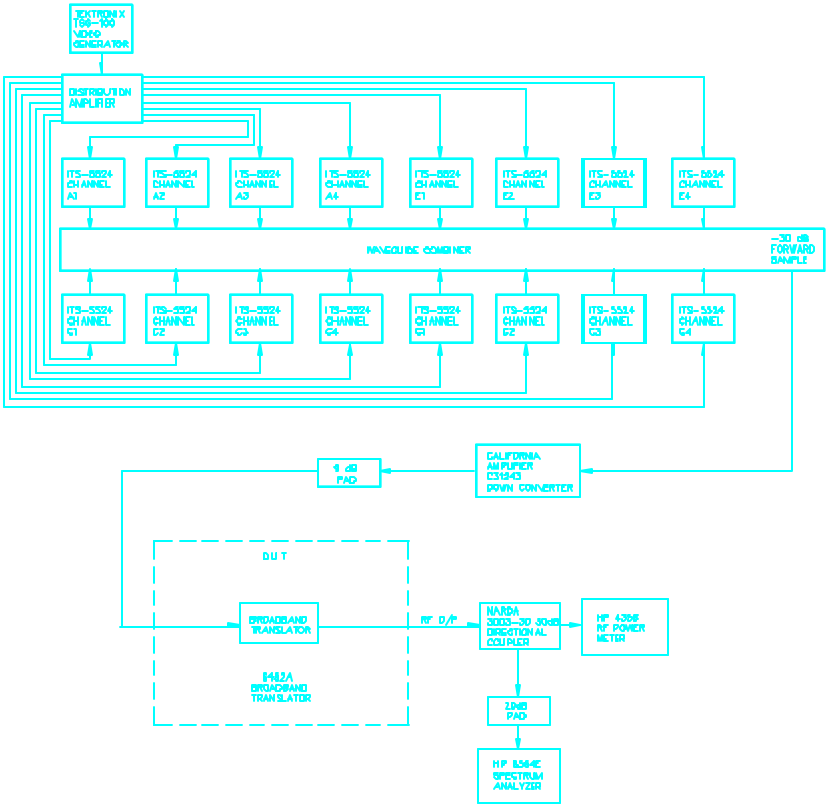
3.0 ENGINEERING DATA

3.1 RF Power Measurements

The following block diagram illustrates the test equipment set-up for RF power measurement:



Before testing the 6452A multi-channel translator, the ITS-5724 transmitters (FCC ID# CJJ79SITS-7022) used to generate the multi-channel input signal to the translator were tested and observed to meet specifications. Then, the translator was tested and observed, as illustrated in the following sections, to reliably reproduce the transmitted signals in acordance with the rules set forth in the Rules and Regulations.

3.0 ENGINEERING DATA

3.1 RF Power Measurements - continued

With eight visual carriers present, the ouput power of the 6452A translator was adjusted to full rated output power (1.0 Watts total average) as observed on the RF power meter. With the power level properly set to 1.0 Watts, all required tests were performed and recorded in the following sections.

Number of channels	Average power/channel	Total Average Power
16	62.5 mW	1.0 W

Note: The peak envelope power has been determined and observed to be six times, or 7.8 dB, above the total average power. Therefore, the maximum peak envelope power for the 6452A is approximately 6.0 watts. In addition, for multi-channel loading, , a doubling in the number of channels requires a 3 dB back-off in the peak power per channel. Also, in the case of 8 or more channels, the total average power remains constant at 1.0 watts. The average power per channel is 1.0 watts divided by the number of channels.

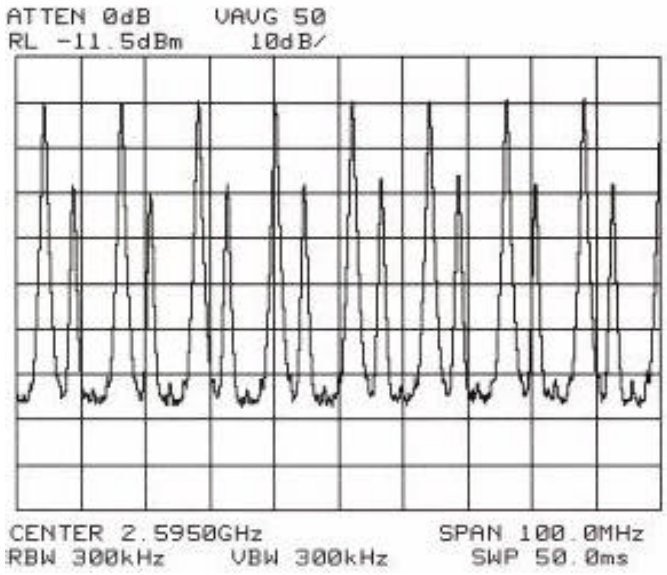
3.0 ENGINEERING DATA

3.2 Occupied Bandwidth

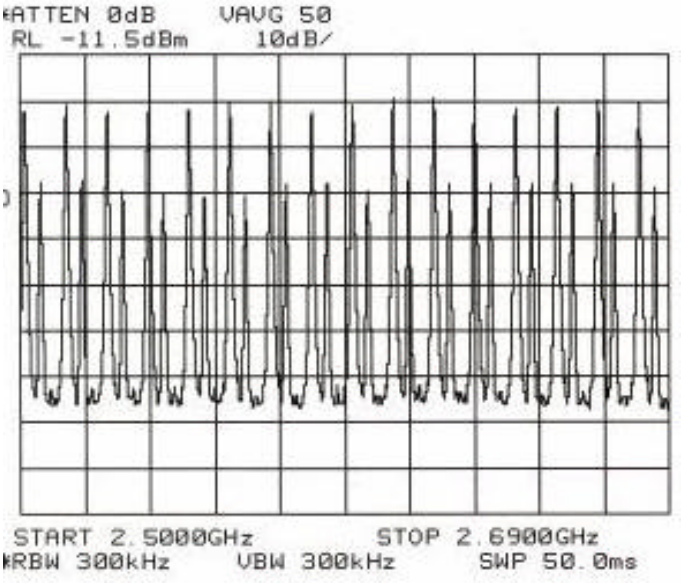
Using the test set-up in Section 3.1, with the unit operating at 1.0 W (total average) output power and with sixteen input signals (A1, A2, A3, A4, C1, C2, C3, C4, E1, E2, E3, E4, G1, G2, G3, and G4) present, ranging from the lowest (A1 = 2501.25 MHz) to the highest (G4 = 2681.25 MHz) channel frequencies, the analyzer was set to a span of 100 MHz and a reference level was established (see plot below). Then the analyzer was adjusted to a span of 190 MHz and the occupied bandwidth (2500.00 MHz – 2690.00 MHz) was observed and recorded below.

Note: The 190 MHz bandwidth permits a maximum of thirty one 6MHz channels.

Reference Level Plot/100 MHz Span (1.0 Watts total average):



Occupied Bandwidth Plot/200 MHz Span (1.0 Watts total average):

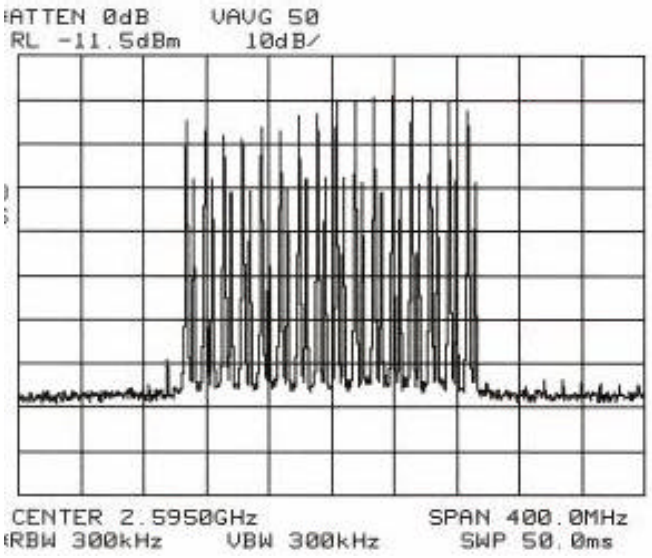


3.0 ENGINEERING DATA

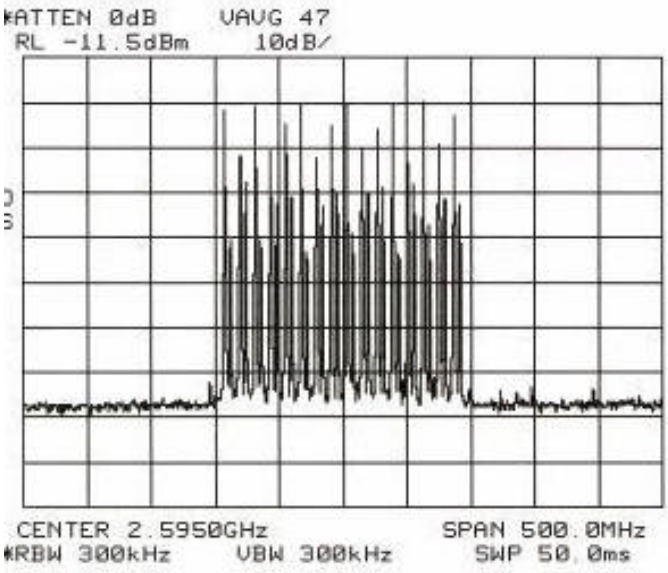
3.3 Out-of-Band Power

Using the test set-up of section 3.1, with the output power adjusted to 1.0 Watts total average, the spectrum outside of the specified band was observed and the data was taken on all products above the -68 dB noise floor of the spectrum analyzer (see spectrum plot below). Analyzer plots were taken at both 400 MHz and 500 MHz span. All spectral points were measured at the same resolution bandwidth used to establish the reference level on the analyzer.

Out-of-Band Power Plot/400 MHz Span (1.0 Watts total average):



Out-of-Band Power Plot/500 MHz Span (1.0 Watts total average):



3.0 ENGINEERING DATA

3.3 Out-of-Band Power - continued

Frequency (MHz)	Source	Level Observed
2500 – 2690	operating band	0 dB (reference)
2500	lower band edge	-47 dB
2499.75	-250.0 KHz below band edge	-55 dB
2497	-3.0 MHz below band edge	-67 dB
2489.25	-12.0 MHz product (below A1)	-57 dB
2480	-20.0 MHz below band edge	-68 dB
<2480	--	-68 dB (max)
2690	upper band edge	-68 dB
2690.25	+250.0 KHz above band edge	-68 dB
2693	+3.0 MHz above band edge	-68 dB
2693.25	+12.0 MHz product (above G4)	-60 dB
2671	+20.0 MHz above band edge	-68 dB
>2671	--	-64 dB (max)
5000 – 5380	2nd harmonic frequencies	-68 dB
7500 – 8070	3rd harmonic frequencies	-68 dB
10000 – 10760	4th harmonic frequencies	-68 dB
12500 – 13450	5th harmonic frequencies	-68 dB
15000 – 16140	6th harmonic frequencies	-68 dB
17500 – 18830	7th harmonic frequencies	-68 dB
20000 – 21520	8th harmonic frequencies	-68 dB
22500 – 24210	9th harmonic frequencies	-68 dB
25000 – 26900	10th harmonic frequencies	-68 dB