

Müşteri Adı/Adresi

Customer Name/Address

: VATPAN RACK KABİNET / VAT ELEKTRİK SAN. TİC. LTD. ŞTİ.
İKİTELLİ OSB. ESKİ TURGUT ÖZAL CAD. NO:31/1 BAŞAKŞEHİR/İSTANBUL

İstek numarası

Order No.

: 2020-D6

Numune Adı, tarifi ve *durumu

Name, identity and condition of test item

: RACK KABİN 12U 600X600 CM DİKİLİ TİP

Numunenin Kabul Tarihi

The date of receipt of test item

: 13.04.2020

Açıklamalar

Remarks

: TS EN 61587-1:2012 7.3.3 Vibration and Shock Test

Deneyin yapıldığı tarih

Date of Test

: 20.04.2020

Raporun Sayfa Sayısı

Number of pages of the Report

: 5

Deney Laboratuvarı olarak faaliyet gösteren Simülasyon Ve Fonksiyonel Test Laboratuvarı, TÜRKAK'tan AB-0507-T akreditasyon dosya numarası ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir.

Simülasyon Ve Fonksiyonel Test Laboratory accredited by TÜRKAK under registration number AB-0507-T for TS EN ISO/IEC 17025:2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği(EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği(ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.

Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür/Kaşe

Seal

YİĞİTAKÜ
MALZ.NAK.TUR.İNŞ.SAN. ve TİC. A.Ş.
Organize Sanayi Bölgesi Oğuz Cad. No 2
Tel 267 02 80 Fax 267 08 61 Sincan/ANKARA
Sincan Vergi Dairesi 980 003 4685

Yayımlandığı Tarih

Date

22.04.2020

Deney Sorumlusu

Person in charge of test

Gürhan İLBERİSOY
Laboratuvar Teknik Sorumlusu

Onaylayan / Tarih

Approval / Date

Aylin OKSAK
Laboratuvar Sorumlusu

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız raporlar geçersizdir.

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Testing reports without signature are not valid

*Uygulanabilir/gerekli olduğunda

- **Deney Metodu: TS EN 61587-1**
Test Method

- ***Numune Alma Prosedürü:-**
Sampling methods

Test Sonuçlarının değerlendirilmesinde aşağıdaki tablo referans alınır.
(Test Results are evaluated as the reference of the following below table.)

DENEY SONUÇLARI
(TEST RESULTS)

STD. MADDE NO (CLAUSE)	DENEY ADI (TEST NAME)	STANDART GEREKLİLİĞİ (SPECIFICATION/LIMIT)	TEST SONUÇLARI (TEST RESULT)	DEĞERLENDİRM (EVALUATION)
*7.3.3	IEC 60068-2-6'ya göre Deney Fc: Titreşim, Sinüs Biçimli DL4 Performans Seviyesi	a) Deneyden sonra şekli, uyumu veya işlevi etkileyen parçalarda herhangi bir deformasyon veya hasar meydana gelmemeli b) Koruyucu topraklama terminali veya topraklama bağlantısı ile topraklanması gereken bağlantılar arasındaki bağlantı direnci 0,1 Ω 'dan küçük olmalıdır	a) Deneyden sonra şekli, uyumu veya işlevi etkileyen parçalarda herhangi bir deformasyon veya hasar meydana gelmedi. b) Koruyucu topraklama terminali veya topraklama bağlantısı ile topraklanması gereken bağlantılar arasındaki bağlantı direnci 0,1 Ω 'dan küçüktür.(0.0 m Ω)	G
*7.3.3	Deney Ea: Sadece Y- ekseninde Mekanik darbe deneyi yarım sinüs dalgası DL4 Performans Seviyesi	a) Deneyden sonra şekli, uyumu veya işlevi etkileyen parçalarda herhangi bir deformasyon veya hasar meydana gelmemeli b) Koruyucu topraklama terminali veya topraklama bağlantısı ile topraklanması gereken bağlantılar arasındaki bağlantı direnci 0,1 Ω 'dan küçük olmalıdır	a) Deneyden sonra şekli, uyumu veya işlevi etkileyen parçalarda herhangi bir deformasyon veya hasar meydana gelmedi. b) Koruyucu topraklama terminali veya topraklama bağlantısı ile topraklanması gereken bağlantılar arasındaki bağlantı direnci 0,1 Ω 'dan küçüktür.(1.1 m Ω)	G

Test sonuçları sadece firma kurum veya kuruluşlardan laboratuvara iletilen numunenin sonuçlarıdır.
(Test results are related to the sample that is sent to laboratory by a firm/institution.)

(**) İşaretli testler akreditasyon kapsamı dışındadır.
(Marked tests are out of accreditation scope.)

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız raporlar geçersizdir.

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*Uygulanabilir/gerekli olduğunda

Deney Sonuçları Değerlendirme
(Evaluation of Test Results)

Bu deney bu numuneye uygulanmaz (Test case does not apply to the test sample)	(UYGULANMAZ) NA
Deney sonucu olumlu (Test item meets the requirement)	G (GEÇTİ) P (PASS)
Deney sonucu olumsuz (Test item does not meet the requirement)	K (KALDI) F (FAIL)

- ***Çevre şartları:** 25 °C Laboratuvar koşulları.
Environmental conditions
- ***Ölçüm belirsizliği:-**
Measurement uncertainty
- ***Görüş ve yorumlar:-**
Opinions and interpretations

*Ölçüm sonuçlarının şartnamelere veya standartlara uygunluk beyanı/Conformity with requirements or specifications:-

* Feragat beyanı/Disclaimer:-

*Karar kuralı/Definition of Decision Rule: Müşteri talebine göre verilecek olan ölçüm belirsizliği değeri ile test sonucunun standart gerekliliğine verilecek olan uygunluk müşteri ile mutabık kalınarak belirlenecektir./The decision rule, the uncertainty measurement value to be given according to the customer demand and the conformity to the standard requirement of the test result shall be determined by being in agreement with the customer.

*Deney yönteminden eklemeler, çıkarmalar ve sapmalar/additions to, deviations, or exclusions from the test method:-

Dış tedarikçi laboratuvarı kullanılmamaktadır./The external supplier laboratory are not used.

Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız raporlar geçersizdir.

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Testing reports without signature are not valid

*Uygulanabilir/gerekli olduğunda



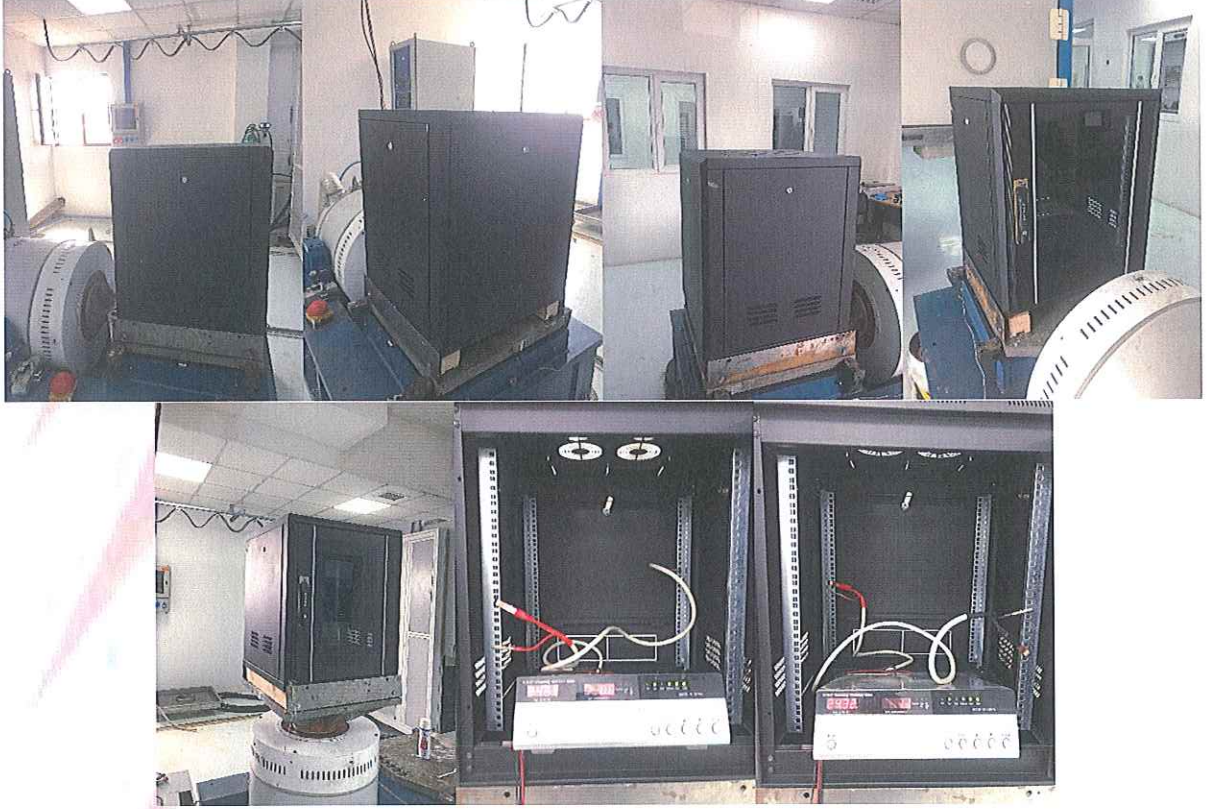
Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız raporlar geçersizdir.

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Testing reports without signature are not valid

**Uygulanabilir/gerekli olduğunda*



Bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.

İmzasız raporlar geçersizdir.

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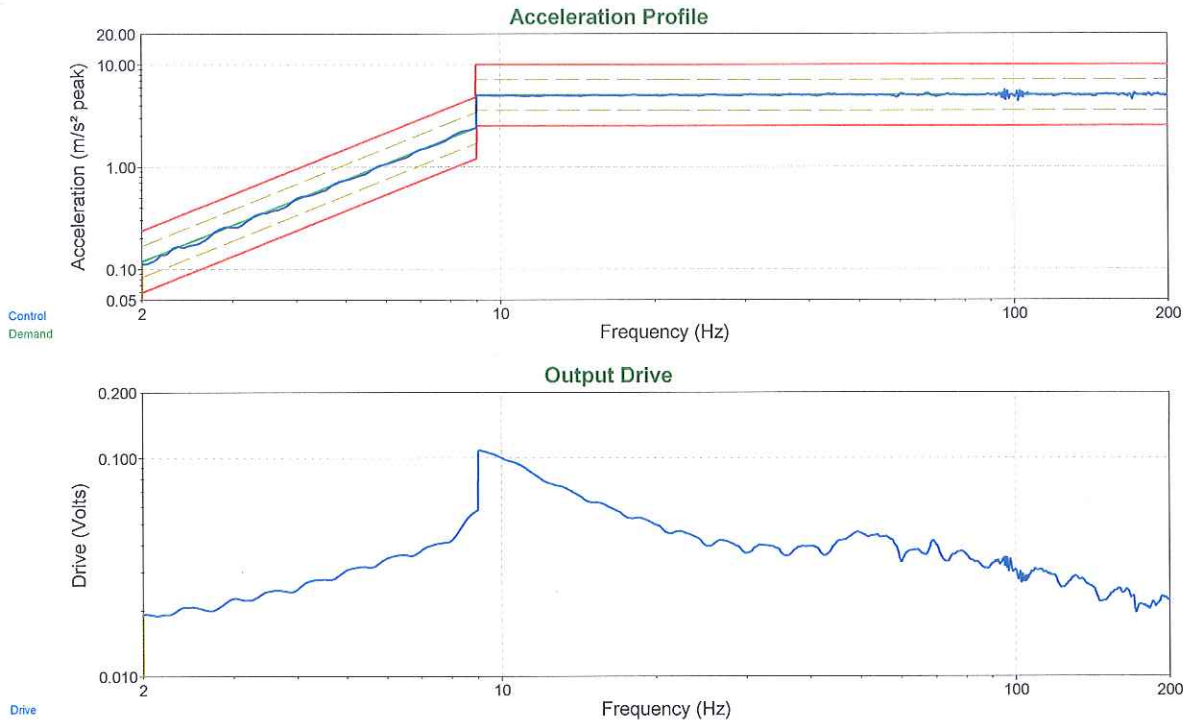
Testing reports without signature are not valid

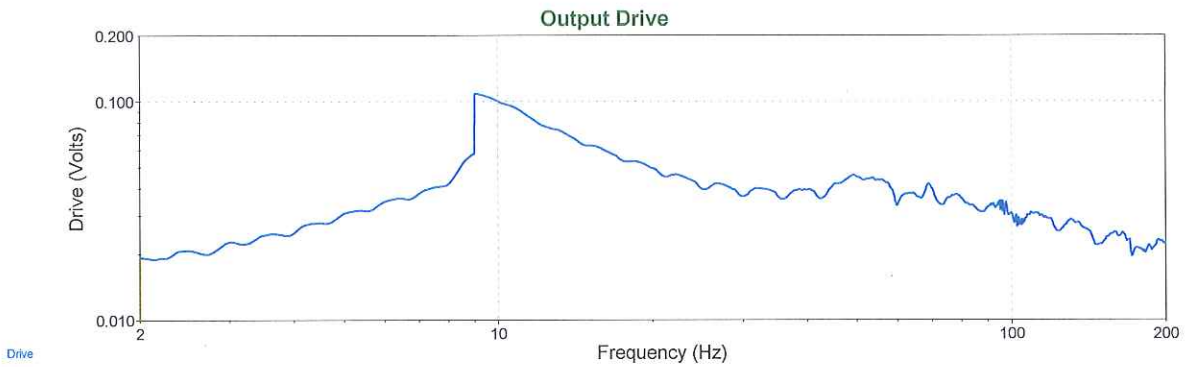
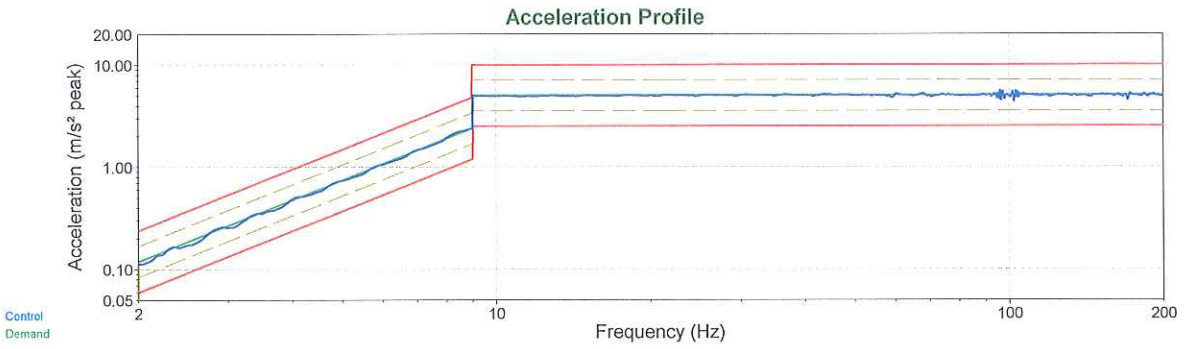
**Uygulanabilir/gerekli olduğunda*

Customer: YIGIT AKU A.S. SFT LABORATUVARI
Job#: VANPAN ELEKTRIK PANO SISTEMLERI X EKSENİ

Data: C:\VibrationVIEW\Data\2020-04\2020Apr20-1031-0001.vsd
Test: C:\VibrationVIEW\Profiles\TS EN 61587-1 DL4 SINUS (recovered).vsp
Data stored on Apr 20, 2020 10:54:26

End of Sweep Test





VibrationVIEW - [2020Apr20-1031-0901 (Acceleration Profile)]

File Edit Configuration Test Record Graph Cursor View Window Help

TestType NewTest OpenTest Settings OpenData SaveData Print Report NewGraph Autoscale EditGraph Copy Help Context

STOP Run Hold

Reset Sine Graph Data

Stop Code: End of Sine Test

Frequency (Hz): 2.00

Demand: 0.11844 Control: 0.11229

Actual (m/s² peak): 0.11844
Vel. (m/s peak): 0.009
Disp. (mm pk-pk): 0.0110

Remaining Level Time Total Time
0 0:22:42 0:22:52

Sweeps Level
10 1) 100%

Current Time: Apr 20, 2020 11:10:32 Volts pk: 0.009

Test Name: TS EN 61587-1 DL4 SINUS (recovered)

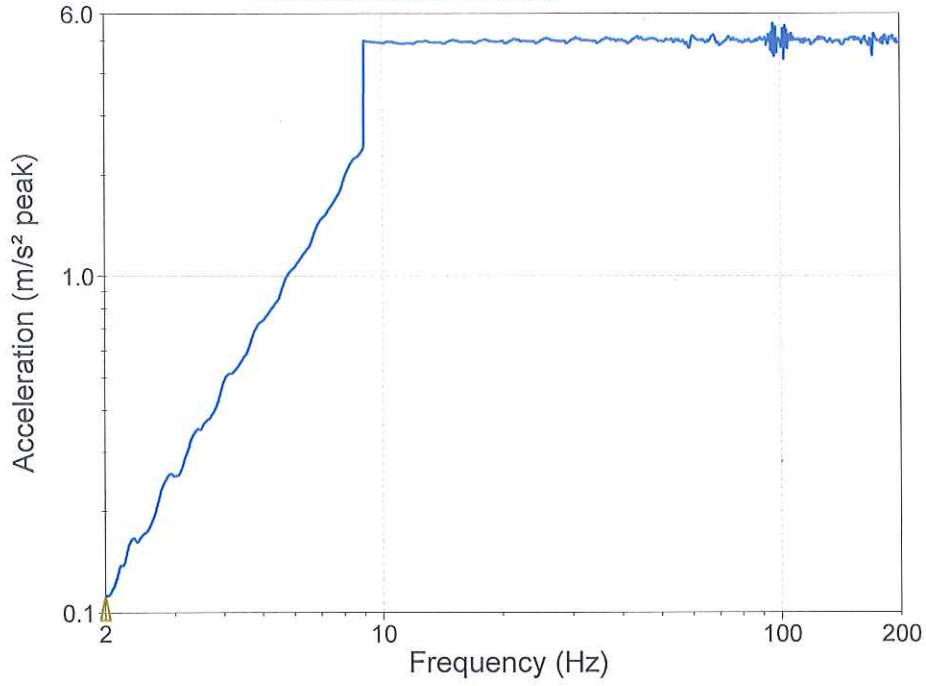
CH1: 0.0011 CH2: 0.0110

System Check: TS EN 61587-1 DL4 SINUS (recovered)

End of Sine Test

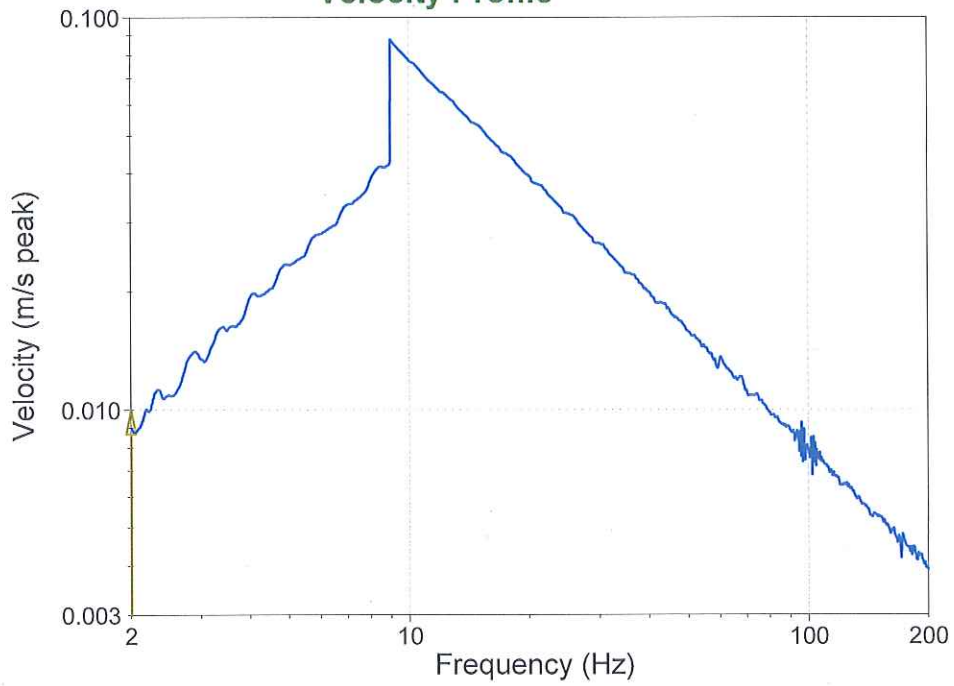
Sine TS EN 61587-1 DL4 SINUS (reco) 1FOEBZ

Acceleration Profile



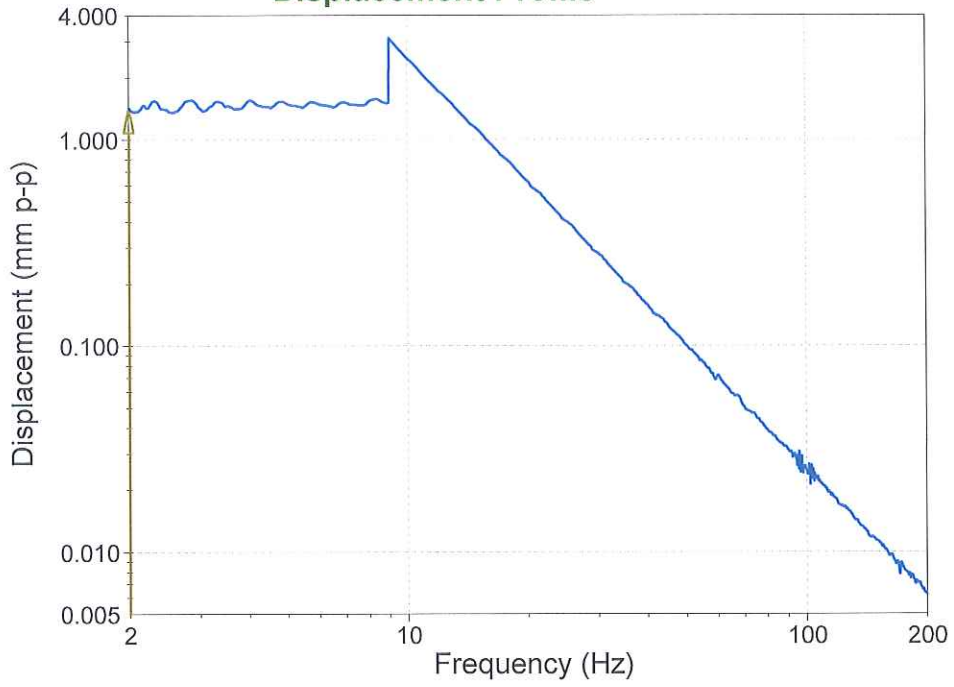
Control

Velocity Profile



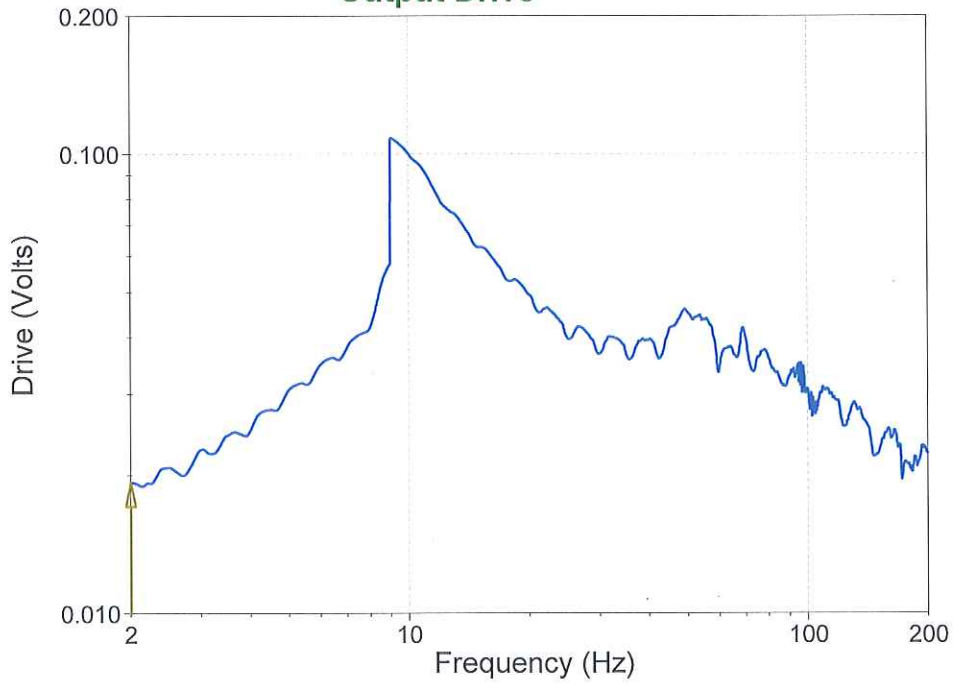
Control

Displacement Profile



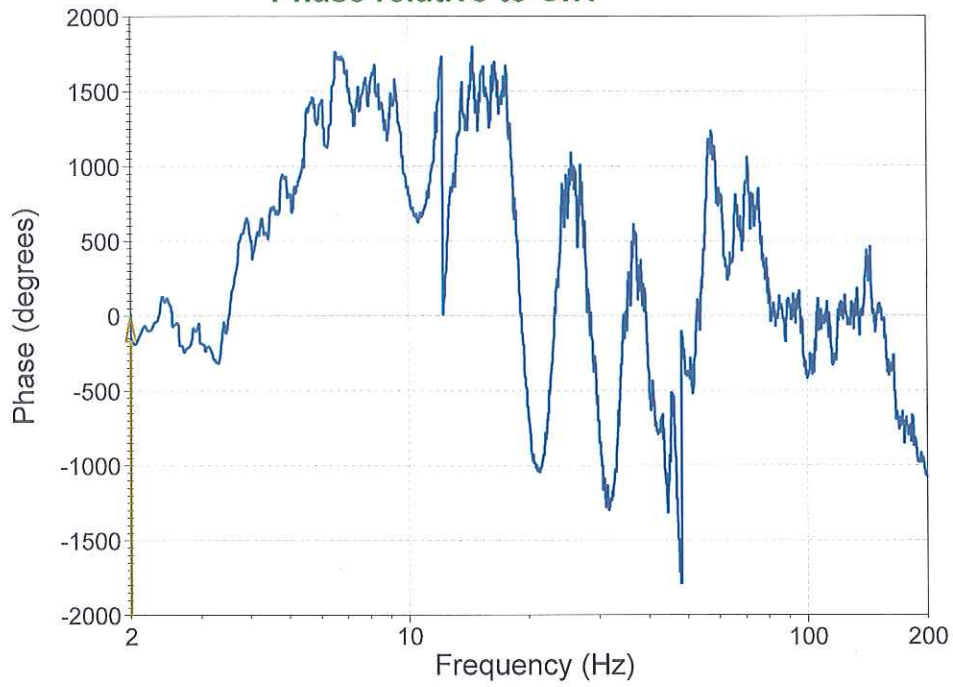
Control

Output Drive



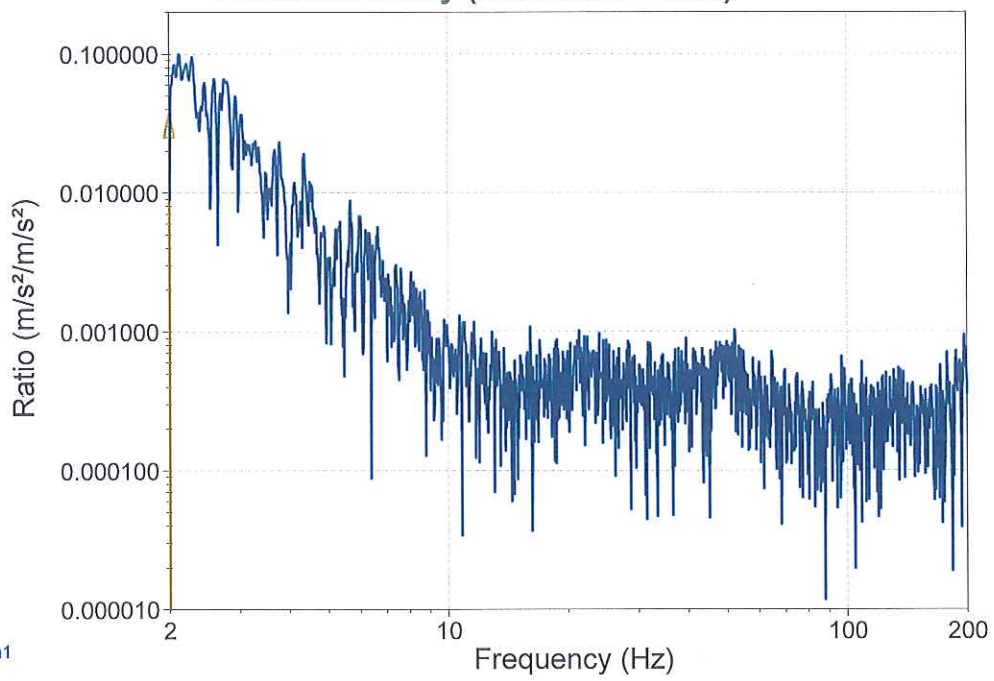
Drive

Phase relative to Ch1



Ch2

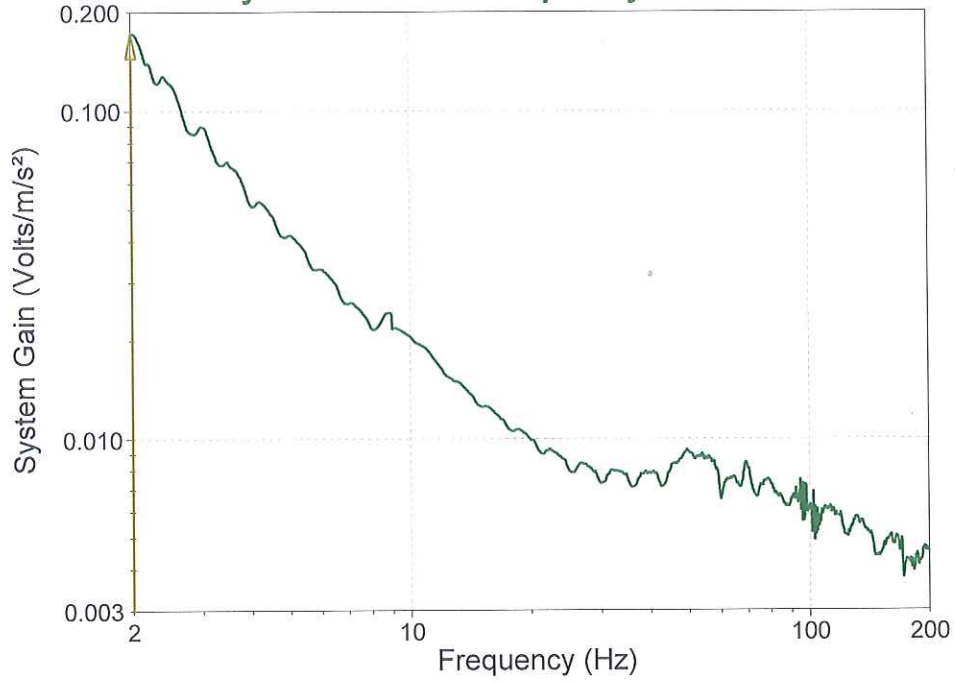
Transmissibility (reference = Ch1)



Ch2/Ch1

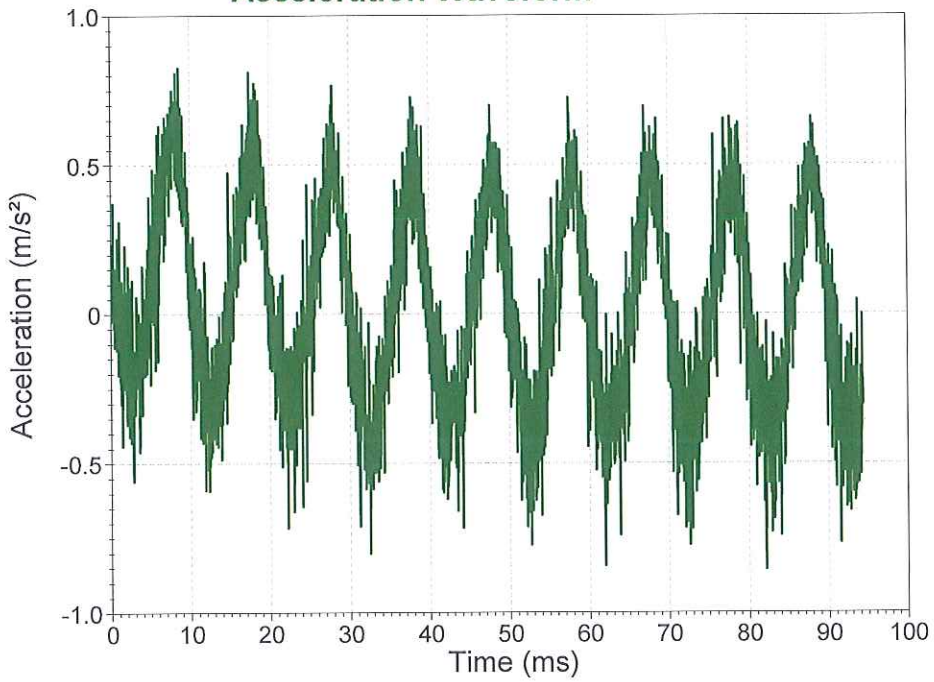
A.O

System Gain vs. Frequency



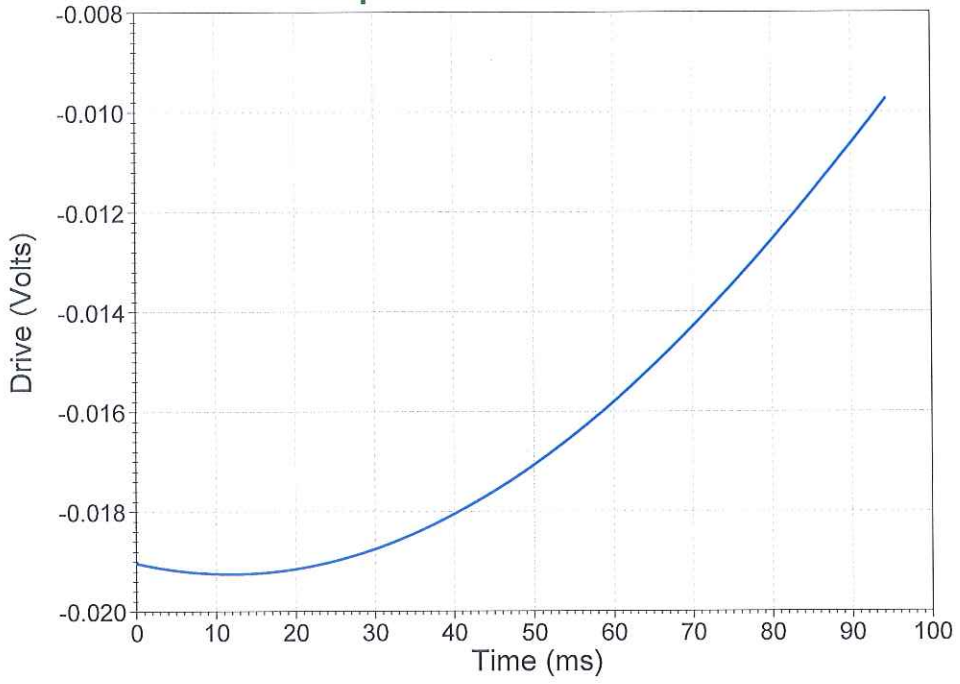
Gain

Acceleration Waveform



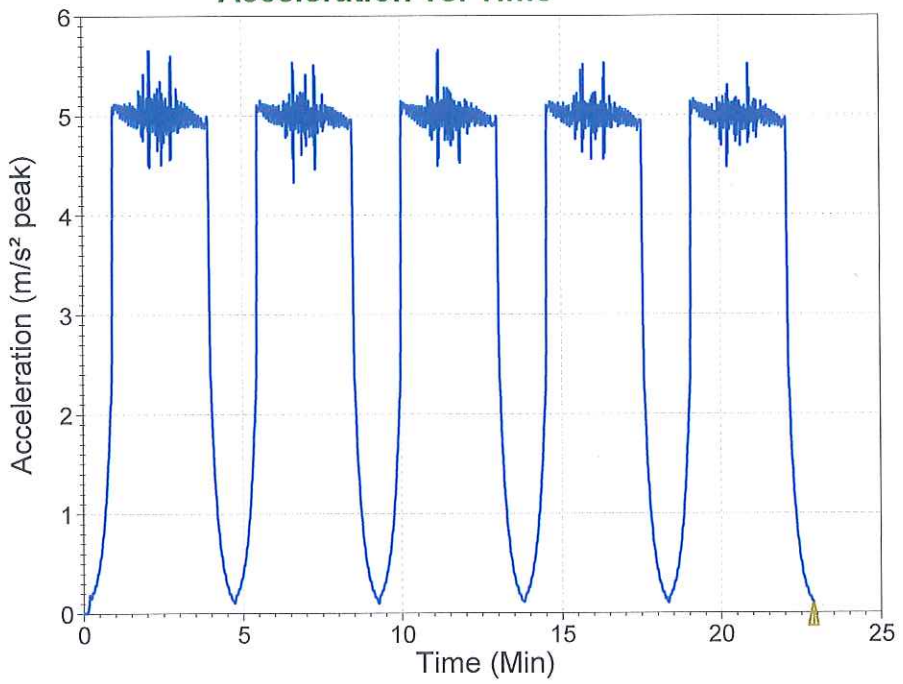
ch1

Output Waveform



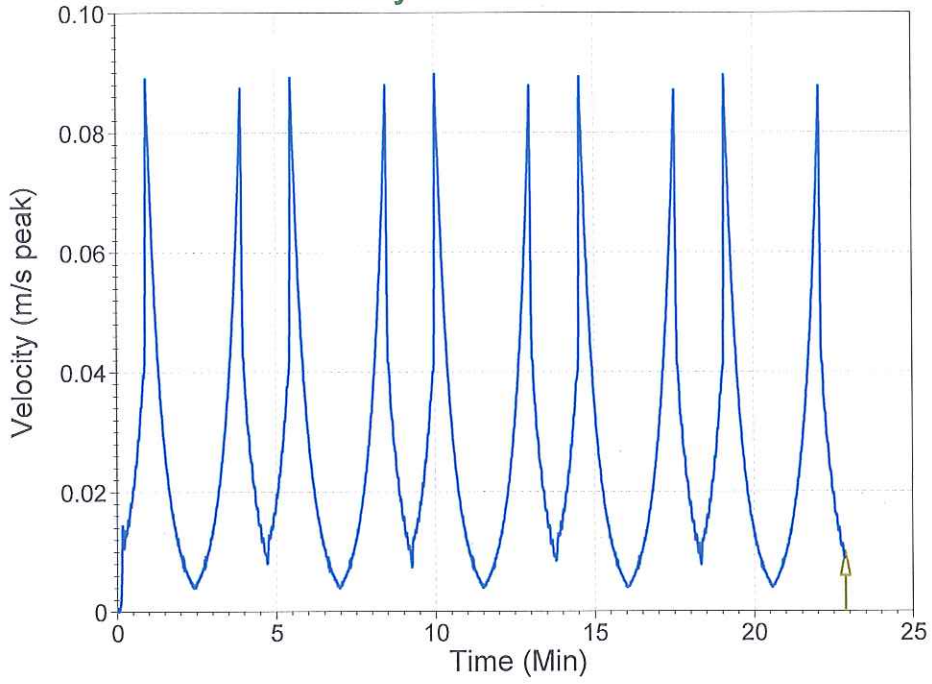
Drive

Acceleration vs. Time



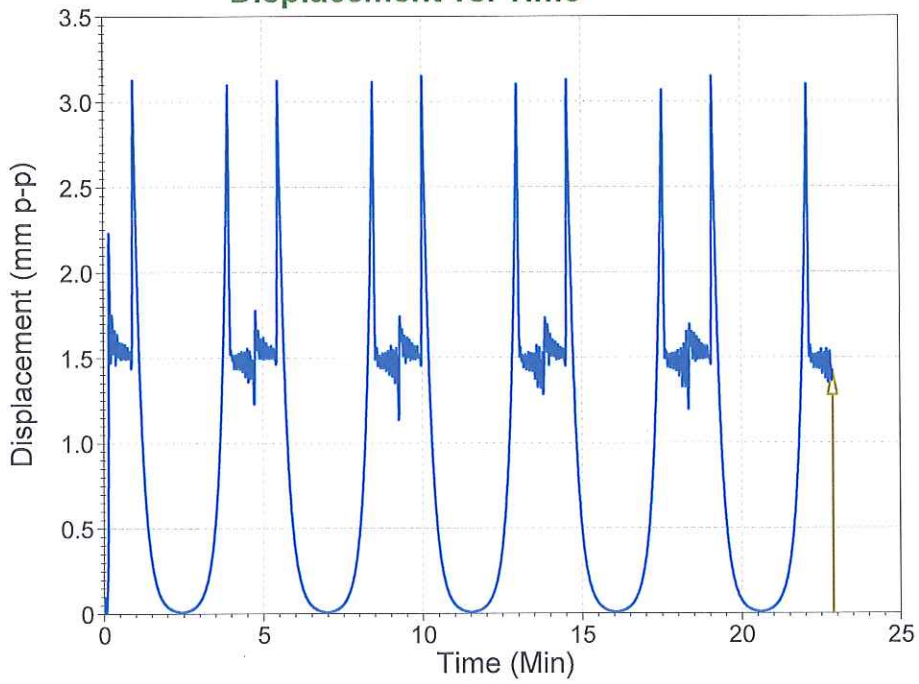
Control

Velocity vs. Time



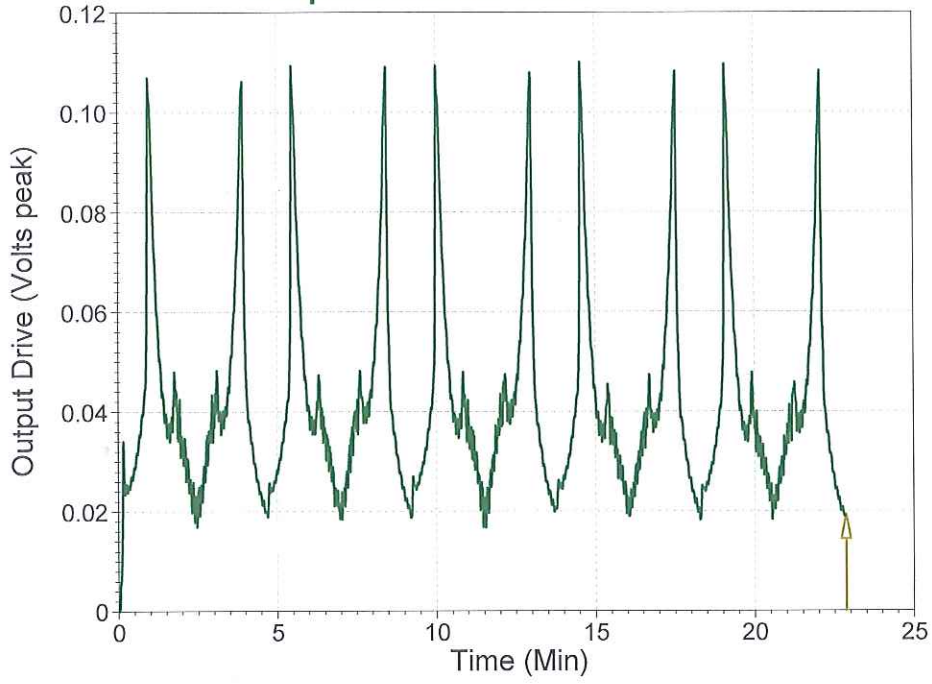
Control

Displacement vs. Time



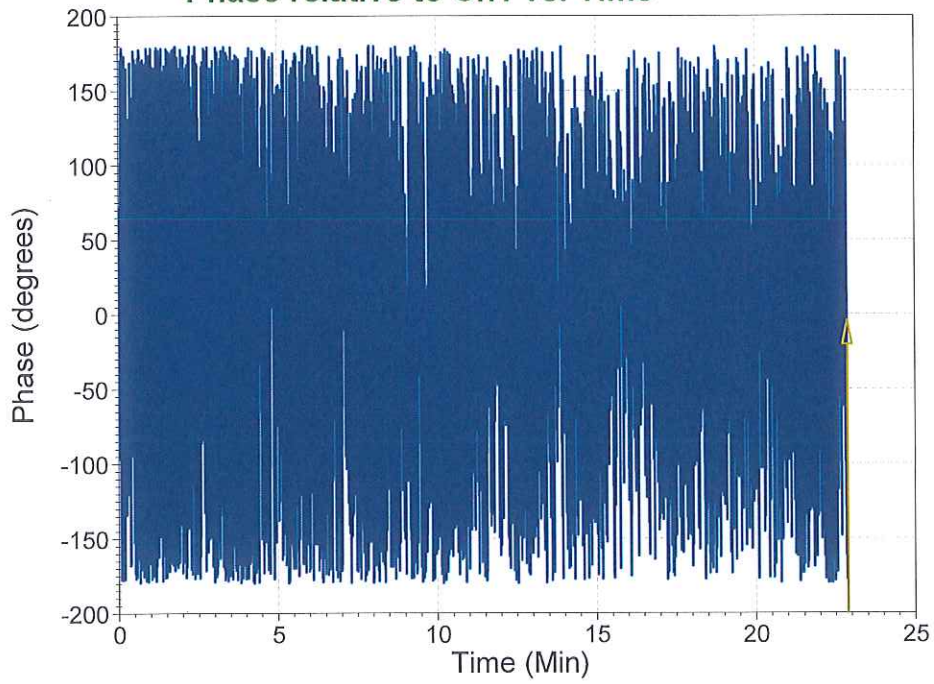
Control

Output Drive vs. Time



Drive

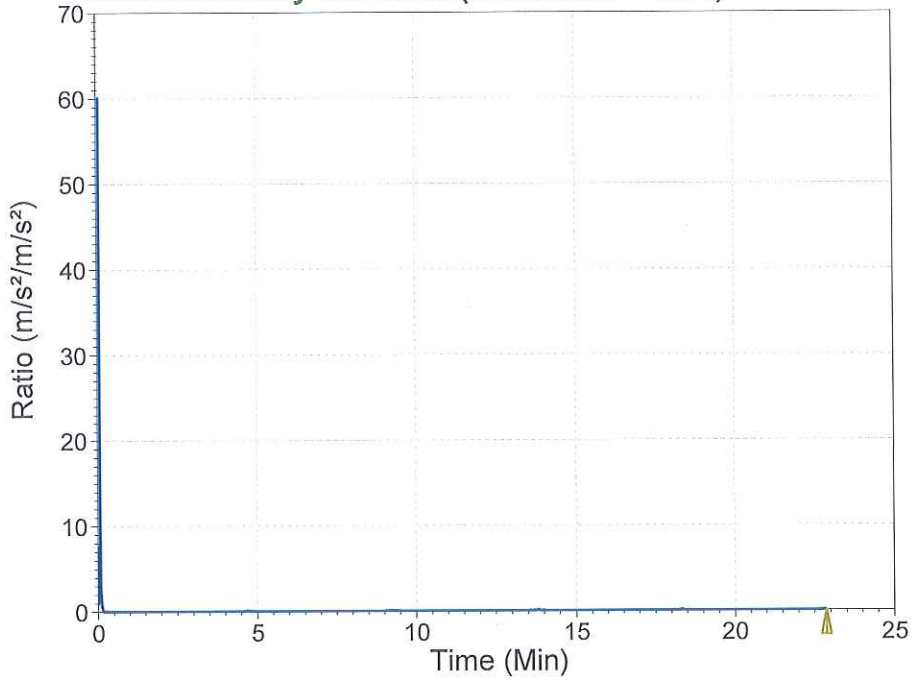
Phase relative to Ch1 vs. Time



Ch2

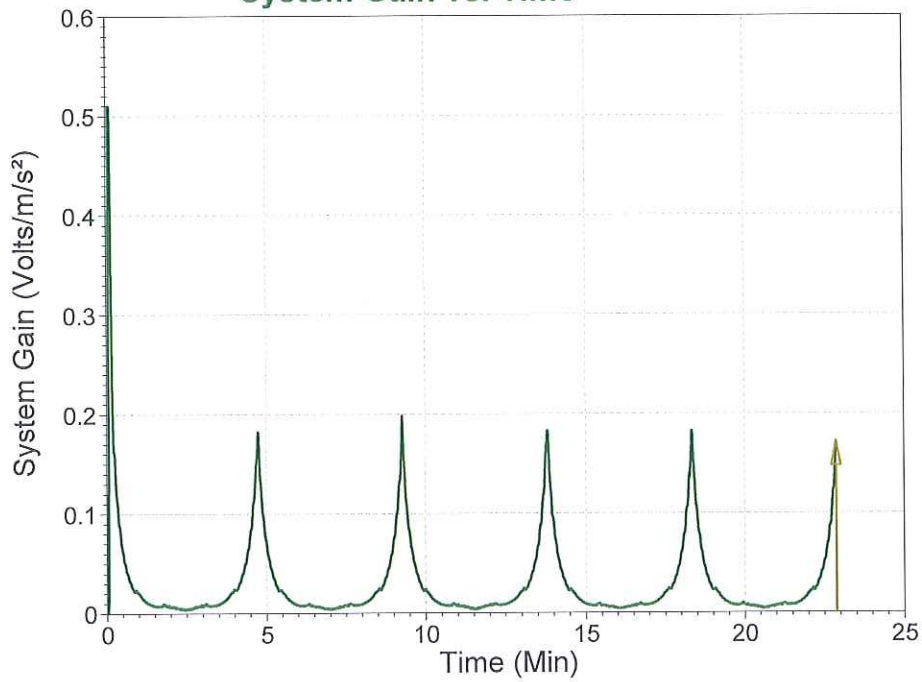
AD

Transmissibility vs. Time (reference = Ch1)



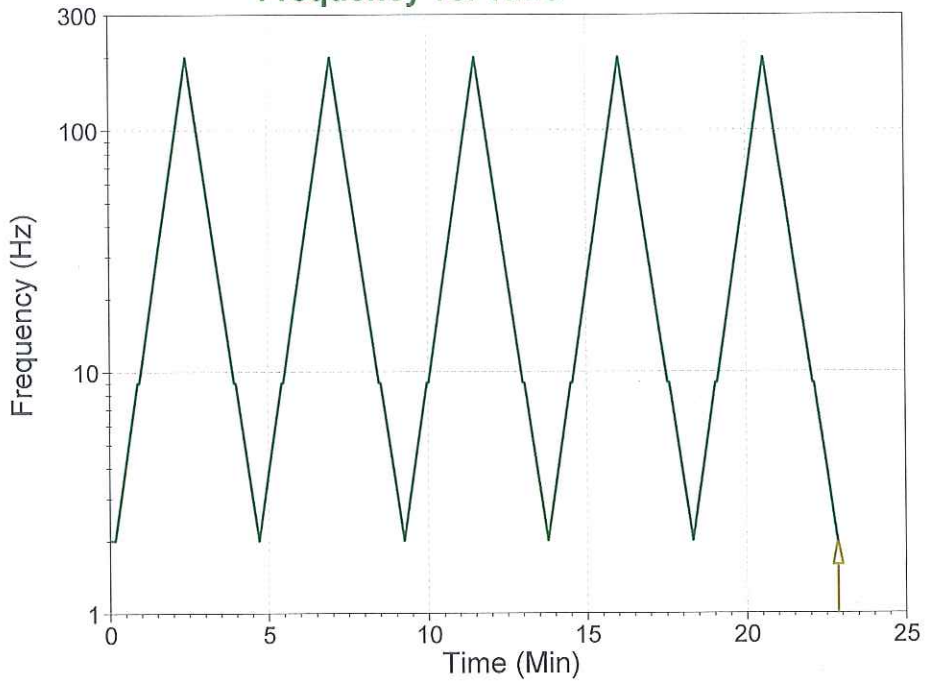
Ch2/Ch1

System Gain vs. Time



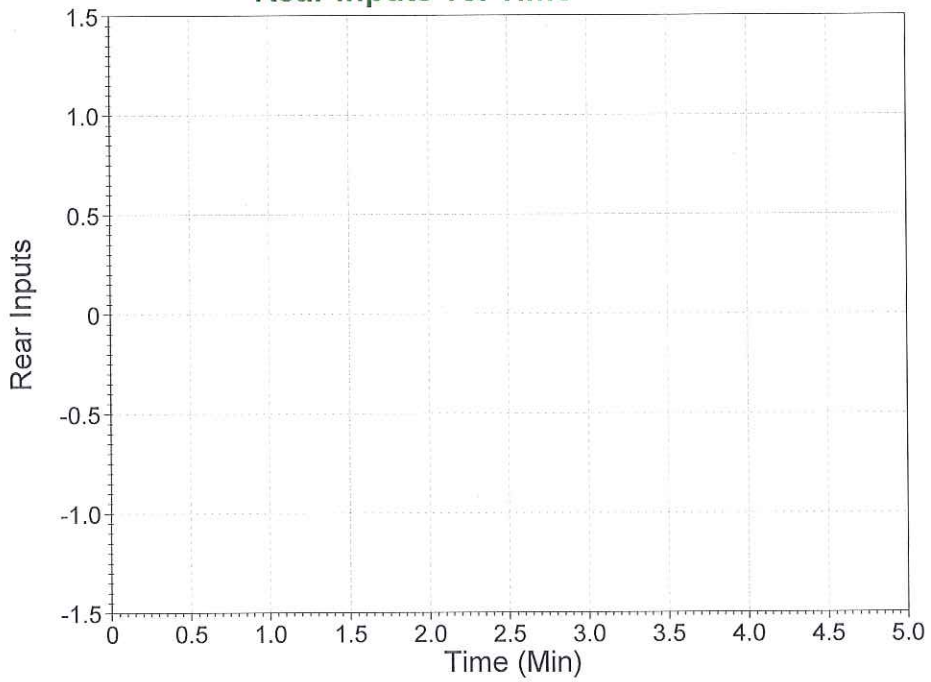
Gain

Frequency vs. Time

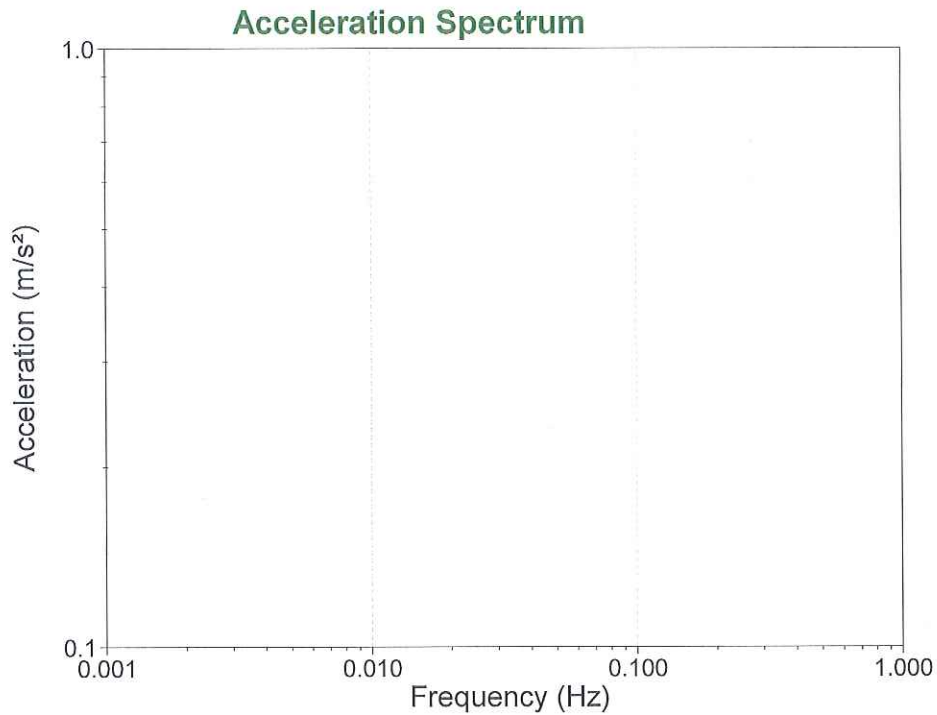


Frequency

Rear Inputs vs. Time



AD



Breakpoint table

Start Freq.	Amplitude	End Freq.	Amplitude
2 Hz	1.5 mm	9 Hz	1.5 mm
9 Hz	5 m/s ²	200 Hz	5 m/s ²

Test level schedule:

	Duration	Level
1)	10 sweeps	100 %

** Test started Apr 20, 2020 10:31:34, running for 0:22:52
 ** Current level: 1, running at 100 %, 10 of 10 sweeps complete

Current Measurements:

Demand: 1.5 mm at 2 Hz	Ch1: 0.112286 m/s ²
Control: 0.1123 m/s ²	Ch2: 0.00424161 m/s ²
Control Vel.: 0.008935 m/s	Ch3: n/a
Control Disp.: 1.422 mm	Ch4: n/a

Drive voltage: 0.01931 Volts peak
 System gain is 0.172004 Volts/m/s² (Max system gain limit = 1 Volts peak)

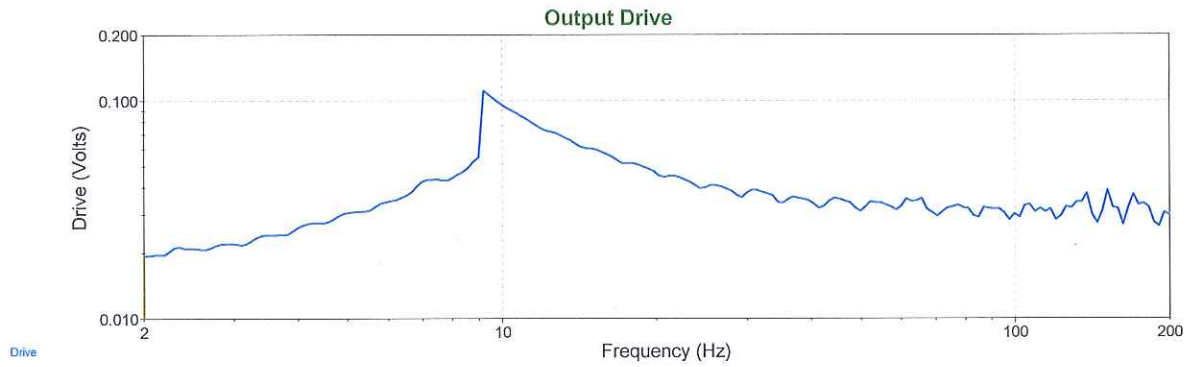
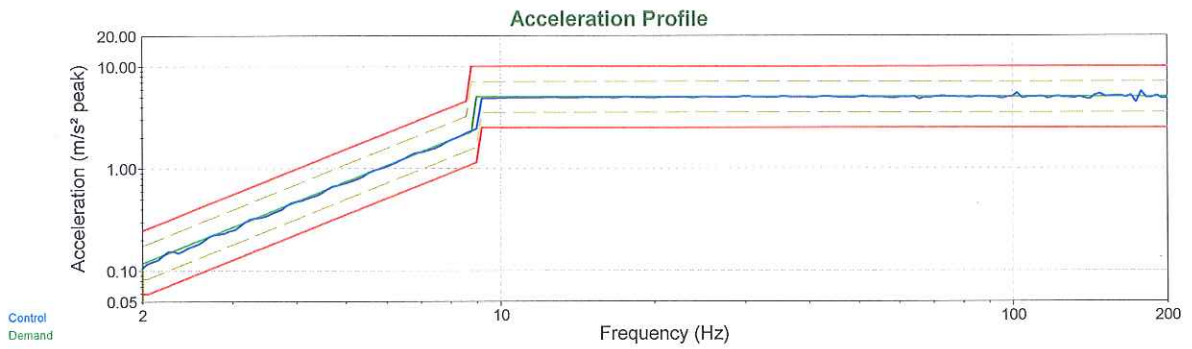
Channel Measurements:

	Accel	Velocity	Displacement
Ch1	0.112286 m/s ²	0.00893544 m/s	1.42212 mm

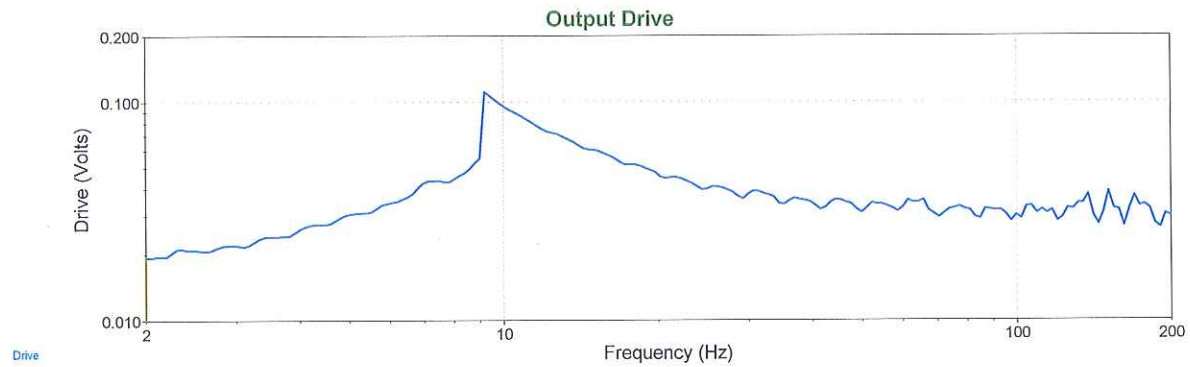
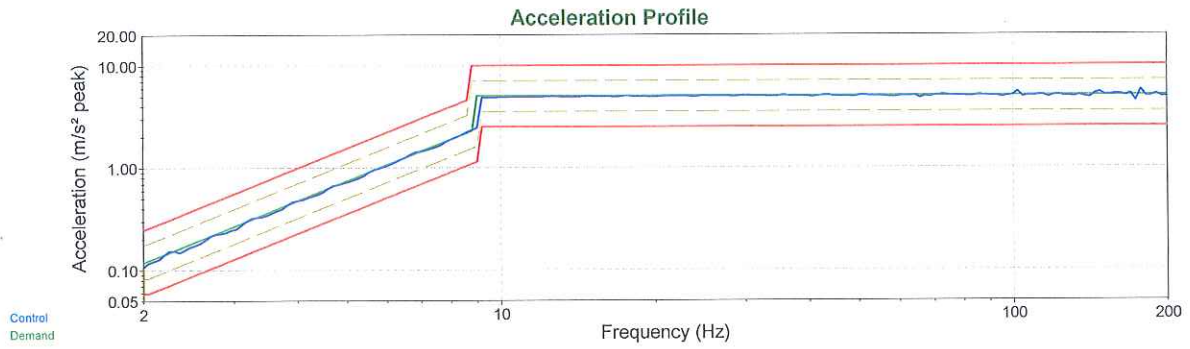
Customer: YIGIT AKU A.S. SFT LABORATUVARI
Job#: VANPAN ELEKTRIK PANO SISTEMLERI Z EKSENI

Data: C:\VibrationVIEW\Data\2020-04\2020Apr20-1130-0001.vsd
Test: C:\VibrationVIEW\Profiles\TS EN 61587-1 DL4 SINUS (recovered).vsp
Data stored on Apr 20, 2020 11:53:04

End of Sweep Test



AD



VibrationVIEW - [2020Apr20-1130-001 (Acceleration Profile)]

File Edit Configuration Test Record Graph Cursor View Window Help

TestType NewTest OpenTest Settings OpenData SaveData Print Report NewGraph Autoscale EditGraph Copy Help Context

STOP Run Hold J.

Reset Sine Graph Data

State Code: End of Sweep Test

Frequency (Hz): 2.00

Demand: 0.11844 Control: 0.10785

Accel. (m/s² peak) Val. (m/s peak) Dep. (mm pl-pk)

Remaining Level Time Total Time

0 0:22:42 0:22:50

SineCos Level

10 1 100%

Current Time Volts pk

Apr 20, 2020 11:54:22 0.000

Test Name

TS EN 61587-1 DL4 SINUS (recovered)

0.0032 Ch2 0.0038

Acceleration Profile

Output Drive

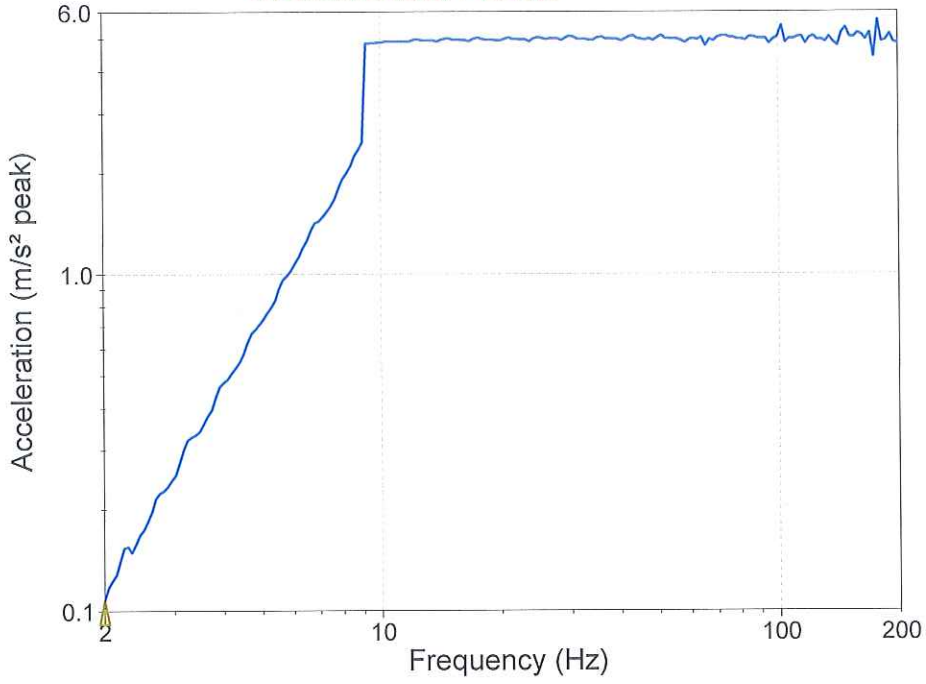
System Check: TS EN 61587-1 DL4 SINUS (recovered)*

End of Sweep Test

Sine TS EN 61587-1 DL4 SINUS (reco) 1F0E82

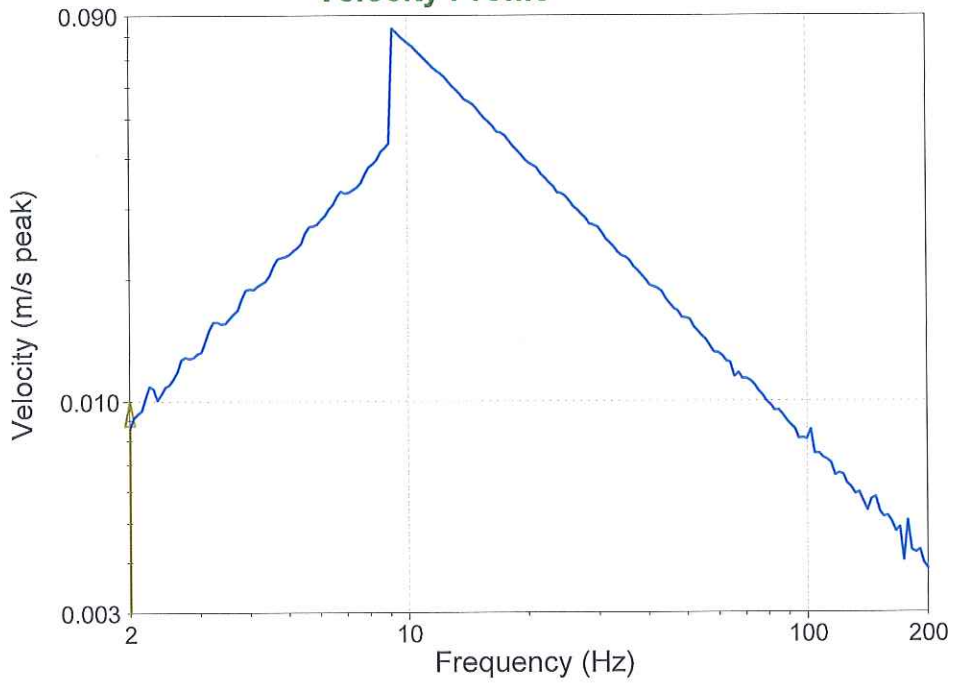
AD

Acceleration Profile



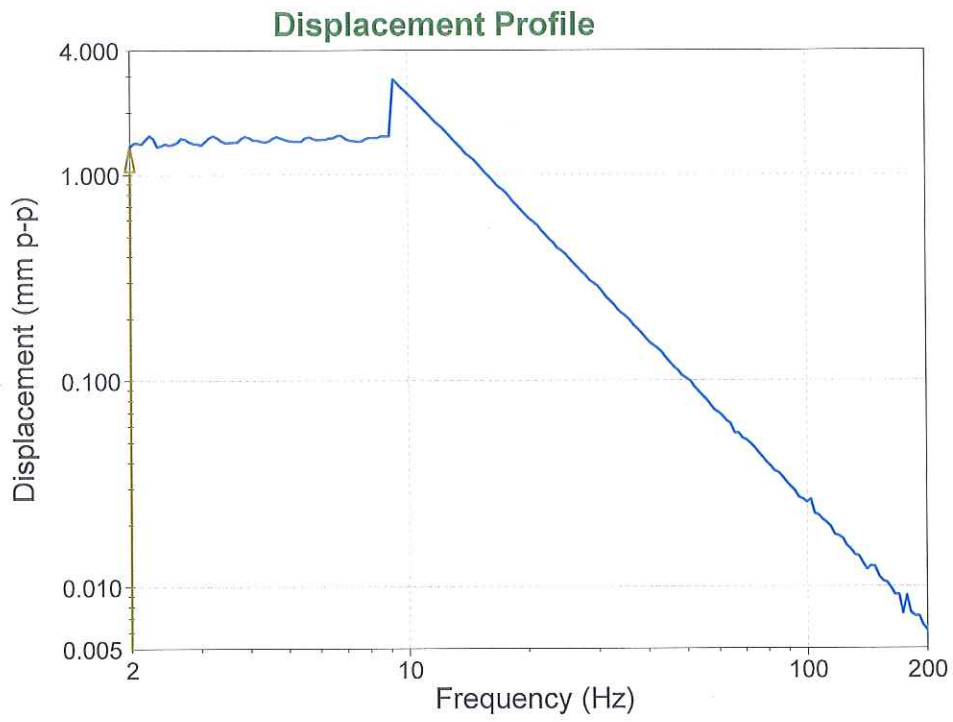
Control

Velocity Profile

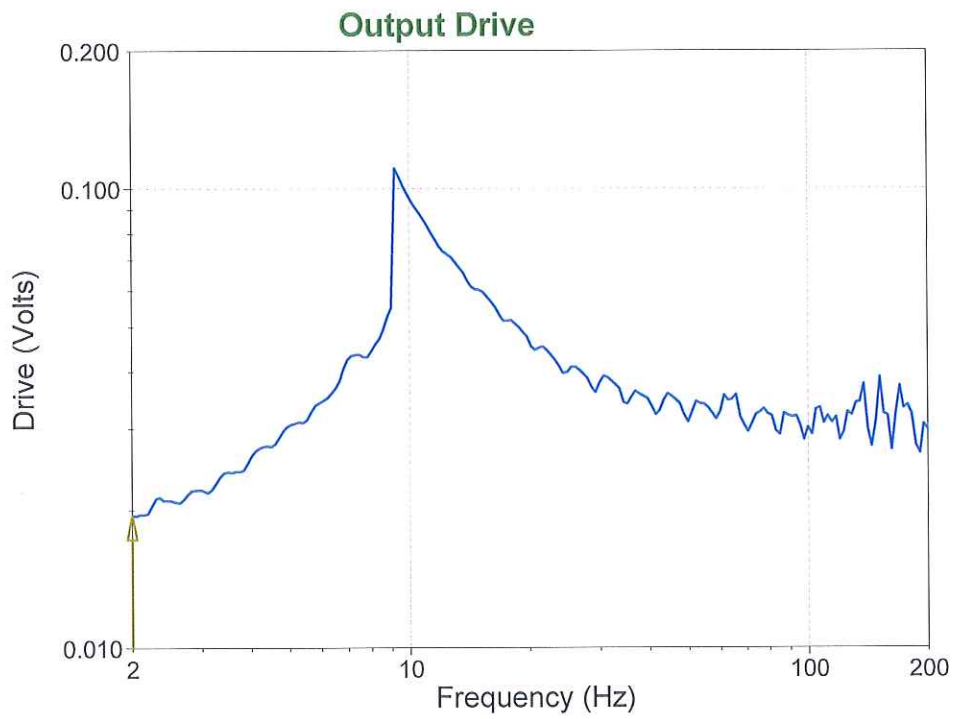


Control

A-D



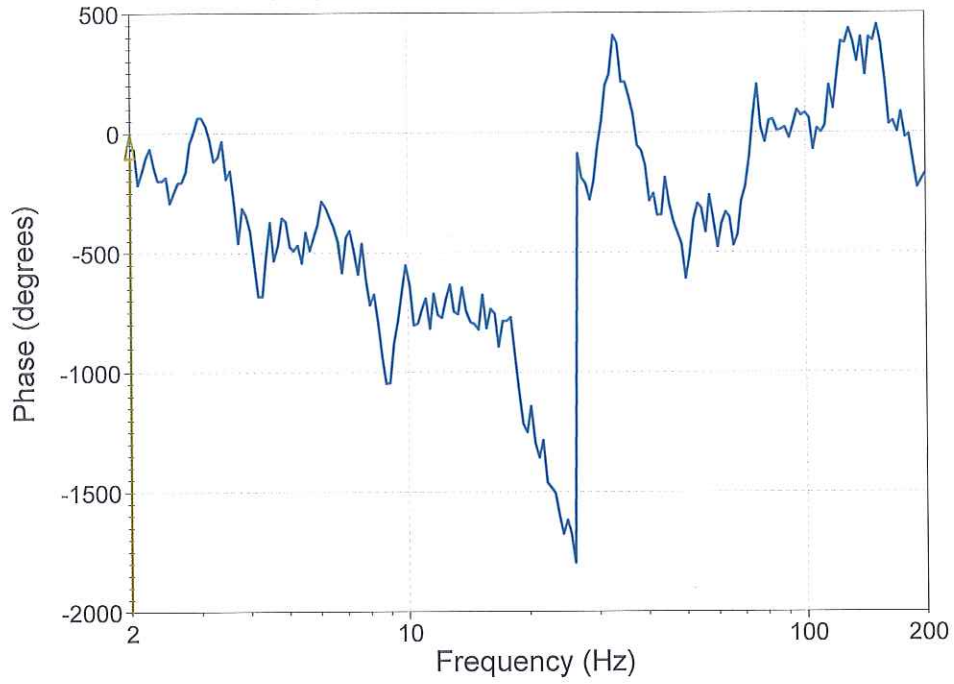
Control



Drive

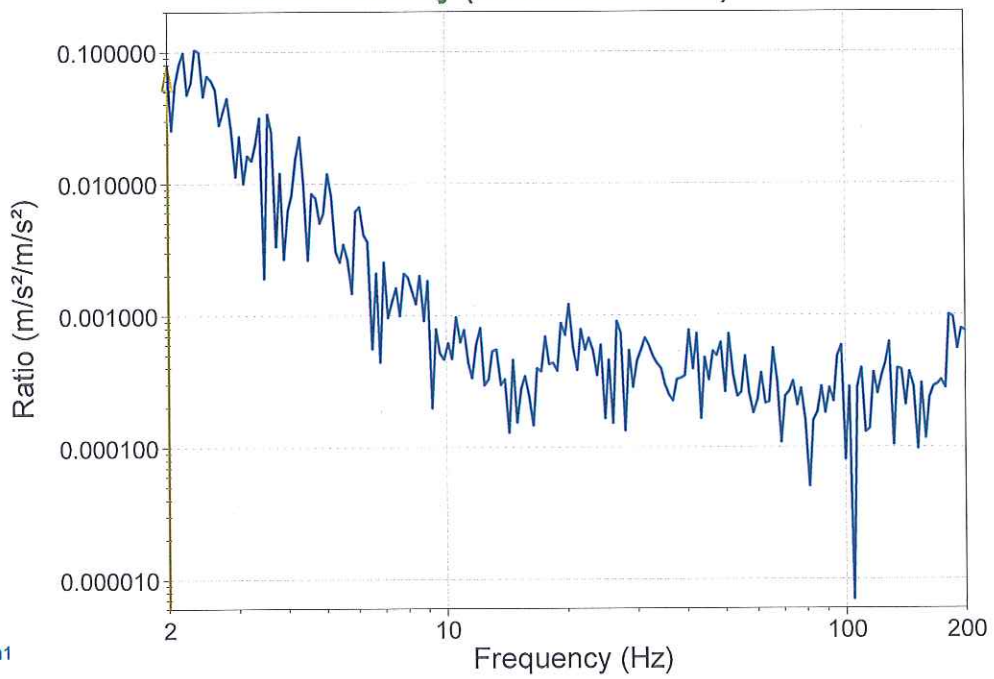
AD

Phase relative to Ch1



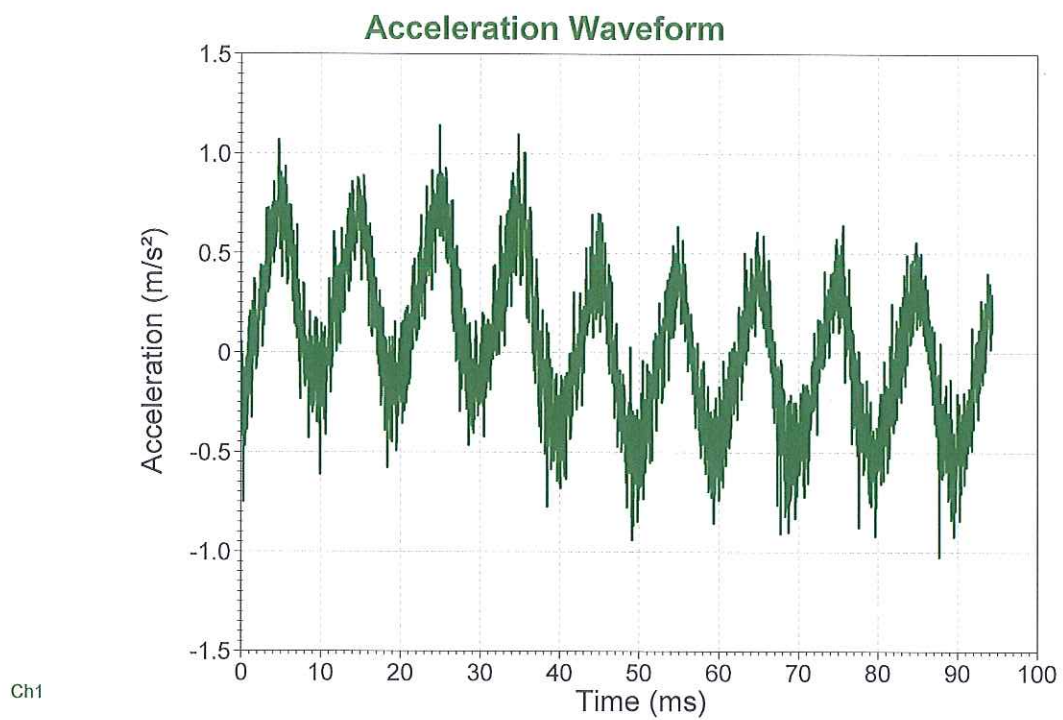
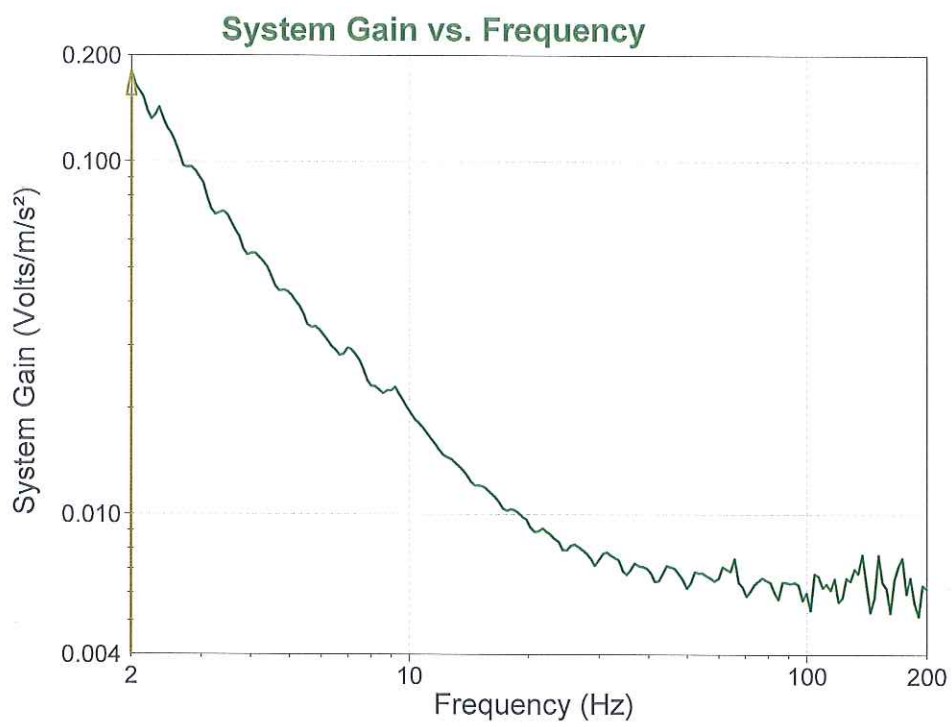
Ch2

Transmissibility (reference = Ch1)



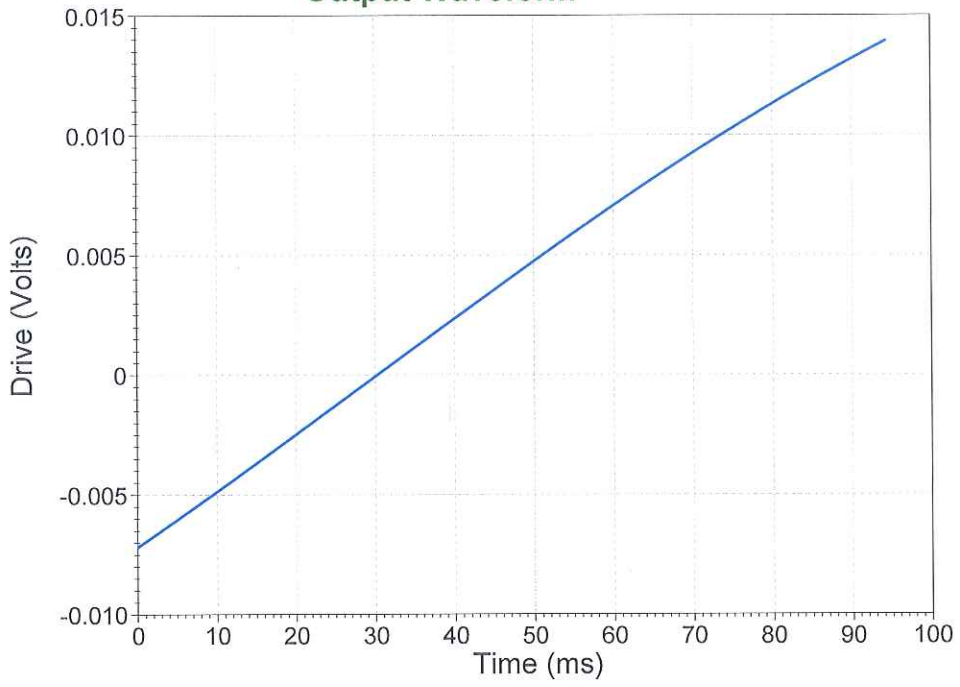
Ch2/Ch1

AO



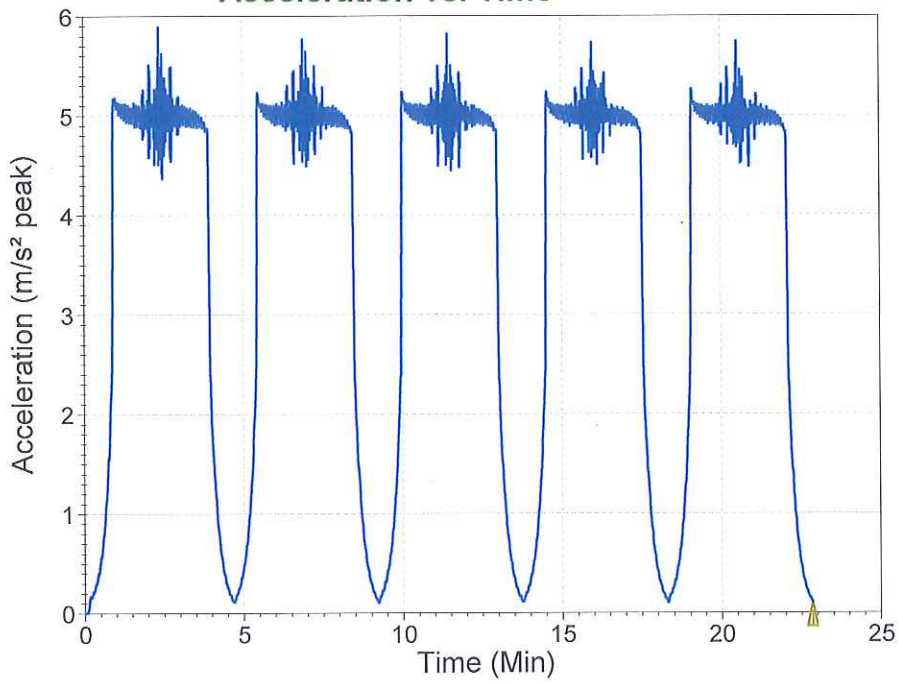
A.O

Output Waveform



Drive

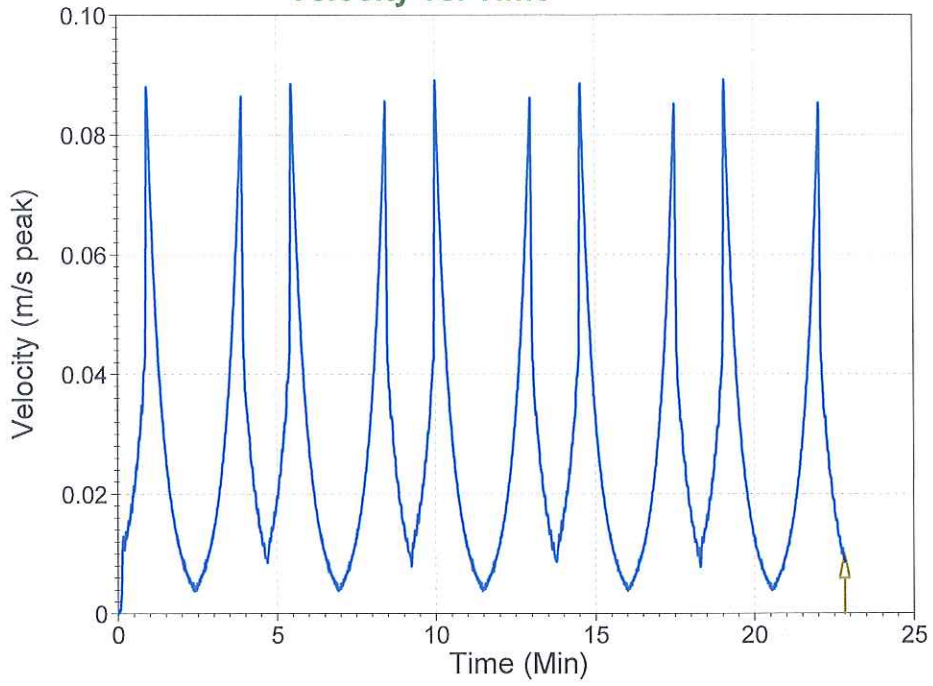
Acceleration vs. Time



Control

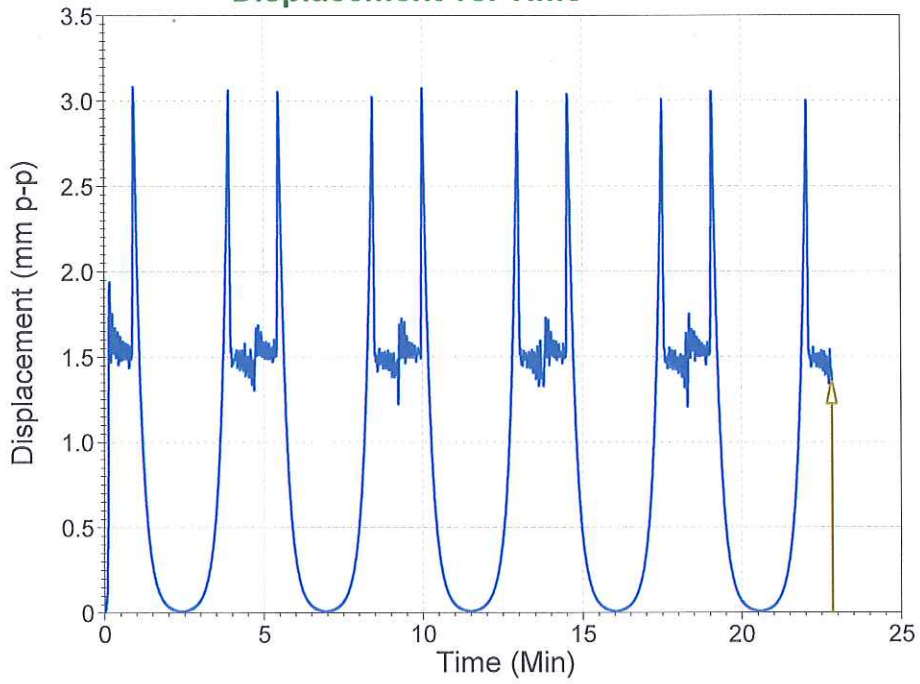
A.O

Velocity vs. Time



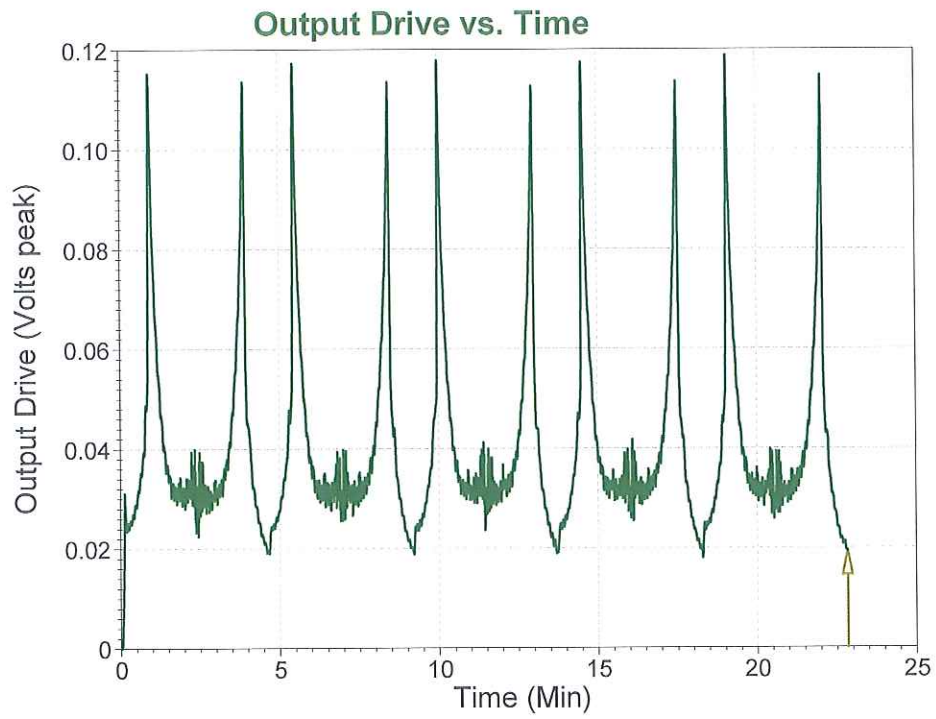
Control

Displacement vs. Time

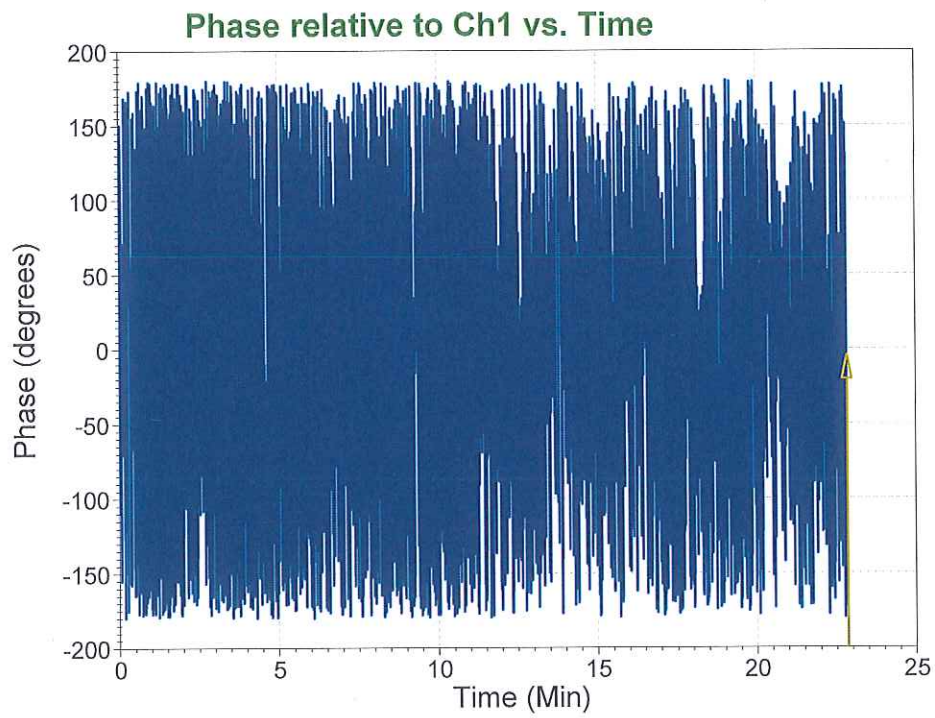


Control

A.D

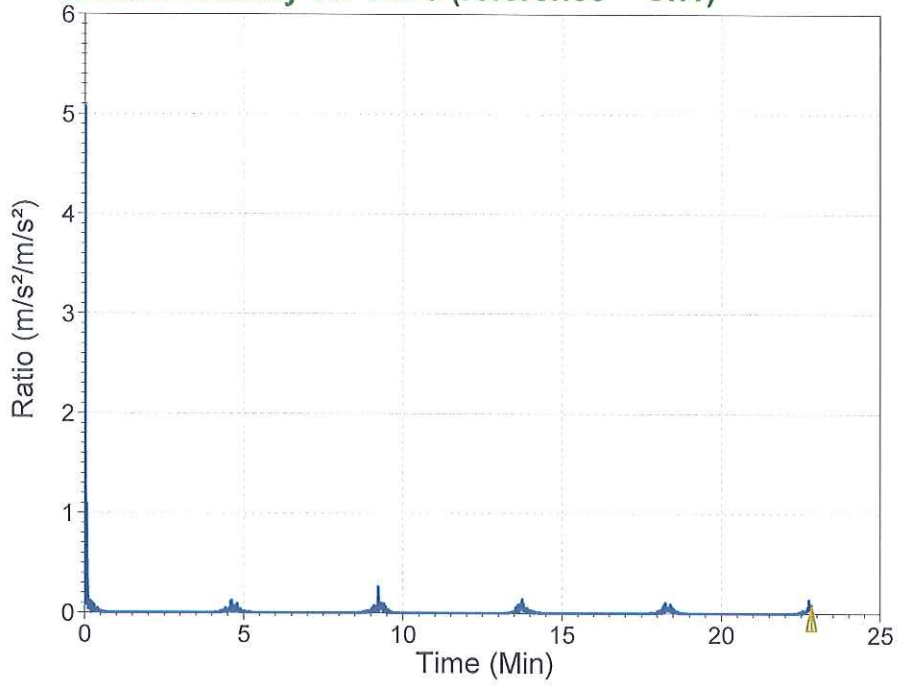


Drive

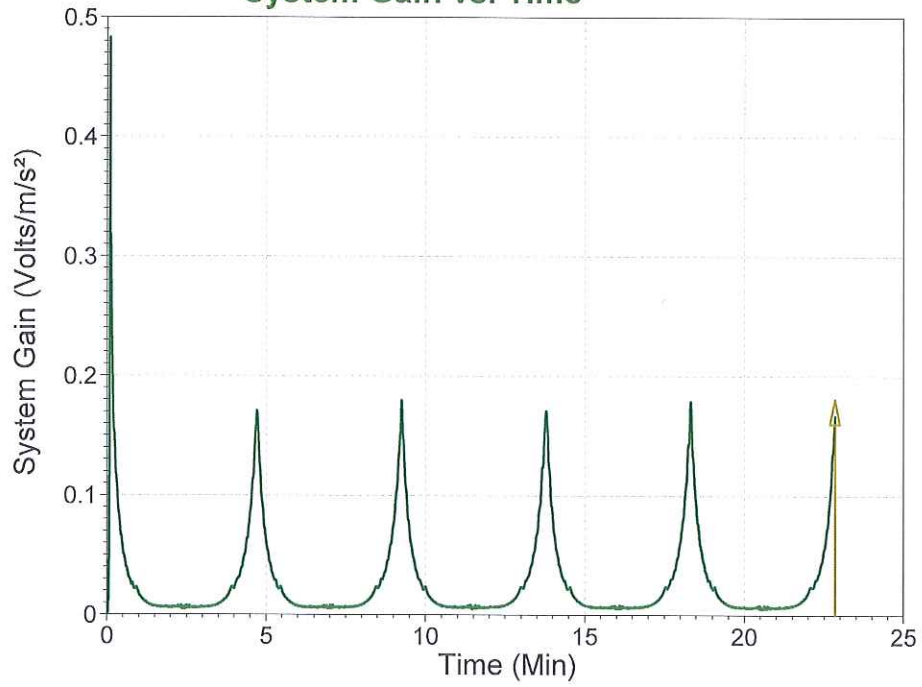


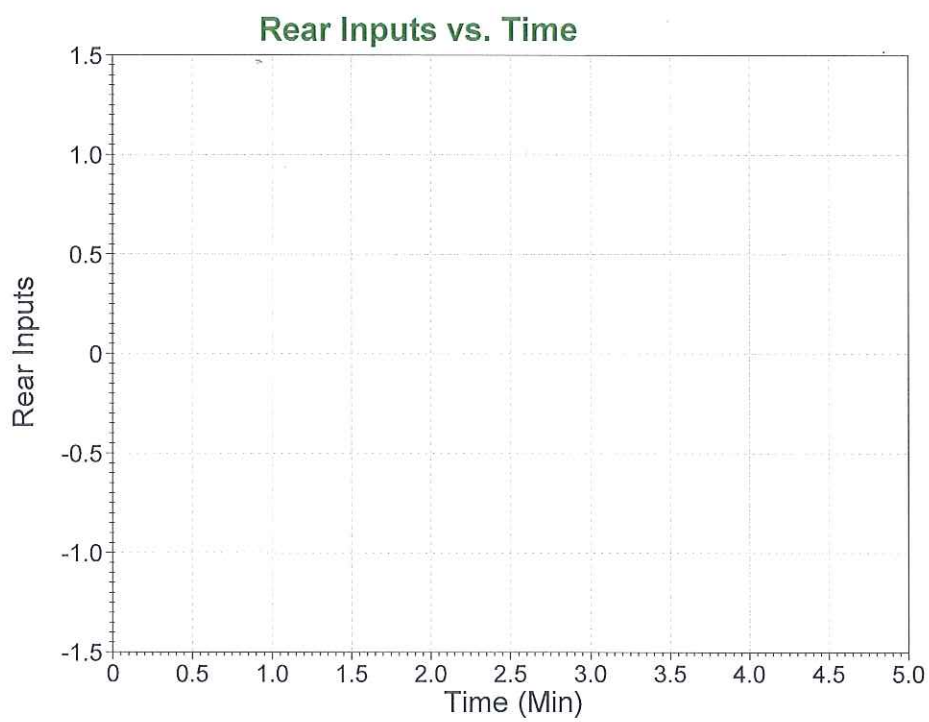
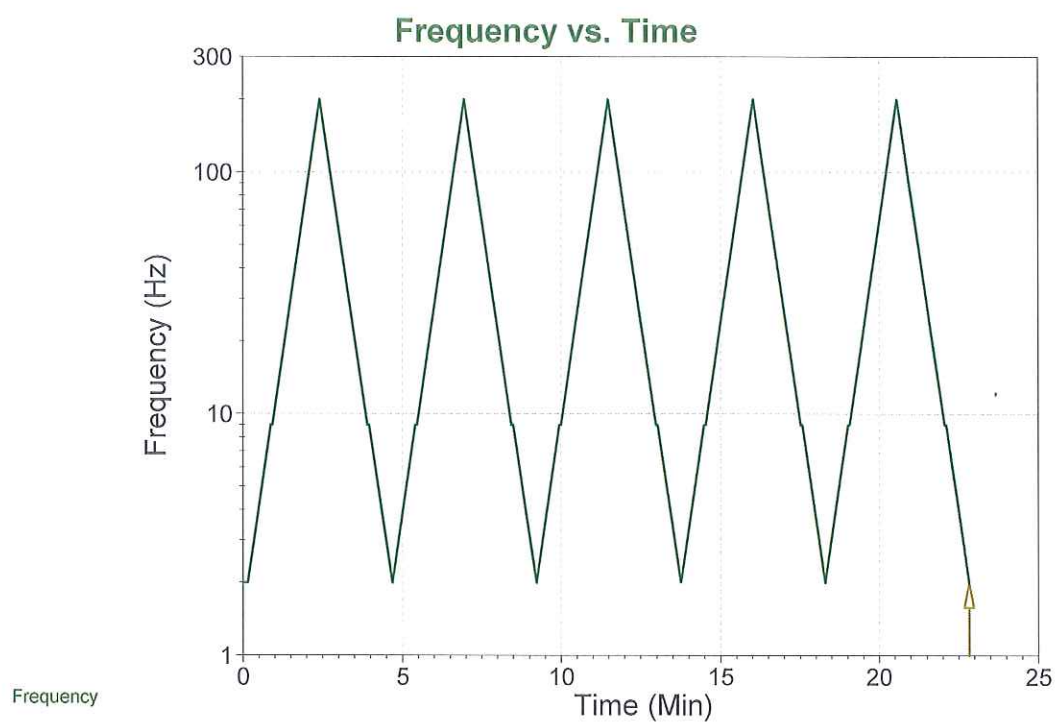
Ch2

Transmissibility vs. Time (reference = Ch1)

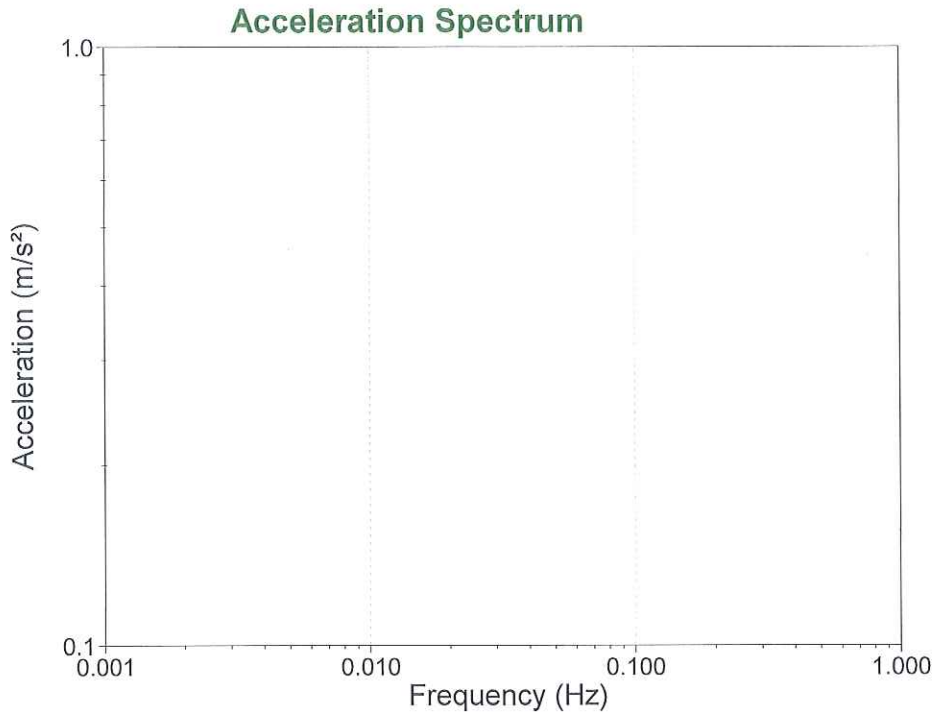


System Gain vs. Time





AD



Breakpoint table

Start Freq.	Amplitude	End Freq.	Amplitude
2 Hz	1.5 mm	9 Hz	1.5 mm
9 Hz	5 m/s ²	200 Hz	5 m/s ²

Test level schedule:

	Duration	Level
1)	10 sweeps	100 %

** Test started Apr 20, 2020 11:30:14, running for 0:22:50

** Current level: 1, running at 100 %, 10 of 10 sweeps complete

Current Measurements:

Demand: 1.5 mm at 2 Hz	Ch1: 0.107852 m/s ²
Control: 0.1079 m/s ²	Ch2: 0.00844622 m/s ²
Control Vel.: 0.008583 m/s	Ch3: n/a
Control Disp.: 1.366 mm	Ch4: n/a

Drive voltage: 0.01948 Volts peak

System gain is 0.18058 Volts/m/s² (Max system gain limit = 1 Volts peak)

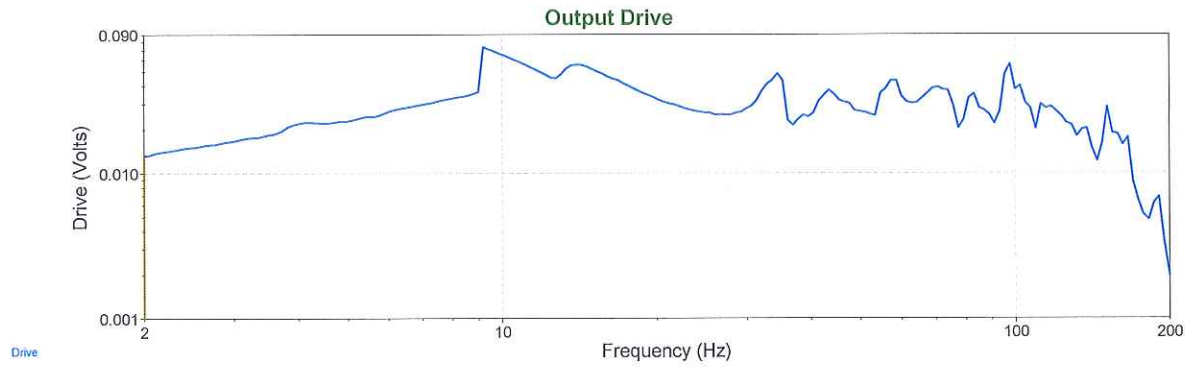
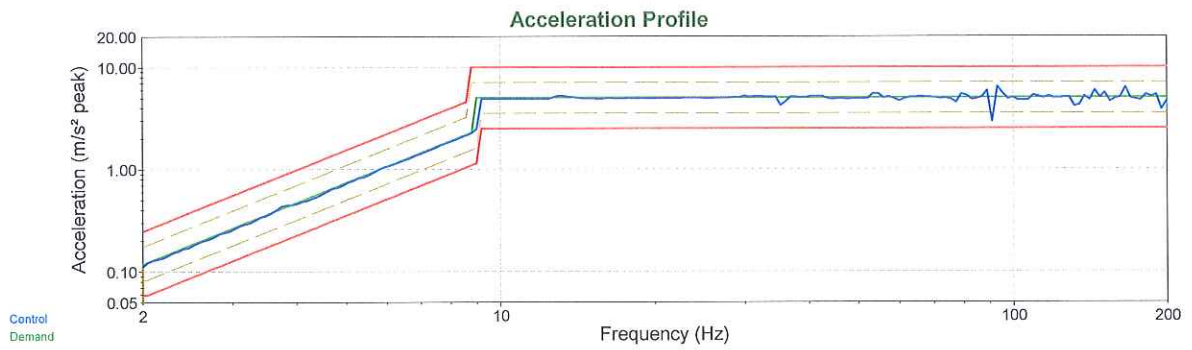
Channel Measurements:

	Accel	Velocity	Displacement
Ch1	0.107852 m/s ²	0.00858257 m/s	1.36596 mm

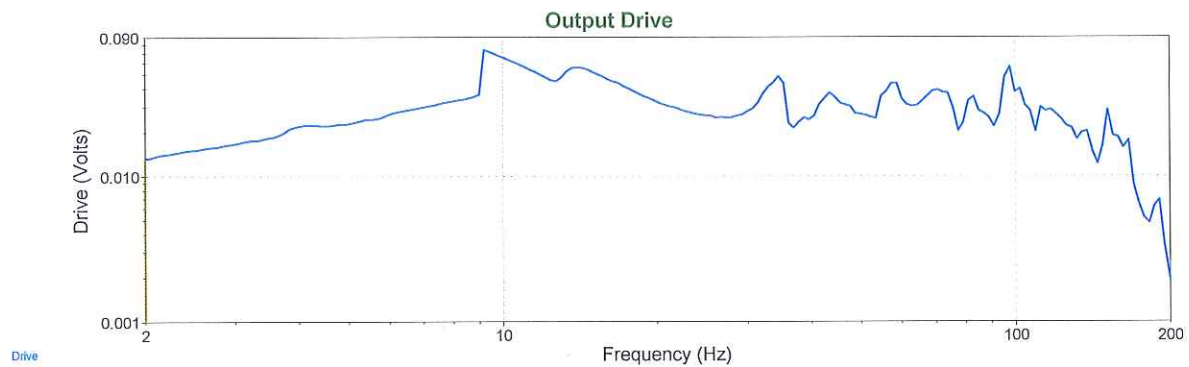
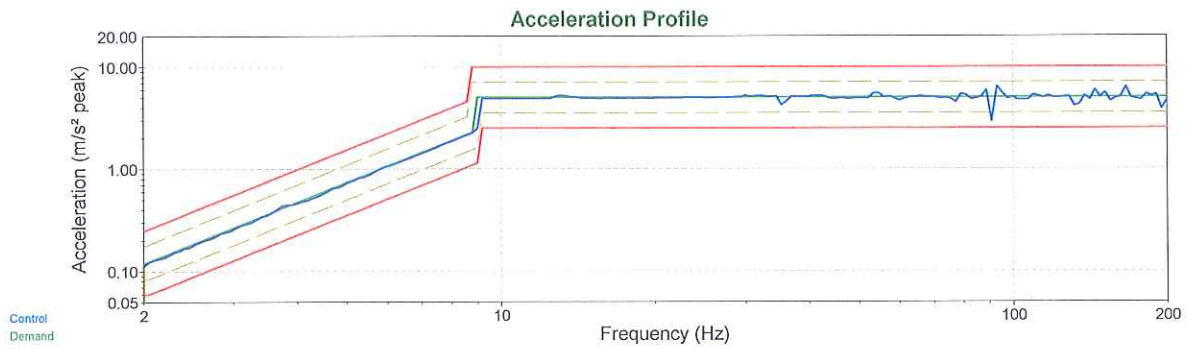
Customer: YIGIT AKU A.S. SFT LABORATUVARI
Job#: Job#: VANPAN ELEKTRIK PANO SISTEMLERI Y EKSENI

Data: C:\VibrationVIEW\Data\2020-04\2020Apr20-1508-0009.vsd
Test: C:\VibrationVIEW\Profiles\TS EN 61587-1 DL4 SINUS (recovered).vsp
Data stored on Apr 20, 2020 16:47:03

End of Sweep Test



AD



VibrationVIEW - [2020Apr20-1503-0939 (Acceleration Profile)]

File Edit Configuration Test Record Graph Cursor View Window Help

TestType NewTest OpenTest Settings OpenData SaveData Print Report NewGraph Autoscale EditGraph Copy Help Context

STOP Run Hold

Reset Sine Graph Data

Stop Code: End of Sweep Test

Frequency (Hz): 2.00

Demand: 0.11844 Control: 0.11242

Accel. (m/s² peak)
 Vel. (m/s peak)
 Disp. (mm pk-pk)

Remaining: 0 Level Time: 0:22:46 Total Time: 0:23:57
 Sweeps: 10 Level: 10 100%
 Current Time: Apr 20, 2020 16:57:55 Volts pk: 0.050

Test Name: TS EN 61587-1 DL4 SINUS (recovered)

Ch1: 0.0043 Ch2: 0.0180

Acceleration Profile

Output Drive

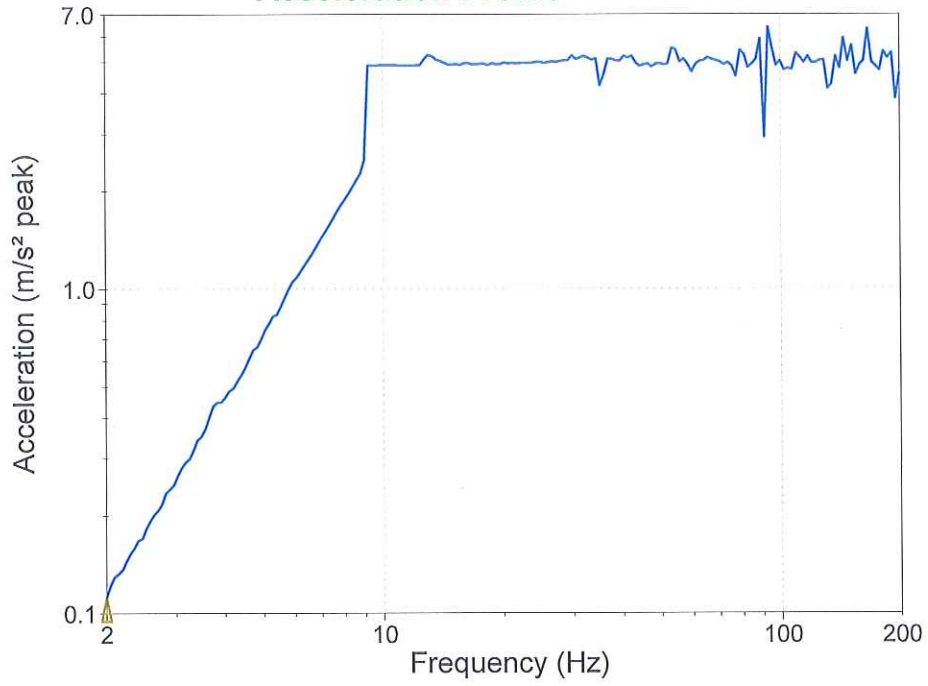
System Check: TS EN 61587-1 DL4 SINUS (recovered)*

End of Sweep Test

Sine TS EN 61587-1 DL4 SINUS (reco) 1FOEBZ

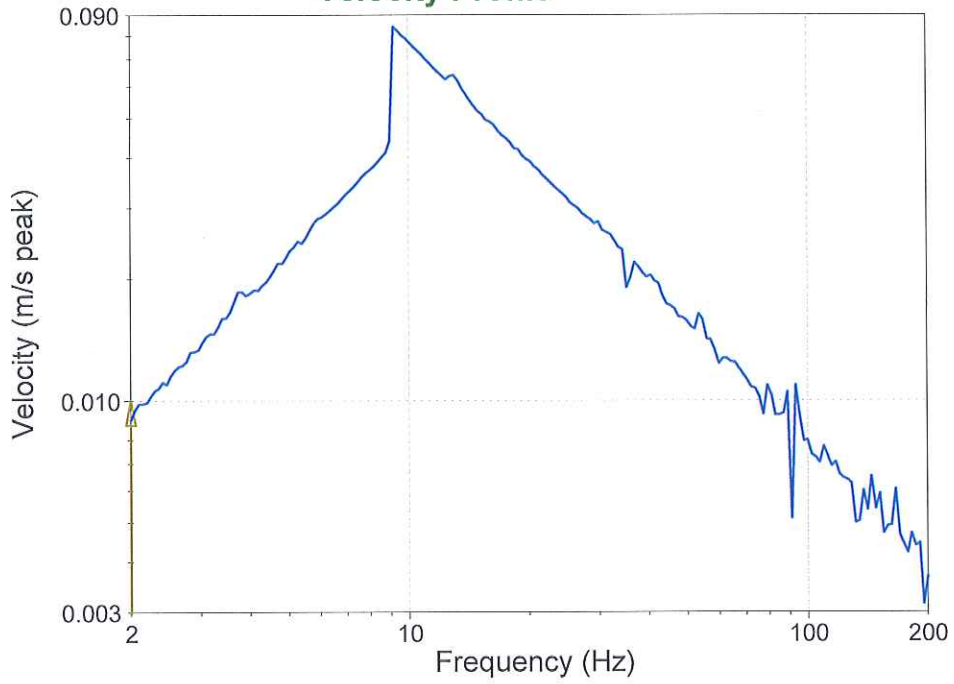
As

Acceleration Profile



Control

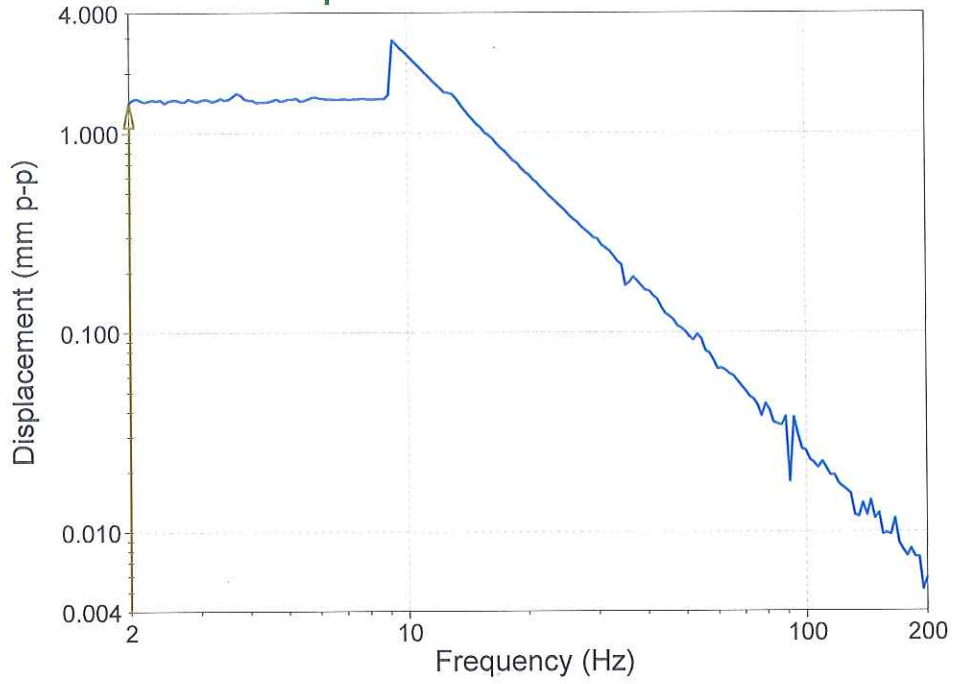
Velocity Profile



Control

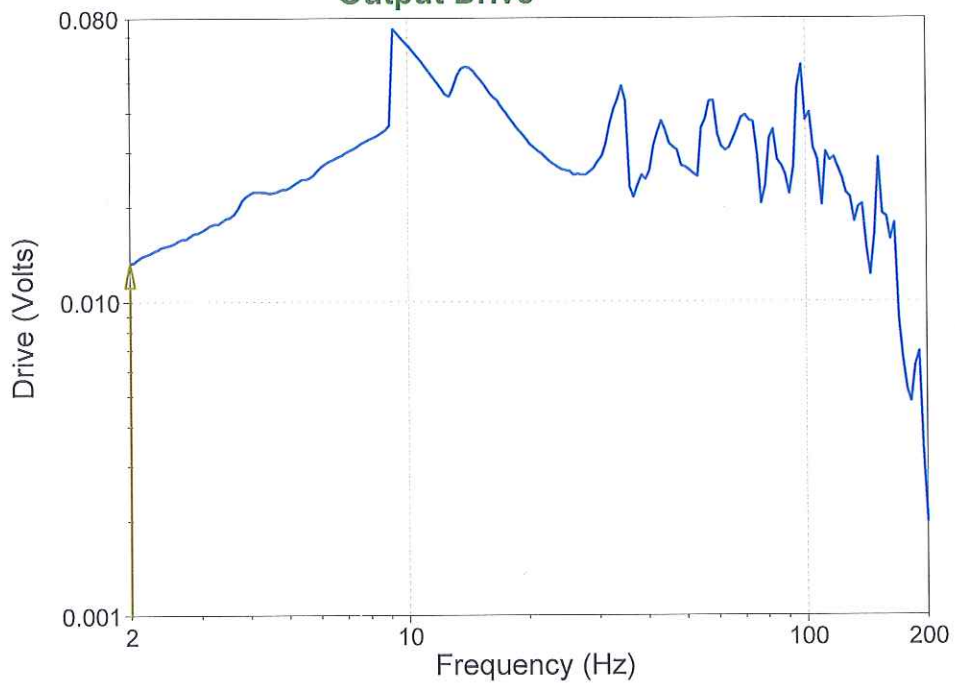
AD

Displacement Profile



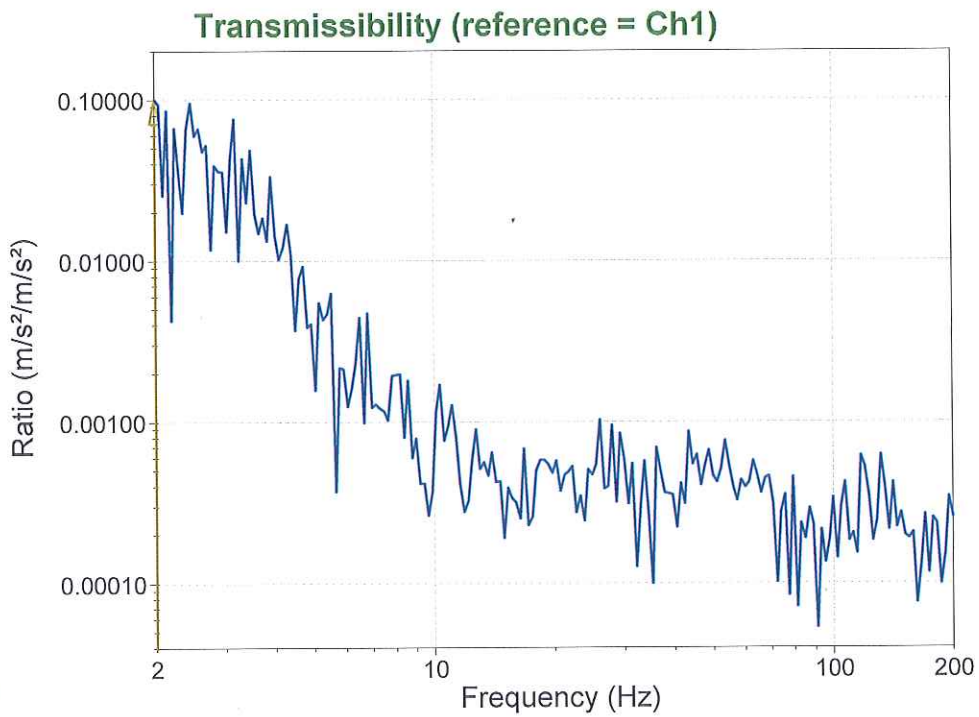
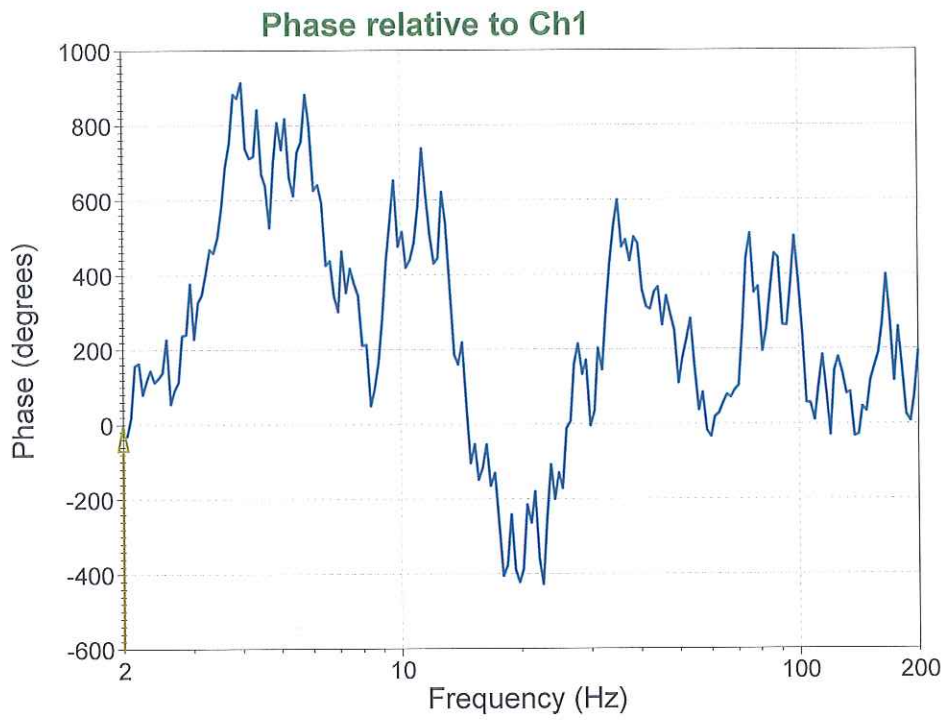
Control

Output Drive

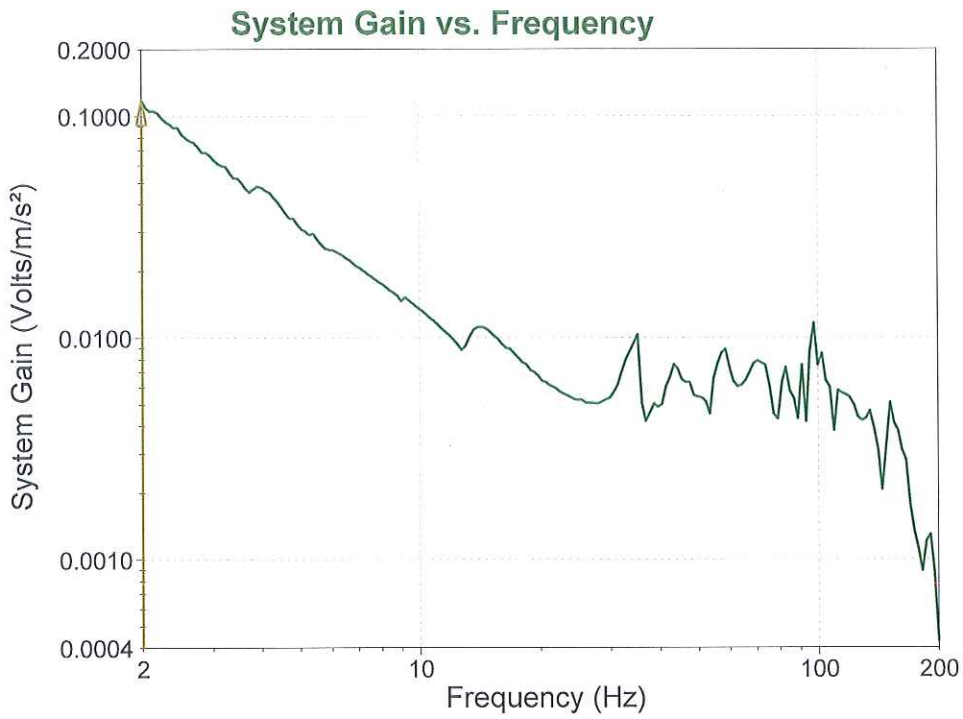


Drive

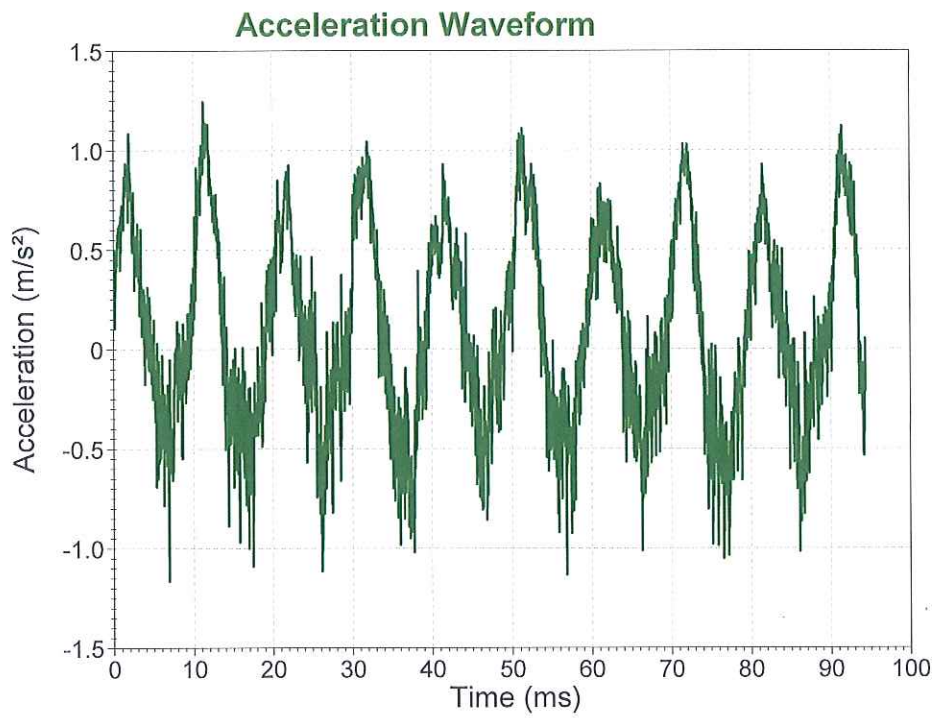
AD



AD



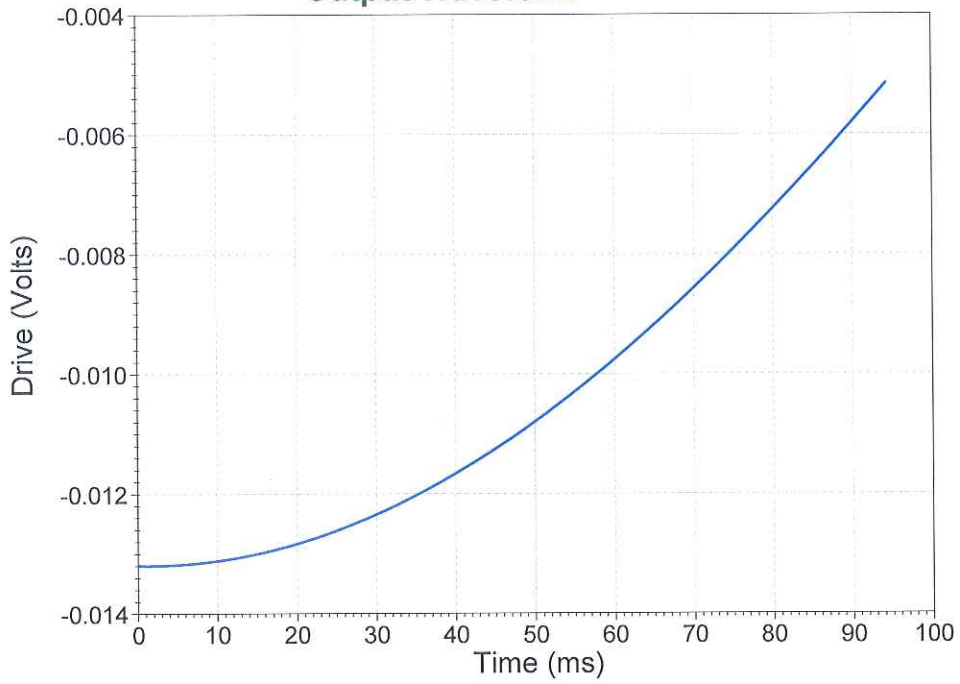
Gain



Ch1

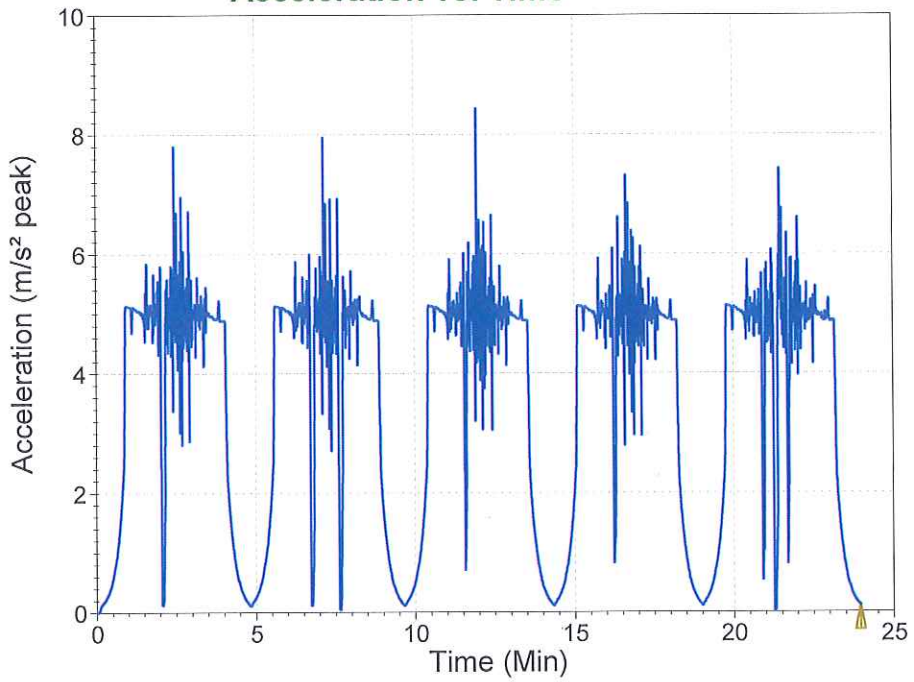
A-D

Output Waveform



Drive

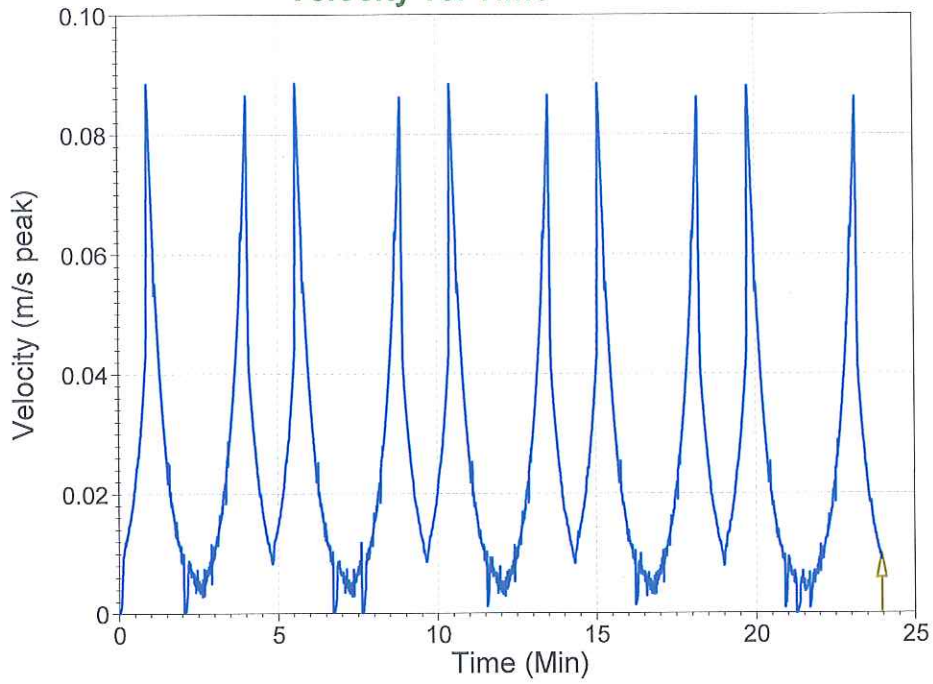
Acceleration vs. Time



Control

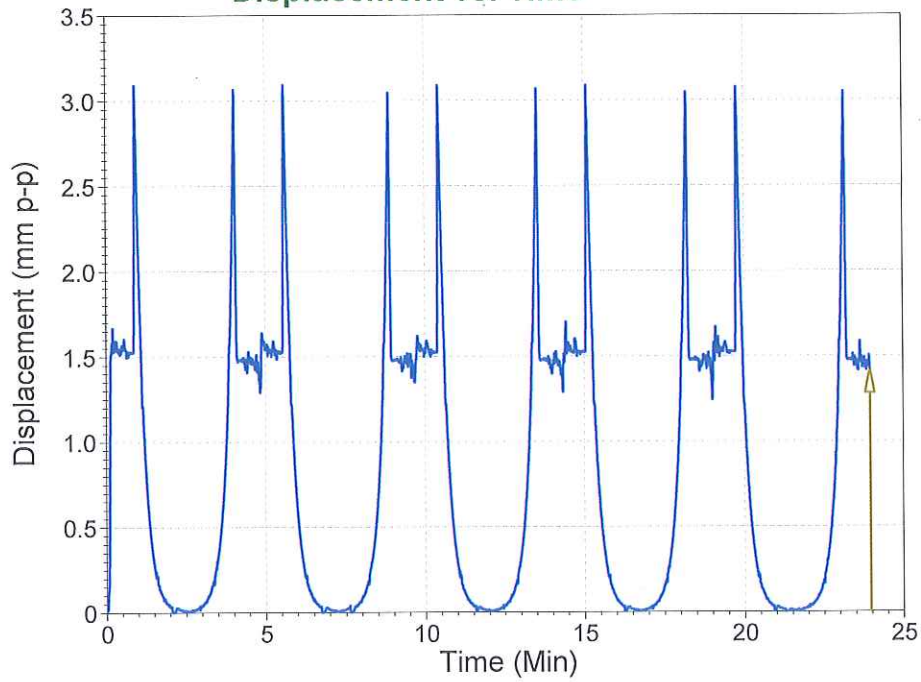
AD

Velocity vs. Time



Control

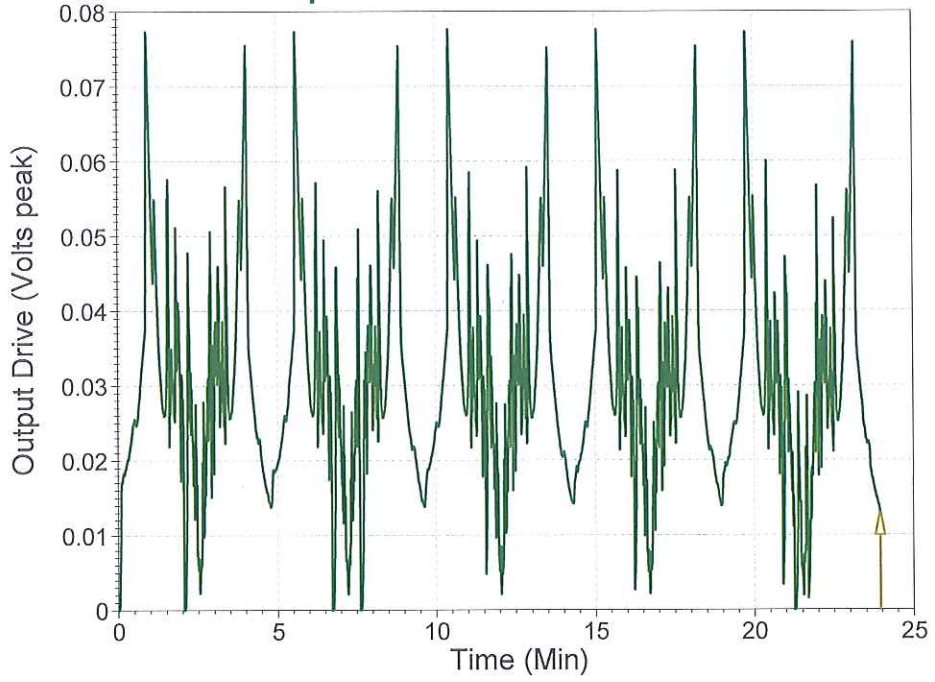
Displacement vs. Time



Control

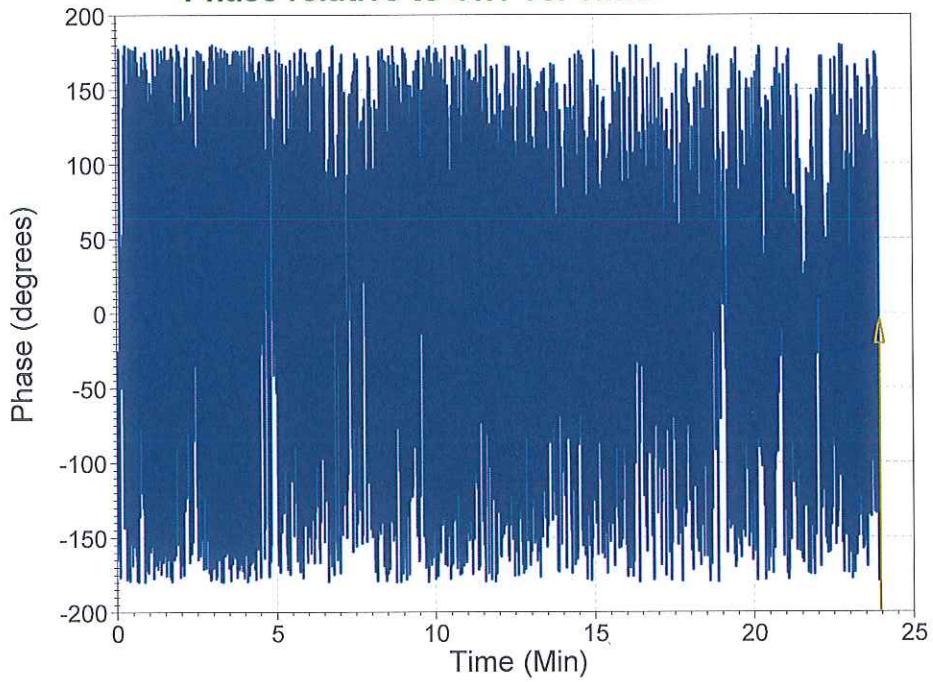
AC

Output Drive vs. Time



Drive

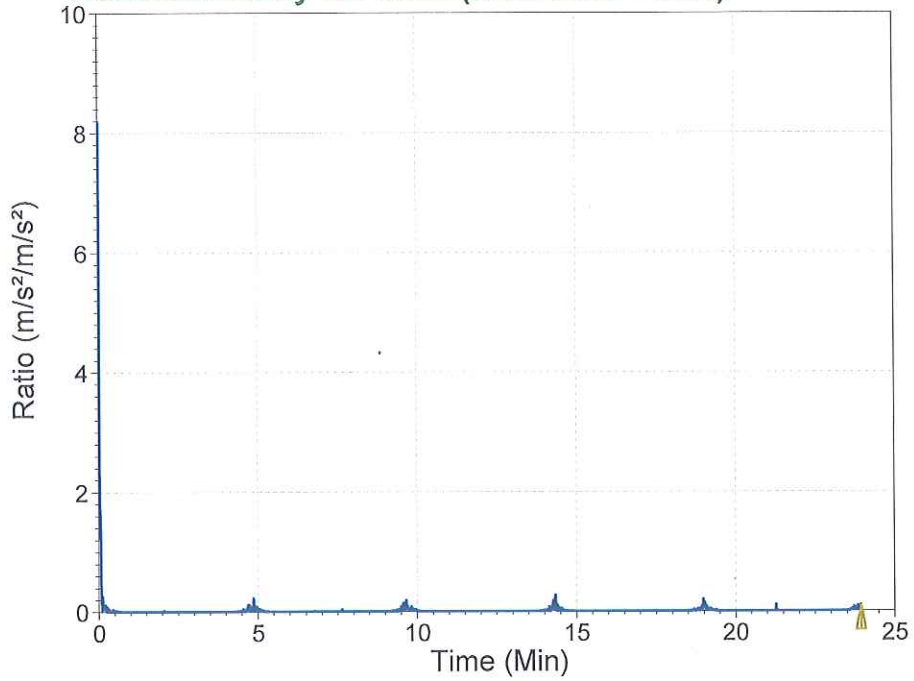
Phase relative to Ch1 vs. Time



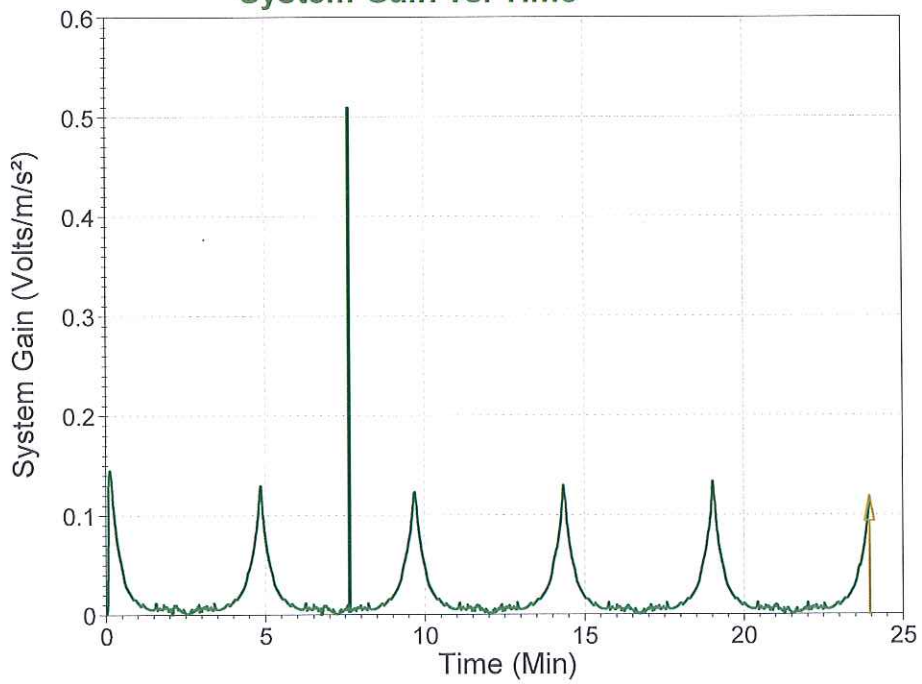
ch2

A.D

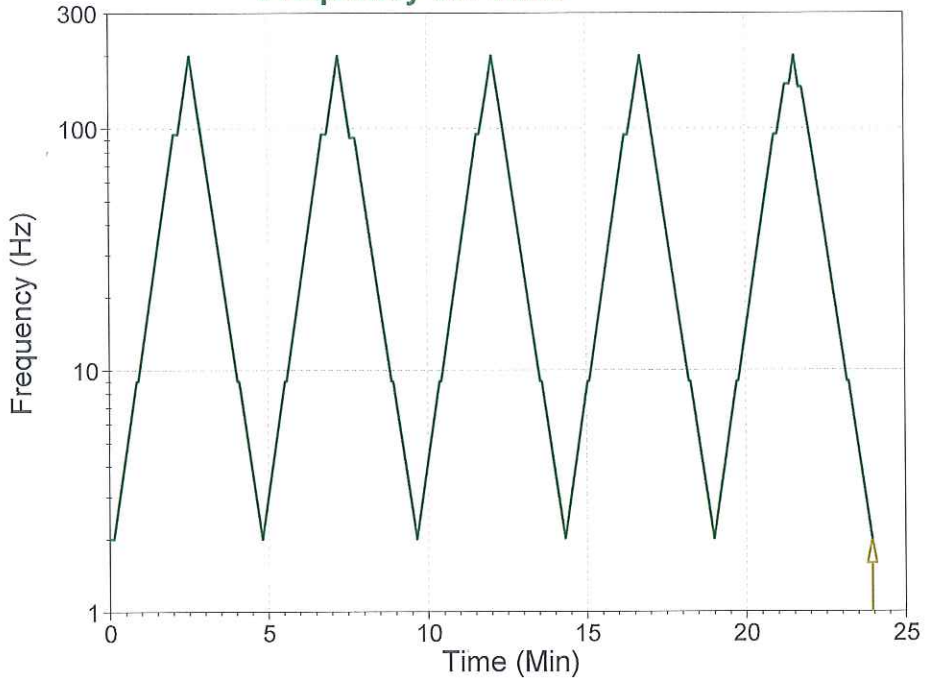
Transmissibility vs. Time (reference = Ch1)



System Gain vs. Time

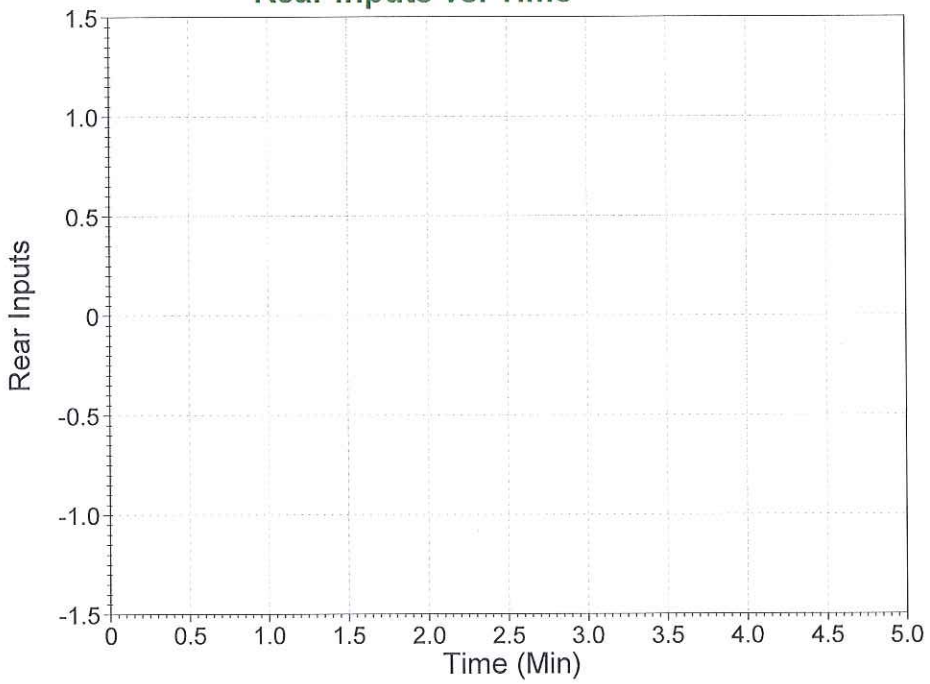


Frequency vs. Time

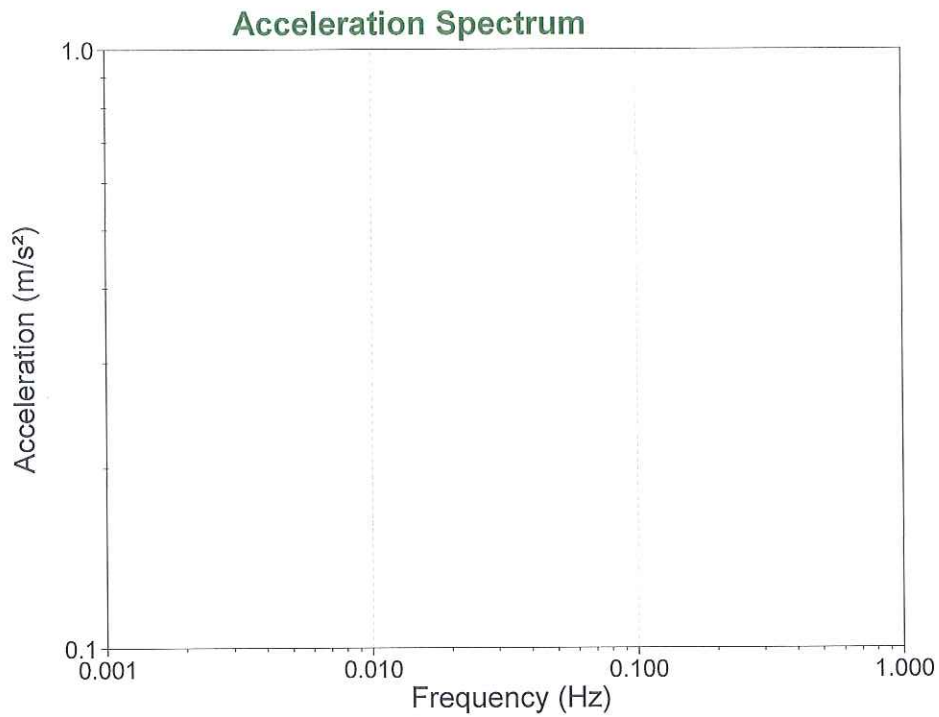


Frequency

Rear Inputs vs. Time



AD



Breakpoint table

Start Freq.	Amplitude	End Freq.	Amplitude
2 Hz	1.5 mm	9 Hz	1.5 mm
9 Hz	5 m/s ²	200 Hz	5 m/s ²

Test level schedule:

	Duration	Level
1)	10 sweeps	100 %

** Test started Apr 20, 2020 15:08:46, running for 0:23:57
 ** Current level: 1, running at 100 %, 10 of 10 sweeps complete

Current Measurements:

Demand: 1.5 mm at 2 Hz	Ch1: 0.112416 m/s ²
Control: 0.1124 m/s ²	Ch2: 0.0113365 m/s ²
Control Vel.: 0.008946 m/s	Ch3: n/a
Control Disp.: 1.424 mm	Ch4: n/a

Drive voltage: 0.01327 Volts peak
 System gain is 0.118068 Volts/m/s² (Max system gain limit = 1 Volts peak)

Channel Measurements:

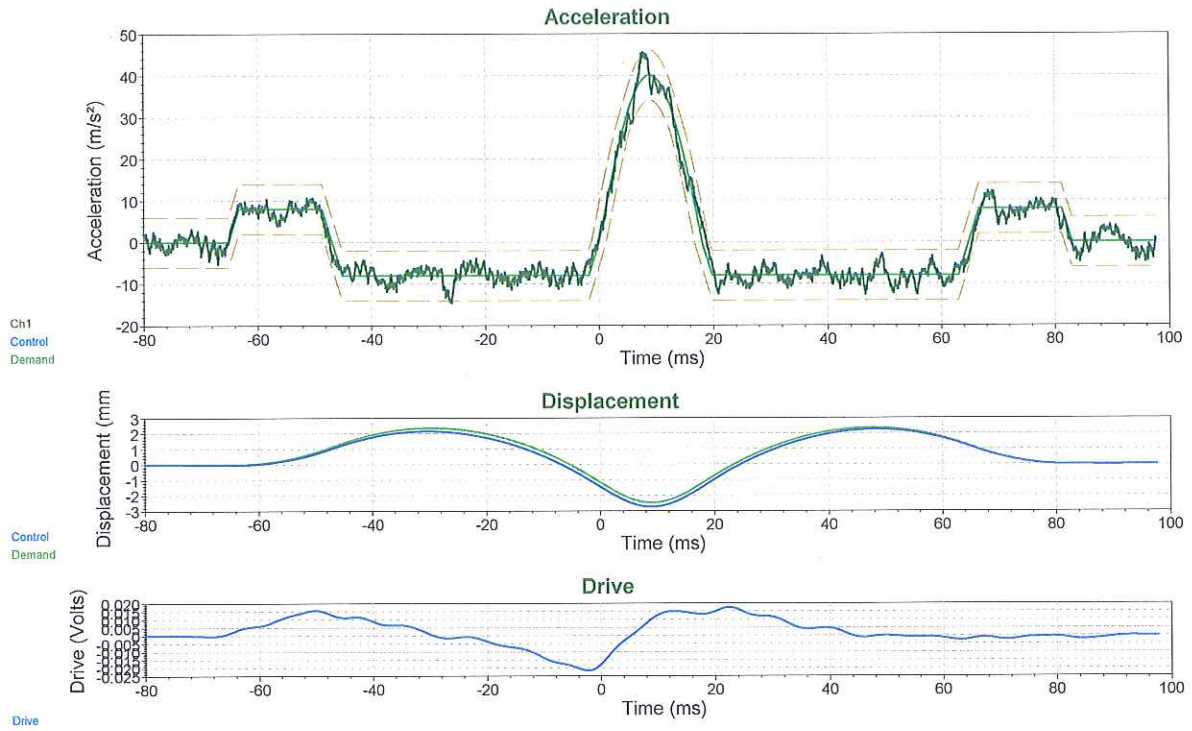
	Accel	Velocity	Displacement
Ch1	0.112416 m/s ²	0.00894578 m/s	1.42376 mm

AD

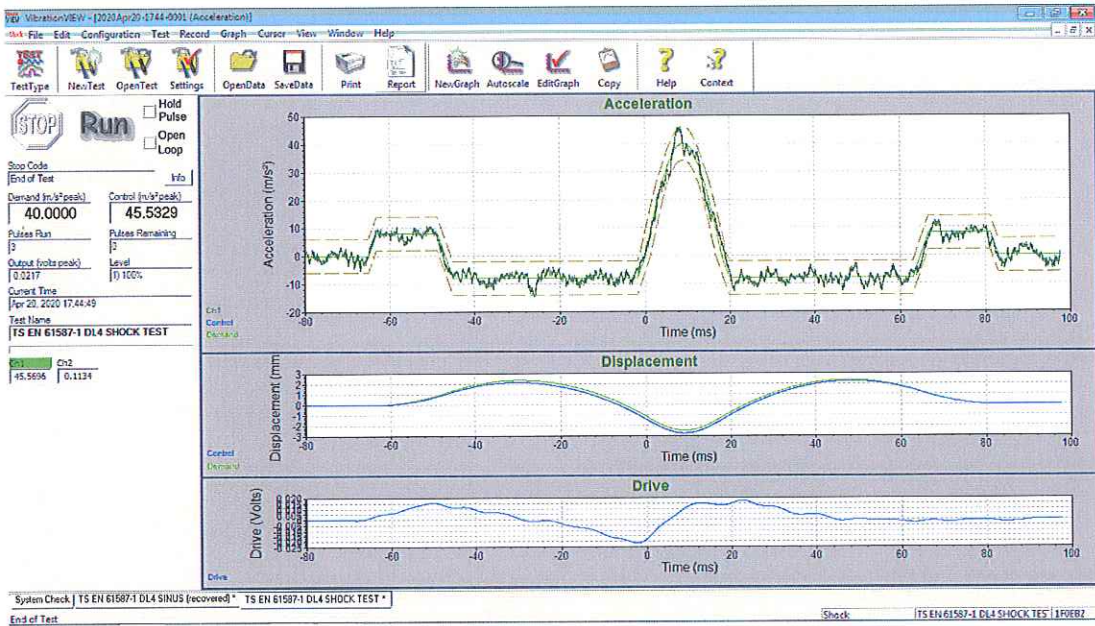
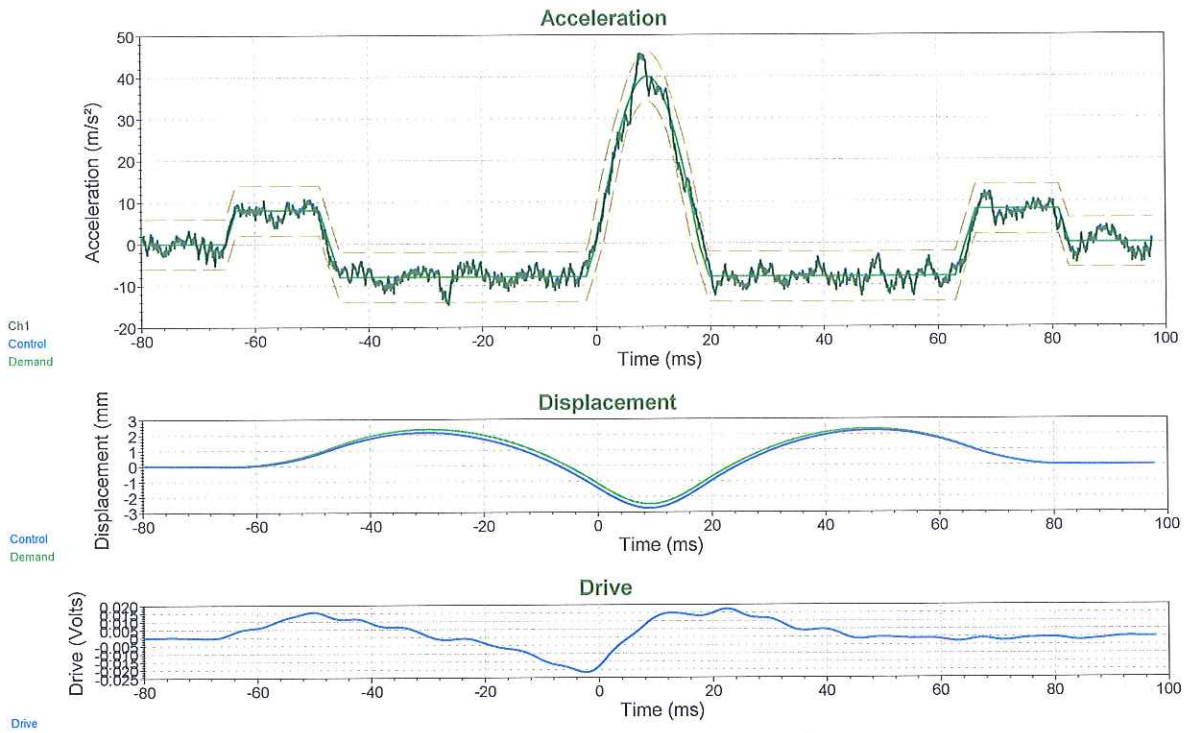
Customer: YIGIT AKU A.S. SFT LABORATUVARI
Job#: VANPAN ELEKTRIK PANO SISTEMLERİ ŞOK TESTİ

Data: C:\VibrationVIEW\Data\2020-04\2020Apr20-1744-0001.vkd
Test: C:\VibrationVIEW\Profiles\TS EN 61587-1 DL4 SHOCK TEST.vkp
Data stored on Apr 20, 2020 17:44:10

End of Test

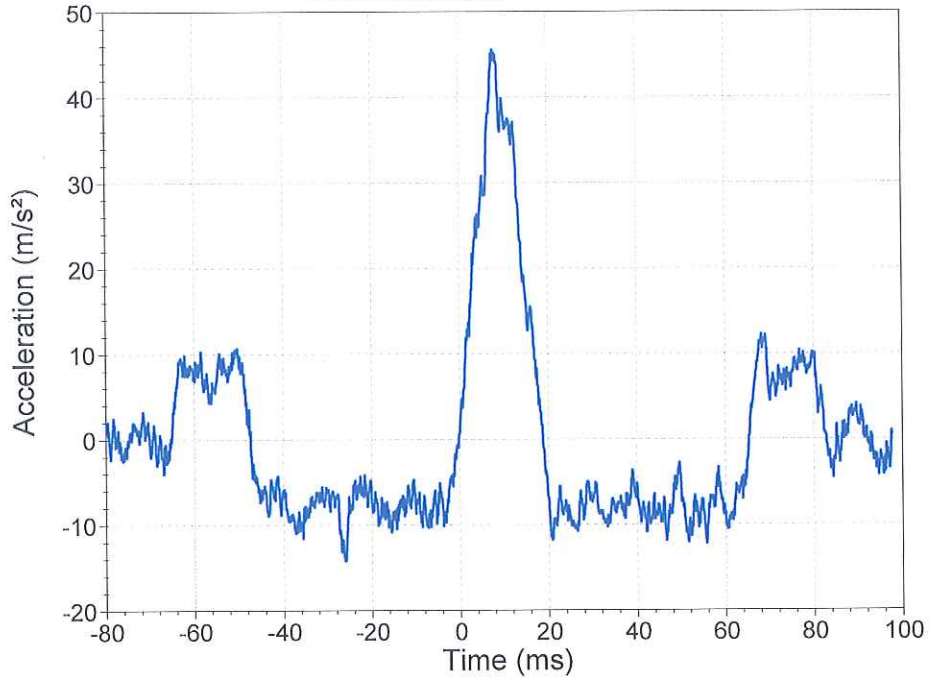


AG



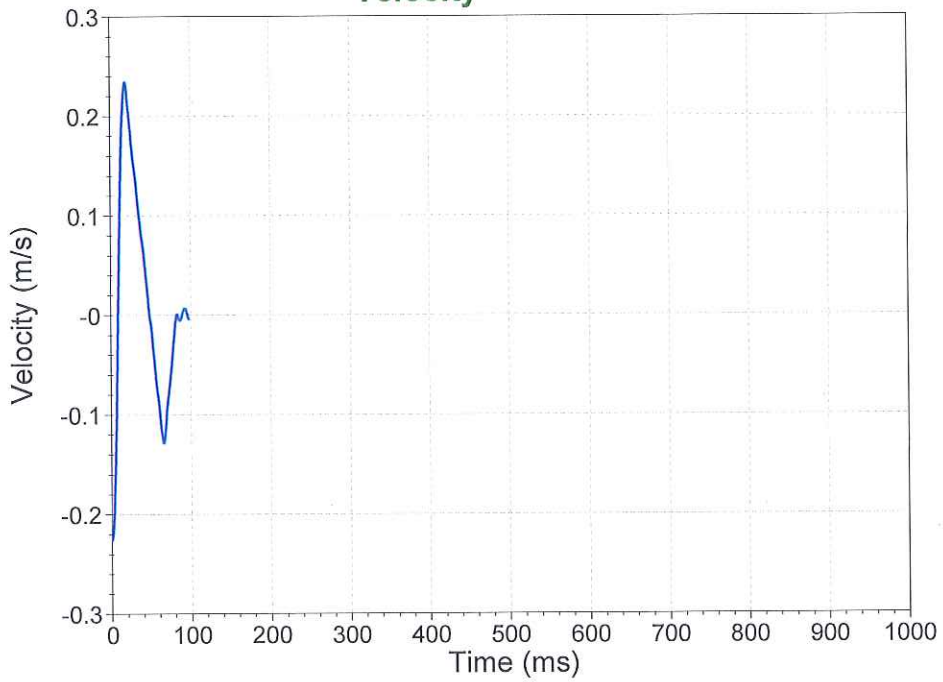
AD

Acceleration



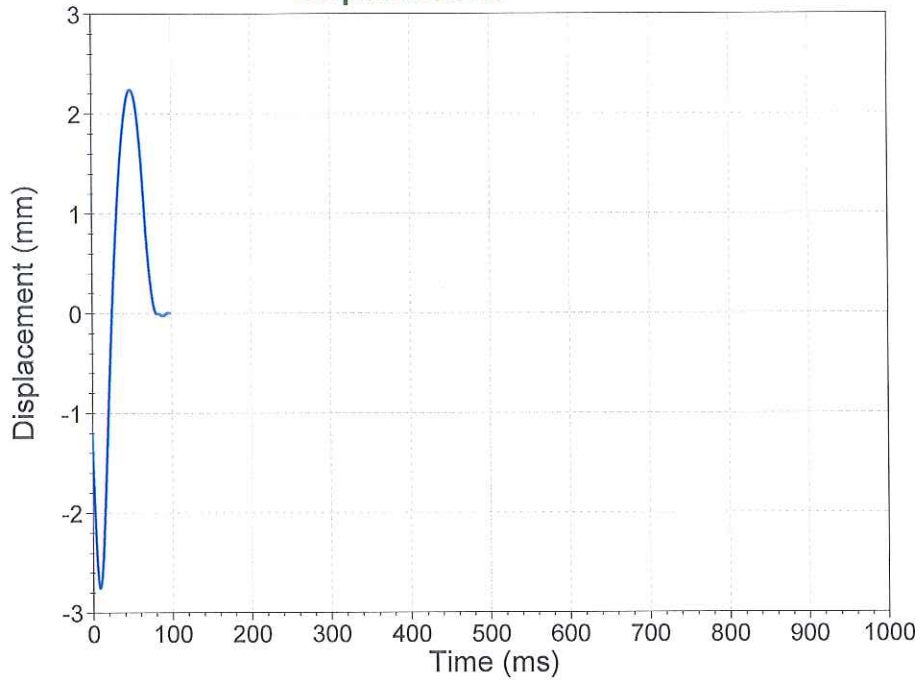
Control

Velocity



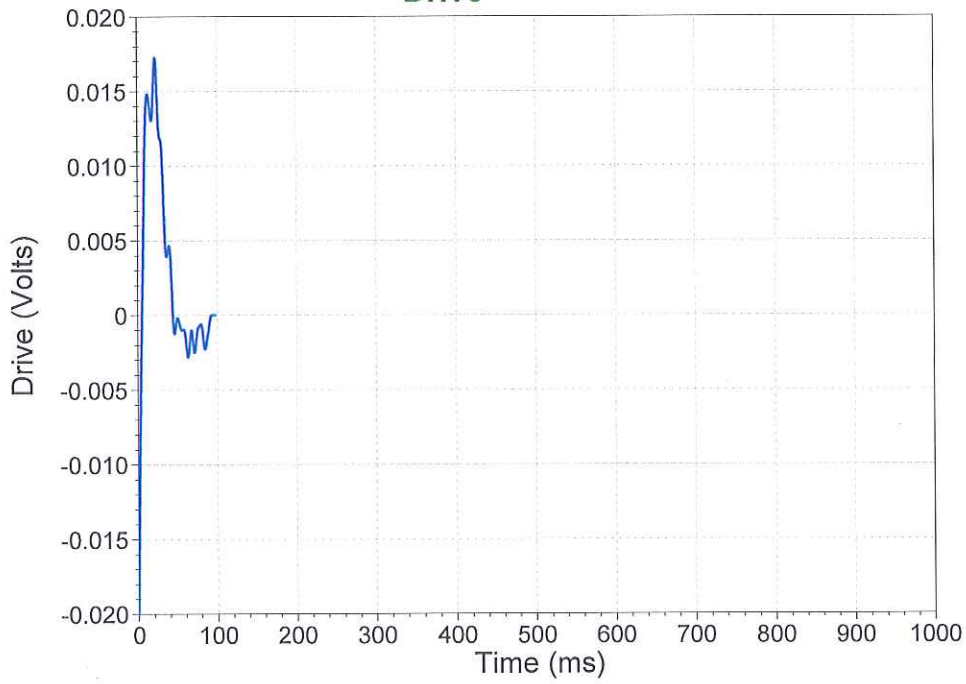
Control

Displacement



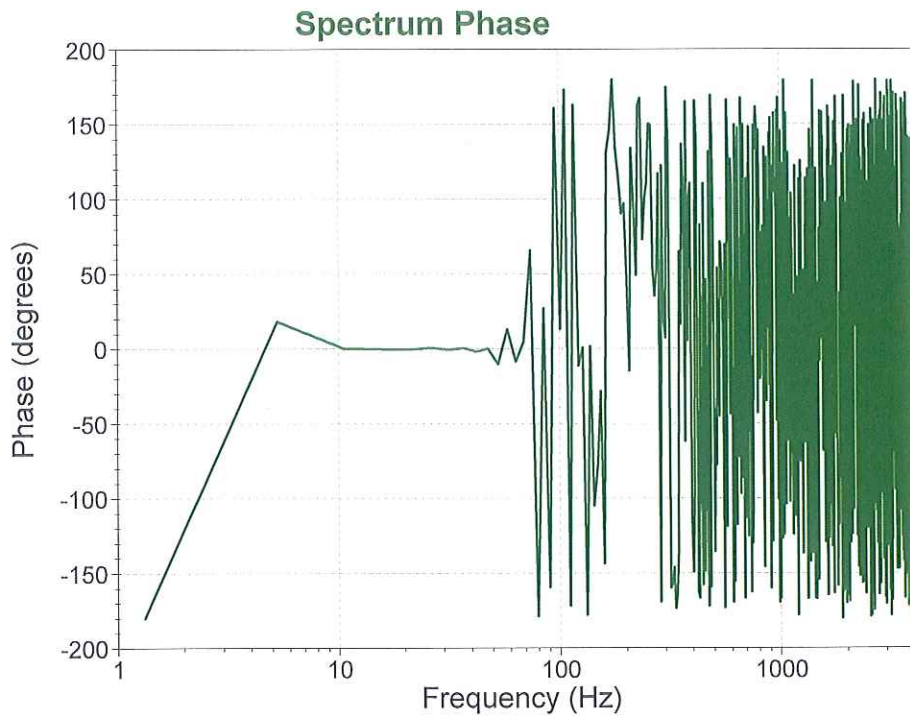
Control

Drive

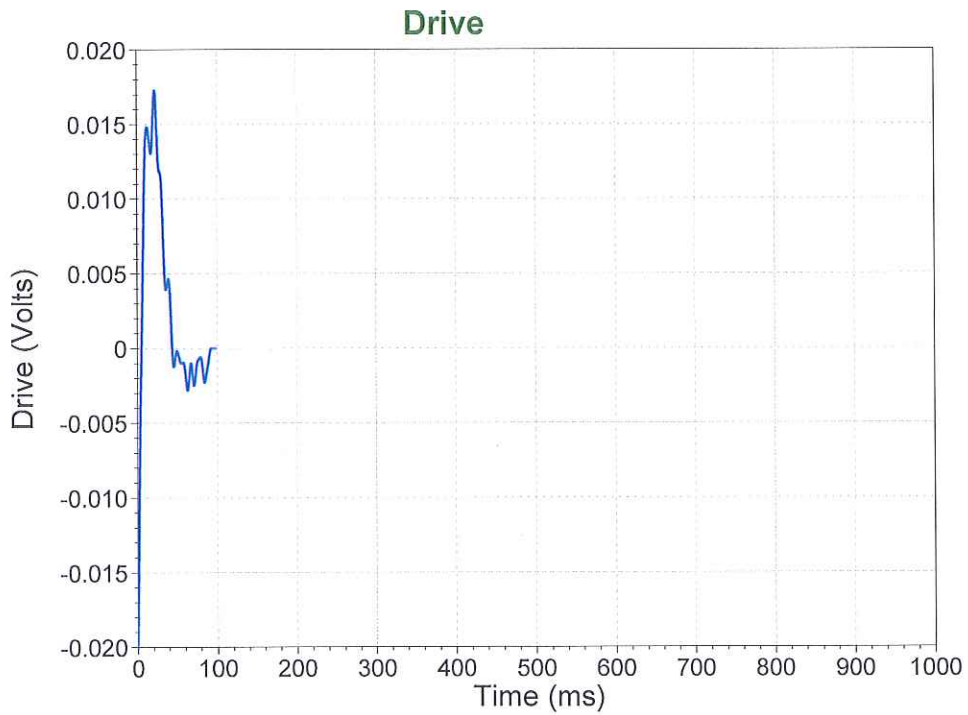


Drive

Ch1
Control

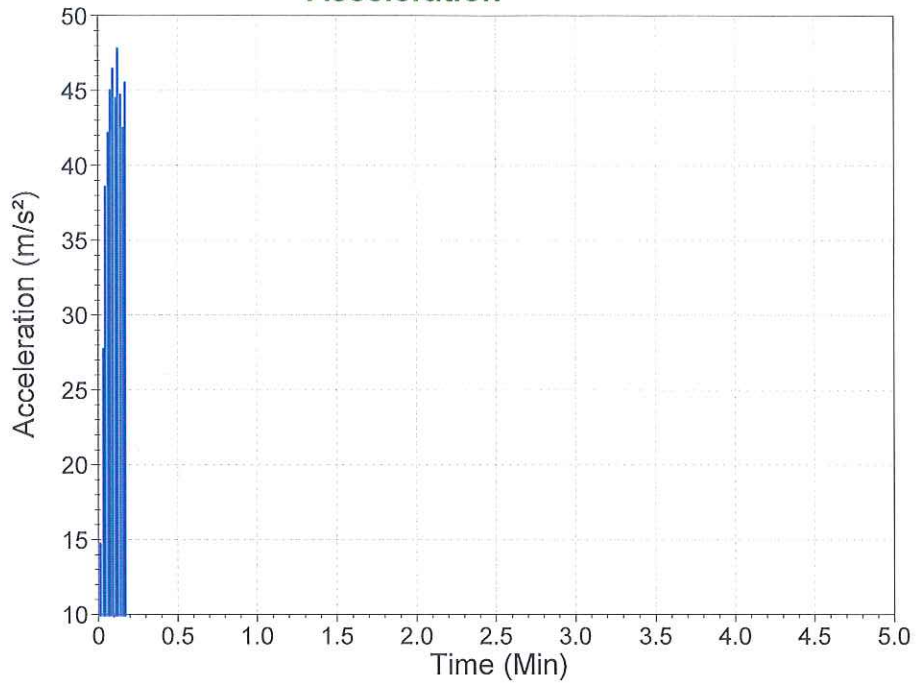


Drive



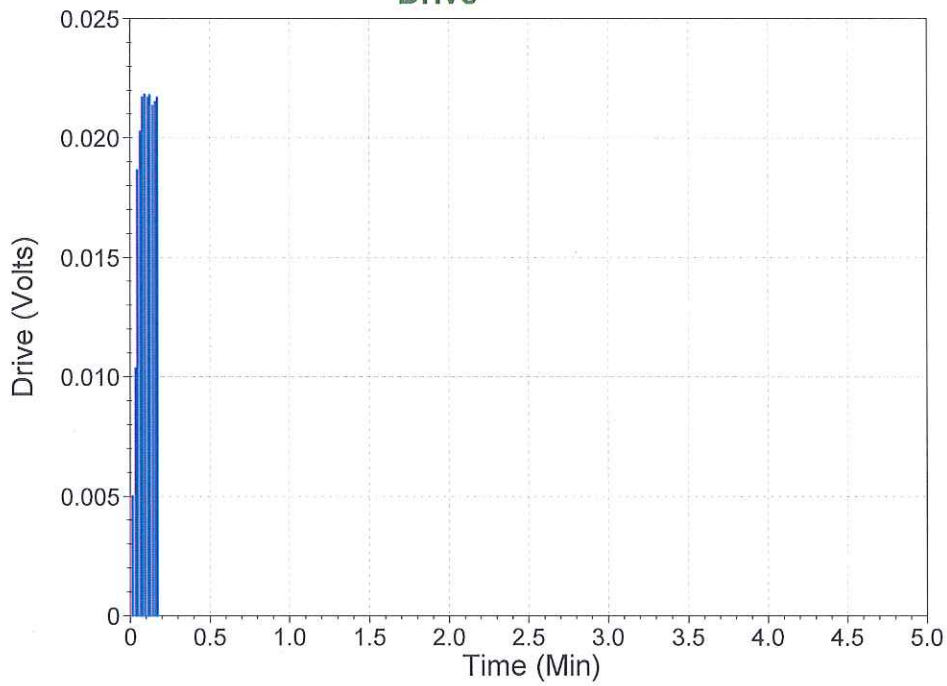
AD

Acceleration



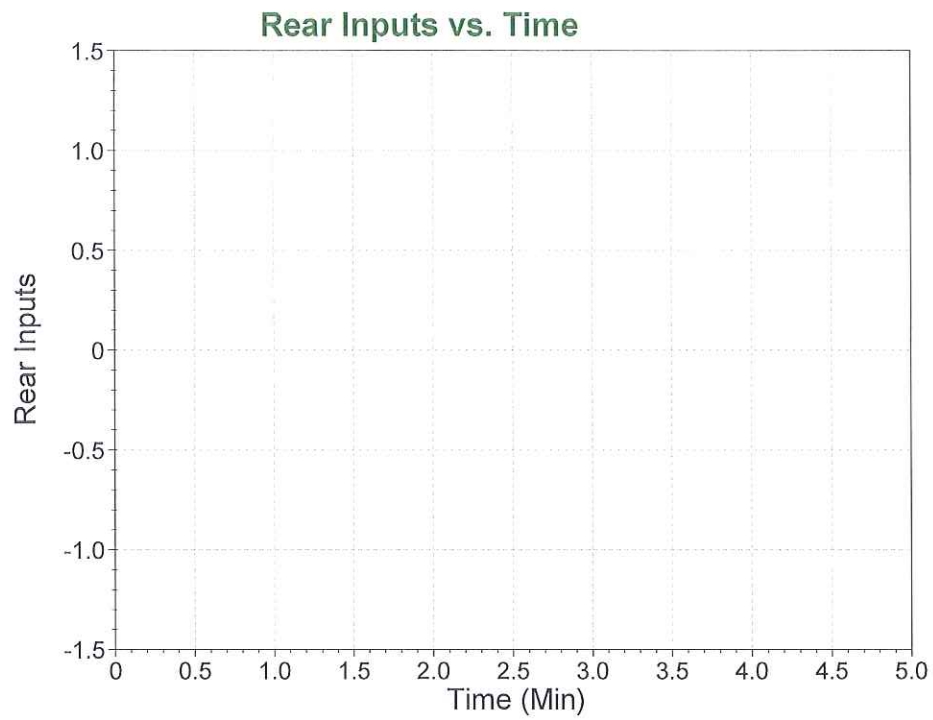
Control

Drive



Drive

A-D



Test level schedule:

	Duration	Level
1)	3	100 %

** Test started Apr 23, 2020 17:44:10, running for 17:55.25
** Current level: 1, running at 100 %,

Drive voltage: 0.2679 Volts peak
System gain is %100 (Max system gain limit = 5 Volts/m/s²)

A-D