

## Response to TCB Findings

1. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000Hz shall be supplied as required by 2.1047(a).

### Response

Freq. Response of Audio

25kHz Ch. Spacing

| I/P Freq.<br>(Hz) | Demod. O/P<br>(dB) |
|-------------------|--------------------|
| 100               | -82                |
| 300               | -19                |
| 500               | -14.3              |
| 1500              | -4.6               |
| 2000              | -1.6               |
| 2500              | 0.1                |
| 3000              | 0                  |
| 3500              | -23                |
| 4000              | -81.9              |
| 5000              | -86.9              |

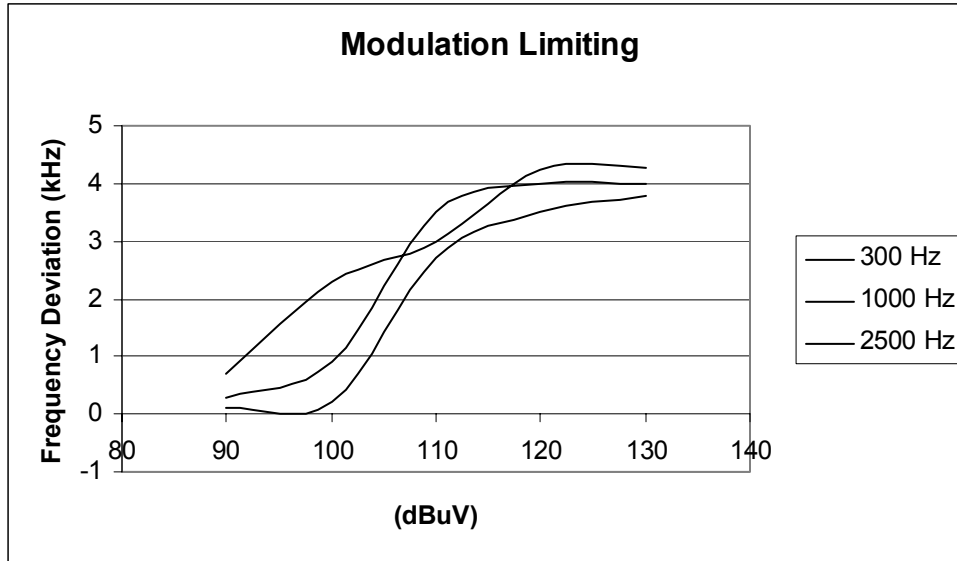
12.5kHz Ch. Spacing

| I/P Freq.<br>(Hz) | Demod. O/P<br>(dB) |
|-------------------|--------------------|
| 100               | -75.8              |
| 300               | -18.9              |
| 500               | -14.3              |
| 1500              | -4.4               |
| 2000              | -1.7               |
| 2500              | 0.3                |
| 3000              | 0                  |
| 3500              | -23                |
| 4000              | -74.8              |
| 5000              | -72.8              |

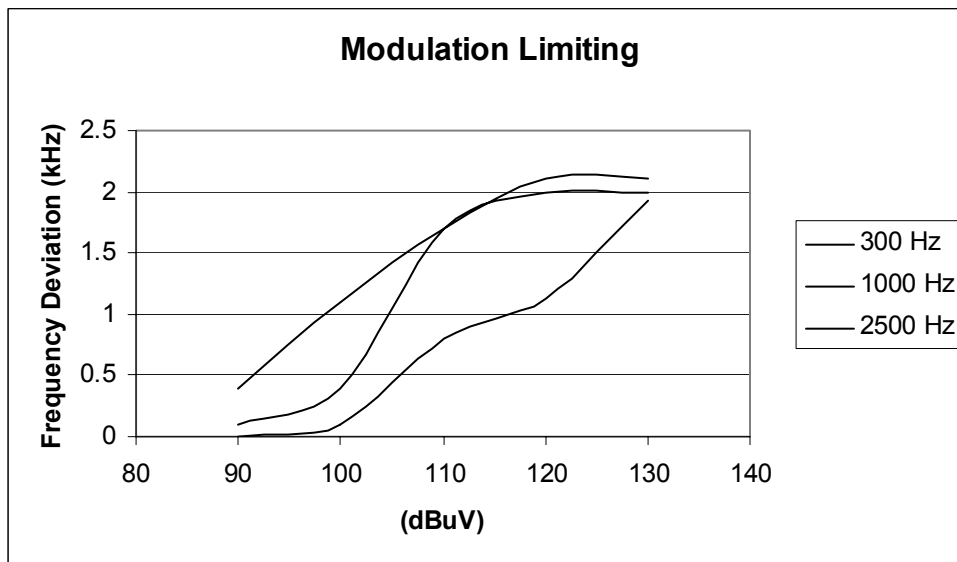
2. Please supply modulation limiting curve required by 2.1047(b).

### Response

VT-4D150, Modulation Limiting  
WB

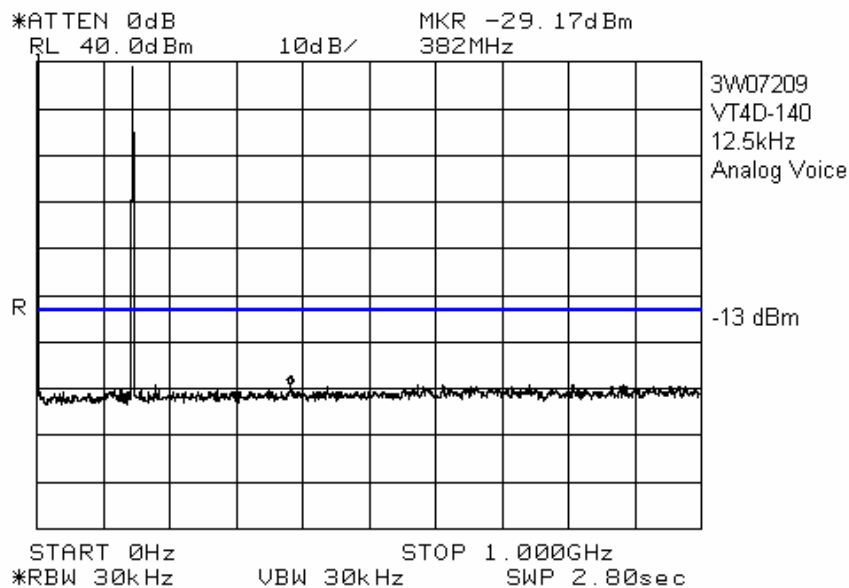
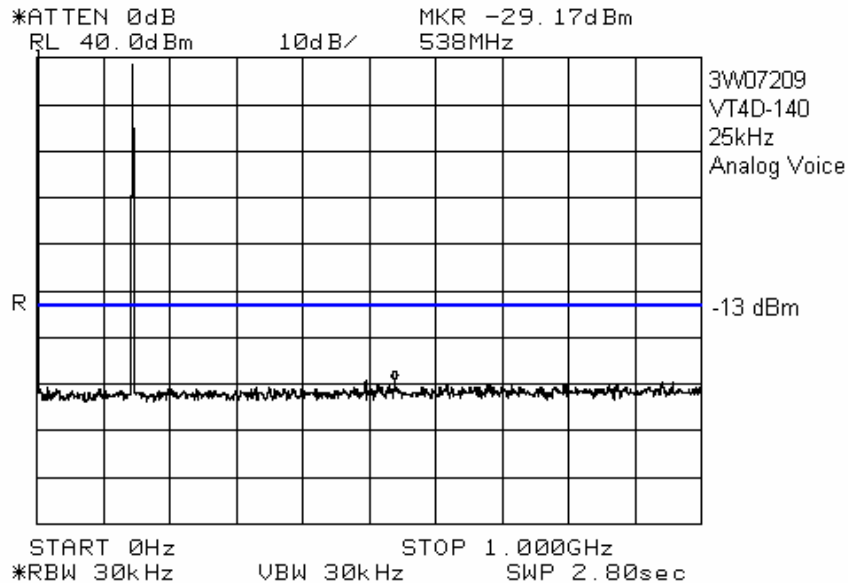


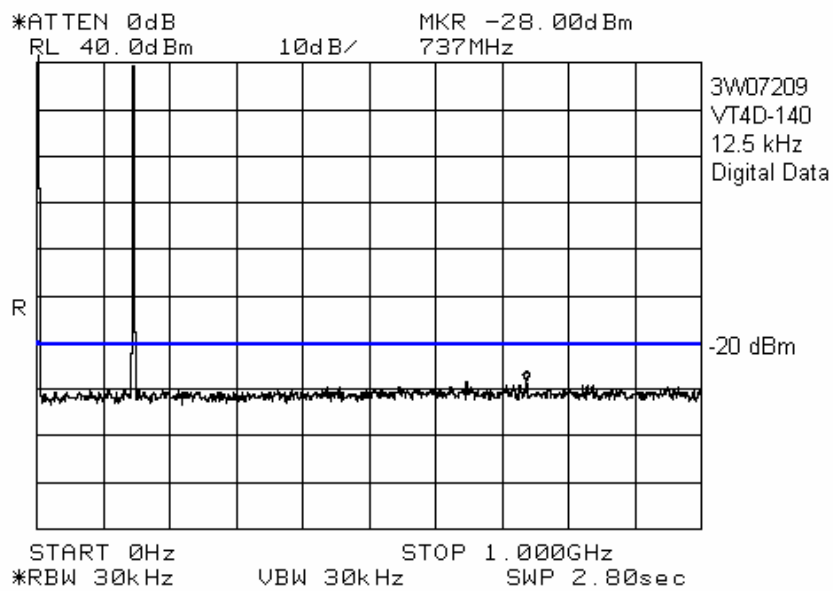
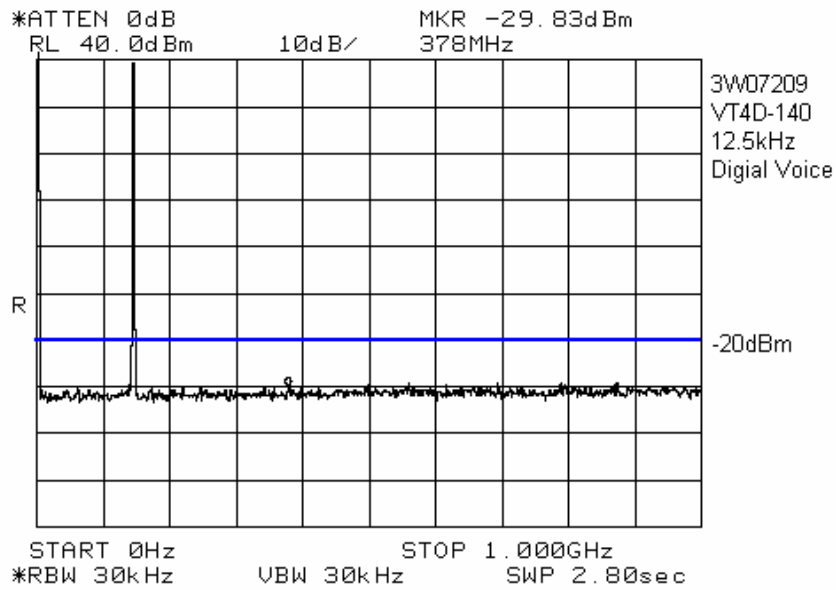
NB

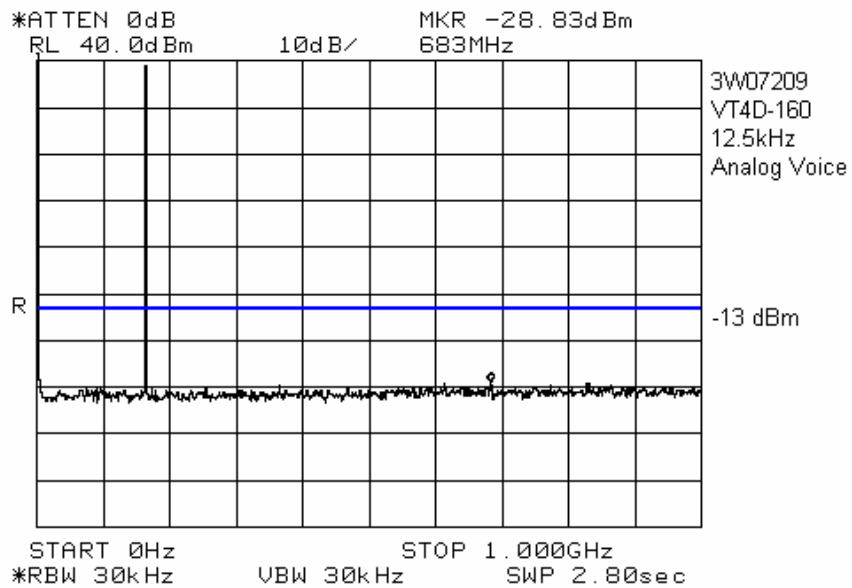
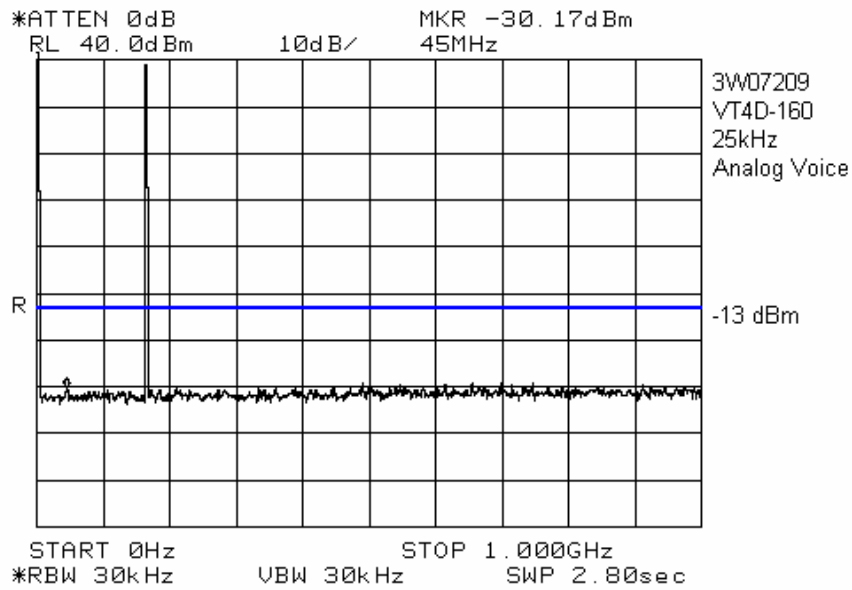


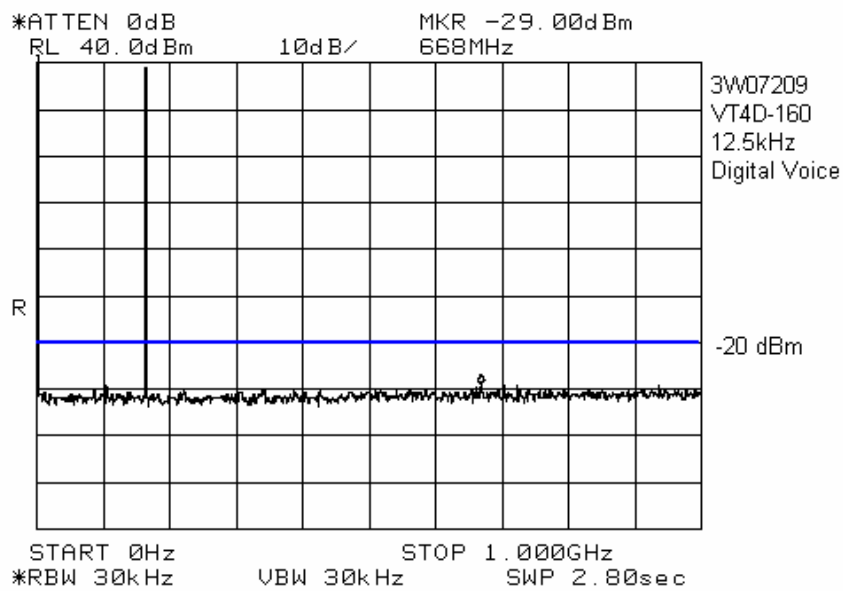
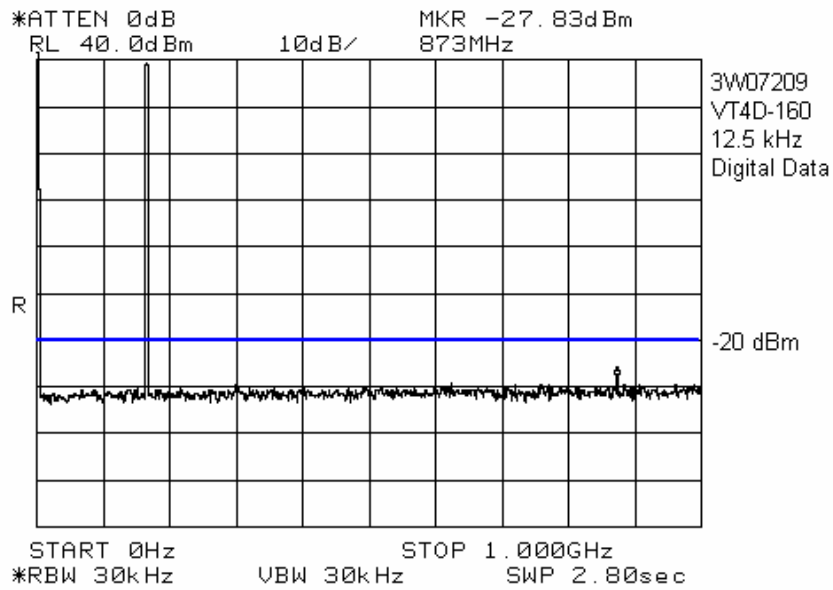
3. For some of the spurious emissions at the antenna terminal plots the in the test report RBW is set to 10kHz. The minimum RBW setting should be 30kHz according to 22.359(c). Please justify/clarify this selection

This test caused a dilemma. Part 22 and Part 90 have different requirements. P22 uses 30 kHz, P90 uses at least 10kHz(see 90.210(m)). I showed 10 kHz assuming it would be relatively easy to calculate emission peaks from a 10 kHz to 30kHz RBW/VBW. It would also show a truer representation of the EUT, by lowering the N.F. of the analyzer. See attached plots.









4. Please describe how the signal substitution factors were determined for radiated emissions on pages 32 and 33 of the test report

**Response**

This data presented is the signal substitution method as per TIA/EIA-603. The emissions level column is the level obtained when reproducing the maximized emission with a substituted signal source as per the guides of the ANSI/TIA/EIA-603 signal substitution procedure.

5. Please point out the section in the operational description where we can find the "DC voltage and current levels in the final RF amplifier stage" of the transmitters.

**Response**

Voltage and current values for the RF Amplifiers are contained in the "General Setup" information of the Amplifier Alignment sections within the applicable Theory of Operation exhibits:

- a) Page 26 of the VT-4D150 VHF Transmitter Operational Description exhibit; and
- b) Page 25 of the UT-4D400 UHF Transmitter Operational Description exhibit.