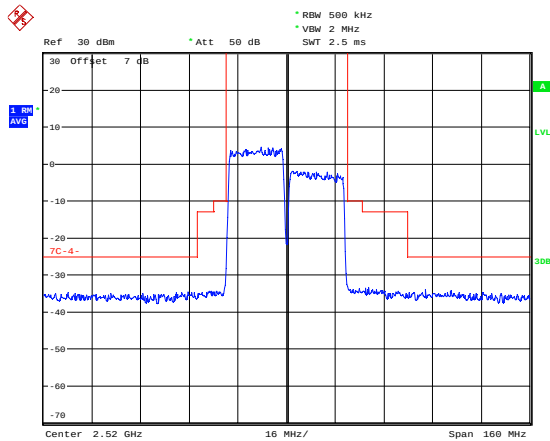


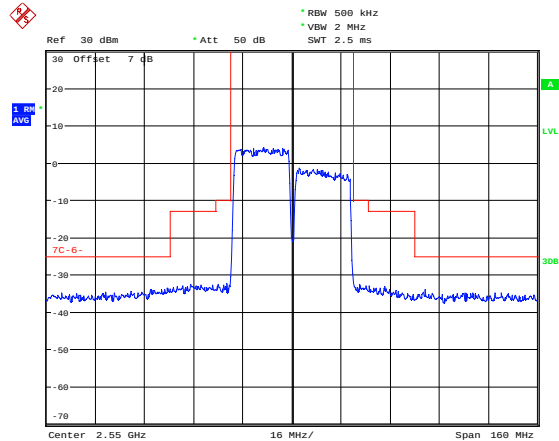


CA-7C 16QAM 20MHz+20MHz CH-Low, 100%RB



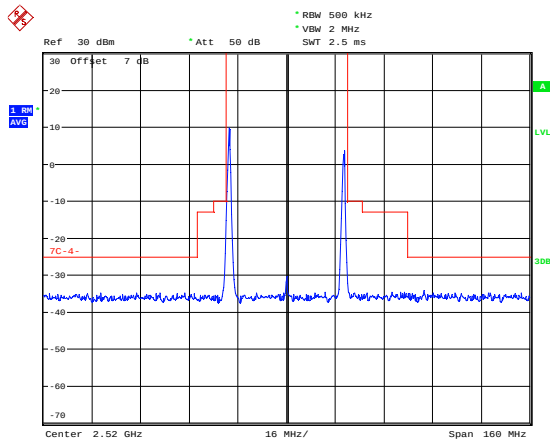
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CA-7C 16QAM 20MHz+20MHz CH-High, 100%RB



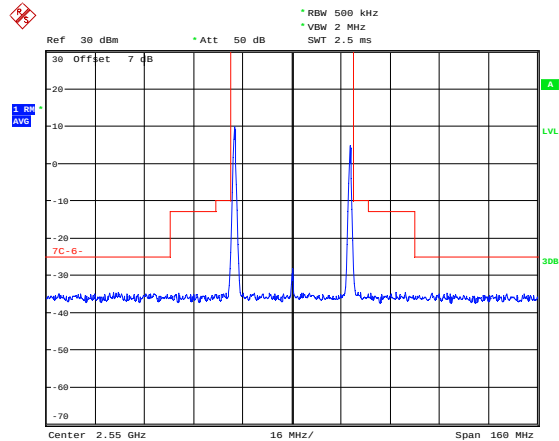
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CA-7C 64QAM 20MHz+20MHz CH-Low, 1 RB



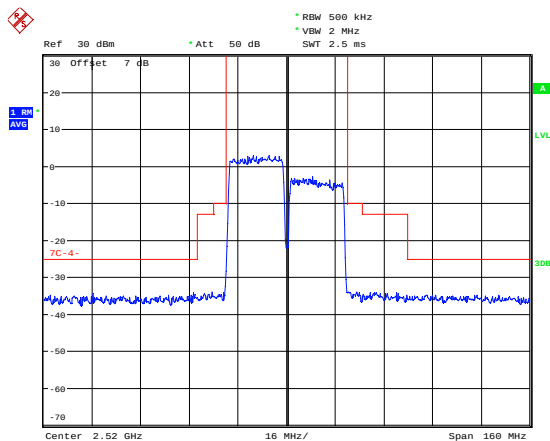
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CA-7C 64QAM 20MHz+20MHz CH-High, 1 RB



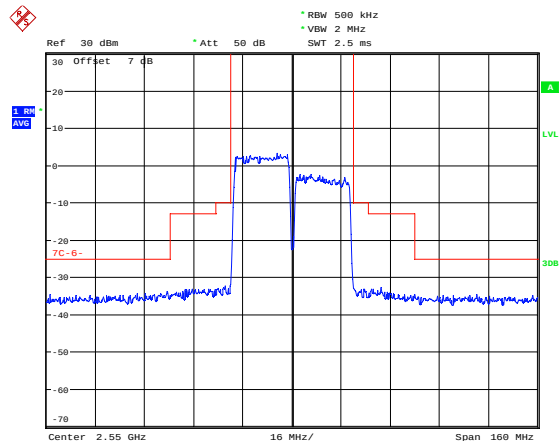
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CA-7C 64QAM 20MHz+20MHz CH-Low, 100%RB



Date: 26.JUL.2019 16:19:33

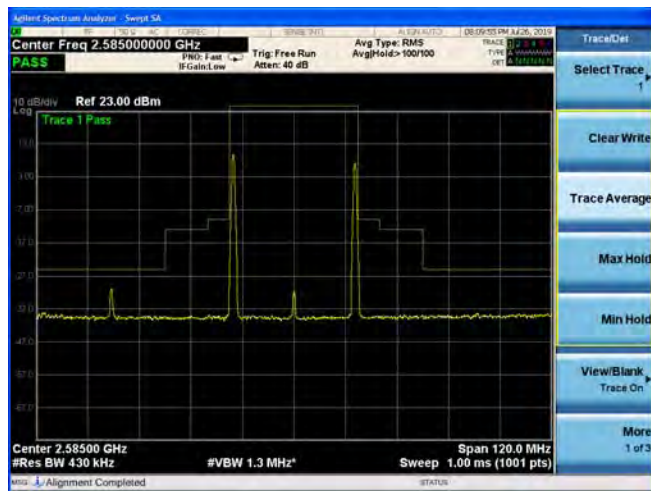
CA-7C 64QAM 20MHz+20MHz CH-High, 100%RB



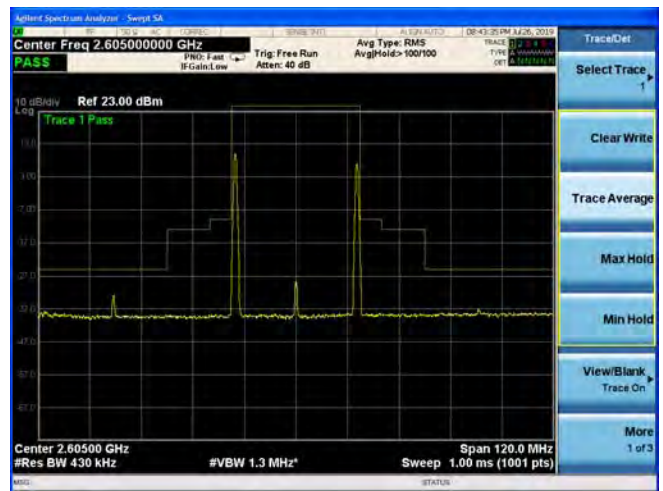
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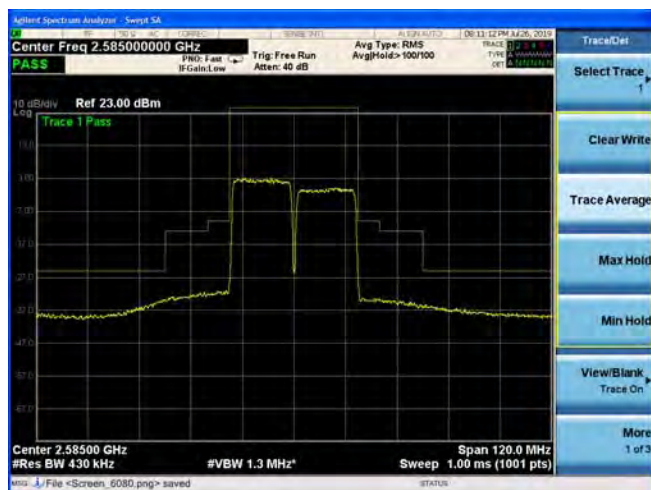
CA-38C QPSK 15MHz+15MHz CH-Low, 1 RB



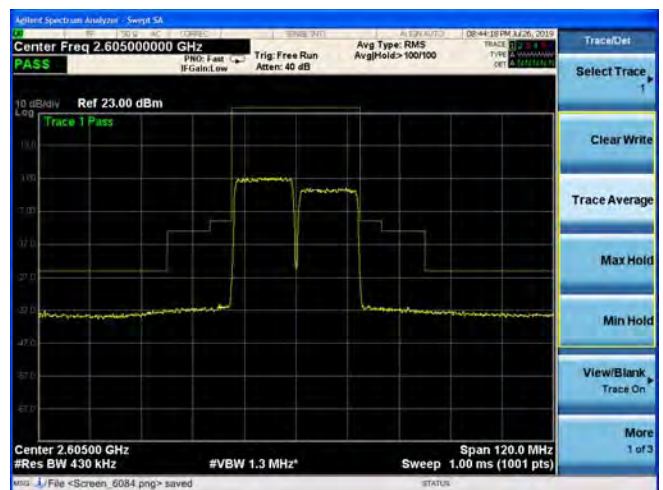
CA-38C QPSK 15MHz+15MHz CH-High, 1 RB



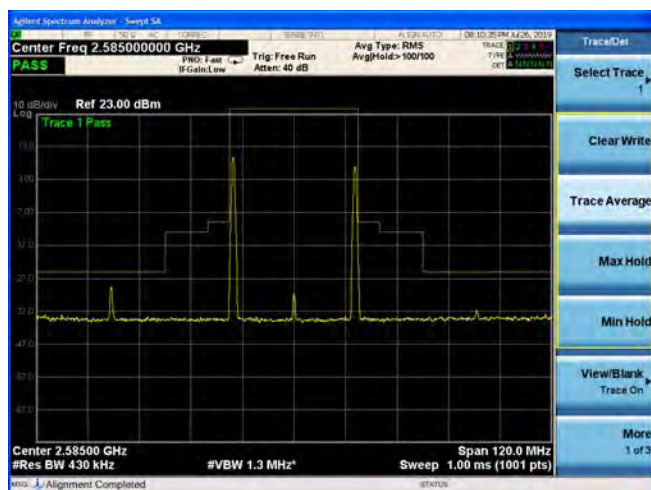
CA-38C QPSK 15MHz+15MHz CH-Low, 100%RB



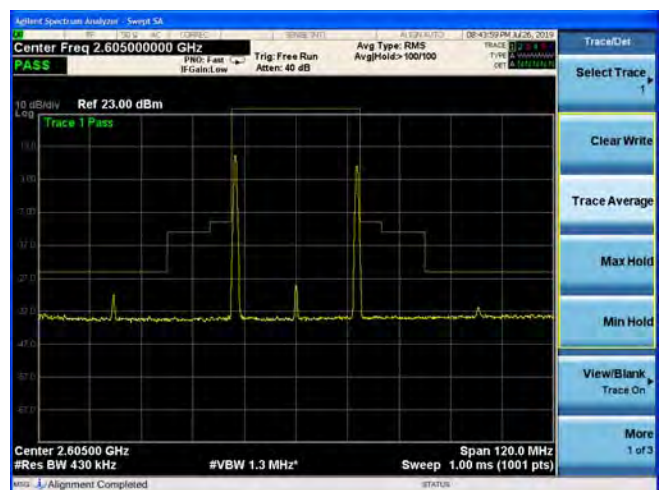
CA-38C QPSK 15MHz+15MHz CH-High, 100%RB



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

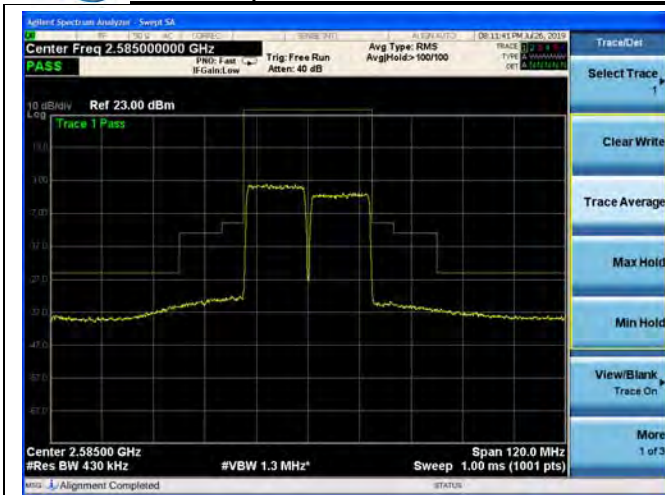


CA-38C 16QAM 15MHz+15MHz CH-High, 1 RB

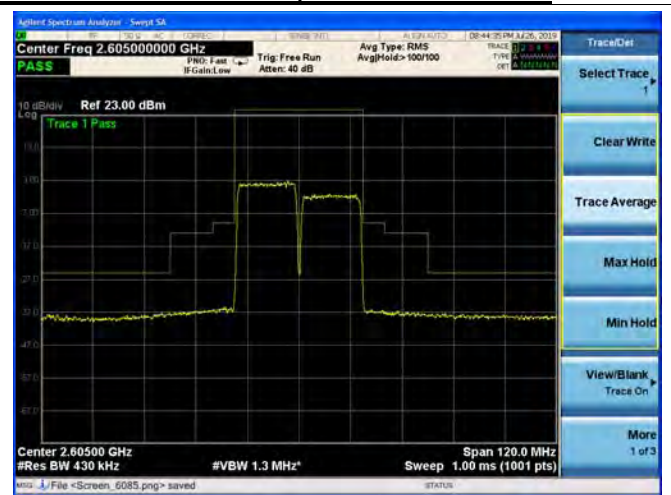


CA-38C 16QAM 15MHz+15MHz CH-Low, 100%RB

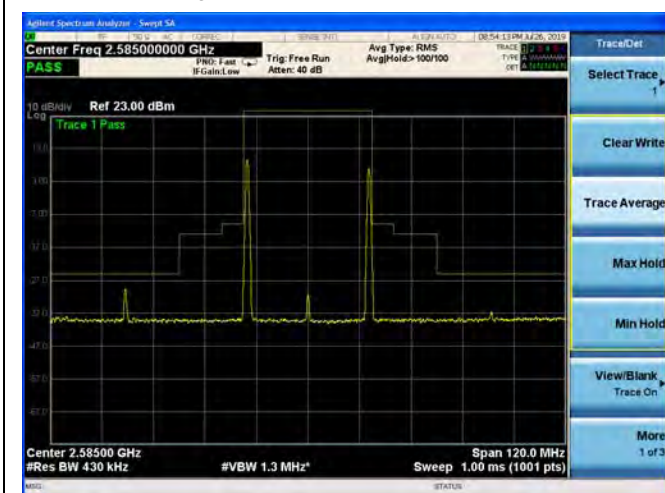
CA-38C 16QAM 15MHz+15MHz CH-High, 100%RB



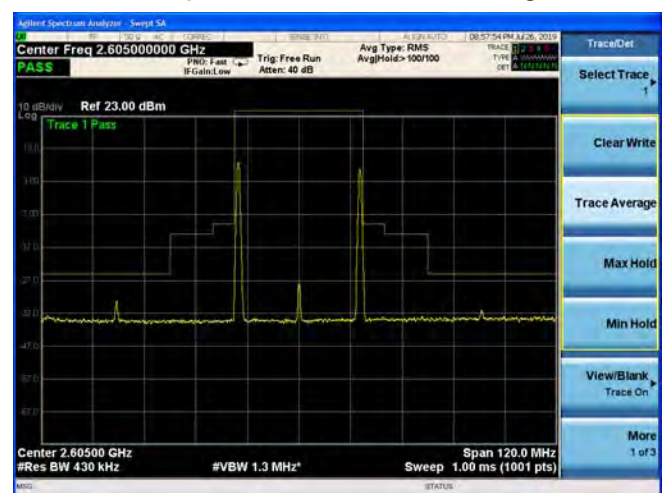
CA-38C 64QAM 15MHz+15MHz CH-Low, 1 RB



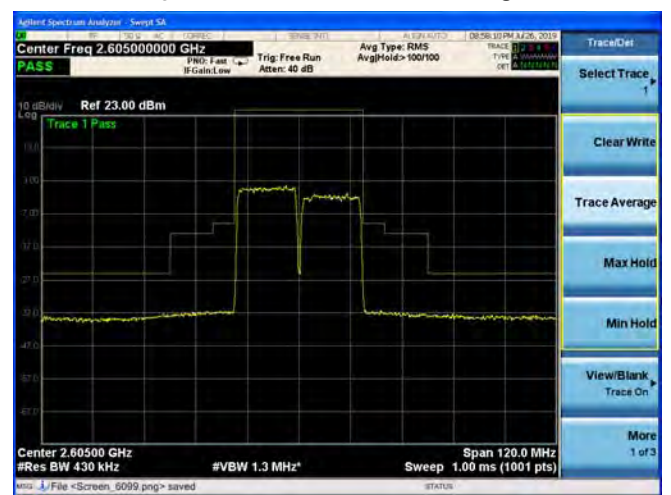
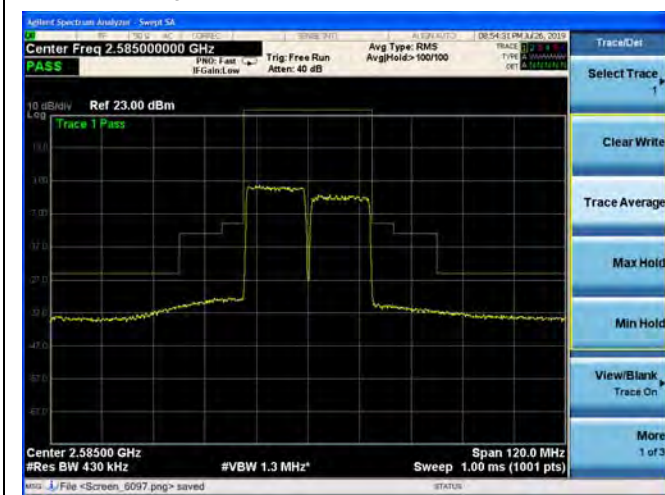
CA-38C 64QAM 15MHz+15MHz CH-High, 1 RB



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

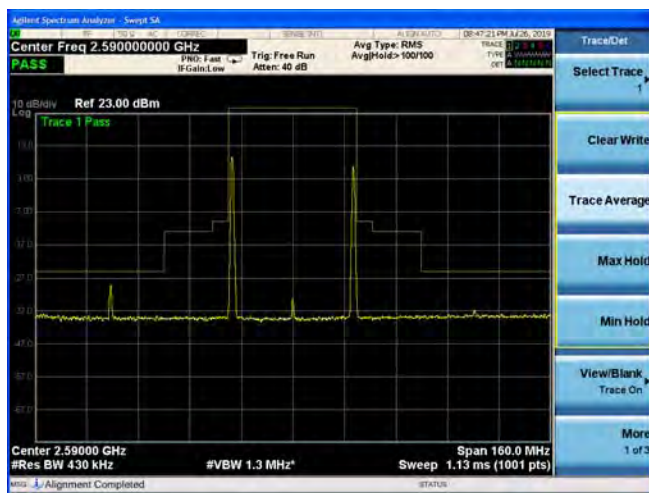


CA-38C 64QAM 15MHz+15MHz CH-High, 100%RB

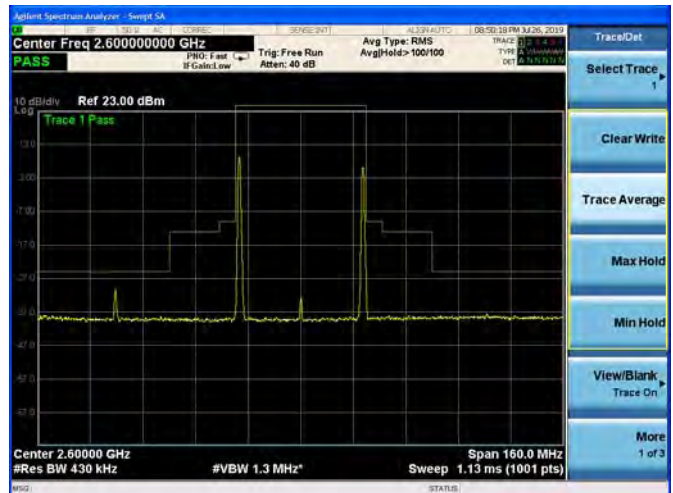




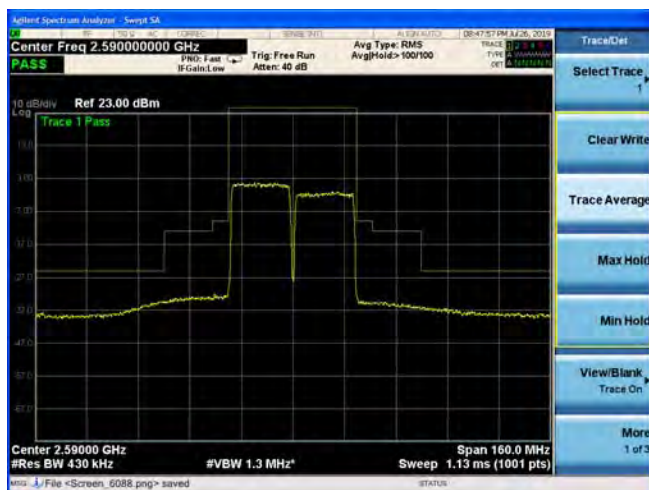
CA-38C QPSK 20MHz+20MHz CH-Low, 1 RB



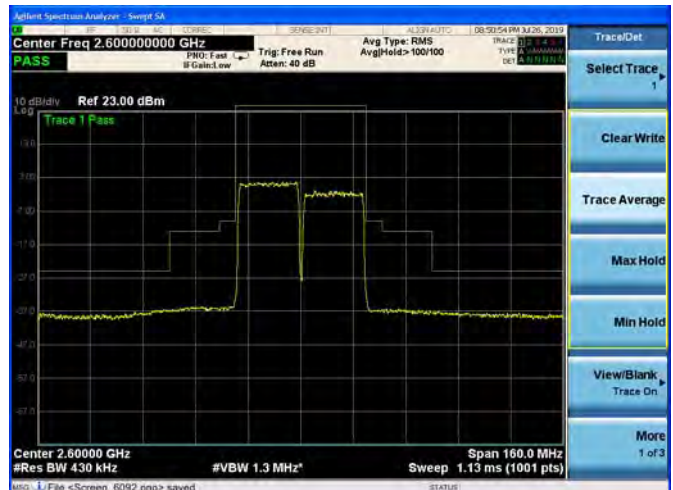
CA-38C QPSK 20MHz+20MHz CH-High, 1 RB



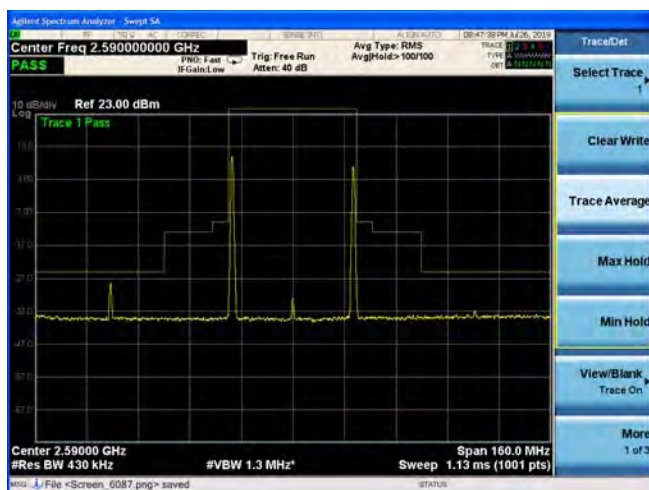
CA-38C QPSK 20MHz+20MHz CH-Low, 100%RB



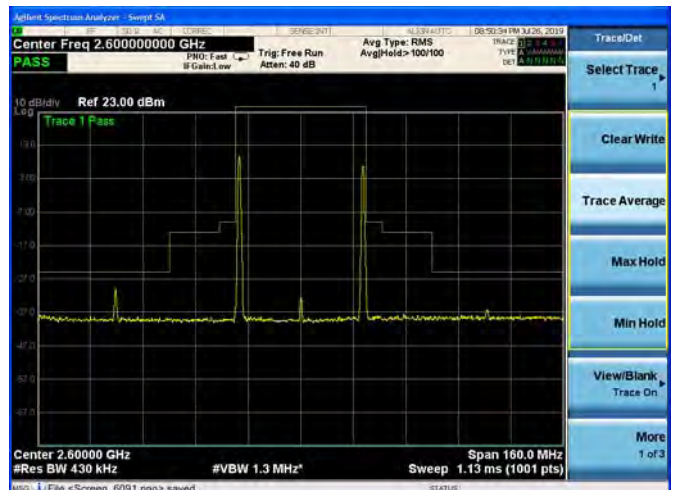
CA-38C QPSK 20MHz+20MHz CH-High, 100%RB



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

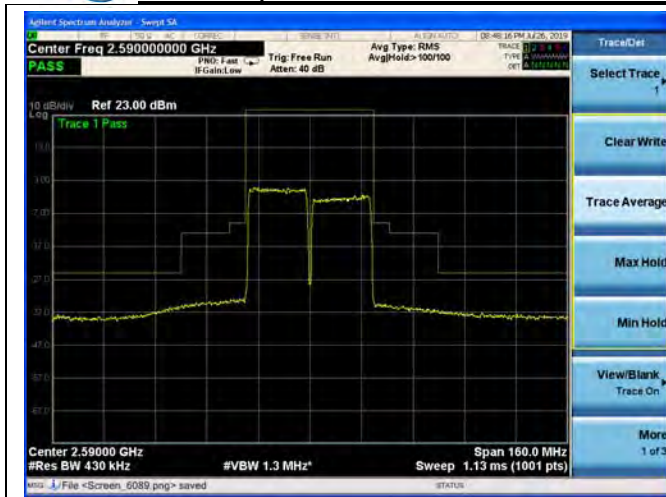


CA-38C 16QAM 20MHz+20MHz CH-High, 1 RB



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

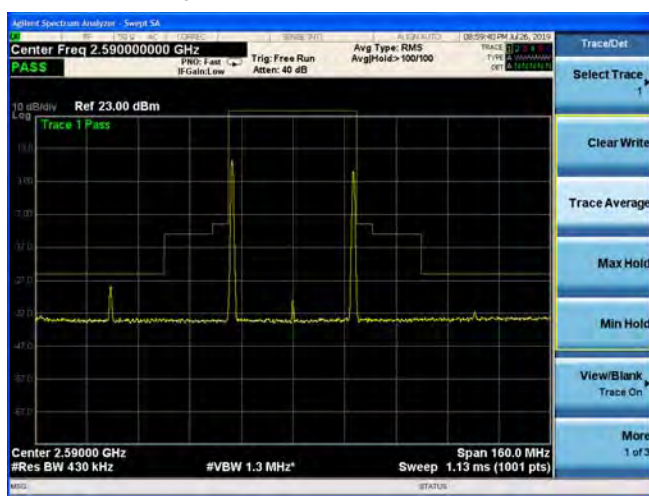
CA-38C 16QAM 20MHz+20MHz CH-High, 100%RB



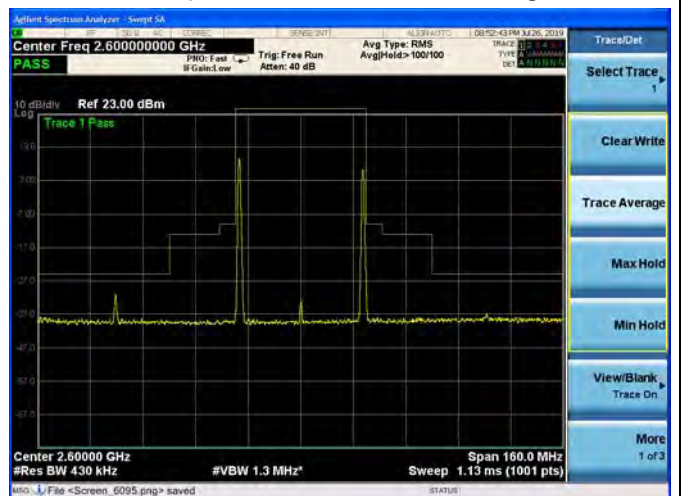
CA-38C 64QAM 20MHz+20MHz CH-Low, 1 RB



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



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



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



5.5 Peak-to-Average Power Ratio (PAPR)

Ambient condition

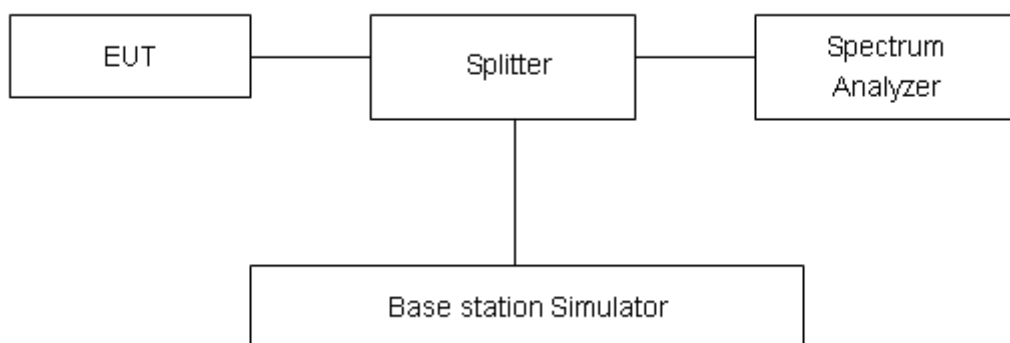
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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	26.29	23.61	2.68	≤13	PASS
	1413	1732.6	26.67	23.69	2.98	≤13	PASS
	1513	1752.6	26.30	23.71	2.59	≤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	26.63	20.59	6.04	≤13	PASS
		20175	1732.5	26.79	20.44	6.35	≤13	PASS
		20393	1754.3	26.58	20.62	5.96	≤13	PASS
	3	19965	1711.5	26.72	20.69	6.03	≤13	PASS
		20175	1732.5	26.78	20.51	6.27	≤13	PASS
		20385	1753.5	26.65	20.75	5.90	≤13	PASS
	5	19975	1712.5	26.71	20.69	6.02	≤13	PASS
		20175	1732.5	26.83	20.56	6.27	≤13	PASS
		20375	1752.5	26.62	20.77	5.85	≤13	PASS
	10	20000	1715	26.66	20.66	6.00	≤13	PASS
		20175	1732.5	26.76	20.55	6.21	≤13	PASS
		20350	1750	26.46	20.70	5.76	≤13	PASS
	15	20025	1717.5	26.74	20.63	6.11	≤13	PASS
		20175	1732.5	26.78	20.52	6.26	≤13	PASS
		20325	1747.5	26.38	20.63	5.75	≤13	PASS
	20	20050	1720	26.74	20.67	6.07	≤13	PASS
		20175	1732.5	26.68	20.61	6.07	≤13	PASS
		20300	1745	26.43	20.63	5.80	≤13	PASS
16QAM	1.4	19957	1710.7	24.88	19.98	4.90	≤13	PASS
		20175	1732.5	25.05	19.91	5.14	≤13	PASS
		20393	1754.3	25.16	20.34	4.82	≤13	PASS
	3	19965	1711.5	24.81	20.08	4.73	≤13	PASS
		20175	1732.5	24.92	20.03	4.89	≤13	PASS
		20385	1753.5	25.04	20.39	4.65	≤13	PASS
	5	19975	1712.5	24.99	20.07	4.92	≤13	PASS
		20175	1732.5	25.17	20.02	5.15	≤13	PASS
		20375	1752.5	25.18	20.38	4.80	≤13	PASS
	10	20000	1715	24.95	20.09	4.86	≤13	PASS
		20175	1732.5	25.04	20.01	5.03	≤13	PASS
		20350	1750	24.98	20.36	4.62	≤13	PASS



	15	20025	1717.5	25.01	20.00	5.01	≤13	PASS
		20175	1732.5	25.08	19.94	5.14	≤13	PASS
		20325	1747.5	24.82	20.15	4.67	≤13	PASS
	20	20050	1720	24.89	20.04	4.85	≤13	PASS
		20175	1732.5	24.90	20.02	4.88	≤13	PASS
		20300	1745	24.77	20.12	4.65	≤13	PASS
64QAM	1.4	19957	1710.7	25.09	19.10	5.99	≤13	PASS
		20175	1732.5	25.49	19.09	6.40	≤13	PASS
		20393	1754.3	25.37	19.40	5.97	≤13	PASS
	3	19965	1711.5	25.18	19.16	6.02	≤13	PASS
		20175	1732.5	25.43	19.15	6.28	≤13	PASS
		20385	1753.5	25.41	19.50	5.91	≤13	PASS
	5	19975	1712.5	25.17	19.15	6.02	≤13	PASS
		20175	1732.5	25.45	19.15	6.30	≤13	PASS
		20375	1752.5	25.34	19.48	5.86	≤13	PASS
	10	20000	1715	25.15	19.14	6.01	≤13	PASS
		20175	1732.5	25.34	19.12	6.22	≤13	PASS
		20350	1750	25.12	19.36	5.76	≤13	PASS
	15	20025	1717.5	25.21	19.14	6.07	≤13	PASS
		20175	1732.5	25.33	19.08	6.25	≤13	PASS
		20325	1747.5	24.94	19.24	5.70	≤13	PASS
	20	20050	1720	25.16	19.13	6.03	≤13	PASS
		20175	1732.5	25.23	19.16	6.07	≤13	PASS
		20300	1745	24.97	19.20	5.77	≤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	26.10	21.59	4.51	≤13	PASS
		21100	2535	25.93	21.56	4.37	≤13	PASS
		21425	2567.5	26.06	21.77	4.29	≤13	PASS
	10	20800	2505	25.97	21.53	4.44	≤13	PASS
		21100	2535	25.88	21.52	4.36	≤13	PASS
		21400	2565	26.05	21.76	4.29	≤13	PASS
	15	20825	2507.5	25.92	21.57	4.35	≤13	PASS
		21100	2535	26.12	21.60	4.52	≤13	PASS
		21375	2562.5	25.98	21.74	4.24	≤13	PASS
	20	20850	2510	25.86	21.60	4.26	≤13	PASS



		21100	2535	26.04	21.57	4.47	≤13	PASS
		21350	2560	26.04	21.73	4.31	≤13	PASS
16QAM	5	20775	2502.5	26.17	20.60	5.57	≤13	PASS
		21100	2535	26.03	20.63	5.40	≤13	PASS
		21425	2567.5	26.08	20.76	5.32	≤13	PASS
	10	20800	2505	26.11	20.58	5.53	≤13	PASS
		21100	2535	26.01	20.59	5.42	≤13	PASS
		21400	2565	26.10	20.74	5.36	≤13	PASS
	15	20825	2507.5	26.03	20.66	5.37	≤13	PASS
		21100	2535	26.24	20.69	5.55	≤13	PASS
		21375	2562.5	26.06	20.83	5.23	≤13	PASS
	20	20850	2510	26.01	20.63	5.38	≤13	PASS
		21100	2535	26.21	20.63	5.58	≤13	PASS
		21350	2560	26.17	20.74	5.43	≤13	PASS
64QAM	5	20775	2502.5	25.68	20.19	5.49	≤13	PASS
		21100	2535	25.67	20.24	5.43	≤13	PASS
		21425	2567.5	25.40	20.35	5.05	≤13	PASS
	10	20800	2505	25.62	20.15	5.47	≤13	PASS
		21100	2535	25.70	20.26	5.44	≤13	PASS
		21400	2565	25.44	20.32	5.12	≤13	PASS
	15	20825	2507.5	25.68	20.21	5.47	≤13	PASS
		21100	2535	25.64	20.35	5.29	≤13	PASS
		21375	2562.5	25.41	20.46	4.95	≤13	PASS
	20	20850	2510	25.70	20.25	5.45	≤13	PASS
		21100	2535	25.59	20.19	5.40	≤13	PASS
		21350	2560	25.53	20.33	5.20	≤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	26.65	19.64	7.01	≤13	PASS
		38000	2595	26.70	19.66	7.04	≤13	PASS
		38225	2617.5	26.30	19.68	6.62	≤13	PASS



	10	37800	2575	26.60	19.63	6.97	≤13	PASS
		38000	2595	26.67	19.74	6.93	≤13	PASS
		38200	2615	26.35	19.72	6.63	≤13	PASS
	15	37825	2577.5	26.95	19.43	7.52	≤13	PASS
		38000	2595	26.77	19.57	7.20	≤13	PASS
		38175	2612.5	26.42	19.33	7.09	≤13	PASS
	20	37850	2580	26.79	19.81	6.98	≤13	PASS
		38000	2595	26.55	19.45	7.10	≤13	PASS
		38150	2610	26.32	19.55	6.77	≤13	PASS
16QAM	5	37775	2572.5	26.81	18.86	7.95	≤13	PASS
		38000	2595	26.91	18.91	8.00	≤13	PASS
		38225	2617.5	26.34	18.66	7.68	≤13	PASS
	10	37800	2575	27.04	18.67	8.37	≤13	PASS
		38000	2595	26.88	18.82	8.06	≤13	PASS
		38200	2615	26.41	18.70	7.71	≤13	PASS
	15	37825	2577.5	27.20	18.72	8.48	≤13	PASS
		38000	2595	26.95	18.93	8.02	≤13	PASS
		38175	2612.5	26.58	18.28	8.30	≤13	PASS
	20	37850	2580	27.15	18.94	8.21	≤13	PASS
		38000	2595	26.83	18.78	8.05	≤13	PASS
		38150	2610	26.50	18.06	8.44	≤13	PASS
64QAM		37775	2572.5	26.85	18.65	8.20	≤13	PASS
		38000	2595	26.85	18.79	8.06	≤13	PASS
		38225	2617.5	26.27	18.57	7.70	≤13	PASS
		37800	2575	26.83	18.91	7.92	≤13	PASS
		38000	2595	26.86	18.81	8.05	≤13	PASS
		38200	2615	26.39	19.03	7.36	≤13	PASS
		37825	2577.5	26.96	18.60	8.36	≤13	PASS
		38000	2595	26.90	18.86	8.04	≤13	PASS
		38175	2612.5	26.36	18.42	7.94	≤13	PASS
		37850	2580	26.85	18.36	8.49	≤13	PASS
		38000	2595	26.82	18.91	7.91	≤13	PASS
		38150	2610	26.48	18.58	7.90	≤13	PASS



CA_7C								
Bandwidth	PCC		SCC1		Modulation	Peak-to-Average Power Ratio (PAPR)		
	Channel	Frequency(MHz)	Channel	Frequency(MHz)		Peak (dBm)	Avg (dBm)	PAPR (dB)
CA_41C_10MHz+20MHz_QPSK	21006	2525.6	21150	2540	QPSK	26.16	20.52	5.64
CA_41C_10MHz+20MHz_16QAM	21006	2525.6	21150	2540	16QAM	26.04	19.57	6.47
CA_41C_10MHz+20MHz_64QAM	21006	2525.6	21150	2540	64QAM	25.69	19.21	6.48
CA_41C_20MHz+10MHz_QPSK	21051	2530.1	21195	2544.5	QPSK	26.49	20.67	5.82
CA_41C_20MHz+10MHz_16QAM	21051	2530.1	21195	2544.5	16QAM	26.28	19.71	6.57
CA_41C_20MHz+10MHz_64QAM	21051	2530.1	21195	2544.5	64QAM	25.92	19.31	6.61
CA_41C_15MHz+10MHz_QPSK	21051	2530.1	21171	2542.1	QPSK	26.34	20.65	5.69
CA_41C_15MHz+10MHz_16QAM	21051	2530.1	21171	2542.1	16QAM	26.26	19.74	6.52
CA_41C_15MHz+10MHz_64QAM	21051	2530.1	21171	2542.1	64QAM	25.82	19.30	6.52
CA_41C_15MHz+15MHz_QPSK	21025	2527.5	21175	2542.5	QPSK	26.64	20.61	6.03
CA_41C_15MHz+15MHz_16QAM	21025	2527.5	21175	2542.5	16QAM	26.40	19.72	6.68
CA_41C_15MHz+15MHz_64QAM	21025	2527.5	21175	2542.5	64QAM	25.97	19.27	6.70
CA_41C_15MHz+20MHz_QPSK	21003	2525.3	21174	2542.4	QPSK	26.54	20.19	6.35
CA_41C_15MHz+20MHz_16QAM	21003	2525.3	21174	2542.4	16QAM	26.21	19.27	6.94
CA_41C_15MHz+20MHz_64QAM	21003	2525.3	21174	2542.4	64QAM	25.75	18.82	6.93
CA_41C_20MHz+15MHz_QPSK	21026	2527.6	21197	2544.7	QPSK	26.76	20.31	6.45
CA_41C_20MHz+15MHz_16QAM	21026	2527.6	21197	2544.7	16QAM	26.32	19.34	6.98
CA_41C_20MHz+15MHz_64QAM	21026	2527.6	21197	2544.7	64QAM	25.81	18.87	6.94
CA_41C_20MHz+20MHz	21001	2525.1	21199	2544.9	QPSK	26.18	19.58	6.60



z_QPSK								
CA_41C_20MHz+20MH z_16QAM	21001	2525.1	21199	2544.9	16QAM	25.73	18.63	7.10
CA_41C_20MHz+20MH z_64QAM	21001	2525.1	21199	2544.9	64QAM	25.26	18.18	7.08

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	27.02	17.20	9.82
CA_38C_15MHz+ 15MHz_16QAM	37925	2587.5	38075	2602.5	16QAM	26.75	16.50	10.25
CA_38C_15MHz+ 15MHz_64QAM	37925	2587.5	38075	2602.5	64QAM	26.31	15.90	10.41
CA_38C_20MHz+ 20MHz_QPSK	37901	2585.1	38099	2604.9	QPSK	26.27	16.27	10.00
CA_38C_20MHz+ 20MHz_16QAM	37901	2585.1	38099	2604.9	16QAM	25.85	15.12	10.73
CA_38C_20MHz+ 20MHz_64QAM	37901	2585.1	38099	2604.9	64QAM	25.36	14.66	10.70

5.6 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)

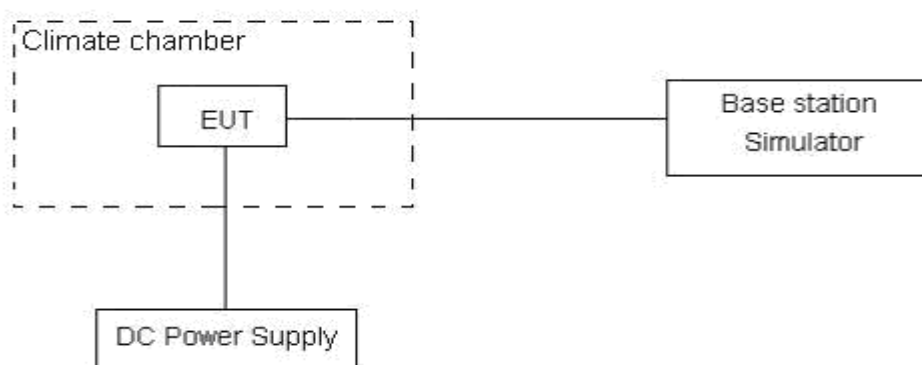
The frequency stability shall be measured with variation of primary supply voltage as follows:

(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 3.65 V and 4.45 V, with a nominal voltage of 3.85V.

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	BPSK	QPSK	BPSK	QPSK	
Normal (25℃)	Normal	5.31	13.48	0.00283	0.00717	PASS
Extreme (55℃)		2.08	5.02	0.00110	0.00267	PASS
Extreme (50℃)		1.90	6.40	0.00101	0.00340	PASS
Extreme (40℃)		15.29	7.82	0.00813	0.00416	PASS
Extreme (30℃)		10.19	17.82	0.00542	0.00948	PASS
Extreme (20℃)		13.36	1.28	0.00711	0.00068	PASS
Extreme (10℃)		8.72	16.03	0.00464	0.00853	PASS
Extreme (0℃)		8.71	3.86	0.00463	0.00205	PASS
Extreme (-10℃)		11.30	8.19	0.00601	0.00435	PASS
Extreme (-20℃)		14.22	15.28	0.00756	0.00813	PASS
Extreme (-30℃)		17.03	13.14	0.00906	0.00699	PASS
25℃	LV	10.44	15.30	0.00555	0.00814	PASS
	HV	7.67	16.79	0.00408	0.00893	PASS

LTE Band 4(BANDWIDTH, 20MHz)								
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	10.20	14.90	6.57	0.00542	0.00792	0.00349	PASS
Extreme (55℃)		8.44	12.18	9.58	0.00449	0.00648	0.00509	PASS
Extreme (50℃)		9.91	8.40	7.05	0.00527	0.00447	0.00375	PASS
Extreme (40℃)		13.92	11.57	1.66	0.00740	0.00615	0.00088	PASS
Extreme (30℃)		13.98	11.20	17.69	0.00744	0.00596	0.00941	PASS
Extreme (20℃)		2.52	16.93	17.71	0.00134	0.00900	0.00942	PASS
Extreme (10℃)		4.28	2.67	8.25	0.00227	0.00142	0.00439	PASS
Extreme (0℃)		9.88	1.89	13.14	0.00525	0.00100	0.00699	PASS
Extreme (-10℃)		4.14	13.25	2.82	0.00220	0.00705	0.00150	PASS
Extreme (-20℃)		4.97	1.65	17.39	0.00264	0.00088	0.00925	PASS
Extreme (-30℃)	11.91	15.83	14.03	0.00634	0.00842	0.00746	PASS	
25℃	LV	10.10	11.56	16.61	0.00537	0.00615	0.00884	PASS
	HV	7.61	12.86	10.00	0.00405	0.00684	0.00532	PASS



LTE Band 7(BANDWIDTH, 20MHz)								
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	2.33	17.36	17.42	0.00124	0.00923	0.00926	
Extreme (55℃)		12.97	3.86	5.95	0.00690	0.00205	0.00316	PASS
Extreme (50℃)		4.21	5.29	12.23	0.00224	0.00282	0.00651	PASS
Extreme (40℃)		13.01	8.87	14.09	0.00692	0.00472	0.00750	PASS
Extreme (30℃)		14.90	11.50	17.93	0.00793	0.00612	0.00954	PASS
Extreme (20℃)		7.95	3.34	12.54	0.00423	0.00178	0.00667	PASS
Extreme (10℃)		1.15	17.28	16.99	0.00061	0.00919	0.00904	PASS
Extreme (0℃)		10.68	10.31	9.35	0.00568	0.00548	0.00497	PASS
Extreme (-10℃)		1.55	14.29	13.17	0.00082	0.00760	0.00700	PASS
Extreme (-20℃)		1.87	3.15	9.91	0.00099	0.00168	0.00527	PASS
Extreme (-30℃)		16.57	4.55	4.57	0.00881	0.00242	0.00243	PASS
25℃	LV	12.24	1.86	10.57	0.00651	0.00099	0.00562	PASS
	HV	14.69	2.66	2.16	0.00782	0.00141	0.00115	PASS

LTE Band 38(BANDWIDTH, 20MHz)								
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	4.08	7.24	2.93	0.00217	0.00385	0.00156	
Extreme (55℃)		2.86	9.76	15.06	0.00152	0.00519	0.00801	PASS
Extreme (50℃)		3.91	17.10	1.01	0.00208	0.00909	0.00054	PASS
Extreme (40℃)		13.52	9.99	8.51	0.00719	0.00532	0.00453	PASS
Extreme (30℃)		8.24	4.31	15.53	0.00439	0.00229	0.00826	PASS
Extreme (20℃)		11.54	9.28	17.16	0.00614	0.00494	0.00913	PASS
Extreme (10℃)		1.40	10.38	15.92	0.00075	0.00552	0.00847	PASS
Extreme (0℃)		13.01	13.32	11.57	0.00692	0.00708	0.00615	PASS
Extreme (-10℃)		7.96	1.56	2.89	0.00423	0.00083	0.00154	PASS
Extreme (-20℃)		1.44	4.00	14.66	0.00076	0.00213	0.00780	PASS
Extreme (-30℃)		6.18	9.89	2.31	0.00329	0.00526	0.00123	PASS
25℃	LV	13.44	13.31	8.52	0.00715	0.00708	0.00453	PASS
	HV	3.91	7.62	3.45	0.00208	0.00405	0.00183	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	12.84	0.00683	6.93	0.00368	PASS
Extreme (55℃)		10.00	0.00532	8.06	0.00429	PASS
Extreme (50℃)		2.46	0.00131	16.15	0.00859	PASS
Extreme (40℃)		11.19	0.00595	8.00	0.00426	PASS
Extreme (30℃)		8.93	0.00475	17.21	0.00916	PASS
Extreme (20℃)		11.07	0.00589	14.93	0.00794	PASS
Extreme (10℃)		10.49	0.00558	15.67	0.00833	PASS
Extreme (0℃)		13.87	0.00738	4.62	0.00246	PASS
Extreme (-10℃)		4.56	0.00243	13.41	0.00713	PASS
Extreme (-20℃)		11.27	0.00599	13.98	0.00744	PASS
Extreme (-30℃)		6.65	0.00354	4.75	0.00253	PASS
25℃	LV	8.23	0.00438	15.77	0.00839	PASS
	HV	17.87	0.00951	15.94	0.00848	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	1.22	0.00065	6.37	0.00339	PASS
Extreme (55℃)		13.97	0.00743	14.24	0.00757	PASS
Extreme (50℃)		16.94	0.00901	14.08	0.00749	PASS
Extreme (40℃)		17.53	0.00932	14.32	0.00762	PASS
Extreme (30℃)		6.49	0.00345	11.01	0.00586	PASS
Extreme (20℃)		16.47	0.00876	2.60	0.00138	PASS
Extreme (10℃)		14.54	0.00774	8.81	0.00469	PASS
Extreme (0℃)		7.17	0.00381	8.98	0.00477	PASS
Extreme (-10℃)		1.78	0.00095	2.48	0.00132	PASS
Extreme (-20℃)		4.20	0.00223	15.96	0.00849	PASS
Extreme (-30℃)		14.62	0.00778	11.00	0.00585	PASS
25℃	LV	12.36	0.00658	8.75	0.00465	PASS
	HV	2.36	0.00126	7.78	0.00414	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	14.01	0.00745	16.43	0.00874	PASS
Extreme (55℃)		11.31	0.00601	1.16	0.00062	PASS
Extreme (50℃)		10.29	0.00547	9.27	0.00493	PASS
Extreme (40℃)		13.52	0.00719	5.71	0.00304	PASS
Extreme (30℃)		12.37	0.00658	13.18	0.00701	PASS
Extreme (20℃)		13.74	0.00731	6.13	0.00326	PASS
Extreme (10℃)		6.25	0.00332	7.71	0.00410	PASS
Extreme (0℃)		6.46	0.00344	2.36	0.00126	PASS
Extreme (-10℃)		12.51	0.00666	3.15	0.00168	PASS
Extreme (-20℃)		7.84	0.00417	16.99	0.00904	PASS
Extreme (-30℃)		8.88	0.00472	9.90	0.00527	PASS
25℃	LV	14.49	0.00771	10.00	0.00532	PASS
	HV	4.66	0.00248	7.66	0.00407	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	11.21	0.00596	14.20	0.00755	PASS
Extreme (55℃)		7.23	0.00384	8.36	0.00445	PASS
Extreme (50℃)		6.29	0.00335	17.44	0.00928	PASS
Extreme (40℃)		6.27	0.00333	4.83	0.00257	PASS
Extreme (30℃)		17.61	0.00937	15.08	0.00802	PASS
Extreme (20℃)		12.97	0.00690	9.00	0.00479	PASS
Extreme (10℃)		7.07	0.00376	12.14	0.00646	PASS
Extreme (0℃)		2.76	0.00147	9.53	0.00507	PASS
Extreme (-10℃)		4.69	0.00249	16.49	0.00877	PASS
Extreme (-20℃)		15.81	0.00841	2.33	0.00124	PASS
Extreme (-30℃)		1.92	0.00102	1.32	0.00070	PASS
25℃	LV	4.47	0.00238	16.19	0.00861	PASS
	HV	16.50	0.00878	5.10	0.00271	PASS



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	16.72	0.00890	11.30	0.00601	PASS
Extreme (55℃)		9.93	0.00528	5.00	0.00266	PASS
Extreme (50℃)		6.23	0.00332	6.33	0.00337	PASS
Extreme (40℃)		9.78	0.00520	17.45	0.00928	PASS
Extreme (30℃)		11.91	0.00634	16.41	0.00873	PASS
Extreme (20℃)		15.73	0.00837	3.95	0.00210	PASS
Extreme (10℃)		10.35	0.00551	10.12	0.00538	PASS
Extreme (0℃)		8.21	0.00437	16.42	0.00874	PASS
Extreme (-10℃)		13.69	0.00728	2.77	0.00148	PASS
Extreme (-20℃)		17.51	0.00932	9.35	0.00497	PASS
Extreme (-30℃)		3.67	0.00195	11.31	0.00602	PASS
25℃	LV	10.50	0.00558	16.36	0.00870	PASS
	HV	16.91	0.00899	9.60	0.00511	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	6.10	0.00325	9.72	0.00517	PASS
Extreme (55℃)		9.14	0.00486	14.35	0.00763	PASS
Extreme (50℃)		7.34	0.00390	8.42	0.00448	PASS
Extreme (40℃)		4.21	0.00224	4.65	0.00247	PASS
Extreme (30℃)		4.78	0.00254	4.85	0.00258	PASS
Extreme (20℃)		3.78	0.00201	12.19	0.00648	PASS
Extreme (10℃)		6.68	0.00355	4.84	0.00257	PASS
Extreme (0℃)		17.74	0.00944	3.53	0.00188	PASS
Extreme (-10℃)		9.86	0.00524	3.57	0.00190	PASS
Extreme (-20℃)		13.44	0.00715	15.87	0.00844	PASS
Extreme (-30℃)		10.53	0.00560	10.24	0.00545	PASS
25℃	LV	5.98	0.00318	3.81	0.00203	PASS
	HV	15.71	0.00836	8.51	0.00453	PASS

5.7 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.

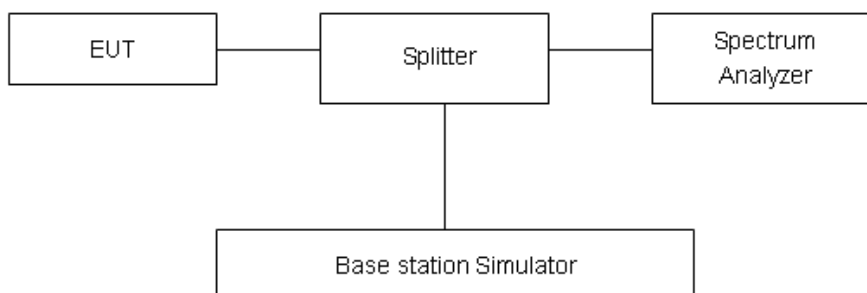
RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

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

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

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 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

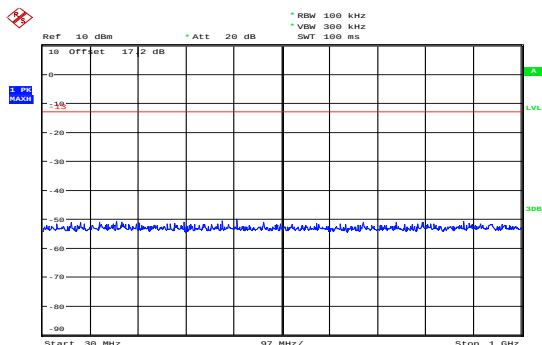


Test Result

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.

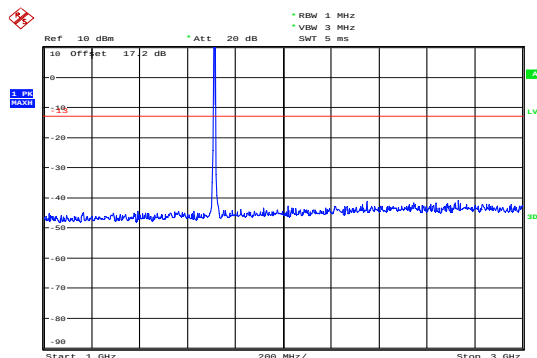
The signal beyond the limit is carrier.

WCDMA Band IV CH-Low 30MHz~1GHz



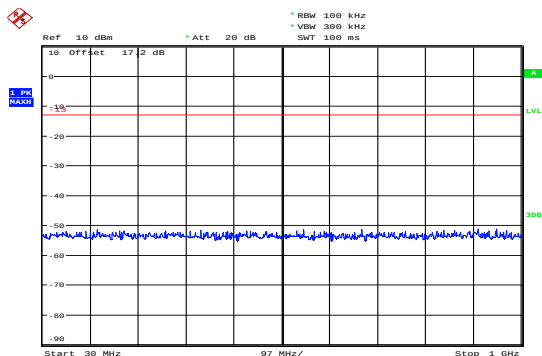
Date: 12.JUL.2019 11:35:08

WCDMA Band IV CH-Low 1GHz ~3GHz



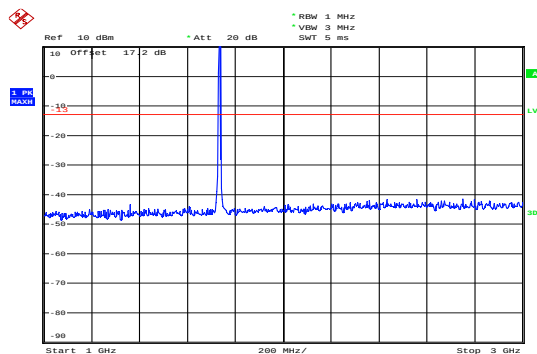
Date: 12.JUL.2019 11:34:32

WCDMA Band IV CH-Middle 30MHz~1GHz



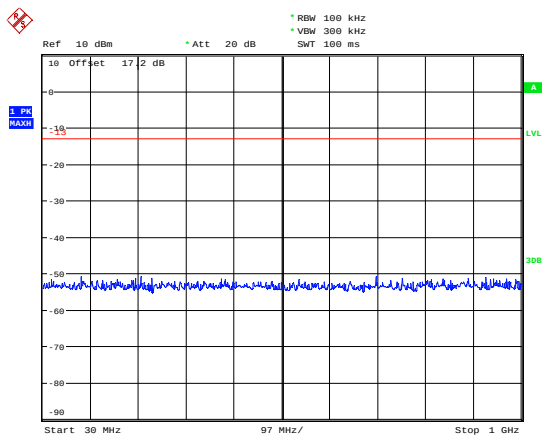
Date: 12.JUL.2019 11:35:21

WCDMA Band IV CH-Middle 1GHz ~3GHz



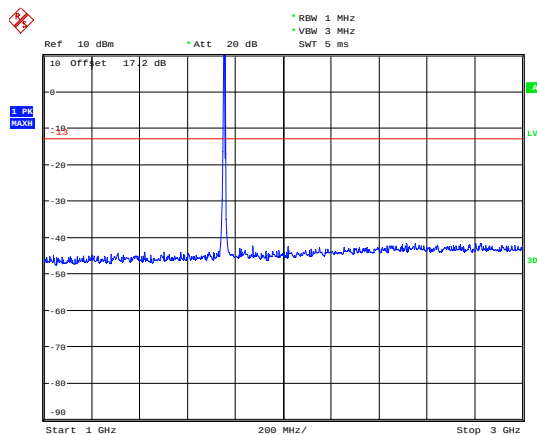
Date: 12.JUL.2019 11:34:18

WCDMA Band IV CH-High 30MHz~1GHz



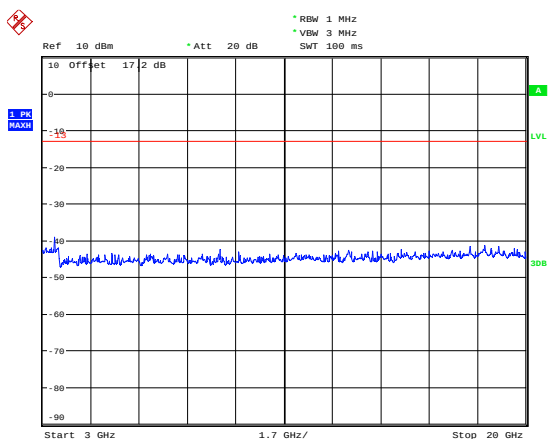
Date: 12.JUL.2019 11:35:37

WCDMA Band IV CH-High 1GHz ~3GHz



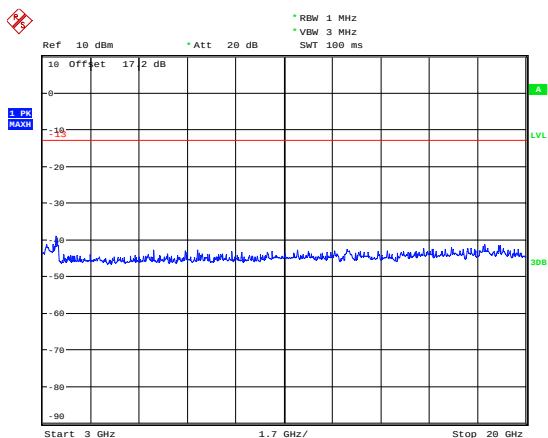
Date: 12.JUL.2019 11:34:03

WCDMA Band IV CH-Low 3GHz ~20GHz



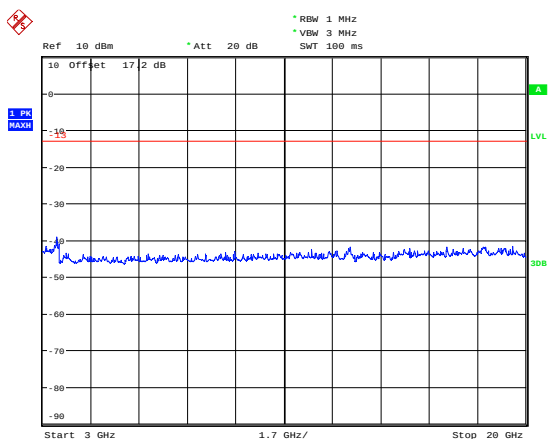
Date: 12.JUL.2019 11:33:12

WCDMA Band IV CH-Middle 3GHz ~20GHz



Date: 12.JUL.2019 11:33:29

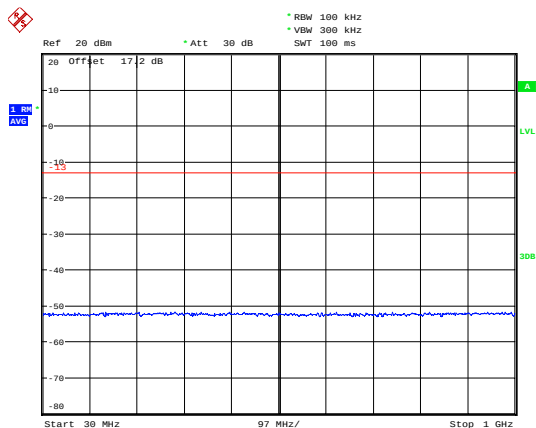
WCDMA Band IV CH-High 3GHz ~20GHz



Date: 12.JUL.2019 11:33:46

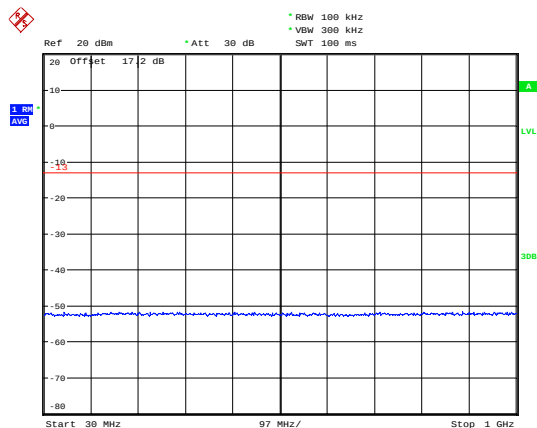


LTE Band 4 1.4MHz CH-Low 30MHz~1GHz



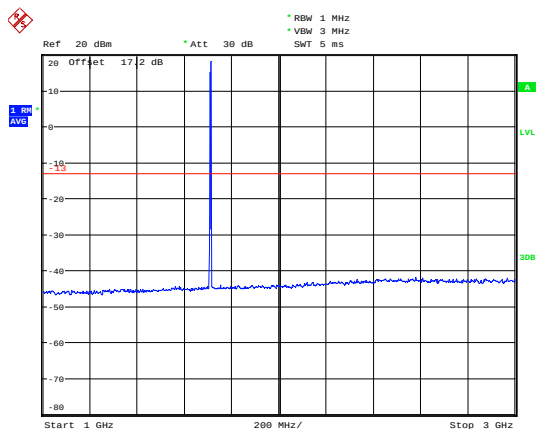
Date: 13.JUL.2019 12:50:45

LTE Band 4 1.4MHz CH-Middle 30MHz~1GHz



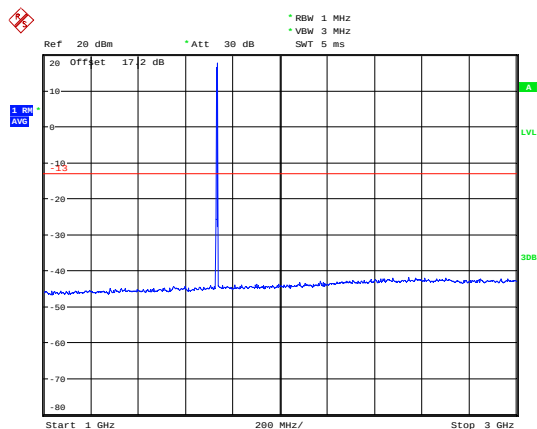
Date: 13.JUL.2019 12:51:09

LTE Band 4 1.4MHz CH-Low 1GHz~3GHz



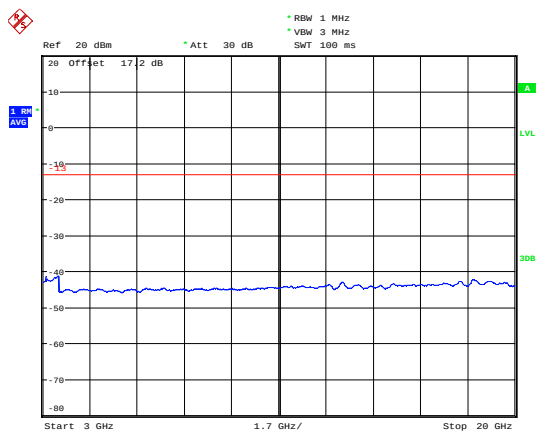
Date: 13.JUL.2019 12:57:33

LTE Band 4 1.4MHz CH-Middle 1GHz~3GHz



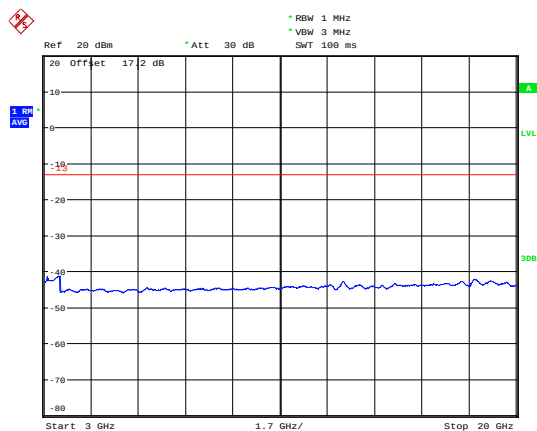
Date: 13.JUL.2019 12:57:55

LTE Band 4 1.4MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:06:42

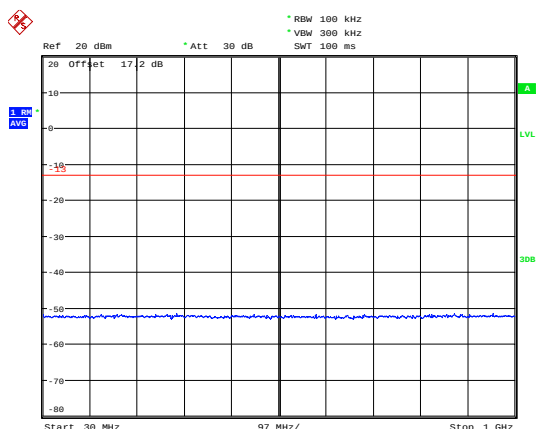
LTE Band 4 1.4MHz CH-Middle 3GHz~20GHz



Date: 13.JUL.2019 13:06:59

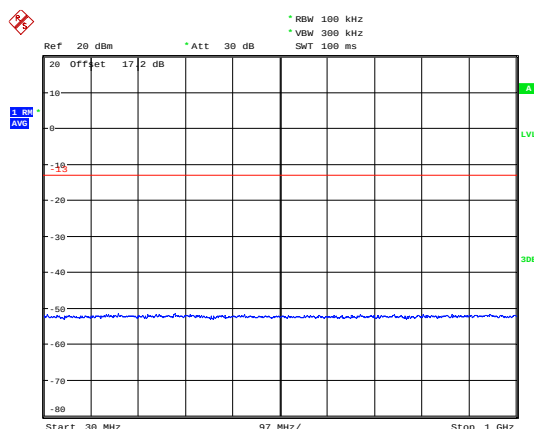


LTE Band 4 1.4MHz CH-High 30MHz~1GHz



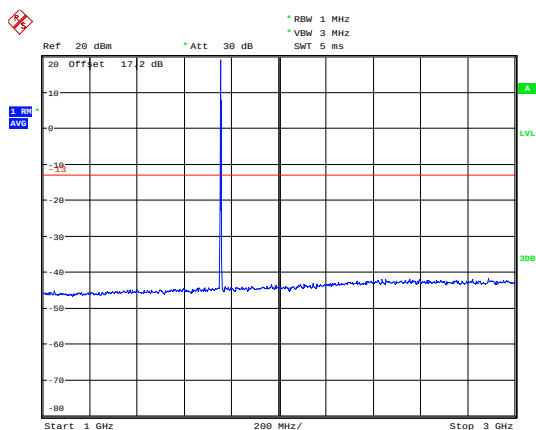
Date: 13.JUL.2019 12:51:29

LTE Band 4 3MHz CH-Low 30MHz~1GHz



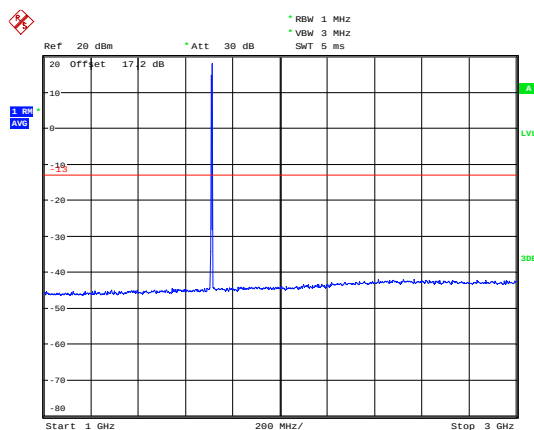
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LTE Band 4 1.4MHz CH-High 1GHz~3GHz



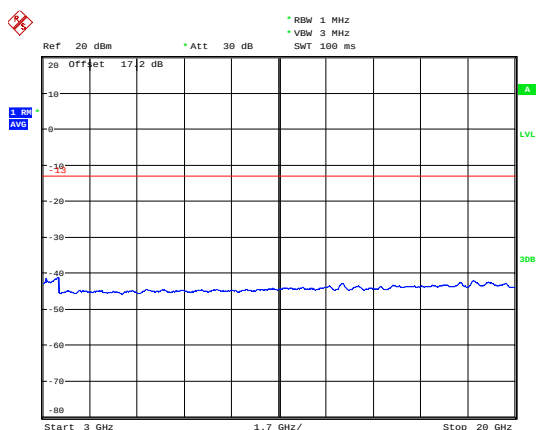
Date: 13.JUL.2019 12:58:18

LTE Band 4 3MHz CH-Low 1GHz~3GHz



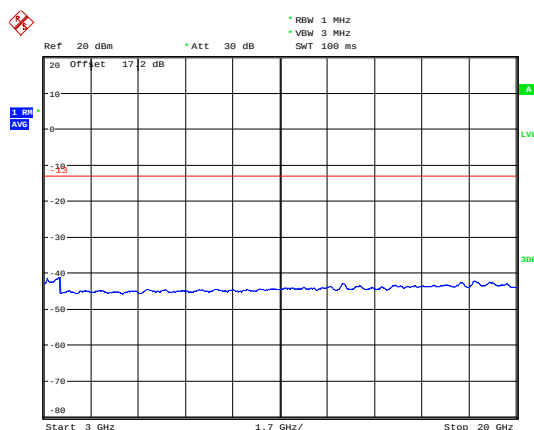
Date: 13.JUL.2019 12:58:49

LTE Band 4 1.4MHz CH-High 3GHz~20GHz



Date: 13.JUL.2019 13:07:17

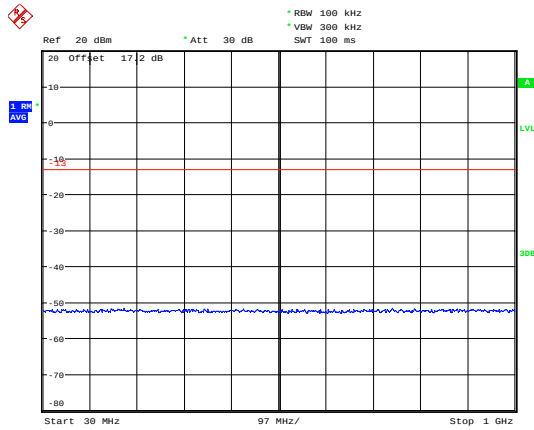
LTE Band 4 3MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:07:41

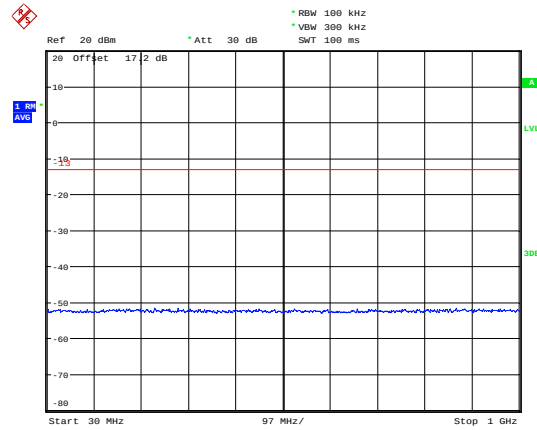


LTE Band 4 3MHz CH-Middle 30MHz~1GHz



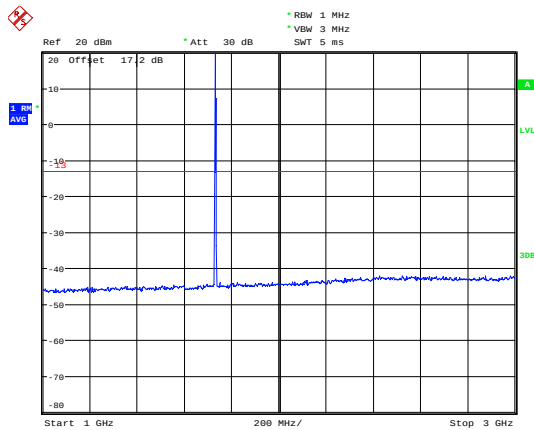
Date: 13.JUL.2019 12:52:13

LTE Band 4 3MHz CH-High 30MHz~1GHz



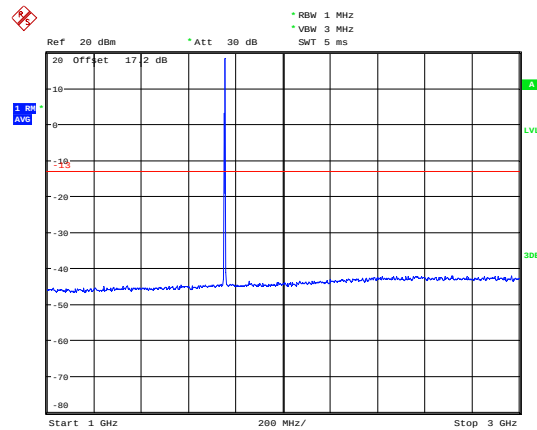
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LTE Band 4 3MHz CH-Middle 1GHz~3GHz



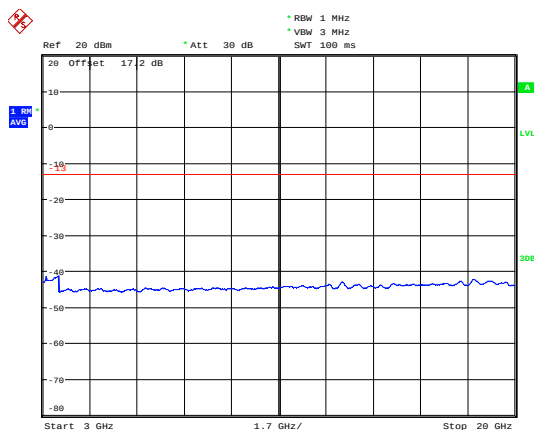
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LTE Band 4 3MHz CH-High 1GHz~3GHz



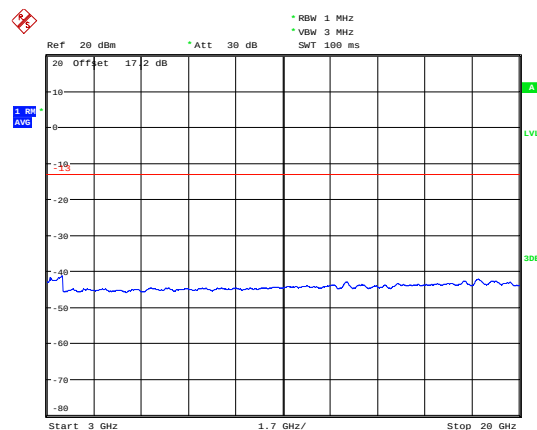
Date: 13.JUL.2019 12:59:42

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



Date: 13.JUL.2019 13:08:00

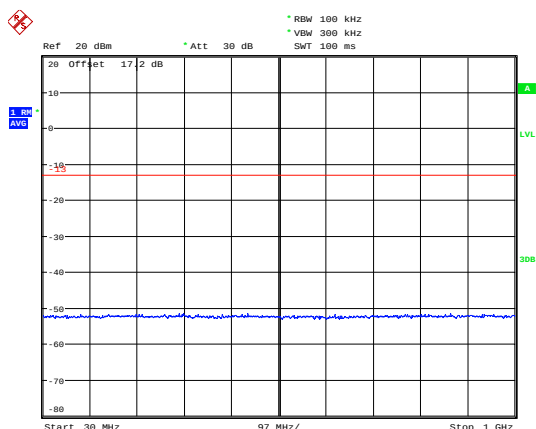
LTE Band 4 3MHz CH-High 3GHz~20GHz



Date: 13.JUL.2019 13:08:19

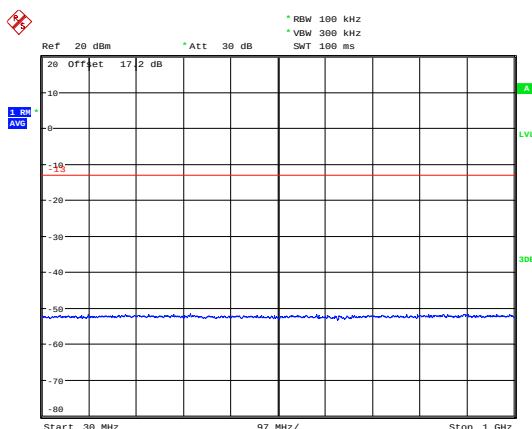


LTE Band 4 5MHz CH-Low 30MHz~1GHz



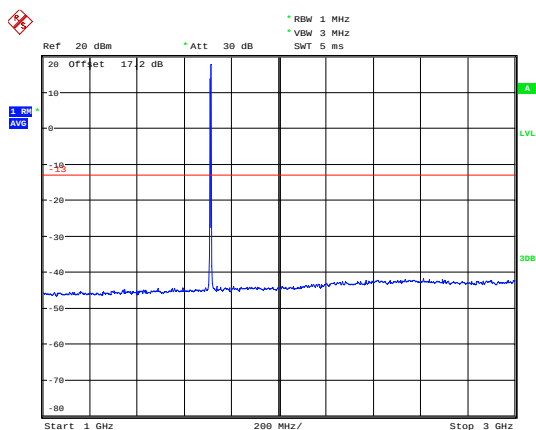
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LTE Band 4 5MHz CH-Middle 30MHz~1GHz



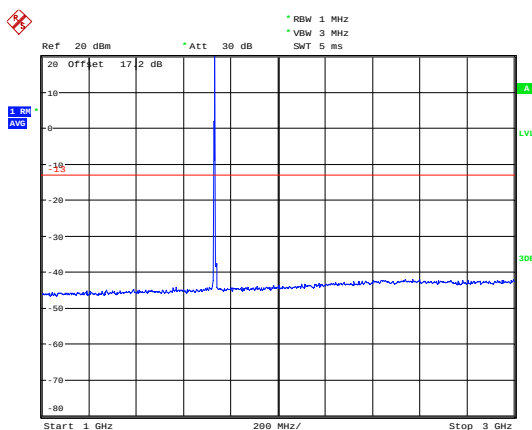
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LTE Band 4 5MHz CH-Low 1GHz~3GHz



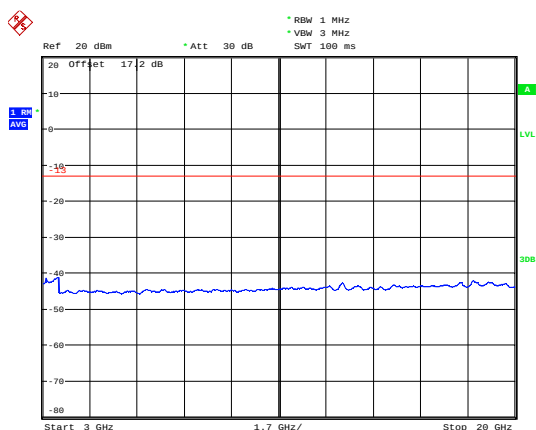
Date: 13.JUL.2019 13:00:26

LTE Band 4 5MHz CH-Middle 1GHz~3GHz



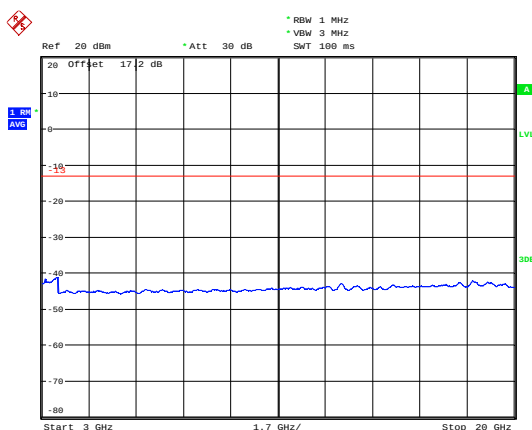
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LTE Band 4 5MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:08:42

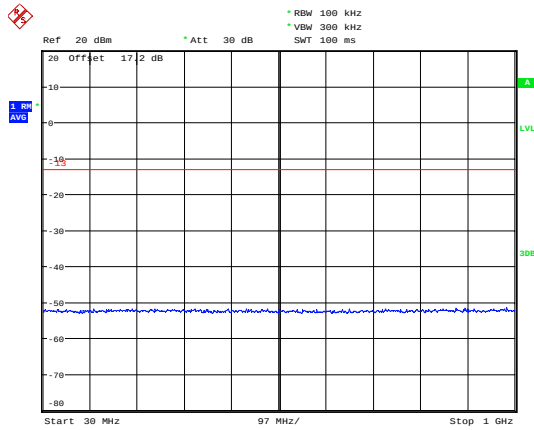
LTE Band 4 5MHz CH-Middle 3GHz~20GHz



Date: 13.JUL.2019 13:08:58

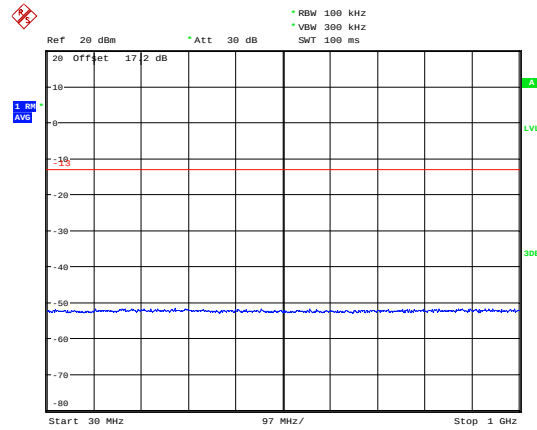


LTE Band 4 5MHz CH-High 30MHz~1GHz



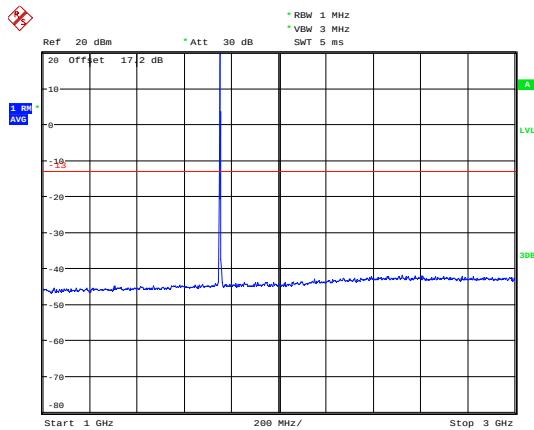
Date: 13.JUL.2019 12:53:34

LTE Band 4 10MHz CH-Low 30MHz~1GHz



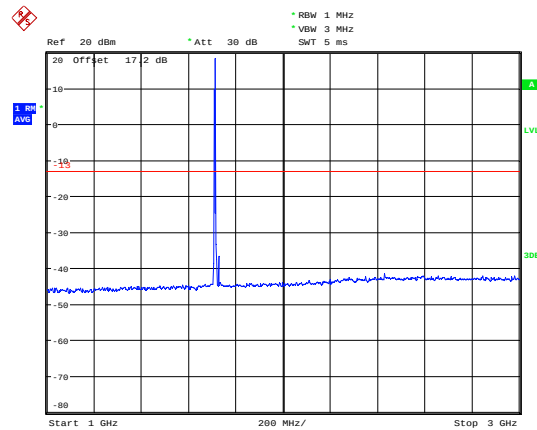
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LTE Band 4 5MHz CH-High 1GHz~3GHz



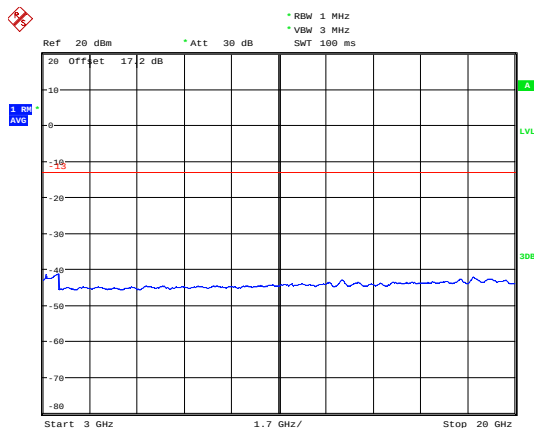
Date: 13.JUL.2019 13:01:05

LTE Band 4 10MHz CH-Low 1GHz~3GHz



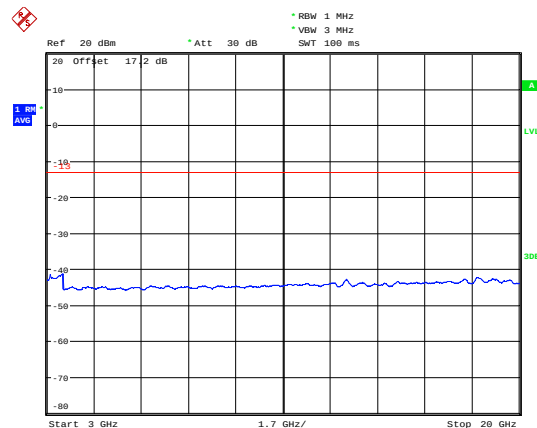
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LTE Band 4 5MHz CH-High 3GHz~20GHz



Date: 13.JUL.2019 13:09:17

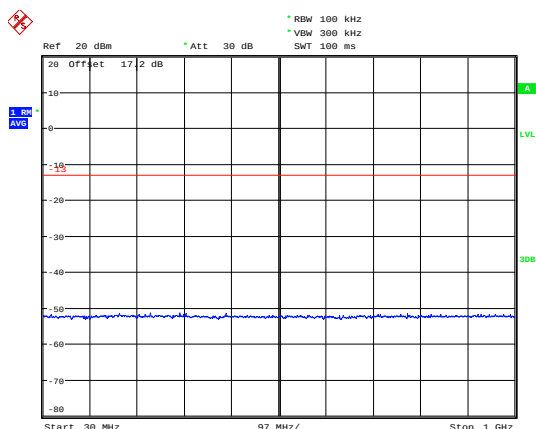
LTE Band 4 10MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:09:42

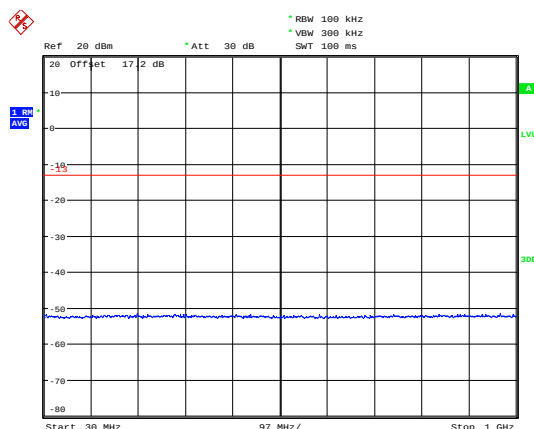


LTE Band 4 10MHz CH-Middle 30MHz~1GHz



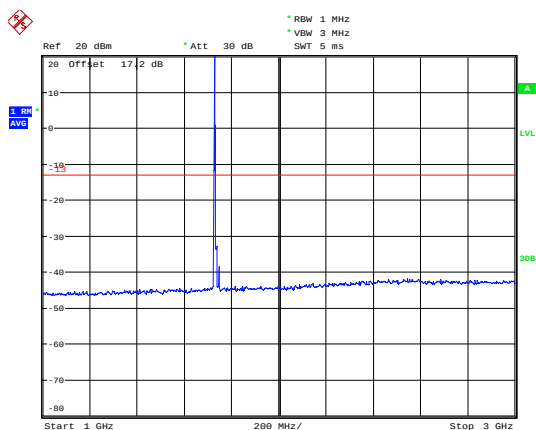
Date: 13.JUL.2019 12:54:08

LTE Band 4 10MHz CH-High 30MHz~1GHz



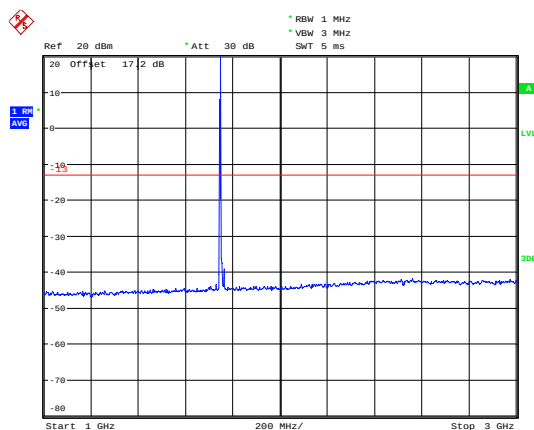
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LTE Band 4 10MHz CH-Middle 1GHz~3GHz



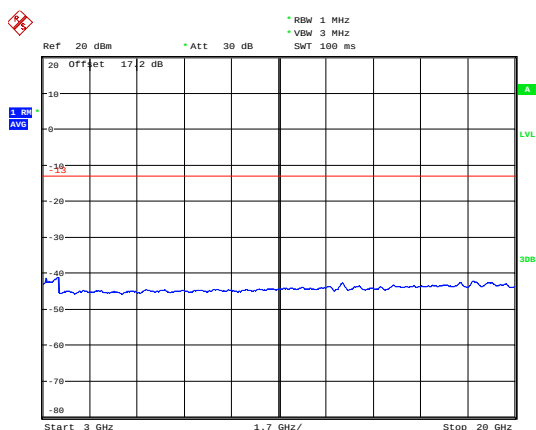
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LTE Band 4 10MHz CH-High 1GHz~3GHz



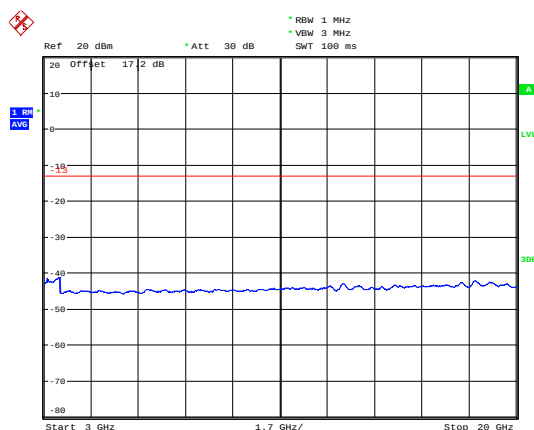
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LTE Band 4 10MHz CH-Middle 3GHz~20GHz



Date: 13.JUL.2019 13:09:54

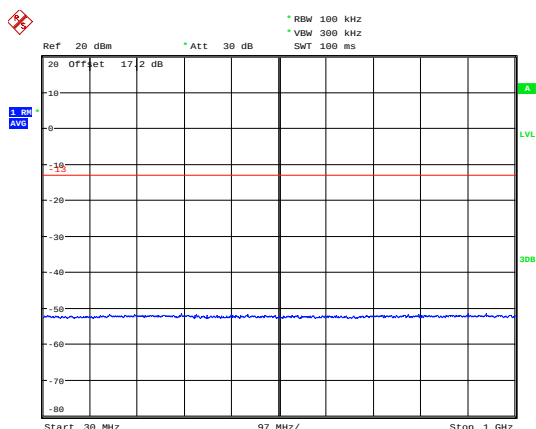
LTE Band 4 10MHz CH-High 3GHz~20GHz



Date: 13.JUL.2019 13:10:08

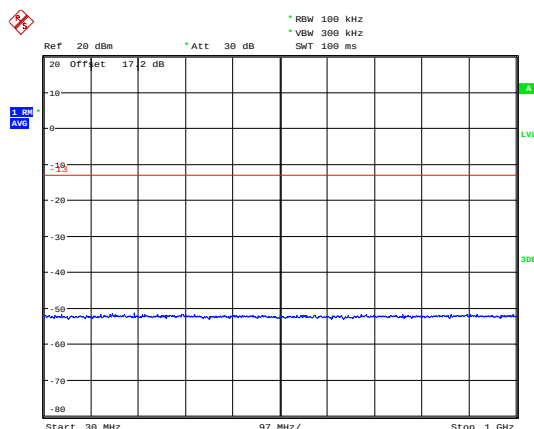


LTE Band 4 15MHz CH-Low 30MHz~1GHz



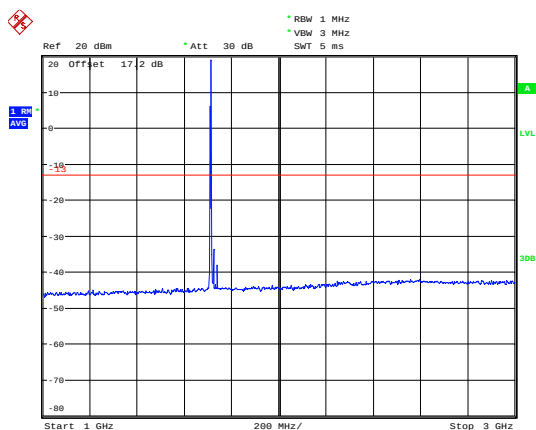
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LTE Band 4 15MHz CH-Middle 30MHz~1GHz



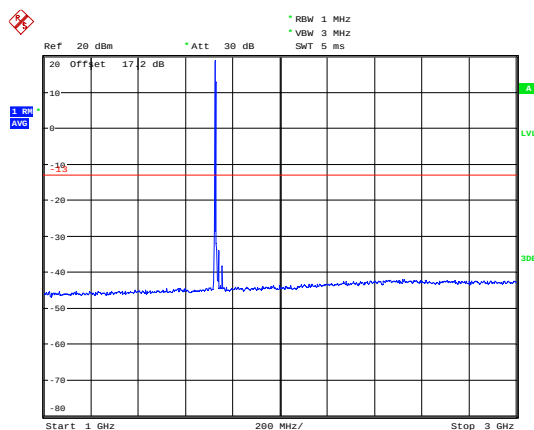
Date: 13.JUL.2019 12:55:16

LTE Band 4 15MHz CH-Low 1GHz~3GHz



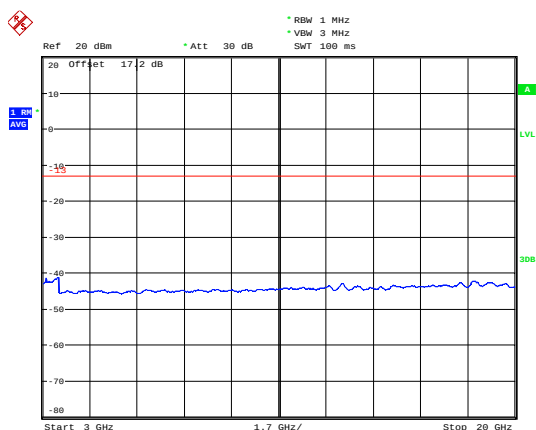
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LTE Band 4 15MHz CH-Middle 1GHz~3GHz



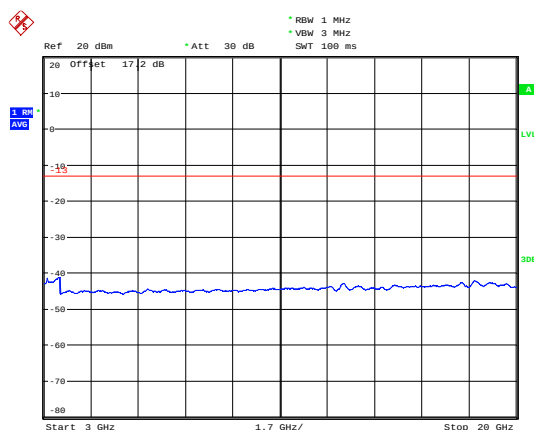
Date: 13.JUL.2019 13:02:53

LTE Band 4 15MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:10:34

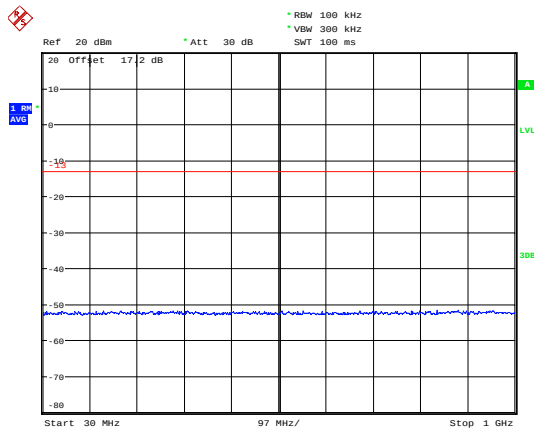
LTE Band 4 15MHz CH-Middle 3GHz~20GHz



Date: 13.JUL.2019 13:10:53

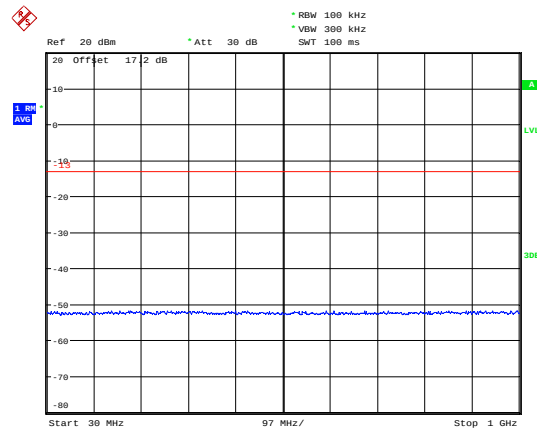


LTE Band 4 15MHz CH-High 30MHz~1GHz



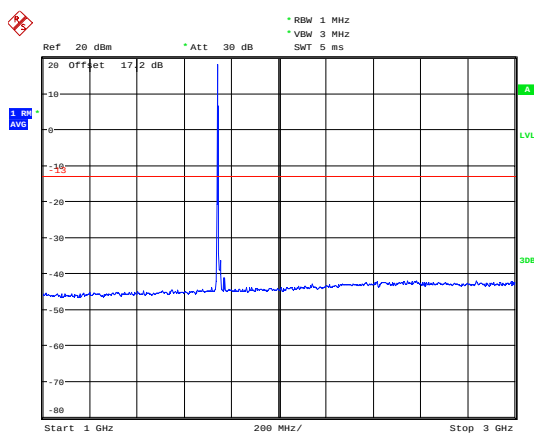
Date: 13.JUL.2019 12:55:31

LTE Band 4 20MHz CH-Low 30MHz~1GHz



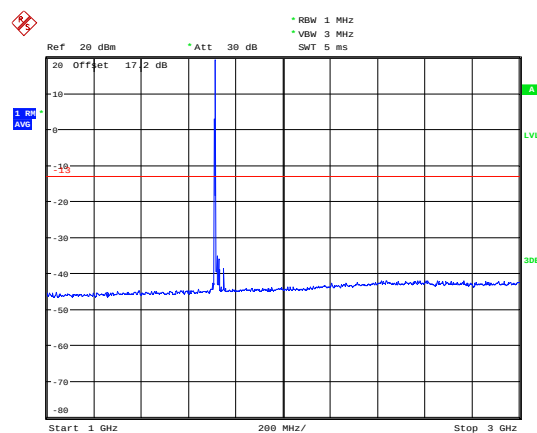
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LTE Band 4 15MHz CH-High 1GHz~3GHz



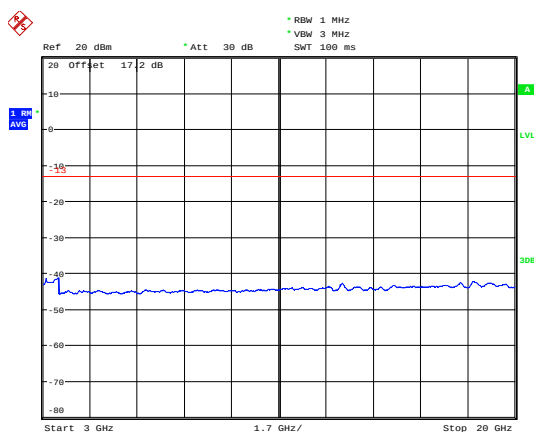
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LTE Band 4 20MHz CH-Low 1GHz~3GHz



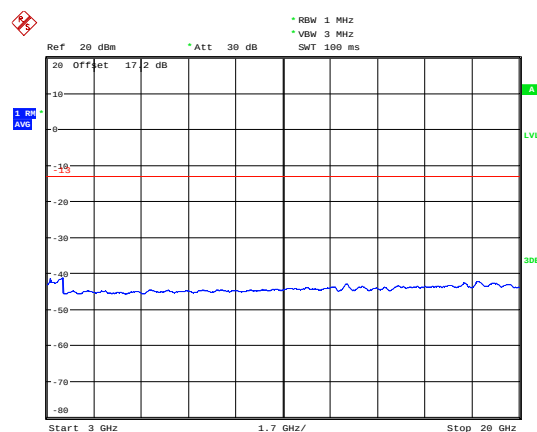
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LTE Band 4 15MHz CH-High 3GHz~20GHz



Date: 13.JUL.2019 13:11:07

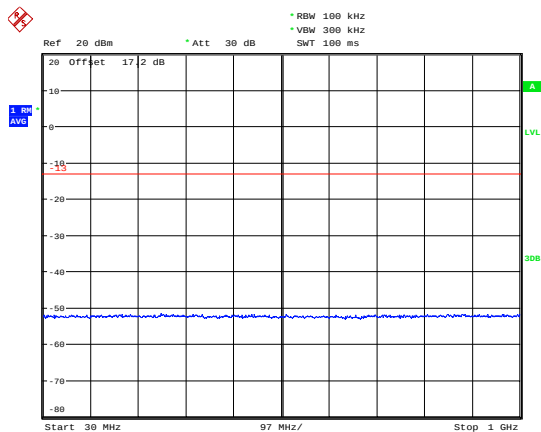
LTE Band 4 20MHz CH-Low 3GHz~20GHz



Date: 13.JUL.2019 13:05:26

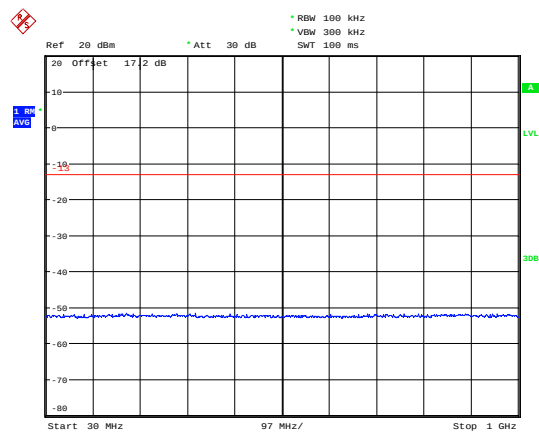


LTE Band 4 20MHz CH- Middle 30MHz~1GHz



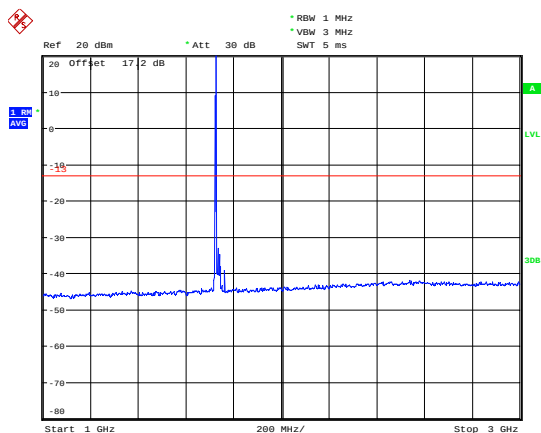
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LTE Band 4 20MHz CH- High 30MHz~1GHz



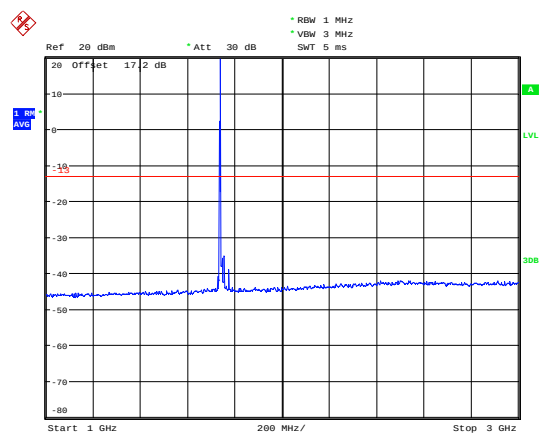
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LTE Band 4 20MHz CH- Middle 1GHz~3GHz



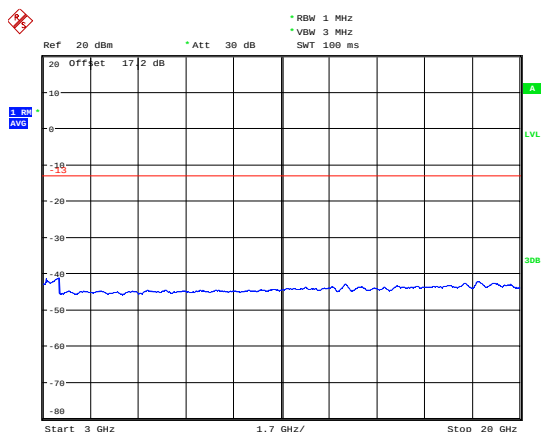
Date: 13.JUL.2019 13:04:05

LTE Band 4 20MHz CH- High 1GHz~3GHz



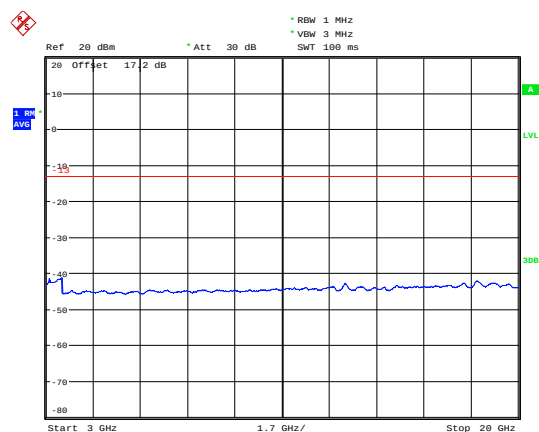
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LTE Band 4 20MHz CH- Middle 3GHz~20GHz



Date: 13.JUL.2019 13:05:09

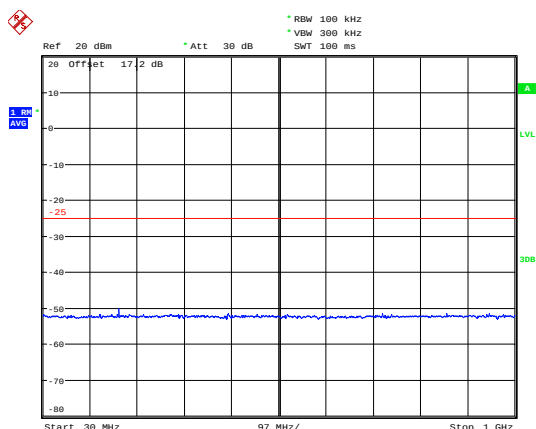
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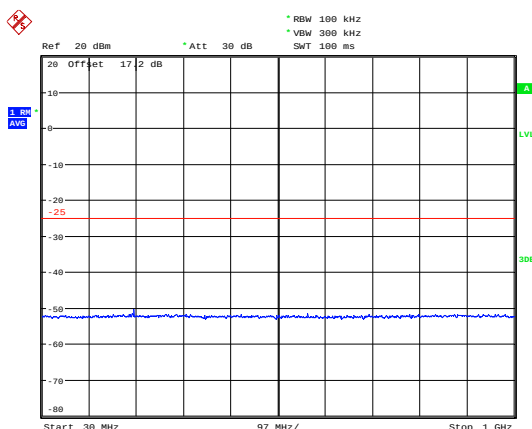


LTE Band 7 5MHz CH-Low 30MHz~1GHz



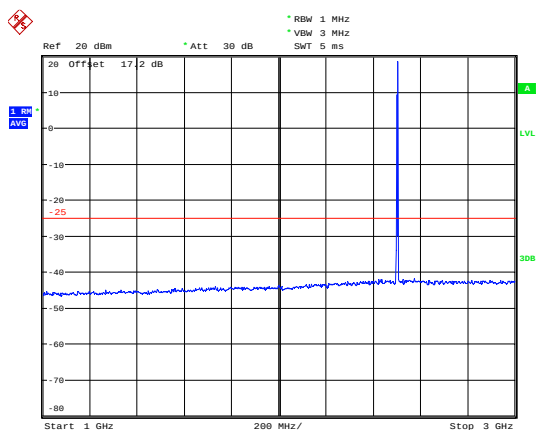
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LTE Band 7 5MHz CH-Middle 30MHz~1GHz



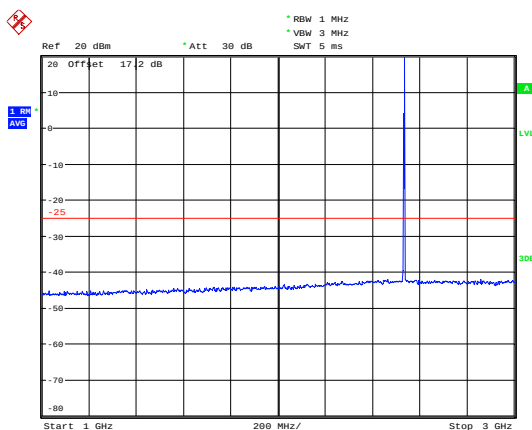
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LTE Band 7 5MHz CH-Low 1GHz~3GHz



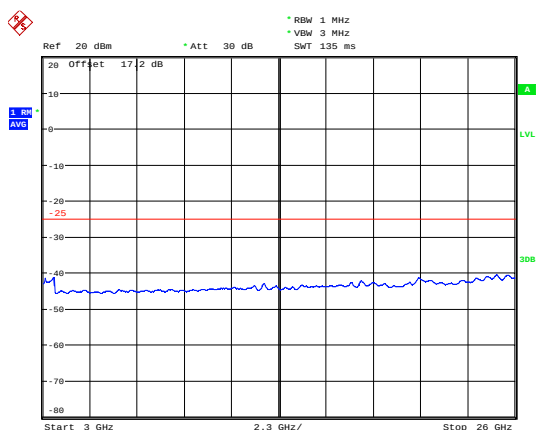
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LTE Band 7 5MHz CH-Middle 1GHz~3GHz



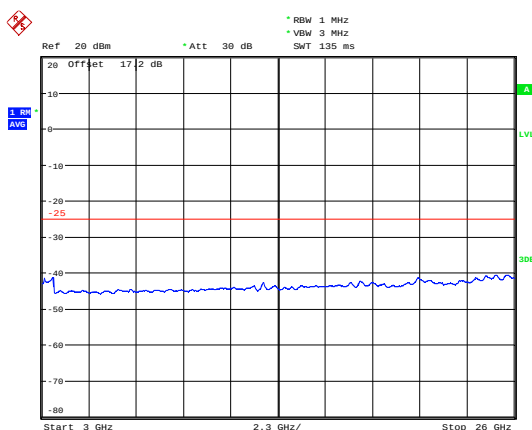
Date: 13.JUL.2019 14:59:59

LTE Band 7 5MHz CH-Low 3GHz~26GHz



Date: 13.JUL.2019 15:19:17

LTE Band 7 5MHz CH-Middle 3GHz~26GHz



Date: 13.JUL.2019 15:19:35



LTE Band 7 10MHz CH-Low 30MHz~1GHz



LTE Band 7 10MHz CH-Low 1GHz~3GHz

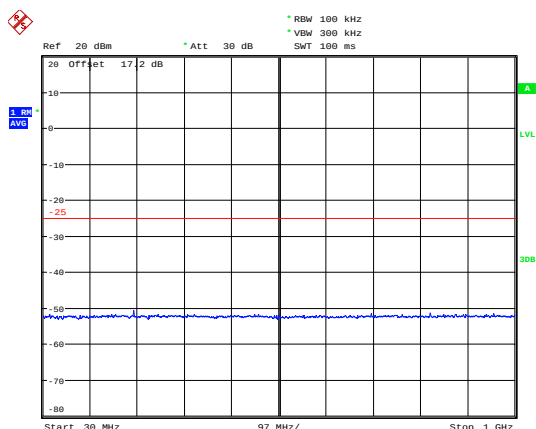


LTE Band 7 10MHz CH-Low 3GHz~26GHz



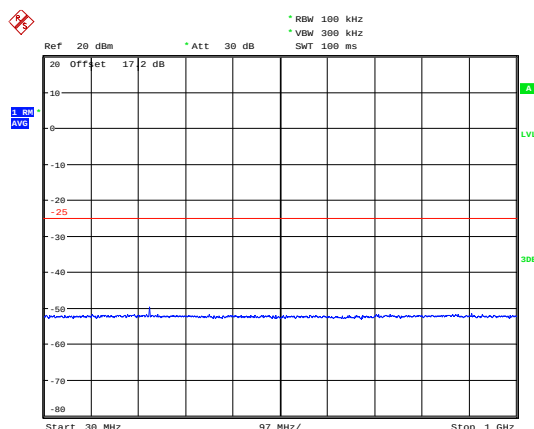


LTE Band 7 10MHz CH-Middle 30MHz~1GHz



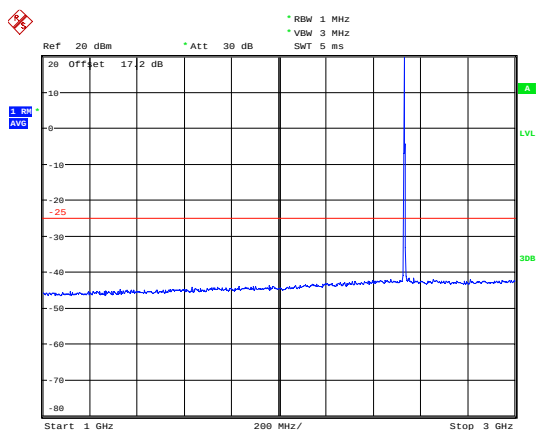
Date: 13.JUL.2019 14:56:18

LTE Band 7 10MHz CH-High 30MHz~1GHz



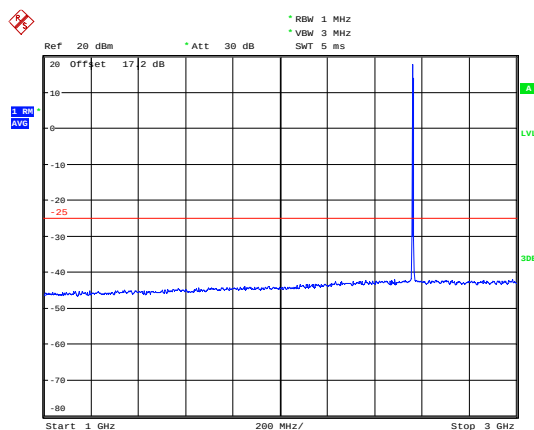
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LTE Band 7 10MHz CH-Middle 1GHz~3GHz



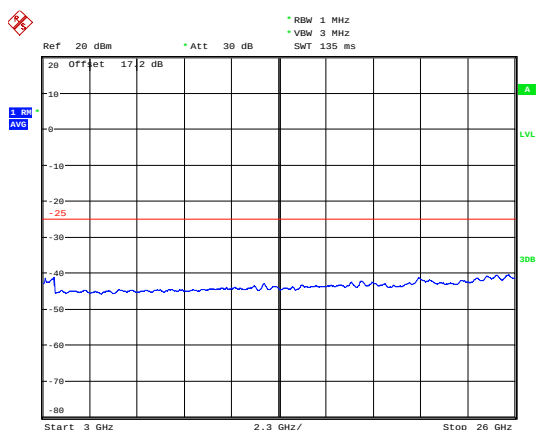
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LTE Band 7 10MHz CH-High 1GHz~3GHz



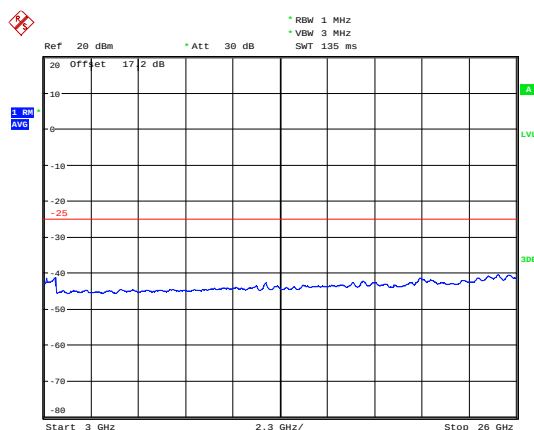
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LTE Band 7 10MHz CH-Middle 3GHz~26GHz



Date: 13.JUL.2019 15:20:38

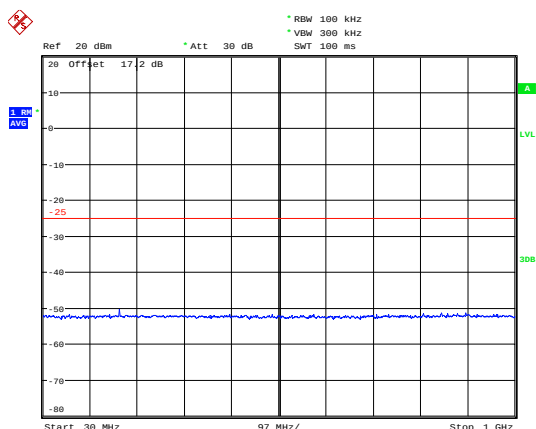
LTE Band 7 10MHz CH-High 3GHz~26GHz



Date: 13.JUL.2019 15:21:11

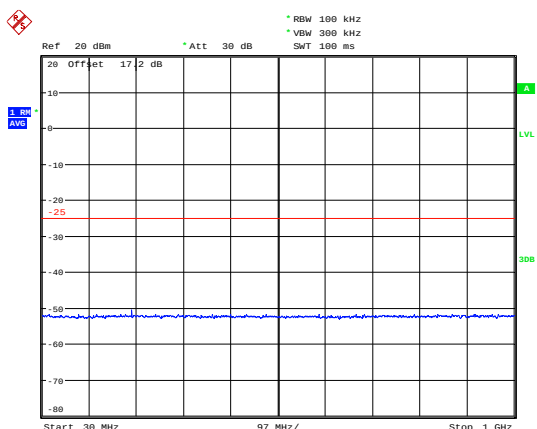


LTE Band 7 15MHz CH-Low 30MHz~1GHz



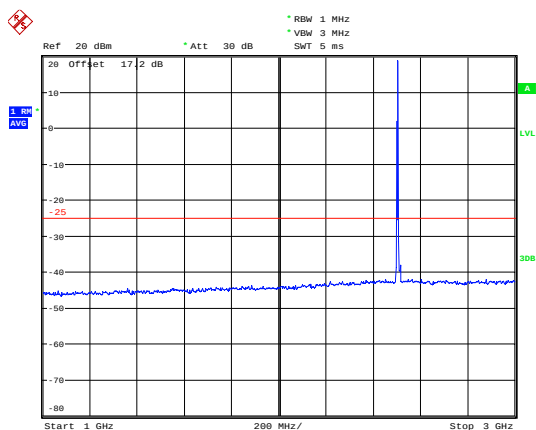
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LTE Band 7 15MHz CH-Middle 30MHz~1GHz



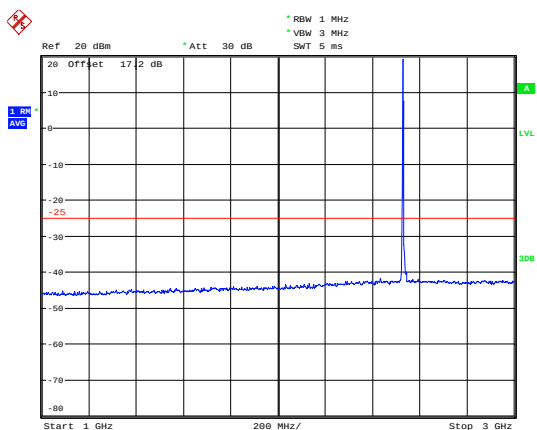
Date: 13.JUL.2019 14:57:06

LTE Band 7 15MHz CH-Low 1GHz~3GHz



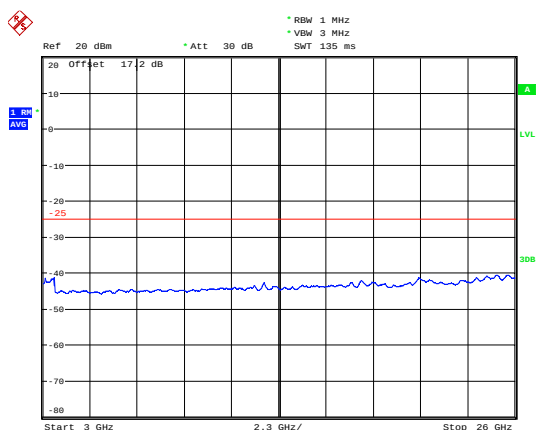
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LTE Band 7 15MHz CH-Middle 1GHz~3GHz



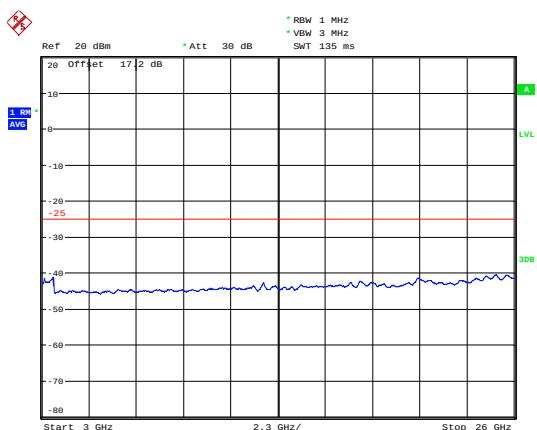
Date: 13.JUL.2019 15:02:01

LTE Band 7 15MHz CH-Low 3GHz~26GHz



Date: 13.JUL.2019 15:21:43

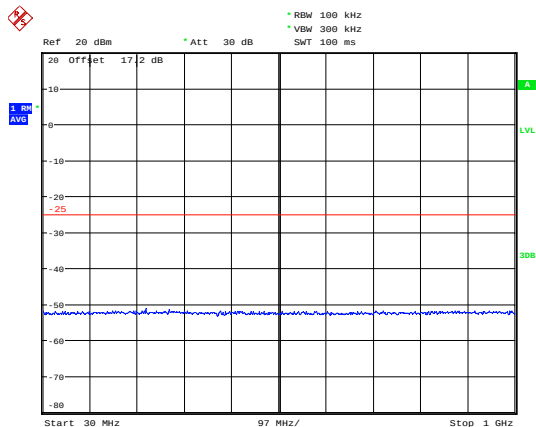
LTE Band 7 15MHz CH-Middle 3GHz~26GHz



Date: 13.JUL.2019 15:22:05

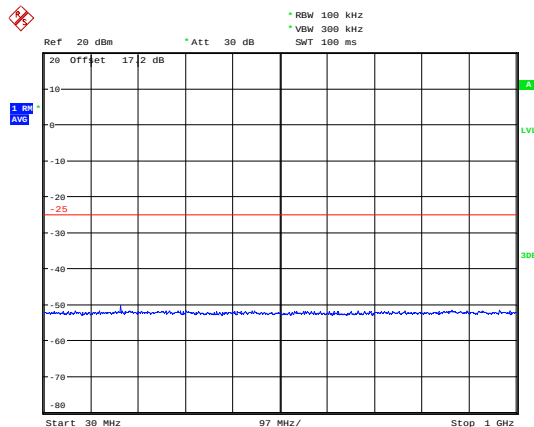


LTE Band 7 15MHz CH-High 30MHz~1GHz



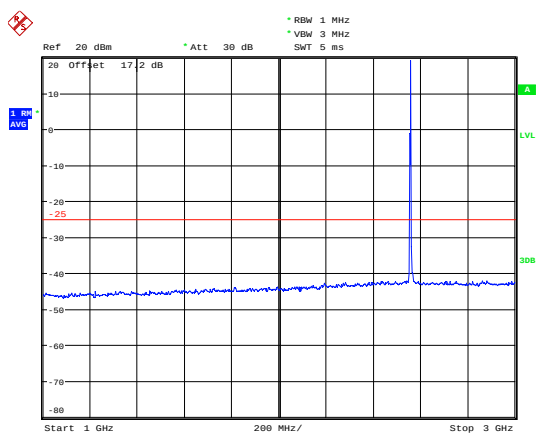
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LTE Band 7 20MHz CH-Low 30MHz~1GHz



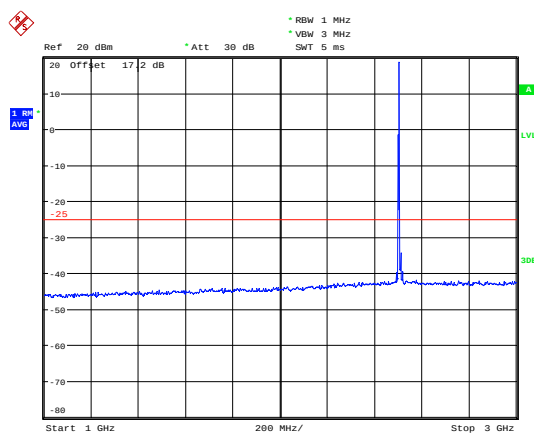
Date: 13.JUL.2019 14:57:43

LTE Band 7 15MHz CH-High 1GHz~3GHz



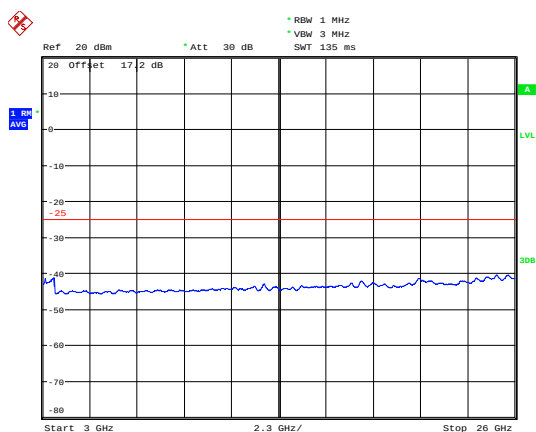
Date: 13.JUL.2019 15:02:20

LTE Band 7 20MHz CH-Low 1GHz~3GHz



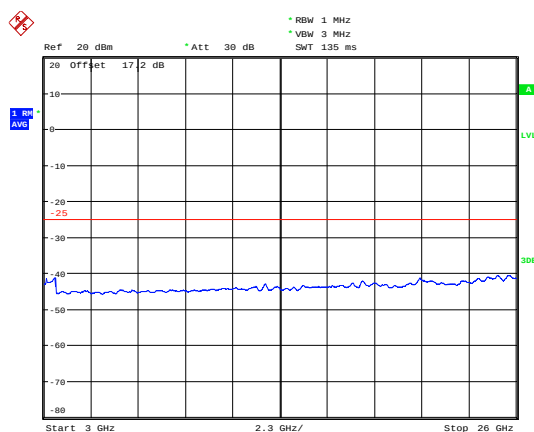
Date: 13.JUL.2019 15:02:41

LTE Band 7 15MHz CH-High 3GHz~26GHz



Date: 13.JUL.2019 15:22:26

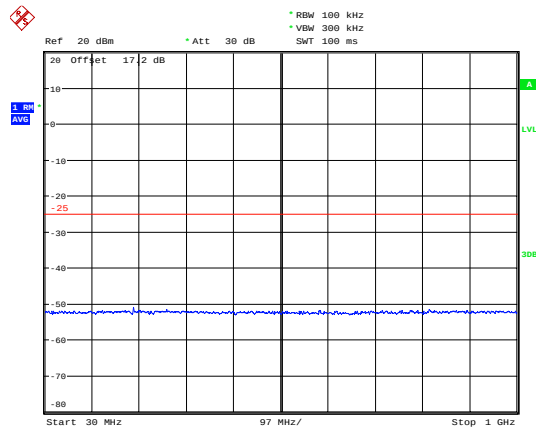
LTE Band 7 20MHz CH-Low 3GHz~26GHz



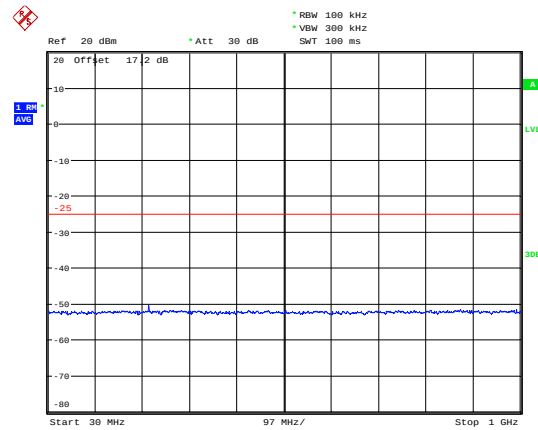
Date: 13.JUL.2019 15:18:53

LTE Band 7 20MHz CH-Middle 30MHz~1GHz

LTE Band 7 20MHz CH-High 30MHz~1GHz

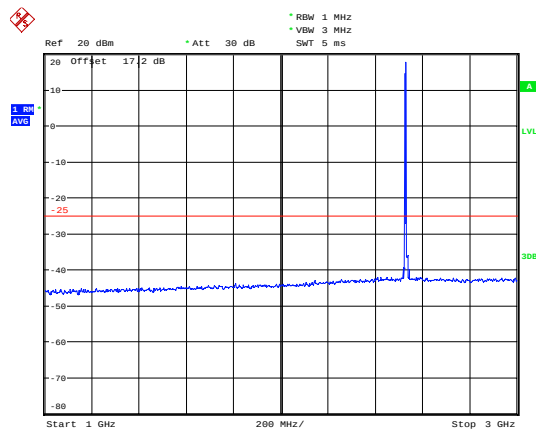


Date: 13.JUL.2019 14:58:06



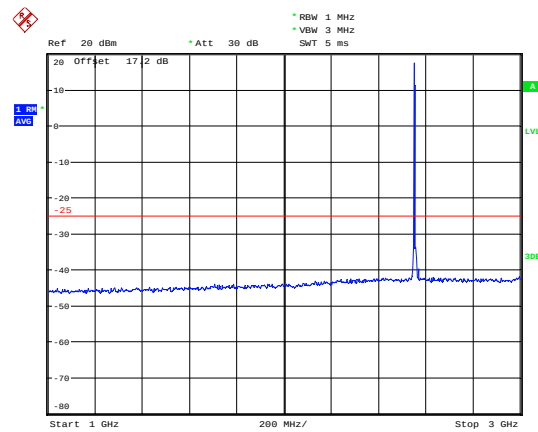
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LTE Band 7 20MHz CH-Middle 1GHz~3GHz



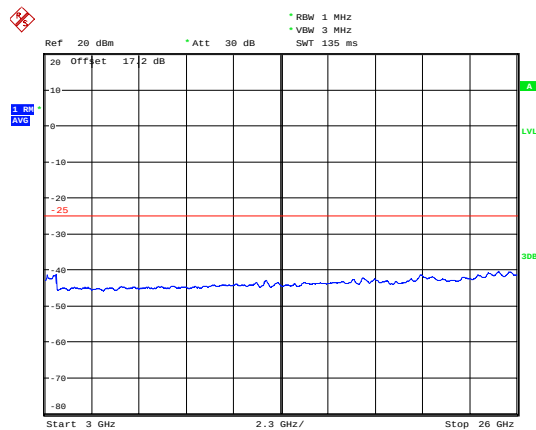
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LTE Band 7 20MHz CH-High 1GHz~3GHz



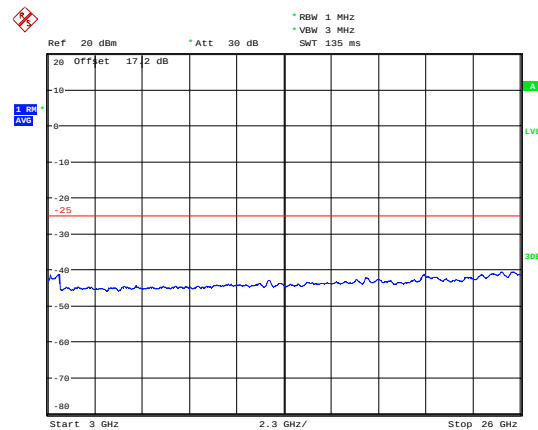
Date: 13.JUL.2019 15:03:13

LTE Band 7 20MHz CH-Middle 3GHz~26GHz



Date: 13.JUL.2019 15:18:37

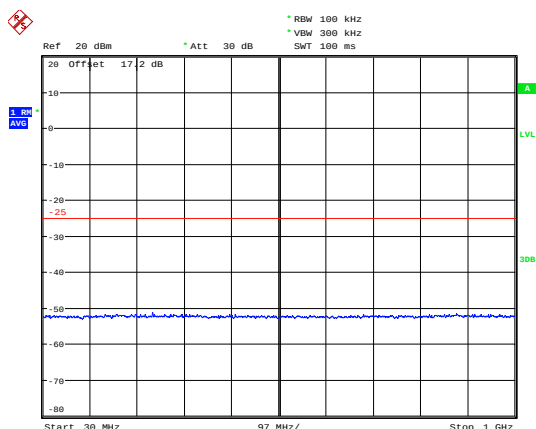
LTE Band 7 20MHz CH-High 3GHz~26GHz



Date: 13.JUL.2019 15:18:20

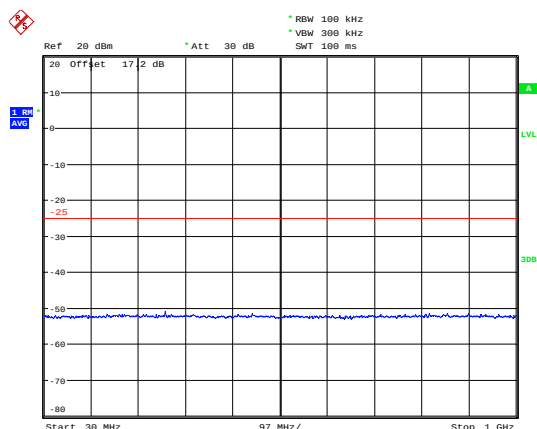


LTE Band 38 5MHz CH-Low 30MHz~1GHz



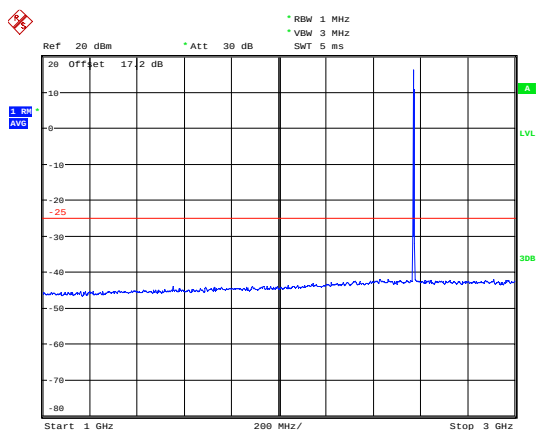
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LTE Band 38 5MHz CH-Middle 30MHz~1GHz



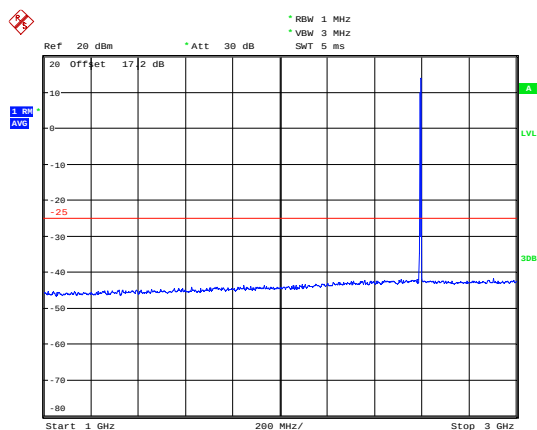
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LTE Band 38 5MHz CH-Low 1GHz~3GHz



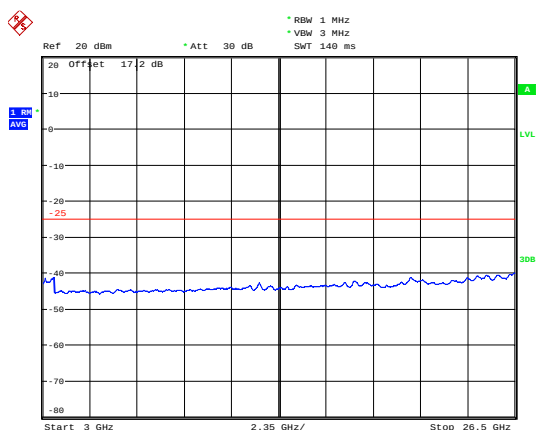
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LTE Band 38 5MHz CH-Middle 1GHz~3GHz



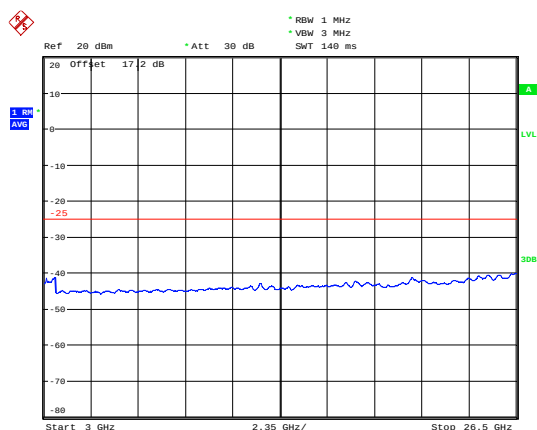
Date: 13.JUL.2019 15:37:04

LTE Band 38 5MHz CH-Low 3GHz~26.5GHz



Date: 13.JUL.2019 15:44:44

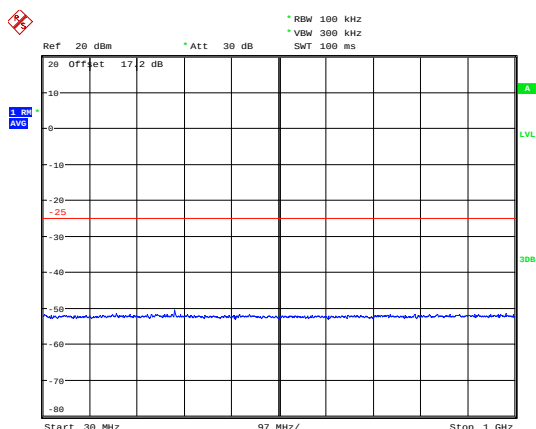
LTE Band 38 5MHz CH-Middle 3GHz~26.5GHz



Date: 13.JUL.2019 15:45:04

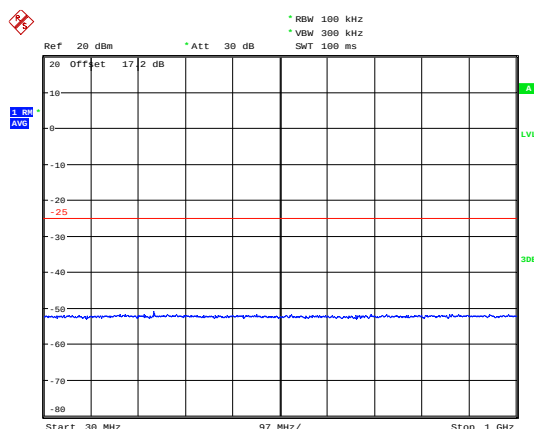


LTE Band 38 5MHz CH-High 30MHz~1GHz



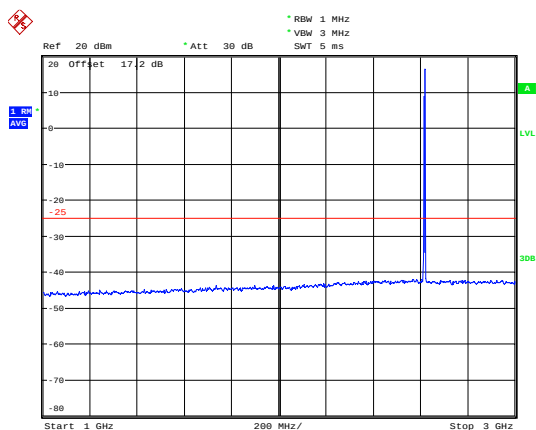
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LTE Band 38 10MHz CH-Low 30MHz~1GHz



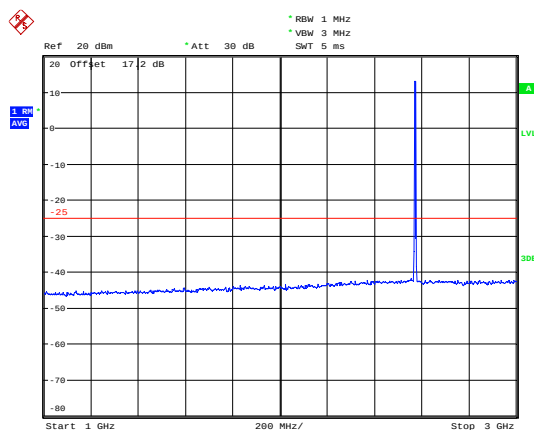
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LTE Band 38 5MHz CH-High 1GHz~3GHz



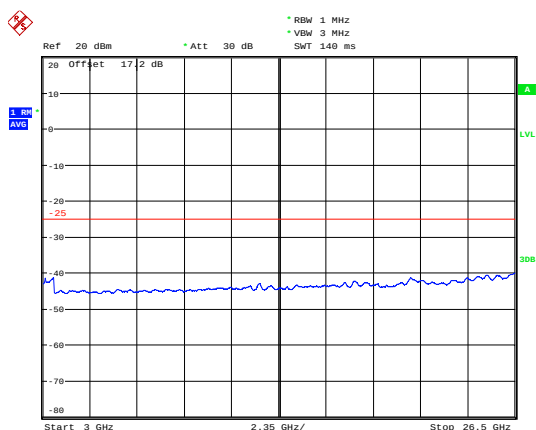
Date: 13.JUL.2019 15:37:27

LTE Band 38 10MHz CH-Low 1GHz~3GHz



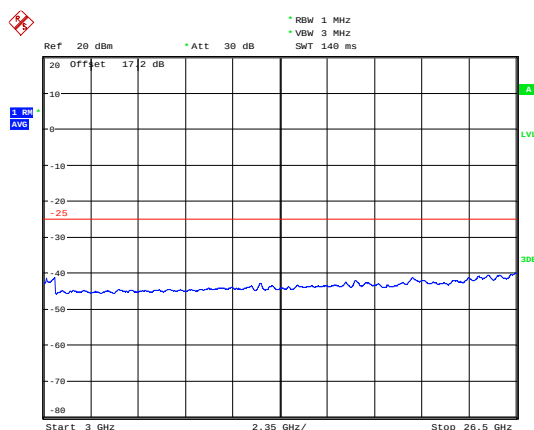
Date: 13.JUL.2019 15:38:19

LTE Band 38 5MHz CH-High 3GHz~26.5GHz



Date: 13.JUL.2019 15:45:23

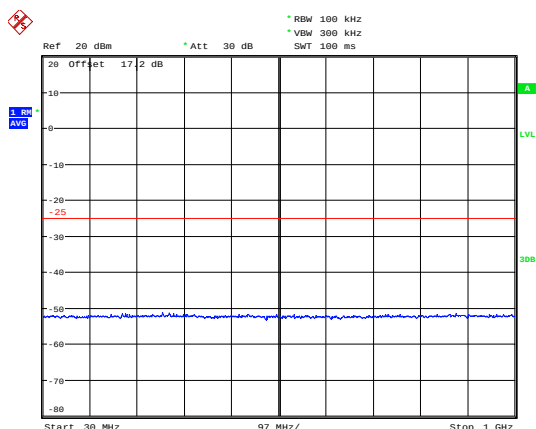
LTE Band 38 10MHz CH-Low 3GHz~26.5GHz



Date: 13.JUL.2019 15:45:53

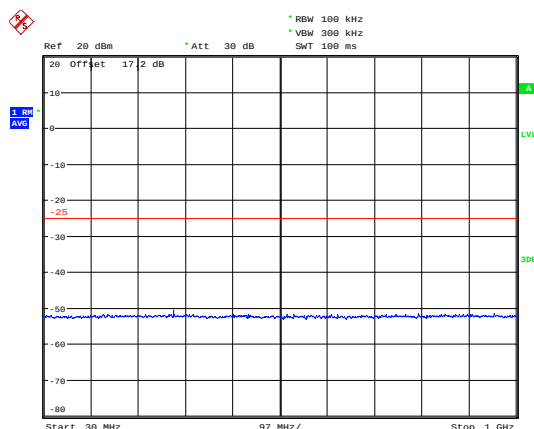


LTE Band 38 10MHz CH-Middle 30MHz~1GHz



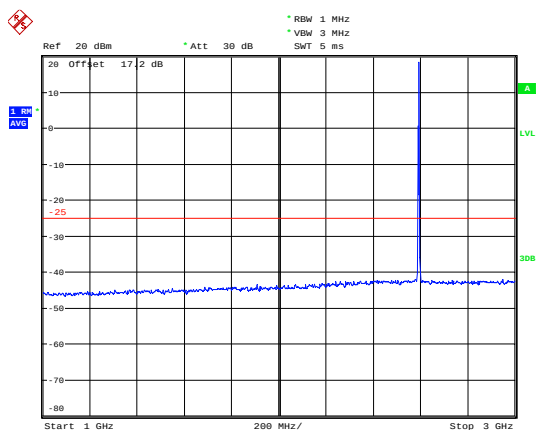
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LTE Band 38 10MHz CH-High 30MHz~1GHz



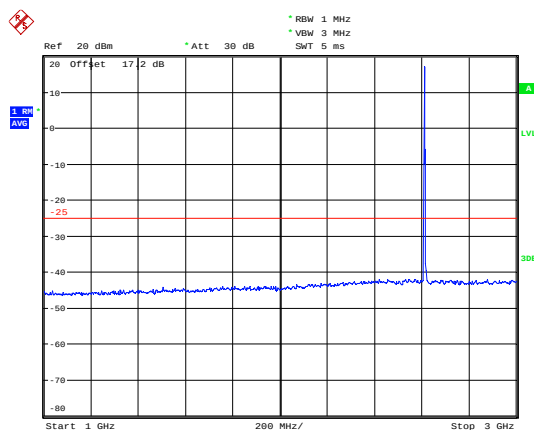
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LTE Band 38 10MHz CH-Middle 1GHz~3GHz



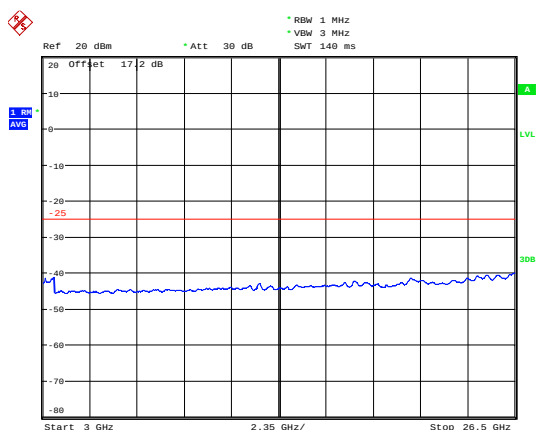
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LTE Band 38 10MHz CH-High 1GHz~3GHz



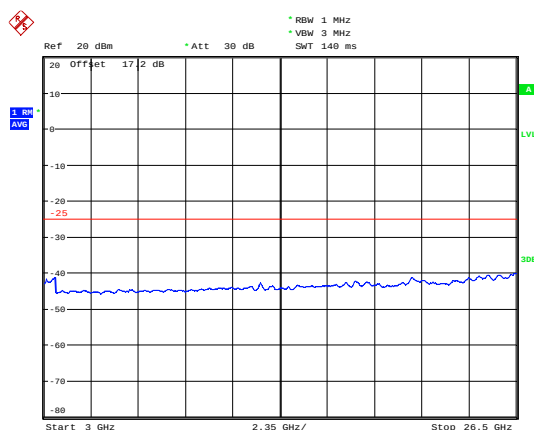
Date: 13.JUL.2019 15:39:00

LTE Band 38 10MHz CH-Middle 3GHz~26.5GHz



Date: 13.JUL.2019 15:46:20

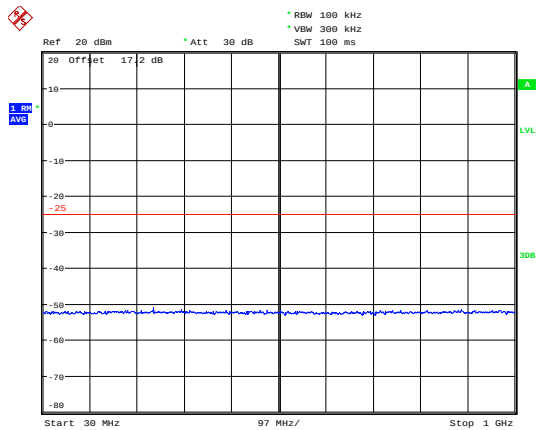
LTE Band 38 10MHz CH-High 3GHz~26.5GHz



Date: 13.JUL.2019 15:46:45

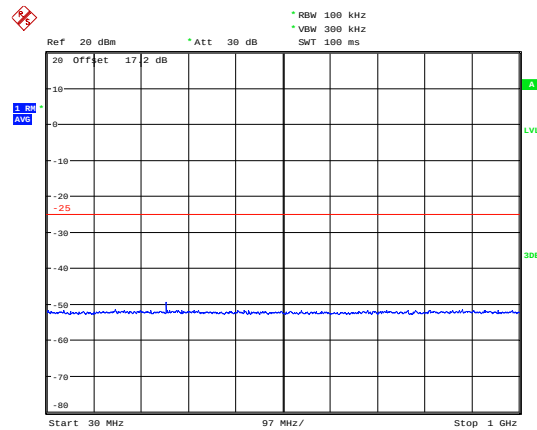


LTE Band 38 15MHz CH-Low 30MHz~1GHz



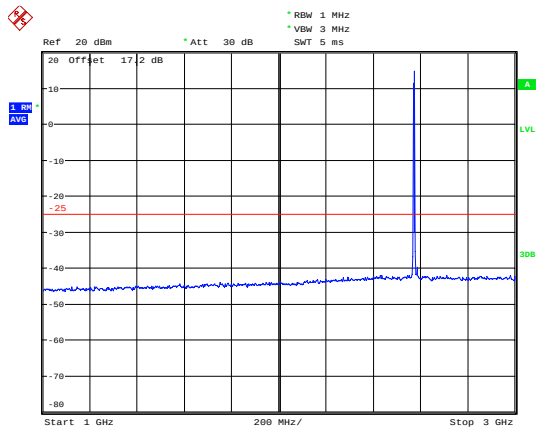
Date: 13.JUL.2019 15:34:43

LTE Band 38 15MHz CH-Middle 30MHz~1GHz



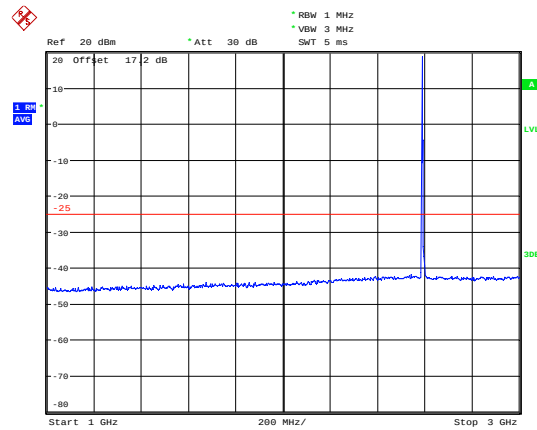
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LTE Band 38 15MHz CH-Low 1GHz~3GHz



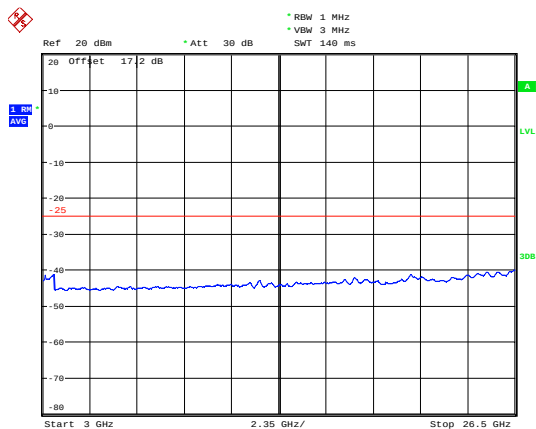
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LTE Band 38 15MHz CH-Middle 1GHz~3GHz



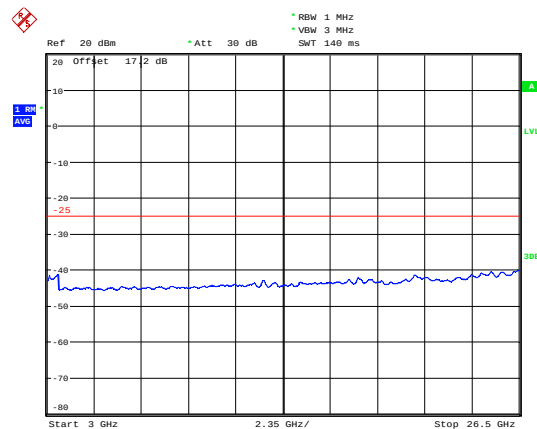
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LTE Band 38 15MHz CH-Low 3GHz~26.5GHz



Date: 13.JUL.2019 15:47:14

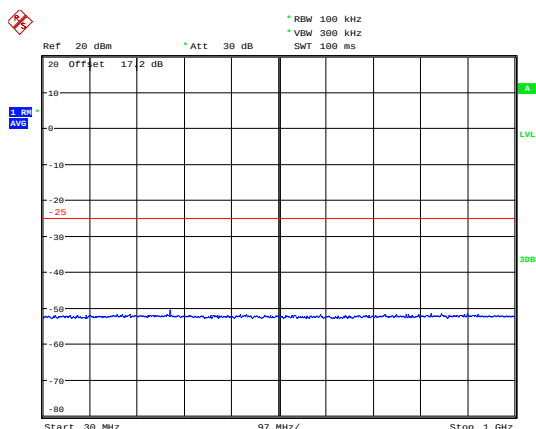
LTE Band 38 15MHz CH-Middle 3GHz~26.5GHz



Date: 13.JUL.2019 15:47:32

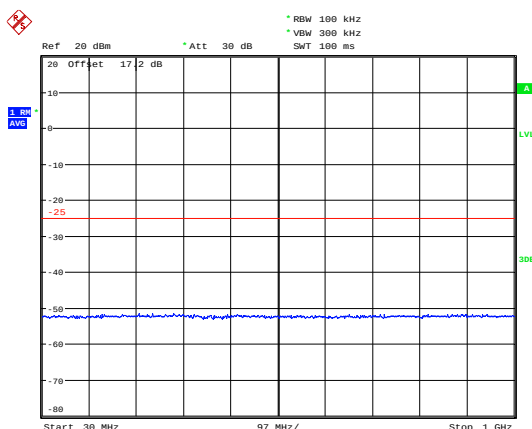


LTE Band 38 15MHz CH-High 30MHz~1GHz



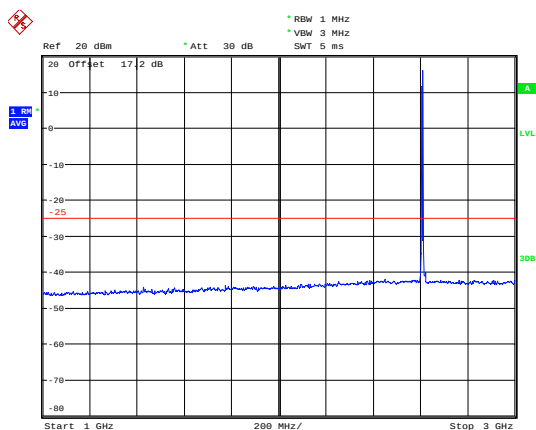
Date: 13.JUL.2019 15:35:09

LTE Band 38 20MHz CH-Low 30MHz~1GHz



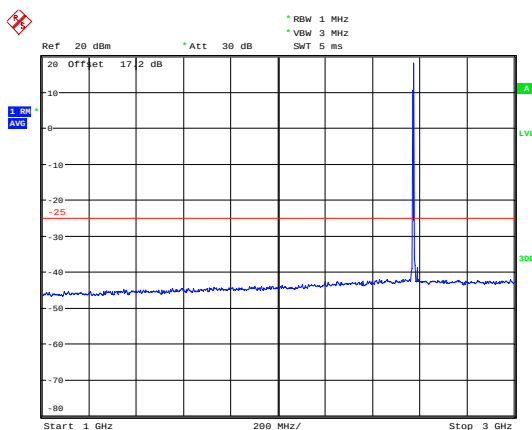
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LTE Band 38 15MHz CH-High 1GHz~3GHz



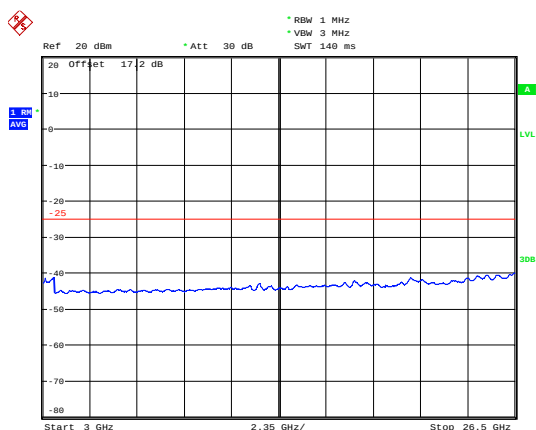
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LTE Band 38 20MHz CH-Low 1GHz~3GHz



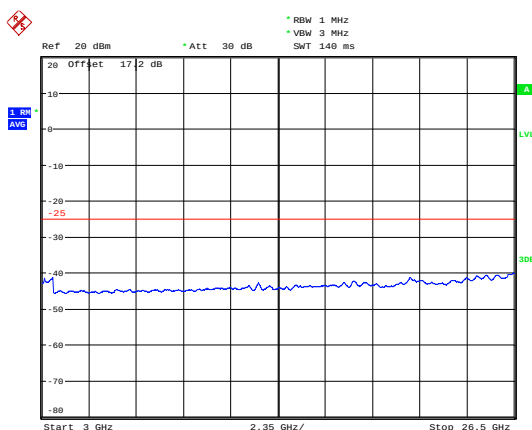
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LTE Band 38 15MHz CH-High 3GHz~26.5GHz



Date: 13.JUL.2019 15:47:54

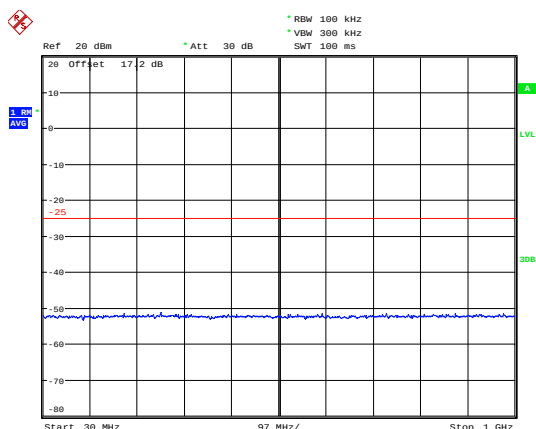
LTE Band 38 20MHz CH-Low 3GHz~26.5GHz



Date: 13.JUL.2019 15:44:18

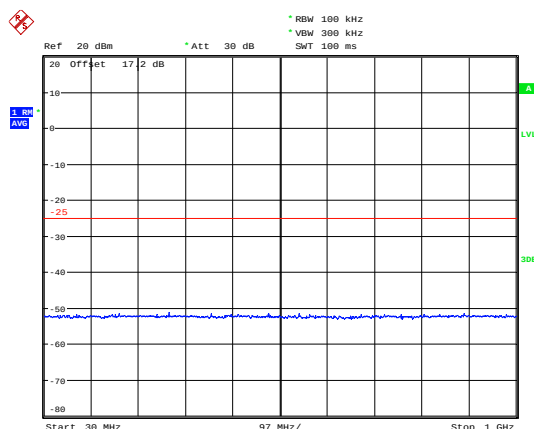


LTE Band 38 20MHz CH-Middle 30MHz~1GHz



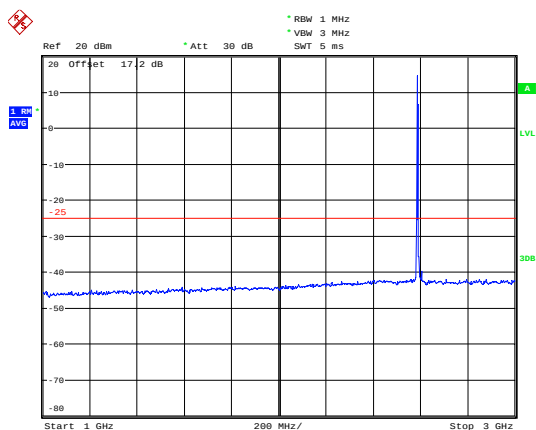
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LTE Band 38 20MHz CH-High 30MHz~1GHz



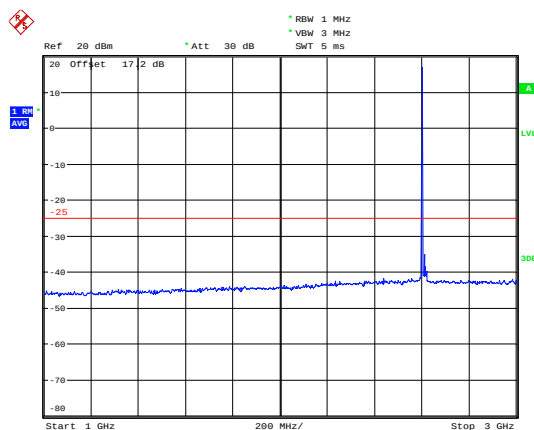
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LTE Band 38 20MHz CH-Middle 1GHz~3GHz



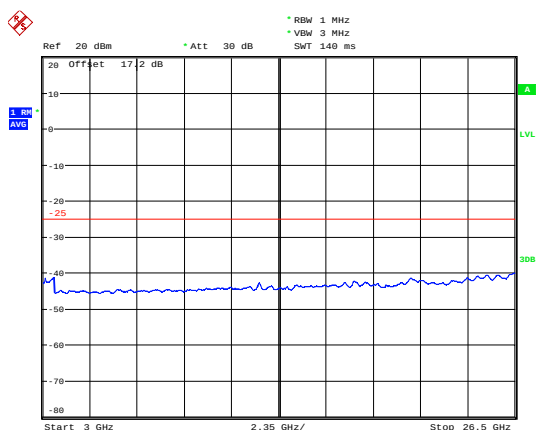
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LTE Band 38 20MHz CH-High 1GHz~3GHz



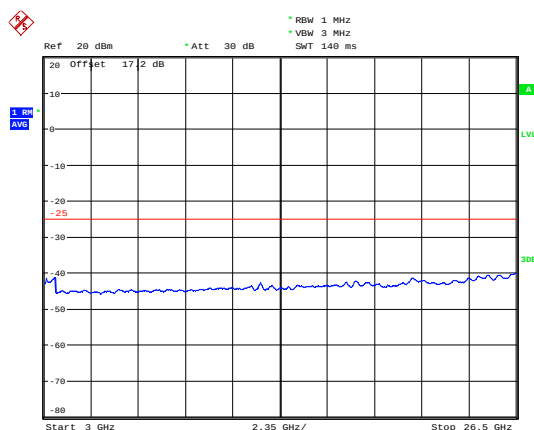
Date: 13.JUL.2019 15:41:04

LTE Band 38 20MHz CH-Middle 3GHz~26.5GHz

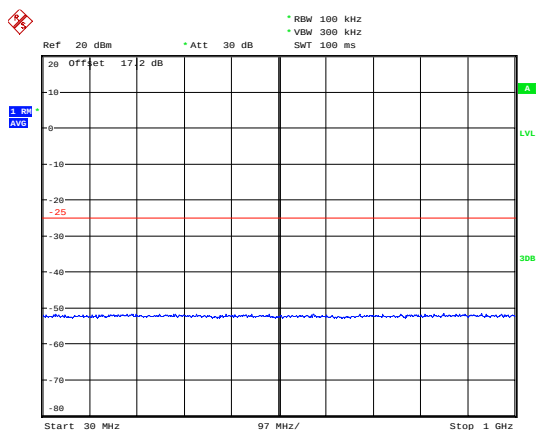


Date: 13.JUL.2019 15:44:02

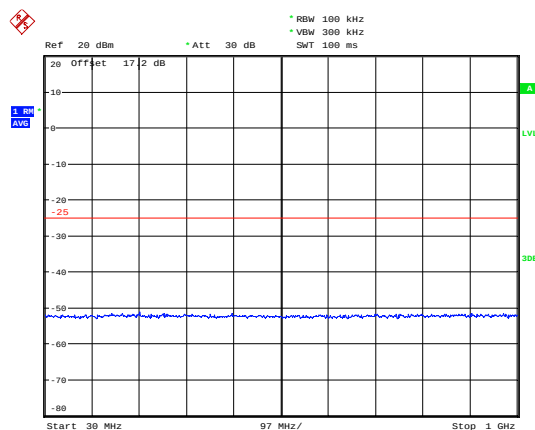
LTE Band 38 20MHz CH-High 3GHz~26.5GHz



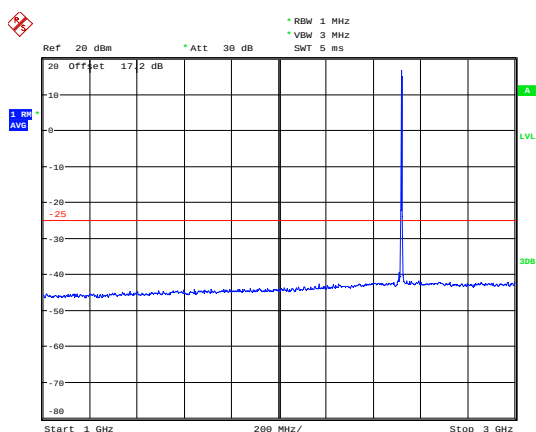
Date: 13.JUL.2019 15:43:46

CA-7C 20MHz+10MHz QPSKCH-Low
30MHz~1GHz

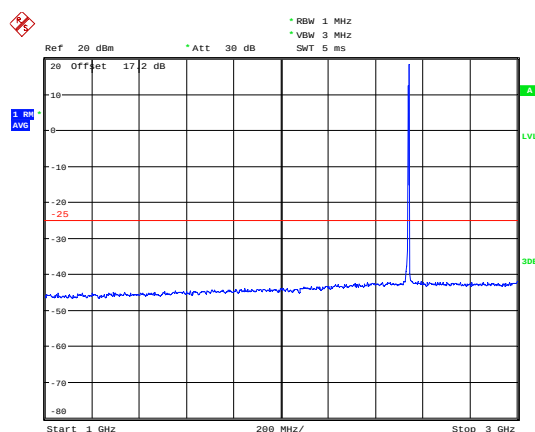
Date: 13.JUL.2019 16:19:08

CA-7C 20MHz+10MHz QPSKCH-Middle
30MHz~1GHz

Date: 13.JUL.2019 16:54:47

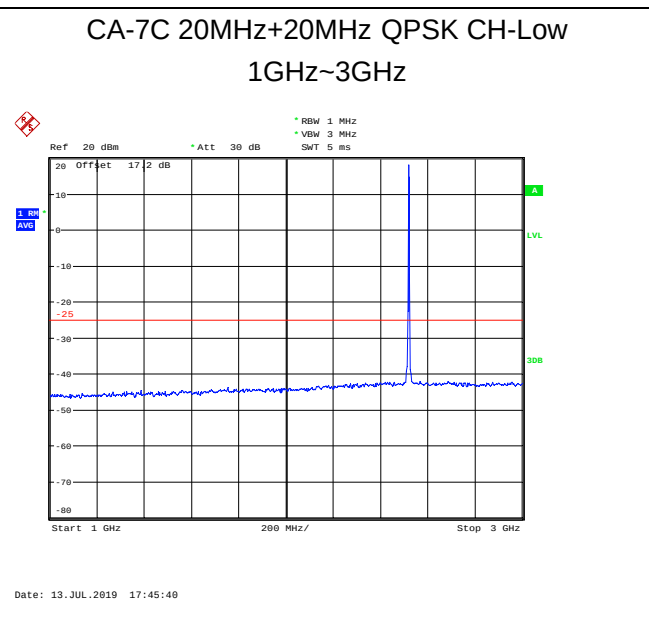
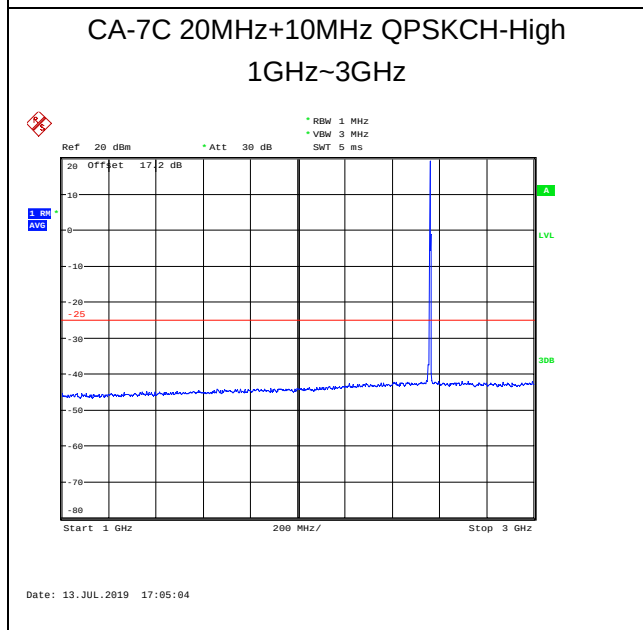
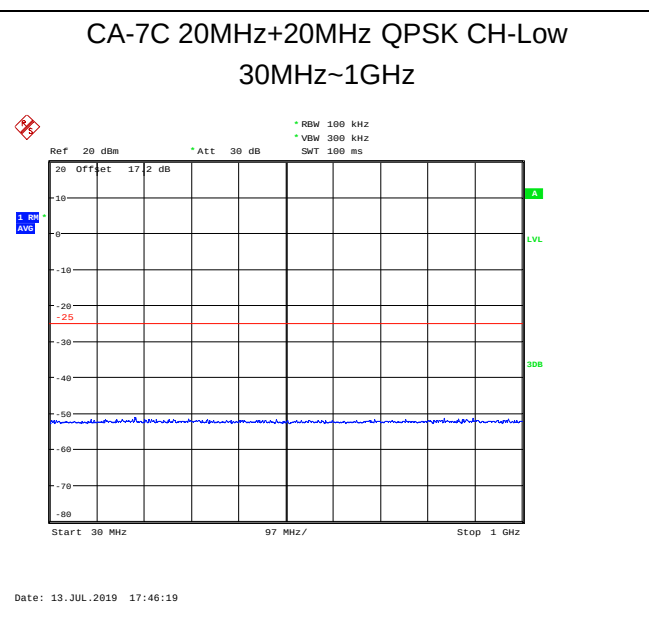
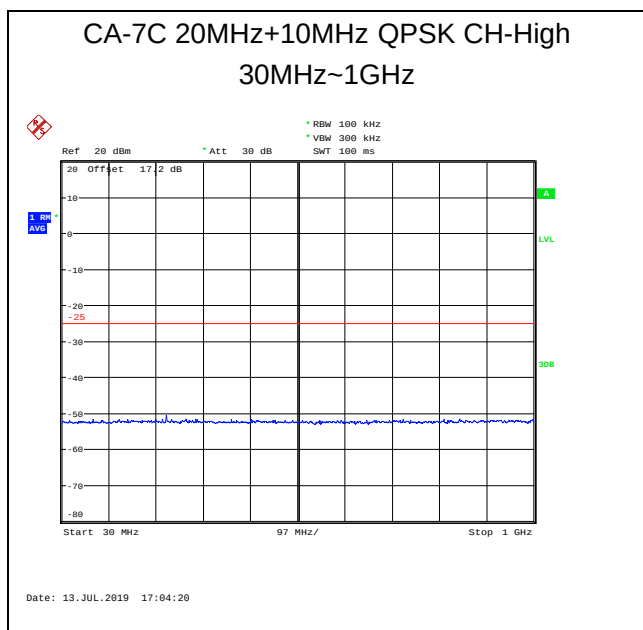
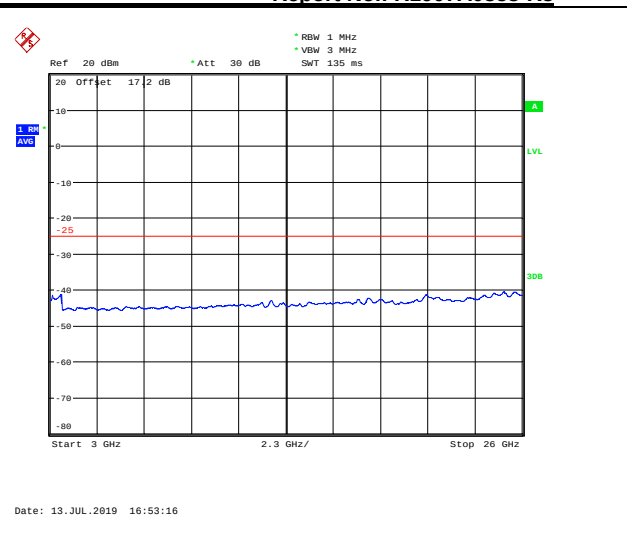
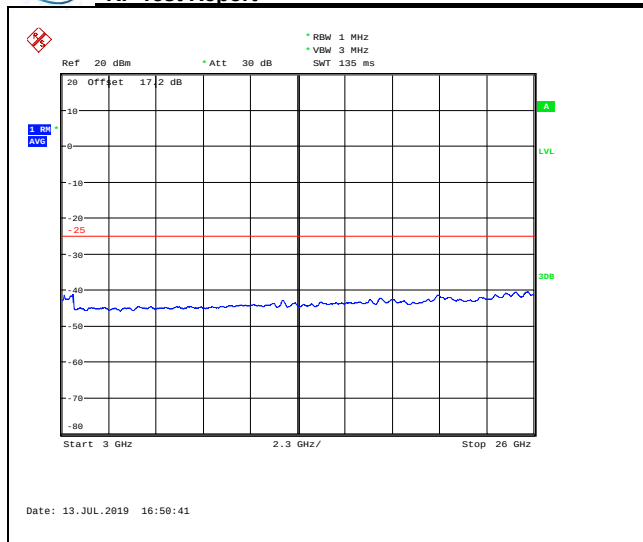
CA-7C 20MHz+10MHz QPSK CH-Low
1GHz~3GHz

Date: 13.JUL.2019 16:49:29

CA-7C 20MHz+10MHz CH-Middle
QPSK1GHz~3GHz

Date: 13.JUL.2019 16:54:17

CA-7C 20MHz+10MHz QPSK CH-Low
3GHz~26GHzCA-7C 20MHz+10MHz CH-Middle
QPSK3GHz~26GHz

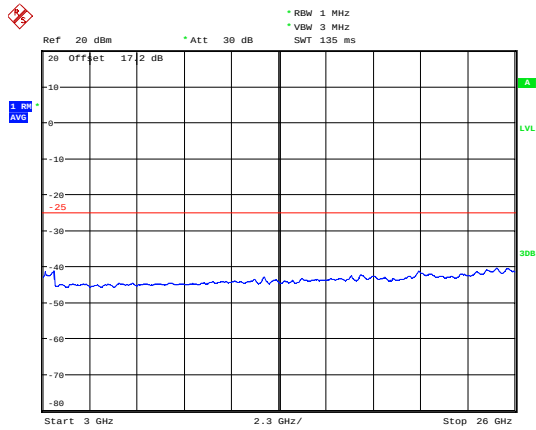


CA-7C 20MHz+10MHz QPSK CH-High

CA-7C 20MHz+20MHz QPSKCH-Low

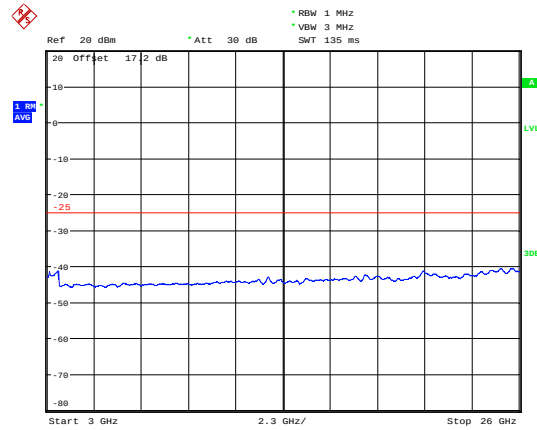


3GHz~26GHz



Date: 13.JUL.2019 17:06:37

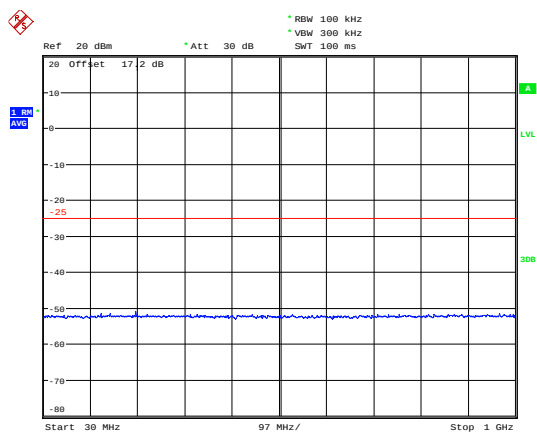
3GHz~26GHz



Date: 13.JUL.2019 17:44:45

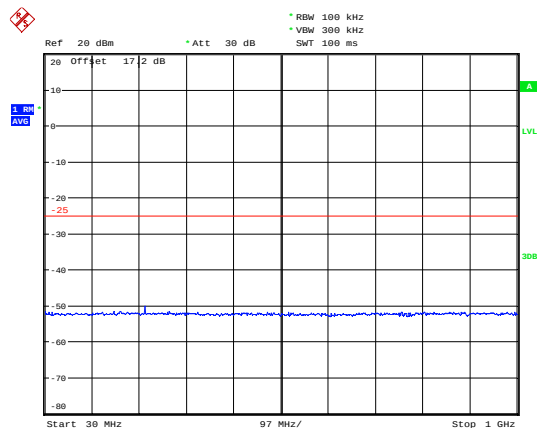


CA-7C 20MHz+20MHz QPSKCH-Middle 30MHz~1GHz



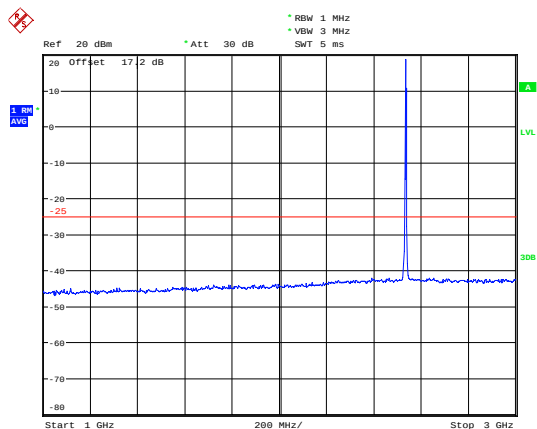
Date: 13.JUL.2019 17:49:03

CA-7C 20MHz+20MHz QPSKCH-High 30MHz~1GHz



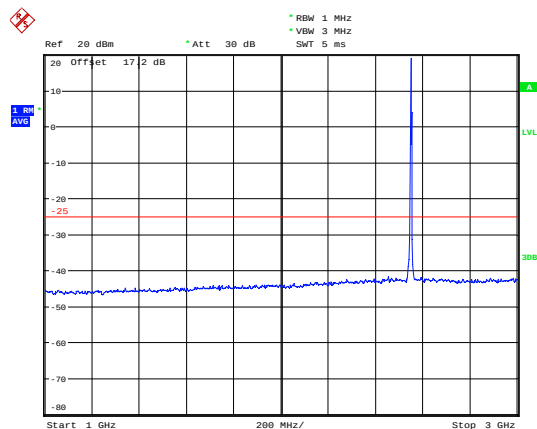
Date: 13.JUL.2019 17:56:24

CA-7C 20MHz+20MHz QPSK CH-Middle 1GHz~3GHz



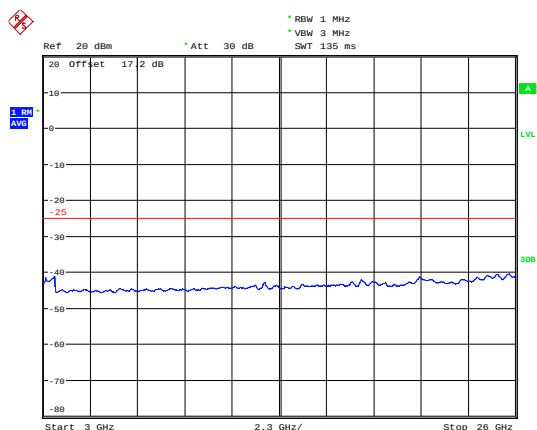
Date: 13.JUL.2019 17:50:16

CA-7C 20MHz+20MHz QPSK CH-High 1GHz~3GHz



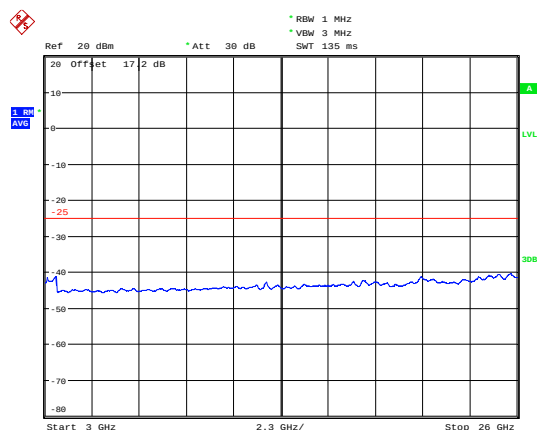
Date: 13.JUL.2019 17:55:57

CA-7C 20MHz+20MHz QPSK CH-Middle 3GHz~26GHz

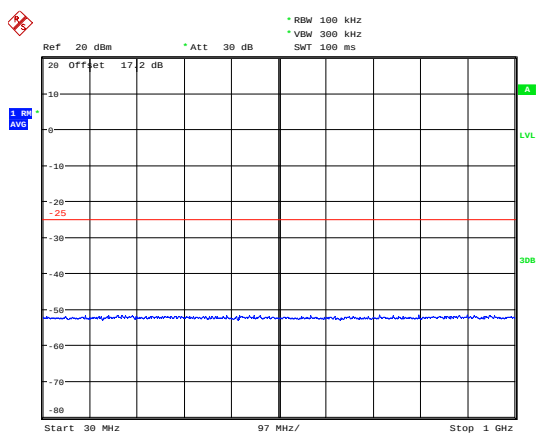


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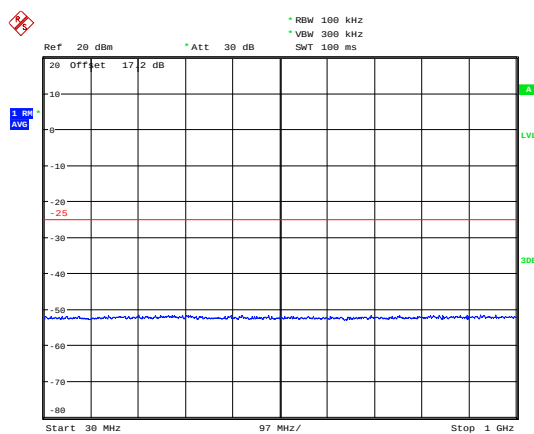
CA-7C 20MHz+20MHz QPSKCH-High 3GHz~26GHz



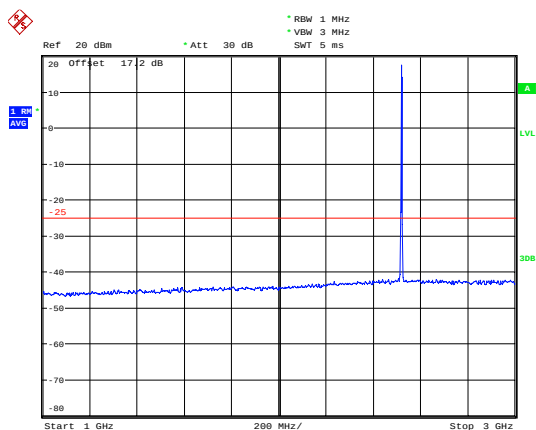
Date: 13.JUL.2019 17:54:48

CA-7C 20MHz+10MHz 16QAM CH-Low
30MHz~1GHz

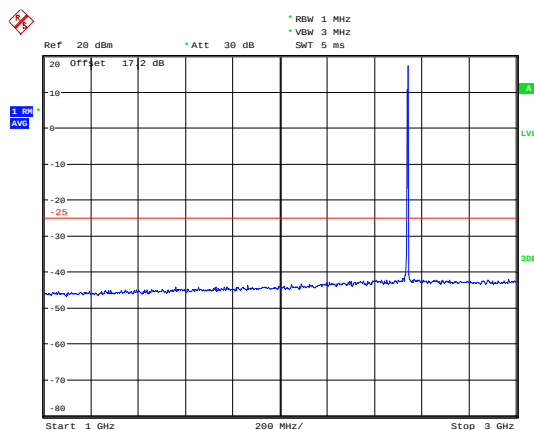
Date: 13.JUL.2019 16:21:40

CA-7C 20MHz+10MHz 16QAMCH-Middle
30MHz~1GHz

Date: 13.JUL.2019 16:55:09

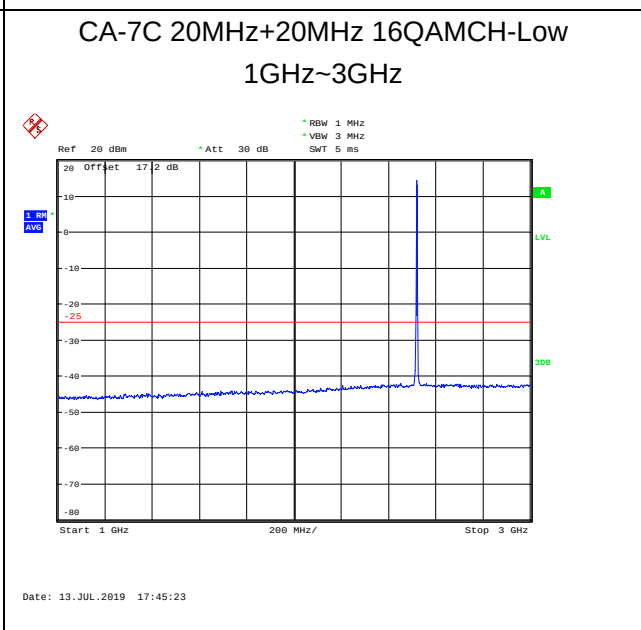
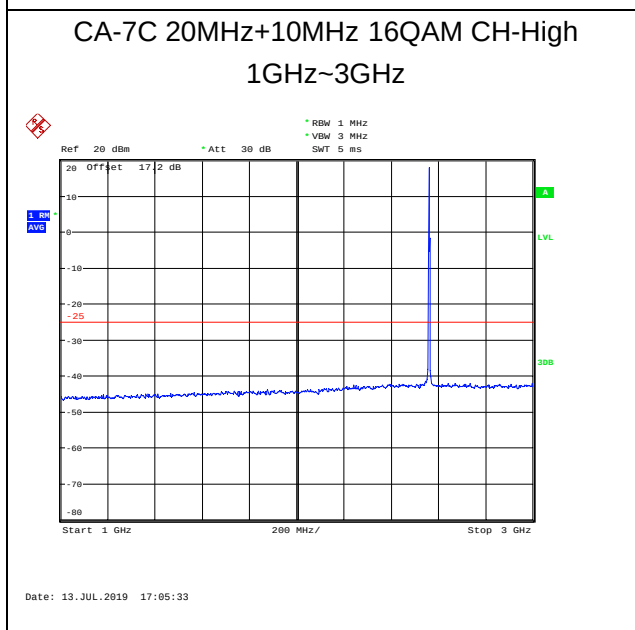
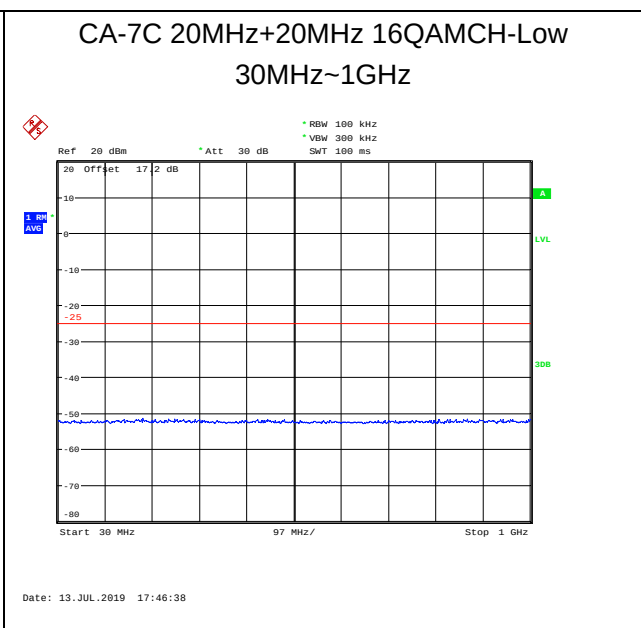
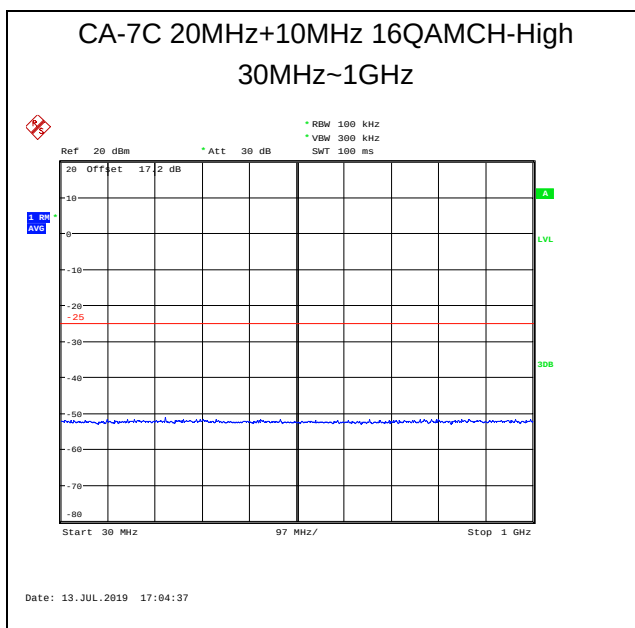
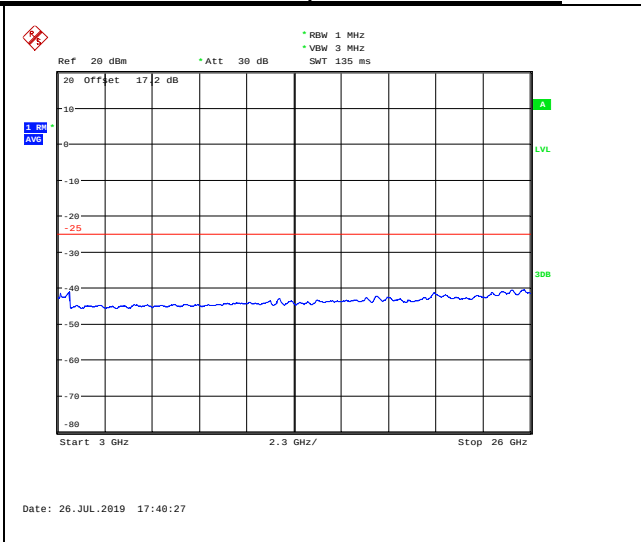
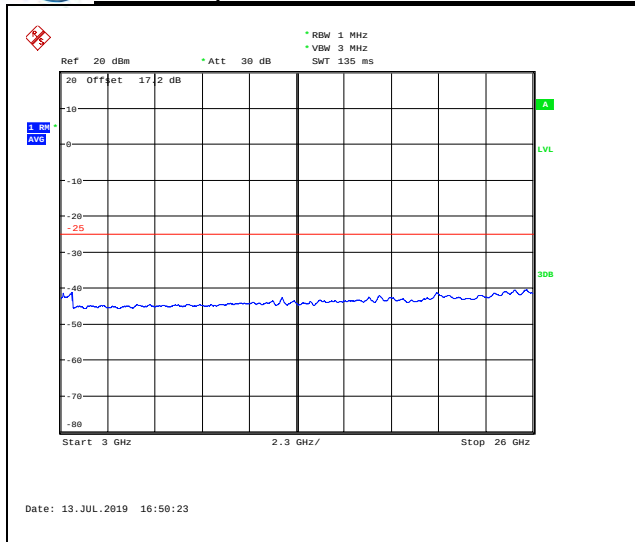
CA-7C 20MHz+10MHz 16QAMCH-Low
1GHz~3GHz

Date: 13.JUL.2019 16:49:47

CA-7C 20MHz+10MHz 16QAMCH-Middle
1GHz~3GHz

Date: 13.JUL.2019 16:54:00

CA-7C 20MHz+10MHz 16QAM CH-Low
3GHz~26GHzCA-7C 20MHz+10MHz 16QAMCH-Middle
3GHz~26GHz

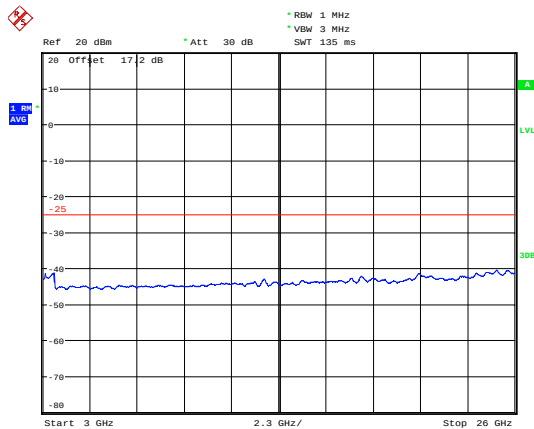


CA-7C 20MHz+10MHz 16QAMCH-High

CA-7C 20MHz+20MHz 16QAM CH-Low

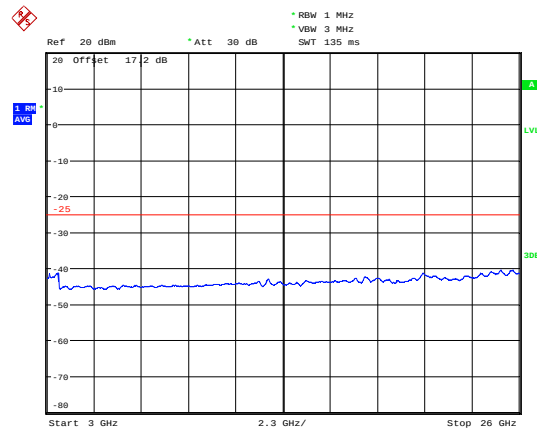


3GHz~26GHz

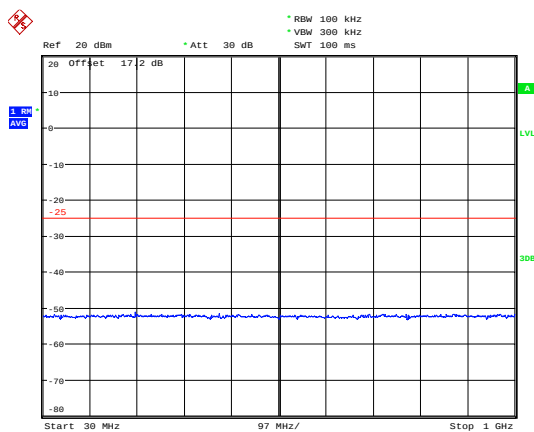


Date: 13.JUL.2019 17:06:17

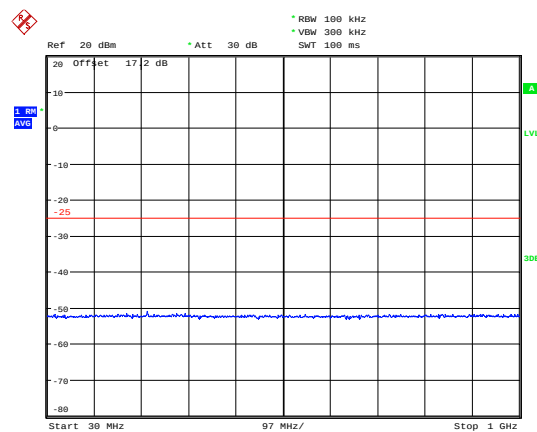
3GHz~26GHz



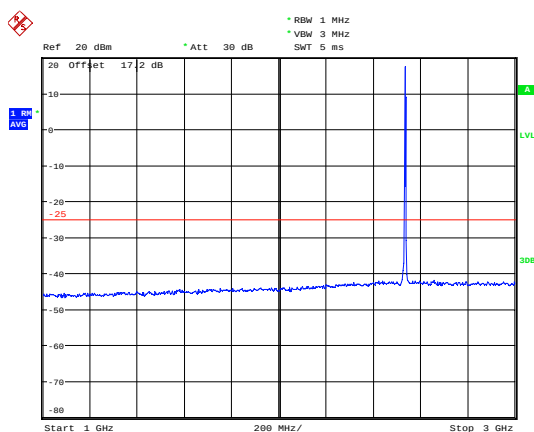
Date: 13.JUL.2019 17:45:05

CA-7C 20MHz+20MHz 16QAMCH-Middle
30MHz~1GHz

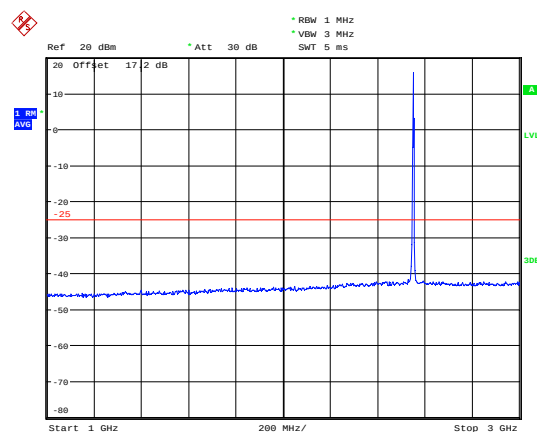
Date: 13.JUL.2019 17:49:23

CA-7C 20MHz+20MHz 16QAMCH-High
30MHz~1GHz

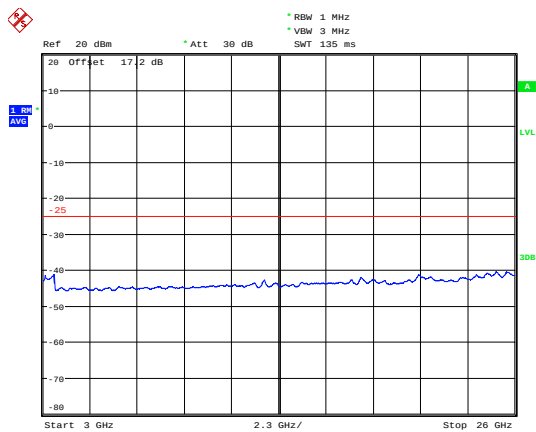
Date: 13.JUL.2019 17:56:46

CA-7C 20MHz+20MHz 16QAMCH-Middle
1GHz~3GHz

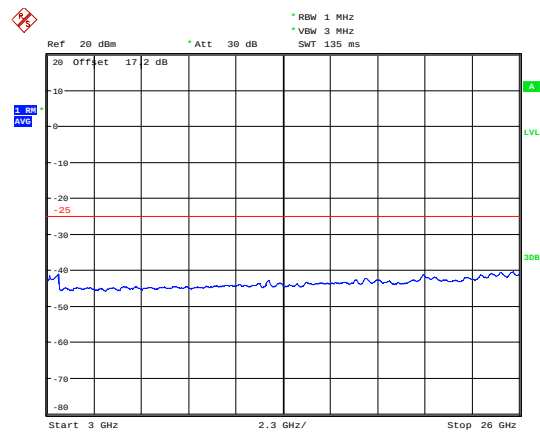
Date: 13.JUL.2019 17:49:57

CA-7C 20MHz+20MHz 16QAM CH-High
1GHz~3GHz

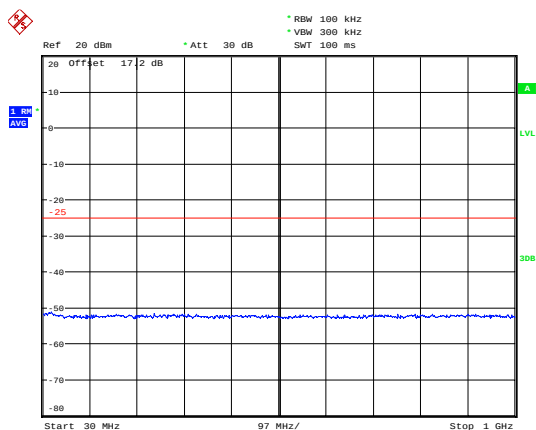
Date: 13.JUL.2019 17:55:32

CA-7C 20MHz+20MHz 16QAMCH-Middle
3GHz~26GHz

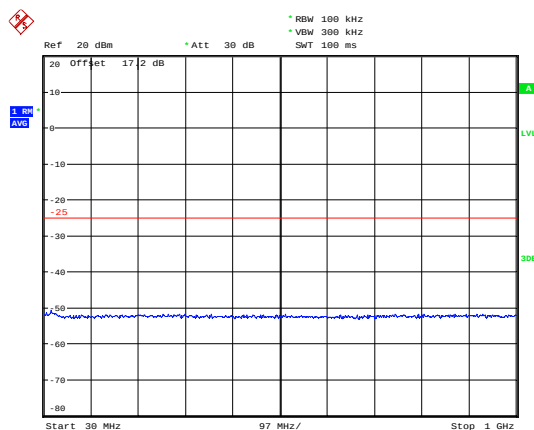
Date: 26.JUL.2019 17:42:15

CA-7C 20MHz+20MHz 16QAMCH-High
3GHz~26GHz

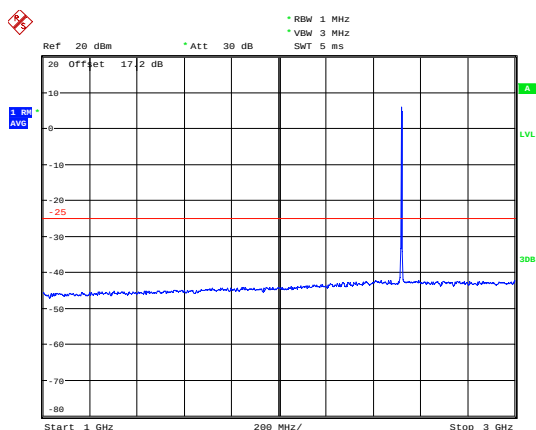
Date: 13.JUL.2019 17:55:11

CA-7C 20MHz+10MHz 64QAM CH-Low
30MHz~1GHz

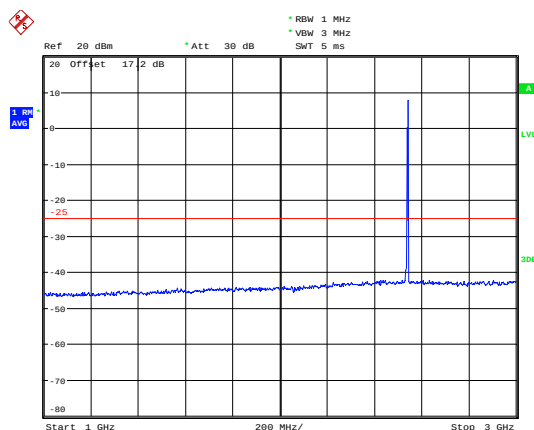
Date: 26.JUL.2019 16:27:39

CA-7C 20MHz+10MHz 64QAMCH-Middle
30MHz~1GHz

Date: 26.JUL.2019 16:28:10

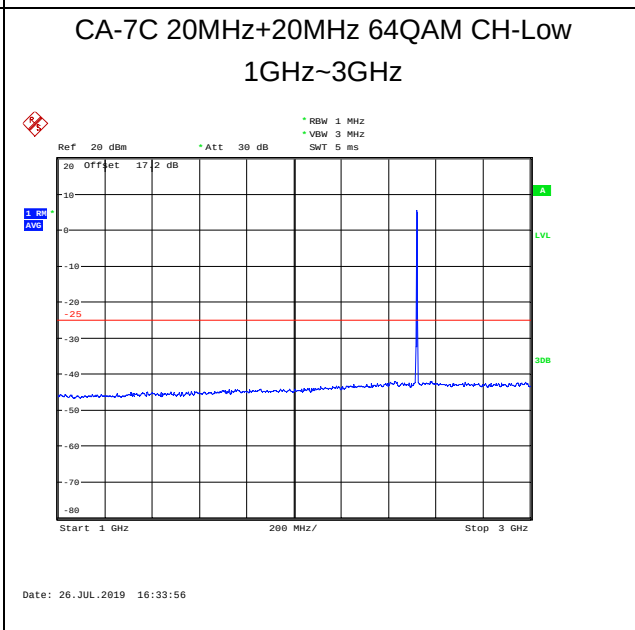
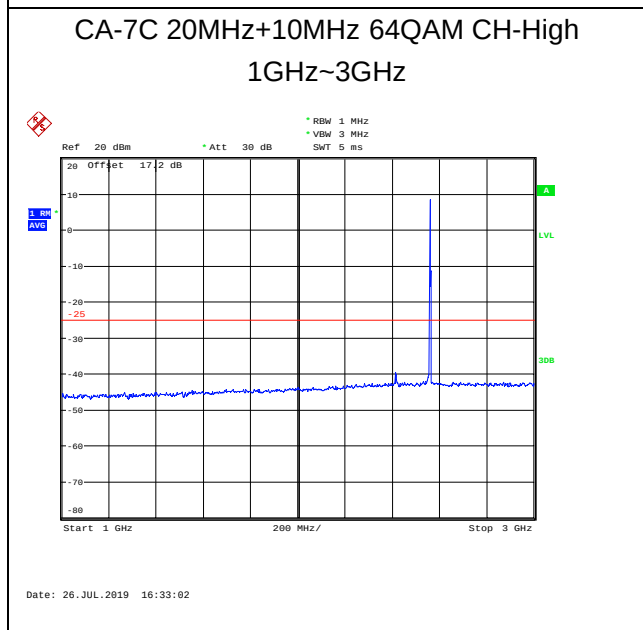
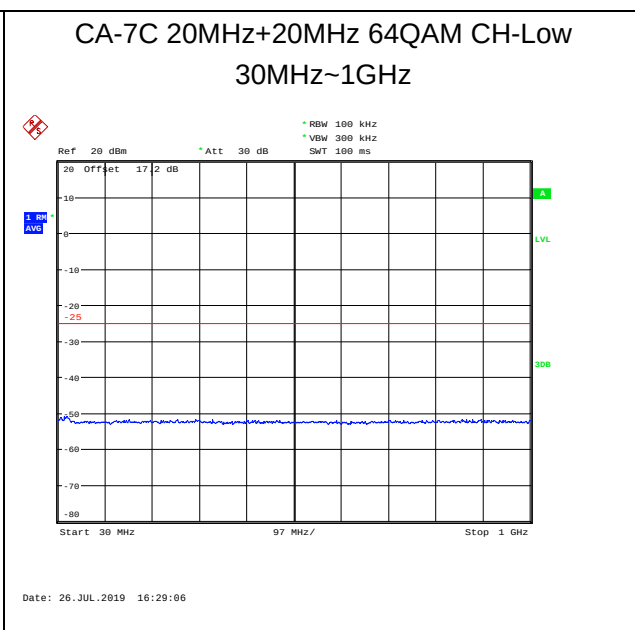
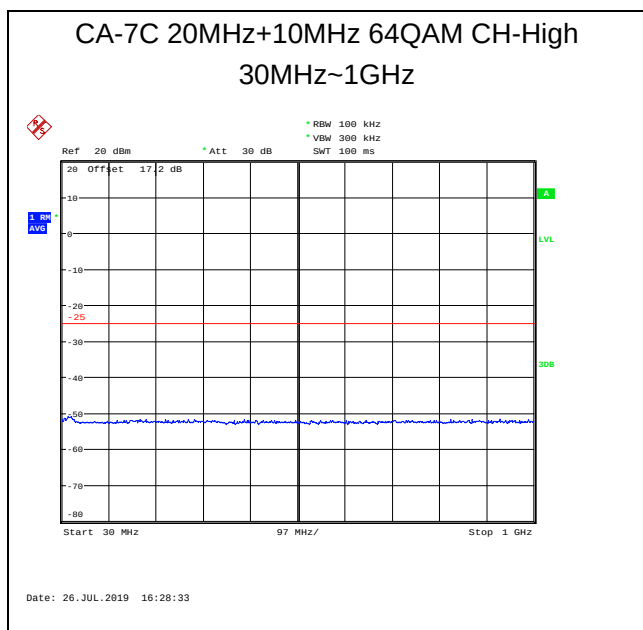
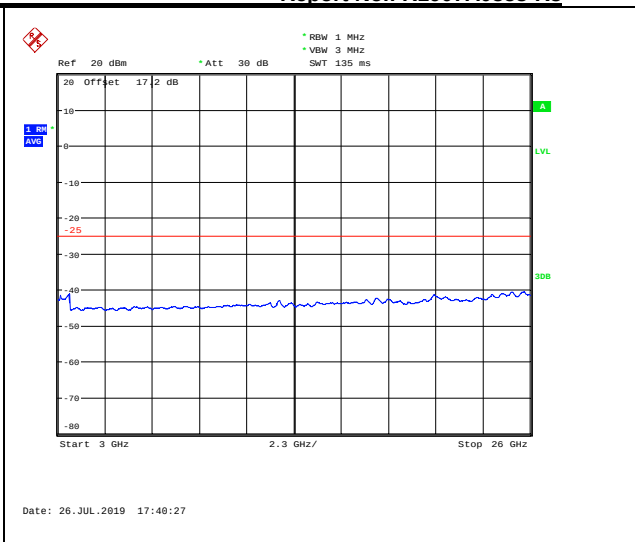
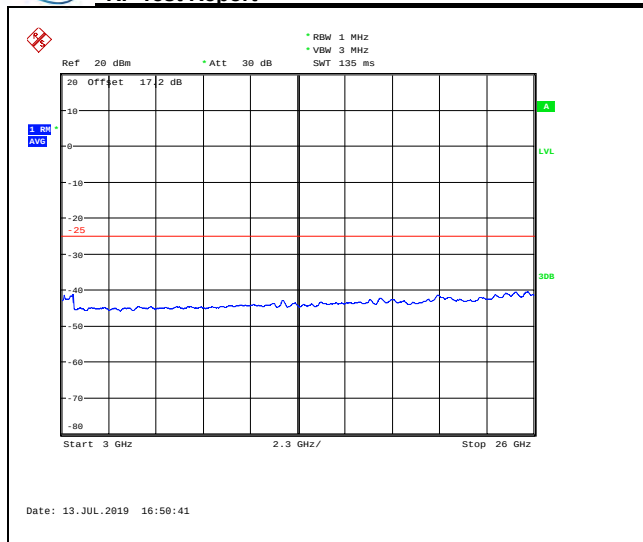
CA-7C 20MHz+10MHz 64QAM CH-Low
1GHz~3GHz

Date: 26.JUL.2019 16:30:35

CA-7C 20MHz+10MHz 64QAM CH-Middle
1GHz~3GHz

Date: 26.JUL.2019 16:32:20

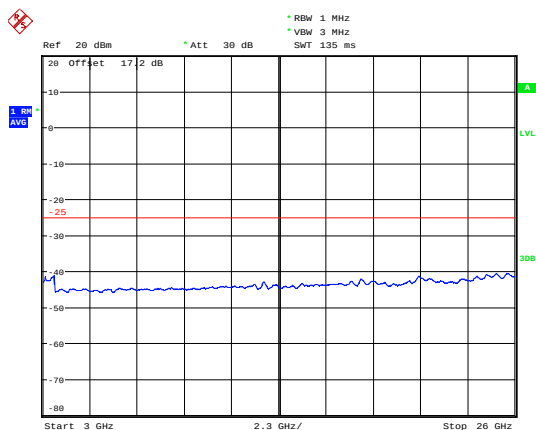
CA-7C 20MHz+10MHz 64QAM CH-Low
3GHz~26GHzCA-7C 20MHz+10MHz 64QAM CH-Middle
3GHz~26GHz



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

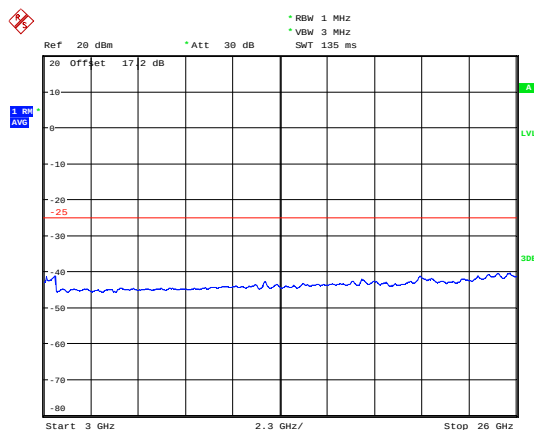
CA-7C 20MHz+20MHz 64QAM CH-Low

3GHz~26GHz



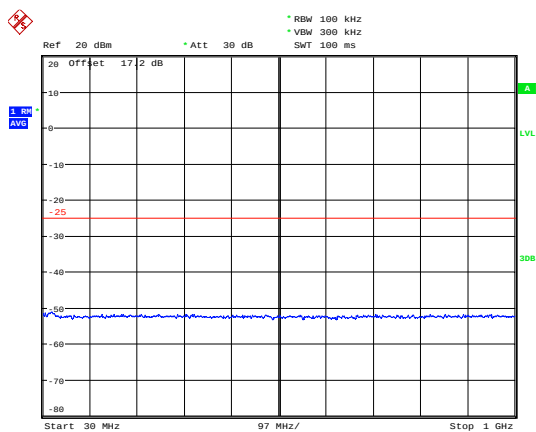
Date: 26.JUL.2019 17:41:22

3GHz~26GHz



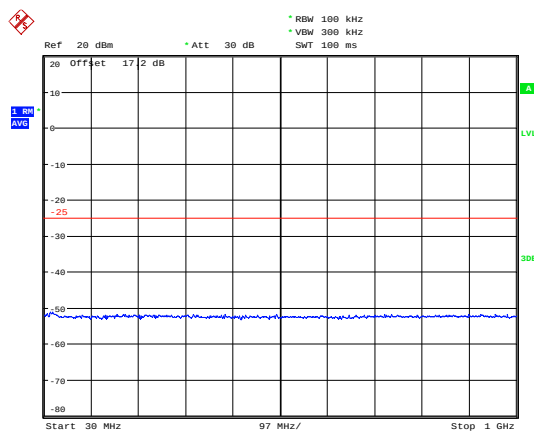
Date: 26.JUL.2019 17:41:44

CA-7C 20MHz+20MHz 64QAMCH-Middle
30MHz~1GHz



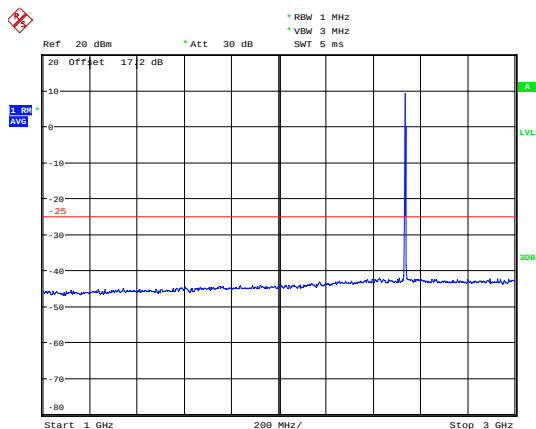
Date: 26.JUL.2019 16:29:24

CA-7C 20MHz+20MHz 64QAMCH-High
30MHz~1GHz



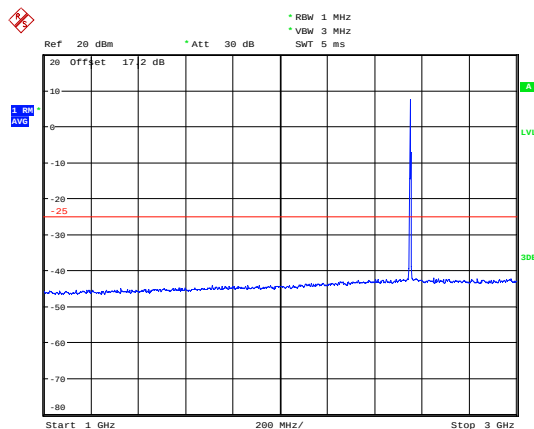
Date: 26.JUL.2019 16:25:25

CA-7C 20MHz+20MHz 64QAMCH-Middle
1GHz~3GHz

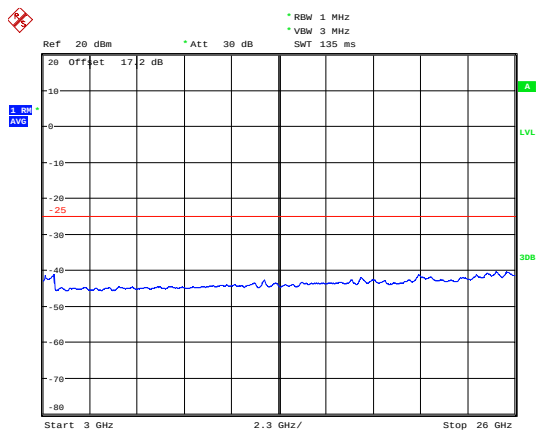


Date: 26.JUL.2019 16:48:46

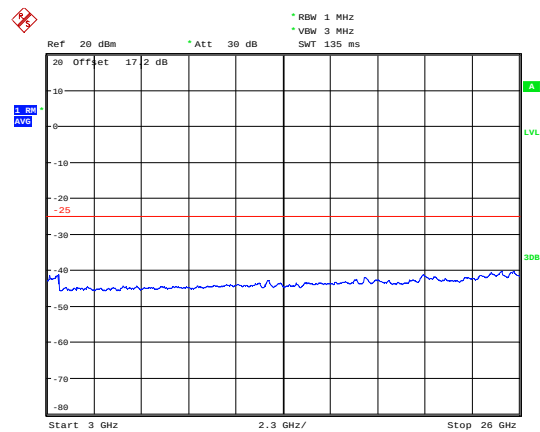
CA-7C 20MHz+20MHz 64QAM CH-High
1GHz~3GHz



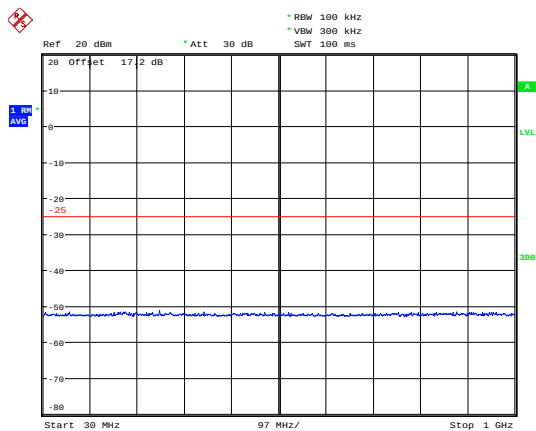
Date: 26.JUL.2019 17:10:42

CA-7C 20MHz+20MHz 64QAMCH-Middle
3GHz~26GHz

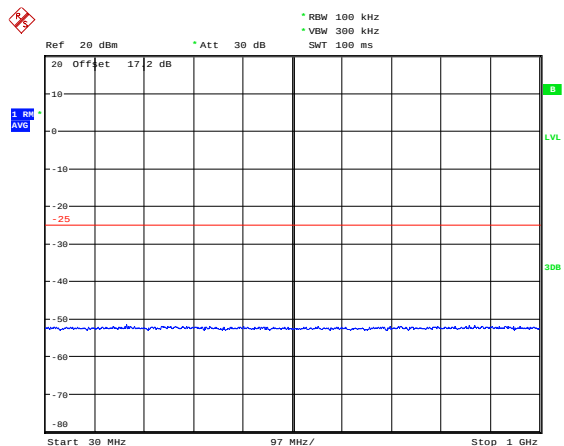
Date: 26.JUL.2019 17:42:15

CA-7C 20MHz+20MHz 64QAMCH-High
3GHz~26GHz

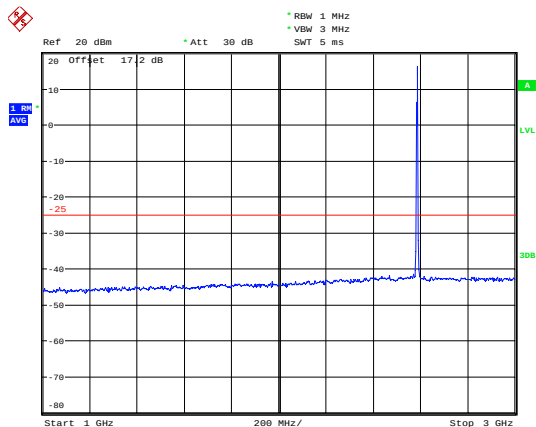
Date: 26.JUL.2019 17:39:34

CA-38C 15MHz+15MHz QPSK CH-Low
30MHz~1GHz

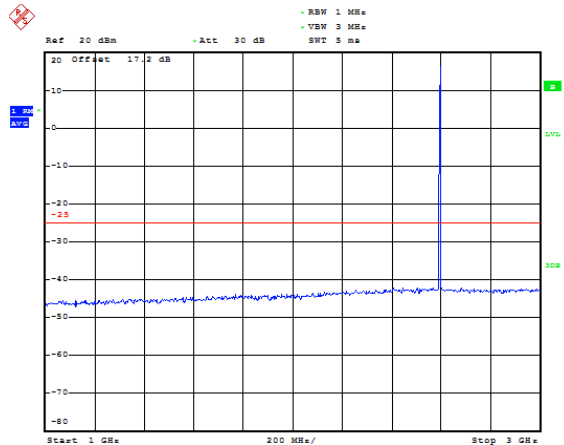
Date: 13.JUL.2019 18:01:36

CA-38C15MHz+15MHz QPSK CH-Middle
30MHz~1GHz

Date: 15.JUL.2019 10:56:11

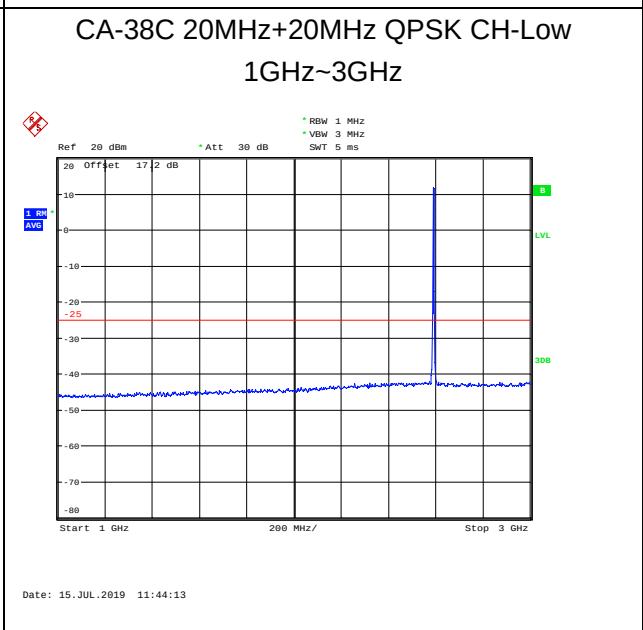
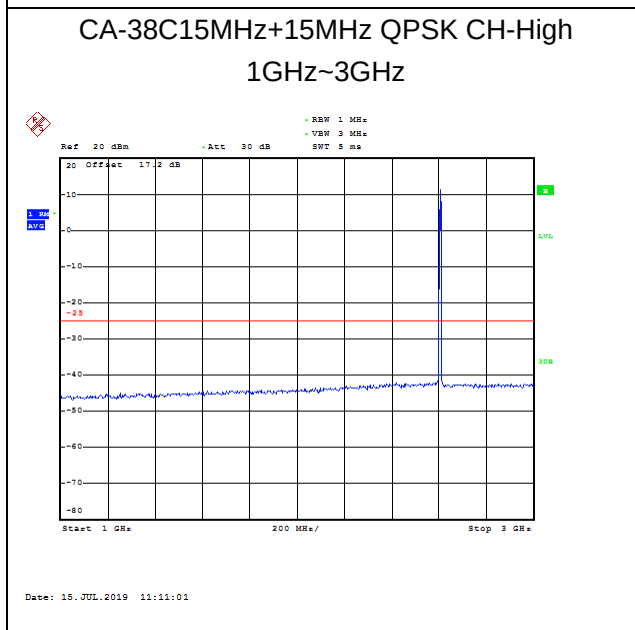
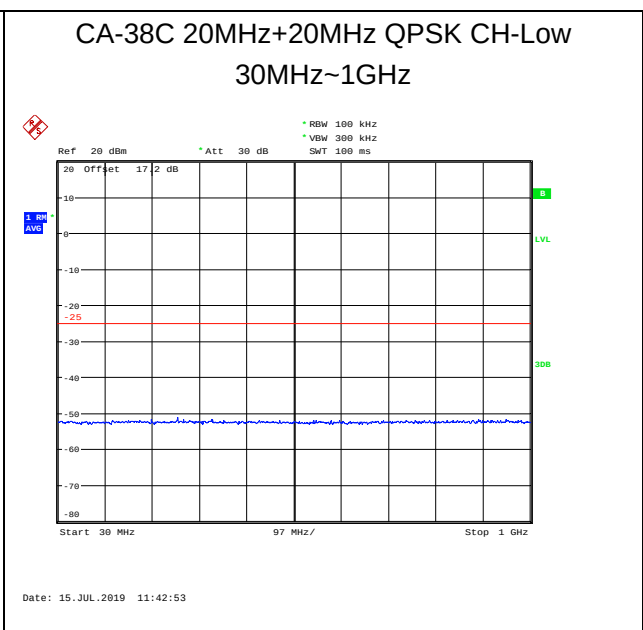
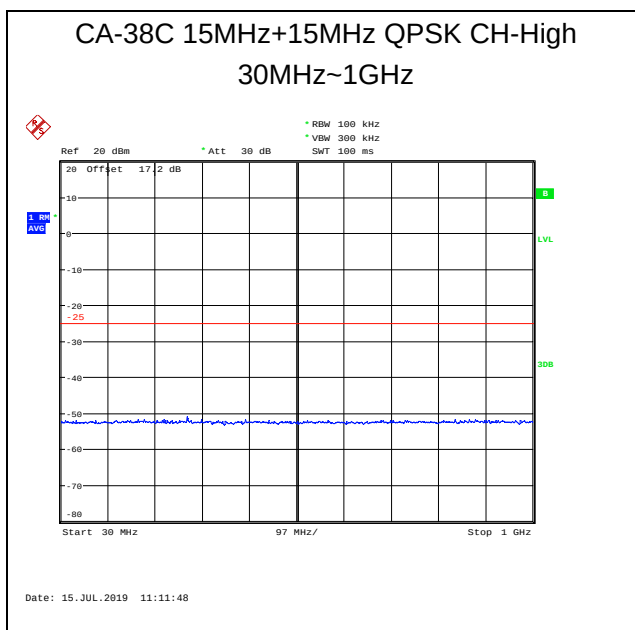
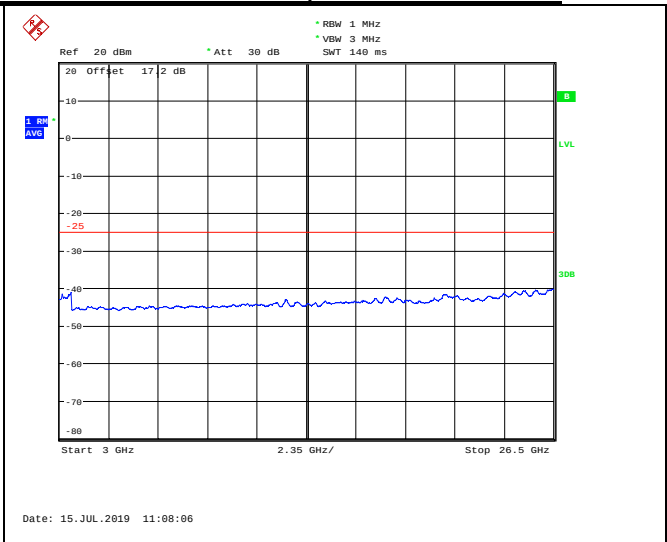
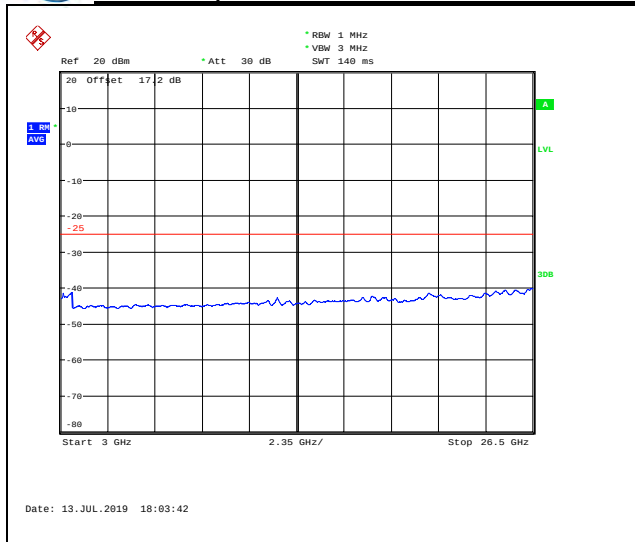
CA-38C 15MHz+15MHz QPSK CH-Low
1GHz~3GHz

Date: 13.JUL.2019 18:03:04

CA-38C15MHz+15MHz QPSK CH-Middle
1GHz~3GHz

Date: 15.JUL.2019 11:06:15

CA-38C 20MHz+10MHz QPSK CH-Low
3GHz~26GHzCA-38C15MHz+15MHz QPSK CH-Middle
3GHz~26GHz

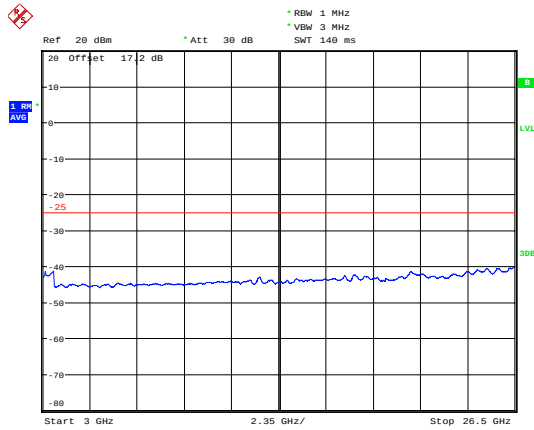


CA-38C 15MHz+15MHz QPSK CH-High

CA-38C 20MHz+20MHz QPSK CH-Low

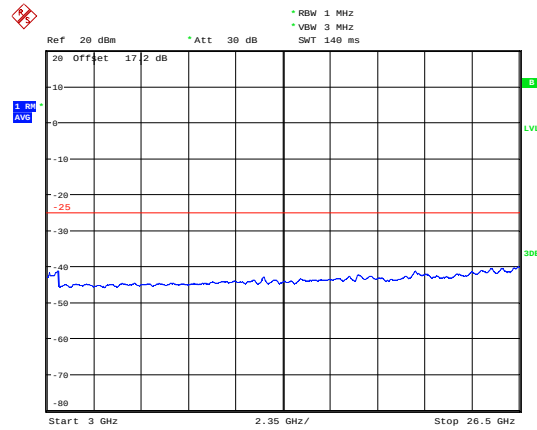


3GHz~26GHz

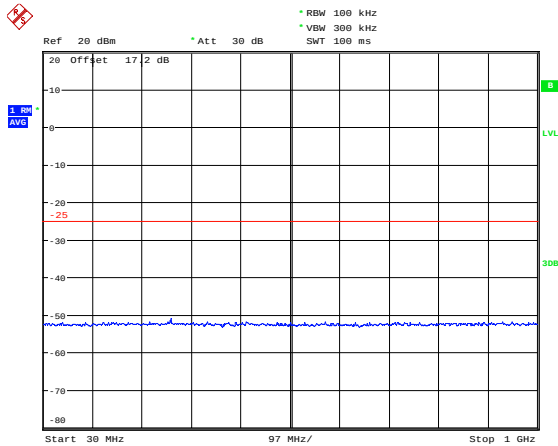


Date: 15.JUL.2019 11:10:05

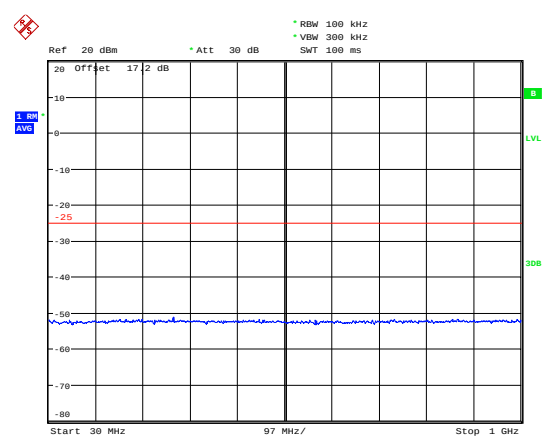
3GHz~26GHz



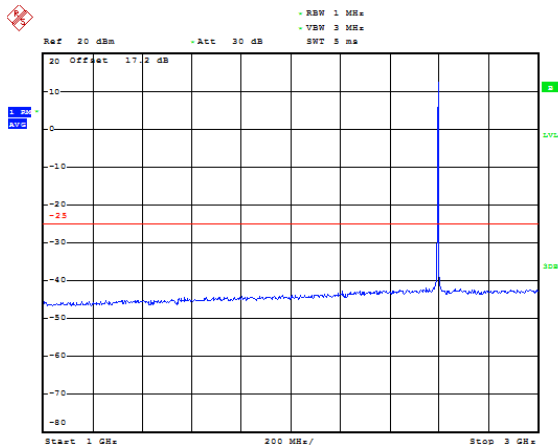
Date: 15.JUL.2019 11:44:51

CA-38C 20MHz+20MHz QPSK CH-Middle
30MHz~1GHz

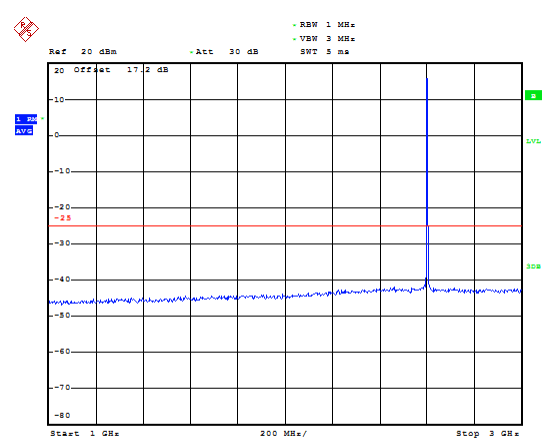
Date: 15.JUL.2019 11:56:41

CA-38C 20MHz+20MHz QPSK CH-High
30MHz~1GHz

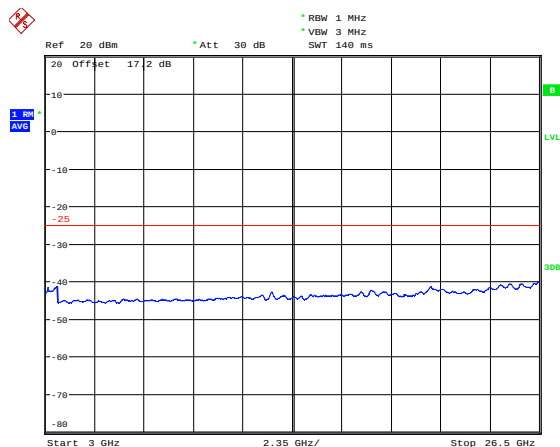
Date: 15.JUL.2019 11:59:20

CA-38C 20MHz+20MHz QPSK CH-Middle
1GHz~3GHz

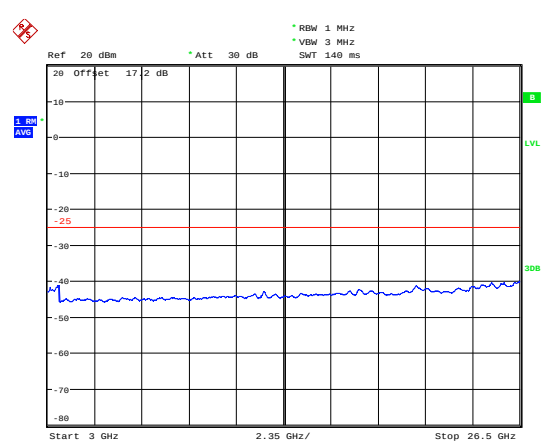
Date: 15.JUL.2019 11:56:03

CA-38C 20MHz+20MHz QPSK CH-High
1GHz~3GHz

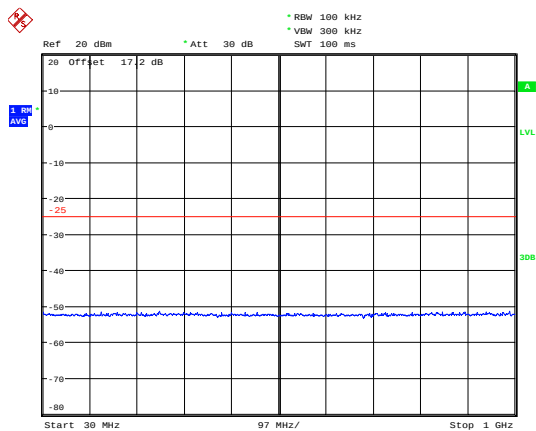
Date: 15.JUL.2019 12:00:03

CA-38C 20MHz+20MHz QPSK CH-Middle
3GHz~26GHz

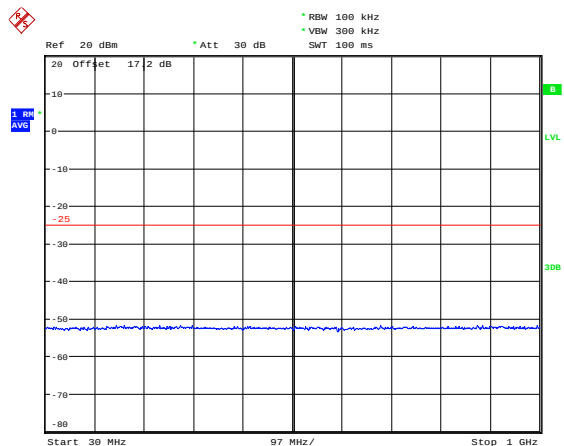
Date: 15 JUL 2019 11:55:20

CA-38C 20MHz+20MHz QPSK CH-High
3GHz~26GHz

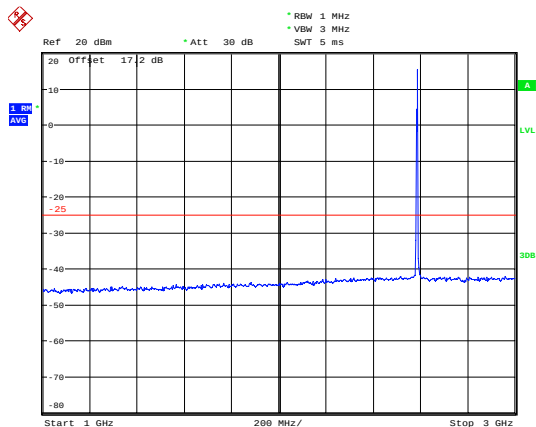
Date: 15 JUL 2019 12:00:33

CA-38C 15MHz+15MHz 16QAM CH-Low
30MHz~1GHz

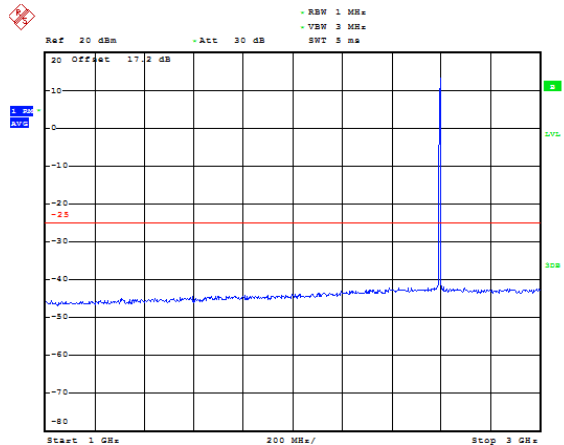
Date: 13.JUL.2019 18:01:58

CA-38C 15MHz+15MHz 16QAM CH-Middle
30MHz~1GHz

Date: 15.JUL.2019 10:56:43

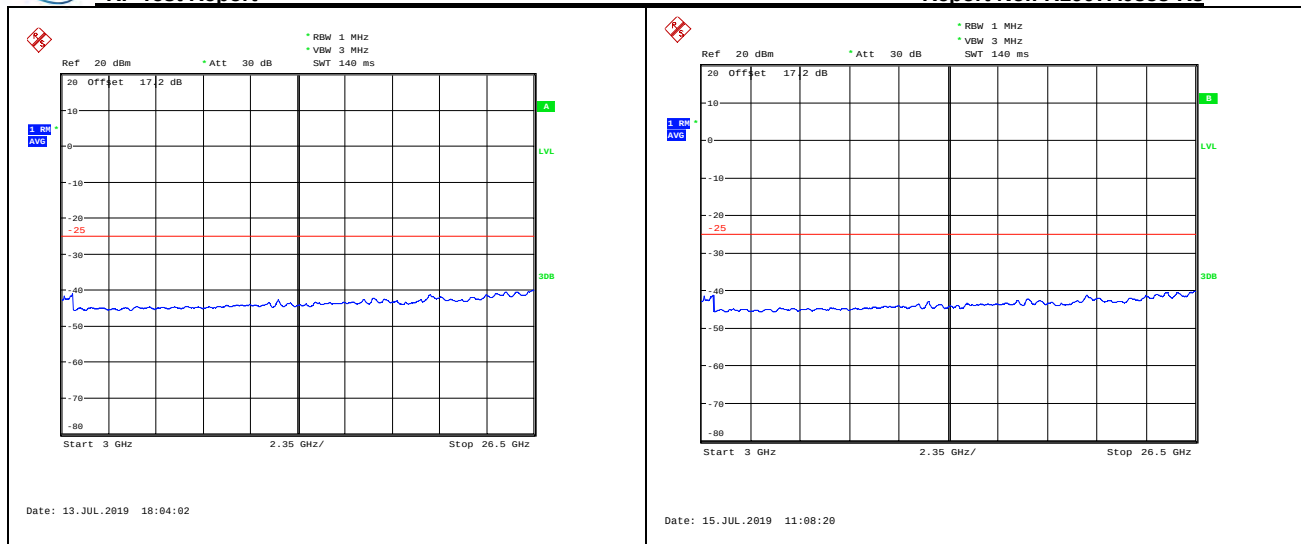
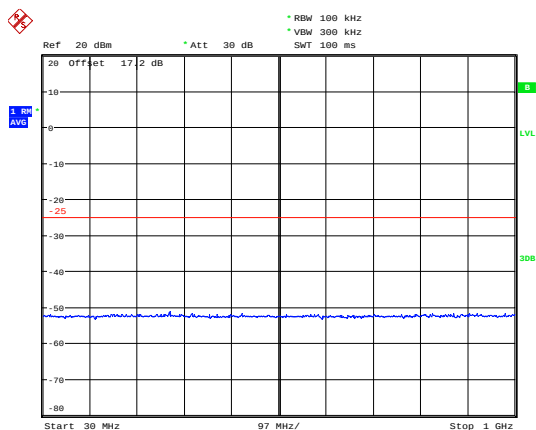
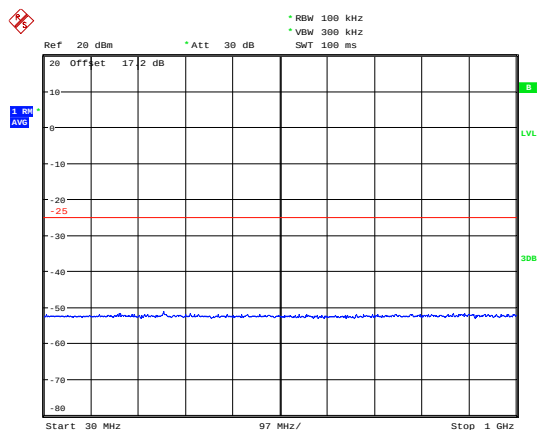
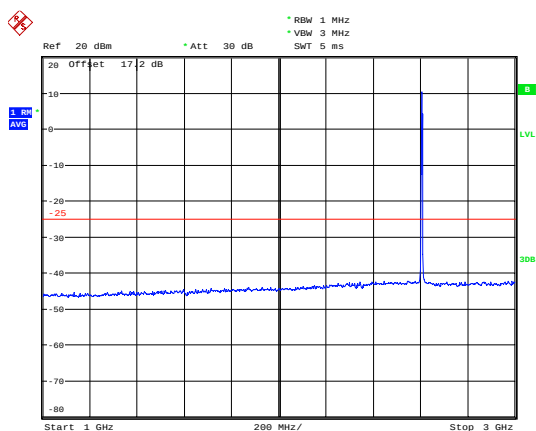
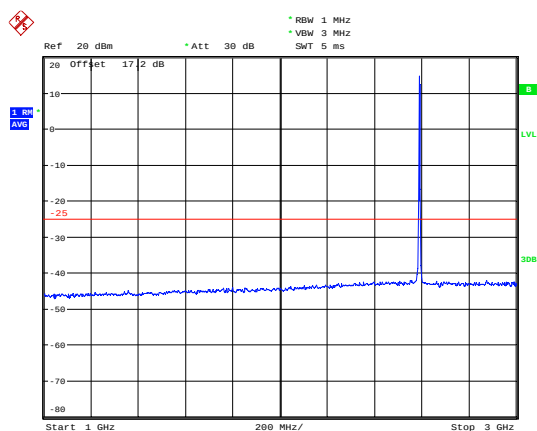
CA-38C 15MHz+15MHz z 16QAM CH-Low
1GHz~3GHz

Date: 13.JUL.2019 18:02:23

CA-38C 15MHz+15MHz 16QAM CH-Middle
1GHz~3GHz

Date: 15.JUL.2019 11:06:35

CA-38C 15MHz+15MHz 16QAM CH-Low
3GHz~26GHzCA-38C 15MHz+15MHz 16QAM CH-Middle
3GHz~26GHz

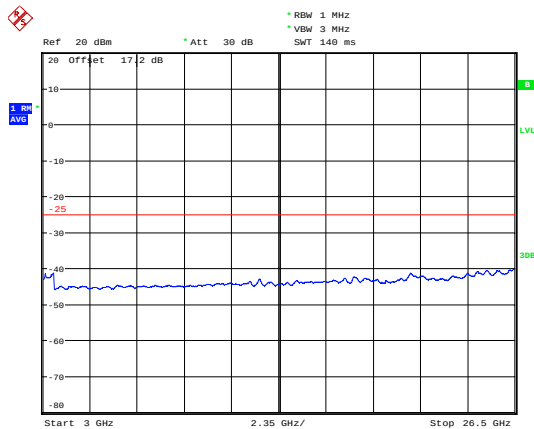
CA-38C 15MHz+15MHz 16QAM CH-High
30MHz~1GHzCA-38C 20MHz+20MHz 16QAM CH-Low
30MHz~1GHzCA-38C 15MHz+15MHz 16QAM CH-High
1GHz~3GHzCA-38C 20MHz+20MHz 16QAM CH-Low
1GHz~3GHz

CA-38C 15MHz+15MHz 16QAM CH-High

CA-38C 20MHz+20MHz 16QAM CH-Low

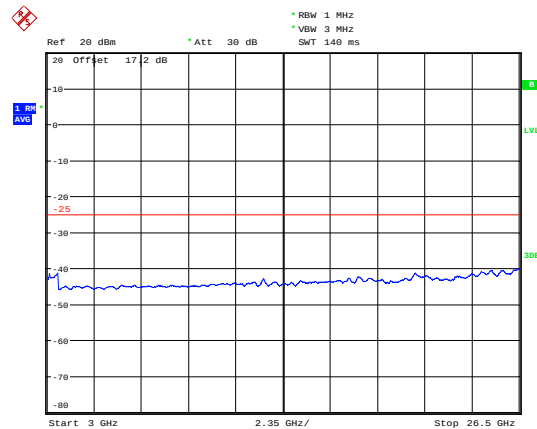


3GHz~26GHz

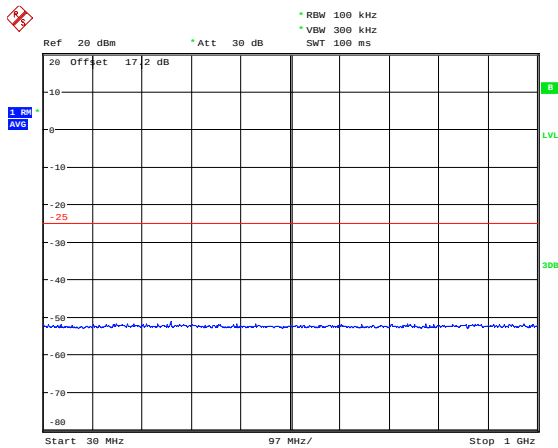


Date: 15.JUL.2019 11:10:12

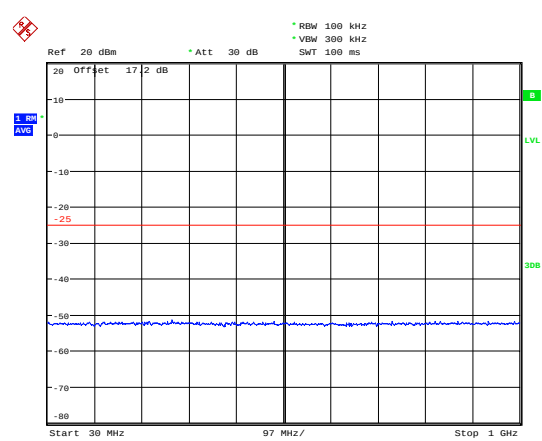
3GHz~26GHz



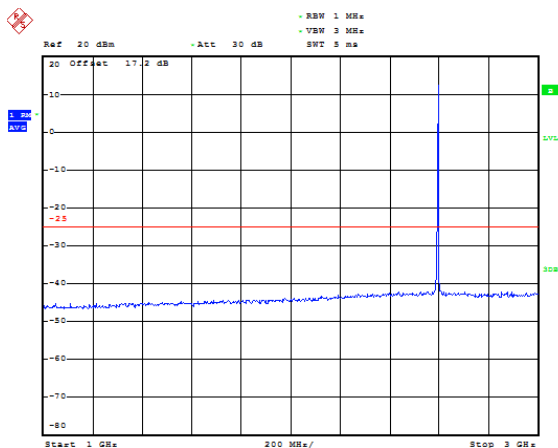
Date: 15.JUL.2019 11:45:05

CA-38C 20MHz+20MHz 16QAM CH-Middle
30MHz~1GHz

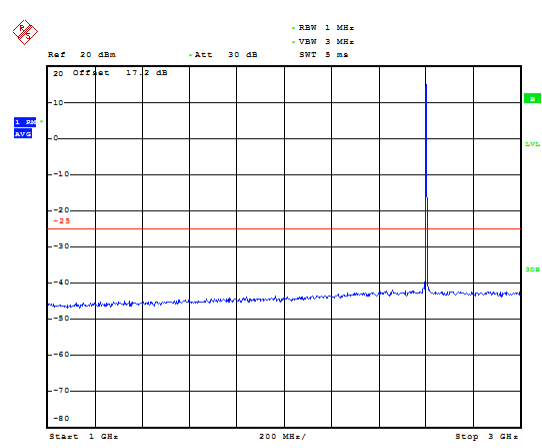
Date: 15.JUL.2019 11:56:50

CA-38C 20MHz+20MHz 16QAM CH-High
30MHz~1GHz

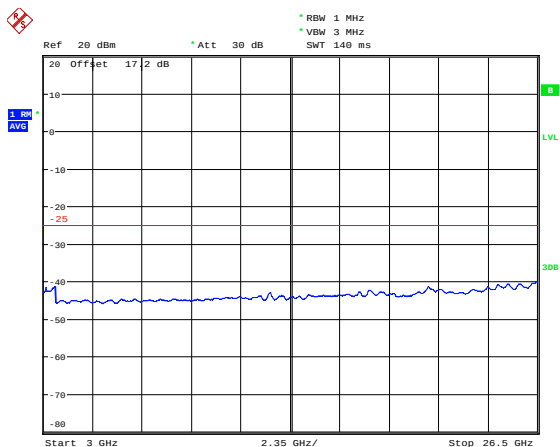
Date: 15.JUL.2019 11:59:28

CA-38C 20MHz+20MHz 16QAM CH-Middle
1GHz~3GHz

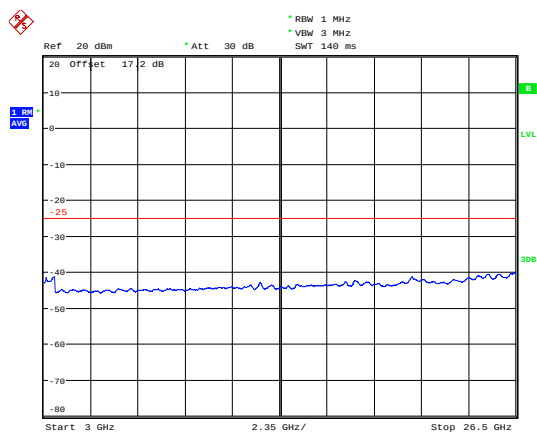
Date: 15.JUL.2019 11:56:14

CA-38C 20MHz+20MHz 16QAM CH-High
1GHz~3GHz

Date: 15.JUL.2019 12:00:12

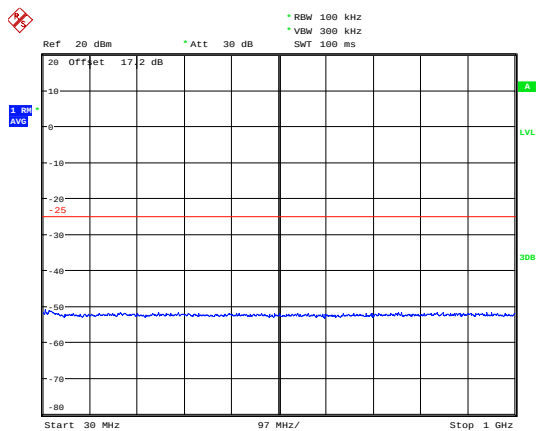
CA-38C 20MHz+20MHz 16QAM CH-Middle
3GHz~26GHz

Date: 15.JUL.2019 11:55:43

CA-38C 20MHz+20MHz 16QAM CH-High
3GHz~26GHz

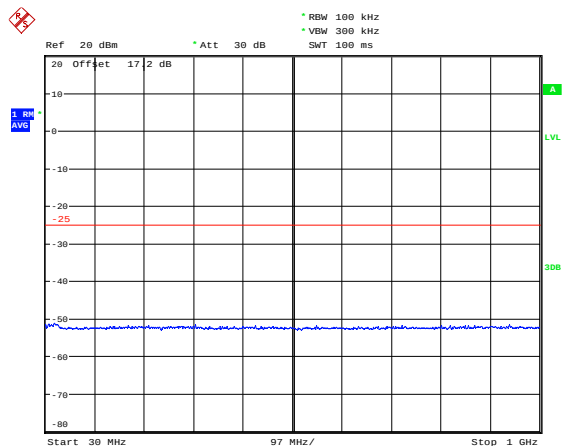
Date: 15.JUL.2019 12:00:39

CA-38C 15MHz+15MHz 64QAM CH-Low
30MHz~1GHz



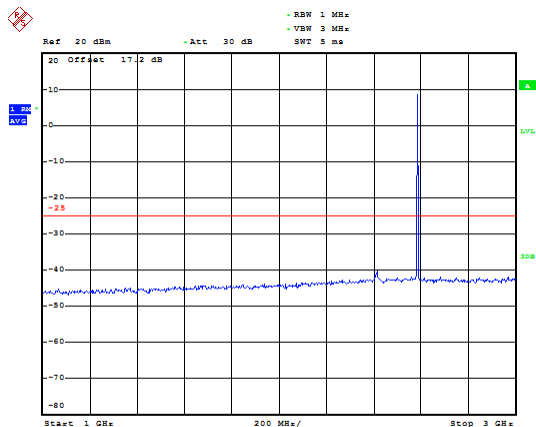
Date: 26.JUL.2019 17:46:40

CA-38C 15MHz+15MHz 64QAM CH-Middle
30MHz~1GHz



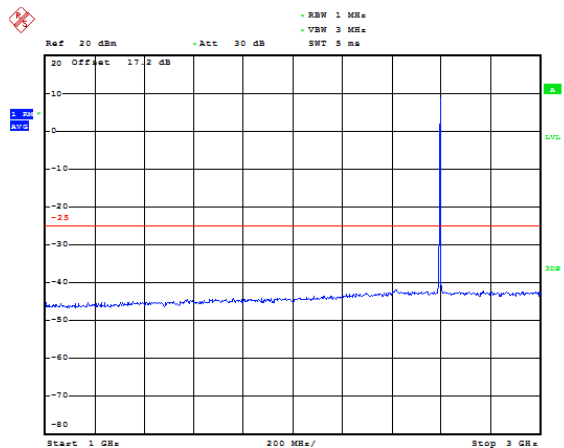
Date: 26.JUL.2019 17:45:48

CA-38C 15MHz+15MHz 64QAM CH-Low
1GHz~3GHz



Date: 26.JUL.2019 17:52:05

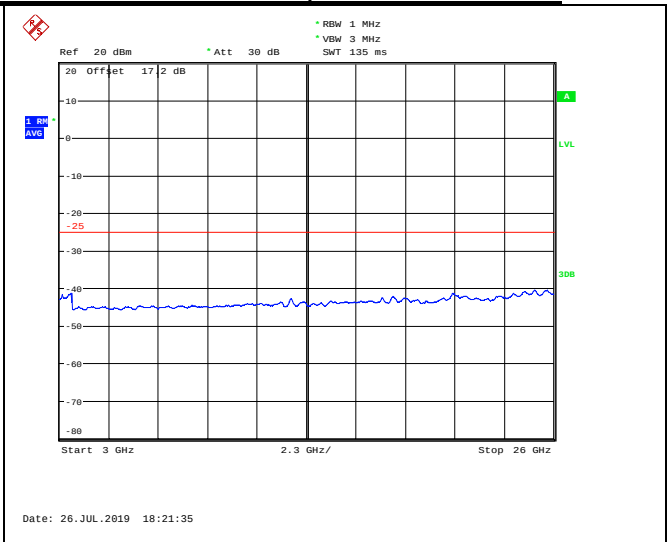
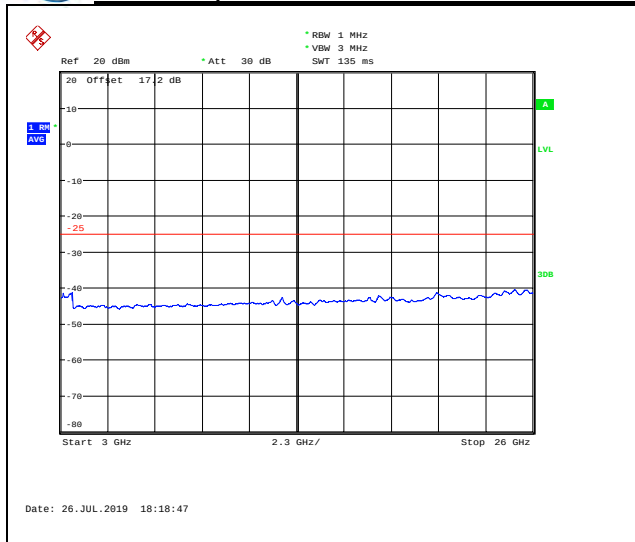
CA-38C 15MHz+15MHz z 64QAM CH-Middle
1GHz~3GHz



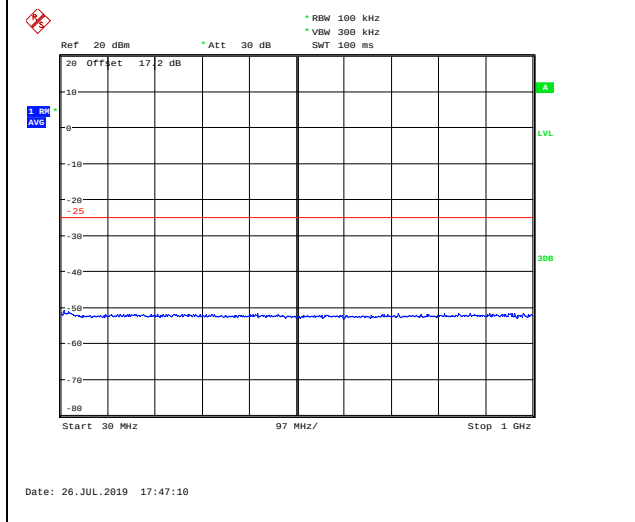
Date: 26.JUL.2019 17:49:14

CA-38C 15MHz+15MHz 64QAM CH-Low
3GHz~26GHz

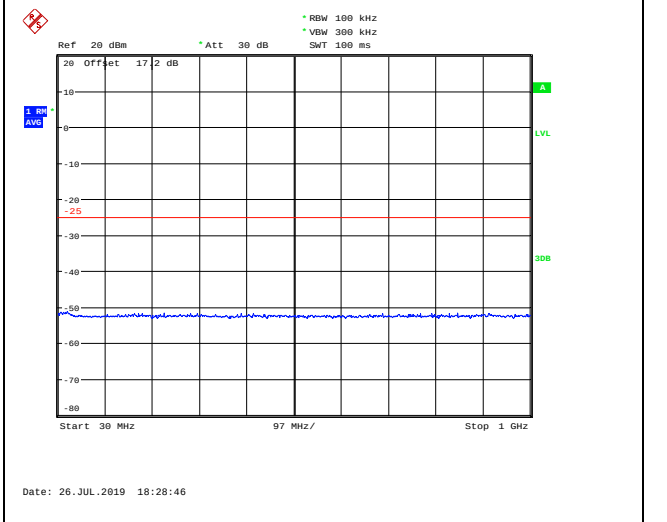
CA-38C 15MHz+15MHz 64QAM CH-Middle
3GHz~26GHz



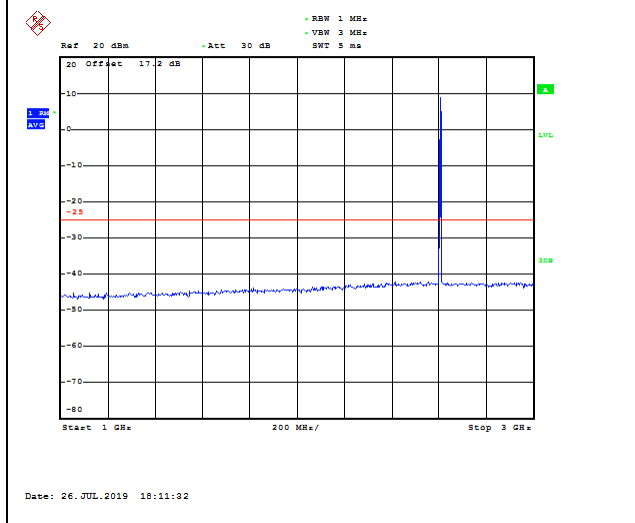
CA-38C15MHz+15MHz 64QAM CH-High 30MHz~1GHz



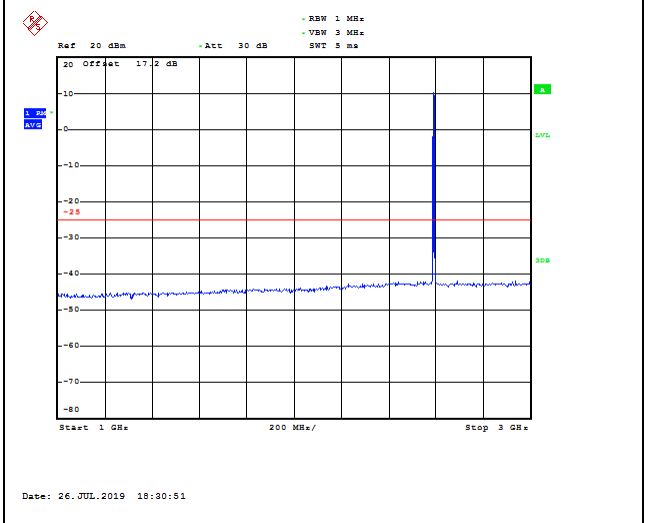
CA-38C 20MHz+20MHz 64QAM CH-Low 30MHz~1GHz



CA-38C 15MHz+15MHz 64QAM CH-High 1GHz~3GHz



CA-38C 20MHz+20MHz 64QAM CH-Low 1GHz~3GHz

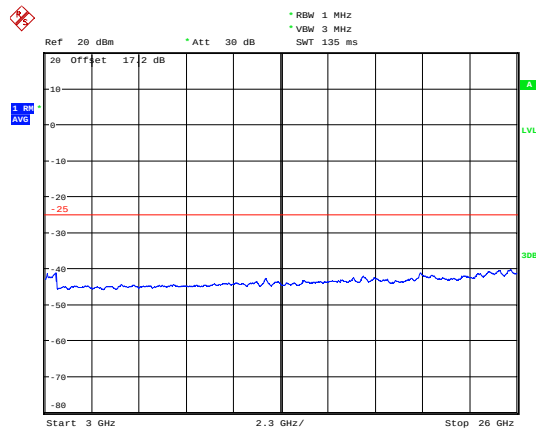


CA-38C 15MHz+15MHz 64QAM CH-High

CA-38C 20MHz+20MHz 64QAM CH-Low

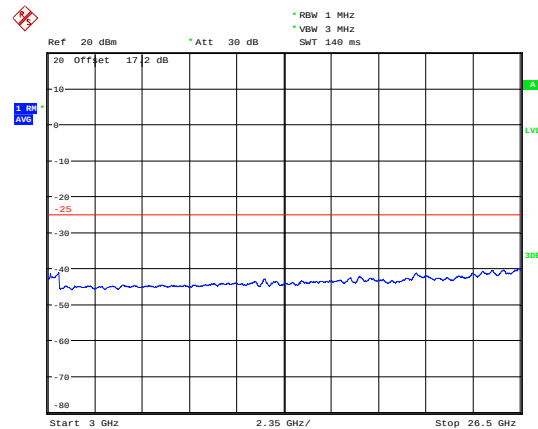


3GHz~26GHz

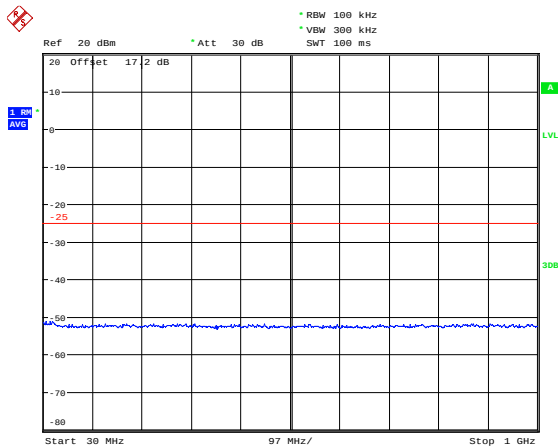


Date: 26.JUL.2019 18:11:55

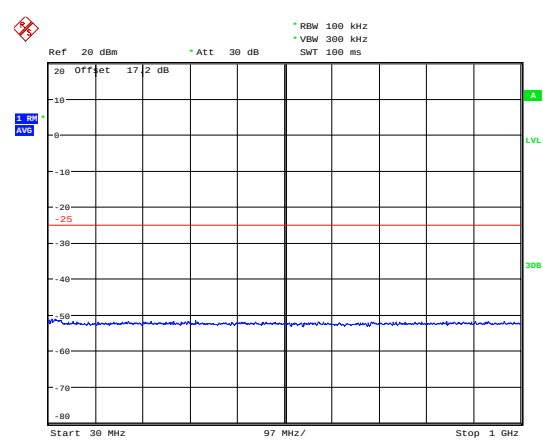
3GHz~26GHz



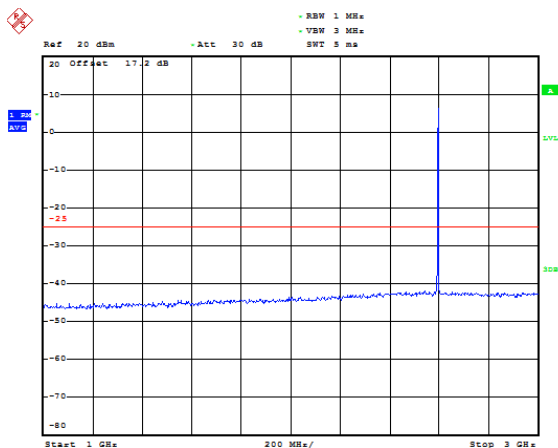
Date: 26.JUL.2019 18:26:49

CA-38C 20MHz+20MHz 64QAM CH-Middle
30MHz~1GHz

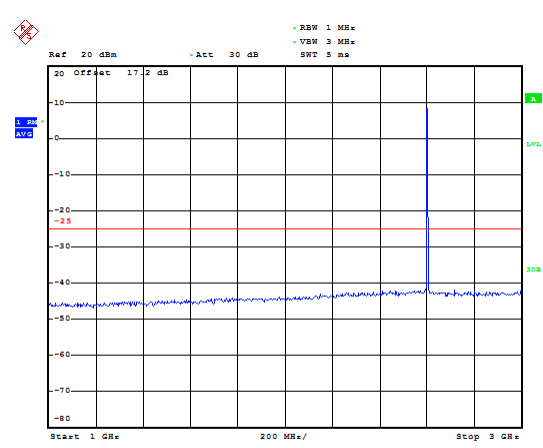
Date: 26.JUL.2019 18:28:10

CA-38C 20MHz+20MHz 64QAM CH-High
30MHz~1GHz

Date: 26.JUL.2019 18:29:12

CA-38C 20MHz+20MHz 64QAM CH-Middle
1GHz~3GHz

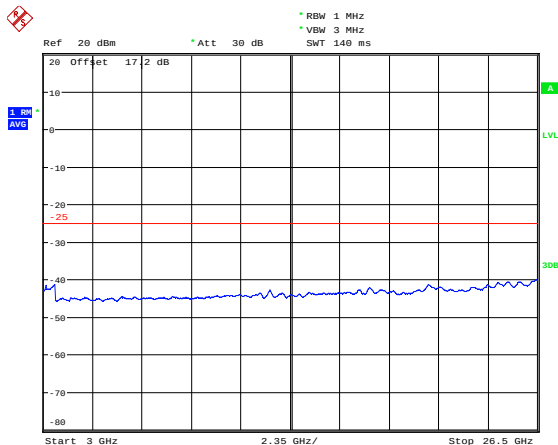
Date: 26.JUL.2019 18:29:51

CA-38C 20MHz+20MHz 64QAM CH-High
1GHz~3GHz

Date: 26.JUL.2019 18:33:33

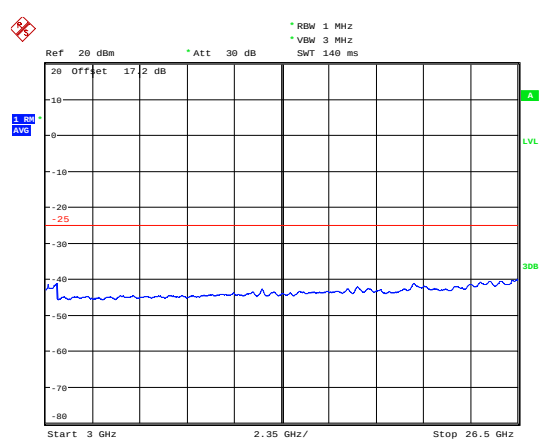


CA-38C 20MHz+20MHz 64QAM CH-Middle
3GHz~26GHz



Date: 26.JUL.2019 18:27:13

CA-38C 20MHz+20MHz 64QAM CH-High
3GHz~26GHz



Date: 26.JUL.2019 18:27:40

5.8 Radiates Spurious Emission

Ambient condition

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

Method of Measurement

- The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
- 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).
- 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.
- 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).
- 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.
- 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.
- 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:

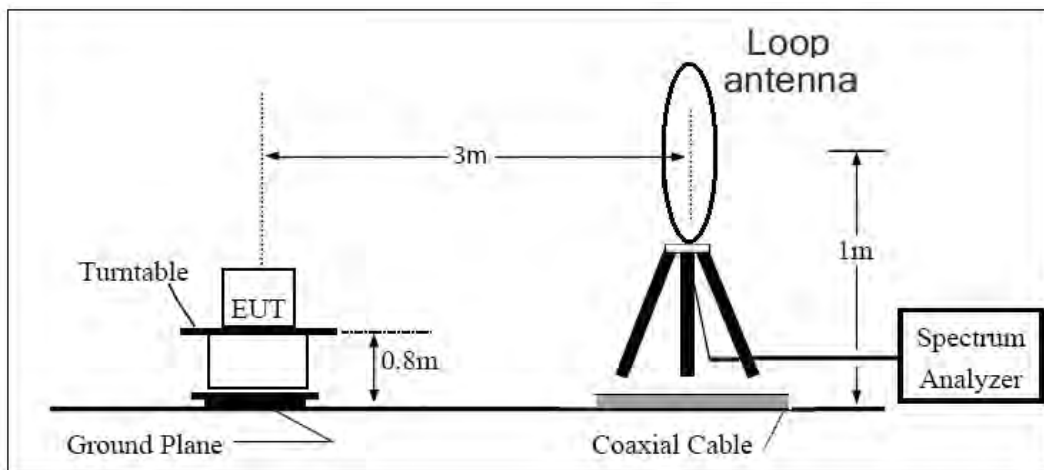
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
- This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

= EIRP-2.15dBi.

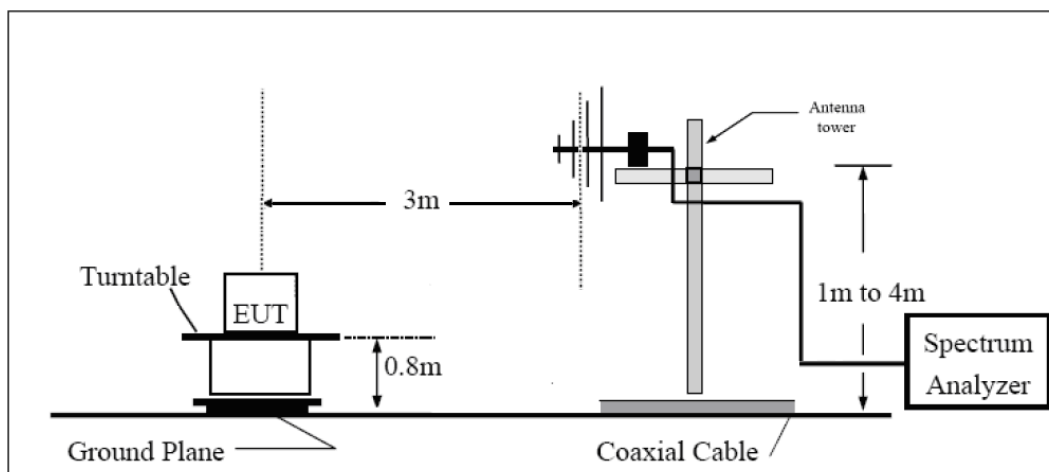
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

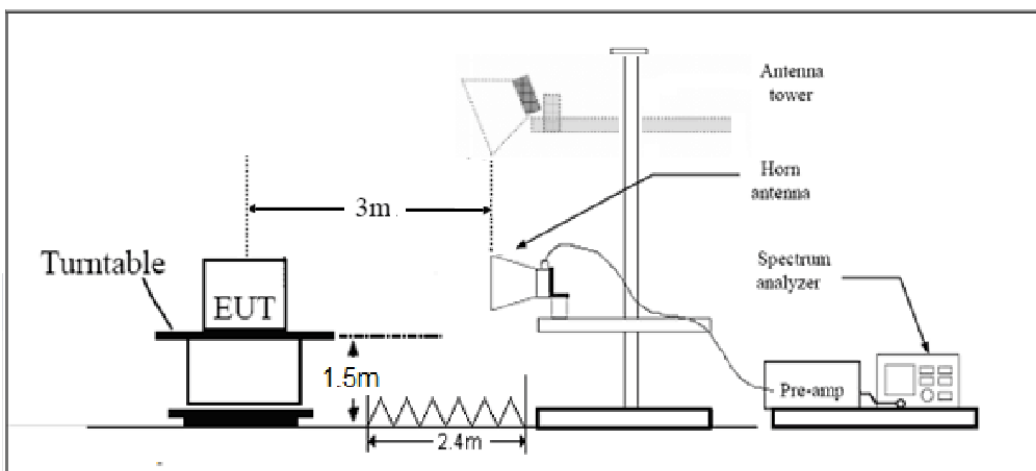
9KHz ~ 30MHz



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	3462.8	-60.58	2.6	10.75	Horizontal	-52.43	-13.00	39.43	45
3	5201.3	-57.53	2.4	11.05	Horizontal	-48.88	-13.00	35.88	0
4	6925.1	-57.07	4.5	11.15	Horizontal	-50.42	-13.00	37.42	180
5	8663.0	-52.91	5.1	11.35	Horizontal	-46.66	-13.00	33.66	90
6	10395.6	-49.70	5.3	11.95	Horizontal	-43.05	-13.00	30.05	90
7	12128.2	-49.34	5.5	13.55	Horizontal	-41.29	-13.00	28.29	270
8	13860.8	-47.88	6.3	13.75	Horizontal	-40.43	-13.00	27.43	225
9	15593.4	-47.46	6.7	13.85	Horizontal	-40.31	-13.00	27.31	180
10	17326.0	-46.72	6.8	14.25	Horizontal	-39.27	-13.00	26.27	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	-58.26	2.6	10.75	Horizontal	-50.11	-13.00	37.11	270
3	5197.5	-43.46	2.4	11.05	Horizontal	-34.81	-13.00	21.81	225
4	6930.0	-57.43	4.5	11.15	Horizontal	-50.78	-13.00	37.78	135
5	8662.5	-51.71	5.1	11.35	Horizontal	-45.46	-13.00	32.46	45
6	10395.0	-49.59	5.3	11.95	Horizontal	-42.94	-13.00	29.94	135
7	12127.5	-47.19	5.5	13.55	Horizontal	-39.14	-13.00	26.14	0
8	13860.0	-48.52	6.3	13.75	Horizontal	-41.07	-13.00	28.07	90
9	15592.5	-49.46	6.7	13.85	Horizontal	-42.31	-13.00	29.31	180
10	17325.0	-45.87	6.8	14.25	Horizontal	-38.42	-13.00	25.42	135

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	-59.55	2.6	10.75	Horizontal	-51.40	-13.00	38.40	135
3	5191.5	-48.86	2.4	11.05	Horizontal	-40.21	-13.00	27.21	0
4	6930.0	-58.66	4.5	11.15	Horizontal	-52.01	-13.00	39.01	90
5	8662.5	-52.33	5.1	11.35	Horizontal	-46.08	-13.00	33.08	180
6	10395.0	-50.03	5.3	11.95	Horizontal	-43.38	-13.00	30.38	135
7	12127.5	-47.51	5.5	13.55	Horizontal	-39.46	-13.00	26.46	45
8	13860.0	-50.11	6.3	13.75	Horizontal	-42.66	-13.00	29.66	135
9	15592.5	-48.77	6.7	13.85	Horizontal	-41.62	-13.00	28.62	0
10	17325.0	-46.44	6.8	14.25	Horizontal	-38.99	-13.00	25.99	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 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	3447.0	-59.60	2.6	10.75	Horizontal	-51.45	-13.00	38.45	180
3	5170.5	-53.36	2.4	11.05	Horizontal	-44.71	-13.00	31.71	135
4	6930.0	-55.50	4.5	11.15	Horizontal	-48.85	-13.00	35.85	135
5	8662.5	-51.99	5.1	11.35	Horizontal	-45.74	-13.00	32.74	0
6	10395.0	-49.35	5.3	11.95	Horizontal	-42.70	-13.00	29.70	90
7	12127.5	-57.26	5.5	13.55	Horizontal	-49.21	-13.00	36.21	180
8	13860.0	-50.19	6.3	13.75	Horizontal	-42.74	-13.00	29.74	135
9	15592.5	-48.47	6.7	13.85	Horizontal	-41.32	-13.00	28.32	270
10	17325.0	-46.20	6.8	14.25	Horizontal	-38.75	-13.00	25.75	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 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	5070.0	-60.02	2.00	9.15	Horizontal	-52.87	-25.00	27.87	45
3	7605.0	-57.16	2.50	11.35	Horizontal	-48.31	-25.00	23.31	135
4	10140.0	-57.30	4.20	12.05	Horizontal	-49.45	-25.00	24.45	0
5	12675.0	-52.60	5.20	12.85	Horizontal	-44.95	-25.00	19.95	90
6	15210.0	-51.12	5.50	14.23	Horizontal	-42.39	-25.00	17.39	180
7	17745.0	-50.54	5.70	14.15	Horizontal	-42.09	-25.00	17.09	135
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	5070.0	-60.40	2.00	10.15	Horizontal	-52.25	-25.00	27.25	135
3	7605.0	-57.62	2.50	11.35	Horizontal	-48.77	-25.00	23.77	270
4	10140.0	-55.88	4.20	12.05	Horizontal	-48.03	-25.00	23.03	225
5	12675.0	-52.31	5.20	14.85	Horizontal	-42.66	-25.00	17.66	135
6	15210.0	-48.44	5.50	13.23	Horizontal	-40.71	-25.00	15.71	45
7	17745.0	-47.09	5.70	12.15	Horizontal	-40.64	-25.00	15.64	0
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	5190.5	-60.37	2.00	9.15	Horizontal	-53.22	-13.00	40.22	45
3	7789.1	-59.37	2.50	11.35	Horizontal	-50.52	-13.00	37.52	135
4	10386.0	-57.06	4.20	12.05	Horizontal	-49.21	-13.00	36.21	45
5	12976.9	-55.72	5.20	12.85	Horizontal	-48.07	-13.00	35.07	135
6	15573.4	-52.72	5.50	14.23	Horizontal	-43.99	-13.00	30.99	0
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--
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	5191.9	-59.99	2.00	10.15	Horizontal	-51.84	-13.00	38.84	45
3	7781.6	-56.61	2.50	11.35	Horizontal	-47.76	-13.00	34.76	135
4	10380.4	-58.46	4.20	12.05	Horizontal	-50.61	-13.00	37.61	225
5	12976.9	-56.23	5.20	14.85	Horizontal	-46.58	-13.00	33.58	270
6	15570.0	-52.22	5.50	13.23	Horizontal	-44.49	-13.00	31.49	135
7	18165.0	--	--	--	--	--	--	--	--
8	20760.0	--	--	--	--	--	--	--	--
9	23355.0	--	--	--	--	--	--	--	--
10	25950.0	--	--	--	--	--	--	--	--
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-High, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5222.6	-59.50	2.00	10.15	Horizontal	-51.35	-25	38.35	90
3	7831.1	-52.66	2.50	11.35	Horizontal	-43.81	-25	30.81	45
4	10446.8	-45.94	4.20	12.05	Horizontal	-38.09	-25	25.09	270
5	13053.4	-52.42	5.20	14.85	Horizontal	-42.77	-25	29.77	180
6	15667.9	-46.25	5.50	13.23	Horizontal	-38.52	-25	25.52	225
7	18270.0	--	--	--	--	--	--	--	--
8	20880.0	--	--	--	--	--	--	--	--
9	23490.0	--	--	--	--	--	--	--	--
10	26100.0	--	--	--	--	--	--	--	--

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 Band 7 QPSK 10MHz+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	-58.99	2.00	9.15	Horizontal	-51.84	-13.00	38.84	45
3	7576.8	-56.61	2.50	11.35	Horizontal	-47.76	-13.00	34.76	135
4	10102.4	-58.46	4.20	12.05	Horizontal	-50.61	-13.00	37.61	225
5	12628.0	-54.23	5.20	12.85	Horizontal	-46.58	-13.00	33.58	270
6	15153.6	-53.22	5.50	14.23	Horizontal	-44.49	-13.00	31.49	135
7	17679.2	-51.00	5.70	14.15	Horizontal	-42.55	-13.00	29.55	225
8	20204.8	--	--	--	--	--	--	--	--
9	22730.4	--	--	--	--	--	--	--	--
10	25256.0	--	--	--	--	--	--	--	--

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 Band 7 QPSK 20MHz+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	-57.72	2.00	9.15	Horizontal	-50.57	-13.00	37.57	45
3	7590.3	-57.67	2.50	11.35	Horizontal	-48.82	-13.00	35.82	135
4	10120.4	-58.46	4.20	12.05	Horizontal	-50.61	-13.00	37.61	225
5	12650.5	-53.54	5.20	12.85	Horizontal	-45.89	-13.00	32.89	270
6	15180.6	-51.88	5.50	14.23	Horizontal	-43.15	-13.00	30.15	135
7	17710.7	-51.64	5.70	14.15	Horizontal	-43.19	-13.00	30.19	
8	20240.8	--	--	--	--	--	--	--	--
9	22770.9	--	--	--	--	--	--	--	--
10	25301.0	--	--	--	--	--	--	--	--

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 Band 7 QPSK 15MHz +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	-59.42	2.00	10.15	Horizontal	-51.27	-13.00	38.27	45
3	7582.5	-58.53	2.50	11.35	Horizontal	-49.68	-13.00	36.68	135
4	10110.0	-54.49	4.20	12.05	Horizontal	-46.64	-13.00	33.64	225
5	12637.5	-52.66	5.20	14.85	Horizontal	-43.01	-13.00	30.01	270
6	15165.0	-51.85	5.50	13.23	Horizontal	-44.12	-13.00	31.12	135
7	17692.5	-49.41	5.70	12.15	Horizontal	-42.96	-13.00	29.96	
8	20220.0	--	--	--	--	--	--	--	--
9	22747.5	--	--	--	--	--	--	--	--
10	25275.0	--	--	--	--	--	--	--	--

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 Band 7 QPSK 20MHz+20MH 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	-58.78	2.00	9.15	Horizontal	-51.63	-13.00	38.63	45
3	7575.3	-57.67	2.50	11.35	Horizontal	-48.82	-13.00	35.82	135
4	10100.4	-54.73	4.20	12.05	Horizontal	-46.88	-13.00	33.88	225
5	12625.5	-50.84	5.20	12.85	Horizontal	-43.19	-13.00	30.19	270
6	15150.6	-51.64	5.50	14.23	Horizontal	-42.91	-13.00	29.91	135
7	17675.7	-50.36	5.70	14.15	Horizontal	-41.91	-13.00	28.91	135
8	20200.8	--	--	--	--	--	--	--	--
9	22725.9	--	--	--	--	--	--	--	--
10	25251.0	--	--	--	--	--	--	--	--

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 Band 38 QPSK 15MHz+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	-59.23	2.00	9.15	Horizontal	-52.08	-13.00	39.08	45
3	7762.5	-58.87	2.50	11.35	Horizontal	-50.02	-13.00	37.02	135
4	10350.0	-54.50	4.20	12.05	Horizontal	-46.65	-13.00	33.65	225
5	12937.5	-52.38	5.20	12.85	Horizontal	-44.73	-13.00	31.73	270
6	15525.0	-51.84	5.50	14.23	Horizontal	-43.11	-13.00	30.11	135
7	18112.5	--	--	--	--	--	--	--	--
8	20700.0	--	--	--	--	--	--	--	--
9	23287.5	--	--	--	--	--	--	--	--
10	25875.0	--	--	--	--	--	--	--	--

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 Band 38 QPSK 20MHz+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	-58.70	2.00	10.15	Horizontal	-50.55	-13.00	37.55	45
3	7755.3	-59.96	2.50	11.35	Horizontal	-51.11	-13.00	38.11	135
4	10340.4	-55.50	4.20	12.05	Horizontal	-47.65	-13.00	34.65	225
5	12925.5	-55.75	5.20	14.85	Horizontal	-46.10	-13.00	33.10	270
6	15510.6	-51.03	5.50	13.23	Horizontal	-43.30	-13.00	30.30	135
7	18095.7	--	--	--	--	--	--	--	--
8	20680.8	--	--	--	--	--	--	--	--
9	23265.9	--	--	--	--	--	--	--	--
10	25851.0	--	--	--	--	--	--	--	--

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.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2018-12-16	2019-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2019-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2019-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2017-07-20	2019-07-19
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preamplifier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-19	2020-05-18
RF Cable	Agilent	SMA 15cm	0001	2019-06-14	2019-09-13
Software	R&S	EMC32	9.26.0	/	/

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