

## I9Q-ATI23GGZSC REQUEST FOR NOTIFICATION

### EXHIBIT 3 - WRITTEN INFORMATION PER FCC RULE PART 2.975

#### DETAILED DESCRIPTION OF EMISSION:

The shape of the output spectrum from 50 to 250 percent of the authorized bandwidth, in any 1 MHz bandwidth, must conform to FCC rule part 101.111 (2) (ii). It specifies attenuation according to the following equation, but in no event less than 11 decibels or greater than 56 decibels:

A = 11 + 0.4 (P-50) + 10 LOG B, where:

A = attenuation in dB below the mean output power level,  
P = percent removed from the carry frequency and  
B = bandwidth in MHz.

For a modulating carrier of DS3 or 44.736 MB/S, 40 MHZ bandwidth, the emission designator calculates as shown below, using 0.1% steps:

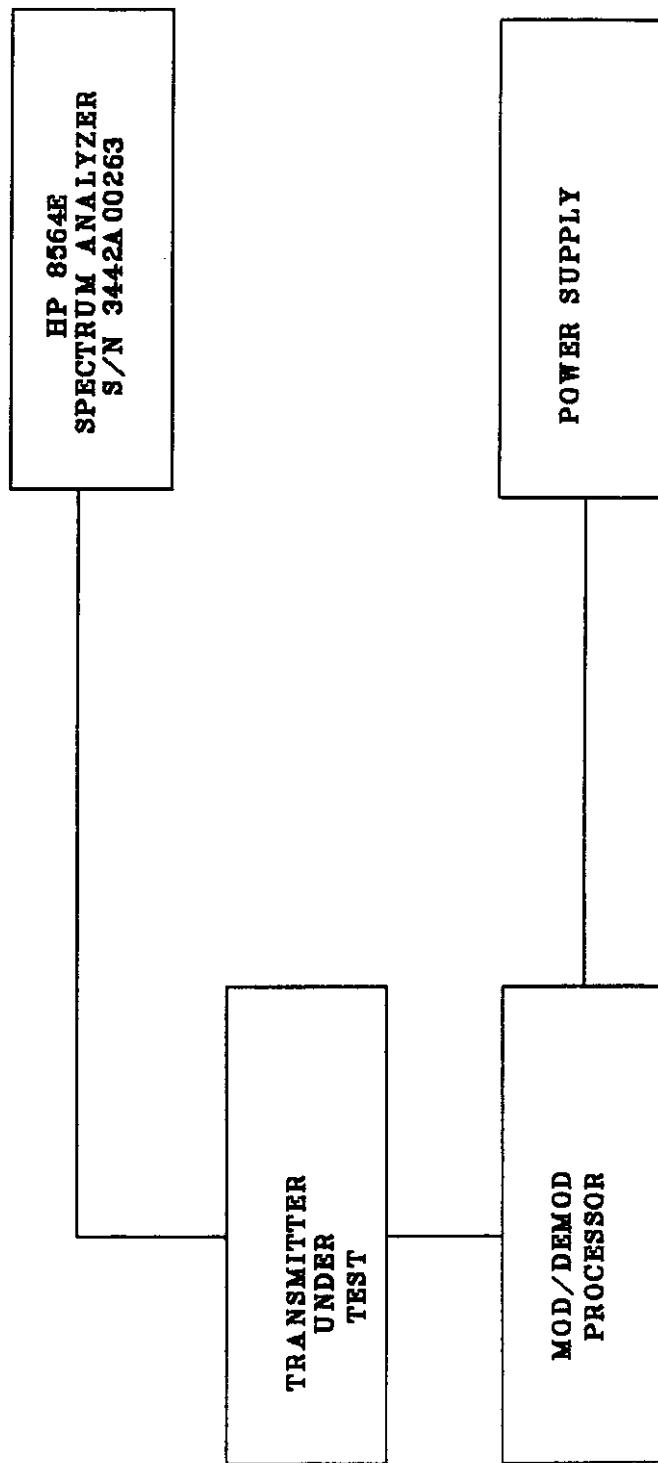
<u>MHz Removed for Fo</u>	<u>Db Attenuation</u>
20	27.0206
25	32.0206
30	37.0206
35	42.0206
40	47.0206
45	52.0206
49	56.0000

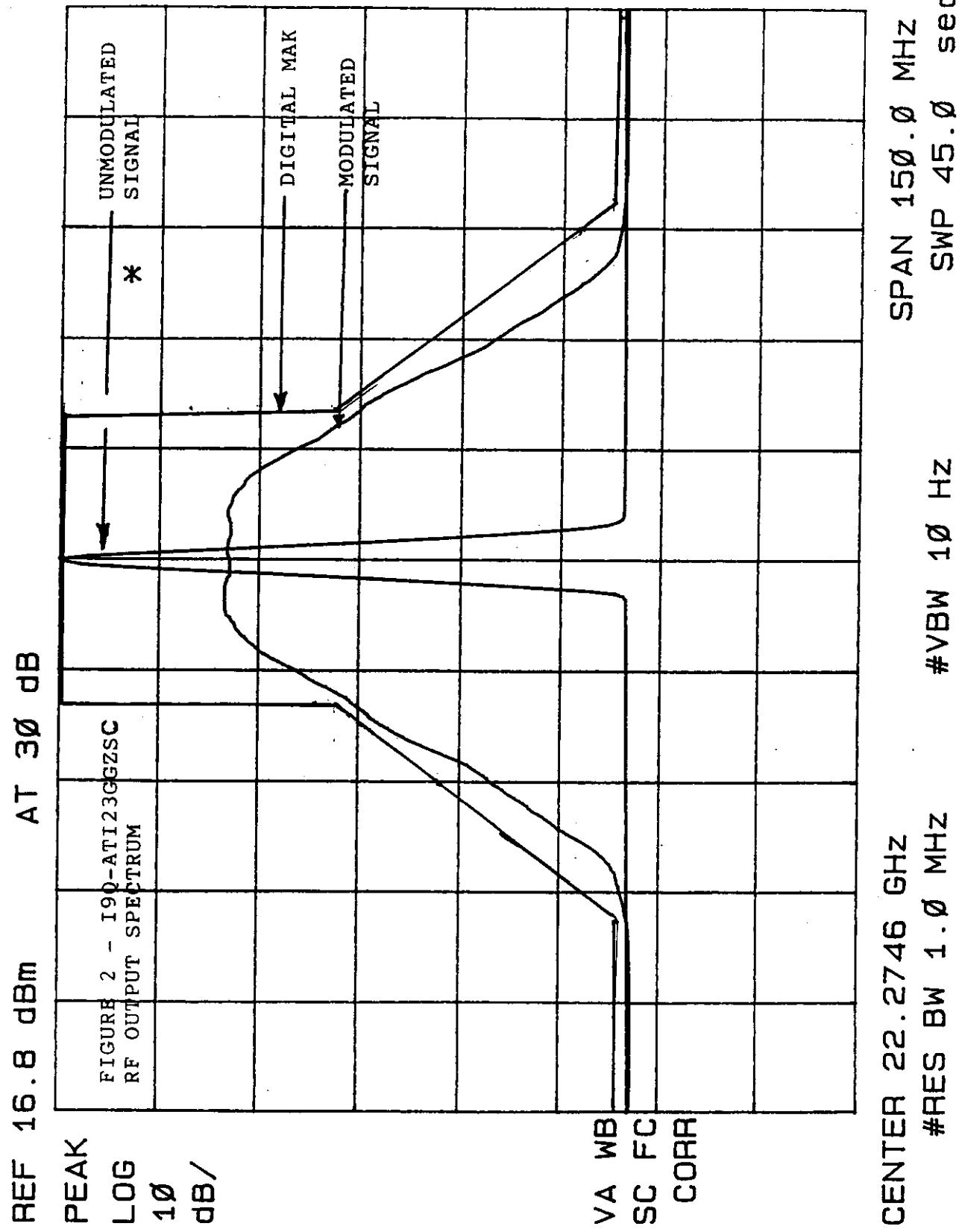
The modulated output spectrum was measured using the test setup of figure 1. The DS3 output spectrum is shown in figure 2 along with the unmodulated signal, modulated signal and digital mask.

The 21,200 - 23,600 MHz band is not subject to the Microwave Digital Modulation requirements of FCC rules parts 101.141.

The I9Q-ATI23GGZSC complies with the required digital mask for a data rate of DS3.

FIGURE 1 - 19Q-ATI23GGZSC MODULATION  
TEST SETUP, 40M OF 7D





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**EMISSIONS BEYOND 250% OF THE AUTHORIZED BANDWIDTH:**

1). General

These emissions are divided into two sections, as follows:

- A) Antenna Conducted Spurious Emissions and
- B) Case Radiated Spurious Emissions

Measurements were made from .01 to 50 GHz using an HP 8592L spectrum Analyzer, S/N 3506A00260 and a HP8564E Spectrum Analyzer, S/N 3442A00263.

2). Antenna Conducted Spurious Emissions

Test equipment was setup as shown in Figure 3. The analyzer was first tuned for a reference carrier level at the fundamental operating frequency. The output spectrum was then slowly scanned upward from .1 GHz to 50 GHz and back down again using an HP8564E Spectrum Analyzer, S/N 3442A00263. Special attention was given to those frequencies which corresponded to possible harmonics and subharmonics.

The FCC limit for Antenna Conducted Spurious Emissions is  $43 + 10 \log P$  below the main carrier or 80 Db whichever is the lesser attenuation. For the I9Q-ATI23GGZSC  $43 + 10 \log P$  is the lesser attenuation. This is calculated as follows:

$$\begin{aligned} P &= .063 \text{ Watt or } 18 \text{ DBm.} \\ 43 + 10 \log P &= 31 \text{ dB below the main carrier,} \\ &\quad \text{or a relative level of } -13 \text{ DBm.} \end{aligned}$$

No antenna conducted emissions were recorded within 20 Db of the FCC limit.

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### **FIGURE 3 - ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST SETUP**

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HP8564E SPECTRUM ..... UNIT UNDER TEST ..  
S/N 3442A00263 ..  
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BIT ERROR GENERATOR ..  
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