

Report No.: SZEM180300241701

Page: 1 of 40

Appendix B

E-UTRA Band 13



Report No.: SZEM180300241701

Page: 2 of 40

CONTENT

		Page
1 E	EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA	3
2 P	PEAK-TO-AVERAGE RATIO	6
2.1	For LTE	6
2	2.1.1 Test Band = LTE band13	6
3 N	MODULATION CHARACTERISTICS	8
3.1	For LTE	8
3	3.1.1 Test Band = LTE band13	8
4 B	BANDWIDTH	10
4.1	For LTE	10
4	1.1.1 Test Band = LTE band13	10
5 B	BAND EDGES COMPLIANCE	18
5.1	For LTE	18
5	5.1.1 Test Band = LTE band13	18
6 S	SPURIOUS EMISSION AT ANTENNA TERMINAL	34
6.1	For LTE	34
6	S.1.1 Test Band = LTE band13	34
7 F	TIELD STRENGTH OF SPURIOUS RADIATION	38
7.1	For LTE	38
7	7.1.1 Test Band = LTE band13	38
8 F	REQUENCY STABILITY	39
8.1	FREQUENCY ERROR VS. VOLTAGE	39
8.2	FREQUENCY ERROR VS. TEMPERATURE	40



Report No.: SZEM180300241701

Page: 3 of 40

1 Effective (Isotropic) Radiated Power Output Data

Effective Radiated Power of Transmitter (ERP) for LTE BAND 13

Test Band(LTE)	Test Mode	d Power of Tr Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	23.58	20.93	34.77	PASS
				RB1#13	23.39	20.74	34.77	PASS
				RB1#24	23.49	20.84	34.77	PASS
			LCH	RB12#0	22.76	20.11	34.77	PASS
				RB12#6	22.55	19.9	34.77	PASS
				RB12#13	22.69	20.04	34.77	PASS
				RB25#0	22.59	19.94	34.77	PASS
	LTE/TM1	5M	MCH	RB1#0	23.32	20.67	34.77	PASS
				RB1#13	23.56	20.91	34.77	PASS
				RB1#24	23.36	20.71	34.77	PASS
BAND13				RB12#0	22.74	20.09	34.77	PASS
				RB12#6	22.78	20.13	34.77	PASS
				RB12#13	22.75	20.1	34.77	PASS
				RB25#0	22.73	20.08	34.77	PASS
				RB1#0	23.58	20.93	34.77	PASS
				RB1#13	23.72	21.07	34.77	PASS
				RB1#24	23.28	20.63	34.77	PASS
			нсн	RB12#0	22.67	20.02	34.77	PASS
				RB12#6	22.86	20.21	34.77	PASS
				RB12#13	22.79	20.14	34.77	PASS
				RB25#0	22.72	20.07	34.77	PASS



Report No.: SZEM180300241701

Page: 4 of 40

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	22.6	19.95	34.77	PASS
				RB1#13	22.48	19.83	34.77	PASS
				RB1#24	21.93	19.28	34.77	PASS
			LCH	RB12#0	21.75	19.1	34.77	PASS
				RB12#6	21.57	18.92	34.77	PASS
				RB12#13	21.58	18.93	34.77	PASS
		5M		RB25#0	21.75	19.1	34.77	PASS
	LTE/TM2		мсн	RB1#0	22.98	20.33	34.77	PASS
				RB1#13	22.63	19.98	34.77	PASS
				RB1#24	22.78	20.13	34.77	PASS
BAND13				RB12#0	21.7	19.05	34.77	PASS
				RB12#6	21.58	18.93	34.77	PASS
				RB12#13	21.85	19.2	34.77	PASS
				RB25#0	21.85	19.2	34.77	PASS
				RB1#0	22.06	19.41	34.77	PASS
				RB1#13	22.26	19.61	34.77	PASS
				RB1#24	22.4	19.75	34.77	PASS
			нсн	RB12#0	21.52	18.87	34.77	PASS
				RB12#6	21.56	18.91	34.77	PASS
				RB12#13	21.65	19	34.77	PASS
				RB25#0	21.62	18.97	34.77	PASS



Report No.: SZEM180300241701

Page: 5 of 40

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	23.32	20.67	34.77	PASS
				RB1#25	23.8	21.15	34.77	PASS
				RB1#49	23.62	20.97	34.77	PASS
	LTE/TM1	10M	MCH	RB25#0	22.79	20.14	34.77	PASS
				RB25#13	22.87	20.22	34.77	PASS
				RB25#25	22.81	20.16	34.77	PASS
BAND13				RB50#0	22.74	20.09	34.77	PASS
DANDIS	LTE/TM2	10M	МСН	RB1#0	23.17	20.52	34.77	PASS
				RB1#25	22.99	20.34	34.77	PASS
				RB1#49	22.36	19.71	34.77	PASS
				RB25#0	21.8	19.15	34.77	PASS
				RB25#13	21.92	19.27	34.77	PASS
				RB25#25	21.75	19.1	34.77	PASS
				RB50#0	21.8	19.15	34.77	PASS

Note:

a: For getting the EIRP (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]

b: SGP=Signal Generator Level



Report No.: SZEM180300241701

Page: 6 of 40

2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band 13	TM1/10M	HCH	4.96	13	PASS
	TM2/10M	HCH	5.80	13	PASS

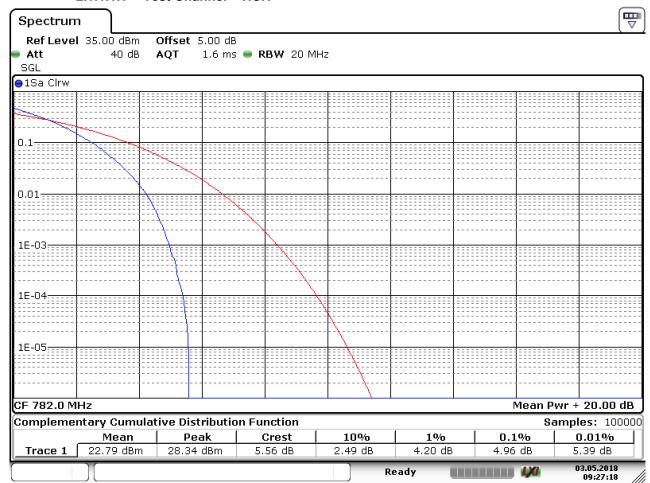
Part II - Test Plots

2.1 For LTE

2.1.1 Test Band = LTE band13

2.1.1.1 Test Mode = LTE/TM1.Bandwidth=10MHz

2.1.1.1.1 Test Channel = HCH



Date: 3.MAY.2018 09:27:19



Report No.: SZEM180300241701

Page: 7 of 40

2.1.1.2 Test Mode = LTE/TM2.Bandwidth=10MHz

2.1.1.2.1 Test Channel = HCH



Date: 3.MAY.2018 09:27:41



Report No.: SZEM180300241701

Page: 8 of 40

3 Modulation Characteristics

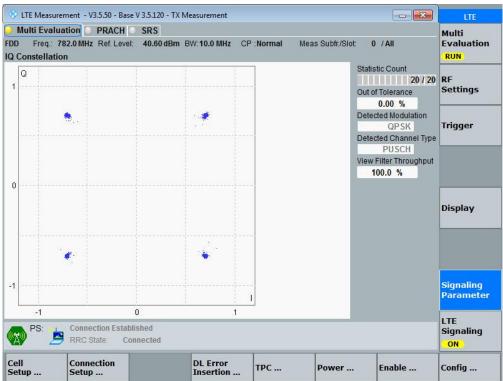
Part I - Test Plots

3.1 For LTE

3.1.1 Test Band = LTE band13

3.1.1.1 Test Mode = LTE /TM1 10MHz

3.1.1.1.1 Test Channel = MCH



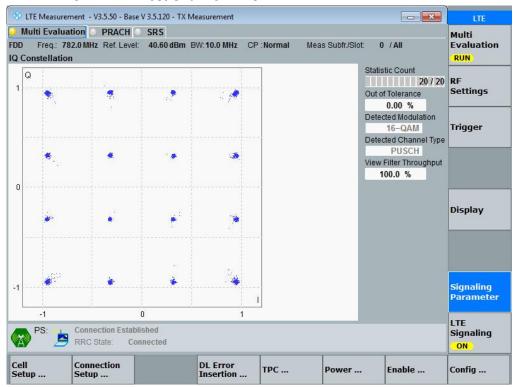


Report No.: SZEM180300241701

Page: 9 of 40

3.1.1.2 Test Mode = LTE /TM2 10MHz

3.1.1.2.1 Test Channel = MCH





Report No.: SZEM180300241701

Page: 10 of 40

4 Bandwidth

Part I - Test Results

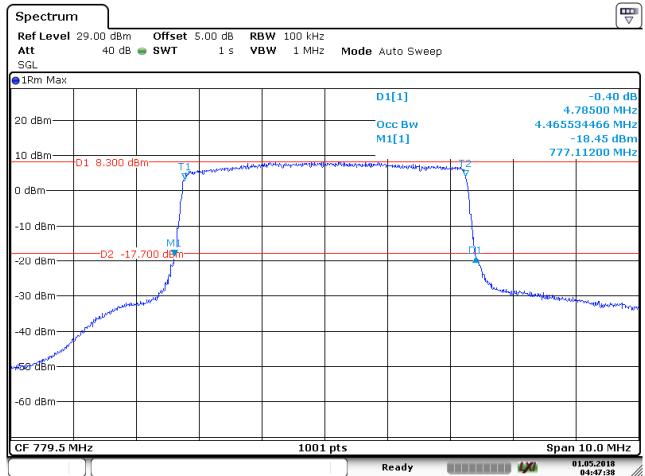
Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
		LCH	4.47	4.79	PASS
	TM1/5MHz	MCH	4.49	4.79	PASS
		HCH	4.49	4.79	PASS
Band 13	TM2/ 5MHz	LCH	4.47	4.79	PASS
Dallu 13		MCH	4.49	4.83	PASS
		HCH	4.49	4.77	PASS
	TM1/10MHz	MCH	8.93	9.49	PASS
	TM2/10MHz	MCH	8.93	9.49	PASS

4.1 For LTE

4.1.1 Test Band = LTE band13

4.1.1.1 Test Mode = LTE/TM1 5MHz





Date: 1.MAY.2018 04:47:39

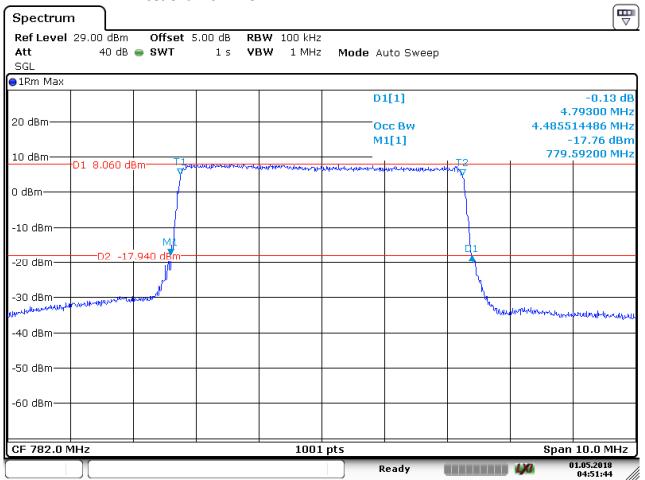
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's object responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



Report No.: SZEM180300241701

Page: 11 of 40

4.1.1.1.2 Test Channel = MCH



Date: 1.MAY.2018 04:51:44



Report No.: SZEM180300241701

Page: 12 of 40

4.1.1.1.3 Test Channel = HCH



Date: 1.MAY.2018 04:52:54



Report No.: SZEM180300241701

Page: 13 of 40

4.1.1.2 Test Mode = LTE/TM2 5MHz

4.1.1.2.1 Test Channel = LCH



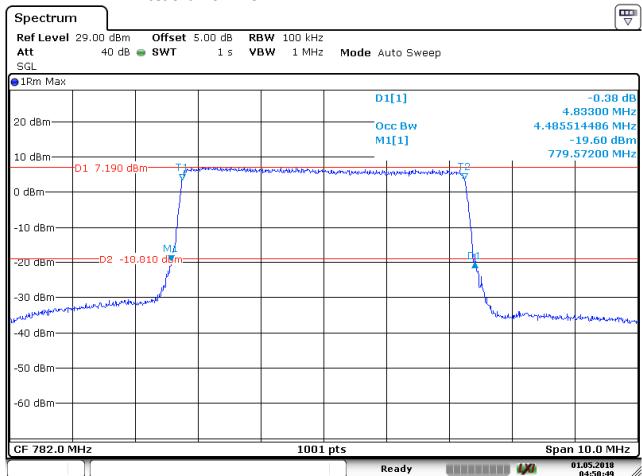
Date: 1.MAY.2018 04:48:34



Report No.: SZEM180300241701

Page: 14 of 40

4.1.1.2.2 Test Channel = MCH



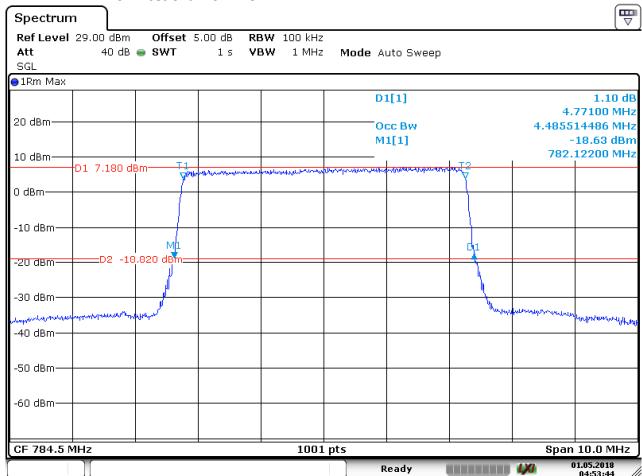
Date: 1.MAY.2018 04:50:50



Report No.: SZEM180300241701

Page: 15 of 40

4.1.1.2.3 Test Channel = HCH



Date: 1.MAY.2018 04:53:45

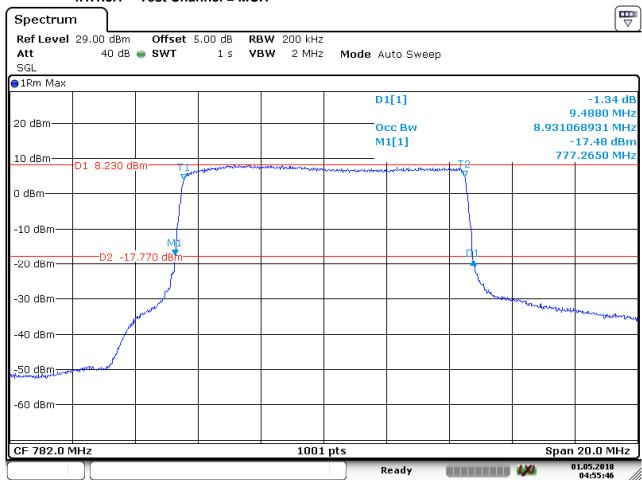


Report No.: SZEM180300241701

Page: 16 of 40

4.1.1.3 Test Mode = LTE/TM1 10MHz

4.1.1.3.1 Test Channel = MCH



Date: 1.MAY.2018 04:55:46

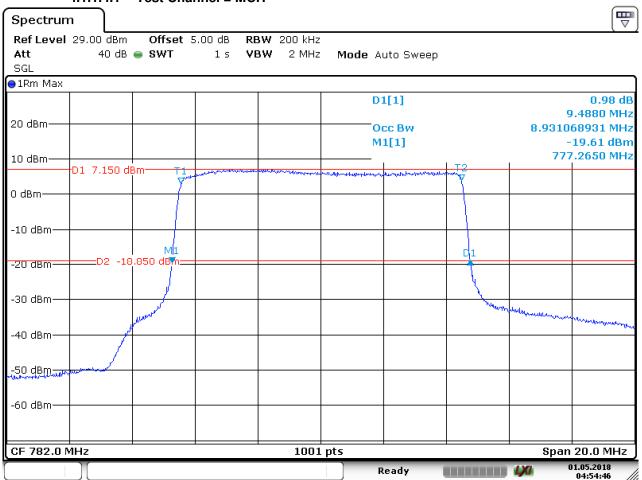


Report No.: SZEM180300241701

Page: 17 of 40

4.1.1.4 Test Mode = LTE/TM2 10MHz

4.1.1.4.1 Test Channel = MCH



Date: 1.MAY.2018 04:54:46



Report No.: SZEM180300241701

Page: 18 of 40

5 Band Edges Compliance

Part I -

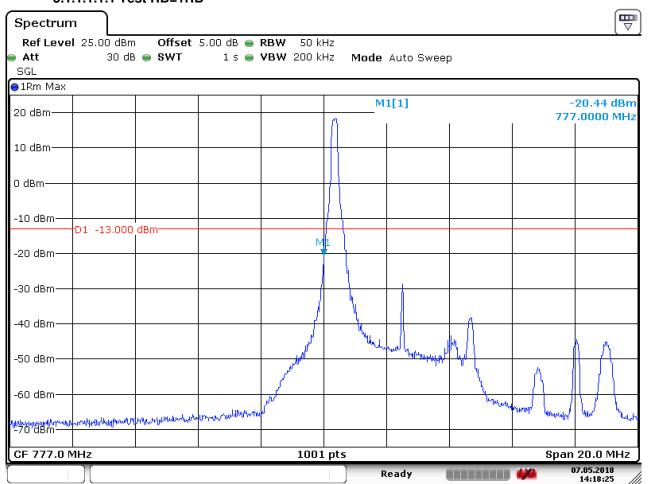
5.1 For LTE

5.1.1 Test Band = LTE band13

5.1.1.1 Test Mode = LTE/TM1 5MHz

5.1.1.1.1 Test Channel = LCH

5.1.1.1.1.1 Test RB=1RB



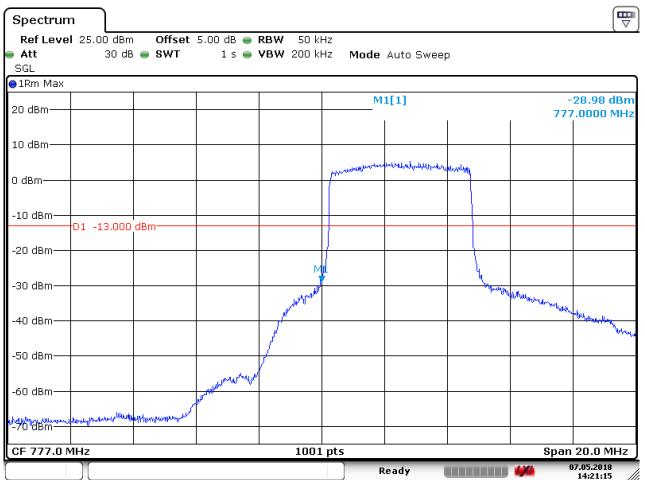
Date: 7.MAY.2018 14:18:26



Report No.: SZEM180300241701

Page: 19 of 40

5.1.1.1.1.2 Test RB=25RB



Date: 7.MAY.2018 14:21:15

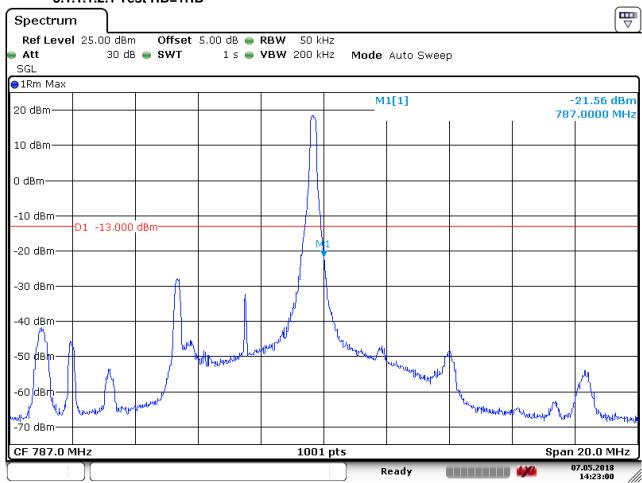


Report No.: SZEM180300241701

Page: 20 of 40

5.1.1.1.2 Test Channel = HCH

5.1.1.1.2.1 Test RB=1RB

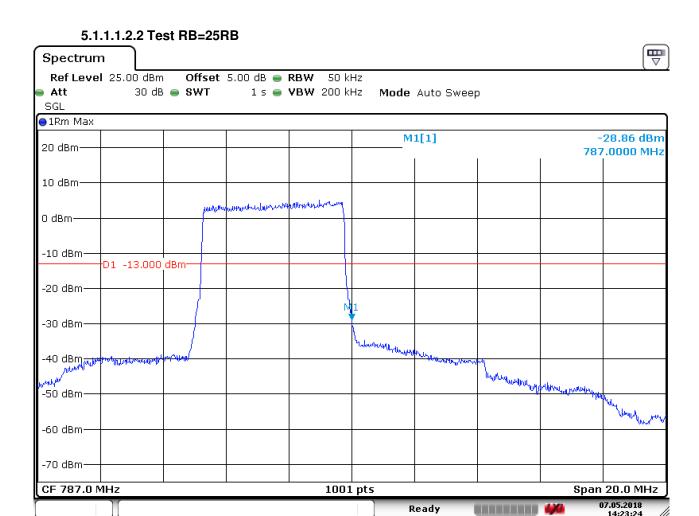


Date: 7.MAY.2018 14:23:00



Report No.: SZEM180300241701

Page: 21 of 40



Date: 7.MAY.2018 14:23:25

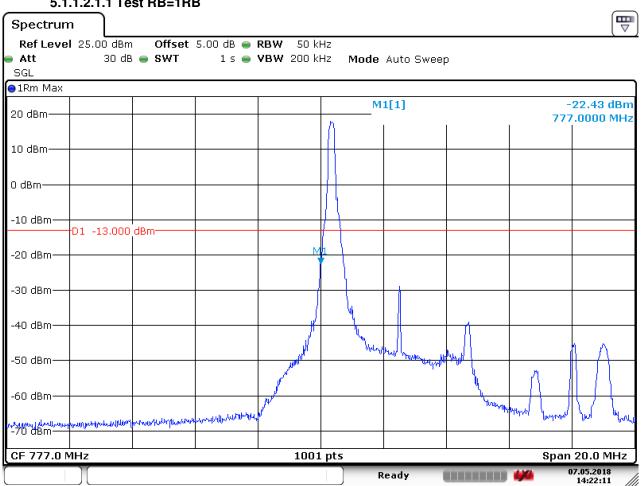


Report No.: SZEM180300241701

Page: 22 of 40

5.1.1.2 Test Mode = LTE/TM2 5MHz 5.1.1.2.1 Test Channel = LCH

5.1.1.2.1.1 Test RB=1RB



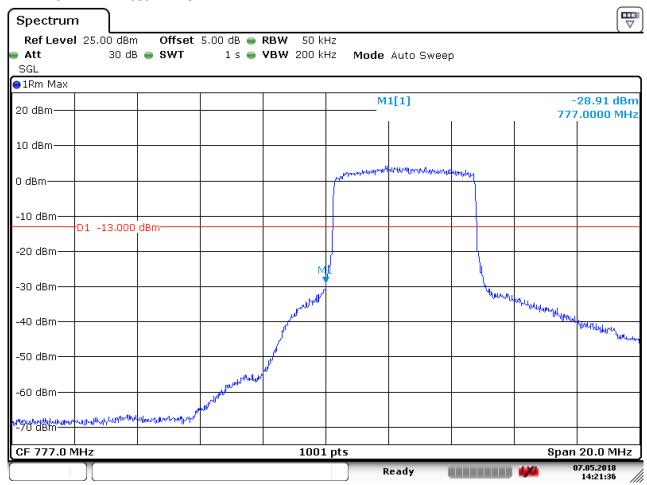
Date: 7.MAY.2018 14:22:11



Report No.: SZEM180300241701

Page: 23 of 40

5.1.1.2.1.2 Test RB=25RB



Date: 7.MAY.2018 14:21:36

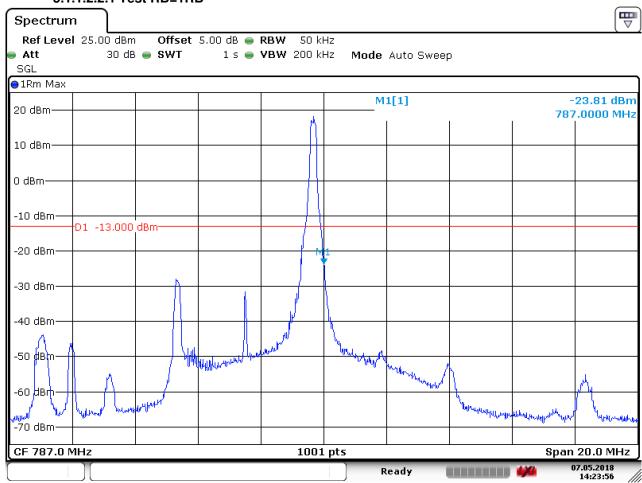


Report No.: SZEM180300241701

Page: 24 of 40

5.1.1.2.2 Test Channel = HCH

5.1.1.2.2.1 Test RB=1RB



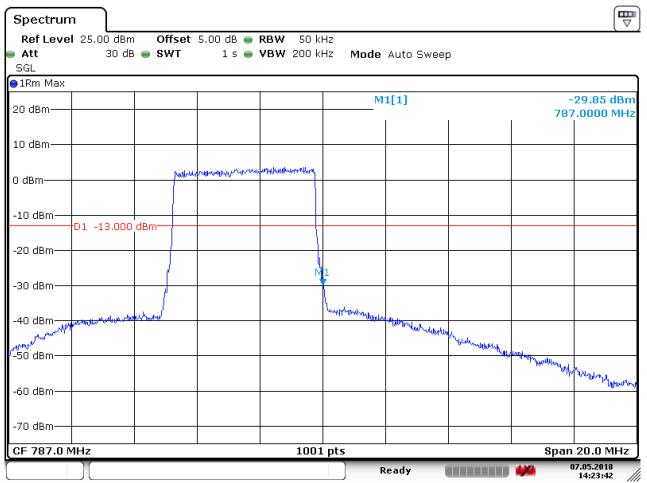
Date: 7.MAY.2018 14:23:57



Report No.: SZEM180300241701

Page: 25 of 40

5.1.1.2.2.2 Test RB=25RB



Date: 7.MAY.2018 14:23:42

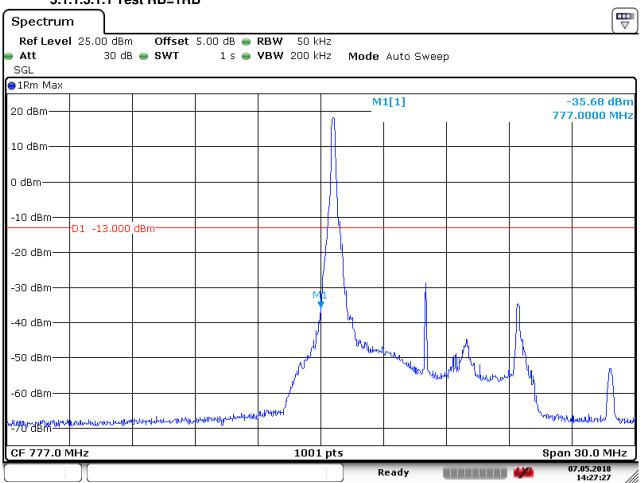


Report No.: SZEM180300241701

Page: 26 of 40

5.1.1.3 Test Mode = LTE/TM1 10MHz 5.1.1.3.1 Test Channel = LCH

5.1.1.3.1.1 Test RB=1RB



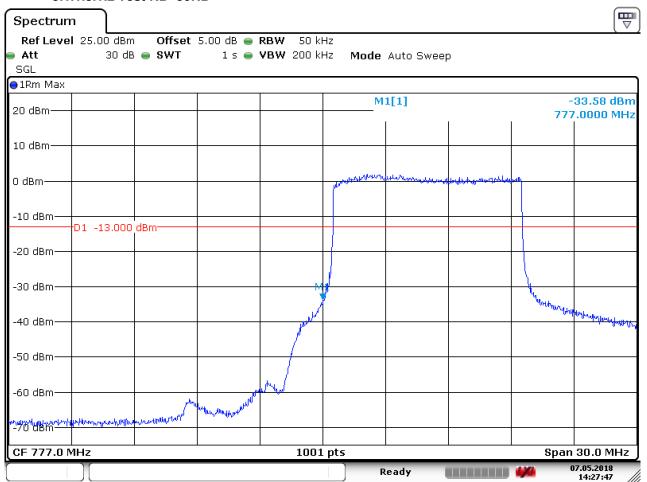
Date: 7.MAY.2018 14:27:27



Report No.: SZEM180300241701

Page: 27 of 40

5.1.1.3.1.2 Test RB=50RB



Date: 7.MAY.2018 14:27:48

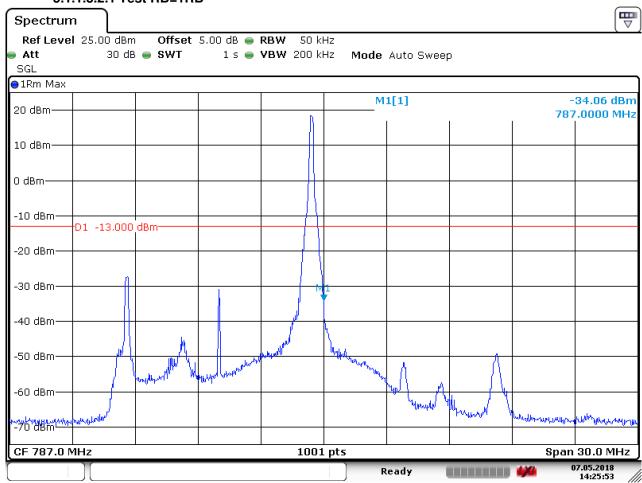


Report No.: SZEM180300241701

Page: 28 of 40

5.1.1.3.2 Test Channel = HCH

5.1.1.3.2.1 Test RB=1RB

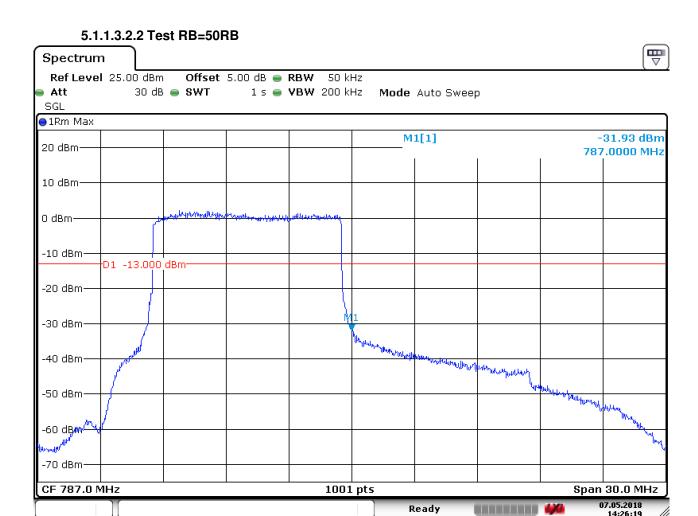


Date: 7.MAY.2018 14:25:53



Report No.: SZEM180300241701

Page: 29 of 40



Date: 7.MAY.2018 14:26:19

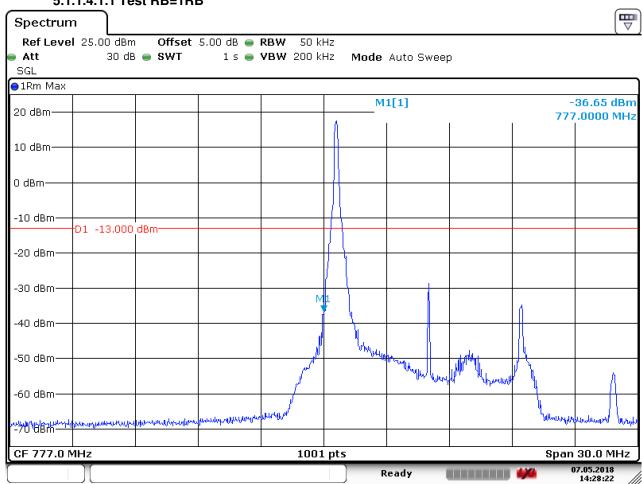


Report No.: SZEM180300241701

Page: 30 of 40

5.1.1.4 Test Mode = LTE/TM2 10MHz 5.1.1.4.1 Test Channel = LCH

5.1.1.4.1.1 Test RB=1RB



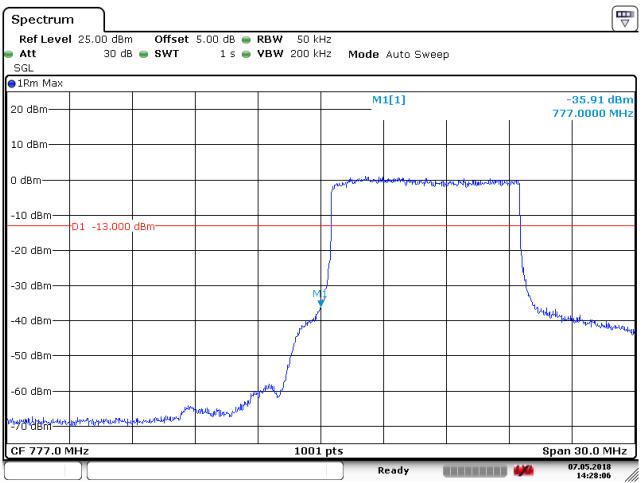
Date: 7.MAY.2018 14:28:22



Report No.: SZEM180300241701

Page: 31 of 40

5.1.1.4.1.2 Test RB=50RB



Date: 7.MAY.2018 14:28:07

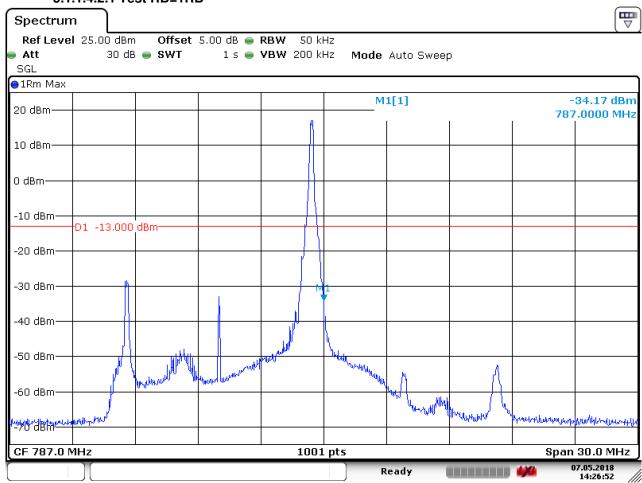


Report No.: SZEM180300241701

Page: 32 of 40

5.1.1.4.2 Test Channel = HCH

5.1.1.4.2.1 Test RB=1RB



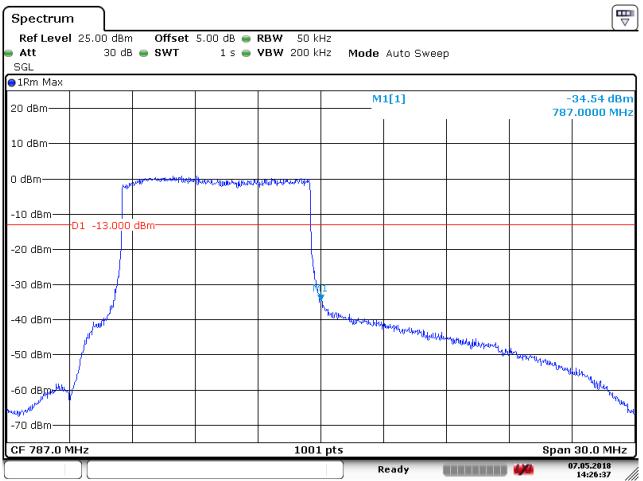
Date: 7.MAY.2018 14:26:53



Report No.: SZEM180300241701

Page: 33 of 40

5.1.1.4.2.2 Test RB=50RB



Date: 7.MAY.2018 14:26:38



Report No.: SZEM180300241701

Page: 34 of 40

6 Spurious Emission at Antenna Terminal

NOTE: 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 = 4 * (Span / RBW) with k = 4 * (Span / RBW).

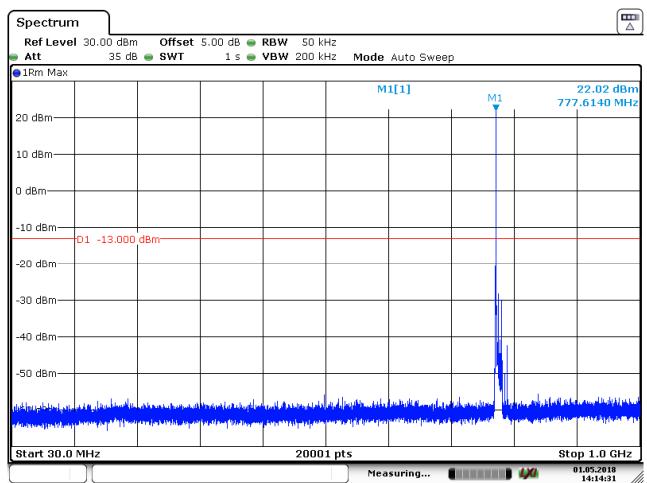
Part I - Test Plots

6.1 For LTE

6.1.1 Test Band = LTE band13

6.1.1.1 Test Mode = LTE / TM1 10MHz RB1#0

6.1.1.1.1 Test Channel = MCH

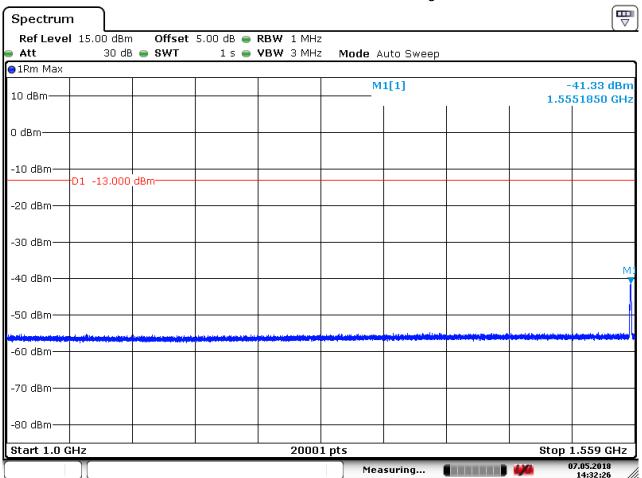


Date: 1.MAY.2018 14:14:32



Report No.: SZEM180300241701

Page: 35 of 40

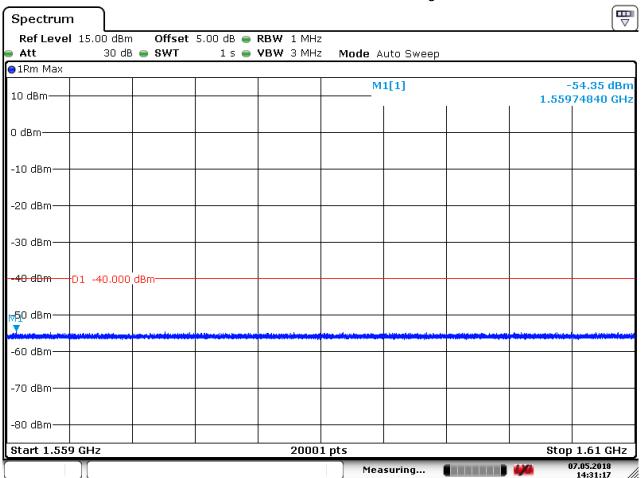


Date: 7.MAY.2018 14:32:27



Report No.: SZEM180300241701

Page: 36 of 40

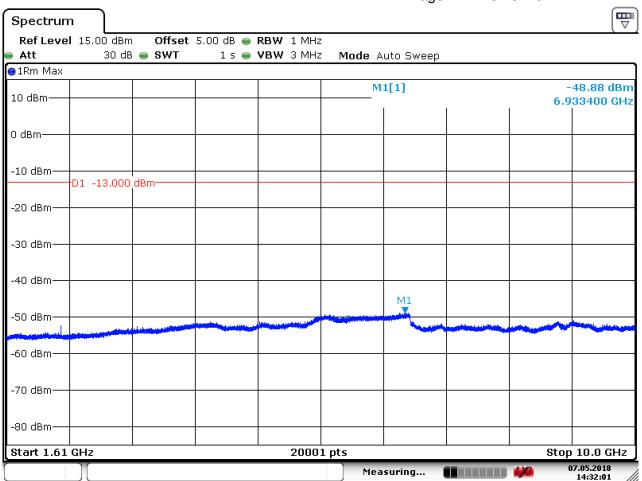


Date: 7.MAY.2018 14:31:17



Report No.: SZEM180300241701

Page: 37 of 40



Date: 7.MAY.2018 14:32:01



Report No.: SZEM180300241701

Page: 38 of 40

7 Field Strength of Spurious Radiation

7.1 For LTE

7.1.1 Test Band = LTE band13

7.1.1.1 Test Mode =LTE/TM1 10MHz RB1#0

7.1.1.1.1 Test Channel = MCH

	rest Chamber = MC	JI I		
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
71.953333	-73.54	-13.00	60.54	Vertical
144.006667	-70.53	-13.00	57.53	Vertical
1605.000000	-60.28	-40.00	20.28	Vertical
2332.500000	-54.12	-13.00	41.12	Vertical
3109.850000	-68.04	-13.00	55.04	Vertical
4011.725000	-67.08	-13.00	54.08	Vertical
62.713333	-78.04	-13.00	65.04	Horizontal
144.006667	-75.51	-13.00	62.51	Horizontal
1605.000000	-62.38	-40.00	20.38	Horizontal
2332.500000	-57.11	-13.00	44.11	Horizontal
3110.175000	-68.01	-13.00	55.01	Horizontal
6056.625000	-65.26	-13.00	52.26	Horizontal

NOTE:

- 1) The disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) We have tested all modulation and all Bandwidth, but only the worst case data presented in this report



Report No.: SZEM180300241701

Page: 39 of 40

8 Frequency Stability

8.1 Frequency Error VS. Voltage

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				VL	8.41	0.01075	PASS
		LCH	TN	VN	-2.33	-0.00297	PASS
				VH	0.16	0.00021	PASS
				VL	-6.82	-0.00872	PASS
	LTE/TM1 10MHz	MCH	TN	VN	2.30	0.00294	PASS
				VH	7.89	0.01009	PASS
		НСН	TN	VL	-3.42	-0.00437	PASS
				VN	-4.79	-0.00612	PASS
LTEband13				VH	2.82	0.00361	PASS
LIEDandis		LCH	TN	VL	-6.49	-0.00830	PASS
				VN	8.37	0.01070	PASS
				VH	-6.40	-0.00818	PASS
			TN	VL	-2.56	-0.00327	PASS
	LTE/TM2 10MHz	MCH		VN	-1.07	-0.00137	PASS
				VH	0.54	0.00069	PASS
				VL	4.50	0.00575	PASS
		HCH	TN	VN	-7.63	-0.00976	PASS
				VH	6.68	0.00854	PASS



Report No.: SZEM180300241701

Page: 40 of 40

8.2 Frequency Error VS. Temperature

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
				-30	-4.90	-0.00627	PASS
				-20	-6.14	-0.00785	PASS
				-10	5.47	0.00699	PASS
				0	-3.63	-0.00464	PASS
	LTE/TM1 10MHz	MCH	VN	10	7.43	0.00950	PASS
				20	6.03	0.00771	PASS
				30	0.99	0.00126	PASS
				40	-4.50	-0.00575	PASS
LTEband13				50	-4.42	-0.00565	PASS
LIEDANGIS				-30	-2.09	-0.00268	PASS
				-20	-6.03	-0.00771	PASS
				-10	0.60	0.00076	PASS
				0	2.34	0.00299	PASS
	LTE/TM2 10MHz	MCH	VN	10	4.16	0.00532	PASS
			_	20	0.39	0.00050	PASS
				30	9.98	0.01276	PASS
				40	1.61	0.00205	PASS
			,	50	-4.09	-0.00522	PASS

The End