TEST REPORT

PINEAPPLE TECHNOLOGY INC. UTX5K ULTRA-2

TV TRANSMITTER TECHNICAL REPORT

INTRODUCTION

The following information is provided to support the technical performance of the Pineapple Technology UTX5K ULTRA-2 TV Transmitter. The information is supplied for broadcast TV service according to applicable portions of FCC rules contained in Part 2, Part 73, and 74.

1. Power Output Measurements as indicated by FCC Rule Part 2.1046.
2. Frequency Measurements as identified by FCC Rule Part 2.1055.
3. Visual Frequency response measurements of the transmitter to be within the window specified by FCC Rule Part 74.750.
4. Occupied BW of aural signal specified by FCC Rule Part 2.1079.
5. Aural frequency response as identified by FCC Rule Part 73.687
6. Measurement of conducted harmonics and spurs +/- 3 MHz outside of channel as specified by FCC Rule Part 74.750 and Part 2 Rule 2.1051.
7. Measurement of cabinet radiation of spurs and harmonics as specified in FCC Rule 2.1053 and 2.1057.
8. Measurements of voltage and current to final amp stage as outlined in FCC Rule 2.1033.

Measurements were conducted at the transmitter visual power output level of 5,000 watts peak of sync (W_{ps}) for which type certification is sought. The corresponding aural power level is 250 watts. Measurements were taken on a unit with visual carrier frequency of 693.250 MHz and an aural carrier frequency of 697.750 MHz.

The test equipment used for the measurements on the next few pages is listed at the end of the test report. All test equipment was calibrated prior to the use of the equipment by the supplier of the test equipment.

RF POWER OUTPUT

The equipment was configured as shown in Figure 1. The loss through the directional coupler was calibrated at the operating frequency (693.250 mHz). The TSG-90 video generator was configured to produce a signal with 0 IRE video and sync. The aural carrier was not energized. The visual portion of the transmitter was energized to the desired output power (5.0 kWps). The power was read on the HP-435B Power Meter. The video demodulator and 1750 were used to verify that sync compression was not causing distortion of the measurement. The aural carrier was energized and its output level was then raised to meet the precise 13 dB visual/aural power ratio as observed on the spectrum analyzer. Pictures were also taken of demodulated video with two (2) lines of a modulated stair step (or reference white level) , and two (2) fields of video to verify no signal distortions were present at the 5.0 kW power level where certification is being sought.

POWER OUTPUT MEASUREMENT

HP 435B Power Meter reading	9.9 dBm
Loss in directional coupler	55.0 dB
Sum	64.9 dBm = 3,090 W Avg

Peak of sync power = 1.68 times average power under the following conditions:

- 0 IRE (Black) picture
- No aural carrier
- 40 IRE of sync
- Proper sync to video ratio (40/100) and depth of modulation, this is shown by the two line modulated video waveform display.

3,090 W Avg. X 1.68 = 5,191 W peak of sync (Within 0.03 dB of 5,000 W)

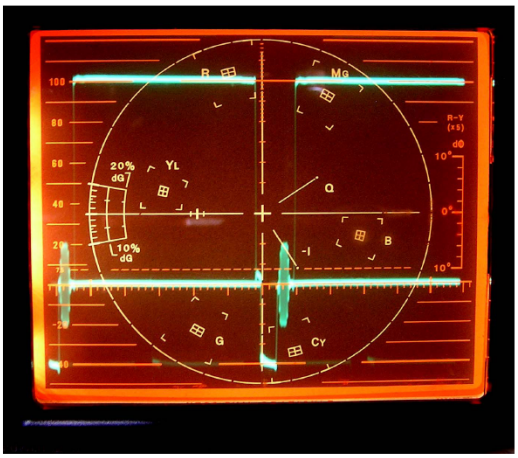
The aural carrier was set 13 dB lower.

5,000 W_{ps} = 67.0 dBm minus 13 dB equals 54.0 dBm = 250 W Aural Power

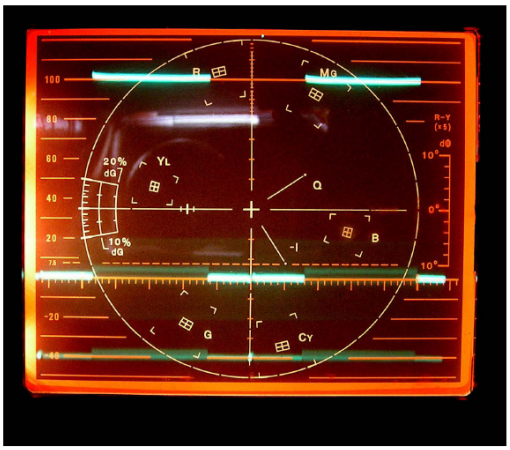
DC voltage and current to final amplifier stage is: 360 Amps at 32 VDC measured with black level input.

Tested By:Ed Wood Date: 6/7/2006

Meter indicating 9.9 dBm for visual RF Power Output

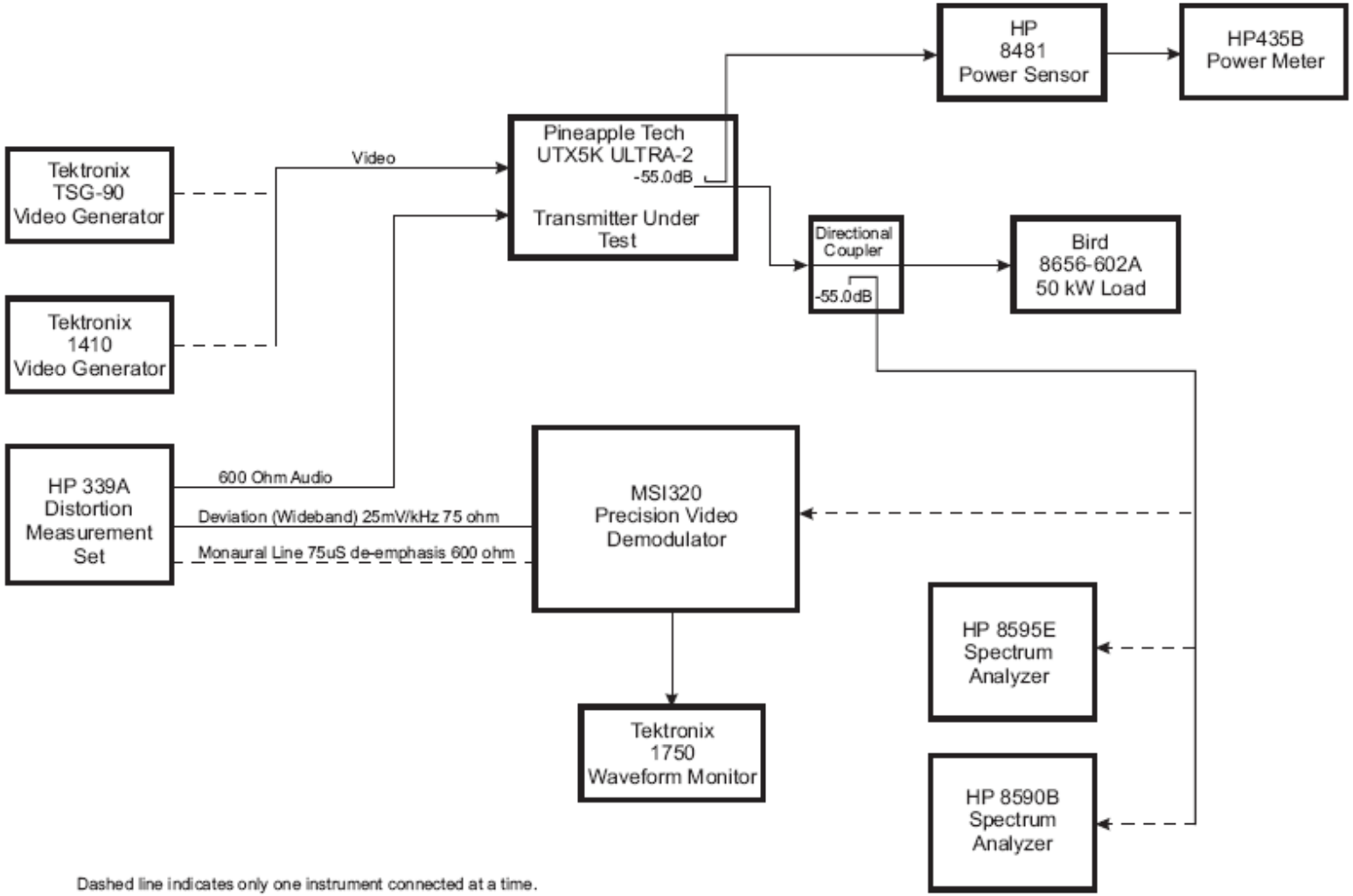


Two Lines of video showing proper Modulation depth.



Two Fields of video showing proper Modulation depth.

TEST EQUIPMENT CONFIGURATION



Dashed line indicates only one instrument connected at a time.