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**2020**

**SURVEY OF**

**AM EMISSION NRSC-2**

**PERFORMANCE**

**FOR**

**KCRO 660-AM RADIO**

BY  
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7 / 28 / 2020

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# AM EMISSION MEASUREMENT DATA SHEET

EMISSION PERFORMANCE MEASUREMENTS AS REQUIRED BY THE FCC RULES 73.44 AND 73.1590  
 WERE TAKEN ON STATION KCRO, FREQUENCY 660 kHz, KW 1, OMNI / DA  
 ON 7-28-2020 BETWEEN 5pm AND 5:30pm LOCAL TIME.  
 MONITOR POINT LOCATION Apx. .2 mile SW of Tower.

## 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>-40.61</u>	<u>0</u>	<u>0</u>
10.2 KHz	<u>          </u>	<u>          </u>	<u>-25 dBc</u>
20 KHz	<u>          </u>	<u>          </u>	<u>-35 dBc</u>
30 KHz	<u>PASS All-OK See KCRO-1</u>	<u>          </u>	<u>-35 dBc</u>
40 KHz	<u>          </u>	<u>          </u>	<u>-45 dBc</u>
50 KHz	<u>          </u>	<u>          </u>	<u>-55 dBc</u>
60 KHz	<u>          </u>	<u>          </u>	<u>-65 dBc</u>
>75 kHz	<u>          </u>	<u>          </u>	<u>-73dBc</u>

☐ WITH MEDIUM NOTCH FILTER  
☒ WITH MEDIUM NOTCH FILTER

## HARMONIC MEASUREMENTS

	FREQ.	ABSOLUTE	NORMALIZED	FCC LIMIT
CARRIER	<u>660 kHz</u>	<u>-40.61</u>	<u>0</u>	<u>0</u>
SECOND	<u>1320</u>	<u>-111.83</u>	<u>(-71.22 Noise Floor)</u>	<u>-73</u>
THIRD	<u>1980</u>	<u>-117.96</u>	<u>-77.35</u>	<u>          </u>
FOURTH	<u>2460</u>	<u>-126.60</u>	<u>-85.99</u>	<u>          </u>
FIFTH	<u>3300</u>	<u>-125.29</u>	<u>-84.68</u>	<u>          </u>

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

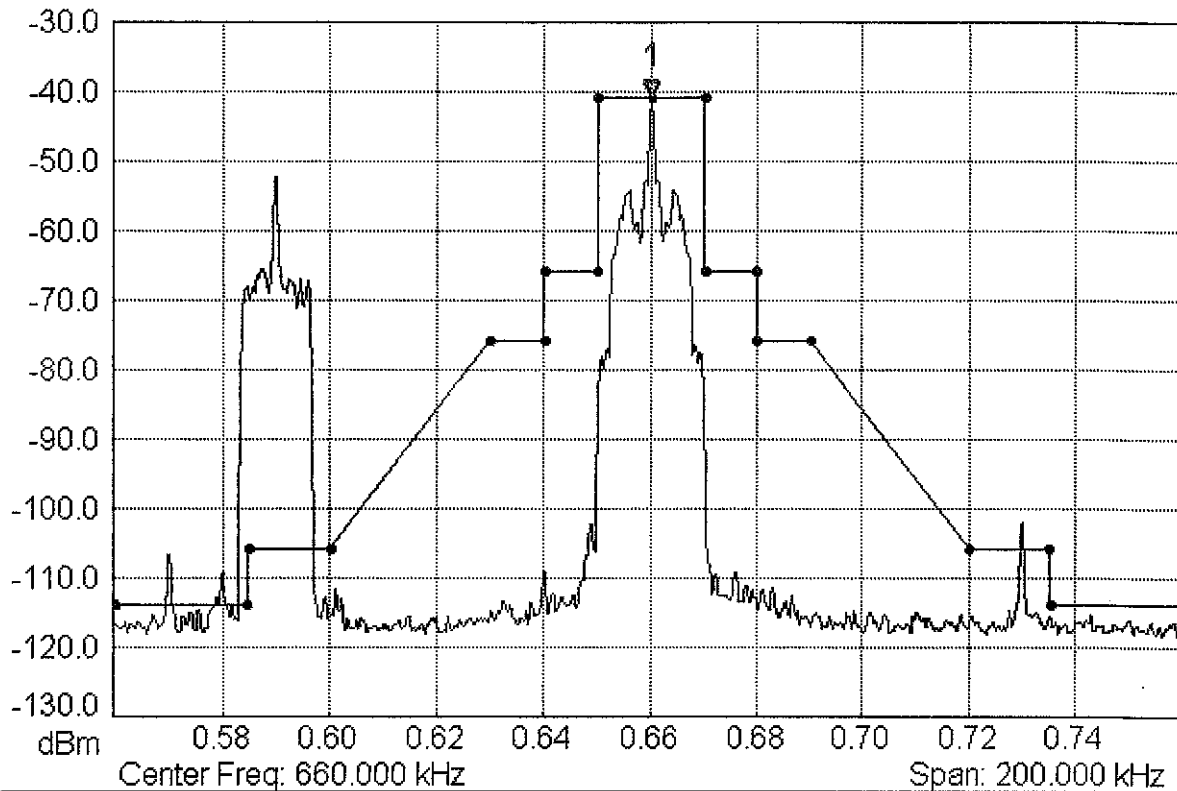
FREQUENCY MEASUREMENT -2 Hz SIGNATURE Val Lane DATE 7-28-20

PASS TEST OK / DID NOT PASS

# Spectrum Analyzer Data

## KCRO-1 (7/28/2020 5:14:21 PM)

Spectrum Analyzer



Mkr	Ref	Delta	Ref Freq	Ref Amp	Delta Freq	Delta Amp
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	660.000 0 kHz	-40.61 dBm	--	--
2	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
3	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
4	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
5	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
6	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--

### Trace A data:

Trace Mode = Max Hold

Preamp = 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

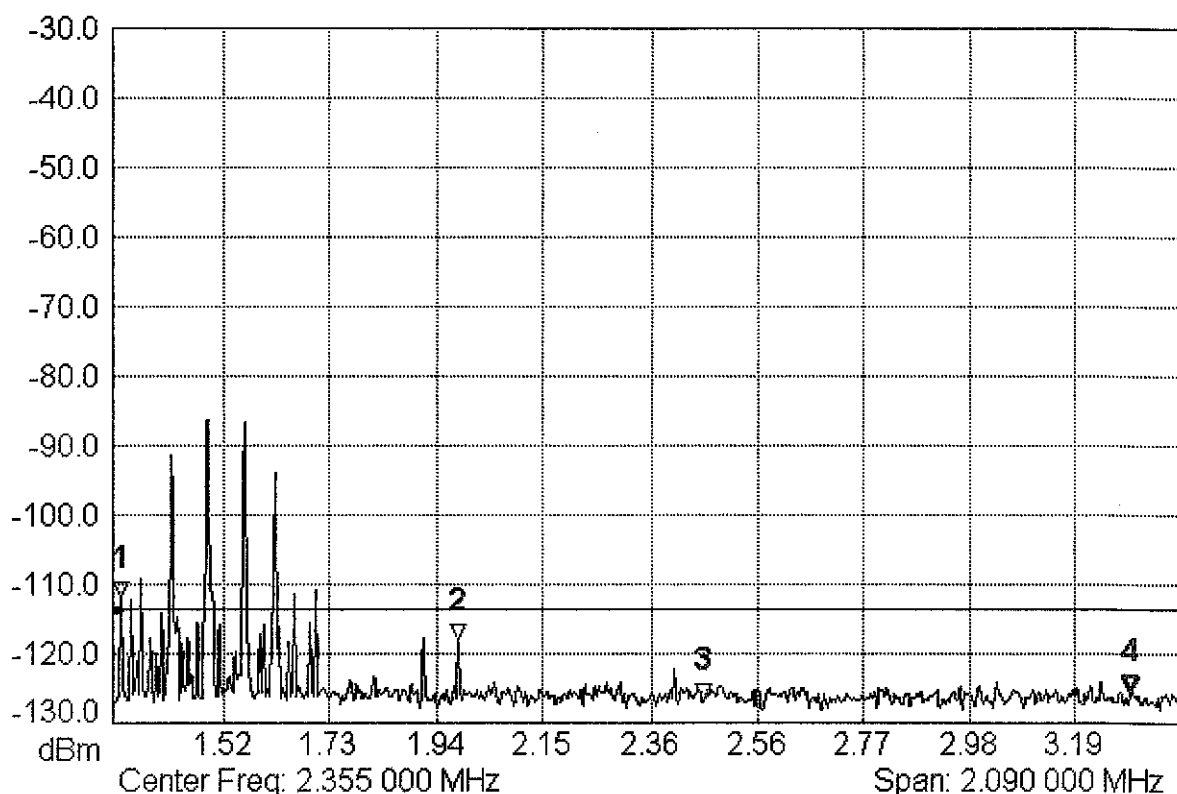
Date = 7/28/2020 5:14:21 PM

Device Name = VAL-MT8222A

# Spectrum Analyzer Data

## KCRO-2 (7/28/2020 5:19:25 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	-111.83 dBm	--	--
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.980 0 MHz	-117.96 dBm	--	--
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2.460 0 MHz	-126.60 dBm	--	--
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>3.300 0 MHz</b>	<b>-125.29 dBm</b>	--	--
5	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--
6	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--

### Trace A data:

Trace Mode = Max Hold

Preamp = OFF

Min Sweep Time = 0.001 S

Reference Level Offset = 0 dB

Input Attenuation = 0.0 dB

RBW = 100.0 Hz

VBW = 30.0 Hz

Detection = Peak

Center Frequency = 2.355 000 MHz

Start Frequency = 1.310 000 MHz

Stop Frequency = 3.400 000 MHz

Frequency Span = 2.090 000 MHz

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 = 7/28/2020 5:19:25 PM

Device Name = VAL-MT8222A