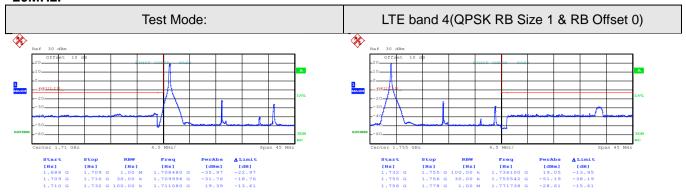




# 20MHz:

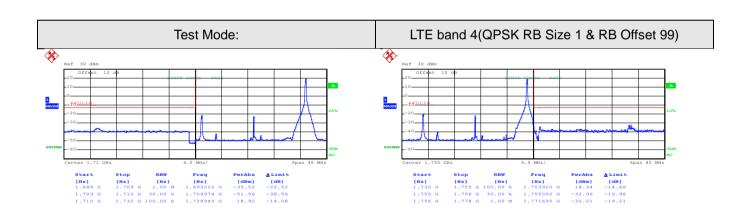


Date: 20.APR.2017 23:26:38

Date: 20.APR.2017 23:28:05

Lowest channel

Highest channel



Date: 20.APR.2017 23:26:50

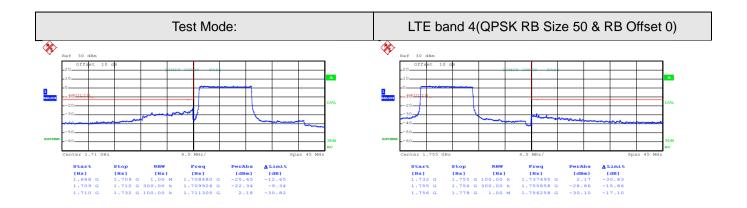
Date: 20.APR.2017 23:28:18

Lowest channel

Highest channel





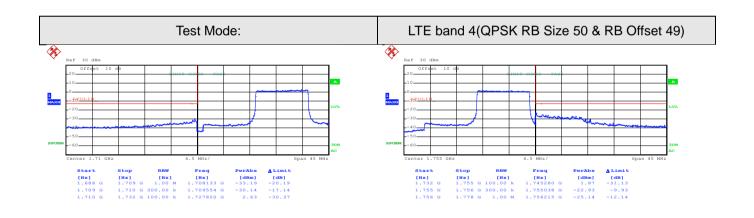


Date: 20.APR.2017 23:27:12

Date: 20.APR.2017 23:28:40

Lowest channel

Highest channel



Date: 20.APR.2017 23:27:26

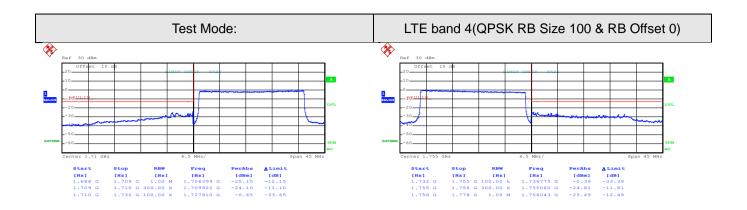
Date: 20.APR.2017 23:28:57

Lowest channel

Highest channel





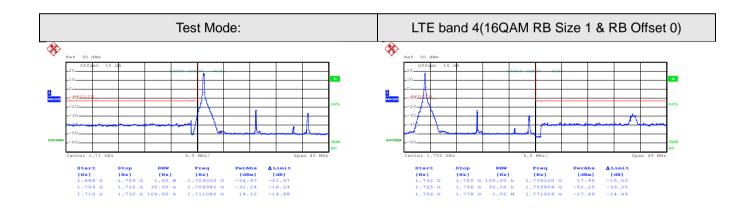


Date: 20.APR.2017 23:27:40

Date: 20.APR.2017 23:29:12

Lowest channel

Highest channel



Date: 20.APR.2017 23:26:43

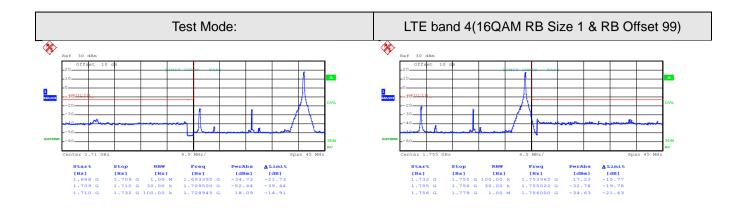
Date: 20.APR.2017 23:28:11

Lowest channel

Highest channel





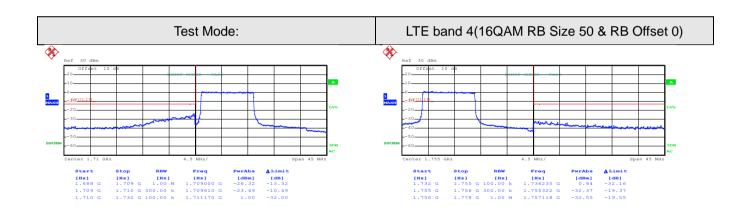


Date: 20.APR.2017 23:26:57

Date: 20.APR.2017 23:28:26

Lowest channel

Highest channel



Date: 20.APR.2017 23:27:17

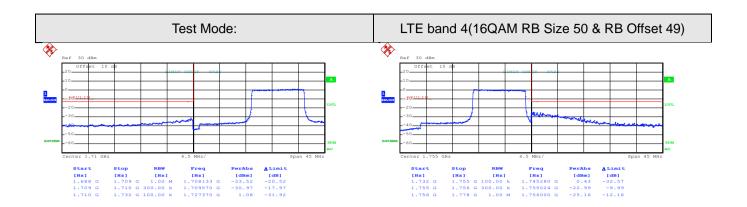
Date: 20.APR.2017 23:28:47

Lowest channel

Highest channel





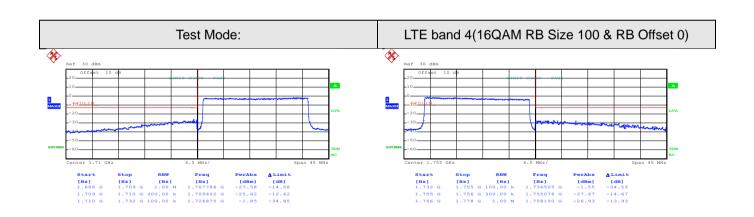


Date: 20.APR.2017 23:27:32

Date: 20.APR.2017 23:29:04

Lowest channel

Highest channel



Date: 20.APR.2017 23:27:45

Date: 20.APR.2017 23:29:16

Lowest channel

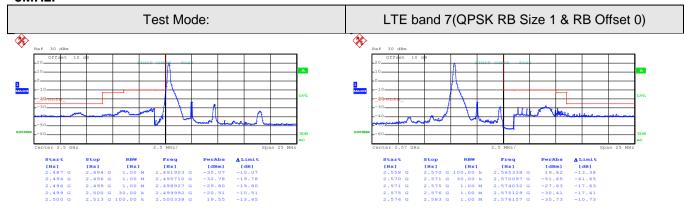
Highest channel





# LTE band 7 part:

### 5MHz:

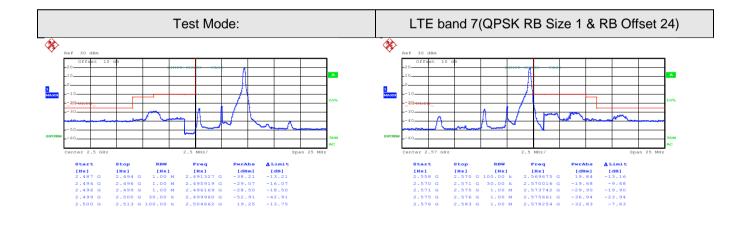


Date: 20.APR.2017 23:38:14

Date: 20.APR.2017 23:39:52

Lowest channel

Highest channel



Date: 20.APR.2017 23:38:29

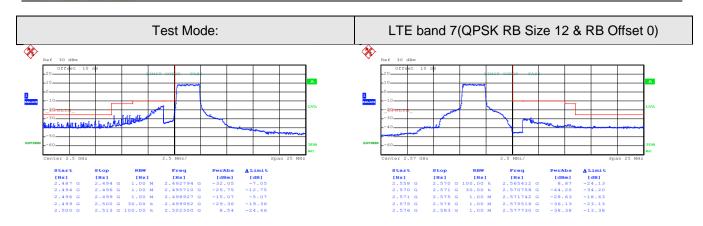
Date: 20.APR.2017 23:40:10

Lowest channel

Highest channel





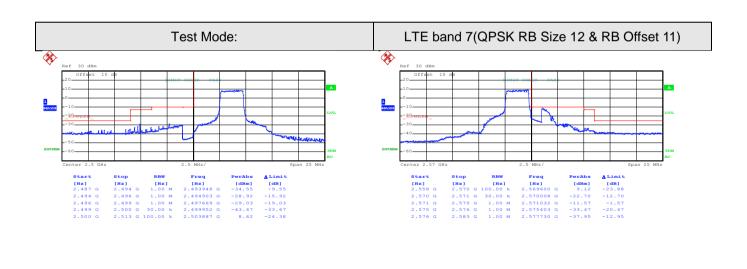


Date: 20.APR.2017 23:38:46

Date: 20.APR.2017 23:40:25

### Lowest channel

Highest channel



Date: 20.APR.2017 23:39:01

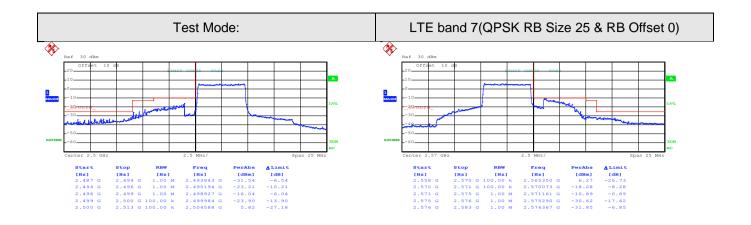
Date: 20.APR.2017 23:40:40

Lowest channel

Highest channel





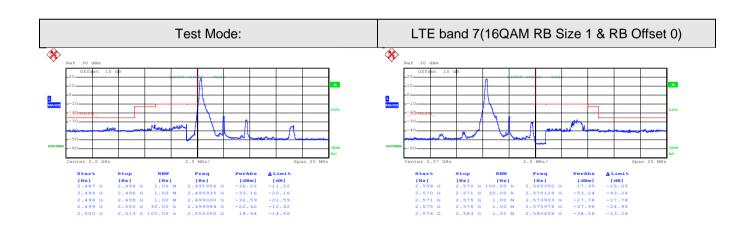


Date: 20.APR.2017 23:39:20

Date: 20.APR.2017 23:41:00

Lowest channel

Highest channel



Date: 20.APR.2017 23:38:21

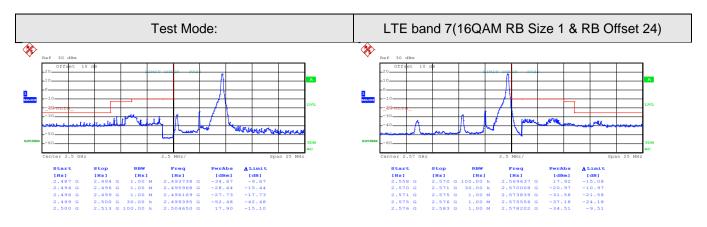
Date: 20.APR.2017 23:39:57

Lowest channel

Highest channel





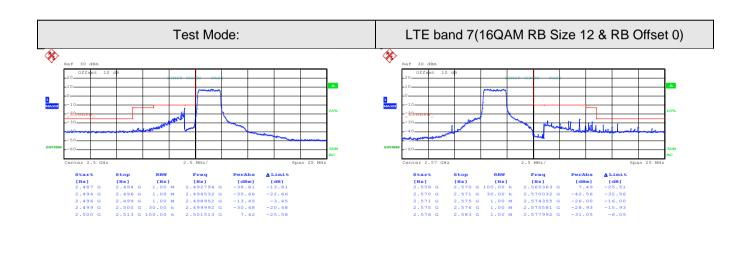


Date: 20.APR.2017 23:38:37

Date: 20.APR.2017 23:40:17

Lowest channel

Highest channel



Date: 20.APR.2017 23:38:52

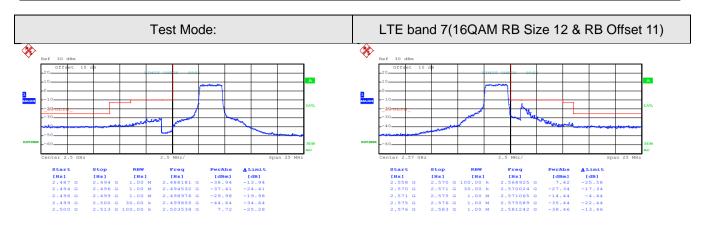
Date: 20.APR.2017 23:40:32

Lowest channel

Highest channel





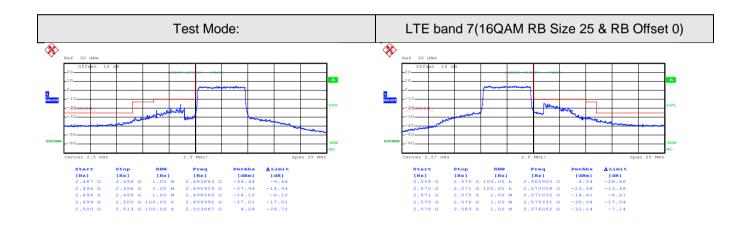


Date: 20.APR.2017 23:39:07

Date: 20.APR.2017 23:40:46

### Lowest channel

Highest channel



Date: 20.APR.2017 23:39:25

Date: 20.APR.2017 23:41:05

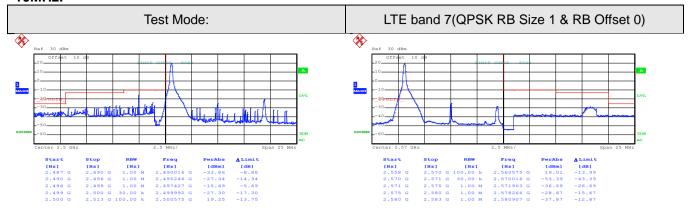
Lowest channel

Highest channel





# 10MHz:

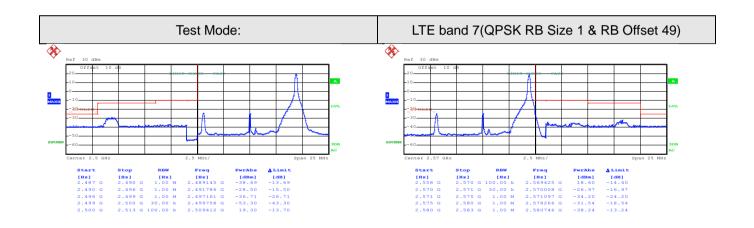


Date: 20.APR.2017 23:51:19

Date: 20.APR.2017 23:53:06

Lowest channel

Highest channel



Date: 20.APR.2017 23:51:41

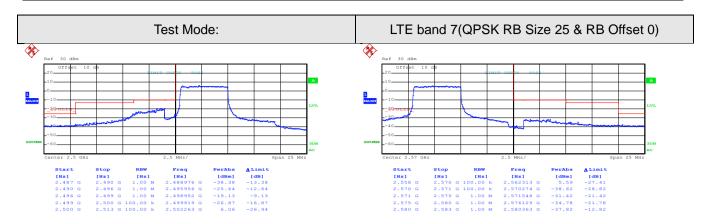
Date: 20.APR.2017 23:53:20

Lowest channel

Highest channel





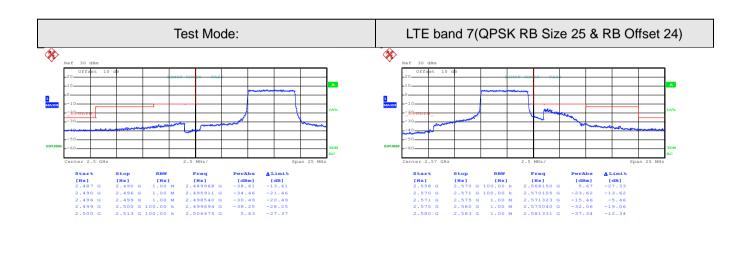


Date: 20.APR.2017 23:52:02

Date: 20.APR.2017 23:53:41

### Lowest channel

Highest channel



Date: 20.APR.2017 23:52:22

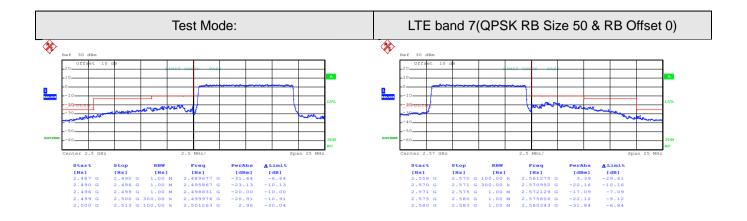
Date: 20.APR.2017 23:53:58

Lowest channel

Highest channel





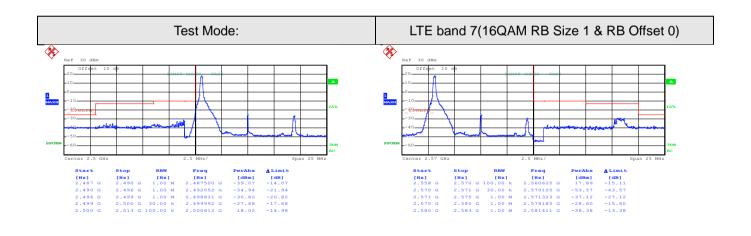


Date: 20.APR.2017 23:52:40

Date: 20.APR.2017 23:54:17

Lowest channel

Highest channel



Date: 20.APR.2017 23:51:33

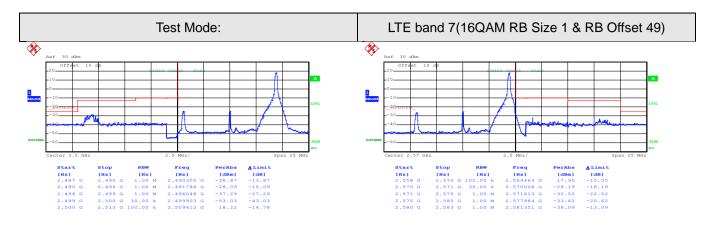
Date: 20.APR.2017 23:53:11

Lowest channel

Highest channel





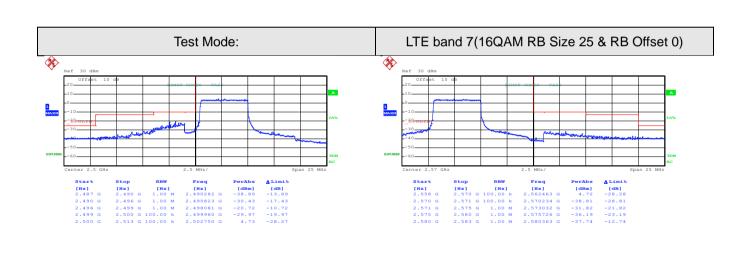


Date: 20.APR.2017 23:51:47

Date: 20.APR.2017 23:53:27

### Lowest channel

Highest channel



Date: 20.APR.2017 23:52:11

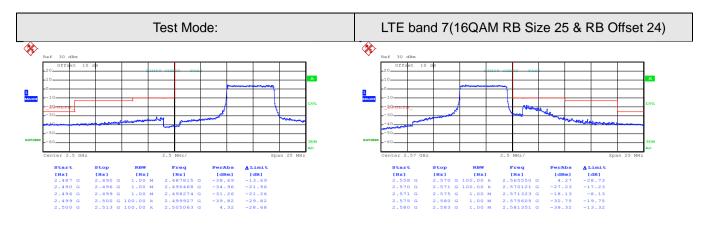
Date: 20.APR.2017 23:53:47

Lowest channel

Highest channel





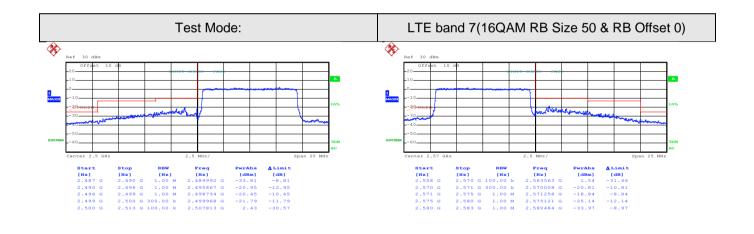


Date: 20.APR.2017 23:52:28

Date: 20.APR.2017 23:54:04

Lowest channel

Highest channel



Date: 20.APR.2017 23:52:45

Date: 20.APR.2017 23:54:21

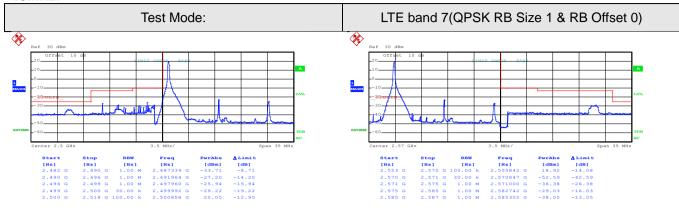
Lowest channel

Highest channel





# 15MHz:

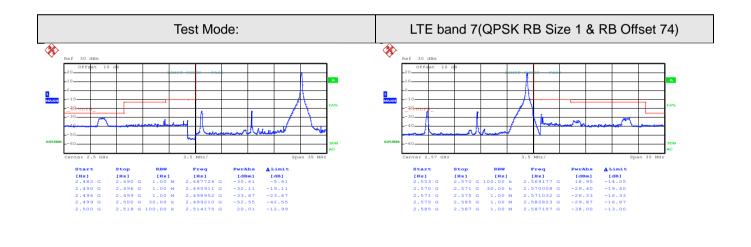


Date: 20.APR.2017 23:55:17

Date: 20.APR.2017 23:57:16

Lowest channel

Highest channel



Date: 20.APR.2017 23:55:33

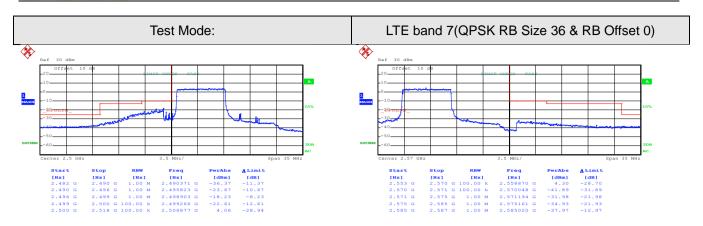
Date: 20.APR.2017 23:57:29

Lowest channel

Highest channel





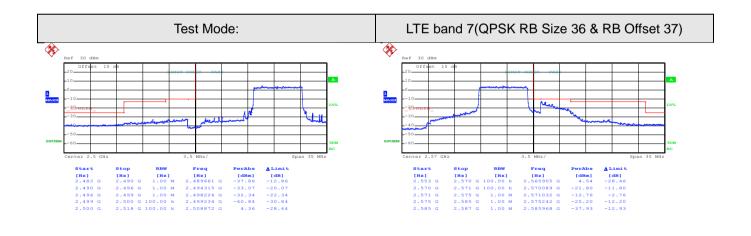


Date: 20.APR.2017 23:55:54

Date: 20.APR.2017 23:57:49

Lowest channel

Highest channel



Date: 20.APR.2017 23:56:09

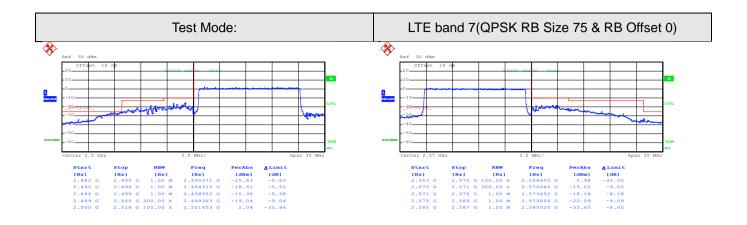
Date: 20.APR.2017 23:58:03

Lowest channel

Highest channel





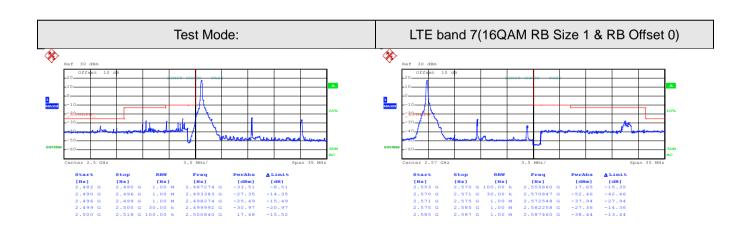


Date: 20.APR.2017 23:56:30

Date: 20.APR.2017 23:58:21

Lowest channel

Highest channel



Date: 20.APR.2017 23:55:24

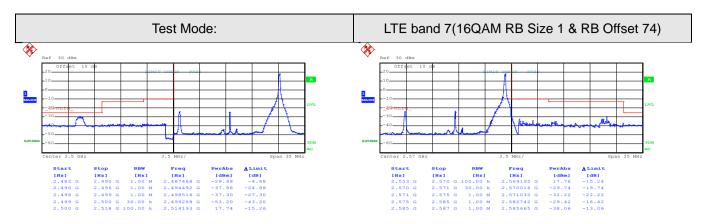
Date: 20.APR.2017 23:57:22

Lowest channel

Highest channel





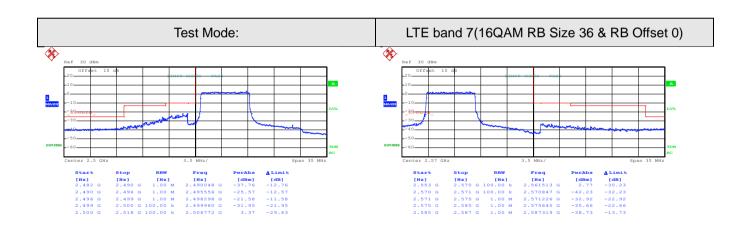


Date: 20.APR.2017 23:55:39

Date: 20.APR.2017 23:57:35

Lowest channel

Highest channel



Date: 20.APR.2017 23:56:00

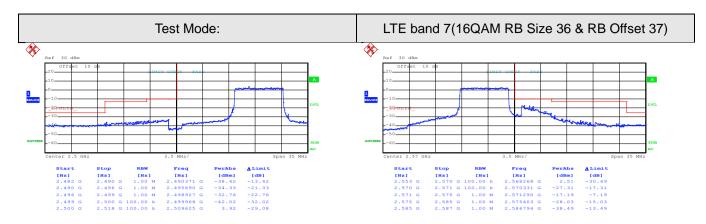
Date: 20.APR.2017 23:57:55

Lowest channel

Highest channel





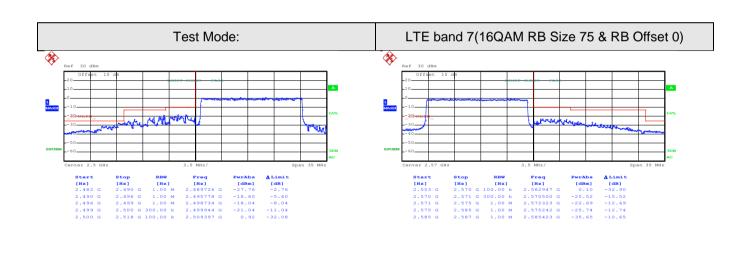


Date: 20.APR.2017 23:56:15

Date: 20.APR.2017 23:58:09

### Lowest channel

Highest channel



Date: 20.APR.2017 23:56:35

Date: 20.APR.2017 23:58:26

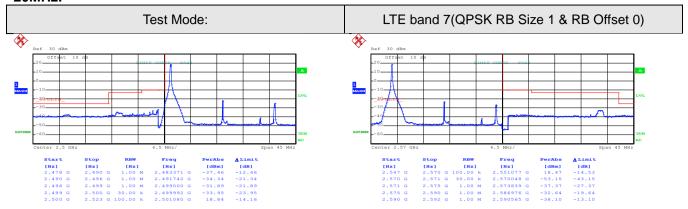
Lowest channel

Highest channel





# 20MHz:

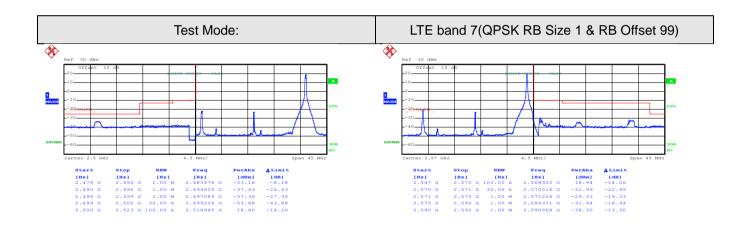


Date: 20.APR.2017 23:59:14

Date: 21.APR.2017 00:00:47

Lowest channel

Highest channel



Date: 20.APR.2017 23:59:28

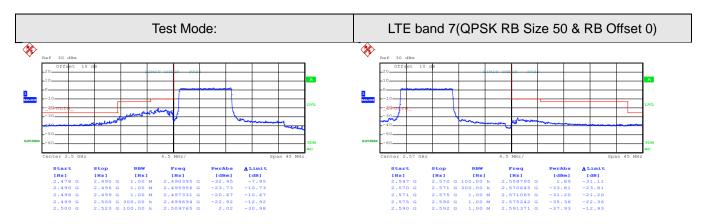
Date: 21.APR.2017 00:01:01

Lowest channel

Highest channel





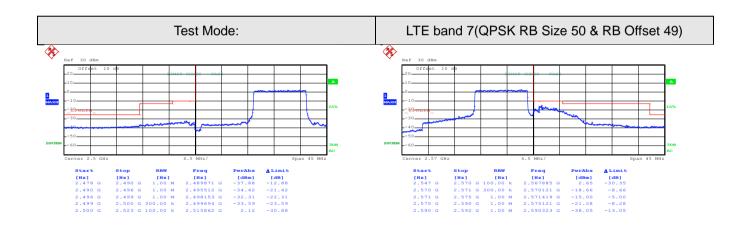


Date: 20.APR.2017 23:59:53

Date: 21.APR.2017 00:01:24

Lowest channel

Highest channel



Date: 21.APR.2017 00:00:07

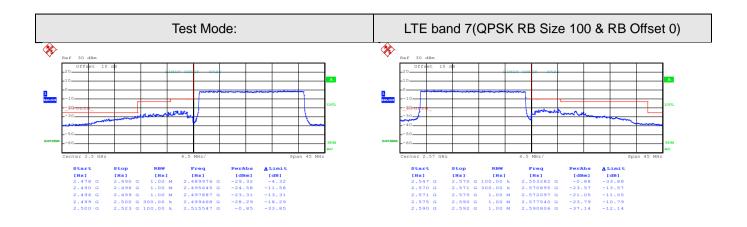
Date: 21.APR.2017 00:01:39

Lowest channel

Highest channel





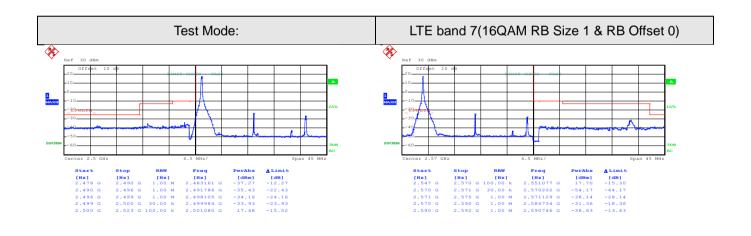


Date: 21.APR.2017 00:00:23

Date: 21.APR.2017 00:01:54

Lowest channel

Highest channel



Date: 20.APR.2017 23:59:21

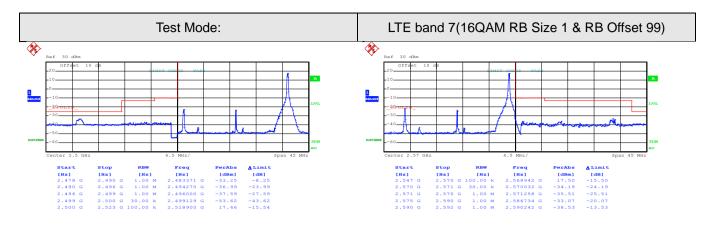
Date: 21.APR.2017 00:00:53

Lowest channel

Highest channel





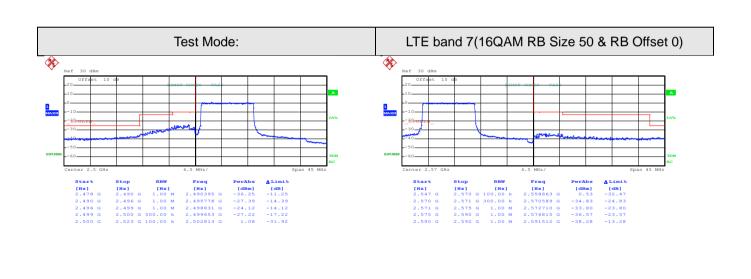


Date: 20.APR.2017 23:59:36

Date: 21.APR.2017 00:01:07

### Lowest channel

Highest channel



Date: 20.APR.2017 23:59:58

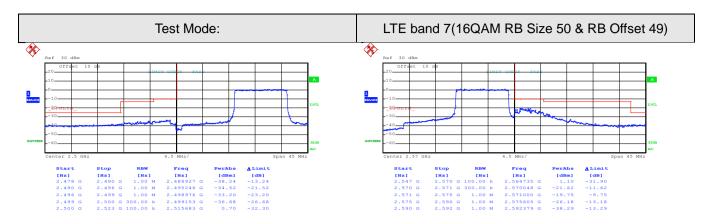
Date: 21.APR.2017 00:01:30

Lowest channel

Highest channel





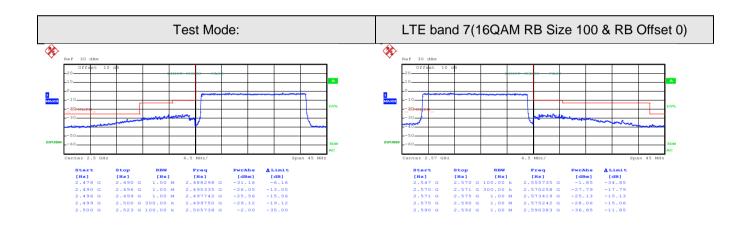


Date: 21.APR.2017 00:00:14

Date: 21.APR.2017 00:01:46

### Lowest channel

Highest channel



Date: 21.APR.2017 00:00:29

Date: 21.APR.2017 00:01:58

Lowest channel

Highest channel





# 6.10 ERP, EIRP Measurement

Test Requirement:	24.232 (c), part 27.50(d), part 27.50 (h)
Test Method:	FCC part2.1046
Limit:	LTE Band 2: 2W EIRP LTE Band 4: 1W EIRP LTE Band 7: 2W EIRP
Test setup:	Below 1GHz  Antenna Tower  Search Antenna Receiver  Ground Plane  Above 1GHz
	Horn Antonna  FLIT  Jon  Jon  Analyseer  Analyseer  Analyseer  Analyseer  Analyseer
	Substituted method:  Antenna mast  d: distance in meters d:3 meter  Substituted Dipole or Horn Antenna  Bi-Log Antenna or Horn Antenna





Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.
	2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.
	3. ERP in frequency band below 1GHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:
	<ul> <li>ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)</li> <li>4. EIRP in frequency band above 1GHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:</li> </ul>
	EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)  5. The worse case was relating to the conducted output power.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed





# Measurement Data (worst case):

# LTE band 2 part

# Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result		
		1.	4MHz(RB s	ize 1 & RB	offset 0)					
1050.70	10007	ODCK	1.1	Н	V	20.10				
1850.70	18607	QPSK	1.4	П	Н	16.11	33.00	Door		
1050.70	10007	16001	1.1	Н	V	19.85	33.00	Pass		
1850.70	18607	16QAM	1.4	П	Н	16.18				
	1.4MHz(RB size 3 & RB offset 0)									
4050.70	40007	ODCK	4.4		V	19.50				
1850.70	18607	QPSK	1.4	H	Н	16.30	22.00	Doos		
1050.70	10607	160AM	1.4	Н	V	19.96	33.00	Pass		
1850.70	18607	16QAM	1.4		Н	16.36				
		1.	4MHz(RB s	ize 6 & RB	offset 0)					
4050.70	40007	ODOK	4.4		V	19.08				
1850.70	18607	QPSK	1.4	H	Н	15.46	22.00	Door		
4050.70	40007	10001	4.4		V	19.00	33.00	Pass		
1850.70	18607	16QAM	1.4	Н	Н	15.80				

# Middle channel

	Middle channel											
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result				
		1.4	4MHz(RB	size 1 & RE	3 offset 0)							
1880.00	18900	QPSK	1.4	Н	<b>&gt;</b>	20.18						
1000.00	10900	QFSK	1.4	11	Н	16.85	33.00	Pass				
1880.00	18900	16QAM	1.4	Н	V	19.73	33.00	rass				
1000.00	10900	IOQAM	1.4	- 11	Н	16.45						
		1.4	4MHz(RB	size 3 & RE	3 offset 0)							
1880.00	18900	QPSK	1.4	Н	>	19.17						
1660.00	16900	QFSK	1.4	11	Н	16.15	33.00	Pass				
1880.00	18900	16QAM	1.4	Н	V	19.39	33.00	F 455				
1000.00	10900	TOQAM	1.4	11	Н	16.37						
		1.4	4MHz(RB	size 6 & RE	3 offset 0)							
1880.00	18900	QPSK	1.40	Н	>	19.21						
1000.00	10900	QF 5R	1.40	11	Н	15.39	33.00	Page				
1880.00	00 18900 16QAM	16QAM	1.40	Н	V	19.21	33.00	Pass				
1000.00	10900	ΙΟΘΛΙΝΙ	1.40	11	Н	15.85						





**Highest channel** 

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
			1.4MHz(RE	3 size 1 & F	RB offset 0)						
1909.30	19193	QPSK	1.4	Н	V	20.73					
1909.30	19193	QFSK	1.4	П	Н	16.41	33.00	Door			
1000 20	10102	16QAM	1.4	Н	V	19.37	33.00	Pass			
1909.30	19193	IOQAW	1.4	П	Н	16.39					
	1.4MHz(RB size 3 & RB offset 0)										
4000 20	40400	ODCK	4.4	1.1	V	19.21		Door			
1909.30	19193	QPSK	1.4	H -	Н	16.15	33.00				
1000 20	10102	160 AM	1.4	Н	V	19.57	33.00	Pass			
1909.30	19193	16QAM	1.4	П	Н	16.47					
			1.4MHz(RE	3 size 6 & F	RB offset 0)						
4000 20	40400	ODCK	4.4	1.1	V	19.82					
1909.30	19193	QPSK	1.4	Н	Н	15.85	00.00	Pass			
1000 20	10102	160AM	1.4	Ш	V	19.25	33.00				
1909.30	19193	16QAM	1.4	Н	Н	15.47					

### Lowest channel

	Lowest channel										
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
	20MHz(RB size 1 & RB offset 0)										
1860.00	18700	QPSK	20	Н	V	20.85					
1000.00	16700	QFSK	20	П	Н	16.73	33.00	Pass			
1860.00	18700	16QAM	20	Н	V	19.82	33.00	Pass			
1000.00	10700	TOQAM	20 I	П	Н	16.45					
		2	0MHz(RB si	ze 50 & R	B offset 0)						
1860.00	18700	QPSK	20	Н	V	19.41					
1000.00	16700	QFSK	20	П	Н	16.45	33.00	Pass			
1860.00	18700	16QAM	20	Н	V	19.41	33.00	Pa55			
1800.00	18700	TOQAM	20		Н	16.82					
		20	MHz(RB siz	e 100 & R	B offset 0)						
1860.00	18700	QPSK	20	Н	V	19.73					
1000.00	10700	QFSK	20	П	Н	15.37	33.00	Docc			
1860.00	18700 16QAM	20	Н	V	19.41	33.00	Pass				
1000.00	10700	IOQAW	20	П	Н	15.85					





Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
	20MHz(RB size 1 & RB offset 0)										
1880.00	18900	QPSK	20	Н	V	20.73					
1000.00	16900	QPSK	20	П	Н	16.37	22.00	Door			
1000.00	19000	16O A M	20	Н	V	19.45	33.00	Pass			
1880.00	18900	16QAM	20	П	Н	16.17					
		2	0MHz(RB si	ze 50 & RI	B offset 0)						
1000.00	10000	ODSK	20	Н	V	19.39					
1880.00	18900	QPSK	20	П	Н	16.37	33.00	Pass			
1000.00	10000	16O A M	20	Н	V	19.21	33.00	Fa55			
1880.00	18900	16QAM	20	П	Н	16.93					
		20	MHz(RB siz	ze 100 & R	B offset 0)						
1000.00	10000	ODCK	20	Ш	V	19.71					
1880.00	18900	QPSK	20	Н	Н	15.85	22.00	Door			
1880.00	18900	16QAM	20	Н	V	19.77	33.00	Pass			
1000.00	10900	IOQAM	20	П	Н	15.12					

**Highest channel** 

Pro-	rigitest chaintei										
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
20MHz(RB size 1 & RB offset 0)											
1900.00	19100	QPSK	20	Н	V	20.41					
1900.00	19100	QFSK	20		Н	16.15	33.00	Door			
1900.00	19100	16QAM	20 H	V	19.33	33.00	Pass				
1900.00	19100	TOQAW	20	11	Н	16.01		_			
		2	20MHz(RB s	size 50 &	RB offset 0	)					
1900.00	19100	QPSK	20	Н	V	19.21					
1900.00	19100	QFSK	20		Н	16.01	33.00	Pass			
1900.00	19100	16QAM	20	Н	٧	19.37	33.00	Fa55			
1900.00	19100	TOQAW	20	11	Н	16.15					
		2	0MHz(RB s	ize 100 8	RB offset (	0)					
1900.00	19100	QPSK	20	Н	V	19.17					
1900.00	19100	QF3N	20	17	Н	15.39	33.00	Pass			
1900.00	19100	16QAM	20	Н	٧	19.21	33.00	F 055			
1900.00	19100	IOQAW	20	11	Н	15.27					





# LTE band 4 part

### Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
		•	I.4MHz(RE	3 size 1 &	RB offset 0)						
1710.70	19957	QPSK	1.4	Н	V	20.23					
1710.70	19937	QFSK	1.4	11	Н	17.80	30.00	Door			
1710.70	19957	16QAM	AM 1.4 H V 20.20	30.00	Pass						
1710.70	19957	TOQAM	1.4	11	Н	17.98					
	1.4MHz(RB size 3 & RB offset 0)										
1710.70	19957	QPSK	1.4	Н	V	20.39	30.00	Pass			
1710.70	19937	QFSK	1.4	П	Н	17.95					
1710.70	19957	16QAM	1.4	Н	V	20.27					
1710.70	19957	IOQAW	1.4		Н	18.00					
		•	1.4MHz(RE	3 size 6 &	RB offset 0)						
1710 70	10057	ODSK	4.4	Н	V	19.10					
1710.70	19957	QPSK	1.4		Н	16.76	20.00	Pass			
1710.70	19957	16QAM	1.4	Н	V	18.97	30.00				
1710.70	19907	IOQAW	1.4	П	Н	17.08					

# Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
		1	.4MHz(RE	3 size 1 &	RB offset 0)			
1732.50	20175	QPSK	1.4	Н	V	20.17		
1732.50	20175	QFSK	1.4	П	Н	17.71	30.00	Pass
1732.50	20175	16QAM	1.4	Н	V	20.22	30.00	Fa55
1732.50	20173	IOQAW	1.4	П	Н			
		1	.4MHz(RE	3 size 3 &	RB offset 0)			
1732.50	20175	QPSK	1.4	Н	V	20.77	30.00	Pass
1732.50	20175	QPSK	1.4	П	Н	17.10		
1732.50	20175	16QAM	1.4	Н	V	20.34		
1732.50	20175	TOQAM	1.4	- 11	Н	18.18		
		1	.4MHz(RE	3 size 6 &	RB offset 0)			
1732.50	20175	QPSK	1.4	Н	V	19.97		
1732.50	20175	QFSK	1.4	П	Н	16.39	20.00	D
1732.50	20175	16QAM	1.4	Н	V	18.01	30.00	Pass
1732.00	20173	TOQAM	1.4	П	Н	17.04		





**Highest channel** 

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
			1.4MHz(RE	size 1 & l	RB offset 0)			
1754.30	20393	QPSK	1.4	Н	V	20.18		
1754.50	20393	QFSK	1.4	П	Н	17.37	30.00	Door
1754 20	20393	16QAM	1.4	Н	V	20.04	30.00	Pass
1754.30	20393	IOQAW	1.4	П	Н	17.18		
		•	1.4MHz(RE	3 size 3 & l	RB offset 0)			
1751 20	20202	ODSK	1.1	.4 H	V	20.04		Door
1754.30	20393	QPSK	1.4		Н	17.39	20.00	
1751 20	20202	160014	1.1	Н	V	20.37	30.00	Pass
1754.30	20393	16QAM	1.4	П	Н	18.47		
		,	1.4MHz(RE	3 size 6 & F	RB offset 0)			
4754.00	20202	ODCK	4.4	- 11	V	19.41		
1754.30	20393	QPSK	1.4	Н	Н	16.37	20.00	Pass
1751 20	20202	160014	1.4	Н	V	18.34	30.00	
1754.30	20393	16QAM	1.4	П	Н	17.17		

# Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result				
	20MHz(RB size 1 & RB offset 0)											
1720.00	20050	ODSK	20	Ш	V	20.22						
1720.00	20050	QPSK	20	Н	Н	17.42	20.00	Doos				
1720.00	20050	160AM	20	Ш	V	20.37	30.00	Pass				
1720.00	20050	16QAM	20	Н	Н	17.71						
		20MHz	(RB size 50	& RB offse	et 0)							
1720.00	20050	ODSK	20	Н	V	20.34	T					
1720.00	20050	QPSK	20	П	Н	17.37	30.00	Doos				
1720.00	20050	16QAM	20	Н	V	20.18	30.00	Pass				
1720.00	20030	TOQAW	20		Н	18.22						
		20MHz(	RB size 100	& RB offs	et 0)							
1720.00	20050	QPSK	20	Н	V	19.44						
1720.00	20050	QFSK	20	П	Н	16.18	20.00	Door				
1720.00	20050	16QAM	20	20	20	20	20	1.1	V	18.10	30.00	Pass
1720.00	20030	IOQAW	20	Н	Н	17.34						



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Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
20MHz(RB size 1 & RB offset 0)											
1732.50	20175	QPSK	20	Н	V	20.34					
1732.50	20175	QFSN	20	П	Н	17.37	30.00	Pass			
1732.50	20175	16QAM	20	20 H -	V	20.97	30.00	Fa55			
1732.50	20175	TOQAW	20	П	Н	17.01					
		20	MHz(RB siz	ze 50 & RE	3 offset 0)						
1722.50	20175	QPSK	20	Н	V	20.18					
1732.50	20175	QFSN	20	П	Н	17.33	30.00	Pass			
1732.50	20175	16QAM	20	Н	V	20.04	30.00	F a 5 5			
1732.50	20175	IOQAW	20	П	Н	18.37					
		20	MHz(RB siz	e 100 & RI	B offset 0)						
1722.50	20175	OBSK	20	Н	V	19.97					
1732.50	20175	QPSK	20	П	Н	16.04	20.00	Door			
1732.50	732.50 20175 16QAM 20	20	Н	V	18.33	30.00	Pass				
1732.50	20175	TOQAW	20	11	Н	17.41					

High channel

nigh channel												
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result				
	20MHz(RB size 1 & RB offset 0)											
1745.00	20300	QPSK	20	Н	V	20.37						
1745.00	20300	QFSK	20	П	Н	17.81	20.00	Door				
1745.00	20300	16QAM	20	Н	V	20.79	30.00	Pass				
1743.00	20300	TOQAM	20	11	Н	17.41						
		:	20MHz(RB siz	ze 50 & RE	offset 0)							
1745.00	20200	QPSK	20	Н	V	20.44						
1745.00	20300	QFSK	20	П	Н	17.22	30.00	Pass				
1745.00	20300	16QAM	20	Н	V	20.41	30.00	F 455				
1745.00	20300	TOQAM	20	П	Н	18.39						
		2	20MHz(RB siz	e 100 & RI	3 offset 0)							
1745.00	20200	OBSK	20	Н	V	19.01						
1745.00	00   20300   QPSK   20	20		Н	16.39	30.00	Dace					
1745.00	20200	16O A M	20	11	V	18.37	30.00	Pass				
1743.00	1745.00 20300 16QAM 20	Н	Н	17.47								





# LTE band 7 part

### Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result				
	5MHz(RB size 1 & RB offset 0)											
2502.50	20775	QPSK	5	Н	V	17.03						
2502.50	20773	QFSK	5	П	Н	10.13	33.00	Pass				
2502.50	20775	16QAM	5	Н	V	16.14	33.00	Fa55				
2502.50	20773	IOQAW	5	П	Н	9.86						
			5MHz(RB	size 12&	RB offset 0)							
2502.50	20775	0077F ODCK	PSK 5	Н	V	16.51	33.00	Poor				
2502.50	20773	QPSK	5		Н	9.87						
2502.50	20775	16QAM	5				Н	V	16.92	33.00	Pass	
2502.50	20773	IOQAW	5	П	Н	9.80						
			5MHz(RB	size 25&	RB offset 0)							
2502.50	20775	ODSK	E	Н	V	16.59						
2502.50	20775	QPSK	5	П	Н	10.14	22.00	Door				
2502.50	20775	160 AM		Н	V	16.26	33.00	Pass				
2502.50	20775	16QAM	5	П	Н	10.24						

# Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
5MHz(RB size 1 & RB offset 0)											
2535.00	21100	QPSK	5	Н	V	17.02					
2555.00	21100	QFSK	5	П	Н	10.82	22.00	Door			
2535.00	21100	16QAM	5	Н	V	16.75	33.00	Pass			
2555.00	21100	IOQAW	5	П	Н	9.82					
		Ę	MHz(RB	size 12&	RB offset 0)						
2535.00	21100	QPSK	5	Н	V	16.39	33.00	Pass			
2555.00	21100	QFSK	5	П	Н	9.82					
2535.00	21100	16QAM	5	Н	V	16.48	33.00				
2555.00	21100	IOQAW	5		Н	9.62					
		Ę	MHz(RB	size 25&	RB offset 0)						
2525.00	21100	ODCK	5	Н	V	16.93					
2535.00	21100	QPSK	5	П	Н	10.75	22.00	Daga			
2525.00	2525.00 24400 4004M 5	5	ы	V	16.37	33.00	Pass				
2535.00	21100	16QAM	3	Н	Н	10.01					





**Highest channel** 

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result				
	5MHz(RB size 1 & RB offset 0)											
2567.50	21425	QPSK	5	Н	V	16.96						
2567.50	21423	QFSK	5	П	Н	10.26	33.00	Pass				
2567.50	21425	16QAM	5	Н	V	16.01	33.00	Fa55				
2567.50	21423	IOQAW	5	П	Н	9.16						
			5MHz(RB	size 12& R	RB offset 0)							
2567.50	24.425	ODOK		Н	V	16.82						
2567.50	21425	QPSK	5	П	Н	9.39	22.00	Door				
2567.50	21425	16QAM	5	Н	V	16.39	33.00	Pass				
2567.50	21423	IOQAW	5	П	Н	9.35						
			5MHz(RB	size 25& R	RB offset 0)							
2507.50	04.405	ODCK	-	1.1	V	16.48						
2567.50	21425	QPSK	5	Н	Н	10.26	22.00	D				
2567.50	24.425	10011	E		V	16.01	33.00	Pass				
2567.50	21425	16QAM	5	Н	Н	10.75						

### Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
		2	0MHz(RB si	ze 1 & RB	offset 0)			
2510.00	20850	QPSK	20	Н	V	16.52		
2510.00	20000	QF3K	20	П	Н	10.83	33.00	Door
2510.00	20850	16QAM	20 H	Н	V	16.48	33.00	Pass
2510.00	20000	IOQAW	20	П	Н	9.83		
		20MHz	(RB size 50	& RB offse	et 0)			
2510.00	20850	QPSK	20	Н	V	16.24		
2510.00	20000	QFSK		11	Н	9.28	33.00	Pass
2510.00	20850	16QAM		Н	V	16.23		
2310.00	20030	TOQAIVI	20	11	Н	9.39		
		20MHz(	RB size 100	& RB offs	et 0)			
2510.00	20850	QPSK	20	Н	V	16.02		
2510.00	20030	QF3K	20	П	Н	10.48	22.00	Door
2510.00	20850	60 16QAM	20	Н	V	16.39	33.00	Pass
2510.00	20000	IOQAW	20	Н	Н	10.24		



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# Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
20MHz(RB size 1 & RB offset 0)											
2535.00	21100	QPSK	20	Н	V	16.59					
2555.00	21100	QFSN	20	П	Н	10.16	33.00	Pass			
2535.00	21100	16QAM	20	Н	V	16.82	33.00	F a 5 5			
2555.00	21100	TOQAW	20	П	Н	9.26					
		20	MHz(RB siz	ze 50 & RE	3 offset 0)						
2535.00	21100	QPSK	20	Ш	V	16.39					
2555.00	21100	QFSN	20	Н	Н	9.61	33.00	Pass			
2535.00	21100	16QAM	20	Н	V	16.37	33.00	F a 5 5			
2555.00	21100	TOQAW	20	П	Н	9.75					
		20	MHz(RB siz	e 100 & RI	B offset 0)						
2535.00	04400	04400 ODOK	20		V	16.42		Pass			
2555.00	21100	QPSK	20	Н	Н	10.39	22.00				
2535.00	21100	21100 16QAM	20	Н	V	16.28	33.00				
2555.00	21100	TOQAW	20	11	Н	10.75					

**High channe** 

High channel											
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result			
			20MHz(RB	size 1 &	RB offset 0)						
2560.00	21350	QPSK	20	Н	V	16.76					
2560.00	21330	QFSK	20	П	Н	10.83	33.00	Pass			
2560.00	21350	16QAM	20	Н	V	16.83	33.00	Fass			
2300.00	21330	TOQAM	20	11	Н	9.52					
	20MHz(RB size 50 & RB offset 0)										
2560.00	21350	QPSK	20	20 H	V	16.76					
2300.00	21330	QFSK	20	11	Н	9.42	33.00	Pass			
2560.00	21350	16QAM	20	Н	V	16.28	33.00	Fass			
2300.00	21330	TOQAM	20	11	Н	9.25					
	20MHz(RB size 100 & RB offset 0)										
2560.00	21350	QPSK	20	20	20	Н	V	16.26			
2300.00	21330	QF JIN	20	20 11	Н	10.57	33.00	Pass			
2560.00	21350	21350 16QAM	20	20 H	V	16.66	33.00	Газз			
2300.00	21330	IOQAW	20	11	Н	10.13					



# 6.11 Field strength of spurious radiation measurement

o. 11 Field Strength of Sp	urious radiation measurement
Test Requirement:	Part 24.238 (a), Part 27.53(m), Part 27.53(h)
Test Method:	FCC part2.1053
Limit:	LTE Band 2, LTE Band 4, LTE Band 5 and LTE Band 17: -13dBm, LTE Band 7: -25dBm
Test setup:	Below 1GHz  Antenna Tower  Scarch Antenna RF Test Receiver  Ground Plane  Above 1GHz
	Antenna Tower  Horn Automa  Spectrum  Analysis  Turn Table  Amplifier
	Substituted method:  Antenna mast  Ground plane  d: distance in meters d:3 meter  I-4 meter  SPA  Substituted Dipole or Horn Antenna  Bi-Log Antenna or Horn Antenna
Test Procedure:	<ol> <li>The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>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.</li> <li>The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission</li> </ol>



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	<ul> <li>was determined using the substitution method.</li> <li>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</li> <li>ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)</li> </ul>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

## Measurement Data (worst case):

### **Below 1GHz:**

The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

### **Above 1GHz**

For above 1 GHz, all test modes were performed, and just the worst case shown in the report.



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LTE band 2 part:

		ze 1 & RB offset 0) for	or QPSK	
Frequency (MHz)	Spurious I	Emission	Limit (dBm)	Result
requericy (IVITZ)	Polarization	Level (dBm)	Limit (ubin)	Result
		Lowest		
3701.40	Vertical	-40.98		
5552.10	V	-44.88		
7402.00	V	-40.85	42.00	Dana
3701.40	Horizontal	-46.58	-13.00	Pass
5552.10	Н	-43.59		
7402.00	Н	-38.48		
·		Middle		
3760.00	Vertical	-50.27		Pass
5640.00	V	-44.74		
7520.00	V	-40.32	42.00	
3760.00	Horizontal	-50.43	-13.00	
5640.00	Н	-44.18		
7520.00	Н	-39.74		
		Highest		
3816.60	Vertical	-46.32		
5724.90	V	-44.08		
7633.20	V	-39.17	-13.00	Dest
3816.60	Horizontal	-49.48		Pass
5724.90	Н	-45.43		
7633.20	Н	-38.94		





	3MHz/RR ei	ze 1 & RB offset 0)	for OPSK	
		Emission		
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3703.00	Vertical	-40.36		
5554.50	V	-44.17		
7406.00	V	-40.13	-13.00	Pass
3703.00	Horizontal	-46.48	-13.00	Pass
5554.50	Н	-43.36		
7406.00	Н	-38.76		
		Middle		
3760.00	Vertical	-50.45		Pass
5640.00	V	-44.35		
7520.00	V	-40.15	-13.00	
3760.00	Horizontal	-50.49	-13.00	
5640.00	Н	-44.18		
7520.00	Н	-39.55		
		Highest		
3817.00	Vertical	-46.37		
5725.50	V	-44.38		
7634.00	V	-39.34	-13.00	Pass
3817.00	Horizontal	-49.25		Fass
5725.50	Н	-45.36		
7634.00	Н	-38.42		





	5MHz(RB siz	ze 1 & RB offset 0) f	or QPSK	
Fraguanay (MUz)	Spurious	Emission		Result
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3705.00	Vertical	-40.30		
5557.50	V	-44.85		
7410.00	V	-40.68	12.00	Door
3705.00	Horizontal	-46.12	-13.00	Pass
5557.50	Н	-43.33		
7410.00	Н	-38.12		
		Middle		
3760.00	Vertical	-50.64		Pass
5640.00	V	-44.50		
7520.00	V	-40.53	40.00	
3760.00	Horizontal	-50.42	-13.00	
5640.00	Н	-44.68		
7520.00	Н	-39.79		
		Highest		
3815.00	Vertical	-46.57		
5722.50	V	-44.53		
7630.00	V	-39.74	-13.00	Desa
3815.00	Horizontal	-49.57		Pass
5722.50	Н	-45.33		
7630.00	Н	-38.18		





	10MHz(RB si	ze 1 & RB offset 0) f	for QPSK	
	Spurious	Emission		
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3710.00	Vertical	-40.56		
5565.00	V	-44.57		
7420.00	V	-40.41	-13.00	Pass
3710.00	Horizontal	-46.21	-13.00	rass
5565.00	Н	-43.49		
7420.00	Н	-38.25		
·		Middle		•
3760.00	Vertical	-50.38		Pass
5640.00	V	-44.42		
7520.00	V	-40.36	-13.00	
3760.00	Horizontal	-50.49	-13.00	
5640.00	Н	-44.44		
7520.00	Н	-39.95		
		Highest		
3810.00	Vertical	-46.68		
5715.00	V	-44.76	-13.00	
7620.00	V	-39.42		Door
3810.00	Horizontal	-49.13		Pass
5715.00	Н	-45.50		
7620.00	Н	-38.42		l





	15MHz(RB	size 1 & RB offset (	) for QPSK	
Frequency (MHz)	Spurious	Emission	Limit (dBm)	Result
r requericy (IVII 12)	Polarization	Level (dBm)	Limit (dbin)	Nesuit
		Lowest		
3715.00	Vertical	-40.38		
5572.50	V	-44.15		
7430.00	V	-40.57	-13.00	Pass
3715.00	Horizontal	-46.33	-13.00	Pass
5572.50	Н	-43.76		
7430.00	Н	-38.64	7	
		Middle	<u> </u>	
3760.00	Vertical	-50.42		Pass
5640.00	V	-44.68		
7520.00	V	-40.13	-13.00	
3760.00	Horizontal	-50.53	-13.00	
5640.00	Н	-44.41		
7520.00	Н	-39.43	7	
		Highest		
3805.00	Vertical	-46.64		
5707.50	V	-44.42	7	
7610.00	V	-39.46	-13.00	
3805.00	Horizontal	-39.12		Pass
5707.50	Н	-45.31		
7610.00	Н	-38.26		





	20MHz(RB s	size 1 & RB offset 0	) for QPSK	
	Spurious	Emission		
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3720.00	Vertical	-40.15		
5580.00	V	-44.49		
7440.00	V	-40.12	-13.00	Door
3720.00	Horizontal	-46.49	-13.00	Pass
5580.00	Н	-43.12		
7440.00	Н	-38.49		
		Middle		
3760.00	Vertical	-50.42		
5640.00	V	-44.13		Pass
7520.00	V	-40.68	12.00	
3760.00	Horizontal	-50.41	-13.00	
5640.00	Н	-44.31		
7520.00	Н	-39.49		
		Highest		
3800.00	Vertical	-46.75		
5700.00	V	-44.55		
7600.00	V	-39.44	-13.00	Door
3800.00	Horizontal	-49.12		Pass
5700.00	Н	-45.68		
7600.00	Н	-38.44		





### LTE Band 4 Part:

t (dBm)	Result
	Result
12.00	
12.00	
12.00	
10.00	
	Pass
13.00	F455
	Pass
10.00	
3.00	
10.00	Dana
3.00	Pass
	3.00





	3MHz(RB siz	e 1 & RB offset 0) fo	or QPSK	
Fragues av (MIII-)		Emission		Desult
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3423.00	Vertical	-50.15		
5134.50	V	-45.36		
6846.00	V	-41.24	42.00	Desc
3423.00	Horizontal	-51.21	-13.00	Pass
5134.50	Н	-45.13		
6846.00	Н	-41.34	-	
·		Middle		•
3465.00	Vertical	-50.12		Pass
5197.50	V	-45.36	1	
6930.00	V	-40.14	-13.00	
3465.00	Horizontal	-50.13	-13.00	
5197.50	Н	-45.82		
6930.00	Н	-40.03		
·		Highest		·
3507.00	Vertical	-49.35		
5260.50	V	-45.69		
7014.00	V	-40.15	-13.00	Pass
3507.00	Horizontal	-50.36		Pass
5260.50	Н	-45.15		
7014.00	Н	-41.97		





	5MHz(RB siz	e 1 & RB offset 0) fo	or QPSK	
Fraguency (MHz)	Spurious			Result
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Resuit
		Lowest		
3425.00	Vertical	-50.65		
5137.50	V	-45.35		
6850.00	V	-41.41	42.00	Door
3425.00	Horizontal	-51.63	-13.00	Pass
5137.50	Н	-45.68		
6850.00	Н	-41.63		
<u>.</u>		Middle		
3465.00	Vertical	-50.41		Pass
5197.50	V	-45.67		
6930.00	V	-40.12	-13.00	
3465.00	Horizontal	-50.92	-13.00	
5197.50	Н	-45.49		
6930.00	Н	-40.16		
<u>.</u>		Highest		
3505.00	Vertical	-49.77		
5257.50	V	-45.46		
7010.00	V	-40.41	-13.00	Pass
3505.00	Horizontal	-50.67		Pass
5257.50	Н	-45.12		
7010.00	Н	-41.45		





	10MHz(RB s	ize 1 & RB offset 0) f	for QPSK	
Fraguency (MHz)		Emission		Result
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result
		Lowest		
3430.00	Vertical	-50.52		
5145.00	V	-45.56		
6860.00	V	-41.29	-13.00	Pass
3430.00	Horizontal	-51.79	-13.00	Pass
5145.00	Н	-45.50		
6860.00	Н	-41.49		
·		Middle		
3465.00	Vertical	-50.36		Pass
5197.50	V	-45.66		
6930.00	V	-40.27	-13.00	
3465.00	Horizontal	-50.65	-13.00	
5197.50	Н	-45.45		
6930.00	Н	-40.41		
<u>.</u>		Highest		•
3500.00	Vertical	-49.65		
5250.00	V	-45.99		
7000.00	V	-40.36	-13.00	Door
3500.00	Horizontal	-50.92		Pass
5250.00	Н	-45.12		
7000.00	Н	-41.45		





	15MHz(RB si	ize 1 & RB offset 0)	for QPSK	
Fraguanay (MHz)		Emission		Result
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Resuit
		Lowest		
3435.00	Vertical	-50.56		
5152.50	V	-45.57		
6870.00	V -41.65		40.00	Dana
3435.00	Horizontal	-51.12	-13.00	Pass
5152.50	Н	-45.36		
6870.00	Н	-41.43		
		Middle		
3465.00	Vertical	-50.56		Pass
5197.50	V	-45.49		
6930.00	V	-40.41	40.00	
3465.00	Horizontal	-50.12	-13.00	
5197.50	Н	-45.77		
6930.00	Н	-40.42		
		Highest		
3495.00	Vertical	-49.56		
5242.50	V	-45.77	1	
6990.00	V	-40.27	12.00	Desa
3495.00	Horizontal	-50.16	-13.00	Pass
5242.50	Н	-45.16	1	
6990.00	Н	-41.50		





	20MHz/PR e	ize 1 & RB offset 0	) for OPSK		
		Emission			
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
		Lowest			
3440.00	Vertical	-50.77			
5160.00	V	-45.92			
6880.00	V -41.46		12.00	Dana	
3440.00	Horizontal	-51.57	-13.00	Pass	
5160.00	Н	-45.43			
6880.00	Н	-41.45			
		Middle			
3465.00	Vertical	-50.84		Pass	
5197.50	V	-45.92			
6930.00	V	-40.65	-13.00		
3465.00	Horizontal	-50.67	-13.00	F455	
5197.50	Н	-45.99			
6930.00	Н	-40.32			
		Highest			
3490.00	Vertical	-49.62			
5235.00	V	-45.41			
6980.00	V	V -40.71		Pass	
3490.00	Horizontal	-50.29	-13.00	rass	
5235.00	Н	-45.56			
6980.00	Н	-41.46			





#### LTE Band 7 Part:

5MHz(RB size 1 & RB offset 0) for QPSK							
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result			
1 requericy (Wil 12)	Polarization	Level (dBm)	Limit (dbin)	Nesuit			
		Lowest					
5005.00	Vertical	-45.11					
7507.50	V	-40.61					
10010.00	V	-37.46	-25.00	Pass			
5005.00	Horizontal	-46.45	-25.00	Pass			
7507.50	Н	-39.92					
10010.00	Н	-39.06					
	Middle						
5070.00	Vertical	-46.00		Pass			
7605.00	V	-39.91					
10140.00	V	-36.91	25.00				
5070.00	Horizontal	-45.75	-25.00	Fd55			
7605.00	Н	-40.31					
10140.00	Н	-37.42					
		Highest					
5135.00	Vertical	-45.82					
7702.50	V	-39.99					
10270.00	V	-38.00	-25.00	Pass			
5135.00	Horizontal	-45.55	-23.00	Pass			
7702.50	Н	-40.22					
10270.00	Н	-38.39					





	10MHz(RB s	ize 1 & RB offset 0) f	for QPSK		
Fraguency (MHz)		Emission		D !!	
Frequency (MHz)	Polarization	Level (dBm)	Limit (dBm)	Result	
		Lowest			
5010.00	Vertical	-45.03			
7515.00	V	-40.15			
10020.00	V -37.25		-25.00	Pass	
5010.00	Horizontal	-46.36	-25.00	Pass	
7515.00	Н	-39.15			
10020.00	Н	-39.54			
		Middle		·	
5070.00	Vertical	-46.24		Pass	
7605.00	V	-39.57			
10140.00	V	-36.69	-25.00		
5070.00	Horizontal	-45.35	-25.00		
7605.00	Н	-40.15			
10140.00	Н	-37.14			
		Highest			
5130.00	Vertical	-45.23			
7695.00	V	-39.51			
10260.00	V	-38.26	25.00	Door	
5130.00	Horizontal	-45.14	-25.00	Pass	
7695.00	Н	-40.36			
10260.00	Н	-38.54			





	15MHz(RB s	size 1 & RB offset 0)	for QPSK		
Frequency (MHz)		Emission	Limit (dBm)	Result	
r requericy (ivil iz)	Polarization	Level (dBm)	Lilliit (dbill)	Result	
		Lowest			
5015.00	Vertical	-45.82			
7522.50	V	-40.24			
10030.00	V -37.83		25.00	Door	
5015.00	Horizontal	-46.24	-25.00	Pass	
7522.50	Н	-39.99			
10030.00	Н	-39.42			
		Middle			
5070.00	Vertical	-46.71		Pass	
7605.00	V	-39.45			
10140.00	V	-36.41	-25.00		
5070.00	Horizontal	-45.24	-25.00		
7605.00	Н	-40.51			
10140.00	Н	-37.46			
		Highest			
5125.00	Vertical	-45.57			
7687.50	V	-39.83			
10250.00	V	-38.99	-25.00	Pass	
5125.00	Horizontal	-45.41	-25.00	F 455	
7687.50	Н	-40.82			
10250.00	Н	-38.18			





	20MHz/RR si	ize 1 & RB offset 0)	for OPSK	
		Emission	Limit (dBm)	
Frequency (MHz)	Polarization			Result
		Lowest		
5020.00	Vertical	-45.73		
7530.00	V	-40.75		
10040.00	V -37.76		25.00	Door
5020.00	Horizontal	-46.12	-25.00	Pass
7530.00	Н	-39.32		
10040.00	Н	-39.26		
		Middle		
5070.00	Vertical	-46.31		Pass
7605.00	V	-39.76		
10140.00	V	-36.20	-25.00	
5070.00	Horizontal	-45.24	-25.00	
7605.00	Н	-40.37		
10140.00	Н	-37.15		
		Highest		
5120.00	Vertical	-45.54		
7680.00	V	-39.76		
10240.00	V	-38.15	-25.00	Pass
5120.00	Horizontal	-45.99	-23.00	rass
7680.00	Н	-40.41		
10240.00	Н	-38.42		



# 6.12 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Test Method:	FCC Part2.1055(a)(1)(b)
Limit:	±2.5ppm
Test setup:	Spectrum analyzer  EUT  Variable Power Supply  Note: Measurement setup for testing on Antenna connector
Test procedure:	<ol> <li>The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>The EUT was placed inside the temperature chamber.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Measurement Data (the worst channel):





LTE Band 2(QPSK):

		LTE Band	2(QPSK):		
Reference Fr	equency: LTE Band	2(1.4MHz) N	Middle channel=18900	channel=1880.00	MHz
Power supplied	Temperature (°C)	Fre	equency error	Limit (nnm)	Docult
(Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result
	-30	187	0.099468		
	-20	163	0.086702		
	-10	155	0.082447		
	0	126	0.067021	]	
3.80	10	132	0.070213	±2.5	Pass
0.00	20	105	0.055851		1 400
	30	122	0.064894		
	40	140	0.074468		
	50	146	0.077660	1	
Poforonco F		<u> </u>	iddle channel=18900 c	hannol-1880 00	.//Ц-z
	requericy. LTL barro			1000.001	VII IZ
Power supplied	Temperature (°C)		equency error	Limit (ppm)	Result
(Vdc)		Hz	ppm	(11 /	
	-30	192	0.102128		
	-20	188	0.100000		
	-10	156	0.082979		
	0	142	0.075532		
3.80	10	163	0.086702	±2.5	Pass
	20	130	0.069149		
	30	120	0.063830		
	40	125	0.066489		
	50	106	0.056383		
Reference F	requency: LTE Band	2(5MHz) M	iddle channel=18900 c	hannel=1880.00 <b>l</b>	ИHz
Dower ounglied (\/-l-\	Temperature (°C)	Frequency error		Lind (	Descrit
Power supplied (Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result
	-30	177	0.094149		
	-20	163	0.086702		
	-10	145	0.077128	_	
	0	129	0.068617	_	_
3.80	10	168	0.089362	±2.5	Pass
	20	160	0.085106	4	
	30	155	0.082447	-	
	40 50	152	0.080851	-	
	50	143	0.076064		





5 " 10/1	T(°C)	Fre	Frequency error		D 14
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	149	0.079255		
	-20	133	0.070745		
	-10	126	0.067021		
	0	120	0.063830		
3.80	10	110	0.058511	±2.5	Pass
	20	108	0.057447		
	30	146	0.077660		
	40	145	0.077128		
	50	127	0.067553		
Reference Fr	equency: LTE Band	2(15MHz) Mi	ddle channel=18900	) channel=1880.00	MHz
Power supplied (Vdc)	Temperature (°C)		quency error	Limit (ppm)	Dogult
Towor supplied (Vdo)	. ,	Hz	ppm	Limit (ppm)	Result
	-30	179	0.095213		Pass
	-20	146	0.077660		
	-10	163	0.086702		
	0	152	0.080851		
3.80	10	146	0.077660	±2.5	
	20	170	0.090426		
	30	169	0.089894		
	40	155	0.082447		
	50	150	0.079787		
Reference Fr	equency: LTE Band			) channel=1880.00	MHz
	<u> </u>	,	quency error		
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	185	0.098404		
		4.40	0.075532		
	-20	142	0.073332		
	-20 -10	142 126			
			0.067021		
3.80	-10	126	0.067021 0.056383	±2.5	Page
3.80	-10 0 10	126 106 103	0.067021 0.056383 0.054787	±2.5	Pass
3.80	-10 0 10 20	126 106 103 136	0.067021 0.056383 0.054787 0.072340	±2.5	Pass
3.80	-10 0 10	126 106 103	0.067021 0.056383 0.054787	±2.5	Pass





LTE Band 2(16QAM):

		LTE Band 2	2(16QAM):		
Reference F	requency: LTE Band	2(1.4MHz)	Middle channel=18900	channel=1880.0	0MHz
	Temperature (°C)	Frequency error		Limit (nnm)	
Power supplied (Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result
	-30	170	0.090426		
	-20	166	0.088298		
	-10	159	0.084574		
	0	146	0.077660		
3.80	10	163	0.086702	±2.5	Pass
0.00	20	125	0.066489		1 455
	30	140	0.074468		
	40	135	0.071809		
	50	139	0.073936		
Doforonco F				hannal 1000 001	ALL
Reference F	requency. LTE band	Z(SIVITZ) IVI	iddle channel=18900	mannel=1660.001	VIIIZ
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
Power supplied (vac)	romporataro ( o)	Hz	ppm	(pp)	Result
	-30	146	0.077660		
	-20	152	0.080851		
	-10	133	0.070745		
	0	126	0.067021		
3.80	10	105	0.055851	±2.5	Pass
0.00	20	114	0.060638		1 400
	30	142	0.075532		
	40	106	0.056383		
	50	129	0.068617		
Reference F	requency: LTE Band	2(5MHz) M	iddle channel=18900 (	channel=1880.00l	МНz
D " 10/1)	T(°C)	Fr	Frequency error		D 1
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	169	0.089894		
	-20	152	0.080851		
	-10	142	0.075532	_	
	0	143	0.076064	_	_
3.80	10	103	0.054787	±2.5	Pass
	20	154	0.081915	4	
	30	120	0.063830	-	
	40	126	0.067021	-	
	50	124	0.065957		





Reference Fr	requency: LTE Band	2(10MHz) M	liddle channel=18900	) channel=1880.00	MHz
Davisa avantia d () (da)	Temperature (°C)	Fre	Frequency error		Result
Power supplied (Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result
	-30	146	0.077660		
	-20	170	0.090426		
	-10	152	0.080851		
	0	146	0.077660		
3.80	10	136	0.072340	±2.5	Pass
	20	150	0.079787		
	30	149	0.079255		
	40	162	0.086170		
	50	178	0.094681		
	requency: LTE Band		liddle channel=18900	channel=1880.00	MHz
Power supplied	Temperature (°C)		equency error	Limit (ppm)	Result
(Vdc)	, , ,	Hz	ppm	- (11 /	
	-30	167	0.088830		
	-20	155	0.082447		Pass
	-10	142	0.075532		
	0	135	0.071809		
3.80	10	120	0.063830	±2.5	
	20	126	0.067021		
	30	105	0.055851		
	40	114	0.060638		
	50	162	0.086170		
Reference Fr	requency: LTE Band	2(20MHz) M	liddle channel=18900	) channel=1880.00	MHz
Power supplied	Temperature (°ℂ)	Fre	equency error	13.24 (2.2.2)	D !!
(Vdc)	. , ,	Hz	ppm	Limit (ppm)	Result
	-30	174	0.092553		
	-20	145	0.077128		
	-10	125	0.066489		
	0	136	0.072340		
3.80	10	130	0.069149	±2.5	Pass
	20	152	0.080851		
	30	146	0.077660	7	
	40	105	0.055851		
	-				





LTE Band 4(QPSK):

		LTE Band	4(QPSK):		
Reference Fr	requency: LTE Band	4(1.4MHz) N	Middle channel=20175	channel=1732.50	)MHz
Power supplied	Temperature (°C)	Fr	equency error	Limit (ppm)	Result
(Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Resuit
	-30	166	0.095815		
	-20	125	0.072150		
	-10	145	0.083694	1	
	0	130	0.075036		
3.80	10	150	0.086580	±2.5	Pass
3.00	20	142	0.081962	12.0	1 433
	30	140	0.080808		
	40	136	0.078499	1	
	50	133	0.076768	-	
Deference F			•	hamal 1700 FO	MI I—
	requency. LTE band	· · ·	liddle channel=20175 d	mannel=1732.50	VITZ
Power supplied	Temperature (°C)		equency error	Limit (ppm)	Result
(Vdc)		Hz	ppm	(  -	- Troodit
	-30	177	0.102165		Pass
	-20	152	0.087734		
	-10	149	0.086003		
	0	163	0.094084		
3.80	10	182	0.105051	±2.5	
	20	145	0.083694		
	30	156	0.090043		
	40	140	0.080808		
	50	125	0.072150		
Reference F	requency: LTE Band	4(5MHz) M	liddle channel=20175 d	channel=1732.50	MHz
D " 10/11	T(°C)	Fr	equency error	1: '( )	<b>D</b> 1
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	166	0.095815		
	-20	135	0.077922		
	-10	124	0.071573		
	0	105	0.060606	_	
3.80	10	117	0.067532	±2.5	Pass
	20	146	0.084271	_	
	30	142	0.081962	_	
	40	141	0.081385	-	
	50	139	0.080231		





	<b>-</b> (00)	Fre	quency error		
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	167	0.096392		
	-20	166	0.095815		
	-10	152	0.087734		
	0	140	0.080808		
3.80	10	136	0.078499	±2.5	Pass
	20	105	0.060606		
	30	119	0.068687		
	40	150	0.086580		
	50	148	0.085426		
Reference Fr	equency: LTE Band	4(15MHz) Mi	ddle channel=2017	5 channel=1732.50	MHz
Power supplied (Vdc)	Temperature (°C)		quency error	Limit (ppm)	Dooult
1 ower supplied (vdo)	. ,	Hz	ppm	Еши (ррш)	Result
	-30	184	0.106205		Pass
	-20	163	0.094084		
	-10	159	0.091775		
	0	148	0.085426		
3.80	10	172	0.099278	±2.5	
	20	146	0.084271		1 400
	30	138	0.079654		
	40	139	0.080231		
	50	159	0.091775		
Reference Fr	equency: LTE Band			5 channel=1732.50	MHz
			quency error		
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	165	0.095238		
	-20	152	0.087734		
			0.081385		
	-10	141 I	บ.บด เวดอ		
	-10 0	141 126			
3.80	0	126	0.072727	+2.5	Dans
3.80	0 10	126 136	0.072727 0.078499	±2.5	Pass
3.80	0 10 20	126 136 105	0.072727 0.078499 0.060606	±2.5	Pass
3.80	0 10	126 136	0.072727 0.078499	±2.5	Pass





LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz			LTE Band 4	1(16QAM):		
Power supplied (Vdc)   Temperature (C)   Hz   ppm   Limit (ppm)   Result	Reference F	requency: LTE Band	4(1.4MHz)	Middle channel=20175	channel=1732.5	OMHz
-30		Tomporature (°C)	Fı	requency error	Limit (nnm)	
125   0.072150     -10	Power supplied (Vdc)	remperature (C)	Hz	ppm	Limit (ppm)	Result
3.80		-30	160	0.092352		
3.80		-20	125	0.072150		
10		-10	142	0.081962		
10		0	138	0.079654		
20	3 80	10	146		±2.5	Pass
30	0.00	20	155			. 400
March   105		30	126			
Temperature (°C)   Frequency error   Limit (ppm)   Result		40	105			
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz   Power supplied (Vdc)   Temperature (°C)   Frequency error   Hz   ppm   0.103319     -20		50				
Power supplied (Vdc)   Temperature (°C)   Frequency error   Hz   ppm	Reference F	requency: LTE Band			channel=1732.50	ИН <i>z</i>
Power supplied (Vdc)	110.0.0.0	1040.000				····-
172   ppm	Power supplied (Vdc)	Temperature (°C)			Limit (ppm)	Result
3.80  -20 145 0.083694 -10 168 0.096970 0 152 0.087734 3.80  10 130 0.075036 20 126 0.072727 30 125 0.072150 40 148 0.085426 50 166 0.095815   Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz  Power supplied (Vdc)  Temperature (°C)  Hz ppm  -30 160 0.092352 -20 152 0.087734 -10 142 0.081962 0 0 136 0.078499 3.80  10 10 107 0.061760 20 124 0.071573 30 129 0.074459 40 150 0.086580						
3.80  -10 -10 -152 -0.087734 -10 -10 -152 -0.087734 -10 -10 -130 -0.075036 -20 -126 -0.072727 -30 -125 -0.072150 -40 -148 -0.085426 -50 -166 -0.095815				0.103319	_	
3.80				0.083694		
3.80		-10		0.096970		
20		0	152	0.087734		
20	3.80	10	130	0.075036	±2.5	Pass
A0		20	126	0.072727		
Temperature (°C)   Temperature		30	125	0.072150		
Temperature (°C)   Frequency error   Limit (ppm)   Result		40	148	0.085426		
Power supplied (Vdc)         Temperature (℃)         Frequency error         Limit (ppm)         Result           -30         160         0.092352         -20         152         0.087734         -10         142         0.081962         0         136         0.078499         -10         107         0.061760         ±2.5         Pass           30         129         0.071573         -10         30         129         0.074459         -10         -10         150         0.086580         -10         -		50	166		7	
Power supplied (Vdc)	Reference F	requency: LTE Band	4(5MHz) M	iddle channel=20175	channel=1732.50I	ИНz
3.80  -30 -30 -30 -30 -30 -30 -30 -30 -30 -	Damas amaliad (Vda)	Tamanaratura (°C)	Fr	equency error		Danish
3.80  -20 152 0.087734  -10 142 0.081962  0 136 0.078499  10 107 0.061760 20 124 0.071573 30 129 0.074459 40 150 0.086580	Power supplied (vac)	remperature (C)	Hz	ppm	Limit (ppm)	Result
-10 142 0.081962 0 136 0.078499 3.80 10 107 0.061760 ±2.5 Pass 20 124 0.071573 30 129 0.074459 40 150 0.086580			160	0.092352		
3.80 0 136 0.078499 10 107 0.061760 ±2.5 Pass 20 124 0.071573 30 129 0.074459 40 150 0.086580						
3.80					_	
20     124     0.071573       30     129     0.074459       40     150     0.086580					_	-
30 129 0.074459 40 150 0.086580	3.80				±2.5	Pass
40 150 0.086580					-	
					-	
		50	150	0.088889	-	





Danier annu l'. 1077	Tamanaugti (°C)	Fre	quency error	Lime!/ ( )	D "
Power supplied (Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
	-30	169	0.097547		
	-20	152	0.087734		
	-10	144	0.083117		
	0	132	0.076190		
3.80	10	120	0.069264	±2.5	Pass
	20	105	0.060606		
	30	126	0.072727		
	40	128	0.073882		
	50	127	0.073304		
	requency: LTE Band			5 channel=1732.50	MHz
Power supplied	Temperature (°C)		quency error	Limit (ppm)	Result
(Vdc)	, , ,	Hz	ppm	Σ (ρρ)	rtoodit
	-30	159	0.091775		Pass
	-20	142	0.081962		
	-10	140	0.080808		
	0	133	0.076768		
3.80	10	136	0.078499	±2.5	
	20	105	0.060606		. 0.00
	30	118	0.068110		
	40	124	0.071573		
	50	126	0.072727		
Reference F	requency: LTE Band			5 channel=1732.50	MHz
Power supplied	T(°C)	Fre	equency error		
(Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
, ,	-30	169	0.097547		
	-20	163	0.094084		
	-10	152	0.087734		
	0	145	0.083694		
	U		0.000001	<del> </del>	_
3.80			0.072150	, O E	Door
3.80	10	125	0.072150	±2.5	Pass
3.80	10 20	125 105	0.060606	±2.5	Pass
3.80	10	125		±2.5	Pass





LTE Band 7(QPSK):

		LTE Band			
	requency: LTE Band		ddle channel=21100Fro	equency=2535.00	)MHz
Power supplied	Temperature (°C)	Fr	equency error	Lineit (a.a.a.)	Desuit
(Vdc)	romporataro (c)	Hz	ppm	Limit (ppm)	Result
	-30	177	0.069822		
	-20	144	0.056805		
	-10	135	0.053254		
	0	160	0.063116		
3.80	10	125	0.049310	±2.5	Pass
	20	105	0.041420	_ ±2.5	F d 5 5
	30	144	0.056805		
	40	128	0.050493		
	50	136			
Doforonoo Er			0.053649 ddle channel=21100 Fi		
Power supplied	equency. LTE band 7	<u>'</u>		lequency=2535.0	UIVITZ
(Vdc)	Temperature (°C)	Hz	equency error	Limit (ppm)	Result
(vuc)	-30	167	ppm	- (11 /	
			0.065878	_	
	-20	146	0.057594		
	-10	138	0.054438	_	
	0	125	0.049310		
3.80	10	109	0.042998	±2.5	Pass
	20	114	0.044970		
	30	106	0.041815		
	40	129	0.050888		
	50	125	0.049310		
Reference Fr	equency: LTE Band 7	(15MHz) Mi	ddle channel=21100 F	requency=2535.0	00MHz
Power supplied	Temperature (°C)	Fr	equency error	Limit (nnm)	Dogult
(Vdc)	Temperature (C)	Hz	ppm	Limit (ppm)	Result
	-30	190	0.074951		
	-20	188	0.074162		
	-10	175	0.069034		
	0	163	0.064300	_	
3.80	10	142	0.056016	±2.5	Pass
	20	149	0.058777		
	30	157	0.061933		
	40	180	0.071006		
D. (	50	160	0.063116		AON ALL
	equency: LTE Band /	·	ddle channel=21100 F	requency=2535.0	OMHZ
Power supplied	Temperature (°C)		equency error	Limit (ppm)	Result
(Vdc)	20	Hz	ppm	(11)	
	-30 -20	170	0.067061		
	-20	155 126	0.061144 0.049704	-	
	0	135	0.049704	-	
3.80	10	104	0.033234	±2.5	Pass
0.00	20	126	0.041020		1 433
	30	105	0.043704	1	
	40	129	0.050888	1	
	50	117	0.046154	-	
		i		1	





LTE Band 7(16QAM):

D (		LTE Band 7		2525.20	N. 41 1
	requency: LTE Band			requency=2535.00	)MHz
Power supplied	Temperature (°C)	Fr	equency error	Limit (ppm)	Result
(Vdc)	. ,	Hz	ppm	Еши (ррш)	rvesuit
	-30	166	0.065483		
	-20	135	0.053254		
	-10	125	0.049310		
	0	106	0.041815		
3.80	10	117	0.046154	±2.5	Pass
	20	128	0.050493		
	30	160	0.063116		
	40	162	0.063905		
	50	135	0.053254		
Reference Fr	requency: LTE Band 7	(10MHz) Mi		requency=2535.0	0MHz
Power supplied	Temperature (°C)		equency error	Limit (ppm)	Result
(Vdc)	Temperature ( c)	Hz	ppm		Nesuit
	-30	149	0.058777		
	-20	152	0.059961		
	-10	144	0.056805		
	0	150	0.059172		
3.80	10	124	0.048915	±2.5	Pass
0.00	20	105	0.041420		1 433
	30	129	0.050888		
	40	136			
	50	104	0.053649		
Deference Fr	requency: LTE Band 7		0.041026	Froguenov-2525 (	∩N1⊔→
Power supplied	equency. LTE band 7		equency error	requency=2535.0	UIVITZ
(Vdc)	Temperature (°C)	Hz	ppm	Limit (ppm)	Result
(100)	-30	106	0.041815		
	-20	129	0.050888		
	-10	146	0.057594		
	0	135	0.053254		
3.80	10	133	0.052465	2.5	Pass
	20	108	0.042604		
	30	127	0.050099	_	
	40	129	0.050888	_	
Deference Fr	50	136	0.053649	700000000000000000000000000000000000000	ON 41.1-
	requency: LTE Band 7			requency=2535.0	UIVIHZ
Power supplied (Vdc)	Temperature (°C)	Hz	equency error ppm	Limit (ppm)	Result
(vuo)	-30	167	0.065878		
	-20	152	0.059961	╡	
	-10	142	0.056016	7	
	0	160	0.063116		
3.80	10	125	0.049310	2.5	Pass
	20	104	0.041026	_	
	30	103	0.040631	_	
	40	136	0.053649	_	
	50	159	0.062722		



# 6.13 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 24.235, Part 27.54, Part 2.1055(d)(2)
Test Method:	FCC Part2.1055(d)(1)(2)
Limit:	2.5ppm
Test setup:	Spectrum analyzer  EUT  Variable Power Supply  Note: Measurement setup for testing on Antenna connector
Test procedure:	<ol> <li>Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>Reduce the input voltage to specify extreme voltage variation (+/-15%) and endpoint, record the maximum frequency change.</li> </ol>
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed





## **Measurement Data (the worst channel):**

## LTE Band 2(QPSK):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz			LTE Band 2(Q	P3N):		
Comperature (C)	Reference Fi	requency: LTE Band	2(1.4MHz) Middle	e channel=18900	channel=1880.00	)MHz
(Vdc)	Tomporatura (°C)	Power supplied	Frequer	ncy error	Lingit (mmm)	Danish
25   3.80   96   0.051064   ±2.5   Pass	remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
3.23   52   0.027660		4.37	78	0.041489		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz	25	3.80	96	0.051064	±2.5	Pass
Temperature (°C)		3.23	52	0.027660		
Temperature (°C)	Reference F	requency: LTE Band	d 2(3MHz) Middle	channel=18900 c	channel=1880.00ľ	ИНz
Power supplied (Vdc)	- (20)	Power supplied	Frequer	ncy error		
25   3.80   49   0.026064   ±2.5   Pass	Temperature (°C)	7 -	Hz	ppm	Limit (ppm)	Result
3.23   63   0.033511			77	0.040957		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz	25	3.80	49	0.026064	±2.5	Pass
Power supplied (Vdc)		3.23	63	0.033511		
Temperature (°C)	Reference F	requency: LTE Band	d 2(5MHz) Middle	channel=18900 c	channel=1880.00 <b>l</b>	МНz
Columberature   Columberatur		Power supplied	Frequer	ncy error		
25   3.80	Temperature (℃)	7 -	Hz	ppm	Limit (ppm)	Result
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz   Temperature (°C)   Power supplied (Vdc)   Hz   ppm   Limit (ppm)   Result		` '	80	0.042553		
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz   Temperature (°C)	25	3.80	49	0.026064	±2.5	Pass
Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           25         4.37         71         0.037766         ±2.5         Pass           3.80         66         0.035106         ±2.5         Pass           3.23         90         0.047872         Limit (ppm)         Result           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           25         3.80         95         0.039362         ±2.5         Pass           3.23         82         0.043617         ±2.5         Pass           Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz         Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           4.37         77         0.040957         ±2.5         Pass		3.23	95	0.050532		
Temperature (℃)         (Vdc)         Hz         ppm         Limit (ppm)         Result           25         4.37         71         0.037766         ±2.5         Pass           3.80         66         0.035106         ±2.5         Pass           3.23         90         0.047872         Limit (ppm)         Pass           Temperature (℃)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         74         0.039362         ±2.5         Pass           3.80         95         0.050532         ±2.5         Pass           3.23         82         0.043617         Pass           Temperature (℃)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         77         0.040957         Limit (ppm)         Result           4.37         77         0.040957         ±2.5         Pass	Reference F	requency: LTE Band	2(10MHz) Middle	channel=18900	channel=1880.00	MHz
Temperature (°C)		Power supplied	Frequer	ncy error		
A.37	Temperature (℃)		Hz	ppm	Limit (ppm)	Result
3.23   90   0.047872			71	0.037766		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error Hz (ppm)         Limit (ppm)         Result           25         3.80         95         0.039362         ±2.5         Pass           3.23         82         0.043617         Pass           Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error Hz (vdc)         Limit (ppm)         Result           4.37         77         0.040957         ±2.5         Pass           25         3.80         90         0.047872         ±2.5         Pass	25	3.80	66	0.035106	±2.5	Pass
Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           25         4.37         74         0.039362         ±2.5         Pass           3.23         82         0.043617         ±2.5         Pass           Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           4.37         77         0.040957         25         3.80         90         0.047872         ±2.5         Pass		3.23	90	0.047872	7	
Temperature (°C)         Itemperature (°C)         Hz         ppm         Limit (ppm)         Result           4.37         74         0.039362         25         3.80         95         0.050532         ±2.5         Pass           3.23         82         0.043617         0.043617         Pass           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         77         0.040957         25         3.80         90         0.047872         ±2.5         Pass	Reference F	requency: LTE Band	2(15MHz) Middle	channel=18900	channel=1880.00	MHz
Columbia		Power supplied	Frequer	ncy error		
A.37	Temperature (℃)	7 -	Hz	ppm	Limit (ppm)	Result
25         3.80         95         0.050532         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         77         0.040957         25         3.80         90         0.047872         ±2.5         Pass			74	0.039362		
3.23         82         0.043617           Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         77         0.040957         25         3.80         90         0.047872         ±2.5         Pass	25	3.80	95		±2.5	Pass
Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         77         0.040957         ±2.5         Pass		3.23	82			
Temperature (℃)         (Vdc)         Hz         ppm         Limit (ppm)         Result           4.37         77         0.040957         25         3.80         90         0.047872         ±2.5         Pass	Reference F	requency: LTE Band	2(20MHz) Middle		channel=1880.00	MHz
Comperature   Compensature   Compe		Power supplied	Frequer	ncy error		
4.37 77 0.040957 25 3.80 90 0.047872 ±2.5 Pass	Temperature (℃)	7 -	•	-	Limit (ppm)	Result
25 3.80 90 0.047872 ±2.5 Pass						
	25	3.80			±2.5	Pass
	-				]	<del></del>

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LTE Band 2(16QAM):

		LTE Band 2(16	QAM):		
Reference F	requency: LTE Band	2(1.4MHz) Middle	e channel=18900	channel=1880.00	MHz
Tomporature (°C)	Power supplied	Freque	ncy error	Limit (none)	Danult
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	79	0.042021		
25	3.80	85	0.045213	±2.5	Pass
	3.23	73	0.038830		
Reference F	requency: LTE Band	2(3MHz) Middle	channel=18900 d	channel=1880.00N	1Hz
	Power supplied	Freque	ncy error		
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	84	0.044681		
25	3.80	95	0.050532	±2.5	Pass
	3.23	90	0.047872		
Reference F	requency: LTE Band			channel=1880.00N	ИНz
	Power supplied	,	ncy error		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	74	0.039362		
25	3.80	70	0.037234	±2.5	Pass
	3.23	69	0.036702		
Reference F	requency: LTE Band	2(10MHz) Middle	channel=18900	channel=1880.00l	ИНz
	Power supplied	Freque	ncy error		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	77	0.040957		
25	3.80	95	0.050532	±2.5	Pass
	3.23	88	0.046809		. 400
Reference F	requency: LTE Band			channel=1880.00l	MHz
	Power supplied	, ,	ncy error		
Temperature $(^{\circ}\mathbb{C})$	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	63	0.033511		
25	3.80	74	0.039362	±2.5	Pass
20	3.23	90	0.047872		1 400
Reference F	requency: LTE Band			channel=1880.00l	MHz
10.0.0.0	Power supplied	, ,	ncy error		
Temperature ( $^{\circ}$ C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	74	0.039362		
25	3.80	85	0.039302	±2.5	Pass
23	3.23	90	0.043213		1 033
	0.20	90	0.04/8/2		





LTE Band 4(QPSK):

		LTE Band 4(Q	PSK):		
Reference F	requency: LTE Band	4(1.4MHz) Middle	e channel=20175	channel=1732.50	)MHz
Tomporatura (°C)	Power supplied	Frequer	ncy error	Limit (none)	Daguik
Temperature (℃)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	74	0.042713		
25	3.80	85	0.049062	±2.5	Pass
	3.23	90	0.051948		
Reference F	requency: LTE Band	d 4(3MHz) Middle	channel=20175 c	hannel=1732.50l	MHz
- (00)	Power supplied	Frequer	ncy error		_
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	75	0.043290		
25	3.80	95	0.054834	±2.5	Pass
	3.23	62	0.035786		
Reference F	requency: LTE Band	4(5MHz) Middle	channel=20175 c	hannel=1732.50l	МНz
	Power supplied	Frequer	ncy error		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	74	0.042713		
25	3.80	71	0.040981	±2.5	Pass
	3.23	80	0.046176		
Reference F	requency: LTE Band	4(10MHz) Middle	channel=20175	channel=1732.50	MHz
	Power supplied	Frequer	ncy error		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	96	0.055411		
25	3.80	53	0.030592	±2.5	Pass
	3.23	80	0.046176	7	
Reference F	requency: LTE Band	4(15MHz) Middle	channel=20175	channel=1732.50	MHz
	Power supplied	Frequer	ncy error		
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	75	0.043290		
25	3.80	90	0.051948	±2.5	Pass
	3.23	80	0.046176	7	
Reference F	requency: LTE Band			channel=1732.50	MHz
- (00)	Power supplied Frequency error				_
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	77	0.044444		
25	3.80	46	0.026551	±2.5	Pass
	3.23	36	0.020779		





LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           25         3.80         48         0.027706         ±2.5         Pass           3.23         55         0.031746         ±2.5         Pass           Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz           Temperature (ℂ)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (ℂ)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result </th <th></th> <th></th> <th>LTE Band 4(16</th> <th>QAM):</th> <th></th> <th></th>			LTE Band 4(16	QAM):		
Comperature (C)	Reference Fi	requency: LTE Band	4(1.4MHz) Middle	channel=20175	channel=1732.50	MHz
(Vdc)	Tomporatura (°C)	Power supplied	Frequer	ncy error	Lineit (none)	Dooult
Section   Sect	remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
3.23   55   0.031746		4.37	77	0.044444		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz	25	3.80	48	0.027706	±2.5	Pass
Temperature (°C)		3.23	55	0.031746		
Temperature (°C)         (Vdc)         Hz         ppm         Limit (ppm)         Result           25         4.37         79         0.045599         ±2.5         Pass           3.80         68         0.039250         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         74         0.042713         ±2.5         Pass           25         3.80         77         0.044444         ±2.5         Pass           25         3.80         77         0.044444         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         76         0.043867         ±2.5         Pass           3.23         82         0.047330         ±2.5         Pass           3.23         82         0.047330         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result      <	Reference F	requency: LTE Band	d 4(3MHz) Middle	channel=20175 c	hannel=1732.50N	ЛHz
Comparature (°C)	- (00)	Power supplied	Frequer	ncy error		
25   3.80   68   0.039250   ±2.5   Pass	Temperature (℃)	• •	Hz	ppm	Limit (ppm)	Result
3.23   82   0.047330		` '	79	0.045599		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           25         3.80         77         0.044444         ±2.5         Pass           3.23         82         0.047330         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           25         3.80         46         0.043867         ±2.5         Pass           25         3.80         46         0.026551         ±2.5         Pass           3.23         82         0.047330         ±2.5         Pass           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           Temperature (°C)         Power supplied (Vdc)         Hz         ppm         Limit (ppm)         Result           25         3.80         58         0.033478         ±2.5         Pass           3.23         80         0.046176         Limit (ppm)         Result           Temperature (°C)         Power supplied (Vdc)         Frequency error         Limit (ppm)	25	3.80	68		±2.5	Pass
Temperature (°C)		3.23	82	0.047330	1	
Temperature (°C)	Reference F	requency: LTE Band	4(5MHz) Middle	channel=20175 c	hannel=1732.50N	ЛНz
Power supplied (Vdc)		Power supplied	Frequer	ncy error		
A.37	Temperature (°C)		Hz	ppm	Limit (ppm)	Result
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz   Temperature (°C)		\	74	0.042713		
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz   Temperature (°C)	25	3.80	77	0.044444	±2.5	Pass
Temperature (℃)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           25         4.37         76         0.043867         ±2.5         Pass           3.23         82         0.047330         ±2.5         Pass           Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           25         3.80         58         0.033478         ±2.5         Pass           3.23         80         0.046176         Pass         Pass           Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error         Limit (ppm)         Result           4.37         67         0.038672         ±2.5         Pass           25         3.80         65         0.037518         ±2.5         Pass		3.23	82		1	
Temperature (°C)	Reference F	requency: LTE Band	4(10MHz) Middle	channel=20175	channel=1732.50	MHz
Temperature (°C)		Power supplied	Frequer	ncy error		
A.37   76   0.043867	Temperature (°C)		Hz	ppm	Limit (ppm)	Result
3.23   82   0.047330		` '	76	0.043867		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           25         3.80         58         0.042713         ±2.5         Pass           3.23         80         0.046176         ±2.5         Pass           Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           4.37         67         0.038672         25         3.80         65         0.037518         ±2.5         Pass	25	3.80	46	0.026551	±2.5	Pass
Power supplied (Vdc)		3.23	82	0.047330	7	
Temperature (℃)         (Vdc)         Hz         ppm         Limit (ppm)         Result           4.37         74         0.042713         25         25         3.80         58         0.033478         ±2.5         Pass           3.23         80         0.046176         0.046176         Example 1732.50MHz           Temperature (℃)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           4.37         67         0.038672         0.037518         ±2.5         Pass	Reference F	requency: LTE Band	4(15MHz) Middle	channel=20175	channel=1732.50	MHz
Temperature (°C)		Power supplied	Frequer	ncy error		
A.37	Temperature (°C)	• •	Hz	ppm	Limit (ppm)	Result
25     3.80     58     0.033478     ±2.5     Pass       3.23     80     0.046176       Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz       Temperature (°C)     Power supplied (Vdc)     Frequency error     Limit (ppm)     Result       4.37     67     0.038672     25     3.80     65     0.037518     ±2.5     Pass		` '	74	0.042713		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz           Temperature (°C)         Power supplied (Vdc)         Frequency error (Vdc)         Limit (ppm)         Result           4.37         67         0.038672         25         Pass	25	3.80	58	0.033478	±2.5	Pass
Temperature (°C)         Power supplied (Vdc)         Frequency error Hz         Limit (ppm)         Result           4.37         67         0.038672         25         3.80         65         0.037518         ±2.5         Pass		3.23	80	0.046176	7	
Temperature (℃)         (Vdc)         Hz         ppm         Limit (ppm)         Result           4.37         67         0.038672         25         3.80         65         0.037518         ±2.5         Pass	Reference F	requency: LTE Band	4(20MHz) Middle	channel=20175	channel=1732.50	MHz
Columberature (C)	_	Power supplied Frequency error				_
4.37 67 0.038672 25 3.80 65 0.037518 ±2.5 Pass	Temperature (°C)	• •	Hz	ppm	Limit (ppm)	Result
25 3.80 65 0.037518 ±2.5 Pass		` '	67	0.038672		
	25	3.80			±2.5	Pass
		3.23	80		]	





LTE Band 7(QPSK):

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Reference Fr	equency: LTE Band	7(5MHz) Middle o	hannel=21100 Fre	equency=2535.0	0MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (nnm)	Dogult
remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	45	0.017751		
25	3.80	68	0.026824	±2.5	Pass
	3.23	90	0.035503		
Reference Fre	equency: LTE Band 7	(10MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (nnm)	Result
remperature ( C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	75	0.029586		
25	3.80	58	0.022880	±2.5	Pass
	3.23	52	0.020513		
Reference Fre	equency: LTE Band 7	(15MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Temperature (°ℂ)	Power supplied	Frequency error		Limit (nnm)	Dogult
remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	46	0.018146		
25	3.80	90	0.035503	±2.5	Pass
	3.23	77	0.030375		
Reference Fre	equency: LTE Band 7	(20MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (nnm)	Result
remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	68	0.026824		
25	3.80	52	0.020513	±2.5	Pass
	3.23	80	0.031558		





LTE Band 7(16QAM):

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Reference Fr	equency: LTE Band	7(5MHz) Middle c	hannel=21100 Fre	equency=2535.0	0MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (nnm)	Result
remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	48	0.018935		
25	3.80	80	0.031558	±2.5	Pass
	3.23	76	0.029980		
Reference Fre	equency: LTE Band 7	(10MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (npm)	Result
Temperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	68	0.026824		
25	3.80	65	0.025641	±2.5	Pass
	3.23	80	0.031558		
Reference Fre	equency: LTE Band 7	(15MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Tomporature (°C)	Power supplied	Frequency error		Lineit (none)	Decult
Temperature (°C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	76	0.029980		
25	3.80	92	0.036292	±2.5	Pass
	3.23	46	0.018146		
Reference Fre	equency: LTE Band 7	(20MHz) Middle	channel=21100 Fr	equency=2535.0	00MHz
Temperature (°ℂ)	Power supplied	Freque	ncy error	Limit (nnm)	Result
remperature (C)	(Vdc)	Hz	ppm	Limit (ppm)	Result
	4.37	78	0.030769		
25	3.80	68	0.026824	±2.5	Pass
	3.23	82	0.032347		