

# KFMS-FM3 97.5 (FM) SPURIOUS EMISSIONS REPORT

Provo, Utah

On the Afternoon of September 3<sup>rd</sup>, 2005 equipment performance measurements were made for broadcast station KFMS-FM3 permit file number: BNPFTB-20050310ABV

This Engineering evaluation report and RF proof of performance measurements were prepared in support of the operation of the specified transmitting system herein as to comply with 47 CFR § Section 73.317 (b) through 73.317 (d).

KFMS-FM3 (97.5 MHz) is one of four stations sharing a master antenna system at the Spirit Hill Communications site located in the Provo, Utah. The outputs of the four stations are combined using a constant impedance combining system Model RCCC-.8 designed and fabricated by Jampro Antennas Inc. located in Sacramento, California

Measurements were made while all stations broadcast programming material. All stations were operating into the combined antenna system at the full permitted power during measurements.

47 CFR § 73.317 (b) & (c) requires that all signals between 120 and 240 kHz removed from the carrier be attenuated below the level of the carrier by at least 25 dB; that all signals between 240 kHz and 600 kHz removed from the carrier be attenuated by at least 35 dB below the level of the carrier; and that all signals greater than 600 kHz removed from the carrier be attenuated by at least 80 dB below the level of the carrier.

In the case of the KFMS-FM3 transmission system, the measurement equipment was feed by a directional coupler at the combined output. Measurements were made on the station's carrier frequency for reference purposes and to look at occupied bandwidth for any spurious emissions. The calibration of the IFR AN940 Serial Number 1009 spectrum analyzer was used to make all measurements. The assigned carrier frequency level was recorded at -81 dBC. All other harmonic intermodulation product or spurious emission levels were referenced to this initial carrier frequency reference level. The radio spectrum from 50 MHz up to the stations 10<sup>th</sup> carrier frequency harmonic was tuned to look for any unusual emissions.

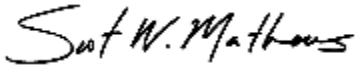
The intermodulation products measured in this report were calculated as the common 2 X A – B = intermodulation product. As in the case herein the carrier frequency of the station under test was multiplied times 2 and then the carrier frequency of the each of the combined individual stations was subtracted one at a time from the 2X sum to find the common intermodulation product.

The input amplifiers of the spectrum analyzer were protected from overload by using a calibrated set of tunable band-pass filters that cover the radio spectrum from 50 mHz to 1.4 GHz. This practice prevents level compression and false readings from occurring by keeping the input amplifiers of the spectrum analyzer in their linear range of operation. This measurement setup is common to Good Engineering Standards and Practice.

No unusual spurious emissions, carrier frequency harmonics or intermodulation productes were noted on the main transmission system for station KFMS-FM3 (FM). The system noise floor was approximately -81dBC.

My services have been retained by 3 Point Media – Franklin, LLC; construction permit holder of KFMS-FM6 to ascertain their compliance with 47 CFR § 73.1590 (a) & (b) and 47 CFR § 73.317 (b-d). This report and associated exhibits were prepared by me, and are based on measurements made by me. To the best of my knowledge all statements made herein are true and reflect the actual facts of the matter. I am a broadcast engineer of 12 years experience and my qualifications are a matter of record with the commission.

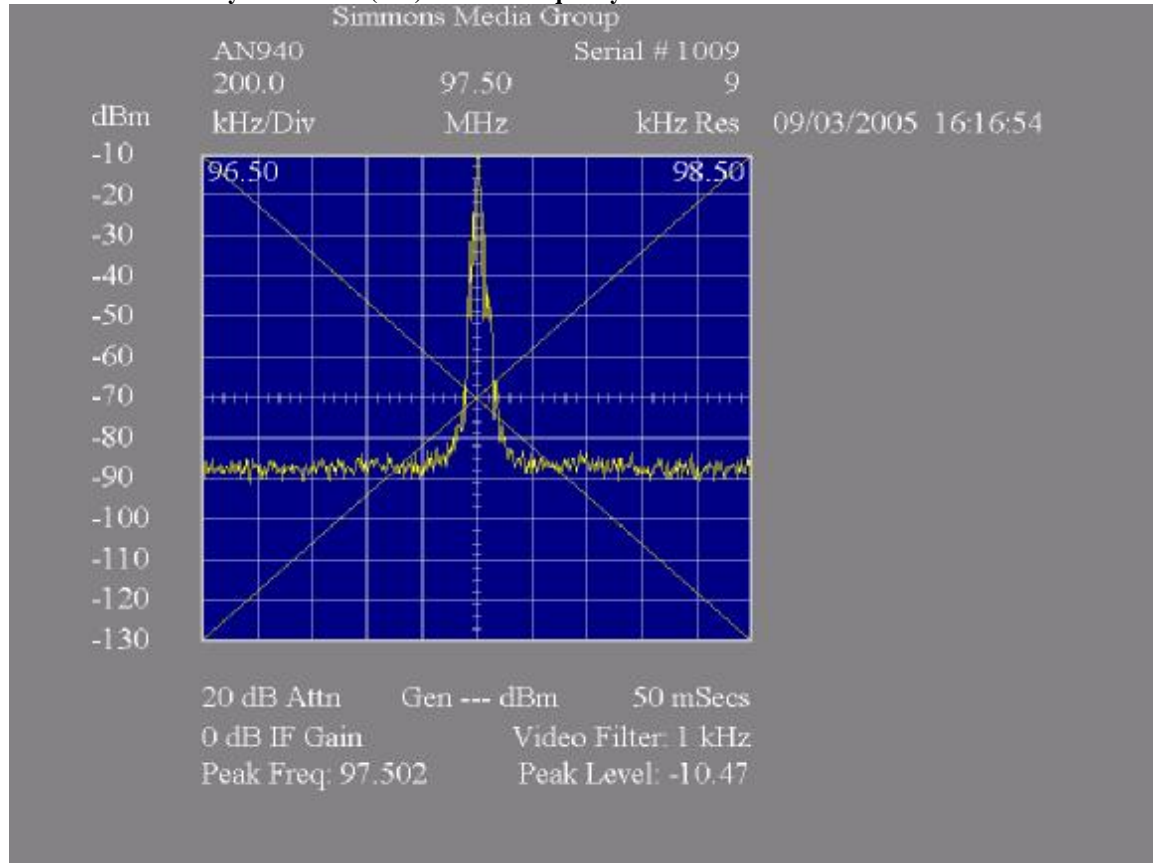
Respectfully submitted this day 5<sup>th</sup> day of September, 2005

A handwritten signature in black ink that reads "Scot W. Mathews". The signature is written in a cursive, flowing style.

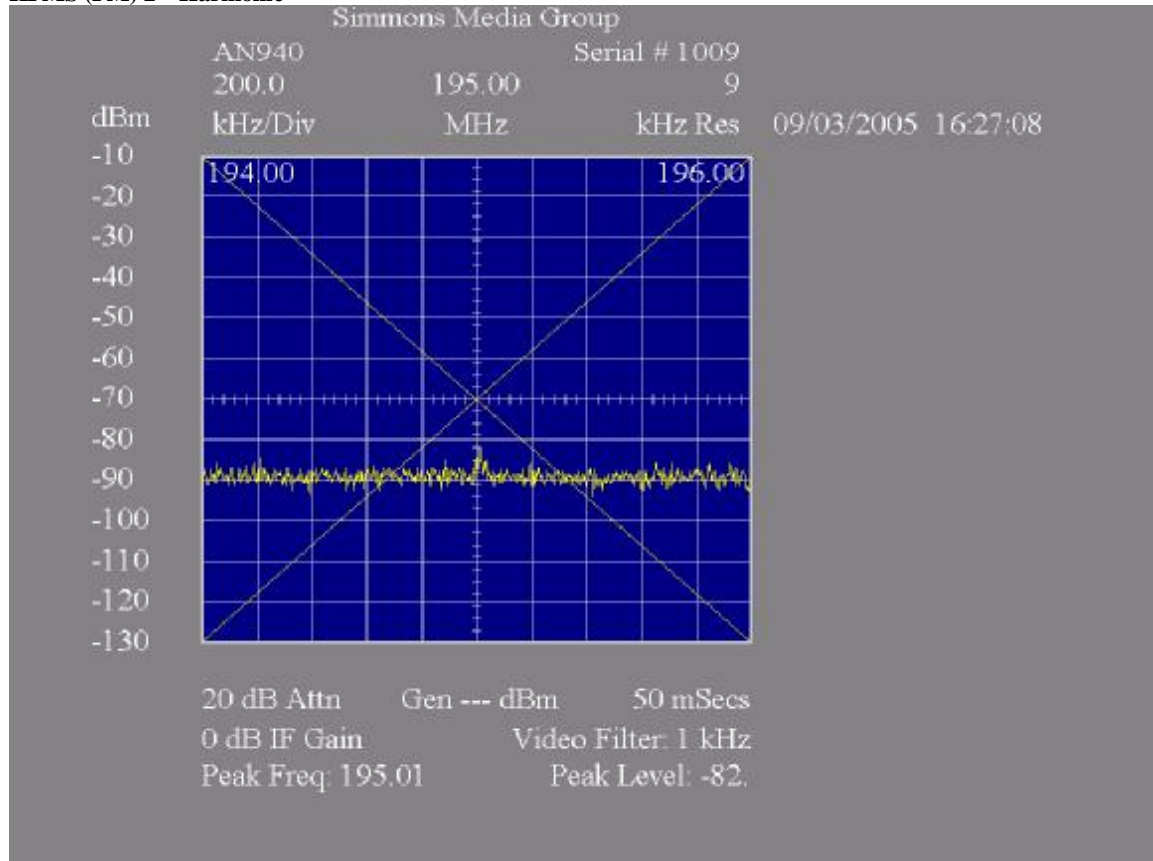
Scot W. Mathews

Contract Engineer/Simmons Media Group

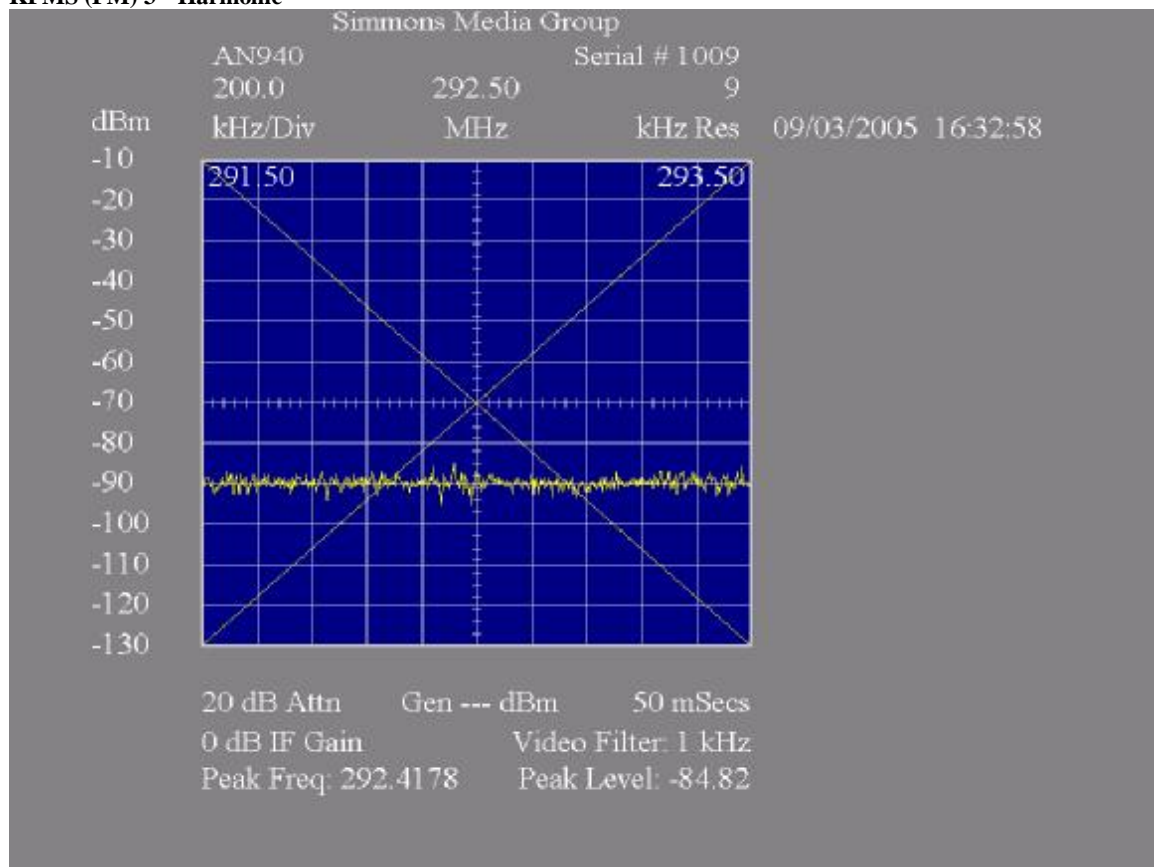
### Main Transmission System KFMS (FM) Carrier Frequency



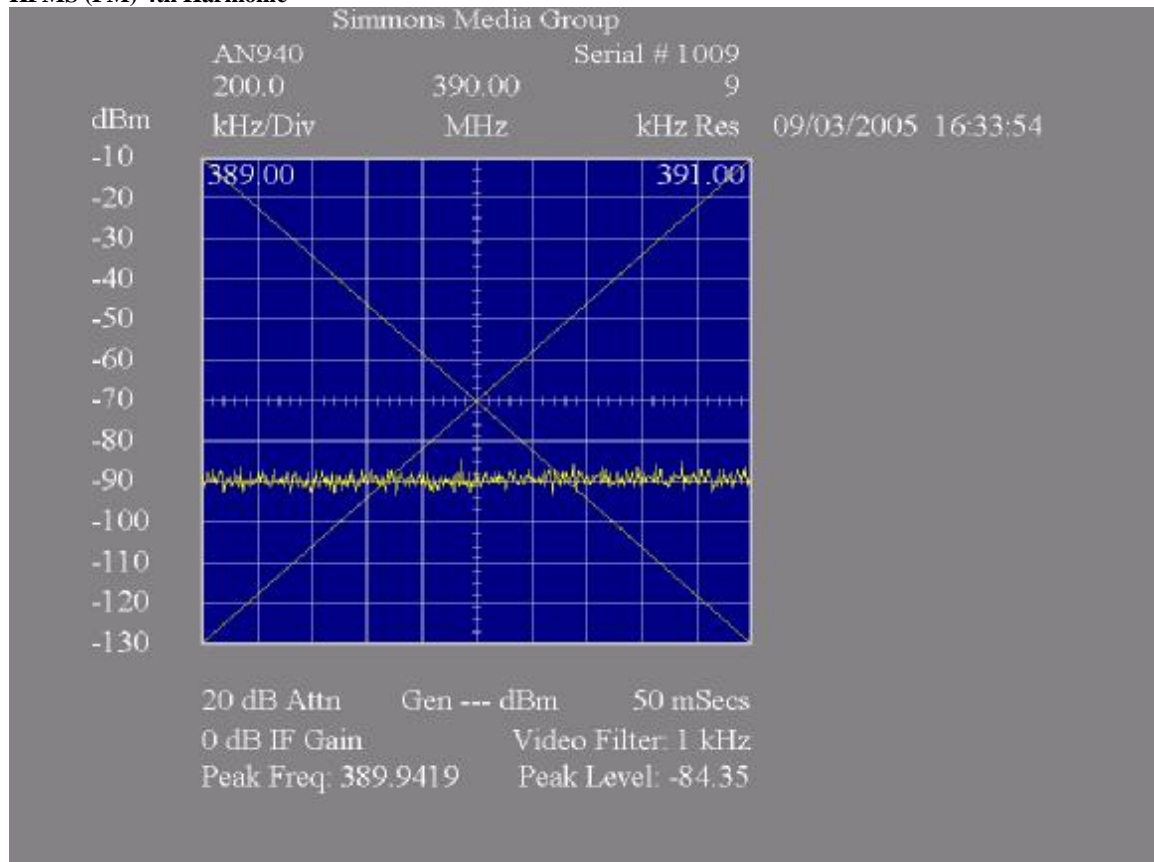
### KFMS (FM) 2<sup>nd</sup> Harmonic



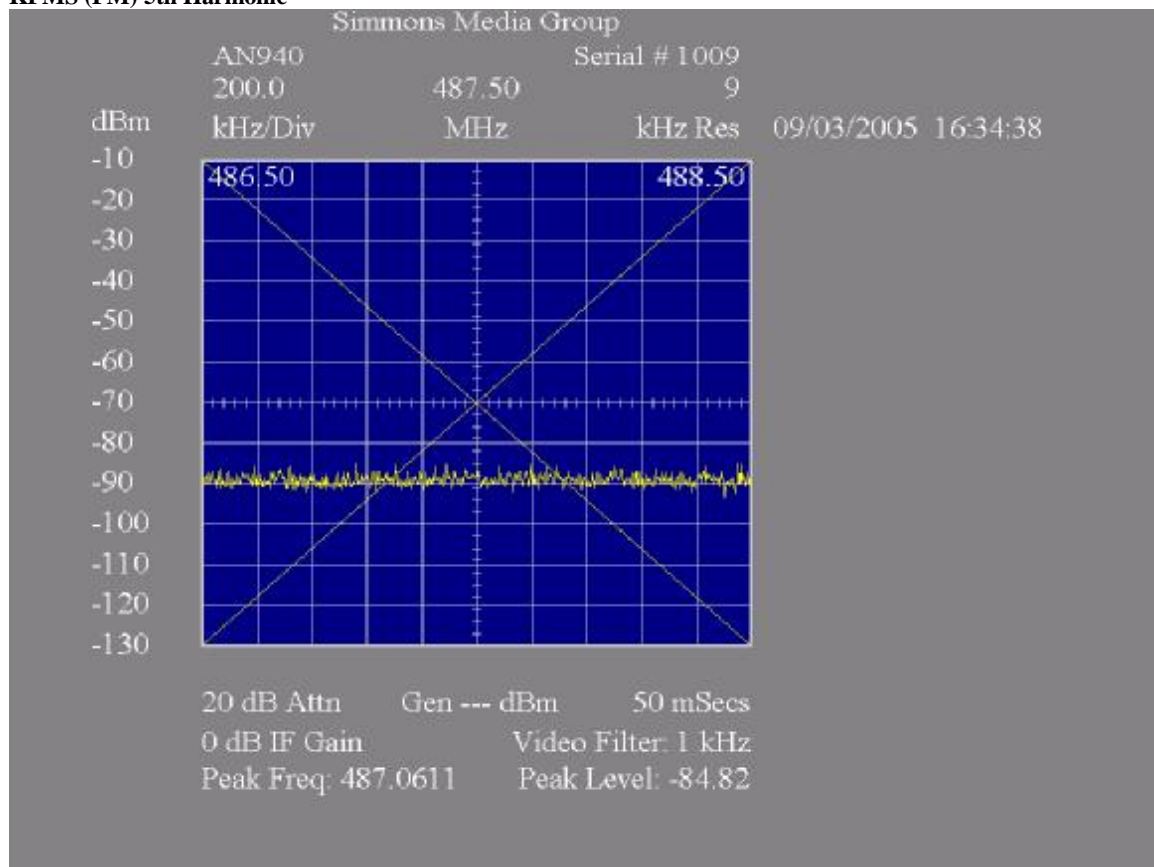
### KFMS (FM) 3<sup>rd</sup> Harmonic



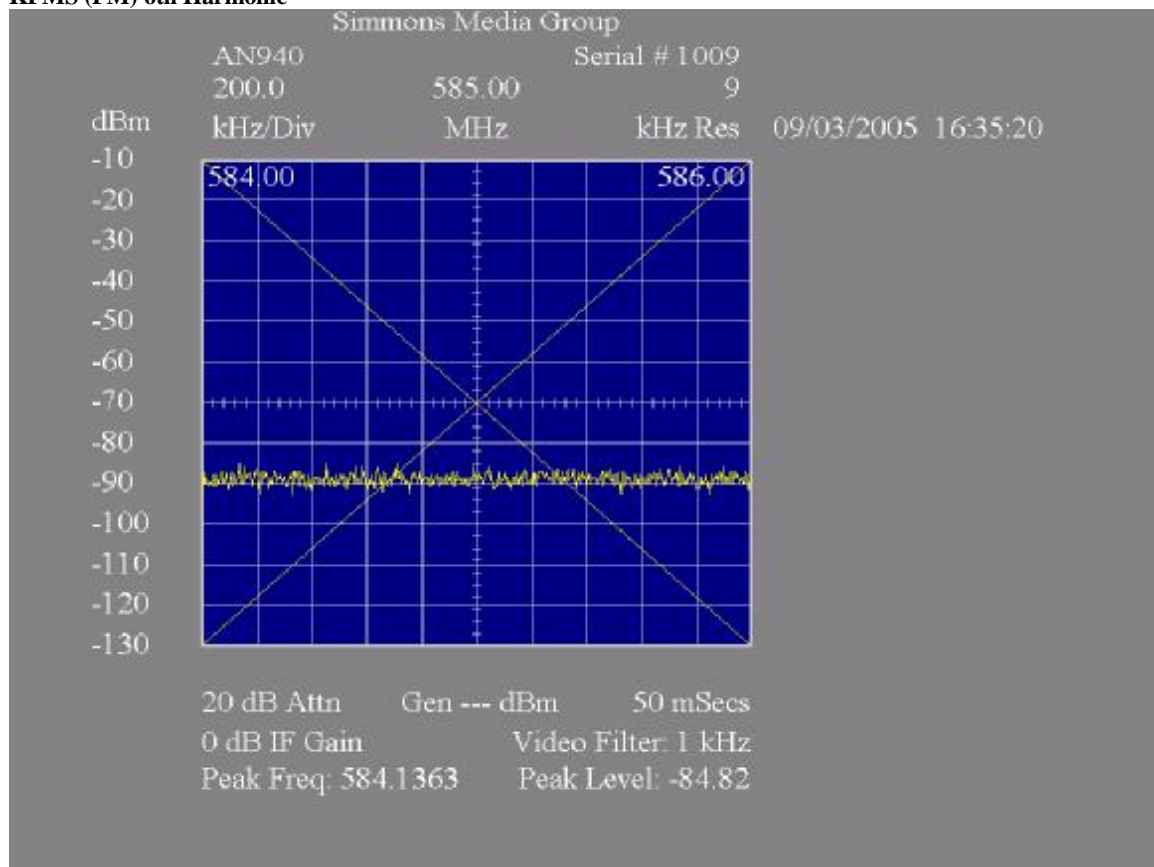
### KFMS (FM) 4th Harmonic



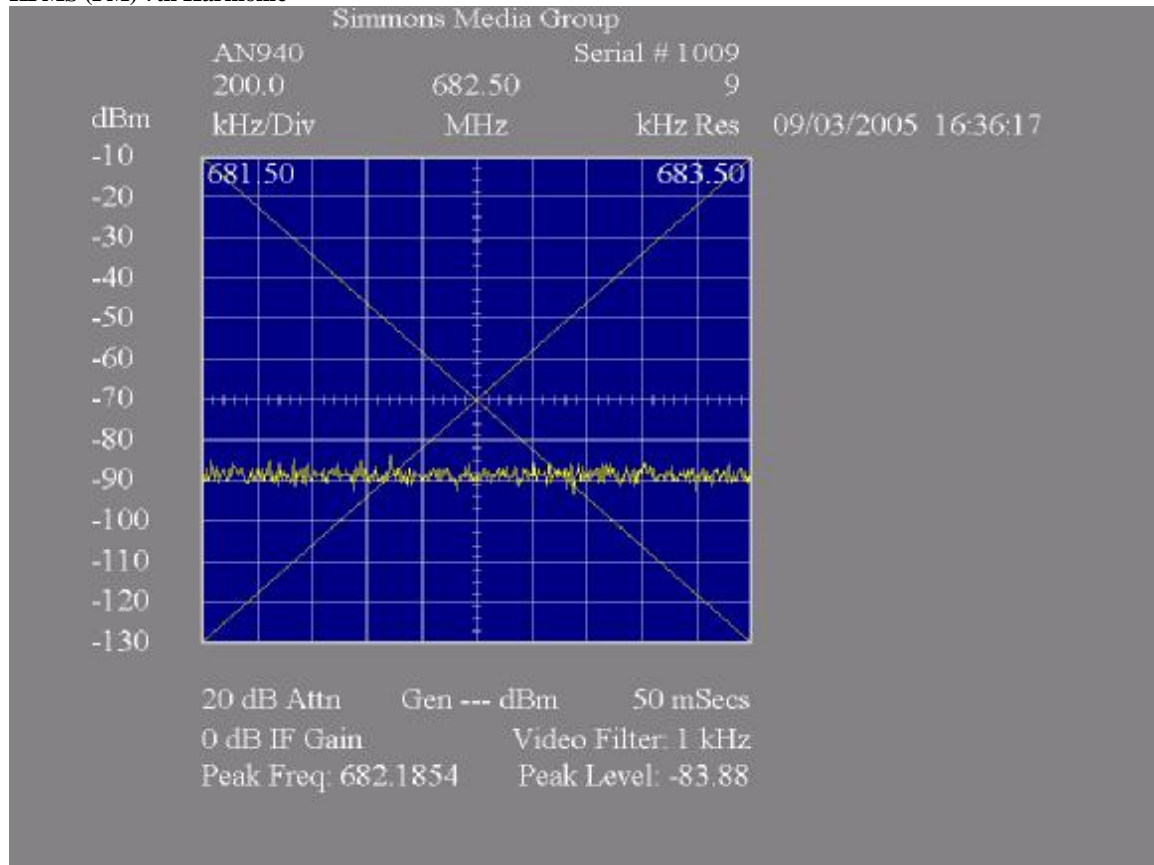
# KFMS (FM) 5th Harmonic



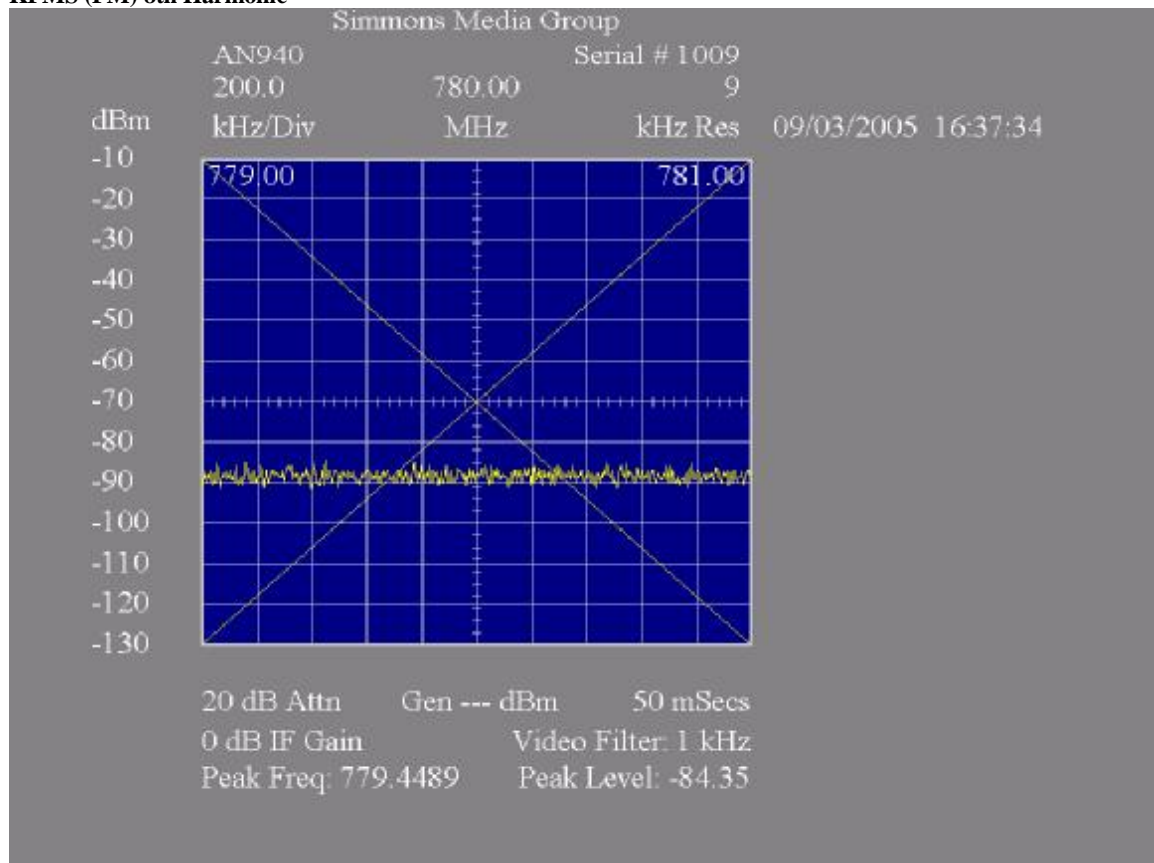
# KFMS (FM) 6th Harmonic



# KFMS (FM) 7th Harmonic

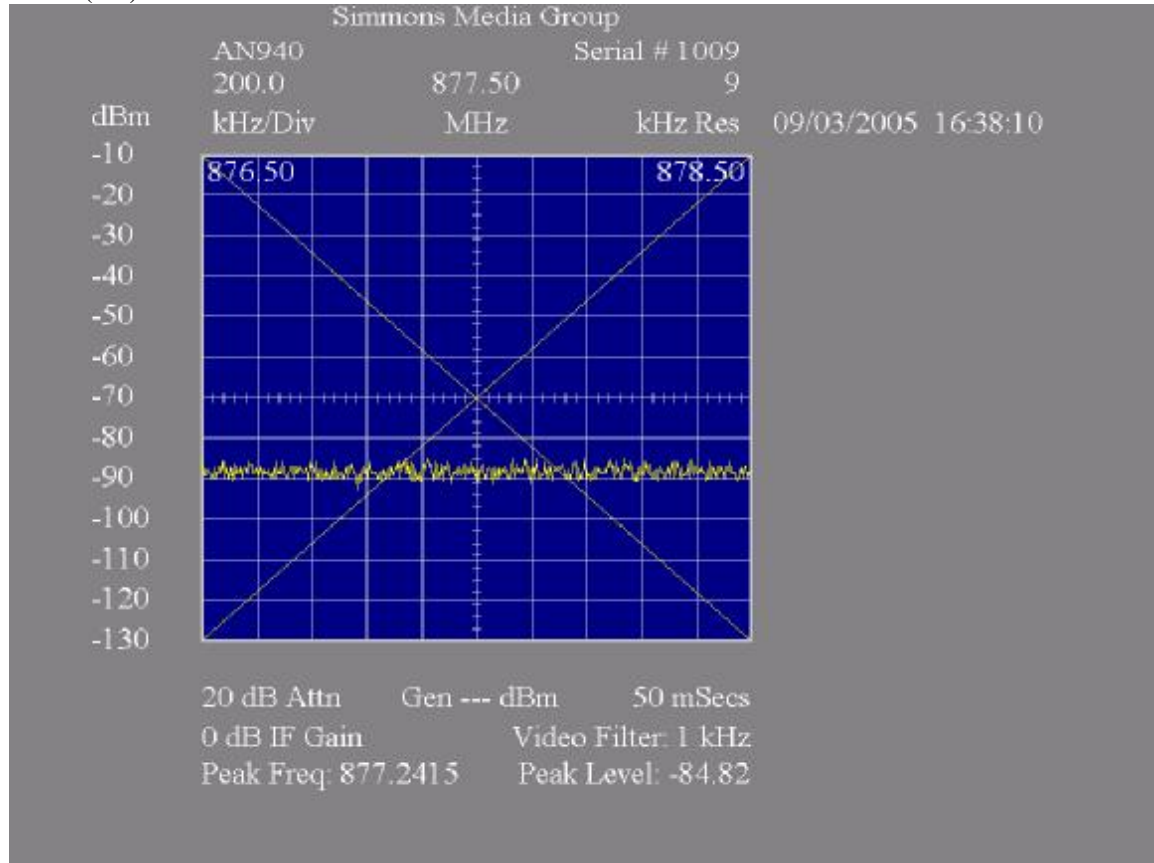


# KFMS (FM) 8th Harmonic

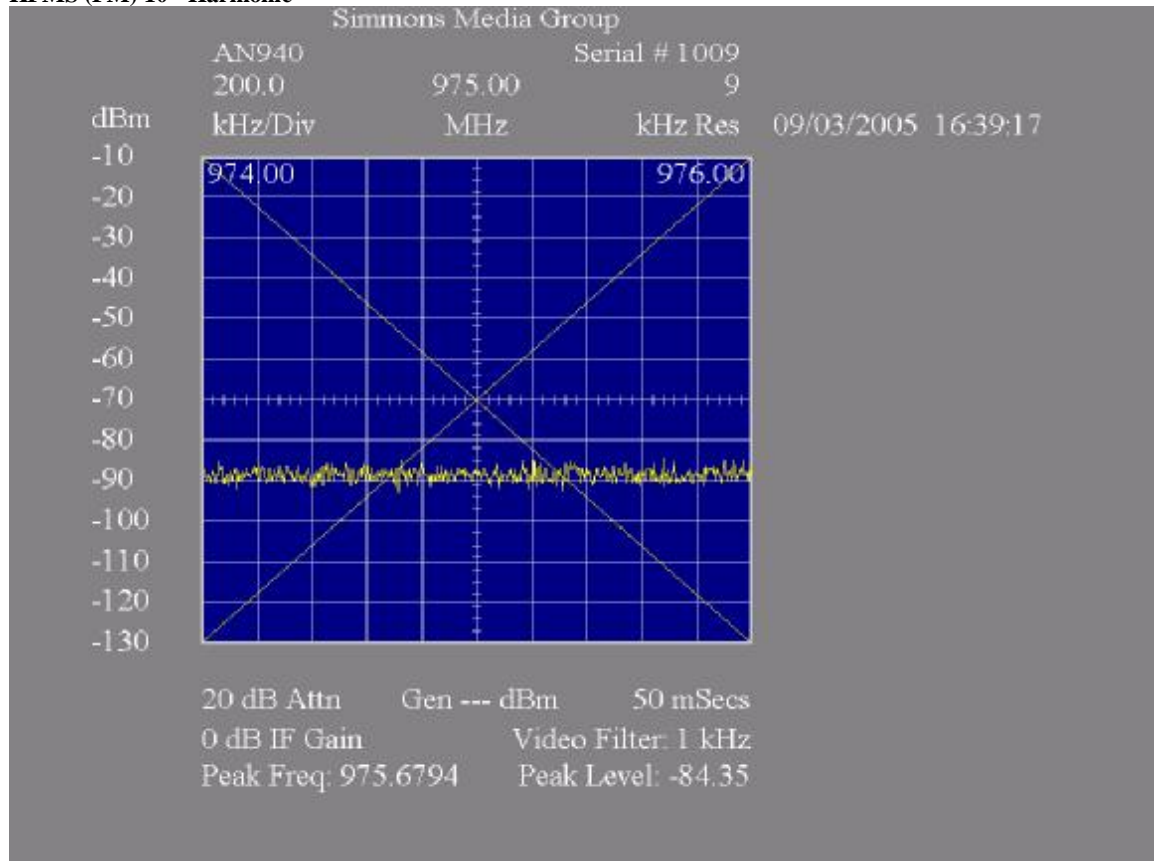




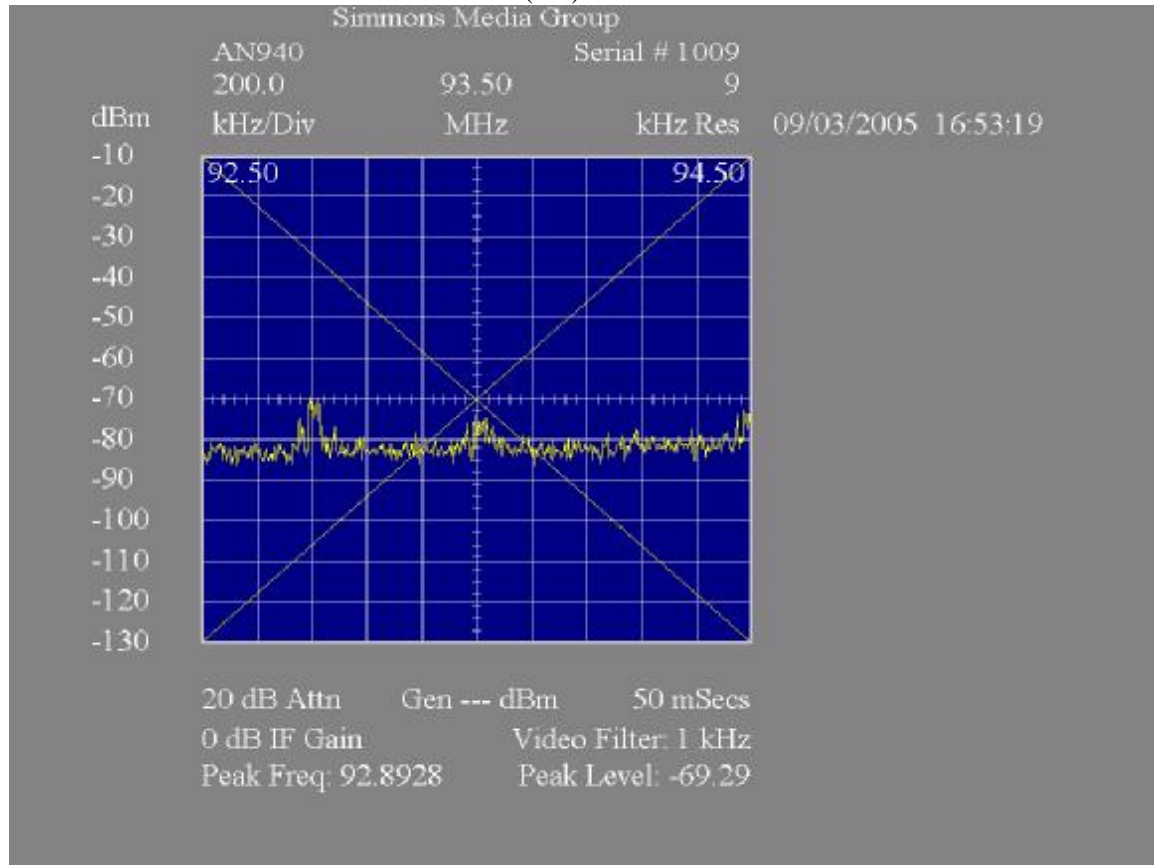
# KFMS (FM) 9<sup>th</sup> Harmonic



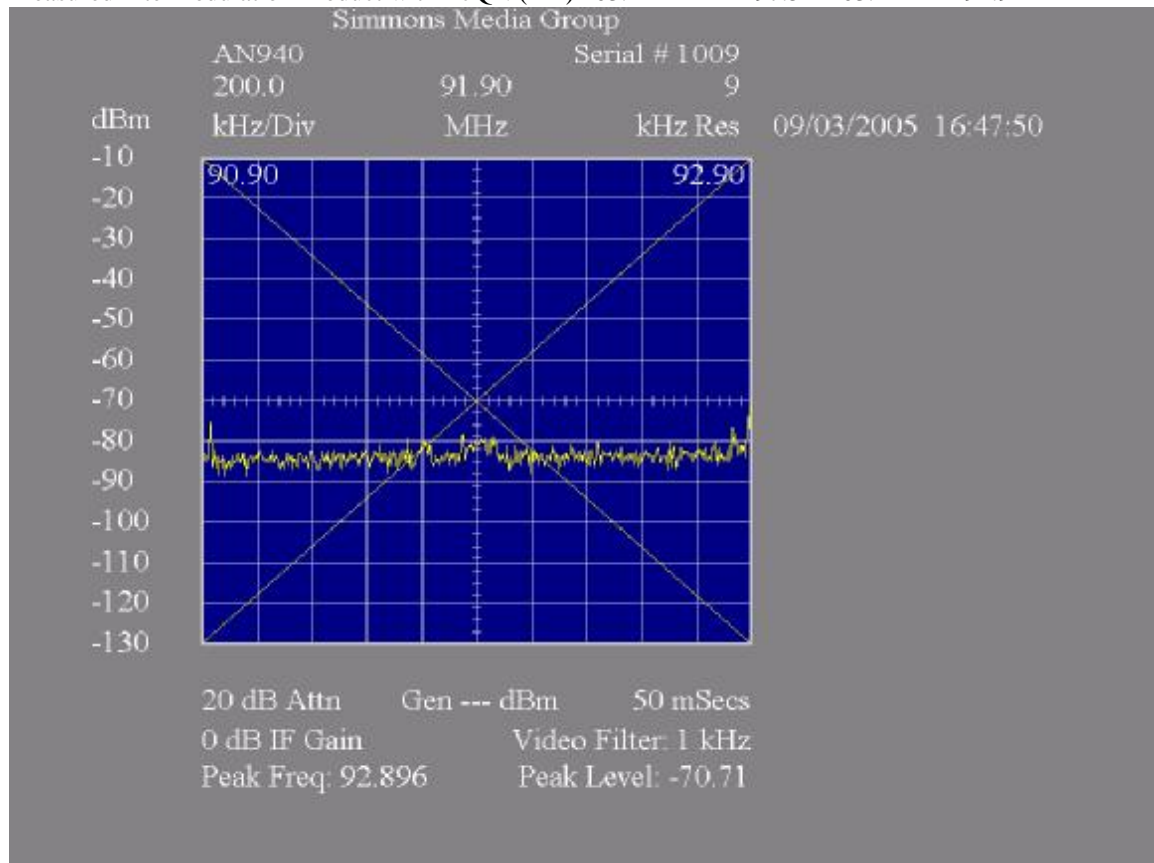
# KFMS (FM) 10<sup>th</sup> Harmonic



Measured Intermodulation Product with KEGA (FM) 101.5 MHz 2 X 97.5 – 101.5 MHz=93.5



Measured Intermodulation Product with KJQN (FM) 103.1 MHz 2 X 97.5 – 103.1 MHz=91.9

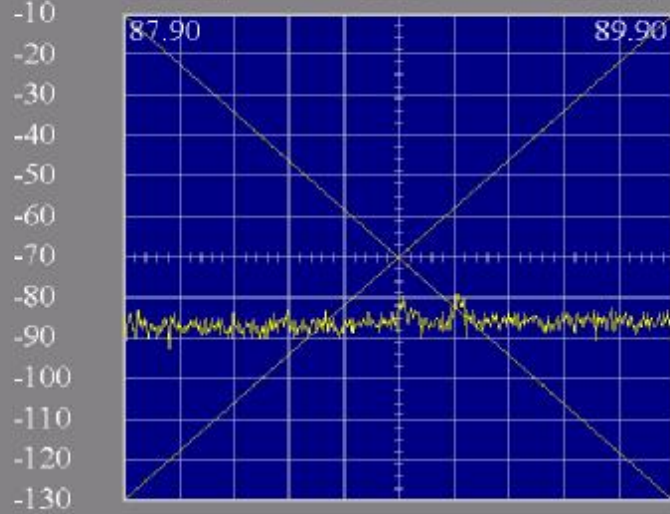




Measured Intermodulation Product with KBMG (FM) 106.1 MHz 2 X 97.5 – 106.1 MHz=88.9

Simmons Media Group

AN940 Serial # 1009  
200.0 88.90 9  
dBm kHz/Div MHz kHz Res 09/03/2005 16:44:39



20 dB Attn Gen --- dBm 50 mSecs  
0 dB IF Gain Video Filter: 1 kHz  
Peak Freq: 89.1104 Peak Level: -79.18