



# **FCC Part 90& Part 22 Rules Test Report**

**Test report  
On Behalf of  
Fujian Juston Electronic Equipment Co.,Ltd.  
For  
DMR Digital two way radio  
Model No.: D2000,D2100,D2200,D2300**

**FCC ID: 2AB4FD2000**

**Prepared for :** Fujian Juston Electronic Equipment Co.,Ltd.  
No.66 Changtai Road,Shudou Industrial Park,Jiangnan Licheng  
District,Quanzhou ,China

**Prepared By :** Shenzhen HUAKE Testing Technology Co., Ltd.  
1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an  
District, Shenzhen City, China

**Date of Test:** Oct. 25, 2018~Dec. 07, 2018

**Date of Report:** Dec. 10, 2018

**Report Number:** HK1812101834E

**TEST RESULT CERTIFICATION**

**Applicant's name** ..... : Fujian Juston Electronic Equipment Co.,Ltd.  
**Address** ..... : No.66 Changtai Road,Shudou Industrial Park,Jiangnan Licheng District,Quanzhou ,China  
**Manufacture's Name**..... : Fujian Juston Electronic Equipment Co.,Ltd.  
**Address** ..... : No.66 Changtai Road,Shudou Industrial Park,Jiangnan Licheng District,Quanzhou ,China  
**Product description** ..... : DMR Digital two way radio  
**Brand Name** ..... : HYDX  
**Mode Name** ..... : D2000  
**Serial Name** ..... : D2100 ,D2200 ,D2300  
**Difference Description** ..... : Model, body speaker position shell style is different, only D2000 has SOS  
**Standards** ..... : FCC Part 90& Part 22 Rules

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen HUAK Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen HUAK Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

**Date of Test** ..... :  
**Date (s) of performance of tests** ..... : Oct. 25, 2018~Dec. 07, 2018  
**Date of Issue**..... : Dec. 10, 2018  
**Test Result**..... : **Pass**

Testing Engineer :

(Gary Qian)

Technical Manager :

(Eden Hu)

Authorized Signatory :

(Jason Zhou)



| Revision | Issue Date   | Revisions     | Revised By |
|----------|--------------|---------------|------------|
| V1.0     | Dec.10, 2018 | Initial Issue | Jason Zhou |

**TABLE OF CONTENTS**

|                                            |           |
|--------------------------------------------|-----------|
| <b>1. GENERAL INFORMATION .....</b>        | <b>6</b>  |
| 1.1PRODUCT DESCRIPTION.....                | 6         |
| 1.2RELATED SUBMITTAL(S) / GRANT (S) .....  | 9         |
| 1.3 TEST METHODOLOGY.....                  | 9         |
| 1.4 TEST FACILITY .....                    | 9         |
| 1.5 SPECIAL ACCESSORIES .....              | 9         |
| 1.6 EQUIPMENT MODIFICATIONS.....           | 9         |
| <b>2. SYSTEM TEST CONFIGURATION .....</b>  | <b>10</b> |
| 2.1EUT CONFIGURATION .....                 | 10        |
| 2.2 EUT EXERCISE.....                      | 10        |
| 2.3 GENERAL TECHNICAL REQUIREMENTS.....    | 10        |
| 2.4 CONFIGURATION OF TESTED SYSTEM .....   | 11        |
| <b>3. SUMMARY OF TEST RESULTS .....</b>    | <b>11</b> |
| <b>4. DESCRIPTION OF TEST MODES .....</b>  | <b>13</b> |
| <b>5. FREQUENCY TOLERANCE .....</b>        | <b>14</b> |
| 5.1 PROVISIONS APPLICABLE .....            | 14        |
| 5.2 MEASUREMENT PROCEDURE.....             | 14        |
| 5.3 TEST SETUP BLOCK DIAGRAM .....         | 15        |
| 5.4 TEST RESULTS.....                      | 16        |
| <b>6. EMISSION BANDWIDTH .....</b>         | <b>28</b> |
| 6.1 PROVISIONS APPLICABLE .....            | 28        |
| 6.2 MEASUREMENT PROCEDURE.....             | 28        |
| 6.3 TEST SETUP BLOCK DIAGRAM .....         | 28        |
| 6.4 MEASUREMENT RESULT .....               | 29        |
| <b>7. UNWANTED RADIATION.....</b>          | <b>53</b> |
| 7.1 PROVISIONS APPLICABLE .....            | 53        |
| 7.2 MEASUREMENT PROCEDURE.....             | 53        |
| 7.3 TEST SETUP BLOCK DIAGRAM .....         | 54        |
| 7.4 MEASUREMENT RESULTS:.....              | 55        |
| 7.5 EMISSION MASK PLOT.....                | 78        |
| <b>8. MODULATION CHARACTERISTICS .....</b> | <b>95</b> |
| 8.1 PROVISIONS APPLICABLE .....            | 95        |
| 8.2 MEASUREMENT METHOD.....                | 95        |
| 8.3 MEASUREMENT RESULT .....               | 95        |



|                                                                              |            |
|------------------------------------------------------------------------------|------------|
| <b>9. MAXIMUM TRANSMITTER POWER (CONDUCTED OUTPUT POWER) PEAK POWER.....</b> | <b>108</b> |
| 9.1 PROVISIONS APPLICABLE .....                                              | 108        |
| 9.2 TEST PROCEDURE .....                                                     | 108        |
| 9.3 TEST CONFIGURATION .....                                                 | 108        |
| 9.4 TEST RESULT.....                                                         | 110        |
| 9.5 CONDUCT SPURIOUS PLOT .....                                              | 120        |
| <b>10. TRANSMITTER FREQUENCY BEHAVIOR .....</b>                              | <b>152</b> |
| 10.1 PROVISIONS APPLICABLE .....                                             | 152        |
| 10.2 TEST METHOD .....                                                       | 152        |
| 10.3 DESCRIBE LIMIT LINE OF TRANSMITTER FREQUENCY BEHAVIOR .....             | 153        |
| 10.4 MEASURE RESULT .....                                                    | 154        |
| <b>11. AUDIO LOW PASS FILTER RESPONSE .....</b>                              | <b>156</b> |
| 11.1. TEST LIMITS.....                                                       | 156        |
| 11.2. METHOD OF MEASUREMENTS .....                                           | 156        |
| 11.3. MEASURE RESULT .....                                                   | 157        |
| <b>APPENDIX I: PHOTOGRAPHS OF SETUP .....</b>                                | <b>159</b> |
| <b>APPENDIX II PHOTOGRAPHS OF EUT .....</b>                                  | <b>160</b> |

## 1. GENERAL INFORMATION

### 1.1 PRODUCT DESCRIPTION

The EUT is a **DMR Digital two way radio** designed for voice/data communication. It is designed by way of utilizing the FM/4FSK modulation achieves the system operating.

A major technical description of EUT is described as following:

|                                       |                                                                                                                                                                                                                              |                                                                                                                         |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Communication Type                    | Voice / Data                                                                                                                                                                                                                 |                                                                                                                         |
| Hardware Version                      | JST-HD-D2000-V2.                                                                                                                                                                                                             |                                                                                                                         |
| Software Version                      | JST-SW-D2000-V1-3                                                                                                                                                                                                            |                                                                                                                         |
| Modulation                            | FM/4FSK                                                                                                                                                                                                                      |                                                                                                                         |
| Emission Type                         | 7K60FXD/7K60FXE/11K0F3E                                                                                                                                                                                                      |                                                                                                                         |
| Emission Bandwidth                    | Analog:10.219(4W-12.5 KHz), 10.218KHz(1W-12.5 KHz) ---VHF<br>Digital: 8.901KHz(4W),9.008 KHz(1W) ---VHF<br>Analog:10.230KHz(4W-12.5 KHz), 10.215KHz(1W-12.5 KHz) ---UHF<br>Digital: 8.920KHz(4W), 8.969KHz(1W) ---UHF        |                                                                                                                         |
| Peak Frequency Deviation              | 2.76KHz                                                                                                                                                                                                                      |                                                                                                                         |
| Audio Frequency Response              | 11.32dB                                                                                                                                                                                                                      |                                                                                                                         |
| Maximum Transmitter Power             | Analog:35.56 dBm(4W-12.5 KHz), 28.84dBm (1W-12.5 KHz) ---VHF<br>Digital: 35.57 dBm(4W), 28.91dBm (1W) ---VHF<br>Analog:34.99 dBm(4W-12.5 KHz), 28.75dBm (1W-12.5 KHz) ---UHF<br>Digital: 34.97 dBm(4W), 28.73dBm (1W) ---UHF |                                                                                                                         |
| Output power Modification             | 4W/1W<br>(It was fixed by the manufacturer, any individual can't arbitrarily change it.)                                                                                                                                     |                                                                                                                         |
| Data Rate                             | 9600bps/12.5KHz(Channel Spacing)                                                                                                                                                                                             |                                                                                                                         |
| Antenna Designation                   | Detachable                                                                                                                                                                                                                   |                                                                                                                         |
| Antenna Gain                          | 2.15 dBi                                                                                                                                                                                                                     |                                                                                                                         |
| Power Supply                          | DC 7.4V, 2200mAh (by battery) charging: DC 8.4V 400~450mA                                                                                                                                                                    |                                                                                                                         |
| Adapter Parameter                     | INPUT: AC 100V-240V , 50/60Hz , 0.3A<br>OUTPUT: DC 12V , 500mA                                                                                                                                                               |                                                                                                                         |
| Limiting Voltage                      | DC 6V-8.51V                                                                                                                                                                                                                  |                                                                                                                         |
| Operation Frequency Range and Channel | Frequency Range: 136 MHz to 174 MHz (VHF) 400 MHz to 480 MHz (UHF)<br>Channel Separation: 12.5KHz(Digital/ Analog)                                                                                                           |                                                                                                                         |
|                                       | Bottom Channel: 136.025MHz<br>Middle Channel:151.85MHz<br>Middle Channel:155.025MHz<br>Middle Channel:161.61MHz<br>(Top)High Channel: 173.975MHz                                                                             | Bottom Channel: 400.025MHz<br>Middle Channel: 453.225MHz<br>Middle Channel: 454.025MHz<br>(Top)High Channel: 479.975MHz |
| Frequency Tolerance                   | 1.098ppm                                                                                                                                                                                                                     |                                                                                                                         |

| Frequency Range<br>(MHz) | Rated Transmit<br>Power(W)(Conducted) | Transmit Mode/Emission Designator           |
|--------------------------|---------------------------------------|---------------------------------------------|
| 400-480                  | 1W/4W                                 | 11K0F3E(Analog Voice;NB)                    |
| 400-480                  | 1W/4W                                 | 7K60FXD/7K60FXW(9600Data/Digital Voice NB ) |

| Frequency Range<br>(MHz) | Rated Transmit<br>Power(W)(Conducted) | Transmit Mode/Emission Designator           |
|--------------------------|---------------------------------------|---------------------------------------------|
| 136-174                  | 1W/4W                                 | 11K0F3E(Analog Voice;NB)                    |
| 136-174                  | 1W/4W                                 | 7K60FXD/7K60FXW(9600Data/Digital Voice NB ) |

| Channel No.<br>(6.25KHz) | Channel No.<br>(12.5KHz) | 12.5KHz Channel Spaced 400MHz Band<br>Plan(MHz) |
|--------------------------|--------------------------|-------------------------------------------------|
| 1                        | 1-2                      | 400.025                                         |
| 2                        |                          |                                                 |
| 3                        | 3-4                      | 440.025                                         |
| 4                        |                          |                                                 |
| 5                        | 5-6                      | 479.975                                         |
| 6                        |                          |                                                 |

| Channel No.<br>(6.25KHz) | Channel No.<br>(12.5KHz) | 12.5KHz Channel Spaced 136MHz Band<br>Plan(MHz) |
|--------------------------|--------------------------|-------------------------------------------------|
| 1                        | 1-2                      | 136.025                                         |
| 2                        |                          |                                                 |
| 3                        | 3-4                      | 155.025                                         |
| 4                        |                          |                                                 |
| 5                        | 5-6                      | 173.975                                         |
| 6                        |                          |                                                 |

## FCC Rules and Regulations Part 2.202: Necessary Bandwidth and Emission Bandwidth

Voice –FM Analog (12.5KHz)

Calculation:

Max modulation (M) in kHz : 3.0

Max deviation(D) in kHz:2.5

Constant factor (K): 1(assumed)

 $B_n = 2XM + 2XDK = 11.0 \text{ KHz}$ 

Emission designator: 11K0F3E

9600 Digital Voice/data (12.5KHz)

Calculation:

Data rate in bps(R)=9600

Deviation Peak deviation of carrier(D)=2359.585

Constant factor (K): 1 (default)

 $B_n = 3.86D + 1.27RK = 3.86(2359.585) + 0.27(9600)(1) = 11.7 \text{ KHz}$ 

Emission designator: 11K0FXD



**1.2 RELATED SUBMITTAL(S) / GRANT (S)**

This submittal(s) (test report) is intended for FCC ID: **2AB4FD2000**, filing to comply with Part 2, Part 22, and Part 90 of the Federal Communication Commission rules.

**1.3 TEST METHODOLOGY**

The radiated emission testing was performed according to the procedures of ANSI/TIA-603-E (2016).

**1.4 TEST FACILITY**

|                                        |                                                                                                                 |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Site</b>                            | Shenzhen HUAK Testing Technology Co., Ltd.                                                                      |
| <b>Location</b>                        | 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China |
| <b>Designation Number</b>              | CN1229                                                                                                          |
| Test Firm Registration Number : 616276 |                                                                                                                 |

**1.5 SPECIAL ACCESSORIES**

Not available for this EUT intended for grant.

**1.6 EQUIPMENT MODIFICATIONS**

Not available for this EUT intended for grant.

## **2. SYSTEM TEST CONFIGURATION**

### **2.1 EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2 EUT EXERCISE**

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

### **2.3 GENERAL TECHNICAL REQUIREMENTS**

For FCC Part 90& Part 22 requirements:

- (1). Section 90.205 & 22.565: RF Output Power
- (2). Section 90.207: Modulation Characteristic
- (3). Section 90.209 & 22.359: Occupied Bandwidth
- (4). Section 90.210 & 22.359: Emission Mask
- (5). Section 90.213 & 22.355: Frequency Tolerance
- (6). Section 90.214: Transient Frequency Behavior

## 2.4 CONFIGURATION OF TESTED SYSTEM

Fig. 2-1 Configuration of Tested System

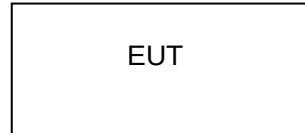


Table 2-1 Equipment Used in Tested System

| Item | Equipment                 | Model No.       | Identifier         | Note      |
|------|---------------------------|-----------------|--------------------|-----------|
| 1    | DMR Digital two way radio | D2000           | FCC ID: 2AB4FD2000 | EUT       |
| 2    | Adapter                   | CG-D120050      | DC 12V 500mA       | Accessory |
| 3    | Battery                   | D50             | DC7.4V, 2200mAh    | Accessory |
| 4    | Desktop charger           | N/A             | DC 8.4V, 400~450mA | Accessory |
| 5    | High gain antenna         | SMA-K7-D2000-UV | N/A                | Accessory |
| 6    | Back clip                 | N/A             | N/A                | Accessory |
| 7    | lanyard                   | N/A             | N/A                | Accessory |

## 3. SUMMARY OF TEST RESULTS

| FCC Rules        | Description Of Test          | Result    |
|------------------|------------------------------|-----------|
| §90.205 & 22.565 | Maximum Transmitter Power    | Compliant |
| §90.207          | Modulation Characteristic    | Compliant |
| §90.209& 22.359  | Occupied Bandwidth           | Compliant |
| §90.210& 22.359  | Emission Mask                | Compliant |
| §90.213& 22.355  | Frequency Tolerance          | Compliant |
| §90.214          | Transient Frequency Behavior | Compliant |

**LIST OF EQUIPMENTS USED**

| <b>Equipment</b>             | <b>Manufacturer</b> | <b>Model</b> | <b>S/N</b> | <b>Cal. Date</b> | <b>Cal. Due</b> |
|------------------------------|---------------------|--------------|------------|------------------|-----------------|
| Receiver                     | R&S                 | ESCI 7       | HKE-010    | Dec. 29, 2017    | Dec. 28, 2018   |
| Spectrum analyzer            | Agilent             | N9020A       | HKE-048    | Dec. 29, 2017    | Dec. 28, 2018   |
| Horn Antenna                 | Schwarzbeck         | 9120D        | HKE-013    | Dec. 29, 2017    | Dec. 28, 2018   |
| Preamplifier                 | EMCI                | EMC051845SE  | HKE-015    | Dec. 29, 2017    | Dec. 28, 2018   |
| Double-Ridged Waveguide Horn | ETS LINDGREN        | 3117         | HKE-087    | Dec. 29, 2017    | Dec. 28, 2018   |
| Preamplifier                 | Schwarzbeck         | BBV 9743     | HKE-006    | Dec. 29, 2017    | Dec. 28, 2018   |
| Bilog Broadband Antenna      | Schwarzbeck         | VULB9163     | HKE-012    | Dec. 29, 2017    | Dec. 28, 2018   |
| Loop Antenna                 | Schwarzbeck         | FMZB 1519 B  | HKE-014    | Dec. 29, 2017    | Dec. 28, 2018   |
| Small environmental tester   | ESPEC               | SH-242       | HKE-088    | Mar. 02, 2018    | Mar. 01, 2019   |
| RF Communication Test Set    | HP                  | HP8920B      | HKE-089    | June 12, 2018    | June 11, 2019   |
| ANTENNA                      | A.H.                | SAS-521-4    | HKE-091    | Mar. 01, 2018    | Feb. 28, 2020   |
| ANTENNA                      | Schwarzbeck         | 9168         | HKE-095    | Mar. 01, 2018    | Feb. 28, 2020   |
| HORN ANTENNA                 | E.M.                | EM-AH-10180  | HKE-090    | Mar. 01, 2018    | Feb. 28, 2020   |
| Signal generator             | Agilent             | N5183A       | HKE-071    | Dec. 29, 2017    | Dec. 28, 2018   |
| Attenuator                   | JFW                 | 50FHC-006-50 | HKE-098    | June 12, 2018    | June 11, 2019   |
| Vector Analyzer              | Agilent             | E4440A       | HKE-079    | 2018/03/01       | 2019/02/28      |
| RF Cable                     | R&S                 | 1#           | N/A        | Each time        | N/A             |
| RF Cable                     | R&S                 | 2#           | N/A        | Each time        | N/A             |

#### 4. DESCRIPTION OF TEST MODES

##### RF TEST MODES

The EUT (**DMR Digital two way radio**) has been tested under normal operating condition. (The top channel, the middle channel and the bottom channel) are chosen for testing at each channel separation.

##### Analog:

| No. | TEST MODES     | CHANNEL SEPARATION |
|-----|----------------|--------------------|
| 1   | Low Channel    | 12.5 KHz           |
| 2   | Middle Channel | 12.5 KHz           |
| 3   | High Channel   | 12.5 KHz           |

##### Digital:

| No. | TEST MODES     | CHANNEL SEPARATION |
|-----|----------------|--------------------|
| 1   | Low Channel    | 12.5 KHz           |
| 2   | Middle Channel | 12.5 KHz           |
| 3   | High Channel   | 12.5 KHz           |

**Note:** Only the result of the worst case was recorded in the report.

## **5. FREQUENCY TOLERANCE**

### **5.1 PROVISIONS APPLICABLE**

- a). According to FCC §2.1055, § 22.355 and §90.213, the frequency stability shall be measured with variation of ambient temperature from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  centigrade.
- b). According to FCC Part 2 Section 2.1055(d)(2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacturer.
- c). According to FCC Part 90 Section 90.213, the frequency tolerance must be maintained within 0.00025% for 12.5 KHz channel separation and 0.0001% for 6.25 KHz channel separation.

### **5.2 MEASUREMENT PROCEDURE**

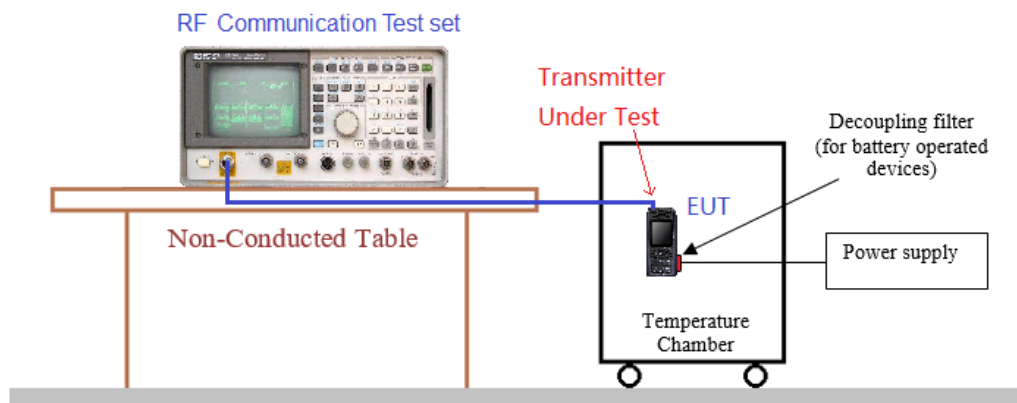
#### **5.2.1 Frequency stability versus environmental temperature**

1. Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
3. Set the temperature of chamber to  $50^{\circ}\text{C}$ . Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a  $10^{\circ}\text{C}$  decreased per stage until the lowest temperature  $-30^{\circ}\text{C}$  is measured, record all measured frequencies on each temperature step.

#### **5.2.2 Frequency stability versus input voltage**

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within  $15^{\circ}\text{C}$  to  $25^{\circ}\text{C}$ . Otherwise, an environment chamber set for a temperature of  $20^{\circ}\text{C}$  shall be used. The EUT shall be powered by DC 7.4V.
2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.
3. Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

### 5.3 TEST SETUP BLOCK DIAGRAM



**5.4 TEST RESULTS****VHF-Analog:**(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-**4W-12.5KHz**

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |            |            | Limit: |
|-------------------------------|--------------|---------------------|------------|------------|--------|
|                               | (V)          | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 7.40 V    | 0.560               | 0.653      | 0.821      | 5      |
| 40                            | DC 7.40 V    | 1.078               | 0.922      | 0.533      |        |
| 30                            | DC 7.40 V    | 0.933               | 0.596      | 0.859      |        |
| 20                            | DC 7.40 V    | 0.674               | 1.030      | 0.836      |        |
| 10                            | DC 7.40 V    | 0.968               | 0.852      | 0.658      |        |
| 0                             | DC 7.40 V    | 0.612               | 0.844      | 0.848      |        |
| -10                           | DC 7.40 V    | 0.964               | 0.513      | 1.004      |        |
| -20                           | DC 7.40 V    | 0.912               | 0.877      | 0.878      |        |
| -30                           | DC 7.40 V    | 0.647               | 0.945      | 0.507      |        |
| Result                        | Pass         |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 7.40 V    | 0.699               | 0.646     | 5      |
| 40                            | DC 7.40 V    | 0.772               | 0.315     |        |
| 30                            | DC 7.40 V    | 0.389               | 0.524     |        |
| 20                            | DC 7.40 V    | 0.907               | 0.870     |        |
| 10                            | DC 7.40 V    | 0.703               | 0.986     |        |
| 0                             | DC 7.40 V    | 0.397               | 0.463     |        |
| -10                           | DC 7.40 V    | 0.395               | 0.606     |        |
| -20                           | DC 7.40 V    | 0.364               | 0.917     |        |
| -30                           | DC 7.40 V    | 0.846               | 0.582     |        |
| Result                        | Pass         |                     |           |        |



(2) Frequency stability versus input voltage (Battery endpoint is 6V) **-4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 6.00 V | 0.553               | 0.640      | 0.892      | 5      |
| 40                            | DC 6.00 V | 0.641               | 0.749      | 0.674      |        |
| 30                            | DC 6.00 V | 0.728               | 1.032      | 0.909      |        |
| 20                            | DC 6.00 V | 1.004               | 0.990      | 0.876      |        |
| 10                            | DC 6.00 V | 0.970               | 0.673      | 0.969      |        |
| 0                             | DC 6.00 V | 0.811               | 0.695      | 0.932      |        |
| -10                           | DC 6.00 V | 0.817               | 0.554      | 0.742      |        |
| -20                           | DC 6.00 V | 0.970               | 1.056      | 0.517      |        |
| -30                           | DC 6.00 V | 1.031               | 0.605      | 0.974      |        |
| Result                        | Pass      |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 6.00 V    | 0.518               | 0.566     | 5      |
| 40                            | DC 6.00 V    | 0.962               | 0.561     |        |
| 30                            | DC 6.00 V    | 0.370               | 0.333     |        |
| 20                            | DC 6.00 V    | 0.760               | 0.873     |        |
| 10                            | DC 6.00 V    | 0.681               | 0.360     |        |
| 0                             | DC 6.00 V    | 0.996               | 0.591     |        |
| -10                           | DC 6.00 V    | 0.818               | 0.403     |        |
| -20                           | DC 6.00 V    | 0.957               | 0.683     |        |
| -30                           | DC 6.00 V    | 0.747               | 0.461     |        |
| Result                        | Pass         |                     |           |        |

## (3) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-1W-12.5KHz

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |            |            | Limit: |
|-------------------------------|--------------|---------------------|------------|------------|--------|
|                               | (V)          | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 7.40 V    | 0.985               | 0.872      | 0.514      | 5      |
| 40                            | DC 7.40 V    | 0.765               | 0.823      | 0.804      |        |
| 30                            | DC 7.40 V    | 0.755               | 0.913      | 0.500      |        |
| 20                            | DC 7.40 V    | 1.055               | 0.960      | 1.082      |        |
| 10                            | DC 7.40 V    | 0.616               | 0.873      | 0.899      |        |
| 0                             | DC 7.40 V    | 0.989               | 0.970      | 1.096      |        |
| -10                           | DC 7.40 V    | 0.976               | 0.523      | 0.532      |        |
| -20                           | DC 7.40 V    | 0.956               | 1.063      | 0.804      |        |
| -30                           | DC 7.40 V    | 0.869               | 0.559      | 0.823      |        |
| Result                        | Pass         |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 7.40 V    | 0.921               | 0.858     | 5      |
| 40                            | DC 7.40 V    | 0.334               | 0.318     |        |
| 30                            | DC 7.40 V    | 0.977               | 0.847     |        |
| 20                            | DC 7.40 V    | 0.567               | 0.782     |        |
| 10                            | DC 7.40 V    | 0.649               | 0.769     |        |
| 0                             | DC 7.40 V    | 0.747               | 0.460     |        |
| -10                           | DC 7.40 V    | 0.734               | 0.691     |        |
| -20                           | DC 7.40 V    | 0.324               | 0.698     |        |
| -30                           | DC 7.40 V    | 0.554               | 0.625     |        |
| Result                        | Pass         |                     |           |        |

## (4) Frequency stability versus input voltage (Battery endpoint is 6V) -1W-12.5KHz

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 6.00 V | 0.843               | 0.658      | 0.602      | 5      |
| 40                            | DC 6.00 V | 0.706               | 0.647      | 0.590      |        |
| 30                            | DC 6.00 V | 0.773               | 0.808      | 0.889      |        |
| 20                            | DC 6.00 V | 0.803               | 0.895      | 0.685      |        |
| 10                            | DC 6.00 V | 0.871               | 0.663      | 0.652      |        |
| 0                             | DC 6.00 V | 0.926               | 0.728      | 0.785      |        |
| -10                           | DC 6.00 V | 0.689               | 1.079      | 1.060      |        |
| -20                           | DC 6.00 V | 0.935               | 0.996      | 0.584      |        |
| -30                           | DC 6.00 V | 0.729               | 0.529      | 0.854      |        |
| Result                        | Pass      |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 6.00 V    | 0.755               | 0.857     | 5      |
| 40                            | DC 6.00 V    | 0.514               | 0.616     |        |
| 30                            | DC 6.00 V    | 0.993               | 0.809     |        |
| 20                            | DC 6.00 V    | 0.834               | 0.732     |        |
| 10                            | DC 6.00 V    | 0.729               | 0.345     |        |
| 0                             | DC 6.00 V    | 0.710               | 0.412     |        |
| -10                           | DC 6.00 V    | 0.375               | 0.328     |        |
| -20                           | DC 6.00 V    | 0.483               | 0.400     |        |
| -30                           | DC 6.00 V    | 0.361               | 0.402     |        |
| Result                        | Pass         |                     |           |        |

**Digital:**(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-**4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 7.40 V | 0.827               | 0.758      | 0.827      | 5      |
| 40                            | DC 7.40 V | 1.009               | 0.646      | 1.009      |        |
| 30                            | DC 7.40 V | 0.732               | 0.963      | 0.732      |        |
| 20                            | DC 7.40 V | 0.548               | 0.755      | 0.548      |        |
| 10                            | DC 7.40 V | 1.001               | 0.850      | 1.001      |        |
| 0                             | DC 7.40 V | 0.995               | 0.704      | 0.995      |        |
| -10                           | DC 7.40 V | 0.792               | 0.730      | 0.792      |        |
| -20                           | DC 7.40 V | 0.744               | 0.605      | 0.744      |        |
| -30                           | DC 7.40 V | 0.961               | 0.794      | 0.961      |        |
| Result                        | Pass      |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 7.40 V    | 0.305               | 0.680     | 5      |
| 40                            | DC 7.40 V    | 0.808               | 0.646     |        |
| 30                            | DC 7.40 V    | 0.450               | 0.662     |        |
| 20                            | DC 7.40 V    | 0.346               | 0.560     |        |
| 10                            | DC 7.40 V    | 0.708               | 0.482     |        |
| 0                             | DC 7.40 V    | 0.659               | 0.386     |        |
| -10                           | DC 7.40 V    | 0.368               | 0.668     |        |
| -20                           | DC 7.40 V    | 0.363               | 0.877     |        |
| -30                           | DC 7.40 V    | 0.870               | 0.923     |        |
| Result                        | Pass         |                     |           |        |

(2) Frequency stability versus input voltage(Battery endpoint is 6V) **-4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 6.00 V | 1.061               | 0.922      | 0.987      | 5      |
| 40                            | DC 6.00 V | 0.991               | 0.729      | 1.087      |        |
| 30                            | DC 6.00 V | 0.844               | 0.654      | 1.013      |        |
| 20                            | DC 6.00 V | 0.541               | 0.565      | 0.520      |        |
| 10                            | DC 6.00 V | 0.999               | 1.088      | 1.024      |        |
| 0                             | DC 6.00 V | 1.051               | 0.880      | 1.044      |        |
| -10                           | DC 6.00 V | 0.548               | 1.074      | 1.057      |        |
| -20                           | DC 6.00 V | 0.845               | 0.613      | 1.050      |        |
| -30                           | DC 6.00 V | 0.837               | 0.564      | 0.594      |        |
| Result                        | Pass      |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 6.00 V    | 0.891               | 1.028     | 5      |
| 40                            | DC 6.00 V    | 0.534               | 0.665     |        |
| 30                            | DC 6.00 V    | 0.744               | 0.619     |        |
| 20                            | DC 6.00 V    | 0.791               | 0.622     |        |
| 10                            | DC 6.00 V    | 0.695               | 0.651     |        |
| 0                             | DC 6.00 V    | 0.713               | 0.797     |        |
| -10                           | DC 6.00 V    | 1.034               | 0.923     |        |
| -20                           | DC 6.00 V    | 0.546               | 0.570     |        |
| -30                           | DC 6.00 V    | 0.804               | 0.686     |        |
| Result                        | Pass         |                     |           |        |

## (3) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-1W-12.5KHz

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                            | DC 7.40 V | 0.717               | 0.736      | 0.567      | 5      |
| 40                            | DC 7.40 V | 1.058               | 0.829      | 1.051      |        |
| 30                            | DC 7.40 V | 0.703               | 0.734      | 0.932      |        |
| 20                            | DC 7.40 V | 0.970               | 0.711      | 1.013      |        |
| 10                            | DC 7.40 V | 1.007               | 0.630      | 0.696      |        |
| 0                             | DC 7.40 V | 0.931               | 0.604      | 0.805      |        |
| -10                           | DC 7.40 V | 0.590               | 1.041      | 0.729      |        |
| -20                           | DC 7.40 V | 0.997               | 0.995      | 0.697      |        |
| -30                           | DC 7.40 V | 0.750               | 0.637      | 1.017      |        |
| Result                        | Pass      |                     |            |            |        |

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |           | Limit: |
|-------------------------------|--------------|---------------------|-----------|--------|
|                               | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                            | DC 7.40 V    | 0.769               | 1.070     | 5      |
| 40                            | DC 7.40 V    | 0.970               | 0.845     |        |
| 30                            | DC 7.40 V    | 0.677               | 0.710     |        |
| 20                            | DC 7.40 V    | 0.919               | 1.041     |        |
| 10                            | DC 7.40 V    | 1.049               | 0.663     |        |
| 0                             | DC 7.40 V    | 0.861               | 0.777     |        |
| -10                           | DC 7.40 V    | 0.798               | 0.648     |        |
| -20                           | DC 7.40 V    | 0.871               | 0.578     |        |
| -30                           | DC 7.40 V    | 0.660               | 0.765     |        |
| Result                        | Pass         |                     |           |        |

(4) Frequency stability versus input voltage (Battery endpoint is 6V) **-1W-12.5KHz**

| Environment<br>Temperature(°C) | Power     | Reference Frequency |            |            | Limit: |
|--------------------------------|-----------|---------------------|------------|------------|--------|
|                                | (V)       | 136.025MHz          | 155.025MHz | 173.975MHz | ppm    |
| 50                             | DC 6.00 V | 0.789               | 0.960      | 0.830      | 5      |
| 40                             | DC 6.00 V | 0.721               | 1.049      | 1.079      |        |
| 30                             | DC 6.00 V | 0.843               | 0.820      | 0.727      |        |
| 20                             | DC 6.00 V | 0.703               | 0.539      | 0.611      |        |
| 10                             | DC 6.00 V | 0.567               | 0.771      | 0.794      |        |
| 0                              | DC 6.00 V | 0.950               | 0.650      | 1.063      |        |
| -10                            | DC 6.00 V | 0.826               | 0.751      | 0.686      |        |
| -20                            | DC 6.00 V | 1.022               | 0.743      | 0.556      |        |
| -30                            | DC 6.00 V | 0.783               | 0.680      | 0.601      |        |
| Result                         | Pass      |                     |            |            |        |

| Environment<br>Temperature(°C) | Power Supply | Reference Frequency |           | Limit: |
|--------------------------------|--------------|---------------------|-----------|--------|
|                                | (V)          | 151.85MHz           | 161.61MHz | ppm    |
| 50                             | DC 6.00 V    | 0.548               | 0.556     | 5      |
| 40                             | DC 6.00 V    | 0.575               | 1.036     |        |
| 30                             | DC 6.00 V    | 0.569               | 0.963     |        |
| 20                             | DC 6.00 V    | 0.685               | 0.741     |        |
| 10                             | DC 6.00 V    | 0.655               | 0.826     |        |
| 0                              | DC 6.00 V    | 0.813               | 0.827     |        |
| -10                            | DC 6.00 V    | 0.854               | 0.809     |        |
| -20                            | DC 6.00 V    | 0.548               | 0.619     |        |
| -30                            | DC 6.00 V    | 0.854               | 0.845     |        |
| Result                         | Pass         |                     |           |        |

**UHF:****Analog:**(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-**4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                            | DC 7.40 V | 1.088               | 0.527      | 0.803      | 2.5    |
| 40                            | DC 7.40 V | 0.931               | 0.752      | 0.934      |        |
| 30                            | DC 7.40 V | 0.685               | 0.648      | 0.561      |        |
| 20                            | DC 7.40 V | 0.712               | 0.780      | 0.781      |        |
| 10                            | DC 7.40 V | 0.901               | 0.966      | 0.713      |        |
| 0                             | DC 7.40 V | 1.077               | 1.067      | 0.657      |        |
| -10                           | DC 7.40 V | 0.576               | 1.012      | 0.711      |        |
| -20                           | DC 7.40 V | 0.605               | 0.640      | 0.600      |        |
| -30                           | DC 7.40 V | 0.575               | 0.532      | 0.543      |        |
| Result                        | Pass      |                     |            |            |        |

(2) Frequency stability versus input voltage (Battery endpoint is 6V) -**4W-12.5KHz**

| Environment<br>Temperature(℃) | Power Supply | Reference Frequency |            |            | Limit: |
|-------------------------------|--------------|---------------------|------------|------------|--------|
|                               | (V)          | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                            | DC 6.00 V    | 0.616               | 1.052      | 0.652      | 2.5    |
| 40                            | DC 6.00 V    | 0.860               | 0.755      | 0.566      |        |
| 30                            | DC 6.00 V    | 1.006               | 0.609      | 0.545      |        |
| 20                            | DC 6.00 V    | 0.748               | 0.854      | 0.517      |        |
| 10                            | DC 6.00 V    | 0.721               | 0.618      | 0.718      |        |
| 0                             | DC 6.00 V    | 0.757               | 0.860      | 1.024      |        |
| -10                           | DC 6.00 V    | 0.516               | 0.768      | 0.743      |        |
| -20                           | DC 6.00 V    | 0.881               | 1.094      | 0.883      |        |
| -30                           | DC 6.00 V    | 0.934               | 0.578      | 0.527      |        |
| Result                        | Pass         |                     |            |            |        |



(3) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-**1W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                            | DC 7.40 V | 1.053               | 0.751      | 0.896      | 2.5    |
| 40                            | DC 7.40 V | 0.834               | 0.718      | 0.507      |        |
| 30                            | DC 7.40 V | 0.662               | 0.643      | 0.880      |        |
| 20                            | DC 7.40 V | 1.072               | 0.893      | 0.598      |        |
| 10                            | DC 7.40 V | 0.691               | 0.589      | 0.557      |        |
| 0                             | DC 7.40 V | 0.562               | 0.802      | 0.860      |        |
| -10                           | DC 7.40 V | 0.871               | 0.559      | 0.808      |        |
| -20                           | DC 7.40 V | 0.888               | 0.837      | 1.087      |        |
| -30                           | DC 7.40 V | 0.507               | 0.640      | 0.857      |        |
| Result                        | Pass      |                     |            |            |        |

(4) Frequency stability versus input voltage (Battery endpoint is 6V) -**1W-12.5KHz**

| Environment<br>Temperature(°C) | Power     | Reference Frequency |            |            | Limit: |
|--------------------------------|-----------|---------------------|------------|------------|--------|
|                                | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                             | DC 6.00 V | 0.965               | 0.551      | 0.525      | 2.5    |
| 40                             | DC 6.00 V | 0.517               | 0.681      | 0.705      |        |
| 30                             | DC 6.00 V | 1.019               | 0.788      | 0.584      |        |
| 20                             | DC 6.00 V | 0.504               | 0.702      | 1.061      |        |
| 10                             | DC 6.00 V | 1.042               | 0.551      | 1.056      |        |
| 0                              | DC 6.00 V | 0.559               | 0.517      | 0.956      |        |
| -10                            | DC 6.00 V | 1.040               | 0.879      | 1.044      |        |
| -20                            | DC 6.00 V | 0.984               | 0.535      | 0.967      |        |
| -30                            | DC 6.00 V | 0.942               | 0.711      | 0.907      |        |
| Result                         | Pass      |                     |            |            |        |

**Digital:****(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                            | DC 7.40 V | 0.774               | 1.024      | 0.804      | 2.5    |
| 40                            | DC 7.40 V | 1.040               | 1.085      | 0.693      |        |
| 30                            | DC 7.40 V | 1.054               | 0.950      | 1.083      |        |
| 20                            | DC 7.40 V | 1.005               | 0.765      | 0.974      |        |
| 10                            | DC 7.40 V | 0.936               | 0.532      | 0.814      |        |
| 0                             | DC 7.40 V | 0.864               | 0.831      | 0.688      |        |
| -10                           | DC 7.40 V | 0.817               | 0.934      | 0.573      |        |
| -20                           | DC 7.40 V | 0.723               | 0.932      | 0.694      |        |
| -30                           | DC 7.40 V | 0.976               | 0.686      | 0.959      |        |
| Result                        | Pass      |                     |            |            |        |

**(2) Frequency stability versus input voltage(Battery endpoint is 6V) -4W-12.5KHz**

| Environment<br>Temperature(℃) | Power     | Reference Frequency |            |            | Limit: |
|-------------------------------|-----------|---------------------|------------|------------|--------|
|                               | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                            | DC 6.00 V | 0.916               | 1.045      | 1.081      | 2.5    |
| 40                            | DC 6.00 V | 0.574               | 1.062      | 0.524      |        |
| 30                            | DC 6.00 V | 1.078               | 0.700      | 1.016      |        |
| 20                            | DC 6.00 V | 1.028               | 0.975      | 1.036      |        |
| 10                            | DC 6.00 V | 0.995               | 0.673      | 0.677      |        |
| 0                             | DC 6.00 V | 0.890               | 1.096      | 0.906      |        |
| -10                           | DC 6.00 V | 0.638               | 1.029      | 0.543      |        |
| -20                           | DC 6.00 V | 1.058               | 1.045      | 0.654      |        |
| -30                           | DC 6.00 V | 0.622               | 0.732      | 0.832      |        |
| Result                        | Pass      |                     |            |            |        |

## (3) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-1W-12.5KHz

| 3) Frequency stability: Power input voltage (Supply nominal voltage is 7.40V) 200 Hz/100 kHz |           |                     |            |            |        |
|----------------------------------------------------------------------------------------------|-----------|---------------------|------------|------------|--------|
| Environment<br>Temperature(°C)                                                               | Power     | Reference Frequency |            |            | Limit: |
|                                                                                              | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                                                                                           | DC 7.40 V | 0.569               | 0.611      | 0.781      | 2.5    |
| 40                                                                                           | DC 7.40 V | 0.888               | 0.860      | 1.098      |        |
| 30                                                                                           | DC 7.40 V | 0.682               | 0.652      | 0.637      |        |
| 20                                                                                           | DC 7.40 V | 1.024               | 1.052      | 0.758      |        |
| 10                                                                                           | DC 7.40 V | 0.697               | 0.852      | 0.890      |        |
| 0                                                                                            | DC 7.40 V | 0.524               | 0.502      | 0.627      |        |
| -10                                                                                          | DC 7.40 V | 0.794               | 0.887      | 1.058      |        |
| -20                                                                                          | DC 7.40 V | 0.806               | 0.792      | 0.853      |        |
| -30                                                                                          | DC 7.40 V | 0.873               | 0.824      | 0.898      |        |
| Result                                                                                       | Pass      |                     |            |            |        |

## (4) Frequency stability versus input voltage (Battery endpoint is 6V) -1W-12.5KHz

| Environment<br>Temperature(°C) | Power     | Reference Frequency |            |            | Limit: |
|--------------------------------|-----------|---------------------|------------|------------|--------|
|                                | (V)       | 400.025MHz          | 454.025MHz | 479.975MHz | ppm    |
| 50                             | DC 6.00 V | 0.569               | 0.899      | 0.997      | 2.5    |
| 40                             | DC 6.00 V | 0.867               | 0.735      | 0.946      |        |
| 30                             | DC 6.00 V | 0.910               | 0.740      | 0.526      |        |
| 20                             | DC 6.00 V | 0.696               | 1.056      | 0.947      |        |
| 10                             | DC 6.00 V | 1.019               | 0.875      | 0.912      |        |
| 0                              | DC 6.00 V | 0.782               | 0.602      | 0.846      |        |
| -10                            | DC 6.00 V | 0.554               | 0.675      | 0.943      |        |
| -20                            | DC 6.00 V | 1.078               | 0.982      | 0.524      |        |
| -30                            | DC 6.00 V | 0.895               | 0.552      | 0.971      |        |
| Result                         | Pass      |                     |            |            |        |

## 6. EMISSION BANDWIDTH

### 6.1 PROVISIONS APPLICABLE

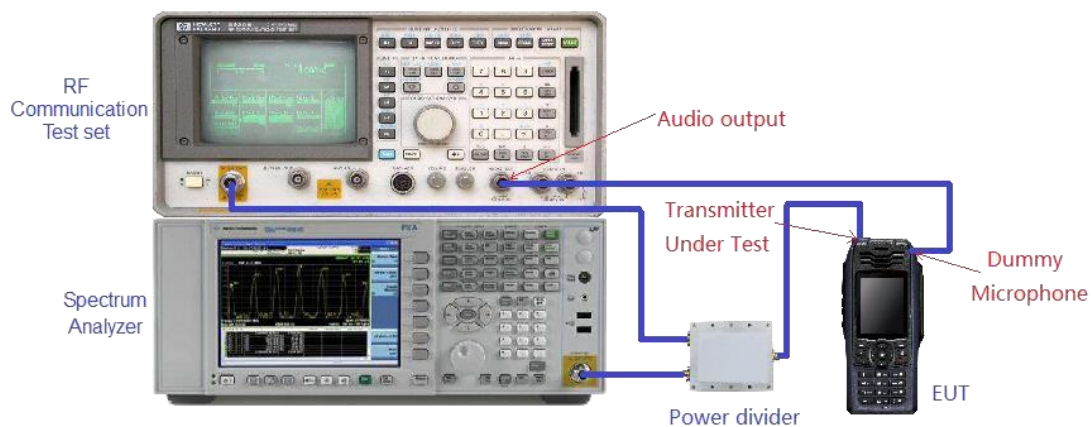
FCC Part 90 & FCC Part 22:

The authorized bandwidth shall be 11.25 KHz for 12.5 KHz channel separation and 6 KHz for 6.25 KHz channel separation.

### 6.2 MEASUREMENT PROCEDURE

- 1). The EUT was placed on a turn table which is 0.8m above ground plane.
- 2). The EUT was modulated by 2.5 KHz Sine wave audio signal, The level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5 kHz channel spacing).
- 3). Set SPA Center Frequency = fundamental frequency, RBW=100Hz.VBW= 300 Hz, Span =50 KHz.
- 4). Set SPA Max hold. Mark peak, -26 dB.

### 6.3 TEST SETUP BLOCK DIAGRAM



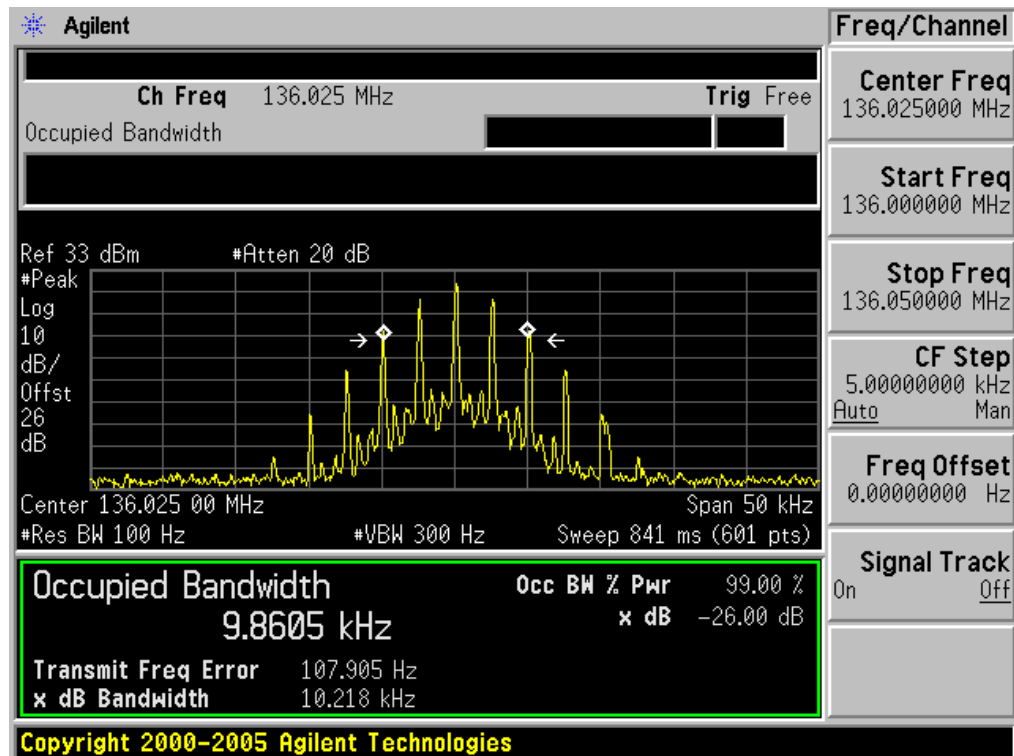
## 6.4 MEASUREMENT RESULT

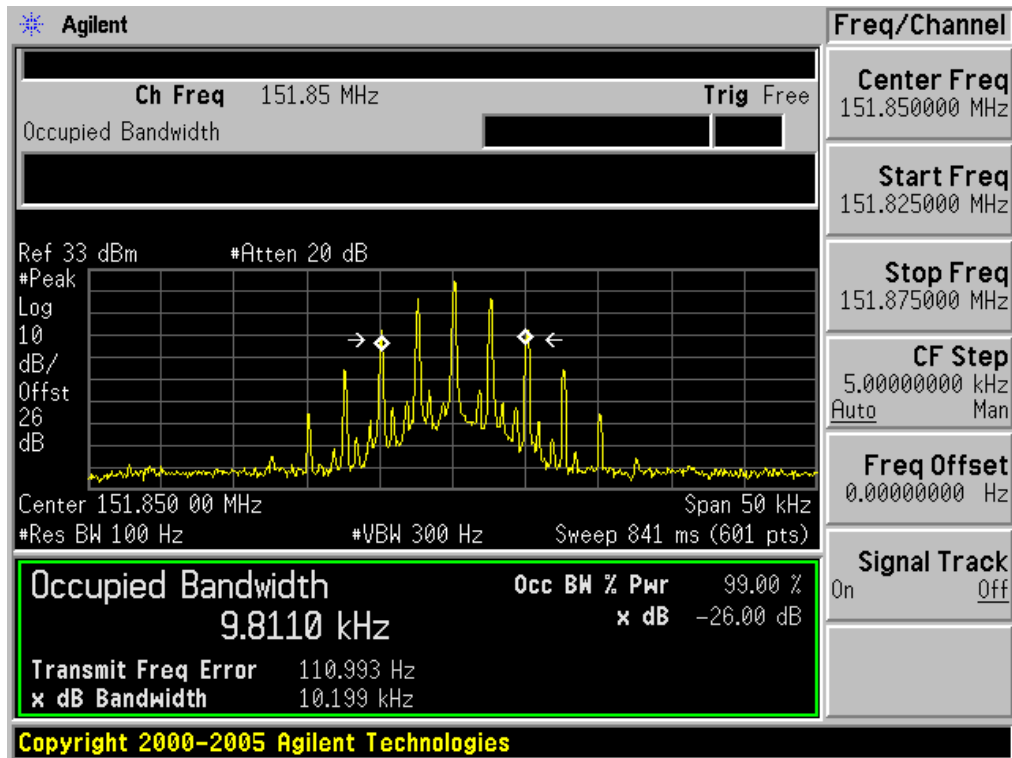
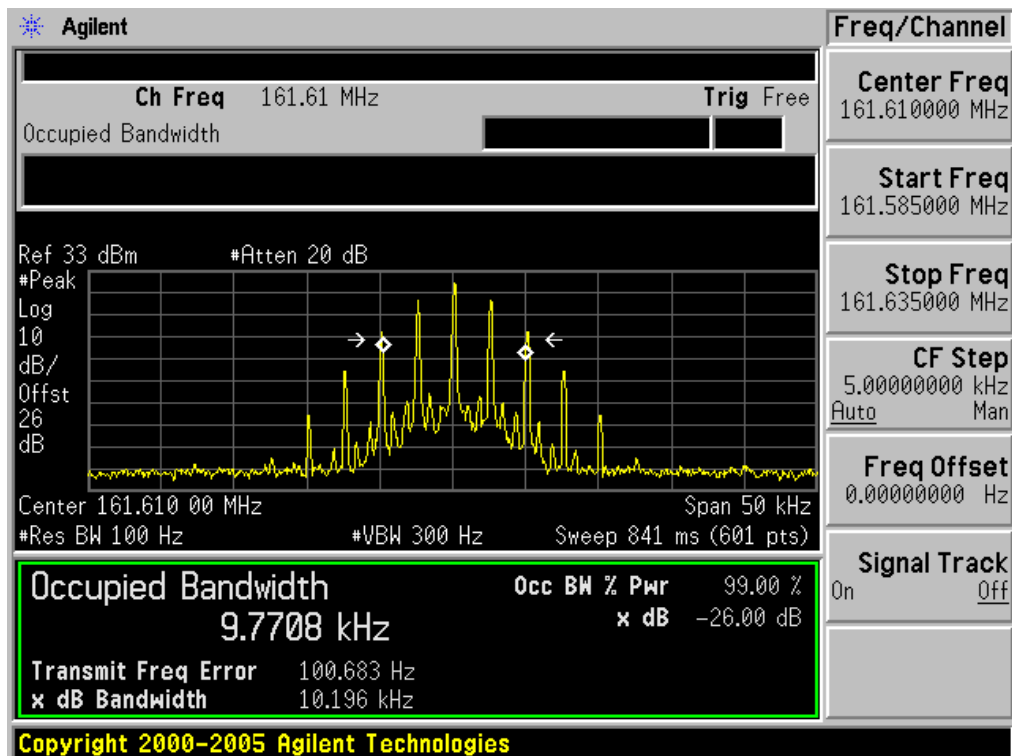
VHF:

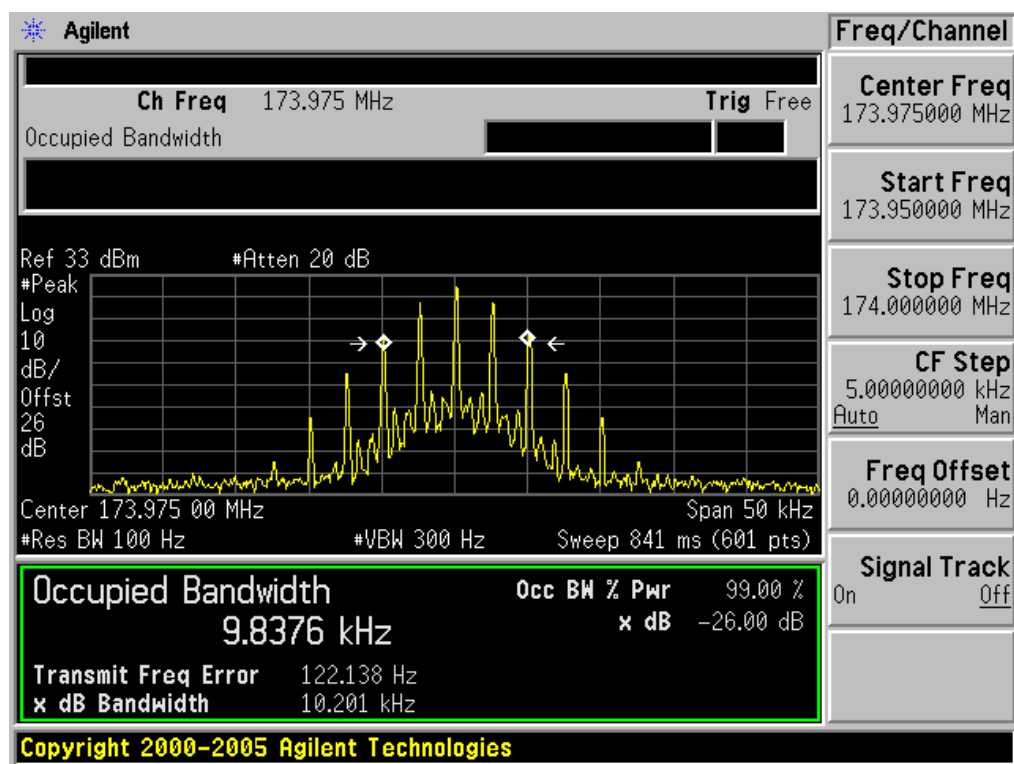
Analog:12.5KHz

| 26 dB Bandwidth Measurement Result |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 136.025MHz                         | 10.218KHz                   | 11.25 KHz | Pass   |
| 151.850MHz                         | 10.199KHz                   | 11.25 KHz | Pass   |
| 161.610MHz                         | 10.196KHz                   | 11.25 KHz | Pass   |
| 173.975MHz                         | 10.201KHz                   | 11.25 KHz | Pass   |

### Occupied bandwidth of Middle Channel (Maximum)-1W

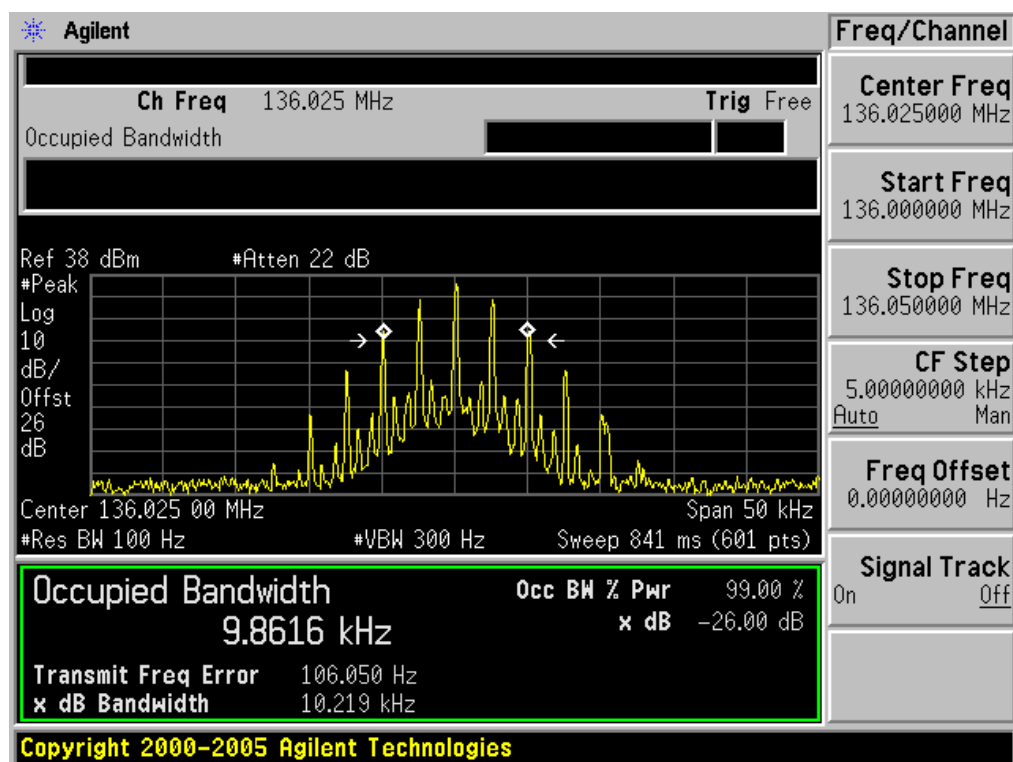


**Occupied bandwidth of Bottom Channel (151.850 MHz)-1W****Occupied bandwidth of Middle Channel (161.610 MHz)-1W**

**Occupied bandwidth of Top Channel (173.975 MHz)-1W**

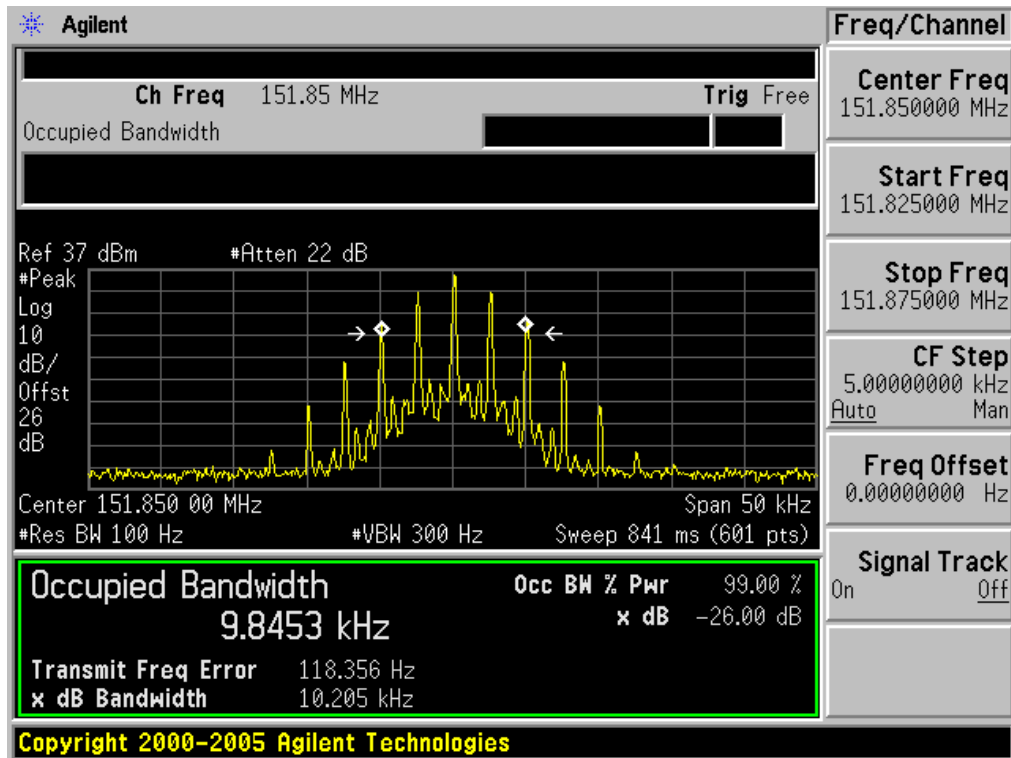
| 26 dB Bandwidth Measurement Result |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 136.025MHz                         | 10.219KHz                   | 11.25 KHz | Pass   |
| 151.850MHz                         | 10.205KHz                   | 11.25 KHz | Pass   |
| 161.610MHz                         | 10.197KHz                   | 11.25 KHz | Pass   |
| 173.975MHz                         | 10.203KHz                   | 11.25 KHz | Pass   |

#### Occupied bandwidth of Bottom Channel (Maximum)-4W

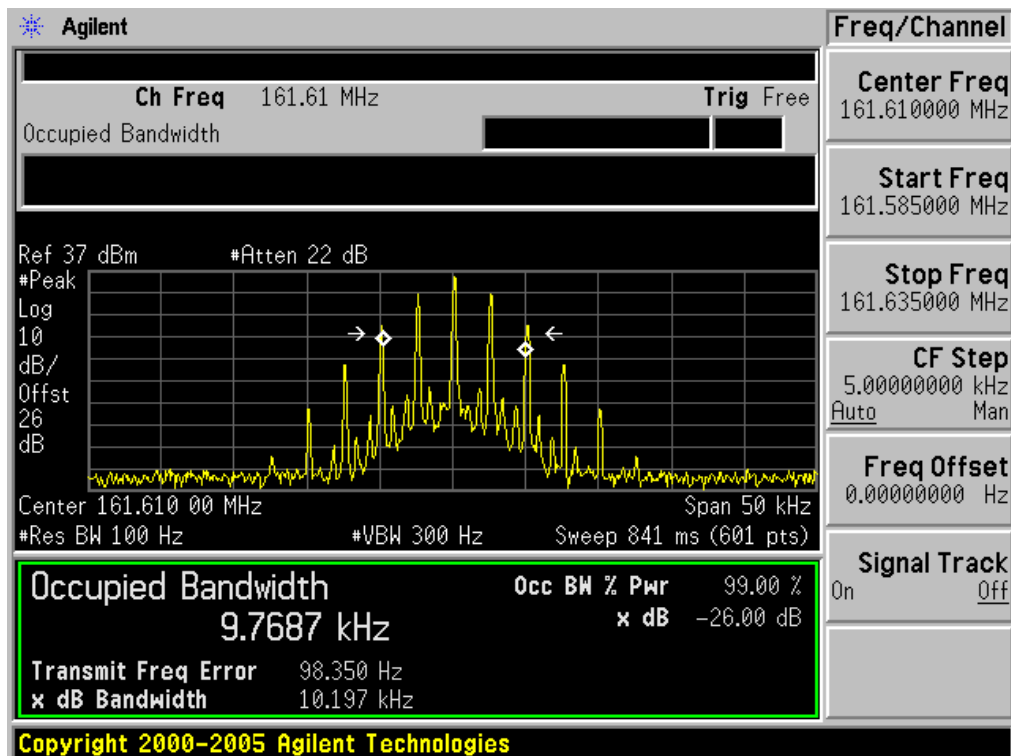


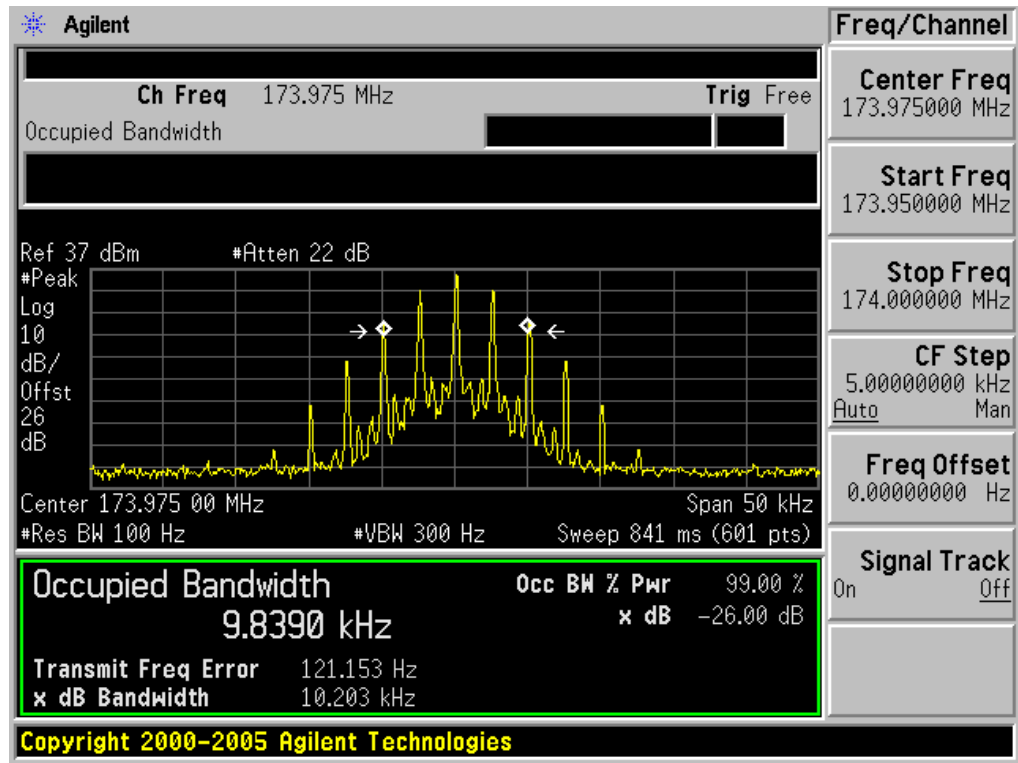


### Occupied bandwidth of Middle Channel (151.850 MHz)-4W



### Occupied bandwidth of Middle Channel (161.610 MHz)-4W

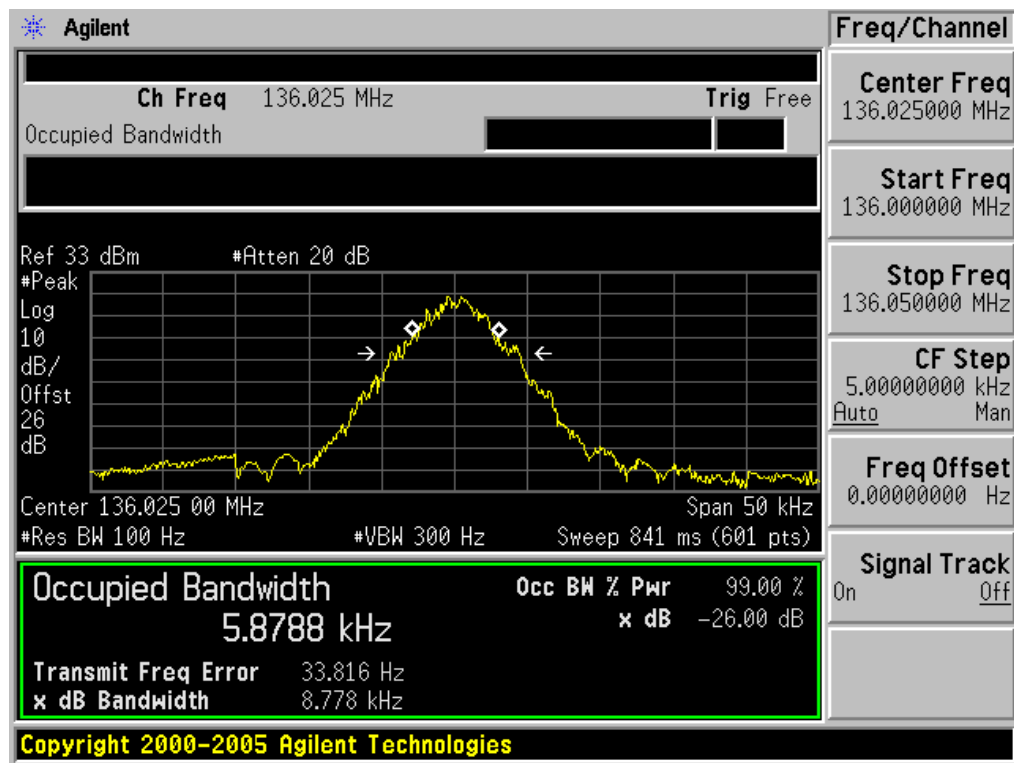


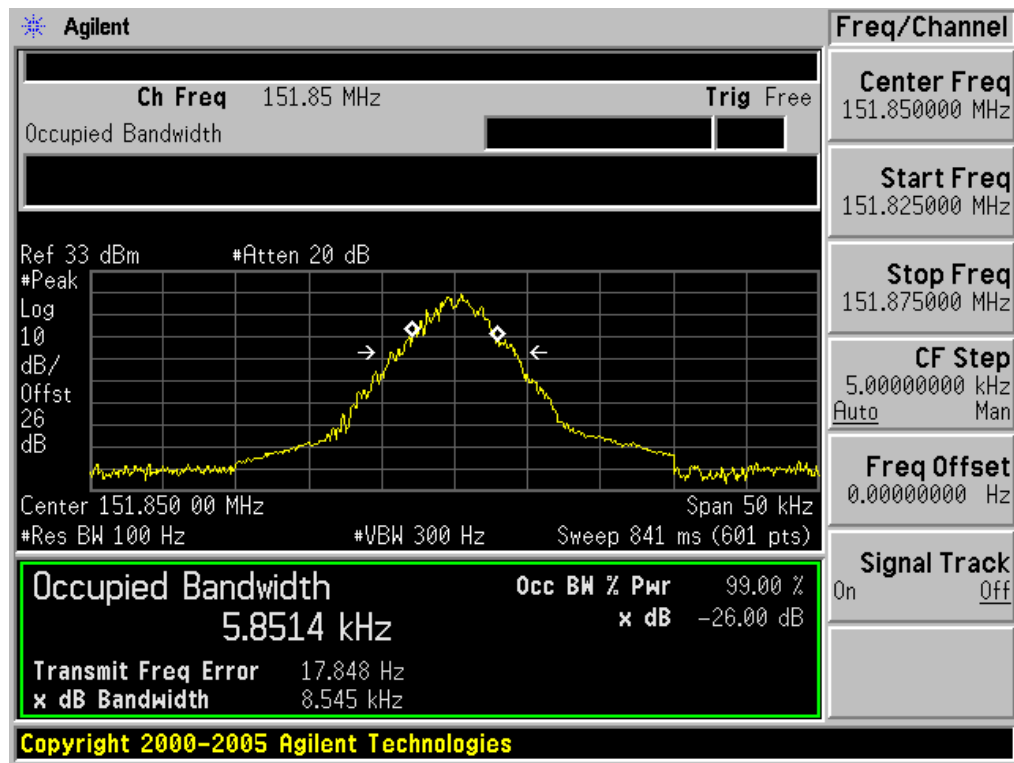
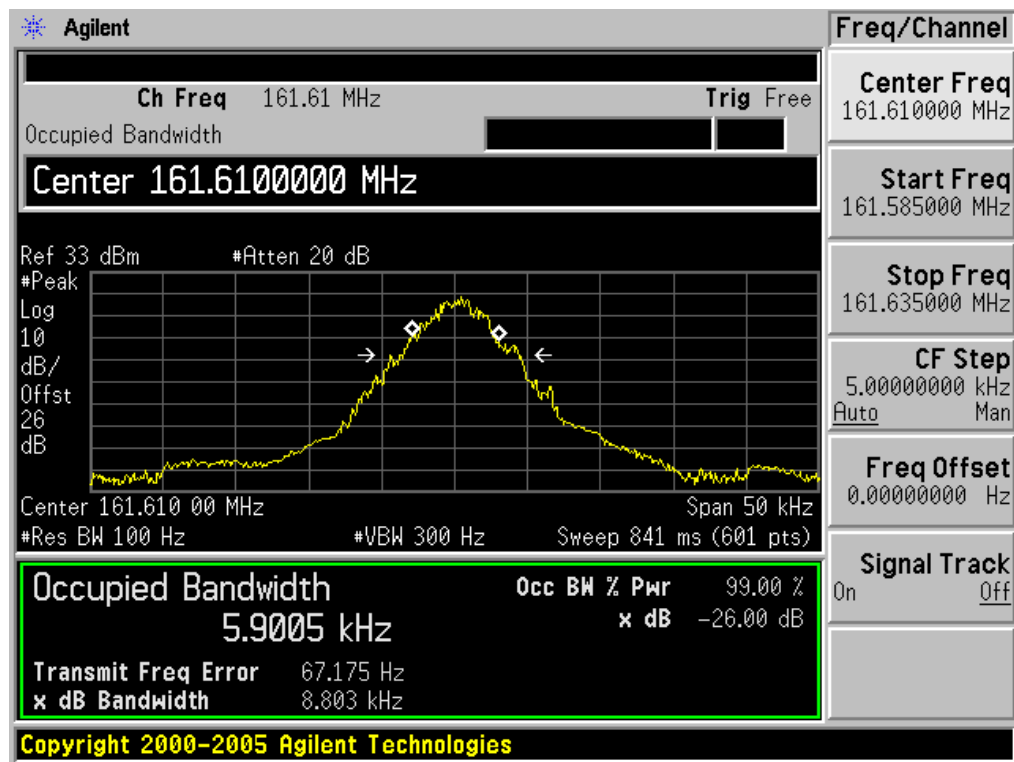
**Occupied bandwidth of Top Channel (173.975 MHz)-4W**

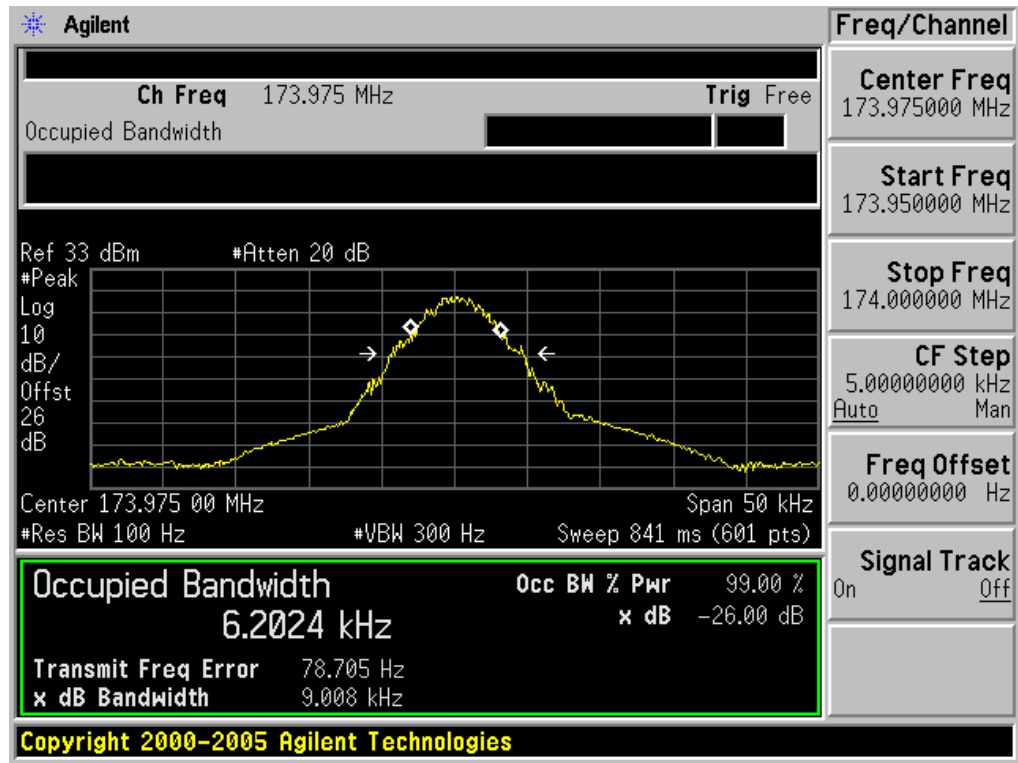
Digital:

**TEST RESULTS**

| 26 DB BANDWIDTH MEASUREMENT RESULT |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 136.025MHz                         | 8.778KHz                    | 11.25 KHz | Pass   |
| 151.850MHz                         | 8.545KHz                    | 11.25 KHz | Pass   |
| 161.610MHz                         | 8.803KHz                    | 11.25 KHz | Pass   |
| 173.975MHz                         | 9.008KHz                    | 11.25 KHz | Pass   |

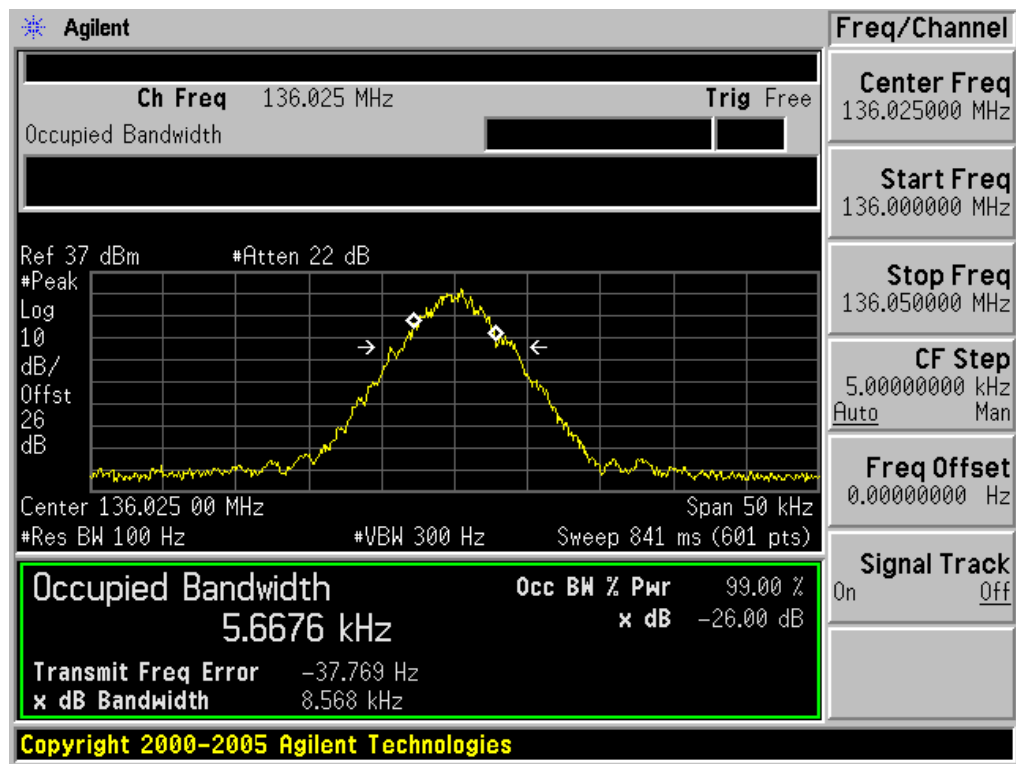
**Occupied bandwidth of Bottom Channel (Maximum)-1W**

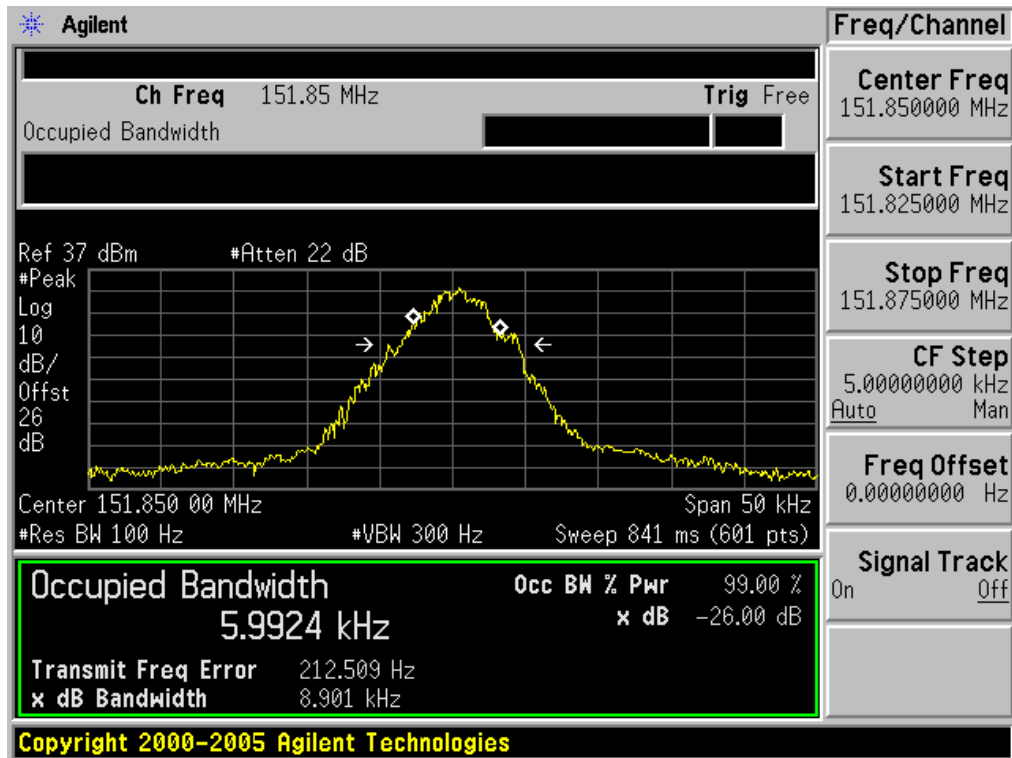
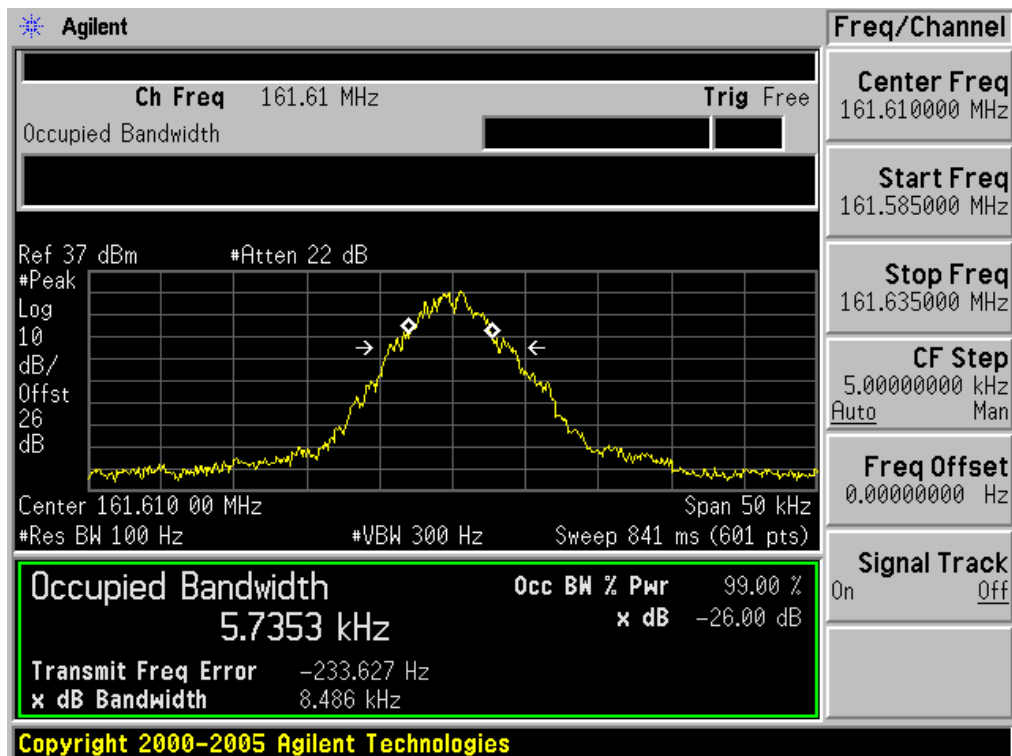
**Occupied bandwidth of Middle Channel (151.850 MHz)-1W****Occupied bandwidth of Middle Channel (161.610 MHz)-1W**

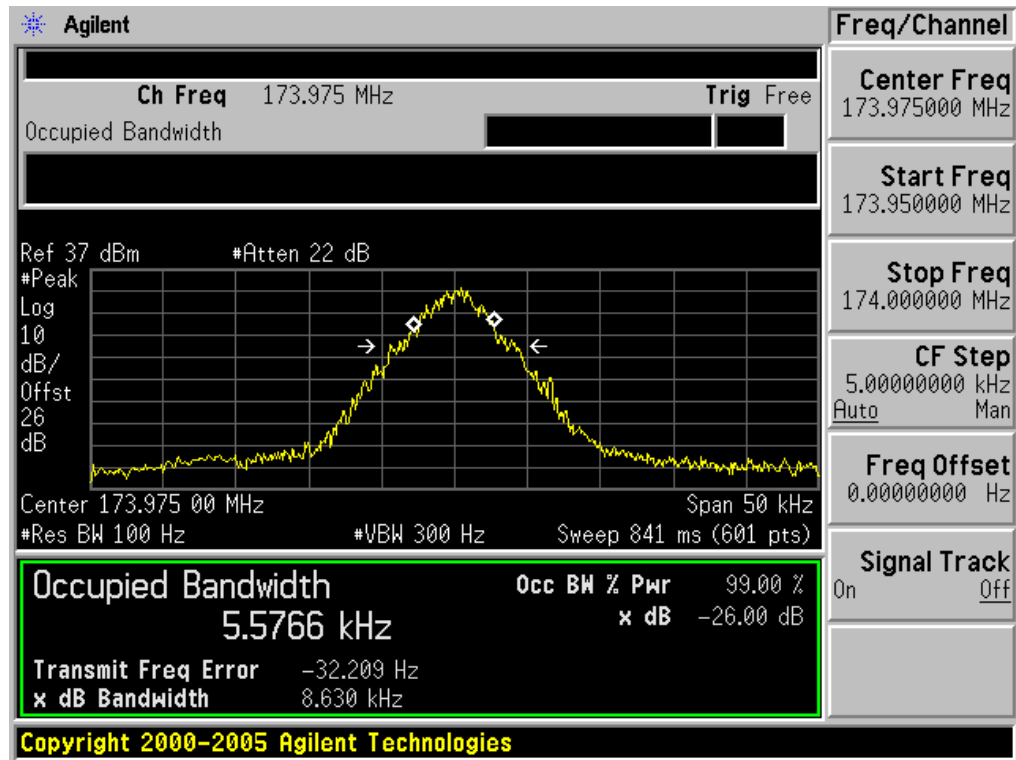
**Occupied bandwidth of Top Channel (173.975 MHz)-1W**

**TEST RESULTS**

| 26 DB BANDWIDTH MEASUREMENT RESULT |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 136.025MHz                         | 8.568KHz                    | 11.25 KHz | Pass   |
| 151.850MHz                         | 8.901KHz                    | 11.25 KHz | Pass   |
| 161.610MHz                         | 8.486KHz                    | 11.25 KHz | Pass   |
| 173.975MHz                         | 8.630KHz                    | 11.25 KHz | Pass   |

**Occupied bandwidth of Bottom Channel (Maximum)-4W**

**Occupied bandwidth of Middle Channel (151.850 MHz)-4W****Occupied bandwidth of Middle Channel (161.610 MHz)-4W**

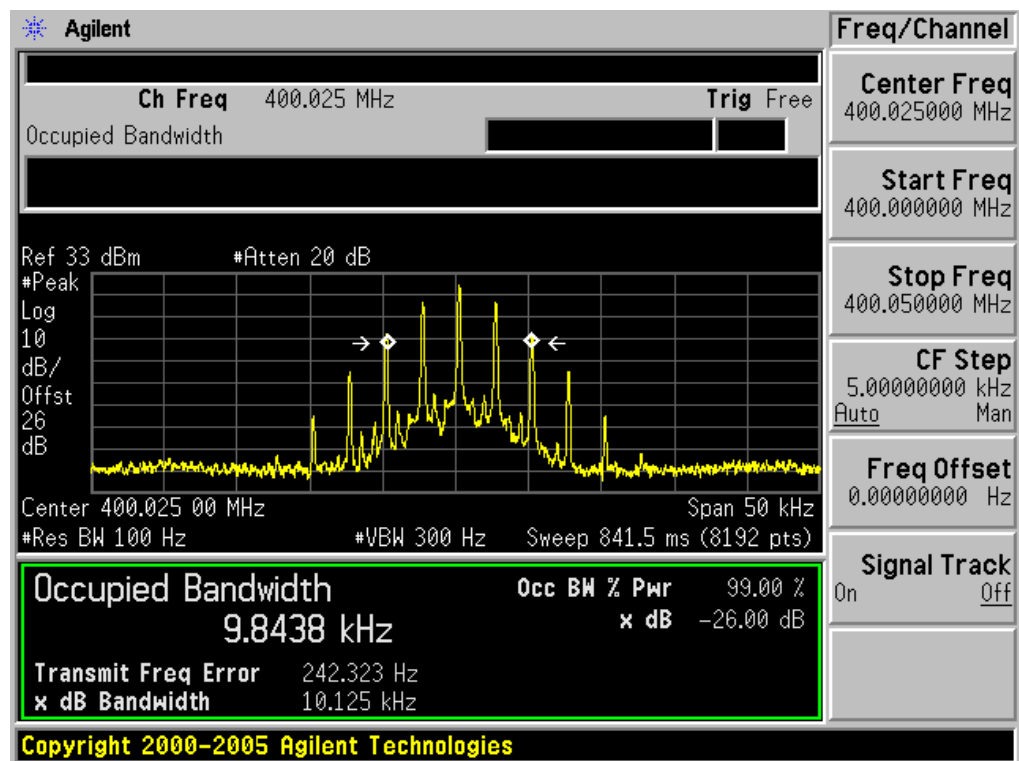
**Occupied bandwidth of Top Channel (173.975 MHz)-4W**

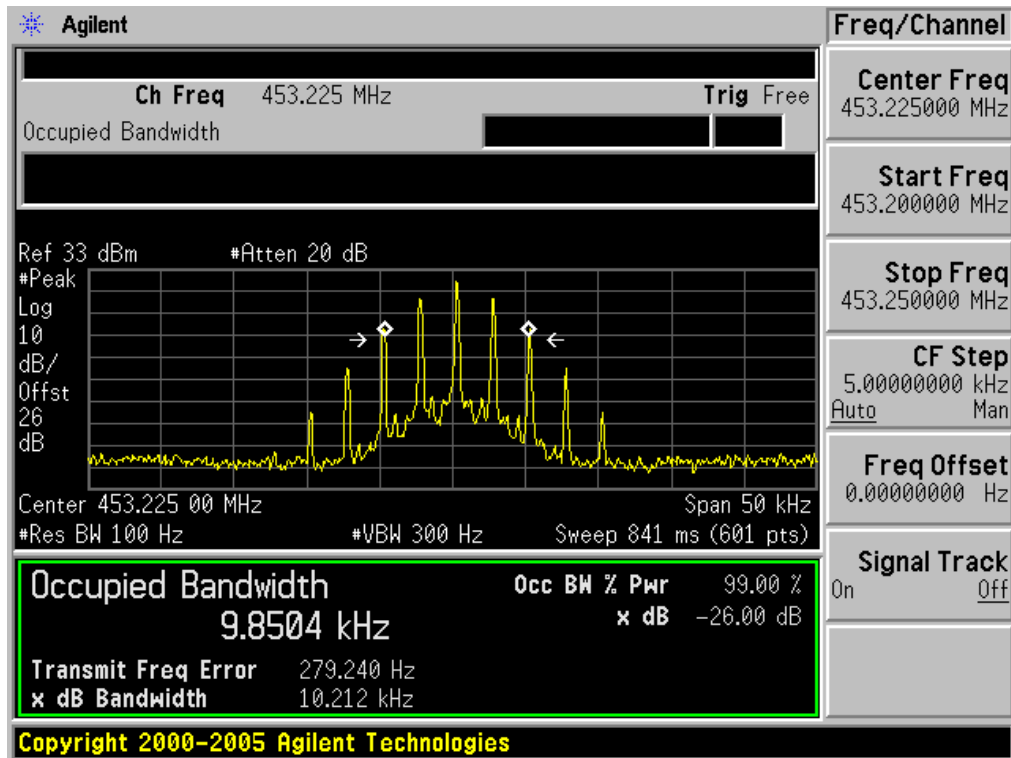
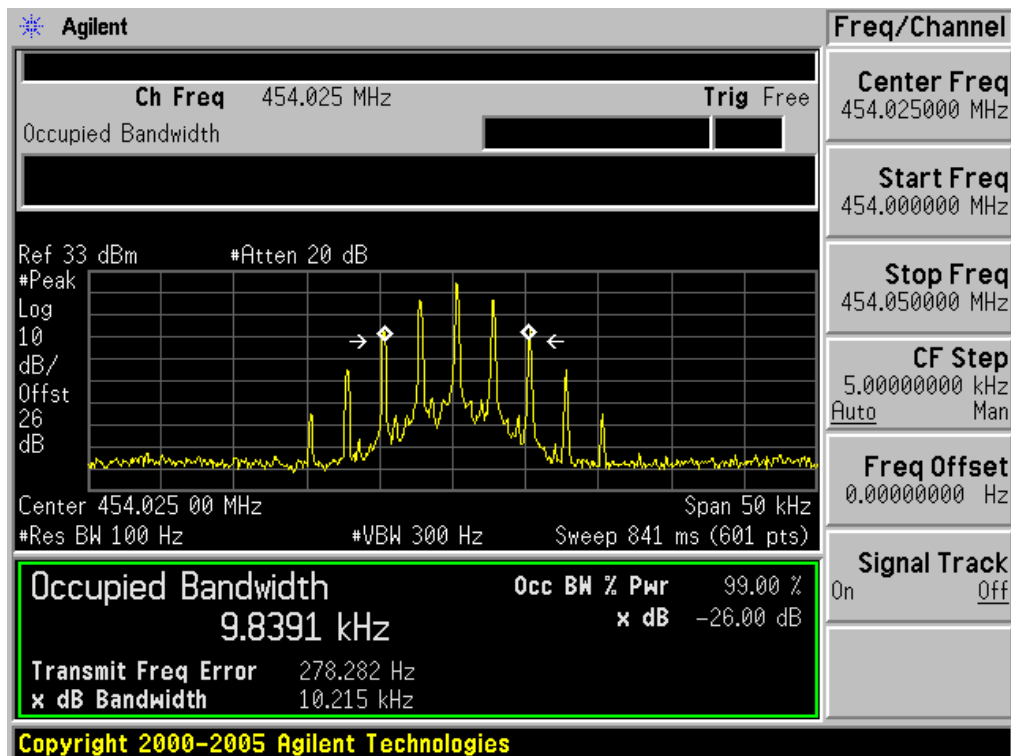


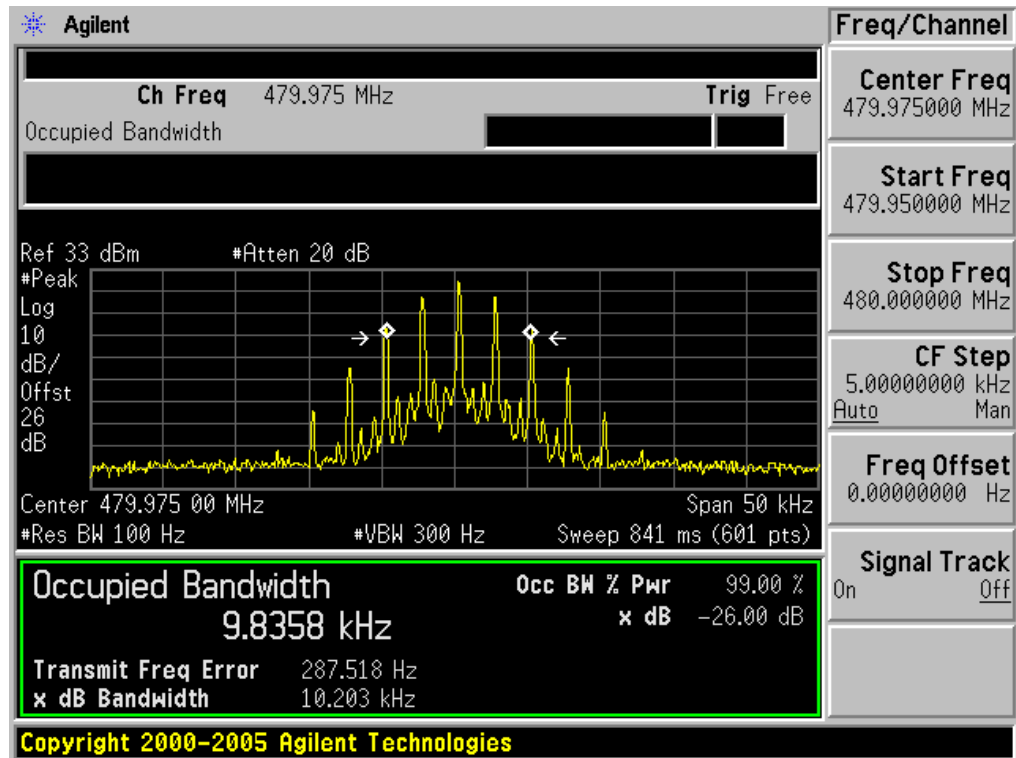
UHF:

Analog:12.5KHz

| 26 DB BANDWIDTH MEASUREMENT RESULT |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 400.025MHz                         | 10.125KHz                   | 11.25 KHz | Pass   |
| 453.225MHz                         | 10.212KHz                   | 11.25 KHz | Pass   |
| 454.025MHz                         | 10.215KHz                   | 11.25 KHz | Pass   |
| 479.975MHz                         | 10.203KHz                   | 11.25 KHz | Pass   |

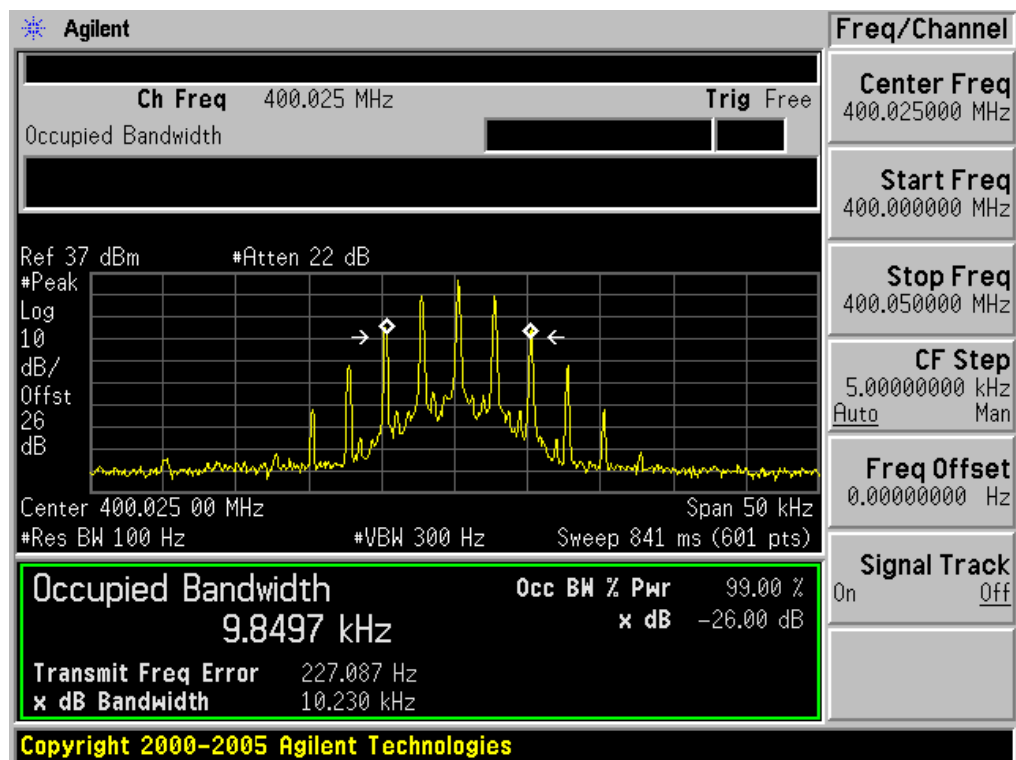
**Occupied bandwidth of Bottom Channel (400.025MHz)-1W**

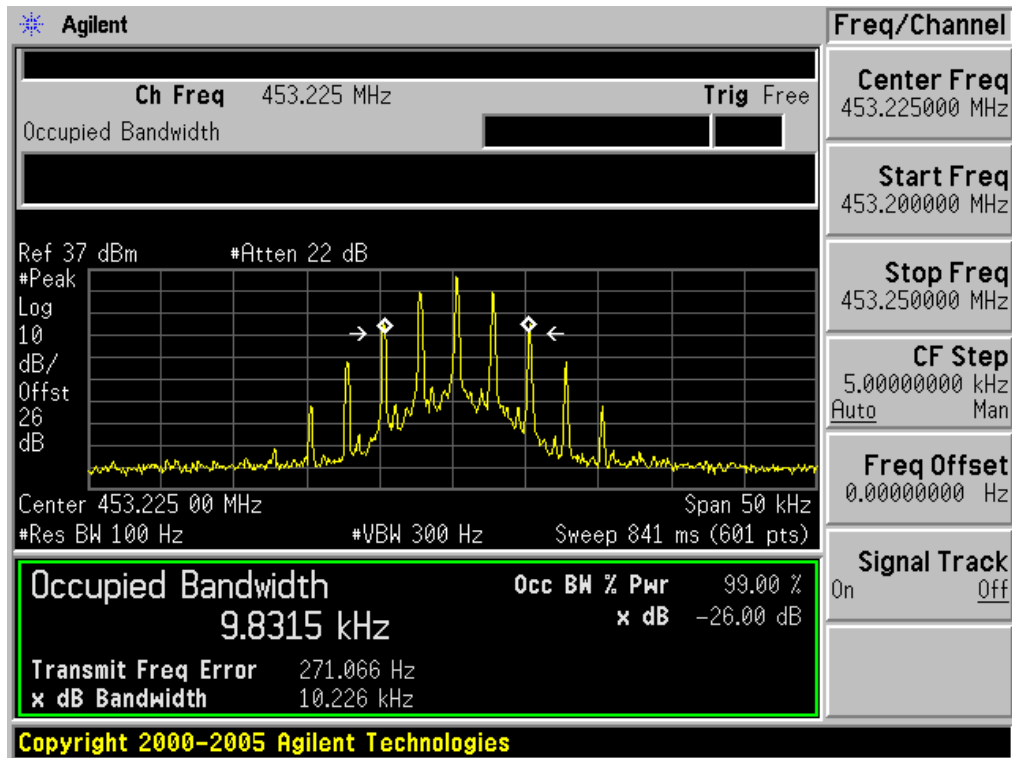
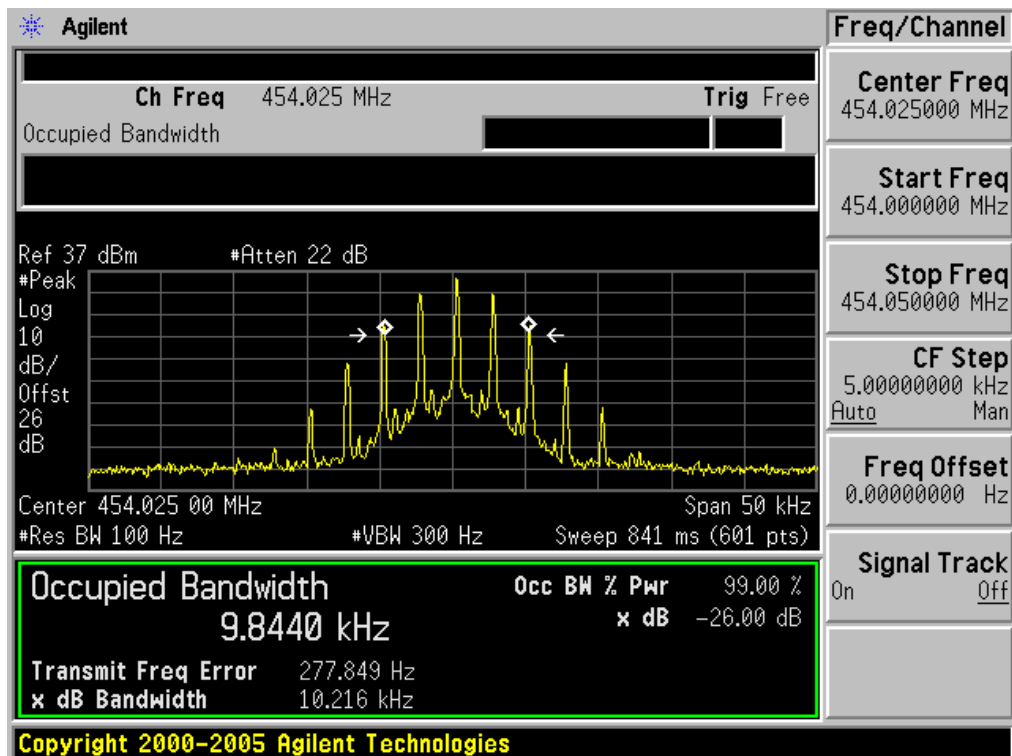
**Occupied bandwidth of Middle Channel (453.225MHz)-1W****Occupied bandwidth of Middle Channel (454.025MHz)-1W**

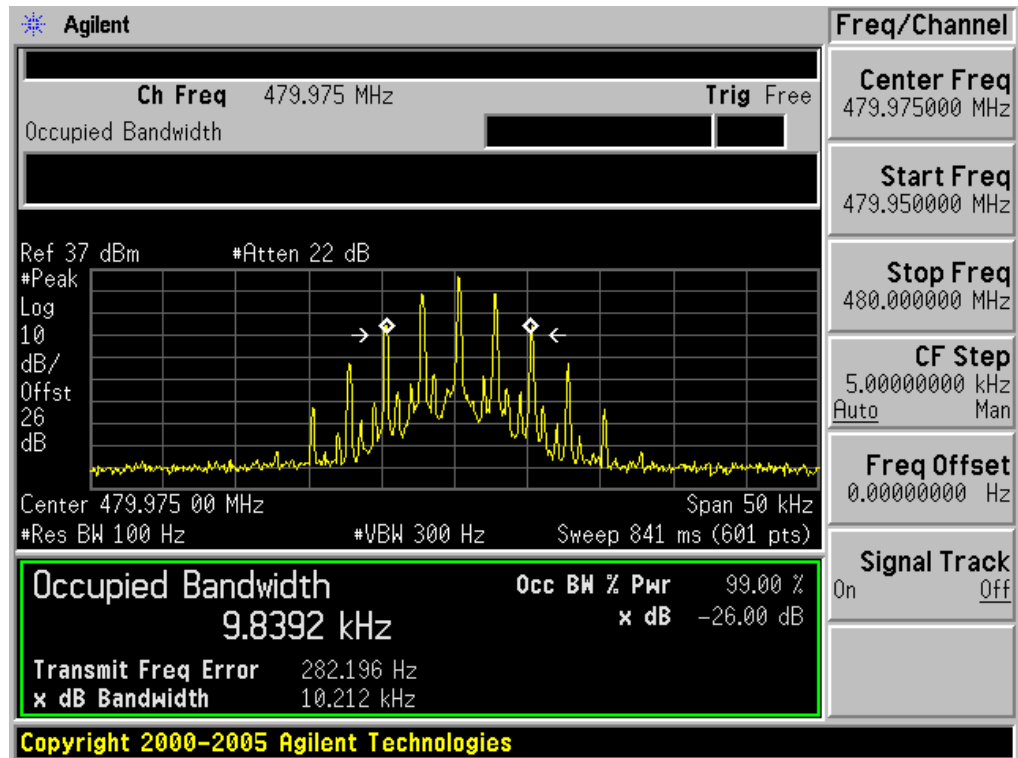
**Occupied bandwidth of Top Channel (479.975MHz)-1W**

**26 DB BANDWIDTH MEASUREMENT RESULT**

| Operating Frequency | 12.5 KHz Channel Separation |           |        |
|---------------------|-----------------------------|-----------|--------|
|                     | Test Data                   | Limits    | Result |
| 400.025MHz          | 10.230KHz                   | 11.25 KHz | Pass   |
| 453.225MHz          | 10.226KHz                   | 11.25 KHz | Pass   |
| 454.025MHz          | 10.216KHz                   | 11.25 KHz | Pass   |
| 479.975MHz          | 10.212MHz                   | 11.25 KHz | Pass   |

**Occupied bandwidth of Bottom Channel (400.025MHz)-4W**

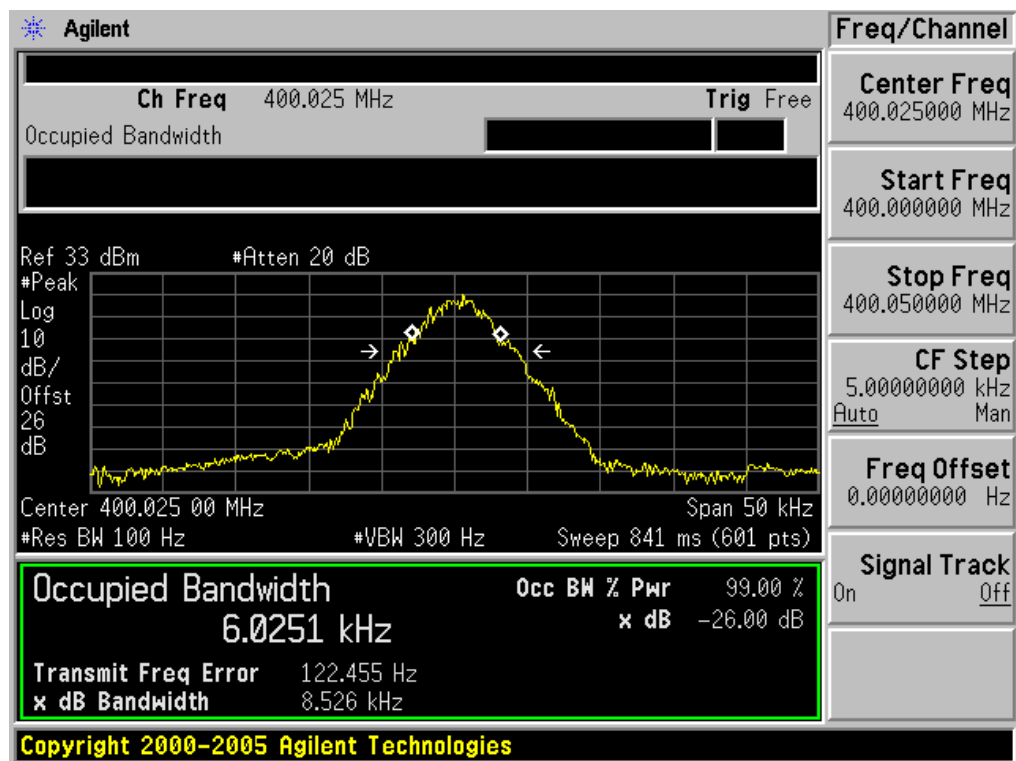
**Occupied bandwidth of Middle Channel (453.225MHz)-4W****Occupied bandwidth of Middle Channel (454.025MHz)-4W**

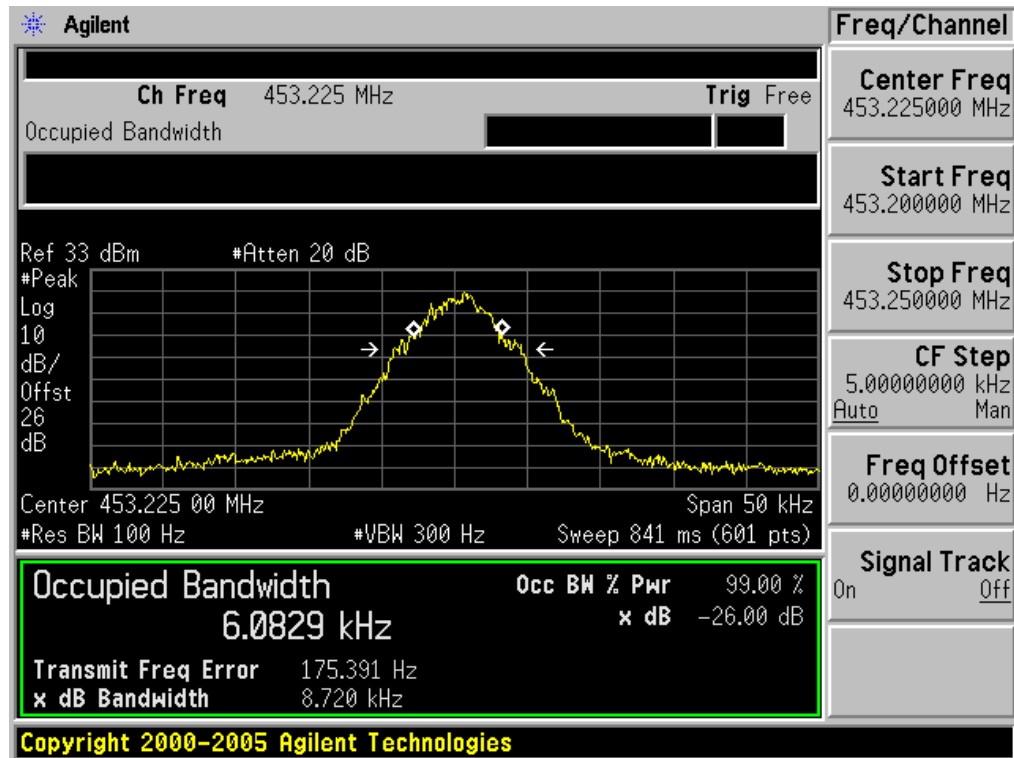
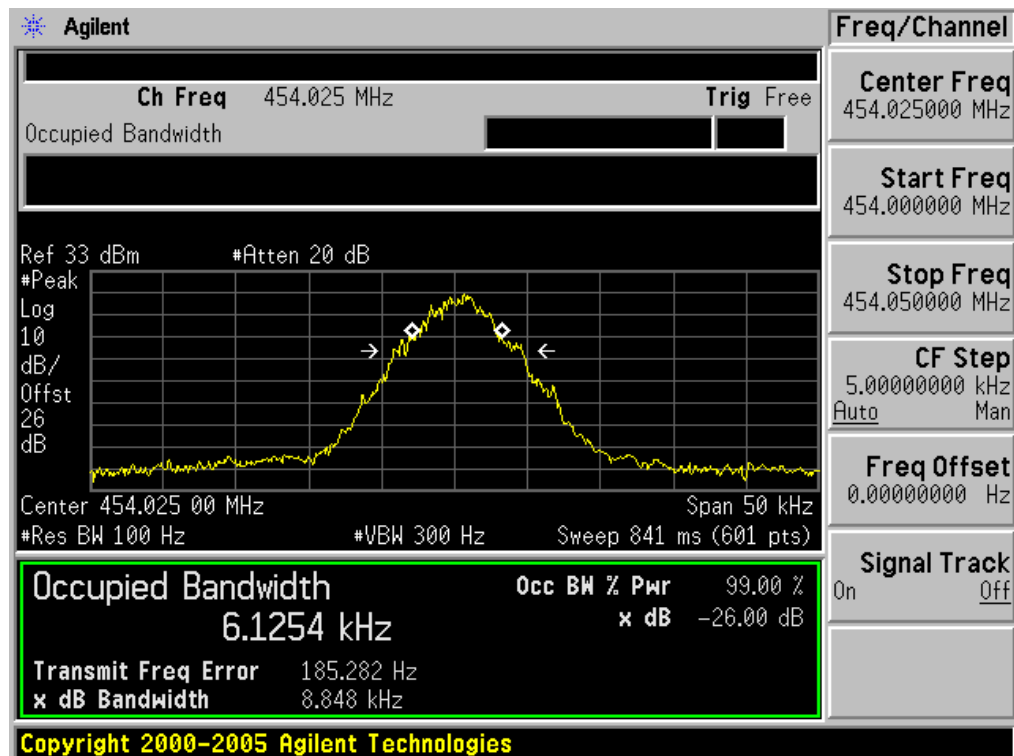
**Occupied bandwidth of Top Channel (479.975MHz)-4W**

Digital:

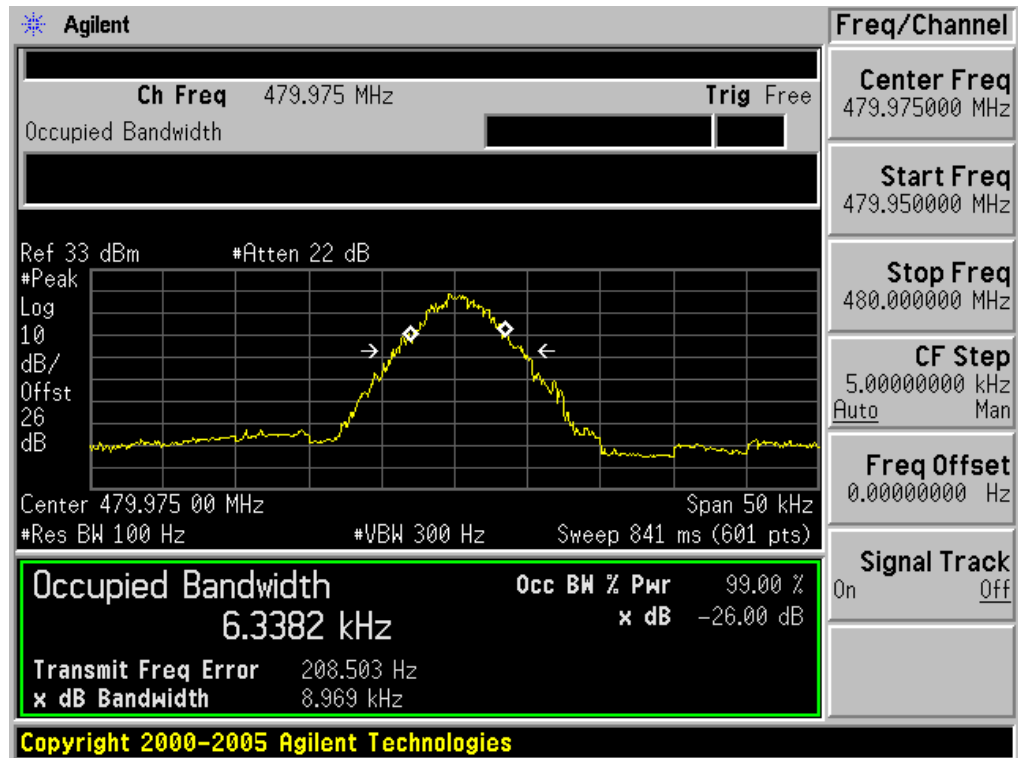
**TEST RESULTS**

| 26 DB BANDWIDTH MEASUREMENT RESULT |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 400.025MHz                         | 8.526KHz                    | 11.25 KHz | Pass   |
| 453.225MHz                         | 8.720KHz                    | 11.25 KHz | Pass   |
| 454.025MHz                         | 8.848KHz                    | 11.25 KHz | Pass   |
| 479.975MHz                         | 8.969KHz                    | 11.25 KHz | Pass   |

**Occupied bandwidth of Bottom Channel (400.025MHz) -1W**

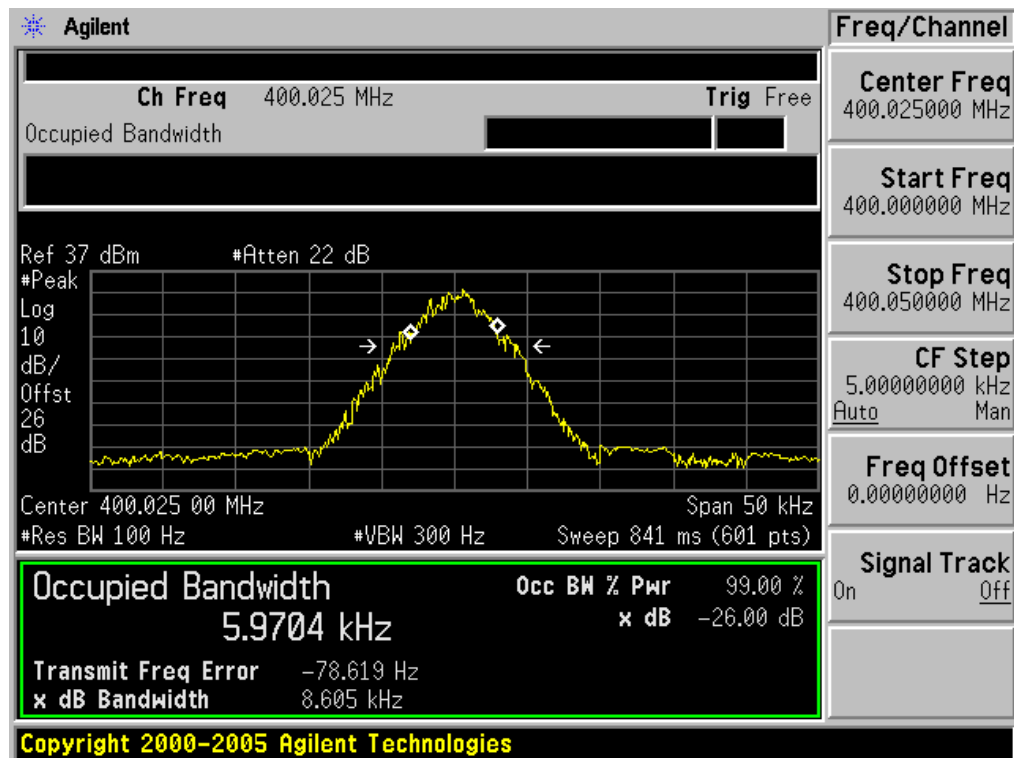
**Occupied bandwidth of Middle Channel (453.225MHz)-1W****Occupied bandwidth of Middle Channel (454.025MHz)-1W**

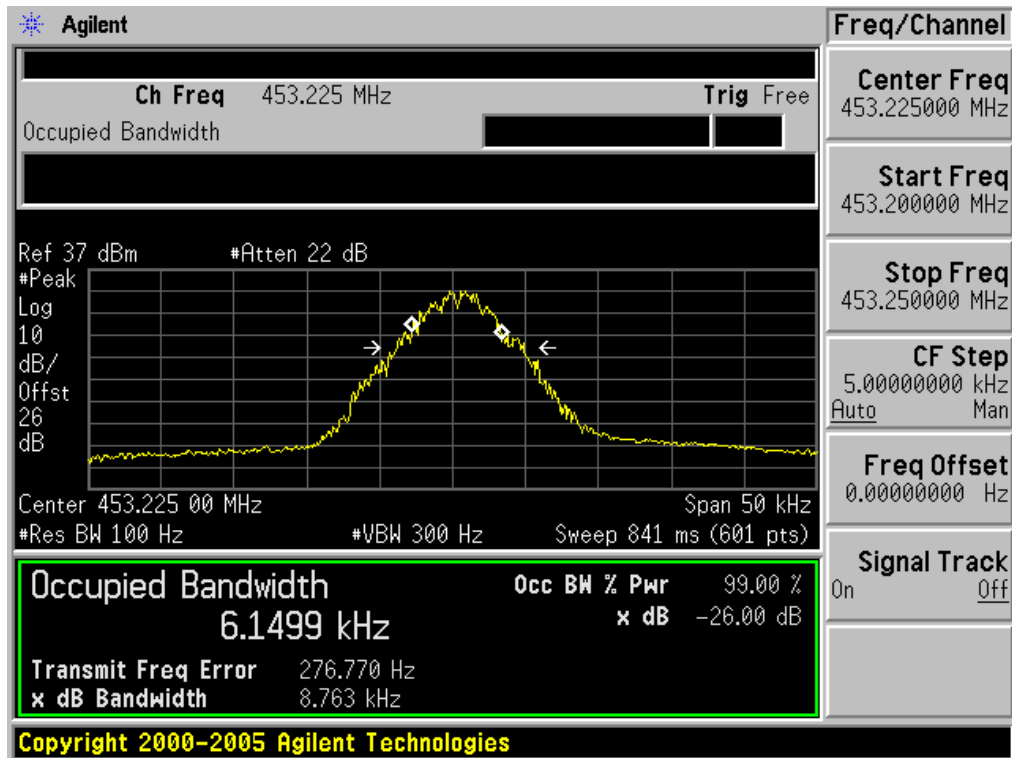
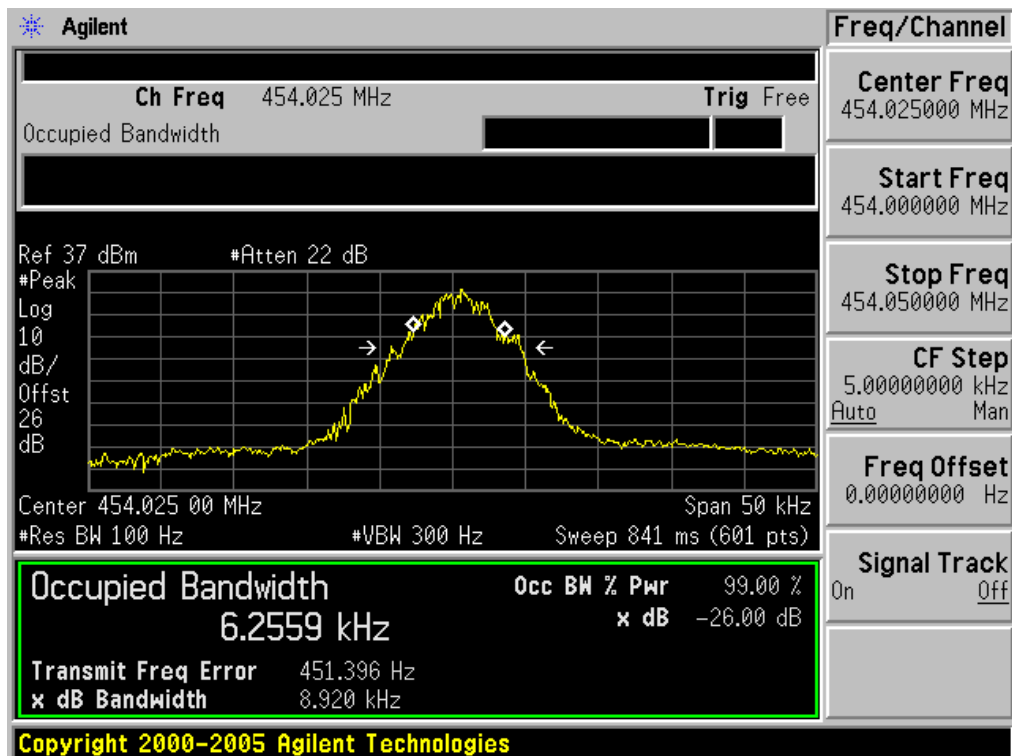


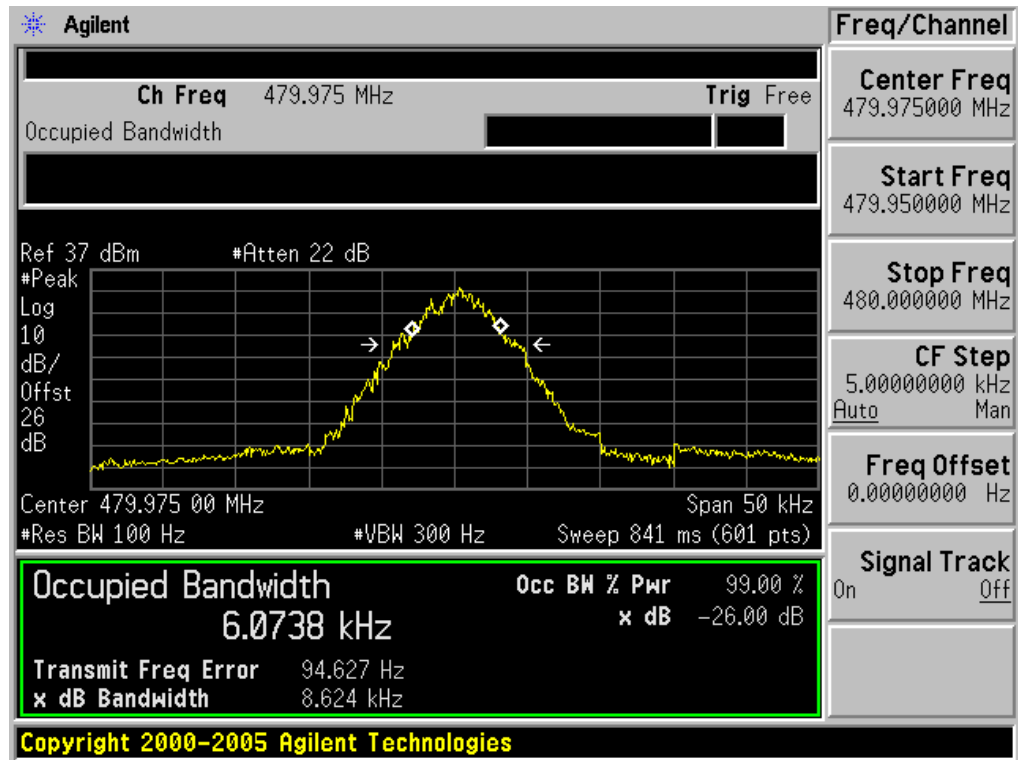
**Occupied bandwidth of Top Channel (479.975MHz)-1W**

**TEST RESULTS**

| 26 DB BANDWIDTH MEASUREMENT RESULT |                             |           |        |
|------------------------------------|-----------------------------|-----------|--------|
| Operating Frequency                | 12.5 KHz Channel Separation |           |        |
|                                    | Test Data                   | Limits    | Result |
| 400.025MHz                         | 8.605KHz                    | 11.25 KHz | Pass   |
| 453.225MHz                         | 8.763KHz                    | 11.25 KHz | Pass   |
| 454.025MHz                         | 8.920KHz                    | 11.25 KHz | Pass   |
| 479.975MHz                         | 8.624KHz                    | 11.25 KHz | Pass   |

**Occupied bandwidth of Bottom Channel (400.025MHz)-4W**

**Occupied bandwidth of Middle Channel (453.225MHz)-4W****Occupied bandwidth of Middle Channel (454.025MHz)-4W**

**Occupied bandwidth of Top Channel (479.975MHz)-4W**

## 7. UNWANTED RADIATION

### 7.1 PROVISIONS APPLICABLE

8.1.1 According to FCC §2.1049, §22.359 and §90.210, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with each channel separation.

Emission Mask D -for 12.5 KHz Channel Separation:

- (1). On any frequency removed from the center of the authorized bandwidth  $f_o$  to 5.625 KHz removed from  $f_o$ : Zero dB.
- (2). On any frequency removed from the center of the authorized bandwidth by a displacement Frequency ( $f_d$  in KHz)  $f_o$  of more than 5.625 KHz but no more than 12.5 KHz: At least  $7.27(f_d - 2.88 \text{ KHz})$  dB
- (3). On any frequency removed from the center of the authorized bandwidth by a displacement Frequency ( $f_d$  in KHz)  $f_o$  of more than 12.5 KHz: At least  $50 + 10 \log(P)$  dB or 70 dB, whichever is lesser attenuation.

### 7.2 MEASUREMENT PROCEDURE

- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through  $360^\circ$  in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.
- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

(14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

(15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

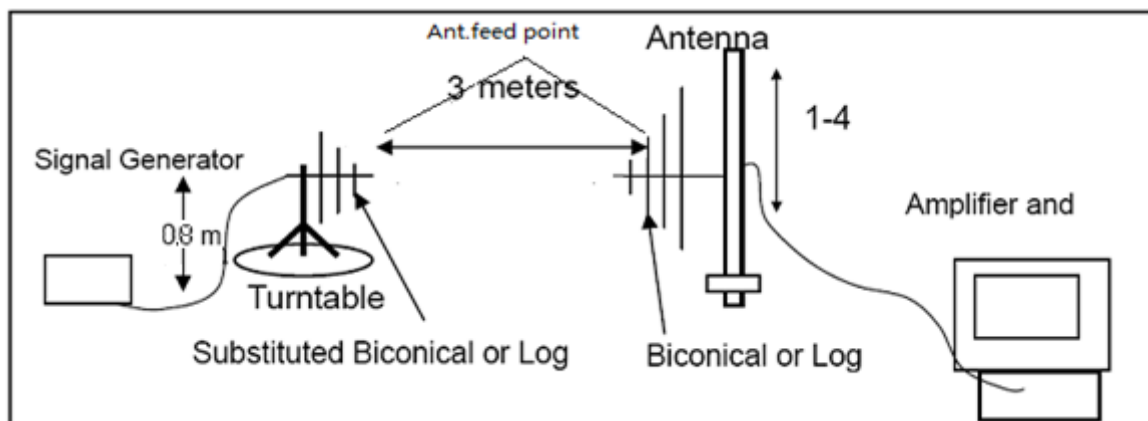
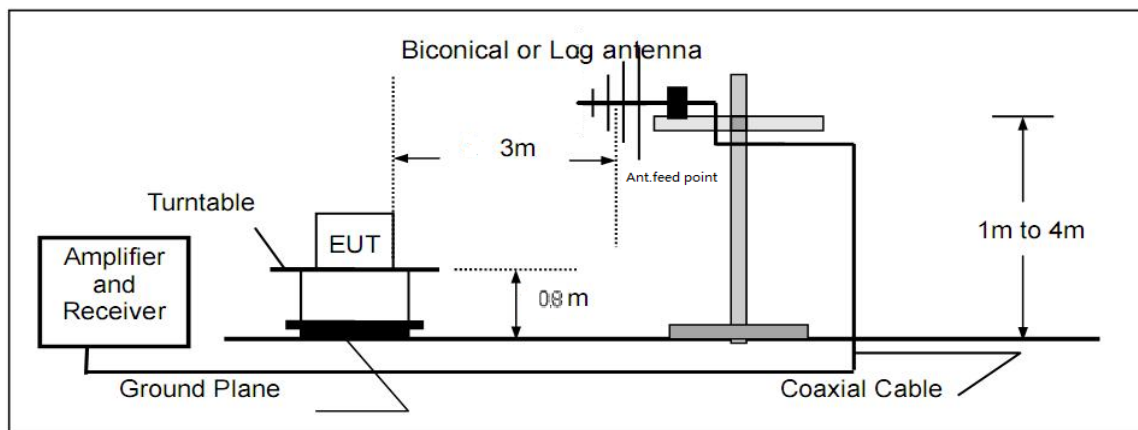
(16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

(17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

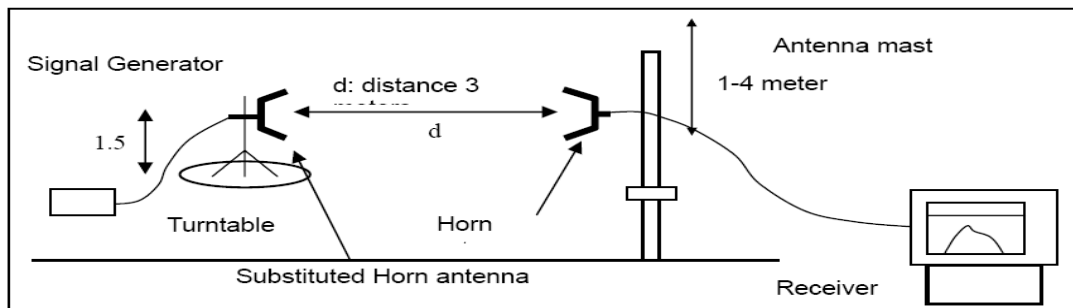
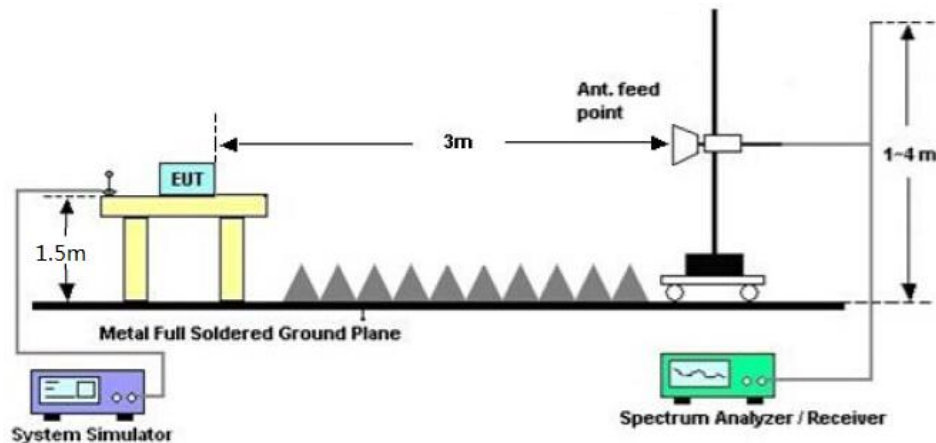
### 7.3 TEST SETUP BLOCK DIAGRAM

#### SUBSTITUTION METHOD: (Radiated Emissions)

##### Radiated Below 1GHz



##### Radiated Above 1 GHz



## 7.4 MEASUREMENT RESULTS:

### Applicable Standard

FCC §2.1053, §22.359 and §90.210

On any frequency removed from the center of the authorized bandwidth by a displacement

Frequency ( $f_d$  in KHz) for of more than 12.5 KHz: at least  $50 + 10 \log(P)$  dB or 70 dB, whichever is lesser attenuation.

## Test Procedure

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for below 1GHz<sub>th</sub> and 1MHz for above 1GHz. Sufficient scans were taken to show any out of band emissions up to 10 harmonic.

In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The “Read Value” is the spectrum reading of maximum power value.

The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

$$\text{EIRP} = \text{"Read Value"} + \text{Measured substitution value} + 2.15.$$

**Limit: At least  $50 + 10 \log(P) = 50 + 10 \log(4) = 56.02$  (dB)—4W     $36.02 - 56.02 = -20$  dBm**

At least  $50+10 \log (P) = 50+10 \log (1) = 50 \text{ (dB)} - 1\text{W}$        $30-50 = -20 \text{ dBm}$

VHF:

Analog:

**Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | H                  | 0                        |             | pass        |
| 272.050                  | H                  | -36.7                    | -20         | pass        |
| 408.08                   | H                  | -33.2                    | -20         | pass        |
| 544.100                  | H                  | -36.3                    | -20         | pass        |
| 680.125                  | H                  | -40.1                    | -20         | pass        |
| 816.150                  | H                  | -40.5                    | -20         | pass        |
| 952.175                  | H                  | -52.2                    | -20         | pass        |
| 1088.200                 | H                  | -43.9                    | -20         | pass        |
| 1224.225                 | H                  | -38.9                    | -20         | pass        |
| 1360.250                 | H                  | -44.6                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | V                  | 0                        |             | pass        |
| 272.050                  | V                  | -31.7                    | -20         | pass        |
| 408.08                   | V                  | -29.2                    | -20         | pass        |
| 544.100                  | V                  | -32.3                    | -20         | pass        |
| 680.125                  | V                  | -37.1                    | -20         | pass        |
| 816.150                  | V                  | -39.5                    | -20         | pass        |
| 952.175                  | V                  | -46.2                    | -20         | pass        |
| 1088.200                 | V                  | -44.9                    | -20         | pass        |
| 1224.225                 | V                  | -39.9                    | -20         | pass        |
| 1360.250                 | V                  | -44.2                    | -20         | pass        |



**Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | H                  | 0                        |             | pass        |
| 303.700                  | H                  | -29.8                    | -20         | pass        |
| 455.550                  | H                  | -35.2                    | -20         | pass        |
| 607.400                  | H                  | -32.7                    | -20         | pass        |
| 759.250                  | H                  | -37.9                    | -20         | pass        |
| 911.100                  | H                  | -36.6                    | -20         | pass        |
| 1062.950                 | H                  | -40.4                    | -20         | pass        |
| 1214.800                 | H                  | -42.8                    | -20         | pass        |
| 1366.650                 | H                  | -42.9                    | -20         | pass        |
| 1518.500                 | H                  | -45.8                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | V                  | 0                        |             | pass        |
| 303.700                  | V                  | -27.1                    | -20         | pass        |
| 455.550                  | V                  | -33.9                    | -20         | pass        |
| 607.400                  | V                  | -35.2                    | -20         | pass        |
| 759.250                  | V                  | -30.3                    | -20         | pass        |
| 911.100                  | V                  | -37.2                    | -20         | pass        |
| 1062.950                 | V                  | -41.4                    | -20         | pass        |
| 1214.800                 | V                  | -43.8                    | -20         | pass        |
| 1366.650                 | V                  | -44.9                    | -20         | pass        |
| 1518.500                 | V                  | -48.8                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | H                  | 0                        |             | pass        |
| 310.050                  | H                  | -32.8                    | -20         | pass        |
| 465.075                  | H                  | -28.7                    | -20         | pass        |
| 620.100                  | H                  | -30.5                    | -20         | pass        |
| 775.125                  | H                  | -34.4                    | -20         | pass        |
| 930.150                  | H                  | -39.1                    | -20         | pass        |
| 1085.175                 | H                  | -40.5                    | -20         | pass        |
| 1240.200                 | H                  | -47.5                    | -20         | pass        |
| 1395.225                 | H                  | -48.3                    | -20         | pass        |
| 1550.250                 | H                  | -49.2                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | V                  | 0                        |             | pass        |
| 310.050                  | V                  | -33.5                    | -20         | pass        |
| 465.075                  | V                  | -32.1                    | -20         | pass        |
| 620.100                  | V                  | -36.2                    | -20         | pass        |
| 775.125                  | V                  | -37.5                    | -20         | pass        |
| 930.150                  | V                  | -38.4                    | -20         | pass        |
| 1085.175                 | V                  | -35.5                    | -20         | pass        |
| 1240.200                 | V                  | -40.8                    | -20         | pass        |
| 1395.225                 | V                  | -42.9                    | -20         | pass        |
| 1550.250                 | V                  | -46.1                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 161.610MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | H                  | 0                        |             | pass        |
| 323.220                  | H                  | -34.3                    | -20         | pass        |
| 484.83                   | H                  | -35.4                    | -20         | pass        |
| 646.440                  | H                  | -36.8                    | -20         | pass        |
| 808.050                  | H                  | -37.1                    | -20         | pass        |
| 969.660                  | H                  | -38.0                    | -20         | pass        |
| 1131.270                 | H                  | -39.6                    | -20         | pass        |
| 1292.880                 | H                  | -44.9                    | -20         | pass        |
| 1454.490                 | H                  | -45.7                    | -20         | pass        |
| 1616.100                 | H                  | -45.0                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | V                  | 0                        |             | pass        |
| 323.220                  | V                  | -34.9                    | -20         | pass        |
| 484.83                   | V                  | -34.2                    | -20         | pass        |
| 646.440                  | V                  | -36.6                    | -20         | pass        |
| 808.050                  | V                  | -35.4                    | -20         | pass        |
| 969.660                  | V                  | -37.4                    | -20         | pass        |
| 1131.270                 | V                  | -39.5                    | -20         | pass        |
| 1292.880                 | V                  | -38.2                    | -20         | pass        |
| 1454.490                 | V                  | -42.8                    | -20         | pass        |
| 1616.100                 | V                  | -42.2                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | H                  | 0                        |             | pass        |
| 347.950                  | H                  | -35.6                    | -20         | pass        |
| 521.925                  | H                  | -35.3                    | -20         | pass        |
| 695.900                  | H                  | -36.1                    | -20         | pass        |
| 869.875                  | H                  | -39.8                    | -20         | pass        |
| 1043.850                 | H                  | -38.9                    | -20         | pass        |
| 1217.825                 | H                  | -42.3                    | -20         | pass        |
| 1391.800                 | H                  | -41.5                    | -20         | pass        |
| 1565.775                 | H                  | -44.1                    | -20         | pass        |
| 1739.750                 | H                  | -45.4                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | V                  | 0                        |             | pass        |
| 347.950                  | V                  | -34.2                    | -20         | pass        |
| 521.925                  | V                  | -35.7                    | -20         | pass        |
| 695.900                  | V                  | -39.8                    | -20         | pass        |
| 869.875                  | V                  | -38.7                    | -20         | pass        |
| 1043.850                 | V                  | -40.1                    | -20         | pass        |
| 1217.825                 | V                  | -41.4                    | -20         | pass        |
| 1391.800                 | V                  | -43.3                    | -20         | pass        |
| 1565.775                 | V                  | -44.6                    | -20         | pass        |
| 1739.750                 | V                  | -45.5                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | H                  | 0                        |             | pass        |
| 272.050                  | H                  | -41.2                    | -20         | pass        |
| 408.08                   | H                  | -40.4                    | -20         | pass        |
| 544.100                  | H                  | -43.9                    | -20         | pass        |
| 680.125                  | H                  | -45.4                    | -20         | pass        |
| 816.150                  | H                  | -44.9                    | -20         | pass        |
| 952.175                  | H                  | -46.1                    | -20         | pass        |
| 1088.200                 | H                  | -49.1                    | -20         | pass        |
| 1224.225                 | H                  | -50.7                    | -20         | pass        |
| 1360.250                 | H                  | -51.5                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | V                  | 0                        |             | pass        |
| 272.050                  | V                  | -40.7                    | -20         | pass        |
| 408.08                   | V                  | -41.5                    | -20         | pass        |
| 544.100                  | V                  | -43.1                    | -20         | pass        |
| 680.125                  | V                  | -44.6                    | -20         | pass        |
| 816.150                  | V                  | -46.4                    | -20         | pass        |
| 952.175                  | V                  | -47.2                    | -20         | pass        |
| 1088.200                 | V                  | -48.6                    | -20         | pass        |
| 1224.225                 | V                  | -50.1                    | -20         | pass        |
| 1360.250                 | V                  | -51.8                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | H                  | 0                        |             | pass        |
| 303.700                  | H                  | -39.3                    | -20         | pass        |
| 455.550                  | H                  | -40.6                    | -20         | pass        |
| 607.400                  | H                  | -41.2                    | -20         | pass        |
| 759.250                  | H                  | -42.7                    | -20         | pass        |
| 911.100                  | H                  | -45.2                    | -20         | pass        |
| 1062.950                 | H                  | -48.3                    | -20         | pass        |
| 1214.800                 | H                  | -49.7                    | -20         | pass        |
| 1366.650                 | H                  | -51.5                    | -20         | pass        |
| 1518.500                 | H                  | -50.9                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.85                   | V                  | 0                        |             | pass        |
| 303.7                    | V                  | -40.8                    | -20         | pass        |
| 455.55                   | V                  | -41.9                    | -20         | pass        |
| 607.4                    | V                  | -43.4                    | -20         | pass        |
| 759.25                   | V                  | -43.1                    | -20         | pass        |
| 911.1                    | V                  | -45.6                    | -20         | pass        |
| 1062.95                  | V                  | -46.2                    | -20         | pass        |
| 1214.8                   | V                  | -47.7                    | -20         | pass        |
| 1366.65                  | V                  | -48.4                    | -20         | pass        |
| 1518.5                   | V                  | -50.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | H                  | 0                        |             | pass        |
| 310.050                  | H                  | -40.1                    | -20         | pass        |
| 465.075                  | H                  | -40.9                    | -20         | pass        |
| 620.100                  | H                  | -41.4                    | -20         | pass        |
| 775.125                  | H                  | -43.6                    | -20         | pass        |
| 930.150                  | H                  | -46.1                    | -20         | pass        |
| 1085.175                 | H                  | -47.8                    | -20         | pass        |
| 1240.200                 | H                  | -50.1                    | -20         | pass        |
| 1395.225                 | H                  | -51.9                    | -20         | pass        |
| 1550.250                 | H                  | -51.8                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | V                  | 0                        |             | pass        |
| 310.050                  | V                  | -40.8                    | -20         | pass        |
| 465.075                  | V                  | -41.2                    | -20         | pass        |
| 620.100                  | V                  | -43.4                    | -20         | pass        |
| 775.125                  | V                  | -44.1                    | -20         | pass        |
| 930.150                  | V                  | -46.1                    | -20         | pass        |
| 1085.175                 | V                  | -45.5                    | -20         | pass        |
| 1240.200                 | V                  | -49.5                    | -20         | pass        |
| 1395.225                 | V                  | -50.2                    | -20         | pass        |
| 1550.250                 | V                  | -51.6                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 161.610MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | H                  | 0                        |             | pass        |
| 323.220                  | H                  | -41.4                    | -20         | pass        |
| 484.830                  | H                  | -42.2                    | -20         | pass        |
| 646.440                  | H                  | -43.1                    | -20         | pass        |
| 808.050                  | H                  | -46.2                    | -20         | pass        |
| 969.660                  | H                  | -44.2                    | -20         | pass        |
| 1131.270                 | H                  | -49.6                    | -20         | pass        |
| 1292.880                 | H                  | -48.4                    | -20         | pass        |
| 1454.490                 | H                  | -50.2                    | -20         | pass        |
| 1616.100                 | H                  | -51.7                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | V                  | 0                        |             | pass        |
| 347.950                  | V                  | -41.0                    | -20         | pass        |
| 521.925                  | V                  | -42.2                    | -20         | pass        |
| 695.900                  | V                  | -43.2                    | -20         | pass        |
| 869.875                  | V                  | -45.2                    | -20         | pass        |
| 1043.850                 | V                  | -46.6                    | -20         | pass        |
| 1217.825                 | V                  | -47.2                    | -20         | pass        |
| 1391.800                 | V                  | -49.1                    | -20         | pass        |
| 1565.775                 | V                  | -51.1                    | -20         | pass        |
| 1739.750                 | V                  | -52.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | H                  | 0                        |             | pass        |
| 347.950                  | H                  | -41.9                    | -20         | pass        |
| 521.925                  | H                  | -42.2                    | -20         | pass        |
| 695.900                  | H                  | -44.9                    | -20         | pass        |
| 869.875                  | H                  | -45.1                    | -20         | pass        |
| 1043.850                 | H                  | -46.2                    | -20         | pass        |
| 1217.825                 | H                  | -48.5                    | -20         | pass        |
| 1391.800                 | H                  | -49.2                    | -20         | pass        |
| 1565.775                 | H                  | -50.3                    | -20         | pass        |
| 1739.750                 | H                  | -50.2                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | V                  | 0                        |             | pass        |
| 347.950                  | V                  | -40.3                    | -20         | pass        |
| 521.925                  | V                  | -42.2                    | -20         | pass        |
| 695.900                  | V                  | -43.3                    | -20         | pass        |
| 869.875                  | V                  | -45.4                    | -20         | pass        |
| 1043.850                 | V                  | -46.9                    | -20         | pass        |
| 1217.825                 | V                  | -47.1                    | -20         | pass        |
| 1391.800                 | V                  | -49.8                    | -20         | pass        |
| 1565.775                 | V                  | -52.0                    | -20         | pass        |
| 1739.750                 | V                  | -52.8                    | -20         | pass        |

Digital:

**Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | H                  | 0                        |             | pass        |
| 272.050                  | H                  | -33.1                    | -20         | pass        |
| 408.08                   | H                  | -35.4                    | -20         | pass        |
| 544.100                  | H                  | -40.7                    | -20         | pass        |
| 680.125                  | H                  | -36.2                    | -20         | pass        |
| 816.150                  | H                  | -38.4                    | -20         | pass        |
| 952.175                  | H                  | -39.8                    | -20         | pass        |
| 1088.200                 | H                  | -45.6                    | -20         | pass        |
| 1224.225                 | H                  | -44.2                    | -20         | pass        |
| 1360.250                 | H                  | -45.4                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | V                  | 0                        |             | pass        |
| 272.050                  | V                  | -35.7                    | -20         | pass        |
| 408.08                   | V                  | -34.2                    | -20         | pass        |
| 544.100                  | V                  | -36.3                    | -20         | pass        |
| 680.125                  | V                  | -37.7                    | -20         | pass        |
| 816.150                  | V                  | -38.2                    | -20         | pass        |
| 952.175                  | V                  | -39.1                    | -20         | pass        |
| 1088.200                 | V                  | -42.8                    | -20         | pass        |
| 1224.225                 | V                  | -44.4                    | -20         | pass        |
| 1360.250                 | V                  | -44.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | H                  | 0                        |             | pass        |
| 303.700                  | H                  | -34.2                    | -20         | pass        |
| 455.55                   | H                  | -35.2                    | -20         | pass        |
| 607.400                  | H                  | -37.9                    | -20         | pass        |
| 759.250                  | H                  | -36.3                    | -20         | pass        |
| 911.100                  | H                  | -38.6                    | -20         | pass        |
| 1062.950                 | H                  | -39.1                    | -20         | pass        |
| 1214.800                 | H                  | -45.2                    | -20         | pass        |
| 1366.650                 | H                  | -44.5                    | -20         | pass        |
| 1518.500                 | H                  | -45.6                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | V                  | 0                        |             | pass        |
| 303.700                  | V                  | -35.1                    | -20         | pass        |
| 455.55                   | V                  | -34.6                    | -20         | pass        |
| 607.400                  | V                  | -36.5                    | -20         | pass        |
| 759.250                  | V                  | -36.5                    | -20         | pass        |
| 911.100                  | V                  | -38.1                    | -20         | pass        |
| 1062.950                 | V                  | -39.3                    | -20         | pass        |
| 1214.800                 | V                  | -41.7                    | -20         | pass        |
| 1366.650                 | V                  | -43.1                    | -20         | pass        |
| 1518.500                 | V                  | -45.8                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | H                  | 0                        |             | pass        |
| 310.050                  | H                  | -35.2                    | -20         | pass        |
| 465.075                  | H                  | -35.1                    | -20         | pass        |
| 620.100                  | H                  | -36.4                    | -20         | pass        |
| 775.125                  | H                  | -39.9                    | -20         | pass        |
| 930.150                  | H                  | -40.7                    | -20         | pass        |
| 1085.175                 | H                  | -42.1                    | -20         | pass        |
| 1240.200                 | H                  | -43.4                    | -20         | pass        |
| 1395.225                 | H                  | -44.7                    | -20         | pass        |
| 1550.250                 | H                  | -44.2                    | -20         | pass        |



| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | V                  | 0                        |             | pass        |
| 310.050                  | V                  | -33.7                    | -20         | pass        |
| 465.08                   | V                  | -34.8                    | -20         | pass        |
| 620.100                  | V                  | -35.2                    | -20         | pass        |
| 775.125                  | V                  | -34.3                    | -20         | pass        |
| 930.150                  | V                  | -35.6                    | -20         | pass        |
| 1085.175                 | V                  | -39.8                    | -20         | pass        |
| 1240.200                 | V                  | -41.1                    | -20         | pass        |
| 1395.225                 | V                  | -42.6                    | -20         | pass        |
| 1550.250                 | V                  | -44.6                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 161.61MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | H                  | 0                        |             | pass        |
| 323.220                  | H                  | -33.2                    | -20         | pass        |
| 484.83                   | H                  | -35.6                    | -20         | pass        |
| 646.440                  | H                  | -36.5                    | -20         | pass        |
| 808.050                  | H                  | -35.2                    | -20         | pass        |
| 969.660                  | H                  | -37.5                    | -20         | pass        |
| 1131.270                 | H                  | -41.1                    | -20         | pass        |
| 1292.880                 | H                  | -44.6                    | -20         | pass        |
| 1454.490                 | H                  | -45.2                    | -20         | pass        |
| 1616.100                 | H                  | -44.2                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | V                  | 0                        |             | pass        |
| 323.220                  | V                  | -34.8                    | -20         | pass        |
| 484.83                   | V                  | -34.9                    | -20         | pass        |
| 646.440                  | V                  | -35.3                    | -20         | pass        |
| 808.050                  | V                  | -36.6                    | -20         | pass        |
| 969.660                  | V                  | -37.1                    | -20         | pass        |
| 1131.270                 | V                  | -40.2                    | -20         | pass        |
| 1292.880                 | V                  | -41.7                    | -20         | pass        |
| 1454.490                 | V                  | -45.1                    | -20         | pass        |
| 1616.100                 | V                  | -45.1                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-4W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | H                  | 0                        |             | pass        |
| 347.950                  | H                  | -35.2                    | -20         | pass        |
| 521.925                  | H                  | -35.2                    | -20         | pass        |
| 695.900                  | H                  | -37.5                    | -20         | pass        |
| 869.875                  | H                  | -38.2                    | -20         | pass        |
| 1043.850                 | H                  | -39.2                    | -20         | pass        |
| 1217.825                 | H                  | -40.9                    | -20         | pass        |
| 1391.800                 | H                  | -43.1                    | -20         | pass        |
| 1565.775                 | H                  | -46.7                    | -20         | pass        |
| 1739.750                 | H                  | -44.5                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | V                  | 0                        |             | pass        |
| 347.950                  | V                  | -35.5                    | 58.45       | pass        |
| 521.925                  | V                  | -35.4                    | 58.45       | pass        |
| 695.900                  | V                  | -38.9                    | 58.45       | pass        |
| 869.875                  | V                  | -37.7                    | 58.45       | pass        |
| 1043.850                 | V                  | -39.2                    | 58.45       | pass        |
| 1217.825                 | V                  | -40.5                    | 58.45       | pass        |
| 1391.800                 | V                  | -42.0                    | 58.45       | pass        |
| 1565.775                 | V                  | -44.2                    | 58.45       | pass        |
| 1739.750                 | V                  | -43.9                    | 58.45       | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 136.025                  | V                  | 0                        |             | pass        |
| 272.050                  | V                  | -42.0                    | -20         | pass        |
| 408.08                   | V                  | -42.1                    | -20         | pass        |
| 544.100                  | V                  | -44.2                    | -20         | pass        |
| 680.125                  | V                  | -45.1                    | -20         | pass        |
| 816.150                  | V                  | -48.1                    | -20         | pass        |
| 952.175                  | V                  | -47.3                    | -20         | pass        |
| 1088.200                 | V                  | -48.9                    | -20         | pass        |
| 1224.225                 | V                  | -50.2                    | -20         | pass        |
| 1360.250                 | V                  | -51.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | H                  | 0                        |             | pass        |
| 303.700                  | H                  | -39.8                    | -20         | pass        |
| 455.55                   | H                  | -42.2                    | -20         | pass        |
| 607.400                  | H                  | -43.9                    | -20         | pass        |
| 759.250                  | H                  | -45.3                    | -20         | pass        |
| 911.100                  | H                  | -45.7                    | -20         | pass        |
| 1062.950                 | H                  | -46.2                    | -20         | pass        |
| 1214.800                 | H                  | -46.9                    | -20         | pass        |
| 1366.650                 | H                  | -48.2                    | -20         | pass        |
| 1518.500                 | H                  | -51.2                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 151.850                  | V                  | 0                        |             | pass        |
| 303.700                  | V                  | -41.1                    | -20         | pass        |
| 455.55                   | V                  | -42.8                    | -20         | pass        |
| 607.400                  | V                  | -43.3                    | -20         | pass        |
| 759.250                  | V                  | -45.1                    | -20         | pass        |
| 911.100                  | V                  | -44.2                    | -20         | pass        |
| 1062.950                 | V                  | -46.1                    | -20         | pass        |
| 1214.800                 | V                  | -46.0                    | -20         | pass        |
| 1366.650                 | V                  | -51.8                    | -20         | pass        |
| 1518.500                 | V                  | -50.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | H                  | 0                        |             | pass        |
| 310.050                  | H                  | -39.9                    | -20         | pass        |
| 465.075                  | H                  | -41.3                    | -20         | pass        |
| 620.100                  | H                  | -42.2                    | -20         | pass        |
| 775.125                  | H                  | -45.7                    | -20         | pass        |
| 930.150                  | H                  | -45.3                    | -20         | pass        |
| 1085.175                 | H                  | -48.2                    | -20         | pass        |
| 1240.200                 | H                  | -48.6                    | -20         | pass        |
| 1395.225                 | H                  | -51.9                    | -20         | pass        |
| 1550.250                 | H                  | -50.7                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 155.025                  | V                  | 0                        |             | pass        |
| 310.050                  | V                  | -39.3                    | -20         | pass        |
| 465.075                  | V                  | -42.0                    | -20         | pass        |
| 620.100                  | V                  | -43.5                    | -20         | pass        |
| 775.125                  | V                  | -45.7                    | -20         | pass        |
| 930.150                  | V                  | -47.3                    | -20         | pass        |
| 1085.175                 | V                  | -46.9                    | -20         | pass        |
| 1240.200                 | V                  | -49.2                    | -20         | pass        |
| 1395.225                 | V                  | -51.6                    | -20         | pass        |
| 1550.250                 | V                  | -52.3                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 161.610MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | H                  | 0                        |             | pass        |
| 323.220                  | H                  | -39.1                    | -20         | pass        |
| 484.83                   | H                  | -41.6                    | -20         | pass        |
| 646.440                  | H                  | -43.3                    | -20         | pass        |
| 808.050                  | H                  | -44.8                    | -20         | pass        |
| 969.660                  | H                  | -45.9                    | -20         | pass        |
| 1131.270                 | H                  | -46.2                    | -20         | pass        |
| 1292.880                 | H                  | -46.9                    | -20         | pass        |
| 1454.490                 | H                  | -48.3                    | -20         | pass        |
| 1616.100                 | H                  | -51.8                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/H) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 161.610                  | V                  | 0                        |             | pass        |
| 323.220                  | V                  | -41.4                    | -20         | pass        |
| 484.83                   | V                  | -42.2                    | -20         | pass        |
| 646.440                  | V                  | -44.5                    | -20         | pass        |
| 808.050                  | V                  | -44.1                    | -20         | pass        |
| 969.660                  | V                  | -46.6                    | -20         | pass        |
| 1131.270                 | V                  | -45.1                    | -20         | pass        |
| 1292.880                 | V                  | -46.4                    | -20         | pass        |
| 1454.490                 | V                  | -50.0                    | -20         | pass        |
| 1616.100                 | V                  | -50.4                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-1W**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | H                  | 0                        |             | pass        |
| 347.950                  | H                  | -39.8                    | -20         | pass        |
| 521.925                  | H                  | -39.1                    | -20         | pass        |
| 695.900                  | H                  | -41.8                    | -20         | pass        |
| 869.875                  | H                  | -43.2                    | -20         | pass        |
| 1043.850                 | H                  | -47.0                    | -20         | pass        |
| 1217.825                 | H                  | -47.3                    | -20         | pass        |
| 1391.800                 | H                  | -48.9                    | -20         | pass        |
| 1565.775                 | H                  | -49.3                    | -20         | pass        |
| 1739.750                 | H                  | -51.0                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 173.975                  | V                  | 0                        |             | pass        |
| 347.950                  | V                  | -40.3                    | -20         | pass        |
| 521.925                  | V                  | -40.8                    | -20         | pass        |
| 695.900                  | V                  | -42.2                    | -20         | pass        |
| 869.875                  | V                  | -45.2                    | -20         | pass        |
| 1043.850                 | V                  | -46.0                    | -20         | pass        |
| 1217.825                 | V                  | -48.2                    | -20         | pass        |
| 1391.800                 | V                  | -49.3                    | -20         | pass        |
| 1565.775                 | V                  | -51.9                    | -20         | pass        |
| 1739.750                 | V                  | -50.5                    | -20         | pass        |

UHF:

Analog:

**TEST RESULTS--4W****Measurement Result for 12.5 KHz Channel Separation @ 400.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | H                  | 0                        |             | pass        |
| 800.050                  | H                  | -32.3                    | -20         | pass        |
| 1200.075                 | H                  | -33.8                    | -20         | pass        |
| 1600.100                 | H                  | -35.2                    | -20         | pass        |
| 2000.125                 | H                  | -36.6                    | -20         | pass        |
| 2400.150                 | H                  | -39.3                    | -20         | pass        |
| 2800.175                 | H                  | -41.2                    | -20         | pass        |
| 3200.200                 | H                  | -43.8                    | -20         | pass        |
| 3600.225                 | H                  | -42.8                    | -20         | pass        |
| 4000.250                 | H                  | -45.5                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | V                  | 0                        |             | pass        |
| 800.050                  | V                  | -34.2                    | -20         | pass        |
| 1200.075                 | V                  | -36.5                    | -20         | pass        |
| 1600.100                 | V                  | -35.2                    | -20         | pass        |
| 2000.125                 | V                  | -39.8                    | -20         | pass        |
| 2400.150                 | V                  | -40.4                    | -20         | pass        |
| 2800.175                 | V                  | -39.1                    | -20         | pass        |
| 3200.200                 | V                  | -41.2                    | -20         | pass        |
| 3600.225                 | V                  | -43.7                    | -20         | pass        |
| 4000.250                 | V                  | -44.2                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 454.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | H                  | 0                        |             | pass        |
| 908.050                  | H                  | -31.1                    | -20         | pass        |
| 1362.075                 | H                  | -34.8                    | -20         | pass        |
| 1816.100                 | H                  | -34.5                    | -20         | pass        |
| 2270.125                 | H                  | -38.2                    | -20         | pass        |
| 2724.150                 | H                  | -39.9                    | -20         | pass        |
| 3178.175                 | H                  | -43.4                    | -20         | pass        |
| 3632.200                 | H                  | -42.3                    | -20         | pass        |
| 4086.225                 | H                  | -45.5                    | -20         | pass        |
| 4540.250                 | H                  | -45.3                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | V                  | 0                        |             | pass        |
| 908.050                  | V                  | -34.5                    | -20         | pass        |
| 1362.075                 | V                  | -35.5                    | -20         | pass        |
| 1816.100                 | V                  | -38.3                    | -20         | pass        |
| 2270.125                 | V                  | -37.4                    | -20         | pass        |
| 2724.150                 | V                  | -38.2                    | -20         | pass        |
| 3178.175                 | V                  | -39.0                    | -20         | pass        |
| 3632.200                 | V                  | -43.1                    | -20         | pass        |
| 4086.225                 | V                  | -42.8                    | -20         | pass        |
| 4540.250                 | V                  | -45.2                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 479.975MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | H                  | 0                        |             | pass        |
| 959.950                  | H                  | -31.4                    | -20         | pass        |
| 1439.925                 | H                  | -32.1                    | -20         | pass        |
| 1919.900                 | H                  | -33.8                    | -20         | pass        |
| 2399.875                 | H                  | -35.0                    | -20         | pass        |
| 2879.850                 | H                  | -36.1                    | -20         | pass        |
| 3359.825                 | H                  | -39.4                    | -20         | pass        |
| 3839.800                 | H                  | -40.7                    | -20         | pass        |
| 4319.775                 | H                  | -43.8                    | -20         | pass        |
| 4799.750                 | H                  | -45.8                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | V                  | 0                        |             | pass        |
| 959.950                  | V                  | -31.8                    | -20         | pass        |
| 1439.925                 | V                  | -33.2                    | -20         | pass        |
| 1919.900                 | V                  | -34.6                    | -20         | pass        |
| 2399.875                 | V                  | -35.3                    | -20         | pass        |
| 2879.850                 | V                  | -37.9                    | -20         | pass        |
| 3359.825                 | V                  | -39.2                    | -20         | pass        |
| 3839.800                 | V                  | -40.1                    | -20         | pass        |
| 4319.775                 | V                  | -42.5                    | -20         | pass        |
| 4799.750                 | V                  | -44.6                    | -20         | pass        |

**TEST RESULTS—1W****Measurement Result for 12.5 KHz Channel Separation @ 400.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | H                  | 0                        |             | pass        |
| 800.050                  | H                  | -40.8                    | -20         | pass        |
| 1200.075                 | H                  | -41.2                    | -20         | pass        |
| 1600.100                 | H                  | -43.5                    | -20         | pass        |
| 2000.125                 | H                  | -45.3                    | -20         | pass        |
| 2400.150                 | H                  | -46.6                    | -20         | pass        |
| 2800.175                 | H                  | -47.9                    | -20         | pass        |
| 3200.200                 | H                  | -49.0                    | -20         | pass        |
| 3600.225                 | H                  | -50.4                    | -20         | pass        |
| 4000.250                 | H                  | -51.2                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | V                  | 0                        |             | pass        |
| 800.050                  | V                  | -40.6                    | -20         | pass        |
| 1200.075                 | V                  | -41.8                    | -20         | pass        |
| 1600.100                 | V                  | -43.2                    | -20         | pass        |
| 2000.125                 | V                  | -44.6                    | -20         | pass        |
| 2400.150                 | V                  | -45.9                    | -20         | pass        |
| 2800.175                 | V                  | -46.4                    | -20         | pass        |
| 3200.200                 | V                  | -47.7                    | -20         | pass        |
| 3600.225                 | V                  | -49.7                    | -20         | pass        |
| 4000.250                 | V                  | -50.2                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 454.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | H                  | 0                        |             | pass        |
| 908.050                  | H                  | -40.8                    | -20         | pass        |
| 1362.075                 | H                  | -40.2                    | -20         | pass        |
| 1816.100                 | H                  | -44.8                    | -20         | pass        |
| 2270.125                 | H                  | -44.5                    | -20         | pass        |
| 2724.150                 | H                  | -46.2                    | -20         | pass        |
| 3178.175                 | H                  | -45.3                    | -20         | pass        |
| 3632.200                 | H                  | -46.7                    | -20         | pass        |
| 4086.225                 | H                  | -49.5                    | -20         | pass        |
| 4540.250                 | H                  | -50.1                    | -20         | pass        |



| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | V                  | 0                        |             | pass        |
| 908.050                  | V                  | -38.1                    | -20         | pass        |
| 1362.075                 | V                  | -39.2                    | -20         | pass        |
| 1816.100                 | V                  | -40.8                    | -20         | pass        |
| 2270.125                 | V                  | -43.0                    | -20         | pass        |
| 2724.150                 | V                  | -46.9                    | -20         | pass        |
| 3178.175                 | V                  | -48.1                    | -20         | pass        |
| 3632.200                 | V                  | -49.6                    | -20         | pass        |
| 4086.225                 | V                  | -50.3                    | -20         | pass        |
| 4540.250                 | V                  | -50.7                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 479.975MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | H                  | 0                        |             | pass        |
| 959.950                  | H                  | -40.8                    | -20         | pass        |
| 1439.925                 | H                  | -41.6                    | -20         | pass        |
| 1919.900                 | H                  | -43.7                    | -20         | pass        |
| 2399.875                 | H                  | -45.1                    | -20         | pass        |
| 2879.850                 | H                  | -46.7                    | -20         | pass        |
| 3359.825                 | H                  | -48.5                    | -20         | pass        |
| 3839.800                 | H                  | -49.2                    | -20         | pass        |
| 4319.775                 | H                  | -50.2                    | -20         | pass        |
| 4799.750                 | H                  | -51.1                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | V                  | 0                        |             | pass        |
| 959.950                  | V                  | -40.5                    | -20         | pass        |
| 1439.925                 | V                  | -41.4                    | -20         | pass        |
| 1919.900                 | V                  | -42.2                    | -20         | pass        |
| 2399.875                 | V                  | -44.2                    | -20         | pass        |
| 2879.850                 | V                  | -46.8                    | -20         | pass        |
| 3359.825                 | V                  | -47.7                    | -20         | pass        |
| 3839.800                 | V                  | -48.5                    | -20         | pass        |
| 4319.775                 | V                  | -49.9                    | -20         | pass        |
| 4799.750                 | V                  | -50.8                    | -20         | pass        |

Digital:

**TEST RESULTS-4W****Measurement Result for 12.5 KHz Channel Separation @ 400.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | H                  | 0                        |             | pass        |
| 800.050                  | H                  | -34.8                    | -20         | pass        |
| 1200.075                 | H                  | -35.2                    | -20         | pass        |
| 1600.100                 | H                  | -36.5                    | -20         | pass        |
| 2000.125                 | H                  | -38.8                    | -20         | pass        |
| 2400.150                 | H                  | -39.1                    | -20         | pass        |
| 2800.175                 | H                  | -41.4                    | -20         | pass        |
| 3200.200                 | H                  | -42.5                    | -20         | pass        |
| 3600.225                 | H                  | -43.2                    | -20         | pass        |
| 4000.250                 | H                  | -44.5                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | V                  | 0                        |             | pass        |
| 800.050                  | V                  | -34.4                    | -20         | pass        |
| 1200.075                 | V                  | -35.8                    | -20         | pass        |
| 1600.100                 | V                  | -36.4                    | -20         | pass        |
| 2000.125                 | V                  | -39.8                    | -20         | pass        |
| 2400.150                 | V                  | -40.4                    | -20         | pass        |
| 2800.175                 | V                  | -39.9                    | -20         | pass        |
| 3200.200                 | V                  | -42.2                    | -20         | pass        |
| 3600.225                 | V                  | -43.7                    | -20         | pass        |
| 4000.250                 | V                  | -44.2                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 454.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | H                  | 0                        |             | pass        |
| 908.050                  | H                  | -34.2                    | -20         | pass        |
| 1362.075                 | H                  | -35.6                    | -20         | pass        |
| 1816.100                 | H                  | -38.2                    | -20         | pass        |
| 2270.125                 | H                  | -38.2                    | -20         | pass        |
| 2724.150                 | H                  | -40.5                    | -20         | pass        |
| 3178.175                 | H                  | -41.4                    | -20         | pass        |
| 3632.200                 | H                  | -43.5                    | -20         | pass        |
| 4086.225                 | H                  | -45.2                    | -20         | pass        |
| 4540.250                 | H                  | -44.0                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | V                  | 0                        |             | pass        |
| 908.050                  | V                  | -34.7                    | -20         | pass        |
| 1362.075                 | V                  | -35.2                    | -20         | pass        |
| 1816.100                 | V                  | -36.5                    | -20         | pass        |
| 2270.125                 | V                  | -37.6                    | -20         | pass        |
| 2724.150                 | V                  | -39.7                    | -20         | pass        |
| 3178.175                 | V                  | -38.3                    | -20         | pass        |
| 3632.200                 | V                  | -41.2                    | -20         | pass        |
| 4086.225                 | V                  | -42.5                    | -20         | pass        |
| 4540.250                 | V                  | -45.0                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 479.975MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | H                  | 0                        |             | pass        |
| 959.950                  | H                  | -35.8                    | -20         | pass        |
| 1439.925                 | H                  | -34.8                    | -20         | pass        |
| 1919.900                 | H                  | -37.3                    | -20         | pass        |
| 2399.875                 | H                  | -39.5                    | -20         | pass        |
| 2879.850                 | H                  | -42.0                    | -20         | pass        |
| 3359.825                 | H                  | -41.2                    | -20         | pass        |
| 3839.800                 | H                  | -43.7                    | -20         | pass        |
| 4319.775                 | H                  | -43.1                    | -20         | pass        |
| 4799.750                 | H                  | -44.7                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | V                  | 0                        |             | pass        |
| 959.950                  | V                  | -35.0                    | -20         | pass        |
| 1439.925                 | V                  | -36.3                    | -20         | pass        |
| 1919.900                 | V                  | -38.7                    | -20         | pass        |
| 2399.875                 | V                  | -39.9                    | -20         | pass        |
| 2879.850                 | V                  | -40.4                    | -20         | pass        |
| 3359.825                 | V                  | -41.6                    | -20         | pass        |
| 3839.800                 | V                  | -42.1                    | -20         | pass        |
| 4319.775                 | V                  | -43.7                    | -20         | pass        |
| 4799.750                 | V                  | -44.2                    | -20         | pass        |

**TEST RESULTS-1W****Measurement Result for 12.5 KHz Channel Separation @ 400.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | H                  | 0                        |             | pass        |
| 800.050                  | H                  | -34.2                    | -20         | pass        |
| 1200.075                 | H                  | -35.3                    | -20         | pass        |
| 1600.100                 | H                  | -36.5                    | -20         | pass        |
| 2000.125                 | H                  | -37.4                    | -20         | pass        |
| 2400.150                 | H                  | -38.2                    | -20         | pass        |
| 2800.175                 | H                  | -39.2                    | -20         | pass        |
| 3200.200                 | H                  | -40.6                    | -20         | pass        |
| 3600.225                 | H                  | -42.4                    | -20         | pass        |
| 4000.250                 | H                  | -43.9                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 400.025                  | V                  | 0                        |             | pass        |
| 800.050                  | V                  | -34.7                    | -20         | pass        |
| 1200.075                 | V                  | -35.4                    | -20         | pass        |
| 1600.100                 | V                  | -38.2                    | -20         | pass        |
| 2000.125                 | V                  | -39.0                    | -20         | pass        |
| 2400.150                 | V                  | -40.5                    | -20         | pass        |
| 2800.175                 | V                  | -42.6                    | -20         | pass        |
| 3200.200                 | V                  | -45.3                    | -20         | pass        |
| 3600.225                 | V                  | -44.8                    | -20         | pass        |
| 4000.250                 | V                  | -45.4                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 454.025MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | H                  | 0                        |             | pass        |
| 908.050                  | H                  | -40.7                    | -20         | pass        |
| 1362.075                 | H                  | -42.3                    | -20         | pass        |
| 1816.100                 | H                  | -43.7                    | -20         | pass        |
| 2270.125                 | H                  | -46.5                    | -20         | pass        |
| 2724.150                 | H                  | -45.8                    | -20         | pass        |
| 3178.175                 | H                  | -47.2                    | -20         | pass        |
| 3632.200                 | H                  | -48.7                    | -20         | pass        |
| 4086.225                 | H                  | -51.2                    | -20         | pass        |
| 4540.250                 | H                  | -50.5                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 454.025                  | V                  | 0                        |             | pass        |
| 908.050                  | V                  | -39.2                    | -20         | pass        |
| 1362.075                 | V                  | -41.1                    | -20         | pass        |
| 1816.100                 | V                  | -40.7                    | -20         | pass        |
| 2270.125                 | V                  | -42.8                    | -20         | pass        |
| 2724.150                 | V                  | -44.1                    | -20         | pass        |
| 3178.175                 | V                  | -46.6                    | -20         | pass        |
| 3632.200                 | V                  | -47.7                    | -20         | pass        |
| 4086.225                 | V                  | -48.0                    | -20         | pass        |
| 4540.250                 | V                  | -51.1                    | -20         | pass        |

**Measurement Result for 12.5 KHz Channel Separation @ 479.975MHz**

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | H                  | 0                        |             | pass        |
| 959.950                  | H                  | -40.4                    | -20         | pass        |
| 1439.925                 | H                  | -41.6                    | -20         | pass        |
| 1919.900                 | H                  | -44.1                    | -20         | pass        |
| 2399.875                 | H                  | -46.6                    | -20         | pass        |
| 2879.850                 | H                  | -48.0                    | -20         | pass        |
| 3359.825                 | H                  | -48.6                    | -20         | pass        |
| 3839.800                 | H                  | -49.7                    | -20         | pass        |
| 4319.775                 | H                  | -50.4                    | -20         | pass        |
| 4799.750                 | H                  | -52.9                    | -20         | pass        |

| Emission Frequency (MHz) | Ant. Polarity(H/V) | Measurement Result (dBm) | Limit (dBm) | Result(P/F) |
|--------------------------|--------------------|--------------------------|-------------|-------------|
| 479.975                  | V                  | 0                        |             | pass        |
| 959.950                  | V                  | -39.9                    | -20         | pass        |
| 1439.925                 | V                  | -41.2                    | -20         | pass        |
| 1919.900                 | V                  | -42.6                    | -20         | pass        |
| 2399.875                 | V                  | -44.7                    | -20         | pass        |
| 2879.850                 | V                  | -45.6                    | -20         | pass        |
| 3359.825                 | V                  | -46.4                    | -20         | pass        |
| 3839.800                 | V                  | -47.7                    | -20         | pass        |
| 4319.775                 | V                  | -48.7                    | -20         | pass        |
| 4799.750                 | V                  | -50.9                    | -20         | pass        |

## 7.5 EMISSION MASK PLOT

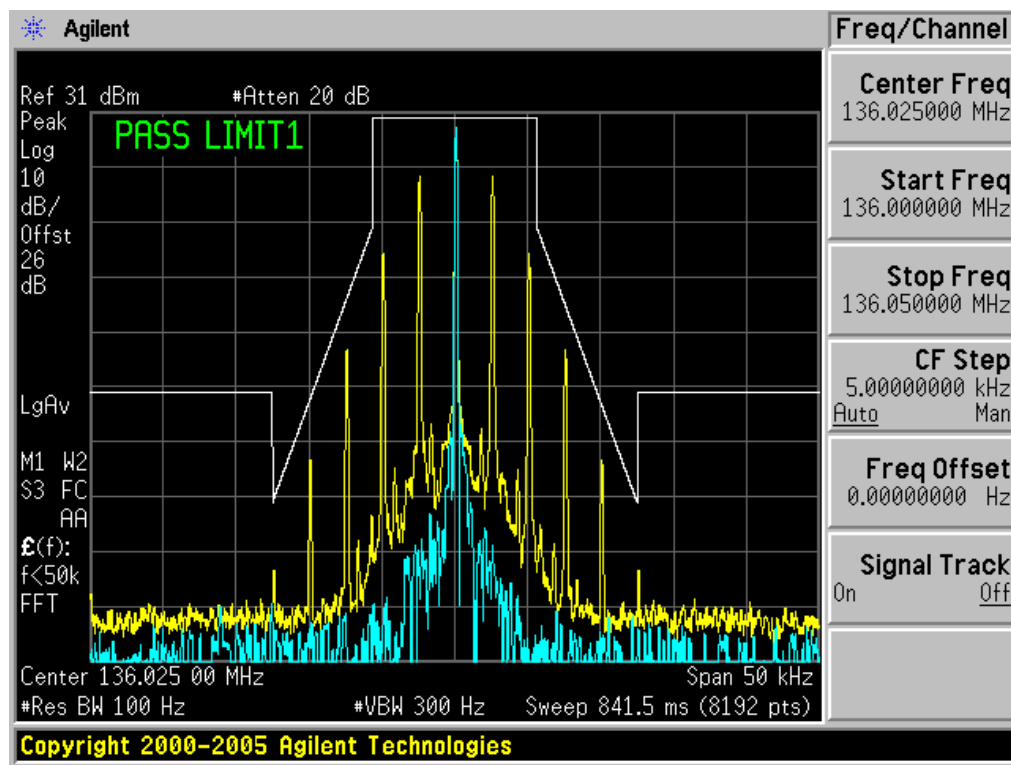
The detailed procedure employed for Emission Mask measurements are specified as following:

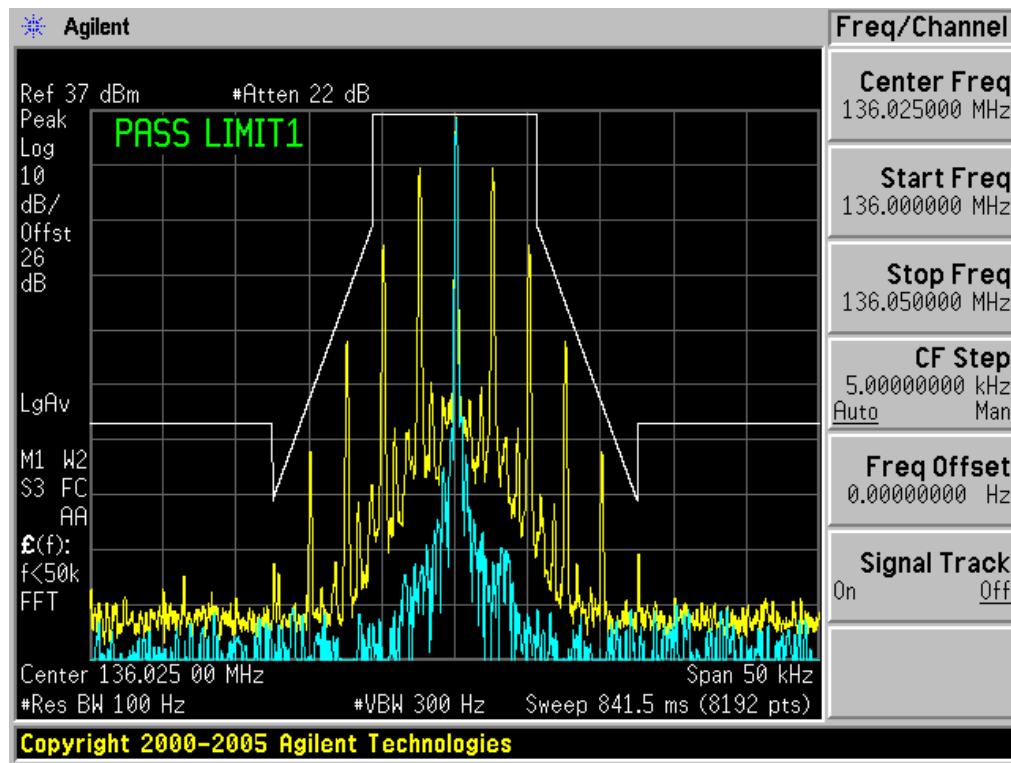
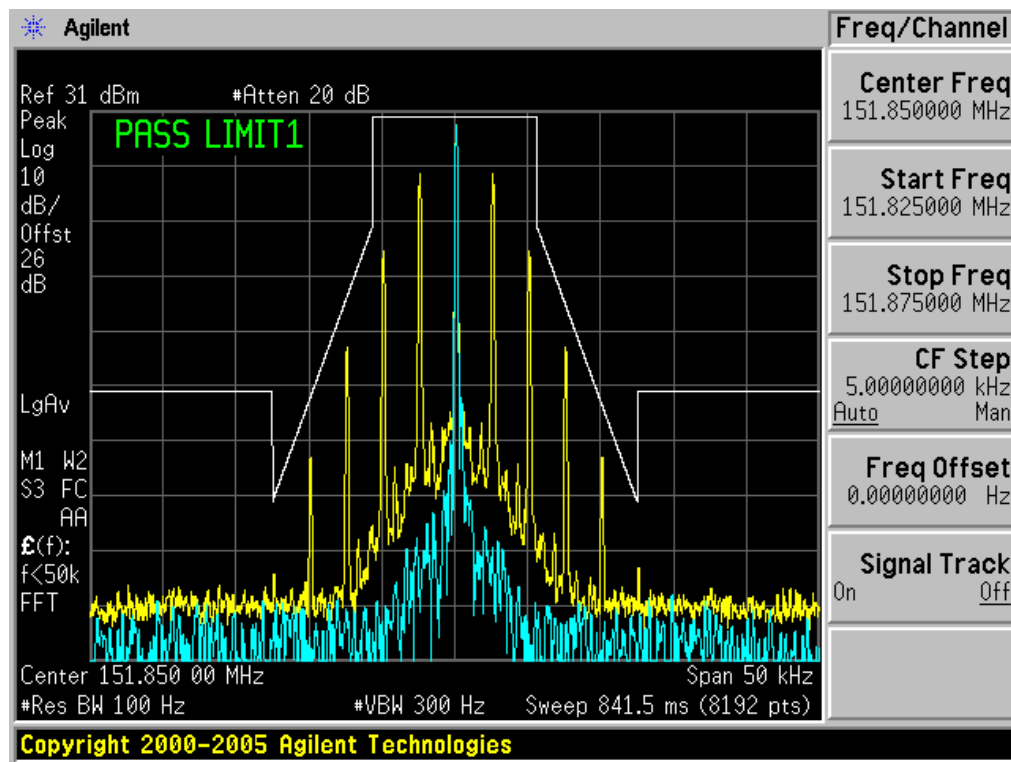
- The transmitter shall be modulated by a 2.5 kHz audio signal,
- The level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz.

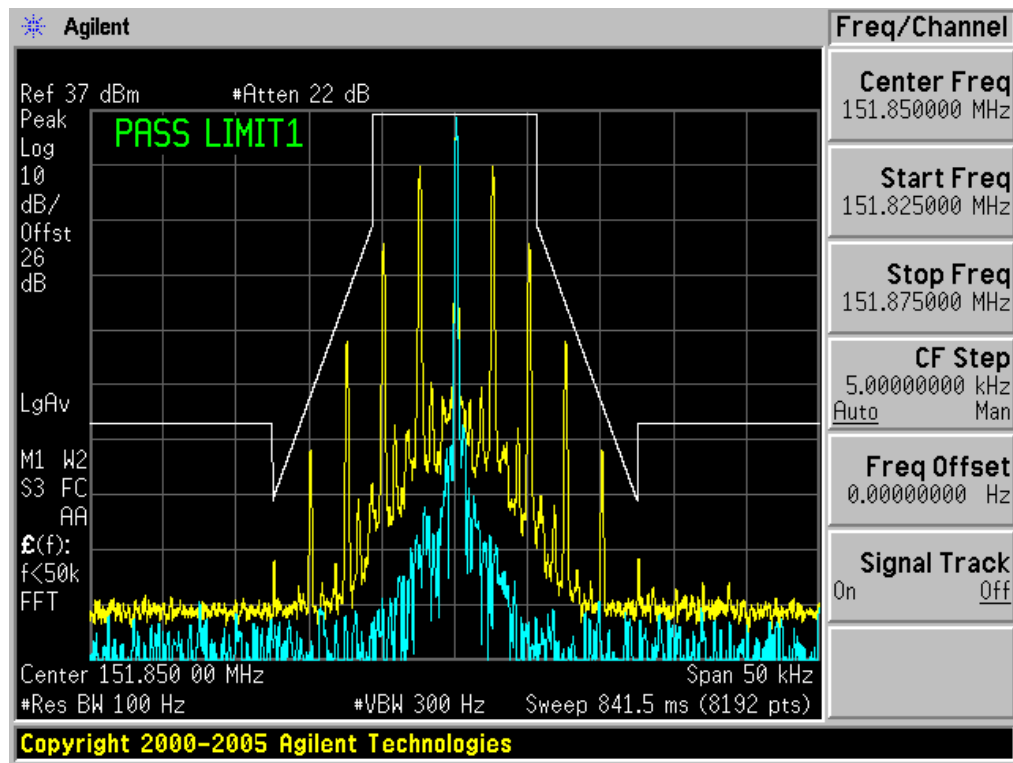
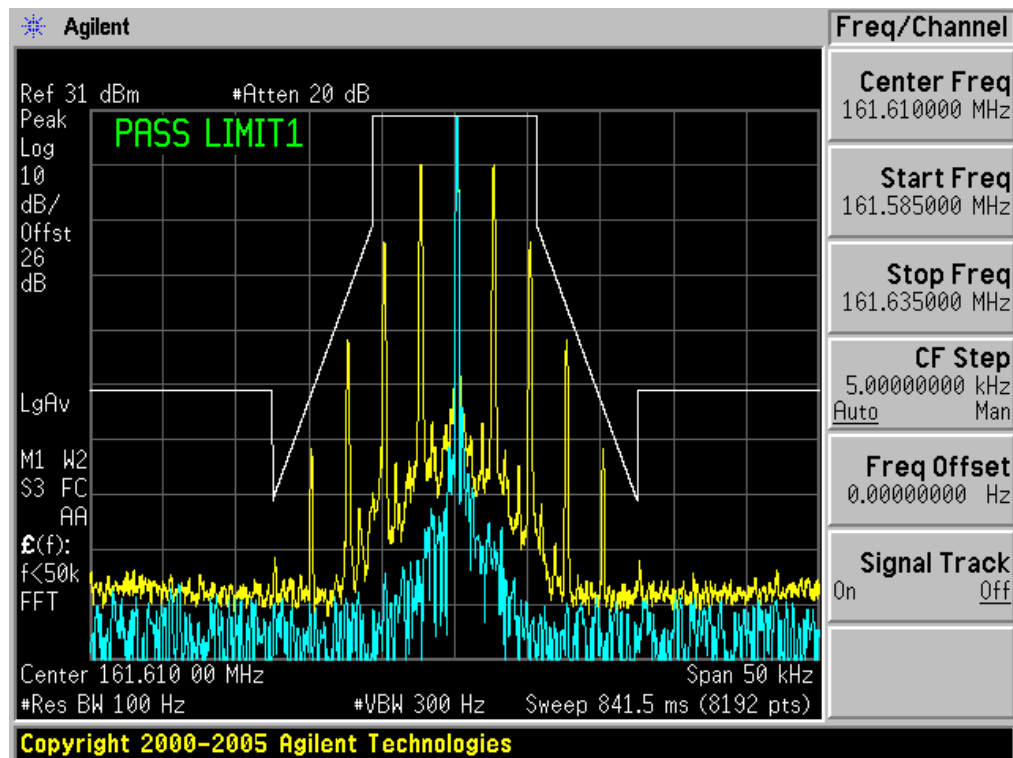
VHF:

Analog:

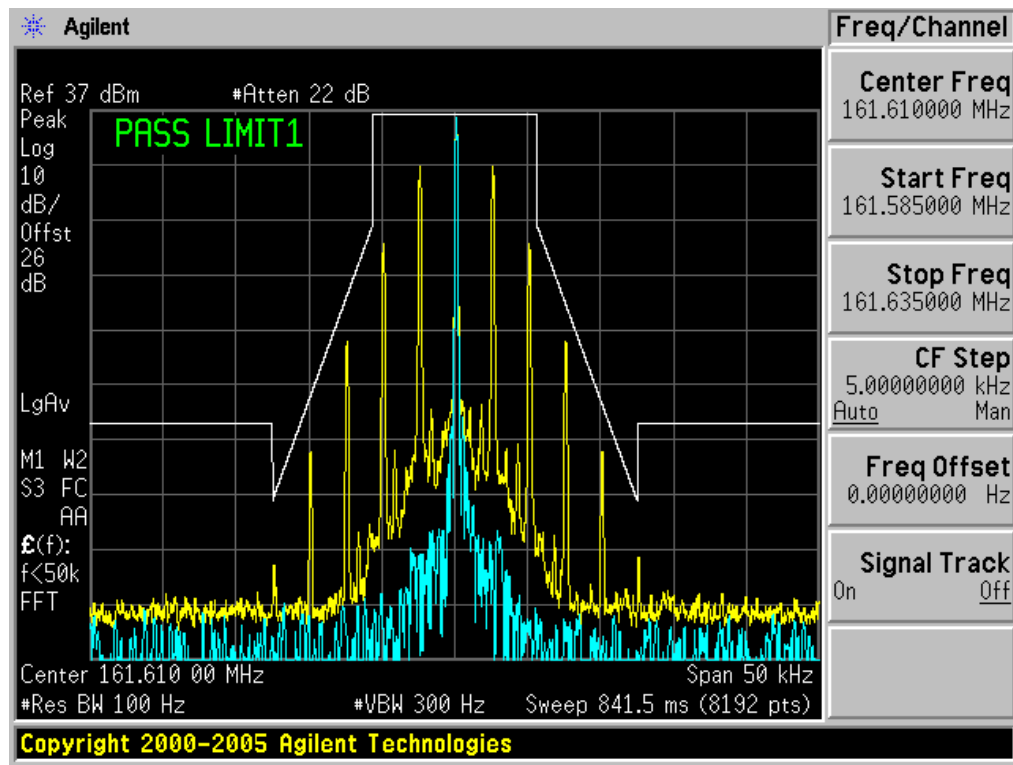
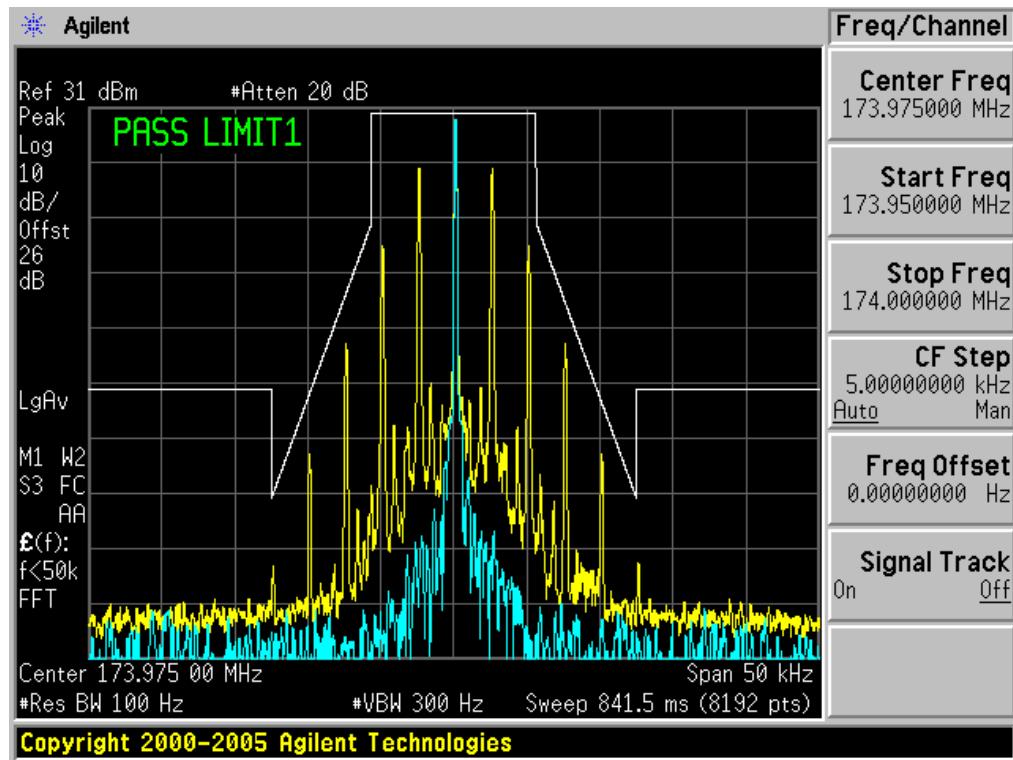
### The Worst Emission Mask D for (136.025MHz) of 12.5 KHz channel Separation (1W)

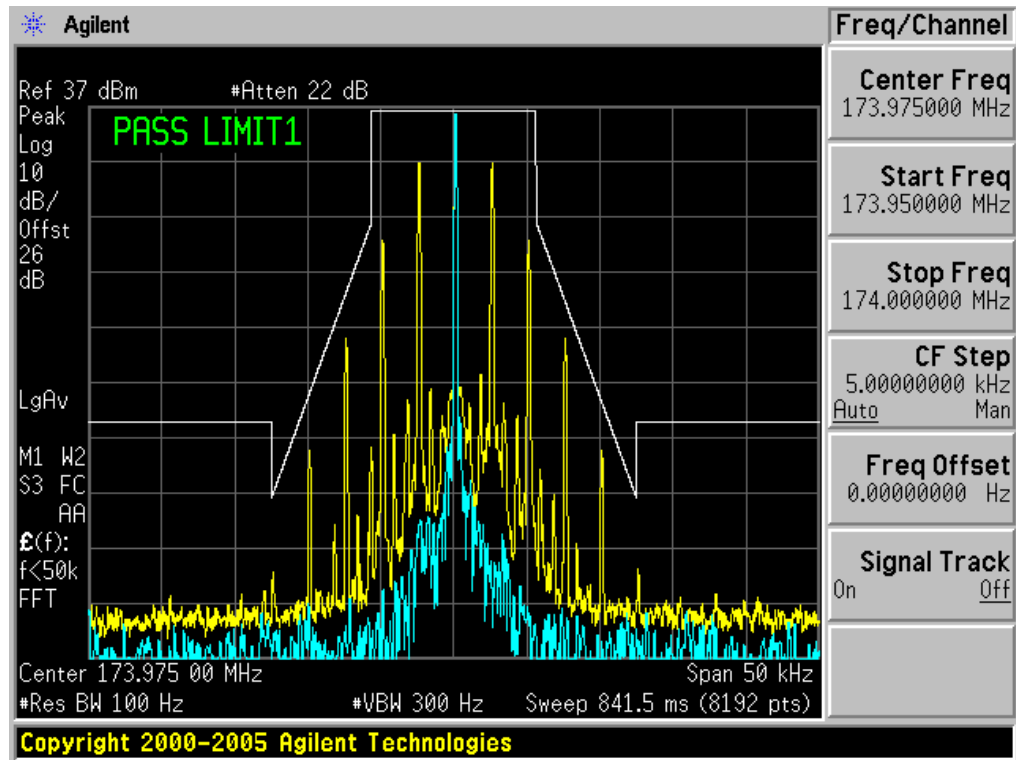


**The Worst Emission Mask D for (136.025MHz) of 12.5 KHz channel Separation (4W)****The Worst Emission Mask D for (151.85MHz) of 12.5 KHz channel Separation (1W)**

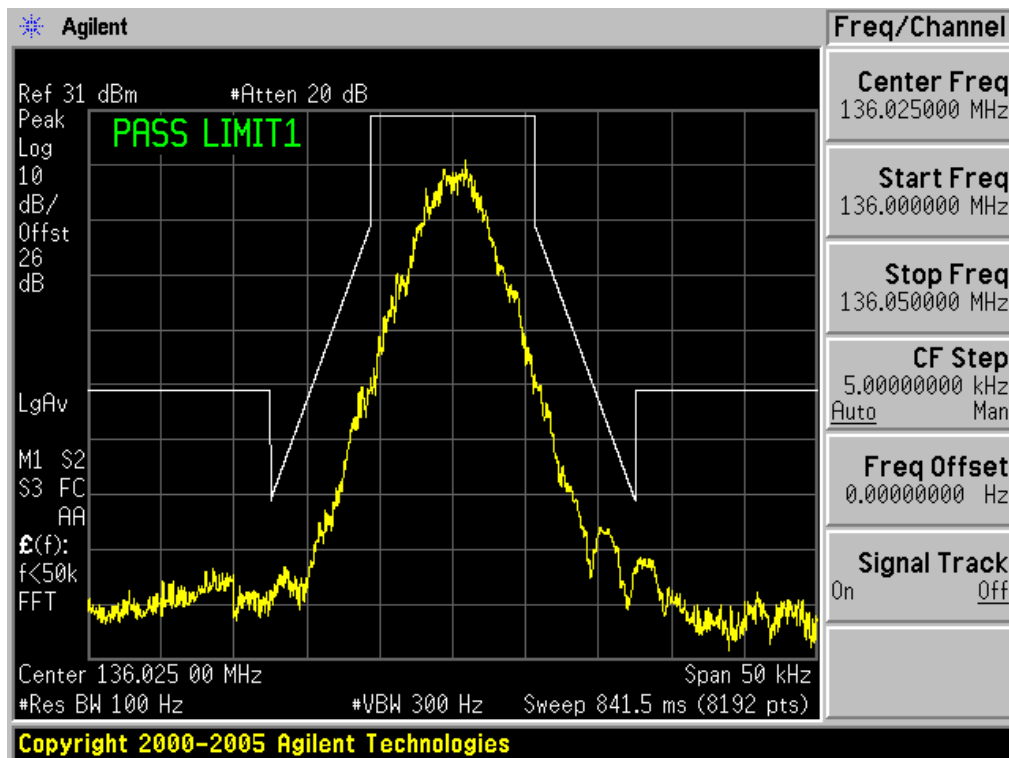
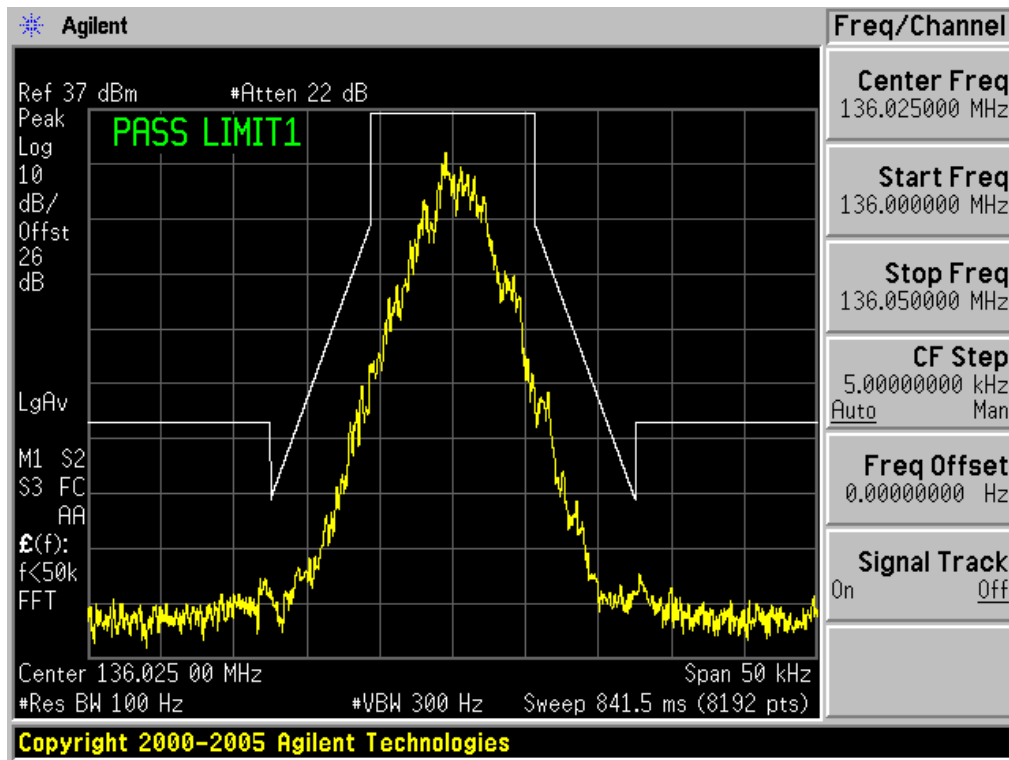
**The Worst Emission Mask D for (151.85MHz) of 12.5 KHz channel Separation (4W)****The Worst Emission Mask D for (161.61MHz) of 12.5 KHz channel Separation (1W)**

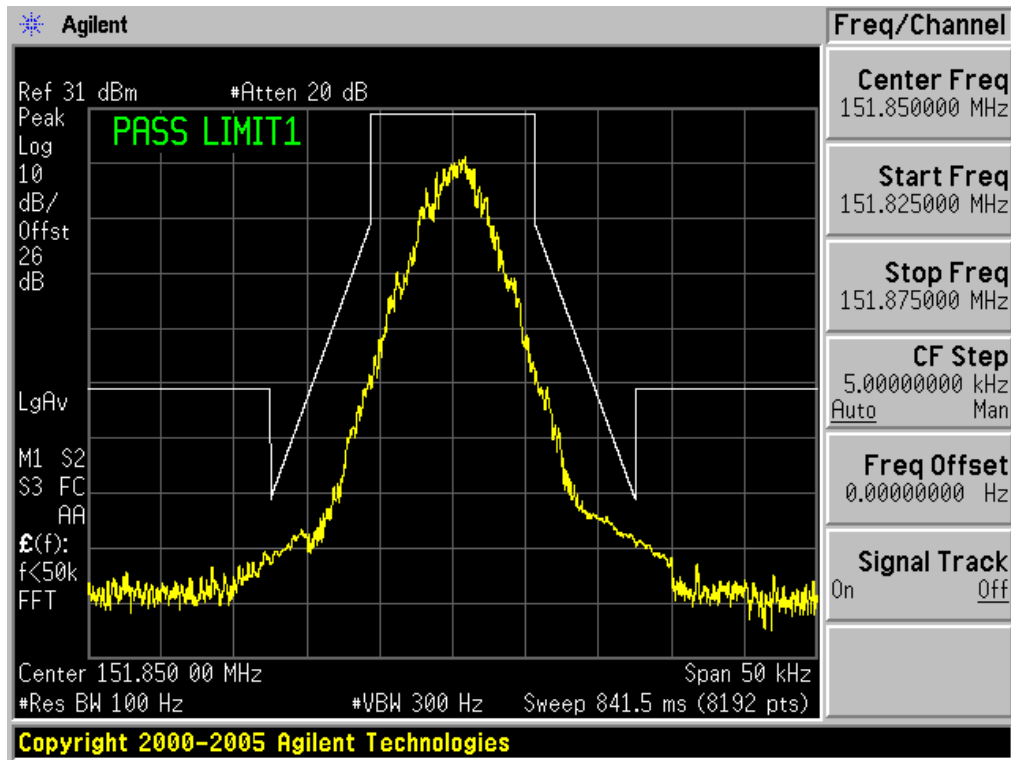
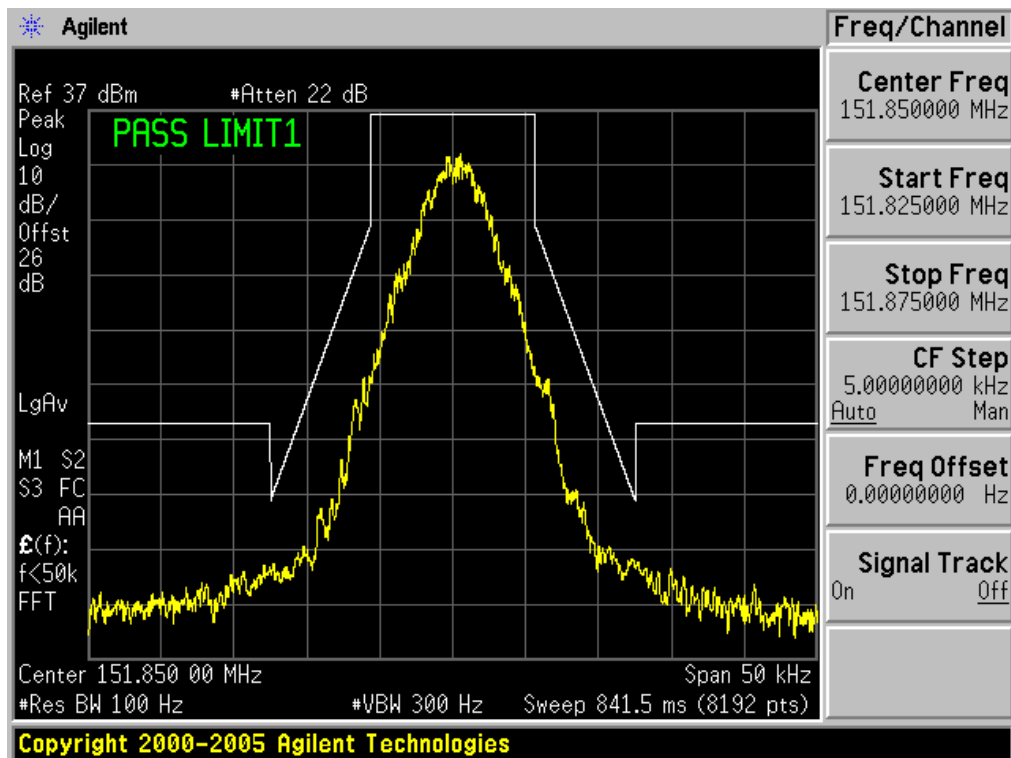


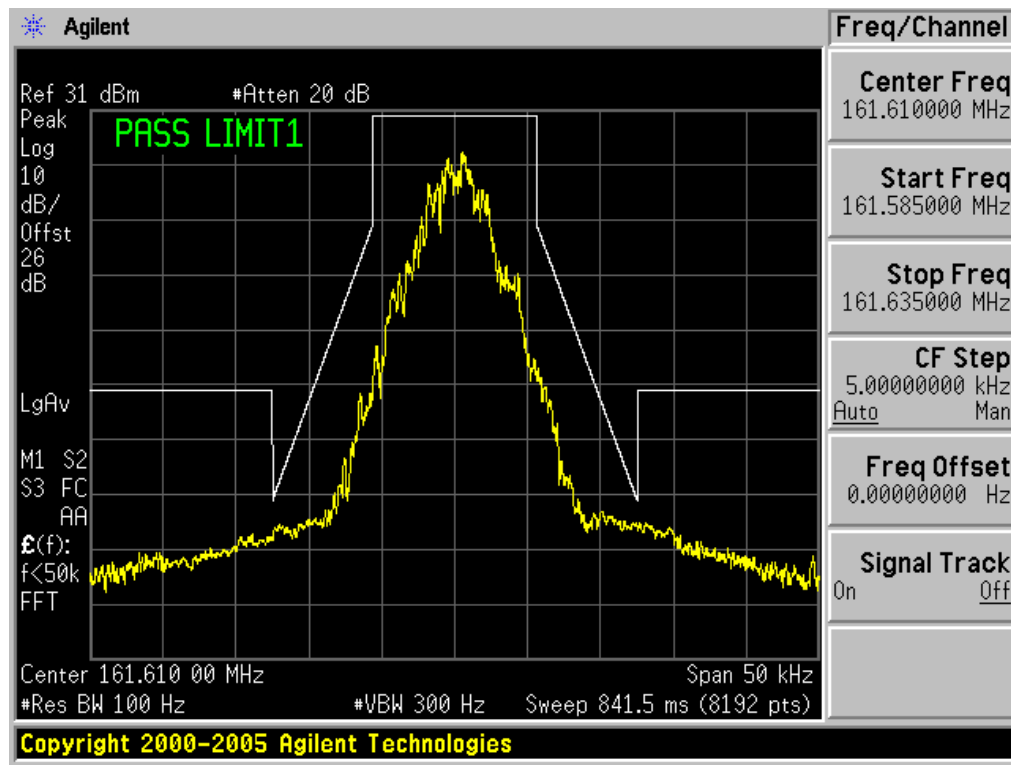
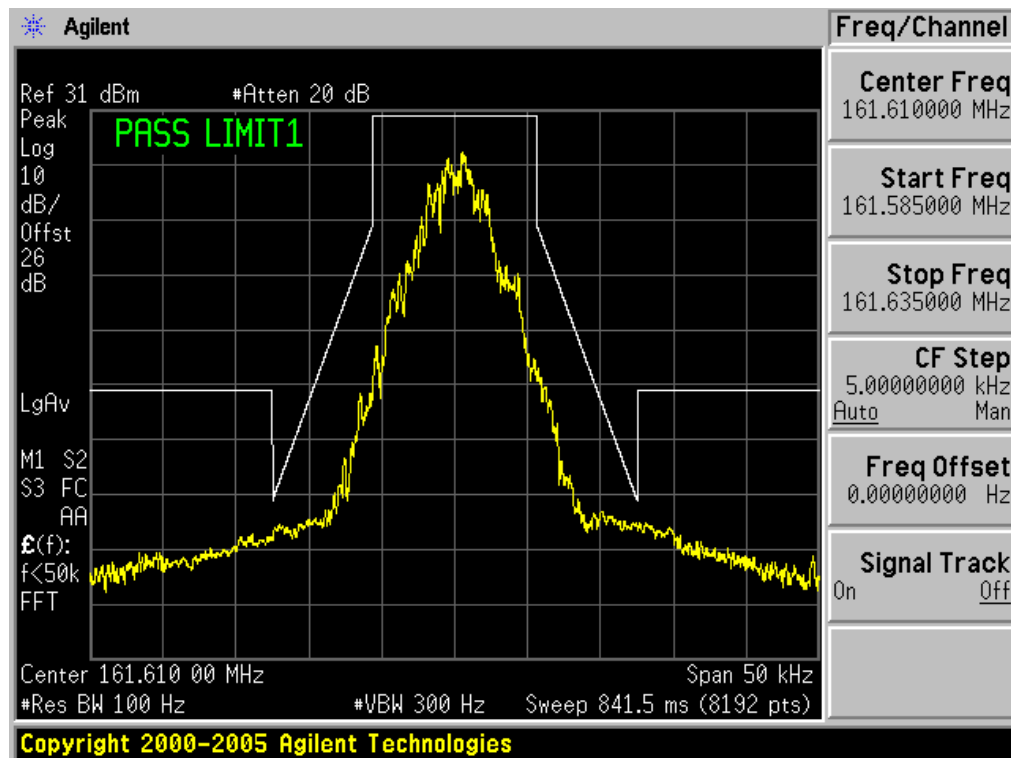
**The Worst Emission Mask for (161.61MHz) of 12.5 KHz channel Separation (4W)****The Worst Emission Mask D for (173.975MHz) of 12.5 KHz channel Separation (1W)**

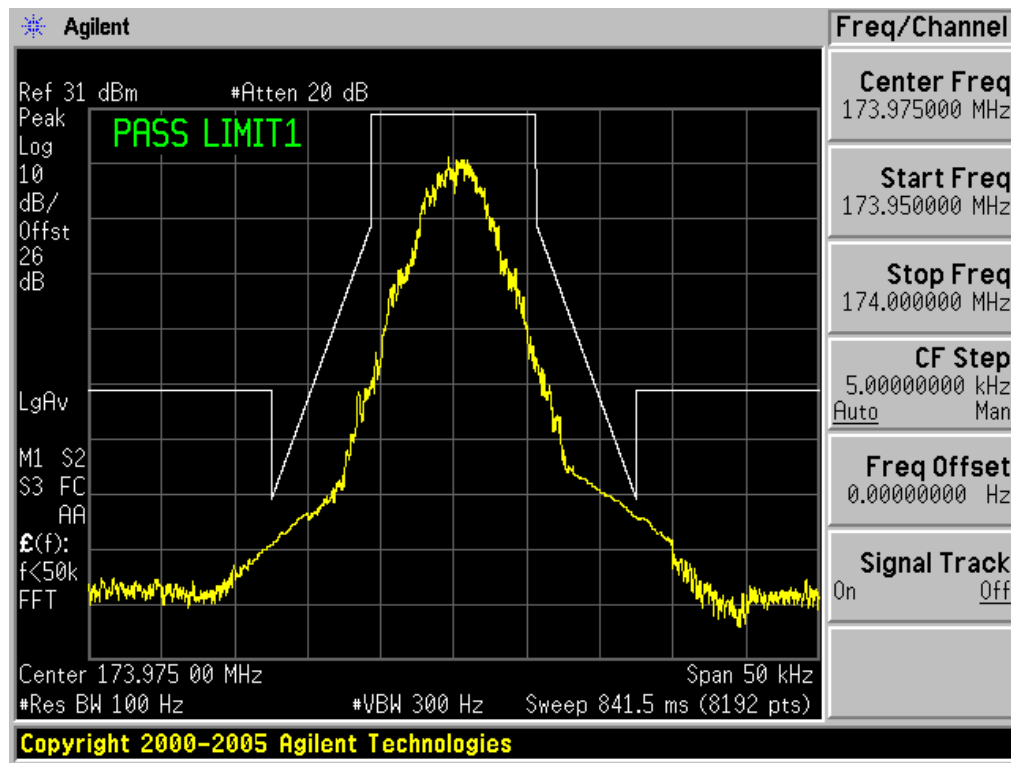
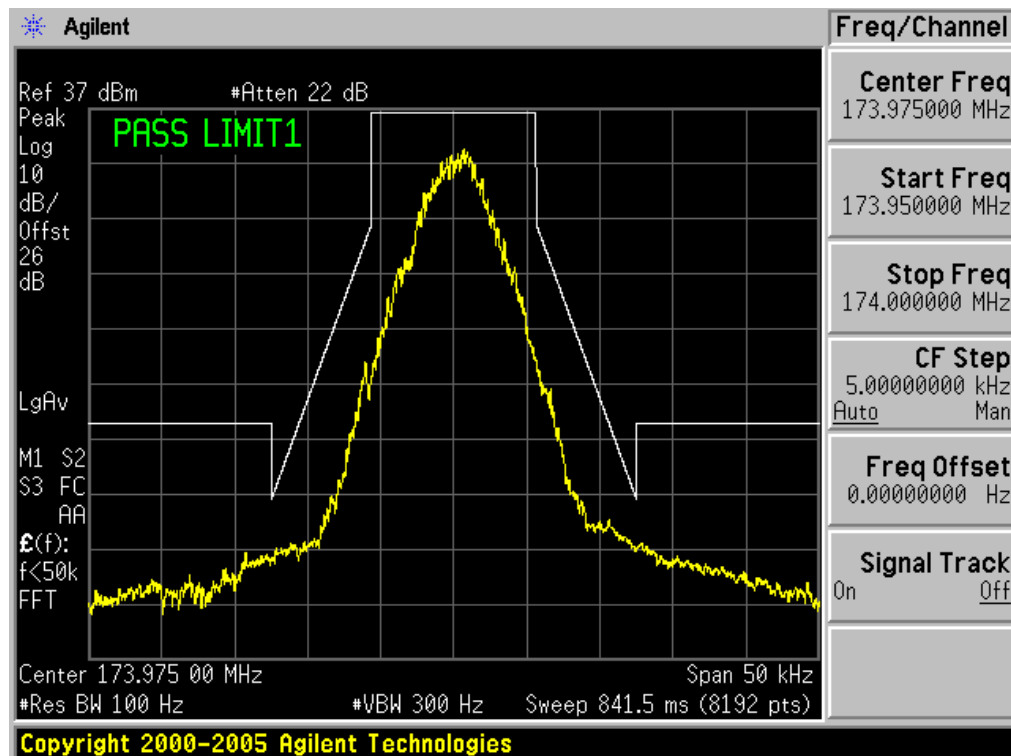
**The Worst Emission Mask D for (173.975MHz) of 12.5 KHz channel Separation (4W)**

Digital:

**The Worst Emission Mask D for (136.025MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (136.025MHz) of 12.5 KHz channel Separation (4W)**

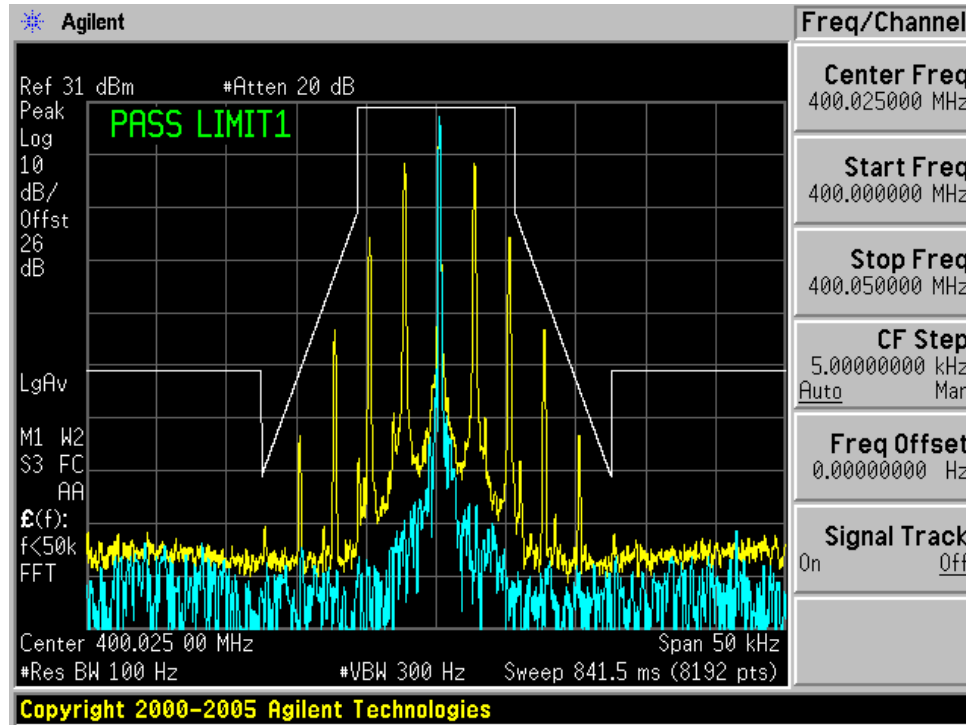
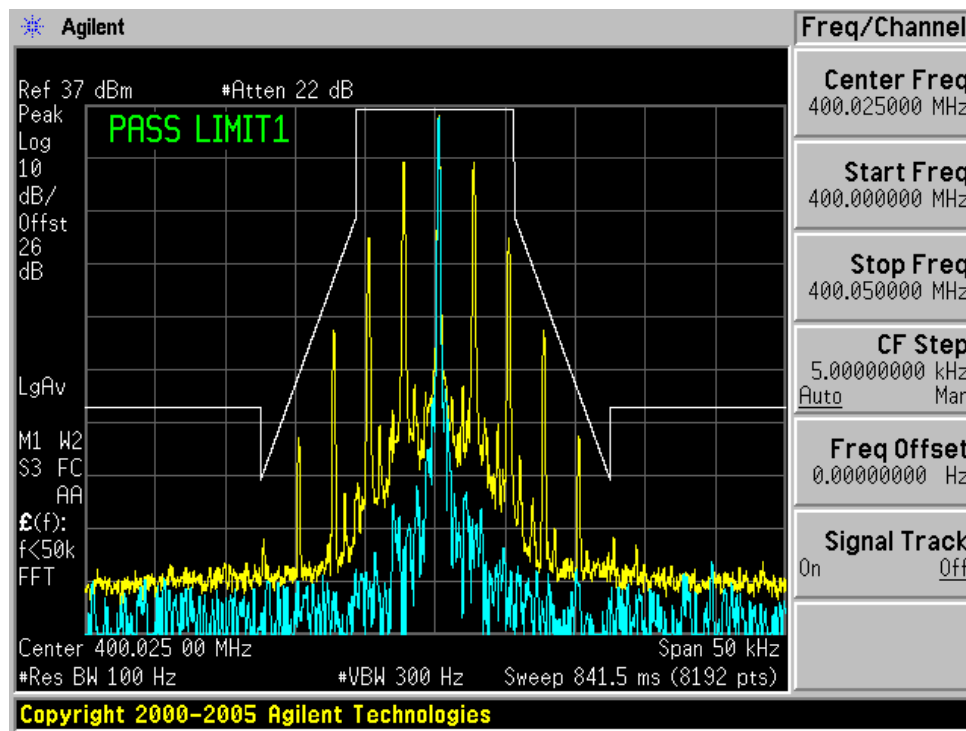
**The Worst Emission Mask D for (151.85MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (151.85MHz) of 12.5 KHz channel Separation (4W)**

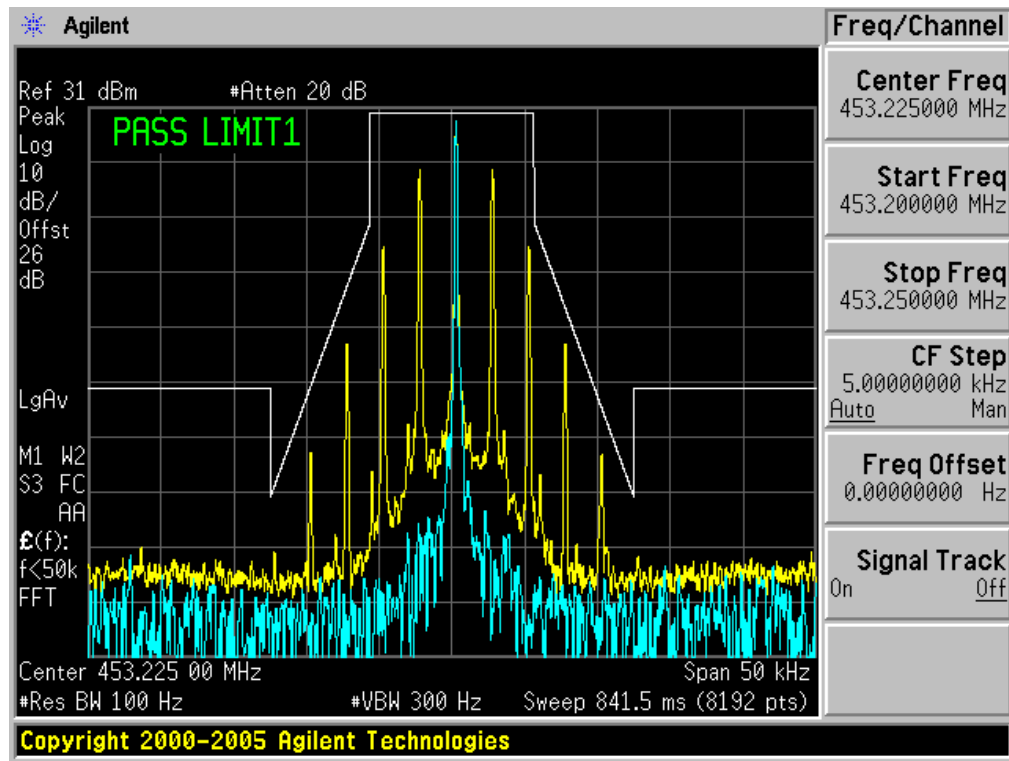
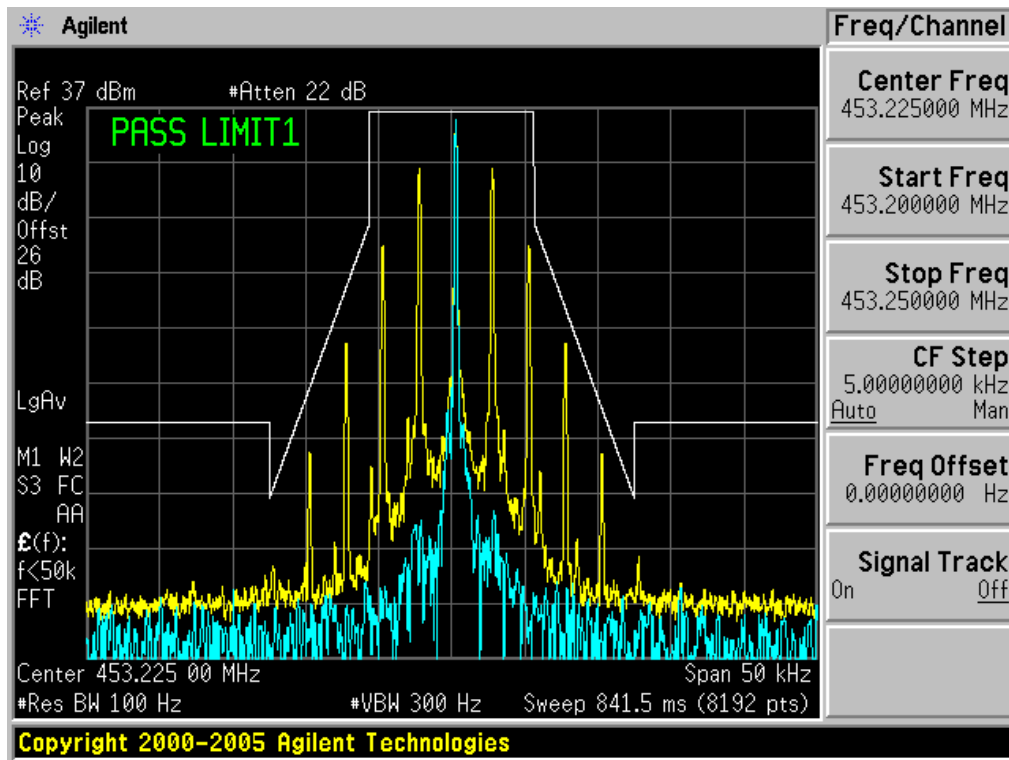
**The Worst Emission Mask D for (161.61MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (161.61MHz) of 12.5 KHz channel Separation (4W)**

**The Worst Emission Mask D for (173.975MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (173.975MHz) of 12.5 KHz channel Separation (4W)**

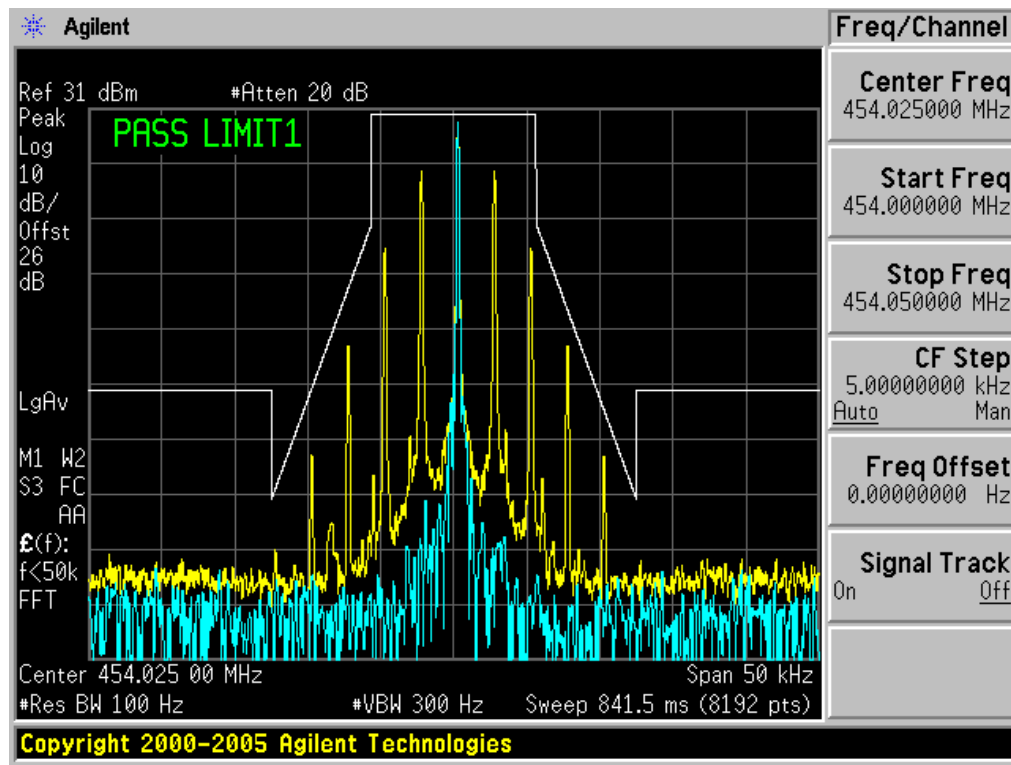
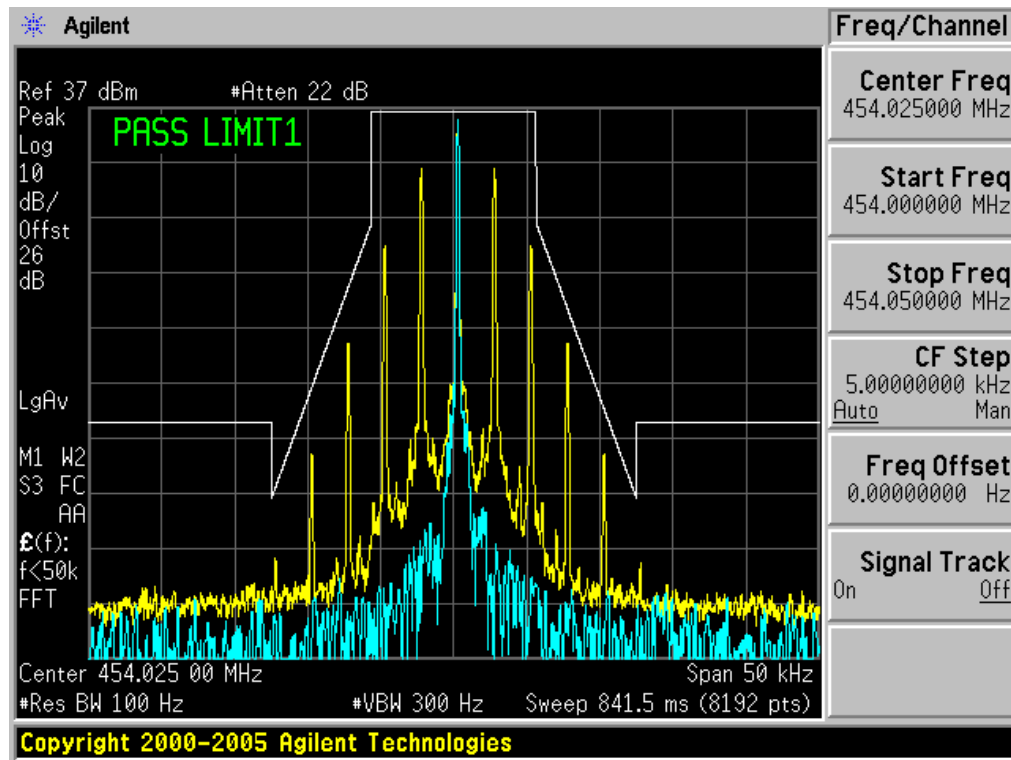
UHF:

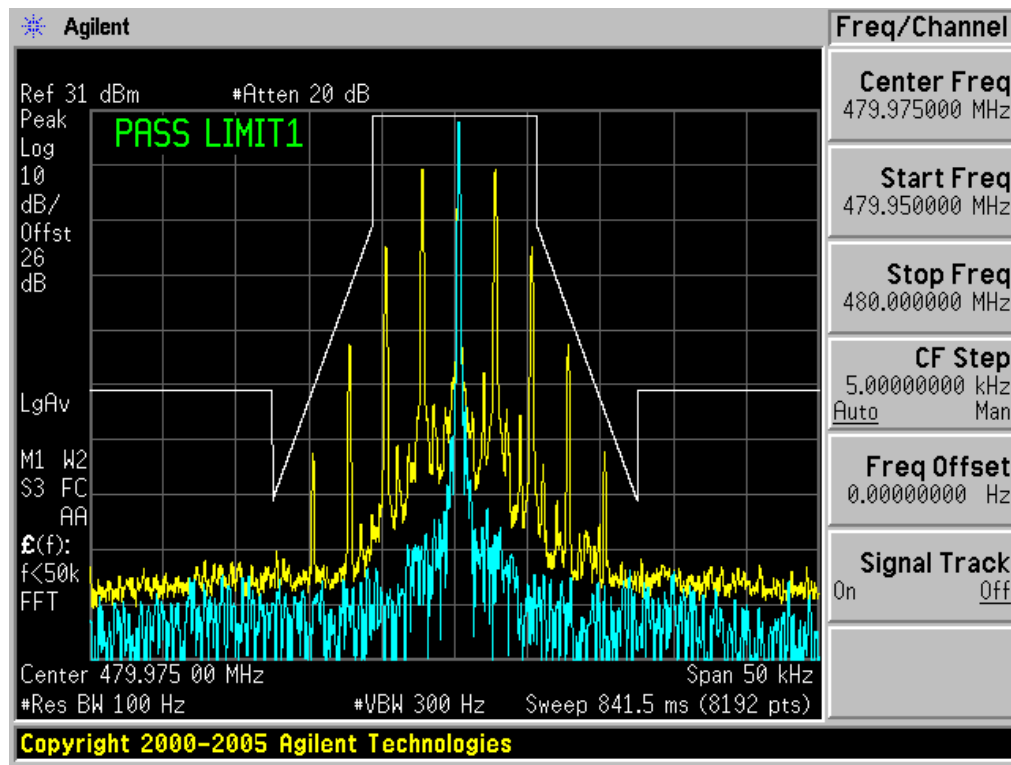
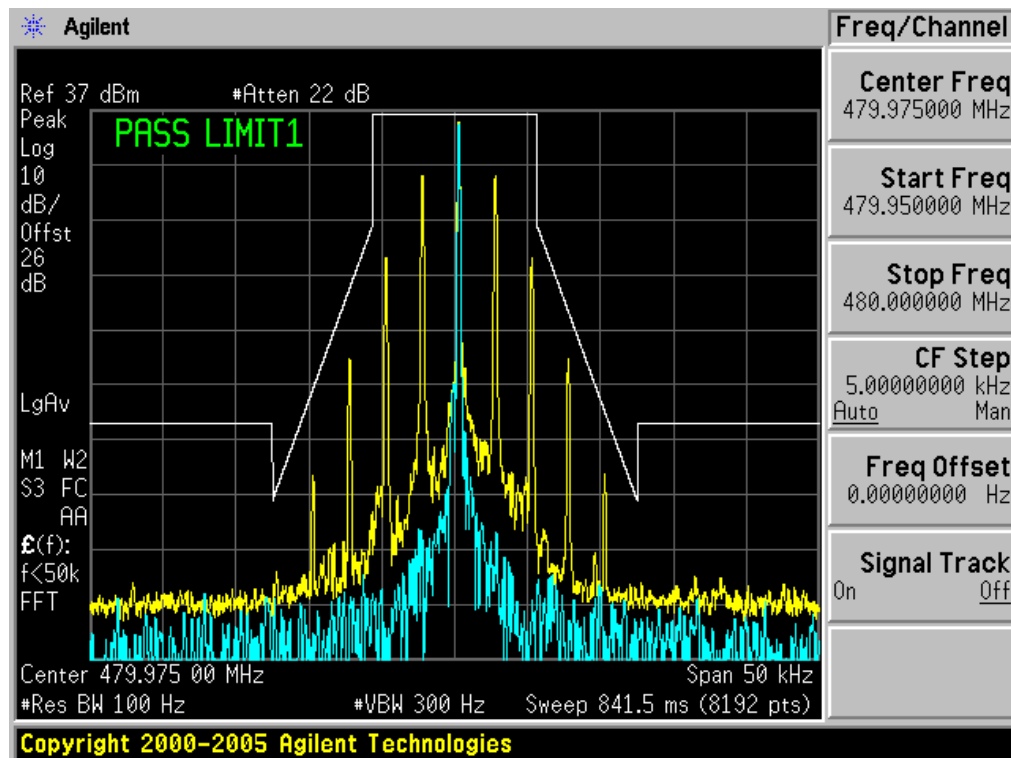
Analog:

**The Worst Emission Mask D for (400.025 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (400.025 MHz) of 12.5 KHz channel Separation (4W)**

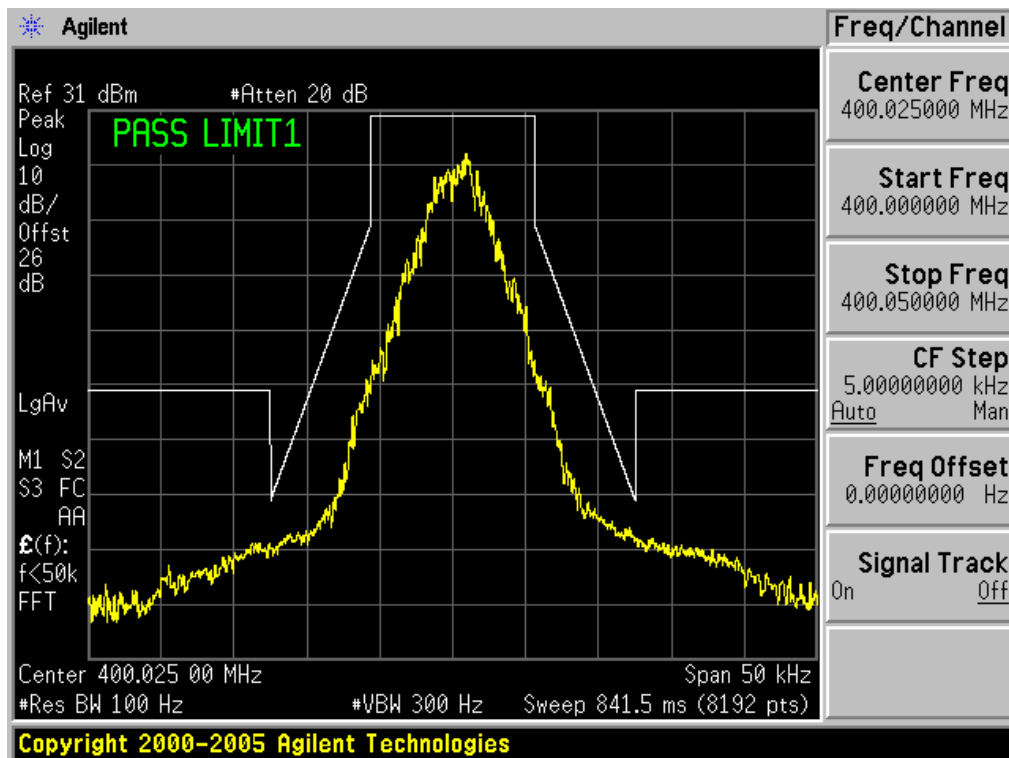
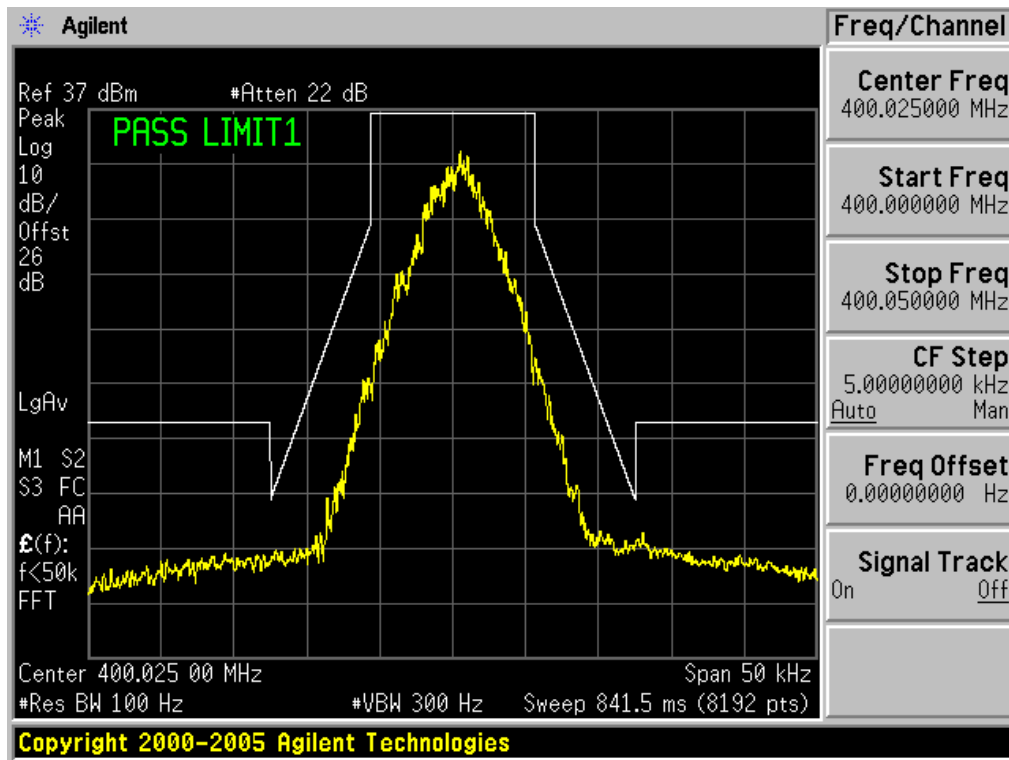
**The Worst Emission Mask D for (453.225 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (453.225 MHz) of 12.5 KHz channel Separation (1W)**

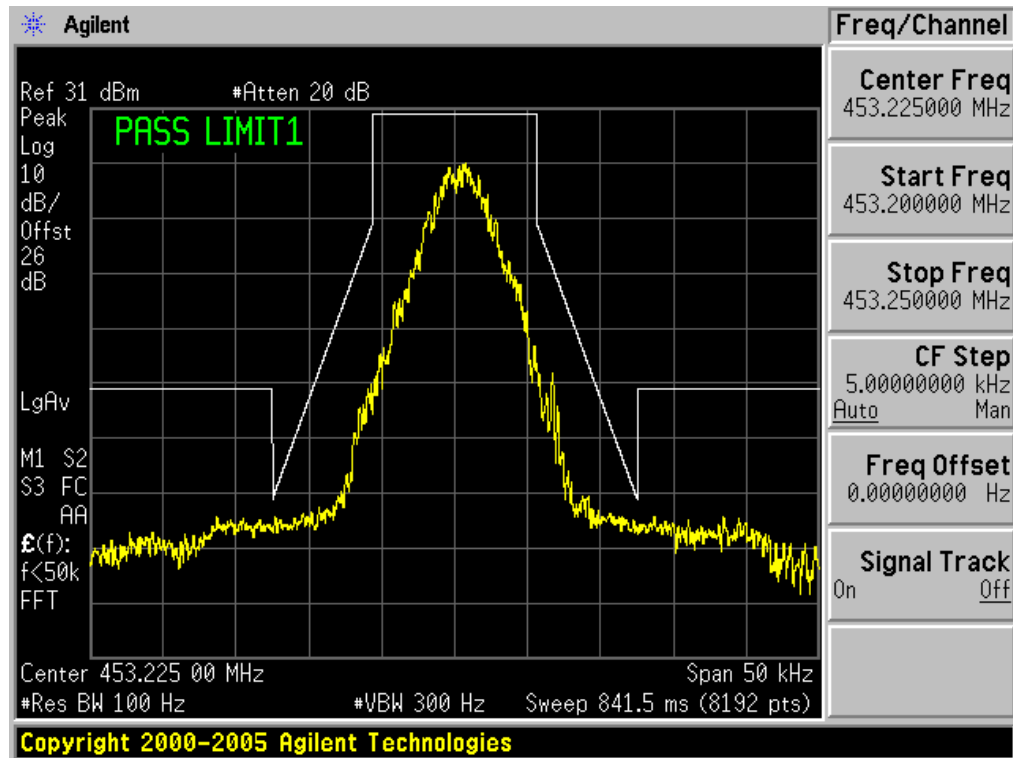
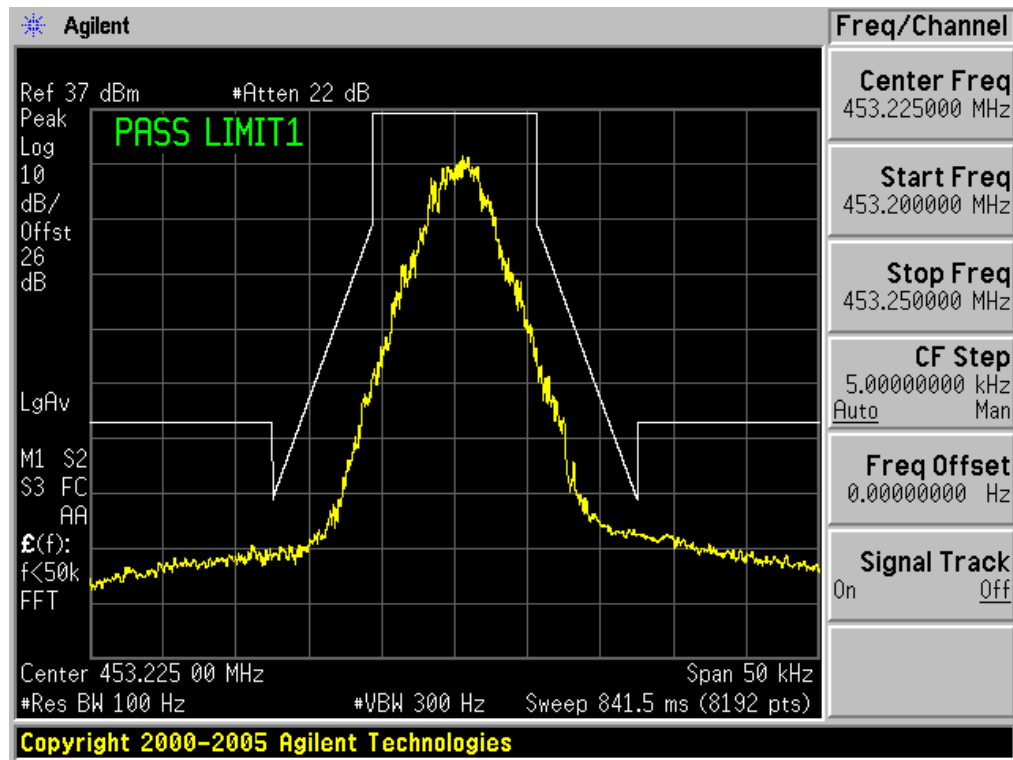


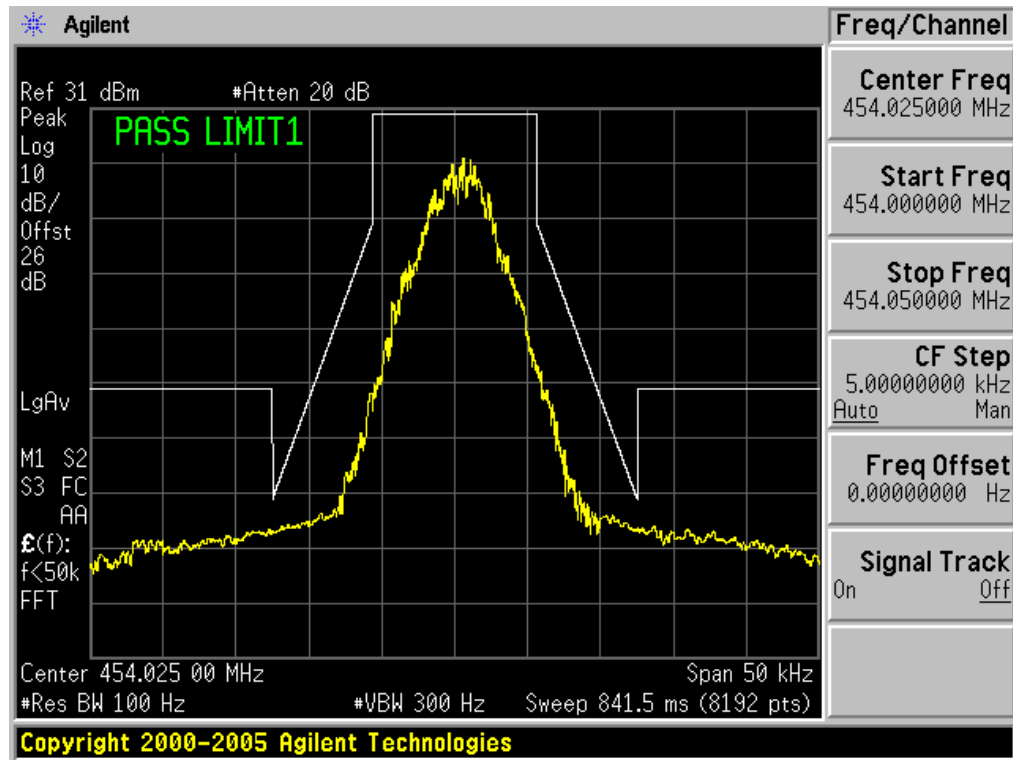
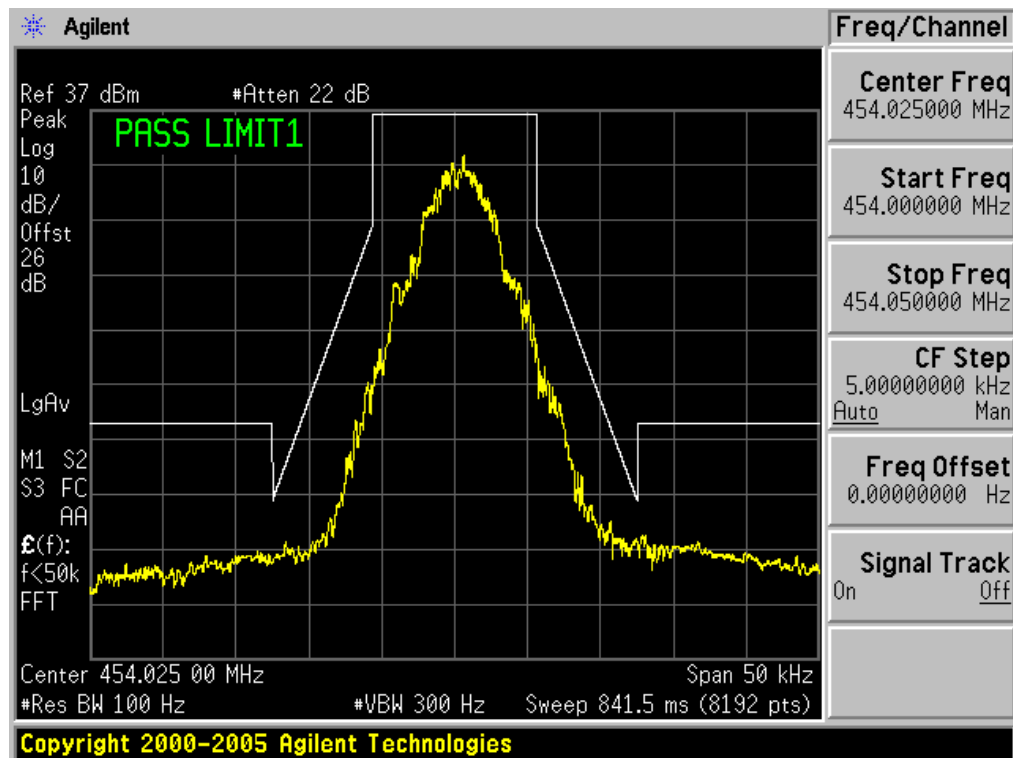
**The Worst Emission Mask D for (454.025 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (454.025 MHz) of 12.5 KHz channel Separation (4W)**

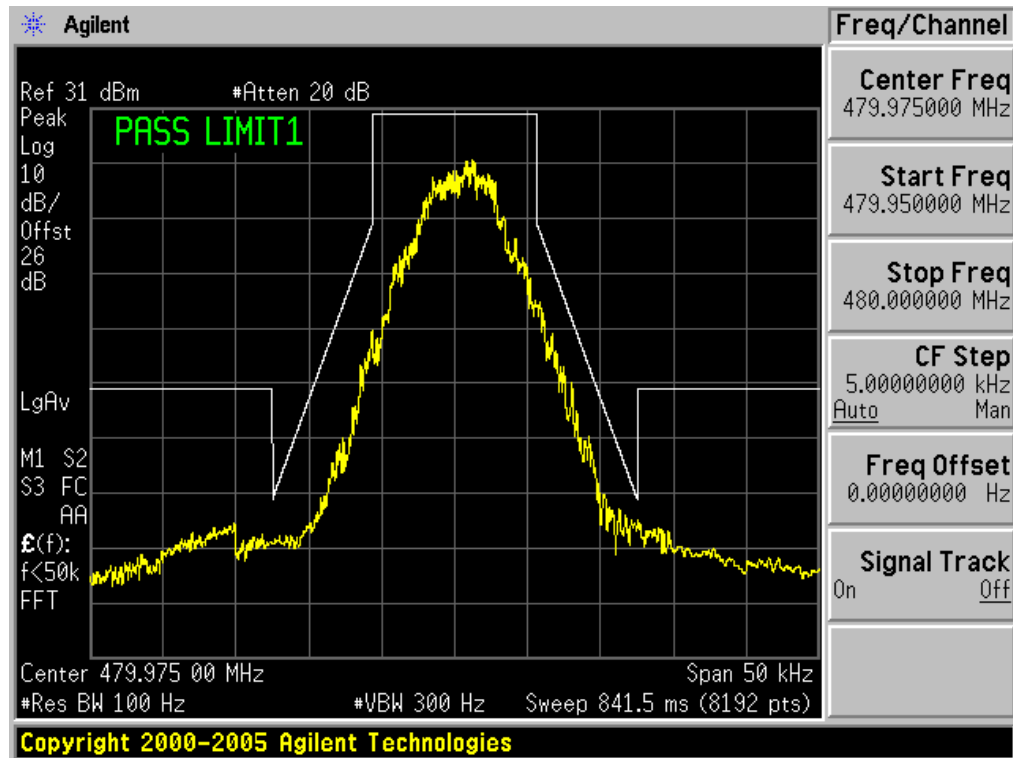
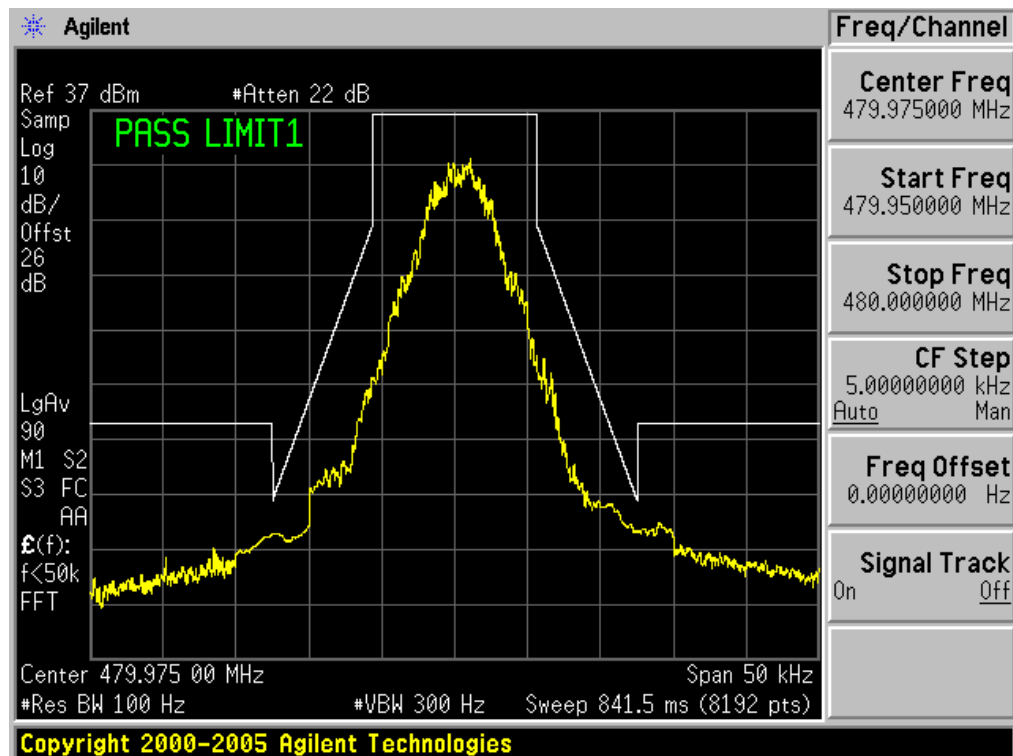
**The Worst Emission Mask D for (479.975 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (479.975 MHz) of 12.5 KHz channel Separation (4W)**

Digital:

**The Worst Emission Mask D for (400.025 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (400.025 MHz) of 12.5 KHz channel Separation (4W)**

**The Worst Emission Mask D for (453.225 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (453.225 MHz) of 12.5 KHz channel Separation (6W)**

**The Worst Emission Mask D for (454.025 MHz) of 12.5 KHz channel Separation (0.2W)****The Worst Emission Mask D for (454.025 MHz) of 12.5 KHz channel Separation (6W)**

**The Worst Emission Mask D for (479.975 MHz) of 12.5 KHz channel Separation (1W)****The Worst Emission Mask D for (479.975 MHz) of 12.5 KHz channel Separation (4W)**

## 8. MODULATION CHARACTERISTICS

### 8.1 PROVISIONS APPLICABLE

According to FCC§2.1047 and §90.207, for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

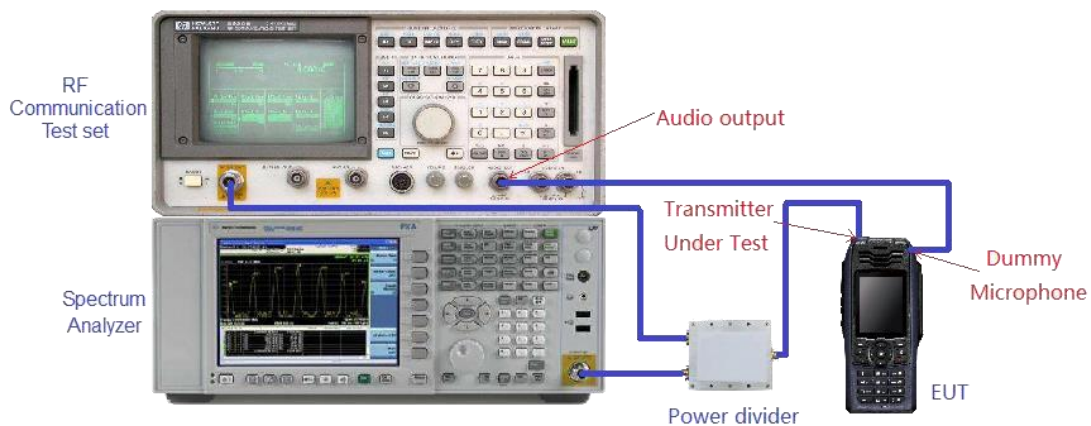
### 8.2 MEASUREMENT METHOD

#### 8.2.1 Modulation Limit

- (1). Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1KHz using this level as a reference (0dB) and vary the input level from -20 to +20dB. Record the frequency deviation obtained as a function of the input level.
- (2). Repeat step 1 with input frequency changing to 300, 1000, 1500 and 3000Hz in sequence.

#### 8.2.2 Audio Frequency Response

- (1). Configure the EUT as shown in figure 1.
- (2). Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0 dB).
- (3). Vary the Audio frequency from 100 Hz to 10 KHz and record the frequency deviation.
- (4). Audio Frequency Response =  $20\log_{10} (\text{Deviation of test frequency} / \text{Deviation of 1 KHz reference})$ .



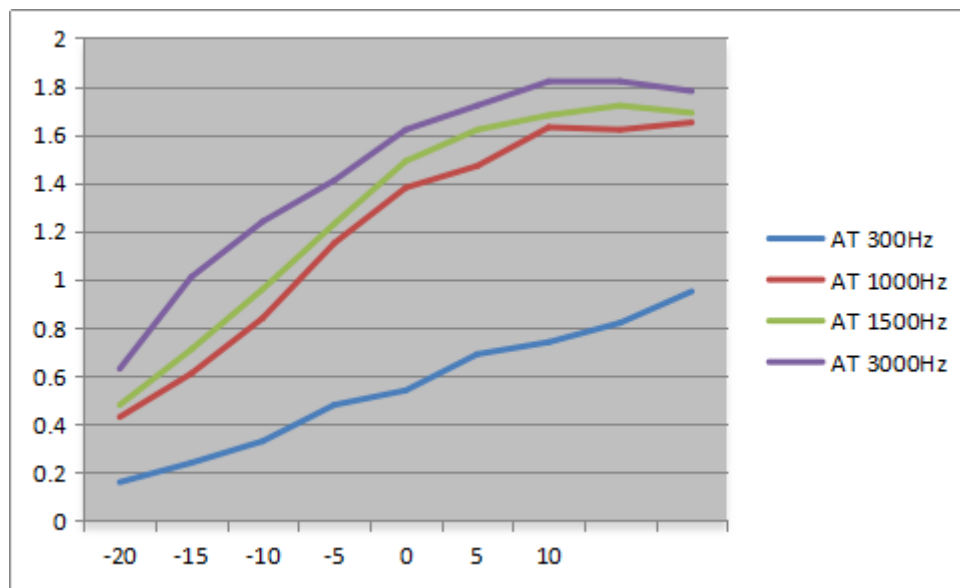
### 8.3 MEASUREMENT RESULT

VHF:

Analog:

**TEST RESULTS FOR H POWER****(A). MODULATION LIMIT:****Middle Channel @ 12.5 KHz Channel Separations**

| Modulation Level (dB) | Peak Freq. Deviation At 300 Hz | Peak Freq. Deviation At 1000 Hz | Peak Freq. Deviation At 1500 Hz | Peak Freq. Deviation At 3000 Hz |
|-----------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| -20                   | 0.16                           | 0.43                            | 0.48                            | 0.63                            |
| -15                   | 0.24                           | 0.61                            | 0.71                            | 1.01                            |
| -10                   | 0.33                           | 0.84                            | 0.96                            | 1.24                            |
| -5                    | 0.48                           | 1.15                            | 1.23                            | 1.41                            |
| 0                     | 0.54                           | 1.38                            | 1.49                            | 1.62                            |
| +5                    | 0.69                           | 1.47                            | 1.62                            | 1.72                            |
| +10                   | 0.74                           | 1.63                            | 1.68                            | 1.82                            |
| +15                   | 0.82                           | 1.62                            | 1.72                            | 1.82                            |
| +20                   | 0.95                           | 1.65                            | 1.69                            | 1.78                            |

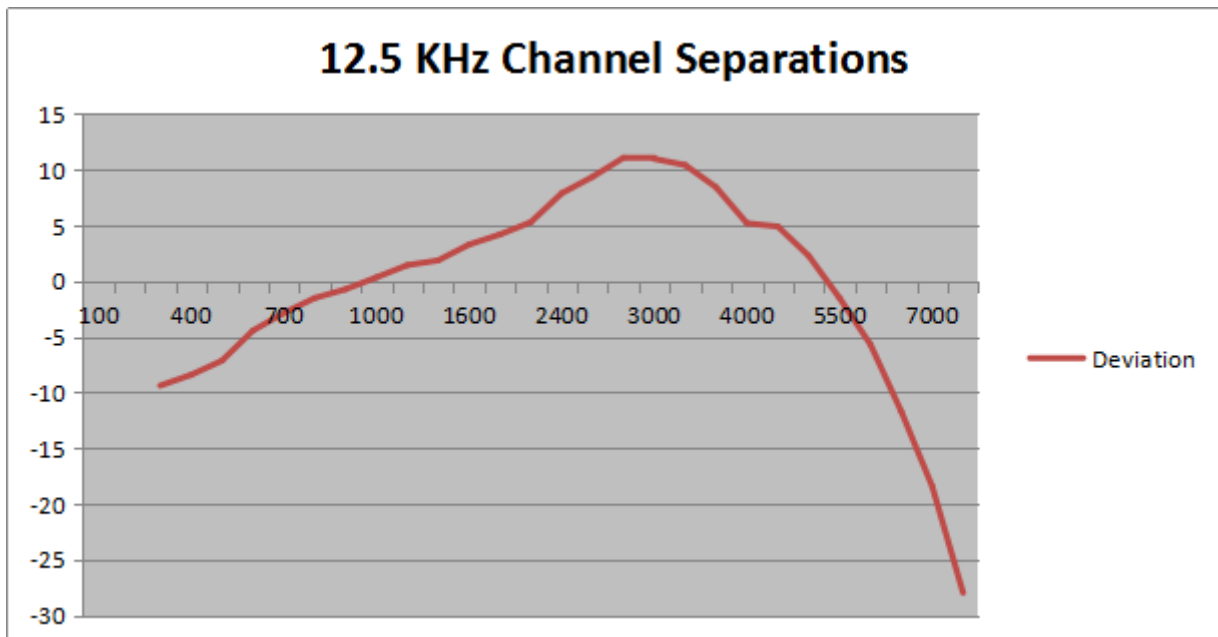


Note: All the modes had been tested, but only the worst data recorded in the report.



**(B). AUDIO FREQUENCY RESPONSE:****Middle Channel @ 12.5 KHz Channel Separations**

| Frequency (Hz) | Deviation (KHz) | Audio Frequency Response(dB) |
|----------------|-----------------|------------------------------|
| 100            | --              | --                           |
| 200            | --              | --                           |
| 300            | 0.17            | -9.90                        |
| 400            | 0.19            | -8.40                        |
| 500            | 0.22            | -7.13                        |
| 600            | 0.3             | -5.68                        |
| 700            | 0.36            | -3.61                        |
| 800            | 0.42            | -1.72                        |
| 900            | 0.46            | -1.11                        |
| 1000           | 0.52            | 0.34                         |
| 1200           | 0.59            | 0.98                         |
| 1400           | 0.62            | 1.58                         |
| 1600           | 0.73            | 3.05                         |
| 1800           | 0.81            | 4.40                         |
| 2000           | 0.92            | 5.20                         |
| 2400           | 1.24            | 7.75                         |
| 2500           | 1.47            | 9.13                         |
| 2800           | 1.79            | 11.32                        |
| 3000           | 1.77            | 10.73                        |
| 3200           | 1.66            | 10.26                        |
| 3600           | 1.32            | 8.69                         |
| 4000           | 0.91            | 5.39                         |
| 4500           | 0.88            | 4.19                         |
| 5000           | 0.65            | 2.54                         |
| 5500           | 0.42            | -0.92                        |
| 6000           | 0.26            | -6.74                        |
| 6500           | 0.13            | -9.90                        |
| 7000           | 0.06            | -20.00                       |
| 7500           | 0.02            | -27.96                       |
| 9000           | --              | --                           |
| 10000          | --              | --                           |
| 14000          | --              | --                           |
| 18000          | --              | --                           |
| 20000          | --              | --                           |
| 30000          | --              | --                           |

Frequency Response of Middle Channel

Note: All the modes had been tested, but only the worst data recorded in the report.

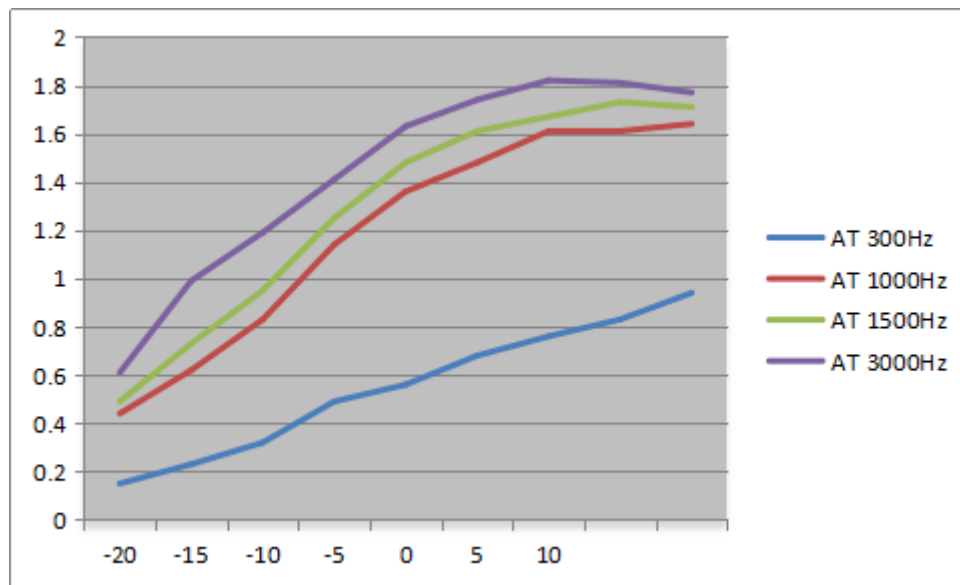
Digital:

**TEST RESULTS FOR H POWER**

**(A). MODULATION LIMIT:**

**Middle Channel @ 12.5 KHz Channel Separations**

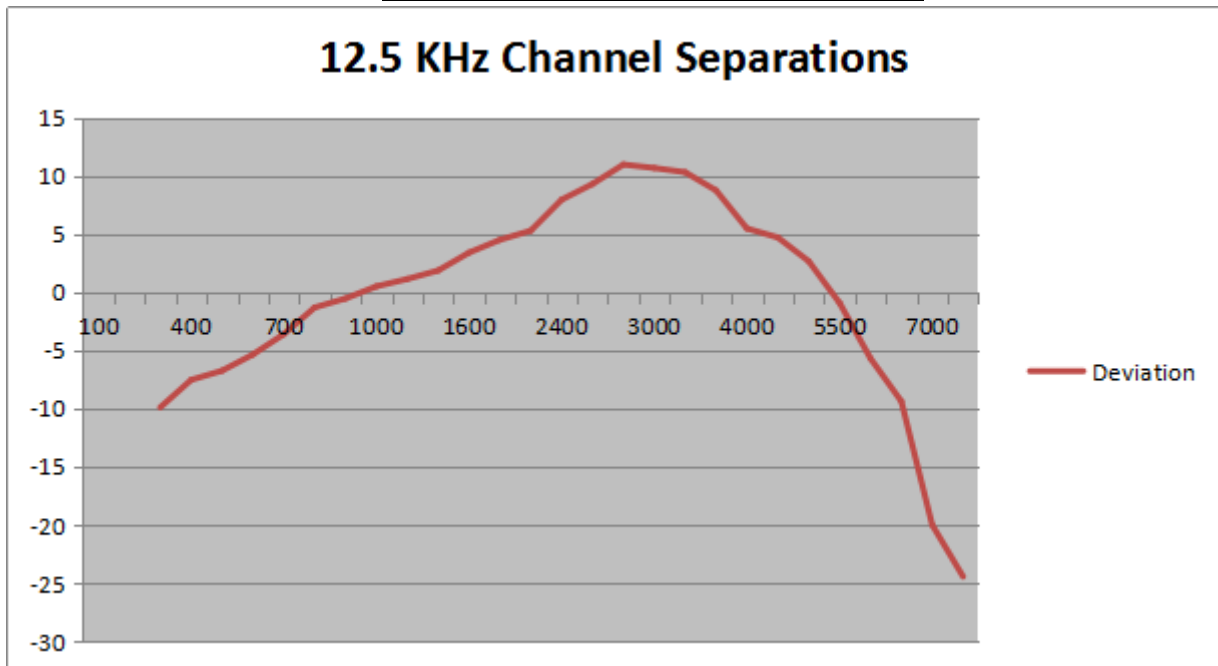
| Modulation Level (dB) | Peak Freq. Deviation At 300 Hz | Peak Freq. Deviation At 1000 Hz | Peak Freq. Deviation At 1500 Hz | Peak Freq. Deviation At 3000 Hz |
|-----------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| -20                   | 0.15                           | 0.44                            | 0.49                            | 0.61                            |
| -15                   | 0.23                           | 0.62                            | 0.73                            | 0.99                            |
| -10                   | 0.32                           | 0.83                            | 0.95                            | 1.19                            |
| -5                    | 0.49                           | 1.14                            | 1.25                            | 1.41                            |
| 0                     | 0.56                           | 1.36                            | 1.48                            | 1.63                            |
| +5                    | 0.68                           | 1.48                            | 1.61                            | 1.74                            |
| +10                   | 0.76                           | 1.61                            | 1.67                            | 1.82                            |
| +15                   | 0.83                           | 1.61                            | 1.73                            | 1.81                            |
| +20                   | 0.94                           | 1.64                            | 1.71                            | 1.77                            |



Note: All the modes had been tested, but only the worst data recorded in the report.

**(B). AUDIO FREQUENCY RESPONSE:****Bottom Channel @ 12.5 KHz Channel Separations**

| Frequency (Hz) | Deviation (KHz) | Audio Frequency Response(dB) |
|----------------|-----------------|------------------------------|
| 100            | --              | --                           |
| 200            | --              | --                           |
| 300            | 0.16            | -9.90                        |
| 400            | 0.21            | -7.54                        |
| 500            | 0.23            | -6.74                        |
| 600            | 0.27            | -5.35                        |
| 700            | 0.33            | -3.61                        |
| 800            | 0.43            | -1.31                        |
| 900            | 0.47            | -0.54                        |
| 1000           | 0.53            | 0.51                         |
| 1200           | 0.57            | 1.14                         |
| 1400           | 0.62            | 1.87                         |
| 1600           | 0.74            | 3.41                         |
| 1800           | 0.84            | 4.51                         |
| 2000           | 0.92            | 5.30                         |
| 2400           | 1.25            | 7.96                         |
| 2500           | 1.46            | 9.31                         |
| 2800           | 1.77            | 10.98                        |
| 3000           | 1.71            | 10.68                        |
| 3200           | 1.64            | 10.32                        |
| 3600           | 1.37            | 8.76                         |
| 4000           | 0.94            | 5.48                         |
| 4500           | 0.86            | 4.71                         |
| 5000           | 0.68            | 2.67                         |
| 5500           | 0.45            | -0.92                        |
| 6000           | 0.26            | -5.68                        |
| 6500           | 0.17            | -9.37                        |
| 7000           | 0.05            | -20.00                       |
| 7500           | 0.03            | -24.44                       |
| 9000           | --              | --                           |
| 10000          | --              | --                           |
| 14000          | --              | --                           |
| 18000          | --              | --                           |
| 20000          | --              | --                           |
| 30000          | --              | --                           |

Frequency Response of Bottom Channel

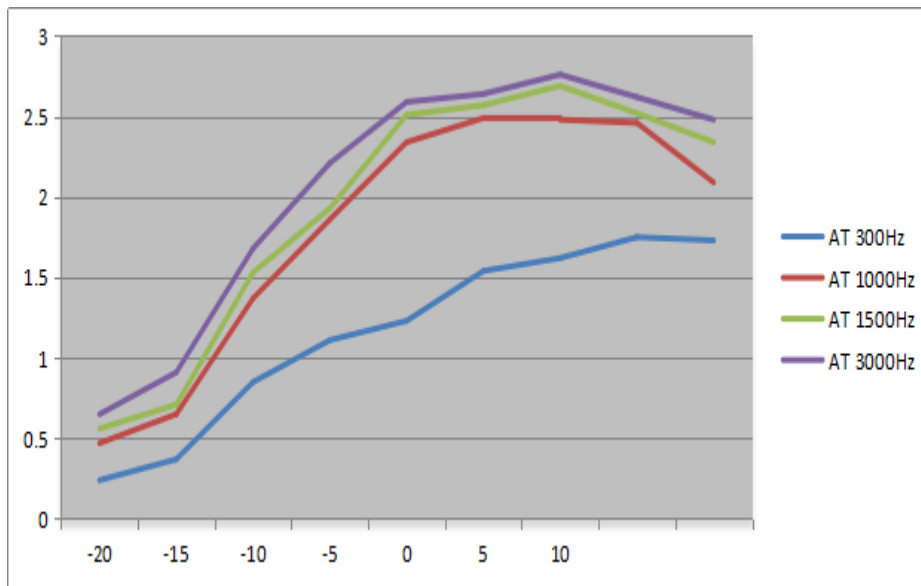
Note: All the modes had been tested, but only the worst data recorded in the report.

UHF:

Analog:

**TEST RESULT TS FOR H POWER H LEVEL****(A). MODULATION LIMIT:****Middle Channel @ 12.5 KHz Channel Separations**

| Modulation Level (dB) | Peak Freq. Deviation At 300 Hz | Peak Freq. Deviation At 1000 Hz | Peak Freq. Deviation At 1500 Hz | Peak Freq. Deviation At 3000 Hz |
|-----------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| -20                   | 0.24                           | 0.47                            | 0.56                            | 0.65                            |
| -15                   | 0.37                           | 0.65                            | 0.71                            | 0.91                            |
| -10                   | 0.85                           | 1.37                            | 1.53                            | 1.68                            |
| -5                    | 1.11                           | 1.86                            | 1.93                            | 2.21                            |
| 0                     | 1.23                           | 2.34                            | 2.51                            | 2.59                            |
| +5                    | 1.54                           | 2.49                            | 2.57                            | 2.64                            |
| +10                   | 1.62                           | 2.48                            | 2.69                            | 2.76                            |
| +15                   | 1.75                           | 2.46                            | 2.52                            | 2.62                            |
| +20                   | 1.73                           | 2.09                            | 2.34                            | 2.48                            |

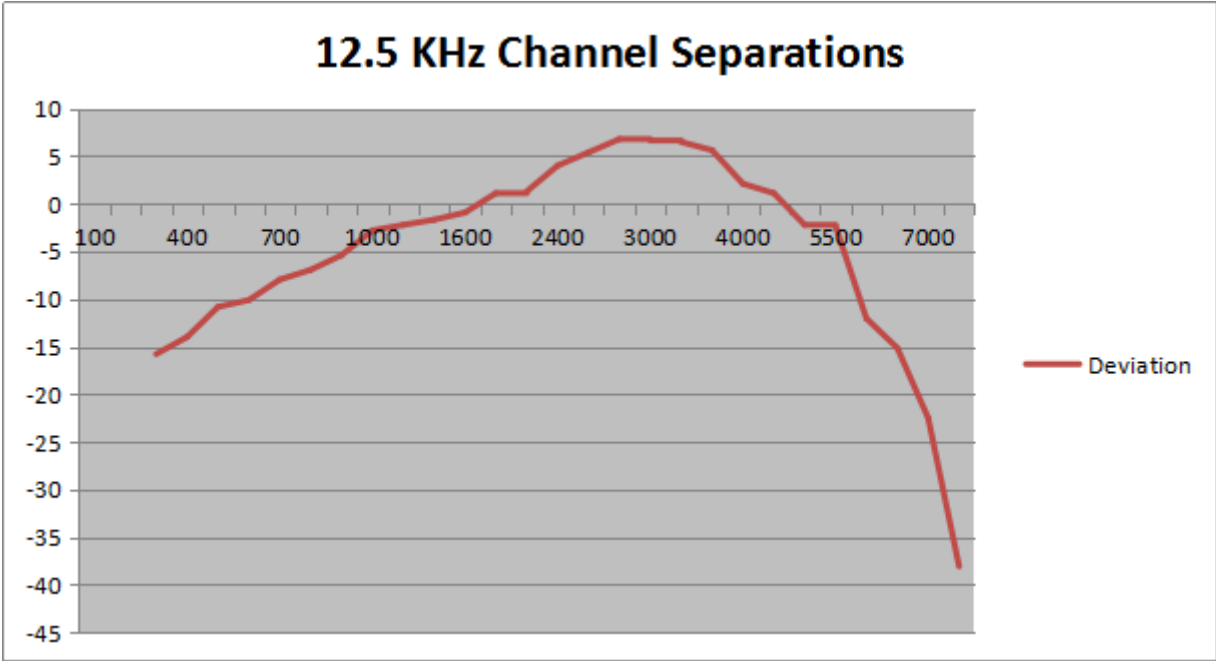


Note: All the modes had been tested, but only the worst data recorded in the report.

**(B). AUDIO FREQUENCY RESPONSE:****Middle Channel @ 12.5 KHz Channel Separations**

| Frequency (Hz) | Deviation (KHz) | Audio Frequency Response(dB) |
|----------------|-----------------|------------------------------|
| 100            | --              | --                           |
| 200            | --              | --                           |
| 300            | 0.13            | -15.78                       |
| 400            | 0.16            | -13.98                       |
| 500            | 0.23            | -10.83                       |
| 600            | 0.25            | -10.10                       |
| 700            | 0.32            | -7.96                        |
| 800            | 0.36            | -6.94                        |
| 900            | 0.43            | -5.39                        |
| 1000           | 0.58            | -2.79                        |
| 1200           | 0.62            | -2.21                        |
| 1400           | 0.66            | -1.67                        |
| 1600           | 0.72            | -0.92                        |
| 1800           | 0.91            | 1.12                         |
| 2000           | 0.93            | 1.31                         |
| 2400           | 1.27            | 4.01                         |
| 2500           | 1.49            | 5.40                         |
| 2800           | 1.75            | 6.80                         |
| 3000           | 1.72            | 6.65                         |
| 3200           | 1.69            | 6.50                         |
| 3600           | 1.53            | 5.63                         |
| 4000           | 1.02            | 2.11                         |
| 4500           | 0.91            | 1.12                         |
| 5000           | 0.62            | -2.21                        |
| 5500           | 0.61            | -2.36                        |
| 6000           | 0.2             | -12.04                       |
| 6500           | 0.14            | -15.14                       |
| 7000           | 0.06            | -22.50                       |
| 7500           | 0.01            | -38.06                       |
| 9000           | --              | --                           |
| 10000          | --              | --                           |
| 14000          | --              | --                           |
| 18000          | --              | --                           |
| 20000          | --              | --                           |
| 30000          | --              | --                           |

Frequency Response of High Channel



Note: All the modes had been tested, but only the worst data recorded in the report.

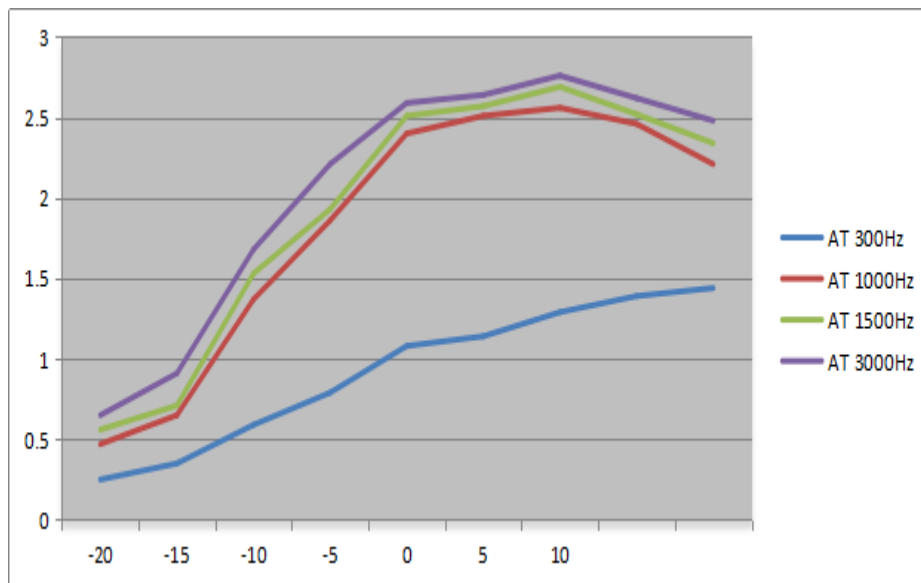


Digital:

(A). MODULATION LIMIT:

Middle Channel @ 12.5 KHz Channel Separations---H Power

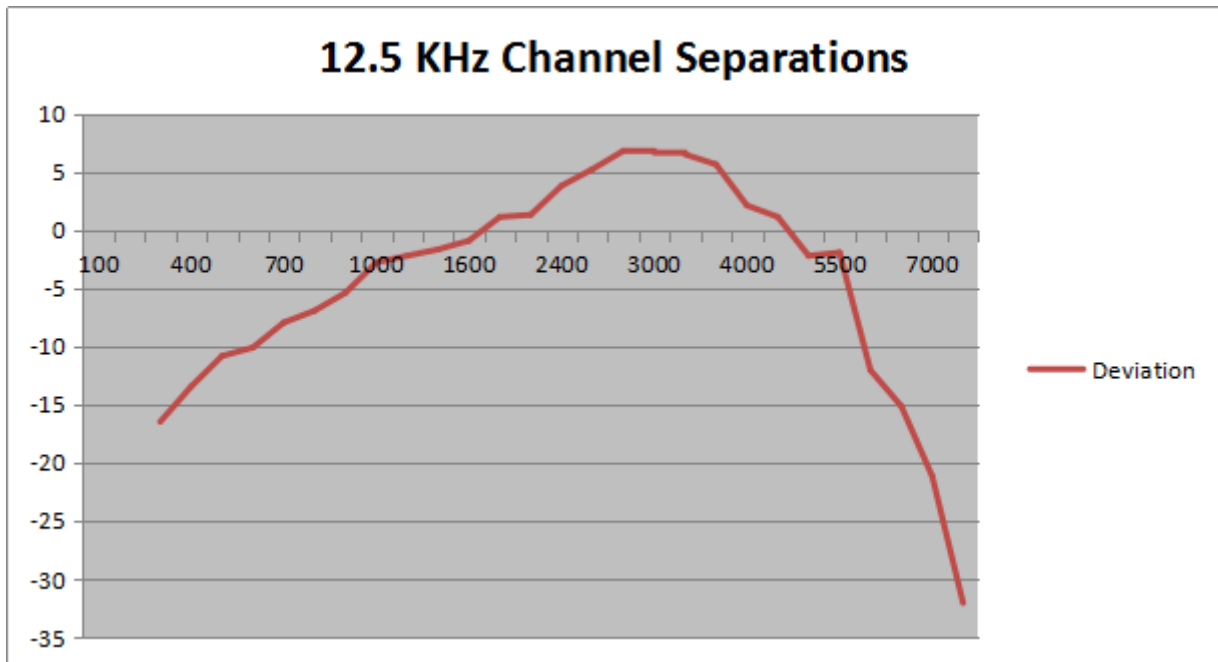
| Modulation Level (dB) | Peak Freq. Deviation At 300 Hz | Peak Freq. Deviation At 1000 Hz | Peak Freq. Deviation At 1500 Hz | Peak Freq. Deviation At 3000 Hz |
|-----------------------|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| -20                   | 0.25                           | 0.47                            | 0.56                            | 0.65                            |
| -15                   | 0.35                           | 0.65                            | 0.71                            | 0.91                            |
| -10                   | 0.59                           | 1.37                            | 1.53                            | 1.68                            |
| -5                    | 0.79                           | 1.86                            | 1.93                            | 2.21                            |
| 0                     | 1.08                           | 2.4                             | 2.51                            | 2.59                            |
| +5                    | 1.14                           | 2.51                            | 2.57                            | 2.64                            |
| +10                   | 1.29                           | 2.56                            | 2.69                            | 2.76                            |
| +15                   | 1.39                           | 2.46                            | 2.52                            | 2.62                            |
| +20                   | 1.44                           | 2.21                            | 2.34                            | 2.48                            |



Note: All the modes had been tested, but only the worst data recorded in the report.

**(B). AUDIO FREQUENCY RESPONSE:****Middle Channel @ 12.5 KHz Channel Separations---H Power**

| Frequency (Hz) | Deviation (KHz) | Audio Frequency Response(dB) |
|----------------|-----------------|------------------------------|
| 100            | --              | --                           |
| 200            | --              | --                           |
| 300            | 0.12            | -16.48                       |
| 400            | 0.17            | -13.45                       |
| 500            | 0.23            | -10.83                       |
| 600            | 0.25            | -10.10                       |
| 700            | 0.32            | -7.96                        |
| 800            | 0.36            | -6.94                        |
| 900            | 0.43            | -5.39                        |
| 1000           | 0.58            | -2.79                        |
| 1200           | 0.62            | -2.21                        |
| 1400           | 0.66            | -1.67                        |
| 1600           | 0.72            | -0.92                        |
| 1800           | 0.91            | 1.12                         |
| 2000           | 0.93            | 1.31                         |
| 2400           | 1.24            | 3.81                         |
| 2500           | 1.46            | 5.23                         |
| 2800           | 1.75            | 6.80                         |
| 3000           | 1.72            | 6.65                         |
| 3200           | 1.69            | 6.50                         |
| 3600           | 1.53            | 5.63                         |
| 4000           | 1.02            | 2.11                         |
| 4500           | 0.91            | 1.12                         |
| 5000           | 0.62            | -2.21                        |
| 5500           | 0.64            | -1.94                        |
| 6000           | 0.2             | -12.04                       |
| 6500           | 0.14            | -15.14                       |
| 7000           | 0.07            | -21.16                       |
| 7500           | 0.02            | -32.04                       |
| 9000           | --              | --                           |
| 10000          | --              | --                           |
| 14000          | --              | --                           |
| 18000          | --              | --                           |
| 20000          | --              | --                           |
| 30000          | --              | --                           |

Frequency Response of Bottom Channel---H Power

Note: All the modes had been tested, but only the worst data recorded in the report.

## 9. MAXIMUM TRANSMITTER POWER (CONDUCTED OUTPUT POWER) PEAK POWER

### 9.1 PROVISIONS APPLICABLE

Per FCC §2.1046 § 22.565 and §90.205: Maximum ERP is dependent upon the station's antenna HAAT and required service area.

### 9.2 TEST PROCEDURE

The RF output of Two-way Radio was conducted to a spectrum analyzer through an appropriate attenuator.

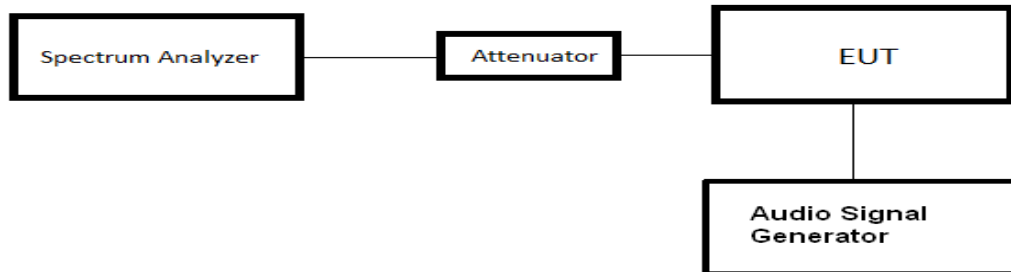
In the semi-anechoic chamber, setup as illustrated above the DUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.

The substitution antenna is substituted for DUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

$$\text{EIRP} = \text{"Read Value"} + \text{Measured substitution value} + 2.15.$$

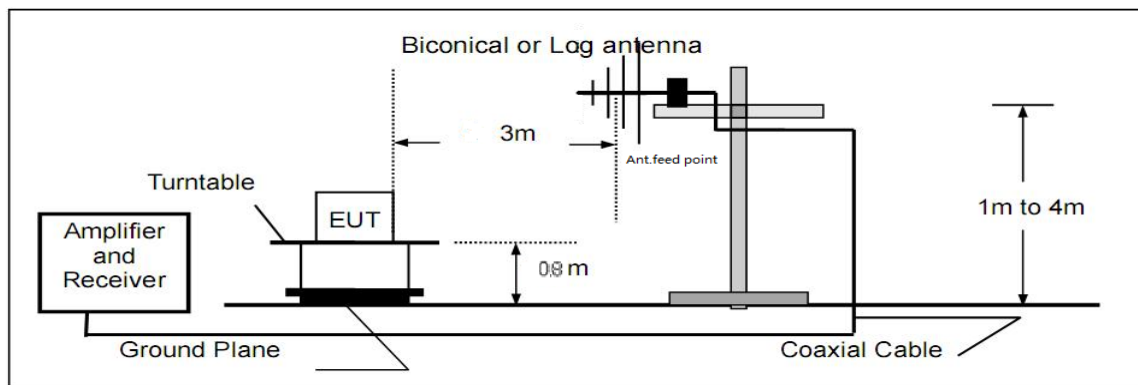
### 9.3 TEST CONFIGURATION

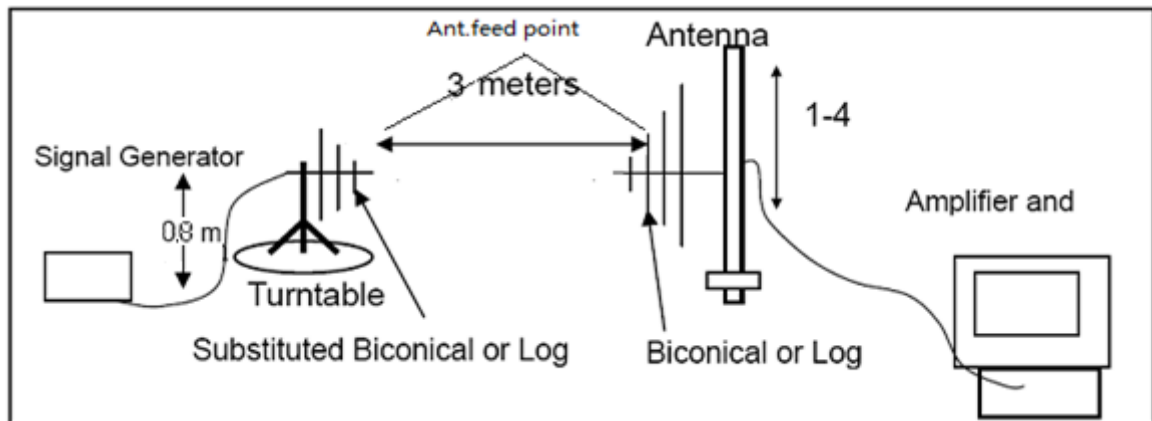
#### Conducted Output Power:



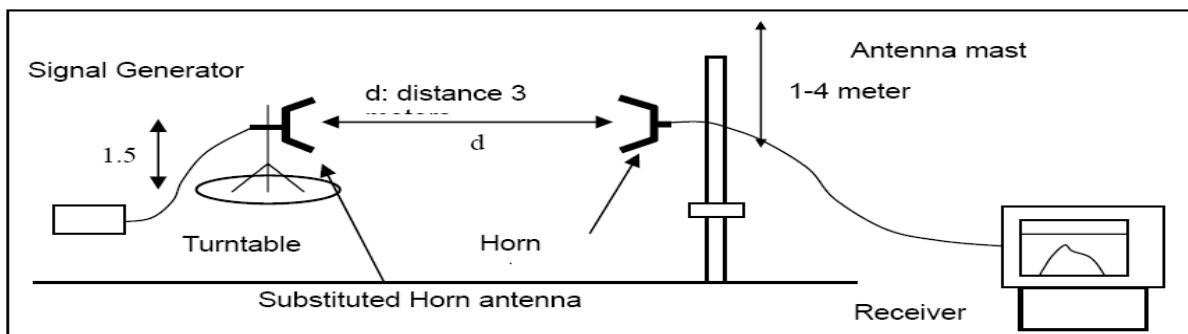
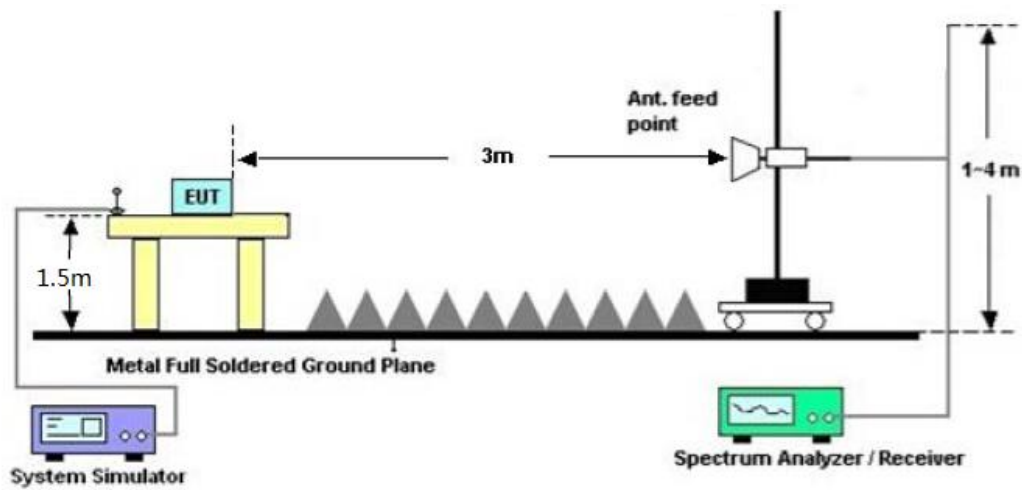
#### Effective Radiated Power

##### Radiated Below 1GHz





### Radiated Above 1 GHz



**9.4 TEST RESULT**

The maximum Conducted Power (CP) for VHF/UHF is

Analog: 4W/1 W for 12.5 KHz Channel Separation VHF

Analog: 4W/1 W for 12.5 KHz Channel Separation UHF

Digital: 4W/1 W for 12.5 KHz Channel Separation VHF

Digital: 4W/1 W for 12.5 KHz Channel Separation UHF

Calculation Formula:  $CP = R + A + L$

Note:

CP: The final Conducted Power

R : The reading value from spectrum analyzer

A : The attenuation value of the used attenuator

L : The loss of all connection cables

**VHF:**

**Analog:**

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 36.02dBm(4W)         |
| 12.5 KHz                            | Bottom(136.025MHz) | 35.52                    |
|                                     | Middle(151.850MHz) | 35.56                    |
|                                     | Middle(155.025MHz) | 35.48                    |
|                                     | Middle(161.610MHz) | 35.52                    |
|                                     | Top (173.975MHz)   | 35.55                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 36.02dBm(4W)         |
| 12.5 KHz                           | Bottom(136.025MHz) | 35.50                    |
|                                    | Middle(151.850MHz) | 35.54                    |
|                                    | Middle(155.025MHz) | 35.46                    |
|                                    | Middle(161.610MHz) | 35.50                    |
|                                    | Top (173.975MHz)   | 35.53                    |

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 30dBm(1W)            |
| 12.5 KHz                            | Bottom(136.025MHz) | 28.38                    |
|                                     | Middle(151.850MHz) | 28.56                    |
|                                     | Middle(155.025MHz) | 28.63                    |
|                                     | Middle(161.610MHz) | 28.58                    |
|                                     | Top (173.975MHz)   | 28.84                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 30dBm(1W)            |
| 12.5 KHz                           | Bottom(136.025MHz) | 28.35                    |
|                                    | Middle(151.850MHz) | 28.54                    |
|                                    | Middle(155.025MHz) | 28.61                    |
|                                    | Middle(161.610MHz) | 28.56                    |
|                                    | Top (173.975MHz)   | 28.82                    |

Digital:

Date + voice:

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 36.02dBm(4W)         |
| 12.5 KHz                            | Bottom(136.025MHz) | 35.38                    |
|                                     | Middle(151.850MHz) | 35.45                    |
|                                     | Middle(155.025MHz) | 35.40                    |
|                                     | Middle(161.610MHz) | 35.46                    |
|                                     | Top (173.975MHz)   | 35.57                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 36.02dBm(4W)         |
| 12.5 KHz                           | Bottom(136.025MHz) | 35.37                    |
|                                    | Middle(151.850MHz) | 35.44                    |
|                                    | Middle(155.025MHz) | 35.38                    |
|                                    | Middle(161.610MHz) | 35.44                    |
|                                    | Top (173.975MHz)   | 35.56                    |

Date transmission mode:

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 36.02dBm(4W)         |
| 12.5 KHz                            | Bottom(136.025MHz) | 35.35                    |
|                                     | Middle(151.850MHz) | 35.42                    |
|                                     | Middle(155.025MHz) | 35.37                    |
|                                     | Middle(161.610MHz) | 35.43                    |
|                                     | Top (173.975MHz)   | 35.54                    |



| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 36.02dBm(4W)         |
| 12.5 KHz                           | Bottom(136.025MHz) | 35.33                    |
|                                    | Middle(151.850MHz) | 35.40                    |
|                                    | Middle(155.025MHz) | 35.35                    |
|                                    | Middle(161.610MHz) | 35.42                    |
|                                    | Top (173.975MHz)   | 35.51                    |

Date + voice:

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 30dBm(1W)            |
| 12.5 KHz                            | Bottom(136.025MHz) | 28.42                    |
|                                     | Middle(151.850MHz) | 28.60                    |
|                                     | Middle(155.025MHz) | 28.60                    |
|                                     | Middle(161.610MHz) | 28.56                    |
|                                     | Top (173.975MHz)   | 28.91                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 30dBm(1W)            |
| 12.5 KHz                           | Bottom(136.025MHz) | 28.40                    |
|                                    | Middle(151.850MHz) | 28.58                    |
|                                    | Middle(155.025MHz) | 28.59                    |
|                                    | Middle(161.610MHz) | 28.54                    |
|                                    | Top (173.975MHz)   | 28.88                    |

**Date transmission mode:**

| <b>Conducted Power Measurement Results</b> |                    |                                 |
|--------------------------------------------|--------------------|---------------------------------|
| <b>Channel Separation</b>                  | <b>Channel</b>     | <b>Measurement Result (dBm)</b> |
|                                            |                    | <b>For 30dBm(1W)</b>            |
| 12.5 KHz                                   | Bottom(136.025MHz) | 28.41                           |
|                                            | Middle(151.850MHz) | 28.57                           |
|                                            | Middle(155.025MHz) | 28.58                           |
|                                            | Middle(161.610MHz) | 28.52                           |
|                                            | Top (173.975MHz)   | 28.87                           |

| <b>Radiated Power Measurement Results</b> |                    |                                 |
|-------------------------------------------|--------------------|---------------------------------|
| <b>Channel Separation</b>                 | <b>Channel</b>     | <b>Measurement Result (dBm)</b> |
|                                           |                    | <b>For 30dBm(1W)</b>            |
| 12.5 KHz                                  | Bottom(136.025MHz) | 28.39                           |
|                                           | Middle(151.850MHz) | 28.56                           |
|                                           | Middle(155.025MHz) | 28.56                           |
|                                           | Middle(161.610MHz) | 28.51                           |
|                                           | Top (173.975MHz)   | 28.86                           |

UHF:  
Analog:

| Conducted Power Measurement Results-4W |                    |                          |
|----------------------------------------|--------------------|--------------------------|
| Channel Separation                     | Channel            | Measurement Result (dBm) |
|                                        |                    | For 36.02dBm(4W)         |
| 12.5 KHz                               | Bottom(400.025MHz) | 34.99                    |
|                                        | Middle(453.225MHz) | 34.90                    |
|                                        | Middle(454.025MHz) | 34.83                    |
|                                        | Top (479.975MHz)   | 34.38                    |

| Radiated Power Measurement Results-4W |                    |                          |
|---------------------------------------|--------------------|--------------------------|
| Channel Separation                    | Channel            | Measurement Result (dBm) |
|                                       |                    | For 36.02dBm(4W)         |
| 12.5 KHz                              | Bottom(400.025MHz) | 34.97                    |
|                                       | Middle(453.225MHz) | 34.89                    |
|                                       | Middle(454.025MHz) | 34.89                    |
|                                       | Top (479.975MHz)   | 34.37                    |

| Conducted Power Measurement Results-1W |                    |                          |
|----------------------------------------|--------------------|--------------------------|
| Channel Separation                     | Channel            | Measurement Result (dBm) |
|                                        |                    | For 30dBm(1W)            |
| 12.5 KHz                               | Bottom(400.025MHz) | 28.45                    |
|                                        | Middle(453.225MHz) | 28.32                    |
|                                        | Middle(454.025MHz) | 28.33                    |
|                                        | Top (479.975MHz)   | 28.75                    |

| Radiated Power Measurement Results-1W |                    |                          |
|---------------------------------------|--------------------|--------------------------|
| Channel Separation                    | Channel            | Measurement Result (dBm) |
|                                       |                    | For 30dBm(1W)            |
| 12.5 KHz                              | Bottom(400.025MHz) | 28.42                    |
|                                       | Middle(453.225MHz) | 28.30                    |
|                                       | Middle(454.025MHz) | 28.31                    |
|                                       | Top (479.975MHz)   | 28.72                    |

**Digital:****Date + voice:**

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 36.02dBm(4W)         |
| 12.5 KHz                            | Bottom(400.025MHz) | 34.97                    |
|                                     | Middle(453.225MHz) | 34.90                    |
|                                     | Middle(454.025MHz) | 34.85                    |
|                                     | Top (479.975MHz)   | 34.40                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 36.02dBm(4W)         |
| 12.5 KHz                           | Bottom(400.025MHz) | 34.96                    |
|                                    | Middle(453.225MHz) | 34.88                    |
|                                    | Middle(454.025MHz) | 34.84                    |
|                                    | Top (479.975MHz)   | 34.38                    |

**Date transmission mode:**

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 36.02dBm(4W)         |
| 12.5 KHz                            | Bottom(400.025MHz) | 34.96                    |
|                                     | Middle(453.225MHz) | 34.85                    |
|                                     | Middle(454.025MHz) | 34.84                    |
|                                     | Top (479.975MHz)   | 34.37                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 36.02dBm(4W)         |
| 12.5 KHz                           | Bottom(400.025MHz) | 34.94                    |
|                                    | Middle(453.225MHz) | 34.83                    |
|                                    | Middle(454.025MHz) | 34.82                    |
|                                    | Top (479.975MHz)   | 34.36                    |

Date + voice:

| Conducted Power Measurement Results |                    |                          |
|-------------------------------------|--------------------|--------------------------|
| Channel Separation                  | Channel            | Measurement Result (dBm) |
|                                     |                    | For 30dBm(1W)            |
| 12.5 KHz                            | Bottom(400.025MHz) | 28.47                    |
|                                     | Middle(453.225MHz) | 28.38                    |
|                                     | Middle(454.025MHz) | 28.36                    |
|                                     | Top (479.975MHz)   | 28.73                    |

| Radiated Power Measurement Results |                    |                          |
|------------------------------------|--------------------|--------------------------|
| Channel Separation                 | Channel            | Measurement Result (dBm) |
|                                    |                    | For 30dBm(1W)            |
| 12.5 KHz                           | Bottom(400.025MHz) | 28.45                    |
|                                    | Middle(453.225MHz) | 28.37                    |
|                                    | Middle(454.025MHz) | 28.34                    |
|                                    | Top (479.975MHz)   | 28.71                    |

**Date transmission mode:**

| <b>Conducted Power Measurement Results</b> |                    |                                 |
|--------------------------------------------|--------------------|---------------------------------|
| <b>Channel Separation</b>                  | <b>Channel</b>     | <b>Measurement Result (dBm)</b> |
|                                            |                    | <b>For 30dBm(1W)</b>            |
| 12.5 KHz                                   | Bottom(400.025MHz) | 28.44                           |
|                                            | Middle(453.225MHz) | 28.38                           |
|                                            | Middle(454.025MHz) | 28.35                           |
|                                            | Top (479.975MHz)   | 28.70                           |

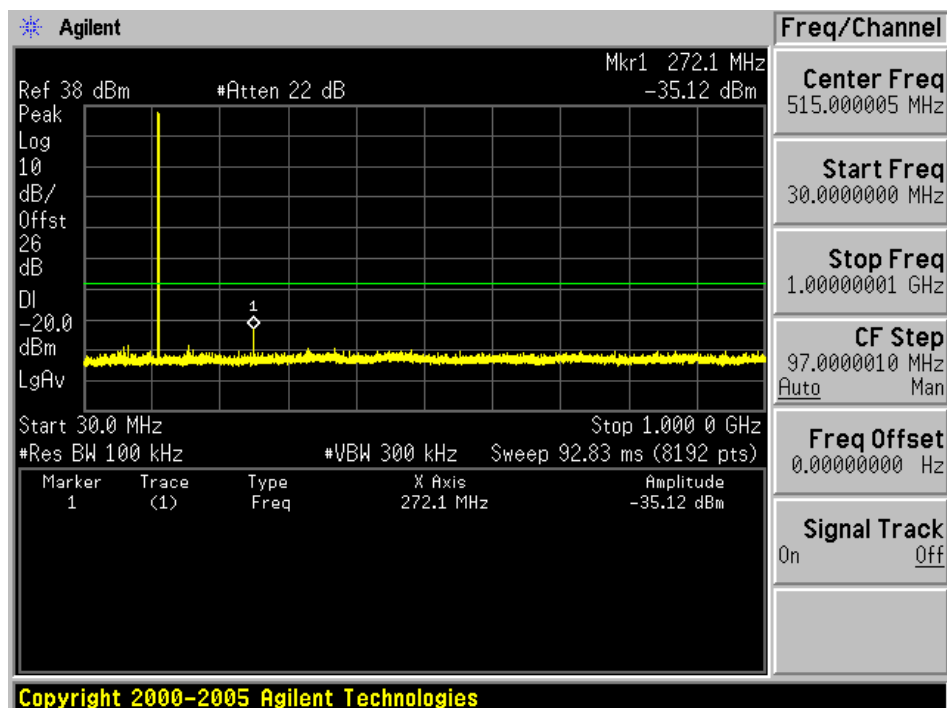
| <b>Radiated Power Measurement Results</b> |                    |                                 |
|-------------------------------------------|--------------------|---------------------------------|
| <b>Channel Separation</b>                 | <b>Channel</b>     | <b>Measurement Result (dBm)</b> |
|                                           |                    | <b>For 30dBm(1W)</b>            |
| 12.5 KHz                                  | Bottom(400.025MHz) | 28.43                           |
|                                           | Middle(453.225MHz) | 28.37                           |
|                                           | Middle(454.025MHz) | 28.34                           |
|                                           | Top (479.975MHz)   | 28.69                           |

## 9.5 CONDUCT SPURIOUS PLOT

VHF:Analog:

### Conducted Spurious Emission (worst) @136.025MHz With 12.5 KHz Channel Separation-4W

30MHz-1GHz



### Conduct Spurious Emission (worst) @ 136.025MHz With 12.5 KHz Channel Separation-4W

1GHz-12.75GHz

