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
Equitrac Corporation
1000 Sawgrass Corporate Parkway
Suite 305
Sunrise, FL 33323

Report Issue Date: 08 Jan 2015
Sample S/N: See Appeendix B
Sample Receipt Date: 30 Apr 2014

Test Report Number: 14F238B2
Model Designation: G10210-A01
Product Description: SafeCom Color Front end with MX RFID

Sample Test Date: see data sheets

Description of non-standard test method or test practice: ***None***
Estimated Measurement Uncertainty: ***See page 9.*** *This uncertainty represents and expanded uncertainty expressed at approximately 95% confidence level* using a coverage factor of k=2.

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 item identified above. It is the manufacturer's responsibility to assure that additional production units 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 08 Jan 2015

Reviewed by:
Approved Signatory _____ Date 08 Jan 2015
Steve Hoke (EMC Site Manager)

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D I R E C T O R Y - EMISSIONS

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

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

☐ - EN 61000-6-3:2007

☐ - EN 61000-6-4:2007

☐ - EN 55011 : 2009/A1:2010	☐ - Group 1	☐ - Group 2
	☐ - Class A	☐ - Class B

■ - EN 300-330 v1.5.1 & EN 300-330 V1.7.1

☐ - EN 55014 -1: 2006/A2:2011	☐ - Household appliances and similar
	☐ - Portable tools
	☐ - Semiconductor devices

☐ - EN 55022:2010/AC:2011	☐ - Class A	☐ - Class B
☐ - CISPR 22:2008	☐ - Class A	☐ - Class B
☐ -AS/NZS CISPR 22:2009	☐ - Class A	☐ - Class B
☐ - ICES-003	☐ - Class A	☐ - Class B
☐ - CNS 13438	☐ - Class A	☐ - Class B
☐ - VCCI V-3/2010.4	☐ - Class A	☐ - Class B
■ - FCC Part 15 (per ANSI C63.4)	☐ - Class A	☐ - Class B
	■ - Certification per 15.225 ☐ - Verification ☐ - Declaration of Conformity	

■ - RSS-210 Issue 8

■ - RSS-GEN Issue 4

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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 : 120 / 230 Volts 60 / 50 Hz SINGLE phase

Sign Explanations:

□ - not applicable
■ - applicable

Models Defined:

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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
□ -	8012	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-T4-02	Fisher Custom Com.	Telecom ISN	20454
□ -	FCC-TLISN-T8-02	Fisher Custom Com.	Telecom ISN	20452
■ -	LI-125	Com-Power	50 Ω LISN	191080/191081

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
■ - 10 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	2532A02418
■ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
■ -	ALR-30M	Electro-Metrics	Loop Antenna	824
■ -	8447D	Hewlett Packard	Preamplifier	2944A06901
□ -	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
□ -	HLP 3003C	EMC Automation	Hybrid Periodic Antenna	017501
■ -	8447D	Hewlett-Packard	Preamplifier (26dB)	2944A06901
■ -	8566B	Hewlett-Packard	Spectrum Analyzer	2532A02418
■ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
■ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00209
□ -	BIA 25	Electro-Metrics	Biconical Antenna	4283
□ -	EMC-30	Electro-Metrics	EMI Receiver	191
□ -	8566B	Hewlett Packard	Spectrum Analyzer	2532A02418
□ -	85650A	Hewlett Packard	Quasi-Peak Adapter	2043A00358
□ -	85662A	Hewlett Packard	Analyzer Display	2403A06604
□ -	LPA30	Electro-Metrics	Log Periodic	2280
■ -	3104C	Emco	Biconical Antenna	00075927
■ -	3148	ETS Lindgren	Log Periodic Antenna	75741

Emissions Test Conditions): DISTURBANCE POWER

The *DISTURBANCE 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	2532A02418
□ -	85662A	Hewlett-Packard	Analyzer Display	2403A07352
□ -	85650A	Hewlett-Packard	Quasi-Peak Adapter	2043A00358
□ -	8447D	Hewlett-Packard	Amplifier (26 dB)	2944A06901

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□ - EMC-30 Electro-Metrics EMI Receiver 191

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz - 2 GHz 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	2532A02418
□ -	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

Emissions Test Conditions): CONDUCTED EMISSIONS - TELECOMMUNICATIONS PORT **measurements were performed in the frequency range 0.15 MHz - 30 MHz at the following test location :**

■ - Test not applicable

□ - Darby Lab
□ -

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number
□ -	EMC-30	Electro-Metrics	EMI Receiver	191
□ -	FCC-TLISN-T8-02	Fischer Custom Com	T-LISN	20452
□ -	FCC-TLISN-T4-02	Fischer Custom Com	T_LISN	20454
□ -				
□ -				

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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:

ANSI C63.4:2003

Emission Test Results:

Conducted emissions 150 kHz - 30 MHz			
The requirements are	■ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: 5.3 dB	2.0 dB	at 13.59 MHz	

Radiated emissions (magnetic field) 10 kHz - 30 MHz			
The requirements are	■□ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: NA	Greater than 10 dB	at	Throughout range

Radiated emissions (electric field) 30 MHz - 1000 MHz			
The requirements are	■ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: 5.2 dB	1.9 dB	at 40.68 MHz.	

Interference Power at the mains and interface cables 30 MHz - 300 MHz			
The requirements are	□ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: NA	dB	at	MHz

Radiated emissions 1 GHz - 2 GHz			
The requirements are	□ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: 4.9 dB	dB	at	GHz

Emissions Test Conditions): CONDUCTED EMISSIONS - TELECOMMUNICATIONS PORT 0.15 to 30 MHz			
The requirements are	□ **- MET**	□ **- NOT MET**	
Minimum limit margin MU: NA	dB	at	MHz

MU = Measurement Uncertainty

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GENERAL REMARKS:

Conducted emissions - Exploratory measurements are used to identify the frequency of the emission that has the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable positions, and with a typical system equipment configuration and arrangement. For each mode of operation and for each ac power current-carrying conductor, cable manipulation is performed within the range of likely configurations. For this measurement or series of measurements, the frequency spectrum of interest is monitored looking for the emission that has the highest amplitude relative to the limit. Once that emission is found for each current-carrying conductor of each power cord associated with the EUT (but not the cords associated with non-EUT equipment in the overall system), the one and arrangement and mode of operation that produces the emission closest to the limit across all the measured conductors is recorded. Software used is Electro metrics OS-30-CAT ver 1.10

Radiated emissions - The equipment under test is oriented at (0) degrees azimuth with respect to the measuring antenna. The antenna is placed in the vertical polarity and the software performs an automated set of measurements across the frequency range of interest. When complete, a database of all signals labeled "suspects" is displayed and the test engineer manually investigates any signal that is within (15) dB of the limit. Those determined to be from the EUT are placed on a separate database labeled "finals" and those not from the EUT are placed in the ambient database. The EUT is then rotated (90) degrees and the process is repeated. Upon completion of (4) scans, the antenna polarity is changed to horizontal, the EUT orientation is set to (45) degrees and the process is repeated (4) additional times. After every scan, the final list is completed re-measured and updated for amplitude and polarity if higher in amplitude.

Once all (8) scans are complete, the highest (6) signals are re-measured by maximizing the amplitude with cable manipulation, antenna height and EUT azimuth. The final (6) six signals are included in the test report. Software used is HP 85870A Opt655/Rev A.02.01.

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 **12 Jun 2014**

Testing End Date: **19 Jun 2014**

- PRODUCT SAFETY ENGINEERING INC -

Test-setup photo(s):
Conducted emission 150 kHz - 30 MHz

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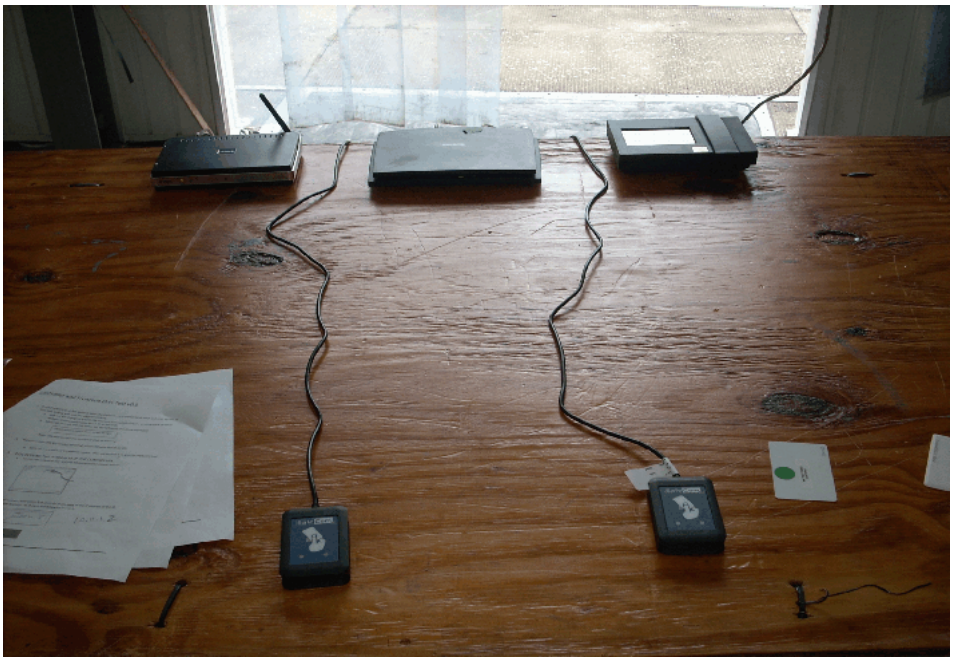
Test-setup photo(s):
Radiated emission 30 MHz - 1000 MHz



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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
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TEST EQUIPMENT CALIBRATION INFORMATION

Manufactirer	Model	Description	Serial Number	Cal Due *
Hewlett Packard	8566B	Spectrum Analyzer	2421A00526	
Hewlett Packard	85662A	Display	2151A03667	
Hewlett Packard	85650A	Quasi-peak Adapter	2043A00209	11/5/2014
Hewlett Packard	8566B	Spectrum Analyzer	2532A02418	11/5/2014
Hewlett Packard	85662A	Display	2403A07352	11/5/2014
Hewlett Packard	85650A	Quasi-peak Adapter	2043A00358	
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06832	
Hewlett Packard	8447D	Preamp 0.1 - 1,000 MHz	2944A06901	12/10/2014
Hewlett Packard	8449B	Preamp 1 - 26.5 GHz	3008A00320	
Hewlett Packard	E7402A	Portable Spectrum Analyzer	US40240204	
ETS Lindgren	3148	Log Periodic Antenna	75741	** 2/7/2016
Electro-Metrics	BIA-30	Biconical Antenna	3852	
EMCO	3104C	Biconical Antenna	75927	** 5/14/2016
Electro-Metrics	ALR30M	Magnetic Loop Antenna	824	** 7/15/2015
Electro-Metrics	EMC-30	EMI Receiver	191	7/9/2014
Electro-Metrics	3115	Double Ridge Guide Antenna	3810	
Solar	8028	LISN	829012/809022	
Com-Power	LI-125	LISN	191080 / 191081	9/16/2014
Schwartzbeck	MDS-21	Absorbing Clamp	2581	
Fisher Custom	FCC-TLISN-T4-02	T LISN	20454	
Fisher Custom	FCC-TLISN-T8-02	Fisher Custom	20452	
ATM	42-441-6	Stanard Gain Horn Antenna	E531612-01	
Electro-Metrics	3117	Double Ridge Guide Antenna	109296	
Solar	7334-1	Loop Sensor	32317	
Sun Systems	EC127	Enviromental Chamber	EC0154	NA
Fluke	52	Digital Thermometer	447553	

* Cal Due Date Format = MM/DD/YYYY

All equipment was calibrated one year prior to the cal due date listed unless otherwise indicated

** These device are on a 2 year calibration cycle

RADIATED DATA SHEET

FCC Rule Part	Frequency Range MHz	Limit dBuV/M	Limit Dist meters	Measured Freq. (MHz)	Level dBuV/M	Margin dB
15.225 (a)	13.553 - 13.567	84	30	13.557	45.5	38.5
15.225 (b)	13.410 - 13.553	50.5	30	13.553	39.4	11.1
15.225 (b)	13.567 - 13.710	50.5	30	13.567	41.1	9.4
15.225 (c)	13.110 - 13.410	40.5	30	13.4	21.8	18.7
15.225 (c)	13.710 - 14.010	40.5	30	13.7	24.2	16.3
15.225 (d)	1.705 - 13.110	29.5	30	3.1	7.6	21.9
15.225 (d)	14.010 - 30.0	29.5	30	27.12	12.0	17.5
15.225 (d)	>30	40.0	3	40.68	38.1	1.9
15.225 (d)	>30	40.0	3	54.24	35.8	4.2
15.225 (d)	>30	40.0	3	67.80	33.4	6.6
15.225 (d)	>30	40.0	3	81.36	36.3	3.7
15.225 (d)	>30	43.5	3	94.92	39.8	3.7
15.225 (d)	>30	43.5	3	108.48	37.3	6.2
15.225 (d)	>30	43.5	3	122.04	34.0	9.5
15.225 (d)	>30	43.5	3	135.6	35.0	8.5

Note: The same limits are stated in the RSS-210 (A2.6) for Canada.

4.2.1.1 Permitted range of operating frequencies

The permitted range of operating frequencies shall not exceed the limits specified in clause 7.3.3 of EN 300 330-1 v1.7.1.

7.3.3 Limits

The permitted range of the modulation bandwidth shall be within the limits of the assigned frequency band.

Compliance data - All measured emissions related to the (13.56) MHz radiator were within the 0.09 to 30 MHz band.

4.2.1.2 Limits for transmitters in the range from 9 kHz to 30 MHz

The maximum radiated field strength and RF carrier current shall not exceed the limits specified in clause 7.2.1.3 of EN 300 330-1 v1.7.1.

7.2.1.3 Limits

The limits presented in the present document are the required field strengths to allow satisfactory operation of inductive systems. The limit for a low level generic H-field strength is given in annexes G & H.

The maximum H-field strengths for certain frequency bands are given in table 5.

The maximum RF carrier current shall not exceed the limits specified in clause 7.2.2.3 of EN 300 330-1 v1.7.1.

Compliance data - see annex H below

7.2.2.3 Limits

The limit for the RF carrier current multiplied with the antenna area for Product Class 3 Large size loop transmitters is given in table 5.

Compliance data - Not applicable

4.2.1.3 Limits for the permitted range of modulation bandwidth

The maximum range of modulation bandwidth shall not exceed the limits as specified in clause 7.4.3 of EN 300 330-1v1.7.1.

7.4.3 Limits

The permitted range of the modulation bandwidth shall be within the assigned frequency band see table 1 or ±7,5 % of the carrier frequency whichever is the smallest. For RFID and EAS Systems, the permitted modulation bandwidth shall be within the transmitter emission boundary of figure G.1, respectively the spectrum mask of figure G.2.

Compliance data - see table G.2,

4.2.1.4 Transmitter spurious and out-of-band emissions

The transmitter unwanted emissions, i.e. spurious and out-of-band emissions, shall not exceed the limits specified in clauses 7.5.2.2, 7.5.2.4 or 7.5.3.2 and 7.5.4.2 of EN 300 330-1v1.7.1.

7.5.2 Conducted spurious emissions (Product class 3 only)

7.5.3 Radiated field strength - Magnetic Emissions

7.5.3.2 Limits

The radiated field strength of the spurious domain emissions below 30 MHz shall not exceed the generated H-field dBµA/m at 10 m given in table below.

State	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Operating	27 dBìA/m at 9 kHz descending 3 dB/oct	-3,5 dBìA/m
Standby	5,5 dBìA/m at 9 kHz descending 3 dB/oct	-25 dBìA/m

Compliance data - We measured one signal that was under (30) MHz at (27.12) MHz. The level measured at (10) meters was 31.0 dBuV/m or (-20.5) dBuA/m. Margin = (17.0) dB.

7.5.4 Effective radiated power - Substitution Method

7.5.4.2 Limits

The power of any radiated emission shall not exceed the values given in table below.

State	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other frequencies between 30 MHz to 1 000 MHz
Operating	4 nW	250 nW
Standby	2 nW	2 nW

Compliance data - See table below. There is no standby mode.

Freq (MHz)	Limit (pw)	Measured (pw)
40.68	250	0.26
54.24	4	0.15
67.8	4	0.09
81.36	250	0.17
94.9	4	0.39
108.5	4	0.22
122.0	250	0.10
135.6	250	0.13

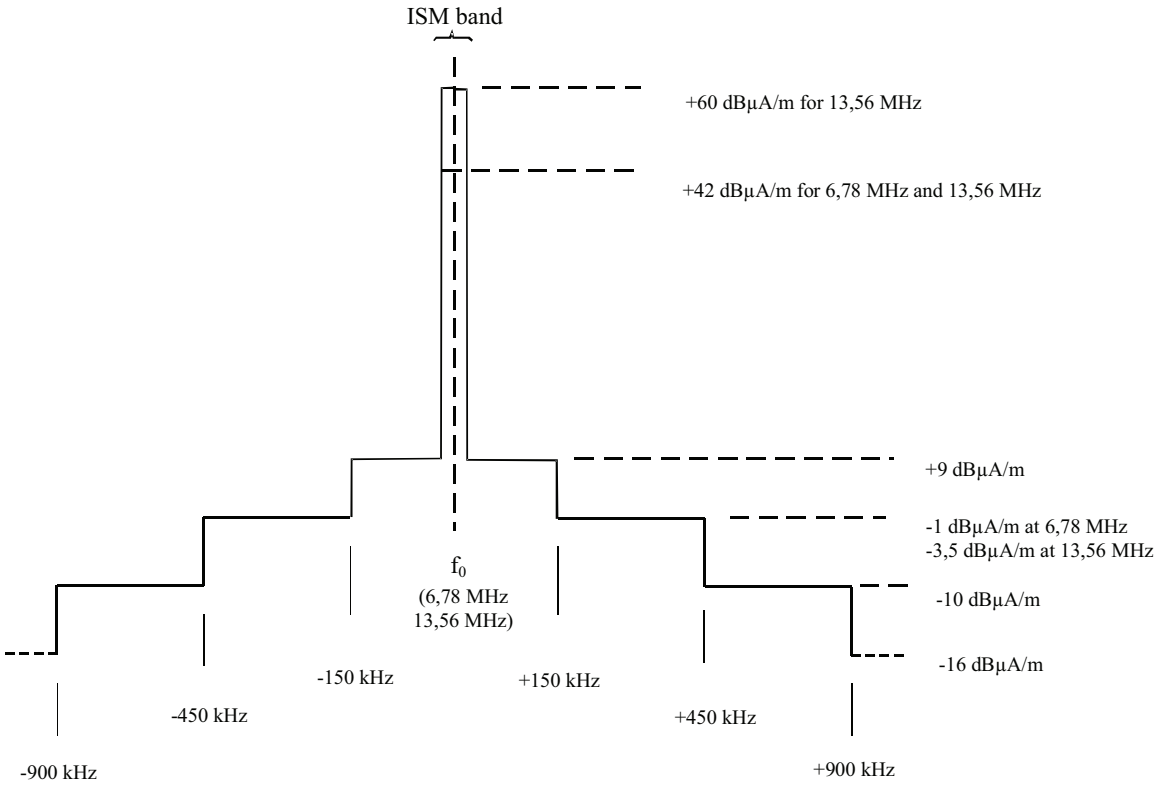


Figure G.2: Spectrum mask limit for RFIDs and EAS in the 6,78 MHz and 13,56 MHz range

PRODUCT EMISSIONS

PSE OPEN AREA TEST SITE Data File: SAFECOM MX CISA@10M 12JUNE14

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS ABS	dLIM dB	MODE	POL	SITE HGT cm	AZM deg	CORR FACTOR dB		COMMENTS
1	30.700	40.0	29.0	-11.0	PK	V	100	135	-18.6		
2	32.030	40.0	29.8	-10.2	PK	V	100	135	-18.4		
3	34.021	40.0	28.2	-11.8	PK	V	150	180	-18.		
4	38.127	40.0	29.2	-10.8	PK	V	100	135	-17.3		
5	40.681	40.0	27.6	-12.4	QP	V	100	135	-17.	13.56	HARMONIC
6	54.224	40.0	25.3	-14.7	QP	V	150	225	-17.8	13.56	
7	66.400	40.0	29.9	-10.1	PK	V	150	225	-20.6		
8	67.800	40.0	22.9	-17.1	PK	V	100	225	-21.	13.56	
9	81.361	40.0	25.8	-14.2	PK	V	100	225	-21.5	13.56	
10	86.048	40.0	29.8	-10.2	PK	V	100	225	-19.9		
11	94.921	40.0	29.3	-10.7	PK	V	100	225	-17.6	13.56	
12	99.000	40.0	27.8	-12.2	PK	V	100	135	-16.8		
13	108.482	40.0	26.8	-13.2	PK	V	100	180	-15.8	13.56	
14	108.786	40.0	29.2	-10.8	PK	V	100	135	-15.7		
15	122.040	40.0	23.5	-16.5	PK	V	100	180	-15.6	13.56	
16	125.090	40.0	28.3	-11.7	PK	V	100	135	-15.8		
17	134.719	40.0	27.2	-12.8	PK	V	100	135	-16.2		
18	135.600	40.0	24.5	-15.5	PK	V	100	180	-16.2	13.56	HARMONIC
19	143.280	40.0	26.4	-13.6	PK	V	100	135	-15.8		
20	145.336	40.0	28.2	-11.8	PK	V	100	135	-15.5		
21	148.095	40.0	29.5	-10.5	PK	V	100	225	-15.1		
22	149.342	40.0	27.4	-12.6	PK	V	100	225	-14.9		
23	155.612	40.0	25.0	-15.0	PK	V	100	90	-13.6		
24	170.29	40.0	25.2	-14.8	PK	V	100	270	-11.		
25	181.080	40.0	21.2	-18.8	PK	V	100	135	-10.2		
26	199.500	40.0	21.9	-18.1	PK	V	100	135	-11.1		
27	225.010	40.0	21.1	-19.0	PK	H	300	270	-15.5		
28	225.370	40.0	28.5	-11.6	PK	H	350	180	-15.4		
29	250.001	47.0	34.4	-12.6	PK	H	300	315	-14.9		
30	350.458	47.0	32.5	-14.5	PK	V	100	135	-12.3		
31	374.995	47.0	32.6	-14.5	PK	H	200	180	-12.4		
32	400.002	47.0	30.7	-16.3	PK	H	200	135	-12.2		
33	500.013	47.0	35.8	-11.2	PK	H	150	225	-9.3		
34	624.992	47.0	34.2	-12.8	PK	H	100	135	-7.4		
35	749.980	47.0	34.1	-12.9	PK	V	100	135	-5.1		
36	800.000	47.0	34.5	-12.5	PK	H	100	225	-4.7		

oduct Safety Engineering

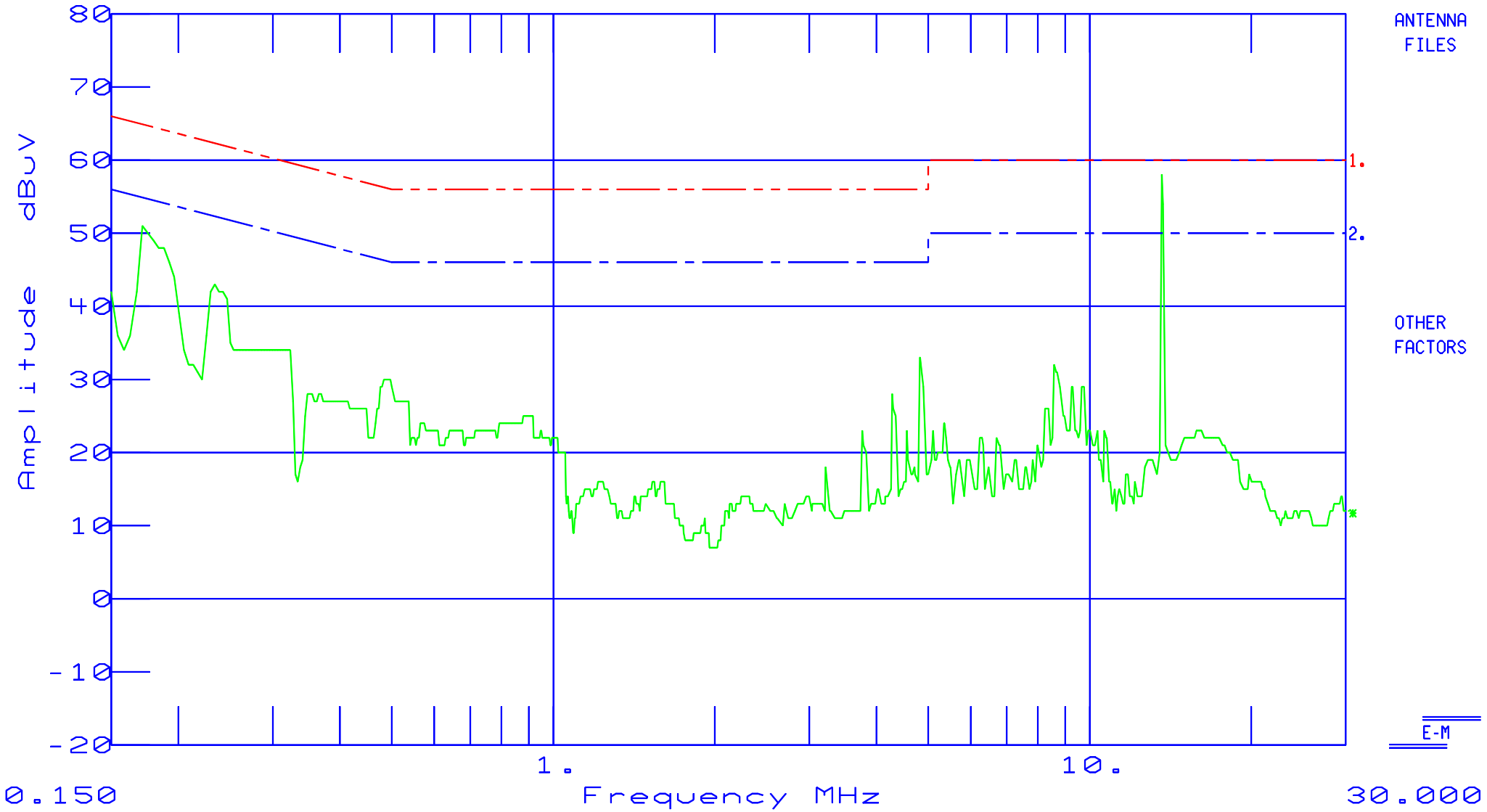
:TRAC
te : 06/16/14
chnician : CHIP FOERSTNER
st Method : EN55022 CLASS B
uipment : SAFECOM MX
de of Op. : NORMAL TRANSMIT
rial No. :

mment : 230 VAC / 50 HZ

Time : 11:19:54.20
Test Equip. : EMC-30
Test Number : 1
Sensor Loc. : SIDE 1
Sensor Pol. :
Ext. Atten. : 0 dB

EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell N/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)



TEST TITLE: EQUITRAC			PAGE 1
DATA FILE : 14238BI.D30			Freq.(MHz)
Amplitude Units : dBuV	Threshold	6 dB	0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.6227	58.0		8.000 *

oduct Safety Engineering

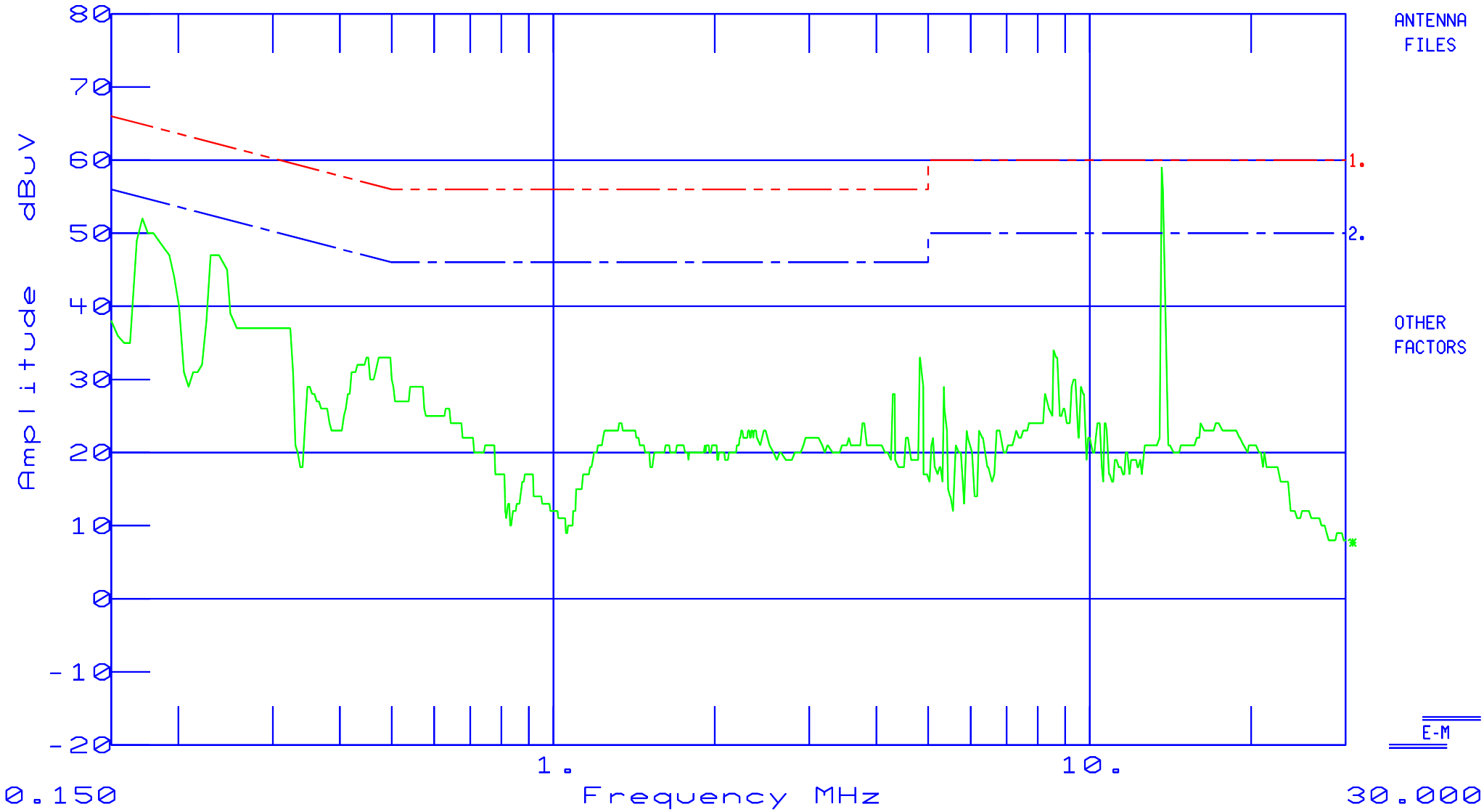
:TRAC
te : 06/16/14
chnician : CHIP FOERSTNER
st Method : EN55022 CLASS B
uipment : SAFECOM MX
de of Op. : NORMAL TRANSMIT
rial No. :

mment : 230 VAC / 50 HZ

Time : 11:01:04.71
Test Equip. : EMC-30
Test Number : 1
Sensor Loc. : SIDE 2
Sensor Pol. :
Ext. Atten. : 0 dB

EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/Dwell N/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)



TEST TITLE: EQUITRAC			PAGE 1
DATA FILE : 14238B2.D30			Freq.(MHz)
Amplitude Units : dBuV	Threshold	6 dB	0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.6194	59.0		9.000 *
13.6831	56.0		6.000 *

oduct Safety Engineering

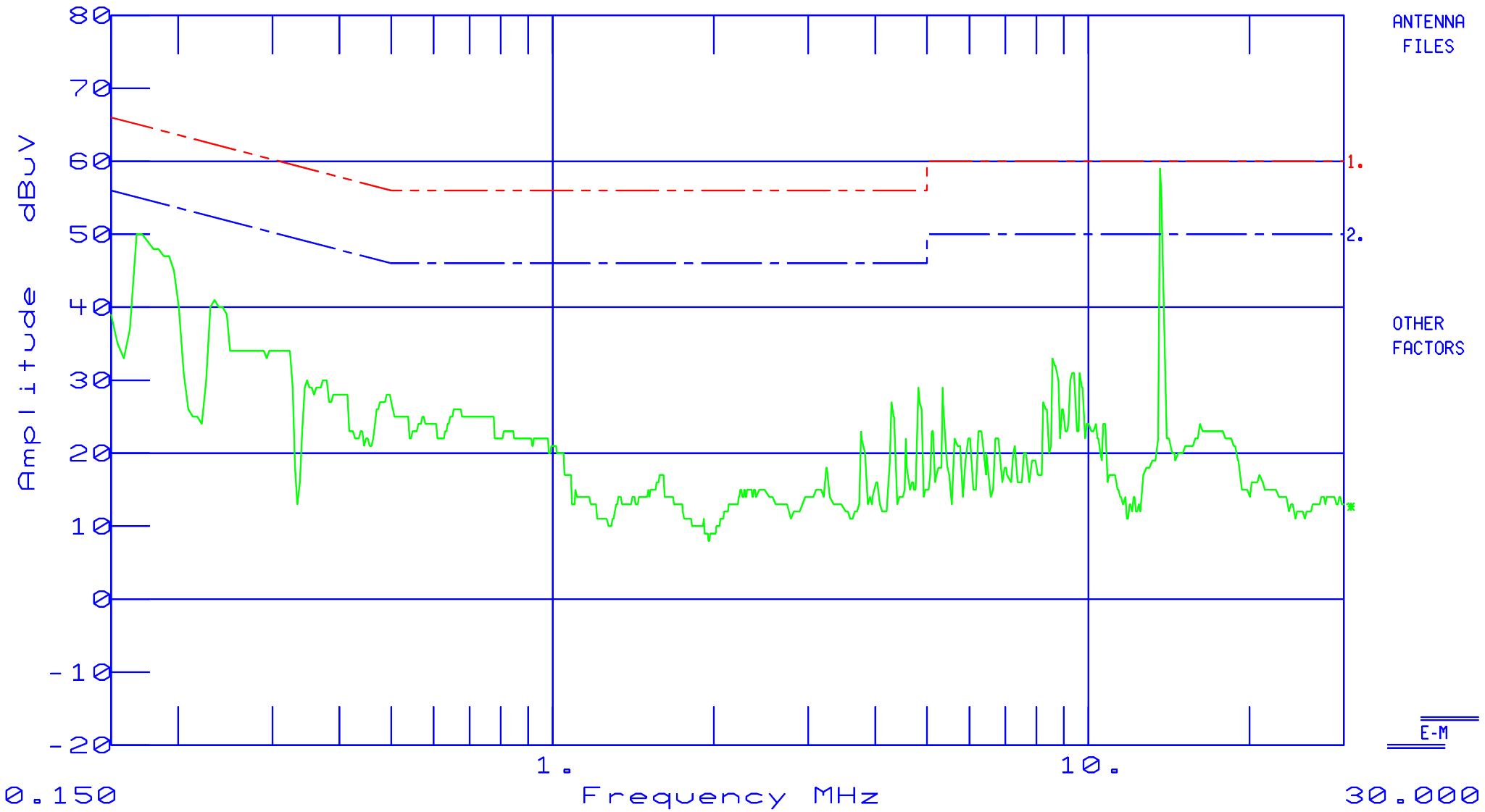
:TRAC
te : 06/16/14
chnician : CHIP FOERSTNER
st Method :FCC CLASS B
uipment : SAFECOM MX
de of Op. :NORMAL TRANSMIT
rial No. :

mment : 120 VAC / 60 HZ

Time : 11:35:07.61
Test Equip. :EMC-30
Test Number :1
Sensor Loc. :LINE
Sensor Pol. :
Ext. Atten. :0 dB

EMC-30 SETTINGS
Detector QuasiPeak
Bandwidth CISPR
Dump/DwellN/A
RF Atten. 10 dB
IF Atten. 10 dB

SPECS
1) CISPR 22 Quasi Peak
2) CISPR 22 AVG
3)
4)



TEST TITLE: EQUITRAC			PAGE 1
DATA FILE : 14238BL.D30			Freq.(MHz)
Amplitude Units : dBuV	Threshold	6 dB	0.1500

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.6093	59.0		9.000 *
13.6797	56.0		6.000 *

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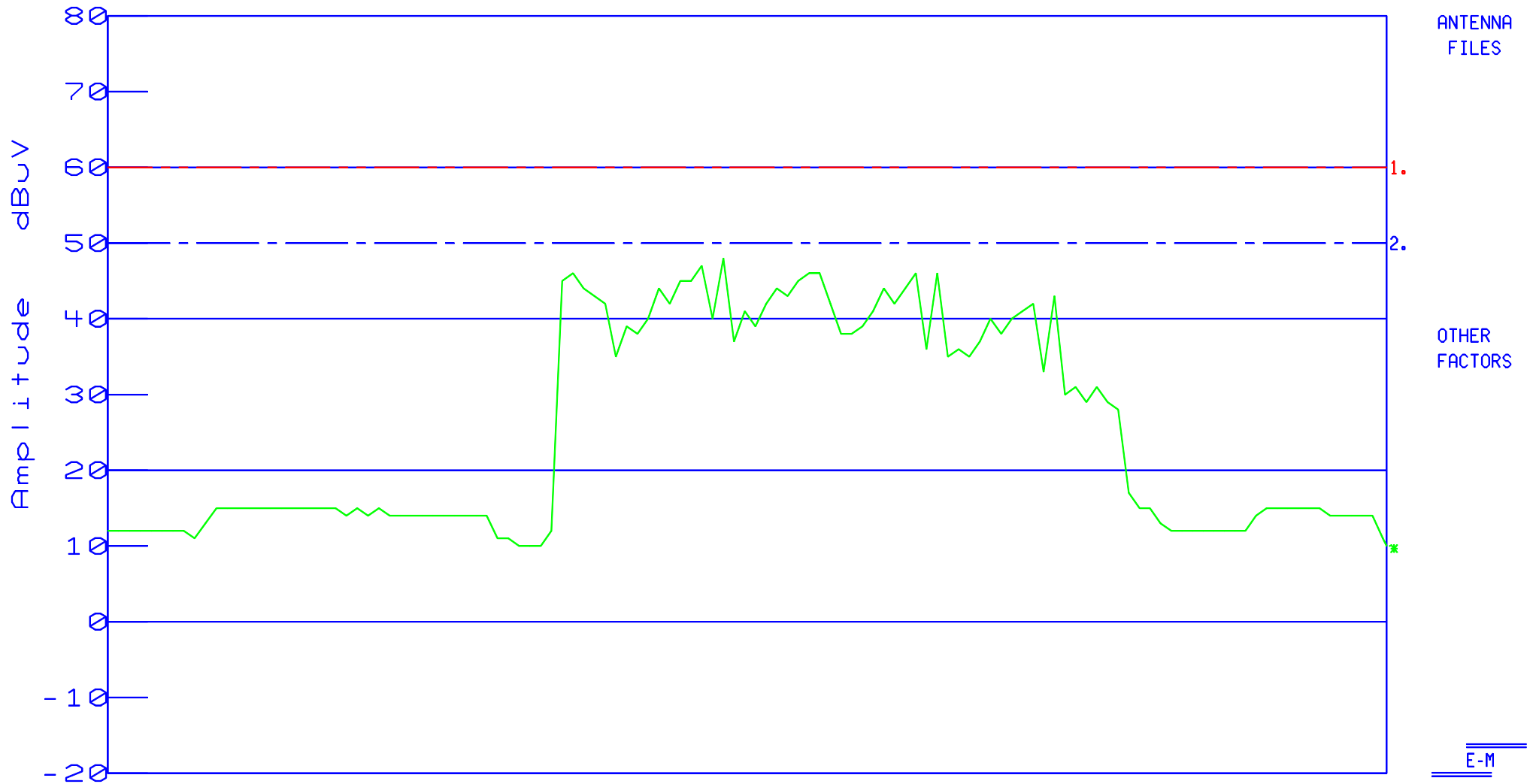
:TRAC

te : 06/16/14	Time : 12:26:15.70	EMC-30 SETTINGS	SPECS
chnician : CHIP FOERSTNER	Test Equip. :EMC-30	Detector Average	1) CISPR 22 Quasi Peak
st Method :FCC CLASS B	Test Number :1	Bandwidth CISPR	2) CISPR 22 AVG
uipment : SAFECOM MX	Sensor Loc. :LINE	Dump/DwellN/A	3)
de of Op. :NORMAL TRANSMIT	Sensor Pol. :	RF Atten. 10 dB	4)
rial No. :	Ext. Atten. :0 dB	IF Atten. 10 dB	

mment : 120 VAC / 60 HZ



TEST TITLE: EQUITRAC		PAGE 1
DATA FILE : 14238BLA.D30		Freq.(MHz)
Amplitude Units : dBuV	Threshold -4 dB	13.4000

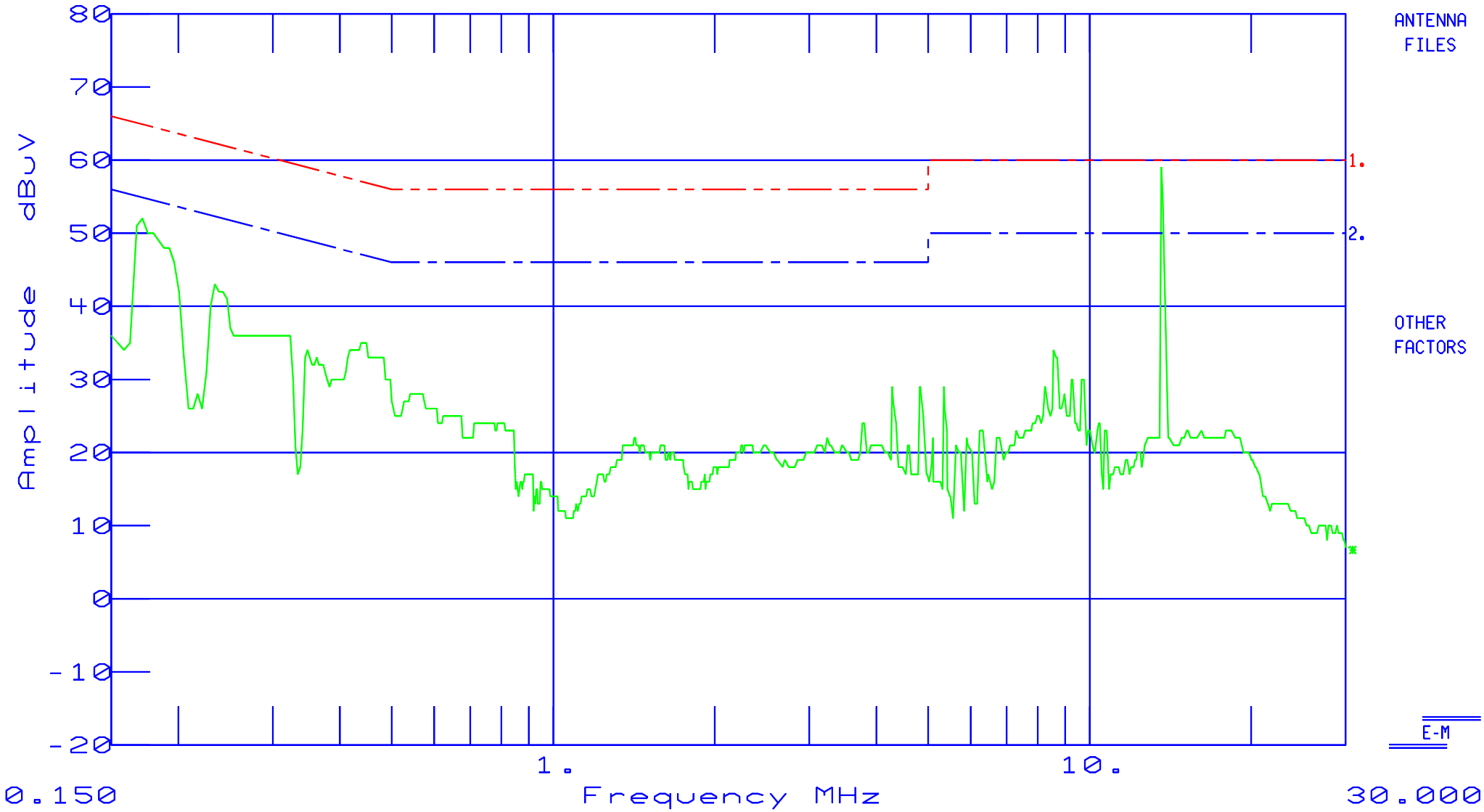
Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.5441	46.0		-4.000 *
13.5843	47.0		-3.000 *
13.5910	48.0		-2.000 *
13.6178	46.0		-4.000 *
13.6212	46.0		-4.000 *
13.6514	46.0		-4.000 *
13.6581	46.0		-4.000 *

oduct Safety Engineering

:TRAC

te :	06/16/14	Time :	12:08:56.07	EMC-30 SETTINGS	SPECS
chnician :	CHIP FOERSTNER	Test Equip. :	EMC-30	Detector QuasiPeak	1) CISPR 22 Quasi Peak
st Method :	FCC CLASS B	Test Number :	1	Bandwidth CISPR	2) CISPR 22 AVG
uipment :	SAFECOM MX	Sensor Loc. :	NEUTRAL	Dump/DwellN/A	3)
de of Op. :	NORMAL TRANSMIT	Sensor Pol. :		RF Atten. 10 dB	4)
rial No. :		Ext. Atten. :	0 dB	IF Atten. 10 dB	

mment : 120 VAC / 60 HZ



TEST TITLE: EQUITRAC			PAGE 1
DATA FILE :14238BN.D30			Freq.(MHz)
Amplitude Units : dBuV	Threshold	7 dB	0.1500

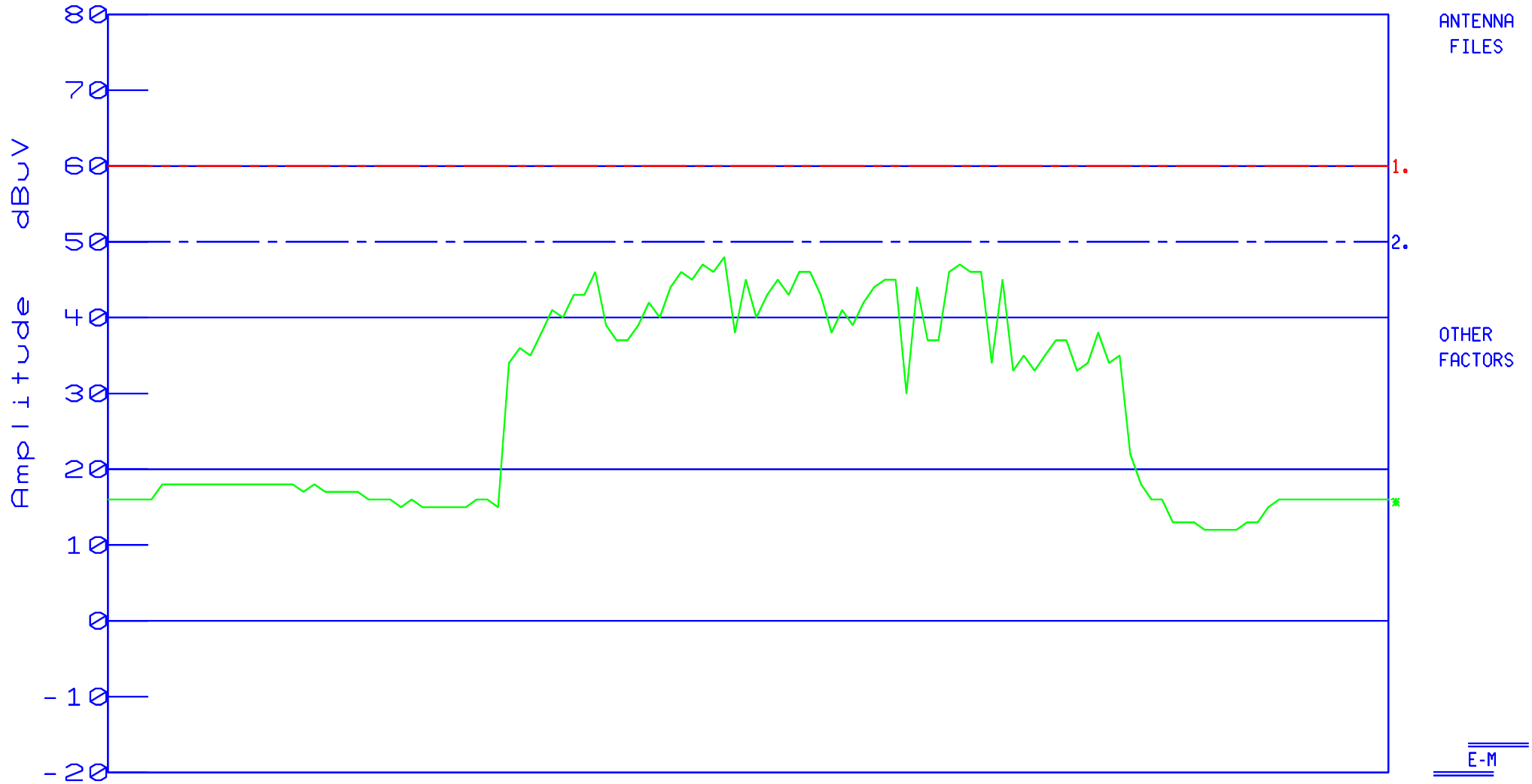
Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.5926	59.0		9.000 *

oduct Safety Engineering

:TRAC

te :	06/16/14	Time :	12:23:34.55	EMC-30 SETTINGS	SPECS
chnician :	CHIP FOERSTNER	Test Equip. :	EMC-30	Detector Average	1) CISPR 22 Quasi Peak
st Method :	FCC CLASS B	Test Number :	1	Bandwidth CISPR	2) CISPR 22 AVG
uipment :	SAFECOM MX	Sensor Loc. :	NEUTRAL	Dump/DwellN/A	3)
de of Op. :	NORMAL TRANSMIT	Sensor Pol. :		RF Atten. 10 dB	4)
rial No. :		Ext. Atten. :	0 dB	IF Atten. 10 dB	

mment : 120 VAC / 60 HZ



TEST TITLE: EQUITRAC			PAGE 1
DATA FILE : 14238BNA.D30			Freq.(MHz)
Amplitude Units : dBuV		Threshold -4 dB	13.4000

Freq(MHz)	Amp	C22BQP.S30 vs Spec(dB)	C22BAVG.S30 vs Spec(dB)
13.5508	46.0		-4.000 *
13.5776	46.0		-4.000 *
13.5843	47.0		-3.000 *
13.5877	46.0		-4.000 *
13.5910	48.0		-2.000 *
13.6145	46.0		-4.000 *
13.6178	46.0		-4.000 *
13.6614	46.0		-4.000 *
13.6648	47.0		-3.000 *
13.6681	46.0		-4.000 *
13.6715	46.0		-4.000 *

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, SafeCom controller with MX RFID reader
Front end G10199-A02 sn 15940170
Power supply 3A-183WP12
****

DEVICE TYPE: Readers **(2X)**, P/N 674120 S/N 38718554 S/N 38717044
****

DEVICE TYPE: DLink Router
****

DEVICE TYPE: Lenovo laptop
****

INTERFACE CABLES

****

DEVICE TYPE: Front end
SHIELD: Yes
LENGTH: 6 feet
CONNECTOR TYPE: DIN type
PORT: serial
****

DEVICE TYPE: Readers **(2X)**
SHIELD: Yes
LENGTH: 6 feet
CONNECTOR TYPE: dedicated to USB
PORT: USB
****

DEVICE TYPE: Controller
SHIELD: No
LENGTH: 10 feet (25 cm for conducted immunity)
CONNECTOR TYPE: RJ45
PORT: LAN to router (DHCP enabled)
****

DEVICE TYPE: Controller
SHIELD: No
LENGTH: 10 feet (25 cm for conducted immunity)
CONNECTOR TYPE: RJ45
PORT: RJ45 nearest power to laptop
****

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

AC LINE CORDS

****

DEVICE TYPE: EUT PS **(DC side of plug in PS)**
SHIELD: No
LENGTH: 6 feet
CONNECTOR TYPE: Dedicated to mini plug
****

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

APPENDIX

C

Environmental Testing

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

FCC DATA SHEET

Frequency tolerance

§15.225

(e) The frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Temperature	Frequency (Hz)	Tolerance
-20 C	13,557,600	13,557,740 - 13,557,600 = -140
+ 50 C	13,558,120	13,557,740 - 13,558,120 = -380
+ 20 C	13,557,740	0.0001 X 13,557,740 = 1,356

The supply voltage to the host computer was varied from (102) to (138) VAC while we monitored the frequency. The frequency did not change during this voltage variation.

PASS

(f) In the case of radio frequency powered tags designed to operate with a device authorized under this section, the tag may be approved with the device or be considered as a separate device subject to its own authorization. Powered tags approved with a device under a single application shall be labeled with the same identification number as the device.

NOT APPLICABLE

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