

# TEST REPORT

## PINEAPPLE TECHNOLOGY INC. XL1000-PRO RETROFIT KIT TECHNICAL REPORT

### INTRODUCTION

The following information is provided to support the technical performance of the XL1000-PRO Retrofit Kit for the Television Technology TV translator designated as the XL1000MU (modulator input version). The information is supplied for broadcast TV service according to applicable portions of Part 74 and the attached letter from the FCC OET office.

The following information is provided in support of acceptance of the retrofitted transmitter for Part 74 service. Where possible, measurements were recorded of spectrum or other appropriate data of the signal in the RF path before and after the retrofit amplifier.

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

Measurements of frequency response, occupied bandwidth, harmonics, and spurs have been executed and compared to the same measurements before the amplifier. The purpose of providing both sets of measurements is to indicate that the substitution of the PTI solid state amplifier did not degrade the performance of the translator and allows the translator to comply with the applicable rules and regulations of Part 74. Measurements were conducted at power output levels of 250 watts peak of sync and 1100 watts peak of sync and constitute the range of power for which type certification is sought. As indicated in the attached documentation from the FCC, the other parameters normally associated with Part 74 service such as frequency stability and receiver dynamic range do not apply to this application for certification.

The test equipment used for the measurements on the next few pages is listed at the back of this exhibit. All test equipment had been calibrated prior to the use of the equipment by the supplier of the test equipment.

### RF Power Output

The equipment was configured as below shown in Figure 1. The loss through the RF output cable and directional coupler and attenuator was calibrated at the Visual carrier frequency of 519.25 MHz. The NTSC generator was configured to produce a signal with 0 IRE video and sync. The audio generator was not energized. Visual power was read on the HP435B Power Meter and a reference level was established on the HP8595E Spectrum Analyzer. The TV demodulator was used to verify that sync compression was not causing distortion of the measurement. The aural output level was then raised to meet the precise 10 dB Visual/aural power ratio as observed on the spectrum analyzer. Pictures were also taken of demodulated video of the horizontal sync, and 2 fields of video to verify no signal distortions were present over the 250 watt to 1100 watt power level range that certification is being sought.

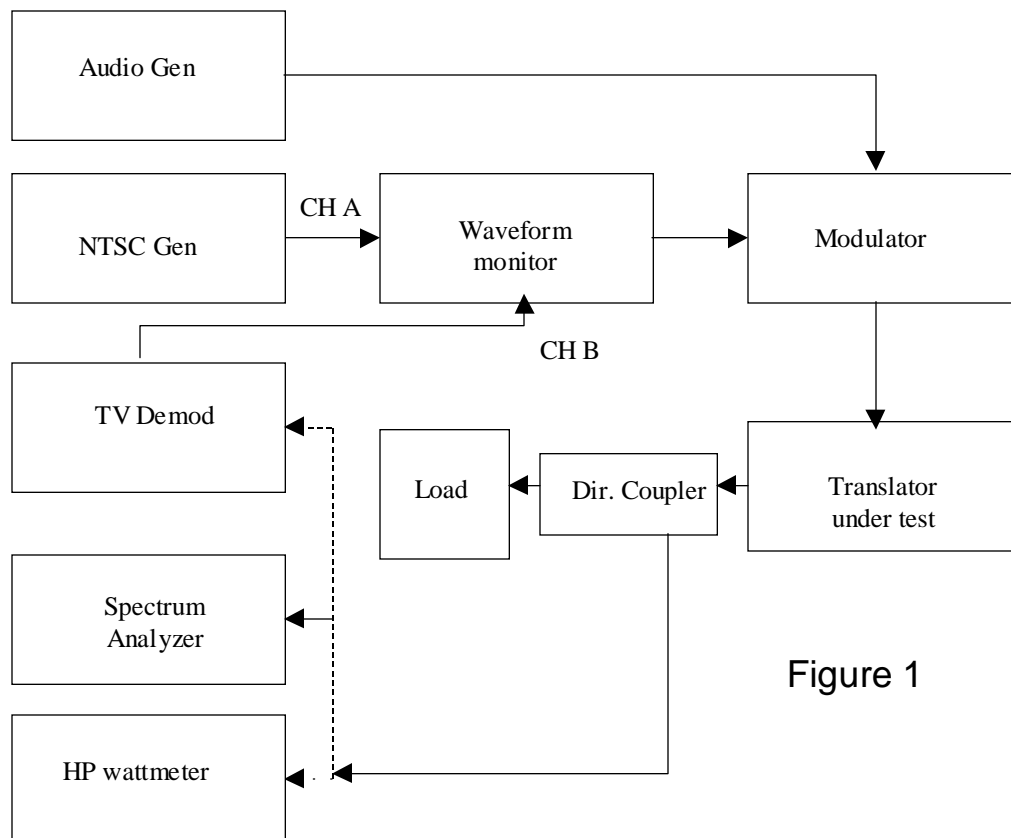


Figure 1

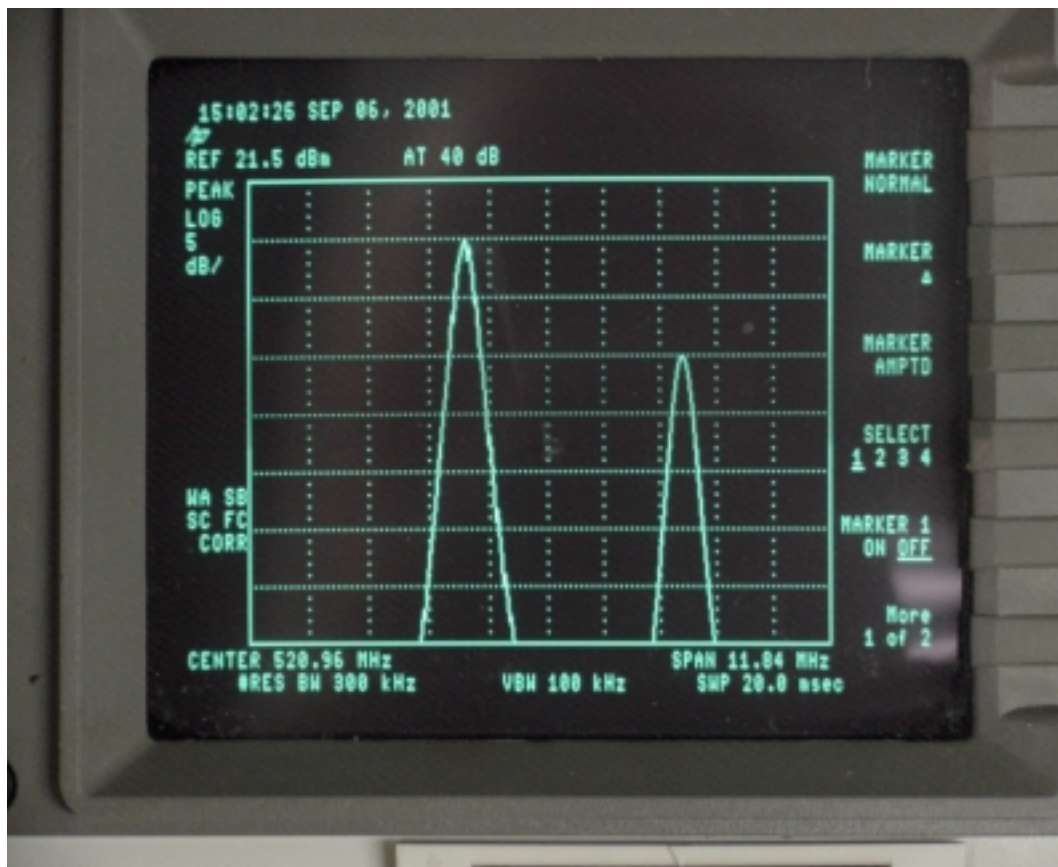
Dashed lines indicate connection to 1 of the 3 pieces of equipment.



### Power Output

+16.6 dBm (average) indicated +41.6 dB (loss due to directional coupler, attenuator and cable) = 58.2 dBm (average) = 661 watts (average).

Peak of sync power =  $661 \times 1.68 = 1110$  watts



POWER OUTPUT ON SPECTRUM ANALYZER (showing 10 dB V/A Ratio)



Horiz. Sync (OUTPUT @1100 watts)