Testing Laboratory
3023

Test Report No:
2630340R-RFUSV01S-A

TEST REPORT
FCC Rules & Regulations

Product Name	Telematics
Model No.	QICILDNX5US, QICILWNX5RW, QICILWNX5NC
FCC ID	HFS-QICILDNX5US
Applicant´s Name / Address	Quanta Computer Inc. No. 188, Wenhua 2nd Road, Guishan District, Taoyuan City, 33377, Taiwan
Manufacturer's Name	Quanta Computer Inc.
Test Method Requested, Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Verdict Summary	IN COMPLIANCE
Documented By Jinn Chen	Jinn Chen
Approved By Steven Tsai	Steven Tsai
Date of Receipt	2026/03/11
Date of Issue	2026/09/02
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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

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	2026/09/02

Summary of Test Result

Report Clause	Test Items	Result (PASS/FAIL)	Remark
3	AC Power Line Conducted Emission	-	-
4	Occupied Bandwidth & DTS Bandwidth	PASS	-
5	Maximum Peak Conducted Output Power	PASS	-
6	Maximum Power Spectral Density	PASS	-
7	Antenna Port Conducted Emission	PASS	-
8	Radiated 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 Band	2400 ~ 2483.5 MHz
Operating Frequency	2402 ~ 2480 MHz
Channel Number	40 Channels
Type of Modulation	GFSK (1 Mbps, 2 Mbps, 125 kbps, 500 kbps)

The difference for each model is shown as below

NAD Variant	NAD Module	Model Name	GNSS	V2X	WiFi / BT	Audio Function	Backup Battery
US	QV28NUS	QICILDNX5US	O	X	O	O	O
ROW	QV28NRW	QICILWNX5RW	O	X	O	O	O
NC	-	QICILWNX5NC	O	X	O	X	X

From the above models, model: QICILDNX5US was selected as representative model for the test and its data was recorded in this report.

Antenna Information				
Item.	Brand Name	Model No.	Type	Antenna Gain (dBi)
1	Molex	ICON25 (Wi-Fi 1)	PIFA	5.06

Note: The antenna of EUT conforms to FCC 15.203.

1.2. EUT Information

EUT Power Type	From Battery			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point

1.3. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC CFR Title 47 Part 15 Subpart C Section 15.247
- ANSI C63.10-2020

The following reference test guidance is not within the scope of accreditation of TAF:

- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01

1.4. Testing Location Information

Testing Location Information			
Test Laboratory：DEKRA Testing and Certification Co., Ltd.			
V	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/Fax Number	TEL: +886-3-275-7255	FAX: +886-3-327-8031
	USA	FCC Designation Number: TW0033 / FCC Registration Number: 647365	
	Canada	CAB Identifier Number: TW3023 / Company Number: 26930	
	Site Description	Accredited by TAF	
		Accredited Number: 3023	
	Address/ Performed Location	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.	
	Phone/Fax Number	TEL: +886-3-582-8001	FAX: +886-3-582-8958
	USA	Test site Designation No. TW3024 with FCC.	
	Canada	CAB Identifier Number: TW3024 / Company Number: 22397	
	Site Description	Accredited by TAF	
		Accredited Number: 3024	
	Address/ Performed Locatio	No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.	
	Phone/Fax Number	TEL: +886-3-582-8001	FAX: +886-3-582-8958
	USA	Test site Designation No. TW3024 with FCC.	
	Canada	CAB Identifier Number: TW3024 / Company Number: 22397	
	Site Description	Accredited by TAF	
		Accredited Number: 3024	

1.5. Ambient Conditions In The Laboratory

Performed Item	Items	Required	Actual	Test Date	Tested By
RF Conducted Emission	Temperature (°C)	10~40 °C	25.5 °C	2026/06/16	Neko Chen
	Humidity (%RH)	10~90 %	62.2 %		
Radiated Emission	Temperature (°C)	10~40 °C	23.7~24.1°C	2026/07/08~	Rock Liang
	Humidity (%RH)	10~90 %	51.5~69.4%	2026/07/18	Ashton Chiu

1.6. 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	±3.73 dB
Occupied Bandwidth & DTS Bandwidth	±1580.61 Hz
Maximum Peak Conducted Output Power	Spectrum Analyzer: ±2.13 dB Power Meter: ±1.06 dB
Maximum Power Spectral Density	±2.13 dB
Antenna Port Conducted Emission	±2.13 dB
Radiated Emission	9 kHz~30 MHz: ±3.30 dB 30 MHz~1 GHz: ±5.39 dB 1 GHz~18 GHz: ±4.24 dB 18 GHz~40 GHz: ±3.62 dB
Duty Cycle	±0.65 %

1.7. 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	103466	2025/12/18	2026/12/17
V	Peak Power Analyzer	KEYSIGHT	8990B	MY51000539	2026/04/30	2027/04/29
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240002	2026/05/06	2027/05/05
V	Wideband Power Sensor	KEYSIGHT	N1923A	MY59240003	2026/05/06	2027/05/05

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 V2.1.2.

For Radiated Measurements /HY-CB03

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
V	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	Com-Power	AH-840	101100	2025/10/07	2027/10/06
V	Horn Antenna	RF SPIN	DRH18-E	210507A18ES	2026/04/24	2028/04/23
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
V	Filter	MICRO TRONICS	BRM20887	G003	2026/01/05	2027/01/04
	Filter	MICRO TRONICS	BRM50716	G196	2026/01/05	2027/01/04
	WIFI 6E Filter	Marvelous Microwave Inc.	MFN-5925.7125.S1	C50003N	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	101114	2026/04/08	2027/04/07
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
V	Radio communication test station	Anritsu	MT8000A	6262134961	2026/05/04	2027/05/03
V	Radio communication test station	Anritsu	8820C	6201169086	2026/04/07	2027/04/06

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

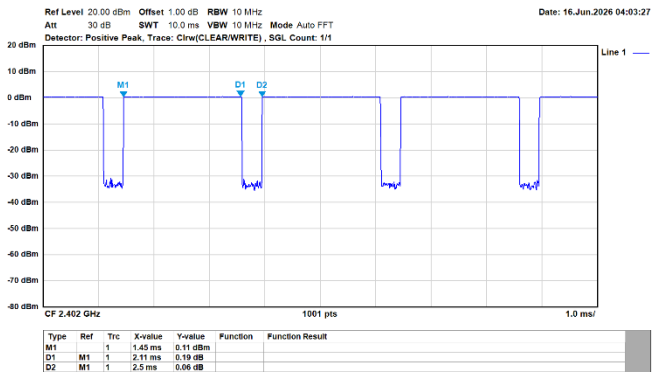
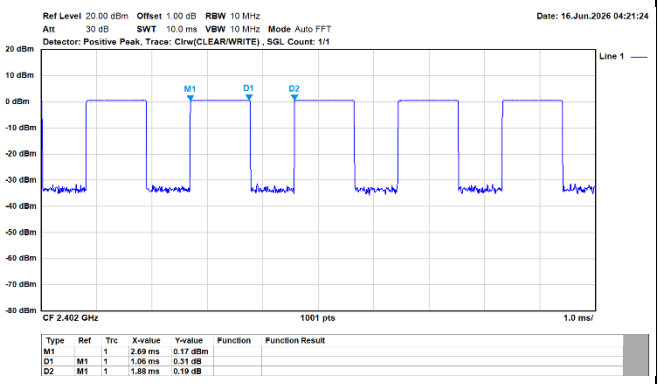
2.2. Test Frequency Mode

Test Software Version	CMD / Version 10.0.19045.5965

Modulation	Frequency (MHz)	Power Setting
GFSK (1 Mbps)	2402	N/A
	2440	N/A
	2480	N/A
GFSK (2 Mbps)	2402	N/A
	2440	N/A
	2480	N/A
GFSK (125 kbps)	2402	N/A
	2440	N/A
	2480	N/A
GFSK (500 kbps)	2402	N/A
	2440	N/A
	2480	N/A

2.3. Duty Cycle

Modulation or Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (Hz)
GFSK (1 Mbps)	2.1100	2.5000	84.40	0.74	500
GFSK (2 Mbps)	1.0600	1.8800	56.38	2.49	1000

GFSK (1 Mbps)	GFSK (2 Mbps)
	

2.4. Measurement Configuration

Tests Item	Occupied Bandwidth & DTS Bandwidth Maximum Peak Conducted Output Power Maximum Power Spectral Density Antenna Port Conducted Emission
Test Condition	Conducted measurement at transmit chains
Operating Mode	Transmit

Tests Item	Radiated Emission
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Transmit
Operating Mode > 1GHz	Transmit

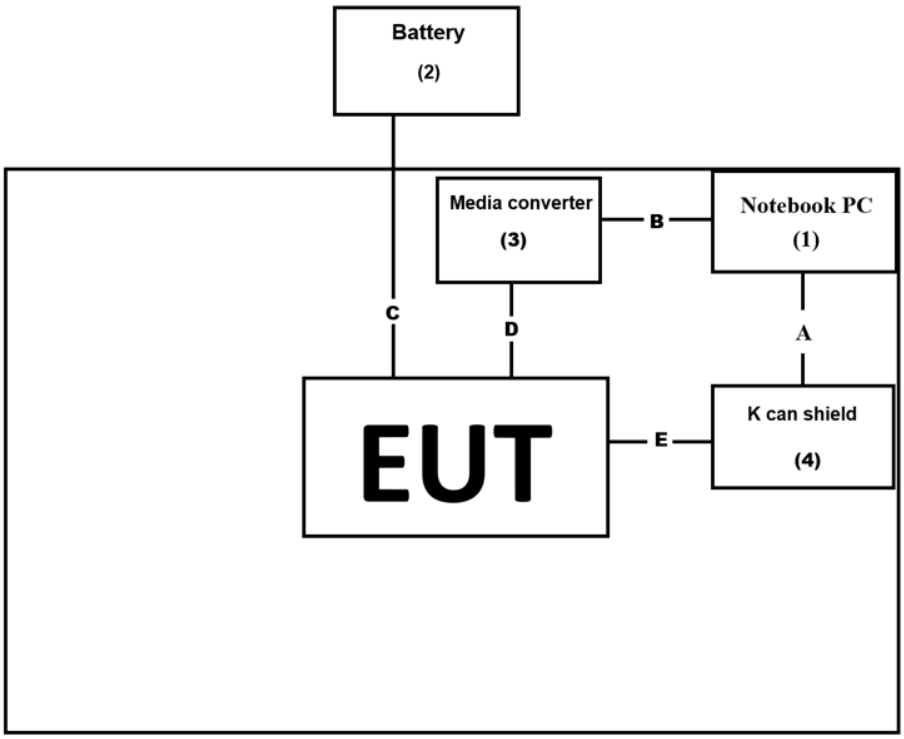
Note:
1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
3. For radiated emission below 1 GHz have performed all modes of operation were investigated and the worst-case emissions are reported.
4. The test mode is based on Bluetooth LE technology. While testing 1 Mbps, 2 Mbps, 125 kbps, and 500 kbps, the worst cases are 1 Mbps and 2 Mbps. Only the worst-case data is recorded in this report.

2.5. Tested System Details

No.	Equipment	Brand Name	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	P75G	7CTHQF2	N/A
2	Battery	BOSCH	60044	N/A	N/A
3	Media converter	Quanta	Media-V1000	N/A	N/A
4	K can shield	Elecrow	CAN BUS Shield V1.5	N/A	N/A

2.6. Configuration of Tested System

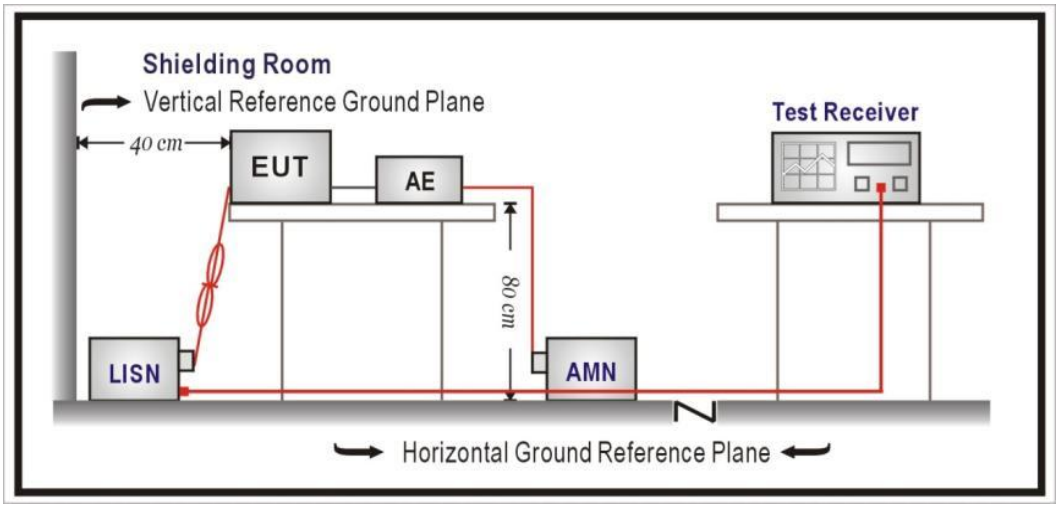
Connection Diagram



Signal Cable Type		Signal cable Description
A	USB Cable	Shielded, 0.3m
B	LAN Cable	Non-shielded, 3m
C	Power Cable	Non-shielded, 1.5m
D	Data Cable	Non-shielded, 0.6m
E	Data Cable	Non-shielded, 0.5m

3. AC Power Line Conducted Emission

3.1. Test Setup



3.2. Test Limit

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

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

3.3. Test Procedure

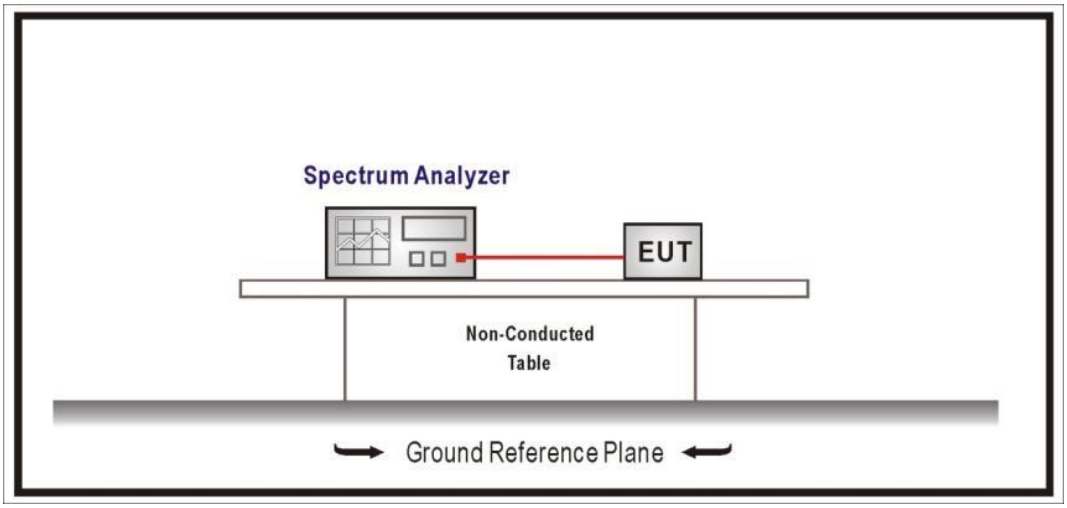
The EUT was setup according to ANSI C63.10-2020 for AC Power Line Conducted Emissions.

3.4. Test Result of AC Power Line Conducted Emission

Refer as Appendix A

4. Occupied Bandwidth & DTS Bandwidth

4.1. Test Setup



4.2. Test Limit

The DTS bandwidth: ≧ 0.50 MHz.

Occupied bandwidth: N/A

4.3. Test Procedures

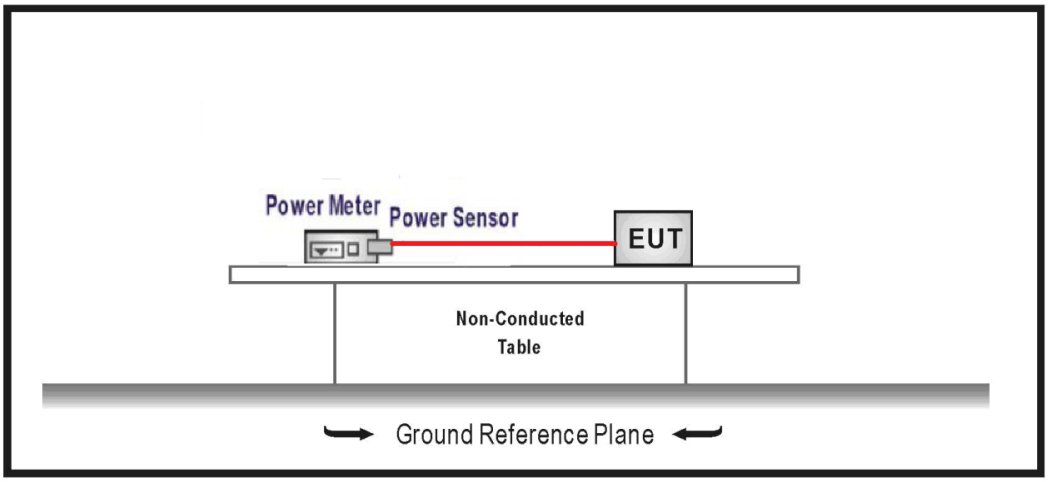
The EUT was setup according to ANSI C63.10-2020; tested according to DTS test procedure of KDB 558074.

4.4. Test Result of Occupied Bandwidth & DTS Bandwidth

Refer as Appendix B

5. Maximum Peak Conducted Output Power

5.1. Test Setup



5.2. Test Limit

The Maximum Peak Conducted Output Power shall be less 30 dBm (1 Watt).

5.3. Test Procedures

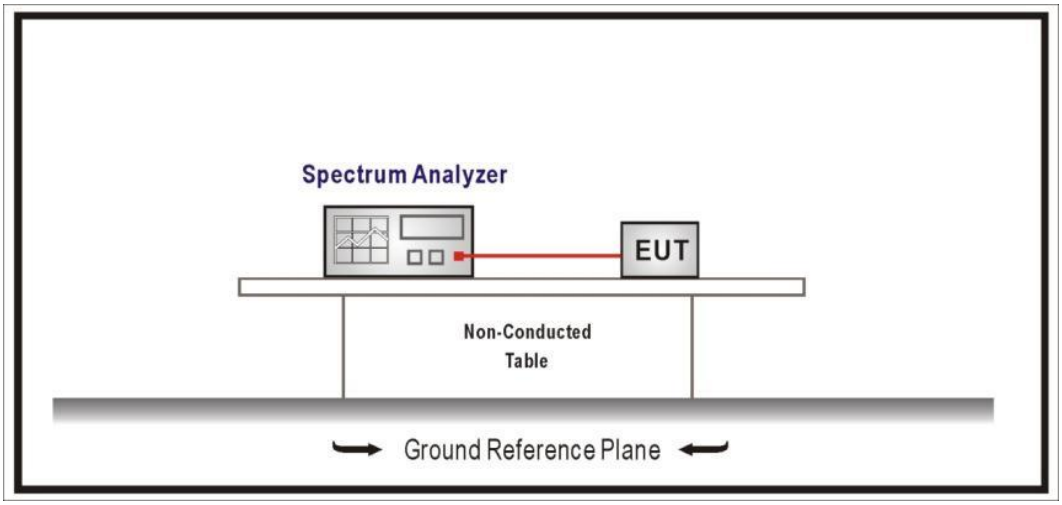
The EUT was setup according to ANSI C63.10-2020; tested according to DTS test procedure of KDB 558074.

5.4. Test Result of Maximum Peak Conducted Output Power

Refer as Appendix C

6. Maximum Power Spectral Density

6.1. Test Setup



6.2. Test Limit

The power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

6.3. Test Procedures

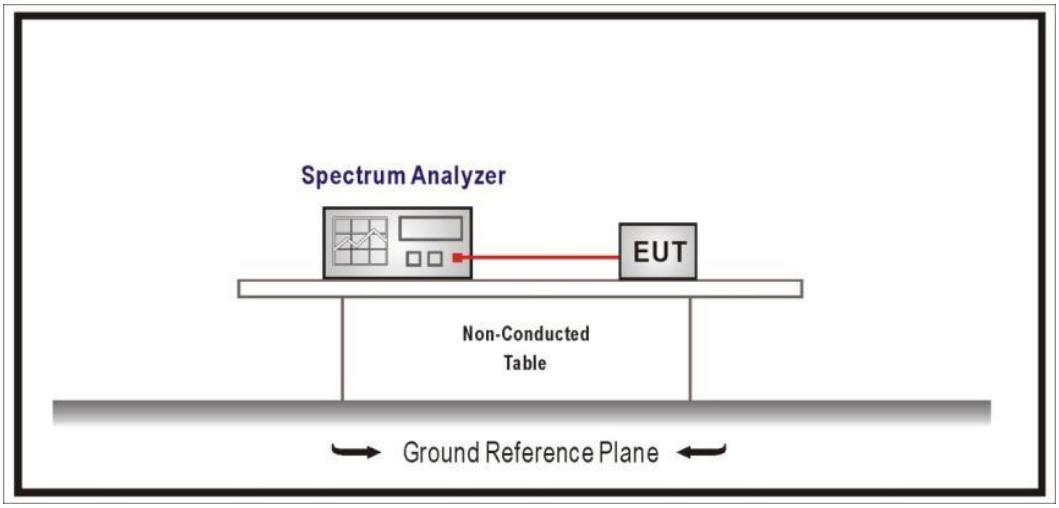
The EUT was setup according to ANSI C63.10-2020; tested according to DTS test procedure of KDB 558074.

6.4. Test Result of Maximum Power Spectral Density

Refer as Appendix D

7. Antenna Port Conducted Emission

7.1. Test Setup



7.2. Test Limit

RF output power procedure	Limit (dBc)
Peak output power procedure	20
Average output power procedure	30

Remarks:

1. In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limit.
2. If the transmitter complies with the conducted power limit based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

7.3. Test Procedure

The EUT was setup according to ANSI C63.10-2020; tested according to DTS test procedure of KDB 558074.

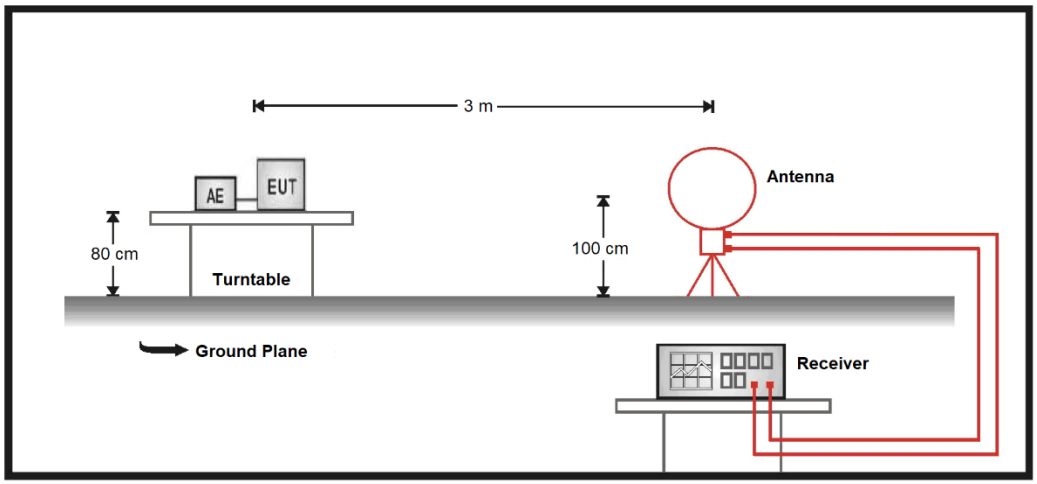
7.4. Test Result of Antenna Port Conducted Emission

Refer as Appendix E

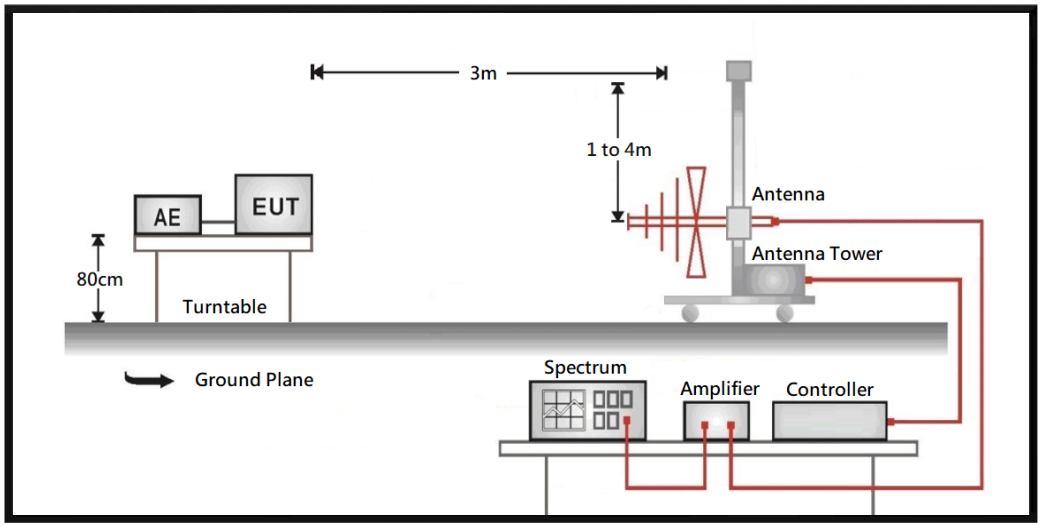
8. Radiated Emission

8.1. Test Setup

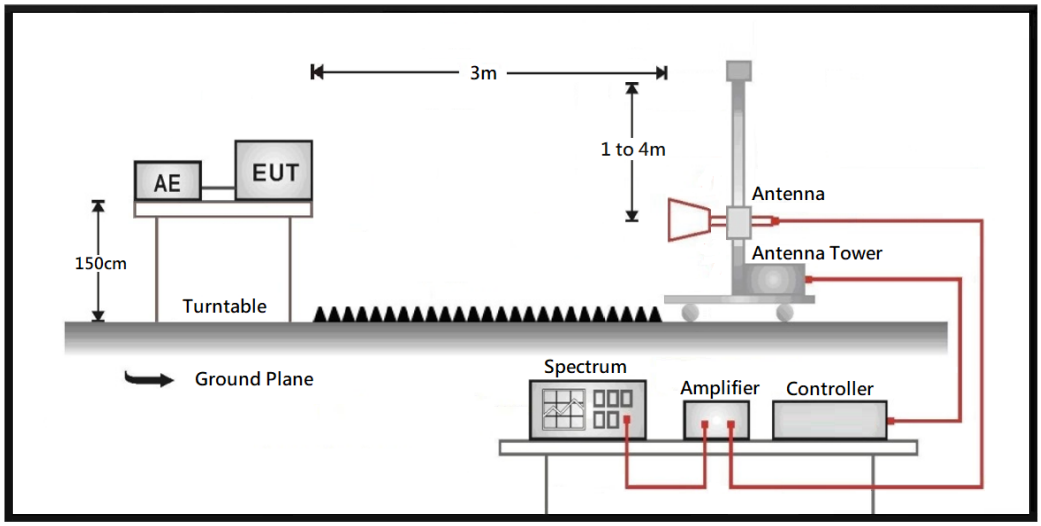
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



8.2. Test Limit

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

8.3. Test Procedure

The EUT and all the supporting units are placed on a turn table which is 0.8 or 1.5 meters above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. 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.

On any frequency or frequencies form 9 kHz (include the lowest oscillator frequency generated within the device up to the 10^{th} harmonic) to 1000 MHz, the limit shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limit shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

The bandwidth below 1 GHz setting on the field strength meter is 120 kHz and above 1 GHz is 1 MHz.

8.4. Test Result of Radiated Emission (Below 30 MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

8.5. Test Result of Radiated Emission

Refer as Appendix F