


ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT



Applicant: Telit Communications S.p.A.
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Manufacturer: Telit Wireless Solutions. Co. Ltd.
13th Fl., Shinyoung Securities Bld, 6, Gukjegeumyung-ro 8-gil,
Yeongdeungpo-gu, Seoul, 07330, South Korea

Product Name: 5G Radio Module

Brand Name: Telit Cinterion or 

Model No.: FE910C04-WW

Family Model No.: FE910C04-WWD

Model Difference: FE910C04-WW and FE910C04-WWD are the same, except for that FE910C04-WWD is Data only module obtained by different SW configuration.

Report Number: TERF2503001150ER

FCC ID RI7FE910C04WW

Date of EUT Received: March 25, 2025

Date of Test: March 26, 2025 ~ June 4, 2025

Issue Date: June 11, 2025

Approved By



Jim Chang

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26-2015 and the energy emitted by the sample EUT comply with FCC rule part 2, 22H & 24E & 27C & 90S.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2503001150ER	00	Original	June 11, 2025	Susan Lin	

Note:

- 1、The remark "" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received. And are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).

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1 GENERAL PRODUCT INFORMATION

1.1 Product Description

Product Name:	5G Radio Module
Brand Name:	Telit Cinterion or 
Model No.:	FE910C04-WW
Family Model No.:	FE910C04-WWD
Model Difference:	FE910C04-WW and FE910C04-WWD are the same, except for that FE910C04-WWD is Data only module obtained by different SW configuration.
Hardware Version:	1.00
Firmware Version:	M0V.031001
EUT Series No.:	355781700005719, 355781700007690
Power Supply:	3.8Vdc
Test Software (Name/Version):	Connected with Callbox

1.2 Operation Frequency Range

LTE Band 2			
BW (MHz)	Operation Frequency (MHz)		
1.4	1850.7	-	1909.3
3	1851.5	-	1908.5
5	1852.5	-	1907.5
10	1855.0	-	1905.0
15	1857.5	-	1902.5
20	1860.0	-	1900.0
LTE Band 4			
BW (MHz)	Operation Frequency (MHz)		
1.4	1710.7	-	1754.3
3	1711.5	-	1753.5
5	1712.5	-	1752.5
10	1715.0	-	1750.0
15	1717.5	-	1747.5
20	1720.0	-	1745.0

LTE Band 5			
BW (MHz)	Operation Frequency (MHz)		
1.4	824.7	-	848.3
3	825.5	-	847.5
5	826.5	-	846.5
10	829.0	-	844.0
LTE Band 7			
BW (MHz)	Operation Frequency (MHz)		
5	2502.5	-	2567.5
10	2505.0	-	2565.0
15	2507.5	-	2562.5
20	2510.0	-	2560.0

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LTE Band 12			
BW (MHz)	Operation Frequency (MHz)		
1.4	699.7	-	715.3
3	700.5	-	714.5
5	701.5	-	713.5
10	704.0	-	711.0
LTE Band 13			
BW (MHz)	Operation Frequency (MHz)		
5	779.5	-	784.5
10	782.0		
LTE Band 14			
BW (MHz)	Operation Frequency (MHz)		
5	790.5	-	795.5
10	793.0		
LTE Band 17			
BW (MHz)	Operation Frequency (MHz)		
5	706.5	-	713.5
10	709.0	-	711.0
LTE Band 25			
BW (MHz)	Operation Frequency (MHz)		
1.4	1850.7	-	1914.3
3	1851.5	-	1913.5
5	1852.5	-	1912.5
10	1855.0	-	1910.0
15	1857.5	-	1907.5
20	1860.0	-	1905.0
LTE Band 26			
BW (MHz)	Operation Frequency (MHz)		
1.4	824.7	-	848.3
3	825.5	-	847.5
5	826.5	-	846.5
10	829.0	-	844.0
15	831.5	-	841.5

LTE Band 26 Part 90			
BW (MHz)	Operation Frequency (MHz)		
1.4	814.7	-	823.3
3	815.5	-	822.5
5	816.5	-	821.5
10	819.0		
LTE Band 30			
BW (MHz)	Operation Frequency (MHz)		
5	2307.5	-	2312.5
10	2310.0		
LTE Band 38			
BW (MHz)	Operation Frequency (MHz)		
5	2572.5	-	2617.5
10	2575.0	-	2615.0
15	2577.5	-	2612.5
20	2580.0	-	2610.0
LTE Band 41			
BW (MHz)	Operation Frequency (MHz)		
5	2498.5	-	2687.5
10	2501.0	-	2685.0
15	2503.5	-	2682.5
20	2506.0	-	2680.0
LTE Band 42 Part 27			
BW (MHz)	Operation Frequency (MHz)		
5	3452.5	-	3547.5
10	3455.0	-	3545.0
15	3457.5	-	3542.5
20	3460.0	-	3540.0
LTE Band 43 Part 27			
BW (MHz)	Operation Frequency (MHz)		
5	3702.5	-	3797.5
10	3705.0	-	3795.0
15	3707.5	-	3792.5
20	3710.0	-	3790.0

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LTE Band 66			
BW (MHz)	Operation Frequency (MHz)		
1.4	1710.7	-	1779.3
3	1711.5	-	1778.5
5	1712.5	-	1777.5
10	1715.0	-	1775.0
15	1717.5	-	1772.5
20	1720.0	-	1770.0
LTE Band 70			
BW (MHz)	Operation Frequency (MHz)		
5	1697.5	-	1707.5
10	1700.0	-	1705.0
15	1702.5		

LTE Band 71			
BW (MHz)	Operation Frequency (MHz)		
5	665.5	-	695.5
10	668.0	-	693.0
15	670.5	-	690.5
20	673.0	-	688.0
LTE Band 106			
BW (MHz)	Operation Frequency (MHz)		
1.4	898.2	-	899.8
3	899.0		

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1.3 Antenna Designation

Antenna Type	Antenna Model No.
Monopole	TG.55.8113
Note: Transmission frequencies in this test report are only available by the above antenna(s).	

LTE Band	Frequency (MHz)	Antenna Gain (dBi)	Insertion Loss (dB)	Final Gain (dBi)
LTE Band 2	1850 ~ 1910	3.09	0.6	2.49
LTE Band 4	1710 ~ 1755	3.09	0.6	2.49
LTE Band 5	824 ~ 849	0.58	0.3	0.28
LTE Band 7	2500 ~ 2570	1.69	0.7	0.99
LTE Band 12	699 ~ 716	-1.88	0.3	-2.18
LTE Band 13	777 ~ 787	-1.88	0.3	-2.18
LTE Band 14	788 ~ 798	-1.88	0.3	-2.18
LTE Band 17	704 ~ 716	-1.88	0.3	-2.18
LTE Band 25	1850 ~ 1915	3.09	0.6	2.49
LTE Band 26_P90s	814 ~ 824	-1.88	0.3	-2.18
LTE Band 26	824 ~ 849	0.58	0.3	0.28
LTE Band 30	2305 ~ 2315	1.69	0.7	0.99
LTE Band 38	2570 ~ 2620	1.69	0.7	0.99
LTE Band 41	2496 ~ 2690	1.69	0.7	0.99
LTE Band 42	3400 ~ 3600	1.51	1.1	0.41
LTE Band 43	3600 ~ 3800	1.51	1.1	0.41
LTE Band 66	1710 ~ 1780	3.09	0.6	2.49
LTE Band 70	1695 ~ 1710	3.09	0.6	2.49
LTE Band 71	663 ~ 698	0.14	0.3	-0.16
LTE Band 106	896 ~ 901	0.58	0.3	0.28

Note: The antenna information is provided by the applicant, and the laboratory shall not be held liable for the accuracy, completeness, or reliability of any applicant-supplied data.

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1.4 Type of Emission & Max ERP/EIRP Power Measurement Result:

LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
2	1.4	1850.7	1909.3	QPSK	25.26	EIRP	0.336	1.0935	1M09G7D
				16QAM	24.40	EIRP	0.275	1.0950	1M10D7W
				64QAM	23.32	EIRP	0.215	1.0930	1M09D7W
				256QAM	20.34	EIRP	0.108	1.0951	1M10D7W
2	3	1851.5	1908.5	QPSK	25.05	EIRP	0.320	2.6998	2M70G7D
				16QAM	24.50	EIRP	0.282	2.7010	2M70D7W
				64QAM	23.40	EIRP	0.219	2.7050	2M71D7W
				256QAM	20.27	EIRP	0.106	2.6972	2M70D7W
2	5	1852.5	1907.5	QPSK	25.13	EIRP	0.326	4.5026	4M50G7D
				16QAM	24.45	EIRP	0.279	4.5025	4M50D7W
				64QAM	24.26	EIRP	0.267	4.5012	4M50D7W
				256QAM	20.33	EIRP	0.108	4.4969	4M50D7W
2	10	1855.0	1905.0	QPSK	25.18	EIRP	0.330	8.9957	9M00G7D
				16QAM	24.55	EIRP	0.285	8.9905	8M99D7W
				64QAM	24.30	EIRP	0.269	8.9889	8M99D7W
				256QAM	20.40	EIRP	0.110	9.0004	9M00D7W
2	15	1857.5	1902.5	QPSK	25.33	EIRP	0.341	13.470	13M5G7D
				16QAM	24.78	EIRP	0.301	13.472	13M5D7W
				64QAM	24.62	EIRP	0.290	13.457	13M5D7W
				256QAM	20.37	EIRP	0.109	13.484	13M5D7W
2	20	1860.0	1900.0	QPSK	25.29	EIRP	0.338	17.905	17M9G7D
				16QAM	24.56	EIRP	0.286	17.943	17M9D7W
				64QAM	24.46	EIRP	0.279	17.932	17M9D7W
				256QAM	20.18	EIRP	0.104	17.973	18M0D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
4	1.4	1710.7	1754.3	QPSK	25.22	EIRP	0.333	1.0911	1M09G7D
				16QAM	24.63	EIRP	0.290	1.0967	1M10D7W
				64QAM	23.39	EIRP	0.218	1.0964	1M10D7W
				256QAM	20.19	EIRP	0.104	1.0943	1M09D7W
4	3	1711.5	1753.5	QPSK	25.16	EIRP	0.328	2.6974	2M70G7D
				16QAM	24.45	EIRP	0.279	2.6988	2M70D7W
				64QAM	23.48	EIRP	0.223	2.6999	2M70D7W
				256QAM	20.34	EIRP	0.108	2.7023	2M70D7W
4	5	1712.5	1752.5	QPSK	25.21	EIRP	0.332	4.5012	4M50G7D
				16QAM	24.52	EIRP	0.283	4.5048	4M50D7W
				64QAM	23.31	EIRP	0.214	4.5038	4M50D7W
				256QAM	20.22	EIRP	0.105	4.4976	4M50D7W
4	10	1715.0	1750.0	QPSK	25.15	EIRP	0.327	8.9906	8M99G7D
				16QAM	24.56	EIRP	0.286	9.0105	9M01D7W
				64QAM	23.41	EIRP	0.219	8.9932	8M99D7W
				256QAM	20.28	EIRP	0.107	8.9799	8M98D7W
4	15	1717.5	1747.5	QPSK	25.35	EIRP	0.343	13.4490	13M4G7D
				16QAM	24.40	EIRP	0.275	13.4630	13M5D7W
				64QAM	23.35	EIRP	0.216	13.4530	13M5D7W
				256QAM	20.30	EIRP	0.107	13.4780	13M5D7W
4	20	1720.0	1745.0	QPSK	25.40	EIRP	0.347	17.9360	17M9G7D
				16QAM	24.52	EIRP	0.283	17.9450	17M9D7W
				64QAM	23.45	EIRP	0.221	17.9740	18M0D7W
				256QAM	20.20	EIRP	0.105	17.9820	18M0D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
5	1.4	824.7	848.3	QPSK	20.97	ERP	0.125	1.0926	1M09G7D
				16QAM	20.19	ERP	0.104	1.0913	1M09D7W
				64QAM	18.99	ERP	0.079	1.0896	1M09D7W
				256QAM	15.93	ERP	0.039	1.0904	1M09D7W
5	3	825.5	847.5	QPSK	20.78	ERP	0.120	2.6943	2M69G7D
				16QAM	20.02	ERP	0.100	2.6980	2M70D7W
				64QAM	19.19	ERP	0.083	2.6985	2M70D7W
				256QAM	15.76	ERP	0.038	2.6998	2M70D7W
5	5	826.5	846.5	QPSK	20.78	ERP	0.120	4.4906	4M49G7D
				16QAM	20.13	ERP	0.103	4.4955	4M50D7W
				64QAM	19.01	ERP	0.080	4.4929	4M49D7W
				256QAM	15.90	ERP	0.039	4.4928	4M49D7W
5	10	829.0	844.0	QPSK	20.86	ERP	0.122	8.9959	9M00G7D
				16QAM	20.21	ERP	0.105	8.9896	8M99D7W
				64QAM	19.05	ERP	0.080	8.9989	9M00D7W
				256QAM	15.88	ERP	0.039	8.9768	8M98D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
7	5	2502.5	2567.5	QPSK	23.78	EIRP	0.239	4.5076	4M51G7D
				16QAM	23.02	EIRP	0.200	4.5089	4M51D7W
				64QAM	21.96	EIRP	0.157	4.5063	4M51D7W
				256QAM	18.58	EIRP	0.072	4.5002	4M50D7W
7	10	2505.0	2565.0	QPSK	23.85	EIRP	0.243	8.9942	8M99G7D
				16QAM	23.21	EIRP	0.209	8.9785	8M98D7W
				64QAM	21.89	EIRP	0.155	8.9915	8M99D7W
				256QAM	18.50	EIRP	0.071	9.0015	9M00D7W
7	15	2507.5	2562.5	QPSK	23.82	EIRP	0.241	13.4760	13M5G7D
				16QAM	22.88	EIRP	0.194	13.4570	13M5D7W
				64QAM	21.85	EIRP	0.153	13.4780	13M5D7W
				256QAM	18.52	EIRP	0.071	13.4700	13M5D7W
7	20	2510.0	2560.0	QPSK	23.94	EIRP	0.248	17.9320	17M9G7D
				16QAM	23.05	EIRP	0.202	17.9710	18M0D7W
				64QAM	22.10	EIRP	0.162	17.9410	17M9D7W
				256QAM	18.51	EIRP	0.071	17.9830	18M0D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
12	1.4	699.7	715.3	QPSK	18.26	ERP	0.067	1.0939	1M09G7D
				16QAM	17.55	ERP	0.057	1.0960	1M10D7W
				64QAM	16.49	ERP	0.045	1.0944	1M09D7W
				256QAM	13.17	ERP	0.021	1.0908	1M09D7W
12	3	700.5	714.5	QPSK	18.21	ERP	0.066	2.6996	2M70G7D
				16QAM	17.54	ERP	0.057	2.7021	2M70D7W
				64QAM	16.43	ERP	0.044	2.6977	2M70D7W
				256QAM	13.29	ERP	0.021	2.6955	2M70D7W
12	5	701.5	713.5	QPSK	18.28	ERP	0.067	4.5063	4M51G7D
				16QAM	17.55	ERP	0.057	4.5012	4M50D7W
				64QAM	16.59	ERP	0.046	4.4913	4M49D7W
				256QAM	13.24	ERP	0.021	4.5047	4M50D7W
12	10	704.0	711.0	QPSK	18.26	ERP	0.067	9.0022	9M00G7D
				16QAM	17.60	ERP	0.058	8.9996	9M00D7W
				64QAM	16.45	ERP	0.044	9.0075	9M01D7W
				256QAM	13.26	ERP	0.021	8.9957	9M00D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
13	5	779.5	784.5	QPSK	18.26	ERP	0.067	4.5013	4M50G7D
				16QAM	17.80	ERP	0.060	4.5030	4M50D7W
				64QAM	16.68	ERP	0.047	4.4896	4M49D7W
				256QAM	13.23	ERP	0.021	4.4852	4M49D7W
13	10	782.0	782.0	QPSK	18.29	ERP	0.067	8.9528	8M95G7D
				16QAM	17.76	ERP	0.060	8.9759	8M98D7W
				64QAM	16.35	ERP	0.043	8.9563	8M96D7W
				256QAM	13.25	ERP	0.021	8.9593	8M96D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
14	5	790.5	795.5	QPSK	18.32	ERP	0.068	4.5056	4M51G7D
				16QAM	17.65	ERP	0.058	4.5053	4M51D7W
				64QAM	16.56	ERP	0.045	4.5162	4M52D7W
				256QAM	13.43	ERP	0.022	4.5153	4M52D7W
14	10	793.0	793.0	QPSK	18.29	ERP	0.067	8.9840	8M98G7D
				16QAM	17.58	ERP	0.057	8.9928	8M99D7W
				64QAM	16.39	ERP	0.044	8.9653	8M97D7W
				256QAM	13.43	ERP	0.022	8.9876	8M99D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
17	5	706.5	713.5	QPSK	18.59	ERP	0.072	4.5021	4M50G7D
				16QAM	17.84	ERP	0.061	4.5011	4M50D7W
				64QAM	16.70	ERP	0.047	4.5046	4M50D7W
				256QAM	13.56	ERP	0.023	4.4964	4M50D7W
17	10	709.0	711.0	QPSK	18.52	ERP	0.071	8.9672	8M97G7D
				16QAM	17.78	ERP	0.060	8.9898	8M99D7W
				64QAM	16.77	ERP	0.048	8.9640	8M96D7W
				256QAM	13.55	ERP	0.023	8.9644	8M96D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
25	1.4	1850.7	1914.3	QPSK	25.26	EIRP	0.336	1.0921	1M09G7D
				16QAM	24.50	EIRP	0.282	1.0966	1M10D7W
				64QAM	23.42	EIRP	0.220	1.0914	1M09D7W
				256QAM	20.19	EIRP	0.104	1.0919	1M09D7W
25	3	1851.5	1913.5	QPSK	25.22	EIRP	0.333	2.6984	2M70G7D
				16QAM	24.57	EIRP	0.286	2.7016	2M70D7W
				64QAM	23.32	EIRP	0.215	2.7000	2M70D7W
				256QAM	20.23	EIRP	0.105	2.7038	2M70D7W
25	5	1852.5	1912.5	QPSK	25.18	EIRP	0.330	4.5078	4M51G7D
				16QAM	24.60	EIRP	0.288	4.4980	4M50D7W
				64QAM	23.41	EIRP	0.219	4.5019	4M50D7W
				256QAM	20.23	EIRP	0.105	4.4943	4M49D7W
25	10	1855.0	1910.0	QPSK	25.22	EIRP	0.333	8.9837	8M98G7D
				16QAM	24.47	EIRP	0.280	8.9879	8M99D7W
				64QAM	23.37	EIRP	0.217	9.0019	9M00D7W
				256QAM	20.23	EIRP	0.105	8.9947	8M99D7W
25	15	1857.5	1907.5	QPSK	25.39	EIRP	0.346	13.4760	13M5G7D
				16QAM	24.55	EIRP	0.285	13.4540	13M5D7W
				64QAM	23.35	EIRP	0.216	13.4580	13M5D7W
				256QAM	20.31	EIRP	0.107	13.4690	13M5D7W
25	20	1860.0	1905.0	QPSK	25.51	EIRP	0.356	17.9420	17M9G7D
				16QAM	24.62	EIRP	0.290	17.9620	18M0D7W
				64QAM	23.40	EIRP	0.219	17.9330	17M9D7W
				256QAM	20.26	EIRP	0.106	17.9550	18M0D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
26 Part 90	1.4	814.7	823.3	QPSK	18.33	ERP	0.068	1.0950	1M10G7D
				16QAM	17.67	ERP	0.058	1.0945	1M09D7W
				64QAM	16.47	ERP	0.044	1.0926	1M09D7W
				256QAM	13.39	ERP	0.022	1.0914	1M09D7W
26 Part 90	3	815.5	822.5	QPSK	18.27	ERP	0.067	2.6987	2M70G7D
				16QAM	17.61	ERP	0.058	2.6983	2M70D7W
				64QAM	16.65	ERP	0.046	2.6991	2M70D7W
				256QAM	13.42	ERP	0.022	2.6992	2M70D7W
26 Part 90	5	816.5	821.5	QPSK	18.32	ERP	0.068	4.5054	4M51G7D
				16QAM	17.67	ERP	0.058	4.4917	4M49D7W
				64QAM	16.55	ERP	0.045	4.5024	4M50D7W
				256QAM	13.37	ERP	0.022	4.4986	4M50D7W
26 Part 90	10	819.0	819.0	QPSK	18.25	ERP	0.067	8.9440	8M94G7D
				16QAM	17.44	ERP	0.055	8.9641	8M96D7W
				64QAM	16.49	ERP	0.045	8.9345	8M93D7W
				256QAM	13.45	ERP	0.022	8.9700	8M97D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
26	1.4	824.7	848.3	QPSK	20.67	ERP	0.117	1.0927	1M09G7D
				16QAM	20.06	ERP	0.101	1.0951	1M10D7W
				64QAM	18.87	ERP	0.077	1.0914	1M09D7W
				256QAM	15.74	ERP	0.037	1.0904	1M09D7W
26	3	825.5	847.5	QPSK	20.71	ERP	0.118	2.7024	2M70G7D
				16QAM	19.94	ERP	0.099	2.6966	2M70D7W
				64QAM	18.87	ERP	0.077	2.7003	2M70D7W
				256QAM	15.76	ERP	0.038	2.6978	2M70D7W
26	5	826.5	846.5	QPSK	20.70	ERP	0.117	4.4994	4M50G7D
				16QAM	20.05	ERP	0.101	4.5001	4M50D7W
				64QAM	18.84	ERP	0.077	4.4988	4M50D7W
				256QAM	15.78	ERP	0.038	4.5055	4M51D7W
26	10	829.0	844.0	QPSK	20.79	ERP	0.120	8.9810	8M98G7D
				16QAM	20.03	ERP	0.101	8.9845	8M98D7W
				64QAM	19.00	ERP	0.079	9.0065	9M01D7W
				256QAM	15.84	ERP	0.038	8.9964	9M00D7W
26	15	831.5	841.5	QPSK	20.94	ERP	0.124	13.4830	13M5G7D
				16QAM	19.94	ERP	0.099	13.4580	13M5D7W
				64QAM	18.94	ERP	0.078	13.4420	13M4D7W
				256QAM	15.84	ERP	0.038	13.4580	13M5D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm/5MHz)		(W)	99%	Type of Emission
30	5	2307.5	2312.5	QPSK	22.67	EIRP	0.185	4.5089	4M51G7D
				16QAM	22.06	EIRP	0.161	4.5026	4M50D7W
				64QAM	20.98	EIRP	0.125	4.4989	4M50D7W
				256QAM	17.84	EIRP	0.061	4.5003	4M50D7W
30	10	2310.0	2310.0	QPSK	22.68	EIRP	0.185	8.9633	8M96G7D
				16QAM	21.88	EIRP	0.154	8.9863	8M99D7W
				64QAM	20.91	EIRP	0.123	8.9899	8M99D7W
				256QAM	17.75	EIRP	0.060	8.9778	8M98D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
38	5	2572.5	2617.5	QPSK	23.61	EIRP	0.230	4.5074	4M51G7D
				16QAM	22.89	EIRP	0.195	4.5188	4M52D7W
				64QAM	21.75	EIRP	0.150	4.5064	4M51D7W
				256QAM	18.88	EIRP	0.077	4.5038	4M50D7W
38	10	2575.0	2615.0	QPSK	23.67	EIRP	0.233	8.9860	8M99G7D
				16QAM	22.93	EIRP	0.196	9.0043	9M00D7W
				64QAM	21.75	EIRP	0.150	8.9982	9M00D7W
				256QAM	18.87	EIRP	0.077	9.0038	9M00D7W
38	15	2577.5	2612.5	QPSK	23.75	EIRP	0.237	13.4640	13M5G7D
				16QAM	22.91	EIRP	0.195	13.4750	13M5D7W
				64QAM	21.90	EIRP	0.155	13.4830	13M5D7W
				256QAM	18.89	EIRP	0.077	13.4660	13M5D7W
38	20	2580.0	2610.0	QPSK	23.83	EIRP	0.242	17.9340	17M9G7D
				16QAM	22.96	EIRP	0.198	17.9520	18M0D7W
				64QAM	21.85	EIRP	0.153	17.9330	17M9D7W
				256QAM	18.89	EIRP	0.077	17.9400	17M9D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
41	5	2498.5	2687.5	QPSK	26.67	EIRP	0.465	4.4955	4M50G7D
				16QAM	25.92	EIRP	0.391	4.4969	4M50D7W
				64QAM	24.81	EIRP	0.303	4.4917	4M49D7W
				256QAM	21.83	EIRP	0.152	4.5053	4M51D7W
41	10	2501.0	2685.0	QPSK	26.67	EIRP	0.465	8.9874	8M99G7D
				16QAM	26.03	EIRP	0.401	9.0110	9M01D7W
				64QAM	24.81	EIRP	0.303	8.9886	8M99D7W
				256QAM	21.89	EIRP	0.155	9.0054	9M01D7W
41	15	2503.5	2682.5	QPSK	26.86	EIRP	0.485	13.4750	13M5G7D
				16QAM	25.91	EIRP	0.390	13.4470	13M4D7W
				64QAM	24.92	EIRP	0.310	13.4710	13M5D7W
				256QAM	21.77	EIRP	0.150	13.4880	13M5D7W
41	20	2506.0	2680.0	QPSK	26.80	EIRP	0.479	17.9340	17M9G7D
				16QAM	26.01	EIRP	0.399	17.9330	17M9D7W
				64QAM	24.93	EIRP	0.311	17.9490	17M9D7W
				256QAM	21.82	EIRP	0.152	17.9390	17M9D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
42 Part 27	5	3452.5	3547.5	QPSK	21.89	EIRP	0.155	4.5126	4M51G7D
				16QAM	21.15	EIRP	0.130	4.5004	4M50D7W
				64QAM	20.12	EIRP	0.103	4.4975	4M50D7W
				256QAM	17.00	EIRP	0.050	4.5015	4M50D7W
42 Part 27	10	3455.0	3545.0	QPSK	21.92	EIRP	0.156	8.9956	9M00G7D
				16QAM	21.17	EIRP	0.131	8.9984	9M00D7W
				64QAM	20.14	EIRP	0.103	8.9788	8M98D7W
				256QAM	16.87	EIRP	0.049	8.9721	8M97D7W
42 Part 27	15	3457.5	3542.5	QPSK	22.07	EIRP	0.161	13.4780	13M5G7D
				16QAM	21.32	EIRP	0.136	13.4600	13M5D7W
				64QAM	20.10	EIRP	0.102	13.4720	13M5D7W
				256QAM	16.86	EIRP	0.049	13.4670	13M5D7W
42 Part 27	20	3460.0	3540.0	QPSK	22.05	EIRP	0.160	17.9310	17M9G7D
				16QAM	21.15	EIRP	0.130	17.9140	17M9D7W
				64QAM	20.08	EIRP	0.102	17.9660	18M0D7W
				256QAM	16.74	EIRP	0.047	17.9290	17M9D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
43 Part 27	5	3702.5	3797.5	QPSK	21.82	EIRP	0.152	4.4879	4M49G7D
				16QAM	21.11	EIRP	0.129	4.5154	4M52D7W
				64QAM	20.02	EIRP	0.100	4.4864	4M49D7W
				256QAM	16.90	EIRP	0.049	4.5011	4M50D7W
43 Part 27	10	3705.0	3795.0	QPSK	21.88	EIRP	0.154	8.9589	8M96G7D
				16QAM	21.15	EIRP	0.130	9.0087	9M01D7W
				64QAM	19.98	EIRP	0.100	8.9920	8M99D7W
				256QAM	16.80	EIRP	0.048	8.9802	8M98D7W
43 Part 27	15	3707.5	3792.5	QPSK	21.95	EIRP	0.157	13.4760	13M5G7D
				16QAM	21.16	EIRP	0.131	13.4390	13M4D7W
				64QAM	20.10	EIRP	0.102	13.4120	13M4D7W
				256QAM	16.69	EIRP	0.047	13.4900	13M5D7W
43 Part 27	20	3710.0	3790.0	QPSK	22.08	EIRP	0.161	17.8600	17M9G7D
				16QAM	21.13	EIRP	0.130	17.8280	17M8D7W
				64QAM	20.03	EIRP	0.101	17.9200	17M9D7W
				256QAM	16.64	EIRP	0.046	17.9360	17M9D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
66	1.4	1710.7	1779.3	QPSK	25.14	EIRP	0.327	1.0930	1M09G7D
				16QAM	24.34	EIRP	0.272	1.0962	1M10D7W
				64QAM	23.35	EIRP	0.216	1.0926	1M09D7W
				256QAM	20.19	EIRP	0.104	1.0932	1M09D7W
66	3	1711.5	1778.5	QPSK	25.17	EIRP	0.329	2.6959	2M70G7D
				16QAM	24.42	EIRP	0.277	2.7000	2M70D7W
				64QAM	23.36	EIRP	0.217	2.7021	2M70D7W
				256QAM	20.10	EIRP	0.102	2.7069	2M71D7W
66	5	1712.5	1777.5	QPSK	25.08	EIRP	0.322	4.5014	4M50G7D
				16QAM	24.41	EIRP	0.276	4.5106	4M51D7W
				64QAM	23.32	EIRP	0.215	4.4999	4M50D7W
				256QAM	20.20	EIRP	0.105	4.5049	4M50D7W
66	10	1715.0	1775.0	QPSK	25.17	EIRP	0.329	9.0107	9M01G7D
				16QAM	24.38	EIRP	0.274	9.0411	9M04D7W
				64QAM	23.44	EIRP	0.221	8.9882	8M99D7W
				256QAM	20.30	EIRP	0.107	8.9927	8M99D7W
66	15	1717.5	1772.5	QPSK	25.18	EIRP	0.330	13.4810	13M5G7D
				16QAM	24.56	EIRP	0.286	13.4870	13M5D7W
				64QAM	23.47	EIRP	0.222	13.4700	13M5D7W
				256QAM	20.14	EIRP	0.103	13.4720	13M5D7W
66	20	1720.0	1770.0	QPSK	25.34	EIRP	0.342	17.9490	17M9G7D
				16QAM	24.41	EIRP	0.276	17.9690	18M0D7W
				64QAM	23.29	EIRP	0.213	17.9610	18M0D7W
				256QAM	20.17	EIRP	0.104	17.9670	18M0D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
70	5	1697.5	1707.5	QPSK	25.12	ERP	0.325	4.5062	4M51G7D
				16QAM	24.24	ERP	0.265	4.5042	4M50D7W
				64QAM	23.22	ERP	0.210	4.5043	4M50D7W
				256QAM	20.20	ERP	0.105	4.4924	4M49D7W
70	10	1700.0	1705.0	QPSK	25.10	ERP	0.324	9.0131	9M01G7D
				16QAM	24.31	ERP	0.270	9.0026	9M00D7W
				64QAM	23.29	ERP	0.213	9.0031	9M00D7W
				256QAM	20.18	ERP	0.104	8.9910	8M99D7W
70	15	1702.5	1702.5	QPSK	25.04	ERP	0.319	13.4520	13M5G7D
				16QAM	24.16	ERP	0.261	13.4540	13M5D7W
				64QAM	23.28	ERP	0.213	13.4500	13M5D7W
				256QAM	20.18	ERP	0.104	13.4630	13M5D7W

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LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
71	5	665.5	695.5	QPSK	20.43	ERP	0.110	4.4982	4M50G7D
				16QAM	19.88	ERP	0.097	4.4969	4M50D7W
				64QAM	18.62	ERP	0.073	4.5011	4M50D7W
				256QAM	15.54	ERP	0.036	4.4962	4M50D7W
71	10	668.0	693.0	QPSK	20.42	ERP	0.110	8.9843	8M98G7D
				16QAM	19.70	ERP	0.093	9.0069	9M01D7W
				64QAM	18.67	ERP	0.074	8.9853	8M99D7W
				256QAM	15.54	ERP	0.036	8.9768	8M98D7W
71	15	670.5	690.5	QPSK	20.37	ERP	0.109	13.4510	13M5G7D
				16QAM	19.65	ERP	0.092	13.4500	13M5D7W
				64QAM	18.71	ERP	0.074	13.4470	13M4D7W
				256QAM	15.54	ERP	0.036	13.4890	13M5D7W
71	20	673.0	688.0	QPSK	20.63	ERP	0.116	17.9560	18M0G7D
				16QAM	19.81	ERP	0.096	17.9440	17M9D7W
				64QAM	18.47	ERP	0.070	17.9100	17M9D7W
				256QAM	15.55	ERP	0.036	17.9650	18M0D7W
LTE Band	BW	Frequency		Modulation	ERP / EIRP (dBm)		(W)	99%	Type of Emission
106	1.4	898.2	899.8	QPSK	20.35	ERP	0.108	1.0928	1M09G7D
				16QAM	19.51	ERP	0.089	1.0972	1M10D7W
				64QAM	18.49	ERP	0.071	1.0958	1M10D7W
				256QAM	15.49	ERP	0.035	1.0933	1M09D7W
106	3	899.0	899.0	QPSK	20.39	ERP	0.109	2.6950	2M70G7D
				16QAM	19.70	ERP	0.093	2.6952	2M70D7W
				64QAM	19.32	ERP	0.086	2.6977	2M70D7W
				256QAM	19.59	ERP	0.091	2.6988	2M70D7W

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1.5 Test Methodology of Applied Standards

FCC 47 CFR Part 2, 22H, 24E, 27C, Part 90.

ANSI C63.26-2015

KDB971168 D01 Power Meas license Digital System v03r01

KDB412172 D01 Determining ERP and EIRP v01r01

1.6 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designa- tion number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027	TW3702
		SAC 2		
		SAC 3		
		Conduction 1		
		Conducted 1		
		Conducted 2		
		Conducted 3		
		Conducted 4		
		Conducted 5		
		Conducted 6		
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028	
		SAC C		
		SAC D		
		SAC G		
		Conducted A		
		Conducted B		
		Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
Conducted G				
Note: Test site name is remarked on the equipment list in each section of this report as an indica- tion where measurements occurred in specific test site and address.				

1.7 Special Accessories

No special accessories were used during testing.

1.8 Equipment Modifications

There was no modifications incorporated into the EUT.

1.9 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Measurement at Antenna Port

The EUT is placed on a table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP)

The EUT is placed on a turn table, for emission measurements below 1 GHz is 0.8 m above ground plane, for emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

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2.5 Final Amplifier Voltage and Current Information:

LTE Band 2		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 2_20M QPSK	3.8	590
LTE Band 4		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 4_20M QPSK	3.8	600
LTE Band 5		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 5_10M QPSK	3.8	510
LTE Band 7		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 7_20M QPSK	3.8	640
LTE Band 12		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 12_10M QPSK	3.8	560
LTE Band 13		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 13_10M QPSK	3.8	540
LTE Band 14		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 14_10M QPSK	3.8	540

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LTE Band 17		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 17_10M QPSK	3.8	540
LTE Band 25		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 25_20M QPSK	3.8	590
LTE Band 26		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 26_15M QPSK	3.8	510
LTE Band 26 for Part 90S		
Test Mode	DC voltage (V)	DC current (mA)
LTE Band 26_10M QPSK	3.8	530
LTE Band 30		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 30_10M QPSK	3.8	730
LTE Band 38		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 38_20M QPSK	3.8	330
LTE Band 41		
Test Mode	DC voltage (V)	DC current (mA)
LTE Band 41_20M QPSK	3.8	340
LTE Band 42 for Part27		
Test Mode	DC voltage (V)	DC current (mA)
LTE Band 42_20M QPSK	3.8	490

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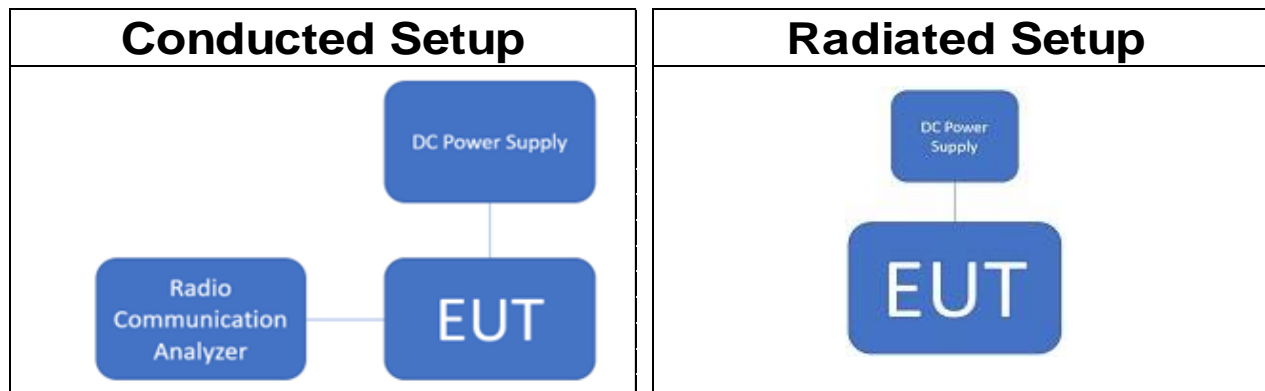
LTE Band 43 for Part27		
Test Mode	DC voltage (V)	DC current (mA)
LTE Band 43_20M QPSK	3.8	300
LTE Band 66		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 66_20M QPSK	3.8	610
LTE Band 70		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 70_15M QPSK	3.8	670
LTE Band 71		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 71_20M QPSK	3.8	580
LTE Band 106		
Test mode	DC voltage (V)	DC current (mA)
LTE Band 106_3M QPSK	3.8	460

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2.6 Test Configuration



Note: Radio Communication Analyzer is placed in remote side for radiated test.

2.7 Control Unit(s)

N/A

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3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§22.913(a)(5) §24.232(c) §27.50(a)(3) §27.50(b)(9) §27.50(c)(9) §27.50(d)(4) §27.50(h)(2) §27.50(k)(3) §90.542(a)(6) §90.635	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% & 26dB Occupied Bandwidth	Compliant
§2.1051 §22.917(a)(b) §24.238(a)(b) §27.53(a)(4) §27.53(c)(2)&(5) §27.53(g) §27.53(h)(1)&(3) §27.53(m) §27.53(m)(4) §27.53(m)(4)(6) §27.53(n)(2) §90.543 (e)(2)~(5) §90.691(a)	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask requirements	Compliant

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§2.1053 §22.917(a)(b) §24.238(a)(b) §27.53(a)(4) §27.53(c)(2)~(6) §27.53(f) §27.53(g) §27.53(h) §27.53(h)(1)&(3) §27.53(m)(4) §27.53(n)(2) §90.543(e)(2)~(5) §90.543(f) §90.691(a)	Field Strength of Spurious Radiation	Compliant
§22.913(d) §24.232(d) §27.50(a)(1)(B) §27.50(a)(B) §27.50(d)(5) §27.50 (k)(4)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235 §27.54 §90.539(e)	Frequency Stability	Compliant

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4 DESCRIPTION OF TEST MODES

4.1 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Pre-Scan has been conducted to determine the worst-case scenario from all possible combinations among available modulations, data rates and antenna ports, the worst case configurations listed below for the final test.
3. The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

4.2 Measurement Configuration

Test Items				Max. Output Power												
Band	Test Channel			Bandwidth (MHz)						Modulation				RB #		
	L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
5	V	V	V	V	V	V	V	-	-	V	V	V	V	V	V	V
7	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
12	V	V	V	V	V	V	V	-	-	V	V	V	V	V	V	V
13	V	V	V	-	-	V	V	-	-	V	V	V	V	V	V	V
14	V	V	V	-	-	V	V	-	-	V	V	V	V	V	V	V
17	V	V	V	-	-	V	V	-	-	V	V	V	V	V	V	V
25	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
26	V	V	V	V	V	V	V	V	-	V	V	V	V	V	V	V
26 P90	V	V	V	V	V	V	V	-	-	V	V	V	V	V	V	V
30	V	V	V	-	-	V	V	-	-	V	V	V	V	V	V	V
38	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
41	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
42 P27	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
43 P27	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
66	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
70	V	V	V	-	-	V	V	V	-	V	V	V	V	V	V	V
71	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
106	V	V	V	V	V	-	-	-	-	V	V	V	V	V	V	V
Test Items				Frequency Stability												
2	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
4	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
5	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
7	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
12	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
13	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
14	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
17	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
25	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
26	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
26 P90	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
30	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
38	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
41	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
42 P27	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
43 P27	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
66	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
70	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
71	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
106	-	V	-	-	V	-	-	-	-	V	-	-	-	-	-	V

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Test Items				26dB and 99% Bandwidth												
Band	Test Channel			Bandwidth (MHz)						Modulation				RB #		
	L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	V
5	V	V	V	V	V	V	V	-	-	V	V	V	V	-	-	V
7	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
12	V	V	V	V	V	V	V	-	-	V	V	V	V	-	-	V
13	V	V	V	-	-	V	V	-	-	V	V	V	V	-	-	V
14	V	V	V	-	-	V	V	-	-	V	V	V	V	-	-	V
17	V	V	V	-	-	V	V	-	-	V	V	V	V	-	-	V
25	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	V
26	V	V	V	V	V	V	V	V	-	V	V	V	V	-	-	V
26 P90	V	V	V	V	V	V	V	-	-	V	V	V	V	-	-	V
30	V	V	V	-	-	V	V	-	-	V	V	V	V	-	-	V
38	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
41	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
42 P27	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
43 P27	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
66	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	V
70	V	V	V	-	-	V	V	V	-	V	V	V	V	-	-	V
71	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V
106	V	V	V	V	V	-	-	-	-	V	V	V	V	-	-	V
Test Items				Peak-to-Average Ratio												
2	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V
4	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V
5	V	V	V	V	V	V	V	-	-	-	-	-	V	-	-	V
7	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
12	V	V	V	V	V	V	V	-	-	-	-	-	V	-	-	V
13	V	V	V	-	-	V	V	-	-	-	-	-	V	-	-	V
14	V	V	V	-	-	V	V	-	-	-	-	-	V	-	-	V
17	V	V	V	-	-	V	V	-	-	-	-	-	V	-	-	V
25	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V
26	V	V	V	V	V	V	V	V	-	-	-	-	V	-	-	V
26 P90	V	V	V	V	V	V	V	-	-	-	-	-	V	-	-	V
30	V	V	V	-	-	V	V	-	-	-	-	-	V	-	-	V
38	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
41	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
42 P27	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
43 P27	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
66	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V
70	V	V	V	-	-	V	V	V	-	-	-	-	V	-	-	V
71	V	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V
106	V	V	V	V	V	-	-	-	-	-	-	-	V	-	-	V

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Test Items				Band Edge												
Band	Test Channel			Bandwidth (MHz)						Modulation				RB #		
	L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	V	-	V	V	V	V	V	V	V	V	-	-	-	V	-	V
4	V	-	V	V	V	V	V	V	V	V	-	-	-	V	-	V
5	V	-	V	V	V	V	V	-	-	V	-	-	-	V	-	V
7	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
12	V	-	V	V	V	V	V	-	-	V	-	-	-	V	-	V
13	V	-	V	-	-	V	V	-	-	V	-	-	-	V	-	V
14	V	-	V	-	-	V	V	-	-	V	-	-	-	V	-	V
17	V	-	V	-	-	V	V	-	-	V	-	-	-	V	-	V
25	V	-	V	V	V	V	V	V	V	V	-	-	-	V	-	V
26	V	-	V	V	V	V	V	V	-	V	-	-	-	V	-	V
26 P90	V	-	V	V	V	V	V	-	-	V	-	-	-	V	-	V
30	V	-	V	-	-	V	V	-	-	V	-	-	-	V	-	V
38	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
41	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
42 P27	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
43 P27	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
66	V	-	V	V	V	V	V	V	V	V	-	-	-	V	-	V
70	V	-	V	-	-	V	V	V	-	V	-	-	-	V	-	V
71	V	-	V	-	-	V	V	V	V	V	-	-	-	V	-	V
106	V	V	V	V	V	-	-	-	-	V	-	-	-	V	-	V
Test Items				Conducted Emission												
2	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
4	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
5	V	V	V	V	-	-	-	-	-	V	-	-	-	V	-	-
7	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
12	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
13	V	V	V	-	-	-	V	-	-	V	-	-	-	V	-	-
14	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
17	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
25	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
26	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
26 P90	V	V	V	V	-	-	-	-	-	V	-	-	-	V	-	-
30	V	V	V	-	-	-	V	-	-	V	-	-	-	V	-	-
38	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
41	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
42 P27	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
43 P27	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
66	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
70	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
71	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
106	V	V	V	-	V	-	-	-	-	V	-	-	-	V	-	-

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Test Items				Radiated Emission												
Band	Test Channel			Bandwidth (MHz)						Modulation				RB #		
	L	M	H	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
4	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
5	V	V	V	V	-	-	-	-	-	V	-	-	-	V	-	-
7	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
12	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
13	V	V	V	-	-	-	V	-	-	V	-	-	-	V	-	-
14	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
17	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
25	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
26	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
26 P90	V	V	V	V	-	-	-	-	-	V	-	-	-	V	-	-
30	V	V	V	-	-	-	V	-	-	V	-	-	-	V	-	-
38	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
41	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
42 P27	V	V	V	-	-	-	-	V	-	V	-	-	-	V	-	-
43 P27	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
66	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
70	V	V	V	-	-	V	-	-	-	V	-	-	-	V	-	-
71	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-
106	V	V	V	-	V	-	-	-	-	V	-	-	-	V	-	-

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
Power Density	+/- 0.61 dB
Output Power measurement	+/- 0.97 dB
ERP/ EIRP measurement	+/- 2.16 dB
	+/- 2.16 dB
Emission Bandwidth	+/- 1.38 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 0.77 dB
Peak to Average Ratio	+/- 0.97 dB
Frequency Stability vs. Temperature	+/- 1.48 Hz
Frequency Stability vs. Voltage	+/- 1.48 Hz
Temperature	+/- 0.6 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	1.89 dB	9kHz~30MHz
	+/-	4.1 dB	30MHz - 1000MHz
	+/-	3.37 dB	1GHz - 18GHz
	+/-	3.83 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	1.89 dB	9kHz~30MHz
	+/-	4.1 dB	30MHz - 1000MHz
	+/-	3.37 dB	1GHz - 18GHz
	+/-	3.83 dB	18GHz - 40GHz
Radiated Spurious Emission	+/-	2 dB	33GHz-50GHz
	+/-	1.59 dB	50GHz-60GHz
	+/-	1.71 dB	60GHz-90GHz
	+/-	1.64 dB	90GHz-140GHz
	+/-	3.84 dB	140GHz-220GHz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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6 MEASUREMENT EQUIPMENT USED

6.1 Conducted Measurement

Conducted Emission Test Site: Conducted 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)
Attenuator	Mini-Circuits	BW-S10W2+	12	12/11/2024	12/10/2025
DC Block	Mini-Circuits	BLK-18-S+	12	12/11/2024	12/10/2025
DC Power Supply	Gwinstek	SPS-3610	GEV856761	09/13/2024	09/12/2025
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY60240503	12/16/2024	12/15/2025
PXA Spectrum Analyzer	Agilent	N9030A	MY53120760	04/25/2025	04/24/2026
Radio Communication Analyzer	Anritsu	MT8821C	6262044751	11/04/2024	11/03/2025
Splitter	RF-Lambda	RFLT2W1G18G	11-JSPF412-017	12/11/2024	12/10/2025
Temperature Chamber	Giant Force	GTH-150-40-CP-AR	MAA0512-018	06/05/2024	06/04/2025
Test Software	SGS	Radio Test Software	Ver. 21	N.C.R	N.C.R

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6.2 Radiated Measurement

Radiated Emission Test Site: SAC 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL. (mm/dd/yyyy)	CAL DUE. (mm/dd/yyyy)
1.3G High Pass Filter	Woken	WHKX10-1066	19	12/11/2024	12/10/2025
3.2G High Pass Filter	Woken	WHKX10-2624	3	12/11/2024	12/10/2025
4G High Pass Filter	WI	WHKX4.0	23	12/11/2024	12/10/2025
Band Reject Filter 1700-2000	Titan	T04N800100050S01	23040703-7	12/11/2024	12/10/2025
Band Reject Filter 2240-2700	Titan	T04N2240270050S01	23040703-12	12/11/2024	12/10/2025
Band Reject Filter 3300-3900	WI	WRCGV3400/3800-3300/3900-40/12SS	1	12/11/2024	12/10/2025
Band Reject Filter 635-920	Titan	T04N63592050S01	23040703-4	12/11/2024	12/10/2025
Bi-log Antenna	SCHWARZBECK	VULB9168	1208	07/17/2024	07/16/2025
Bi-log Antenna	TESEO	CBL 6112D	35242 & AT-N0555	12/09/2024	12/08/2025
Coaxial Cable	EMCI	EMC104-SM-SM-8000+EMC106-SM-SM-7600	RX Cable 9K-18G(160125+150817)	08/30/2024	08/29/2025
Coaxial Cables	Huber Suhner	SUCOFLEX 102	RX Cable 18G-40G MY2630/2+805062/2	08/30/2024	08/29/2025
Coaxial Cables	Huber Suhner	SUCOFLEX 102+SUCOFLEX 106	TX Cable 30M-40G 23051/2+76096/6+22962/2	08/30/2024	08/29/2025
DC Power Supply	HILA	DP-3003N	11233K1019035	03/24/2025	03/23/2026
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY60242081	10/23/2024	10/22/2025
Horn Antenna	RF SPIN	DRH0844	LE2D05A0844	07/10/2024	07/09/2025
Horn Antenna	SCHWARZBECK	BBHA9120D	603	05/20/2025	05/19/2026
Horn Antenna	SCHWARZBECK	BBHA9120D	D803	01/09/2025	01/08/2026
Horn Antenna	SCHWARZBECK	BBHA9170	184	12/20/2024	12/19/2025
Network Analyzer	Anritsu	MS4644A	1216312	12/25/2024	12/24/2025
Pre-Amplifier	EMCI	EMC118A45SEE	980933	08/30/2024	08/29/2025
Pre-Amplifier	EMCI	EMC184045SEE	9080939	08/30/2024	08/29/2025
Pre-Amplifier	HP	8447D	2944A09469	08/30/2024	08/29/2025
Radio Communication Analyzer	Anritsu	MT8821C	6261786084	12/31/2024	12/30/2025
Site Cal	SGS	SAC 1	N/A	08/30/2024	08/29/2025
Test Software	Audix	e3	Ver. 9.210616	N.C.R	N.C.R

NOTE: N.C.R refers to Not Calibrated Required.

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7 STANDARD APPLICABLE

7.1 Maximum Output Power

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

7.1.1 ERP/EIRP LIMIT

According to FCC §2.1046

FCC 22.913(a)

(5) mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

FCC 24.232(c)

Mobile and portable stations are limited to 2 W EIRP.

FCC 27.50 (a)

(3) for mobile and portable stations compliant with 3GPP LTE standards transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band are limited to 250 mW/ 5MHz EIRP but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth.

FCC 27.50 (b)

(9) Control stations and mobile stations transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 30 watts ERP.

FCC 27.50(c)

(9) Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

FCC 27.50(d)

(4) Mobile, and portable (hand-held) stations operating in the 1710-1755 MHz, 1695-1710 MHz and 1755-1780 MHz bands are limited to 1W EIRP.

FCC 27, 50(h)

(2) Mobile and other user stations transmitting in the BRS and EBS bands are limited to 2 W EIRP.

FCC 90.542(a)

(6) Control stations and mobile stations transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 30 watts ERP.

FCC 90.635(b)

Mobile station is limited to 100W ERP.

7.2 Occupied Bandwidth Measurement

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.

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7.3 Out Of Band Emission At Antenna Terminals

FCC §22.917(a), §24.238(a), §27.53(h), §90.543(e)(3)

Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC §27.53(a)

For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

- (4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
 - (i) By a factor of not less than: $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log(P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log(P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log(P)$ dB on all frequencies between 2328 and 2337 MHz;
 - (ii) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log(P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log(P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log(P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log(P)$ dB below 2288 MHz;
 - (iii) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log(P)$ dB above 2365 MHz.

FCC §27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB (-13dBm)
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC §27.53(g)

Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC §27.53(h)(1)

(h) *AWS emission limits*—(1) *General protection levels*. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission

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outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz 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; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

FCC §90.543 (e)

For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations.
- (2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- (3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB.

FCC §90.691 Emission mask requirements for EA-based systems

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

- (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

- (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the

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power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

7.4 Field Strength Of Spurious Radiation Measurement

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53(h), §90.543(e)(3)

Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC §27.53(a)

For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

- (4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
 - (ii) By a factor of not less than $70 + 10 \log(P)$ dB below 2288 MHz;
 - (iii) By a factor of not less than $70 + 10 \log(P)$ dB above 2365 MHz.

FCC §27.53(g)

Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

FCC §90.543 (f)

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC §27.53(h)(1)

(h) *AWS emission limits*—(1) *General protection levels*. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

FCC §27.53(m) (4) (6)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of

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6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz 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; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

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(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

7.5 Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

7.6 Peak to Average Ratio

The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

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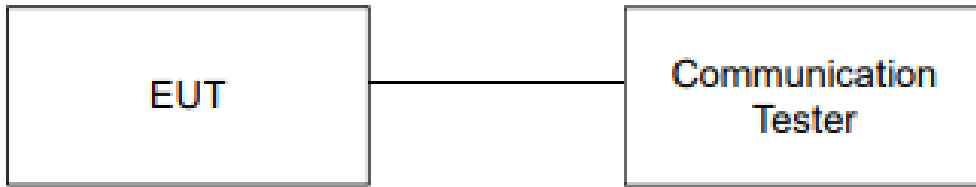
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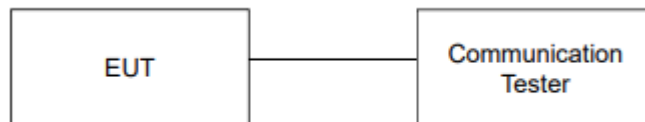
8 TEST SETUP

8.1 Maximum Output Power



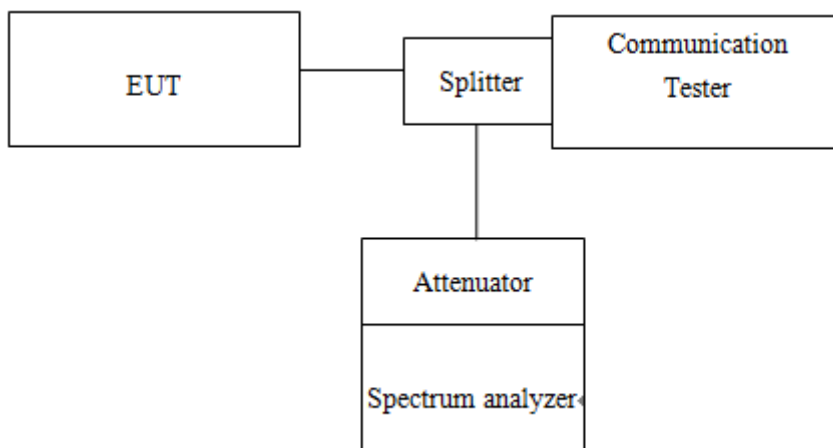
Note: Measurement setup for testing on Antenna connector

8.2 Occupied Bandwidth Measurement



Note: Measurement setup for testing on Antenna connector

8.3 Out of Band Emission At Antenna Terminals

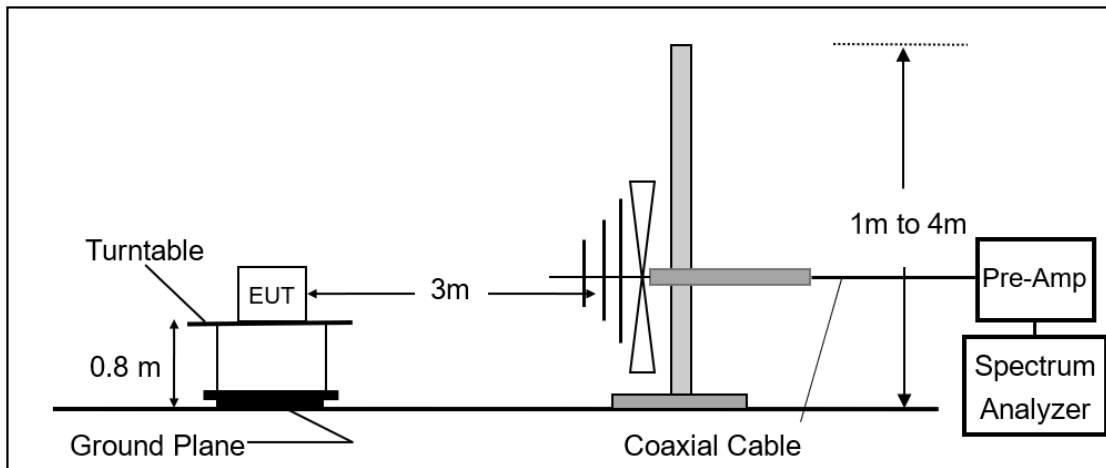


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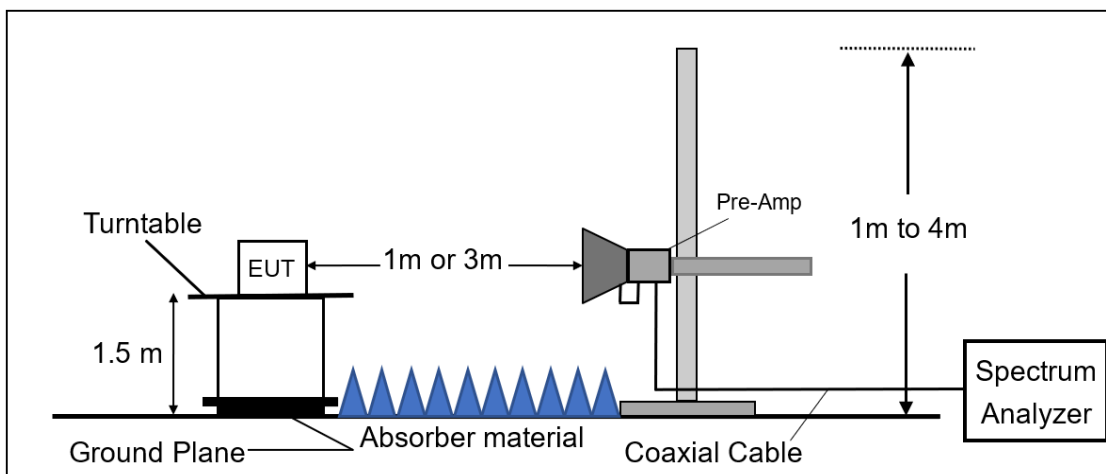
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8.4 Field Strength of Spurious Radiation Measurement

Radiated Emission Test Set-Up, Frequency From 30MHz to 1000MHz.



Radiated Emission Test Set-Up, Frequency Above 1GHz.

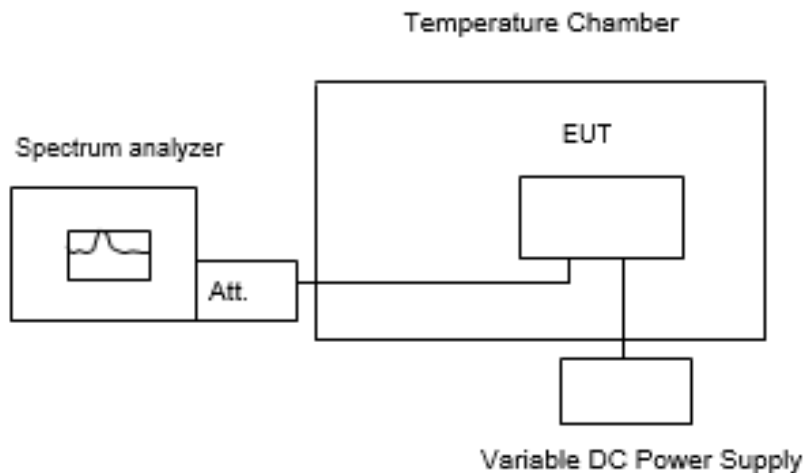


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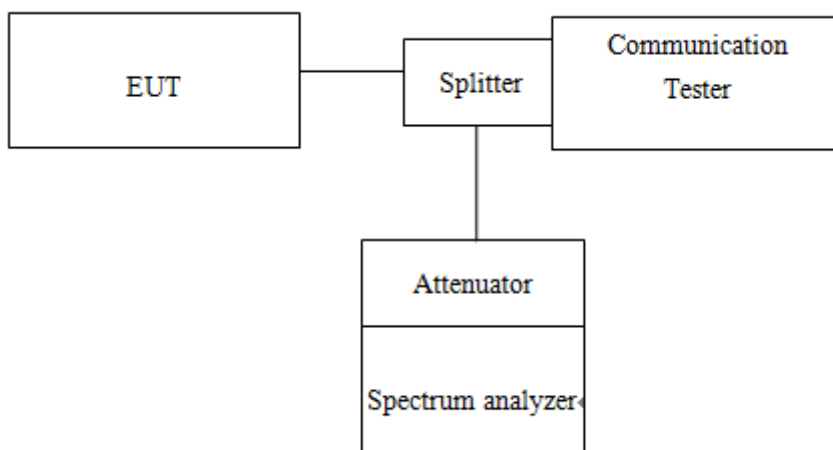
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8.5 Frequency Stability Measurement



Note: Measurement setup for testing on Antenna connector

8.6 Peak To Average Ratio



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9 TEST PROCEDURE

9.1 Maximum Output Power

9.1.1 Output Power Measurement Applicable Guidance

The transmitter output was connected to a communication tester. Transmitter output was read off the communication tester in dBm. The power output at the transmitter antenna port was determined by the communication tester reading.

KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results.

All LTE bands conducted average power is obtained from the simulator telecommunication test set.

9.1.2 Determining ERP and/or EIRP from conducted RF output power measurements

According to KDB 412172 D01 Power Approach,

$$EIRP = P_T + G_T - L_C,$$

$$ERP = EIRP - 2.15,$$

Where:

- ERP or EIRP = effective radiated power or equivalent isotropically radiated power (expressed in the same units as P_T , typically dBW, dBm, or power spectral density (PSD)²), relative to either a dipole antenna (ERP) or an isotropic antenna (EIRP);
- P_T = transmitter output power, expressed in dBW, dBm, or PSD;
- 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.

9.2 Occupied Bandwidth Measurement

99% & 26dB Bandwidth with detector peak

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -26dBc display line was placed on the screen (or 26dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1% ~ 5%, VBW $\geq 3 * RBW$, with span $> 2 * \text{Signal BW}$, set % Power = 99%.

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9.3 Out of Band Emission at Antenna Terminals

9.3.1 Conducted Emission

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

1. To connect Antenna Port of EUT to Spectrum.
2. Set RBW = 1MHz & VBW = 1MHz on Spectrum.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

9.3.2 Band Edge

1. To connect Antenna Port of EUT to Spectrum.
2. The band edge of low and high channels for the highest RF powers was measured. Setting RBW \geq 1% EBW.
3. Allow trace to fully stabilize
4. Repeat above procedures until all default test channel measured were complete.

9.4 Field Strength of Spurious Radiation Measurement

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBd)} + \text{Cable Loss(dB)}$$

$$\text{EIRP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBi)} + \text{Cable Loss(dB)}$$

9.5 Frequency Stability Measurement

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure 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.

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low

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enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as declared by the manufacturer, record the maximum frequency change.

9.6 Peak to Average Ratio

1. KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:
2. Set resolution/measurement bandwidth \geq signal's occupied bandwidth; & internal = 1ms
3. Set the number of counts to a value that stabilizes the measured CCDF curve.

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10 MEASUREMENT RESULTS

Please refer to the Annex A-Measurement Results.

11 PHOTOGRAPHS OF SET UP

Please refer to the attached file (Setup Photo).

12 PHOTOGRAPHS OF EUT

Please refer to the attached file (EUT Photo).

~ End of Report ~

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