Appendix B

WCDMA BAND II & V

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1. Effective (Isotropic) Radiated Power Output Data

1.1. Test Result

BAND	Channel	Power(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
Band II	9262	23.04	18.24	33.00	PASS
Band II	9400	23.06	18.26	33.00	PASS
Band II	9538	23.16	18.36	33.00	PASS

BAND	Channel	Power(dBm)	ERP(dBm)	Limit(dBm)	Verdict
Band V	4132	23.42	16.17	38.45	PASS
Band V	4182	23.29	16.04	38.45	PASS
Band V	4233	23.12	15.87	38.45	PASS

Remark:

a: For getting the ERP (Efficient Isotropic Radiated Power) in substitution method, the following formula should be taken to calculate it,

EIRP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBi]

ERP [dBm] = SGP [dBm] – Cable Loss [dB] + Gain [dBd]

b: SGP=Signal Generator Level

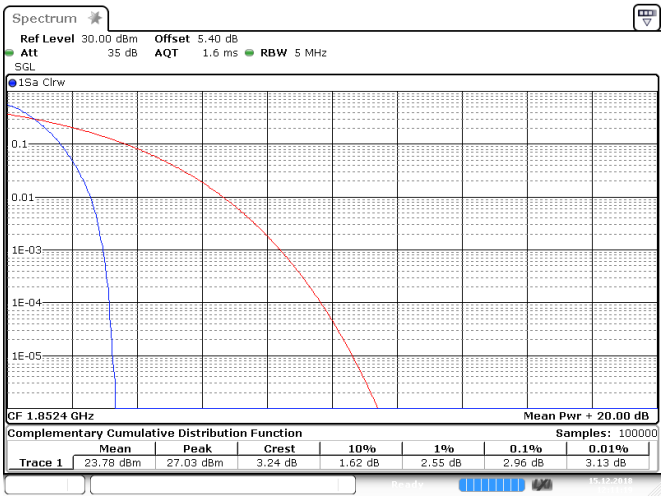
2. Peak-to-Average Ratio

2.1. Test Result

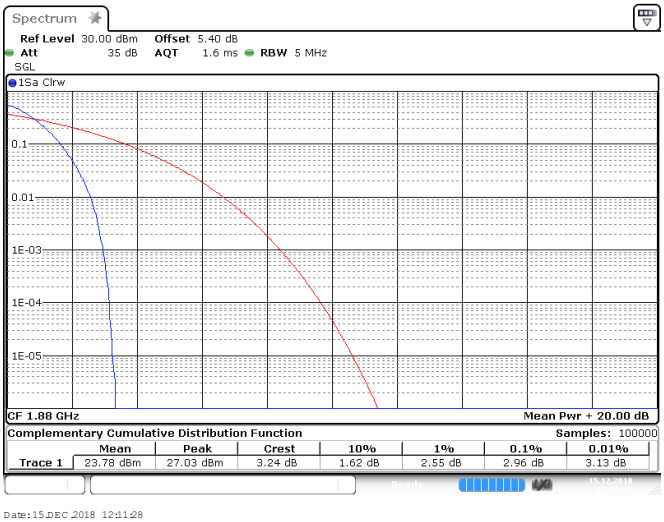
BAND	Channel	Peak-to-Average Ratio(dB)	Limit(dB)	Verdict
Band II	9262	2.96	13	PASS
Band II	9400	2.96	13	PASS
Band II	9538	2.96	13	PASS
Band V	4132	2.87	13	PASS
Band V	4182	2.87	13	PASS
Band V	4233	2.87	13	PASS

2.2. Test Plots

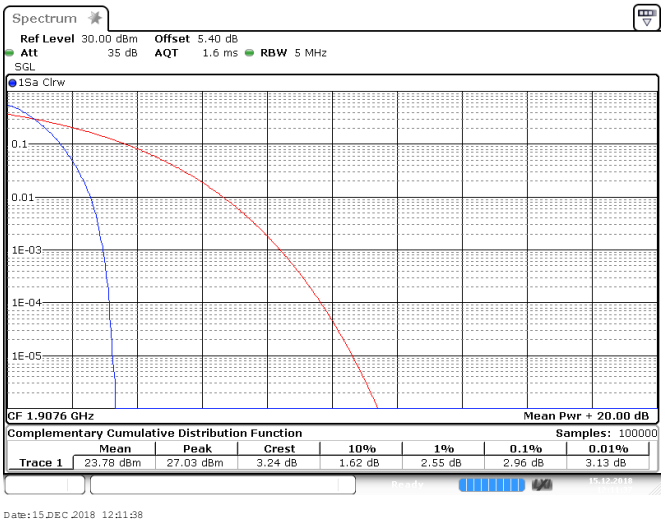
BAND II_9262



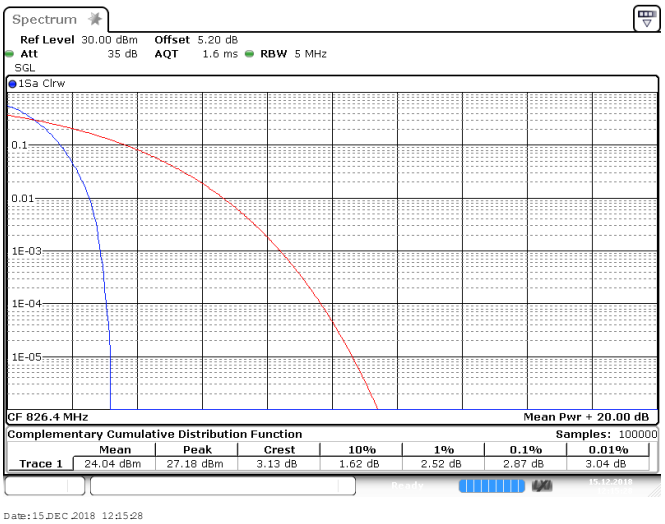
BAND II_9400



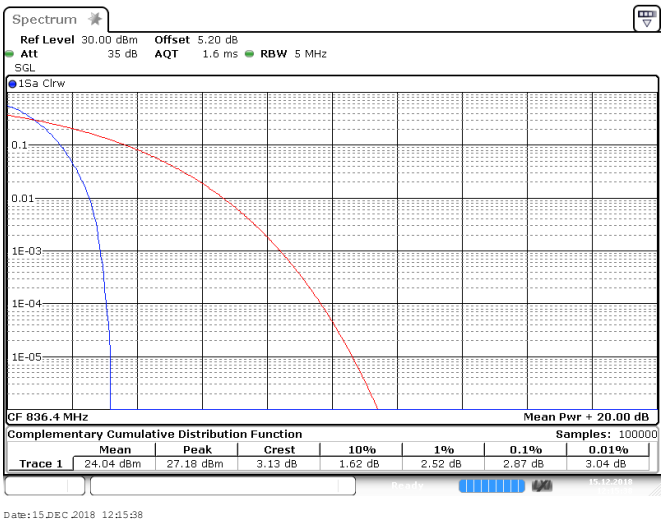
BAND II_9538



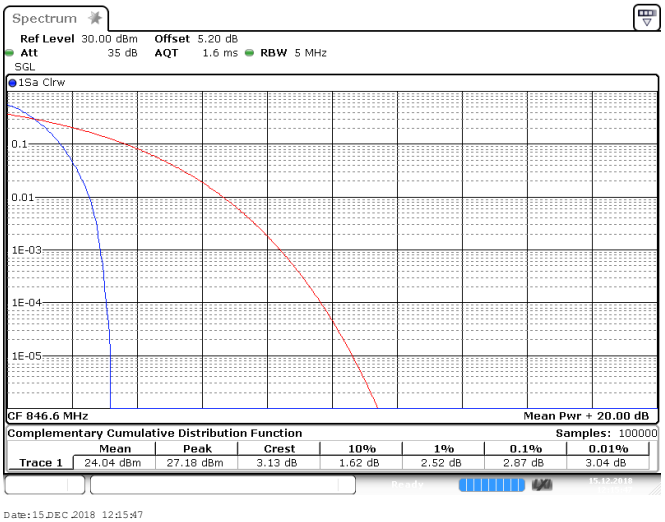
BAND V_4132



BAND V_4182



BAND V_4233



3. Modulation Characteristics

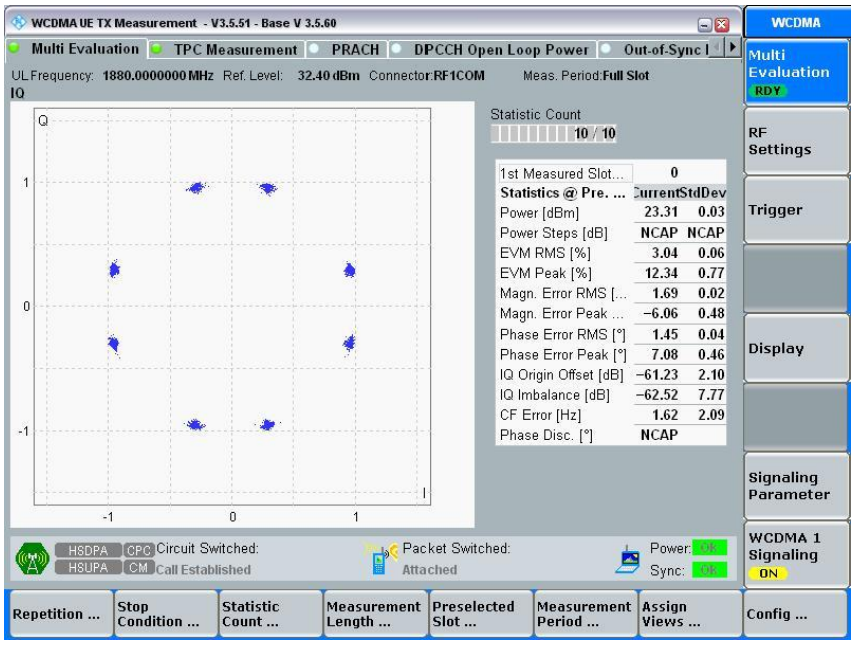
Part I - Test Plots

3.1. For WCDMA

3.1.1. Test BAND = WCDMA BAND II

3.1.1.1. Test Mode = UMTS/TM1

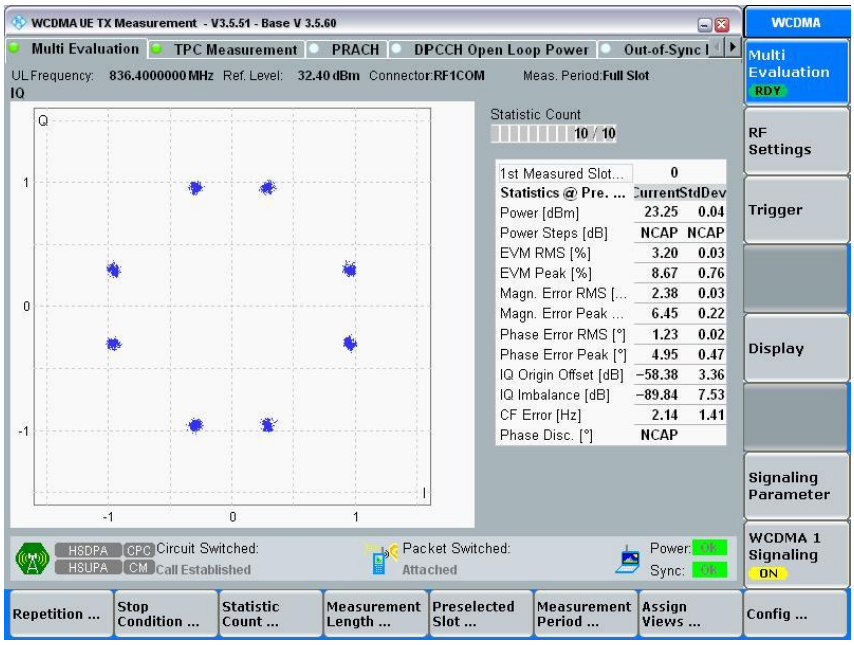
3.1.1.1.1. Test Channel = MCH



3.1.2. Test BAND = WCDMA BAND V

3.1.2.1. Test Mode = UMTS /TM1

3.1.2.1.1. Test Channel = MCH



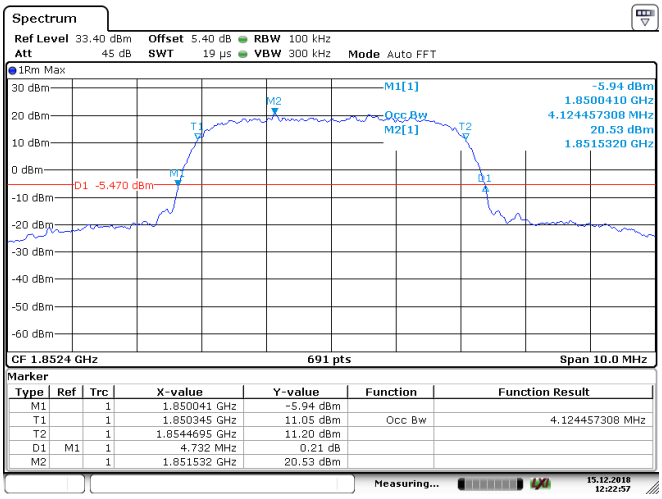
4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

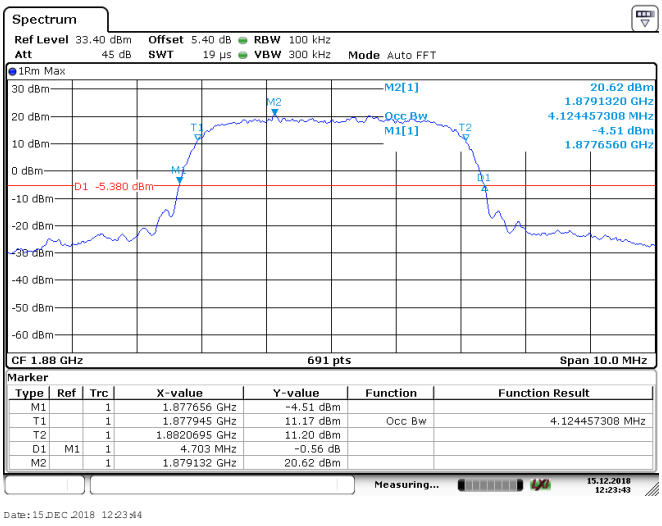
BAND	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band II	9262	4.124	4.732	---	PASS
Band II	9400	4.124	4.703	---	PASS
Band II	9538	4.124	4.732	---	PASS
Band V	4132	4.124	4.718	---	PASS
Band V	4182	4.124	4.776	---	PASS
Band V	4233	4.124	4.732	---	PASS

4.2. Test Plots

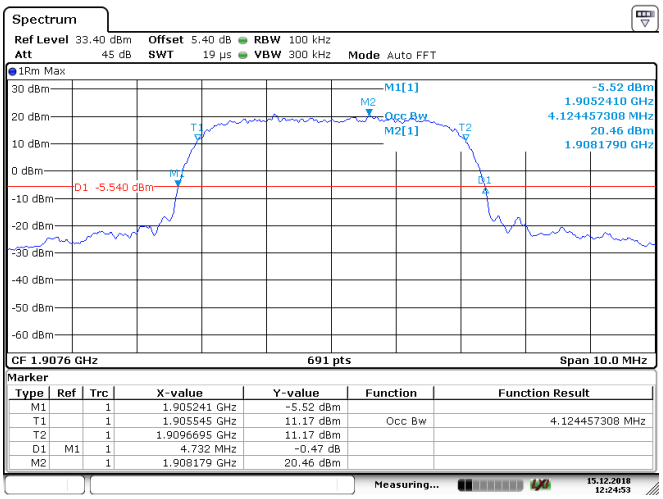
BAND II_9262



BAND II_9400



BAND II_9538



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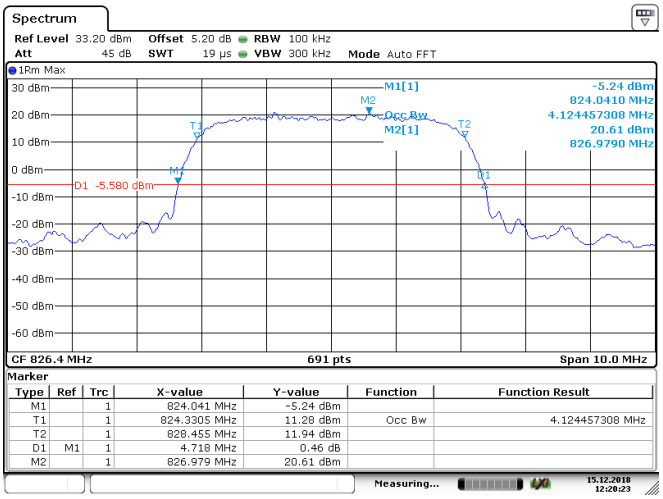
BAND V_4132



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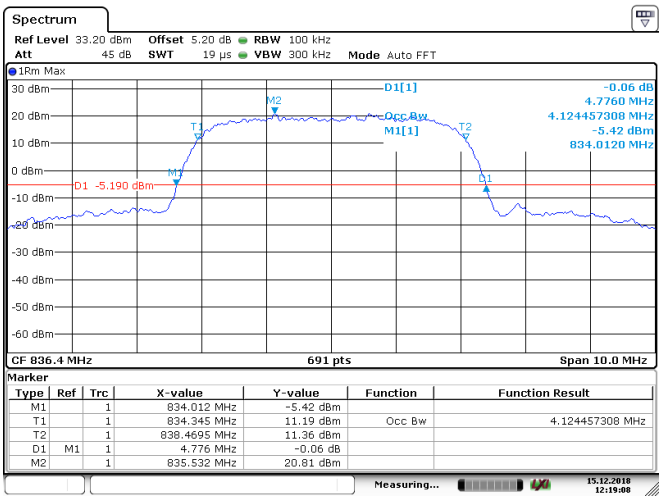
BAND V_4182



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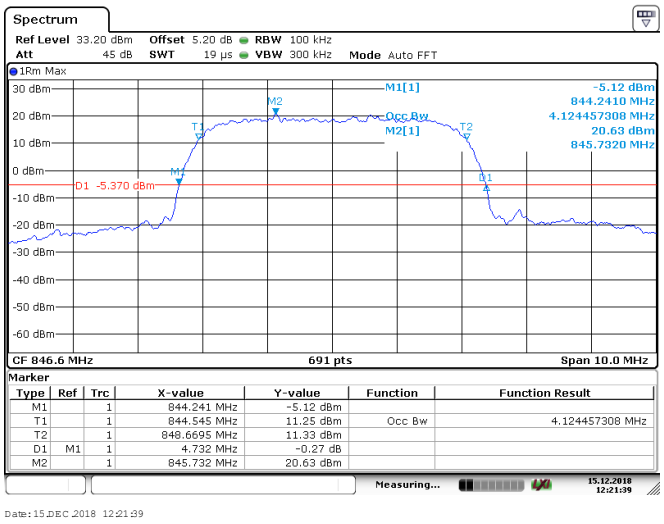
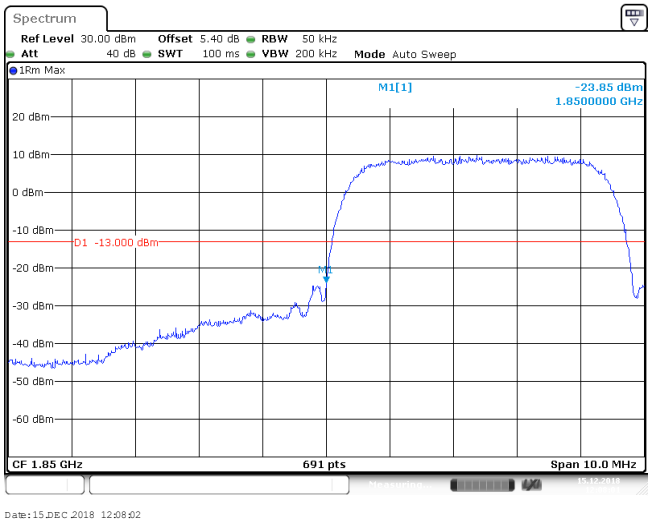
BAND V_4233

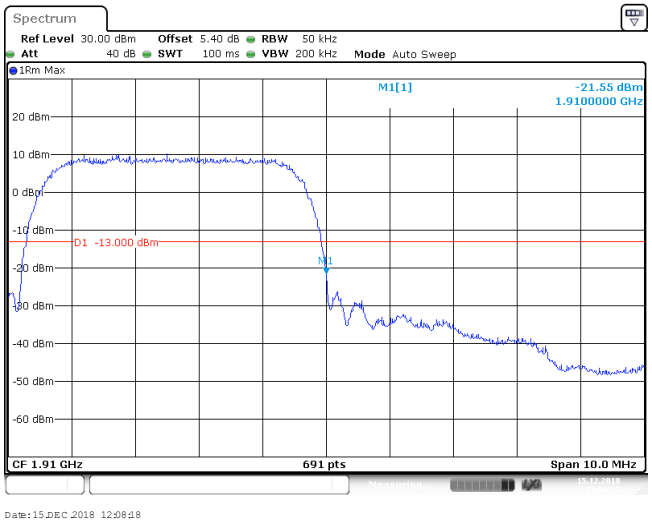


5. Band Edge Compliance

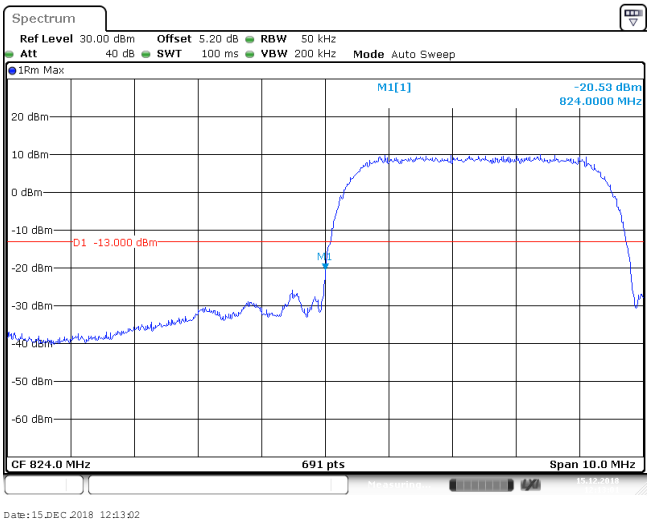
5.1. Test Plots



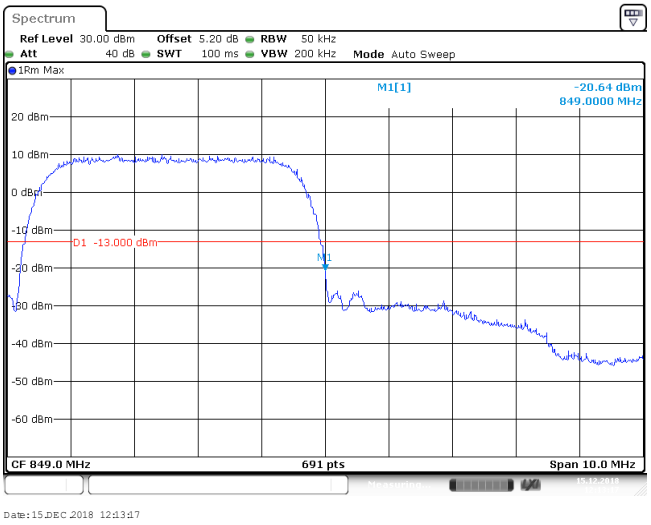
Band II_9262



Band II_9538



Band V_4132



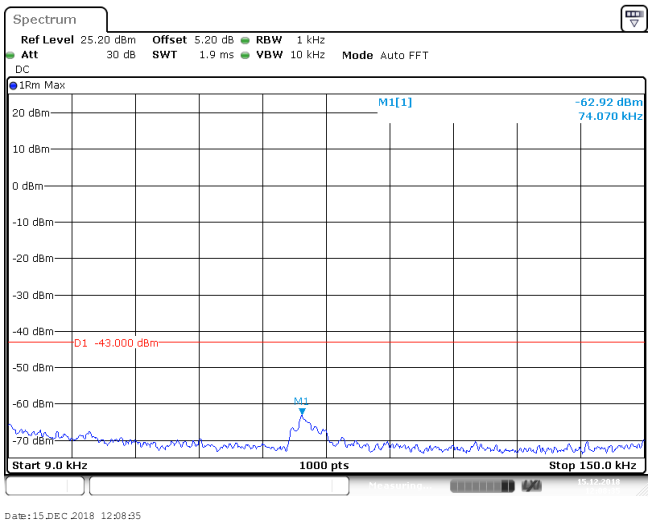
Band V_4233

6. Spurious Emission at Antenna Terminal

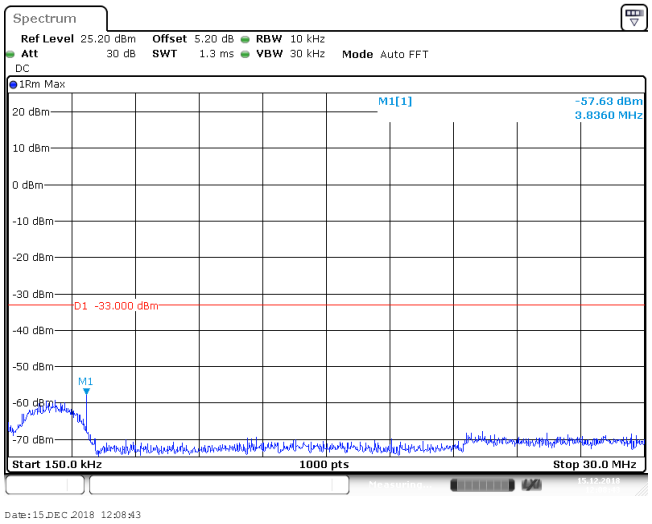
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of < RBW/2 so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = k * (Span / RBW)" with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Remark2: only the worst case data displayed in this report.

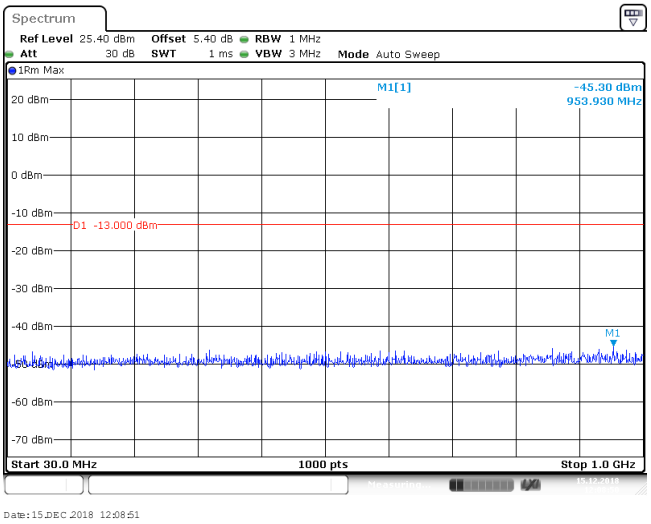
6.1. Test Plots



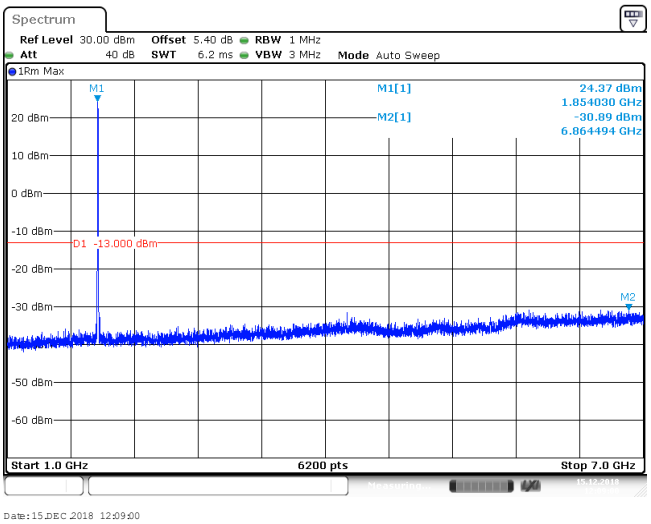
Band II_9262



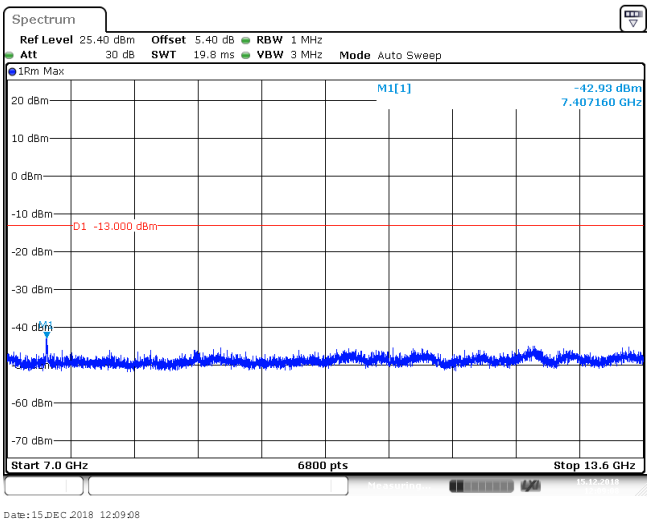
Band II_9262



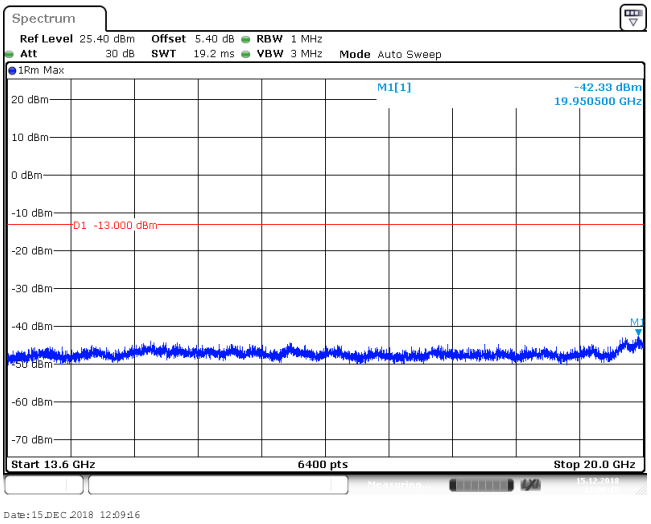
Band II_9262



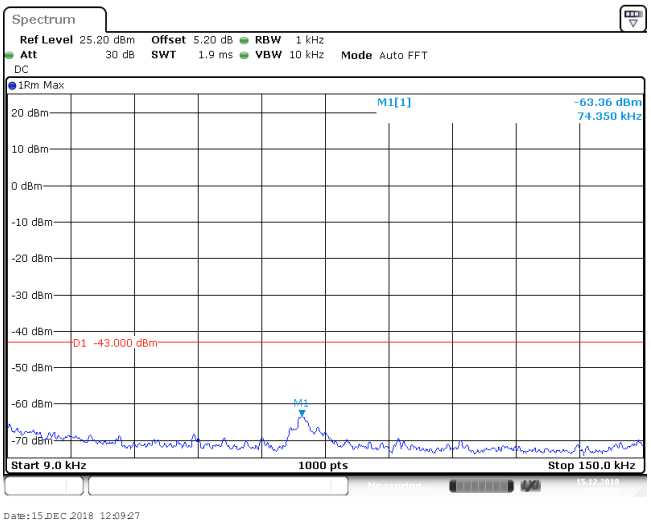
Band II_9262



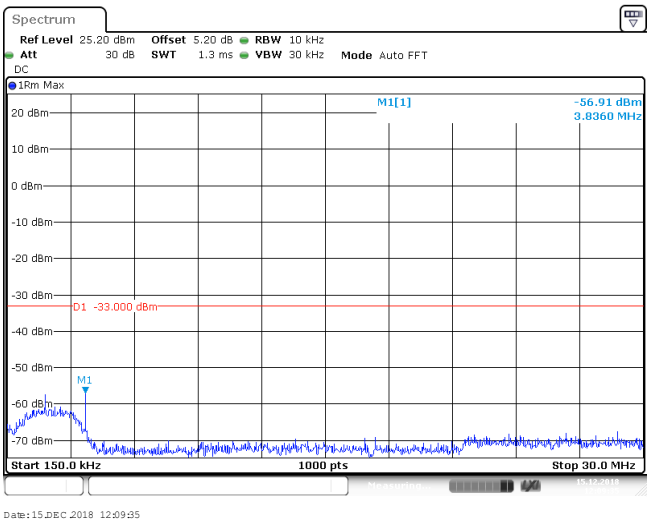
Band II_9262



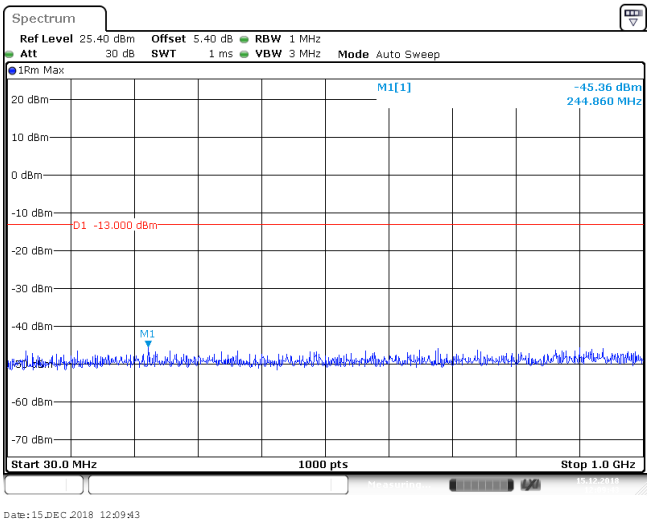
Band II_9262



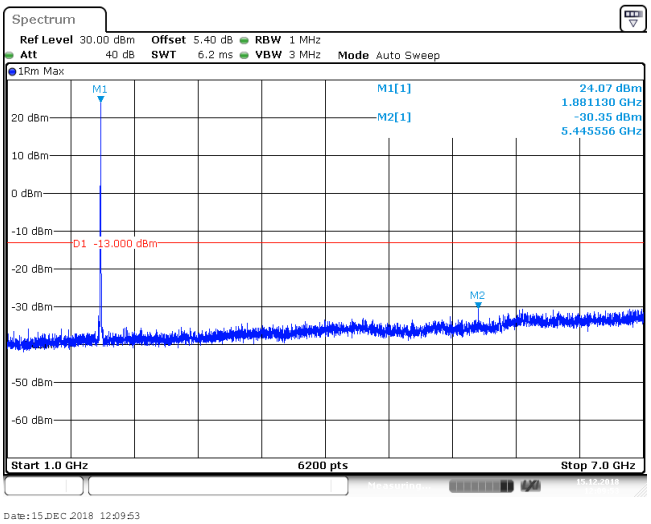
Band II_9400



Band II_9400



Band II_9400



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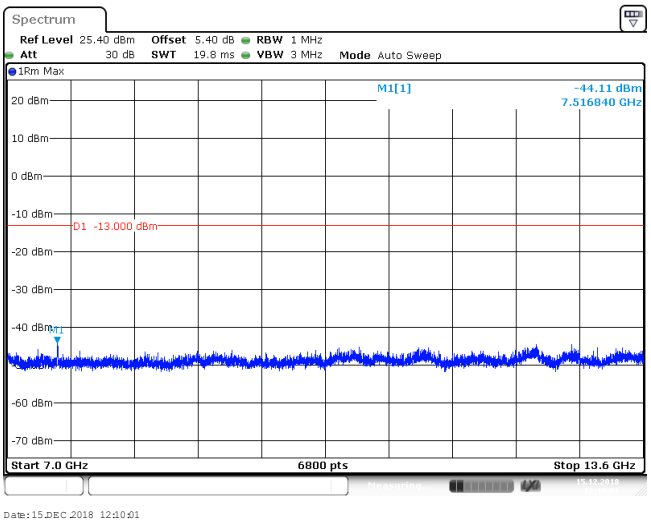
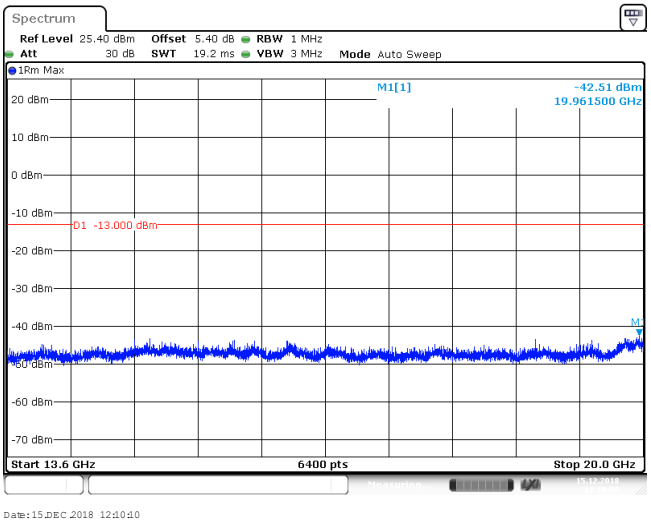
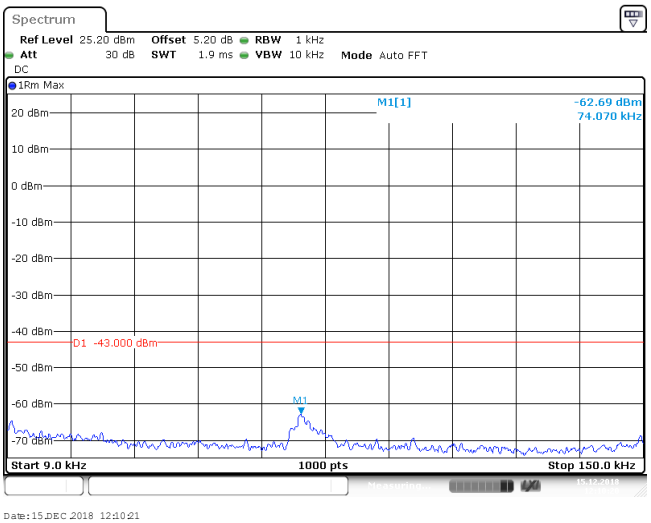


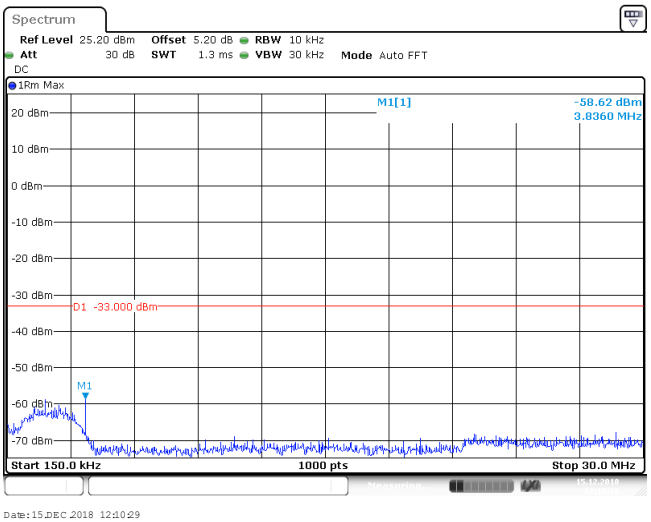
Band II_9400



Band II_9400



Band II_9538



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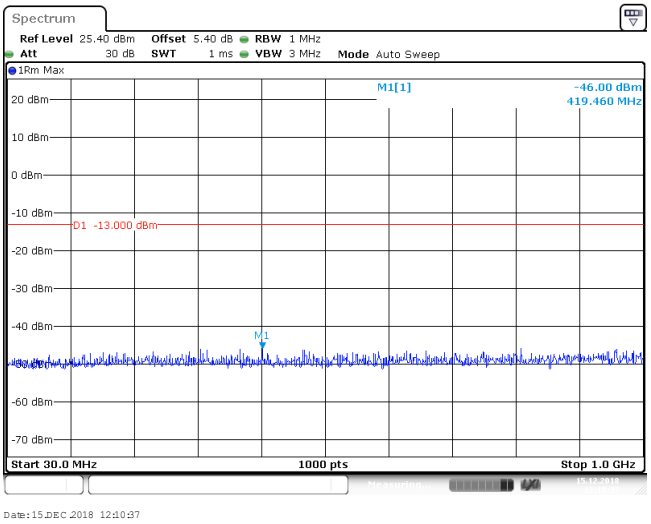

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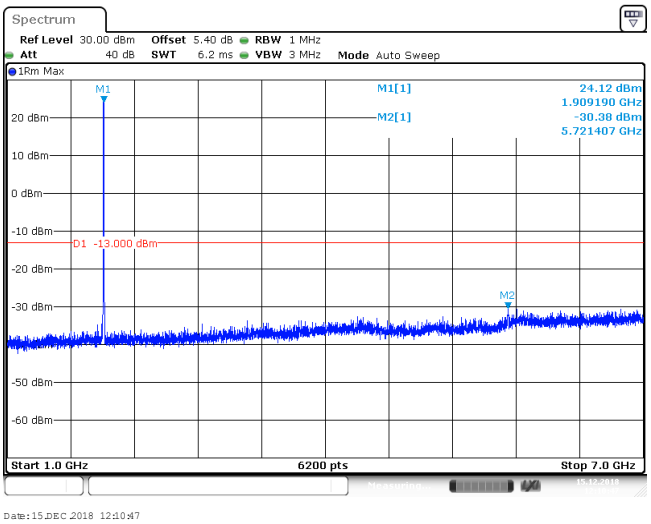

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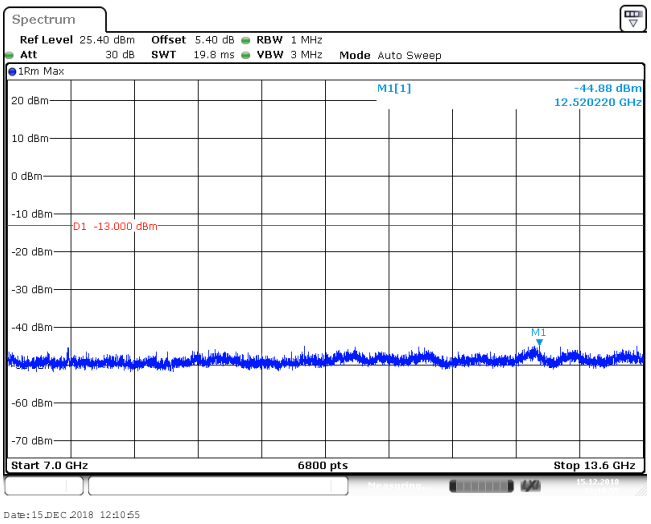
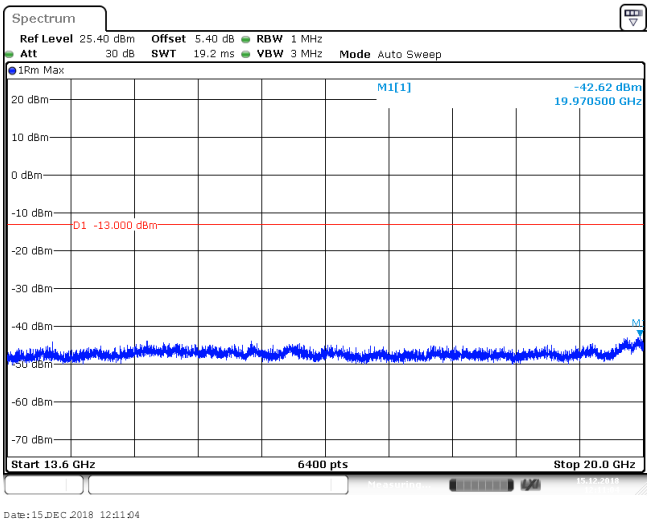
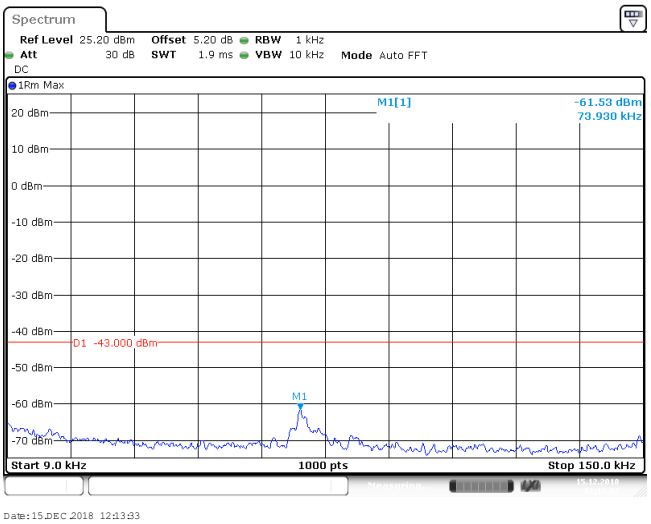


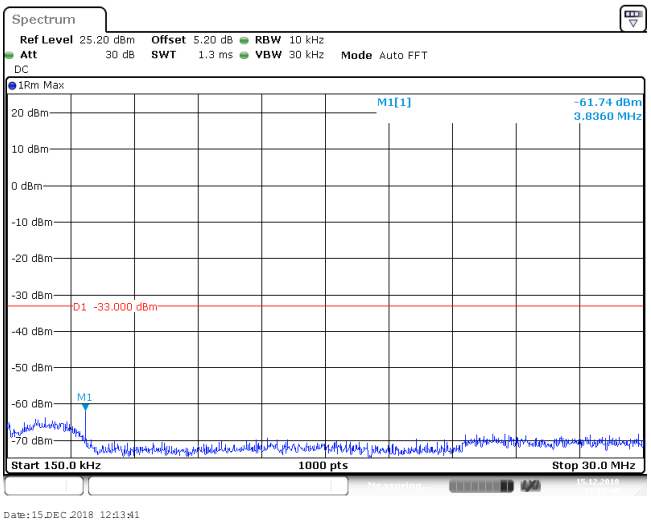
Band II_9538



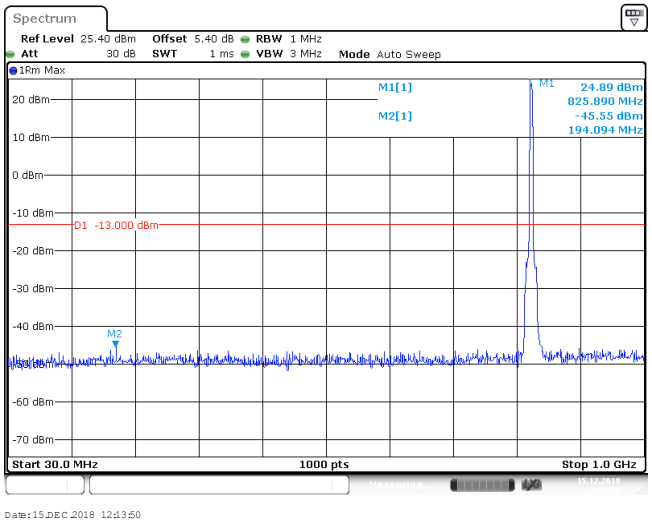
Band II_9538



Band V_4132



Band V_4132



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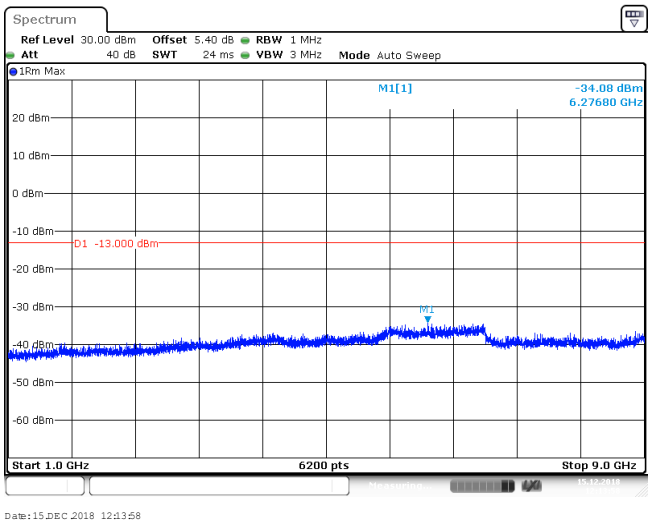
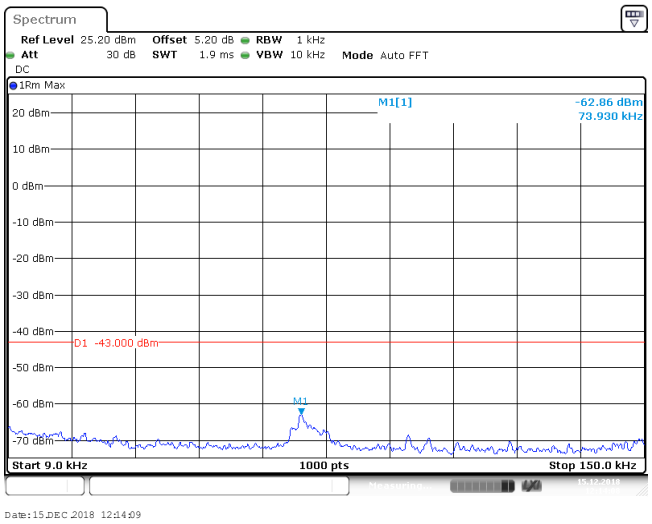
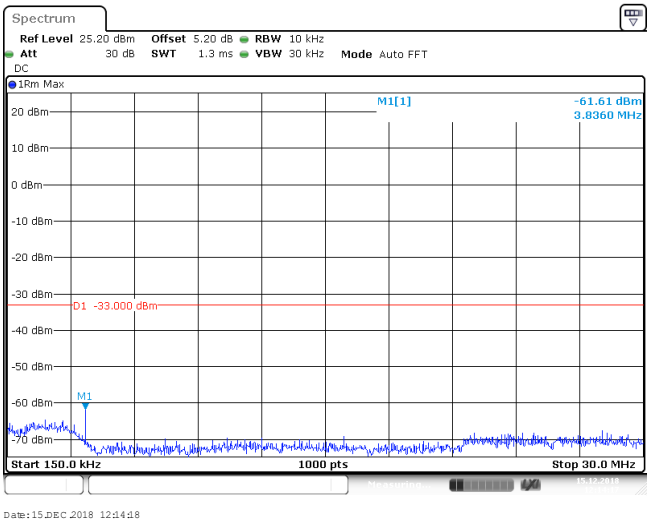


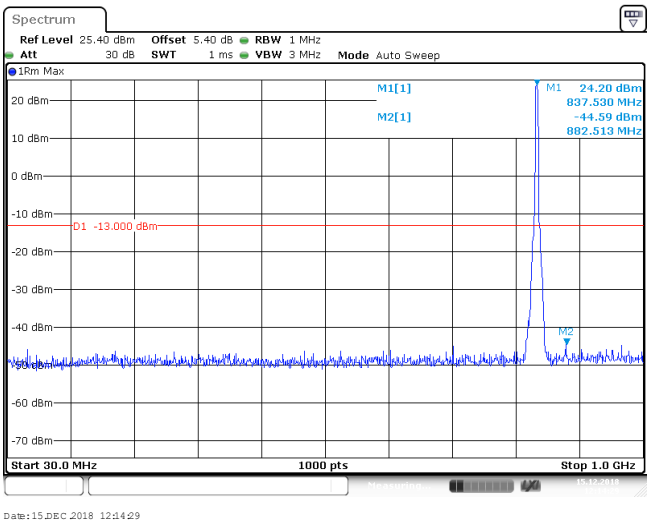
Band V_4132



Band V_4182



Band V_4182



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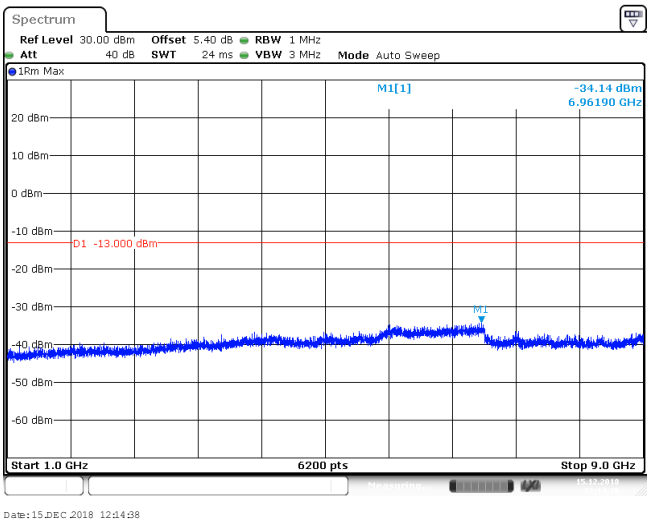

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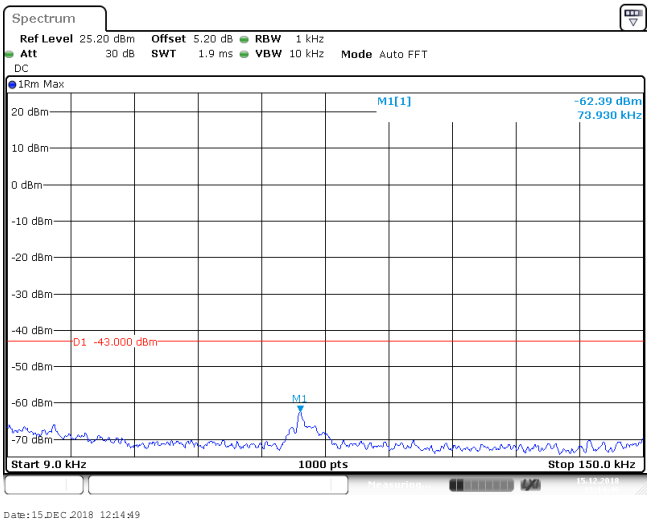

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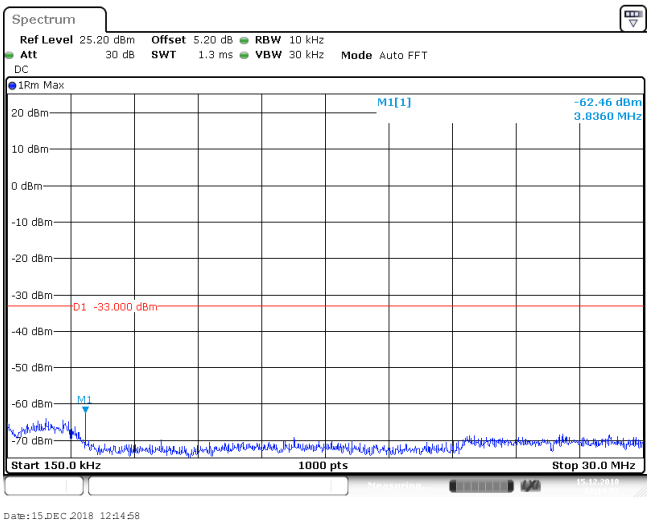
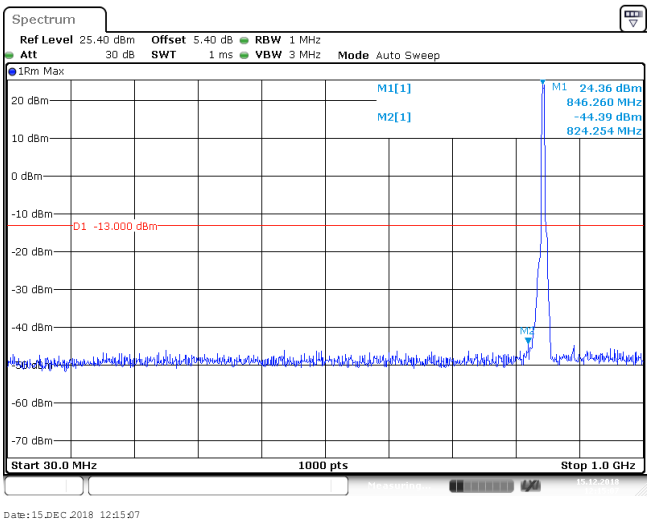
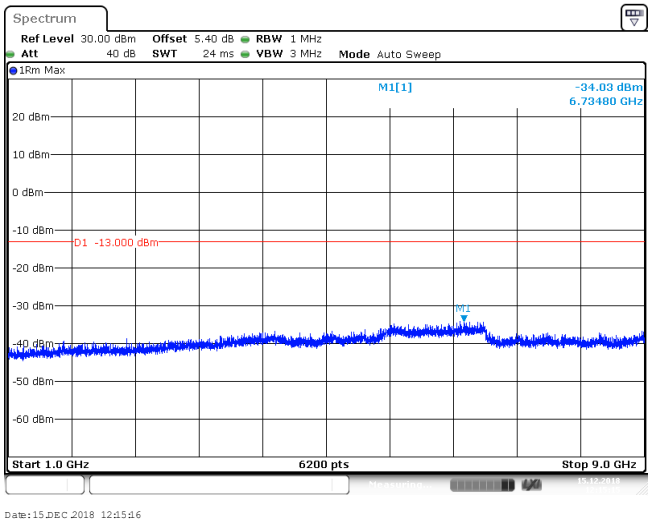


Band V_4233



Band V_4233



Band V_4233

7. Field Strength of Spurious Radiation

7.1. For WCDMA

7.1.1. Test Band = WCDMA BAND II

7.1.1.1. Test Mode = UMTS/TM1

7.1.1.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
72.250000	-74.53	-13.00	61.53	Vertical
126.600000	-71.42	-13.00	58.42	Vertical
419.050000	-81.15	-13.00	68.15	Vertical
5559.862500	-63.15	-13.00	50.15	Vertical
7406.512500	-61.14	-13.00	48.14	Vertical
10628.887500	-62.46	-13.00	49.46	Vertical
62.500000	-77.32	-13.00	64.32	Horizontal
131.300000	-74.13	-13.00	61.13	Horizontal
209.950000	-81.55	-13.00	68.55	Horizontal
3702.975000	-67.65	-13.00	54.65	Horizontal
5560.350000	-57.43	-13.00	44.43	Horizontal
7406.512500	-47.04	-13.00	34.04	Horizontal

7.1.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
73.650000	-76.92	-13.00	63.92	Vertical
131.050000	-71.77	-13.00	58.77	Vertical
210.600000	-79.68	-13.00	66.68	Vertical
3757.575000	-68.31	-13.00	55.31	Vertical
5636.887500	-66.01	-13.00	53.01	Vertical
7516.687500	-62.82	-13.00	49.82	Vertical
62.550000	-77.37	-13.00	64.37	Horizontal
131.350000	-73.91	-13.00	60.91	Horizontal
878.770833	-78.55	-13.00	65.55	Horizontal
3758.062500	-67.36	-13.00	54.36	Horizontal
5642.737500	-56.01	-13.00	43.01	Horizontal
7523.025000	-48.63	-13.00	35.63	Horizontal

7.1.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
72.950000	-76.99	-13.00	63.99	Vertical
130.650000	-71.88	-13.00	58.88	Vertical
421.200000	-81.36	-13.00	68.36	Vertical
3753.675000	-68.46	-13.00	55.46	Vertical

5726.587500	-65.88	-13.00	52.88	Vertical
7631.250000	-63.27	-13.00	50.27	Vertical
63.050000	-77.44	-13.00	64.44	Horizontal
131.350000	-74.47	-13.00	61.47	Horizontal
421.650000	-80.40	-13.00	67.40	Horizontal
3816.562500	-67.10	-13.00	54.10	Horizontal
5725.612500	-51.53	-13.00	38.53	Horizontal
7633.200000	-50.95	-13.00	37.95	Horizontal

7.1.2. Test Band = WCDMA BAND V

7.1.2.1. Test Mode = UMTS/TM1

7.1.2.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
72.750000	-77.59	-13.00	64.59	Vertical
131.500000	-73.83	-13.00	60.83	Vertical
201.600000	-80.50	-13.00	67.50	Vertical
1654.500000	-62.07	-13.00	49.07	Vertical
2476.000000	-58.21	-13.00	45.21	Vertical
9220.012500	-63.46	-13.00	50.46	Vertical
62.250000	-77.79	-13.00	64.79	Horizontal
130.700000	-74.92	-13.00	61.92	Horizontal
210.750000	-81.06	-13.00	68.06	Horizontal
1654.500000	-57.34	-13.00	44.34	Horizontal
2476.000000	-58.47	-13.00	45.47	Horizontal
4964.137500	-66.13	-13.00	53.13	Horizontal

7.1.2.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
73.050000	-77.57	-13.00	64.57	Vertical
131.200000	-73.90	-13.00	60.90	Vertical
210.450000	-80.75	-13.00	67.75	Vertical
1671.000000	-61.11	-13.00	48.11	Vertical
2511.500000	-58.02	-13.00	45.02	Vertical
3342.225000	-68.79	-13.00	55.79	Vertical
63.100000	-77.29	-13.00	64.29	Horizontal
131.850000	-75.39	-13.00	62.39	Horizontal
210.350000	-82.84	-13.00	69.84	Horizontal
1671.000000	-56.48	-13.00	43.48	Horizontal
2512.000000	-58.64	-13.00	45.64	Horizontal
7992.000000	-64.10	-13.00	51.10	Horizontal

7.1.2.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
73.650000	-77.25	-13.00	64.25	Vertical
131.500000	-74.15	-13.00	61.15	Vertical
201.600000	-80.24	-13.00	67.24	Vertical
1691.500000	-59.56	-13.00	46.56	Vertical
2543.000000	-58.33	-13.00	45.33	Vertical
7999.312500	-64.10	-13.00	51.10	Vertical
62.200000	-73.75	-13.00	60.75	Horizontal
131.450000	-75.31	-13.00	62.31	Horizontal
421.050000	-81.56	-13.00	68.56	Horizontal
1695.000000	-54.34	-13.00	41.34	Horizontal
2543.000000	-59.02	-13.00	46.02	Horizontal
7972.987500	-63.91	-13.00	50.91	Horizontal

Remark:

1) The disturbance above 12.75GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data had been displayed.
2) We have tested all modulation and all Bandwidth , but only the worst case data presented in this report.

8. Frequency Stability

8.1. Frequency Vs Voltage

Voltage							
BAND	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VL	TN	6.41	0.003458	±2.5	PASS
Band II	9262	VN	TN	-14.03	-0.007571	±2.5	PASS
Band II	9262	VH	TN	7.69	0.004150	±2.5	PASS
Band II	9400	VL	TN	-8.01	-0.004263	±2.5	PASS
Band II	9400	VN	TN	14.71	0.007826	±2.5	PASS
Band II	9400	VH	TN	8.97	0.004769	±2.5	PASS
Band II	9538	VL	TN	-10.38	-0.005441	±2.5	PASS
Band II	9538	VN	TN	-8.21	-0.004304	±2.5	PASS
Band II	9538	VH	TN	-6.02	-0.003157	±2.5	PASS
Band V	4132	VL	TN	7.85	0.009505	±2.5	PASS
Band V	4132	VN	TN	-6.84	-0.008282	±2.5	PASS
Band V	4132	VH	TN	10.28	0.012445	±2.5	PASS
Band V	4182	VL	TN	-12.74	-0.015232	±2.5	PASS
Band V	4182	VN	TN	-1.76	-0.002107	±2.5	PASS
Band V	4182	VH	TN	8.36	0.009995	±2.5	PASS
Band V	4233	VL	TN	-10.60	-0.012516	±2.5	PASS
Band V	4233	VN	TN	-7.13	-0.008423	±2.5	PASS
Band V	4233	VH	TN	14.36	0.016961	±2.5	PASS

8.2. Frequency Vs Temperature

Temperature							
BAND	Channel	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band II	9262	VN	-30	-13.17	-0.007107	±2.5	PASS
Band II	9262	VN	-20	-7.74	-0.004180	±2.5	PASS
Band II	9262	VN	-10	8.80	0.004748	±2.5	PASS
Band II	9262	VN	0	-14.74	-0.007955	±2.5	PASS
Band II	9262	VN	10	2.86	0.001542	±2.5	PASS
Band II	9262	VN	20	-0.24	-0.000131	±2.5	PASS
Band II	9262	VN	30	1.78	0.000962	±2.5	PASS
Band II	9262	VN	40	-1.08	-0.000583	±2.5	PASS
Band II	9262	VN	50	-9.86	-0.005324	±2.5	PASS
Band II	9400	VN	-30	-7.19	-0.003823	±2.5	PASS
Band II	9400	VN	-20	-3.52	-0.001871	±2.5	PASS
Band II	9400	VN	-10	-7.34	-0.003904	±2.5	PASS
Band II	9400	VN	0	11.98	0.006373	±2.5	PASS
Band II	9400	VN	10	-2.13	-0.001130	±2.5	PASS
Band II	9400	VN	20	14.07	0.007484	±2.5	PASS
Band II	9400	VN	30	-10.98	-0.005840	±2.5	PASS
Band II	9400	VN	40	11.70	0.006223	±2.5	PASS
Band II	9400	VN	50	0.84	0.000448	±2.5	PASS
Band II	9538	VN	-30	5.38	0.002819	±2.5	PASS

Band II	9538	VN	-20	-4.61	-0.002415	±2.5	PASS
Band II	9538	VN	-10	7.15	0.003750	±2.5	PASS
Band II	9538	VN	0	-9.31	-0.004882	±2.5	PASS
Band II	9538	VN	10	-2.17	-0.001138	±2.5	PASS
Band II	9538	VN	20	12.16	0.006376	±2.5	PASS
Band II	9538	VN	30	1.91	0.000999	±2.5	PASS
Band II	9538	VN	40	3.02	0.001586	±2.5	PASS
Band II	9538	VN	50	-11.98	-0.006280	±2.5	PASS
Band V	4132	VN	-30	1.67	0.002022	±2.5	PASS
Band V	4132	VN	-20	3.75	0.004535	±2.5	PASS
Band V	4132	VN	-10	-1.16	-0.001403	±2.5	PASS
Band V	4132	VN	0	9.58	0.011589	±2.5	PASS
Band V	4132	VN	10	9.04	0.010943	±2.5	PASS
Band V	4132	VN	20	-5.83	-0.007056	±2.5	PASS
Band V	4132	VN	30	-1.98	-0.002390	±2.5	PASS
Band V	4132	VN	40	9.71	0.011748	±2.5	PASS
Band V	4132	VN	50	10.47	0.012675	±2.5	PASS
Band V	4182	VN	-30	12.78	0.015276	±2.5	PASS
Band V	4182	VN	-20	-0.34	-0.000409	±2.5	PASS
Band V	4182	VN	-10	8.80	0.010525	±2.5	PASS
Band V	4182	VN	0	1.13	0.001355	±2.5	PASS
Band V	4182	VN	10	-3.27	-0.003910	±2.5	PASS
Band V	4182	VN	20	1.64	0.001957	±2.5	PASS
Band V	4182	VN	30	1.03	0.001233	±2.5	PASS
Band V	4182	VN	40	0.61	0.000724	±2.5	PASS
Band V	4182	VN	50	-9.20	-0.011000	±2.5	PASS
Band V	4233	VN	-30	1.02	0.001208	±2.5	PASS
Band V	4233	VN	-20	7.24	0.008547	±2.5	PASS
Band V	4233	VN	-10	-10.63	-0.012562	±2.5	PASS
Band V	4233	VN	0	-12.58	-0.014854	±2.5	PASS
Band V	4233	VN	10	-1.74	-0.002058	±2.5	PASS
Band V	4233	VN	20	5.60	0.006614	±2.5	PASS
Band V	4233	VN	30	9.96	0.011767	±2.5	PASS
Band V	4233	VN	40	-13.63	-0.016095	±2.5	PASS
Band V	4233	VN	50	10.02	0.011830	±2.5	PASS

The End