

Test Report

Applicant : Shinwa industries(China)ltd
Address : No.26,HuiFeng West 2 Road,Zhongkai High-Tech
Park,Huizhou,Guangdong,China
Product Name : Car Kit WiFi/BT Module
Brand Mark : Shinwa
Model : WF-MA80-FY3
Series model : WF-MA80-FY1
Report Number : BLA-EMC-202602-A1406
FCC ID : ZWYMA80X
Date of Receipt : Feb. 02,2026
Date of Test : Feb. 02,2026 to Mar. 23,2026
Test Standard : 47 CFR Part 15, Subpart E 15.407
Test Result : Pass

Compiled by:

charlie

Review by:

Xavier

Approved by:

J3 hui zheng

Issued Date:

Mar. 23,2026



BlueAsia Technical Services (Shenzhen) Co., Ltd

Address: No.41, South of Beihuan Road, Shangwu Community, Shiyuan
Subdistrict,Bao'an District, Shenzhen, Guangdong, China



The test report is effective only with both signature and specialized stamp and The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full. The results described in this report do not represent the quality or characteristics of the sampled batch, nor do they represent any similar or identical products that are not explicitly stated.

Table of Contents

1 General information	4
1.1 General information	4
1.2 General description of EUT	4
2 Test summary	5
3 Test Configuration	6
3.1 Test mode	6
3.2 EUT Configuration for DFS Test channel	6
3.3 Auxiliary equipment	6
3.4 Test environment	6
4 Laboratory information	7
4.1 Laboratory and accreditations	7
4.2 Measurement uncertainty	7
5 Test equipment	8
6 DFS Technical Requirements	9
6.1 DFS Parameters	9
6.2 DFS Technical Requirements	11
6.3 DFS Threshold Level	11
6.4 Test Setup Block	11
7 Test Result	13
7.1 Non-Occupancy Period	13
7.2 Channel Move Time and Channel Closing Transmission Time	15
8 Test photos	17
9 Appendix B: photographs of EUT	18

Revise Record

Version No.	Date	Description
01	Mar. 23,2026	Original

1 General information

1.1 General information

Applicant	Shinwa industries(China)ltd
Address	No.26,HuiFeng West 2 Road,Zhongkai High-Tech Park,Huizhou,Guangdong,China
Manufacturer	Shinwa industries(China)ltd
Address	No.26,HuiFeng West 2 Road,Zhongkai High-Tech Park,Huizhou,Guangdong,China
Factory	N/A
Address	N/A

1.2 General description of EUT

Product name	Car Kit WiFi/BT Module
Model no.	WF-MA80-FY3
Series model	WF-MA80-FY1
Differences of Series model	Due to the different sales channels, the names are different, but the rest are the same.
Transmitter frequency range	Band1: 5180MHz~5240MHz;Band2:5260MHz~5320MHz Band3: 5500MHz~5700MHz;Band4:5745MHz~5825MHz
Modulation type	OFDMA
Resource unit (802.11ax)	Only support full RU
WLAN Function	802.11a/802.11n/802.11ac/802.11ax
Bandwidth	20MHz/40MHz/80MHz
Antenna Type	FPC antenna
Antenna Gain	4.5 dBi
DFS Operation Type	☐ Master Device ☐ Slaver Device with Radar detection function ☒ Slaver Device without Radar detection function
Power supply or adapter information	DC5V for test board
Hardware version	WF-MA80-FY1 V1.1 240701
Software version	N/A
Engineer sample no.	BLA-EMC-202410-A51

Note: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2 Test summary

Test Items	Limit	Result
Channel Availability Check	> 60 seconds	N/A
UNII Detection Bandwidth	> 100% of the UNII 99% transmission power bandwidth	N/A
Statistical Performance Check	Radar type 1,2,3,4 $\geq$ 60% Aggregate Radar type 1~4 and 5 $\geq$ 80% Radar type 6 $\geq$ 70%	N/A
Channel Move Time	< 10 seconds	Pass
Channel Closing Transmission Time	< 20ms + aggregate of 60ms over remaining 10 second period	Pass
Non-Occupancy Period	> 30 minutes	Pass
Note: "Pass" means meet the requirements, "N/A" means not applicable		

3 Test Configuration

3.1 Test mode

Test Mode	Description
Normal working	Keep the EUT in continuously working in normal mode.

3.2 EUT Configuration for DFS Test channel

Test Items	Channel Frequency
Channel Move Time	5260MHz, 5290MHz 5500MHz, 5610MHz
Channel Closing Transmission Time	5260MHz, 5290MHz 5500MHz, 5610MHz
Non-Occupancy Period	5260MHz, 5290MHz 5500MHz, 5610MHz

3.3 Auxiliary equipment

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	lenovo	E46OC	N/A	From lab (No.BLA-ZC-BS-2022005)
WiFi Router	ASUS	RT-AC86U	N/A	FCCID:MSQ-RTACHN00 ICID:3568A-RTAC86U

Note:

--" mean no any auxiliary device during testing.

3.4 Test environment

Temperature	20 ~ 25 °C
Humidity	60% ~ 65%
Atmospheric pressure	1012 kPa

4 Laboratory information

4.1 Laboratory and accreditations

The test facility is recognized, certified, or accredited by the following organizations:

Company name:	BlueAsia Technical Services (Shenzhen) Co.,Ltd.
Address:	No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China
CNAS accredited No.:	L9788
A2LA Cert. No.:	5071.01
FCC Designation No.:	CN1252
Test Firm Registration Number:	923526
ISED CAB identifier No.:	CN0028
Company Number:	24243
Telephone:	+86-755-28682673
FAX:	+86-755-28682673

4.2 Measurement uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

Parameter	Expanded Uncertainty
RF output power, conducted	± 1.5 dB
Temperature	± 3 °C
Supply voltages	± 3 %
Time	± 5 %

5 Test equipment

Equipment	Name	Model	Manufacture	S/N	Cal. Date	Due. Date
BLA-EMC-003-003	Shield room	5*3*3	SKET	N/A	2023/11/16	2026/11/15
BLA-EMC-016	Signal Generator	N5182A	Agilent	MY52420567	2025/06/09	2026/06/08
BLA-EMC-038	Spectrum	N9020A	Agilent	MY49100060	2025/08/05	2026/08/04
BLA-EMC-042	Power sensor	RPR3006 W	DARE	14I00889SN042	2025/08/05	2026/08/04
BLA-EMC-044	Radio communication tester	CMW500	R&S	132429	2025/08/05	2026/08/04
BLA-EMC-064	Signal Generator	N5182B	KEYSIGHT	MY58108892	2025/06/09	2026/06/08
BLA-EMC-079	Spectrum	N9020A	Agilent	MY54420161	2025/08/05	2026/08/04
BLA-EMC-088	Audio Analyzer	ATS-1	Audio Precision	ATS141094	2025/06/09	2026/06/08
BLA-EMC-100	Digital Radio Tester	RWC2010	Redwoodcom m	RWC201024903 04	2025/06/09	2026/06/08

Test Software Record

Software No.	Software Name	Manufacture	Software version	Test site
BLA-EMC-S010	MTS 8310	MW	2.0.0.0	RF

6 DFS Technical Requirements

6.1 DFS Parameters

Table D.1: Applicability of DFS Requirements Prior to Use of a Channel			
Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table D.2: Applicability of DFS requirements during normal operation		
Requirement	Operational Mode	
	Master	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

Table D.3: DFS Detection Thresholds	
Maximum Transmit Power	Value (See Notes 1,2, and 3)
EIRP $\geq$ 200 mW	-64 dBm
EIRP < 200 mW and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 mW that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Table D.4: DFS requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 ms + an aggregate of 60ms over remaining 10 second period (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the UNII 99% transmission power bandwidth (See Note 3)

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step, the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table D.5: Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A Test B	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Table D.6: Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

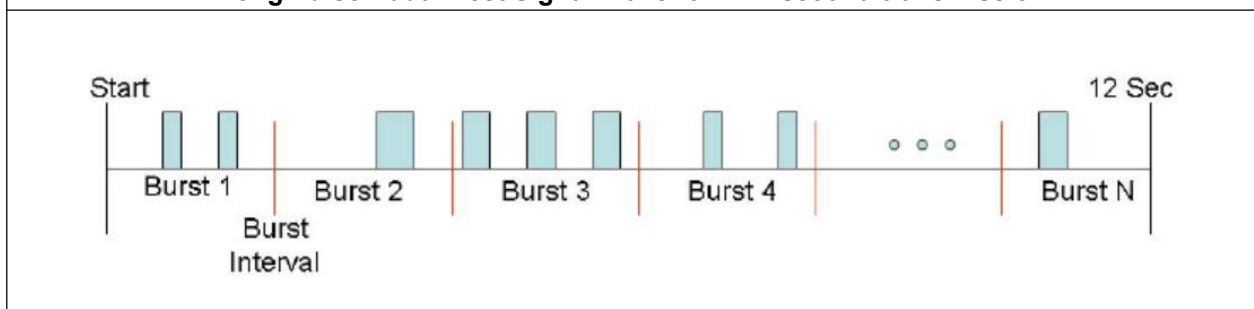
Long Pulse Radar Test Signal Wave form 12 second transmission


Table D.7: Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	0	0.333	300	70%	30

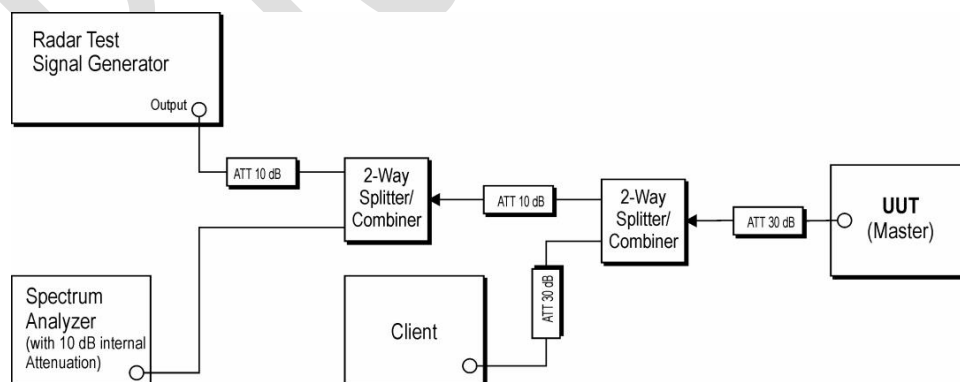
6.2 DFS Technical Requirements

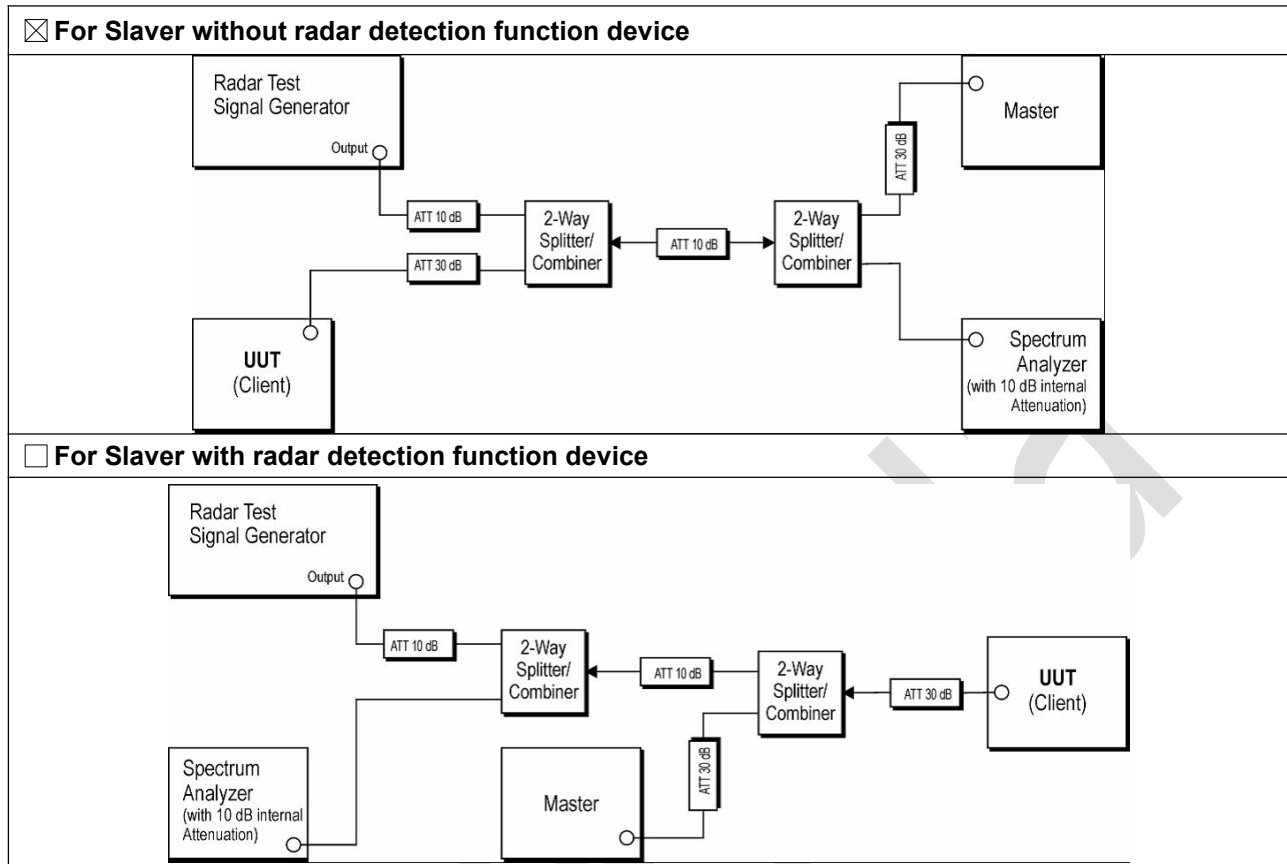
Requirement	DFS Operational mode		
	☐ Master	☒ Slave without Radar Detection	☐ Slave with Radar Detection
Channel Availability Check	√	Not Required	Not Required
UNII Detection Bandwidth	√	Not Required	√
Statistical Performance Check	√	Not Required	√
Channel Move Time	√	√	√
Channel Closing Transmission Time	√	√	√
Non-Occupancy Period	√	√	√

6.3 DFS Threshold Level

DFS Threshold Level	
5250MHz ~ 5350MHz	-62dBm @ antenna connector
5470MHz~5725MHz	-62dBm @ antenna connector
Note: The worst case level was selected to perform the test.	

6.4 Test Setup Block

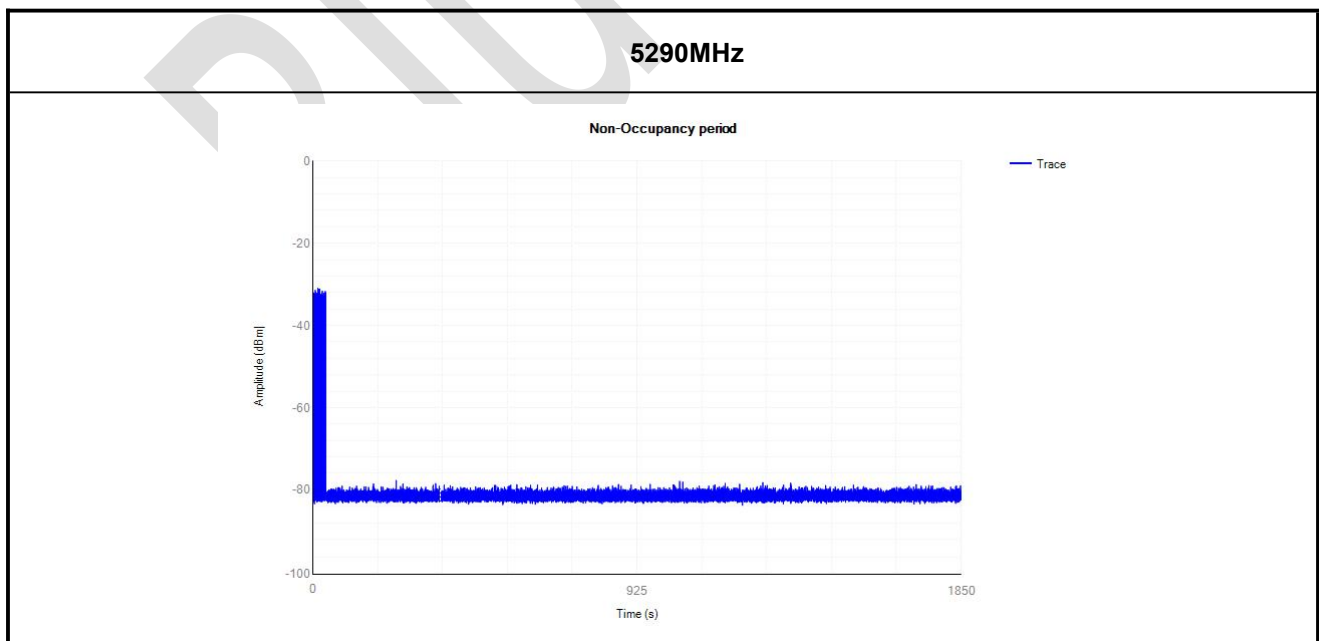
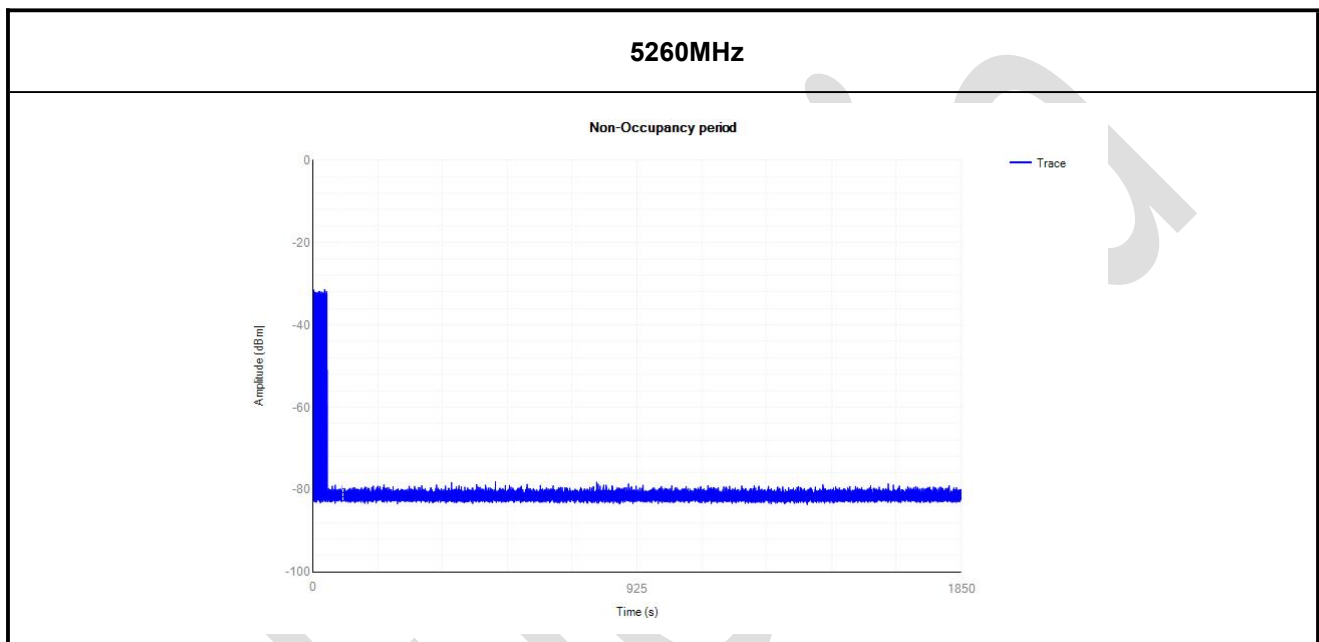
☐ For master device




7 Test Result

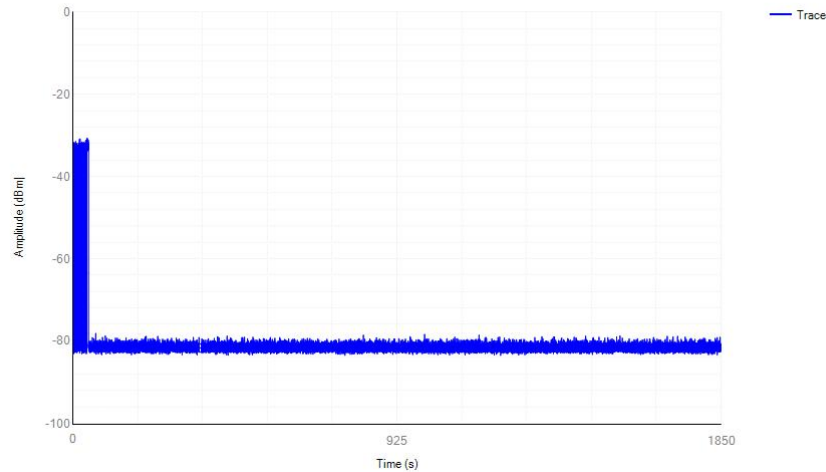
7.1 Non-Occupancy Period

Test Items	Value	Limit	Result
Non-Occupancy Period	> 30 minutes	Minimum 30 minutes	Pass

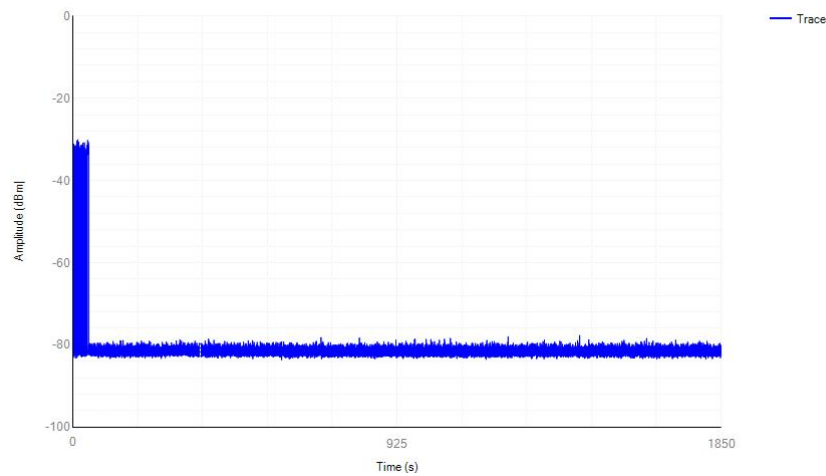


5500MHz

Non-Occupancy period

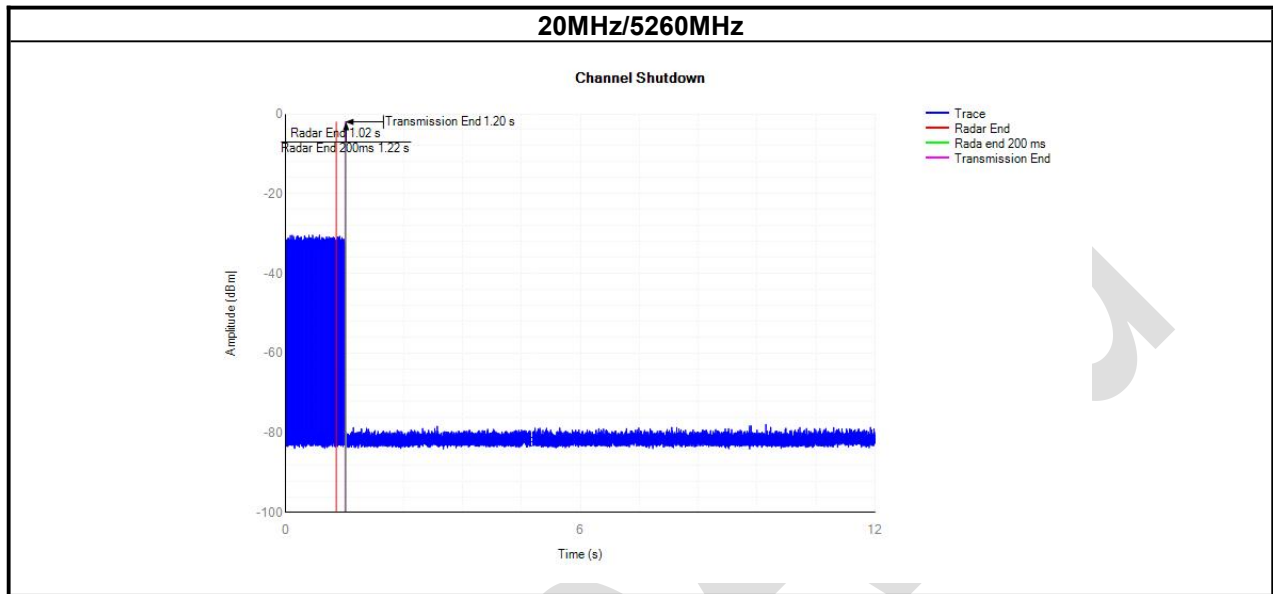
**5610MHz**

Non-Occupancy period

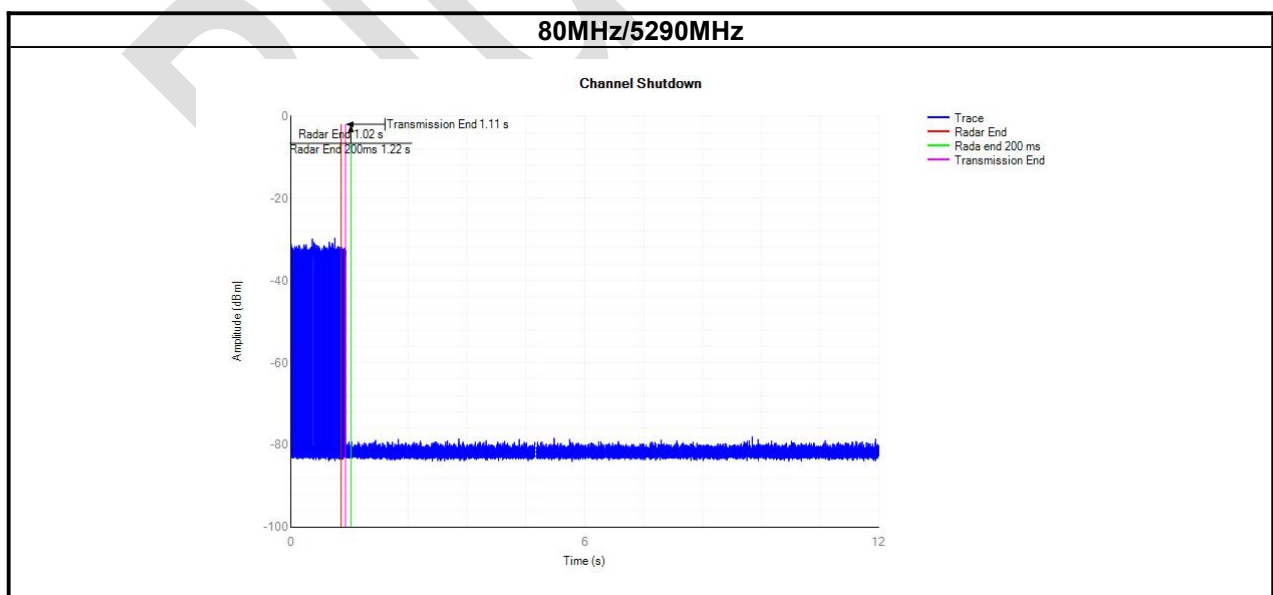


7.2 Channel Move Time and Channel Closing Transmission Time

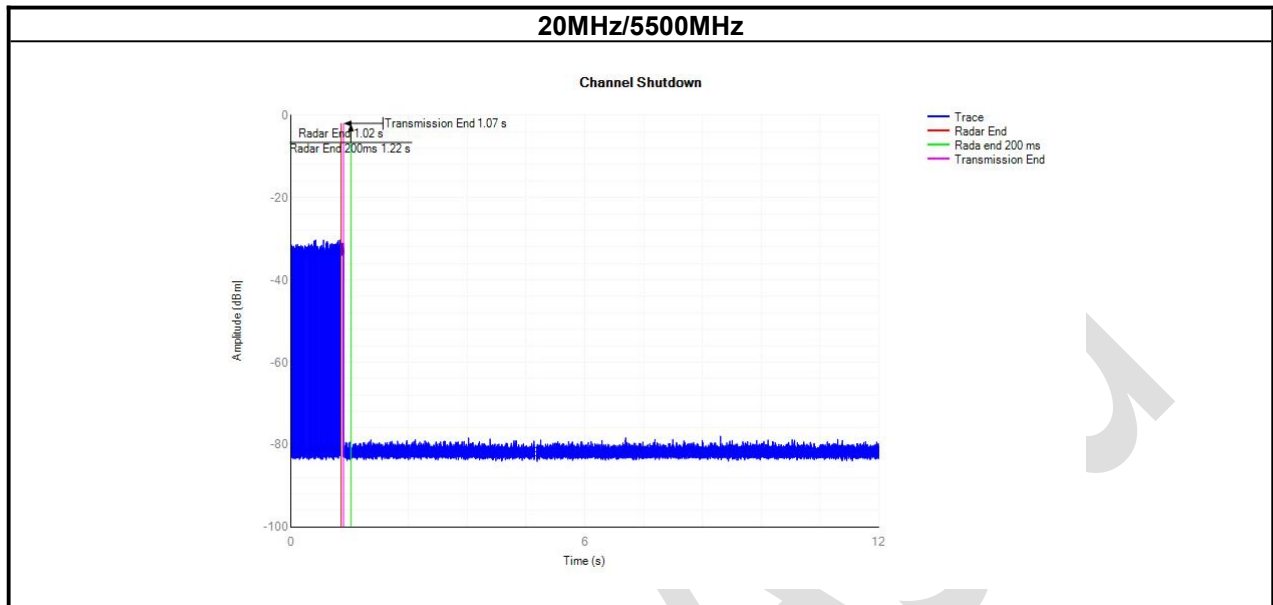
Test Items	Value	Limit	Result
Channel Closing Transmission Time	0.0832s	1s	Pass
Channel Move Time	0.1781s	10 s	Pass



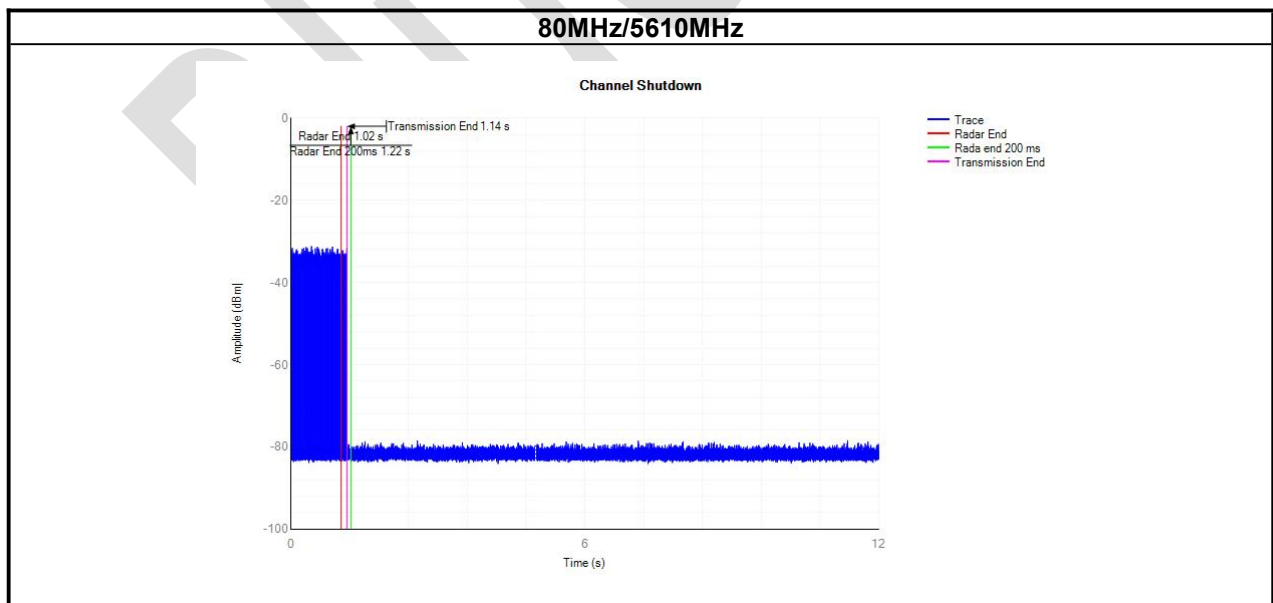
Test Items	Value	Limit	Result
Channel Closing Transmission Time	0.0356s	1s	Pass
Channel Move Time	0.0897s	10 s	Pass



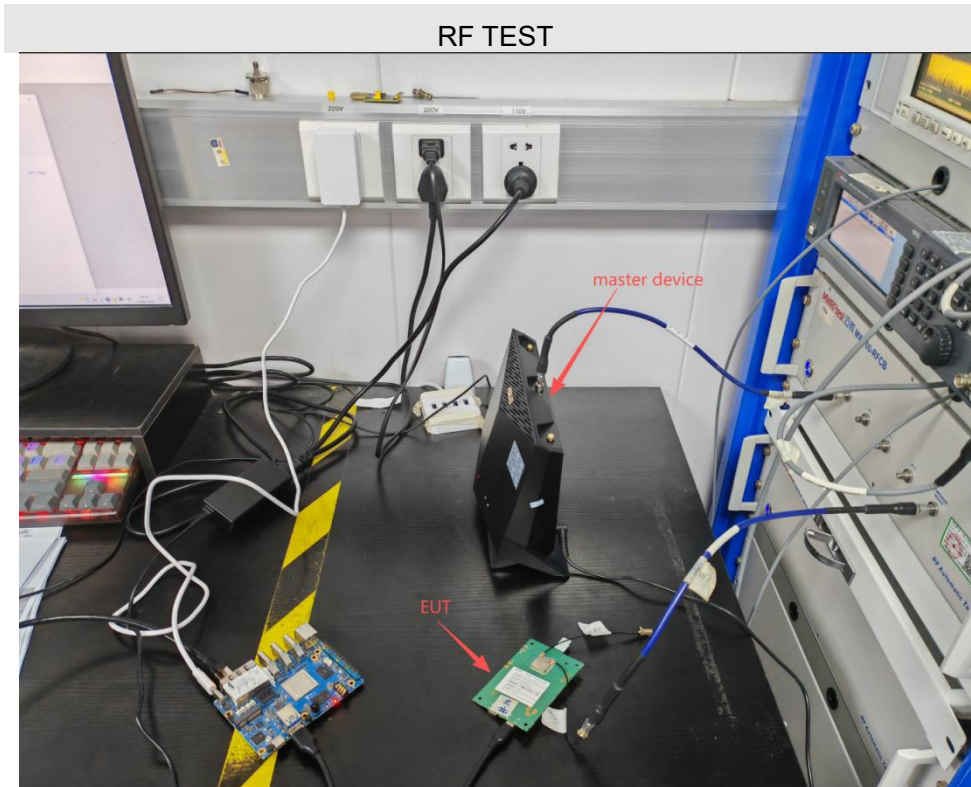
Test Items	Value	Limit	Result
Channel Closing Transmission Time	0.0456s	1s	Pass
Channel Move Time	0.0477s	10s	Pass



Test Items	Value	Limit	Result
Channel Closing Transmission Time	0.0412s	1s	Pass
Channel Move Time	0.1177s	10s	Pass



8 Test photos



9 Appendix B: photographs of EUT

Reference to the test report no. BLA-EMC-202410-A5101

----END OF REPORT----

The test report is effective only with both signature and specialized stamp, the result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.

BlueAsia