

Test Report No:
2640586R-RFUSV15S-D

TEST REPORT

FCC Rules & Regulations

(Class II Permissive Change)

Product Name	Multimedia device with Bluetooth and WLAN
Brand Name	BOSCH
Model No.	CCS2SBXQ
FCC ID	2AUXS-CCS2SBXQ
Applicant's Name / Address	Robert Bosch GmbH Robert-Bosch-Strasse 200, 31139 Hildesheim, Germany
Manufacturer's Name	Robert Bosch GmbH
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart E Section 15.407
Verdict Summary	IN COMPLIANCE
Documented by Jinn Chen	
Approved by Alan Chen	
Date of Receipt	2026/04/22
Date of Issue	2026/06/01
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.

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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	2026/06/01

Permissive Change

Report No.	Version	Description	Issued Date
2640586R-RFUSV15S-D	V1.0	The major change filed under this application is: Change #1: Difference consists in mounting of broadcast receiver SXM vs DAB.	2026/06/01

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
3	Maximum Conducted Output Power	PASS	-
4	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	5180 ~ 5240 MHz / 4 Channels
	IEEE 802.11n/ac (20 MHz)	5745 ~ 5825 MHz / 5 Channels
	IEEE 802.11n/ac (40 MHz)	5190 ~ 5230 MHz / 2 Channels 5755 ~ 5795 MHz / 2 Channels
Type of Modulation	IEEE 802.11a/n	OFDM-BPSK, QPSK, 16QAM, 64QAM
	IEEE 802.11ac	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM

The product includes two configurations with the following as below:

Model name	HW Version Identification Number (HVIN)	Description
CCS2SBXQ	NA1	Internal Antenna / External Antenna
	NA2	2x Internal Antenna

Usage of sample

Bosch Part Number	Control Number	Description	Type	Version
7 515 752 801-01	PSR-2059527	Antenna: 2x Internal Antenna	Radiated	GCC
7 515 752 686-03	PSR-2077299	Antenna: Internal Antenna /External antenna	Radiated	GCC

Internal Antenna

Antenna Information					
Item.	Brand Name	Part No.	Type	Gain (dBi)	
1	BOSCH	W701	Integrated as printed circuit board antenna	U-NII 1	3.1
				U-NII 3	0.5
		W702		U-NII 1	3.9
				U-NII 3	3.4

External Antenna

Antenna Information					
Item.	Brand Name	Part No.	Type	Gain (dBi)	
1	NISSEI ELECTRIC	ANT2420-161CW/U-AB	Metal Plate Antenna	U-NII 1	2.97
				U-NII 3	3.74
2	NISSEI ELECTRIC	Single ANT2420-161CW/U-AB		U-NII 1	4.34
				U-NII 3	5.77
3	Harada Industry	259D57LA0A		U-NII 1	2.89
				U-NII 3	4.24
4	Harada Industry	Single 259D57LA0A		U-NII 1	1.08
				U-NII 3	2.93

Note: The antenna of EUT is conforming to FCC 15.203.

2x Internal antenna

For power CDD Directional gain
3.9 dBi for 5150-5250 MHz
3.4 dBi for 5725-5850 MHz

For CDD mode:
5150MHz-5250MHz: Directional gain = 3.9 dBi
5725MHz-5850MHz: Directional gain = 3.4 dBi
(Directional gain = GANT MAX + Array Gain, Array Gain = 0 dB for $N_{ANT} \leq 4$)

For Power Density Directional gain
5150MHz-5250MHz: Directional gain = 6.52 dBi
5725MHz-5850MHz: Directional gain = 5.08 dBi
Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi

Internal / External antenna

For power CDD Directional gain
4.34 dBi for 5150-5250 MHz
5.77 dBi for 5725-5850 MHz

For CDD mode:
5150MHz-5250MHz: Directional gain = 4.34 dBi
5725MHz-5850MHz: Directional gain = 5.77 dBi
(Directional gain = GANT MAX + Array Gain, Array Gain = 0 dB for $N_{ANT} \leq 4$)

For Power Density Directional gain
5150MHz-5250MHz: Directional gain = 7.13 dBi
5725MHz-5850MHz: Directional gain = 7.68 dBi
Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi

1.2. EUT Information

EUT Power Type	From Battery
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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	Tested By
RF Conducted Emission	Temperature (°C)	10~40 °C	24.2 °C	2025/04/30	Kevin Lai
	Humidity (%RH)	10~90 %	62.6 %		
Radiated Emission	Temperature (°C)	10~40 °C	24.2 °C	2026/05/04	Rock Liang
	Humidity (%RH)	10~90 %	57.8 %		Ashton Chiu

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
Maximum Conducted Output Power	Spectrum Analyzer: ± 2.13 dB Power Meter: ± 1.05 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

1.5. List of Test Equipment

For Conducted Measurements / HY-SR02

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	Spectrum Analyzer	R&S	FSV30	103467	2025/05/29	2026/05/28
V	Power Meter	Anritsu	ML2496A	1947001	2025/12/22	2026/12/21
V	Power Sensor	Anritsu	MA2411B	1911082	2025/12/22	2026/12/21
V	Power Sensor	Anritsu	MA2411B	1911083	2025/12/22	2026/12/21

Note:

1. All equipment is calibrated every year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version : DTC_RF_Tool_Release V2.0.37.

For Radiated Measurements /HY-CB03

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
	Loop Antenna	TESEQ	HLA6121	49611	2026/02/04	2027/02/03
V	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-0675	2025/08/14	2027/08/13
V	Horn Antenna	RF SPIN	DRH18-E	210508A18ES	2024/05/30	2026/05/29
V	Horn Antenna	Com-Power	AH-840	101100	2025/10/07	2027/10/06
V	Pre-Amplifier	SGH	SGH0301-9	20211007-11	2026/01/10	2027/01/09
V	Pre-Amplifier	SGH	PRAMP118	20200701	2026/01/10	2027/01/09
V	Pre-Amplifier	EMCI	EMC05820SE	980310	2026/01/10	2027/01/09
V	Pre-Amplifier	EMCI	EMC184045SE	980369	2026/01/10	2027/01/09
V	Coaxial Cable	EMCI	EMC102-KM-KM-600	160311	2026/01/10	2027/01/09
V	Coaxial Cable	SGH	HC360-2.92M/2.92M-7.0M	202108-1	2026/01/10	2027/01/09
	Filter	MICRO TRONICS	BRM20887	G002	2026/01/05	2027/01/04
V	Filter	MICRO TRONICS	BRM50716	G067	2026/01/05	2027/01/04
V	EMI Test Receiver	R&S	ESR3	102793	2025/12/01	2026/11/30
V	Spectrum Analyzer	R&S	FSV3044	101113	2025/12/23	2026/12/22
V	Coaxial Cable	SGH	SGH18	2021005-1	2026/01/10	2027/01/09
V	Coaxial Cable	SGH	SGH18	202108-4	2026/01/10	2027/01/09
V	Coaxial Cable	SGH	HA800	GD20110223-1	2026/01/10	2027/01/09
V	Coaxial Cable	SGH	HA800	GD20110222-8	2026/01/10	2027/01/09

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 12V by Battery

2.2. Test Frequency Mode

Test Software Version	cmd / 10.0.26200.7623
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Modulation	Frequency (MHz)	Power Setting	
		MIMO A	MIMO B
802.11a	5180	11	11
	5745	14	14

2.3. Measurement Configuration

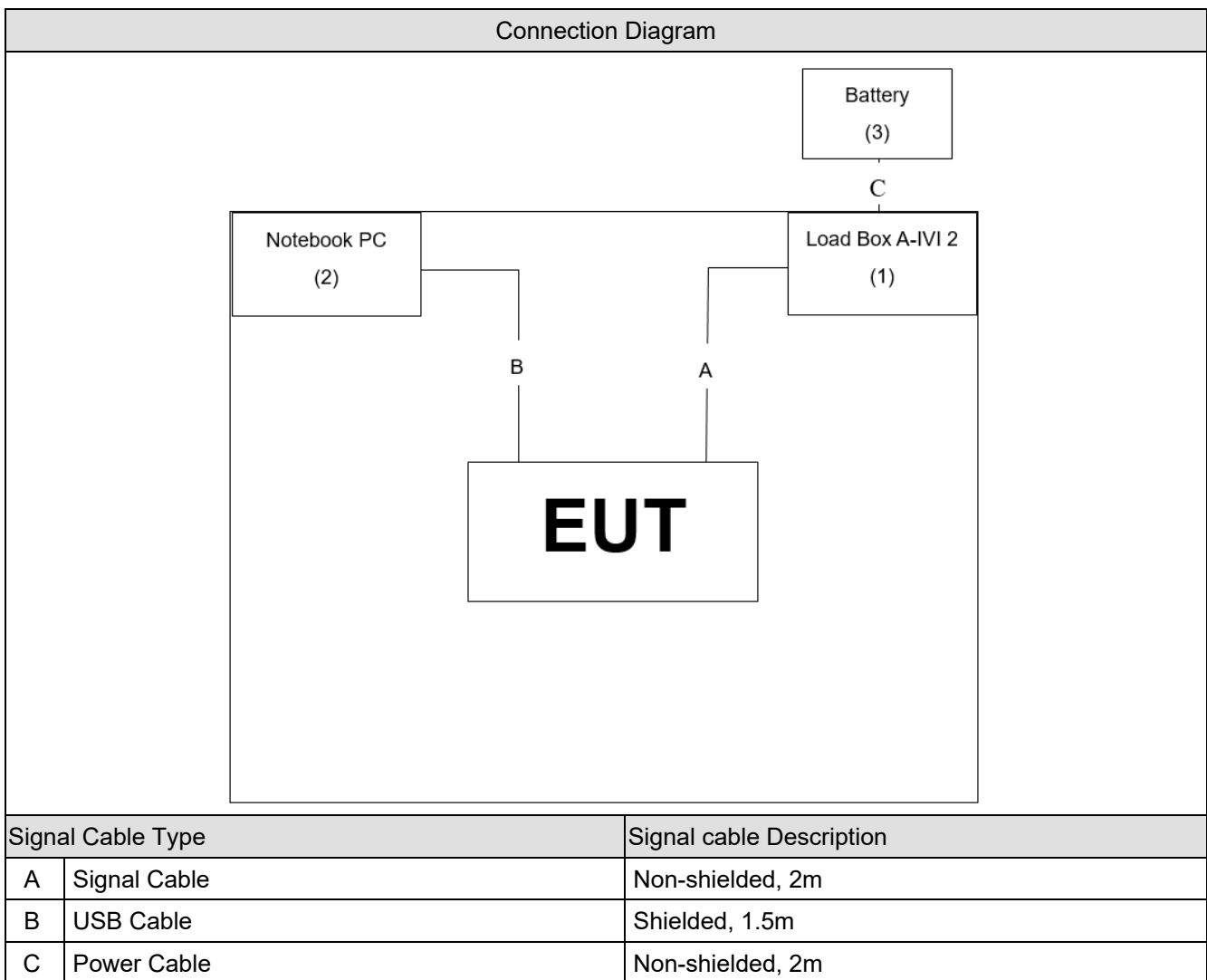
Test Mode	Mode 1 (Transmit)	802.11a (20 MHz)
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Note: Determining compliance shall be based on the results of the compliance measurement, without taking measurement instrumentation uncertainty into account.

2.4. Tested System Details

No.	Equipment	Brand Name	Model No.	Serial No.	Power Cord
1	Load Box A-IVI 2	BOSCH	N/A	N/A	N/A
2	Notebook PC	ASUS	P5430U	G8NXCV07J179325	N/A
3	Battery	BOSCH	60044	N/A	N/A

2.5. Configuration of Tested System

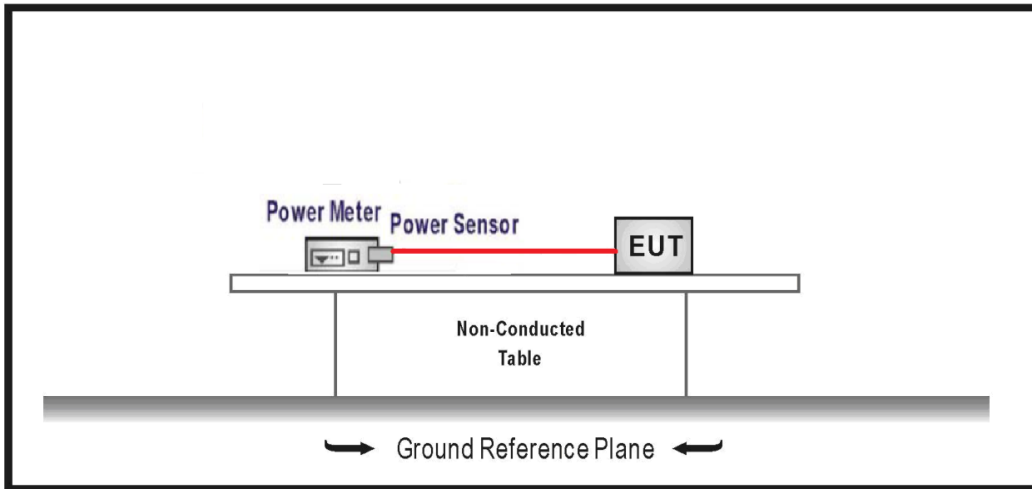


2.6. EUT Operating Procedures

1	Setup the EUT as shown in Section 2.5.
2	Execute software “cmd / 10.0.26200.7623” on the Notebook PC.
3	Configure the test mode, the test channel, and the data rate.
4	Verify that the EUT works properly.

3. Maximum Conducted Output Power

3.1. Test Setup



3.2. 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 $11 \text{ dBm} + 10 \log B$, 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.

3.3. Test Procedure

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

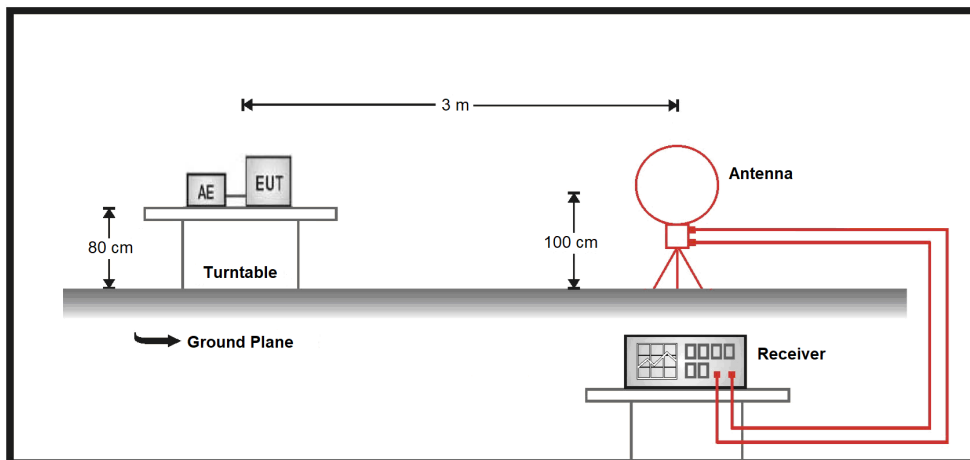
3.4. Test Result of Maximum Conducted Output Power

Refer as Appendix A

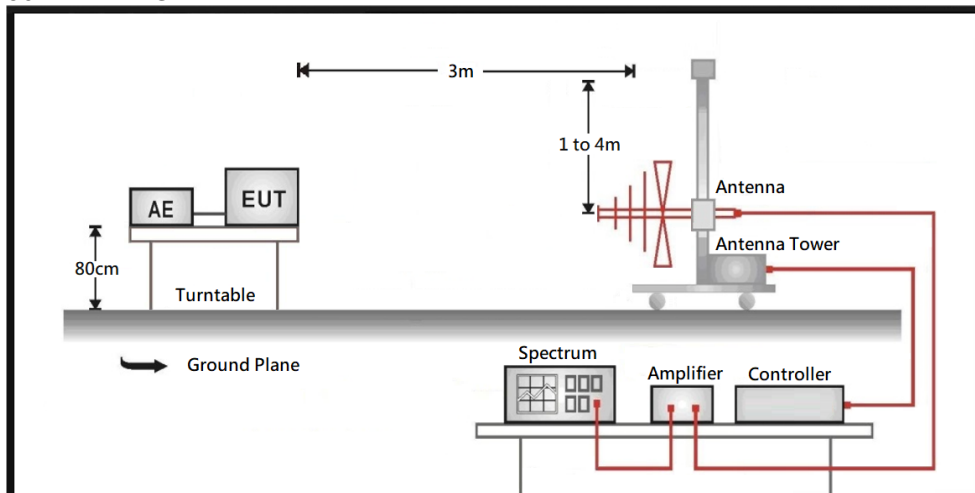
4. Transmitter Radiated Emission

4.1. Test Setup

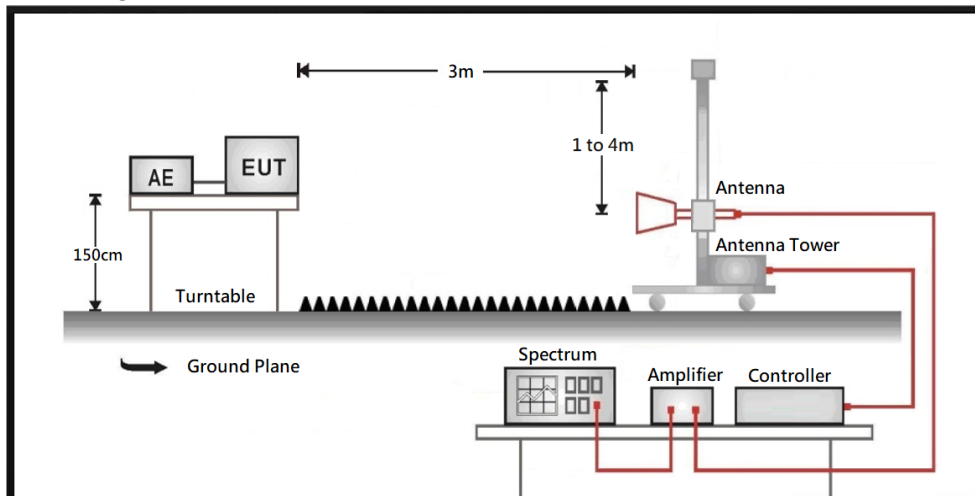
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



4.2. 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 equivalent isotropically radiated power (eirp) to field strength:

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

4.3. 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 strength 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.

4.4. Test Result of Transmitter Radiated Emission

Refer as Appendix B