



FCC TEST REPORT

For

Gutsi Limited

Gutsi

Test Model: Gen 1

Prepared for : Gutsi Limited
Address : 86-90 3rd Floor Paul Street, London, England, EC2A 4NE

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei,
Shajing Street, Baoan District, Shenzhen, 518000, China
Tel : (+86)755-82591330
Fax : (+86)755-82591332
Web : www.LCS-cert.com
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : April 23, 2026
Number of tested samples : 2
Sample No. : A260302002-1, A260302002-2
Serial number : Prototype
Date of Test : April 23, 2026 ~ July 21, 2026
Date of Report : July 22, 2026



FCC TEST REPORT FCC CFR 47 PART 15 E (15.407)	
Report Reference No. : LCSA03186019EF	
Date of Issue..... : July 22, 2026	
Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.	
Address.....	101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Full application of Harmonised standards ■	
Testing Location/ Procedure.....	Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name..... : Gutsi Limited	
Address..... : 86-90 3rd Floor Paul Street, London, England, EC2A 4NE	
Test Specification	
Standard.....	FCC CFR 47 PART 15E (15.407)
TRF Originator.....	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	Dated 2011-03
Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
EUT Description..... : Gutsi	
Trade Mark.....	gutsi
Test Model.....	Gen 1
Ratings.....	Please Refer to Page 6
Result	PASS

Compiled by:

Ling Zhu

Ling Zhu/ Administrator

Supervised by:

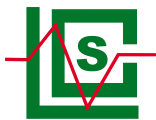
Kevin Huang

Kevin Huang/ RF Manager

Approved by:

Gavin Liang

Gavin Liang/ Manager

**FCC -- TEST REPORT**

Test Report No. :	LCSA03186019EF	<u>July 22, 2026</u> Date of issue
--------------------------	-----------------------	---------------------------------------

Test Model.....	: Gen 1
EUT.....	: Gutsi
Applicant.....	: Gutsi Limited
Address.....	: 86-90 3rd Floor Paul Street, London, England, EC2A 4NE
Telephone.....	: /
Fax.....	: /
Manufacturer.....	: Innovative Electronics (Zhuhai) Co., Ltd
Address.....	: No.1 South of 3rd Xinqing Road, Xinqing Science & Technology Industrial Park, Doumen District, Zhuhai, China 519180
Telephone.....	: /
Fax.....	: /
Factory.....	: Innovative Electronics (Zhuhai) Co., Ltd
Address.....	: No.1 South of 3rd Xinqing Road, Xinqing Science & Technology Industrial Park, Doumen District, Zhuhai, China 519180
Telephone.....	: /
Fax.....	: /

Test Result:	PASS
---------------------	-------------

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



Revision History

Report Version	Issue Date	Revision Content	Revised By
000	July 22, 2026	Initial Issue	---



TABLE OF CONTENTS

1. GENERAL INFORMATION	6
1.1. DESCRIPTION OF DEVICE (EUT)	6
1.2. SUPPORT EQUIPMENT LIST	8
1.3. EXTERNAL I/O CABLE	8
1.4. DESCRIPTION OF TEST FACILITY	8
1.5. STATEMENT OF THE MEASUREMENT UNCERTAINTY	8
1.6. MEASUREMENT UNCERTAINTY	8
1.7. DESCRIPTION OF TEST MODES	9
1.8. CHANNEL LIST AND FREQUENCY	10
1.9. CONDUCTED OUTPUT POWER AND EIRP	11
2. TEST METHODOLOGY	12
3. SYSTEM TEST CONFIGURATION	12
3.1. EUT EXERCISE SOFTWARE	12
3.2. SPECIAL ACCESSORIES	12
3.3. BLOCK DIAGRAM/SCHEMATICS	12
3.4. EQUIPMENT MODIFICATIONS	12
3.5. TEST SETUP	12
3.6. PROCEDURE	12
4. SUMMARY OF TEST RESULTS	14
5. DESCRIPTION OF DYNAMIC FREQUENCY SELECTION TEST	15
5.1. REQUIREMENTS	15
5.2. LIMIT	15
6. DFS DETECTION THRESHOLD VALUES	16
7. DFS TEST SIGNALS	17
8. TEST RESULT	21
9. LIST OF MEASURING EQUIPMENTS	26
10. TEST SETUP PHOTOGRAPHS OF EUT	27
11. EXTERIOR PHOTOGRAPHS OF THE EUT	27
12. INTERIOR PHOTOGRAPHS OF THE EUT	27



1. GENERAL INFORMATION

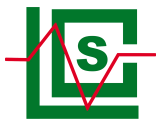
1.1. Description of Device (EUT)

EUT	: Gutsi
Test Model	: Gen 1
Ratings	: DC 3.6V, 6.8Ah, 24.48Wh
Hardware Version	: Gutsi Gen 1
Software Version	: /
Bluetooth	:
Frequency Range	: 2402MHz~2480MHz
Channel Number	: 79 channels for Bluetooth V5.3 (DSS) 40 channels for Bluetooth V5.3 (DTS)
Channel Spacing	: 1MHz for Bluetooth V5.3 (DSS) 2MHz for Bluetooth V5.3 (DTS)
Modulation Type	: GFSK, $\pi/4$ -DQPSK, 8-DPSK for Bluetooth V5.3 (DSS) GFSK for Bluetooth V5.3 (DTS)
Bluetooth Version	: V5.3
Antenna Description	: Internal Antenna, 3.89dBi(max.)
WIFI(2.4G Band)	:
Frequency Range	: 2412MHz~2462MHz
Channel Spacing	: 5MHz
Channel Number	: 11 Channels for 20MHz bandwidth (2412~2462MHz)
Modulation Type	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: Antenna1: Internal Antenna, 3.89dBi(Max.) Antenna2: Internal Antenna, 3.89dBi(Max.)
WIFI(5.2G Band)	:
Frequency Range	: 5180MHz~5240MHz
Channel Number	: 4 Channels for 20MHz bandwidth(5180MHz~5240MHz) 2 channels for 40MHz bandwidth(5190MHz~5230MHz) 1 channels for 80MHz bandwidth(5210MHz)
Modulation Type	: IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: Antenna1: Internal Antenna, 2.97dBi(Max.) Antenna2: Internal Antenna, 2.97dBi(Max.)
WIFI(5.3G Band)	:
Frequency Range	: 5260MHz~5320MHz
Channel Number	: 4 Channels for 20MHz bandwidth(5260MHz~5320MHz) 2 channels for 40MHz bandwidth(5270MHz~5310MHz) 1 channels for 80MHz bandwidth(5290MHz)



Modulation Type	: IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: Antenna1: Internal Antenna, 2.97dBi(Max.) Antenna2: Internal Antenna, 2.97dBi(Max.)
WIFI(5.5G Band)	:
Frequency Range	: 5500MHz~5700MHz
Channel Number	: 11 Channels for 20MHz bandwidth(5500MHz~5700MHz) 5 Channels for 40MHz bandwidth(5510MHz~5670MHz) 2 Channels for 80MHz bandwidth(5530MHz, 5610MHz)
Modulation Type	: IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: Antenna1: Internal Antenna, 2.97dBi(Max.) Antenna2: Internal Antenna, 2.97dBi(Max.)
WIFI(5.8G Band)	:
Frequency Range	: 5745MHz~5825MHz
Channel Number	: 5 channels for 20MHz bandwidth(5745MHz~5825MHz) 2 channels for 40MHz bandwidth(5755MHz~5795MHz) 1 channels for 80MHz bandwidth(5775MHz)
Modulation Type	: IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax: OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Description	: Antenna1: Internal Antenna, 2.97dBi(Max.) Antenna2: Internal Antenna, 2.97dBi(Max.)
NFC	:
Operating Frequency	: 13.56MHz
Modulation Type	: ASK
Antenna Description	: Internal Antenna

Note: For a more detailed antenna description, please refer to the antenna specifications or the antenna report provided by the customer.



1.2. Support equipment List

Manufacturer	Description	Model	Serial Number	Certificate
---	---	---	---	---

1.3 External I/O Cable

I/O Port Description	Quantity	Cable
Type-C USB Port	1	N/A

1.4. Description of Test Facility

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Test Firm Registration Number: 254912.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63 10-2020 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

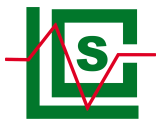
1.5. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6. Measurement Uncertainty

No.	Item	Uncertainty
1	DFS Threshold (radiated)	±1.50dB
2	DFS Threshold (conducted)	±1.45dB
3	Temperature	±0.5°C
4	Humidity	±2%

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



1.7. Description of Test Modes

The EUT has been tested under operating condition.

Worst-Case data rates were utilized from preliminary testing of the Chipset, worst-case data rates used during the testing are as follows:

IEEE 802.11a Mode: 6 Mbps, OFDM.

IEEE 802.11ac VHT20 Mode: MCS0

IEEE 802.11n HT20 Mode: MCS0, OFDM.

IEEE 802.11ac VHT40 Mode: MCS0, OFDM.

IEEE 802.11n HT40 Mode: MCS0, OFDM.

IEEE 802.11ac VHT80 Mode: MCS0, OFDM.

IEEE 802.11ax HEW20 Mode: HE1MCS0, RU242, OFDM, OFDMA.

IEEE 802.11ax HEW40 Mode: HE1MCS0, RU484, OFDM, OFDMA.

IEEE 802.11ax HEW80 Mode: HE1MCS0, RU996, OFDM, OFDMA.

Note: for 802.11ax mode, all RU are tested, and only the worst RU(full RU)are recorded in the report.

Antenna & Bandwidth

Antenna	Chain1 (Ant1)			Chain2 (Ant2)			Simultaneously
Bandwidth Mode	20M Hz	40M Hz	80M Hz	20MHz	40M Hz	80M Hz	/
IEEE 802.11a	☒	☐	☐	☒	☐	☐	☐
IEEE 802.11n	☒	☒	☐	☒	☒	☐	☒
IEEE 802.11ac	☒	☒	☒	☒	☒	☒	☒
IEEE 802.11ax	☒	☒	☒	☒	☒	☒	☒



1.8. Channel List and Frequency

U-NI-2A

Frequency Band	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
5250-5350MHz	50	5250	58	5290
	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320

For IEEE 802.11a/n HT20/ac VHT20/ax HE20, Channel 52, 60 and 64 were tested.

For IEEE 802.11n HT40/ac VHT40/ax HE40, Channel 54 and 62 were tested.

For IEEE 802.11ac VHT80/ax HE80, Channel 58 was tested.

U-NI-2C

Frequency Band	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
5470-5725MHz	100	5500	118	5590
	102	5510	120	5600
	104	5520	122	5610
	106	5530	124	5620
	108	5540	126	5630
	110	5550	128	5640
	112	5560	132	5660
	114	5570	134	5670
	116	5580	136	5680
	--	--	140	5700

For IEEE 802.11a/n HT20/ac VHT20/ax HE20, Channel 100, 116 and 140 were tested.

For IEEE 802.11n HT40/ac VHT40/ax HE40, Channel 102, 110 and 134 were tested.

For IEEE 802.11ac VHT80/ax HE80, Channel 106, 122 were tested.

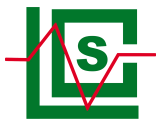


1.9. Conducted Output Power and EIRP

Mode	Frequency Band (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)
IEEE 802.11a	5260 – 5320	11.63	2.97	14.60	28.84
	5500 – 5700	12.37	2.97	15.34	34.20
IEEE 802.11n HT20 MIMO	5260 – 5320	14.82	2.97	17.79	60.12
	5500 – 5700	14.94	2.97	17.91	61.80
IEEE 802.11ac VHT20 MIMO	5260 – 5320	14.80	2.97	17.77	59.84
	5500 – 5700	15.02	2.97	17.99	62.95
IEEE 802.11ax HE20 MIMO	5260 – 5320	14.97	2.97	17.94	62.23
	5500 – 5700	15.07	2.97	18.04	63.68
IEEE 802.11n HT40 MIMO	5270 – 5310	13.60	2.97	16.57	45.39
	5510 – 5670	13.67	2.97	16.64	46.13
IEEE 802.11ac VHT40 MIMO	5270 – 5310	13.57	2.97	16.54	45.08
	5510 – 5670	13.60	2.97	16.57	45.39
IEEE 802.11ax HE40 MIMO	5270 – 5310	13.83	2.97	16.80	47.86
	5510 – 5670	13.64	2.97	16.61	45.81
IEEE 802.11ac VHT80 MIMO	5290	13.82	2.97	16.79	47.75
	5530-5610	15.07	2.97	18.04	63.68
IEEE 802.11ax HE80 MIMO	5290	14.57	2.97	17.54	56.75
	5530-5610	13.36	2.97	16.33	42.95

Remark:

1. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW;



2. TEST METHODOLOGY

This report has been prepared to demonstrate compliance with the requirements for Dynamic Frequency Selection (DFS) as stated in FCC CFR 47 PART 15E(15.407). Testing was performed in accordance with the measurement procedure described in FCC KDB 905462 D02 v02

3. SYSTEM TEST CONFIGURATION

3.1. EUT Exercise Software

The system was configured for testing in a continuous transmits condition and change test channels by software provided by application.

3.2. Special Accessories

N/A

3.3. Block Diagram/Schematics

Please refer to the related document

3.4. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

3.5. Test Setup

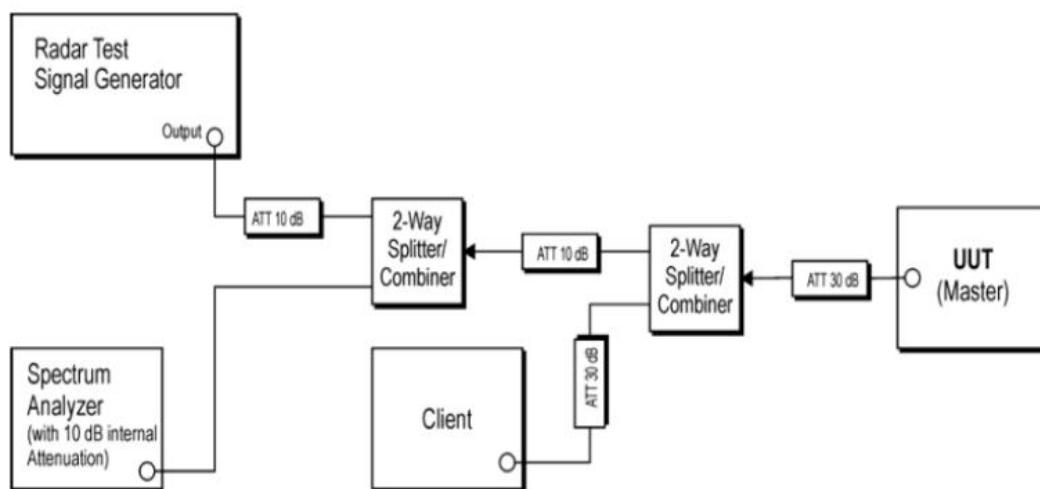


Figure 7-1. Test Setup

3.6. Procedure

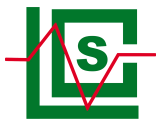
The KDB905462 D02 v02 describes a conducted test setup. Each one channel selected between bands 2, band 3 is chosen for the testing.

1. The radar pulse generator is setup to provide a pulse at the frequency that the Master and Client are operating. A Type 0 radar pulse with a 1 μ s pulse width and a 1428 μ s PRI is used for the testing.
2. The vector signal generator is adjusted to provide the radar burst (18 pulses) at a level of approximately -62 dBm at the antenna of the Master device.



3. The Client Device (EUT) is set up per the diagram in Figure 3-1 and communications between the Master device and the Client is established.
4. The MPEG file specified by the FCC ("6½ Magic Hours") is streamed from the "file computer" through the Master to the Slave Device and played in full motion video using Media Player Classic Ver.6.4.8.6 in order to properly load the network.
5. The spectrum analyzer is set to record about 15 sec window to any transmissions occurring up to and after 10 sec.
6. The system is again setup and the monitoring time is shortened in order to capture the Channel Closing Transmission Time. This time is measured to insure that the Client ceases transmission within 200 ms and the aggregate of emissions occurring after 200 ms up to 10 sec do not exceed 60 ms.

(Note: the channel may be different since the Master and Client have changed channels due to the detection of the initial radar pulse.)
7. After the initial radar burst the channel is monitored for 30 minutes to insure no transmissions or beacons occur. A second monitoring setup is used to verify that the Master and Client have both moved to different channels.



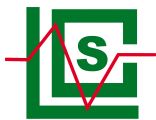
4. SUMMARY OF TEST RESULTS

Applied Standard: FCC CFR 47 PART 15.407				
Requirement	Operational Mode			RESULTS
	Master	Client with radar detection	Client without radar detection	
Non-Occupancy Period	Required	Required	Required	Pass
DFS Detection Threshold	Required	Required	Not required	Not required
Channel Availability Check Time	Required	Not required	Not required	Not required
Channel Closing Transmission Time	Required	Required	Required	Pass
Channel Move Time	Required	Required	Required	Pass
U-NII Detection Bandwidth	Required	Required	Not required	Not required

Note 1: We test all channels that need to be tested for DFS, reporting only part of the test pattern and data. In this report, we have identified other parts that are compliant with FCC regulations.

Note 2: The method of establishing a connection between the master device and the slave device: After inserting the EUT LAN port into the PC, the laptop opens the router control interface to connect to the EUT and control its corresponding signal transmission.

1. The frequency range of equipment operation is: U-NI-1: 5180 MHz to 5240 MHz, U-NI-2A: 5620 MHz to 5320 MHz, U-NII-2C: 5500 MHz to 5700 MHz, U-NII-3: 5745 MHz to 5825 MHz.
2. The operating modes is Client, Equipped with radar detection capability, the main U-NII device FCC ID used for DFS testing is A3LWEA453E.
3. Please refer to section 1.9 of this report for the maximum and minimum possible power levels (Equivalent Isotropic Radiated Power (EIRP)) of the equipment, The antenna gain is 5.58dBi.
4. Test sequences or messages that should be used for communication between Master and Client Devices, which are used for Channel loading. Stream the test file from the Master Device to the Client Device for IP based systems or frame based systems which dynamically allocate the talk/listen ratio.
5. The time required for the master and slave devices to fully start is 120 seconds.
6. The product belongs to Slave without radar detection.
7. Manufacturer statement confirming that information regarding the parameters of the detected Radar Waveforms is not available to the end user.
8. Manufacturers can manually select the first channel 5180MHz.



5. DESCRIPTION OF DYNAMIC FREQUENCY SELECTION TEST

5.1. Requirements

KDB905462 D02 v02 (04/08/2016) the following are the requirements for Client Devices:

- 1) A Client Device will not transmit before having received appropriate control signals from a Master Device.
- 2) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements.
The Client Device will not resume any transmissions until it has again received control signals from a Master Device.
- 3) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1(KDB905462 D02 v02) apply.
- 4) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

5.2. Limit

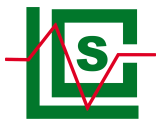
Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an Aggregate of 60 milliseconds over Remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	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 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.

Note 3: Finally, let the two IP addresses run traffic with each other through the Run flow software "Lan test" to reach 17% channel loading



6. DFS DETECTION THRESHOLD VALUES

The DFS detection thresholds are defined for Master devices and Client Devices with In-service monitoring. These detection thresholds are listed in the following table.

Maximum Transmit Power	Value (See Notes 1 and 2)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP $<$ 200 milliwatt and Power spectral $<$ 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 0dBi receive antenna.

Calibration:

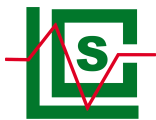
The EUT is slave equipment with a max gain is 2.97dBi;

For a detection threshold level of -62dBm and the master (Brand: Sanmsung), Model: S2LF812265, FCC ID: A3LWEA453E) antenna gain is 3.0 dBi, required detetion threshold is -59.00 dBm ($=-62+3.0$)

Maximum transmit power is less than 200 milliwatt in this report, so detection threshold level is -62dBm.

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.

Note 3: EIRP is based on the highest antenna. For MIMO devices refer to KDB Publication 662911 D01.



7. DFS TEST SIGNALS

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 Detection	Minimum Number of Trials
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	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	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 Test A			
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.

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

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the

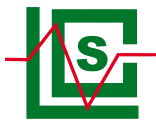
TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, 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 Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

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

Manufacturer's Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.

TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution. The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time. The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List, with the initial starting point randomized at run-time.

The signal monitoring equipment consists of a spectrum analyzer with the capacity to display 8192 bins on the horizontal axis. A time-domain resolution of 2 msec / bin is achievable with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. A time-domain resolution of 3 msec / bin is achievable with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

The software selects the hopping sequence as a 100-length segment of the August 2005 NTIA hopping frequency list. This list contains 274 unique pseudorandom sequences. Each such sequence contains 475 frequencies ordered on a random without replacement basis. Each successive trial uses a contiguous 100-length segment from within each successive 475-length sequence in the list. The initial starting point within the list is randomized at run-time such that the first 100-length segment is entirely contained within the first 475-length sequence. The starting point of each successive trial is incremented by 475.

Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

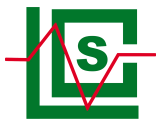
```

graph LR
    PC[PC] -- DAQ Card Trigger --> VSG[Vector Signal Generator]
    PC -- DAQ Card Trigger --> SA[Spectrum Analyzer]
    VSG --> S1[SPLITTER]
    S1 --> S2[SPLITTER]
    S2 --> MSA[Master Step Attenuator]
    S2 --> SSA[Slave Step Attenuator]
    MSA --> S3[SPLITTER]
    SSA --> S4[SPLITTER]
    S3 --> MSPLIT[SPLITTER]
    S4 --> SSPLIT[SPLITTER]
    MSPLIT --> MASTER[MASTER]
    SSPLIT --> SLAVE[SLAVE]
  
```

Lock the signal generator and the spectrum analyzer to the same reference source as follows: Connect the 10 MHz OUT (SWITCHED) on the spectrum analyzer to the 10 MHz IN on the signal generator and set the spectrum analyzer 10 MHz Out to On.

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of -62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system. Measure the amplitude and calculate the difference from -62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at -62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at -62 dBm.



The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of -62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

Interference Detection Threshold Adjustment

Download the applicable radar waveforms to the signal generator. Select the radar waveform, trigger a burst manually and measure the amplitude on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired

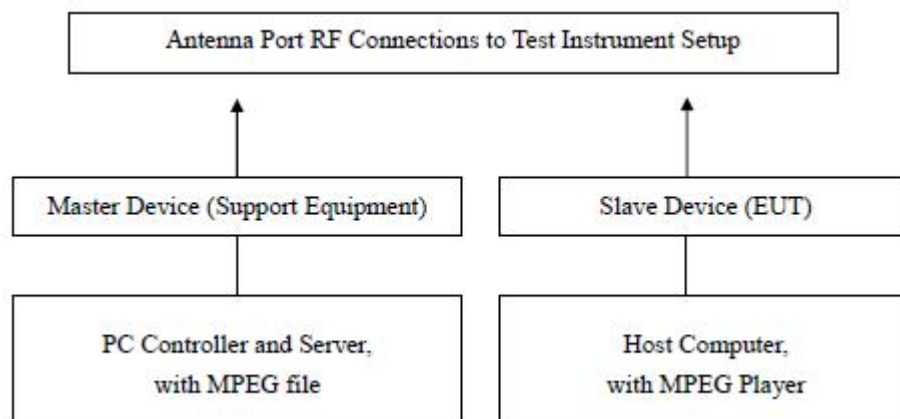
interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.

Test Setup



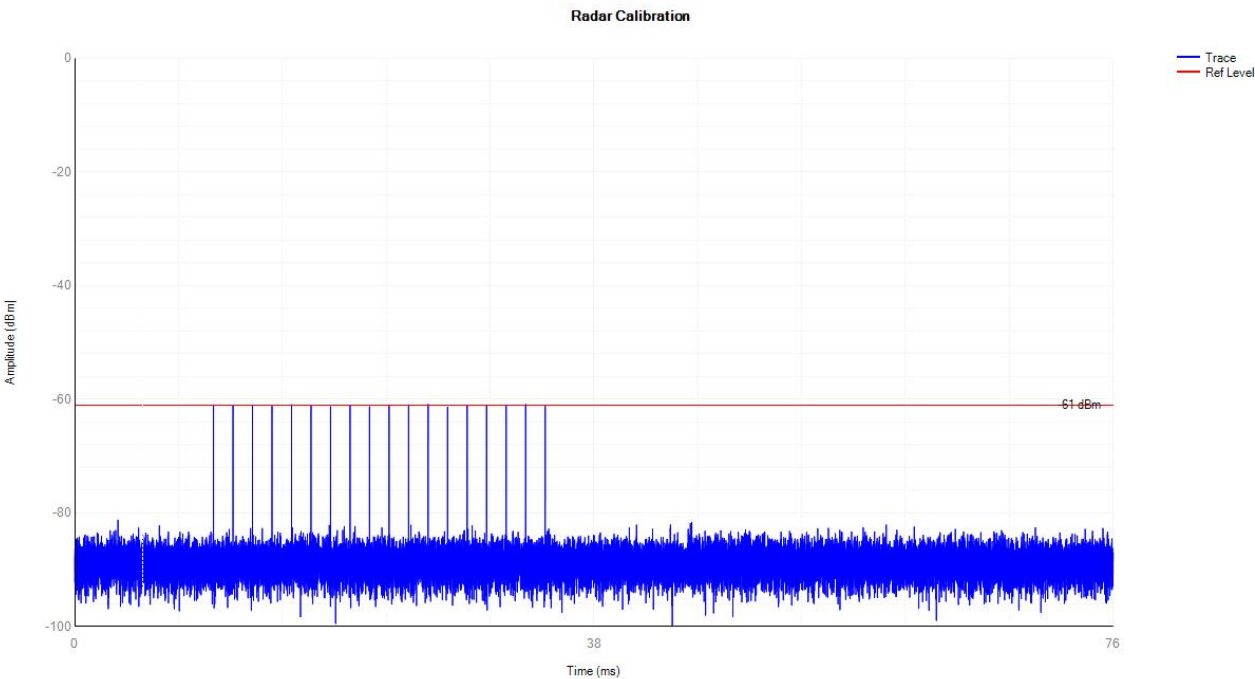


8. TEST RESULT

8.1. CHANNEL LOADING

Test Mode	Test Frequency	Packet Ratio	Requirement Ratio	Test resuelt
802.11ax-HEW80	5530	17.69%	≥17%	PASS
Note: System testing was performed with the designated iperf test file. This file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the U-NII device. Packet ratio = Time On / (Time On + Off Time).				

802.11ax-HEW80

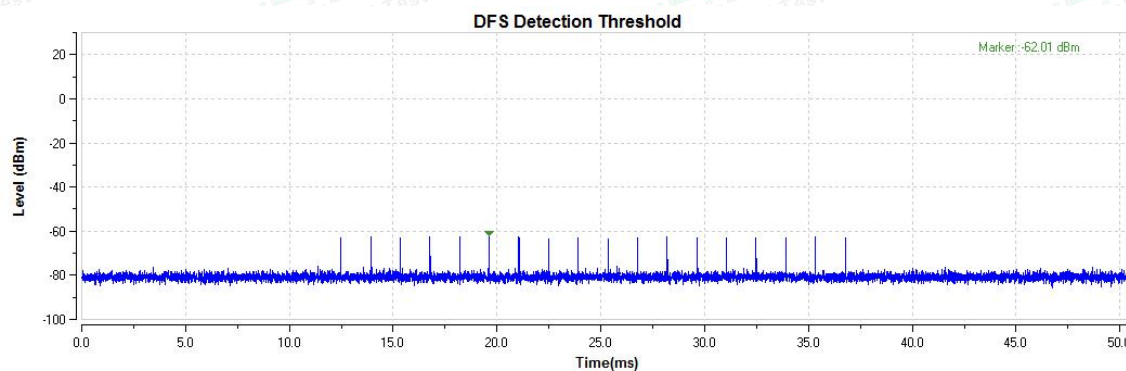


TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



8.2 PLOTS OF RADAR WAVEFORMS



Radar Singal 0



Radar Singal 0

Trial ID	Radar Type	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Legth (us)
0	Type 0	1	1421	18	25702
1	Type 0	1	1421	18	25702
2	Type 0	1	1421	18	25702
3	Type 0	1	1421	18	25702
4	Type 0	1	1421	18	25702
5	Type 0	1	1421	18	25702
6	Type 0	1	1421	18	25702
7	Type 0	1	1421	18	25702
8	Type 0	1	1421	18	25702
9	Type 0	1	1421	18	25702
10	Type 0	1	1421	18	25702
11	Type 0	1	1421	18	25702
12	Type 0	1	1421	18	25702
13	Type 0	1	1421	18	25702
14	Type 0	1	1421	18	25702
15	Type 0	1	1421	18	25702
16	Type 0	1	1421	18	25702
17	Type 0	1	1421	18	25702
18	Type 0	1	1421	18	25702
19	Type 0	1	1421	18	25702
20	Type 0	1	1421	18	25702
21	Type 0	1	1421	18	25702
22	Type 0	1	1421	18	25702
23	Type 0	1	1421	18	25702
24	Type 0	1	1421	18	25702
25	Type 0	1	1421	18	25702
26	Type 0	1	1421	18	25702
27	Type 0	1	1421	18	25702
28	Type 0	1	1421	18	25702
29	Type 0	1	1421	18	25702

TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

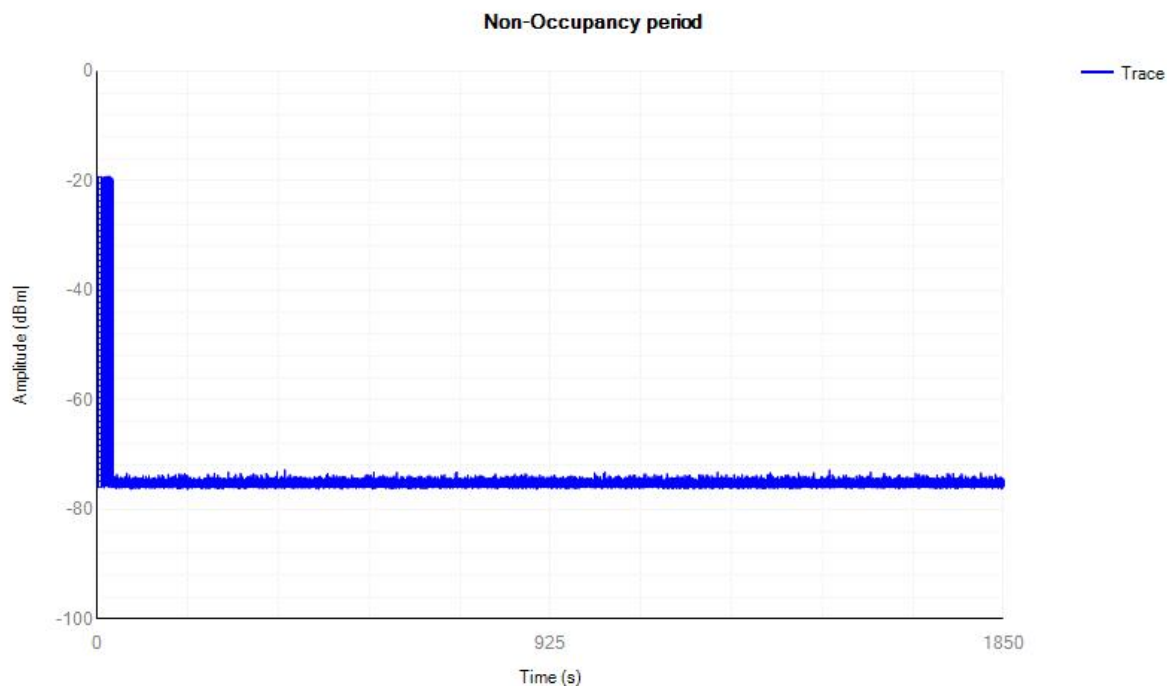
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

**Non-Occupancy Period**

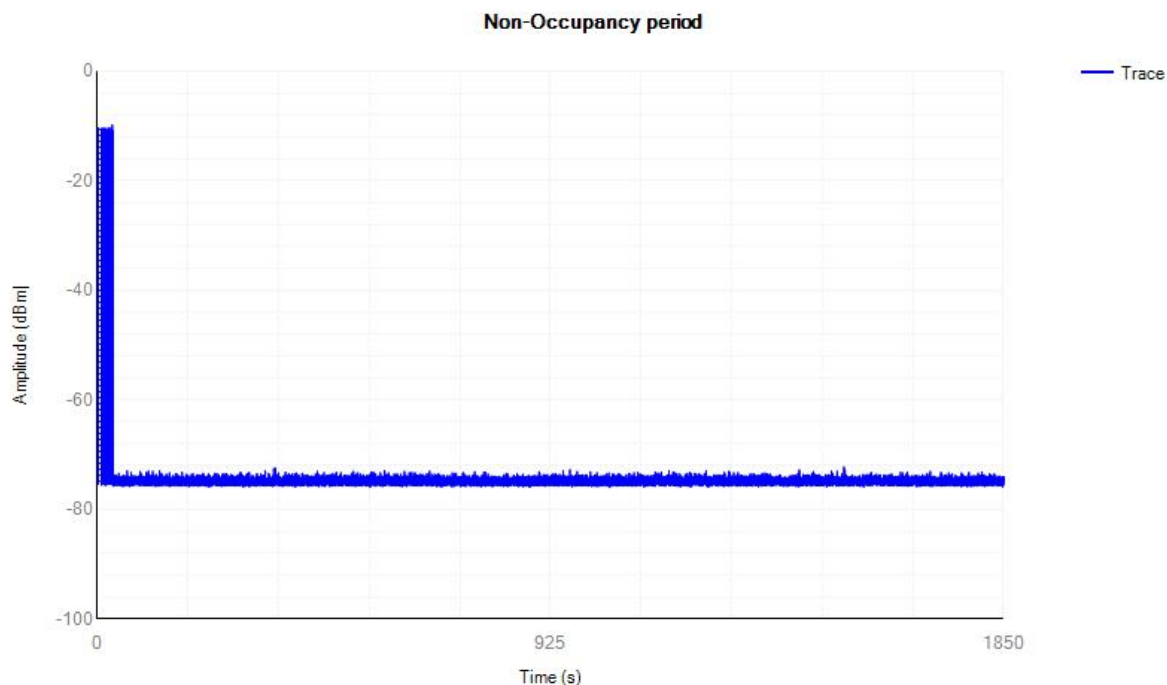
IEEE 802.11ax

Channel 58/ 5290 MHz



IEEE 802.11ax

Channel 106 / 5530 MHz



Notes: A20/N40/AC80/AX80 were tested, the report recorded the worst result of AX mode.

TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

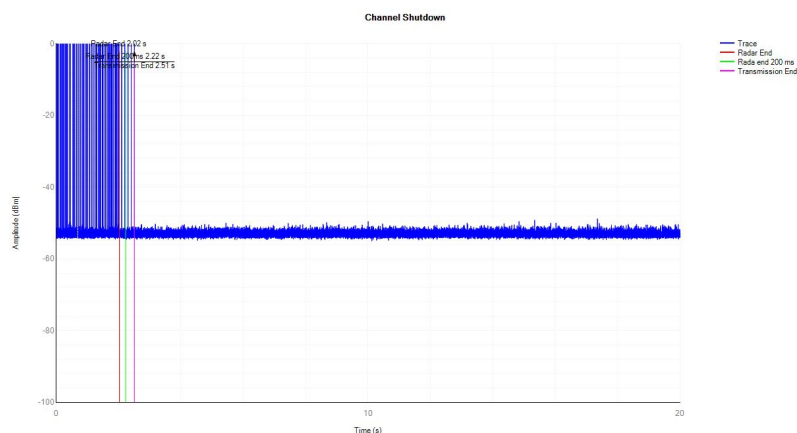
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

**Channel Move Time & Channel Closing Transmission Time**

IEEE 802.11ax

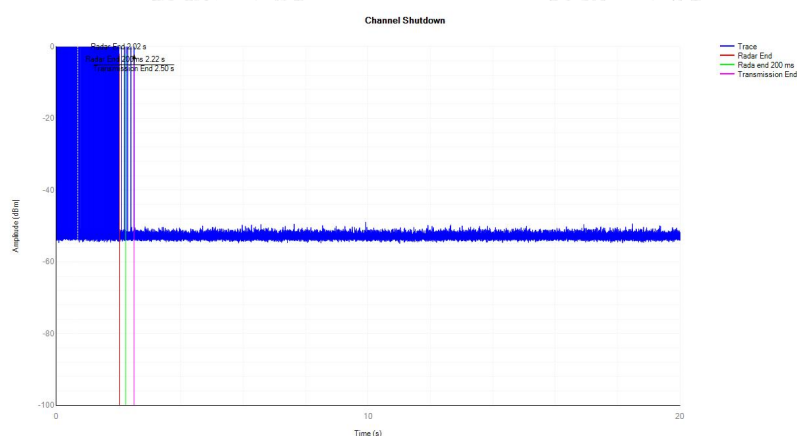
Channel 58/ 5290 MHz



Channel Move Time	Limit
0.49s	10s
Channel Close Time	Limit
0.003ms	60ms

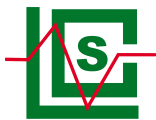
IEEE 802.11ax

Channel 106 / 5530 MHz



Channel Move Time	Limit
0.48s	10s
Channel Close Time	Limit
0.005ms	60ms

Notes: A20/N40/AC80/AX80 were tested, the report recorded the worst result of AX mode.



9. LIST OF MEASURING EQUIPMENTS

Manufacturer	Model / Equipment	Cal Date	Due Date	Serial No.
SAMSUNG ELECTRONICS	S2LF812265/ Wireless AP (Master Device)	N/A	N/A	S2LF812265
ADLINK	PXI/DFS Measurement System(S/G)	2026-03-17	2027-03-16	302581/735
ADLINK	PXI/DFS Measurement System(S/A)	2026-03-17	2027-03-16	303582/113
Agilent	N9020A / Signal Analyzer	2025-06-03 2026-06-02	2026-06-02 2027-06-01	MY52090906
Hewlett Packard	11636B/Power Divider	2026-02-16	2027-02-15	0531
Hewlett Packard	11667B / Power Splitter	2025-06-02 2026-06-01	2026-06-01 2027-05-31	05001
Agilent	8493C / Attenuator(10 dB)	2025-09-03	2026-09-02	07560
WEINSCHEL	2-3 / Attenuator(3 dB)	2025-08-06	2026-08-05	BR0617
Weinschel	AF9003-69-31 / Step Attenuator	2025-10-09	2026-10-08	5701
Cernex	CDPU5260404K / 4 Way Power Divider	2026-03-02	2027-03-01	14695
Narda	4426-4 / 4 Way Power Divider	2026-02-03	2027-02-02	11927

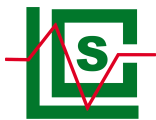
TRF-4-E-150 A/0

Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



10. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

11. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

12. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF REPORT-----