
2021

SURVEY OF

AM EMISSION NRSC-2

PERFORMANCE

FOR

KCRO 660-AM RADIO

BY

VAL LANE

CENTRAL ELECTRONICS

1911 CENTRAL AVE.

KEARNEY, NE 68847

308-236-7201

2 / 18 / 2021

AM EMISSION MEASUREMENT DATA SHEET

EMISSION PERFORMANCE MEASUREMENTS AS REQUIRED BY THE FCC RULES 73.44 AND 73.1590 WERE TAKEN ON STATION KC RO, FREQUENCY 660 kHz, KW 1 (OMNI) / DA ON 2/18/2021 BETWEEN 12:50 AND 1:15pm LOCAL TIME. MONITOR POINT LOCATION App. .2 mile SW of town.

METHODOLOGY

MEASURING VAN WAS DRIVEN TO A LOCATION APPROXIMATELY ONE KILOMETER FROM THE TOWER SITE, OR AS INDICATED ABOVE. A MODEL LP-3 SHIELDED LOOP ANTENNA, MANUFACTURED BY CHRIS SCOTT AND ASSOCIATES WAS USED FOR THESE MEASUREMENTS. THE ANTENNA WAS ROTATED TO GIVE MAXIMUM SIGNAL FROM THE STATION UNDER TEST. WHILE OTHER SIGNALS WERE WATCHED TO SEE IF THEIR LEVELS INCREASED OR DECREASED FROM THE STATION UNDER TEST. A ANRITSU MS2711D SPECTRUM ANALYZER WAS USED. DURING BANDWIDTH MEASUREMENTS A RESOLUTION BANDWIDTH OF 300 Hz WAS USED AND A CHRIS SCOTT LOW LOSS AM NOTCH FILTER MAY HAVE BEEN USED TO IMPROVE THE +/- 75 kHz PLUS. NOISE FLOOR READINGS. FOR HARMONIC MEASUREMENTS, TO MINIMIZE INTERMODULATION CREATED IN THE "FRONT END" OF THE ANALYZER, A MEDIUM FREQUENCY NOTCH FILTER WAS USED. BEFORE EACH HARMONIC MEASUREMENT WAS TAKEN THE FILTER WAS APPLIED AND TUNED FOR THE BEST NULL AT THE CARRIER FREQUENCY. THE FILTER HAS BEEN TESTED AND HAS LITTLE OR NO ATTENUATION OR INSERTION LOSS AT THE HARMONIC FREQUENCIES.

BANDWIDTH MEASUREMENTS

ABSOLUTE	NORMALIZED	FCC LIMIT
CARRIER <u>-37.98</u>	0	0
10.2 KHz		-25 dBc
20 KHz		-35 dBc
30 KHz	<u>All Pass OK - See KC RO-1 mask.</u>	-35 dBc
40 KHz		-45 dBc
50 KHz		-55 dBc
60 KHz		-65 dBc
>75 KHz		-73

☐ WITH MEDIUM NOTCH FILTER
☒ WITH MEDIUM NOTCH FILTER

HARMONIC MEASUREMENTS

FREQ.	ABSOLUTE	NORMALIZED	FCC LIMIT
CARRIER <u>660 KHz</u>	<u>-37.98</u>	0	0
SECOND <u>1320</u>	<u>-123.88</u>	<u>-85.90</u>	<u>-73</u>
THIRD <u>1980</u>	<u>-117.92</u>	<u>-79.94</u>	
FOURTH <u>2460</u>	<u>-126.08</u>	<u>-88.10</u>	
FIFTH <u>3300</u>	<u>-129.26</u>	<u>-91.28</u>	

FCC LIMITS 5KW PLUS -80DB, 2.5KW -77DB, 1KW -73DB, 500 WATT -70DB, 250 WATT -67DB, 158 LESS -65DB.

FREQUENCY MEASUREMENT -2 HZ SIGNATURE Val Jone DATE 2-18-21

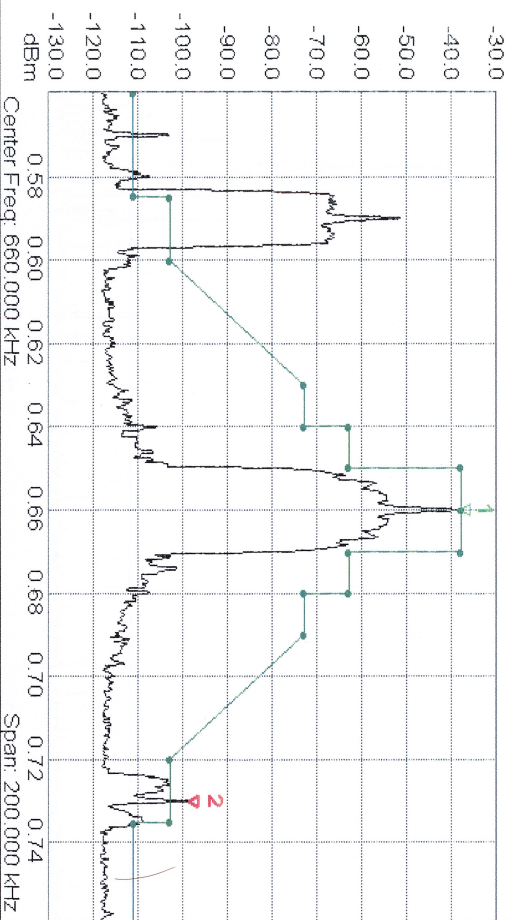
PASS TEST OK

/ DID NOT PASS

Spectrum Analyzer Data

KCRO-1 (2/18/2021 12:50:01 PM)

Spectrum Analyzer



Mkr	Ref Delta	Ref Freq	Ref Amp	Delta Freq	Delta Amp
1	<input type="checkbox"/>	660.000 0 kHz	-37.98 dBm	--	--
2	<input checked="" type="checkbox"/>	730.000 0 kHz	-98.63 dBm	--	--
3	<input type="checkbox"/>	--	--	--	--
4	<input type="checkbox"/>	--	--	--	--
5	<input type="checkbox"/>	--	--	--	--
6	<input type="checkbox"/>	--	--	--	--

Trace A data:

Trace Mode = Max Hold

Preamplifier = OFF

Min Sweep Time = 0.001 S

Reference Level Offset = 0 dB

Input Attenuation = 0.0 dB

RBW = 300.0 Hz

VBW = 3.0 kHz

Detection = Peak

Center Frequency = 660.000 000 kHz

Start Frequency = 560.000 000 kHz

Stop Frequency = 760.000 000 kHz

Frequency Span = 200.000 000 kHz

Reference Level = -30.000 dBm

Scale = 10.0 dB/div

Serial Number = 802149

Base Ver. = V4.32

App Ver. = V5.73

Model = MT8222A

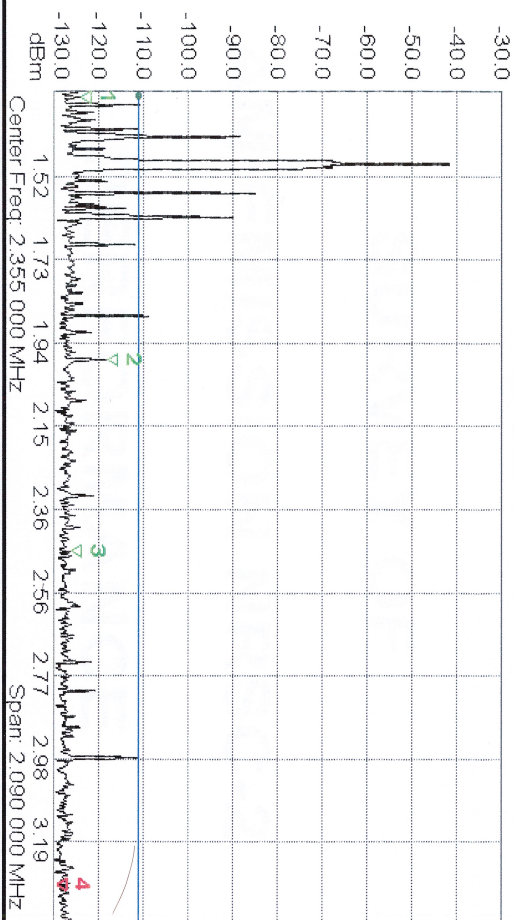
Options = 19, 25, 27, 31, 37, 66, 67

Date = 2/18/2021 12:50:01 PM

Device Name = VAL-MT8222A

Spectrum Analyzer Data KCRO-2 (2/18/2021 12:58:52 PM)

Spectrum Analyzer



Mkr	Ref	Delta	Ref Freq	Ref Amp	Delta Freq	Delta Amp
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.320 0 MHz	-123.88 dBm	--	--
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.980 0 MHz	-117.92 dBm	--	--
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2.460 0 MHz	-126.08 dBm	--	--
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3.300 0 MHz	-129.26 dBm	--	--
5	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
6	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--

Trace A data:

Trace Mode = Normal

Stop Frequency = 3.400 000 MHz

Preamp = OFF

Frequency Span = 2.090 000 MHz

Min Sweep Time = 0.001 S

Reference Level = -30.000 dBm

Reference Level Offset = 0 dB

Scale = 10.0 dB/div

Input Attenuation = 0.0 dB

Serial Number = 802149

RBW = 100.0 Hz

Base Ver. = V4.32

VBW = 30.0 Hz

App Ver. = V5.73

Detection = Peak

Model = MT8222A

Center Frequency = 2.355 000 MHz

Options = 19, 25, 27, 31, 37, 66, 67

Start Frequency = 1.310 000 MHz

Date = 2/18/2021 12:58:52 PM

Device Name = VAL-MT8222A