HME

Customer Driven

Date: August 20, 2003

TUV Product Service
10040 Mesa Rim Road
San Diego, Ca. 92121
Attn: Ms. Judy Evans

Dear Ms. Evans,

The following is the test setup and equipment used for the re-measurement of the occupied bandwidth of the SYS400 Base Station (FCC ID: BYM400).

Equipment Used:
HP8920A, Serial Number 3438A05630, RF Communications Test Set
HP8594E, Serial Number 3325A00532, Spectrum Analyzer
HME, microphone-matching network.

Test Set Up:
Modulation Limiting:

The microphone-matching network was connected to the Unit Under Test (UUT) microphone input. The audio output of the HP8920A was connected to the microphone-matching network. The RF deviation of the UUT was measured on the HP8920A. The audio input frequency was swept to find the point of maximum deviation. The audio input frequency was set to the frequency of maximum deviation, and the level then increased until the deviation ceased to increase with increasing audio level. The audio frequency was then set to 2500Hz, and the level was then reduced to achieve 50% modulation. The audio level was then increased by 16dB.

Data:

Freq. (Hz)	Deviation (kHz)	Freq. (Hz)	Deviation (kHz)	Freq. (Hz)	Deviation (kHz)
500	1.48	2100	3.31	3700	2.57
600	1.74	2200	3.33	3800	2.41
700	1.96	2300	3.33	3900	2.29
800	2.27	2400	3.34	4000	1.94
900	2.55	2500	3.35		
1000	2.79	2600	3.34		
1100	2.91	2700	3.30		
1200	3.00	2800	3.27		
1300	3.09	2900	3.24		
1400	3.15	3000	3.20		
1500	3.21	3100	3.15		
1600	3.23	3200	3.08		
1700	3.25	3300	3.03		
1800	3.27	3400	2.92		
1900	3.28	3500	2.80		
2000	3.30	3600	2.71		

Maximum Deviation is at 2500Hz. Increasing Audio level provides a maximum deviation of 3.87kHz with an input of 3.70 millivolts. 50% deviation = 1.935kHz with an input of 0.01 millivolts. +16 dB is input of 0.05 millivolts.

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Occupied Bandwidth:
With the UUT set to 2500Hz modulation, 50% deviation (+16dB), the HP8594E Spectrum Analyzer was used to measure the 99% occupied bandwidth using the internal function for this purpose.

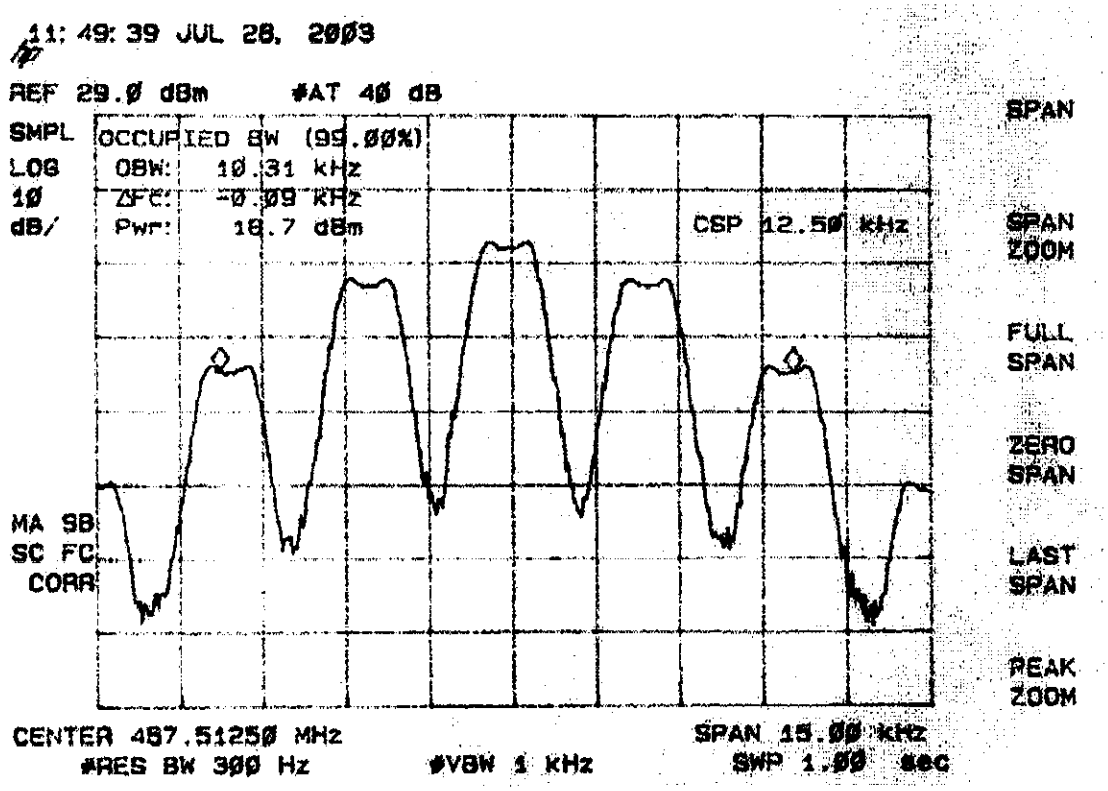

Figure 1 BASE 400 Modulated with 2500Hz + 16dB

Best Regards.

HM Electronics, Inc.

Thomas P. Riches

Engineering Services Manager