Testing Laboratory
3023

Test Report No:
2550674R-RFUSV03S-A

TEST REPORT
FCC Rules & Regulations

Product Name	WLAN module
Brand Name	CTE
Model No.	CTE6256
FCC ID	2AS3E-CTE6256
Applicant´s Name / Address	CTE TECH CORP. No. 1-7 Gongjian Rd., Cidu District, Keelung City 20647, Taiwan
Manufacturer's Name	CTE TECH CORP.
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Verdict Summary	IN COMPLIANCE
Documented By April Chen	
Tested By Ivan Chuang	
Approved By Alan Chen	
Date of Receipt	2025/05/22
Date of Issue	2025/07/31
Report Version	V1.0

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Competences and Guarantees

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

General Conditions

1. The test results relate only to the samples tested.
2. The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
3. This report must not be used to claim product endorsement by TAF or any agency of the government.
4. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Revision History

Version	Description	Issued Date
V1.0	Initial issue of report	2025/07/31

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
3	AC Power Line Conducted Emission	PASS	-
4	Emission Bandwidth	PASS	-
5	Maximum Conducted Output Power	PASS	-
6	Maximum Power Spectral Density	PASS	-
7	Transmitter Radiated Spurious Emission	PASS	-

Comments and Explanations
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1. General Information

1.1. EUT Description

Frequency Range	5150 ~ 5250 MHz 5725 ~ 5850 MHz	
Operating Frequency / Channel Number	IEEE 802.11a/n/ac (20 MHz)	5180 ~ 5240 MHz / 4 Channels 5745 ~ 5825 MHz / 5 Channels
	IEEE 802.11n/ac (40 MHz)	5190 ~ 5230 MHz / 2 Channels 5755 ~ 5795 MHz / 2 Channels
	IEEE 802.11ac (80 MHz)	5210 MHz / 1 Channel 5775 MHz / 1 Channel
Type of Modulation	IEEE 802.11a/n	OFDM-BPSK, QPSK, 16QAM, 64QAM
	IEEE 802.11ac	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM

Antenna Information				
Item.	Brand Name	Part No.	Type	Gain (dBi)
1	Unictron	H2U84W1H1S0800	Chip	2.3

Note: The antenna of EUT conforms to FCC 15.203.

For IEEE 802.11a/n/ac Mode: (1TX, 1RX)

1.2. EUT Information

EUT Power Type	From DC 3.3V			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point
TPC Function	☐	With TPC Function	☒	Without TPC Function
Beamforming Function	☐	With beamforming	☒	Without beamforming

1.3. Testing Location Information

USA	FCC Designation Number: TW0033
Canada	CAB Identifier Number: TW3023 / Company Number: 26930

Site Description	Accredited by TAF
	Accredited Number: 3023

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No. 85, Wenlin St., Linkou Dist., New Taipei City 244017, Taiwan, R.O.C.
Performed Location	No. 26, Huaya 1st Rd., Guishan Dist.,Taoyuan City 333411, Taiwan, R.O.C.
Phone Number	+886-3-275-7255
Fax Number	+886-3-327-8031

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual	Test Date
AC Power Line Conducted Emission	Temperature (°C)	10~40 °C	25.3 °C	2025/07/21
	Humidity (%RH)	10~90 %	54.5 %	
RF Conducted Emission	Temperature (°C)	10~40 °C	24.0 °C	2025/06/12 ~ 2025/07/21
	Humidity (%RH)	10~90 %	52.1 %	
Radiated Emission	Temperature (°C)	10~40 °C	25.3 °C	2025/06/30~2025/07/17
	Humidity (%RH)	10~90 %	60.1 %	

1.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document.

The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty
AC Power Line Conducted Emission	±3.50 dB
Emission Bandwidth	±1580.61 Hz
Maximum Conducted Output Power	Spectrum Analyzer: ±2.13 dB Power Meter: ±1.05 dB
Maximum Power Spectral Density	±2.13 dB
Transmitter Radiated Spurious Emission	9 kHz~30 MHz: ±3.30 dB 30 MHz~1 GHz: ±5.19 dB 1 GHz~18 GHz: ±4.46 dB 18 GHz~40 GHz: ±4.19 dB
Duty Cycle	±0.62 %

1.5. List of Test Equipment

For Conduction Measurements / HY-SR01

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	EMI Test Receiver	R&S	ESR7	101601	2025/04/28	2026/04/27
V	Two-Line V-Network	R&S	ENV216	101306	2024/04/01	2026/03/31
V	Two-Line V-Network	R&S	ENV216	101307	2023/08/17	2025/08/16
V	Coaxial Cable	SUHNER	RG400_BNC	RF001	2025/01/10	2026/01/09

Note:
1. Two-Line V-Network is calibrated every two years, the other equipment is calibrated every year.
2. The test instruments marked with “V” are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

For Conducted Measurements / HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Spectrum Analyzer	R&S	FSV30	103466	2024/12/18	2025/12/17
V	Spectrum Analyzer	KEYSIGHT	N9010A	MY53470892	2024/10/30	2025/10/29
V	Peak Power Analyzer	KEYSIGHT	8990B	MY51000539	2025/05/05	2026/05/04
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240002	2025/05/07	2026/05/06
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240003	2025/05/07	2026/05/06

Note:
1. All equipment is calibrated every year.
2. The test instruments marked with “V” are used to measure the final test results.
4. Test Software Version : DTC_RF_Tool_Release V1.0.19

For Radiated Measurements /HY-CB03

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Loop Antenna	TESEQ	HLA6121	49611	2025/02/18	2026/02/17
V	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-0675	2023/08/09	2025/08/08
V	Horn Antenna	Com-Power	AH-840	101101	2023/12/04	2025/12/03
V	Horn Antenna	RF SPIN	DRH18-E	210507A18ES	2024/05/15	2026/05/14
V	Pre-Amplifier	SGH	SGH0301-9	20211007-11	2025/01/10	2026/01/09
V	Pre-Amplifier	SGH	PRAMP118	20200701	2025/01/10	2026/01/09
V	Pre-Amplifier	EMCI	EMC05820SE	980310	2025/01/10	2026/01/09
V	Pre-Amplifier	EMCI	EMC184045SE	980369	2025/01/10	2026/01/09
V	Coaxial Cable	EMCI	EMC102-KM-KM-600	1160311	2025/01/10	2026/01/09
V	Coaxial Cable	EMCI	EMC102-KM-KM-7000	170242	2025/01/10	2026/01/09
	Filter	MICRO TRONICS	BRM20887	G003	2025/01/05	2026/01/04
V	Filter	MICRO TRONICS	BRM50716	G196	2025/01/05	2026/01/04
V	EMI Test Receiver	R&S	ESR3	102793	2024/12/06	2025/12/05
V	Spectrum Analyzer	R&S	FSV3044	101114	2025/02/26	2026/02/25
V	Coaxial Cable	SGH	SGH18	2021005-1	2025/01/10	2026/01/09
V	Coaxial Cable	SGH	SGH18	202108-4	2025/01/10	2026/01/09
V	Coaxial Cable	SGH	HA800	GD20110223-1	2025/01/10	2026/01/09
V	Coaxial Cable	SGH	HA800	GD20110222-8	2025/01/10	2026/01/09

Note:
1. Bi-Log Antenna and Horn Antenna are calibrated every two years, the other equipment is calibrated every year.
2. The test instruments marked with “V” are used to measure the final test results.
3. Test Software Version: e3 230303 dekra V9.

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	DC 3.3 V (Power by test fixture)

2.2. Test Frequency Mode

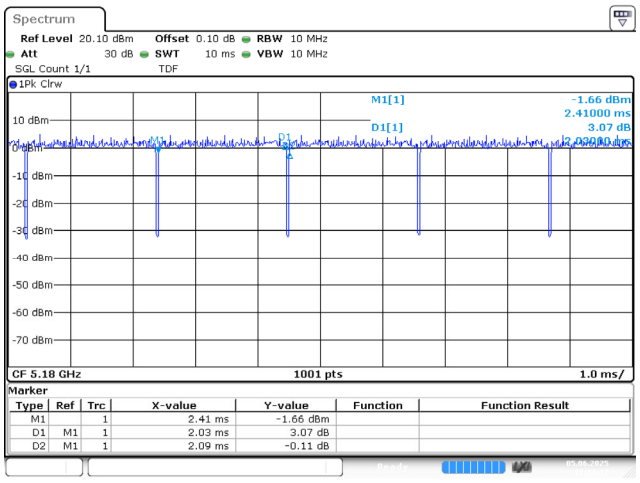
Test Software Version	Tera Term / Version 4.106

Modulation	Frequency (MHz)	Power Setting
802.11a (20 MHz)	5180	32
	5220	35
	5240	35
	5745	58
	5785	58
	5825	57
802.11ac (20 MHz)	5180	35
	5220	35
	5240	36
	5745	60
	5785	60
	5825	60
802.11ac (40 MHz)	5190	45
	5230	46
	5755	72
	5795	72
802.11ac (80 MHz)	5210	40
	5775	74

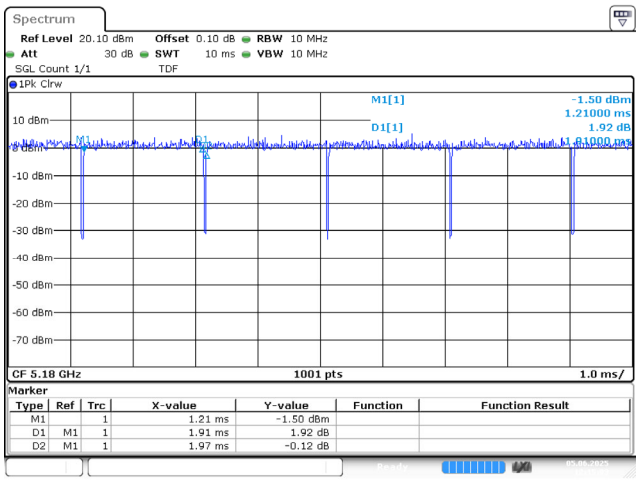
2.3. Duty Cycle

Modulation	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	VBW (Hz)
802.11a (20 MHz)	2.0300	2.0900	97.13	0.13	500
802.11ac (20 MHz)	1.9100	1.9700	96.95	0.13	1000
802.11ac (40 MHz)	0.9400	0.9800	95.92	0.18	2000
802.11ac (80 MHz)	0.4440	0.4920	90.24	0.45	3000

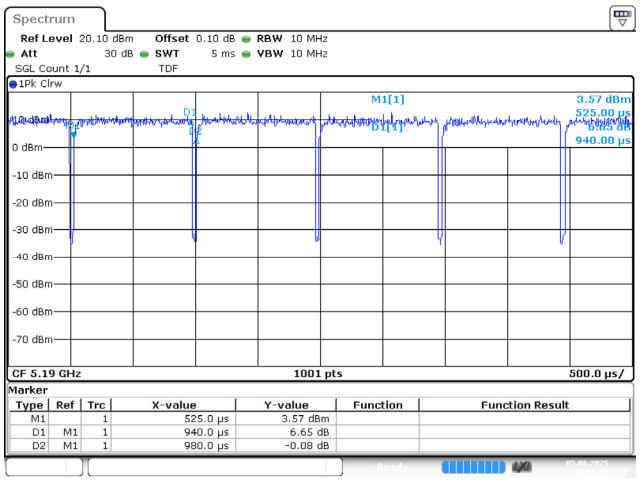
802.11a (20 MHz)



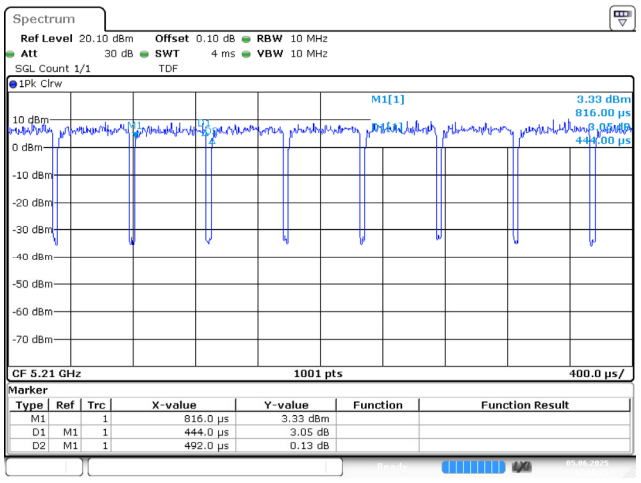
802.11ac (20 MHz)



802.11ac (40 MHz)



802.11ac (80 MHz)



2.4. Measurement Configuration

Test Mode	Mode 1 (Transmit)	802.11a (20 MHz)
		802.11ac (20 MHz)
		802.11ac (40 MHz)
		802.11ac (80 MHz)

Note:

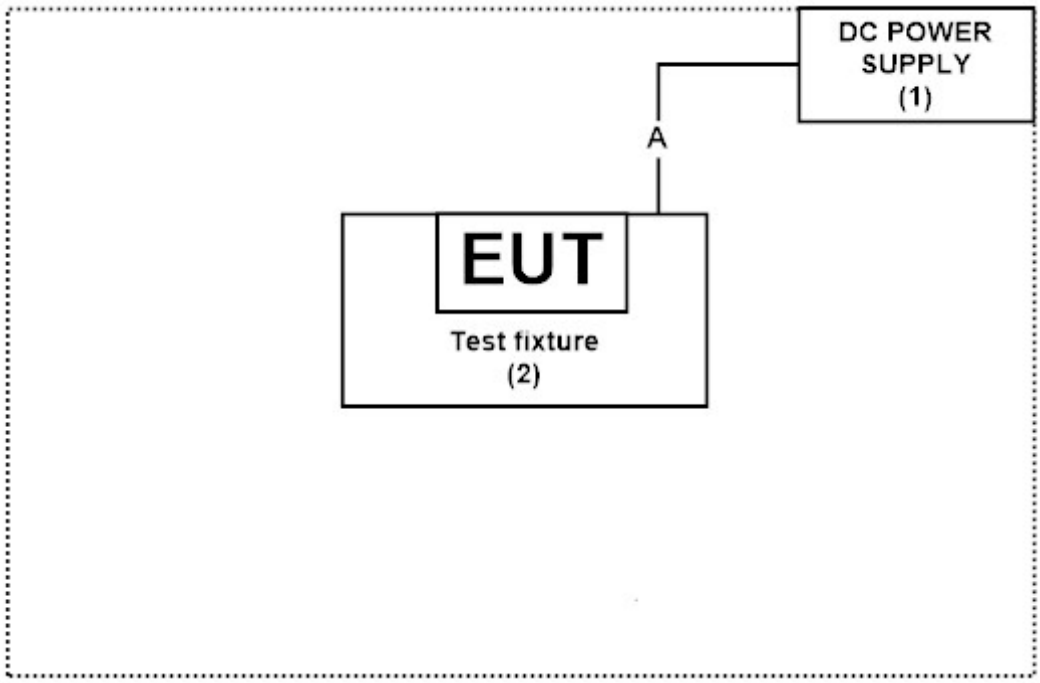
1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For radiated emissions below 1 GHz and AC power line conducted emissions, all modes of operation were investigated, and the worst-case emissions are reported.
3. The lowest data rates are tested in each mode. Only the worst case is shown in the report.
   (802.11a is 6 Mbps, 802.11 ac is MCS0)
4. The radiation measurements are performed in the X, Y, and Z axis positions. Only the worst case is shown in the report.

2.5. Tested System Details

No.	Equipment	Brand Name	Model No.	Serial No.	Power Cord
1	DC POWER SUPPLY	KEYSIGHT	E36234A	MY59001234	Non-shielded, 1.8m
2	Test fixture	CTE	No1	N/A	N/A

2.6. Configuration of tested System

Connection Diagram



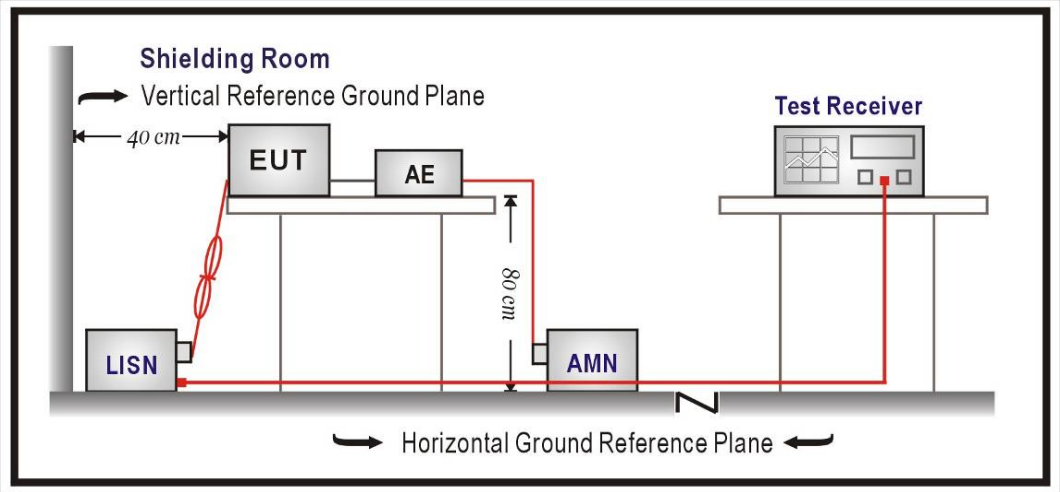
Signal Cable Type		Signal cable Description
A	Power Cable	Non-shielded, 1m

2.7. EUT Operating Procedures

1	Setup the EUT as shown in Section 2.6.
2	Execute software “Tera Term / Version 4.106” on the Notebook PC.
3	Configure the test mode, the test channel, and the data rate.
4	Remove the Notebook PC and Control Board.
5	Verify that the EUT works properly.

3. AC Power Line Conducted Emission

3.1. Test Setup



3.2. Test Limit

Frequency (MHz)	QP (dBµV)	AV (dBµV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remark: In the above table, the tighter limit applies at the band edges.

3.3. Test Procedure

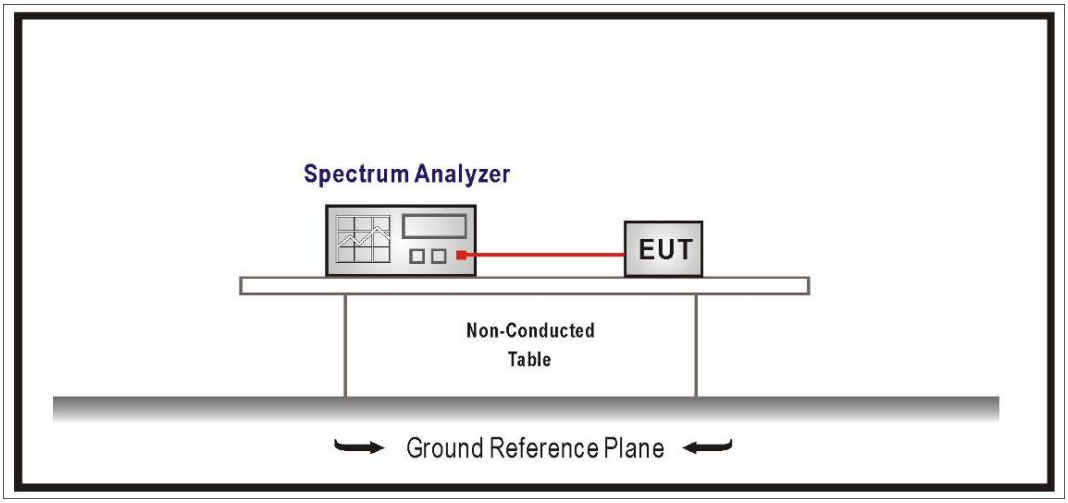
The EUT was setup according to ANSI C63.10-2020 for AC Power Line Conducted Emissions.

3.4. Test Result of AC Power Line Conducted Emission

Refer as Appendix A

4. Emission Bandwidth

4.1. Test Setup



4.2. Test Limit

26 dB Bandwidth : No Required

6 dB Bandwidth ≧ 500kHz

4.3. Test Procedure

26 dB Bandwidth, 99% Occupied Bandwidth :

The EUT was tested according to U-NII test procedure of KDB 789033.

Set RBW 1% of the emission bandwidth, VBW equal to 3 times the RBW.

6 dB Bandwidth :

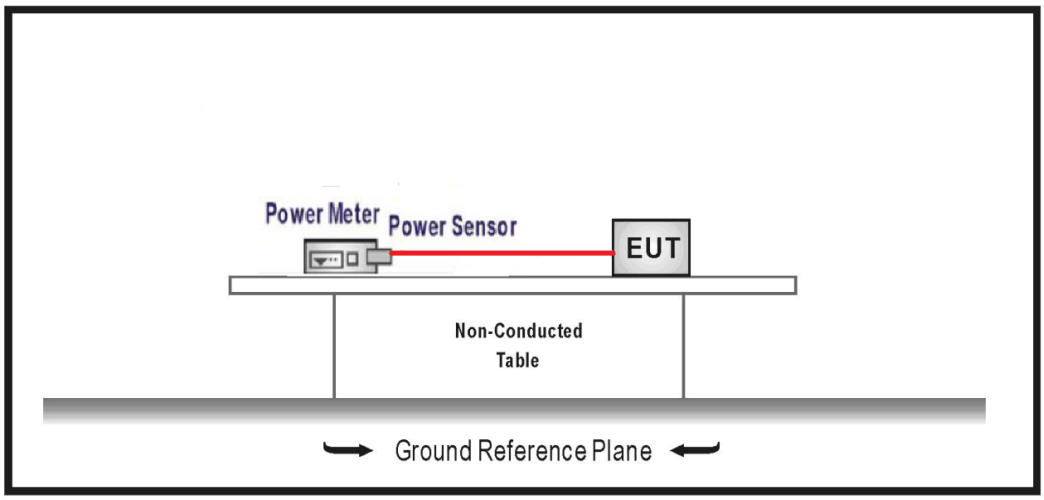
Set RBW = 100kHz, VBW≧3xRBW, Sweep time=Auto, Set Peak detector.

4.4. Test Result of Emission Bandwidth

Refer as Appendix B

5. Maximum Conducted Output Power

5.1. Test Setup



5.2. Test Limit

1. For an outdoor access point and an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.3. Test Procedure

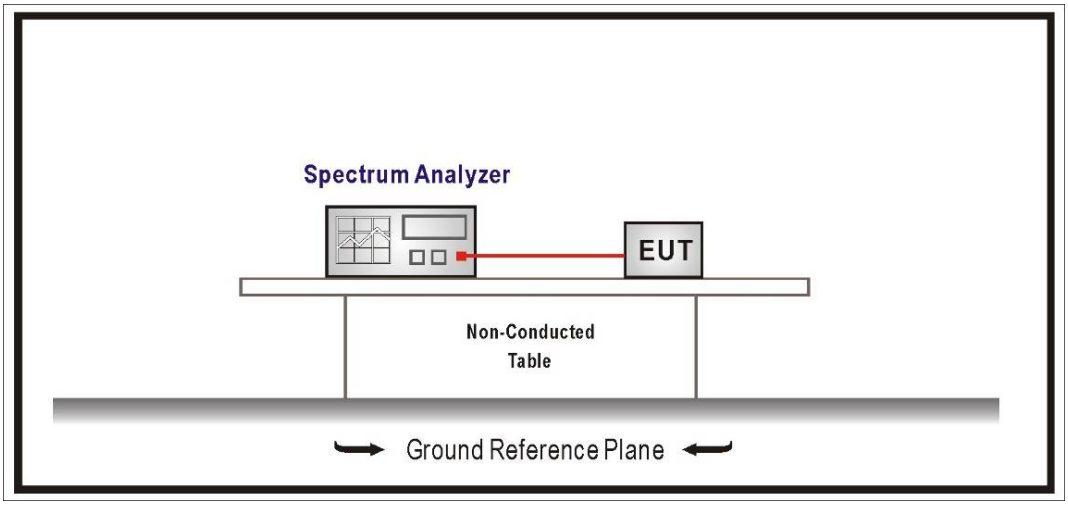
The EUT was setup to ANSI C63.10-2020; tested to U-NII test procedure of 789033.

5.4. Test Result of Maximum Conducted Output Power

Refer as Appendix C

6. Maximum Power Spectral Density

6.1. Test Setup



6.2. Test Limit

1. For the band 5.15 ~ 5.25 GHz, the peak power spectral density shall not exceed 17 dBm in any 1 MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
2. For client devices in the 5.15 ~ 5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
3. For the 5.25 ~ 5.35 GHz ,5470 ~ 5600 MHz and 5650 ~ 5725 MHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
4. For the band 5.725 ~ 5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

6.3. Test Procedure

The EUT was setup to ANSI C63.10-2020; tested to U-NII test procedure of 789033.

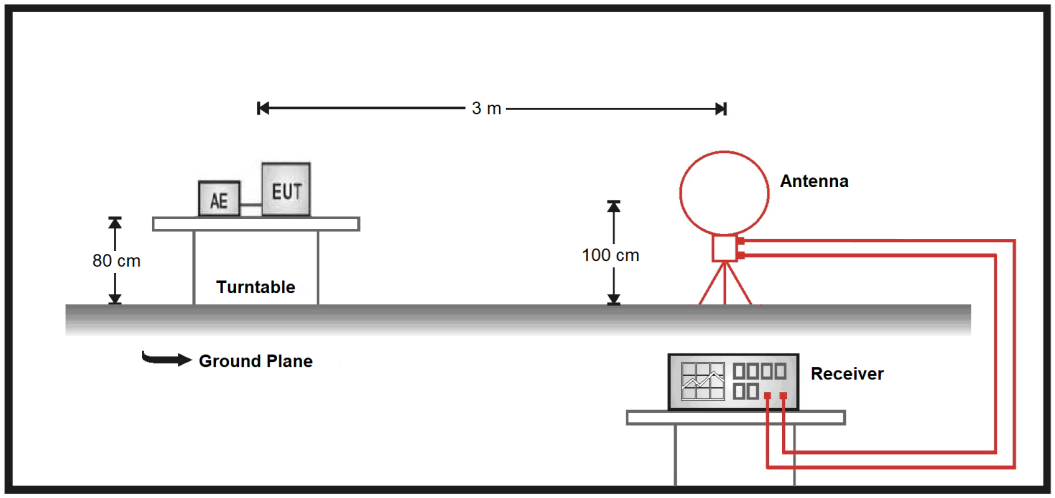
6.4. Test Result of Maximum Power Spectral Density

Refer as Appendix D

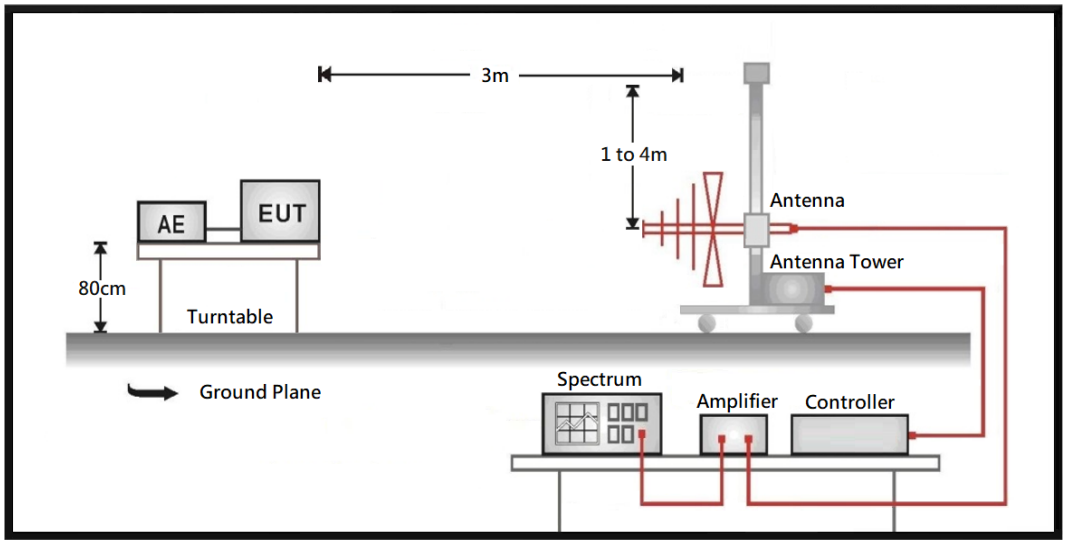
7. Transmitter Radiated Spurious Emission

7.1. Test Setup

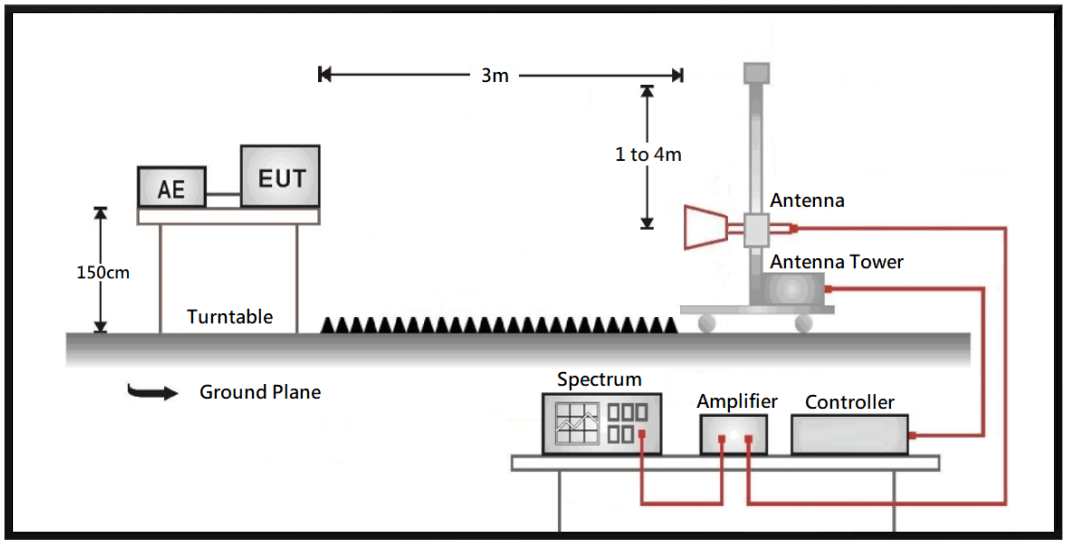
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



7.2. Test Limit

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	20 log (2400/F(kHz))	300
0.490 – 1.705	24000/F(kHz)	20 log (24000/F(kHz))	30
1.705 - 30	30	29.5	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Remarks:

1. Field strength (dBμV/m) = 20 log Field strength (μV/m)
2. In the Above Table, the tighter limit applies at the band edges.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Unwanted Emission out of the restricted bands Test Limit

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength (dBμV/m@3m)
5150 – 5250	-27	68.2
5250 – 5350	-27	68.2
5470 – 5725	-27	68.2
5725 – 5850	-27 *1	68.2 *1
	10 *2	105.2 *2
	15.6 *3	110.8 *3
	27 *4	122.2 *4

*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Remark:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

E = $\frac{1000000\sqrt{30P}}{3}$ uV/m, where P is the eirp (Watts).

7.3. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10-2020 on radiated measurement.
The additional latch filter below 1 GHz was used to measure the level of harmonics radiated emission during field dtrength of harmonics measurement.
The bandwidth below 1 GHz setting on the field strength meter is 120 kHz, above 1 GHz are 1 MHz.
The frequency range from 9 kHz to 10th harmonics and included The frequency range from the lowest oscillator frequency generated within the device up to the 10th harmonic was checked is checked.

7.4. Test Result of Transmitter Radiated Spurious Emission

Refer as Appendix E