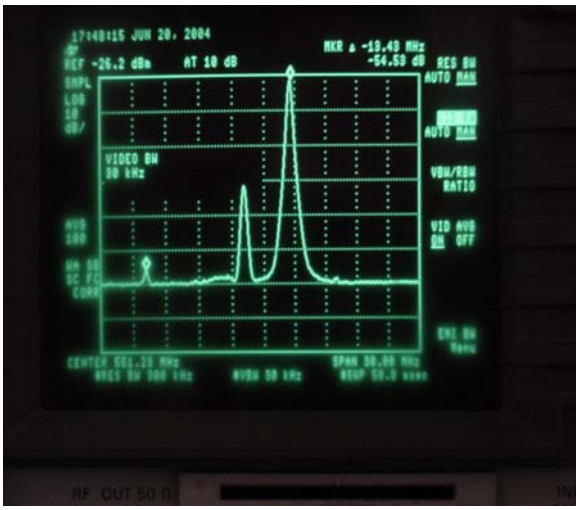
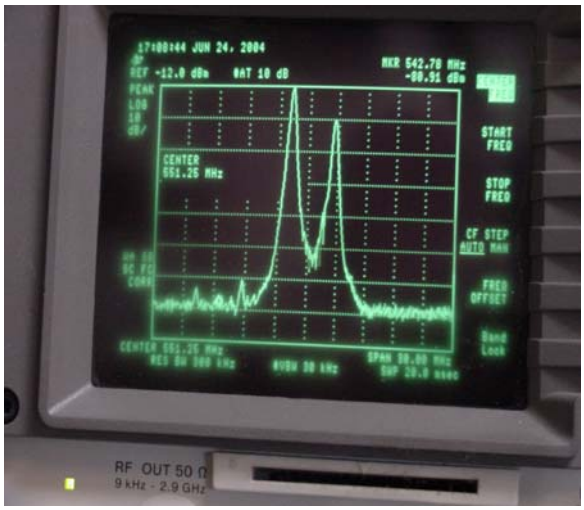
CONDUCTED SPURIOUS AND HARMONICS

The following photographs indicate the spurious performance (> +/- 3 MHz) from the designated TV channel. As can be seen from the photos (one taken at 1.0 kW and the other taken at 100 W), the worst case spurious levels are below 64 dB relative to the peak of sync of the visual carrier. The scan width is 30 MHz for both pictures. The left picture utilized a notch filter on the directional coupler output for the visual carrier to be able to see the spurious level. The aural carrier is located at the top of the screen so the visual carrier reference would be 10 greater than the top of the screen. The level of the spurious product at -4.5 MHz from the visual carrier was -65 dB. The picture on the right did not utilize the notch filter.

POWER OUTPUT = 1.0 kWatts



POWER OUTPUT = 100 Watts



CONDUCTED HARMONIC OUTPUTS

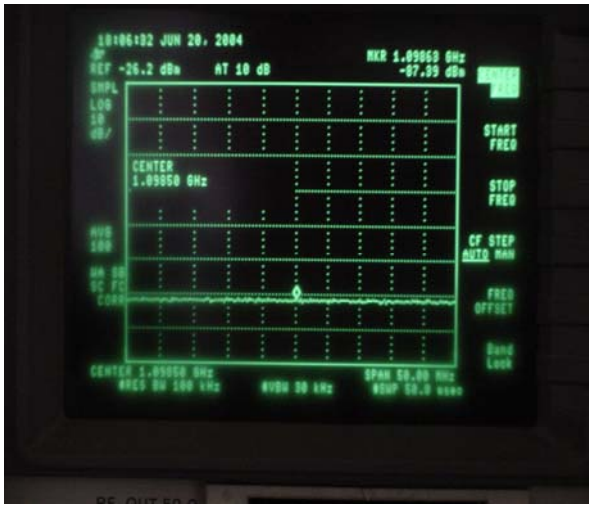
The following data indicates the harmonic performance of the UTX1KW. Only the 2nd harmonic was possibly visible. The following table displays the actual value of the harmonic that takes into account the coupling factor of the directional coupler and loss of the cable used for the measurement. There was no value recorded when the instrument measured value was <-75dB relative to the visual peak of sync value as this was below the noise floor of the spectrum analyzer with the bandwidth used. Photographs of the spectrum containing the second harmonic are shown below. The visual carrier level was placed at the top of the screen at the fundamental frequency and then the frequency was adjusted to view the frequency range of the second harmonic.

HARMONIC LEVELS VERSUS FREQUENCY AT 1.0 KW	
FREQUENCY OF HARMONIC (MHz)	AMPLITUDE (Relative to visual Peak Sync at fundamental frequency (dB))
1114 (2nd harmonic)	-68
1671 (3rd harmonic)	<-75
2228 (4th harmonic)	<-75
2783 (5th harmonic)	<-75
3342 (6th harmonic)	<-75
3899 (7th harmonic)	<-75
4456 (8th harmonic)	<-75
5013 (9th harmonic)	<-75
5570 (10th harmonic)	<-75

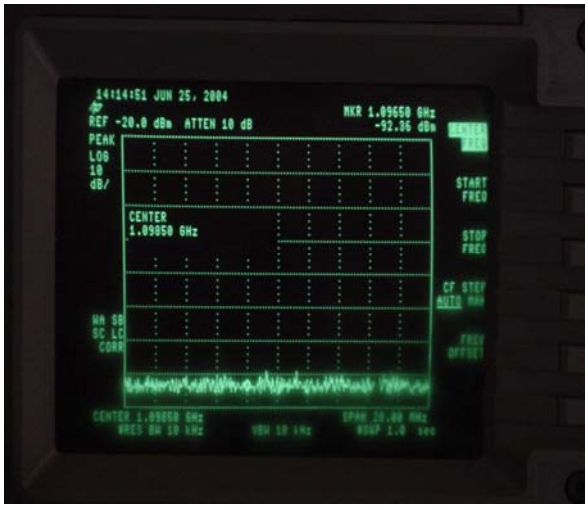
HARMONIC LEVELS VERSUS FREQUENCY AT 100 W	
FREQUENCY OF HARMONIC (MHz)	AMPLITUDE (Relative to visual Peak Sync at fundamental frequency (dB))
1114 (2^{nd} harmonic)	-70
1671 (3^{rd} harmonic)	-75
2228 (4^{th} harmonic)	<-75
2783 (5^{th} harmonic)	<-75
3342 (6^{th} harmonic)	<-75
3899 (7^{th} harmonic)	<-75
4456 (8^{th} harmonic)	<-75
5013 (9^{th} harmonic)	<-75
5570 (10^{th} harmonic)	<-75

The pictures below indicate that the harmonic levels are below 62 dB.

POWER OUTPUT = 1.0 kWatt



POWER OUTPUT = 100 Watts



Both photographs are centered at the 2^{nd} Harmonic because only those harmonics were possibly visible. The fundamental frequency visual peak of sync reference value is located at the top of the screen on these photographs. The values indicate a maximum harmonic level of -68 dB when corrected for coupling and cable loss.