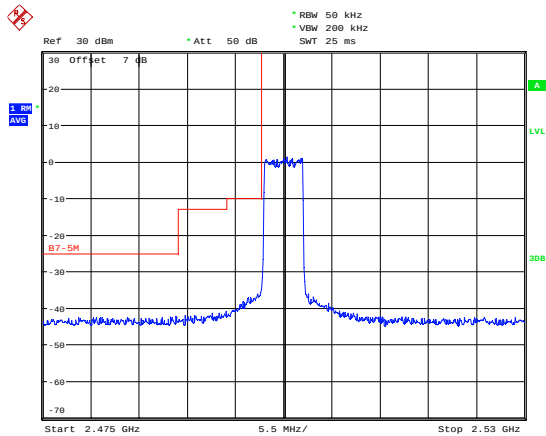
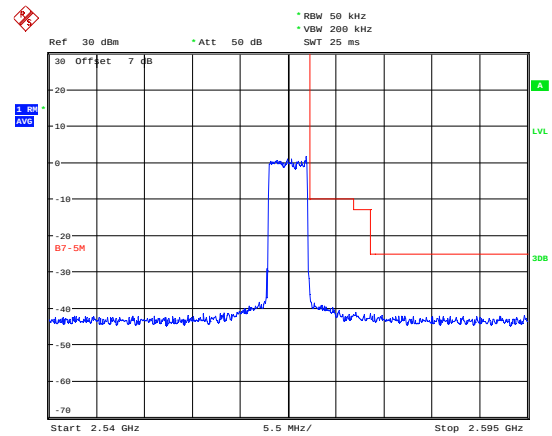




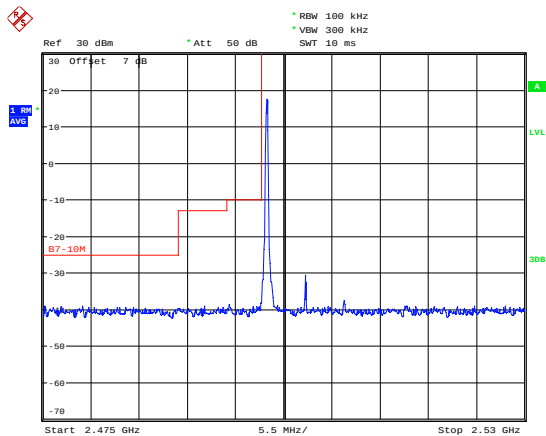
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



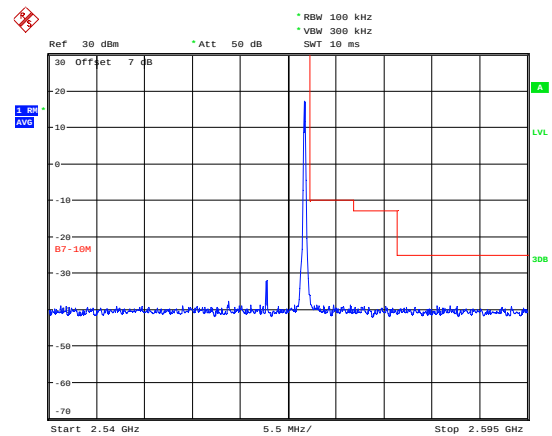
LTE Band 7 16QAM 5MHz CH-High, 100%RB



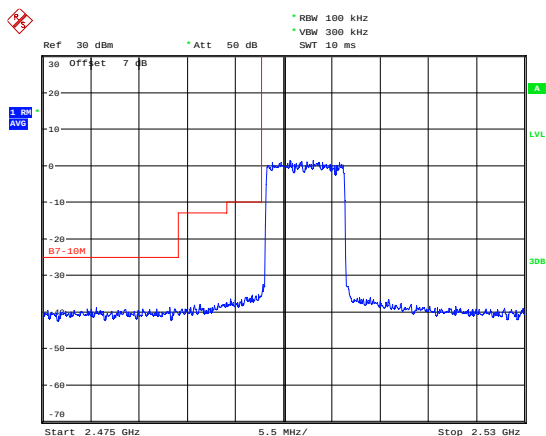
LTE Band 7 16QAM 10MHz CH-Low, 1 RB



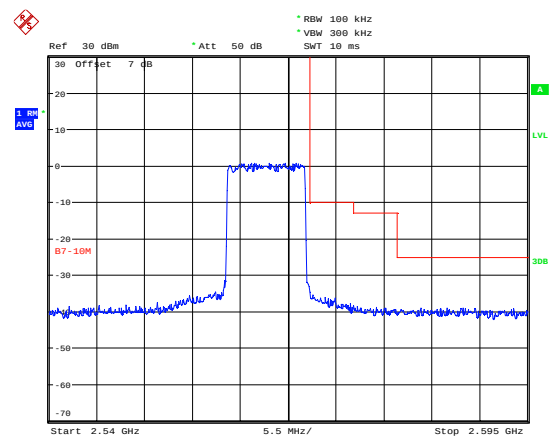
LTE Band 7 16QAM 10MHz CH-High, 1 RB



LTE Band 7 16QAM 10MHz CH-Low, 100%RB

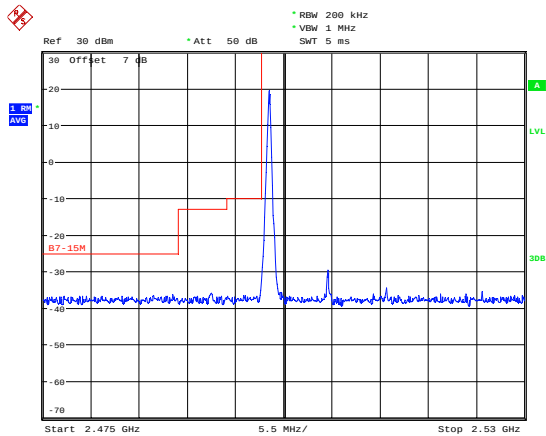


LTE Band 7 16QAM 10MHz CH-High, 100%RB



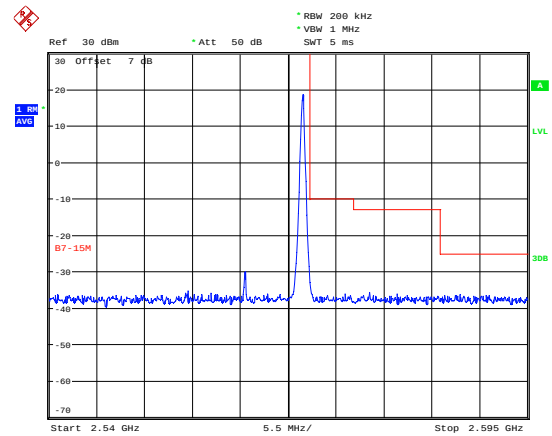


LTE Band 7 16QAM 15MHz CH-Low, 1 RB



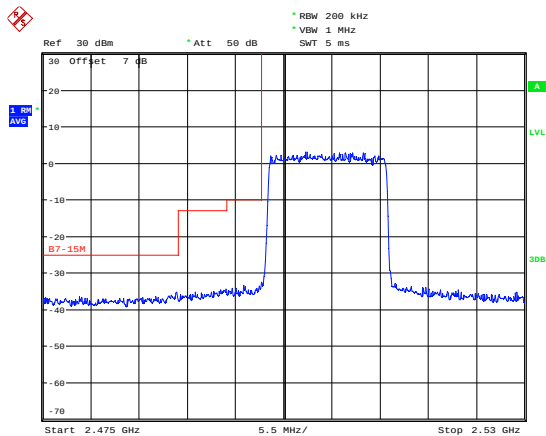
Date: 22.JUL.2020 16:48:03

LTE Band 7 16QAM 15MHz CH-High, 1 RB



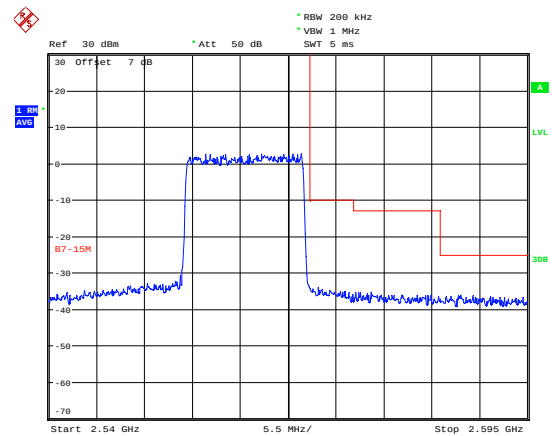
Date: 22.JUL.2020 16:58:09

LTE Band 7 16QAM 15MHz CH-Low, 100%RB



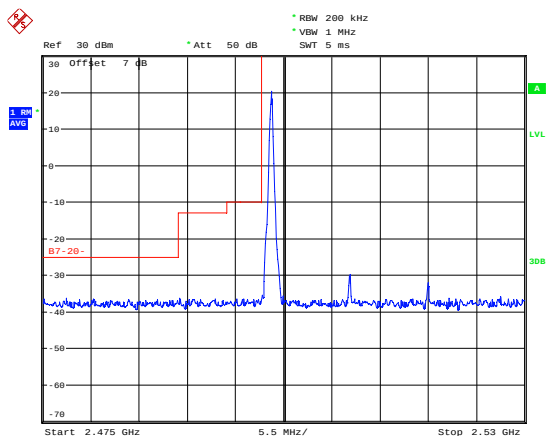
Date: 22.JUL.2020 16:48:13

LTE Band 7 16QAM 15MHz CH-High, 100%RB



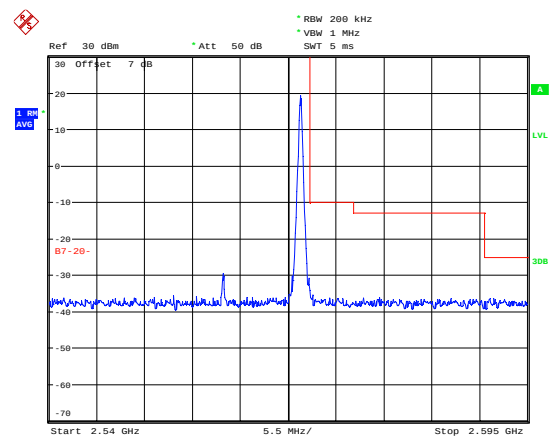
Date: 22.JUL.2020 16:58:20

LTE Band 7 16QAM 20MHz CH-Low, 1 RB



Date: 22.JUL.2020 16:49:49

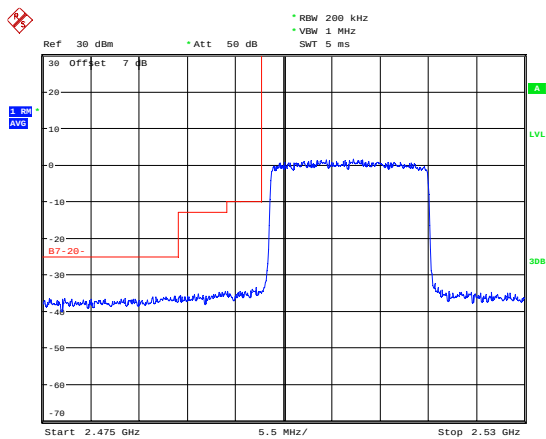
LTE Band 7 16QAM 20MHz CH-High, 1 RB



Date: 22.JUL.2020 17:00:05

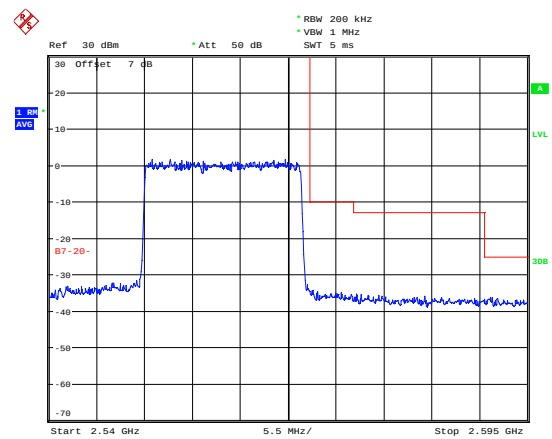


LTE Band 7 16QAM 20MHz CH-Low, 100%RB



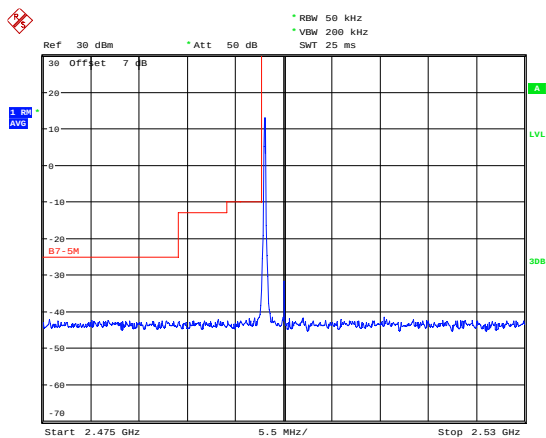
Date: 22.JUL.2020 16:49:59

LTE Band 7 16QAM 20MHz CH-High, 100%RB



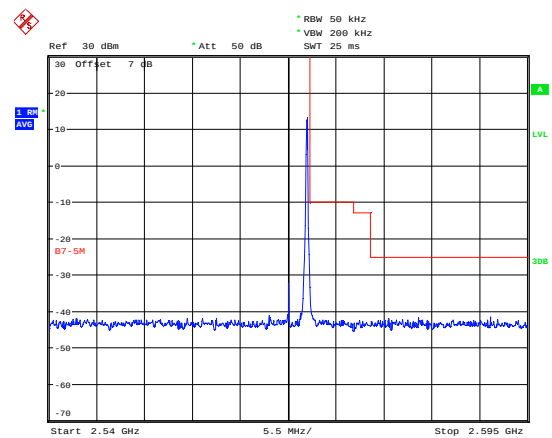
Date: 22.JUL.2020 17:00:14

LTE Band 7 64QAM 5MHz CH-Low, 1 RB



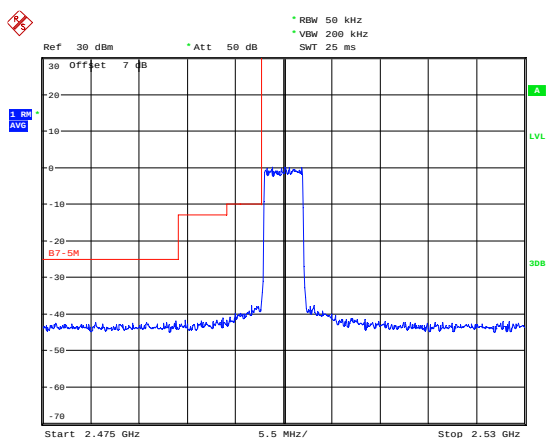
Date: 22.JUL.2020 16:44:28

LTE Band 7 64QAM 5MHz CH-High, 1 RB



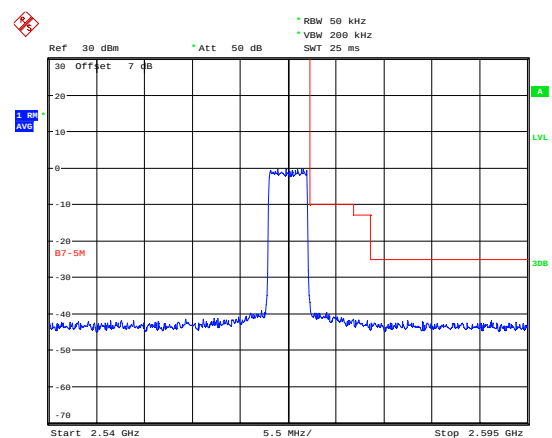
Date: 22.JUL.2020 16:54:25

LTE Band 7 64QAM 5MHz CH-Low, 100%RB



Date: 22.JUL.2020 16:44:37

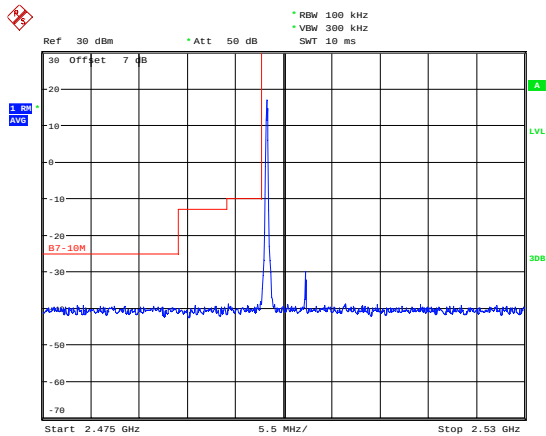
LTE Band 7 64QAM 5MHz CH-High, 100%RB



Date: 22.JUL.2020 16:54:35

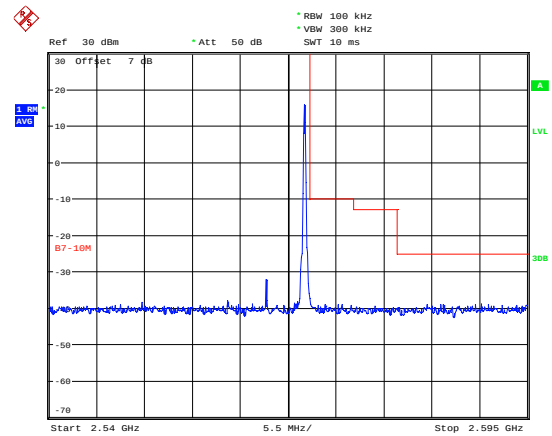


LTE Band 7 64QAM 10MHz CH-Low, 1 RB



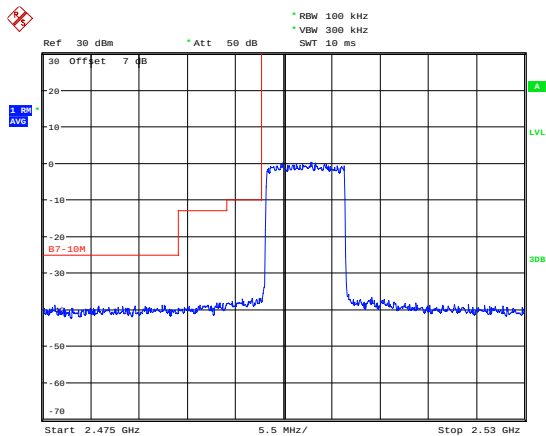
Date: 22.JUL.2020 16:46:23

LTE Band 7 64QAM 10MHz CH-High, 1 RB



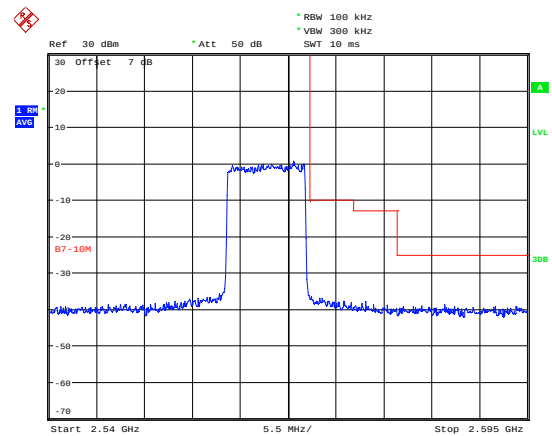
Date: 22.JUL.2020 16:56:28

LTE Band 7 64QAM 10MHz CH-Low, 100%RB



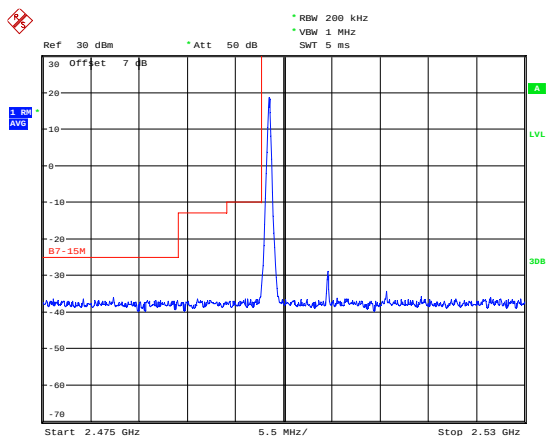
Date: 22.JUL.2020 16:46:40

LTE Band 7 64QAM 10MHz CH-High, 100%RB



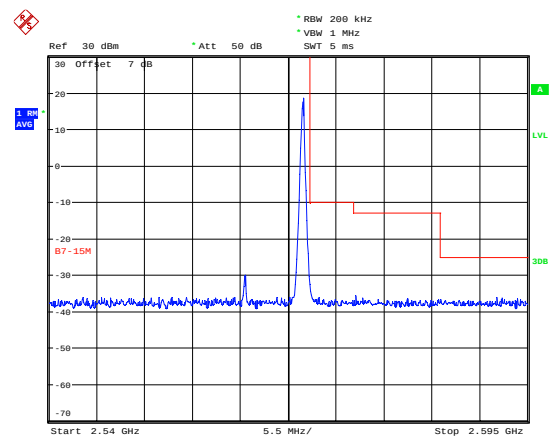
Date: 22.JUL.2020 16:56:38

LTE Band 7 64QAM 15MHz CH-Low, 1 RB



Date: 22.JUL.2020 16:48:26

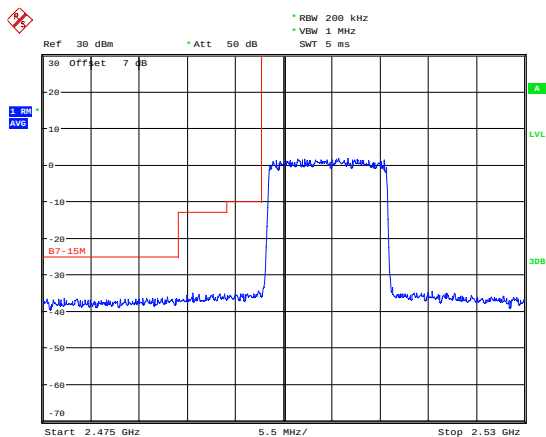
LTE Band 7 64QAM 15MHz CH-High, 1 RB



Date: 22.JUL.2020 16:58:36

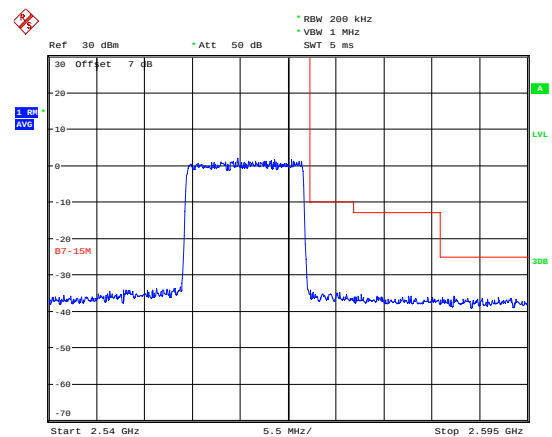


LTE Band 7 64QAM 15MHz CH-Low, 100%RB



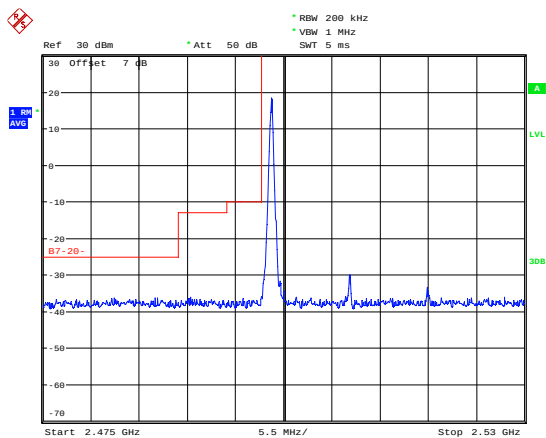
Date: 22.JUL.2020 16:48:36

LTE Band 7 64QAM 15MHz CH-High, 100%RB



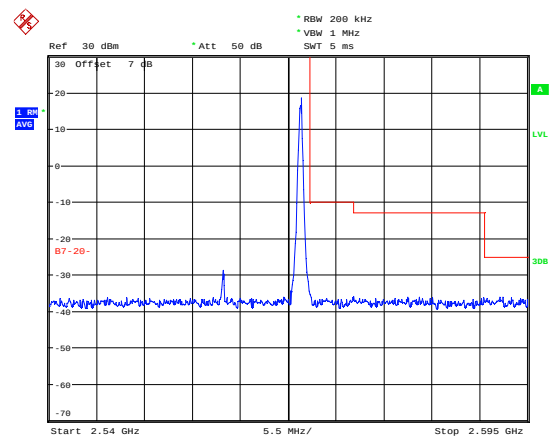
Date: 22.JUL.2020 16:58:47

LTE Band 7 64QAM 20MHz CH-Low, 1 RB



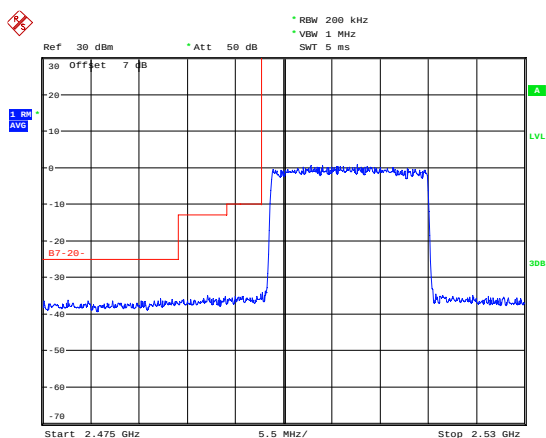
Date: 22.JUL.2020 16:50:11

LTE Band 7 64QAM 20MHz CH-High, 1 RB



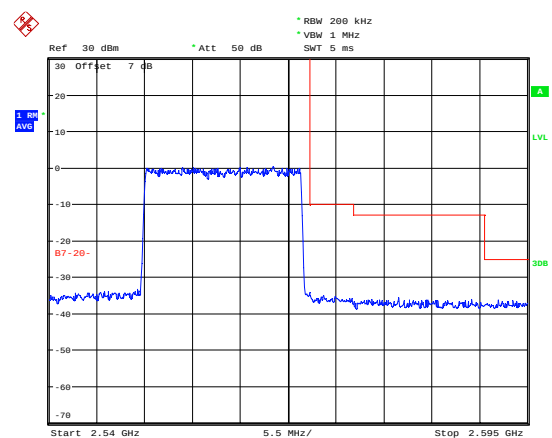
Date: 22.JUL.2020 17:00:31

LTE Band 7 64QAM 20MHz CH-Low, 100%RB



Date: 22.JUL.2020 16:50:20

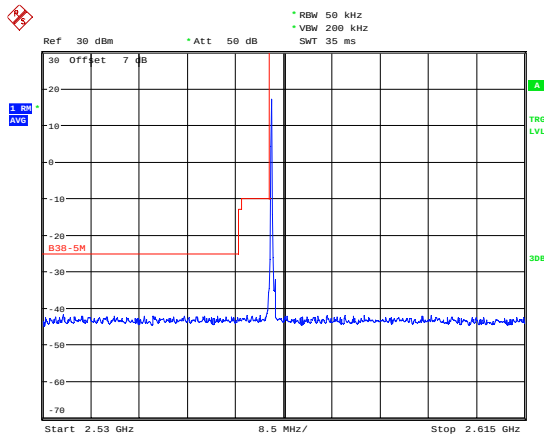
LTE Band 7 64QAM 20MHz CH-High, 100%RB



Date: 22.JUL.2020 17:00:41

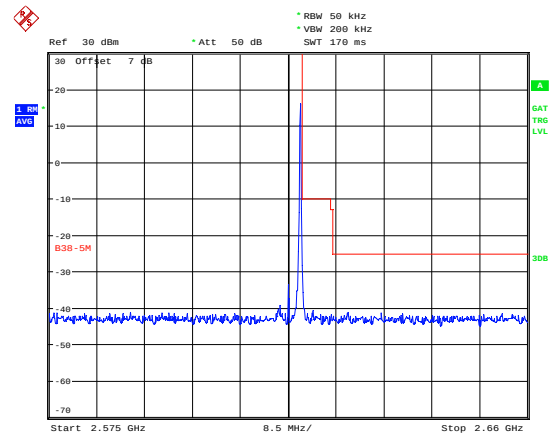


LTE Band 38 QPSK 5MHz CH-Low, 1 RB



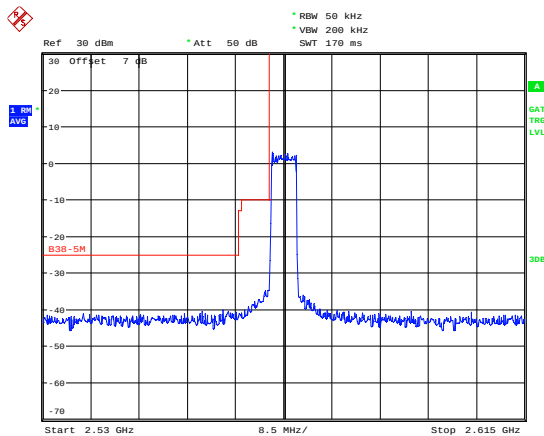
Date: 22.JUL.2020 17:05:56

LTE Band 38 QPSK 5MHz CH-High, 1 RB



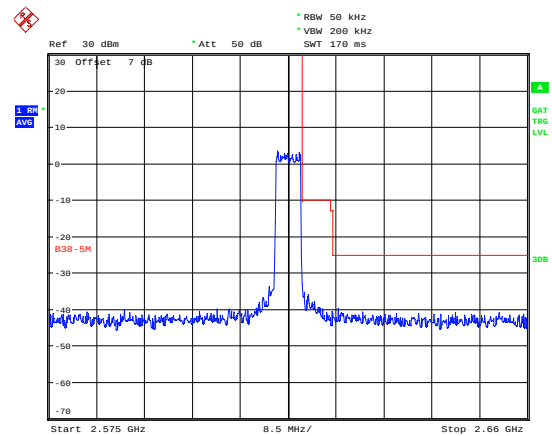
Date: 22.JUL.2020 17:23:19

LTE Band 38 QPSK 5MHz CH-Low 100%RB



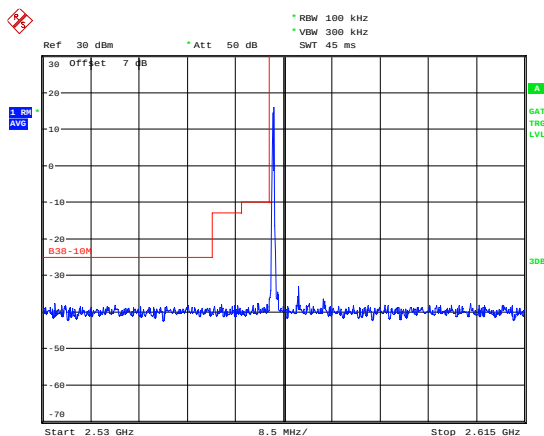
Date: 22.JUL.2020 17:10:03

LTE Band 38 QPSK 5MHz CH-High, 100%RB



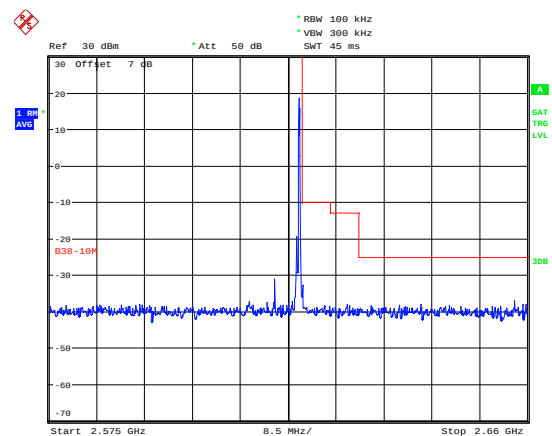
Date: 22.JUL.2020 17:23:27

LTE Band 38 QPSK 10MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:12:43

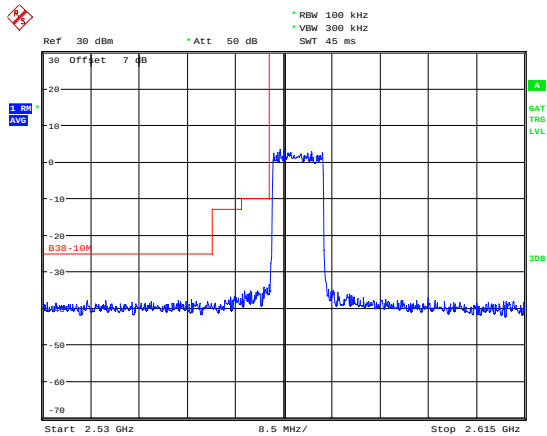
LTE Band 38 QPSK 10MHz CH-High, 1 RB



Date: 22.JUL.2020 17:25:33

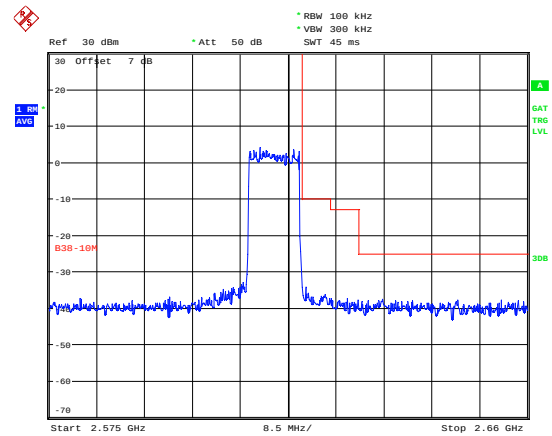


LTE Band 38 QPSK 10MHz CH-Low, 100%RB



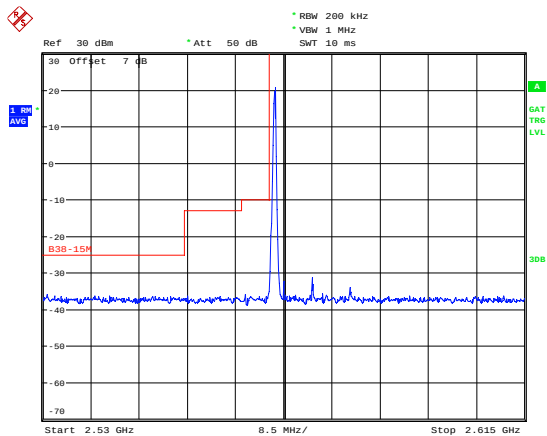
Date: 22.JUL.2020 17:13:00

LTE Band 38 QPSK 10MHz CH-High, 100%RB



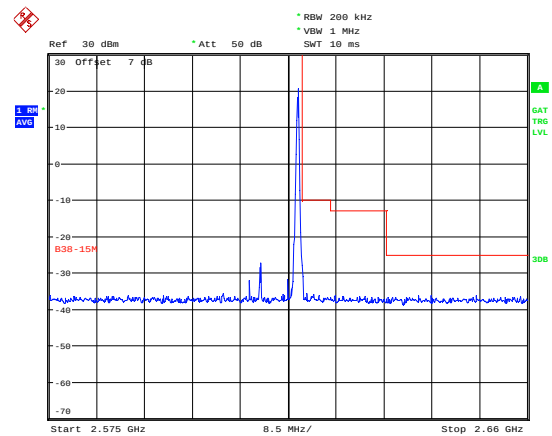
Date: 22.JUL.2020 17:25:49

LTE Band 38 QPSK 15MHz CH-Low, 1 RB



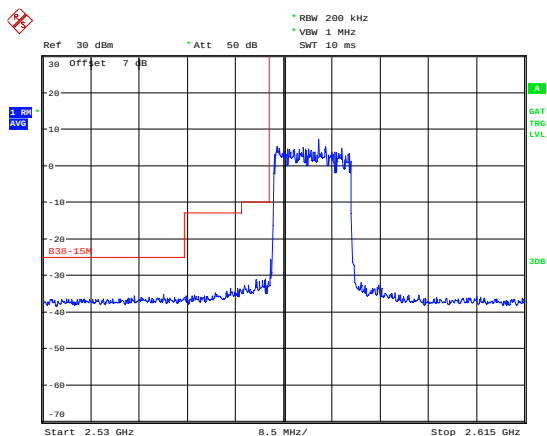
Date: 22.JUL.2020 17:15:44

LTE Band 38 QPSK 15MHz CH-High, 1 RB



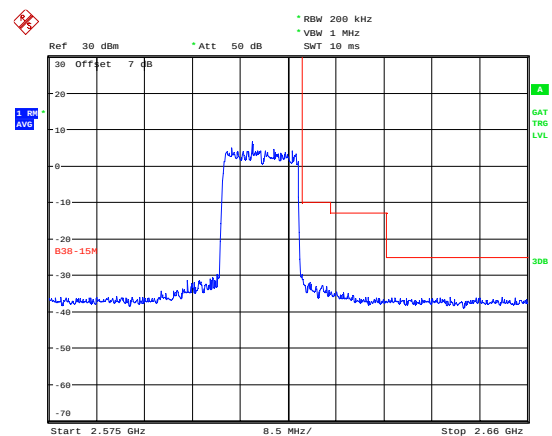
Date: 22.JUL.2020 17:27:43

LTE Band 38 QPSK 15MHz CH-Low, 100%RB



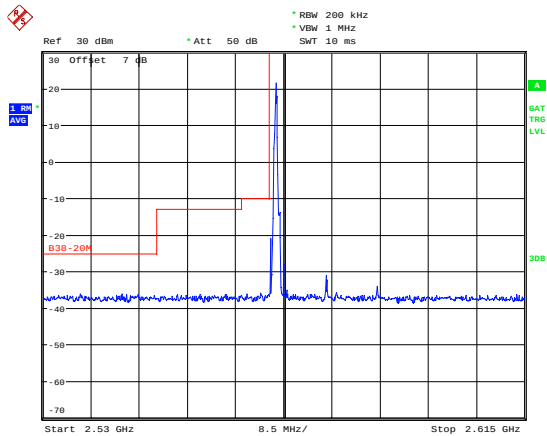
Date: 22.JUL.2020 17:16:03

LTE Band 38 QPSK 15MHz CH-High, 100%RB



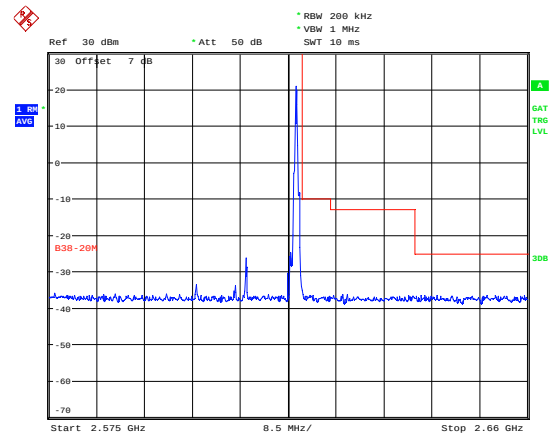
Date: 22.JUL.2020 17:28:04

LTE Band 38 QPSK 20MHz CH-Low, 1 RB



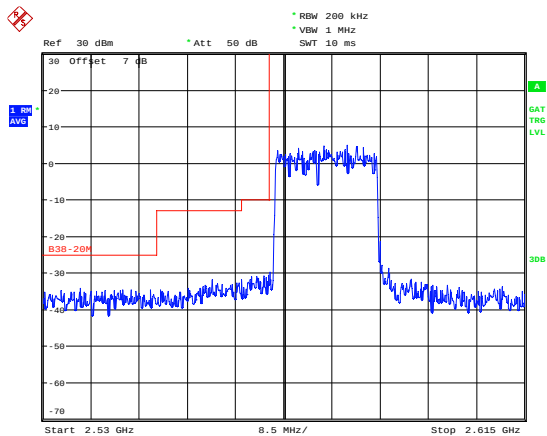
Date: 22.JUL.2020 17:17:52

LTE Band 38 QPSK 20MHz CH-High, 1 RB



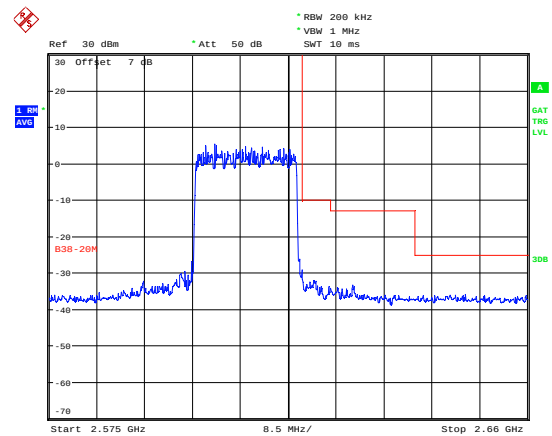
Date: 22.JUL.2020 17:30:28

LTE Band 38 QPSK 20MHz CH-Low, 100%RB



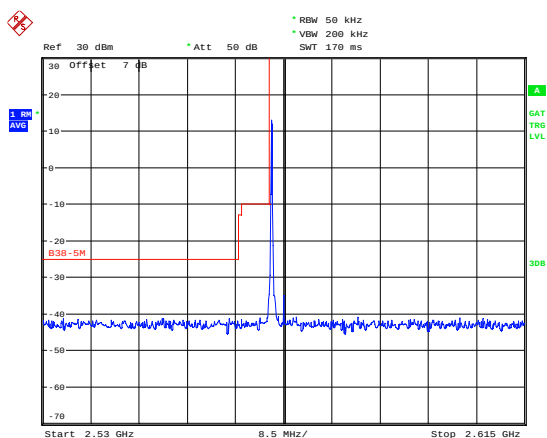
Date: 22.JUL.2020 17:18:31

LTE Band 38 QPSK 20MHz CH-High, 100%RB



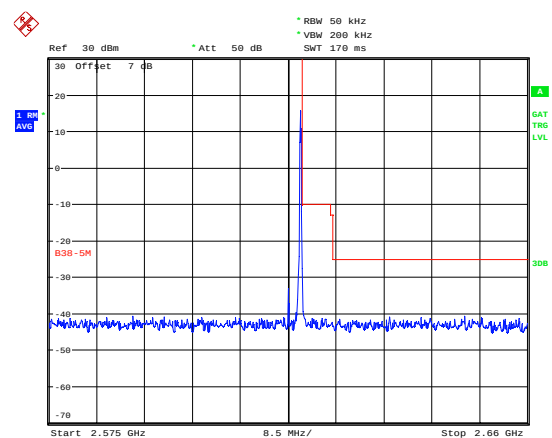
Date: 22.JUL.2020 17:30:43

LTE Band 38 16QAM 5MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:10:27

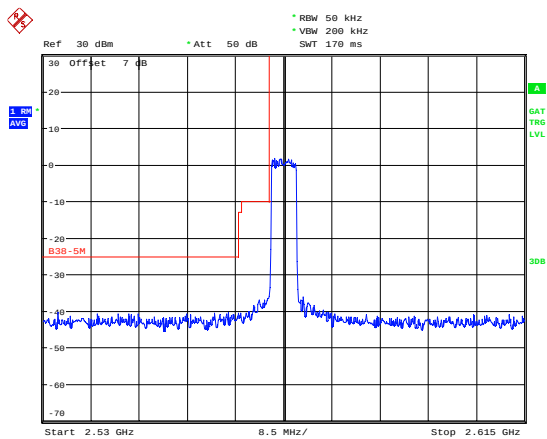
LTE Band 38 16QAM 5MHz CH-High, 1 RB



Date: 22.JUL.2020 17:23:46

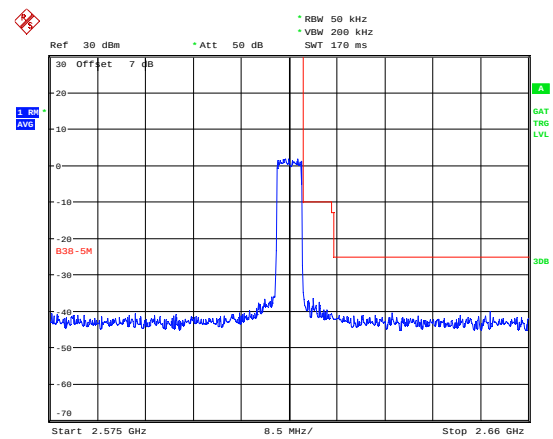


LTE Band 38 16QAM 5MHz CH-Low, 100%RB



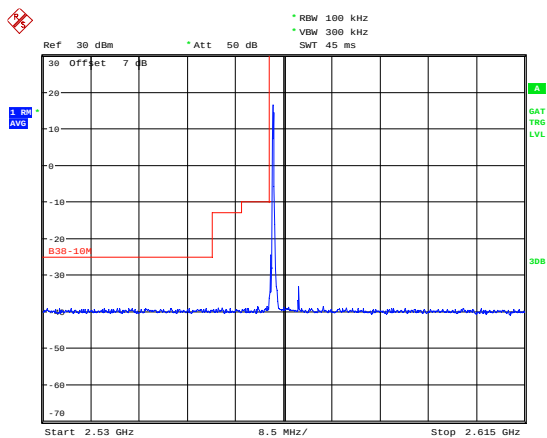
Date: 22.JUL.2020 17:11:07

LTE Band 38 16QAM 5MHz CH-High, 100%RB



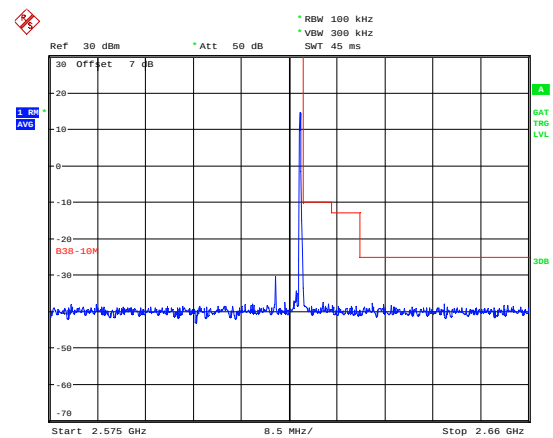
Date: 22.JUL.2020 17:24:01

LTE Band 38 16QAM 10MHz CH-Low, 1 RB



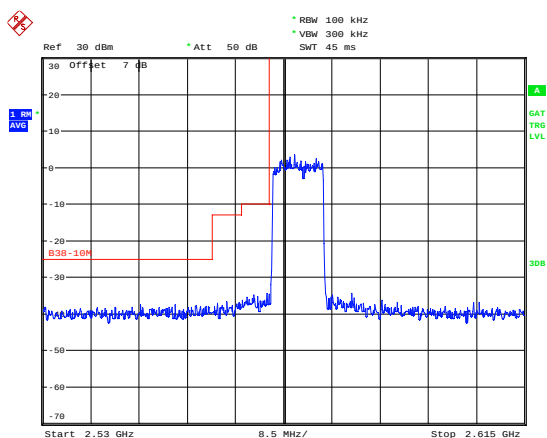
Date: 22.JUL.2020 17:14:01

LTE Band 38 16QAM 10MHz CH-High, 1 RB



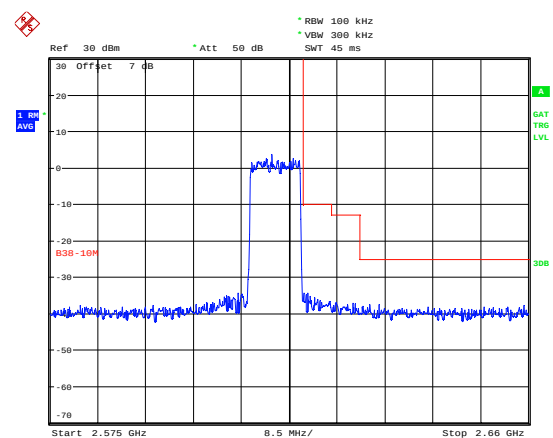
Date: 22.JUL.2020 17:26:06

LTE Band 38 16QAM 10MHz CH-Low, 100%RB



Date: 22.JUL.2020 17:14:15

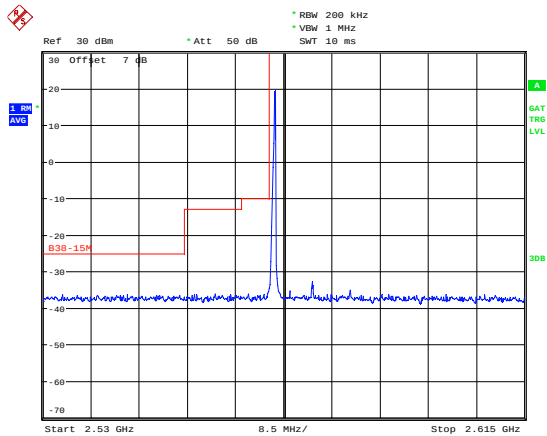
LTE Band 38 16QAM 10MHz CH-High, 100%RB



Date: 22.JUL.2020 17:26:20

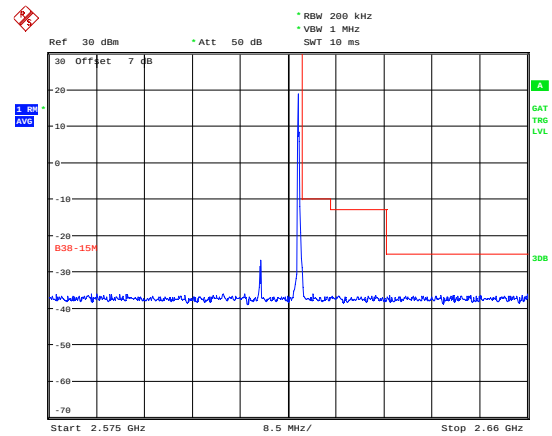


LTE Band 38 16QAM 15MHz CH-Low, 1 RB



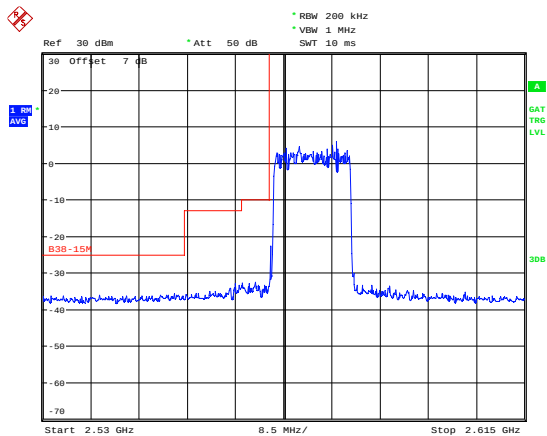
Date: 22.JUL.2020 17:16:23

LTE Band 38 16QAM 15MHz CH-High, 1 RB



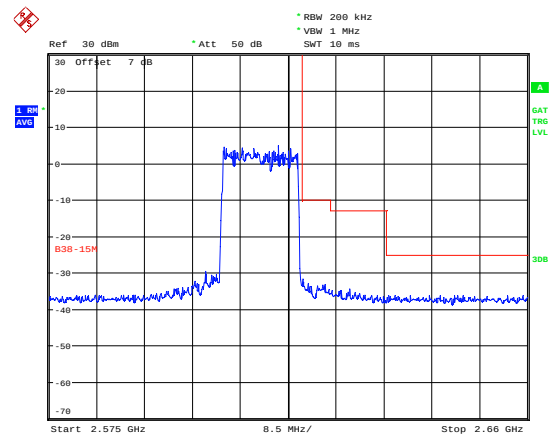
Date: 22.JUL.2020 17:28:20

LTE Band 38 16QAM 15MHz CH-Low, 100%RB



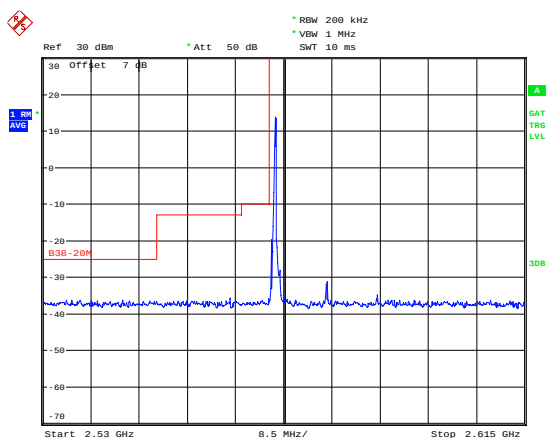
Date: 22.JUL.2020 17:16:38

LTE Band 38 16QAM 15MHz CH-High, 100%RB



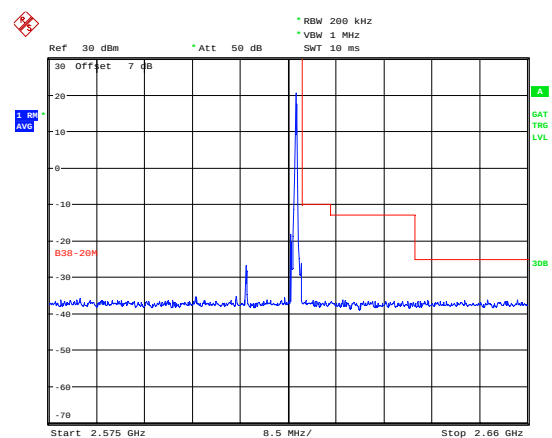
Date: 22.JUL.2020 17:28:34

LTE Band 38 16QAM 20MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:18:48

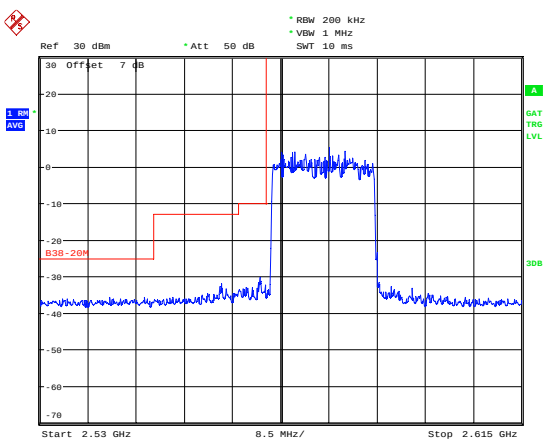
LTE Band 38 16QAM 20MHz CH-High, 1 RB



Date: 22.JUL.2020 17:32:48

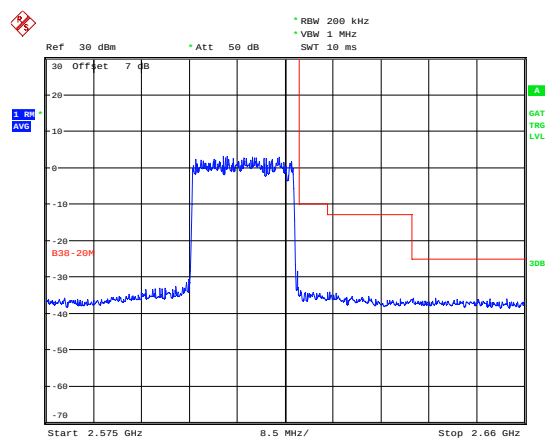


LTE Band 38 16QAM 20MHz CH-Low, 100%RB



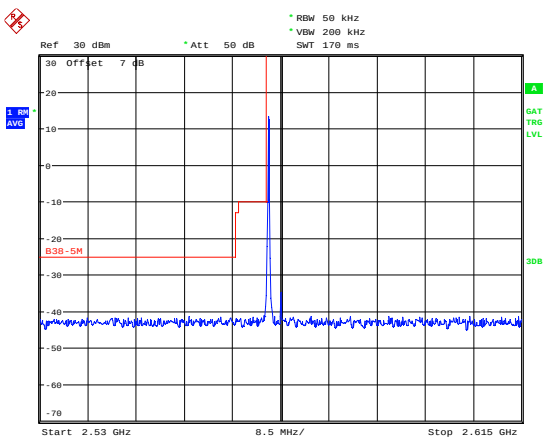
Date: 22.JUL.2020 17:19:04

LTE Band 38 16QAM 20MHz CH-High, 100%RB



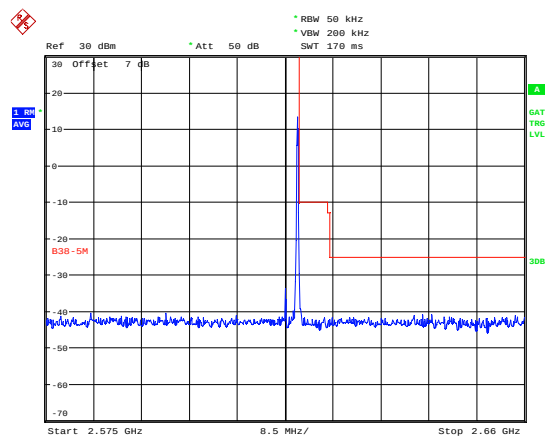
Date: 22.JUL.2020 17:33:01

LTE Band 38 64QAM 5MHz CH-Low, 1 RB



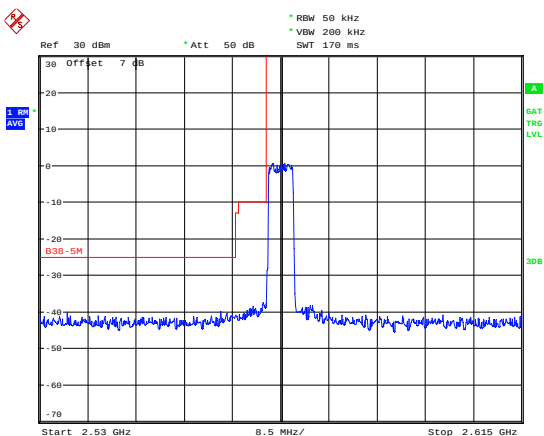
Date: 22.JUL.2020 17:11:28

LTE Band 38 64QAM 5MHz CH-High, 1 RB



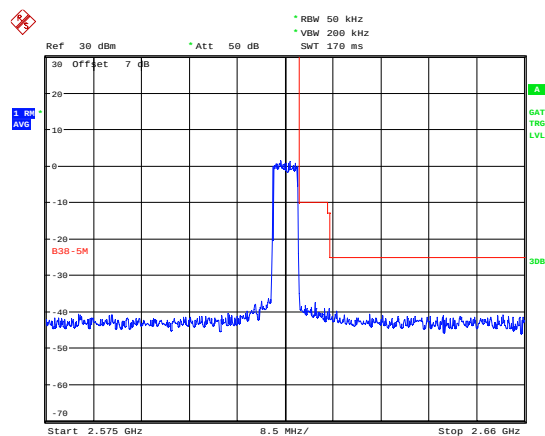
Date: 22.JUL.2020 17:24:21

LTE Band 38 64QAM 5MHz CH-Low, 100%RB



Date: 22.JUL.2020 17:11:46

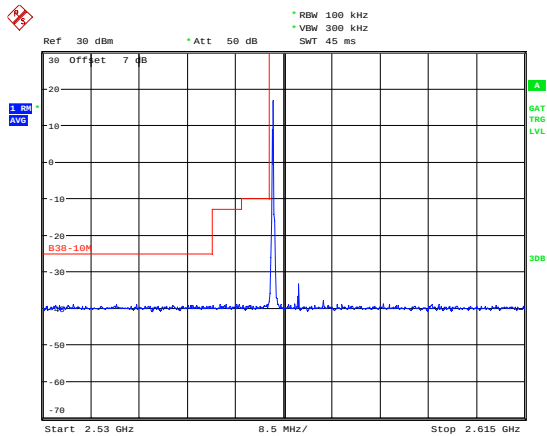
LTE Band 38 64QAM 5MHz CH-High, 100%RB



Date: 22.JUL.2020 17:24:37

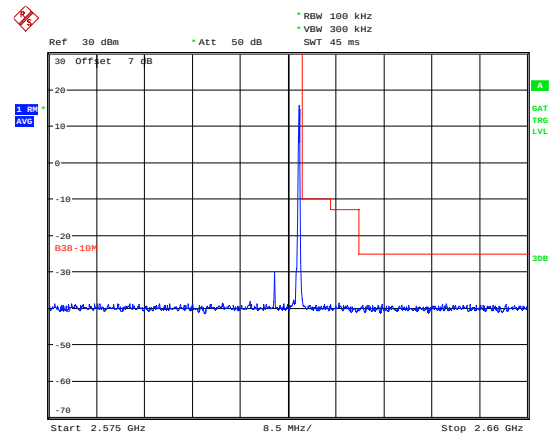


LTE Band 38 64QAM 10MHz CH-Low, 1 RB



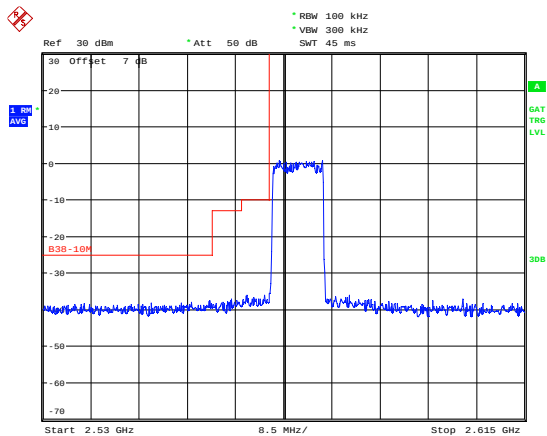
Date: 22.JUL.2020 17:14:35

LTE Band 38 64QAM 10MHz CH-High, 1 RB



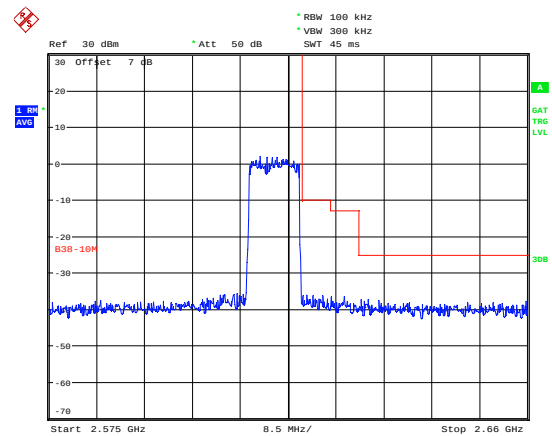
Date: 22.JUL.2020 17:26:37

LTE Band 38 64QAM 10MHz CH-Low, 100%RB



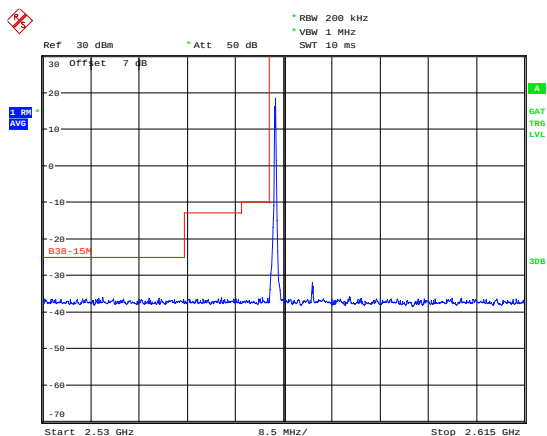
Date: 22.JUL.2020 17:14:50

LTE Band 38 64QAM 10MHz CH-High, 100%RB



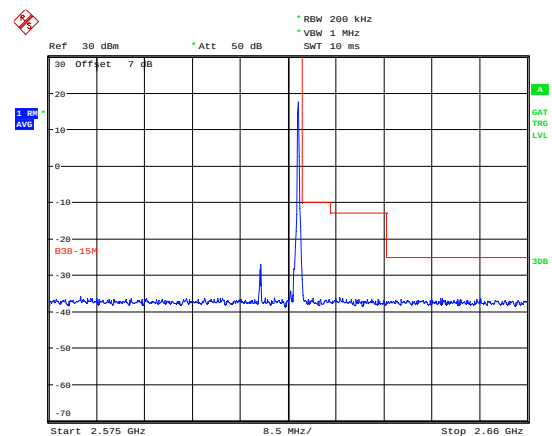
Date: 22.JUL.2020 17:26:51

LTE Band 38 64QAM 15MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:16:57

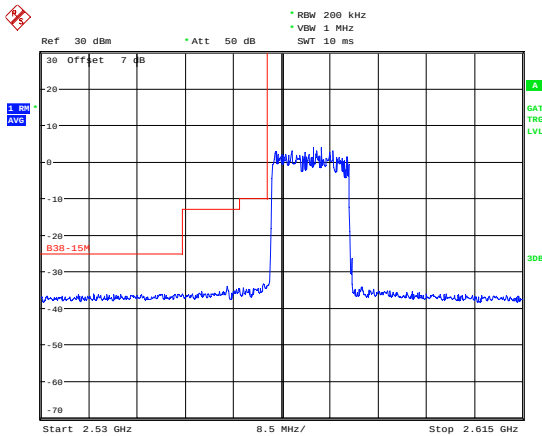
LTE Band 38 64QAM 15MHz CH-High, 1 RB



Date: 22.JUL.2020 17:29:24

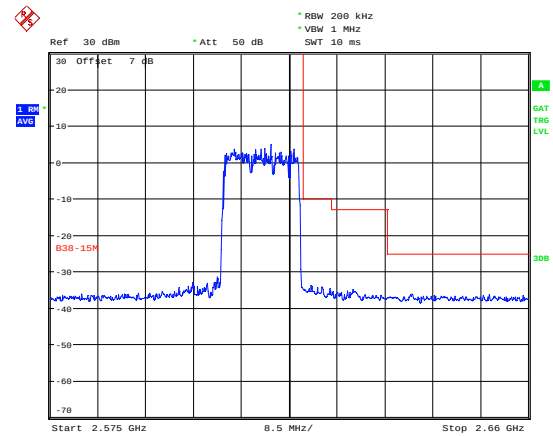


LTE Band 38 64QAM 15MHz CH-Low, 100%RB



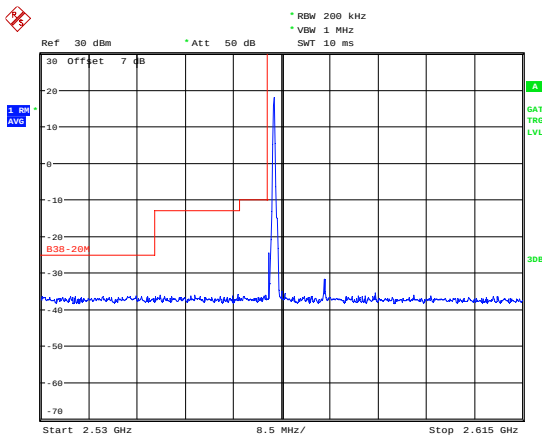
Date: 22.JUL.2020 17:17:12

LTE Band 38 64QAM 15MHz CH-High, 100%RB



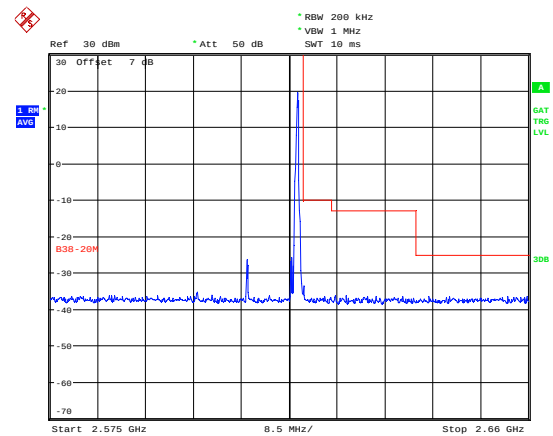
Date: 22.JUL.2020 17:29:51

LTE Band 38 64QAM 20MHz CH-Low, 1 RB



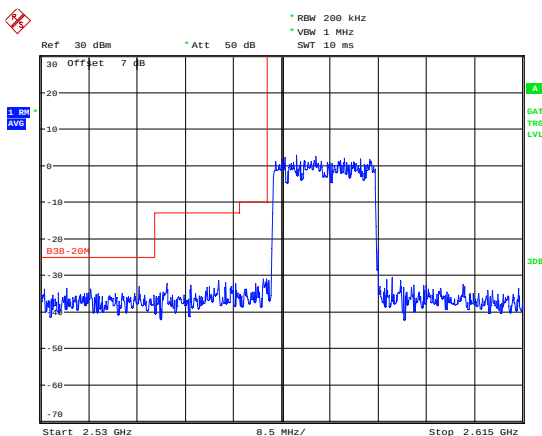
Date: 22.JUL.2020 17:19:20

LTE Band 38 64QAM 20MHz CH-High, 1 RB



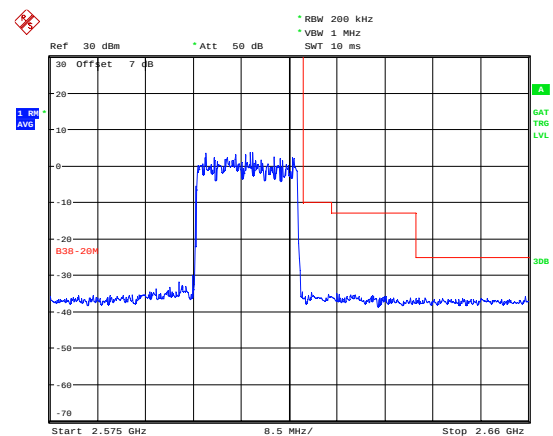
Date: 22.JUL.2020 17:33:52

LTE Band 38 64QAM 20MHz CH-Low, 100%RB



Date: 22.JUL.2020 17:19:38

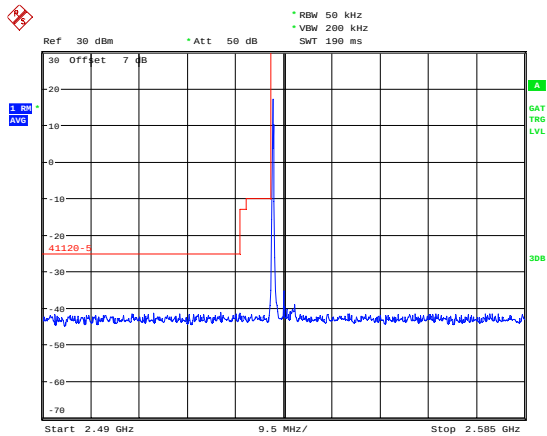
LTE Band 38 64QAM 20MHz CH-High, 100%RB



Date: 22.JUL.2020 17:34:07

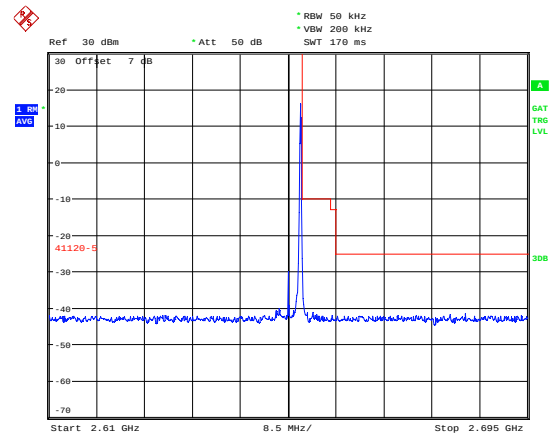


LTE Band 41 QPSK 5MHz CH-Low, 1 RB



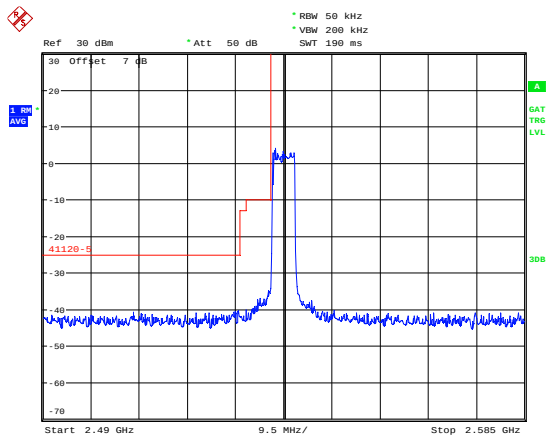
Date: 22.JUL.2020 17:37:20

LTE Band 41 QPSK 5MHz CH-High, 1 RB



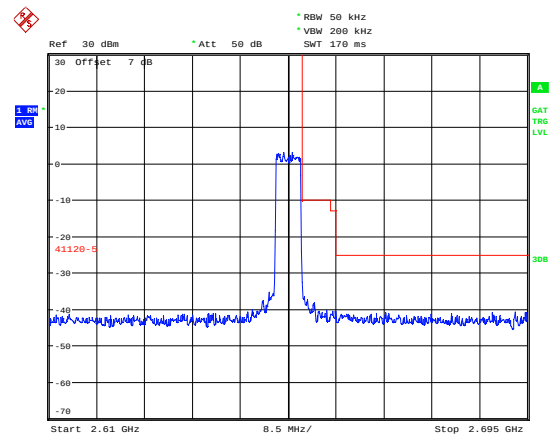
Date: 22.JUL.2020 18:14:58

LTE Band 41 QPSK 5MHz CH-Low, 100%RB



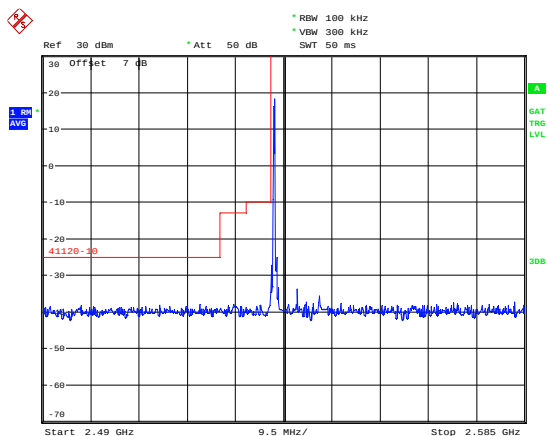
Date: 22.JUL.2020 17:37:38

LTE Band 41 QPSK 5MHz CH-High, 100%RB



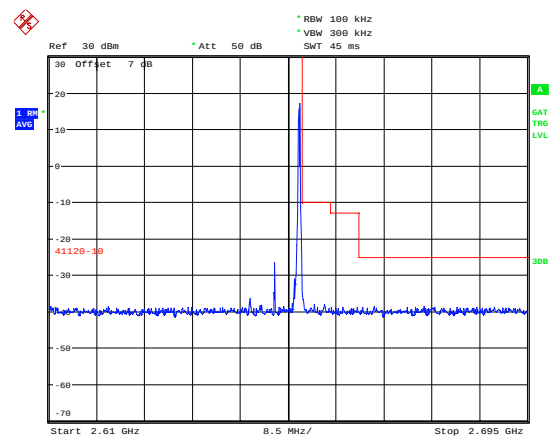
Date: 22.JUL.2020 18:15:17

LTE Band 41 QPSK 10MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:41:03

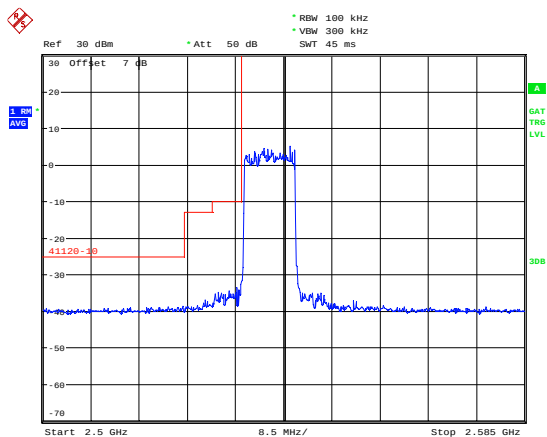
LTE Band 41 QPSK 10MHz CH-High, 1 RB



Date: 22.JUL.2020 18:18:23

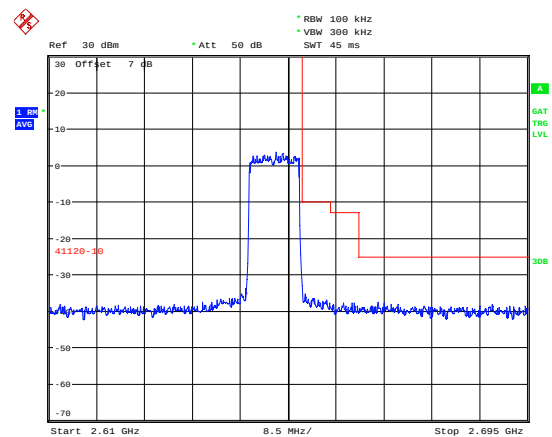


LTE Band 41 QPSK 10MHz CH-Low, 100%RB



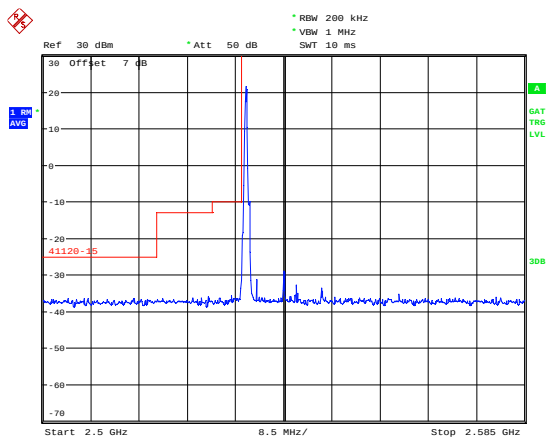
Date: 22.JUL.2020 17:52:04

LTE Band 41 QPSK 10MHz CH-High, 100%RB



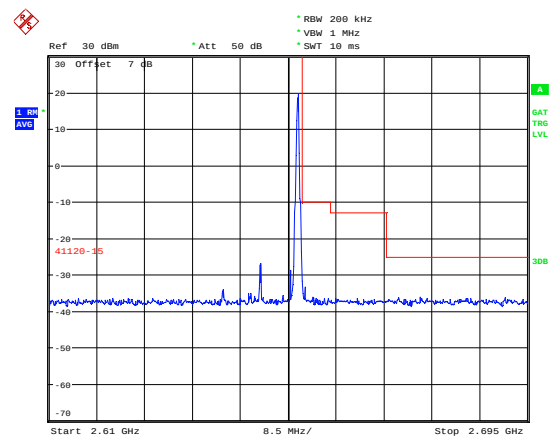
Date: 22.JUL.2020 18:18:40

LTE Band 41 QPSK 15MHz CH-Low, 1 RB



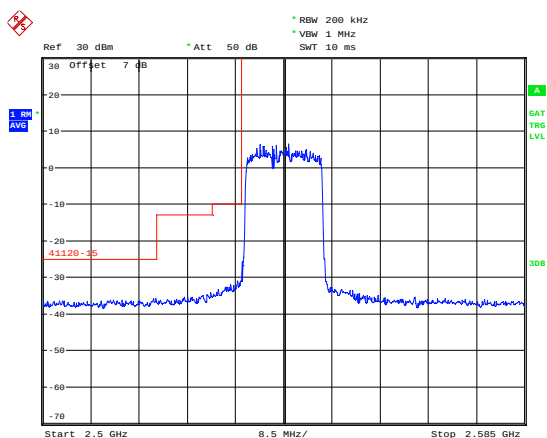
Date: 22.JUL.2020 18:01:40

LTE Band 41 QPSK 15MHz CH-High, 1 RB



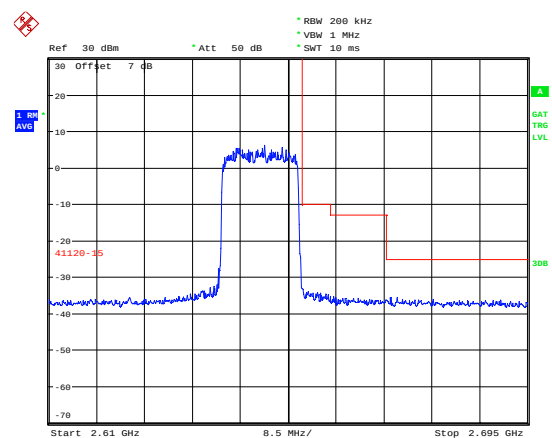
Date: 22.JUL.2020 19:26:51

LTE Band 41 QPSK 15MHz CH-Low, 100%RB



Date: 22.JUL.2020 18:01:57

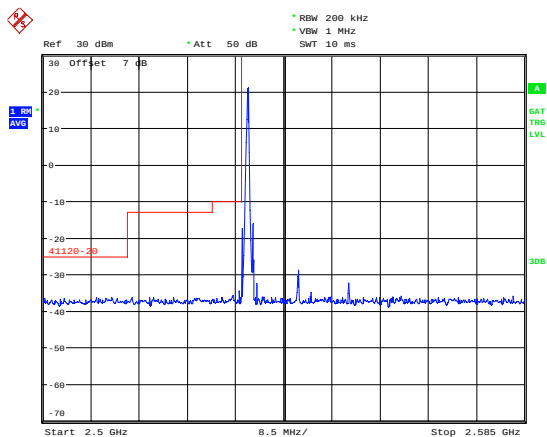
LTE Band 41 QPSK 15MHz CH-High, 100%RB



Date: 22.JUL.2020 19:27:06

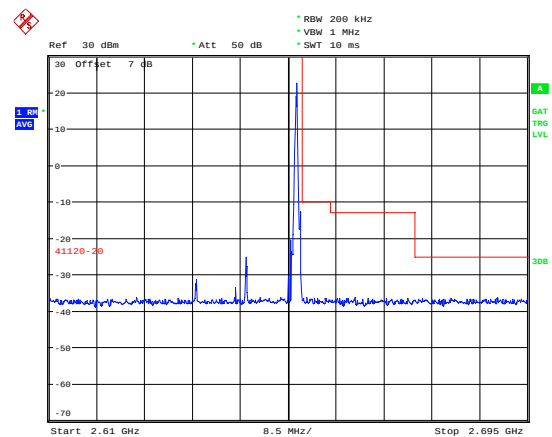


LTE Band 41 QPSK 20MHz CH-Low, 1 RB



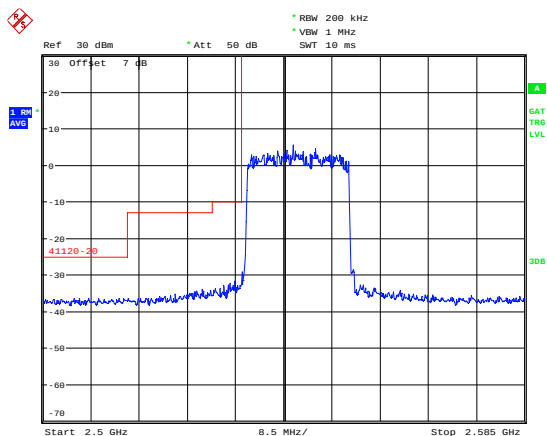
Date: 22.JUL.2020 18:03:32

LTE Band 41 QPSK 20MHz CH-High, 1 RB



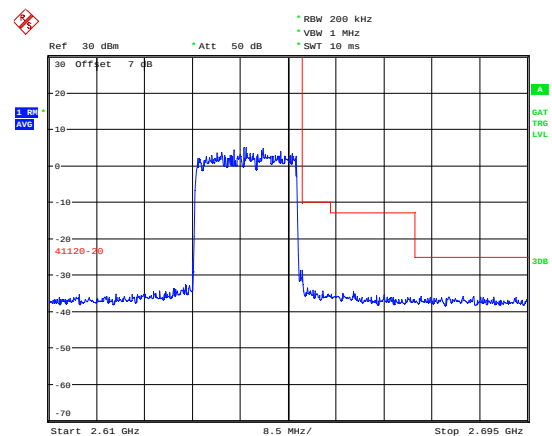
Date: 22.JUL.2020 19:30:44

LTE Band 41 QPSK 20MHz CH-Low, 100%RB



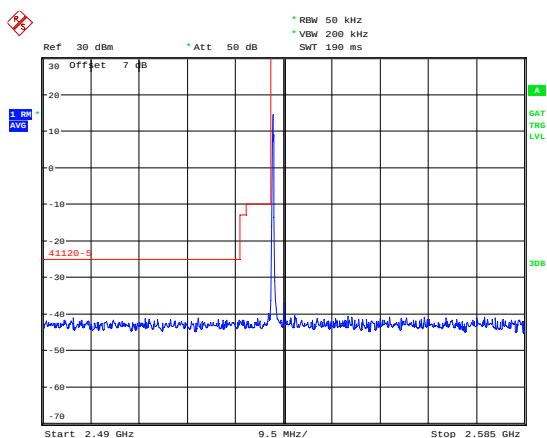
Date: 22.JUL.2020 18:03:45

LTE Band 41 QPSK 20MHz CH-High, 100%RB



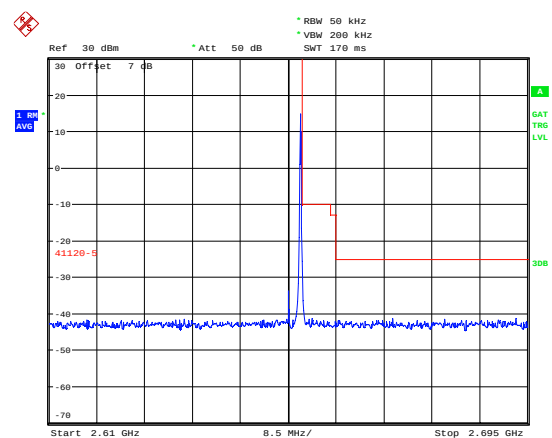
Date: 22.JUL.2020 19:30:59

LTE Band 41 16QAM 5MHz CH-Low, 1 RB



Date: 22.JUL.2020 17:39:11

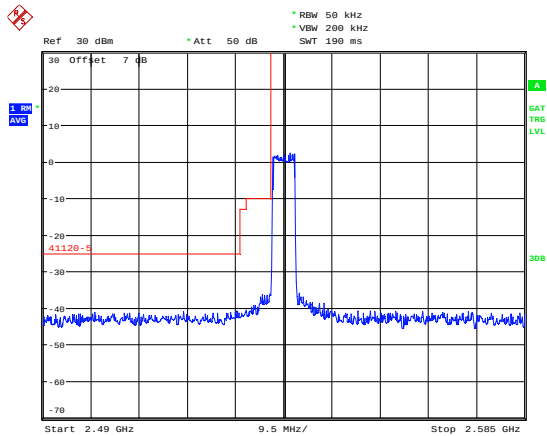
LTE Band 41 16QAM 5MHz CH-High, 1 RB



Date: 22.JUL.2020 18:15:44

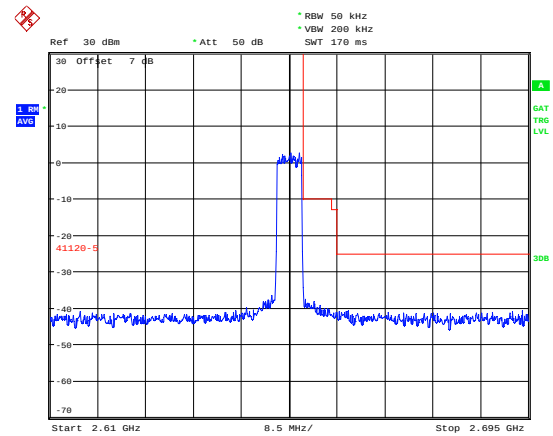


LTE Band 41 16QAM 5MHz CH-Low, 100%RB



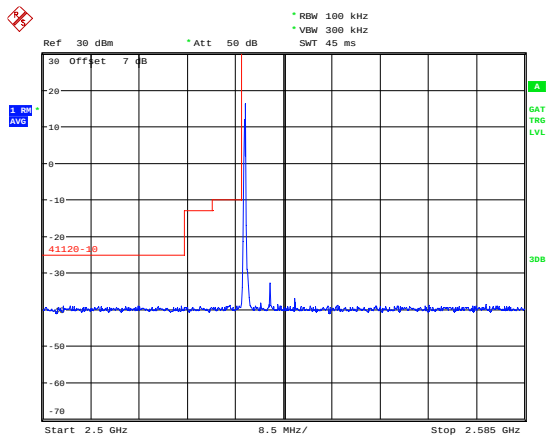
Date: 22.JUL.2020 17:39:28

LTE Band 41 16QAM 5MHz CH-High, 100%RB



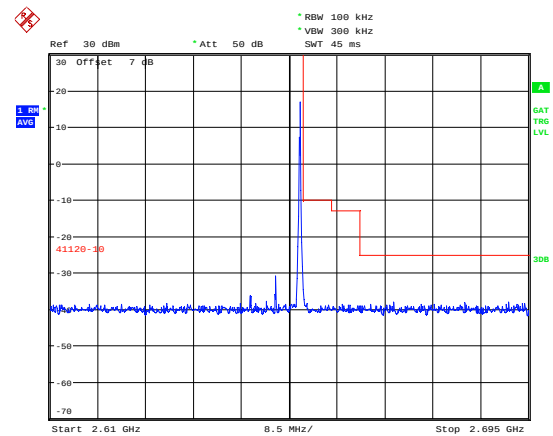
Date: 22.JUL.2020 18:15:59

LTE Band 41 16QAM 10MHz CH-Low, 1 RB



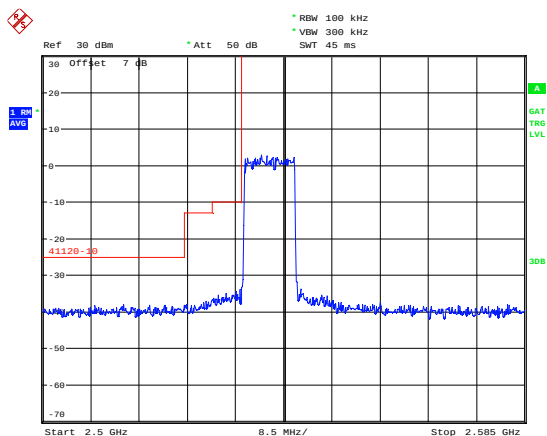
Date: 22.JUL.2020 17:52:25

LTE Band 41 16QAM 10MHz CH-High, 1 RB



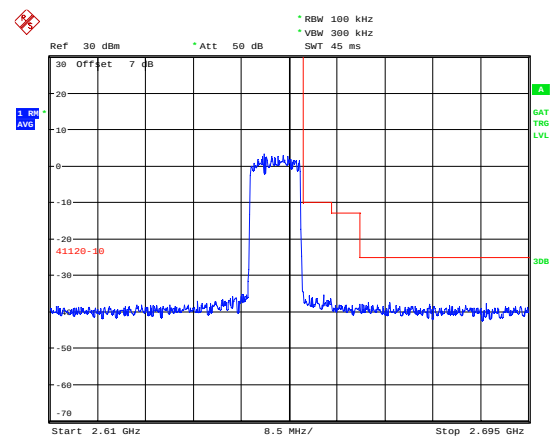
Date: 22.JUL.2020 18:18:57

LTE Band 41 16QAM 10MHz CH-Low, 100%RB



Date: 22.JUL.2020 17:52:38

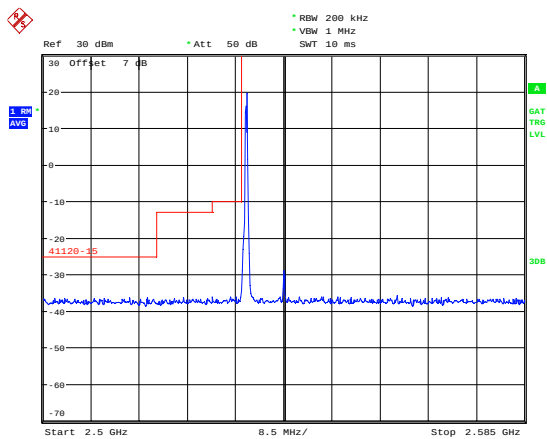
LTE Band 41 16QAM 10MHz CH-High, 100%RB



Date: 22.JUL.2020 18:19:18

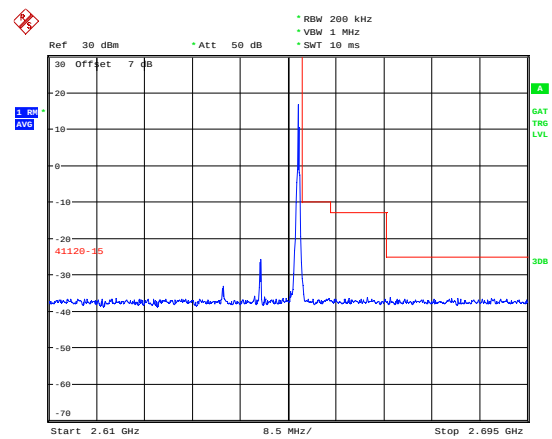


LTE Band 41 16QAM 15MHz CH-Low, 1 RB



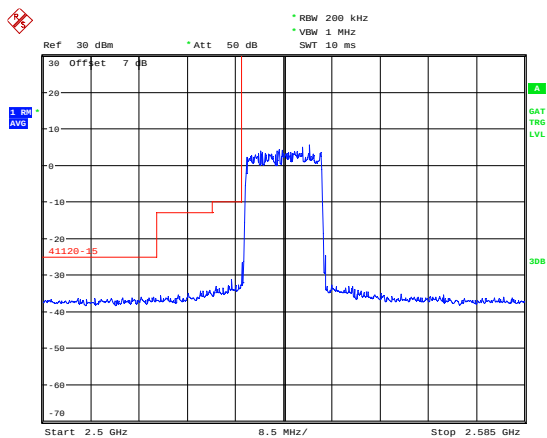
Date: 22.JUL.2020 18:02:13

LTE Band 41 16QAM 15MHz CH-High, 1 RB



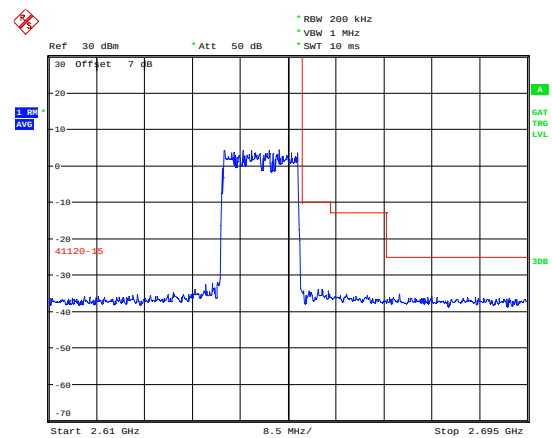
Date: 22.JUL.2020 19:29:02

LTE Band 41 16QAM 15MHz CH-Low, 100%RB



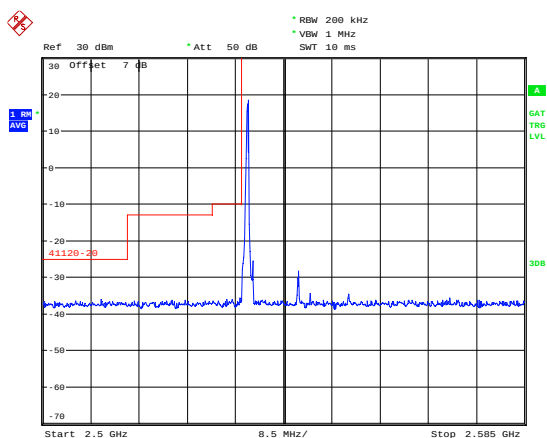
Date: 22.JUL.2020 18:02:27

LTE Band 41 16QAM 15MHz CH-High, 100%RB



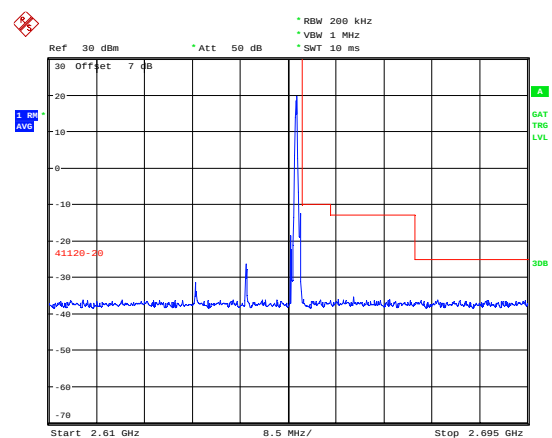
Date: 22.JUL.2020 19:29:15

LTE Band 41 16QAM 20MHz CH-Low, RB 1



Date: 22.JUL.2020 18:04:01

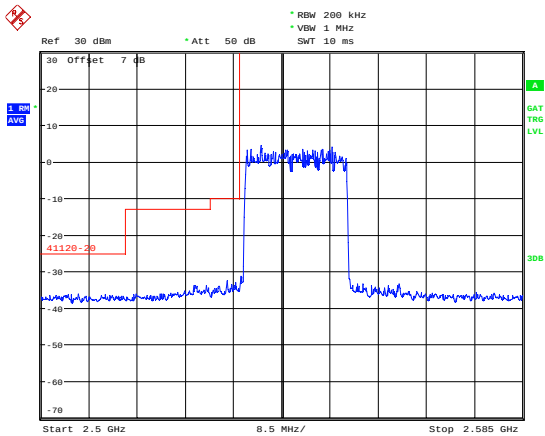
LTE Band 41 16QAM 20MHz CH-High, RB 1



Date: 22.JUL.2020 19:31:39

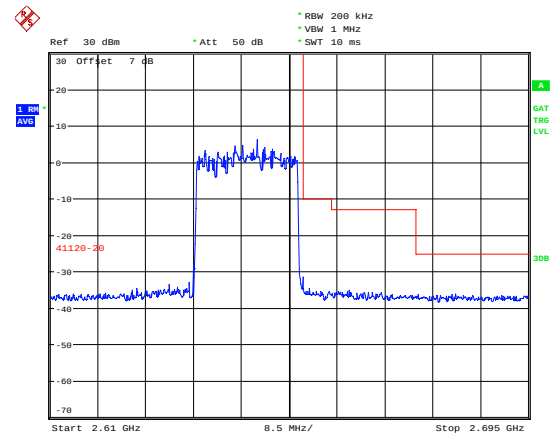


LTE Band 41 16QAM 20MHz CH-Low, 100%RB



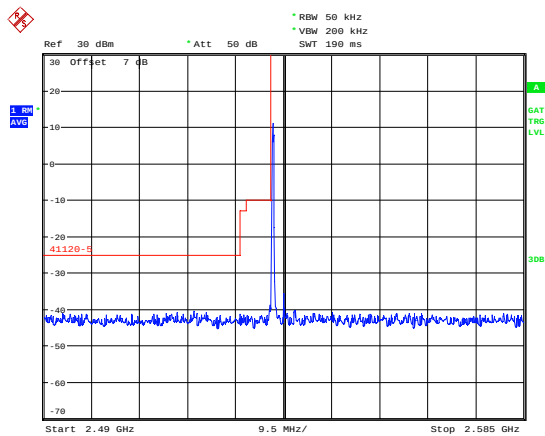
Date: 22.JUL.2020 18:04:13

LTE Band 41 16QAM 20MHz CH-High, 100%RB



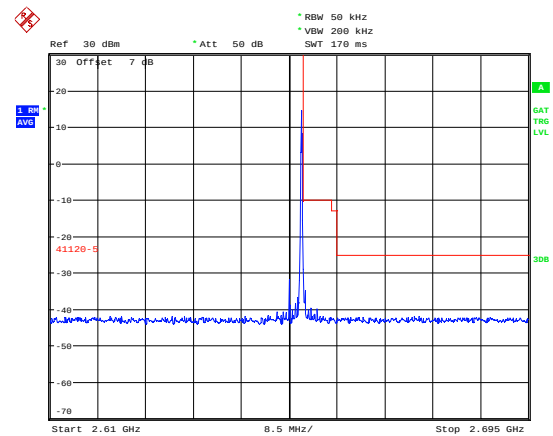
Date: 22.JUL.2020 19:31:58

LTE Band 41 64QAM 5MHz CH-Low, 1 RB



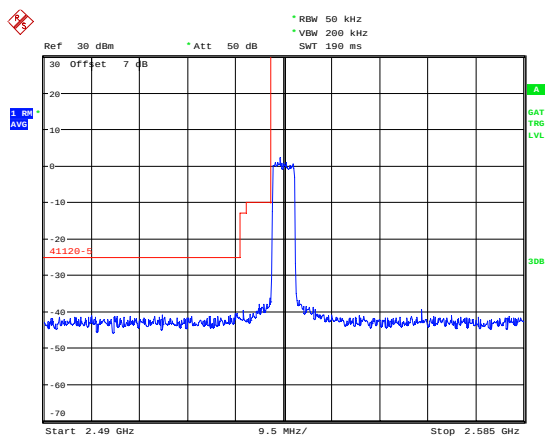
Date: 22.JUL.2020 17:39:46

LTE Band 41 64QAM 5MHz CH-High, 1 RB



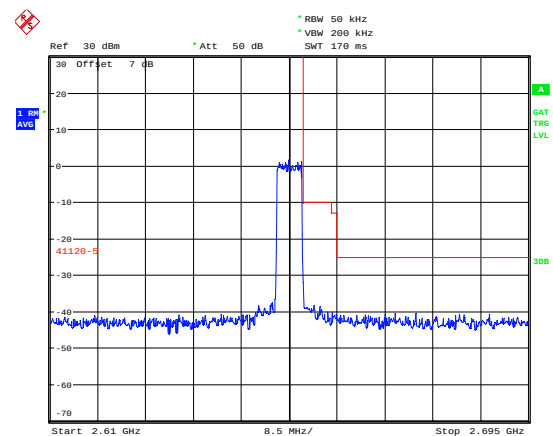
Date: 22.JUL.2020 18:16:54

LTE Band 41 64QAM 5MHz CH-Low, 100%RB



Date: 22.JUL.2020 17:40:03

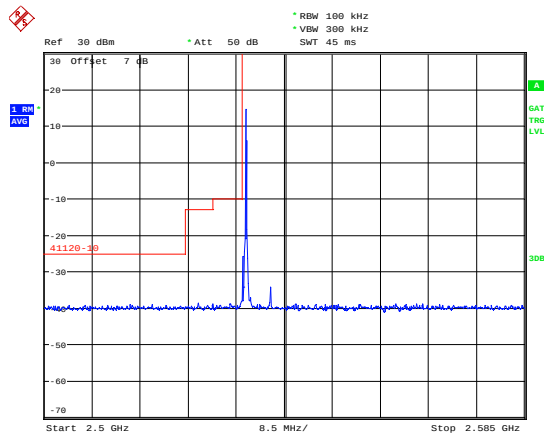
LTE Band 41 64QAM 5MHz CH-High, 100%RB



Date: 22.JUL.2020 18:17:09

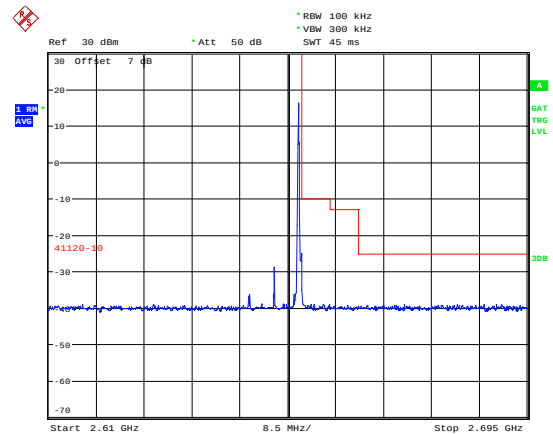


LTE Band 41 64QAM 10MHz CH-Low, 1 RB



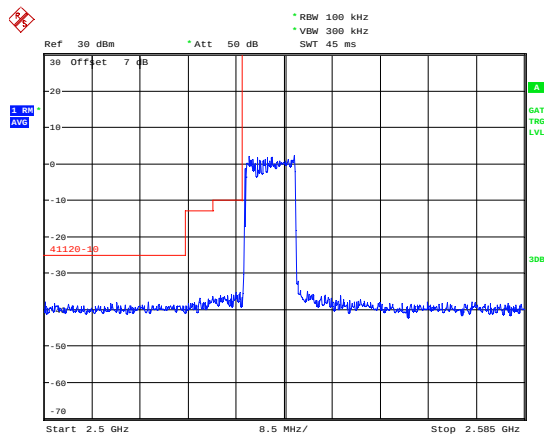
Date: 22.JUL.2020 17:52:55

LTE Band 41 64QAM 10MHz CH-High, 1 RB



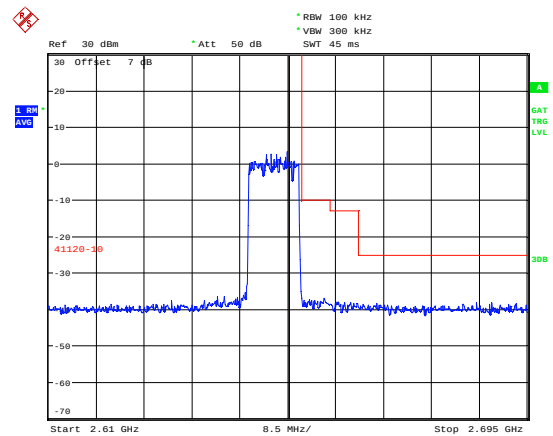
Date: 22.JUL.2020 18:19:28

LTE Band 41 64QAM 10MHz CH-Low, 100%RB



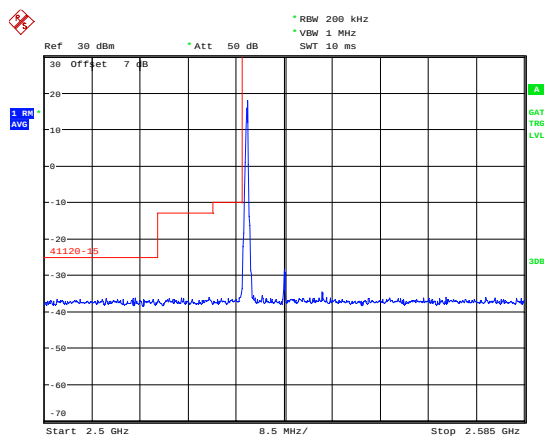
Date: 22.JUL.2020 17:53:10

LTE Band 41 64QAM 10MHz CH-High, 100%RB



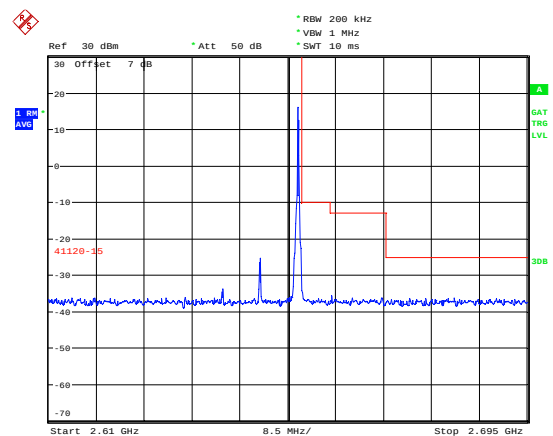
Date: 22.JUL.2020 18:19:45

LTE Band 41 64QAM 15MHz CH-Low, 1 RB



Date: 22.JUL.2020 18:02:42

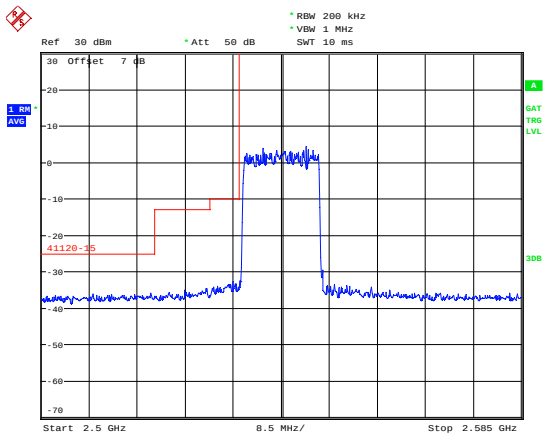
LTE Band 41 64QAM 15MHz CH-High, 1 RB



Date: 22.JUL.2020 19:29:33

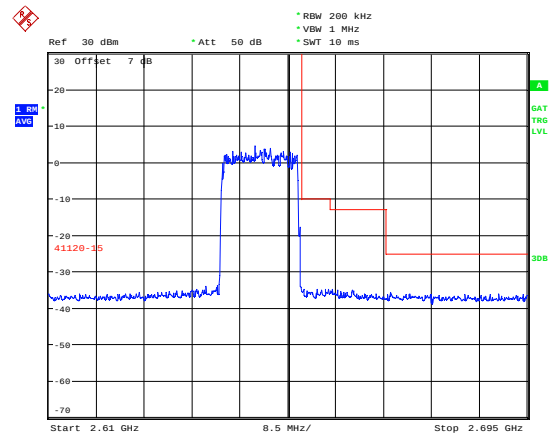


LTE Band 41 64QAM 15MHz CH-Low, 100%RB



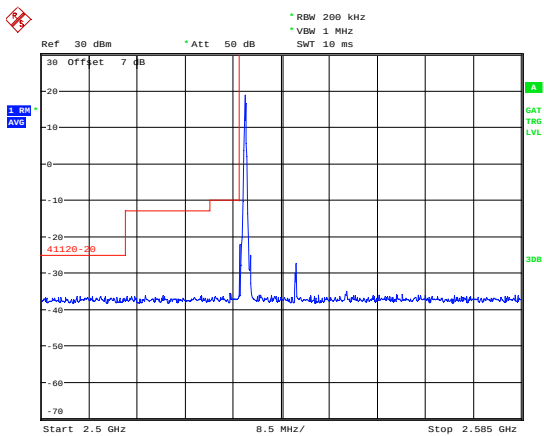
Date: 22.JUL.2020 18:02:59

LTE Band 41 64QAM 15MHz CH-High, 100%RB



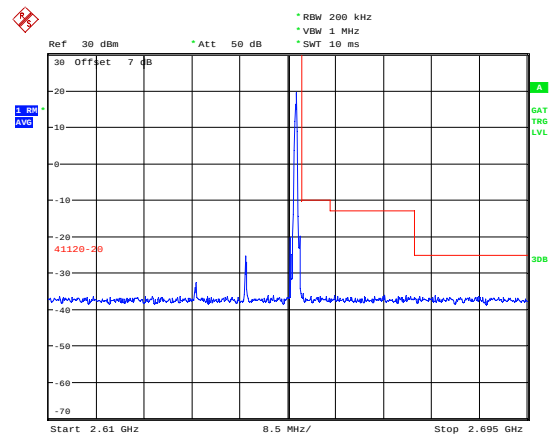
Date: 22.JUL.2020 19:29:52

LTE Band 41 64QAM 20MHz CH-Low, RB 1



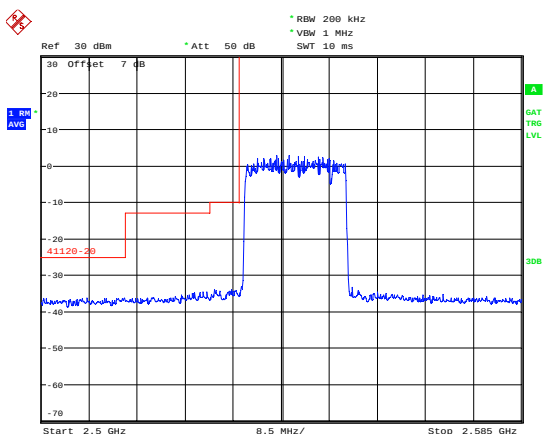
Date: 22.JUL.2020 18:04:27

LTE Band 41 64QAM 20MHz CH-High, RB 1



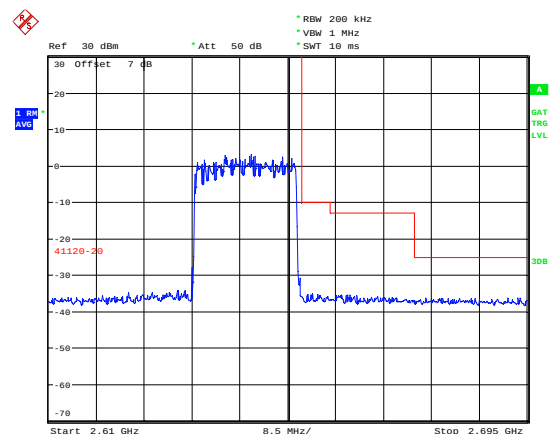
Date: 22.JUL.2020 19:32:29

LTE Band 41 64QAM 20MHz CH-Low, 100%RB



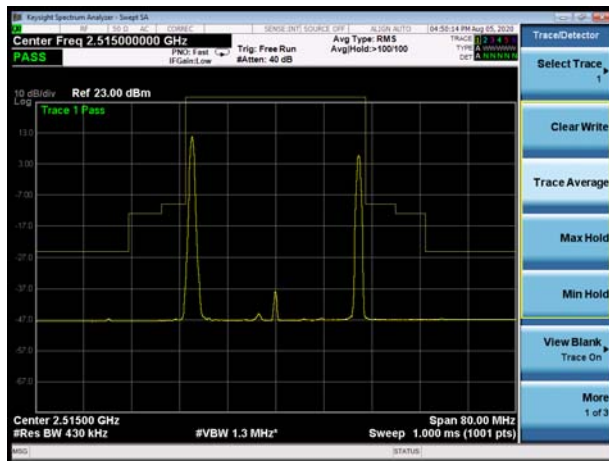
Date: 22.JUL.2020 18:04:40

LTE Band 41 64QAM 20MHz CH-High, 100%RB

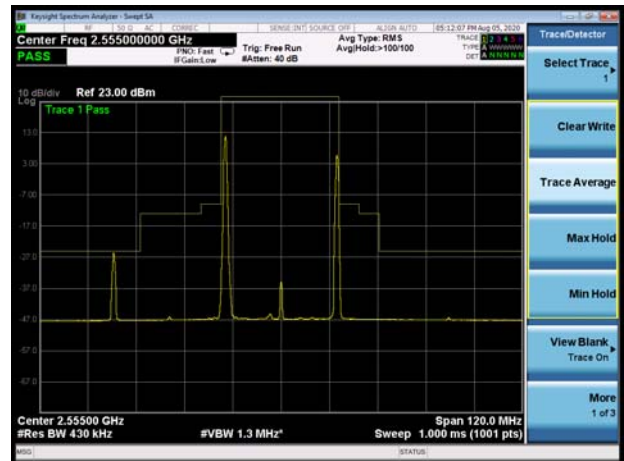


Date: 22.JUL.2020 19:32:48

CA-7C QPSK 20+10MHz CH-Low,RB 1



CA-7C QPSK 20+10MHz CH- High, RB 1



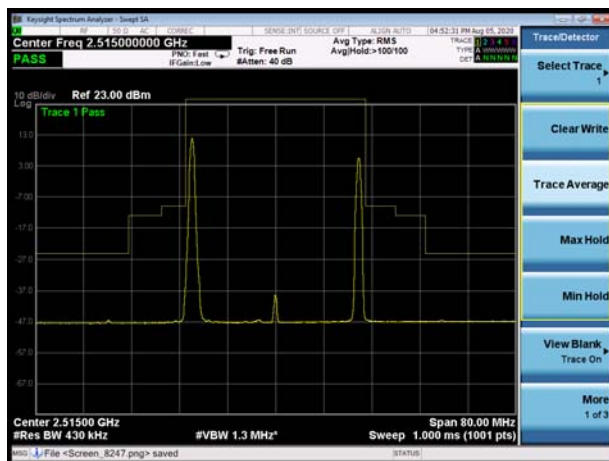
CA-7C QPSK 20+10MHz CH-Low, 100%RB



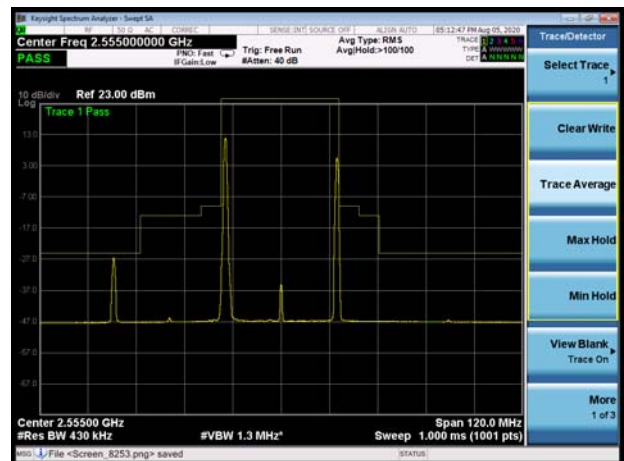
CA-7C QPSK 20+10MHz CH- High, 100%RB



CA-7C 16QAM 20+10MHz CH-Low,RB 1



CA-7C 16QAM 20+10MHz CH- High, RB 1





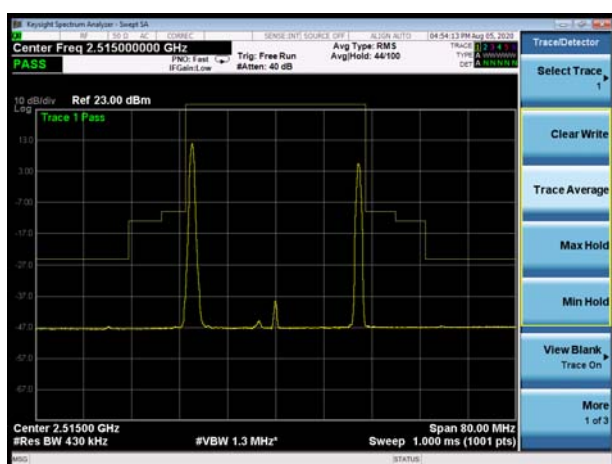
CA-7C 16QAM 20+10MHz CH-Low, 100%RB



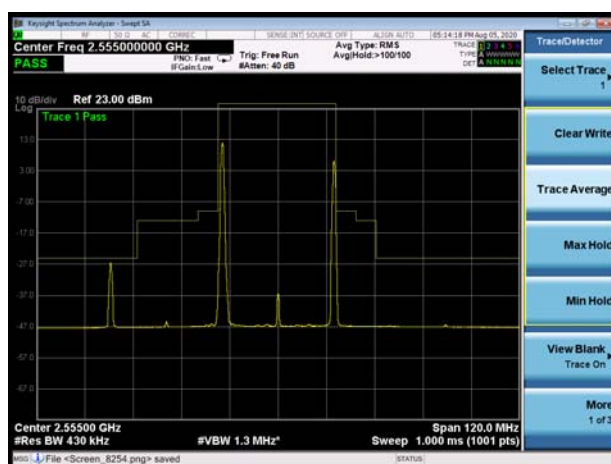
CA-7C 16QAM 20+10MHz CH- High, 100%RB



CA-7C 64QAM 20+10MHz CH-Low,RB 1



CA-7C 64QAM 20+10MHz CH- High, RB 1



CA-7C 64QAM 20+10MHz CH-Low, 100%RB

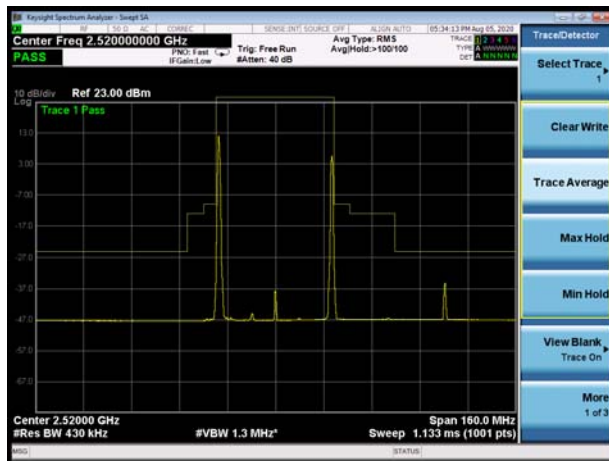


CA-7C 64QAM 20+10MHz CH- High, 100%RB

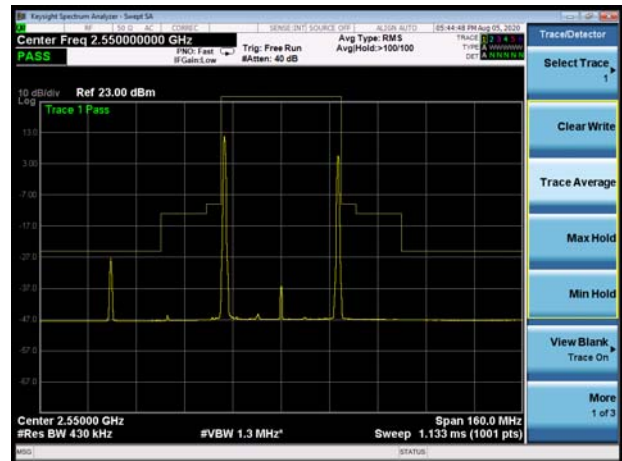




CA-7C QPSK 20+20MHz CH-Low,RB 1



CA-7C QPSK 20+20MHz CH- High, RB 1



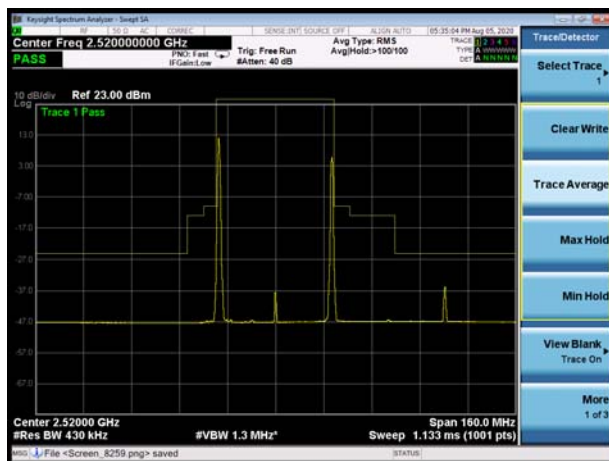
CA-7C QPSK 20+20MHz CH-Low, 100%RB



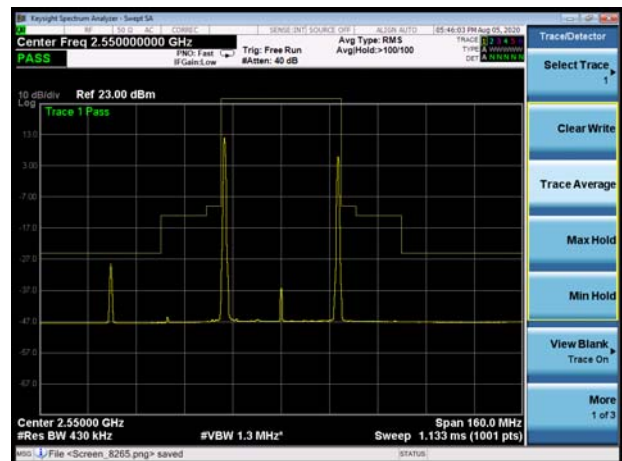
CA-7C QPSK 20+20MHz CH- High, 100%RB



CA-7C 16QAM 20+20MHz CH-Low,RB 1



CA-7C 16QAM 20+20MHz CH- High, RB 1





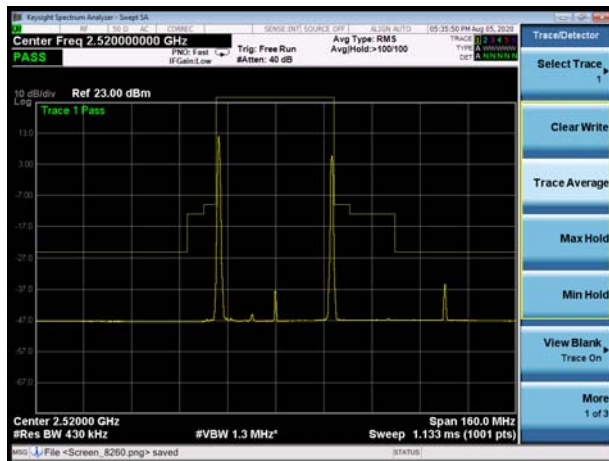
CA-7C 16QAM 20+20MHz CH-Low, 100%RB



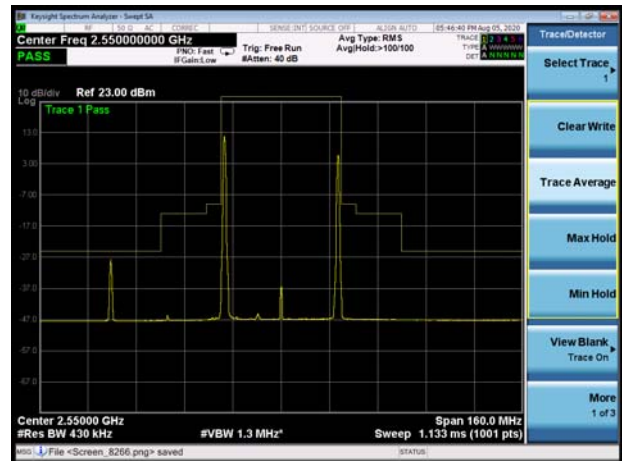
CA-7C 16QAM 20+20MHz CH- High, 100%RB



CA-7C 64QAM 20+20MHz CH-Low,RB 1



CA-7C 64QAM 20+20MHz CH- High, RB 1



CA-7C 64QAM 20+20MHz CH-Low, 100%RB

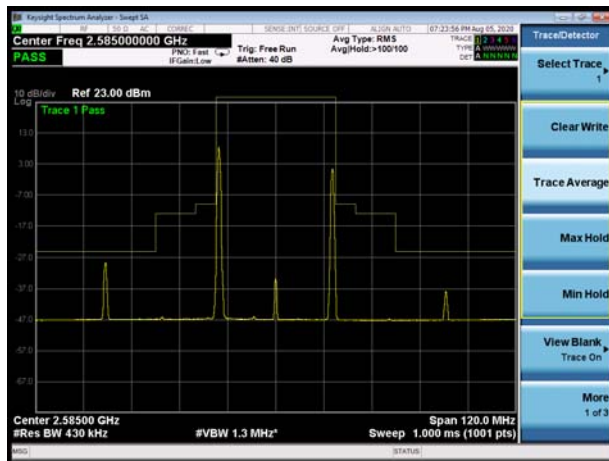


CA-7C 64QAM 20+20MHz CH- High, 100%RB

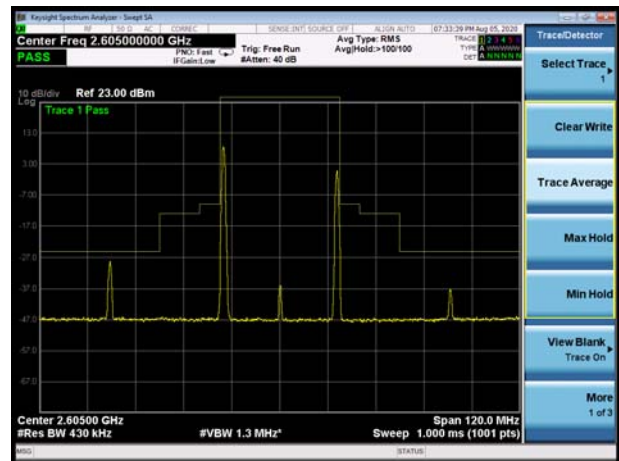




CA-38C QPSK 15+15MHz CH-Low,RB 1



CA-38C QPSK 15+15MHz CH- High, RB 1



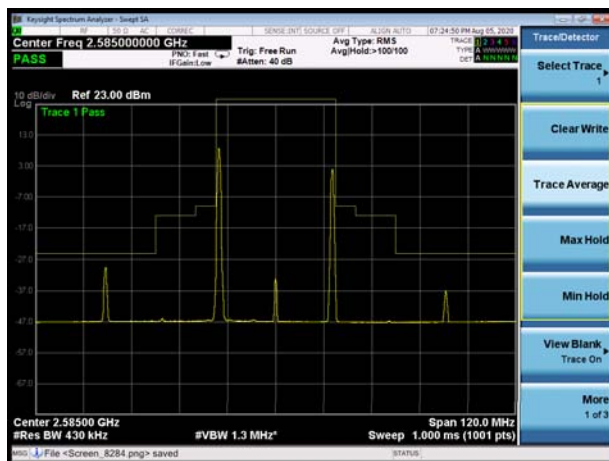
CA-38C QPSK 15+15MHz CH-Low, 100%RB



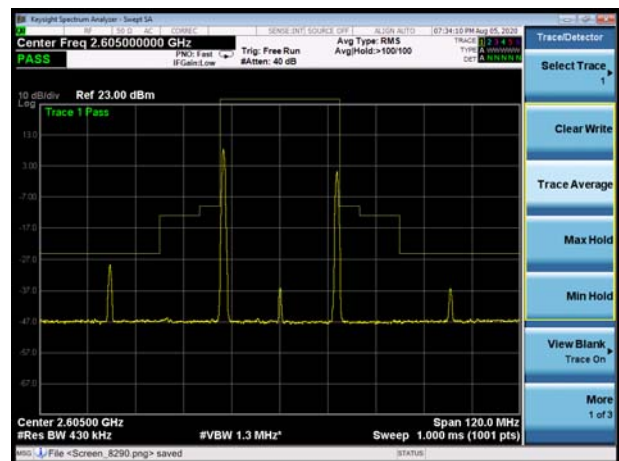
CA-38C QPSK 15+15MHz CH- High, 100%RB



CA-38C 16QAM 15+15MHz CH-Low,RB 1



CA-38C 16QAM 15+15MHz CH- High, RB 1





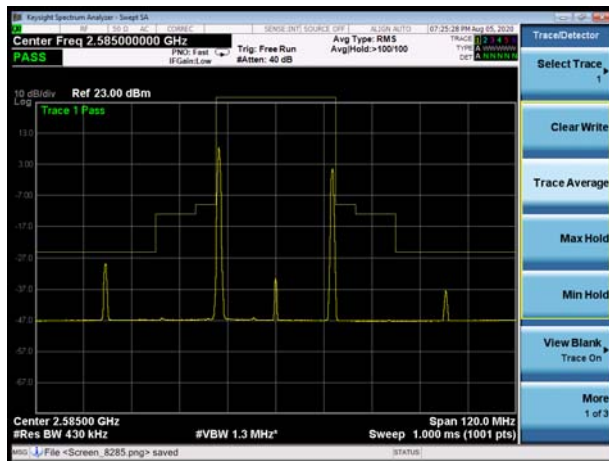
CA-38C 16QAM 15+15MHz CH-Low, 100%RB



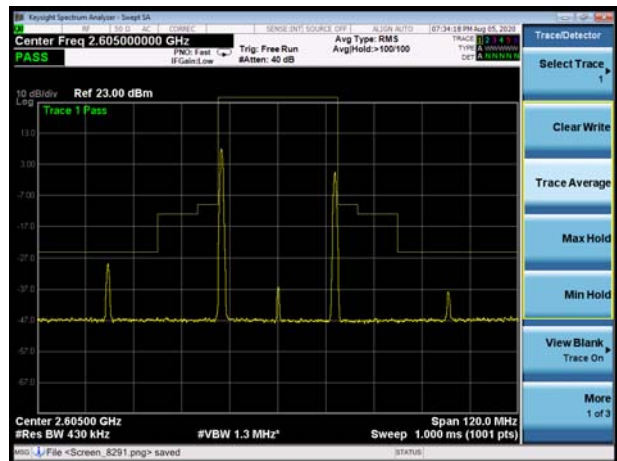
CA-38C 16QAM 15+15MHz CH- High, 100%RB



CA-38C 64QAM 15+15MHz CH-Low,RB 1



CA-38C 64QAM 15+15MHz CH- High, RB 1



CA-38C 64QAM 15+15MHz CH-Low, 100%RB

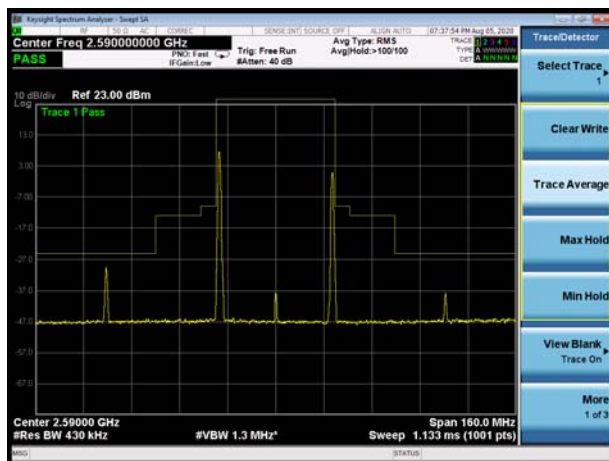


CA-38C 64QAM 15+15MHz CH- High, 100%RB

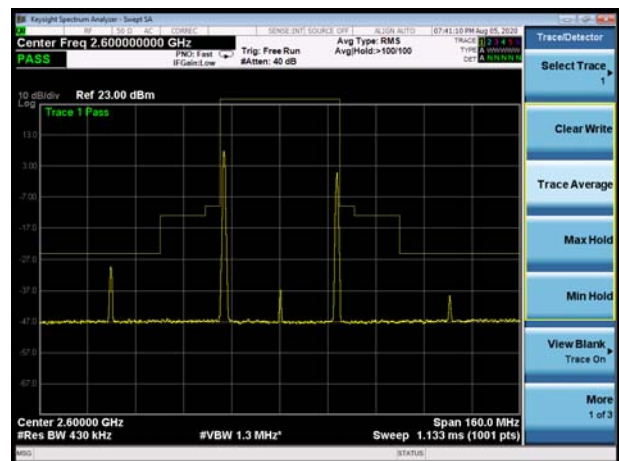




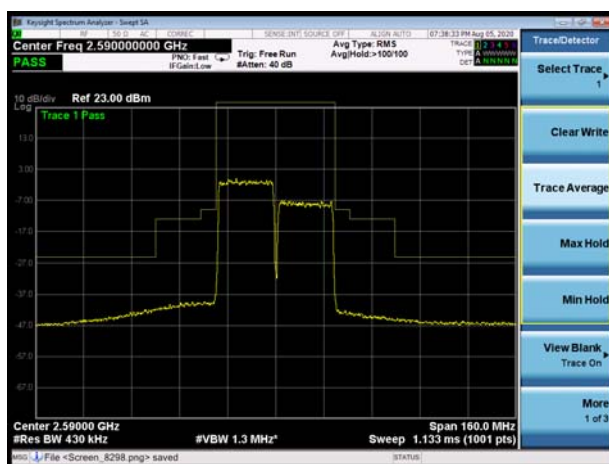
CA-38C QPSK 20+20MHz CH-Low,RB 1



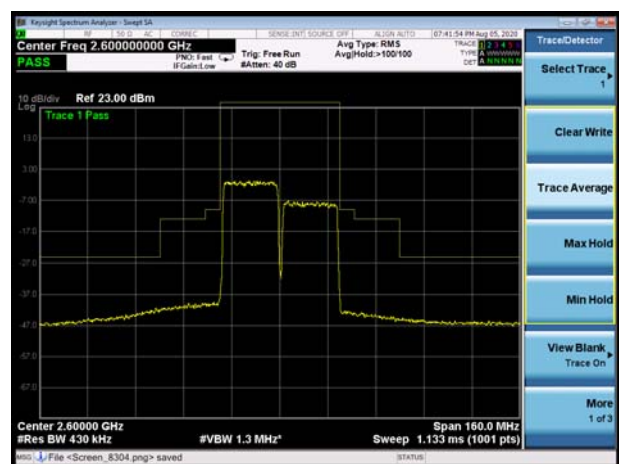
CA-38C QPSK 20+20MHz CH- High, RB 1



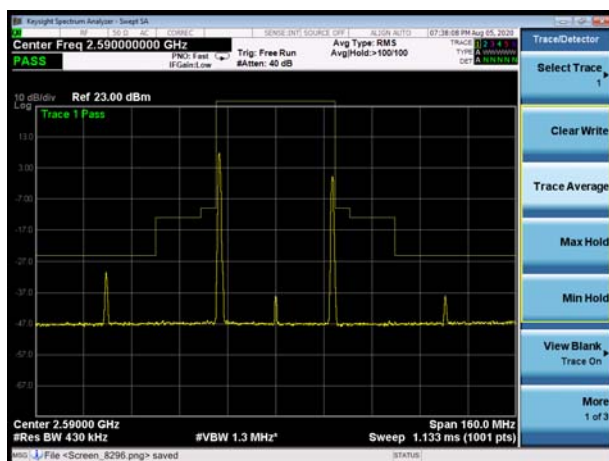
CA-38C QPSK 20+20MHz CH-Low, 100%RB



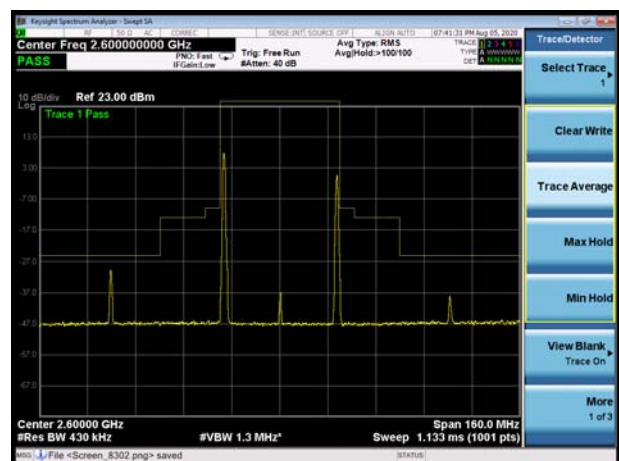
CA-38C QPSK 20+20MHz CH- High, 100%RB



CA-38C 16QAM 20+20MHz CH-Low,RB 1



CA-38C 16QAM 20+20MHz CH- High, RB 1





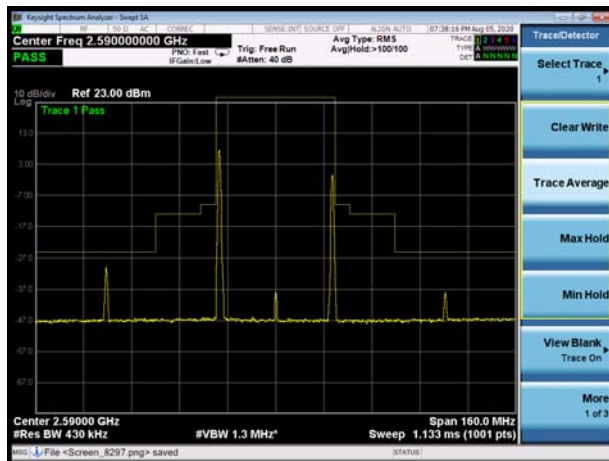
CA-38C 16QAM 20+20MHz CH-Low, 100%RB



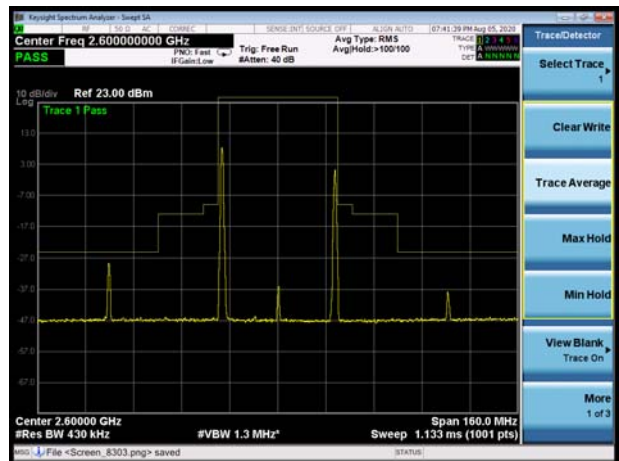
CA-38C 16QAM 20+20MHz CH- High, 100%RB



CA-38C 64QAM 20+20MHz CH-Low,RB 1



CA-38C 64QAM 20+20MHz CH- High, RB 1



CA-38C 64QAM 20+20MHz CH-Low, 100%RB



CA-38C 64QAM 20+20MHz CH- High, 100%RB



5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

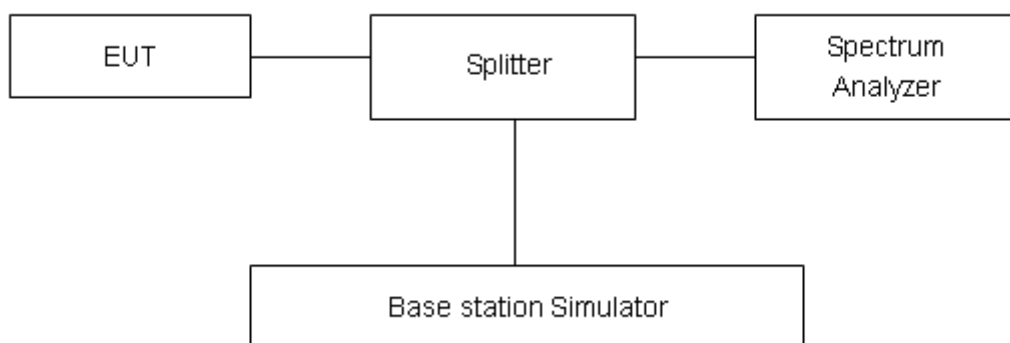
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.



Test Results

WCDMA Band IV	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
RMC	1312	1712.4	23.64	21.03	2.61	≤13	PASS
	1413	1732.6	24.69	21.93	2.76	≤13	PASS
	1513	1752.6	25.58	22.81	2.77	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	26.01	22.23	3.78	≤13	PASS
		20175	1732.5	26.58	22.20	4.38	≤13	PASS
		20393	1754.3	25.52	21.11	4.41	≤13	PASS
	3	19965	1711.5	25.98	22.21	3.77	≤13	PASS
		20175	1732.5	26.56	22.29	4.27	≤13	PASS
		20385	1753.5	26.47	22.17	4.30	≤13	PASS
	5	19975	1712.5	26.15	22.23	3.92	≤13	PASS
		20175	1732.5	26.68	22.27	4.41	≤13	PASS
		20375	1752.5	26.54	22.18	4.36	≤13	PASS
	10	20000	1715	26.34	22.20	4.14	≤13	PASS
		20175	1732.5	26.68	22.26	4.42	≤13	PASS
		20350	1750	26.43	22.20	4.23	≤13	PASS
	15	20025	1717.5	26.96	22.34	4.62	≤13	PASS
		20175	1732.5	26.87	22.29	4.58	≤13	PASS
		20325	1747.5	26.60	22.23	4.37	≤13	PASS
	20	20050	1720	26.93	22.33	4.60	≤13	PASS
		20175	1732.5	26.75	22.24	4.51	≤13	PASS
		20300	1745	26.59	22.23	4.36	≤13	PASS
16QAM	1.4	19957	1710.7	26.07	21.22	4.85	≤13	PASS
		20175	1732.5	26.67	21.23	5.44	≤13	PASS
		20393	1754.3	26.74	21.24	5.50	≤13	PASS
	3	19965	1711.5	26.14	21.31	4.83	≤13	PASS
		20175	1732.5	26.75	21.29	5.46	≤13	PASS
		20385	1753.5	26.70	21.28	5.42	≤13	PASS
	5	19975	1712.5	26.21	21.29	4.92	≤13	PASS
		20175	1732.5	26.80	21.37	5.43	≤13	PASS
		20375	1752.5	26.65	21.29	5.36	≤13	PASS
	10	20000	1715	26.41	21.27	5.14	≤13	PASS
		20175	1732.5	26.83	21.35	5.48	≤13	PASS
		20350	1750	26.54	21.27	5.27	≤13	PASS



	15	20025	1717.5	27.08	21.45	5.63	≤13	PASS
		20175	1732.5	26.93	21.34	5.59	≤13	PASS
		20325	1747.5	26.66	21.30	5.36	≤13	PASS
	20	20050	1720	27.13	21.41	5.72	≤13	PASS
		20175	1732.5	26.93	21.34	5.59	≤13	PASS
		20300	1745	26.68	21.25	5.43	≤13	PASS
64QAM	1.4	19957	1710.7	26.04	21.21	4.83	≤13	PASS
		20175	1732.5	26.68	21.27	5.41	≤13	PASS
		20393	1754.3	26.73	21.22	5.51	≤13	PASS
	3	19965	1711.5	26.15	21.29	4.86	≤13	PASS
		20175	1732.5	26.75	21.29	5.46	≤13	PASS
		20385	1753.5	26.69	21.28	5.41	≤13	PASS
	5	19975	1712.5	26.20	21.31	4.89	≤13	PASS
		20175	1732.5	26.81	21.39	5.42	≤13	PASS
		20375	1752.5	26.63	21.28	5.35	≤13	PASS
	10	20000	1715	26.42	21.27	5.15	≤13	PASS
		20175	1732.5	26.82	21.35	5.47	≤13	PASS
		20350	1750	26.54	21.28	5.26	≤13	PASS
	15	20025	1717.5	27.08	21.46	5.62	≤13	PASS
		20175	1732.5	26.95	21.35	5.60	≤13	PASS
		20325	1747.5	26.65	21.30	5.35	≤13	PASS
	20	20050	1720	27.12	21.41	5.71	≤13	PASS
		20175	1732.5	26.93	21.34	5.59	≤13	PASS
		20300	1745	26.67	21.25	5.42	≤13	PASS

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	26.33	21.77	4.56	≤13	PASS
		21100	2535	26.05	21.35	4.70	≤13	PASS
		21425	2567.5	25.95	21.34	4.61	≤13	PASS
	10	20800	2505	26.16	21.76	4.40	≤13	PASS
		21100	2535	26.04	21.39	4.65	≤13	PASS
		21400	2565	26.20	21.37	4.83	≤13	PASS
	15	20825	2507.5	26.40	21.73	4.67	≤13	PASS
		21100	2535	26.14	21.37	4.77	≤13	PASS
		21375	2562.5	26.32	21.39	4.93	≤13	PASS
	20	20850	2510	26.26	21.72	4.54	≤13	PASS



		21100	2535	26.05	21.40	4.65	≤13	PASS
		21350	2560	26.23	21.41	4.82	≤13	PASS
16QAM	5	20775	2502.5	26.49	20.89	5.60	≤13	PASS
		21100	2535	26.20	20.41	5.79	≤13	PASS
		21425	2567.5	26.31	20.46	5.85	≤13	PASS
	10	20800	2505	26.48	20.87	5.61	≤13	PASS
		21100	2535	26.23	20.46	5.77	≤13	PASS
		21400	2565	26.50	20.55	5.95	≤13	PASS
	15	20825	2507.5	26.56	20.85	5.71	≤13	PASS
		21100	2535	26.31	20.46	5.85	≤13	PASS
		21375	2562.5	26.48	20.49	5.99	≤13	PASS
	20	20850	2510	26.52	20.81	5.71	≤13	PASS
		21100	2535	26.24	20.45	5.79	≤13	PASS
		21350	2560	26.50	20.55	5.95	≤13	PASS
64QAM	5	20775	2502.5	26.48	20.86	5.62	≤13	PASS
		21100	2535	26.19	20.43	5.76	≤13	PASS
		21425	2567.5	26.28	20.45	5.83	≤13	PASS
	10	20800	2505	26.48	20.87	5.61	≤13	PASS
		21100	2535	26.24	20.48	5.76	≤13	PASS
		21400	2565	26.43	20.49	5.94	≤13	PASS
	15	20825	2507.5	26.58	20.86	5.72	≤13	PASS
		21100	2535	26.32	20.48	5.84	≤13	PASS
		21375	2562.5	26.48	20.49	5.99	≤13	PASS
	20	20850	2510	26.54	20.81	5.73	≤13	PASS
		21100	2535	26.21	20.45	5.76	≤13	PASS
		21350	2560	26.47	20.52	5.95	≤13	PASS

LTE Band 38								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	37775	2572.5	26.17	17.11	9.06	≤13	PASS
		38000	2595	26.00	15.96	10.04	≤13	PASS
		38225	2617.5	26.17	17.07	9.10	≤13	PASS
	10	37800	2575	25.95	15.20	10.75	≤13	PASS



		38000	2595	26.07	17.19	8.88	≤13	PASS
		38200	2615	26.09	16.83	9.26	≤13	PASS
	15	37825	2577.5	26.21	16.93	9.28	≤13	PASS
		38000	2595	26.22	18.36	7.86	≤13	PASS
		38175	2612.5	26.24	17.48	8.76	≤13	PASS
	20	37850	2580	26.02	17.14	8.88	≤13	PASS
		38000	2595	25.80	15.13	10.67	≤13	PASS
		38150	2610	26.12	18.15	7.97	≤13	PASS
16QAM	5	37775	2572.5	26.34	16.95	9.39	≤13	PASS
		38000	2595	26.25	16.34	9.91	≤13	PASS
		38225	2617.5	26.37	16.31	10.06	≤13	PASS
	10	37800	2575	26.34	16.69	9.65	≤13	PASS
		38000	2595	26.35	16.85	9.50	≤13	PASS
		38200	2615	26.42	16.87	9.55	≤13	PASS
	15	37825	2577.5	26.52	17.22	9.30	≤13	PASS
		38000	2595	26.40	17.16	9.24	≤13	PASS
		38175	2612.5	26.46	16.69	9.77	≤13	PASS
	20	37850	2580	26.36	17.00	9.36	≤13	PASS
		38000	2595	26.28	16.96	9.32	≤13	PASS
		38150	2610	26.18	15.06	11.12	≤13	PASS
64QAM	5	37775	2572.5	26.15	15.16	10.99	≤13	PASS
		38000	2595	26.25	16.66	9.59	≤13	PASS
		38225	2617.5	26.39	16.83	9.56	≤13	PASS
	10	37800	2575	26.23	15.28	10.95	≤13	PASS
		38000	2595	26.19	15.25	10.94	≤13	PASS
		38200	2615	26.44	17.01	9.43	≤13	PASS
	15	37825	2577.5	26.43	16.56	9.87	≤13	PASS
		38000	2595	26.23	15.27	10.96	≤13	PASS
		38175	2612.5	26.34	14.99	11.35	≤13	PASS
	20	37850	2580	26.34	16.77	9.57	≤13	PASS
		38000	2595	26.27	16.51	9.76	≤13	PASS
		38150	2610	26.07	14.22	11.85	≤13	PASS

LTE Band 41



Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	39675	2498.5	24.87	16.40	8.47	≤13	PASS
		40620	2593	25.11	16.44	8.67	≤13	PASS
		41565	2687.5	24.79	15.57	9.22	≤13	PASS
	10	39700	2501	24.79	15.67	9.12	≤13	PASS
		40620	2593	25.04	16.04	9.00	≤13	PASS
		41540	2685	24.91	16.70	8.21	≤13	PASS
	15	39725	2503.5	25.05	15.98	9.07	≤13	PASS
		40620	2593	25.12	16.13	8.99	≤13	PASS
		41515	2682.5	24.97	16.68	8.29	≤13	PASS
	20	39750	2506	24.91	16.80	8.11	≤13	PASS
		40620	2593	25.00	15.94	9.06	≤13	PASS
		41490	2680	24.70	15.78	8.92	≤13	PASS
16QAM	5	39675	2498.5	24.95	15.29	9.66	≤13	PASS
		40620	2593	25.32	15.59	9.73	≤13	PASS
		41565	2687.5	24.98	15.00	9.98	≤13	PASS
	10	39700	2501	25.10	15.06	10.04	≤13	PASS
		40620	2593	25.35	15.89	9.46	≤13	PASS
		41540	2685	25.06	15.12	9.94	≤13	PASS
	15	39725	2503.5	25.24	15.53	9.71	≤13	PASS
		40620	2593	25.33	15.55	9.78	≤13	PASS
		41515	2682.5	25.14	15.48	9.66	≤13	PASS
	20	39750	2506	25.18	15.40	9.78	≤13	PASS
		40620	2593	25.29	15.73	9.56	≤13	PASS
		41490	2680	25.05	15.41	9.64	≤13	PASS
64M	5	39675	2498.5	24.96	15.30	9.66	≤13	PASS
		40620	2593	25.35	15.53	9.82	≤13	PASS
		41565	2687.5	25.02	15.38	9.64	≤13	PASS
	10	39700	2501	25.13	15.40	9.73	≤13	PASS
		40620	2593	25.32	15.47	9.85	≤13	PASS
		41540	2685	25.10	15.51	9.59	≤13	PASS
	15	39725	2503.5	25.25	15.47	9.78	≤13	PASS
		40620	2593	25.33	15.54	9.79	≤13	PASS
		41515	2682.5	25.16	15.28	9.88	≤13	PASS



	20	39750	2506	25.15	15.30	9.85	≤13	PASS
		40620	2593	25.28	15.43	9.85	≤13	PASS
		41490	2680	25.06	15.58	9.48	≤13	PASS

Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
	Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_7C_10MHz+20MHz_QPSK	21006	2525.6	21150	2540	QPSK	24.70	18.82	5.88
CA_7C_10MHz+20MHz_16QAM	21006	2525.6	21150	2540	16QAM	24.69	17.88	6.81
CA_7C_10MHz+20MHz_64QAM	21006	2525.6	21150	2540	64QAM	24.00	17.81	6.19
CA_7C_20MHz+10MHz_QPSK	21051	2530.1	21195	2544.5	QPSK	24.86	18.96	5.90
CA_7C_20MHz+10MHz_16QAM	21051	2530.1	21195	2544.5	16QAM	24.80	18.04	6.76
CA_7C_20MHz+10MHz_64QAM	21051	2530.1	21195	2544.5	64QAM	24.72	18.02	6.70
CA_7C_15MHz+10MHz_QPSK	21051	2530.1	21171	2542.1	QPSK	25.53	19.40	6.13
CA_7C_15MHz+10MHz_16QAM	21051	2530.1	21171	2542.1	16QAM	25.41	18.50	6.91
CA_7C_15MHz+10MHz_64QAM	21051	2530.1	21171	2542.1	64QAM	24.71	18.37	6.34
CA_7C_15MHz+15MHz_QPSK	21025	2527.5	21175	2542.5	QPSK	25.02	18.86	6.16
CA_7C_15MHz+15MHz_16QAM	21025	2527.5	21175	2542.5	16QAM	24.84	17.96	6.88
CA_7C_15MHz+15MHz_64QAM	21025	2527.5	21175	2542.5	64QAM	24.19	17.84	6.35
CA_7C_15MHz+20MHz_QPSK	21003	2525.3	21174	2542.4	QPSK	24.27	18.05	6.22
CA_7C_15MHz+20MHz_16QAM	21003	2525.3	21174	2542.4	16QAM	24.23	17.18	7.05
CA_7C_15MHz+20MHz_64QAM	21003	2525.3	21174	2542.4	64QAM	23.52	17.06	6.46
CA_7C_20MHz+15MHz_QPSK	21026	2527.6	21197	2544.7	QPSK	24.27	17.41	6.86
CA_7C_20MHz+15MHz_16QAM	21026	2527.6	21197	2544.7	16QAM	23.68	17.33	6.35
CA_7C_20MHz+15MHz_64QAM	21026	2527.6	21197	2544.7	64QAM	24.40	17.45	6.95
CA_7C_20MHz+20MHz_QPSK	21001	2525.1	21199	2544.9	QPSK	24.11	17.60	6.51
CA_7C_20MHz+20MHz_16QAM	21001	2525.1	21199	2544.9	16QAM	23.87	16.69	7.18
CA_7C_20MHz+20MHz_64QAM	21001	2525.1	21199	2544.9	64QAM	23.34	16.63	6.71

Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
	Channel	Frequency (MHz)	Channel	Frequency (MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_38C_15MHz+15MHz_QPSK	37925	2587.5	38075	2602.5	QPSK	24.71	15.27	9.44
CA_38C_15MHz+15MHz_16QAM	37925	2587.5	38075	2602.5	16QAM	24.38	13.78	10.60
CA_38C_15MHz+15MHz_64QAM	37925	2587.5	38075	2602.5	64QAM	23.81	14.27	9.54
CA_38C_20MHz+20MHz_QPSK	37901	2585.1	38099	2604.9	QPSK	23.71	13.44	10.27
CA_38C_20MHz+20MHz_16QAM	37901	2585.1	38099	2604.9	16QAM	23.39	12.88	10.51
CA_38C_20MHz+20MHz_64QAM	37901	2585.1	38099	2604.9	64QAM	22.83	12.39	10.44

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +55°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

Frequency Stability (Voltage Variation)

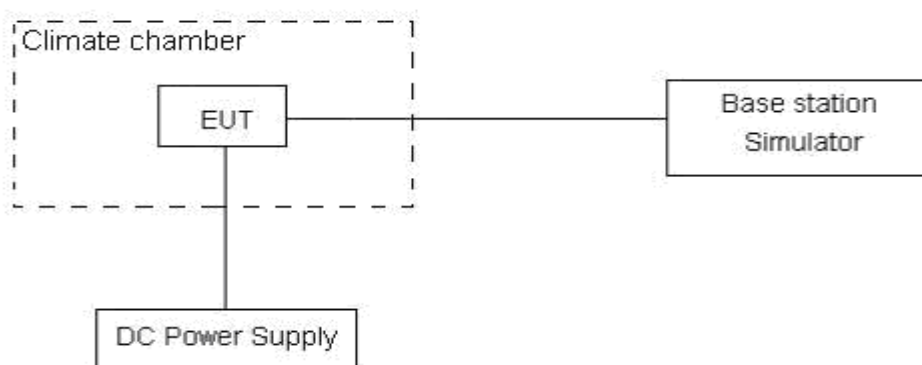
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.4V, with a nominal voltage of 3.87.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U = 0.01\text{ppm}$.



Test Result

WCDMA Band IV						
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
Temperature	Voltage	QPSK	BPSK	QPSK	BPSK	
Normal (25℃)	Normal	12.45	14.22	0.00662	0.00756	PASS
Extreme (55℃)		13.64	2.40	0.00725	0.00128	PASS
Extreme (50℃)		13.42	2.73	0.00714	0.00145	PASS
Extreme (40℃)		9.88	11.46	0.00525	0.00610	PASS
Extreme (30℃)		6.85	5.00	0.00364	0.00266	PASS
Extreme (20℃)		12.63	12.25	0.00672	0.00651	PASS
Extreme (10℃)		16.49	12.30	0.00877	0.00654	PASS
Extreme (0℃)		9.12	17.67	0.00485	0.00940	PASS
Extreme (-10℃)		6.54	12.89	0.00348	0.00686	PASS
Extreme (-20℃)		4.37	7.95	0.00232	0.00423	PASS
Extreme (-30℃)		6.67	6.55	0.00355	0.00348	PASS
25℃	LV	4.71	15.20	0.00250	0.00808	PASS
	HV	2.85	2.42	0.00151	0.00129	PASS

LTE Band 4								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	1.4MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	6.25	14.85	4.13	0.00333	0.00790	0.00220	PASS
Extreme (55℃)		9.38	15.92	4.05	0.00499	0.00847	0.00216	PASS
Extreme (50℃)		15.71	14.52	1.96	0.00836	0.00773	0.00104	PASS
Extreme (40℃)		10.44	9.54	12.06	0.00555	0.00507	0.00641	PASS
Extreme (30℃)		14.58	9.62	1.48	0.00775	0.00512	0.00079	PASS
Extreme (20℃)		13.45	9.55	12.77	0.00715	0.00508	0.00679	PASS
Extreme (10℃)		9.39	8.00	15.04	0.00500	0.00426	0.00800	PASS
Extreme (0℃)		11.11	16.10	14.96	0.00591	0.00856	0.00796	PASS
Extreme (-10℃)		13.90	6.34	17.45	0.00740	0.00337	0.00928	PASS
Extreme (-20℃)		9.09	5.37	11.81	0.00484	0.00286	0.00628	PASS
Extreme (-30℃)		7.60	17.40	15.07	0.00404	0.00926	0.00802	PASS
25℃	LV	7.83	12.98	12.66	0.00417	0.00691	0.00673	PASS
	HV	5.13	4.16	13.35	0.00273	0.00221	0.00710	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict



BANDWIDTH	3MHz				(ppm)	(ppm)	(ppm)	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	10.14	12.62	11.71	0.00539	0.00671	0.00623	PASS
Extreme (55℃)		9.68	4.89	7.79	0.00515	0.00260	0.00414	PASS
Extreme (50℃)		15.62	14.42	6.73	0.00831	0.00767	0.00358	PASS
Extreme (40℃)		10.78	1.58	7.10	0.00574	0.00084	0.00378	PASS
Extreme (30℃)		5.40	2.18	14.39	0.00287	0.00116	0.00765	PASS
Extreme (20℃)		11.21	12.91	12.07	0.00596	0.00687	0.00642	PASS
Extreme (10℃)		16.20	13.82	15.95	0.00862	0.00735	0.00848	PASS
Extreme (0℃)		4.70	8.19	14.58	0.00250	0.00436	0.00776	PASS
Extreme (-10℃)		11.93	10.08	7.62	0.00634	0.00536	0.00405	PASS
Extreme (-20℃)		1.94	10.86	12.55	0.00103	0.00578	0.00667	PASS
Extreme (-30℃)		3.75	16.43	13.16	0.00199	0.00874	0.00700	PASS
25℃	LV	1.93	15.20	17.80	0.00103	0.00809	0.00947	PASS
	HV	9.54	3.53	14.34	0.00507	0.00188	0.00763	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	8.19	10.87	11.60	0.00436	0.00578	0.00617	PASS
Extreme (55℃)		9.36	15.26	9.06	0.00498	0.00812	0.00482	PASS
Extreme (50℃)		5.62	5.71	16.74	0.00299	0.00304	0.00891	PASS
Extreme (40℃)		12.75	5.01	4.53	0.00678	0.00266	0.00241	PASS
Extreme (30℃)		6.40	14.55	1.24	0.00341	0.00774	0.00066	PASS
Extreme (20℃)		4.06	5.54	4.34	0.00216	0.00295	0.00231	PASS
Extreme (10℃)		16.19	4.72	8.23	0.00861	0.00251	0.00438	PASS
Extreme (0℃)		6.39	6.73	3.40	0.00340	0.00358	0.00181	PASS
Extreme (-10℃)		9.25	11.87	17.01	0.00492	0.00631	0.00905	PASS
Extreme (-20℃)		4.89	3.19	9.11	0.00260	0.00169	0.00485	PASS
Extreme (-30℃)		17.02	5.60	14.18	0.00905	0.00298	0.00754	PASS
25℃	LV	14.27	9.71	10.46	0.00759	0.00516	0.00557	PASS
	HV	10.98	15.33	15.10	0.00584	0.00816	0.00803	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	3.06	10.00	1.68	0.00163	0.00532	0.00089	PASS
Extreme (55℃)		4.98	16.50	4.27	0.00265	0.00878	0.00227	PASS
Extreme (50℃)		16.55	4.50	3.09	0.00880	0.00239	0.00165	PASS
Extreme (40℃)		2.01	14.76	6.44	0.00107	0.00785	0.00342	PASS
Extreme (30℃)		6.56	16.21	1.62	0.00349	0.00862	0.00086	PASS



Extreme (20℃)		17.52	16.19	15.08	0.00932	0.00861	0.00802	PASS
Extreme (10℃)		14.33	5.18	8.99	0.00762	0.00276	0.00478	PASS
Extreme (0℃)		7.90	1.43	17.41	0.00420	0.00076	0.00926	PASS
Extreme (-10℃)		14.59	13.94	8.64	0.00776	0.00742	0.00459	PASS
Extreme (-20℃)		12.16	15.81	9.46	0.00647	0.00841	0.00503	PASS
Extreme (-30℃)		16.85	6.72	12.24	0.00896	0.00358	0.00651	PASS
25℃	LV	9.83	7.90	6.80	0.00523	0.00420	0.00362	PASS
	HV	2.63	14.56	17.72	0.00140	0.00774	0.00943	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	6.47	6.51	6.09	0.00344	0.00346	0.00324	PASS
Extreme (55℃)		9.54	7.21	1.77	0.00508	0.00384	0.00094	PASS
Extreme (50℃)		10.38	17.57	9.29	0.00552	0.00934	0.00494	PASS
Extreme (40℃)		3.12	1.97	5.72	0.00166	0.00105	0.00304	PASS
Extreme (30℃)		13.23	3.22	12.82	0.00704	0.00171	0.00682	PASS
Extreme (20℃)		11.87	5.27	5.34	0.00632	0.00280	0.00284	PASS
Extreme (10℃)		1.30	10.02	9.55	0.00069	0.00533	0.00508	PASS
Extreme (0℃)		3.82	1.25	4.75	0.00203	0.00067	0.00252	PASS
Extreme (-10℃)		2.70	17.08	3.72	0.00143	0.00909	0.00198	PASS
Extreme (-20℃)		2.73	4.50	7.55	0.00145	0.00239	0.00402	PASS
Extreme (-30℃)		17.90	9.46	7.28	0.00952	0.00503	0.00387	PASS
25℃	LV	17.54	14.19	7.12	0.00933	0.00755	0.00379	PASS
	HV	11.27	9.17	8.30	0.00599	0.00488	0.00441	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	3.94	8.90	14.61	0.00210	0.00474	0.00777	PASS
Extreme (55℃)		13.81	15.69	2.79	0.00734	0.00835	0.00148	PASS
Extreme (50℃)		7.44	6.54	5.32	0.00396	0.00348	0.00283	PASS
Extreme (40℃)		6.25	3.99	16.40	0.00332	0.00212	0.00873	PASS
Extreme (30℃)		5.87	10.57	4.34	0.00312	0.00562	0.00231	PASS
Extreme (20℃)		3.94	14.06	3.73	0.00210	0.00748	0.00198	PASS
Extreme (10℃)		16.99	4.02	11.18	0.00903	0.00214	0.00595	PASS
Extreme (0℃)		6.66	2.53	14.15	0.00354	0.00134	0.00752	PASS
Extreme (-10℃)		6.50	16.42	1.73	0.00346	0.00873	0.00092	PASS
Extreme (-20℃)		4.76	2.48	12.85	0.00253	0.00132	0.00683	PASS
Extreme (-30℃)		11.87	16.23	16.64	0.00631	0.00863	0.00885	PASS
25℃	LV	6.28	4.90	13.15	0.00334	0.00261	0.00700	PASS



	HV	3.08	17.72	10.58	0.00164	0.00942	0.00563	PASS
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LTE Band 7								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	6.40	10.46	15.02	0.00340	0.00557	0.00799	PASS
Extreme (55℃)		1.08	7.38	7.11	0.00057	0.00392	0.00378	PASS
Extreme (50℃)		16.80	3.64	12.48	0.00894	0.00193	0.00664	PASS
Extreme (40℃)		5.07	3.63	7.59	0.00270	0.00193	0.00404	PASS
Extreme (30℃)		11.48	6.75	13.04	0.00610	0.00359	0.00694	PASS
Extreme (20℃)		15.75	15.20	9.58	0.00838	0.00809	0.00510	PASS
Extreme (10℃)		2.11	3.71	7.89	0.00112	0.00197	0.00419	PASS
Extreme (0℃)		4.98	10.89	16.29	0.00265	0.00579	0.00866	PASS
Extreme (-10℃)		6.22	14.64	11.34	0.00331	0.00779	0.00603	PASS
Extreme (-20℃)		6.13	1.50	11.99	0.00326	0.00080	0.00638	PASS
Extreme (-30℃)		13.32	1.21	16.87	0.00709	0.00064	0.00898	PASS
25℃	LV	11.47	16.37	9.74	0.00610	0.00871	0.00518	PASS
	HV	16.63	2.23	9.58	0.00885	0.00118	0.00510	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	16.15	1.32	8.35	0.00859	0.00070	0.00444	PASS
Extreme (55℃)		6.01	16.50	2.32	0.00320	0.00877	0.00124	PASS
Extreme (50℃)		3.36	9.39	3.43	0.00179	0.00500	0.00183	PASS
Extreme (40℃)		5.23	6.50	2.35	0.00278	0.00346	0.00125	PASS
Extreme (30℃)		7.79	15.48	2.04	0.00414	0.00823	0.00109	PASS
Extreme (20℃)		17.72	3.07	3.38	0.00942	0.00163	0.00180	PASS
Extreme (10℃)		1.44	7.30	7.38	0.00077	0.00388	0.00393	PASS
Extreme (0℃)		3.42	14.12	5.21	0.00182	0.00751	0.00277	PASS
Extreme (-10℃)		16.46	15.41	13.57	0.00876	0.00820	0.00722	PASS
Extreme (-20℃)		3.68	7.38	2.32	0.00196	0.00392	0.00123	PASS
Extreme (-30℃)		13.37	13.05	6.12	0.00711	0.00694	0.00326	PASS
25℃	LV	3.67	13.87	6.12	0.00195	0.00738	0.00325	PASS
	HV	13.77	3.80	13.78	0.00733	0.00202	0.00733	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz							



Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	5.89	2.94	6.84	0.00313	0.00156	0.00364	PASS
Extreme (55℃)		16.47	5.94	9.01	0.00876	0.00316	0.00479	PASS
Extreme (50℃)		16.60	12.00	16.99	0.00883	0.00638	0.00904	PASS
Extreme (40℃)		13.27	7.45	12.23	0.00706	0.00396	0.00650	PASS
Extreme (30℃)		15.99	11.37	13.84	0.00851	0.00605	0.00736	PASS
Extreme (20℃)		4.30	15.55	14.77	0.00229	0.00827	0.00786	PASS
Extreme (10℃)		14.59	4.82	17.07	0.00776	0.00257	0.00908	PASS
Extreme (0℃)		5.76	10.45	17.84	0.00306	0.00556	0.00949	PASS
Extreme (-10℃)		8.52	1.54	2.57	0.00453	0.00082	0.00137	PASS
Extreme (-20℃)		1.99	16.28	13.76	0.00106	0.00866	0.00732	PASS
Extreme (-30℃)		10.77	17.53	15.10	0.00573	0.00932	0.00803	PASS
25℃	LV	12.22	16.80	9.29	0.00650	0.00894	0.00494	PASS
	HV	5.48	17.93	9.02	0.00291	0.00953	0.00480	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	13.72	6.92	10.47	0.00730	0.00368	0.00557	PASS
Extreme (55℃)		17.24	17.89	5.07	0.00917	0.00951	0.00269	PASS
Extreme (50℃)		13.83	9.36	3.34	0.00736	0.00498	0.00178	PASS
Extreme (40℃)		4.15	4.51	14.49	0.00221	0.00240	0.00771	PASS
Extreme (30℃)		8.41	9.97	14.39	0.00447	0.00530	0.00765	PASS
Extreme (20℃)		16.91	8.10	9.44	0.00899	0.00431	0.00502	PASS
Extreme (10℃)		13.90	11.24	10.34	0.00739	0.00598	0.00550	PASS
Extreme (0℃)		4.49	4.65	4.71	0.00239	0.00248	0.00250	PASS
Extreme (-10℃)		5.48	2.35	10.10	0.00292	0.00125	0.00537	PASS
Extreme (-20℃)		9.72	15.25	7.52	0.00517	0.00811	0.00400	PASS
Extreme (-30℃)		9.32	3.97	6.17	0.00496	0.00211	0.00328	PASS
25℃	LV	17.76	14.72	10.12	0.00944	0.00783	0.00538	PASS
	HV	5.50	12.93	1.19	0.00293	0.00688	0.00063	PASS

LTE Band 38								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	13.02	6.08	13.91	0.00693	0.00324	0.00740	PASS
Extreme (55℃)		10.29	9.76	11.87	0.00547	0.00519	0.00631	PASS
Extreme (50℃)		14.47	14.02	13.78	0.00770	0.00746	0.00733	PASS
Extreme (40℃)		12.86	10.24	13.55	0.00684	0.00545	0.00721	PASS



Extreme (30℃)		6.76	3.36	5.54	0.00359	0.00179	0.00295	PASS
Extreme (20℃)		10.59	5.73	5.38	0.00563	0.00305	0.00286	PASS
Extreme (10℃)		7.33	8.45	4.74	0.00390	0.00449	0.00252	PASS
Extreme (0℃)		1.14	10.07	4.91	0.00061	0.00536	0.00261	PASS
Extreme (-10℃)		1.88	5.24	10.19	0.00100	0.00278	0.00542	PASS
Extreme (-20℃)		1.05	13.00	13.61	0.00056	0.00691	0.00724	PASS
Extreme (-30℃)		14.62	13.32	8.94	0.00778	0.00709	0.00475	PASS
25℃	LV	9.75	1.52	2.36	0.00518	0.00081	0.00125	PASS
	HV	13.53	4.01	9.03	0.00720	0.00214	0.00480	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	10MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	8.45	15.14	11.16	0.00450	0.00805	0.00594	PASS
Extreme (55℃)		14.12	13.36	6.23	0.00751	0.00711	0.00331	PASS
Extreme (50℃)		15.12	2.17	9.77	0.00804	0.00115	0.00520	PASS
Extreme (40℃)		6.30	1.74	2.45	0.00335	0.00092	0.00131	PASS
Extreme (30℃)		5.01	8.72	3.50	0.00267	0.00464	0.00186	PASS
Extreme (20℃)		13.66	13.50	1.87	0.00727	0.00718	0.00099	PASS
Extreme (10℃)		1.81	11.64	15.24	0.00096	0.00619	0.00811	PASS
Extreme (0℃)		9.29	2.78	9.58	0.00494	0.00148	0.00510	PASS
Extreme (-10℃)		6.14	7.81	7.71	0.00327	0.00415	0.00410	PASS
Extreme (-20℃)		8.49	6.46	7.85	0.00452	0.00344	0.00417	PASS
Extreme (-30℃)		16.66	15.28	8.56	0.00886	0.00813	0.00455	PASS
25℃	LV	6.63	5.86	10.49	0.00352	0.00312	0.00558	PASS
	HV	8.10	6.23	4.81	0.00431	0.00332	0.00256	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	4.58	5.01	14.47	0.00244	0.00266	0.00770	PASS
Extreme (55℃)		15.27	15.40	3.61	0.00812	0.00819	0.00192	PASS
Extreme (50℃)		1.93	3.02	12.27	0.00103	0.00160	0.00653	PASS
Extreme (40℃)		7.64	3.01	4.24	0.00406	0.00160	0.00225	PASS
Extreme (30℃)		1.81	3.05	6.21	0.00096	0.00162	0.00330	PASS
Extreme (20℃)		11.65	17.45	2.05	0.00620	0.00928	0.00109	PASS
Extreme (10℃)		2.50	10.60	5.76	0.00133	0.00564	0.00306	PASS
Extreme (0℃)		2.51	5.33	5.53	0.00134	0.00283	0.00294	PASS
Extreme (-10℃)		11.23	9.89	8.60	0.00597	0.00526	0.00457	PASS
Extreme (-20℃)		5.64	16.06	16.22	0.00300	0.00854	0.00863	PASS
Extreme (-30℃)		7.98	11.62	4.89	0.00425	0.00618	0.00260	PASS



25℃	LV	6.58	11.26	8.92	0.00350	0.00599	0.00475	PASS
	HV	5.60	15.67	17.73	0.00298	0.00833	0.00943	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	2.93	12.28	3.35	0.00156	0.00653	0.00178	PASS
Extreme (55℃)		4.39	5.12	5.03	0.00234	0.00272	0.00268	PASS
Extreme (50℃)		15.55	15.21	8.99	0.00827	0.00809	0.00478	PASS
Extreme (40℃)		10.25	3.46	11.22	0.00545	0.00184	0.00597	PASS
Extreme (30℃)		3.89	6.25	17.19	0.00207	0.00332	0.00914	PASS
Extreme (20℃)		13.10	9.16	11.45	0.00697	0.00487	0.00609	PASS
Extreme (10℃)		16.77	5.79	7.07	0.00892	0.00308	0.00376	PASS
Extreme (0℃)		9.35	7.52	3.88	0.00498	0.00400	0.00206	PASS
Extreme (-10℃)		8.99	6.14	11.10	0.00478	0.00327	0.00590	PASS
Extreme (-20℃)		9.01	17.40	15.85	0.00479	0.00926	0.00843	PASS
Extreme (-30℃)		5.30	1.69	9.56	0.00282	0.00090	0.00509	PASS
25℃	LV	9.86	10.69	7.30	0.00525	0.00569	0.00388	PASS
	HV	17.21	6.18	2.75	0.00916	0.00329	0.00146	PASS

LTE Band 41								
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	5MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	14.94	5.41	2.50	0.00795	0.00288	0.00133	PASS
Extreme (55℃)		2.59	15.67	4.22	0.00138	0.00834	0.00224	PASS
Extreme (50℃)		14.70	16.41	5.47	0.00782	0.00873	0.00291	PASS
Extreme (40℃)		16.50	17.91	9.31	0.00878	0.00952	0.00495	PASS
Extreme (30℃)		1.38	2.78	1.57	0.00073	0.00148	0.00083	PASS
Extreme (20℃)		10.26	11.92	14.10	0.00546	0.00634	0.00750	PASS
Extreme (10℃)		8.29	9.24	16.88	0.00441	0.00492	0.00898	PASS
Extreme (0℃)		13.85	16.65	10.47	0.00737	0.00886	0.00557	PASS
Extreme (-10℃)		2.35	16.59	8.19	0.00125	0.00882	0.00435	PASS
Extreme (-20℃)		11.93	3.92	15.24	0.00634	0.00208	0.00811	PASS
Extreme (-30℃)		7.46	3.10	15.73	0.00397	0.00165	0.00837	PASS
25℃	LV	9.98	12.38	10.88	0.00531	0.00658	0.00579	PASS
	HV	9.04	13.90	11.43	0.00481	0.00740	0.00608	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability	Frequency Stability	Frequency Stability	Verdict



BANDWIDTH	10MHz				(ppm)	(ppm)	(ppm)	
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	4.33	13.14	13.09	0.00230	0.00699	0.00696	PASS
Extreme (55℃)		8.16	17.61	9.90	0.00434	0.00937	0.00526	PASS
Extreme (50℃)		5.62	3.19	2.26	0.00299	0.00170	0.00120	PASS
Extreme (40℃)		17.54	10.21	13.47	0.00933	0.00543	0.00717	PASS
Extreme (30℃)		8.62	9.91	1.22	0.00459	0.00527	0.00065	PASS
Extreme (20℃)		3.14	10.90	12.26	0.00167	0.00580	0.00652	PASS
Extreme (10℃)		4.48	8.05	2.23	0.00238	0.00428	0.00119	PASS
Extreme (0℃)		1.71	12.68	1.49	0.00091	0.00675	0.00079	PASS
Extreme (-10℃)		9.20	14.35	11.73	0.00490	0.00763	0.00624	PASS
Extreme (-20℃)		11.21	12.92	7.08	0.00596	0.00687	0.00376	PASS
Extreme (-30℃)		1.22	3.75	9.17	0.00065	0.00199	0.00488	PASS
25℃	LV	2.86	9.85	7.06	0.00152	0.00524	0.00375	PASS
	HV	1.11	8.68	9.64	0.00059	0.00462	0.00513	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	15MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	17.03	15.80	2.83	0.00906	0.00841	0.00150	PASS
Extreme (55℃)		8.11	2.04	3.05	0.00431	0.00109	0.00162	PASS
Extreme (50℃)		17.02	8.83	8.89	0.00905	0.00470	0.00473	PASS
Extreme (40℃)		17.90	15.25	1.87	0.00952	0.00811	0.00099	PASS
Extreme (30℃)		17.55	13.69	9.10	0.00933	0.00728	0.00484	PASS
Extreme (20℃)		4.61	9.58	10.96	0.00245	0.00510	0.00583	PASS
Extreme (10℃)		17.08	7.14	17.21	0.00909	0.00380	0.00915	PASS
Extreme (0℃)		6.52	9.43	12.44	0.00347	0.00502	0.00662	PASS
Extreme (-10℃)		4.71	4.97	3.88	0.00250	0.00264	0.00206	PASS
Extreme (-20℃)		9.75	6.88	5.95	0.00518	0.00366	0.00317	PASS
Extreme (-30℃)		12.69	9.09	16.69	0.00675	0.00484	0.00888	PASS
25℃	LV	2.91	16.81	12.21	0.00155	0.00894	0.00650	PASS
	HV	8.47	6.91	11.29	0.00451	0.00368	0.00601	PASS
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Verdict
BANDWIDTH	20MHz							
Temperature	Voltage	64QAM	16QAM	QPSK	64QAM	16QAM	QPSK	
Normal (25℃)	Normal	1.55	16.28	16.71	0.00083	0.00866	0.00889	PASS
Extreme (55℃)		2.06	2.45	8.64	0.00110	0.00130	0.00460	PASS
Extreme (50℃)		9.79	11.89	7.63	0.00521	0.00632	0.00406	PASS
Extreme (40℃)		14.65	15.13	11.94	0.00779	0.00805	0.00635	PASS
Extreme (30℃)		16.38	12.09	7.28	0.00871	0.00643	0.00387	PASS



Extreme (20℃)		6.99	11.14	17.52	0.00372	0.00593	0.00932	PASS
Extreme (10℃)		16.32	9.56	4.33	0.00868	0.00509	0.00230	PASS
Extreme (0℃)		7.05	12.99	8.52	0.00375	0.00691	0.00453	PASS
Extreme (-10℃)		12.82	14.23	11.84	0.00682	0.00757	0.00630	PASS
Extreme (-20℃)		17.02	9.55	5.51	0.00905	0.00508	0.00293	PASS
Extreme (-30℃)		3.45	1.39	12.49	0.00184	0.00074	0.00664	PASS
25℃	LV	6.00	6.87	13.05	0.00319	0.00366	0.00694	PASS
	HV	7.10	7.40	13.52	0.00377	0.00393	0.00719	PASS

CA_7C_QPSK		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	2.46	0.00131	8.59	0.00457	PASS
Extreme (55℃)		10.33	0.00549	15.19	0.00808	PASS
Extreme (50℃)		8.71	0.00463	15.16	0.00806	PASS
Extreme (40℃)		6.91	0.00368	11.42	0.00607	PASS
Extreme (30℃)		13.67	0.00727	15.92	0.00847	PASS
Extreme (20℃)		14.84	0.00790	17.15	0.00912	PASS
Extreme (10℃)		5.27	0.00280	2.39	0.00127	PASS
Extreme (0℃)		9.61	0.00511	10.52	0.00560	PASS
Extreme (-10℃)		16.73	0.00890	10.17	0.00541	PASS
Extreme (-20℃)		5.05	0.00268	8.07	0.00429	PASS
Extreme (-30℃)		8.98	0.00478	16.36	0.00870	PASS
25℃	LV	13.90	0.00739	4.39	0.00233	PASS
	HV	4.69	0.00249	1.54	0.00082	PASS

CA_7C_16QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	11.83	0.00629	15.27	0.00812	PASS
Extreme (55℃)		12.14	0.00646	7.36	0.00391	PASS
Extreme (50℃)		11.42	0.00607	17.84	0.00949	PASS
Extreme (40℃)		1.69	0.00090	1.13	0.00060	PASS
Extreme (30℃)		13.51	0.00718	7.30	0.00389	PASS
Extreme (20℃)		11.68	0.00621	8.04	0.00428	PASS
Extreme (10℃)		12.73	0.00677	2.55	0.00135	PASS
Extreme (0℃)		3.48	0.00185	9.98	0.00531	PASS
Extreme (-10℃)		5.48	0.00291	16.34	0.00869	PASS



Extreme (-20℃)		10.77	0.00573	9.49	0.00505	PASS
Extreme (-30℃)		4.13	0.00220	7.19	0.00383	PASS
25℃	LV	4.35	0.00231	6.81	0.00362	PASS
	HV	11.61	0.00618	10.65	0.00566	PASS

CA_7C_64QAM		20MHz+10MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	7.34	0.00390	12.15	0.00646	PASS
Extreme (55℃)		8.63	0.00459	4.92	0.00262	PASS
Extreme (50℃)		5.12	0.00272	17.77	0.00945	PASS
Extreme (40℃)		17.76	0.00944	12.48	0.00664	PASS
Extreme (30℃)		16.46	0.00876	10.30	0.00548	PASS
Extreme (20℃)		7.49	0.00399	13.25	0.00705	PASS
Extreme (10℃)		4.91	0.00261	17.71	0.00942	PASS
Extreme (0℃)		5.06	0.00269	10.74	0.00571	PASS
Extreme (-10℃)		7.33	0.00390	1.56	0.00083	PASS
Extreme (-20℃)		7.20	0.00383	10.74	0.00571	PASS
Extreme (-30℃)		4.30	0.00229	7.70	0.00409	PASS
25℃	LV	17.18	0.00914	4.53	0.00241	PASS
	HV	4.14	0.00220	12.30	0.00655	PASS

CA_38C_QPSK		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	5.11	0.00272	6.37	0.00339	PASS
Extreme (55℃)		13.79	0.00733	12.88	0.00685	PASS
Extreme (50℃)		3.33	0.00177	5.59	0.00297	PASS
Extreme (40℃)		13.59	0.00723	6.10	0.00325	PASS
Extreme (30℃)		7.83	0.00416	10.13	0.00539	PASS
Extreme (20℃)		7.43	0.00395	2.63	0.00140	PASS
Extreme (10℃)		15.10	0.00803	4.73	0.00252	PASS
Extreme (0℃)		3.55	0.00189	1.25	0.00066	PASS
Extreme (-10℃)		7.77	0.00413	1.29	0.00069	PASS
Extreme (-20℃)		15.48	0.00824	9.64	0.00513	PASS
Extreme (-30℃)		9.90	0.00527	12.43	0.00661	PASS
25℃	LV	7.27	0.00387	14.68	0.00781	PASS



	HV	5.64	0.00300	4.69	0.00250	PASS
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CA_38C_16QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	3.53	0.00188	12.29	0.00654	PASS
Extreme (55℃)		12.11	0.00644	1.00	0.00053	PASS
Extreme (50℃)		10.59	0.00563	6.04	0.00321	PASS
Extreme (40℃)		1.58	0.00084	10.46	0.00556	PASS
Extreme (30℃)		3.19	0.00169	16.92	0.00900	PASS
Extreme (20℃)		9.25	0.00492	5.15	0.00274	PASS
Extreme (10℃)		17.05	0.00907	11.33	0.00603	PASS
Extreme (0℃)		12.32	0.00655	14.24	0.00758	PASS
Extreme (-10℃)		3.81	0.00203	13.78	0.00733	PASS
Extreme (-20℃)		15.19	0.00808	5.50	0.00292	PASS
Extreme (-30℃)		2.84	0.00151	10.36	0.00551	PASS
25℃	LV	10.60	0.00564	10.69	0.00569	PASS
	HV	6.10	0.00324	7.01	0.00373	PASS

CA_38C_64QAM		15MHz+15MHz (Bandwidth)		20MHz+20MHz (Bandwidth)		Verdict
Condition		Delta (Hz)	Frequency Stability (ppm)	Delta (Hz)	Frequency Stability (ppm)	
Temperature	Voltage					
Normal (25℃)	Normal	2.22	0.00118	11.43	0.00608	PASS
Extreme (55℃)		17.12	0.00911	10.82	0.00575	PASS
Extreme (50℃)		11.20	0.00596	15.16	0.00807	PASS
Extreme (40℃)		7.26	0.00386	14.22	0.00756	PASS
Extreme (30℃)		1.57	0.00084	7.76	0.00413	PASS
Extreme (20℃)		13.55	0.00721	12.56	0.00668	PASS
Extreme (10℃)		8.27	0.00440	7.66	0.00408	PASS
Extreme (0℃)		6.35	0.00338	12.94	0.00688	PASS
Extreme (-10℃)		14.75	0.00785	11.25	0.00598	PASS
Extreme (-20℃)		3.60	0.00192	6.31	0.00336	PASS
Extreme (-30℃)		15.17	0.00807	6.79	0.00361	PASS
25℃	LV	12.08	0.00643	13.62	0.00725	PASS
	HV	1.23	0.00065	1.94	0.00103	PASS

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

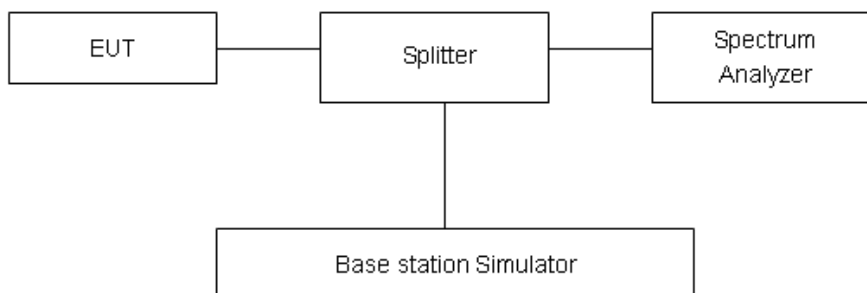
RBW is set to 100 kHz (30MHz~1000 MHz)

RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB..”

Rule Part 27.53(m) $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.



Part 27.53(h)Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

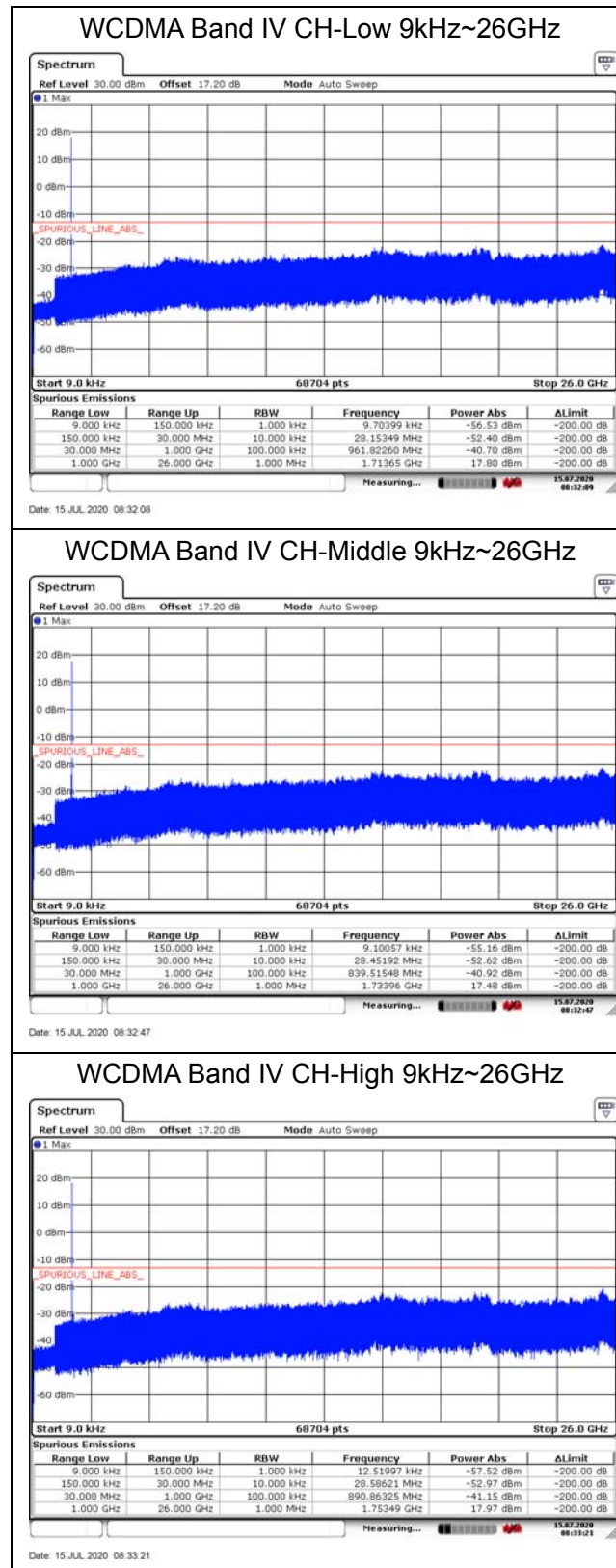
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB

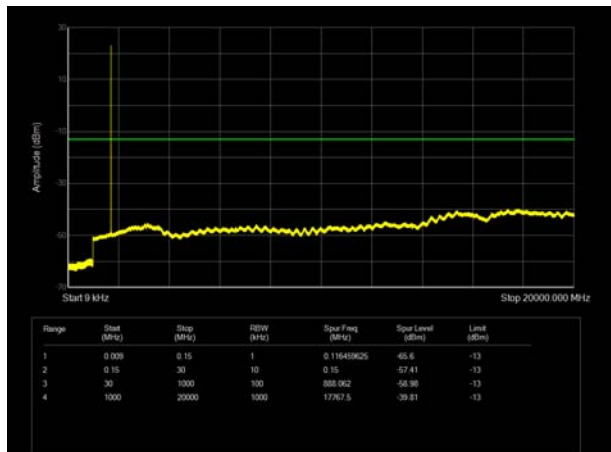
Test Result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

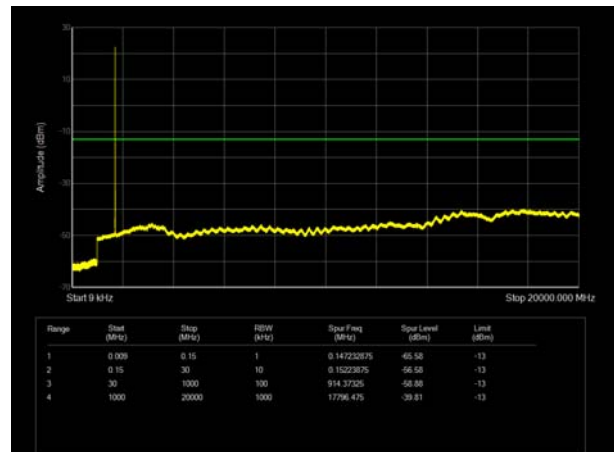
The signal beyond the limit is carrier.



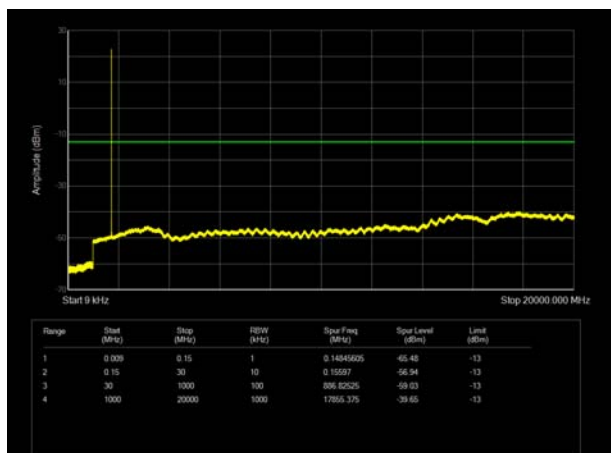
LTE Band 4 1.4MHz CH-Low 9kHz~20GHz



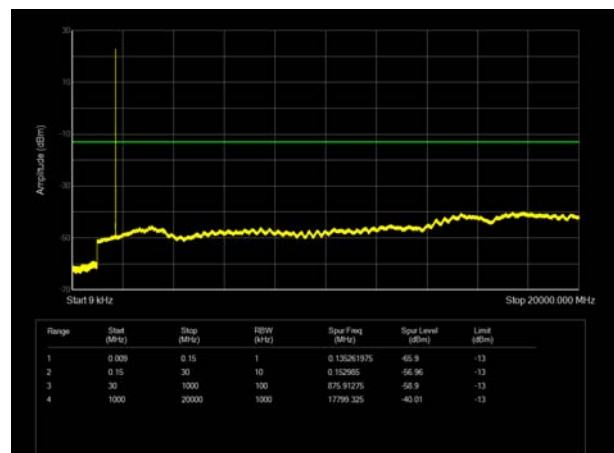
LTE Band 4 3MHz CH- Low 9kHz~20GHz



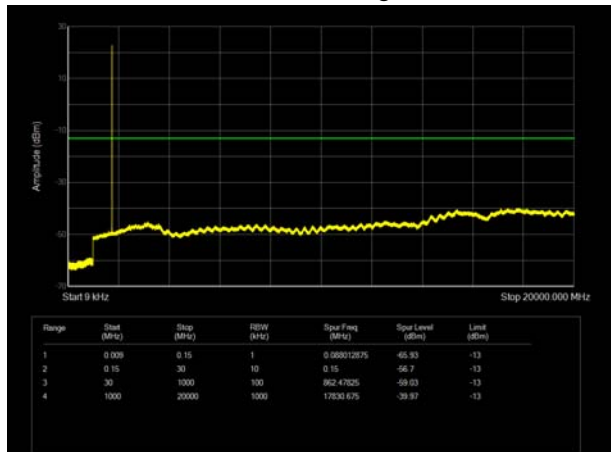
LTE Band 4 1.4MHz CH- Middle 9kHz~20GHz



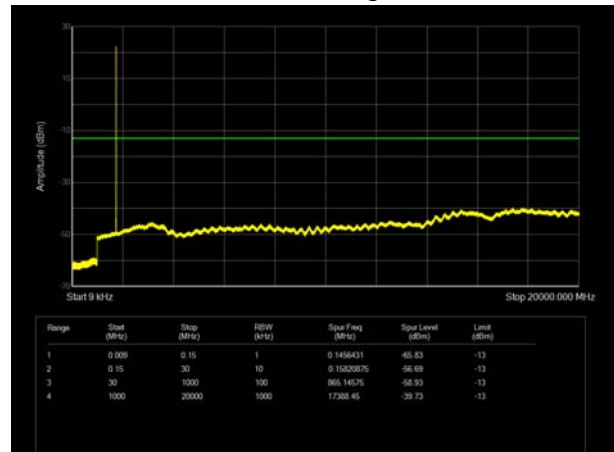
LTE Band 4 3MHz CH- Middle 9kHz~20GHz



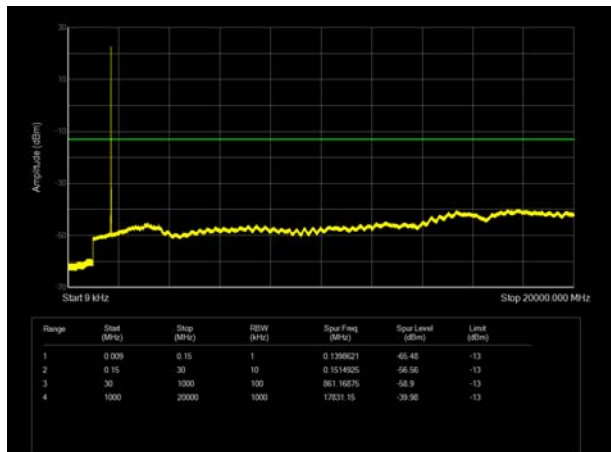
LTE Band 4 1.4MHz CH- High 9kHz~20GHz



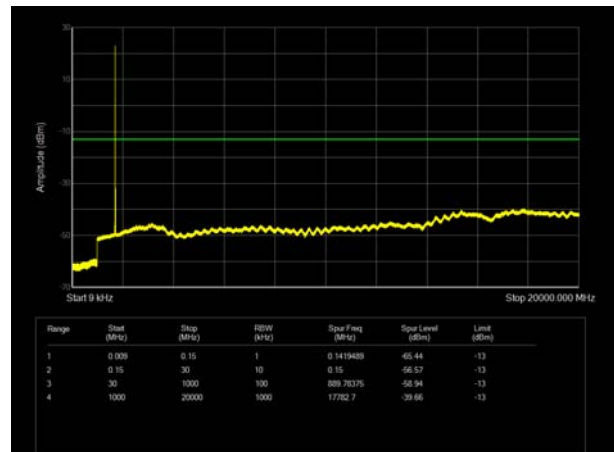
LTE Band 4 3MHz CH-High 9kHz~20GHz



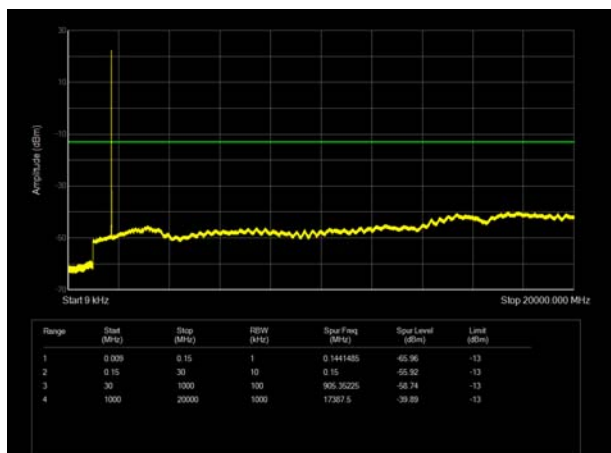
LTE Band 4 5MHz CH- Low 9kHz~20GHz



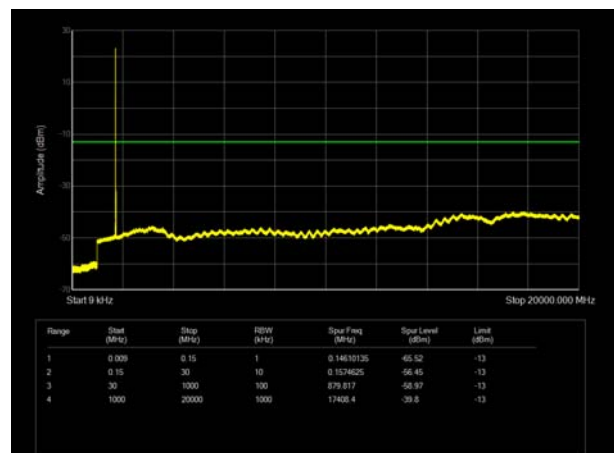
LTE Band 4 10MHz CH-Low 9kHz~20GHz



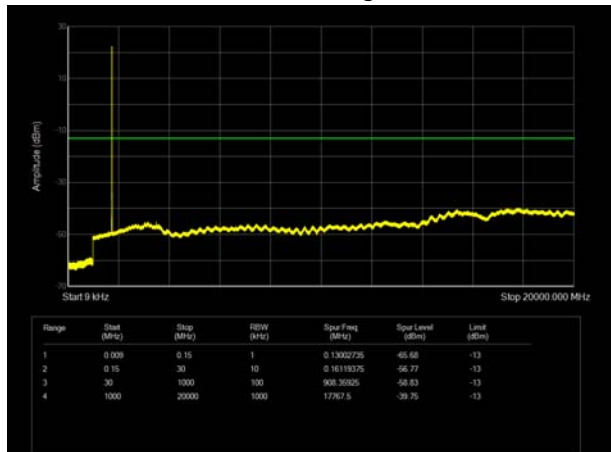
LTE Band 4 5MHz CH- Middle 9kHz~20GHz



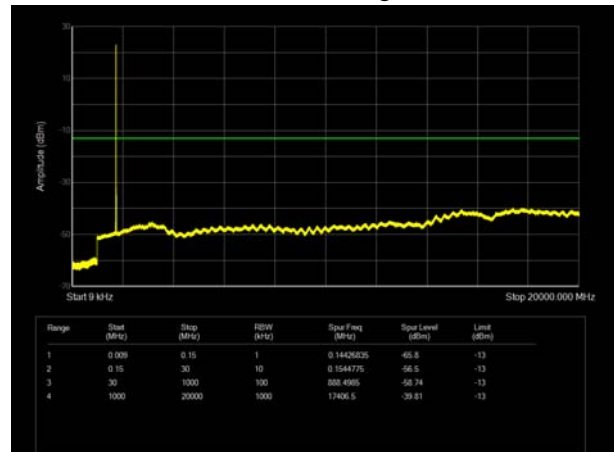
LTE Band 4 10MHz CH- Middle 9kHz~20GHz



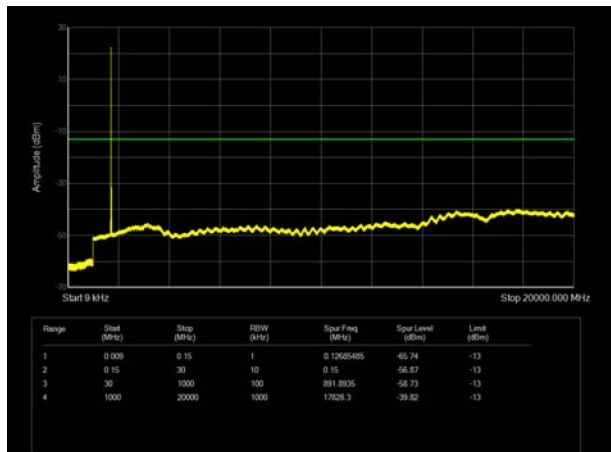
LTE Band 4 5MHz CH-High 9kHz~20GHz



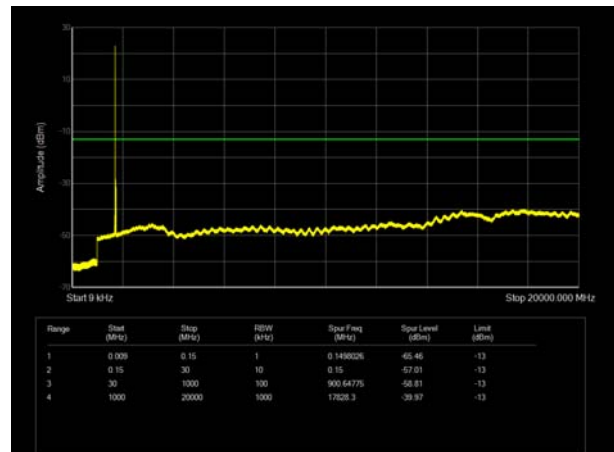
LTE Band 4 10MHz CH- High 9kHz~20GHz



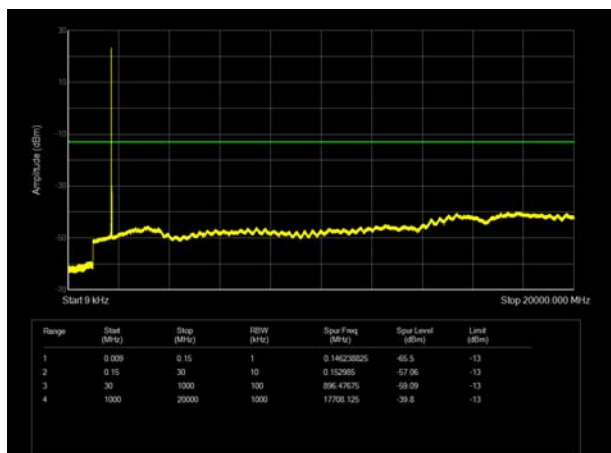
LTE Band 4 15MHz CH- Low 9kHz~20GHz



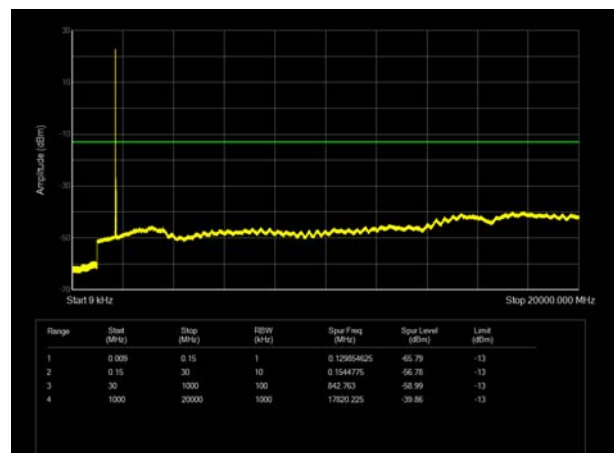
LTE Band 4 20MHz CH-Low 9kHz~20GHz



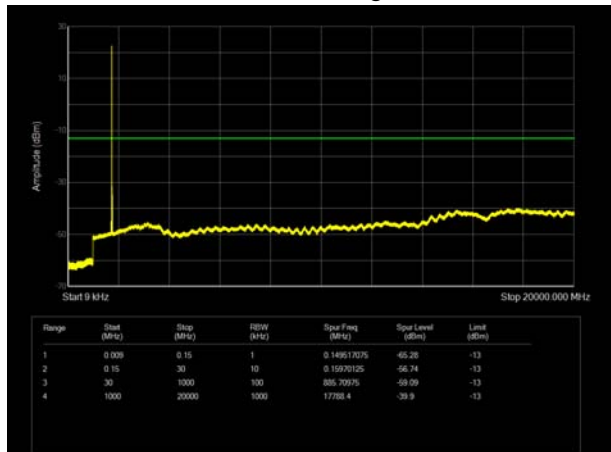
LTE Band 4 15MHz CH- Middle 9kHz~20GHz



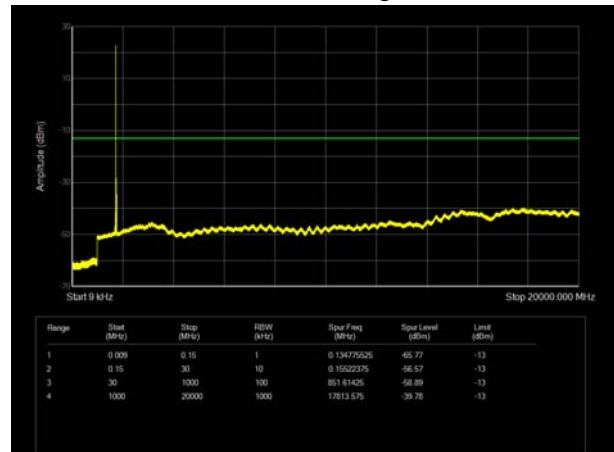
LTE Band 4 20MHz CH- Middle 9kHz~20GHz



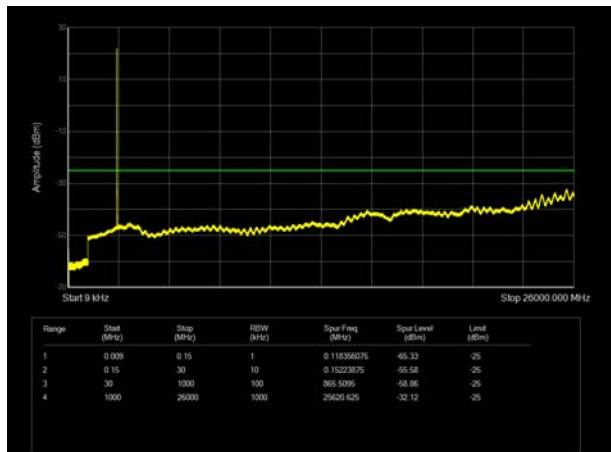
LTE Band 4 15MHz CH-High 9kHz~20GHz



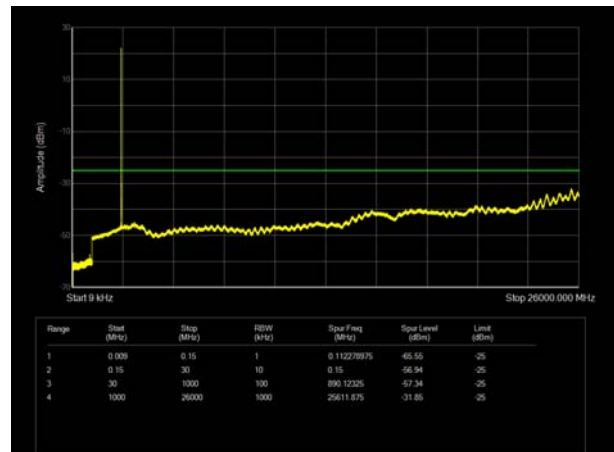
LTE Band 4 20MHz CH- High 9kHz~20GHz



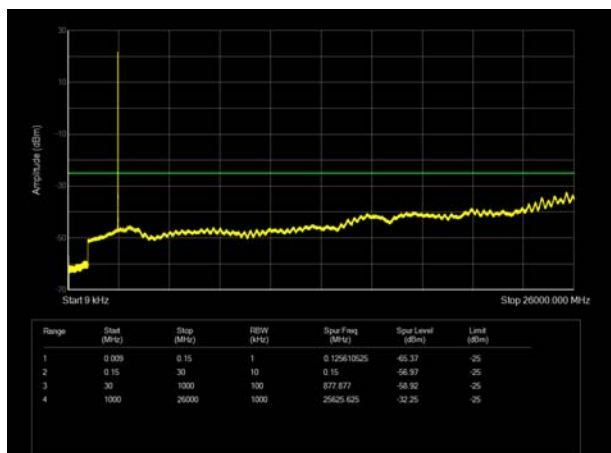
LTE Band 7 5MHz CH- Low 9kHz~26GHz



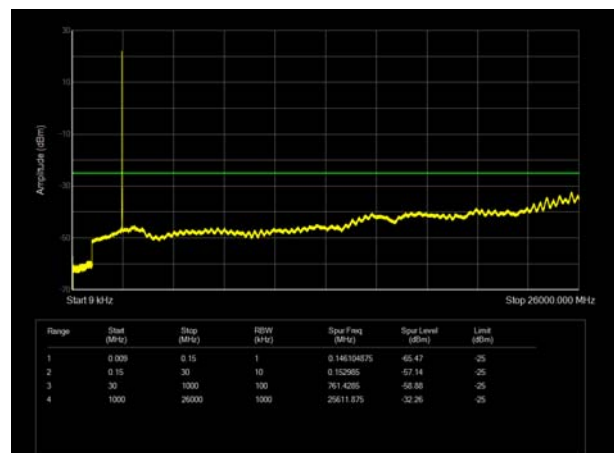
LTE Band 7 10MHz CH- Low 9kHz~26GHz



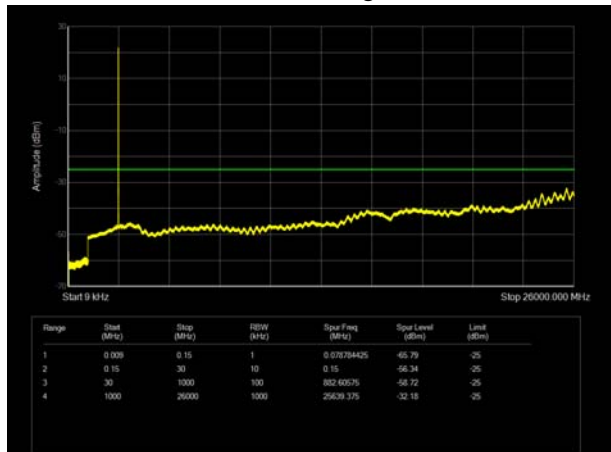
LTE Band 7 5MHz CH- Middle 9kHz~26GHz



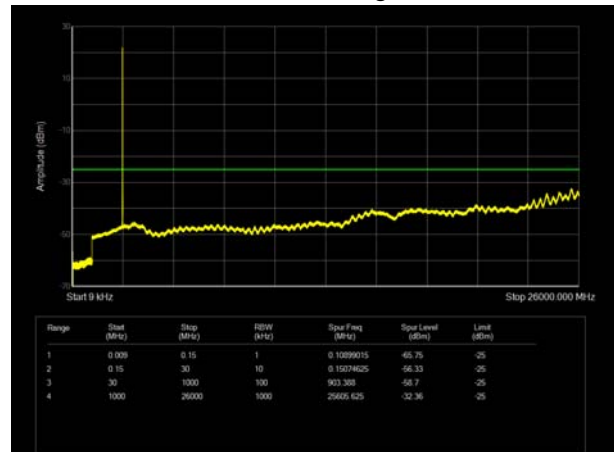
LTE Band 7 10MHz CH- Middle 9kHz~26GHz



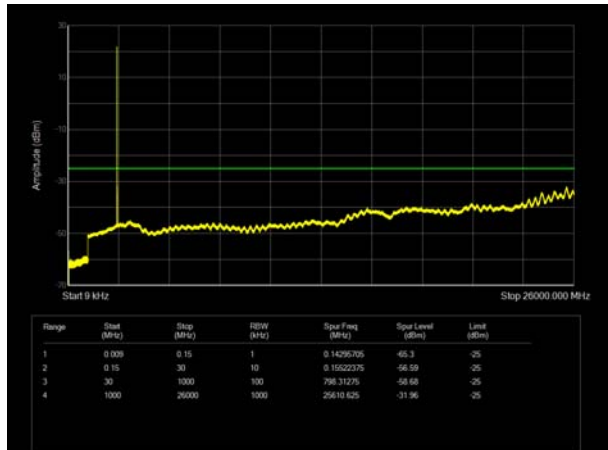
LTE Band 7 5MHz CH-High 9kHz~26GHz



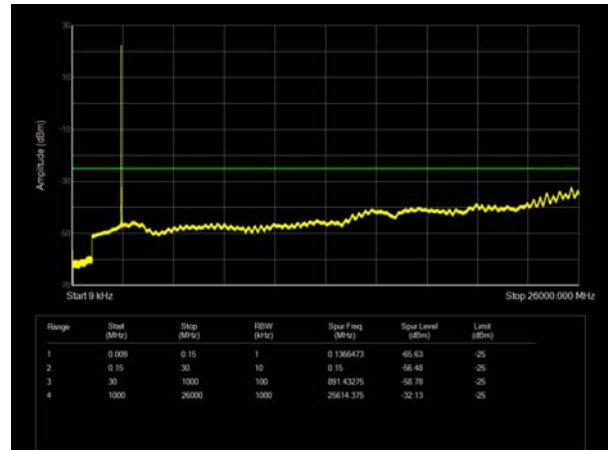
LTE Band 7 10MHz CH-High 9kHz~26GHz



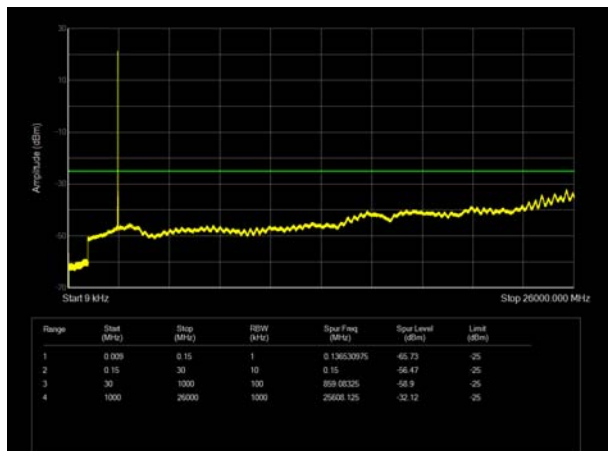
LTE Band 7 15MHz CH- Low 9kHz~26GHz



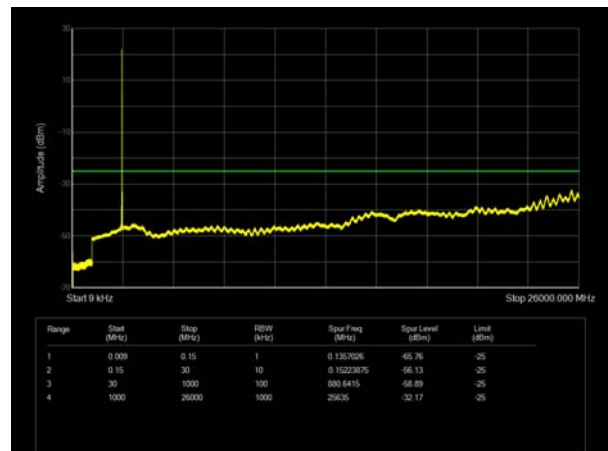
LTE Band 7 20MHz CH-Low 9kHz~26GHz



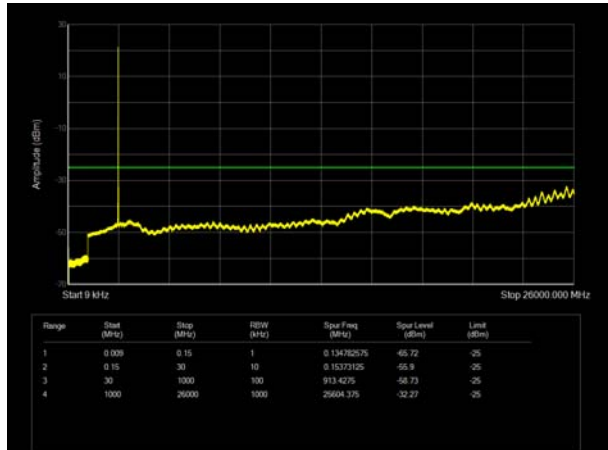
LTE Band 7 15MHz CH- Middle 9kHz~26GHz



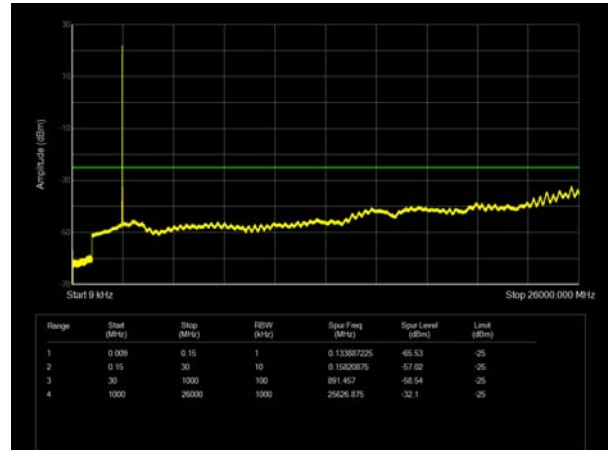
LTE Band 7 20MHz CH- Middle 9kHz~26GHz



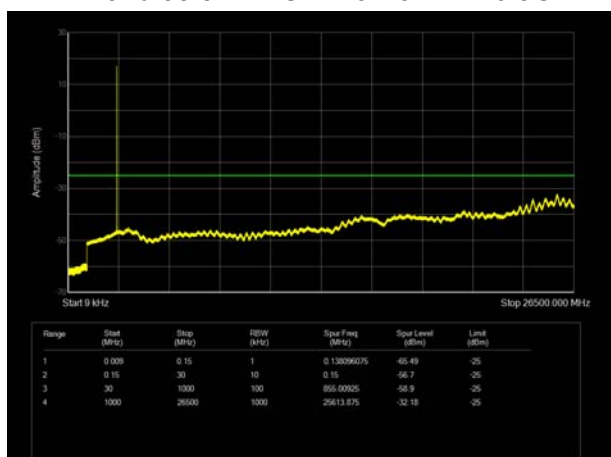
LTE Band 7 15MHz CH-High 9kHz~26GHz



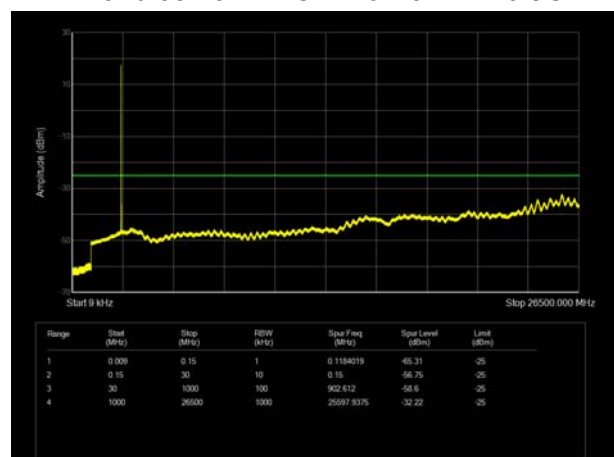
LTE Band 7 20MHz CH- High 9kHz~26GHz



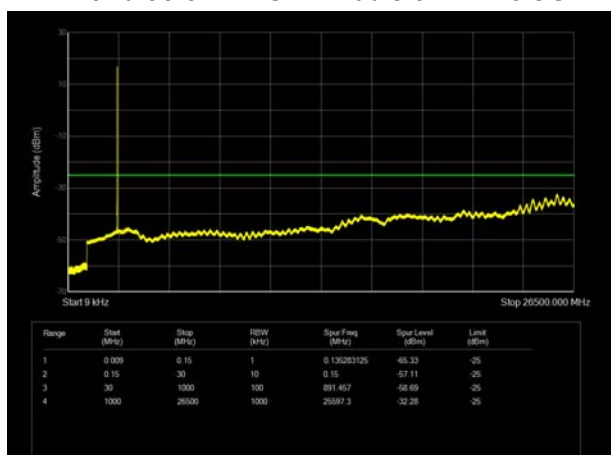
LTE Band 38 5MHz CH- Low 9kHz~26.5GHz



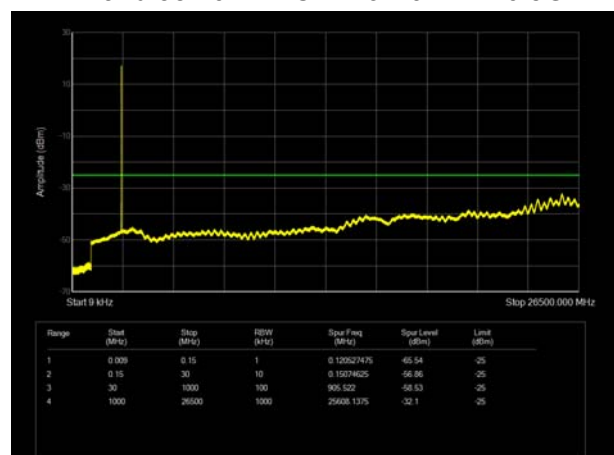
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



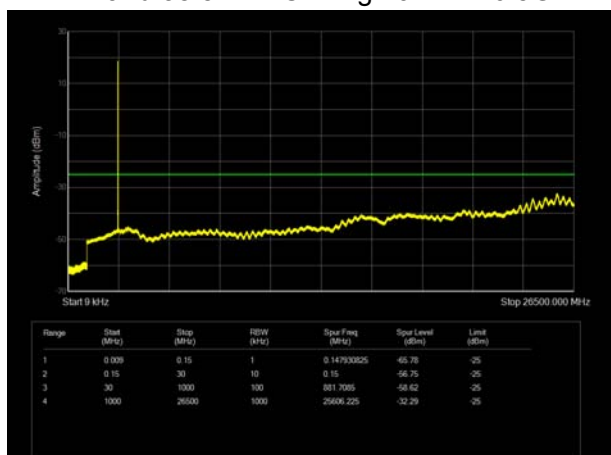
LTE Band 38 5MHz CH- Middle 9kHz~26.5GHz



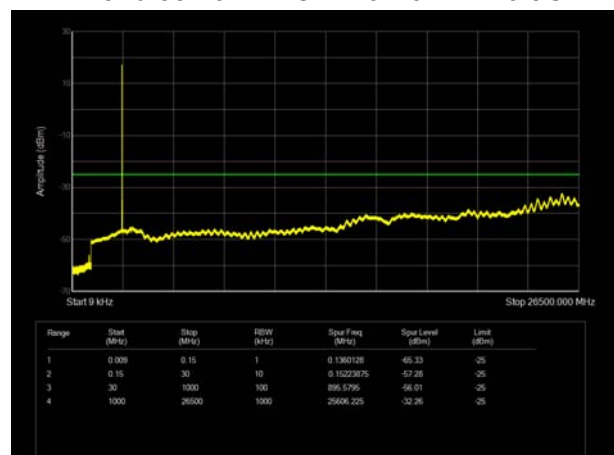
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



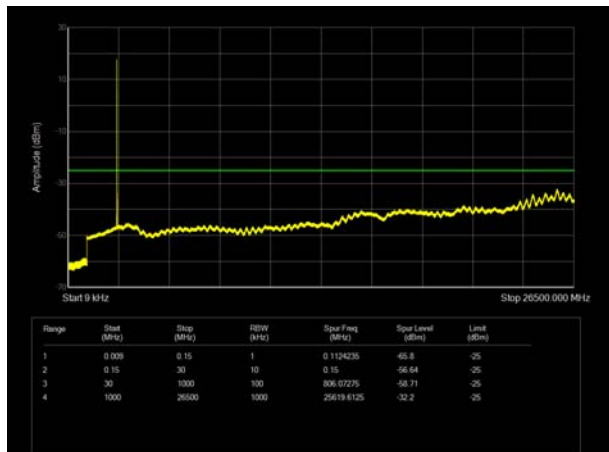
LTE Band 38 5MHz CH-High 9kHz~26.5GHz



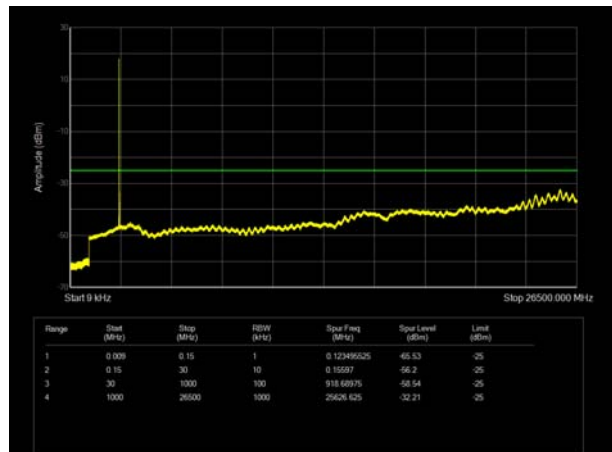
LTE Band 38 10MHz CH- Low 9kHz~26.5GHz



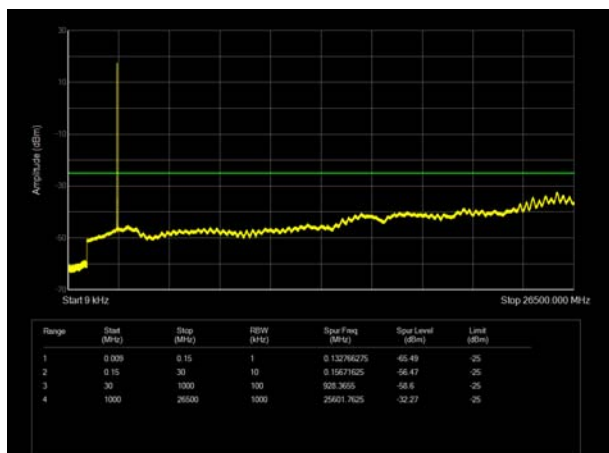
LTE Band 38 15MHz CH- Low 9kHz~26.5GHz



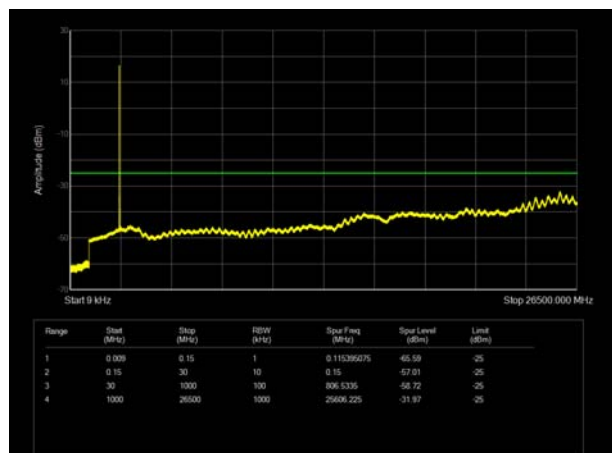
LTE Band 38 20MHz CH-Low 9kHz~26.5GHz



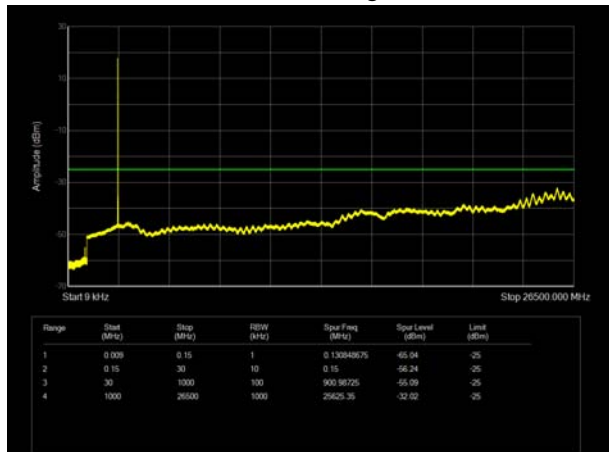
LTE Band 38 15MHz CH- Middle 9kHz~26.5GHz



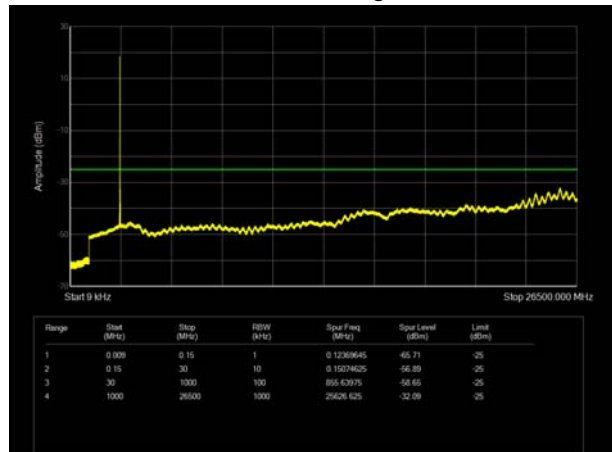
LTE Band 38 20MHz CH- Middle 9kHz~26.5GHz



LTE Band 38 15MHz CH-High 9kHz~26.5GHz

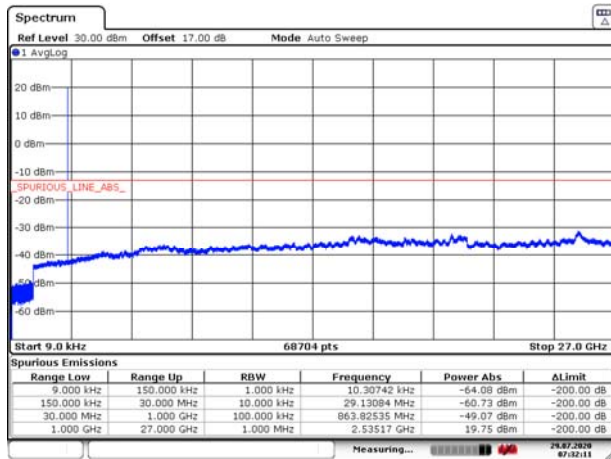


LTE Band 38 20MHz CH- High 9kHz~26.5GHz



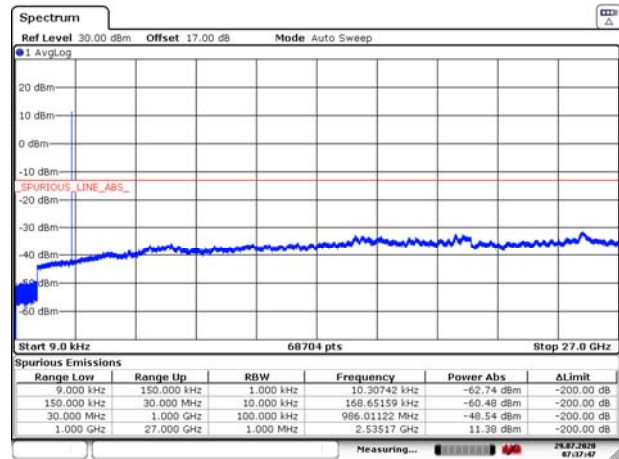


LTE Band 41 5MHz CH- Low 9kHz~27GHz



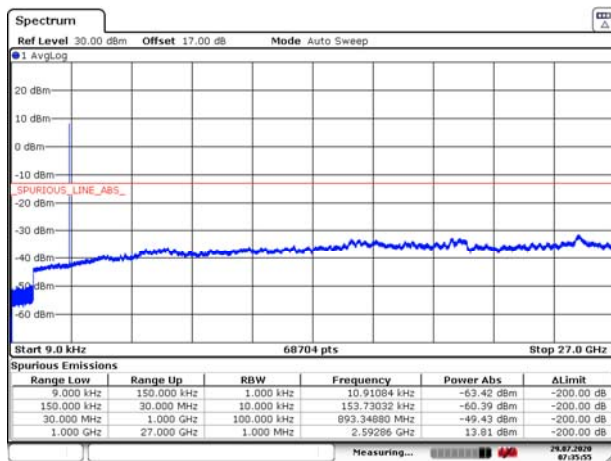
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LTE Band 41 10MHz CH- Low 9kHz~27GHz



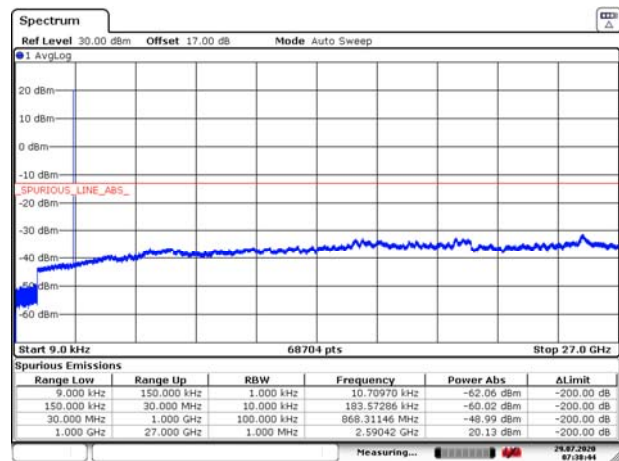
Date: 29 JUL 2020 07:37:48

LTE Band 41 5MHz CH- Middle 9kHz~27GHz



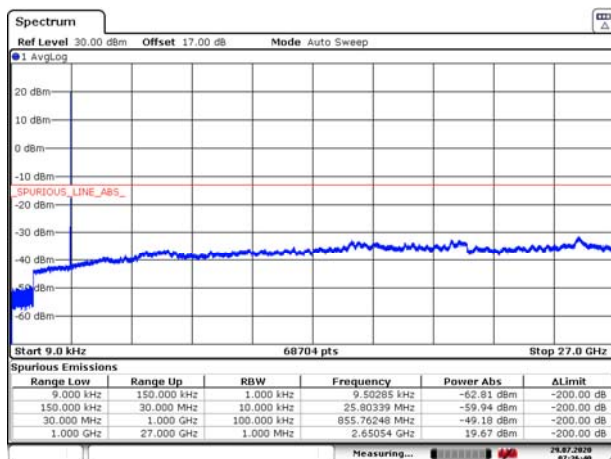
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LTE Band 41 10MHz CH- Middle 9kHz~27GHz



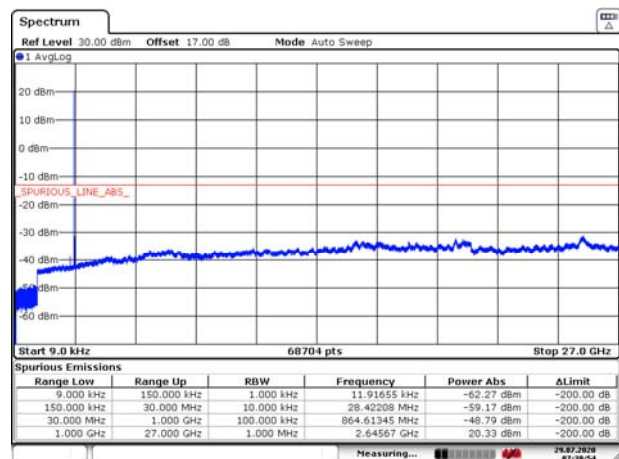
Date: 29 JUL 2020 07:38:44

LTE Band 41 5MHz CH-High 9kHz~27GHz



Date: 29 JUL 2020 07:36:40

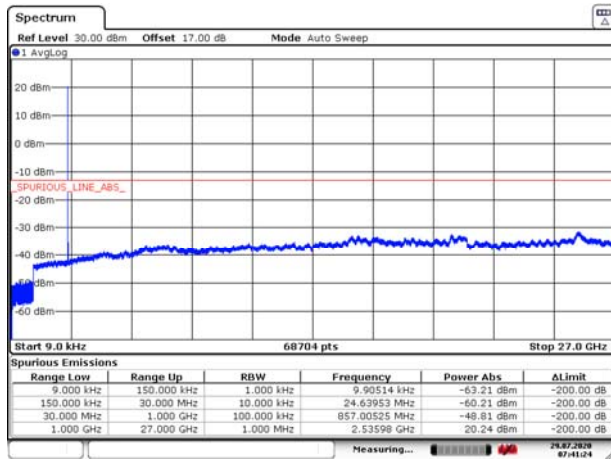
LTE Band 41 10MHz CH-High 9kHz~27GHz



Date: 29 JUL 2020 07:39:54

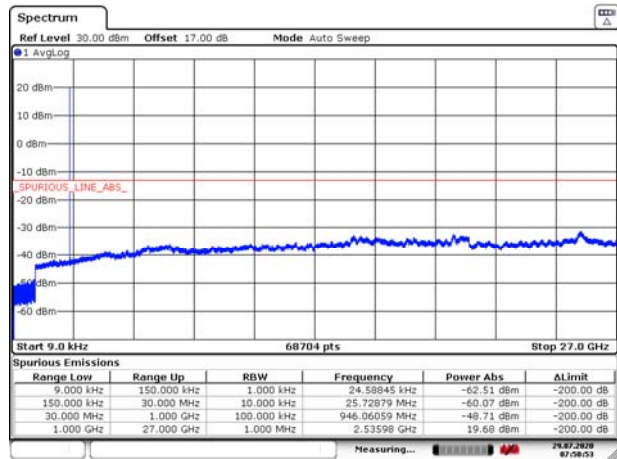


LTE Band 41 15MHz CH- Low 9kHz~27GHz



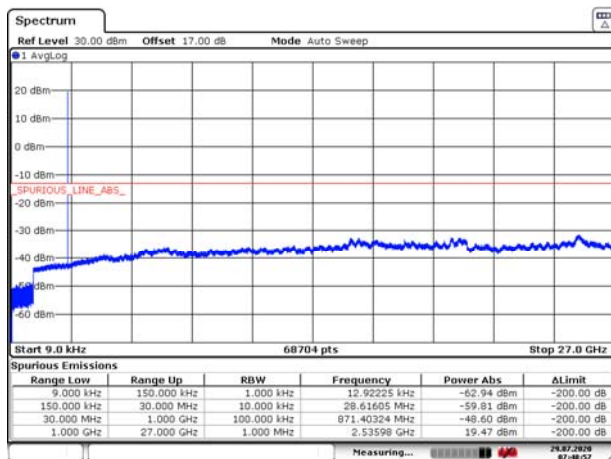
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LTE Band 41 20MHz CH-Low 9kHz~27GHz



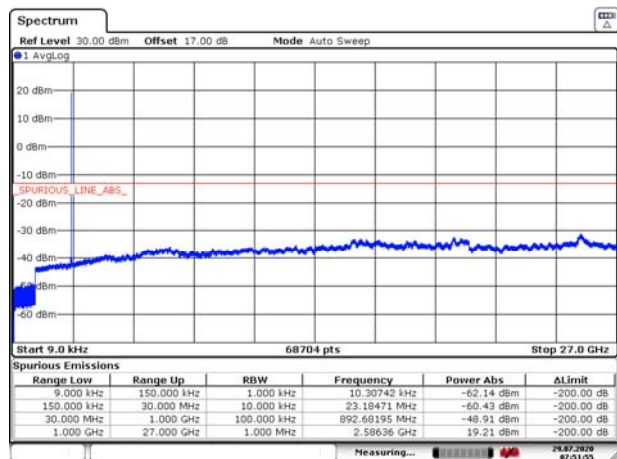
Date: 29 JUL 2020 07:50:53

LTE Band 41 15MHz CH- Middle 9kHz~27GHz



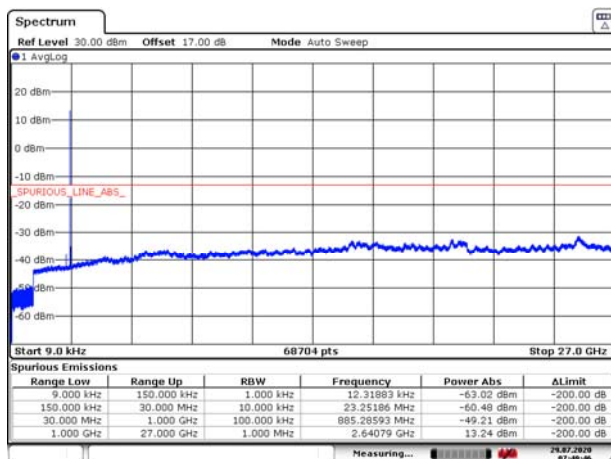
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LTE Band 41 20MHz CH- Middle 9kHz~27GHz



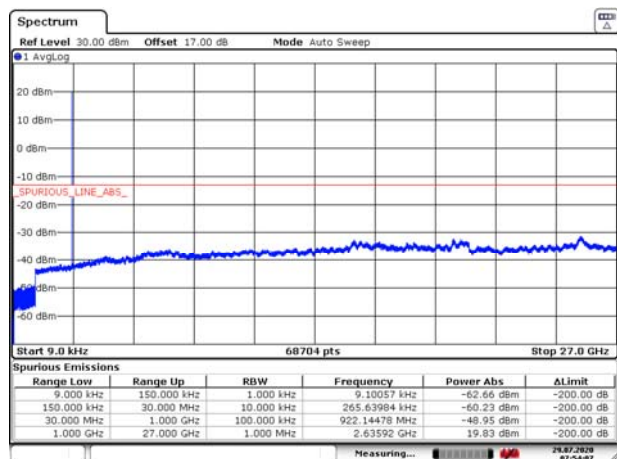
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LTE Band 41 15MHz CH-High 9kHz~27GHz

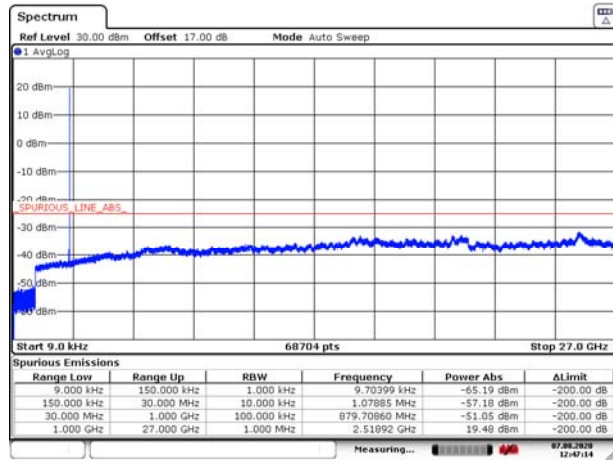


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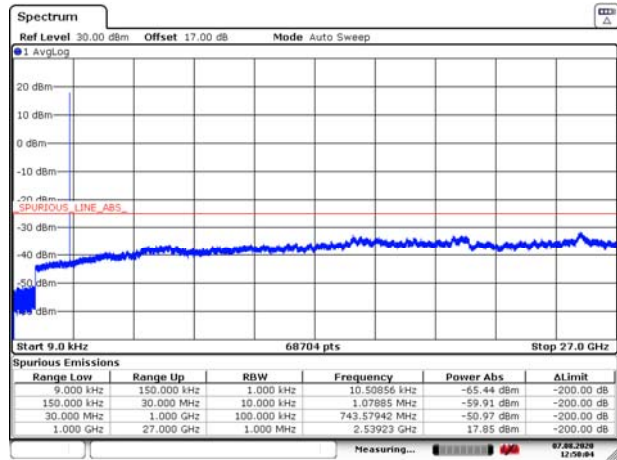
LTE Band 41 20MHz CH- High 9kHz~27GHz



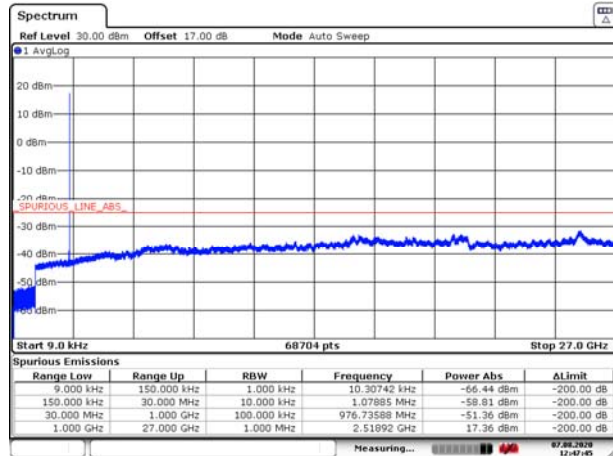
Date: 29 JUL 2020 07:54:08

CA-7C QPSK 20+10MHz CH-Low,
9kHz~27GHz

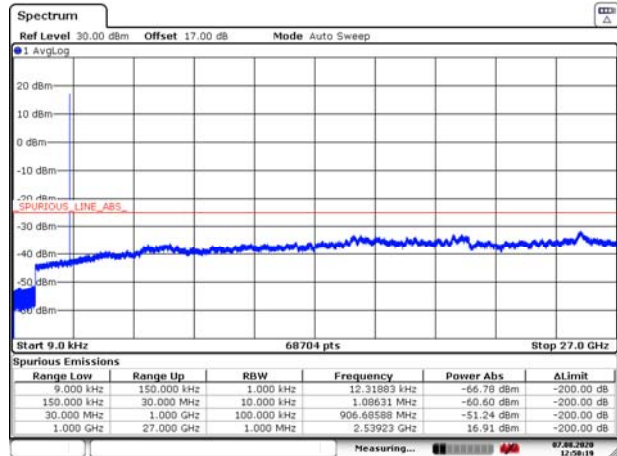
Date: 7.AUG.2020 12:47:14

CA-7C QPSK 20+10MHz CH- Middle,
9kHz~27GHz

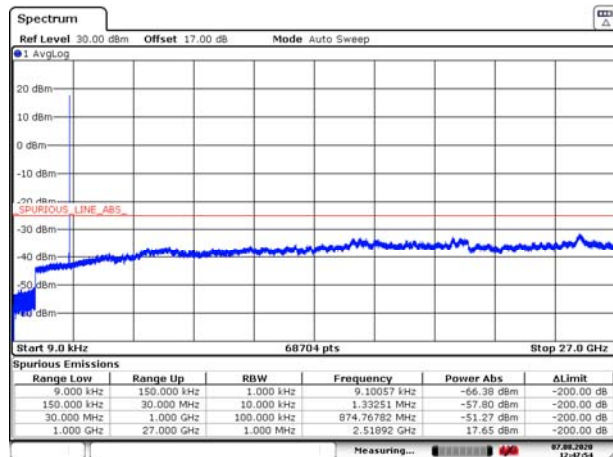
Date: 7.AUG.2020 12:50:04

CA-7C 16QAM 20+10MHz CH-Low,
9kHz~27GHz

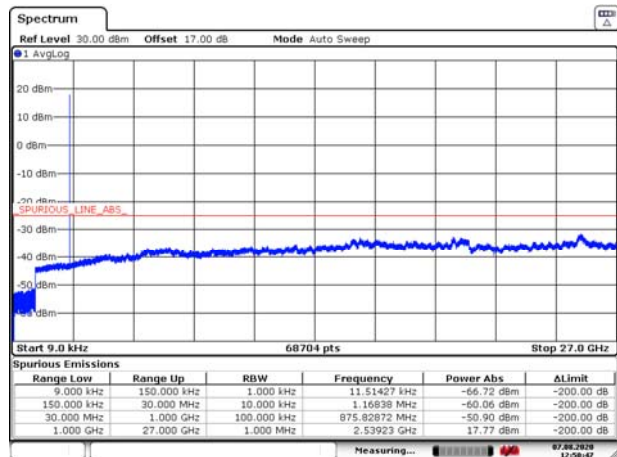
Date: 7.AUG.2020 12:47:46

CA-7C 16QAM 20+10MHz CH- Middle,
9kHz~27GHz

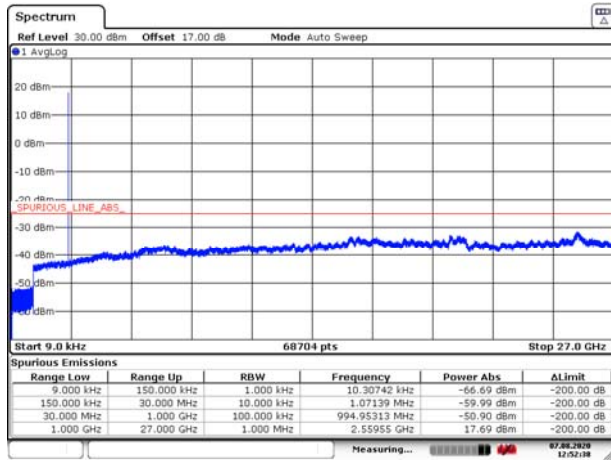
Date: 7.AUG.2020 12:50:19

CA-7C 64QAM 20+10MHz CH-Low,
9kHz~27GHz

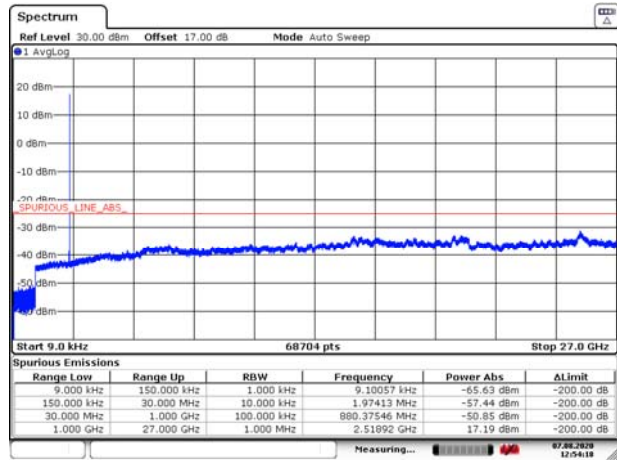
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CA-7C 64QAM 20+10MHz CH- Middle,
9kHz~27GHz

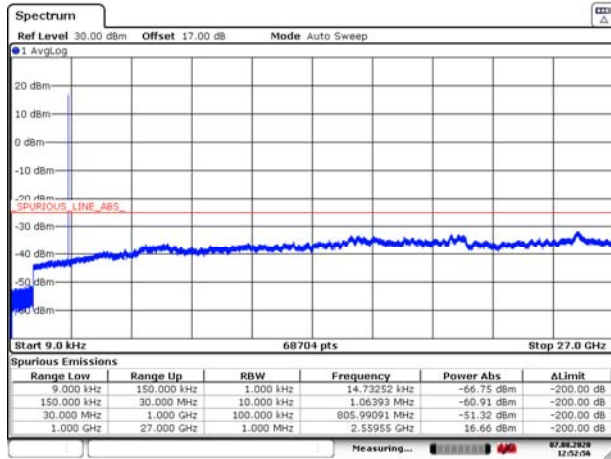
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CA-7C QPSK 20+10MHz CH- High,
9kHz~27GHz

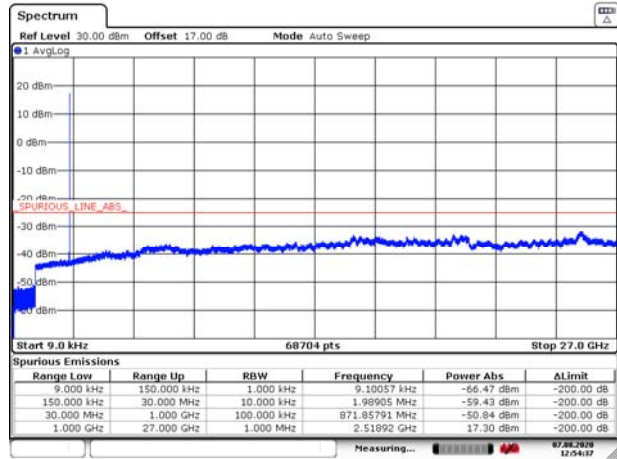
Date: 7.AUG.2020 12:52:38

CA-7C QPSK 20+20MHz CH-Low,
9kHz~27GHz

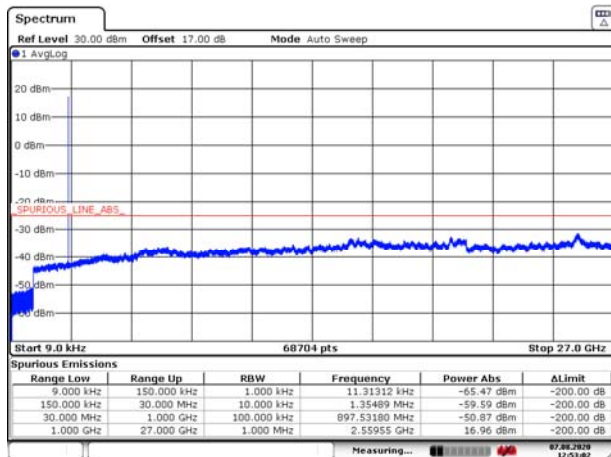
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CA-7C 16QAM 20+10MHz CH- High,
9kHz~27GHz

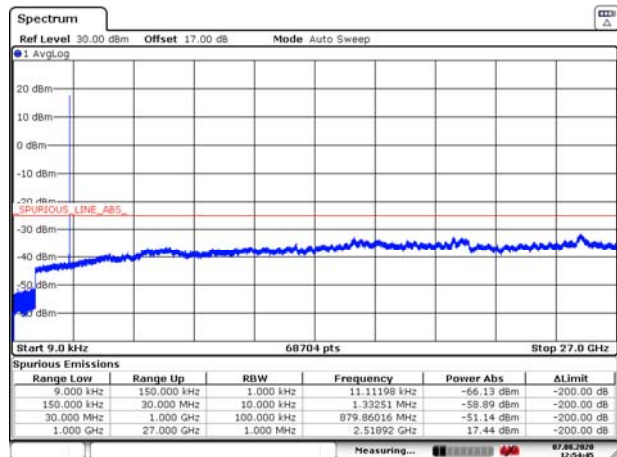
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CA-7C 16QAM 20+20MHz CH-Low,
9kHz~27GHz

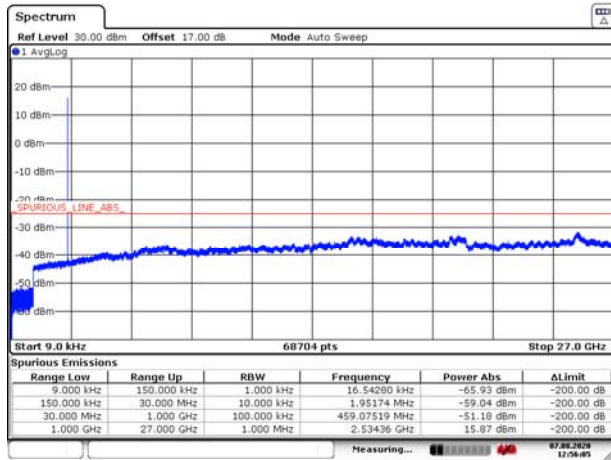
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CA-7C 64QAM 20+10MHz CH- High,
9kHz~27GHz

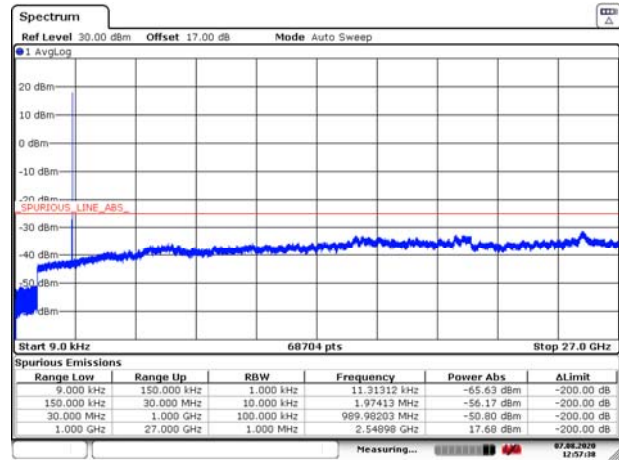
Date: 7.AUG.2020 12:53:03

CA-7C 64QAM 20+20MHz CH-Low,
9kHz~27GHz

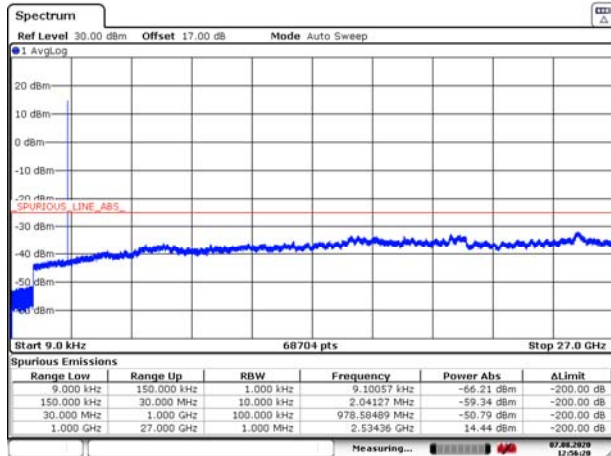
Date: 7.AUG.2020 12:54:45

CA-7C QPSK 20+20MHz CH- Middle,
9kHz~27GHz

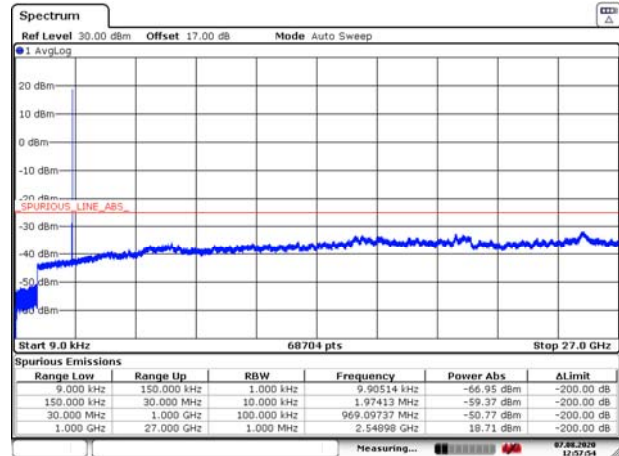
Date: 7.AUG.2020 12:56:05

CA-7C QPSK 20+20MHz CH- High,
9kHz~27GHz

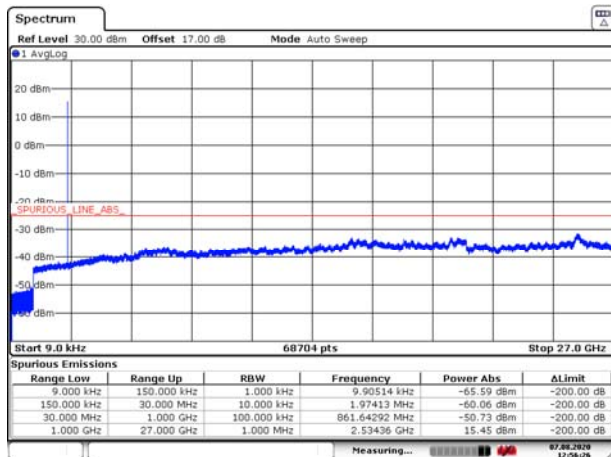
Date: 7.AUG.2020 12:57:38

CA-7C 16QAM 20+20MHz CH- Middle,
9kHz~27GHz

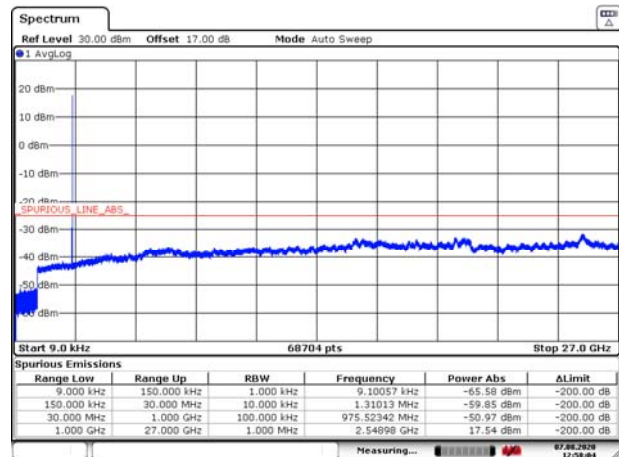
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CA-7C 16QAM 20+20MHz CH- High,
9kHz~27GHz

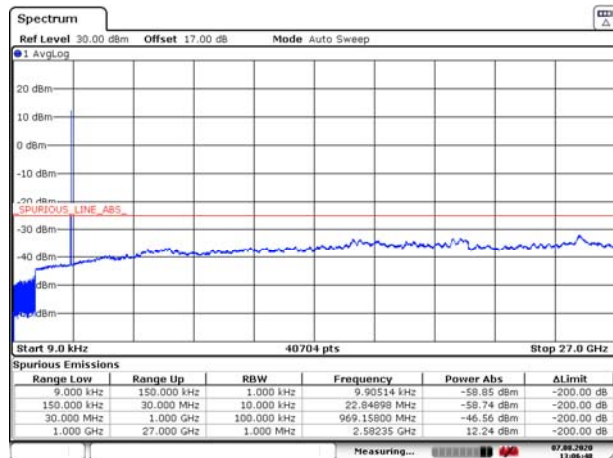
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CA-7C 64QAM 20+20MHz CH- Middle,
9kHz~27GHz

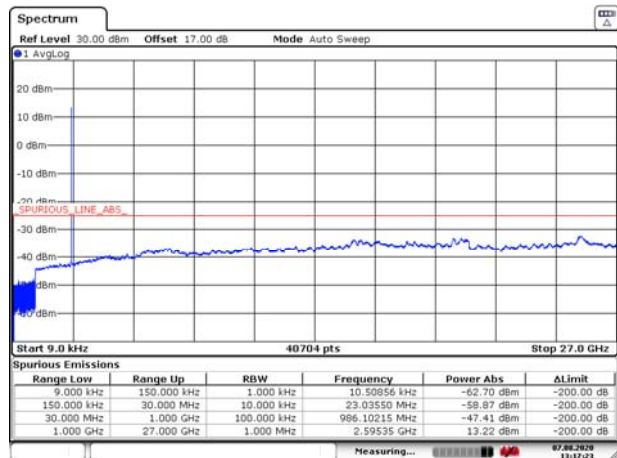
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CA-7C 64QAM 20+20MHz CH- High,
9kHz~27GHz

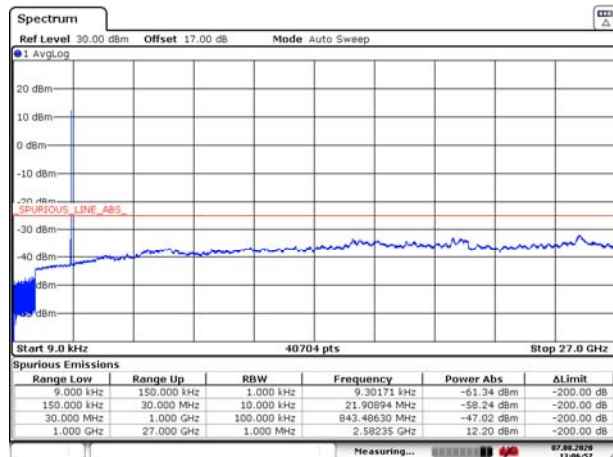
Date: 7.AUG.2020 12:58:03

CA-38C QPSK 15+15MHz CH-Low,
9kHz~27GHz

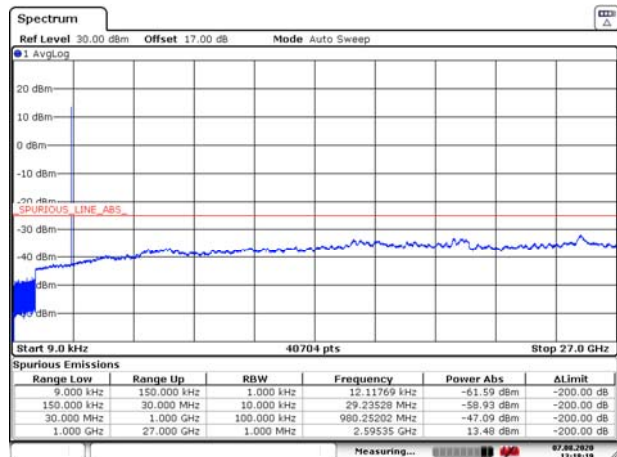
Date: 21 APR 2020 15:50:10

CA-38C QPSK 15+15MHz CH- Middle,
9kHz~27GHz

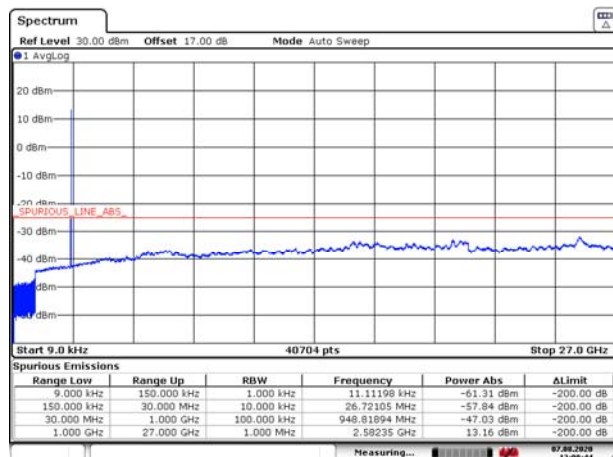
Date: 21 APR 2020 15:51:58

CA-38C 16QAM 15+15MHz CH-Low,
9kHz~27GHz

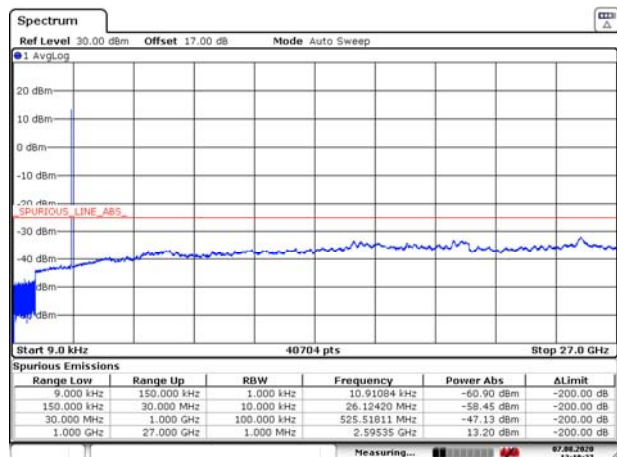
Date: 21 APR 2020 15:50:41

CA-38C 16QAM 15+15MHz CH- Middle,
9kHz~27GHz

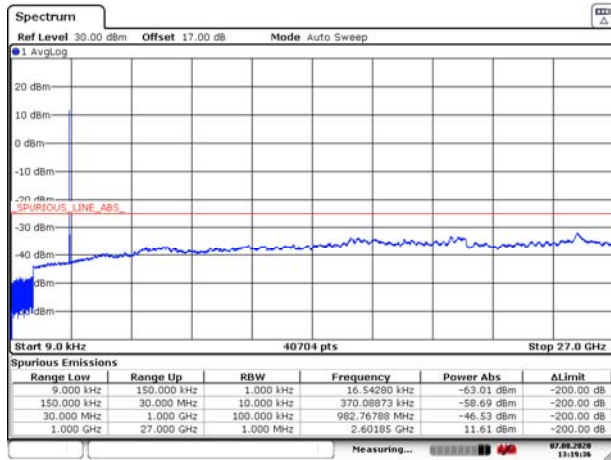
Date: 21 APR 2020 15:52:57

CA-38C 64QAM 15+15MHz CH-Low,
9kHz~27GHz

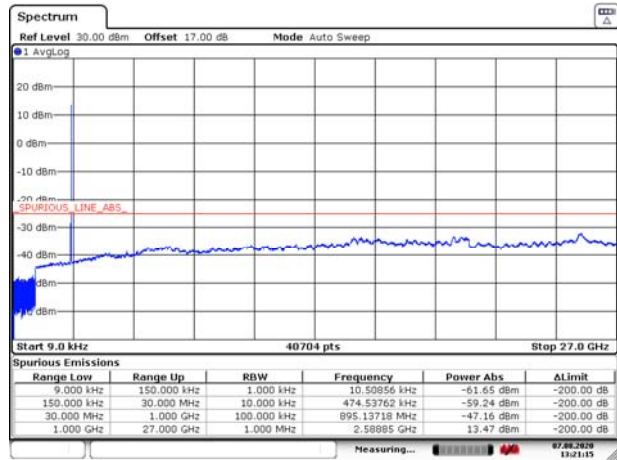
Date: 21 APR 2020 15:50:55

CA-38C 64QAM 15+15MHz CH- Middle,
9kHz~27GHz

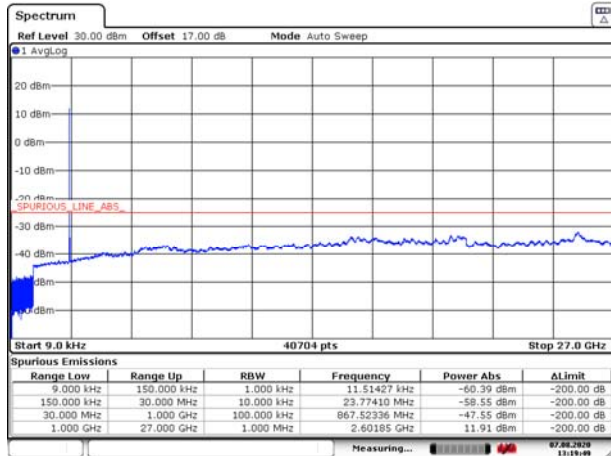
Date: 21 APR 2020 15:53:20

CA-38C QPSK 15+15MHz CH- High,
9kHz~27GHz

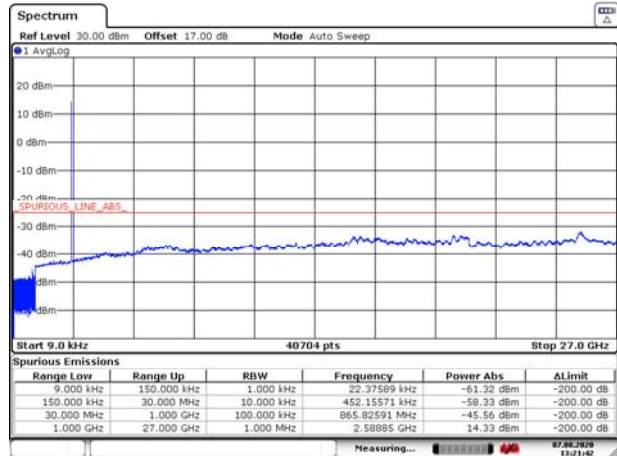
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CA-38C QPSK 20+20MHz CH-Low,
9kHz~27GHz

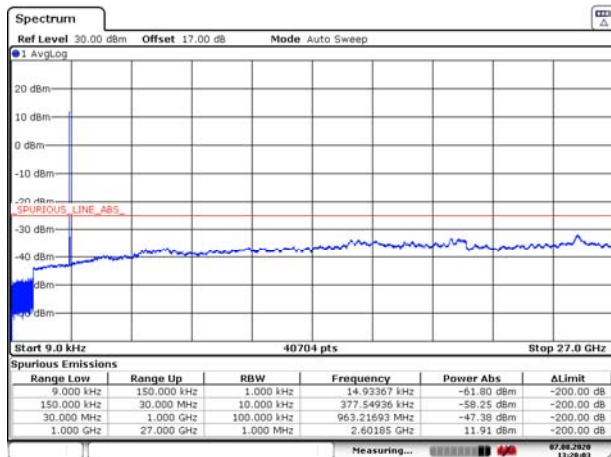
Date: 21 APR 2020 15:58:51

CA-38C 16QAM 15+15MHz CH- High,
9kHz~27GHz

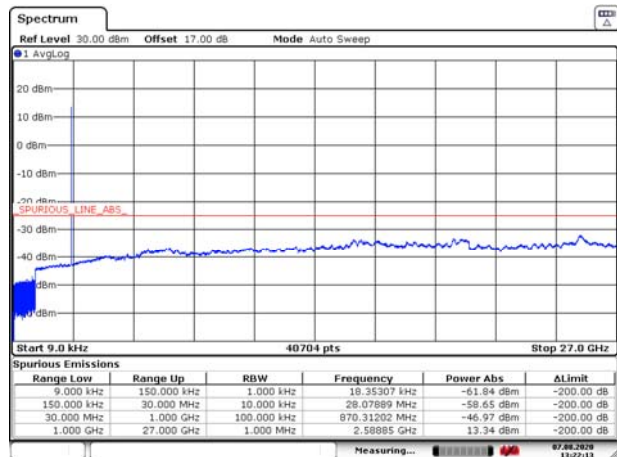
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CA-38C 16QAM 20+20MHz CH-Low,
9kHz~27GHz

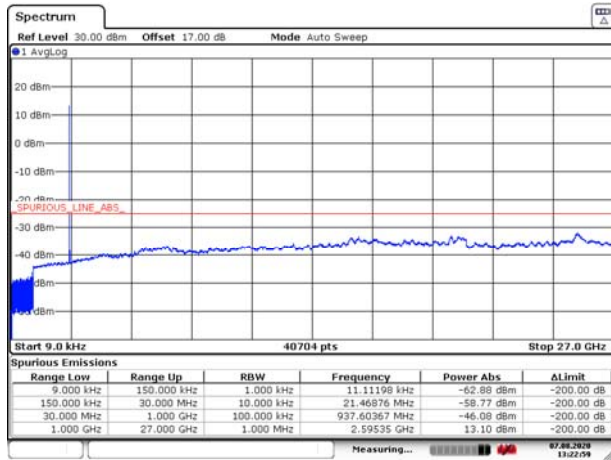
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CA-38C 64QAM 15+15MHz CH- High,
9kHz~27GHz

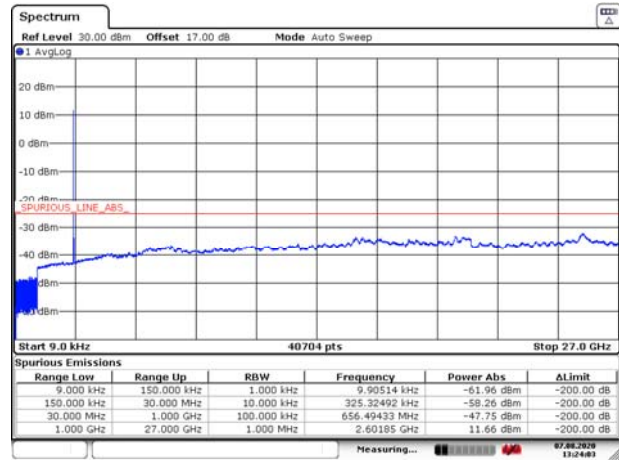
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CA-38C 64QAM 20+20MHz CH-Low,
9kHz~27GHz

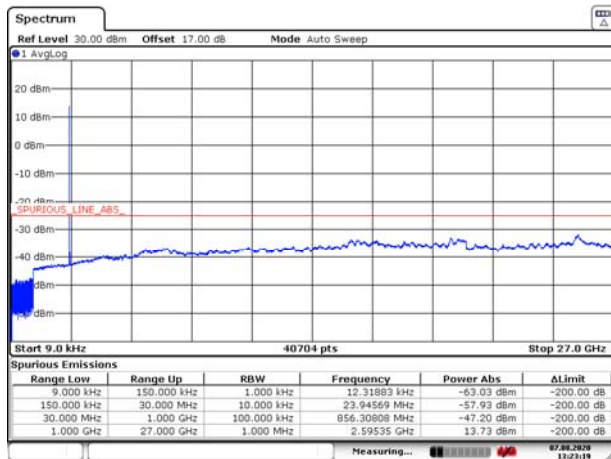
Date: 21 APR 2020 15:57:54

CA-38C QPSK 20+20MHz CH- Middle,
9kHz~27GHz

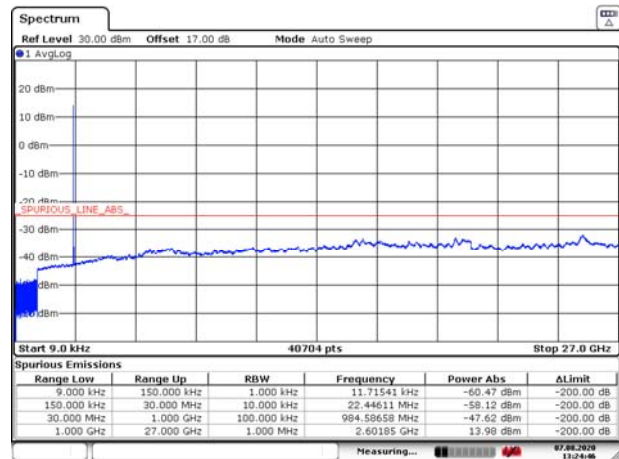
Date: 21 APR 2020 15:59:32

CA-38C QPSK 20+20MHz CH- High,
9kHz~27GHz

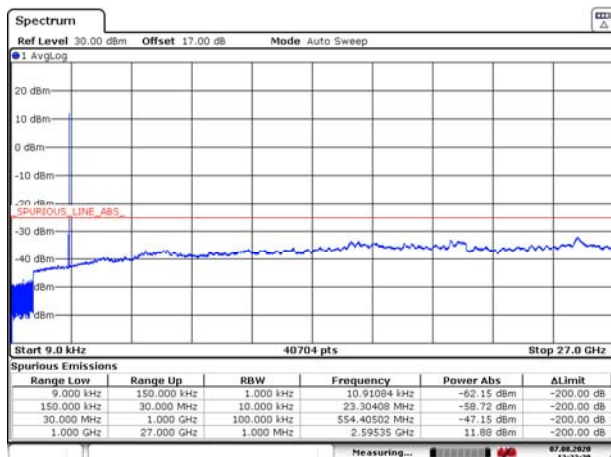
Date: 21 APR 2020 16:03:28

CA-38C 16QAM 20+20MHz CH- Middle,
9kHz~27GHz

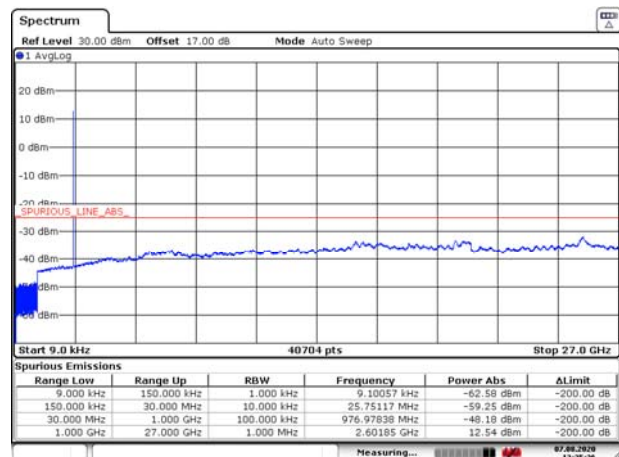
Date: 21 APR 2020 16:00:14

CA-38C 16QAM 20+20MHz CH- High,
9kHz~27GHz

Date: 21 APR 2020 16:04:54

CA-38C 64QAM 20+20MHz CH- Middle,
9kHz~27GHz

Date: 21 APR 2020 16:00:57

CA-38C 64QAM 20+20MHz CH- High,
9kHz~27GHz

Date: 21 APR 2020 16:05:35

5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz ,RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz And the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

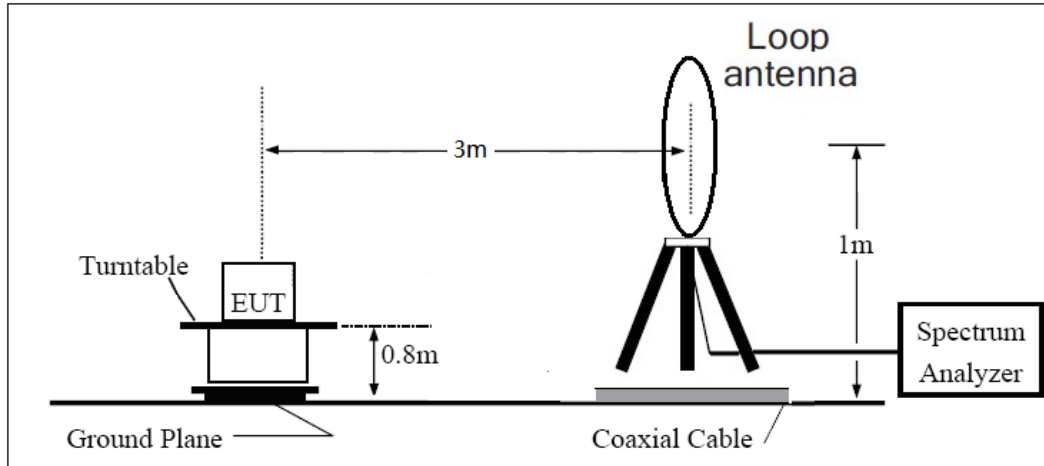
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

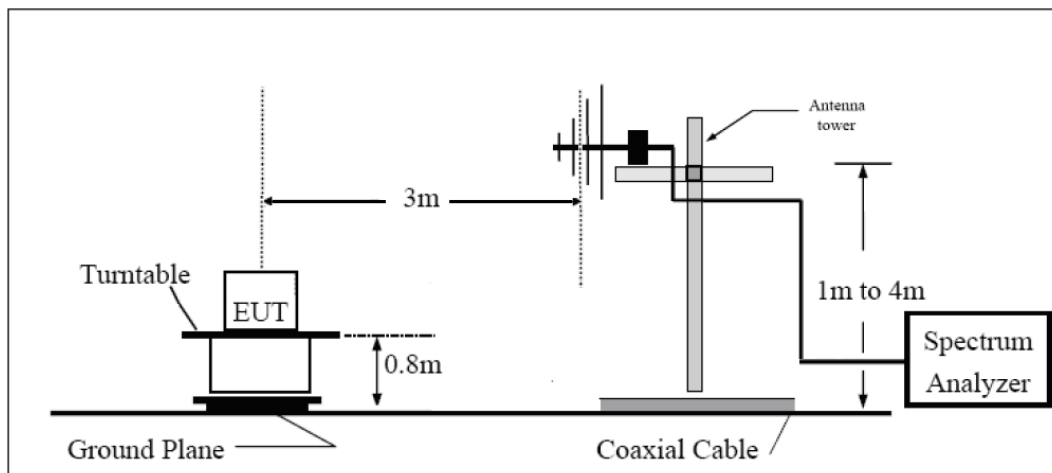
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

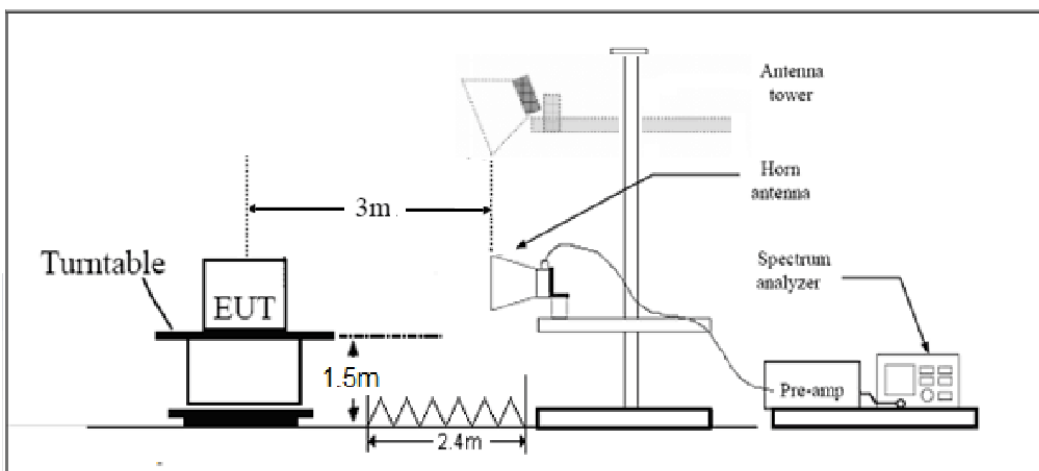
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.”

Rule Part 27.53(m) $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(h)Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

WCDMA Band IV CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.2	-61.57	2.6	10.75	Horizontal	-53.42	-13.0	40.42	135
3	5197.8	-59.22	2.4	11.05	Horizontal	-50.57	-13.0	37.57	90
4	6930.4	-60.61	4.5	11.15	Horizontal	-53.96	-13.0	40.96	270
5	8663.0	-54.65	5.1	11.35	Horizontal	-48.40	-13.0	35.40	270
6	10395.6	-50.76	5.3	11.95	Horizontal	-44.11	-13.0	31.11	45
7	12128.2	-52.11	5.5	13.55	Horizontal	-44.06	-13.0	31.06	90
8	13860.8	-49.66	6.3	13.75	Horizontal	-42.21	-13.0	29.21	45
9	15593.4	-49.47	6.7	13.85	Horizontal	-42.32	-13.0	29.32	315
10	17326.0	-47.34	6.8	14.25	Horizontal	-39.89	-13.0	26.89	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3464.3	-59.82	2.6	10.75	Horizontal	-51.67	-13.00	38.67	180
3	5197.5	-58.20	2.4	11.05	Horizontal	-49.55	-13.00	36.55	315
4	6930.0	-57.71	4.5	11.15	Horizontal	-51.06	-13.00	38.06	0
5	8662.5	-53.68	5.1	11.35	Horizontal	-47.43	-13.00	34.43	45
6	10395.0	-50.70	5.3	11.95	Horizontal	-44.05	-13.00	31.05	180
7	12127.5	-50.10	5.5	13.55	Horizontal	-42.05	-13.00	29.05	90
8	13860.0	-48.95	6.3	13.75	Horizontal	-41.50	-13.00	28.50	180
9	15592.5	-48.30	6.7	13.85	Horizontal	-41.15	-13.00	28.15	225
10	17325.0	-47.54	6.8	14.25	Horizontal	-40.09	-13.00	27.09	270

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.5	-60.86	2.6	10.75	Horizontal	-52.71	-13.00	39.71	0
3	5191.5	-58.49	2.4	11.05	Horizontal	-49.84	-13.00	36.84	45
4	6930.0	-60.03	4.5	11.15	Horizontal	-53.38	-13.00	40.38	180
5	8662.5	-55.45	5.1	11.35	Horizontal	-49.20	-13.00	36.20	90
6	10395.0	-49.77	5.3	11.95	Horizontal	-43.12	-13.00	30.12	0
7	12127.5	-51.17	5.5	13.55	Horizontal	-43.12	-13.00	30.12	315
8	13860.0	-48.98	6.3	13.75	Horizontal	-41.53	-13.00	28.53	0
9	15592.5	-48.19	6.7	13.85	Horizontal	-41.04	-13.00	28.04	45
10	17325.0	-46.23	6.8	14.25	Horizontal	-38.78	-13.00	25.78	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-61.88	2.6	10.75	Horizontal	-53.73	-13.00	40.73	45
3	5170.9	-58.51	2.4	11.05	Horizontal	-49.86	-13.00	36.86	225
4	6930.0	-59.07	4.5	11.15	Horizontal	-52.42	-13.00	39.42	180
5	8662.5	-54.93	5.1	11.35	Horizontal	-48.68	-13.00	35.68	90
6	10395.0	-49.71	5.3	11.95	Horizontal	-43.06	-13.00	30.06	45
7	12127.5	-51.11	5.5	13.55	Horizontal	-43.06	-13.00	30.06	315
8	13860.0	-49.11	6.3	13.75	Horizontal	-41.66	-13.00	28.66	270
9	15592.5	-48.33	6.7	13.85	Horizontal	-41.18	-13.00	28.18	270
10	17325.0	-45.24	6.8	14.25	Horizontal	-37.79	-13.00	24.79	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



LTE Band 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.8	-58.19	2.00	9.15	Horizontal	-51.04	-25.00	26.04	45
3	7598.6	-57.49	2.50	11.35	Horizontal	-48.64	-25.00	23.64	180
4	10130.6	-55.75	4.20	12.05	Horizontal	-47.90	-25.00	22.90	90
5	12675.0	-52.63	5.20	12.85	Horizontal	-44.98	-25.00	19.98	315
6	15210.0	-51.05	5.50	14.23	Horizontal	-42.32	-25.00	17.32	0
7	17745.0	-48.48	5.70	14.15	Horizontal	-40.03	-25.00	15.03	180
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.4	-58.31	2.00	10.15	Horizontal	-50.16	-25.00	25.16	0
3	7605.0	-60.35	2.50	11.35	Horizontal	-51.50	-25.00	26.50	180
4	10140.0	-58.01	4.20	12.05	Horizontal	-50.16	-25.00	25.16	0
5	12675.0	-51.05	5.20	14.85	Horizontal	-41.40	-25.00	16.40	45
6	15210.0	-44.89	5.50	13.23	Horizontal	-37.16	-25.00	12.16	90
7	17745.0	-44.00	5.70	12.15	Horizontal	-37.55	-25.00	12.55	315
8	20280.0	--	--	--	--	--	--	--	--
9	22815.0	--	--	--	--	--	--	--	--
10	25350.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 38 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.0	-58.31	2.00	9.15	Horizontal	-51.16	-13.00	38.16	180
3	7495.5	-59.36	2.50	11.35	Horizontal	-50.51	-13.00	37.51	0
4	9994.0	-56.40	4.20	12.05	Horizontal	-48.55	-13.00	35.55	45
5	12492.5	-51.11	5.20	12.85	Horizontal	-43.46	-13.00	30.46	0
6	14991.0	-49.13	5.50	14.23	Horizontal	-40.40	-13.00	27.40	180
7	17489.5	--	--	--	--	--	--	--	--
8	19988.0	--	--	--	--	--	--	--	--
9	22486.5	--	--	--	--	--	--	--	--
10	24985.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

LTE Band 38 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-57.57	2.00	10.15	Horizontal	-49.42	-13.00	36.42	180
3	7779.0	-60.59	2.50	11.35	Horizontal	-51.74	-13.00	38.74	135
4	10372.0	-55.64	4.20	12.05	Horizontal	-47.79	-13.00	34.79	45
5	12965.0	-52.78	5.20	14.85	Horizontal	-43.13	-13.00	30.13	0
6	15558.0	-49.27	5.50	13.23	Horizontal	-41.54	-13.00	28.54	90
7	18151.0	--	--	--	--	--	--	--	--
8	20744.0	--	--	--	--	--	--	--	--
9	23337.0	--	--	--	--	--	--	--	--
10	25930.0	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



LTE Band 41 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.0	-57.68	2.00	9.15	Horizontal	-50.53	-25.00	25.53	45
3	7495.5	-60.39	2.50	11.35	Horizontal	-51.54	-25.00	26.54	180
4	9994.0	-55.53	4.20	12.05	Horizontal	-47.68	-25.00	22.68	90
5	12492.5	-50.89	5.20	12.85	Horizontal	-43.24	-25.00	18.24	315
6	14991.0	-48.98	5.50	14.23	Horizontal	-40.25	-25.00	15.25	45
7	17489.5	-46.59	5.70	14.15	Horizontal	-38.14	-25.00	13.14	0
8	19988.0	--	--	--	--	--	--	--	--
9	22486.5	--	--	--	--	--	--	--	--
10	24985.0	--	--	--	--	--	--	--	--
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-59.90	2.00	10.15	Horizontal	-51.75	-25.00	26.75	315
3	7779.0	-58.74	2.50	11.35	Horizontal	-49.89	-25.00	24.89	45
4	10372.0	-56.47	4.20	12.05	Horizontal	-48.62	-25.00	23.62	0
5	12965.0	-53.39	5.20	14.85	Horizontal	-43.74	-42.02	18.74	180
6	15558.0	-49.75	5.50	13.23	Horizontal	-42.02	-25.00	17.02	0
7	18151.0	--	--	--	--	--	--	--	--
8	20744.0	--	--	--	--	--	--	--	--
9	23337.0	--	--	--	--	--	--	--	--
10	25930.0	--	--	--	--	--	--	--	--
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									



CA-7C QPSK 10+20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5051.2	-58.46	2.00	10.15	Horizontal	-50.31	-25.00	25.31	45
3	7576.9	-57.86	2.50	11.35	Horizontal	-49.01	-25.00	24.01	135
4	10102.4	-54.85	4.20	12.05	Horizontal	-47.00	-25.00	22.00	45
5	12628.0	-52.70	5.20	14.85	Horizontal	-43.05	-25.00	18.05	270
6	15153.6	-49.64	5.50	13.23	Horizontal	-41.91	-25.00	16.91	90
7	17679.2	-45.76	5.70	12.15	Horizontal	-39.31	-25.00	14.31	315
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

CA-7C QPSK 20+10MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5060.2	-58.72	2.00	10.15	Horizontal	-50.57	-25.00	25.57	270
3	7590.3	-58.00	2.50	11.35	Horizontal	-49.15	-25.00	24.15	45
4	10120.4	-53.01	4.20	12.05	Horizontal	-45.16	-25.00	20.16	135
5	12650.5	-51.50	5.20	14.85	Horizontal	-41.85	-25.00	16.85	45
6	15180.6	-50.74	5.50	13.23	Horizontal	-43.01	-25.00	18.01	315
7	17710.7	-46.88	5.70	12.15	Horizontal	-40.43	-25.00	15.43	90
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



CA-7C QPSK 15+15MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5055.0	-58.77	2.00	10.15	Horizontal	-50.62	-25.00	25.62	270
3	7582.5	-58.72	2.50	11.35	Horizontal	-49.87	-25.00	24.87	90
4	10110.0	-53.01	4.20	12.05	Horizontal	-45.16	-25.00	20.16	45
5	12637.5	-52.58	5.20	14.85	Horizontal	-42.93	-25.00	17.93	315
6	15165.0	-50.15	5.50	13.23	Horizontal	-42.42	-25.00	17.42	135
7	17692.5	-48.10	5.70	12.15	Horizontal	-41.65	-25.00	16.65	45
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

CA-7C QPSK 20+20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5050.2	-58.94	2.00	10.15	Horizontal	-50.79	-25.00	25.79	315
3	7575.3	-59.07	2.50	11.35	Horizontal	-50.22	-25.00	25.22	45
4	10100.4	-53.97	4.20	12.05	Horizontal	-46.12	-25.00	21.12	270
5	12625.5	-51.61	5.20	14.85	Horizontal	-41.96	-25.00	16.96	135
6	15150.6	-51.10	5.50	13.23	Horizontal	-43.37	-25.00	18.37	270
7	17675.7	-46.75	5.70	12.15	Horizontal	-40.30	-25.00	15.30	45
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



CA-38C QPSK 15+15MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5175.0	-59.18	2.00	10.15	Horizontal	-51.03	-25.00	26.03	270
3	7762.5	-58.28	2.50	11.35	Horizontal	-49.43	-25.00	24.43	45
4	10350.0	-51.79	4.20	12.05	Horizontal	-43.94	-25.00	18.94	270
5	12937.5	-51.85	5.20	14.85	Horizontal	-42.20	-25.00	17.20	315
6	15525.0	-48.43	5.50	13.23	Horizontal	-40.70	-25.00	15.70	45
7	--	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

CA-38C QPSK 20+20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5170.2	-59.10	2.00	10.15	Horizontal	-50.95	-25.00	25.95	270
3	7755.3	-58.57	2.50	11.35	Horizontal	-49.72	-25.00	24.72	45
4	10340.4	-51.36	4.20	12.05	Horizontal	-43.51	-25.00	18.51	90
5	12925.5	-51.59	5.20	14.85	Horizontal	-41.94	-25.00	16.94	315
6	15510.6	-49.30	5.50	13.23	Horizontal	-41.57	-25.00	16.57	45
7	--	--	--	--	--	--	--	--	--
8	--	--	--	--	--	--	--	--	--
9	--	--	--	--	--	--	--	--	--
10	--	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2020-05-18	2021-05-17
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2020-05-18	2021-05-17
Signal Analyzer	R&S	FSV30	100815	2019-12-15	2020-12-14
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2020-11-17
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
Signal generator	R&S	SMB 100A	102594	2020-05-18	2021-05-17
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preamplifier	R&S	SCU18	102327	2020-05-18	2021-05-17
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2020-05-18	2021-05-17
RF Cable	Agilent	SMA 15cm	0001	2020-06-12	2020-12-11
Software	R&S	EMC32	9.26.0	/	/

*****END OF REPORT *****