



Test Report No:
2610461R-RFUSV26S-A

TEST REPORT

FCC Rules&Regulations

Product Name	Telematics Module
Brand Name	Quanta Computer Inc.
Model No.	QV28NUS
FCC ID	HFS-QV28NUS
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 96 ANSI/TIA-603-E-2016 ANSI C63.26-2015
Verdict Summary	IN COMPLIANCE
Documented By Genie Chang	<i>Genie Chang</i>
Approved By Will Chen	<i>Will Chen</i>
Date of Receipt	2025/11/25
Date of Issue	2026/03/13
Report Version	V1.0

INDEX

	page
Competences and Guarantees.....	4
General Conditions.....	4
Revision History.....	5
Summary of Test Result.....	6
Comments and Remarks.....	6
1. General Information.....	7
1.1. EUT Description.....	7
1.2. EUT Information.....	10
1.3. Testing Location Information.....	10
1.4. Measurement Uncertainty.....	11
1.5. List of Test Equipment.....	12
2. Test Configuration of EUT.....	14
2.1. Test Condition.....	14
2.2. Measurement Configuration.....	14
2.3. Tested System Details.....	16
2.4. Configuration of Tested System.....	16
2.5. EUT Operating Procedures.....	17
3. RF Output Power.....	18
3.1. Test Setup.....	18
3.2. Test Limit.....	18
3.3. Test Procedure.....	18
3.4. Test Result of RF Output Power.....	18
4. Occupied Bandwidth.....	19
4.1. Test Setup.....	19
4.2. Test Limit.....	19
4.3. Test Procedures.....	19
4.4. Test Result of Occupied Bandwidth.....	19
5. Conducted Band Edge.....	20
5.1. Test Setup.....	20
5.2. Test Limit.....	20
5.3. Test Procedure.....	20
5.4. Test Result of Conducted Band Edge.....	20
6. Spurious Emission.....	21
6.1. Test Setup.....	21
6.2. Test Limit.....	22
6.3. Test Procedure.....	22

6.4.	Test Result of Spurious Emission	22
7.	Frequency Stability	23
7.1.	Test Setup	23
7.2.	Test Limit	23
7.3.	Test Procedures	23
7.4.	Test Result of Frequency Stability	23
8.	Peak to Average Power Ratio	24
8.1.	Test Setup	24
8.2.	Test Limit	24
8.3.	Test Procedure	24
8.4.	Test Result of Peak to Average Power Ratio	24

Appendix A. Test Result of RF Output Power

Appendix B. Test Result of Occupied Bandwidth

Appendix C. Test Result of Conducted Band Edge

Appendix D. Test Result of Spurious Emission

Appendix E. Test Result of Frequency Stability

Appendix F. Test Result of Peak to Average Ratio

Appendix G. Test Setup Photograph

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	2026/03/13

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3	Part 2.1046, 96.41(b)	RF Output Power	PASS	-
4	Part 2.1049, 96.41	Occupied Bandwidth	PASS	-
5	Part 2.1051, 96.41	Conducted Band Edge	PASS	-
6	Part 2.1051, 96.41	Spurious Emission	PASS	-
7	Part 2.1055	Frequency Stability	PASS	-
8	Part 96.41	Peak to Average Ratio	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.

Comments and Remarks

The product specification and testing instructions for the EUT declared in the report are provided by the manufacturer who will take all responsibilities for the accuracy.

1. General Information

1.1. EUT Description

Frequency Range	LTE B42	3550~3600 MHz (Uplink) 3550~3600 MHz (Downlink)	
	LTE B48	3550~3700 MHz (Uplink) 3550~3700 MHz (Downlink)	
	5GNR n48	3550~3700 MHz (Uplink) 3550~3700 MHz (Downlink)	
Bandwidth	LTE B42	5 / 10 / 15 / 20 MHz	
	LTE B48	5 / 10 / 15 / 20 MHz	
	5GNR n48	SCS: 30 kHz	10 / 15 / 20 / 30 / 40 MHz
Type of Modulation	LTE	QPSK / 16QAM / 64QAM / 256QAM	
	5GNR	DFT-s-OFDM (pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)	
IMEI No.	359918921148290		

Antenna Port	Supported Bands
MIMO 1	WCDMA: B2 / B5 LTE: B2 / B4 / B5 / B7 / B12 / B13 / B17 / B25 / B26 / B38 / B42 / B48 / B66 / B71 5GNR: n2 / n5 / n7 / n12 / n25 / n41 / n48 / n66 / n71 / n77 / n78
MIMO 2	LTE: B42 / B48 5GNR: n48 / n77 / n78
MIMO 3	Only RX
MIMO 4	Only RX
Internal BUA (Backup Antenna)	WCDMA: B2 / B5 LTE: B2 / B4 / B5 / B7 / B25 / B26 / B38 / B66 5GNR: n2 / n5 / n7 / n25 / n41 / n66

Antenna Information				
Item.	Brand Name	Model No.	Type	Gain (dBi)
1	molex	5A7F527 (MIMO 1)	PIFA	6.70 dBi for LTE B42 6.70 dBi for LTE B48 6.70 dBi for 5GNR n48
		5A7F527 (MIMO 2)		5.90 dBi for LTE B42 5.90 dBi for LTE B48 5.90 dBi for 5GNR n48

Note: Only the higher gain antenna was tested and recorded in this report.

Maximum Output Power – LTE B48(42)					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
LTE B48(42) (5M)	3552.5 - 3697.5	4M49G7D	QPSK	0.191	22.81
		4M49W7D	16QAM	0.175	22.43
		4M51W7D	64QAM	0.136	21.35
		4M48W7D	256QAM	0.070	18.48
LTE B48(42) (10M)	3555.0 - 3695.0	8M99G7D	QPSK	0.189	22.77
		8M97W7D	16QAM	0.175	22.44
		8M99W7D	64QAM	0.133	21.24
		8M95W7D	256QAM	0.070	18.42
LTE B48(42) (15M)	3557.5 - 3692.5	13M5G7D	QPSK	0.191	22.80
		13M5W7D	16QAM	0.175	22.44
		13M5W7D	64QAM	0.133	21.24
		13M5W7D	256QAM	0.070	18.46
LTE B48(42) (20M)	3560.0 –3690.0	18M0G7D	QPSK	0.189	22.76
		17M9W7D	16QAM	0.175	22.43
		17M9W7D	64QAM	0.134	21.26
		18M0W7D	256QAM	0.070	18.47

Maximum Output Power – 5GNR n48					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n48 (10M)	3555.00 - 3694.98	8M65G7D	PI/2 BPSK	0.178	22.51
		8M65G7D	QPSK	0.174	22.41
		8M66W7D	16QAM	0.142	21.51
		8M66W7D	64QAM	0.129	21.09
		8M66W7D	256QAM	0.080	19.03
5GNR n48 (15M)	3557.52 - 3692.49	13M0G7D	PI/2 BPSK	0.173	22.37
		12M9G7D	QPSK	0.176	22.45
		13M0W7D	16QAM	0.140	21.45
		12M9W7D	64QAM	0.124	20.92
		13M0W7D	256QAM	0.071	18.5
5GNR n48 (20M)	3560.01 - 3690.00	18M0G7D	PI/2 BPSK	0.170	22.31
		17M9G7D	QPSK	0.173	22.37
		18M0W7D	16QAM	0.139	21.43
		17M9W7D	64QAM	0.123	20.89
		18M0W7D	256QAM	0.079	18.98
5GNR n48 (30M)	3565.02 - 3684.99	27M0G7D	PI/2 BPSK	0.166	22.19
		26M9G7D	QPSK	0.172	22.35
		27M1W7D	16QAM	0.145	21.61
		26M9W7D	64QAM	0.121	20.81
		26M9W7D	256QAM	0.077	18.85
5GNR n48 (40M)	3570.00 - 3679.98	36M0G7D	PI/2 BPSK	0.175	22.42
		35M9G7D	QPSK	0.174	22.41
		36M0W7D	16QAM	0.136	21.34
		35M9W7D	64QAM	0.125	20.98
		36M0W7D	256QAM	0.078	18.94

1.2. EUT Information

EUT Power Type	From DC power supply
----------------	----------------------

1.3. Testing Location Information

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

Test Laboratory	DEKRA Testing and Certification Co., Ltd.
	Linkou Laboratory
Address	No.5-22, Ruishukeng Linkou District, New Taipei City, 24451, 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
Conducted Emission	Temperature (°C)	15~35 °C	21.4~22.5 °C	2025/12/01~2026/03/05	Joe Wang
	Humidity (%RH)	20~75 %	54.3~55.2 %		
Radiated Emission	Temperature (°C)	15~35 °C	19.8~20.5°C	2026/02/09~2026/03/02	Ashton Chiu Rock Liang
	Humidity (%RH)	20~75 %	51.5~63.8 %		

1.4. Measurement Uncertainty

Uncertainties have been calculated according to the DEKRA internal document with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

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
RF Output Power	± 1.30 dB
Occupied Bandwidth	± 1580.61 Hz
Peak to Average Power Ratio	± 2.12 dB
Conducted Band Edge	± 2.12 dB
Spurious Emission at Antenna Port	± 2.12 dB
Radiated Spurious Emissions	± 4.72 dB for 30MHz~180MHz ± 2.99 dB for 180MHz~1GHz ± 2.98 dB for 1GHz~18GHz ± 2.99 dB for 18GHz~40GHz
Frequency Stability	± 0.52 ppm

1.5. List of Test Equipment

Conducted / HY-SR04

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510357	2025/05/05	2026/05/04
Spectrum Analyzer	KEYSIGHT	N9020B	MY59050510	2025/08/13	2026/08/12
Temperature & Humidity Test Chamber	KSON	THS-D4T-100	A0606	2026/02/24	2027/02/23
DC Power Supply	GWInstek	SPD-3606	GEQ820915	2025/07/08	2026/07/07
DC Power Supply	Agilent	E3646A	MY53020023	2025/10/27	2026/10/26
Radio Communication Analyzer	Anritsu	MT8821C	6262044740	2025/06/23	2026/06/22
Radio communication test station	R&S	CMW500	157304	2025/03/13	2026/03/12
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321672	2025/06/30	2026/06/29

Radiated / HY-CB03

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-0675	2025/08/14	2027/08/13
Horn Antenna	Com-Power	AH-840	101100	2025/10/07	2027/10/06
Horn Antenna	RF SPIN	DRH18-E	210507A18ES	2024/05/15	2026/05/14
Pre-Amplifier	SGH	SGH0301-9	20211007-11	2026/01/10	2027/01/09
Pre-Amplifier	SGH	PRAMP118	20200701	2026/01/10	2027/01/09
Pre-Amplifier	EMCI	EMC184045SE	980369	2026/01/10	2027/01/09
Coaxial Cable	EMCI	EMC102-KM-KM-600	160311	2026/01/10	2027/01/09
Coaxial Cable	SGH	HC360-2.92M/2.92M-7.0M	202108-1	2026/01/10	2027/01/09
EMI Test Receiver	R&S	ESR3	102793	2025/12/01	2026/11/30
Spectrum Analyzer	R&S	FSV3044	101113	2025/12/23	2026/12/22
Coaxial Cable	SGH	SGH18	2021005-1	2026/01/10	2027/01/09
Coaxial Cable	SGH	SGH18	202108-4	2026/01/10	2027/01/09
Coaxial Cable	SGH	HA800	GD20110223-1	2026/01/10	2027/01/09
Coaxial Cable	SGH	HA800	GD20110222-8	2026/01/10	2027/01/09
Radio communication test station	R&S	CMW500	157304	2025/03/13	2026/03/12
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59321672	2025/06/30	2026/06/29
DC Power Supply	KEYSIGHT	E36234A	MY59001234	2025/10/27	2026/10/26

Note: Test Software Version: e3 230303 dekra V9.

2. Test Configuration of EUT

2.1. Test Condition

EUT Operational Condition	
Testing Voltage	DC 4.1V

2.2. Measurement Configuration

Test Mode	Mode 1: LTE B48(42) Mode 2: 5G NR n48
Note: - Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty. - LTE B48 overlaps the entire frequency range of LTE B42. - For LTE B48(42) and 5GNR n48, RF output power was evaluated for both MIMO 1 and MIMO 2. Since MIMO 2 represents the worst-case condition, all test items were performed under MIMO 2. - According to the manufacturer's declaration, when the device is connected to the antenna (Brand: Molex, Model No.: 5A7F527), the LTE B48 and 5GNR n48 supports a power backoff mechanism. The transmit power is backed off by 7 dB for MIMO 1 and MIMO 2. Therefore, the EIRP for LTE B48 and 5GNR n48 takes this backoff factor into account. - The EUT was performed at X axis, Y axis and Z axis position for radiated spurious emission test. The worst case was found at X axis, so the measurement will follow this same test configuration. - The device was tested under all configurations, bandwidths, RB configurations and modulations. The worst-case results are presented in the table below.	

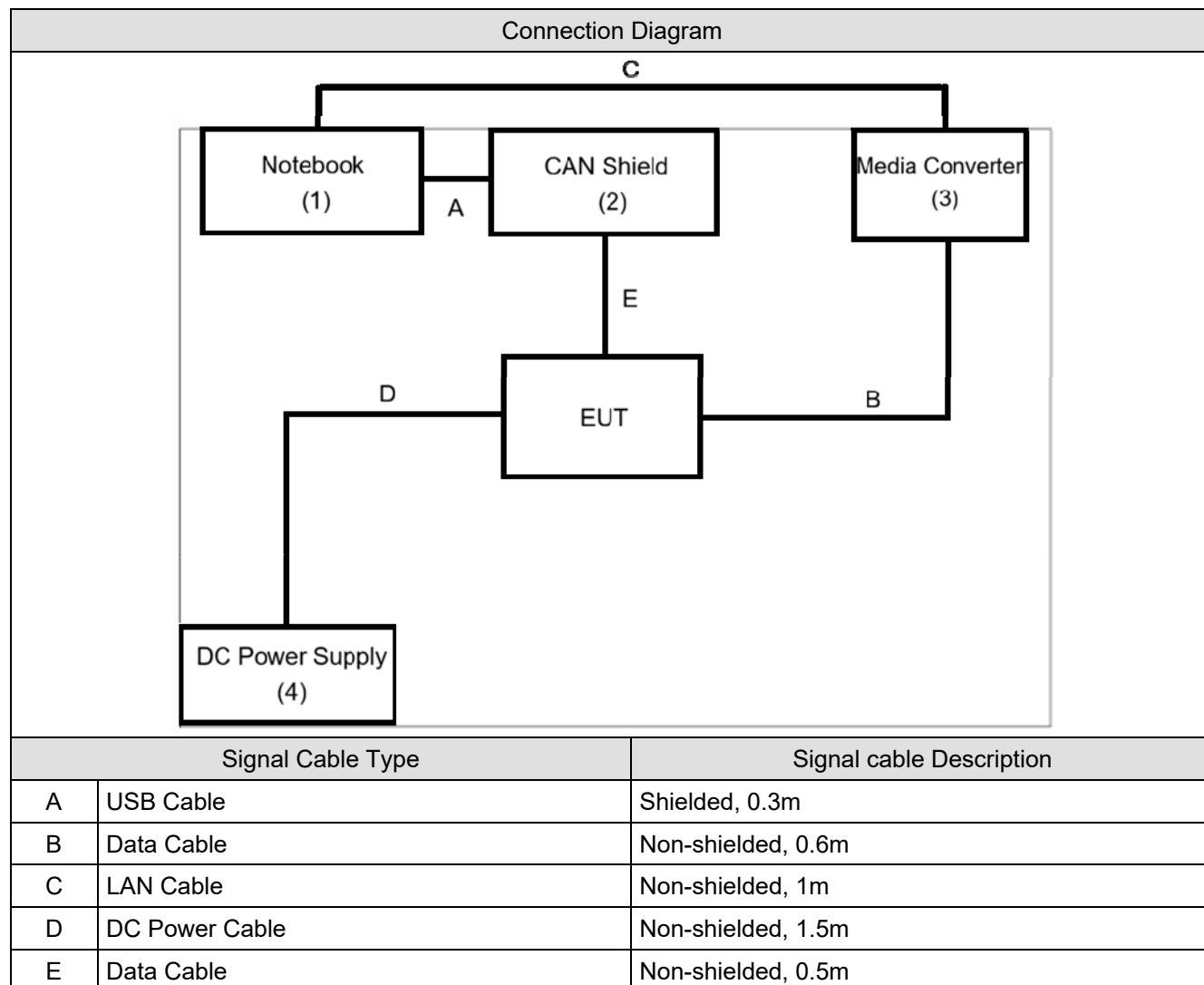
Worst Case – LTE B48(42)				
Test Item	Modulation	Bandwidth	RB Size	Test Channel
RF Output Power	QPSK / 16QAM / 64QAM / 256QAM	All supported	1RB, Mid RB, Full RB	Low, Mid, High
Occupied Bandwidth	QPSK / 16QAM / 64QAM / 256QAM	All supported	Full RB	Mid
Conducted Band Edge	QPSK	All supported	1RB, Full RB	Low, Mid, High
Peak to Average Power Ratio	QPSK / 16QAM / 64QAM / 256QAM	All supported	Full RB	Mid
Spurious Emission at Antenna Port	QPSK	All supported	1RB	Low, Mid, High
Radiated Spurious Emissions	QPSK	Max. output power combination		Low, Mid, High
Frequency Stability	QPSK	All supported	Full RB	Mid

Worst Case – 5G NR n48						
Test Item	Mode	Waveform	Modulation	Bandwidth	RB Size	Test Channel
RF Output Power	SA	DFT-s-OFDM, CP-OFDM	pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	All supported	1RB, Mid RB, Full RB	Low, Mid, High
Occupied Bandwidth	SA	DFT-s-OFDM	pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	All supported	Full RB	Mid
Conducted Band Edge	SA	DFT-s-OFDM	pi/2 BPSK	All supported	1RB, Full RB	Low, Mid, High
Peak to Average Power Ratio	SA	DFT-s-OFDM	pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	All supported	Full RB	Mid
Spurious Emission at Antenna Port	SA	DFT-s-OFDM	pi/2 BPSK	All supported	1RB	Low, Mid, High
Radiated Spurious Emissions	SA	DFT-s-OFDM	Max. output power combination			Low, Mid, High
Frequency Stability	SA	DFT-s-OFDM	pi/2 BPSK	All supported	Full RB	Mid

2.3. Tested System Details

No.	Equipment	Brand Name	Model No.	Serial No.
1	Notebook	DELL	P62G	CY9FJC2
2	CAN Shield	N/A	N/A	N/A
3	Media Converter	N/A	N/A	N/A
4	DC Power Supply	KEYSIGHT	E36234A	MY59001234

2.4. Configuration of Tested System

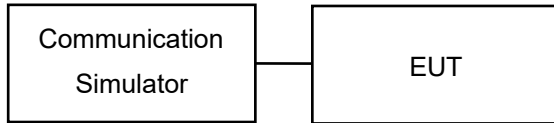


2.5. EUT Operating Procedures

1.	Setup the EUT as shown in Section 2.4.
2.	Setup the EUT connect to the base station.
3.	Setup the parameter (band, channel, frequency).
4.	The EUT will continue receive the signal from WWAN function.
5.	Verify that the EUT works properly.

3. RF Output Power

3.1. Test Setup



3.2. Test Limit

Type	Device	Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
X	End User Device	23	N/A
	Category A CBSD	30	20
	Category B CBSD	47	37

3.3. Test Procedure

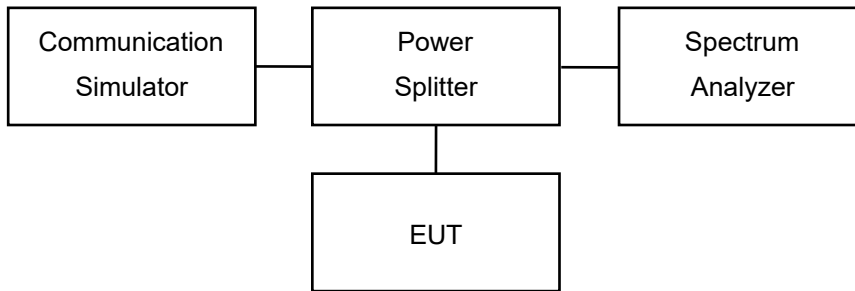
The EUT is tested with maximum rated TX power via the Base Station simulator, and the output power was measured at the antenna terminals of the EUT.

3.4. Test Result of RF Output Power

Refer as Appendix A

4. Occupied Bandwidth

4.1. Test Setup



4.2. Test Limit

N/A

4.3. Test Procedures

The EUT is tested with maximum rated TX power via the Base Station simulator, and the occupied bandwidth was measured at the antenna terminals of the EUT.

The Resolution BW of the analyzer is set to 1 %~5% of the emission bandwidth. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

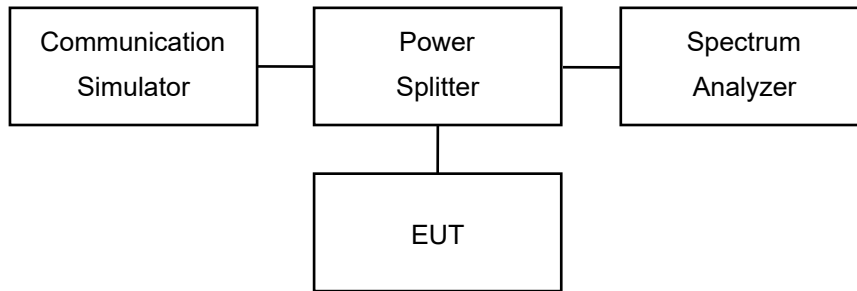
The plots below show the resultant display from the Spectrum Analyser.

4.4. Test Result of Occupied Bandwidth

Refer as Appendix B

5. Conducted Band Edge

5.1. Test Setup



5.2. Test Limit

- (1) Within 0 MHz to 10 MHz above and below the assigned channel ≤ -13 dBm/MHz.
- (2) Greater than 10 MHz above and below the assigned channel ≤ -25 dBm/MHz.
- (3) Any emission below 3530 MHz and above 3720 MHz ≤ -40 dBm/MHz.

5.3. Test Procedure

In accordance with Part 96.41 at least 1% of the emission bandwidth was used for the resolution and video bandwidths up to 1MHz away from the Block Edge. At greater than 1MHz, the resolution and video bandwidth were increased to 1MHz/3MHz.

The reference power and path losses of all channels used for testing in each frequency block were measured.

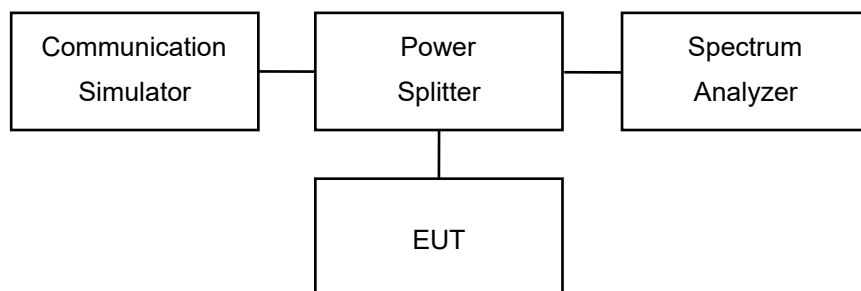
5.4. Test Result of Conducted Band Edge

Refer as Appendix C

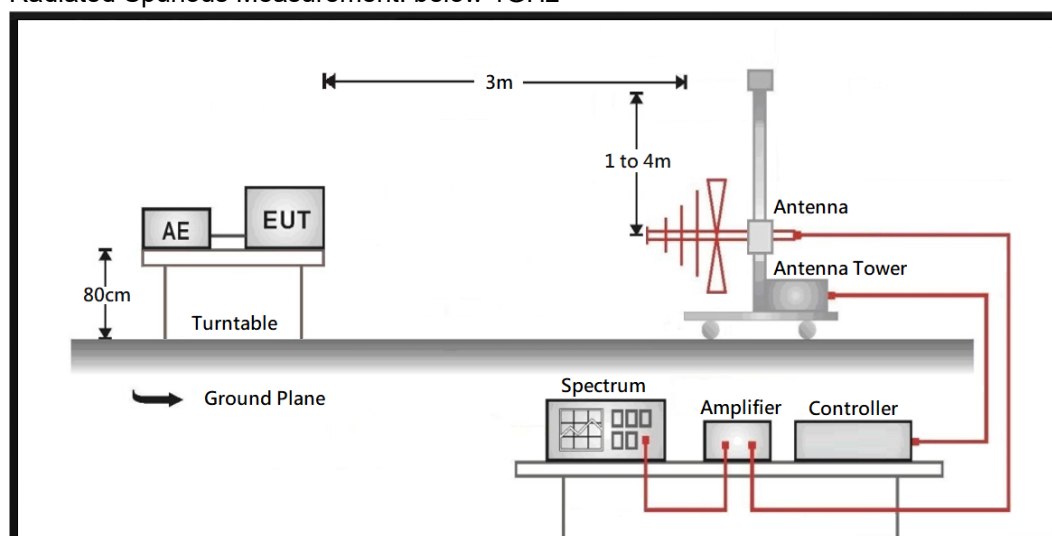
6. Spurious Emission

6.1. Test Setup

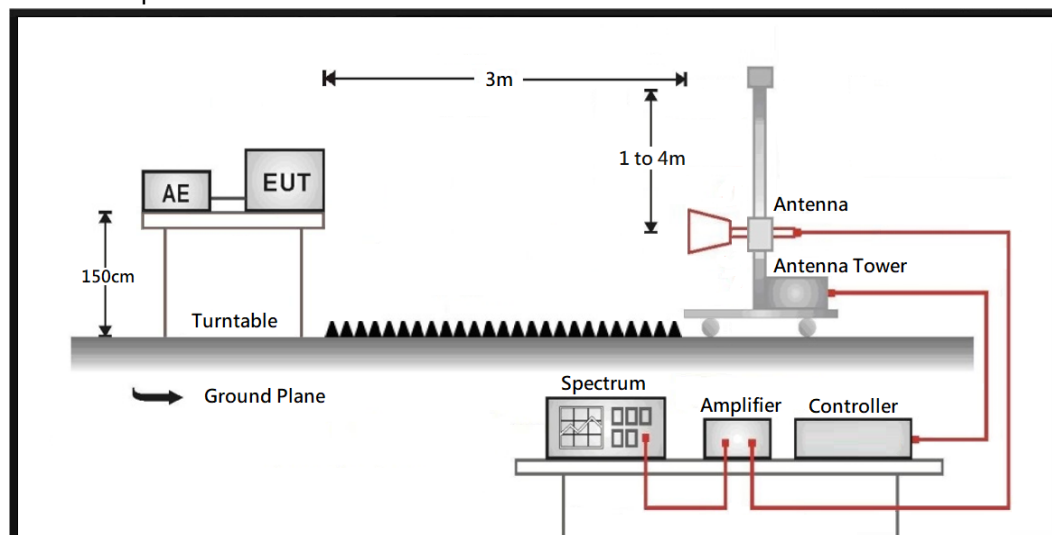
Conducted Spurious Emission.



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



6.2. Test Limit

Limit: < -40 dBm/MHz

6.3. Test Procedure

In accordance with Part 2.1051, 96.41, the spurious emissions from the antenna terminal were measured. The transmitter output power was attenuated using a combination of filters and attenuators and the frequency spectrum investigated from 30MHz to 40GHz. The EUT was set to transmit on full power. The EUT was tested on Low, middle and High channels for both power levels. The resolution and video bandwidth was set to 1MHz/3MHz in accordance with Part 2.1051, 96.41. The spectrum analyzer detector was set to Max Hold. In addition, measurements were made up to the 10th harmonic of the fundamental. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

- (1) The EUT is tested with maximum rated TX power via the Base Station simulator.
- (2) The EUT is tested in three orthogonal planes, The worst case was showing in this report.

The EUT is placed on a turn table which is 0.8 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.

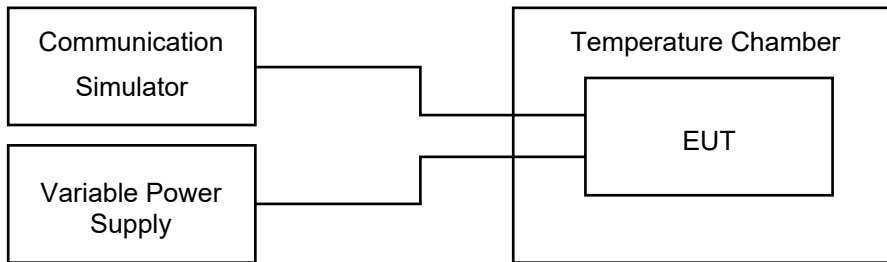
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to TIA/EIA 603-E on radiated measurement.

6.4. Test Result of Spurious Emission

Refer as Appendix D

7. Frequency Stability

7.1. Test Setup



7.2. Test Limit

Limit: < ± 2.5 ppm

7.3. Test Procedures

The frequency stability of transmitter is measured by:

- (a) Temperature: The temperature is varied from -30°C to 50°C in 10°C increment using a standard temperature & Humidity chamber.
- (b) Primary Supply Voltage: The primary supply voltage is varied 85% to 115% of the nominal value for non hand-carried equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating endpoint which shall be specified by the manufacturer.

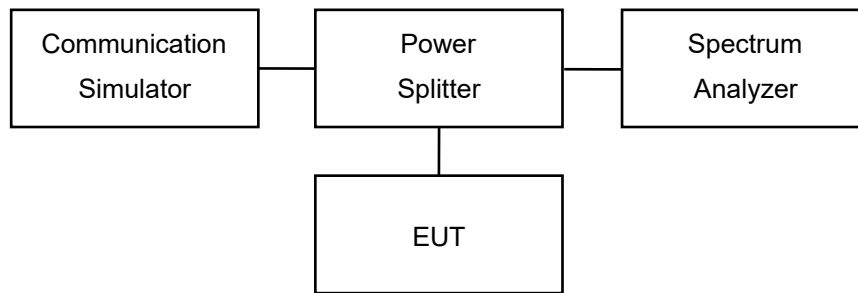
The EUT was connected via the base station simulator. Universal Radio Communication Tester, was used to measure The Frequency Error. The maximum result of measurements was recorded.

7.4. Test Result of Frequency Stability

Refer as Appendix E

8. Peak to Average Power Ratio

8.1. Test Setup



8.2. Test Limit

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure.

8.3. Test Procedure

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Set the measurement interval as follows:
 - 1) for continuous transmissions, set to 1 ms,
 - 2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
- e) Record the maximum PAPR level associated with a probability of 0.1%.

8.4. Test Result of Peak to Average Power Ratio

Refer as Appendix F