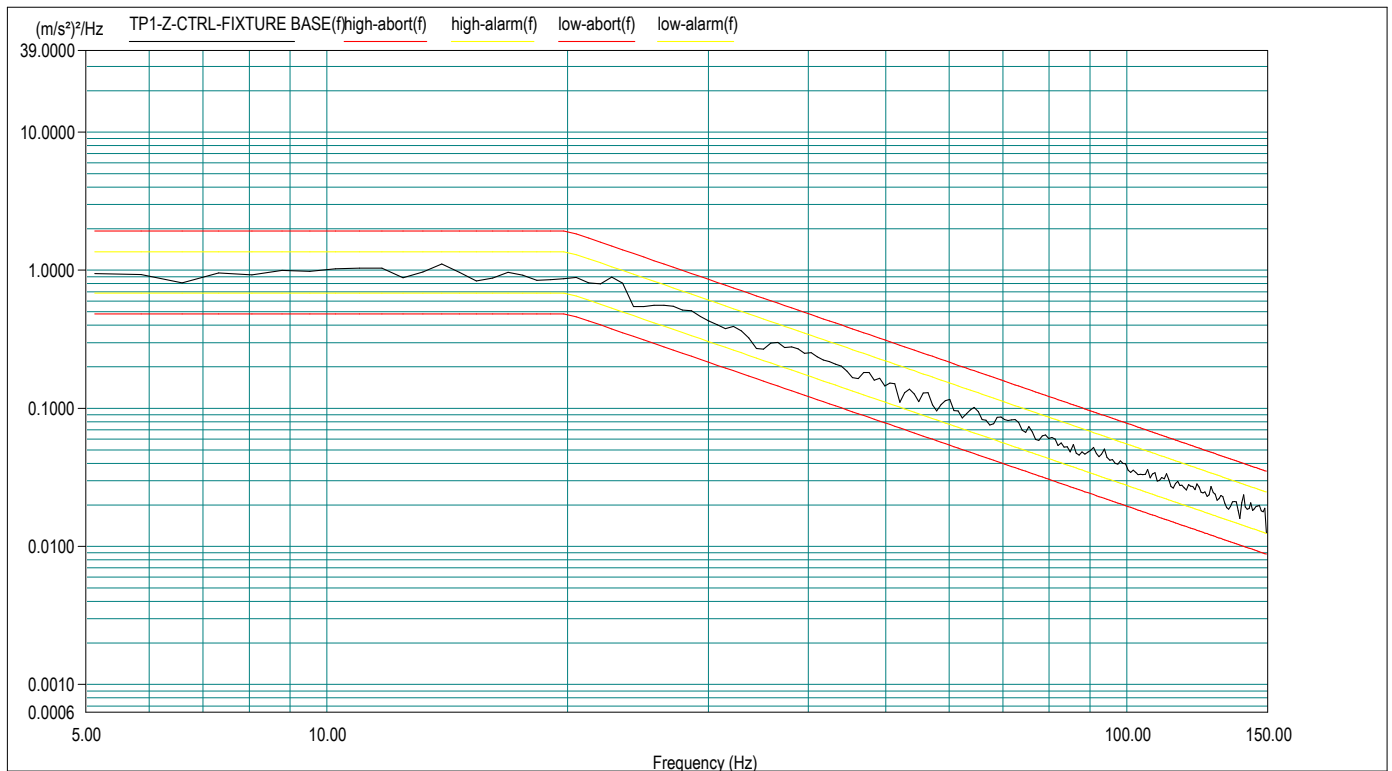
DWG N.: D344639

ASSE VERTICALE (Z)

ENDURANCE TEST - PROFILO
VERTICALE
(7 PLOTS)

Project File Name: VERTICAL Z - ENDURANCE.prj
 Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)
 Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08

Test Type: Random



Level: 0 dB					
Control RMS: 5.605435 m/s^2	Full Level Elapsed Time: 04:59:59	Lines: 200	Frame Time:		
1.365333 Seconds					
Demand RMS: 5.626908 m/s^2	Remaining Time: 00:00:00	DOF: 154	dF:		
0.732422 Hz					

Data saved at 04:30:11 PM, Monday, September 21, 2015

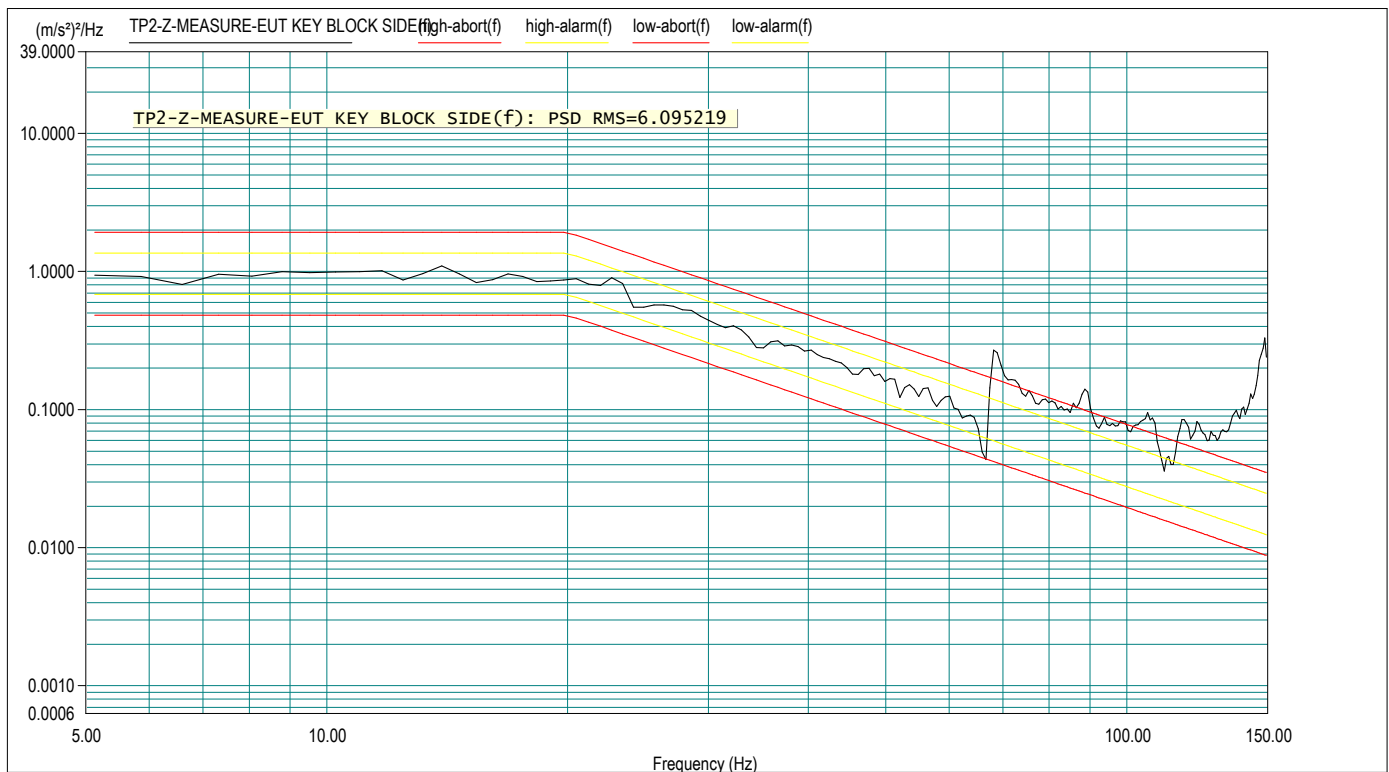
Report created at 04:30:21 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time:

04:59:59

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

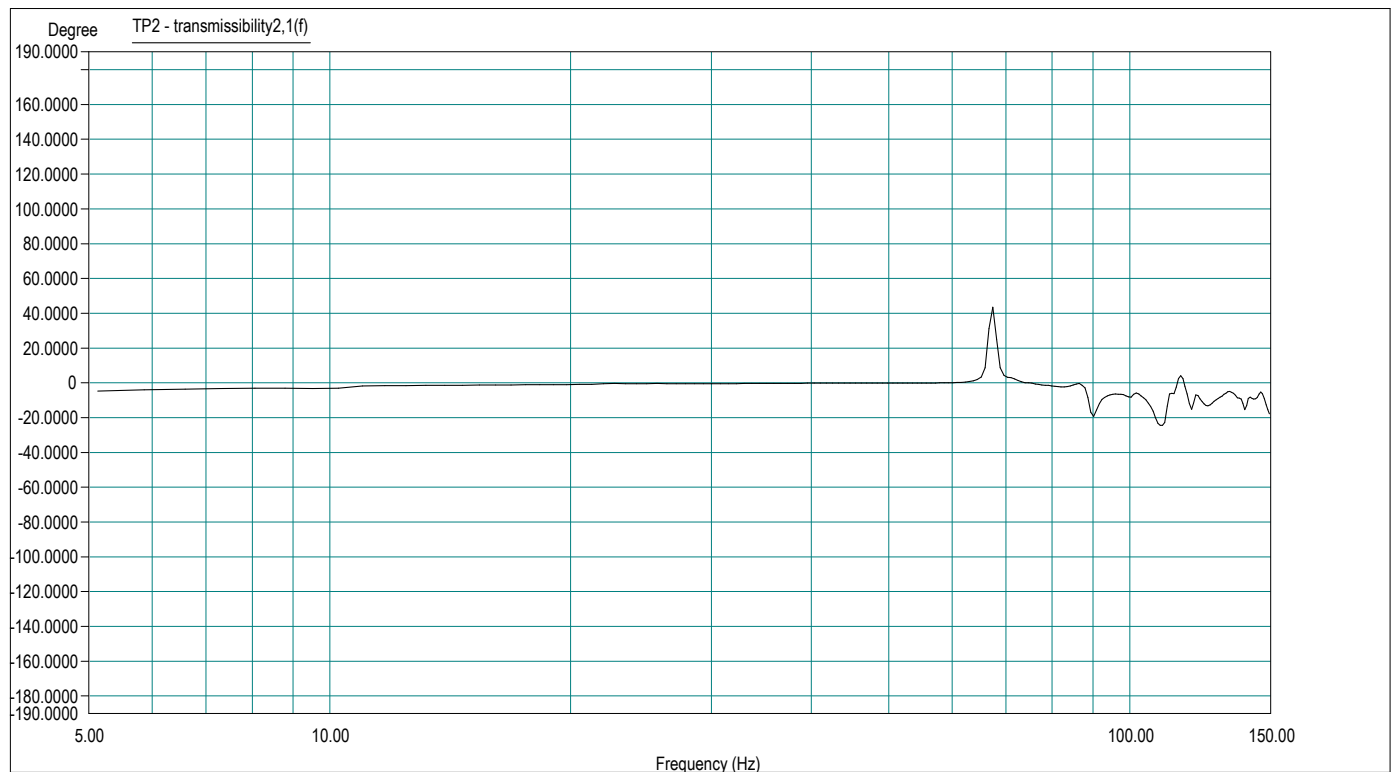
Report created at 04:30:22 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

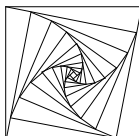
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:22 , lunedì, settembre 21, 2015

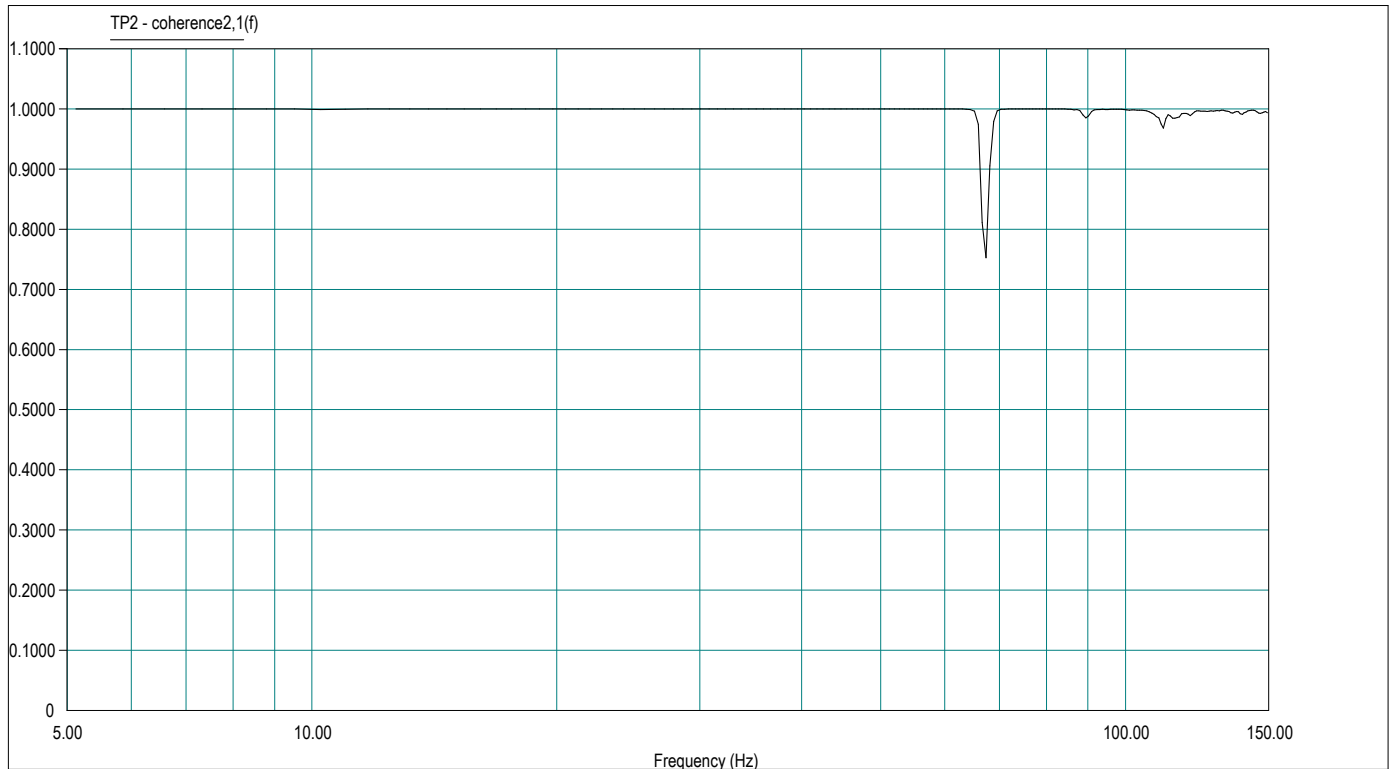
 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.	
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Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

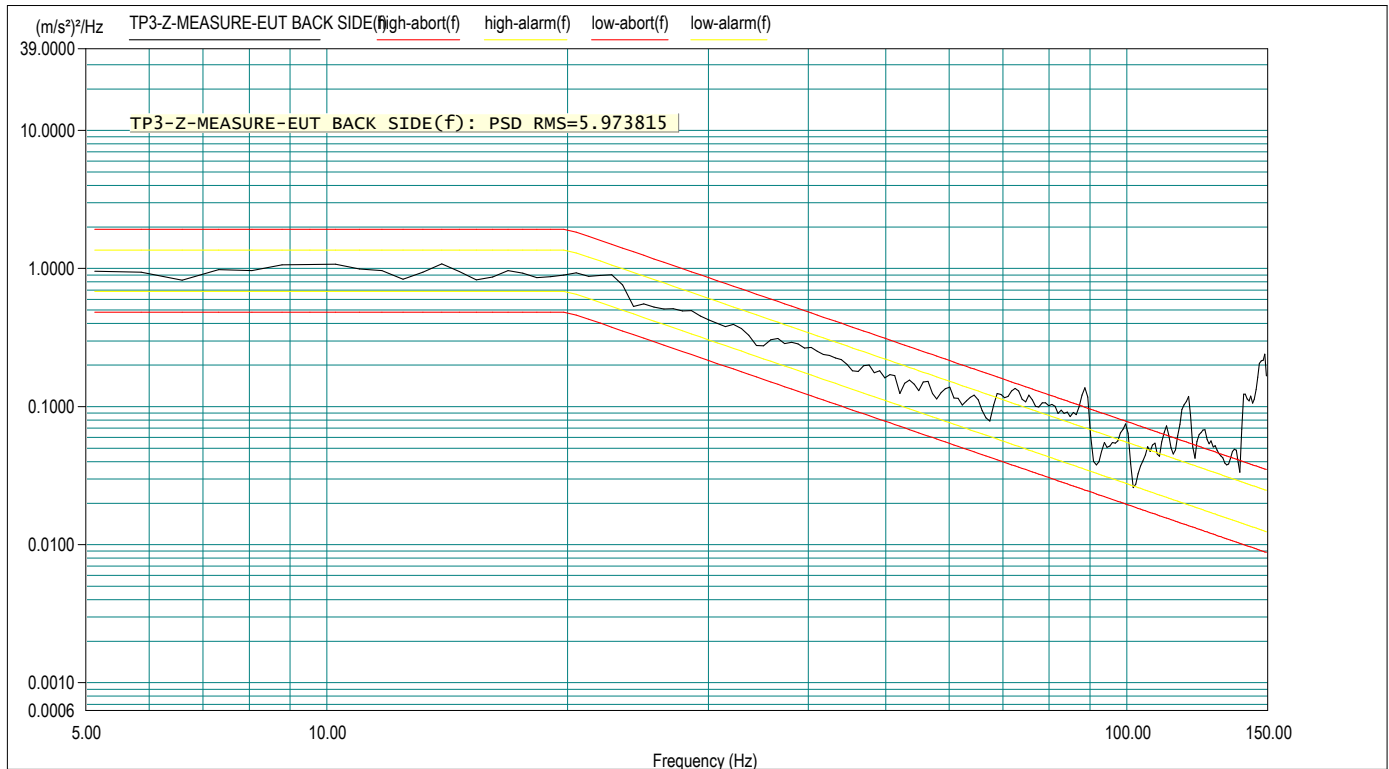
Report created at 04:30:22 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time:

04:59:59

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

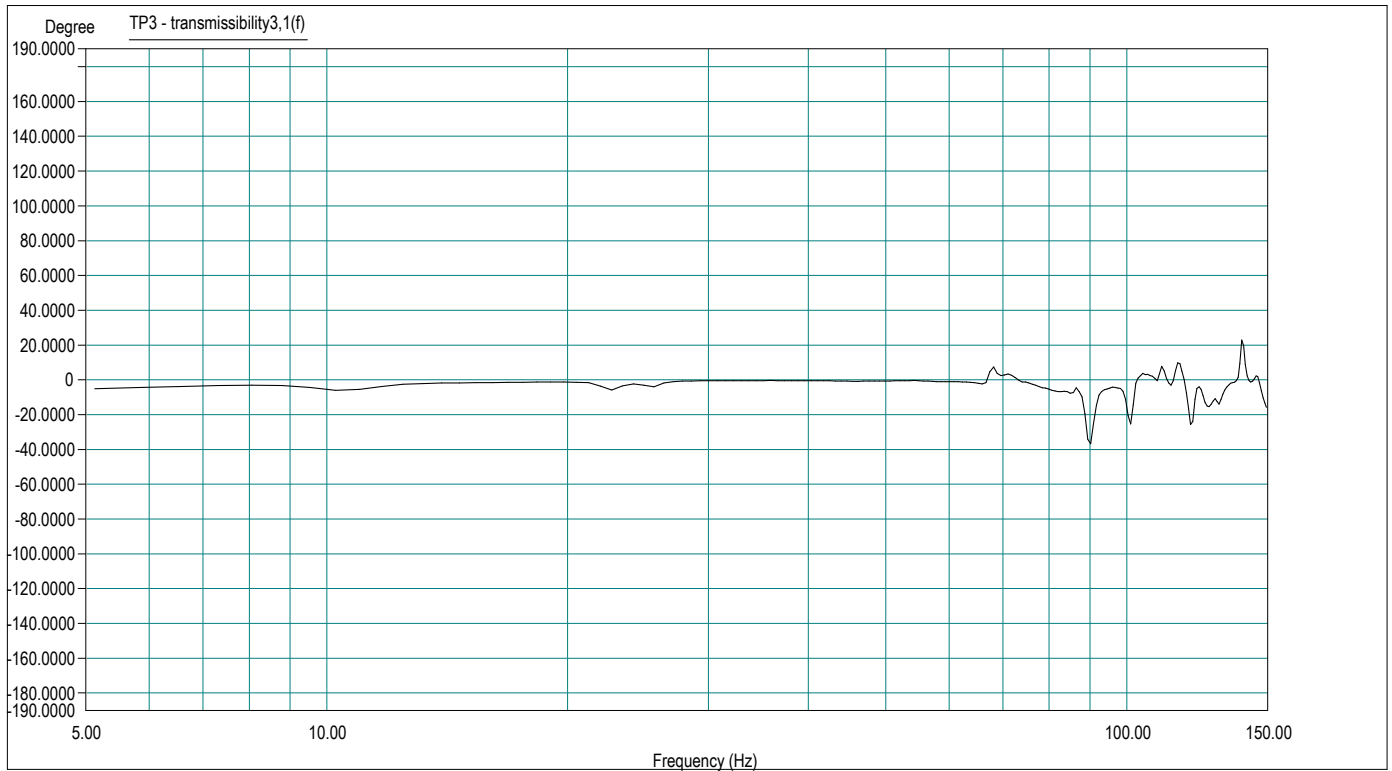
Report created at 04:30:23 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

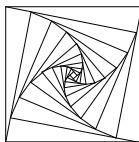
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:23 , lunedì, settembre 21, 2015

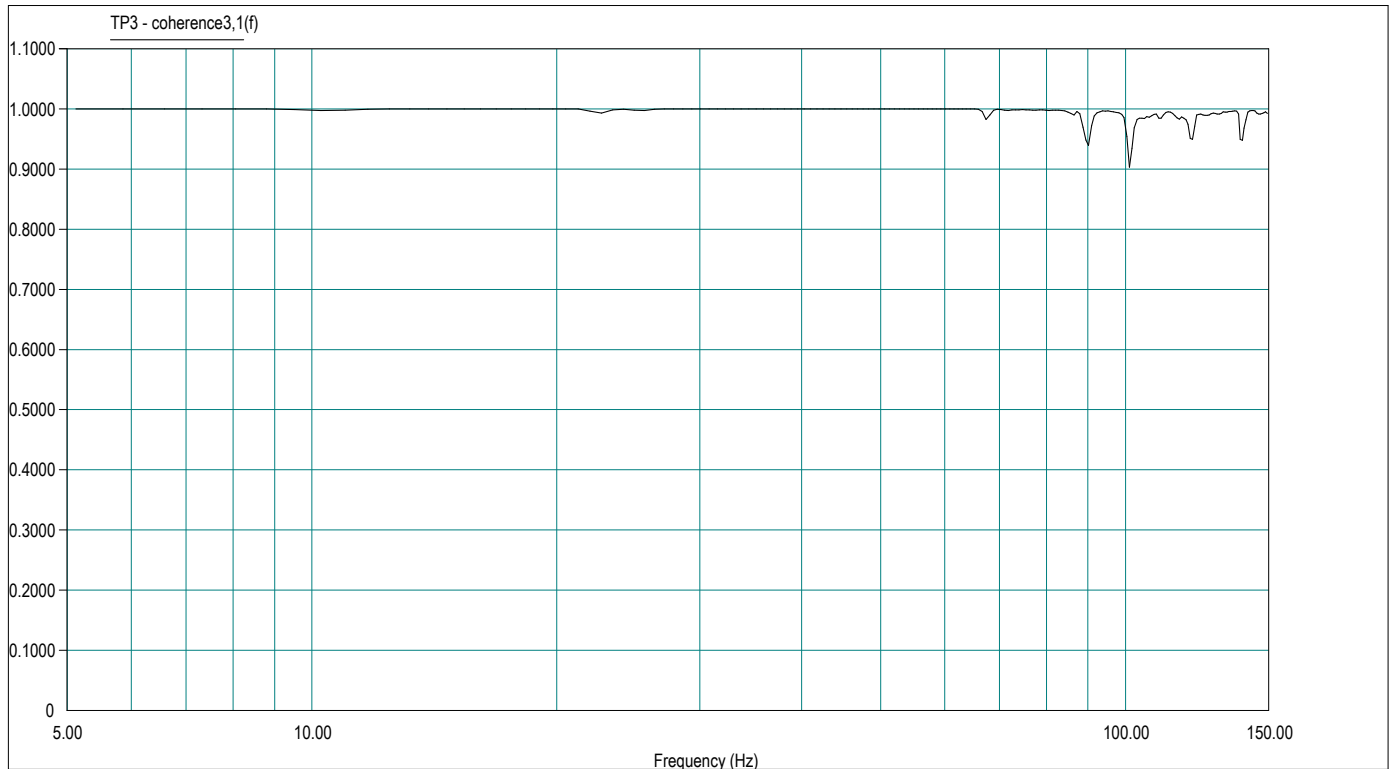
 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.	
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Project File Name: VERTICAL Z - ENDURANCE.prj

Profile Name: RUN 02 RANDOM ENDURANCE TEST ASSE VERTICALE (Z)

Test Type: Random

Run Folder: .\RUN 02 ENDURANCE Z Sep 21, 2015 11-28-08



Level: 0 dB

Control RMS: 5.605435 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

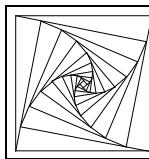
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 04:30:11 PM, Monday, September 21, 2015

Report created at 04:30:24 , lunedì, settembre 21, 2015

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ALLEGATO 1.3

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

SHOCK TEST - UP DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

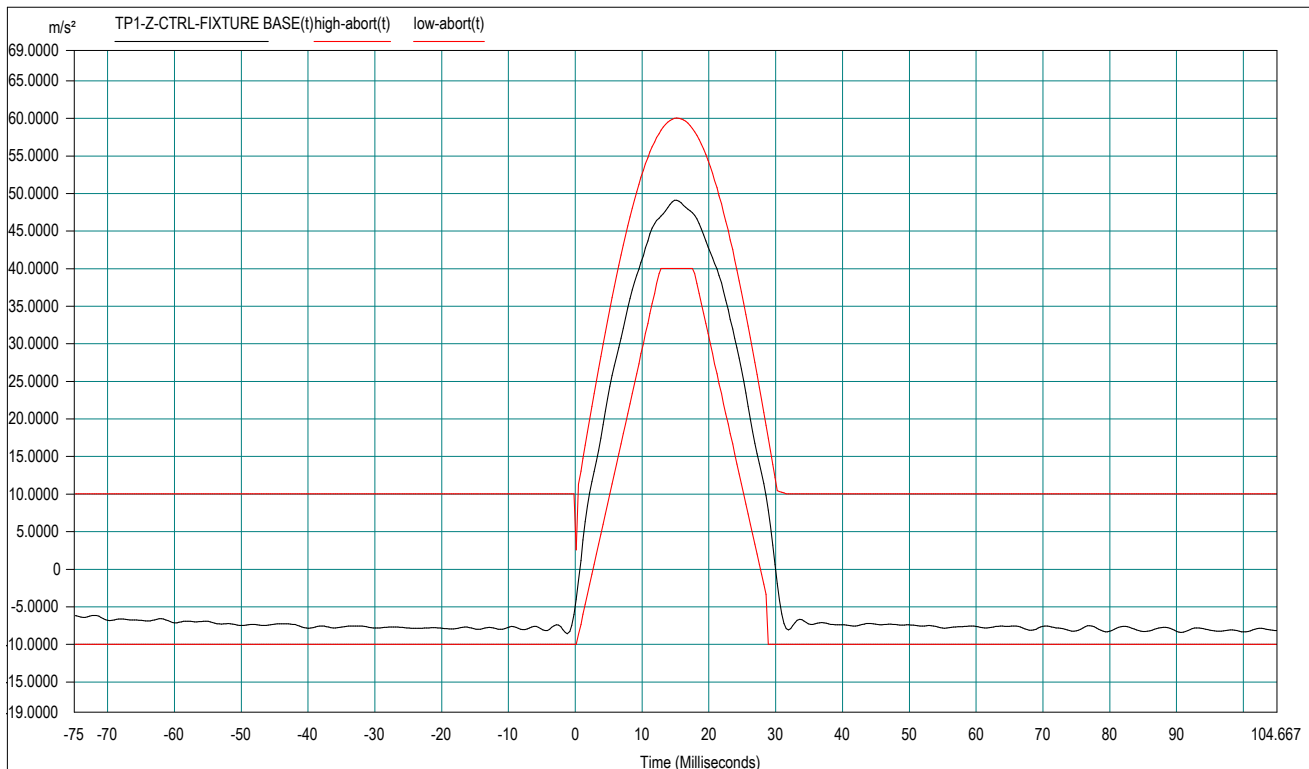
Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE

Test

Type: Classical Shock

Run Folder: .\RUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.088360	Control RMS:	8.696640
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 04:51:01 PM, Monday, September 21, 2015 Report created at 04:51:02 , lunedì, settembre 21, 2015

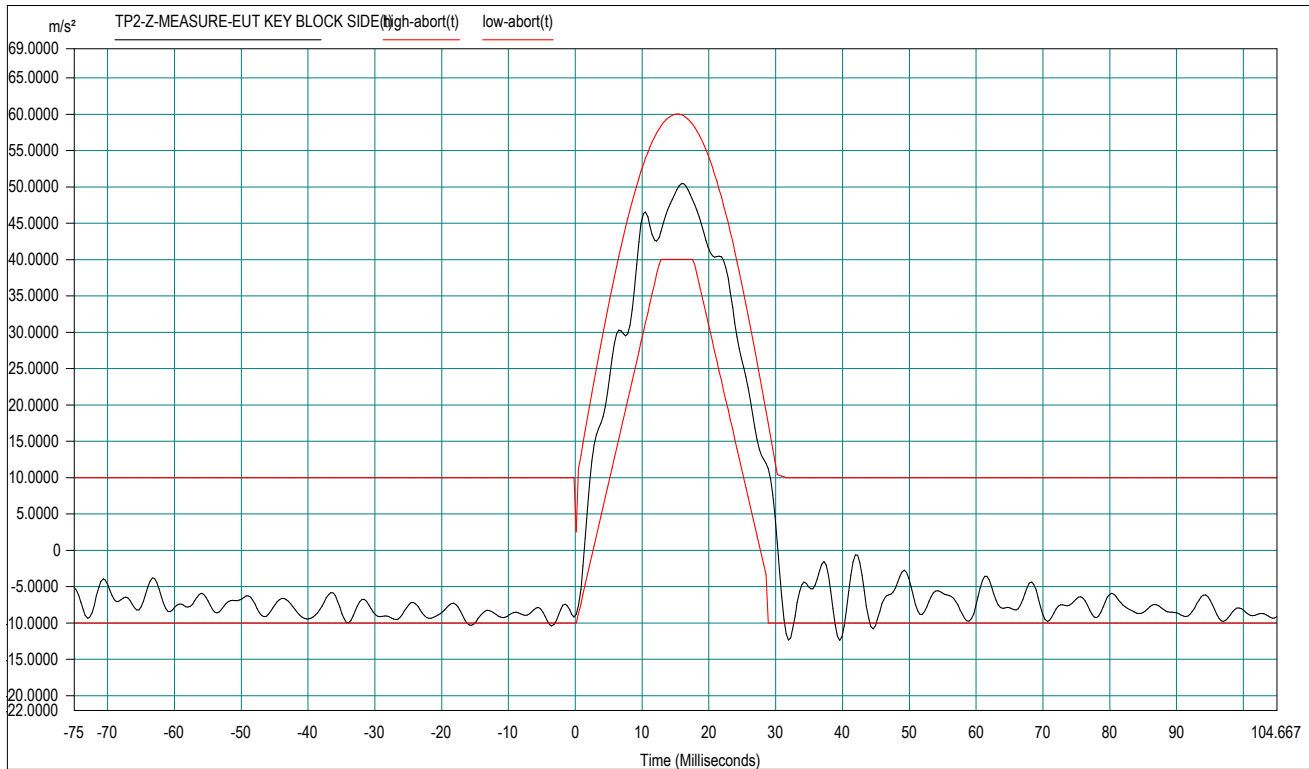
Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE

Test

Type: Classical Shock

Run Folder: .\RUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.088360	Control RMS:	8.696640
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 04:51:01 PM, Monday, September 21, 2015 Report created at 04:51:03 , lunedì, settembre 21, 2015

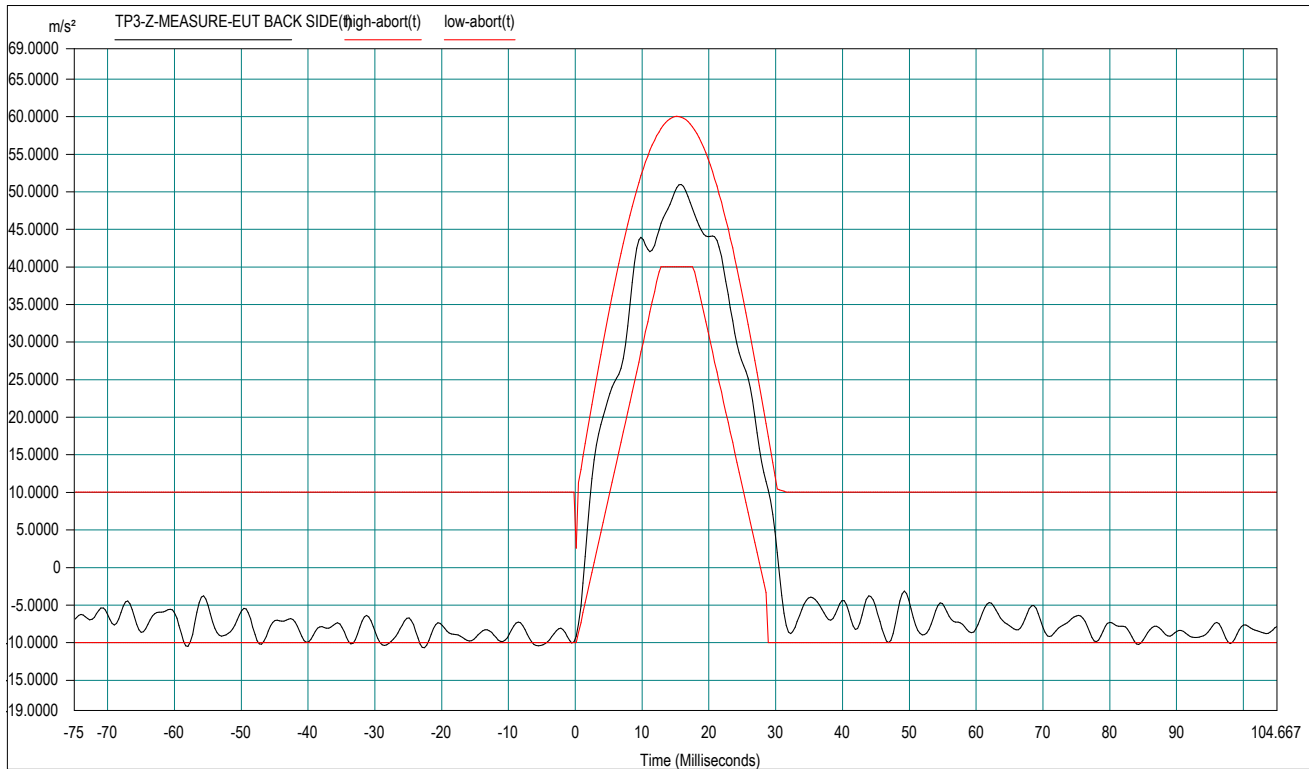
Project File Name: VERTICAL Z - SHOCK.prj

Profile Name: RUN 03 SHOCK TEST ON ASSE VERTICALE (Z) - UP DIRECTION - PROFILO LONGITUDINALE

Test

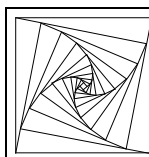
Type: Classical Shock

Run Folder: .\RUN 03 SHOCK Z - UP Sep 21, 2015 16-49-42



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.088360	Control RMS:	8.696640
3				Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 04:51:01 PM, Monday, September 21, 2015 Report created at 04:51:03 , lunedì, settembre 21, 2015

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ALLEGATO 1.4

EARTHING SWITCH E402A CAF

TYPE: D344640

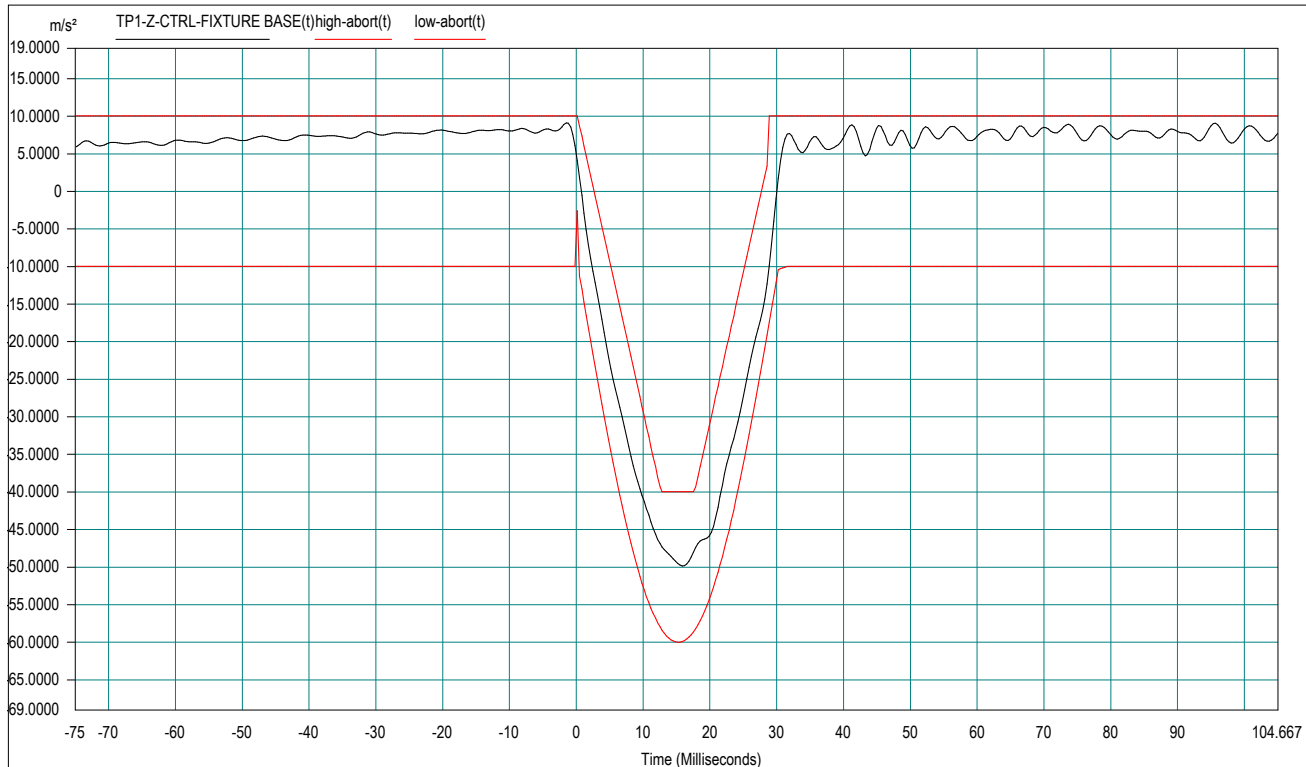
S/N: A1506999

DWG N.: D344639

ASSE VERTICALE (Z)

SHOCK TEST - DOWN DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

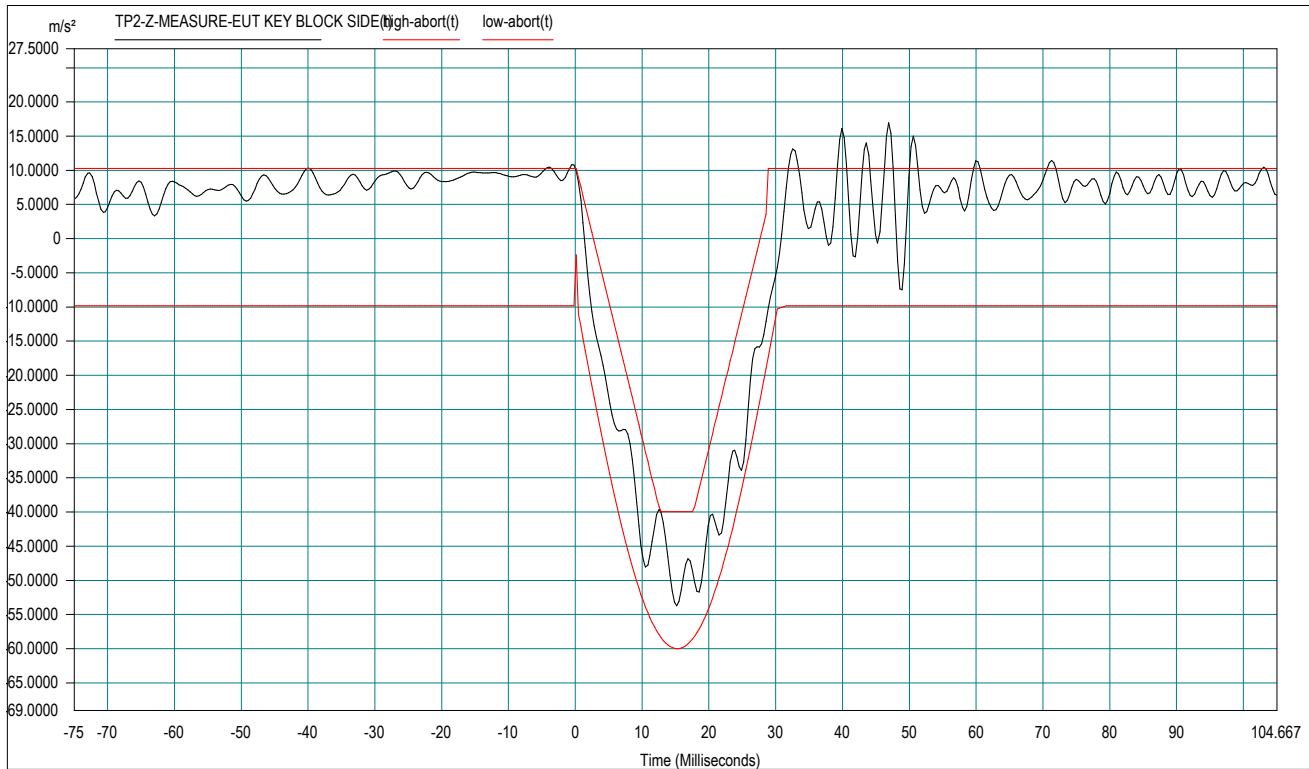
Project File Name: VERTICAL Z - SHOCK.prj
 Profile Name: RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	19
Frame Time:	0.682667 Seconds	Control Peak:	49.865845	Control RMS:	8.733629
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

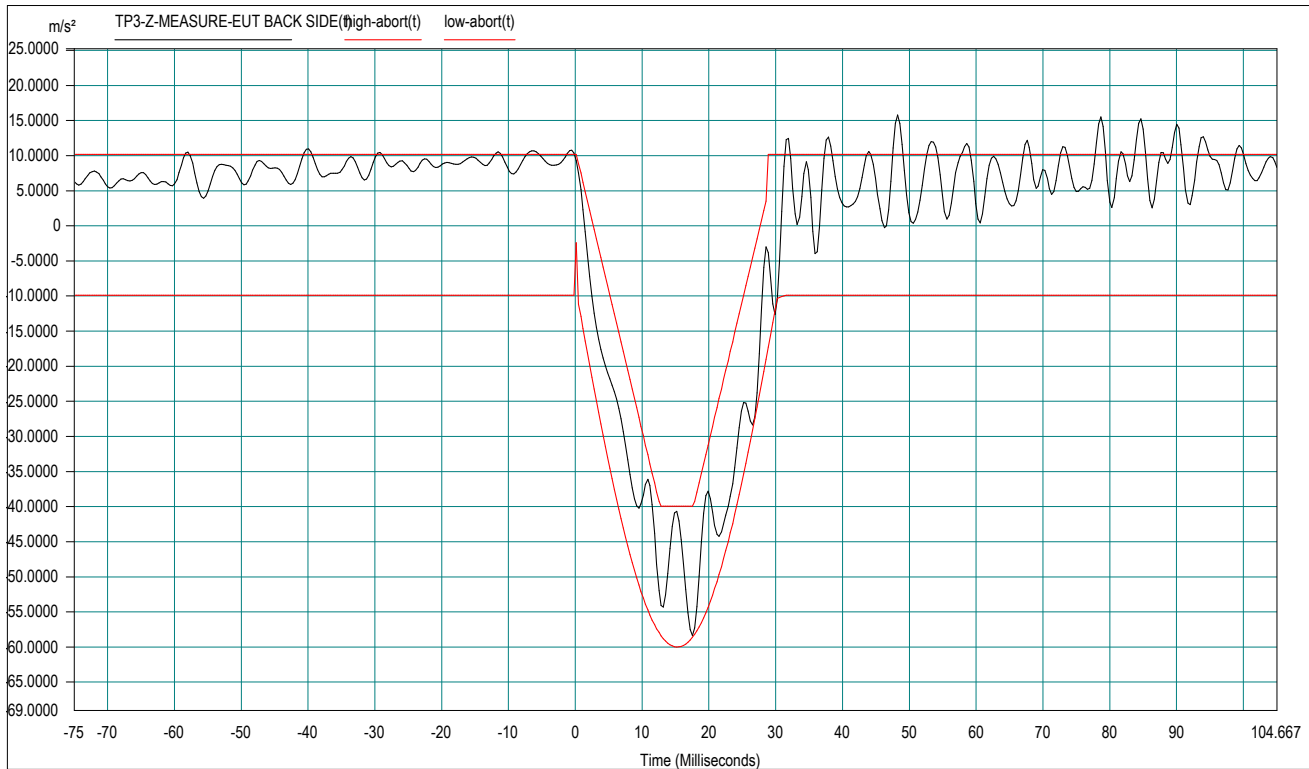
Data saved at 04:54:50 PM, Monday, September 21, 2015 Report created at 04:54:55 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - SHOCK.prj
 Profile Name: RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05

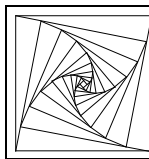


Level:	0 dB	Block Size:	2048	Elapsed Pulses:	19
Frame Time:	0.682667 Seconds	Control Peak:	49.865845	Control RMS:	8.733629
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0
Data saved at 04:54:50 PM, Monday, September 21, 2015				Report created at 04:54:56 , lunedì, settembre 21, 2015	

Project File Name: VERTICAL Z - SHOCK.prj
 Profile Name: RUN 04 SHOCK TEST ON ASSE VERTICALE (Z) - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 04 SHOCK Z - DOWN Sep 21, 2015 16-53-05



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	19
Frame Time:	0.682667 Seconds	Control Peak:	49.865845	Control RMS:	8.733629
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0
Data saved at 04:54:50 PM, Monday, September 21, 2015				Report created at 04:54:56 , lunedì, settembre 21, 2015	

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ALLEGATO 1.5

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

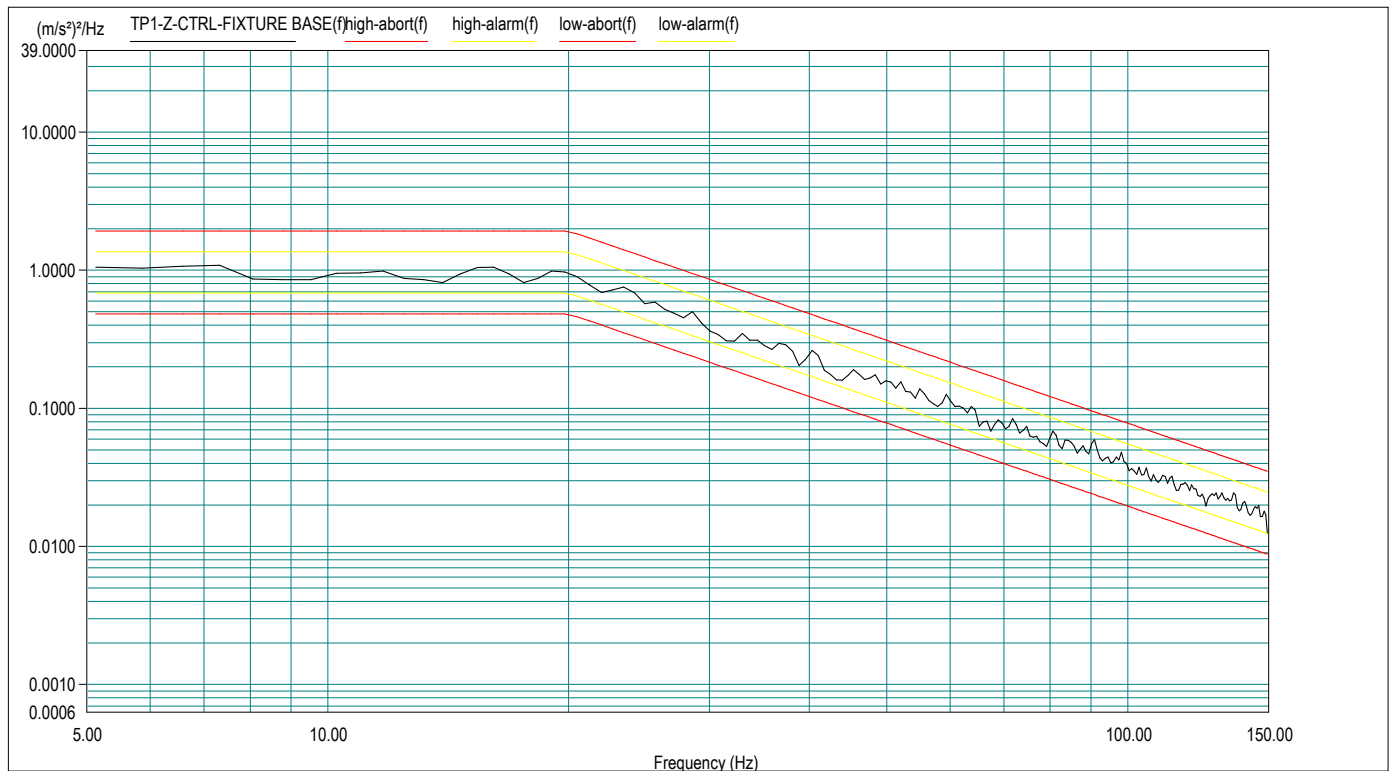
DWG N.: D344639

ASSE VERTICALE (Z)

FINAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

Project File Name: VERTICAL Z - FINAL MEASURE.prj
 Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

Test Type: Random Run



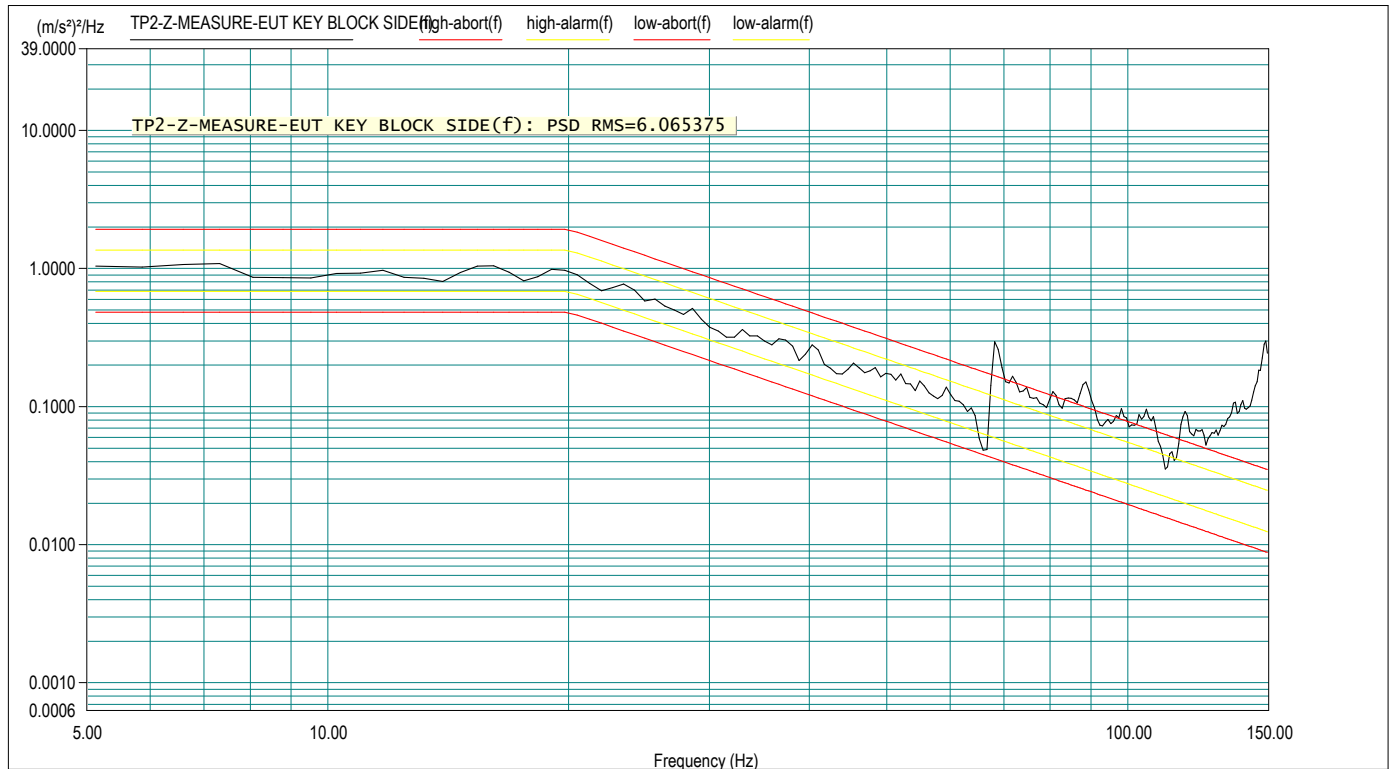
Level: 0 dB
 Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time:
 1.365333 Seconds
 Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF:
 0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - FINAL MEASURE.prj
 Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

Test Type: Random Run



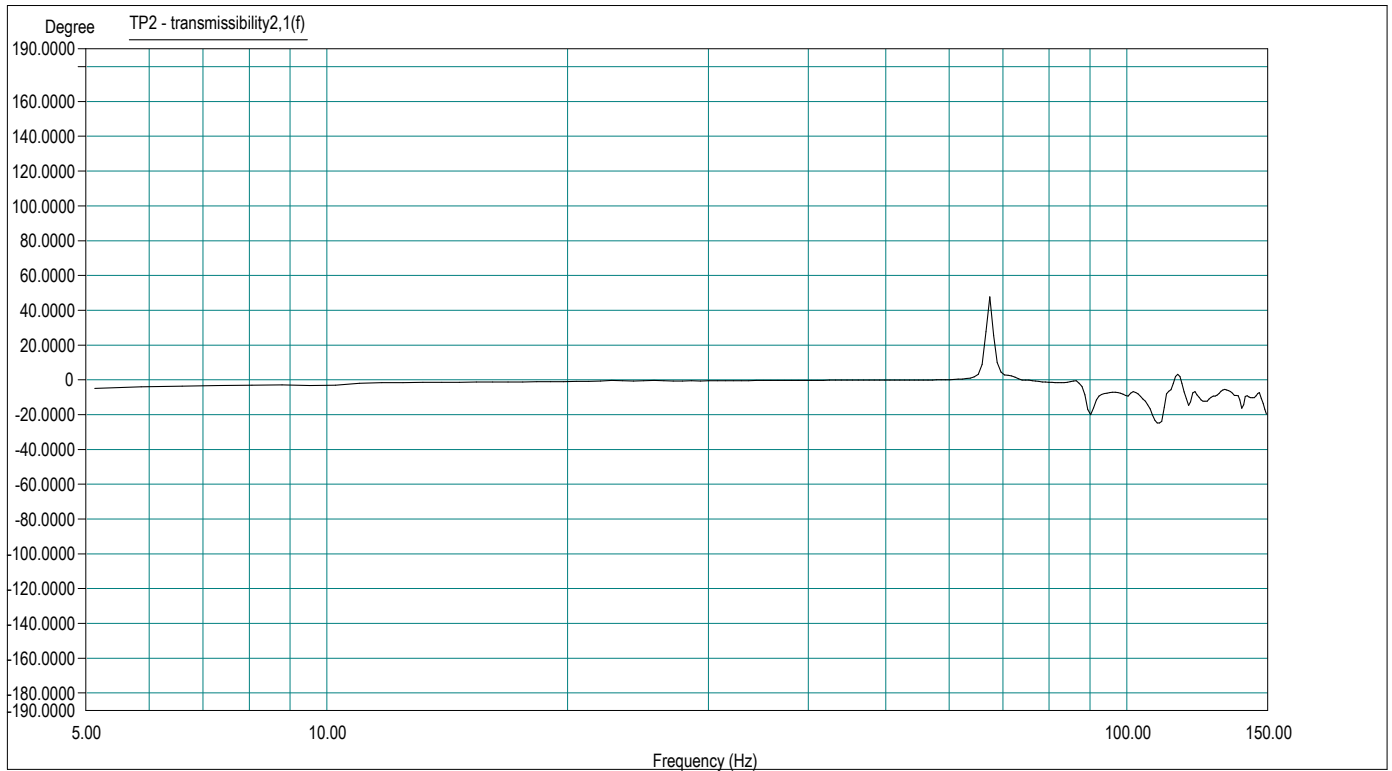
Level: 0 dB				
Control RMS: 5.565898 m/s²	Full Level Elapsed Time: 00:02:00	Lines: 200	Frame Time:	
1.365333 Seconds				
Demand RMS: 5.626908 m/s²	Remaining Time: 00:00:00	DOF: 154	dF:	
0.732422 Hz				

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - FINAL MEASURE.prj
 Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

Test Type: Random Run



Level: 0 dB
 Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time: 1.365333 Seconds
 Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:16 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - FINAL MEASURE.prj

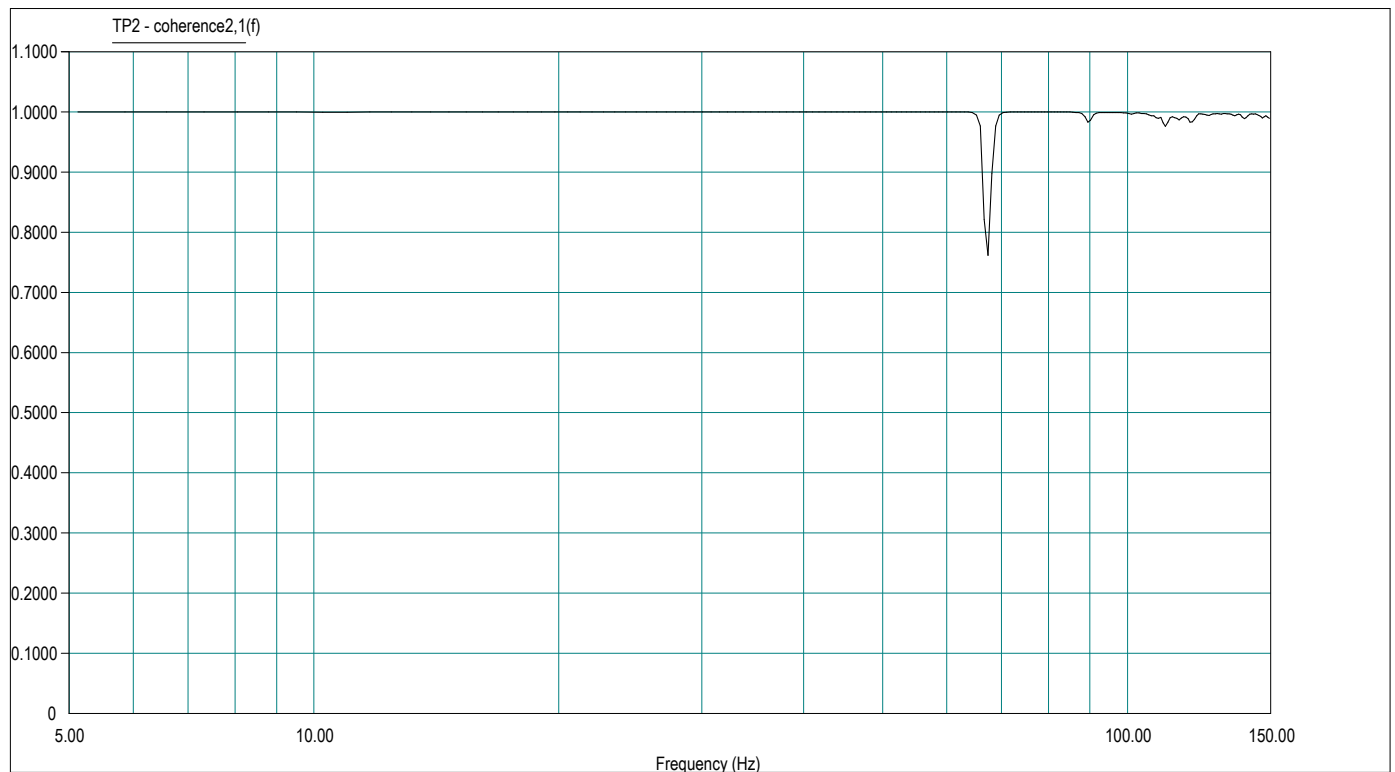
Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)

Test Type:

Random

Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Control RMS: 5.565898 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

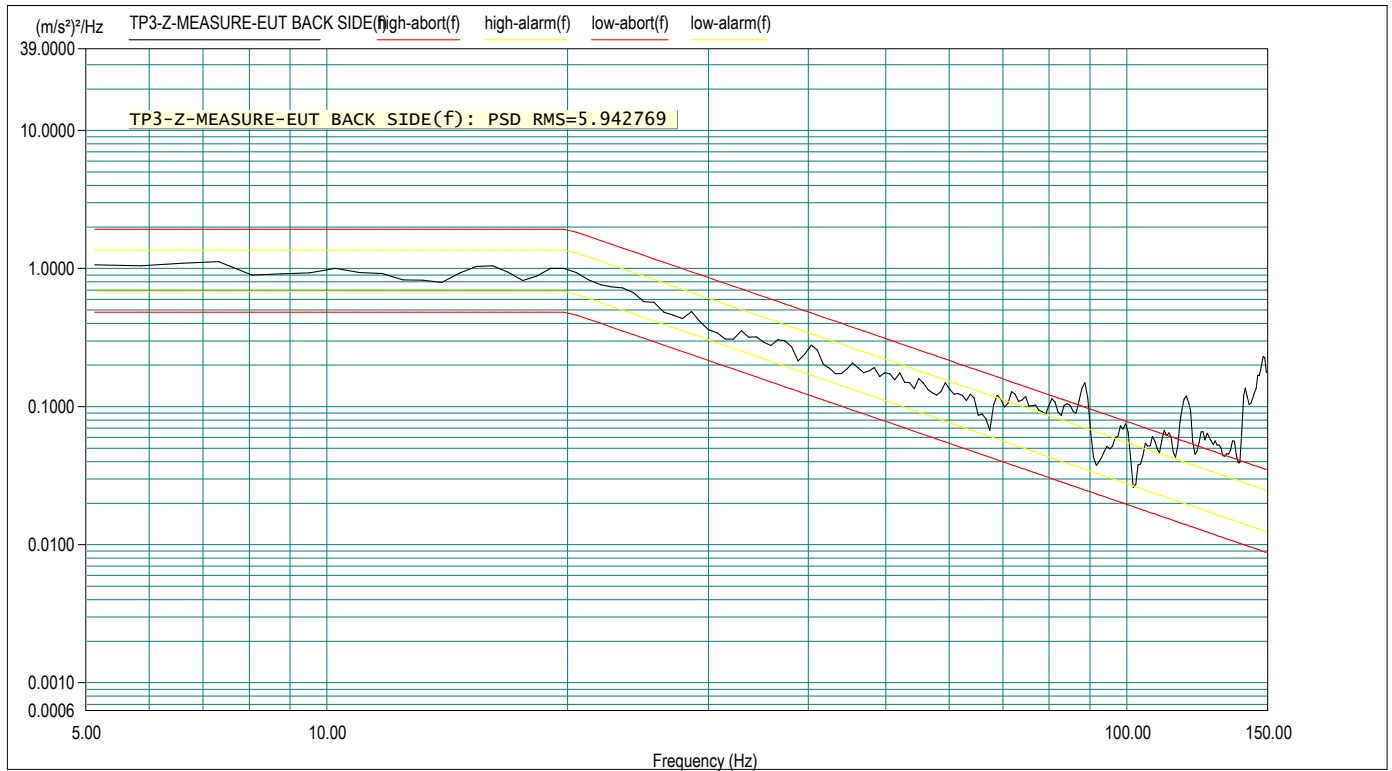
dF:

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - FINAL MEASURE.prj
 Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

Test Type: Random Run



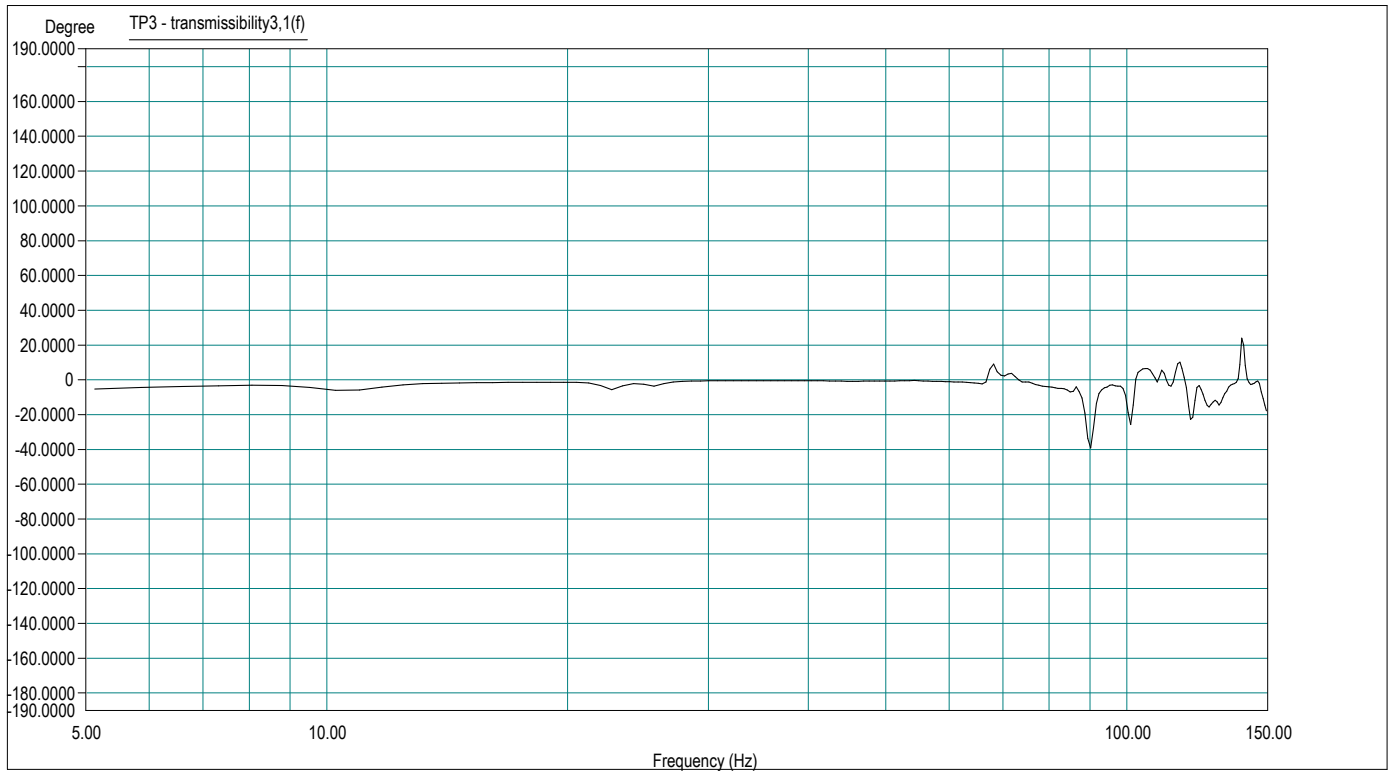
Level: 0 dB				
Control RMS: 5.565898 m/s²	Full Level Elapsed Time: 00:02:00	Lines: 200	Frame Time:	
1.365333 Seconds				
Demand RMS: 5.626908 m/s²	Remaining Time: 00:00:00	DOF: 154	dF:	
0.732422 Hz				

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17 , lunedì, settembre 21, 2015

Project File Name: VERTICAL Z - FINAL MEASURE.prj
 Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)
 Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23

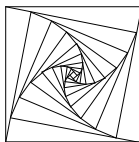
Test Type: Random Run



Level: 0 dB
 Control RMS: 5.565898 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time: 1.365333 Seconds
 Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:17 , lunedì, settembre 21, 2015

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Project File Name: VERTICAL Z - FINAL MEASURE.prj

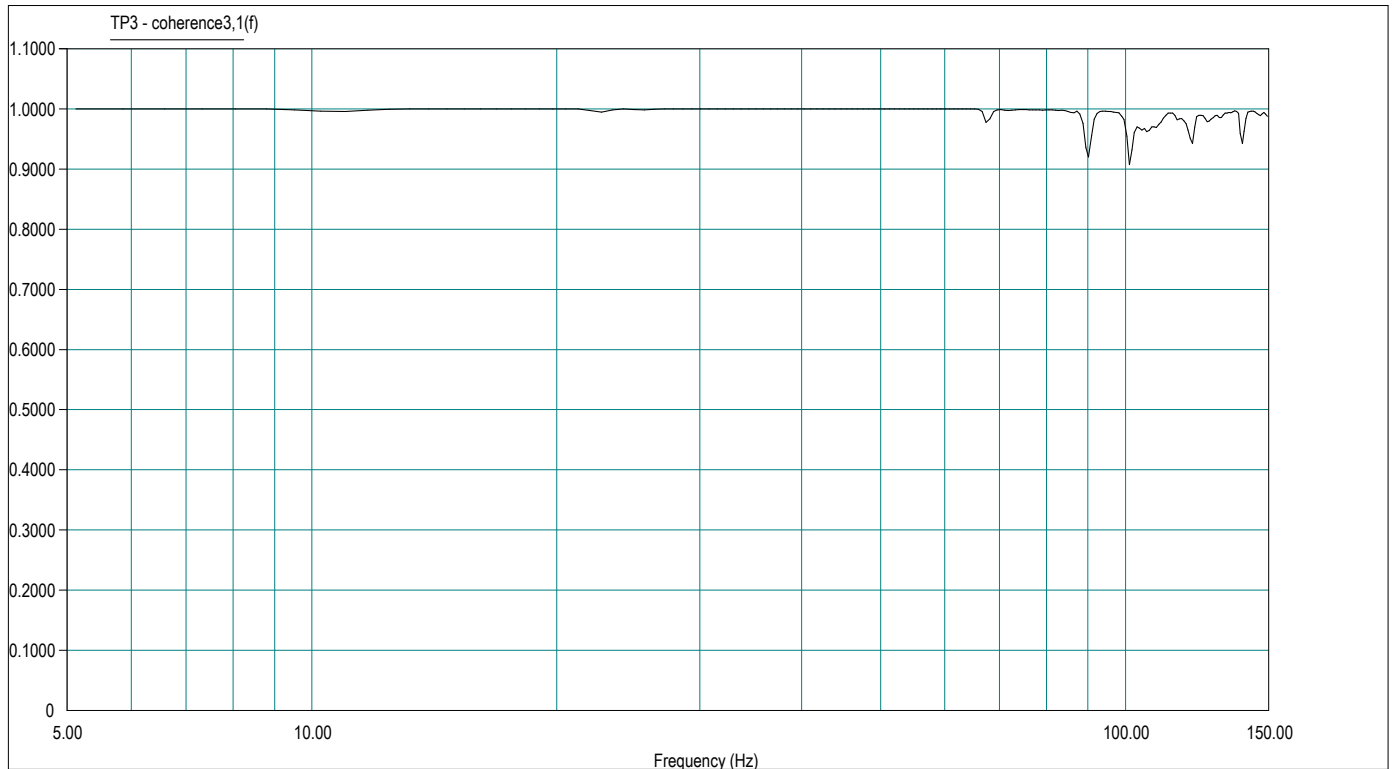
Profile Name: RUN 05 FINAL MEASURE ON ASSE VERTICALE (Z)

Test Type:

Random

Run

Folder: .\RUN 05 F.M. - Z Sep 21, 2015 16-57-23



Level: 0 dB

Control RMS: 5.565898 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

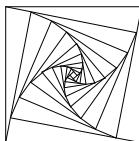
00:00:00

DOF: 154

dF:

Data saved at 05:01:11 PM, Monday, September 21, 2015

Report created at 05:01:18 , lunedì, settembre 21, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
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ALLEGATO 2.1

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

INITIAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

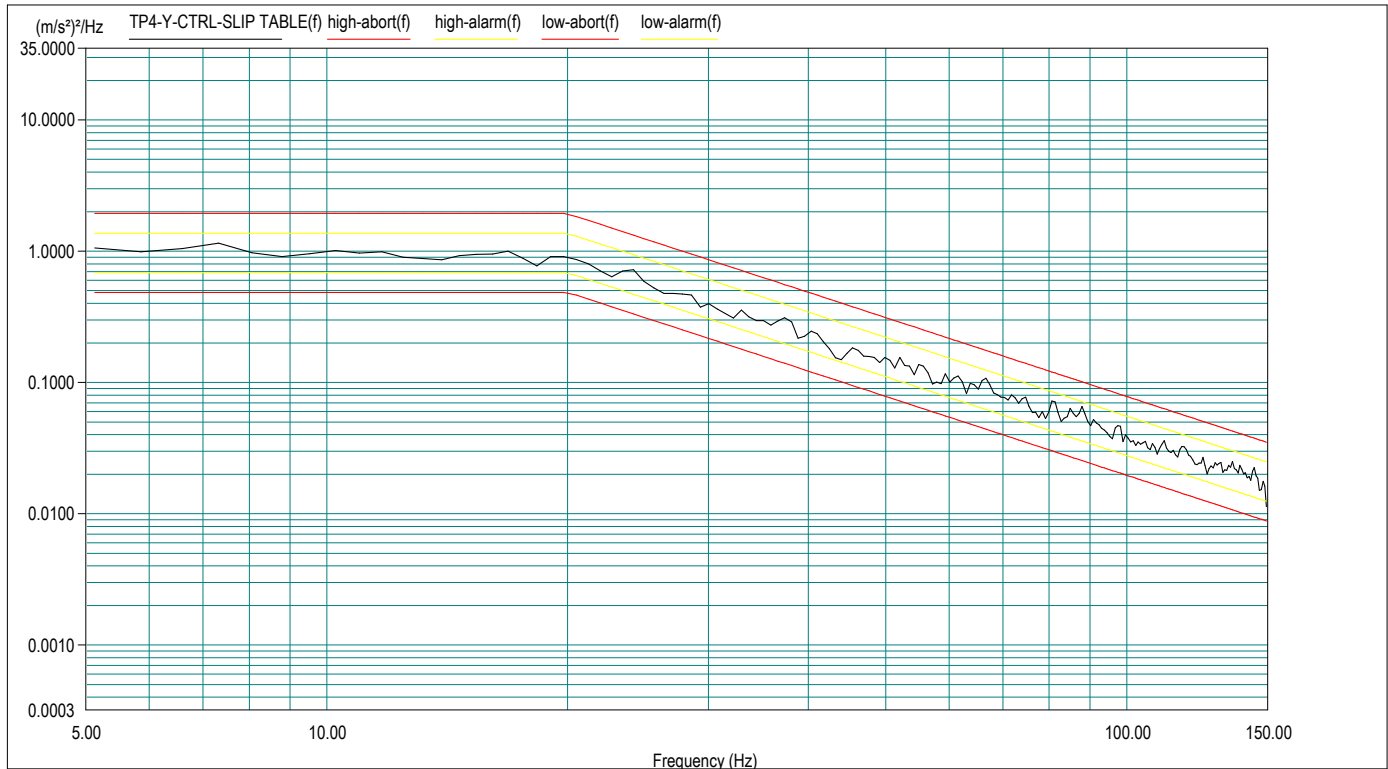
Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder:

.IRUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:58 , martedì, settembre 22, 2015

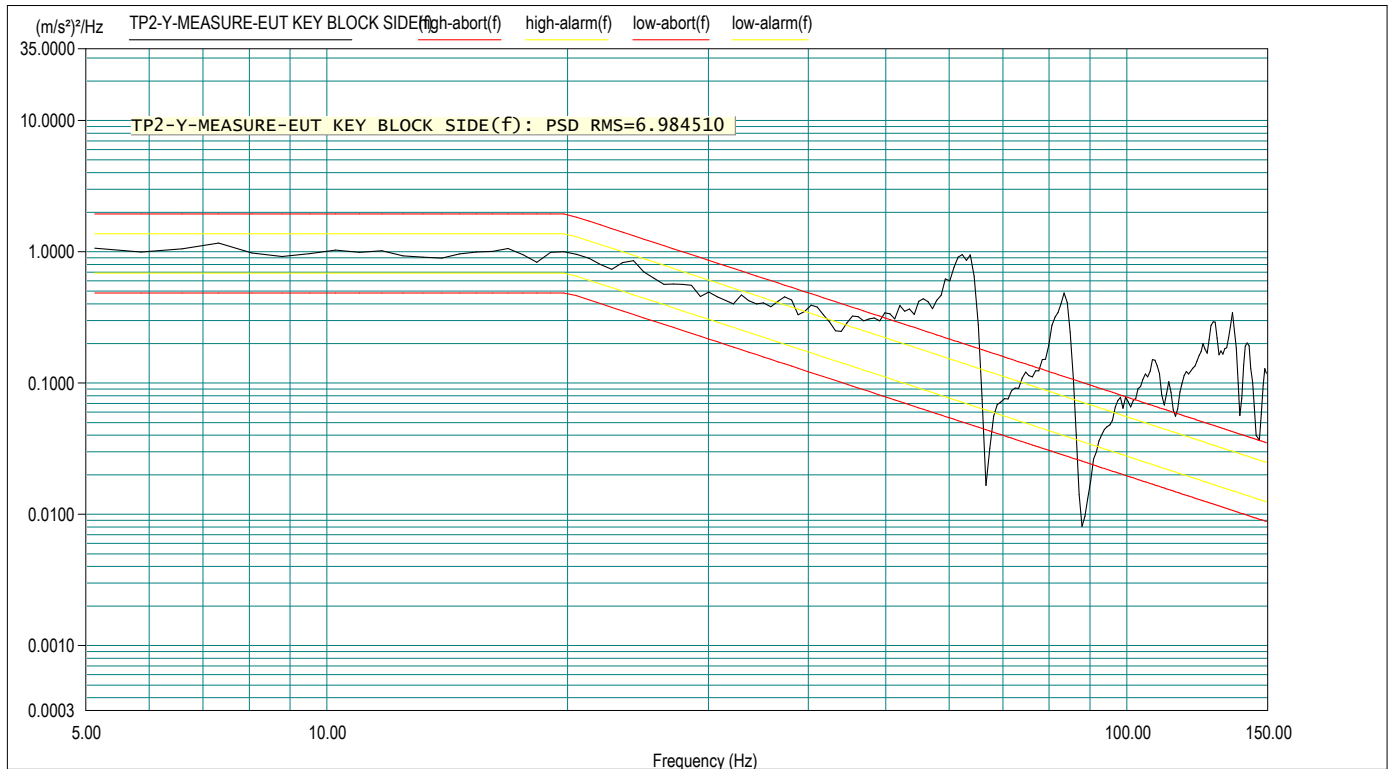
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59 , martedì, settembre 22, 2015

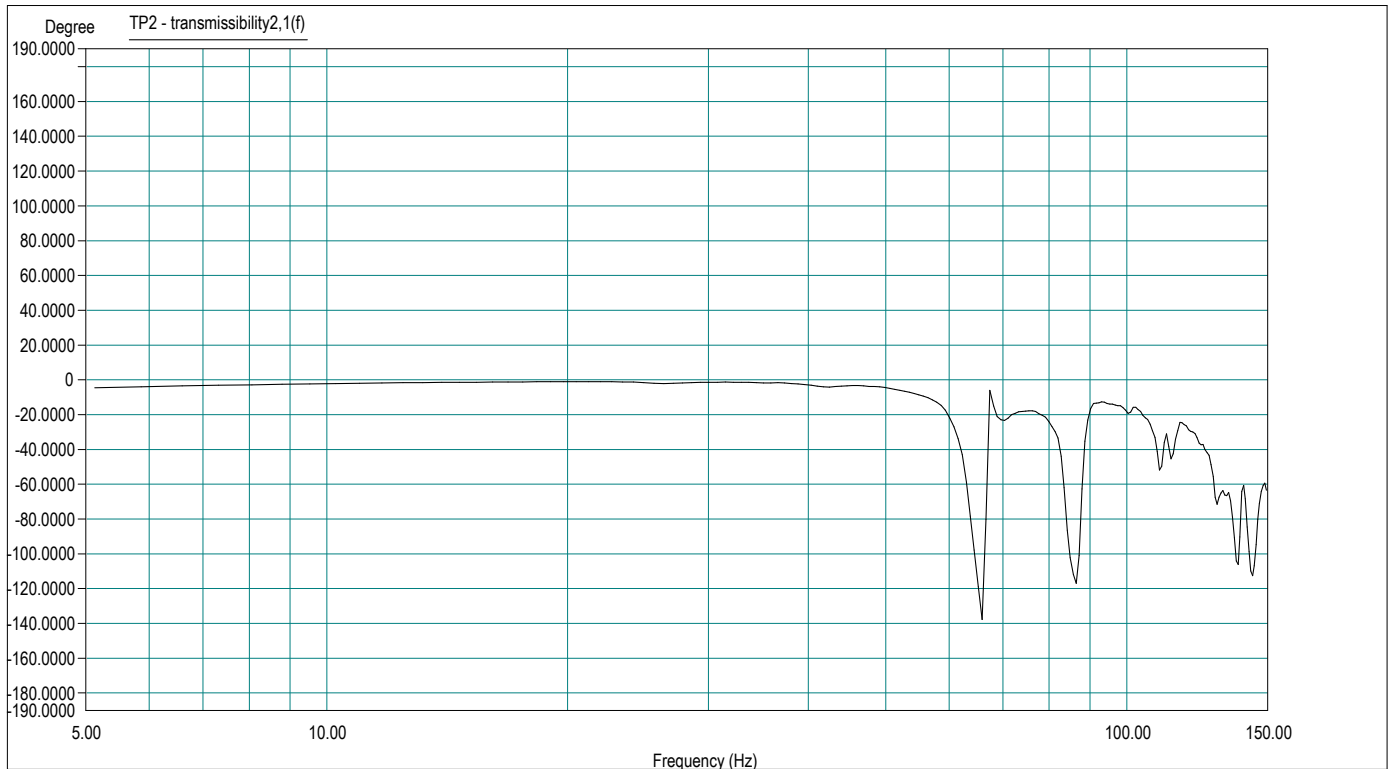
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59 , martedì, settembre 22, 2015

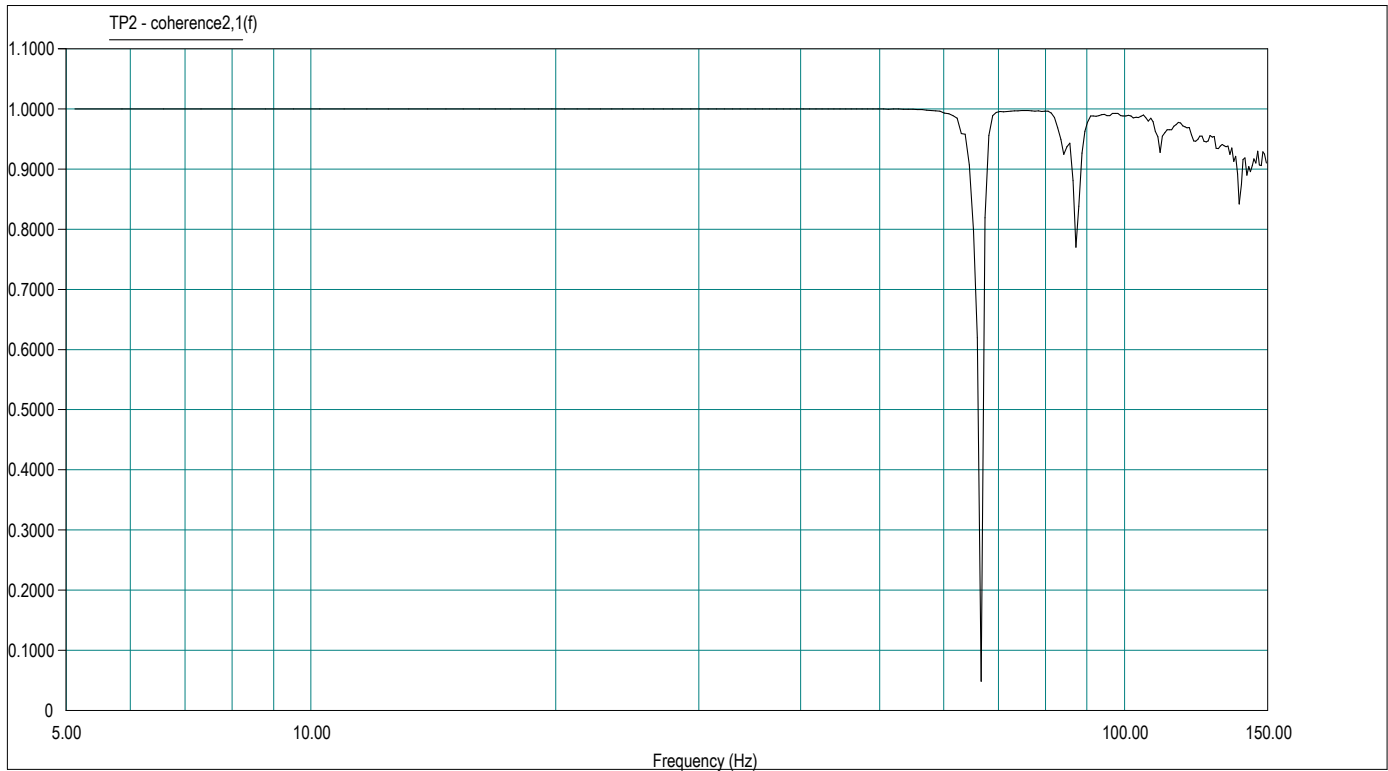
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:44:59 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

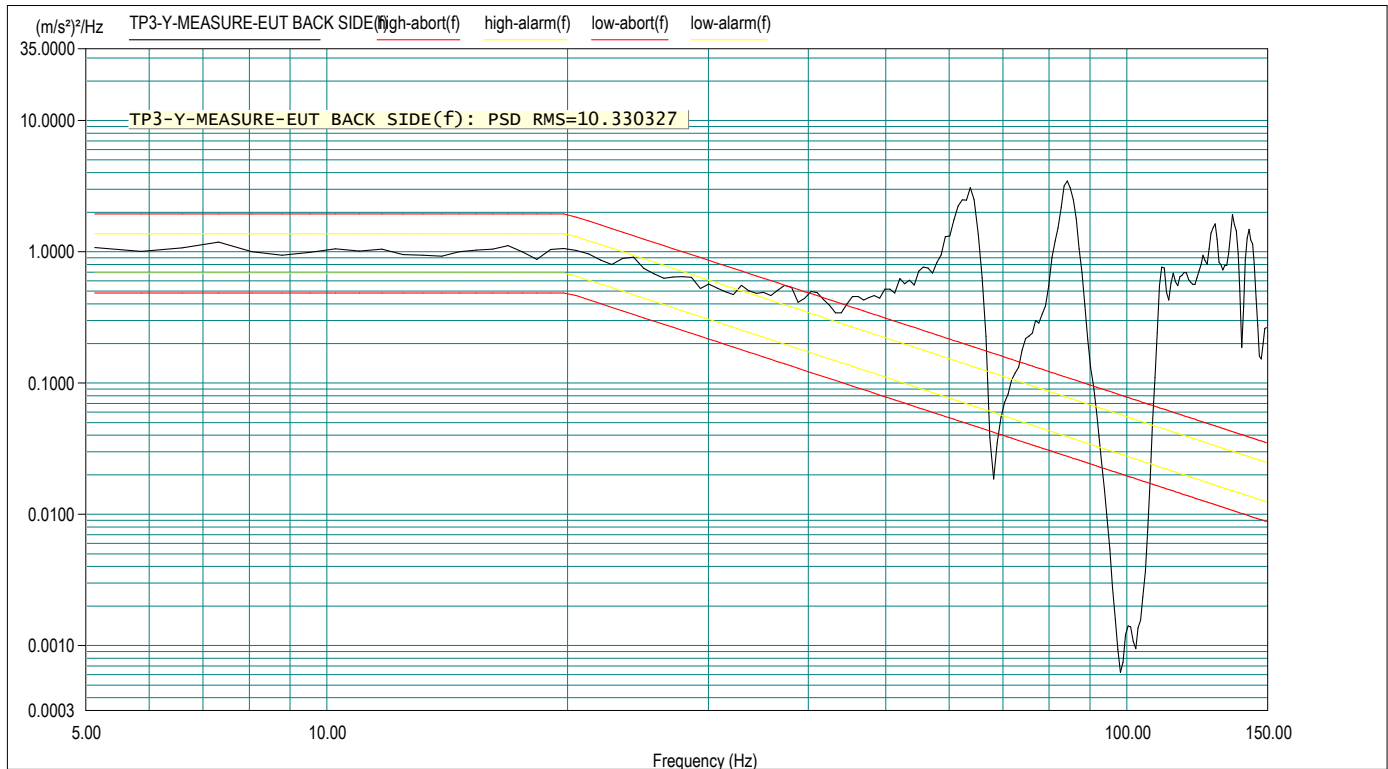
Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder:

.\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:45:00 , martedì, settembre 22, 2015

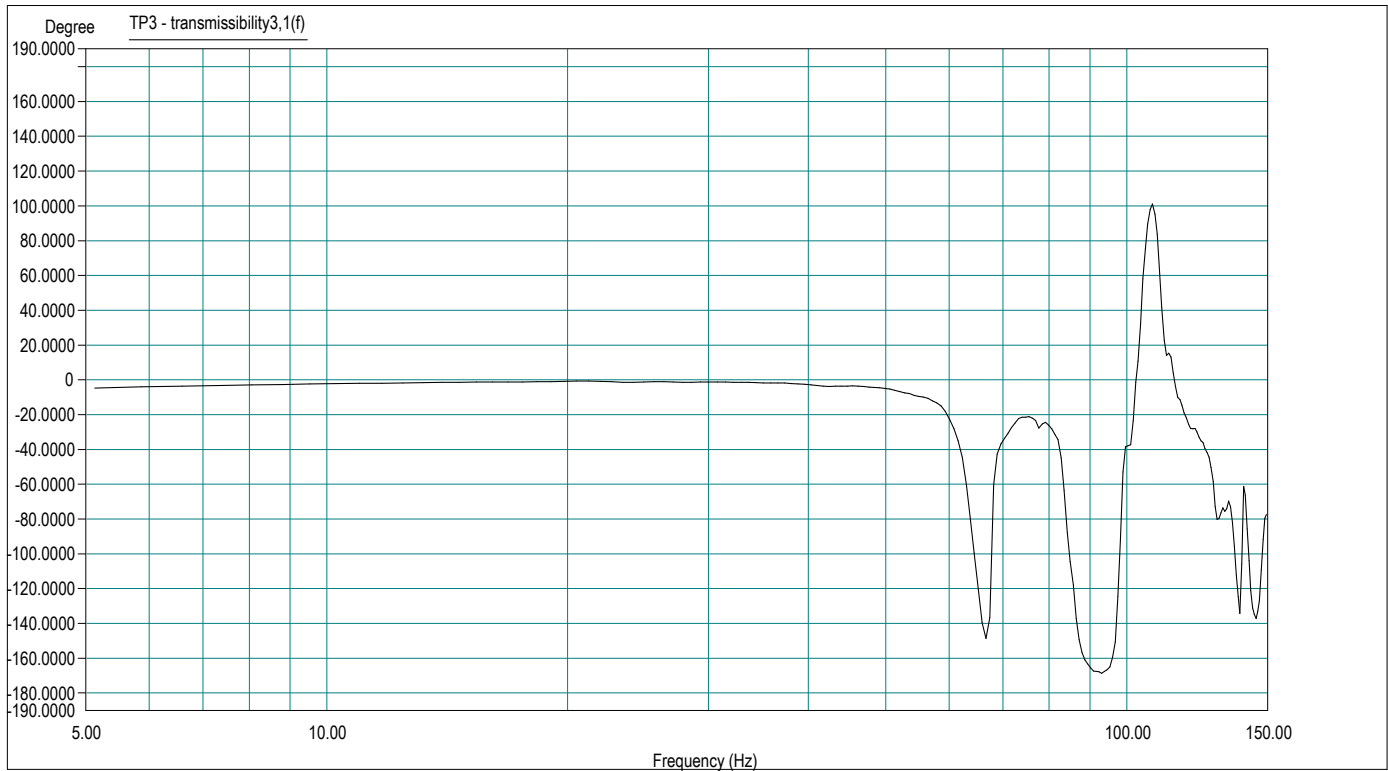
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

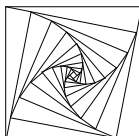
00:00:00

DOF: 154

dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:45:00 , martedì, settembre 22, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.	
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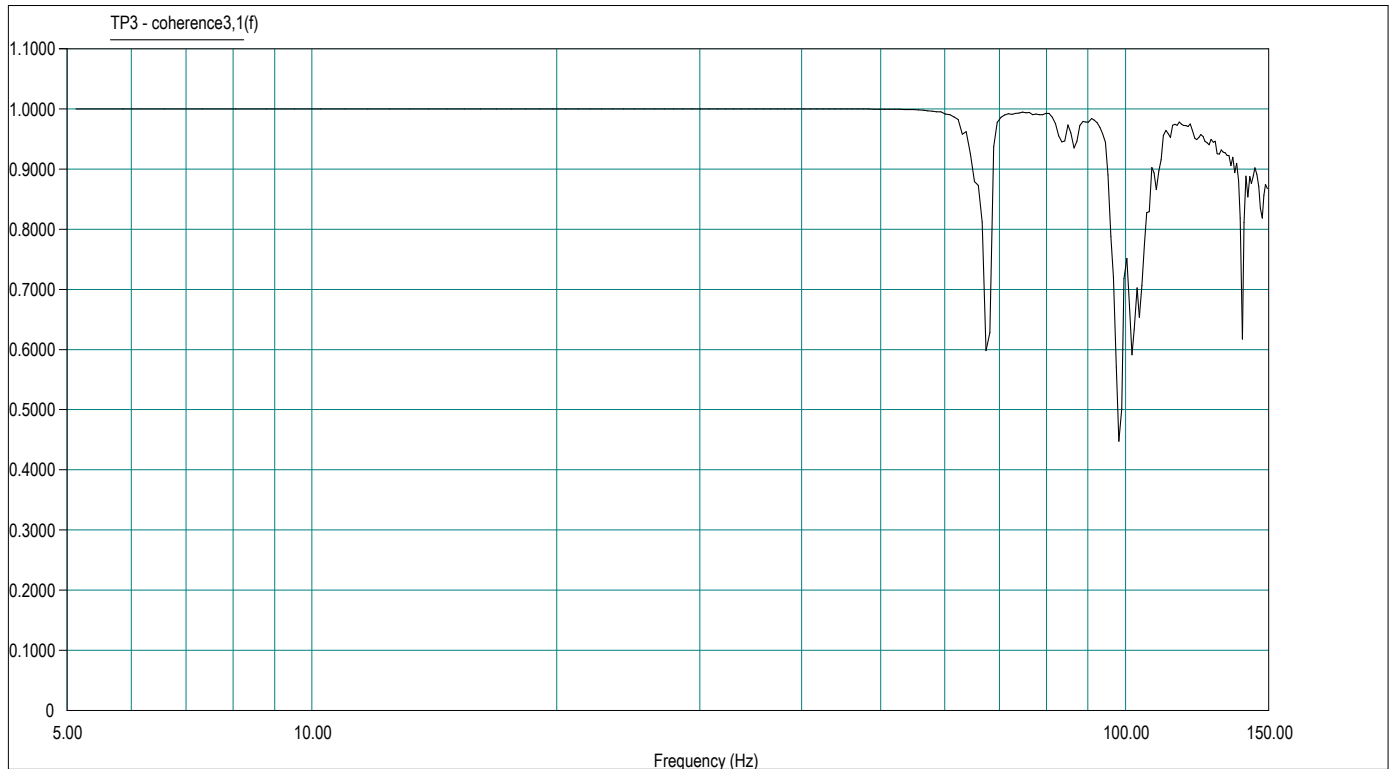
Project File Name: TRANSVERSAL Y - INITIAL MEASURE.prj

Profile Name: RUN 06 INITIAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 06 I.M. - Y Sep 22, 2015 09-40-37



Level: 0 dB

Control RMS: 5.563500 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

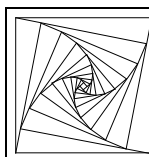
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:44:43 AM, Tuesday, September 22, 2015

Report created at 09:45:00 , martedì, settembre 22, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
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ALLEGATO 2.2

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

ENDURANCE TEST - PROFILO
VERTICALE
(7 PLOTS)

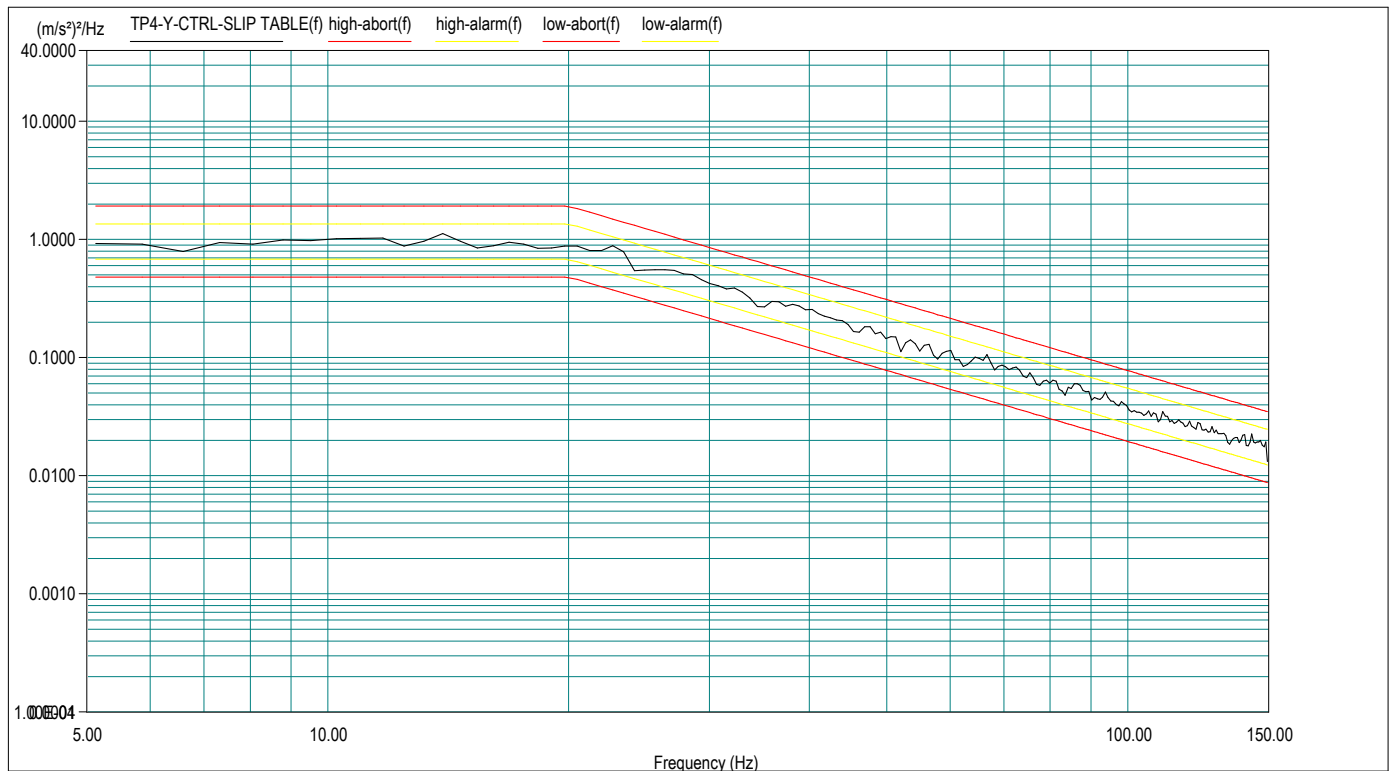
Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random

Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154

dF:

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

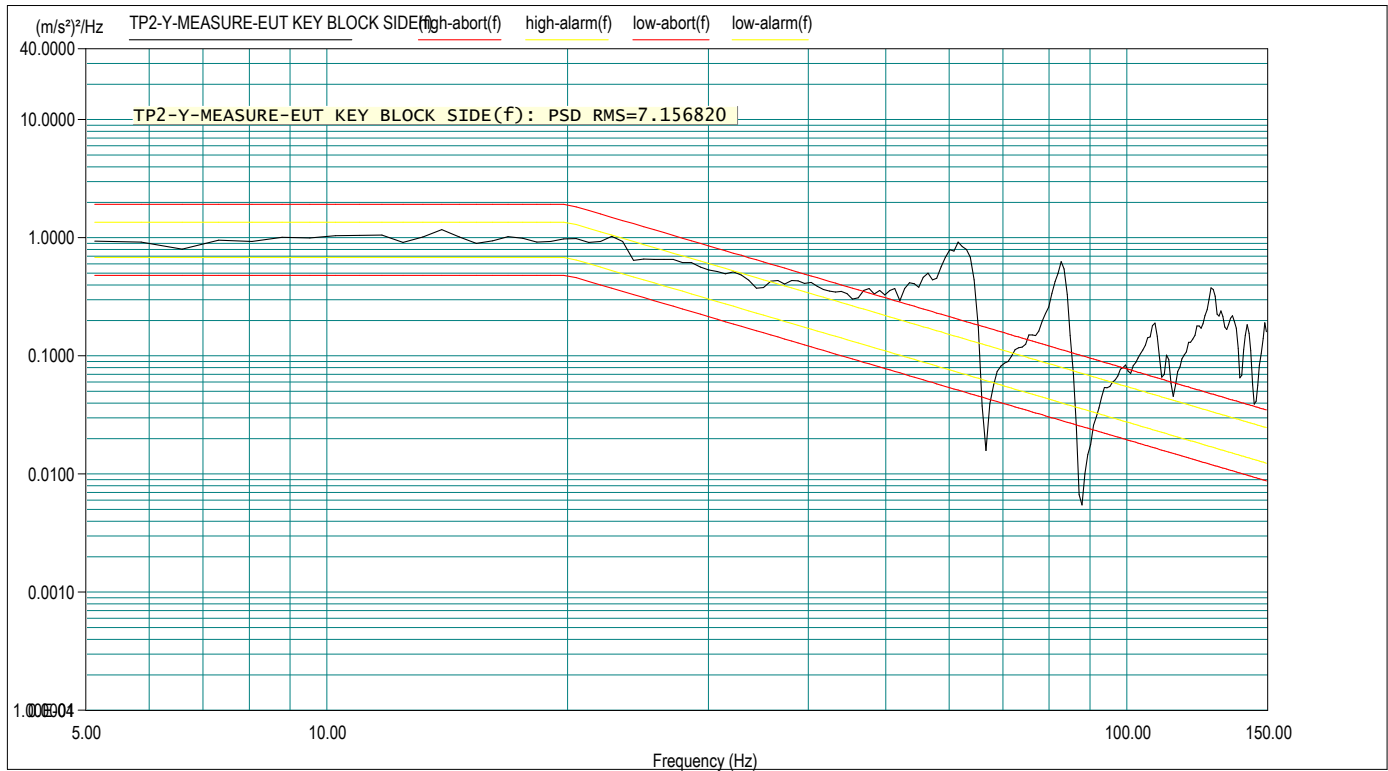
Report created at 02:50:45 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s²
1.365333 Seconds

Full Level Elapsed Time:

04:59:59

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

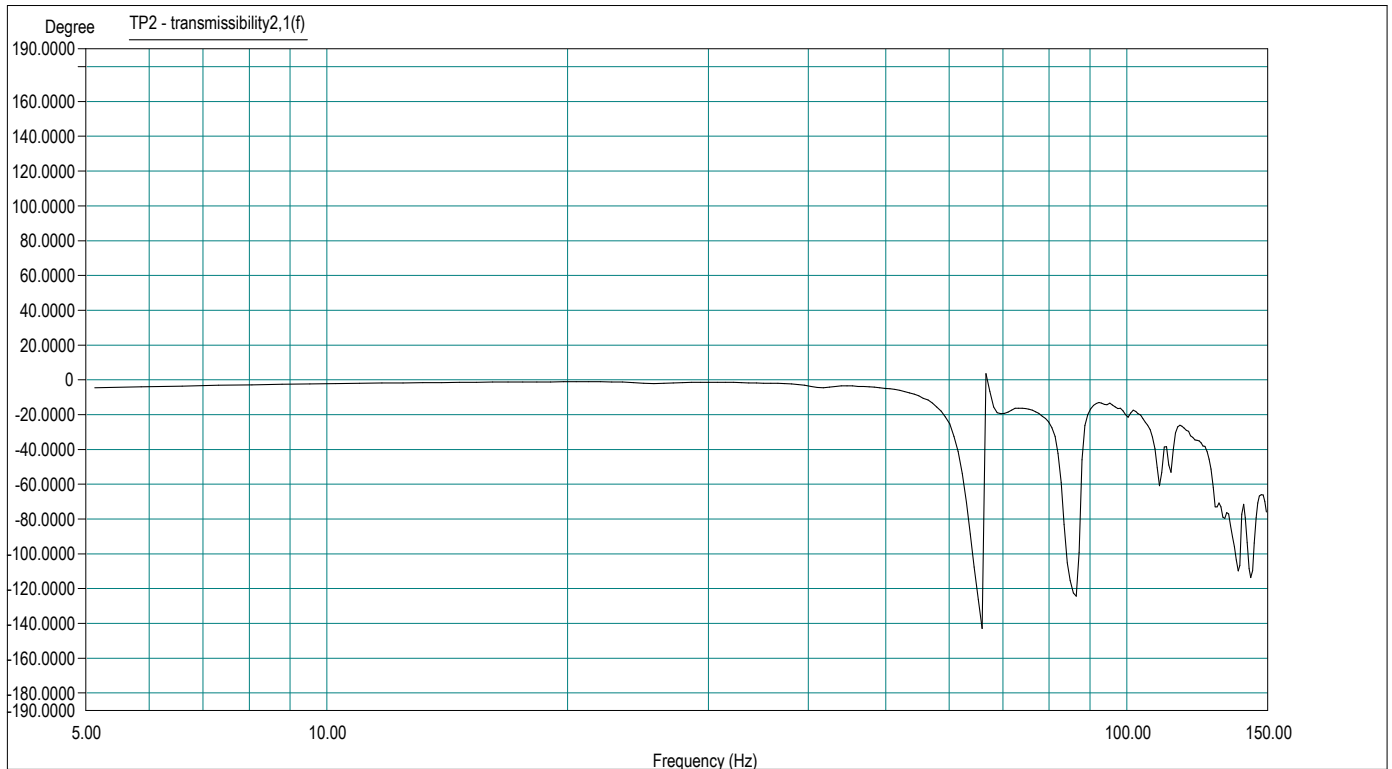
Report created at 02:50:46 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

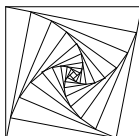
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:47 , martedì, settembre 22, 2015

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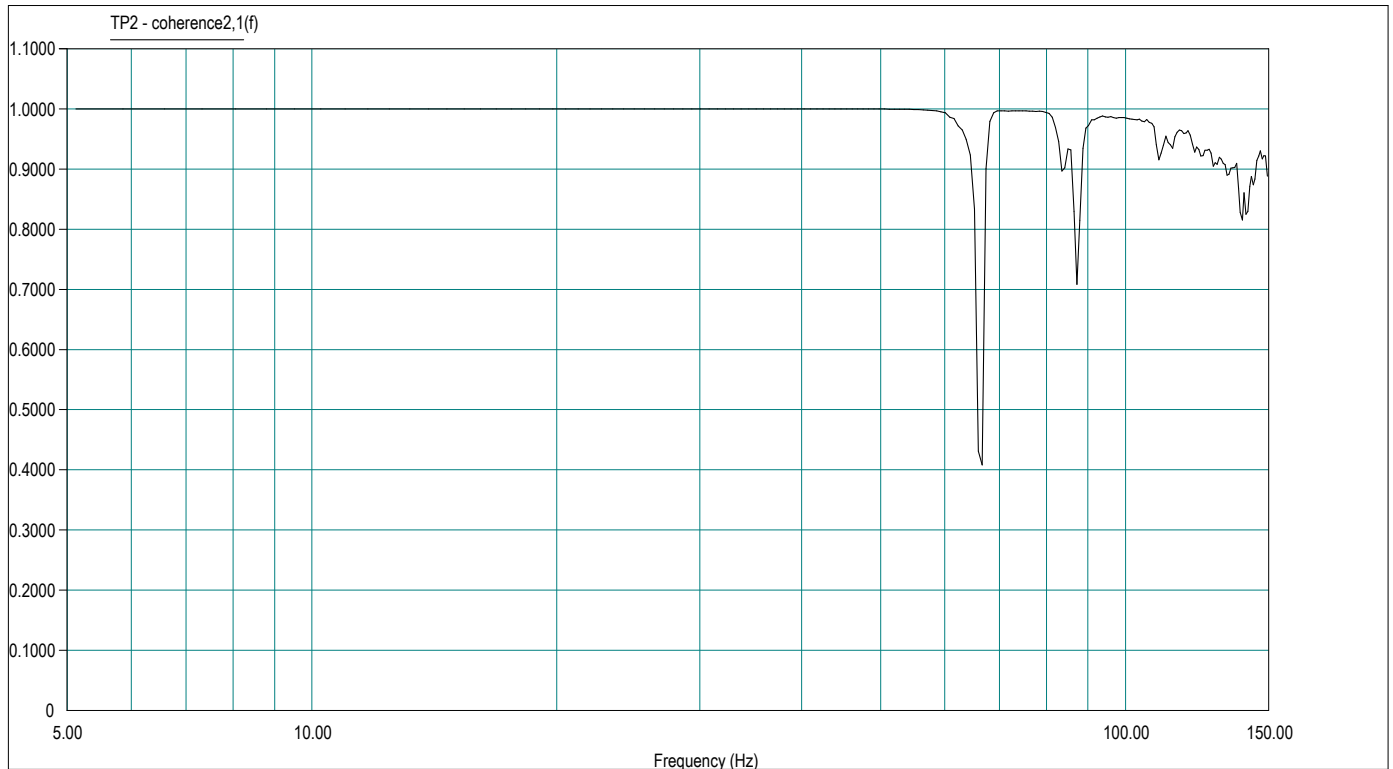
Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random

Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

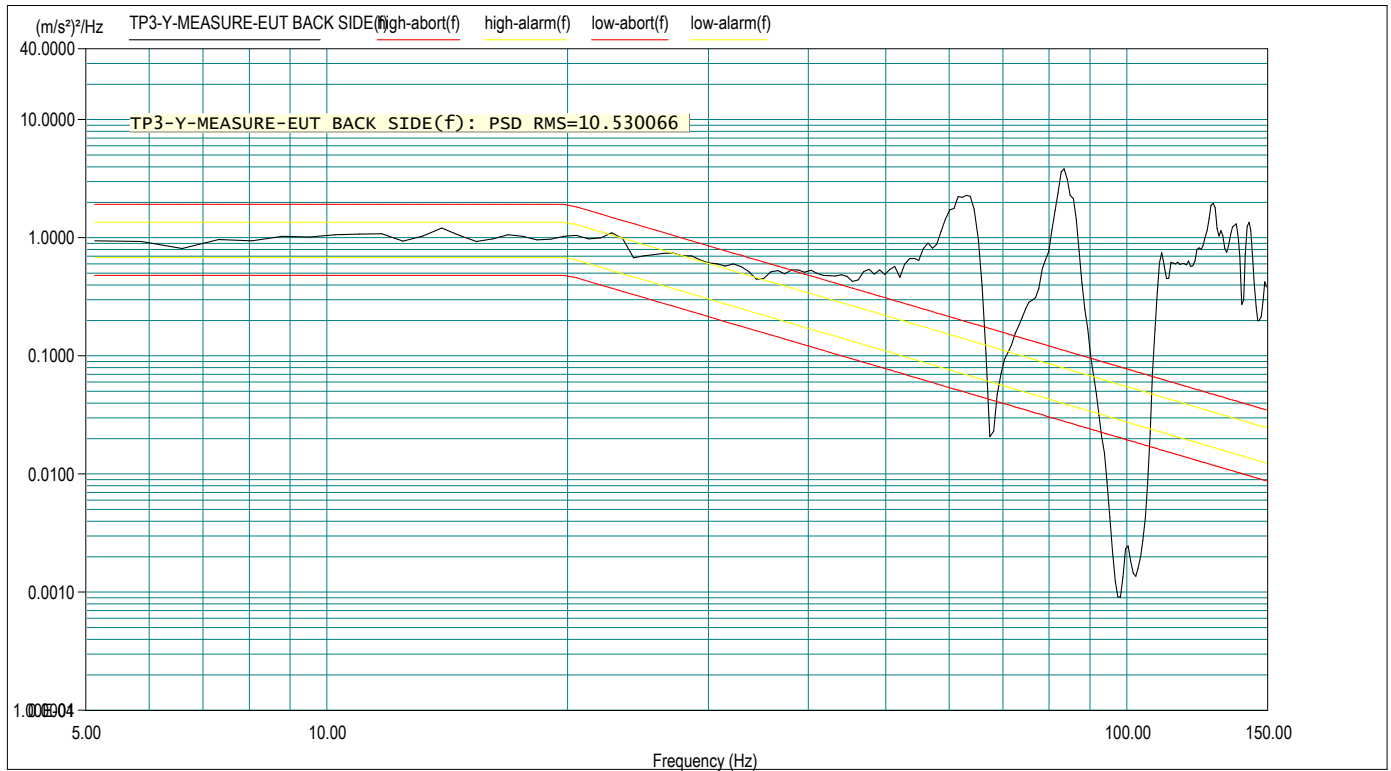
Report created at 02:50:47 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

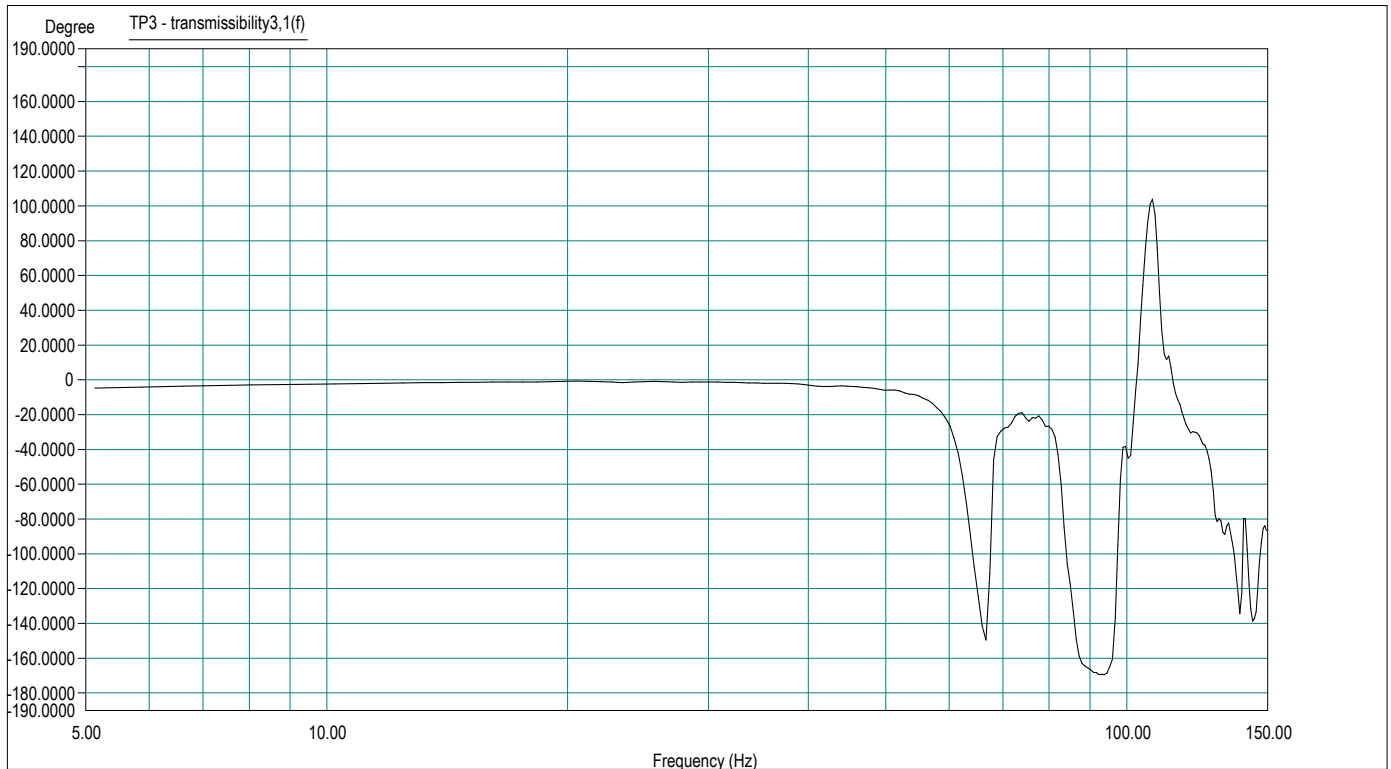
Report created at 02:50:48 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



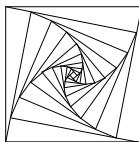
Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:48 , martedì, settembre 22, 2015

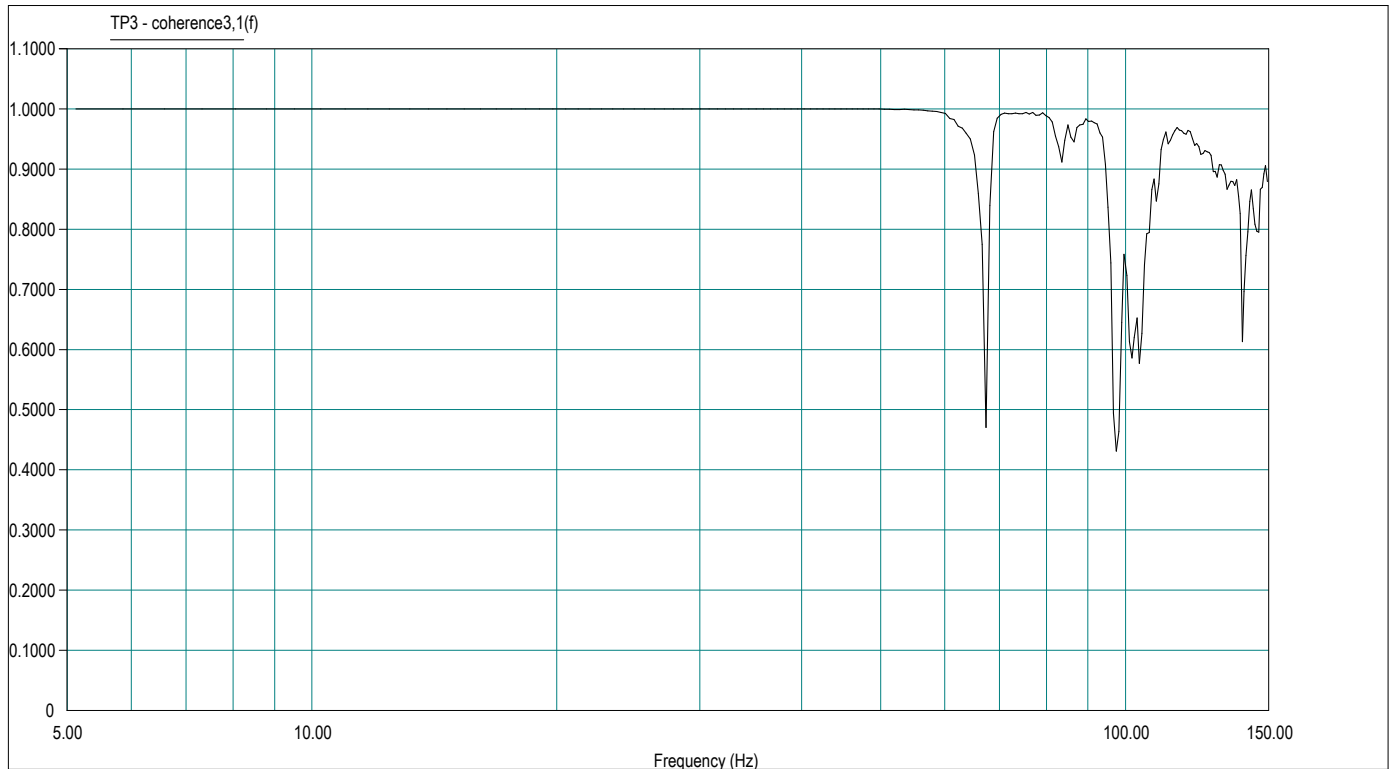
 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPII S.p.A.	
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Project File Name: TRANSVERSAL Y - ENDURANCE.prj

Profile Name: RUN 07 RANDOM ENDURANCE TEST ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 07 ENDURANCE Y Sep 22, 2015 09-48-38



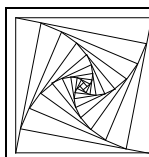
Level: 0 dB

Control RMS: 5.616270 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 02:50:40 PM, Tuesday, September 22, 2015

Report created at 02:50:49 , martedì, settembre 22, 2015

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ALLEGATO 2.3

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

SHOCK TEST - UP DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

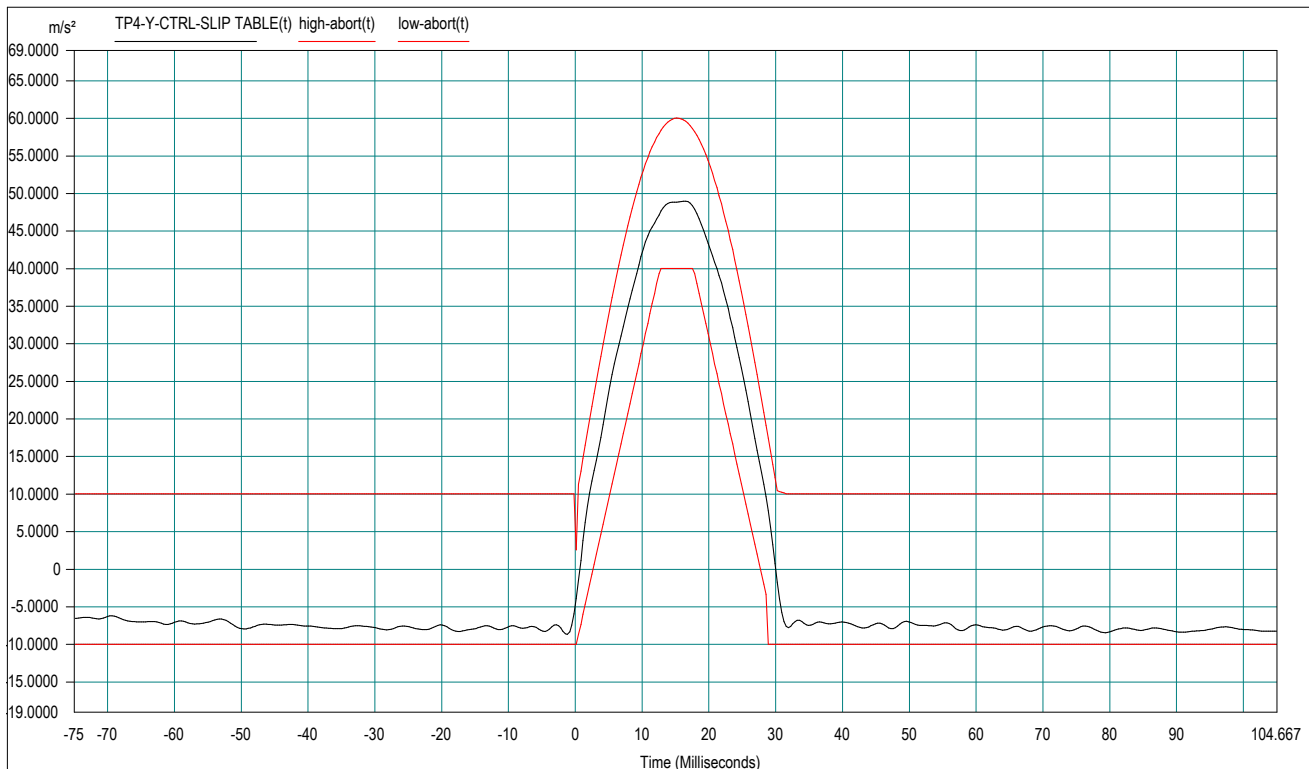
Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE

Test

Type: Classical Shock

Run Folder: .\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	48.963539	Control RMS:	8.750772
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 03:03:58 PM, Tuesday, September 22, 2015 Report created at 03:04:03 , martedì, settembre 22, 2015

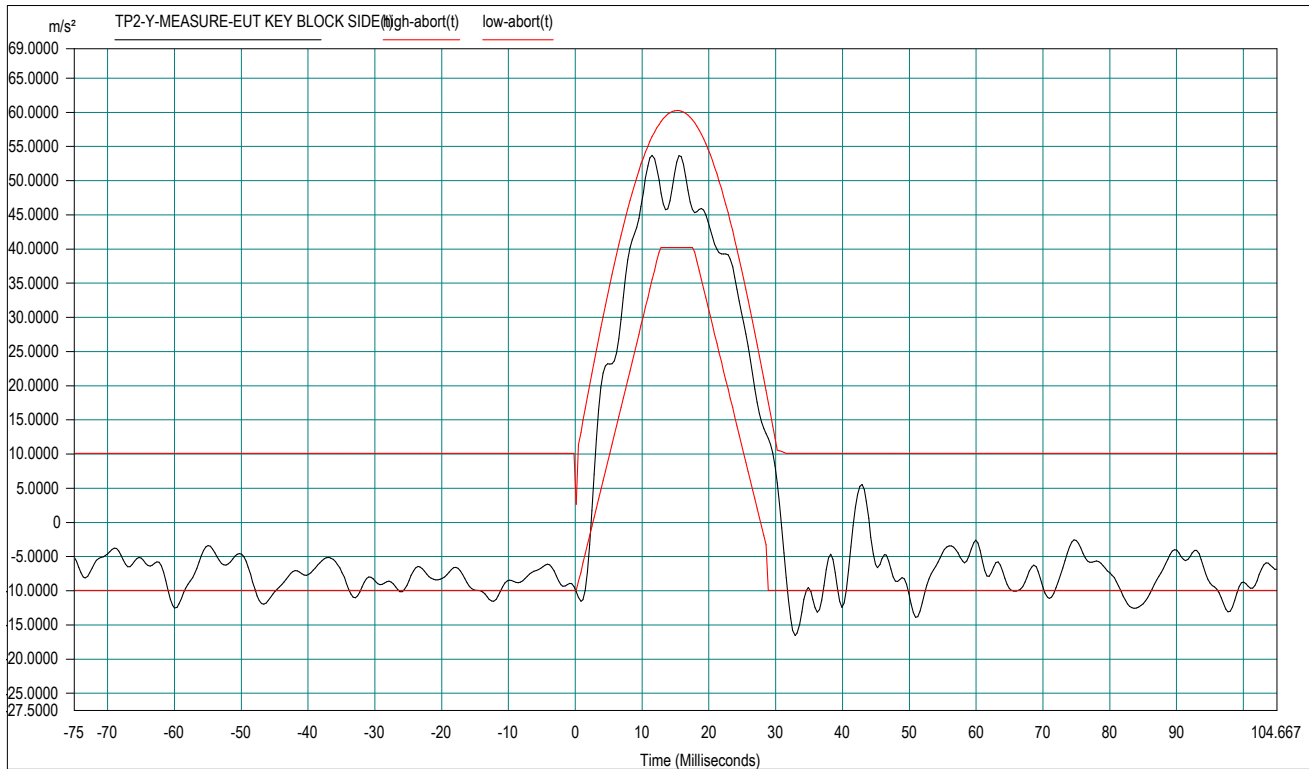
Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE

Test

Type: Classical Shock

Run Folder: .\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	48.963539	Control RMS:	8.750772
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 03:03:58 PM, Tuesday, September 22, 2015 Report created at 03:04:04 , martedì, settembre 22, 2015

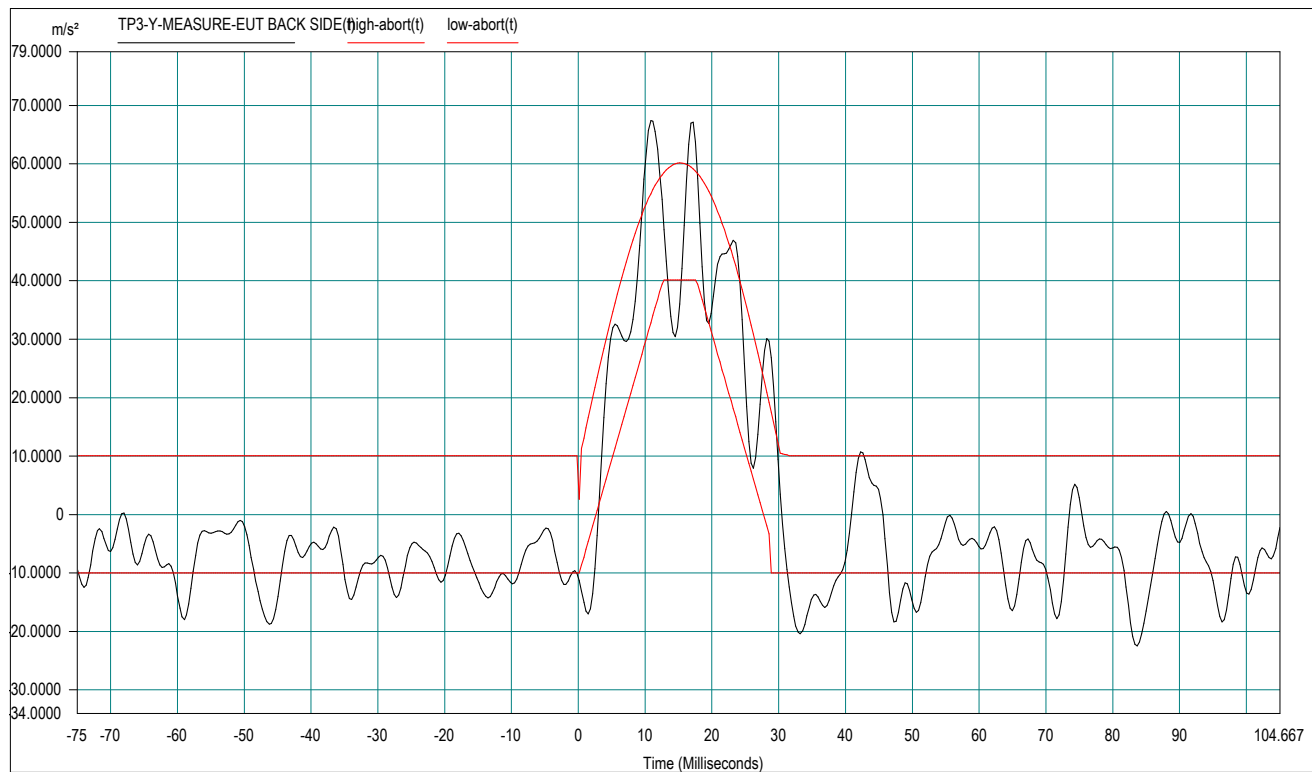
Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 08 SHOCK TEST ON TRANSVERSAL (Y) - UP DIRECTION - PROFILO LONGITUDINALE

Test

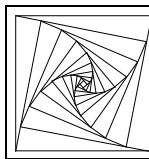
Type: Classical Shock

Run Folder: .\RUN 08 SHOCK Y - UP Sep 22, 2015 15-02-24



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	48.963539	Control RMS:	8.750772
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 03:03:58 PM, Tuesday, September 22, 2015 Report created at 03:04:04 , martedì, settembre 22, 2015

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ALLEGATO 2.4

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

SHOCK TEST - DOWN DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

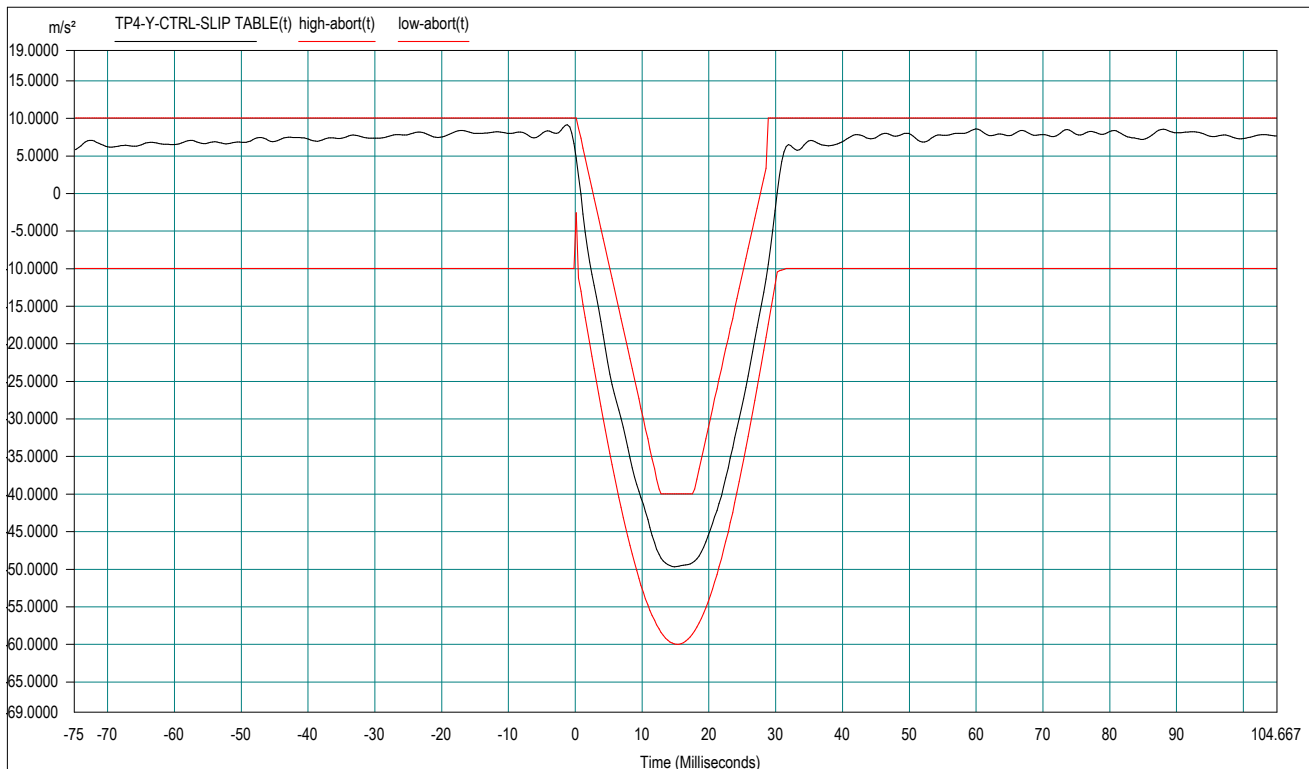
Project File Name: TRANSVERSAL Y - SHOCK.prj

Profile Name: RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE

Test

Type: Classical Shock

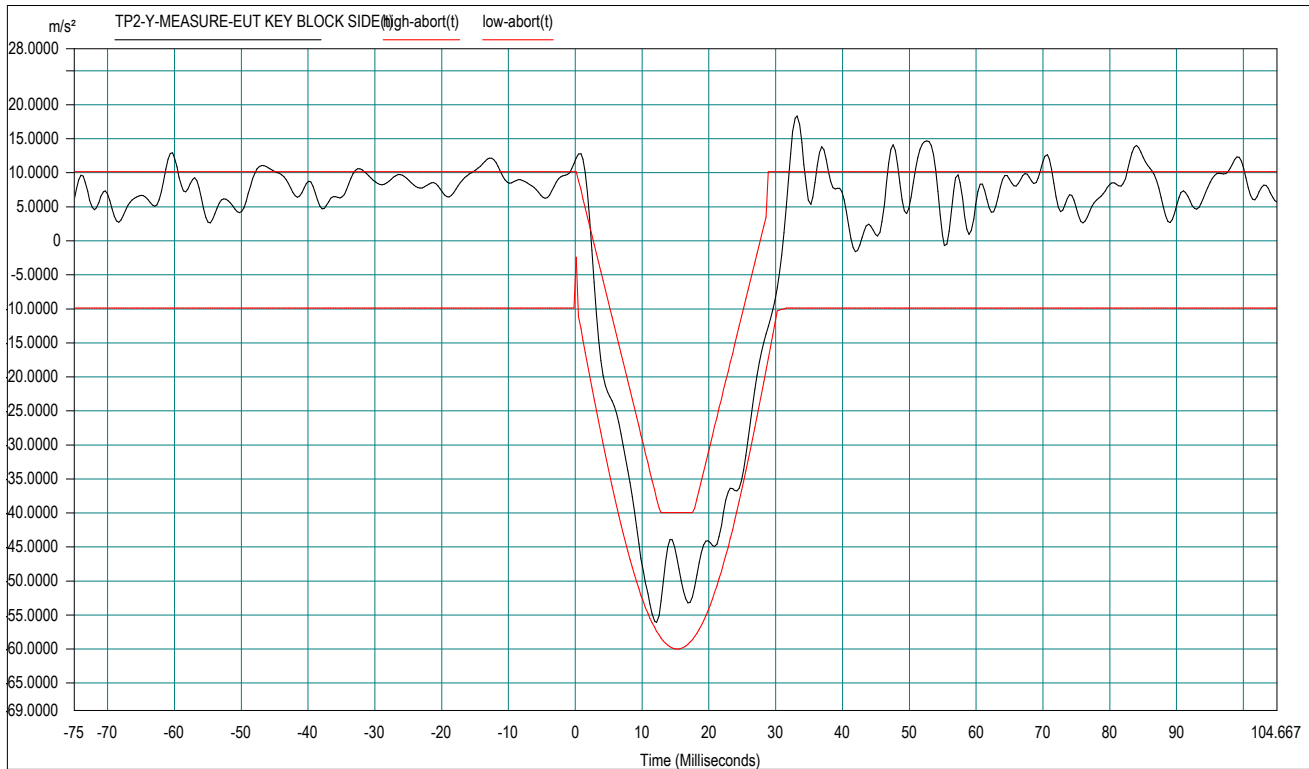
Run Folder: .\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.674400	Control RMS:	8.814052
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

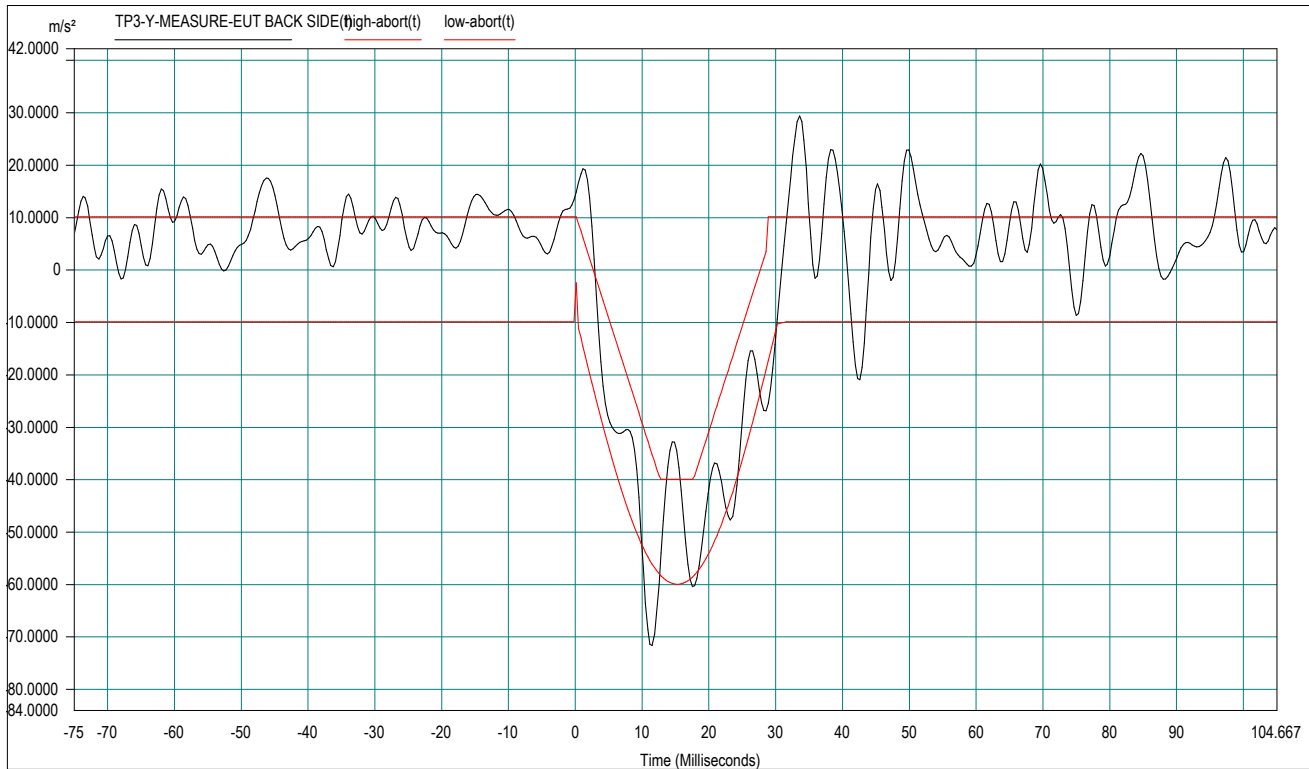
Data saved at 03:07:24 PM, Tuesday, September 22, 2015 Report created at 03:07:25 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - SHOCK.prj
 Profile Name: RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE Test
 Type: Classical Shock Run Folder: .\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06



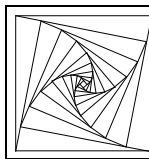
Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.674400	Control RMS:	8.814052
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0
Data saved at 03:07:24 PM, Tuesday, September 22, 2015			Report created at 03:07:26 , martedì, settembre 22, 2015		

Project File Name: TRANSVERSAL Y - SHOCK.prj
 Profile Name: RUN 09 SHOCK TEST ON TRANSVERSAL (Y) - DOWN DIRECTION - PROFILO LONGITUDINALE Test
 Type: Classical Shock Run Folder: .\RUN 09 SHOCK Y - DOWN Sep 22, 2015 15-06-06



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	15
Frame Time:	0.682667 Seconds	Control Peak:	49.674400	Control RMS:	8.814052
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 03:07:24 PM, Tuesday, September 22, 2015 Report created at 03:07:26 , martedì, settembre 22, 2015

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ALLEGATO 2.5

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE TRASVERSALE (Y)

FINAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

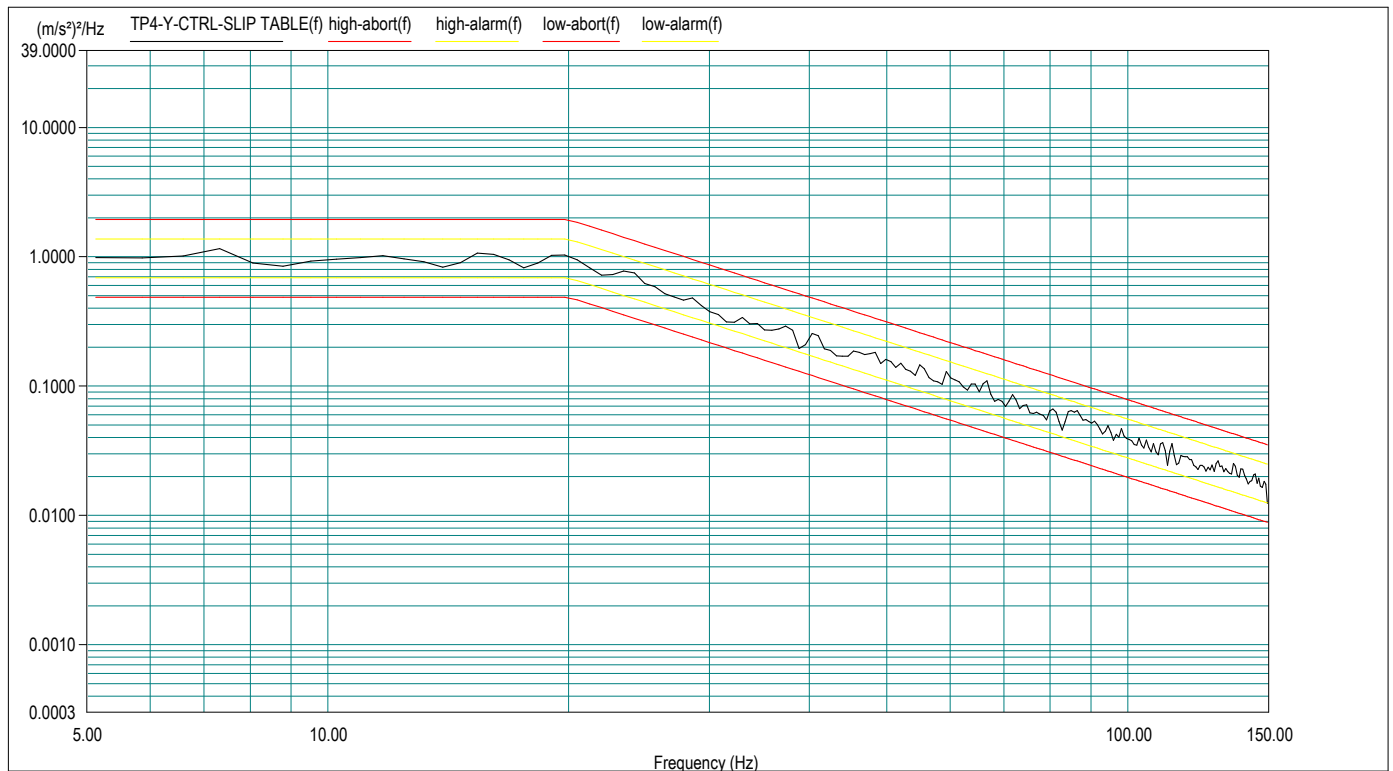
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154

dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35 , martedì, settembre 22, 2015

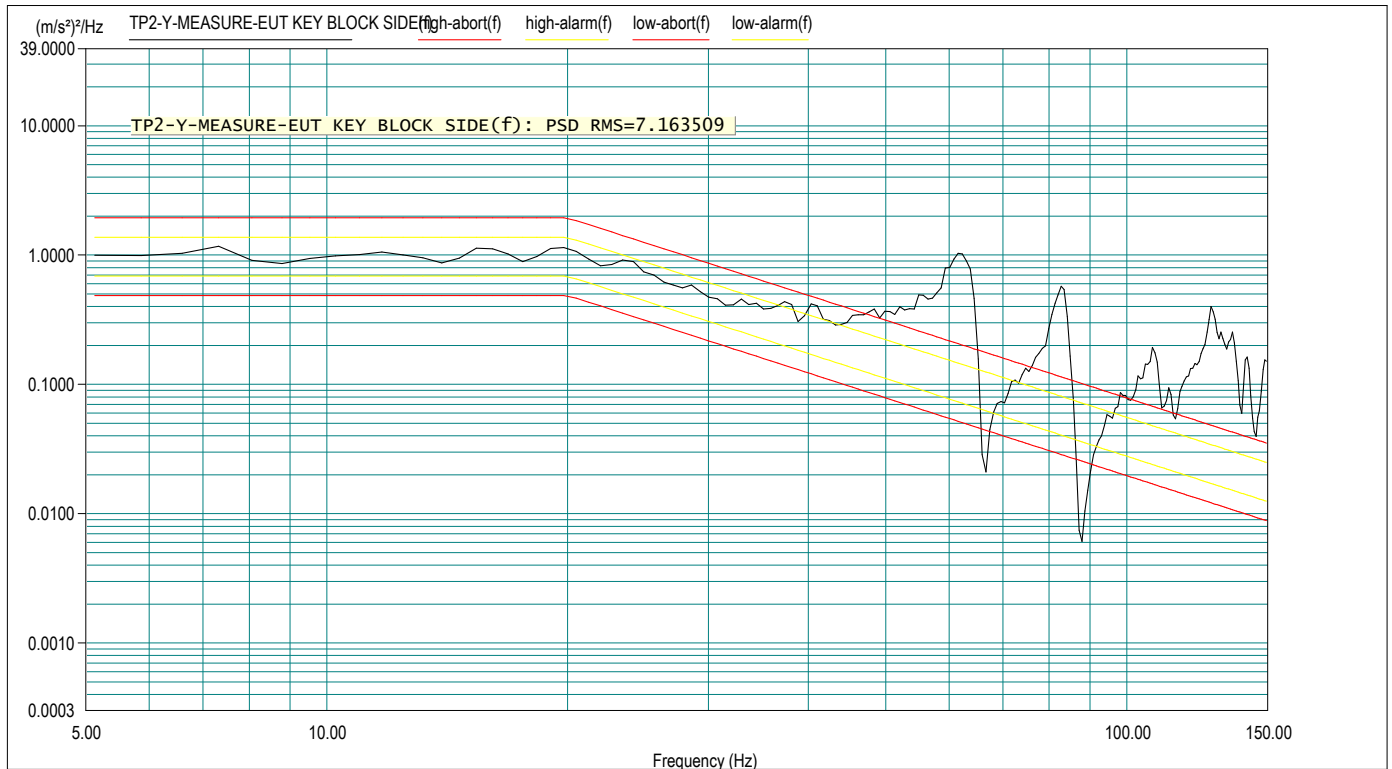
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35 , martedì, settembre 22, 2015

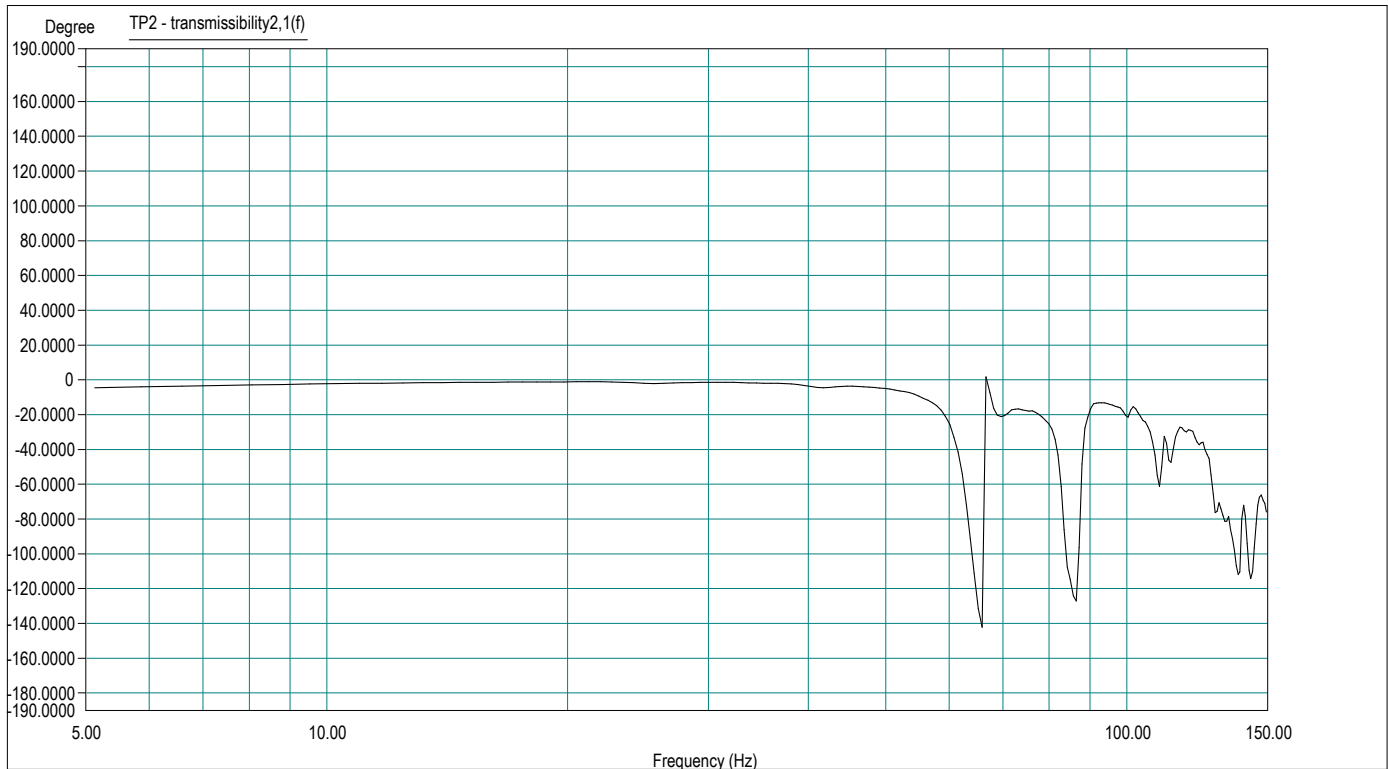
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

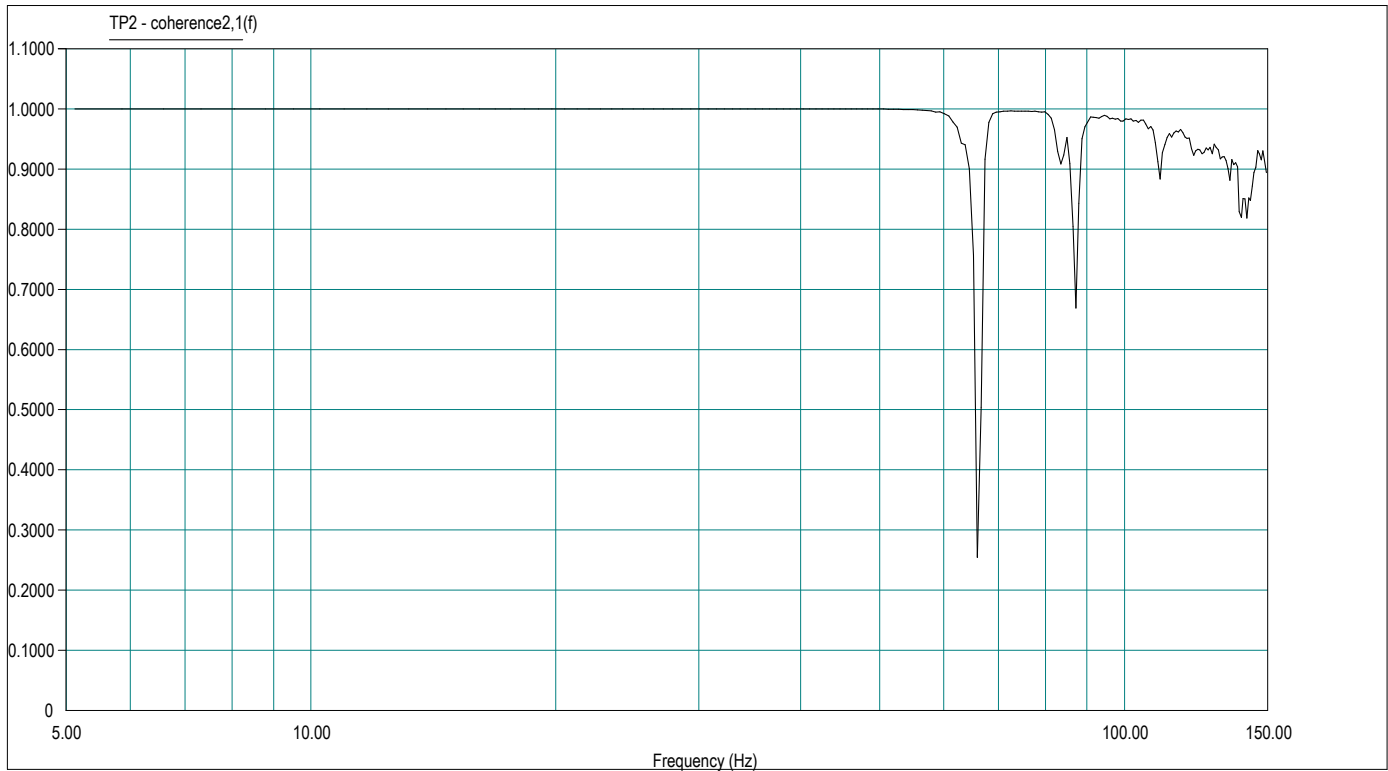
Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj
 Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE
 Random Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02 Test Type:



Level: 0 dB
 Control RMS: 5.602522 m/s² Full Level Elapsed Time: 00:02:00 Lines: 200 Frame Time: 1.365333 Seconds
 Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:35 , martedì, settembre 22, 2015

Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

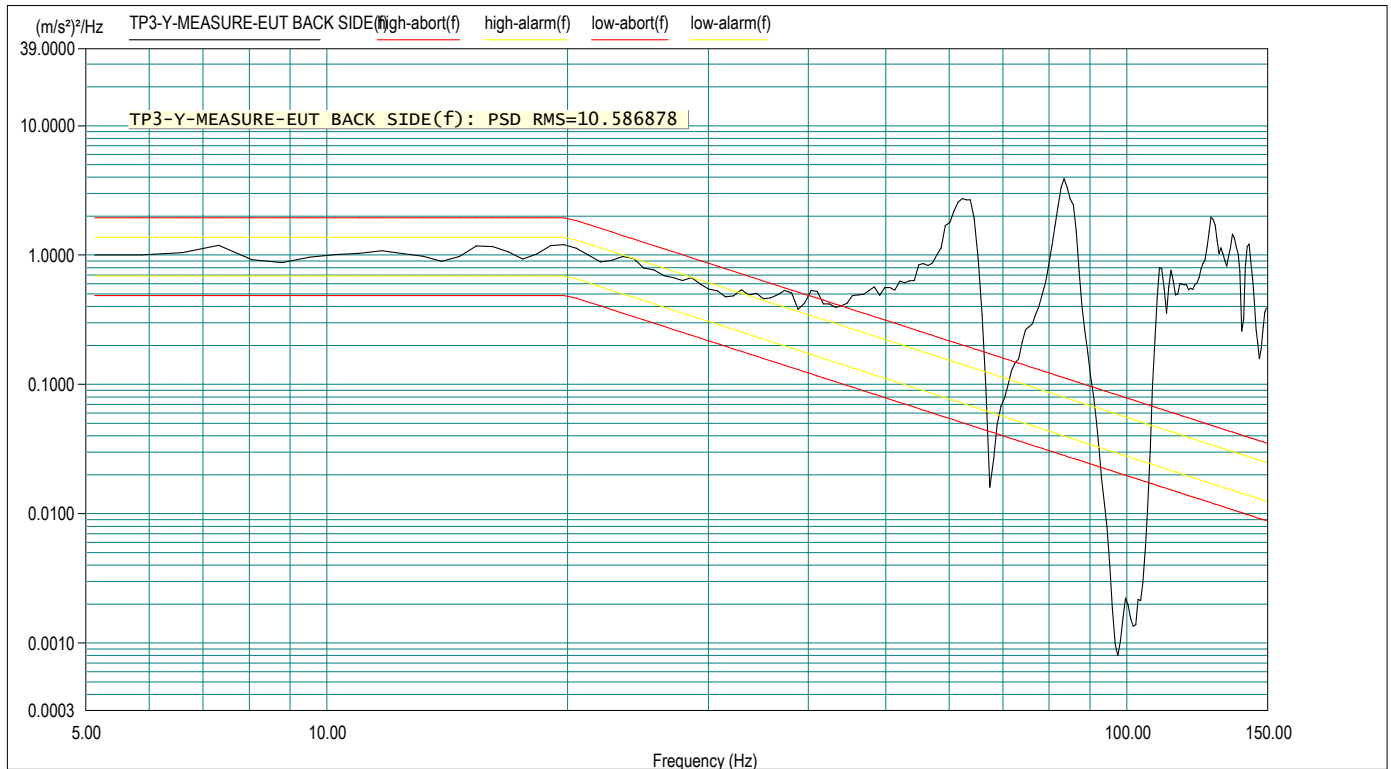
Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder:

.\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time:

00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36 , martedì, settembre 22, 2015

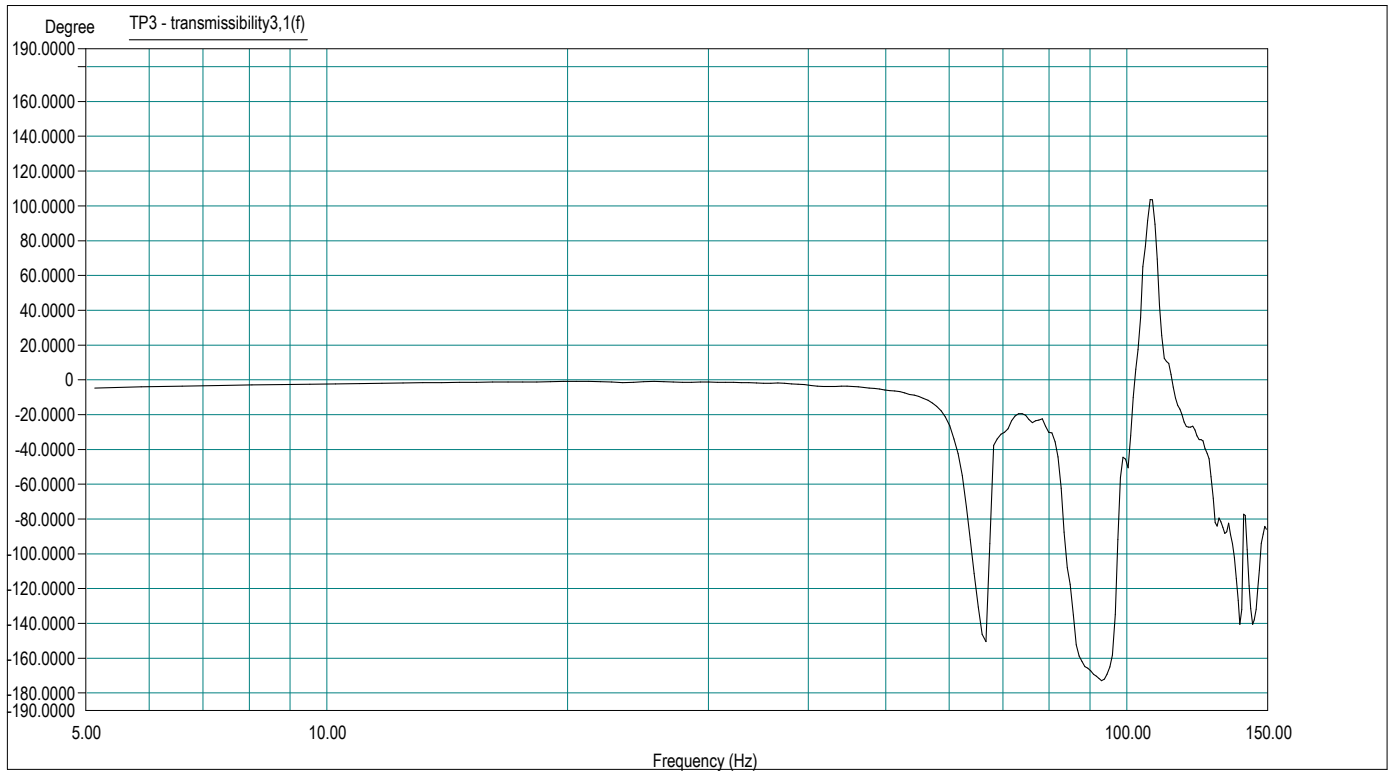
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36 , martedì, settembre 22, 2015

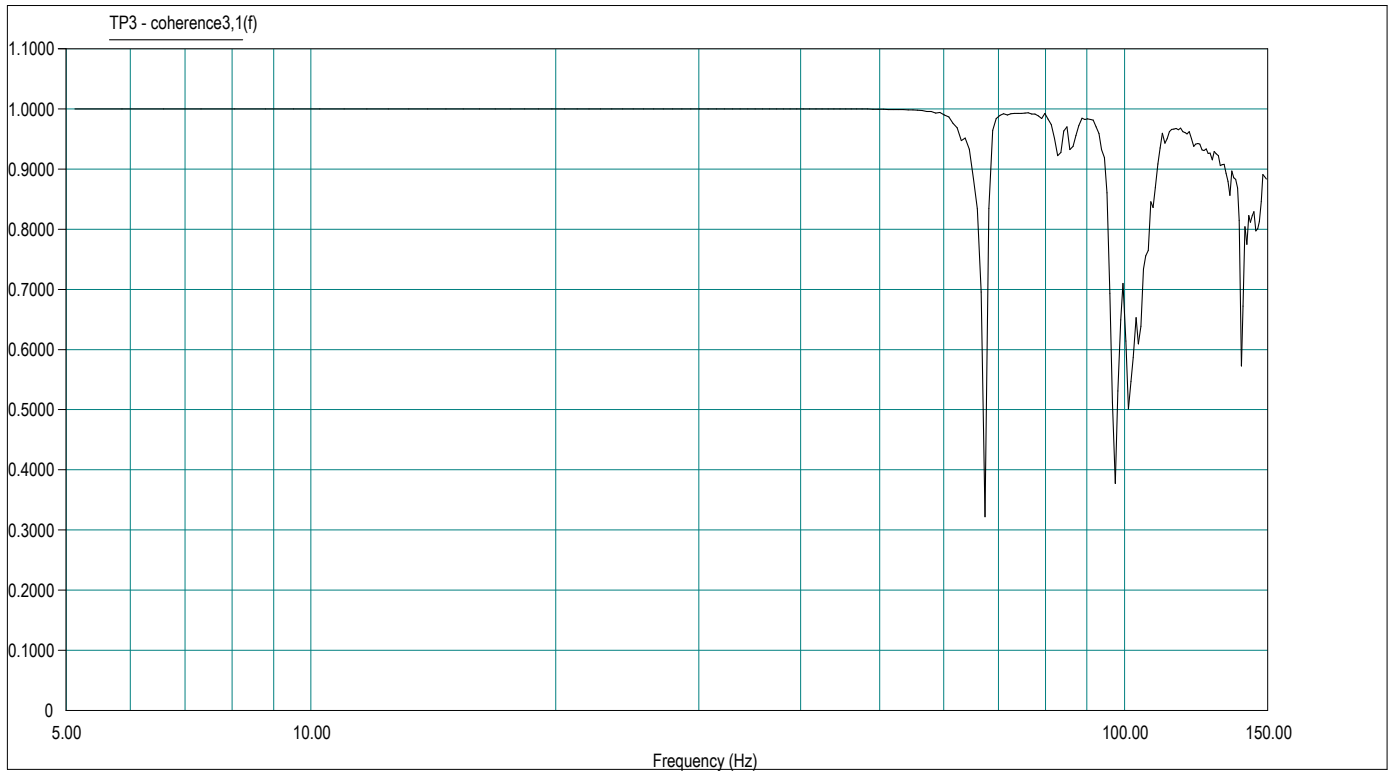
Project File Name: TRANSVERSAL Y - FINAL MEASURE.prj

Profile Name: RUN 10 FINAL MEASURE ON ASSE TRASVERSALE (Y) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 10 F.M. - Y Sep 22, 2015 15-10-02



Level: 0 dB

Control RMS: 5.602522 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

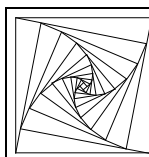
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 03:13:33 PM, Tuesday, September 22, 2015

Report created at 03:13:36 , martedì, settembre 22, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
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ALLEGATO 3.1

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

INITIAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

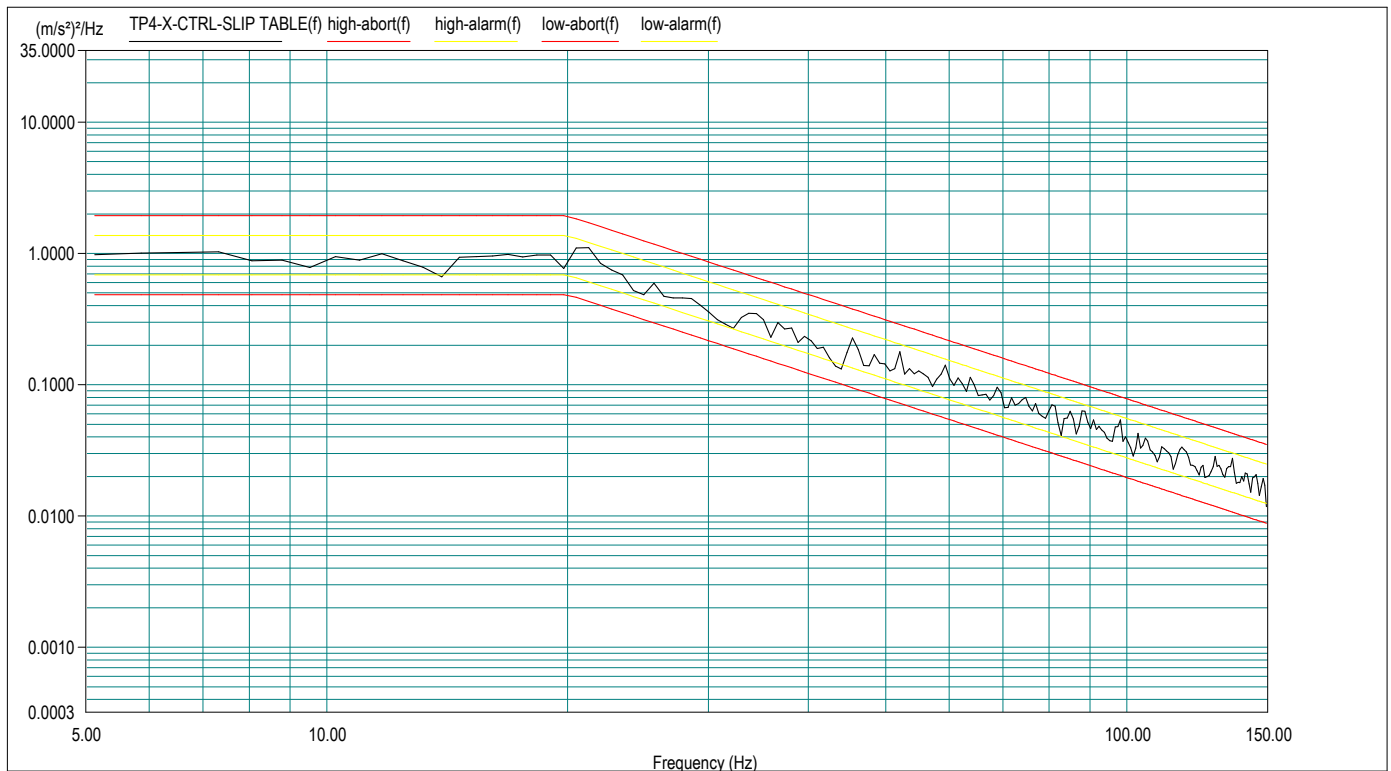
Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder:

.\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154

dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:05 , mercoledì, settembre 23, 2015

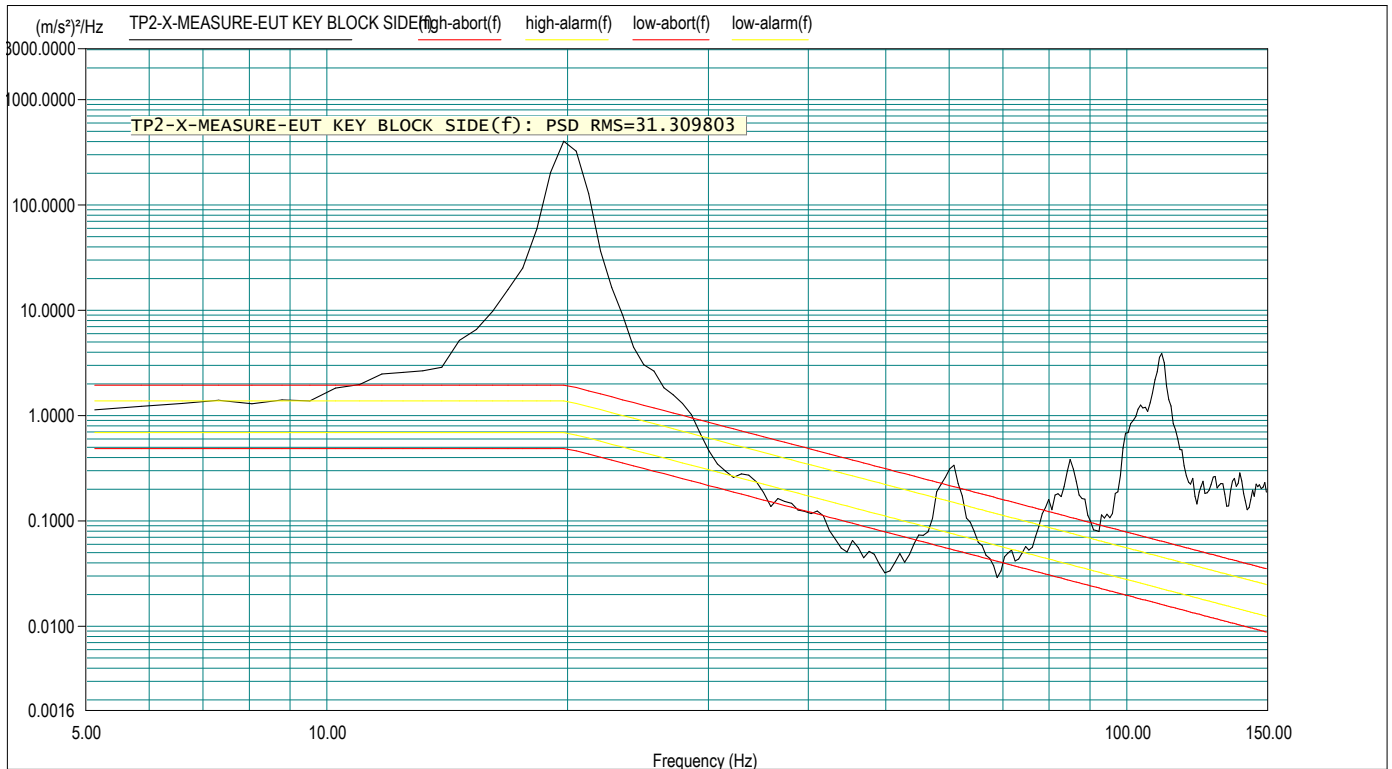
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:05 , mercoledì, settembre 23, 2015

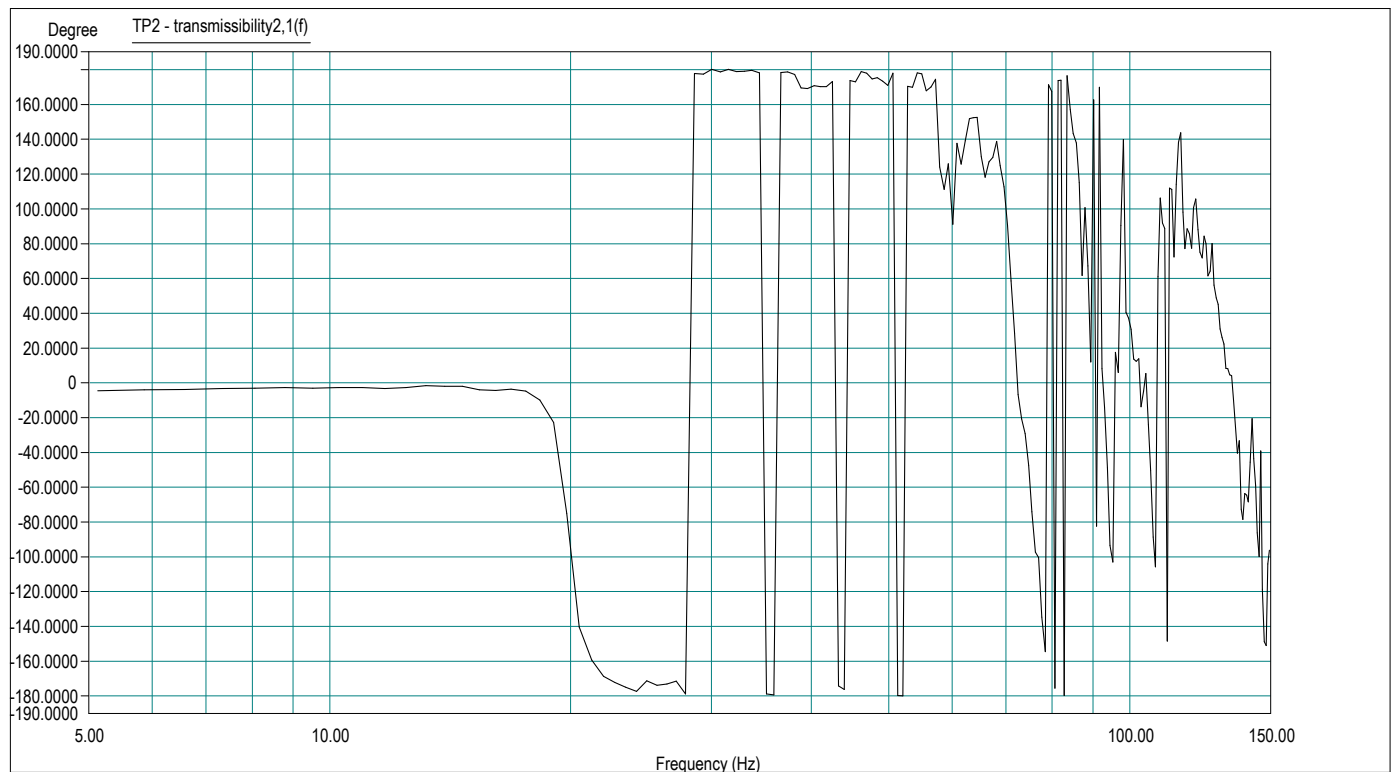
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:05 , mercoledì, settembre 23, 2015

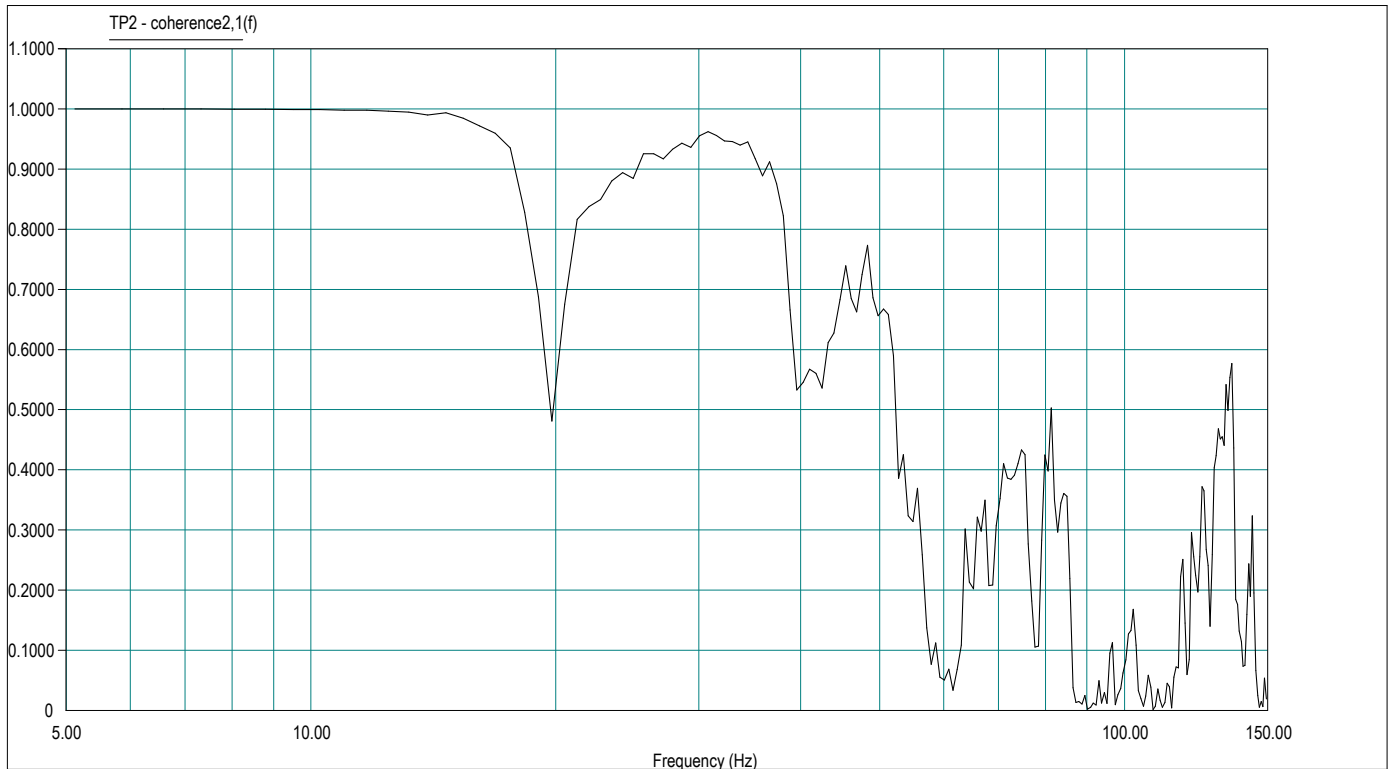
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:06 , mercoledì, settembre 23, 2015

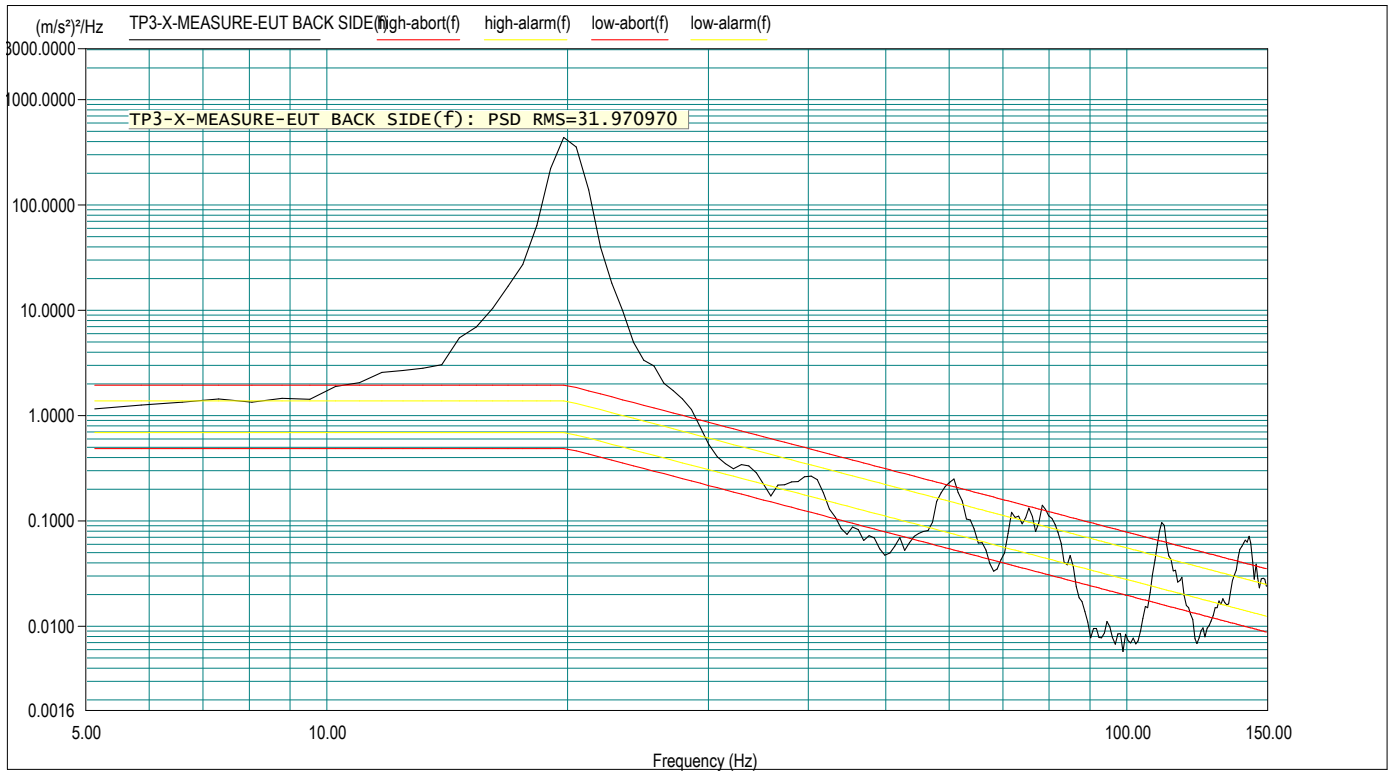
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:06 , mercoledì, settembre 23, 2015

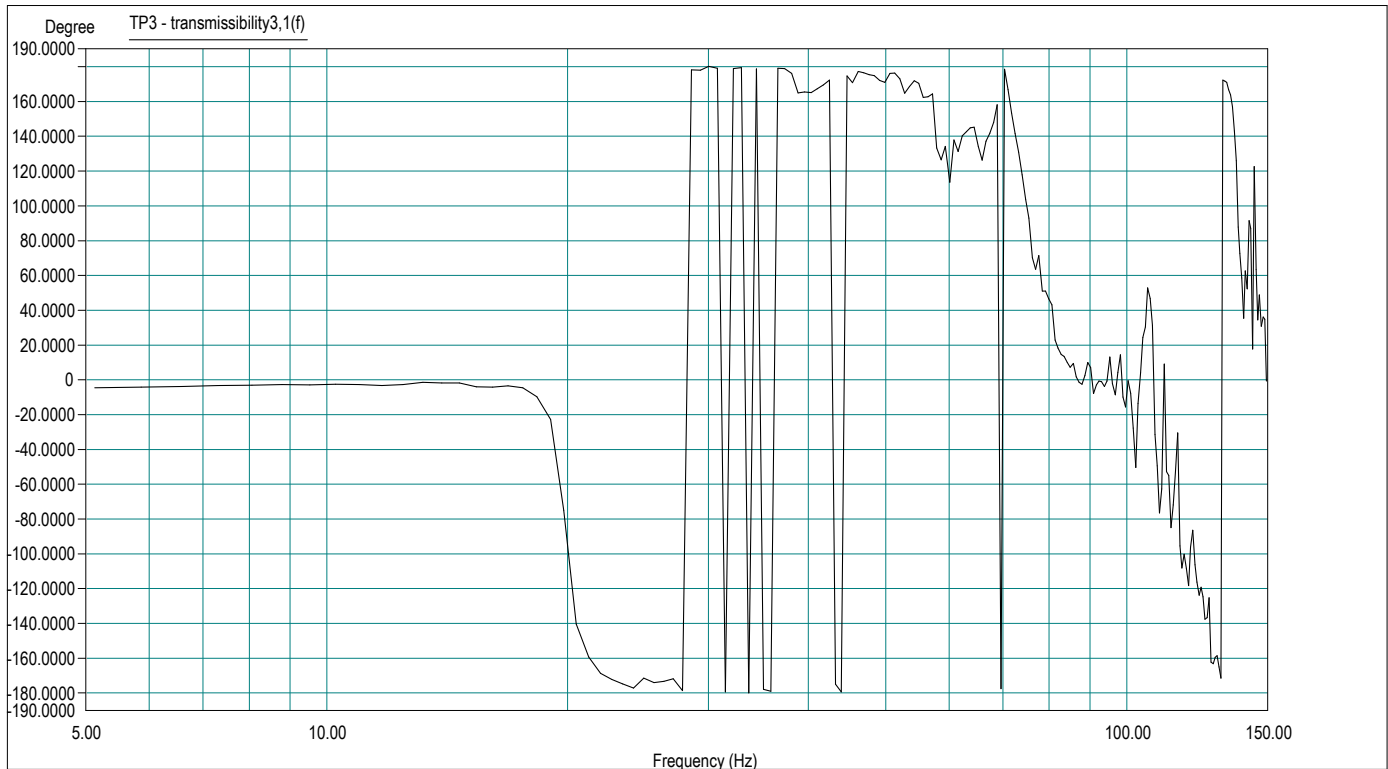
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:06 , mercoledì, settembre 23, 2015

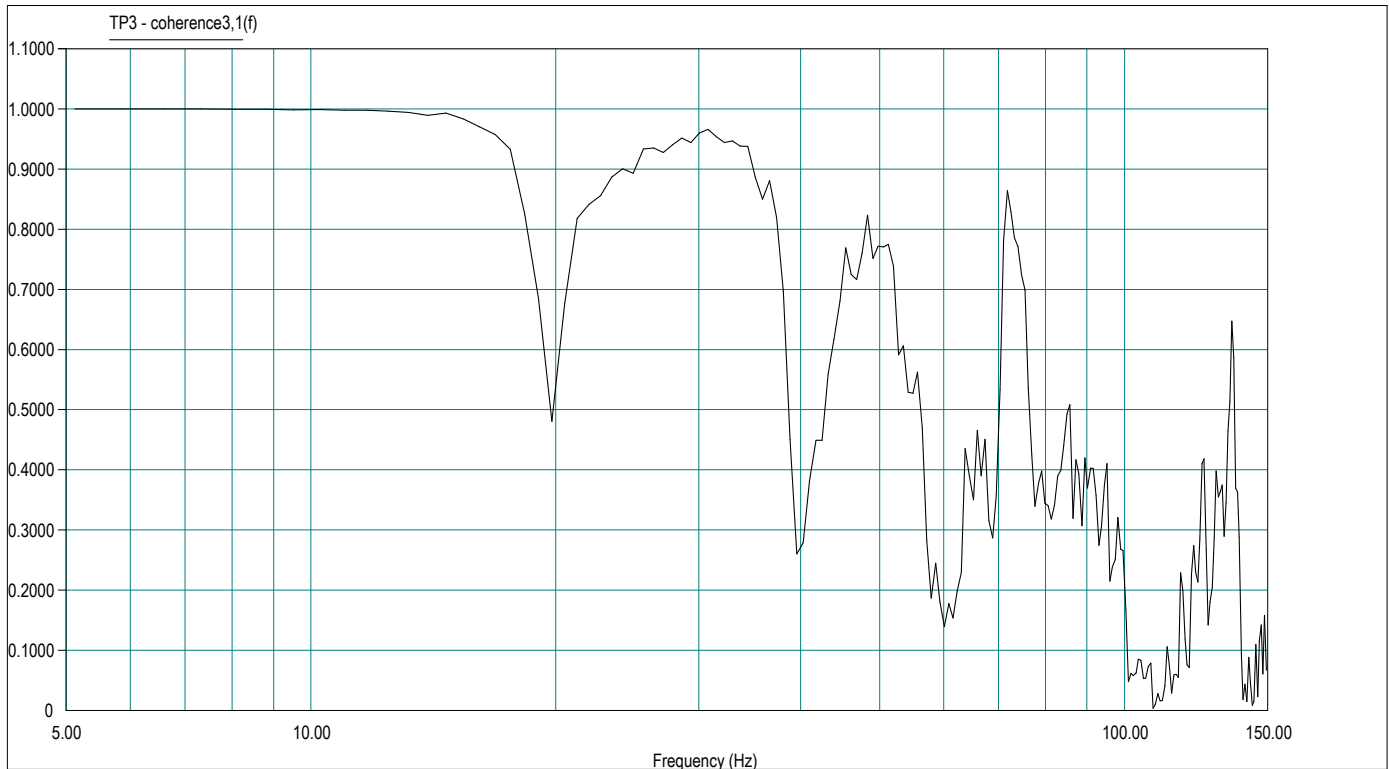
Project File Name: LONGITUDINAL X - INITIAL MEASURE.prj

Profile Name: RUN 11 INITIAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 11 I.M. - X Sep 23, 2015 09-09-06



Level: 0 dB

Control RMS: 5.518383 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

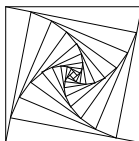
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 09:13:01 AM, Wednesday, September 23, 2015

Report created at 09:13:07 , mercoledì, settembre 23, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
Documento: VR1527001SPMA-ITA.doc	Rev. 0	Pag. 93 di 117

ALLEGATO 3.2

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

ENDURANCE TEST - PROFILO
VERTICALE
(7 PLOTS)

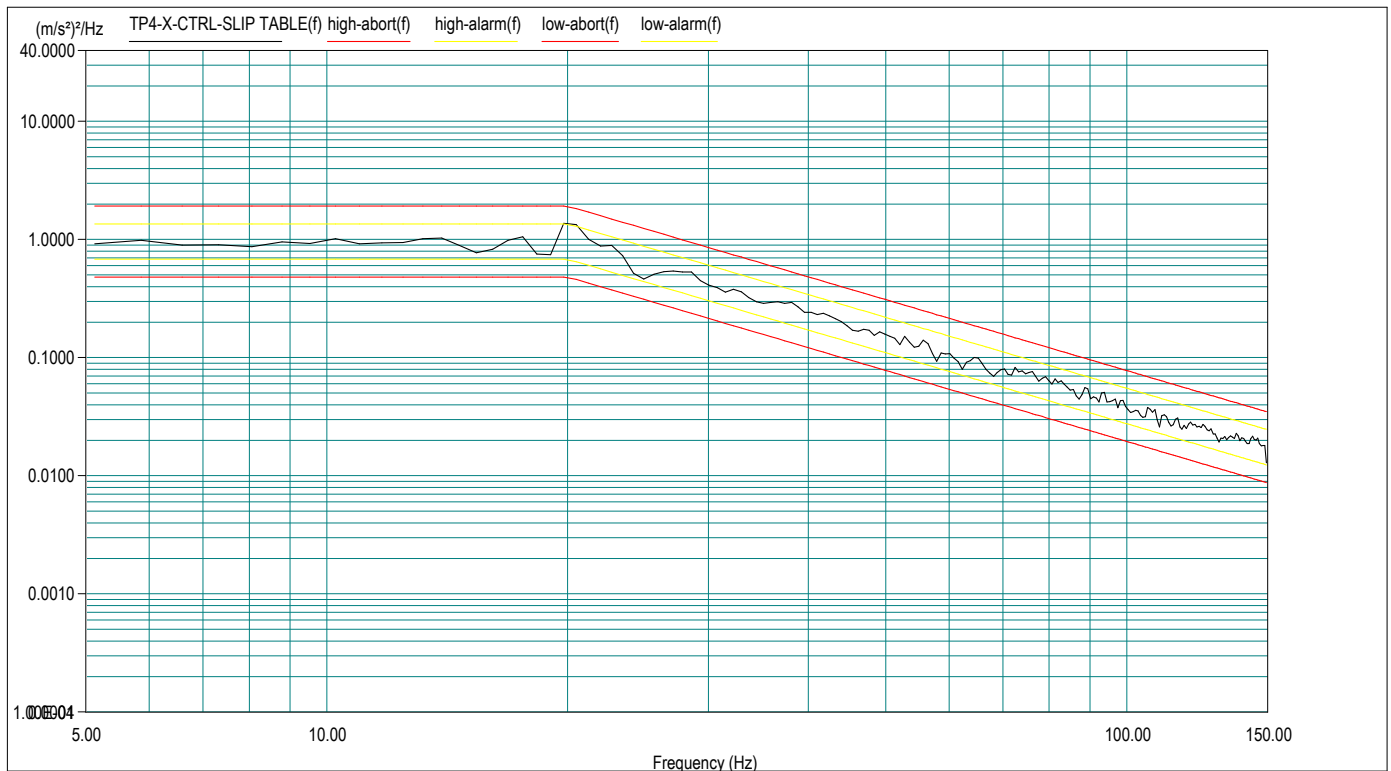
Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random

Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

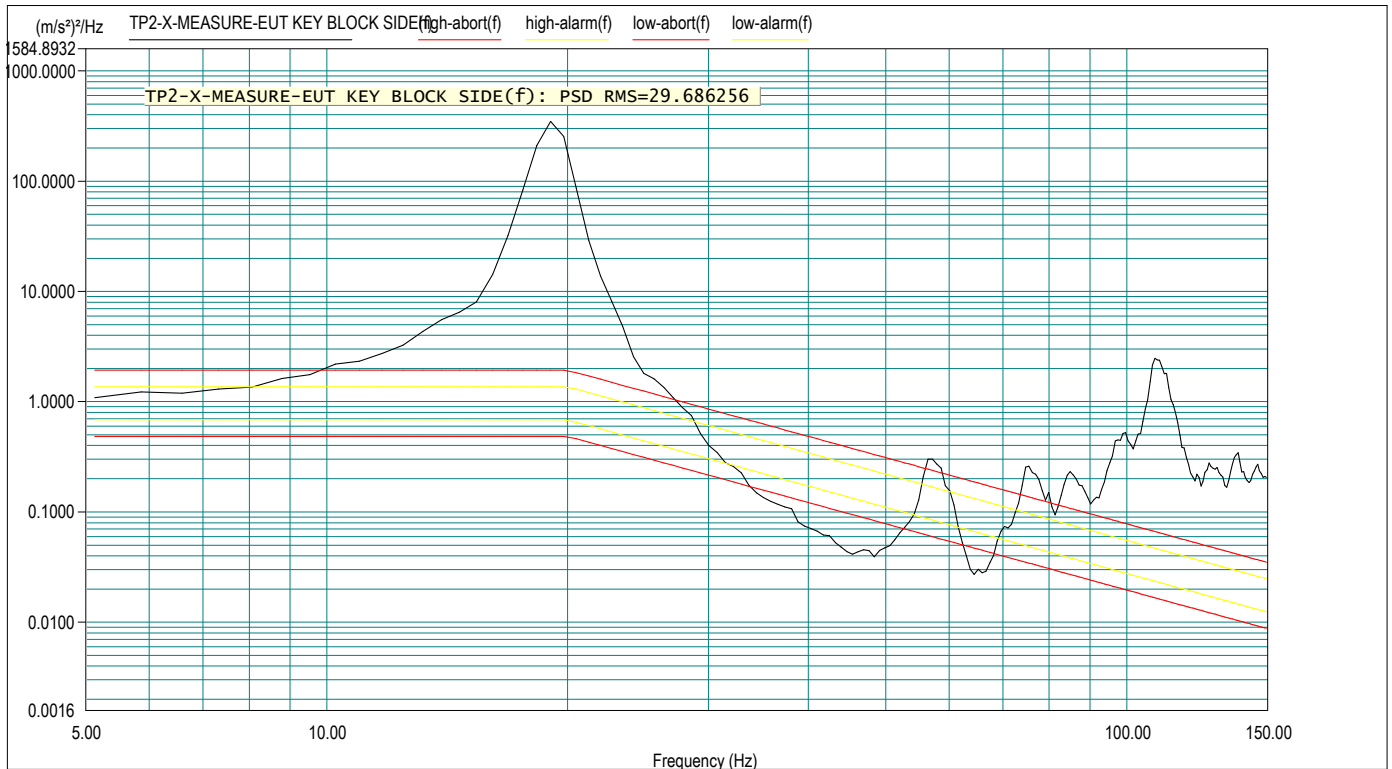
Report created at 02:19:15 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time:

04:59:59

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

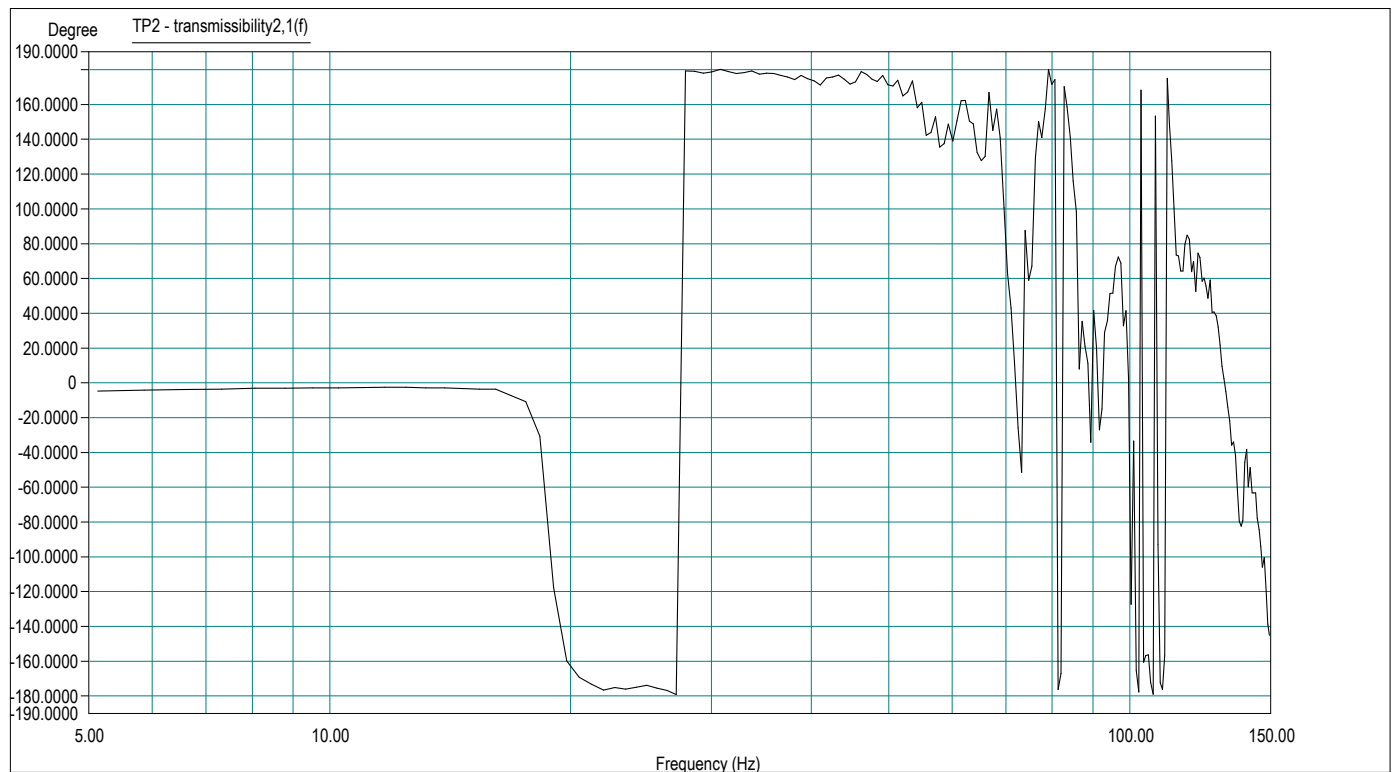
Report created at 02:19:15 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: \RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

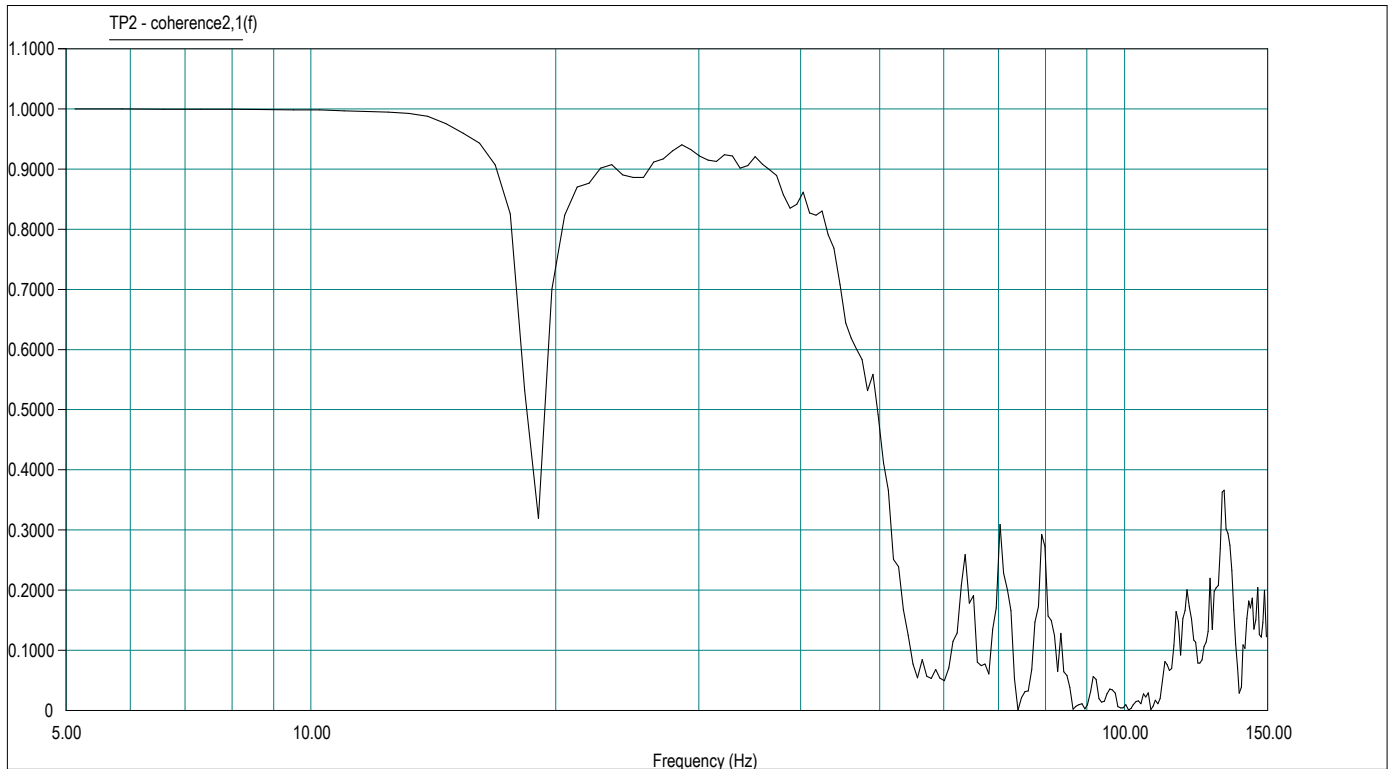
Report created at 02:19:16 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

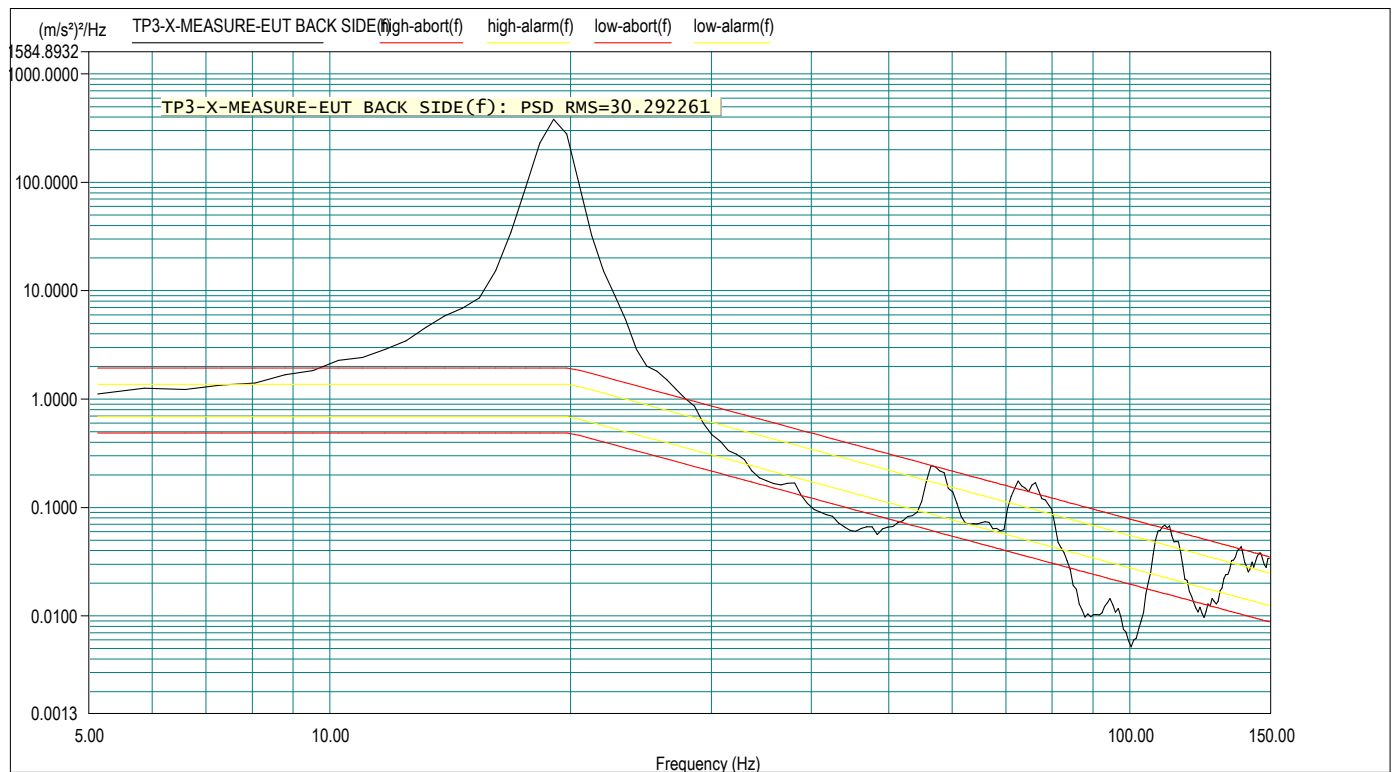
Report created at 02:19:17 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s² Full Level Elapsed Time: 04:59:59 Lines: 200 Frame Time: 1.365333 Seconds

Demand RMS: 5.626908 m/s² Remaining Time: 00:00:00 DOF: 154 dF: 0.732422 Hz

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

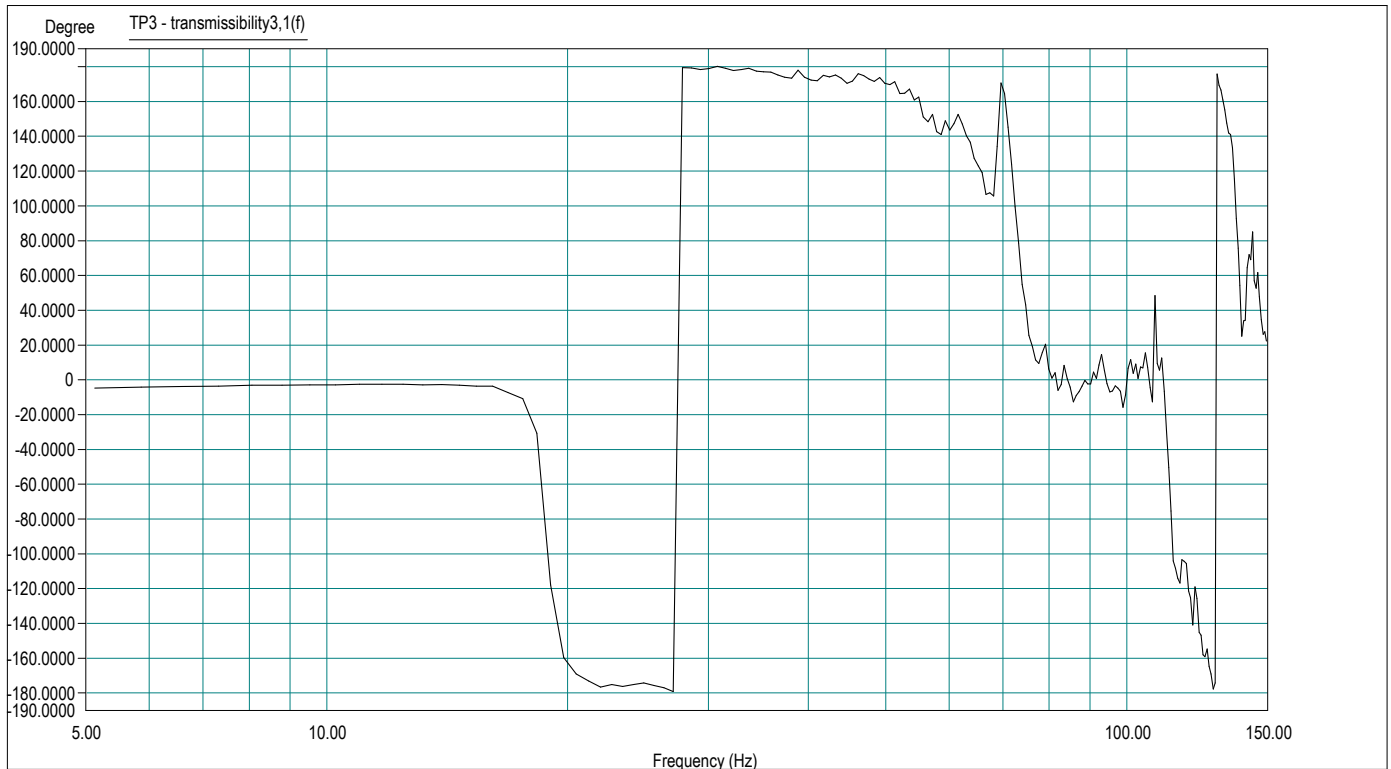
Report created at 02:19:17 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

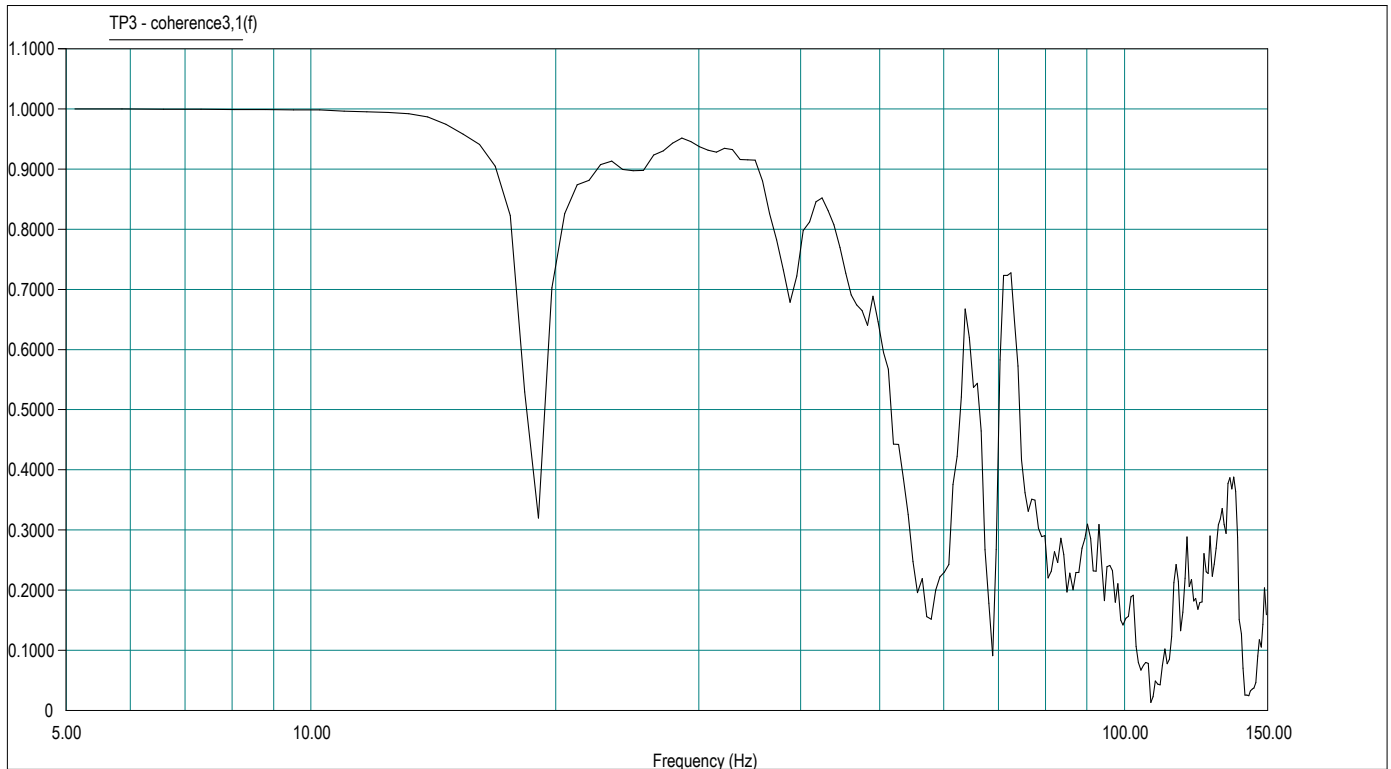
Report created at 02:19:18 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - ENDURANCE.prj

Profile Name: RUN 12 RANDOM ENDURANCE TEST ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test

Type: Random Run Folder: .\RUN 12 ENDURANCE X Sep 23, 2015 09-16-20



Level: 0 dB

Control RMS: 5.653069 m/s²
1.365333 Seconds

Full Level Elapsed Time: 04:59:59

Lines: 200 Frame Time:

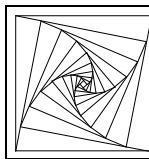
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:19:11 PM, Wednesday, September 23, 2015

Report created at 02:19:18 , mercoledì, settembre 23, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
Documento: VR1527001SPMA-ITA.doc	Rev. 0	Pag. 101 di 117

ALLEGATO 3.3

EARTHING SWITCH E402A CAF

TYPE: D344640

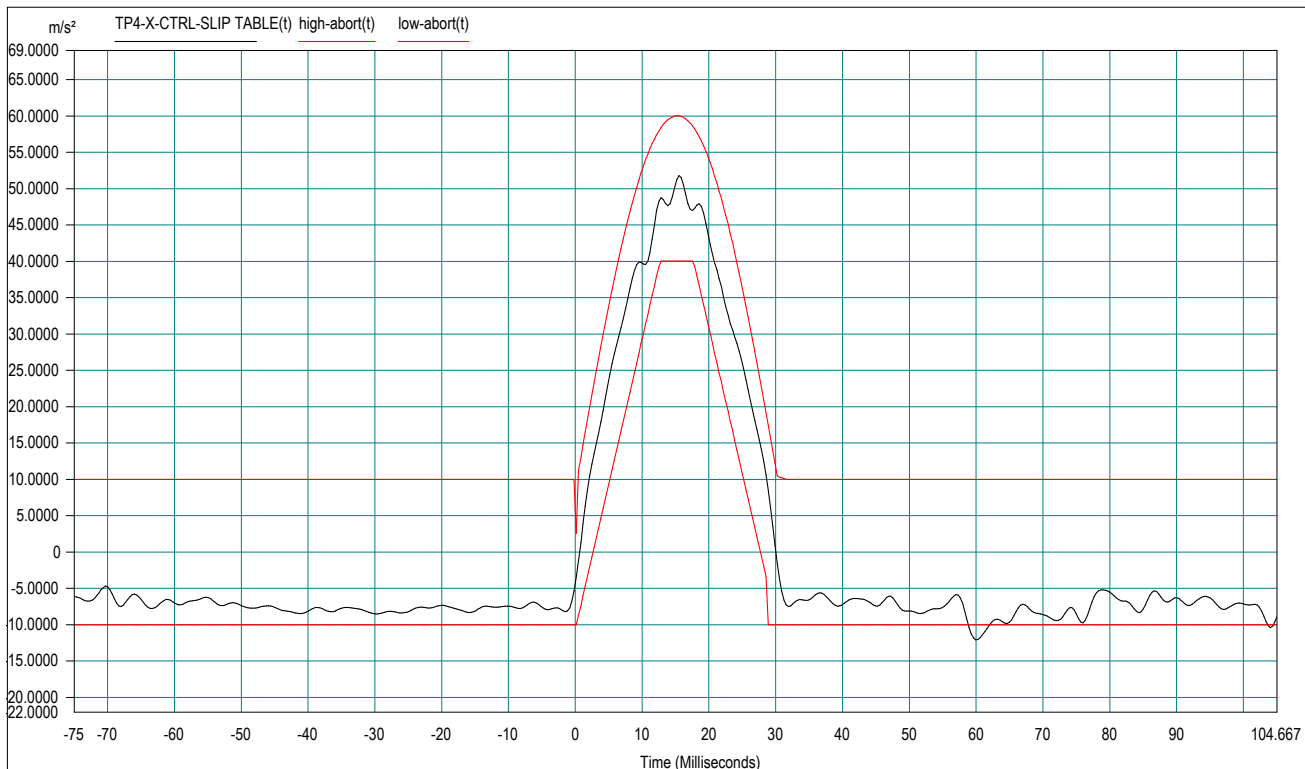
S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

SHOCK TEST - UP DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

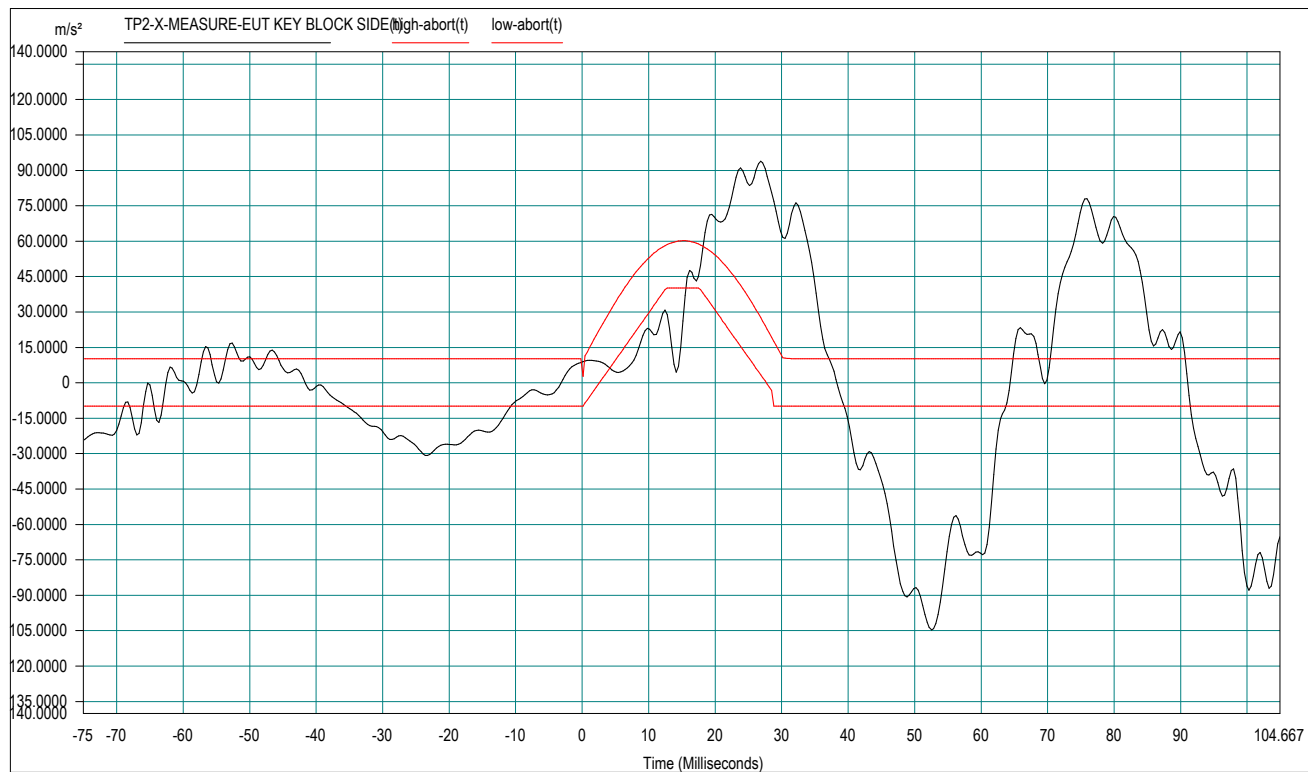
Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	17
Frame Time:	0.682667 Seconds	Control Peak:	51.767784	Control RMS:	8.793738
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 02:45:04 PM, Wednesday, September 23, 2015 Report created at 02:45:10 , mercoledì, settembre 23, 2015

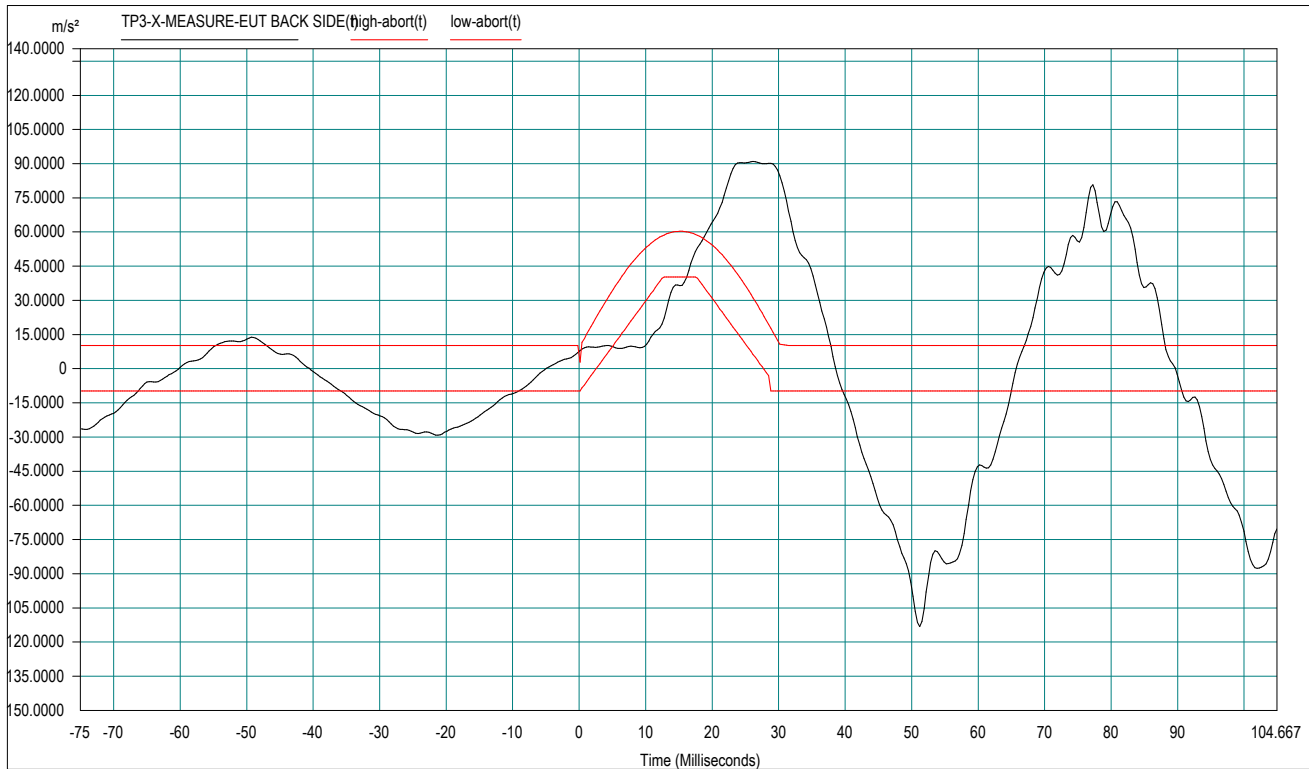
Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	17
Frame Time:	0.682667 Seconds	Control Peak:	51.767784	Control RMS:	8.793738
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

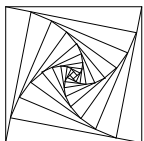
Data saved at 02:45:04 PM, Wednesday, September 23, 2015 Report created at 02:45:10 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 13 SHOCK TEST ON ASSE LONGITUDINALE (X) - UP DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 13 SHOCK X - UP Sep 23, 2015 14-43-35



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	17
Frame Time:	0.682667 Seconds	Control Peak:	51.767784	Control RMS:	8.793738
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 02:45:04 PM, Wednesday, September 23, 2015 Report created at 02:45:11 , mercoledì, settembre 23, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
Documento: VR1527001SPMA-ITA.doc	Rev. 0	Pag. 105 di 117

ALLEGATO 3.4

EARTHING SWITCH E402A CAF

TYPE: D344640

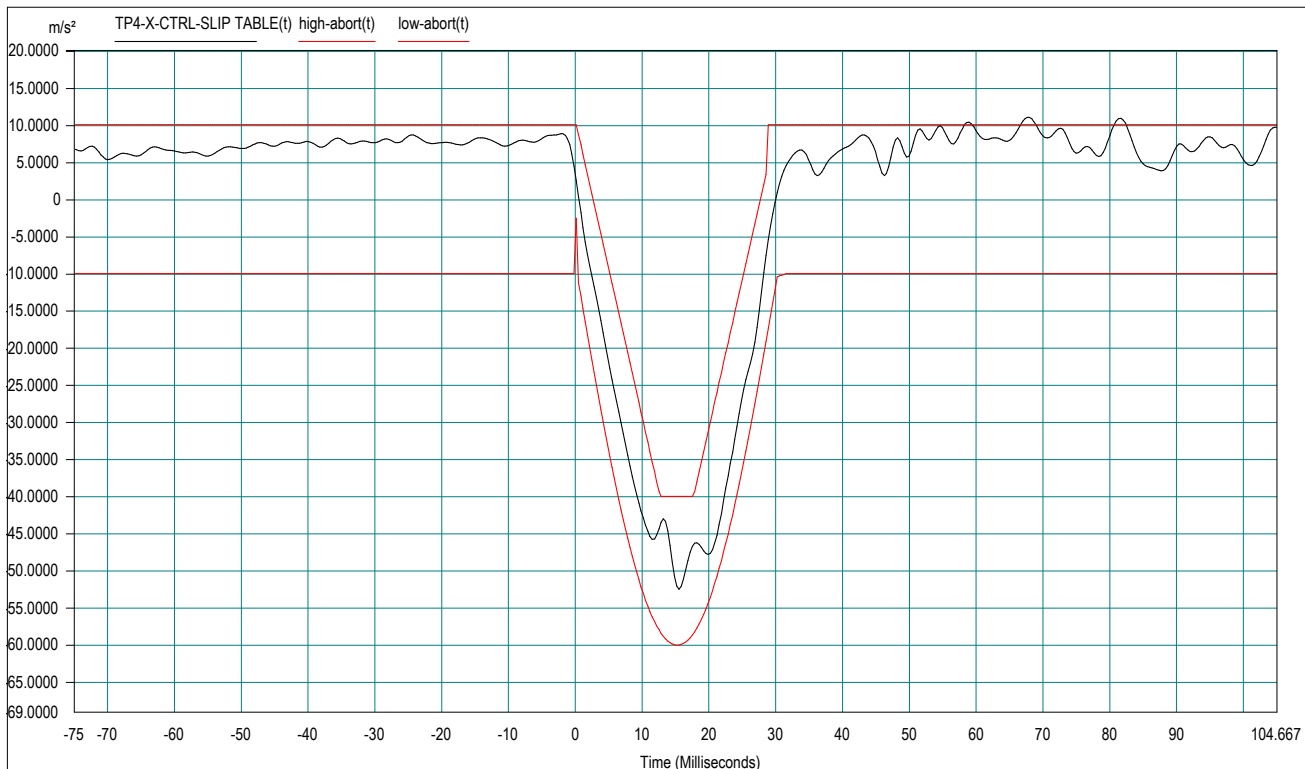
S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

SHOCK TEST - DOWN DIRECTION -
PROFILO LONGITUDINALE
(3 PLOTS)

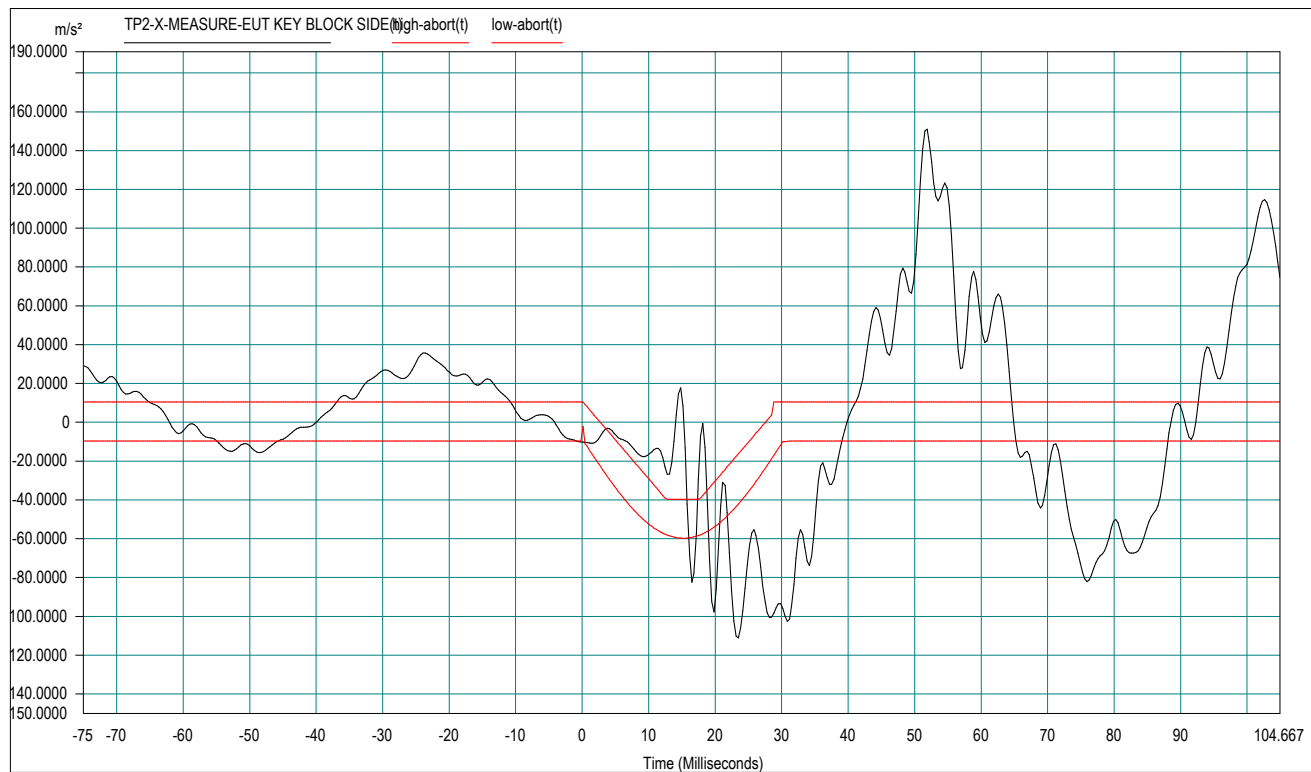
Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	52.482666	Control RMS:	8.871209
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

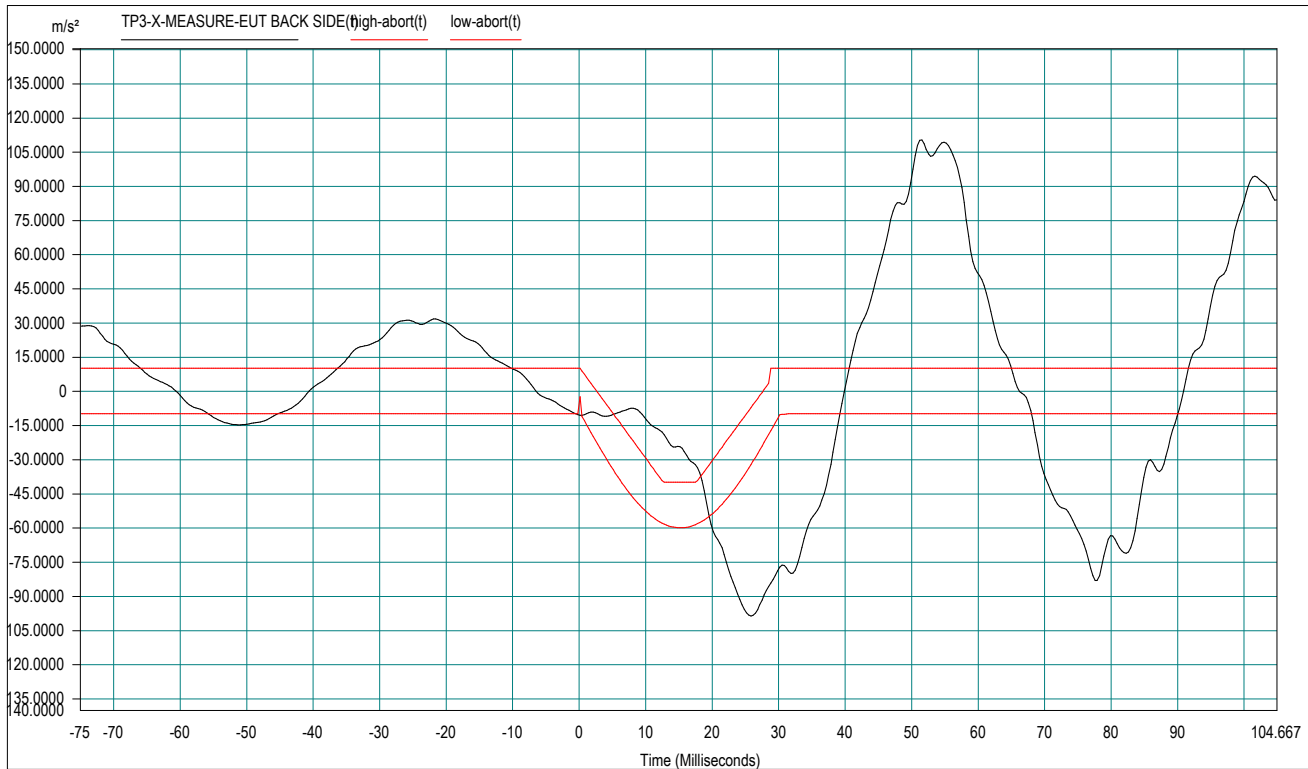
Data saved at 02:47:21 PM, Wednesday, September 23, 2015 Report created at 02:47:23 , mercoledì, settembre 23, 2015

Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49



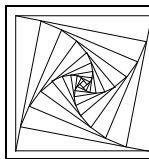
Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	52.482666	Control RMS:	8.871209
3				Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
Data saved at 02:47:21 PM, Wednesday, September 23, 2015			Report created at 02:47:23 , mercoledì, settembre 23, 2015		

Project File Name: LONGITUDINAL X - SHOCK.prj
 Profile Name: RUN 14 SHOCK TEST ON LONGITUDINAL (X) AX - DOWN DIRECTION - PROFILO LONGITUDINALE
 Test Type: Classical Shock Run Folder: .\RUN 14 SHOCK X - DOWN Sep 23, 2015 14-45-49



Level:	0 dB	Block Size:	2048	Elapsed Pulses:	18
Frame Time:	0.682667 Seconds	Control Peak:	52.482666	Control RMS:	8.871209
	3			Full Level Elapsed Pulses:	
dT:	0.000333 Seconds	Demand Peak:	50.000000	Demand RMS:	8.770651
Pulse Type:	Half Sine	Amplitude:	50.000000	Pulse Width:	29.999999 ms
				Remaining Pulses:	0

Data saved at 02:47:21 PM, Wednesday, September 23, 2015 Report created at 02:47:24 , mercoledì, settembre 23, 2015

 CENTROTECNICA SRL Via F. Confalonieri, 23 20060 Masate (MI) Tel. 0255305888 E-mail info@ctecnica.it www.ctecnica.it Partita I.V.A. / Cod. Fiscale 04703330961	EARTHING SWITCH E402A CAF RELAZIONE SU TEST MECCANICI Elaborato per: SPil S.p.A.	
Documento: VR1527001SPMA-ITA.doc	Rev. 0	Pag. 109 di 117

ALLEGATO 3.5

EARTHING SWITCH E402A CAF

TYPE: D344640

S/N: A1506999

DWG N.: D344639

ASSE LONGITUDINALE (X)

FINAL MEASUREMENTS - PROFILO
ENDURANCE VERTICALE
(7 PLOTS)

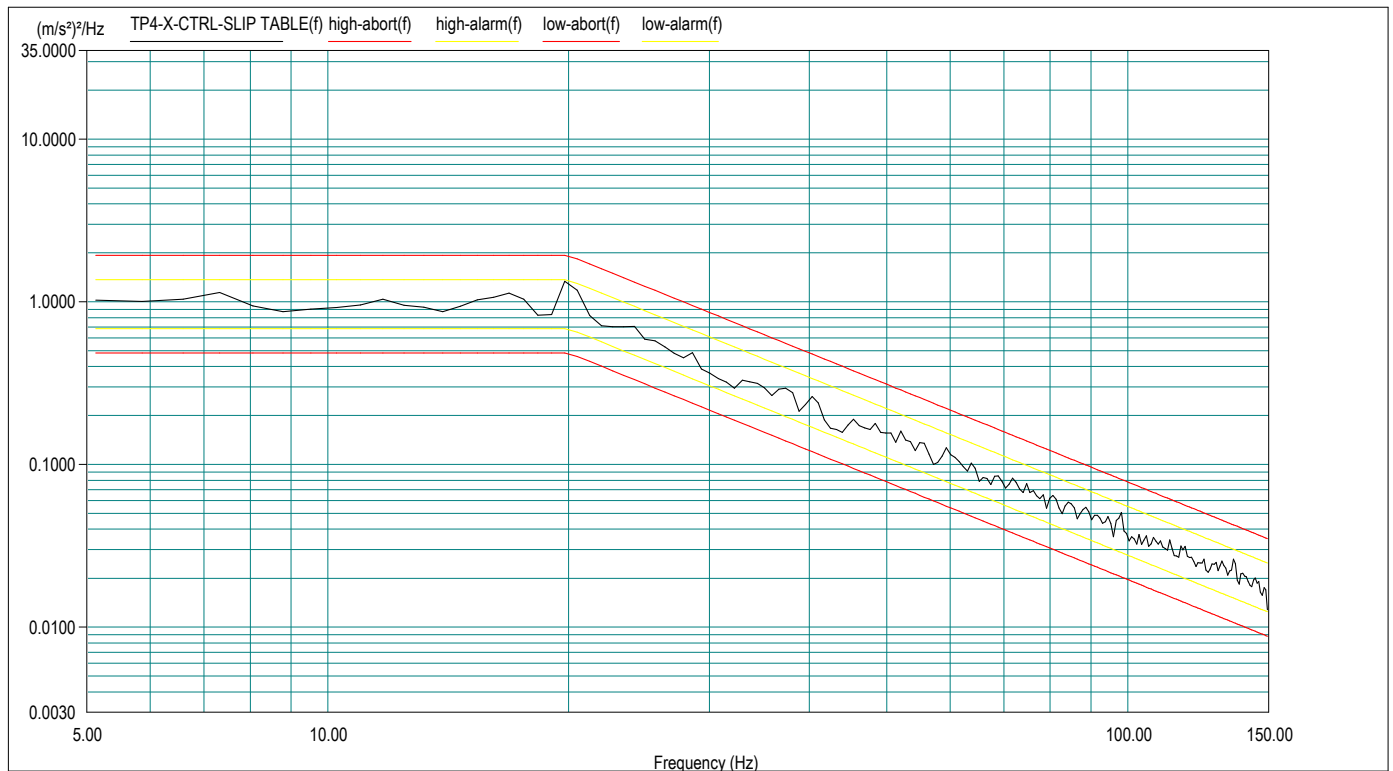
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154

dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:43 , mercoledì, settembre 23, 2015

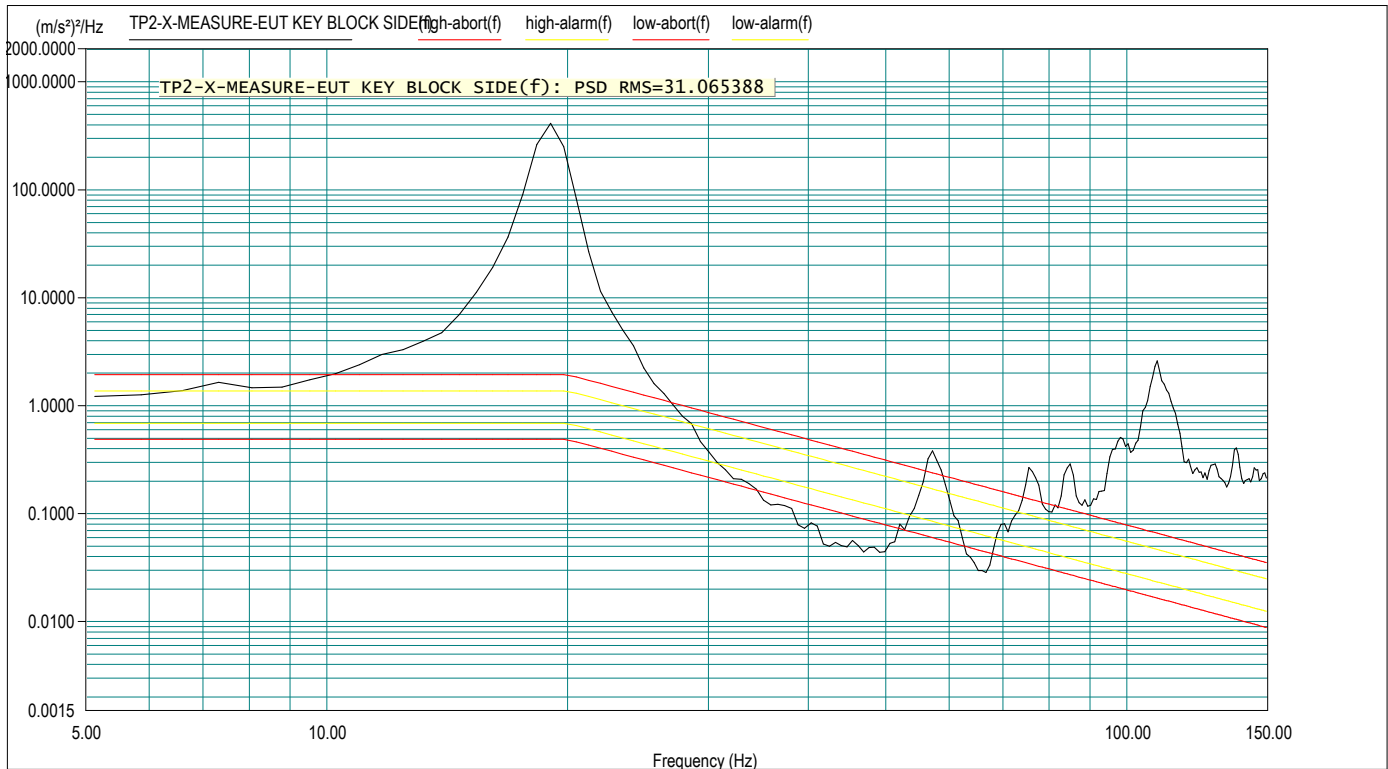
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:43 , mercoledì, settembre 23, 2015

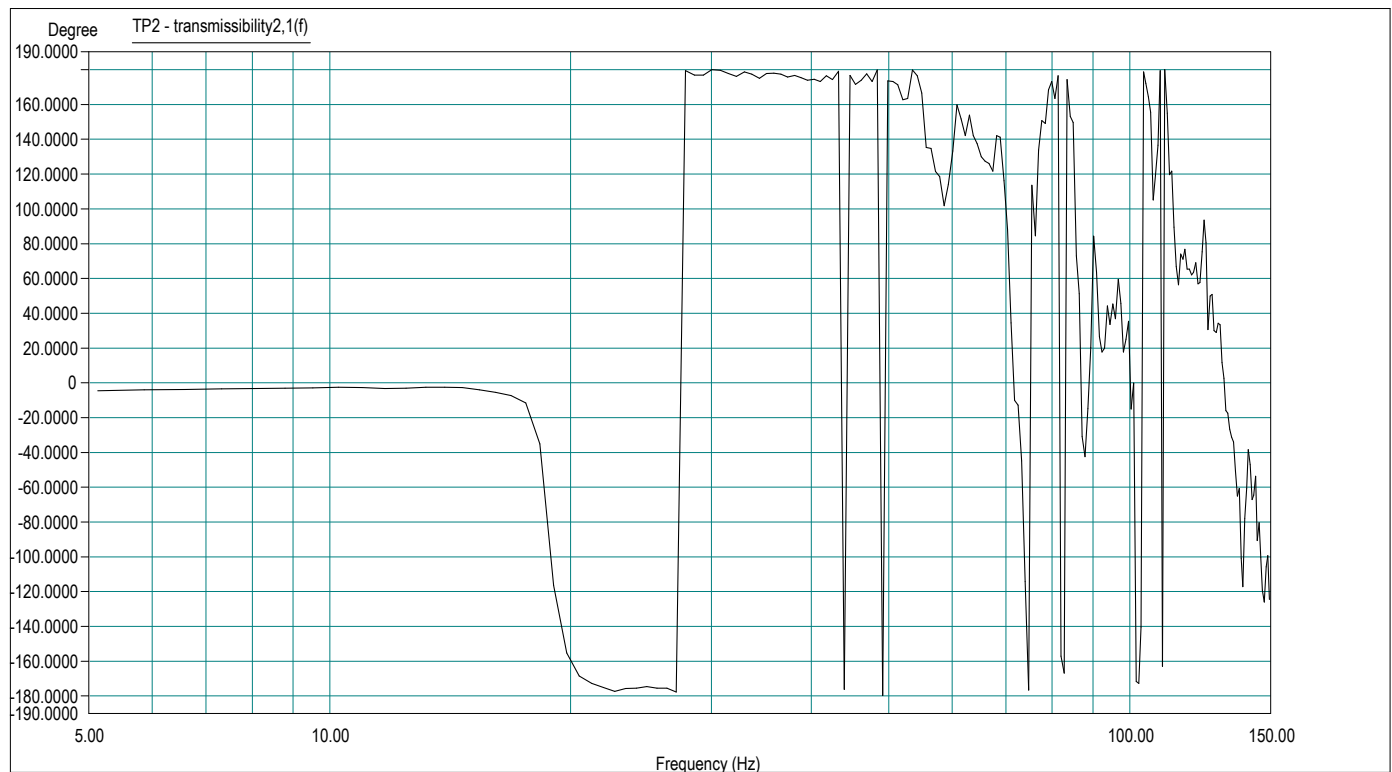
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:43 , mercoledì, settembre 23, 2015

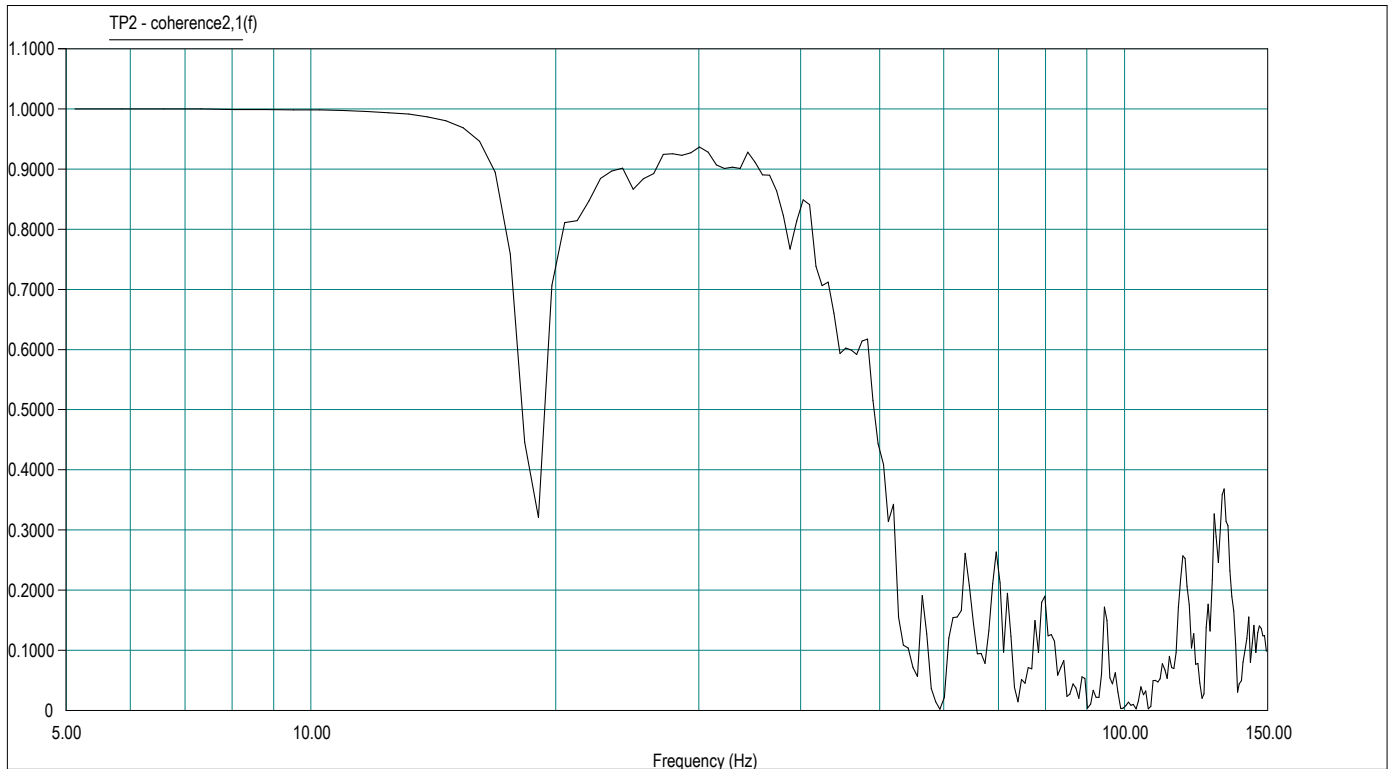
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200

Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time:

00:00:00

DOF: 154

dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:43 , mercoledì, settembre 23, 2015

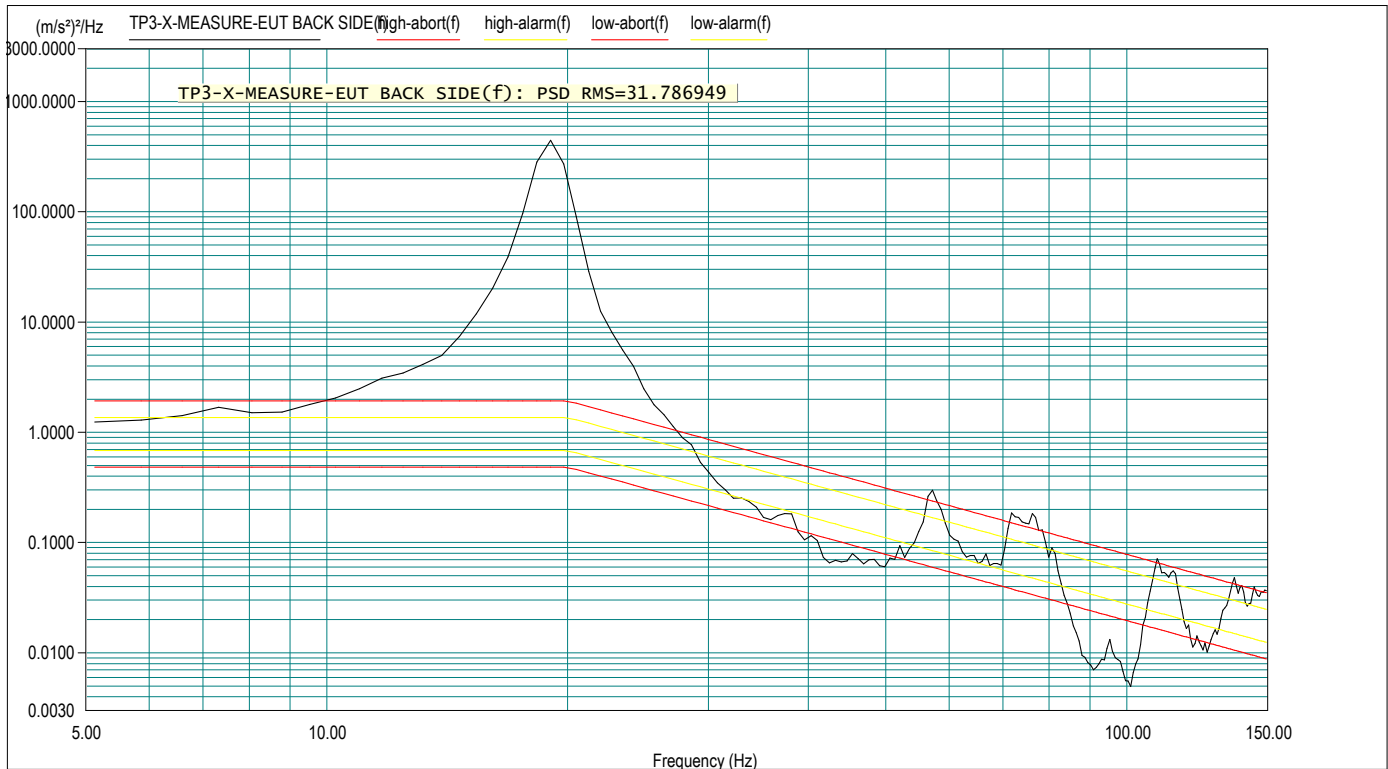
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:44 , mercoledì, settembre 23, 2015

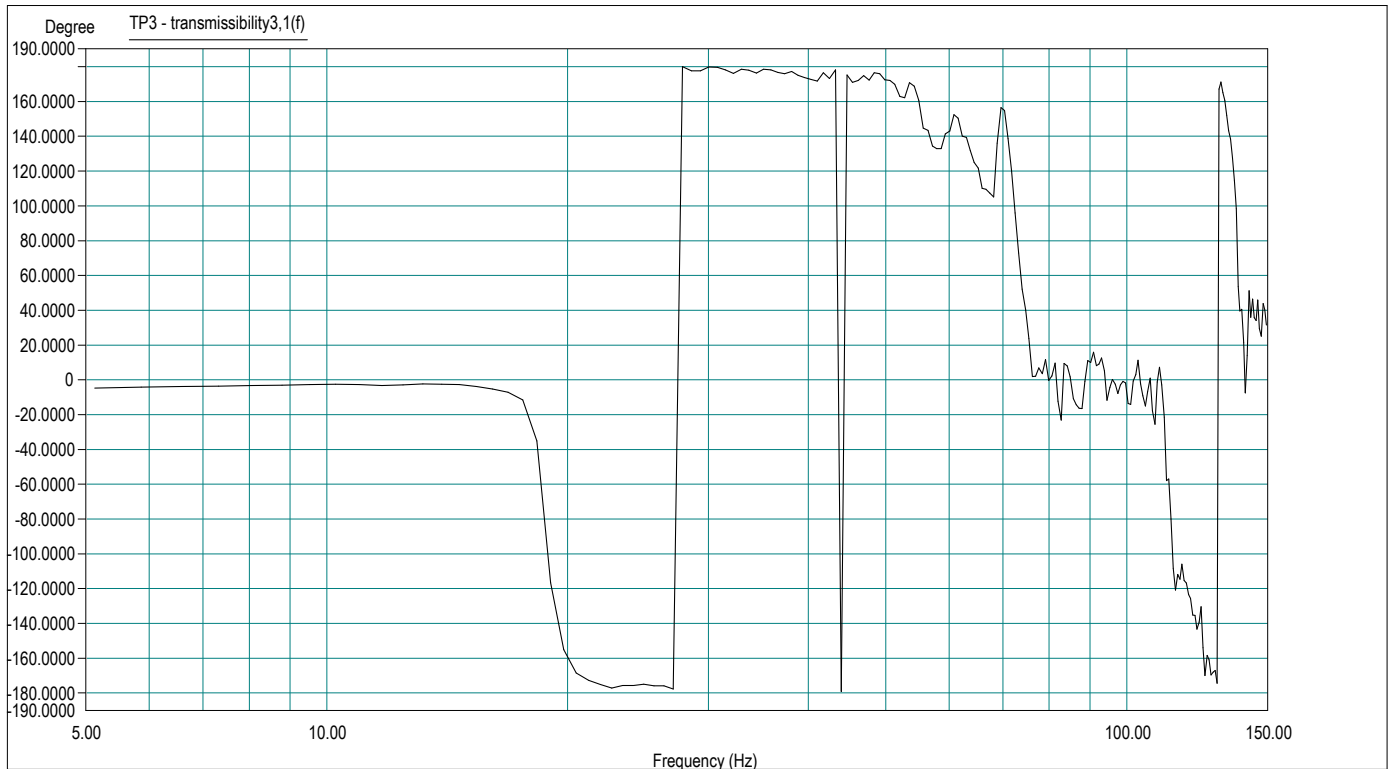
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:44 , mercoledì, settembre 23, 2015

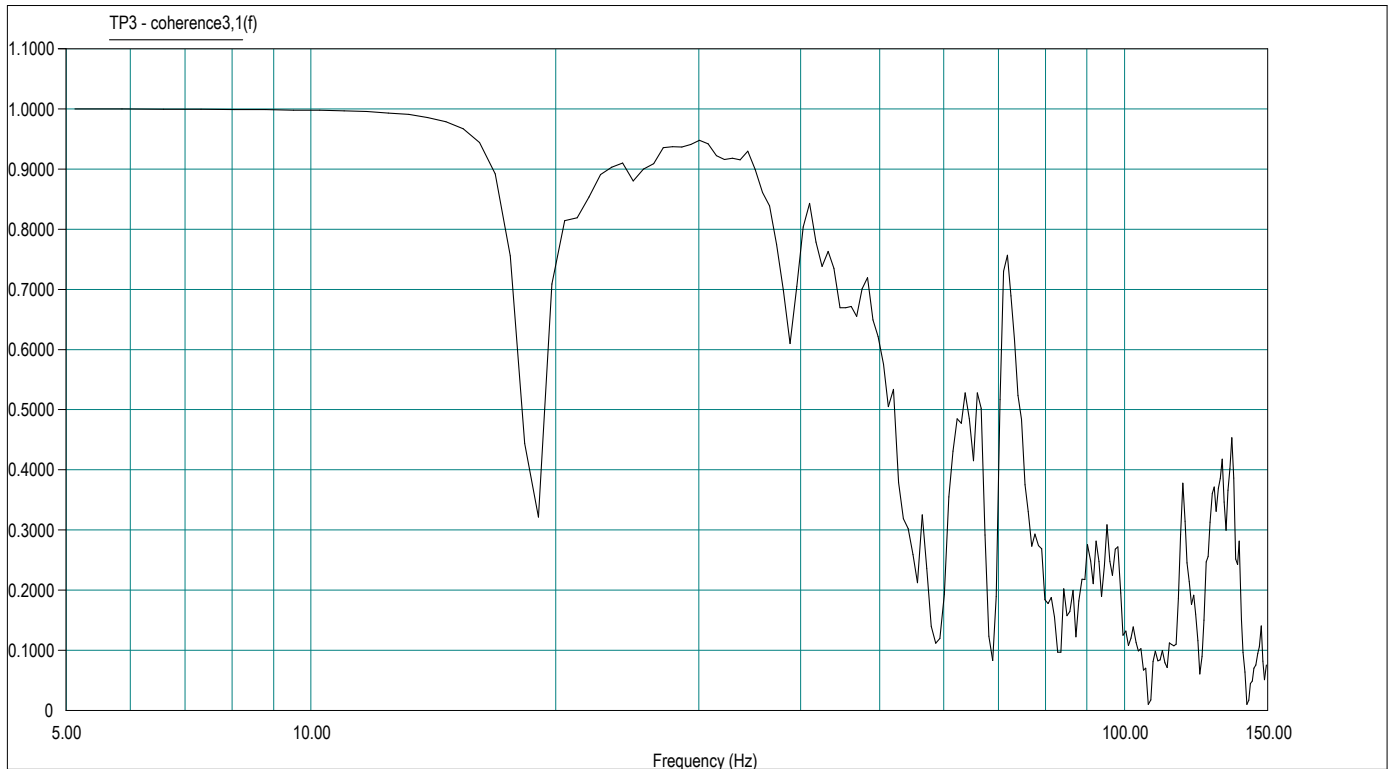
Project File Name: LONGITUDINAL X - FINAL MEASURE.prj

Profile Name: RUN 15 FINAL MEASURE ON ASSE LONGITUDINALE (X) - PROFILO VERTICALE

Test Type:

Random

Run Folder: .\RUN 15 F.M. - X Sep 23, 2015 14-49-47



Level: 0 dB

Control RMS: 5.650515 m/s²
1.365333 Seconds

Full Level Elapsed Time: 00:02:00

Lines: 200 Frame Time:

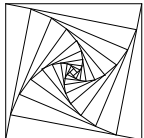
Demand RMS: 5.626908 m/s²
0.732422 Hz

Remaining Time: 00:00:00

DOF: 154 dF:

Data saved at 02:53:41 PM, Wednesday, September 23, 2015

Report created at 02:53:44 , mercoledì, settembre 23, 2015

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