KNWT-FM

Facility ID: 172695

Broadcast Transmissions Bandwidth Specifications
FCC Rules Part 73.317

September 30, 2010

KNWT-FM EMISSIONS REPORT

This report is to show compliance with part 73.317 of the FCC Rules for Broadcast Transmissions Bandwidth Specifications. Myself, Richard Jones license PG-13-5961, took the following measurements on September 30, 2010. All readings were taken under my direct supervision and are true and accurate to the best of my knowledge.

An Anritsu 2721B S/N 0716214 swept-frequency RF spectrum analyzer using peak hold with no video filtering was used the tests. The signals were taken off air with a half wave dipole just West of the transmitter site. The harmonic measurements were taken from the same location with a highpass filter inline to filter out the main carrier frequency from the spectrum analyzer. This prevents mixing and overload of the analyzer.

Diagram #1 shows the span from 120 to 240 Khz.

Diagram #2 shows the span from 240 to 600 Khz.

Diagram #3 shows the bandwidth beyond 600 Khz.

Diagram #4 is the 2nd harmonic.

Diagram #5 is the 3rd harmonic.

All harmonic measurements were taken with a highpass filter in line to prevent mixing and harmonic generation within the analyzer.

The station is shown to be in compliance with the FCC rules.

All spectrum analyzer measurements were taken on September 30, 2010.

All measurements taken are true and correct to the best of my knowledge.

Richard G. Jones

Digitally signed by Richard G. Jones
DN: cn=Richard G. Jones, o=RJ Engineering, ou, email=rjeng@imt.net, c=US
Date: 2010.10.03 18:23:04 -06'00'

Richard G. Jones Date:
KNWT-FM

§73.317 FM transmission system requirements.

(a) FM broadcast stations employing transmitters authorized after January 1, 1960, must maintain the bandwidth occupied by their emissions in accordance with the specification detailed below. FM broadcast stations employing transmitters installed or type accepted before January 1, 1960, must achieve the highest degree of compliance with these specifications practicable with their existing equipment. In either case, should harmful interference to other authorized stations occur, the licensee shall correct the problem promptly or cease operation.

(b) Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the unmodulated carrier. Compliance with this requirement will be deemed to show the occupied bandwidth to be 240 kHz or less.

(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the unmodulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least 43 + 10 Log10 (Power, in watts) dB below the level of the unmodulated carrier, or 80 dB, whichever is the lesser attenuation.

(e) Preemphasis shall not be greater than the impedance-frequency characteristics of a series inductance resistance network having a time constant of 75 microseconds. (See upper curve of Figure 2 of §73.333.)

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FM Occupied Bandwidth Measurements

Station Call Letters KNWT-FM Frequency 89.1 Mhz Date 9-30-10
Transmitter Nautel 3.72kw Engineer Conducting Tests Richard Jones
Test Equipment Anritsu 2721B Analyzer, Highpass filter and dipole antenna

Notes Measurements were taken off air just West of the transmitter site using a dipole antenna.

Measurements

Carrier Frequency: 89.1000 Mhz Carrier Level -15 dBm

Frequency	Limit	Measured Level
120 to 240 KHz	-25 DB	-34.0 dBm
240 to 600 KHz	-35 DB	-75.0 dBm
Greater than 600 KHz	See Chart	-85.0 dBm

Harmonics

Harmonic Frequency			Measured Level		Harmonic Frequency			Measured Level	
2nd	178.2	Mhz	-90.0	dBm	7th	623.7	Mhz	-90.0	dBm
3rd	267.3	Mhz	-90.0	dBm	8th	712.8	Mhz	-90.0	dBm
4th	356.4	Mhz	-90.0	dBm	9th	801.9	Mhz	-90.0	dBm
5th	445.5	Mhz	-90.0	dBm	10th	891.0	Mhz	-90.0	dBm
6th	534.6	Mhz	-90.0	dBm					

Spurious and Harmonic Levels

Spurious and harmonic radiation beyond 600 KHz from carrier must be suppressed below the limits listed below. 1 – 10 watt translators are allowed –60 DB. Formula = Power in watts Log X 10 + 43 = DB

250 Watts = -66.9 DB
500 Watts = -70.0 DB
1000 Watts = -73.0 DB
1500 Watts = -74.7 DB
2500 Watts = -77.0 DB
3500 Watts = -78.4 DB
5000 Watts = -80.0 DB

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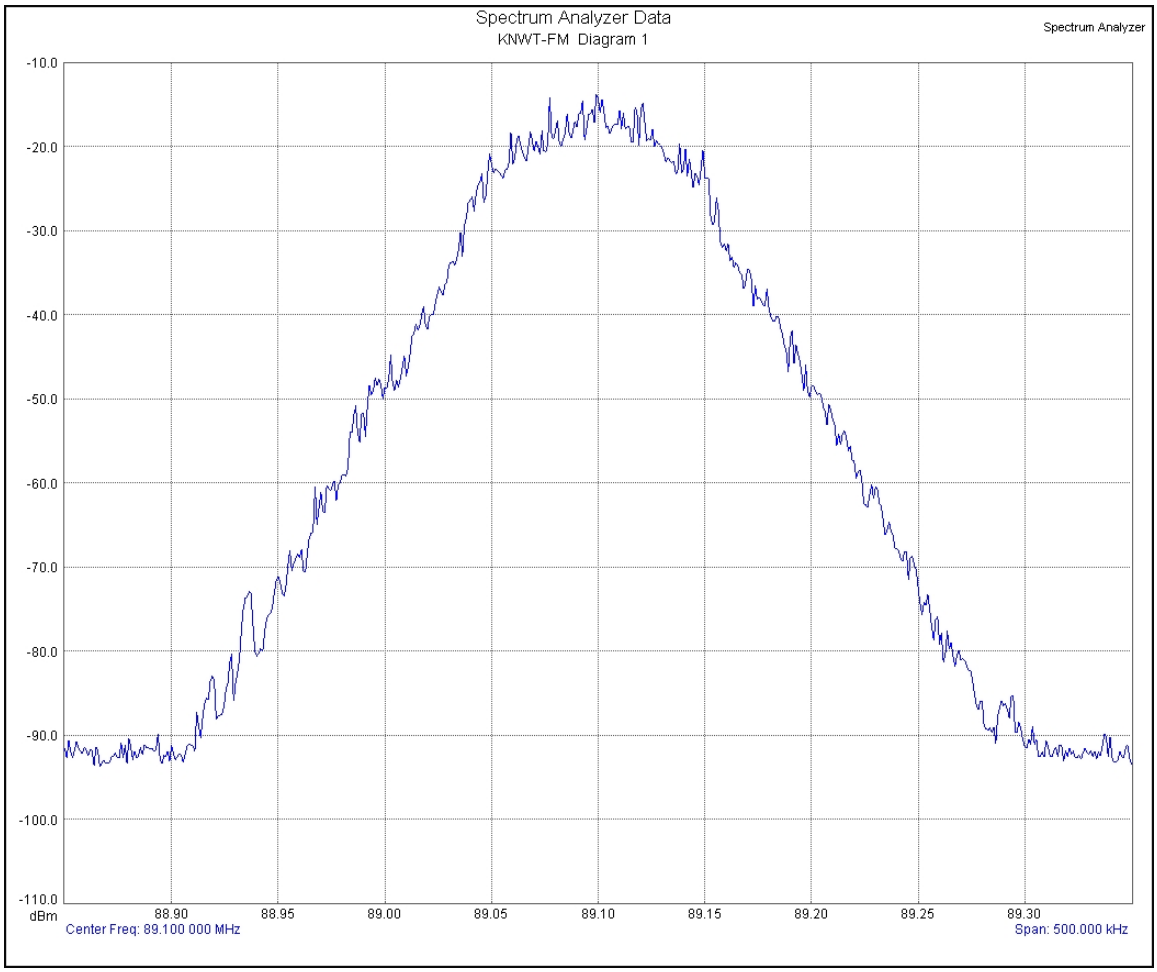

Measurement Summary			
Trace A data		Center Frequency	89.100 000 MHz
.	.	Start Frequency	88.850 000 MHz
.	.	Stop Frequency	89.350 000 MHz
Trace Mode	Max Hold	Frequency Span	500.000 000 kHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0.0 dB	.	.
Input Attenuation	10.0 dB	GPS Longitude	W 109 9 17
RBW	1.0 kHz	GPS Latitude	N 44 29 47
VBW	1.0 kHz	GPS Fix Time	09 30 2010 18 00 05

Device Summary			
Serial Number	716214	Model	MS2721B
Base Ver.	V3.46	Options	9, 19, 20, 25, 31
App Ver.	V4.42	Date	9/30/2010 11=58=34 AM

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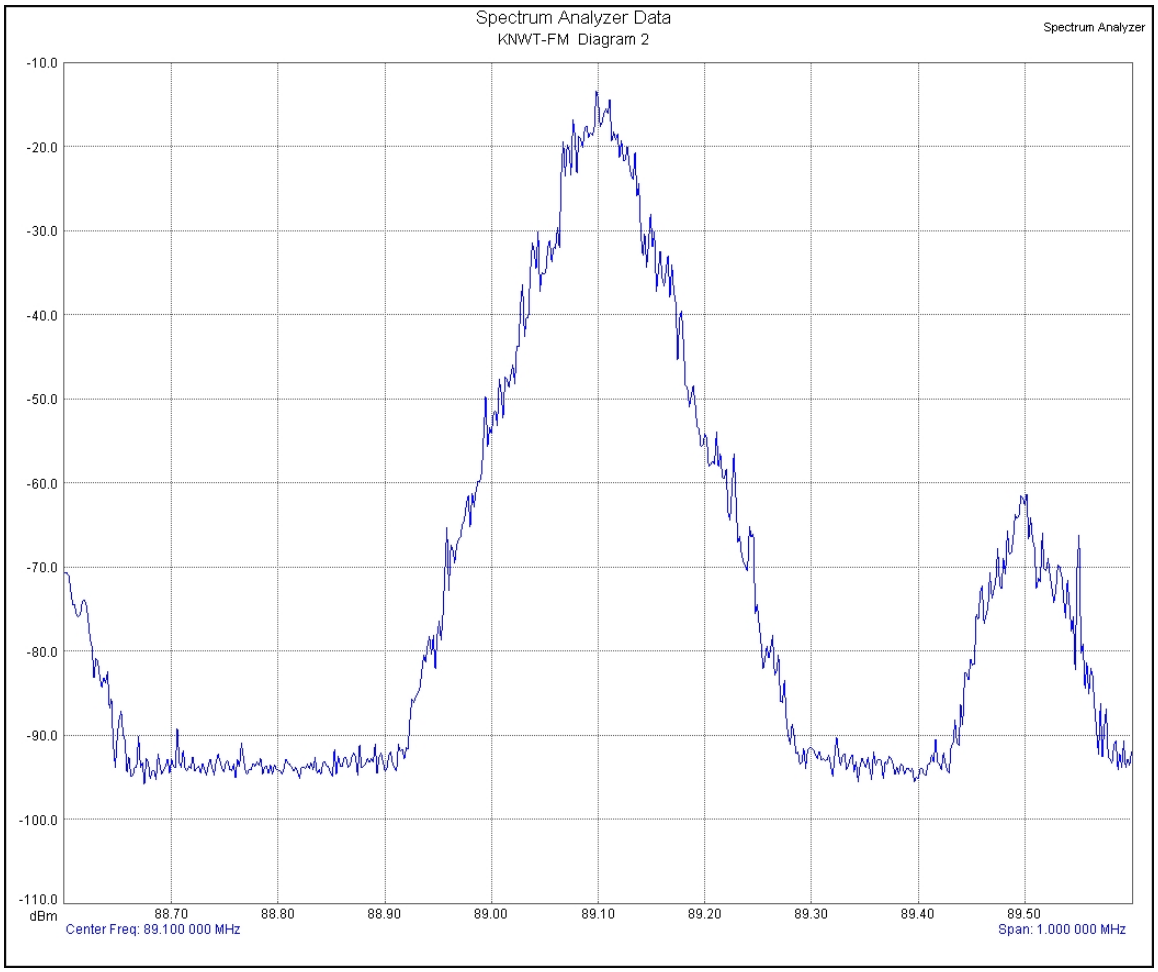

Measurement Summary			
Trace A data		Center Frequency	89.100 000 MHz
.	.	Start Frequency	88.600 000 MHz
.	.	Stop Frequency	89.600 000 MHz
Trace Mode	Max Hold	Frequency Span	1.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0.0 dB	.	.
Input Attenuation	10.0 dB	GPS Longitude	W 109 9 17
RBW	1.0 kHz	GPS Latitude	N 44 29 47
VBW	1.0 kHz	GPS Fix Time	09 30 2010 18 02 10

Device Summary			
Serial Number	716214	Model	MS2721B
Base Ver.	V3.46	Options	9, 19, 20, 25, 31
App Ver.	V4.42	Date	9/30/2010 12=00=37 PM

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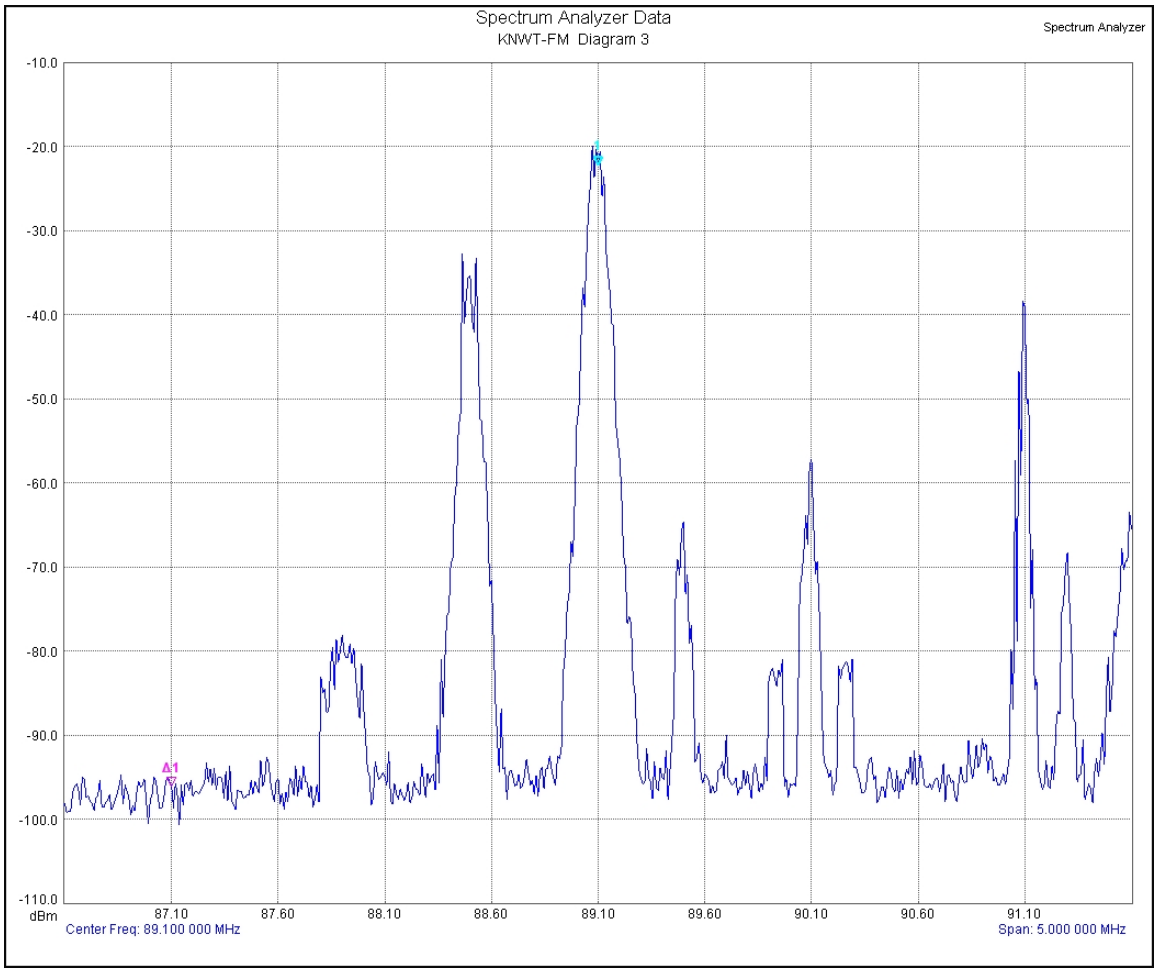
Date: Date: 9/30/2010 12:02:02 PM



Measurement Summary			
Trace A data		Center Frequency	89.100 000 MHz
.	.	Start Frequency	86.600 000 MHz
.	.	Stop Frequency	91.600 000 MHz
Trace Mode	Max Hold	Frequency Span	5.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0.0 dB	.	.
Input Attenuation	10.0 dB	GPS Longitude	W 109 9 17
RBW	1.0 kHz	GPS Latitude	N 44 29 47
VBW	1.0 kHz	GPS Fix Time	09 30 2010 18 03 35

Device Summary			
Serial Number	716214	Model	MS2721B
Base Ver.	V3.46	Options	9, 19, 20, 25, 31
App Ver.	V4.42	Date	9/30/2010 12=02=02 PM

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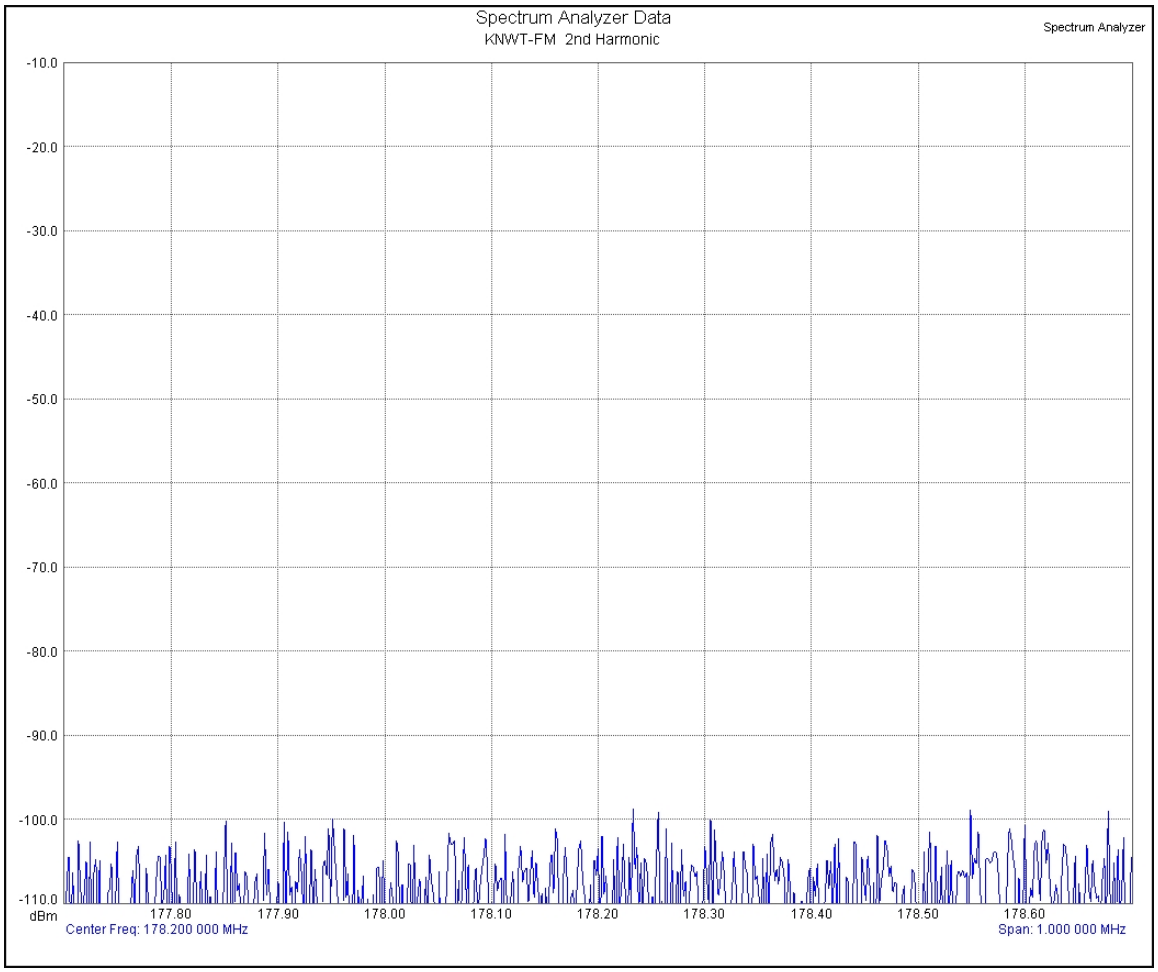

Measurement Summary			
Trace A data		Center Frequency	178.200 000 MHz
.	.	Start Frequency	177.700 000 MHz
.	.	Stop Frequency	178.700 000 MHz
Trace Mode	Normal	Frequency Span	1.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0.0 dB	.	.
Input Attenuation	10.0 dB	GPS Longitude	W 109 9 17
RBW	1.0 kHz	GPS Latitude	N 44 29 47
VBW	1.0 kHz	GPS Fix Time	09 30 2010 18 04 25

Device Summary			
Serial Number	716214	Model	MS2721B
Base Ver.	V3.46	Options	9, 19, 20, 25, 31
App Ver.	V4.42	Date	9/30/2010 12=02=55 PM

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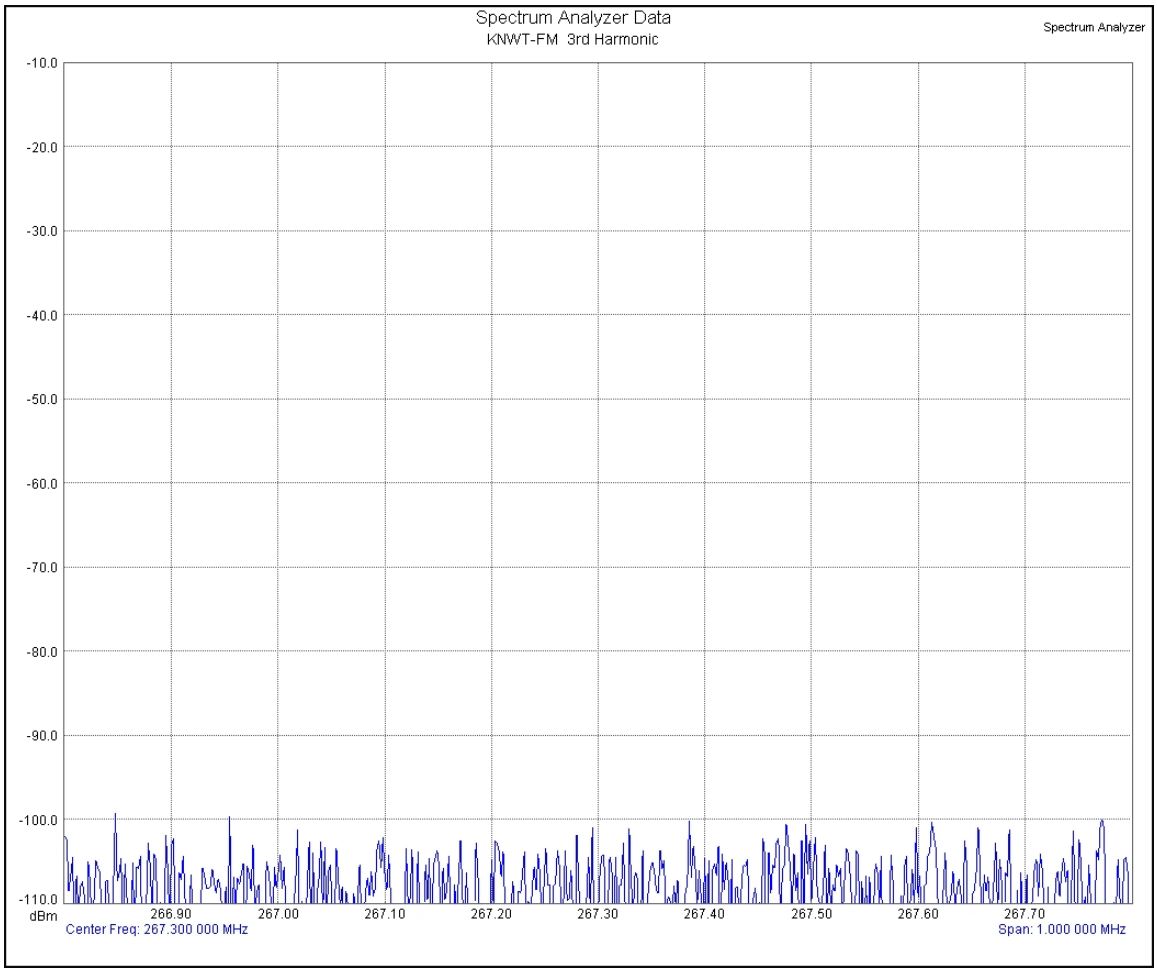

Measurement Summary			
Trace A data		Center Frequency	267.300 000 MHz
.	.	Start Frequency	266.800 000 MHz
.	.	Stop Frequency	267.800 000 MHz
Trace Mode	Normal	Frequency Span	1.000 000 MHz
Preamp	OFF	Reference Level	-10.000 dBm
Min Sweep Time	0.001 S	Scale	10.0 dB/div
Reference Level Offset	0.0 dB	.	.
Input Attenuation	10.0 dB	GPS Longitude	W 109 9 17
RBW	1.0 kHz	GPS Latitude	N 44 29 47
VBW	1.0 kHz	GPS Fix Time	09 30 2010 18 04 45

Device Summary			
Serial Number	716214	Model	MS2721B
Base Ver.	V3.46	Options	9, 19, 20, 25, 31
App Ver.	V4.42	Date	9/30/2010 12=03=14 PM