TEST REPORT

ACCREDITED

Testing Certification # 1367-01

Laboratory ID
PRODUCT SAFETY ENGINEERING, INC.
12955 Bellamy Brothers Boulevard
Dade City, Florida 33525 USA
PH (352) 588-2209 FX (352) 588-2544

Submitter ID
StormEasy Shutters Inc
1605 Standing Oakes Blvd

Naples, FL 34119

Report Issue Date: 07 JAN 08
Sample S/N: None
Sample Receipt Date: 16 NOV 07
Sample Test Date: see data sheets

Test Report Number: 07F299B
Model Designation: VG-TR-2
Product Description: 4 Button Remote

Description of non-standard test method or test practice: ***None***

Estimated Measurement Uncertainty: ***Not Applicable***

Special limitations of use: ***None***

Traceability: ***reference standards of measurement have been calibrated by a competent body using standards traceable to the NIST.***

According to testing performed at Product Safety Engineering, Inc., the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in regulations indicated on page (3) of the test report. The test results contained herein relate only to the model(s) identified above. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Project Engineer, I hereby declare that the equipment tested as specified above conforms to the requirements indicated on page (3) of the test report.

Signature _____ Name David Foerstner

Title Engineering Group Leader Date 07 JAN 08

Reviewed by:
Approved Signatory _____ Date 07 JAN 08

DIRECTORY - EMISSIONS

Revision History - 04/02/2008 added 2003 date to C63.4 in paragraph 2 on page 10 of test report.

DIRECTORY - EMISSIONS

Environmental conditions during testing:

	LAB	OATS
Temperature: *	_____	: _____
Relative Humidity: **	_____	: _____

* The ambient temperature during the testing was within the range of (50° - 104° F) unless indicted above.
** The humidity levels during the testing was within the range of (10% - 90%) relative humidity unless indicated above.

Power supply system : 12 Volts DC Hz Battery Powered

Sign Explanations:

□ - not applicable
■ - applicable

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

■ - **Test not applicable**

□ - Darby Test Site (Open Area Test Site)
□ - Darby Laboratory

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
□ -	8028-50	Solar	50 Ω LISN	829012, 829022
□ -	3825/2	Solar	50 Ω LISN	924840
□ -	EMC-30	Electro-Metrics	EMI Receiver	191
□ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
□ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
□ -	85662A	Hewlett Packard	Analyzer Display	2403A07352
□ -	8028-50	Solar	50 Ω LISN	903725, 903726
□ -	FCC-TLISN-T4	Fisher Custom Com.	Telecom ISN	20072

Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

□ - Darby Test Site (Open Area Test Site)
□ -
□ -

at a test distance of :

□ - 3 meters
□ - 30 meters

■ - **Test not applicable**

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
□ -	3148	EMCO	Log Periodic Antenna	00044783
□ -	BIA-25	Electro-Metrics	Biconical Antenna	4283
□ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
□ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
□ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
□ -	ALR-30M	Electro-Metrics	Loop Antenna	824
□ -	8447D	Hewlett Packard	Preamplifier	2944A06832
□ -	EMC-30	Electro-Metrics	EMI Receiver	191
□ -	ALA-130/A	Antenna Research	Loop Antenna	106

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

□ - Test not applicable

■ - Darby Site (Open Area Test Site)
□ - Darby Lab
□ -

at a test distance of :

■ - 3 meters
□ - 10 meters
□ - 30 meters

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
■ -	3148	EMCO	Log Periodic Antenna	00044783
■ -	BIA 25	Electro-Metrics	Biconical Antenna	4283
■ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ -	8447D	Hewlett-Packard	Preamplifier (26dB)	2944A06832
□ -	EMC-30	Electro-Metrics	EMI Receiver	191
□ -	8568B	Hewlett Packard	Spectrum Analyzer	2407A03213
□ -	85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
□ -	85662A	Hewlett Packard	Analyzer Display	2340A05806
□ -	LPA30	Electro-Metrics	Log Periodic	2280
□ -	BIA-30	Electro-Metrics	Biconical Antenna	3852

Emissions Test Conditions): INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

□ - Darby Lab
□ -

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
□ -	MDS-21	Rhode&Schwarz	Absorbing Clamp	8608447020
□ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
□ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
□ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
□ -	8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06832
□ -	EMC-30	Electro-Metrics	EMI Receiver	191

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz - 4.4GHz were performed in a *horizontal and vertical polarization at the following test location :*

■ - Darby Test Site (Open Area Test Site)
□ -
□ -
□ -

at a test distance of:

□ - 1 meters
■ - 3 meters
□ - 10 meters

□ - Test not applicable

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
■ -	8566B	Hewlett-Packard	Spectrum Analyzer	2421A00526
■ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ -	8449B	Hewlett-Packard	Preamplifier	3008A00320
■ -	3115	Electro-Mechanics	Double Ridge Guide Horn	3810

The *ANTENNA TERMINAL DISTURBANCE VOLTAGE* in the frequency range 30 MHz - 1,000 MHz were performed.

□ - Darby Test Site (Open Area Test Site)
□ - Laboratory
□ -
□ -

■ - Test not applicable

	Model Number	Manufacturer	Description	Serial Number
□ -	2F9-3C4-3C5	Wavecom	UHF PAL TV Modulator	185879
□ -	2F1-3C4-3C5	Wavecom	VHF PAL TV Modulator	157728
□ -	A-8000	IFR	Spectrum Analyzer	1306
□ -	8648B	Hewlett-Packard	Signal Generator	3623A01433
□ -	8648B	Hewlett-Packard	Signal Generator	3623A01477
□ -	LMV-182A	Leader	RMS Milli-Voltmeter	8010091
□ -	3202	Krhon-Hite	Active filter	5899
□-	FMT115	Leaming	FM Modulator	NONE
□ -	371	UDT	Optical power meter	06657
□ -	TSG95	Tektronix	PAL video / Audio generator	B028883
□-				

Equipment Under Test (EUT) Test Operation Mode - Emission tests :

The device under test was operated under the following conditions during emissions testing:

□ - Standby

□ - Test program (H - Pattern)

□ - Test program (color bar)

□ - Test program (customer specific)

□ - Practice operation

■ - Normal Operating Mode

□ -

Configuration of the device under test:

■ - See System Under Test Information in Appendix B

Rationale for EUT setup / configuration:

Per ANSI C63.4

Label compliance: The label is permanently glued in place. The label is not on a removable part. The only removal part is the battery cover which is located below the label postion.

Emission Test Results:

Conducted emissions 150 kHz - 30 MHz

The requirements are ☐ - **MET** ☐ - **NOT MET**

Minimum limit margin dB at MHz
Remarks:

Radiated emissions (magnetic field) 10 kHz - 30 MHz

The requirements are ☐ - **MET** ☐ - **NOT MET**

Minimum limit margin dB at MHz
Remarks:

Radiated emissions (electric field) 30 MHz - 1000 MHz

The requirements are ■ - **MET** ☐ - **NOT MET**

Minimum limit margin **4.3** dB at **866.5** MHz
Remarks:

Interference Power at the mains and interface cables 30 MHz - 300 MHz

The requirements are ☐ - **MET** ☐ - **NOT MET**

Minimum limit margin dB at MHz
Remarks:

Radiated emissions 1 GHz - 4.34 GHz

The requirements are ■ - **MET** ☐ - **NOT MET**

Minimum limit margin **14.1** dB at **1.2997** GHz
Remarks:

Antenna Terminal Disturbance Voltage 30 MHz - 1,000 MHz

The requirements are ☐ - **MET** ☐ - **NOT MET**

Minimum limit margin dB at MHz
Remarks:

GENERAL REMARKS:

The (20) dB bandwidth is (281) kHz. This meets the requirement of being less than (0.25%) of the center frequency. Center frequency = (434) MHz. The maximum allowable bandwidth at (434) MHz is (1,085) kHz. The bandwidth plot is attached on page A4.

We made measurements up to the tenth harmonic. We followed the measurement procedures detailed in ANSI C63.4-2003.

The EUT was placed in the center of a non-conductive table at a height of (0.8) meters above the ground plane. At each frequency of concern, the orientation of the EUT was checked in three orthogonal positions. The worst-case radiation for fundamental and spurious radiation was determined by rotating the EUT (360) degrees and scanning the height of the antenna between (1-4) meters for both antenna polarities. When the highest level was observed, the data was recorded.

All testing was performed using the following CISPR bandwidths:

Between (30) & (1,000) MHz – RBW = (120) kHz / VBW = (300) kHz
Above (1,000) MHz – RBW = (1) MHz / VBW = (1) MHz

The EUT complies with the timing requirements of 15.231. The EUT ceases to transmit within (5) seconds of releasing the button.

All measurements reported were made with a PEAK detector and therefor by default do need to comply with 15.231(b)(2), "If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply." Duty cycle plots are shown for reference purposes on pages A5-A7. The testing was completed with the transmitter operating in a normal mode and not in CW.

SUMMARY:

The requirements according to the technical regulations are
■ - met
□ - **not** met.

The device under test does
■ - fulfill the general approval requirements mentioned on page 3.
□ - **not** fulfill the general approval requirements mentioned on page 3.

Testing Start Date **November 16, 2007**

Testing End Date: **November 16, 2007**

- PRODUCT SAFETY ENGINEERING INC -

Test-setup photo(s):
Radiated emission 30 MHz - 4400 MHz

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APPENDIX

A

Test Equipment Calibration Information

&

Test Data Sheets

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

TEST EQUIPMENT CALIBRATION INFORMATION

Manufacturer	Model	Description	Serial Number	Cal Due
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	07/13/08
Hewlett Packard	85662A	Display	2403A07352	07/13/08
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00209	07/13/08
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	12/04/07
Hewlett Packard	8568B	Spectrum Analyzer	2407A03213	07/13/08
Hewlett Packard	85662A	Display	2340A05806	07/13/08
Hewlett Packard	85650A	Quasi-Peak Adapter	2043A00358	07/13/03
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	07/13/08
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	1937A03247	06/01/08
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	08/09/08
Hewlett Packard	8648B	Signal Generator	3443U00312	06/01/08
Hewlett Packard	8672A	Signal Generator	2211A02426	12/04/07
EMCO	3148	Log Periodic Antenna	00044783	03/21/08
Electro-Metrics	LPA 30	Log Periodic Antenna	2280	12/22/07
Electro-Metrics	BIA 30	Biconical Antenna	3852	12/28/07
Electro-Metrics	BIA 25	Biconical Antenna	4283	05/22/08
Electro-Mechanics	3115	Double Ridge Guide Ant.	3810	11/28/07
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	12/27/07
Solar	8012	LISN	924840	04/02/08
Solar	8028	LISN	829012/809022	01/05/08
Solar	8028	LISN	903725/903726	12/13/07
Schwartzbeck	MDS-21	Absorbing Clamp	02581	04/27/07
Leader	LFG1310	Function Generator	8060233	06/01/08
Electro-Metrics	EMC-30	EMI Receiver	191	06/01/08
Antenna Research	ALA-130/A	Loop Antenna	106	07/02/08
Cole-Palmer	9970-00	Digital Barometer	61493735	03/ 0708
EMC Automation	HLP3003C	Hybrid Log Periodic	017501	06/26/08

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
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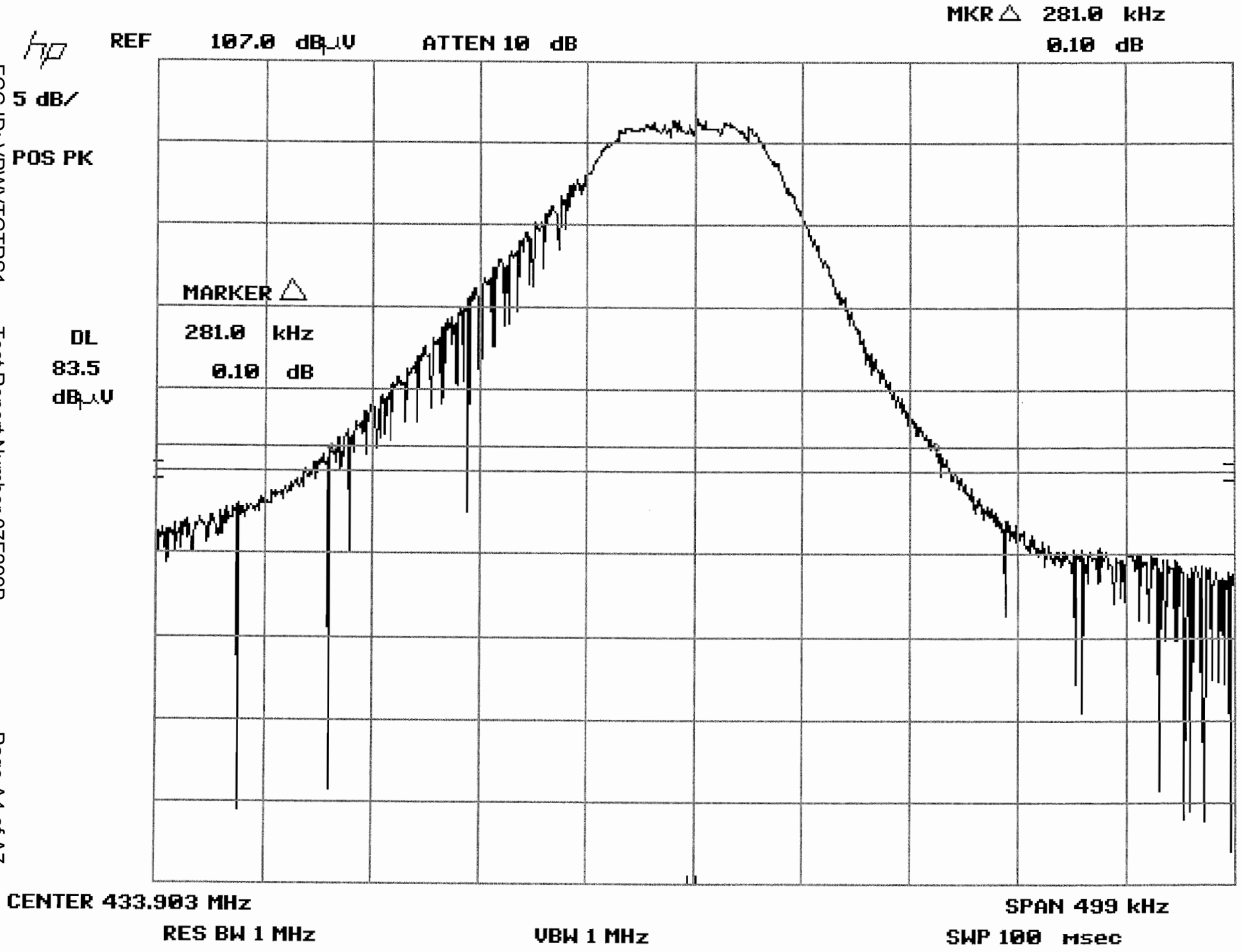
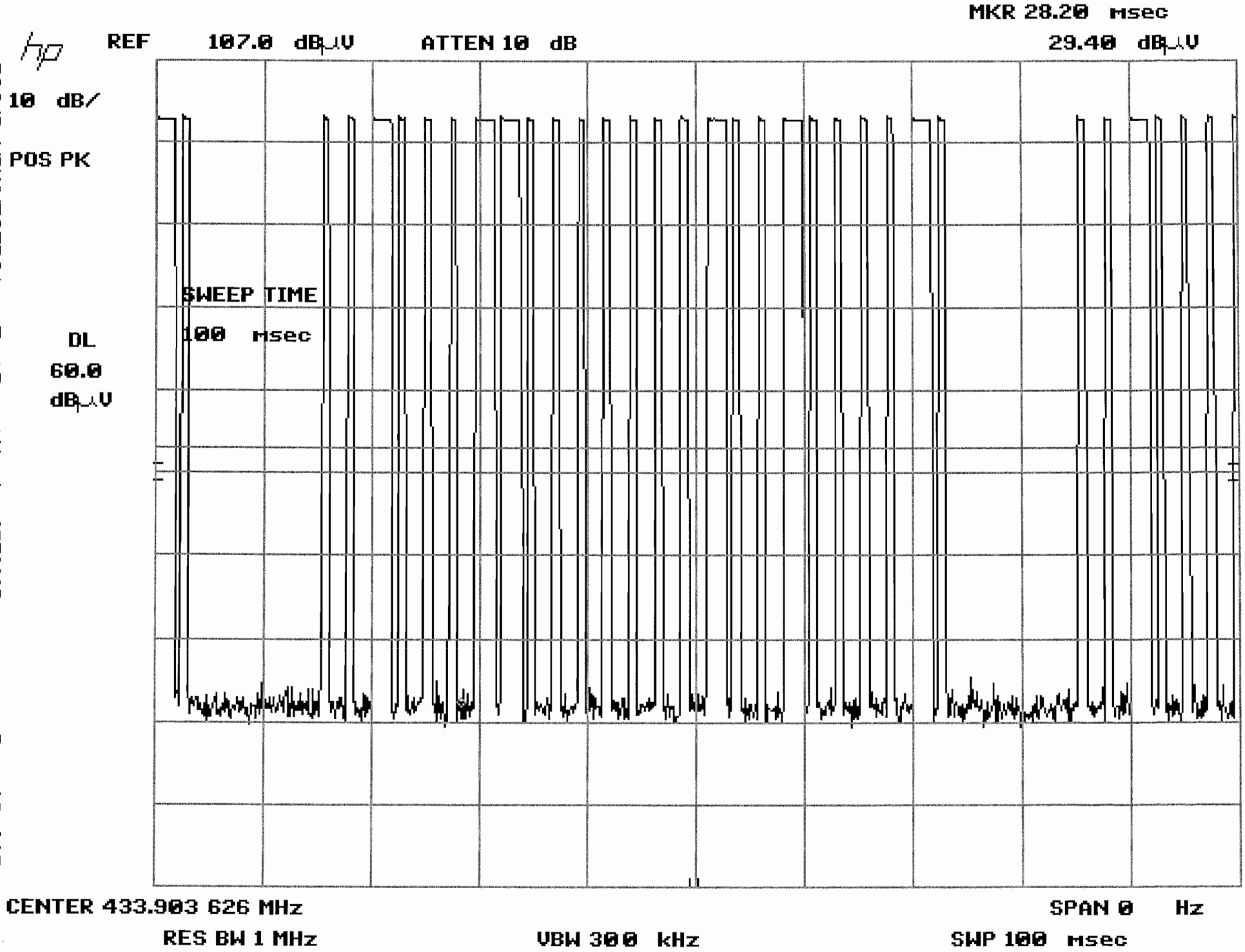
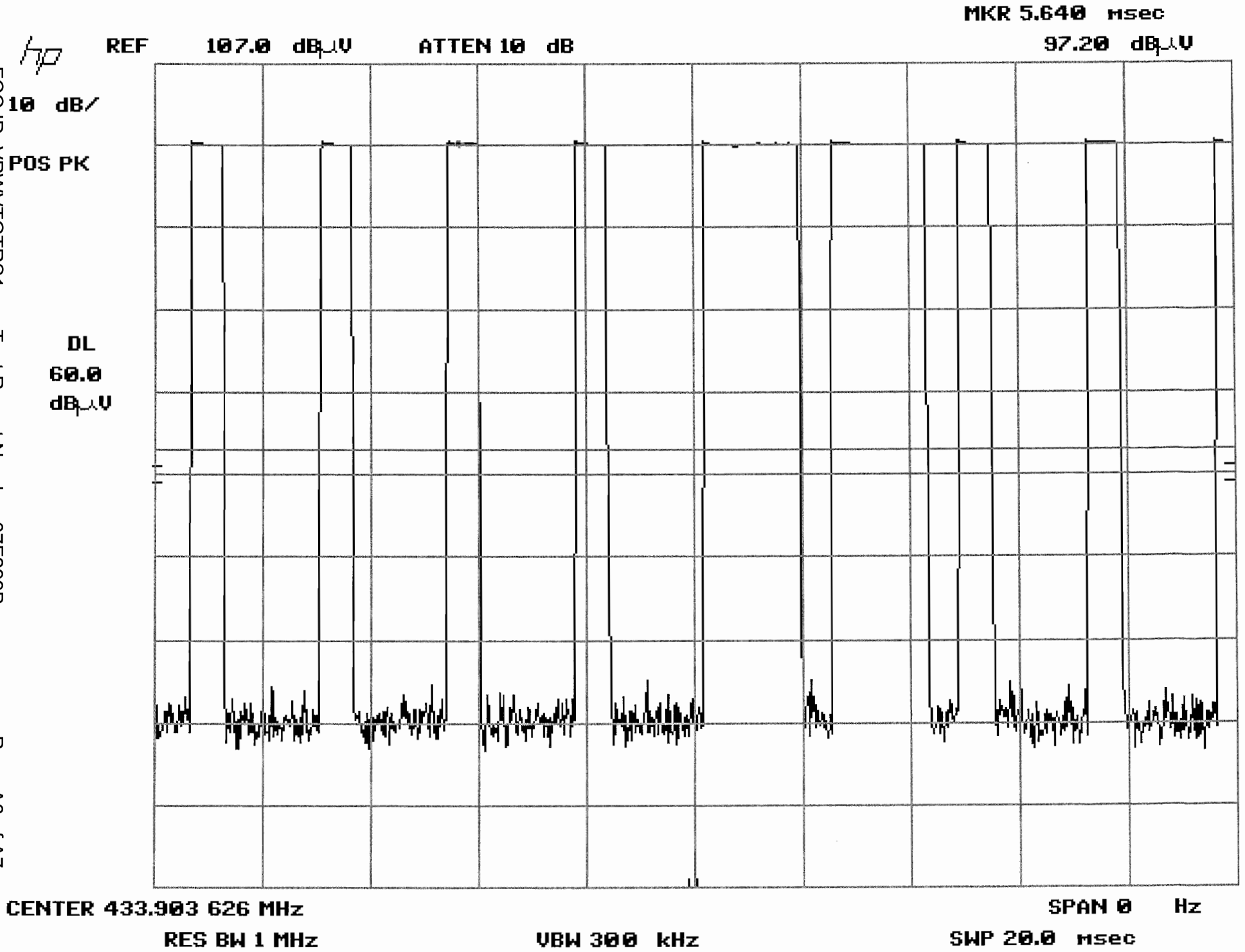
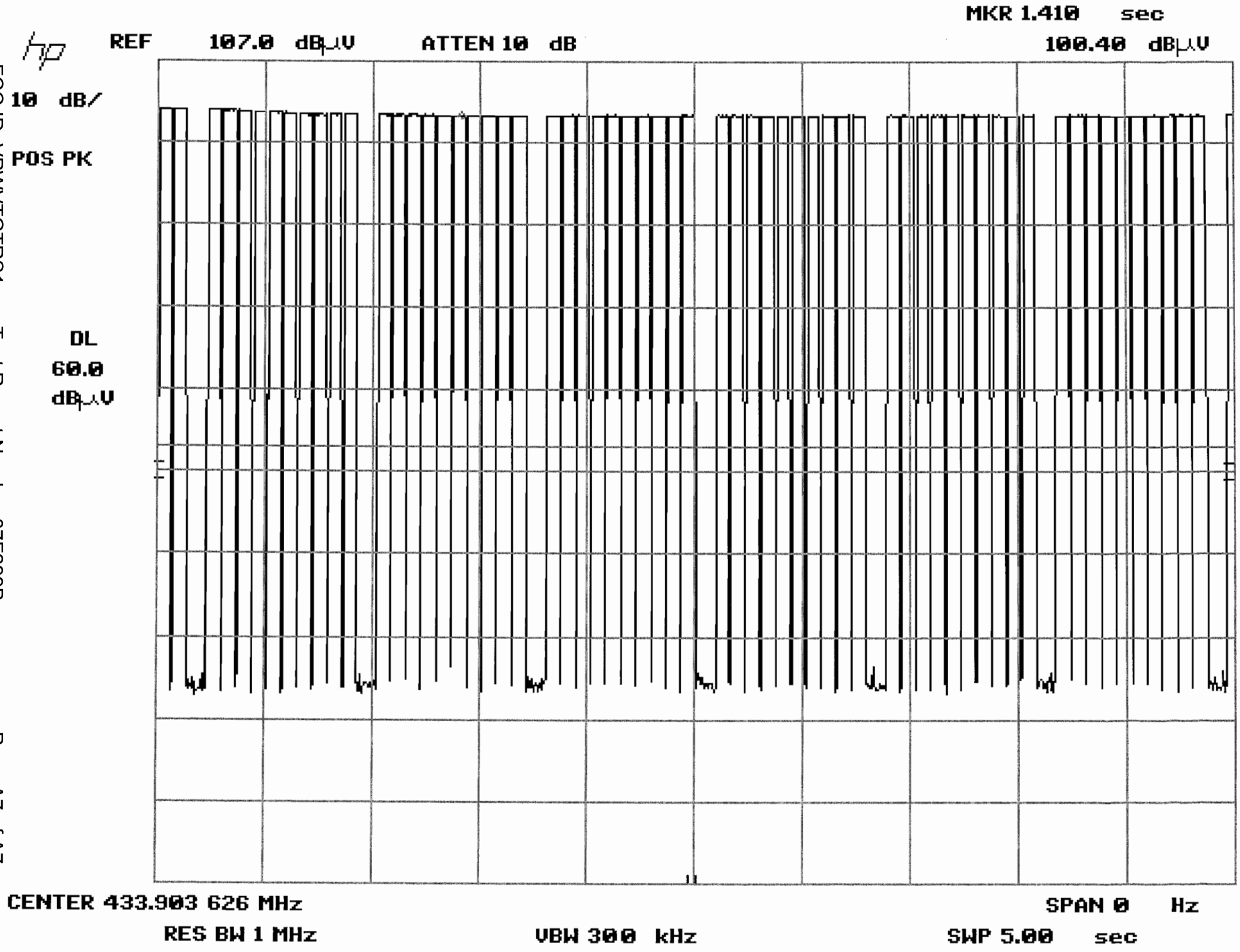
Radiated Emissions
(3) Meter Measurement Distance
Peak Detector

Freq. (MHZ)	Pol V/H	Average Limit (dBuV/M)	Peak Measured (dBuV)	ACF (dB)	System Gain/loss (dB) PA-CL	Corrected (dBuV/M)	Restricted Band (Y/N)	Delta Limit (dB)
433.9	V	80.8	76.9	16.8	24.6	69.1	N	11.7
433.9	H	80.8	75.4	16.8	24.6	67.6	N	13.2
867.8	V	60.8	56.4	22.8	22.7	56.5	N	4.3
867.8	H	60.8	56	22.8	22.7	56.1	N	4.7
1,301.6	V	54.0	49.4	25.3	28.0	46.7	Y	7.3
1,301.6	H	54.0	47.6	25.3	28.0	44.9	Y	9.1
1,735.4	V	60.8	37.9	27.0	26.3	38.6	N	22.2
1,735.4	H	60.8	37.2	27.0	26.3	37.9	N	22.9
2,169.3	V	60.8	34.5	28.0	24.7	37.8	N	23
2,169.3	H	60.8	33.1	28.0	24.7	36.4	N	24.4
2,603.2	V	60.8	26.6	29.4	23.1	32.9	N	27.9
2,603.2	H	60.8	24.6	29.4	23.1	30.9	N	29.9
3,037.0	V	60.8	24.4	30.8	22.5	32.7	N	28.1
3,037.0	H	60.8	23.8	30.8	22.5	32.1	N	28.7
3,470.9	V	60.8	23.2	31.6	22.0	32.8	N	28
3,470.9	H	60.8	22	31.6	22.0	31.6	N	29.2
3,904.7	V	54.0	18.5	32.9	18	33.4	Y	20.6
3,904.7	H	54.0	15.9	32.9	18	30.8	Y	23.2
4,338.6	V	60.8	20.4	33.6	20.1	33.9	N	26.9
4,338.6	H	60.8	17.7	33.6	20.1	31.2	N	29.6


MKR △ 281.0 kHz
0.10 dB
REF 107.0 dBµV
ATTEN 10 dB
5 dB/
POS PK
MARKER △
281.0 kHz
0.10 dB
DL
83.5
dBµV
CENTER 433.903 MHz
SPAN 499 kHz
RES BW 1 MHz
VBW 1 MHz
SWP 100 msec


MKR 28.20 msec
REF 107.0 dBµV
ATTEN 10 dB
29.40 dBµV
10 dB/
POS PK
SWEEP TIME
100 msec
DL
60.0
dBµV
CENTER 433.903 626 MHz
SPAN 0 Hz
RES BW 1 MHz
VBW 300 kHz
SWP 100 msec


MKR 5.640 msec
REF 107.0 dBµV
ATTEN 10 dB
97.20 dBµV
10 dB/
POS PK
DL
60.0
dBµV
CENTER 433.903 626 MHz
SPAN 0 Hz
RES BW 1 MHz
VBW 300 kHz
SWP 20.0 msec


MKR 1.410 sec
REF 107.0 dBµV
ATTEN 10 dB
100.40 dBµV
10 dB/
POS PK
DL
60.0
dBµV
CENTER 433.903 626 MHz
SPAN 0 Hz
RES BW 1 MHz
VBW 300 kHz
SWP 5.00 sec

APPENDIX

B

System Under Test Description

Product Safety Engineering, Inc 12955 Bellamy Brothers Blvd. Dade City, FL 33525
Tel (352) 588-2209 Fax (352) 588-2544

SYSTEM COMPONENTS

****

DEVICE TYPE: EUT, SHUTTER MOTOR SERVICE VG-TR-2

****

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INTERFACE CABLES

****

DEVICE TYPE: EUT **NONE**
SHIELD:
LENGTH:
CONNECTOR TYPE:
PORT:
****

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AC LINE CORDS

****

DEVICE TYPE: EUT **NONE**
SHIELD:
LENGTH:
CONNECTOR TYPE:

****

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APPENDIX

C

Measurement Protocol

The test methodology followed during the collection of the data included within this technical report was ANSI C63.4:1992.

The EUT was powered with (12) VDC during the collection of data included within.

The data is compared to the FCC Part 15 Class B limits.

The "EMI" instrumentation is capable of calculating the final emission level based on the following formula:

Level at the receiver (dBµV) + Antenna Correction Factor (dB/M) + Cable Loss (dB) - Preamp Gain (dB) = Actual Level in dBµV/M.

The sample calculation below is based on the actual test data collected:

Observed Level		**75.2**	dBµV	
ACF	+	**12.2**	dB/M	
Cable Loss	+	**7.7**	dB	
Preamp Gain	-	**26.0**	dB	
Actual Level		**69.1**	dBµV/M	@ 433.2 MHz

Please have a company official review this report and sign.

_____

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