

Exhibit O: Transient Frequency Response

FCC ID: CW21669-3

Transient Frequency Response

The Transient Frequency Response data that was approved by the FCC during the certification of CW21668-1 is being referenced for this application.

10. Transient Frequency Behavior

10.1 Test Technical Standard

Sec. 90.214 Transient frequency behavior.

Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time intervals ^{1,2}	Maximum frequency difference ³	All equipment	
		150 to 174 MHz	421 to 512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t_1^4	± 12.5 kHz	5.0 mSec	10.0 mSec
t_2	± 6.25 kHz	20.0 mSec	25.0 mSec
t_3^4	± 12.5 kHz	5.0 mSec	10.0 mSec

¹ t_{on} is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.

t_1 is the time period immediately following t_{on} .

t_2 is the time period immediately following t_1 .

t_3 is the time period from the instant when the transmitter is turned off until t_{off} .

t_{off} is the instant when the 1 kHz test signal starts to rise.

² During the time from the end of t_2 to the beginning of t_3 , the frequency difference must not exceed the limits specified in Sec. 90.213.

³ Difference between the actual transmitter frequency and the assigned transmitter frequency.

⁴ If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

10.2 Test Procedure

TIA/EIA-603:1993 Section 2.2.19

10.3 Test equipment

IFR	Communications Monitor	COM-120A	485002436
HP	Signal Generator	8640B	1741A07326
HP	VHF Attenuator	355D	1204A24115
HP	Triple Output Power Supply	6235A	2450A-06875
Tektronix	Digital Oscilloscope	TDS620B	B030182
Instek	Laboratory DC Supply	PS-3030	9669588
JFW	Directional Coupler	50C-007-10	207963
JFW	RF Detector	50D-003	N/A
RE	Combiner	50-500 Mhz	N/A

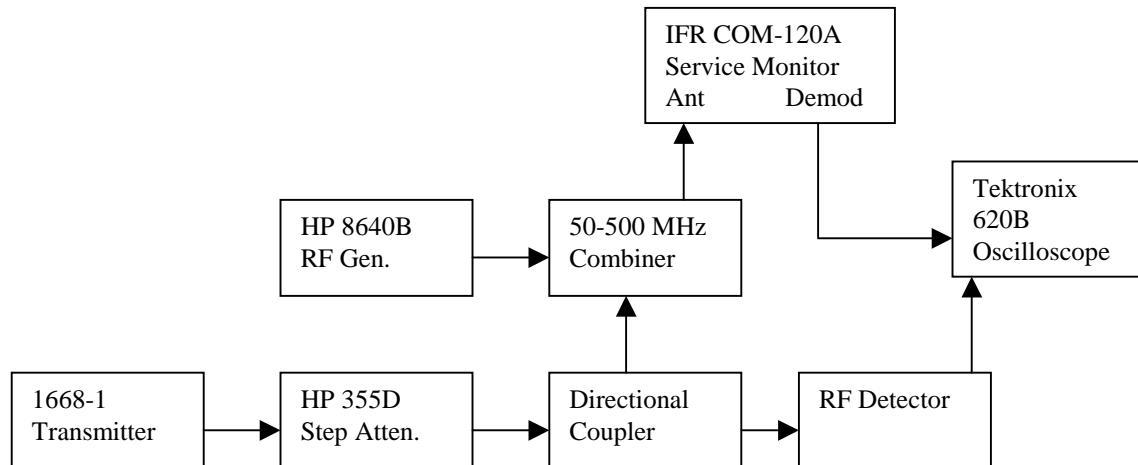
10.4 Test Results

RFD Controller 1668-1 Transient Frequency Tests With Unmodulated Signal

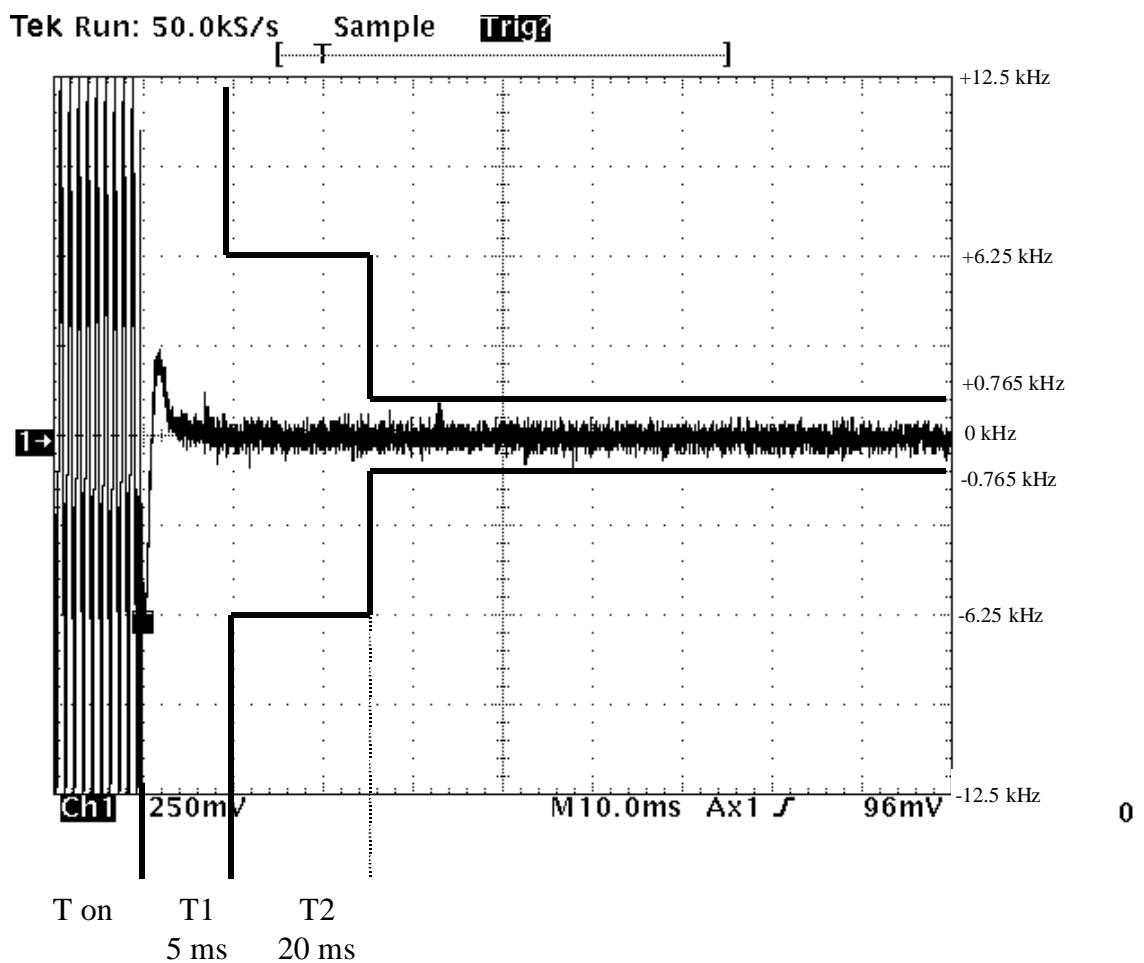
Time Interval	Allowed Frequency Deviation	Measured Frequency Deviation	Delta to limit
t_1 5.0 mSec	No limit EUT < 6 Watts	11.25 kHz	N/A
t_2 20.0 mSec	6.25 kHz	2.5 kHz	-3.75 kHz
t_3 5.0 mSec	No limit EUT < 6 Watts	none	N/A

RFD Controller 1668-1 Transient Frequency Tests With Modulated Signal

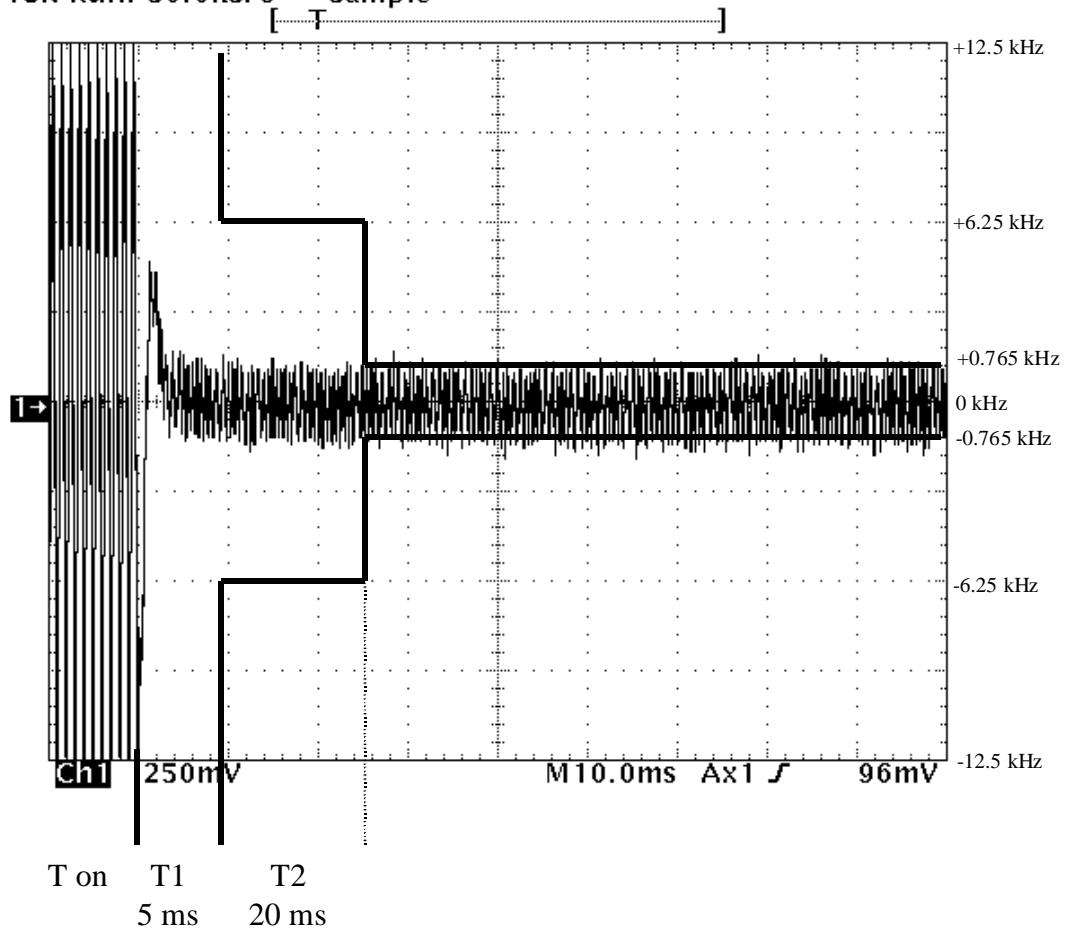
Time Interval	Allowed Frequency Deviation	Measured Frequency Deviation	Delta to limit
t_1 5.0 mSec	No limit EUT < 6 Watts	11.25 kHz	N/A
t_2 20.0 mSec	6.25 kHz	2.5 kHz	-3.75 kHz
t_3 5.0 mSec	No limit EUT < 6 Watts	none	N/A



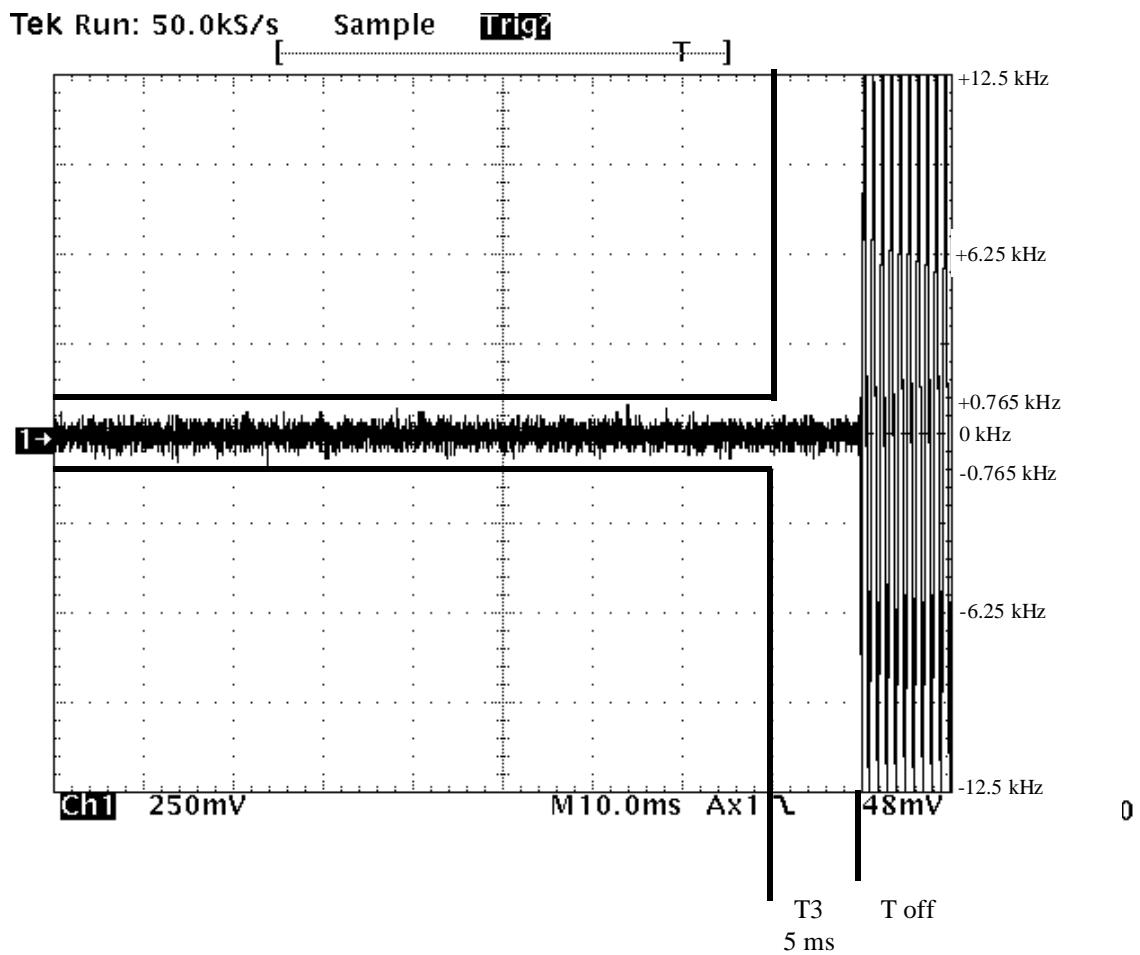
Block Diagram of Test Setup



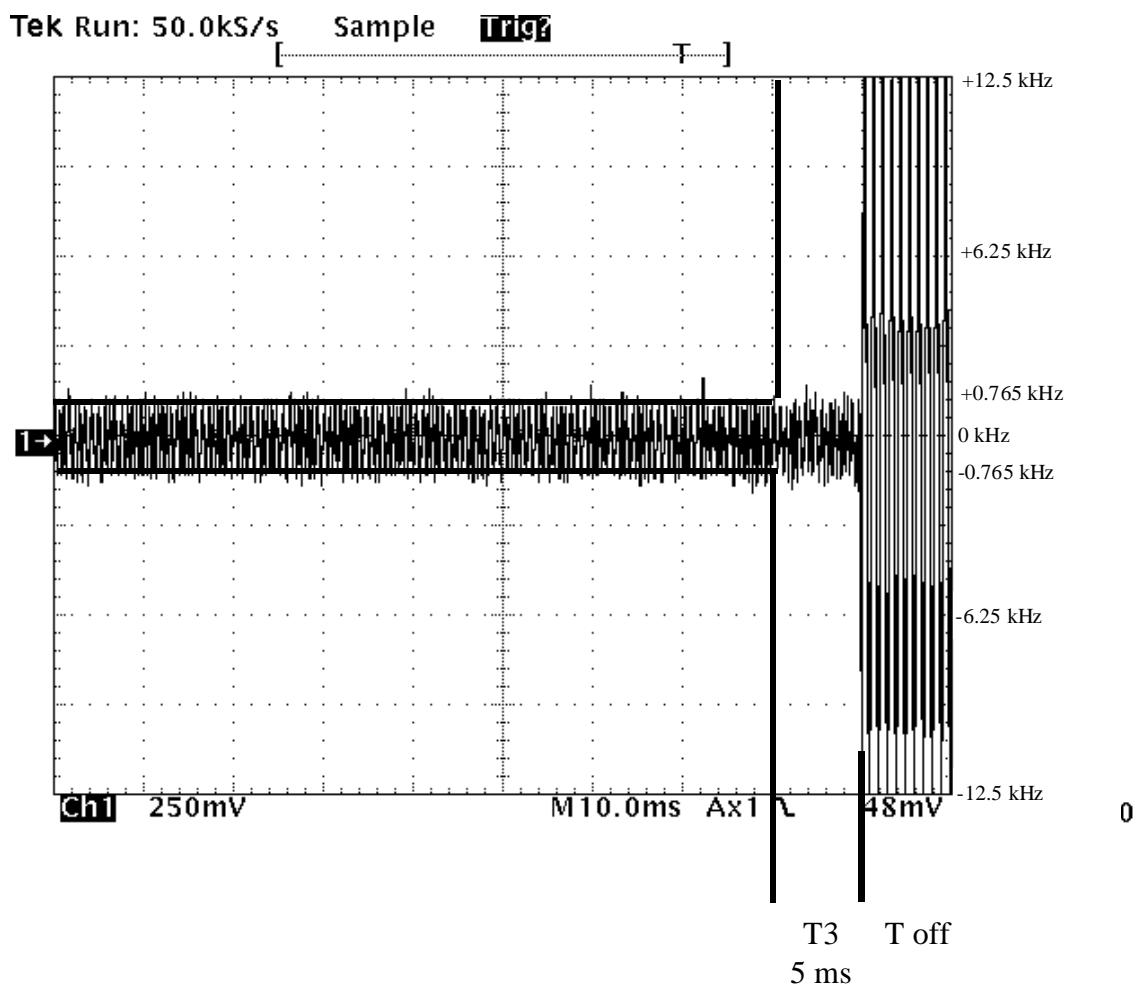
Tek Run: 50.0kS/s Sample



Turn On Transient – Modulated with data



Turn Off Transient – No Modulation



Turn Off Transient – Modulated with data