



# Appendix B

## E-UTRA Band7



## CONTENT

	Page
<b>1 EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA.....</b>	<b>3</b>
<b>2 PEAK-TO-AVERAGE RATIO .....</b>	<b>11</b>
2.1 FOR LTE .....	11
2.1.1 Test Band = LTE band7.....	11
<b>3 MODULATION CHARACTERISTICS .....</b>	<b>15</b>
3.1 FOR LTE .....	15
3.1.1 Test Band = LTE band7.....	15
<b>4 BANDWIDTH .....</b>	<b>17</b>
4.1 FOR LTE .....	18
4.1.1 Test Band = LTE band7.....	18
<b>5 BAND EDGES COMPLIANCE .....</b>	<b>31</b>
5.1 FOR LTE .....	31
5.1.1 Test Band = LTE band7.....	31
<b>6 SPURIOUS EMISSION AT ANTENNA TERMINAL.....</b>	<b>48</b>
6.1 FOR LTE .....	48
6.1.1 Test Band = LTE band7.....	48
<b>7 FIELD STRENGTH OF SPURIOUS RADIATION .....</b>	<b>55</b>
7.1 FOR LTE .....	55
7.1.1 Test Band = LTE band7.....	55
<b>8 FREQUENCY STABILITY .....</b>	<b>57</b>
8.1 FREQUENCY ERROR VS. VOLTAGE .....	57
8.2 FREQUENCY ERROR VS. TEMPERATURE .....	58



# 1 Effective (Isotropic) Radiated Power Output Data

## Part I - Test Results

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM1	5M	LCH	RB1#0	23.37	23.27	33.00	PASS
				RB1#13	23.43	23.33	33.00	PASS
				RB1#24	23.34	23.24	33.00	PASS
				RB12#0	22.44	22.34	33.00	PASS
				RB12#6	22.48	22.38	33.00	PASS
				RB12#13	22.49	22.39	33.00	PASS
				RB25#0	22.48	22.38	33.00	PASS
			MCH	RB1#0	23.25	23.15	33.00	PASS
				RB1#13	23.36	23.26	33.00	PASS
				RB1#24	23.31	23.21	33.00	PASS
				RB12#0	22.34	22.24	33.00	PASS
				RB12#6	22.42	22.32	33.00	PASS
				RB12#13	22.42	22.32	33.00	PASS
				RB25#0	22.44	22.34	33.00	PASS
			HCH	RB1#0	23.18	23.08	33.00	PASS
				RB1#13	23.31	23.21	33.00	PASS
				RB1#24	23.24	23.14	33.00	PASS
				RB12#0	22.28	22.18	33.00	PASS
				RB12#6	22.35	22.25	33.00	PASS
				RB12#13	22.36	22.26	33.00	PASS
				RB25#0	22.36	22.26	33.00	PASS

\*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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802

Page: 4 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM2	5M	LCH	RB1#0	22.41	22.31	33.00	PASS
				RB1#13	22.47	22.37	33.00	PASS
				RB1#24	22.38	22.28	33.00	PASS
				RB12#0	21.33	21.23	33.00	PASS
				RB12#6	21.38	21.28	33.00	PASS
				RB12#13	21.41	21.31	33.00	PASS
				RB25#0	21.37	21.27	33.00	PASS
			MCH	RB1#0	22.37	22.27	33.00	PASS
				RB1#13	22.43	22.33	33.00	PASS
				RB1#24	22.38	22.28	33.00	PASS
				RB12#0	21.27	21.17	33.00	PASS
				RB12#6	21.34	21.24	33.00	PASS
				RB12#13	21.35	21.25	33.00	PASS
				RB25#0	21.31	21.21	33.00	PASS
			HCH	RB1#0	22.33	22.23	33.00	PASS
				RB1#13	22.40	22.30	33.00	PASS
				RB1#24	22.35	22.25	33.00	PASS
				RB12#0	21.23	21.13	33.00	PASS
				RB12#6	21.30	21.20	33.00	PASS
				RB12#13	21.30	21.20	33.00	PASS
				RB25#0	21.28	21.18	33.00	PASS

<sup>4</sup>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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802  
Page: 5 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM1	10M	LCH	RB1#0	23.43	23.33	33.00	PASS
				RB1#25	23.53	23.43	33.00	PASS
				RB1#49	23.43	23.33	33.00	PASS
				RB25#0	22.47	22.37	33.00	PASS
				RB25#13	22.56	22.46	33.00	PASS
				RB25#25	22.60	22.50	33.00	PASS
				RB50#0	22.53	22.43	33.00	PASS
			MCH	RB1#0	23.33	23.23	33.00	PASS
				RB1#25	23.46	23.36	33.00	PASS
				RB1#49	23.37	23.27	33.00	PASS
				RB25#0	22.41	22.31	33.00	PASS
				RB25#13	22.50	22.40	33.00	PASS
				RB25#25	22.58	22.48	33.00	PASS
				RB50#0	22.50	22.40	33.00	PASS
			HCH	RB1#0	23.35	23.25	33.00	PASS
				RB1#25	23.42	23.32	33.00	PASS
				RB1#49	23.34	23.24	33.00	PASS
				RB25#0	22.42	22.32	33.00	PASS
				RB25#13	22.45	22.35	33.00	PASS
				RB25#25	22.51	22.41	33.00	PASS
				RB50#0	22.51	22.41	33.00	PASS

\*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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802

Page: 6 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM2	10M	LCH	RB1#0	22.48	22.38	33.00	PASS
				RB1#25	22.55	22.45	33.00	PASS
				RB1#49	22.52	22.42	33.00	PASS
				RB25#0	21.38	21.28	33.00	PASS
				RB25#13	21.43	21.33	33.00	PASS
				RB25#25	21.52	21.42	33.00	PASS
				RB50#0	21.44	21.34	33.00	PASS
			MCH	RB1#0	22.44	22.34	33.00	PASS
				RB1#25	22.57	22.47	33.00	PASS
				RB1#49	22.46	22.36	33.00	PASS
				RB25#0	21.32	21.22	33.00	PASS
				RB25#13	21.39	21.29	33.00	PASS
				RB25#25	21.48	21.38	33.00	PASS
				RB50#0	21.41	21.31	33.00	PASS
			HCH	RB1#0	22.57	22.47	33.00	PASS
				RB1#25	22.56	22.46	33.00	PASS
				RB1#49	22.46	22.38	33.00	PASS
				RB25#0	21.38	22.45	33.00	PASS
				RB25#13	21.37	22.42	33.00	PASS
				RB25#25	21.37	21.28	33.00	PASS
				RB50#0	21.37	21.33	33.00	PASS

<sup>4</sup>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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802

Page: 7 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM1	15M	LCH	RB1#0	23.37	23.27	33.00	PASS
				RB1#38	23.44	23.34	33.00	PASS
				RB1#74	23.34	23.24	33.00	PASS
				RB36#0	22.44	22.34	33.00	PASS
				RB36#18	22.50	22.40	33.00	PASS
				RB36#39	22.51	22.41	33.00	PASS
				RB75#0	22.51	22.41	33.00	PASS
			MCH	RB1#0	23.26	23.16	33.00	PASS
				RB1#38	23.40	23.30	33.00	PASS
				RB1#74	23.33	23.23	33.00	PASS
				RB36#0	22.37	22.27	33.00	PASS
				RB36#18	22.45	22.35	33.00	PASS
				RB36#39	22.52	22.42	33.00	PASS
				RB75#0	22.48	22.38	33.00	PASS
			HCH	RB1#0	23.22	23.12	33.00	PASS
				RB1#38	23.36	23.26	33.00	PASS
				RB1#74	23.31	23.21	33.00	PASS
				RB36#0	22.41	22.31	33.00	PASS
				RB36#18	22.40	22.30	33.00	PASS
				RB36#39	22.45	22.35	33.00	PASS
				RB75#0	22.46	22.36	33.00	PASS

<sup>4</sup>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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802  
Page: 8 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM2	15M	LCH	RB1#0	22.41	22.31	33.00	PASS
				RB1#38	22.50	22.40	33.00	PASS
				RB1#74	22.52	22.42	33.00	PASS
				RB36#0	21.35	21.25	33.00	PASS
				RB36#18	21.43	21.33	33.00	PASS
				RB36#39	21.44	21.34	33.00	PASS
				RB75#0	21.42	21.32	33.00	PASS
			MCH	RB1#0	22.39	22.29	33.00	PASS
				RB1#38	22.48	22.38	33.00	PASS
				RB1#74	22.39	22.29	33.00	PASS
				RB36#0	21.31	21.21	33.00	PASS
				RB36#18	21.36	21.26	33.00	PASS
				RB36#39	21.43	21.33	33.00	PASS
				RB75#0	21.37	21.27	33.00	PASS
			HCH	RB1#0	22.50	22.40	33.00	PASS
				RB1#38	22.56	22.46	33.00	PASS
				RB1#74	22.40	22.30	33.00	PASS
				RB36#0	21.41	21.31	33.00	PASS
				RB36#18	21.36	21.26	33.00	PASS
				RB36#39	21.42	21.32	33.00	PASS
				RB75#0	21.41	21.31	33.00	PASS

<sup>4</sup>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-Documents.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 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.





**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802  
Page: 9 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM1	20M	LCH	RB1#0	23.17	23.07	33.00	PASS
				RB1#50	23.49	23.39	33.00	PASS
				RB1#99	23.20	23.10	33.00	PASS
				RB50#0	22.41	22.31	33.00	PASS
				RB50#25	22.54	22.44	33.00	PASS
				RB50#50	22.50	22.40	33.00	PASS
				RB100#0	22.51	22.41	33.00	PASS
			MCH	RB1#0	23.05	22.95	33.00	PASS
				RB1#50	23.43	23.33	33.00	PASS
				RB1#99	23.16	23.06	33.00	PASS
				RB50#0	22.35	22.25	33.00	PASS
				RB50#25	22.47	22.37	33.00	PASS
				RB50#50	22.44	22.34	33.00	PASS
				RB100#0	22.47	22.37	33.00	PASS
			HCH	RB1#0	23.03	22.93	33.00	PASS
				RB1#50	23.45	23.35	33.00	PASS
				RB1#99	23.14	23.04	33.00	PASS
				RB50#0	22.51	22.41	33.00	PASS
				RB50#25	22.52	22.42	33.00	PASS
				RB50#50	22.50	22.40	33.00	PASS
				RB100#0	22.46	22.36	33.00	PASS

<sup>4</sup>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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802  
Page: 10 of 60

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND7	LTE/TM2	20M	LCH	RB1#0	22.20	22.10	33.00	PASS
				RB1#50	22.57	22.47	33.00	PASS
				RB1#99	22.39	22.29	33.00	PASS
				RB50#0	21.28	21.18	33.00	PASS
				RB50#25	21.44	21.34	33.00	PASS
				RB50#50	21.42	21.32	33.00	PASS
				RB100#0	21.32	21.22	33.00	PASS
			MCH	RB1#0	22.22	22.12	33.00	PASS
				RB1#50	22.49	22.39	33.00	PASS
				RB1#99	22.25	22.15	33.00	PASS
				RB50#0	21.27	21.17	33.00	PASS
				RB50#25	21.36	21.26	33.00	PASS
				RB50#50	22.53	22.43	33.00	PASS
				RB100#0	21.41	21.31	33.00	PASS
			HCH	RB1#0	22.27	22.17	33.00	PASS
				RB1#50	22.65	22.55	33.00	PASS
				RB1#99	22.27	22.17	33.00	PASS
				RB50#0	21.47	21.37	33.00	PASS
				RB50#25	21.39	21.29	33.00	PASS
				RB50#50	21.45	21.35	33.00	PASS
				RB100#0	21.43	21.33	33.00	PASS

Note:

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

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b: SGP=Signal Generator Level

\*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 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.



## 2 Peak-to-Average Ratio

### Part I - Test Results

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
Band7	TM1/20M	LCH	4.61	13	PASS
		MCH	4.81	13	PASS
		HCH	5.16	13	PASS
	TM2/20M	LCH	5.54	13	PASS
		MCH	5.71	13	PASS
		HCH	6.12	13	PASS

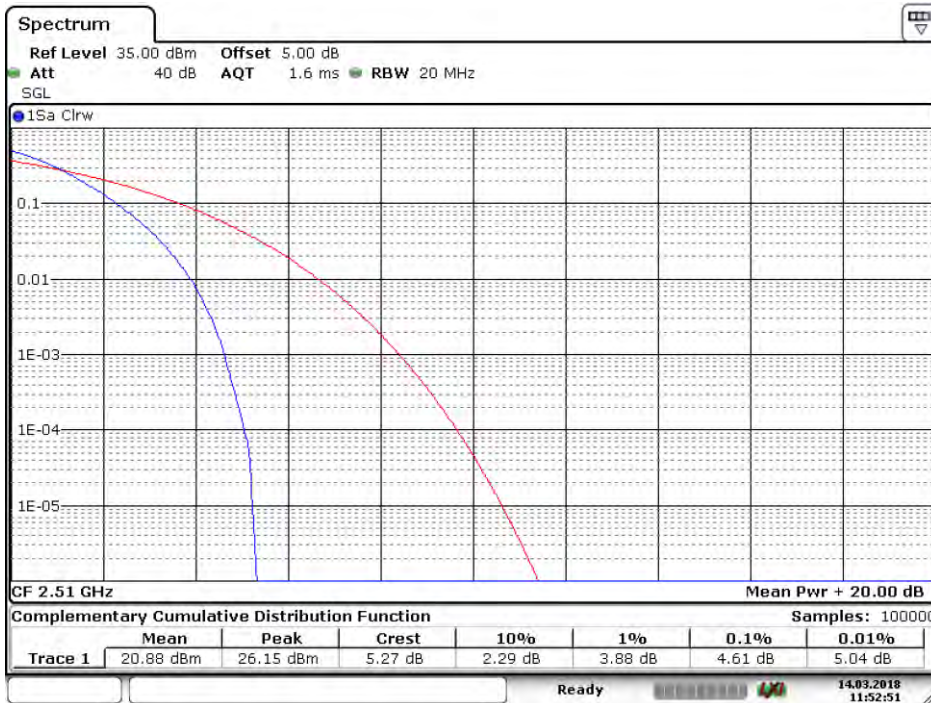
### Part II - Test Plots

## 2.1 For LTE

### 2.1.1 Test Band = LTE band7

#### 2.1.1.1 Test Mode = LTE/TM1.Bandwidth=20MHz

##### 2.1.1.1.1 Test Channel = LCH



Date: 14.MAR.2018 11:52:52



**2.1.1.1.2 Test Channel = MCH**



Date: 14.MAR.2018 11:53:43

**2.1.1.1.3 Test Channel = HCH**



Date: 14.MAR.2018 11:54:40

\*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 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.





**2.1.1.2 Test Mode = LTE/TM2.Bandwidth=20MHz**

**2.1.1.2.1 Test Channel = LCH**



Date: 14.MAR.2018 11:52:36

**2.1.1.2.2 Test Channel = MCH**



Date: 14.MAR.2018 11:54:04

\*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 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.



2.1.1.2.3 Test Channel = HCH



Date: 14.MAR.2018 11:54:25



### 3 Modulation Characteristics

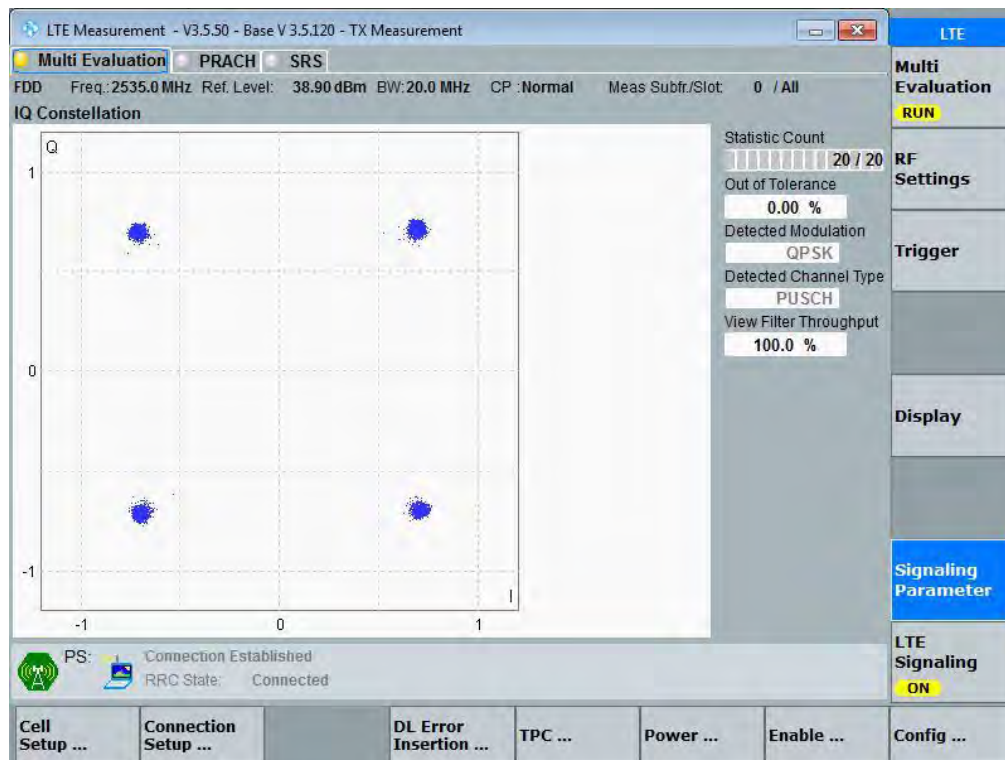
#### Part I - Test Plots

#### 3.1 For LTE

##### 3.1.1 Test Band = LTE band7

##### 3.1.1.1 Test Mode = LTE /TM1 20MHz

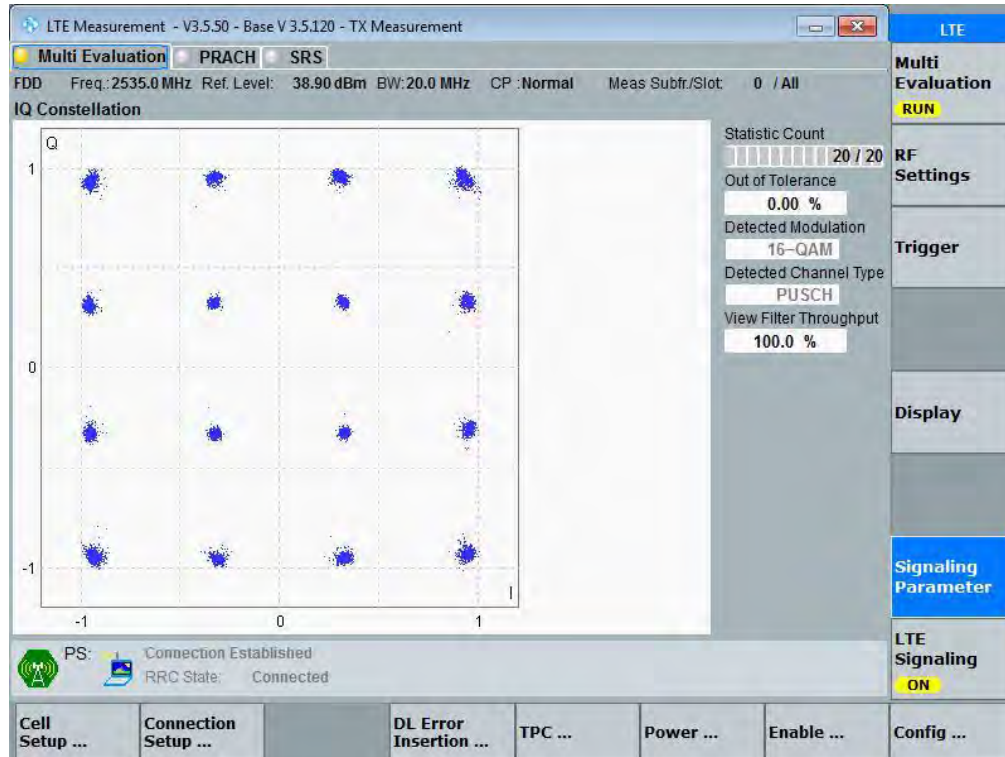
##### 3.1.1.1.1 Test Channel = MCH





3.1.1.2 Test Mode = LTE /TM2 20MHz

3.1.1.2.1 Test Channel = MCH



<sup>4</sup>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 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.





## 4 Bandwidth

### Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band7	TM1/ 5MHz	LCH	4.48	5.05	PASS
		MCH	4.46	5.06	PASS
		HCH	4.48	5.07	PASS
	TM2/ 5MHz	LCH	4.48	5.01	PASS
		MCH	4.40	5.05	PASS
		HCH	4.47	4.98	PASS
	TM1/10MHz	LCH	8.95	9.97	PASS
		MCH	8.93	9.83	PASS
		HCH	8.97	9.97	PASS
	TM2/ 10MHz	LCH	8.95	9.89	PASS
		MCH	8.95	9.93	PASS
		HCH	8.93	9.69	PASS
	TM1/ 15MHz	LCH	13.51	15.13	PASS
		MCH	13.57	15.07	PASS
		HCH	13.51	15.19	PASS
	TM2/ 15MHz	LCH	13.48	15.07	PASS
		MCH	13.51	15.07	PASS
		HCH	13.51	15.16	PASS
	TM1/ 20MHz	LCH	17.94	19.62	PASS
		MCH	17.91	19.25	PASS
		HCH	17.98	19.50	PASS
	TM2/ 20MHz	LCH	17.90	19.58	PASS
		MCH	17.94	19.74	PASS
		HCH	17.98	19.66	PASS



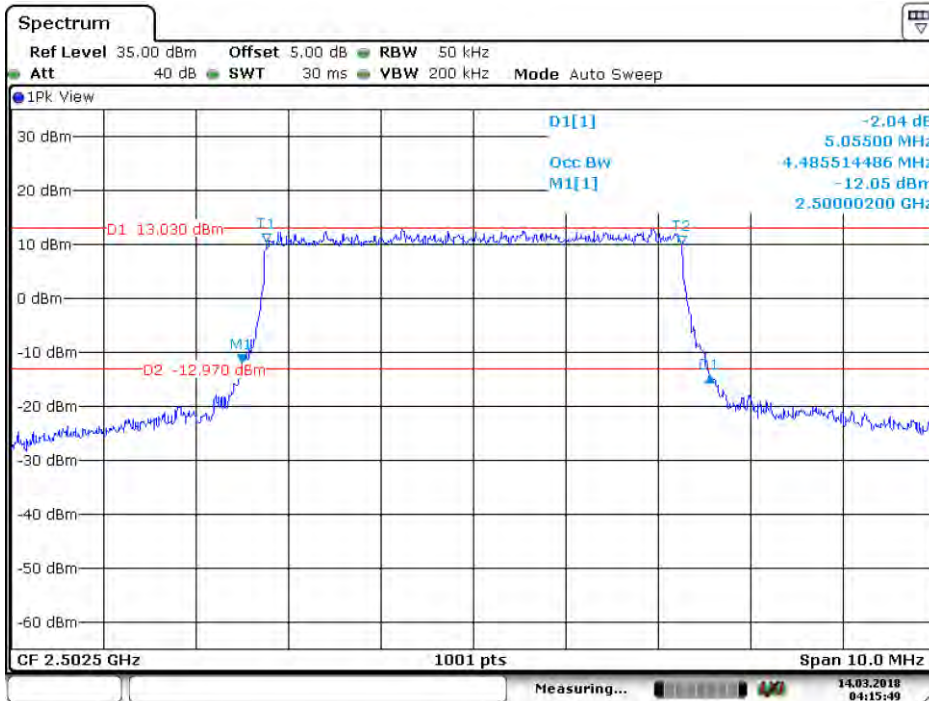
Part II - Test Plots

4.1 For LTE

4.1.1 Test Band = LTE band7

4.1.1.1 Test Mode = LTE/TM1 5MHz

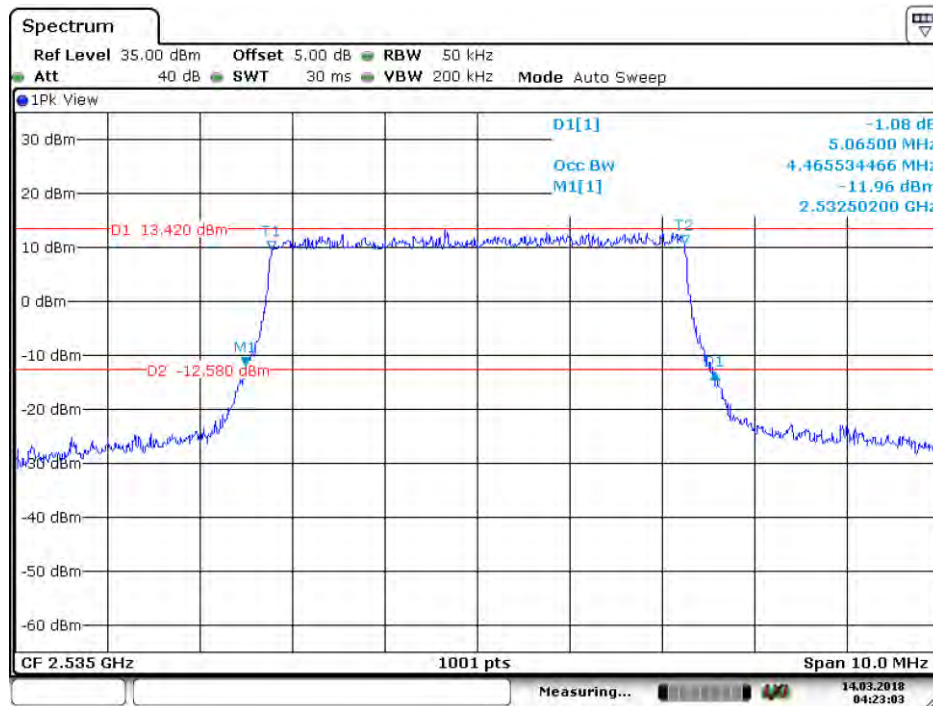
4.1.1.1.1 Test Channel = LCH



Date: 14.MAR.2018 04:15:49

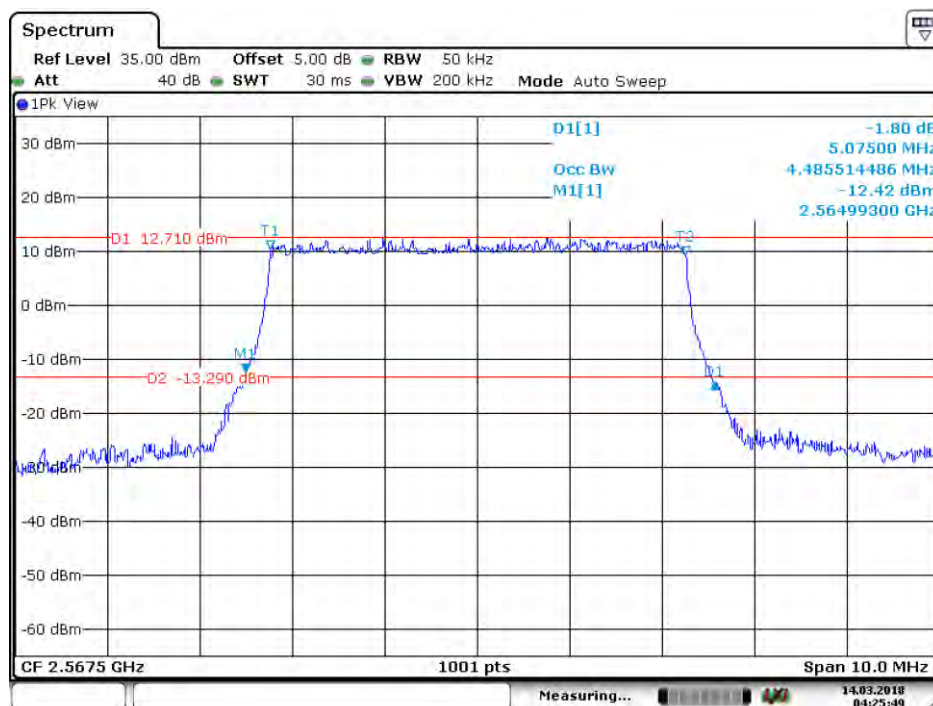


#### 4.1.1.1.2 Test Channel = MCH



Date: 14. MAR. 2018 04:23:04

#### 4.1.1.1.3 Test Channel = HCH

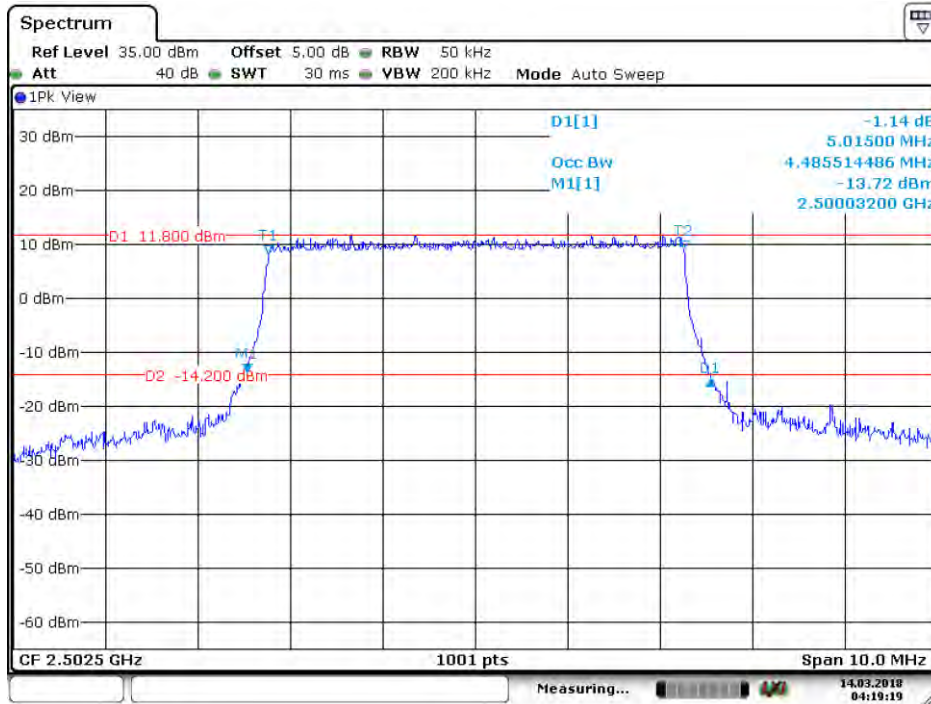


Date: 14. MAR. 2018 04:25:49



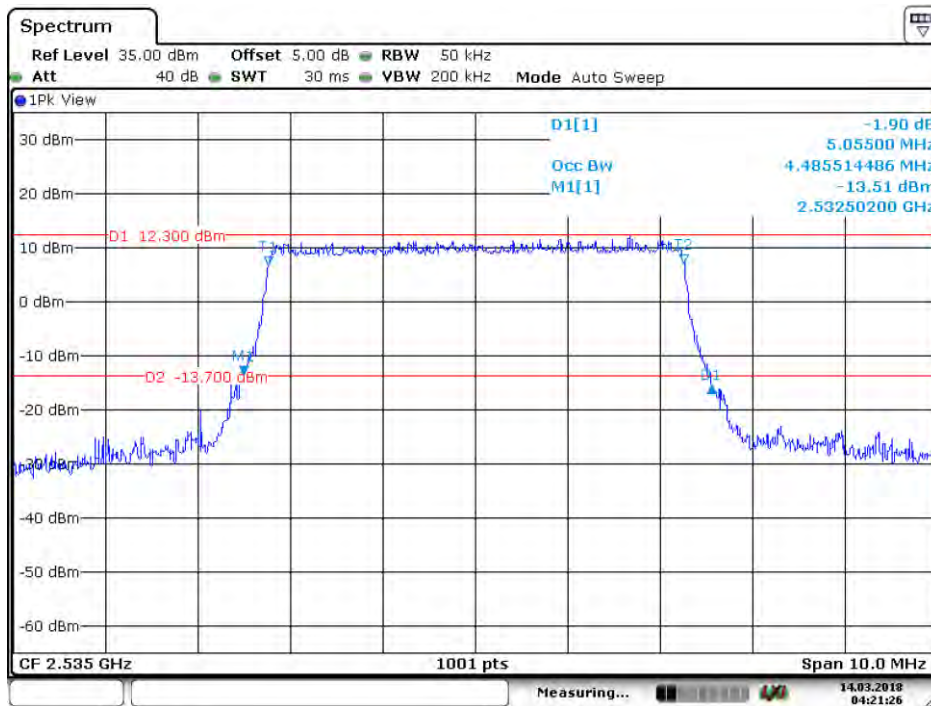
4.1.1.2 Test Mode = LTE/TM2 5MHz

4.1.1.2.1 Test Channel = LCH



Date: 14.MAR.2018 04:19:20

4.1.1.2.2 Test Channel = MCH



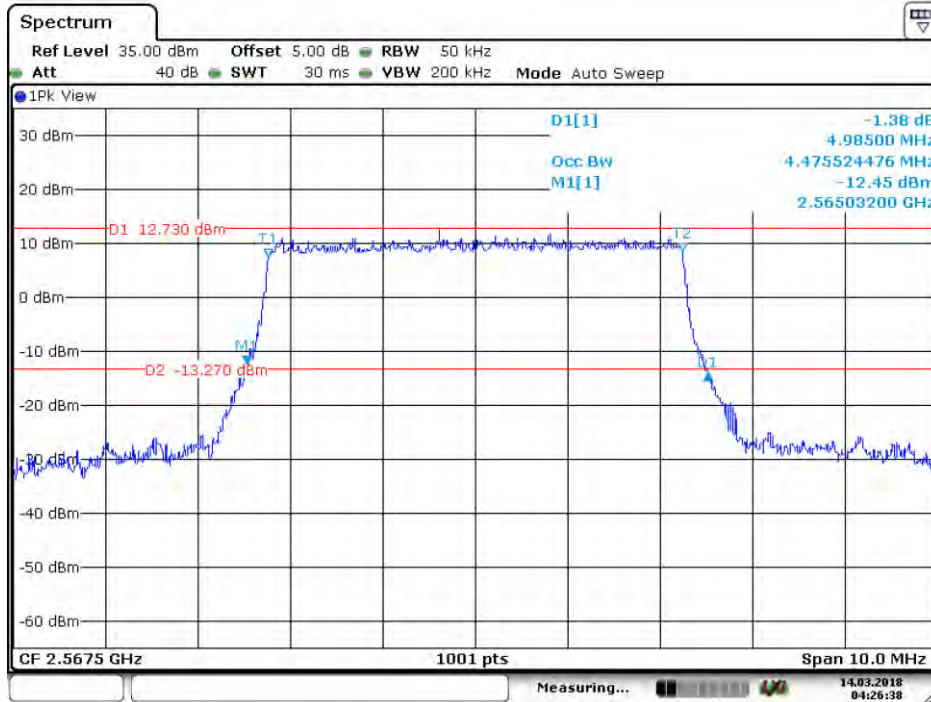
Date: 14.MAR.2018 04:21:26

"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, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.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 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.





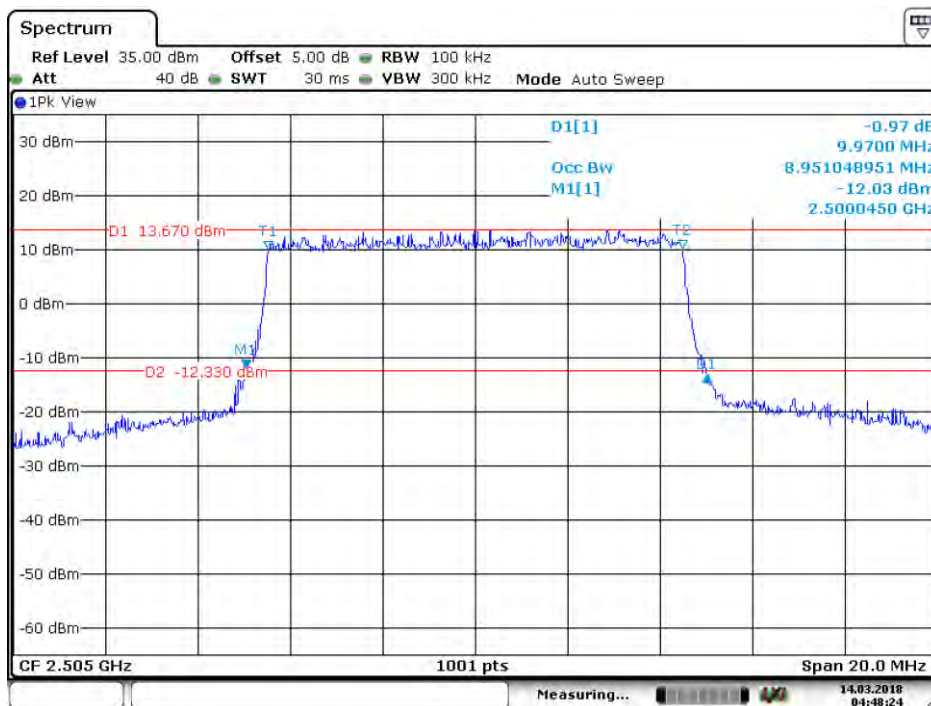
#### 4.1.1.2.3 Test Channel = HCH



Date: 14.MAR.2018 04:26:38

#### 4.1.1.3 Test Mode = LTE/TM1 10MHz

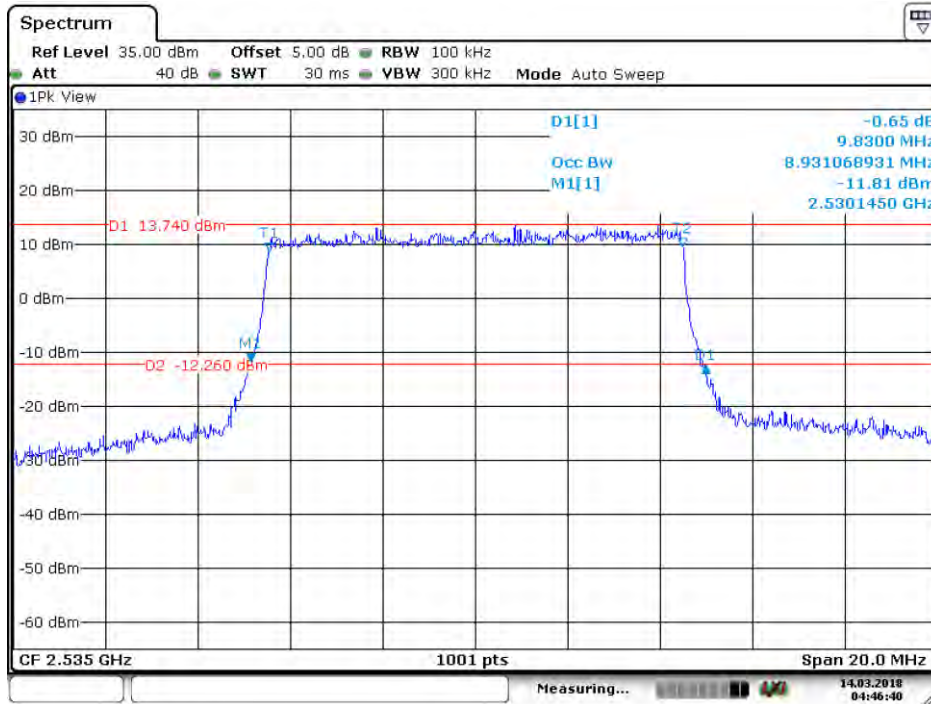
##### 4.1.1.3.1 Test Channel = LCH



Date: 14.MAR.2018 04:48:24

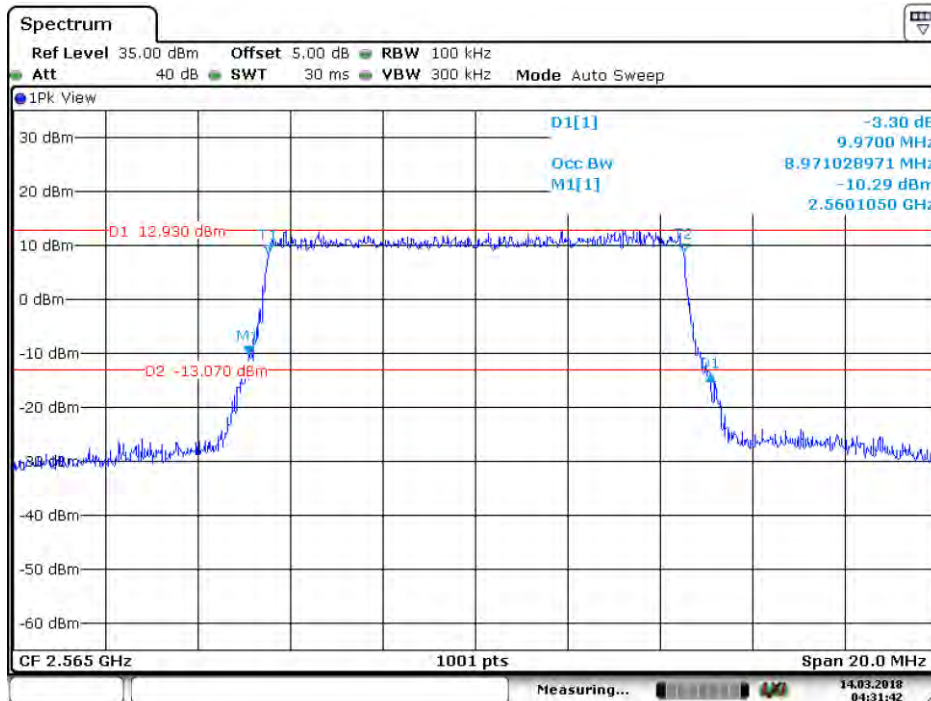


#### 4.1.1.3.2 Test Channel = MCH



Date: 14.MAR.2018 04:46:41

#### 4.1.1.3.3 Test Channel = HCH

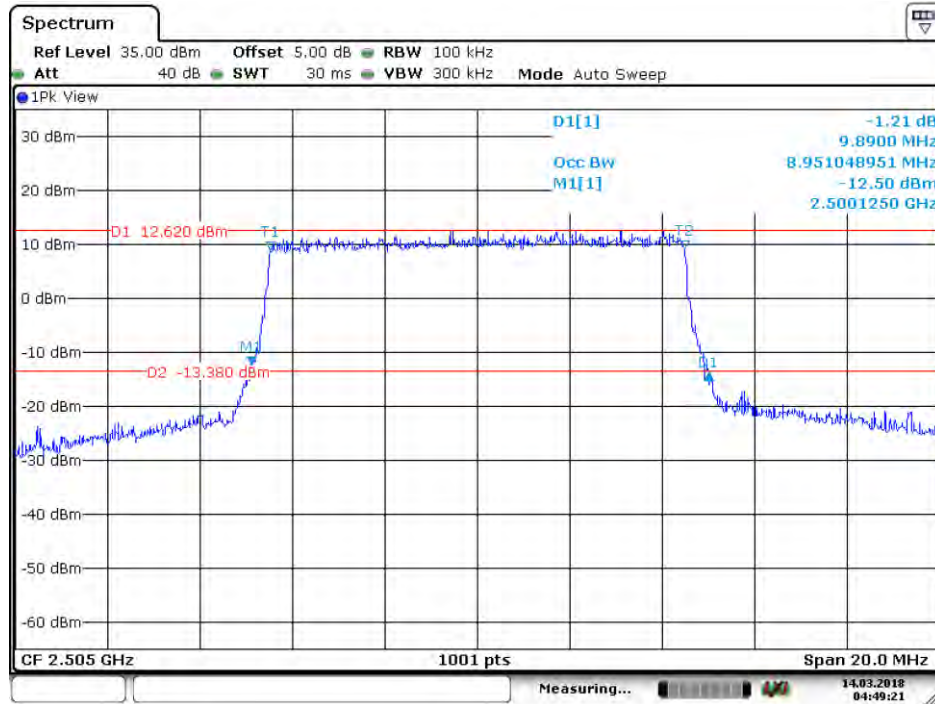


Date: 14.MAR.2018 04:31:42



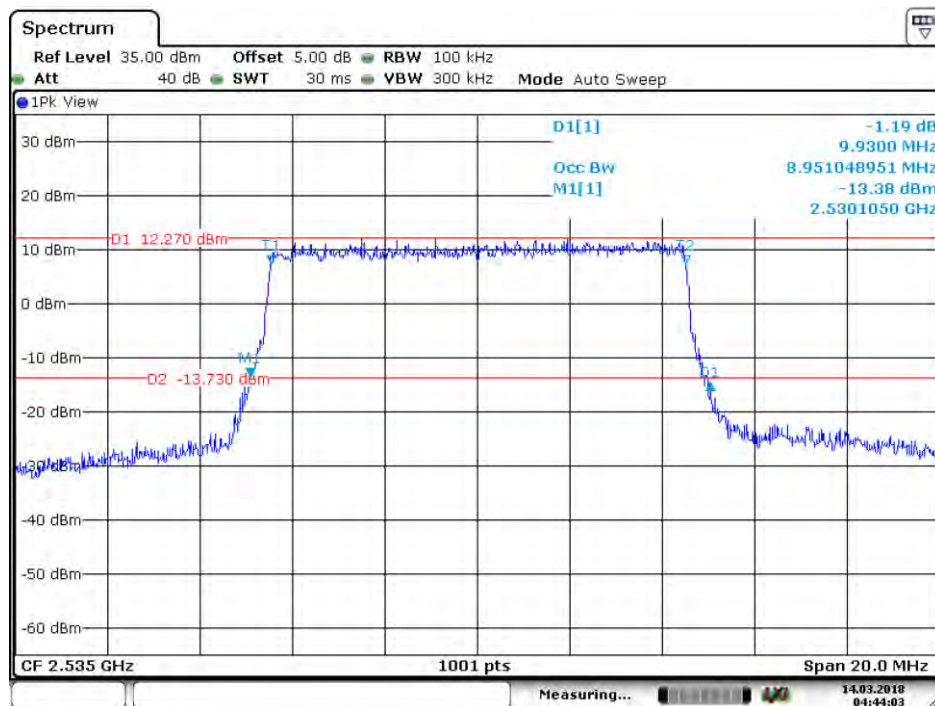
#### 4.1.1.4 Test Mode = LTE/TM2 10MHz

##### 4.1.1.4.1 Test Channel = LCH



Date: 14.MAR.2018 04:49:22

##### 4.1.1.4.2 Test Channel = MCH



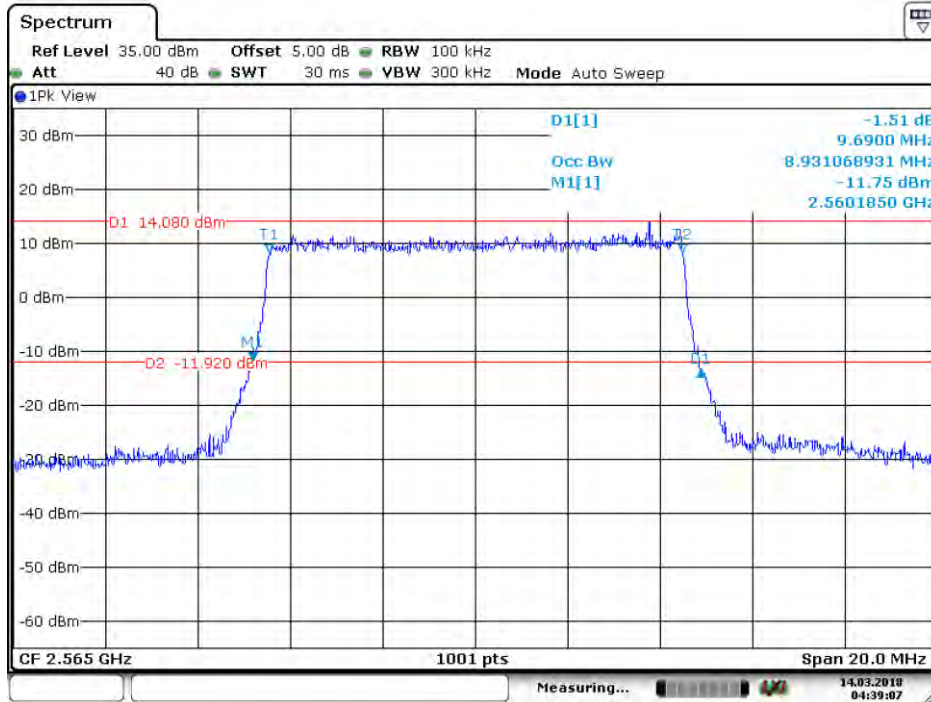
Date: 14.MAR.2018 04:44:03

\*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-Documents.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 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.





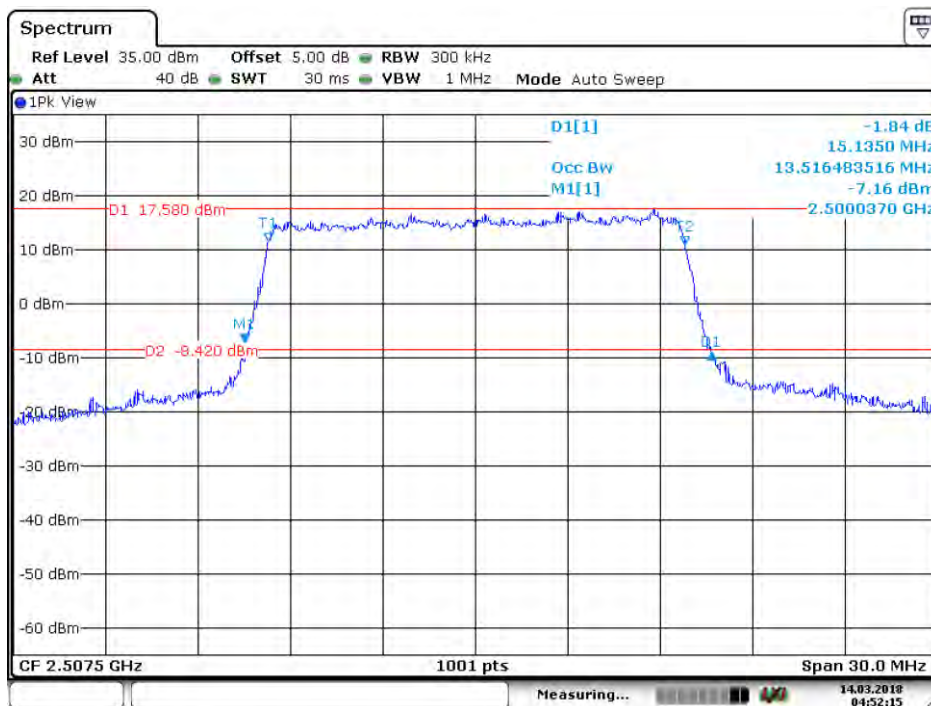
#### 4.1.1.4.3 Test Channel = HCH



Date: 14.MAR.2018 04:39:07

#### 4.1.1.5 Test Mode = LTE/TM1 15MHz

##### 4.1.1.5.1 Test Channel = LCH

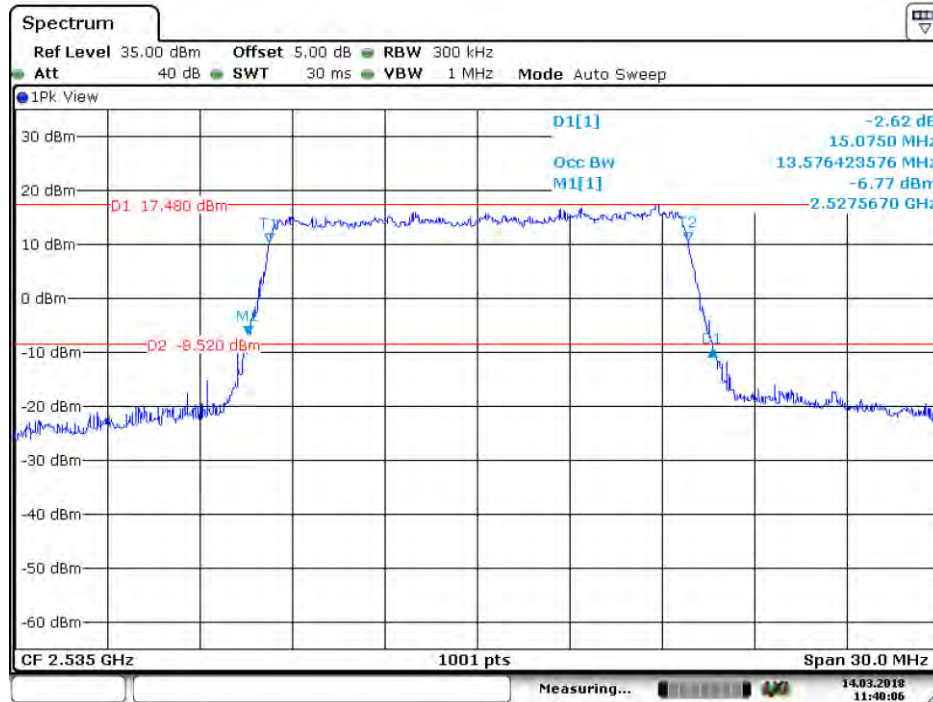


Date: 14.MAR.2018 04:52:15



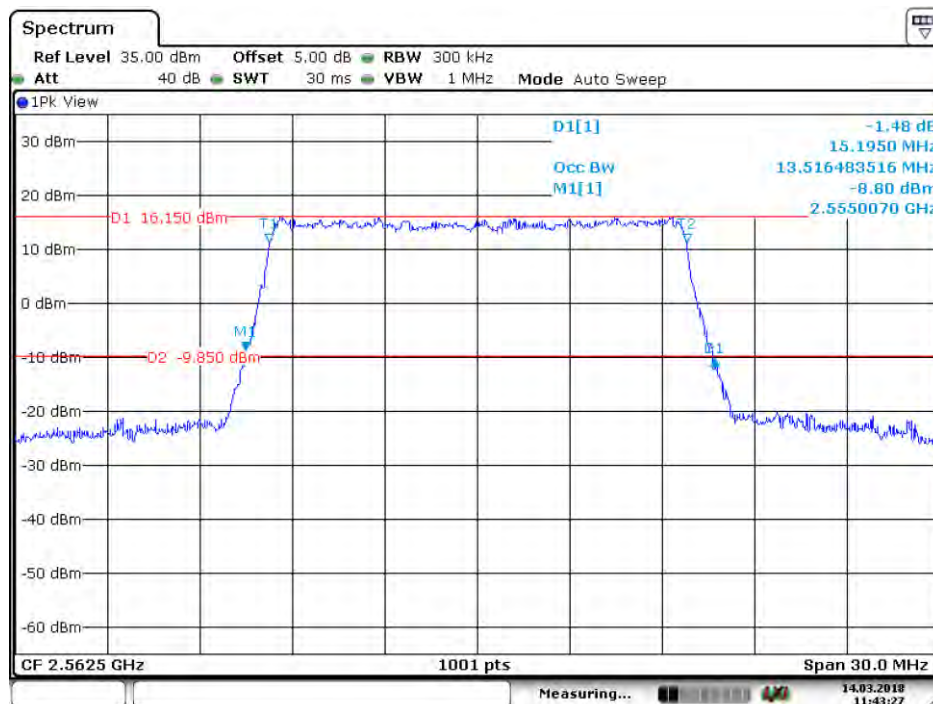


#### 4.1.1.5.2 Test Channel = MCH



Date: 14.MAR.2018 11:40:06

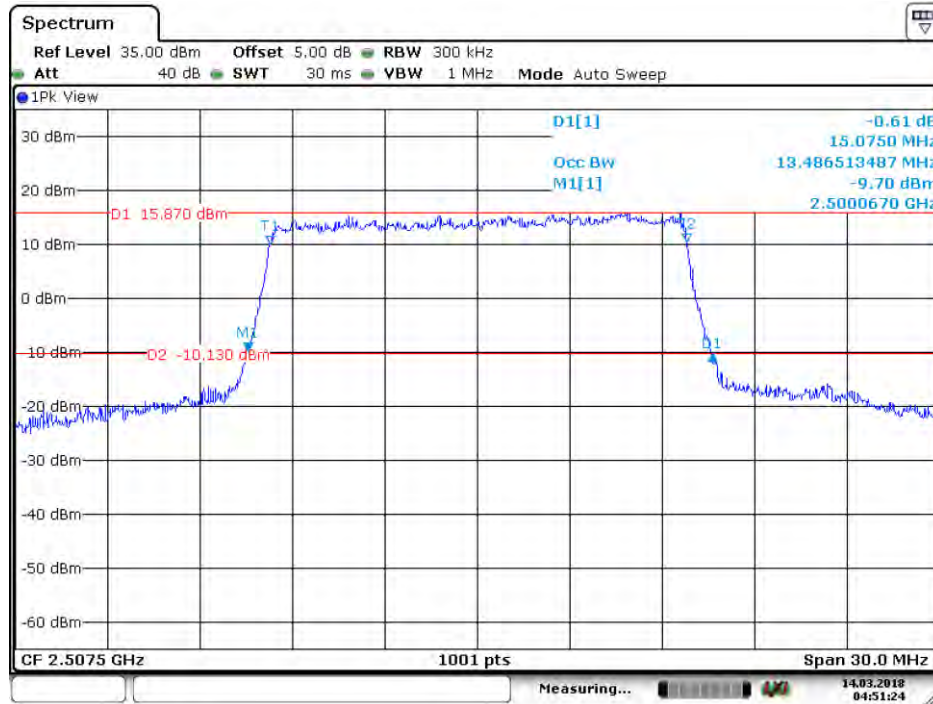
#### 4.1.1.5.3 Test Channel = HCH



Date: 14.MAR.2018 11:43:28

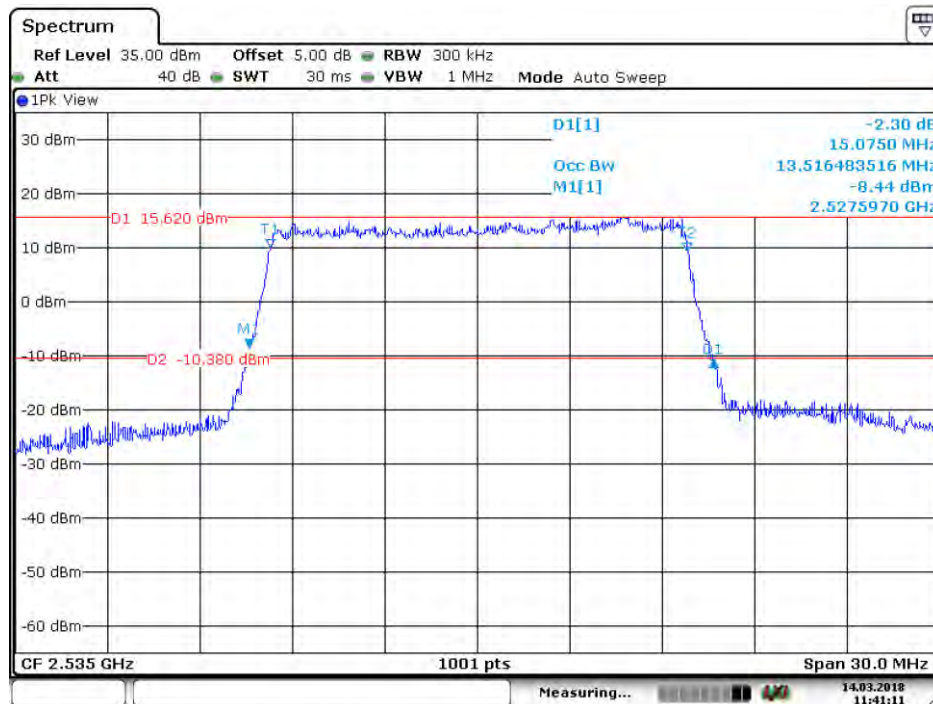
**4.1.1.6 Test Mode = LTE/TM2 15MHz**

**4.1.1.6.1 Test Channel = LCH**



Date: 14.MAR.2018 04:51:24

**4.1.1.6.2 Test Channel = MCH**

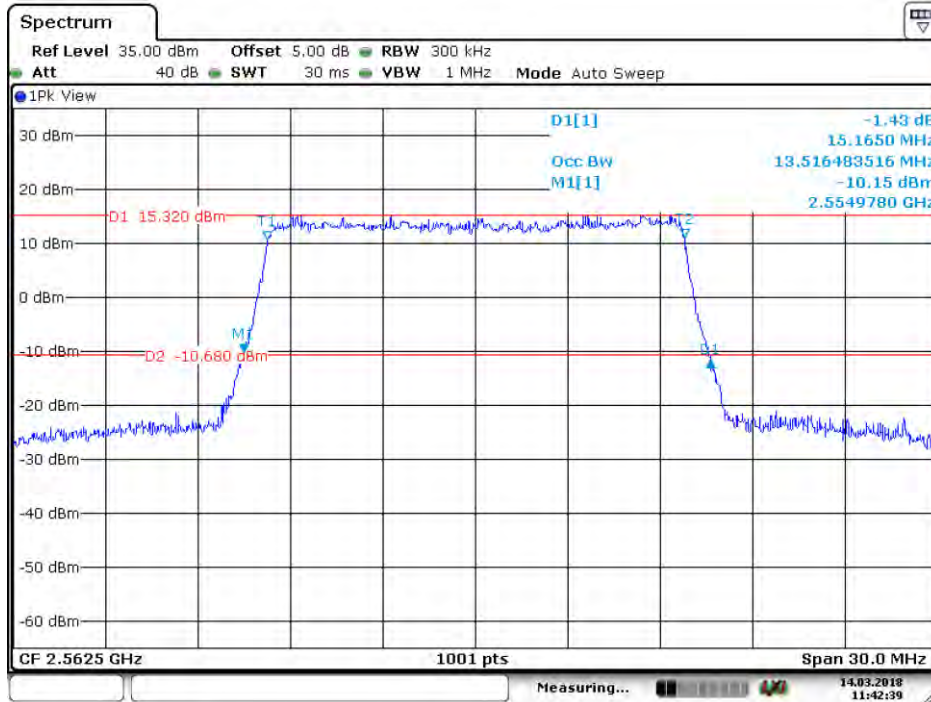


Date: 14.MAR.2018 11:41:11

\*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-Documents.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 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.



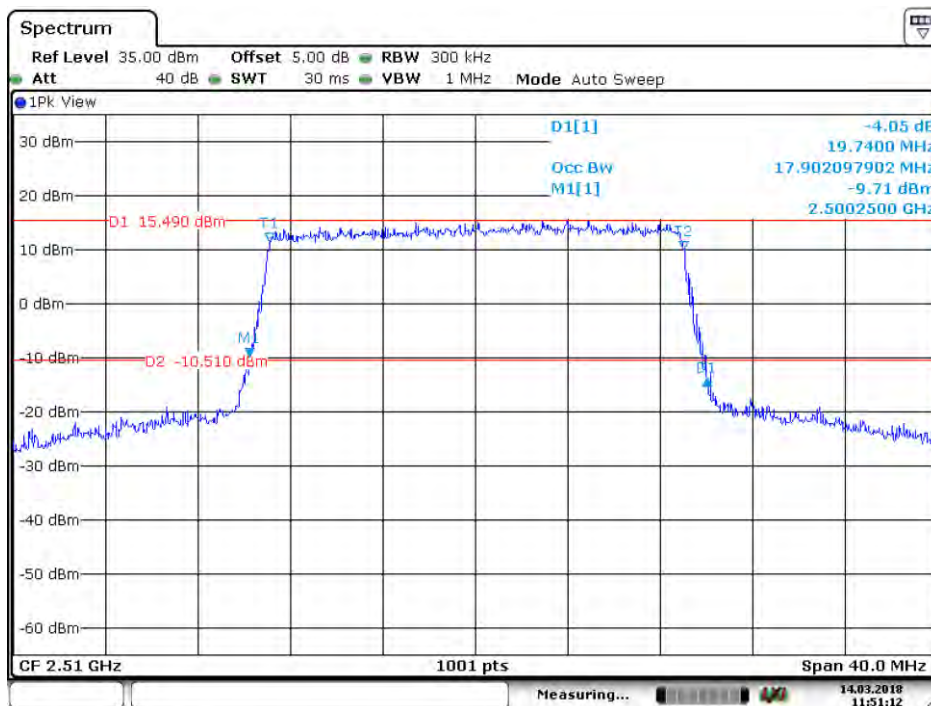
#### 4.1.1.6.3 Test Channel = HCH



Date: 14.MAR.2018 11:42:39

#### 4.1.1.7 Test Mode = LTE/TM1 20MHz

##### 4.1.1.7.1 Test Channel = LCH

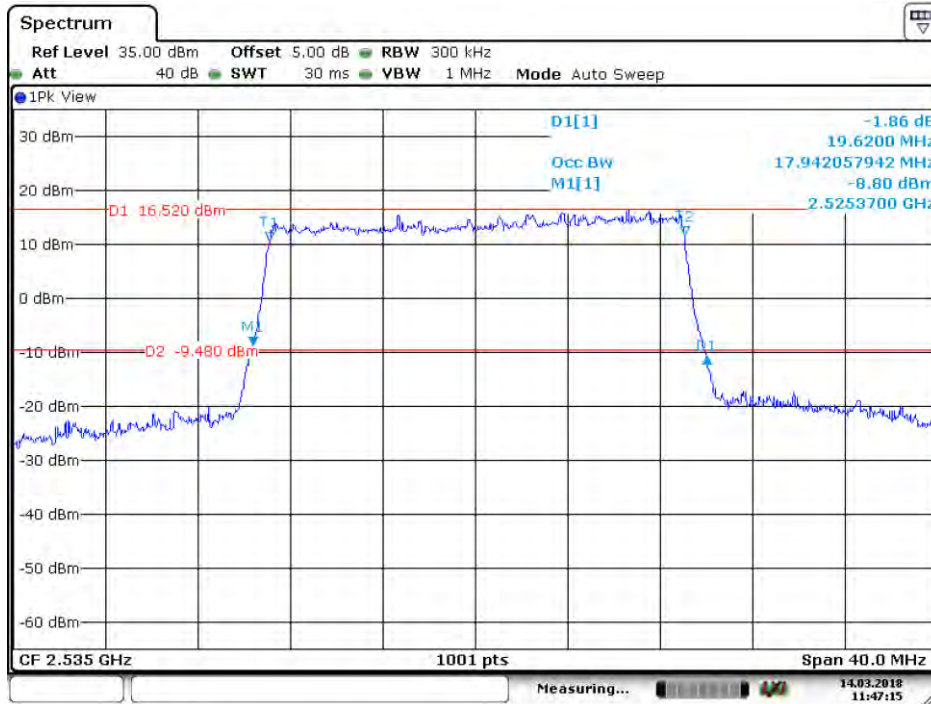


Date: 14.MAR.2018 11:51:13



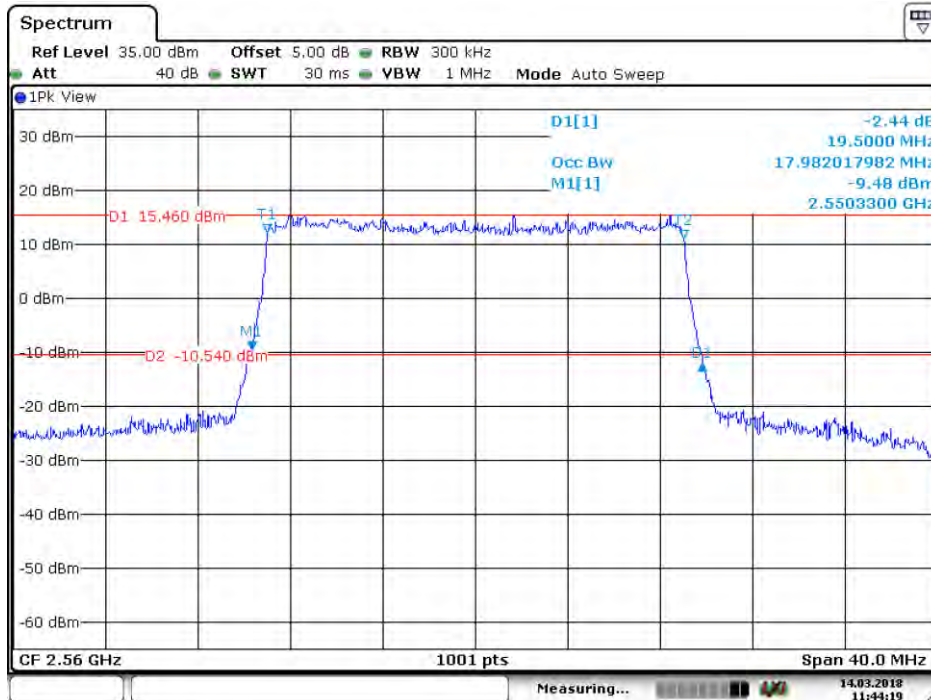


#### 4.1.1.7.2 Test Channel = MCH



Date: 14.MAR.2018 11:47:15

#### 4.1.1.7.3 Test Channel = HCH

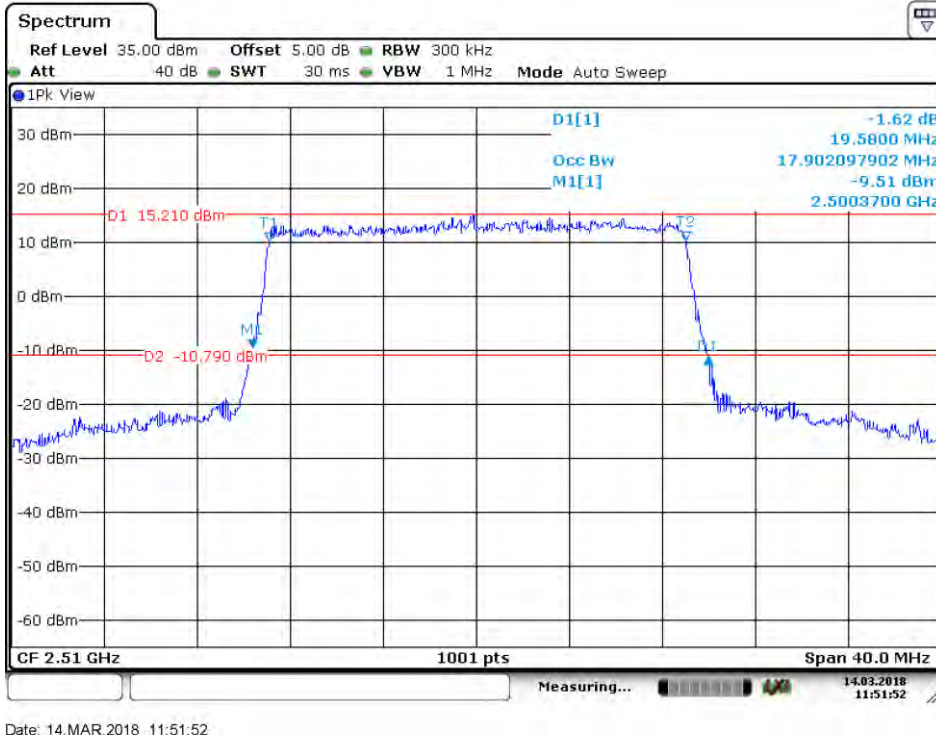


Date: 14.MAR.2018 11:44:19

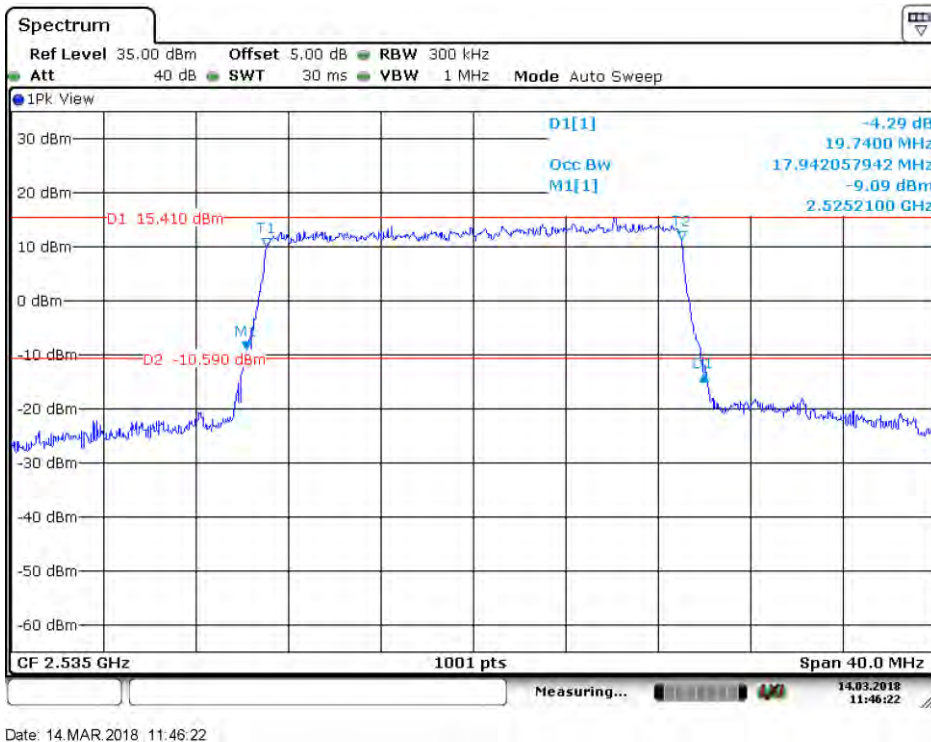


#### 4.1.1.8 Test Mode = LTE/TM2 20MHz

##### 4.1.1.8.1 Test Channel = LCH



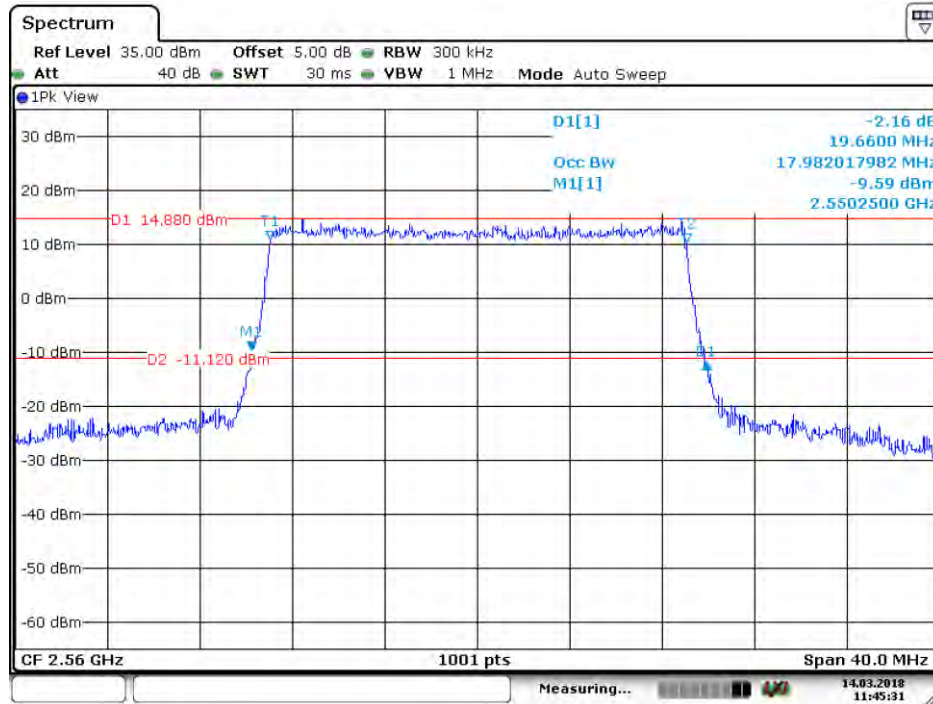
##### 4.1.1.8.2 Test Channel = MCH



\*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 herein 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.



4.1.1.8.3 Test Channel = HCH



Date: 14.MAR.2018 11:45:32

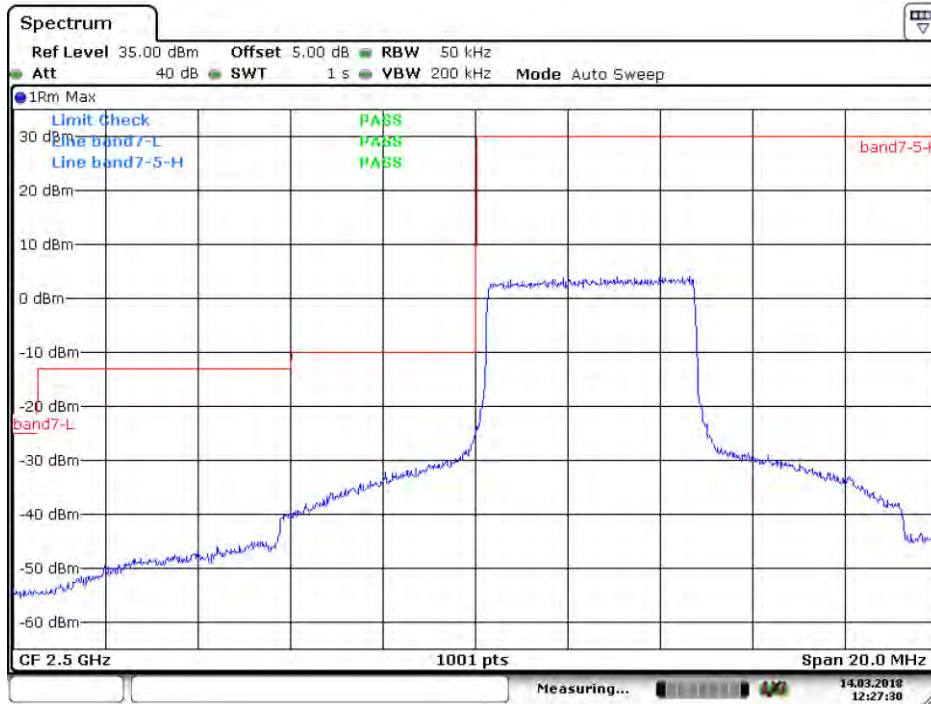
\*This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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







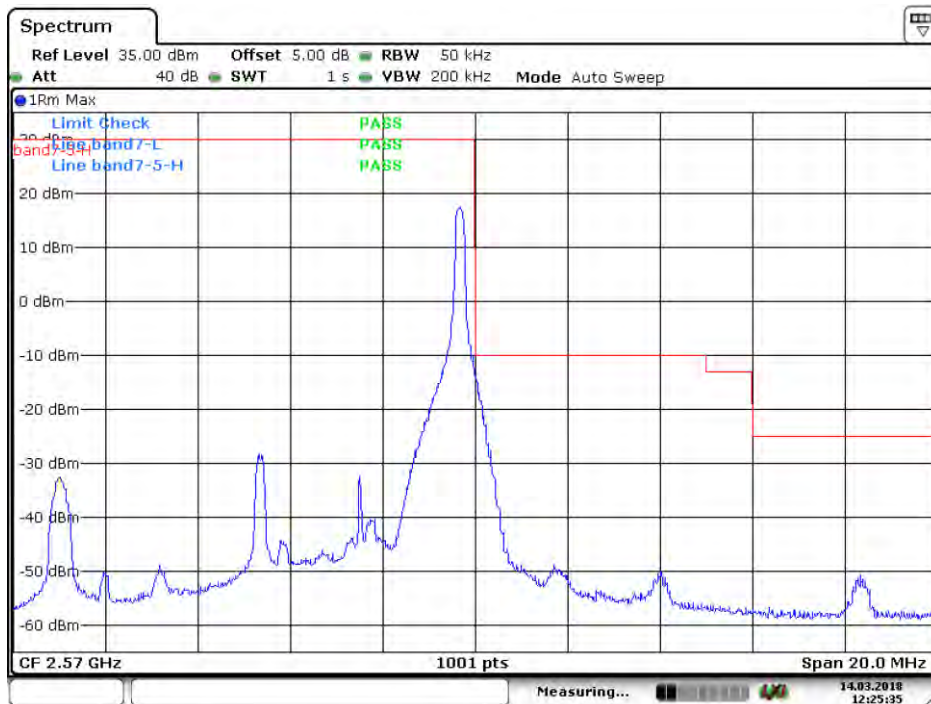
5.1.1.1.2 Test RB=25RB



Date: 14.MAR.2018 12:27:30

5.1.1.1.2 Test Channel = HCH

5.1.1.1.2.1 Test RB=1RB



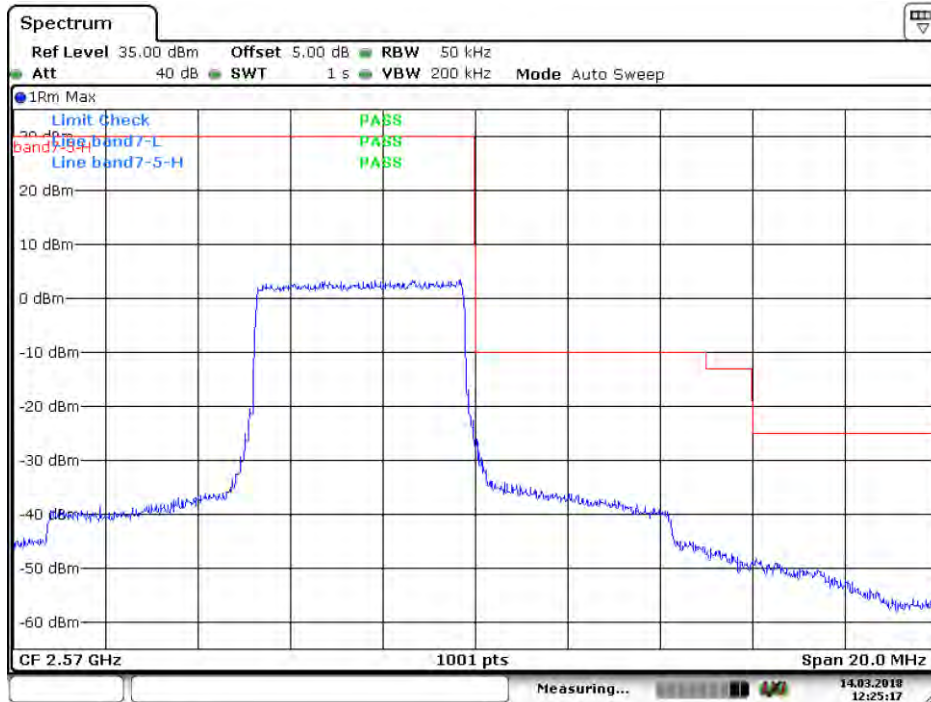
Date: 14.MAR.2018 12:25:35

\*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 herein 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.





### 5.1.1.1.2.2 Test RB=25RB

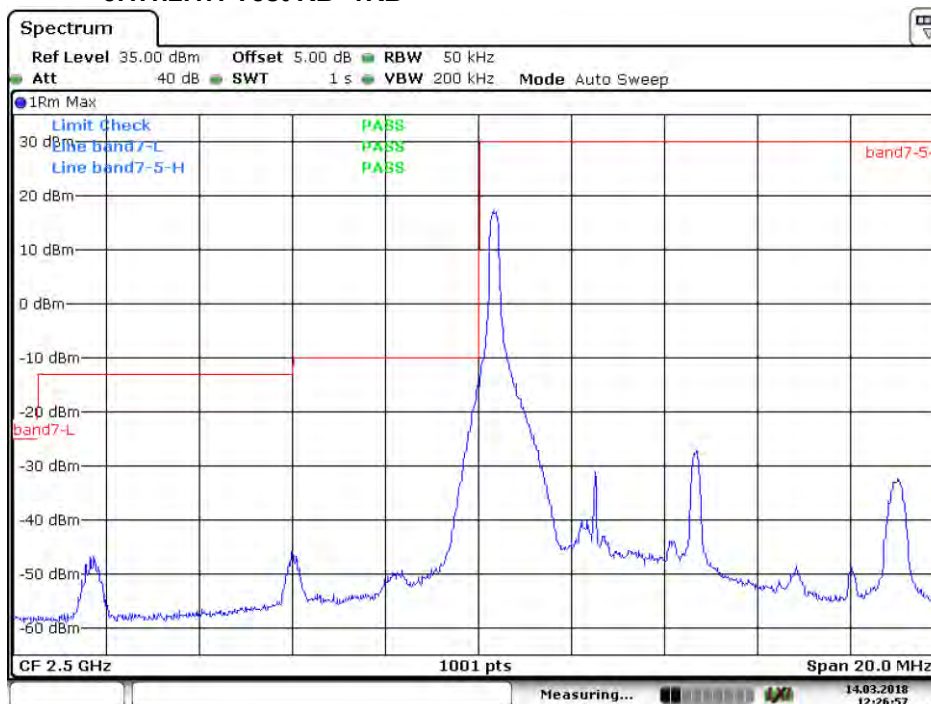


Date: 14.MAR.2018 12:25:17

### 5.1.1.2 Test Mode = LTE/TM2 5MHz

#### 5.1.1.2.1 Test Channel = LCH

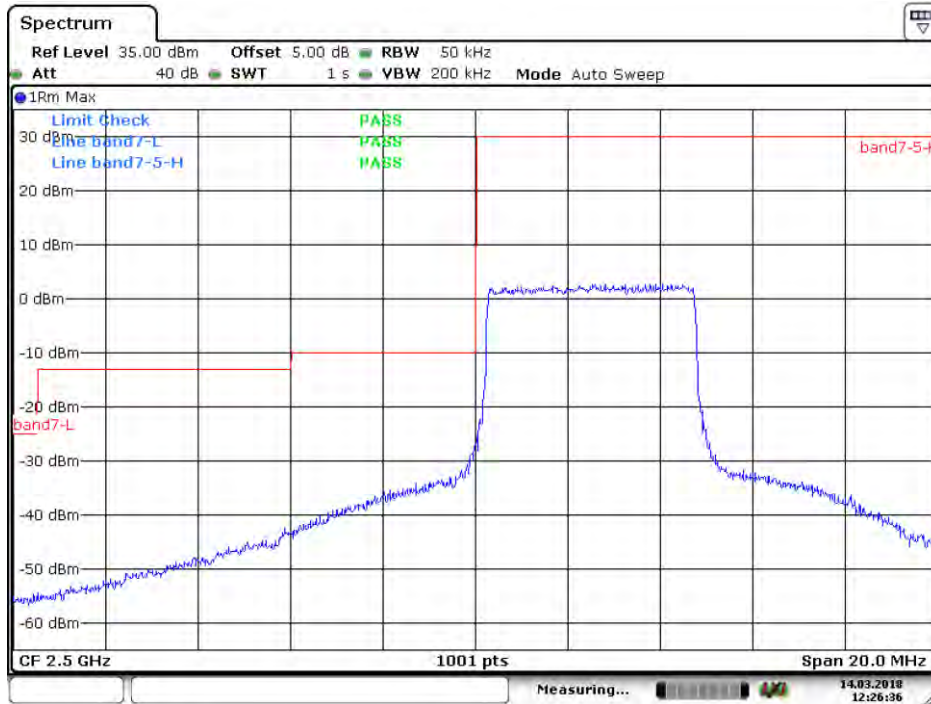
##### 5.1.1.2.1.1 Test RB=1RB



Date: 14.MAR.2018 12:26:58



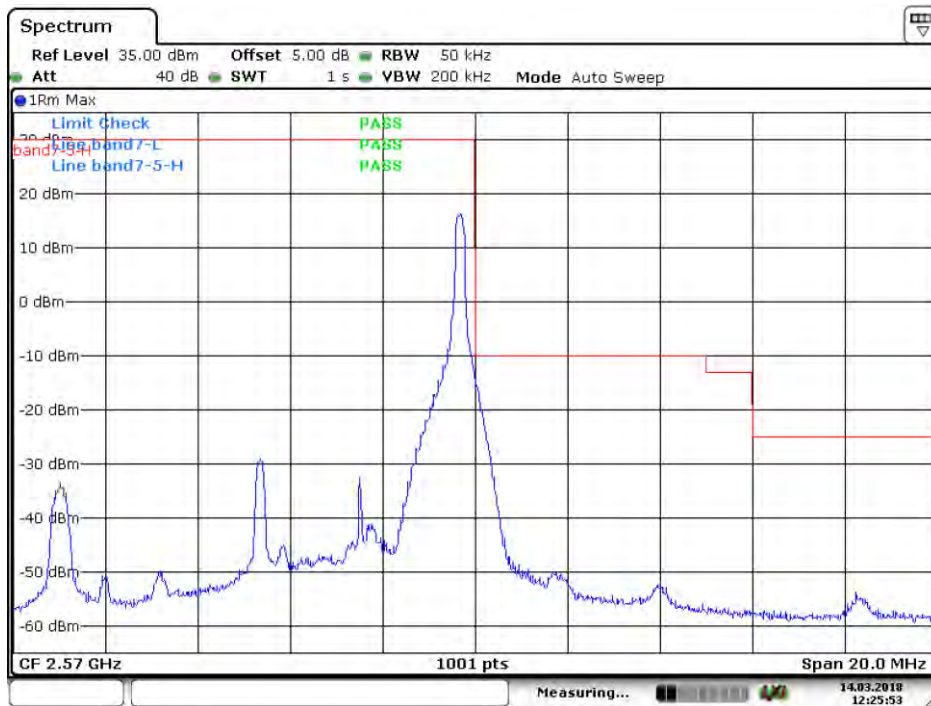
### 5.1.1.2.1.2 Test RB=25RB



Date: 14.MAR.2018 12:26:37

### 5.1.1.2.2 Test Channel = HCH

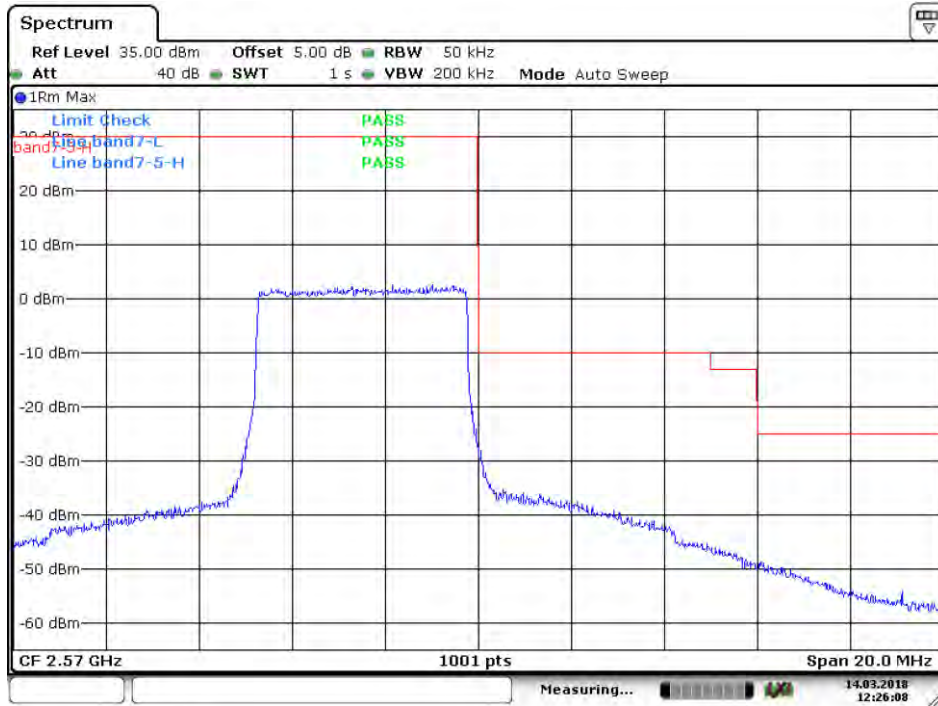
#### 5.1.1.2.2.1 Test RB=1RB



Date: 14.MAR.2018 12:25:53



5.1.1.2.2.2 Test RB=25RB



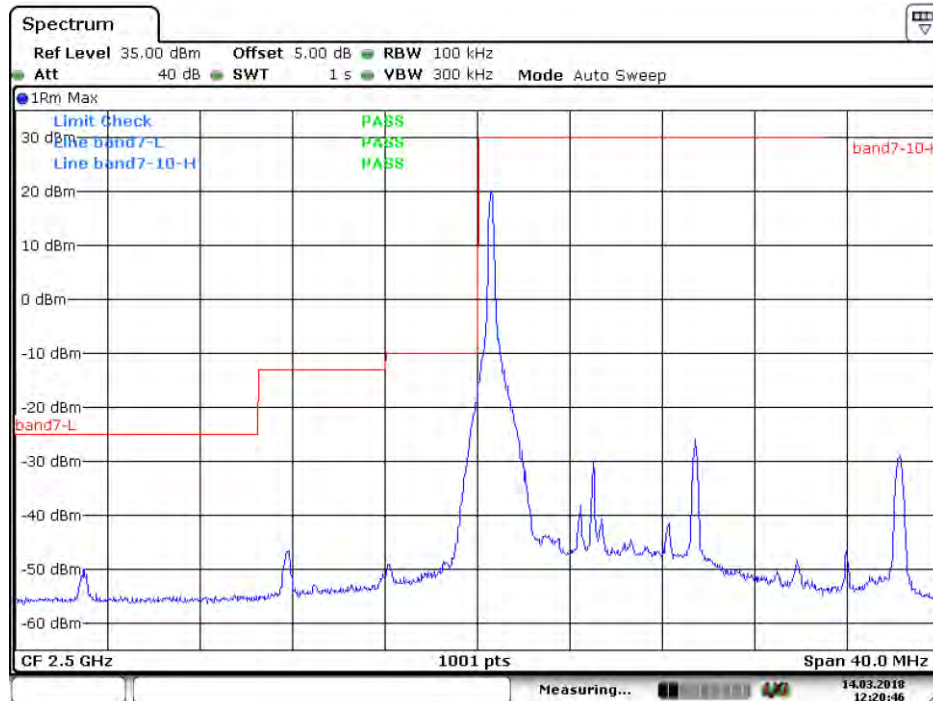
Date: 14.MAR.2018 12:26:08



5.1.1.3 Test Mode = LTE/TM1 10MHz

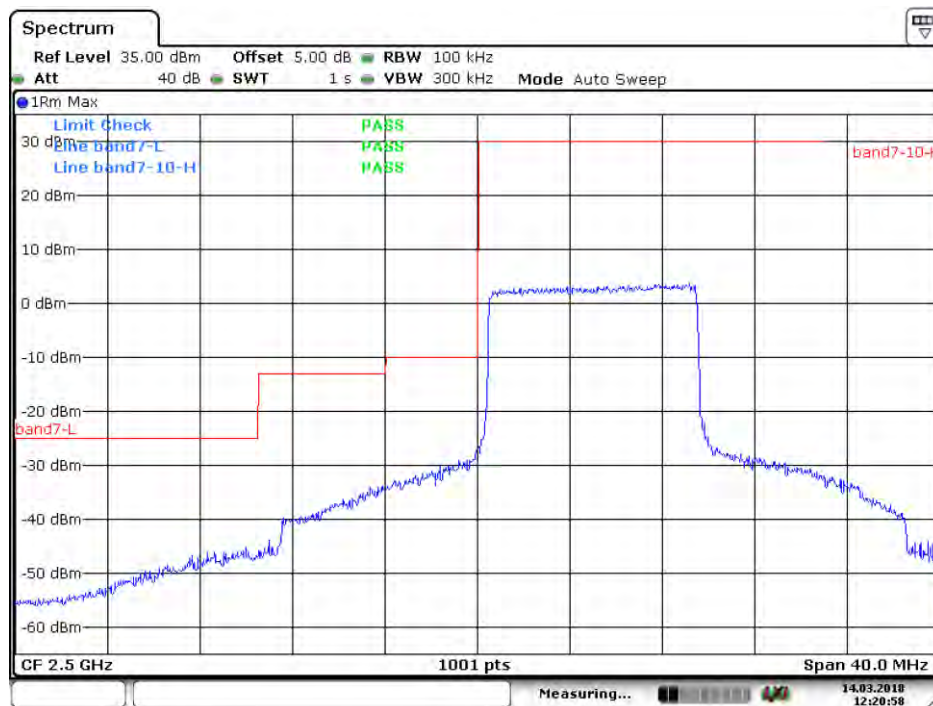
5.1.1.3.1 Test Channel = LCH

5.1.1.3.1.1 Test RB=1RB



Date: 14.MAR.2018 12:20:47

5.1.1.3.1.2 Test RB=50RB



Date: 14.MAR.2018 12:20:58

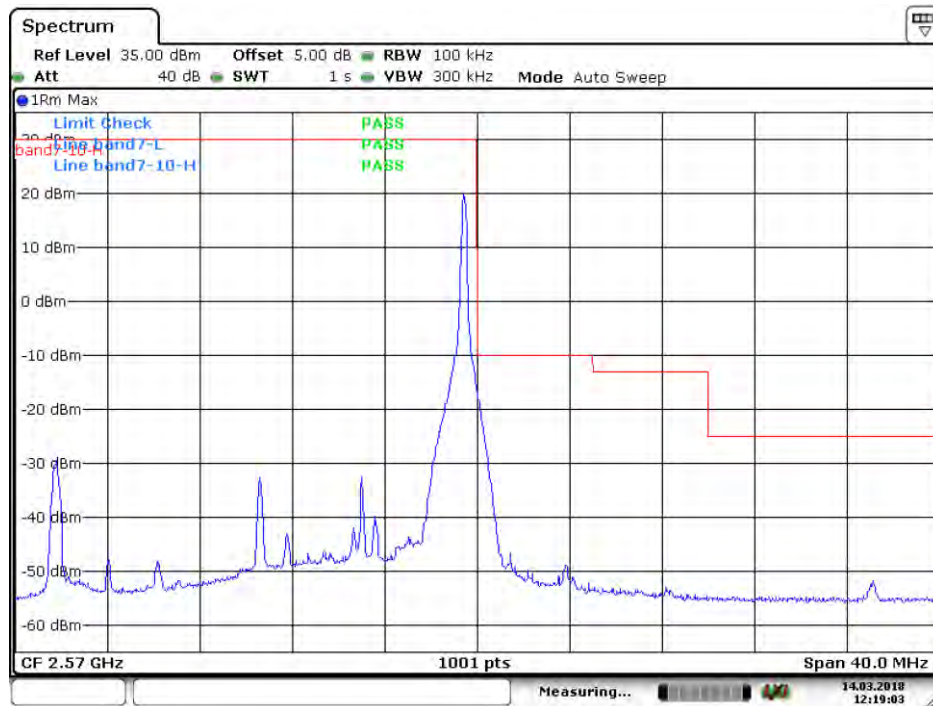
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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





5.1.1.3.2 Test Channel = HCH

5.1.1.3.2.1 Test RB=1RB



Date: 14.MAR.2018 12:19:03

5.1.1.3.2.2 Test RB=50RB



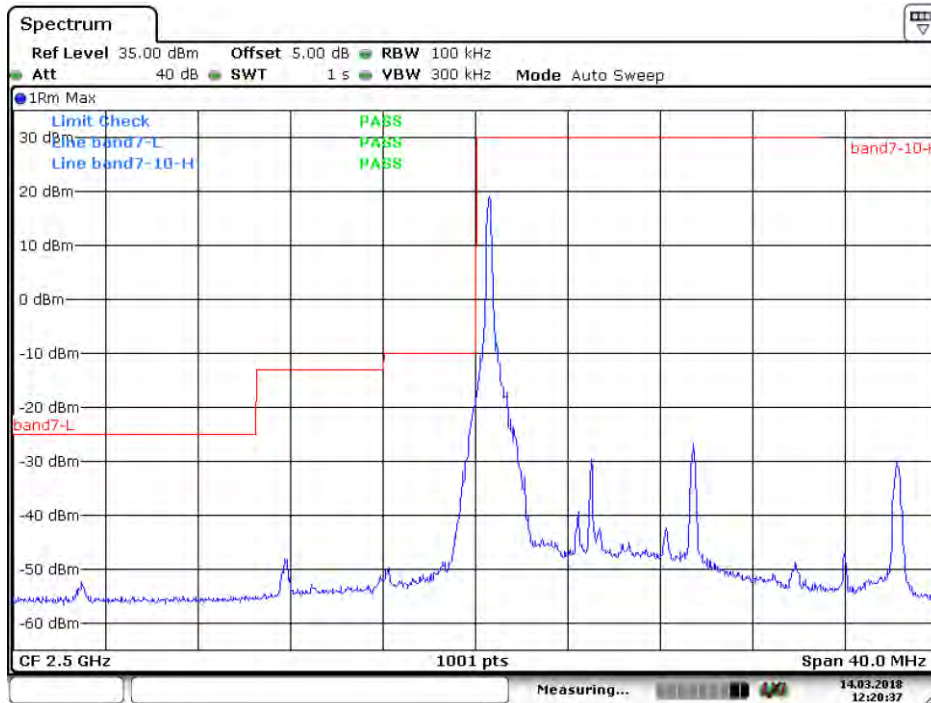
Date: 14.MAR.2018 12:18:41



5.1.1.4 Test Mode = LTE/TM2 10MHz

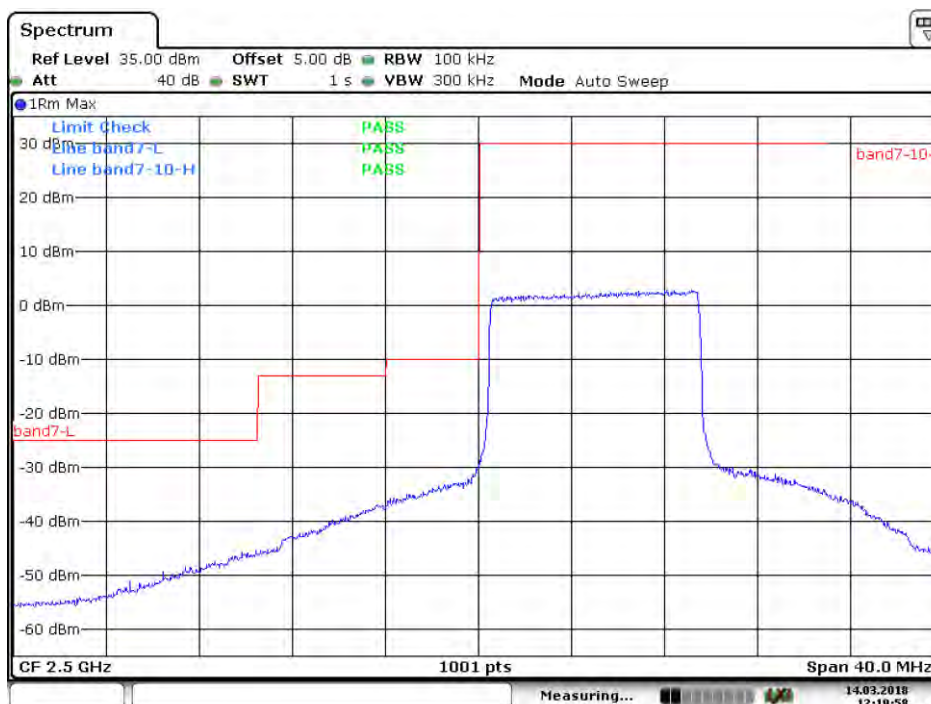
5.1.1.4.1 Test Channel = LCH

5.1.1.4.1.1 Test RB=1RB



Date: 14.MAR.2018 12:20:38

5.1.1.4.1.2 Test RB=50RB



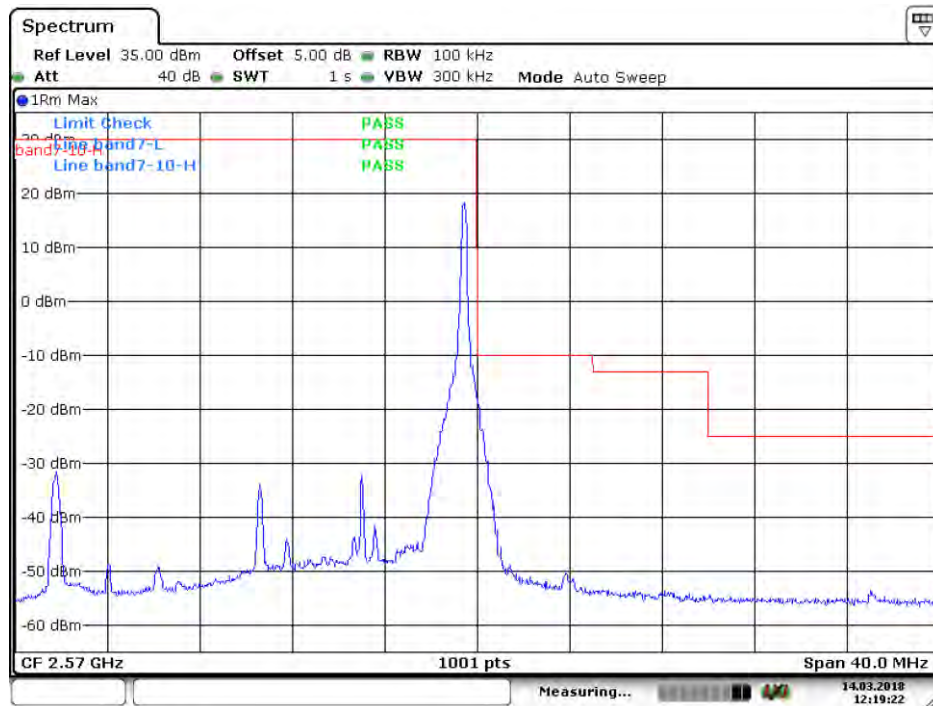
Date: 14.MAR.2018 12:19:58

\*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 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.



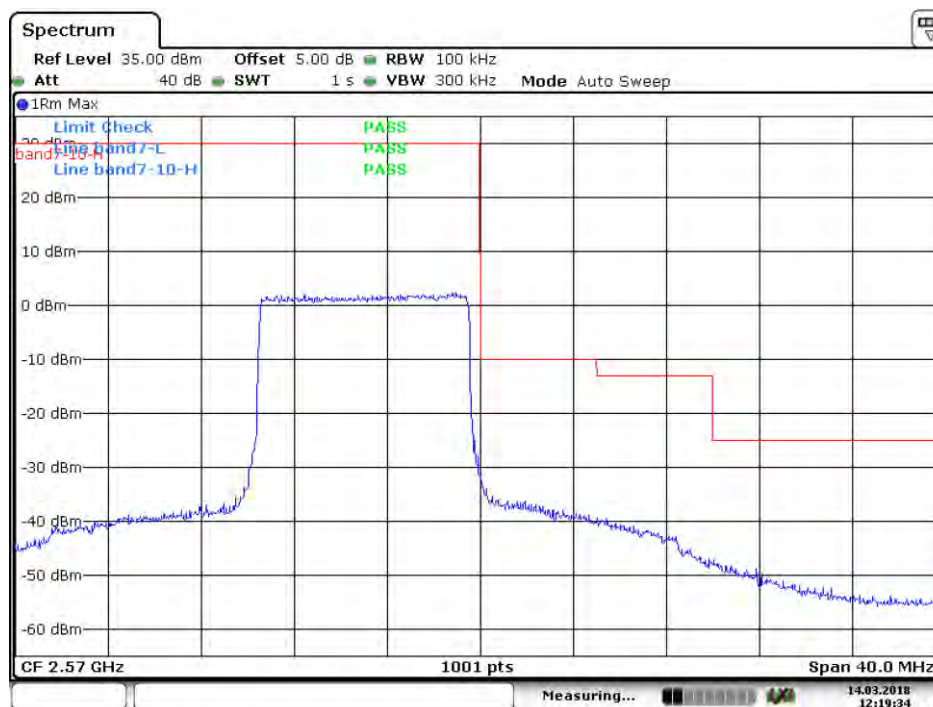
5.1.1.4.2 Test Channel = HCH

5.1.1.4.2.1 Test RB=1RB



Date: 14.MAR.2018 12:19:23

5.1.1.4.2.2 Test RB=50RB



Date: 14.MAR.2018 12:19:35

"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 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.

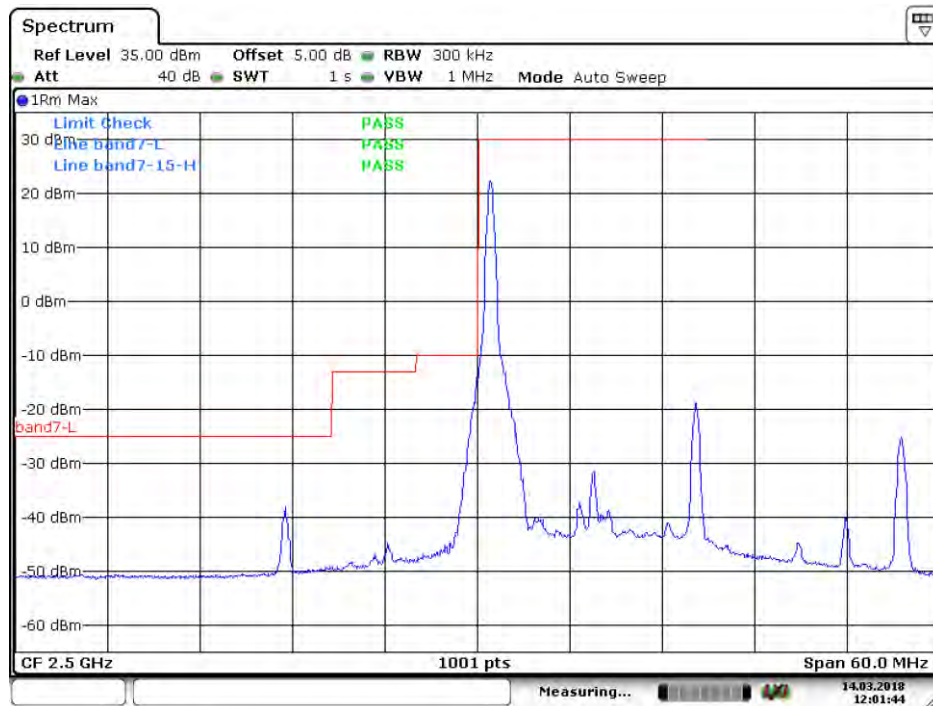




5.1.1.5 Test Mode = LTE/TM1 15MHz

5.1.1.5.1 Test Channel = LCH

5.1.1.5.1.1 Test RB=1RB



Date: 14.MAR.2018 12:01:44

5.1.1.5.1.2 Test RB=75RB



Date: 14.MAR.2018 12:01:12

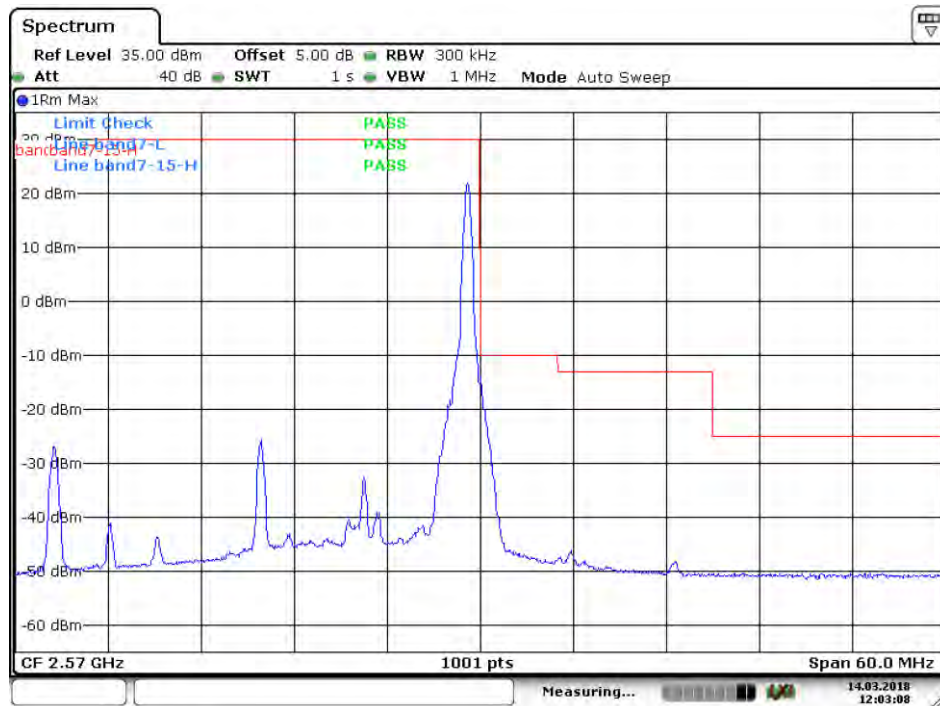
\*This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>.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





5.1.1.5.2 Test Channel = HCH

5.1.1.5.2.1 Test RB=1RB



Date: 14.MAR.2018 12:03:08

5.1.1.5.2.2 Test RB=75RB



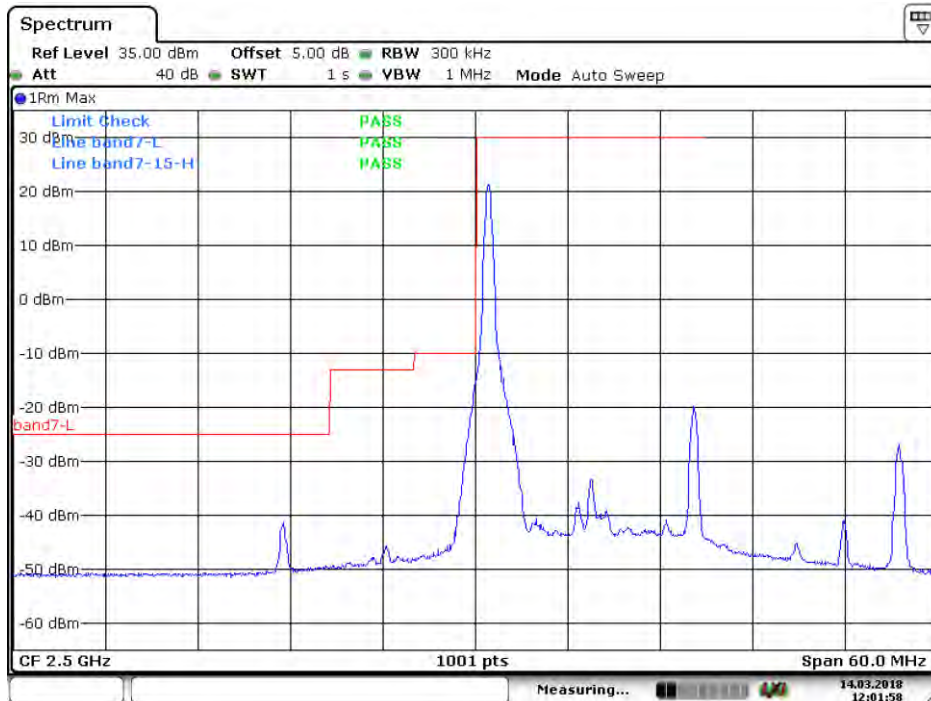
Date: 14.MAR.2018 12:03:22

<sup>4</sup>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 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.

**5.1.1.6 Test Mode = LTE/TM2 15MHz**

**5.1.1.6.1 Test Channel = LCH**

**5.1.1.6.1.1 Test RB=1RB**



Date: 14.MAR.2018 12:01:59

**5.1.1.6.1.2 Test RB=75RB**

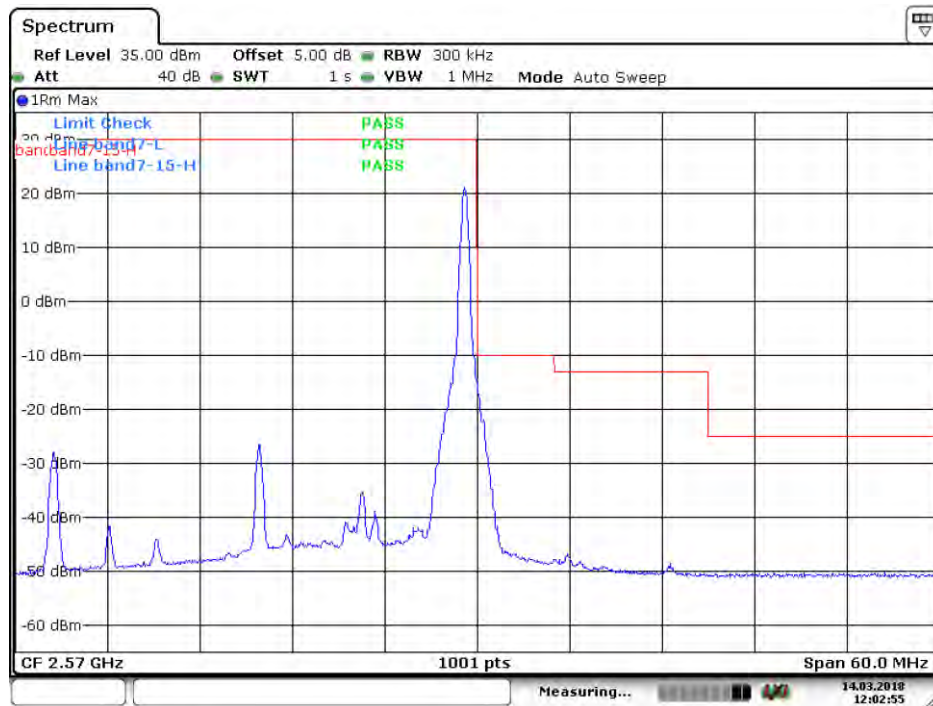


Date: 14.MAR.2018 12:02:10



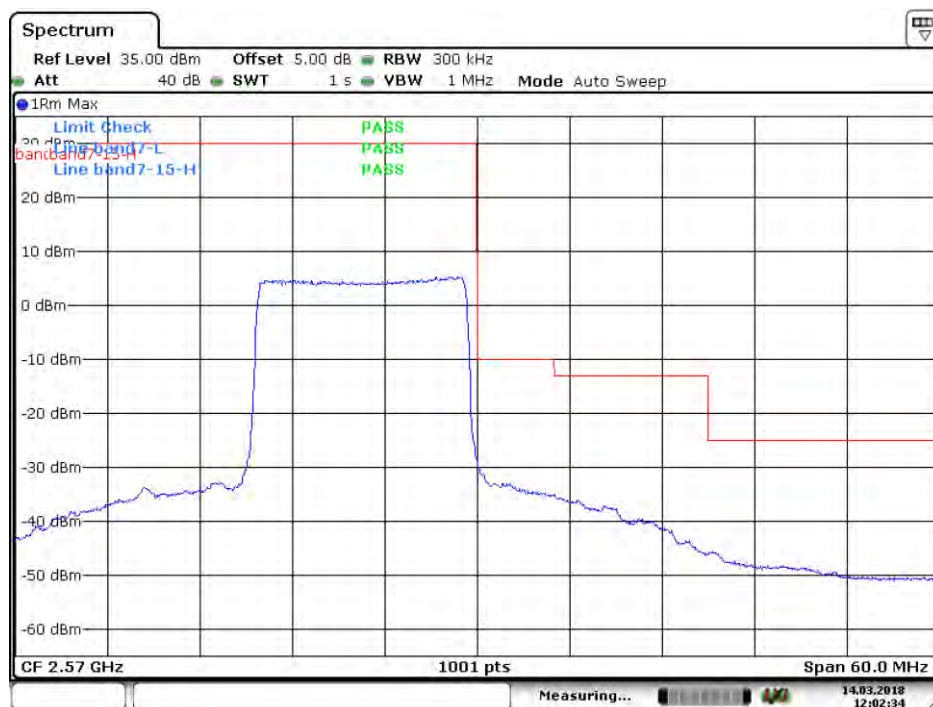
5.1.1.6.2 Test Channel = HCH

5.1.1.6.2.1 Test RB=1RB



Date: 14.MAR.2018 12:02:55

5.1.1.6.2.2 Test RB=75RB



Date: 14.MAR.2018 12:02:35

<sup>4</sup>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 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.

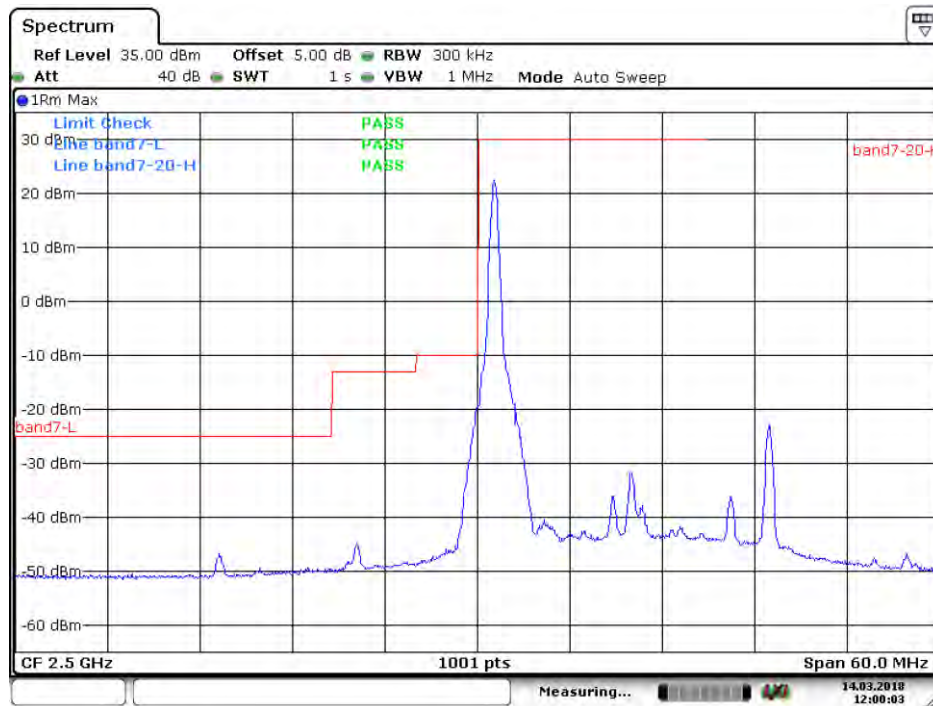




5.1.1.7 Test Mode = LTE/TM1 20MHz

5.1.1.7.1 Test Channel = LCH

5.1.1.7.1.1 Test RB=1RB



Date: 14.MAR.2018 12:00:04

5.1.1.7.1.2 Test RB=100RB



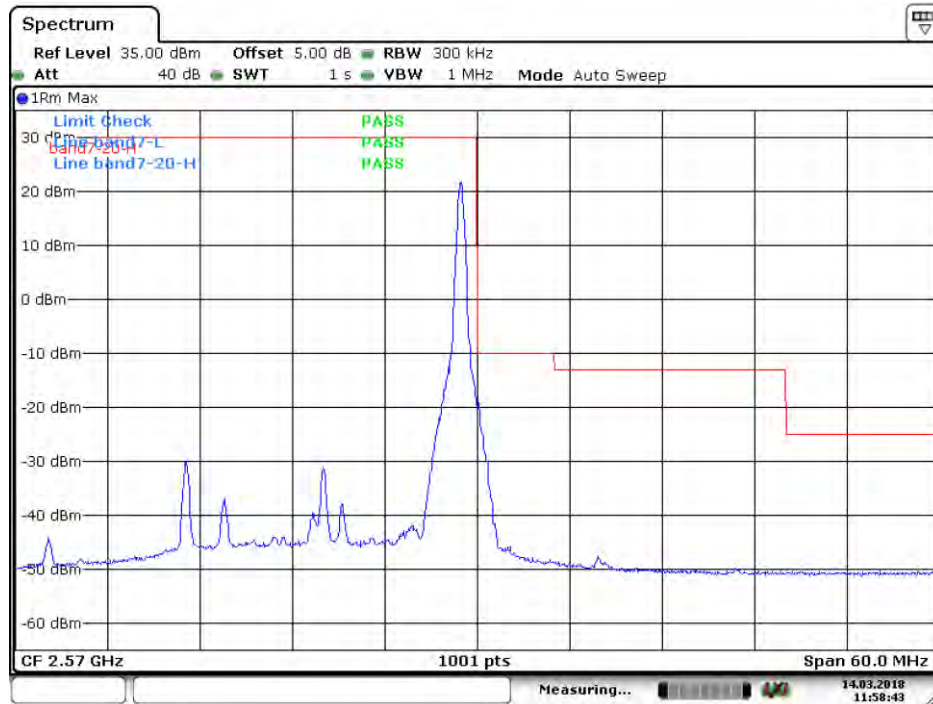
Date: 14.MAR.2018 12:00:16

\*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-Documents.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 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.



5.1.1.7.2 Test Channel = HCH

5.1.1.7.2.1 Test RB=1RB



Date: 14.MAR.2018 11:58:43

5.1.1.7.2.2 Test RB=100RB



Date: 14.MAR.2018 11:58:16

\*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 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.

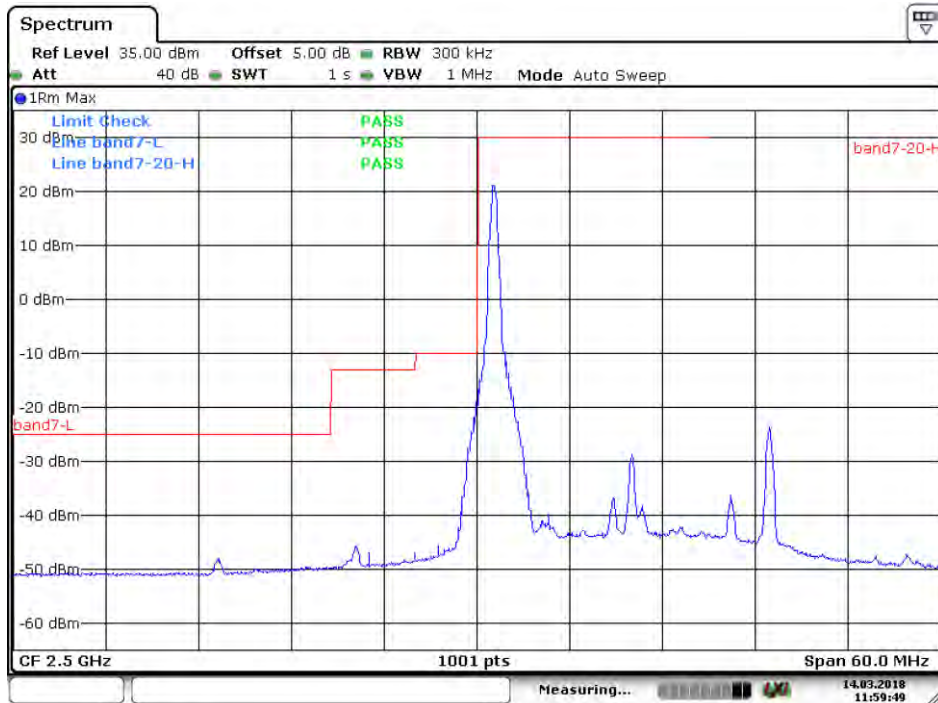




5.1.1.8 Test Mode = LTE/TM2 20MHz

5.1.1.8.1 Test Channel = LCH

5.1.1.8.1.1 Test RB=1RB



Date: 14.MAR.2018 11:59:49

5.1.1.8.1.2 Test RB=100RB



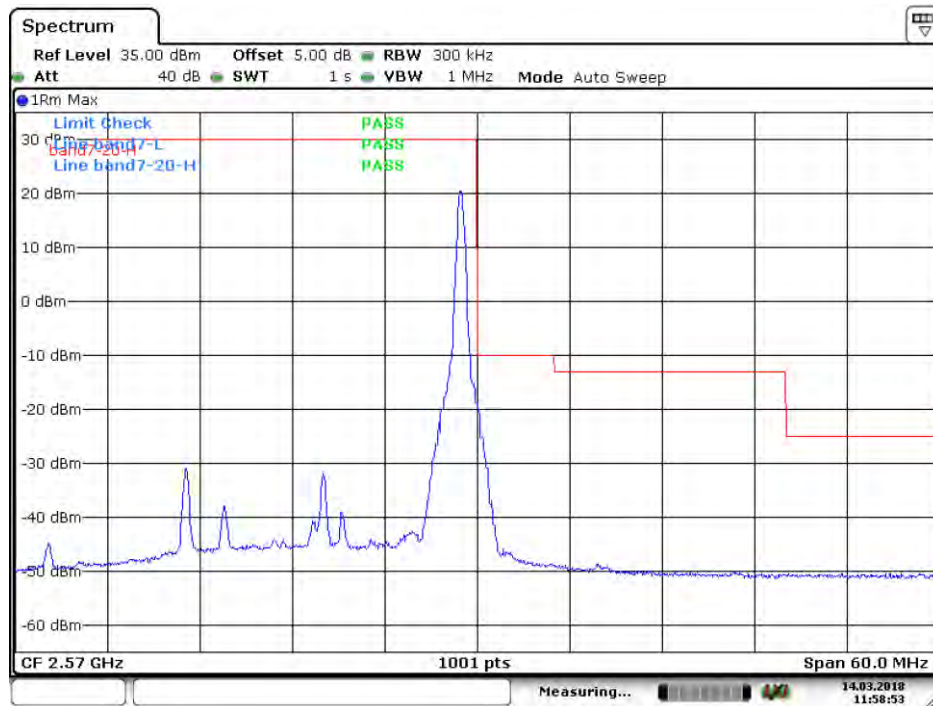
Date: 14.MAR.2018 11:59:28

\*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 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.



5.1.1.8.2 Test Channel = HCH

5.1.1.8.2.1 Test RB=1RB



Date: 14.MAR.2018 11:58:54

5.1.1.8.2.2 Test RB=100RB



Date: 14.MAR.2018 11:59:07

\*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 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.

## 6 Spurious Emission at Antenna Terminal

NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep are 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.

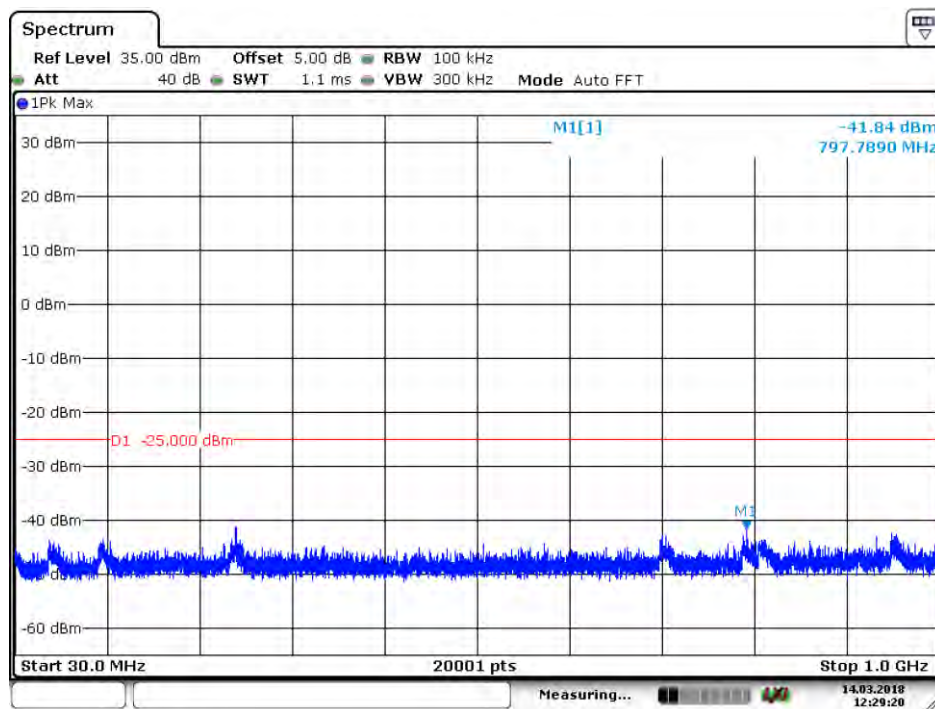
### Part I - Test Plots

#### 6.1 For LTE

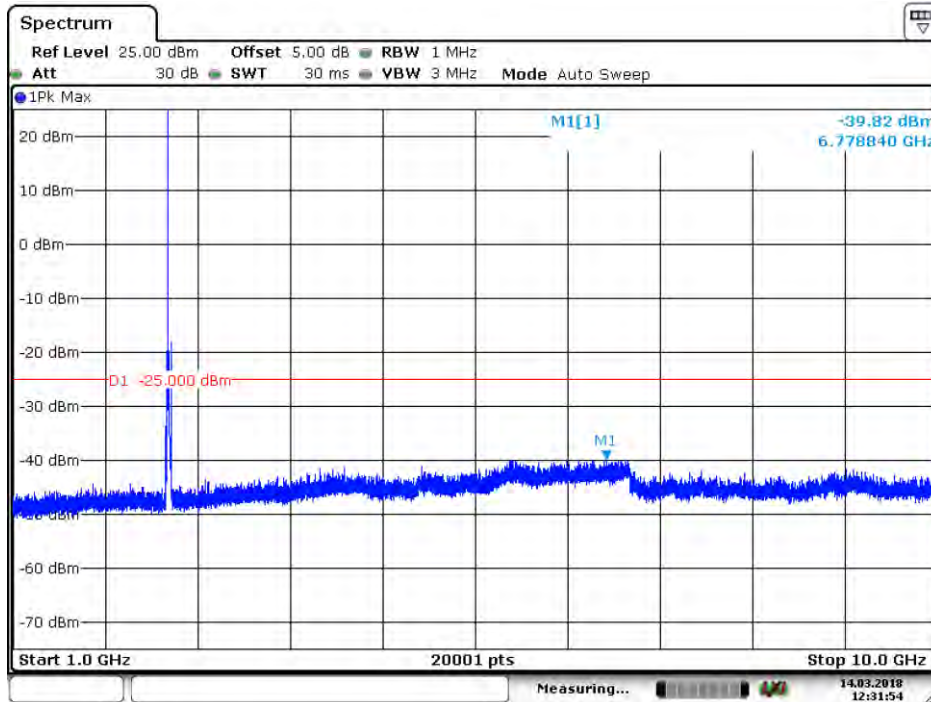
##### 6.1.1 Test Band = LTE band7

##### 6.1.1.1 Test Mode = LTE / TM1 20MHz RB1#0

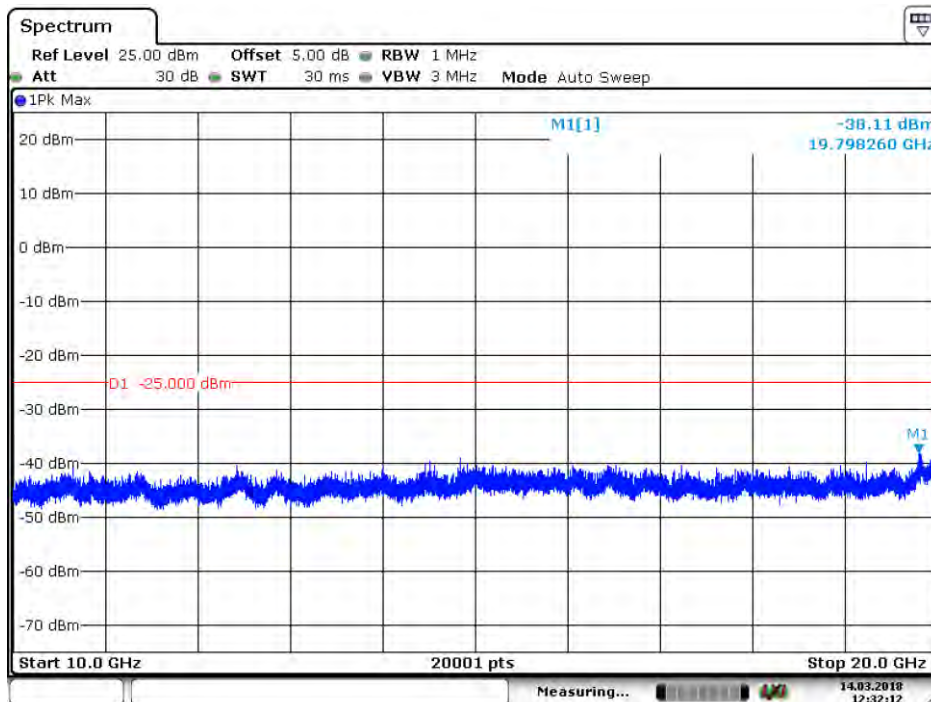
##### 6.1.1.1.1 Test Channel = LCH



Date: 14.MAR.2018 12:29:21

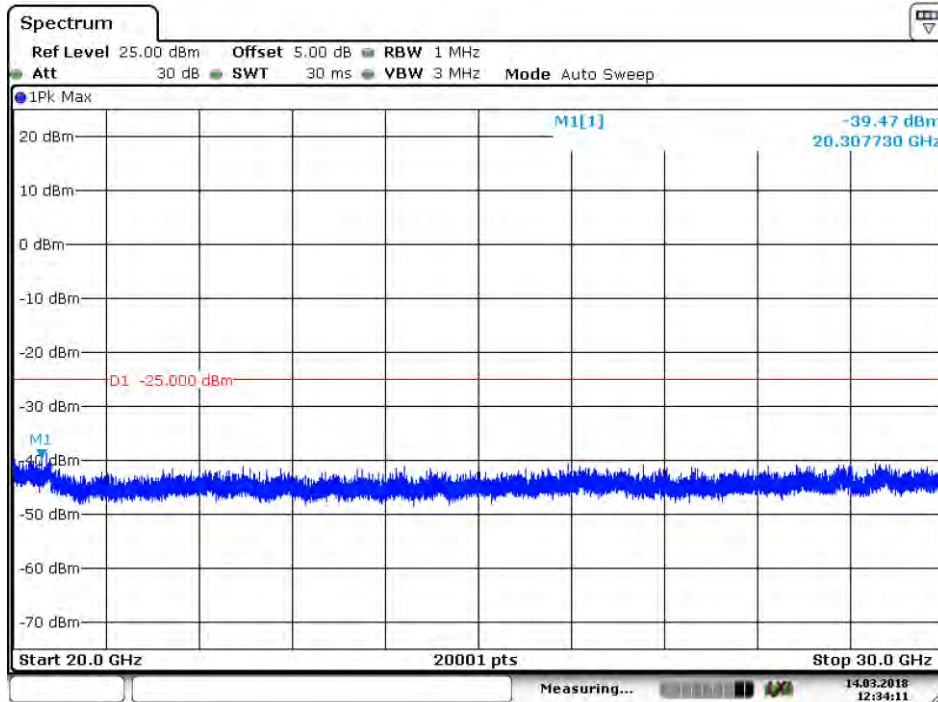


Date: 14.MAR.2018 12:31:54



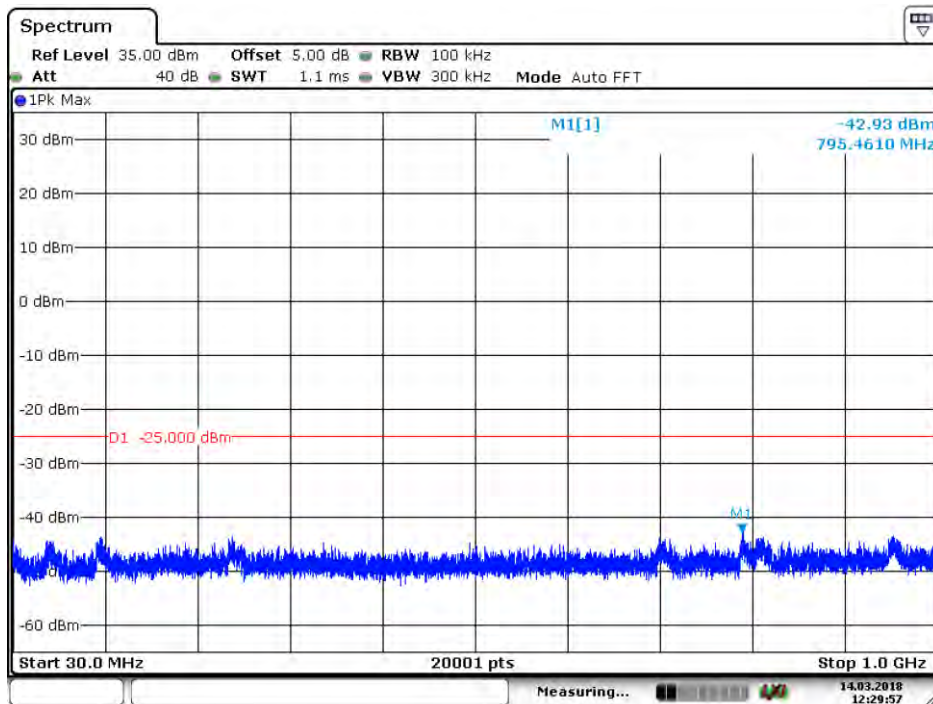
Date: 14.MAR.2018 12:32:12





Date: 14.MAR.2018 12:34:12

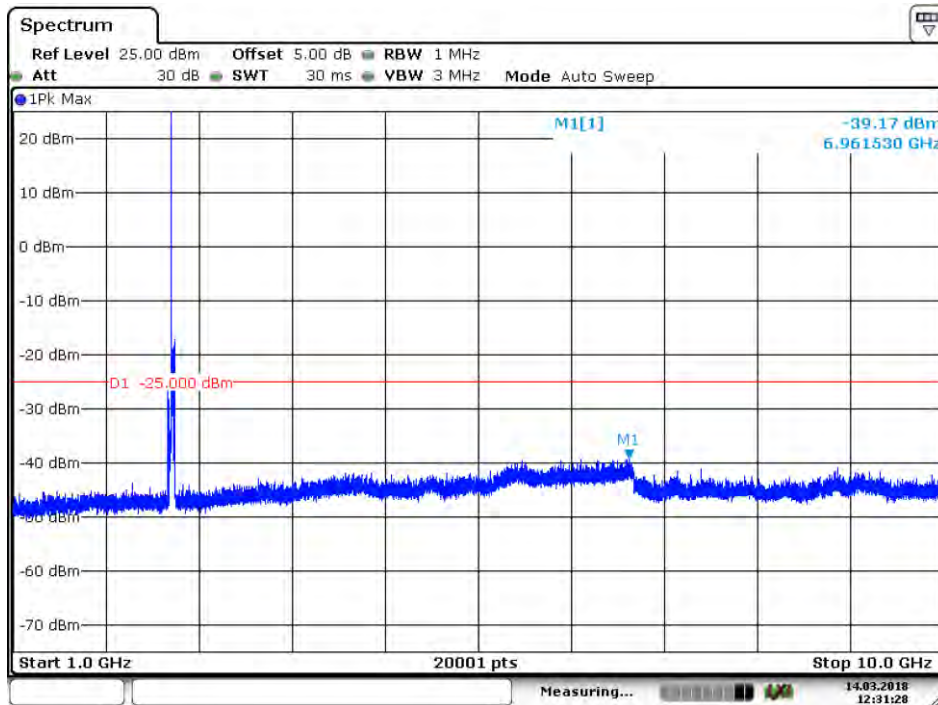
### 6.1.1.1.2 Test Channel = MCH



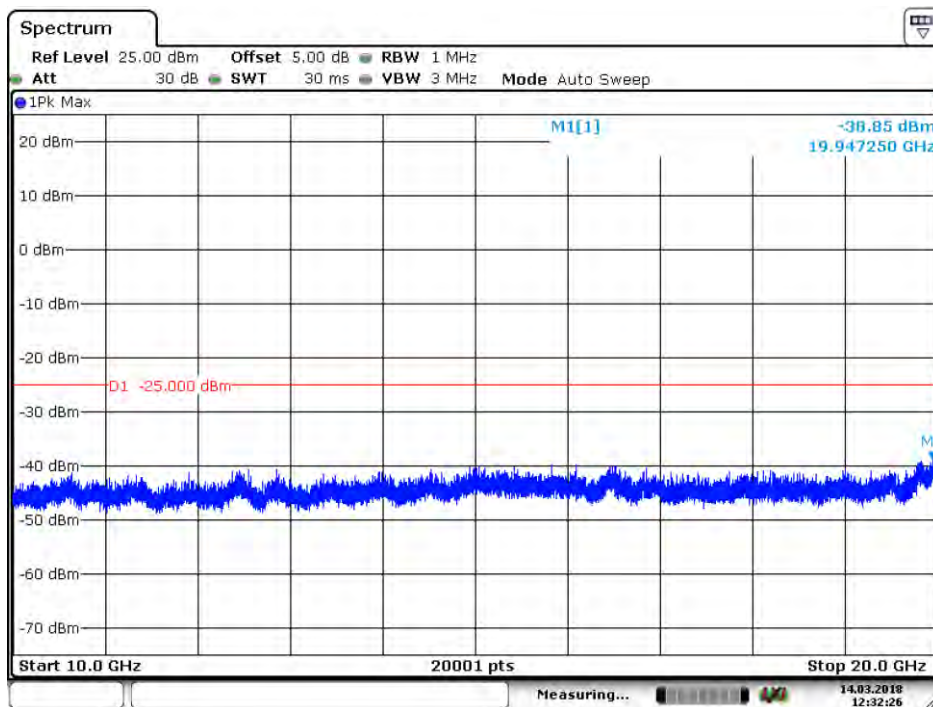
Date: 14.MAR.2018 12:29:57

\*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-Documents.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 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.

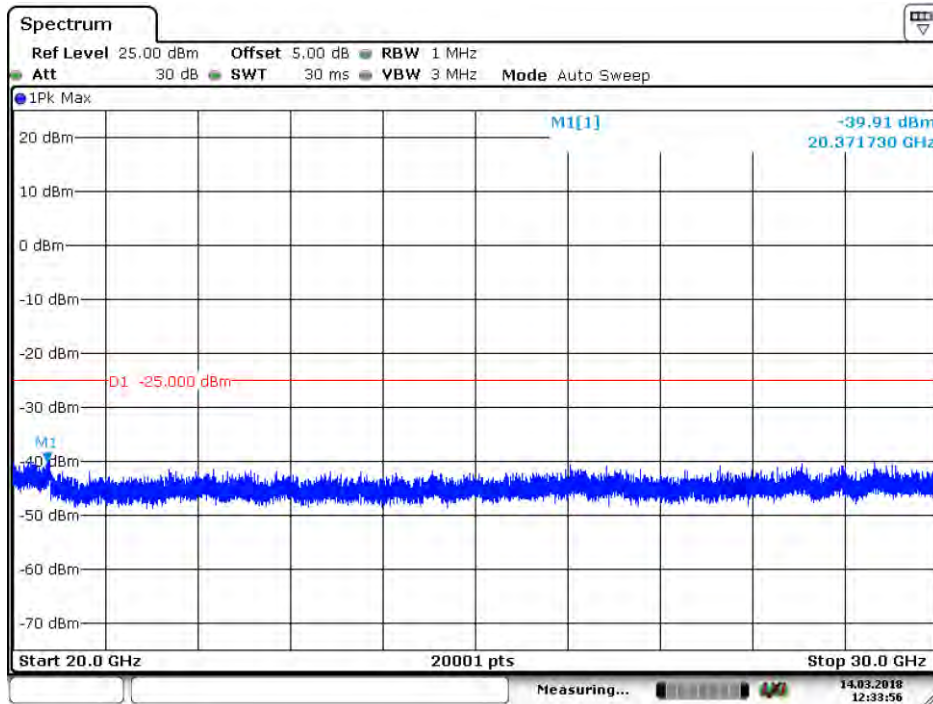




Date: 14.MAR.2018 12:31:29

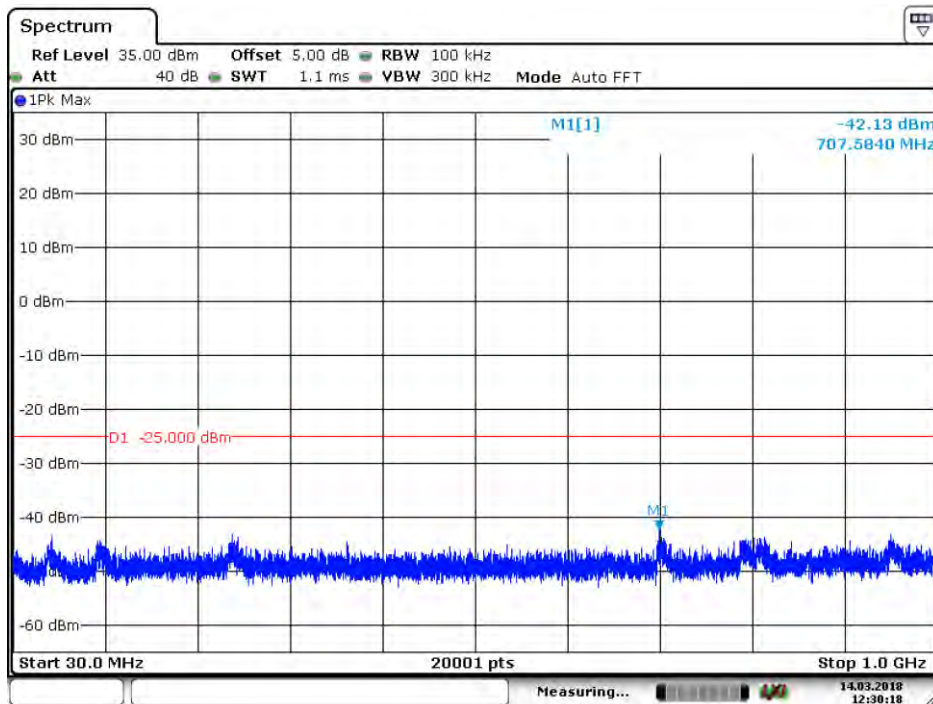


Date: 14.MAR.2018 12:32:27



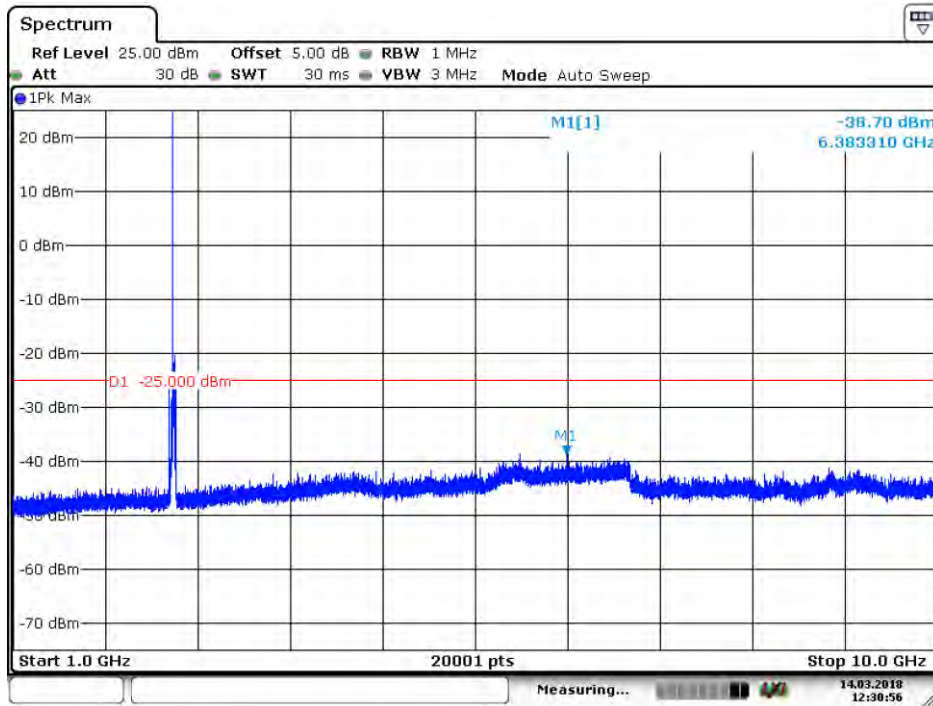
Date: 14.MAR.2018 12:33:57

### 6.1.1.1.3 Test Channel = HCH

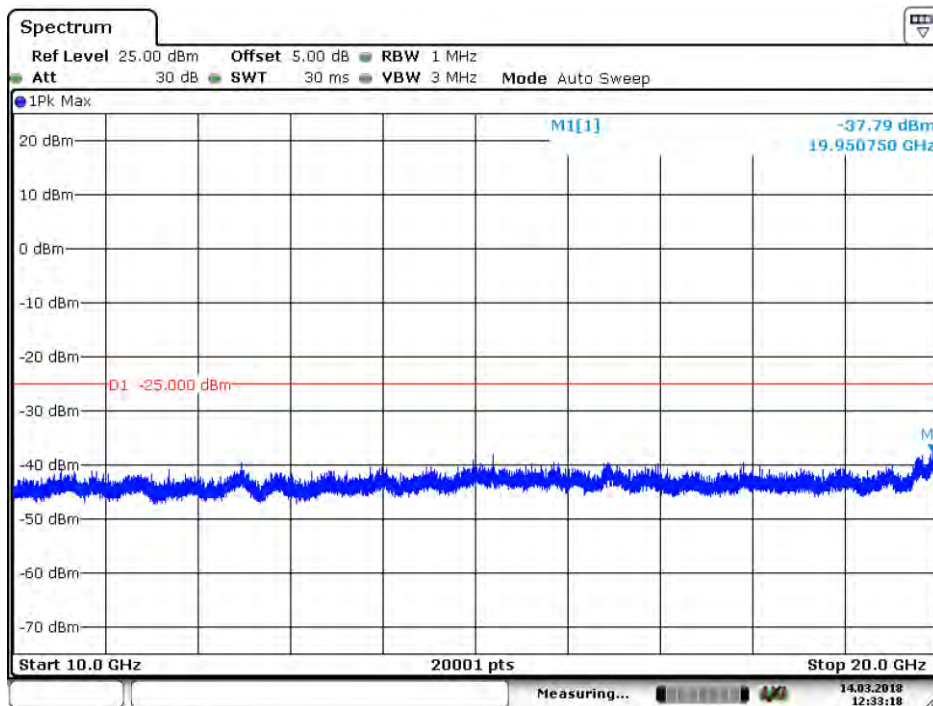


Date: 14.MAR.2018 12:30:18

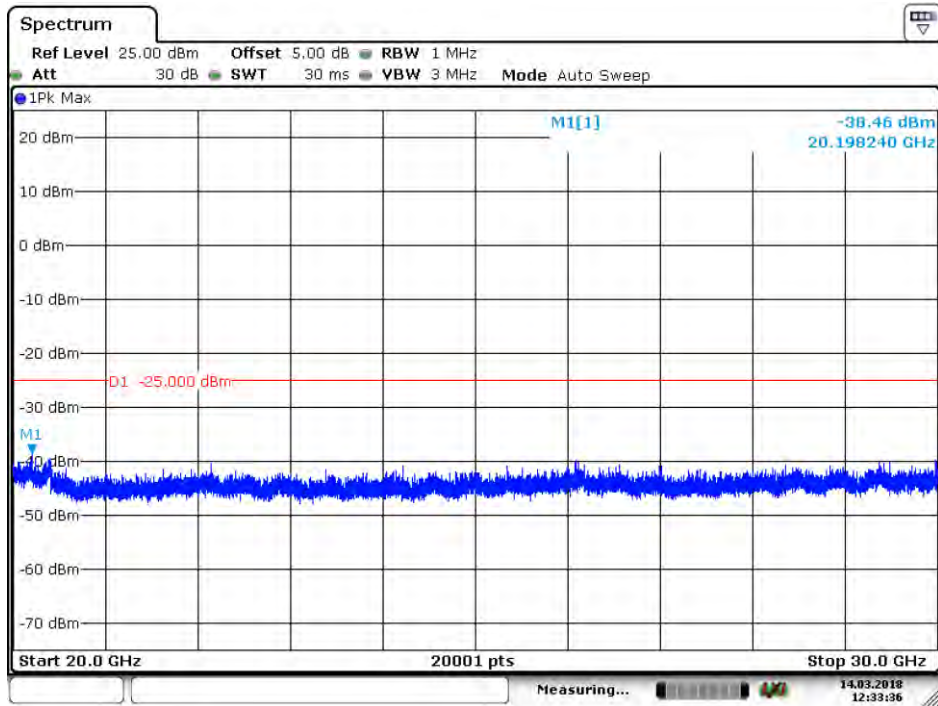
\*This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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



Date: 14.MAR.2018 12:30:56



Date: 14.MAR.2018 12:33:18



Date: 14.MAR.2018 12:33:37





## 7 Field Strength of Spurious Radiation

### Part I - Test Results

#### 7.1 For LTE

##### 7.1.1 Test Band = LTE band7

##### 7.1.1.1 Test Mode =LTE/TM1 20MHz RB1#0

##### 7.1.1.1.1 Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
62.600000	-83.18	-25.00	58.18	Vertical
104.300000	-74.23	-25.00	49.23	Vertical
942.066667	-78.17	-25.00	53.17	Vertical
5002.000000	-66.15	-25.00	41.15	Vertical
7503.200000	-63.83	-25.00	38.83	Vertical
10004.400000	-60.63	-25.00	35.63	Vertical
63.700000	-78.31	-25.00	53.31	Horizontal
104.300000	-80.90	-25.00	55.90	Horizontal
1147.000000	-67.70	-25.00	42.70	Horizontal
5002.000000	-65.59	-25.00	40.59	Horizontal
7503.200000	-57.41	-25.00	32.41	Horizontal
10004.400000	-56.77	-25.00	31.77	Horizontal

##### 7.1.1.1.2 Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
72.050000	-81.65	-25.00	56.65	Vertical
104.300000	-74.69	-25.00	49.69	Vertical
1272.000000	-66.34	-25.00	41.34	Vertical
5051.725000	-66.14	-25.00	41.14	Vertical
7577.950000	-61.77	-25.00	36.77	Vertical
10104.500000	-58.57	-25.00	33.57	Vertical
62.250000	-78.28	-25.00	53.28	Horizontal
104.300000	-81.46	-25.00	56.46	Horizontal
173.950000	-86.14	-25.00	61.14	Horizontal
5052.050000	-65.59	-25.00	40.59	Horizontal
7578.600000	-60.02	-25.00	35.02	Horizontal
10104.500000	-58.14	-25.00	33.14	Horizontal

<sup>4</sup>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 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.





**7.1.1.1.3 Test Channel = HCH**

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
64.150000	-81.56	-25.00	56.56	Vertical
104.250000	-75.02	-25.00	50.02	Vertical
1258.000000	-66.31	-25.00	41.31	Vertical
5102.100000	-66.05	-25.00	41.05	Vertical
7653.025000	-62.91	-25.00	37.91	Vertical
10204.275000	-59.49	-25.00	34.49	Vertical
63.150000	-77.52	-25.00	52.52	Horizontal
104.300000	-80.80	-25.00	55.80	Horizontal
1238.500000	-67.49	-25.00	42.49	Horizontal
5359.825000	-66.60	-25.00	41.60	Horizontal
7653.350000	-58.45	-25.00	33.45	Horizontal
10204.275000	-57.89	-25.00	32.89	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.



## 8 Frequency Stability

### 8.1 Frequency Error VS. Voltage

#### Part I - Test Results

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	LTE/TM1 20MHz	LCH	TN	VL	-4.03	-0.00217	PASS
				VN	0.46	0.00025	PASS
				VH	-7.73	-0.00416	PASS
		MCH	TN	VL	1.49	0.00079	PASS
				VN	-2.84	-0.00151	PASS
				VH	2.63	0.00140	PASS
		HCH	TN	VL	-6.56	-0.00345	PASS
				VN	-5.17	-0.00272	PASS
				VH	-0.79	-0.00042	PASS
	LTE/TM2 20MHz	LCH	TN	VL	-4.28	-0.00230	PASS
				VN	-2.95	-0.00159	PASS
				VH	-5.16	-0.00277	PASS
		MCH	TN	VL	1.56	0.00083	PASS
				VN	-2.80	-0.00149	PASS
				VH	2.59	0.00138	PASS
		HCH	TN	VL	-3.08	-0.00162	PASS
				VN	-8.00	-0.00421	PASS
				VH	0.44	0.00023	PASS
	LTE/TM3 20MHz	LCH	TN	VL	2.09	0.00112	PASS
				VN	-0.32	-0.00017	PASS
				VH	4.38	0.00235	PASS
		MCH	TN	VL	-2.83	-0.00151	PASS
				VN	0.43	0.00023	PASS
				VH	-3.54	-0.00188	PASS
		HCH	TN	VL	3.23	0.00170	PASS
				VN	1.45	0.00076	PASS
				VH	-2.05	-0.00108	PASS

<sup>4</sup>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-Documents.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 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.



## 8.2 Frequency Error VS. Temperature

### Part I - Test Results

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	LTE/TM1 20MHz	LCH	VN	-30	-0.40	-0.00022	PASS
				-20	-1.34	-0.00072	PASS
				-10	2.38	0.00128	PASS
				0	1.75	0.00094	PASS
				10	1.65	0.00089	PASS
				20	0.11	0.00006	PASS
				30	-0.31	-0.00017	PASS
				40	-0.14	-0.00008	PASS
				50	0.59	0.00032	PASS
		MCH	VN	-30	-7.80	-0.00415	PASS
				-20	-5.95	-0.00316	PASS
				-10	-7.49	-0.00398	PASS
				0	-5.62	-0.00299	PASS
				10	-4.04	-0.00215	PASS
				20	-9.94	-0.00529	PASS
				30	-5.66	-0.00301	PASS
				40	-4.62	-0.00246	PASS
				50	-6.92	-0.00368	PASS
		HCH	VN	-30	0.54	0.00028	PASS
				-20	-1.49	-0.00078	PASS
				-10	1.53	0.00081	PASS
				0	-2.83	-0.00149	PASS
				10	2.60	0.00137	PASS
				20	-0.57	-0.00030	PASS
				30	-2.66	-0.00140	PASS
				40	-5.43	-0.00286	PASS
				50	-8.90	-0.00468	PASS

<sup>4</sup>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-Documents.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 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.



**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802

Page: 59 of 60

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	LTE/TM2 20MHz	LCH	VN	-30	-0.50	-0.00027	PASS
				-20	-2.45	-0.00132	PASS
				-10	3.38	0.00182	PASS
				0	2.64	0.00142	PASS
				10	1.60	0.00086	PASS
				20	-0.23	-0.00012	PASS
				30	-0.44	-0.00024	PASS
				40	5.34	0.00287	PASS
		MCH	VN	-30	-3.80	-0.00202	PASS
				-20	-5.38	-0.00286	PASS
				-10	-7.29	-0.00388	PASS
				0	-4.32	-0.00230	PASS
				10	-0.34	-0.00018	PASS
				20	1.74	0.00093	PASS
				30	-3.64	-0.00194	PASS
				40	-2.62	-0.00139	PASS
		HCH	VN	-30	1.34	0.00071	PASS
				-20	-2.55	-0.00134	PASS
				-10	1.59	0.00084	PASS
				0	-3.73	-0.00196	PASS
				10	2.88	0.00152	PASS
				20	-1.47	-0.00077	PASS
				30	-2.59	-0.00136	PASS
				40	-4.33	-0.00228	PASS
				50	-7.60	-0.00400	PASS

<sup>4</sup>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-Documents.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 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.





**SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch**

Report No.: SZEM180200119802

Page: 60 of 60

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Verdict
LTEband7	LTE/TM3 20MHz	LCH	VN	-30	1.50	0.00081	PASS
				-20	-1.60	-0.00086	PASS
				-10	4.38	0.00235	PASS
				0	1.69	0.00091	PASS
				10	1.43	0.00077	PASS
				20	0.54	0.00029	PASS
				30	-2.61	-0.00140	PASS
				40	-0.69	-0.00037	PASS
		MCH	VN	-30	-7.34	-0.00390	PASS
				-20	-5.33	-0.00284	PASS
				-10	-7.23	-0.00385	PASS
				0	-5.34	-0.00284	PASS
				10	-4.04	-0.00215	PASS
				20	-6.34	-0.00337	PASS
				30	-5.26	-0.00280	PASS
				40	-4.13	-0.00220	PASS
		HCH	VN	-30	2.34	0.00123	PASS
				-20	-1.83	-0.00096	PASS
				-10	1.57	0.00083	PASS
				0	-2.43	-0.00128	PASS
				10	1.60	0.00084	PASS
				20	-0.57	-0.00030	PASS
				30	0.66	0.00035	PASS
				40	-5.43	-0.00286	PASS
			50	-5.90	-0.00311	PASS	

The End

<sup>4</sup>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-Documents.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 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.