

FCC Radio Test Report

FCC ID: A4C-10009A

This report concerns (check one): ☒ Original Grant ☐ Class II Change

Project No. : 1605099
Equipment : OverDryve 7
Test Model : OD7
Applicant : RM Acquisition, LLC
Address : 9855 Woods Drive Skokie, IL 60077 USA

Date of Receipt : May 20, 2016
Date of Test : May 20, 2016 ~ Jun. 01, 2016
Issued Date : Jun. 03, 2016
Tested by : BTL Inc.

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-5-1605099	Original Issue.	Jun. 03, 2016

1. CERTIFICATION

Equipment : OverDryve 7
Brand Name : RAND McNALLY
Test Model : OD7
Applicant : RM Acquisition, LLC
Manufacturer : RM Acquisition, LLC
Address : 9855 Woods Drive Skokie, IL 60077 USA
Date of Test : May 20, 2016 ~ Jun. 01, 2016
Test Sample : Engineering Sample
Standard(s) : FCC Part15, Subpart C (15.239) / ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-5-1605099) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the FM part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.239) , Subpart C				
Standard(s)	Section	Test Item	Judgment	Remark
	15.207	Conducted Emission	PASS	
	15.209 15.239 (b) (c)	Radiated Emissions	PASS	
	15.239 (a)	20dB Bandwidth	PASS	

NOTE:

(1)" N/A" denotes test is not applicable to this device.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C05: (VCCI RN: C-4742; FCC RN:949005; FCC DN:TW1082)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Below 1GHz):

CB11: (VCCI RN: R-4260; FCC RN:949005; FCC DN:TW1082; IC Assigned Code:20088)
No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)
C05	CISPR	150 kHz~30MHz	2.04

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)
CB11 (3m)	CISPR	9kHz ~ 150kHz	4.00
		150kHz ~ 30MHz	4.00

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
CB11 (3m)	CISPR	30 MHz ~ 200 MHz	V	3.06
		30 MHz ~ 200 MHz	H	2.58
		200 MHz ~ 1, 000 MHz	V	3.50
		200 MHz ~ 1, 000 MHz	H	3.10

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz : 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) – 30 MHz – 1000 MHz : 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	OverDryve 7		
Brand Name	RAND McNALLY		
Test Model	OD7		
Model Difference	N/A		
EUT Power Rating	I/P: DC 5V		
Power Adapter Manufacturer	Chicony	Model	W12-010N3A
	DVE	Model	DDA-18A-05 053350
Power Adapter Power Rating	For W12-010N3A I/P: AC 100-240V 50/60Hz 0.3A O/P: DC 5V 2A		
	For DDA-18A-05 053350 I/P: DC 12/24V 2A O/P: DC 5.3V 3.5A		
Battery Pack Manufacturer	McNair New Power	Model	MLP4110172
Product Description	Operation Frequency		88-108 MHz
	Modulation Technology		FM
	Antenna Type		Dipole
	Channel Separation		200 KHz
	Field Strength		45.84 dBuV/m (AVG Max) 47.58 dBuV/m (Peak Max)

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List

Channel	Frequency (MHz)
Low channel (L)	88.10
Middle channel (M)	98.10
High channel (H)	107.90

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX Mode NOTE (2)

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

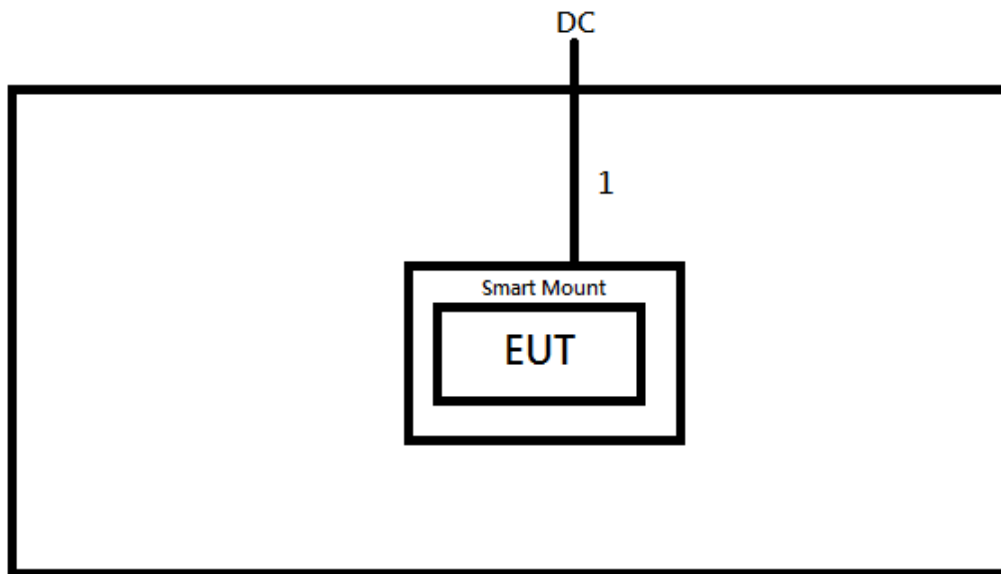
For Conducted Test	
Final Test Mode	Description
Mode 1	TX Mode NOTE (2)

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode NOTE (2)

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) The FM function is only supported when connected to Smart Mount.
Both voltages DC12/24V are tested, only the worst cases are recorded in this report.

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	2m	DC Adapter

Note:

(1) The support equipment was authorized by Declaration of Conformity (DOC).

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.5	66 to 56*	56 to 46*
0.5 -5.0	56	46
5.0 -30.0	60	50

Note:

- (1) The limit of " * " decreases with the logarithm of the frequency
- (2) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

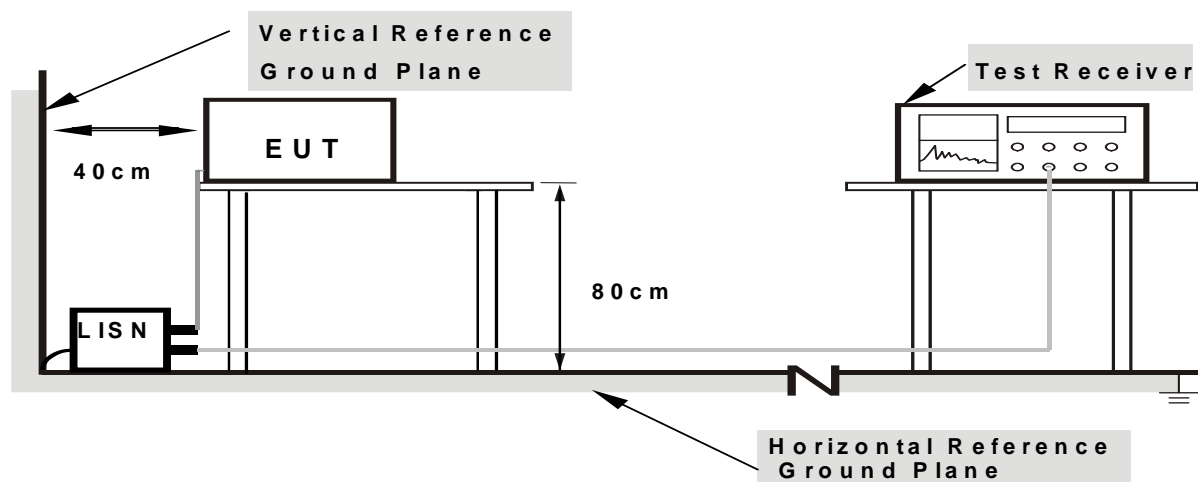
4.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN .
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80
from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting/receiving data or hopping on mode.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C
Relative Humidity: 55%
Test Voltage: DC 12/24V

4.1.7 TEST RESULTS

Please refer to the Attachment A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform.In this case, a “ * ” marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.
- (3) “ N/A ” denotes test is not applicable to this device.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (FCC 15.209)

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

4.2.2 RADIATED EMISSION LIMITS (FCC 15.239)

According to 15.239 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
88 to 108	67.96	47.96

Band edge emissions outside of the frequency bands shown in below table.

Outside Frequency Band Edge	Limit (dBuV/m) at 3m
Below 88 MHz	40.0 (QP)
Above 108 MHz	43.5 (QP)

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

Receiver Parameter	Setting
Center Frequency	Fundamental Frequency
RBW	120 KHz
Detector	AV or Peak

4.2.3 TEST PROCEDURE

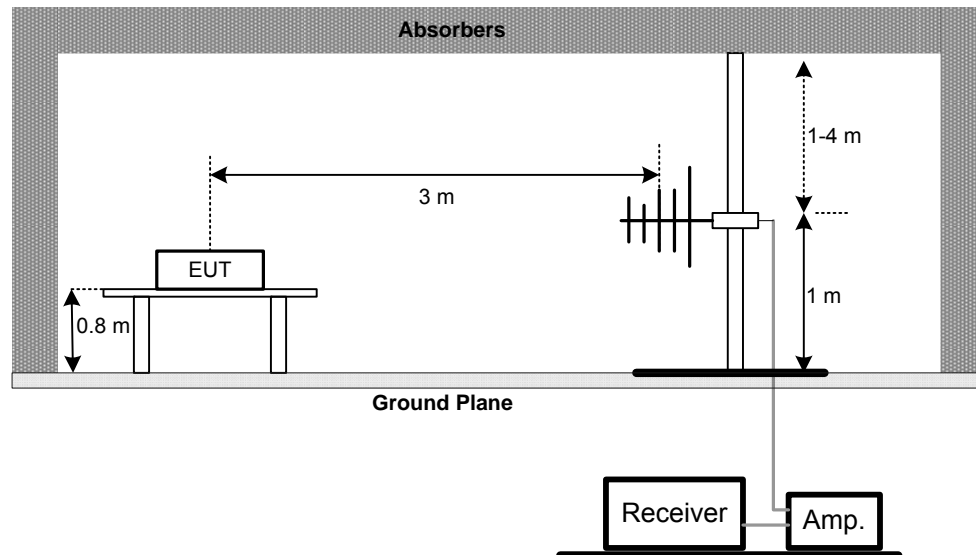
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

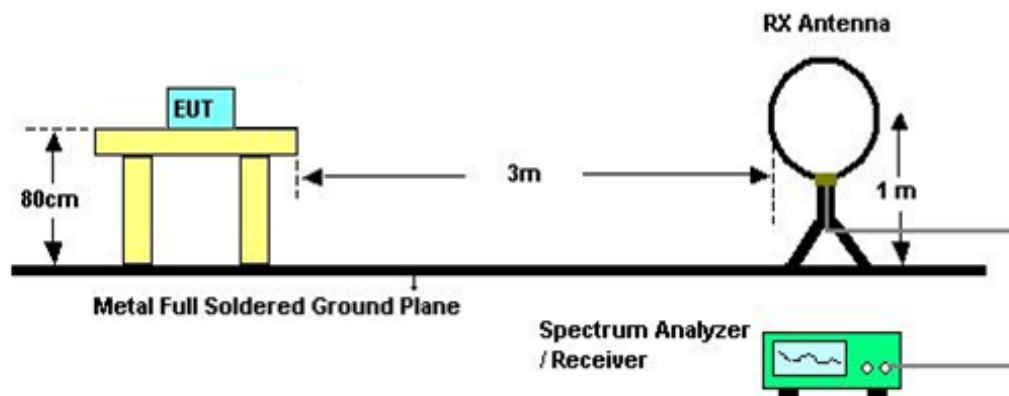
No deviation

4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) For radiated emissions below 30MHz



4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.5** unless otherwise a special operating condition is specified in the follows during the testing.

4.2.7 EUT TEST CONDITIONS

Temperature: 25°C

Relative Humidity: 45%

Test Voltage: DC 12V

4.2.8 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.9 TEST RESULTS (BETWEEN 30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz.
- (3) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

4.2.10 TEST RESULTS (FIELD STRENGTH AND BAND EDGE EMISSION)

Please refer to the Attachment C.

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz.
- (3) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

5. BANDWIDTH TEST

5.1 Applied procedures / limit

FCC Part15 (15.239) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.239(b)	Bandwidth	Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.	88-108	PASS

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 10KHz, VBW=30KHz, Sweep time = Auto.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.5 unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 EUT TEST CONDITIONS

Temperature: 25°C
 Relative Humidity: 60%
 Test Voltage: DC 12V

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. MEASUREMENT INSTRUMENTS LIST

Conducted Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	Jan. 26, 2017
2	Test Cable	TIMES	CFD300-NL	C02	Jun. 14, 2016
3	EMI Test Receiver	R&S	ESR7	101433	Dec. 09, 2016
4	Power Dividers	HP	11636A	8103	May 03, 2017
5	Measurement Software	EZ	EZ EMC (Version NB-03A)	N/A	N/A

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB9168-352	9168-352	Jul. 30, 2016
2	Horn Antenna	Schwarzbeck	BBHA 9120	D-325	Apr. 19, 2017
3	Horn Antenna	Schwarzbeck	BBHA 9120	9120D-1333	May 19, 2017
4	Pre-Amplifier	Anritsu	MH648A	M92649	Jun. 16, 2016
5	Pre-Amplifier	Agilent	8449B	3008A01714	Apr. 13, 2017
6	Test Cable	LMR	LMR-400	01(10M)	May 11, 2017
7	Test Cable	LMR	LMR-400	01(3M)	May 11, 2017
8	Test Cable	Harbour industries	27478LL142	1M	May 12, 2017
9	Test Cable	Harbour industries	27478LL142	3M	May 12, 2017
10	Test Cable	AISI	S104-SMAP-1	8M	May 12, 2017
11	Spectrum Analyzer	Agilent	N9020A	MY51160196	Aug. 02, 2016
12	EMI Test Receiver	R&S	ESCI	100080	May 12, 2017
13	Measurement Software	Farad	EZ EMC (Version NB-03A)	N/A	N/A
14	Loop Ant	EMCO	6502	42960	Nov. 15, 2016

20 dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP-40	100129	Jan. 17, 2017

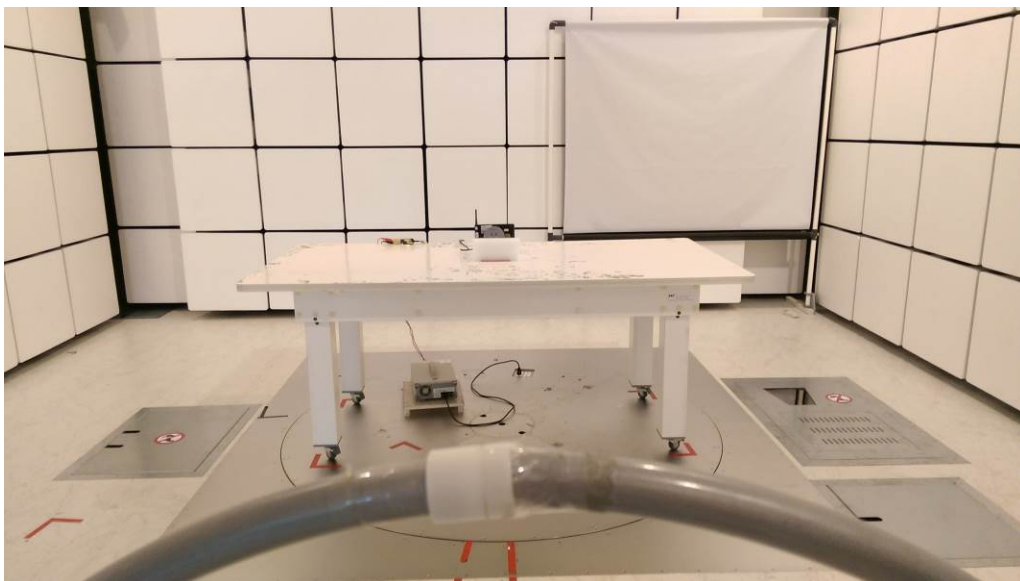
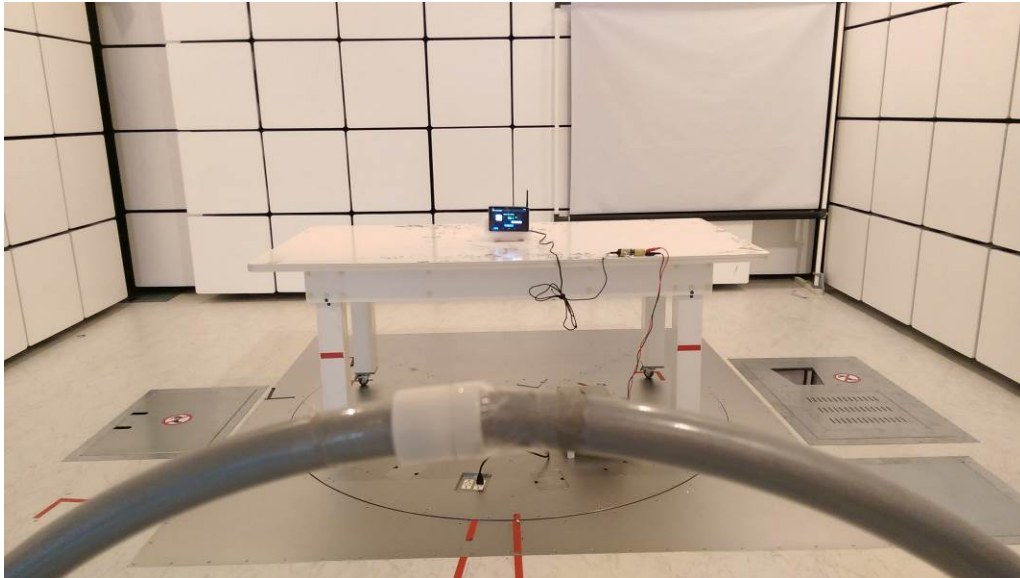
Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

7. EUT TEST PHOTO

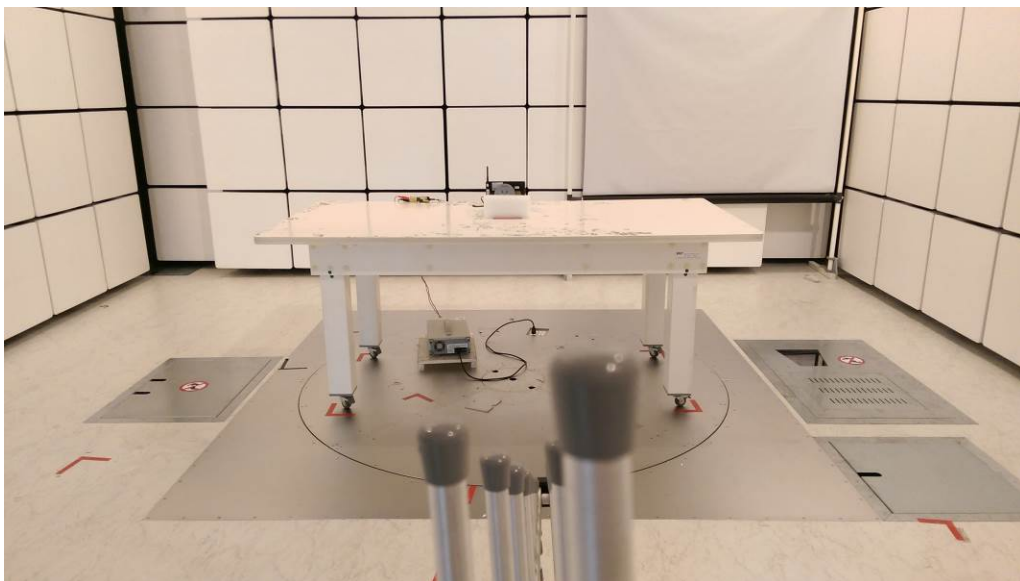
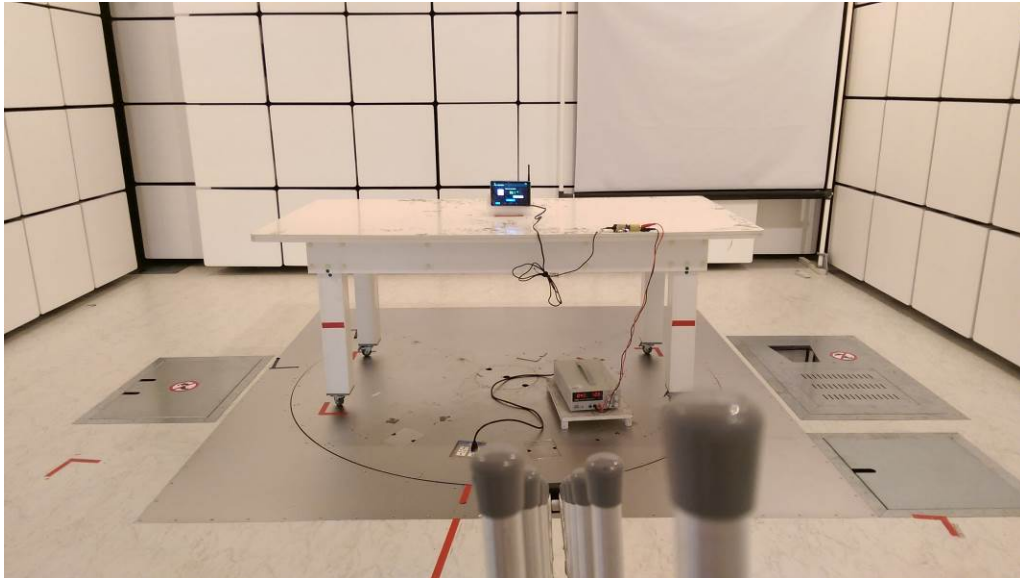
Conducted Measurement Photos



Radiated Measurement Photos 9KHz to 30MHz



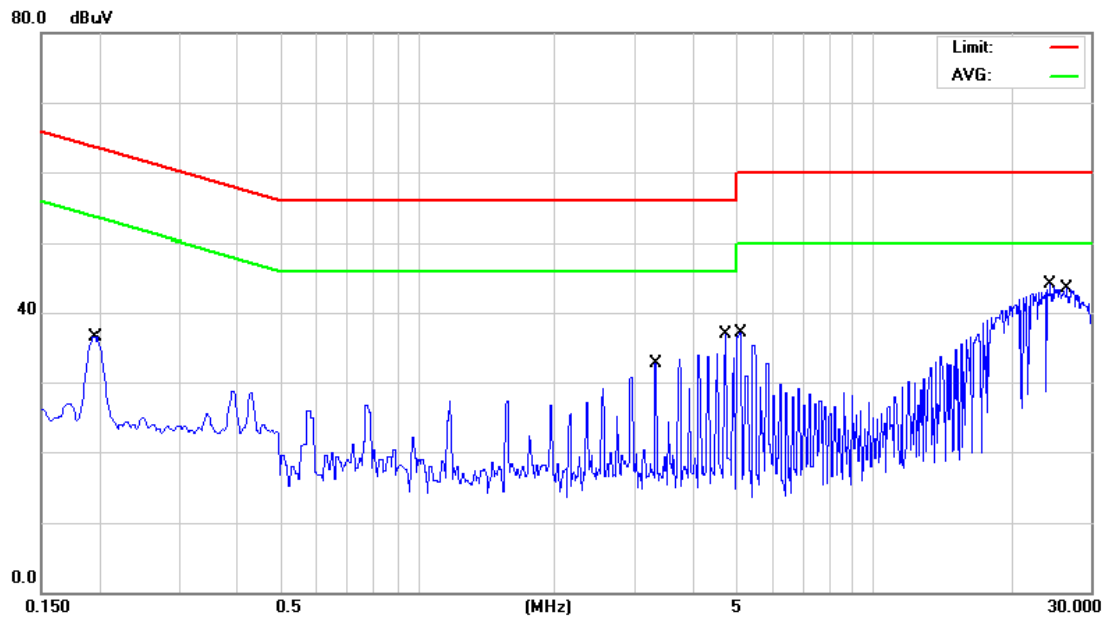
Radiated Measurement Photos 30MHz to 1000MHz



ATTACHMENT A - CONDUCTED EMISSION

Test Mode: TX_DC 12V

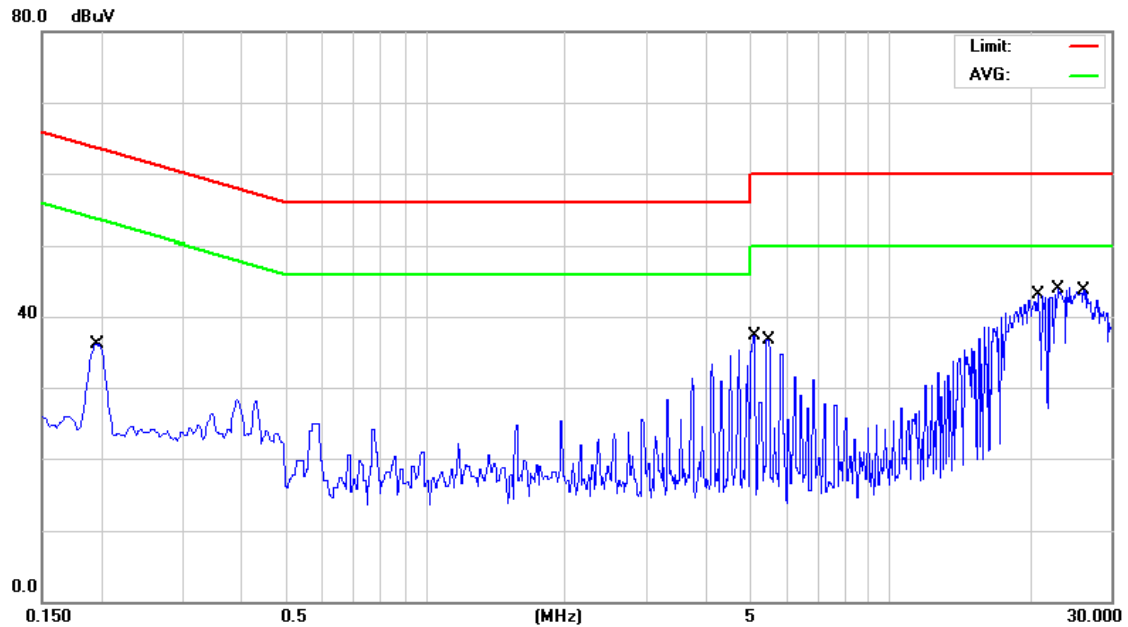
Line



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1962	24.20	9.68	33.88	63.77	-29.89	QP	
2		0.1962	24.10	9.68	33.78	53.77	-19.99	AVG	
3		3.3350	20.30	9.82	30.12	56.00	-25.88	QP	
4		3.3350	20.20	9.82	30.02	46.00	-15.98	AVG	
5		4.7120	26.00	9.88	35.88	56.00	-20.12	QP	
6		4.7120	25.90	9.88	35.78	46.00	-10.22	AVG	
7		5.1000	25.30	9.90	35.20	60.00	-24.80	QP	
8		5.1000	24.50	9.90	34.40	50.00	-15.60	AVG	
9		24.3500	32.60	9.96	42.56	60.00	-17.44	QP	
10		24.3500	29.50	9.96	39.46	50.00	-10.54	AVG	
11		26.5000	32.80	9.95	42.75	60.00	-17.25	QP	
12	*	26.5000	30.70	9.95	40.65	50.00	-9.35	AVG	

Test Mode: TX_DC 12V

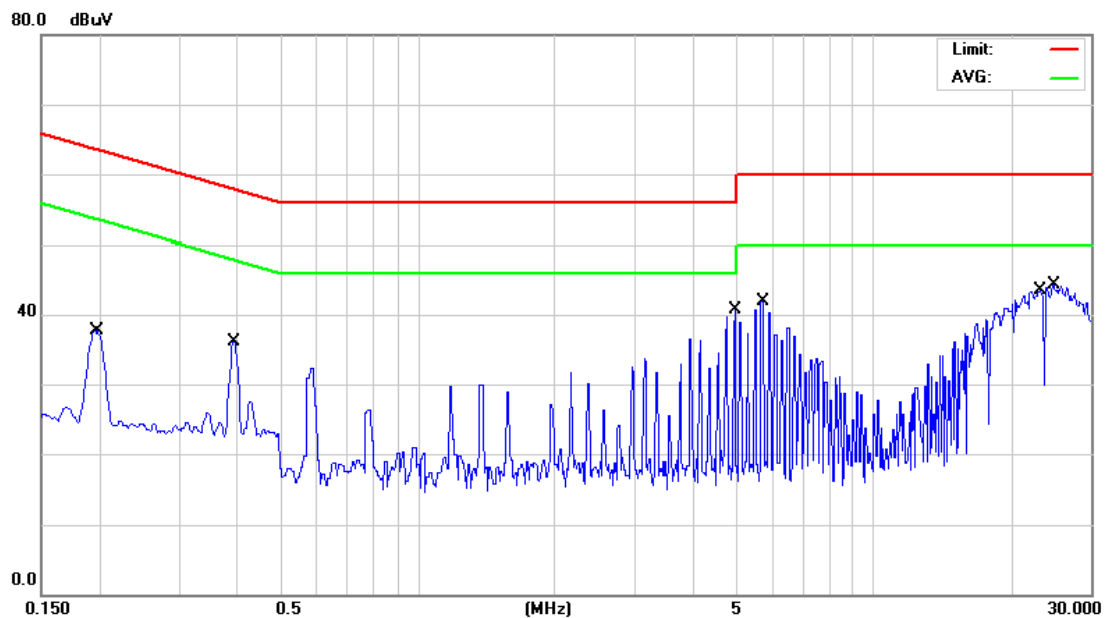
Neutral



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1962	23.90	9.68	33.58	63.77	-30.19	QP	
2		0.1962	23.40	9.68	33.08	53.77	-20.69	AVG	
3		5.1000	24.00	9.90	33.90	60.00	-26.10	QP	
4		5.1000	22.80	9.90	32.70	50.00	-17.30	AVG	
5		5.4500	26.10	9.90	36.00	60.00	-24.00	QP	
6		5.4500	26.00	9.90	35.90	50.00	-14.10	AVG	
7		20.8000	27.80	9.93	37.73	60.00	-22.27	QP	
8		20.8000	21.00	9.93	30.93	50.00	-19.07	AVG	
9		23.0000	32.60	9.95	42.55	60.00	-17.45	QP	
10	*	23.0000	29.90	9.95	39.85	50.00	-10.15	AVG	
11		26.1000	28.50	9.97	38.47	60.00	-21.53	QP	
12		26.1000	22.40	9.97	32.37	50.00	-17.63	AVG	

Test Mode: TX_DC 24V

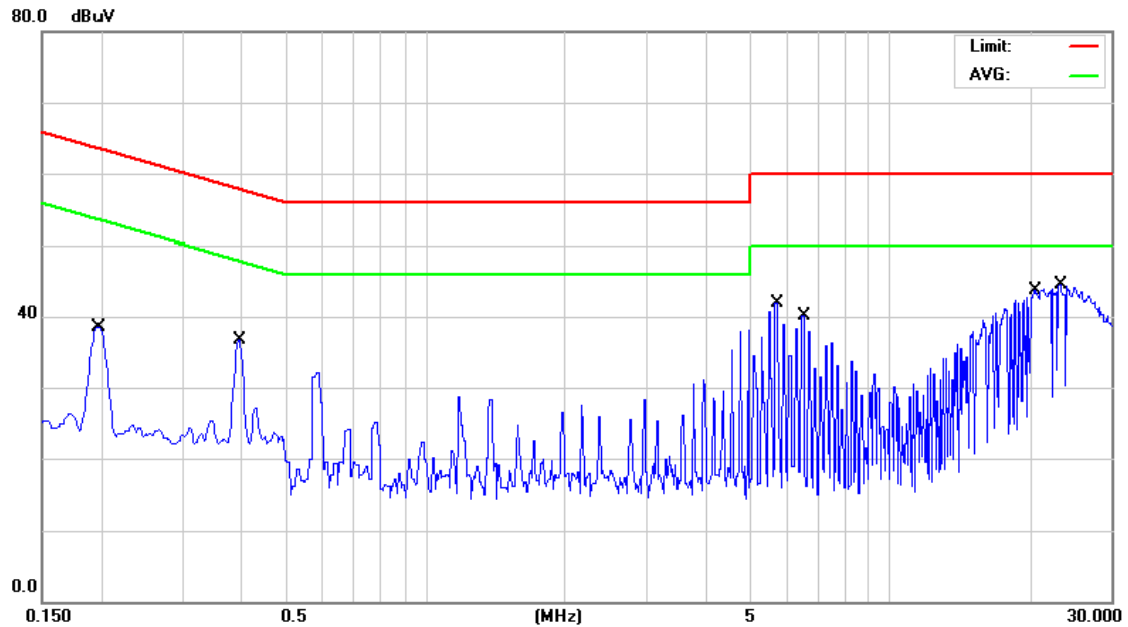
Line



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1969	25.50	9.68	35.18	63.74	-28.56	QP	
2		0.1969	25.30	9.68	34.98	53.74	-18.76	AVG	
3		0.3943	24.30	9.68	33.98	57.97	-23.99	QP	
4		0.3943	24.10	9.68	33.78	47.97	-14.19	AVG	
5		4.9370	27.60	9.90	37.50	56.00	-18.50	QP	
6		4.9370	26.70	9.90	36.60	46.00	-9.40	AVG	
7		5.7000	31.80	9.90	41.70	60.00	-18.30	QP	
8	*	5.7000	31.50	9.90	41.40	50.00	-8.60	AVG	
9		22.9000	24.70	9.95	34.65	60.00	-25.35	QP	
10		22.9000	17.70	9.95	27.65	50.00	-22.35	AVG	
11		24.7000	33.10	9.97	43.07	60.00	-16.93	QP	
12		24.7000	31.00	9.97	40.97	50.00	-9.03	AVG	

Test Mode: TX_DC 24V

Neutral

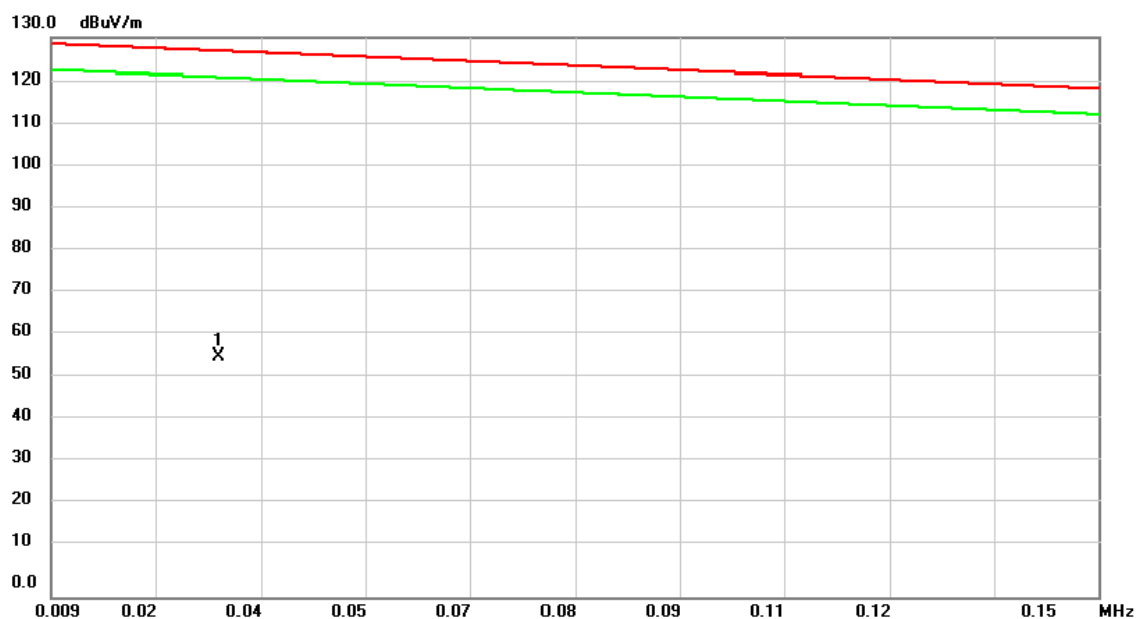


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1976	26.30	9.68	35.98	63.71	-27.73	QP	
2		0.1976	25.90	9.68	35.58	53.71	-18.13	AVG	
3		0.3964	24.80	9.68	34.48	57.93	-23.45	QP	
4		0.3964	24.60	9.68	34.28	47.93	-13.65	AVG	
5		5.7000	31.40	9.90	41.30	60.00	-18.70	QP	
6		5.7000	31.30	9.90	41.20	50.00	-8.80	AVG	
7		6.5000	29.70	9.92	39.62	60.00	-20.38	QP	
8		6.5000	29.50	9.92	39.42	50.00	-10.58	AVG	
9		20.4000	33.40	9.93	43.33	60.00	-16.67	QP	
10		20.4000	32.30	9.93	42.23	50.00	-7.77	AVG	
11		23.1500	33.70	9.95	43.65	60.00	-16.35	QP	
12	*	23.1500	32.50	9.95	42.45	50.00	-7.55	AVG	

ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode: TX_FM 88.10 MHz

OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0316	41.34	14.84	56.18	126.89	-70.71	peak	

Test Mode: TX_FM 88.10 MHz

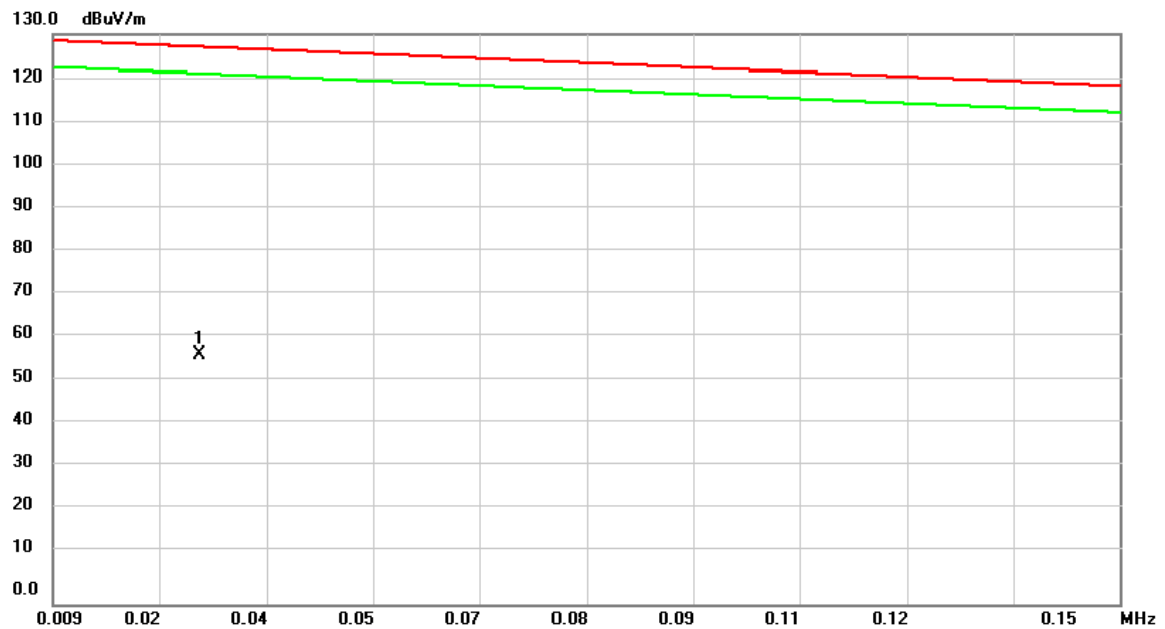
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3888	38.80	11.80	50.60	101.10	-50.50	peak	
2	*	1.3042	26.08	11.86	37.94	66.54	-28.60	peak	
3		1.7420	23.58	11.67	35.25	69.54	-34.29	peak	
4		3.8116	16.74	11.22	27.96	69.54	-41.58	peak	
5		5.6822	15.01	11.39	26.40	69.54	-43.14	peak	
6		7.5926	12.56	11.35	23.91	69.54	-45.63	peak	

Test Mode: TX_FM 88.10 MHz

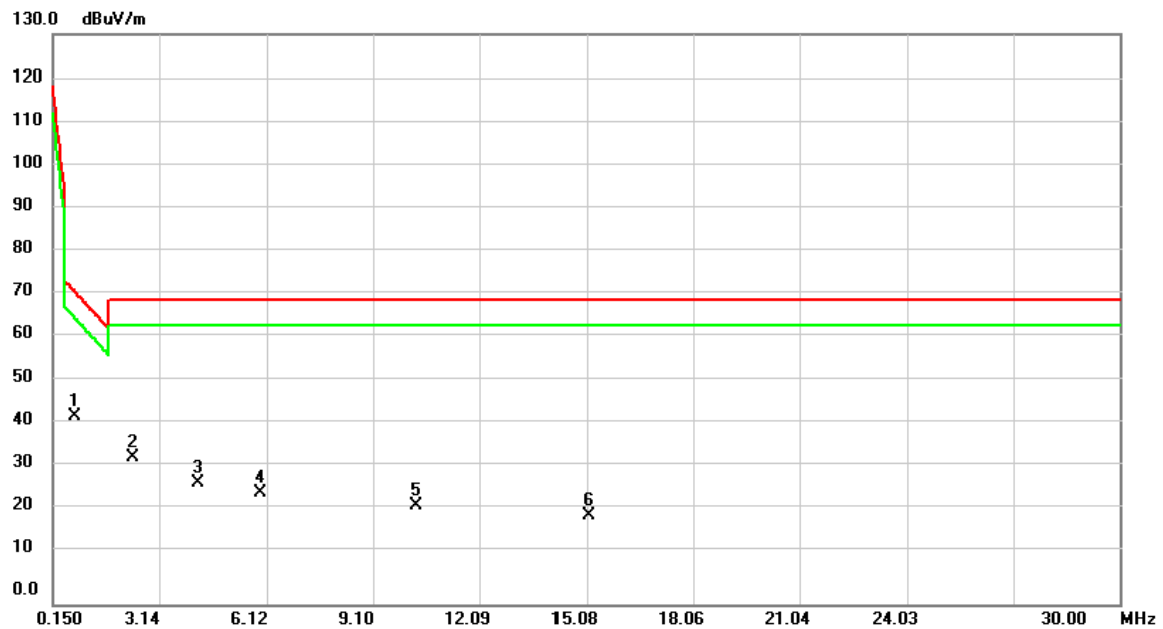
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0284	41.62	15.44	57.06	127.12	-70.06	peak	

Test Mode: TX_FM 88.10 MHz

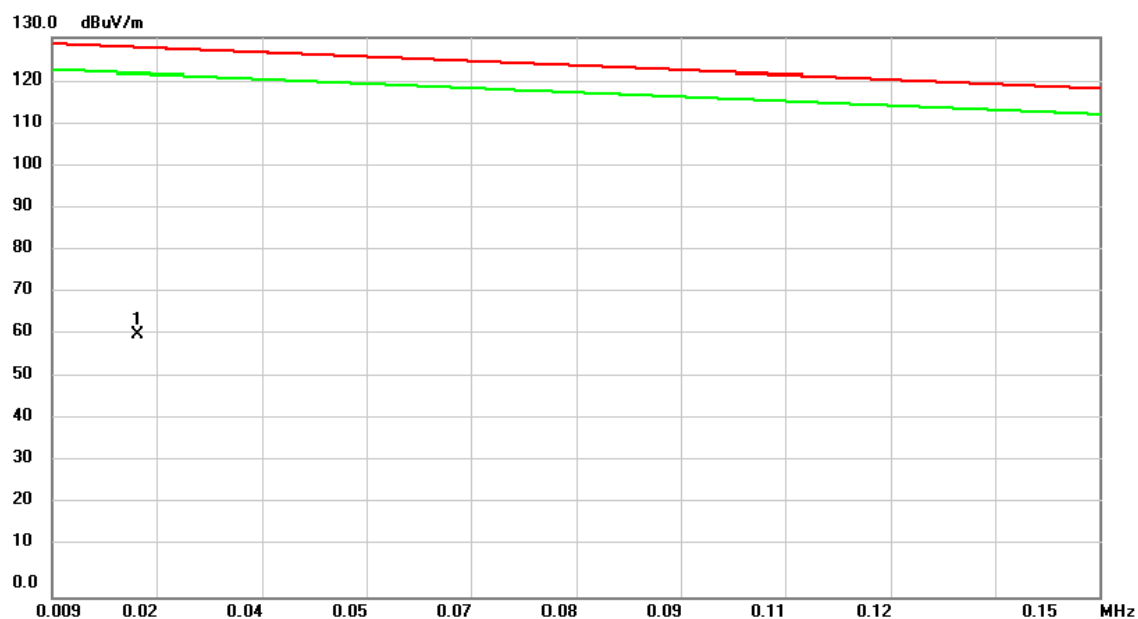
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.7867	31.17	11.91	43.08	71.16	-28.08	peak	
2		2.3788	22.40	11.38	33.78	69.54	-35.76	peak	
3		4.2096	16.56	11.28	27.84	69.54	-41.70	peak	
4		5.9210	14.05	11.38	25.43	69.54	-44.11	peak	
5		10.2990	11.36	11.29	22.65	69.54	-46.89	peak	
6		15.1148	9.28	11.15	20.43	69.54	-49.11	peak	

Test Mode: TX_FM 98.10 MHz

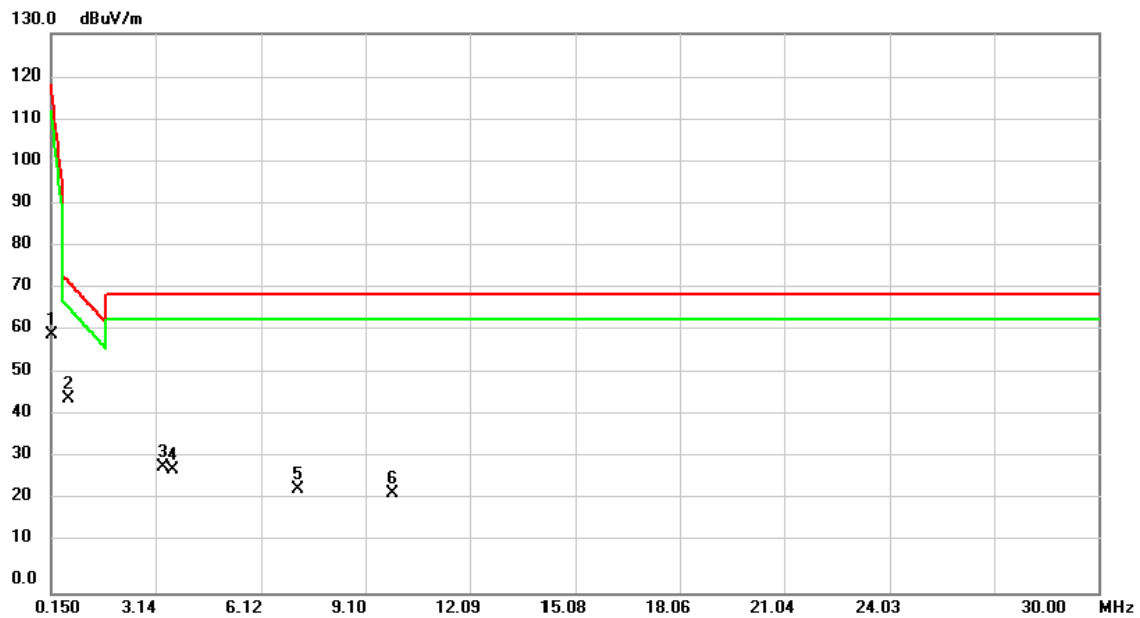
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0205	43.40	17.61	61.01	127.69	-66.68	peak	

Test Mode: TX_FM 98.10 MHz

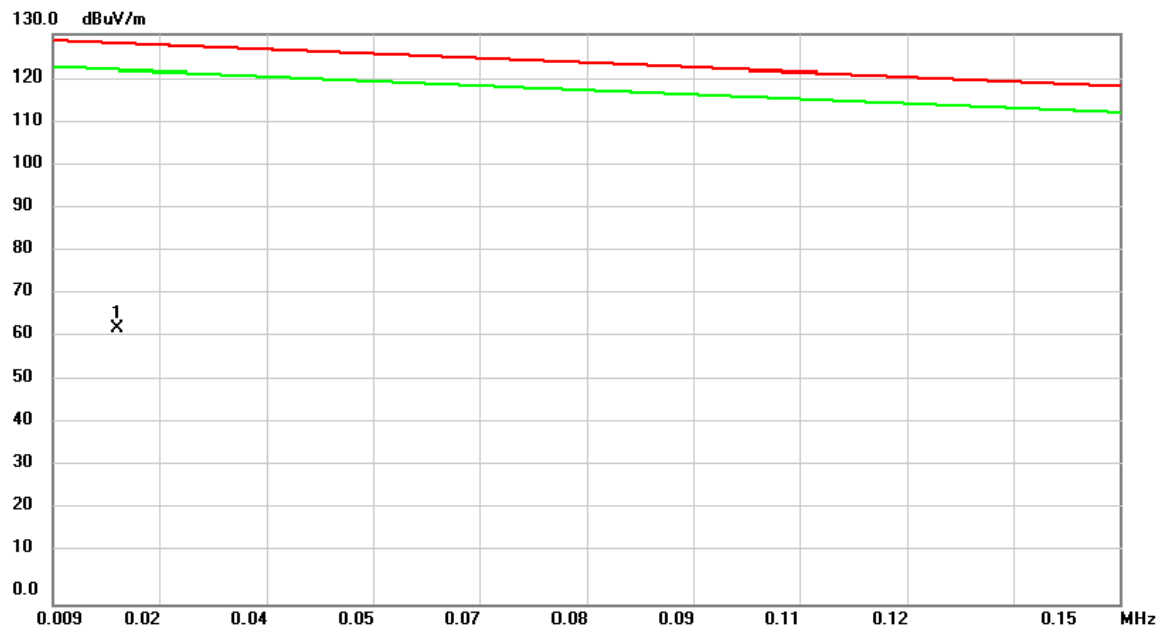
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1500	47.93	12.03	59.96	118.34	-58.38	peak	
2	*	0.6276	33.55	11.85	45.40	72.57	-27.17	peak	
3		3.3340	18.17	11.15	29.32	69.54	-40.22	peak	
4		3.6126	17.42	11.19	28.61	69.54	-40.93	peak	
5		7.1548	12.77	11.36	24.13	69.54	-45.41	peak	
6		9.8612	11.94	11.30	23.24	69.54	-46.30	peak	

Test Mode: TX_FM 98.10 MHz

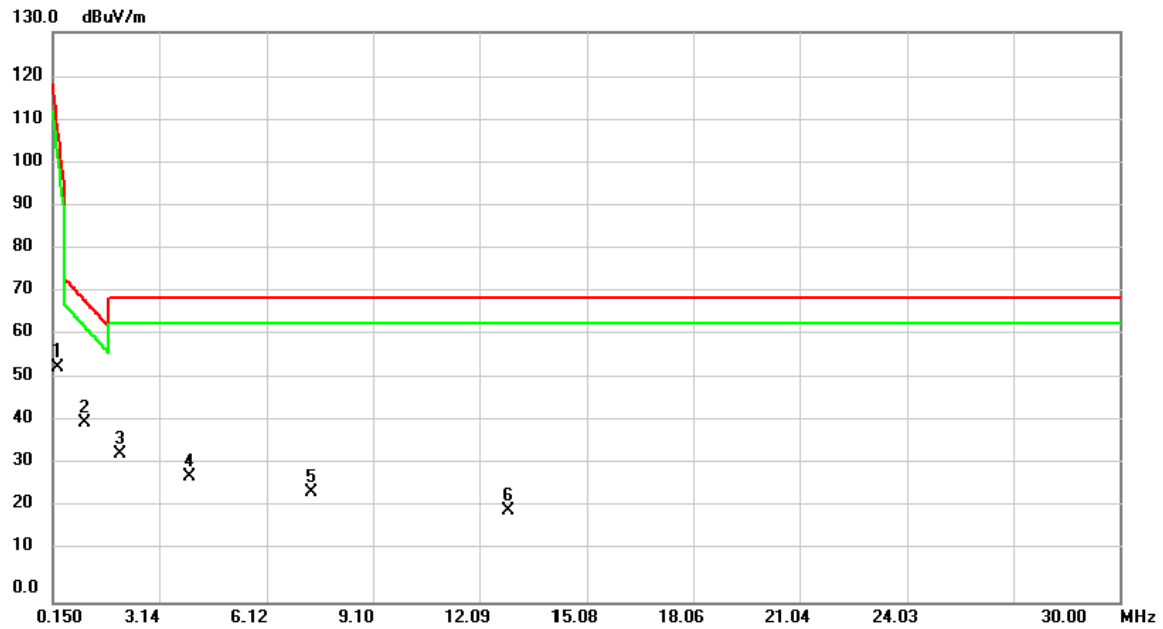
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0175	44.43	18.44	62.87	127.91	-65.04	peak	

Test Mode: TX_FM 98.10 MHz

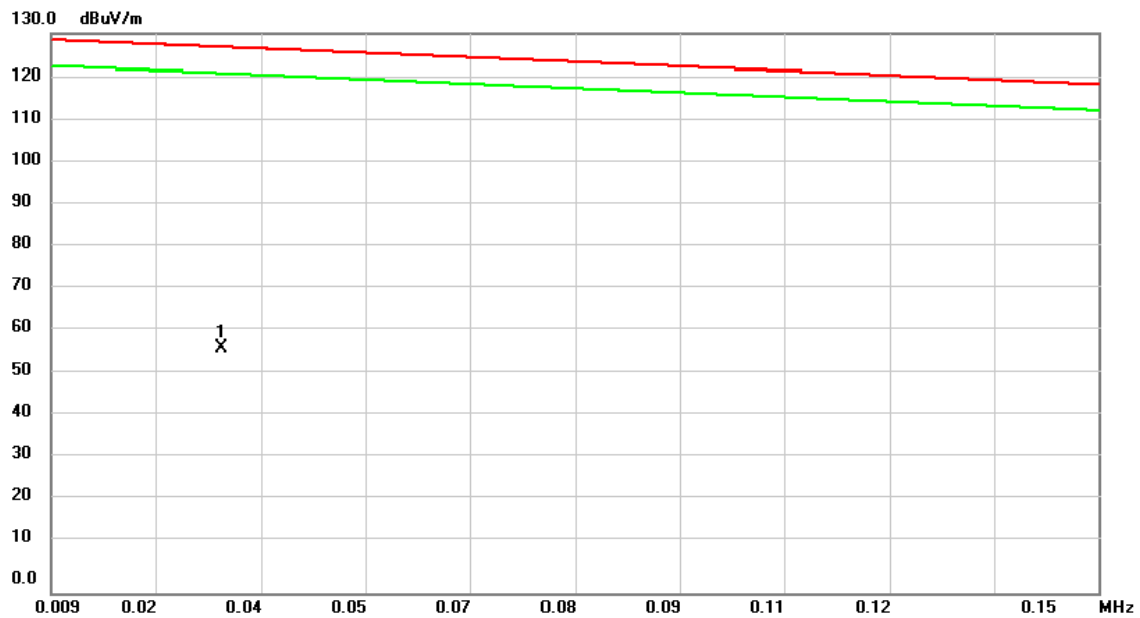
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.2694	42.03	11.85	53.88	109.72	-55.84	peak	
2	*	1.0256	29.13	11.99	41.12	69.03	-27.91	peak	
3		2.0206	22.50	11.54	34.04	69.54	-35.50	peak	
4		3.9708	17.57	11.25	28.82	69.54	-40.72	peak	
5		7.3538	13.68	11.35	25.03	69.54	-44.51	peak	
6		12.8860	9.91	11.21	21.12	69.54	-48.42	peak	

Test Mode:	TX_FM 107.90 MHz
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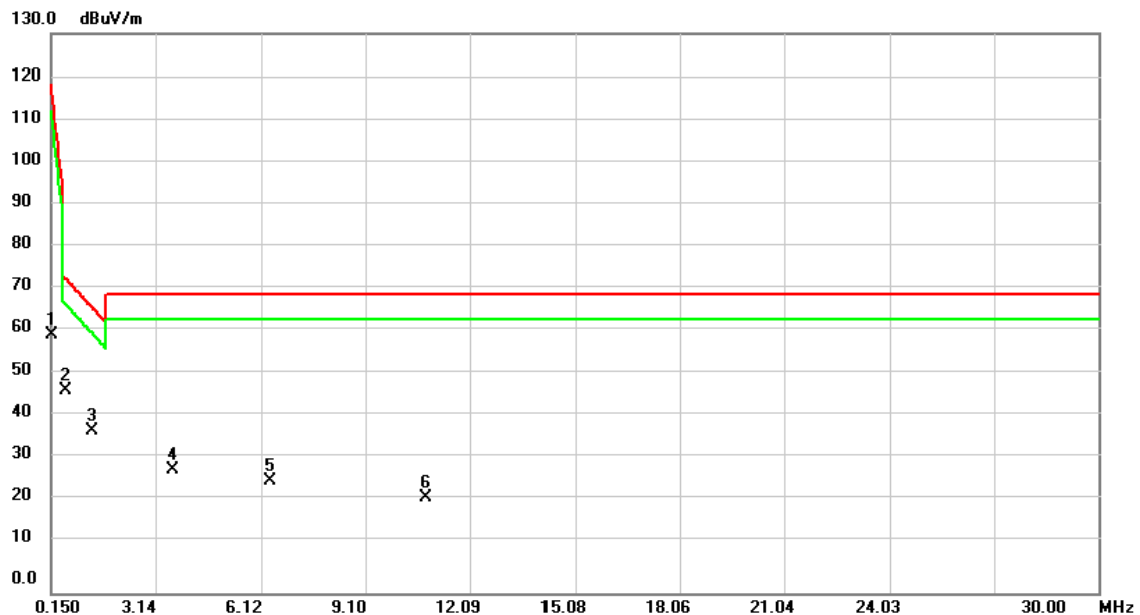
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0320	42.16	14.80	56.96	126.86	-69.90	peak	

Test Mode: TX_FM 107.90 MHz

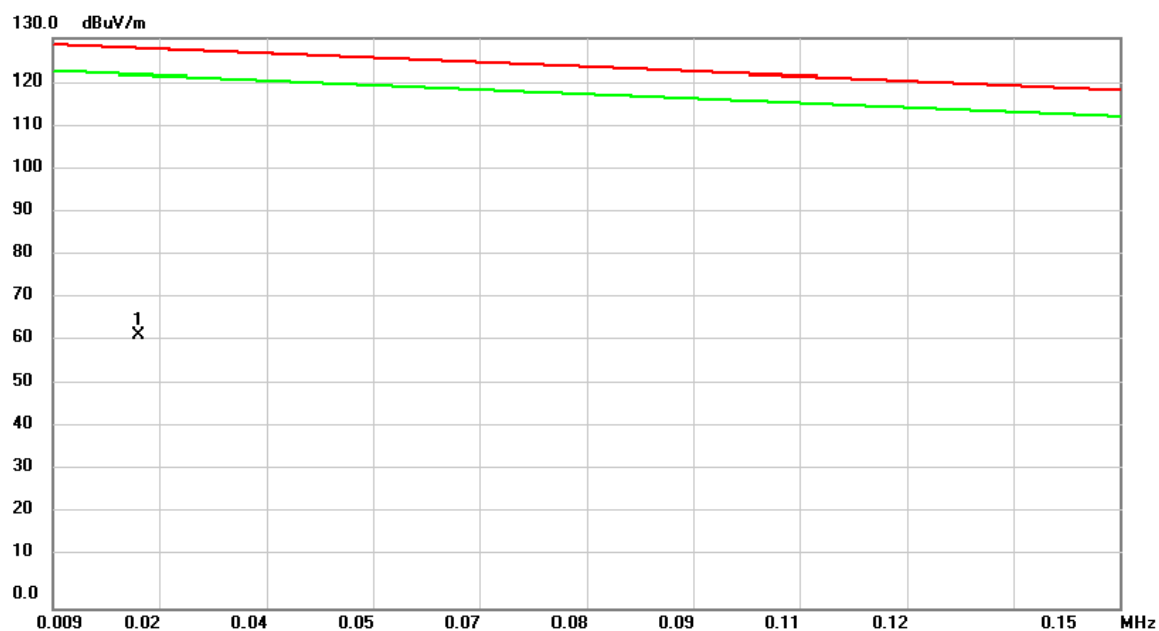
OPEN



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1500	47.93	12.03	59.96	118.34	-58.38	peak	
2	*	0.5480	35.35	11.82	47.17	73.28	-26.11	peak	
3		1.3042	26.08	11.86	37.94	66.54	-28.60	peak	
4		3.6126	17.42	11.19	28.61	69.54	-40.93	peak	
5		6.3588	14.70	11.37	26.07	69.54	-43.47	peak	
6		10.8164	10.97	11.28	22.25	69.54	-47.29	peak	

Test Mode: TX_FM 107.90 MHz

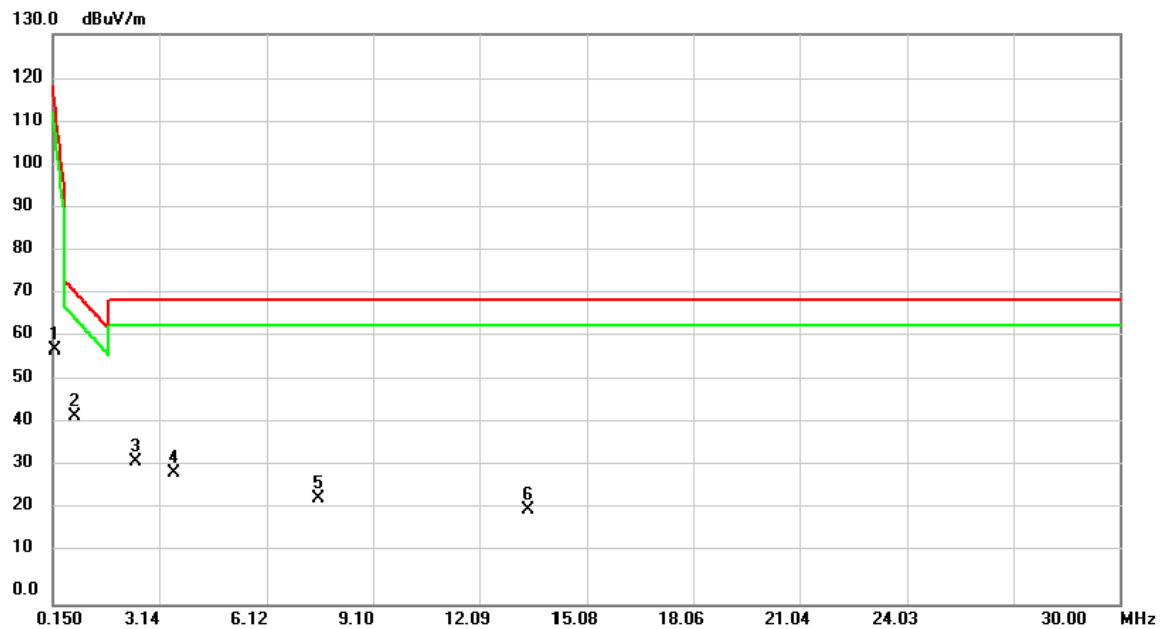
CLOSE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	0.0203	44.45	17.67	62.12	127.70	-65.58	peak	

Test Mode: TX_FM 107.90 MHz

CLOSE

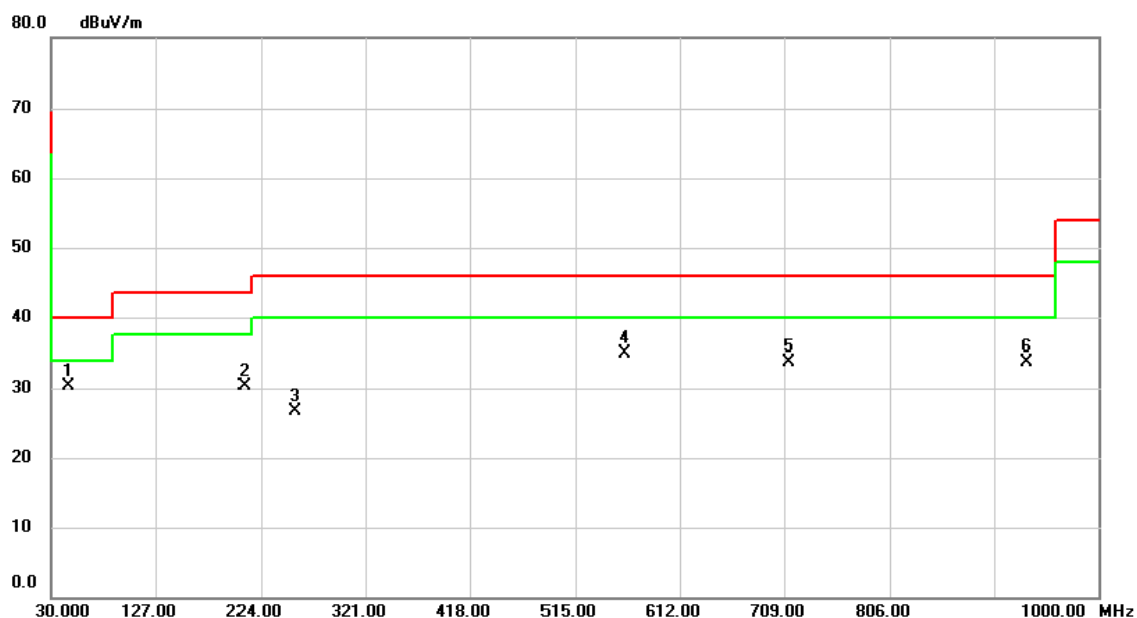


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.1898	45.98	11.97	57.95	115.47	-57.52	peak	
2	*	0.7867	31.17	11.91	43.08	71.16	-28.08	peak	
3		2.4584	21.18	11.34	32.52	69.54	-37.02	peak	
4		3.5330	18.75	11.18	29.93	69.54	-39.61	peak	
5		7.5528	12.99	11.35	24.34	69.54	-45.20	peak	
6		13.4432	10.56	11.20	21.76	69.54	-47.78	peak	

ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode: TX_FM 88.10 MHz

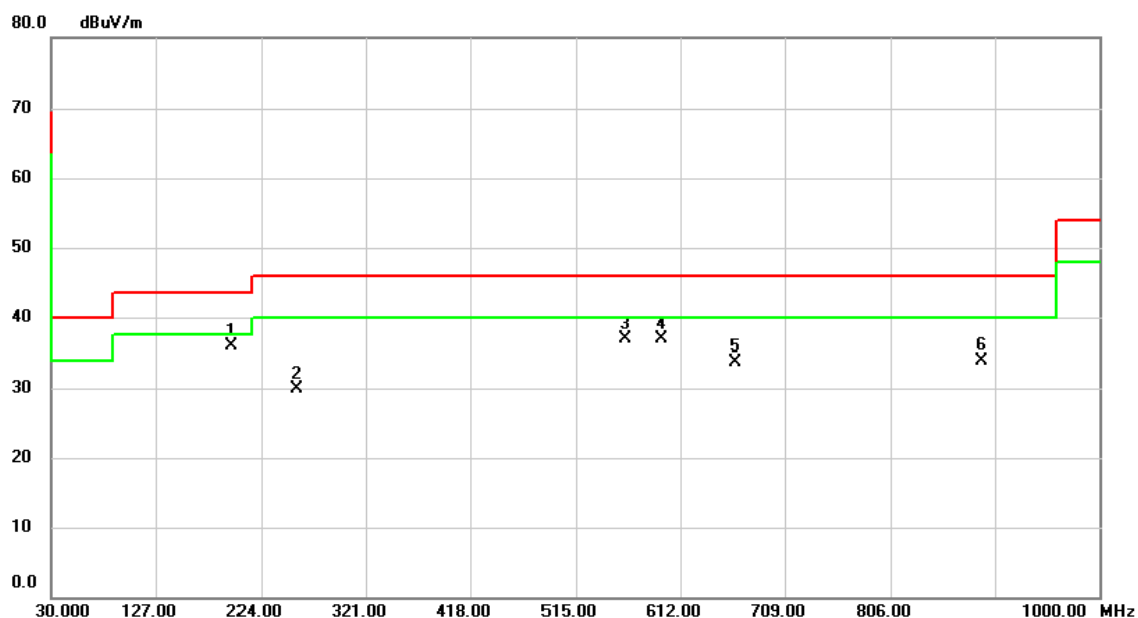
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	46.4900	38.59	-8.25	30.34	40.00	-9.66	peak	
2		208.4800	41.09	-10.87	30.22	43.50	-13.28	peak	
3		256.0100	35.70	-8.96	26.74	46.00	-19.26	peak	
4		560.5900	36.19	-1.26	34.93	46.00	-11.07	peak	
5		713.8500	32.07	1.58	33.65	46.00	-12.35	peak	
6		933.0700	28.61	5.19	33.80	46.00	-12.20	peak	

Test Mode: TX_FM 88.10 MHz

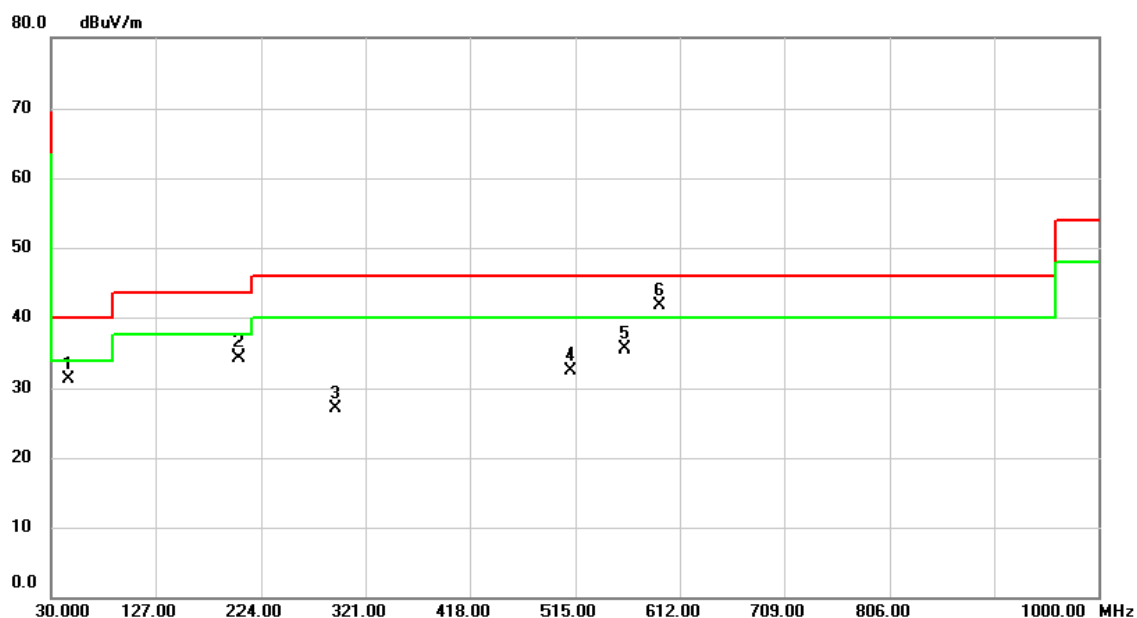
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	197.8100	46.73	-10.76	35.97	43.50	-7.53	peak	
2		256.9800	38.81	-8.92	29.89	46.00	-16.11	peak	
3		560.5900	38.19	-1.26	36.93	46.00	-9.07	peak	
4		594.5400	37.25	-0.36	36.89	46.00	-9.11	peak	
5		662.4400	33.32	0.45	33.77	46.00	-12.23	peak	
6		890.3900	29.45	4.42	33.87	46.00	-12.13	peak	

Test Mode: TX_FM 98.10 MHz

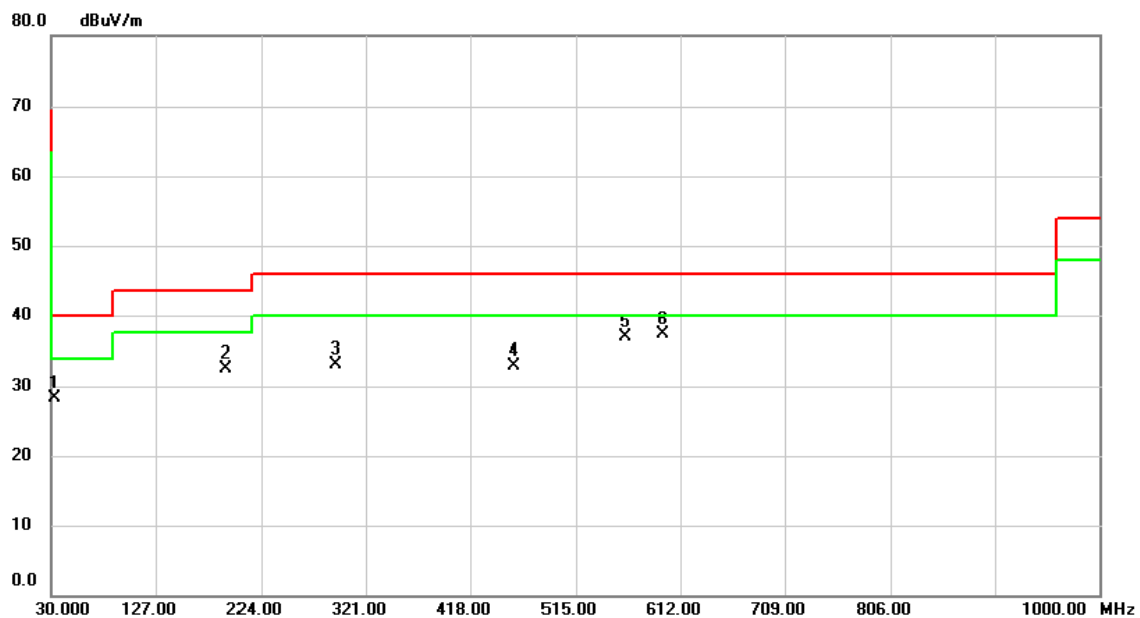
Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		45.5200	39.63	-8.25	31.38	40.00	-8.62	peak	
2		203.6300	45.06	-10.85	34.21	43.50	-9.29	peak	
3		293.8400	34.59	-7.57	27.02	46.00	-18.98	peak	
4		510.1500	35.03	-2.43	32.60	46.00	-13.40	peak	
5		560.5900	36.78	-1.26	35.52	46.00	-10.48	peak	
6	*	593.5700	42.13	-0.38	41.75	46.00	-4.25	peak	

Test Mode: TX_FM 98.10 MHz

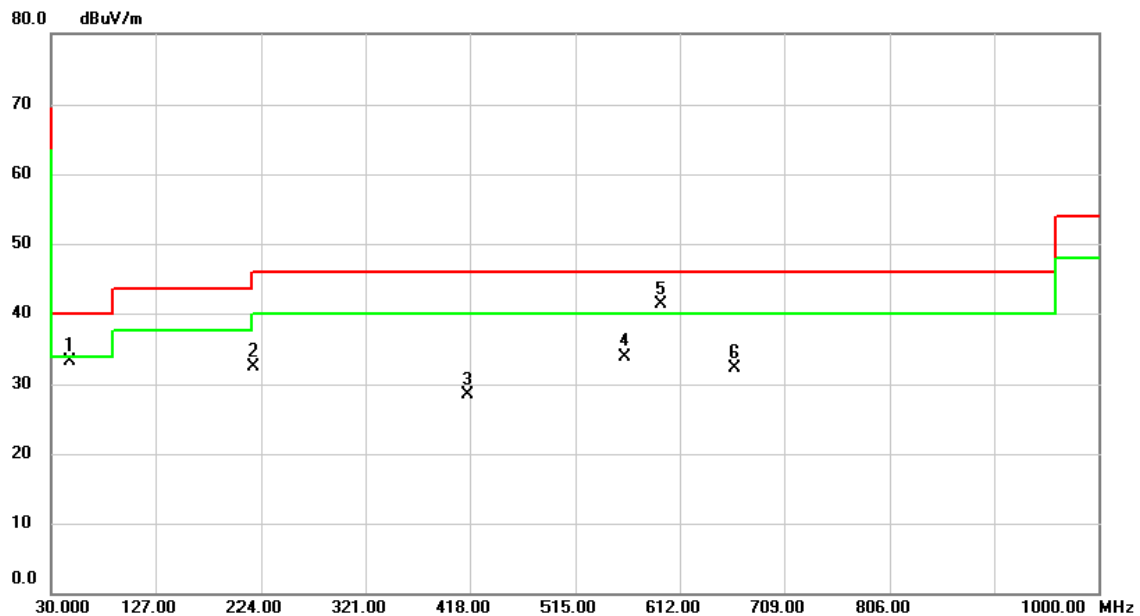
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		32.9100	37.20	-8.96	28.24	40.00	-11.76	peak	
2		191.9900	43.19	-10.64	32.55	43.50	-10.95	peak	
3		293.8400	40.59	-7.57	33.02	46.00	-12.98	peak	
4		458.7400	36.35	-3.37	32.98	46.00	-13.02	peak	
5		560.5900	38.26	-1.26	37.00	46.00	-9.00	peak	
6	*	595.5100	37.70	-0.34	37.36	46.00	-8.64	peak	

Test Mode: TX_FM 107.90 MHz

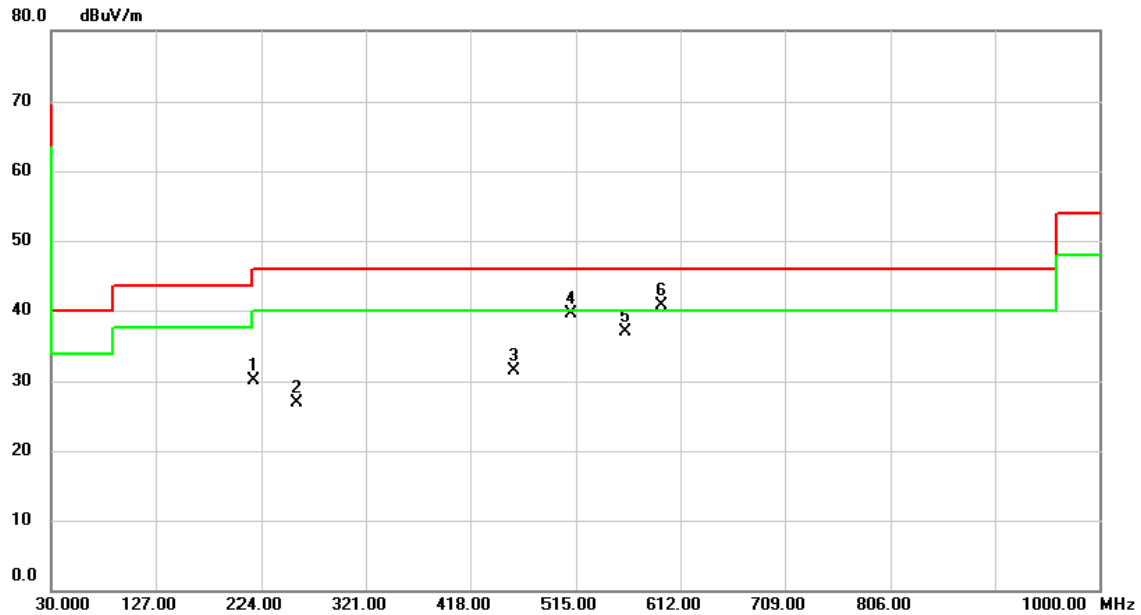
Vertical



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment				
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		47.4600	41.51	-8.25	33.26	40.00	-6.74	peak	
2		216.2400	43.45	-10.88	32.57	46.00	-13.43	peak	
3		416.0600	32.93	-4.45	28.48	46.00	-17.52	peak	
4		560.5900	35.15	-1.26	33.89	46.00	-12.11	peak	
5	*	594.5400	41.69	-0.36	41.33	46.00	-4.67	peak	
6		663.4100	31.81	0.48	32.29	46.00	-13.71	peak	

Test Mode: TX_FM 107.90 MHz

Horizontal

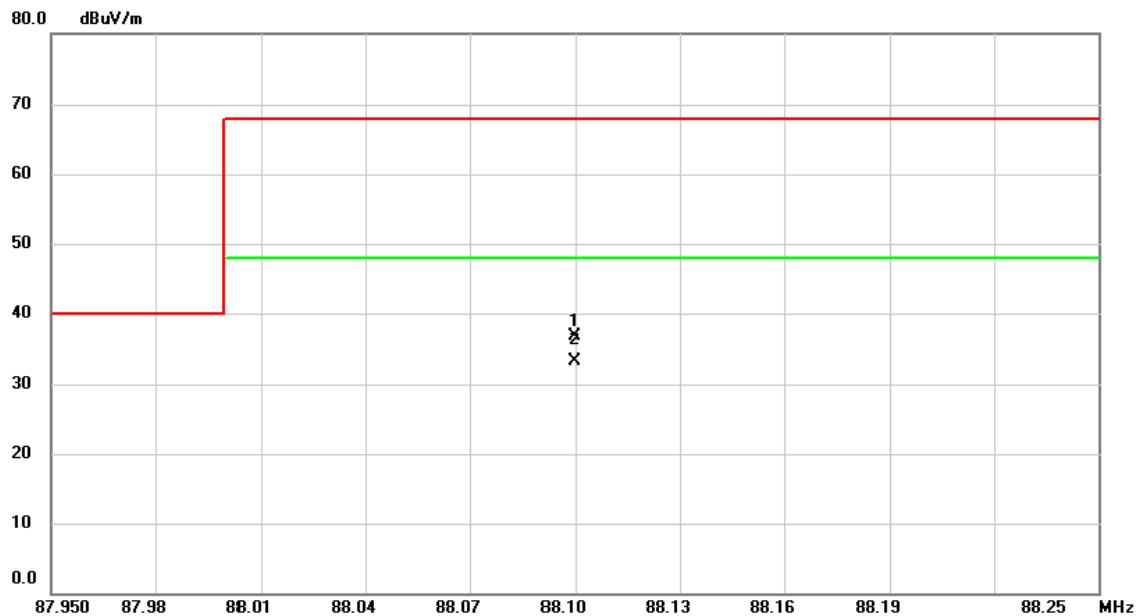


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		216.2400	40.94	-10.88	30.06	46.00	-15.94	peak	
2		256.9800	35.84	-8.92	26.92	46.00	-19.08	peak	
3		458.7400	34.97	-3.37	31.60	46.00	-14.40	peak	
4		510.1500	41.88	-2.43	39.45	46.00	-6.55	peak	
5		561.5600	38.06	-1.22	36.84	46.00	-9.16	peak	
6	*	594.5400	41.13	-0.36	40.77	46.00	-5.23	peak	

ATTACHMENT D - RADIATED EMISSION (FIELD STRENGTH AND BAND EDGE EMISSION)

Test Mode: TX_FM 88.10 MHz

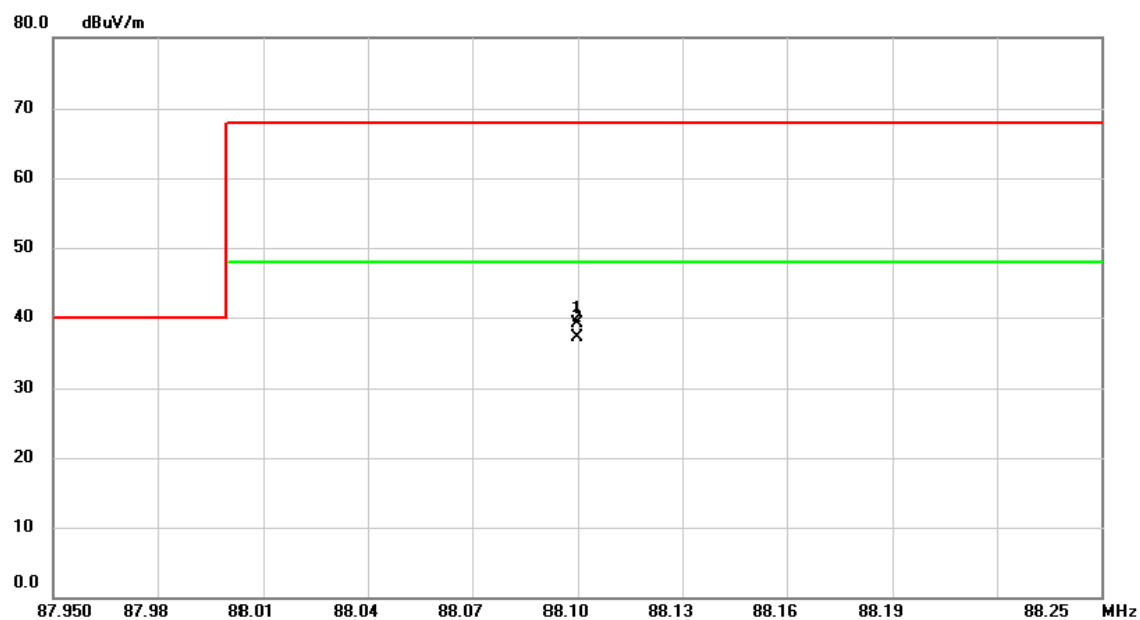
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		88.1000	21.62	15.01	36.63	68.00	-31.37	peak	
2	*	88.1000	18.20	15.01	33.21	48.00	-14.79	AVG	

Test Mode: TX_FM 88.10 MHz

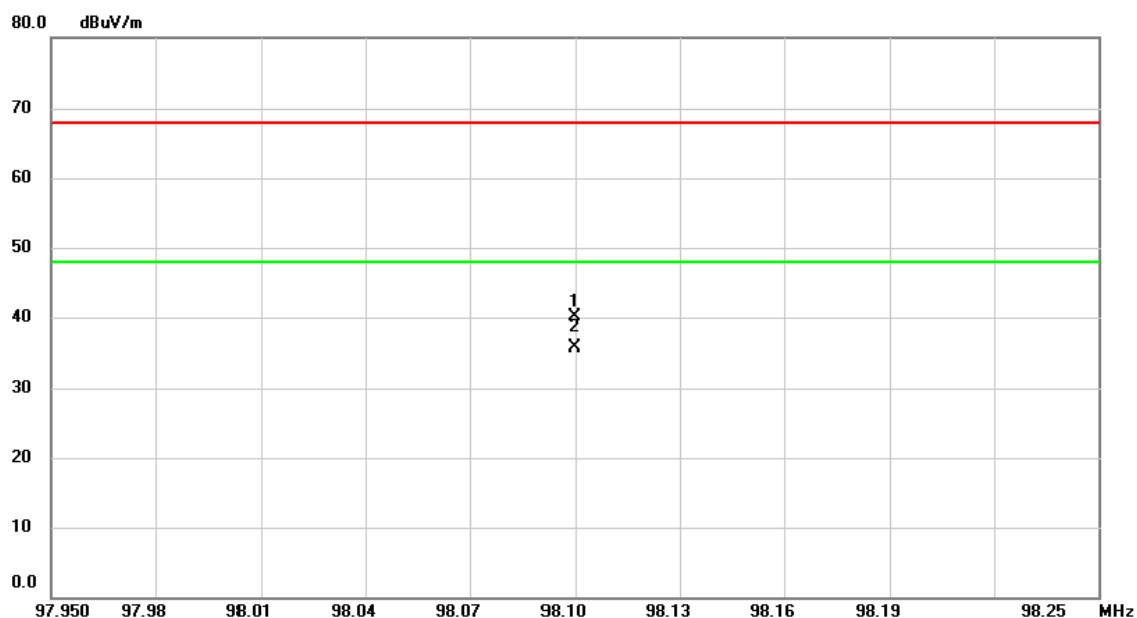
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		88.1000	24.14	15.01	39.15	68.00	-28.85	peak	
2	*	88.1000	22.03	15.01	37.04	48.00	-10.96	AVG	

Test Mode:	TX_FM 98.10 MHz
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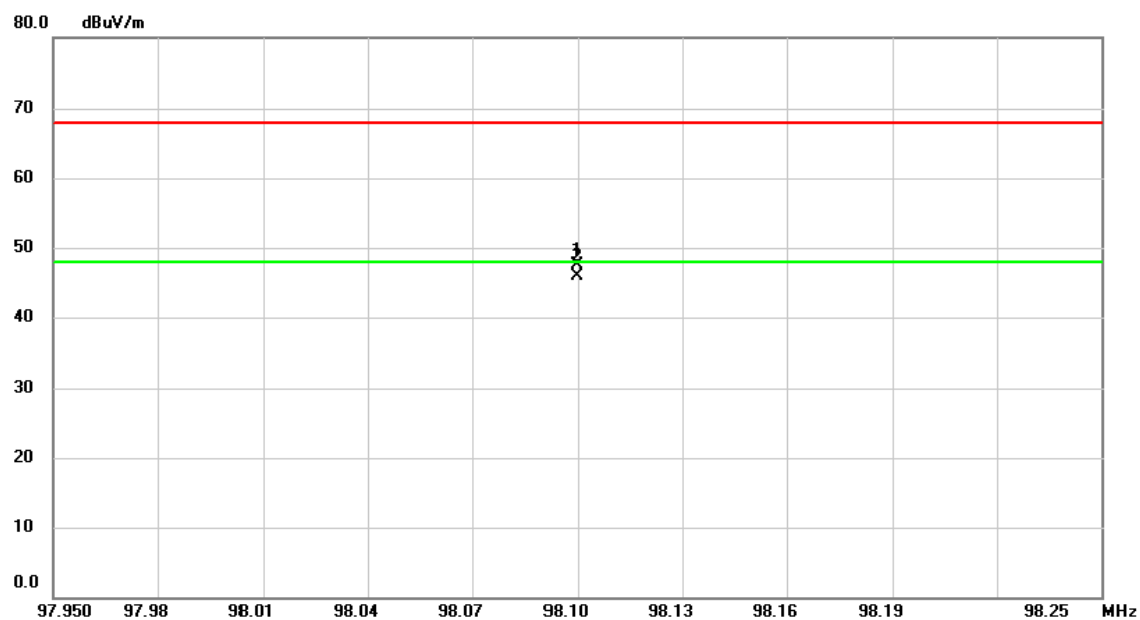
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		98.1000	24.75	15.34	40.09	68.00	-27.91	peak	
2	*	98.1000	20.33	15.34	35.67	48.00	-12.33	AVG	

Test Mode: TX_FM 98.10 MHz

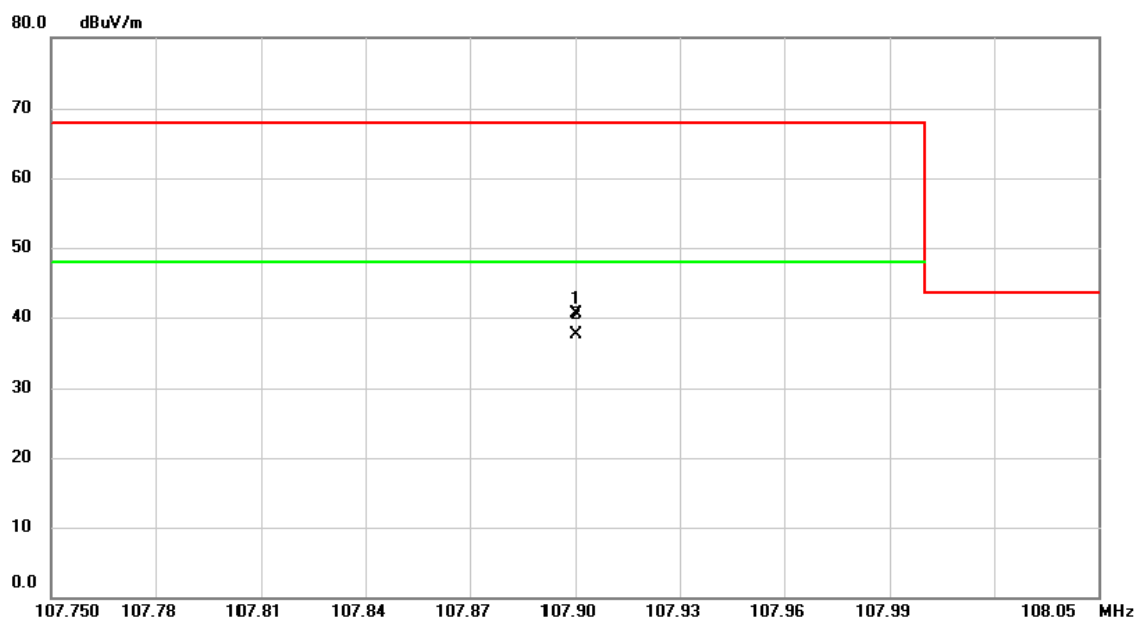
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		98.1000	32.24	15.34	47.58	68.00	-20.42	peak	
2	*	98.1000	30.50	15.34	45.84	48.00	-2.16	AVG	

Test Mode: TX_FM 107.90 MHz

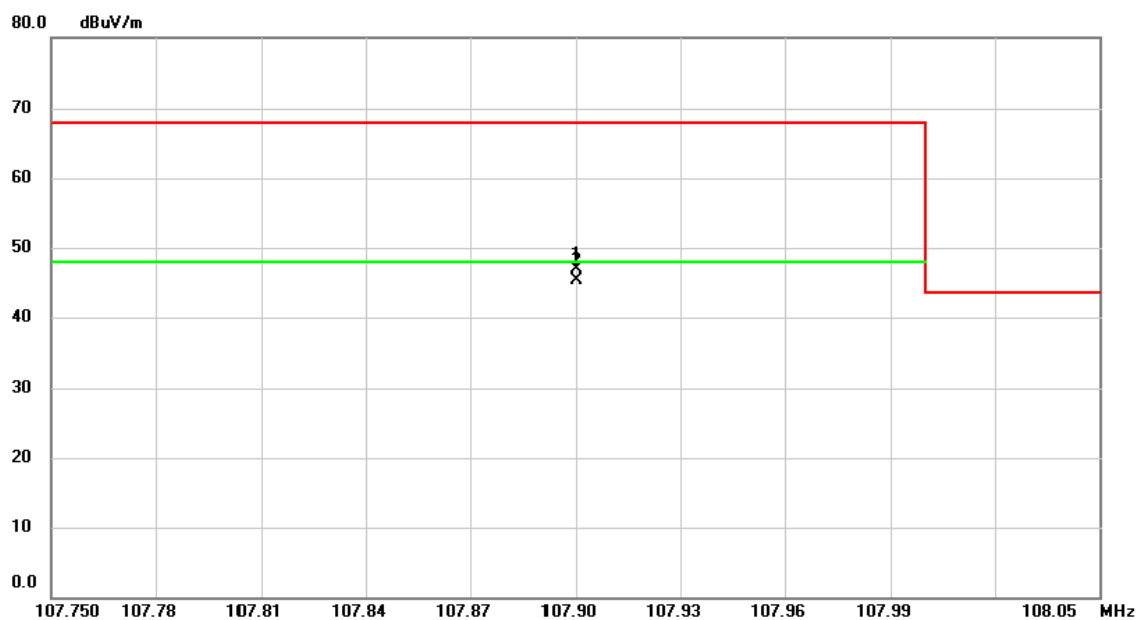
Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		107.9000	23.69	16.77	40.46	68.00	-27.54	peak	
2	*	107.9000	20.66	16.77	37.43	48.00	-10.57	AVG	

Test Mode: TX_FM 107.90 MHz

Horizontal

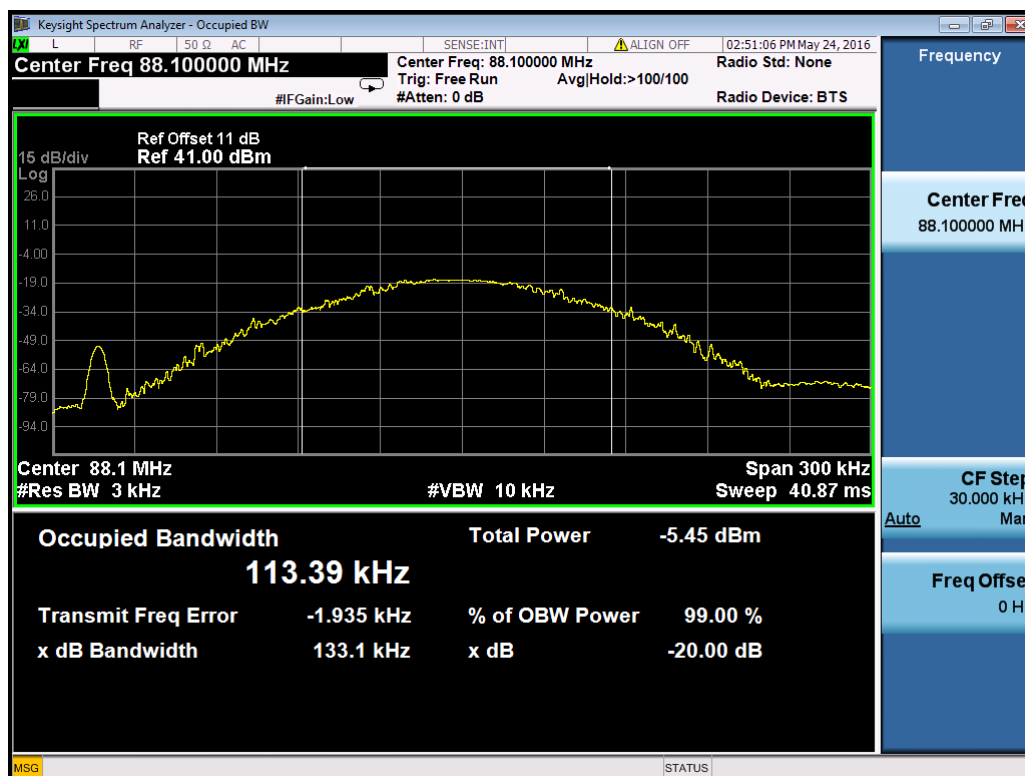


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		107.9000	30.15	16.77	46.92	68.00	-21.08	peak	
2	*	107.9000	28.49	16.77	45.26	48.00	-2.74	AVG	

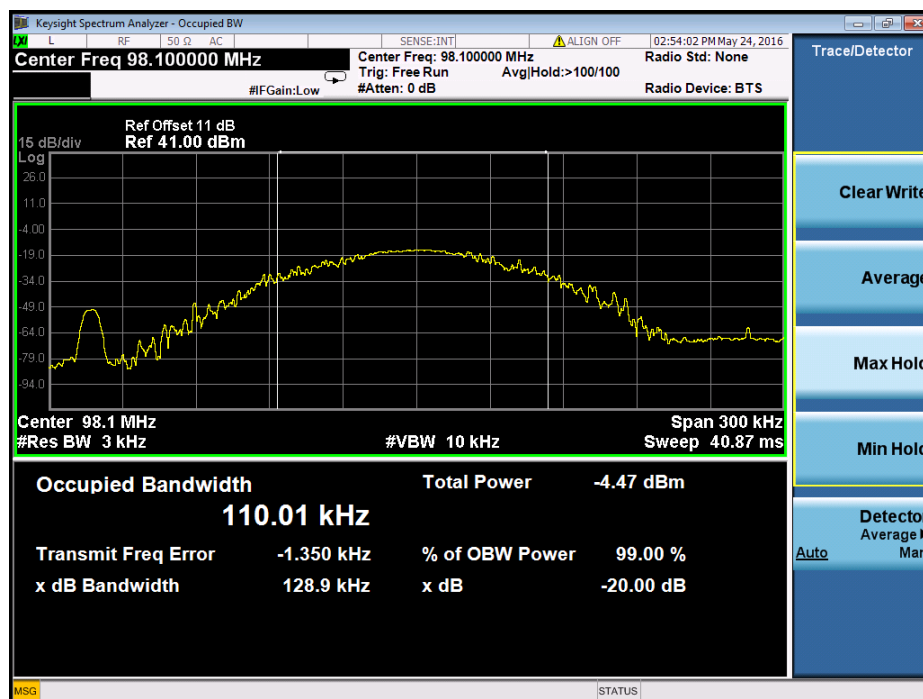
ATTACHMENT E - BANDWIDTH

Frequency (MHz)	20dB Bandwidth (kHz)	99% Occupied BW	Frequency range MHz (20dB Down)	Frequency range MHz (20dB Down)	Limits kHz	Test Result
88.10	133.10	113.39	88.0335	-	200	Complies
98.10	128.90	110.01	-	-	200	Complies
107.90	124.60	101.45	-	107.9623	200	Complies

FM 88.10 MHz



FM 98.10 MHz



FM 107.90 MHz

