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673.0	20	QPSK	1/99	15.37	V	6.6	0.47	19.81	34.77
680.5	20	QPSK	1/99	16.98	V	6.6	0.47	20.00	34.77
688.0	20	QPSK	1/0	14.10	V	6.6	0.47	19.78	34.77
673.0	20	QPSK	1/99	14.10	θН	6.6	0.47	21.09	34.77
680.5	20	QPSK	1/99	15.00	Н	6.6	0.47	21.39	34.77
688.0	20	QPSK	1/0	14.54	Н	6.6	0.47	21.65	34.77
673.0	20	16-QAM	1/99	14.96	V	6.6	0.47	19.77	34.77
680.5	20	16-QAM	1/99	15.26	V	6.6	0.47	18.58	34.77
688.0	20	16-QAM	1/0	15.52	V	6.6	0.47	19.16	34.77
673.0	20	16-QAM	1/99	13.99	Н	6.6	0.47	21.13	34.77
680.5	20	16-QAM	1/99	14.41	H	6.6	0.47	20.54	34.77
688.0	20	16-QAM	1/0	14.69	Н	6.6	0.47	20.82	34.77

Note: Above is the worst mode data.



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8. PEAK-TO-AVERAGE RATIO

8.1 PROVISIONS APPLICABLE

① CCDF Procedure for PAPR:

- 1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 3. Set the measurement interval as follows:
- -for continuous transmissions, set to 1 ms,
- -or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time
 - that is less than or equal to the burst duration.
- 4. Record the maximum PAPR level associated with a probability of 0.1%.

② Alternate Procedure for PAPR:

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as PPk. Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and recordas PAvg. Determine the P.A.R. from:

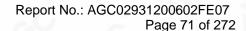
P.A.R(dB) = PPk (dBm) - PAvg (dBm) (PAvg = Average Power + Duty cycle Factor)

8.2 MEASUREMENT METHOD

Test Settings(Peak Power):

The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW \geq 3 × RBW.

- 1. Set the RBW ≥ OBW.
- 2. Set VBW ≥ 3 × RBW.
- 3. Set span ≥ 2 × OBW.
- 4. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period).
- 5. Detector = peak.
- 6. Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- 8. Use the peak marker function to determine the peak amplitude level.

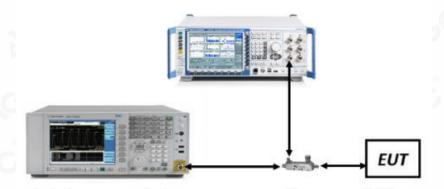




Test Settings(Average Power)

- 1. Set span to $2 \times$ to $3 \times$ the OBW.
- 2. Set RBW ≥ OBW.
- 3. Set VBW ≥ 3 × RBW.
- 4. Set number of measurement points in sweep ≥ 2 × span / RBW.
- 5. Sweep time: Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.
- 6. Detector = power averaging (rms).
- 7. Set sweep trigger to "free run."
- 8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25%.

8.3 MEASUREMENT SETUP





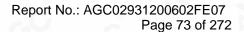
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8.4 MEASUREMENT RESULT

LTE Band 2

	LIE Band 2								
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict		
Band2	1.4MHz	QPSK	18607	6RB#0	4.57	13	PASS		
Band2	1.4MHz	QPSK	18900	6RB#0	4.92	13	PASS		
Band2	1.4MHz	QPSK	19193	6RB#0	4.67	13	PASS		
Band2	1.4MHz	16QAM	18607	6RB#0	5.42	13	PASS		
Band2	1.4MHz	16QAM	18900	6RB#0	5.80	13	PASS		
Band2	1.4MHz	16QAM	19193	6RB#0	5.46	0 13	PASS		
Band2	3MHz	QPSK	18615	15RB#0	4.64	13	PASS		
Band2	3MHz	QPSK	18900	15RB#0	5.00	13	PASS		
Band2	3MHz	QPSK	19185	15RB#0	4.85	13	PASS		
Band2	3MHz	16QAM	18615	15RB#0	5.47	13 🏻	PASS		
Band2	3MHz	16QAM	18900	15RB#0	5.83	13	PASS		
Band2	3MHz	16QAM	19185	15RB#0	5.70	13	PASS		
Band2	5MHz	QPSK	18625	25RB#0	4.86	13	PASS		
Band2	5MHz	QPSK	18900	25RB#0	5.02	13	PASS		
Band2	5MHz	QPSK	19175	25RB#0	4.93	13	PASS		
Band2	5MHz	16QAM	18625	25RB#0	5.67	13	PASS		
Band2	5MHz	16QAM	18900	25RB#0	5.82	13	PASS		
Band2	5MHz	16QAM	19175	25RB#0	5.78	13	PASS		
Band2	10MHz	QPSK	18650	50RB#0	4.95	13	PASS		
Band2	10MHz	QPSK	18900	50RB#0	5.02	13	PASS		
Band2	10MHz	QPSK	19150	50RB#0	4.99	13	PASS		
Band2	10MHz	16QAM	18650	50RB#0	5.75	13	PASS		
Band2	10MHz	16QAM	18900	50RB#0	5.85	13	PASS		
Band2	10MHz	16QAM	19150	50RB#0	5.84	13	PASS		
Band2	15MHz	QPSK	18675	75RB#0	5.25	13	PASS		
Band2	15MHz	QPSK	18900	75RB#0	5.17	13	PASS		
Band2	15MHz	QPSK	19125	75RB#0	5.08	13	PASS		
Band2	15MHz	16QAM	18675	75RB#0	5.96	13	PASS		
Band2	15MHz	16QAM	18900	75RB#0	5.90	13	PASS		
Band2	15MHz	16QAM	19125	75RB#0	5.80	13	PASS		
Band2	20MHz	QPSK	18700	100RB#0	5.21	13	PASS		
Band2	20MHz	QPSK	18900	100RB#0	4.98	13	PASS		
Band2	20MHz	QPSK	19100	100RB#0	4.94	13	PASS		
Band2	20MHz	16QAM	18700	100RB#0	5.98	13	PASS		
Band2	20MHz	16QAM	18900	100RB#0	5.82	13	PASS		
Band2	20MHz	16QAM	19100	100RB#0	5.74	13	PASS		

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LTE Band 4

			LTE Band 4					
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict	
Band4	1.4MHz	QPSK	19957	6RB#0	4.66	13	PASS	
Band4	1.4MHz	QPSK	20175	6RB#0	5.20	13	PASS	
Band4	1.4MHz	QPSK	20393	6RB#0	4.75	13	PASS	
Band4	1.4MHz	16QAM	19957	6RB#0	5.51	13	PASS	
Band4	1.4MHz	16QAM	20175	6RB#0	6.01	13	PASS	
Band4	1.4MHz	16QAM	20393	6RB#0	5.56	13	PASS	
Band4	3MHz	QPSK	19965	15RB#0	4.75	13	PASS	
Band4	3MHz	QPSK	20175	15RB#0	5.28	13	PASS	
Band4	3MHz	QPSK	20385	15RB#0	4.88	13	PASS	
Band4	3MHz	16QAM	19965	15RB#0	5.57	13	PASS	
Band4	3MHz	16QAM	20175	15RB#0	6.10	13	PASS	
Band4	3MHz	16QAM	20385	15RB#0	5.65	13	PASS	
Band4	5MHz	QPSK	19975	25RB#0	4.70	13	PASS	
Band4	5MHz	QPSK	20175	25RB#0	5.29	13	PASS	
Band4	5MHz	QPSK	20375	25RB#0	4.83	13	PASS	
Band4	5MHz	16QAM	19975	25RB#0	5.52	13	PASS	
Band4	5MHz	16QAM	20175	25RB#0	6.08	13	PASS	
Band4	5MHz	16QAM	20375	25RB#0	5.64	13	PASS	
Band4	10MHz	QPSK	20000	50RB#0	4.67	13	PASS	
Band4	10MHz	QPSK	20175	50RB#0	5.25	13	PASS	
Band4	10MHz	QPSK	20350	50RB#0	4.83	13	PASS	
Band4	10MHz	16QAM	20000	50RB#0	5.51	13	PASS	
Band4	10MHz	16QAM	20175	50RB#0	6.09	13	PASS	
Band4	10MHz	16QAM	20350	50RB#0	5.71	13	PASS	
Band4	15MHz	QPSK	20025	75RB#0	4.98	13	PASS	
Band4	15MHz	QPSK	20175	75RB#0	5.37	13	PASS	
Band4	15MHz	QPSK	20325	75RB#0	5.11	13	PASS	
Band4	15MHz	16QAM	20025	75RB#0	5.67	13	PASS	
Band4	15MHz	16QAM	20175	75RB#0	6.08	13	PASS	
Band4	15MHz	16QAM	20325	75RB#0	5.82	13	PASS	
Band4	20MHz	QPSK	20050	100RB#0	4.85	13	PASS	
Band4	20MHz	QPSK	20175	100RB#0	5.21	13	PASS	
Band4	20MHz	QPSK	20300	100RB#0	5.10	13	PASS	
Band4	20MHz	16QAM	20050	100RB#0	5.68	13	PASS	
Band4	20MHz	16QAM	20175	100RB#0	5.99	13	PASS	
Band4	20MHz	16QAM	20300	100RB#0	5.91	13	PASS	

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LTE BAND 5

	(2)			LIL DITITO	(8)		
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band5	1.4MHz	QPSK	20407	6RB#0	4.22	13	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	4.93	13	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	5.06	13	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	5.13	13	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	5.85	13	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	5.94	13	PASS
Band5	3MHz	QPSK	20415	15RB#0	4.37	13	PASS
Band5	3MHz	QPSK	20525	15RB#0	5.08	13	PASS
Band5	3MHz	QPSK	20635	15RB#0	5.16	13	PASS
Band5	3MHz	16QAM	20415	15RB#0	5.31	13	PASS
Band5	3MHz	16QAM	20525	15RB#0	5.95	13	PASS
Band5	3MHz	16QAM	20635	15RB#0	6.00	13	PASS
Band5	5MHz	QPSK	20425	25RB#0	4.55	13	PASS
Band5	5MHz	QPSK	20525	25RB#0	5.01	13	PASS
Band5	5MHz	QPSK	20625	25RB#0	4.99	13	PASS
Band5	5MHz	16QAM	20425	25RB#0	5.35	13	PASS
Band5	5MHz	16QAM	20525	25RB#0	5.86	13	PASS
Band5	5MHz	16QAM	20625	25RB#0	5.84	13	PASS
Band5	10MHz	QPSK	20450	50RB#0	5.06	13	PASS
Band5	10MHz	QPSK	20525	50RB#0	4.91	13	PASS
Band5	10MHz	QPSK	20600	50RB#0	4.89	13	PASS
Band5	10MHz	16QAM	20450	50RB#0	5.91	13	PASS
Band5	10MHz	16QAM	20525	50RB#0	5.81	13	PASS
Band5	10MHz	16QAM	20600	50RB#0	5.72	13	PASS



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LTE Band 12

				LIL Dallu 12			
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band12	1.4MHz	QPSK	23017	6RB#0	5.05	13	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	5.15	13	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	4.91	13	PASS
Band12	1.4MHz	16QAM	23017	6RB#0	5.93	13	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	5.98	13	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	5.76	13	PASS
Band12	3MHz	QPSK	23025	15RB#0	5.07	13	PASS
Band12	3MHz	QPSK	23095	15RB#0	5.14	13	PASS
Band12	3MHz	QPSK	23165	15RB#0	5.06	13	PASS
Band12	3MHz	16QAM	23025	15RB#0	5.93	13	PASS
Band12	3MHz	16QAM	23095	15RB#0	6.00	13	PASS
Band12	3MHz	16QAM	23165	15RB#0	5.91	13	PASS
Band12	5MHz	QPSK	23035	25RB#0	5.04	13	PASS
Band12	5MHz	QPSK	23095	25RB#0	5.13	13	PASS
Band12	5MHz	QPSK	23155	25RB#0	5.11	13	PASS
Band12	5MHz	16QAM	23035	25RB#0	5.85	13	PASS
Band12	5MHz	16QAM	23095	25RB#0	5.95	13	PASS
Band12	5MHz	16QAM	23155	25RB#0	5.92	<u>13</u>	PASS
Band12	10MHz	QPSK	23060	50RB#0	4.99	13	PASS
Band12	10MHz	QPSK	23095	50RB#0	5.08	13	PASS
Band12	10MHz	QPSK	23130	50RB#0	5.09	13	PASS
Band12	10MHz	16QAM	23060	50RB#0	5.88	13	PASS
Band12	10MHz	16QAM	23095	50RB#0	5.94	13	PASS
Band12	10MHz	16QAM	23130	50RB#0	5.96	13	PASS



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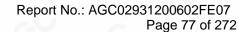
LTE Band 13

Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.71	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.62	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.48	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.59	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.49	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.35	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.62	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.52	13	PASS

LTE BAND 14

Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
5MHz	QPSK	23305	25RB#0	4.94	13	PASS
5MHz	QPSK	23330	25RB#0	4.75	13	PASS
5MHz	QPSK	23355	25RB#0	4.66	13	PASS
5MHz	16QAM	23305	25RB#0	5.79	13	PASS
5MHz	16QAM	23330	25RB#0	5.61	13	PASS
5MHz	16QAM	23355	25RB#0	5.46	13	PASS
10MHz	QPSK	23330	50RB#0	4.82	13	PASS
10MHz	16QAM	23330	50RB#0	5.67	13	PASS
	5MHz 5MHz 5MHz 5MHz 5MHz 5MHz 10MHz	5MHz QPSK 5MHz QPSK 5MHz QPSK 5MHz 16QAM 5MHz 16QAM 5MHz 16QAM 10MHz QPSK	5MHz QPSK 23305 5MHz QPSK 23330 5MHz QPSK 23355 5MHz 16QAM 23305 5MHz 16QAM 23330 5MHz 16QAM 23355 10MHz QPSK 23330	5MHz QPSK 23305 25RB#0 5MHz QPSK 23330 25RB#0 5MHz QPSK 23355 25RB#0 5MHz 16QAM 23305 25RB#0 5MHz 16QAM 23330 25RB#0 5MHz 16QAM 23355 25RB#0 10MHz QPSK 23330 50RB#0	5MHz QPSK 23305 25RB#0 4.94 5MHz QPSK 23330 25RB#0 4.75 5MHz QPSK 23355 25RB#0 4.66 5MHz 16QAM 23305 25RB#0 5.79 5MHz 16QAM 23330 25RB#0 5.61 5MHz 16QAM 23355 25RB#0 5.46 10MHz QPSK 23330 50RB#0 4.82	5MHz QPSK 23305 25RB#0 4.94 13 5MHz QPSK 23330 25RB#0 4.75 13 5MHz QPSK 23355 25RB#0 4.66 13 5MHz 16QAM 23305 25RB#0 5.79 13 5MHz 16QAM 23330 25RB#0 5.61 13 5MHz 16QAM 23355 25RB#0 5.46 13 10MHz QPSK 23330 50RB#0 4.82 13

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LTE BAND 66

LTE BAND 66									
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict		
Band66	1.4MHz	QPSK	131979	6RB#0	4.55	13	PASS		
Band66	1.4MHz	QPSK	132322	6RB#0	4.96	13	PASS		
Band66	1.4MHz	QPSK	132665	6RB#0	3.62	13	PASS		
Band66	1.4MHz	16QAM	131979	6RB#0	5.41	13	PASS		
Band66	1.4MHz	16QAM	132322	6RB#0	5.89	13	PASS		
Band66	1.4MHz	16QAM	132665	6RB#0	4.50	13	PASS		
Band66	3MHz	QPSK	131987	15RB#0	4.61	13	PASS		
Band66	3MHz	QPSK	132322	15RB#0	5.02	13	PASS		
Band66	3MHz	QPSK	132657	15RB#0	3.72	13	PASS		
Band66	3MHz	16QAM	131987	15RB#0	5.47	13	PASS		
Band66	3MHz	16QAM	132322	15RB#0	5.85	13	PASS		
Band66	3MHz	16QAM	132657	15RB#0	4.57	13	PASS		
Band66	5MHz	QPSK	131997	25RB#0	4.58	13	PASS		
Band66	5MHz	QPSK	132322	25RB#0	5.09	13	PASS		
Band66	5MHz	QPSK	132647	25RB#0	3.83	13	PASS		
Band66	5MHz	16QAM	131997	25RB#0	5.42	13	PASS		
Band66	5MHz	16QAM	132322	25RB#0	5.90	13	PASS		
Band66	5MHz	16QAM	132647	25RB#0	4.77	13	PASS		
Band66	10MHz	QPSK	132022	50RB#0	4.58	13	PASS		
Band66	10MHz	QPSK	132322	50RB#0	4.97	13	PASS		
Band66	10MHz	QPSK	132622	50RB#0	4.15	13	PASS		
Band66	10MHz	16QAM	132022	50RB#0	5.38	13	PASS		
Band66	10MHz	16QAM	132322	50RB#0	5.83	13	PASS		
Band66	10MHz	16QAM	132622	50RB#0	5.02	13	PASS		
Band66	15MHz	QPSK	132047	75RB#0	4.85	13	PASS		
Band66	15MHz	QPSK	132322	75RB#0	5.20	13	PASS		
Band66	15MHz	QPSK	132597	75RB#0	4.62	13	PASS		
Band66	15MHz	16QAM	132047	75RB#0	5.58	13	PASS		
Band66	15MHz	16QAM	132322	75RB#0	5.92	13	PASS		
Band66	15MHz	16QAM	132597	75RB#0	5.39	13	PASS		
Band66	20MHz	QPSK	132072	100RB#0	4.73	13	PASS		
Band66	20MHz	QPSK	132322	100RB#0	5.15	13	PASS		
Band66	20MHz	QPSK	132572	100RB#0	4.95	13	PASS		
Band66	20MHz	16QAM	132072	100RB#0	5.58	13	PASS		
Band66	20MHz	16QAM	132322	100RB#0	5.98	13	PASS		
Band66	20MHz	16QAM	132572	100RB#0	5.69	13	PASS		

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LTE BAND 71

				LIL DAND II			
Mode	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band71	5MHz	QPSK	133147	25RB#0	4.84	13	PASS
Band71	5MHz	QPSK	133297	25RB#0	5.04	13	PASS
Band71	5MHz	QPSK	133447	25RB#0	5.16	13	PASS
Band71	5MHz	16QAM	133147	25RB#0	5.72	13	PASS
Band71	5MHz	16QAM	133297	25RB#0	5.83	13	PASS
Band71	5MHz	16QAM	133447	25RB#0	5.91	13	PASS
Band71	10MHz	QPSK	133172	50RB#0	4.78	13	PASS
Band71	10MHz	QPSK	133297	50RB#0	4.88	13	PASS
Band71	10MHz	QPSK	133422	50RB#0	5.17	13	PASS
Band71	10MHz	16QAM	133172	50RB#0	5.64	13	PASS
Band71	10MHz	16QAM	133297	50RB#0	5.77	13	PASS
Band71	10MHz	16QAM	133422	50RB#0	5.95	13	PASS
Band71	15MHz	QPSK	133197	75RB#0	5.30	13	PASS
Band71	15MHz	QPSK	133297	75RB#0	4.78	13	PASS
Band71	15MHz	QPSK	133397	75RB#0	5.45	13	PASS
Band71	15MHz	16QAM	133197	75RB#0	5.98	13	PASS
Band71	15MHz	16QAM	133297	75RB#0	5.72	13	PASS
Band71	15MHz	16QAM	133397	75RB#0	6.09	13	PASS
Band71	20MHz	QPSK	133222	100RB#0	5.27	13	PASS
Band71	20MHz	QPSK	133322	100RB#0	4.76	13	PASS
Band71	20MHz	QPSK	133372	100RB#0	5.20	13	PASS
Band71	20MHz	16QAM	133222	100RB#0	6.09	13	PASS
Band71	20MHz	16QAM	133322	100RB#0	5.71	13	PASS
Band71	20MHz	16QAM	133372	100RB#0	5.94	13	PASS



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9. SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

9.1 PROVISIONS APPLICABLE

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

9.2 MEASUREMENT METHOD

For Band 2/Band 4/Band 5/Band 12/Band 13/Band 14/Band 17/Band 25/Band 26/Band 66/Band 71: The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

For Band 7:

- (i) 40 + 10 log10 p from the channel edges to 5 MHz away
- (ii) 43 + 10 log10 p between 5 MHz and X MHz from the channel edges, and
- (iii) 55 + 10 log10 p at X MHz and beyond from the channel edges

For Band 14:

On all frequencies between 769-775 MHz and 799-805 MHz: < 65 + 10log10 (P[Watts])

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
- 1. RBW = 1 MHz
- 2. VBW ≥ 3 MHz
- 3. Detector = RMS
- 4. Trace Mode = Average
- 5. Sweep time = auto
- 6. Number of points in sweep ≥ 2 * Span / RBW

Test Note

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. 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. 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 emission are attenuated at least 26 dB below the transmitter power.



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the dest results of the test report.

9.3 MEASUREMENT SETUP



9.4 MEASUREMENT RESULT

Please refer to: appendix a test plots for spurious and harmonic emissions at antenna terminal

Note: 1. No transmission signal is found in standby or receiving mode, and the default value is lower than the limit of 20dB, which is not recorded in this report.



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10 RADIATED SPURIOUS EMISSION

10.1.PROVISIONS APPLICABLE

(A) On any frequency outside a licensee's frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm.

At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

(B) For specific criteria, please refer to the description in section 9.2 of the report for corresponding evaluation.

10.2. MEASUREMENT PROCEDURE

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that



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means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.
- 11. For spurious emissions above 1GHz, a horn antenna is substituted in place of the EUT.

The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated. The spurious emissions is calculated by the following formula;

Result(dBm) = Pg(dBm) + Factor(dB)

Factor(dB) = Ant Gain(dB)-Cable Loss(dB) + Power Splitter(dB) (Above 1GHz)

Factor(dB) = Ant Gain(dB)-Cable Loss(dB) (Below 1GHz)

Where: Pgis the generator output power into the substitution antenna.

If the fundalmatal frequency is below 1GHz, RF output power has been converted to EIRP.

EIRP(dBm) = ERP(dBm) + 2.15

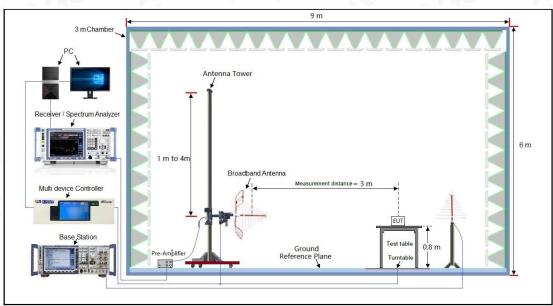
12. Examples of Factor parameters for testing radiation spurious:

Frequency Range(MHz)	Factor(dB)				
30-500	6.18				
500-1000	9.37				
1000-1500	27.56				
1500-2000	28.27				
2000-3000	29.45				
3000-5000	30.15				
5000-10000	31.26				
10000-15000	32.78				
15000-20000	33.99				
Above 20GHz	35.04				

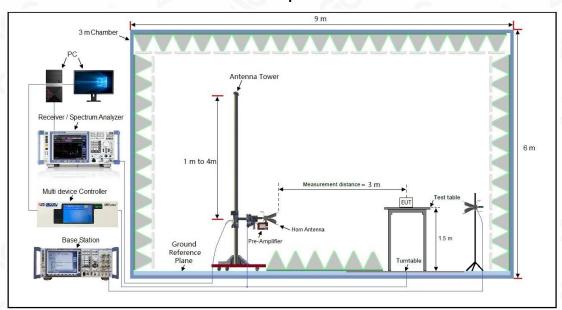


10.3. MEASUREMENT SETUP

Radiated Emissions 30MHz to 1GHz Test setup



Radiated Emissions Above 1GHz Test setup



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10.4 MEASUREMENT RESULT

LTE Band 2 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5580	V	-40.88	-13	-27.88
3720	V	-39.92	-13	-26.92
695.5	V	-46.79	-13	-33.79
412.1	V	-48.81	-13	-35.81
5580	H	-39.18	-13	-26.18
3720	Н	-40.45	-13	-27.45
678.3	H ®	-47.52	-13	-34.52
452.1	Н	-48.95	-13	-35.95

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5640	V	-40.59	-13	-27.59
3760	V	-39.29	-13	-26.29
885.1	V	-47.11	-13	-34.11
618.7	V	-48.09	-13	-35.09
5640	H 🔞	-48.25	-13	-35.25
3760	Н	-41.22	-13	-28.22
851.3	Н	-44.34	-13	-31.34
732.5	Н	-47.82	-13	-34.82

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5700	V	-40.71	-13	-27.71
3800	V	-41.20	-13	-28.20
664.5	V	-46.32	-13	-33.32
525.8	V	-45.76	-13	-32.76
5700	Н	-38.91	-13	-25.91
3800	Н	-38.63	-13	-25.63
669.8	Н	-47.11	-13	-34.11
574.4	Н	-47.26	-13	-34.26

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LTE Band 4 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5160	V	-38.84	-13	-25.84
3440	V	-39.03	-13	-26.03
745.5	V	-44.03	-13	-31.03
528.1	V	-46.68	-13	-33.68
5160	Н ®	-38.95	-13	-25.95
3440	Н	-39.41	-13	-26.41
520.5	Н	-46.18	-13	-33.18
395.8	Н	-43.11	-13	-30.11

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5197.5	V	-38.14	-13	-25.14
3465	V	-38.28	-13	-25.28
669.4	V	-45.30	-13	-32.30
512.5	V	-47.35	-13	-34.35
5197.5	Н	-38.59	-13	-25.59
3465	Н	-39.12	-13	-26.12
569.4	Н	-45.99	-13	-32.99
469.3	Н	-45.57	-13	-32.57

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5235	V	-38.15	-13	-25.15
3490	V	-39.18	-13	-26.18
711.1	V	-47.34	-13	-34.34
528.7	V	-46.51	-13	-33.51
5235	Н	-37.96	-13	-24.96
3490	Н	-37.88	-13	-24.88
612.5	Н	-45.12	-13	-32.12
553.9	Н	-44.89	-13	-31.89

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LTE Band 5 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2487	V	-40.46	-13	-27.46
1658	V	-41.77	-13	-28.77
512.2	V	-45.77	-13	-32.77
365.5	V	-46.05	-13	-33.05
2487	Н	-39.39	-13	-26.39
1658	Н	-39.56	-13	-26.56
521.1	Н	-44.00	-13	-31.00
336.5	Н	-44.08	-13	-31.08

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2509.5	V	-42.19	-13	-29.19
1673	V	-42.06	-13	-29.06
725.8	V	-46.06	-13	-33.06
616.6	V	-45.79	-13	-32.79
2509.5	Н	-40.54	-13	-27.54
1673	Н	-41.42	-13	-28.42
705.5	Н	-45.07	-13	-32.07
558.9	Н	-44.75	-13	-31.75

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2532	V ®	-39.51	-13	-26.51
1688	V	-39.44	-13	-26.44
648.3	V	-45.59	-13	-32.59
482.7	V	-45.58	-13	-32.58
2532	Н	-39.90	-13	-26.90
1688	Н	-40.09	-13	-27.09
785.6	Н	-45.31	-13	-32.31
615.7	Н	-47.27	-13	-34.27

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LTE Band 12 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2112.0	V	-42.25	-13	-29.25
1408	V	-40.81	-13	-27.81
658.1	V	-49.70	-13	-36.70
516.9	V	-49.11	-13	-36.11
2112	H ®	-41.12	-13	-28.12
1408	H C	-41.02	-13	-28.02
714.4	Н	-48.02	-13	-35.02
669.5	H	-48.34	-13	-35.34

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2122.5	V	-43.67	-13	-30.67
1415	V	-43.17	-13	-30.17
651.5	V	-47.43	-13	-34.43
512.7	V	-49.66	-13	-36.66
2122.5	Н	-42.80	-13	-29.80
1415	Н	-42.63	-13	-29.63
525.4	Н	-48.52	-13	-35.52
498.7	Н	-49.41	-13	-36.41

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2133	C V	-43.64	-13	-30.64
1422	V	-42.98	-13	-29.98
653.3	V	-46.87	-13 ₎	-33.87
592.7	V	-47.76	-13	-34.76
2133	Н	-43.89	-13	-30.89
1422	Н	-43.40	-13	-30.40
641.5	Н	-50.81	-13	-37.81
558.3	Н	-48.87	-13	-35.87

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LTE Band 13 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2338.5	V	-47.03	-13	-34.03
1559	V	-44.49	-13	-31.49
678.2	V	-47.71	-13	-34.71
423.6	V	-51.52	-13	-38.52
2338.5	Н	-44.74	-13	-31.74
1559	H C	-43.78	-13	-30.78
577.3	Н	-52.28	-13	-39.28
345.9	Н	-48.55	-13	-35.55

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2346	V	-44.68	-13	-31.68
1564	V	-45.40	-13	-32.4
611.7	V	-50.77	-13	-37.77
444,8	V	-51.78	-13	-38.78
2346	Н	-43.72	-13	-30.72
1564	Н	-45.32	-13	-32.32
692.8	Н	-47.38	-13	-34.38
439.4	Н	-51.83	-13	-38.83

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2353.5	V ®	-44.57	-13	-31.57
1569	V	-44.02	-13	-31.02
572.8	V	-48.16	-13	-35.16
309.9	V	-50.84	-13	-37.84
2353.5	Н	-43.40	-13	-30.40
1569	Н	-42.96	-13	-29.96
602.7	Н	-49.44	-13	-36.44
413.6	Н	-49.31	-13	-36.31



LTE Band 14 Low channel

	Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
	2371.5	V	-45.13	-13	-32.13
	1581	V	-46.69	-13	-33.69
8	577.9	V	-48.13	-13	-35.13
- C	415.6.6	V	-50.24	-13	-37.24
	2371.5	Н 🔞	-44.36	-13	-31.36
	1581	H C	-44.58	-13	-31.58
	699.2	Н	-51.83	-13	-38.83
	514.7	Н	-48.48	-13	-35.48

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2379	V	-45.97	-13	-32.97
1586	V	-45.31	-13	-32.31
611.7	V	-50.02	-13	-37.02
444,8	V	-51.49	-13	-38.49
2379	Н	-44.46	-13	-31.46
1586	Н	-44.18	-13	-31.18
692.8	Н	-47.73	-13	-34.73
439.4	Н	-52.30	-13	-39.30

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2386.5	V	-45.37	-13	-32.37
1591	V	-44.76	-13	-31.76
572.8	V	-48.92	-13	-35.92
309.9	V	-50.65	-13	-37.65
2386.6	Н	-42.55	-13	-29.55
1591	Н	-43.30	-13	-30.3
602.7	Н	-50.28	-13	-37.28
413.6	Н	-49.22	-13	-36.22



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LTE Band 13 (1559 MHz ~ 1610 MHz Wideband Band)

®	ETE Balla 15 (1995 MITE * 1916 MITE WIGEBAILA BAILA)						
Operating Frequency (MHz)	Measured Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm/MHz)	Margin (dB)		
779.5	1559	V	-44.49	-40	-4.49		
782.0	1564	V	-45.40	-40	-5.40		
784.5	1569	V	-44.02	-40	-4.02		
779.5	1559	Н	-43.78	-40	-3.78		
782.0	1564	Н	-45.32	-40	-5.32		
784.5	1569	Н	-42.96	-40	-2.96		

LTE Band 14 (1559 MHz ~ 1610 MHz Wideband Band)

Operating Frequency (MHz)	Measured Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm/MHz)	Margin (dB)
790.5	1581	V	-46.69	-40	-6.69
793.0	1586	V	-45.31	-40	-5.31
795.5	1591	V	-44.76	-40	-4.76
790.5	1581	Н	-44.58	-40	-4.58
793.0	1586	Н	-44.18	-40	-4.18
795.5	1591	Н	-43.30	-40	-3.30

Note: The spurious emissions found in the frequency band 1559-1610MHz meet the stricter Wideband limits.



LTE Band 66 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5132.1	V	-43.11	-13	-30.11
3421.4	V	-41.66	-13	-28.66
698.3	V	-46.50	-13	-33.50
417.5	V	-48.35	-13	-35.35
5132.1	Н	-42.21	-13	-29.21
3421.4	H C	-42.77	-13	-29.77
504.9	Н	-50.14	-13	-37.14
431.9	Н	-47.42	-13	-34.42

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5235	V	-42.69	-13	-29.69
3490	V	-42.05	-13	-29.05
578.2	V	-48.26	-13	-35.26
345.7	V	-49.14	-13	-36.14
5235	Н	-42.25	-13	-29.25
3490	Н	-41.92	-13	-28.92
634.8	Н	-46.36	-13	-33.36
412.9	Н	-50.18	-13	-37.18

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
5337.9	V ®	-41.65	-13	-28.65
3558.6	V	-40.54	-13	-27.54
752.6	V	-46.12	-13	-33.12
546.1	V	-48.75	-13	-35.75
5337.9	Н	-41.58	-13	-28.58
3558.6	Н	-41.15	-13	-28.15
687.3	Н	-47.79	-13	-34.79
436.6	Н	-46.83	-13	-33.83

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LTE Band 71 Low channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
1996.5	V	-41.64	-13	-28.64
1331	V	-42.66	-13	-29.66
511.2	V	-45.16	-13	-32.16
375.4	V	-48.36	-13	-35.36
1996.5	H ®	-41.77	-13	-28.77
1331	H C	-42.89	-13	-29.89
577.1	Н	-50.83	-13	-37.83
309.6	H	-47.39	-13	-34.39

Middle channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2041.5	V	-42.15	-13	-29.15
1361	V	-43.22	-13	-30.22
515.1	V	-48.53	-13	-35.53
345.7	V	-50.20	-13	-37.20
2041.5	Н	-42.77	-13	-29.77
1361	Н	-41.91	-13	-28.91
564.5	Н	-46.12	-13	-33.12
315.9	Н	-51.04	-13	-38.04

High channel

Frequency (MHz)	Polarity (H/V)	Emission Level (dBm)	Limit (dBm)	Margin (dB)
2086.5	C V	-41.17	-13	-28.17
1391	V	-40.74	-13	-27.74
546.6	V	-47.08	-13	-34.08
345.1	V	-49.30	-13	-36.30
2086.5	Н	-41.13	-13	-28.13
1391	Н	-40.73	-13	-27.73
534.2	Н	-48.13	-13	-35.13
322.9	Н	-47.03	-13	-34.03



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Note: 1. Margin (dB) = Emission Level(dBm) -Limit(dBm)

Emission Level(dBm)= Measurement Reading(dBm)+Factor(dB)

Factor(dB) = ANT Gain -Cable Loss + Power Splitter

- 2. The test refers to the value of Factor, please refer to the results listed in the test method in this section of the report.
- 3. Radiated Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0.
- 4. Below 30MHz, no spurious emission was found, and only the worst mode data above 30MHz is recorded in the report.



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11. FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

11.1 PROVISIONS APPLICABLE

11.1.1 For Hand carried battery powered equipment

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) Temperature: The temperature is varied from -10°C to +40°C in 10°C increments using an environmental chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24 and Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

11.1.2 For equipment powered by primary supply voltage

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -10°C to +40°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

11.2 MEASUREMENT METHOD

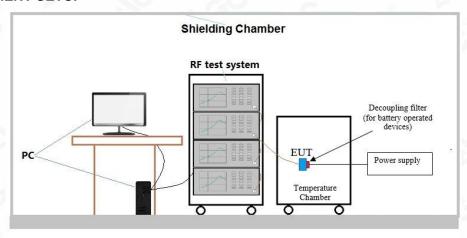
In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

- 1 Measure the carrier frequency at room temperature.
- 2 Subject the EUT to overnight soak at -10°C. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on channel 20175 for LTE band 4 measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
- Repeat the above measurements at 10° C increments from -10°C to +40°C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
- 4 Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.



- 5 Subject the EUT to overnight soak at +50°C.
- 6 With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
- 7 Repeat the above measurements at 10°C increments from +50°C to -20°C. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.
- At all temperature levels hold the temperature to +/- 0.5° during the measurement procedure.

11.3 MEASUREMENT SETUP

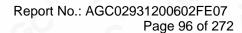


11.4 MEASUREMENT RESULT

LTE Band 2

	Middle Chann	el, f _O = 1880 MHz		
Temperature $(^{\circ}\!\mathbb{C})$	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	
-20	0	-4.43	-0.002394	
-10	A.C.	-6.44	-0.003480	
0	37 .60	-5.84	-0.003156	
10	7,	-5.36	-0.002851	
20	7.4	-9.10	-0.004840	
30		-7.28	-0.003872	
40		-4.18	-0.002189	
50		-4.76	-0.002493	
- 60	8.51	-5.65	-0.002959	
25	6.29	-5.25	-0.002837	

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the





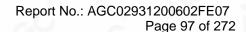
device is determined to remain operating in band over the temperature and voltage range as tested.

LTE Band 4

	Mi	ddle Channel, fo = 173	2.5 MHz	
Temperature (℃)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Temperature $(^{\circ}\!\mathbb{C})$
-20		-2.76	-0.001613	±2.5
-10		5.87	0.003431	±2.5
0		4.31	0.002519	±2.5
10	7.4	3.56	0.002055	±2.5
20	C 7.4	4.82	0.002782	±2.5
30		-3.23	-0.001864	±2.5
40	0	-3.19	-0.001818	±2.5
50	20	-4.53	-0.002582	±2.5
25	8.51	-6.08	-0.003466	±2.5
25	6.29	6.14	0.003589	±2.5

LTE Band 5

Middle Channel, fo = 836.5 MHz						
Temperature $(^{\circ}\mathbb{C})$	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Temperature (°ℂ)		
-20		-3.06	-0.003710	±2.5		
-10		-4.25	-0.005153			
0	20	-2.86	-0.003468	±2.5		
10	7.4	-3.89	-0.004650	±2.5		
20	7.4	-3.18	-0.003802	±2.5		
30	7 a.C	-2.23	-0.002666	±2.5		
40		2.13	0.002511	±2.5		
50		-2.45	-0.002888			
25	8.51	-1.30	-0.001532	±2.5		
25	6.29	-2.69	-0.003262	±2.5		





LTE Band 12

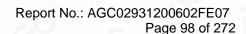
	Middle Channel, fo = 707.5 MHz						
Temperature (°ℂ)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)				
-20		-3.02	-0.004316				
-10		1.54	0.002201				
0	GU 2.0	-2.03	-0.002901				
10	7.0	-3.78	-0.005343				
20	7.4	-2.92	-0.004127				
30		2.56	0.003618				
40		-3.12	-0.004362				
50		-3.19	-0.004460				
0-	8.51	-3.33	-0.004655				
25	6.29	3.53	0.005045				

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

LTE Band 13

	Middle Chan	nel, f ₀ = 782.0MHz	
Temperature (°C)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)
-20		-3.62	-0.004644
-10	100 CO	-3.81	-0.004888
0	· ·	-5.19	-0.006658
10	6 7.4 ®	1.86	0.002379
20	7.4	1.90	0.002430
30		-3.68	-0.004706
40		-2.39	-0.003047
50		-2.70	-0.003442
8	8.51	3.78	0.004818
25	6.29	-2.37	-0.003040

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.





LTE Band 14

	Middle Channel, f ₀ = 793.0MHz						
Temperature (°C)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)				
-20		-3.29	-0.004162				
-10		-5.24	-0.006629				
0	60 20	-3.66	-0.004630				
10		1.87	0.002358				
20	7.4	1.50	0.001892				
30		-2.76	-0.003480				
40		-3.78	-0.004752				
50		3.69	0.004639				
	8.51	-2.95	-0.003708				
25	6.29	-2.72	-0.003441				

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

LTE Band 66

	Middle Channel, f _O = 1745.0MHz						
Temperature (°C)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)				
-20		4.39	0.002566				
-10		6.25	0.003653				
0	·	5.04	0.002946				
10	s.C 7.1 ®	-7.54	-0.004321				
20	7.4	-4.75	-0.002722				
30		-9.51	-0.005450				
40		-3.91	-0.002197				
50		4.31	0.002422				
8	8.51	6.29	0.003535				
25	6.29	4.02	0.002350				

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.



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/Inspection

he test results

he test report.

LTE Band 71

	Middle Char	nnel, fo = 680.5MHz	,	
Temperature (°C)	Power Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	
-20		-3.72	-0.005590	
-10		-2.82	-0.004237	
0	6° 46	-2.88	-0.004328	
10	7.4	-2.23	-0.003277	
20	7.4	-2.32	-0.003409	
30		-2.68	-0.003938	
40		-2.83	-0.004069	
50		-2.60	-0.003738	
05	8.51	-2.55	-0.003666	
25	6.29	-2.27	-0.003411	

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Note:1. The device under test maintains the minimum and maximum operating temperature and the required limit voltage according to the manufacturer's requirements.

2. Only the worst working mode data is recorded in the report.



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12. OCCUPIED BANDWIDTH

12.1 PROVISIONS APPLICABLE

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission. The EUT makes a call to the communication simulator.

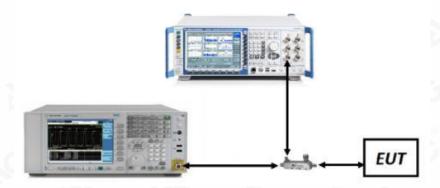
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

12.2 MEASUREMENT METHOD

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
 - 1 5% of the 99% occupied bandwidth observed in Step 7

12.3 MEASUREMENT SETUP





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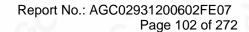
12.4 MEASUREMENT RESULT

LTE Band 2

) (a		LI L Dalla 2		
			Channel Ba	andwidth: 1.4 MHz		
		RB Con	figuration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
	LCH	6	0	1.0908	1.260	PASS
QPSK	MCH	6	0	1.0903	1.255	PASS
	HCH	6	0	1.0909	1.270	PASS
	LCH	6	0	1.0913	1.263	PASS
16QAM	MCH	6	0	1.0892	1.261	PASS
-C	HCH	6	0	1.0897	1.270	PASS

			Channel B	andwidth: 3 MHz		
		RB Con	figuration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict
		Oizo	Onoct	(MHz)	(MHz)	
	LCH	15	0	2.6902	2.915	PASS
QPSK	MCH	15	0	2.6965	2.922	PASS
	HCH	15	0	2.6987	2.904	PASS
	LCH	15	0	2.6913	2.904	PASS
16QAM	MCH	15	0	2.6921	2.922	PASS
	HCH	15	0	2.6953	2.902	PASS

			Channel B	Sandwidth: 5 MHz		
		RB Conf	iguration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
®	LCH	25	0	4.5038	4.916	PASS
QPSK	MCH	25	0	4.4976	4.899	PASS
100	HCH	25	0	4.5059	4.878	PASS
	LCH	25	0	4.5038	4.867	PASS
16QAM	MCH	25	0	4.4997	4.901	PASS
<i>a.</i> C	HCH	25	0	4.5109	4.878	PASS





					(19)		
Channel Bandwidth: 10 MHz							
		RB Conf	iguration	Occupied	-26dB		
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict	
CO	LCH	50	0	8.9707	9.546	PASS	
QPSK	MCH	50	0	8.9637	9.545	PASS	
(8)	HCH	50	0	8.9612	9.516	PASS	
GO .	LCH	50	0	8.9575	9.527	PASS	
16QAM	MCH	50	0	8.9579	9.530	PASS	
8	HCH	50	0	8.9464	9.485	PASS	

			Channel B	andwidth: 15 MHz		
		RB Conf	iguration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
(e)	LCH	75	0	13.458	14.27	PASS
QPSK	MCH	75	0	13.424	14.27	PASS
	HCH	75	0	13.419	14.22	PASS
0	LCH	75	0	13.442	14.29	PASS
16QAM	MCH	75	0	13.423	14.26	PASS
	HCH	75	0	13.403	14.23	PASS

Channel Bandwidth: 20 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation Cl	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
	LCH	100	0	17.942	18.98	PASS			
QPSK	MCH	100	0	17.890	18.93	PASS			
G S	HCH	100	0	17.863	18.94	PASS			
100	LCH	100	0	17.950	18.96	PASS			
16QAM	MCH	100	0	17.881	18.94	PASS			
®	HCH	100	0	17.876	18.93	PASS			



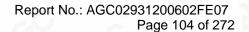
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LTE Band 4

Channel Bandwidth: 1.4 MHz									
		RB Con	figuration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
G	LCH	6	0	1.0915	1.282	PASS			
QPSK	MCH	6	0	1.0899	1.253	PASS			
©	HCH	6	0	1.0919	1.257	PASS			
G ^O	LCH	6	0	1.0890	1.267	PASS			
16QAM	MCH	6	0	1.0895	1.255	PASS			
8	HCH	6	0	1.0897	1.257	PASS			

			Channel E	Bandwidth: 3 MHz		
		RB Conf	iguration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
(8)	LCH	15	0	2.6866	2.912	PASS
QPSK	MCH	15	0	2.6892	2.915	PASS
	HCH	15	0	2.7008	2.919	PASS
8	LCH	15	0	2.6884	2.897	PASS
16QAM	MCH	15	0	2.6914	2.894	PASS
	HCH	15	0	2.6920	2.933	PASS

Channel Bandwidth: 5 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
9 (6	LCH	25	0	4.5008	4.922	PASS			
QPSK	MCH	25	0	4.5006	4.912	PASS			
	HCH	25	0	4.5010	4.887	PASS			
10°	LCH	25	0	4.5040	4.908	PASS			
16QAM	MCH	25	0 @	4.5067	4.866	PASS			
®	HCH	25	0	4.4953	4.892	PASS			





			Channel E	andwidth: 10 MHz		
		RB Configuration		Occupied	-26dB	
Modulation Channel	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
100	LCH	50	0	8.9720	9.590	PASS
QPSK	MCH	50	0	8.9714	9.591	PASS
	HCH	50	0	8.9673	9.514	PASS
69	LCH	50	0	8.9602	9.578	PASS
16QAM	MCH	50	0	8.9568	9.551	PASS
	HCH	50	0	8.9524	9.511	PASS

			Channel B	andwidth: 15 MHz		
		RB Configuration		Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
8	LCH	75	0	13.438	14.30	PASS
QPSK	MCH	75	0	13.439	14.29	PASS
	HCH	75	0	13.420	14.25	PASS
(6)	LCH	75	0	13.423	14.26	PASS
16QAM	MCH	75	0	13.447	14.26	PASS
	HCH	75	0	13.418	14.26	PASS

Channel Bandwidth: 20 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation C	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
	LCH	100	0	17.846	18.92	PASS			
QPSK	MCH	100	0	17.940	18.94	PASS			
G S	HCH	100	0	17.899	18.93	PASS			
10°	LCH	100	0	17.854	18.92	PASS			
16QAM	MCH	100	0 🌑	17.909	18.95	PASS			
®	HCH	100	0	17.919	18.95	PASS			



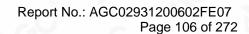
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LTE Band 5

Channel Bandwidth: 1.4 MHz									
		RB Con	figuration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
1000	LCH	6	0	1.0897	1.249	PASS			
QPSK	MCH	6	0	1.0900	1.244	PASS			
®	HCH	6	0	1.0919	1.255	PASS			
G ^O	LCH	6	0	1.0930	1.263	PASS			
16QAM	MCH	6	0	1.0904	1.267	PASS			
8	HCH	6	0	1.0879	1.265	PASS			

			(0)			
			Channel E	Bandwidth: 3 MHz		
		RB Conf	figuration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict
		Size	Oliset	(MHz)	(MHz)	
@	LCH	15	0	2.6930	2.911	PASS
QPSK	MCH	15	0	2.6933	2.922	PASS
	HCH	15	0	2.6982	2.922	PASS
8	LCH	15	0	2.6917	2.920	PASS
16QAM	MCH	15	0	2.6852	2.897	PASS
	HCH	15	0	2.6922	2.924	PASS

Channel Bandwidth: 5 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
60	LCH	25	0	4.4925	4.859	PASS			
QPSK	MCH	25	0	4.4992	4.888	PASS			
8	HCH	25	0	4.4995	4.867	PASS			
	LCH	25	0	4.4985	4.853	PASS			
16QAM	MCH	25	0	4.4996	4.833	PASS			
	HCH	25	0	4.4969	4.890	PASS			



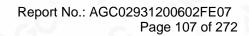


			Channel B	andwidth: 10 MHz		
		RB Configuration		Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
100	LCH	50	0	8.9930	9.532	PASS
QPSK	MCH	50	0	8.9580	9.505	PASS
	HCH	50	0	8.9658	9.515	PASS
69	LCH	50	0	8.9672	9.504	PASS
16QAM	MCH	50	0	8.9515	9.500	PASS
	HCH	50	0	8.9568	9.523	PASS

LTE Band 12

			(6)	L Dana 12		
			Channel B	andwidth: 1.4 MHz		
		RB Conf	figuration	Occupied	-26dB	
Modulation Chan	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
(<u>(</u>)	LCH	6	0	1.0904	1.261	PASS
QPSK	MCH	6	0	1.0882	1.266	PASS
	HCH	6	0	1.0917	1.259	PASS
8	LCH	6	0	1.0901	1.264	PASS
16QAM	MCH	6	0	1.0899	1.254	PASS
10°	HCH	6	0	1.0913	1.265	PASS

			Channel B	Sandwidth: 3 MHz		
		RB Conf	figuration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict
		Oizo	Oliset	(MHz)	(MHz)	
	LCH	15	0	2.6908	2.914	PASS
QPSK	MCH	15	0	2.6995	2.916	PASS
6 2	HCH	15	0	2.7023	2.930	PASS
.00	LCH	15	0	2.6863	2.897	PASS
16QAM	MCH	15	0 @	2.6909	2.908	PASS
	HCH	15	0	2.6981	2.909	PASS





			Channel I	Bandwidth: 5 MHz		
		RB Configuration		Occupied	-26dB	
Modulation Cha	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
100	LCH	25	0	4.4927	4.884	PASS
QPSK	MCH	25	0	4.5000	4.887	PASS
	HCH	25	0	4.5001	4.859	PASS
69	LCH	25	0	4.4946	4.860	PASS
16QAM	MCH	25	0	4.4958	4.885	PASS
	HCH	25	0	4.5039	4.886	PASS

Channel Bandwidth: 10 MHz									
		RB Conf	figuration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
	LCH	50	0	8.9396	9.514	PASS			
QPSK	MCH	50	0	8.9595	9.498	PASS			
	HCH	50	0	8.9346	9.541	PASS			
	LCH	50	0	8.9254	9.490	PASS			
16QAM	MCH	50	0	8.9592	9.520	PASS			
	HCH	50	0	8.9427	9.533	PASS			

LTE Band 13

			Channel B	andwidth: 5 MHz		
		RB Configu		Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict
		0.20	Chlock	(MHz)	(MHz)	
-C	LCH	25	0	4.4971	4.892	PASS
QPSK	MCH	25	0	4.4981	4.888	PASS
®	HCH	25	0	4.5000	4.873	PASS
.C	LCH	25	0	4.4966	4.894	PASS
16QAM	MCH	25	0	4.4984	4.880	PASS
	HCH	25	0 ®	4.5036	4.886	PASS



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	39				(8)				
Channel Bandwidth: 10 MHz									
		RB Configuration		Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict			
		Size	Oliset	(MHz)	(MHz)				
QPSK	MCH	50	0	8.9471	9.542	PASS			
16QAM	MCH	50	0	8.9417	9.497	PASS			

LTE Band 14

			Channel E	Bandwidth: 5 MHz		
		RB Con	figuration	Occupied	-26dB	
Modulation Ch	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
0	LCH	25	0	4.4972	4.882	PASS
QPSK	MCH	25	0	4.4937	4.877	PASS
	HCH	25	0	4.5001	4.872	PASS
	LCH	25	0	4.5020	4.864	PASS
16QAM	MCH	25	0	4.4957	4.897	PASS
	HCH	25	0	4.5068	4.876	PASS

Channel Bandwidth: 10 MHz									
		RB Configuration		Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth	Bandwidth	Verdict			
		Size	Oliset	(MHz)	(MHz)				
QPSK	MCH	50	0	8.9484	9.543	PASS			
16QAM	MCH	50	0	8.9384	9.495	PASS			



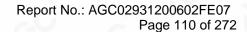
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LTE Band 66

			Channel Ba	andwidth: 1.4 MHz		
		RB Con	figuration	Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
	LCH	6	0	1.0909	1.260	PASS
QPSK	MCH	6	0	1.0908	1.243	PASS
	HCH	6	0	1.0939	1.302	PASS
69	LCH	6	0	1.0895	1.271	PASS
16QAM	MCH	6	0	1.0881	1.272	PASS
	HCH	6	0	1.0949	1.296	PASS

			Channel E	Bandwidth: 3 MHz		
		RB Conf	iguration	Occupied	-26dB	
Modulation Ch	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
(8)	LCH	15	0	2.6969	2.924	PASS
QPSK	MCH	15	0	2.6957	2.921	PASS
	HCH	15	0	2.7000	2.950	PASS
8	LCH	15	0	2.6884	2.910	PASS
16QAM	MCH	15	0	2.6942	2.933	PASS
	HCH	15	0	2.6962	2.952	PASS

Channel Bandwidth: 5 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
, (LCH	25	0	4.5026	4.904	PASS			
QPSK	MCH	25	0	4.4997	4.921	PASS			
G S	HCH	25	0	4.5032	4.909	PASS			
10°	LCH	25	0	4.5098	4.896	PASS			
16QAM	MCH	25	0 🌑	4.5051	4.851	PASS			
®	HCH	25	0	4.5021	4.946	PASS			





	9				Wy P				
Channel Bandwidth: 10 MHz									
		RB Conf	iguration	Occupied	-26dB				
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict			
0	LCH	50	0	8.9788	9.541	PASS			
QPSK	MCH	50	0	8.9731	9.556	PASS			
©	HCH	50	0	8.9840	9.546	PASS			
G ^o	LCH	50	0	8.9675	9.555	PASS			
16QAM	MCH	50	0	8.9608	9.516	PASS			
0	HCH	50	0	8.9736	9.585	PASS			

Channel Bandwidth: 15 MHz									
Charinei Danuwidin: 15 IVITZ									
		RB Config		Occupied	-26dB				
Modulation	Channel	Channel Size	Offset	Bandwidth	Bandwidth	Verdict			
				(MHz)	(MHz)				
8	LCH	75	0	13.427	14.25	PASS			
QPSK	MCH	75	0	13.457	14.27	PASS			
	HCH	75	0	13.479	14.34	PASS			
®	LCH	75	0	13.426	14.27	PASS			
16QAM	MCH	75	0	13.440	14.24	PASS			
	HCH	75	0	13.471	14.27	PASS			

Channel Bandwidth: 20 MHz								
Modulation	Channel	RB Configuration		Occupied	-26dB			
		Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict		
9 (0	LCH	100	0	17.847	18.94	PASS		
QPSK	MCH	100	0	17.919	18.94	PASS		
	HCH	100	0	17.990	19.05	PASS		
100	LCH	100	0	17.835	18.90	PASS		
16QAM	MCH	100	0 @	17.915	18.95	PASS		
	HCH	100	0	17.999	19.03	PASS		



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LTE Band 71

	9				W P	
			Channel B	andwidth: 5 MHz		
		RB Configuration		Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
QPSK	LCH	25	0	4.4872	4.895	PASS
	MCH	25	0	4.4962	4.865	PASS
	HCH	25	0	4.5010	4.893	PASS
16QAM	LCH	25	0	4.4907	4.863	PASS
	MCH	25	0	4.4990	4.867	PASS
	HCH	25	0	4.5035	4.872	PASS

			Channel B	andwidth: 10 MHz		
Modulation	Channel	RB Configuration		Occupied	-26dB	
		Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
	LCH	50	0	8.9333	9.517	PASS
QPSK	MCH	50	0	8.9383	9.489	PASS
	HCH	50	0	8.9736	9.556	PASS
16QAM	LCH	50	0	8.9258	9.500	PASS
	MCH	50	0	8.9335	9.495	PASS
	HCH	50	0	8.9621	9.522	PASS

Channel Bandwidth: 15 MHz								
Modulation	Channel	RB Configuration		Occupied	-26dB			
		Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict		
60	LCH	75	0	13.456	14.31	PASS		
QPSK	MCH	75	0	13.347	14.20	PASS		
®	HCH	75	0	13.500	14.35	PASS		
	LCH	75	0	13.438	14.27	PASS		
16QAM	MCH	75	0	13.337	14.17	PASS		
	HCH	75	0	13.471	14.27	PASS		



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			Channel B	andwidth: 20 MHz		
		RB Confi		Occupied	-26dB	
Modulation	Channel	Size	Offset	Bandwidth (MHz)	Bandwidth (MHz)	Verdict
	LCH	100	0	17.870	18.90	PASS
QPSK	PSK MCH	100	0	17.760	18.86	PASS
	HCH	100	0	17.898	19.01	PASS
	LCH	100	0	17.876	18.90	PASS
16QAM	QAM MCH 10	100	0	17.753	18.85	PASS
	HCH	100	0	17.910	18.95	PASS

Note: Please refers to Appendix B for compliance test plots for emission bandwidth (-26dBc)



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13. BAND EDGE

13.1 MEASUREMENT OVERVIEW

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

13.2 MEASUREMENT METHOD

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW > 1% of the emission bandwidth
- $4. VBW > 3 \times RBW$
- 5. Detector = RMS
- 6. Number of sweep points ≥ 2 x Span/RBW
- 7. Trace mode = trace average
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

TEST NOTE

§90.543(e)

- 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.
- 4. Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measure ment instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.
- 5. Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwid th of 30kHz may be employed.

According to FCC 22.917, 24.238, 27.53 specified that 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.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. All measurements were done at 2 channels(low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.



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13.3 MEASUREMENT METHOD



13.4 MEASUREMENT RESULT

NOTE: Please refers to Appendix C for compliance test plots for band edge