

Test Report No:
2610461R-RFUSV24S-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 22 FCC CFR Title 47 Part 24 FCC CFR Title 47 Part 27 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

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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.

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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	2026/03/13

Summary of Test Result

Report Clause	Test Items	Band	Ref Std. Clause	Limit	Result (PASS/FAIL)	Remark
3	RF Output Power	n2, n25	§2.1033 §2.1046 §24.232	< 2 Watts EIRP	PASS	-
		n5	§2.1033 §2.1046 §22.913	< 7 Watts ERP	PASS	-
		n7, n41	§2.1033 §2.1046 §27.50	< 2 Watts EIRP	PASS	-
		n12, n71	§2.1033 §2.1046 §27.50	< 3 Watts ERP	PASS	-
		n66, n77, n78	§2.1033 §2.1046 §27.50	< 1 Watts EIRP	PASS	-
4	Occupied Bandwidth	n2, n5, n7, n12, n25, n41, n66, n71, n77, n78	§2.1049	N/A	PASS	-
5	Peak to Average Power Ratio	n2, n25	§24.232	$\leq$ 13 dB	PASS	-
		n5	§22.913	$\leq$ 13 dB		
		n7, n12, n41, n66, n71, n77, n78	§27.50	$\leq$ 13 dB	PASS	-
6	Spurious Emission	n2, n25	§2.1053 §24.238	< -13 dBm	PASS	-
		n5	§22.917	< -13 dBm	PASS	-
		n7, n41	§27.53	< -25 dBm	PASS	-
		n12, n66, n71, n77, n78	§27.53	< -13 dBm	PASS	-
7	Conducted Band Edge	n2, n25	§24.238	< -13 dBm	PASS	-
		n5	§2.1053 §22.917	< -13 dBm	PASS	-
		n7, n41	§2.1053 §27.53	< 5 MHz: -10 dBm 5 MHz-X MHz: -13 dBm >X MHz: -25 dBm	PASS	-
		n12, n66, n71, n77, n78	§2.1053 §27.53	< -13 dBm	PASS	-

8	Frequency Stability	n2, n25	§2.1055 §24.235	± 2.5 ppm	PASS	-
		n5	§2.1055 §22.355	± 2.5 ppm	PASS	-
		n7, n12, n41, n66, n71, n77, n78	§2.1055 §27.54	± 2.5 ppm	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	5G NR n2	1850~1910 MHz (Uplink) 1930~1990 MHz (Downlink)	
	5G NR n5	824~849 MHz (Uplink) 869~894 MHz (Downlink)	
	5G NR n7	2500~2570 MHz (Uplink) 2620~2690 MHz (Downlink)	
	5G NR n12	699~716 MHz (Uplink) 729~746 MHz (Downlink)	
	5G NR n25	1850~1915 MHz (Uplink) 1930~1995 MHz (Downlink)	
	5G NR n41	2496~2690 MHz (Uplink) 2496~2690 MHz (Downlink)	
	5G NR n66	1710~1780 MHz (Uplink) 2110~2200 MHz (Downlink)	
	5G NR n71	663~698 MHz (Uplink) 617~652 MHz (Downlink)	
	5G NR n77 (Part 27Q)	3450~3550 MHz (Uplink) 3450~3550 MHz (Downlink)	
	5G NR n77 (Part 27O)	3700~3980 MHz (Uplink) 3700~3980 MHz (Downlink)	
	5G NR n78	3700~3800 MHz (Uplink) 3700~3800 MHz (Downlink)	
Bandwidth	5G NR n2	SCS: 15 kHz	5 / 10 / 15 / 20 MHz
	5G NR n5	SCS: 15 kHz	5 / 10 / 15 / 20 MHz
	5G NR n7	SCS: 15 kHz	5 / 10 / 15 / 20 / 25 / 30 / 40 / 50 MHz
	5G NR n12	SCS: 15 kHz	5 / 10 / 15 MHz
	5G NR n25	SCS: 15 kHz	5 / 10 / 15 / 20 / 25 / 30 / 35 / 40 MHz
	5G NR n41	SCS: 30 kHz	10 / 15 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 MHz
	5G NR n66	SCS: 15 kHz	5 / 10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 MHz
	5G NR n71	SCS: 15 kHz	5 / 10 / 15 / 20 MHz
	5G NR n77	SCS: 30 kHz	10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 MHz
	5G NR n78	SCS: 30 kHz	10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 MHz
Type of Modulation	DFT-s-OFDM (pi/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)		

IMEI No.	359918921148290
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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

Note: Since the Internal BUA uses the same antenna port as MIMO 1, only radiated testing was evaluated.

Antenna Information				
Item.	Brand Name	Model No.	Type	Gain (dBi)
1	molex	5A7F527 (MIMO 1)	PIFA	1.90 dBi for 5GNR n2 -2.60 dBi for 5GNR n5 2.00 dBi for 5GNR n7 -5.40 dBi for 5GNR n12 1.90 dBi for 5GNR n25 2.00 dBi for 5GNR n41 3.30 dBi for 5GNR n66 -4.90 dBi for 5GNR n71 5.10 dBi for 5GNR n77 (3450 - 3550 MHz) 6.00 dBi for 5GNR n77 (3700 - 3980 MHz) 6.00 dBi for 5GNR n78 (3700 - 3800 MHz)
		5A7F527 (MIMO 2)		5.90 dBi for 5GNR n77 (3450 - 3550 MHz) 7.40 dBi for 5GNR n77 (3700 - 3980 MHz) 7.40 dBi for 5GNR n78 (3700 - 3800 MHz)
2	AMO	BMW ICON SF (Internal BUA)	PIFA	2.99 dBi for 5GNR n2 2.09 dBi for 5GNR n5 0.45 dBi for 5GNR n7 2.99 dBi for 5GNR n25 0.45 dBi for 5GNR n41 2.72 dBi for 5GNR n66

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

Maximum Output Power – 5GNR n25(2)					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n25(2) (5M)	1852.5 - 1912.5	4M50G7D	PI/2 BPSK	0.240	23.80
		4M50G7D	QPSK	0.199	22.98
		4M49W7D	16QAM	0.160	22.05
		4M50W7D	64QAM	0.130	21.15
		4M48W7D	256QAM	0.074	18.68
5GNR n25(2) (10M)	1855.0 - 1910.0	8M98G7D	PI/2 BPSK	0.207	23.17
		8M97G7D	QPSK	0.208	23.18
		8M95W7D	16QAM	0.175	22.43
		8M95W7D	64QAM	0.126	21.01
		8M95W7D	256QAM	0.076	18.78
5GNR n25(2) (15M)	1857.5 - 1907.5	13M4G7D	PI/2 BPSK	0.215	23.33
		13M4G7D	QPSK	0.212	23.26
		13M4W7D	16QAM	0.173	22.38
		13M4W7D	64QAM	0.128	21.07
		13M5W7D	256QAM	0.072	18.57
5GNR n25(2) (20M)	1860.0 - 1905.0	17M9G7D	PI/2 BPSK	0.201	23.03
		17M9G7D	QPSK	0.205	23.11
		17M9W7D	16QAM	0.170	22.31
		17M9W7D	64QAM	0.119	20.76
		17M9W7D	256QAM	0.077	18.88
5GNR n25 (25M)	1862.5 - 1902.5	23M0G7D	PI/2 BPSK	0.193	22.85
		22M9G7D	QPSK	0.198	22.96
		23M0W7D	16QAM	0.159	22.02
		23M0W7D	64QAM	0.121	20.82
		22M9W7D	256QAM	0.073	18.63
5GNR n25 (30M)	1865.0 –1900.0	28M7G7D	PI/2 BPSK	0.196	22.92
		28M7G7D	QPSK	0.200	23.01
		28M7W7D	16QAM	0.161	22.07
		28M7W7D	64QAM	0.115	20.59
		28M7W7D	256QAM	0.076	18.83

5GNR n25 (35M)	1867.5 –1897.5	32M3G7D	PI/2 BPSK	0.200	23.01
		32M3G7D	QPSK	0.201	23.03
		32M3W7D	16QAM	0.162	22.09
		32M3W7D	64QAM	0.116	20.66
		32M3W7D	256QAM	0.080	19.03
5GNR n25 (40M)	1870.0 –1895.0	38M7G7D	PI/2 BPSK	0.196	22.93
		38M7G7D	QPSK	0.199	22.99
		38M7W7D	16QAM	0.163	22.13
		38M7W7D	64QAM	0.117	20.67
		38M8W7D	256QAM	0.075	18.76

Maximum Output Power – 5GNR n5					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n5 (5M)	826.5 - 846.5	4M58G7D	PI/2 BPSK	0.187	22.71
		4M58G7D	QPSK	0.186	22.70
		4M59W7D	16QAM	0.157	21.97
		4M57W7D	64QAM	0.111	20.45
		4M57W7D	256QAM	0.084	19.24
5GNR n5 (10M)	829.0 - 844.0	9M00G7D	PI/2 BPSK	0.187	22.71
		8M98G7D	QPSK	0.196	22.92
		8M96W7D	16QAM	0.156	21.93
		8M94W7D	64QAM	0.116	20.64
		8M98W7D	256QAM	0.070	18.44
5GNR n5 (15M)	831.5 - 841.5	13M4G7D	PI/2 BPSK	0.179	22.53
		13M4G7D	QPSK	0.186	22.69
		13M4W7D	16QAM	0.157	21.97
		13M4W7D	64QAM	0.103	20.12
		13M4W7D	256QAM	0.075	18.73
5GNR n5 (20M)	834.0 - 839.0	17M9G7D	PI/2 BPSK	0.183	22.62
		17M9G7D	QPSK	0.179	22.52
		17M9W7D	16QAM	0.151	21.79
		18M0W7D	64QAM	0.120	20.78
		18M0W7D	256QAM	0.076	18.79

Maximum Output Power – 5GNR n7					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n7 (5M)	2502.5 - 2567.5	4M49G7D	PI/2 BPSK	0.195	22.91
		4M49G7D	QPSK	0.196	22.92
		4M50W7D	16QAM	0.155	21.91
		4M47W7D	64QAM	0.126	21.01
		4M48W7D	256QAM	0.071	18.51
5GNR n7 (10M)	2505.0 - 2565.0	8M97G7D	PI/2 BPSK	0.195	22.89
		8M96G7D	QPSK	0.206	23.14
		8M98W7D	16QAM	0.158	21.99
		8M98W7D	64QAM	0.120	20.78
		8M94W7D	256QAM	0.073	18.65
5GNR n7 (15M)	2507.5 - 2562.5	13M5G7D	PI/2 BPSK	0.196	22.92
		13M5G7D	QPSK	0.200	23.02
		13M4W7D	16QAM	0.163	22.12
		13M5W7D	64QAM	0.112	20.49
		13M5W7D	256QAM	0.074	18.71
5GNR n7 (20M)	2510.0 - 2560.0	18M0G7D	PI/2 BPSK	0.195	22.89
		17M9G7D	QPSK	0.200	23.01
		17M9W7D	16QAM	0.163	22.11
		17M9W7D	64QAM	0.111	20.45
		17M9W7D	256QAM	0.067	18.29
5GNR n7 (25M)	2512.5 - 2557.5	23M0G7D	PI/2 BPSK	0.191	22.81
		23M0G7D	QPSK	0.189	22.76
		23M0W7D	16QAM	0.157	21.96
		22M9W7D	64QAM	0.109	20.38
		23M0W7D	256QAM	0.072	18.57
5GNR n7 (30M)	2515.0 –2555.0	28M7G7D	PI/2 BPSK	0.184	22.64
		28M7G7D	QPSK	0.182	22.59
		28M7W7D	16QAM	0.155	21.91
		28M8W7D	64QAM	0.112	20.48
		28M7W7D	256QAM	0.071	18.54

5GNR n7 (40M)	2520.0 –2550.0	38M7G7D	PI/2 BPSK	0.185	22.68
		38M7G7D	QPSK	0.190	22.79
		38M7W7D	16QAM	0.157	21.97
		38M7W7D	64QAM	0.112	20.49
		38M8W7D	256QAM	0.070	18.47
5GNR n7 (50M)	2525.0 –2545.0	48M6G7D	PI/2 BPSK	0.187	22.73
		48M5G7D	QPSK	0.189	22.76
		48M5W7D	16QAM	0.161	22.08
		48M5W7D	64QAM	0.106	20.25
		48M5W7D	256QAM	0.072	18.55

Maximum Output Power – 5GNR n12					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n12 (5M)	701.5 - 713.5	4M48G7D	PI/2 BPSK	0.207	23.16
		4M49G7D	QPSK	0.215	23.32
		4M49W7D	16QAM	0.197	22.95
		4M49W7D	64QAM	0.115	20.60
		4M47W7D	256QAM	0.086	19.32
5GNR n12 (10M)	704.0 - 711.0	8M97G7D	PI/2 BPSK	0.212	23.27
		8M97G7D	QPSK	0.216	23.35
		8M96W7D	16QAM	0.179	22.52
		8M99W7D	64QAM	0.120	20.78
		8M96W7D	256QAM	0.081	19.11
5GNR n12 (15M)	706.5 - 708.5	13M4G7D	PI/2 BPSK	0.205	23.12
		13M5G7D	QPSK	0.209	23.21
		13M4W7D	16QAM	0.191	22.81
		13M5W7D	64QAM	0.124	20.92
		13M4W7D	256QAM	0.084	19.24

Maximum Output Power – 5GNR n41					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n41 (10M)	2501.01 - 2685.00	8M63G7D	PI/2 BPSK	0.200	23.02
		8M65G7D	QPSK	0.203	23.07
		8M64W7D	16QAM	0.165	22.18
		8M62W7D	64QAM	0.117	20.68
		8M64W7D	256QAM	0.071	18.52
5GNR n41 (15M)	2503.50 - 2682.48	12M9G7D	PI/2 BPSK	0.207	23.17
		13M0G7D	QPSK	0.205	23.12
		12M9W7D	16QAM	0.169	22.27
		12M9W7D	64QAM	0.114	20.56
		12M9W7D	256QAM	0.069	18.38
5GNR n41 (20M)	2506.02 - 2679.99	18M0G7D	PI/2 BPSK	0.201	23.04
		17M9G7D	QPSK	0.210	23.22
		17M9W7D	16QAM	0.155	21.91
		18M0W7D	64QAM	0.113	20.52
		18M0W7D	256QAM	0.071	18.54
5GNR n41 (30M)	2511.00 - 2674.98	26M9G7D	PI/2 BPSK	0.193	22.86
		26M9G7D	QPSK	0.201	23.03
		26M9W7D	16QAM	0.163	22.12
		26M9W7D	64QAM	0.108	20.32
		27M0W7D	256QAM	0.074	18.67
5GNR n41 (40M)	2516.01 - 2670.00	36M0G7D	PI/2 BPSK	0.203	23.07
		36M1G7D	QPSK	0.203	23.07
		35M9W7D	16QAM	0.162	22.09
		35M8W7D	64QAM	0.107	20.30
		36M0W7D	256QAM	0.071	18.52
5GNR n41 (50M)	2521.02 – 2664.99	45M9G7D	PI/2 BPSK	0.199	22.99
		46M2G7D	QPSK	0.196	22.93
		45M9W7D	16QAM	0.156	21.92
		45M9W7D	64QAM	0.112	20.48
		45M9W7D	256QAM	0.065	18.14

5GNR n41 (60M)	2526.00 – 2659.98	58M1G7D	PI/2 BPSK	0.201	23.04
		58M2G7D	QPSK	0.198	22.97
		58M1W7D	16QAM	0.155	21.91
		58M1W7D	64QAM	0.107	20.28
		58M2W7D	256QAM	0.065	18.15
5GNR n41 (70M)	2531.01 – 2655.00	64M7G7D	PI/2 BPSK	0.193	22.86
		64M9G7D	QPSK	0.192	22.83
		64M8W7D	16QAM	0.147	21.66
		64M8W7D	64QAM	0.110	20.43
		64M9W7D	256QAM	0.068	18.35
5GNR n41 (80M)	2536.02 – 2649.99	77M5G7D	PI/2 BPSK	0.201	23.03
		77M7G7D	QPSK	0.202	23.06
		77M8W7D	16QAM	0.152	21.82
		77M7W7D	64QAM	0.109	20.39
		77M7W7D	256QAM	0.071	18.51
5GNR n41 (90M)	2541.00 – 2644.98	87M4G7D	PI/2 BPSK	0.205	23.11
		87M7G7D	QPSK	0.203	23.08
		87M5W7D	16QAM	0.155	21.91
		87M6W7D	64QAM	0.100	20.02
		87M4W7D	256QAM	0.068	18.34
5GNR n41 (100M)	2546.01 – 2640.00	97M3G7D	PI/2 BPSK	0.204	23.09
		97M2G7D	QPSK	0.206	23.14
		97M3W7D	16QAM	0.150	21.77
		97M2W7D	64QAM	0.116	20.66
		97M3W7D	256QAM	0.070	18.46

Maximum Output Power – 5GNR n66					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n66 (5M)	1712.5 - 1777.5	4M58G7D	PI/2 BPSK	0.233	23.67
		4M57G7D	QPSK	0.240	23.81
		4M61W7D	16QAM	0.198	22.96
		4M57W7D	64QAM	0.131	21.18
		4M60W7D	256QAM	0.087	19.42

5GNR n66 (10M)	1715.0 - 1775.0	8M99G7D	PI/2 BPSK	0.236	23.72
		8M93G7D	QPSK	0.233	23.68
		8M98W7D	16QAM	0.187	22.71
		8M94W7D	64QAM	0.137	21.38
		8M99W7D	256QAM	0.085	19.31
5GNR n66 (15M)	1717.5 - 1772.5	13M4G7D	PI/2 BPSK	0.230	23.62
		13M4G7D	QPSK	0.225	23.52
		13M4W7D	16QAM	0.178	22.51
		13M4W7D	64QAM	0.126	21.01
		13M4W7D	256QAM	0.082	19.12
5GNR n66 (20M)	1720.0 - 1770.0	17M9G7D	PI/2 BPSK	0.232	23.65
		17M9G7D	QPSK	0.233	23.67
		17M9W7D	16QAM	0.195	22.90
		17M9W7D	64QAM	0.141	21.48
		18M0W7D	256QAM	0.083	19.18
5GNR n66 (25M)	1722.5 - 1767.5	22M9G7D	PI/2 BPSK	0.219	23.41
		23M0G7D	QPSK	0.223	23.48
		23M0W7D	16QAM	0.189	22.77
		22M9W7D	64QAM	0.141	21.48
		22M9W7D	256QAM	0.079	18.97
5GNR n66 (30M)	1725.0 –1765.0	28M7G7D	PI/2 BPSK	0.221	23.45
		28M8G7D	QPSK	0.220	23.43
		28M7W7D	16QAM	0.179	22.52
		28M8W7D	64QAM	0.132	21.21
		28M7W7D	256QAM	0.082	19.15
5GNR n66 (35M)	1727.5 –1762.5	32M3G7D	PI/2 BPSK	0.222	23.47
		32M2G7D	QPSK	0.223	23.48
		32M3W7D	16QAM	0.195	22.91
		32M3W7D	64QAM	0.133	21.23
		32M2W7D	256QAM	0.082	19.16
5GNR n66 (40M)	1730.0 –1760.0	38M7G7D	PI/2 BPSK	0.222	23.46
		38M8G7D	QPSK	0.222	23.46
		38M6W7D	16QAM	0.194	22.87
		38M7W7D	64QAM	0.127	21.03
		38M7W7D	256QAM	0.082	19.12

5GNR n66 (45M)	1732.5 –1757.5	43M1G7D	PI/2 BPSK	0.224	23.50
		43M0G7D	QPSK	0.224	23.51
		43M0W7D	16QAM	0.194	22.87
		43M1W7D	64QAM	0.134	21.28
		43M2W7D	256QAM	0.077	18.87

Maximum Output Power – 5GNR n71					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n71 (5M)	665.5 - 695.5	4M56G7D	PI/2 BPSK	0.215	23.32
		4M56G7D	QPSK	0.218	23.38
		4M56W7D	16QAM	0.175	22.42
		4M57W7D	64QAM	0.126	20.99
		4M56W7D	256QAM	0.090	19.53
5GNR n71 (10M)	668.0 - 693.0	8M97G7D	PI/2 BPSK	0.217	23.36
		8M98G7D	QPSK	0.219	23.40
		8M96W7D	16QAM	0.171	22.33
		8M99W7D	64QAM	0.131	21.17
		8M96W7D	256QAM	0.078	18.93
5GNR n71 (15M)	670.5 - 690.5	13M4G7D	PI/2 BPSK	0.216	23.34
		13M5G7D	QPSK	0.222	23.47
		13M5W7D	16QAM	0.182	22.59
		13M5W7D	64QAM	0.130	21.15
		13M5W7D	256QAM	0.082	19.14
5GNR n71 (20M)	673.0 - 688.0	18M0G7D	PI/2 BPSK	0.209	23.21
		18M0G7D	QPSK	0.210	23.23
		17M9W7D	16QAM	0.178	22.51
		17M9W7D	64QAM	0.133	21.23
		18M0W7D	256QAM	0.076	18.78

Maximum Output Power – 5GNR n77 (3450 - 3550 MHz)					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n77 (10M)	3455.01 - 3544.98	8M64G7D	PI/2 BPSK	0.460	26.63
		8M64G7D	QPSK	0.458	26.61
		8M59W7D	16QAM	0.373	25.72
		8M64W7D	64QAM	0.250	23.98
		8M64W7D	256QAM	0.144	21.58
5GNR n77 (15M)	3457.50 - 3542.49	12M9G7D	PI/2 BPSK	0.486	26.87
		13M0G7D	QPSK	0.491	26.91
		12M9W7D	16QAM	0.405	26.07
		12M9W7D	64QAM	0.283	24.52
		12M9W7D	256QAM	0.146	21.63
5GNR n77 (20M)	3460.02 - 3540.00	18M0G7D	PI/2 BPSK	0.489	26.89
		17M9G7D	QPSK	0.491	26.91
		17M9W7D	16QAM	0.365	25.62
		17M9W7D	64QAM	0.281	24.48
		18M0W7D	256QAM	0.153	21.84
5GNR n77 (25M)	3462.51 - 3537.48	23M0G7D	PI/2 BPSK	0.481	26.82
		22M9G7D	QPSK	0.480	26.81
		23M0W7D	16QAM	0.368	25.66
		23M0W7D	64QAM	0.248	23.95
		23M0W7D	256QAM	0.151	21.78
5GNR n77 (30M)	3465.00 - 3534.99	26M9G7D	PI/2 BPSK	0.478	26.79
		27M0G7D	QPSK	0.480	26.81
		27M0W7D	16QAM	0.384	25.84
		26M9W7D	64QAM	0.258	24.11
		27M0W7D	256QAM	0.146	21.64
5GNR n77 (40M)	3470.01 - 3529.98	35M8G7D	PI/2 BPSK	0.453	26.56
		35M9G7D	QPSK	0.461	26.64
		36M0W7D	16QAM	0.394	25.95
		36M0W7D	64QAM	0.237	23.74
		35M9W7D	256QAM	0.147	21.67

5GNR n77 (50M)	3475.02 – 3525.00	46M1G7D	PI/2 BPSK	0.474	26.76
		46M0G7D	QPSK	0.494	26.94
		46M0W7D	16QAM	0.383	25.83
		46M0W7D	64QAM	0.256	24.09
		45M9W7D	256QAM	0.152	21.83
5GNR n77 (60M)	3480.00 – 3519.99	58M3G7D	PI/2 BPSK	0.467	26.69
		58M2G7D	QPSK	0.465	26.67
		58M1W7D	16QAM	0.348	25.42
		58M2W7D	64QAM	0.237	23.75
		58M1W7D	256QAM	0.156	21.92
5GNR n77 (70M)	3485.01 – 3514.98	64M8G7D	PI/2 BPSK	0.445	26.48
		64M9G7D	QPSK	0.443	26.46
		64M8W7D	16QAM	0.337	25.27
		64M8W7D	64QAM	0.235	23.71
		64M8W7D	256QAM	0.145	21.61
5GNR n77 (80M)	3490.02 – 3510.00	77M6G7D	PI/2 BPSK	0.467	26.69
		77M7G7D	QPSK	0.434	26.37
		77M8W7D	16QAM	0.330	25.19
		77M8W7D	64QAM	0.240	23.81
		77M7W7D	256QAM	0.146	21.64
5GNR n77 (90M)	3495.00 – 3504.99	87M6G7D	PI/2 BPSK	0.450	26.53
		87M4G7D	QPSK	0.451	26.54
		87M4W7D	16QAM	0.352	25.47
		87M3W7D	64QAM	0.237	23.75
		87M6W7D	256QAM	0.156	21.92
5GNR n77 (100M)	3500.01	97M3G7D	PI/2 BPSK	0.441	26.44
		97M3G7D	QPSK	0.437	26.40
		97M2W7D	16QAM	0.327	25.15
		97M0W7D	64QAM	0.242	23.83
		97M4W7D	256QAM	0.154	21.87

Maximum Output Power – 5GNR n77(78) (3700 - 3980 MHz)					
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Conducted Output Power	
				Max. Power (W)	Max. Power (dBm)
5GNR n77 (78) (10M)	3705.00 - 3975.00	8M65G7D	PI/2 BPSK	0.440	26.43
		8M61G7D	QPSK	0.461	26.64
		8M66W7D	16QAM	0.321	25.06
		8M63W7D	64QAM	0.240	23.80
		8M63W7D	256QAM	0.149	21.73
5GNR n77 (78) (15M)	3707.52 - 3972.48	12M9G7D	PI/2 BPSK	0.446	26.49
		12M9G7D	QPSK	0.446	26.49
		12M9W7D	16QAM	0.330	25.18
		12M9W7D	64QAM	0.232	23.65
		12M9W7D	256QAM	0.143	21.55
5GNR n77 (78) (20M)	3710.01 - 3969.99	17M9G7D	PI/2 BPSK	0.435	26.38
		17M9G7D	QPSK	0.445	26.48
		17M9W7D	16QAM	0.337	25.28
		17M9W7D	64QAM	0.240	23.81
		18M0W7D	256QAM	0.146	21.64
5GNR n77 (78) (25M)	3712.50 - 3967.50	23M0G7D	PI/2 BPSK	0.442	26.45
		22M9G7D	QPSK	0.441	26.44
		23M1W7D	16QAM	0.335	25.25
		22M9W7D	64QAM	0.249	23.96
		23M0W7D	256QAM	0.158	21.99
5GNR n77 (78) (30M)	3715.02 - 3964.98	26M9G7D	PI/2 BPSK	0.451	26.54
		26M9G7D	QPSK	0.453	26.56
		26M9W7D	16QAM	0.345	25.38
		26M9W7D	64QAM	0.258	24.11
		26M9W7D	256QAM	0.156	21.92
5GNR n77 (78) (40M)	3720.00 - 3960.00	35M9G7D	PI/2 BPSK	0.450	26.53
		36M0G7D	QPSK	0.452	26.55
		35M9W7D	16QAM	0.337	25.27
		36M0W7D	64QAM	0.228	23.57
		36M0W7D	256QAM	0.157	21.95

5GNR n77 (78) (50M)	3725.01 – 3954.99	45M9G7D	PI/2 BPSK	0.459	26.62
		46M0G7D	QPSK	0.461	26.64
		46M0W7D	16QAM	0.349	25.43
		46M0W7D	64QAM	0.240	23.81
		46M0W7D	256QAM	0.156	21.93
5GNR n77 (78) (60M)	3730.02 – 3949.98	58M1G7D	PI/2 BPSK	0.445	26.48
		58M1G7D	QPSK	0.444	26.47
		57M9W7D	16QAM	0.335	25.25
		58M1W7D	64QAM	0.243	23.86
		58M0W7D	256QAM	0.146	21.63
5GNR n77 (78) (70M)	3735.00 – 3945.00	64M9G7D	PI/2 BPSK	0.443	26.46
		65M0G7D	QPSK	0.448	26.51
		64M9W7D	16QAM	0.330	25.18
		65M1W7D	64QAM	0.234	23.69
		64M8W7D	256QAM	0.141	21.49
5GNR n77 (78) (80M)	3740.01 – 3939.99	77M8G7D	PI/2 BPSK	0.444	26.47
		77M5G7D	QPSK	0.440	26.43
		77M8W7D	16QAM	0.330	25.19
		77M7W7D	64QAM	0.252	24.01
		77M7W7D	256QAM	0.154	21.87
5GNR n77 (78) (90M)	3745.02 – 3934.98	87M4G7D	PI/2 BPSK	0.444	26.47
		87M5G7D	QPSK	0.445	26.48
		87M4W7D	16QAM	0.336	25.26
		87M4W7D	64QAM	0.247	23.92
		87M4W7D	256QAM	0.148	21.69
5GNR n77 (78) (100M)	3750.00 – 3930.00	97M1G7D	PI/2 BPSK	0.442	26.45
		97M1G7D	QPSK	0.444	26.47
		97M1W7D	16QAM	0.333	25.23
		97M1W7D	64QAM	0.234	23.69
		97M2W7D	256QAM	0.147	21.66

1.2. EUT Information

EUT Power Type	From DC power supply
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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
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
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: 5G NR n25(n2) Mode 2: 5G NR n5 Mode 3: 5G NR n7 Mode 4: 5G NR n12 Mode 5: 5G NR n41 Mode 6: 5G NR n66 Mode 7: 5G NR n71 Mode 8: 5G NR n77 (3450 - 3550 MHz) Mode 9: 5G NR n77(n78) (3700 - 3980 MHz)
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Note:

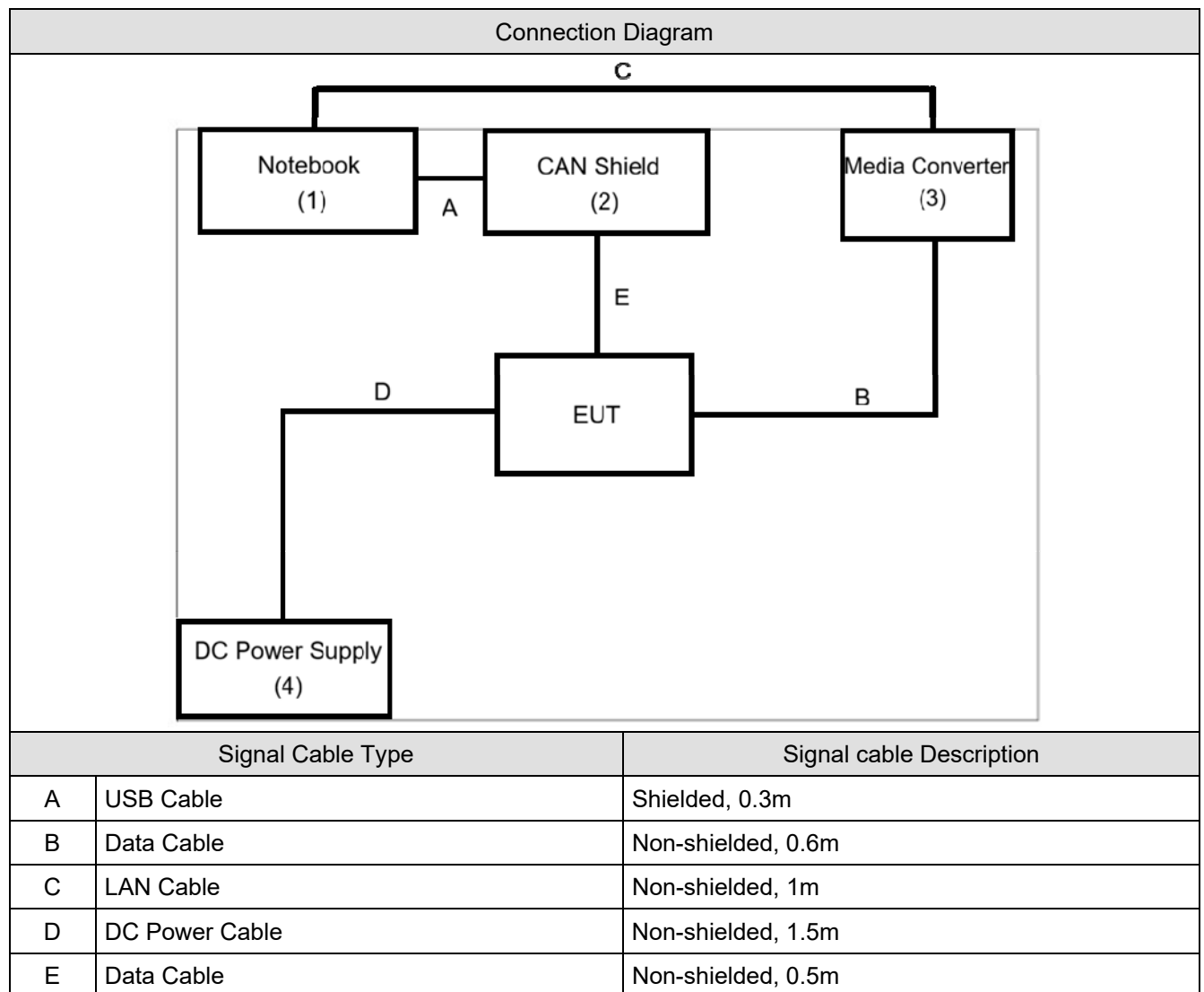
1. Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. 5GNR n25 overlaps the entire frequency range of n2.
3. 5GNR n77 overlaps the entire frequency range of n78.
4. For 5GNR n77(n78), RF output power 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.
5. According to the manufacturer's declaration, when the device is connected to the antenna (Brand: Molex, Model No.: 5A7F527), the 5GNR n77 band supports a power backoff mechanism. The transmit power is backed off by 4 dB for MIMO 1 and 5 dB for MIMO 2. Therefore, the EIRP for 5GNR n77 takes this backoff factor into account.
6. 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.
7. The device was tested under all configurations, bandwidths, RB configurations and modulations. The worst-case results are presented in the table below.

Worst Case						
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, 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

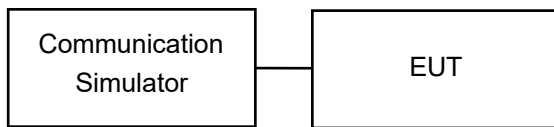


2.5. EUT Operating Procedures

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 Procedure

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum conducted RF output power under transmission mode and specific channel frequency. The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

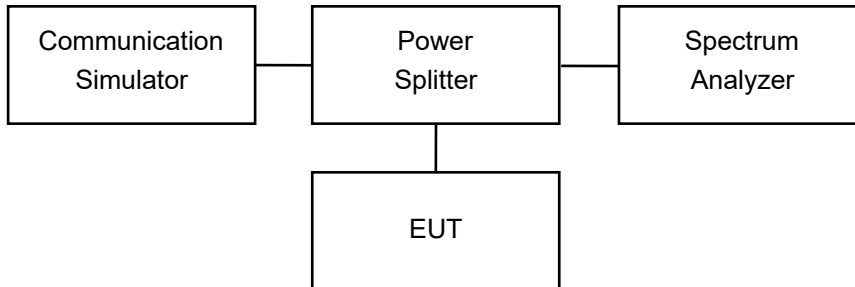
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB

3.3. Test Result of RF Output Power

Refer as Appendix A

4. Occupied Bandwidth

4.1. Test Setup



4.2. Test Procedure

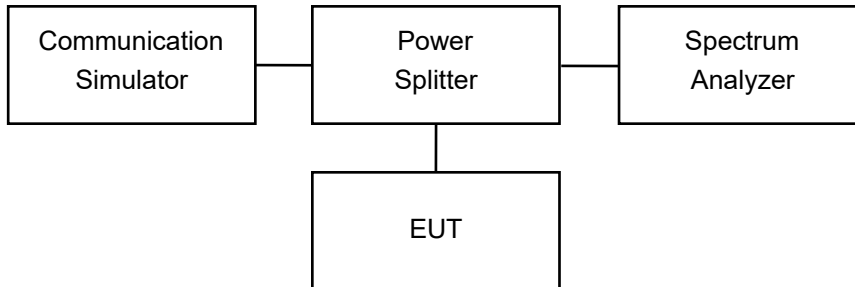
The EUT makes a call to the communication simulator. The 26dB bandwidth and 99% occupied bandwidth measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.

4.3. Test Result of Occupied Bandwidth

Refer as Appendix B

5. Peak to Average Power Ratio

5.1. Test Setup



5.2. Test Procedure

1. The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.
2. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth.
3. Set the number of counts to a value that stabilizes the measured CCDF curve.
4. Record the maximum PAPR level associated with a probability of 0.1 %.

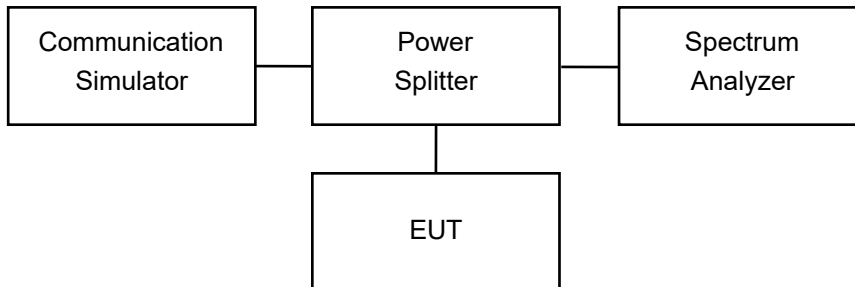
5.3. Test Result of Peak to Average Power Ratio

Refer as Appendix C

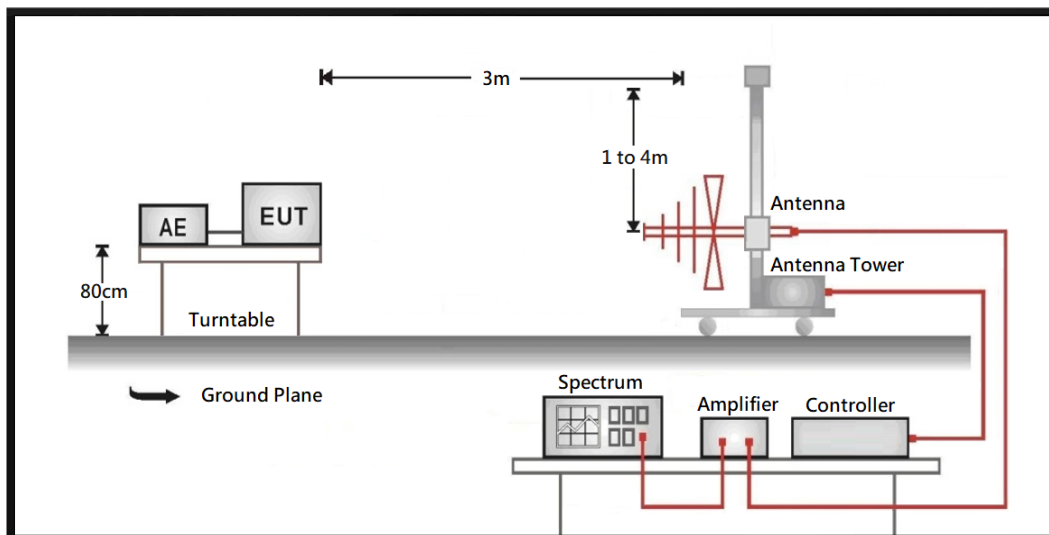
6. Spurious Emissions

6.1. Test Setup

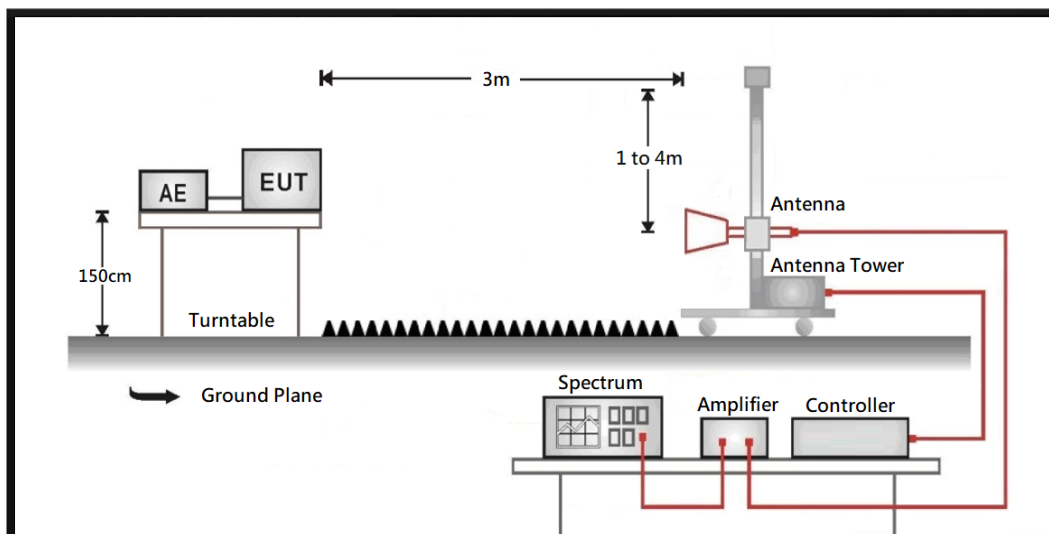
Conducted Spurious Measurement



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



6.2. Test Procedure

Conducted Spurious Measurement:

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement. The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10th harmonic.

Radiated Spurious Measurement:

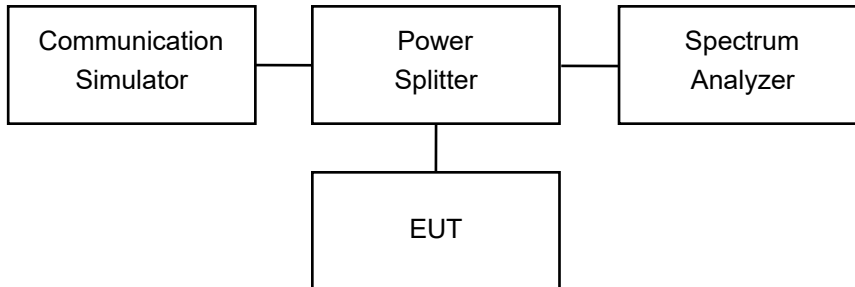
The EUT and its simulators are placed on a turn table which is 0.8 or 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations. The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10th harmonic. Taking the record of maximum spurious emission.

6.3. Test Result of Spurious Emission

Refer as Appendix D

7. Conducted Band Edge

7.1. Test Setup



7.2. Test Procedure

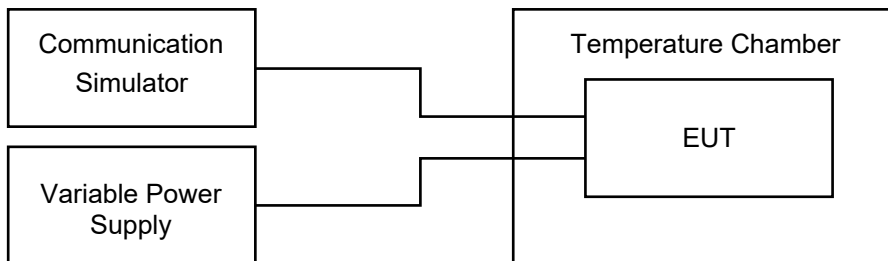
1. The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. The path loss was compensated to the results for each measurement.
2. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.

7.3. Test Result of Conducted Band Edge

Refer as Appendix E

8. Frequency Stability

8.1. Test Setup



8.2. Test Procedure

Frequency Stability under Temperature Variations:

The EUT under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a communication simulator. The EUT was placed inside the temperature chamber. Set the EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC or DC power supply to power the EUT and set the voltage to rated voltage. Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

8.3. Test Result of Frequency Stability

Refer as Appendix F