KEGA-FM5 Spurious Emissions Report

Provo, Utah

On the evening of November 16, 2004 equipment performance measurements were made for broadcast booster station KPEB-FM4 permit No. BNPFTB-20040730AYI.

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 C.F.R. Section 73.317 (b) through 73.317 (d).

KEGA-FM5 (101.5 MHz) is one of two stations sharing a master antenna system at the Spirit Hill Communications site located in Provo, Utah. The outputs of the two stations are combined using a constant impedance balanced bandpass filter combining system Model RCCC-29A – 0.8 designed and fabricated by Jampro antenna Systems of Sacramento, CA

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.

In the case of the KEGA-FM5 transmission system, the measurement equipment was fed 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. 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^{th} 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 main Carrier measured -74 dBc. This level is due to the transmitter input power being lower.

No unusual spurious emissions, carrier frequency harmonics or intermodulation productes were noted on the main transmission system for station KEGA-FM5.

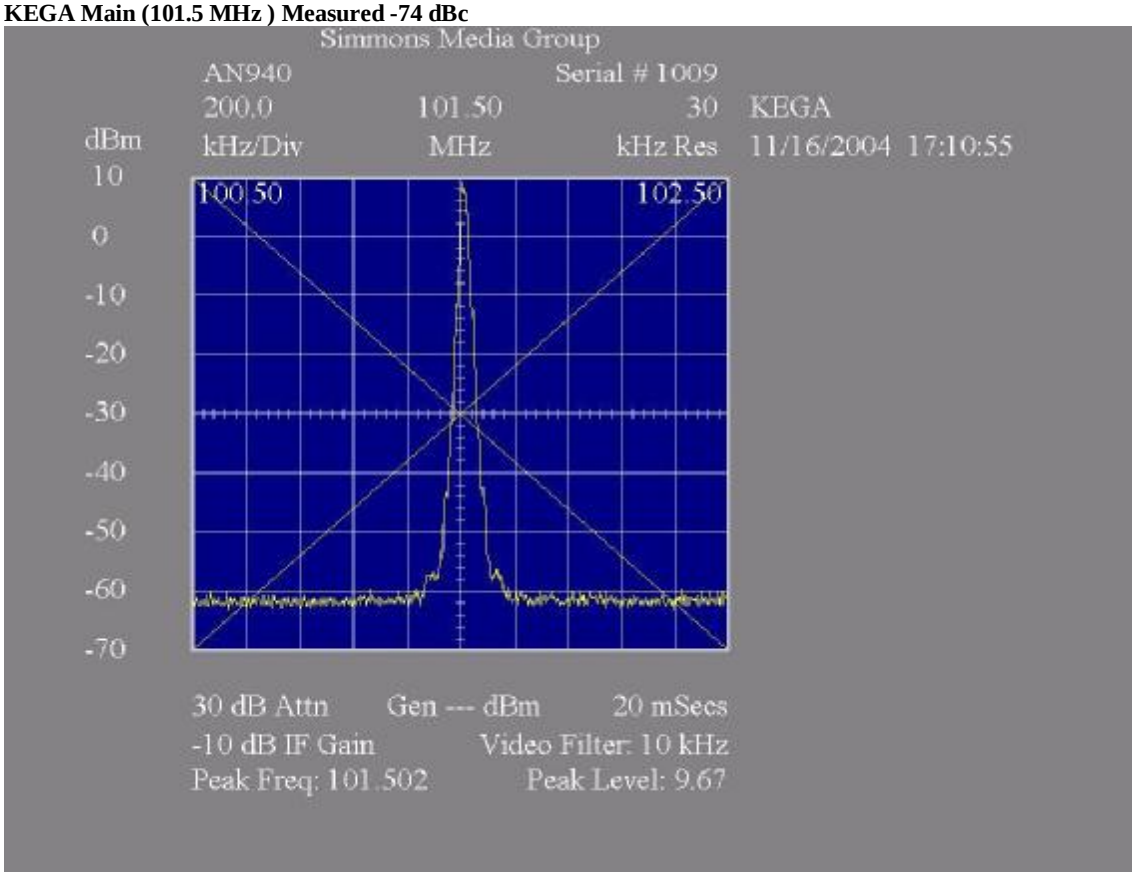
With regards to the KEGA-FM5 transmission system, I believe that the station is in compliance with the requirements of Section 73.317. This report was prepared by me and is based measurements made by myself. I believe them to be true and accurate to the best of my knowledge.

Respectfully submitted,

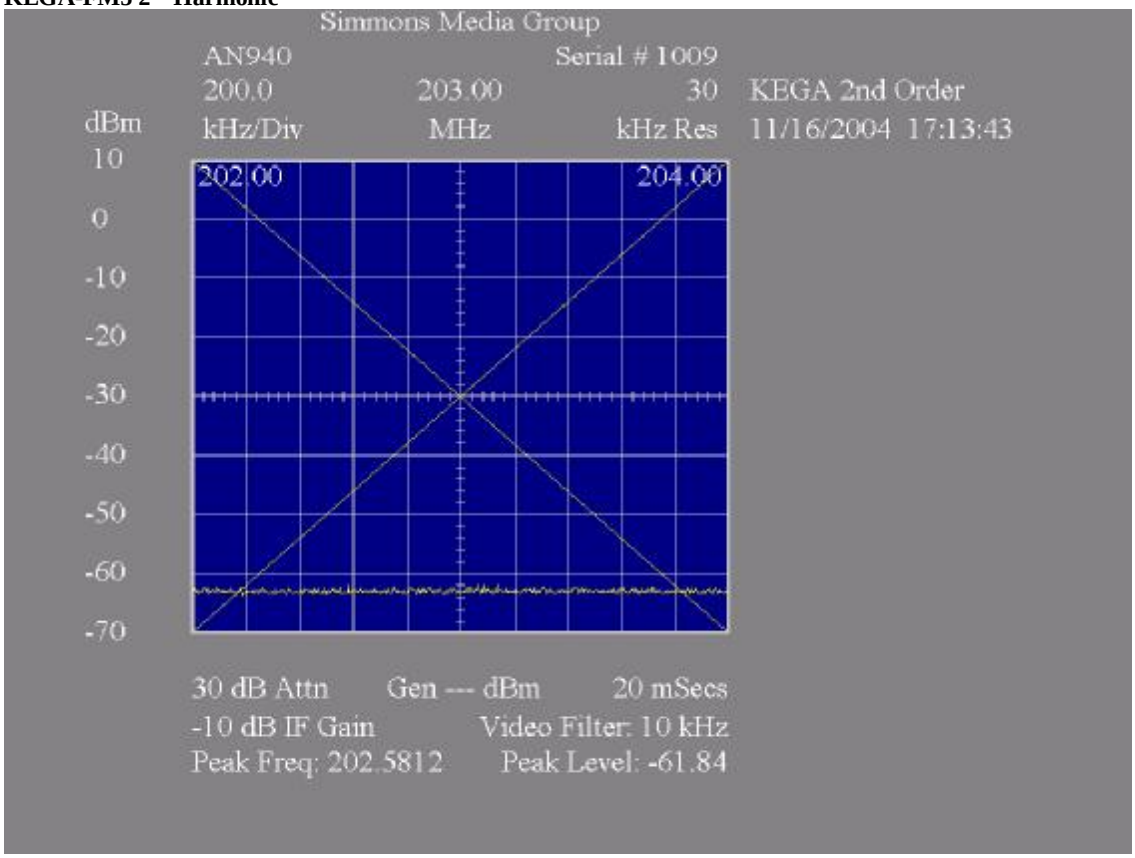
Scot W. Mathews

Scot W. Mathews
Director of Engineering

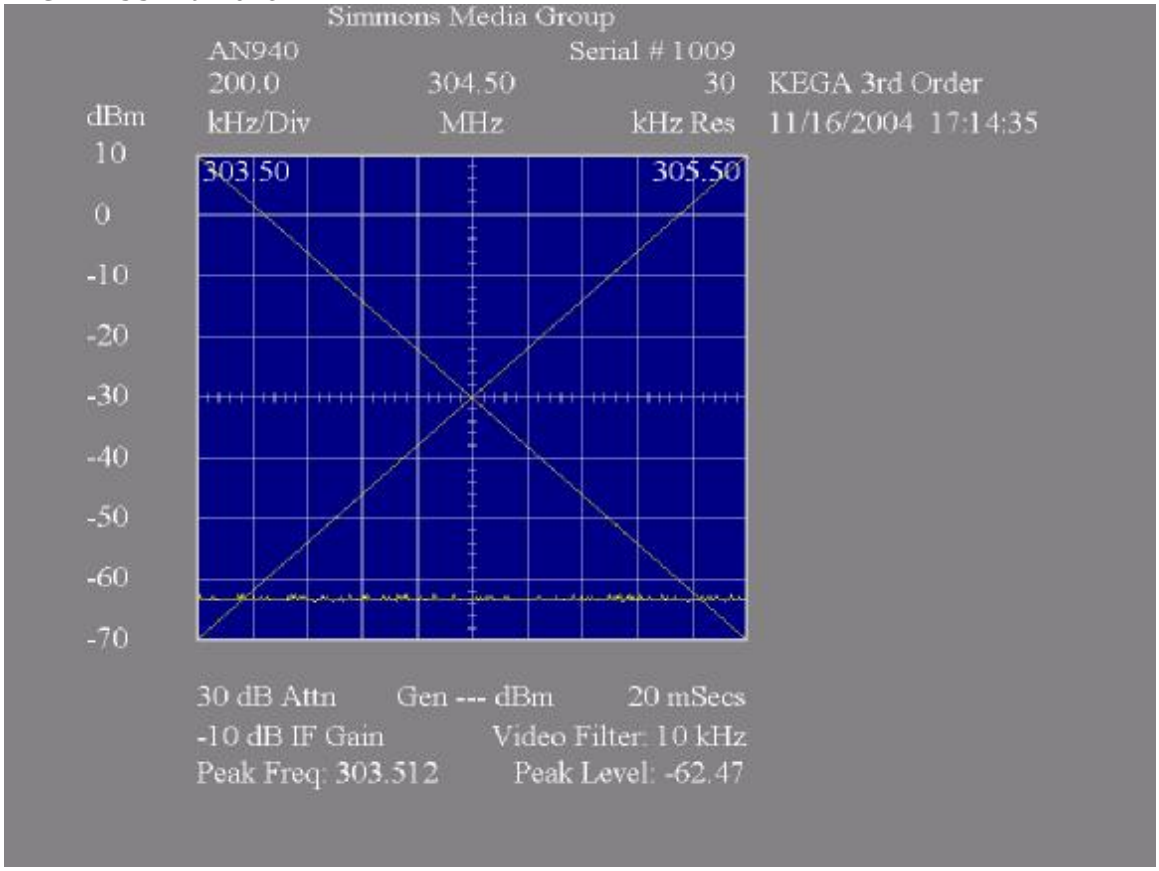
KEGA Main (101.5 MHz) Measured -74 dBc



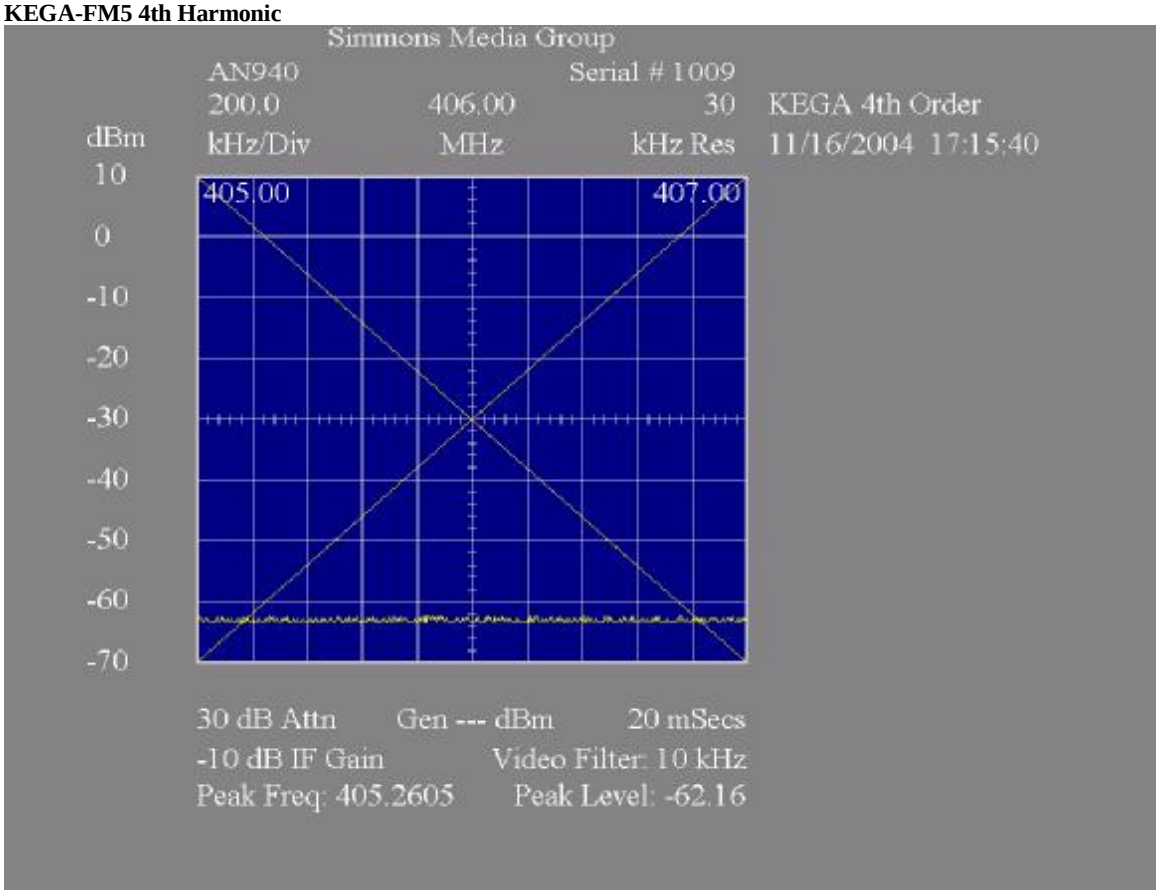
KEGA-FM5 2nd Harmonic



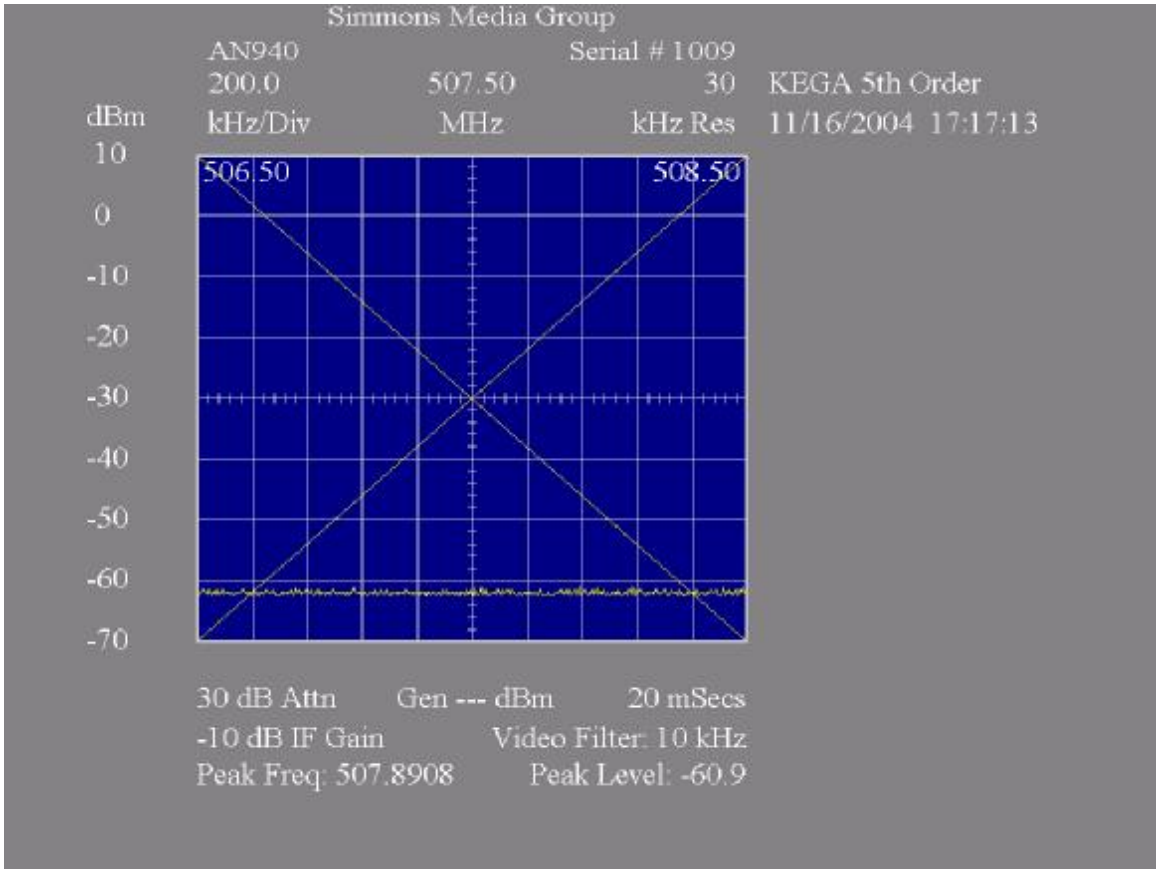
KEGA-FM5 3rd Harmonic



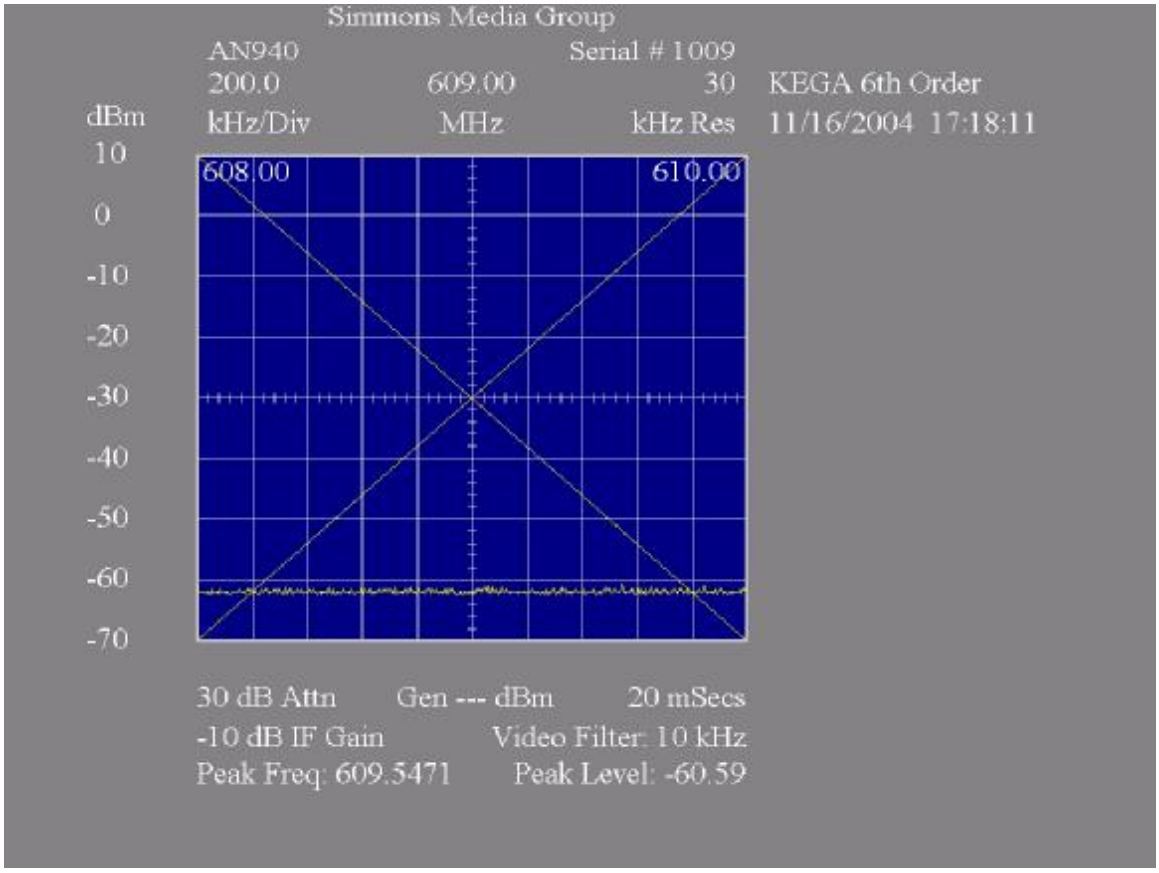
KEGA-FM5 4th Harmonic



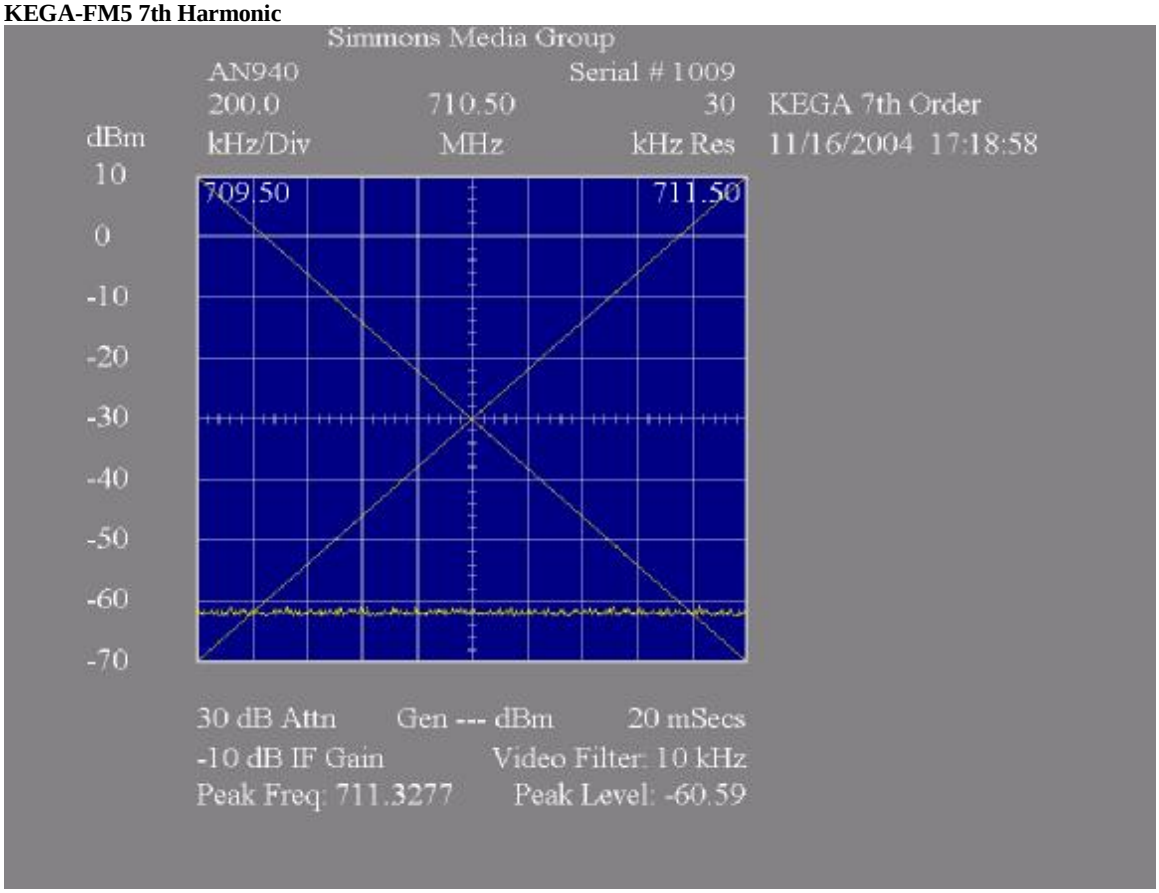
KEGA-FM5 5th Harmonic



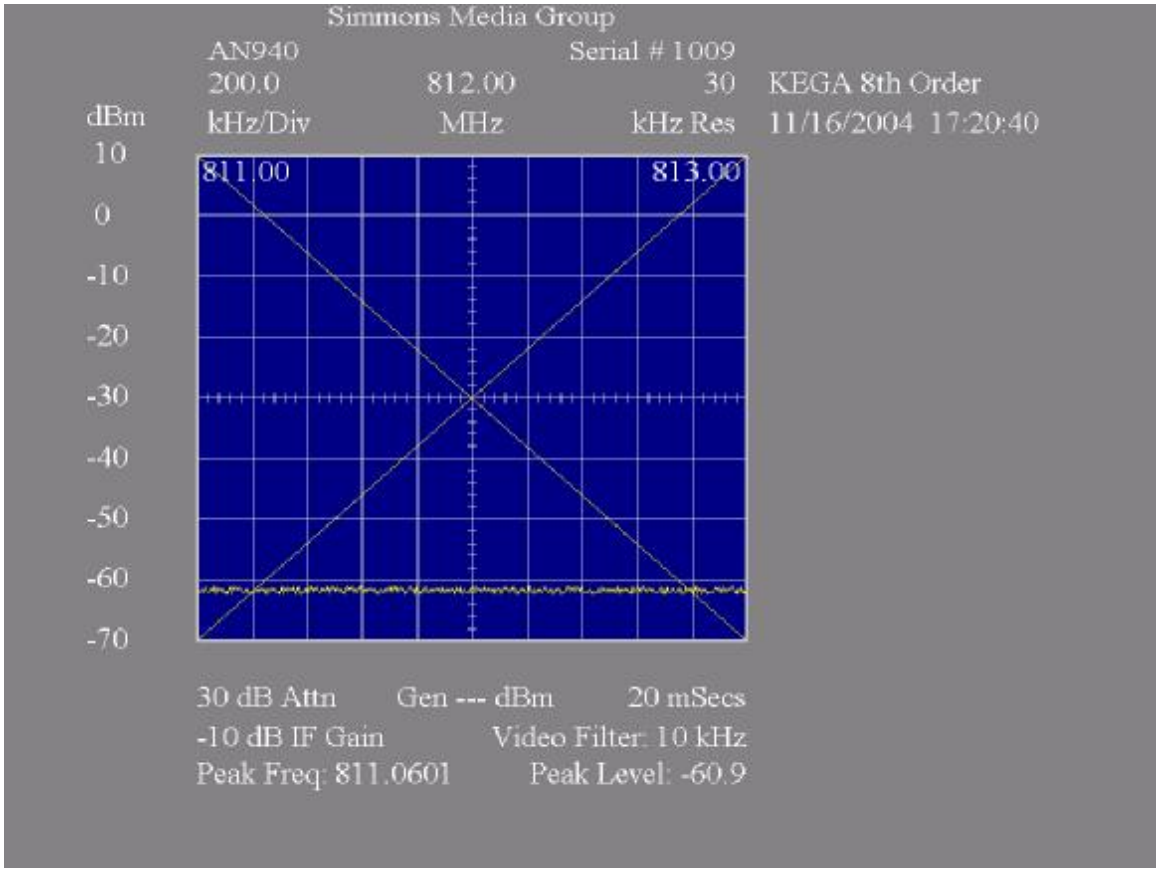
KEGA-FM5 6th Harmonic



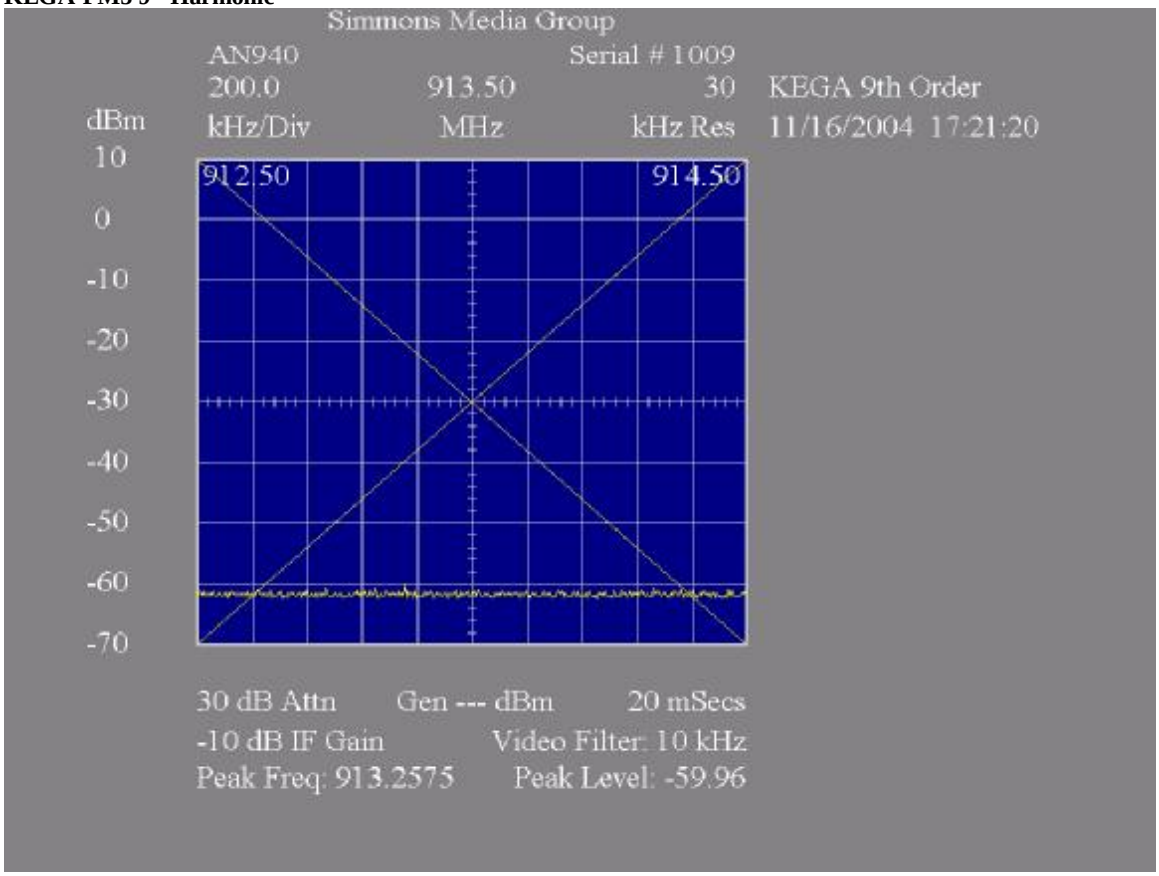
KEGA-FM5 7th Harmonic



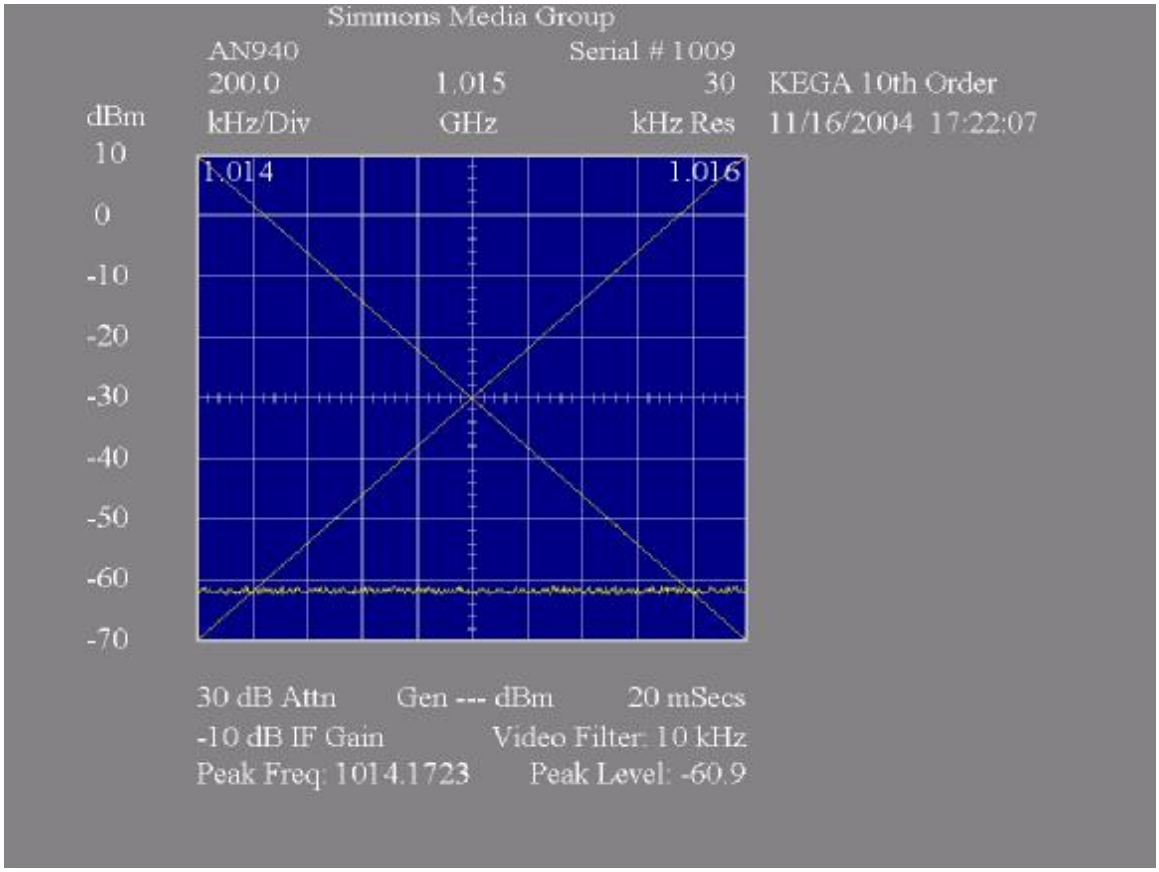
KEGA-FM5 8th Harmonic



KEGA-FM5 9th Harmonic



KEGA-FM5 10th Harmonic



Measured Intermodulation Product with KPEB (FM) 103.1 MHz 2 X 101.5- 103.1 MHz = 99.9MHz