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# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**





**FCC Applicant:** ASUSTEK COMPUTER INC.

1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan

**FCC Manufacturer:** ASUSTeK COMPUTER INC.

1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan

**Product Name:** ASUS Phone (Mobile Phone)

**Brand Name: ASUS** 

Model No.: ASUSAI2501E Family Model No.: ASUSAI2501D

**Model Difference:** Refer to section 1.2

**Report Number:** TERF2407002102ER

FCC ID **MSQAI2501** 

Date of EUT Received: July 01, 2024

Date of Test: July 17, 2024 ~ November 04, 2024

Issue Date: November 13, 2024

Approved By\_

Marcus Tseng

Marcus Tsenz

#### 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 ANSI C63.26-2015 and the energy emitted by the sample EUT comply with FCC rule part 2, 22H & 24E & 27 C & 90S.

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Revision History										
Report Number	Revision	Description	Issue Date	Revised By	Remark					
TERF2407002102ER	00	Original	November 13, 2024	Yuri Tsai						

#### 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:	ASUS Phone(Mobile Phone)
Brand Name:	ASUS
Model No.:	ASUSAI2501E
Family Model No.:	ASUSAI2501D
Hardware Version:	R2.0C
Firmware Version:	35.1400.1400.10
EUT Series No.:	S7AIOCN13282W8P & S7AIOCN13359SCN
Power Supply:	7.8 Vdc from Battery
Test Software (Name/Version)	Connect with Callbox

#### 1.2 Model Difference

Model Name	ASUSAI2501D	ASUSAI2501E					
3rd Camera	5MP Macro	32 MP Tele					
LED Light	mini LED (85 pcs)	mini LED (648 pcs)					
Memory	12/256, 12/512, 16/512	16/512, 24/1TB					
Side USB port	Υ						
Air trigger	Y						
Power	5800mAh, 65W						
Refresh Rate	185Hz						

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## **Operation Frequency Range**

LTE Band 2								
BW (MHz)	Operation	Freque	ency (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 Ban	d 4						
BW (MHz)	Operation	Freque	ency (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 Ban	d 5						
BW (MHz)	Operation	Freque	ency (MHz)					
1.4	824.7	-	848.3					
3	825.5	-	847.5					
5	826.5	-	846.5					
10	829.0	-	844.0					
	LTE Ban	d 7						
BW (MHz)	Operation	Freque	ency (MHz)					
5	2502.5	-	2567.5					
10	2505.0	-	2565.0					
15	2507.5	-	2562.5					
20	2510.0	-	2560.0					

	LTE Ban	d 12							
BW (MHz)	Operation	Freque	ency (MHz)						
1.4	699.7	-	715.3						
3	700.5	-	714.5						
5	701.5	-	713.5						
10	704.0	-	711.0						
LTE Band 17									
BW (MHz) Operation Frequency (MHz)									
5	706.5	-	713.5						
10	709.0	-	711.0						
	LTE Ban	d 25							
BW (MHz)	Operation	Freque	ency (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	Part 9	0						
BW (MHz)	Operation	Freque	ency (MHz)						
1.4	814.7	-	823.3						
3	815.5	-	822.5						
5	816.5	-	821.5						
10	819.0								
	LTE Ban	d 26							
BW (MHz)	Operation	Freque	ency (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						

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	LTE Ban	d 30							
BW (MHz)	Operation	Freque	ency (MHz)						
5	2307.5 - 2312.5								
10	2310.0								
	LTE Band 38								
BW (MHz)	Operation	Freque	ency (MHz)						
5	2572.5	-	2617.5						
10	2575.0	-	2615.0						
15	2577.5	-	2612.5						
20	2580.0	-	2610.0						
	LTE Ban	d 41							
BW (MHz)	Operation	Freque	ency (MHz)						
5	2498.5	-	2687.5						
10	2501.0	-	2685.0						
15	2503.5	-	2682.5						
20	2506.0	-	2680.0						

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 Ban	d 71						
BW (MHz)	Operation	Freque	ency (MHz)					
5	665.5	-	695.5					
10	688.0	-	693.0					
15	670.5	-	690.5					
20	673.0	-	688.0					

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## **Antenna Designation**

Antenna Type	Antenna Model No.
	Ant0
	Ant1
	Ant2
PIFA	Ant6
	Ant7
	Ant8
	Ant9
Note: Transmission freq	uencies in this test report are only available by the above antenna(s).

Туре	Modulation	Frequency (MHz)			F	Peak Ante	nna Gai	n (dBi)			
				Ant0	Ant1	Ant2	Ant6	Ant7	Ant8	Ant9	
	LTE-Band 2	1850	~	1910		-0.2	-1.9		-5.1		
	LTE-Band 4	1710	~	1755		-1.5	-1.9		-6.6		
	LTE-Band 5	824	~	849	-2.4		-3.3				
	LTE-Band 7	2500	~	2570		-2.5	-1.1		-5.5		
	LTE-Band 12	699	~	716	-1.6		-4.8				
	LTE-Band 17	704	~	716	-1.6		-4.8				
	LTE-Band 25	1850	~	1915		-0.2	-1.9		-5.1		
PIFA	LTE-Band 26	824	~	849	-2.4		-3.3				
	LTE-Band 26 Part 90	814	~	824	-2.4		-3.3				
	LTE-Band 30	2305	~	2315		-1.5	-0.7				
	LTE-Band 38	2570	~	2620		-2.5	-1.1				
	LTE-Band 41	2496	~	2690		-2.5	-1.1			-1.8	-8.1
	LTE-Band 66	1710	~	1780		-0.2	-1.9		-6.6		
	LTE-Band 71	663	~	698	-3.4		-9.9				

Note: Antenna information is provided by the applicant.

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

LTE Band															
Danu	BW	Frequ	uency	M odulation	ERP / EIR	P (dBm)	(W)	99%	Type of Emission						
				QPSK	23.91	EIRP	0.246	1.0934	1M09G7						
				16QAM	22.78	EIRP	0.190	1.0955	1M10D7\						
2	1.4	1850.7	1909.3	64QAM	21.81	EIRP	0.152	1.0916	1M09D7						
				256QAM	19.20	EIRP			1M09D7						
							0.083	1.0937							
				QPSK	23.94	EIRP	0.248	2.7122	2M71G7						
2	3	1851.5	1908.5	16QAM	22.81	EIRP	0.191	2.6971	2M70D7\						
-	"	1001.0	1500.0	64QAM	21.75	EIRP	0.150	2.7092	2M71D7\						
				256QAM	19.20	EIRP	0.083	2.7032	2M70D7\						
				QPSK	24.02	EIRP	0.252	4.5156	4M52G7						
				16QAM	22.86	EIRP	0.193	4.5048	4M50D7\						
2	5	1852.5	1907.5	64QAM	21.89	EIRP	0.155	4.4948	4M49D7\						
				256QAM	19.73	EIRP	0.094	4.4978	4M50D7						
					24.10	EIRP									
				QPSK			0.257	8.9932	8M99G7						
2	10	1855.0	1905.0	16QAM	22.99	EIRP	0.199	9.0033	9M00D7\						
				64QAM	21.96	EIRP	0.157	8.9849	8M98D7\						
				256QAM	19.20	EIRP	0.083	8.9726	8M97D7\						
				QPSK	24.18	EIRP	0.262	13.505	13M5G7						
	15	4057.5	1902.5	16QAM	23.11	EIRP	0.205	13.468	13M5D7\						
2	15	1857.5	1902.5	64QAM	21.99	EIRP	0.158	13.472	13M5D7\						
				256QAM	19.20	EIRP	0.083	13.461	13M5D7\						
				QPSK	24.30	EIRP	0.269	17.978	18M0G7						
2	20	1860.0	1900.0	16QAM	23.16	EIRP	0.207	18.000	18M0D7\						
				64QAM	22.20	EIRP	0.166	17.989	18M0D7\						
				256QAM	19.20	EIRP	0.083	17.956	18M0D7\						
.TE	BW	Frequ	iency	M odulation	ERP / EIR	D (dBm)	(W)	99%	Type of						
and	DVV	riequ	ленсу	woullation	LNF / EIK	(ubiii)	(vv)	3370	Emissio						
П				QPSK	22.59	EIRP	0.182	1.0928	1M09G7I						
,		4745-		16QAM	21.48	EIRP	0.141	1.0956	1M10D7V						
4	1.4	1710.7	1754.3	64QAM	20.42	EIRP	0.110	1.0990	1M10D7\						
			l	256QAM	17.82	EIRP	0.061	1.0930	1M09D7\						
			-	QPSK	22.64	EIRP	0.061	2.7013	2M70G7						
4	3	1711.5	1753.5	16QAM	21.54	EIRP	0.143	2.7038	2M70D7\						
•		1111.0	1100.0	64QAM	20.55	EIRP	0.114	2.6995	2M70D7\						
				256QAM	17.85	EIRP	0.061	2.6990	2M70D7\						
				QPSK	22.68	EIRP	0.185	4.4959	4M50G7						
	_			16QAM	21.66	EIRP	0.147	4.4944	4M49D7\						
4	5	1712.5	1752.5	64QAM	20.63	EIRP	0.116	4.4964	4M50D7\						
								, ,		256QAM	18.39	EIRP	0.069	4.4896	4M49D7\
				QPSK	22.65	EIRP	0.184	8.9934	8M99G7						
4	10	1715.0 1	10 1715.0	1715.0 1750.0	1715.0 175	1715.0	1715.0	16QAM	21.61	EIRP	0.145	9.0048	9M00D7\		
			1730.0	64QAM	20.55	EIRP	0.114	8.9914	8M99D7\						
				256QAM	17.71	EIRP	0.059	9.0115	9M01D7\						
				QPSK	22.73	EIRP	0.187	13.4680	13M5G7						
				16QAM	21.65	EIRP	0.146	13.4740	13M5D7\						
4	15	1717.5	1747.5	64QAM	20.61	EIRP	0.115	13.4670	13M5D7\						
				256QAM	17.88	EIRP	0.061	13.4700	13M5D7\						
				QPSK	22.91	EIRP	0.195	17.9510	18M0G7						
				16QAM	21.84	EIRP	0.153	17.9580	18M0D7\						
4	20	1720.0	1745.0	64QAM	20.83	EIRP	0.121	17.9470	17M9D7\						
				256QAM					_						
					17.95	EIRP	0.062	17.9620	18M0D7\						
		L		ZJUQAW					T						
	BW	Frequ	iency		ERP / EIR	P (dBm)	(W)	99%							
	BW	Frequ	iency	M odulation					Emissio						
	BW	Frequ	iency	Modulation QPSK	20.07	ERP	0.102	1.0904	Emissio 1M09G7						
and			,	Modulation QPSK 16QAM	20.07	ERP ERP	0.102	1.0904 1.0938	Emissio 1M09G7 1M09D7V						
	BW 1.4	Frequ 824.7	ency 848.3	Modulation  QPSK  16QAM  64QAM	20.07 19.10 18.02	ERP ERP	0.102 0.081 0.063	1.0904	Emissio 1M09G7 1M09D7V						
and			,	Modulation QPSK 16QAM	20.07	ERP ERP	0.102	1.0904 1.0938	1M09G7 1M09D7\ 1M09D7\						
and			,	Modulation  QPSK  16QAM  64QAM	20.07 19.10 18.02	ERP ERP	0.102 0.081 0.063	1.0904 1.0938 1.0943	Emissio 1M09G7 1M09D7\ 1M09D7\ 1M09D7\						
and 5	1.4	824.7	848.3	Modulation  QPSK 16QAM 64QAM 256QAM	20.07 19.10 18.02 15.39	ERP ERP ERP	0.102 0.081 0.063 0.035	1.0904 1.0938 1.0943 1.0917	Emissio 1M09G7I 1M09D7V 1M09D7V 1M09D7V 2M70G7I						
and			,	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM	20.07 19.10 18.02 15.39 20.22 19.30	ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085	1.0904 1.0938 1.0943 1.0917 2.6984 2.6979	Emissio 1M09G7I 1M09D7V 1M09D7V 1M09D7V 2M70G7I 2M70D7V						
and 5	1.4	824.7	848.3	Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22	ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066	1.0904 1.0938 1.0943 1.0917 2.6984 2.6979 2.6954	Emissio 1M09G7I 1M09D7\ 1M09D7\ 1M09D7\ 2M70G7I 2M70D7\ 2M70D7\						
and 5	1.4	824.7	848.3	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40	ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 <b>0.035</b>	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961	Emissio 1M09G7I 1M09D7I 1M09D7I 1M09D7I 1M09D7I 2M70G7I 2M70D7I 2M70D7I 2M70D7I						
and 5	1.4	824.7	848.3	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 256QAM QPSK	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34	ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 <b>0.035</b>	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882	Emissio 1M09G7i 1M09D7i 1M09D7i 1M09D7i 2M70G7i 2M70D7i 2M70D7i 4M49G7i						
and 5	1.4	824.7	848.3	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM QPSK	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22	ERP ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 <b>0.035</b> 0.108 0.084	1.0904 1.0938 1.0943 1.0943 1.0917 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921	Emissio 1M09G7I 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 2M70G7I 2M70D7\ 2M70D7\ 4M49G7I 4M49D7\						
5 5	1.4	824.7	848.3 847.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27	ERP ERP ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 <b>0.035</b> 0.108 0.084 0.067	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921	Emissio 1M09G7I 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 2M70G7I 2M70D7\ 2M70D7\ 4M49G7I 4M49D7\ 4M50D7\						
5 5	1.4	824.7	848.3 847.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 64QAM 456QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38	ERP ERP ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976	Emissio 1M09G7I 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 2M70D7\ 2M70D7\ 2M70D7\ 4M49G7I 4M49D7\ 4M49D7\ 4M49D7\						
5 5	1.4	824.7	848.3 847.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47	ERP ERP ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111	1.0904 1.0938 1.0943 1.0917 2.6954 2.6979 2.6961 4.4882 4.4921 4.4976 4.4921 8.9890	Emissio 1M09G7 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 2M70G7 2M70D7\ 2M70D7\ 2M70D7\ 4M49G7 4M49D7\ 4M49D7\						
5 5 5	3 5	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 64QAM 456QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976 4.4976 4.4921 8.9800 9.0009	Emissio 1M09G7I 1M09D7V 1M09D7V 1M09D7V 1M09D7V 2M70G7I 2M70D7V 2M70D7V 2M70D7V 4M49D7V 4M49D7V 4M49D7V 4M49D7V 8M99G7I						
5 5	1.4	824.7	848.3 847.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 64QAM 456QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47	ERP ERP ERP ERP ERP ERP ERP ERP ERP ERP	0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111	1.0904 1.0938 1.0943 1.0917 2.6954 2.6979 2.6961 4.4882 4.4921 4.4976 4.4921 8.9890	Emissio 1M09G7I 1M09D7I 1M09D7I 1M09D7V 1M09D7V 2M70D7V 2M70D7V 2M70D7V 2M70D7V 4M49D7V 4M49D7V 4M49D7V 4M49D7V 8M99G7I 9M00D7V						
5 5 5	3 5	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM QPSK 16QAM 256QAM QPSK 16QAM 1564QAM 256QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976 4.4976 4.4921 8.9800 9.0009	Emissio 1M09G7I 1M09D7I 1M09D7I 1M09D7I 1M09D7I 2M70G7I 2M70D7I 2M70D7I 2M70D7I 4M49D7I 4M49D7I 4M49D7I 4M49D7I 4M49D7I 4M49D7I 8M99D7I 8M99D7I						
5 5 5	1.4	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM 464QAM QPSK 16QAM 464QAM 256QAM QPSK 16QAM 40AM 256QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.069	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.3890 9.0009 8.9921	Emissio 1M09G7 1M09D7 1M09D7 1M09D7 1M09D7 1M09D7 2M70G7 2M70D7 2M70D7 2M70D7 4M49D7 4M49D7 4M49D7 4M50D7 4M49D7 8M99D7 8M99D7 8M99D7						
5 5 5 TE	3 5	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 64QAM 256QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM 64QAM 44QAM 64QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976 4.4976 4.4921 8.3880 9.0009 8.9921	Emissio 1M09G7 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 1M09D7\ 2M70G7 2M70D7\ 2M70D7\ 2M70D7\ 4M49G7 4M49G7 4M49D7\ 8M99G7 8M99D7\ 8M99D7\						
5 5 5 TE	1.4 3 5	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM 464QAM QPSK 16QAM 464QAM 256QAM QPSK 16QAM 40AM 256QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.069	1.0904 1.0938 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.3890 9.0009 8.9921	Emissio 1M09C7 1M09D7 1M09D7 1M09D7 1M09D7 1M09D7 2M70D7 2M70D7 2M70D7 2M70D7 4M49G7 4M49D7 4M50D7 4M49D7 8M99D7 8M99D7 1Type o Emissic						
5 5 5 TE and	1.4 3 5 10	824.7 825.5 826.5 829.0	848.3 847.5 846.5 844.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM QPSK 16QAM 40QPSK 16QAM 40QPSK 16QAM 40QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR		0.102 0.081 0.063 0.035 0.105 0.086 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.069 0.034 (W)	1.0904 1.0938 1.0943 1.0947 2.6984 2.6999 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.8990 9.0009 8.9921 8.9877	Emissio 1M09G7i 1M09D7i 1M09D7i 1M09D7i 1M09D7i 1M09D7i 2M70G7i 2M70D7i 2M70D7i 2M70D7i 4M49G7i 4M49D7i 4M49D7i 4M49D7i 8M99G7i 9M00D7i 8M99D7i Type o Emissic						
5 5 5 TE and	1.4 3 5	824.7 825.5 826.5	848.3 847.5 846.5	Modulation  QPSK 16QAM 64QAM 256QAM 0PSK 16QAM 64QAM 64QAM 256QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM 44QAM 256QAM QPSK 16QAM 44QAM 256QAM QPSK 16QAM 44QAM 256QAM QPSK 16QAM 44QAM 256QAM 454QAM 256QAM 454QAM 256QAM 454QAM 256QAM 454QAM 256QAM 454QAM 256QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.067 0.035 0.111 0.086 0.035 0.108 0.097 0.035 0.111 0.086 0.035 0.108 0.097 0.035 0.108 0.097 0.035 0.108 0.097 0.035 0.108 0.097 0.035 0.108 0.097 0.035 0.108 0.097 0.098 0.	1.0904 1.0938 1.0943 1.0943 1.0917 2.6984 2.6979 2.6964 2.6961 4.4882 4.4921 4.4976 4.4921 8.8890 9.0009 8.9921 8.9877	Emissio 1M09G7i 1M09D7i 1M09D7i 1M09D7i 1M09D7i 1M09D7i 2M70D7i 2M70D7i 2M70D7i 4M49D7i 4M49D7i 4M49D7i 4M99G7i 9M00D7i 8M99D7i Type o Emissic						
5 5 5 TE and	1.4 3 5 10	824.7 825.5 826.5 829.0	848.3 847.5 846.5 844.0	Modulation  QPSK 16QAM 64QAM 256QAM GPSK 16QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR		0.102 0.081 0.063 0.035 0.105 0.086 0.085 0.066 0.035 0.108 0.067 0.035 0.111 0.086 0.036 (W) 0.215 0.166 0.133	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6999 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 999% 4.5004 4.5006 4.5034	Emissio 1M09G71 1M09D71 1M09D71 1M09D71 1M09D71 1M09D71 2M70D71 2M70D71 2M70D71 2M70D71 4M49G71 4M49D71						
5 5 5 TE and	1.4 3 5 10	824.7 825.5 826.5 829.0	848.3 847.5 846.5 844.0	Modulation  OPSK 16QAM 64QAM 256QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM QPSK 16QAM 256QAM QPSK 16QAM 256QAM QPSK 16QAM 256QAM 0PSK 16QAM 40QAM 256QAM Modulation QPSK 16QAM 256QAM Modulation QPSK 16QAM 256QAM Modulation QPSK 16QAM 256QAM Modulation	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.101 0.084 0.067 0.035 0.101 0.084 0.067 0.035 0.101 0.105 0.	1.0904 1.0938 1.0943 1.0947 2.6984 2.6994 2.6997 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.3890 9.0009 8.3921 8.3977 99% 4.5024 4.5006 4.5034 4.4904	Emissio 1M09G7i 1M09D7v 1M09D7v 1M09D7v 2M70D7v 2M70D7v 2M70D7v 4M49G7i 4M49D7v 4M59D7v 8M99C7v 8M99D7v 8M99D7v 4M50D7v 4M40D7v 4M40D7						
5 5 5 TE and	1.4 3 5 10	824.7 825.5 826.5 829.0	848.3 847.5 846.5 844.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16CAM 64CAM 256QAM 256QAM 256QAM 64QAM 64QAM 64QAM 64QAM MODULATION MODULATION 64QAM MODULATION MODULATION 64QAM 64QAM MODULATION MODULATION 64QAM 64QAM MODULATION 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR		0.102 0.081 0.063 0.035 0.105 0.086 0.035 0.066 0.035 0.108 0.084 0.067 0.035 0.101 0.084 0.067 0.035 0.101 0.086 0.035 0.105 0.106 0.105 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6979 2.6964 2.6961 4.4882 4.4921 4.4976 4.4921 8.8980 9.0009 8.9921 8.9977 99% 4.5024 4.5006 4.5034 4.4904 8.9785	Emissio 11009571 1109977 110997 110997 110997 110997 110997 110997 110997 110997 110997 110997 110997 110997 1						
5 5 5 TE and	1.4 3 5 10	824.7 825.5 826.5 829.0 Frequ	848.3 847.5 846.5 844.0 uency 2567.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM 256QAM QPSK 16QAM 256QAM 40PSK 16QAM 64QAM 256QAM Modulation QPSK 16QAM Modulation QPSK 16QAM 64QAM 256QAM Modulation QPSK 16QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.035 0.111 0.086 0.035 0.103 0.003 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6999 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 999% 4.5024 4.5006 4.5034 4.4904 8.9785	Emissio 1M09G71 1M09D71 1M09D71 1M09D71 1M09D71 1M09D71 2M70D71 2M70D71 2M70D71 2M70D71 4M49D71 4M49D71 4M49D71 4M49D71 4M49D71 4M49D71 8M99D71 Type o Emissic 4M50D71 4M50D71 4M49D71 4M49D71 4M50D71						
5 5 5 TE	1.4 3 5 10 BW	824.7 825.5 826.5 829.0	848.3 847.5 846.5 844.0	Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  40PSK  16QAM  256QAM  256QAM  256QAM  64QAM  64QAM  256QAM  Modulation  QPSK  16QAM  Modulation  QPSK  16QAM  64QAM  256QAM  MODULATION  QPSK  16QAM  64QAM  64QAM  256QAM  QPSK  16QAM  64QAM  64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / ER 23.32 22.21 21.25 18.39 23.36 22.28 21.20		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.069 0.034 (W) 0.215 0.166 0.166 0.217 0.169 0.132	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6994 2.6997 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.3890 9.0009 8.3921 8.3877 99% 4.5024 4.5006 4.5034 4.4904 8.3785 8.3848	Emissio 1M0907 1M0907 1M0907 1M0907 1M0907 2M7007 2M7007 2M7007 4M4907 4M4907 4M5907 3M9907 3M9907 4M5007 4M5007 4M4907 4M4907 4M5007 4M4907 4M4907 4M4907						
5 5 5 TTE and 7	1.4 3 5 10 BW	824.7 825.5 826.5 829.0 Frequ	848.3 847.5 846.5 844.0 uency 2567.5	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM 256QAM QPSK 16QAM 256QAM 40PSK 16QAM 64QAM 256QAM Modulation QPSK 16QAM Modulation QPSK 16QAM 64QAM 256QAM Modulation QPSK 16QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.035 0.111 0.086 0.035 0.103 0.003 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6999 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 999% 4.5024 4.5006 4.5034 4.4904 8.9785	Emissio 1M09G7i 1M09D7v 1M09D7v 1M09D7v 1M09D7v 2M70D7v 2M70D7v 2M70D7v 4M49G7i 4M49D7v 4M49D7v 4M50D7v 8M99D7v 1M09D7v 4M50D7v 4M50D7v 4M49D7v 4M50D7v 4M49D7v 4M50D7v 4M49D7v 4M49D7v 4M49D7v 4M50D7v 4M49D7v 4M49D7v 4M49D7v 4M49D7v 4M49D7v 4M49D7v 4M49D7v 8M98G7						
5 5 5 TTE and 7	1.4 3 5 10 BW	824.7 825.5 826.5 829.0 Frequ	848.3 847.5 846.5 844.0 uency 2567.5	Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  40PSK  16QAM  256QAM  256QAM  256QAM  64QAM  64QAM  256QAM  Modulation  QPSK  16QAM  Modulation  QPSK  16QAM  64QAM  256QAM  MODULATION  QPSK  16QAM  64QAM  64QAM  256QAM  QPSK  16QAM  64QAM  64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / ER 23.32 22.21 21.25 18.39 23.36 22.28 21.20		0.102 0.081 0.063 0.035 0.105 0.085 0.066 0.035 0.108 0.084 0.067 0.035 0.111 0.086 0.069 0.034 (W) 0.215 0.166 0.166 0.217 0.169 0.132	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6994 2.6997 2.6954 2.6961 4.4882 4.4921 4.4976 4.4921 8.3890 9.0009 8.3921 8.3877 99% 4.5024 4.5006 4.5034 4.4904 8.3785 8.3848	Type of Emissic of Mo9C71 MO9C						
5 5 5 TTE and 7	1.4 3 5 10 BW 5	824.7 825.5 826.5 829.0 Frequ 2502.5	847.5 846.5 844.0 2567.5 2565.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM 256QAM 256QAM 64QAM 256QAM 64QAM 256QAM 64QAM 256QAM Modulation QPSK 16QAM 64QAM QPSK	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 21.20 18.31		0.102 0.081 0.063 0.105 0.085 0.105 0.086 0.087 0.087 0.087 0.087 0.088 0.084 0.089 0.084 0.086 0.084 0.086 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4862 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 99% 4.5024 4.5006 4.5034 4.4904 8.9785 8.9848 8.9983 1.3.4670	Emissio 1M09G71 1M09D71 1M09D71 1M09D71 1M09D71 1M09D71 2M70D71 2M70D71 2M70D71 2M70D71 4M49D71 4M49D71 4M49D71 4M49D71 4M50D71 8M99D71 8M99D71 7Vpe o Emissic 4M50D71 4M49D71 4M50D71 4M50D71 4M50D71 4M50D71 4M50D71 4M50D71 8M98D70 1M99D70 1M90D70						
5 5 5 TTE and 7	1.4 3 5 10 BW	824.7 825.5 826.5 829.0 Frequ	848.3 847.5 846.5 844.0 uency 2567.5	Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  40PSK  16QAM  256QAM  256QAM  64QAM  256QAM  64QAM  64QAM  Modulation  QPSK  16QAM  64QAM  256QAM  Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 22.29 18.31 23.46 22.28 23.36 23		0.102 0.081 0.003 0.105 0.105 0.006 0.006 0.005 0.108 0.006 0.007 0.006 0.007	1.0904 1.0908 1.0908 1.0943 1.0943 1.0947 2.6984 2.6984 2.6987 2.6984 4.4882 4.4921 4.4921 4.4976 4.4921 8.8980 9.0009 8.9921 8.89877 99% 4.5024 4.5006 4.5034 4.4904 8.9785 8.9848 8.9986 8.9983 13.4670 13.4650	Emissio 1M09G7i 1M09D7v 1M09D7v 1M09D7v 1M09D7v 2M70D7v 2M70D7v 2M70D7v 4M49G7i 4M49D7v 4M49D7						
5 5 5 TE and 7	1.4 3 5 10 BW 5	824.7 825.5 826.5 829.0 Frequ 2502.5	847.5 846.5 844.0 2567.5 2565.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16CAM 64CAM 256QAM 256QAM 64CAM 64CAM 64CAM 64CAM Modulation 456QAM 64CAM 64CAM 256QAM MODULATION 64CAM 64CAM 256CAM 64CAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 21.30 18.31 23.45 22.38 21.34	Record   R	0.102 0.081 0.063 0.105 0.085 0.105 0.086 0.035 0.108 0.084 0.067 0.035 0.108 0.084 0.094 0.011 0.086 0.094 0.011 0.086 0.094 0.011 0.086 0.094 0.011 0.086 0.094 0.011 0.018 0.	1.0904 1.0938 1.0943 1.0938 1.0943 1.0997 2.6984 2.6979 2.6964 2.6961 4.4882 4.4921 4.4976 4.4921 8.8980 9.0009 8.9921 8.9987 99% 4.5024 4.5006 4.5003 4.4904 8.9785 8.9988 8.9996 8.9983 13.4670 13.4650	Emissio 11009571 1109977 110997						
5 5 5 TE and 7	1.4 3 5 10 BW 5	824.7 825.5 826.5 829.0 Frequ 2502.5	847.5 846.5 844.0 2567.5 2565.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM 256QAM 64QAM 256QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 21.20 18.31 23.45 22.38 21.34 18.31	Record   R	0.102 0.081 0.083 0.105 0.085 0.105 0.086 0.084 0.087 0.084 0.086 0.094 0.096 0.094 0.096 0.094 0.096 0.094 0.096 0.094 0.096 0.096 0.094 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.097 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.097 0.096 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4862 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 99% 4.5024 4.5006 4.5034 4.4904 8.9785 8.9848 8.9983 13.4670 13.4650 13.4460	Emissio 1M09G71 1M09D71 1M09D71 1M09D71 1M09D71 1M09D71 2M70D71 2M70D71 2M70D71 2M70D71 4M49D71 4M49D71 4M49D71 4M49D71 4M5D71 8M99G71 9M00D71 4M50D71 4M50D71 4M50D71 4M50D71 4M50D71 13M5D71 13M5D71 13M5D71						
5 5 5 TE and 7	1.4 3 5 10 BW 5	824.7 825.5 826.5 829.0 Frequ 2502.5	847.5 846.5 844.0 2567.5 2565.0	Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  QPSK  16QAM  256QAM  256QAM  256QAM  64QAM  256QAM  64QAM  256QAM  Modulation  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  64QAM  256QAM  QPSK  16QAM  16QAM  16QAM  256QAM  QPSK  16QAM  16QAM  256QAM  QPSK  16QAM  16QAM  256QAM  QPSK  16QAM  256QAM  QPSK	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 22.29 18.31 23.36 22.28 18.31 23.45 23.45 23.34	金	0.102 0.081 0.003 0.105 0.105 0.006 0.005 0.105 0.006 0.005 0.008 0.007 0.005 0.008 0.007 0.005 0.008 0.007 0.008 0.009 0.007 0.008 0.009 0.	1.0904 1.0908 1.0908 1.0943 1.0943 1.0947 2.6984 2.6984 2.6987 2.6984 4.4882 4.4921 4.4976 4.4921 8.8980 9.0009 8.9921 8.89877 99% 4.5024 4.5006 4.5034 4.4904 8.9785 8.9848 8.9986 8.9983 13.4670 13.4650 17.9570	Emissio 1M09G7i 1M09D7v 1M09D7v 1M09D7v 1M09D7v 2M70D7v 2M70D7v 2M70D7v 4M49G7i 4M49D7v 4M49D7v 4M49D7v 4M50D7v 5M99D7v 5M99D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 4M50D7v 1M50D7v 1M50D7						
5 5 5 TE and 7	1.4 3 5 10 BW 5	824.7 825.5 826.5 829.0 Frequ 2502.5	847.5 846.5 844.0 2567.5 2565.0	Modulation  QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM 256QAM 64QAM 256QAM 64QAM	20.07 19.10 18.02 15.39 20.22 19.30 18.22 15.40 20.34 19.22 18.27 15.38 20.47 19.35 18.41 15.37 ERP / EIR 23.32 22.21 21.25 18.39 23.36 22.28 21.20 18.31 23.45 22.38 21.34 18.31	Record   R	0.102 0.081 0.083 0.105 0.085 0.105 0.086 0.084 0.087 0.084 0.086 0.094 0.096 0.094 0.096 0.094 0.096 0.094 0.096 0.094 0.096 0.096 0.094 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.097 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.096 0.097 0.096 0.	1.0904 1.0938 1.0943 1.0943 1.0947 2.6984 2.6979 2.6954 2.6961 4.4862 4.4921 4.4976 4.4921 8.9890 9.0009 8.9921 8.9877 99% 4.5024 4.5006 4.5034 4.4904 8.9785 8.9848 8.9983 13.4670 13.4650 13.4460	Emissio 1M09G71 1M09D71 1M09D71 1M09D71 1M09D71 1M09D71 2M70D71 2M70D71 2M70D71 2M70D71 4M49D71 4M49D71 4M49D71 4M49D71 4M5D71 8M99G71 9M00D71 4M50D71 4M50D71 4M50D71 4M50D71 4M50D71 13M5D71 13M5D71 13M5D71						

LTE Band	BW	Frequ	iency	M odulation	ERP / EIR	P (dBm)	(W)	99%	Type of Emissio												
Dallu				QPSK	20.84	ERP	0.121	1.0894	1M09G7I												
				16QAM	19.81	ERP	0.096	1.0954	1M10D7V												
12	1.4	699.7	715.3	64QAM	18.80	ERP	0.076	1.0947	1M09D7\												
				256QAM	16.13	ERP	0.041	1.0916	1M09D7\												
				QPSK	20.96	ERP	0.125	2.6979	2M70G7												
12	3	700.5	714.5	16QAM	19.96	ERP	0.099	2.7009	2M70D7\												
12	3	700.5	714.5	64QAM	19.05	ERP	0.080	2.6948	2M69D7\												
				256QAM	16.09	ERP	0.041	2.7011	2M70D7\												
				QPSK	21.18	ERP	0.131	4.4914	4M49G7												
12	5	701.5	713.5	16QAM	20.11	ERP	0.103	4.4924	4M49D7\												
		701.0	1 10.0	64QAM	19.15	ERP	0.082	4.4872	4M49D7												
				256QAM	16.10	ERP	0.041	4.4954	4M50D7\												
				QPSK	21.24	ERP	0.133	9.0050	9M01G7												
12	10	704.0	711.0	16QAM	20.17	ERP	0.104	9.0049	9M00D7\												
				64QAM	19.21	ERP	0.083	8.9807	8M98D7\												
				256QAM	16.10	ERP	0.041	8.9789	8M98D7\												
LTE	BW	Frequ	iency	Modulation	ERP / EIR	P (dBm)	(W)	99%	Type o												
Band		-			04.44	ERP	0.130	4.4889	Emissio												
				QPSK	21.14				4M49G7												
17	5	706.5	713.5	16QAM 64QAM	20.09 19.13	ERP ERP	0.102 0.082	4.4941 4.4903	4M49D7 4M49D7												
		-	-	256QAM QPSK	16.11 21.21	ERP ERP	0.041 0.132	4.4950 8.9771	4M50D7 8M98G7												
				16QAM	20.16	ERP	0.132	8.9823	8M98D7												
17	10	709.0	711.0	64QAM	19.03	ERP	0.080	8.9816	8M98D7												
				256QAM	16.08	ERP	0.000	8.9798	8M98D7												
LTE				ZJUQAW	10.00	LINE	0.041	0.9790	Type												
Band	BW	Frequ	ency	Modulation	ERP / EIR	P (dBm)	(W)	99%	Emissi												
Janu				QPSK	24.12	EIRP	0.258	1.0948	1M09G												
				16QAM	23.08	EIRP	0.203	1.0965	1M10D7												
25	i 1.4	1.4 1850.7	1914.3	64QAM	21.99	EIRP	0.203	1.0965	1M10D7												
					256QAM	19.19	EIRP	0.083	1.0919	1M09D7											
		+ +		QPSK	24.19	EIRP	0.262	2.7009	2M70G												
	3			16QAM	23.10	EIRP	0.204	2.6998	2M70D7												
25		3	3	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1851.5	1913.5	64QAM	22.16	EIRP	0.164	2.7030
				256QAM	19.24	EIRP	0.084	2.6959	2M70D7												
_				QPSK	24.17	EIRP	0.261	4.4937	4M49G												
				16QAM	23.08	EIRP	0.203	4.4947	4M49D7												
25	5	5	5	1852.5	1912.5	64QAM	21.94	EIRP	0.156	4.5042	4M50D7										
				256QAM	19.15	EIRP	0.082	4.5061	4M51D7												
				QPSK	24.22	EIRP	0.264	8.9777	8M98G												
				16QAM	23.08	EIRP	0.203	8.9751	8M98D7												
25	10	1855.0	1910.0	64QAM	22.07	EIRP	0.161	8.9790	8M98D7												
				256QAM	19.23	EIRP	0.084	8.9649	8M96D7												
				QPSK	24.23	EIRP	0.265	13.4700	13M5G												
				16QAM	23.13	EIRP	0.206	13.4580	13M5D7												
25	15	1857.5	1907.5	64QAM	22.07	EIRP	0.161	13.4580	13M5D7												
				256QAM	19.20	EIRP	0.083	13.4430	13M4D7												
				QPSK	24.31	EIRP	0.270	17.9200	17M9G												
25	20	1960.0	1005.0	16QAM	23.16	EIRP	0.207	17.9270	17M9D7												
25	20	1860.0	1905.0	64QAM	22.16	EIRP	0.164	17.9430	17M9D7												
		<u></u>	<u></u>	256QAM	19.18	EIRP	0.083	17.9140	17M9D7												
LTE	BW	Frequ	IO DOV			D (dD~)		000/	Туре												
Band	DVV	Frequ	шенсу	M odulation	ERP / EIR	r (apm)	(W)	99%	Emissi												
26				QPSK	19.71	ERP	0.094	1.0903	1M09G												
∠o Part	1.4	814.7	823.3	16QAM	18.86	ERP	0.077	1.0936	1M09D7												
90	1.4	014.7	023.3	64QAM	17.96	ERP	0.063	1.0940	1M09D7												
an				256QAM	14.98	ERP	0.031	1.0888	1M09D7												
26				QPSK	19.71	ERP	0.094	2.7011	2M70G												
26 Part	3	815.5	822.5	16QAM	19.07	ERP	0.081	2.6969	2M70D7												
	J	010.0	022.5	64QAM	17.70	ERP	0.059	2.6938	2M69D7												
90		<u></u>		256QAM	14.92	ERP	0.031	2.7000	2M70D7												
26				QPSK	19.92	ERP	0.098	4.4939	4M49G												
26 Part	5	816.5	821.5	16QAM	19.25	ERP	0.084	4.4952	4M50D7												
90	J	010.0	021.0	64QAM	18.23	ERP	0.067	4.4921	4M49D7												
3U				256QAM	15.13	ERP	0.033	4.4874	4M49D7												
26				QPSK	20.00	ERP	0.100	9.0062	9M01G												
∠o Part	10	819.0	819.0	16QAM	19.44	ERP	0.088	8.9931	8M99D7												
90	10	015.0	015.0	64QAM	17.70	ERP	0.059	8.9787	8M98D7												
		1	ı	256QAM	15.21	ERP	0.033	8.9784	8M98D7												

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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LTE Band	BW	Frequ	uency	M odulation	ERP / EIR	P (dBm)	(W)	99%	Type of Emission		
Danu				QPSK	19.73	ERP	0.094	1.0891	1M09G7D		
				16QAM	18.85	ERP	0.034	1.0941	1M09D7W		
26	1.4	824.7	848.3	64QAM	18.01	ERP	0.063	1.0907	1M09D7W		
						ERP		1.0950			
				256QAM QPSK	15.01 19.78	ERP	0.032	2.6985	1M10D7W 2M70G7D		
				16QAM	18.89	ERP	0.095	2.6926	2M69D7W		
26	3	825.5	847.5	64QAM	17.91	ERP	0.077	2.7014	2M70D7W		
				256QAM		ERP	0.002	2.7013			
					15.12				2M70D7W		
				QPSK	19.76 19.20	ERP ERP	0.095	4.4898 4.4915	4M49G7D 4M49D7W		
26	5	826.5	846.5	16QAM		ERP	0.083				
				64QAM	17.95		0.062	4.4892	4M49D7W		
				256QAM	15.00	ERP	0.032	4.4916	4M49D7W		
				QPSK	19.78	ERP	0.095	8.9923	8M99G7D		
26	10	829.0	844.0	16QAM	19.00	ERP	0.079	8.9997	9M00D7W		
				64QAM	17.85	ERP	0.061	8.9955	9M00D7W		
				256QAM	15.31	ERP	0.034	8.9960	9M00D7W		
				QPSK	19.93	ERP	0.098	13.4690	13M5G7D		
26	15	831.5	841.5	16QAM	18.76	ERP	0.075	13.4620	13M5D7W		
		001.0	011.0	64QAM	17.88	ERP	0.061	13.4680	13M5D7W		
				256QAM	15.18	ERP	0.033	13.4740	13M5D7W		
LTE	BW	Frequ	uency	Modulation	ERP /		(W)	99%	Type of		
Band	אינים	rieqi	ucricy		(dBm/5				Emission		
				QPSK	23.39	EIRP	0.218	4.4919	4M49G7D		
30	5	2307.5	2312.5	16QAM	22.78	EIRP	0.190	4.4918	4M49D7W		
30	5	2307.5	2312.5	64QAM	23.09	EIRP	0.204	4.4911	4M49D7W		
				256QAM	18.54	EIRP	0.071	4.4850	4M49D7W		
				QPSK	23.18	EIRP	0.208	8.9919	8M99G7D		
	40	2310.0		0040.0	16QAM	22.31	EIRP	0.170	8.9748	8M97D7W	
30	10		2310.0 2310.0	64QAM	22.21	EIRP	0.166	8.9807	8M98D7W		
				256QAM	18.58	EIRP	0.072	8.9816	8M98D7W		
LTE			1		i e				Type of		
Band	BW	Frequ	uency	Modulation	ERP / EIR	P (dBm)	(W)	99%	Emission		
Dana				QPSK	23.39	EIRP	0.218	4.5020	4M50G7D		
				16QAM	22.59	EIRP	0.182	4.5066	4M51D7W		
38	5	2572.5	72.5 2617.5	64QAM	21.54	EIRP	0.143	4.4982	4M50D7W		
						256QAM	18.62	EIRP	0.073	4.4895	4M49D7W
			2575.0			QPSK	23.37	EIRP	0.217	9.0124	9M01G7D
		2575.0			16QAM	22.59	EIRP	0.182	8.9786	8M98D7W	
38	10			2575.0	2575.0	2575.0 2615.0	575.0 2615.0	64QAM	21.41	EIRP	0.138
				256QAM	18.57	EIRP	0.072	8.9803	8M98D7W		
				QPSK	23.49	EIRP	0.223	13.4650	13M5G7D		
				16QAM	22.56	EIRP	0.180	13.4790	13M5D7W		
38	15	2577.5	2612.5	64QAM	21.46	EIRP	0.140	13.4580	13M5D7W		
				256QAM	18.57	EIRP	0.072	13.4770	13M5D7W		
				QPSK	23.42	EIRP	0.072	17.9140	17M9G7D		
				16QAM	22.58	EIRP	0.220	17.9660	18M0D7W		
38	20	20	2580.0	2610.0	64QAM		EIRP	0.181		17M9D7W	
			1		21.58			17.9390			
1.75			L	256QAM	18.78	EIRP	0.076	17.9120	17M9D7W		
LTE	L 5147	1		Modulation	ERP / EIR	P (dBm)	(W)	99%	Type of		
	BW	Frequ	Jency	IVIOUUIAUUII				i e e e e e e e e e e e e e e e e e e e			
Band	BW	Frequ	uency		04.00	E IDD			Emission		
Band	BW	Frequ	lency	QPSK	24.62	EIRP	0.290	4.4955	4M50G7D		
Band 41	5 BW	2498.5	2687.5	QPSK 16QAM	23.92	EIRP	0.247	4.4942	4M50G7D 4M49D7W		
				QPSK 16QAM 64QAM	23.92 23.42	EIRP EIRP	0.247 <b>0.220</b>	4.4942 4.4958	4M50G7D 4M49D7W 4M50D7W		
				QPSK 16QAM 64QAM 256QAM	23.92 23.42 20.56	EIRP EIRP	0.247 0.220 0.114	4.4942 4.4958 4.5056	4M50G7D 4M49D7W 4M50D7W 4M51D7W		
				QPSK 16QAM 64QAM 256QAM QPSK	23.92 23.42 20.56 24.49	EIRP EIRP EIRP	0.247 0.220 0.114 0.281	4.4942 4.4958 4.5056 8.9920	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM	23.92 23.42 20.56 24.49 24.11	EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258	4.4942 4.4958 4.5056 8.9920 8.9911	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W		
				QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM	23.92 23.42 20.56 24.49 24.11 23.38	EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218	4.4942 4.4958 4.5056 8.9920 8.9911 9.0023	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52	EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113	4.4942 4.4958 4.5056 8.9920 8.9911 9.0023 9.0072	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288	4 4942 4 4958 4 5056 8 9920 8 9911 9 0023 9 0072 13 4750	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252	4 4942 4 4958 4 5056 8 9920 8 9911 9 0023 9 0072 13 4750 13 4770	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01 23.16	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252 0.207	4.4942 4.4958 4.5056 8.9920 8.9911 9.0023 9.0072 13.4750 13.4770 13.4850	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W 13M5D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01 23.16 20.30	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252 0.207 0.107	4 .4942 4 .4958 4 .5056 8 .9920 8 .9911 9 .0023 9 .0072 13 .4750 13 .4770 13 .4850 13 .4760	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01 23.16	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252 0.207	4.4942 4.4958 4.5056 8.9920 8.9911 9.0023 9.0072 13.4750 13.4770 13.4850	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W 13M5D7W		
41 41	5 10 15	2498.5 2501.0 2503.5	2687.5 2685.0 2682.0	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK 16QAM 64QAM 256QAM	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01 23.16 20.30	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252 0.207 0.107	4 .4942 4 .4958 4 .5056 8 .9920 8 .9911 9 .0023 9 .0072 13 .4750 13 .4770 13 .4850 13 .4760	4M50G7D 4M49D7W 4M50D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W 13M5D7W 13M5D7W		
41	5	2498.5	2687.5	QPSK 16QAM 64QAM 256QAM QPSK 16QAM 256QAM QPSK 16QAM QPSK 16QAM 256QAM QPSK	23.92 23.42 20.56 24.49 24.11 23.38 20.52 24.60 24.01 23.16 20.30 24.46	EIRP EIRP EIRP EIRP EIRP EIRP EIRP EIRP	0.247 0.220 0.114 0.281 0.258 0.218 0.113 0.288 0.252 0.207 0.107 0.279	4 4942 4 4958 4 5056 8 9920 8 9911 9 0023 9 0072 13 4750 13 4750 13 4850 13 4760 17 9210	4M50G7D 4M49D7W 4M50D7W 4M51D7W 4M51D7W 8M99G7D 8M99D7W 9M00D7W 9M01D7W 13M5G7D 13M5D7W 13M5D7W 13M5D7W 13M5D7W 13M5D7W 17M9G7D		

LTE Band	BW	Frequ	iency	Modulation	ERP / EIR	P (dBm)	(W)	99%	Type of Emission				
Dana				QPSK	24.05	FIRP	0.254	1.0932	1M09G7D				
				16QAM	22.97	EIRP	0.198	1.0992	1M10D7W				
66	1.4	1710.7	1779.3	64QAM	21.96	EIRP	0.157	1.0946	1M09D7W				
				256QAM	19.13	EIRP	0.082	1.0932	1M09D7W				
				QPSK	24.06	EIRP	0.255	2.7018	2M70G7D				
	66 3 17			16QAM	22.89	EIRP	0.195	2.7021	2M70D7W				
66		1711.5	1778.5	64QAM	21.90	FIRP	0.155	2.6984	2M70D7W				
				256QAM	19.09	EIRP	0.081	2.7055	2M71D7W				
				QPSK	24.09	EIRP	0.256	4.5017	4M50G7D				
				16QAM	22.99	EIRP	0.199	4.5057	4M51D7W				
66	5	1712.5	1777.5	64QAM	21.93	EIRP	0.156	4.4977	4M50D7W				
				256QAM	19.12	EIRP	0.082	4.5071	4M51D7W				
				QPSK	24.11	EIRP	0.258	9.0019	9M00G7D				
				16QAM	23.01	EIRP	0.200	8.9947	8M99D7W				
66	10	1715.0	1775.0	64QAM	21.95	EIRP	0.157	8.9842	8M98D7W				
				256QAM	19.06	EIRP	0.081	8.9851	8M99D7W				
						QPSK	24.16	EIRP	0.261	13.4690	13M5G7D		
		5 1717.5		16QAM	23.02	EIRP	0.200	13.4790	13M5D7W				
66	15		17.5 1772.5	64QAM	21.99	EIRP	0.158	13.4620	13M5D7W				
				256QAM	19.12	EIRP	0.082	13.4600	13M5D7W				
				QPSK	24.21	FIRP	0.264	17.9600	18M0G7D				
	66 20 1720.0	1720.0		16QAM	23.07	EIRP	0.203	17.9300	17M9D7W				
66			1770.0	64QAM	22.10	EIRP	0.162	17.9410	17M9D7W				
			256QAM	19.08	EIRP	0.081	17.9170	17M9D7W					
LTE									Type of				
Band	BW	Frequ	uency	Modulation	ERP / EIR	P (dBm)	(W)	99%	Emission				
Dana				QPSK	19.03	ERP	0.080	4.4884	4M49G7D				
				16QAM	17.95	ERP	0.062	4.4940	4M49D7W				
71	5	665.5	695.5	64QAM	16.98	ERP	0.050	4.4869	4M49D7W				
				256QAM	14.19	ERP	0.026	4.4874	4M49D7W				
				QPSK	19.21	ERP	0.083	8.9814	8M98G7D				
71 10				10 688.0	10 688.0	688.0		16QAM	18.13	ERP	0.065	8.9915	8M99D7W
	10	10	10				688.0	688.0	688.0	688.0			
71	10	688.0	693.0			FRP	0.052	8 9877	8M99D7W				
71	10	688.0	693.0	64QAM	17.13	ERP	0.052	8.9877 8.9667	8M99D7W				
71	10	688.0	693.0	64QAM 256QAM	17.13 14.16	ERP	0.026	8.9667	8M97D7W				
				64QAM 256QAM QPSK	17.13 14.16 19.23	ERP ERP	0.026 0.084	8.9667 13.4880	8M97D7W 13M5G7D				
71	10	688.0 670.5	693.0 690.5	64QAM 256QAM QPSK 16QAM	17.13 14.16 19.23 18.09	ERP ERP	0.026 0.084 0.064	8.9667 13.4880 13.4870	8M97D7W 13M5G7D 13M5D7W				
				64QAM 256QAM QPSK 16QAM 64QAM	17.13 14.16 19.23 18.09 17.18	ERP ERP ERP	0.026 0.084 0.064 0.052	8.9667 13.4880 13.4870 13.4620	8M97D7W 13M5G7D 13M5D7W 13M5D7W				
				64QAM 256QAM QPSK 16QAM 64QAM 256QAM	17.13 14.16 19.23 18.09 17.18 14.22	ERP ERP ERP ERP	0.026 0.084 0.064 0.052 <b>0.026</b>	8.9667 13.4880 13.4870 13.4620 13.4580	8M97D7W 13M5G7D 13M5D7W 13M5D7W 13M5D7W				
71	15	670.5	690.5	64QAM 256QAM QPSK 16QAM 64QAM 256QAM QPSK	17.13 14.16 19.23 18.09 17.18 14.22 19.31	ERP ERP ERP ERP ERP	0.026 0.084 0.064 0.052 <b>0.026</b> <b>0.085</b>	8.9667 13.4880 13.4870 13.4620 13.4520 17.9600	8M97D7W 13M5G7D 13M5D7W 13M5D7W 13M5D7W 18M0G7D				
				64QAM 256QAM QPSK 16QAM 64QAM 256QAM	17.13 14.16 19.23 18.09 17.18 14.22	ERP ERP ERP ERP	0.026 0.084 0.064 0.052 <b>0.026</b>	8.9667 13.4880 13.4870 13.4620 13.4580	8M97D7W 13M5G7D 13M5D7W 13M5D7W 13M5D7W				

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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## **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

#### 1.7 **Test Facility**

Laboratory	Test Site Address	Test Site Name	FCC Designa- tion number	IC CAB identifier
		SAC 1		TW3702
		SAC 2		
		SAC 3		
	No 124 Wu Kung Bood New Toingi	Conduction 1		
	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New	Conducted 1	TW0027	
	Taipei City, Taiwan.	Conducted 2	1 440027	
		Conducted 3		
		Conducted 4		
		Conducted 5		
SGS Taiwan Ltd.		Conducted 6		
Central RF Lab.		Conduction C		
(TAF code 3702)		SAC C		
		SAC D		
		SAC G		
	No.2, Keji 1st Rd., Guishan District,	Conducted A		
		Conducted B	TW0028	
	Taoyuan City, Taiwan 333	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 indication where measurements occurred in specific test site and address.

#### 1.8 **Special Accessories**

No special accessories were used during testing.

### **Equipment Modifications**

There was no modifications incorporated into the EUT.

## 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	DC current
163(111006	(V)	(mA)
LTE Band 2_20M	7.8	426
QPSK	1.0	420

#### LTE Band 4

Test mode	DC voltage (V)	DC current (mA)
LTE Band 4_20M QPSK	7.8	433

### LTE Band 5

Test mode	DC voltage (V)	DC current (mA)
LTE Band 5_10M QPSK	7.8	415

## LTE Band 7

Test mode	DC voltage	DC current
lest mode	(V)	(mA)
LTE Band 7_20M	7.8	408
QPSK	1.0	400

## LTE Band 12

Test mode	DC voltage	DC current		
163t IIIOGE	(V)	(mA)		
LTE Band 12_10M	7.8	419		
QPSK	1.0	419		

### LTE Band 17

Test mode	DC voltage (V)	DC current (mA)
LTE Band 17_10M QPSK	7.8	416

## LTE Band 25

Test mode	DC voltage (V)	DC current (mA)
LTE Band 25_20M QPSK	7.8	426

#### LTE Band 26 for Part 90S

Test Mode	DC voltage	DC current			
Test Mode	(V)	(mA)			
LTE Band 26_10M	7.8	<b>∆</b> 17			
QPSK	1.0	417			

#### LTE Band 26

Test mode	DC voltage (V)	DC current (mA)
LTE Band 26_15M QPSK	7.8	422

### LTE Band 30

Test mode	DC voltage (V)	DC current (mA)
LTE Band 30_10M QPSK	7.8	409

### LTE Band 38

Test mode	DC voltage (V)	DC current (mA)
LTE Band 38_20M QPSK	7.8	418

## LTE Band 41

Test Mode	DC voltage	DC current
TOST WIDGE	(V)	(mA)
LTE Band 41_20M	7.8	<i>4</i> 21
QPSK	1.0	421

## LTE Band 66

Test mode	DC voltage (V)	DC current (mA)
LTE Band 66_20M	7.8	425
QPSK	7.0	423

### LTE Band 71

Test mode	DC voltage (V)	DC current (mA)
LTE Band 71_20M QPSK	7.8	434

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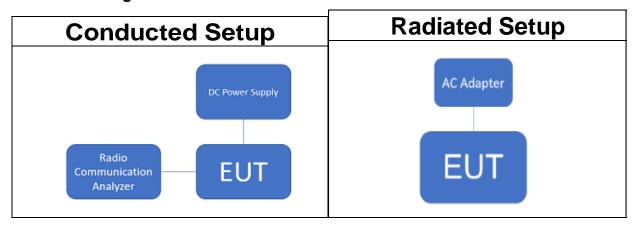
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## 2.6 Test Configuration



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

## 2.7 Control Unit(s)

Radiated Emission Test Site: SAC 3											
EQUIPMENT TYPE	TYPE MFR MODEL NUMBER SERIAL NUMBER LAST CAL. CAL DUE.										
AC Adapter	Shenzhen JingQuanHua & Everrise Intelligent Electric Co., Ltd	NSA65EU-20032500	N/A	N/A	N/A						
USB Cable	ASAP	LA9U2030-CS-H	N/A	N/A	N/A						

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## 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(c)(9) §27.50(c)(10) §27.50(d)(4) §27.50(h)(2) §90.635(b)	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(g) §27.53(h)(1)(3) §27.53(m)(4)(6) §90.691(a)	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask requirements	Compliant
§2.1053 §22.917(a) §24.238(a) §27.53(a)(4) §27.53(g) §27.53(h)(1)(3) §27.53(m)(4) §90.691(a)	Field Strength of Spurious Radiation	Compliant
§22.913(d) §24.232(d) §27.50(a)(1)(B) §27.50(d)(5)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235 §27.54 §90.213	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 Ite	ms							Max.	Output F	Power					
	Tes	st Chani	nel	Bandwidth (MHz)						Modulation				RB#		
Band	L	М	Н	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	V	٧	٧	٧	٧	V	٧	٧	٧	٧	٧	٧	V	V	٧	٧
4	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧
5	V	٧	٧	٧	٧	٧	٧	ı		٧	٧	٧	V	٧	٧	٧
7	٧	٧	٧	-	-	٧	٧	٧	٧	٧	٧	٧	V	٧	٧	٧
12	V	٧	٧	٧	٧	٧	٧	ı	-	٧	٧	٧	V	V	٧	٧
17	V	V	V	-	-	V	V	-	-	٧	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	-	-	٧	V	V	V	V	V	V
30	V	V	V	-	-	V	V	-	-	٧	V	V	V	V	V	٧
38	V	V	V	-	-	V	V	V	V	٧	V	V	V	V	V	V
41	V	V	V	-	-	V	V	V	V	٧	V	V	V	V	V	V
66	V	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	V
71	V	V	V	-	-	V	V	V	V	V	V	V	V	V	V	V
	Test Ite	ms							Freq	ency Sta	bility					
2	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	V
4	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	V
5	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	V
7	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	V
12	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	V
17	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
25	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
26	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	V
26 P90	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	٧
30	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	٧
38	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	٧
41	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	٧
66	-	V	-	-	-	-	V	-	-	V	-	-	-	-	-	٧
71	-	V	-	-	-	-	V	-	-	٧	-	-	-	-	-	٧

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	Test Ite								260	dB and 9	9%						
	rest ite	TIS							В	andwid	th						
Dond	Tes	st Chanı	nel	Bandwidth (MHz)						Modulation					RB#		
Band	L	М	Н	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	
2	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	-	-	٧	
4	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	-	-	٧	
5	٧	٧	٧	٧	V	٧	٧	-	-	٧	٧	٧	٧	-	-	٧	
7	٧	V	٧	-	-	٧	٧	٧	٧	٧	٧	٧	٧	-	-	٧	
12	٧	V	V	V	V	٧	V	-	-	٧	V	٧	٧	-	-	V	
17	٧	V	٧	-	-	V	V	-	-	٧	V	V	٧	-	-	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	-	٧	V	V	٧	-	-	V	
26 P90	V	V	V	V	V	V	V	-	-	V	V	V	V	-	-	V	
30	V	V	V	-	-	V	V	-	-	V	V	V	٧	-	-	V	
38	٧	V	٧	-	-	V	V	V	٧	٧	٧	٧	٧	-	-	V	
41	٧	V	V	-	-	V	V	V	٧	V	V	V	٧	-	-	V	
66	V	V	V	V	V	V	V	V	V	V	V	V	٧	-	-	V	
71	V	V	V	-	-	V	V	V	V	V	V	V	V	-	-	V	
	Test Ite	ms							Peak-to	sk-to-Av erage Ratio							
2	٧	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	
4	V	V	V	V	V	V	V	V	V	-	-	-	٧	-	-	V	
5	V	V	V	V	V	V	V	-	-	-	-	-	٧	-	-	V	
7	V	V	V	-	-	V	V	V	V	-	-	-	٧	-	-	V	
12	٧	V	V	V	V	V	V	-	-	-	-	-	٧	-	-	V	
17	٧	V	٧	-	-	٧	V	-	-	-	-	-	٧	-	-	V	
25	٧	V	٧	V	V	٧	V	V	٧	-	-	-	٧	-	-	V	
26	V	V	V	V	V	V	V	V	-	-	-	-	٧	-	-	V	
26 P90	٧	V	V	V	V	V	V	-	-	-	-	-	V	-	-	V	
30	٧	V	V	-	-	V	V	-	-	-	-	-	٧	-	-	V	
38	٧	V	V	-	-	V	V	V	V	-	-	-	V	-	-	V	
41	V	V	V	-	-	V	V	V	٧	-	-	-	V	-	-	V	
66	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	
71	٧	V	V	-	-	٧	V	V	٧	-	-	-	V	-	-	V	

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	Test Ite	ms							В	and Edg	je						
Donal	Tes	st Chanı	nel	Bandwidth (MHz)							Modulation				RB#		
Band	L	М	Н	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	64QAM	1	Half	Full	
2	٧	-	٧	٧	٧	٧	٧	٧	٧	٧	-	-	-	٧	٧	٧	
4	٧	-	٧	V	V	٧	٧	٧	٧	٧	-	-	-	٧	٧	٧	
5	V	-	V	V	V	V	V	-	-	V	-	-	-	V	٧	V	
7	V	-	V	-	-	V	V	V	V	V	-	-	-	V	V	V	
12	V	-	V	V	V	V	V	-	-	V	-	-	-	V	V	V	
17	٧	-	V	-	-	V	٧	-	-	٧	-	-	-	V	٧	٧	
25	V	-	V	V	V	V	V	V	V	V	-	-	-	V	V	V	
26	V	-	V	V	V	V	V	V	-	V	-	-	-	V	V	V	
26 P90	V	-	V	V	V	V	V	-	-	V	-	-	-	V	V	V	
30	V	-	V	-	-	V	V	-	-	V	-	-	-	V	V	V	
38	٧	-	V	-	-	V	V	V	V	V	-	-	-	V	V	V	
41	٧	-	V	-	-	V	V	V	V	٧	-	-	-	V	V	V	
66	V	-	V	V	V	V	V	V	V	V	-	-	-	V	V	V	
71	V	-	V	-	-	V	V	V	V	V	-	-	-	V	V	V	
	Test Ite	ms							Condu	ucted Emission							
2	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-	
4	٧	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-	
5	V	V	V	-	-	-	V	-	-	V	-	-	-	V	-	-	
7	٧	V	V	-	-	-	-	-	V	٧	-	-	-	V	-	-	
12	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	-	-	٧	-	-	-	V	-	-	
30	٧	V	V	-	-	V	V	-	-	٧	-	-	-	V	-	-	
38	٧	V	V	-	-	-	-	V	V	٧	-	-	-	V	-	-	
41	٧	V	V	-	-	V	-	-	V	٧	-	-	-	V	-	-	
66	V	V	V	-	-	-	-	-	V	V	-	-	-	V	-	-	
71	٧	V	V	-	-	-	-	-	V	٧	-	-	-	٧	-	-	

	Test Ite	ms		Radiated Emission												
Donal	Band Test Channel					Bandwid	th (MHz	)			Modu	lation			RB#	
Вапа	L	М	Н	1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full
2	٧	٧	٧	-	-	-	-	-	٧	٧	-	-	-	V	-	-
4	٧	٧	٧	ı	•	ı	ı	ı	٧	٧	ı	ı	-	٧	-	-
5	٧	٧	٧	ı	-	-	٧	ı	-	٧	-	1	-	V	-	-
7	٧	٧	٧	-	-	-	-	-	V	٧	-	-	-	V	-	-
12	٧	٧	٧	-	-	-	V	-	-	٧	-	-	-	V	-	-
17	٧	٧	٧	-	-	-	٧	-	-	٧	-	-	-	V	-	-
25	٧	٧	٧	1	-	-	-	1	٧	٧	-	-	-	V	-	-
26	٧	٧	٧	-	-	-	-	V	-	٧	-	-	-	V	-	-
26 P90	٧	٧	٧	-	-	-	V	-	-	٧	-	-	-	V	-	-
30	٧	٧	٧	-	-	٧	-	-	-	٧	-	-	-	V	-	-
38	٧	٧	٧	-	-	-	-	٧	-	٧	-	-	-	V	-	-
41	٧	٧	٧	ı	-	٧	1	ı	-	٧	-	1	-	٧	-	-
66	٧	٧	٧	•	-	-	-	•	٧	٧	-	-	-	٧	-	-
71	٧	V	٧	-	-	-	-	-	٧	٧	-	-	-	V	-	-

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E-UTRA Band	Test Channel	Channel Bandwidth (MHz)	Modulation	Resource Blo	
		, ,		RBs allocated	RB Offset
2	18700	20	QPSK	1	0
2	18900	20	QPSK	1	0
2	19100	20	QPSK	1	0
4	20050	20	QPSK	1	0
4	20175	20	QPSK	1	0
4	20300	20	QPSK	1	0
5	20450	10	QPSK	1	0
5	20525	10	QPSK	1	0
5	20600	10	QPSK	1	0
7	20850	20	QPSK	1	0
7	21100	20	QPSK	1	0
7	21350	20	QPSK	1	0
12	23060	10	QPSK	1	0
12	23095	10	QPSK	1	0
12	23130	10	QPSK	1	0
17	23780	10	QPSK	1	0
17	23790	10	QPSK	1	0
17	23800	10	QPSK	1	0
25	26140	20	QPSK	1	0
25	26365	20	QPSK	1	0
25	26590	20	QPSK	1	0
26	26865	15	QPSK	1	74
26	26915	15	QPSK	1	74
26	26965	15	QPSK	1	74
26(part90)	26740	10	QPSK	1	49
30	27685	5	QPSK	1	0
30	27710	5	QPSK	1	0
30	27735	5	QPSK	1	0
38	37825	15	QPSK	1	0
38	38000	15	QPSK	1	0
38	38175	15	QPSK	1	0
41	39675	5	QPSK	1	0
41	40620	5	QPSK	1	0
41	41565	5	QPSK	1	0
66	132072	20	QPSK	1	0
66	132322	20	QPSK	1	0
66	132572	20	QPSK	1	0
71	133222	20	QPSK	1	0
71	133297	20	QPSK	1	0
71	133372	20	QPSK	1	0

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## **MEASUREMENT UNCERTAINTY**

Test Items	Und	Uncertainty			
Power Density	+/-	0.61	dB		
RF Power Output	+/-	0.97	dB		
ERP/ EIRP measurement		2.15	dB		
		2.15	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
	+/-	4.15	dB	30MHz - 1000MHz
	+/-	3.43	dB	1GHz - 18GHz
	+/-	3.86	dB	18GHz - 40GHz
Polarization: Horizontal	+/-	1.89	dB	9kHz~30MHz
	+/-	4.02	dB	30MHz - 1000MHz
	+/-	3.43	dB	1GHz - 18GHz
	+/-	3.86	dB	18GHz - 40GHz
Radiated Spurious Emission	+/-	2	dB	33GHz-50GHz
	+/-	1.59	dB	50GHz-60GHz
	+/-	1.7	dB	60GHz-90GHz
	+/-	1.64	dB	90GHz-140GHz
	+/-	3.83	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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## MEASUREMENT EQUIPMENT USED

#### 6.1 **Conducted Measurement**

Conducted Emission Test Site: Conducted 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
4G High Pass Filter	WI	WHKX4.0	21	12/12/2023	12/11/2024
Attenuator	Mini-Circuits	BW-S10W2+	16	12/12/2023	12/11/2024
DC Block	Mini-Circuits	BLK-18-S+	11	12/12/2023	12/11/2024
DC Power Supply	Gwinstek	SPS-3610	GEV856733	12/04/2023	12/03/2024
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY60240503	12/18/2023	12/17/2024
PXA Spectrum Analyzer	Keysight	N9030B	MY61330494	03/22/2024	03/21/2025
Radio Communication Analyzer	Anritsu	MT8821C	6261786084	01/16/2024	01/15/2025
Splitter	Titan	T0510E2W118Q	22015158	12/12/2023	12/11/2024
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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### **Radiated Measurement**

		Radiated Emissio	n Test Site: SAC 3		
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Attenuator	Mini-Circuits	BW-S10W2+	16	12/12/2023	12/11/2024
1G High Pass Filter	Micro-Tronics	HPM50108	32	12/12/2023	12/11/2024
2G High Pass Filter	Micro-Tronics	HPM50110	36	12/12/2023	12/11/2024
4G High Pass Filter	WI	WHKX4.0	22	12/12/2023	12/11/2024
Band Reject Filter 800-1000	EWT	EWT-54-0037	M3R	12/12/2023	12/11/2024
Band Reject Filter 1700-2000	EWT	EWT-54-0038	M1	12/12/2023	12/11/2024
Band Reject Filter 2240-2700	WI	WRCJV2300/2700- 2240/2760-40/12SS	1	12/12/2023	12/11/2024
Band Reject Filter 3250-3750	Micro-Tronics	BRM15247	1	12/12/2023	12/11/2024
Coaxial Cables	Huber Suhner	SUCOFLEX 102+SUCOFLEX 106	TX Cable 30M-40G 23051/2+76096/6+2 2962/2	08/30/2024	08/29/2025
Coaxial Cables	EMCI+Huber Suhner	EMC107-SM-SM- 1000 +SUCOFLEX 104PEA +EMC107-SM-SM- 1500 +SUCOFLEX 106	RX Cable 9K-18G (221110+MY4251/4 PEA+221106+76096 /6)	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
Radio Communication Analyzer	Anritsu	MT8821C	6262044670	08/23/2024	08/22/2025
EMI Test Receiver	R&S	ESCI 7	100759	08/28/2024	08/27/2025
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY63440386	02/06/2024	02/05/2025
Network Analyzer	R&S	ZNB 40	101842	05/16/2024	05/15/2025
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/09/2024	08/08/2025
Bi-log Antenna	SCHWARZBECK	VULB9168	1208	07/17/2024	07/16/2025
Horn Antenna	SCHWARZBECK	BBHA9120D	603	05/15/2024	05/14/2025
Horn Antenna	SCHWARZBECK	BBHA9170	184	12/28/2023	12/27/2024
Horn Antenna	RF SPIN	DRH0844	LE2D05A0844	07/10/2024	07/09/2025
Horn Antenna	SCHWARZBECK	BBHA9120D	1441	09/23/2024	09/22/2025
Pre-Amplifier	EMCI	EMC184045SEE	9080939	08/30/2024	08/29/2025
Pre-Amplifier	EMCI	EMC118A45SEE	980868	08/30/2024	08/29/2025
Pre-Amplifier	HP	8447D	2944A07676	08/30/2024	08/29/2025
Site Cal	SGS	SAC 3	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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## 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(c)

(10) Portable stations (hand-held devices) are limited to 3 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 90.635(b)

Mobile station is limited to 100W ERP

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### **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.

#### **Out Of Band Emission At Antenna Terminals** 7.3

### FCC §22.917(a), §24.238(a), §27.53(h)

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(q)

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 outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log<sub>10</sub> (P) dB.

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### 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 that 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 nstrumentation 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 §90.691 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 Log10(f/6.1) decibels or 50 + 10 Log10(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 power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(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)

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.

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#### 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(q)

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 outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log<sub>10</sub> (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 that 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 nstrumentation 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

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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.

### §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 Log10(f/6.1) decibels or 50 + 10 Log10(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 power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(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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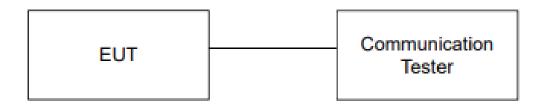
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## **TEST SETUP**

#### 8.1 **Maximum Output Power**



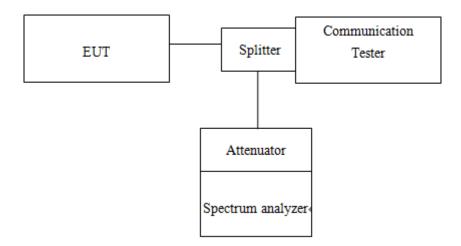
Note: Measurement setup for testing on Antenna connector

#### **Occupied Bandwidth Measurement** 8.2



Note: Measurement setup for testing on Antenna connector

#### **Out of Band Emission At Antenna Terminals** 8.3



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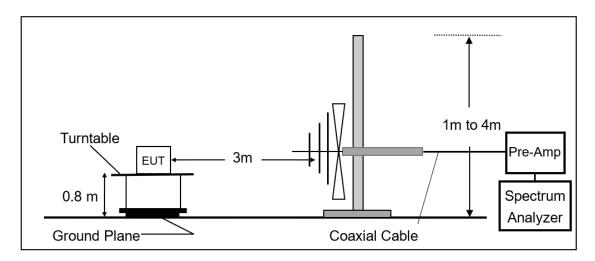
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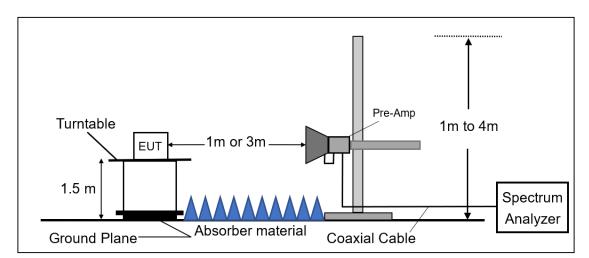
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## 8.4 Field Strength of Spurious Radiation Measurement

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



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



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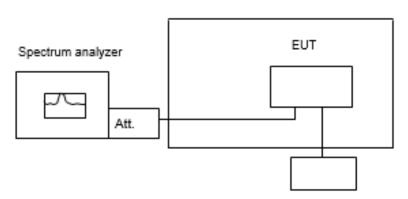
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## **Frequency Stability Measurement**

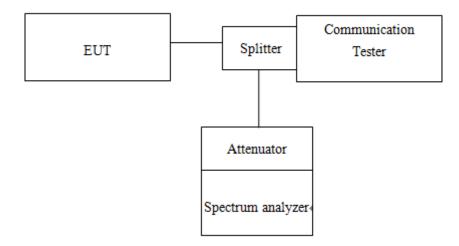
#### Temperature Chamber



Variable DC Power Supply

**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 Guideance

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 PT, 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;

 $G_{\tau}$  = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

Lc = 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%, VBW= 3 \* RBW, with span > 2 \* Signal BW, set % Power = 99%.

## 99% Bandwidth with detector sample

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about  $1\% \sim 5\%$  of emission BW, VBW= 3 times RBW.

Set RBW= 1% ~ 5%, VBW= 3 \* RBW, with span > 2 \* Signal BW, set % Power = 99%.

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#### **Out of Band Emission at Antenna Terminals**

#### 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 ≥ 1% EBW.
- 3. Allow trace to fully stabilize
- 4. Repeat above procedures until all default test channel measured were complete.

# 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.

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

#### **Frequency Stability Measurement** 9.5

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 ≥ 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.

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