



JAPAN RADIO TEST REPORT

Applicant: ACCUPHY TECHNOLOGIES LTD

Address: 1409 HUASHENG INTL BLDG, NO.12 YABAO ROAD, CHAOYANG DISTRICT, BEIJING, R.P.CHINA

Manufacturer: ACCUPHY TECHNOLOGIES LTD

Address: 1409 HUASHENG INTL BLDG, NO.12 YABAO ROAD, CHAOYANG DISTRICT, BEIJING, R.P.CHINA

Product Name: Marine Router

Trade Mark: Accuphy

Model Number: Router One, Router Two, Accuphy Router

Date of Receipt: Dec. 09, 2025

Test Date: Dec. 12, 2025-Jan. 10, 2026

Date of Report: Jan. 13, 2026

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

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Applicable Standards: Article 2 Paragraph 1, item 19-3
MIC Notice No.88 Appendix No.45

Test Result: Pass

Report Number: DLE-260114045R

Prepared (Test Engineer): Alisa Song

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



TABLE OF CONTENTS

	Page
1. TEST SUMMARY	4
1.1 MEASUREMENT UNCERTAINTY	5
2. GENERAL INFORMATION	6
2.1. GENERAL DESCRIPTION OF E.U.T.	6
2.2. GENERAL CONDITION	8
2.3. TEST CONDITION	8
2.4. TEST MODE	9
2.5. TEST CONFIGURATION	9
2.6. TEST EQUIPMENT	10
3. FREQUENCY TOLERANCE TEST	11
3.1. FREQUENCY ERROR	11
4. OCCUPIED BANDWIDTH (99%) TEST	12
4.1. TEST EQUIPMENT	12
4.2. TEST CONFIGURATION	12
4.3. TEST RESULTS	13
5. SPURIOUS AND UNWANTED EMISSIONS	14
5.1. TEST RESULTS	16
6. ANTENNA POWER TEST	17
6.1. TEST CONFIGURATION	17
6.2. TEST RESULTS	18
7. ADJACENT CHANNEL LEAKAGE POWER	19
7.1. TEST CONFIGURATION	19
7.2. TEST RESULTS	19
8. BURST TRANSMISSION DURATION	20
8.1. TEST EQUIPMENT	20
8.2. TEST RESULTS	20
9. SECONDARY RADIATED EMISSIONS	21
9.1 TEST RESULTS	21
10. CARRIER SENSE	22
11. INTERFERENCE PREVENTION FUNCTION	23
12. TEST SETUP PHOTOGRAPH	33



13. EUT PHOTOGRAPH.....33



1. TEST SUMMARY

Test Standard	Description of Test	Result
Article 5 Annex 1	Frequency Tolerance	Compliance
Article 49-20 Article 14, table 7	Antenna Power& Output Power Tolerance	Compliance
Article 6 Annex 2.30	Occupied Bandwith	Compliance
Article 7 Annex 3.29	Unwanted Emission Strength/Spurious Area	Compliance
Article 49-20	Adjacent Channel Leakage Power	Compliance
Article 24.2	Secondary Radiated Emssion Strength	Compliance
Article 49-20	Transmission Burst Length	Compliance
Article 49-20 No.295 of 2022	Carrier Sensing Function	Compliance
Article 9-4.5 Article 6-2.3	Interference prevention function	Compliance
-	Dynamic Frequency Selection	Compliance

Pass: The EUT complies with the carrier sense capability and radio interference prevention capability.

Note

1: This device has more than 1 subcarrier in 1MHz, compliances with the requirement.



1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 3.2\text{dB}$
2	Radiated Emission Test	$\pm 4.7\text{dB}$
3	RF power, conducted	$\pm 0.16\text{dB}$
4	Spurious emissions, conducted	$\pm 0.21\text{dB}$
5	All emissions, radiated (<1G)	$\pm 4.68\text{dB}$
6	All emissions, radiated(>1G)	$\pm 5.0\text{dB}$
7	frequency error ppm	$\pm 0.5\text{ppm}$
8	Occupied Bandwidth	$\pm 0.32\text{MHz}$



2. GENERAL INFORMATION

2.1. General Description of E.U.T.

Product Name:	Marine Router
Model No.:	Router One, Router Two, Accuphy Router
Test Model:	Router One
Model Difference:	All models are electrically identical (i.e., in terms of circuit design, layout of printed circuit boards, radio frequency modules/circuits, antenna types and positions, components on the printed circuit boards, etc.), and have the same mechanical structure and design. The difference lies in the product model, color.
Hardware Version:	1.2
Software Version:	1.00
Operation Frequency:	5500MHz-5720MHz for 802.11a/802.11n(HT20)/802.11ac(VHT20); 5510MHz-5710MHz for 802.11n(HT40)/802.11ac(VHT40); 5530MHz-5690MHz for 802.11ac(VHT80);
Channel numbers:	4 channels for 802.11a/802.11n(HT20)/802.11ac(VHT20) 4 channels for 802.11n(HT40)/802.11ac(VHT40) 3 channels for 802.11ac(VHT80)
Modulation Type:	802.11a/n/ac: OFDM (BPSK, QPSK, QAM16, QAM64, QAM256)
Rated power:	802.11a: W56: 1.2mW/MHz 802.11n20: W56: 2.4mW/MHz 802.11n40: W56: 1.6mW/MHz 802.11ac20: W56: 2.0mW/MHz 802.11ac40: W56: 1.6mW/MHz 802.11ac80: W56: 0.52mW/MHz
EUT Type:	Master Device
Antenna Specification:	ANT Type 1: Dipole Antenna ANT Type 2: FPC antenna
Antenna Gain:	ANT Type 1: 3.51dBi ANT Type 2: 3.51dBi
Power supply:	DC 5V



Operation Frequency List WIFI on 5.6G Band :

Operating band	20MHz		40MHz		80MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
W56 (5500MHz-5720MHz)	100	5500	102	5510	106	5530
	104	5520				
	108	5540				
	112	5560	110	5550	118	5590
	116	5580				
	120	5600				
	124	5620	126	5630	122	5610
	128	5640				
	132	5660				
	136	5680	134	5670	138	5690
	140	5700				
	144	5720				

Note: Test performed at the lowest/middle/highest frequencies selected in the list above for EUT supported while working on specified mode.



2.2.General condition

Ambient Condition: 25 °C 59 %RH

2.3.Test condition

The wifi module was tested while in a continuous transmitter/receiver mode.

The EUT was tuned to a low, middle, and high channel for all tests. For all test case pre/scans were completed in all Modes to determine worst case levels.

Voltage Fluctuation Test		Normal Voltage	High Voltage + 10% of Normal Voltage	Low Voltage - 10% of Normal Voltage
Input Power		5.0V	5.5V	4.5V
Module Voltage		3.3V	3.3V	3.3V
Voltage error(%)	Result	Ref.level	0	0

Note:

Voltage Variation (%)

= (Output high or Low Voltage - Output Normal Voltage)/ Output Normal Voltage* 100

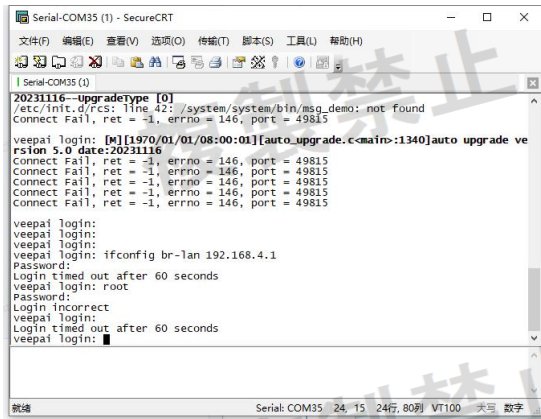
Note: The EUT has its own voltage regulator principle from WR1117A, the output voltage of the chip is 3.3V and the fluctuation of power supply to the RF circuit of EUT is equal to or less than +/- 1%. So exempt extremely high and low supply voltage condition tests, EUT only operated in normal voltage to test all regulations.

The RF Chip voltage on the motherboard inside the product does not change more than 1%.

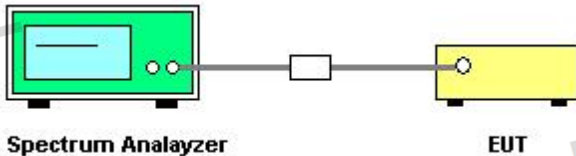


2.4. Test Mode

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.



2.5. Test Configuration





2.6. Test Equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	160400005	Nov. 01, 2025	Nov. 01, 2026
2	Test Receiver	R&S	ESPI	101318	Nov. 01, 2025	Oct. 31, 2026
3	Bilog Antenna	TESEQ	CBL6111D	31216	Nov. 01, 2025	Oct. 31, 2026
4	50Ω Coaxial Switch	Anritsu	MP59B	620026441 6	Nov. 01, 2025	Oct. 31, 2026
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	Nov. 01, 2025	Oct. 31, 2026
6	Horn Antenna	EM	EM-AH- 10180	201107140 2	Nov. 01, 2025	Oct. 31, 2026
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	Nov. 01, 2025	Oct. 31, 2026
8	Amplifier	EM	EM-30180	060538	Nov. 01, 2025	Oct. 31, 2026
9	Loop Antenna	ARA	PLA- 1030/B	1029	Nov. 01, 2025	Oct. 31, 2026
10	Power Meter	R&S	NRVS	100696	Nov. 01, 2025	Oct. 31, 2026
11	Test Receiver	R&S	ESCI	101160	Nov. 01, 2025	Oct. 31, 2026
12	Spectrum Analyzer	Agilent	N9020A	MY553702 80	Nov. 01, 2025	Oct. 31, 2026
13	Wideband Radio Communication Tester	R&S	CMW500	106504	Nov. 01, 2025	Oct. 31, 2026
14	50Ω Coaxial Switch	Anritsu	MP59B	620026441 7	Nov. 01, 2025	Oct. 31, 2026
15	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2025	Oct. 31, 2026
16	Digital oscilloscope	Tektronix	TDS3032B	-	Nov. 01, 2025	Oct. 31, 2026

Note: All Equipments Calibration In Guangzhou GRE Metrology & Test Co., Ltd

(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT)

in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18

paragraph (1) in JRL.

(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act

(Act No. 51 of 1992) .

(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration

conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right

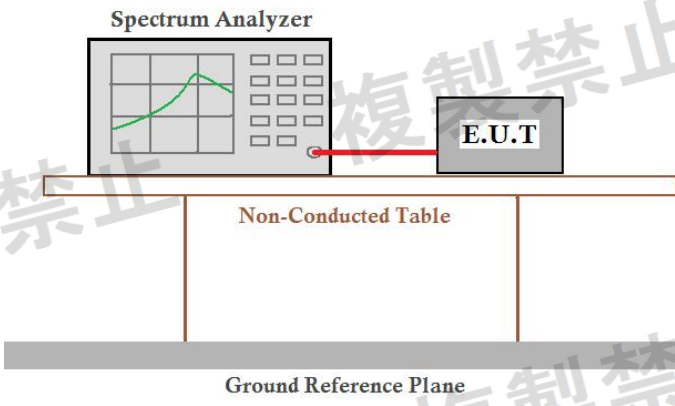
column of appended table No. 3, which shall have been given any type of calibration, etc. listed above

from (a) to (C) From JRL Article 24-2, paragraph 4, Item 2



3. FREQUENCY TOLERANCE TEST

3.1. Frequency Error

Test condition:	Without modulation, continuously transmitting
Spectrum set:	Test Frequency: test channel, RBW=10kHz, VBW=10kHz, Span=1MHz, Sweep time=Auto, Detector mode=Positive peak
Limit:	$\pm 20\text{ppm}$
Test setup:	
Test Instruments:	Refer to section 2.6 for details
Test results:	Pass

Pass, the table and plot please see Appendix I .



4. OCCUPIED BANDWIDTH (99%) TEST

4.1. Test Equipment

Same as 2.6

4.2. Test Configuration

One antenna position was evaluated based on verification that changing the diversity switch position did not affect the occupied bandwidth of the center channel at nominal voltage.

The occupied bandwidth was measured with the spectrum analyzer configured according to the table below.

The occupied bandwidth was determined from the 99% power bandwidth by determining the highest and lowest frequencies at which 99.5% of the power was captured and then subtracting the two numbers.

The limits are as follows:

Modulation Type	Occupied Band Width
20MHz system (OFDM)	<20 MHz
20MHz system Other)	<20 MHz
40MHz system (OFDM)	<40 MHz
80MHz system (OFDM)	<80 MHz

The calculation was done by either the analyzer directly or via the software used to capture the plot.

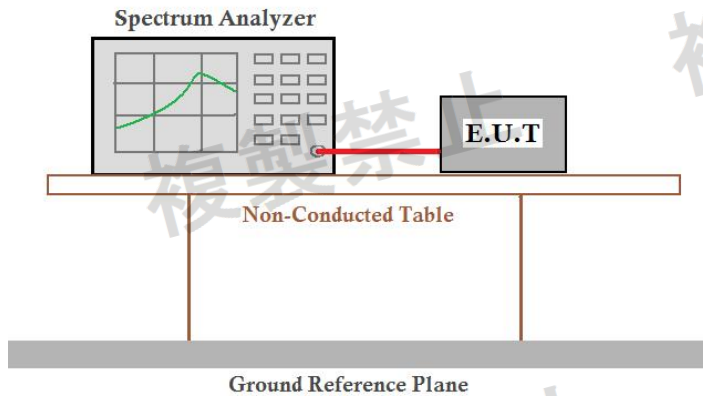
Instrument Settings and Test Requirements				
Modulation Type	Analyzer Settings			
	Span	RB	VB	Other
OFDM (eg 802.11an)	40-160 MHz	Under 3% of OBW	Under 3% of OBW	Sample detector, averaging (10 sweeps)2, sweep time auto1)

Note 1: For burst transmissions sweep time set to ensure dwell time in each bandwidth > transmission cycle time (sweep time = transmit cycle time x span/ measurement bandwidth)

Note 2: For burst transmissions trace set for max hold and detector set to positive peak.



4.3 Test setup:



4.4 Test Results

Pass, the table and plot please see Appendix I .



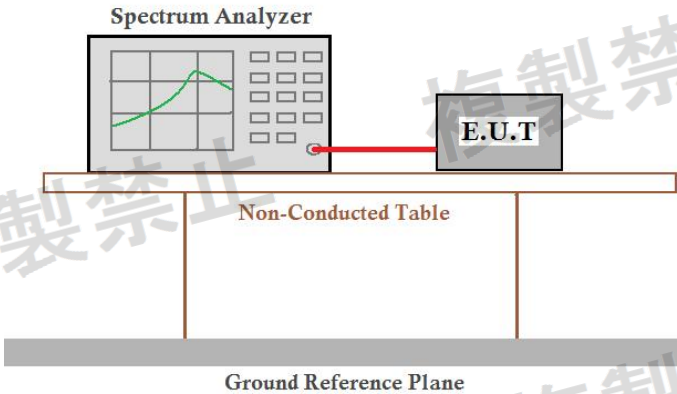
5. SPURIOUS AND UNWANTED EMISSIONS

Test condition:	Test diffusion code and modulate with standard coding test signal																																							
Measurement procedure:	Step 1 All spurious are measured from 30MHz to 26GHz by peak mode. Step 2 If the value measured by Step1 is 3dB or less to the limit, measure in average mode.																																							
Spectrum set:	Test Frequency: test channel, Below 1GHz: RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak Above 1GHz: RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak																																							
Limit:	W52: <table><tr><th colspan="2">20MHz system</th></tr><tr><th>OBW : 18MHz or less</th><th>OBW : 18 - 20 MHz</th></tr><tr><td>5,142 MHz or less : 2.5 μW/MHz</td><td>5,142 MHz or less : 2.5 μW/MHz</td></tr><tr><td>5,142 - 5,150 MHz : 15 μW/MHz</td><td>5,142 - 5,150 MHz : 15 μW/MHz</td></tr><tr><td></td><td>5,250 - 5,250.2 MHz : $10^{1-(8/3)(f-9.75)}$ mW/MHz</td></tr><tr><td>5,250 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz</td><td>5,250.2 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz</td></tr><tr><td>5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz</td><td>5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz</td></tr><tr><td>5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz</td><td>5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz</td></tr><tr><td>5,266.7 MHz or more : 2.5 μW/MHz</td><td>5,266.7 MHz or more : 2.5 μW/MHz</td></tr><tr><td>f = MHz, Difference from 5240 (MHz)</td><td>f = MHz, Difference from 5240 (MHz)</td></tr></table> <table><tr><th>40MHz system</th><th>80MHz system</th></tr><tr><td>5,141.6 MHz or less : 2.5 μW/MHz</td><td>5,123.2 MHz or less : 2.5 μW/MHz</td></tr><tr><td>5,141.6 - 5,150 MHz : 15 μW/MHz</td><td>5,123.2 - 5,150 MHz : 15 μW/MHz</td></tr><tr><td></td><td></td></tr><tr><td>5,250 - 5,251 MHz : $10^{-(f-20)+\log(1/2)}$ mW/MHz</td><td>5,250 - 5,251 MHz : $10^{-(f-40)+\log(1/4)}$ mW/MHz</td></tr><tr><td>5,251 - 5,270 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz</td><td>5,251 - 5,290 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz</td></tr><tr><td>5,270 - 5,278.4 MHz : $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz</td><td>5,290 - 5,296.7 MHz : $10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz</td></tr><tr><td>5,278.4 MHz or more : 2.5 μW/MHz</td><td>5,296.7 MHz or more : 2.5 μW/MHz</td></tr><tr><td>f = MHz, Difference from 5230 (MHz)</td><td>f = MHz, Difference from 5210 (MHz)</td></tr></table>		20MHz system		OBW : 18MHz or less	OBW : 18 - 20 MHz	5,142 MHz or less : 2.5 μ W/MHz	5,142 MHz or less : 2.5 μ W/MHz	5,142 - 5,150 MHz : 15 μ W/MHz	5,142 - 5,150 MHz : 15 μ W/MHz		5,250 - 5,250.2 MHz : $10^{1-(8/3)(f-9.75)}$ mW/MHz	5,250 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz	5,250.2 - 5,251 MHz : $10^{1-(f-9)}$ mW/MHz	5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz	5,251 - 5,260 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz	5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5,260 - 5,266.7 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5,266.7 MHz or more : 2.5 μ W/MHz	5,266.7 MHz or more : 2.5 μ W/MHz	f = MHz, Difference from 5240 (MHz)	f = MHz, Difference from 5240 (MHz)	40MHz system	80MHz system	5,141.6 MHz or less : 2.5 μ W/MHz	5,123.2 MHz or less : 2.5 μ W/MHz	5,141.6 - 5,150 MHz : 15 μ W/MHz	5,123.2 - 5,150 MHz : 15 μ W/MHz			5,250 - 5,251 MHz : $10^{-(f-20)+\log(1/2)}$ mW/MHz	5,250 - 5,251 MHz : $10^{-(f-40)+\log(1/4)}$ mW/MHz	5,251 - 5,270 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz	5,251 - 5,290 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz	5,270 - 5,278.4 MHz : $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz	5,290 - 5,296.7 MHz : $10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz	5,278.4 MHz or more : 2.5 μ W/MHz	5,296.7 MHz or more : 2.5 μ W/MHz	f = MHz, Difference from 5230 (MHz)	f = MHz, Difference from 5210 (MHz)
20MHz system																																								
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5,251 - 5,270 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz	5,251 - 5,290 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz																																							
5,270 - 5,278.4 MHz : $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz	5,290 - 5,296.7 MHz : $10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz																																							
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	W53:																																							



20MHz system	
OBW : 18MHz or less	OBW : 18 - 20 MHz
5,233.3 MHz or less : 2.5 μ W/MHz	5,233.3 MHz or less : 2.5 μ W/MHz
5,233.3 - 5,240 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz	5,233.3 - 5,240 MHz : $10^{-1.8-(6/50)(f-20)}$ mW/MHz
5,240 - 5,249 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz	5,240 - 5,249 MHz : $10^{-1-(8/90)(f-11)}$ mW/MHz
5,249 - 5,250 MHz : $10^{1-(f-9)}$ mW/MHz	5,249 - 5,249.8 MHz : $10^{1-(f-9)}$ mW/MHz
5,350 MHz or more : 2.5 μ W/MHz	5,249.8 - 5,250 MHz : $10^{1-(8/3)(f-9.75)}$ mW/MHz
	5,350 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5260 (MHz)	f = MHz, Difference from 5260 (MHz)
40MHz system	
80MHz system	
5,221.6 MHz or less : 2.5 μ W/MHz	5,203.3 MHz or less : 2.5 μ W/MHz
5,221.6 - 5,230 MHz : $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz	5,203.3 - 5,210 MHz : $10^{-(2/100)(f-80)-1.8+\log(1/4)}$ mW/MHz
5,230 - 5,249 MHz : $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz	5,210 - 5,249 MHz : $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz
5,249 - 5,250 MHz : $10^{-(f-20)+\log(1/2)}$ mW/MHz	5,249 - 5,250 MHz : $10^{-(f-40)+\log(1/4)}$ mW/MHz
5,350 - 5,358.4 MHz : 15 μ W/MHz	5,350 - 5,376.8 MHz : 15 μ W/MHz
5,358.4 MHz or more : 2.5 μ W/MHz	5,376.8 MHz or more : 2.5 μ W/MHz
f = MHz, Difference from 5270 (MHz)	f = MHz, Difference from 5290 (MHz)
W56:	
20MHz system	
DSSS, etc.	OFDM
5,470 MHz or less : 12.5 μ W/MHz	5,460 MHz or less : 2.5 μ W/MHz
	5,460 - 5,470 MHz : 12.5 μ W/MHz
5,730 MHz or more : 12.5 μ W/MHz	5,745 - 5,765 MHz : 12.5 μ W/MHz
	Over 5,765 MHz : 2.5 μ W/MHz
40MHz system	
80MHz system	
5,460 MHz or less : 12.5 μ W/MHz	5,460 MHz or less : 12.5 μ W/MHz
5,460 - 5,470 MHz : 50 μ W/MHz	5,460 - 5,469.5 MHz : 50 μ W/MHz
5,770 MHz or more : 12.5 μ W/MHz	5,469.5 - 5,470 MHz : 51.2 μ W/MHz
	5,770 MHz or more : 12.5 μ W/MHz



Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 2.6 for details
Test results:	Pass

5.1. Test Results

Pass, the table and plot please see Appendix I .



6. ANTENNA POWER TEST

6.1. Test Configuration

Test condition:	Test diffusion code and modulate with standard coding test signal																																																																														
Spectrum set:	a) The EUT is connected to the input port of the high frequency power meter through the attenuator and the transmit frequency is set. b) Remove the EUT and put the replacing signal generator (SG). Set the signal generator (SG) at same frequency and transmit on, the set SG output power at Pt to give the equivalent output level of “E”. c) Calculate antenna power density by the formula below $PD=P_t+10\cdot\log(1/x)$. x: The duty cycle of the EUT in continuously transmitting mode Pt: Output power of the SG d) Antenna Power Error is definition that actual measure antenna power tolerance between+20% to -80% power range that base on manufacturer declare the conducted power density.																																																																														
Rating power:	802.11a: W56: 1.2mW/MHz 802.11n20: W56: 2.4mW/MHz 802.11n40: W56: 1.6mW/MHz 802.11ac20: W56: 2.0mW/MHz 802.11ac40: W56: 1.6mW/MHz 802.11ax80: W56: 0.52mW/MHz																																																																														
Maximum EIRP:	-																																																																														
Limit:	<table><tr><th>Operation Band</th><th>Item</th><th colspan="2">20MHz system</th><th>40MHz system</th><th>80MHz system</th><th colspan="2">160MHz system</th></tr><tr><td rowspan="5">W52 & W53</td><td rowspan="2">Antenna Power</td><td>DSSS, etc</td><td>OFDM</td><td>OFDM</td><td>OFDM</td><td colspan="2">OFDM</td></tr><tr><td>10mW/MHz</td><td>10mW/MHz</td><td>5mW/MHz</td><td>2.5mW/MHz</td><td colspan="2">1.25mW/MHz</td></tr><tr><td colspan="2">Antenna power Tolerance</td><td colspan="5">+20%, -80%</td></tr><tr><td rowspan="2">EIRP</td><td>W52</td><td colspan="2">10mW/MHz</td><td>5mW/MHz</td><td>2.5mW/MHz</td><td colspan="2">1.25mW/MHz</td></tr><tr><td>W53</td><td colspan="2">10mW/MHz: with TPC 5mW/MHz: without TPC</td><td>5mW/MHz: with TPC 2.5mW/MHz: without TPC</td><td>2.5mW/MHz: with TPC 1.25mW/MHz: without TPC</td><td colspan="2">1.25mW/MHz: with TPC 0.625mW/MHz: without TPC</td></tr><tr><td rowspan="4">W56</td><td rowspan="2">Antenna Power</td><td>DSSS, etc</td><td>OFDM</td><td>OFDM</td><td>OFDM</td><td colspan="2">OFDM</td></tr><tr><td>10mW/MHz</td><td>10mW/MHz</td><td>5mW/MHz</td><td>2.5mW/MHz</td><td colspan="2">1.25mW/MHz</td></tr><tr><td colspan="2">Antenna power Tolerance</td><td colspan="5">+50%, -50%</td></tr><tr><td>EIRP</td><td colspan="2">50mW/MHz: with TPC 25mW/MHz: without TPC</td><td>25mW/MHz: with TPC 12.5mW/MHz: without TPC</td><td>12.5mW/MHz: with TPC 6.25mW/MHz: without TPC</td><td colspan="2">6.25mW/MHz: with TPC 3.125mW/MHz: without TPC</td></tr></table>							Operation Band	Item	20MHz system		40MHz system	80MHz system	160MHz system		W52 & W53	Antenna Power	DSSS, etc	OFDM	OFDM	OFDM	OFDM		10mW/MHz	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz		Antenna power Tolerance		+20%, -80%					EIRP	W52	10mW/MHz		5mW/MHz	2.5mW/MHz	1.25mW/MHz		W53	10mW/MHz: with TPC 5mW/MHz: without TPC		5mW/MHz: with TPC 2.5mW/MHz: without TPC	2.5mW/MHz: with TPC 1.25mW/MHz: without TPC	1.25mW/MHz: with TPC 0.625mW/MHz: without TPC		W56	Antenna Power	DSSS, etc	OFDM	OFDM	OFDM	OFDM		10mW/MHz	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz		Antenna power Tolerance		+50%, -50%					EIRP	50mW/MHz: with TPC 25mW/MHz: without TPC		25mW/MHz: with TPC 12.5mW/MHz: without TPC	12.5mW/MHz: with TPC 6.25mW/MHz: without TPC	6.25mW/MHz: with TPC 3.125mW/MHz: without TPC	
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Test setup:	<pre>graph LR; EUT[EUT] --- Attenuator[Attenuator]; Attenuator --- HFPM[High Frequency Power Meter]; SG[Signal Generator] --- Attenuator;</pre>																																																																														
Test Instruments:	Refer to section 2.6 for details																																																																														



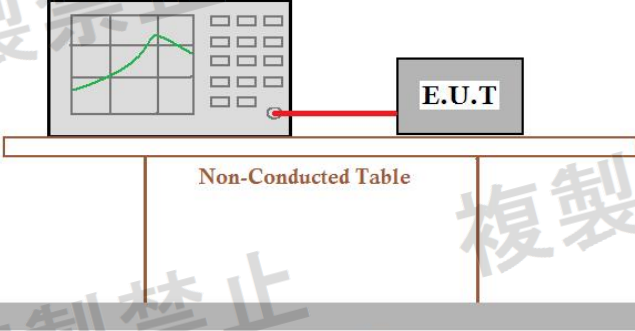
6.2. Test Results

Pass, the table and plot please see Appendix I.



7. ADJACENT CHANNEL LEAKAGE POWER

7.1. Test Configuration

Test condition:	Test diffusion code and modulate with standard coding test signal				
Spectrum set:	Test Frequency: test channel, RBW=VBW=300kHz, Span=120/240/480MHz, Detector mode=RMS, Sweep time=auto				
Limit:	20MHz system		40MHz system	80MHz system	160MHz system
	DSSS, etc	OFDM	OFDM	OFDM	OFDM
	Fc ± 20MHz ± 10MHz BW: -25dBc	Fc ± 20MHz ± 10MHz BW: -25dBc	Fc ± 40MHz ± 20MHz BW: -25dBc	Fc ± 80MHz ± 40MHz BW: -25dBc	--
	Fc ± 40MHz ± 10MHz BW: -40dBc	Fc ± 40MHz ± 10MHz BW: -40dBc	Fc ± 80MHz ± 20MHz BW: -40dBc		
Test setup:	Spectrum Analyzer 				
Test Instruments:	Refer to section 2.6 for details				
Test results:	Pass				

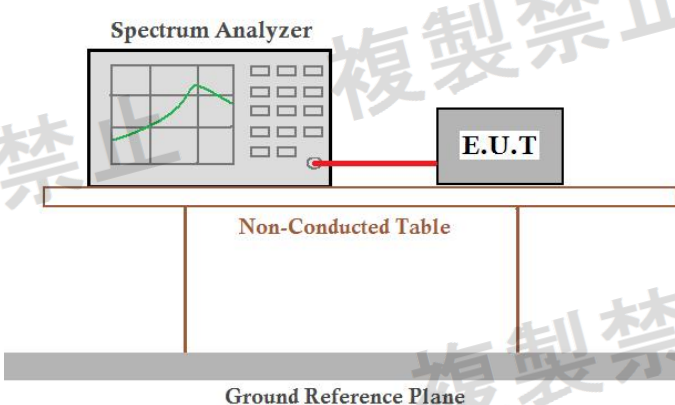
7.2. Test Results

Pass, the table and plot please see Appendix I.



8. BURST TRANSMISSION DURATION

8.1. Test Equipment

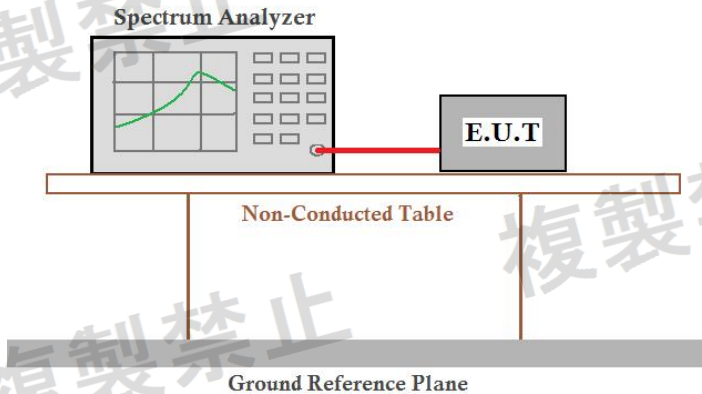
Test condition:	Test diffusion code and modulate with standard coding test signal
Spectrum set:	Test Frequency: test channel, RBW=VBW=10MHz, Span=Zero, Detector mode= Positive Peak, Sweep mode=Single Sweep, sweep time= more than burst length
Limit:	≤8ms
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. The E.U.T. is placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 2.6 for details
Test results:	Pass

8.2. Test Results

Pass, the table and plot please see Appendix I .



9. SECONDARY RADIATED EMISSIONS

Test condition:	Receiving mode
Measurement procedure:	Step 1 All spurious are measured from 30MHz to 26.5GHz by peak mode. Step 2 If the value measured by Step1 is 3dB or less to the limit, measure in average mode.
Spectrum set:	Step 1: Test Frequency: test channel, Below 1GHz, RBW=VBW=100kHz; Above 1GHz, RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Positive peak Step 2: Test Frequency: spurious frequency Test Frequency: test channel, Below 1GHz, RBW=VBW=100kHz; Above 1GHz, RBW=VBW=1MHz, Sweep time=Auto, Detector mode=Sample, Span=0Hz
Limit:	Below 1GHz: 4.0nW or less Above 1GHz: 20nW or less
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 2.6 for details
Test results:	Pass

9.1 Test Results

Pass, the table and plot please see Appendix I.



10. CARRIER SENSE

Limit:	Stop transmission for interference signal level above 100mV/m (or level at $22.79 + Gr - 20 \cdot \log(f) [dBm]$) f: indicated frequency in MHz Gr: indicated the antenna gain in dBi	
Spectrum set:	Attenuation	Auto
	RBW/VBW	1MHz/1MHz
	Span	0Hz
	Sweep time	10s
	Detector	Peak
	Trigger mode	Free Run
Measurement procedure:	1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG. Then turn off the RF signal of SG. 2. EUT have transmitted the maximum modulation signal and fixed channelize. 3. Set the Spectrum per the above form. 4. SG RF signal on, and adjust the signal level until the EUT stop transmission at the tested frequency. Record the signal level. 5. EUT shall be stop the transmission and SG RF signal off. Then EUT will be continuously transmitted signal.	
Test setup:	<pre>graph LR UUT[UUT] <--> SC[Splitter/Combiner] SC --> SA[Spectrum Analyzer] SC <--> DC[Direct Coupler] DC <--> ATT[ATT] ATT <--> CD[Companion Device] SG[Signal Generator] --> DC</pre>	
Test Instruments:	Refer to section 2.6 for details	
Test results:	Pass	



11. INTERFERENCE PREVENTION FUNCTION

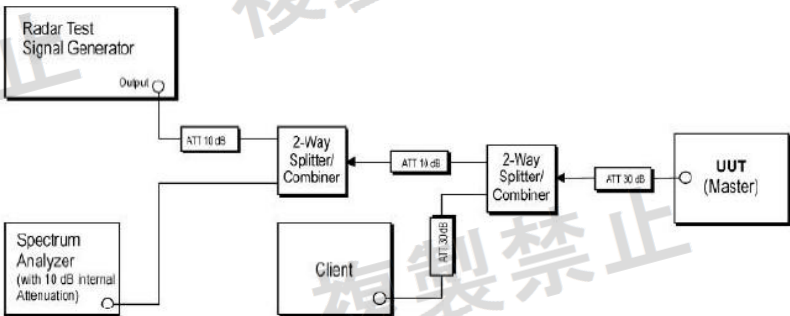
Measurement procedure:	(1) The radio equipment with automatic transmitting function of identification code a) Transmit the assigned identification code from the radio equipment. b) Confirm the identification code received by the demodulator. (2) The radio equipment with automatic receiving function of identification code b) Transmit the assigned identification code from the opposite equipment. c) Confirm that the usual communication is available. d) Transmit the identification code distinct from the assigned one from the opposite equipment. e) Confirm that the radio equipment is stopped or an indication is displayed as the identification code is different.		
Test setup:	Radio equipment	Dummy load (Attenuator)	Demodulator
Test Instruments:	Refer to section 2.6 for details		
Test results:	Pass		

Measurement data:

Identification function:	Good; The MAC address is 54: EF:33:9A:1E:A4
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12. DYNAMIC FREQUENCY SELECTION

Test condition:																																																														
Test setup:																																																														
Requirement	Parameters and applicability of DFS requirement <table><tr><th rowspan="2">Parameter</th><th rowspan="2">Value</th><th colspan="2">Operational Mode</th></tr><tr><th>Master</th><th>Slave</th></tr><tr><td>Non-Occupancy period</td><td>Minimum 30 minutes</td><td>✓</td><td>Not requirement</td></tr><tr><td>Channel Availability Check Time</td><td>60 Seconds</td><td>✓</td><td>Not requirement</td></tr><tr><td>Channel Move Time</td><td>10 Seconds</td><td>✓</td><td>✓</td></tr><tr><td>Channel Closing Transmission Time</td><td>260ms</td><td>✓</td><td>✓</td></tr></table> W56 Un-modulated pulse radio wave <table><tr><th colspan="4">The radio wave which a radar transmits *Un-modulated pulse</th><th rowspan="2">Detection probability</th></tr><tr><th>Classification</th><th>Pulse width</th><th>Repetition frequency</th><th>The number of continuous pulses</th></tr><tr><td>1</td><td>0.5 μs</td><td>720 Hz</td><td>18</td><td>60% or more</td></tr><tr><td>2</td><td>1 μs</td><td>700 Hz</td><td>18</td><td>60% or more</td></tr><tr><td>3</td><td>2.0 μs</td><td>250 Hz</td><td>18</td><td>60% or more</td></tr><tr><td>4</td><td>1 μs ≤ X ≤ 5 μs ("1μs" or "width which added the integral multiple of 1μs to 1μs")</td><td>4,347Hz ≤ X ≤ 6,667Hz (arbitrary frequency of 1)</td><td>23 ≤ X ≤ 29 (arbitrary integer of 1)</td><td>60% or more</td></tr><tr><td>5</td><td>6 μs ≤ X ≤ 10 μs ("6μs" or "width which added the integral multiple of 1μs to 6μs")</td><td>2,000Hz ≤ X ≤ 5,000Hz (arbitrary frequency of 1)</td><td>16 ≤ X ≤ 18 (arbitrary integer of 1)</td><td>60% or more</td></tr><tr><td>6</td><td>11 μs ≤ X ≤ 20 μs ("11μs" or "width which added the integral multiple of 1μs to 11μs")</td><td>2,000Hz ≤ X ≤ 5,000Hz (arbitrary frequency of 1)</td><td>12 ≤ X ≤ 16 (arbitrary integer of 1)</td><td>60% or more</td></tr></table> *1 In the transmission of the 17% of maximum signal access speed (an error correction and a control signal are not included), when the master station is transmitting to the slave station. *2 The average value of the "detection probability" for every classification of the radio wave which a radar transmits shall be "80% or more". W56 modulated pulse (Chirp radar)	Parameter	Value	Operational Mode		Master	Slave	Non-Occupancy period	Minimum 30 minutes	✓	Not requirement	Channel Availability Check Time	60 Seconds	✓	Not requirement	Channel Move Time	10 Seconds	✓	✓	Channel Closing Transmission Time	260ms	✓	✓	The radio wave which a radar transmits *Un-modulated pulse				Detection probability	Classification	Pulse width	Repetition frequency	The number of continuous pulses	1	0.5 μs	720 Hz	18	60% or more	2	1 μs	700 Hz	18	60% or more	3	2.0 μs	250 Hz	18	60% or more	4	1 μs ≤ X ≤ 5 μs ("1μs" or "width which added the integral multiple of 1μs to 1μs")	4,347Hz ≤ X ≤ 6,667Hz (arbitrary frequency of 1)	23 ≤ X ≤ 29 (arbitrary integer of 1)	60% or more	5	6 μs ≤ X ≤ 10 μs ("6μs" or "width which added the integral multiple of 1μs to 6μs")	2,000Hz ≤ X ≤ 5,000Hz (arbitrary frequency of 1)	16 ≤ X ≤ 18 (arbitrary integer of 1)	60% or more	6	11 μs ≤ X ≤ 20 μs ("11μs" or "width which added the integral multiple of 1μs to 11μs")	2,000Hz ≤ X ≤ 5,000Hz (arbitrary frequency of 1)	12 ≤ X ≤ 16 (arbitrary integer of 1)	60% or more
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The radio wave which a radar transmits *Modulated pulse (Chirp radar)				Detection probability *
Classification	Pulse width	Repetition frequency	The number of continuous pulses	
1	$50\ \mu\text{s} \leq X \leq 100\ \mu\text{s}$ ("50 μs " or "width which added the integral multiple of 1 μs to 50 μs ")	$500\text{Hz} \leq X \leq 1,000\text{Hz}$ (arbitrary frequency of 1)	$1 \leq X \leq 3$ (arbitrary integer of 1)	80% or more

*1 In the transmission of the 17% of maximum signal access speed (an error correction and a control signal are not included), when the master station is transmitting to the slave station.

*2 A mass of the number of continuous pulses (burst) shall be radiated for 12 seconds.

*3 Chirp width : $5\text{MHz} \leq X \leq 20\text{MHz}$ ("5MHz" or "frequency width which added the integral multiple of 1MHz to 5MHz") In this case, "chirp width" is arbitrary to each burst, "chirp width" in the same burst shall be an equal thing.

*4 Number of burst : $8 \leq X \leq 20$ (arbitrary integer), Burst interval : Time which divided 12 seconds by the number of burst.

*5 When there are two or more pulses within the burst of 1, the pulse width shall be an equal thing.

*6 When there are two or more pulses within the burst of 1, the "repetition frequency" must not have relevance between the "repetition frequency" of the pulse of 1, and the "repetition frequency" of the pulse of next 1.

W56 modulated pulse (hopping radar)

The radio wave which a radar transmits *Modulated pulse (hopping radar)				Detection probability *
Classification	Pulse width	Repetition frequency	Number of pulses in a burst of 1	
1	1 μs	3000 Hz	9	70% or more

*1 In the transmission of the 17% of maximum signal access speed (an error correction and a control signal are not included), when the master station is transmitting to the slave station.

*2 Burst : One mass of the number of continuous pulses

*3 Hopping frequency : $5,250\text{MHz} \leq X \leq 5,724\text{MHz}$ ("5250MHz" or "the arbitrary frequency which added the integral multiple of 1MHz to 5250MHz")

*4 Switching interval of the hopping frequency : "3ms", Total switching interval of the all hopping frequency : "300ms"

*5 Burst interval : "3 ms"

DFS Detection Thresholds

Maximum E. I. R. P.	Received power (average)
less than 0.2W	-62dBm
0.2W or more	-64dBm

Test Procedures:

A spectrum analyzer is used as a monitor to verify that the UUT has vacated the Channel within the (Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and Channel move. It is also used to monitor UUT transmissions during the Channel Availability Check Time.

(i) Confirming available channels

- Set the standard signal generator to be in non-transmission state.
- Set EUT to be in state of available channel checking by initializing EUT and confirm with the spectrum analyzer that EUT does not radiate emissions.
- In a time slot selected randomly from the time period of available channel checking, set the standard signal input generator to be in transmission state and apply quasi radar pulses at the prescribed level to EUT.
- Confirm with the spectrum analyzer that EUT does not radiate emissions when quasi radar pulses are input to EUT.
- Repeat Steps A to D four times and record each time whether EUT radiates emissions or not. If EUT does not radiate emissions, assume that a quasi radar pulse has been detected and find how



	many times it has been detected. (ii) Monitoring of operating channel A. Set the standard signal generator to be in non-transmission state. B. Set EUT to be in state of operating channel monitoring by initializing it and transmit waves at the test frequency. C. Establish communications with the external test device. D. Set the standard signal generator to be in transmission state and apply quasi radar pulses at the prescribed input level to EUT. E. Confirm with the spectrum analyzer that EUT stops radiating emissions when quasi radar pulses are input to EUT. F. Repeat Steps A to E 20 times and record each time whether EUT radiates emissions or not. If EUT does not radiate emissions, assume that a quasi radar pulse has been detected and find how many times it has been detected.
Radar Waveform Calibration	A Spectrum analyzers replace the Master device in the TEST CONFIGURATION to measure the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -62dBm.
Test Instruments:	Refer to section 5.8 for details
Test results:	Pass Transmitter: The transmitting mode (the identification code is more than 48 bits) of EUT is on normal operating, the interference prevention function is good. Receiver: The transmitting mode of EUT is on normal operating, the interference prevention function is good.

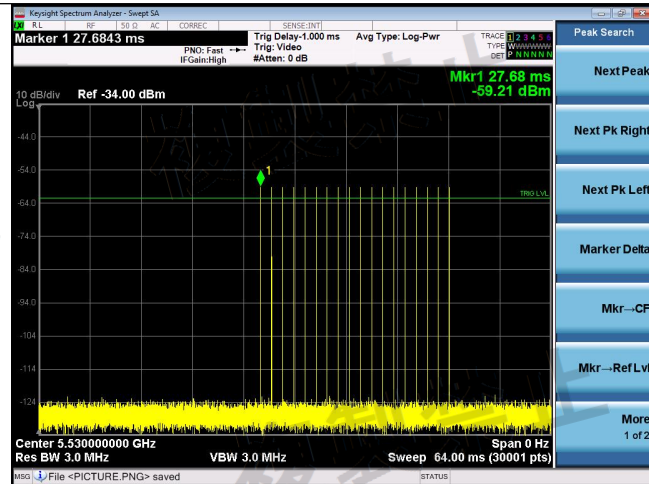
Note: The manufacturer declared the EUT is master device.

Measurement data:

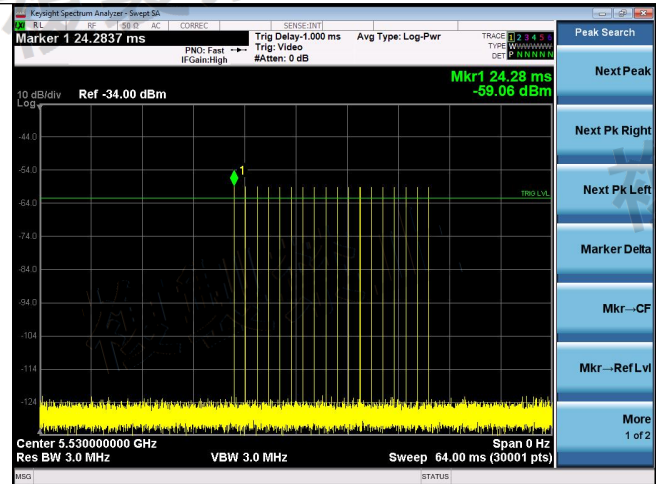
Radar calibration signal results:



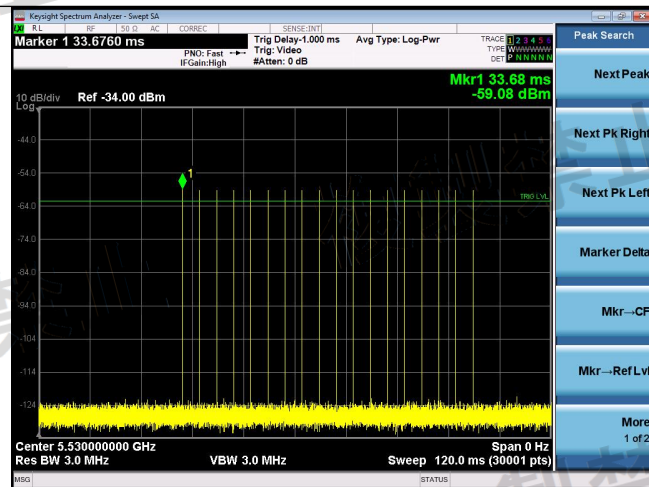
W56 Radar type



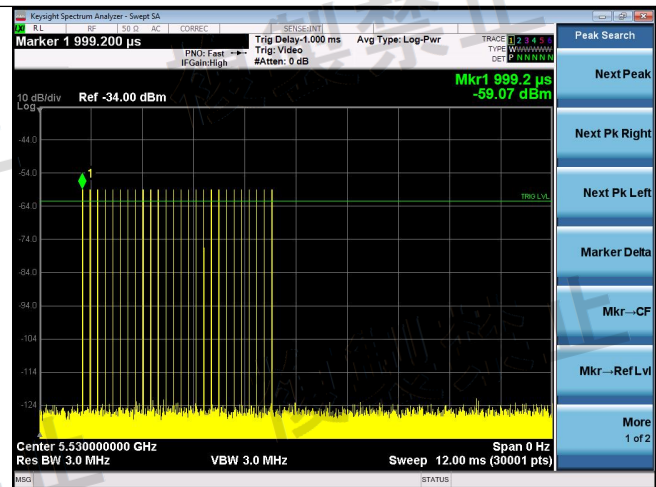
Fixed Pulse 1



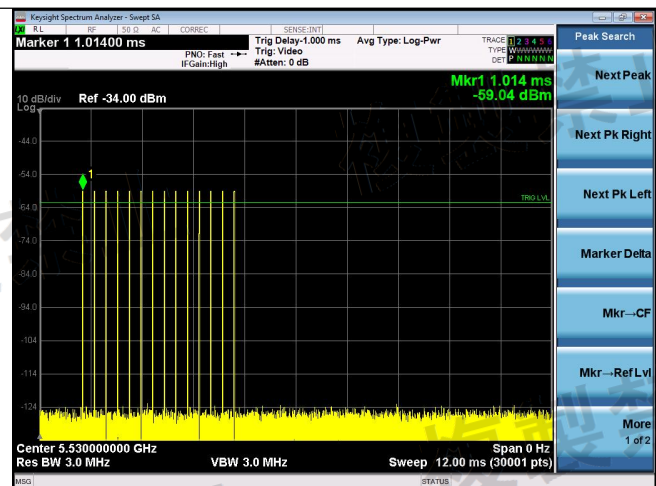
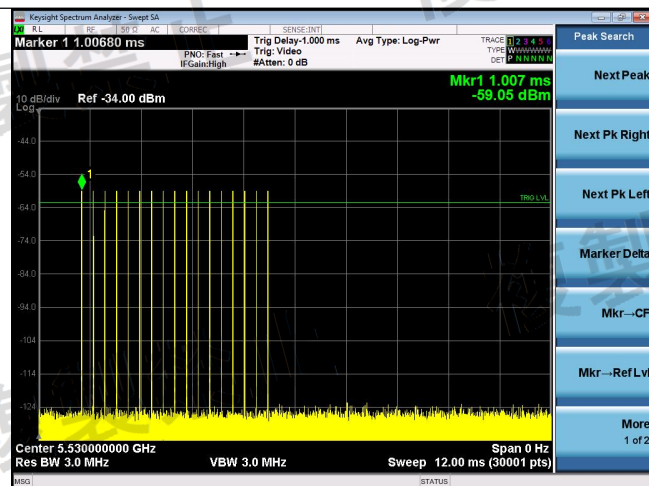
Fixed Pulse 2



Fixed Pulse 3



Variable Pulse 4

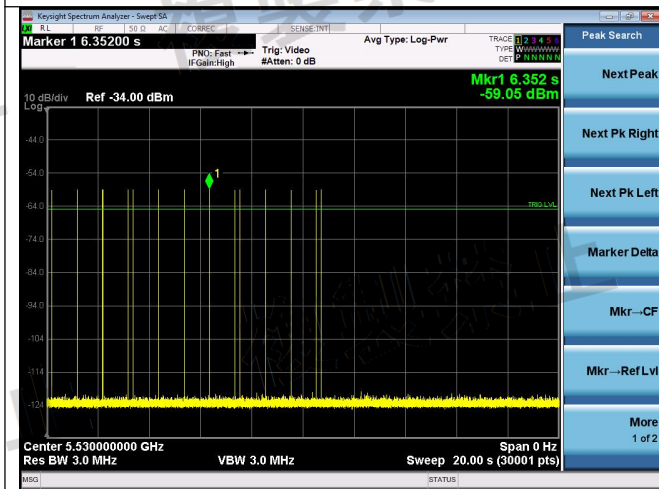




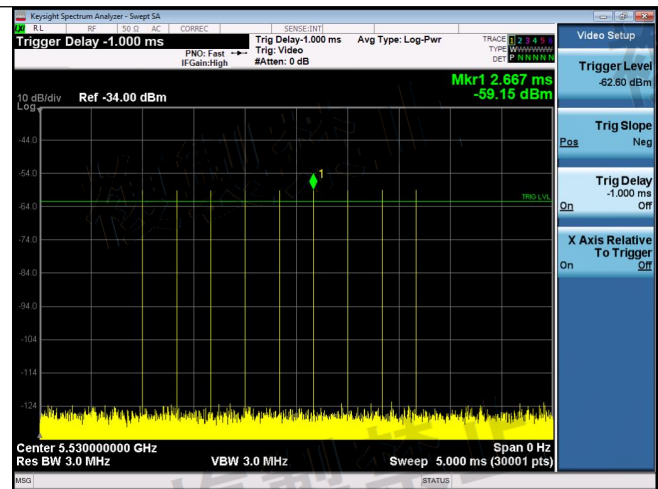
Variable Pulse 5

Variable Pulse 6

W56 Radar type



Chirp

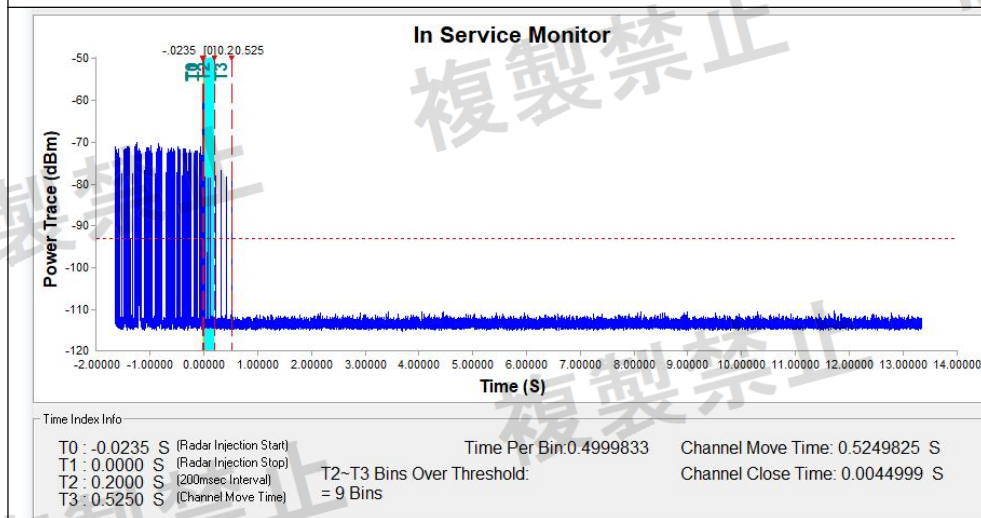
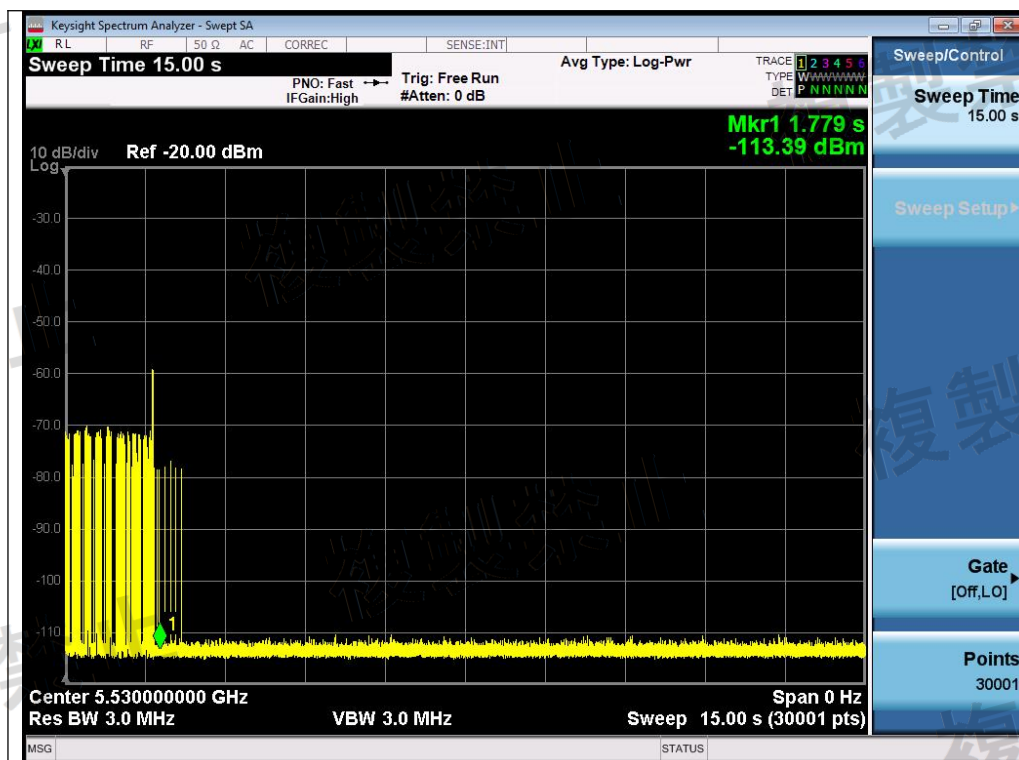


Hopping



Channel shut down results:

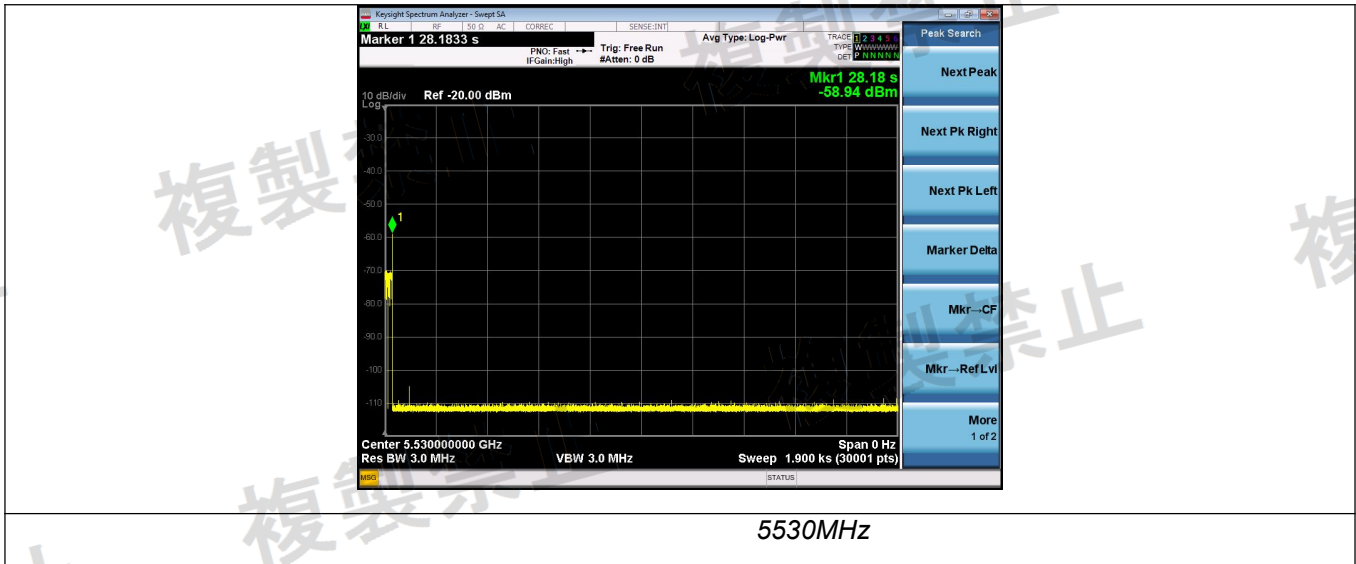
Description	Operation Frequency(MHz)	Value (s)	Limit
Channel Move Time	5530	0.5249825	10s
Channel Closing Transmission Time	5530	0.0044999	260ms



Note: The radar test signals are injected into the Master Device.



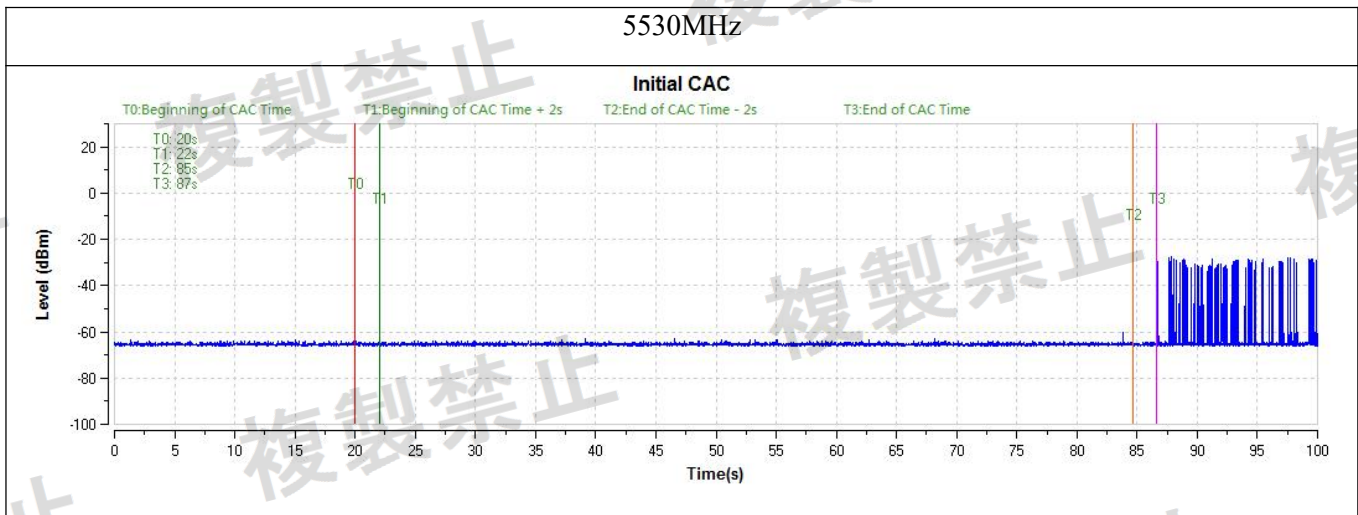
Non-Occupancy period results:



Note: Master was off. During the 30 minutes observation time, The UUT did not make any transmissions in the DFS band after UUT power up.



Channel Availability Check Time results





In-Service Monitoring Detection Probability results

Radar Single	Total times	Pass times	Fail times	Radar Detection Probability	Limit
W56 Fixed Pulse 1	20	20	0	100%	$\geq 60\%$
W56 Fixed Pulse 2	20	19	1	95%	$\geq 60\%$
W56 Fixed Pulse 3	20	20	0	100%	$\geq 60\%$
W56 Variable Pulse 4	20	18	0	90%	$\geq 60\%$
W56 Variable Pulse 5	20	20	0	100%	$\geq 60\%$
W56 Variable Pulse 6	20	20	0	100%	$\geq 60\%$
W56 Chirp	20	19	0	95%	$\geq 60\%$
W56 Hopping	20	20	0	100%	$\geq 60\%$

Note: All condition has been tested, list the worst case in this item.



13. TEST SETUP PHOTOGRAPH

Reference to the Setup photo for details

14. EUT PHOTOGRAPH

Reference to the **External Photos** and **Internal Photos** for details

***** END OF REPORT *****