



**APPLICATION FOR
TITLE 47 FCC PART 2, SUBPART J, AND FCC PART 95, SUBPART D
CERTIFICATION
AND
ANSI/TIA-603-C-2004, LAND MOBILE- COMMUNICATIONS
EQUIPMENT MEASUREMENT AND PERFORMANCE STANDARDS
AND
IC-RSS-236, GENERAL RADIO SERVICE EQUIPMENT OPERATING IN
THE BAND 26.960 TO 27.410 MHZ**

FOR

RADIO SOUND, INC.

**N-TOUCH MODEL RS-2025X
27 MHZ CB TRANSCEIVER**

**FCC ID: JOFRS2025X
IC: 5855A-2025X**

**UST PROJECT NO: 14-0096 & 14-0097
JUNE 26, 2014**

**3505 Francis Circle Alpharetta, GA 30004
PH: 770-740-0717 Fax: 770-740-1508
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Testing Tomorrow's Technology

I certify that I am authorized to sign for the Test Agency and that all of the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US Tech (Agent Responsible For Test):

By:  _____

Name: George Yang

Title: Laboratory Manager- Test Engineer

Date: June 26, 2014

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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one): Original grant X
Class II change _____

Equipment type: Transceiver

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? yes _____ No X

If yes, defer until: _____
date

N.A. agrees to notify the Commission by N.A.
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Report prepared by:

US Tech
3505 Francis Circle
Alpharetta, GA 30004

Phone Number: (770) 740-0717

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Equipment Label
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Schematic(s)
Test Configuration Photographs
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Theory of Operation
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1 General Information

1.1 Product Description

The Equipment Under Test (EUT) is the Radio Sound, Incorporated N-Touch Model RS-2025X CB (proposed/assigned FCC ID: JOFRS2025X and IC: 5855A-2025X). The EUT is an AM-only (A3E), 40 channel, Citizen's Band transceiver presented for certification under FCC Rules Part 95, Subpart D. The EUT consists of a transceiver module enclosed in aluminum extrusion case. This module is designed for professional installation (e.g. factory/dealer) in a motorcycle. No user interface (controls or display) is incorporated in the unit. All CB transceiver functions are operated via remotely located (motorcycle handlebar) controls. There are no control buttons on the transceiver. The display of an external AM/FM entertainment system is used for the display function. A single interface connector on the transceiver provides lines for control data, receive and transmit audio, and power. A separate connector is provided on the transceiver for connection to the antenna. The transceiver is designed to operate with common commercially available citizens band antennas having a nominal impedance of 50 ohms.

1.2 Related Submittal(s)/Grant(s)

There are no related submittals or grants associated with this project.

2 Test and Measurements

2.1 Configuration of Tested System

A block diagram of the tested system is shown in Figure 1. Table 2 lists the peripherals associated with the operation of the EUT. Test configuration photographs for spurious emissions measurements are shown in the Test Configurations attachment for this report. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer was off throughout the evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions.

2.2 Characterization of Tested System

The sample used for testing was received by US Tech on June 9, 2014 in good condition.

2.3 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. Conducted and digital device testing was performed at US Tech's OATS measurement facility. This site has been fully described and registered by the FCC under Registration Number 186022. Additionally this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number IC 9900A-1.

2.4 Test Equipment

Table 2 describes test equipment used to evaluate this product.

2.5 Modifications to Equipment under Test (EUT)

No modifications were made by US Tech to bring the EUT into compliance with the FCC limits for the transmitter portion of the EUT.

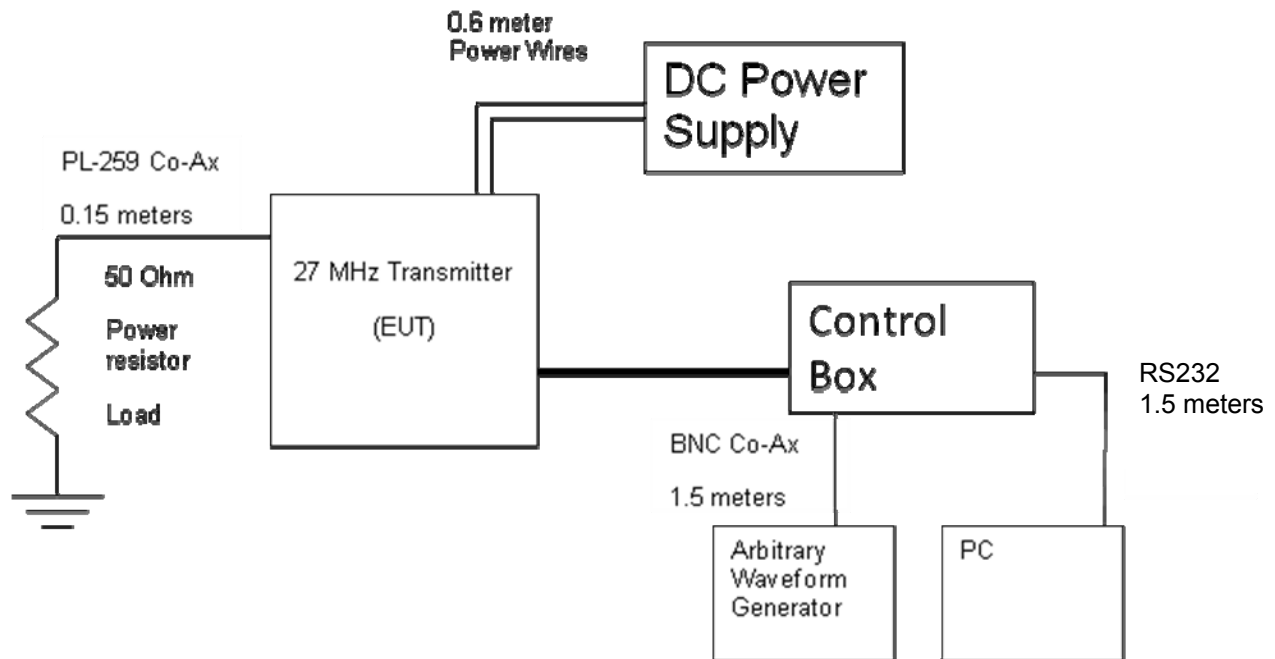


Figure 1. Test Configuration

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Table 1. EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC/IC ID:	CABLES P/D
EUT 27 MHz Transmitter	N-Touch Model RS-2025X	None	FCCID: JOFRS2025X IC: 5855A-2025X	0.1m D 1.5m D 0.6m P
DC Supply	GPS-3303	0830994	None	1.5m P
Control box Radio Sound	Engineering Sample	Engineering Sample	None	1.5m D 1.5m D
Waveform Generator	DDS-3X25	N/A	None	1.5m D

P= Power
D= Data

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Table 2. Test Instruments

EQUIPMENT	MODEL NUMBER	MANUFACTURER	SERIAL NUMBER	DATE OF LAST CALIBRATION
SPECTRUM ANALYZER	8566B	HEWLETT-PACKARD	2410A00109	2/3/2014
SPECTRUM ANALYZER	E4407B	AGILENT	US4144293 5	11/08/2013
Loop Antenna	SAS-200/562	A. H. Systems	142	9/12/2013 2 yrs
BICONICAL ANTENNA	3110B	EMCO	9306-1708	7/2/2012 2 yrs
LOG PERIODIC	3146	EMCO	9305-3600	6/5/2012 2yrs*
PREAMP	8447D	HEWLETT PACKARD	2944A07436	2/6/2014
Arbitrary Waveform Generator	DDS-3X25	Hantek	DDS020250 1	Verified before use
Signal Generator	IG-5218	Heathkit	N/A	Verified before use
Signal Generator	8648B	HEWLETT PACKARD	3642U01679	11/15/13
Graphical Multi-Meter	867B	FLUKE	DM7060268	6/12/2013
Temperature Chamber	SM16/DR45 00A	Thermotron/ Honeywell	17095	4/24/2013 2 yrs
CALCULATION PROGRAM	N/A	N/A	Ver. 6.0	N/A
Modulation Analyzer	8091A	HP/ Agilent	2925A05335	Verified With SG before use

Note: The calibration interval of the above test instruments is 12 months unless otherwise noted and all calibrations are traceable to NIST/USA.
 (*)= calibration extended additional 90 days.

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2.6 Antenna Description

Radio antenna connector is a UHF female.

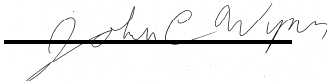
2.7 CB transmitter power (FCC Section 2.1046, 95.410 and 95.667)

The transmitter (EUT) was programmed to continuously generate maximum power. RF output power was measured by connecting the output of the transmitter directly to the input of a calibrated spectrum analyzer through a power attenuator whose loss had been measured and entered into the spectrum analyzer as offset. The spectrum analyzer was set for an impedance of 50 Ω with the RBW set greater than the 6 dB bandwidth of the EUT, and the VBW $\geq$ RBW. The allowable carrier power is 4 W when transmitting emission type A1D or A3E

Table 3. RF Transmitter Power

Frequency of Fundamental (MHz)	ERP Measurement		FCC Limit (Watts)
	(dBm)	(Watts)	
27.185	35.90	3.9	4W

Test Date: June 10, 2014

Tester Signature: 

Name: John C. Wynn

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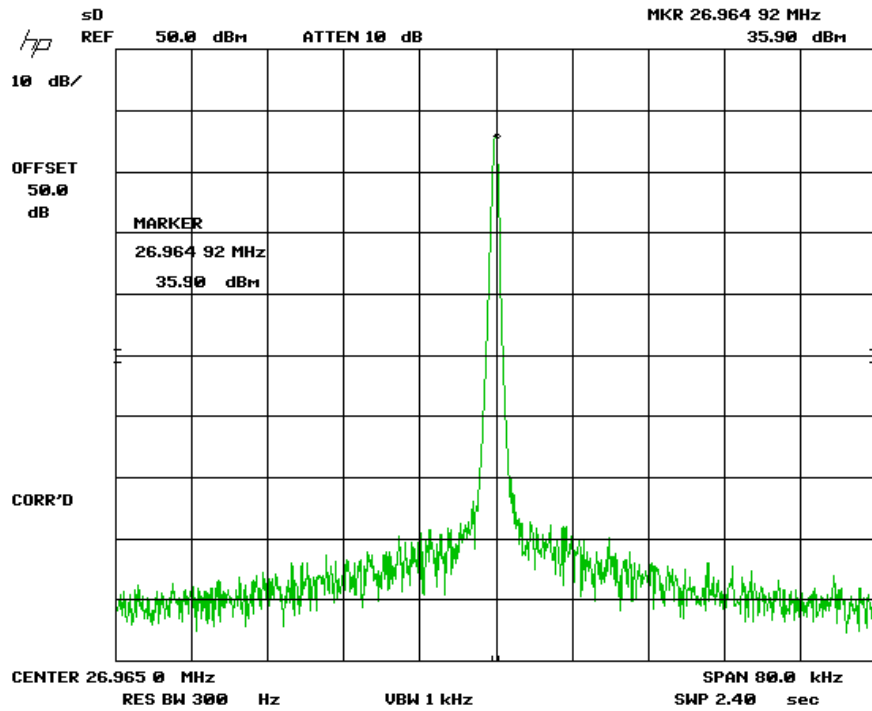


Figure 2. Conducted Output Power-Low Channel

Note: Attenuators and cable loss are added to spectrum analyzer.

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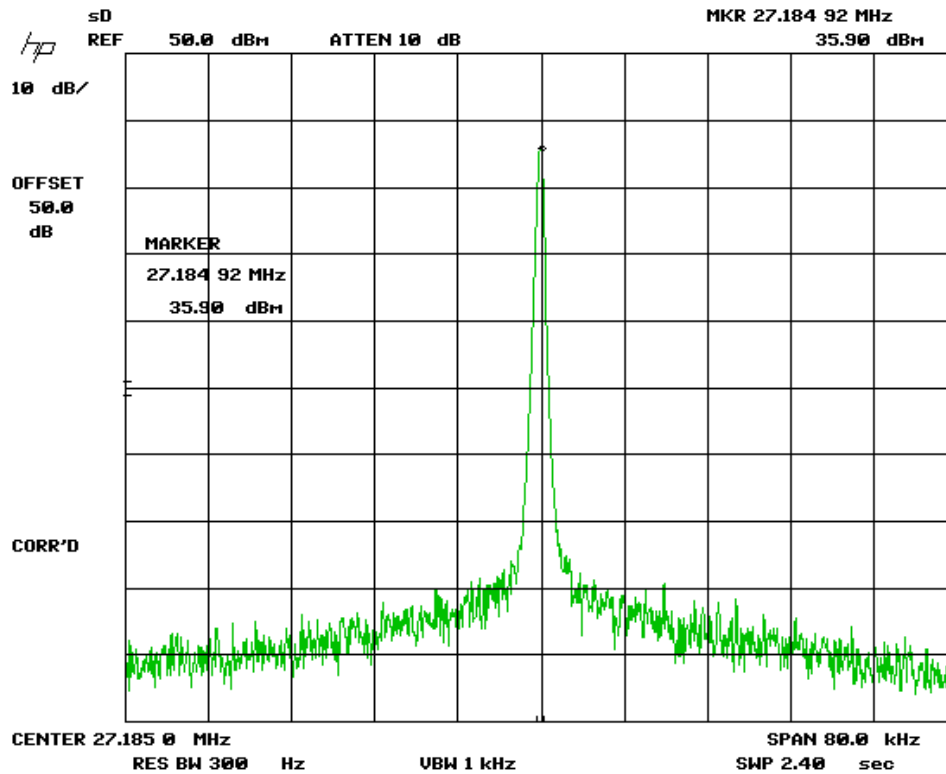


Figure 3. Conducted Output Power-Mid Channel

Note: Attenuators and cable loss are added to spectrum analyzer.

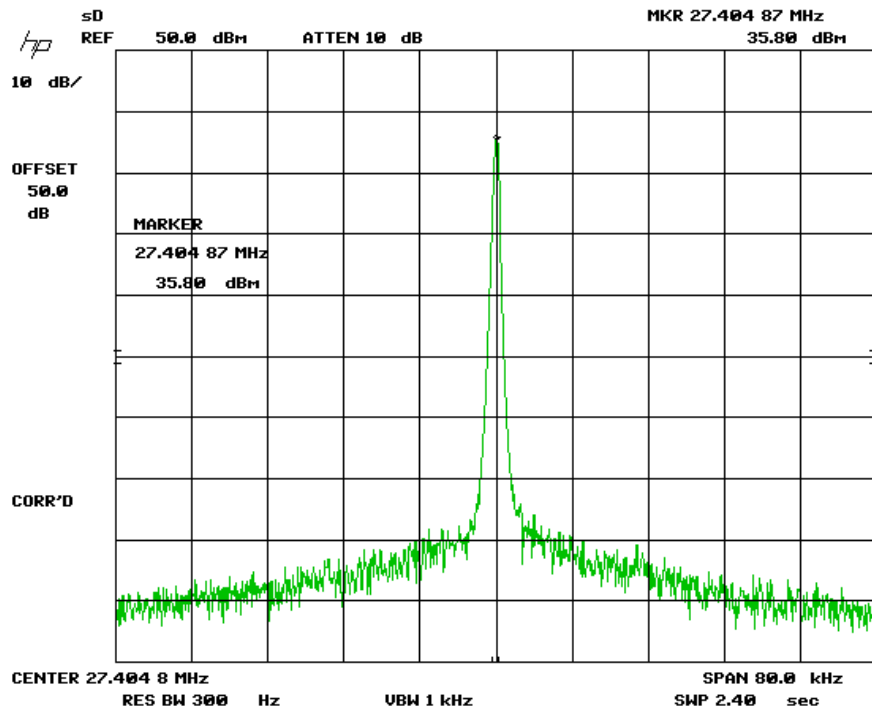


Figure 4. Conducted Output Power-High Channel

Note: Attenuators and cable loss are added to spectrum analyzer.

2.8 Modulation Characteristics (FCC Section 2.1047& 95.637)

As a voice modulated communication equipment with an audio low pass filter, and all circuitry installed between the modulation limiter and the modulated stage, a curve showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz is shown here. The rated audio input signal was applied to the input of the audio low-pass filter (or of all modulation stages) using an arbitrary waveform generator. The data collected was the frequency deviation measured with Modulation Analyzer. Tests were repeated at different audio signal frequencies from 100 Hz to 5 KHz.

2.8.1 Audio Frequency Requirements

§ 2.1047(a): Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz is submitted herein to meet this requirement.

2.8.2 Audio Frequency Test Results

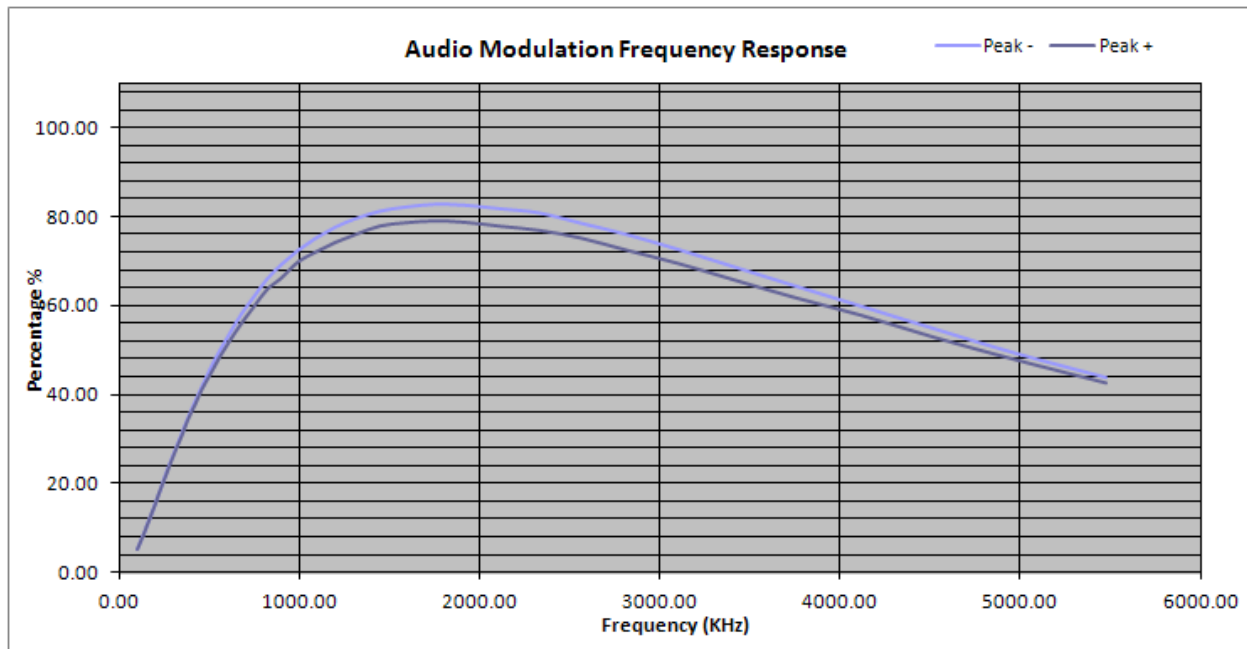


Figure 5. Plot of the Audio Frequency Response

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Table 4. Data of the Audio Frequency Response

Frequency (Hz)	Peak + %	Peak - %	Frequency (Hz)	Peak + %	Peak - %
100	5.1	5.1	820.0	63.5	65.8
130	8.0	8.1	900.0	66.1	69.1
140	9.0	9.0	990.0	69.6	72.2
150	10.1	10.1	1090.0	71.9	75.0
170	12.1	12.2	1200.0	74.1	77.5
180	13.3	13.2	1320.0	76.0	79.5
200	15.3	15.5	1450.0	77.8	81.1
220	17.7	17.6	1590.0	78.5	82.0
240	19.8	19.9	1750.0	78.9	82.6
260	21.9	22.2	1920.0	78.6	82.4
290	25.1	25.4	2120.0	77.7	81.6
320	28.1	28.4	2330.0	76.8	80.7
350	31.0	31.5	2560.0	75.1	78.4
380	34.2	34.5	2820.0	72.3	75.8
420	37.6	38.3	3100.0	69.4	72.5
460	41.2	41.8	3410.0	65.7	68.6
510	44.8	46.1	3750.0	61.7	64.3
560	48.5	49.9	4120.0	57.7	59.7
620	52.4	54.1	4530.0	52.7	54.6
680	56.0	58.1	4980.0	47.7	49.1
750	59.8	62.0	5480.0	42.5	43.7

Test Date: June 10, 2014

Tester Signature: 

Name: John C. Wynn

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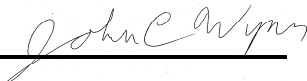
2.8.3 Modulation Limiting (FCC Section 2.1047(b), RSS-236(5.3.2))

This test is required for Equipment which employs modulation limiting. A curve or family of curves showing the percentage of modulation versus the modulation input voltage is supplied. The information submitted is sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed. Modulation level must be below 100%.

Table 5. Modulation Limiting Test Data

Voltage	100 Hz + (%)	100 Hz - (%)	1000 Hz + (%)	1000 Hz - (%)	2500 Hz + (%)	2500 Hz - (%)	5000 Hz + (%)	5000 Hz - (%)
0.05	1.17	1.15	7.48	7.55	8.20	9.98	5.35	5.33
0.08	1.98	1.78	11.64	11.66	92.30	90.60	8.42	8.88
0.10	1.98	1.78	14.82	15.15	92.00	90.40	10.53	10.95
0.20	2.58	2.52	30.16	29.89	91.90	90.50	20.69	20.88
0.30	3.47	3.49	44.70	45.60	91.80	90.50	30.70	30.90
0.40	4.39	4.47	59.30	59.20	91.70	90.30	40.30	40.40
0.50	5.20	4.90	74.00	74.40	92.30	93.00	49.90	50.00
0.60	6.00	5.00	88.10	86.70	92.20	91.10	57.80	58.90
0.70	6.80	6.88	87.60	90.90	93.00	90.90	65.90	68.80
0.80	7.74	7.80	87.20	90.30	92.10	90.80	74.60	77.60
0.90	8.68	8.78	87.40	90.80	92.00	90.70	83.20	86.60
1.00	9.80	9.88	87.90	89.80	92.20	90.50	86.00	89.20
1.10	14.50	10.89	88.10	89.80	92.30	90.70	86.30	89.40
1.20	14.73	13.53	87.90	89.80	92.30	90.40	86.30	89.50
1.30	13.62	13.19	88.00	89.70	92.40	90.40	86.30	89.50
1.40	13.37	13.56	88.30	90.00	91.90	90.10	89.30	89.40
1.50	14.50	14.61	89.40	90.20	91.80	90.10	86.30	89.50
1.60	15.07	15.97	88.50	90.20	91.80	90.00	86.90	89.40
1.70	16.50	17.20	88.70	89.90	91.80	90.00	86.40	89.40
1.80	17.13	17.90	93.60	90.30	91.50	90.00	87.40	89.70
1.90	18.11	18.56	93.80	90.20	91.70	90.00	87.10	90.00
2.00	19.70	20.00	95.60	90.50	92.20	90.00	87.90	89.70
2.10	20.18	21.07	89.80	90.30	92.10	90.10	86.90	89.70

Test Date: June 9, 2014

Tester Signature: 

Name: John C. Wynn

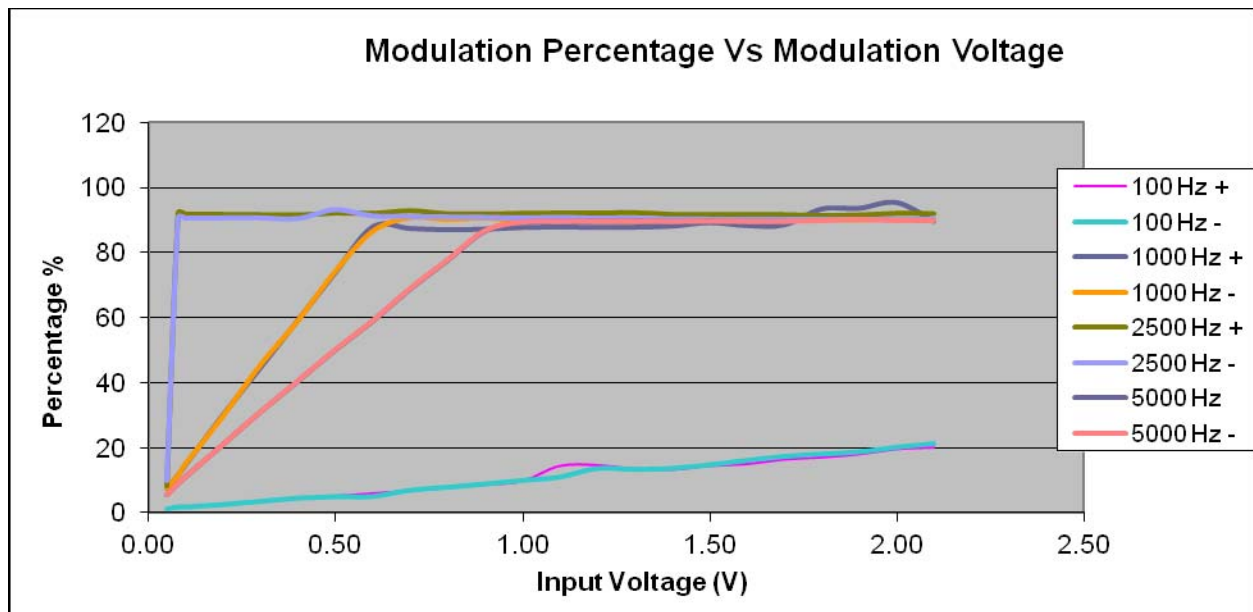


Figure 6. Modulation Limiting Graph

2.9 Occupied Bandwidth (FCC Section 2.1049, 95.633, RSS-236(5.3.2))

2.9.1 Test method used

The transmitter was modulated by a 2.5 KHz tone signal at an input level 16 dB greater than that required to produce 50% modulation

The occupied bandwidth of the fundamental was measured using a spectrum analyzer with resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement. Two markers were placed: one below the carrier center frequency and one above the carrier center frequency that are 20 dB down relative to the maximum level of the modulated carrier.

2.9.2 Limit

The authorized bandwidth for emission type A1D or A3E is 8 kHz.

2.9.3 Test result

Figures 9, 10 and 11 show the bandwidths. All demonstrate compliance.
BW <8 KHz

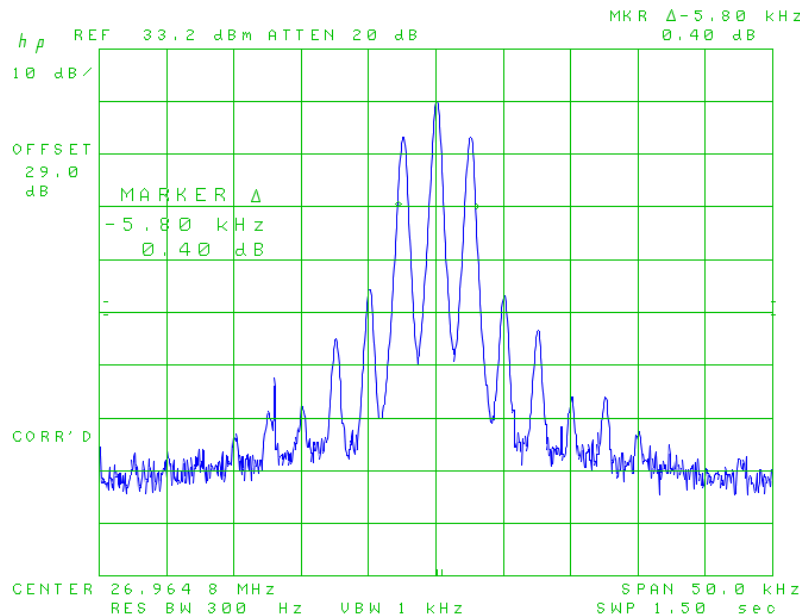


Figure 7. Occupied Bandwidth Measurement, Low Channel

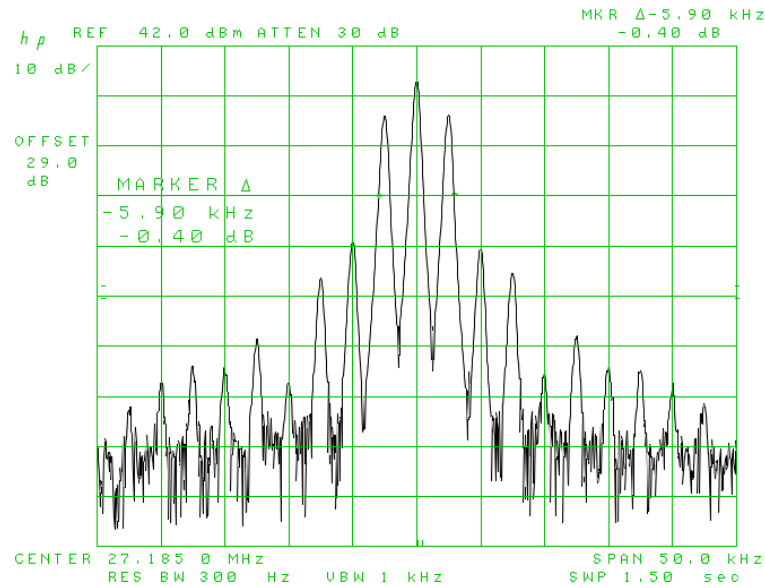


Figure 8. Occupied Bandwidth Measurement, Mid Channel

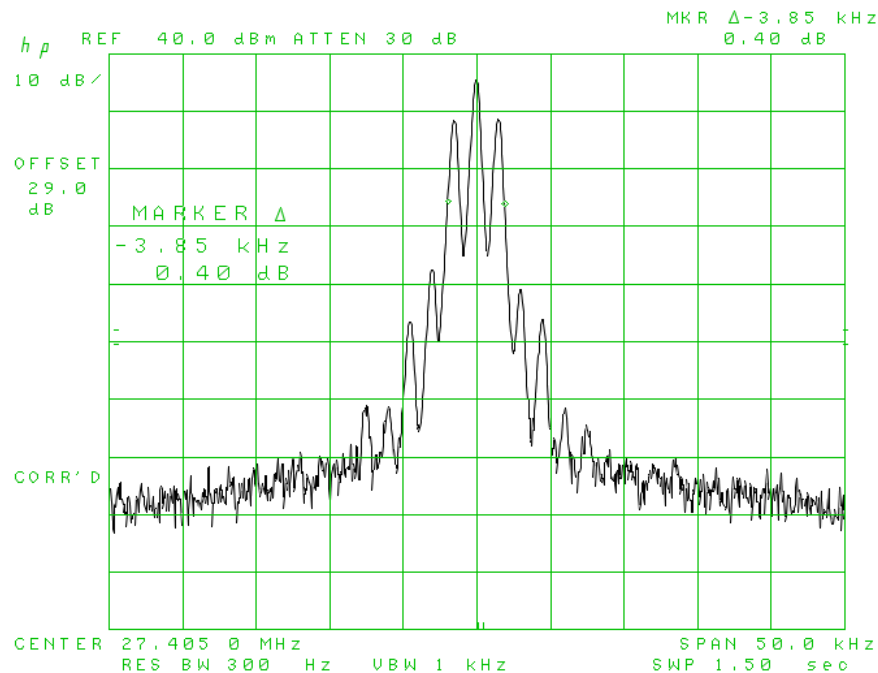


Figure 9. Occupied Bandwidth Measurement, Mid Channel

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2.10 Field Strength of Spurious Radiation (FCC Section 2.1053, 2.1057, 95.635(b)(9), RSS-236(5.4))

2.10.1 Regulatory Requirements

Measurements were made to detect spurious emissions that may be radiated directly from the EUT. Data are supplied showing the magnitude of each harmonic and other spurious emission. Information submitted include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter.

2.10.2 Test method

Spurious emissions were evaluated from 30 MHz to 1 GHz at a distance of 3 meters from the EUT.

The EUT was placed on an open area test site and setup to operate in normal operating condition. The spurious emissions were tested with the EUT antenna terminated with a 50 Ohm load per section 2.2.12, TIA-603-C:2004. Measurements for 30 to 1000 MHz were made with the analyzer's bandwidth at 100 kHz and video bandwidth set to 300 kHz. The antenna was raised and lowered over a span of 4 meters in order to maximize the signal coming from the EUT. Similarly, the turntable was rotated through 360 degrees in the same maximizing effort.

The emissions levels were recreated using the substitution method as outlined in TIA-603-C:2004 section 2.2.

2.10.3 Limit

Per FCC 95.635(b)(9), at least 60 dB on any frequency twice or greater than twice the fundamental frequency.

Limit = 36 dBm - 60 dB = -24.0 dBm

2.10.4 Test Results

The test results from 30-1000 MHz are presented below. All emissions are shown to be below the limit.

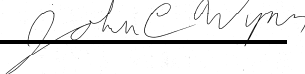
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Table 6. Field Strength of Spurious Radiation

Frequency	Maximum RX Reading (Units A)	Recreated Reading During Substitution (Using Same Units A) - Ideally 0	Difference Column A - B	TX Gain Relative to Dipole (dB)	RF Power into TX antenna (Corrected (dBm) (SG Value-CL)	RF Power into substitution TX antenna corrected by TX Gain Relative to Dipole (dBm)	Limit (dBm)	Margin Below Limit (dB)
54.30	51.11	54.70	-3.59	-7.74	-56.19	-67.52	-24.00	43.52
81.55	62.77	62.40	0.37	-2.64	-48.32	-50.59	-24.00	26.59
108.73	81.17	80.10	1.07	-1.44	-34.00	-34.37	-24.00	10.37
135.93	84.81	86.50	-1.69	-1.04	-26.35	-29.08	-24.00	5.08
163.11	83.40	84.90	-1.50	-0.14	-26.68	-28.32	-24.00	4.32
190.20	87.02	83.20	3.82	-0.84	-27.09	-24.11	-24.00	0.11
217.00	89.70	98.20	8.50	-7.74	-27.90	-27.14	-24.00	3.14
244.00	86.70	86.90	0.20	-2.64	-28.12	-30.56	-24.00	6.56
271.00	75.60	73.70	-1.90	-1.44	-38.72	-42.06	-24.00	18.06
299.63	77.00	76.60	-0.40	-1.04	-29.82	-31.26	-24.00	7.26
325.70	74.70	75.50	0.80	-0.14	-35.31	-34.65	-24.00	10.65
353.39	74.60	74.30	-0.30	-0.84	-27.38	-28.52	-24.00	4.52
380.58	68.40	71.10	2.70	1.93	-35.23	-30.60	-24.00	6.60
408.84	74.10	76.50	2.40	3.14	-35.82	-30.28	-24.00	6.28
434.96	67.80	69.20	1.40	4.36	-41.79	-36.03	-24.00	12.03
462.00	62.10	62.60	0.50	5.57	-46.74	-40.67	-24.00	16.67
488.49	69.30	67.20	-2.10	6.78	-39.79	-35.11	-24.00	11.11
516.50	57.00	60.40	3.40	7.99	-49.95	-38.56	-24.00	14.56
543.69	55.70	59.30	3.60	9.20	-50.10	-37.30	-24.00	13.30
570.88	57.80	57.90	0.10	10.41	-50.68	-40.17	-24.00	16.17
597.61	59.80	53.90	-5.90	11.62	-50.49	-44.77	-24.00	20.77
625.25	58.30	60.60	2.30	12.84	-49.05	-33.91	-24.00	9.91
652.43	56.80	59.50	2.70	14.05	-49.17	-32.42	-24.00	8.42
679.60	53.90	57.20	3.30	15.26	-52.28	-33.72	-24.00	9.72
706.80	49.80	52.80	3.00	16.47	-51.05	-31.58	-24.00	7.58
734.02	48.40	52.90	4.50	17.68	-52.57	-30.39	-24.00	6.39
761.10	47.78	49.60	1.82	18.89	-56.39	-35.68	-24.00	11.68
788.39	39.60	42.60	3.00	20.10	-64.50	-41.40	-24.00	17.40
815.00	39.20	40.70	1.50	21.32	-63.30	-40.48	-24.00	16.48

Test Date: May 28, 2014

Tester Signature: 

Name: John C. Wynn

2.11 Unwanted Radiations (FCC Section 95.635, RSS-236(5.4.4))

2.11.1 Regulatory requirements

The EUT uses emissions type A1D, A3E, therefore any unwanted emissions must be attenuated by the amounts noted below per section 95.635(b) of the FCC.

95.635(b)(1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.

95.635(b)(3) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.

95.635(b)(8) At least $53 + 10 \log_{10}(T)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

95.635(b)(9) At least 60 dB on any frequency twice or greater than twice the fundamental frequency.

2.11.2 Test Results

The following plot demonstrates emissions being under the required mask.

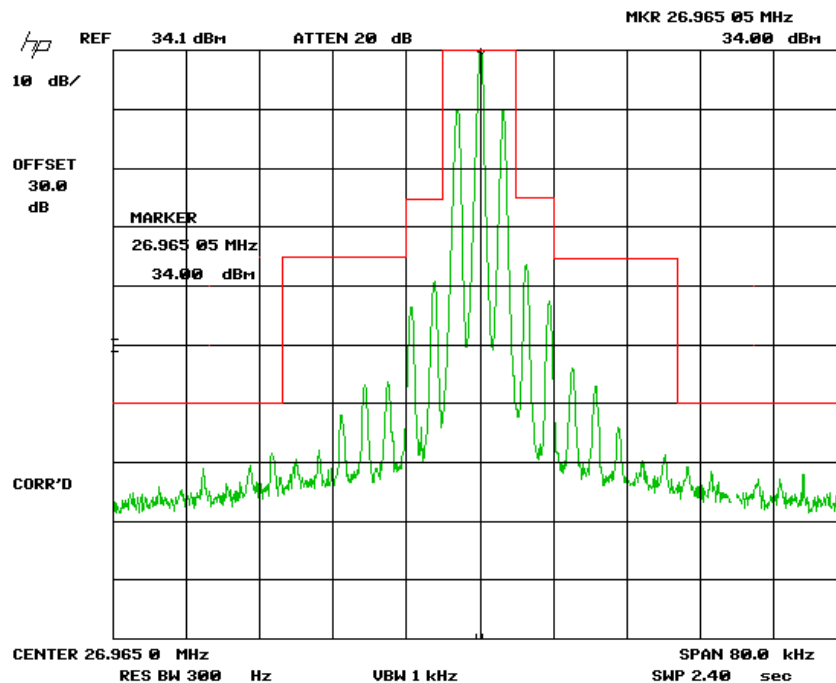


Figure 10. Emissions Mask

2.12 Spurious Emissions at antenna terminal (FCC 2.1051, 2.1057, RSS-236(5.4.2))

Spurious emissions in the frequency range 30 MHz – 1 GHz have been investigated with a spectrum analyzer by connecting the spectrum analyzer directly via a short cable and attenuator (whose loss was entered in the spectrum analyzer as offset) to the antenna output terminals. The spectrum analyzer was set for a 50 Ω impedance with the RBW = 1 kHz and 3 kHz and VBW > RBW. EUT transmitter was turned on and a 2.5 KHz sine wave was injected into the microphone port.

All emissions detected in this test were also measured per FCC Section 2.1053 and 95.635(b)(9), (Spurious Unwanted radiations) and were shown to be below the limit. Please see section 2.10 for radiated data.

2.12.1 Test data

Plots below show all conducted emissions.

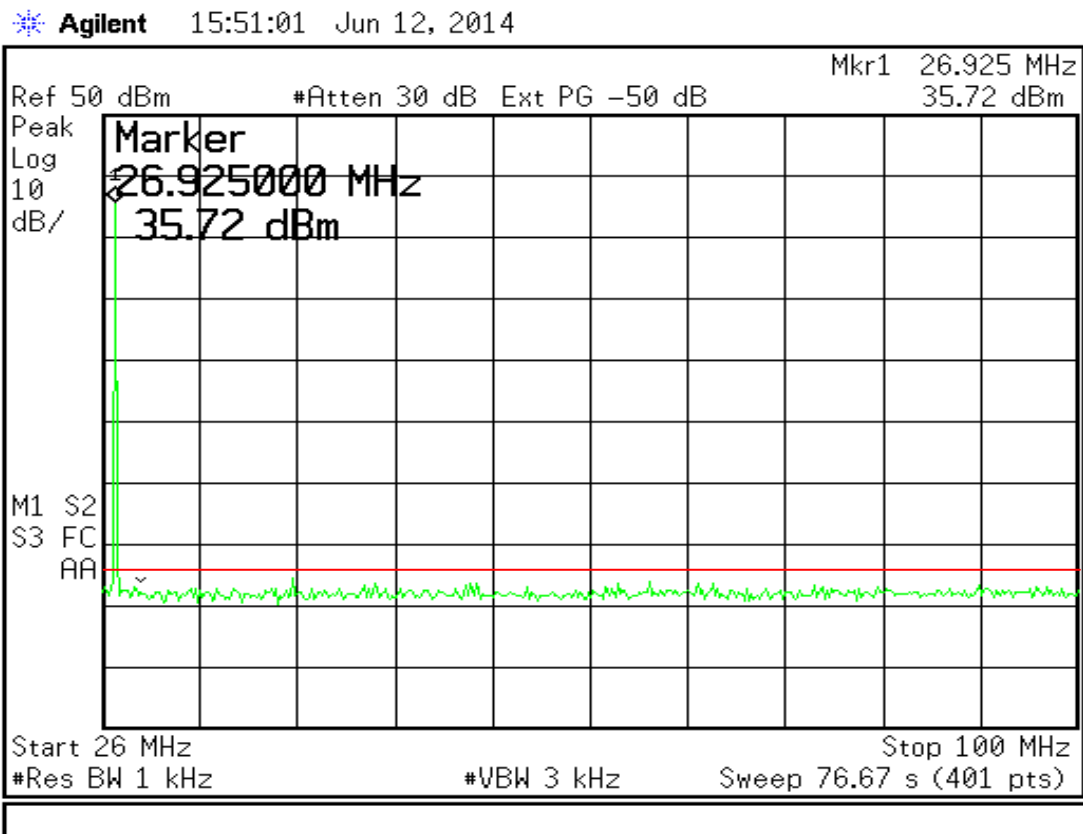


Figure 11. Low Channel Antenna Conducted Spurious Emissions, Part 1

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 95, IC RSS-236
JOFRS2025X
5855A-2025X
14-0096 & 14-0097
June 26, 2014
Radio Sound Inc.
RS2025X

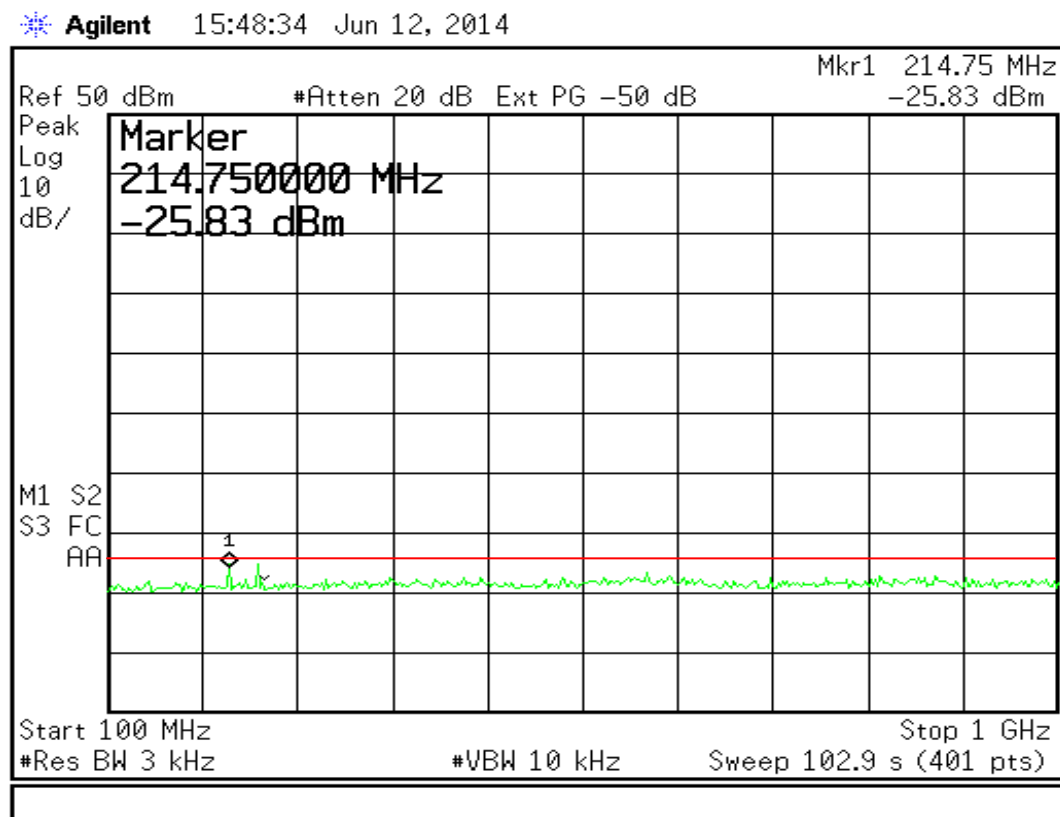


Figure 12. Low Channel Antenna Conducted Spurious Emissions, Part 2

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 95, IC RSS-236
JOFRS2025X
5855A-2025X
14-0096 & 14-0097
June 26, 2014
Radio Sound Inc.
RS2025X

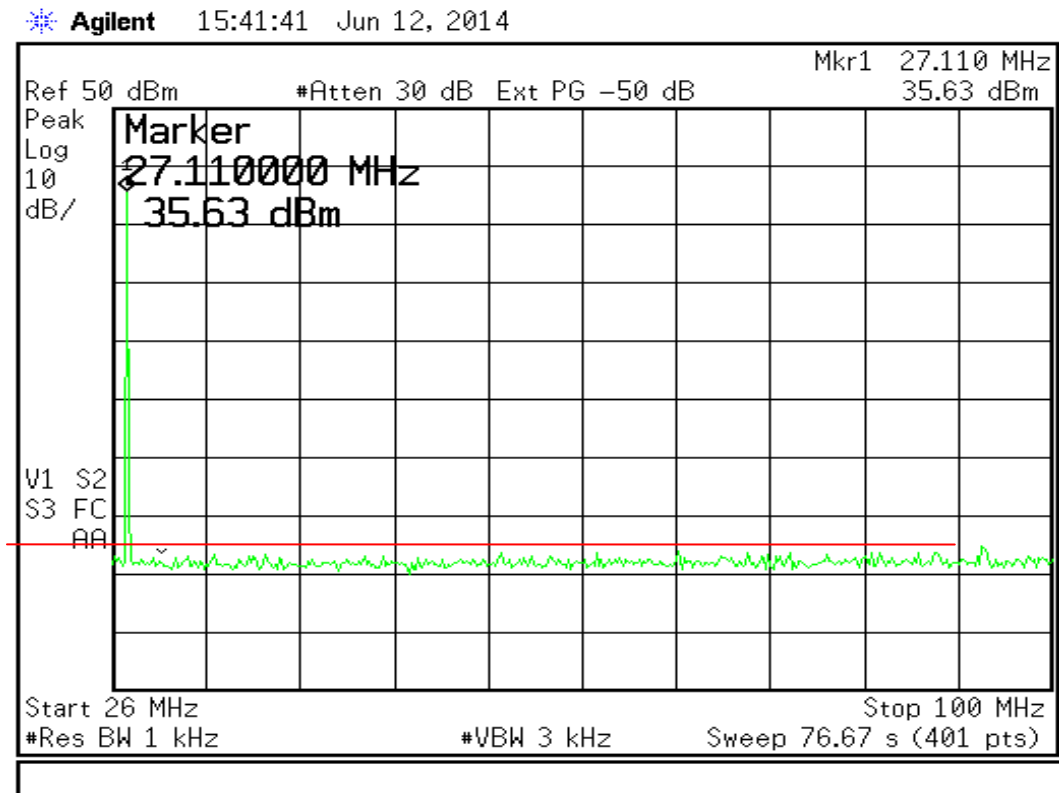


Figure 13. Mid Channel Antenna Conducted Spurious Emissions, Part 1

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 95, IC RSS-236
JOFRS2025X
5855A-2025X
14-0096 & 14-0097
June 26, 2014
Radio Sound Inc.
RS2025X

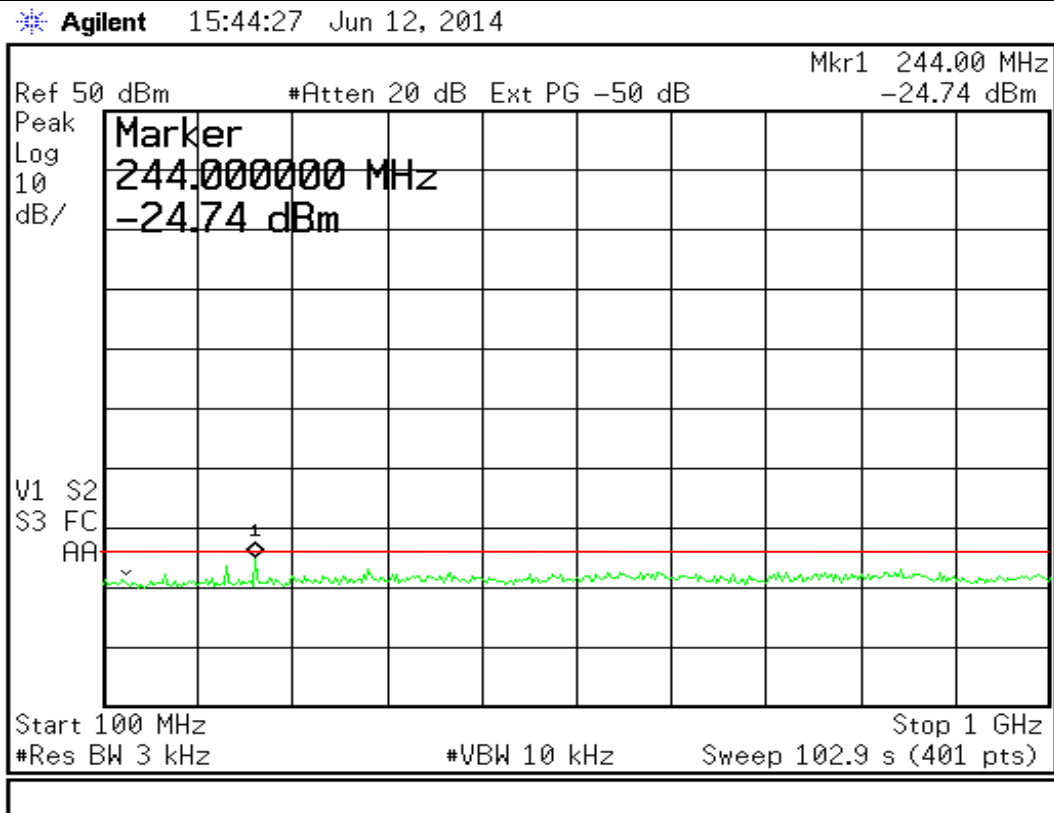


Figure 14. Mid Channel Antenna Conducted Spurious Emissions, Part 2

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 95, IC RSS-236
JOFRS2025X
5855A-2025X
14-0096 & 14-0097
June 26, 2014
Radio Sound Inc.
RS2025X

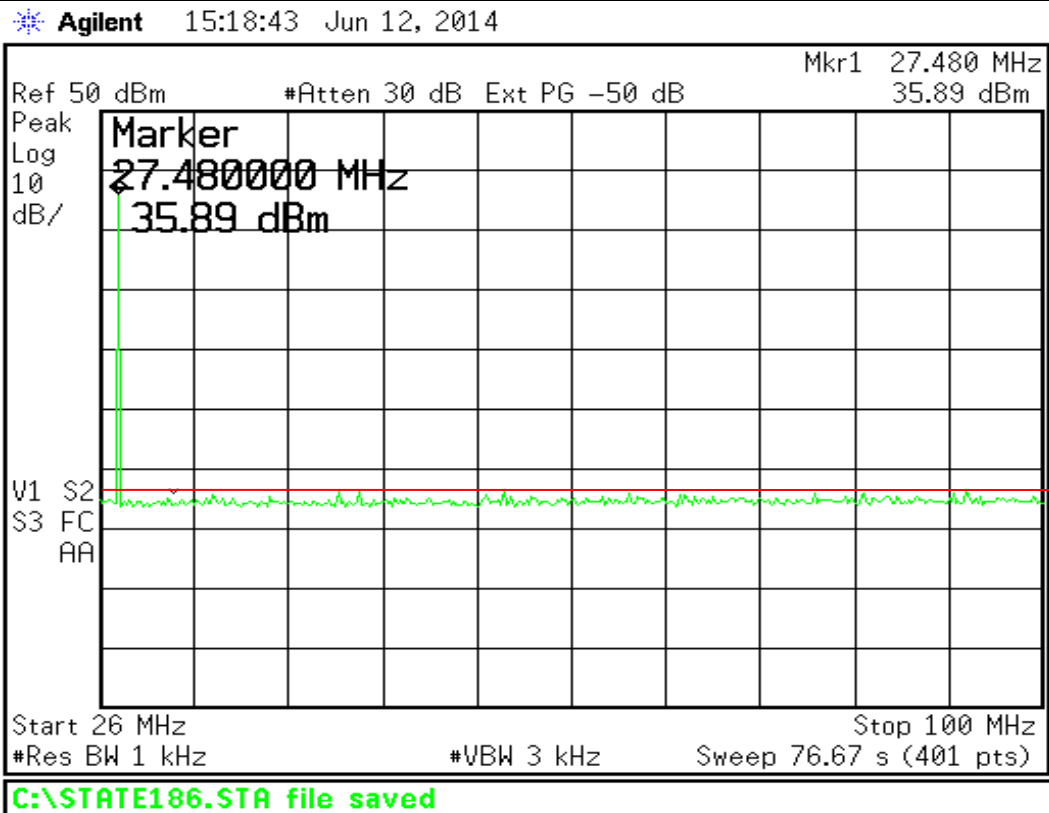


Figure15. High Channel Antenna Conducted Spurious Emissions, Part 1

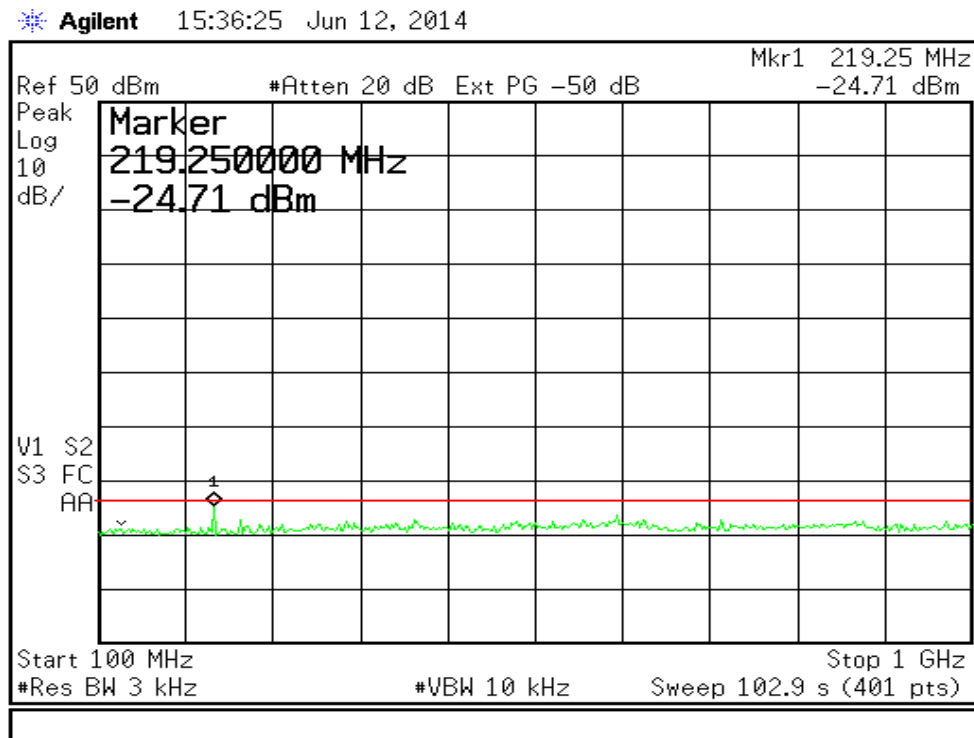


Figure 16. High Channel Antenna Conducted Spurious Emissions, Part 2

2.13 Frequency Stability (FCC 2.1055, 95.625)

2.13.1 Regulatory Requirements

The frequency stability was measured with variation of ambient temperature and at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range.

2.13.2 Test Performed

The EUT RF output was measured as its input bias voltages were changed from 12.10 VDC to 16.30 VDC. The temperature was varied from -30°C to +50 °C. Each stabilization period was 10 minutes.

2.13.3 Limit

Per FCC 95.625b), Each CB transmitter must be maintained within a frequency tolerance of 0.005%.

2.13.4 Frequency Stability Test results

CB Channel frequency: 27.185 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 95, IC RSS-236
JOFRS2025X
5855A-2025X
14-0096 & 14-0097
June 26, 2014
Radio Sound Inc.
RS2025X

Table 7. Frequency Stability Measurement vs. Temperature

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (%)
-30	27.184946	-0.000200
-20	27.184973	-0.000100
-10	27.185003	0.000010
0	27.185027	0.000100
10	27.185014	0.000050
20	27.185068	0.000250
30	27.185003	0.000012
40	27.184973	-0.000100
50	27.185027	0.000100

Table 8. Frequency Stability Measurement at Extreme Voltages

Input Voltage	Measured Frequency (MHz)	Deviation (%)
V Low(12.10 V)	27185068	0.000250
V nominal	27.185068	0.000250
V high (16.30 V)	27185054	0.000200

Test Date: June 2, 2014

Tester Signature: John C. Wynn

Name: John C. Wynn

2.14 RF Exposure Requirements (1.1310 & 2.1091)

2.14.1 Limits

Per CFR 47 Part 1.1310: The criteria listed in Table 1 of this section shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1310.

2.14.2 Maximum Public Exposure to RF (MPE)

The maximum exposure level to the public from the RF power of the EUT shall not exceed the following:

Occupational/Controlled Exposure, $S_{\text{controlled}}$ [mW/cm²] = $900/(27 \text{ MHz}^2) =$
 $1.23 \text{ mW/cm}^2 = 12.3 \text{ W/m}^2$

General population/Uncontrolled Exposure, $S_{\text{uncontrolled}}$ [mW/cm²] = $180/(27 \text{ MHz}^2) =$
 $0.25 \text{ mW/cm}^2 = 2.5 \text{ W/m}^2$

Therefore, for: Gain Antenna = 0 dBi

Peak Power (Watts) = 3.98 (from Table 3 of Test Report)

Gain of Transmit Antenna = 0 dBi = 1,

$r_{\text{controlled}} = \sqrt{(PG/4\pi S)} = 3.98(1)/4*\pi*12.3 = 0.16 \text{ m} = 16 \text{ cm}$

$r_{\text{uncontrolled}} = \sqrt{(PG/4\pi S)} = 3.98(1)/4*\pi*2.5 = 0.36 \text{ m} = 35.6 \text{ cm}$

The EUT must maintain these distances to be considered compliant with the RF exposure limits.

2.15 Emission Designation

For AM Voice Modulation:

Channel Spacing = 10 KHz; Authorized bandwidth = 8 kHz

Emission designation: 5K90A3E