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FCC PART 90

TEST REPORT

APPLICANT	VERTEX STANDARD USA, INC.
	8000 WEST SUNRISE BLVD.
	FT. LAUDERDALE FL 33322 USA
FCC ID	AXI11144640
MODEL NUMBER	EVX-5300-G6-45, EVX-5400-G6-45
PRODUCT DESCRIPTION	UHF MOBILE TRANSCEIVER
DATE SAMPLE RECEIVED	8/9/2013
DATE TESTED	8/16/2013
TESTED BY	NAM NGUYEN
APPROVED BY	NAM NGUYEN
TIMCO REPORT NO.	1380AUT13TestReport.docx
TEST RESULTS	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

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GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

Summary

The device under test does:
☒ fulfill the general approval requirements as identified in this test report
☐ not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

A2LA ACCREDITED
Testing Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, Fl 32669

Authorized Signatory Name:

Nam Nguyen
Project Manager/Testing Technician

Date: Aug 26, 2013

GENERAL INFORMATION

DUT Specification

DUT Description	UHF MOBILE TRANSCEIVER
FCC ID	AXI11144640
Model Number	EVX-5300-G6-45, EVX-5400-G6-45
Operating Frequency	406.1 – 470.0 MHz
No. of Channels	8 (EXV-5300), 512 (EXV-5400)
Type of Emission	11K0F3E, 7K60F1D, 7K60F1E 7K60FXD, 7K60FXE, 7K60F1W
Modulation	FM
DUT Power Source	☐ 110–120Vac/50– 60Hz
	☒ DC Power 12V
	☐ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Type of Equipment	☐ Fixed
	☒ Mobile
	☐ Portable
Test Conditions	The temperature was 26°C with a relative humidity of 50%.
Modification to the DUT	None
Test Exercise	The DUT was placed in continuous transmit mode.
Applicable Standards	ANSI/TIA 603-C:2004, FCC CFR 47 Part 90
Test Facility	Timco Engineering Inc. at 849 NW State Road 45 Newberry, FL 32669 USA.

EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	10/28/11	10/28/13
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	10/28/11	10/28/13
Antenna: Biconnical	Eaton	94455-1	1096	05/10/13	05/10/15
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	05/09/13	05/09/15
Frequency Counter	HP	5352B	2632A00165	06/26/13	06/26/15
Frequency Counter	HP	5385A	2730A03025	08/17/11	08/17/13
Signal Generator	HP	8640B	2308A21464	02/23/12	02/23/14
Hygro-Thermometer	Extech	445703	0602	06/20/13	06/20/15
Digital Multimeter	Fluke	77	35053830	09/09/11	09/09/13
EMI Receiver	Rohde & Schwarz	ESIB40	100274	3/16/12	3/16/14
Notch Filter	Microlab	HA-10N		5/17/13	5/17/15
Notch Filter	Microlab	HA-20N		5/17/13	5/17/15
Antenna: Double-Ridged Horn/ETS Horn 1	ETS-Lindgren	3117	00035923	12/07/11	12/07/13
Antenna: Double-Ridged Horn	Electro-Metrics	RGA-180	2319	06/19/12	06/19/14
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	10/28/11	10/28/13
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	10/28/11	10/28/13
Temperature Chamber	Tenney Engineering	TTRC	11717-7	07/03/12	07/03/14
Frequency Counter	HP	5385A	3242A07460	06/16/13	06/16/15
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	12/31/11	12/31/13

TEST PROCEDURE

Power Line Conducted Interference: The procedure used was ANSI/TIA 603-C:2004, using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

Bandwidth 20 dB: The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 1 MHz and the video bandwidth (VBW) = 3 MHz and the span set as shown on plot.

Power Output: The RF power output was measured at the antenna feed point using a peak power meter.

Antenna Conducted Emissions: The RBW = 100 kHz, VBW = 300 kHz and the span set to 10.0 MHz and the spectrum was scanned from 30 MHz to the 10th harmonic of the fundamental. Above 1 GHz the resolution bandwidth was 1 MHz and the VBW = 3 MHz and the span to 50 MHz.

Radiation Interference: The test procedure used was ANSI/TIA 603-C:2004, using an Agilent spectrum receiver with pre-selector. The bandwidth (RBW) of the spectrum ANSI/TIA 603-C:2004, receiver was 100 kHz up to 1 GHz and 1 MHz above 1 GHz with an appropriate sweep speed. The VBW above 1 GHz was 3 MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 76°F with a humidity of 55%.

RF POWER OUTPUT

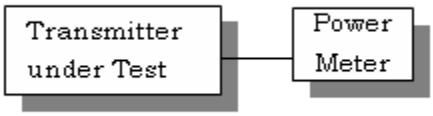
Rule Part No.: Part 2.1046(a), Part 90

Test Requirements:

Method of Measurement: RF power is measured by using a 50-ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage (if battery operated), or a properly adjusted power supply (if not battery operated), and the transmitter properly adjusted the RF output measures:

For the device with a fixed or integral antenna, the RF power is measured as ERP. The substitution method was used. The RF output measures:

Test Setup Diagram:



Test Data: RF power of the EUT can be set at 5W to 45W. For the model: EVX-5300-G6-45, EVX-5400-G6-45 can be set at 5W to 45W.

OUTPUT POWER:

	RF POWER (W)	
Tuned Frequency (MHz)	HI	LOW
406.25	47.2	5.3
418.00	43.6	4.9
429.75	45.8	5.0
450.25	42.6	5.1
460.00	45.8	5.5
469.75	47.1	5.4

Part 2.1033 (C)(8) DC Input into the final amplifier

FOR LOW POWER SETTING INPUT POWER: (12.0V)(0.54A) = 6.48 Watts
FOR HIGH POWER SETTING INPUT POWER: (12.0V)(1.4A) = 16.80Watts

MODULATION CHARACTERISTICS
Part 2.1033(c)
Part 2.1033(c) (4) Type of Emission: 11K2F1D , 11K2F2D, and 11K2F3E
FCC Part 90.209
FCC Part 90.207
DMR TDMA

Type of Emission: 11K2F3E, 11K2F3D
Bn = 2M + 2DK
M = 3000
D = 2100
K=1
Bn = 2(3000)+2(2100) = 10.2k

The EVX-5300-G6-45, EVX-5400-G6-45 Digital functions comply with DMR (Digital Mobile Radio).

Format: 2-slot TDMA
Modulation: 4FSK
Bandwidth: 12.5kHz
Data rate: 9,600bps (bit per second)
Voice: AMBE+2 Vocoder (digitized) 3,600bps

MODULATION CHARACTERISTICS

Rule Part No.: Part 2.1047(a)(b)

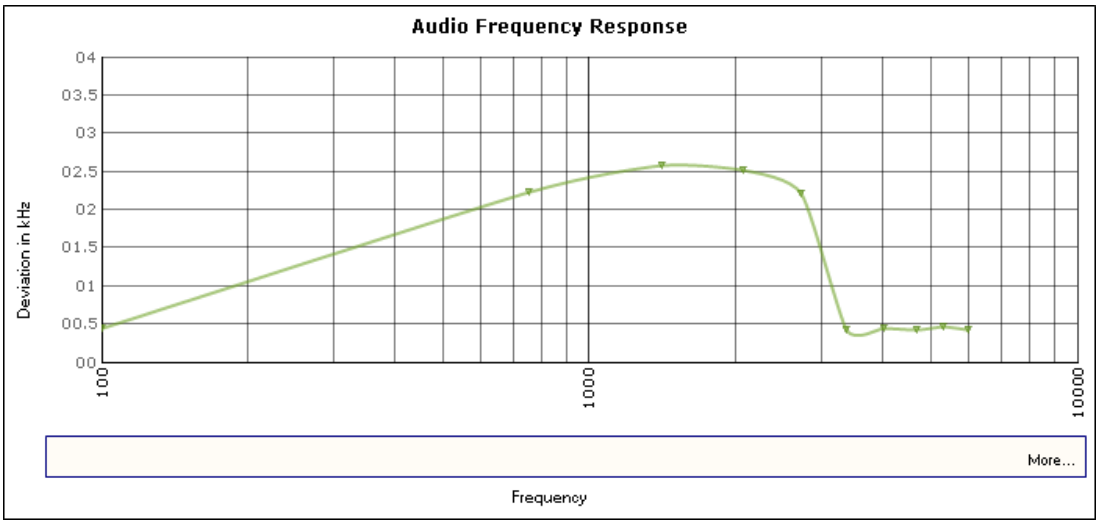
Test Requirements:

Method of Measurement:

Audio frequency response

The audio frequency response was measured in accordance with TIA/EIA Specification 603 with no exception. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 – 5000Hz shall be submitted. The audio frequency response curve is shown below.

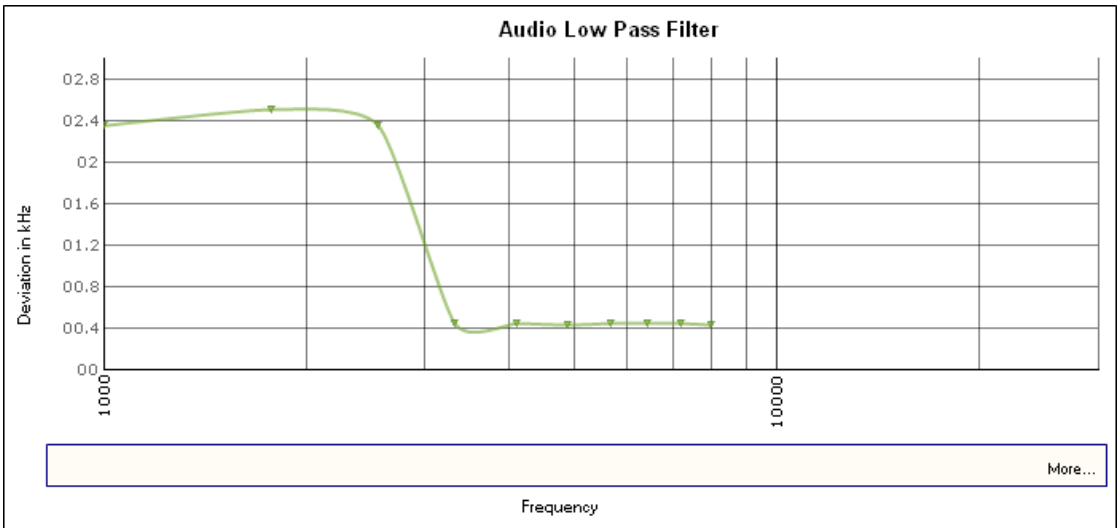
AUDIO FREQUENCY RESPONSE PLOT



VOICE MODULATED COMMUNICATION EQUIPMENT

Part 2.1047(a): For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all the circuitry installed between the modulation limiter and the modulated stage shall be submitted.

AUDIO LOW PASS FILTER.



AUDIO INPUT VERSUS MODULATION

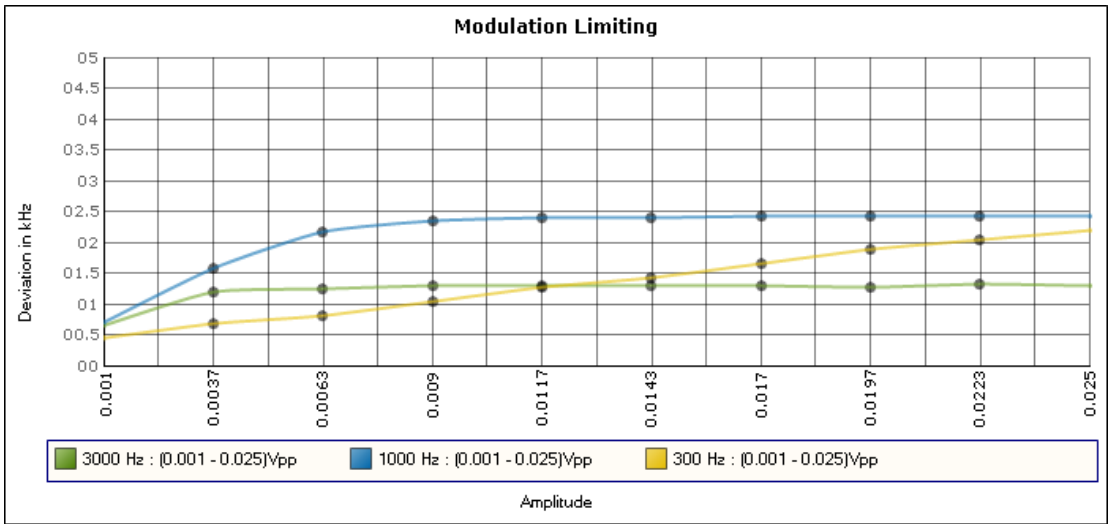
Rule Part No.: Part 2.1047(b) & 90

Test Requirements:

Method of Measurement: **Modulation cannot exceed 100%,** The audio input level needed for a particular percentage of modulation was measured in accordance with ANSI/TIA 603-C: 2004. The audio input curves versus modulation are shown below. Curves are provided for audio input frequencies of 300, 1000, and 3000 Hz.

Test data:

MODULATION LIMITING PLOT



OCCUPIED BANDWIDTH

Part 2.1049(c) EMISSION BANDWIDTH:
Part 90.210(b) 25kHz Channel Spacing

Data in the plots show that on any frequency removed from the assigned frequency by more than 50%, but not more than 100%: At least 25dB. On any frequency removed from the assigned frequency by more than 100%, but not more than 250%: At least 35 dB. On any frequency removed from the assigned frequency by more than 250%, of the authorized bandwidth: At least 43 + 10log(P)dB.

Part 90.210(c) 12.5kHz Channel Spacing Not Equipped with a Low Pass Filter

For transmitters that are not equipped with an audio low pass filter pursuant to S90.211 (b), the power of any emission must be attenuated below the un-modulated carrier output power as follows; (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz but not more than10 kHz: At least 83 log (fd/5) dB; (2) ON any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz, but not more than 250% of the authorized bandwidth: At least 29 log(fd2/11)dB or 50 dB, whichever is the lesser attenuation; (3) On any frequency removed from the center of the authorized bandwidth by more than 250% of the authorized bandwidth: At least 43+10 log(Po)dB.

Part 90.210(d) Emission Mask D - 12.5 kHz channel BW equipment.
For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

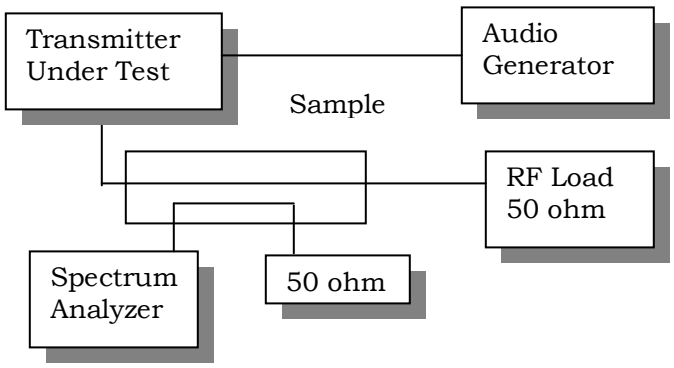
(1) On any frequency from the center of the authorized bandwidth f0 to 5.625 kHz removed from f0: Zero dB.
(2) On any frequency from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27 (fd - 2.88 kHz) dB.
(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10log(P) dB or 70 dB, whichever is the lesser attenuation.

Part 90.210(e) Emission Mask E – 6.25 kHz channel BW equipment.
For transmitters designed to operate with a 6.25 kHz bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f0 to 3.0 kHz removed from f0: Zero dB.
(2) On any frequency from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 3.0 kHz but no more than 4.6 kHz: At least 30 + 16.67(fd – 3.0 kHz) or 55 + 10 Log(P) or 65, whichever us the lesser attenuation.
(3) On any frequency removed from the center of the authorized bandwidth by more than 4.6kHz: At least 55 + 10log(P) dB or 65 dB, whichever is the lesser attenuation.

Method of Measurement: ANSI/TIA 603-C: 2004

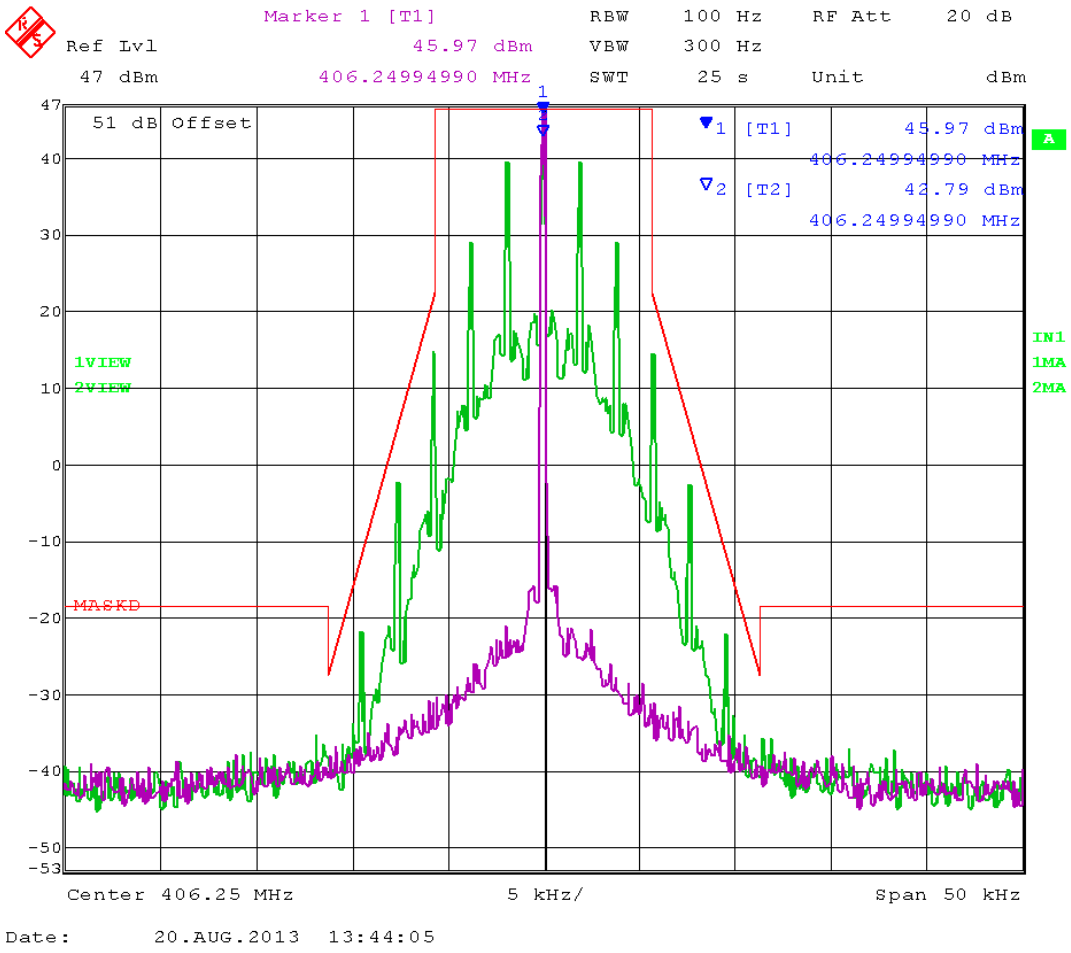
Test Setup Diagram:

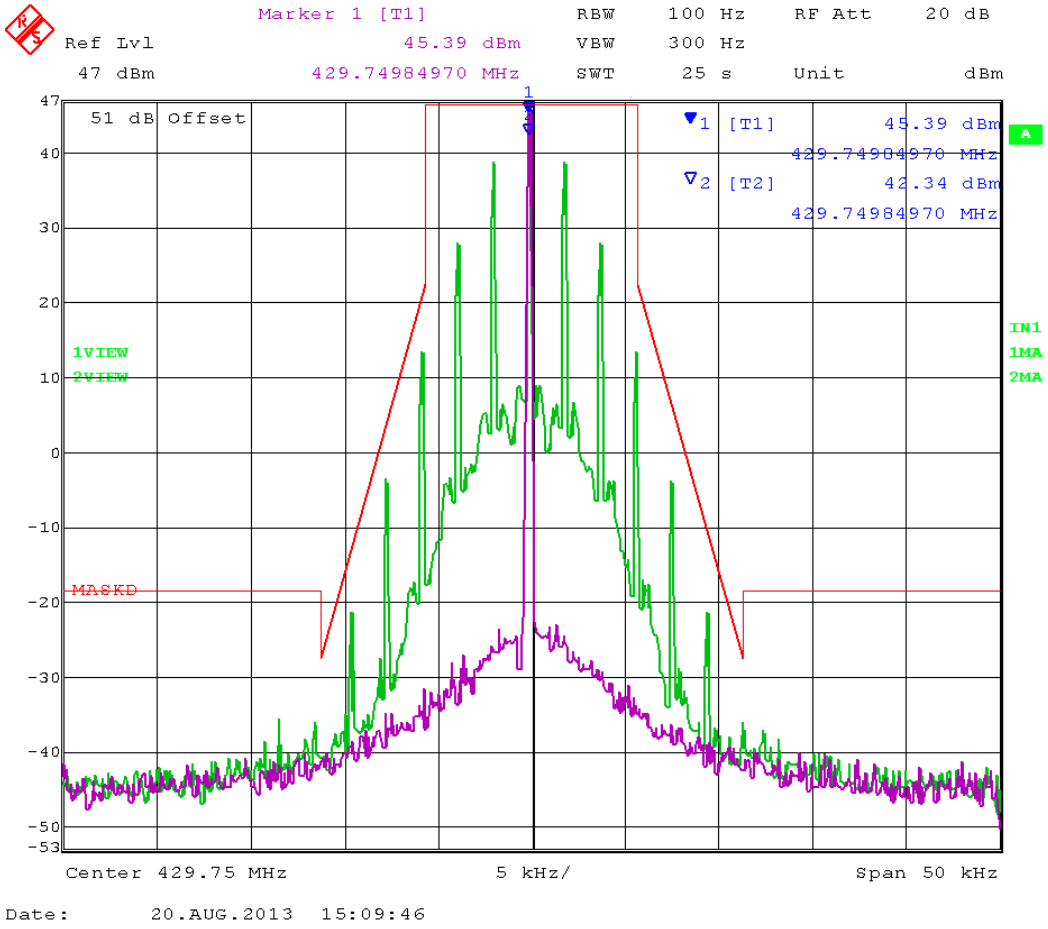


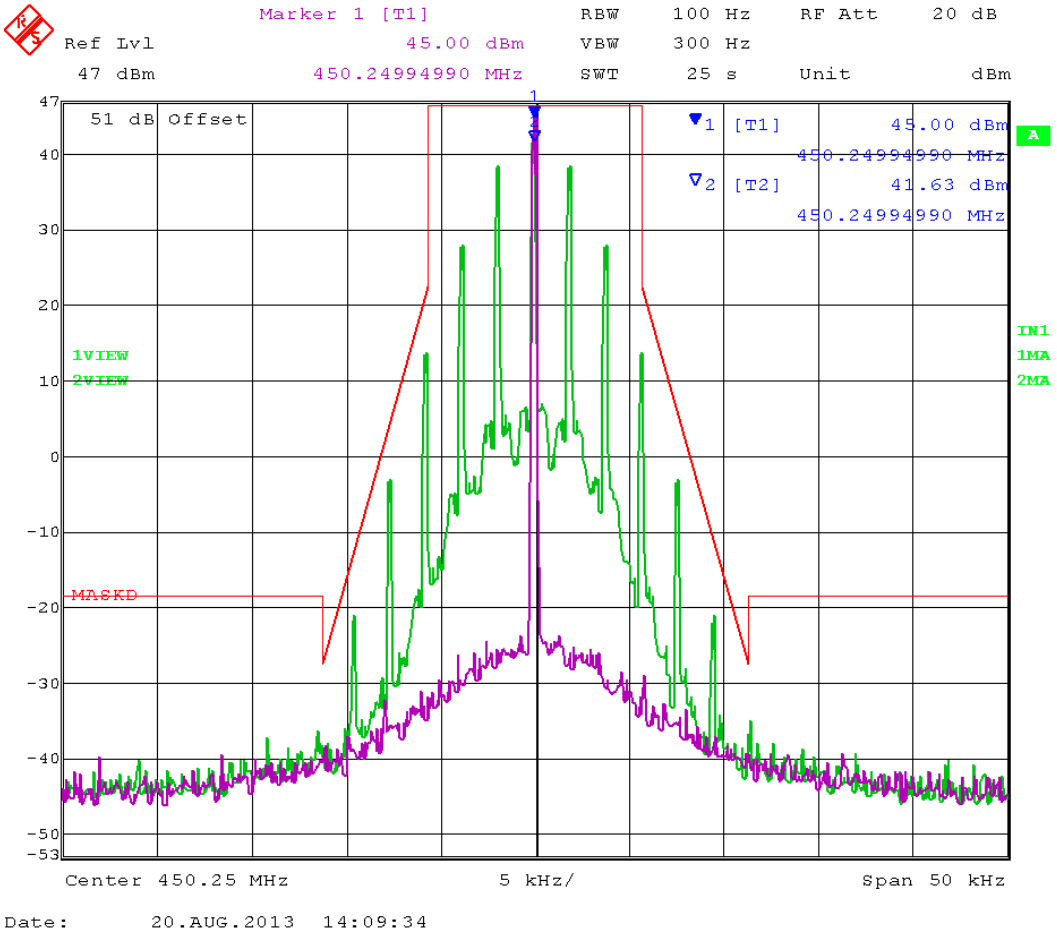
Test Data: See the plots below

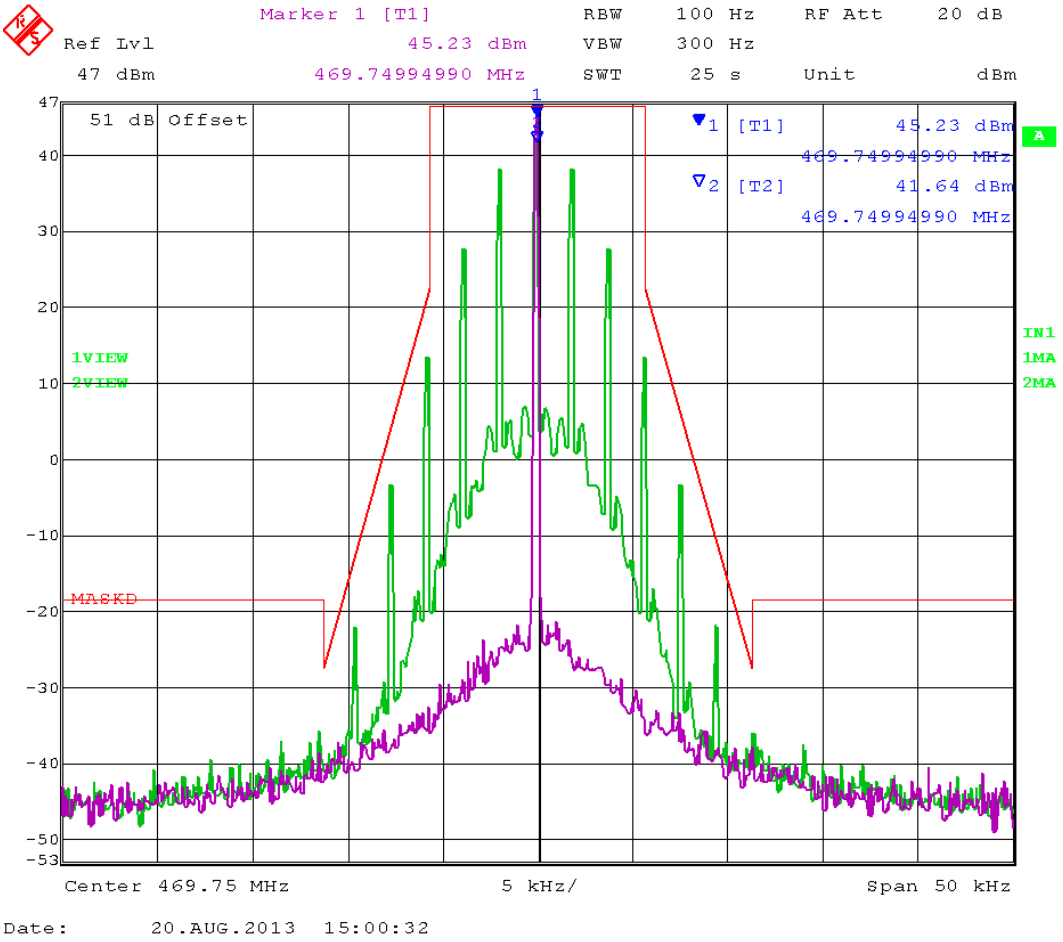
OCCUPIED BANDWIDTH PLOTS
Part 90.210(d) Emission Mask D - 12.5 kHz channel

12.5kHz: ANALOG

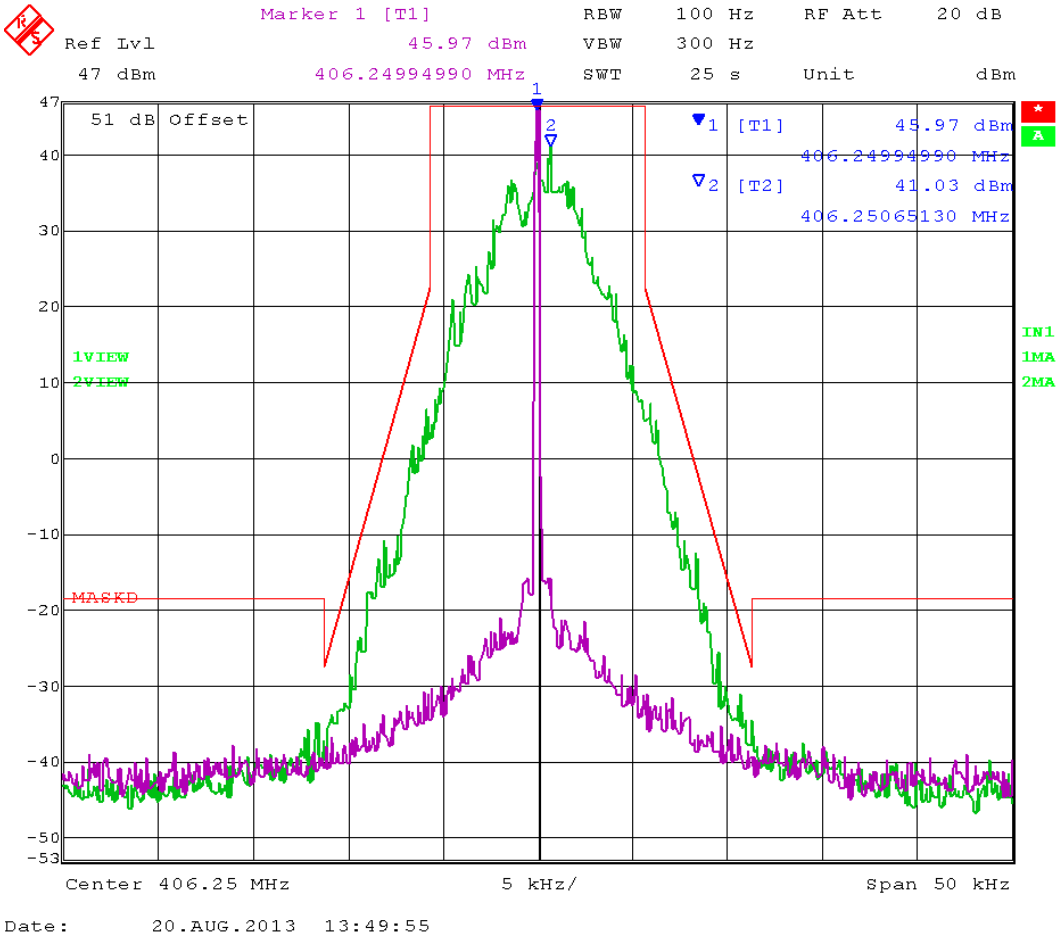


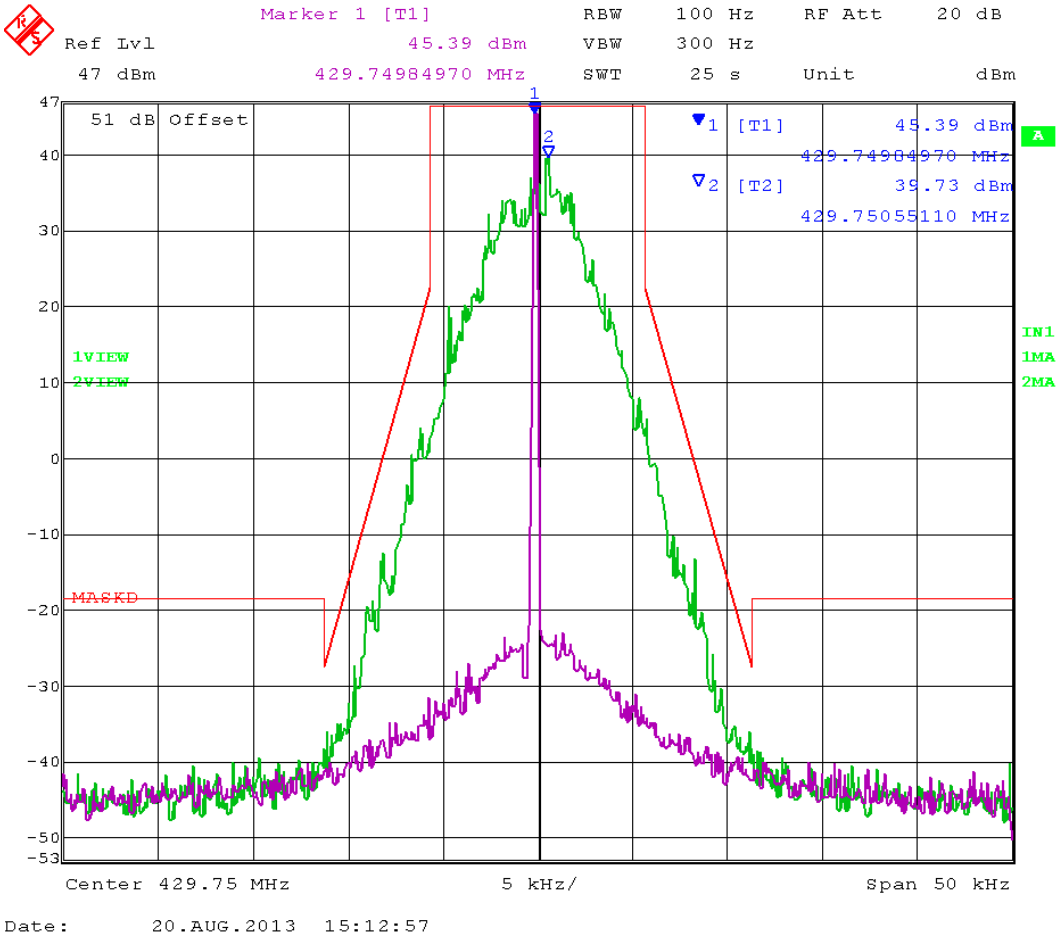

Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.39 dBm
VBW 300 Hz
47 dBm
429.74984970 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.39 dBm
429.74984970 MHz
2 [T2] 42.34 dBm
429.74984970 MHz
1VIEW
2VIEW
MASKD
IN1
1MA
2MA
Center 429.75 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 15:09:46

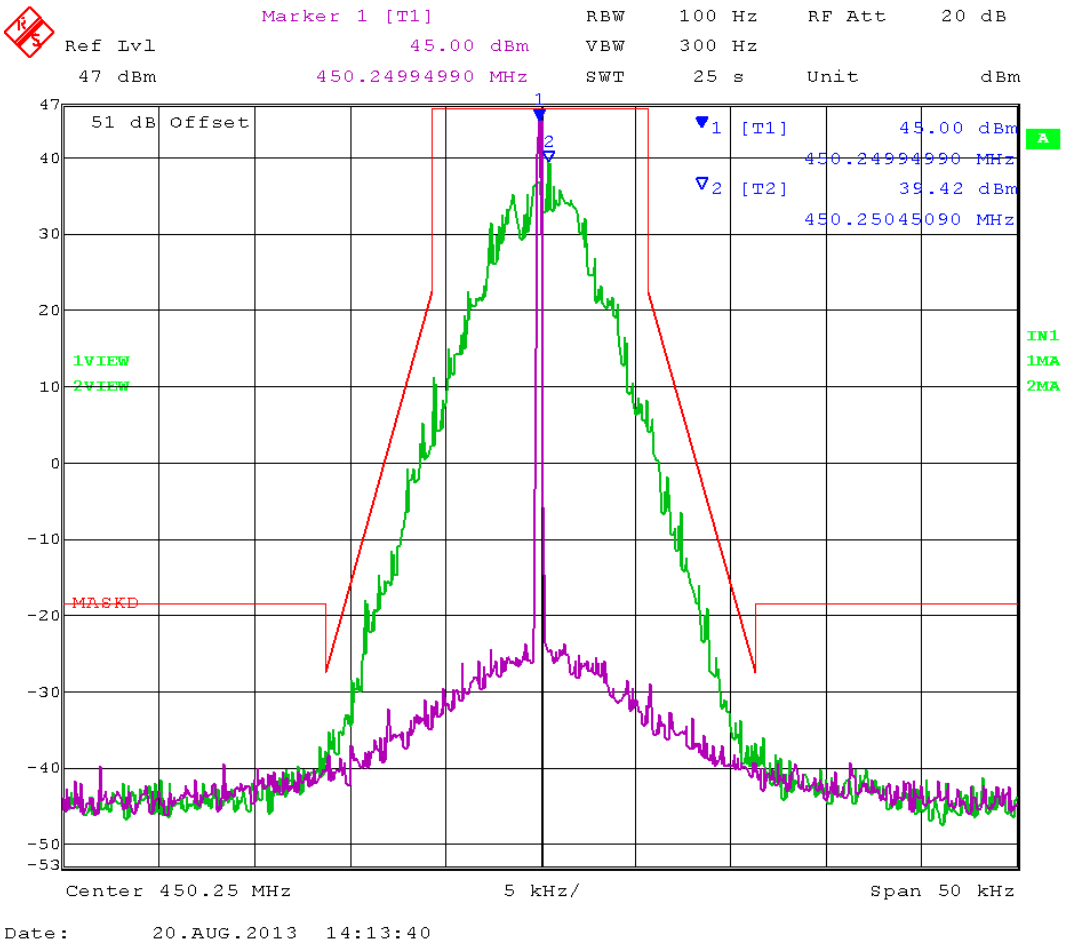

Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.00 dBm
VBW 300 Hz
47 dBm
450.24994990 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.00 dBm
450.24994990 MHz
2 [T2] 41.63 dBm
450.24994990 MHz
A
IN1
1MA
2MA
1VIEW
2VIEW
MASKD
47
40
30
20
10
0
-10
-20
-30
-40
-50
-53
Center 450.25 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 14:09:34

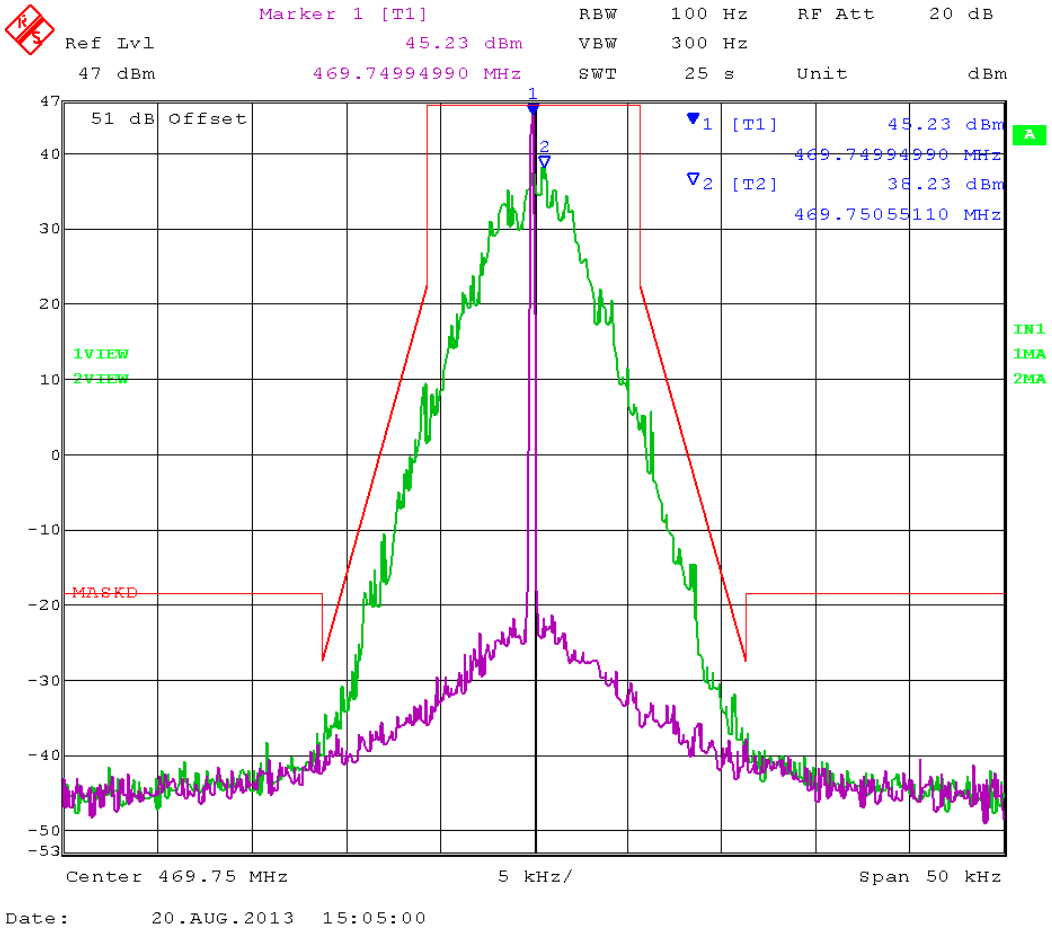

Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.23 dBm
VBW 300 Hz
47 dBm
469.74994990 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.23 dBm
469.74994990 MHz
2 [T2] 41.64 dBm
469.74994990 MHz
A
IN1
1MA
2MA
1VIEW
2VIEW
MASKD
47
40
30
20
10
0
-10
-20
-30
-40
-50
-53
Center 469.75 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 15:00:32

12.5kHz – DIGITAL




Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.39 dBm
VBW 300 Hz
47 dBm
429.74984970 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.39 dBm
429.74984970 MHz
2 [T2] 39.73 dBm
429.75055110 MHz
1VIEW
2VIEW
MASKD
IN1
1MA
2MA
Center 429.75 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 15:12:57


Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.00 dBm
VBW 300 Hz
47 dBm
450.24994990 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.00 dBm
450.24994990 MHz
2 [T2] 39.42 dBm
450.25045090 MHz
1VIEW
2VIEW
MASKD
IN1
1MA
2MA
Center 450.25 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 14:13:40


Marker 1 [T1]
RBW 100 Hz
RF Att 20 dB
Ref Lvl
45.23 dBm
VBW 300 Hz
47 dBm
469.74994990 MHz
SWT 25 s
Unit dBm
51 dB Offset
1 [T1] 45.23 dBm
469.74994990 MHz
2 [T2] 38.23 dBm
469.75055110 MHz
1VIEW
2VIEW
MASKD
IN1
1MA
2MA
Center 469.75 MHz
5 kHz/
Span 50 kHz
Date: 20.AUG.2013 15:05:00

SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

Rule Part No.: Part 2.1051(a)

Requirements:

12.5kHz Channel Spacing = 50+10log(45.0) = 66.5 dBc
12.5kHz Channel Spacing = 50+10log(5.0) = 57.0 dBc

Method of Measurement: The carrier was modulated 100% using a 2500 Hz tone. The spectrum was scanned from 0.4 to at least the 10th harmonic of the fundamental. The measurements were made in accordance with standard ANSI/TIA 603-C: 2004.

Test Data:

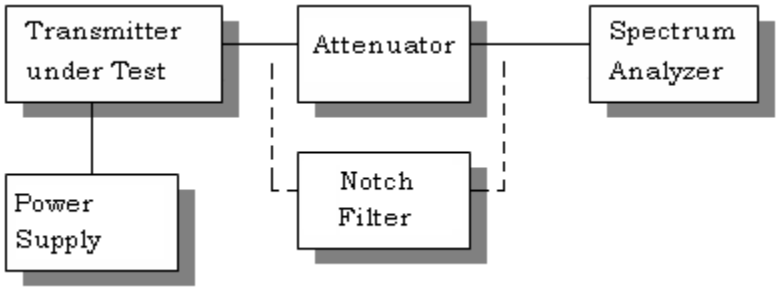
TF HIGH POWER	EF	dB below carrier		TF LOW POWER	EF	dB below carrier
406.25	812.50	83.5		406.25	812.50	79.1
	1218.75	72.5			1218.75	77.8
	1625.00	95.7			1625.00	88.2
	2031.25	75			2031.25	79.5
	2437.50	100.2			2437.50	91.4
	2843.75	79.6			2843.75	86.7
	3250.00	100.9			3250.00	92.1
	3656.25	90.3			3656.25	94.3
	4062.50	100.5			4062.50	93.8

TF HIGH POWER	EF	dB below carrier		TF LOW POWER	EF	dB below carrier
429.75	859.50	89.9		429.75	859.50	80.8
	1289.25	69.9			1289.25	74.9
	1719.00	96.7			1719.00	86.7
	2148.75	75			2148.75	80.5
	2578.50	101.7			2578.50	91.4
	3008.25	79.9			3008.25	85.4
	3438.00	101.5			3438.00	91.5
	3867.75	88.3			3867.75	91.3
	4297.50	99.7			4297.50	90.1

TF HIGH POWER	EF	dB below carrier		TF LOW POWER	EF	dB below carrier
450.25	900.50	83.2		450.25	900.50	85.9
	1350.75	70.4			1350.75	74.5
	1801.00	95.4			1801.00	85.9
	2251.25	74.8			2251.25	77.7
	2701.50	98.2			2701.50	91.6
	3151.75	79.6			3151.75	85
	3602.00	98.7			3602.00	91.1
	4052.25	84.5			4052.25	83.1
	4502.50	98.2			4502.50	90.8

TF HIGH POWER	EF	dB below carrier		TF LOW POWER	EF	dB below carrier
469.75	939.50	80.1		469.75	939.50	84.3
	1409.25	67.3			1409.25	71.7
	1879.00	94.3			1879.00	85.8
	2348.75	71.8			2348.75	74.4
	2818.50	101.8			2818.50	93.1
	3288.25	80.4			3288.25	83.6
	3758.00	100.4			3758.00	91.2
	4227.75	94.4			4227.75	88.8
	4697.50	90.6			4697.50	87.5

Method of Measuring Conducted Spurious Emissions



FIELD STRENGTH OF SPURIOUS EMISSIONS

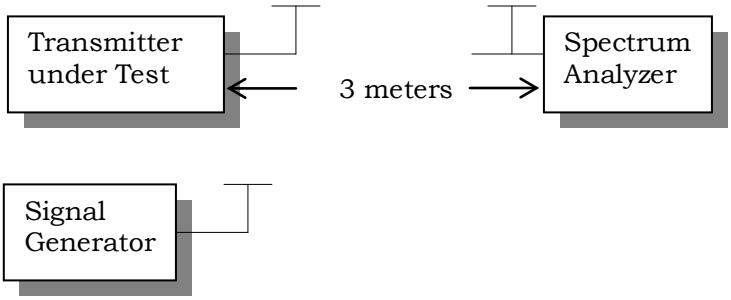
Rule Parts. No.: Part 2.1053

Requirements:

12.5kHz Channel Spacing = 50+10log(45.0) = 66.5 dBc
12.5kHz Channel Spacing = 50+10log(5.0) = 57.0 dBc

METHOD OF MEASUREMENT: The tabulated data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 MHz to at least the tenth harmonic of the fundamental. This test was conducted per ANSI/TIA 603-C: 2004 using the substitution method. Measurements were made at the test site of TIMCO ENGINEERING, INC. located at 849 NW State Road 45, Newberry, FL 32669.

Test Setup Diagram:



Test Data:

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
406.25	0	0
812.50	H	78.2
1218.75	H	93.3
1625.00	H	99.6
2031.25	H	93.3
2437.50	H	93.8
2843.75	H	101.1
3250.00	H	98.7
3656.25	H	96.4
4062.50	H	100.5

Low Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
406.25	0	0
812.50	H	74.5
1218.75	H	88.9
1625.00	H	95.3
2031.25	H	91.5
2437.50	H	93.6
2843.75	H	94.6
3250.00	H	93.0
3656.25	H	92.4
4062.50	H	91.8

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
429.75	0	0
859.50	H	75.8
1289.25	H	97.6
1719.00	H	91.0
2148.75	H	94.3
2578.50	H	98.7
3008.25	H	94.0
3438.00	H	102.6
3867.75	H	94.6
4297.50	H	100.2

Low Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
429.75	0	0
859.50	H	72.6
1289.25	H	89.6
1719.00	H	94.3
2148.75	H	92.2
2578.50	H	92.9
3008.25	H	91.5
3438.00	H	93.1
3867.75	H	89.4
4297.50	H	89.8

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
450.25	0	0
900.50	H	83.7
1350.75	H	93.3
1801.00	H	86.4
2251.25	H	75.0
2701.50	H	96.5
3151.75	H	94.6
3602.00	H	97.6
4052.25	H	91.2
4502.50	H	95.7

Low Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
450.25	0	0
900.50	H	80.5
1350.75	H	89.3
1801.00	H	84.2
2251.25	H	70.0
2701.50	H	88.8
3151.75	H	90.4
3602.00	H	92.2
4052.25	H	86.6
4502.50	H	89.2

High Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
469.75	0	0
939.50	H	85.4
1409.25	H	98.2
1879.00	H	86.0
2348.75	H	69.8
2818.50	H	104.3
3288.25	H	95.2
3758.00	H	96.1
4227.75	H	90.3
4697.50	H	97.6

Low Power

Emission Frequency MHz	Ant. Polarity	dB Below Carrier (dBc)
469.75	0	0
939.50	H	82.4
1409.25	H	96.5
1879.00	H	82.3
2348.75	H	63.6
2818.50	H	94.8
3288.25	H	89.5
3758.00	H	86.8
4227.75	H	88.7
4697.50	H	89.3

FREQUENCY STABILITY

Rule Parts. No.: Part 2.1055, Part 90.213

Requirements: Temperature range requirements: -30 to +50° C.
Voltage Variation +, -15%
±2.5 PPM

Method of Measurements: ANSI/TIA 603-C: 2004.

Test Data:

Assigned Frequency (Ref. Frequency) (MHz)		**459.999789**
Temperature (°C)	**Frequency (MHz)**	**Frequency Stability (PPM)**
-30	459.999808	0.04
-20	459.999825	0.08
-10	459.999944	0.34
0	459.999954	0.36
+10	459.999881	0.20
+20	459.999811	0.05
+30	459.999826	0.08
+40	459.999857	0.15
+50	459.999819	0.07

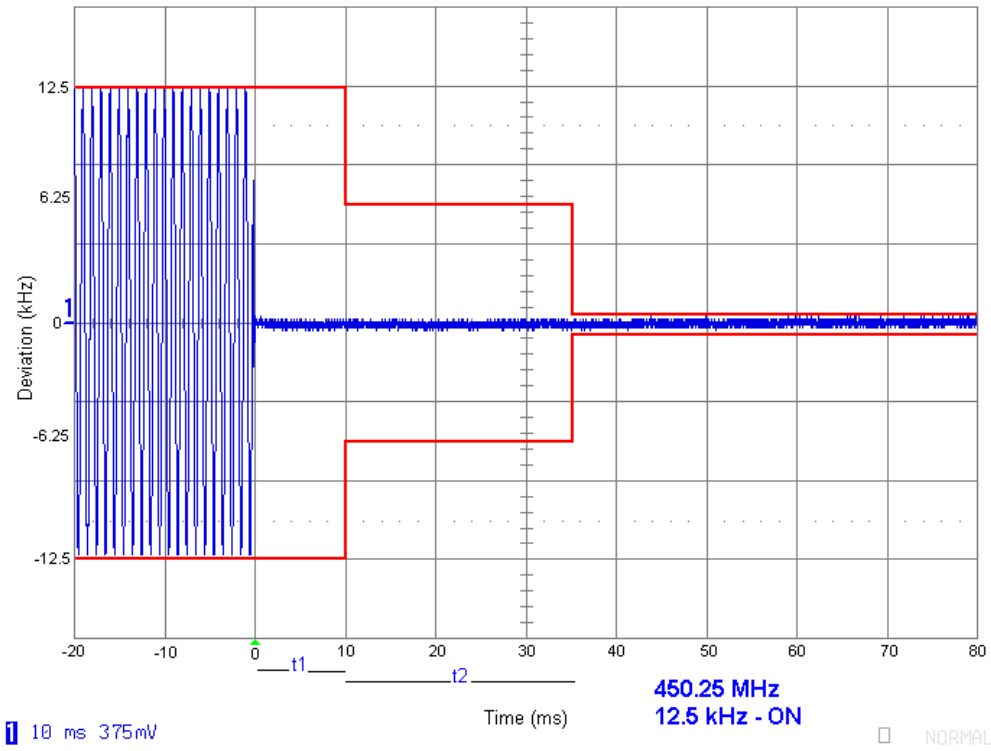
Assigned Frequency (Ref. Frequency) (MHz)		
% Battery	**Frequency (MHz)**	**Frequency Stability (PPM)**
-15%	459.999788	0.00
0	459.999789	0.00
+15%	459.999790	0.00

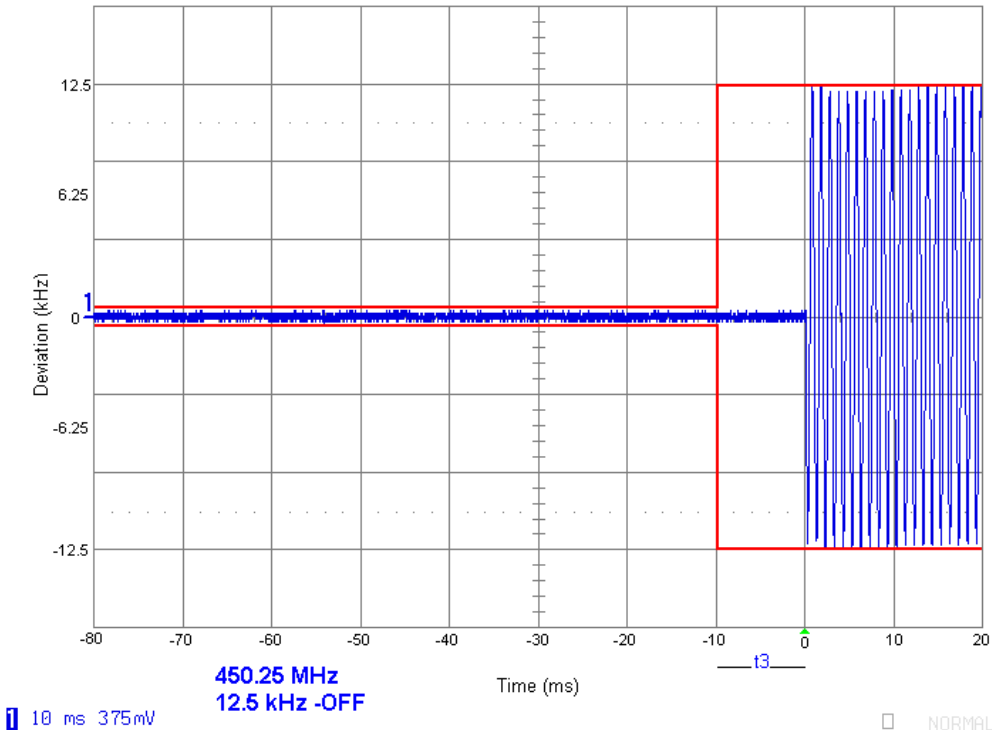
TRANSIENT FREQUENCY BEHAVIOR

Part 90.214 Transient Frequency Behavior

REQUIREMENTS: Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum transient frequencies within the maximum frequency difference limits during the time intervals indicated:

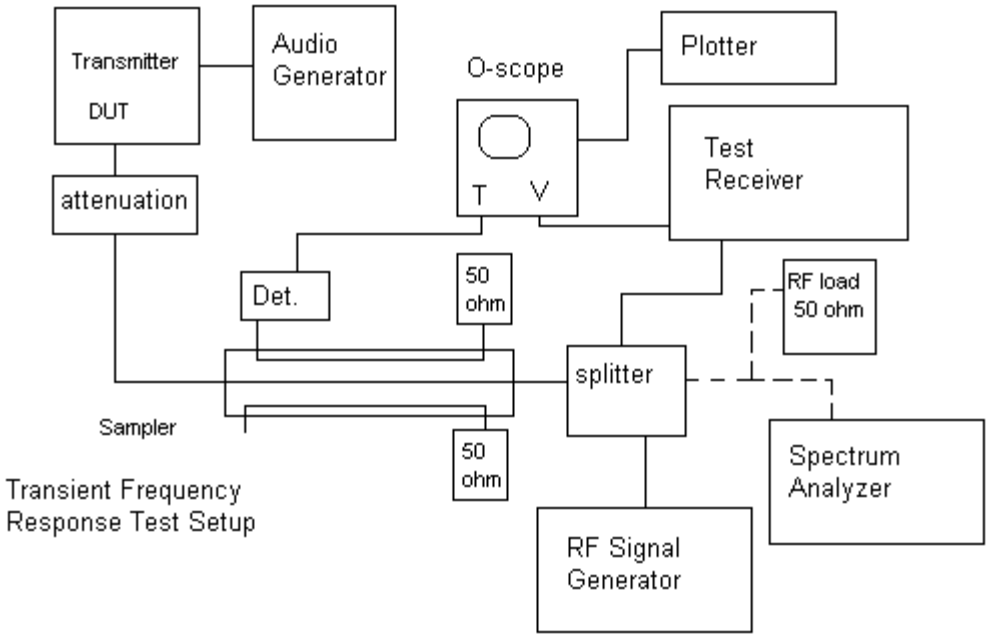
Time Intervals	Maximum frequency difference	All Equipment	
		150-174 MHz	421-512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels			
t_1[4]	±25.0 kHz	5.0 ms	10.0 ms
t_2	±12.5 kHz	20.0 ms	25.0 ms
t_3[4]	±25.0 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t_1[4]	±12.5 kHz	5.0 ms	10.0 ms
t_2	±6.25 kHz	20.0 ms	25.0 ms
t_3[4]	±12.5 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels			
t_1[4]	±6.25 kHz	5.0 ms	10.0 ms
t_2	±3.125 kHz	20.0 ms	25.0 ms
t_3[4]	±6.25 kHz	5.0 ms	10.0 ms


12.5
6.25
0
-6.25
-12.5
Deviation (kHz)
-20
-10
0
10
20
30
40
50
60
70
80
t1
t2
Time (ms)
450.25 MHz
12.5 kHz - ON
10 ms 375mV
NORMAL


12.5
6.25
0
-6.25
-12.5
Deviation (kHz)
-80
-70
-60
-50
-40
-30
-20
-10
0
10
20
t3
Time (ms)
450.25 MHz
12.5 kHz -OFF
10 ms 375mV
NORMAL

TEST PROCEEDURE: ANSI/TIA 603-C:2004, the levels were set as follows:

1. Using the variable attenuator the transmitter level was set to 40 dB below the test receivers maximum input level, then the transmitter was turned off.
2. With the transmitter off the signal generator was set 20dB below the level of the transmitter in the above step, this level will be maintained with the signal generator through-out the test.
3. Reduce the attenuation between the transmitter and the RF detector by 30 dB.
4. With the levels set as above, the transient frequency behavior was observed and recorded.



Transient Frequency Response Test Setup