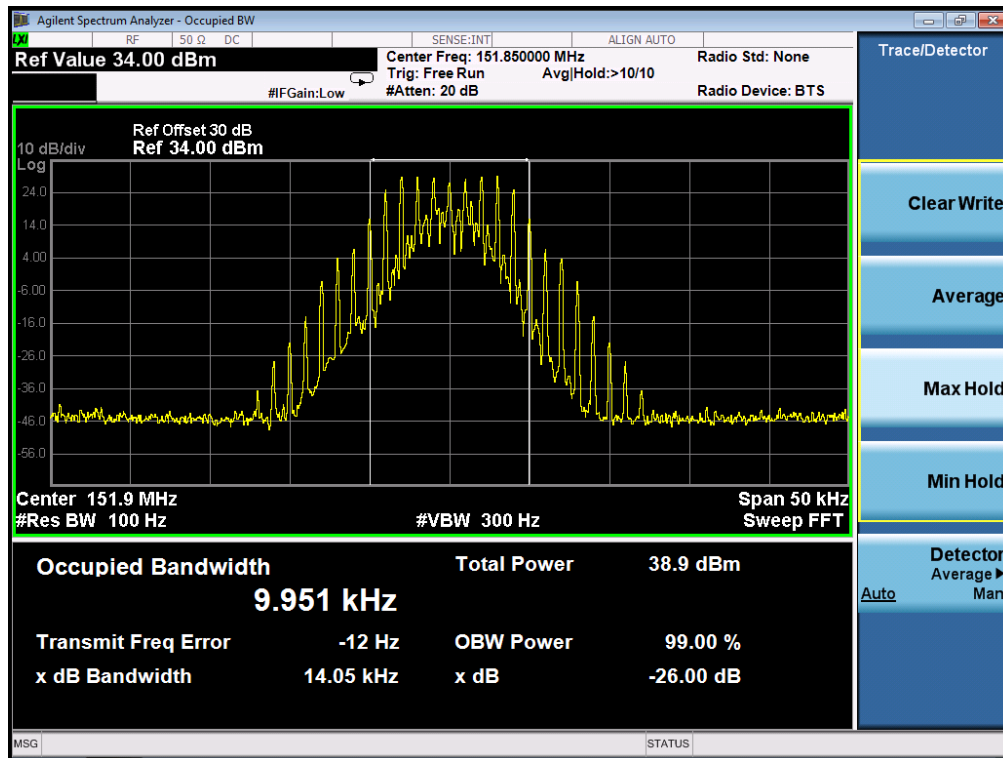
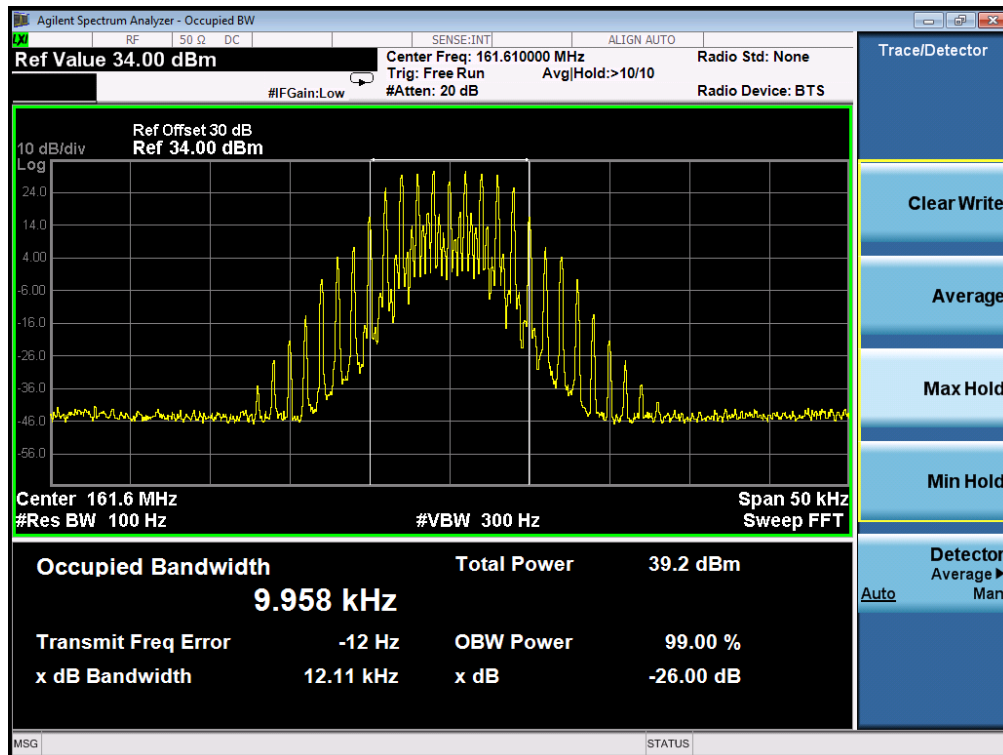


Occupied bandwidth of Middle Channel (151.850 MHz)-2.5W

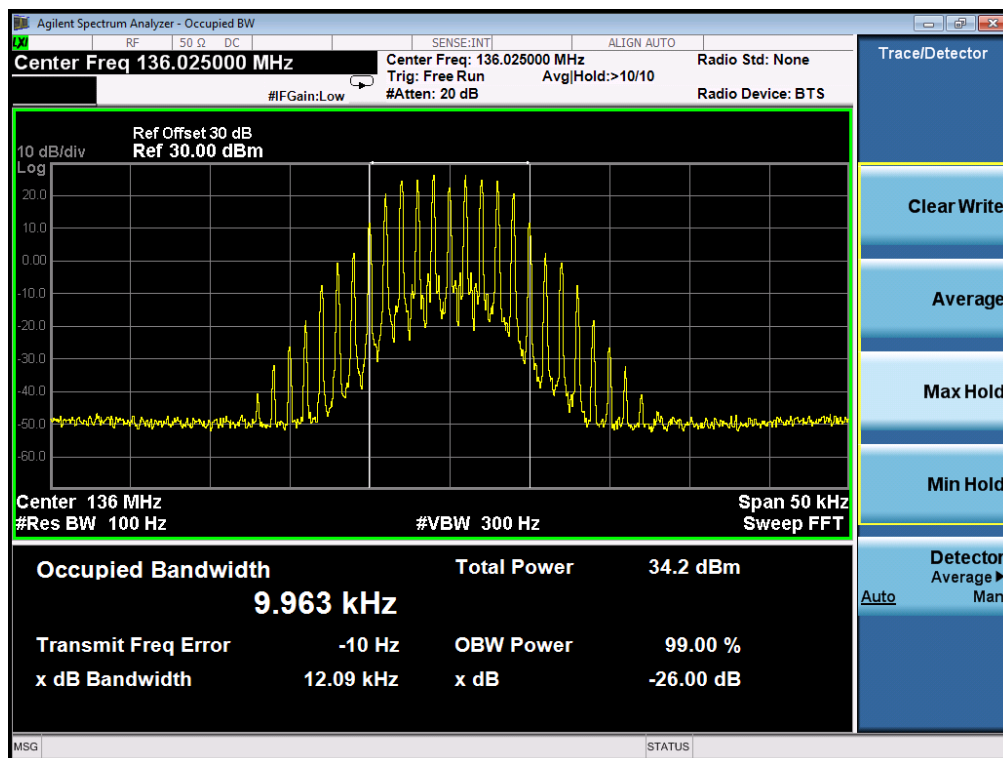


Occupied bandwidth of Middle Channel (161.610 MHz)-2.5W

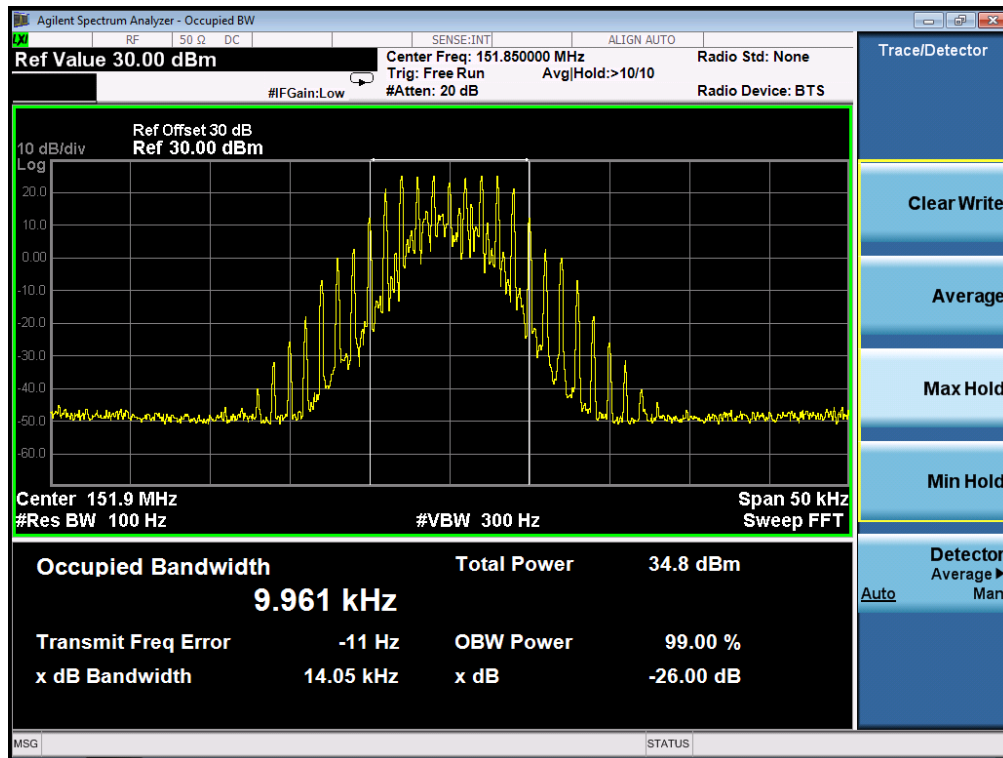


26 dB Bandwidth Measurement Result			
Operating Frequency	25 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	12.09KHz	20 KHz	Pass
151.850MHz	14.05KHz	20 KHz	Pass
155.025MHz	13.92KHz	20 KHz	Pass
161.61 MHz	14.00KHz	20 KHz	Pass
173.975MHz	13.85KHz	20 KHz	Pass

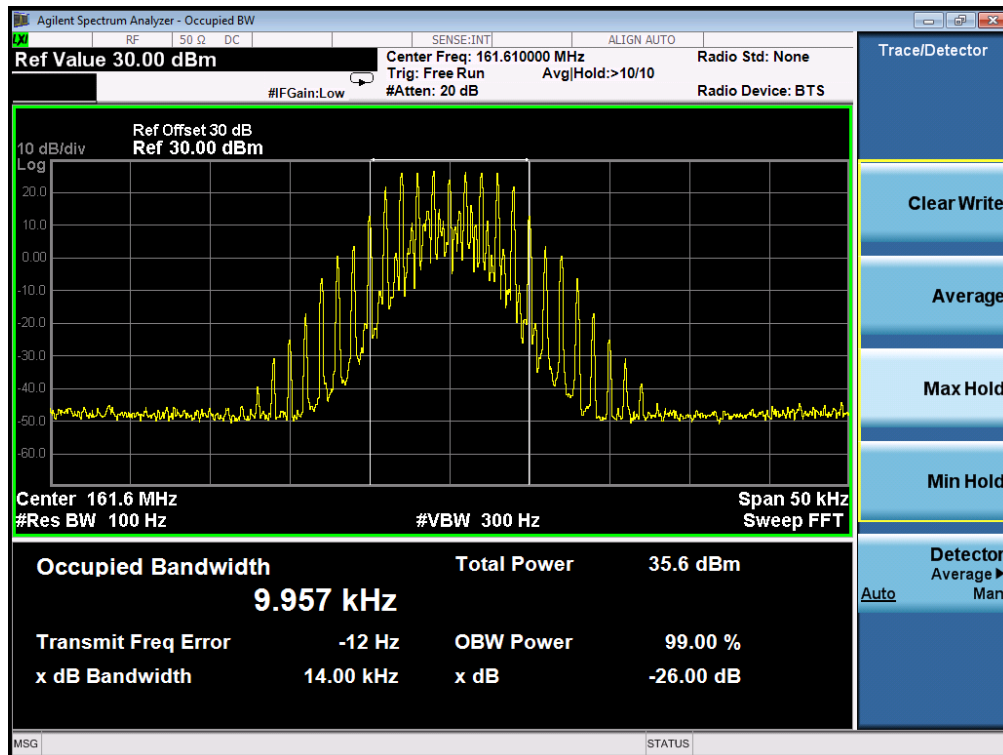
Occupied bandwidth of Bottom Channel (136.025MHz)-1W



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



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

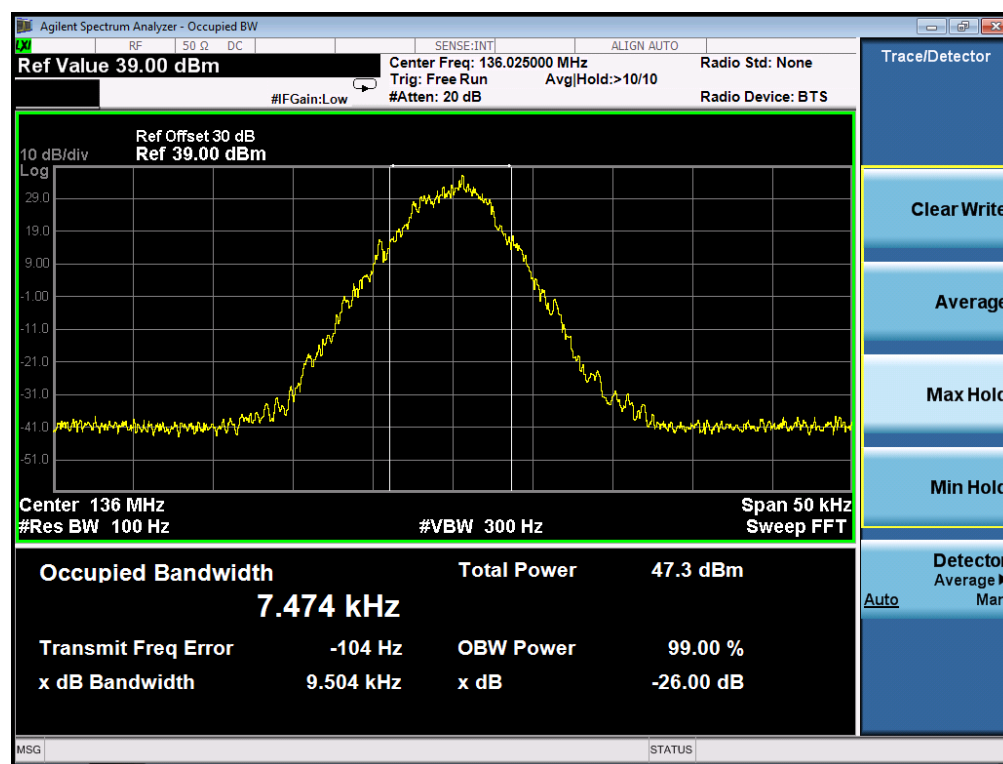


Digital:

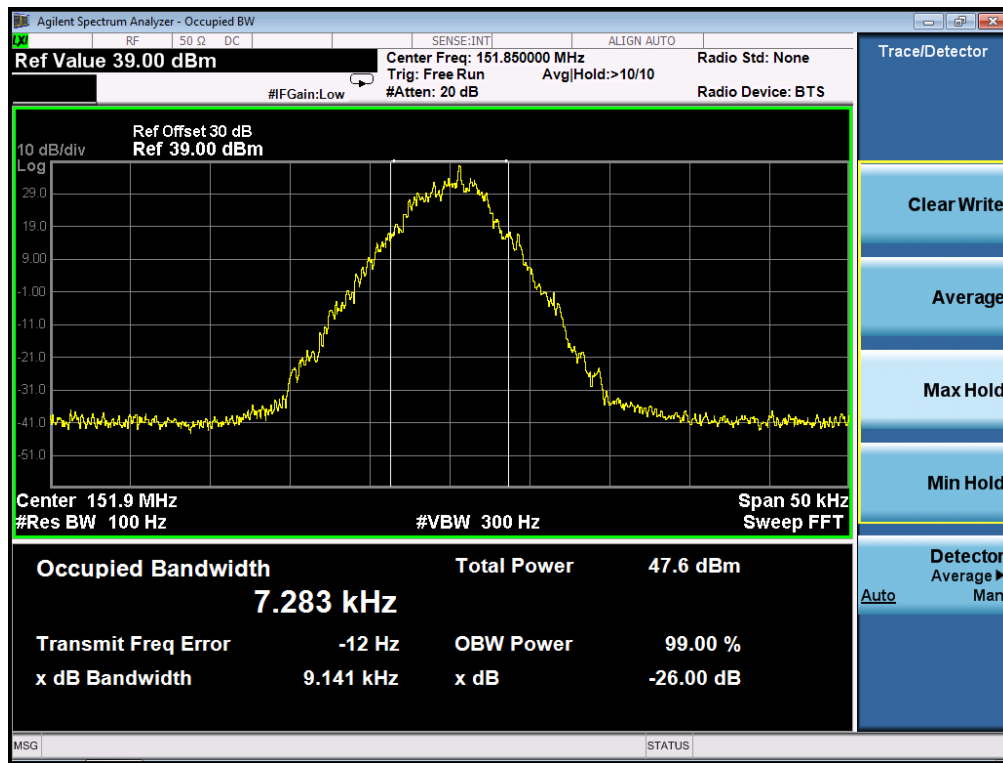
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	9.504KHz	11.25 KHz	Pass
151.850MHz	9.141KHz	11.25 KHz	Pass
155.025MHz	9.126KHz	11.25 KHz	Pass
161.61 MHz	9.659KHz	11.25 KHz	Pass
173.975MHz	9.149KHz	11.25 KHz	Pass

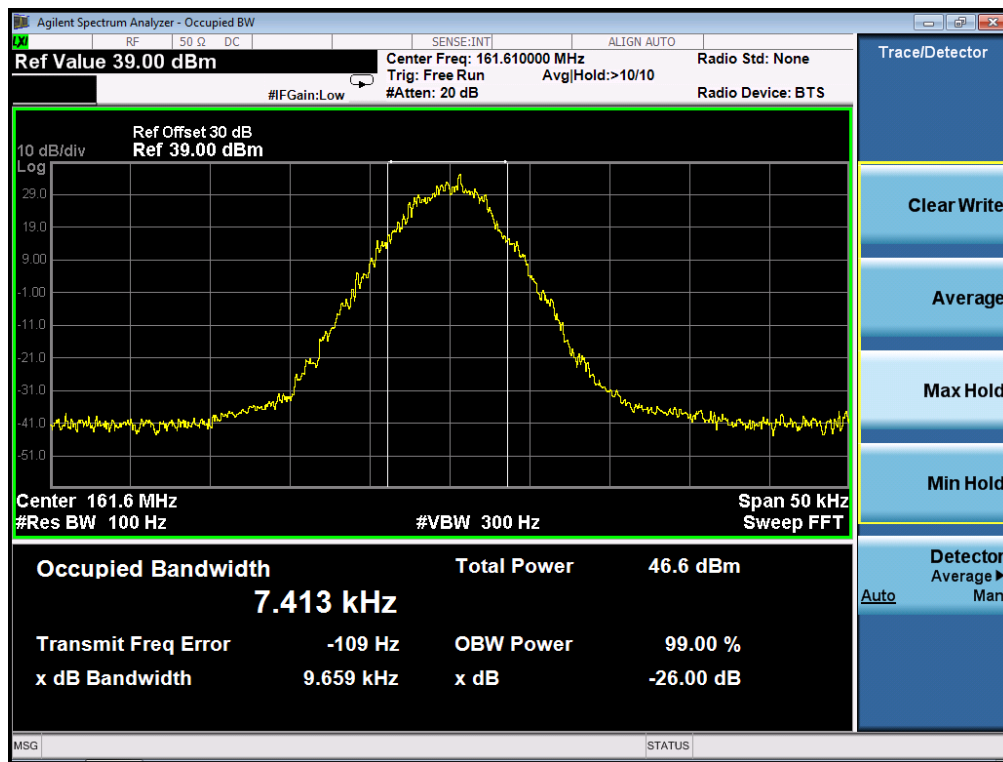
Occupied bandwidth of Bottom Channel (Maximum)-7W



Occupied bandwidth of Middle Channel (151.850 MHz)-7W



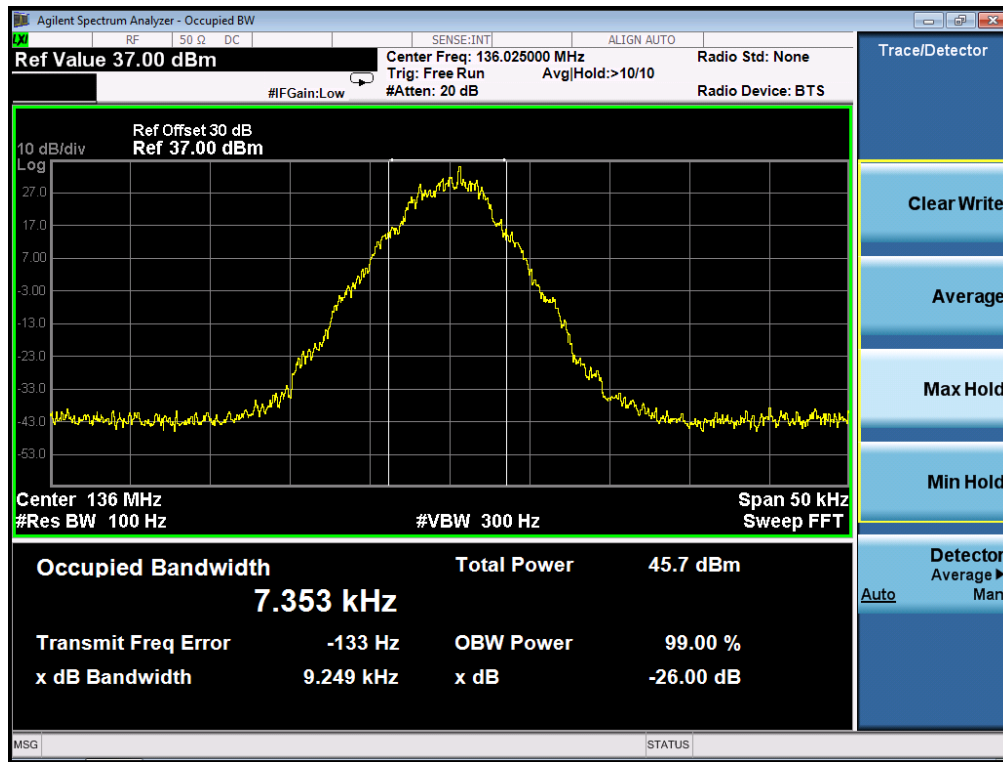
Occupied bandwidth of Middle Channel (161.610 MHz)-7W



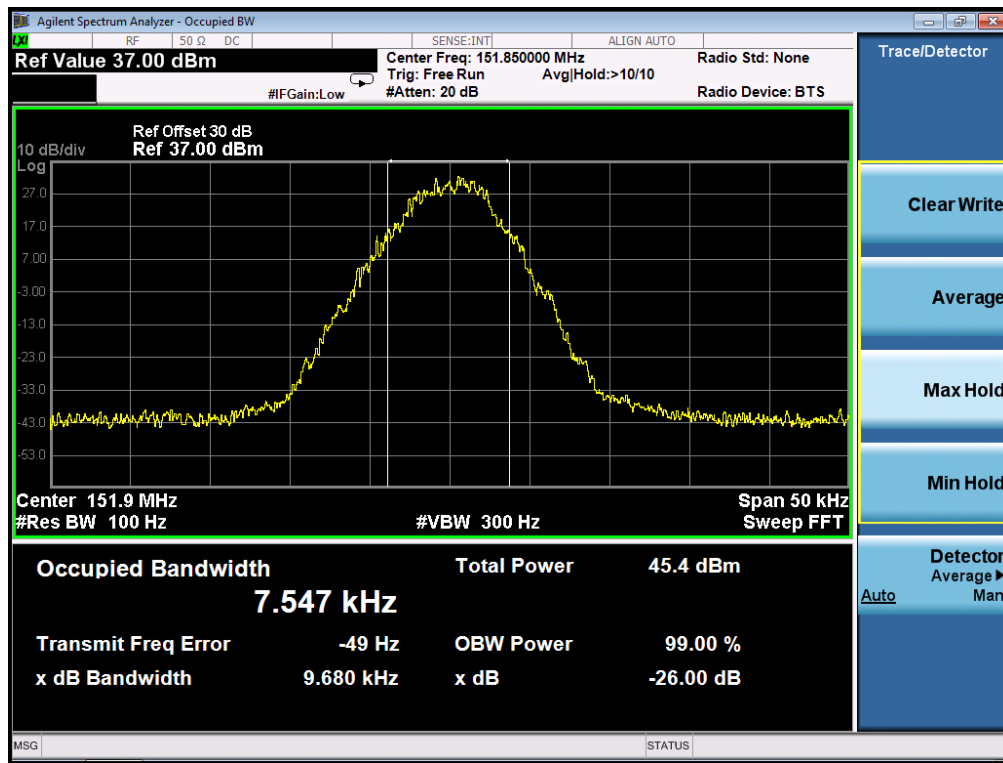
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	9.249KHz	11.25 KHz	Pass
151.850MHz	9.680KHz	11.25 KHz	Pass
155.025MHz	9.539KHz	11.25 KHz	Pass
161.61 MHz	9.157KHz	11.25 KHz	Pass
173.975MHz	9.462KHz	11.25 KHz	Pass

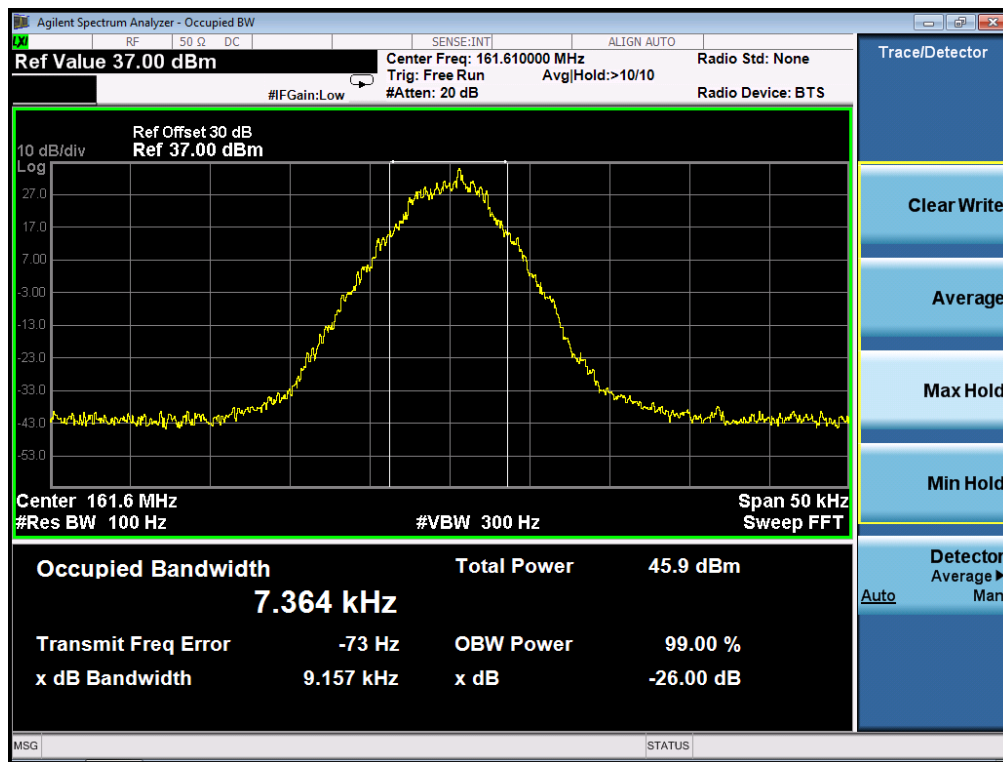
Occupied bandwidth of Bottom Channel (Maximum)-5W



Occupied bandwidth of Middle Channel (151.850 MHz)-5W



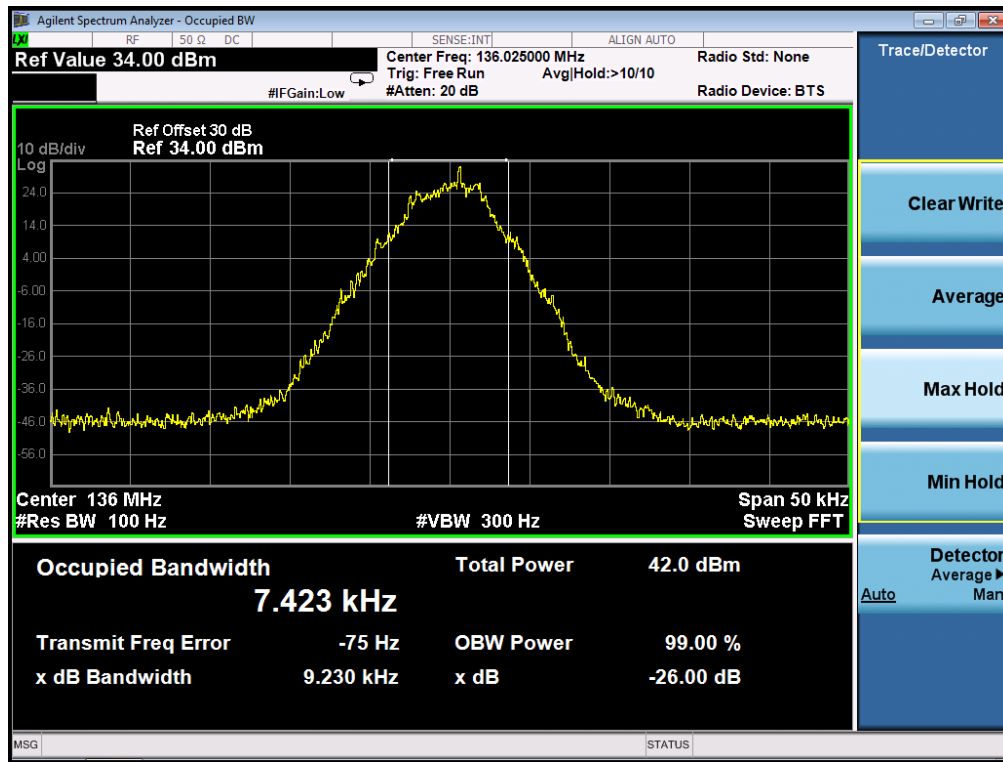
Occupied bandwidth of Middle Channel (161.610 MHz)-5W



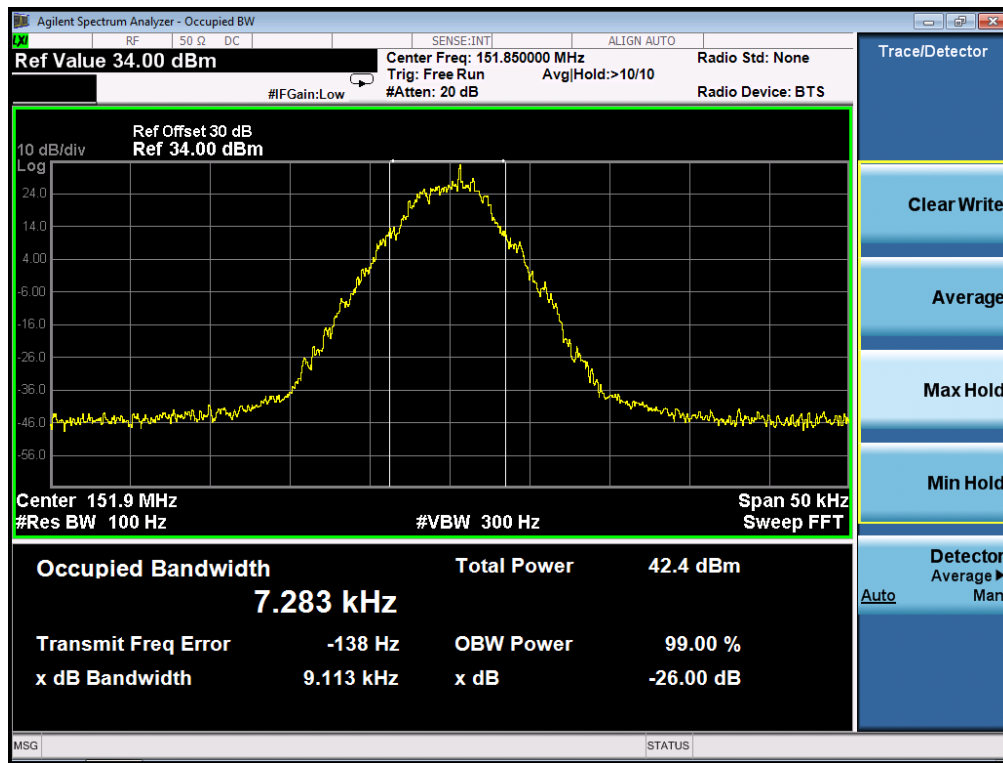
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	9.230KHz	11.25 KHz	Pass
151.850MHz	9.113KHz	11.25 KHz	Pass
155.025MHz	9.093KHz	11.25 KHz	Pass
161.61 MHz	9.355KHz	11.25 KHz	Pass
173.975MHz	9.138KHz	11.25 KHz	Pass

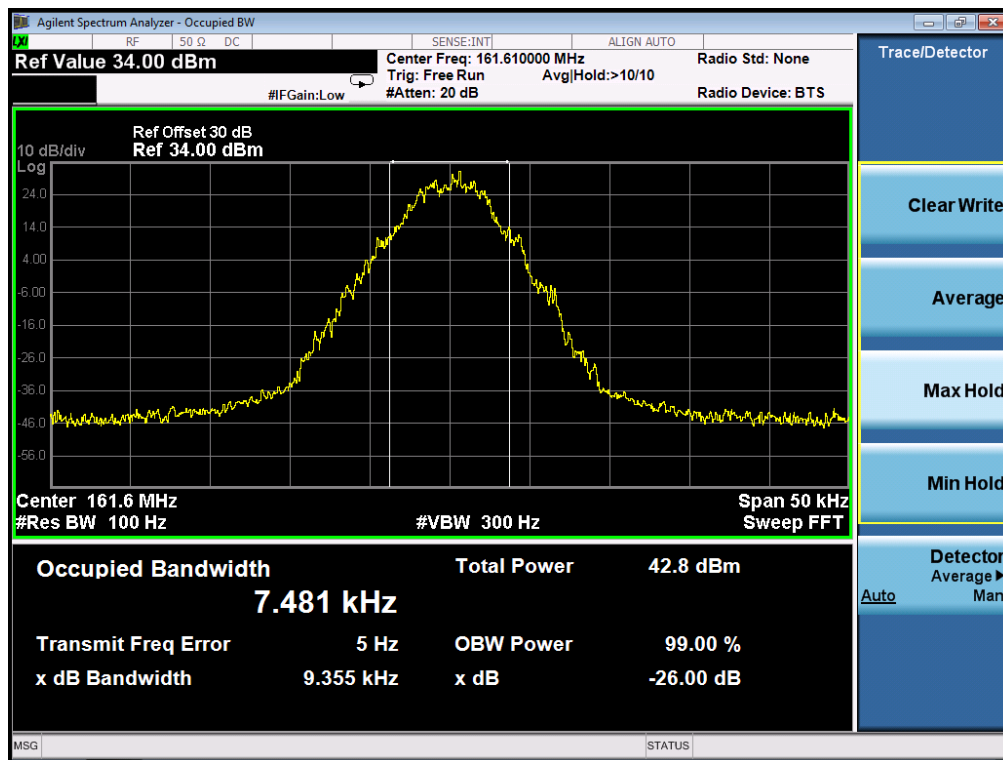
Occupied bandwidth of Bottom Channel (Maximum)-2.5W



Occupied bandwidth of Middle Channel (151.850 MHz)-2.5W



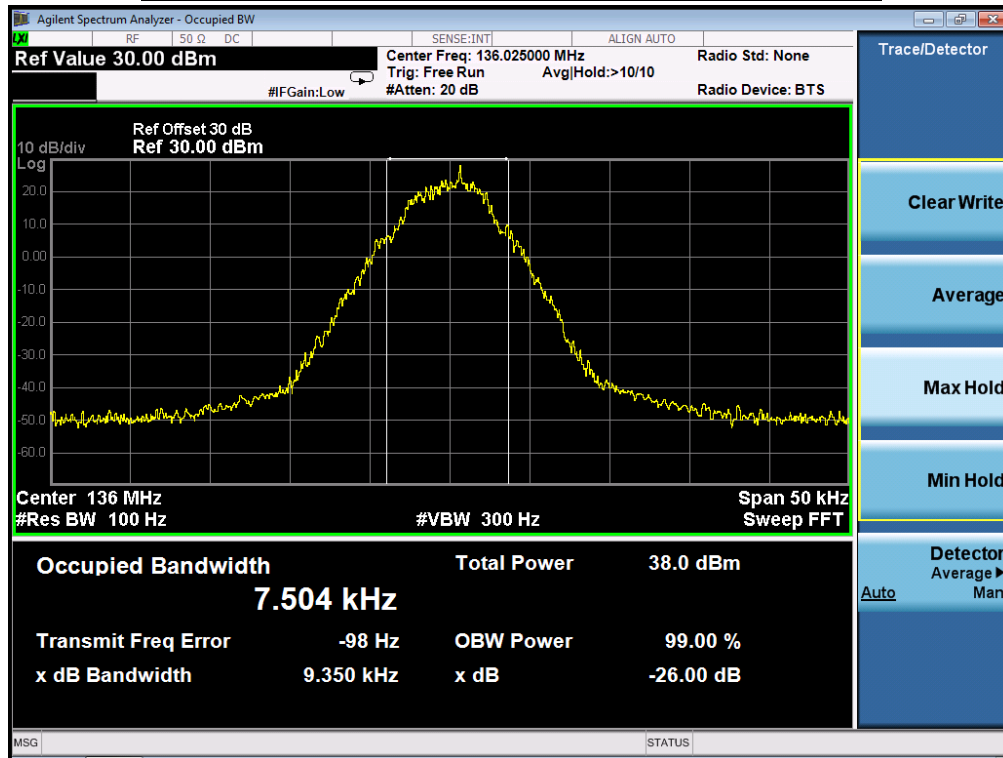
Occupied bandwidth of Middle Channel (161.610 MHz)-2.5W



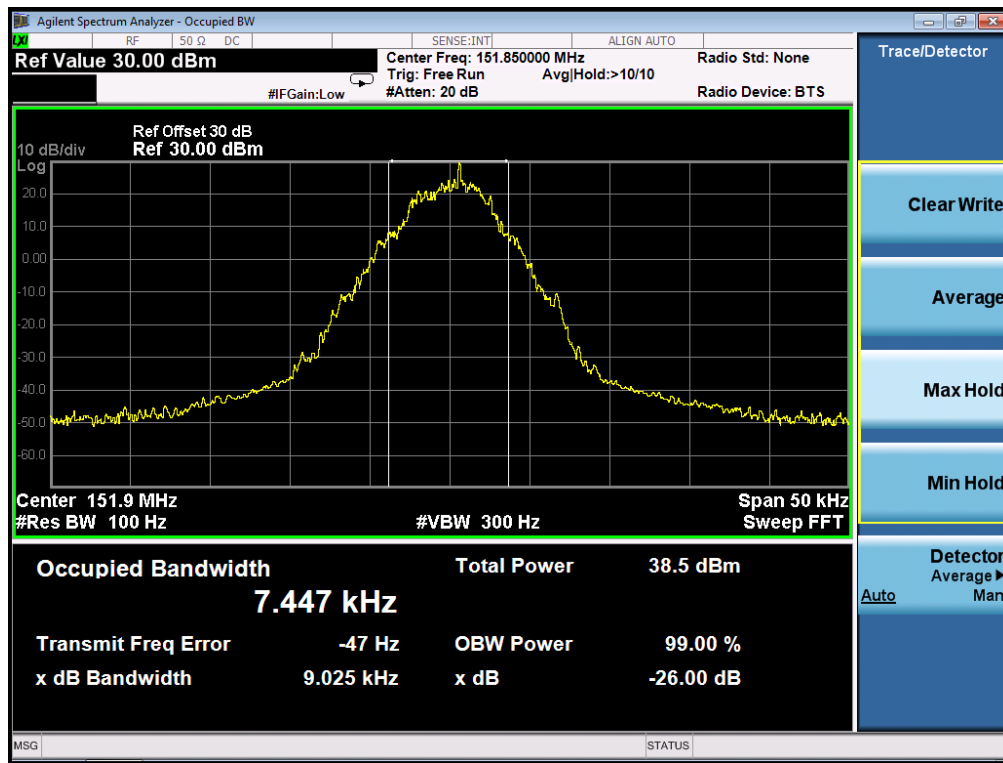
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	9.350KHz	11.25 KHz	Pass
151.850MHz	9.025KHz	11.25 KHz	Pass
155.025MHz	9.306KHz	11.25 KHz	Pass
161.610MHz	9.404KHz	11.25 KHz	Pass
173.975MHz	9.264KHz	11.25 KHz	Pass

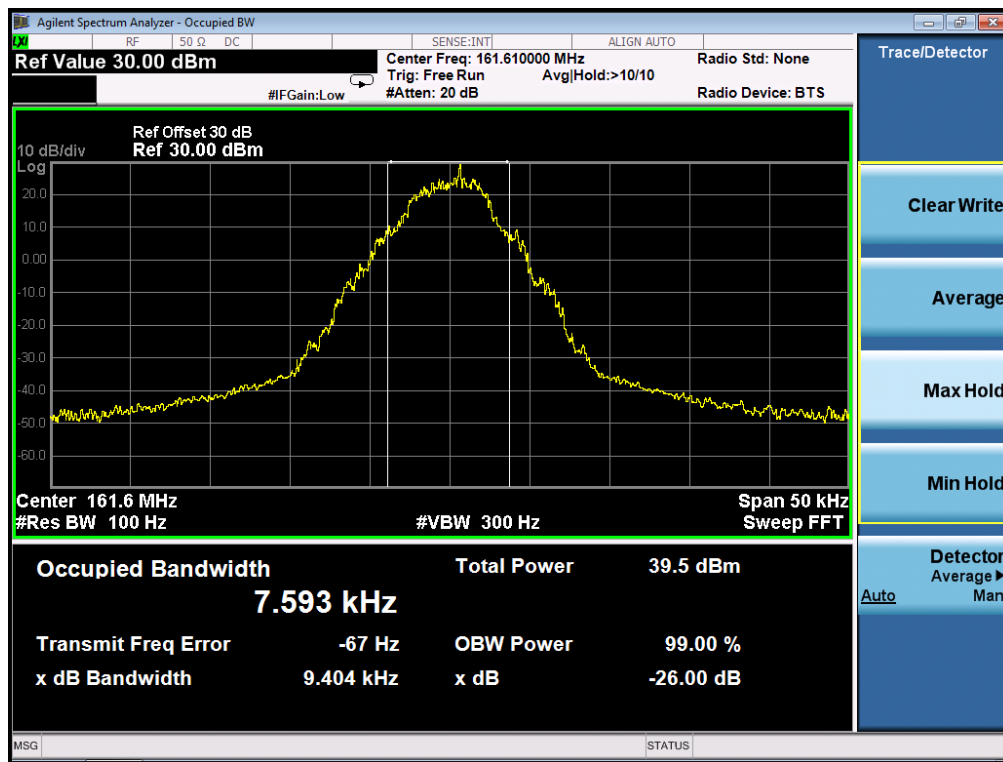
Occupied bandwidth of Bottom Channel (Maximum)-1W



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



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

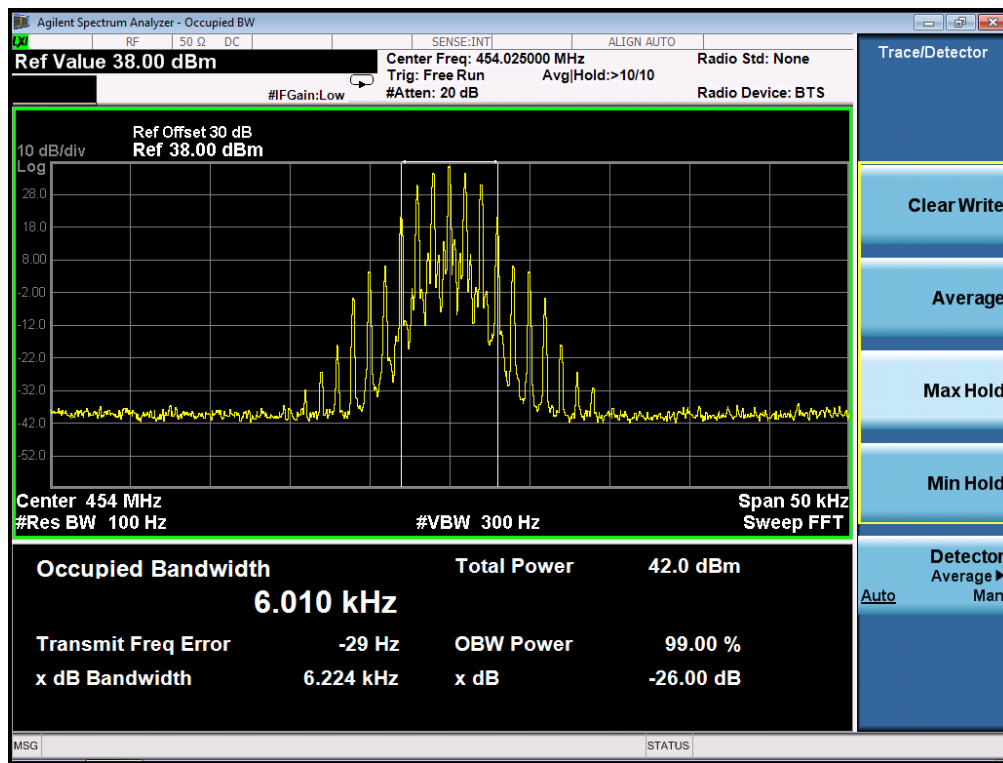


UHF:

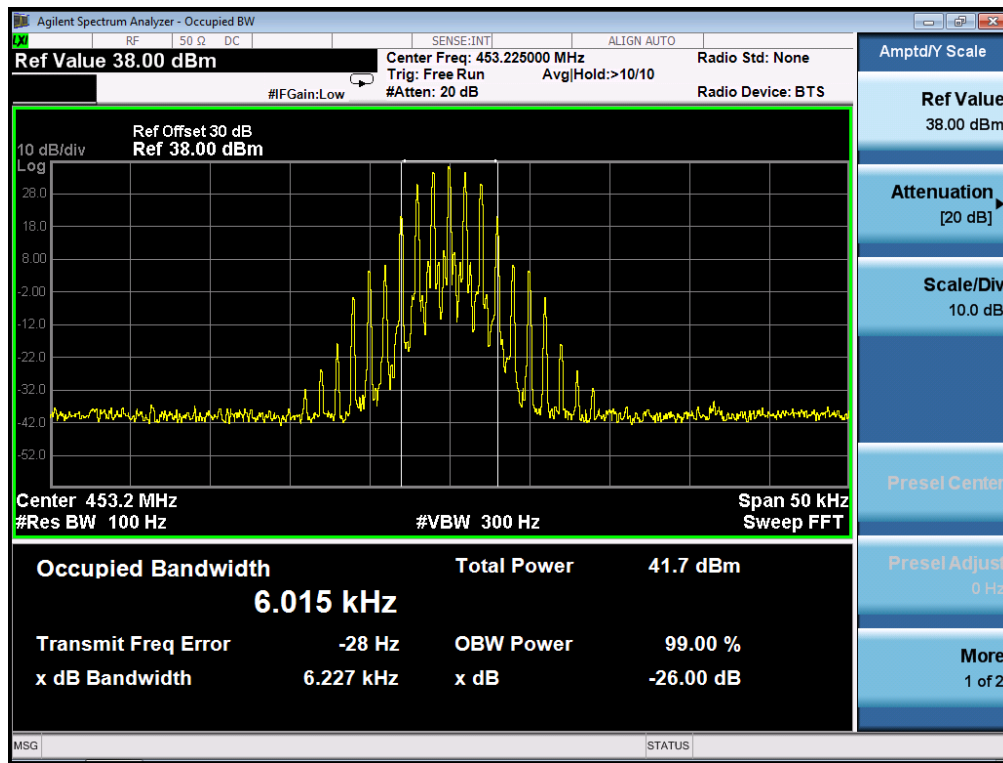
Analog-12.5KHz:

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	6.224KHz	11.25 KHz	Pass
453.225MHz	6.227KHz	11.25 KHz	Pass
454.025MHz	6.224KHz	11.25 KHz	Pass
479.975MHz	6.216KHz	11.25 KHz	Pass

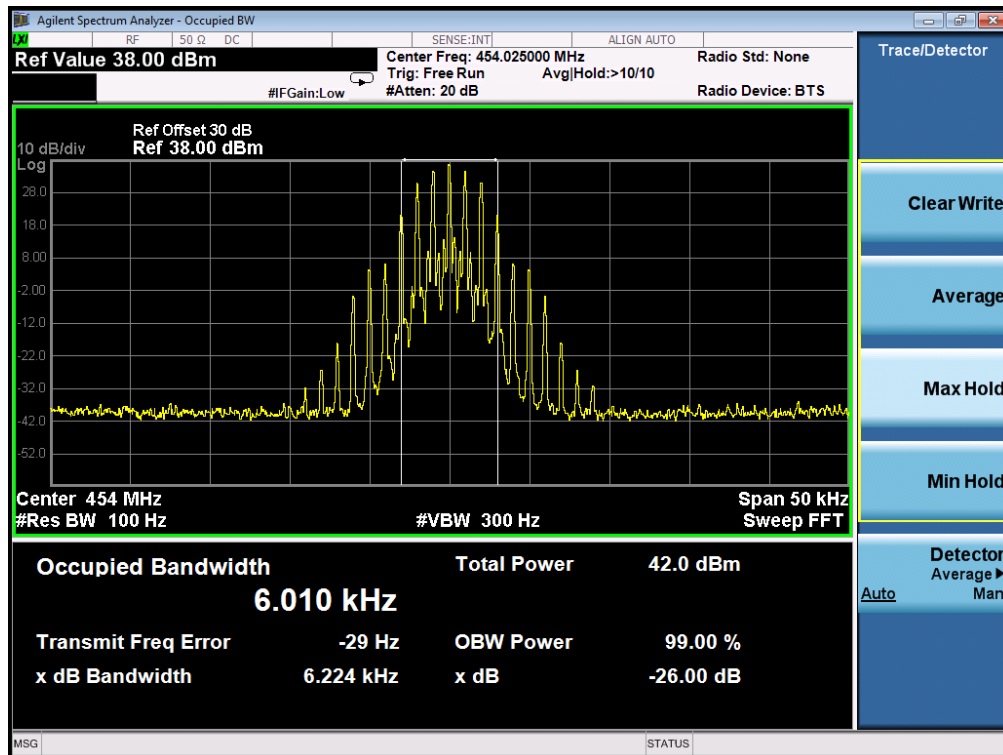
Occupied bandwidth of Bottom Channel (Maximum)-6W



Occupied bandwidth of Middle Channel (Maximum)-6W

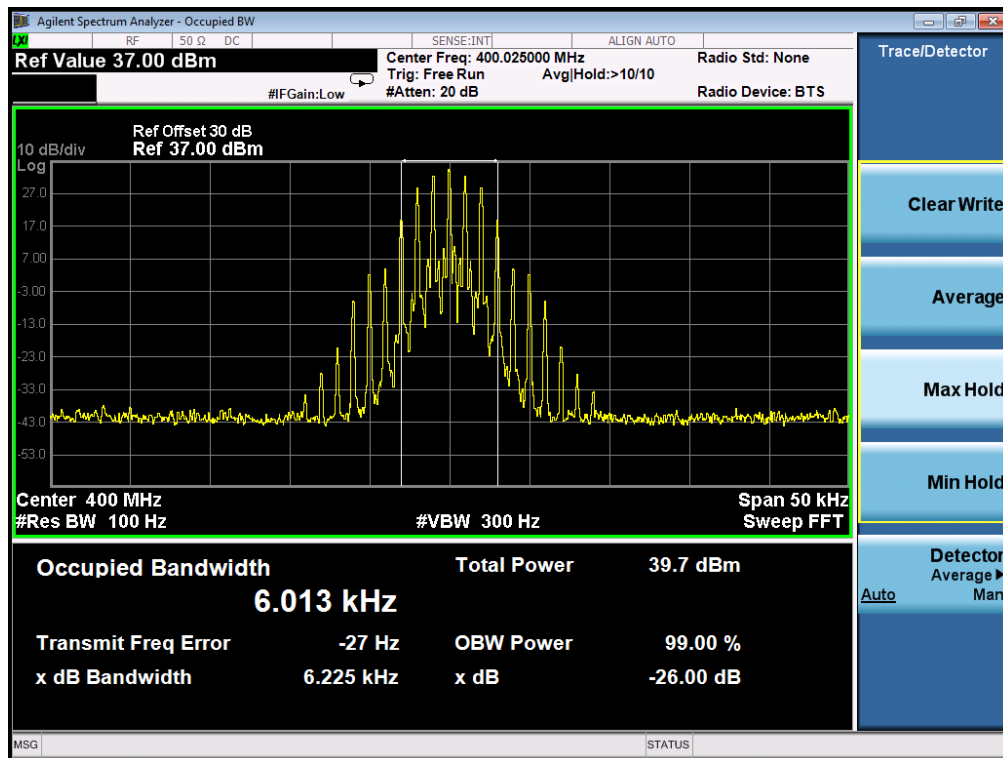


Occupied bandwidth of Middle Channel (Maximum)-6W

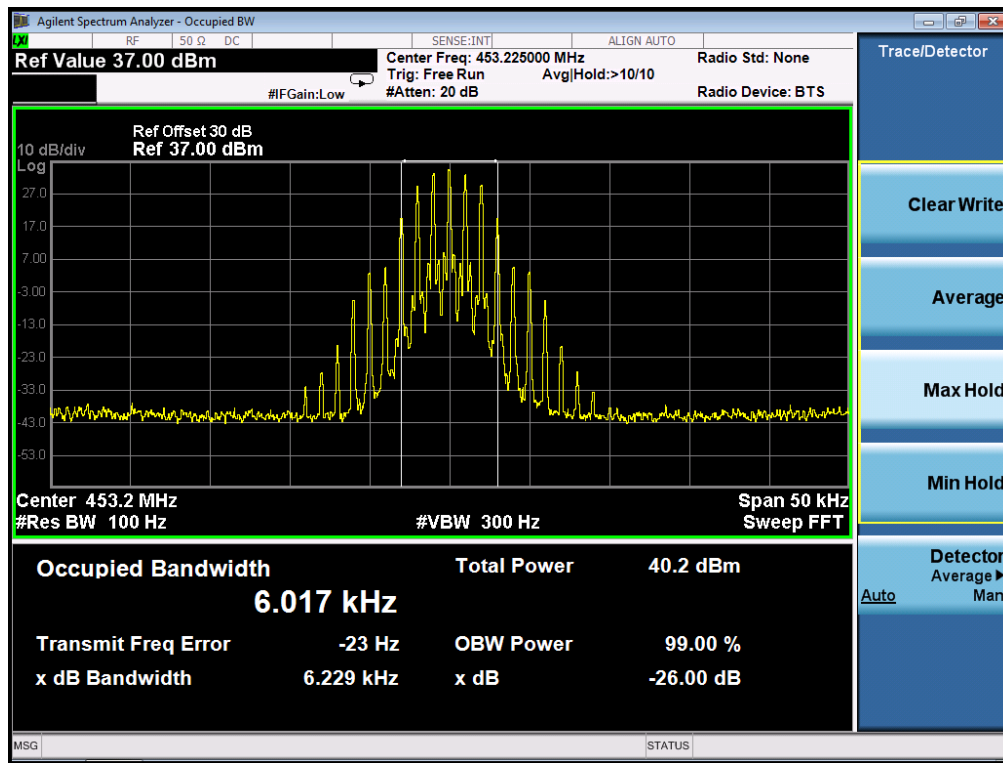


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	6.225KHz	11.25 KHz	Pass
453.225MHz	6.229KHz	11.25 KHz	Pass
454.025MHz	6.226KHz	11.25 KHz	Pass
479.975MHz	6.218KHz	11.25 KHz	Pass

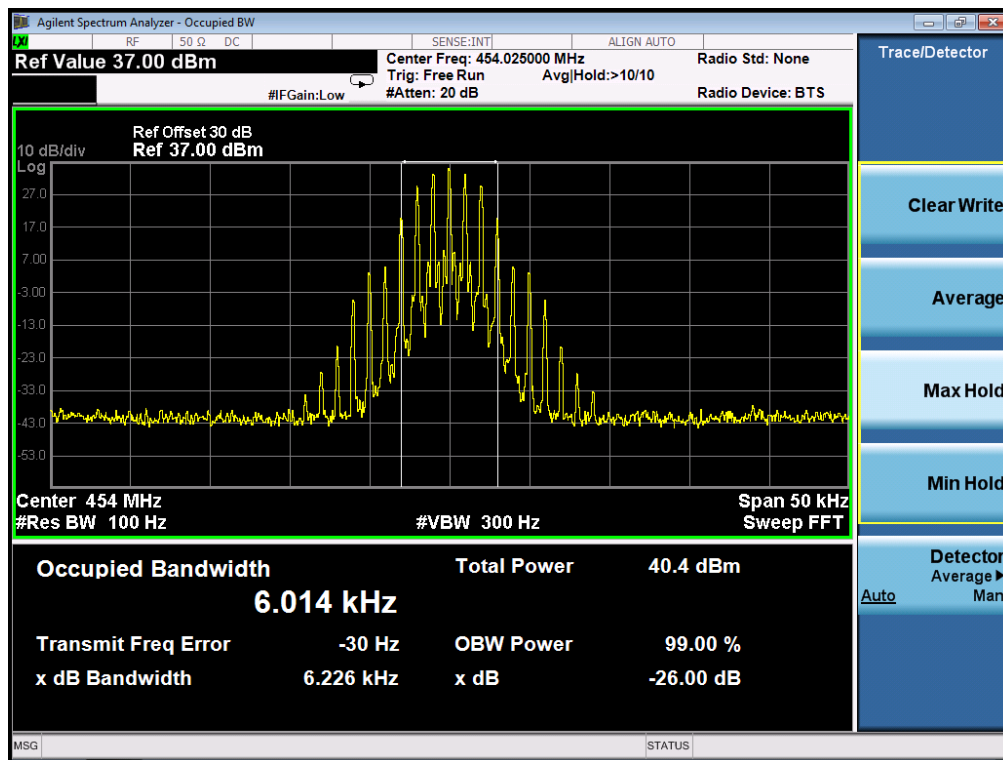
Occupied bandwidth of Bottom Channel (Maximum)-5W



Occupied bandwidth of Middle Channel (Maximum)-5W

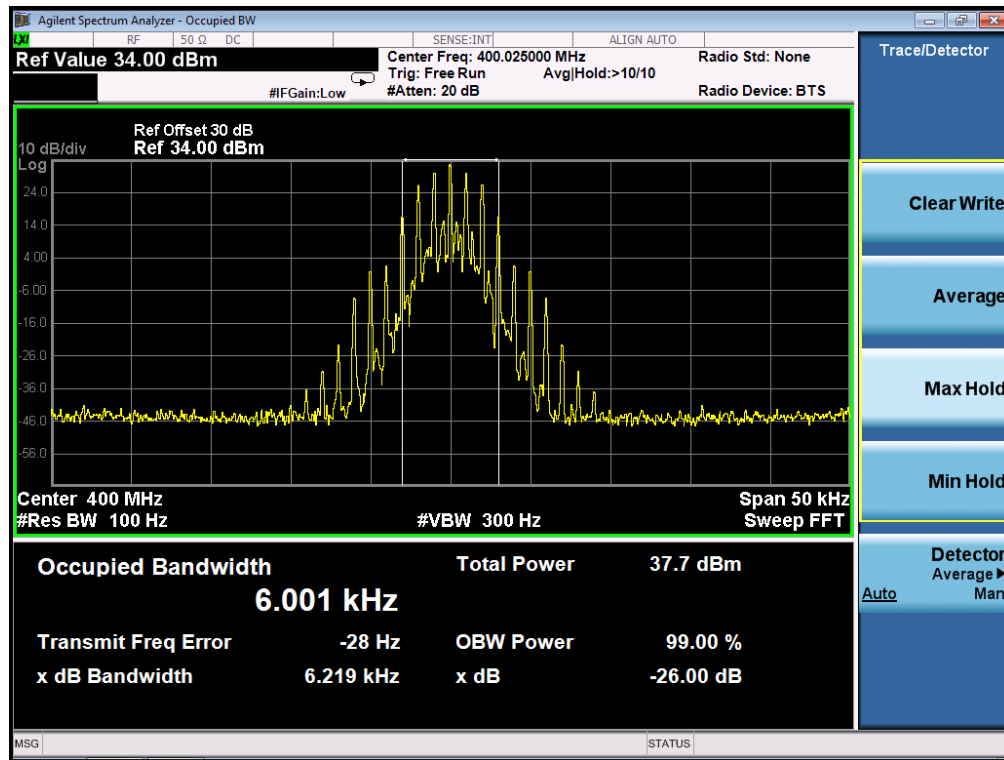


Occupied bandwidth of Middle Channel (Maximum)-5W

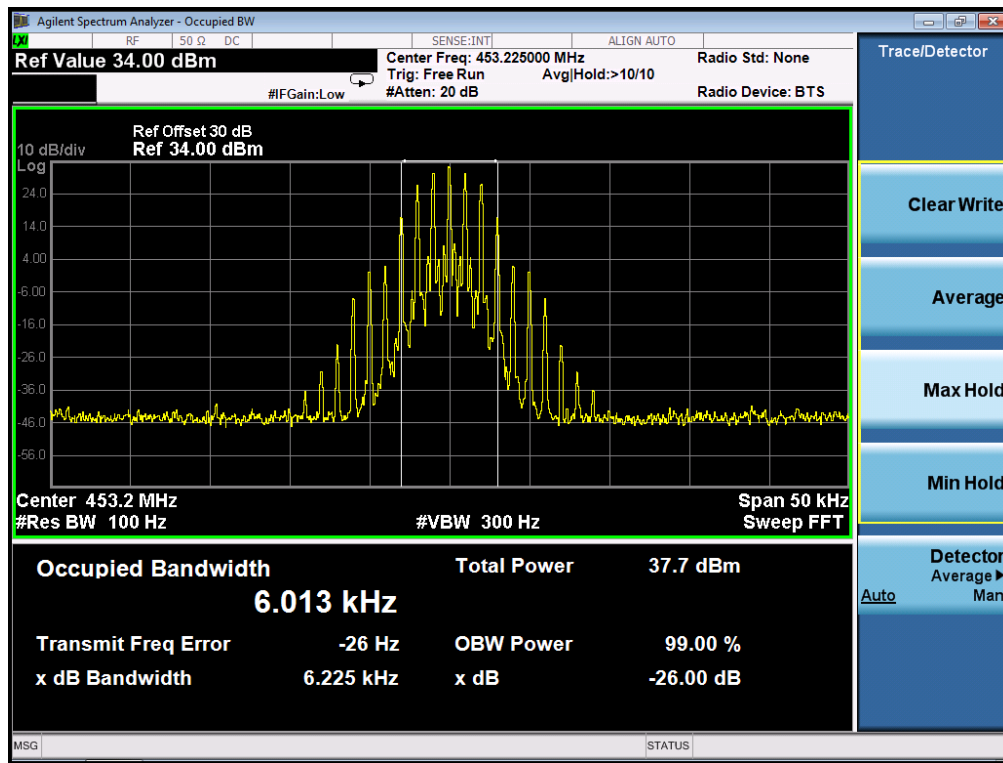


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	6.219KHz	11.25 KHz	Pass
453.225MHz	6.225KHz	11.25 KHz	Pass
454.025MHz	6.228KHz	11.25 KHz	Pass
479.975MHz	6.205KHz	11.25 KHz	Pass

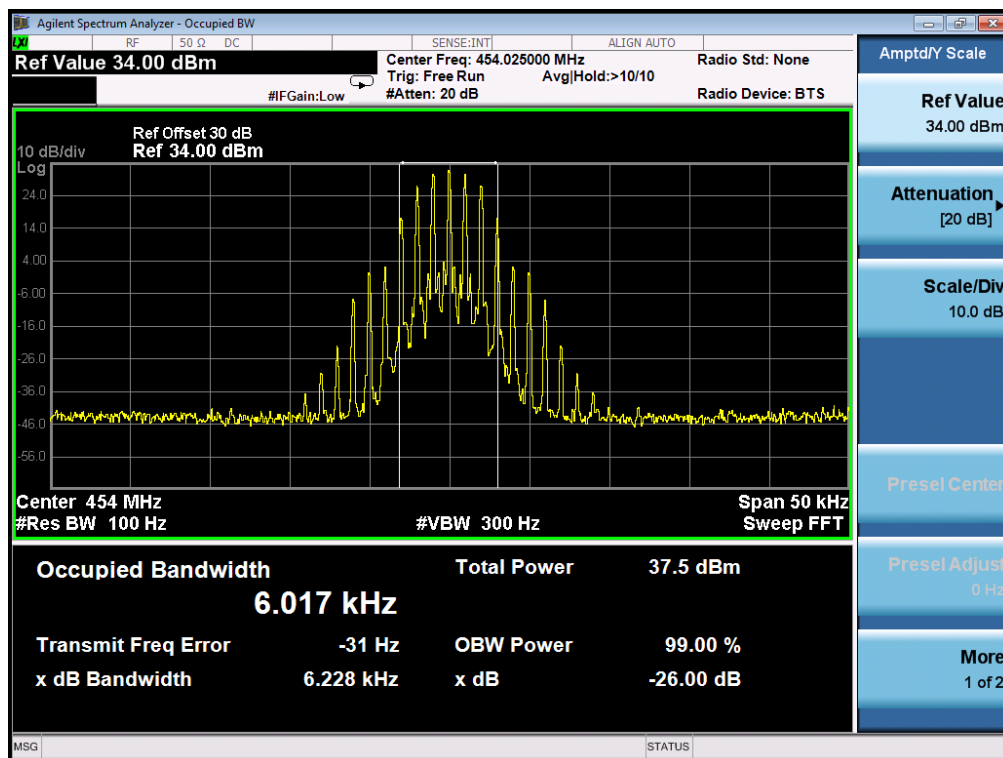
Occupied bandwidth of Bottom Channel (Maximum)-2.5W



Occupied bandwidth of Middle Channel (Maximum)-2.5W

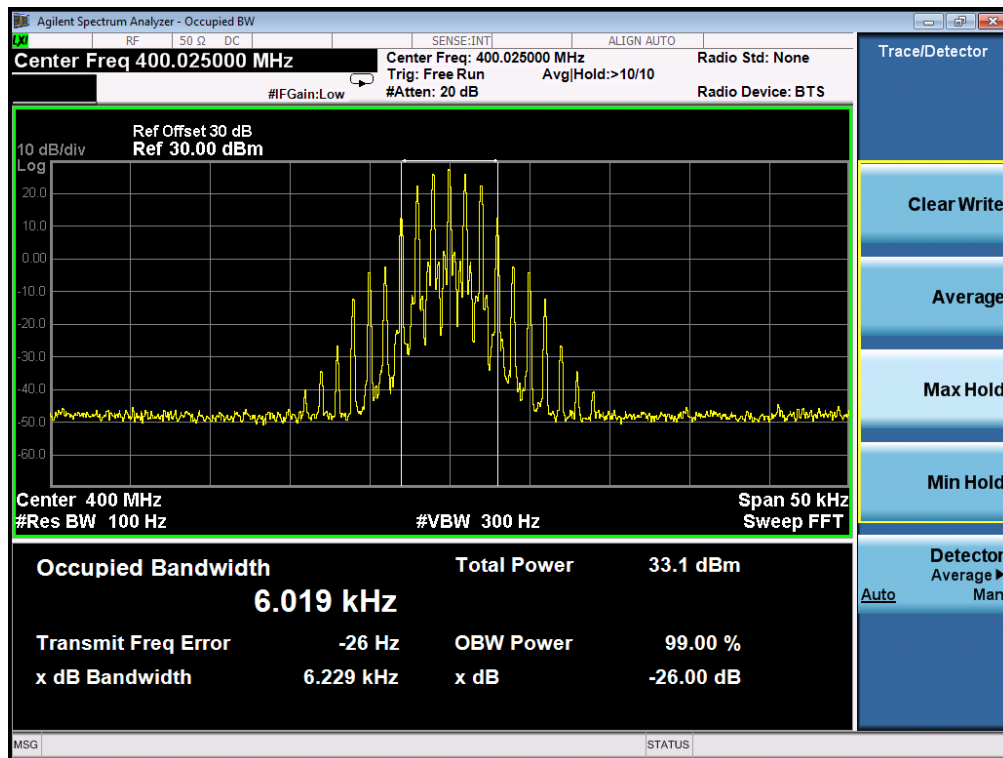


Occupied bandwidth of Middle Channel (Maximum)-2.5W

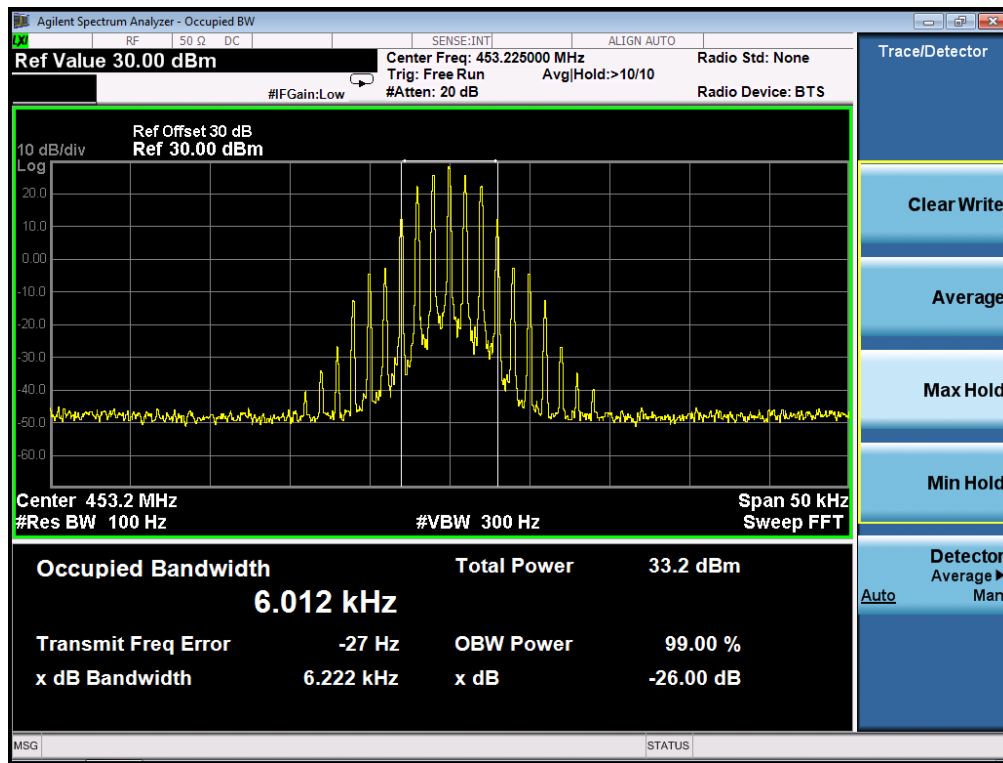


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	6.229KHz	11.25 KHz	Pass
453.225MHz	6.222KHz	11.25 KHz	Pass
454.025MHz	6.223KHz	11.25 KHz	Pass
479.975MHz	6.215KHz	11.25 KHz	Pass

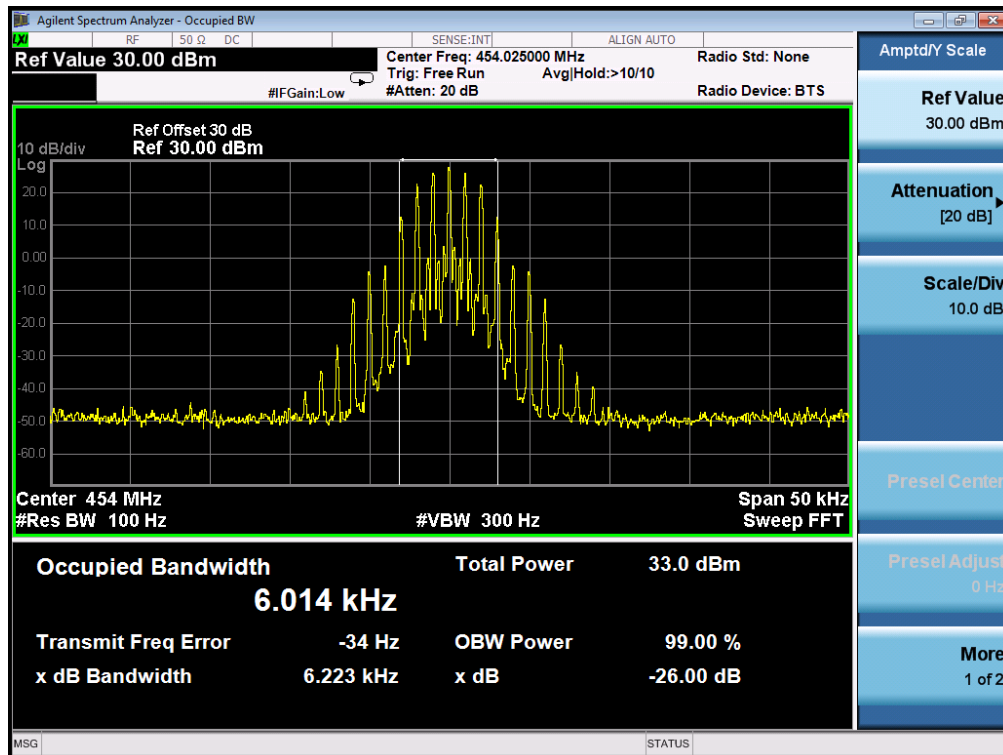
Occupied bandwidth of Bottom Channel (Maximum)-1W



Occupied bandwidth of Middle Channel (Maximum)-1W



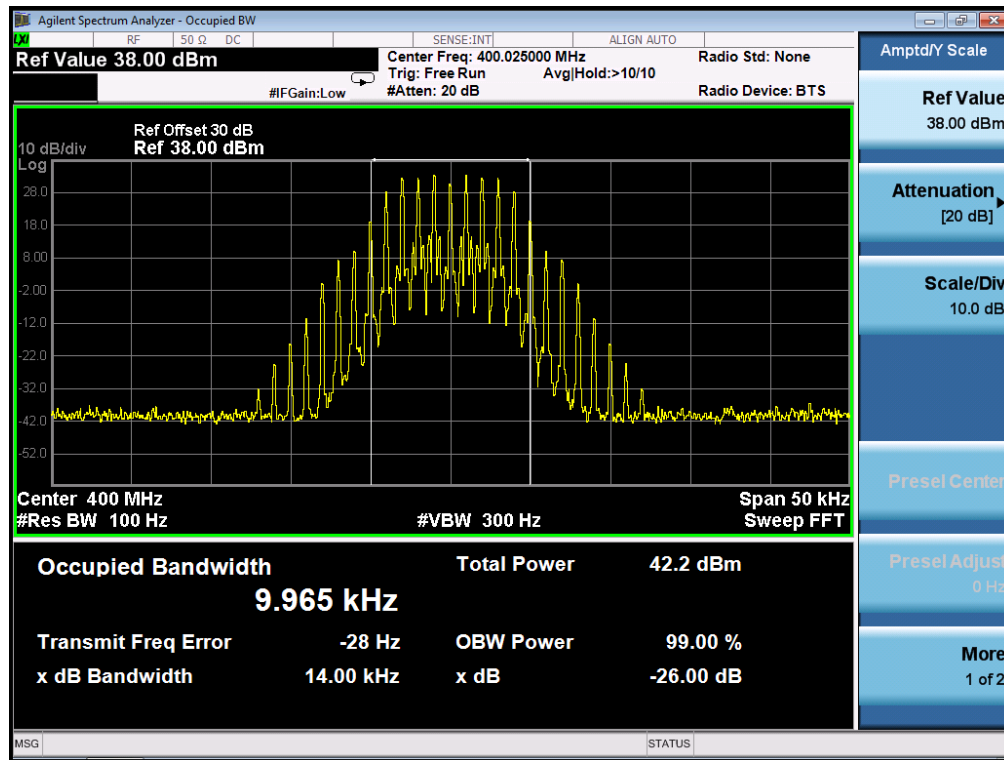
Occupied bandwidth of Middle Channel (Maximum)-1W



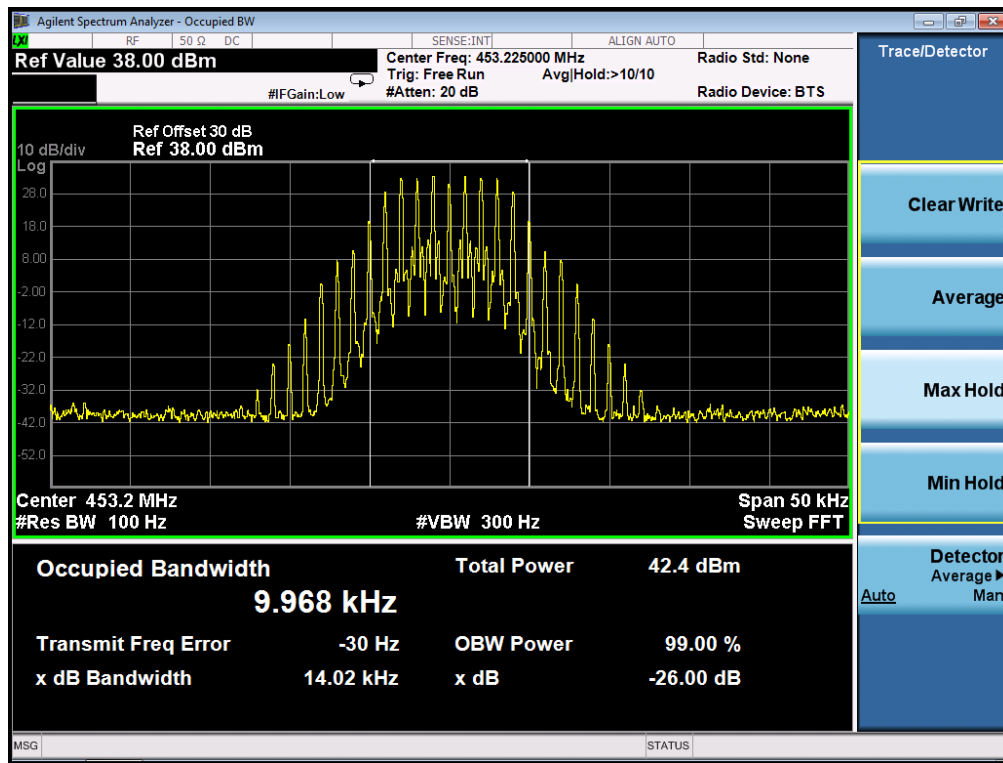
Analog-25KHz

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	25 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	14.00KHz	20 KHz	Pass
453.225MHz	14.02KHz	20 KHz	Pass
454.025MHz	12.01KHz	20 KHz	Pass
479.975MHz	13.06KHz	20 KHz	Pass

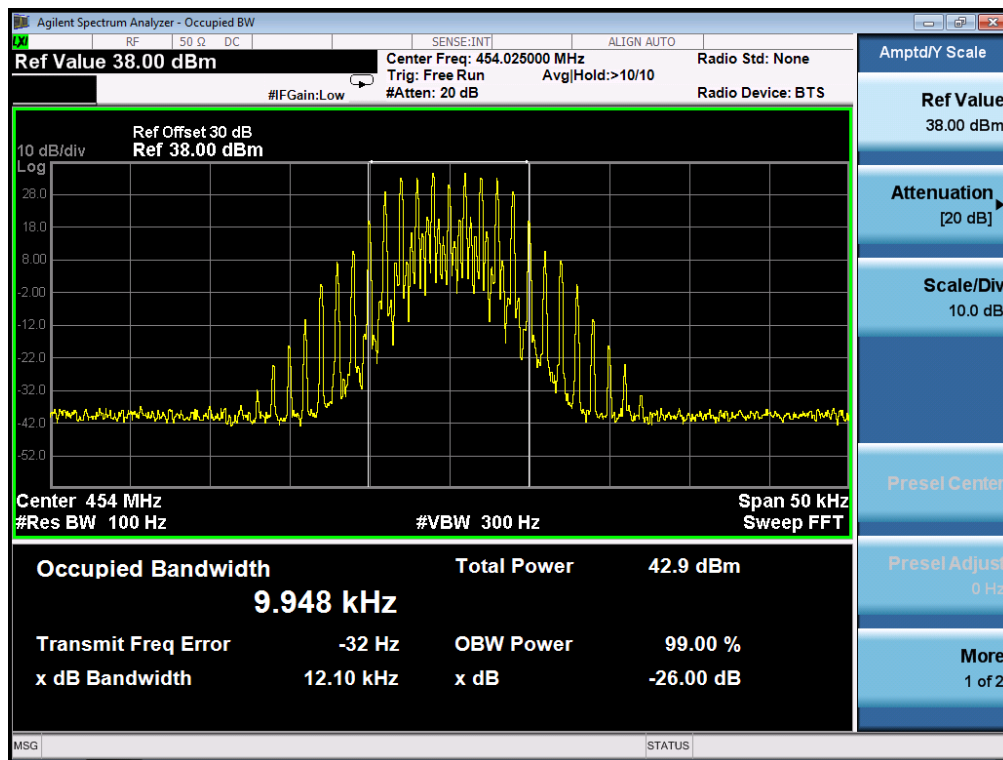
Occupied bandwidth of Bottom Channel (Maximum)-6W



Occupied bandwidth of Middle Channel (Maximum)-6W

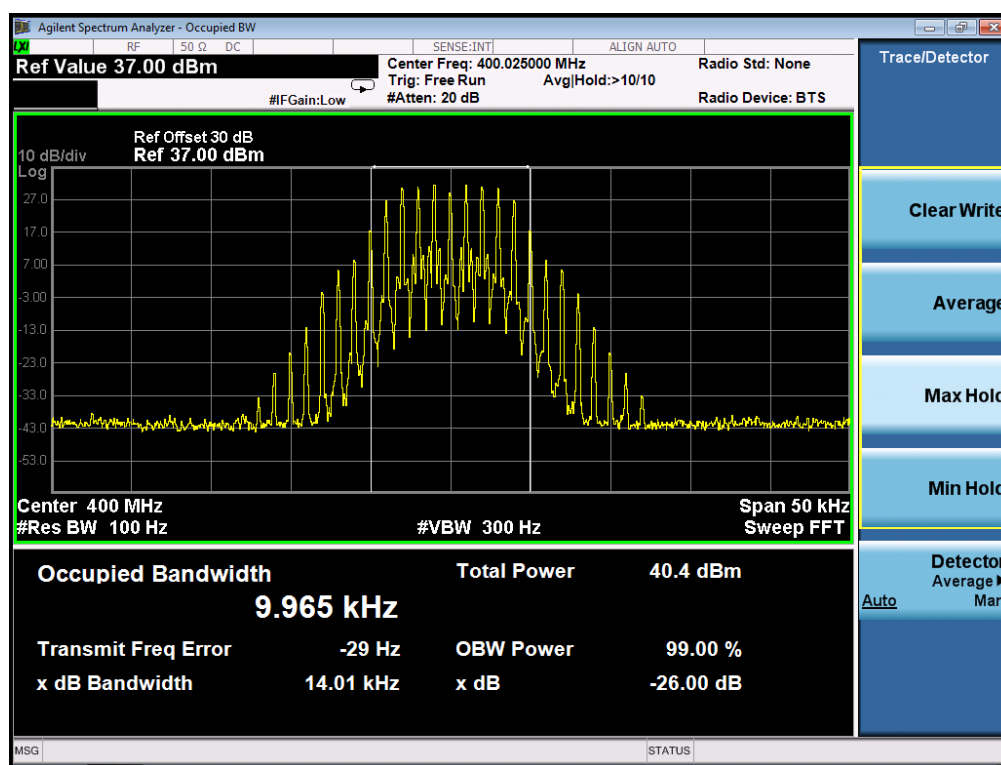


Occupied bandwidth of Middle Channel (Maximum)-6W

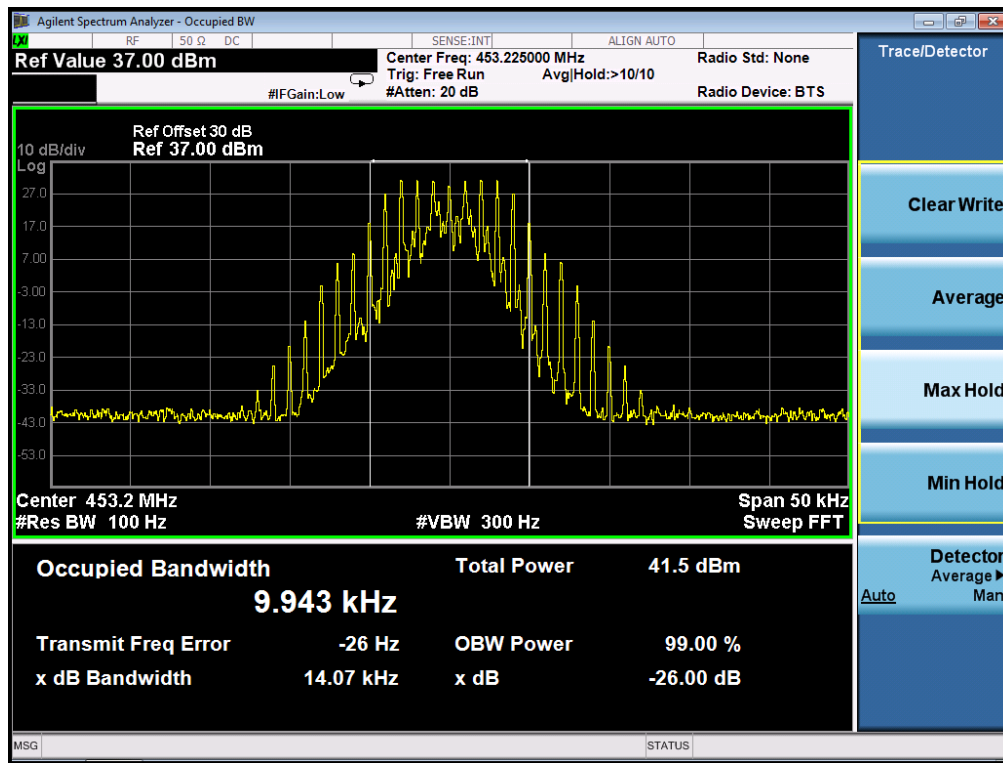


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	25 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	14.01KHz	20 KHz	Pass
453.225MHz	14.07KHz	20 KHz	Pass
454.025MHz	12.10KHz	20 KHz	Pass
479.975MHz	13.51KHz	20 KHz	Pass

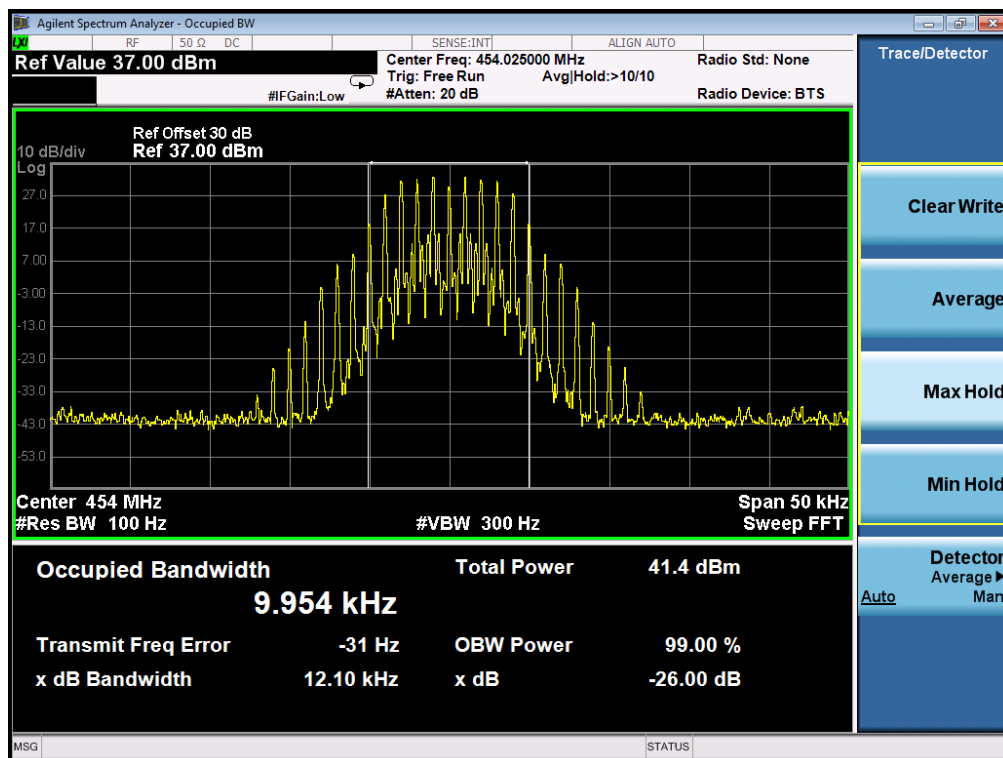
Occupied bandwidth of Bottom Channel (Maximum)-5W



Occupied bandwidth of Middle Channel (Maximum)-5W

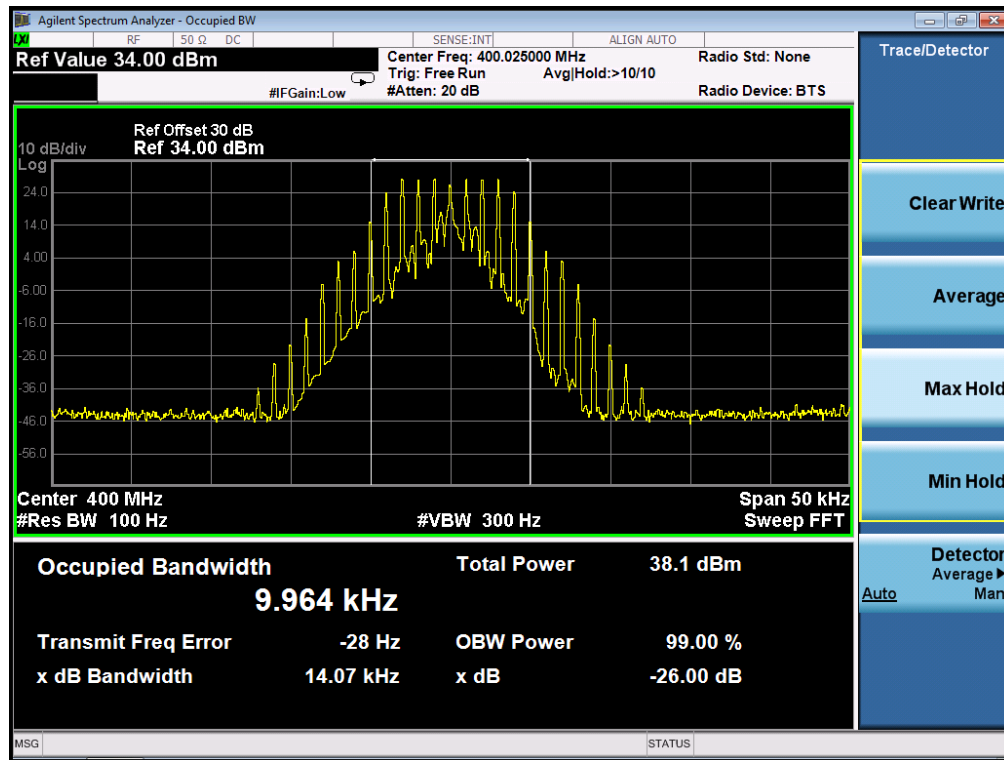


Occupied bandwidth of Middle Channel (Maximum)-5W

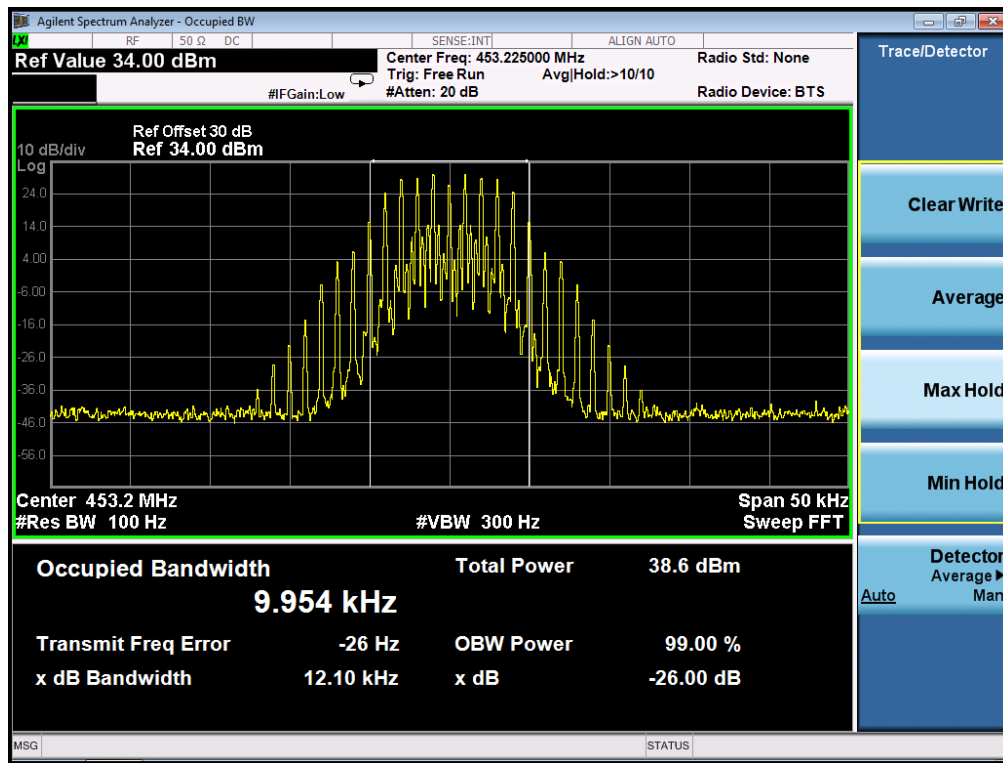


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	25 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	14.07KHz	20 KHz	Pass
453.225MHz	12.10KHz	20 KHz	Pass
454.025MHz	12.10KHz	20 KHz	Pass
479.975MHz	13.05KHz	20 KHz	Pass

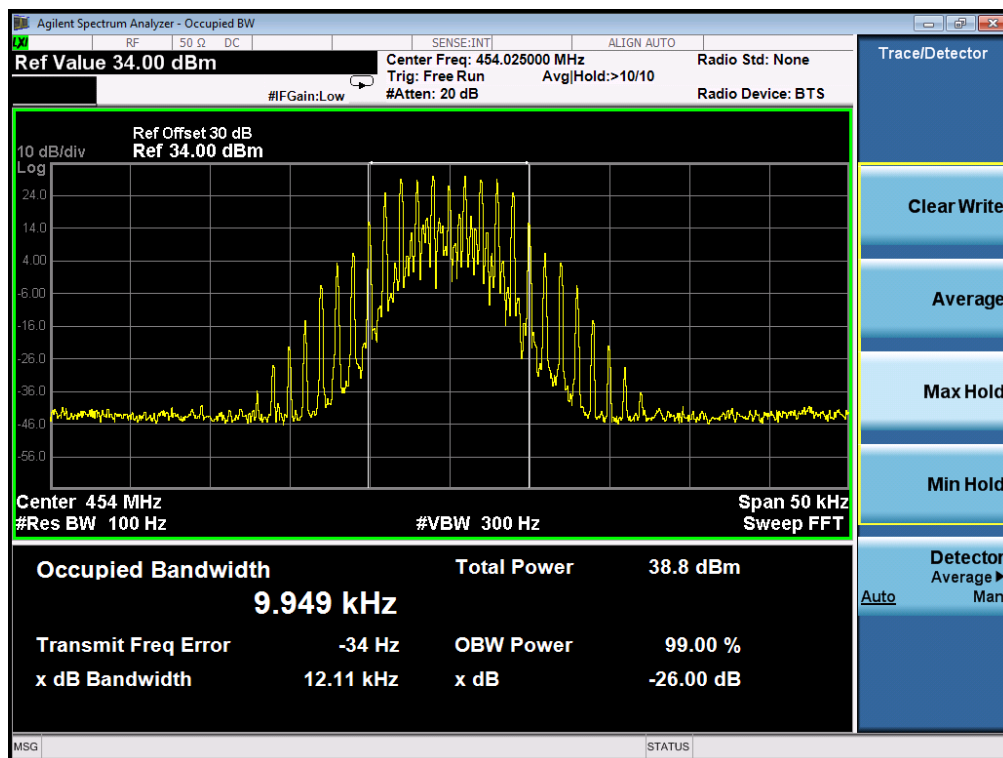
Occupied bandwidth of Bottom Channel (Maximum)-2.5W



Occupied bandwidth of Middle Channel (Maximum)-2.5W

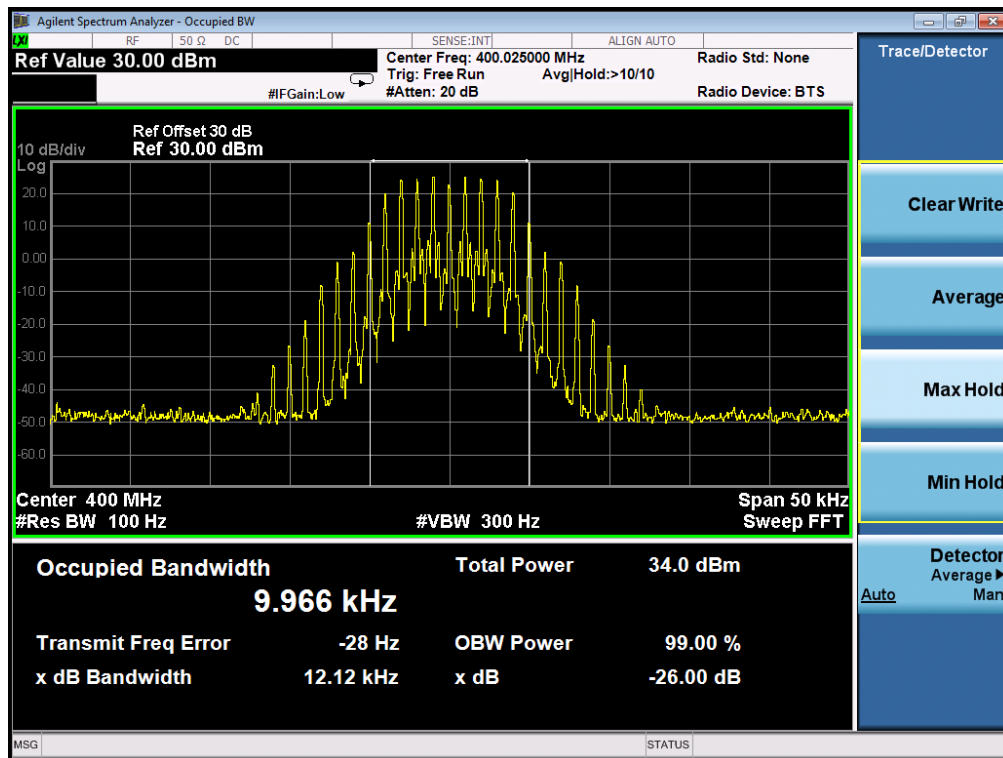


Occupied bandwidth of Middle Channel (Maximum)-2.5W

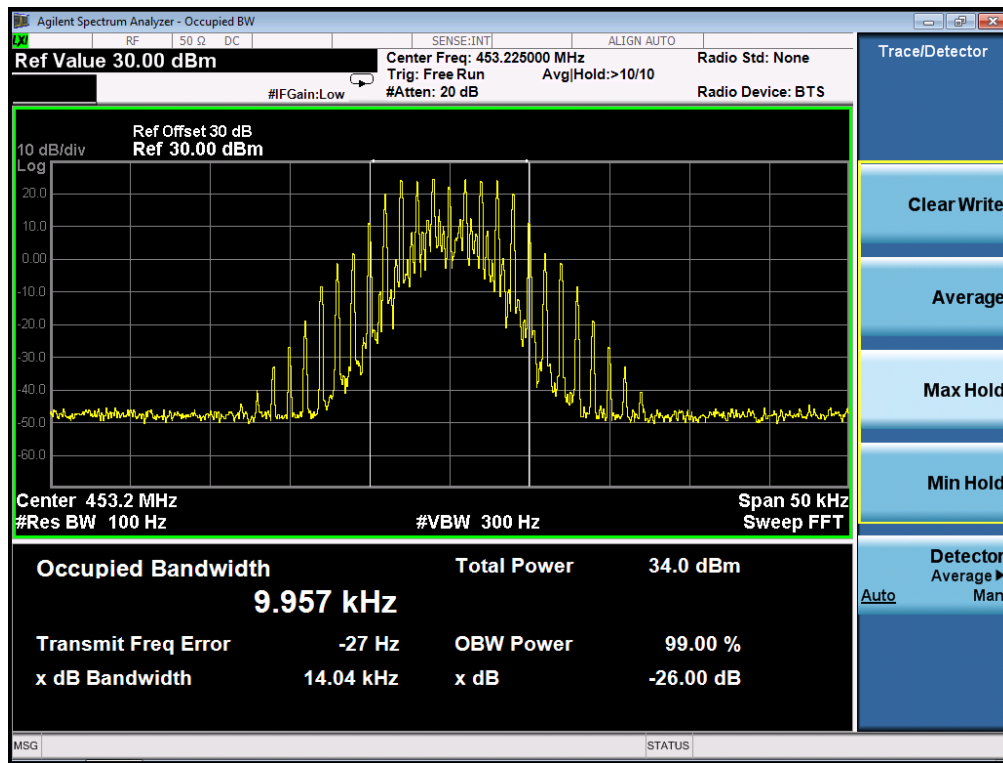


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	25 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	12.12KHz	20 KHz	Pass
453.225MHz	14.04KHz	20 KHz	Pass
454.025MHz	12.10KHz	20 KHz	Pass
479.975MHz	12.09KHz	20 KHz	Pass

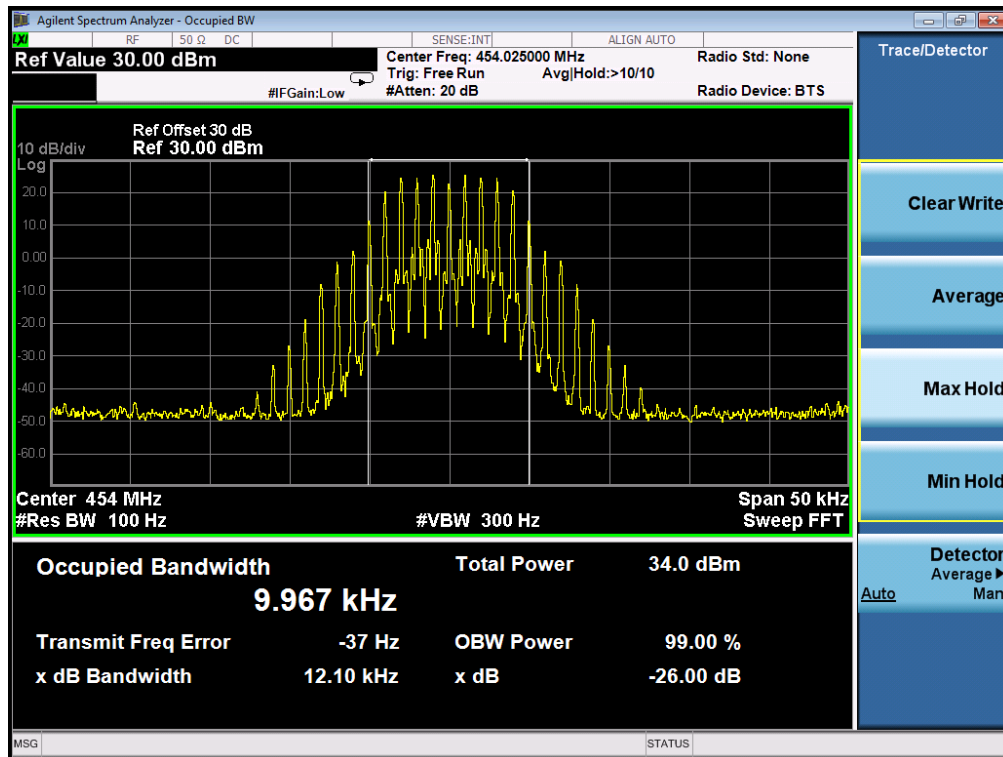
Occupied bandwidth of Bottom Channel (Maximum)-1W



Occupied bandwidth of Middle Channel (Maximum)-1W



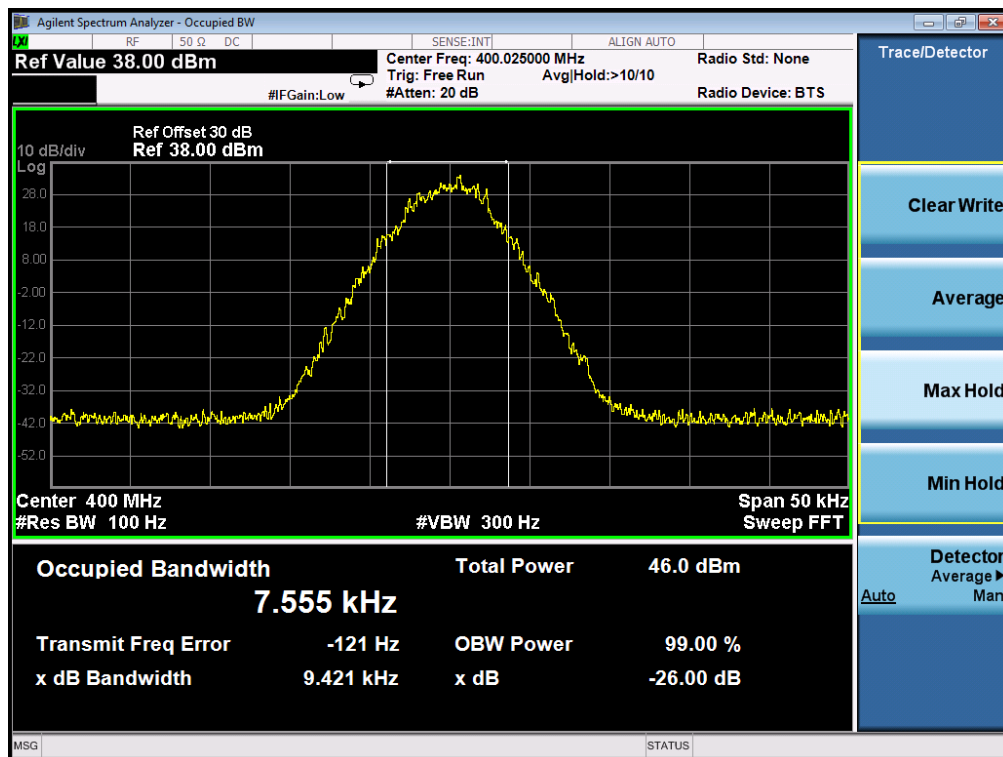
Occupied bandwidth of Middle Channel (Maximum)-1W



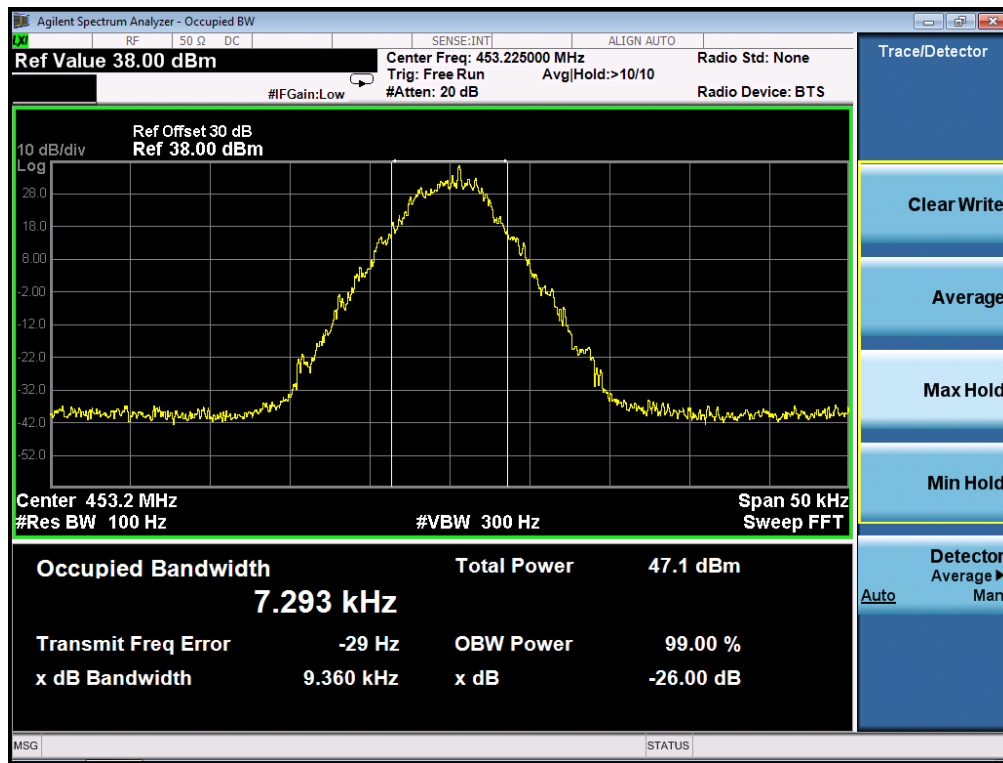
Digital:

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	9.421KHz	11.25 KHz	Pass
453.225MHz	9.360KHz	11.25 KHz	Pass
454.025MHz	9.719KHz	11.25 KHz	Pass
479.975MHz	9.286KHz	11.25 KHz	Pass

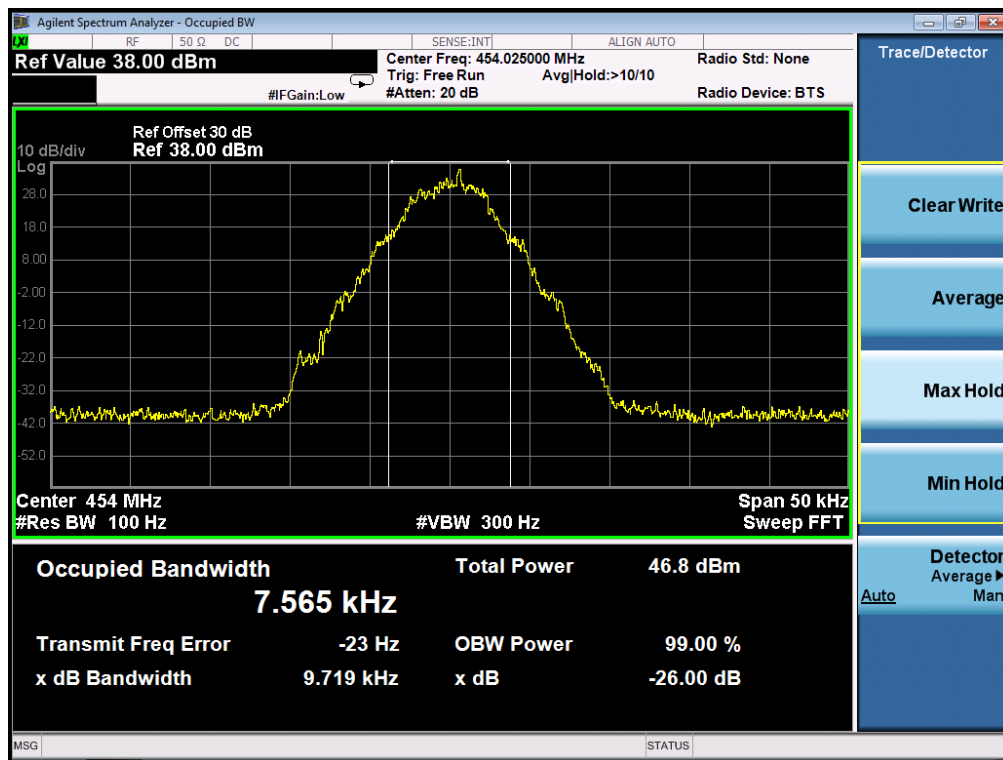
Occupied bandwidth of Bottom Channel (Maximum) -6W



Occupied bandwidth of Middle Channel (Maximum)-6W



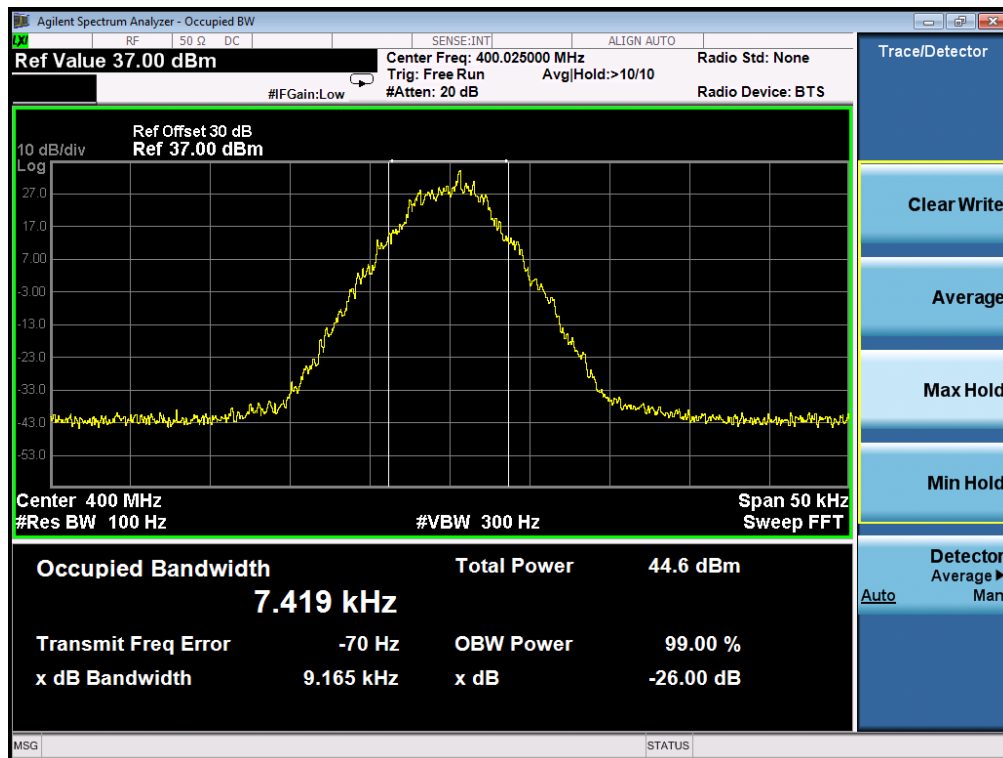
Occupied bandwidth of Middle Channel (Maximum)-6W



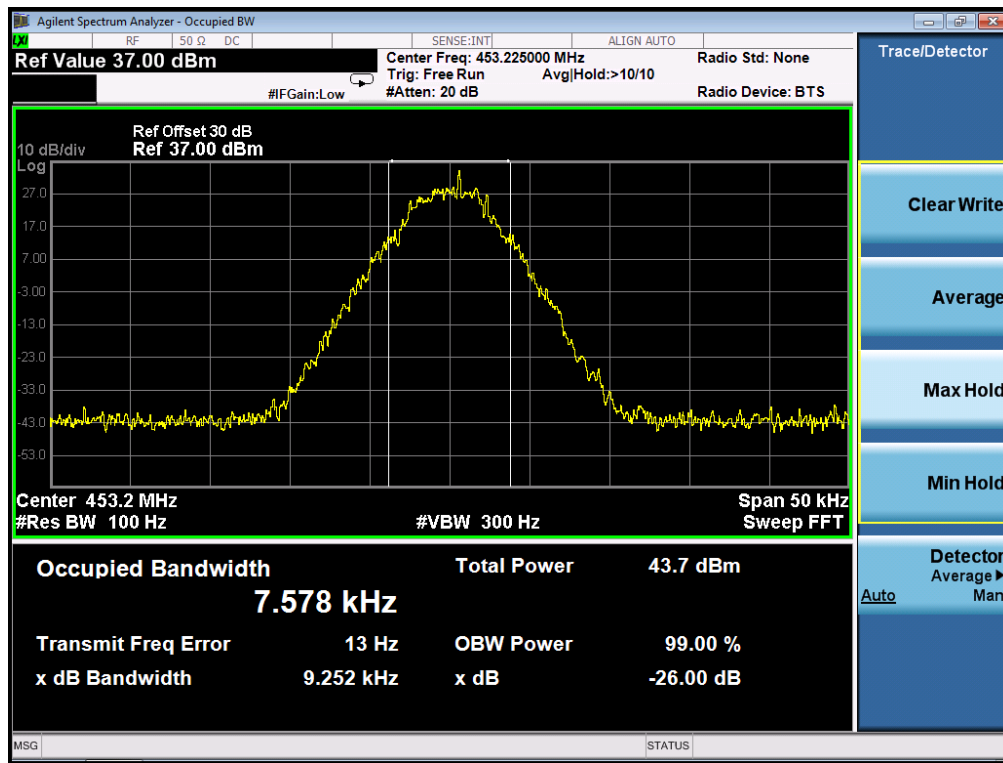
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	9.165KHz	11.25 KHz	Pass
453.225MHz	9.252KHz	11.25 KHz	Pass
454.025MHz	8.937KHz	11.25 KHz	Pass
479.975MHz	9.062KHz	11.25 KHz	Pass

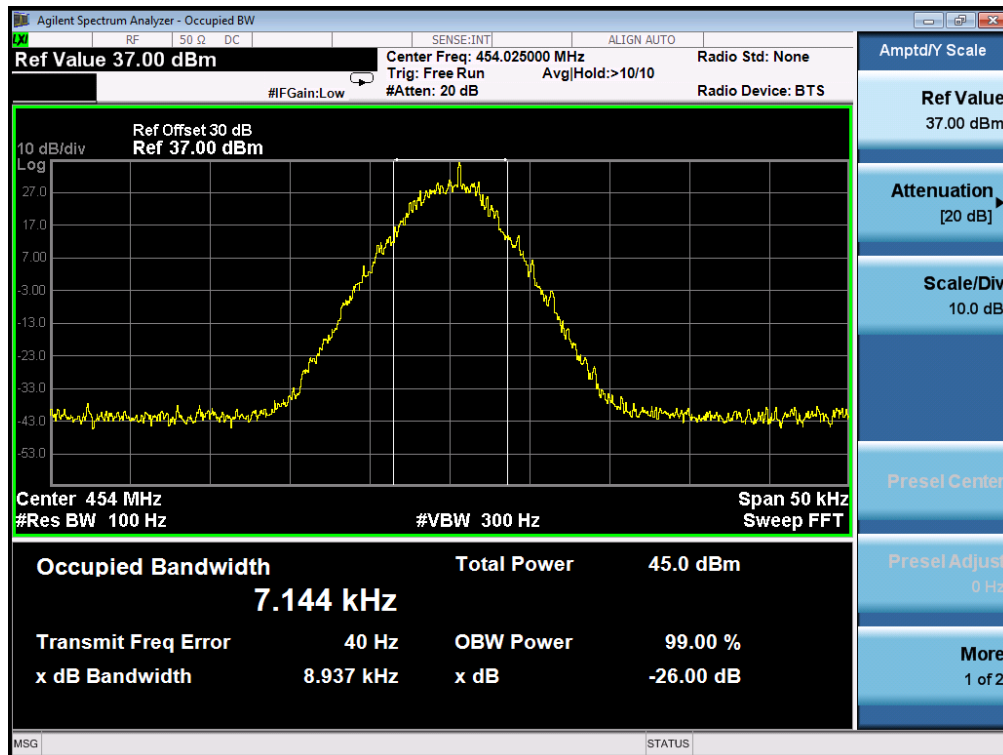
Occupied bandwidth of Bottom Channel (Maximum) -5W



Occupied bandwidth of Middle Channel (Maximum)-5W

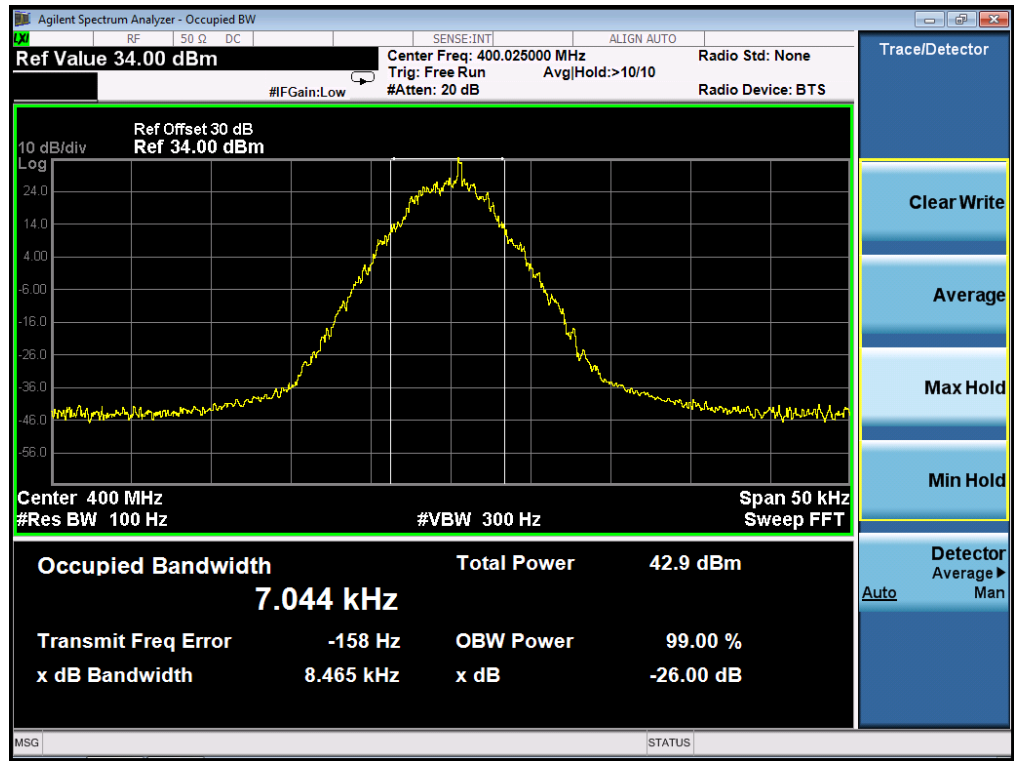


Occupied bandwidth of Middle Channel (Maximum)-5W

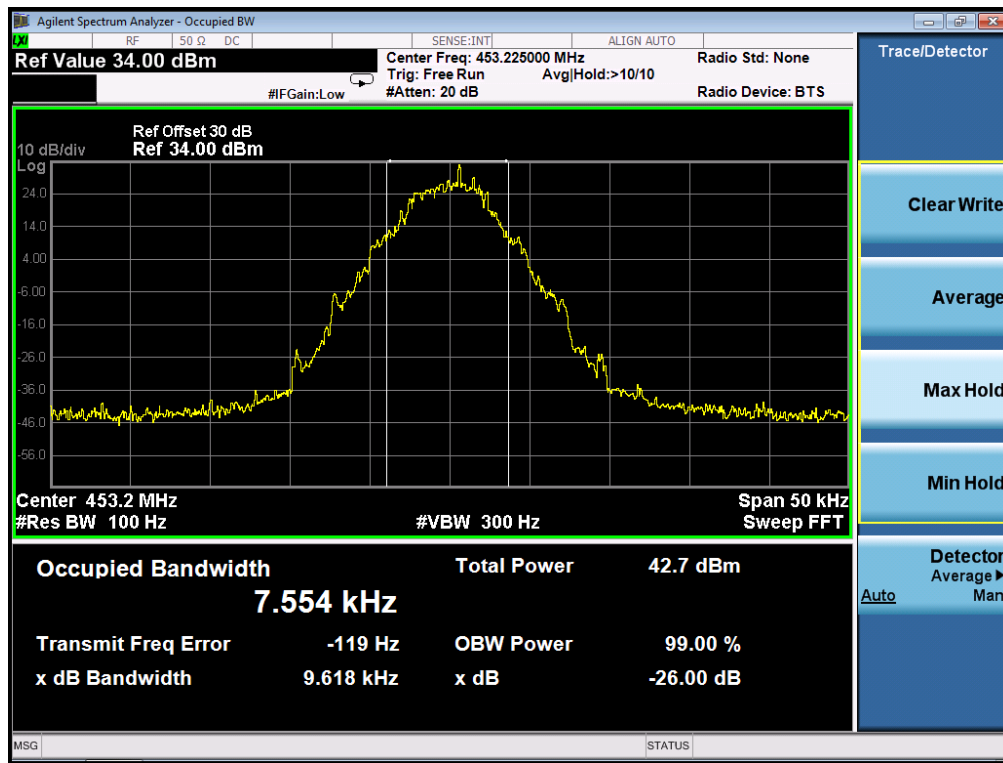


26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	8.465KHz	11.25 KHz	Pass
453.225MHz	9.618KHz	11.25 KHz	Pass
454.025MHz	9.012KHz	11.25 KHz	Pass
479.975MHz	8.992KHz	11.25 KHz	Pass

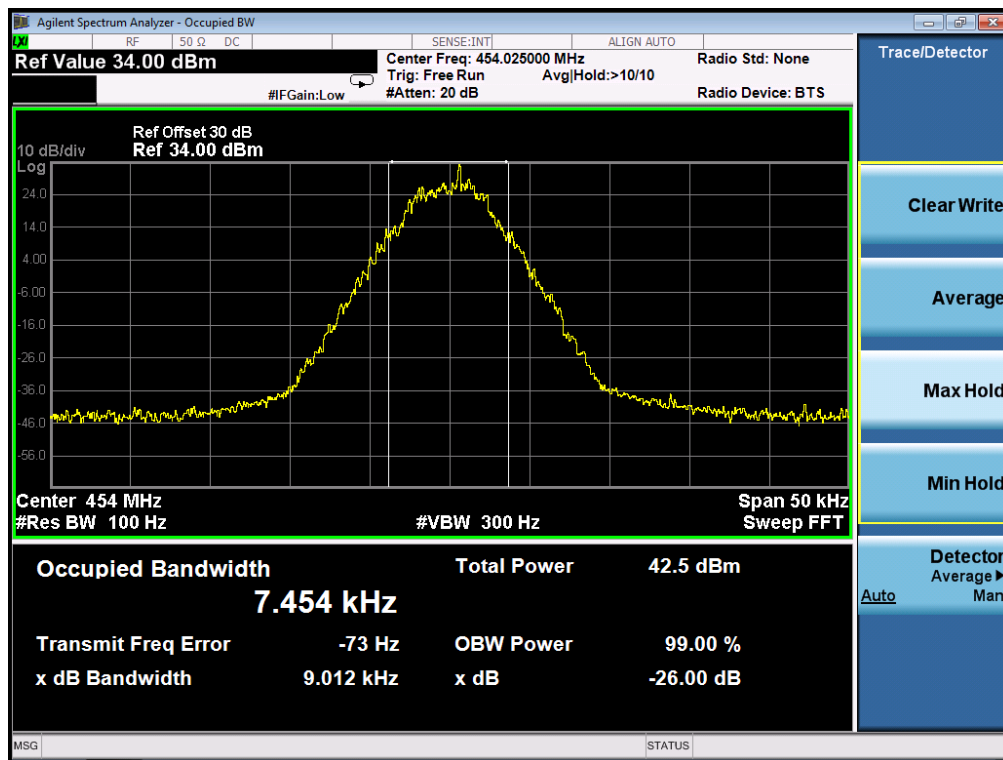
Occupied bandwidth of Bottom Channel (Maximum) -2.5W



Occupied bandwidth of Middle Channel (Maximum)-2.5W



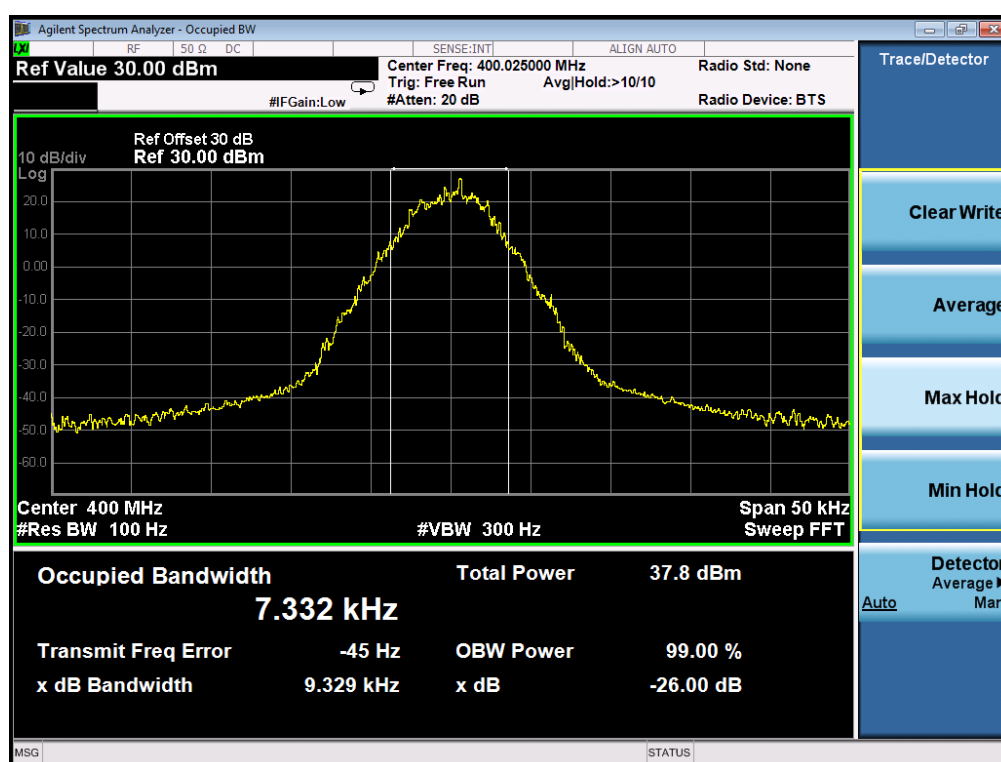
Occupied bandwidth of Middle Channel (Maximum)-2.5W



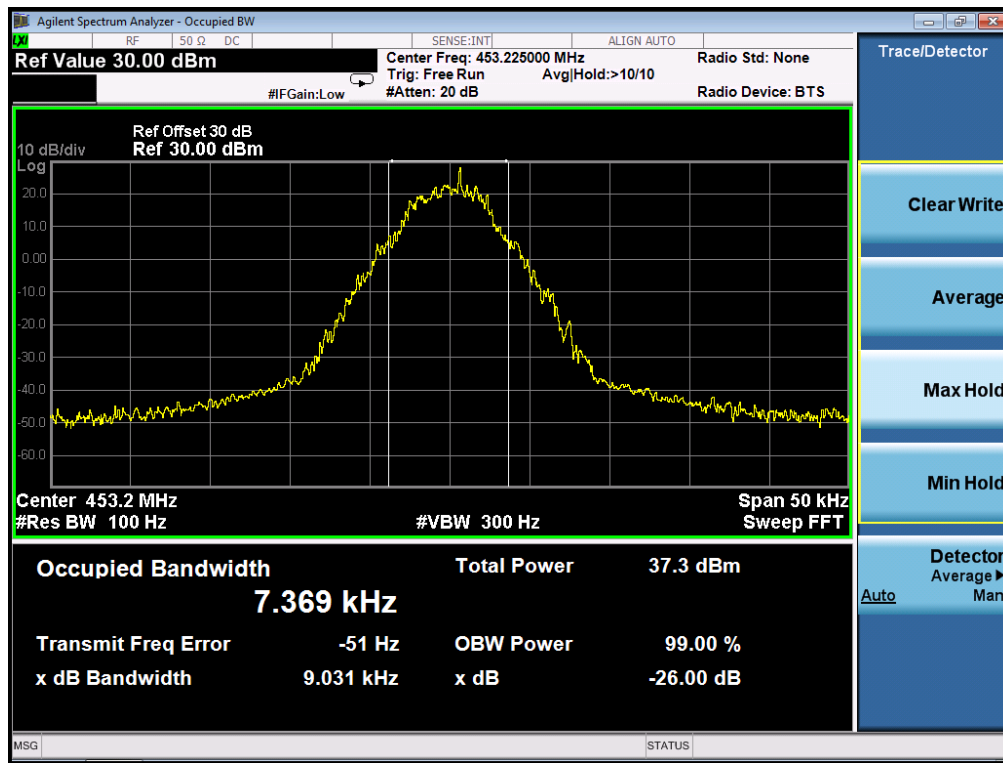
TEST RESULTS

26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	9.329KHz	11.25 KHz	Pass
453.225MHz	9.031KHz	11.25 KHz	Pass
454.025MHz	9.535KHz	11.25 KHz	Pass
479.975MHz	9.492KHz	11.25 KHz	Pass

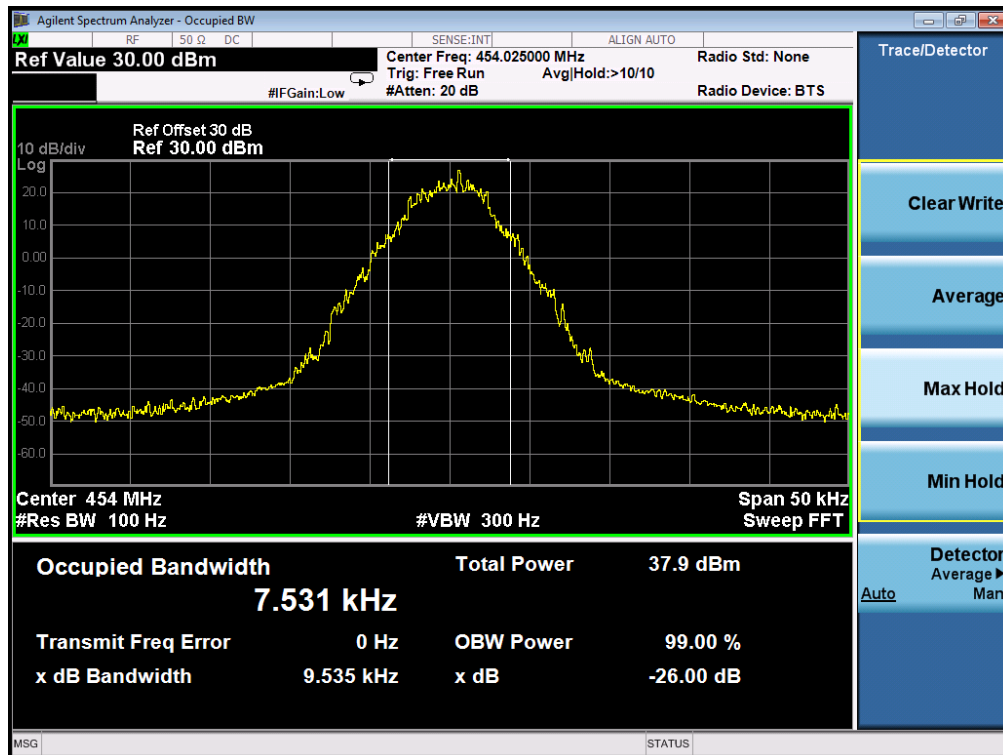
Occupied bandwidth of Bottom Channel (Maximum) -1W



Occupied bandwidth of Middle Channel (Maximum)-1W



Occupied bandwidth of Middle Channel (Maximum)-1W



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_0 to 5.625 KHz removed from f_0 : Zero dB.
- (2).On any frequency removed from the center of the authorized bandwidth by a displacement Frequency (f_d in KHz) f_0 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_0 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° 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.

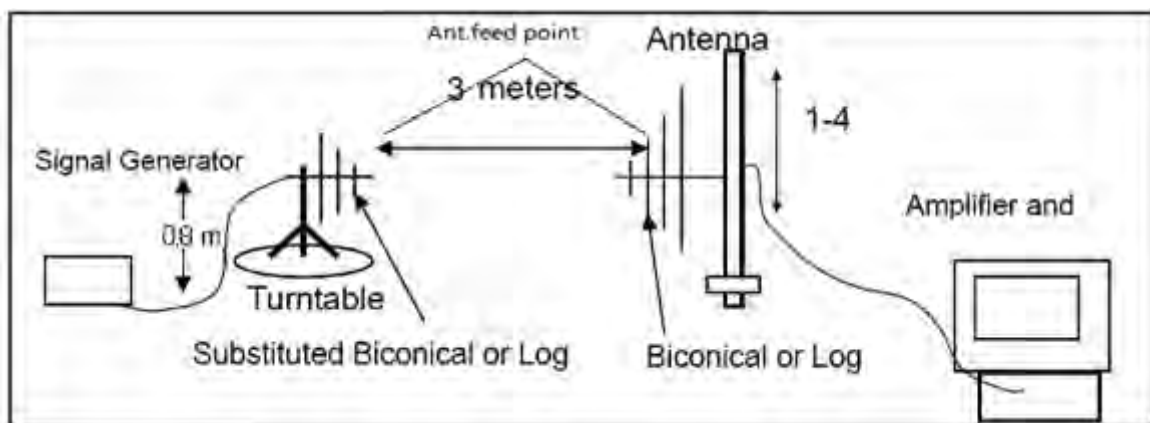
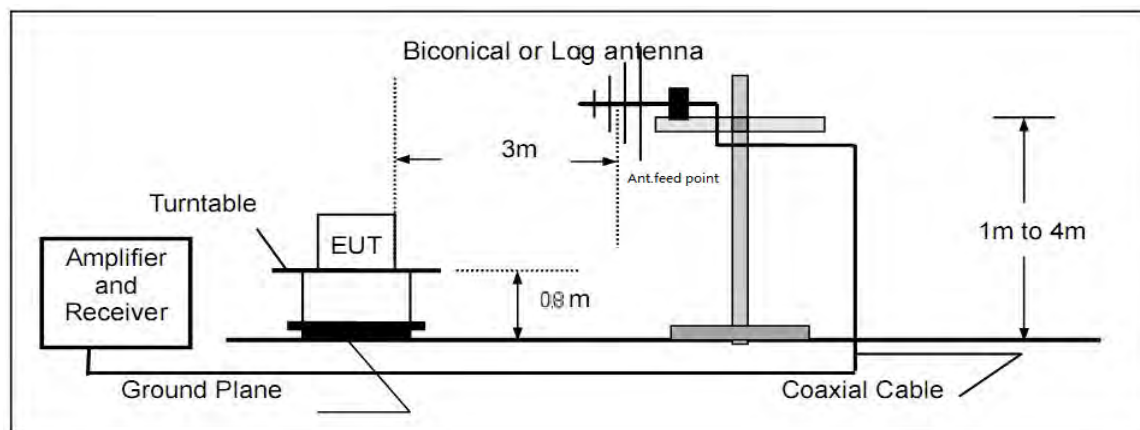
(16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

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

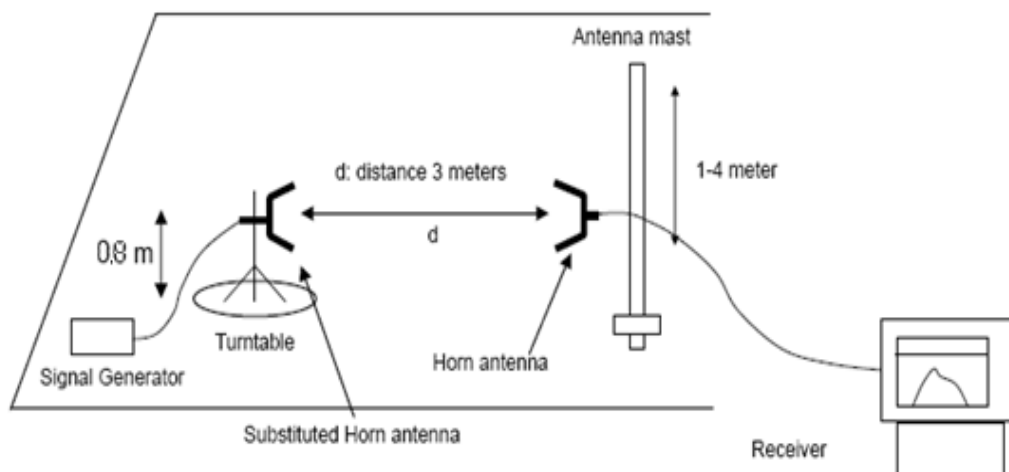
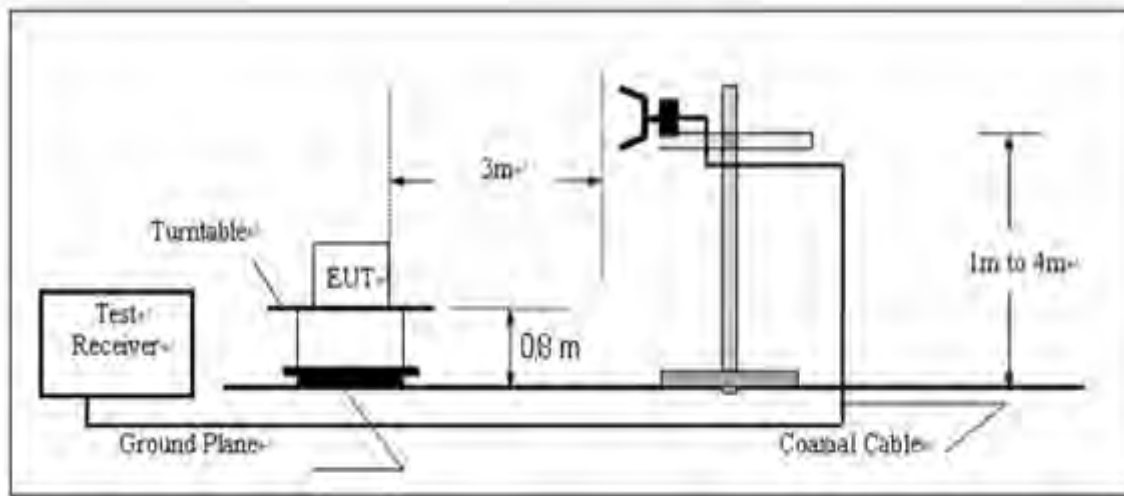
7.3 TEST SETUP BLOCK DIAGRAM

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_{th} and 1MHz for above 1GHz. Sufficient scans were taken to show any out of band emissions up to 10 harmonic.

Limit: At least $50 + 10 \log(P) = 50 + 10 \log(5) = 57$ (dB)—5W

At least $50 + 10 \log(P) = 50 + 10 \log(1) = 50$ (dB)—1W

TEST RESULTS (UHF) -5W:

Transmitter Spurious Emission (30MHz-6GHz)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
Analog Modulation 453.225MHz—part 90								
906.45	44.61	V	-53.67	0.71	6.36	-48.02	-20.00	35.02
906.45	40.57	H	-57.07	0.71	6.36	-51.41	-20.00	38.41
1359.68	45.19	H	-52.29	0.98	5.58	-47.69	-20.00	34.69
1359.68	46.92	V	-48.05	0.98	5.58	-43.45	-20.00	30.45
Analog Modulation 454.025MHz—part 22								
908.05	45.26	V	-51.52	0.71	6.38	-45.85	-13.00	32.85
908.05	43.61	H	-52.74	0.71	6.38	-47.07	-13.00	34.07
1362.08	44.29	V	-51.65	0.98	5.59	-47.05	-13.00	34.05
1362.08	43.95	H	-50.01	0.98	5.59	-45.41	-13.00	32.41
Digital Modulation 453.225MHz—part 90								
906.45	45.92	V	-52.38	0.71	6.36	-46.73	-20.00	33.73
906.45	42.65	H	-55.40	0.71	6.36	-49.74	-20.00	36.74
1359.68	44.17	H	-50.45	0.98	5.58	-45.85	-20.00	32.85
1359.68	45.28	V	-50.15	0.98	5.58	-45.55	-20.00	32.55
Digital Modulation 454.025MHz—part 22								
908.05	44.59	V	-53.85	0.71	6.38	-48.18	-13.00	35.18
908.05	43.16	H	-52.84	0.71	6.38	-47.17	-13.00	34.17
1362.08	41.26	H	-54.02	0.98	5.59	-49.41	-13.00	36.41
1362.08	43.58	V	-50.87	0.98	5.59	-46.27	-13.00	33.27

Note: All the test frequencies was tested, but only the worst data be recorded in this part.

TEST RESULTS (VHF)-5W:

Transmitter Spurious Emission (30MHz-2GHz)

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
Analog Modulation 151.85MHz—part 90								
303.7	43.55	V	-53.42	0.19	7.03	-46.58	-20.00	26.58
303.7	40.53	H	-58.24	0.19	7.03	-51.40	-20.00	31.40
1062.95	49.25	H	-47.41	0.81	5.34	-42.87	-20.00	22.87
1062.95	48.25	V	-48.17	0.81	5.34	-43.64	-20.00	23.64
Analog Modulation 161.61MHz—part 22								
323.22	41.06	H	-57.02	0.21	6.10	-51.13	-13.00	38.13
323.22	42.51	V	-55.83	0.21	6.10	-49.94	-13.00	36.94
1131.27	48.59	H	-47.77	0.85	5.40	-43.22	-13.00	30.22
1131.27	49.02	V	-47.53	0.85	5.40	-42.98	-13.00	29.98
Digital Modulation 151.85MHz—part 90								
303.7	40.57	H	-56.94	0.19	7.03	-50.10	-20.00	30.10
303.7	42.39	V	-56.69	0.19	7.03	-49.85	-20.00	29.85
1062.95	45.58	V	-49.16	0.81	5.34	-44.63	-20.00	24.63
1062.95	46.28	H	-51.25	0.81	5.34	-46.71	-20.00	26.71
Digital Modulation 161.61MHz—part 22								
323.22	41.09	H	-55.25	0.21	6.10	-49.36	-13.00	36.36
323.22	41.36	V	-54.40	0.21	6.10	-48.52	-13.00	35.52
1131.27	49.38	H	-45.37	0.85	5.40	-40.82	-13.00	27.82
1131.27	48.62	V	-46.48	0.85	5.40	-41.93	-13.00	28.93

Note: All the test frequencies was tested, but only the worst data be recorded in this part.

7.5 EMISSION MASK PLOT

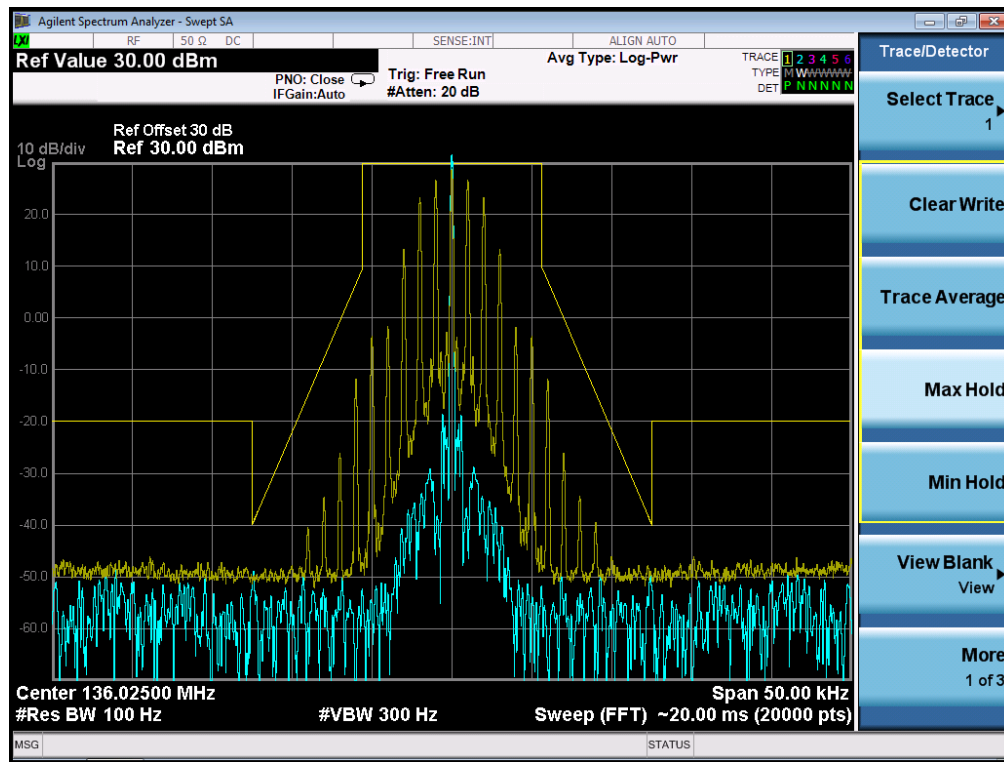
The detailed procedure employed for Emission Mask measurements are specified as following:

- 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.

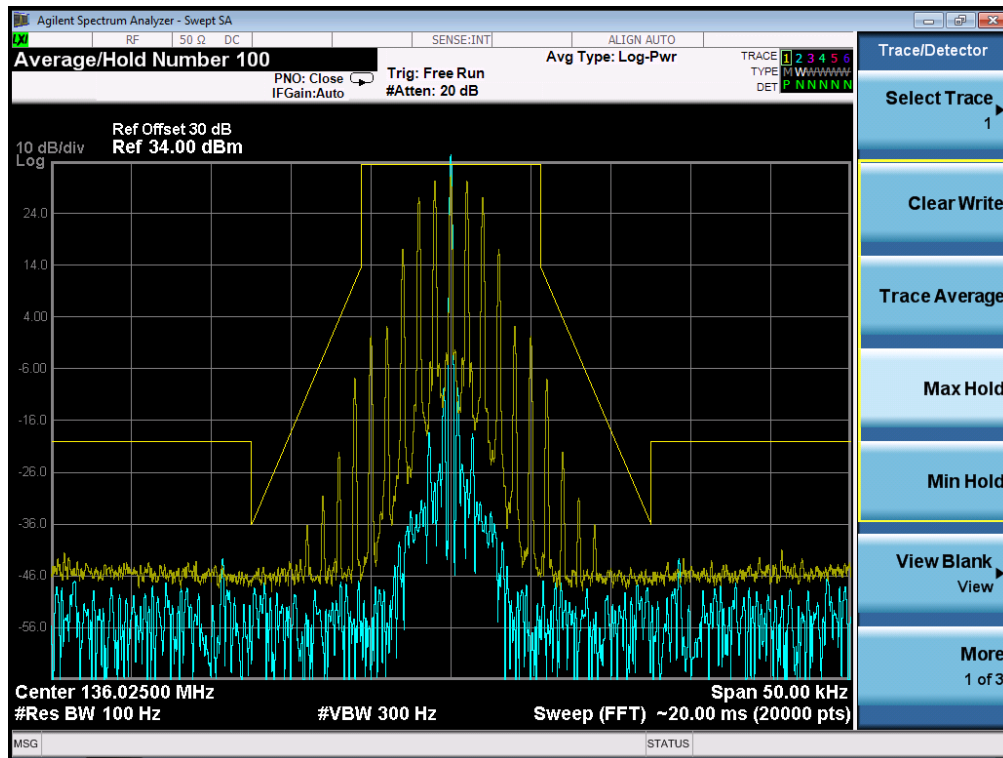
VHF:

Analog:

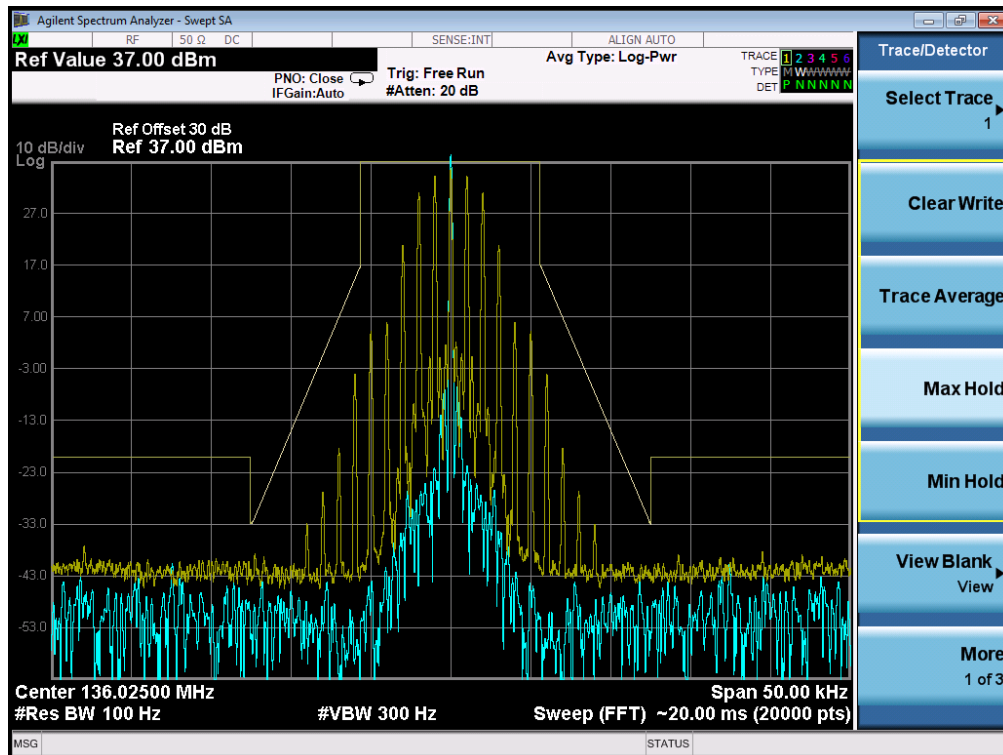
The Worst Emission Mask D for 12.5 KHz channel Separation-136.025MHz (1W)



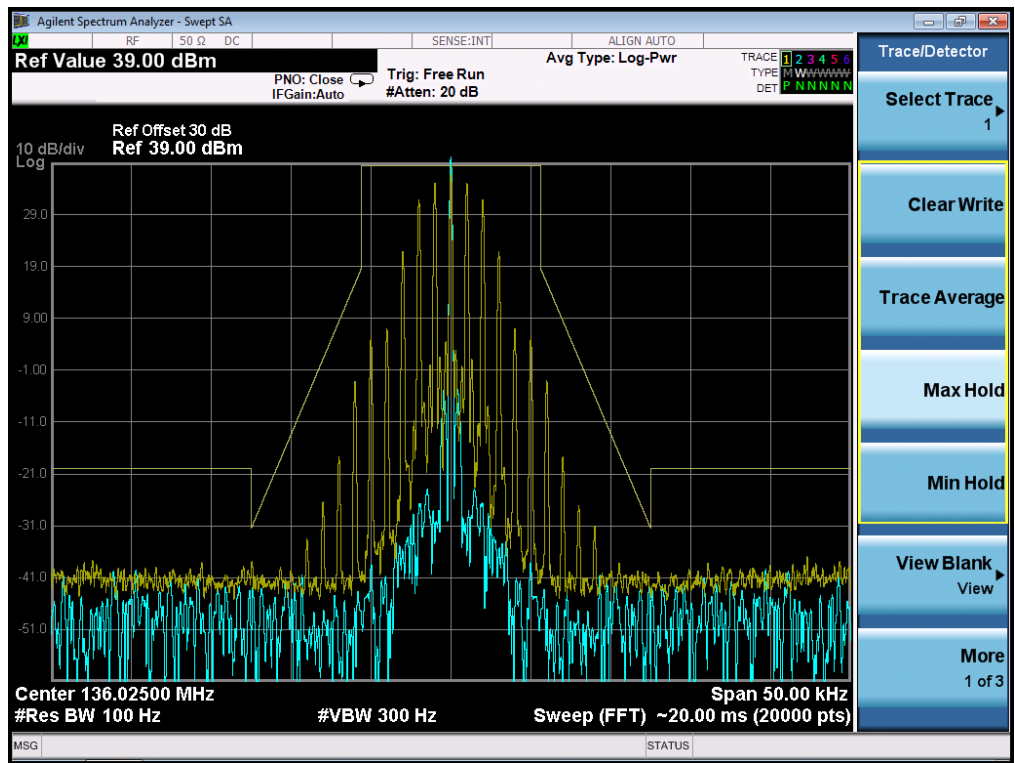
The Worst Emission Mask D for 12.5 KHz channel Separation-136.025MHz (2.5W)



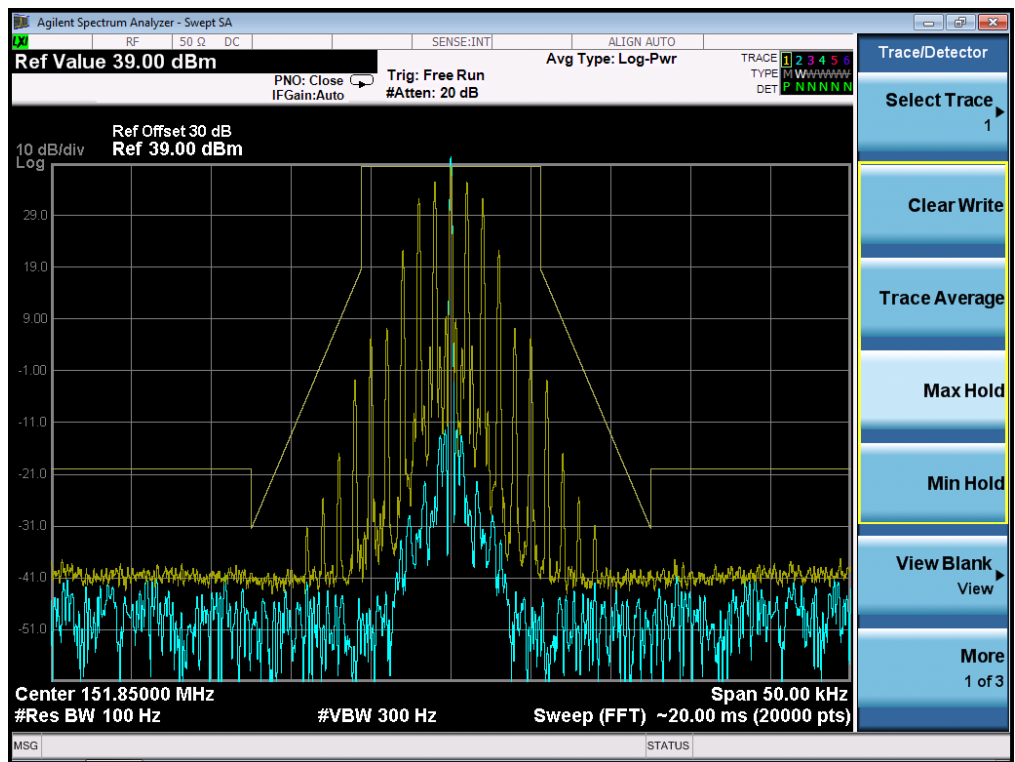
The Worst Emission Mask D for 12.5 KHz channel Separation-136.025MHz (5W)



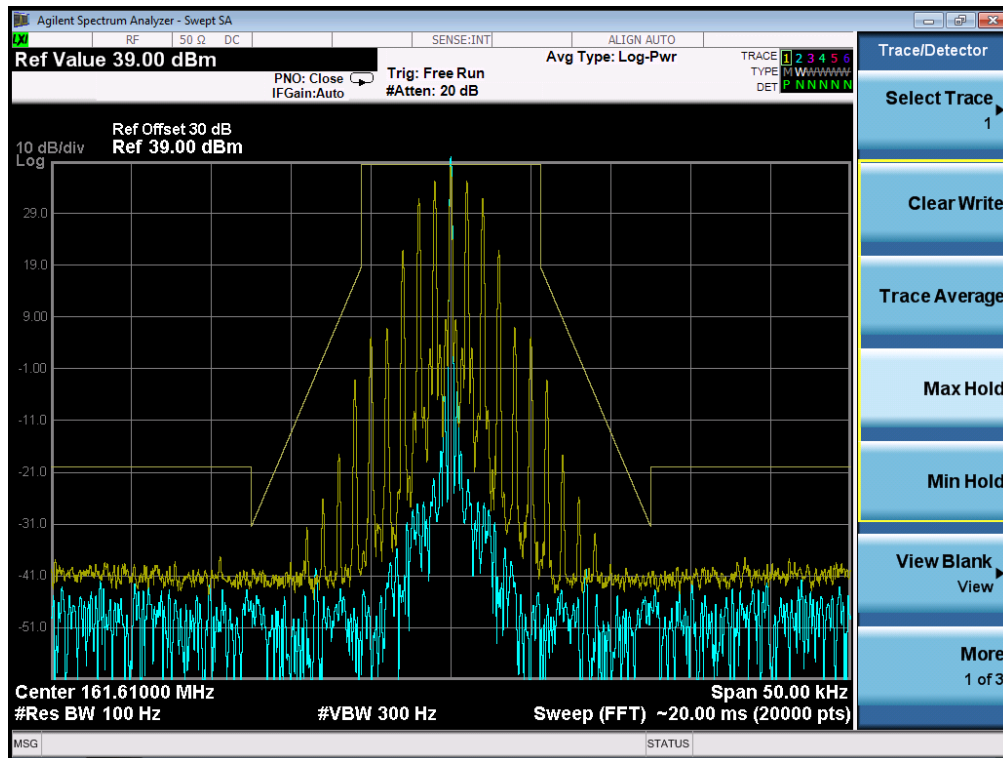
The Worst Emission Mask D for 12.5 KHz channel Separation-136.025MHz (7W)



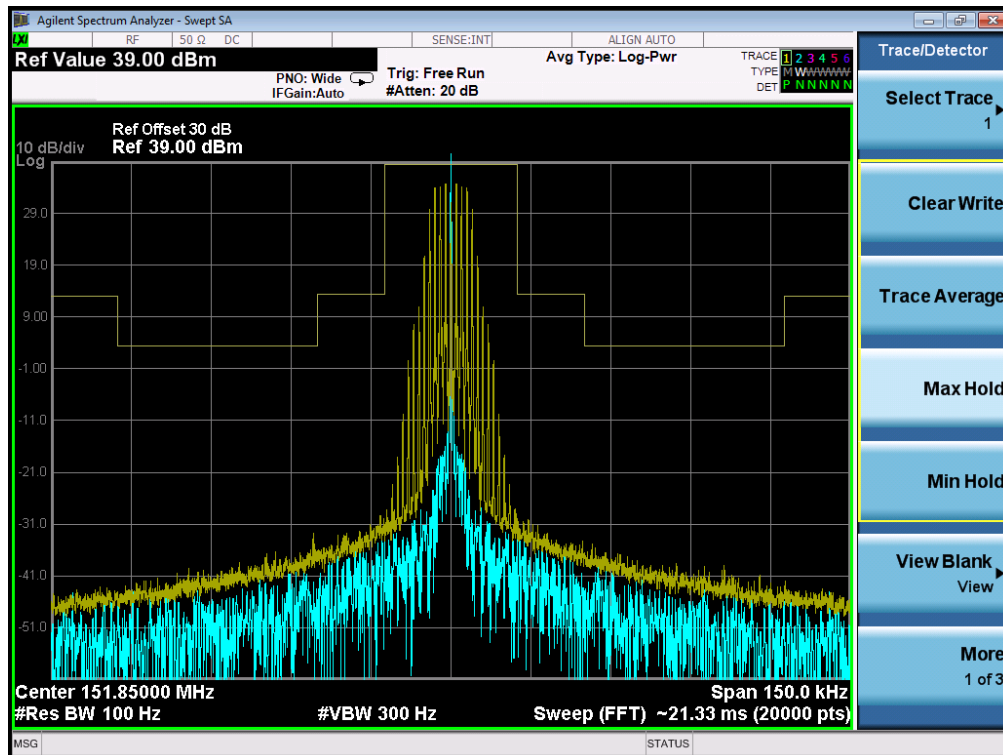
The Worst Emission Mask D for 12.5 KHz channel Separation-151.85MHz (7W)

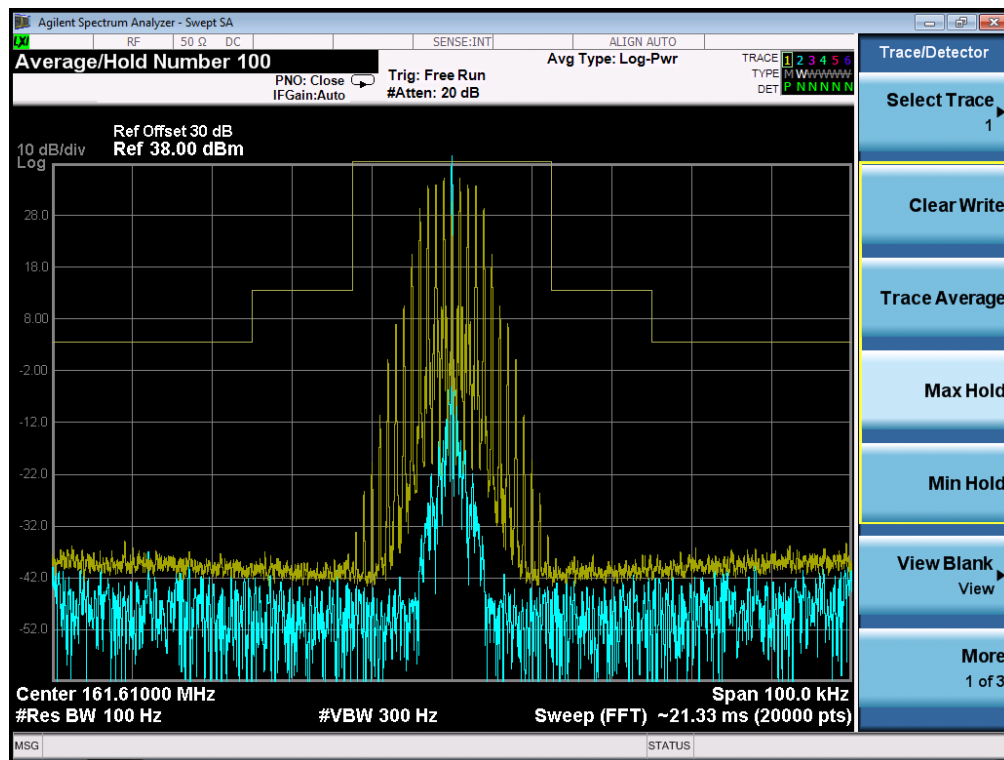


The Worst Emission Mask for (161.61MHz) of 12.5 KHz channel Separation (7W)



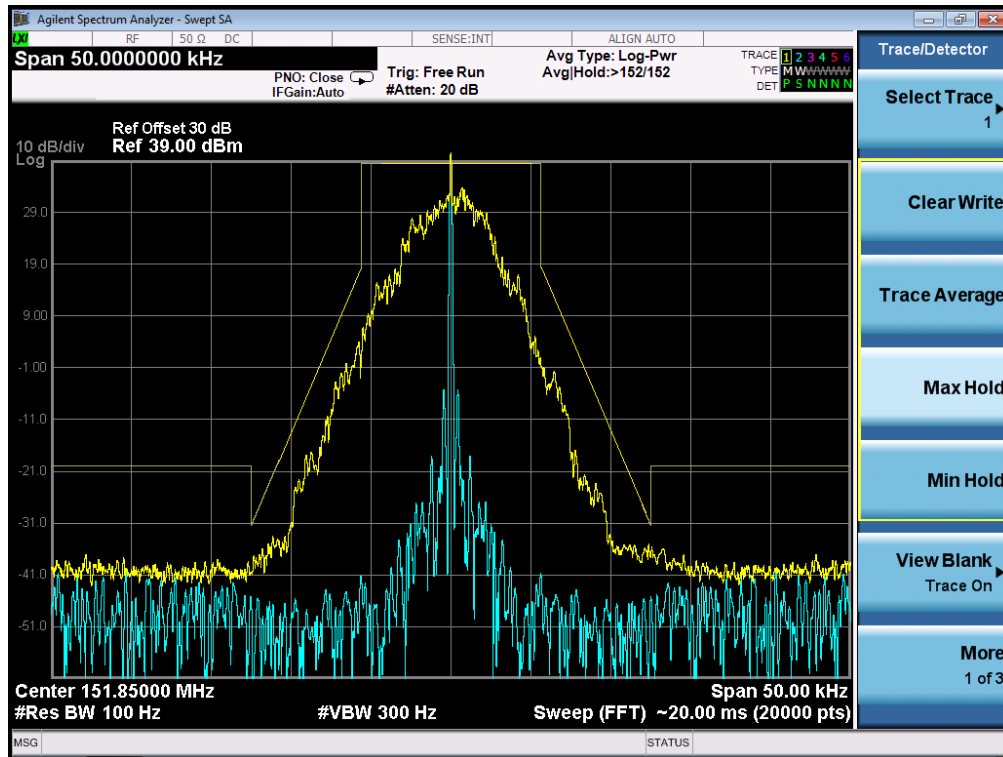
The Worst Emission Mask for (151.85MHz) of 25 KHz channel Separation (7W)



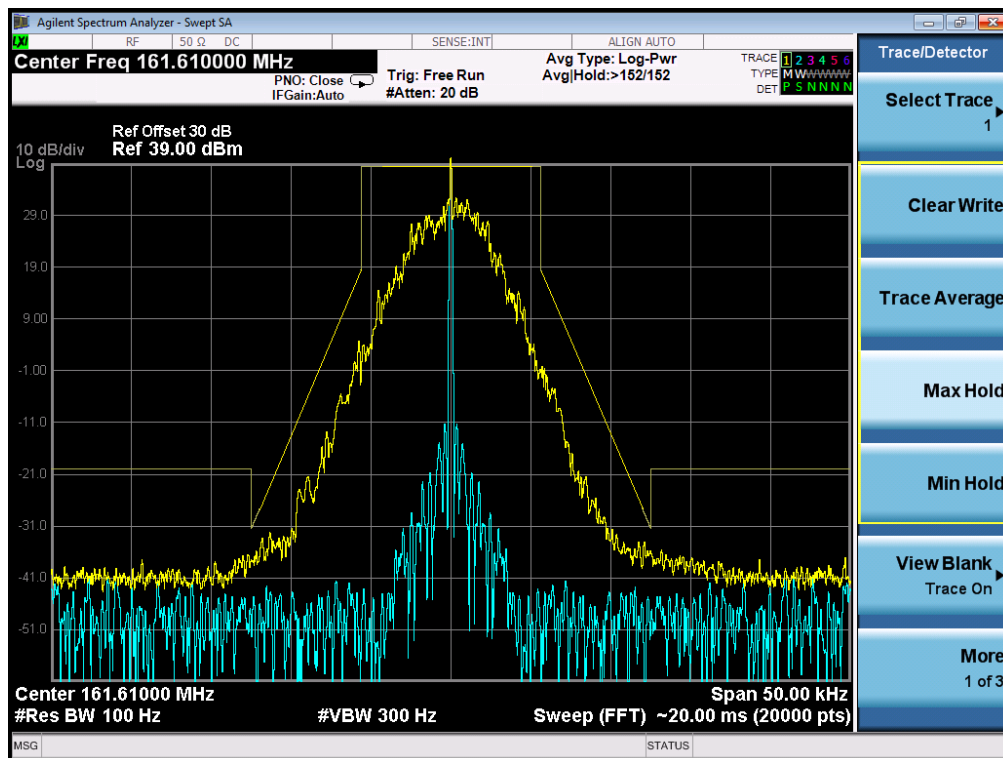


Digital:

The Worst Emission Mask D for 12.5 KHz channel Separation-151.85MHz (7W)



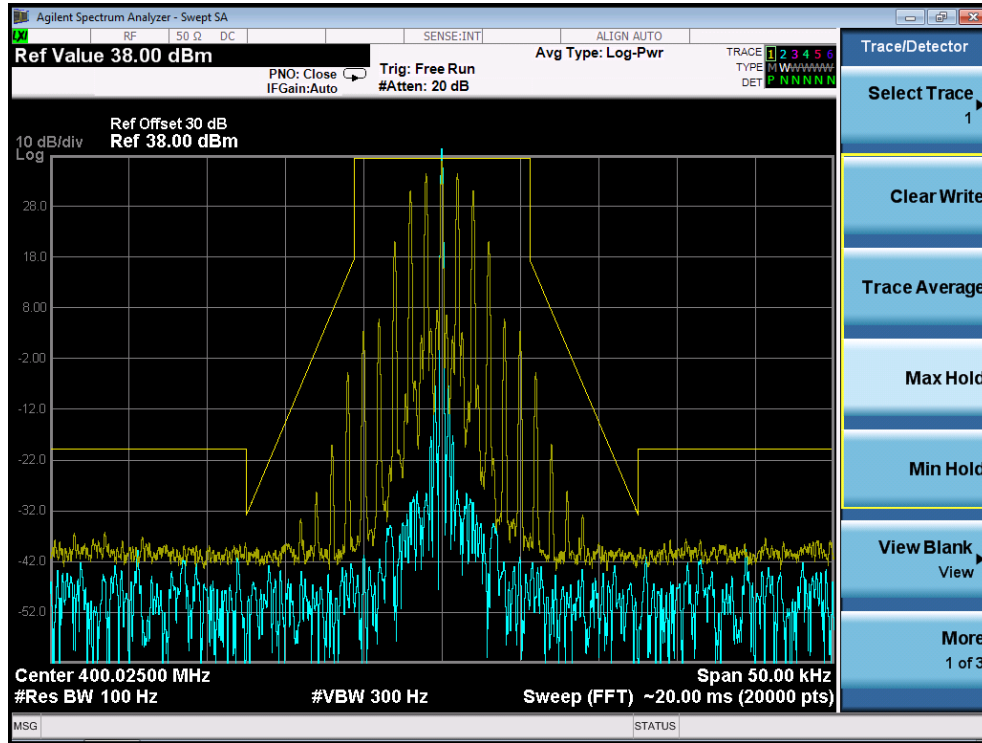
The Worst Emission Mask for (161.61MHz) of 12.5 KHz channel Separation (5W)



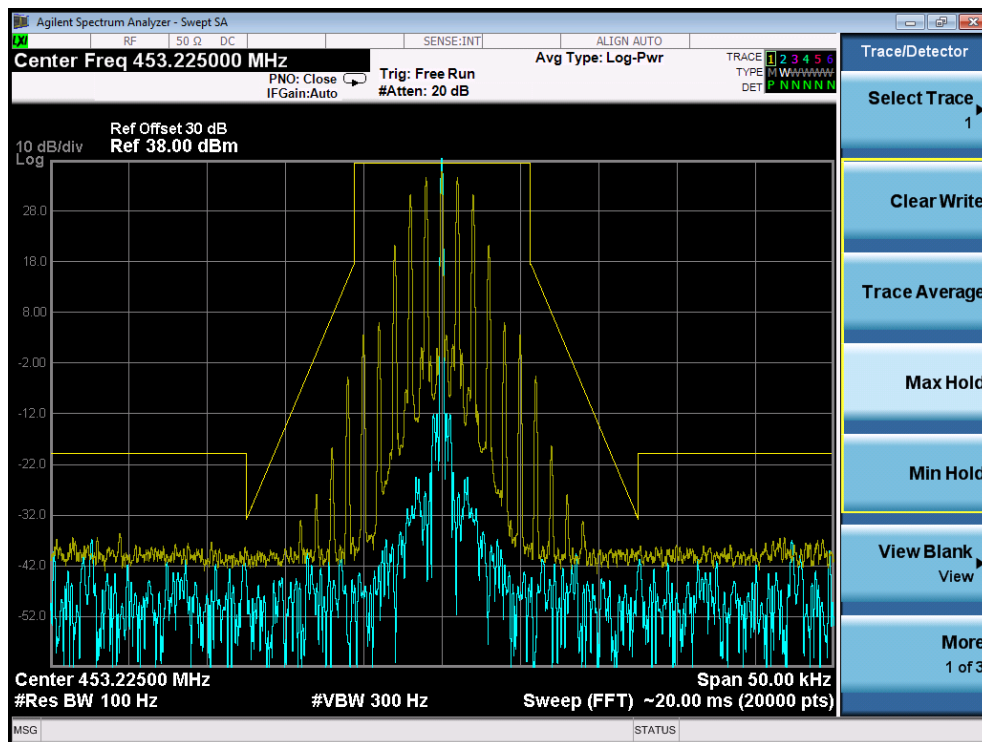
UHF:

Analog:

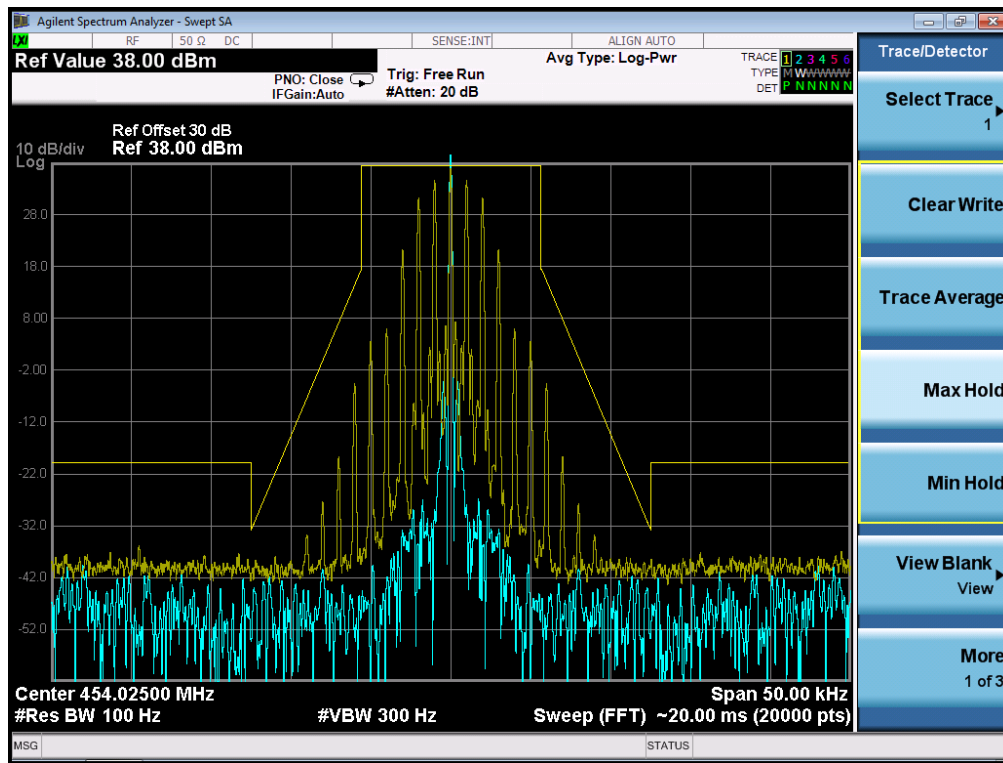
The Worst Emission Mask D for 12.5 KHz channel Separation-400.025MHz (6W)



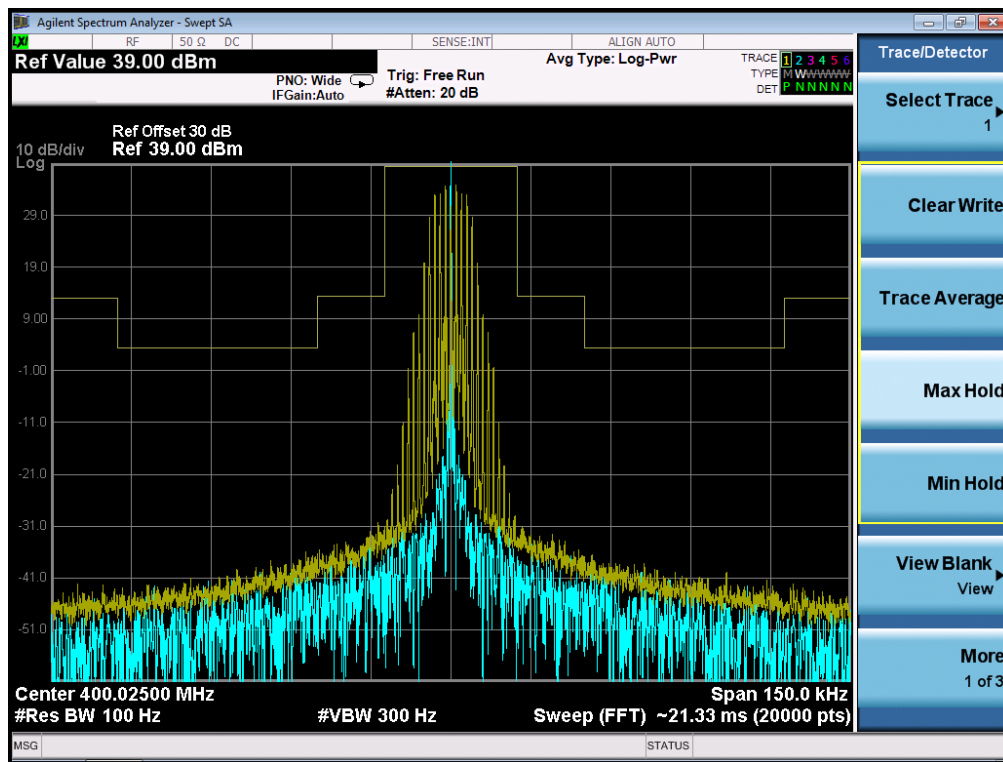
The Worst Emission Mask D for 12.5 KHz channel Separation-453.225MHz (6W)



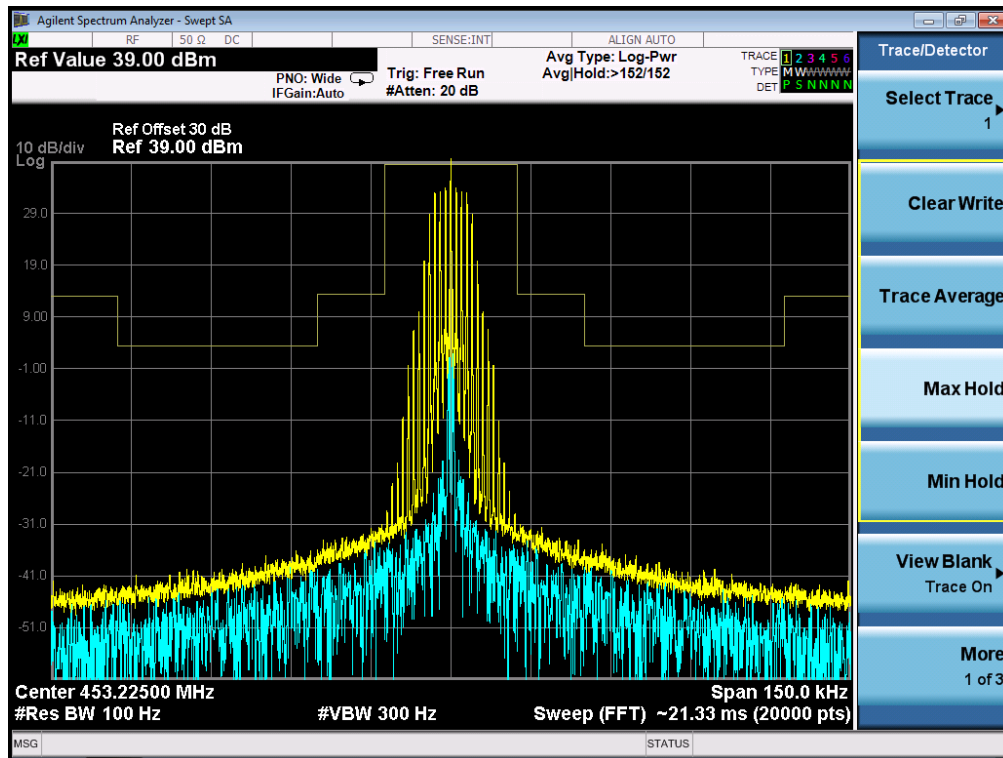
The Worst Emission Mask for (454.025 MHz) of 12.5 KHz channel Separation (6W)



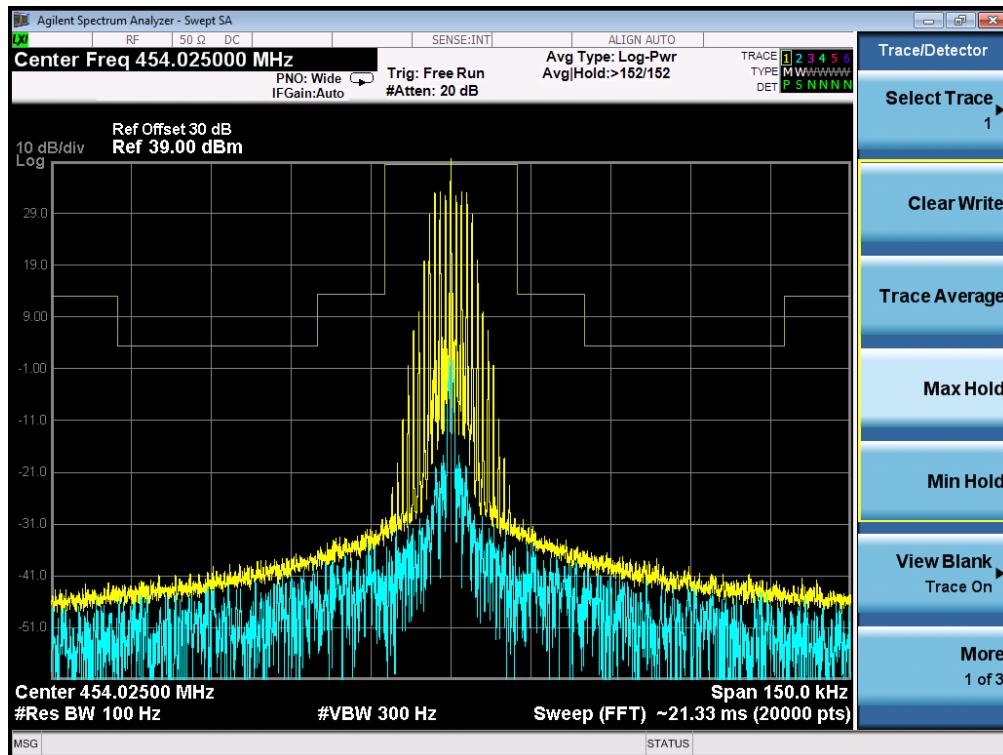
The Worst Emission Mask for 25 KHz channel Separation-400.025MHz (6W)



The Worst Emission Mask for 25 KHz channel Separation-453.225MHz (6W)

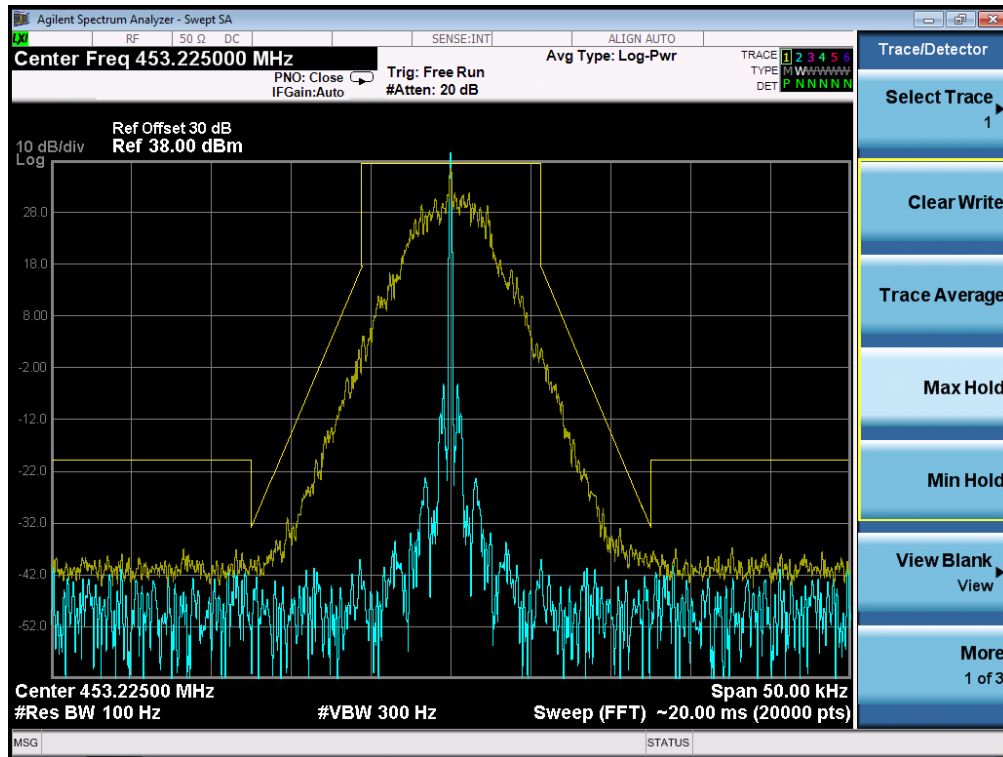


The Worst Emission Mask for 25 KHz channel Separation-454.025MHz (6W)

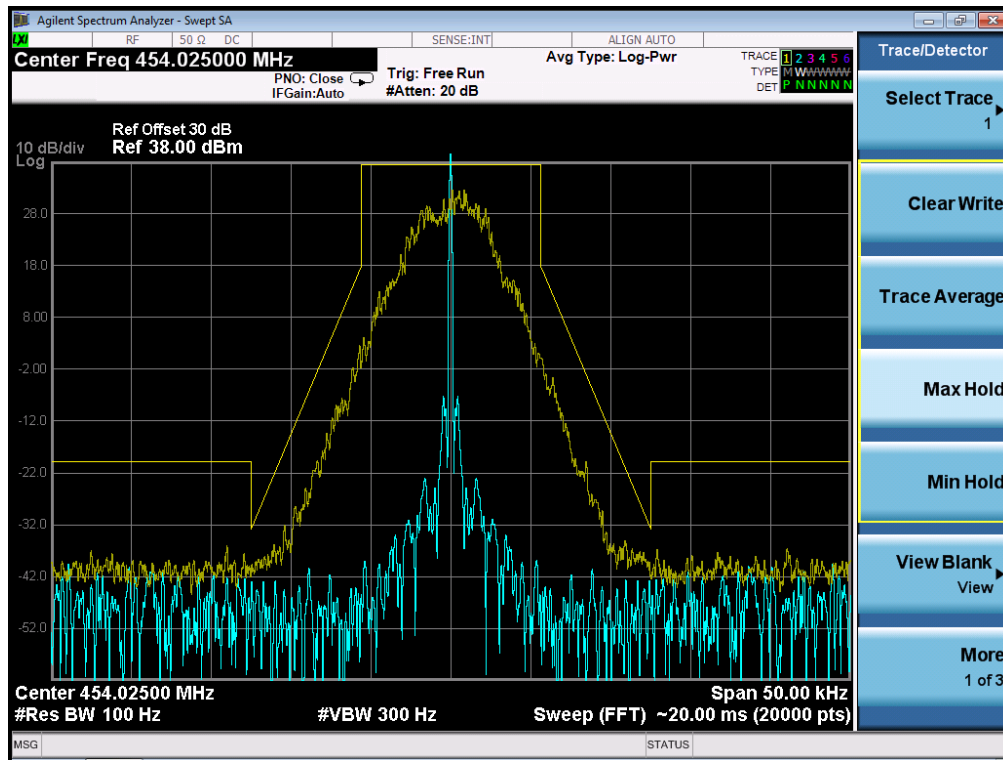


Digital:

The Worst Emission Mask for 12.5 KHz channel Separation- 453.225 MHz (6W)



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



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 = $20\log_{10} (\text{Deviation of test frequency} / \text{Deviation of 1 KHz reference})$.

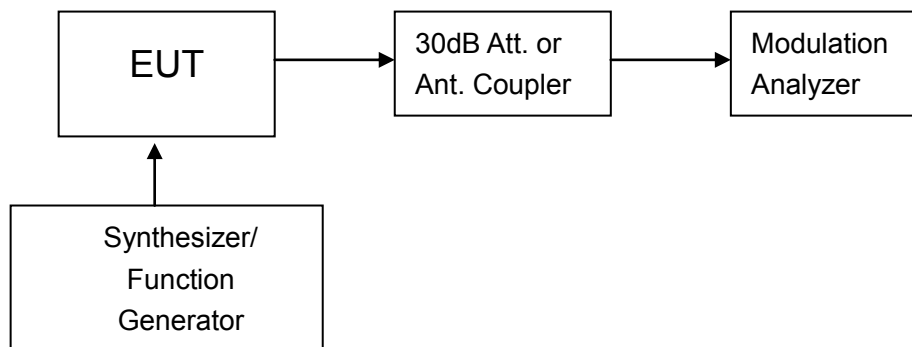


Figure 1: Modulation characteristic measurement configuration

8.3 MEASUREMENT RESULT

Analog:

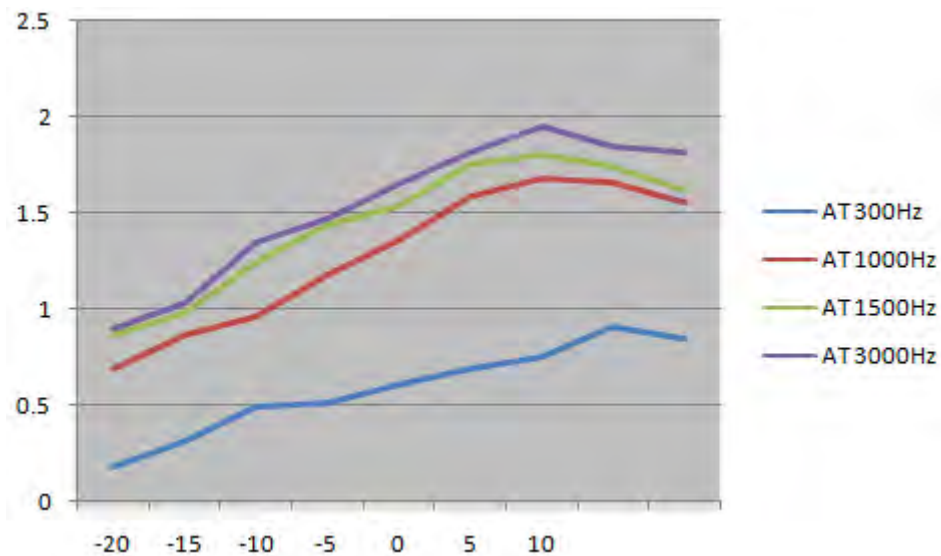
VHF-7W:

TEST RESULTS FOR H POWER

(A). MODULATION LIMIT:

Bottom 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	0.18	0.69	0.87	0.90
-15	0.32	0.87	0.98	1.03
-10	0.49	0.96	1.25	1.35
-5	0.51	1.18	1.44	1.47
0	0.61	1.36	1.54	1.65
+5	0.69	1.59	1.76	1.82
+10	0.75	1.68	1.81	1.95
+15	0.91	1.66	1.75	1.85
+20	0.85	1.55	1.62	1.81



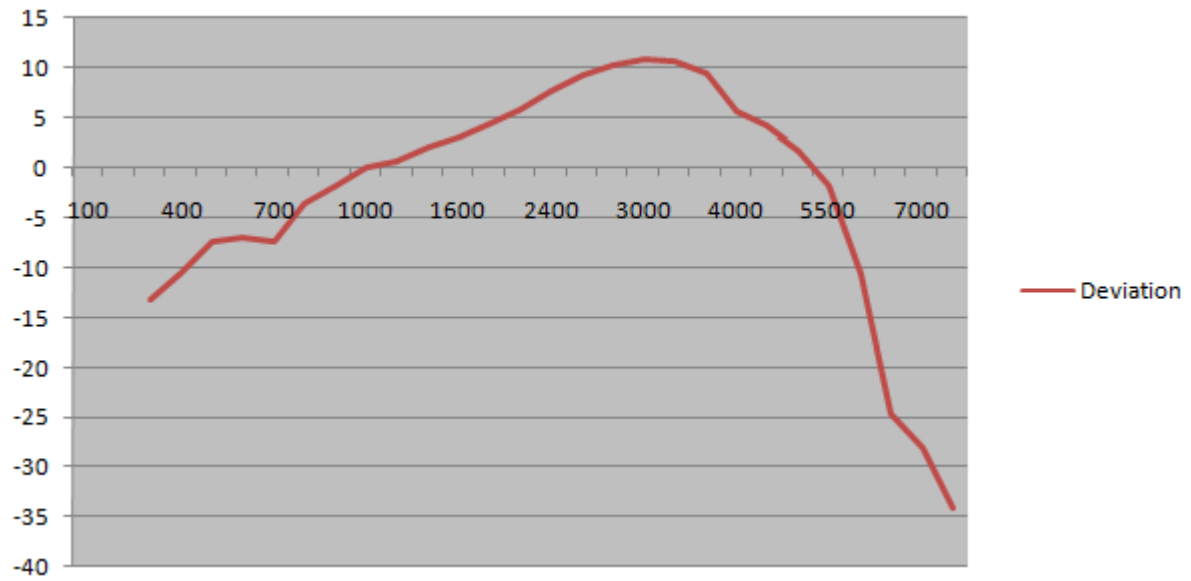
Note: All the modes had been tested, but only the worst data recorded in the report.

(B). AUDIO FREQUENCY RESPONSE:

Bottom Channel @ 12.5 KHz Channel Separations

Frequency (Hz)	Deviation (KHz)	Audio Frequency Response(dB)
100	--	--
200	--	--
300	0.11	-13.15
400	0.15	-10.46
500	0.22	-7.13
600	0.23	-6.74
700	0.22	-7.13
800	0.34	-3.35
900	0.42	-1.51
1000	0.51	0.17
1200	0.55	0.83
1400	0.64	2.14
1600	0.72	3.17
1800	0.84	4.51
2000	0.98	5.85
2400	1.22	7.75
2500	1.46	9.31
2800	1.64	10.32
3000	1.75	10.88
3200	1.71	10.68
3600	1.49	9.48
4000	0.95	5.58
4500	0.82	4.30
5000	0.62	1.87
5500	0.42	-1.51
6000	0.15	-10.46
6500	0.03	-24.44
7000	0.02	-27.96
7500	0.01	-33.98
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.

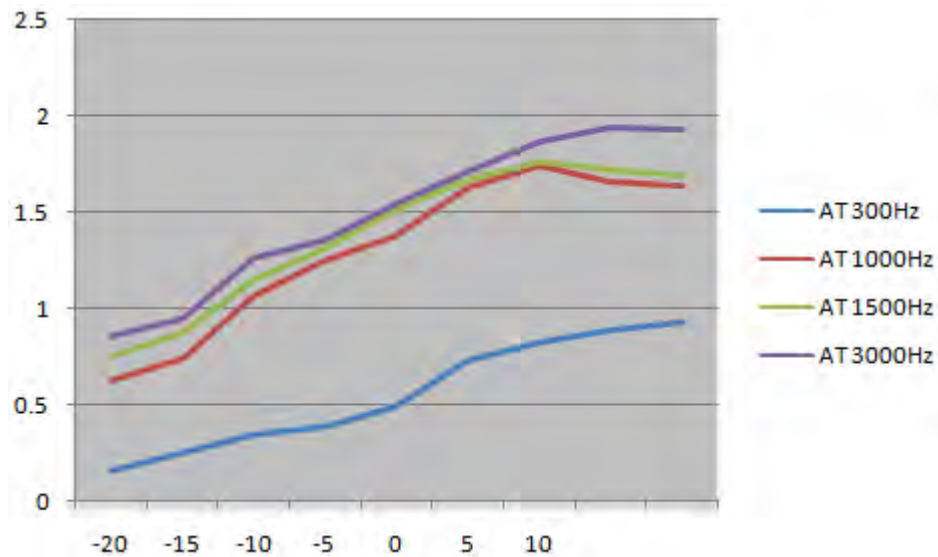
Digital:
VHF-7W

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	0.62	0.75	0.85
-15	0.25	0.74	0.88	0.94
-10	0.34	1.06	1.15	1.26
-5	0.38	1.25	1.31	1.35
0	0.49	1.37	1.51	1.54
+5	0.73	1.63	1.67	1.71
+10	0.82	1.74	1.76	1.87
+15	0.89	1.66	1.72	1.94
+20	0.93	1.64	1.69	1.93



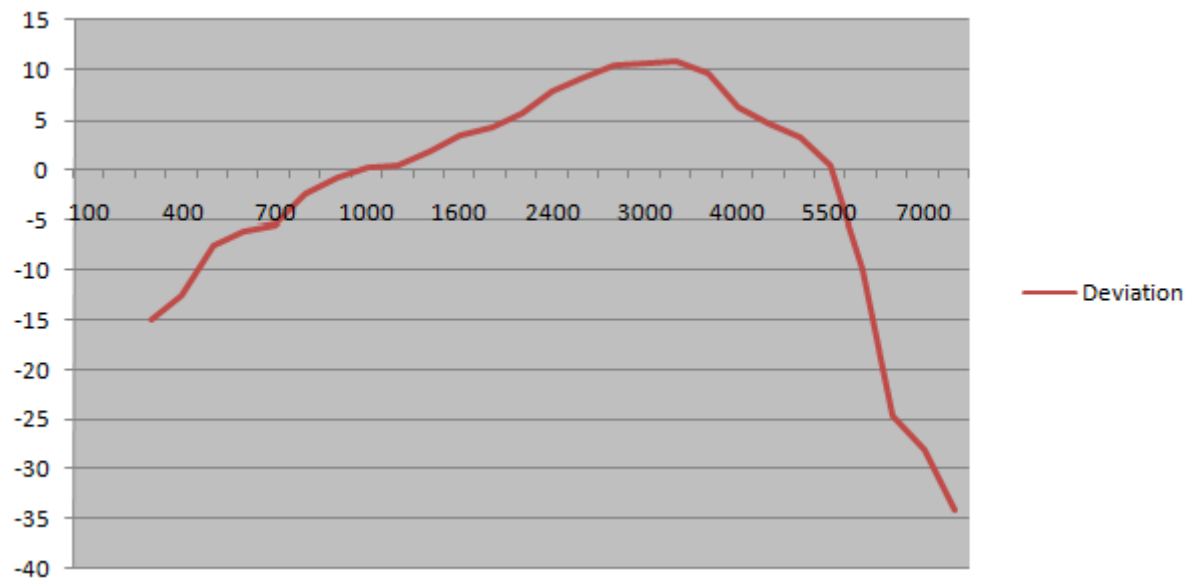
Note: All the modes had been tested, but only the worst data recorded in the report.

(B). AUDIO FREQUENCY RESPONSE:

Middle Channel @ 12.5 KHz Channel Separations

Frequency (Hz)	Deviation (KHz)	Audio Frequency Response(dB)
100	--	--
200	--	--
300	0.09	-14.89
400	0.12	-12.40
500	0.21	-7.54
600	0.25	-6.02
700	0.27	-5.35
800	0.38	-2.38
900	0.46	-0.72
1000	0.51	0.17
1200	0.53	0.51
1400	0.62	1.87
1600	0.74	3.41
1800	0.82	4.30
2000	0.95	5.58
2400	1.23	7.82
2500	1.44	9.19
2800	1.65	10.37
3000	1.72	10.73
3200	1.74	10.83
3600	1.53	9.71
4000	1.03	6.28
4500	0.85	4.61
5000	0.73	3.29
5500	0.52	0.34
6000	0.16	-9.90
6500	0.03	-24.44
7000	0.02	-27.96
7500	0.01	-33.98
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.

UHF:

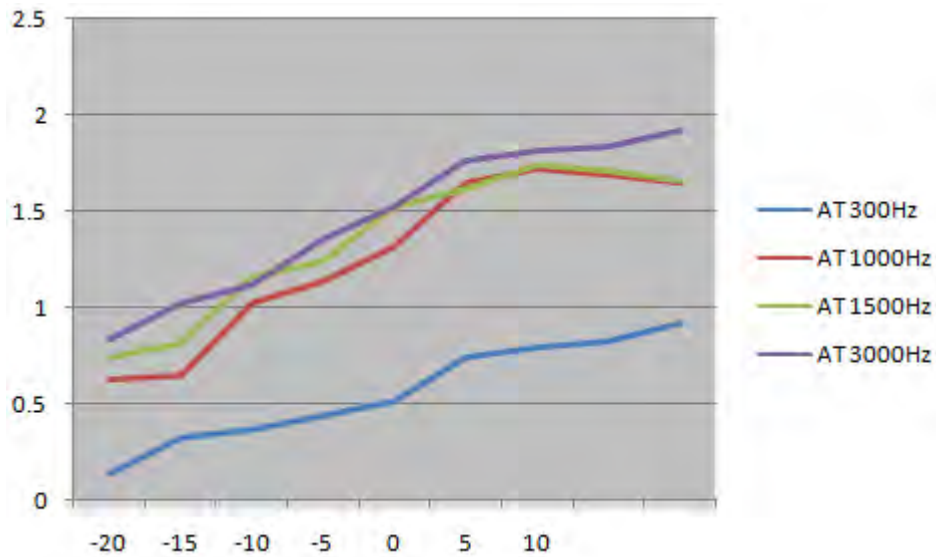
Analog:

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	0.13	0.63	0.74	0.83
-15	0.32	0.65	0.81	1.02
-10	0.36	1.02	1.16	1.11
-5	0.44	1.14	1.24	1.35
0	0.51	1.32	1.52	1.52
+5	0.74	1.65	1.62	1.76
+10	0.79	1.72	1.74	1.82
+15	0.82	1.69	1.71	1.84
+20	0.92	1.65	1.66	1.92

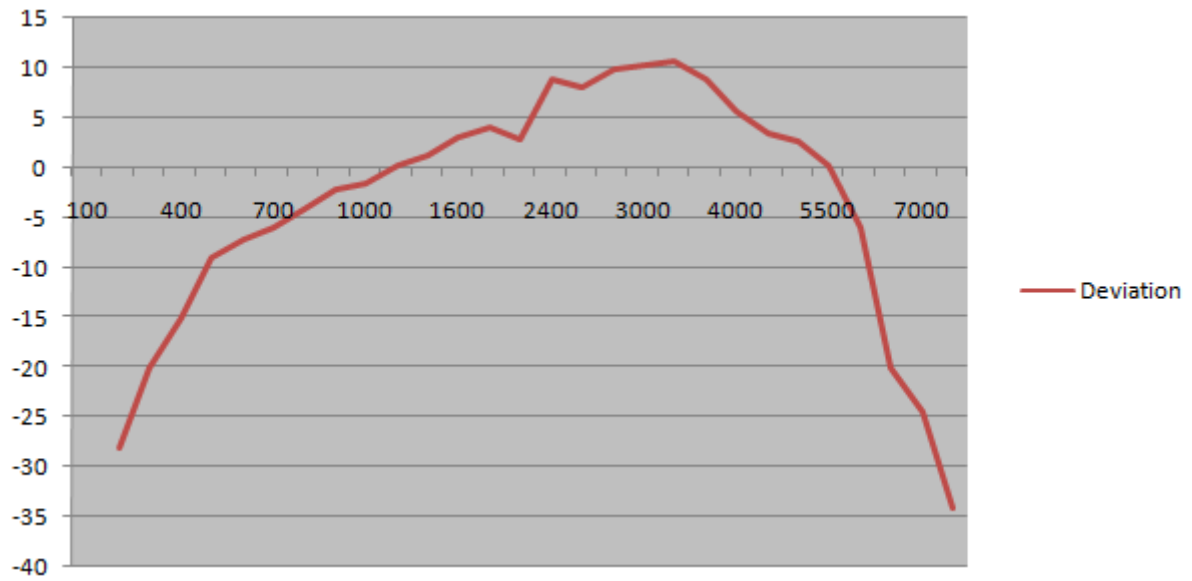


Note: All the modes had been tested, but only the worst data recorded in the report.

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

Frequency (Hz)	Deviation (KHz)	Audio Frequency Response(dB)
100	--	--
200	0.02	-27.96
300	0.05	-20.00
400	0.09	-14.89
500	0.18	-8.87
600	0.22	-7.13
700	0.25	-6.02
800	0.31	-4.15
900	0.39	-2.16
1000	0.42	-1.51
1200	0.51	0.17
1400	0.58	1.29
1600	0.71	3.05
1800	0.79	3.97
2000	0.69	2.80
2400	1.38	8.82
2500	1.28	8.16
2800	1.57	9.94
3000	1.62	10.21
3200	1.71	10.68
3600	1.38	8.82
4000	0.95	5.58
4500	0.75	3.52
5000	0.68	2.67
5500	0.52	0.34
6000	0.25	-6.02
6500	0.05	-20.00
7000	0.03	-24.44
7500	0.01	-33.98
9000	--	--
10000	--	--
14000	--	--
18000	--	--
20000	--	--
30000	--	--

Frequency Response of Middle Channel



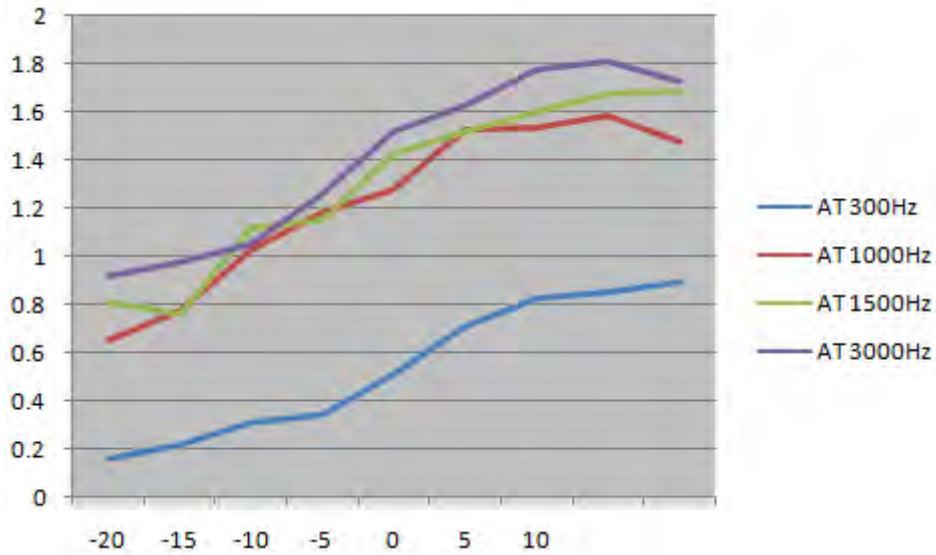
Note: All the modes had been tested, but only the worst data recorded in the report.

Digital:

(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	0.16	0.65	0.81	0.92
-15	0.22	0.78	0.76	0.98
-10	0.31	1.03	1.12	1.05
-5	0.34	1.19	1.15	1.26
0	0.51	1.28	1.43	1.52
+5	0.71	1.53	1.52	1.63
+10	0.82	1.54	1.61	1.78
+15	0.85	1.59	1.68	1.81
+20	0.89	1.48	1.69	1.73



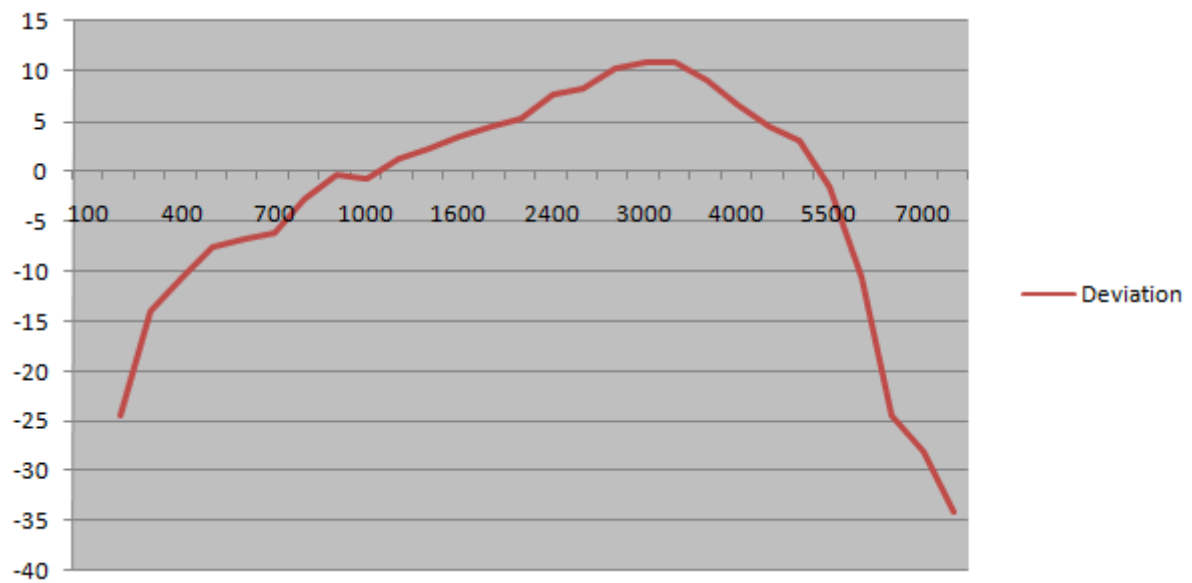
Note: All the modes had been tested, but only the worst data recorded in the report.

(B). AUDIO FREQUENCY RESPONSE:

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

Frequency (Hz)	Deviation (KHz)	Audio Frequency Response(dB)
100	--	--
200	0.03	-24.44
300	0.1	-13.98
400	0.15	-10.46
500	0.21	-7.54
600	0.23	-6.74
700	0.25	-6.02
800	0.37	-2.62
900	0.48	-0.35
1000	0.46	-0.72
1200	0.59	1.44
1400	0.65	2.28
1600	0.76	3.64
1800	0.84	4.51
2000	0.92	5.30
2400	1.22	7.75
2500	1.31	8.37
2800	1.65	10.37
3000	1.76	10.93
3200	1.77	10.98
3600	1.45	9.25
4000	1.08	6.69
4500	0.84	4.51
5000	0.72	3.17
5500	0.42	-1.51
6000	0.15	-10.46
6500	0.03	-24.44
7000	0.02	-27.96
7500	0.01	-33.98
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)

9.1 PROVISIONS APPLICABLE

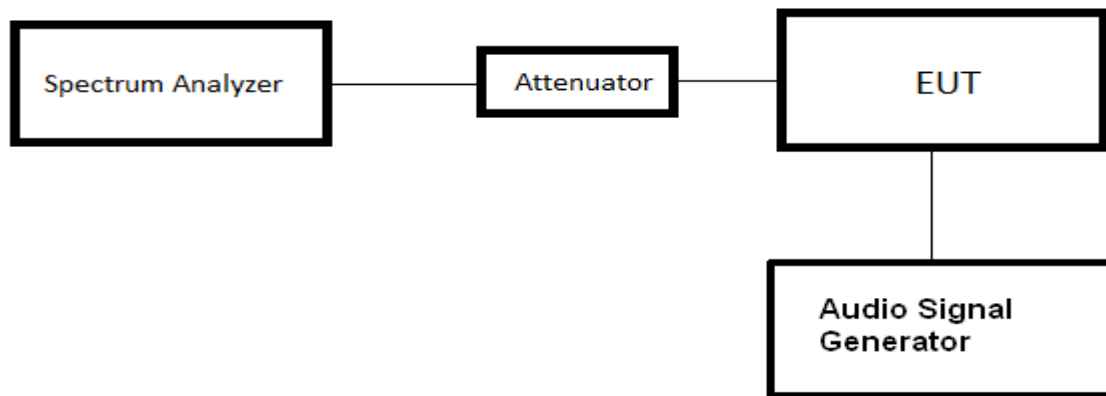
Per FCC §2.1046 § 22.565 and §90.205: Maximum ERP is dependent upon the station's antenna HAAT and required service area.

9.2 TEST PROCEDURE

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

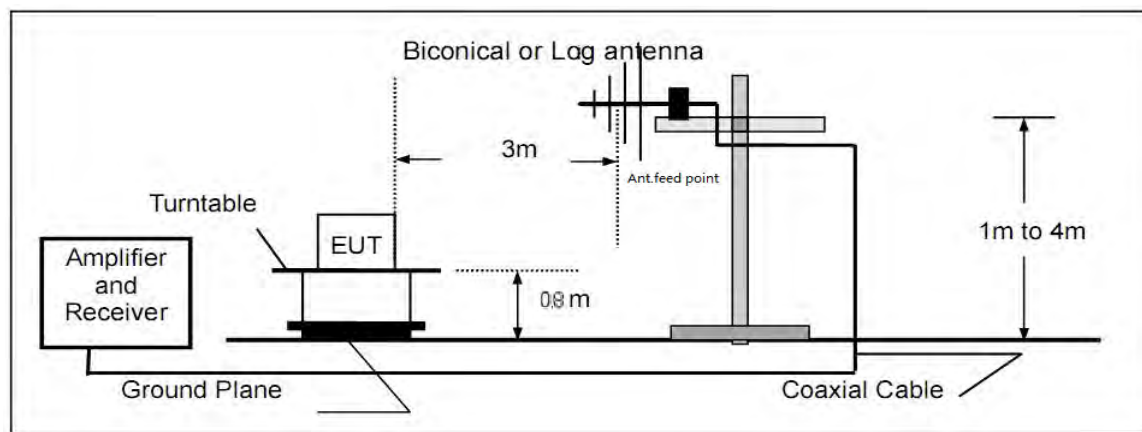
9.3 TEST CONFIGURATION

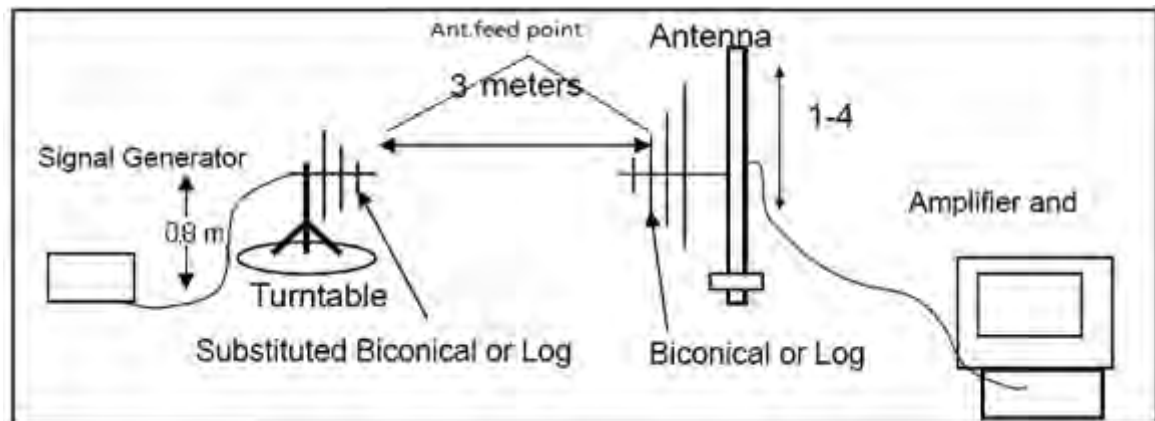
Conducted Output Power:



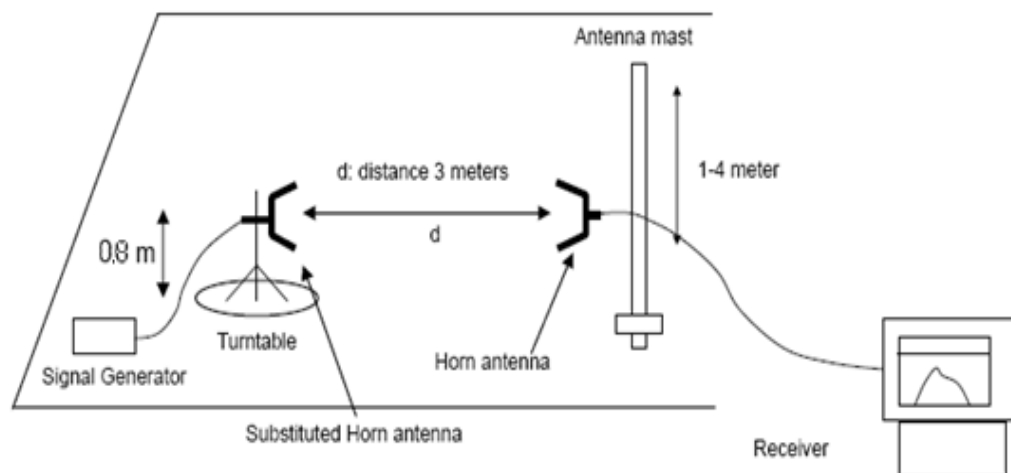
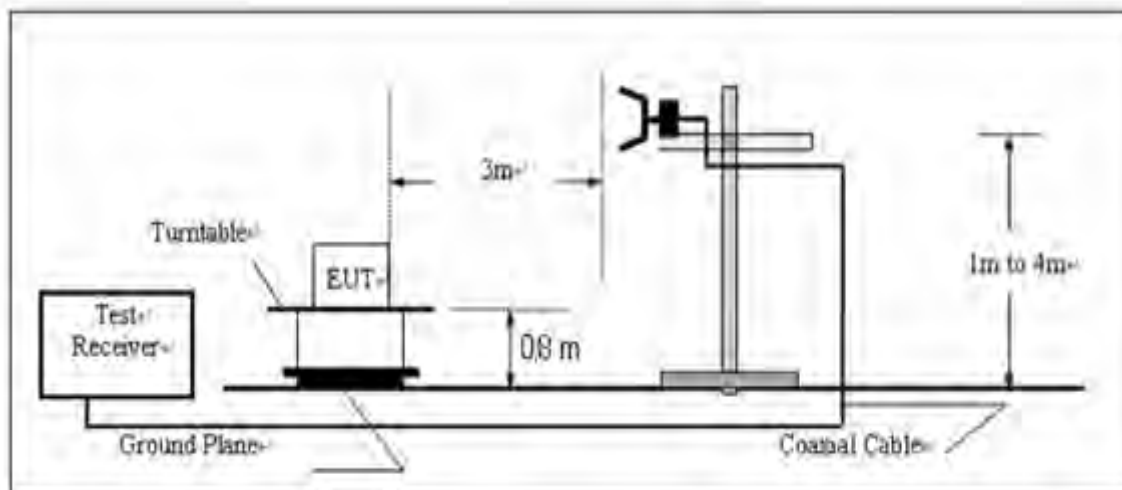
Effective Radiated Power

Radiated Below 1GHz





Radiated Above 1 GHz



9.4 TEST RESULT

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

Analog: UHF/VHF for 12.5 KHz/25 KHz Channel Separation

Digital: UHF/VHF for 12.5 KHz Channel Separation

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:

12.5 KHz:

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.16
	Middle(151.850MHz)	38.25
	Middle(155.025MHz)	38.19
	Middle(161.610MHz)	38.28
	Top (173.975MHz)	38.05

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.05
	Middle(151.850MHz)	38.15
	Middle(155.025MHz)	38.18
	Middle(161.610MHz)	38.31
	Top (173.975MHz)	38.16

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.75
	Middle(151.850MHz)	36.72
	Middle(155.025MHz)	36.59
	Middle(161.610MHz)	36.63
	Top (173.975MHz)	36.65

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.58
	Middle(151.850MHz)	36.63
	Middle(155.025MHz)	36.71
	Middle(161.610MHz)	36.62
	Top (173.975MHz)	36.68

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.59
	Middle(151.850MHz)	33.62
	Middle(155.025MHz)	33.59
	Middle(161.610MHz)	33.61
	Top (173.975MHz)	33.65

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.69
	Middle(151.850MHz)	33.68
	Middle(155.025MHz)	33.58
	Middle(161.610MHz)	33.49
	Top (173.975MHz)	33.63

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.59
	Middle(151.850MHz)	29.62
	Middle(155.025MHz)	29.72
	Middle(161.610MHz)	29.68
	Top (173.975MHz)	29.82

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.71
	Middle(151.850MHz)	29.69
	Middle(155.025MHz)	29.62
	Middle(161.610MHz)	29.66
	Top (173.975MHz)	29.70

25 KHz:

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
25 KHz	Bottom(136.025MHz)	38.06
	Middle(151.850MHz)	38.18
	Middle(155.025MHz)	38.21
	Middle(161.610MHz)	38.23
	Top (173.975MHz)	38.09

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
25 KHz	Bottom(136.025MHz)	38.09
	Middle(151.850MHz)	38.16
	Middle(155.025MHz)	38.14
	Middle(161.610MHz)	38.13
	Top (173.975MHz)	38.09

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
25 KHz	Bottom(136.025MHz)	36.58
	Middle(151.850MHz)	36.49
	Middle(155.025MHz)	36.62
	Middle(161.610MHz)	36.61
	Top (173.975MHz)	36.58

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
25 KHz	Bottom(136.025MHz)	36.56
	Middle(151.850MHz)	36.59
	Middle(155.025MHz)	36.57
	Middle(161.610MHz)	36.63
	Top (173.975MHz)	36.68

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
25 KHz	Bottom(136.025MHz)	33.61
	Middle(151.850MHz)	33.60
	Middle(155.025MHz)	33.57
	Middle(161.610MHz)	33.63
	Top (173.975MHz)	33.59

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
25 KHz	Bottom(136.025MHz)	33.52
	Middle(151.850MHz)	33.63
	Middle(155.025MHz)	33.49
	Middle(161.610MHz)	33.62
	Top (173.975MHz)	33.59

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
25 KHz	Bottom(136.025MHz)	29.56
	Middle(151.850MHz)	29.75
	Middle(155.025MHz)	29.63
	Middle(161.610MHz)	29.68
	Top (173.975MHz)	29.59

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
25 KHz	Bottom(136.025MHz)	29.52
	Middle(151.850MHz)	29.49
	Middle(155.025MHz)	29.58
	Middle(161.610MHz)	29.61
	Top (173.975MHz)	29.72

Digital:
Date + voice:

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.35
	Middle(151.850MHz)	38.36
	Middle(155.025MHz)	38.28
	Middle(161.610MHz)	38.32
	Top (173.975MHz)	38.19

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.13
	Middle(151.850MHz)	38.09
	Middle(155.025MHz)	38.12
	Middle(161.610MHz)	38.35
	Top (173.975MHz)	38.24

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.82
	Middle(151.850MHz)	36.79
	Middle(155.025MHz)	36.83
	Middle(161.610MHz)	36.81
	Top (173.975MHz)	36.75

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.77
	Middle(151.850MHz)	36.74
	Middle(155.025MHz)	36.84
	Middle(161.610MHz)	36.81
	Top (173.975MHz)	36.82

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.49
	Middle(151.850MHz)	33.45
	Middle(155.025MHz)	33.43
	Middle(161.610MHz)	33.59
	Top (173.975MHz)	33.61

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.53
	Middle(151.850MHz)	33.59
	Middle(155.025MHz)	33.71
	Middle(161.610MHz)	33.62
	Top (173.975MHz)	33.59

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.69
	Middle(151.850MHz)	29.71
	Middle(155.025MHz)	29.59
	Middle(161.610MHz)	29.62
	Top (173.975MHz)	29.68

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.49
	Middle(151.850MHz)	29.58
	Middle(155.025MHz)	29.55
	Middle(161.610MHz)	29.60
	Top (173.975MHz)	29.63

Date transmission mode:

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.21
	Middle(151.850MHz)	38.30
	Middle(155.025MHz)	38.25
	Middle(161.610MHz)	38.24
	Top (173.975MHz)	38.21

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 38.45dBm(7W)
12.5 KHz	Bottom(136.025MHz)	38.05
	Middle(151.850MHz)	38.16
	Middle(155.025MHz)	38.08
	Middle(161.610MHz)	38.26
	Top (173.975MHz)	38.16

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.82
	Middle(151.850MHz)	36.78
	Middle(155.025MHz)	36.81
	Middle(161.610MHz)	36.84
	Top (173.975MHz)	36.76

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(136.025MHz)	36.75
	Middle(151.850MHz)	36.81
	Middle(155.025MHz)	36.78
	Middle(161.610MHz)	36.79
	Top (173.975MHz)	36.84

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.53
	Middle(151.850MHz)	33.46
	Middle(155.025MHz)	33.38
	Middle(161.610MHz)	33.62
	Top (173.975MHz)	33.71

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(136.025MHz)	33.62
	Middle(151.850MHz)	33.81
	Middle(155.025MHz)	33.63
	Middle(161.610MHz)	33.75
	Top (173.975MHz)	33.59

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.71
	Middle(151.850MHz)	29.73
	Middle(155.025MHz)	29.68
	Middle(161.610MHz)	29.59
	Top (173.975MHz)	29.74

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(136.025MHz)	29.62
	Middle(151.850MHz)	29.59
	Middle(155.025MHz)	29.68
	Middle(161.610MHz)	29.49
	Top (173.975MHz)	29.65

UHF:
Analog:
12.5 KHz:

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 37.78dBm(6W)
12.5 KHz	Bottom(400.025MHz)	37.62
	Middle(453.225MHz)	37.71
	Middle(454.025MHz)	37.69
	Top (479.975MHz)	37.63

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 37.78dBm(6W)
12.5 KHz	Bottom(400.025MHz)	37.59
	Middle(453.225MHz)	37.58
	Middle(454.025MHz)	37.62
	Top (479.975MHz)	37.60

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(400.025MHz)	36.82
	Middle(453.225MHz)	36.81
	Middle(454.025MHz)	36.76
	Top (479.975MHz)	36.75

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 36.99dBm(5W)
12.5 KHz	Bottom(400.025MHz)	36.63
	Middle(453.225MHz)	36.69
	Middle(454.025MHz)	36.75
	Top (479.975MHz)	36.81

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(400.025MHz)	33.83
	Middle(453.225MHz)	33.74
	Middle(454.025MHz)	33.70
	Top (479.975MHz)	33.81

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 33.98dBm(2.5W)
12.5 KHz	Bottom(400.025MHz)	33.75
	Middle(453.225MHz)	33.82
	Middle(454.025MHz)	33.73
	Top (479.975MHz)	33.71

Conducted Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(400.025MHz)	29.78
	Middle(453.225MHz)	29.82
	Middle(454.025MHz)	29.81
	Top (479.975MHz)	29.86

Radiated Power Measurement Results		
Channel Separation	Channel	Measurement Result (dBm)
		For 30dBm(1W)
12.5 KHz	Bottom(400.025MHz)	29.86
	Middle(453.225MHz)	29.81
	Middle(454.025MHz)	29.73
	Top (479.975MHz)	29.79