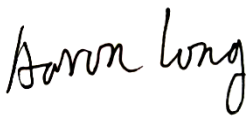
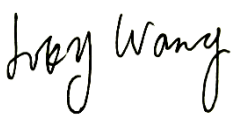
Product Name: AC1200 Gigabit Whole Home Mesh WiFi System	**Report No: ITEZA2-202400362RF3**
Product Model: Please refer to the Page 6 model list	**Security Classification: Open**
Version: V1.0	**Total Page: 38**

TIRT Testing Report

Prepared By:	Checked By:	Approved By:	
Aaron Long	Stone Tang	Joky Wang	
			

RF TEST REPORT

FCC ID: 2BLJV-R-W52410

According to

47 CFR FCC Part 15, Subpart E(Section 15.407)

ANSI C63.10:2013

Applicant:	Shenzhen Dbit Network Equipment Co., Ltd
Address:	4002, Phase II, Qianhai Shimao Financial Center, No. 3040 Xinghai Avenue, Nanshan Street, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, China
Manufacturer:	Shenzhen Dbit Network Equipment Co., Ltd
Address:	4002, Phase II, Qianhai Shimao Financial Center, No. 3040 Xinghai Avenue, Nanshan Street, Qianhai Shenzhen-Hong Kong Cooperation Zone, Shenzhen, China
Factory:	Micronet Union Technology (Chengdu) Co., Ltd
Address:	No.2068, Aviation Kechuang Avenue, Hi-Tech Industrial Park, Xindu District, Chengdu, China
Sample No:	1000035553
Product Name:	AC1200 Gigabit Whole Home Mesh WiFi System
Brand Name:	N/A
Model No.:	Please refer to the Page 6 model list
Test No.:	D-MAC3

Date of Receipt:	2024/10/22
Date of Test:	2024/10/22~2024/11/25
Issued Date:	2024/12/10
Testing Lab:	TIRT

Table of Contents

History of this test report

Original Report Issue Date: 2024.12.10

● No additional attachment

○ Additional attachments were issued following record

Attachment No.	Issue Date	Description

1. General Information

1.1 Basic Description of Equipment Under Test

Equipment Name	AC1200 Gigabit Whole Home Mesh WiFi System	
Test Model	D-MAC3	
Model Number	Please refer to the Page 6 model list	
Trademark	N/A	
Power Supply	DC 12V from SWITCHING POWER ADAPTER	
EUT Stage	○ Product Unit	●Final-Sample
Operating Band	5260MHz~5320MHz 5500MHz~5700MHz	●IEEE 802.11a/n/ac (20MHz)
		●IEEE 802.11n/ac (40MHz)
		●IEEE 802.11ac (80MHz)
Modulation technology	OFDM	
Nominal Bandwidth	20MHz / 40MHz / 80MHz	
Modulation Type	IEEE 802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11n: (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11ac: (BPSK / QPSK / 16QAM / 64QAM / 256QAM)	
Function	☐Outdoor AP ☒Indoor AP ☐Fixed P2P ☐Client	
Type of Device	Master, support the TPC function	
Antenna Type:	FPC Antenna	
Antenna Gain:	ANT1: 5.05dBi, ANT2: 5.05dBi,	

Note:
#: The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below .

All mode had been tested, this only show the worst mode

Band	Test Channel	20MHz		40MHz		80MHz	
		Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII-2A	L	52	5260	54	5270	--	--
	M	56	5280	--	--	58	5290
	H	64	5320	62	5310	--	--
U-NII-2C	L	100	5500	102	5510	--	--
	M	136	5680	--	--	106	5530
	H	140	5700	110	5550	--	--

1.2 Description Of Support Units

Description	Manufacturer	Model No.	Serial Number	FCC ID
Smart Phone	OPPO	PJX110	N/A	N/A
Notebook	Lenovo	T430u	REF.No.SEA1800	N/A
Network Cable	Supplied by lab	N/A	N/A	N/A

Model List

D-MAC1, D-MAC2, D-MAC3, D-MAC4, D-MAC5, D-MAC6, D-MAC7, D-MAC8, D-MAC9, D-MAC10, D-MAC11, D-MAC12, D-MAC13, D-MAC14, D-MAC15, D-MAC16, D-MAC17, D-MAC18, D-MAC19, D-MAC20, D-MAC21, D-MAC22, D-MAC23, D-MAC24, D-MAC25, D-MAC26, D-MAC27, D-MAC28, D-MAC29, D-MAC30, D-MAC31, D-MAC32, D-MAC33, D-MAC34, D-MAC35, D-MAC36, D-MAC37, D-MAC38, D-MAC39, D-MAC40, D-MAC41, D-MAC42, D-MAC43, D-MAC44, D-MAC45, D-MAC46, D-MAC47, D-MAC48, D-MAC49, D-MAC50

2. Summary of Test Results

2.1 Summary of Test Items

Item	Tested Bandwidth and Channel		Limit	Result
	Bandwidth (MHz) / mode	Frequency (MHz) / Channel No.		
Channel Availability Check Time	80/ 802.11ac	5290/ 58	≥ 60 sec	Pass
U-NII Detection Bandwidth	20/ 802.11ac	5500/ 100	> 100% of the U-NII 99% transmission power bandwidth	Pass
	40/ 802.11ac	5510/ 102		
	80/ 802.11ac	5530/ 106		
Statistical Performance Check	20/ 802.11ac	5500/ 100	Type 1~4≥60% Type 1~4 and 5≥80% Type 6 > 70%	Pass
	40/ 802.11ac	5510/ 102		
	80/ 802.11ac	5530/ 106		
Channel Move Time	80/ 802.11ac	5290/ 58	≤ 10 sec	Pass
Channel Closing Transmission Time	80/ 802.11ac	5290/ 58	≤ 200 ms + aggregate of 60 ms over remaining 10 sec period	Pass
Non-Occupancy Period Test	80/ 802.11ac	5290/ 58	≥ 30 minutes	Pass

2.2 Application of Standard

47 CFR Part 15 Subpart E Section 15.407：Unlicensed National Information Infrastructure Devices

KDB905462 D02 V02：COMPLIANCE MEASUREMENT PROCEDURES FORUNLICENSED-NATIONAL INFORMATION INFRASTRUCTUREDEVICES OPERATING IN THE 5250-5350 MHZ AND 5470-5725MHz BANDS INCORPORATING DYNAMIC FREQUENCYSELECTION

KDB905462 D04 v01：OPERATIONAL MODES SUGGESTED FOR DFS TESTING

KDB905462 D03 v01r02：U-NIICLIENT DEVICES MTHOUT RADAR DETECTION CAPABILITY

ANSI C63.10:2013：American National Standard for Testing Unlicensed Wireless Devices

2.3 Test Instruments

No.	Equipment	Manufacturer	Type No.	Serial No.	Cal. date (yyyy/mm/dd)	Cal. Due date (yyyy/mm/dd)
1	MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2024/11/10	2025/11/09
2	WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2024/11/10	2025/11/09
3	ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY45094854	2024/11/10	2025/11/09
4	MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2024/11/18	2025/11/17
5	Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2024/11/10	2025/11/09
6	RF Control Unit	TST	TST-Full	S01	2024/11/10	2025/11/09
7	RF Test software	TST	V2.0	/	2024/11/10	2025/11/09

2.4 Operation Mode

The EUT was supplied by and it was run in TX mode that was controlled by client provided RF testing program.

The EUT was transmitted continuously during the test. The worst case test result was showed in the report.

2.5 Test Condition

Applicable to	Environmental conditions	Input Power	Tested by
Channel Availability Check Time	20.0°C, 56 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang
Detection threshold	24.3°C, 55 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang
Non-occupancy period	20.0°C, 56 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang
Channel Move Time	24.3°C, 55 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang
Detection bandwidth	20.0°C, 56 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang
Channel Closing Transmission Time	24.3°C, 55 % RH	DC 12V from SWITCHING POWER ADAPTER	Stone Tang

The applicant declare the operating environment of EUT as below:

2.6 Measurement Uncertainty

Test Item	Measurement Uncertainty
Channel Availability Check Time	± 5.4 x 10-8
Detection threshold	± 5.4 x 10-8
Non-occupancy period	± 5.4 x 10-8
Channel Move Time	± 5.4 x 10-8
Detection bandwidth	± 5.4 x 10-8
Channel Closing Transmission Time	± 5.4 x 10-8

2.7 Test Location

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	104 Building C, Xinmingsheng Industrial Park No.132, Zhangge Old Village East Zone, Zhangge Community, Fucheng Street, Longhua District, Shenzhen, Guangdong, P. R. China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Accredited Lab. Designation Number:	CN1366
FCC Test Firm Registration Number:	820690
Telephone:	+86-0755-27087573

2.8 DFS test requirement

The following table from FCC KDB905462 D02 UNII DFS Compliance procedures new rules list the applicable requirements for the DFS testing.

Table 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 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	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	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.		

Master Devices

a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250~5350 MHz and 5470~5725 MHz bands. DFS is not required in the 5150~5250 MHz or 5725~5825 MHz bands.

b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for a specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.

c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.

d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).

e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to the Channel Closing Transmission Time.

f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period.

g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

Table 4: DFS Response Requirement Values

Paramenter	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 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 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 facilitating 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.	

2.9 DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Macimum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt 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.	

2.10 Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 5 Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful	Minimum Number of
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in			
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.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 µsec is selected, the number of pulses would be Round up $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{3066}\right)\right\}$ = Round up {17.2} = 18.

Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Table 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	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveforms are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type wave forms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Table 7 – Frequency Hopping Radar Test Waveform

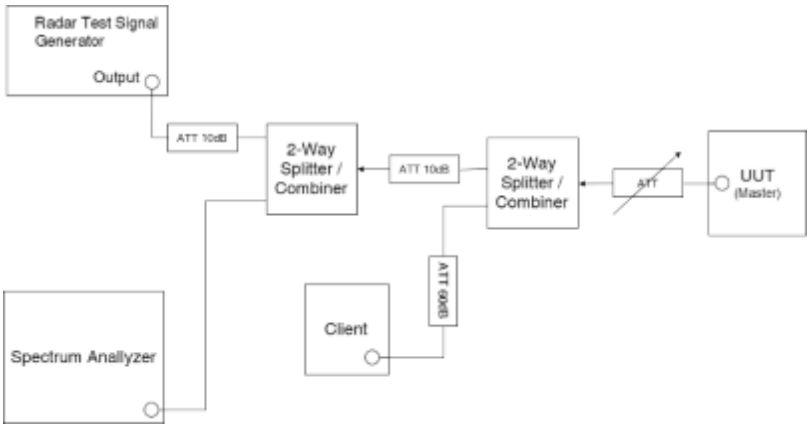
Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

For the Frequency Hopping Radar Type, the same Burst parameters are used for each wave form. The hopping sequence is different for each wave form and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250–5724MHz.Next,the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

3. Calibration of Radar Waveform

3.1 Test Configuration



3.2 Test Procedure

1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master

2) The interference Radar Detection Threshold Level is -64dBm + 6.25dBi +1dB = -56.75dBm that had been taken into account the output power range and antenna gain.

3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process, there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.

4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was -64dBm + 6.25dBi +1dB = -56.75dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

3.3 Test Result

Please refer to the DFS attachment

4. Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

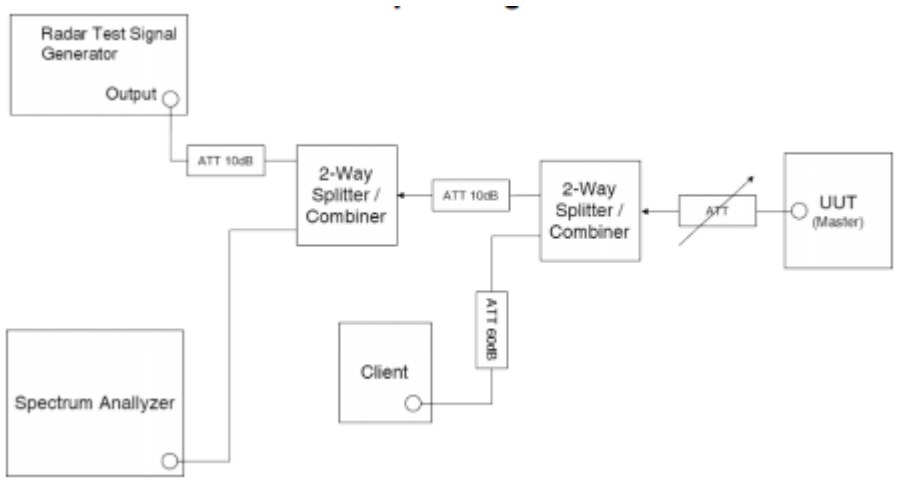
4.1 Limit of In-Service Monitoring

The EUT has In-Service Monitoring function to continuously monitor the radar signals. If radar is detected, it must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current Channel upon detection of a Radar Waveform above the DFS Detection Threshold within 10 sec.

The total duration of 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 facilitating Channel changes (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.

Non-Occupancy Period time is 30 minutes during which a Channel will not be utilized after a Radar Waveform is detected on that Channel.

4.2 Test Configuration



4.3 Test Procedure

The steps below define the procedure to determine the above-mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

1. One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals.

This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.

2. In case the UUT is a U-NII device operating as a Client Device (with or without DFS), a U-NII device operating as a Master Device will be used to allow the UUT (Client device) to Associate with the Master Device. In case the UUT is a Master Device, a U-NII device operating as a Client

Device will be used and it is assumed that the Client will Associate with the UUT (Master). In both cases for conducted tests, the Radar Waveform generator will be connected to the Master Device. For radiated tests, the emissions of the Radar Waveform generator will be directed towards the
Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
4. At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Radar Type 0 in Table 5 at levels defined in Table 3, on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
5. Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs. Figure 17 illustrates Channel Closing
Transmission Time.
6. When operating as a Master Device, monitor the UUT for more than 30 minutes following instant T2 to verify that the UUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.
7. In case the UUT is a U-NII device operating as a Client Device with In-Service Monitoring, perform steps 1 to 6.

4.4 Test Result

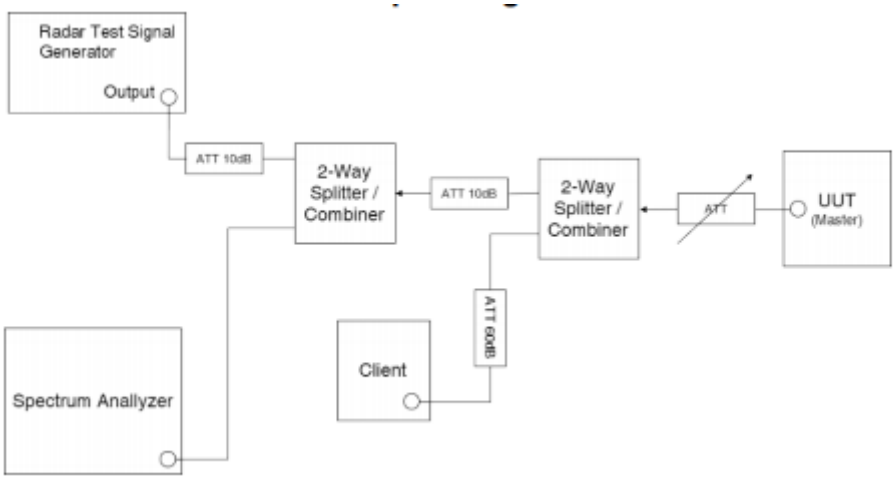
Please refer to the DFS attachment

5. U-NII Detection Bandwidth

5.1 Limit of U-NII Detection Bandwidth

The U-NII Detection Bandwidth shall contain minimum 100% of the 99% power bandwidth.

5.2 Test Configuration



5.3 Test Procedure

1. Adjust the equipment to produce a single *Burst* of any one of the Short Pulse Radar Types 0 – 4 in **Table 5** at the center frequency of the UUT *Operating Channel* at the specified *DFS Detection Threshold* level found in **Table 3**.
2. Set the UUT up as a standalone device (no associated Client or Master, as appropriate) and no traffic. Frame based systems will be set to a talk/listen ratio reflecting the worst case (macimum) that is user configurable during this test.
3. Generate a single radar *Burst*, and note the response of the UUT. Repeat for a minimum of 10 trials. The UUT must detect the *Radar Waveform* within the DFS band using the specified *U-NII Detection Bandwidth* criterion shown in **Table 4**. In cases where the channel bandwidth may exceed past the DFS band edge on specific channels (i.e., 802.11ac or wideband frame based systems) select a channel that has the entire emission bandwidth within the DFS band. If this is not possible, test the detection BW to the DFS band edge.
4. Starting at the center frequency of the UUT operating *Channel*, increase the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the *U-NII Detection Bandwidth* criterion specified in **Table 4**. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as F_H) at which detection is greater than or equal to the *U-NII Detection Bandwidth* criterion. Recording the detection rate at frequencies above F_H is not required to demonstrate compliance.

5. Starting at the center frequency of the UUT operating *Channel*, decrease the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the *U-NII Detection Bandwidth* criterion specified in **Table 4**. Repeat this measurement in 1MHz steps at frequencies 5 MHz above where the detection rate begins to fall. Record the lowest frequency (denote as F_L) at which detection is greater than or equal to the *U-NII Detection Bandwidth* criterion. Recording the detection rate at frequencies below F_L is not required to demonstrate compliance. The U-NII Detection Bandwidth is calculated as follows:

   U-NII Detection Bandwidth = $F_H - F_L$

5.4 Test Result

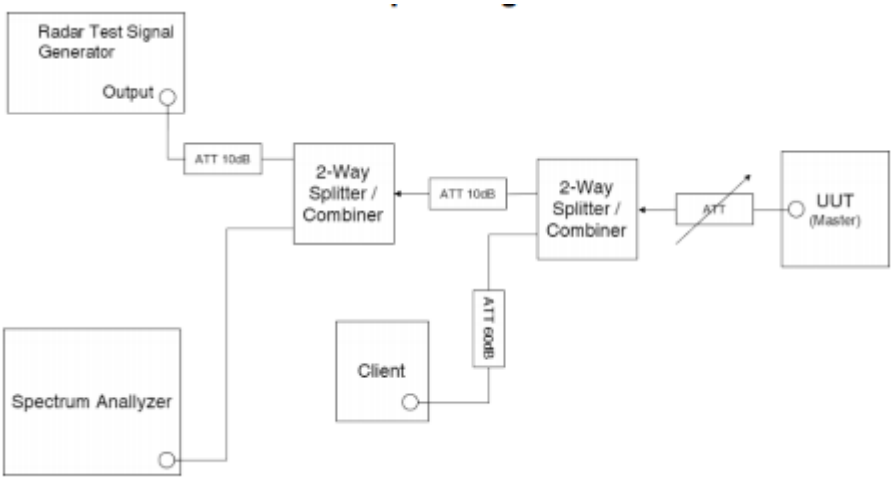
Please refer to the DFS attachment

6. Channel Availability Check

6.1 Limit of Channel Availability Check

The Initial *Channel Availability Check Time* tests that the UUT does not emit beacon, control, or data signals on the test *Channel* until the power-up sequence has been completed and the U-NII device checks for *Radar Waveforms* for one minute on the test *Channel*.

6.2 Test Configuration



6.3 Test Procedure

This test does not use any *Radar Waveforms* and only needs to be performed one time.

1. The U-NII devices will be powered on and be instructed to operate on the appropriate U-NII *Channel* that must incorporate DFS functions. At the same time the UUT is powered on, the spectrum analyzer will be set to zero span mode with a 3 MHz RBW and 3 MHz VBW on the *Channel* occupied by the radar (Chr) with a 2.5 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.
2. The UUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle.
3. Confirm that the UUT initiates transmission on the channel

A) Radar Burst at the Beginning of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test *Channel* during a period equal to the *Channel Availability Check Time* and avoidance of operation on that *Channel* when a radar *Burst* with a level equal to the *DFS Detection Threshold* + 1 dB occurs at the beginning of the *Channel Availability Check Time*. This is illustrated in **Figure 15**.

1. The *Radar Waveform* generator and UUT are connected using the applicable test setup described in the sections on Configuration for Conducted Tests (7.2) or Radiated Tests (7.3) and

the power of the UUT is switched off.

2. The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence (Tpower_up). The *Channel Availability Check Time* commences on Chr at instant T1 and will end no sooner than T1 + Tch_avail_check.

3. A single *Burst* of one of the Short Pulse Radar Types 0-4 will commence within a 6 second window starting at T1. An additional 1 dB is added to the radar test signal to ensure it is at or above the *DFS Detection Threshold*, accounting for equipment variations/errors.

4. Visual indication or measured results on the UUT of successful detection of the radar *Burst* will be recorded and reported. Observation of Chr for UUT emissions will continue for 2.5 minutes after the radar *Burst* has been generated.

5. Verify that during the 2.5 minute measurement window no UUT transmissions occurred on Chr. The *Channel Availability Check* results will be recorded.

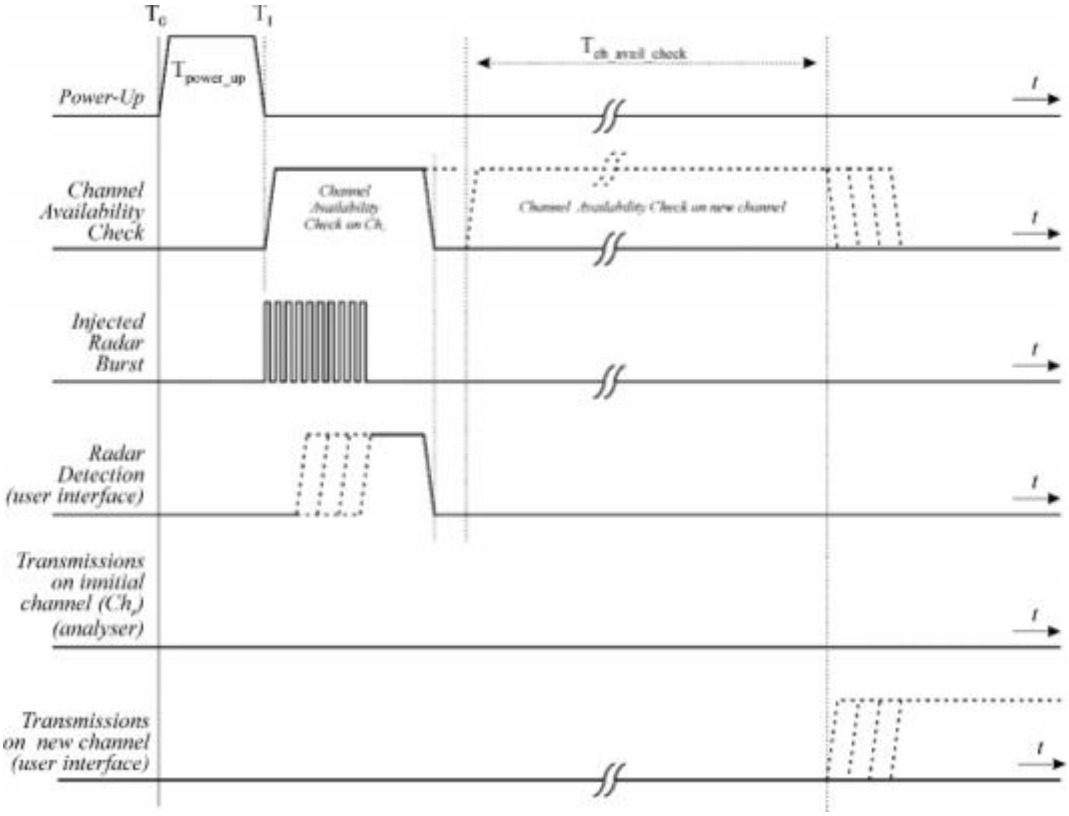


Figure 15: Example of timing for radar testing at the beginning of the Channel Availability Check Time

B) Radar Burst at the End of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar *Burst* with a level equal to the *DFS Detection Threshold* + 1dB occurs at the end of the *Channel Availability Check Time*. This is illustrated in **Figure 16**.

1. The *Radar Waveform* generator and UUT are connected using the applicable test setup described in the sections for Conducted Tests (7.2) or Radiated Tests (7.3) and the power of the UUT is switched off.
2. The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence (Tpower_up). The *Channel Availability Check Time* commences on Chr at instant T1 and will end no sooner than T1 + Tch_avail_check.
3. A single *Burst* of one of the Short Pulse Radar Types 0-4 will commence within a 6 second window starting at T1 + 54 seconds. An additional 1 dB is added to the radar test signal to ensure it is at or above the *DFS Detection Threshold*, accounting for equipment variations/errors.
4. Visual indication or measured results on the UUT of successful detection of the radar *Burst* will be recorded and reported. Observation of Chr for UUT emissions will continue for 2.5 minutes after the radar *Burst* has been generated.
5. Verify that during the 2.5 minute measurement window no UUT transmissions occurred on Chr. The *Channel Availability Check* results will be recorded.

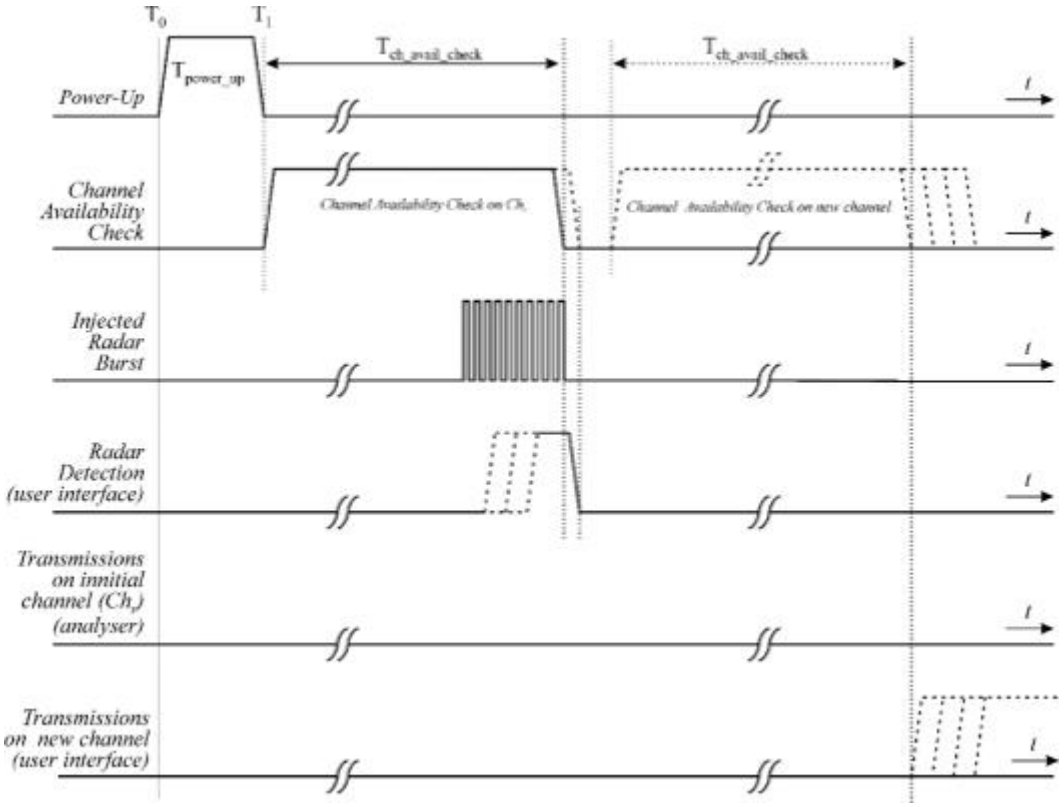


Figure 16: Example of timing for radar testing towards the end of the Channel Availability Check Time

6.4 Test Result

Please refer to the DFS attachment

The time for master complete its power-on cycle:

The time for EUT to complete its power-on cycle is 70.5S.

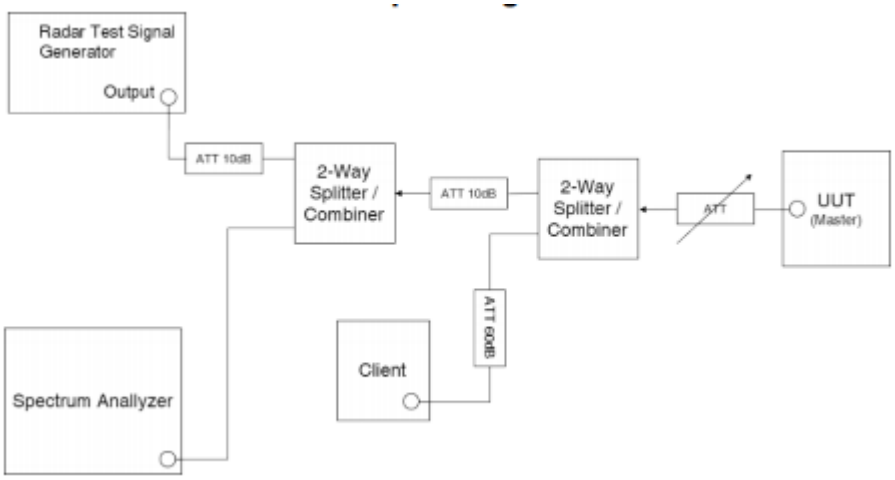
The time for Auxiliary equipment to complete its power-on cycle is 10.6S

7. Statistical Performance Check

7.1 Limit of Statistical Performance Check

Refer to Table 5, 5a, 6, 7

7.2 Test Configuration



7.3 Test Procedure

The steps below define the procedure to determine the minimum percentage of successful detection requirements found in **Tables 5-7** when a radar burst with a level equal to the *DFS Detection Threshold* + 1dB is generated on the *Operating Channel* of the U-NII device *(In- Service Monitoring).*

1. One frequency will be chosen from the *Operating Channels* of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.
2. In case the UUT is a U-NII device operating as a *Client Device* (with or without Radar Detection), a U-NII device operating as a *Master Device* will be used to allow the UUT (Client device) to *Associate* with the *Master Device*. In case the UUT is a *Master Device*, a U-NII device operating as a *Client Device* will be used and it is assumed that the Client will *Associate* with the UUT (Master). In both cases for conducted tests, the *Radar Waveform* generator will be connected to the *Master Device*. For radiated tests, the emissions of the *Radar Waveform* generator will be directed towards the *Master Device*. If the *Master Device* has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. Stream the channel loading test file from the *Master Device* to the Client Device on the test *Channel* for the entire period of the test.
4. At time T0 the *Radar Waveform* generator sends the individual waveform for each of the Radar Types 1- 6 in **Tables 5-7**, at levels defined in **Table 3**, on the *Operating Channel*. An

additional 1 dB is added to the radar test signal to ensure it is at or above the *DFS Detection Threshold*, accounting for equipment variations/errors.

5. Observe the transmissions of the UUT at the end of the Burst on the *Operating Channel* for duration greater than 10 seconds for Radar Type 0 to ensure detection occurs.
6. Observe the transmissions of the UUT at the end of the Burst on the *Operating Channel* for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
7. In case the UUT is a U-NII device operating as a *Client Device* with *In-Service Monitoring*, perform steps 1 to 6.

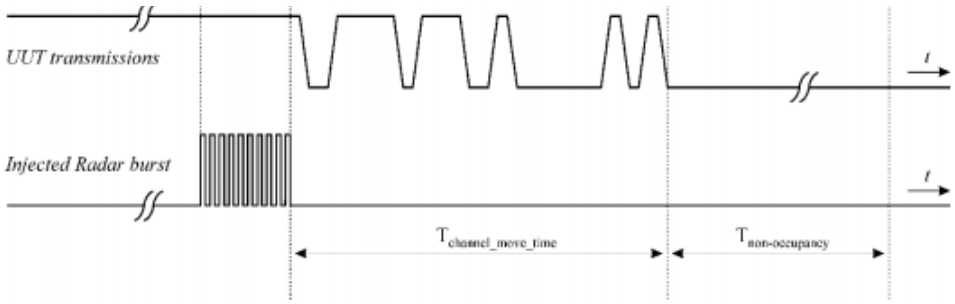
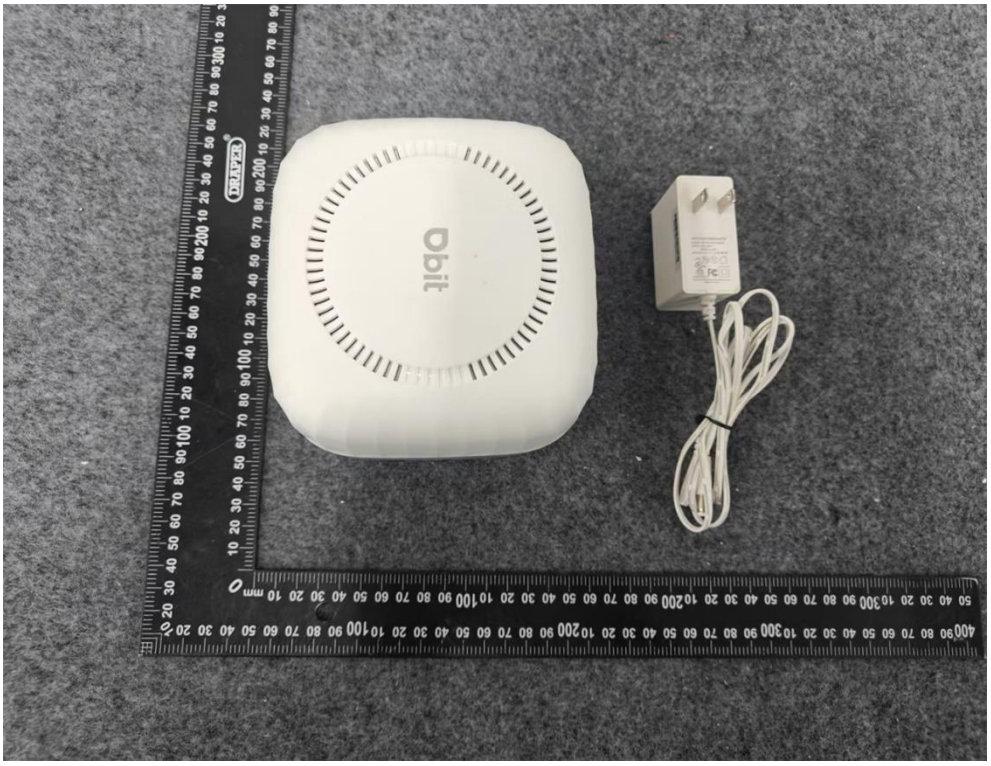


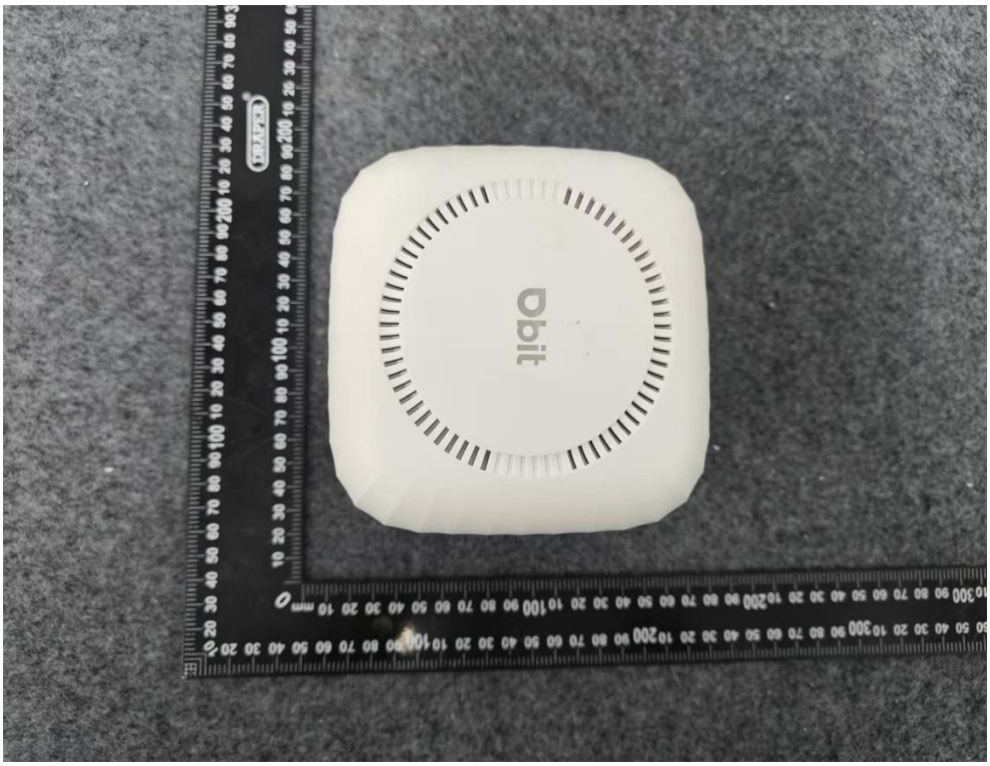
Figure 17: Example of Channel Closing Transmission Time & Channel Closing Time

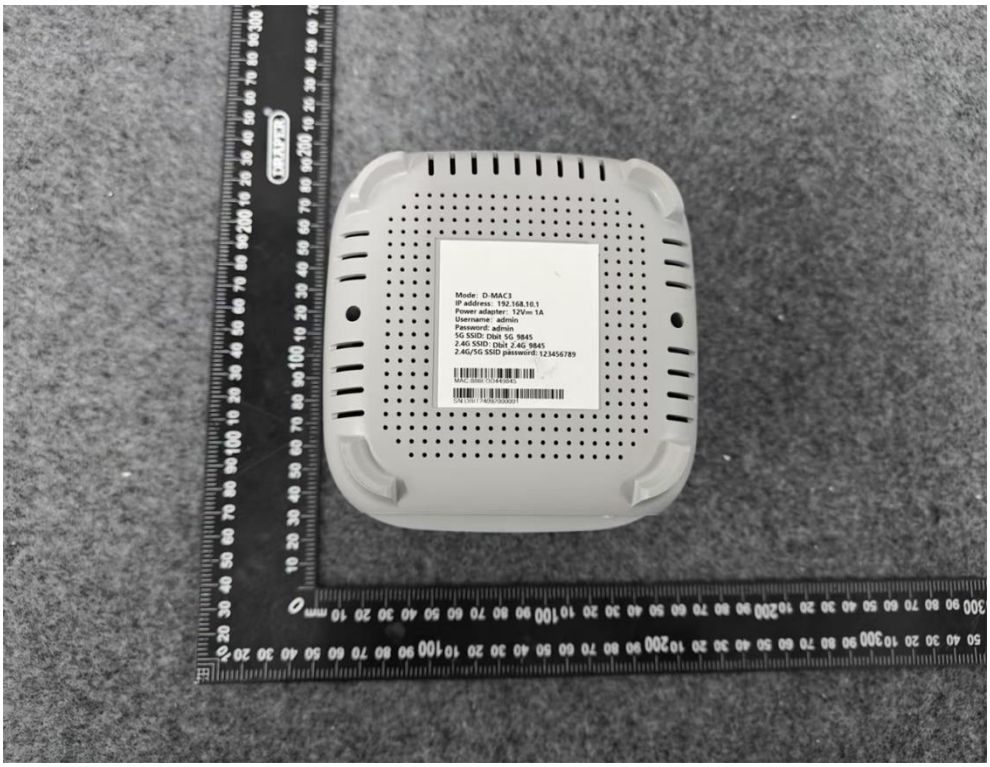
7.4 TEST RESULTS

Please refer to the DFS attachment

8. Photos of EUT




Dbit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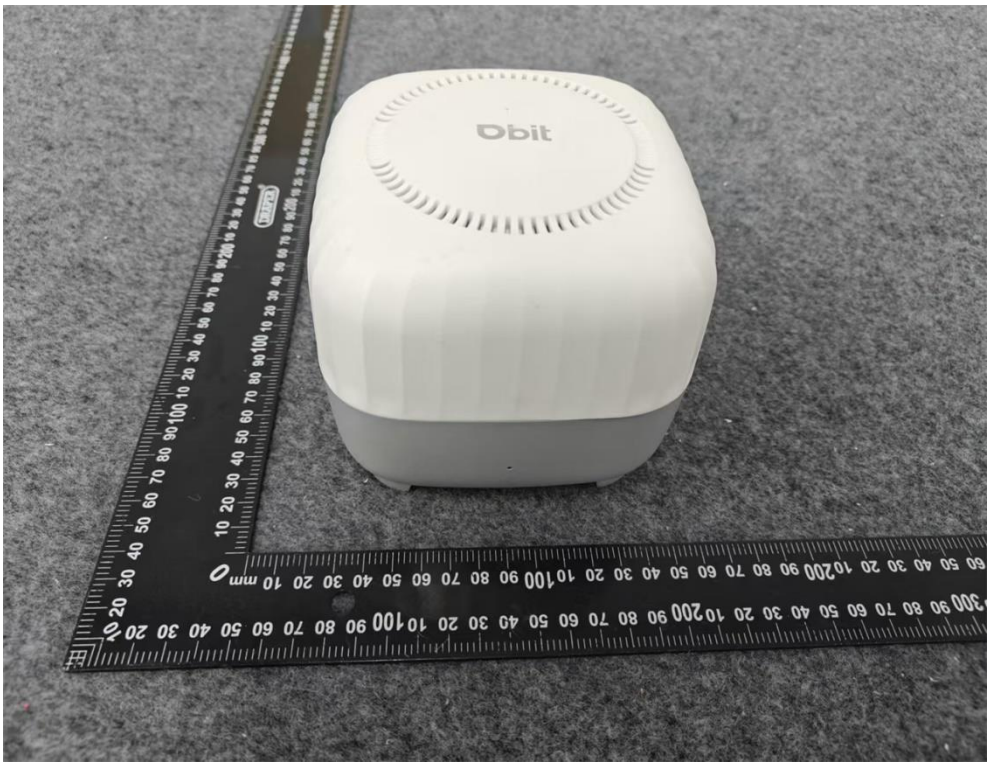
Power adapter: 12V⎓ 1A
Username: admin
Password: admin
5G SSID: Dbit_5G_9845
2.4G SSID: Dbit_2.4G_9845
2.4G/5G SSID password: 12345678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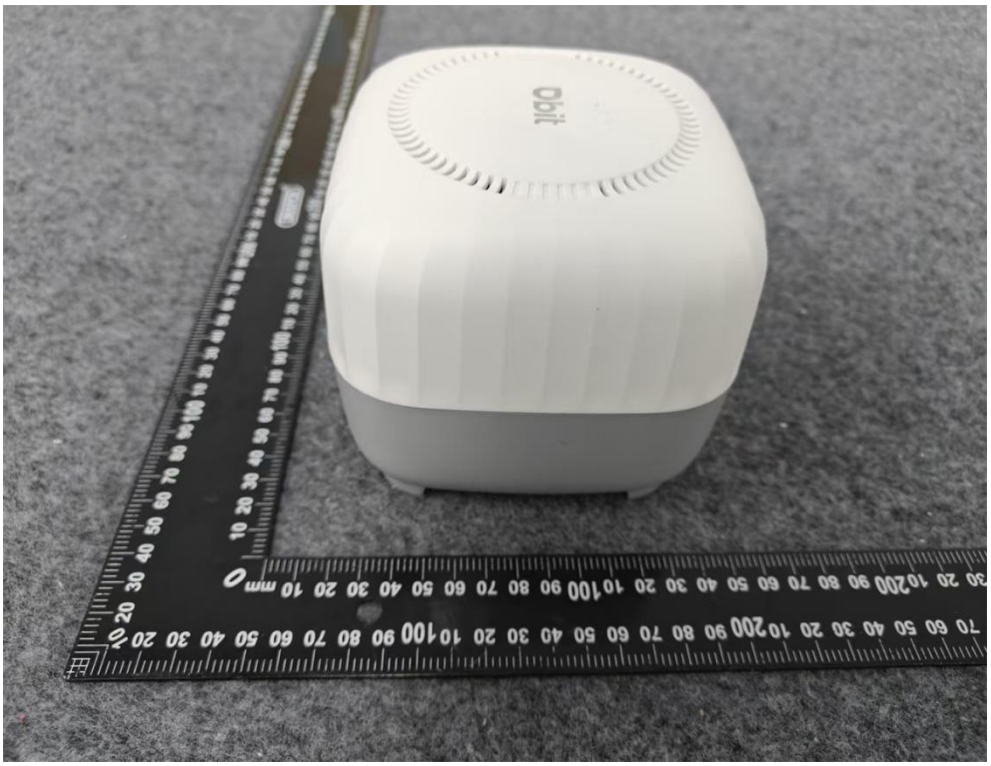
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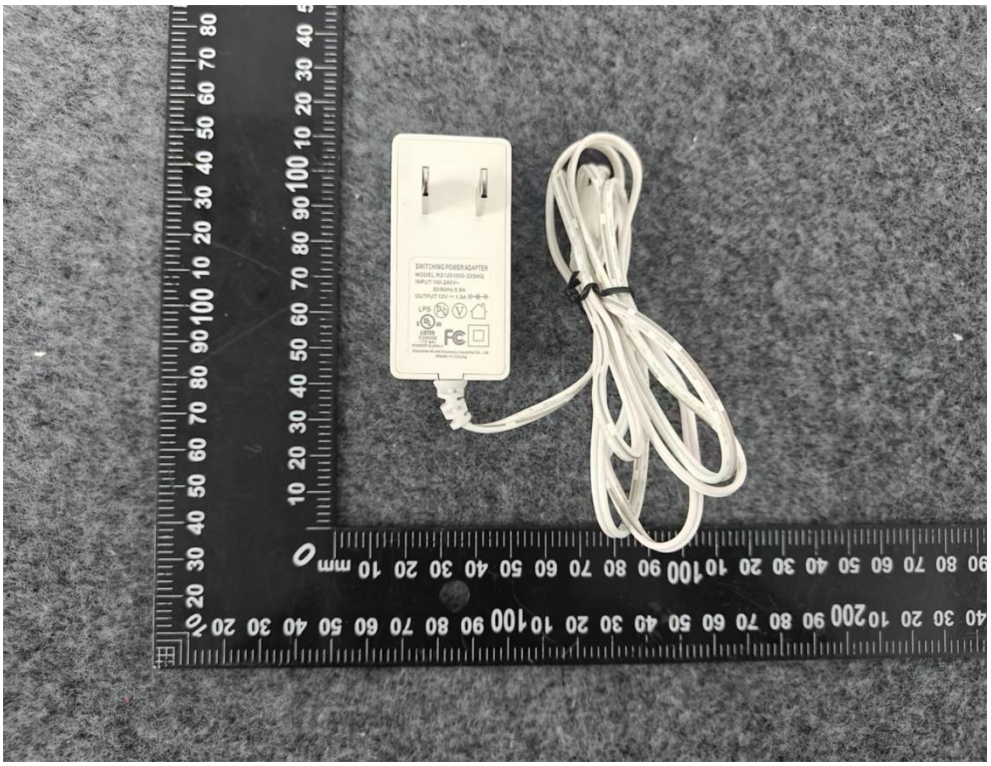

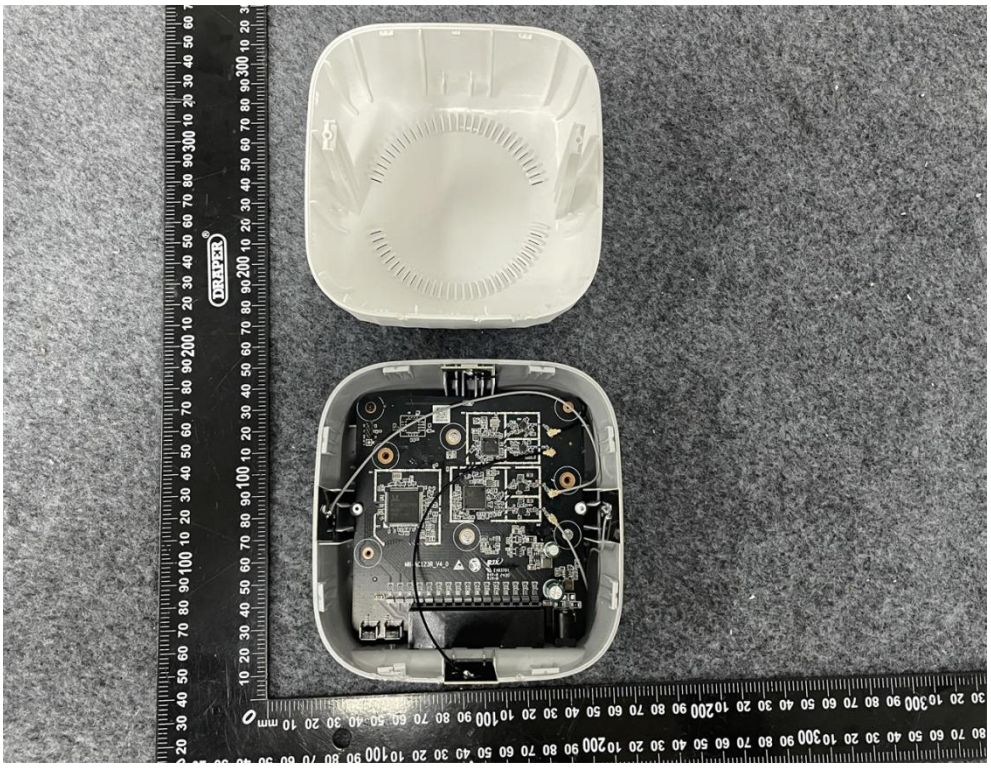

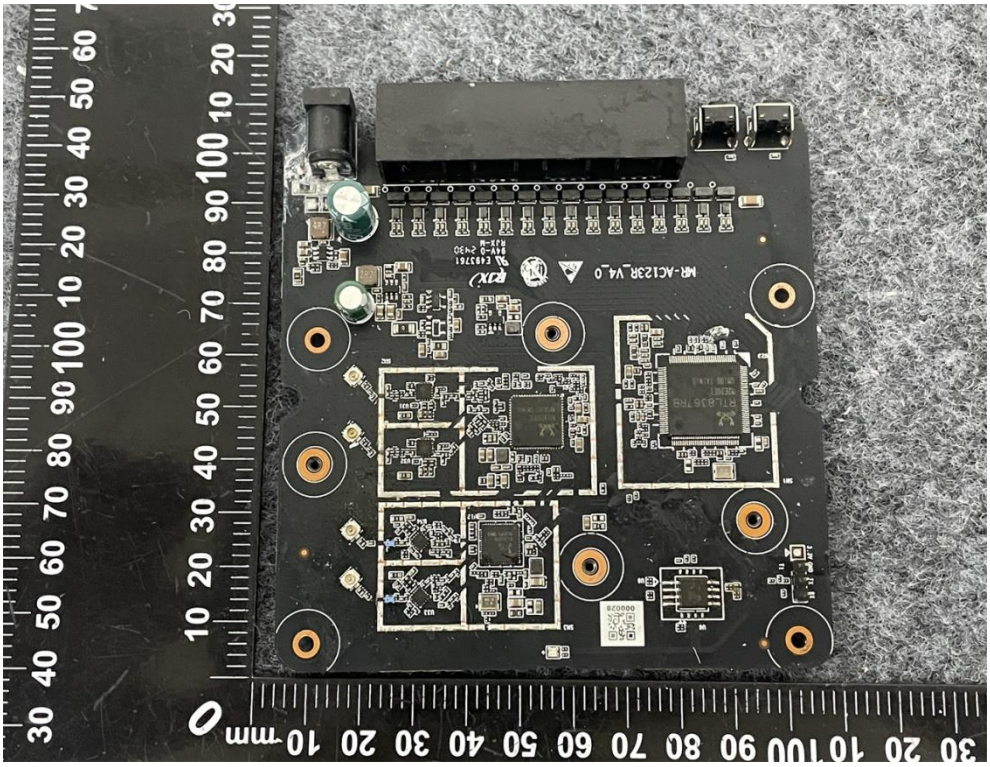

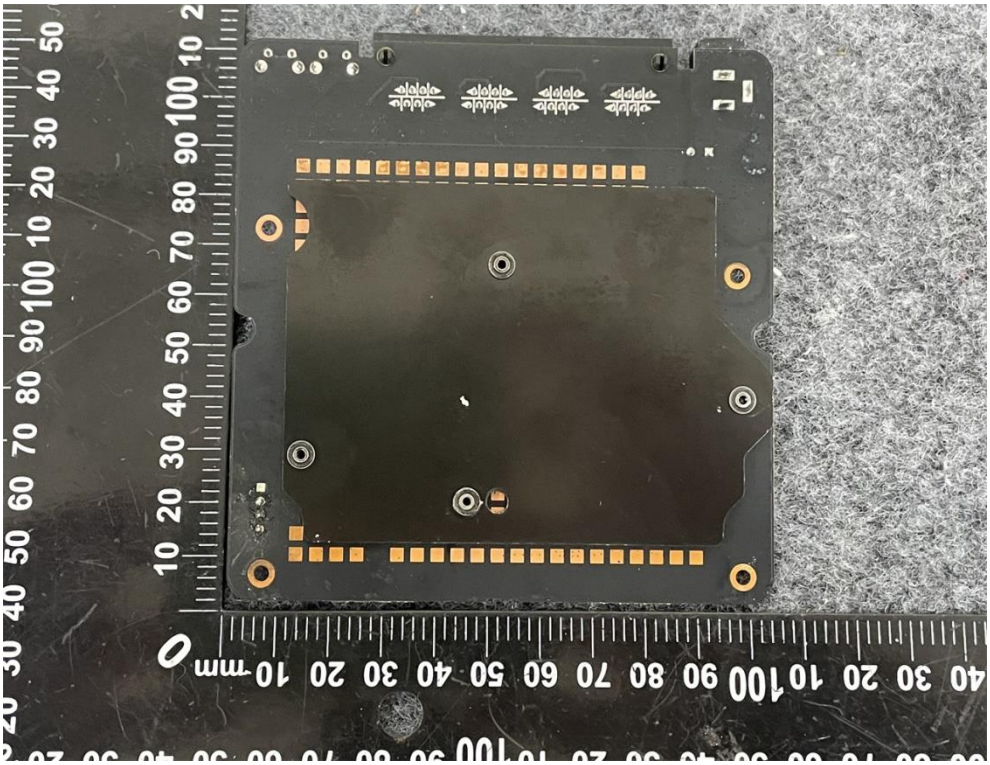

END OF REPORT