


Japan DFS Test Report

Equipment : EVO2.4
Model No. : EVO2.4
Brand Name : Soft bank
Applicant : Sercomm Corporation
Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,
Taiwan, R.O.C.
Standard : Article 2 Paragraph 1 Item 19-3
Article 2 Paragraph 1 Item 19-3-2
Received Date : Nov. 12, 2018
Tested Date : Dec. 07 ~ Dec. 11, 2018 (Original test)
Oct. 03, 2019 (New test)
Operating Mode Master

Measurement was conducted by the following test method:
the test method of Ordinance Concerning Technical Regulations Conformity Certification
etc. of Specified Radio Equipment in Annex 1, the Ministry of Internal Affairs and
Communication notification in Annex "45" of Article 88, Paragraph 1 or the test method
more than equivalent.

We, International Certification Corp., 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 may be duplicated completely for
legal use with the approval of the applicant. It shall not be reproduced except in full without
the written approval of our laboratory.

Reviewed by:


James Fan / Assistant Manager

Approved by:


Gary Chang / Manager

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Release Record

Report No.	Version	Description	Issued Date
JZ8N1201-03	Rev. 01	Initial issue	Oct. 23, 2019

Summary of Test Results

Description of Test	Result
Channel Availability Check	Pass
In-service Monitoring	Pass
Channel Shutdown and Non-Occupancy Period	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared values of gain for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of the gain.

1 General Description

1.1 Information

This report is issued as a supplementary report to original ICC report no. JZ8N1201. The modification is adding an adapter and Channel 144 / 142 / 138 by software setting.

1.1.1 Specification of the Equipment under Test (EUT)

Power Type	12Vdc from adapter
Type(s) of Modulation / Technology	1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK / OFDM
Frequency Range (MHz)	5150~5250, 5250~5350, 5470~5730
Operating Mode: IEEE Std. 802.11 / Data rate (Mbps)	802.11a 802.11an HT 20 (MCS 0~31) 802.11an HT 40 (MCS 0~31) 802.11ac VHT 20 (MCS 0~9) 802.11ac VHT 40 (MCS 0~9) 802.11ac VHT 80 (MCS 0~9) 802.11ac VHT 160 (MCS 0~9) 802.11ax HEW 20 (MCS 0~11) 802.11ax HEW 40 (MCS 0~11) 802.11ax HEW 80 (MCS 0~11) 802.11ax HEW 160 (MCS 0~11)

1.1.2 Accessories (New addition is marked in boldface.)

No.	Equipment	Description
1	Adapter	Brand: Kuantech (Cambodia) Corporation Limited Model: KST-42A-120350M2 I/P: 100Vac, 50/60Hz, 1.1A O/P: 12Vdc, 3.5A Power line: AC 1m non-shielded without core DC 1.05m non-shielded without core
2	Adapter	Brand: SERCOMM Model: DS38W120JPB10-CUY-00 I/P: 100Vac, 50/60Hz, 48VA O/P: 12Vdc, 3.2A Power line: AC 1m non-shielded without core DC 0.95m non-shielded without core
3	RJ45 cable	3.0m non-shielded without core
4	RJ45 cable	4.5m non-shielded without core
5	RJ11 cable x2	3.0m non-shielded without core

1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5730	5725~5850
1	Dual Band Ant 1 (2G1/5G1)	Dipole	UFL	2.74	2.32	2.32	2.25	---
2	Dual Band Ant 2 (2G2/5G2)	Dipole	UFL	2.9	3.09	3.09	3.29	---
3	2G Ant 3	PIFA	No	2.81	--	--	--	---
4	2G Ant 4	Dipole	UFL	2.75	--	--	--	---
5	5G Ant 3	LOOP	No	--	3.01	3.01	2.85	---
6	Dual Band Ant 3 (5G4)	Dipole	UFL	--	3.37	3.37	2.97	--

The lowest gain : 2.25 dBi

1.2 Support Equipment

Support Equipment List				
No.	Equipment	Brand Name	Model Name	Remark
1	Notebook	DELL	Latitude E5420	9ZFB4X1
2	Notebook	DELL	Latitude E5420	B6FT9T1
3	EVO2.4	Soft bank	EVO2.4	-

1.3 Channel Loading/Data Streaming

<input checked="" type="checkbox"/>	Test transmission sequence is from the Master to the Slave.
<input checked="" type="checkbox"/>	For W53 band (5250-5350 MHz) Monitoring of operating channel with about 50% loading over maximum signal transmission speed.
<input checked="" type="checkbox"/>	For W56 band (5470-5730 MHz) Monitoring of operating channel with about 17% loading over maximum signal transmission speed.
<input checked="" type="checkbox"/>	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			
<input checked="" type="checkbox"/> Master			
<input type="checkbox"/> Client with radar detection			
<input type="checkbox"/> Client without radar detection			
Software / Firmware Version		V1008	
Power-on Cycle. (Master)		39.35sec	
Communication Mode		<input checked="" type="checkbox"/> IP Based (Load Based)	<input type="checkbox"/> Frame Based
IEEE Std. 802.11	Frequency Range (MHz)	TPC (Transmit Power Control)	Active Scan
11ax (HE20)	<input checked="" type="checkbox"/> 5250-5350	Yes	Yes
11ax (HE40) 11ax (HE80) 11ax (HE160)	<input checked="" type="checkbox"/> 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 [μs]	Pulse repetition frequency PRF [Hz]	Pulses per burst [PPB]	Detection Probability (%)
1	1	700	18	≥60
2	2.5	260	18	≥60

W56: Parameters DFS radar test signal				
Test Signal (#)	Pulse width [μs]	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

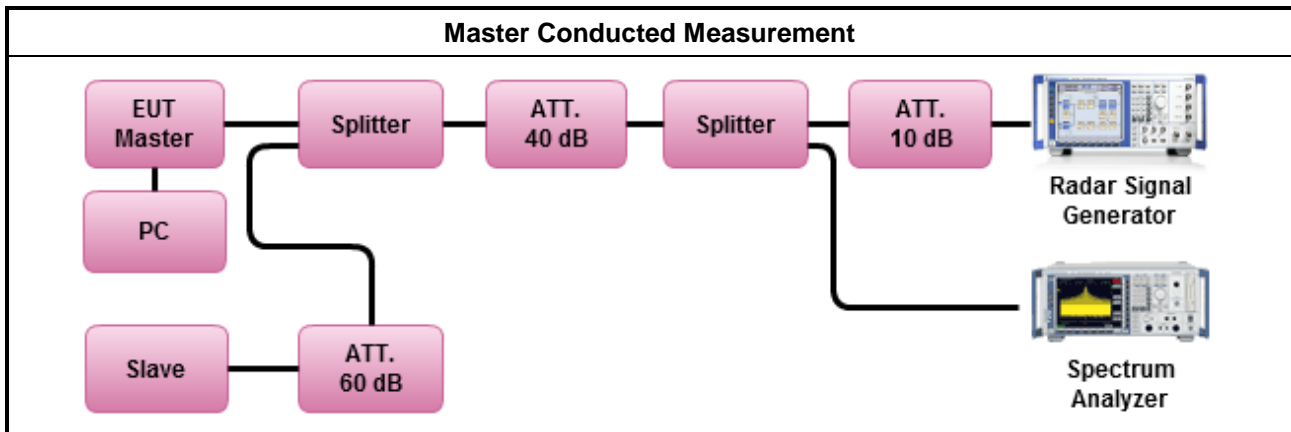
W56: Chirp Modulation (5~20MHz) Parameters DFS radar test signal					
Test Signal (#)	Pulse width [μs]	Pulse repetition frequency PRF [Hz]	Number of Pulses per Burst	Number of Bursts	Detection Probability (%)
7	50-100 (step 1)	500-1000 (step 1)	1-3	8-20	≥80

W56: 5250-5724 MHz Frequency Hopping Modulation Parameters DFS radar test signal					
Test Signal (#)	Pulse width [μs]	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:-61.75 dBm
<p>Note 1: DFS Detection Threshold (dBm) = $-64 + G$ (dBi) The DFSDetection Threshold Level is $(-64\text{dBm}) + (2.25\text{ dBi}) = -61.75\text{ dBm}$</p> <p>Note 2: maximum EIRP < 200mW (23dBm). DFSDetection Threshold Level is $(-62\text{dBm}) + G_{\text{ANT}}$ maximum EIRP \geq 200mW (23dBm). DFSDetection Threshold Level is $(-64\text{dBm}) + G_{\text{ANT}}$</p>

1.7 Test Setup



1.8 The Equipment List

Original test: Dec. 07 ~ Dec. 11, 2018

Test Site	(DF01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV 7	101607	Dec. 14, 2017	Dec. 13, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX_104	MY15686/4	Oct. 15 2018	Oct. 14. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296081/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500199/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500202/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296088/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329023/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329021/4	Oct. 17 2018	Oct. 16. 2019
Vector signal generator	R&S	SMJ100A	100498	Dec. 27, 2017	Dec. 26, 2018
Note: Calibration Interval of instruments listed above is one year.					

New test: Oct. 03, 2019

Test Site	(DF01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV-7	101607	Dec. 20, 2018	Dec. 19, 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	MY15686/4	Oct. 15 2018	Oct. 14. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296081/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500199/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500202/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296088/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329023/4	Oct. 17 2018	Oct. 16. 2019
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329021/4	Oct. 17 2018	Oct. 16. 2019
Vector signal generator	R&S	SMJ100A	100498	Dec. 26, 2018	Dec. 25, 2019
Note: Calibration Interval of instruments listed above is one year.					

1.9 Testing Condition

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

1.10 Test Standards

According to the specification of EUT, the EUT must comply with following standard.

Article 2 Paragraph 1 Item 19-3

Article 2 Paragraph 1 Item 19-3-2

1.11 Deviation from Test Standard and Measurement Procedure

None

1.12 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Measurement Uncertainty	
Parameters	Uncertainty
Time	±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(60 sec) on the intended operating frequency.	

2.1.2 Test Procedure

Test Method for W53	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/26.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/26.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/26.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/26.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/26.6

Test Method for W56	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/27.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/27.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/27.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/27.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/27.6

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

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE20	5320	1 - Fixed	4	100	100
		2 - Fixed	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
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE20 CH 144	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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE40	5310	1 - Fixed	4	100	100
		2 - Fixed	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
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE40 CH 142	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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE80	5290	1 - Fixed	4	100	100
		2 - Fixed	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
Result		Complied			

Radar Detection Threshold (during the Channel Availability Check) Result					
Minimum Antenna Gain (dBi)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE80 CH 138	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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 4)	Detection Probability(%)	Detection Probability Limit (%)
HE160	5250	1 - Fixed	4	100	100
		2 - Fixed	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 - Charp	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
<p>The <i>In-Service Monitoring</i> shall be used to monitor an <i>Operating Channel</i>.</p> <p>The <i>In-Service-Monitoring</i> shall start immediately after the EUT has started transmissions on a channel.</p> <p>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>.</p> <p>The minimum required detection probability is defined in clause 3.1.1 DFS Parameters.</p>

2.2.2 Test Procedure

Test Method for W53	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/26.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/26.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/26.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/26.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/26.6

Test Method for W56	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/27.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/27.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/27.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/27.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/27.6

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 limit 20 times –90% [18] or 40 times – 80% [32]

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

2.2.3 Test Result of In-service Monitoring

In-service Monitoring Result					
Minimum Antenna Gain (dBi)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE20	5320	1 - Fixed	15	75	75
		2 - Fixed	15	75	75
HE20	5500	1 - Fixed	18	90	90
		2 - Fixed	19	95	90
		3 - Fixed	20	100	90
		4 - Variable	19	95	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE20	5720	1 - Fixed	19	95	90
		2 - Fixed	19	95	90
		3 - Fixed	19	95	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Chorp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE40	5310	1 - Fixed	16	80	75
		2 - Fixed	15	75	75
HE40	5510	1 - Fixed	18	90	90
		2 - Fixed	19	95	90
		3 - Fixed	20	100	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	19	95	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE40	5710	1 - Fixed	18	90	90
		2 - Fixed	18	90	90
		3 - Fixed	19	95	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE80	5290	1 - Fixed	16	80	75
		2 - Fixed	15	75	75
HE80	5530	1 - Fixed	18	90	90
		2 - Fixed	18	90	90
		3 - Fixed	20	100	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	19	95	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE80	5690	1 - Fixed	18	90	90
		2 - Fixed	19	95	90
		3 - Fixed	20	100	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	20	100	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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)			2.25		
Detection Threshold Level (dBm)			-61.75		
Modulation Mode	Freq. (MHz)	Radar Test Signal (#)	Nr of Times Triggered (#out of 20)	Detection Probability(%)	Detection Probability Limit (%)
HE160	5250	1 - Fixed	15	75	75
		2 - Fixed	15	75	75
HE160	5570	1 - Fixed	19	95	90
		2 - Fixed	18	90	90
		3 - Fixed	19	95	90
		4 - Variable	18	90	90
		5 - Variable	18	90	90
		6 - Variable	18	90	90
		7 - Charp	19	95	90
		8 - Hopping	20	100	80
Result		Complied			

Note:

W53: Type 1-2 limit 20 times – 75% [15] or 40 times – 60% [24]

W56: Type 1-7 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

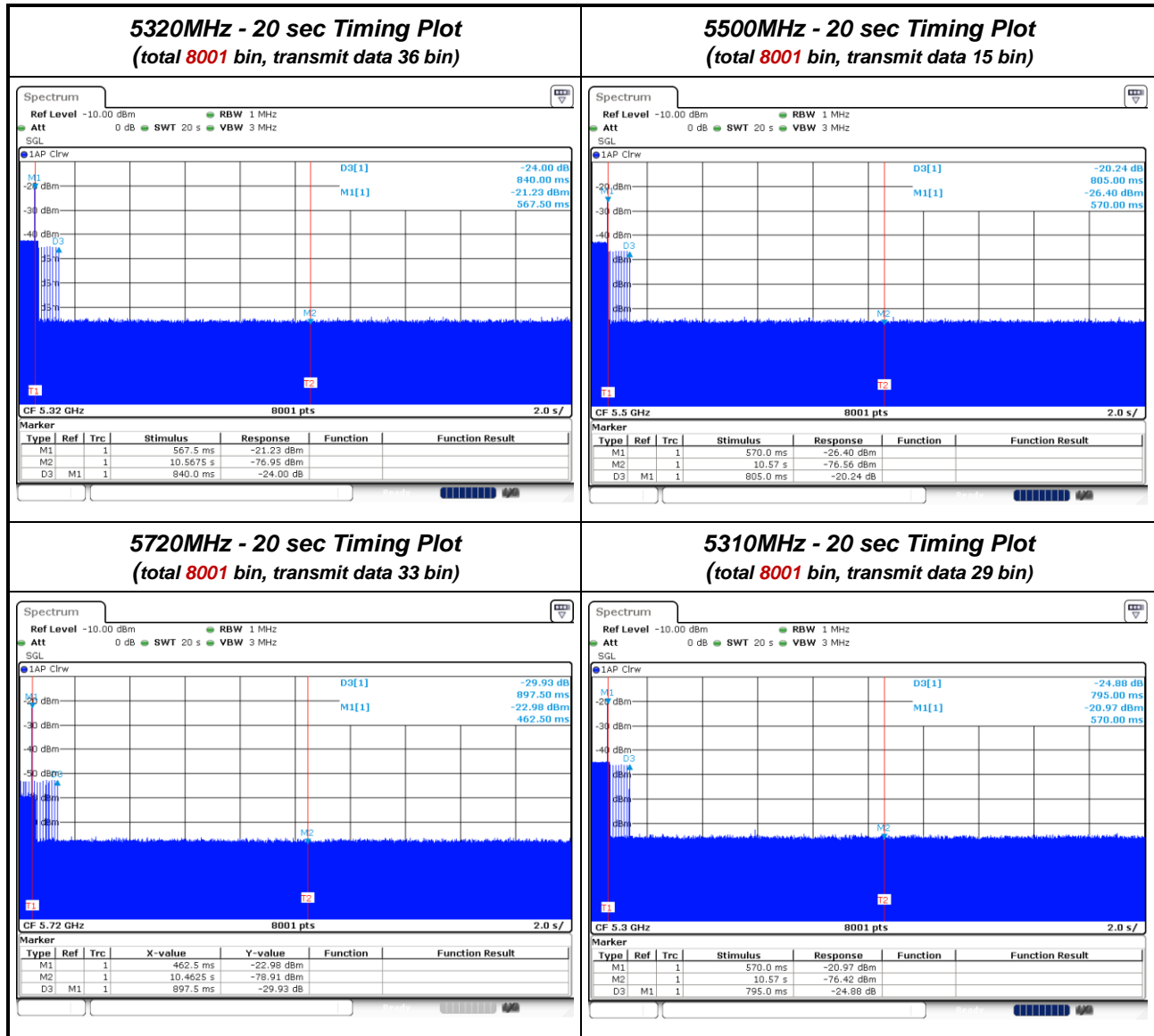
Test Method for W53	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/26.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/26.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/26.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/26.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/26.6

Test Method for W56	
Measuring Equipment Conditions	MIC Notice No.88 Appendix No.45, clause 13.2/27.2
Conditions of Equipment under Test	MIC Notice No.88 Appendix No.45, clause 13.3/27.3
Measuring Operation Procedures	MIC Notice No.88 Appendix No.45, clause 13.4/27.4
Presentation of Results	MIC Notice No.88 Appendix No.45, clause 13.5/27.5
Other Conditions	MIC Notice No.88 Appendix No.45, clause 13.6/27.6

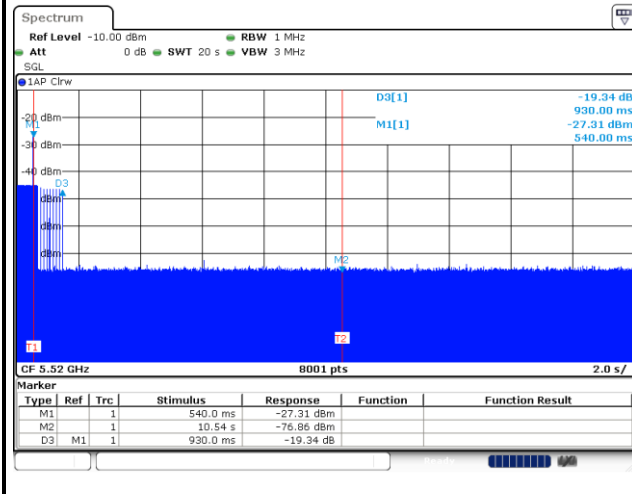
2.3.3 Test Result of Channel Shutdown

Channel Shutdown and Non-Occupancy Period Result				
Minimum Antenna Gain (dBi)			2.25	
Detection Threshold Level (dBm)			-61.75	
Modulation Mode	Freq. (MHz)	Radar Test Signal	Channel Closing Transmission Time(ms)	Channel Move Time(s)
HE20	5320	1 - Fixed	90	0.84
HE20	5500	1 - Fixed	37.5	0.805
HE20	5720	1 - Fixed	82.5	0.8975
HE40	5310	1 - Fixed	72.5	0.795
HE40	5510	1 - Fixed	90	0.93
HE40	5710	1 - Fixed	80	0.9125
HE80	5290	1 - Fixed	80	0.84
HE80	5530	1 - Fixed	65	0.8625
HE80	5690	1 - Fixed	82.5	0.915
HE160	5250	1 - Fixed	40	0.825
HE160	5570	1 - Fixed	50	0.8025
Limit			260ms	10 sec
Result			Complied	

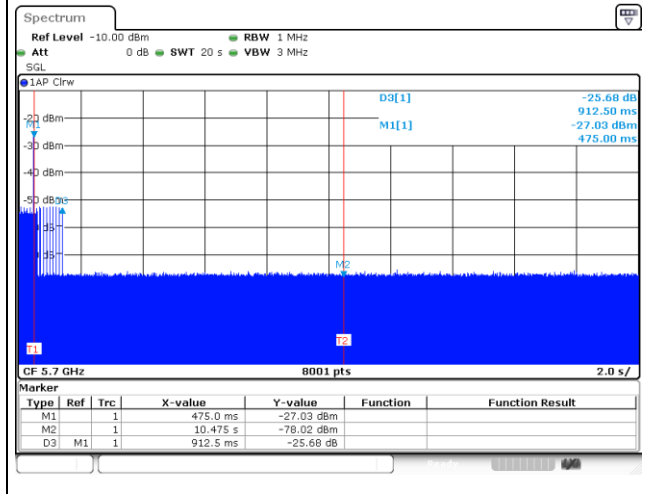
2.3.4 Channel Shutdown Plots



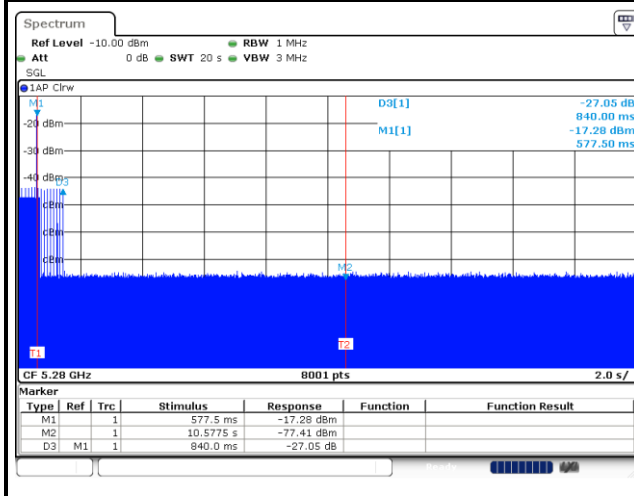
5510MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 36 bin)



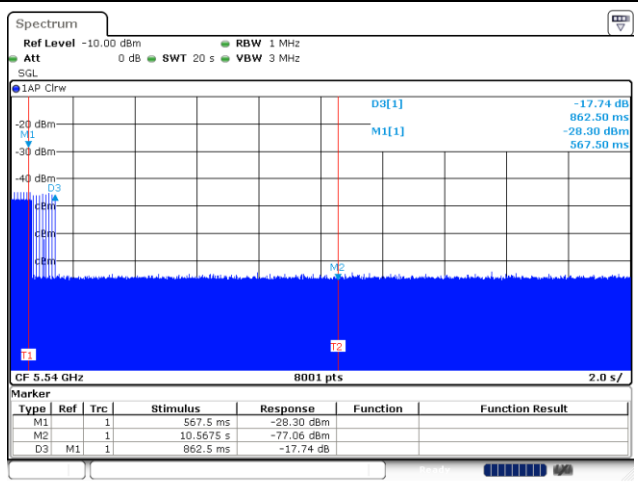
5710MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 32 bin)



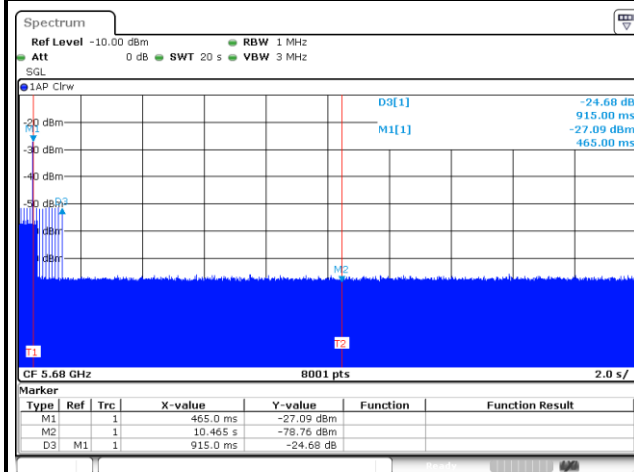
5290MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 32 bin)



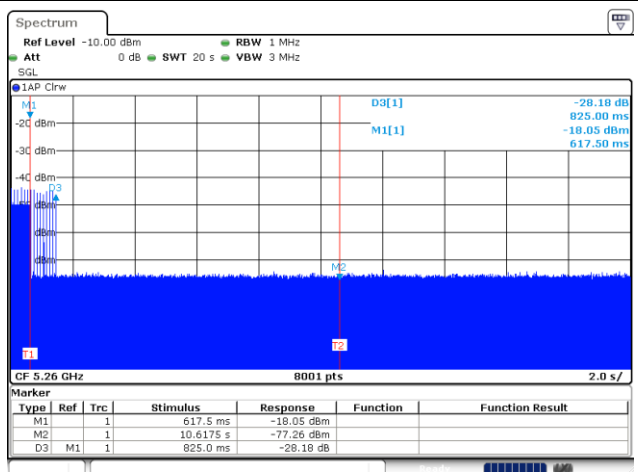
5530MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 26 bin)



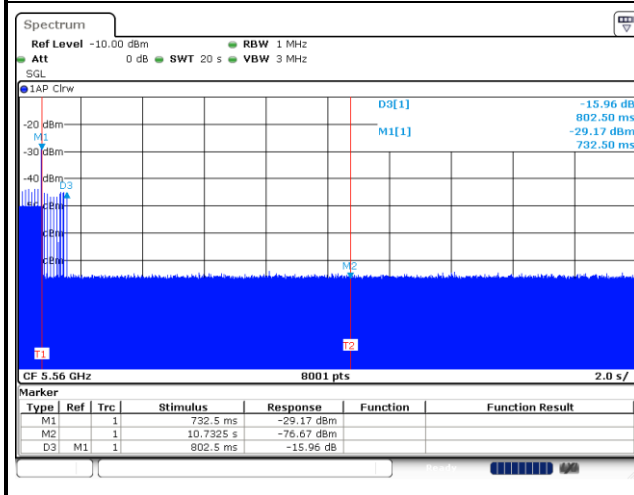
5690MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 33 bin)



5250MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 16 bin)



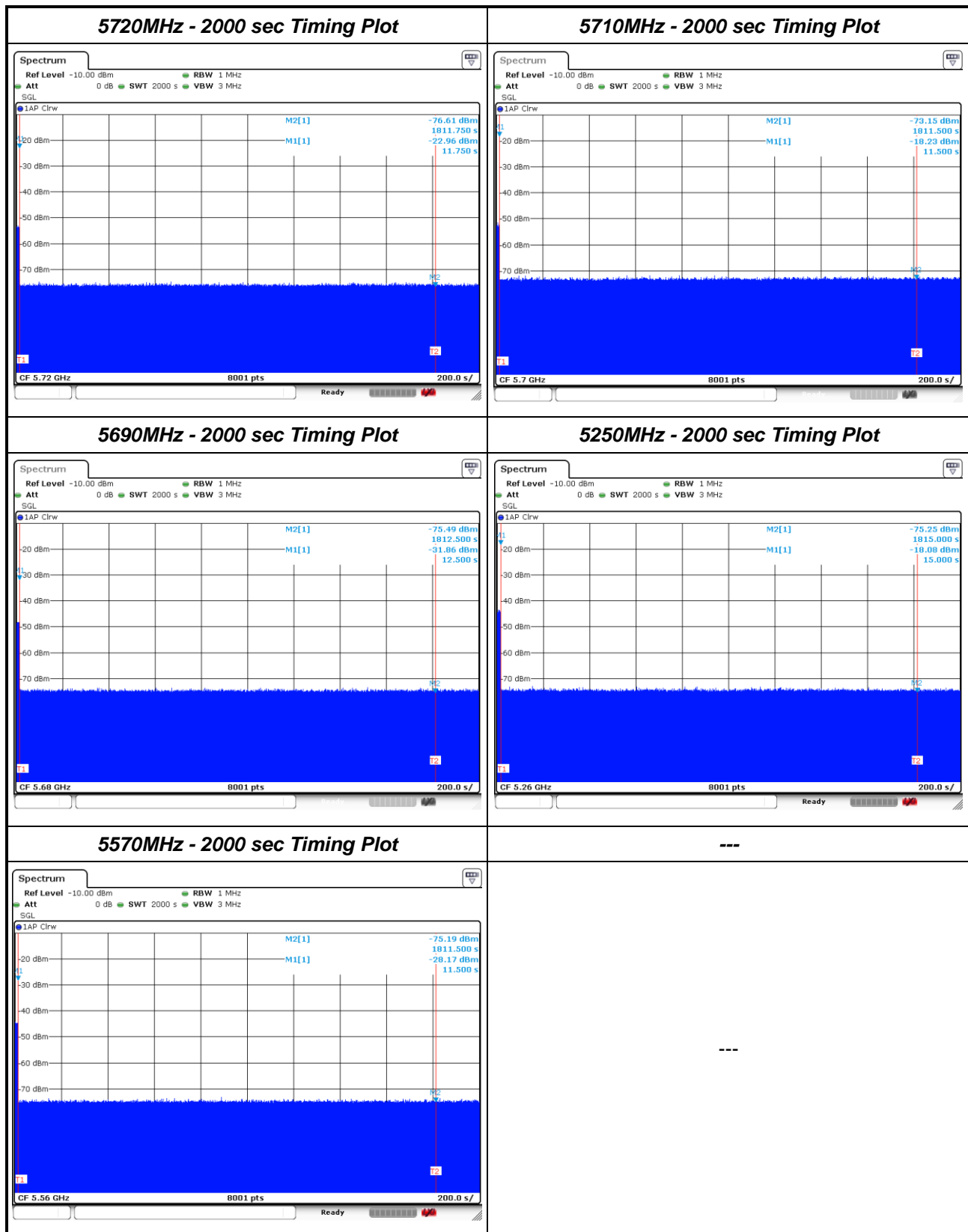
5570MHz - 20 sec Timing Plot
(total 8001 bin, transmit data 20 bin)



2.3.5 Test Result of Non-Occupancy Period

Non-Occupancy Period Result			
Minimum Antenna Gain (dBi)		2.25	
Detection Threshold Level (dBm)		-61.75	
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 - Fixed	>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 Corp, 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 District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan District, Tao Yuan
City 333, Taiwan, R.O.C.

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

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Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

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