

KTPT-FM1

Broadcast Transmissions Bandwidth Specifications
FCC Rules Part 73.317

April 28, 2008

KTPT-FM1 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 April 28, 2008. All readings were taken under my direct supervision and are true and accurate to the best of my knowledge.

An Anritsu 2721B swept-frequency RF spectrum analyzer using a peak hold duration of at least 10 minutes, with no video filtering, was used for most of the tests. The measurements were taken from a sample port just after the final amplifier stage. The harmonic measurements were taken from a sample port after the three station combiner and a high pass filter as used 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 response of the notch filter used at the carrier frequency to prevent overload and increase the dynamic range of the analyzer.

Diagram #4 shows the bandwidth beyond 600 Khz.

Diagram #5 is the 2nd harmonic.

Diagram #6 is the 3rd harmonic.

All harmonic measurements were taken with a high pass filter to prevent mixing and harmonic generation within the analyzer.

The station shows to be in compliance with the FCC rules.

All spectrum analyzer measurements were taken on April 28, 2008

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

Richard G. Jones
KTPT-FM1

Date:

§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 $43 + 10 \log_{10}(\text{Power, in watts})$ 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.)

FM Occupied Bandwidth Measurements

Station Call Letters _____ Frequency _____ Date _____
Transmitter _____ Engineer Conducting Tests _____
Test Equipment _____

Notes _____

Measurements

Carrier Frequency: _____ Carrier Level _____

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

Harmonics

Harmonic Frequency	Measured Level	Harmonic Frequency	Measured Level
2 nd		7 th	
3 rd		8 th	
4 th		9 th	
5 th		10 th	
6 th			

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

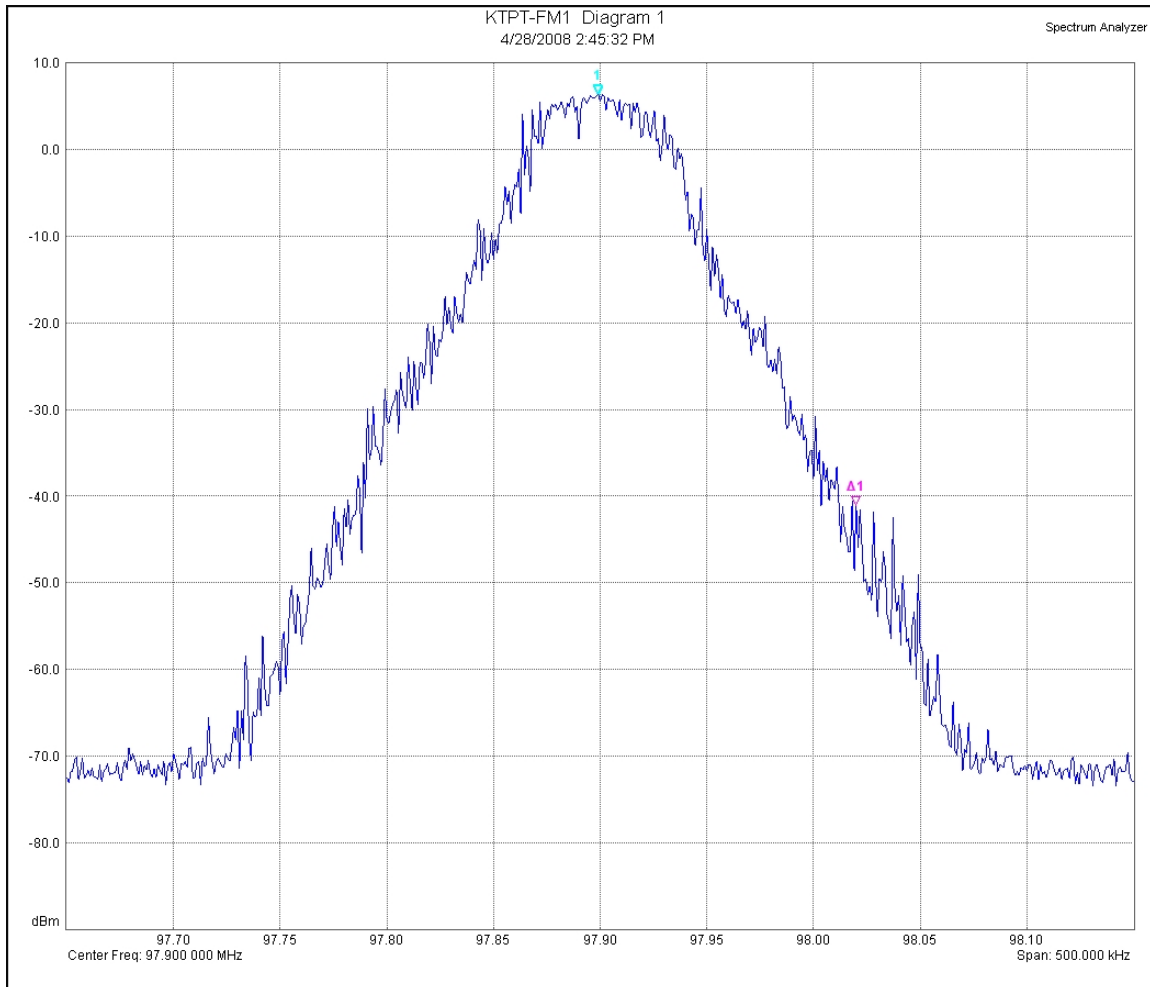
2500 Watts = -77.0 DB
3500 Watts = -78.4 DB
5000 Watts = -80.0 DB

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RJ Engineering

Prepared for: BETHESDA CHRISTIAN BROADCASTING

Date: 4/28/2008 2:45:32 PM



Measurement Summary			
Trace Mode	Max Hold	Center Frequency	97.900 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	97.650 000 MHz
Input Attenuation	20.0 dB	Stop Frequency	98.150 000 MHz
RBW	3.0 kHz	Frequency Span	500.000 000 kHz
VBW	100.0 kHz	Reference Level	10.000 dBm
Detection	Sample	Scale	10.0 dB/div

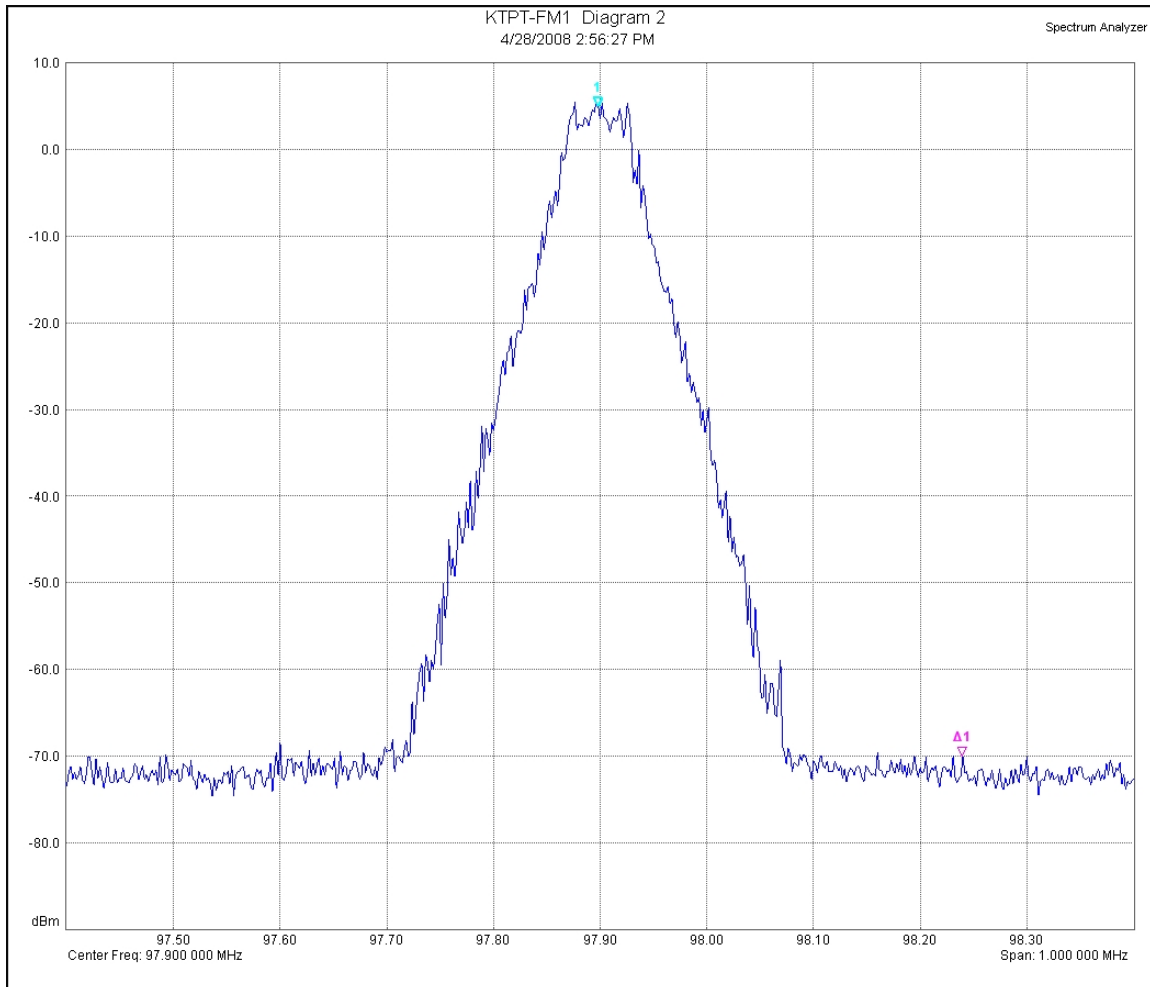
Device Summary			
Serial Number	716214	App Ver.	V1.89
Base Ver.	V1.88	Date	4/28/2008 2=45=32 PM

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Date: 4/28/2008 2:56:27 PM



Measurement Summary

Trace Mode	Max Hold	Center Frequency	97.900 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	97.400 000 MHz
Input Attenuation	20.0 dB	Stop Frequency	98.400 000 MHz
RBW	3.0 kHz	Frequency Span	1.000 000 MHz
VBW	100.0 kHz	Reference Level	10.000 dBm
Detection	Sample	Scale	10.0 dB/div

Device Summary

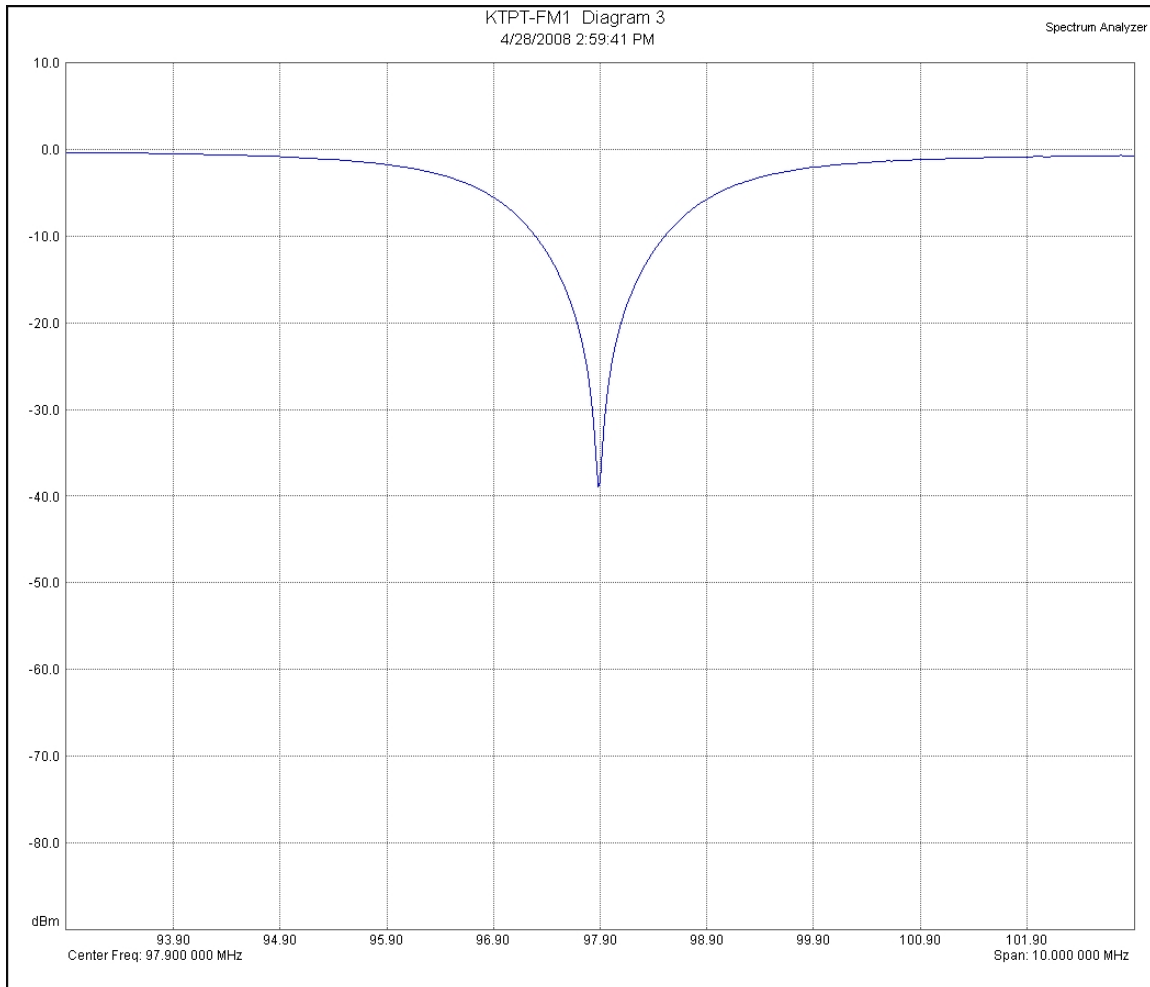
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Base Ver.	V1.88	Date	4/28/2008 2:56:27 PM

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Date: 4/28/2008 2:59:41 PM



Measurement Summary			
Trace Mode	Normal	Center Frequency	97.900 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	92.900 000 MHz
Input Attenuation	20.0 dB	Stop Frequency	102.900 000 MHz
RBW	3.0 kHz	Frequency Span	10.000 000 MHz
VBW	100.0 kHz	Reference Level	10.000 dBm
Detection	Sample	Scale	10.0 dB/div

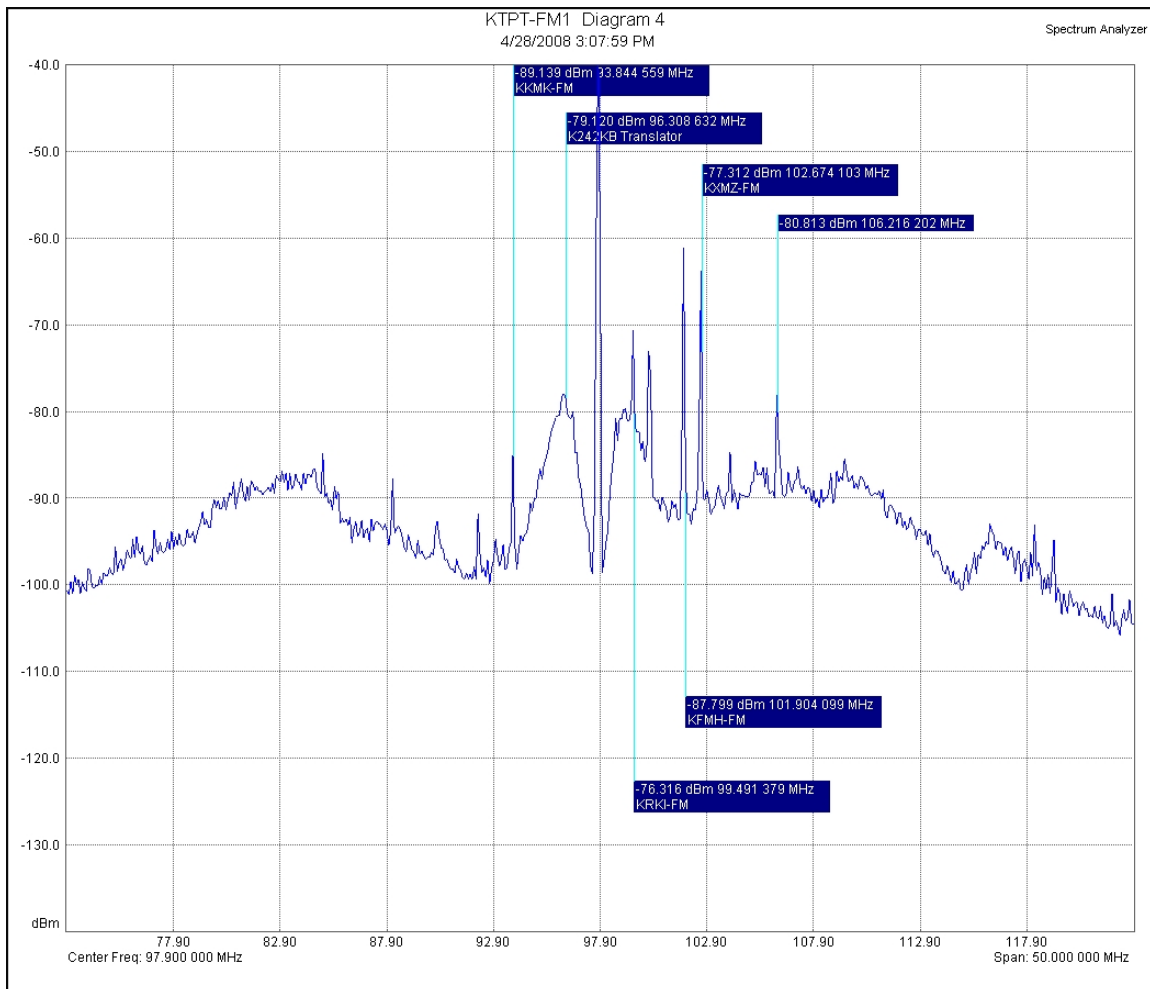
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Serial Number	716214	App Ver.	V1.89
Base Ver.	V1.88	Date	4/28/2008 2=59=41 PM

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Date: 4/28/2008 3:07:59 PM



Measurement Summary

Trace Mode	Max Hold	Center Frequency	97.900 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	72.900 000 MHz
Input Attenuation	0.0 dB	Stop Frequency	122.900 000 MHz
RBW	3.0 kHz	Frequency Span	50.000 000 MHz
VBW	100.0 kHz	Reference Level	-40.000 dBm
Detection	Sample	Scale	10.0 dB/div

Device Summary

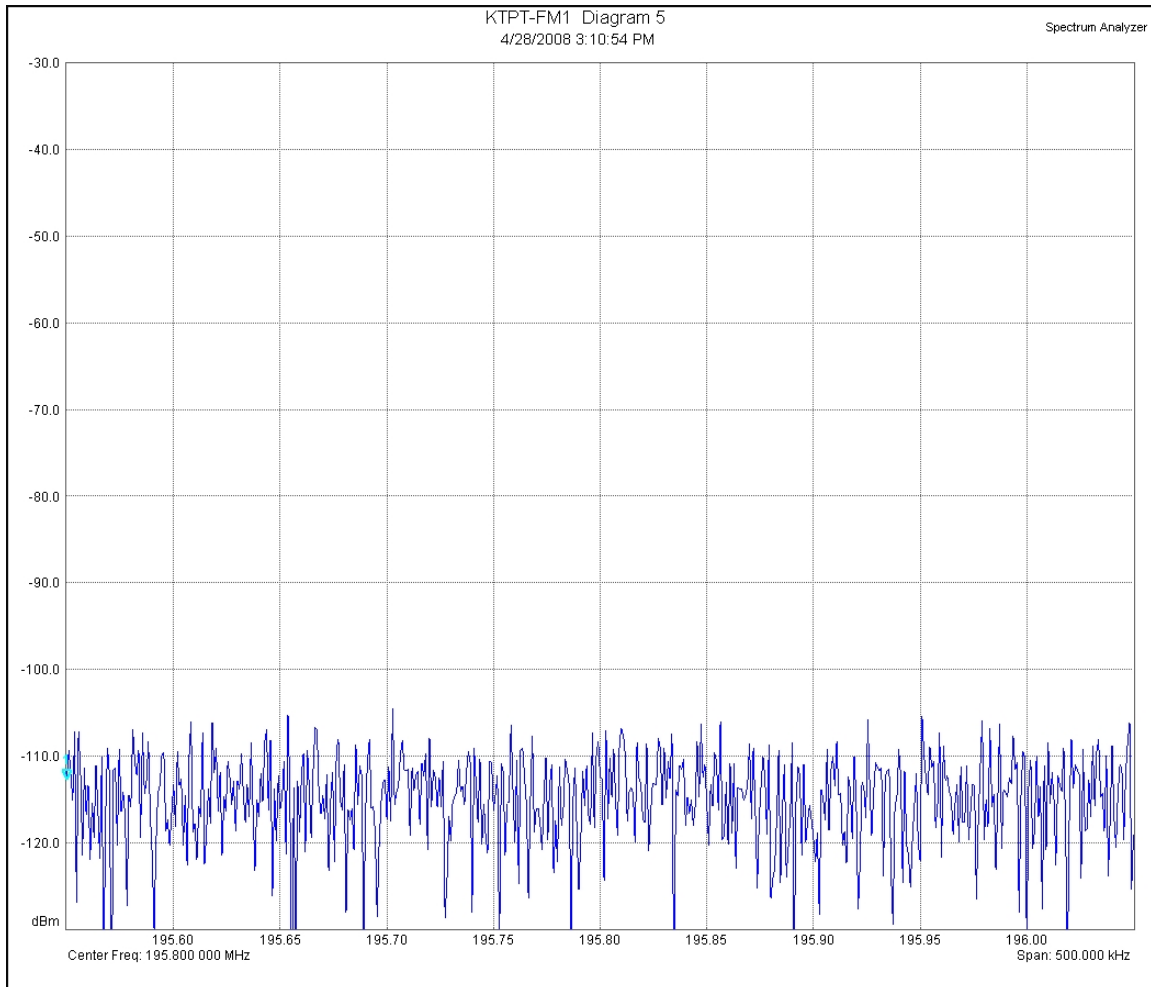
Serial Number	716214	App Ver.	V1.89
Base Ver.	V1.88	Date	4/28/2008 3=07=59 PM

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Date: 4/28/2008 3:10:54 PM



Measurement Summary			
Trace Mode	Normal	Center Frequency	195.800 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	195.550 000 MHz
Input Attenuation	0.0 dB	Stop Frequency	196.050 000 MHz
RBW	3.0 kHz	Frequency Span	500.000 000 kHz
VBW	100.0 kHz	Reference Level	-30.000 dBm
Detection	Sample	Scale	10.0 dB/div

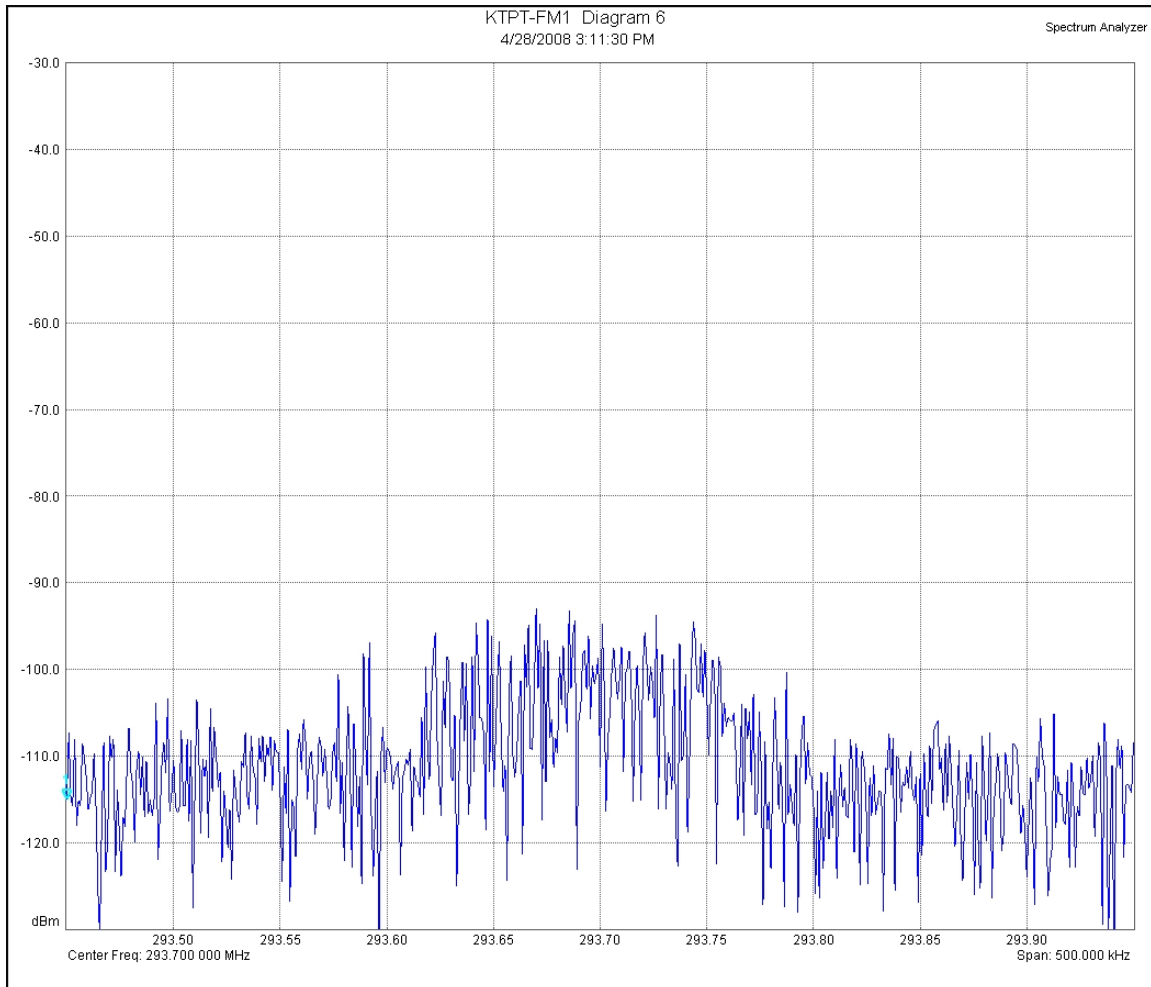
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Serial Number	716214	App Ver.	V1.89
Base Ver.	V1.88	Date	4/28/2008 3=10=54 PM

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Date: 4/28/2008 3:11:30 PM



Measurement Summary			
Trace Mode	Normal	Center Frequency	293.700 000 MHz
Reference Level Offset	0.0 dB	Start Frequency	293.450 000 MHz
Input Attenuation	0.0 dB	Stop Frequency	293.950 000 MHz
RBW	3.0 kHz	Frequency Span	500.000 000 kHz
VBW	100.0 kHz	Reference Level	-30.000 dBm
Detection	Sample	Scale	10.0 dB/div

Device Summary			
Serial Number	716214	App Ver.	V1.89
Base Ver.	V1.88	Date	4/28/2008 3:11:30 PM