

Report No.: SZEM1701001110301

Page: 1 of 30

Appendix B

E-UTRA Band 13



Report No.: SZEM1701001110301

Page: 2 of 30

CONTENT

		Page
1 E	FFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA	3
2 P	PEAK-TO-AVERAGE RATIO	6
2.1	For LTE	7
2.	.1.1 Test Band = LTE band13	7
3 M	ODULATION CHARACTERISTICS	9
3.1	For LTE	9
3.	2.1.1 Test Band = LTE band13	9
4 B	SANDWIDTH	11
4.1	For LTE	12
4.	2.1.1 Test Band = LTE band13	12
5 B	SAND EDGES COMPLIANCE	17
5.1	For LTE	17
5.	5.1.1 Test Band = LTE band13	17
6 S	PURIOUS EMISSION AT ANTENNA TERMINAL	26
6.1	For LTE	26
6.	3.1.1 Test Band = LTE band13	26
7 F	TELD STRENGTH OF SPURIOUS RADIATION	28
7.1	For LTE	28
7.	7.1.1 Test Band = LTE band13	28
8 F	REQUENCY STABILITY	29
8.1	FREQUENCY ERROR VS. VOLTAGE	29
8.2	FREQUENCY ERROR VS. TEMPERATURE	30



Report No.: SZEM1701001110301

3 of 30

Effective (Isotropic) Radiated Power Output Data

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	20.79	19.79	34.77	PASS
				RB1#13	20.89	19.89	34.77	PASS
				RB1#24	20.92	19.92	34.77	PASS
			LCH	RB12#0	19.88	18.88	34.77	PASS
				RB12#6	19.88	18.88	34.77	PASS
				RB12#13	19.96	18.96	34.77	PASS
		5M		RB25#0	19.91	18.91	34.77	PASS
	LTE/TM1		МСН	RB1#0	20.91	19.91	34.77	PASS
				RB1#13	20.79	19.79	34.77	PASS
				RB1#24	20.87	19.87	34.77	PASS
BAND13				RB12#0	19.87	18.87	34.77	PASS
				RB12#6	19.78	18.78	34.77	PASS
				RB12#13	19.81	18.81	34.77	PASS
				RB25#0	19.84	18.84	34.77	PASS
				RB1#0	20.81	19.81	34.77	PASS
				RB1#13	20.87	19.87	34.77	PASS
				RB1#24	20.74	19.74	34.77	PASS
			НСН	RB12#0	19.77	18.77	34.77	PASS
				RB12#6	19.90	18.90	34.77	PASS
			_	RB12#13	19.82	18.82	34.77	PASS
				RB25#0	19.76	18.76	34.77	PASS



Report No.: SZEM1701001110301

Page: 4 of 30

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	19.71	18.71	34.77	PASS
				RB1#13	19.80	18.80	34.77	PASS
				RB1#24	19.82	18.82	34.77	PASS
			LCH	RB12#0	18.87	17.87	34.77	PASS
				RB12#6	18.88	17.88	34.77	PASS
				RB12#13	18.90	17.90	34.77	PASS
				RB25#0	18.87	17.87	34.77	PASS
	LTE/TM2	5M	мсн	RB1#0	19.76	18.76	34.77	PASS
				RB1#13	19.76	18.76	34.77	PASS
				RB1#24	19.82	18.82	34.77	PASS
BAND13				RB12#0	18.86	17.86	34.77	PASS
				RB12#6	18.78	17.78	34.77	PASS
				RB12#13	18.80	17.80	34.77	PASS
				RB25#0	18.82	17.82	34.77	PASS
				RB1#0	19.68	18.68	34.77	PASS
				RB1#13	19.8	18.80	34.77	PASS
				RB1#24	19.69	18.69	34.77	PASS
			HCH	RB12#0	18.79	17.79	34.77	PASS
				RB12#6	18.89	17.89	34.77	PASS
				RB12#13	18.79	17.79	34.77	PASS
				RB25#0	18.81	17.81	34.77	PASS



Report No.: SZEM1701001110301

Page: 5 of 30

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	ERP (dBm)	limit (dBm)	Verdict
				RB1#0	20.80	19.80	34.77	PASS
				RB1#25	20.80	19.80	34.77	PASS
				RB1#49	20.79	19.79	34.77	PASS
	LTE/TM1	10M	MCH	RB25#0	19.85	18.85	34.77	PASS
				RB25#13	19.93	18.93	34.77	PASS
				RB25#25	19.82	18.82	34.77	PASS
BAND13				RB50#0	19.92	18.92	34.77	PASS
BAND 13		10M	МСН	RB1#0	19.74	18.74	34.77	PASS
				RB1#25	19.73	18.73	34.77	PASS
				RB1#49	19.72	18.72	34.77	PASS
	LTE/TM2			RB25#0	18.91	17.91	34.77	PASS
				RB25#13	18.93	17.93	34.77	PASS
				RB25#25	18.78	17.78	34.77	PASS
				RB50#0	18.90	17.90	34.77	PASS

Note:

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

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

- b: SGP=Signal Generator Level
- c: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMSNote:



Report No.: SZEM1701001110301

Page: 6 of 30

2 Peak-to-Average Ratio

Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band 13	TM1/10M	MCH	5.30	13	PASS
	TM2/10M	MCH	6.09	13	PASS



Report No.: SZEM1701001110301

Page: 7 of 30

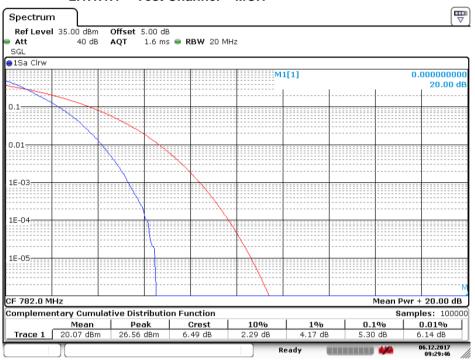
Part II - Test Plots

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 = MCH



Date: 6.DEC.2017 09:29:46

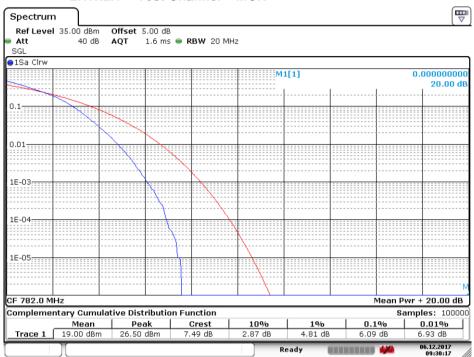


Report No.: SZEM1701001110301

Page: 8 of 30

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

2.1.1.2.1 Test Channel = MCH



Date: 6.DEC.2017 09:30:17



Report No.: SZEM1701001110301

Page: 9 of 30

3 Modulation Characteristics

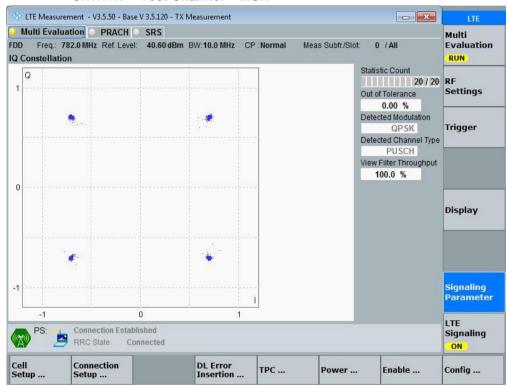
Part I - Test Plots

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



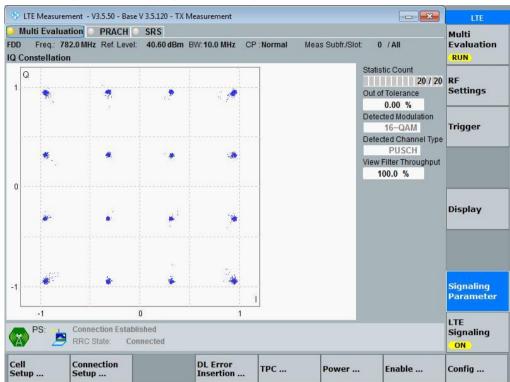


Report No.: SZEM1701001110301

Page: 10 of 30

3.1.1.2 Test Mode = LTE /TM2 10MHz

3.1.1.2.1 Test Channel = MCH





Report No.: SZEM1701001110301

Page: 11 of 30

4 Bandwidth

Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
		LCH	4.49	4.87	PASS
	TM1/5MHz	MCH	4.47	4.86	PASS
Band 13		HCH	4.49	4.93	PASS
	TM2/ 5MHz	LCH	4.48	4.91	PASS
		MCH	4.48	4.90	PASS
		HCH	4.49	4.92	PASS
	TM1/10MHz	MCH	8.93	9.71	PASS
	TM2/10MHz	MCH	8.93	9.67	PASS



Report No.: SZEM1701001110301

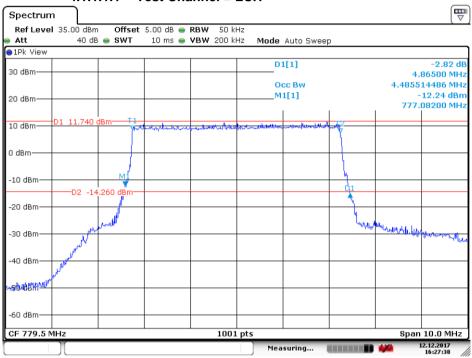
Page: 12 of 30

4.1 For LTE

4.1.1 Test Band = LTE band13

4.1.1.1 Test Mode = LTE/TM1 5MHz

4.1.1.1.1 Test Channel = LCH



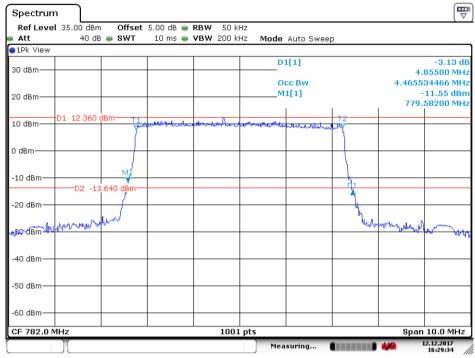
Date: 12.DEC.2017 16:27:39



Report No.: SZEM1701001110301

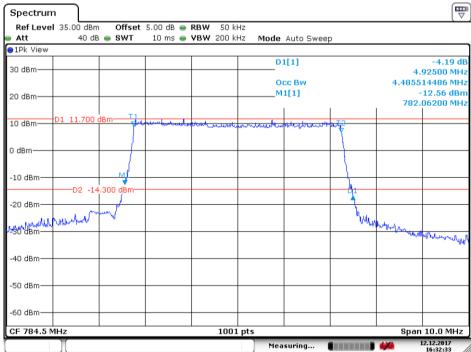
Page: 13 of 30

4.1.1.1.2 Test Channel = MCH



Date: 12.DEC.2017 16:29:34





Date: 12.DEC.2017 16:32:34

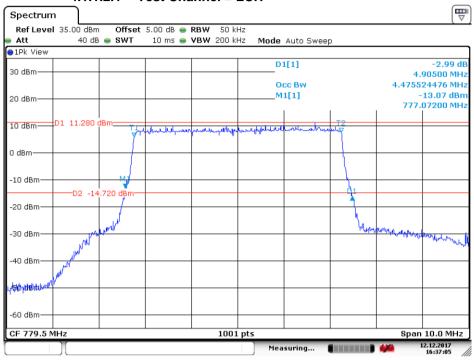


Report No.: SZEM1701001110301

Page: 14 of 30

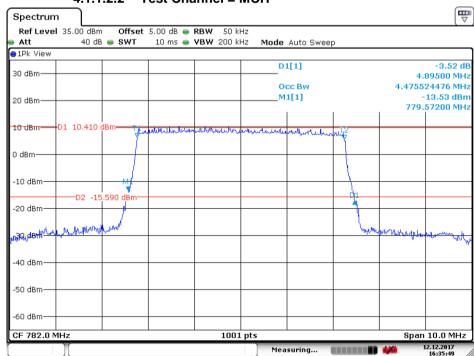
4.1.1.2 Test Mode = LTE/TM2 5MHz

4.1.1.2.1 Test Channel = LCH



Date: 12.DEC.2017 16:37:06

4.1.1.2.2 Test Channel = MCH



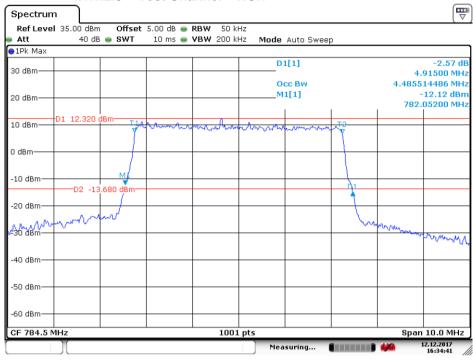
Date: 12.DEC.2017 16:35:49



Report No.: SZEM1701001110301

Page: 15 of 30

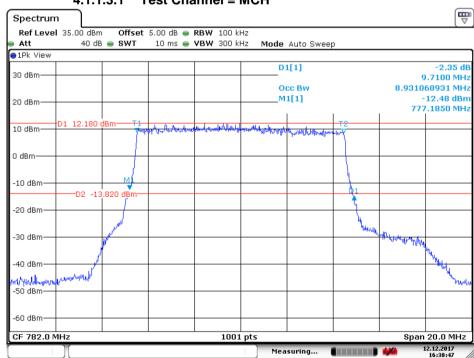
4.1.1.2.3 Test Channel = HCH



Date: 12.DEC.2017 16:34:41

4.1.1.3 Test Mode = LTE/TM1 10MHz

4.1.1.3.1 Test Channel = MCH



Date: 12.DEC.2017 16:38:47

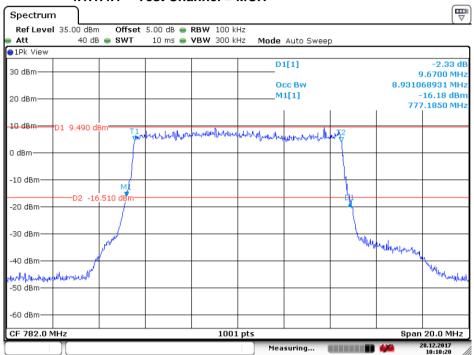


Report No.: SZEM1701001110301

Page: 16 of 30

4.1.1.4 Test Mode = LTE/TM2 10MHz

4.1.1.4.1 Test Channel = MCH



Date: 28.DEC.2017 10:10:20



Report No.: SZEM1701001110301

Page: 17 of 30

5 Band Edges Compliance

Part I -

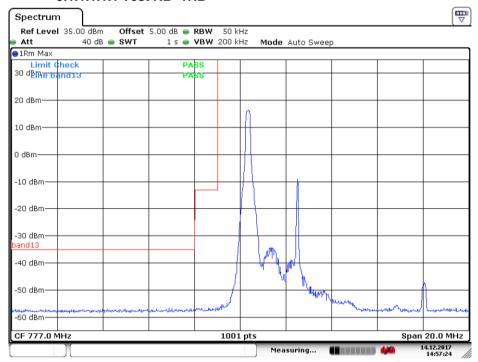
5.1 For LTE

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



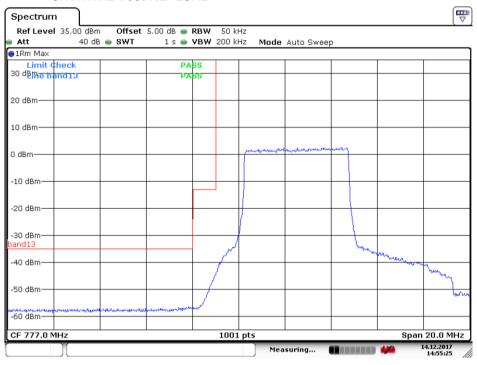
Date: 14.DEC.2017 14:57:24



Report No.: SZEM1701001110301

Page: 18 of 30

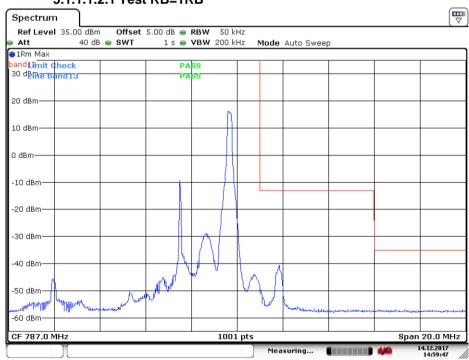
5.1.1.1.1.2 Test RB=25RB



Date: 14.DEC.2017 14:55:25

5.1.1.1.2 Test Channel = HCH

5.1.1.1.2.1 Test RB=1RB



Date: 14.DEC.2017 14:59:47

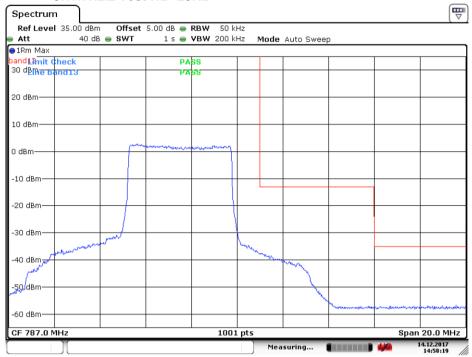
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. 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 sole 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 to 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.: SZEM1701001110301

Page: 19 of 30

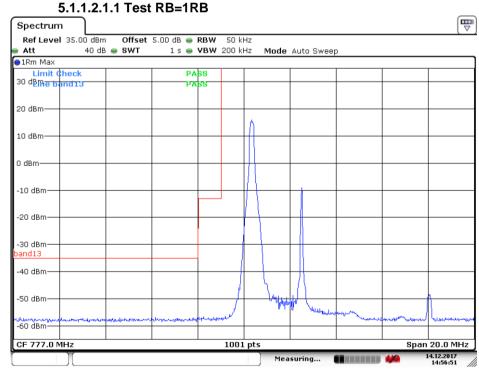
5.1.1.1.2.2 Test RB=25RB



Date: 14.DEC.2017 14:58:19

5.1.1.2 Test Mode = LTE/TM2 5MHz

5.1.1.2.1 Test Channel = LCH



Date: 14.DEC.2017 14:56:51

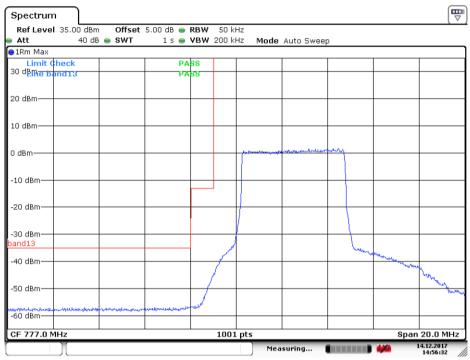
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. 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 sole 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 to 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.: SZEM1701001110301

Page: 20 of 30

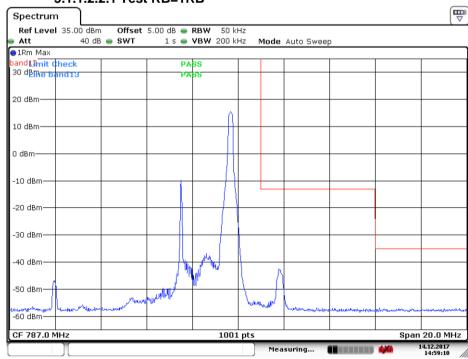
5.1.1.2.1.2 Test RB=25RB



Date: 14.DEC.2017 14:56:32

5.1.1.2.2 Test Channel = HCH

5.1.1.2.2.1 Test RB=1RB



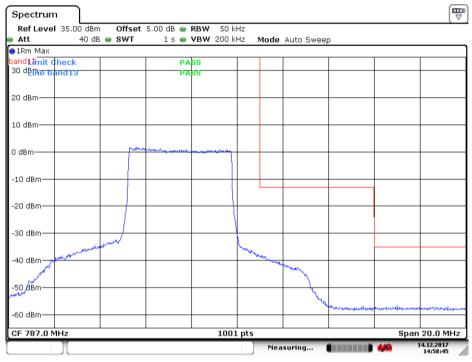
Date: 14.DEC.2017 14:59:10



Report No.: SZEM1701001110301

Page: 21 of 30

5.1.1.2.2.2 Test RB=25RB

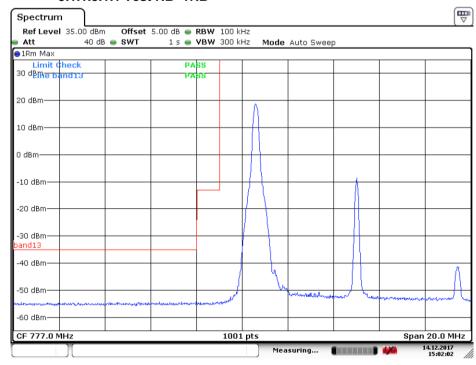


Date: 14.DEC.2017 14:58:45

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: 14.DEC.2017 15:02:02

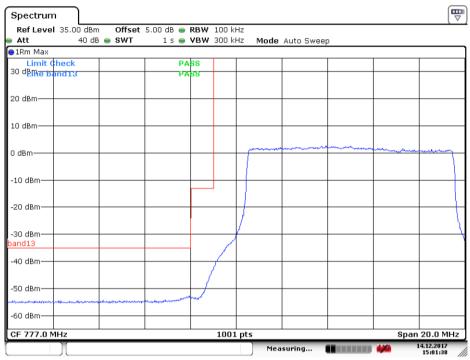
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of ilability, indemnification and jurisdiction issues defined therein. Any holder of his 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 sole 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.: SZEM1701001110301

Page: 22 of 30

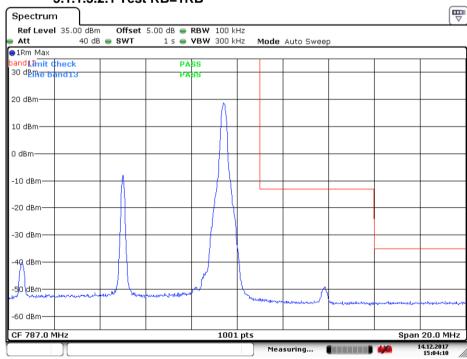
5.1.1.3.1.2 Test RB=50RB



Date: 14.DEC.2017 15:01:38

5.1.1.3.2 Test Channel = HCH

5.1.1.3.2.1 Test RB=1RB



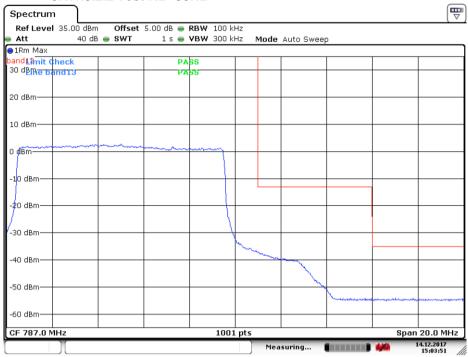
Date: 14.DEC.2017 15:04:10



Report No.: SZEM1701001110301

23 of 30 Page:

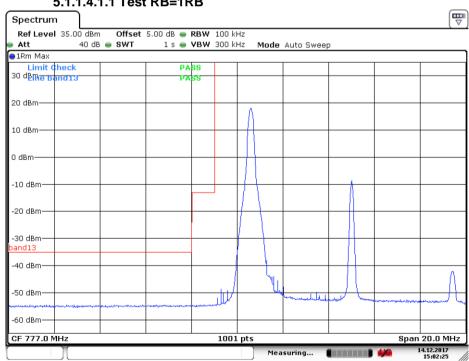
5.1.1.3.2.2 Test RB=50RB



Date: 14.DEC.2017 15:03:51

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: 14 DEC 2017 15:02:26

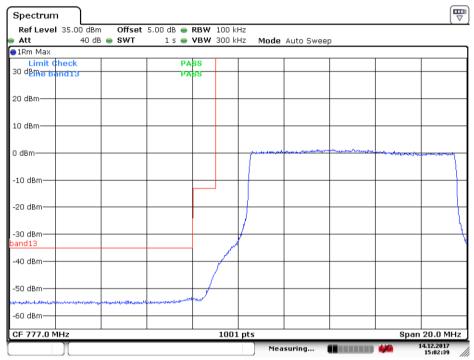
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and. Inis document is issued by the Company subject to fits General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/l erms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/l erms-and-Conditions/Term



Report No.: SZEM1701001110301

Page: 24 of 30

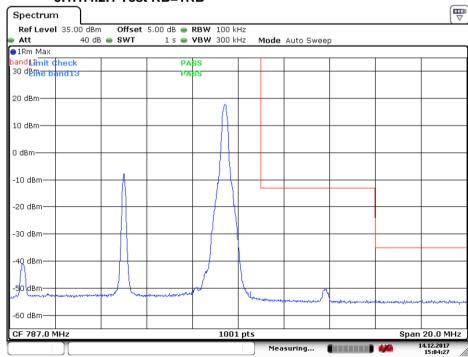
5.1.1.4.1.2 Test RB=50RB



Date: 14.DEC.2017 15:02:39

5.1.1.4.2 Test Channel = HCH

5.1.1.4.2.1 Test RB=1RB



Date: 14.DEC.2017 15:04:27



Report No.: SZEM1701001110301

Page: 25 of 30

5.1.1.4.2.2 Test RB=50RB



Date: 14.DEC.2017 15:03:06



Report No.: SZEM1701001110301

Page: 26 of 30

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)

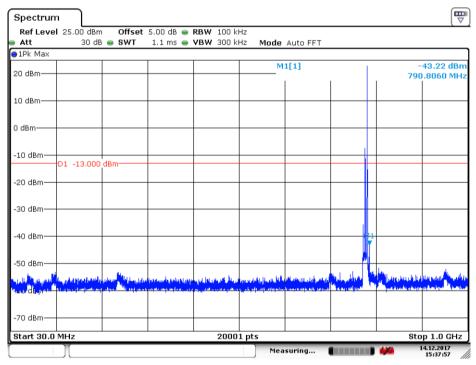
Part I - Test Plots

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

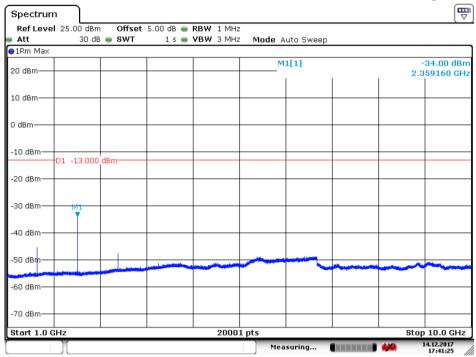


Date: 14.DEC.2017 15:37:57

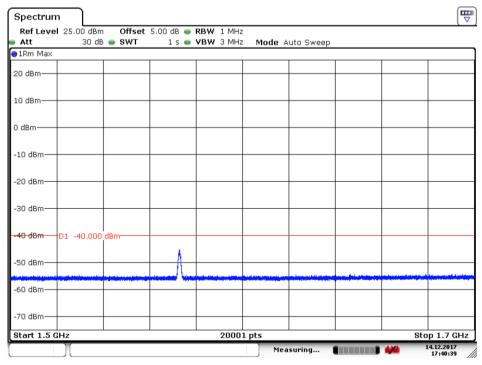


Report No.: SZEM1701001110301

Page: 27 of 30



Date: 14.DEC.2017 17:41:25



Date: 14.DEC.2017 17:40:40



Report No.: SZEM1701001110301

Page: 28 of 30

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

/ - 1 - 1 - 1 - 1	rest Chamber - Wit	9 11		
Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
38.586667	-74.68	-13.00	-61.68	Vertical
73.306667	-72.85	-13.00	-59.85	Vertical
203.413333	-69.20	-13.00	-56.20	Vertical
2632.000000	-57.59	-13.00	-44.59	Vertical
6058.087500	-64.61	-13.00	-51.61	Vertical
8605.762500	-63.66	-13.00	-50.66	Vertical
63.366667	-77.41	-13.00	-64.41	Horizontal
129.213333	-72.02	-13.00	-59.02	Horizontal
205.886667	-74.21	-13.00	-61.21	Horizontal
1100.000000	-66.34	-13.00	-53.34	Horizontal
4289.437500	-66.51	-13.00	-53.51	Horizontal
7970.062500	-63.31	-13.00	-50.31	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.



Report No.: SZEM1701001110301

Page: 29 of 30

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	-4.93	-0.00630	PASS
		LCH	TN	VN	2.06	0.00263	PASS
				VH	-3.79	-0.00485	PASS
				VL	2.05	0.00262	PASS
	LTE/TM1 10MHz	MCH	TN	VN	-2.38	-0.00304	PASS
				VH	2.63	0.00336	PASS
			TN	VL	-5.46	-0.00698	PASS
		HCH		VN	-5.99	-0.00766	PASS
LTEband13				VH	-0.04	-0.00005	PASS
LIEDANUIS		LCH	TN	VL	-4.32	-0.00552	PASS
				VN	-2.58	-0.00330	PASS
				VH	-2.89	-0.00370	PASS
				VL	1.96	0.00251	PASS
	LTE/TM2 10MHz	MCH	TN	VN	-0.88	-0.00113	PASS
				VH	2.87	0.00367	PASS
		НСН		VL	-3.04	-0.00389	PASS
			TN	VN	-8.28	-0.01059	PASS
				VH	5.55	0.00710	PASS



Report No.: SZEM1701001110301

Page: 30 of 30

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	-0.39	-0.00050	PASS
				-20	-1.94	-0.00248	PASS
				-10	2.76	0.00353	PASS
				0	1.78	0.00228	PASS
	LTE/TM1 10MHz	MCH	VN	10	1.65	0.00211	PASS
				20	6.71	0.00858	PASS
				30	-3.32	-0.00425	PASS
				40	-2.84	-0.00363	PASS
LTEband13				50	3.69	0.00472	PASS
LIEDANUIS			VN	-30	-2.89	-0.00370	PASS
				-20	-0.25	-0.00032	PASS
				-10	-1.49	-0.00191	PASS
				0	-5.96	-0.00762	PASS
	LTE/TM2 10MHz	MCH		10	-4.54	-0.00581	PASS
				20	-2.34	-0.00299	PASS
				30	-5.60	-0.00716	PASS
				40	-4.65	-0.00595	PASS
				50	-6.75	-0.00863	PASS

The End