

Japan DFS Test Report

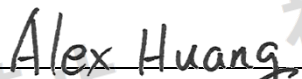
Equipment : Wi-Fi 6 AX6000 Dual-Radio Indoor Router
Model No. : MI12
Brand Name : PRISM
Applicant : BROWAN COMMUNICATIONS INCORPORATION
Address : No.15-1, Zhonghua Rd., Hsinchu Industrial Park,
Hukou Hsinchu Hsien Taiwan 303
Standard : Article 2 Paragraph 1 Item 19-3
Received Date : Aug. 04, 2023
Tested Date : Aug. 22 ~ Aug. 24, 2023

Measurement was conducted by the following test method:
Test method temporarily determined by TACOYAKI.

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:

Approved by:


Alex Huang / Supervisor


Gary Chang / Manager

Table of Contents

1	GENERAL DESCRIPTION	4
1.1	Information.....	4
1.2	Support Equipment.....	5
1.3	Channel Loading/Data Streaming	5
1.4	DFS and TPC Information.....	5
1.5	DFS Parameters.....	6
1.6	Master DFS Threshold Level.....	7
1.7	Test Setup	11
1.8	The Equipment List	12
1.9	Testing Condition	13
1.10	Testing Facility	13
1.11	Test Standards	13
1.12	Deviation from Test Standard and Measurement Procedure.....	13
1.13	Measurement Uncertainty.....	13
2	TEST RESULT	14
2.1	Channel Availability Check (CAC).....	14
2.2	In-service Monitoring	20
2.3	Channel Shutdown and Non-Occupancy Period.....	25
3	TEST LABORATORY INFORMATION	32

Release Record

Report No.	Version	Description	Issued Date
JZ331702-02	Rev. 01	Initial issue	Oct. 03, 2023

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

Power Type	56Vdc from POE
Type(s) of Modulation / Technology	1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK
Frequency Range (MHz)	5150~5250, 5250~5350, 5470~5730
Operating Mode: IEEE Std. 802.11 / Data rate (Mbps)	802.11a: Up to 54 Mbps 802.11n HT20 (MCS 0~31) 802.11n HT40 (MCS 0~31) 802.11ac VHT20 (MCS 0~9) 802.11ac VHT40 (MCS 0~9) 802.11ac VHT80 (MCS 0~9) 802.11ax HE20 (MCS 0~11) 802.11ax HE40 (MCS 0~11) 802.11ax HE80 (MCS 0~11)
HW Version	V02
SW Version	0.4.03.1

1.1.2 Accessories

No.	Equipment	Description
1	MOUNTING-BRACKET	---

1.1.3 Antenna Details

Ant. No.	Brand	Model	Type	Connector	Antenna Gain (dBi)	
					5250~5350	5470~5730
1	LYNwave	AEX22M-222AA1-00	PIFA	UFL	2.17	2.42
2	LYNwave	AEX22M-222AA2-00	PIFA	UFL	2.17	2.42
3	LYNwave	AEX22M-222AA4-00	PIFA	UFL	2.17	2.42
4	LYNwave	AEX22M-222AA3-00	PIFA	UFL	2.17	2.42

Note: The lowest gain: 2.17 dBi

1.2 Support Equipment

Support Equipment List				
No.	Equipment	Brand Name	Model Name	Remark
1	Notebook	DELL	LATITUDE-E6430	S/N: 9ZFB4X1
2	Wireless Module	Intel	AX200NGW	FCC ID: PD9AX200NG

1.3 Channel Loading/Data Streaming

☒	Test transmission sequence is from the Master to the Slave.
☒	For W53 band (5250-5350 MHz) Monitoring of operating channel with about 30% loading over maximum signal transmission speed.
☒	For W56 band (5470-5730 MHz) Monitoring of operating channel with about 17% loading over maximum signal transmission speed.
☒	No transmissions on channels being checked during a Channel Availability Check and Confirming Available Channels.

1.4 DFS and TPC Information

The DFS Related Operating Mode(s) of the Equipment			
Power-on Cycle.(Master)		55.275	
Communication Mode		☒ IP Based (Load Based)	☐ Frame Based
IEEE Std. 802.11	Frequency Range (MHz)	TPC (Transmit Power Control)	Active Scan
11ax (HE20)	☒ 5250-5350	Yes	Yes
11ax (HE40) 11ax (HE80) 11ax (HE160)	☒ 5470-5730	Yes	Yes

1.5 DFS Parameters

DFS requirement values	
Parameter	Value
Channel Availability Check Time	60 sec
Channel Move Time	10 sec
Channel Closing Transmission Time	260 ms
Non-occupancy period	Minimum 30 minutes

W53: Parameters DFS radar test signal						
Test Signal (#)	Pulse width [μ s]		Pulse repetition frequency PRF [Hz]		Pulses per burst [PPB]	Detection Probability (%)
	minimum value	maximum value	minimum value	maximum value		
1	0.5	5	200	1000	10	≥ 60
2	0.5	15	200	1600	15	≥ 60
3	0.5	5	200	1000	Repetition frequency x 0.026" (Round up to less than 1), or "22", whichever is larger, or "30", whichever is smaller	≥ 60
4	0.5	15	200	1600	"Repetition frequency x 0.026" (Round up to less than 1), or "22", whichever is larger, or "30", whichever is smaller	≥ 60
5	0.5	1.5	1114	1118	30	≥ 60
6	0.5	1.5	928	932	25	≥ 60
7	0.5	1.5	886	890	24	≥ 60
8	0.5	1.5	738	742	20	≥ 60

W56: Parameters DFS radar test signal				
Test Signal (#)	Pulse width [μ s]	Pulse repetition frequency PRF [Hz]	Pulses per burst [PPB]	Detection Probability (%)
1	0.5	720	18	≥ 60
2	1	700	18	≥ 60
3	2	250	18	≥ 60
4	1~5 (step 1)	4347-6667 (step 1)	23~29	≥ 60
5	6~10 (step 1)	2000-5000 (step 1)	16~18	≥ 60
6	11~20 (step 1)	2000-5000 (step 1)	12~16	≥ 60
Aggregate (Radar Types 1-6)				≥ 80

W56: Chirp Modulation (5~20MHz) Parameters DFS radar test signal

Test Signal (#)	Pulse width [μ s]	Pulse repetition frequency PRF [Hz]	Number of Pulses per Burst	Number of Bursts	Detection Probability (%)
7	50-100 (step 1)	500-1000 (step 1)	1-3	8-20	≥ 80

W56: 5250-5724 MHz Frequency Hopping Modulation Parameters DFS radar test signal

Test Signal (#)	Pulse width [μ s]	Pulse repetition frequency PRF [Hz]	Number of Pulses per Burst	Number of Bursts	Detection Probability (%)
8	1	3000	9 (3ms)	300	≥ 70

1.6 Master DFS Threshold Level

DFS Threshold Level

DFS Threshold level: -61.83 dBm

Note 1: DFS Detection Threshold (dBm) = $-64 + G$ (dBi)

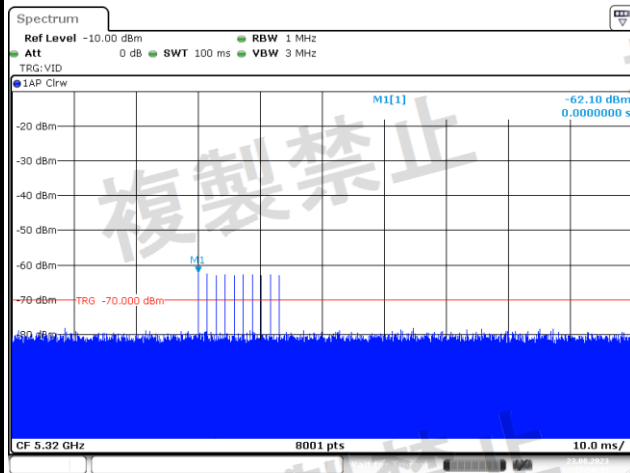
The DFS **Detection Threshold Level** is $(-64\text{dBm}) + (2.17\text{dBi}) = -61.83 \text{ dBm}$

Note 2: maximum EIRP < 200mW (23dBm). DFS **Detection Threshold Level** is $(-62\text{dBm}) + G_{\text{ANT}}$
 maximum EIRP $\geq 200\text{mW}$ (23dBm). DFS **Detection Threshold Level** is $(-64\text{dBm}) + G_{\text{ANT}}$

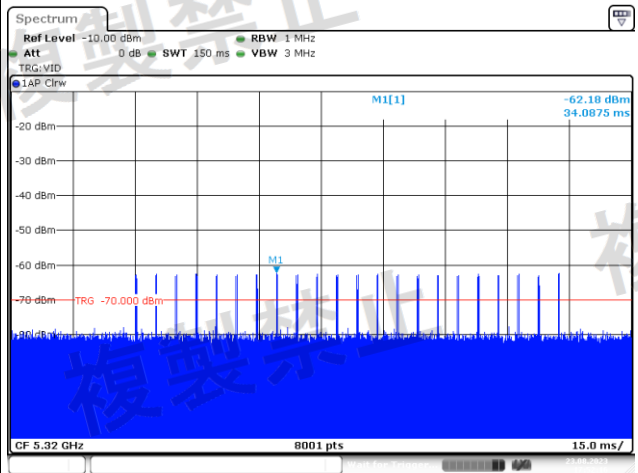
W53 Radar

Calibration Plots

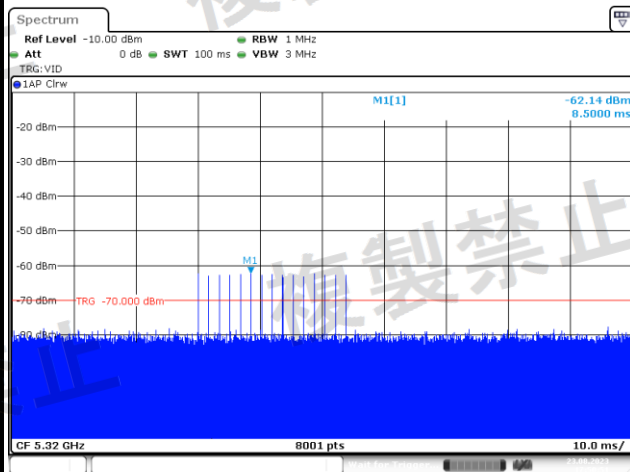
Radar #1 DFS detection threshold level



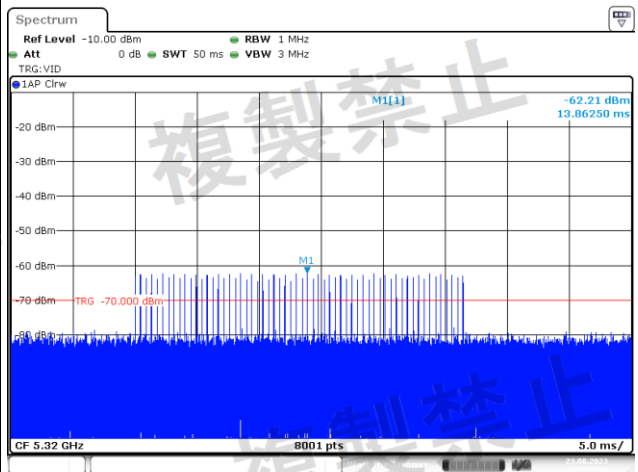
Radar #4 DFS detection threshold level



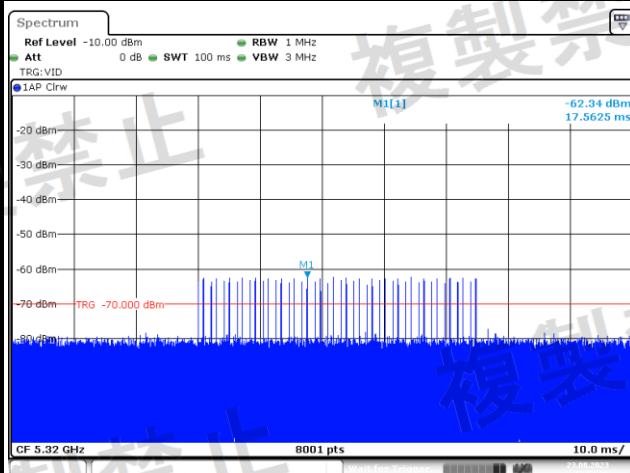
Radar #2 DFS detection threshold level



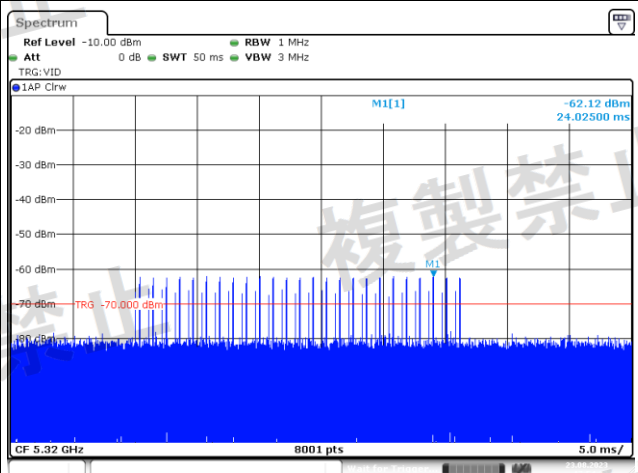
Radar #5 DFS detection threshold level

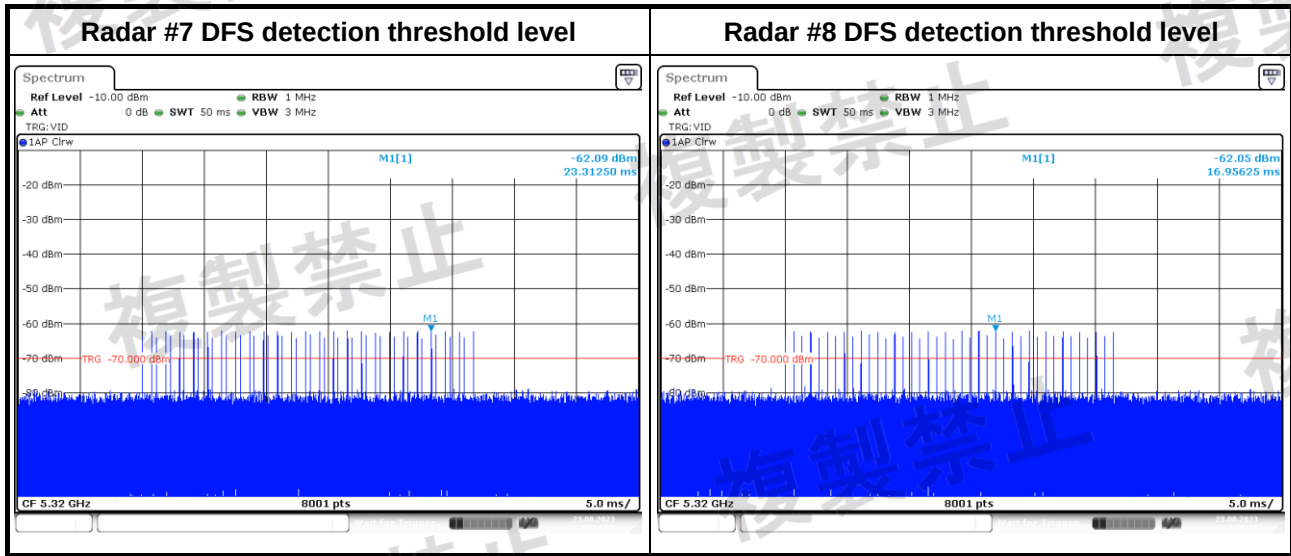


Radar #3 DFS detection threshold level



Radar #6 DFS detection threshold level

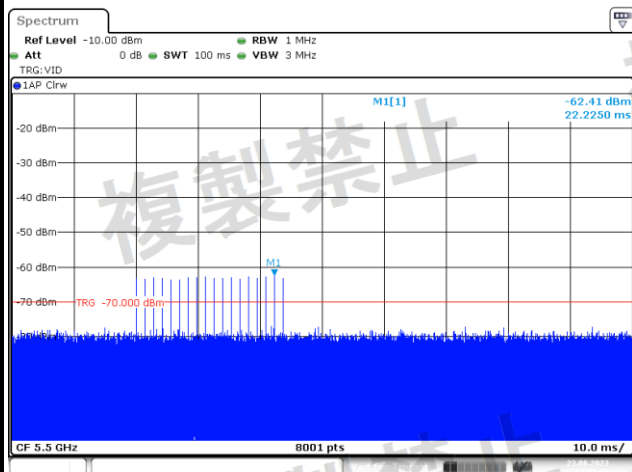




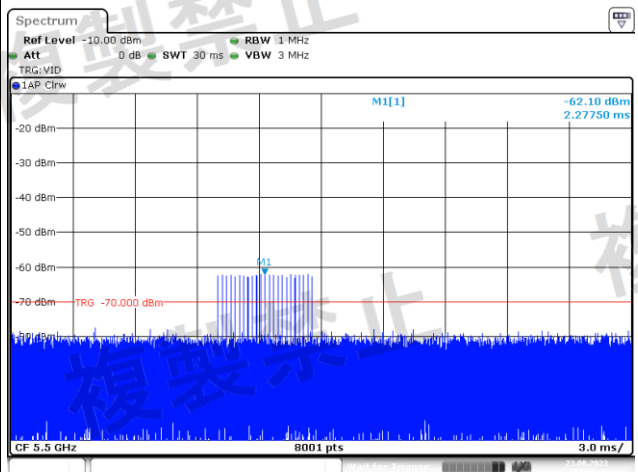
W56 Radar

Calibration Plots

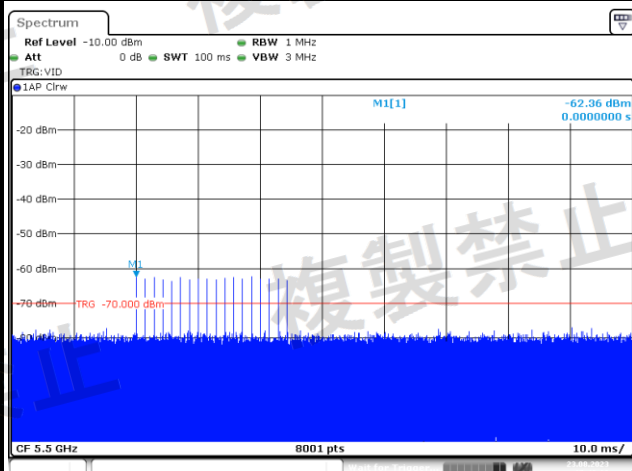
Radar #1 DFS detection threshold level



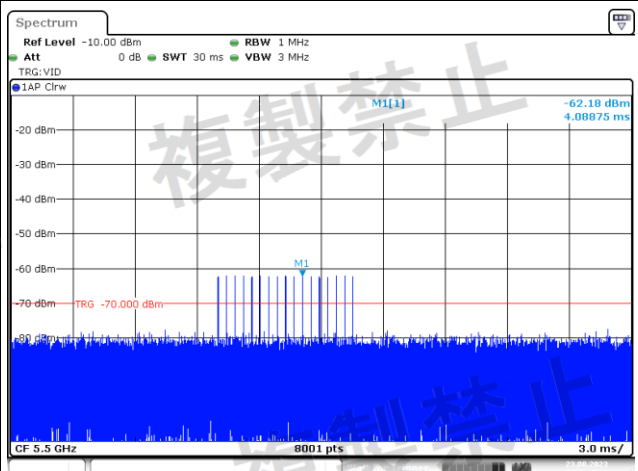
Radar #4 DFS detection threshold level



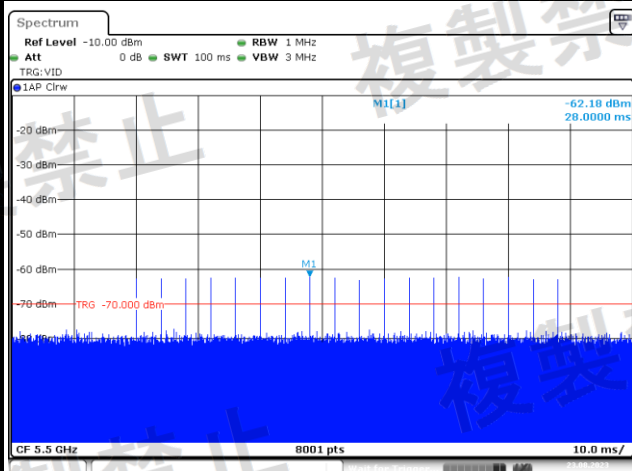
Radar #2 DFS detection threshold level



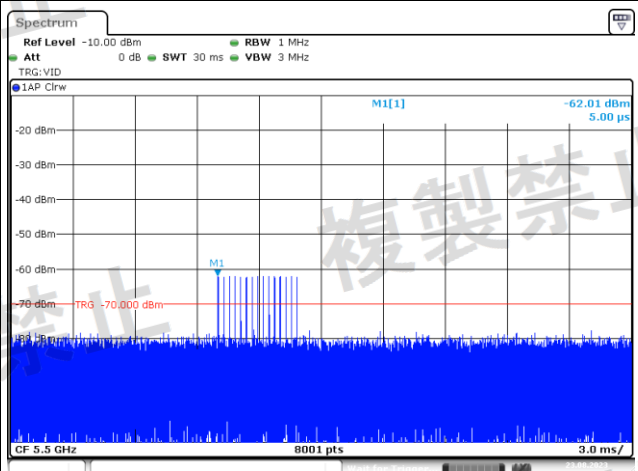
Radar #5 DFS detection threshold level

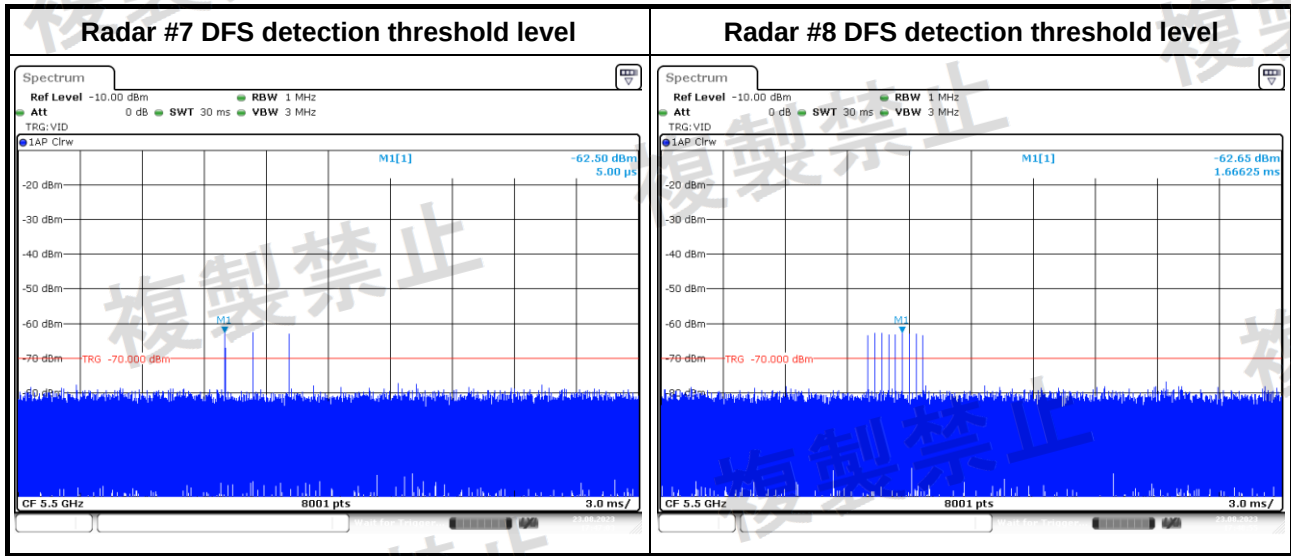


Radar #3 DFS detection threshold level

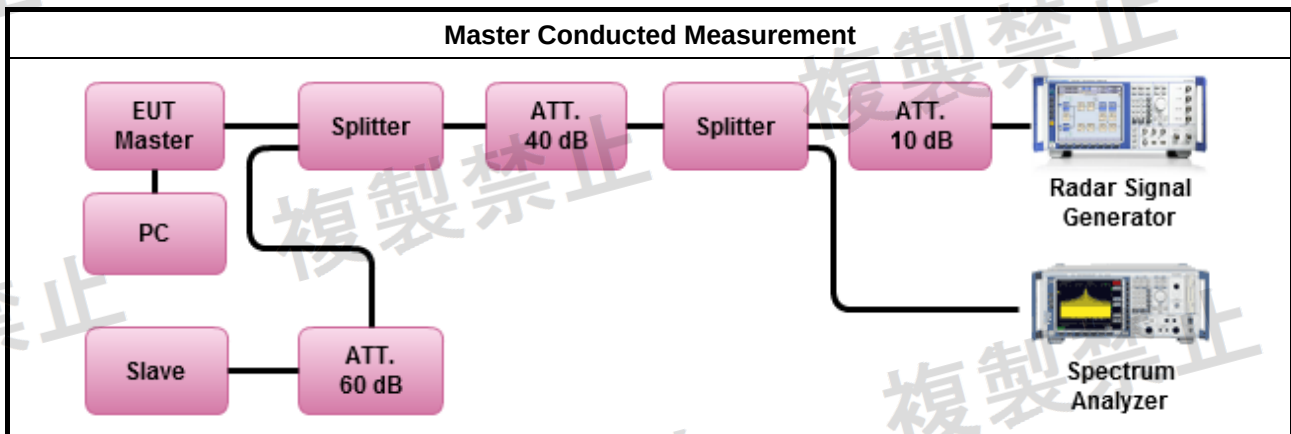


Radar #6 DFS detection threshold level





1.7 Test Setup



1.8 The Equipment List

Test Site	DF01-WS						
Tested Date	Aug. 22 ~ Aug. 24, 2023						
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until	Calibration Authority	Calibration Method
Spectrum Analyzer	R&S	FSV7	101607	Feb. 03, 2023	Feb. 02, 2024	ETC	(C)
RF Cable	HUBER+SUHNER	SUCOFLEX_104	MY15686/4	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296081/4	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329023/4	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329021/4	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Vector signal generator	R&S	SMJ100A	100498	Feb. 06, 2023	Feb. 05, 2024	ETC	(C)
Splitter (1X2)	WOKEN	2WAYDIV	12101200003	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Splitter (1X4)	WOKEN	4WAYDIV	0120A0420110 10	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Attenuator	woken	PE7013-10	10-1	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Attenuator	woken	PE7013-10	10-2	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Attenuator	woken	PE7013-20	20-1	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Attenuator	woken	PE7013-20	20-2	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
20dB Attenuator	MVE	MVE2462-20	16050401	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
30dB Attenuator	MVE	MVE2462-30	16050401	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Direction Coupler	Marvelous Microwave	MVE4514-20	20	Oct. 13, 2022	Oct. 12, 2023	ICC	(D)
Measurement Software	ICC	DFS	V1.3.30	NA	NA	N/A	N/A
<p>Note 1: Calibration Interval of instruments listed above is one year.</p> <p>Note 2: Calibration Method</p> <p>a. Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18 paragraph (1) of the Radio Law.</p> <p>b. Calibration conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) Japan Calibration Service System.</p> <p>c. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).</p> <p>d. Calibration conducted by using other equipment that listed above from a) to c).</p>							

1.9 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
DFS	DF01-WS	25°C / 65%	Jack Li

1.10 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	DF01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

1.11 Test Standards

Article 2 Paragraph 1 Item 19-3

1.12 Deviation from Test Standard and Measurement Procedure

None

1.13 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ($k=2$)).

Measurement Uncertainty	
Parameters	Uncertainty
Time	$\pm 0.1\%$

2 Test Result

2.1 Channel Availability Check (CAC)

2.1.1 Channel Availability Check Limit

Channel Availability Check Limit
The EUT shall perform a channel availability check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute (60sec) on the intended operating frequency.

2.1.2 Test Procedure

Test Method for W53	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

Test Method for W56	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

2.1.3 Power on cycle

Initial Channel Availability Check Time Result					
Modulation Mode	Freq. (MHz)	Radar Test Signal	Power-on Cycle. (sec)	CAC Time (sec)	Observation Time (min)
HE20	5500	N/A	55.275	60	3.33
Result 200S Timing Plot			Complied		
<div><div><div>Spectrum</div><div><div>Ref Level -10.00 dBm</div><div>Att 0 dB</div><div>RBW 1 MHz</div><div>SWT 200 s</div><div>VBW 3 MHz</div><div>SGL</div><div>IAP Clrw</div></div><div><div><div><div>-20 dBm</div><div>-30 dBm</div><div>-40 dBm</div><div>-50 dBm</div><div>-60 dBm</div><div>-70 dBm</div></div><div><div><div>M1[1]</div><div>-52.53 dBm</div><div>115.2750 s</div></div><div><div>1</div></div></div><div><div>CF 5.5 GHz</div><div>8001 pts</div><div>20.0 s/</div></div></div></div></div></div>					
Note 1: This test does not use any Radar Waveforms.					

2.1.4 Radar Detection Threshold (during the Channel Availability Check) Result

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE20	5320	1 - Variable	4	100	100
		2 - Variable	4	100	100
		3 - Variable	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Variable	4	100	100
		8 - Variable	4	100	100
HE20	5500	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
HE20	5720	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE40	5310	1 - Variable	4	100	100
		2 - Variable	4	100	100
		3 - Variable	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Variable	4	100	100
		8 - Variable	4	100	100
HE40	5510	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
HE40	5710	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE80	5290	1 - Variable	4	100	100
		2 - Variable	4	100	100
		3 - Variable	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Variable	4	100	100
		8 - Variable	4	100	100
HE80	5530	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
HE80	5690	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Charp	4	100	100
		8 - Hopping	4	100	100
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE160	5250	1 - Variable	4	100	100
		2 - Variable	4	100	100
		3 - Variable	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Variable	4	100	100
		8 - Variable	4	100	100
HE160	5570	1 - Fixed	4	100	100
		2 - Fixed	4	100	100
		3 - Fixed	4	100	100
		4 - Variable	4	100	100
		5 - Variable	4	100	100
		6 - Variable	4	100	100
		7 - Chorp	4	100	100
		8 - Hopping	4	100	100
Result		Complied			

2.2 In-service Monitoring

2.2.1 In-service Monitoring limit

In-service Monitoring Limit
The <i>In-Service Monitoring</i> shall be used to monitor an <i>Operating Channel</i> . The <i>In-Service-Monitoring</i> shall start immediately after the EUT has started transmissions on a channel. During the <i>In-Service Monitoring</i> , the EUT shall be capable of detecting any of the radar test signals that fall within the started transmissions ranges and with a level above the <i>Radar Detection Threshold</i> . The minimum required detection probability is defined in clause 1.5 DFS Parameters.

2.2.2 Test Procedure

Test Method for W53	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

Test Method for W56	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

2.2.3 Test Result of In-service Monitoring

In-service Monitoring Result					
Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE20	5320	1 - Variable	18	90	75
		2 - Variable	20	100	75
		3 - Variable	19	95	75
		4 - Variable	20	100	75
		5 - Variable	20	100	75
		6 - Variable	20	100	75
		7 - Variable	19	95	75
		8 - Variable	20	100	75
HE20	5500	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	18	90	90
		5 - Variable	20	100	90
		6 - Variable	18	90	90
		Aggregate 1 - 6	116	96.67	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
HE20	5720	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	20	100	90
		6 - Variable	18	90	90
		Aggregate 1 - 6	117	97.5	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-8 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-6 limit 20 times – 90% [18] or 40 times – 60% [24]

W56: Type 7 limit 20 times – 90% [18] or 40 times – 80% [32]

W56: Type 8 limit 20 times – 80% [16] or 40 times – 70% [28]

In-service Monitoring Result

Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE40	5310	1 - Variable	18	90	75
		2 - Variable	20	100	75
		3 - Variable	19	95	75
		4 - Variable	20	100	75
		5 - Variable	20	100	75
		6 - Variable	20	100	75
		7 - Variable	19	95	75
		8 - Variable	20	100	75
HE40	5510	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	19	95	90
		6 - Variable	18	90	90
		Aggregate 1 - 6	116	96.67	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
HE40	5710	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	20	100	90
		6 - Variable	18	90	90
		Aggregate 1 - 6	117	97.5	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-8 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-6 limit 20 times – 90% [18] or 40 times – 60% [24]

W56: Type 7 limit 20 times – 90% [18] or 40 times – 80% [32]

W56: Type 8 limit 20 times – 80% [16] or 40 times – 70% [28]

In-service Monitoring Result

Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE80	5290	1 - Variable	18	90	75
		2 - Variable	20	100	75
		3 - Variable	19	95	75
		4 - Variable	19	95	75
		5 - Variable	19	95	75
		6 - Variable	20	100	75
		7 - Variable	18	90	75
		8 - Variable	20	100	75
HE80	5530	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	19	95	90
		6 - Variable	19	95	90
		Aggregate 1 - 6	117	97.5	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
HE80	5690	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	19	95	90
		6 - Variable	19	95	90
		Aggregate 1 - 6	117	97.5	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-8 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-6 limit 20 times – 90% [18] or 40 times – 60% [24]

W56: Type 7 limit 20 times – 90% [18] or 40 times – 80% [32]

W56: Type 8 limit 20 times – 80% [16] or 40 times – 70% [28]

In-service Monitoring Result

Minimum Antenna Gain (dBi)			2.17		
Detection Threshold Level (dBm)			-61.83		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE160	5250	1 - Variable	17	85	75
		2 - Variable	19	95	75
		3 - Variable	19	95	75
		4 - Variable	19	95	75
		5 - Variable	19	95	75
		6 - Variable	18	90	75
		7 - Variable	18	90	75
		8 - Variable	20	100	75
HE160	5570	1 - Fixed	20	100	90
		2 - Fixed	20	100	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	19	95	90
		6 - Variable	19	95	90
		Aggregate 1 - 6	117	97.5	80
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-8 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-6 limit 20 times – 90% [18] or 40 times – 60% [24]

W56: Type 7 limit 20 times – 90% [18] or 40 times – 80% [32]

W56: Type 8 limit 20 times – 80% [16] or 40 times – 70% [28]

2.3 Channel Shutdown and Non-Occupancy Period

2.3.1 Channel Shutdown and Non-Occupancy Period Limit

Channel Shutdown and Non-Occupancy Period Limit	
Channel Move Time	10 sec
Channel Closing Transmission Time	260 ms in Channel Move Time 10 sec period.
Non-occupancy period	Minimum 30 minutes

2.3.2 Test Procedure

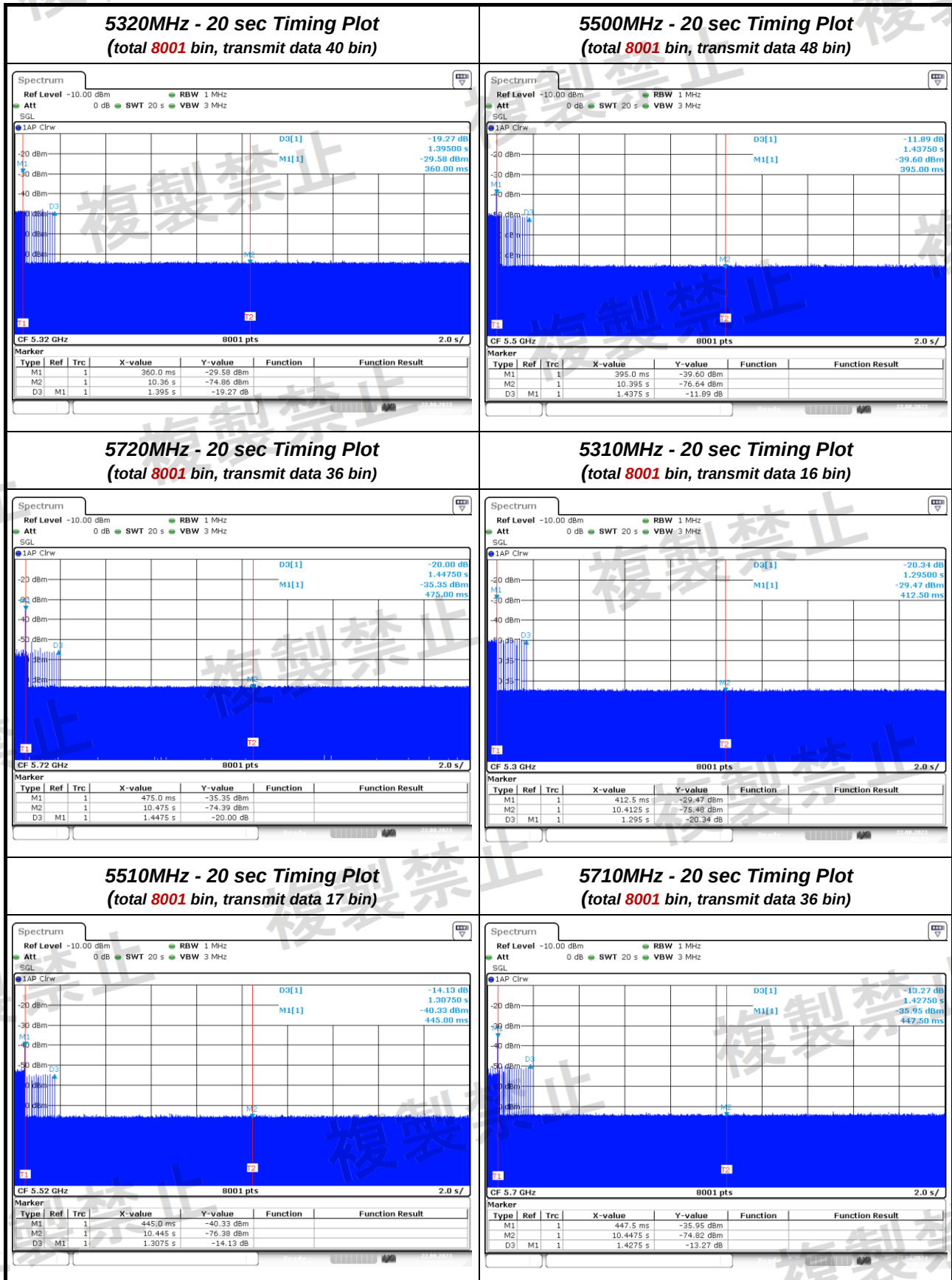
Test Method for W53	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

Test Method for W56	
Measuring Equipment Conditions	Test method temporarily determined by TACOYAKI
Conditions of Equipment under Test	
Measuring Operation Procedures	
Presentation of Results	
Other Conditions	

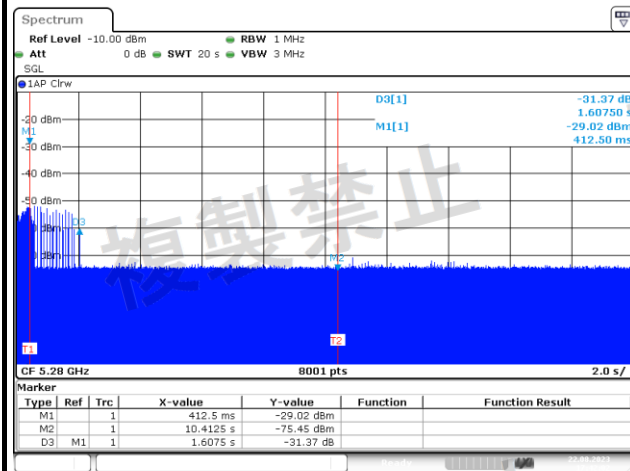
2.3.3 Test Result of Channel Shutdown

Channel Shutdown and Non-Occupancy Period Result				
Minimum Antenna Gain (dBi)			2.17	
Detection Threshold Level (dBm)			-61.83	
Modulation Mode	Freq. (MHz)	Radar Test Signal	Channel Closing Transmission Time(ms)	Channel Move Time(s)
HE20	5320	1 - Variable	100	1.395
HE20	5500	1 - Fixed	120	1.4375
HE20	5720	1 - Fixed	90	1.4475
HE40	5310	1 - Variable	40	1.295
HE40	5510	1 - Fixed	42.5	1.3075
HE40	5710	1 - Fixed	90	1.4275
HE80	5290	1 - Variable	135	1.6075
HE80	5530	1 - Fixed	82.5	1.415
HE80	5690	1 - Fixed	70	1.445
HE160	5250	1 - Variable	82.5	1.375
HE160	5570	1 - Fixed	32.5	1.2925
Limit			260ms	10 sec
Result			Complied	

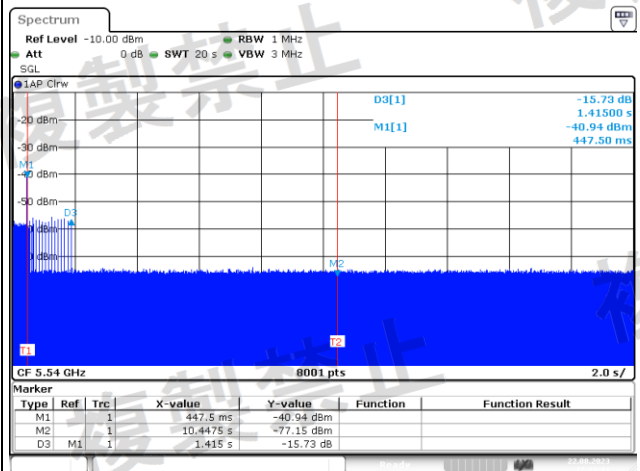
2.3.4 Channel Shutdown Plots



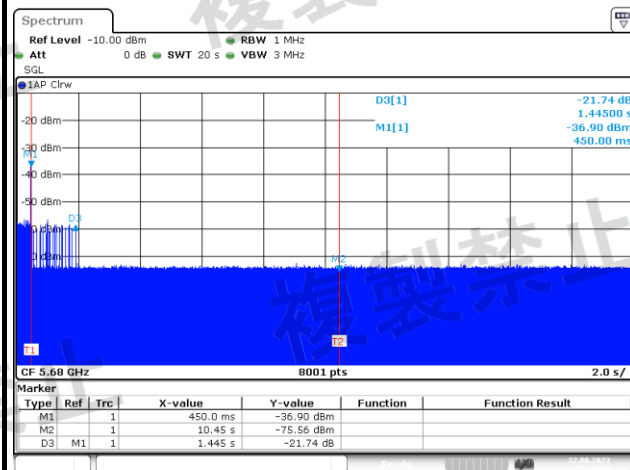
5290MHz - 20 sec Timing Plot (total 8001 bin, transmit data 54 bin)



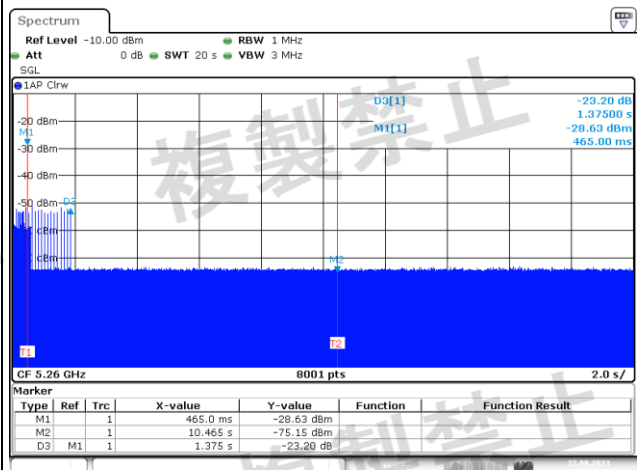
5530MHz - 20 sec Timing Plot (total 8001 bin, transmit data 33 bin)

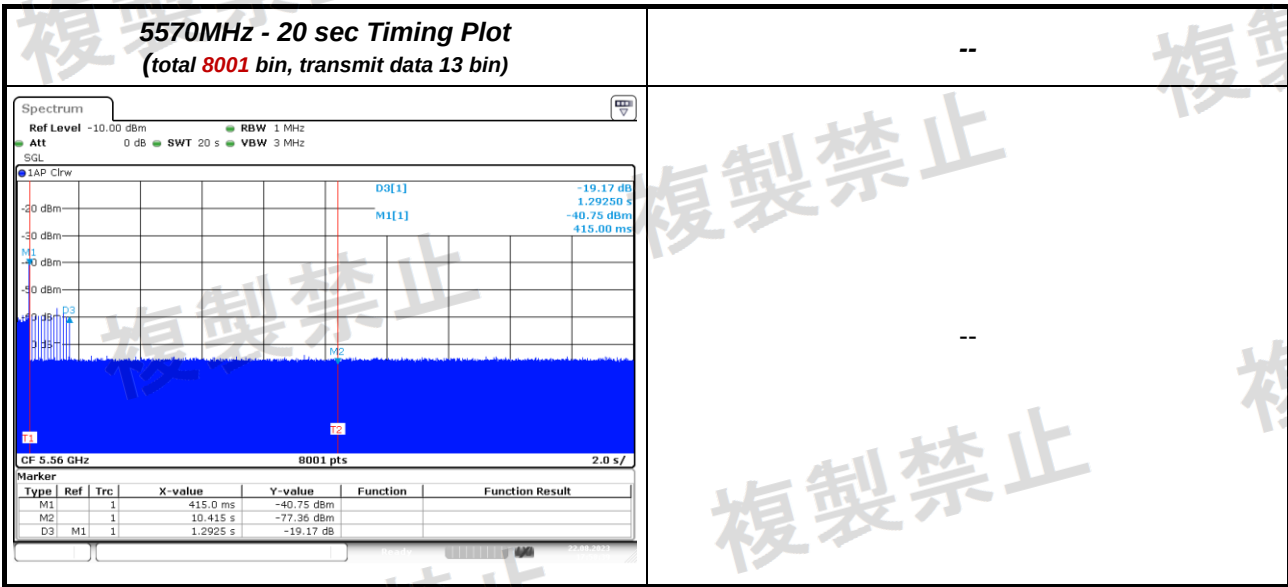


5690MHz - 20 sec Timing Plot (total 8001 bin, transmit data 28 bin)



5250MHz - 20 sec Timing Plot (total 8001 bin, transmit data 33 bin)

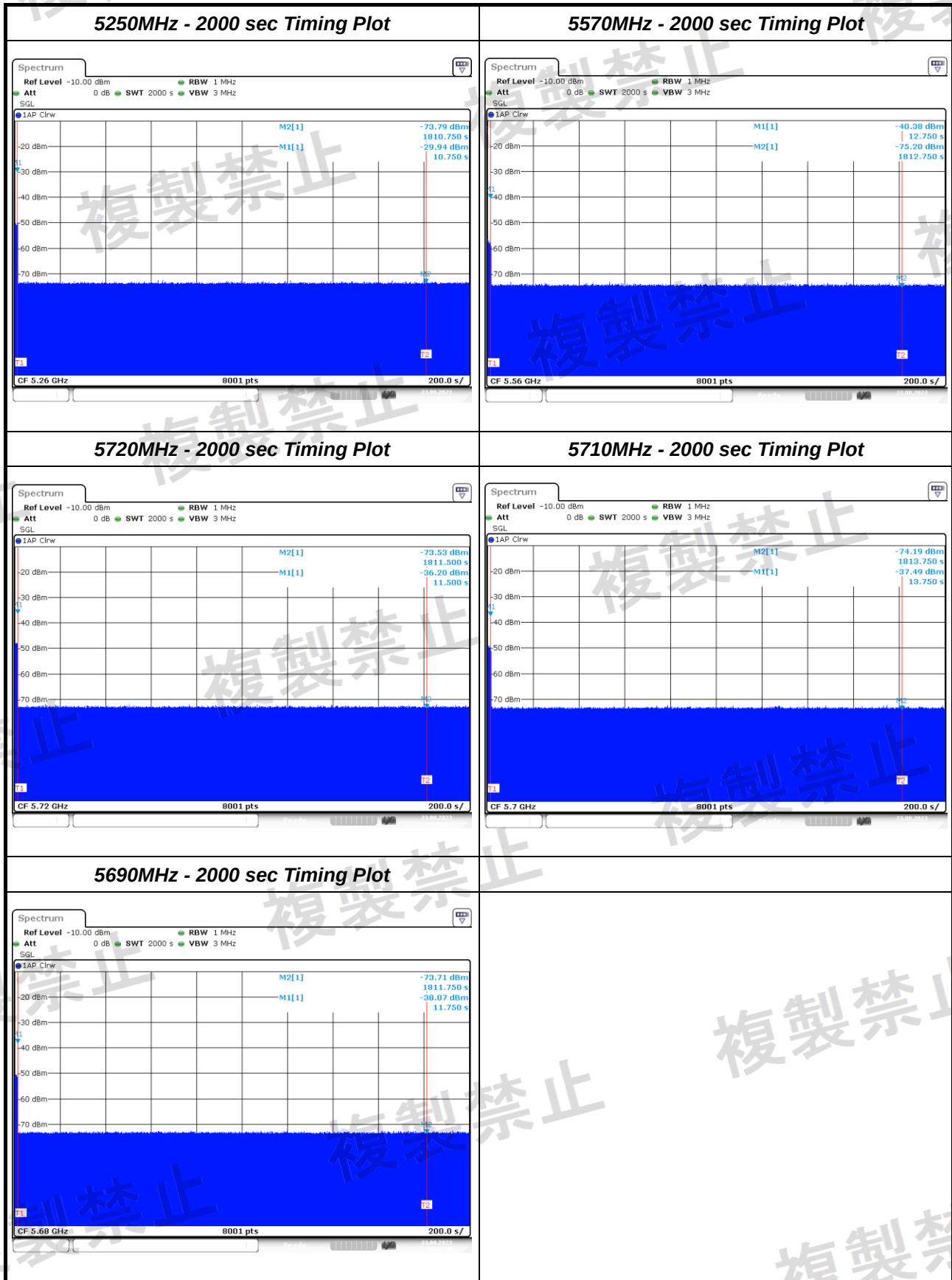




2.3.5 Test Result of Non-Occupancy Period

Non-Occupancy Period Result			
Minimum Antenna Gain (dBi)		2.17	
Detection Threshold Level (dBm)		-61.83	
Modulation Mode	Freq. (MHz)	Radar Test Signal	Non-Occupancy Period(min)
HE20	5720	1 - Fixed	>30
HE40	5710	1 - Fixed	>30
HE80	5690	1 - Fixed	>30
HE160	5250	1 - Variable	>30
HE160	5570	1 - Fixed	>30
Limit		30 min	
Result		Complied	

2.3.6 Non-Occupancy Period Plots



3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666

No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)
No.2-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640

No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666

Fax: 886-3-318-0345

Email: ICC_Service@icertifi.com.tw

==END==