

FCC Part 90& Part 22 Rules Test Report

Report No.: AGC02294181204FE10

FCC ID : 2AJGM-DM1706
PRODUCT DESIGNATION : DMR Digital Radio
BRAND NAME : BAOFENG , Pofung
MODEL NAME : DM-1706, ZT-51, RD-78, TC-858, AR-919, FB-R5, RH-UV1,
TR-218, TF-551
CLIENT : PO FUNG ELECTRONIC(HK) INTERNATIONAL GROUP COMPANY
DATE OF ISSUE : Apr. 17, 2019
STANDARD(S) : FCC Part 90 Rules
FCC Part 22 Rules
REPORT VERSION : V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 17, 2019	Valid	Initial Release

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TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	5
2. GENERAL INFORMATION.....	6
2.1PRODUCT DESCRIPTION	6
2.2RELATED SUBMITTAL(S) / GRANT (S).....	9
2.3 TEST METHODOLOGY	9
2.4 TEST FACILITY	9
2.5 SPECIAL ACCESSORIES.....	9
2.6 EQUIPMENT MODIFICATIONS.....	9
3. SYSTEM TEST CONFIGURATION	10
3.1EUT CONFIGURATION	10
3.2 EUT EXERCISE	10
3.3 GENERAL TECHNICAL REQUIREMENTS.....	10
3.4CONFIGURATION OF TESTED SYSTEM	11
4. SUMMARY OF TEST RESULTS	12
5. DESCRIPTION OF TEST MODES	14
6. FREQUENCY TOLERANCE	15
6.1 PROVISIONS APPLICABLE	15
6.2 MEASUREMENT PROCEDURE	15
6.3 TEST SETUP BLOCK DIAGRAM	16
6.4 TEST RESULTS	17
7. EMISSION BANDWIDTH	29
7.1 PROVISIONS APPLICABLE	29
7.2 MEASUREMENT PROCEDURE	29
7.3 TEST SETUP BLOCK DIAGRAM	29
7.4 MEASUREMENT RESULT.....	30
8. UNWANTED RADIATION.....	54
8.1 PROVISIONS APPLICABLE	54
8.2 MEASUREMENT PROCEDURE	54
8.3 TEST SETUP BLOCK DIAGRAM	55
8.4 MEASUREMENT RESULTS:	56
8.5 EMISSION MASK PLOT	79
9. MODULATION CHARACTERISTICS.....	96
9.1 PROVISIONS APPLICABLE	96
9.2 MEASUREMENT METHOD.....	96

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9.3 MEASUREMENT RESULT	97
10. MAXIMUM TRANSMITTER POWER (CONDUCTED OUTPUT POWER) PEAK POWER 109	
10.1 PROVISIONS APPLICABLE	109
10.2 TEST PROCEDURE	109
10.3 TEST CONFIGURATION	109
10.4 TEST RESULT	111
10.5 CONDUCT SPURIOUS PLOT	120
11. TRANSMITTER FREQUENCY BEHAVIOR	152
11.1 PROVISIONS APPLICABLE	152
11.2 TEST METHOD	152
11.3 DESCRIBE LIMIT LINE OF TRANSMITTER FREQUENCY BEHAVIOR	153
11.4 MEASURE RESULT	154
12. AUDIO LOW PASS FILTER RESPONSE	156
12.1. TEST LIMITS	156
12.2. METHOD OF MEASUREMENTS	156
12.3. MEASURE RESULT	157
APPENDIX I: PHOTOGRAPHS OF SETUP	159
APPENDIX II PHOTOGRAPHS OF EUT	160

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1. VERIFICATION OF COMPLIANCE

Applicant:	PO FUNG ELECTRONIC(HK) INTERNATIOANL GROUP COMPANY
Address	3/F FULOK BLDG 131-133 WING LOK ST SHEUNG WAN, Hong Kong
Manufacturer:	PO FUNG ELECTRONIC(HK) INTERNATIOANL GROUP COMPANY
Address	3/F FULOK BLDG 131-133 WING LOK ST SHEUNG WAN, Hong Kong
Factory	PO FUNG ELECTRONIC(HK) INTERNATIOANL GROUP COMPANY
Address	3/F FULOK BLDG 131-133 WING LOK ST SHEUNG WAN, Hong Kong
Product Designation:	DMR Digital Transceiver
Brand Name:	BAOFENG , Pofung
Test Model	DM-1706
Serial Model	ZT-51, RD-78, TC-858, AR-919, FB-R5, RH-UV1, TR-218, TF-551
Difference Description	All the same except the model name.
Date of Test:	Jan. 05, 2019~Apr. 03, 2019

WE HEREBY CERTIFY THAT:

The above equipment was tested by Shenzhen Attestation of Global Compliance Science & Technology Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI/TIA-603-E (2016). The sample tested as described in this report is in compliance with the FCC Rules Part 90 and FCC Rules Part 22 requirements

The test results of this report relate only to the tested sample identified in this report.

Tested By



Calvin Liu(Liu Junchen)

Apr. 03, 2019

Reviewed By



Max Zhang(Zhang Yi)

Apr. 17, 2019

Approved By



Forrest Lei(Lei Yonggang)
Authorized Officer

Apr. 17, 2019

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2. GENERAL INFORMATION

2.1 PRODUCT DESCRIPTION

The EUT is a **DMR Digital 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	DM-1706-V2.0	
Software Version	1703	
Modulation	FM/4FSK	
Emission Type	7K60FXD/7K60FXE/11K0F3E	
Emission Bandwidth	Analog:10.154KHz(5W-12.5 KHz), 10.153KHz(1W-12.5 KHz) ---VHF Digital: 10.672KHz(5W),10.754 KHz(1W) ---VHF Analog:10.286KHz(5W-12.5 KHz), 10.286KHz(1W-12.5 KHz) ---UHF Digital: 10.103KHz(5W), 10.0009KHz(1W) ---UHF	
Peak Frequency Deviation	1.91KHz	
Audio Frequency Response	11.32dB	
Maximum Transmitter Power	Analog:36.88 dBm(5W-12.5 KHz), 29.66dBm (1W-12.5 KHz) ---VHF Digital: 36.40 dBm(5W), 29.82dBm (1W) ---VHF Analog:36.48 dBm(5W-12.5 KHz), 29.23dBm (1W-12.5 KHz) ---UHF Digital: 35.96 dBm(5W), 28.66dBm (1W) ---UHF	
Output power Modification	5W/1W (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	2.15dBi	
Power Supply	DC 7.4V, 2200mAh (by battery) charging for DC 8.4V	
Adapter Parameter	INPUT: AC 100V-240V , 50/60Hz , 0.2A OUTPUT: DC 10V , 500mA	
Limiting Voltage	DC 6V-8.51V	
Operation Frequency Range and Channel	Frequency Range: 136 MHz to 174 MHz (VHF) 400 MHz to 470 MHz (UHF) Channel Separation: 12.5KHz(Digital/ Analog) <div> <div> Bottom Channel: 136.025MHz Middle Channel:151.85MHz Middle Channel:155.025MHz Middle Channel:161.61MHz (Top)High Channel: 173.975MHz </div> <div> Bottom Channel: 400.025MHz Middle Channel: 453.225MHz Middle Channel: 454.025MHz (Top)High Channel: 469.975MHz </div> </div>	
Frequency Tolerance	1.101ppm	

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Frequency Range (MHz)	Rated Transmit Power(W)(Conducted)	Transmit Mode/Emission Designator
400-470	1W/5W	11K0F3E(Analog Voice;NB)
400-470	1W/5W	7K60FXD/7K60FXW(9600Data/Digital Voice NB)

Frequency Range (MHz)	Rated Transmit Power(W)(Conducted)	Transmit Mode/Emission Designator
136-174	1W/5W	11K0F3E(Analog Voice;NB)
136-174	1W/5W	7K60FXD/7K60FXW(9600Data/Digital Voice NB)

Channel No. (6.25KHz)	Channel No. (12.5KHz)	12.5KHz Channel Spaced 400MHz Band Plan(MHz)
1	1-2	400.025
2		
3	3-4	440.025
4		
5	5-6	469.975
6		

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

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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

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2.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: **2AJGM-DM1706**, filing to comply with Part 2, Part 22, and Part 90 of the Federal Communication Commission rules.

2.3 TEST METHODOLOGY

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

2.4 TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

2.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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3. SYSTEM TEST CONFIGURATION

3.1 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.

3.2 EUT EXERCISE

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

3.3 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

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3.4 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 Radio	DM-1706	FCC ID: 2AJGM-DM1706	EUT
2	Adapter	BF-480	DC 10V 500mA	Accessory
3	Battery	DM-3	DC7.4V, 2200mAh	Accessory
4	Desktop charger	VT-2025010HR	DC10V, 700mA	Accessory
5	High gain antenna	N/A	N/A	Accessory
6	Back clip	N/A	N/A	Accessory

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4. 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

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LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2018	Jun. 11, 2019
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 20, 2018	Dec. 19, 2019
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.18, 2018	Sep.17, 2019
preamplifier	ChengYi	EMC184045SE	980508	Oct.31, 2018	Oct 30, 2019
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 26, 2018	May. 25, 2020
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun. 12, 2018	Jun. 11, 2019
HORN ANTENNA	EM	EM-AH-10180	/	Mar.01, 2018	Feb.29, 2020
SIGNAL GENERATOR	AGILENT	E4421B	122501288	May. 15, 2018	May. 14, 2019
SIGNAL GENERATOR	R&S	SMT03	A0304261	Jun. 12, 2018	Jun. 11, 2019
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 09, 2019	Jan. 08, 2020
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.26, 2018	Sep.25, 2019
Modulation Domain Analyzer	HP	53310A	3121A02467	Nov. 01, 2018	Oct. 31, 2019
Small environmental tester	ESPEC	SH-242	--	Feb. 27, 2018	Feb. 26, 2019
Small environmental tester	ESPEC	SH-242	--	Feb. 25, 2019	Feb. 24, 2020
RF Communication Test Set	HP	8920B	--	Jun. 12, 2018	Jun. 11, 2019
Loop Antenna	LAPLACE	RF300	--	Feb. 21, 2018	Feb. 20, 2019
Loop Antenna	LAPLACE	RF300	--	Feb. 19, 2019	Feb. 18, 2020
Attenuator	JFW	50FHC-006-50	--	June 12, 2018	June 11, 2019
Vector Analyzer	Agilent	E4440A	--	Mar. 01, 2018	Feb. 28, 2019
Vector Analyzer	Agilent	E4440A	--	Feb. 27, 2019	Feb. 26, 2020
RF Cable	R&S	1#	--	Each time	N/A
RF Cable	R&S	2#	--	Each time	N/A

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5. DESCRIPTION OF TEST MODES

RF TEST MODES

The EUT (**DMR Digital 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.

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6. FREQUENCY TOLERANCE

6.1 PROVISIONS APPLICABLE

- According to FCC §2.1055, § 22.355 and §90.213, the frequency stability shall be measured with variation of ambient temperature from -30°C to $+50^{\circ}\text{C}$ centigrade.
- 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.
- 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.

6.2 MEASUREMENT PROCEDURE

6.2.1 Frequency stability versus environmental temperature

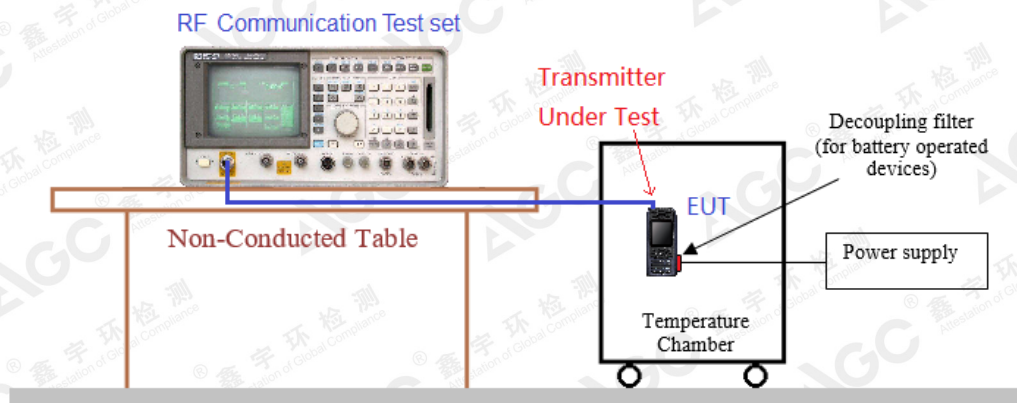
- Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
- Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
- Set the temperature of chamber to 50°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.
- Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measured frequencies on each temperature step.

6.2.2 Frequency stability versus input voltage

- Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15°C to 25°C . Otherwise, an environment chamber set for a temperature of 20°C shall be used. The EUT shall be powered by DC 7.4V.
- 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.
- Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

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6.3 TEST SETUP BLOCK DIAGRAM



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6.4 TEST RESULTS

VHF-Analog:

(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-5W-12.5KHz

Environment Temperature(°C)	Power Supply	Reference Frequency			Limit:
	(V)	136.025MHz	155.025MHz	173.975MHz	ppm
50	DC 7.40 V	0.387	0.653	0.602	5
40	DC 7.40 V	0.731	0.805	0.792	
30	DC 7.40 V	0.909	0.900	0.586	
20	DC 7.40 V	0.557	0.798	0.575	
10	DC 7.40 V	0.691	0.936	0.887	
0	DC 7.40 V	0.697	0.528	1.032	
-10	DC 7.40 V	1.057	1.034	1.064	
-20	DC 7.40 V	0.605	0.536	0.742	
-30	DC 7.40 V	0.845	0.660	0.588	
Result	Pass				

Environment Temperature(°C)	Power Supply	Reference Frequency		Limit:
	(V)	151.85MHz	161.61MHz	ppm
50	DC 7.40 V	0.444	1.000	5
40	DC 7.40 V	0.326	0.389	
30	DC 7.40 V	0.409	0.902	
20	DC 7.40 V	0.438	0.955	
10	DC 7.40 V	0.637	0.904	
0	DC 7.40 V	0.482	0.509	
-10	DC 7.40 V	0.945	0.938	
-20	DC 7.40 V	0.953	0.942	
-30	DC 7.40 V	0.744	0.789	
Result	Pass			

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(2) Frequency stability versus input voltage (Battery endpoint is 6V) **-5W-12.5KHz**

Environment Temperature(°C)	Power	Reference Frequency			Limit:
	(V)	136.025MHz	155.025MHz	173.975MHz	ppm
50	DC 6.00 V	0.813	0.653	0.665	5
40	DC 6.00 V	0.736	0.792	0.789	
30	DC 6.00 V	0.674	1.037	0.517	
20	DC 6.00 V	0.693	0.980	0.728	
10	DC 6.00 V	1.086	0.800	0.691	
0	DC 6.00 V	0.961	1.046	0.625	
-10	DC 6.00 V	0.593	0.955	0.847	
-20	DC 6.00 V	0.948	0.865	0.737	
-30	DC 6.00 V	0.976	0.509	0.616	
Result	Pass				

Environment Temperature(°C)	Power Supply	Reference Frequency		Limit:
	(V)	151.85MHz	161.61MHz	ppm
50	DC 6.00 V	0.833	0.373	5
40	DC 6.00 V	0.347	0.594	
30	DC 6.00 V	0.831	0.622	
20	DC 6.00 V	0.836	0.421	
10	DC 6.00 V	0.754	0.898	
0	DC 6.00 V	0.606	0.645	
-10	DC 6.00 V	0.962	0.964	
-20	DC 6.00 V	0.400	0.664	
-30	DC 6.00 V	0.703	0.991	
Result	Pass			

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

b) Frequency stability versus input voltage (Supply nominal voltage is 7.40V) for all data					
Environment Temperature(°C)	Power Supply	Reference Frequency			Limit:
	(V)	136.025MHz	155.025MHz	173.975MHz	ppm
50	DC 7.40 V	0.405	0.653	1.101	5
40	DC 7.40 V	1.072	0.534	0.505	
30	DC 7.40 V	0.560	0.943	0.969	
20	DC 7.40 V	0.955	0.785	0.688	
10	DC 7.40 V	1.065	0.961	0.950	
0	DC 7.40 V	0.737	1.088	0.622	
-10	DC 7.40 V	0.685	0.887	1.043	
-20	DC 7.40 V	0.731	0.878	0.746	
-30	DC 7.40 V	0.973	0.964	0.903	
Result	Pass				

Environment Temperature(°C)	Power Supply	Reference Frequency		Limit:
	(V)	151.85MHz	161.61MHz	ppm
50	DC 7.40 V	0.503	0.606	5
40	DC 7.40 V	0.622	0.745	
30	DC 7.40 V	0.543	0.877	
20	DC 7.40 V	0.922	0.802	
10	DC 7.40 V	0.562	0.470	
0	DC 7.40 V	0.647	0.479	
-10	DC 7.40 V	0.458	0.888	
-20	DC 7.40 V	0.436	0.315	
-30	DC 7.40 V	0.710	0.389	
Result	Pass			

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		136.025MHz	155.025MHz	173.975MHz	
50	DC 6.00 V	0.323	0.653	0.965	5
40	DC 6.00 V	1.007	0.526	0.652	
30	DC 6.00 V	0.902	0.772	1.035	
20	DC 6.00 V	0.613	0.730	0.724	
10	DC 6.00 V	1.068	0.956	0.708	
0	DC 6.00 V	0.985	0.904	0.898	
-10	DC 6.00 V	1.019	0.538	0.988	
-20	DC 6.00 V	0.570	1.067	0.635	
-30	DC 6.00 V	0.916	0.895	0.626	
Result		Pass			

Environment Temperature(°C)	Power Supply (V)	Reference Frequency		Limit: ppm
		151.85MHz	161.61MHz	
50	DC 6.00 V	0.353	0.854	5
40	DC 6.00 V	0.458	0.724	
30	DC 6.00 V	0.558	0.539	
20	DC 6.00 V	0.563	0.561	
10	DC 6.00 V	0.445	0.758	
0	DC 6.00 V	0.469	0.942	
-10	DC 6.00 V	0.676	0.312	
-20	DC 6.00 V	0.598	0.827	
-30	DC 6.00 V	0.960	0.534	
Result		Pass		

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Digital:
(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-5W-12.5KHz

Environment Temperature(°C)	Power	Reference Frequency			Limit:
	(V)	136.025MHz	155.025MHz	173.975MHz	ppm
50	DC 7.40 V	0.323	0.653	0.965	5
40	DC 7.40 V	1.007	0.526	0.652	
30	DC 7.40 V	0.902	0.772	1.035	
20	DC 7.40 V	0.613	0.730	0.724	
10	DC 7.40 V	1.068	0.956	0.708	
0	DC 7.40 V	0.985	0.904	0.898	
-10	DC 7.40 V	1.019	0.538	0.988	
-20	DC 7.40 V	0.570	1.067	0.635	
-30	DC 7.40 V	0.916	0.895	0.626	
Result	Pass				

Environment Temperature(°C)	Power Supply	Reference Frequency		Limit:
	(V)	151.85MHz	161.61MHz	ppm
50	DC 7.40 V	0.357	0.608	5
40	DC 7.40 V	0.781	0.405	
30	DC 7.40 V	0.417	0.807	
20	DC 7.40 V	0.349	0.925	
10	DC 7.40 V	0.745	0.791	
0	DC 7.40 V	0.818	0.955	
-10	DC 7.40 V	0.996	0.584	
-20	DC 7.40 V	0.393	0.465	
-30	DC 7.40 V	0.759	0.719	
Result	Pass			

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(2) Frequency stability versus input voltage(Battery endpoint is 6V) **-5W-12.5KHz**

Environment Temperature(°C)	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 Temperature(°C)	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			

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		136.025MHz	155.025MHz	173.975MHz	
50	DC 7.40 V	0.739	0.653	0.882	5
40	DC 7.40 V	0.672	1.070	1.003	
30	DC 7.40 V	0.978	0.594	0.523	
20	DC 7.40 V	0.704	0.580	0.841	
10	DC 7.40 V	0.950	0.881	0.888	
0	DC 7.40 V	1.082	0.594	0.509	
-10	DC 7.40 V	0.829	1.067	0.785	
-20	DC 7.40 V	0.857	0.640	1.067	
-30	DC 7.40 V	0.923	0.755	0.744	
Result		Pass			

Environment Temperature(°C)	Power Supply (V)	Reference Frequency		Limit: ppm
		151.85MHz	161.61MHz	
50	DC 7.40 V	0.628	0.346	5
40	DC 7.40 V	0.338	0.730	
30	DC 7.40 V	0.878	0.944	
20	DC 7.40 V	0.822	0.654	
10	DC 7.40 V	0.317	0.947	
0	DC 7.40 V	0.978	0.399	
-10	DC 7.40 V	0.916	0.540	
-20	DC 7.40 V	0.371	0.518	
-30	DC 7.40 V	0.463	0.618	
Result		Pass		

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		136.025MHz	155.025MHz	173.975MHz	
50	DC 6.00 V	0.515	0.653	0.807	5
40	DC 6.00 V	0.847	0.787	0.820	
30	DC 6.00 V	0.544	0.750	0.735	
20	DC 6.00 V	0.537	0.552	0.634	
10	DC 6.00 V	0.728	1.034	0.801	
0	DC 6.00 V	0.654	0.845	0.697	
-10	DC 6.00 V	0.765	0.959	0.787	
-20	DC 6.00 V	0.762	0.743	0.869	
-30	DC 6.00 V	0.961	1.073	0.906	
Result		Pass			

Environment Temperature(°C)	Power Supply (V)	Reference Frequency		Limit: ppm
		151.85MHz	161.61MHz	
50	DC 6.00 V	0.694	0.651	5
40	DC 6.00 V	0.991	0.908	
30	DC 6.00 V	0.437	0.441	
20	DC 6.00 V	0.378	0.782	
10	DC 6.00 V	0.973	0.609	
0	DC 6.00 V	0.826	0.874	
-10	DC 6.00 V	0.999	0.503	
-20	DC 6.00 V	0.766	0.990	
-30	DC 6.00 V	0.493	0.856	
Result		Pass		

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UHF:
Analog:

 (1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V) **-5W-12.5KHz**

7) Frequency stability versus input voltage (Supply nominal voltage is 7.14V) 500 kHz					
Environment	Power	Reference Frequency			Limit:
Temperature(°C)	(V)	400.025MHz	454.025MHz	469.975MHz	ppm
50	DC 7.40 V	0.837	0.653	0.708	2.5
40	DC 7.40 V	0.580	0.615	0.717	
30	DC 7.40 V	0.947	0.570	0.589	
20	DC 7.40 V	0.828	0.823	1.079	
10	DC 7.40 V	0.706	0.948	1.003	
0	DC 7.40 V	0.879	0.670	0.548	
-10	DC 7.40 V	0.857	0.943	0.553	
-20	DC 7.40 V	0.725	0.590	0.848	
-30	DC 7.40 V	0.994	0.814	0.728	
Result	Pass				

 (2) Frequency stability versus input voltage (Battery endpoint is 6V) **-5W-12.5KHz**

Environment Temperature(°C)	Power Supply	Reference Frequency			Limit:
	(V)	400.025MHz	454.025MHz	469.975MHz	ppm
50	DC 6.00 V	0.985	0.938	0.720	2.5
40	DC 6.00 V	0.759	0.569	0.611	
30	DC 6.00 V	0.705	0.366	0.334	
20	DC 6.00 V	0.770	0.896	0.462	
10	DC 6.00 V	0.625	0.900	0.775	
0	DC 6.00 V	0.369	0.950	0.672	
-10	DC 6.00 V	0.949	0.983	0.735	
-20	DC 6.00 V	0.471	0.917	0.922	
-30	DC 6.00 V	0.553	0.635	0.860	
Result	Pass				

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		400.025MHz	454.025MHz	469.975MHz	
50	DC 7.40 V	0.406	0.653	0.864	2.5
40	DC 7.40 V	0.549	0.775	0.610	
30	DC 7.40 V	0.674	0.792	1.006	
20	DC 7.40 V	0.781	0.983	1.072	
10	DC 7.40 V	0.871	0.654	0.568	
0	DC 7.40 V	0.582	1.045	0.983	
-10	DC 7.40 V	1.066	0.554	0.943	
-20	DC 7.40 V	1.060	0.999	0.804	
-30	DC 7.40 V	0.554	0.726	0.836	
Result		Pass			

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		400.025MHz	454.025MHz	469.975MHz	
50	DC 6.00 V	0.977	0.422	0.345	2.5
40	DC 6.00 V	0.838	0.442	0.353	
30	DC 6.00 V	0.615	0.639	0.477	
20	DC 6.00 V	0.636	0.519	0.936	
10	DC 6.00 V	0.644	0.355	0.544	
0	DC 6.00 V	0.332	0.889	0.605	
-10	DC 6.00 V	0.744	0.576	0.393	
-20	DC 6.00 V	0.933	0.912	0.474	
-30	DC 6.00 V	0.579	0.845	0.393	
Result		Pass			

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Digital:
(1) Frequency stability versus input voltage (Supply nominal voltage is 7.40V)-5W-12.5KHz

Environment Temperature(℃)	Power	Reference Frequency			Limit:
	(V)	400.025MHz	454.025MHz	469.975MHz	ppm
50	DC 7.40 V	0.793	0.653	0.638	2.5
40	DC 7.40 V	0.653	0.777	0.560	
30	DC 7.40 V	0.642	0.638	0.892	
20	DC 7.40 V	1.000	0.786	0.868	
10	DC 7.40 V	0.602	0.895	0.541	
0	DC 7.40 V	0.964	0.840	0.581	
-10	DC 7.40 V	0.864	1.085	0.571	
-20	DC 7.40 V	1.058	0.955	0.978	
-30	DC 7.40 V	0.672	0.771	0.809	
Result	Pass				

(2) Frequency stability versus input voltage(Battery endpoint is 6V) -5W-12.5KHz

Environment Temperature(°C)	Power	Reference Frequency			Limit:
	(V)	400.025MHz	454.025MHz	469.975MHz	ppm
50	DC 6.00 V	0.334	0.478	0.825	2.5
40	DC 6.00 V	0.650	0.650	0.426	
30	DC 6.00 V	0.657	0.702	0.407	
20	DC 6.00 V	0.726	0.835	0.801	
10	DC 6.00 V	0.923	0.365	0.745	
0	DC 6.00 V	0.682	0.743	0.944	
-10	DC 6.00 V	0.667	0.478	0.534	
-20	DC 6.00 V	0.564	0.891	0.459	
-30	DC 6.00 V	0.857	0.431	0.789	
Result	Pass				

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		400.025MHz	454.025MHz	469.975MHz	
50	DC 7.40 V	0.693	0.653	1.038	2.5
40	DC 7.40 V	0.854	0.527	1.078	
30	DC 7.40 V	0.661	0.894	1.016	
20	DC 7.40 V	0.729	0.746	0.854	
10	DC 7.40 V	0.901	0.908	0.758	
0	DC 7.40 V	0.549	0.777	0.878	
-10	DC 7.40 V	0.617	1.085	0.746	
-20	DC 7.40 V	1.009	0.881	0.606	
-30	DC 7.40 V	0.891	1.047	0.889	
Result		Pass			

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

Environment Temperature(°C)	Power (V)	Reference Frequency			Limit: ppm
		400.025MHz	454.025MHz	469.975MHz	
50	DC 6.00 V	0.779	0.732	0.869	2.5
40	DC 6.00 V	0.761	0.928	0.456	
30	DC 6.00 V	0.803	0.714	0.868	
20	DC 6.00 V	0.905	0.715	0.539	
10	DC 6.00 V	0.903	0.488	0.771	
0	DC 6.00 V	0.867	0.374	0.558	
-10	DC 6.00 V	0.693	0.572	0.324	
-20	DC 6.00 V	0.712	0.835	0.537	
-30	DC 6.00 V	0.738	0.835	0.318	
Result		Pass			

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7. EMISSION BANDWIDTH

7.1 PROVISIONS APPLICABLE

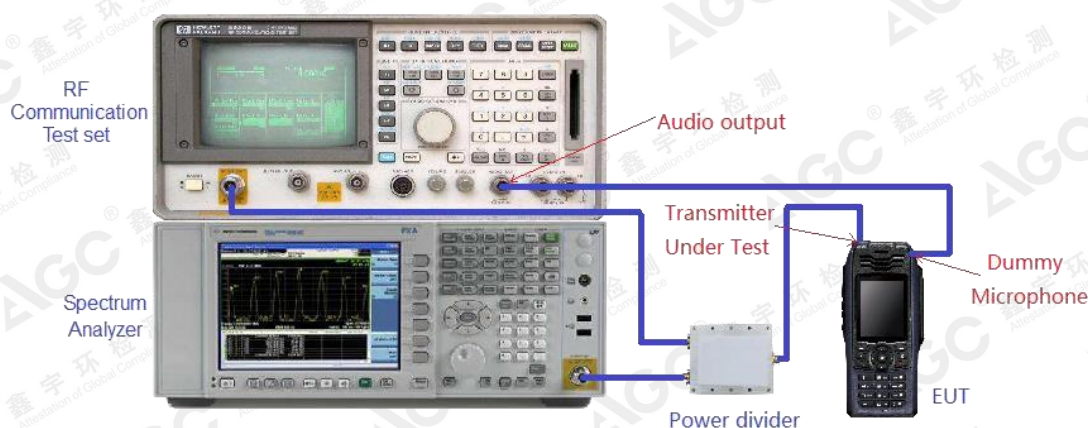
FCC Part 90 & FCC Part 22:

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

7.2 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.

7.3 TEST SETUP BLOCK DIAGRAM



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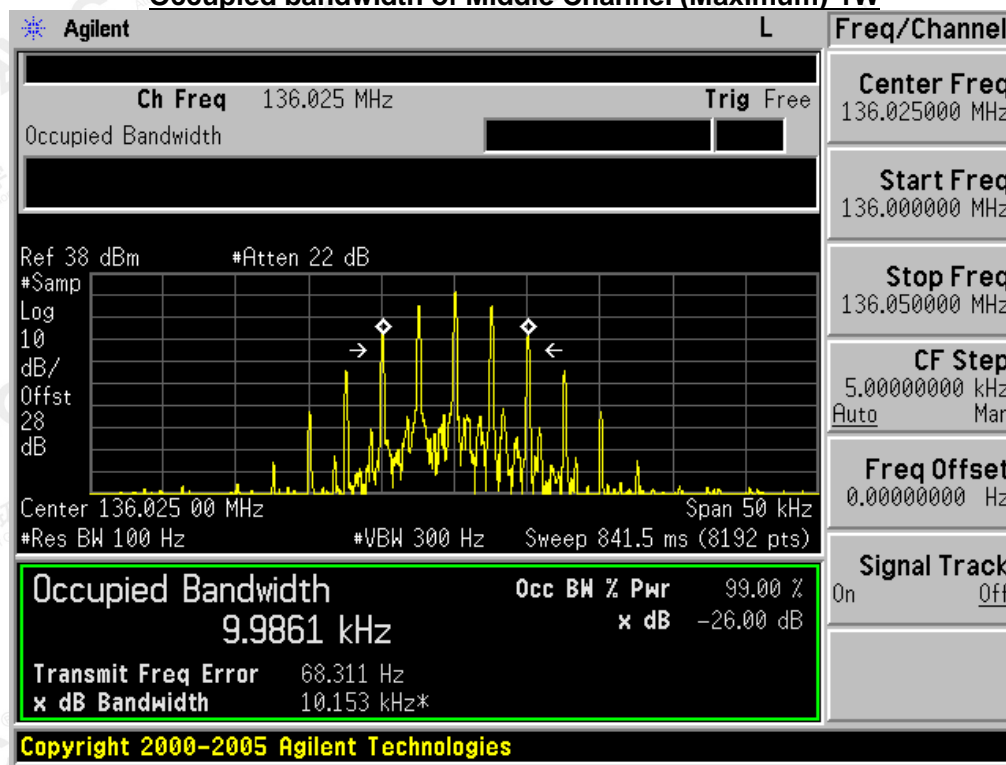
7.4 MEASUREMENT RESULT

VHF:

Analog:12.5KHz

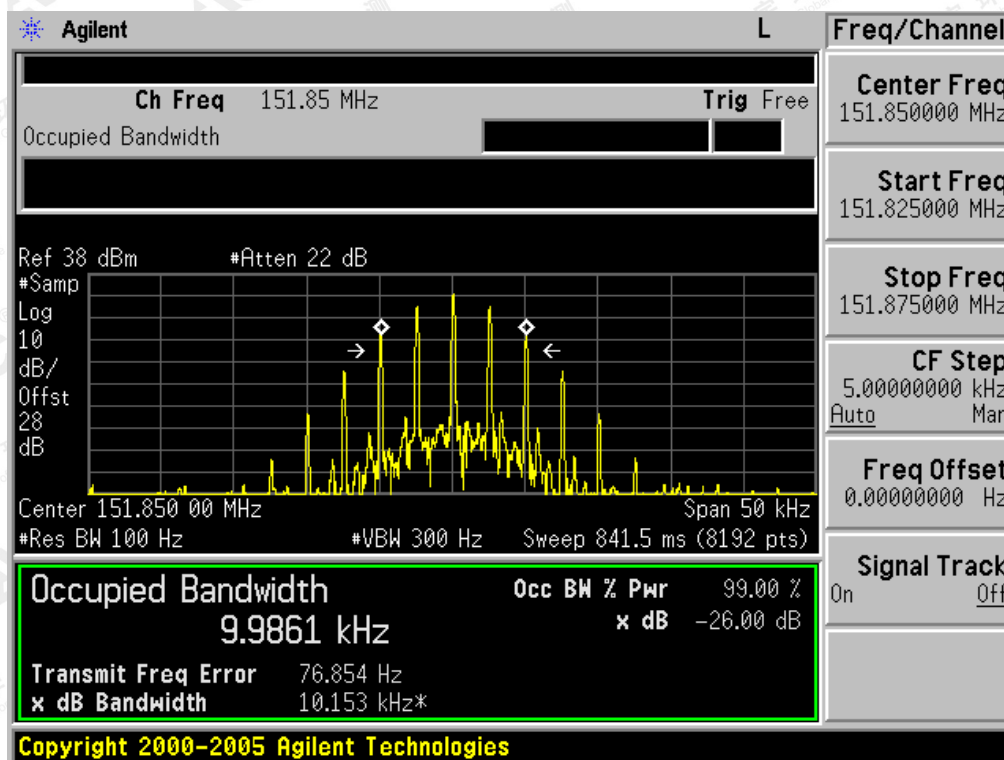
26 dB Bandwidth Measurement Result			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	10.153KHz	11.25 KHz	Pass
151.850MHz	10.153KHz	11.25 KHz	Pass
161.610MHz	10.153KHz	11.25 KHz	Pass
173.975MHz	10.152KHz	11.25 KHz	Pass

Occupied bandwidth of Middle Channel (Maximum)-1W

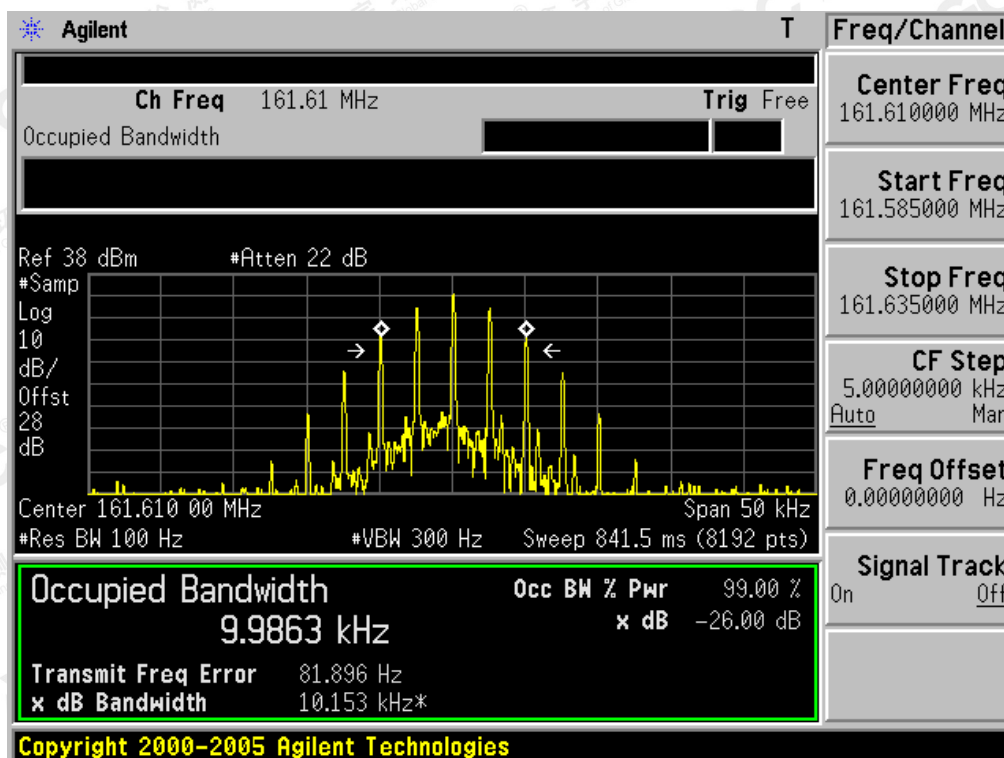


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Occupied bandwidth of Bottom Channel (151.850 MHz)-1W

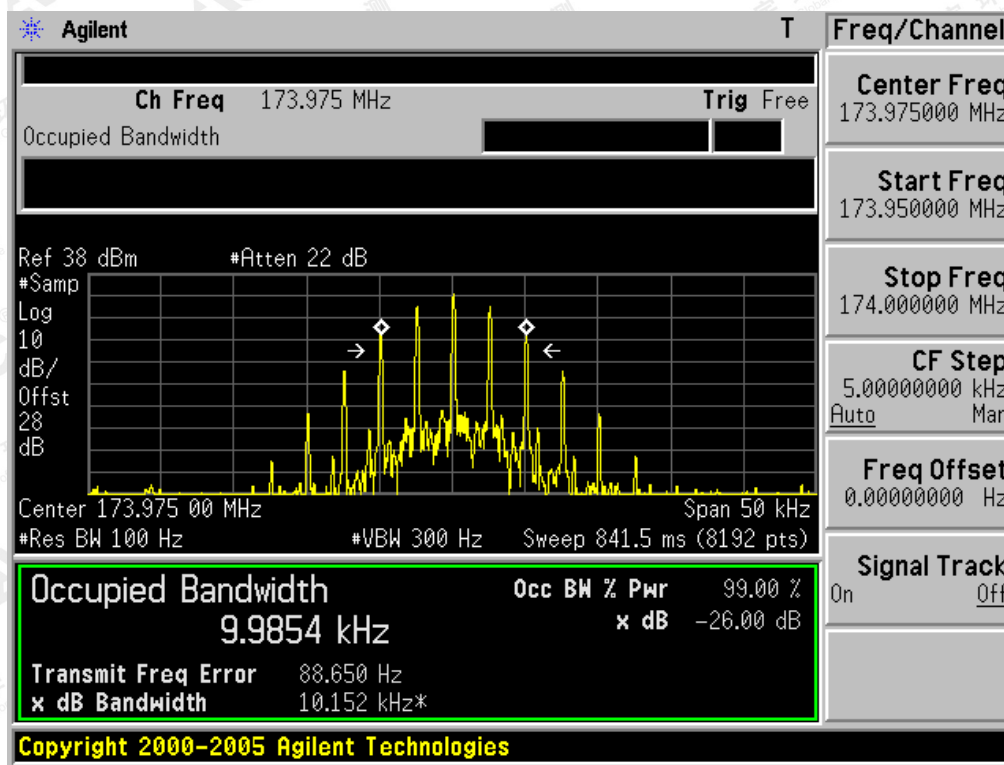


Occupied bandwidth of Middle Channel (161.610 MHz)-1W



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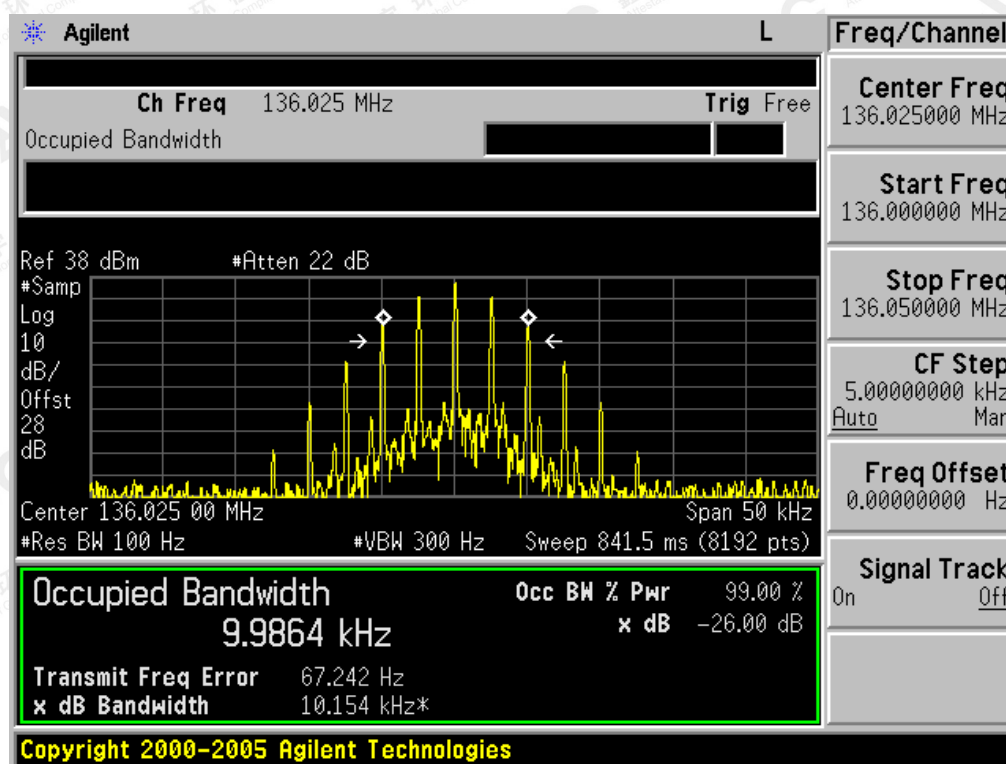
Occupied bandwidth of Top Channel (173.975 MHz)-1W



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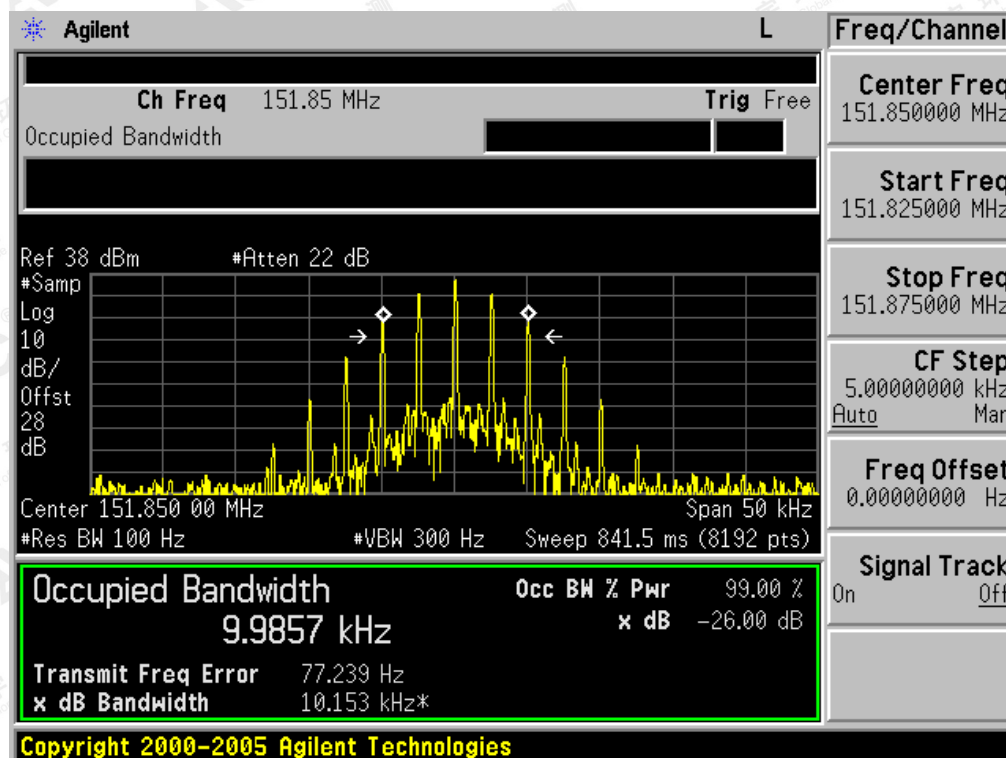
26 dB Bandwidth Measurement Result			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	10.154KHz	11.25 KHz	Pass
151.850MHz	10.153KHz	11.25 KHz	Pass
161.610MHz	10.153KHz	11.25 KHz	Pass
173.975MHz	10.152KHz	11.25 KHz	Pass

Occupied bandwidth of Bottom Channel (Maximum)-5W

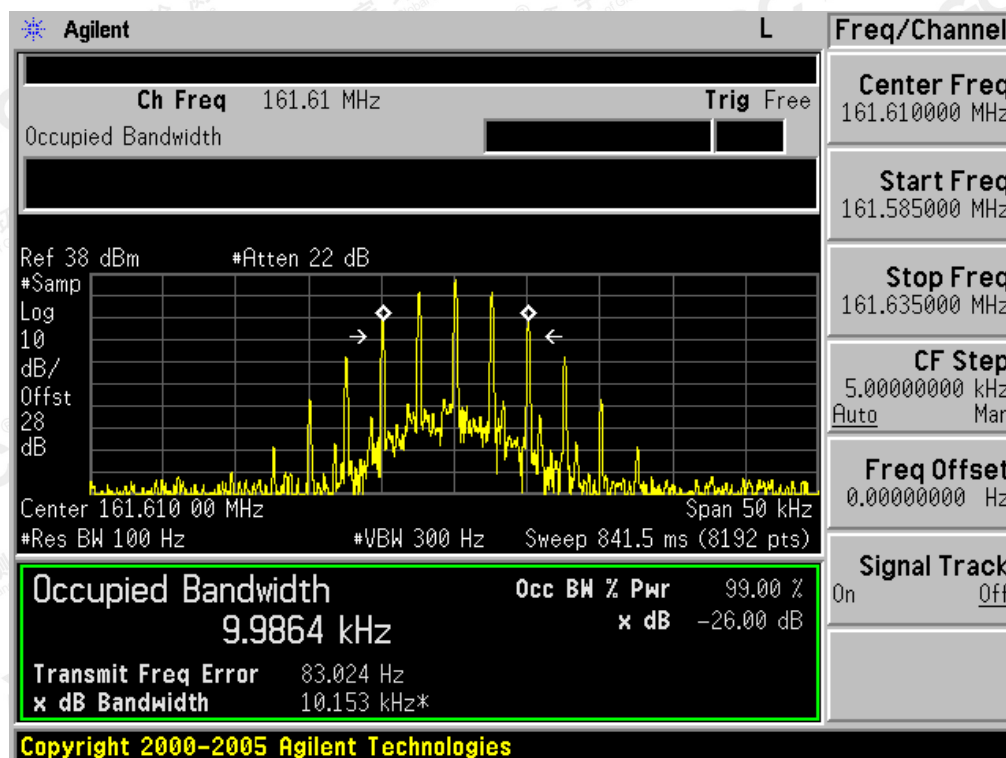


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Occupied bandwidth of Middle Channel (151.850 MHz)-5W

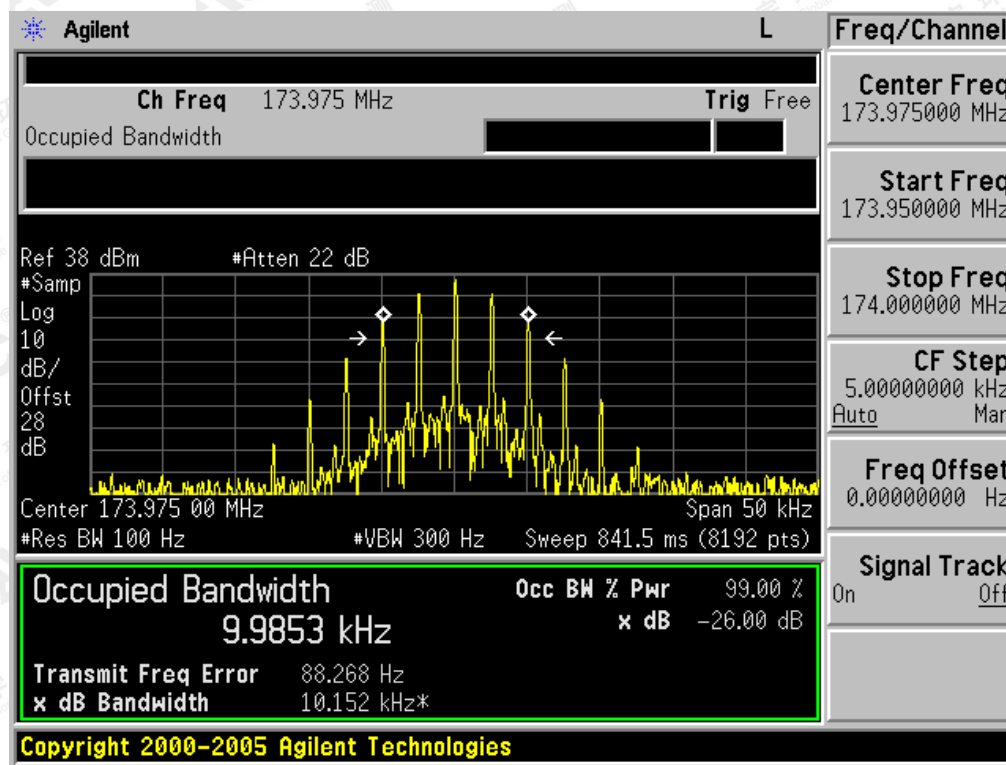


Occupied bandwidth of Middle Channel (161.610 MHz)-5W



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Occupied bandwidth of Top Channel (173.975 MHz)-5W

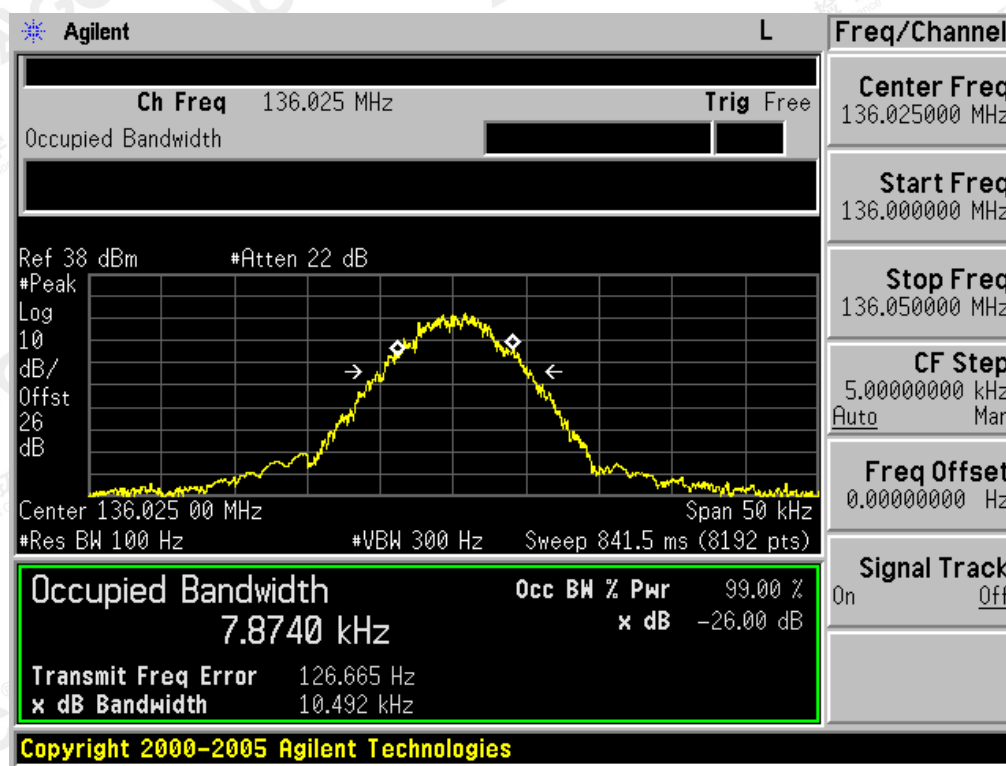


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Digital:
VHF:
TEST RESULTS

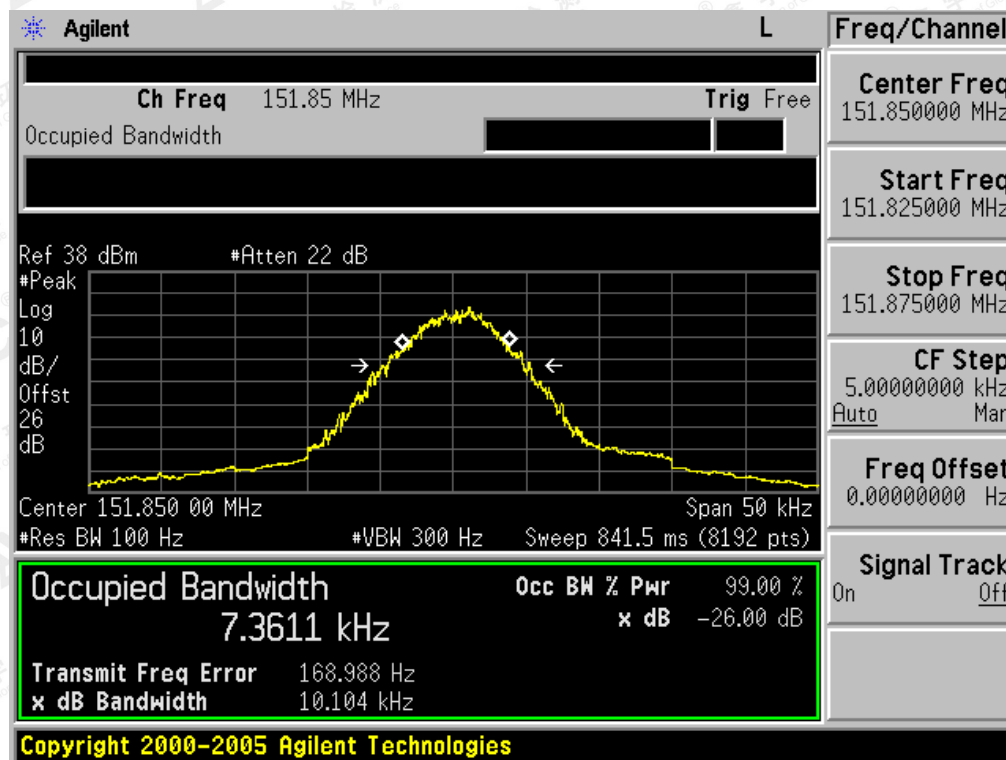
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	10.492KHz	11.25 KHz	Pass
151.850MHz	10.104KHz	11.25 KHz	Pass
161.610MHz	9.898KHz	11.25 KHz	Pass
173.975MHz	10.754KHz	11.25 KHz	Pass

Occupied bandwidth of Bottom Channel (Maximum)-1W

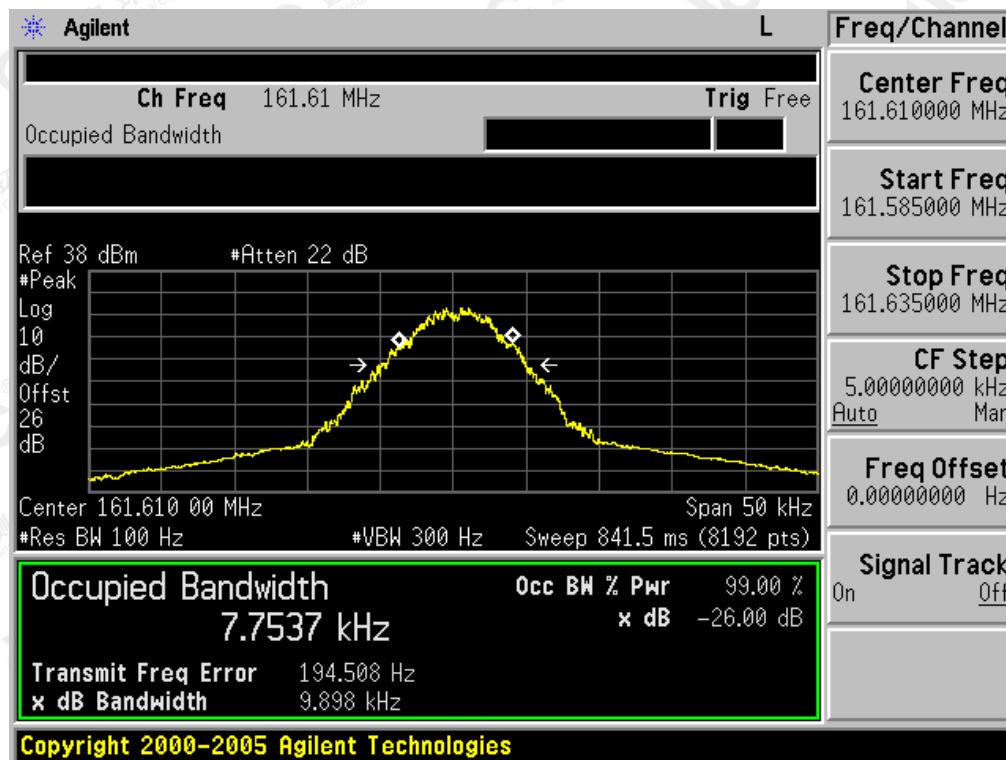


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Occupied bandwidth of Middle Channel (151.850 MHz)-1W

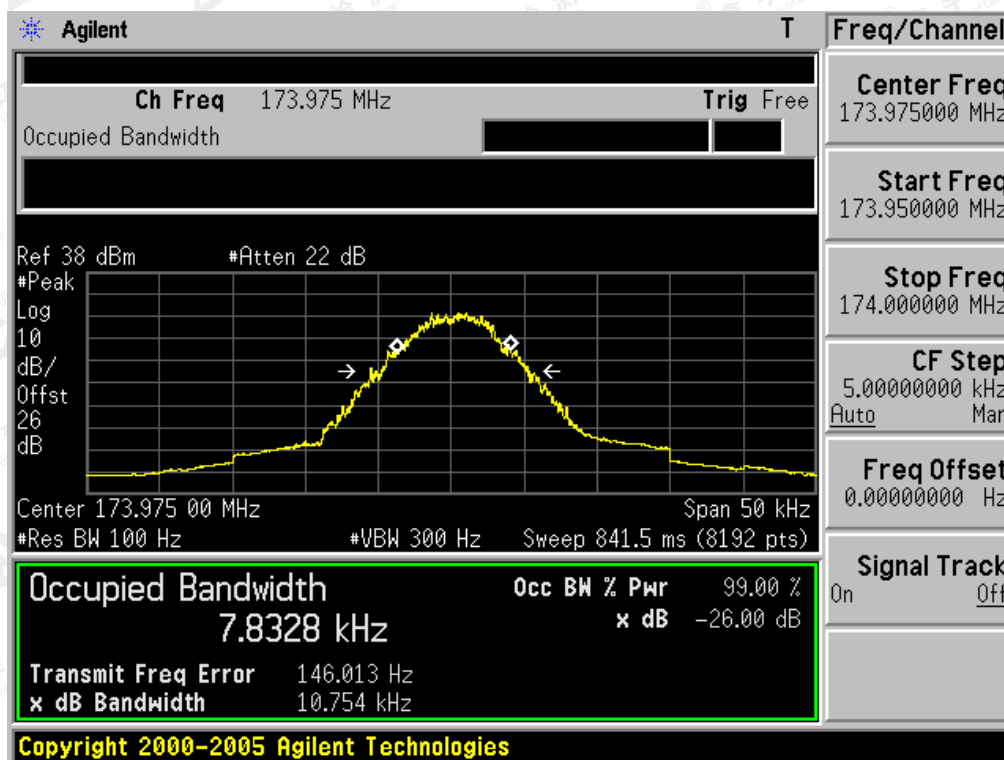


Occupied bandwidth of Middle Channel (161.610 MHz)-1W



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

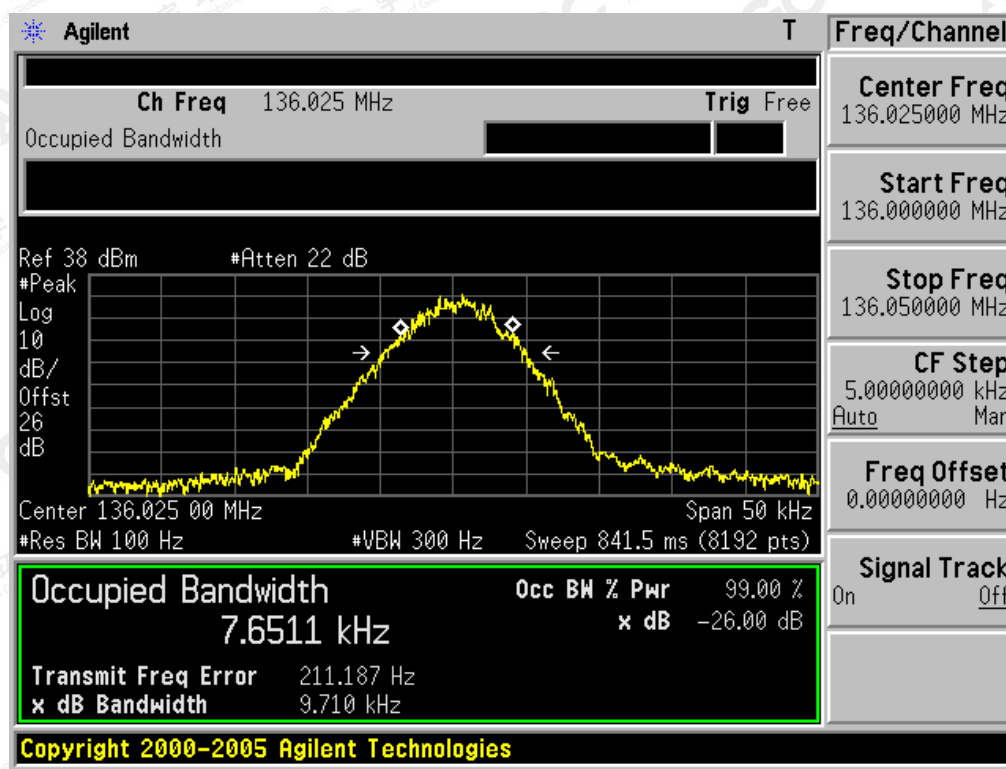


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TEST RESULTS

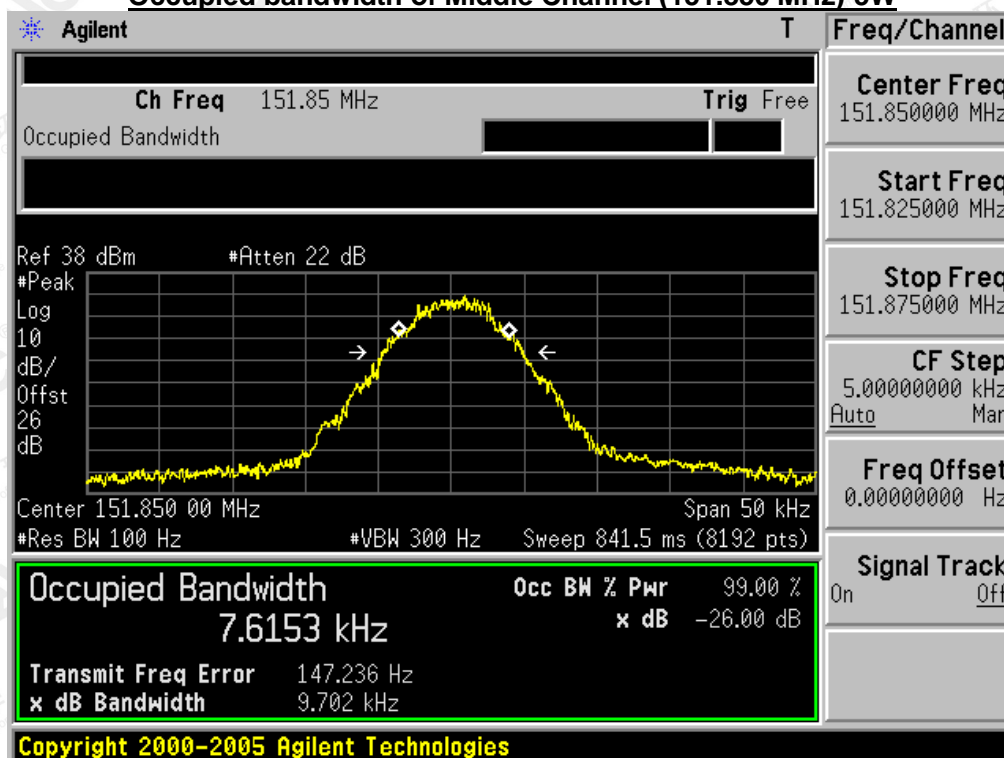
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
136.025MHz	9.710KHz	11.25 KHz	Pass
151.850MHz	9.702KHz	11.25 KHz	Pass
161.610MHz	9.843KHz	11.25 KHz	Pass
173.975MHz	10.672KHz	11.25 KHz	Pass

Occupied bandwidth of Bottom Channel (Maximum)-5W

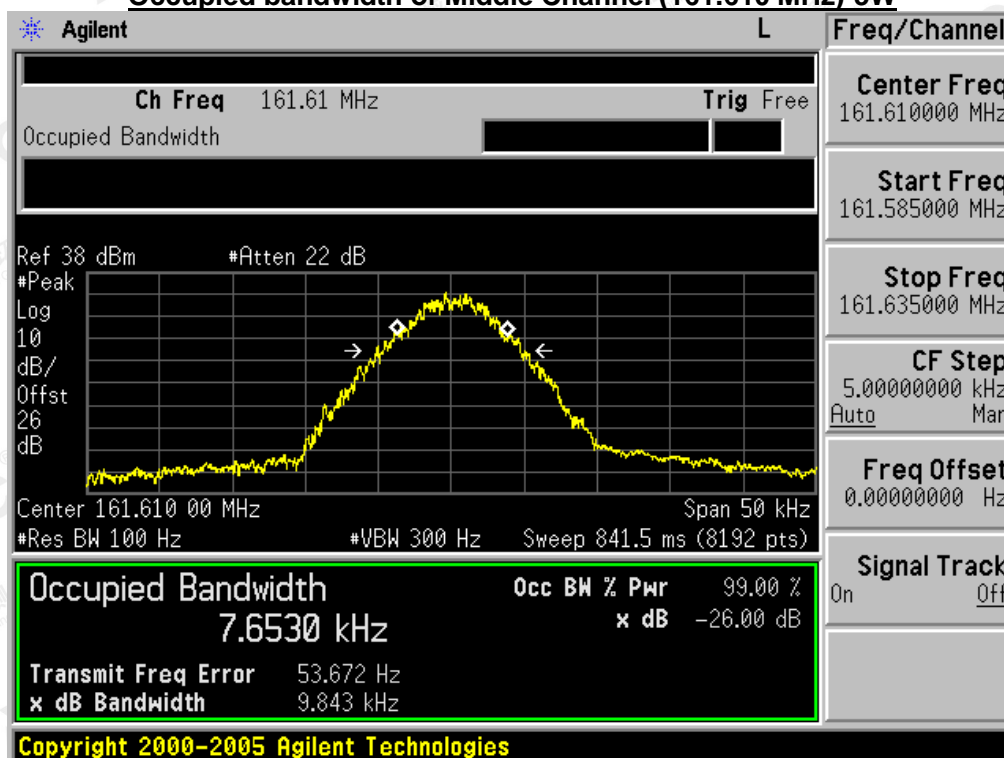


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Occupied bandwidth of Middle Channel (151.850 MHz)-5W



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



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Agilent

Occupied Bandwidth of Top Channel (173.975 MHz) L

Ch Freq 173.975 MHz Trig Free

Occupied Bandwidth

Ref 38 dBm #Atten 22 dB

#Peak Log 10 dB/ Offst 26 dB

Center 173.975 00 MHz Span 50 kHz

#Res BW 100 Hz #VBW 300 Hz Sweep 841.5 ms (8192 pts)

Occupied Bandwidth 7.7884 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error 133.626 Hz x dB Bandwidth 10.672 kHz

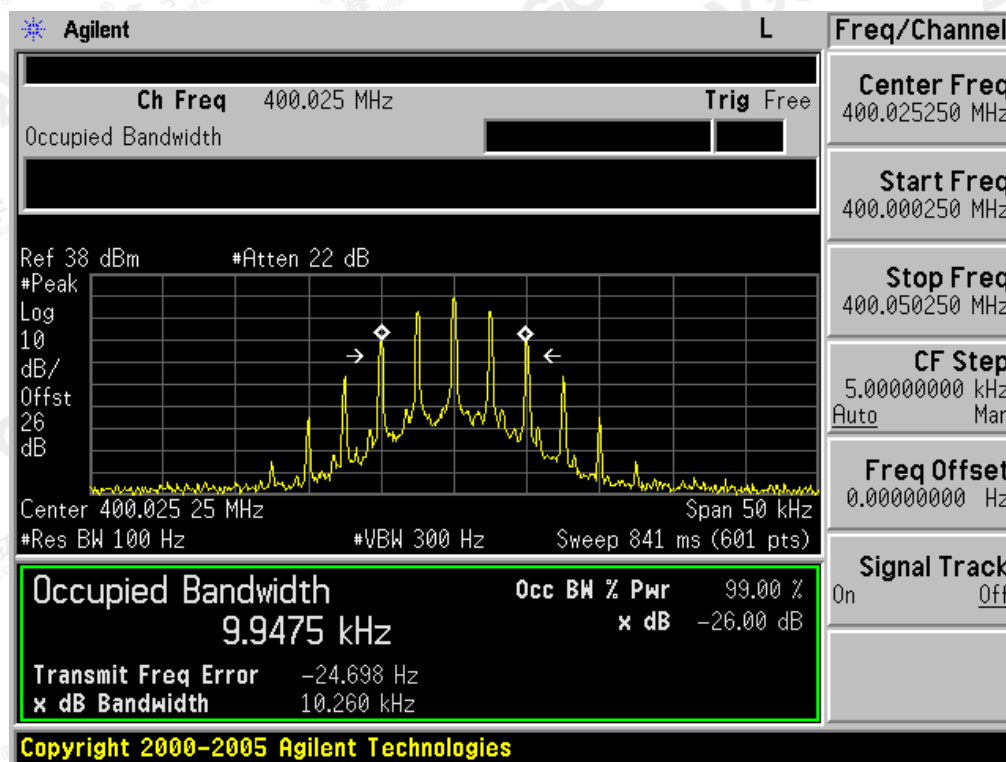
Copyright 2000-2005 Agilent Technologies

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UHF:
Analog:12.5KHz

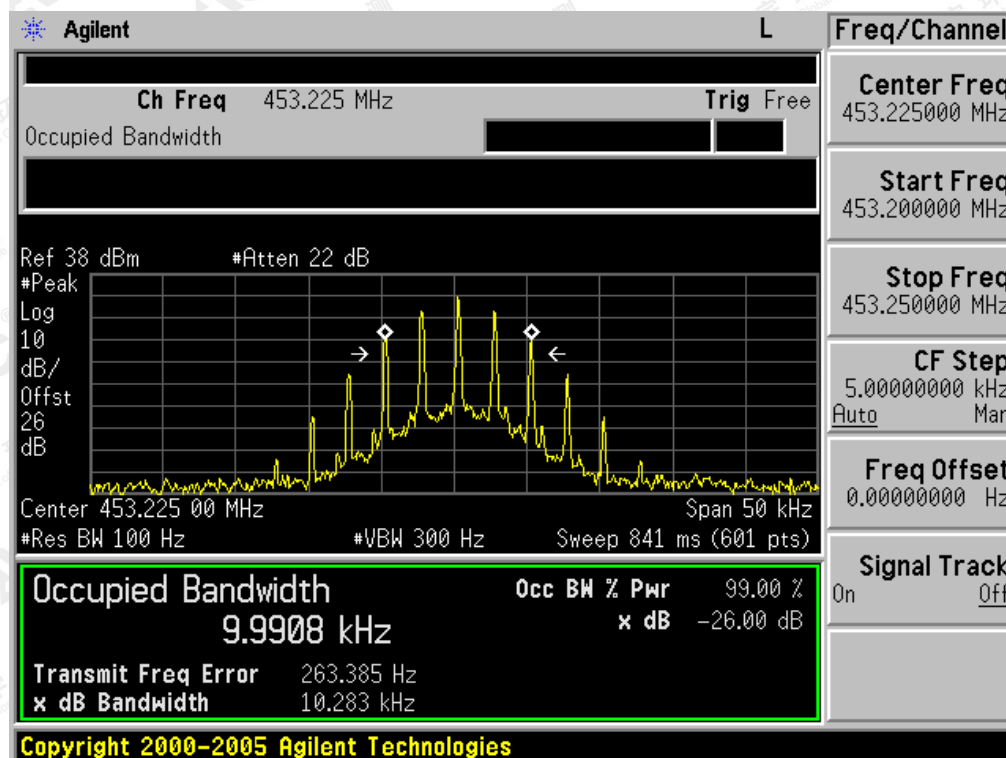
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	10.260KHz	11.25 KHz	Pass
453.225MHz	10.283KHz	11.25 KHz	Pass
454.025MHz	10.282KHz	11.25 KHz	Pass
469.975MHz	10.286KHz	11.25 KHz	Pass

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

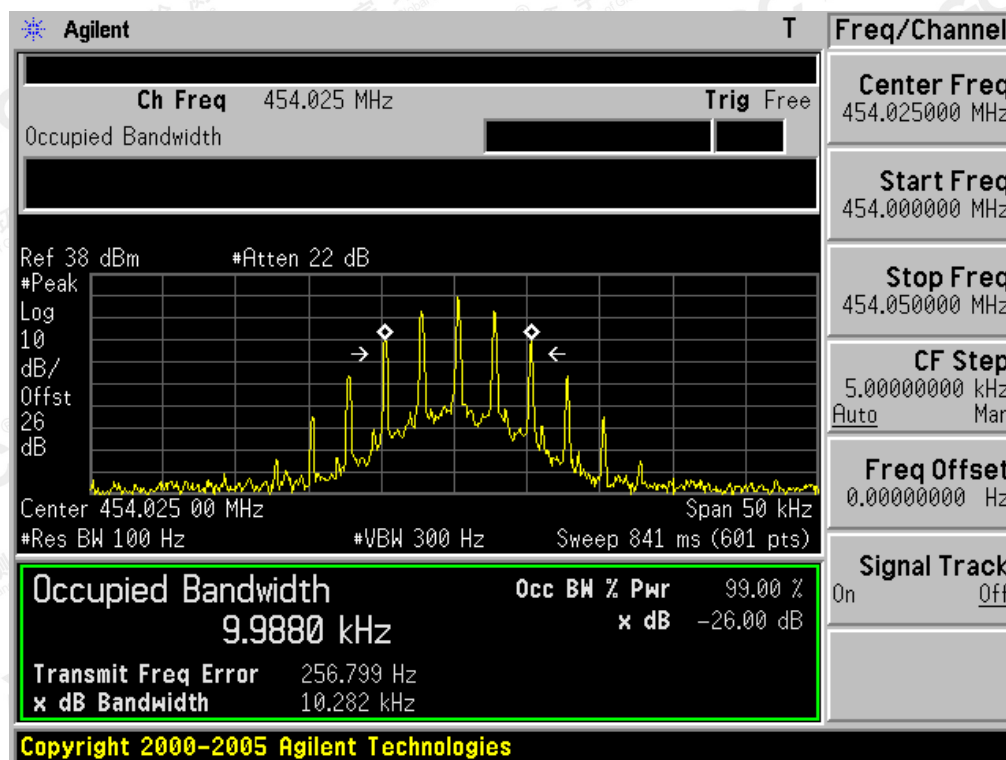


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Occupied bandwidth of Middle Channel (453.225MHz)-1W

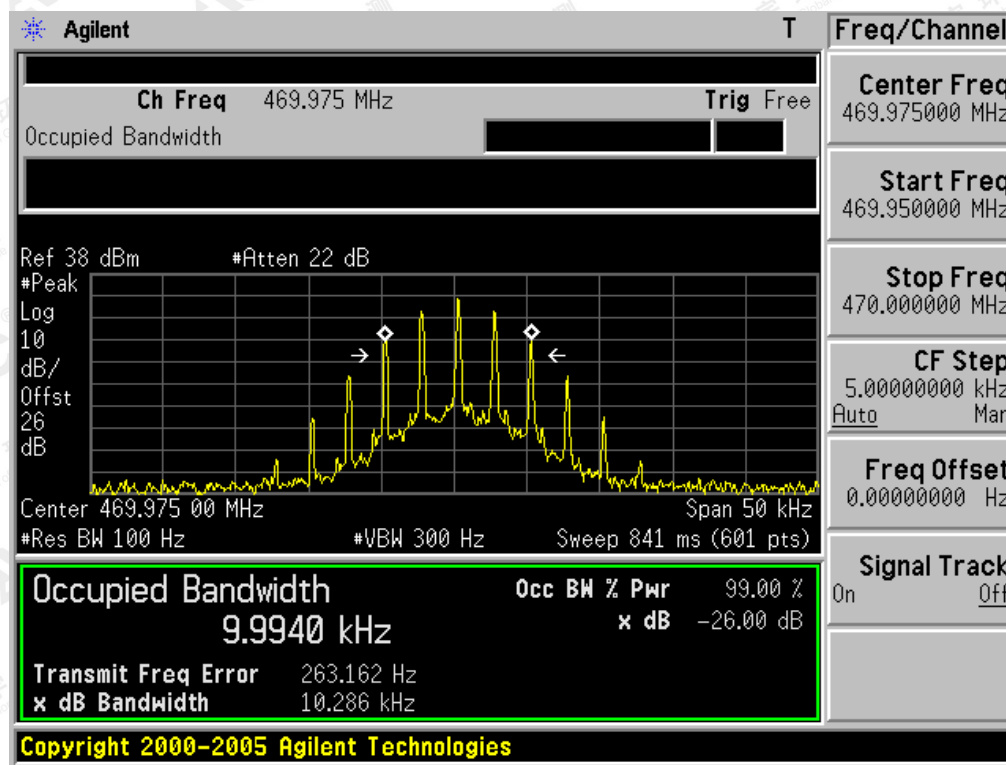


Occupied bandwidth of Middle Channel (454.025MHz)-1W



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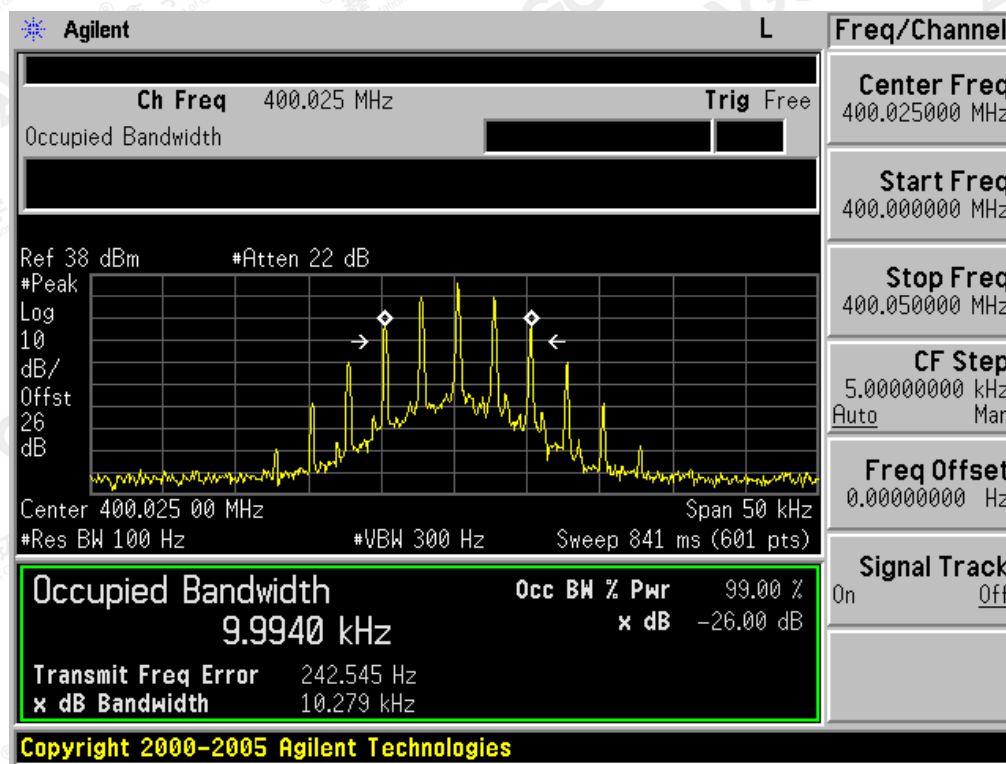
Occupied bandwidth of Top Channel (469.975MHz)-1W



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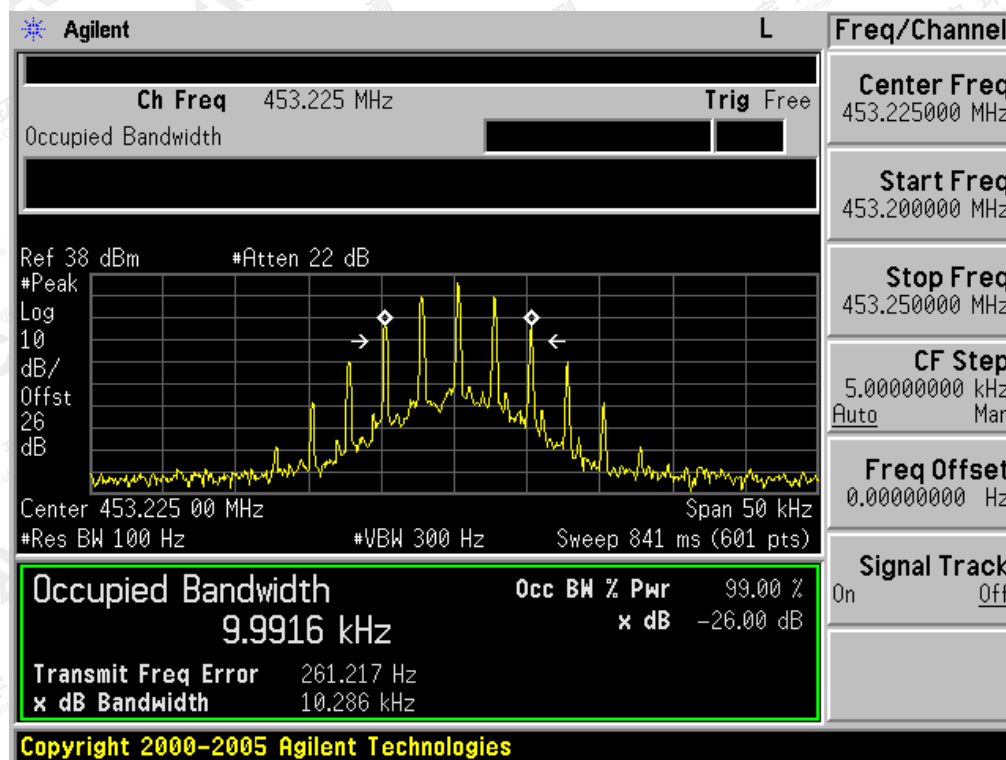
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	10.279KHz	11.25 KHz	Pass
453.225MHz	10.286KHz	11.25 KHz	Pass
454.025MHz	10.285KHz	11.25 KHz	Pass
469.975MHz	10.284MHz	11.25 KHz	Pass

Occupied bandwidth of Bottom Channel (400.025MHz)-5W

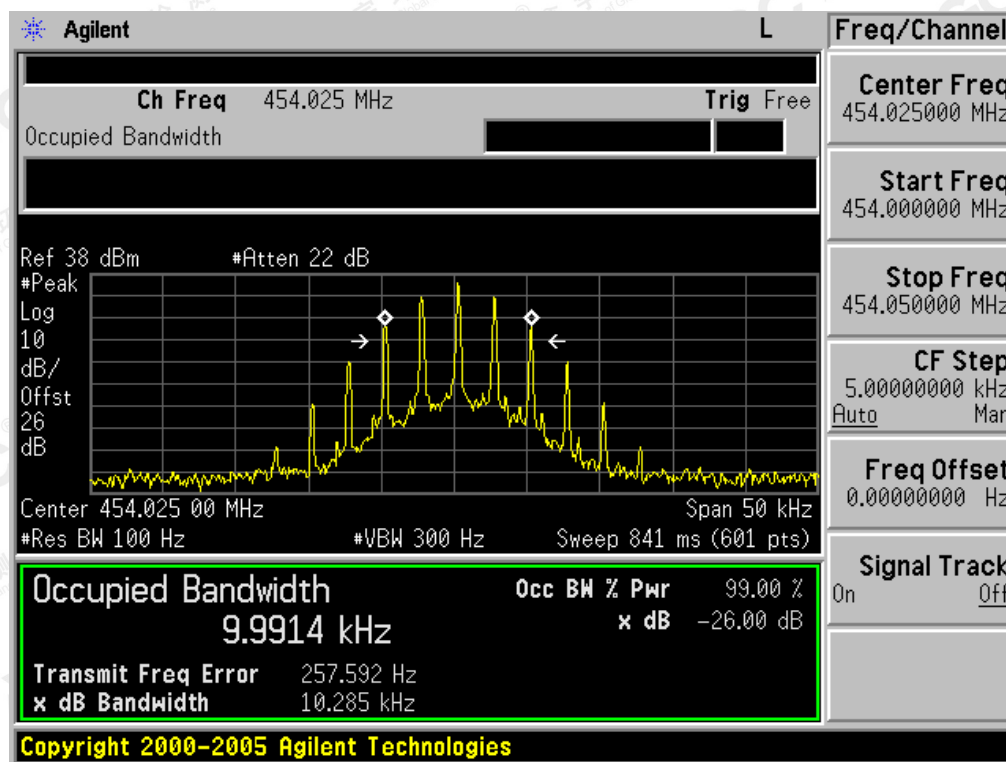


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Occupied bandwidth of Middle Channel (453.225MHz)-5W

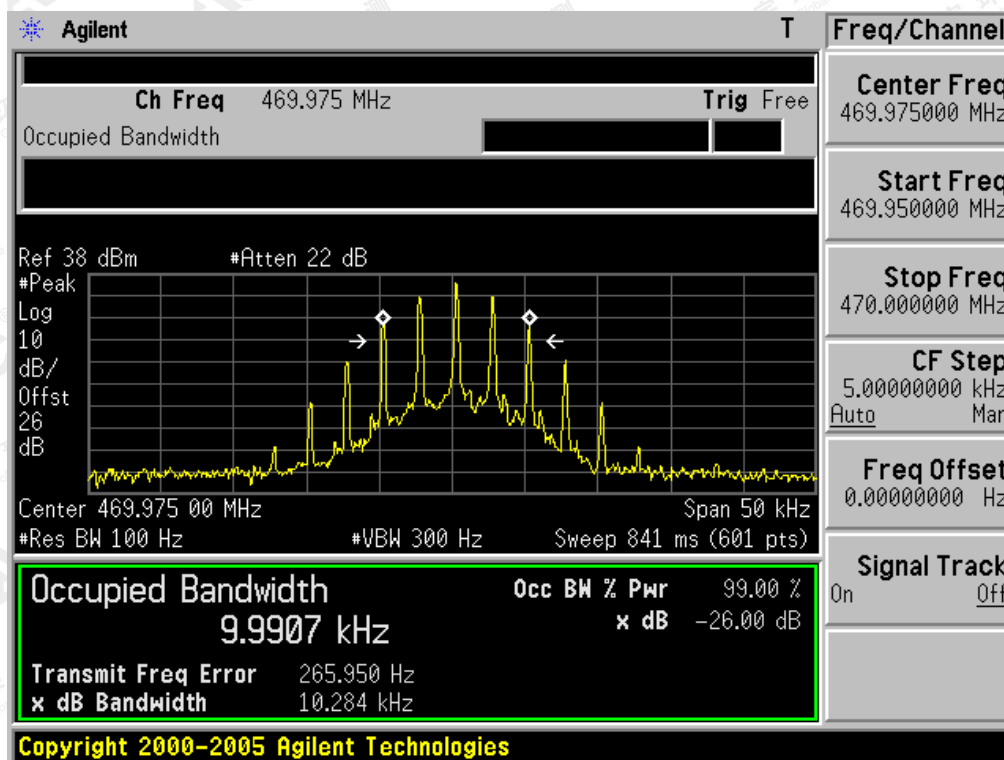


Occupied bandwidth of Middle Channel (454.025MHz)-5W



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Occupied bandwidth of Top Channel (469.975MHz)-5W

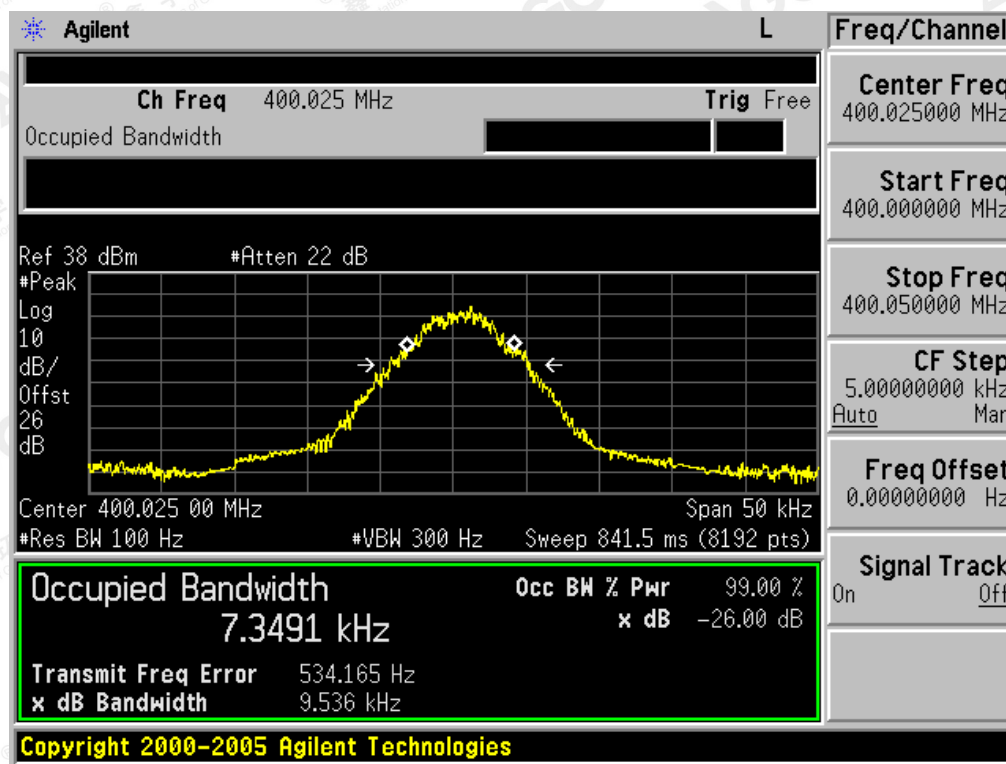


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**Digital:
TEST RESULTS**

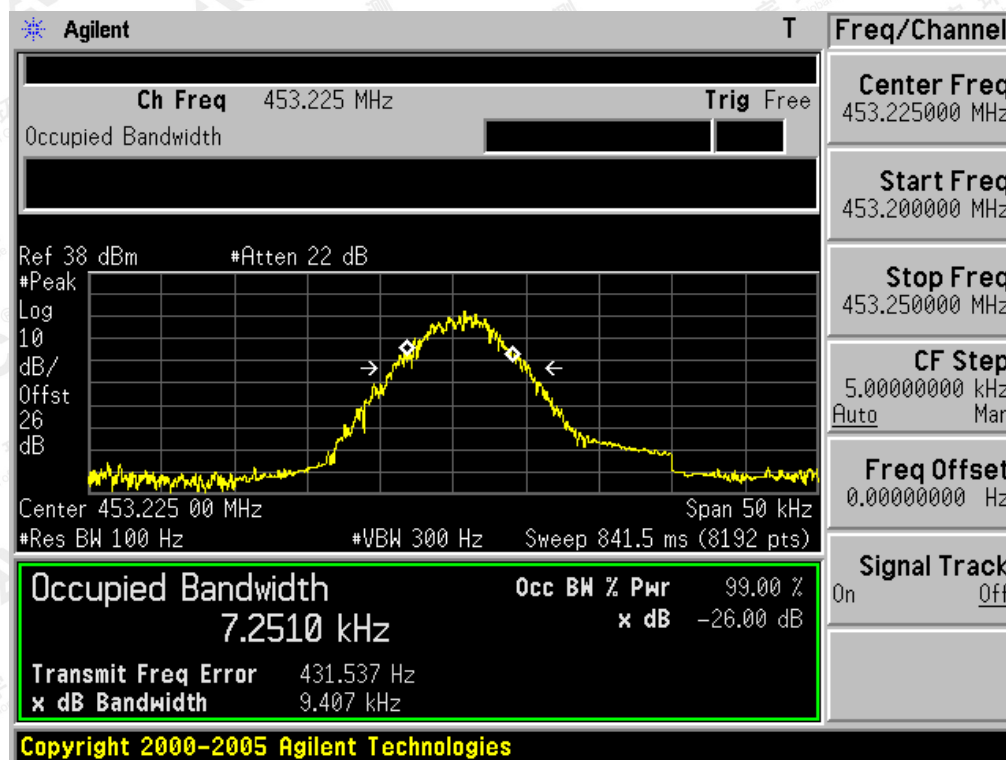
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	9.536KHz	11.25 KHz	Pass
453.225MHz	9.407KHz	11.25 KHz	Pass
454.025MHz	9.916KHz	11.25 KHz	Pass
469.975MHz	10.000KHz	11.25 KHz	Pass

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

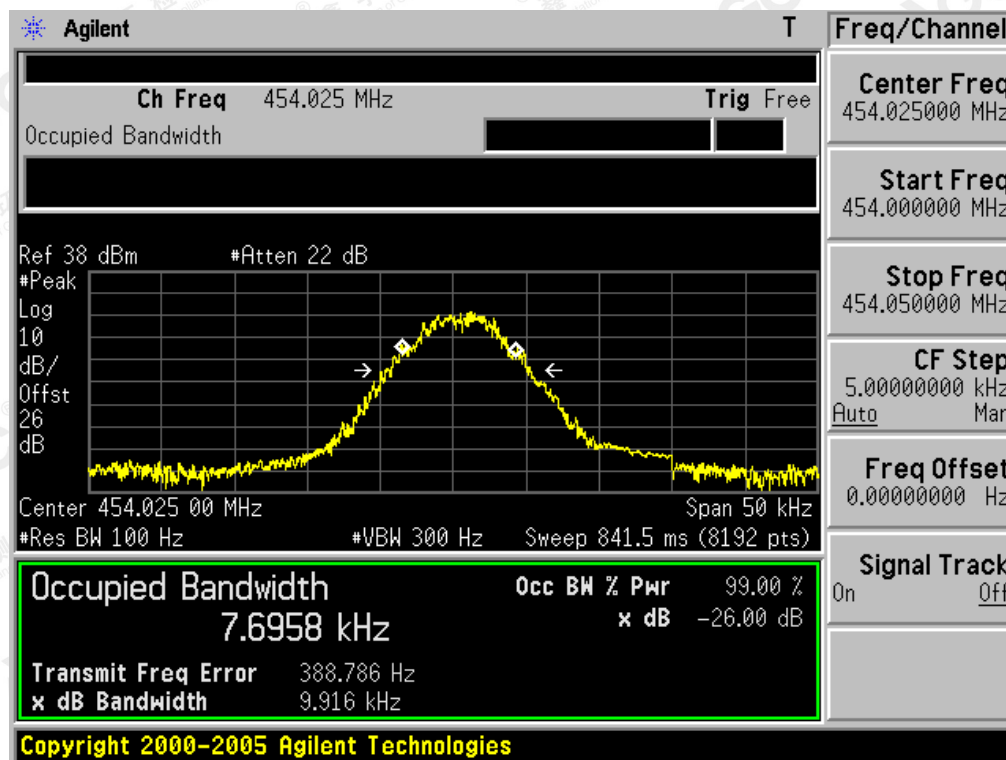


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Occupied bandwidth of Middle Channel (453.225MHz)-1W

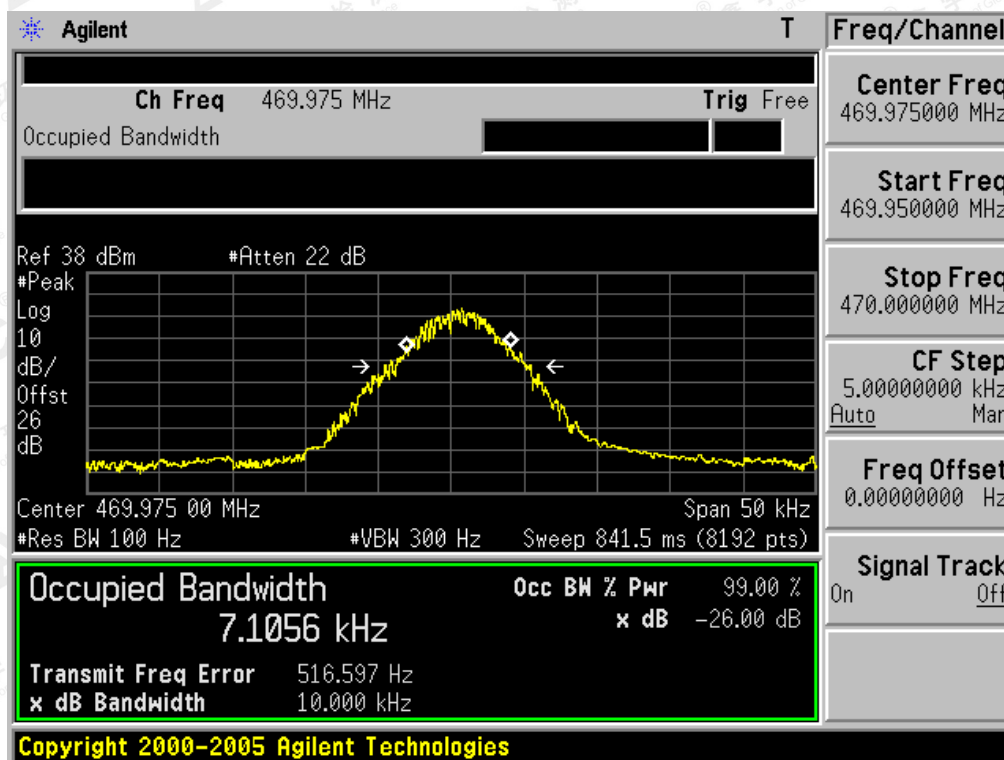


Occupied bandwidth of Middle Channel (454.025MHz)-1W



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Occupied bandwidth of Top Channel (469.975MHz)-1W

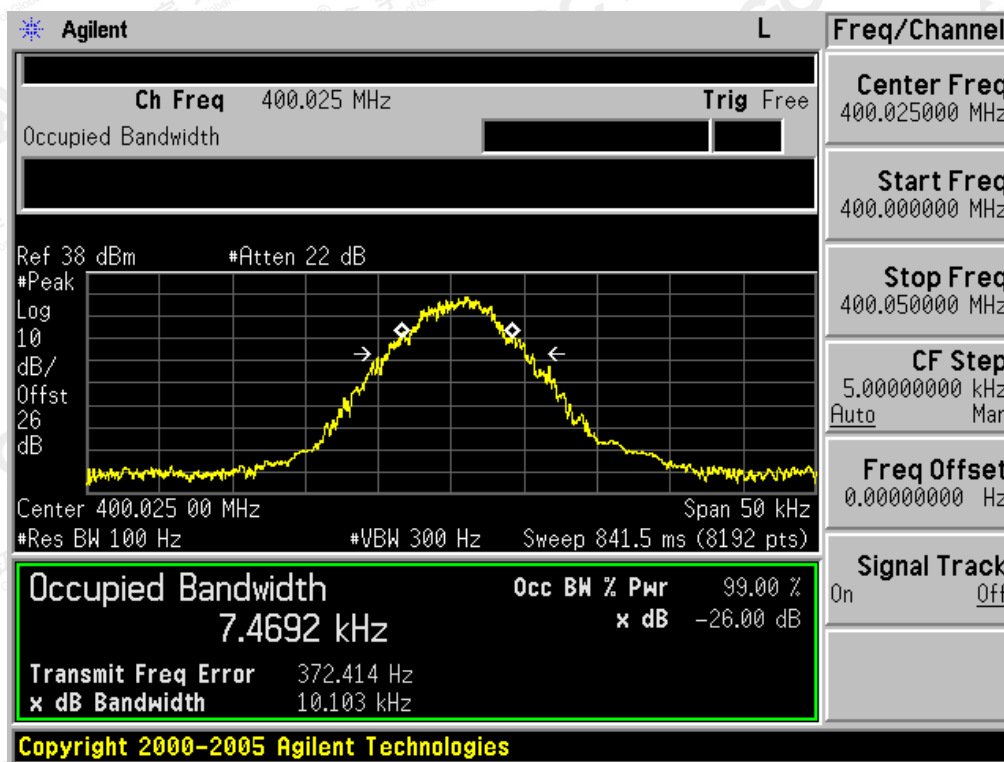


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TEST RESULTS

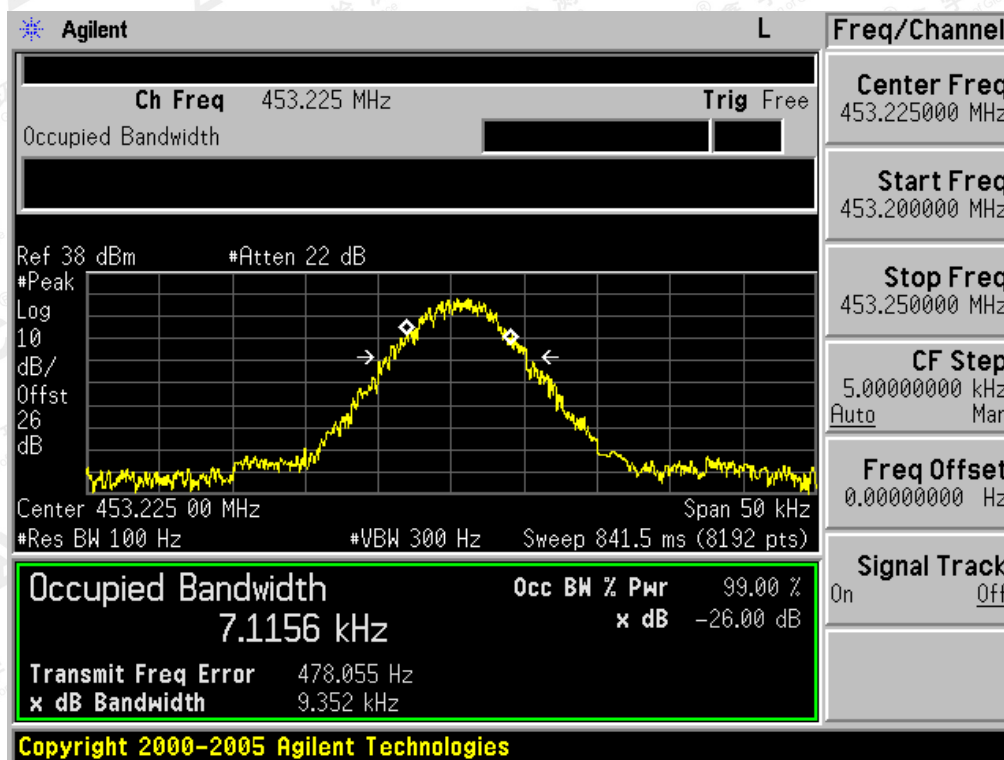
26 DB BANDWIDTH MEASUREMENT RESULT			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
400.025MHz	10.103KHz	11.25 KHz	Pass
453.225MHz	9.352KHz	11.25 KHz	Pass
454.025MHz	9.662KHz	11.25 KHz	Pass
469.975MHz	9.355KHz	11.25 KHz	Pass

Occupied bandwidth of Bottom Channel (400.025MHz)-5W

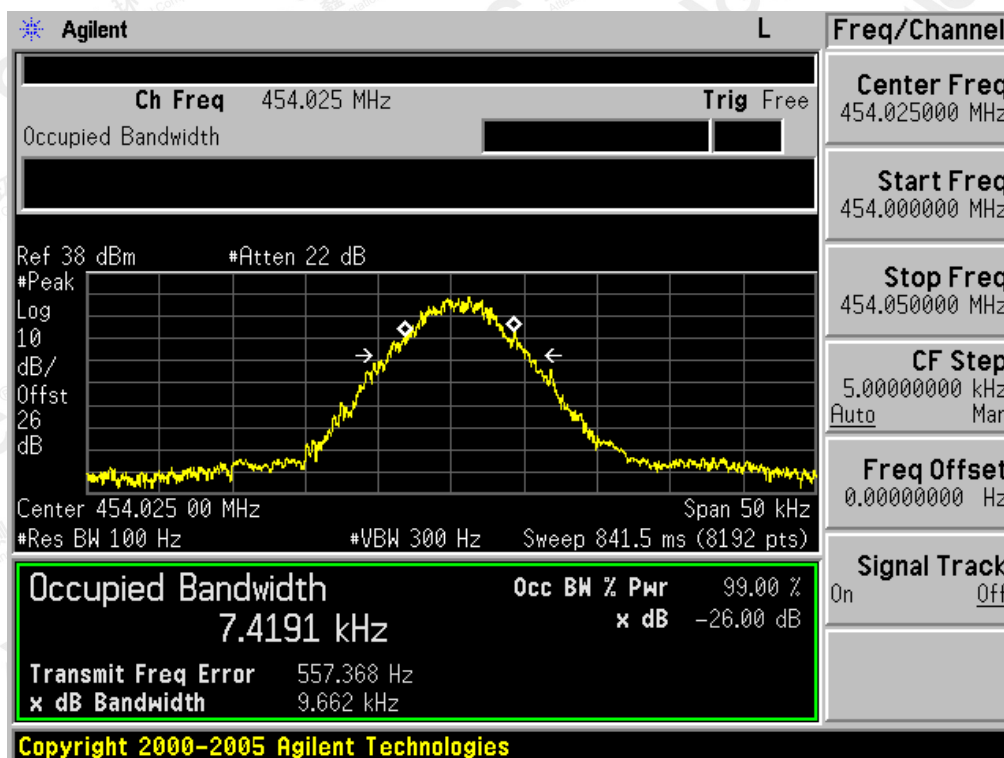


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Occupied bandwidth of Middle Channel (453.225MHz)-5W

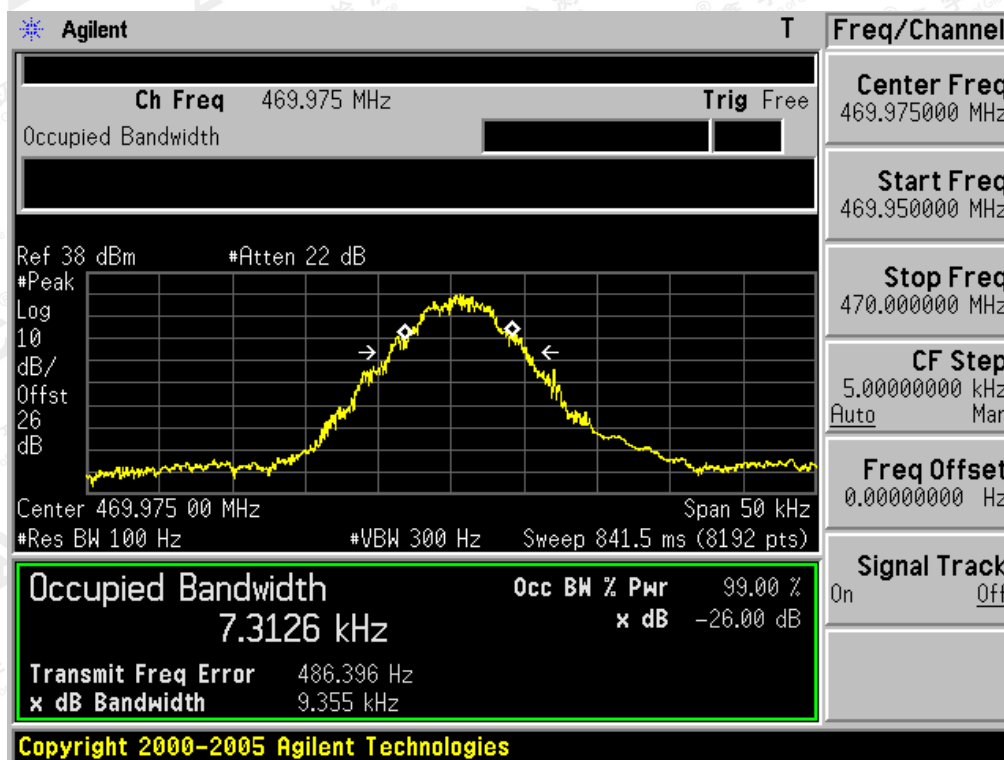


Occupied bandwidth of Middle Channel (454.025MHz)-5W



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Occupied bandwidth of Top Channel (469.975MHz)-5W



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8. UNWANTED RADIATION

8.1 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.

8.2 MEASUREMENT PROCEDURE

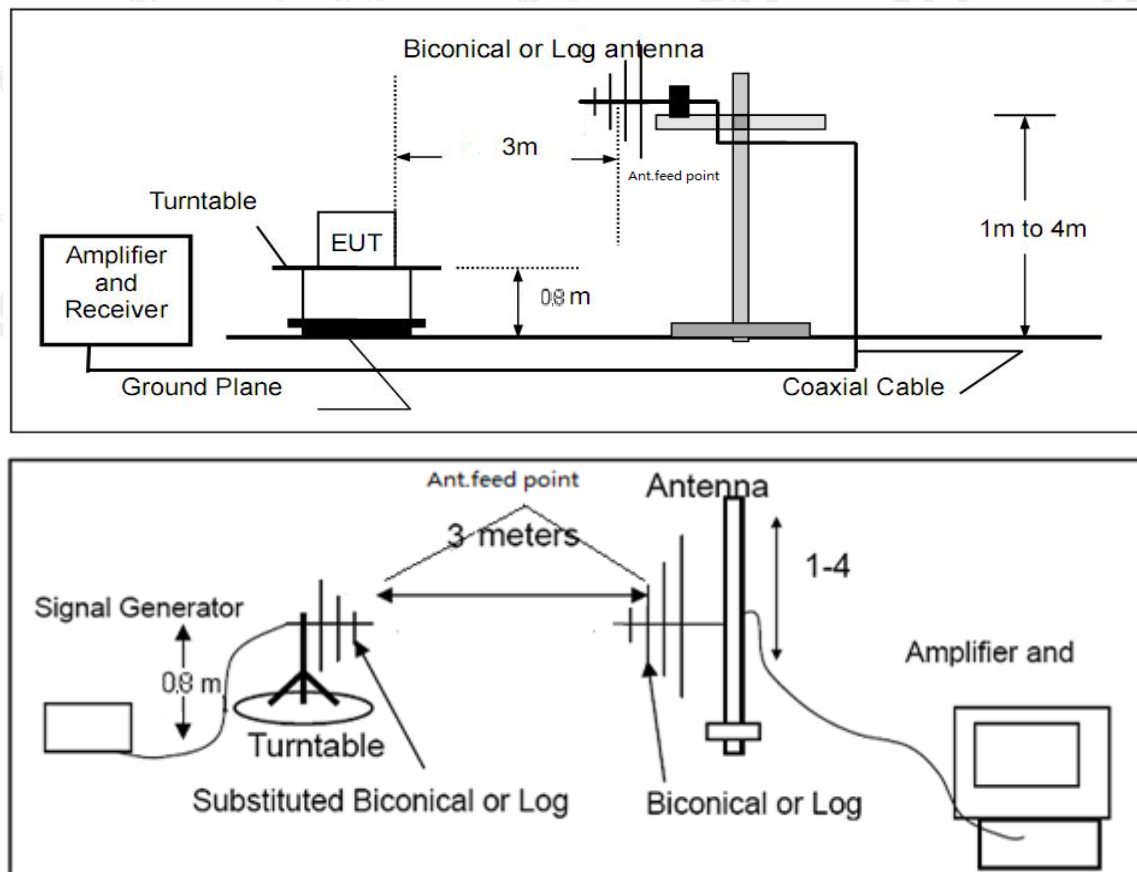
- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall 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.

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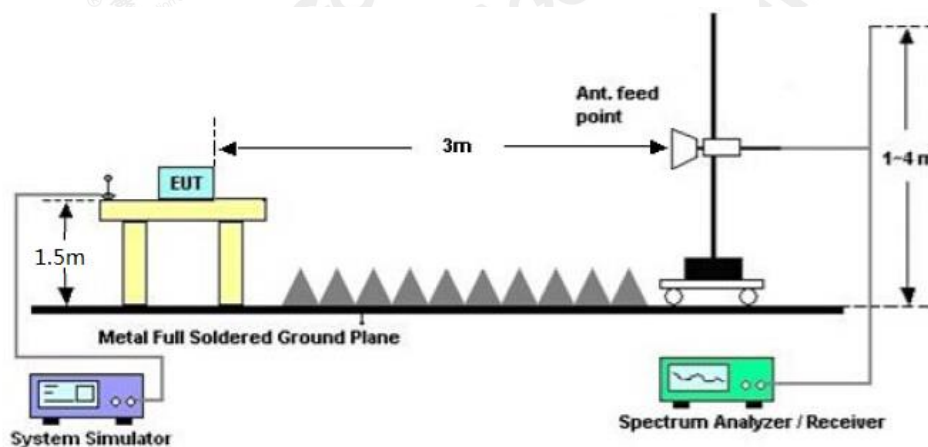
8.3 TEST SETUP BLOCK DIAGRAM

SUBSTITUTION METHOD: (Radiated Emissions)

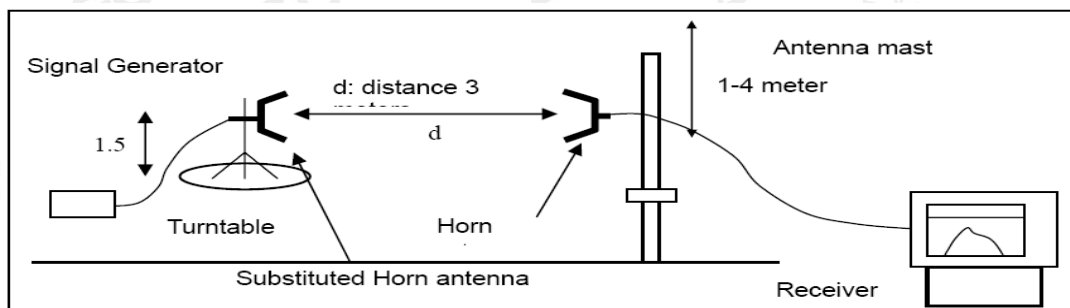
Radiated Below 1GHz



Radiated Above 1 GHz



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8.4 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 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.

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

Limit: At least $50+10 \log(P) = 50+10 \log(5) = 56.99$ (dB)—5W 36.99-56.02=-20 dBm

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

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VHF:
Analog:

Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
136.025	H	0		pass
272.050	H	-34.4	-20	pass
408.08	H	-35.1	-20	pass
544.100	H	-37.9	-20	pass
680.125	H	-40.3	-20	pass
816.150	H	-41.1	-20	pass
952.175	H	-42.9	-20	pass
1088.200	H	-43.5	-20	pass
1224.225	H	-45.5	-20	pass
1360.250	H	-48.3	-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	-34.5	-20	pass
408.08	V	-36.2	-20	pass
544.100	V	-38.6	-20	pass
680.125	V	-40.2	-20	pass
816.150	V	-41.4	-20	pass
952.175	V	-43.6	-20	pass
1088.200	V	-45.4	-20	pass
1224.225	V	-46.9	-20	pass
1360.250	V	-48.3	-20	pass

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Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/H)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
151.850	H	0		pass
303.700	H	-33.3	-20	pass
455.550	H	-36.3	-20	pass
607.400	H	-37.3	-20	pass
759.250	H	-38.2	-20	pass
911.100	H	-39.9	-20	pass
1062.950	H	-40.1	-20	pass
1214.800	H	-41.7	-20	pass
1366.650	H	-42.3	-20	pass
1518.500	H	-44.3	-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	-32.3	-20	pass
455.550	V	-34.1	-20	pass
607.400	V	-36.3	-20	pass
759.250	V	-35.1	-20	pass
911.100	V	-37.4	-20	pass
1062.950	V	-42.1	-20	pass
1214.800	V	-41.5	-20	pass
1366.650	V	-42.2	-20	pass
1518.500	V	-47.7	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
155.025	H	0		pass
310.050	H	-29.6	-20	pass
465.075	H	-30.3	-20	pass
620.100	H	-31.2	-20	pass
775.125	H	-34.2	-20	pass
930.150	H	-38.5	-20	pass
1085.175	H	-41.1	-20	pass
1240.200	H	-46.3	-20	pass
1395.225	H	-47.6	-20	pass
1550.250	H	-48.5	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
155.025	V	0		pass
310.050	V	-32.1	-20	pass
465.075	V	-30.2	-20	pass
620.100	V	-34.4	-20	pass
775.125	V	-38.5	-20	pass
930.150	V	-35.9	-20	pass
1085.175	V	-37.7	-20	pass
1240.200	V	-41.1	-20	pass
1395.225	V	-42.4	-20	pass
1550.250	V	-45.3	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 161.610MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
161.610	H	0		pass
323.220	H	-32.3	-20	pass
484.83	H	-34.2	-20	pass
646.440	H	-35.2	-20	pass
808.050	H	-35.9	-20	pass
969.660	H	-38.1	-20	pass
1131.270	H	-40.3	-20	pass
1292.880	H	-41.5	-20	pass
1454.490	H	-44.1	-20	pass
1616.100	H	-48.6	-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	-35.2	-20	pass
484.83	V	-36.3	-20	pass
646.440	V	-38.5	-20	pass
808.050	V	-39.1	-20	pass
969.660	V	-40.9	-20	pass
1131.270	V	-42.5	-20	pass
1292.880	V	-44.9	-20	pass
1454.490	V	-46.2	-20	pass
1616.100	V	-48.8	-20	pass

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Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
173.975	H	0		pass
347.950	H	-34.4	-20	pass
521.925	H	-36.3	-20	pass
695.900	H	-35.5	-20	pass
869.875	H	-37.6	-20	pass
1043.850	H	-36.6	-20	pass
1217.825	H	-40.3	-20	pass
1391.800	H	-42.5	-20	pass
1565.775	H	-43.4	-20	pass
1739.750	H	-43.3	-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	-35.2	-20	pass
521.925	V	-36.3	-20	pass
695.900	V	-38.5	-20	pass
869.875	V	-39.4	-20	pass
1043.850	V	-42.2	-20	pass
1217.825	V	-44.3	-20	pass
1391.800	V	-45.2	-20	pass
1565.775	V	-48.1	-20	pass
1739.750	V	-50.2	-20	pass

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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	-33.6	-20	pass
408.08	H	-35.9	-20	pass
544.100	H	-37.5	-20	pass
680.125	H	-39.3	-20	pass
816.150	H	-40.1	-20	pass
952.175	H	-42.9	-20	pass
1088.200	H	-45.5	-20	pass
1224.225	H	-49.6	-20	pass
1360.250	H	-50.0	-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	-36.2	-20	pass
408.08	V	-37.1	-20	pass
544.100	V	-39.8	-20	pass
680.125	V	-40.3	-20	pass
816.150	V	-42.1	-20	pass
952.175	V	-43.3	-20	pass
1088.200	V	-50.2	-20	pass
1224.225	V	-50.6	-20	pass
1360.250	V	-50.8	-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	-36.4	-20	pass
455.550	H	-38.3	-20	pass
607.400	H	-40.9	-20	pass
759.250	H	-42.4	-20	pass
911.100	H	-43.0	-20	pass
1062.950	H	-46.4	-20	pass
1214.800	H	-49.6	-20	pass
1366.650	H	-50.3	-20	pass
1518.500	H	-52.7	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/H)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
151.85	V	0		pass
303.7	V	-33.9	-20	pass
455.55	V	-35.6	-20	pass
607.4	V	-36.7	-20	pass
759.25	V	-40.2	-20	pass
911.1	V	-43.3	-20	pass
1062.95	V	-45.5	-20	pass
1214.8	V	-48.0	-20	pass
1366.65	V	-49.5	-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	-38.5	-20	pass
465.075	H	-42.1	-20	pass
620.100	H	-39.4	-20	pass
775.125	H	-45.1	-20	pass
930.150	H	-44.9	-20	pass
1085.175	H	-49.5	-20	pass
1240.200	H	-51.5	-20	pass
1395.225	H	-49.6	-20	pass
1550.250	H	-48.5	-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	-39.5	-20	pass
465.075	V	-42.6	-20	pass
620.100	V	-45.3	-20	pass
775.125	V	-43.5	-20	pass
930.150	V	-44.2	-20	pass
1085.175	V	-43.1	-20	pass
1240.200	V	-48.4	-20	pass
1395.225	V	-51.3	-20	pass
1550.250	V	-52.2	-20	pass

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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	-38.6	-20	pass
484.830	H	-39.3	-20	pass
646.440	H	-43.1	-20	pass
808.050	H	-45.3	-20	pass
969.660	H	-45.0	-20	pass
1131.270	H	-47.7	-20	pass
1292.880	H	-49.3	-20	pass
1454.490	H	-50.2	-20	pass
1616.100	H	-50.3	-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	-20	pass
521.925	V	-36.3	-20	pass
695.900	V	-39.4	-20	pass
869.875	V	-40.7	-20	pass
1043.850	V	-43.9	-20	pass
1217.825	V	-46.4	-20	pass
1391.800	V	-47.4	-20	pass
1565.775	V	-48.0	-20	pass
1739.750	V	-49.9	-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	-40.5	-20	pass
521.925	H	-43.3	-20	pass
695.900	H	-45.1	-20	pass
869.875	H	-43.2	-20	pass
1043.850	H	-44.7	-20	pass
1217.825	H	-46.3	-20	pass
1391.800	H	-47.1	-20	pass
1565.775	H	-48.6	-20	pass
1739.750	H	-49.4	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
173.975	V	0		pass
347.950	V	-34.3	-20	pass
521.925	V	-36.5	-20	pass
695.900	V	-39.4	-20	pass
869.875	V	-43.1	-20	pass
1043.850	V	-45.8	-20	pass
1217.825	V	-46.6	-20	pass
1391.800	V	-47.4	-20	pass
1565.775	V	-49.1	-20	pass
1739.750	V	-50.3	-20	pass

Digital:

Measurement Result for 12.5 KHz Channel Separation @ 136.025MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
136.025	H	0		pass
272.050	H	-35.4	-20	pass
408.08	H	-36.3	-20	pass
544.100	H	-38.4	-20	pass
680.125	H	-39.7	-20	pass
816.150	H	-41.3	-20	pass
952.175	H	-42.2	-20	pass
1088.200	H	-43.3	-20	pass
1224.225	H	-48.7	-20	pass
1360.250	H	-48.9	-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	-36.4	-20	pass
408.08	V	-32.9	-20	pass
544.100	V	-35.5	-20	pass
680.125	V	-38.9	-20	pass
816.150	V	-37.5	-20	pass
952.175	V	-37.6	-20	pass
1088.200	V	-41.3	-20	pass
1224.225	V	-45.7	-20	pass
1360.250	V	-43.1	-20	pass

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Measurement Result for 12.5 KHz Channel Separation @ 151.850MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
151.850	H	0		pass
303.700	H	-35.2	-20	pass
455.55	H	-36.1	-20	pass
607.400	H	-38.4	-20	pass
759.250	H	-37.3	-20	pass
911.100	H	-39.5	-20	pass
1062.950	H	-40.2	-20	pass
1214.800	H	-47.4	-20	pass
1366.650	H	-51.1	-20	pass
1518.500	H	-52.2	-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	-36.2	-20	pass
455.55	V	-38.3	-20	pass
607.400	V	-39.3	-20	pass
759.250	V	-43.1	-20	pass
911.100	V	-42.9	-20	pass
1062.950	V	-43.2	-20	pass
1214.800	V	-50.0	-20	pass
1366.650	V	-50.7	-20	pass
1518.500	V	-51.9	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 155.025MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
155.025	H	0		pass
310.050	H	-36.8	-20	pass
465.075	H	-37.0	-20	pass
620.100	H	-38.9	-20	pass
775.125	H	-39.4	-20	pass
930.150	H	-42.3	-20	pass
1085.175	H	-45.1	-20	pass
1240.200	H	-48.5	-20	pass
1395.225	H	-49.3	-20	pass
1550.250	H	-49.6	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/H)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
155.025	V	0		pass
310.050	V	-35.5	-20	pass
465.08	V	-35.3	-20	pass
620.100	V	-37.7	-20	pass
775.125	V	-38.9	-20	pass
930.150	V	-39.6	-20	pass
1085.175	V	-40.2	-20	pass
1240.200	V	-42.3	-20	pass
1395.225	V	-41.1	-20	pass
1550.250	V	-43.3	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 161.61MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
161.610	H	0		pass
323.220	H	-36.5	-20	pass
484.83	H	-37.4	-20	pass
646.440	H	-38.4	-20	pass
808.050	H	-39.6	-20	pass
969.660	H	-42.3	-20	pass
1131.270	H	-43.1	-20	pass
1292.880	H	-50.3	-20	pass
1454.490	H	-50.8	-20	pass
1616.100	H	-52.7	-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	-35.1	-20	pass
484.83	V	-35.3	-20	pass
646.440	V	-37.8	-20	pass
808.050	V	-38.5	-20	pass
969.660	V	-44.7	-20	pass
1131.270	V	-45.3	-20	pass
1292.880	V	-48.6	-20	pass
1454.490	V	-50.3	-20	pass
1616.100	V	-50.4	-20	pass

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Measurement Result for 12.5 KHz Channel Separation @ 173.975MHz-5W

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
173.975	H	0		pass
347.950	H	-34.4	-20	pass
521.925	H	-34.6	-20	pass
695.900	H	-38.2	-20	pass
869.875	H	-40.6	-20	pass
1043.850	H	-41.3	-20	pass
1217.825	H	-41.5	-20	pass
1391.800	H	-45.6	-20	pass
1565.775	H	-50.5	-20	pass
1739.750	H	-52.0	-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	-32.9	58.45	pass
521.925	V	-33.1	58.45	pass
695.900	V	-37.6	58.45	pass
869.875	V	-39.9	58.45	pass
1043.850	V	-42.5	58.45	pass
1217.825	V	-45.6	58.45	pass
1391.800	V	-49.4	58.45	pass
1565.775	V	-50.9	58.45	pass
1739.750	V	-50.9	58.45	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	V	0		pass
272.050	V	-37.2	-20	pass
408.08	V	-38.3	-20	pass
544.100	V	-39.4	-20	pass
680.125	V	-43.1	-20	pass
816.150	V	-42.9	-20	pass
952.175	V	-44.7	-20	pass
1088.200	V	-49.6	-20	pass
1224.225	V	-50.7	-20	pass
1360.250	V	-52.3	-20	pass

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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	-38.4	-20	pass
455.55	H	-40.6	-20	pass
607.400	H	-46.5	-20	pass
759.250	H	-47.5	-20	pass
911.100	H	-43.3	-20	pass
1062.950	H	-42.6	-20	pass
1214.800	H	-45.5	-20	pass
1366.650	H	-47.4	-20	pass
1518.500	H	-52.2	-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	-37.2	-20	pass
455.55	V	-37.9	-20	pass
607.400	V	-39.1	-20	pass
759.250	V	-41.3	-20	pass
911.100	V	-43.9	-20	pass
1062.950	V	-45.6	-20	pass
1214.800	V	-46.1	-20	pass
1366.650	V	-50.4	-20	pass
1518.500	V	-52.6	-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	-38.6	-20	pass
465.075	H	-39.1	-20	pass
620.100	H	-40.2	-20	pass
775.125	H	-41.1	-20	pass
930.150	H	-42.3	-20	pass
1085.175	H	-44.2	-20	pass
1240.200	H	-49.6	-20	pass
1395.225	H	-50.7	-20	pass
1550.250	H	-50.9	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/H)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
155.025	V	0		pass
310.050	V	-34.2	-20	pass
465.075	V	-35.3	-20	pass
620.100	V	-38.1	-20	pass
775.125	V	-40.5	-20	pass
930.150	V	-45.3	-20	pass
1085.175	V	-47.2	-20	pass
1240.200	V	-48.5	-20	pass
1395.225	V	-50.3	-20	pass
1550.250	V	-51.9	-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	-36.2	-20	pass
484.83	H	-37.2	-20	pass
646.440	H	-38.4	-20	pass
808.050	H	-43.3	-20	pass
969.660	H	-46.3	-20	pass
1131.270	H	-47.6	-20	pass
1292.880	H	-48.1	-20	pass
1454.490	H	-50.3	-20	pass
1616.100	H	-52.3	-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	-35.3	-20	pass
484.83	V	-36.7	-20	pass
646.440	V	-39.4	-20	pass
808.050	V	-40.3	-20	pass
969.660	V	-42.4	-20	pass
1131.270	V	-45.9	-20	pass
1292.880	V	-50.1	-20	pass
1454.490	V	-50.3	-20	pass
1616.100	V	-51.1	-20	pass

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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	-33.3	-20	pass
521.925	H	-34.9	-20	pass
695.900	H	-37.1	-20	pass
869.875	H	-38.6	-20	pass
1043.850	H	-40.3	-20	pass
1217.825	H	-42.4	-20	pass
1391.800	H	-50.6	-20	pass
1565.775	H	-49.3	-20	pass
1739.750	H	-51.1	-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	-36.4	-20	pass
521.925	V	-38.5	-20	pass
695.900	V	-41.9	-20	pass
869.875	V	-46.4	-20	pass
1043.850	V	-48.7	-20	pass
1217.825	V	-49.3	-20	pass
1391.800	V	-48.4	-20	pass
1565.775	V	-52.2	-20	pass
1739.750	V	-52.6	-20	pass

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UHF:
 Analog:

TEST RESULTS--5W
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	-31.5	-20	pass
1200.075	H	-32.9	-20	pass
1600.100	H	-36.3	-20	pass
2000.125	H	-37.5	-20	pass
2400.150	H	-38.6	-20	pass
2800.175	H	-40.3	-20	pass
3200.200	H	-50.4	-20	pass
3600.225	H	-51.6	-20	pass
4000.250	H	-52.6	-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	-35.4	-20	pass
1200.075	V	-37.3	-20	pass
1600.100	V	-36.1	-20	pass
2000.125	V	-40.2	-20	pass
2400.150	V	-41.3	-20	pass
2800.175	V	-40.6	-20	pass
3200.200	V	-40.0	-20	pass
3600.225	V	-50.5	-20	pass
4000.250	V	-50.9	-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	V	0		pass
908.050	V	-36.4	-20	pass
1362.075	V	-38.3	-20	pass
1816.100	V	-39.1	-20	pass
2270.125	V	-45.2	-20	pass
2724.150	V	-46.1	-20	pass
3178.175	V	-50.2	-20	pass
3632.200	V	-48.8	-20	pass
4086.225	V	-51.5	-20	pass
4540.250	V	-50.7	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
454.025	H	0		pass
908.050	H	-33.2	-20	pass
1362.075	H	-34.1	-20	pass
1816.100	H	-36.5	-20	pass
2270.125	H	-39.4	-20	pass
2724.150	H	-40.8	-20	pass
3178.175	H	-42.6	-20	pass
3632.200	H	-43.7	-20	pass
4086.225	H	-51.9	-20	pass
4540.250	H	-51.7	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 469.975MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
479.975	H	0		pass
959.950	H	-36.2	-20	pass
1439.925	H	-37.4	-20	pass
1919.900	H	-39.2	-20	pass
2399.875	H	-41.2	-20	pass
2879.850	H	-42.6	-20	pass
3359.825	H	-43.4	-20	pass
3839.800	H	-50.2	-20	pass
4319.775	H	-50.8	-20	pass
4799.750	H	-51.9	-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	-35.9	-20	pass
1439.925	V	-36.7	-20	pass
1919.900	V	-39.1	-20	pass
2399.875	V	-40.3	-20	pass
2879.850	V	-41.3	-20	pass
3359.825	V	-43.4	-20	pass
3839.800	V	-50.0	-20	pass
4319.775	V	-50.3	-20	pass
4799.750	V	-52.8	-20	pass

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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	-35.6	-20	pass
1200.075	H	-36.8	-20	pass
1600.100	H	-39.5	-20	pass
2000.125	H	-43.2	-20	pass
2400.150	H	-42.9	-20	pass
2800.175	H	-45.5	-20	pass
3200.200	H	-49.4	-20	pass
3600.225	H	-50.3	-20	pass
4000.250	H	-52.0	-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	-36.6	-20	pass
1200.075	V	-37.2	-20	pass
1600.100	V	-38.9	-20	pass
2000.125	V	-39.5	-20	pass
2400.150	V	-42.3	-20	pass
2800.175	V	-44.5	-20	pass
3200.200	V	-48.3	-20	pass
3600.225	V	-50.3	-20	pass
4000.250	V	-51.8	-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	-36.5	-20	pass
1362.075	H	-37.9	-20	pass
1816.100	H	-39.5	-20	pass
2270.125	H	-42.7	-20	pass
2724.150	H	-44.9	-20	pass
3178.175	H	-46.3	-20	pass
3632.200	H	-45.9	-20	pass
4086.225	H	-50.7	-20	pass
4540.250	H	-51.2	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
454.025	V	0		pass
908.050	V	-36.6	-20	pass
1362.075	V	-38.8	-20	pass
1816.100	V	-42.3	-20	pass
2270.125	V	-44.4	-20	pass
2724.150	V	-47.2	-20	pass
3178.175	V	-48.1	-20	pass
3632.200	V	-50.3	-20	pass
4086.225	V	-50.6	-20	pass
4540.250	V	-51.9	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 469.975MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
479.975	H	0		pass
959.950	H	-35.6	-20	pass
1439.925	H	-36.7	-20	pass
1919.900	H	-38.8	-20	pass
2399.875	H	-43.2	-20	pass
2879.850	H	-42.9	-20	pass
3359.825	H	-45.4	-20	pass
3839.800	H	-50.3	-20	pass
4319.775	H	-50.9	-20	pass
4799.750	H	-51.8	-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	-39.5	-20	pass
1439.925	V	-42.4	-20	pass
1919.900	V	-41.3	-20	pass
2399.875	V	-43.6	-20	pass
2879.850	V	-45.9	-20	pass
3359.825	V	-46.9	-20	pass
3839.800	V	-49.1	-20	pass
4319.775	V	-50.0	-20	pass
4799.750	V	-51.4	-20	pass

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Digital:

TEST RESULTS-5W
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	-35.1	-20	pass
1200.075	H	-36.2	-20	pass
1600.100	H	-37.1	-20	pass
2000.125	H	-39.3	-20	pass
2400.150	H	-38.4	-20	pass
2800.175	H	-40.3	-20	pass
3200.200	H	-41.9	-20	pass
3600.225	H	-42.5	-20	pass
4000.250	H	-43.3	-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	-34.1	-20	pass
1200.075	V	-35.4	-20	pass
1600.100	V	-35.3	-20	pass
2000.125	V	-40.2	-20	pass
2400.150	V	-41.3	-20	pass
2800.175	V	-42.9	-20	pass
3200.200	V	-43.2	-20	pass
3600.225	V	-41.6	-20	pass
4000.250	V	-42.8	-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	-35.2	-20	pass
1362.075	H	-36.1	-20	pass
1816.100	H	-36.6	-20	pass
2270.125	H	-39.4	-20	pass
2724.150	H	-41.8	-20	pass
3178.175	H	-40.1	-20	pass
3632.200	H	-40.7	-20	pass
4086.225	H	-46.4	-20	pass
4540.250	H	-45.8	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
454.025	V	0		pass
908.050	V	-33.3	-20	pass
1362.075	V	-36.4	-20	pass
1816.100	V	-35.1	-20	pass
2270.125	V	-39.5	-20	pass
2724.150	V	-37.5	-20	pass
3178.175	V	-40.3	-20	pass
3632.200	V	-43.6	-20	pass
4086.225	V	-40.8	-20	pass
4540.250	V	-47.5	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 469.975MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
479.975	H	0		pass
959.950	H	-33.2	-20	pass
1439.925	H	-36.1	-20	pass
1919.900	H	-38.0	-20	pass
2399.875	H	-42.1	-20	pass
2879.850	H	-43.6	-20	pass
3359.825	H	-43.9	-20	pass
3839.800	H	-49.9	-20	pass
4319.775	H	-52.1	-20	pass
4799.750	H	-51.9	-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	-35.1	-20	pass
1439.925	V	-38.4	-20	pass
1919.900	V	-39.5	-20	pass
2399.875	V	-40.1	-20	pass
2879.850	V	-46.3	-20	pass
3359.825	V	-47.3	-20	pass
3839.800	V	-53.4	-20	pass
4319.775	V	-54.5	-20	pass
4799.750	V	-55.2	-20	pass

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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	-35.2	-20	pass
1200.075	H	-36.4	-20	pass
1600.100	H	-37.1	-20	pass
2000.125	H	-38.4	-20	pass
2400.150	H	-39.6	-20	pass
2800.175	H	-40.2	-20	pass
3200.200	H	-50.2	-20	pass
3600.225	H	-51.3	-20	pass
4000.250	H	-52.6	-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	-35.2	-20	pass
1200.075	V	-36.8	-20	pass
1600.100	V	-39.4	-20	pass
2000.125	V	-40.3	-20	pass
2400.150	V	-41.1	-20	pass
2800.175	V	-43.3	-20	pass
3200.200	V	-49.5	-20	pass
3600.225	V	-50.6	-20	pass
4000.250	V	-51.2	-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	-39.3	-20	pass
1362.075	H	-40.2	-20	pass
1816.100	H	-41.3	-20	pass
2270.125	H	-43.2	-20	pass
2724.150	H	-44.7	-20	pass
3178.175	H	-46.9	-20	pass
3632.200	H	-49.6	-20	pass
4086.225	H	-50.2	-20	pass
4540.250	H	-51.1	-20	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
454.025	V	0		pass
908.050	V	-38.2	-20	pass
1362.075	V	-39.4	-20	pass
1816.100	V	-41.4	-20	pass
2270.125	V	-41.8	-20	pass
2724.150	V	-42.6	-20	pass
3178.175	V	-45.3	-20	pass
3632.200	V	-48.7	-20	pass
4086.225	V	-49.3	-20	pass
4540.250	V	-52.0	-20	pass

Measurement Result for 12.5 KHz Channel Separation @ 469.975MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
479.975	H	0		pass
959.950	H	-39.4	-20	pass
1439.925	H	-40.2	-20	pass
1919.900	H	-42.4	-20	pass
2399.875	H	-45.8	-20	pass
2879.850	H	-47.6	-20	pass
3359.825	H	-48.4	-20	pass
3839.800	H	-50.2	-20	pass
4319.775	H	-50.9	-20	pass
4799.750	H	-52.4	-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	-40.1	-20	pass
1919.900	V	-41.3	-20	pass
2399.875	V	-43.3	-20	pass
2879.850	V	-44.2	-20	pass
3359.825	V	-45.4	-20	pass
3839.800	V	-48.6	-20	pass
4319.775	V	-49.6	-20	pass
4799.750	V	-51.1	-20	pass

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8.5 EMISSION MASK PLOT

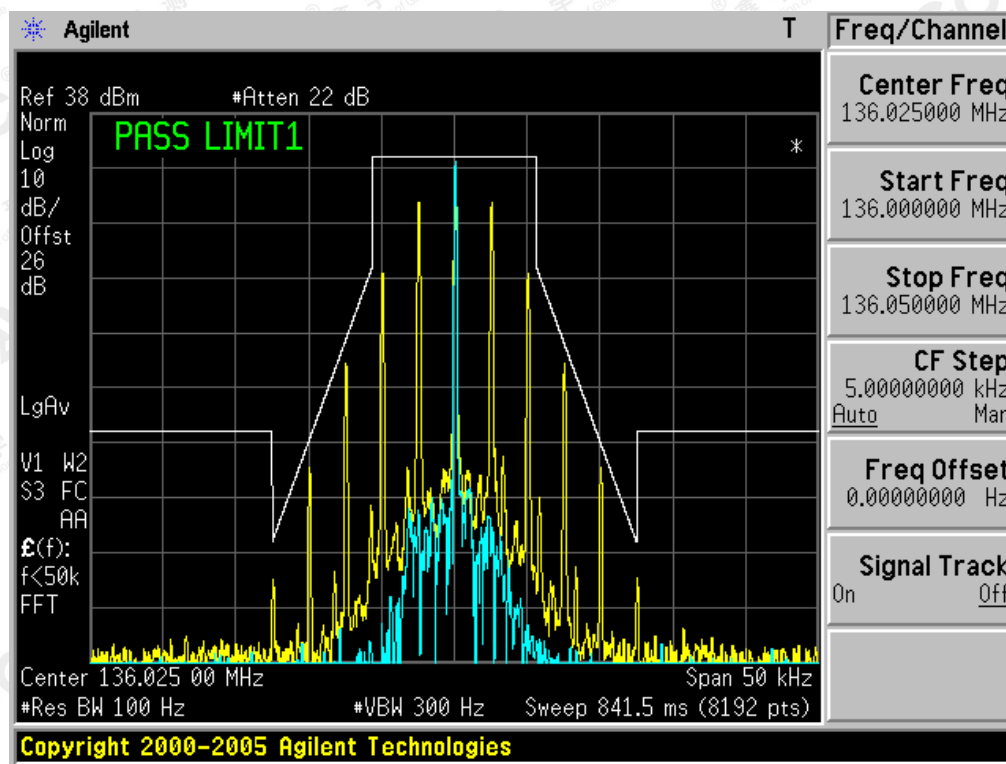
The detailed procedure employed for Emission Mask measurements are specified as following:

- 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:

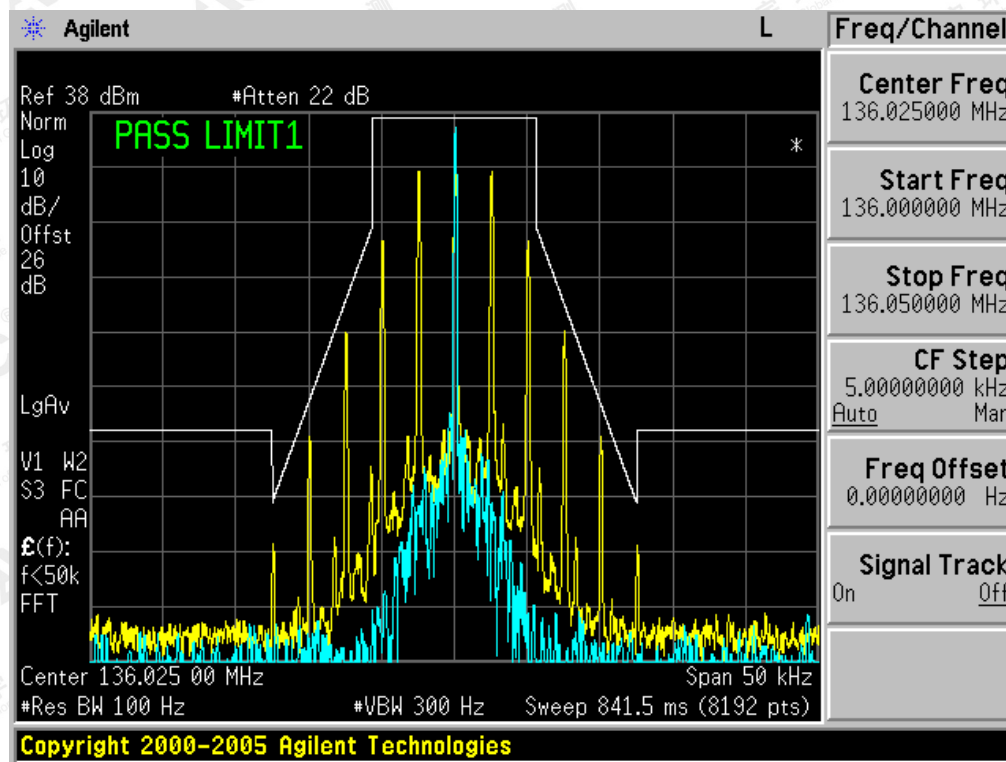
Analog:

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

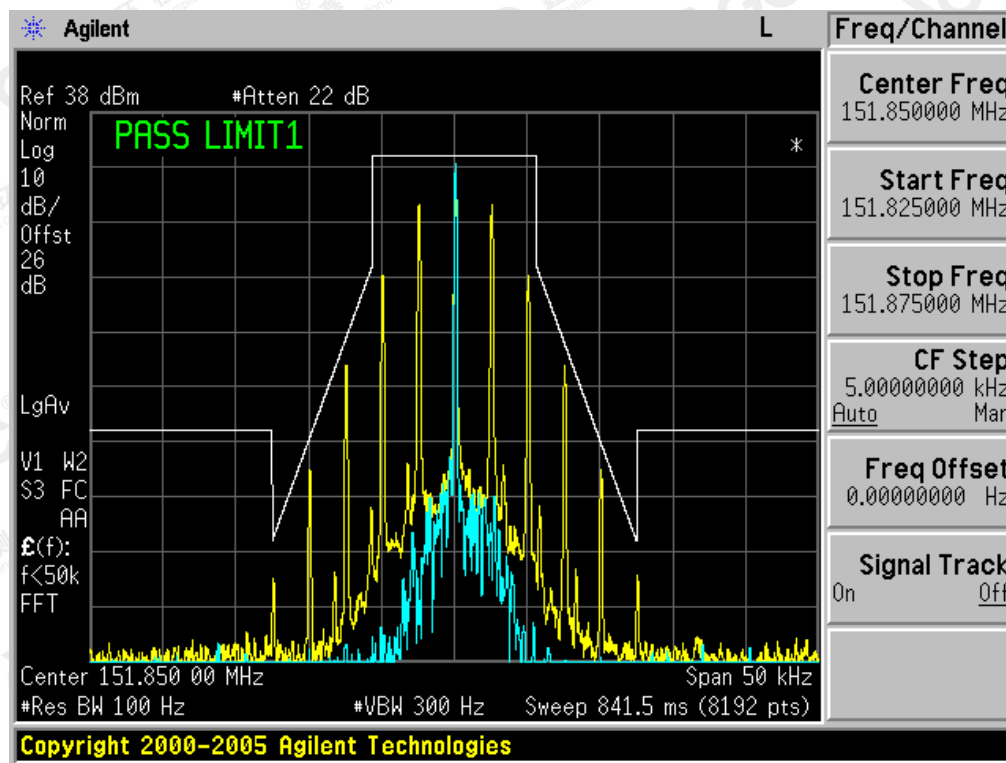


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The Worst Emission Mask D for (136.025MHz) of 12.5 KHz channel Separation (5W)



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



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