

NAME OF TEST: Transient Frequency Behavior

RULE PART NUMBER: 90.214

MINIMUM STANDARD: **25 kHz channel** (used worst case numbers from 450 to 512 MHz)  
PTT Enable  
Shall not exceed  $\pm 25$  kHz for  $t_0$  to 10 msec  
Shall not exceed  $\pm 12.5$  kHz for 10 msec to 25 msec  
Shall not exceed FCC frequency limit for  $t > 35$  msec

PTT Disable  
Shall not exceed  $\pm 25$  kHz for  $t_3$  to  $t_{off}$  (10msec)

**12.5 kHz channel** (used worst case numbers from 450 to 512 MHz)  
PTT Enable  
Shall not exceed  $\pm 12.5$  kHz for  $t_0$  to 10 msec  
Shall not exceed  $\pm 6.25$  kHz for 10 msec to 25 msec  
Shall not exceed FCC frequency limit for  $t > 35$  msec

PTT Disable  
Shall not exceed  $\pm 12.5$  kHz for  $t_3$  to  $t_{off}$  (10msec)

TEST RESULTS: Meets minimum standards, see data on following pages

TEST CONDITIONS: RF Power Level = 125 Watts  
Standard Test Conditions, 25 C

TEST PROCEDURE: TIA/EIA - 603, 2.2.19

TEST EQUIPMENT: Attenuator, Coaxial Dynamics Model 6005 / 10 dB 200 Watt  
Attenuator, Tenuline Model 8340-100 / 10 dB 25 Watt  
Attenuator, Lucas Weinschel Model 45-3-43 / 3 dB 250 Watt  
Attenuator, Kay Step Attenuator, Model 439A  
Attenuator, Texscan Model FP-50 / 20 dB 0.5 Watt  
Power Supply, Tectrol Inc., TC845-1081  
Digital Voltmeter, Fluke Model 8012A  
Power Combiner, Model MCL ZFSC-4-1  
Modulation Analyzer, Model HP8901A  
Power Meter, Model HP436  
Oscilloscope, Model HP54501A  
Power Detector, Model EFJ lab made  
Directional Coupler, Model HP778D  
Signal Generator, Model HP8644B  
Plotter, Model HP2671G

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TEST DESCRIPTION:

1. Adjust signal generator to -100 dBm with a 1 kHz tone at +/- 25 kHz deviation.
2. Enable the transmitter.
3. Adjust the step attenuator such that the transmitter output is -10 dBm at the test receiver input. (maximum input to test receiver = 1 Watt or 30 dBm)
4. Disable the transmitter.
5. Adjust the signal generator such that the level at the test receiver input is -30 dBm.
6. Adjust the oscilloscope to a 10 msec. per division horizontal sweep rate. Then adjust the vertical amplitude control to display the 1 kHz tone at +/- 4 divisions. The +/- 4 divisions represents a deviation of +/- 25 kHz.
7. Adjust the oscilloscope to trigger, and store the result, on a rising edge signal at 1 division from the left side of the display.
8. Remove 30 dB of attenuation from the attenuators that are inline with the transmitter signal.
9. Enable the transmitter and record the display results as the "On Transient Frequency Behavior".
10. Adjust the oscilloscope to trigger, and store the result, on a falling edge signal at 1 division from the right side of the display.
11. Disable the transmitter and record the display results as the "Off Transient Frequency Behavior".

