



# Appendix B

## Test Data for SZEM161201085001RG

## **CONTENT**

	Page
<b>1 EFFECTIVE (ISOTROPIC) RADIATED POWER OUTPUT DATA.....</b>	<b>3</b>
<b>2 PEAK-TO-AVERAGE RATIO .....</b>	<b>15</b>
2.1 FOR LTE .....	16
2.1.1 <i>Test Band = LTE band4</i> .....	16
<b>3 MODULATION CHARACTERISTICS .....</b>	<b>22</b>
3.1 FOR LTE .....	22
3.1.1 <i>Test Band = LTE band4</i> .....	22
<b>4 BANDWIDTH .....</b>	<b>34</b>
4.1 FOR LTE .....	36
4.1.1 <i>Test Band = LTE band4</i> .....	36
<b>5 BAND EDGES COMPLIANCE .....</b>	<b>72</b>
5.1 FOR LTE .....	72
5.1.1 <i>Test Band = LTE band4</i> .....	72
<b>6 SPURIOUS EMISSION AT ANTENNA TERMINAL.....</b>	<b>121</b>
6.1 FOR LTE .....	121
6.1.1 <i>Test Band = LTE band4</i> .....	121
<b>7 FIELD STRENGTH OF SPURIOUS RADIATION .....</b>	<b>175</b>
7.1 FOR LTE .....	175
7.1.1 <i>Test Band = LTE band4</i> .....	175
<b>8 FREQUENCY STABILITY .....</b>	<b>176</b>
8.1 FREQUENCY ERROR VS. VOLTAGE .....	176
8.2 FREQUENCY ERROR VS. TEMPERATURE .....	177

## 1 Effective (Isotropic) Radiated Power Output Data

**Effective Isotropic Radiated Power of Transmitter (EIRP) for LTE BAND 4**

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	1.4M	LCH	RB1#0	22.39	22.39	30.00	PASS
				RB1#2	22.48	22.48	30.00	PASS
				RB1#5	22.37	22.37	30.00	PASS
				RB3#0	21.41	21.41	30.00	PASS
				RB3#2	21.45	21.45	30.00	PASS
				RB3#3	21.48	21.48	30.00	PASS
				RB6#0	21.47	21.47	30.00	PASS
			MCH	RB1#0	22.44	22.44	30.00	PASS
				RB1#2	22.53	22.53	30.00	PASS
				RB1#5	22.45	22.45	30.00	PASS
				RB3#0	21.46	21.46	30.00	PASS
				RB3#2	21.44	21.44	30.00	PASS
				RB3#3	21.46	21.46	30.00	PASS
				RB6#0	21.44	21.44	30.00	PASS
			HCH	RB1#0	22.49	22.49	30.00	PASS
				RB1#2	22.57	22.57	30.00	PASS
				RB1#5	22.51	22.51	30.00	PASS
				RB3#0	21.43	21.43	30.00	PASS
				RB3#2	21.47	21.47	30.00	PASS
				RB3#3	21.41	21.41	30.00	PASS
				RB6#0	21.46	21.46	30.00	PASS



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

Report No.: SZEM161201085001

Page: 4 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	1.4M	LCH	RB1#0	21.47	21.47	30.00	PASS
				RB1#2	21.47	21.47	30.00	PASS
				RB1#5	21.45	21.45	30.00	PASS
				RB3#0	21.45	21.45	30.00	PASS
				RB3#2	21.40	21.40	30.00	PASS
				RB3#3	21.41	21.41	30.00	PASS
				RB6#0	20.51	20.51	30.00	PASS
			MCH	RB1#0	21.45	21.45	30.00	PASS
				RB1#2	21.45	21.45	30.00	PASS
				RB1#5	21.45	21.45	30.00	PASS
				RB3#0	21.48	21.48	30.00	PASS
				RB3#2	21.48	21.48	30.00	PASS
				RB3#3	21.49	21.49	30.00	PASS
				RB6#0	20.57	20.57	30.00	PASS
			HCH	RB1#0	21.40	21.40	30.00	PASS
				RB1#2	21.41	21.41	30.00	PASS
				RB1#5	21.42	21.42	30.00	PASS
				RB3#0	21.46	21.46	30.00	PASS
				RB3#2	21.44	21.44	30.00	PASS
				RB3#3	21.46	21.46	30.00	PASS
				RB6#0	20.56	20.56	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 5 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	3M	LCH	RB1#0	22.49	22.49	30.00	PASS
				RB1#7	22.48	22.48	30.00	PASS
				RB1#14	22.45	22.45	30.00	PASS
				RB8#0	21.41	21.41	30.00	PASS
				RB8#4	21.49	21.49	30.00	PASS
				RB8#7	21.47	21.47	30.00	PASS
				RB15#0	21.49	21.49	30.00	PASS
			MCH	RB1#0	22.48	22.48	30.00	PASS
				RB1#7	22.43	22.43	30.00	PASS
				RB1#14	22.44	22.44	30.00	PASS
				RB8#0	21.41	21.41	30.00	PASS
				RB8#4	21.41	21.41	30.00	PASS
				RB8#7	21.48	21.48	30.00	PASS
				RB15#0	21.40	21.40	30.00	PASS
			HCH	RB1#0	22.41	22.41	30.00	PASS
				RB1#7	22.44	22.44	30.00	PASS
				RB1#14	22.49	22.49	30.00	PASS
				RB8#0	21.48	21.48	30.00	PASS
				RB8#4	21.43	21.43	30.00	PASS
				RB8#7	21.43	21.43	30.00	PASS
				RB15#0	21.44	21.44	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 6 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	3M	LCH	RB1#0	21.48	21.48	30.00	PASS
				RB1#7	21.45	21.45	30.00	PASS
				RB1#14	21.41	21.41	30.00	PASS
				RB8#0	20.62	20.62	30.00	PASS
				RB8#4	20.59	20.59	30.00	PASS
				RB8#7	20.58	20.58	30.00	PASS
				RB15#0	20.56	20.56	30.00	PASS
			MCH	RB1#0	21.46	21.46	30.00	PASS
				RB1#7	21.44	21.44	30.00	PASS
				RB1#14	21.45	21.45	30.00	PASS
				RB8#0	20.73	20.73	30.00	PASS
				RB8#4	20.71	20.71	30.00	PASS
				RB8#7	20.70	20.70	30.00	PASS
				RB15#0	20.67	20.67	30.00	PASS
			HCH	RB1#0	21.41	21.41	30.00	PASS
				RB1#7	21.43	21.43	30.00	PASS
				RB1#14	21.49	21.49	30.00	PASS
				RB8#0	20.66	20.66	30.00	PASS
				RB8#4	20.66	20.66	30.00	PASS
				RB8#7	20.69	20.69	30.00	PASS
				RB15#0	20.65	20.65	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 7 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	5M	LCH	RB1#0	22.48	22.48	30.00	PASS
				RB1#13	22.48	22.48	30.00	PASS
				RB1#24	22.41	22.41	30.00	PASS
				RB12#0	21.46	21.46	30.00	PASS
				RB12#6	21.44	21.44	30.00	PASS
				RB12#13	21.42	21.42	30.00	PASS
				RB25#0	21.49	21.49	30.00	PASS
			MCH	RB1#0	22.46	22.46	30.00	PASS
				RB1#13	22.49	22.49	30.00	PASS
				RB1#24	22.40	22.40	30.00	PASS
				RB12#0	21.43	21.43	30.00	PASS
				RB12#6	21.44	21.44	30.00	PASS
				RB12#13	21.43	21.43	30.00	PASS
				RB25#0	21.49	21.49	30.00	PASS
			HCH	RB1#0	22.44	22.44	30.00	PASS
				RB1#13	22.45	22.45	30.00	PASS
				RB1#24	22.42	22.42	30.00	PASS
				RB12#0	21.41	21.41	30.00	PASS
				RB12#6	21.40	21.40	30.00	PASS
				RB12#13	21.42	21.42	30.00	PASS
				RB25#0	21.49	21.49	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 8 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	5M	LCH	RB1#0	21.49	21.49	30.00	PASS
				RB1#13	21.44	21.44	30.00	PASS
				RB1#24	21.46	21.46	30.00	PASS
				RB12#0	20.61	20.61	30.00	PASS
				RB12#6	20.59	20.59	30.00	PASS
				RB12#13	20.58	20.58	30.00	PASS
				RB25#0	20.56	20.56	30.00	PASS
			MCH	RB1#0	21.45	21.45	30.00	PASS
				RB1#13	21.49	21.49	30.00	PASS
				RB1#24	21.40	21.40	30.00	PASS
				RB12#0	20.68	20.68	30.00	PASS
				RB12#6	20.70	20.70	30.00	PASS
				RB12#13	20.67	20.67	30.00	PASS
				RB25#0	20.65	20.65	30.00	PASS
			HCH	RB1#0	21.46	21.46	30.00	PASS
				RB1#13	21.49	21.49	30.00	PASS
				RB1#24	21.48	21.48	30.00	PASS
				RB12#0	20.65	20.65	30.00	PASS
				RB12#6	20.65	20.65	30.00	PASS
				RB12#13	20.66	20.66	30.00	PASS
				RB25#0	20.62	20.62	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 9 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	10M	LCH	RB1#0	22.47	22.47	30.00	PASS
				RB1#25	22.38	22.38	30.00	PASS
				RB1#49	22.34	22.34	30.00	PASS
				RB25#0	21.46	21.46	30.00	PASS
				RB25#13	21.44	21.44	30.00	PASS
				RB25#25	21.41	21.41	30.00	PASS
				RB50#0	21.48	21.48	30.00	PASS
			MCH	RB1#0	22.48	22.48	30.00	PASS
				RB1#25	22.45	22.45	30.00	PASS
				RB1#49	22.44	22.44	30.00	PASS
				RB25#0	21.49	21.49	30.00	PASS
				RB25#13	21.40	21.40	30.00	PASS
				RB25#25	21.40	21.40	30.00	PASS
				RB50#0	21.42	21.42	30.00	PASS
			HCH	RB1#0	22.41	22.41	30.00	PASS
				RB1#25	22.40	22.40	30.00	PASS
				RB1#49	22.43	22.43	30.00	PASS
				RB25#0	21.45	21.45	30.00	PASS
				RB25#13	21.44	21.44	30.00	PASS
				RB25#25	21.43	21.43	30.00	PASS
				RB50#0	21.40	21.40	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 10 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	10M	LCH	RB1#0	21.46	21.46	30.00	PASS
				RB1#25	21.48	21.48	30.00	PASS
				RB1#49	21.44	21.44	30.00	PASS
				RB25#0	20.48	20.48	30.00	PASS
				RB25#13	20.43	20.43	30.00	PASS
				RB25#25	20.43	20.43	30.00	PASS
				RB50#0	20.48	20.48	30.00	PASS
			MCH	RB1#0	21.48	21.48	30.00	PASS
				RB1#25	21.49	21.49	30.00	PASS
				RB1#49	21.44	21.44	30.00	PASS
				RB25#0	20.52	20.52	30.00	PASS
				RB25#13	20.52	20.52	30.00	PASS
				RB25#25	20.49	20.49	30.00	PASS
				RB50#0	20.54	20.54	30.00	PASS
			HCH	RB1#0	21.48	21.48	30.00	PASS
				RB1#25	21.45	21.45	30.00	PASS
				RB1#49	21.41	21.41	30.00	PASS
				RB25#0	20.46	20.46	30.00	PASS
				RB25#13	20.44	20.44	30.00	PASS
				RB25#25	20.43	20.43	30.00	PASS
				RB50#0	20.50	20.50	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 11 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	15M	LCH	RB1#0	22.44	22.44	30.00	PASS
				RB1#38	22.34	22.34	30.00	PASS
				RB1#74	22.32	22.32	30.00	PASS
				RB36#0	21.46	21.46	30.00	PASS
				RB36#18	21.41	21.41	30.00	PASS
				RB36#39	21.39	21.39	30.00	PASS
				RB75#0	21.43	21.43	30.00	PASS
			MCH	RB1#0	22.43	22.43	30.00	PASS
				RB1#38	22.43	22.43	30.00	PASS
				RB1#74	22.39	22.39	30.00	PASS
				RB36#0	21.49	21.49	30.00	PASS
				RB36#18	21.48	21.48	30.00	PASS
				RB36#39	21.49	21.49	30.00	PASS
				RB75#0	21.46	21.46	30.00	PASS
			HCH	RB1#0	22.42	22.42	30.00	PASS
				RB1#38	22.33	22.33	30.00	PASS
				RB1#74	22.40	22.40	30.00	PASS
				RB36#0	21.45	21.45	30.00	PASS
				RB36#18	21.44	21.44	30.00	PASS
				RB36#39	21.40	21.40	30.00	PASS
				RB75#0	21.44	21.44	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 12 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	15M	LCH	RB1#0	21.47	21.47	30.00	PASS
				RB1#38	21.46	21.46	30.00	PASS
				RB1#74	21.45	21.45	30.00	PASS
				RB36#0	20.48	20.48	30.00	PASS
				RB36#18	20.44	20.44	30.00	PASS
				RB36#39	20.42	20.42	30.00	PASS
				RB75#0	20.45	20.45	30.00	PASS
			MCH	RB1#0	21.44	21.44	30.00	PASS
				RB1#38	21.48	21.48	30.00	PASS
				RB1#74	21.42	21.42	30.00	PASS
				RB36#0	20.51	20.51	30.00	PASS
				RB36#18	20.52	20.52	30.00	PASS
				RB36#39	20.52	20.52	30.00	PASS
				RB75#0	20.50	20.50	30.00	PASS
			HCH	RB1#0	21.45	21.45	30.00	PASS
				RB1#38	21.43	21.43	30.00	PASS
				RB1#74	21.41	21.41	30.00	PASS
				RB36#0	20.49	20.49	30.00	PASS
				RB36#18	20.45	20.45	30.00	PASS
				RB36#39	20.44	20.44	30.00	PASS
				RB75#0	20.44	20.44	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 13 of 178

Test Band(LTE)	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM1	20M	LCH	RB1#0	22.61	22.61	30.00	PASS
				RB1#50	22.41	22.41	30.00	PASS
				RB1#99	22.45	22.45	30.00	PASS
				RB50#0	21.41	21.41	30.00	PASS
				RB50#25	21.38	21.38	30.00	PASS
				RB50#50	21.43	21.43	30.00	PASS
				RB100#0	21.42	21.42	30.00	PASS
			MCH	RB1#0	22.59	22.59	30.00	PASS
				RB1#50	22.54	22.54	30.00	PASS
				RB1#99	22.55	22.55	30.00	PASS
				RB50#0	21.45	21.45	30.00	PASS
				RB50#25	21.44	21.44	30.00	PASS
				RB50#50	21.47	21.47	30.00	PASS
				RB100#0	21.47	21.47	30.00	PASS
			HCH	RB1#0	22.65	22.65	30.00	PASS
				RB1#50	22.51	22.51	30.00	PASS
				RB1#99	22.56	22.56	30.00	PASS
				RB50#0	21.54	21.54	30.00	PASS
				RB50#25	21.45	21.45	30.00	PASS
				RB50#50	21.49	21.49	30.00	PASS
				RB100#0	21.46	21.46	30.00	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001  
Page: 14 of 178

Test Band(LTE )	Test Mode	Test Bandwidth	Test channel	Test RB	Measured (dBm)	EIRP (dBm)	limit (dBm)	Verdict
BAND4	LTE/TM2	20M	LCH	RB1#0	22.04	22.04	30.00	PASS
				RB1#50	21.87	21.87	30.00	PASS
				RB1#99	21.74	21.74	30.00	PASS
				RB50#0	20.43	20.43	30.00	PASS
				RB50#25	20.36	20.36	30.00	PASS
				RB50#50	20.40	20.40	30.00	PASS
				RB100#0	20.38	20.38	30.00	PASS
			MCH	RB1#0	21.65	21.65	30.00	PASS
				RB1#50	21.75	21.75	30.00	PASS
				RB1#99	22.01	22.01	30.00	PASS
				RB50#0	20.48	20.48	30.00	PASS
				RB50#25	20.46	20.46	30.00	PASS
				RB50#50	20.43	20.43	30.00	PASS
				RB100#0	20.43	20.43	30.00	PASS
			HCH	RB1#0	21.80	21.80	30.00	PASS
				RB1#50	21.63	21.63	30.00	PASS
				RB1#99	21.69	21.69	30.00	PASS
				RB50#0	20.45	20.45	30.00	PASS
				RB50#25	20.39	20.39	30.00	PASS
				RB50#50	20.45	20.45	30.00	PASS
				RB100#0	20.47	20.47	30.00	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

c: RBW > emission bandwidth, VBW > 3 x RBW.

Detector: RMS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



## **2 Peak-to-Average Ratio**

### **Part I - Test Results**

<b>Test Band</b>	<b>Test Mode</b>	<b>Test Channel</b>	<b>Measured[dB]</b>	<b>Limit [dB]</b>	<b>Verdict</b>
Band 4	TM1/20M	LCH	4.96	13	PASS
		MCH	4.99	13	PASS
		HCH	5.04	13	PASS
	TM2/20M	LCH	5.86	13	PASS
		MCH	5.83	13	PASS
		HCH	5.86	13	PASS

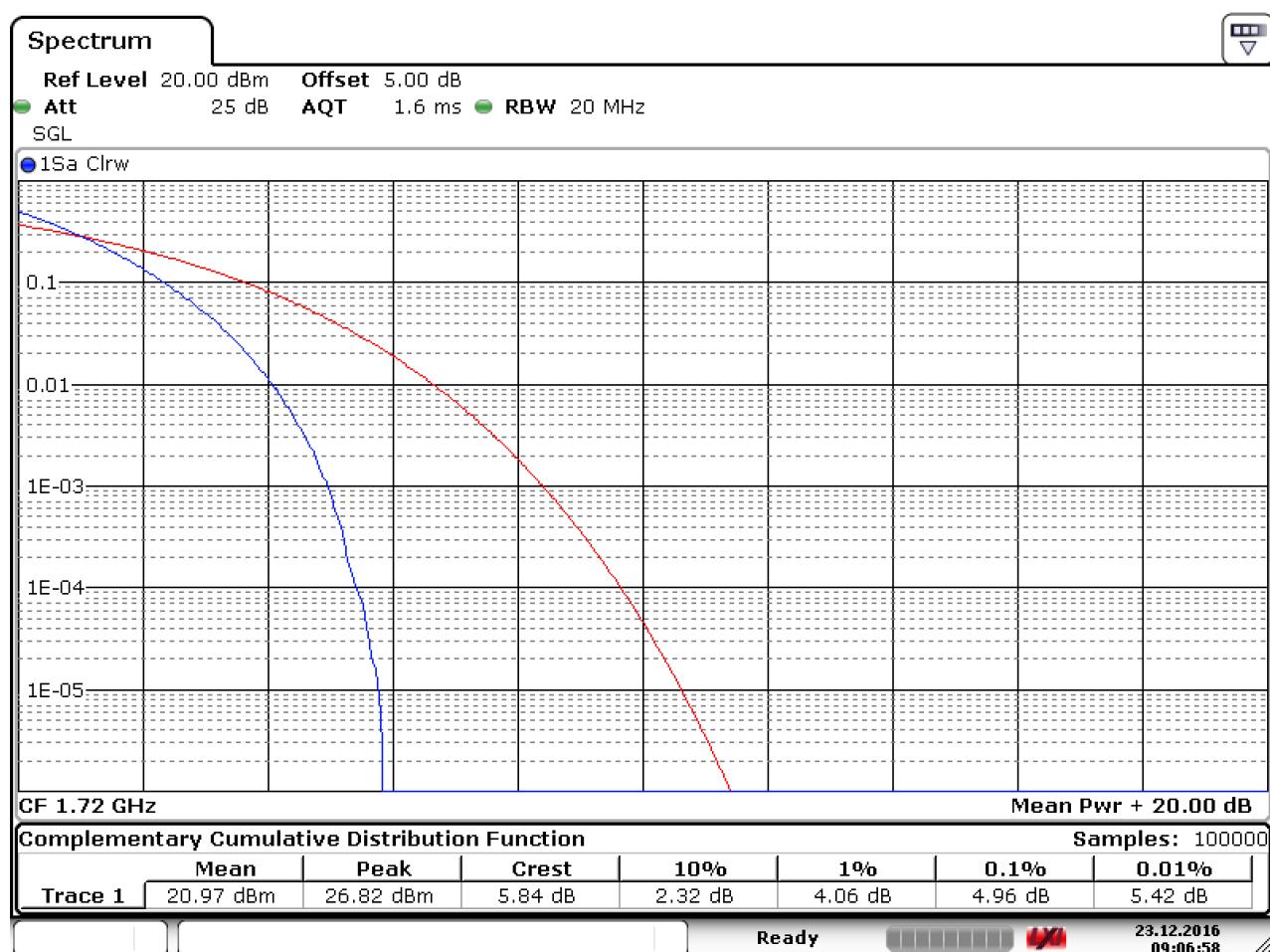
Part II - Test Plots

## 2.1 For LTE

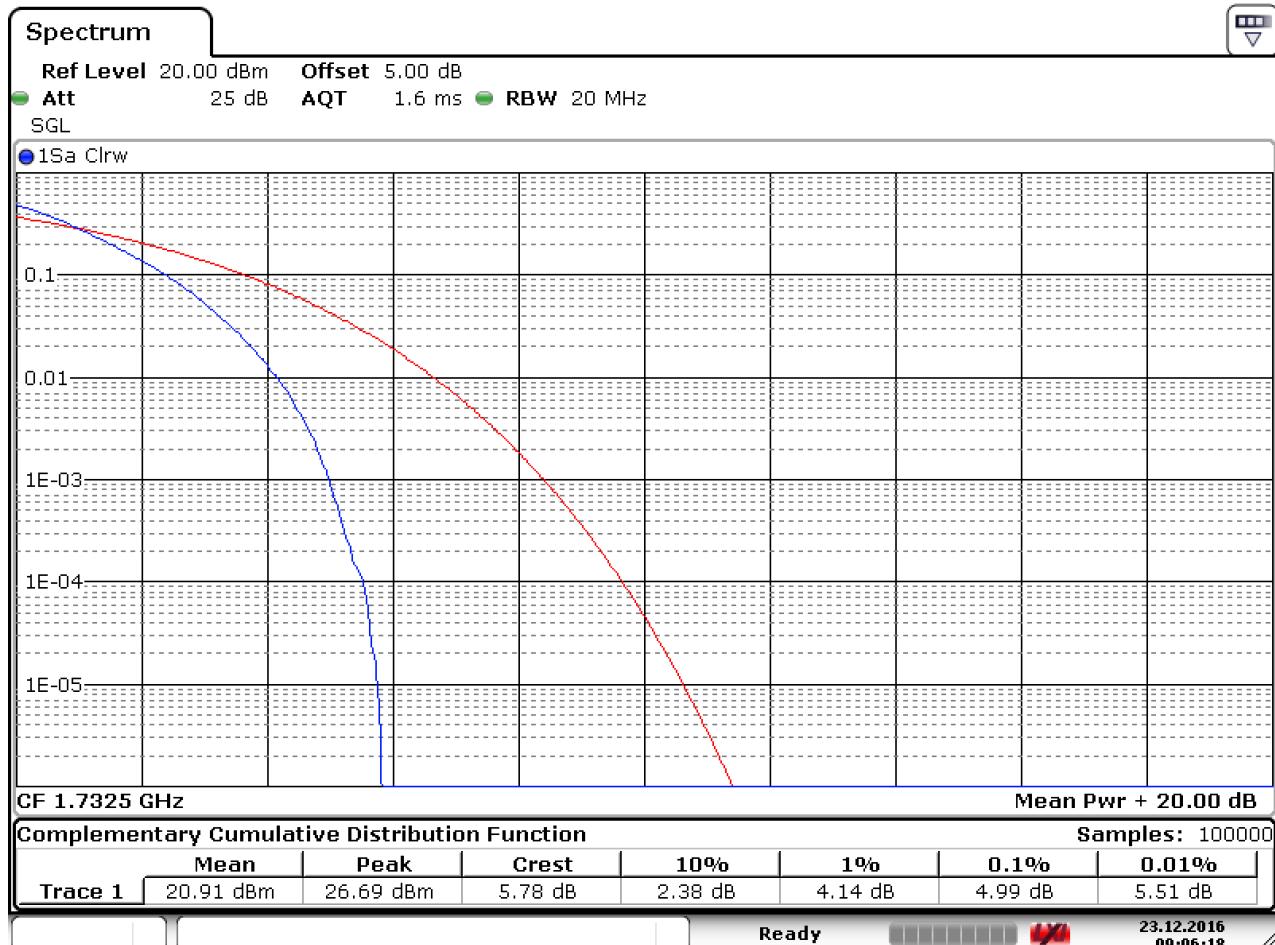
### 2.1.1 Test Band = LTE band4

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

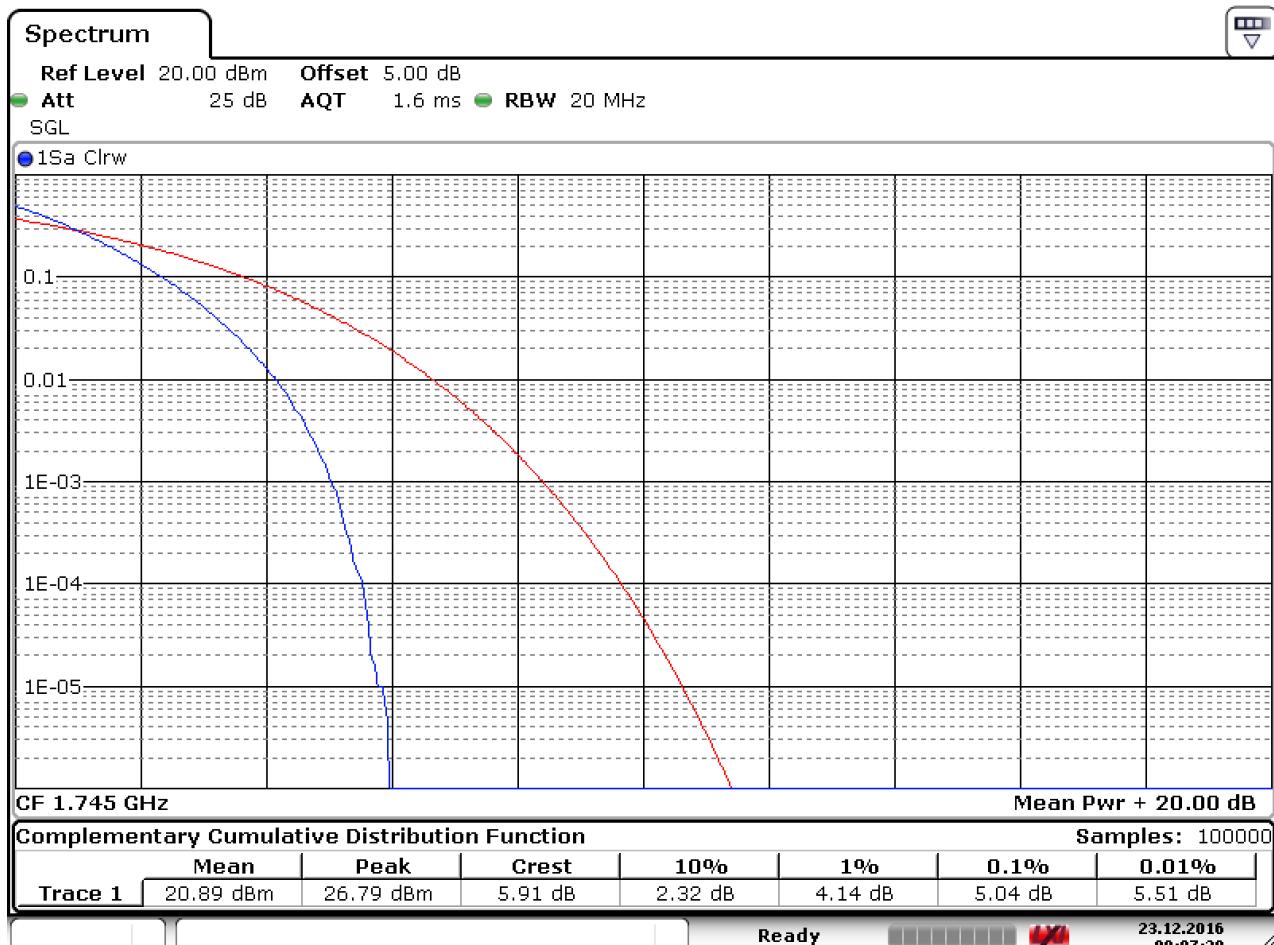
##### 2.1.1.1.1 Test Channel = LCH



Date: 23.DEC.2016 09:06:58

**2.1.1.1.2 Test Channel = MCH**

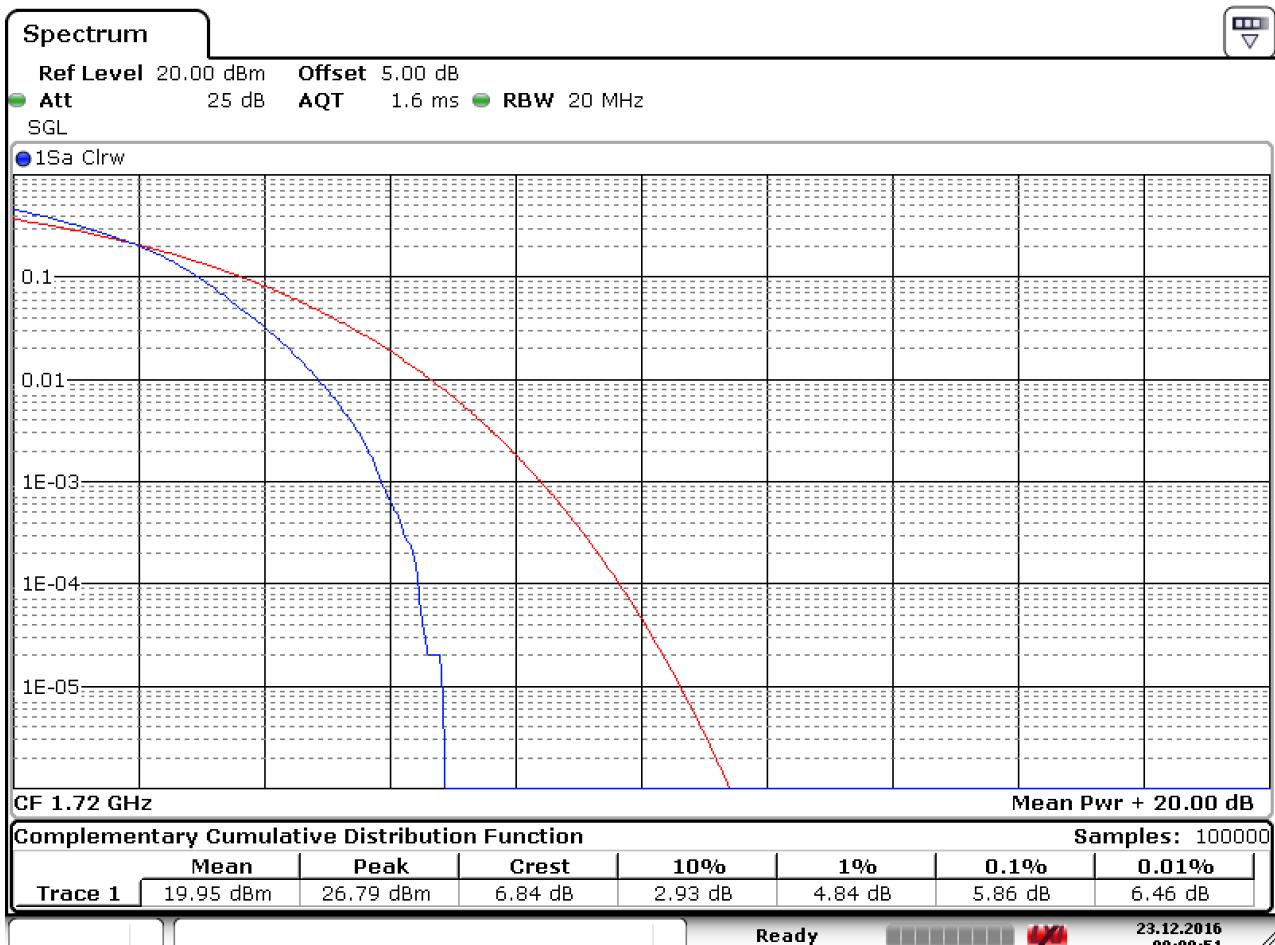
Date: 23.DEC.2016 09:06:19

**2.1.1.1.3 Test Channel = HCH**

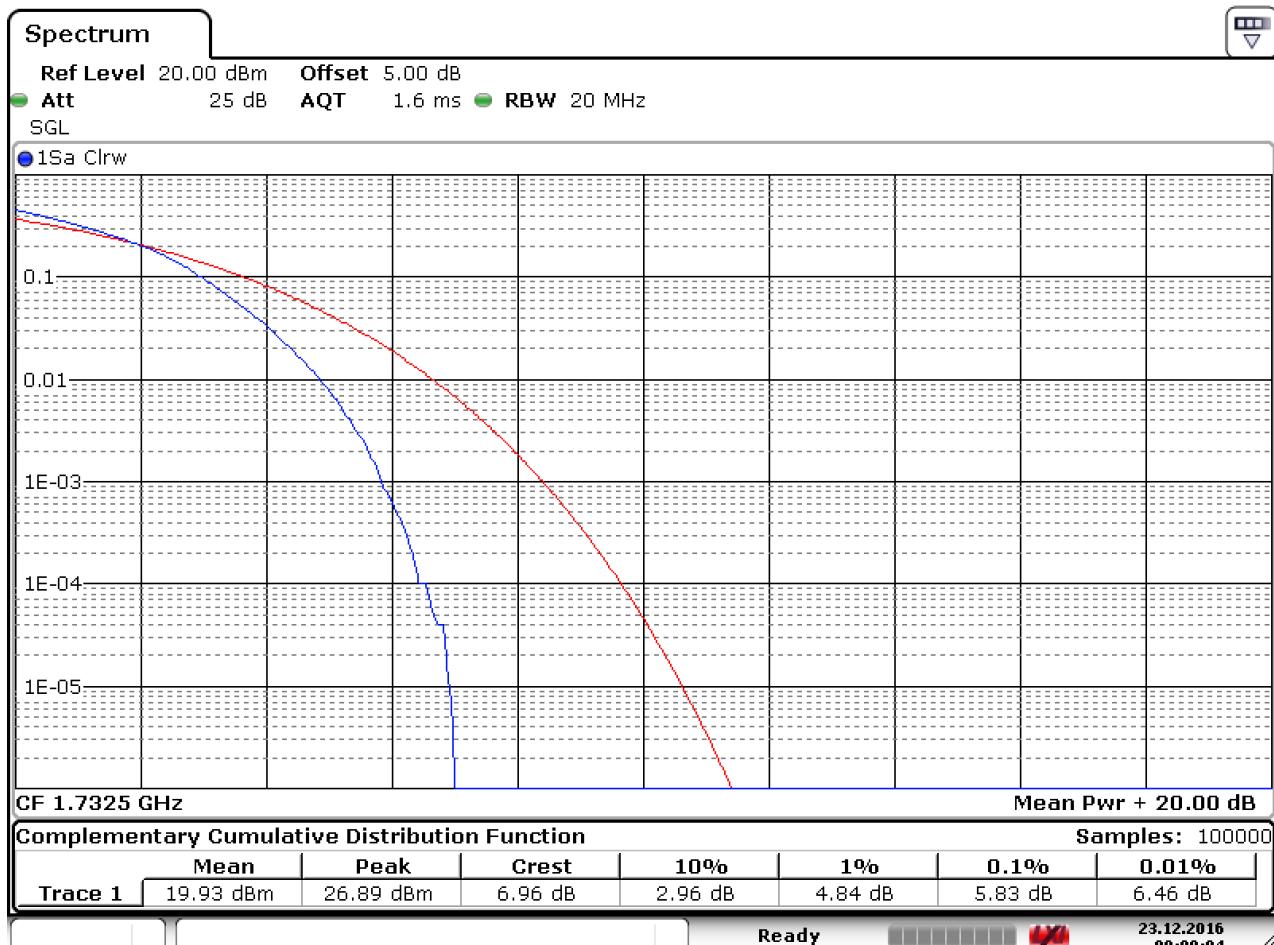
Date: 23.DEC.2016 09:07:20

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

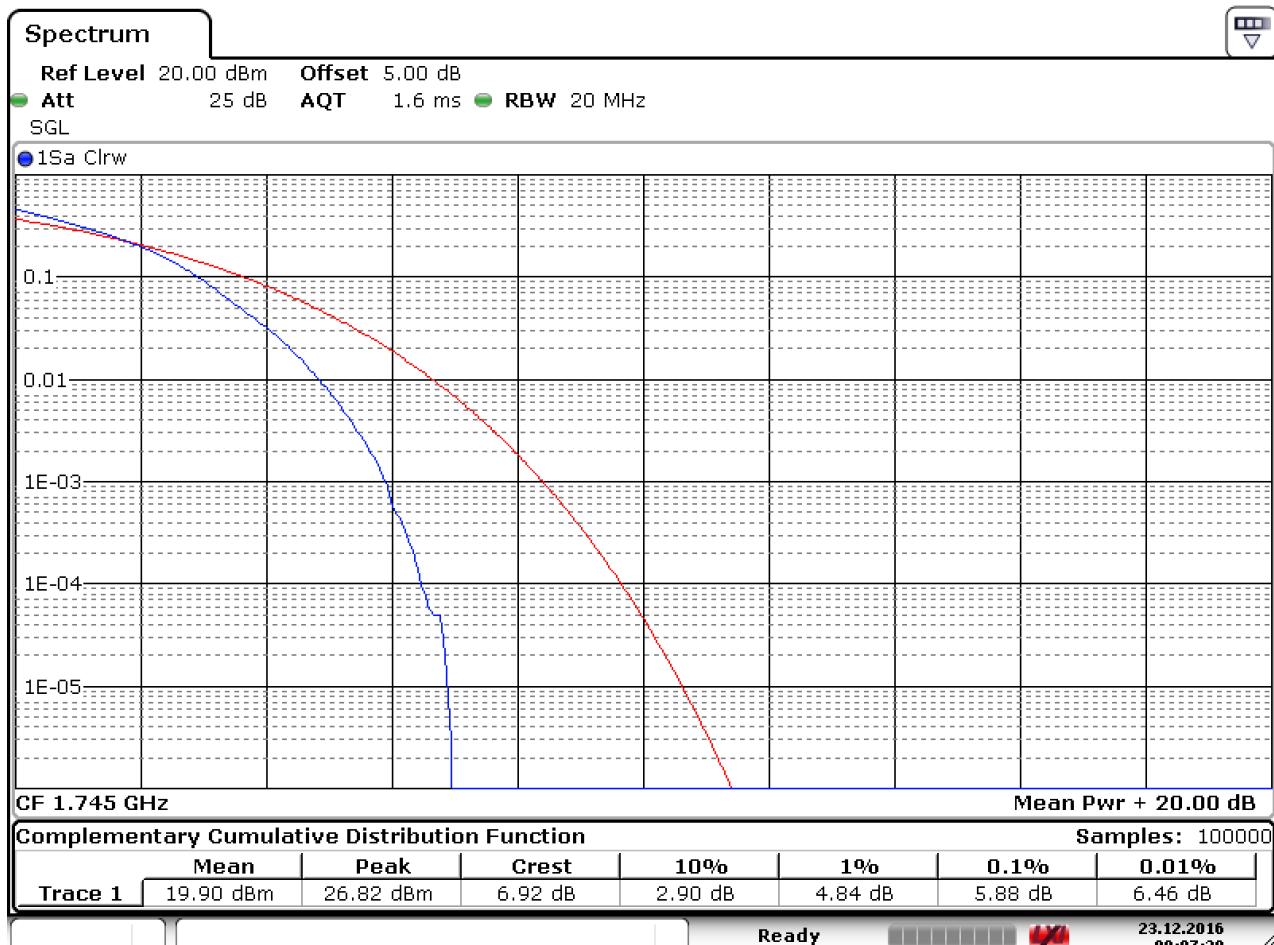
2.1.1.2.1 Test Channel = LCH



Date: 23.DEC.2016 09:08:52

**2.1.1.2.2 Test Channel = MCH**

Date: 23.DEC.2016 09:08:05

**2.1.1.2.3 Test Channel = HCH**

Date: 23.DEC.2016 09:07:40

### 3 Modulation Characteristics

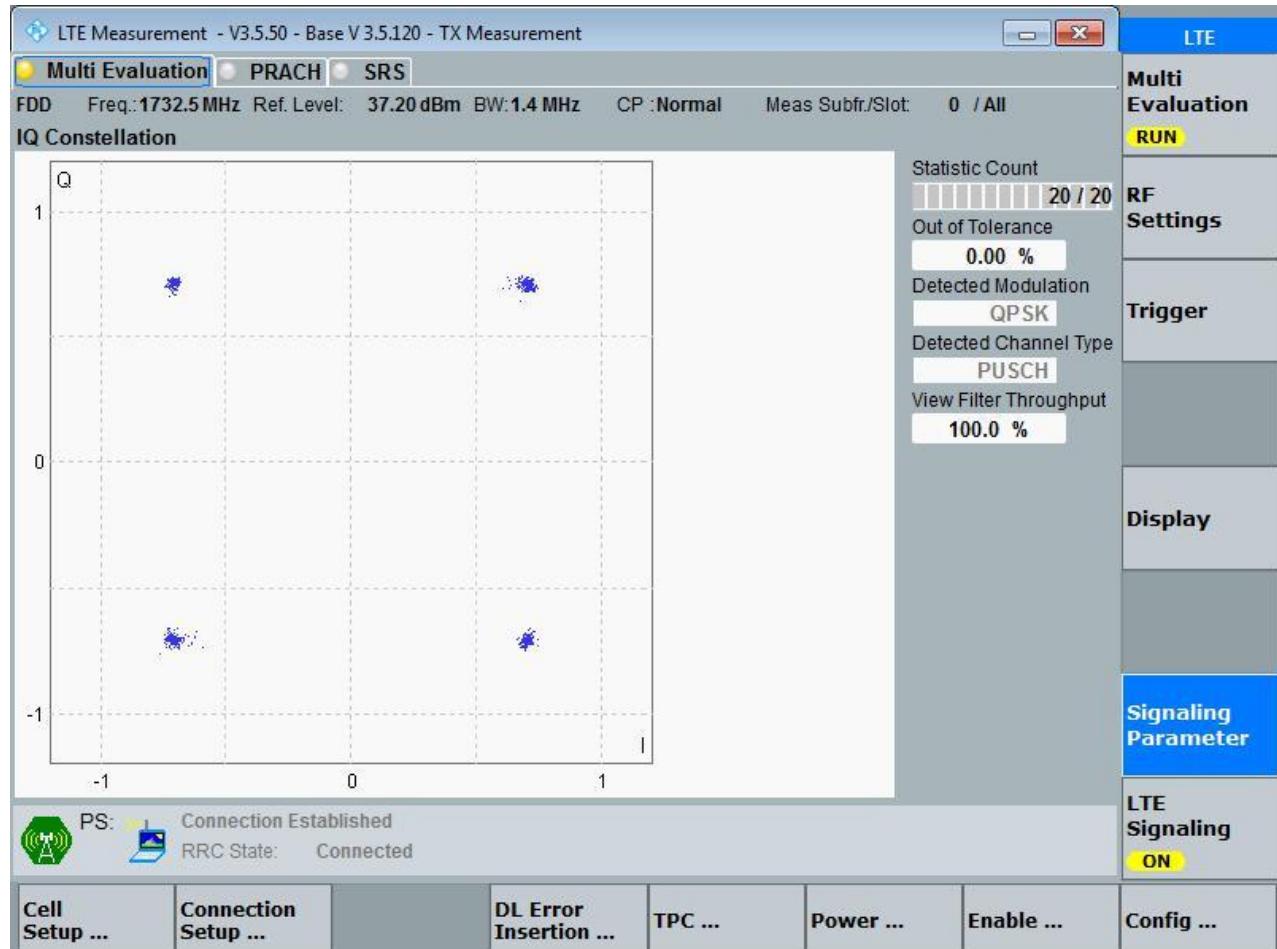
#### Part I - Test Plots

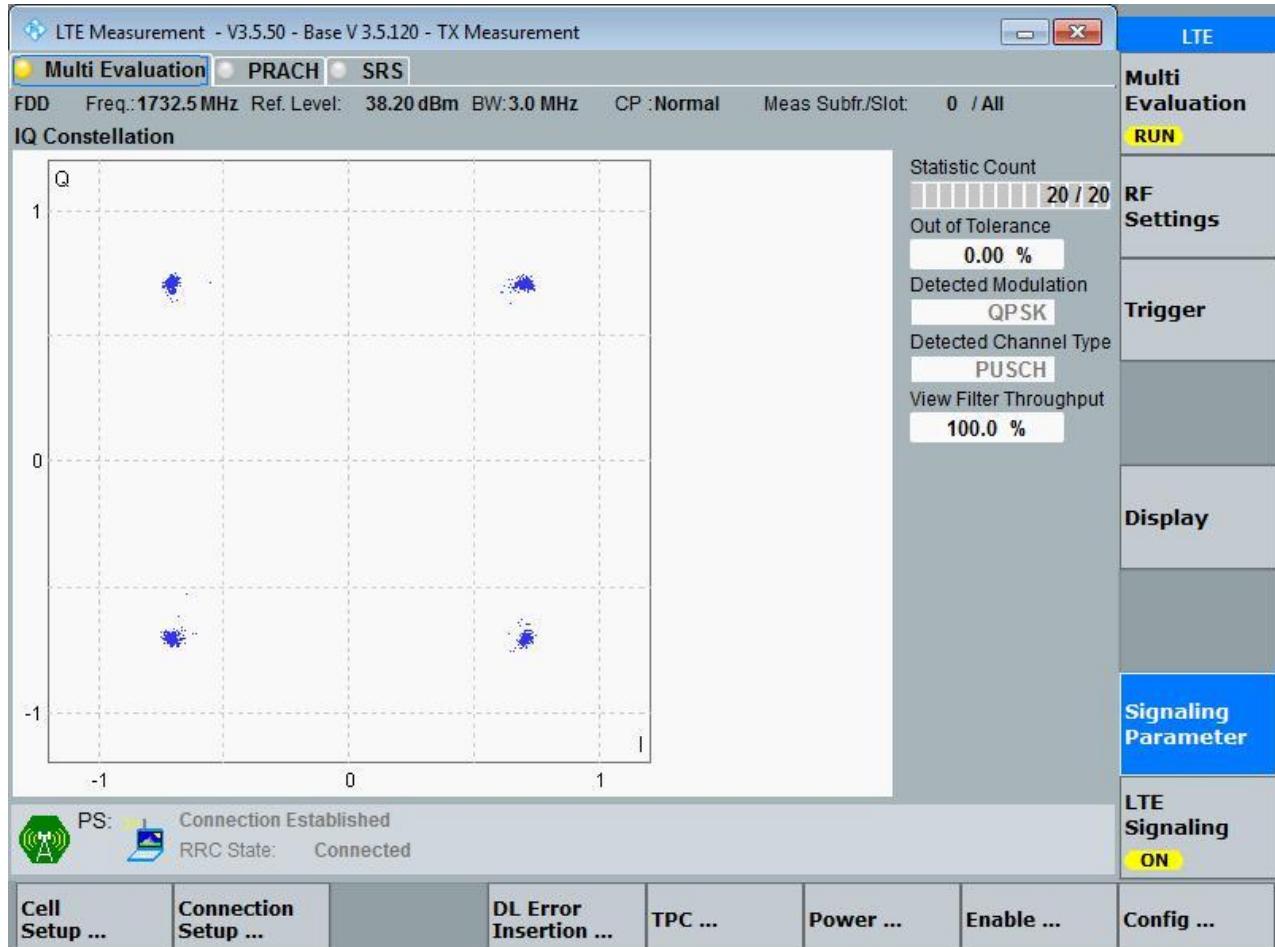
##### 3.1 For LTE

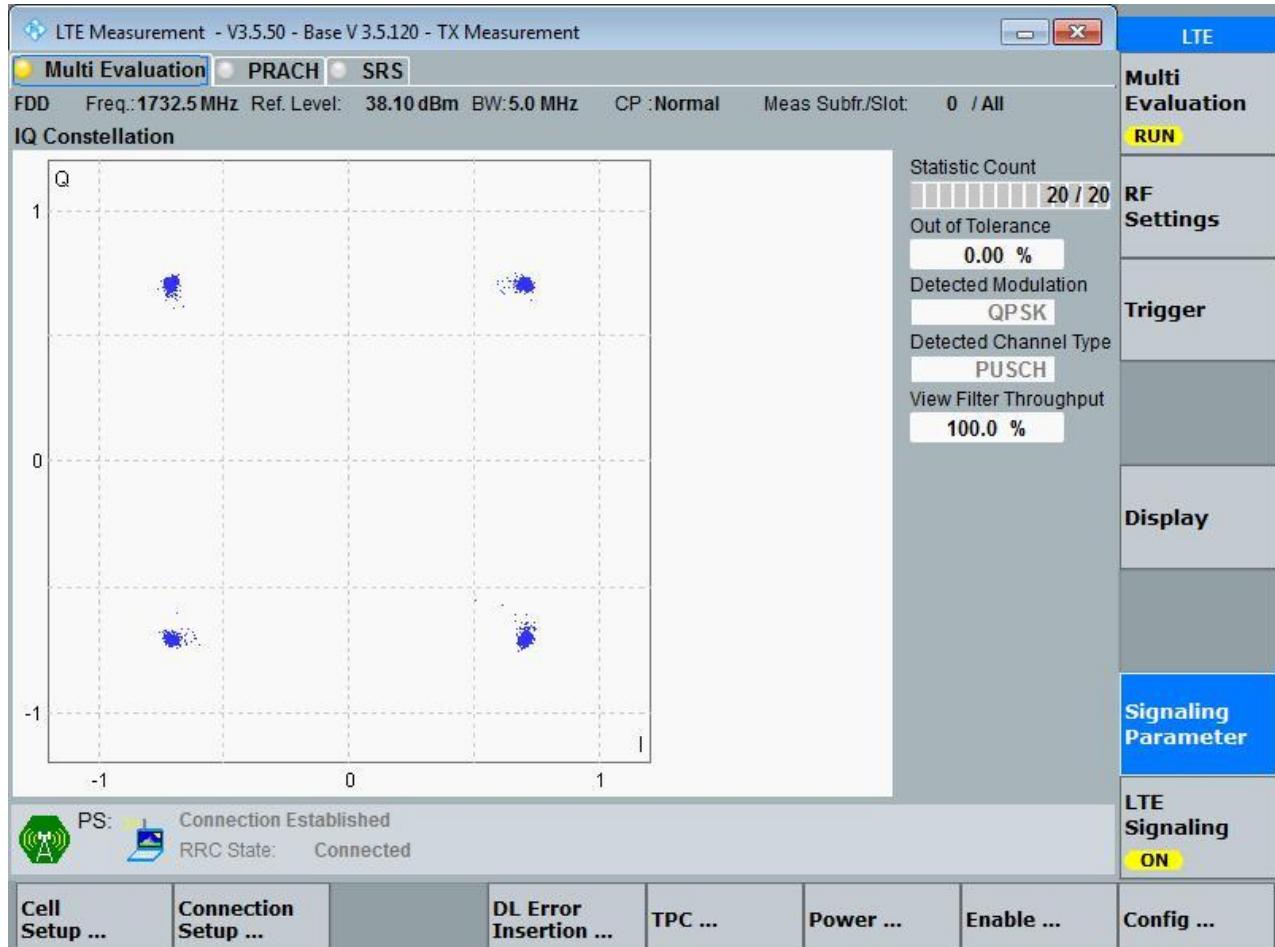
###### 3.1.1 Test Band = LTE band4

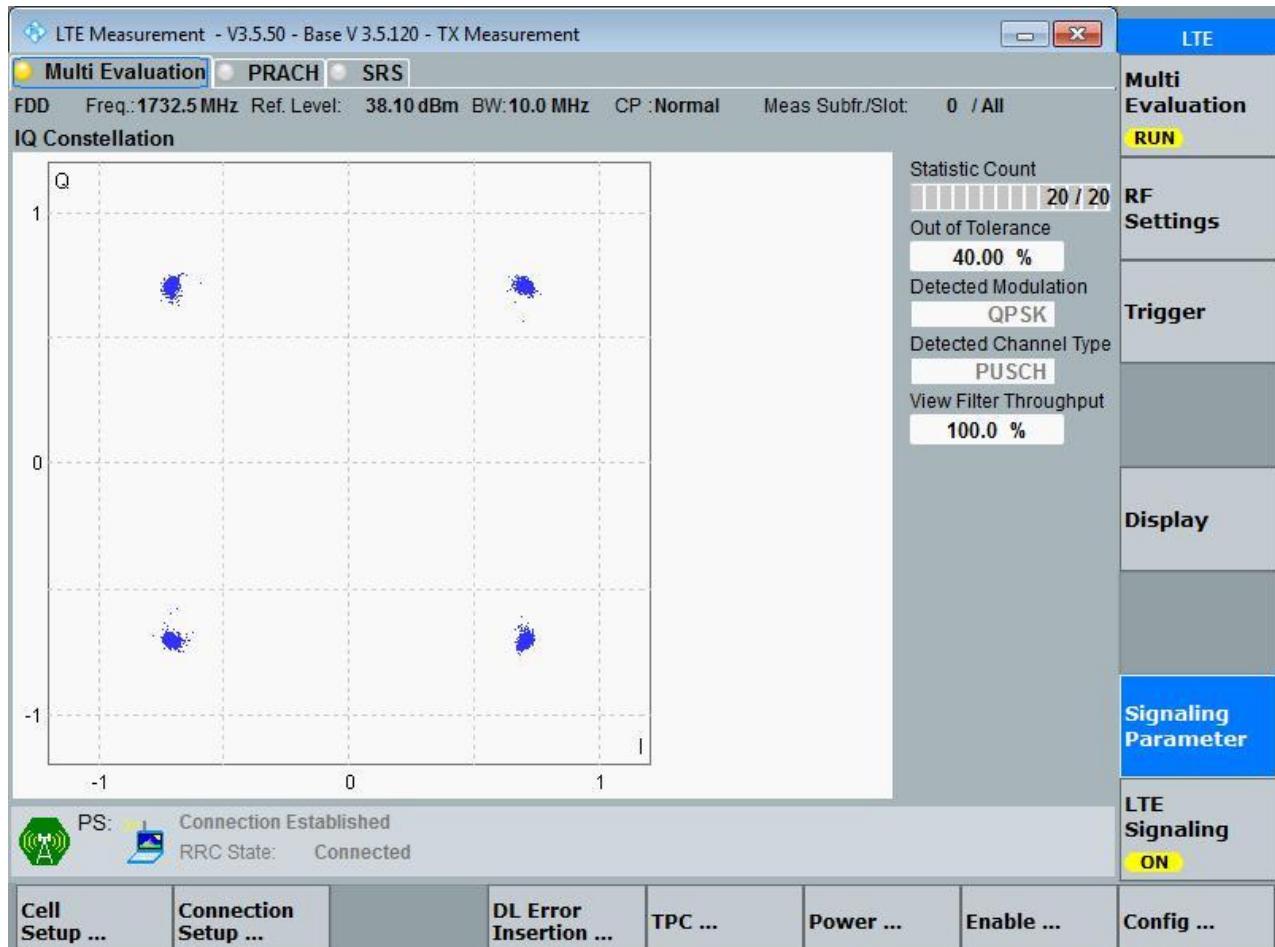
###### 3.1.1.1 Test Mode = LTE /TM1 1.4MHz

###### 3.1.1.1.1 Test Channel = MCH



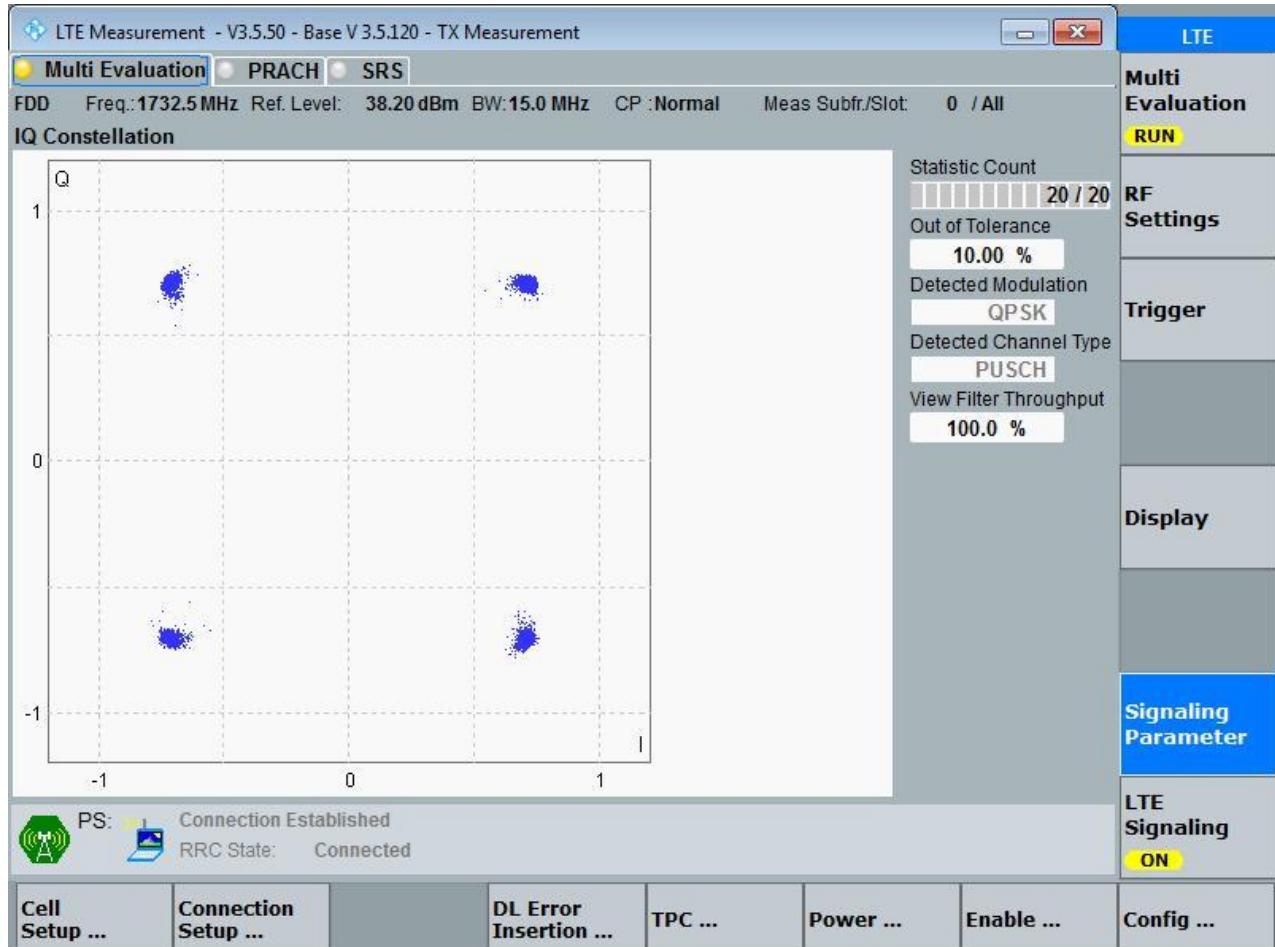
**3.1.1.2 Test Mode = LTE /TM1 3MHz****3.1.1.2.1 Test Channel = MCH**

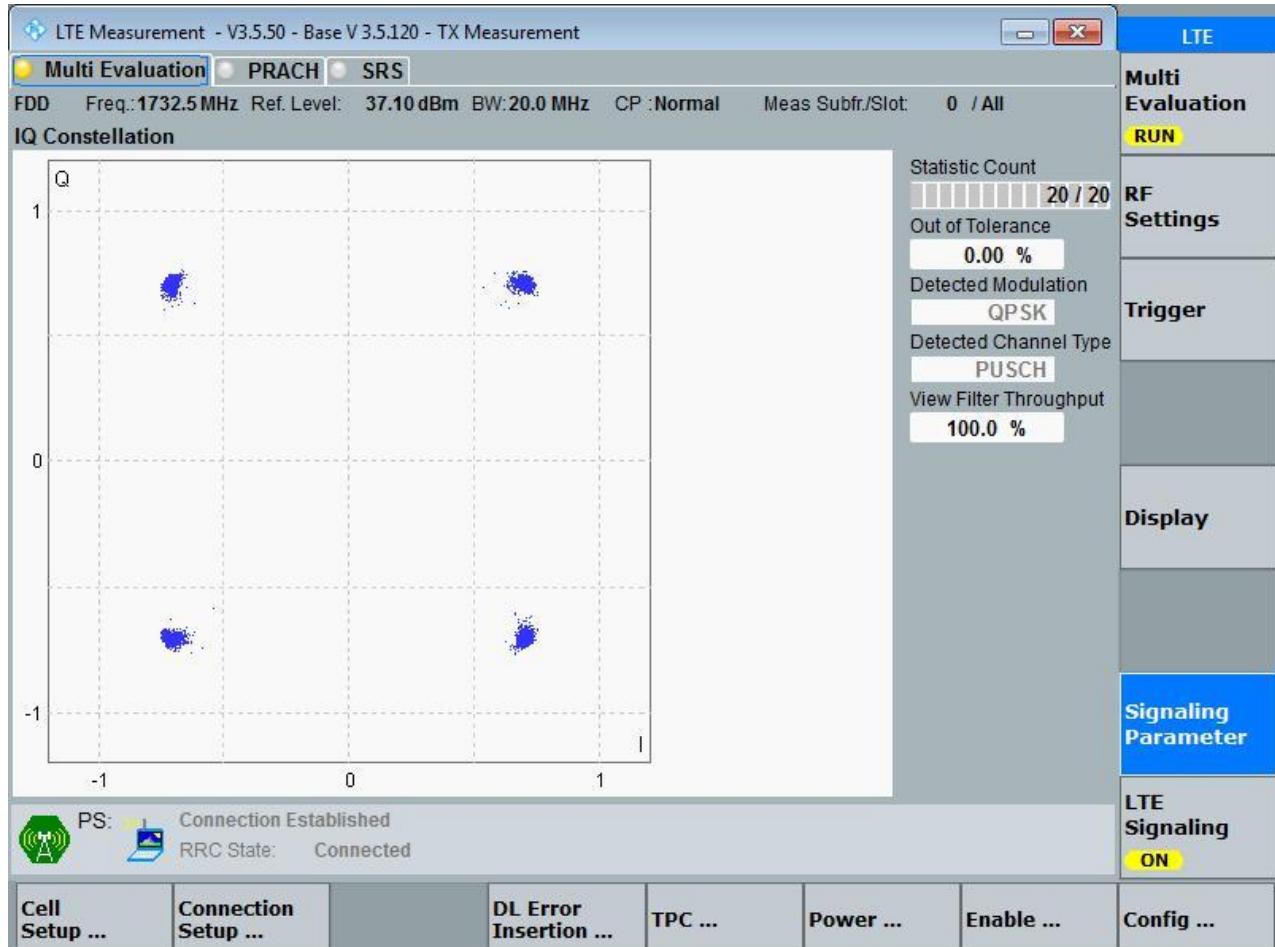
**3.1.1.3 Test Mode = LTE /TM1 5MHz****3.1.1.3.1 Test Channel = MCH**

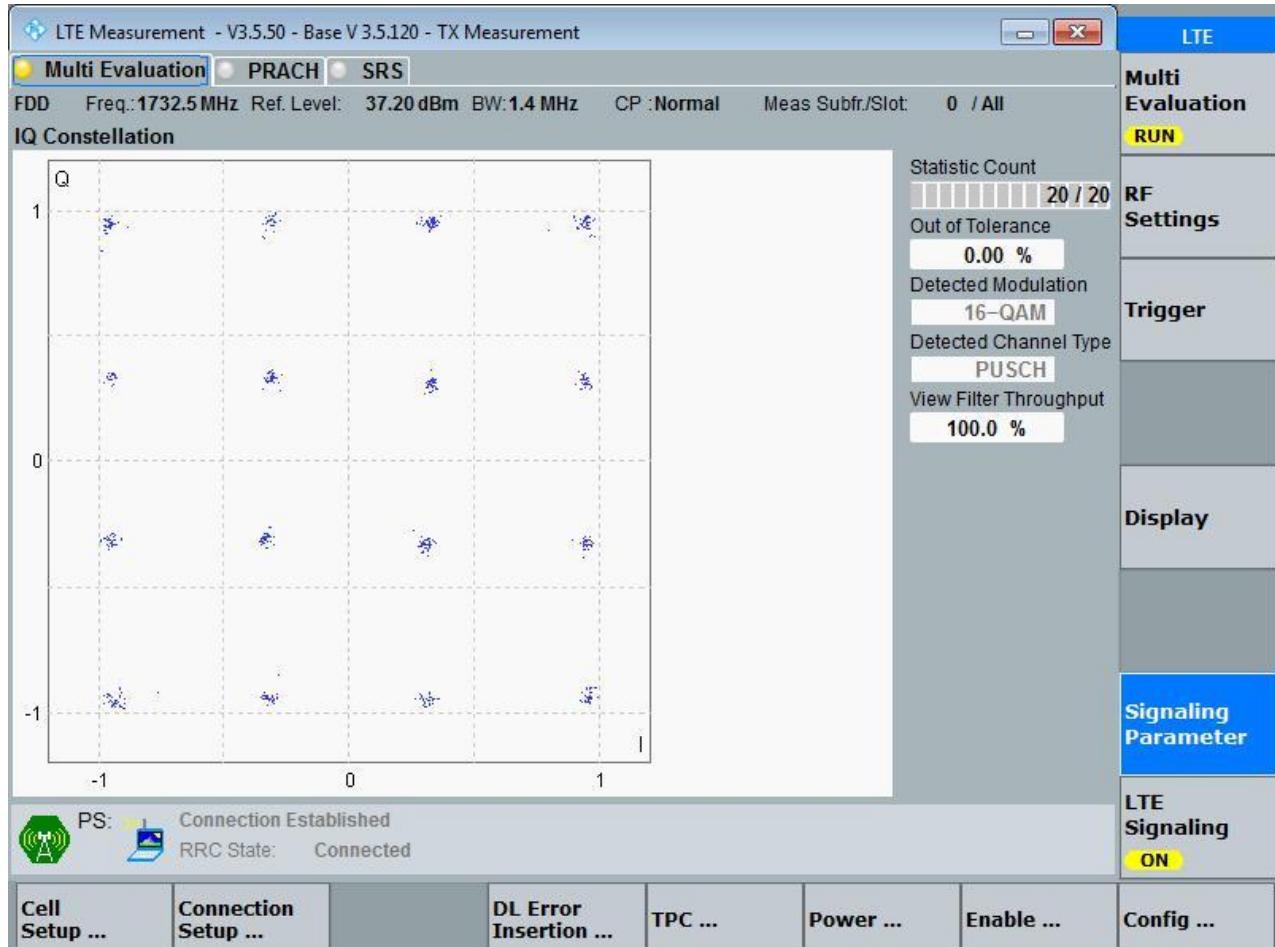
**3.1.1.4 Test Mode = LTE /TM1 10MHz****3.1.1.4.1 Test Channel = MCH**

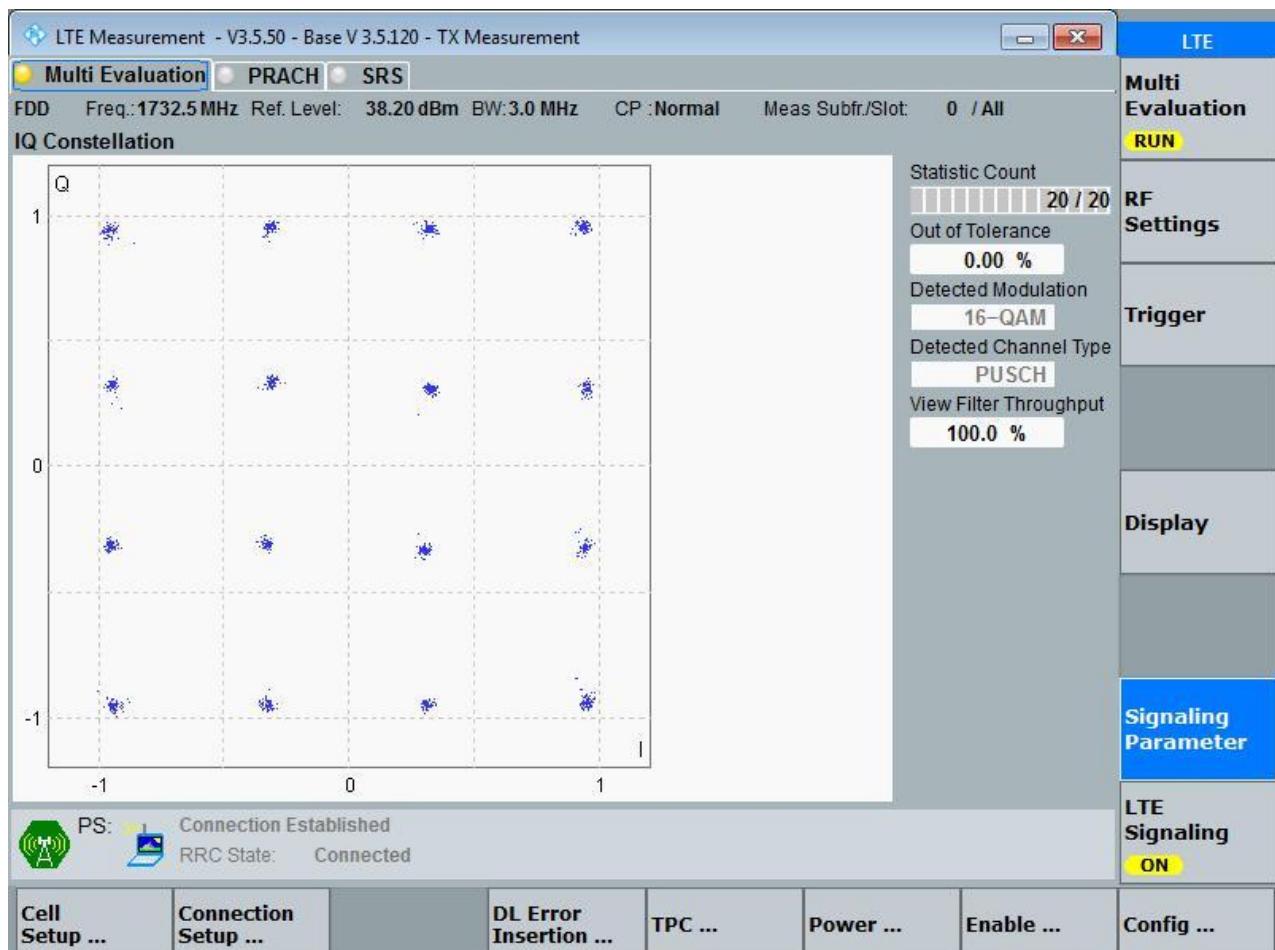
### 3.1.1.5 Test Mode = LTE /TM1 15MHz

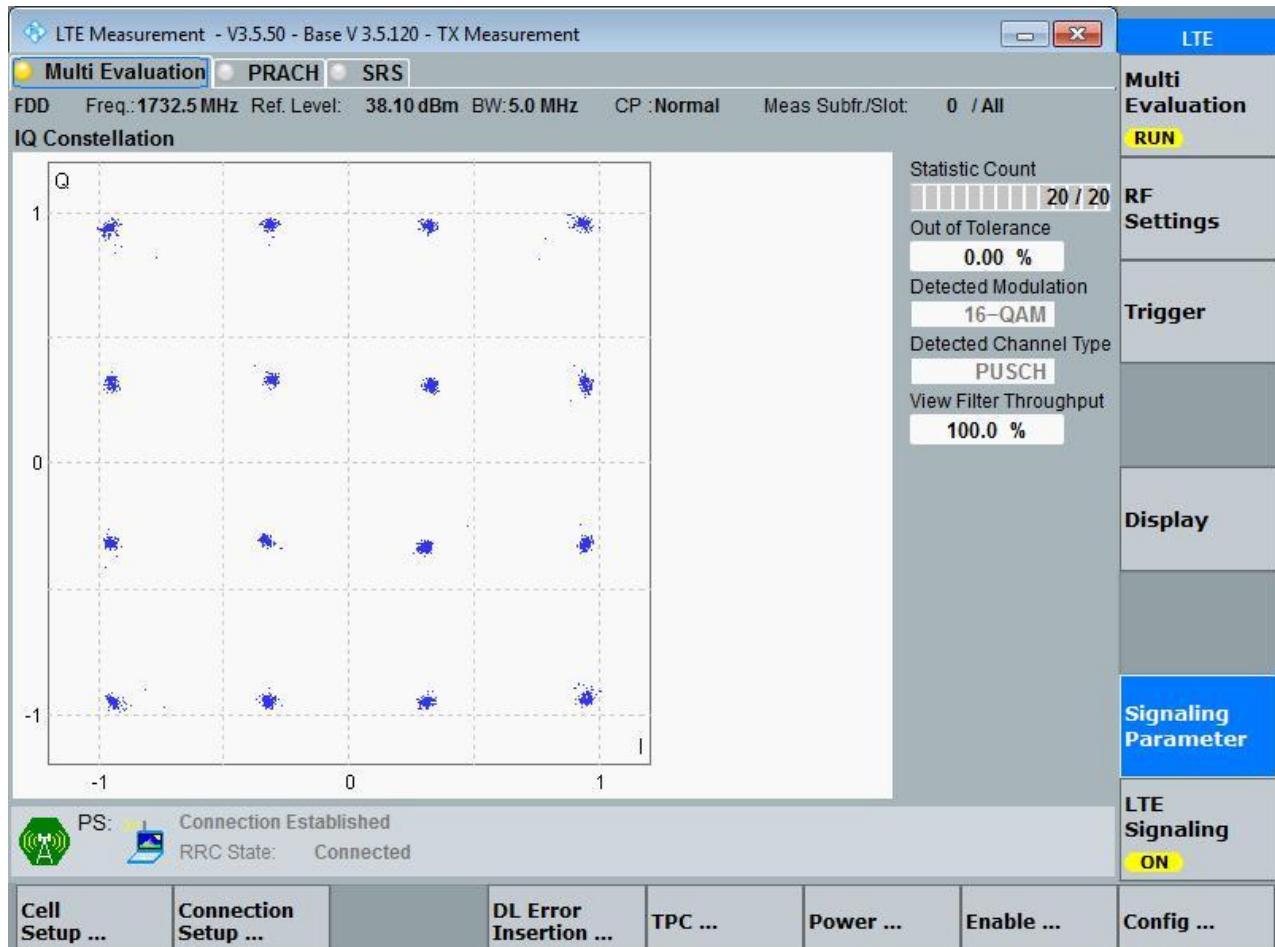
#### 3.1.1.5.1 Test Channel = MCH



**3.1.1.6 Test Mode = LTE /TM1 20MHz****3.1.1.6.1 Test Channel = MCH**

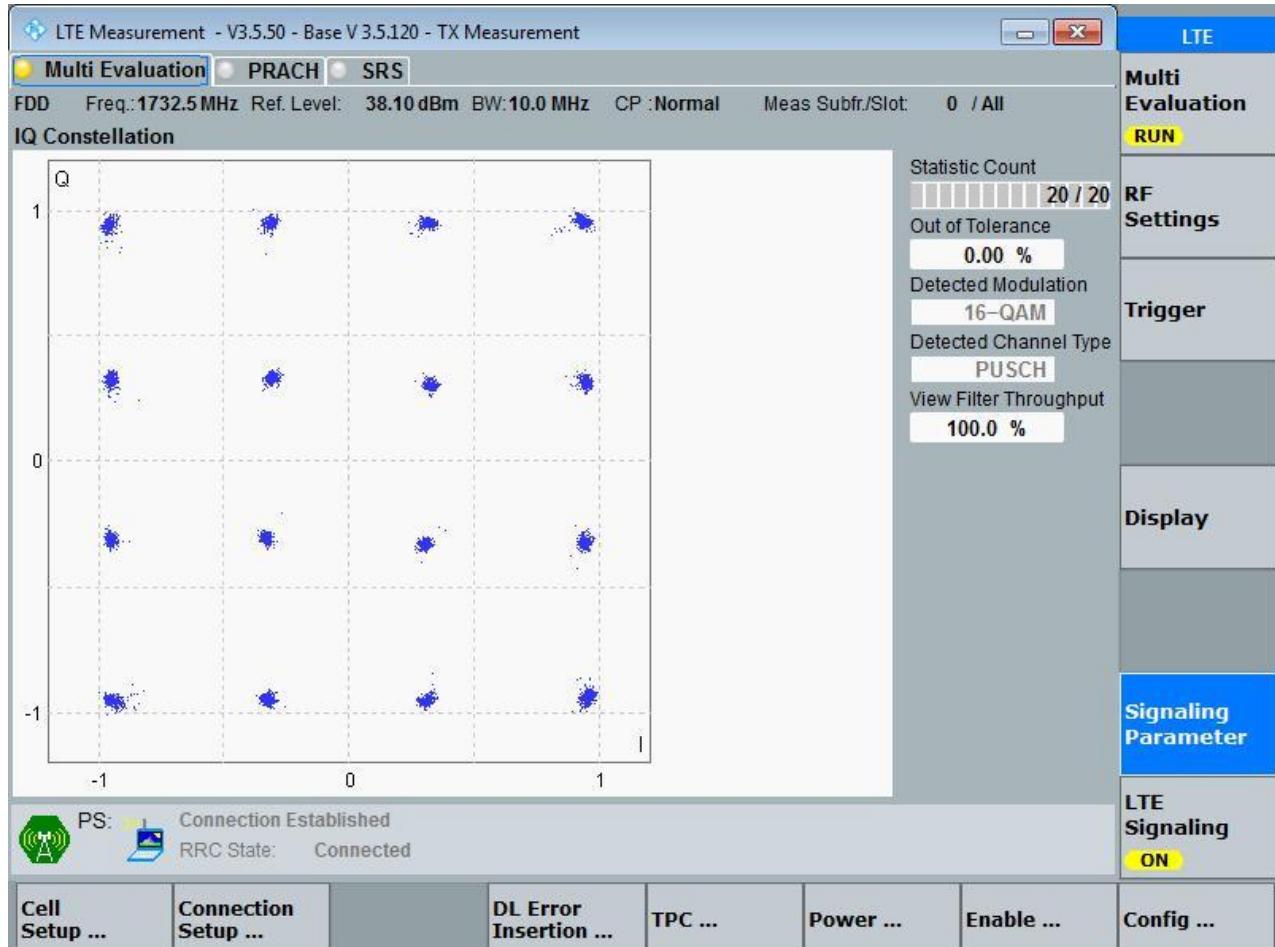
**3.1.1.7 Test Mode = LTE /TM2 1.4MHz****3.1.1.7.1 Test Channel = MCH**

**3.1.1.8 Test Mode = LTE /TM2 3MHz****3.1.1.8.1 Test Channel = MCH**

**3.1.1.9 Test Mode = LTE /TM2 5MHz****3.1.1.9.1 Test Channel = MCH**

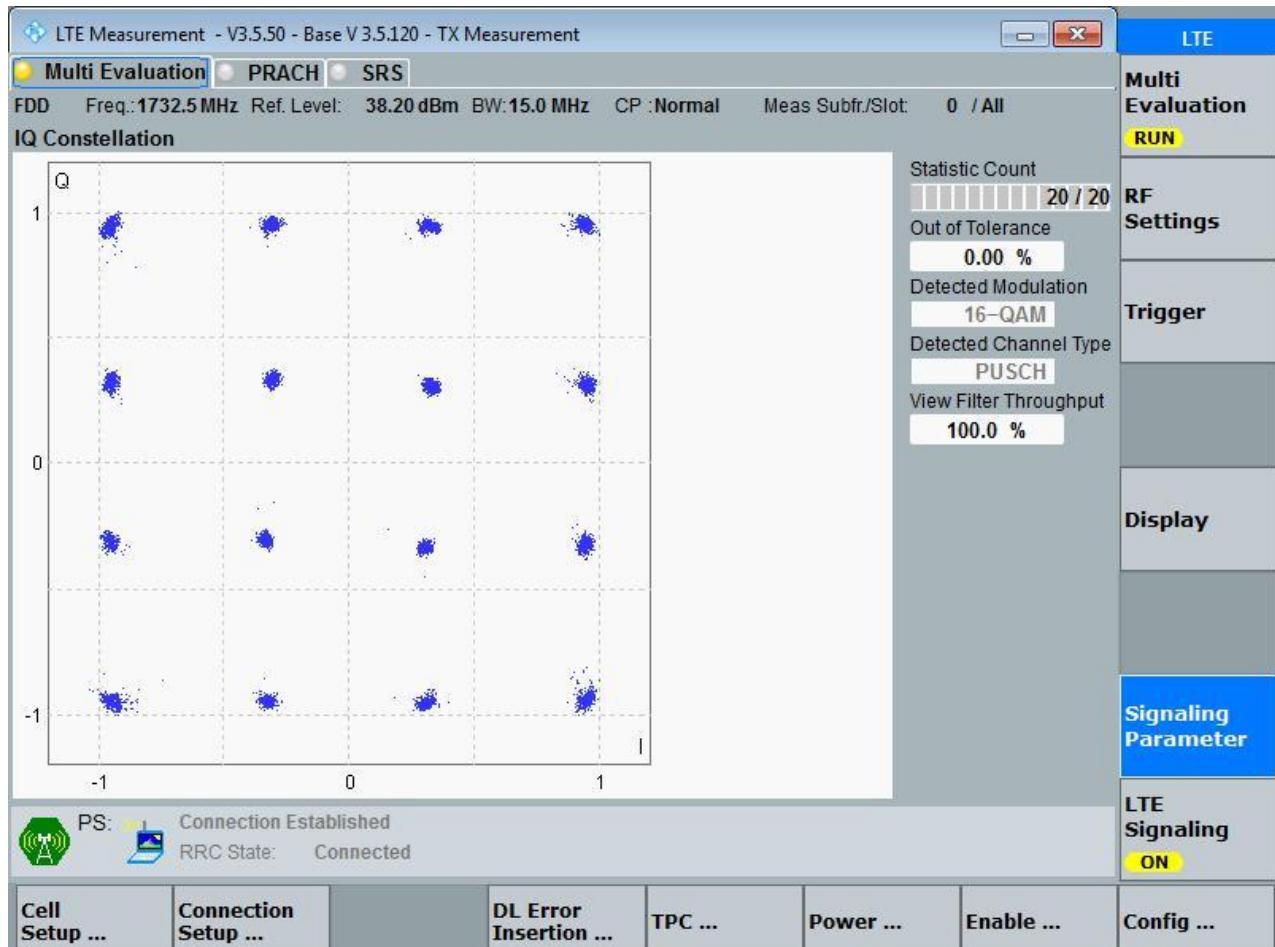
## 3.1.1.10 Test Mode = LTE /TM2 10MHz

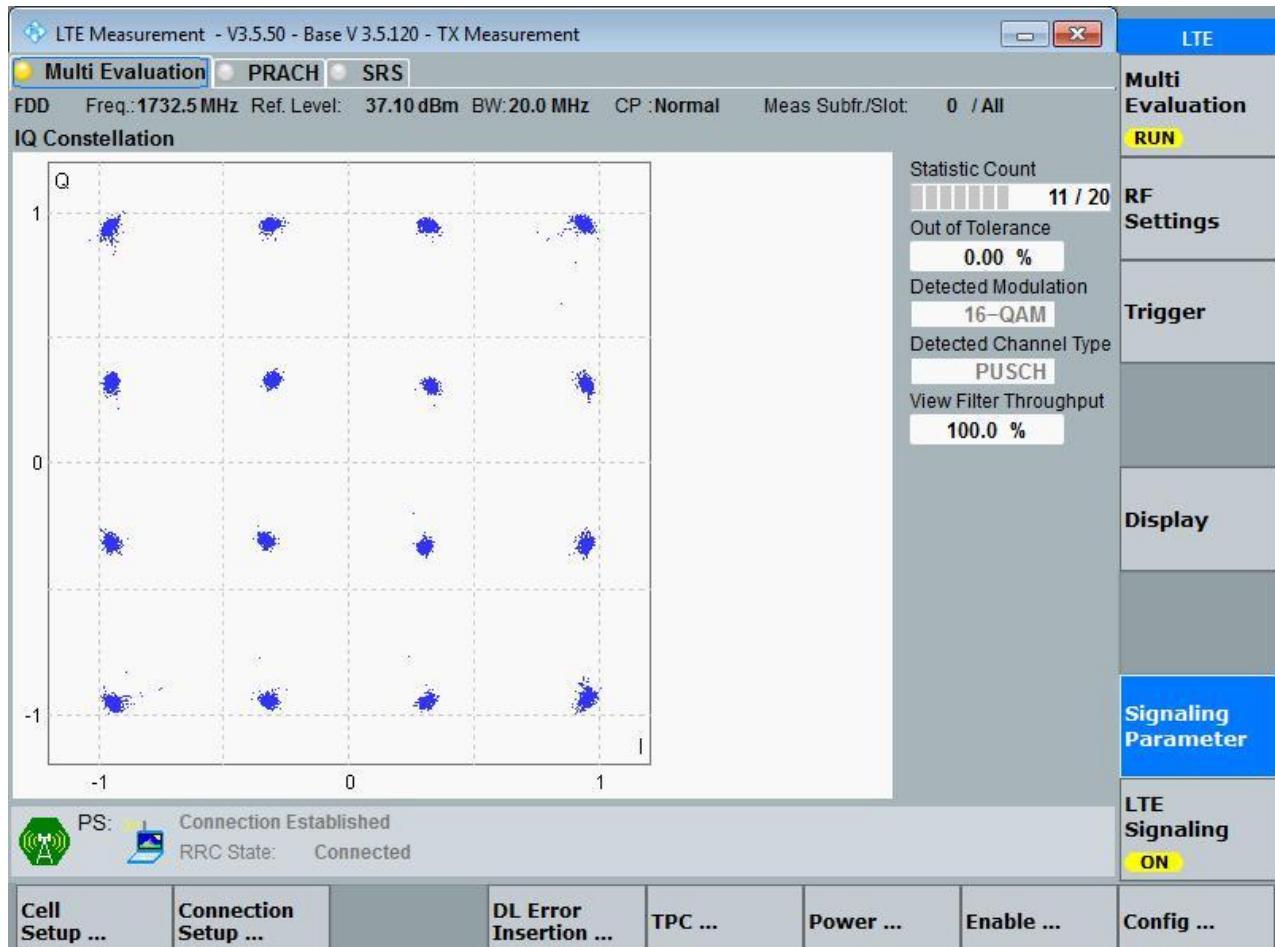
## 3.1.1.10.1 Test Channel = MCH



## 3.1.1.11 Test Mode = LTE /TM2 15MHz

## 3.1.1.11.1 Test Channel = MCH



**3.1.1.12 Test Mode = LTE /TM2 20MHz****3.1.1.12.1 Test Channel = MCH**

## 4 Bandwidth

### Part I - Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
Band 4	TM1/1.4MHz	LCH	1.09	1.27	PASS
		MCH	1.10	1.27	PASS
		HCH	1.10	1.28	PASS
	TM2/1.4MHz	LCH	1.10	1.29	PASS
		MCH	1.10	1.27	PASS
		HCH	1.09	1.27	PASS
	TM1/ 3MHz	LCH	2.69	2.90	PASS
		MCH	2.69	2.91	PASS
		HCH	2.69	2.93	PASS
	TM2/ 3MHz	LCH	2.69	2.91	PASS
		MCH	2.69	2.94	PASS
		HCH	2.68	2.91	PASS
	TM1/ 5MHz	LCH	4.50	4.97	PASS
		MCH	4.50	4.98	PASS
		HCH	4.48	4.95	PASS
	TM2/ 5MHz	LCH	4.49	4.99	PASS
		MCH	4.49	4.95	PASS
		HCH	4.50	5.00	PASS
	TM1/ 10MHz	LCH	8.93	9.71	PASS
		MCH	8.97	9.80	PASS
		HCH	8.93	9.75	PASS
	TM2/ 10MHz	LCH	8.95	9.73	PASS
		MCH	8.95	9.70	PASS
		HCH	8.93	9.71	PASS
	TM1/ 15MHz	LCH	13.46	14.87	PASS
		MCH	13.52	14.95	PASS
		HCH	13.49	14.96	PASS
	TM2/ 15MHz	LCH	13.52	14.90	PASS
		MCH	13.52	14.83	PASS
		HCH	13.52	14.87	PASS
	TM1/ 20MHz	LCH	17.90	19.42	PASS
		MCH	17.94	19.46	PASS
		HCH	17.94	19.72	PASS

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."



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

Report No.: SZEM161201085001

Page: 35 of 178

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
	TM2/ 20MHz	LCH	17.90	19.58	PASS
		MCH	17.98	19.42	PASS
		HCH	17.94	19.60	PASS

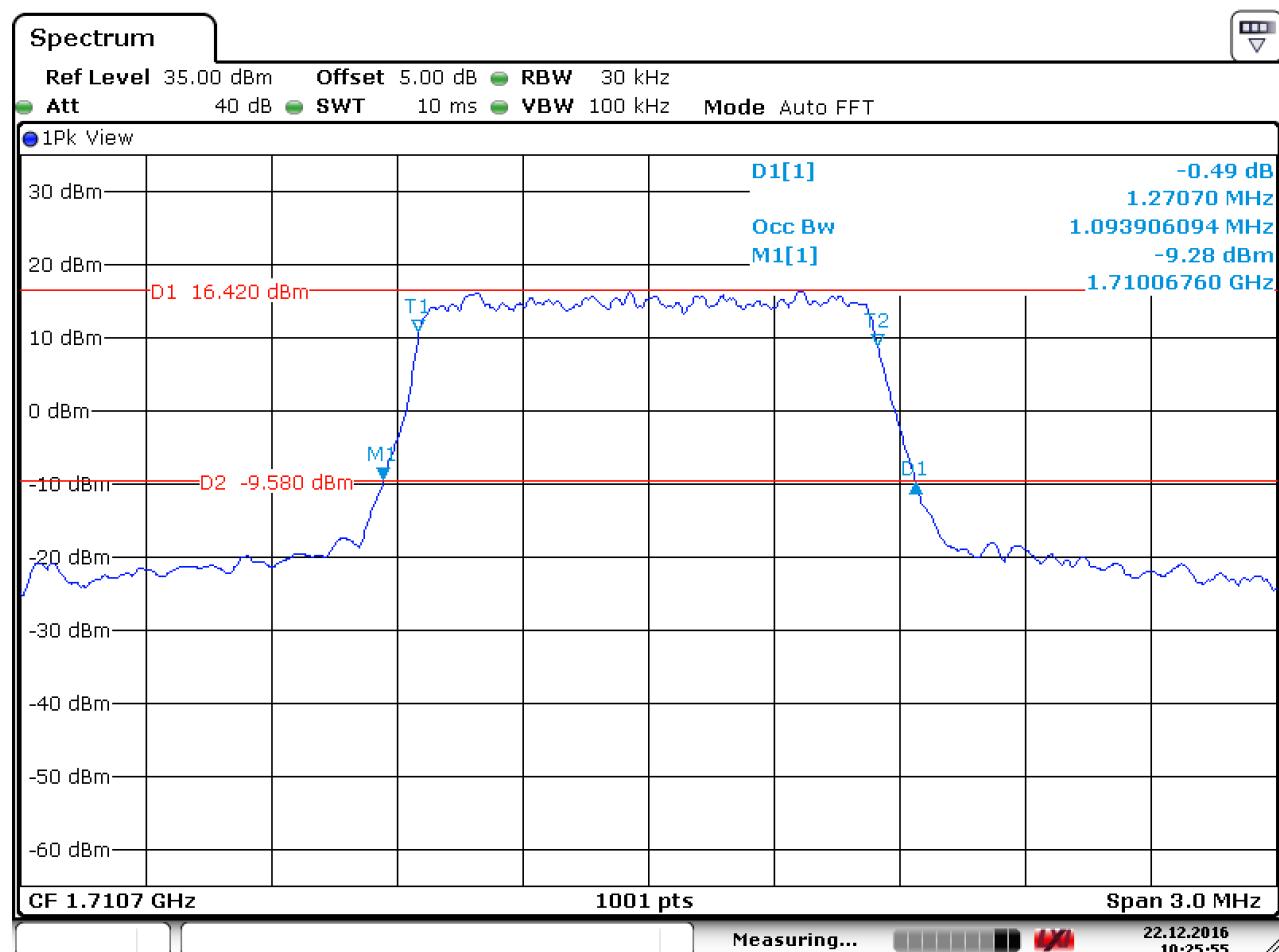
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). 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 90 days only."

## 4.1 For LTE

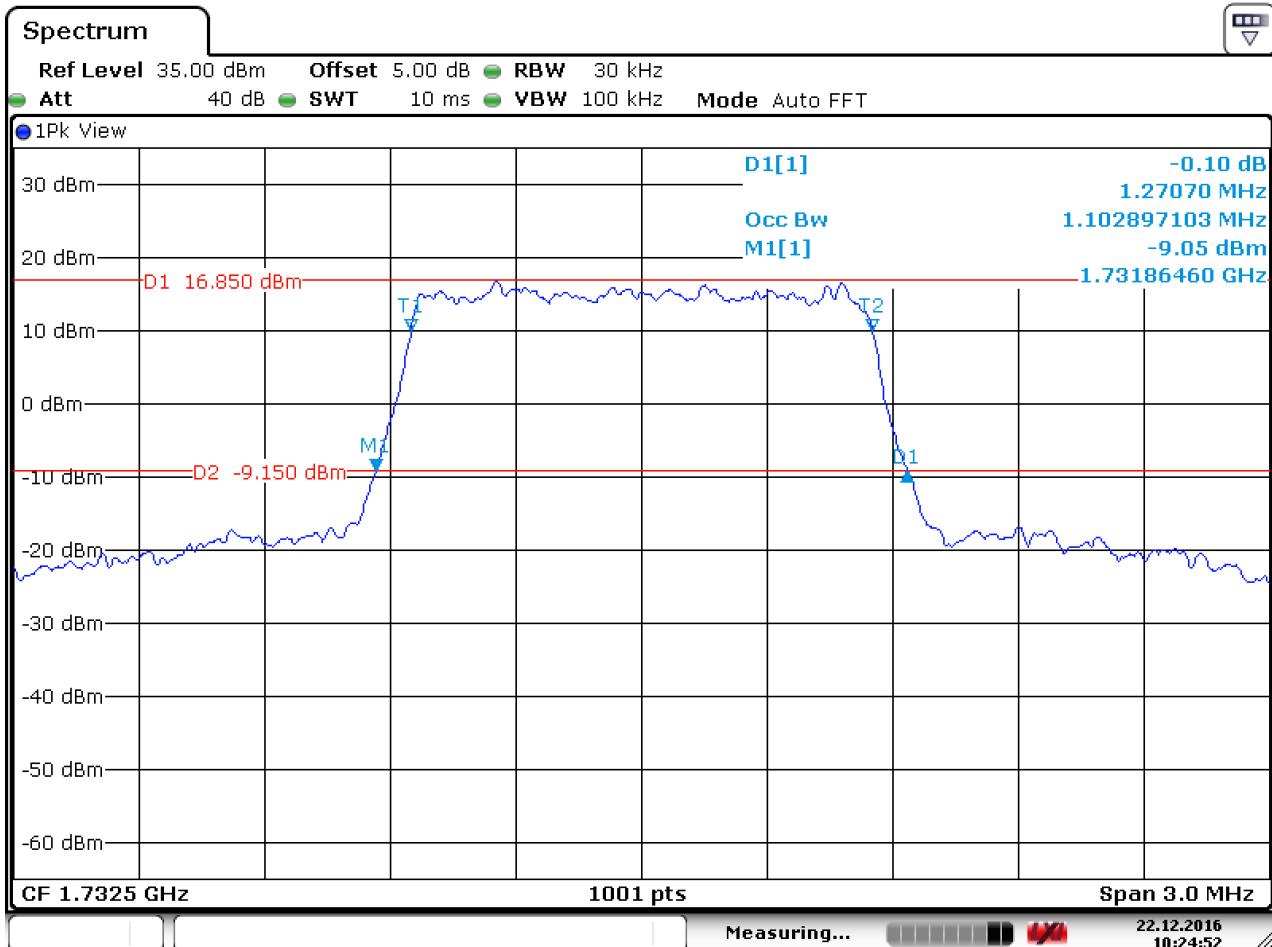
### 4.1.1 Test Band = LTE band4

#### 4.1.1.1 Test Mode = LTE/TM1 1.4MHz

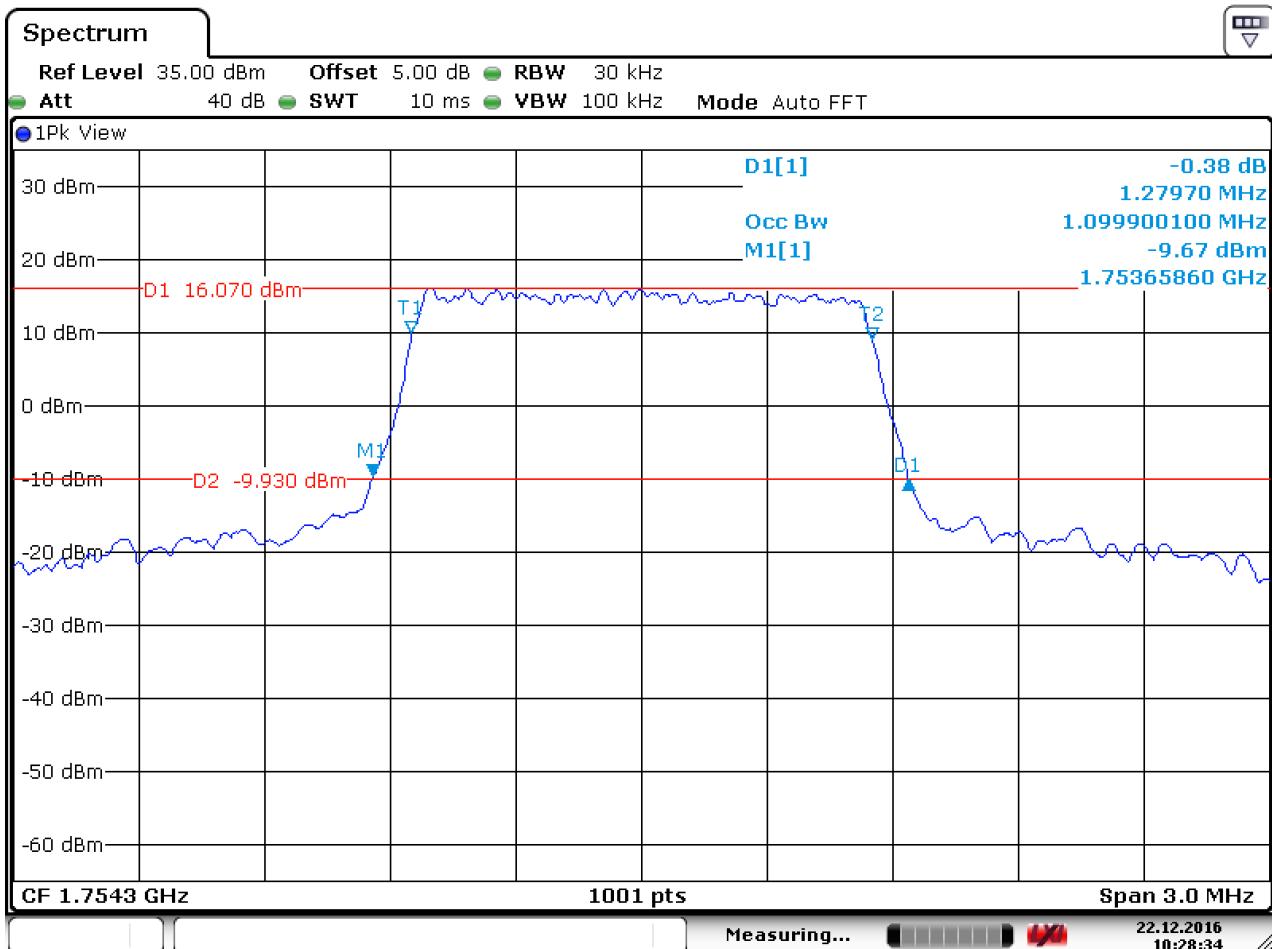
##### 4.1.1.1.1 Test Channel = LCH



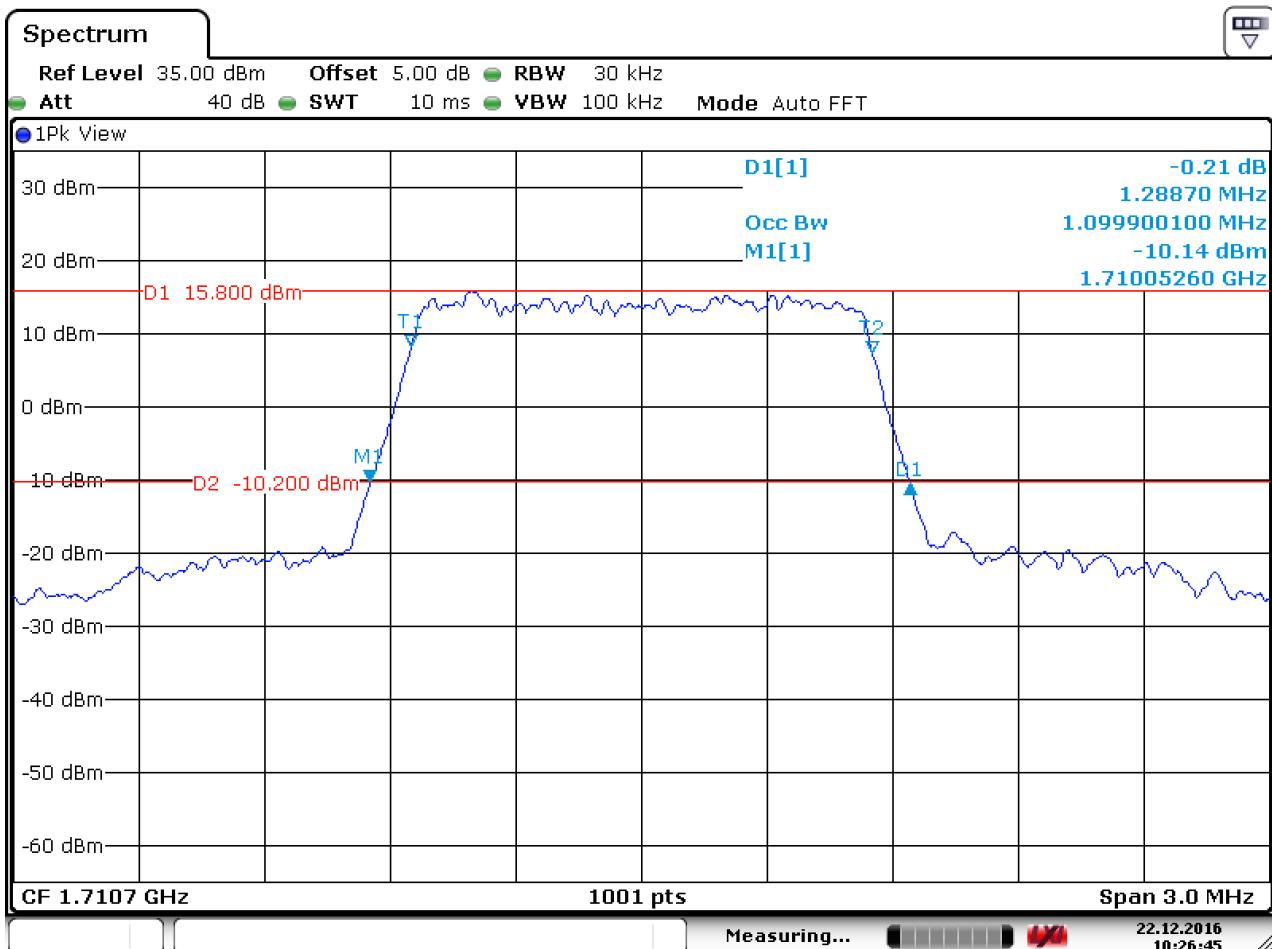
Date: 22.DEC.2016 10:25:55

**4.1.1.1.2 Test Channel = MCH**

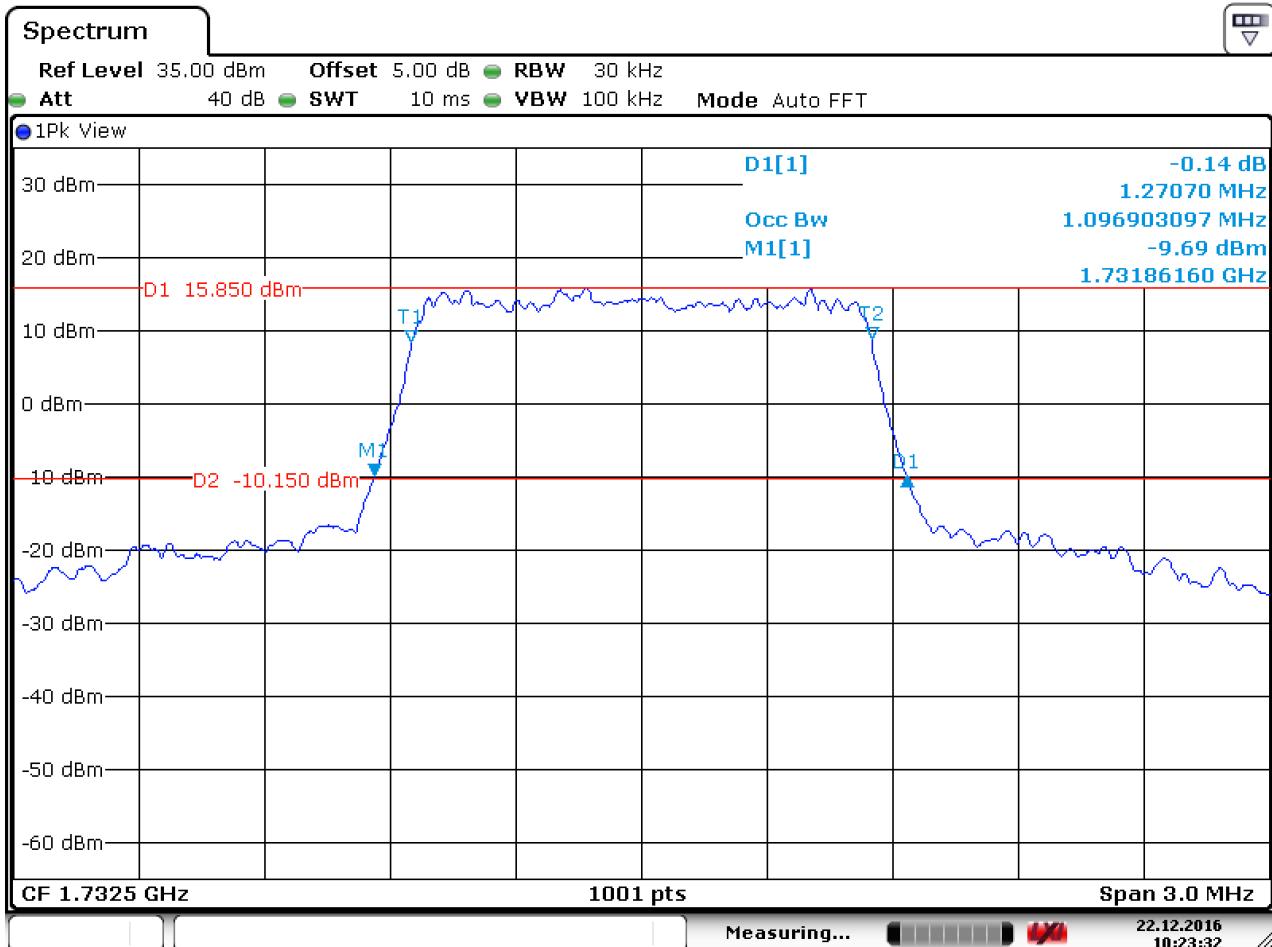
Date: 22.DEC.2016 10:24:52

**4.1.1.1.3 Test Channel = HCH**

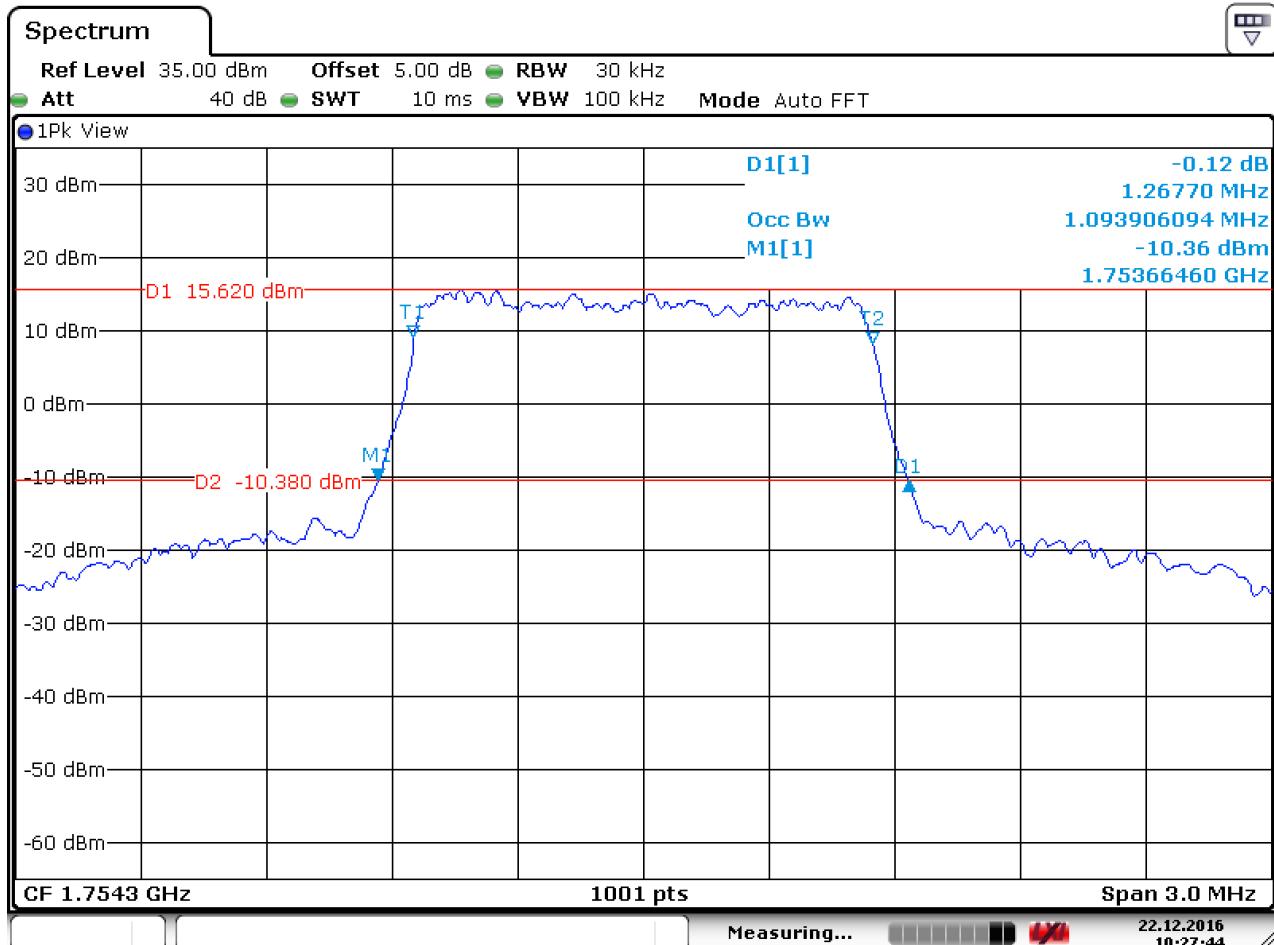
Date: 22.DEC.2016 10:28:35

**4.1.1.2 Test Mode = LTE/TM2 1.4MHz****4.1.1.2.1 Test Channel = LCH**

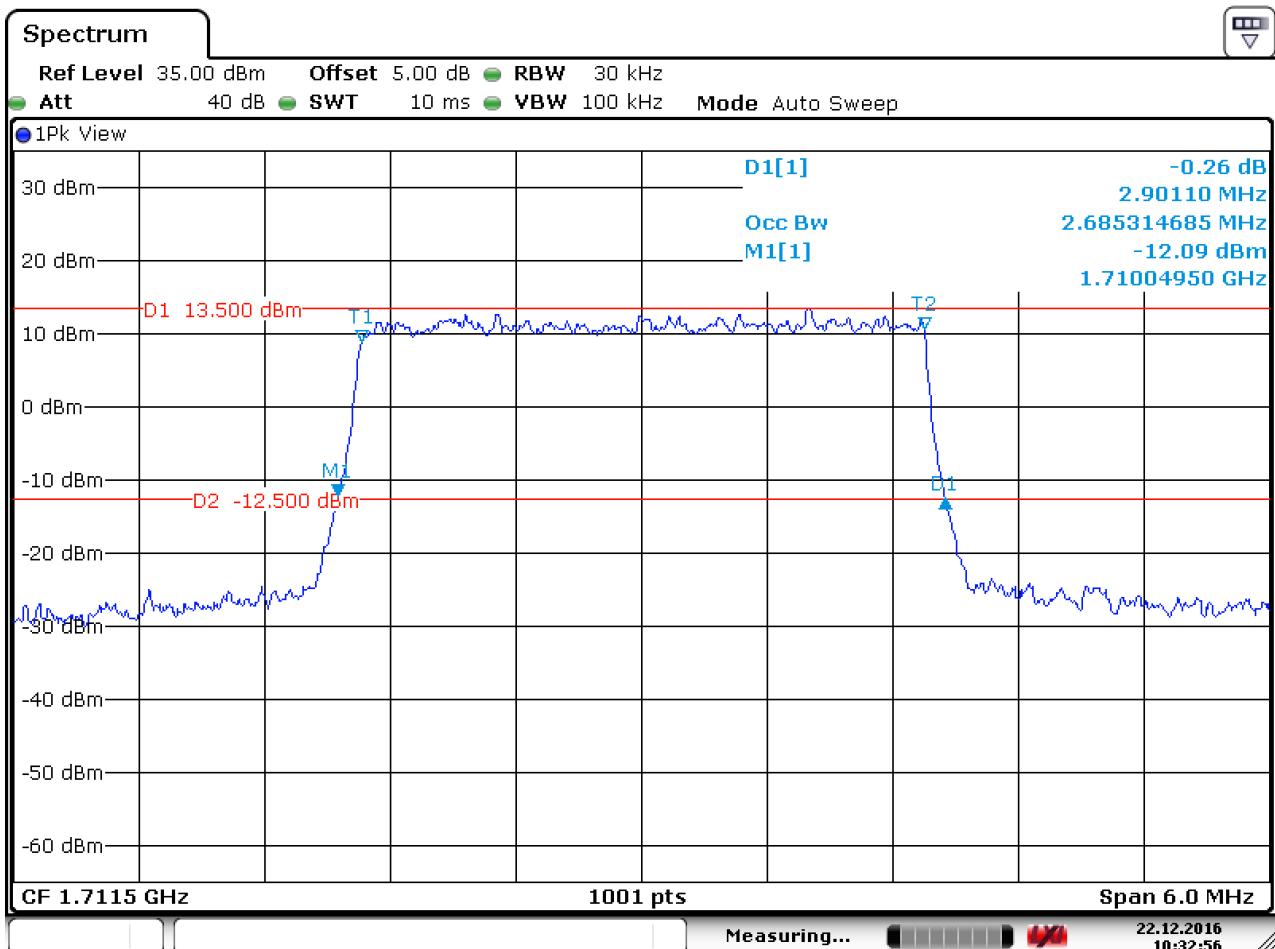
Date: 22.DEC.2016 10:26:46

**4.1.1.2.2 Test Channel = MCH**

Date: 22.DEC.2016 10:23:32

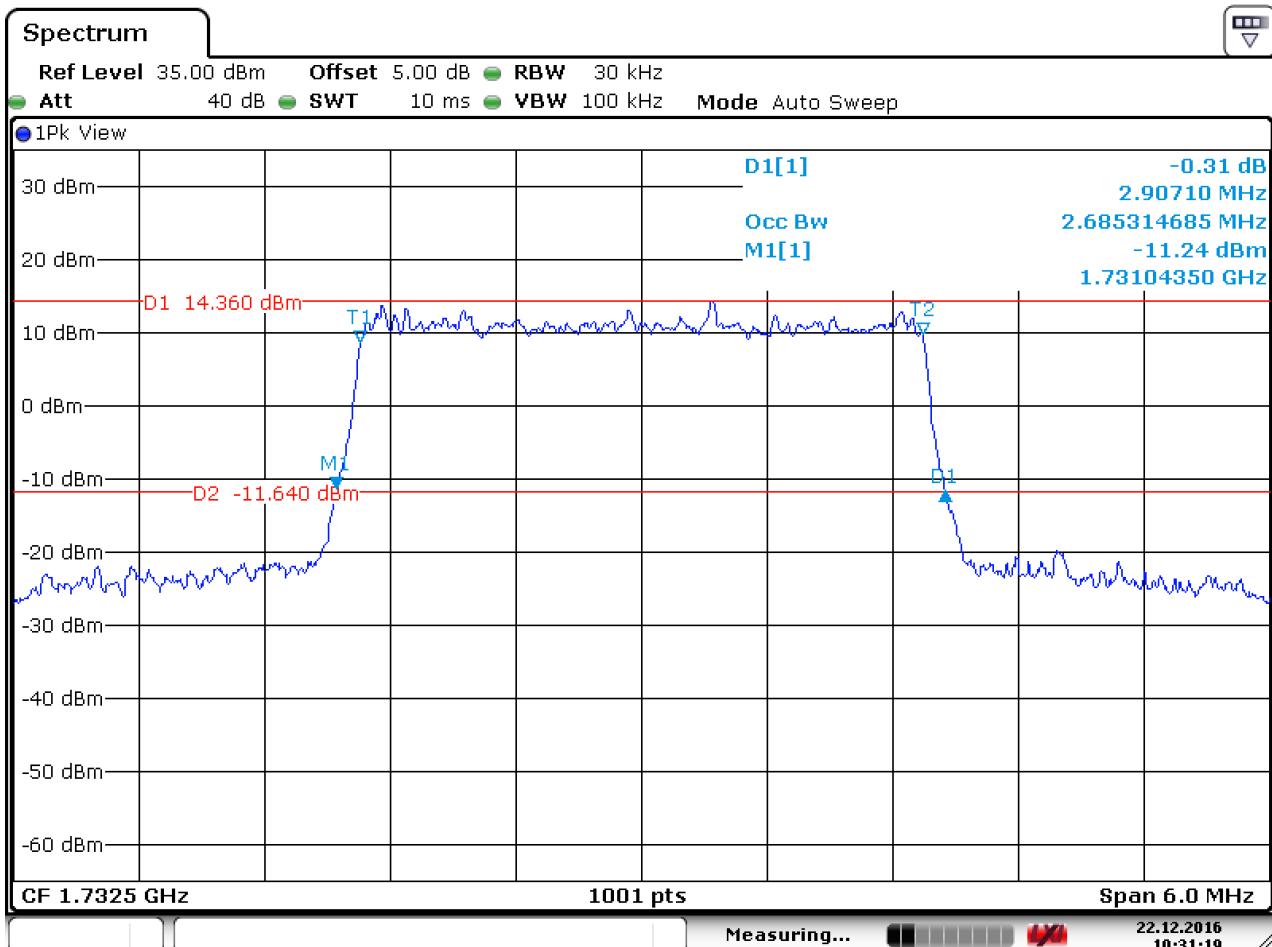
**4.1.1.2.3 Test Channel = HCH**

Date: 22.DEC.2016 10:27:44

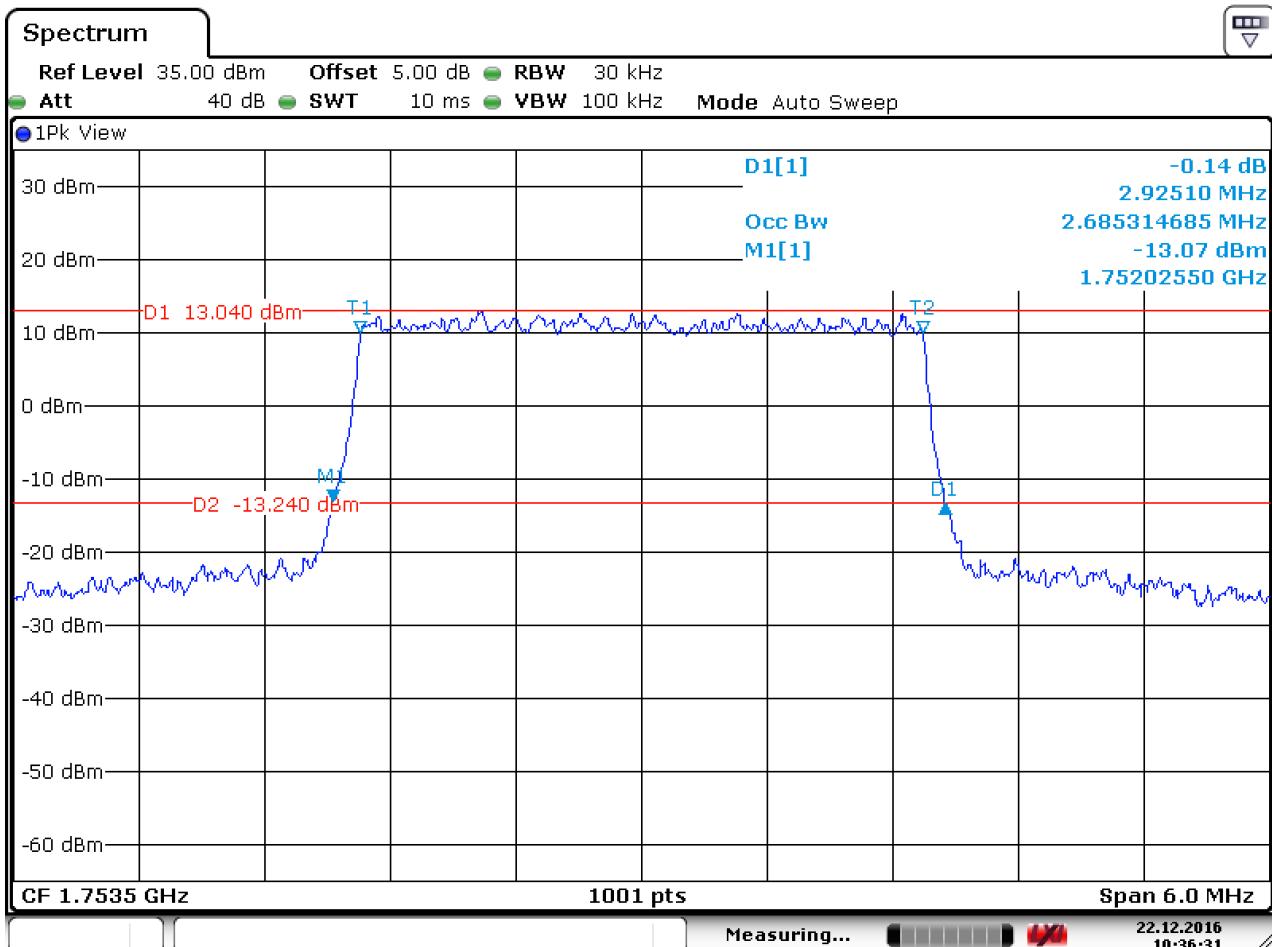
**4.1.1.3 Test Mode = LTE/TM1 3MHz****4.1.1.3.1 Test Channel = LCH**

Date: 22.DEC.2016 10:32:56

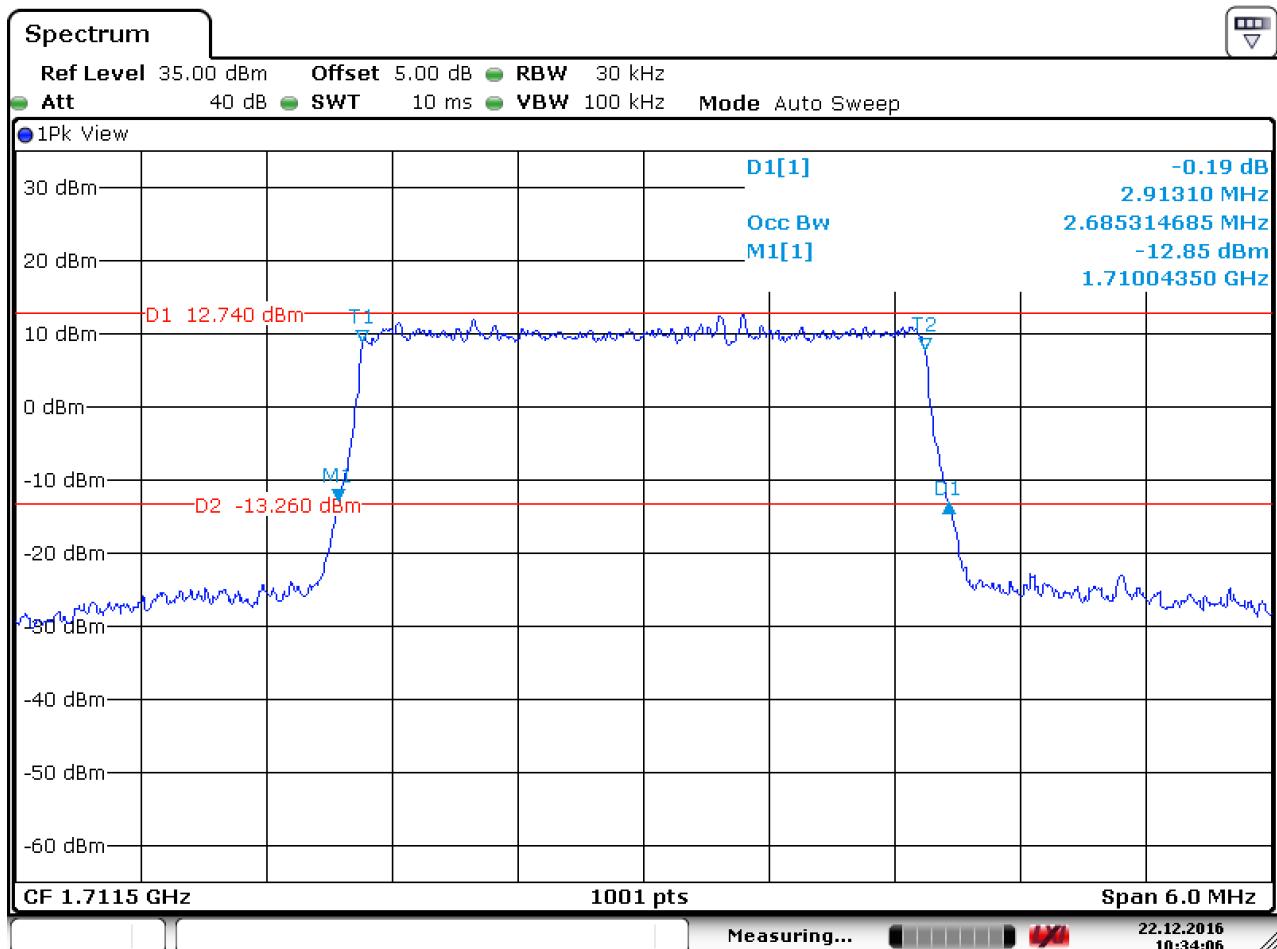
#### 4.1.1.3.2 Test Channel = MCH



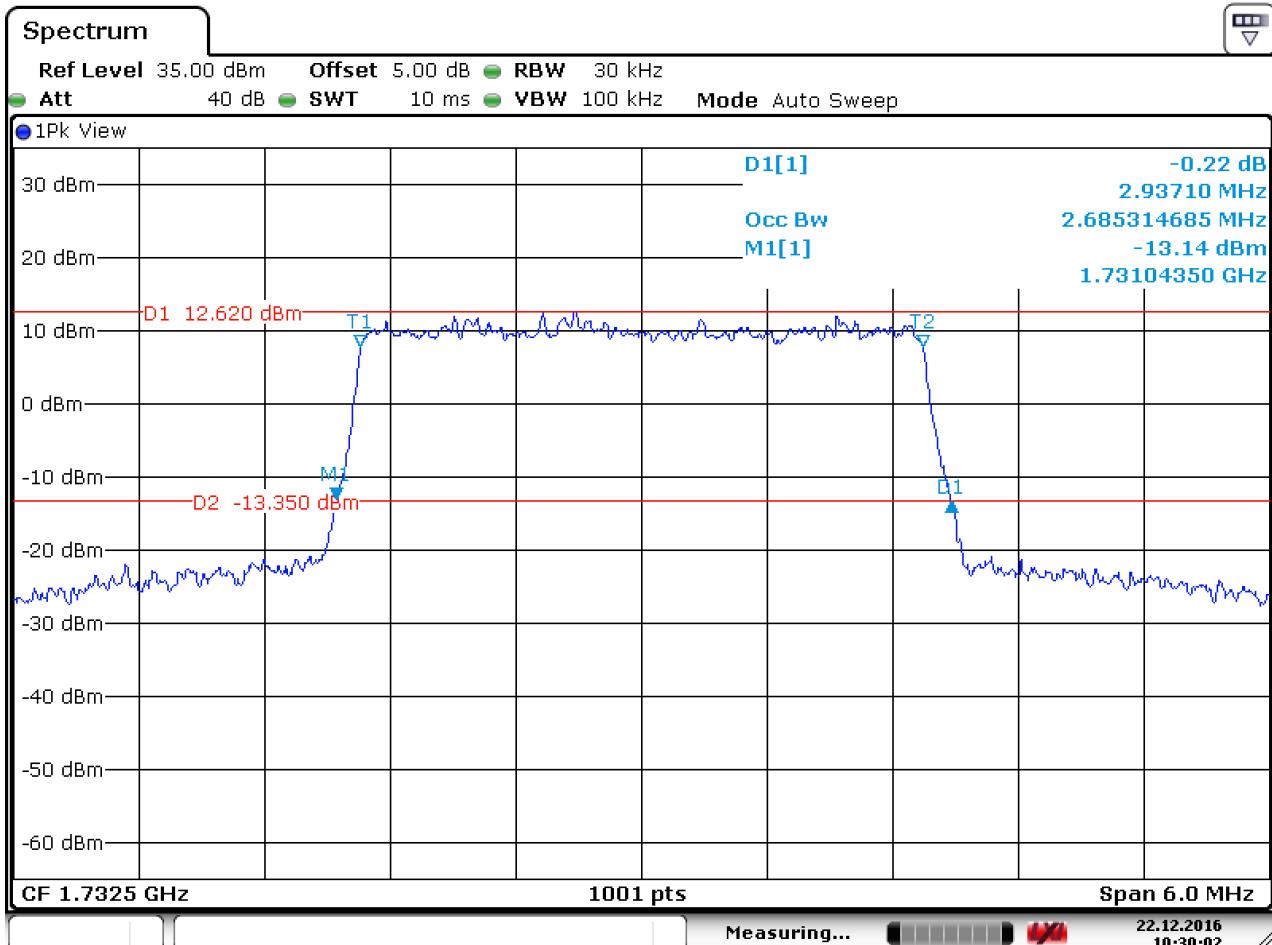
Date: 22.DEC.2016 10:31:20

**4.1.1.3.3 Test Channel = HCH**

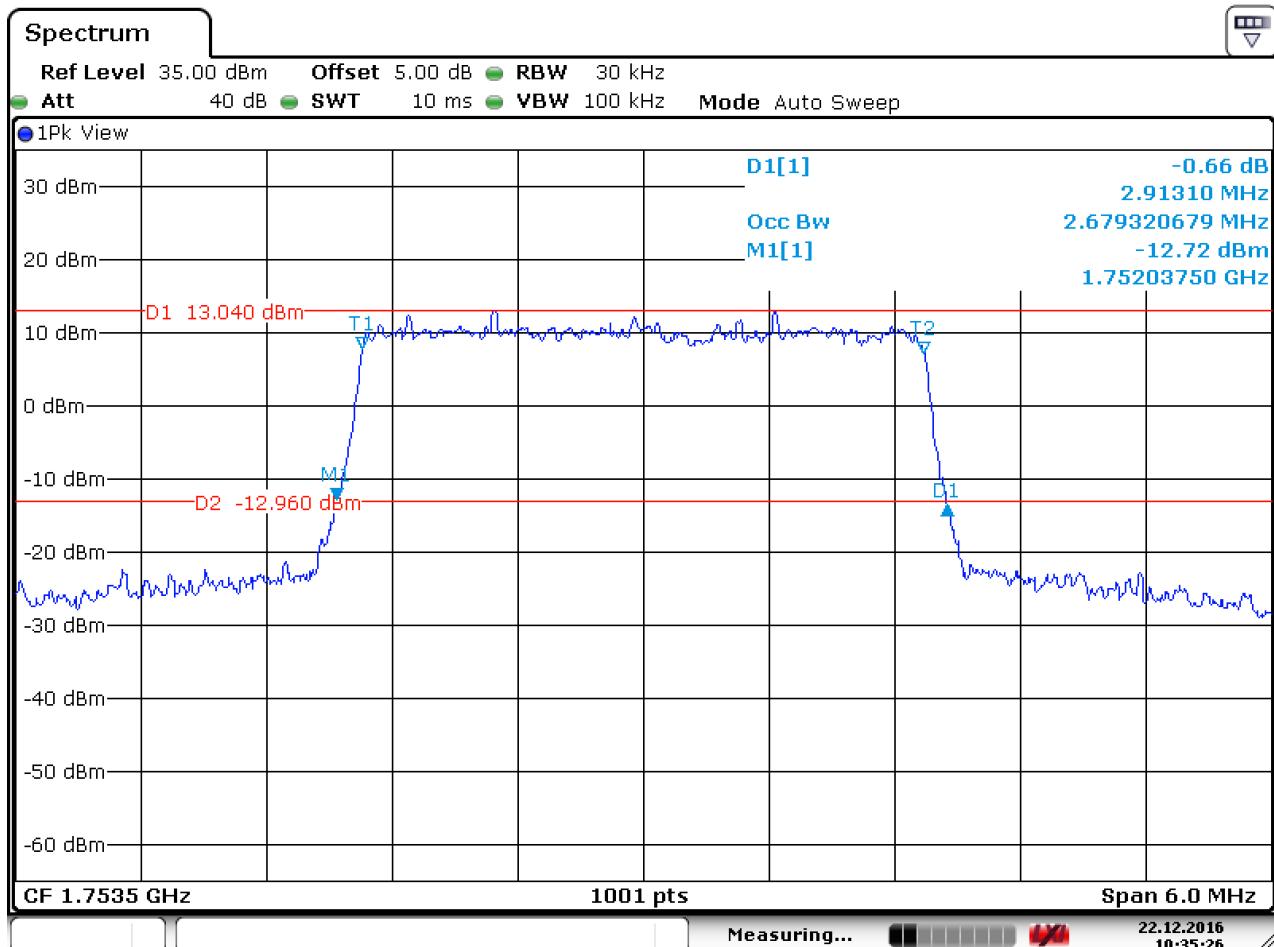
Date: 22.DEC.2016 10:36:31

**4.1.1.4 Test Mode = LTE/TM2 3MHz****4.1.1.4.1 Test Channel = LCH**

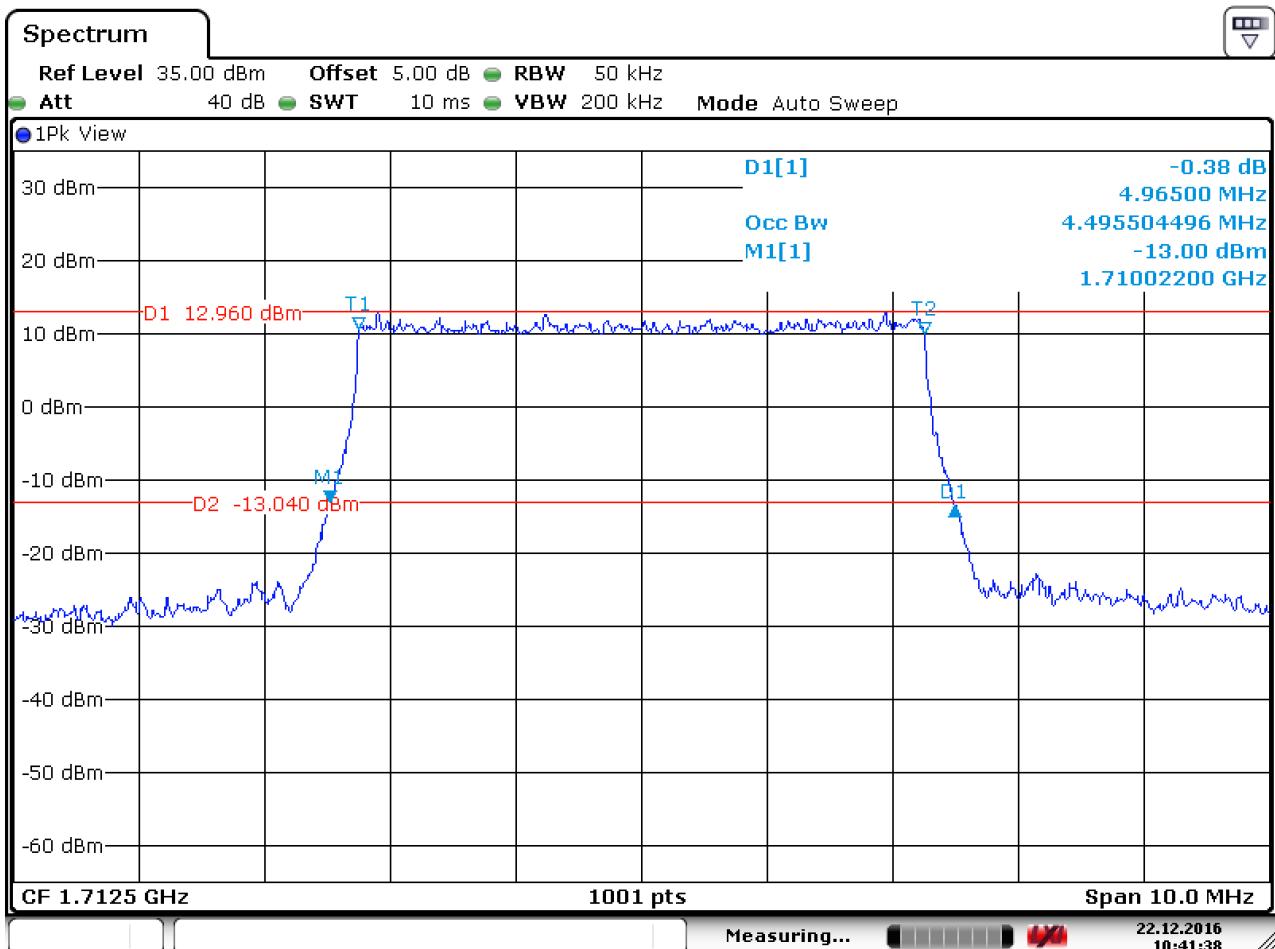
Date: 22.DEC.2016 10:34:07

**4.1.1.4.2 Test Channel = MCH**

Date: 22.DEC.2016 10:30:03

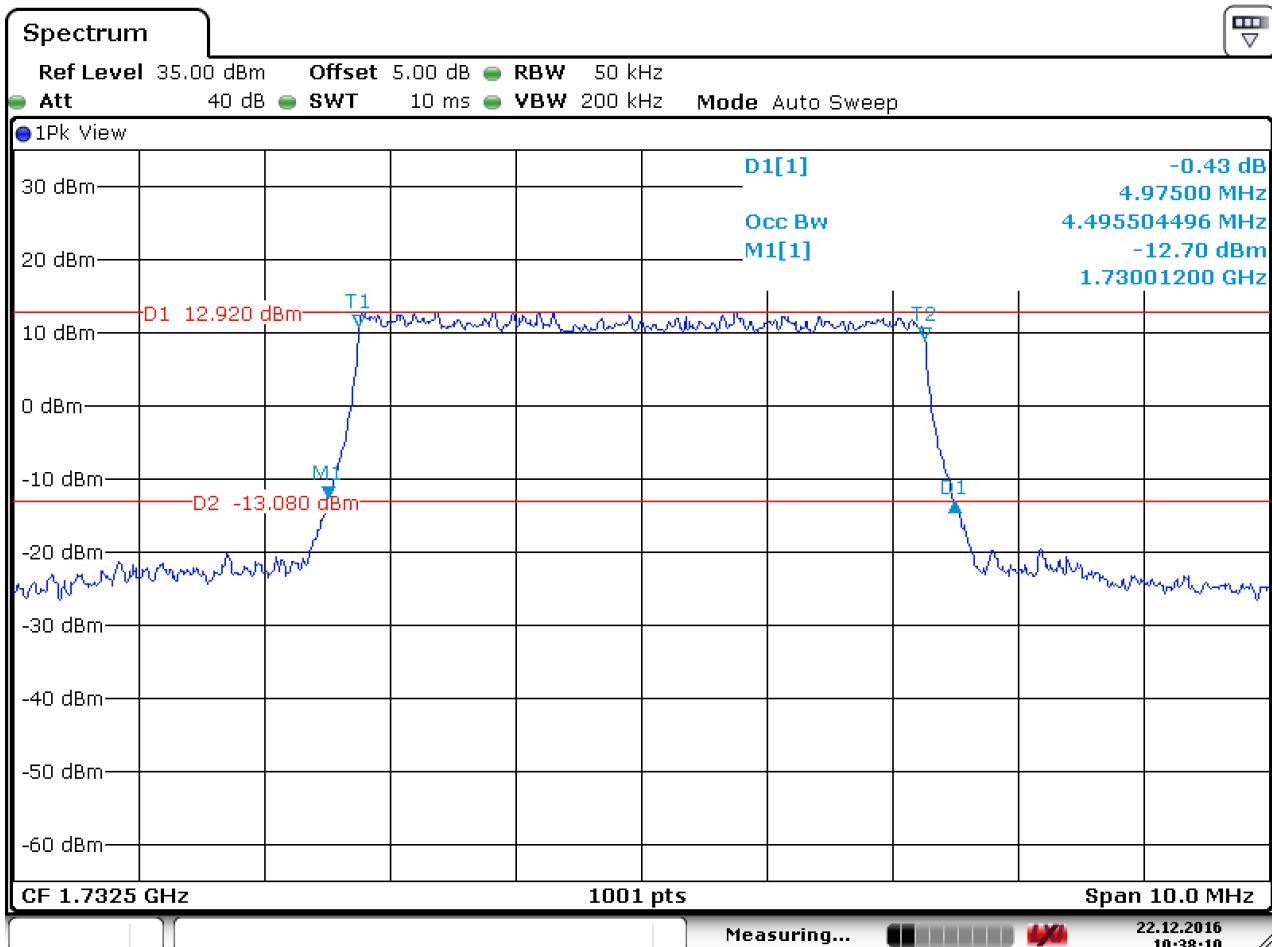
**4.1.1.4.3 Test Channel = HCH**

Date: 22.DEC.2016 10:35:26

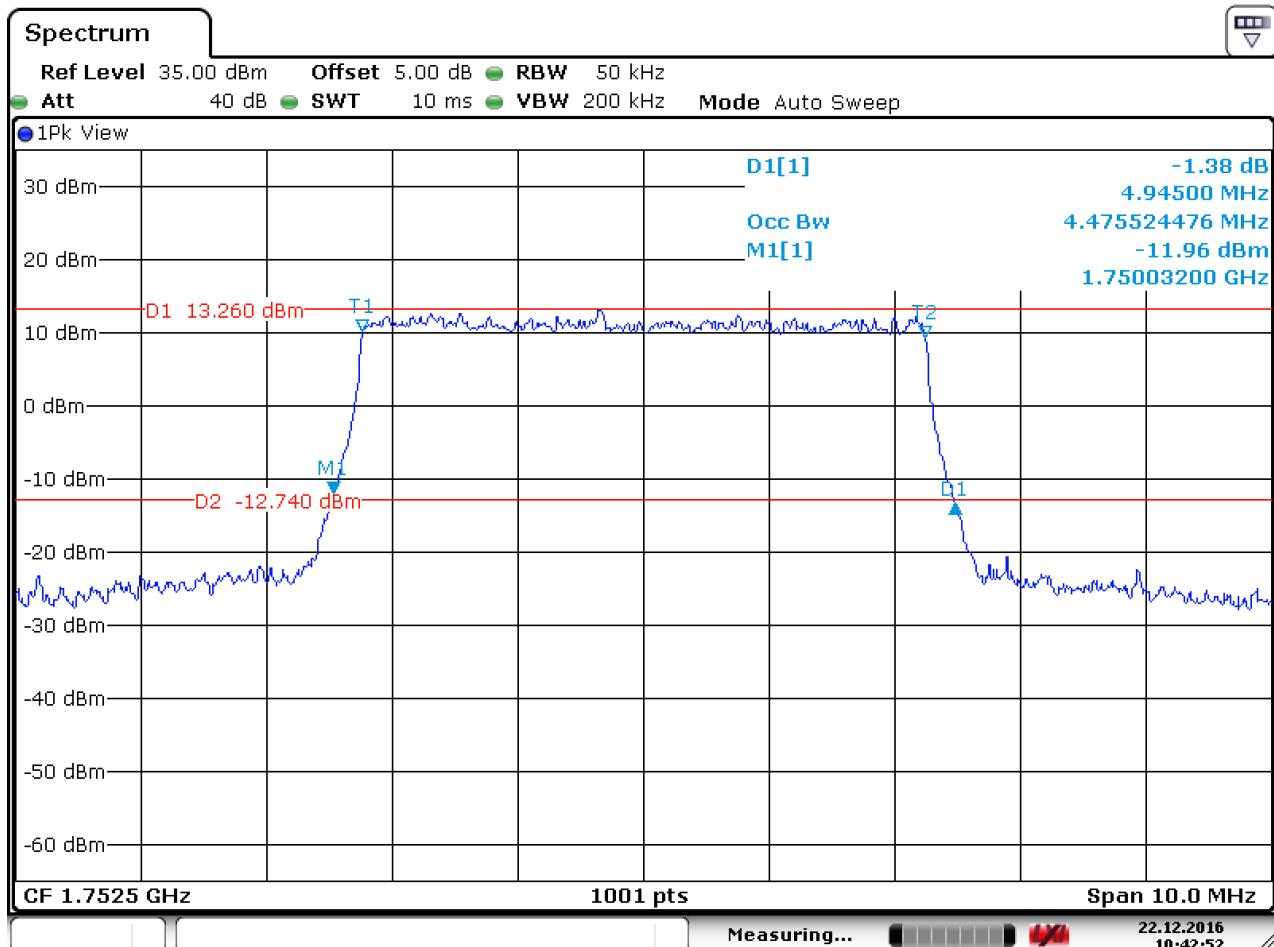
**4.1.1.5 Test Mode = LTE/TM1 5MHz****4.1.1.5.1 Test Channel = LCH**

Date: 22.DEC.2016 10:41:38

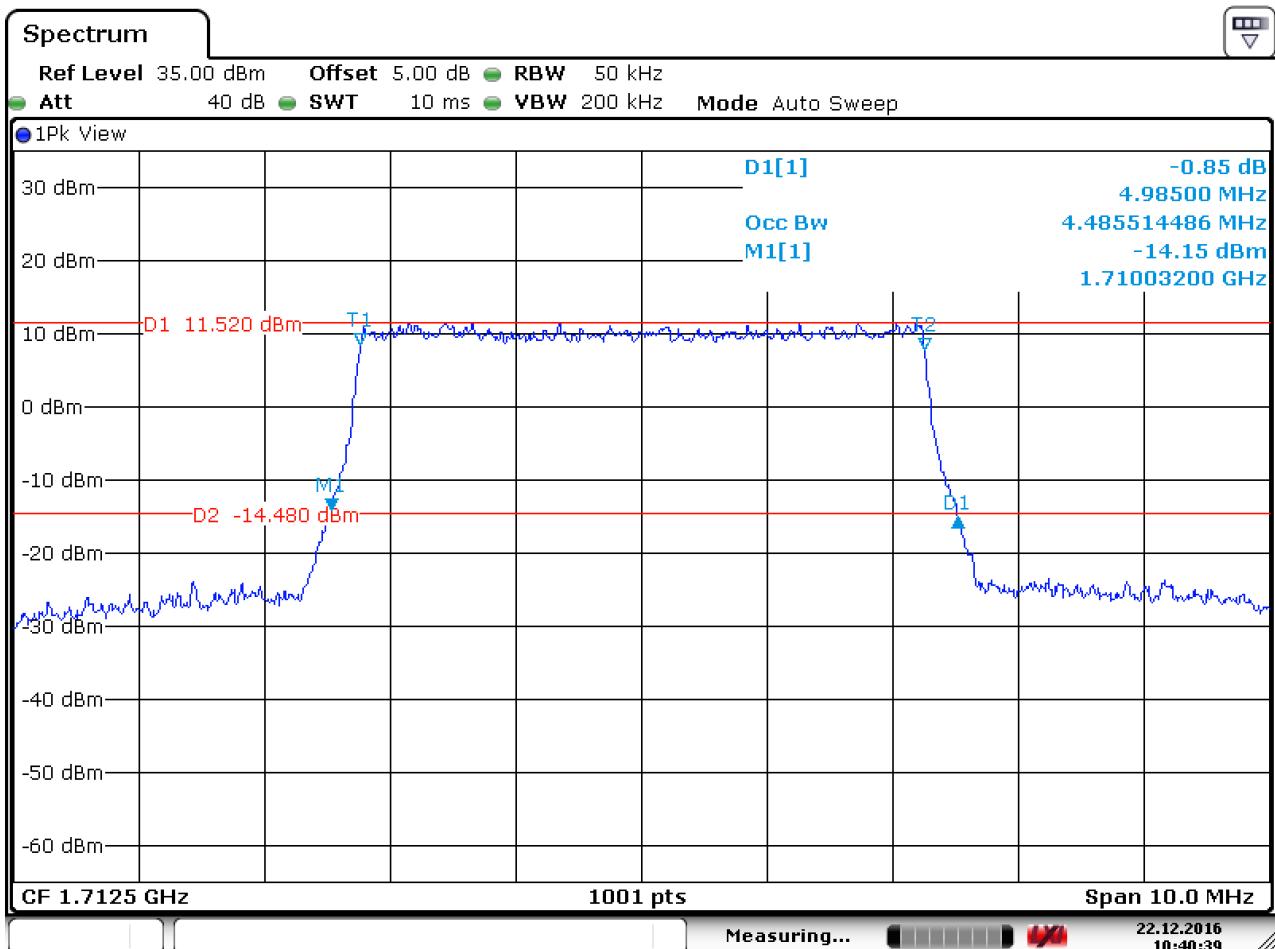
## 4.1.1.5.2 Test Channel = MCH



Date: 22.DEC.2016 10:38:11

**4.1.1.5.3 Test Channel = HCH**

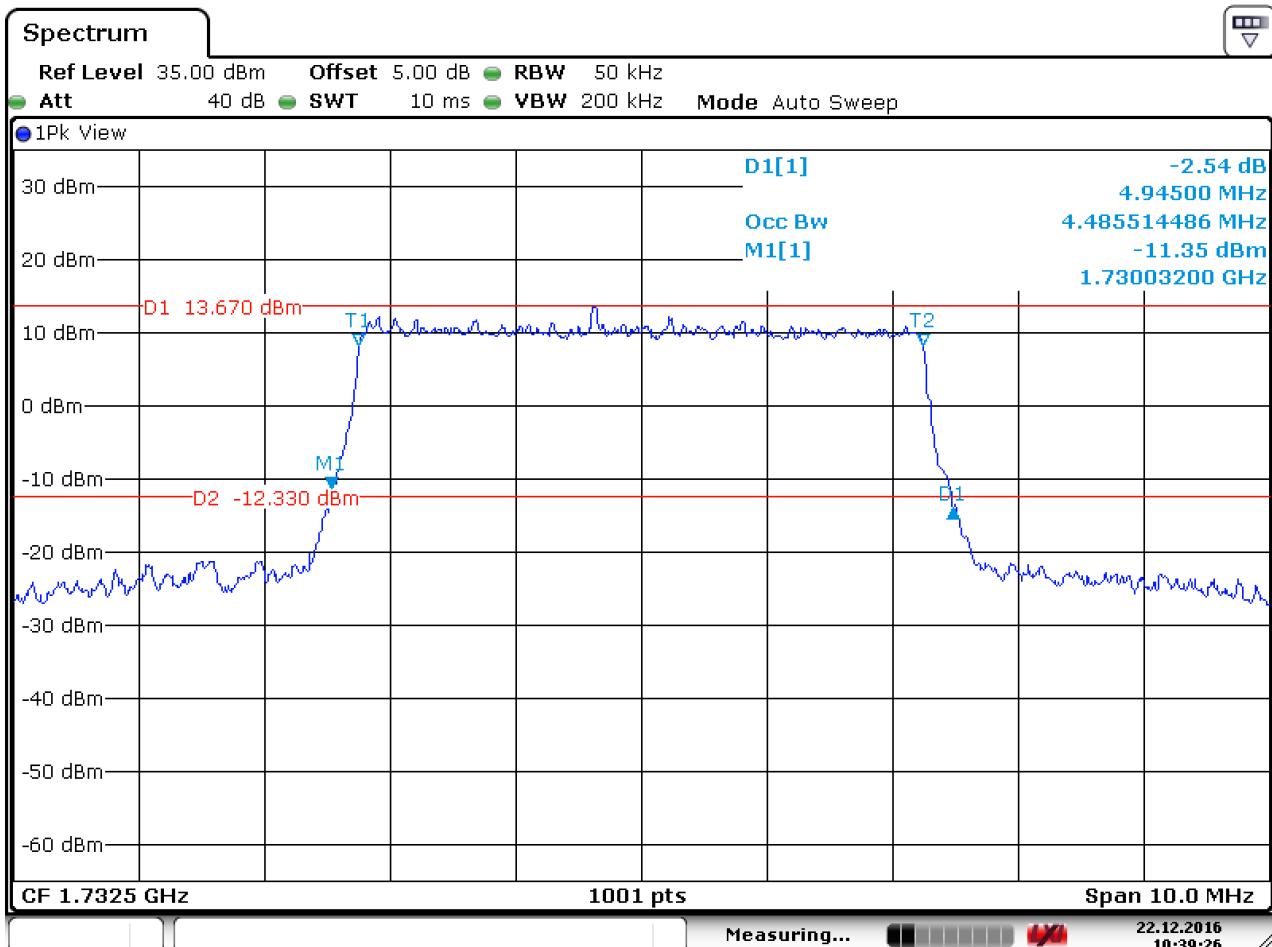
Date: 22.DEC.2016 10:42:52

**4.1.1.6 Test Mode = LTE/TM2 5MHz****4.1.1.6.1 Test Channel = LCH**

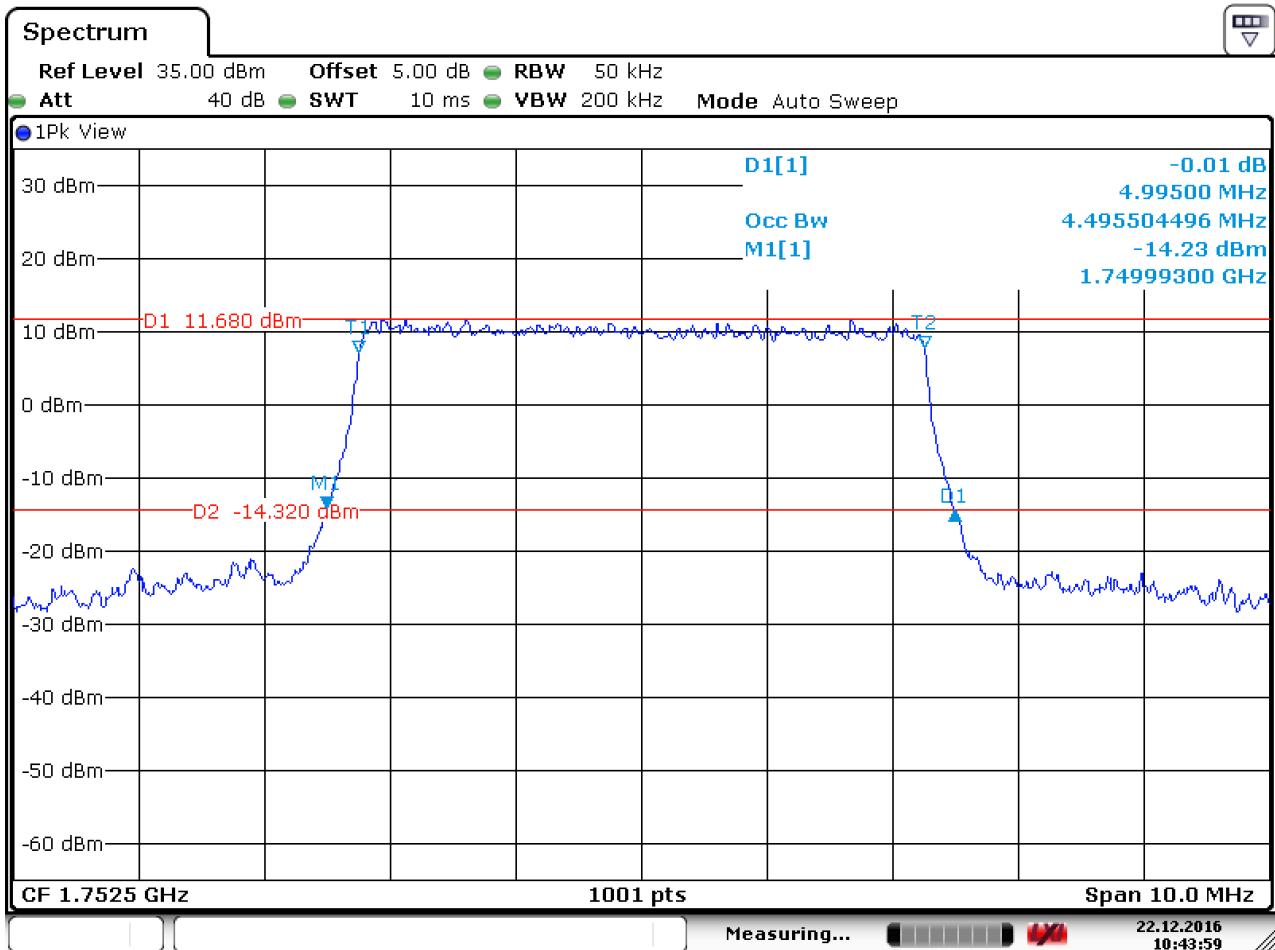
Date: 22.DEC.2016 10:40:39

22.12.2016  
10:40:39

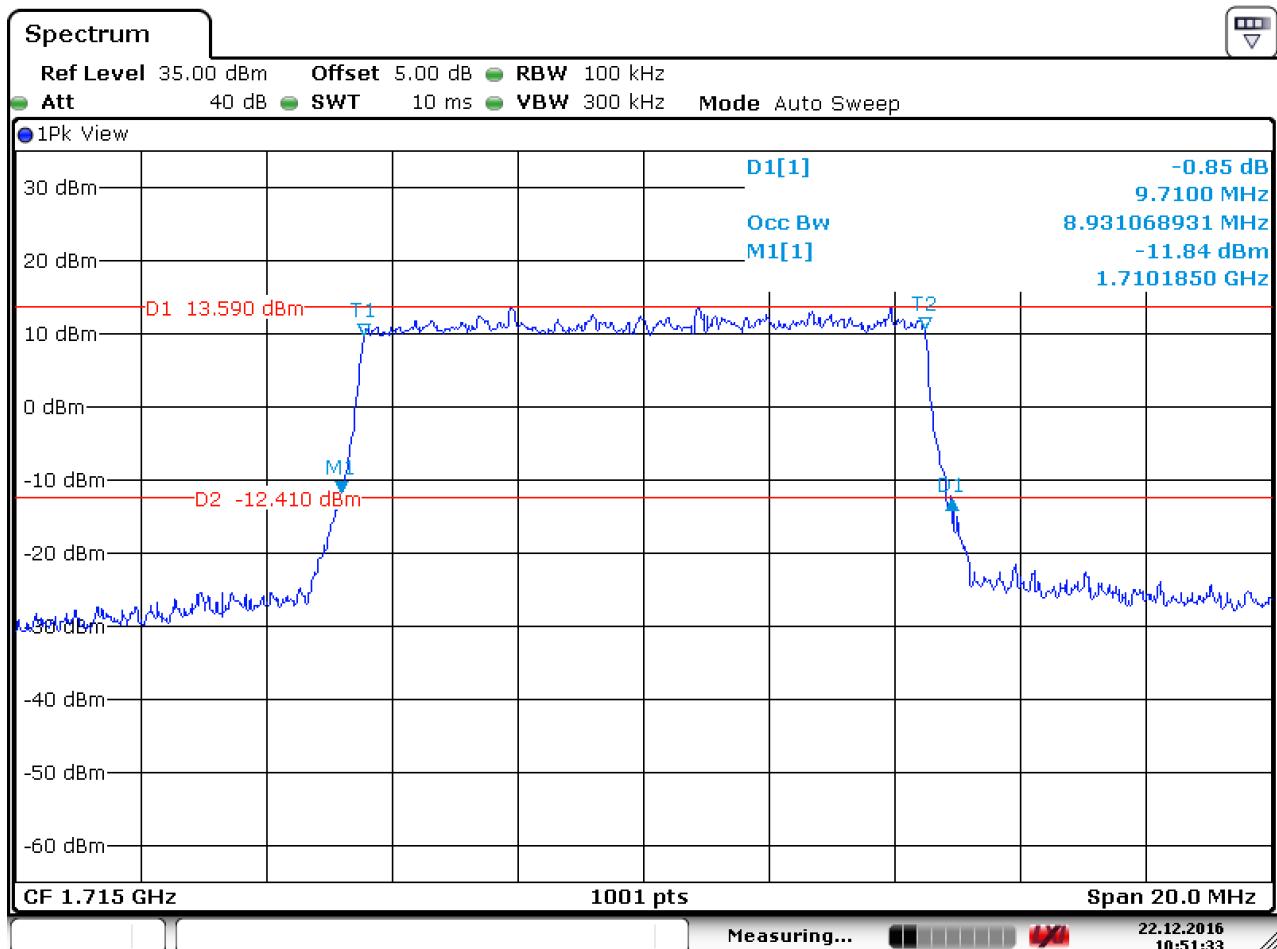
## 4.1.1.6.2 Test Channel = MCH



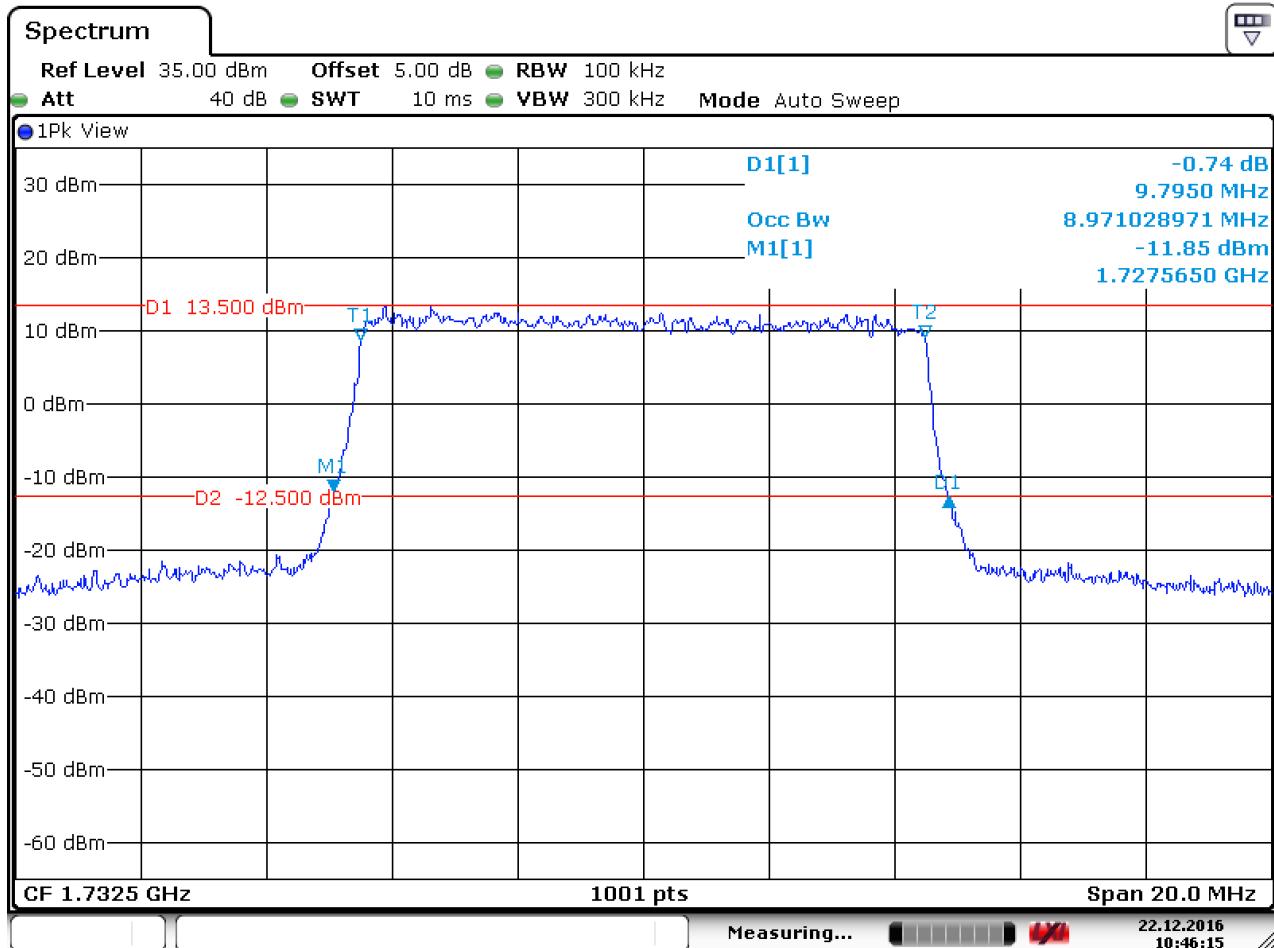
Date: 22.DEC.2016 10:39:27

**4.1.1.6.3 Test Channel = HCH**

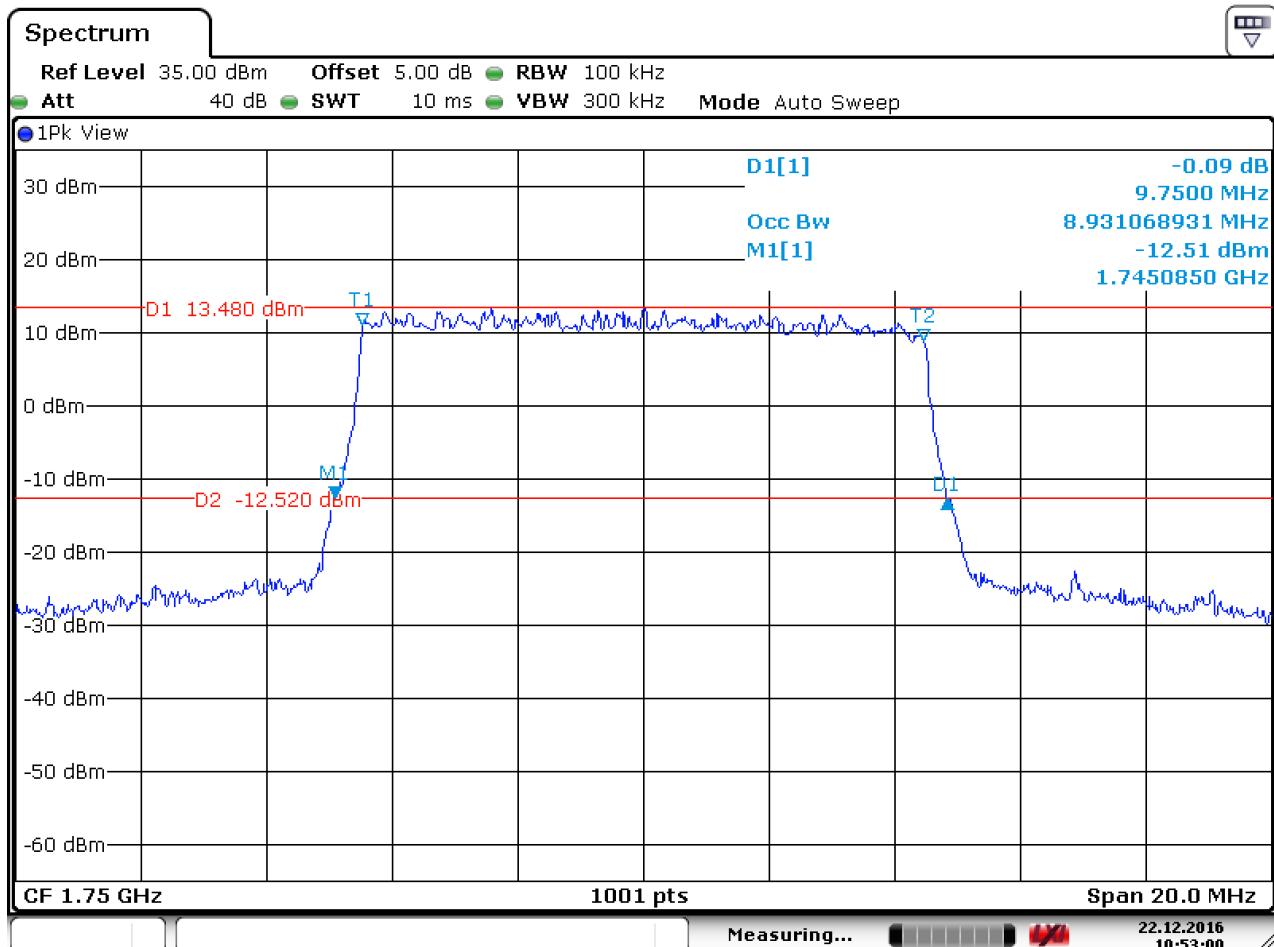
Date: 22.DEC.2016 10:43:59

**4.1.1.7 Test Mode = LTE/TM1 10MHz****4.1.1.7.1 Test Channel = LCH**

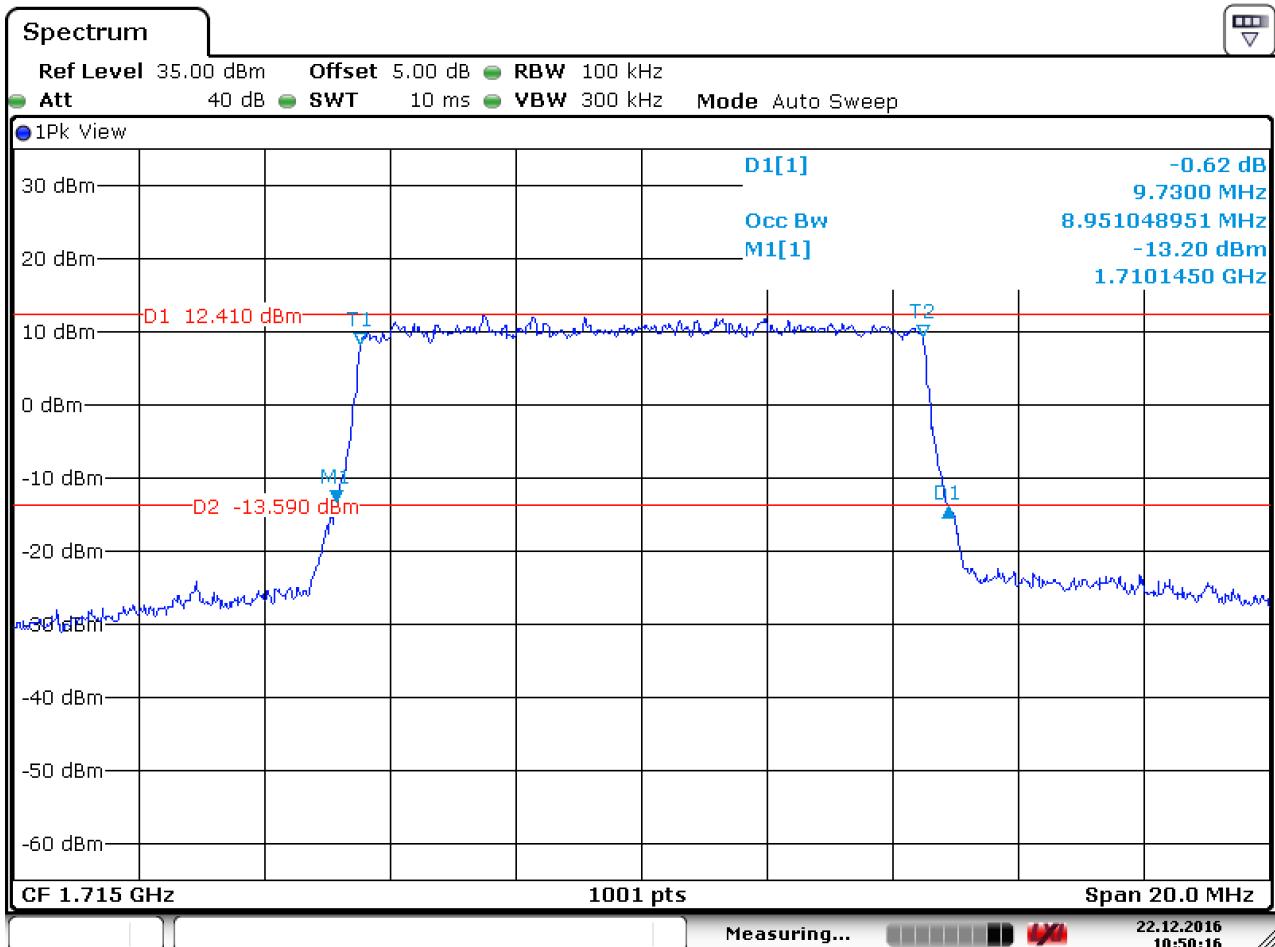
Date: 22.DEC.2016 10:51:34

**4.1.1.7.2 Test Channel = MCH**

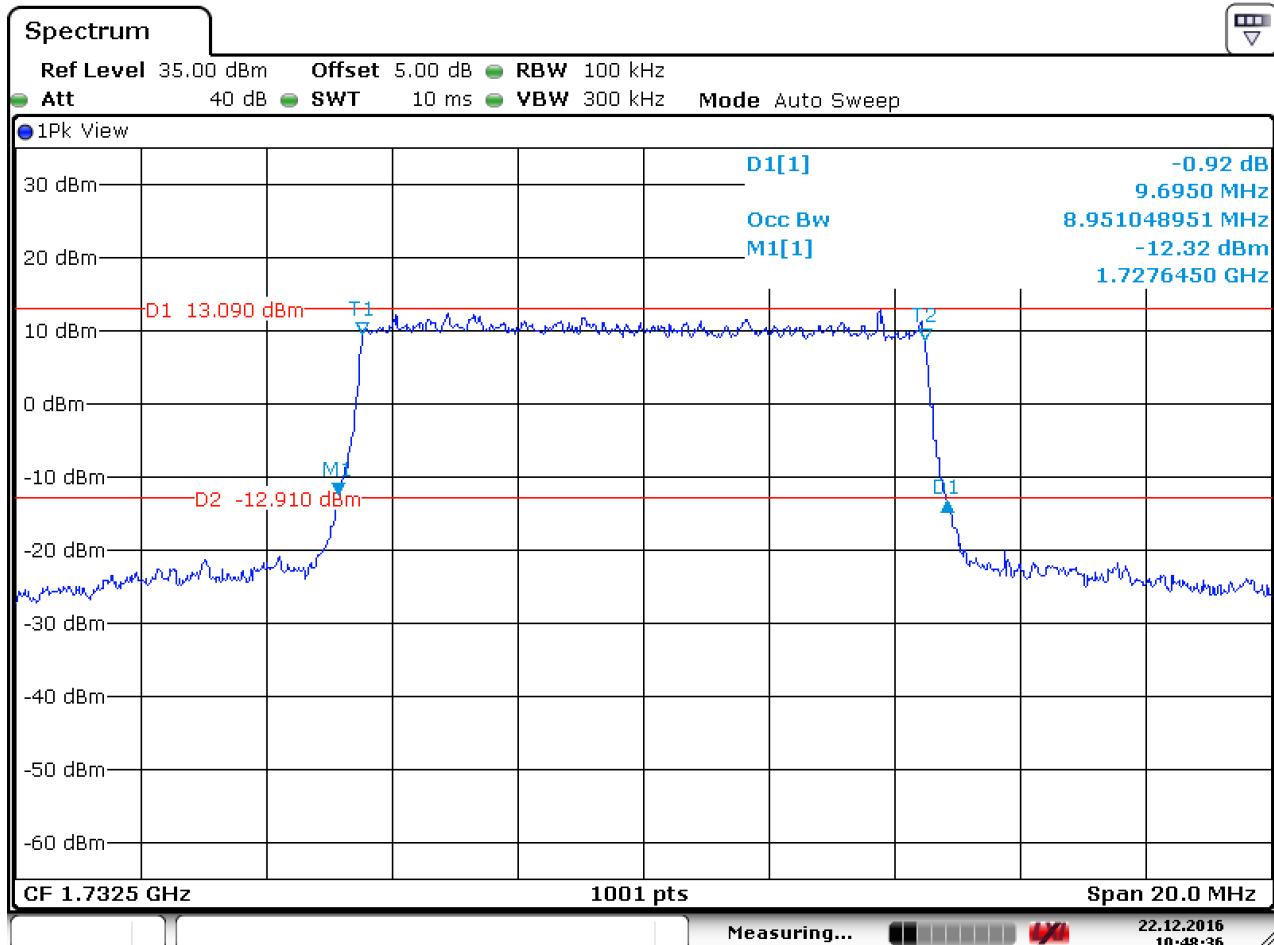
Date: 22.DEC.2016 10:46:15

**4.1.1.7.3 Test Channel = HCH**

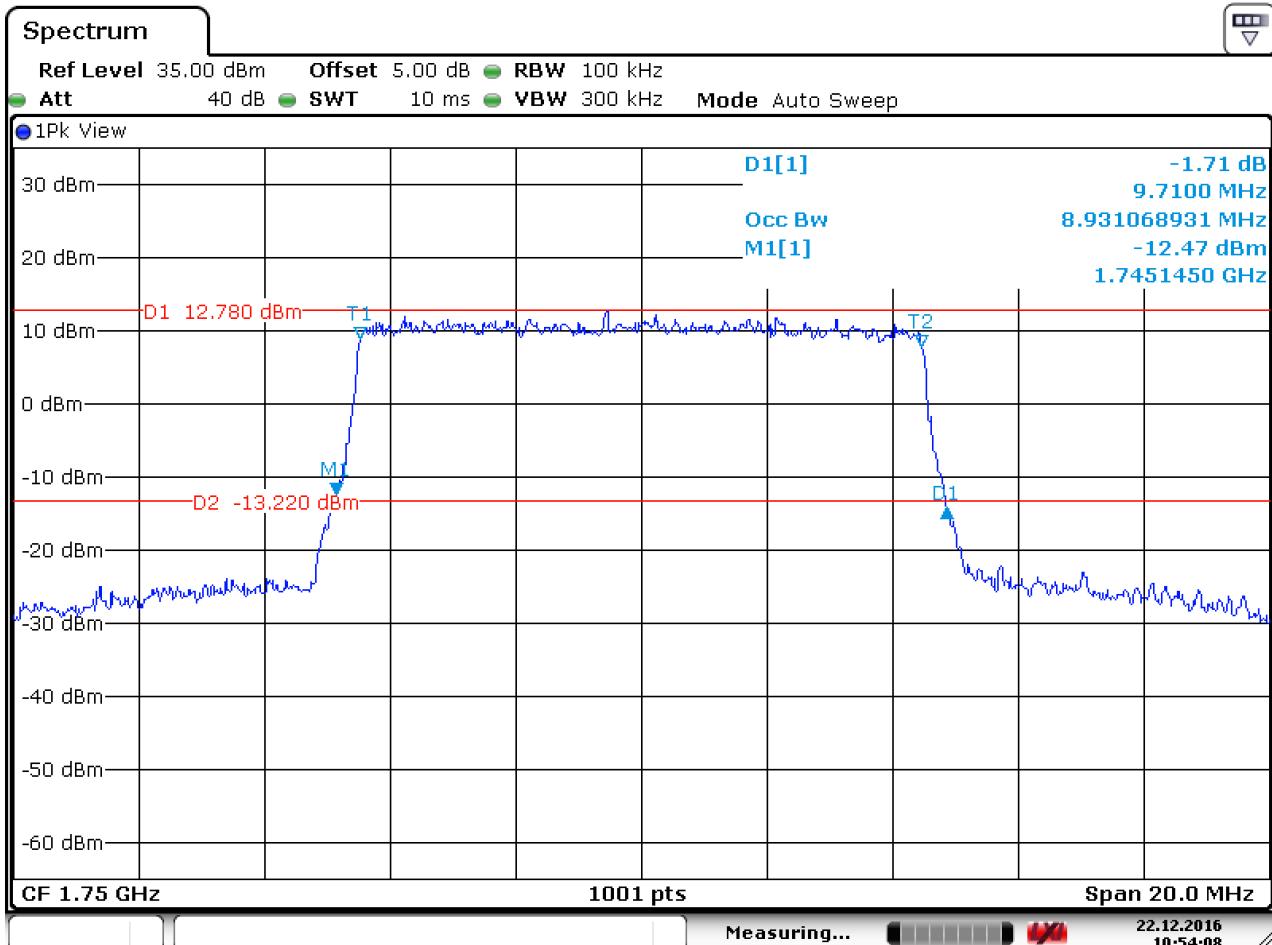
Date: 22.DEC.2016 10:53:01

**4.1.1.8 Test Mode = LTE/TM2 10MHz****4.1.1.8.1 Test Channel = LCH**

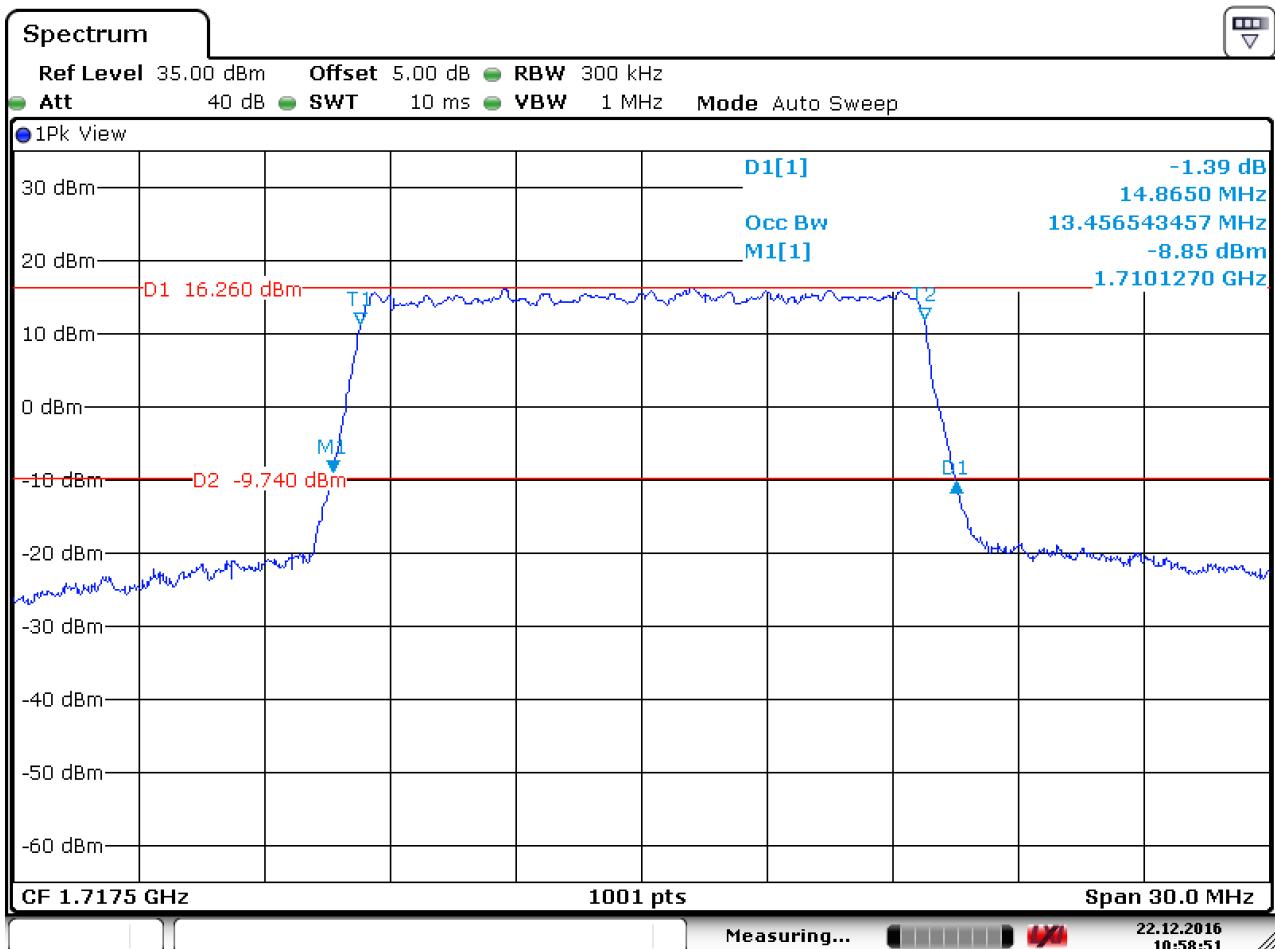
Date: 22.DEC.2016 10:50:16

**4.1.1.8.2 Test Channel = MCH**

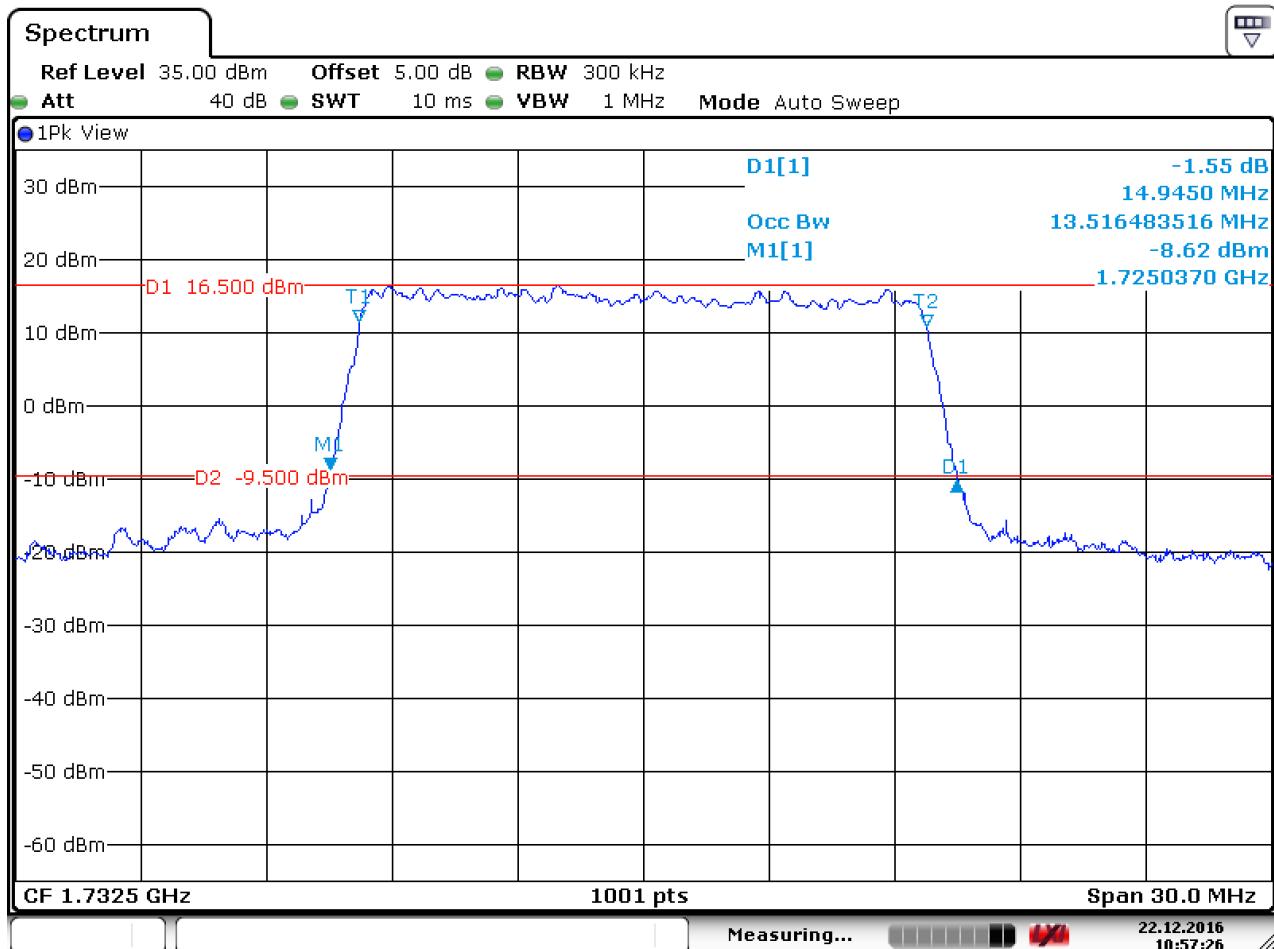
Date: 22.DEC.2016 10:48:36

**4.1.1.8.3 Test Channel = HCH**

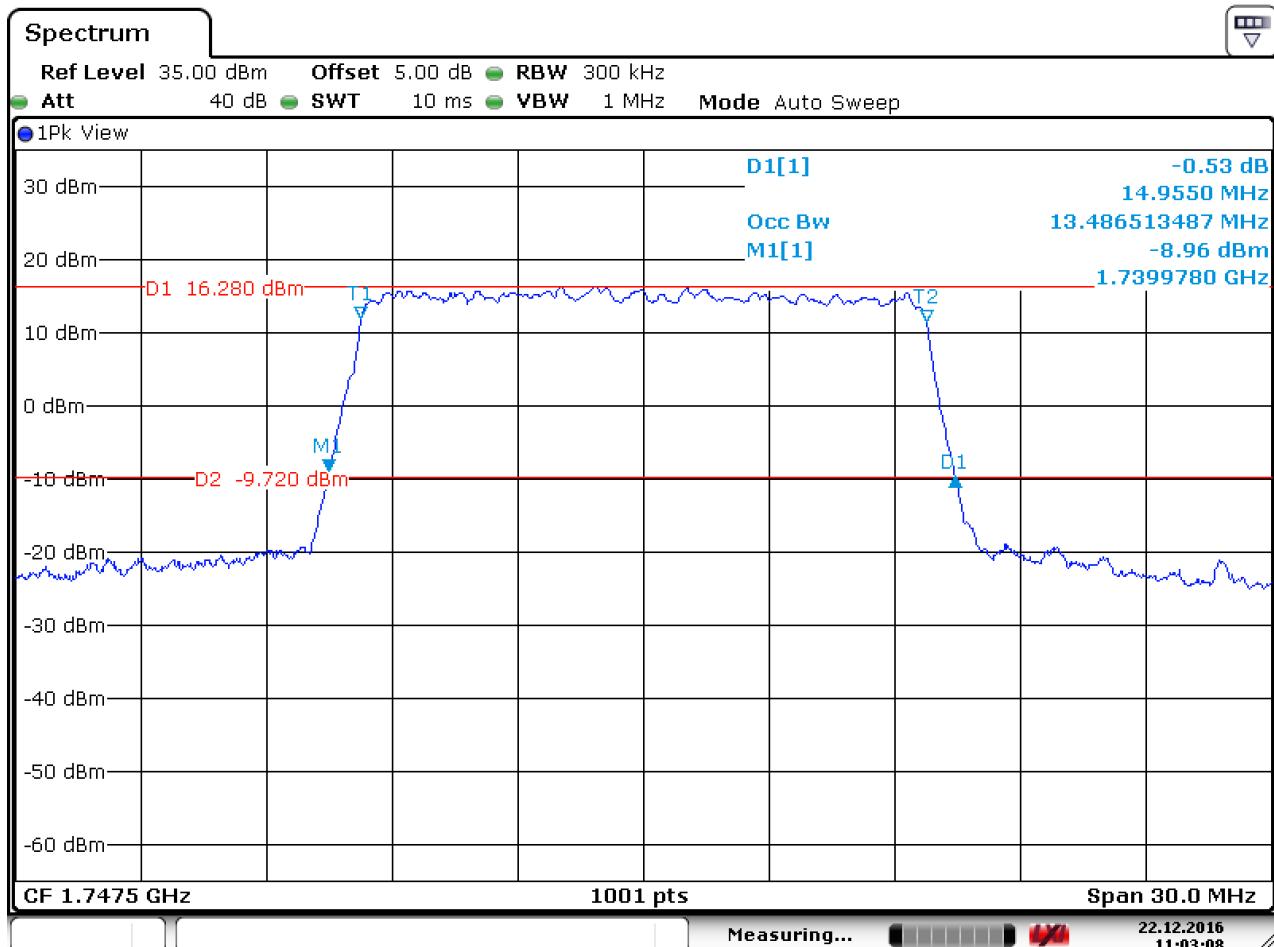
Date: 22.DEC.2016 10:54:09

**4.1.1.9 Test Mode = LTE/TM1 15MHz****4.1.1.9.1 Test Channel = LCH**

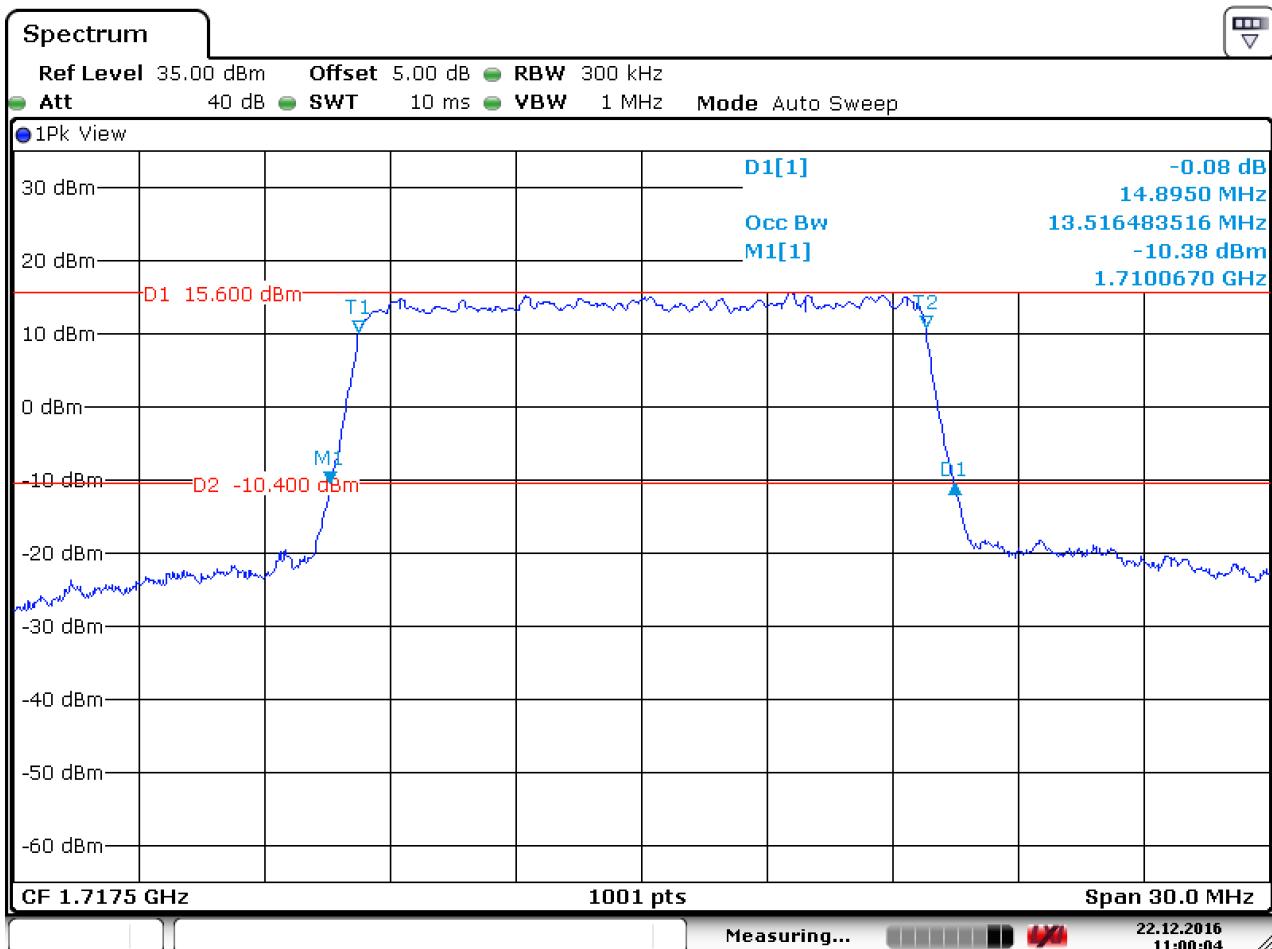
Date: 22.DEC.2016 10:58:52

**4.1.1.9.2 Test Channel = MCH**

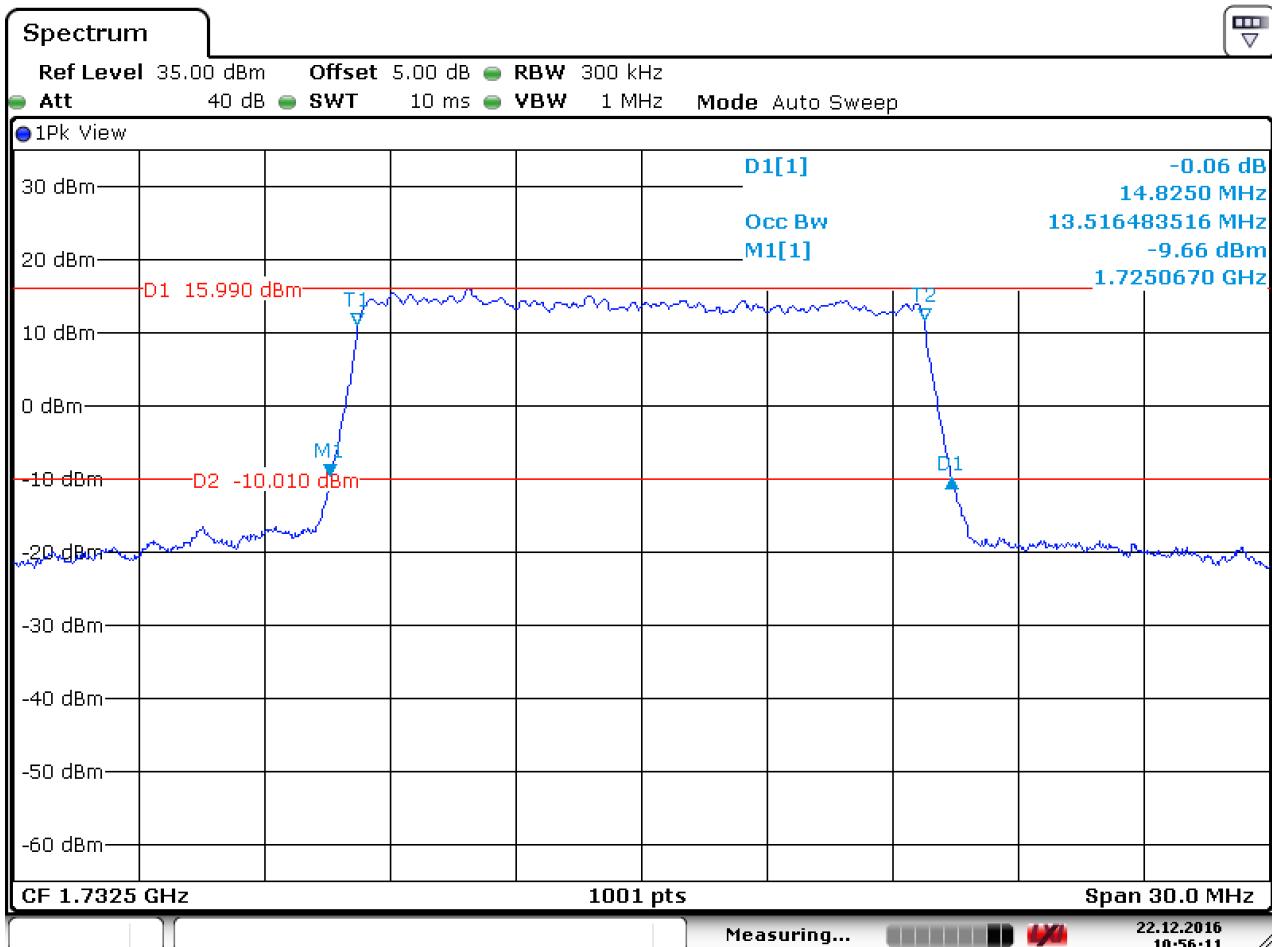
Date: 22.DEC.2016 10:57:27

**4.1.1.9.3 Test Channel = HCH**

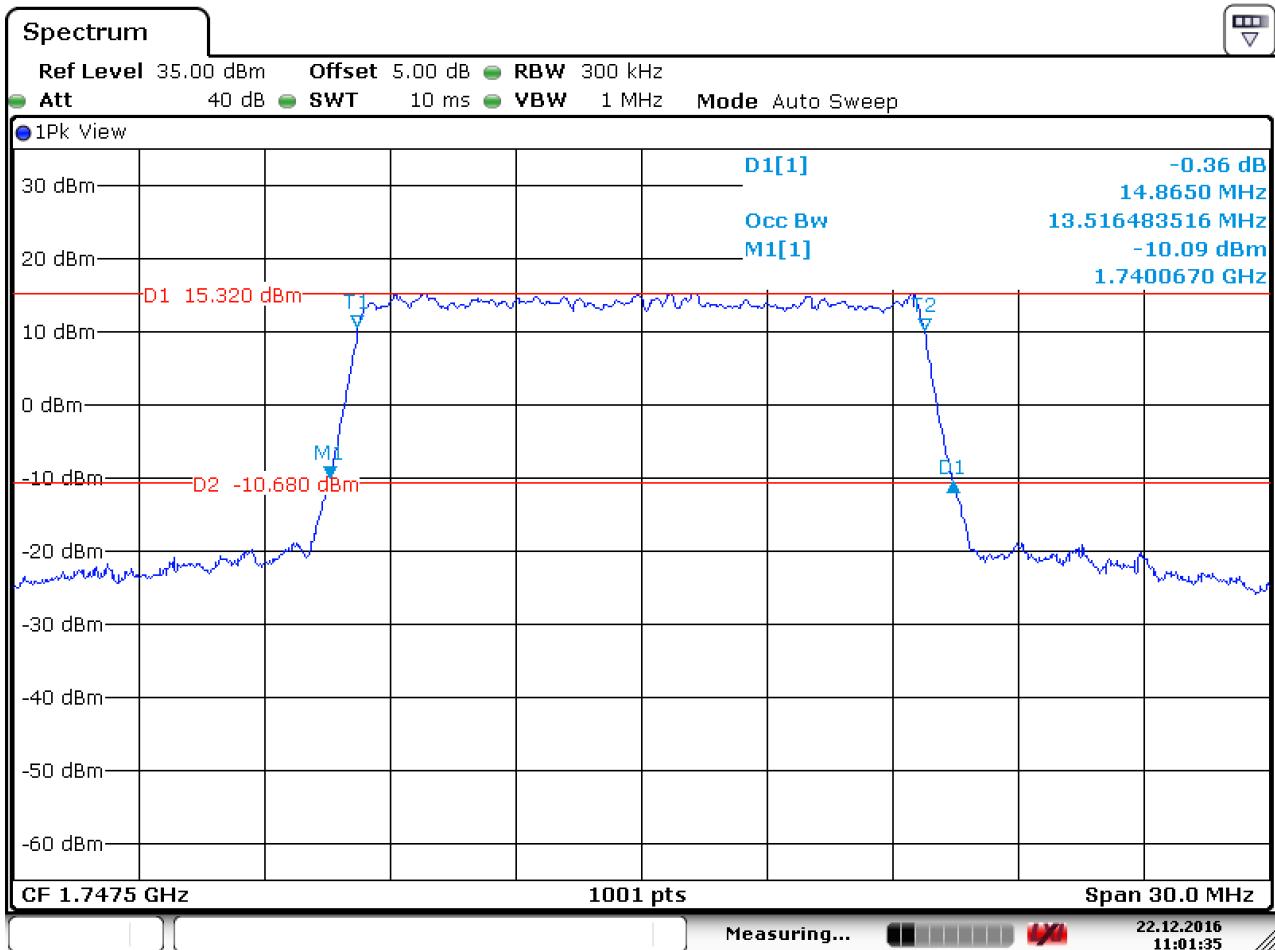
Date: 22.DEC.2016 11:03:08

**4.1.1.10 Test Mode = LTE/TM2 15MHz****4.1.1.10.1 Test Channel = LCH**

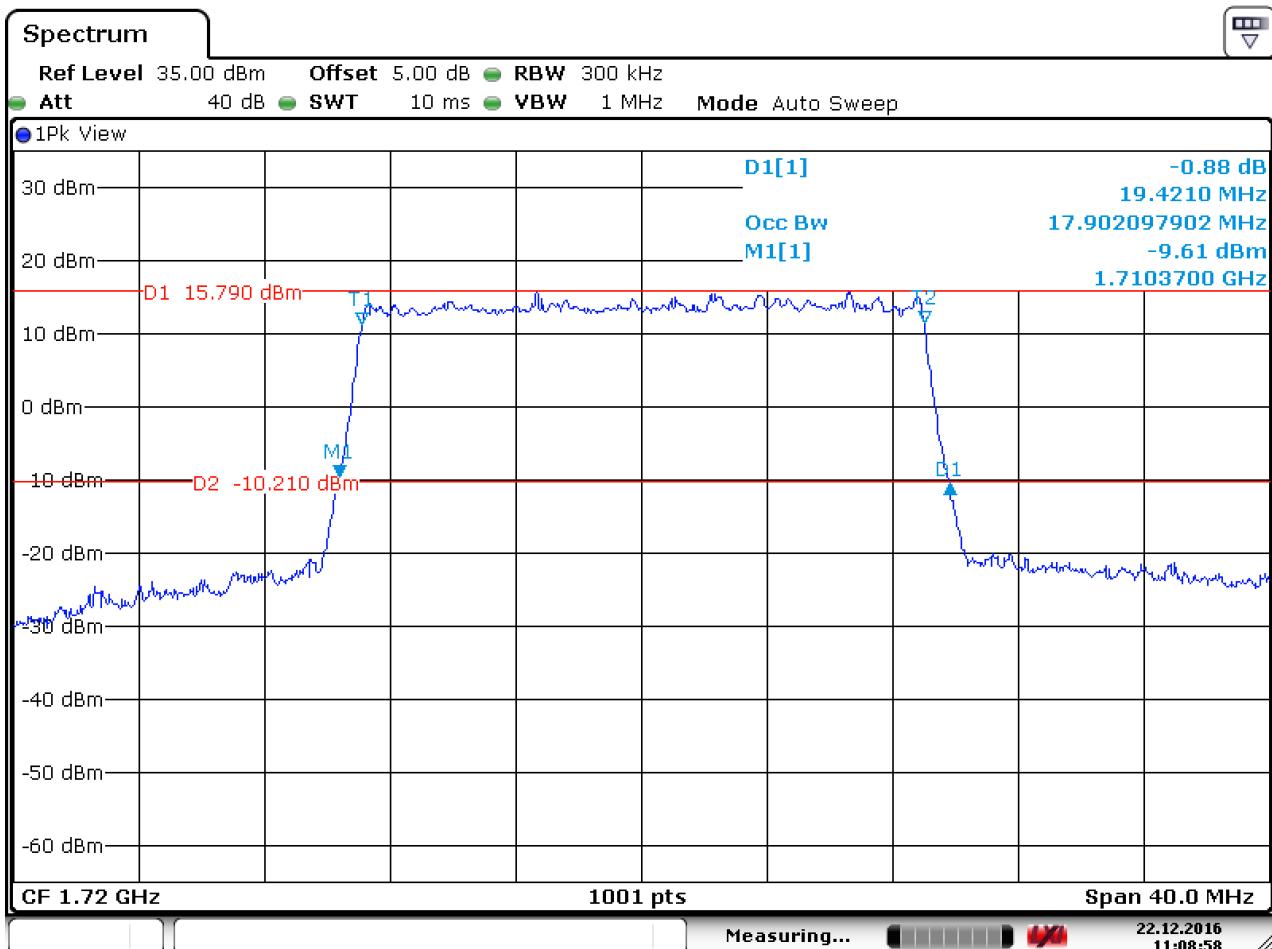
Date: 22.DEC.2016 11:00:05

**4.1.1.10.2 Test Channel = MCH**

Date: 22.DEC.2016 10:56:11

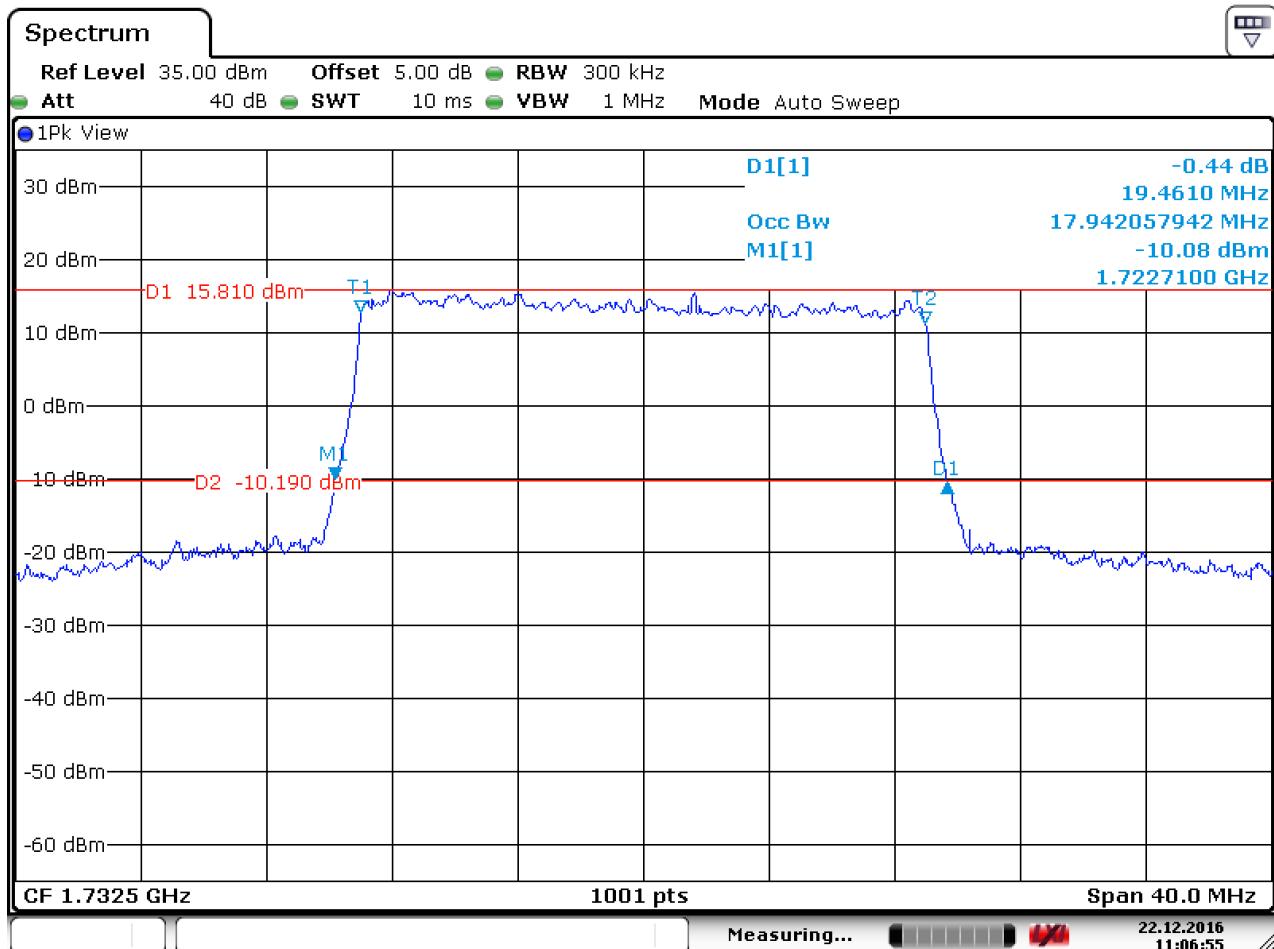
**4.1.1.10.3 Test Channel = HCH**

Date: 22.DEC.2016 11:01:35

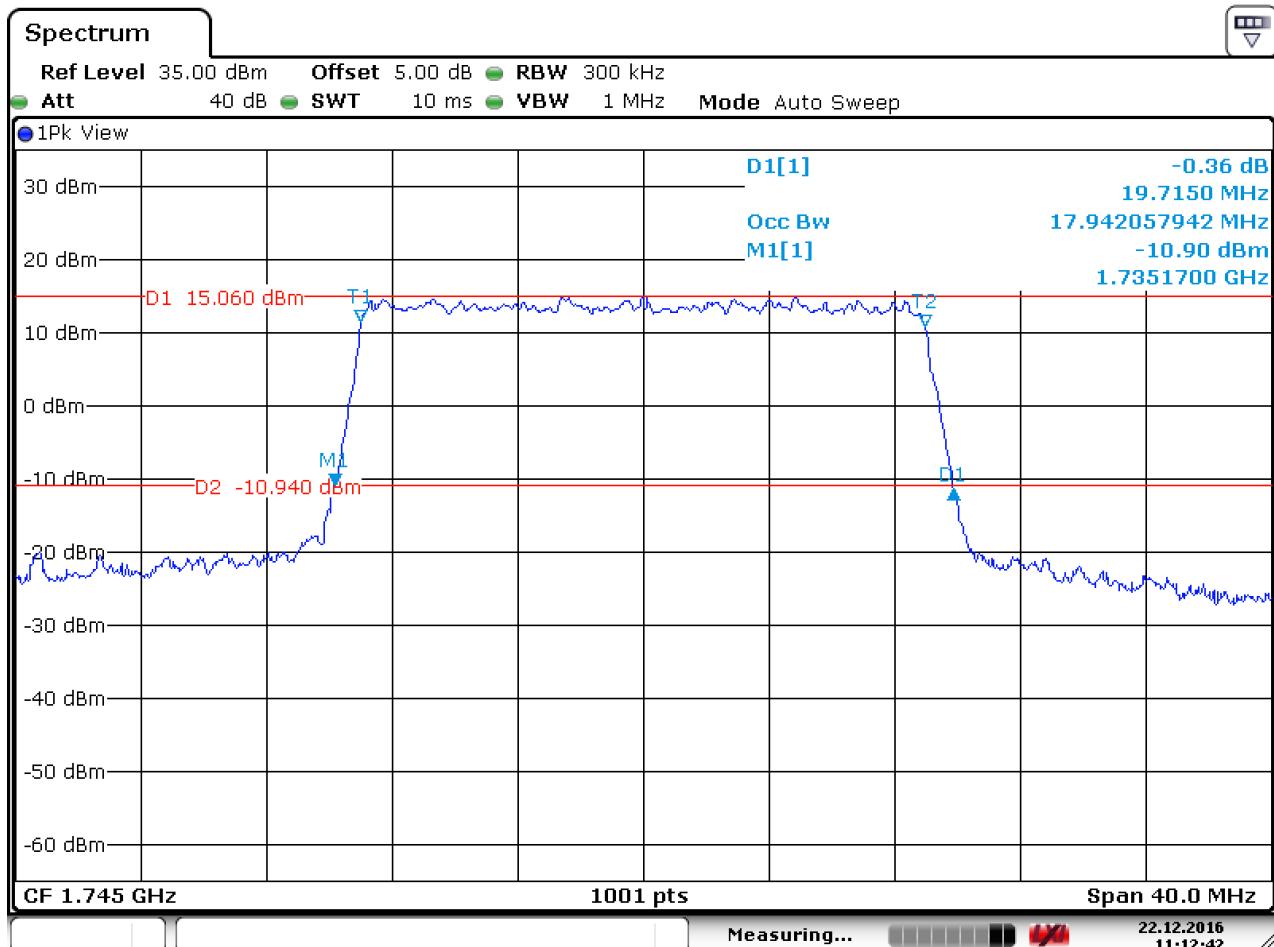
**4.1.1.11 Test Mode = LTE/TM1 20MHz****4.1.1.11.1 Test Channel = LCH**

Date: 22.DEC.2016 11:08:59

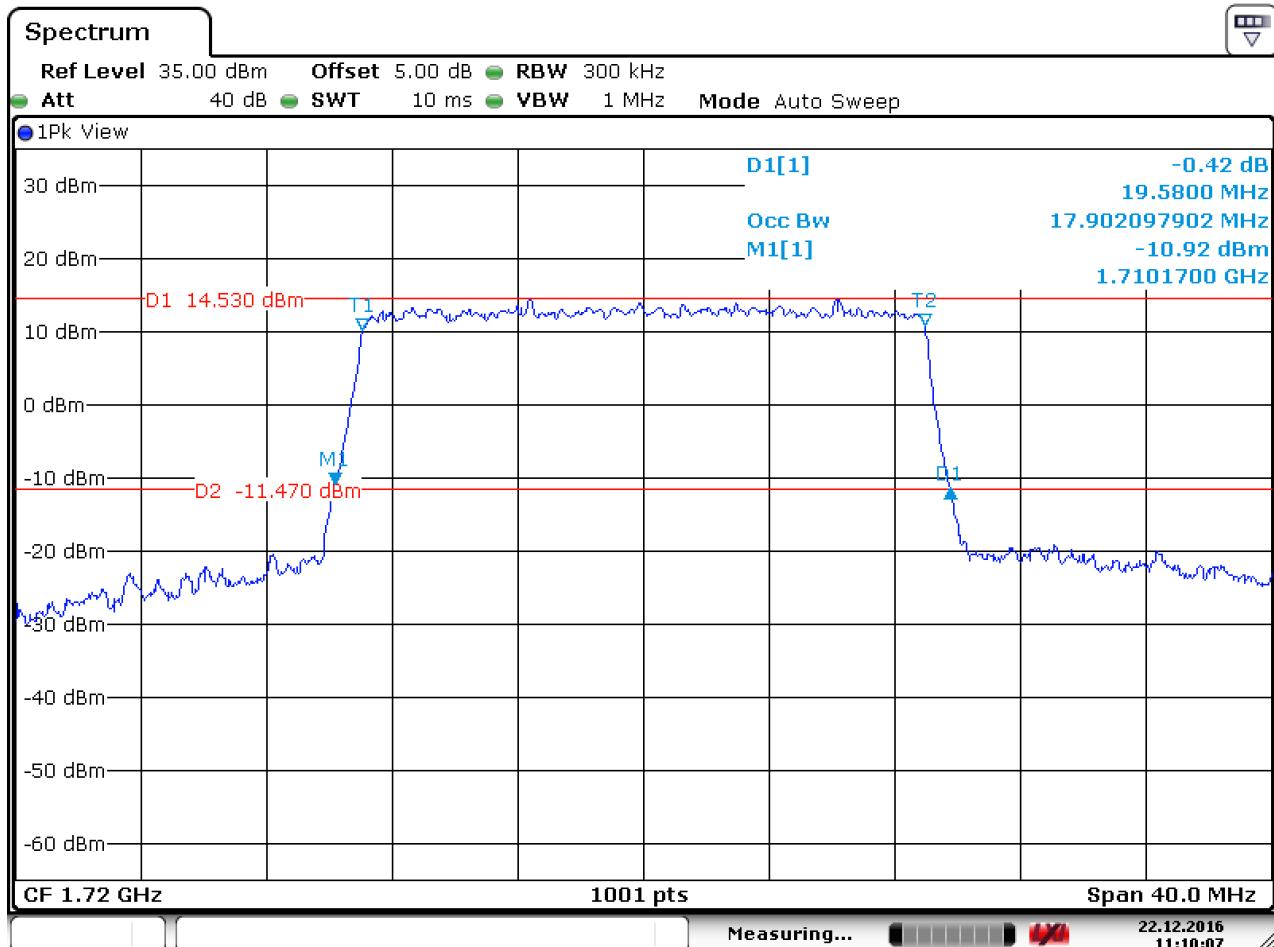
22.12.2016  
11:08:58

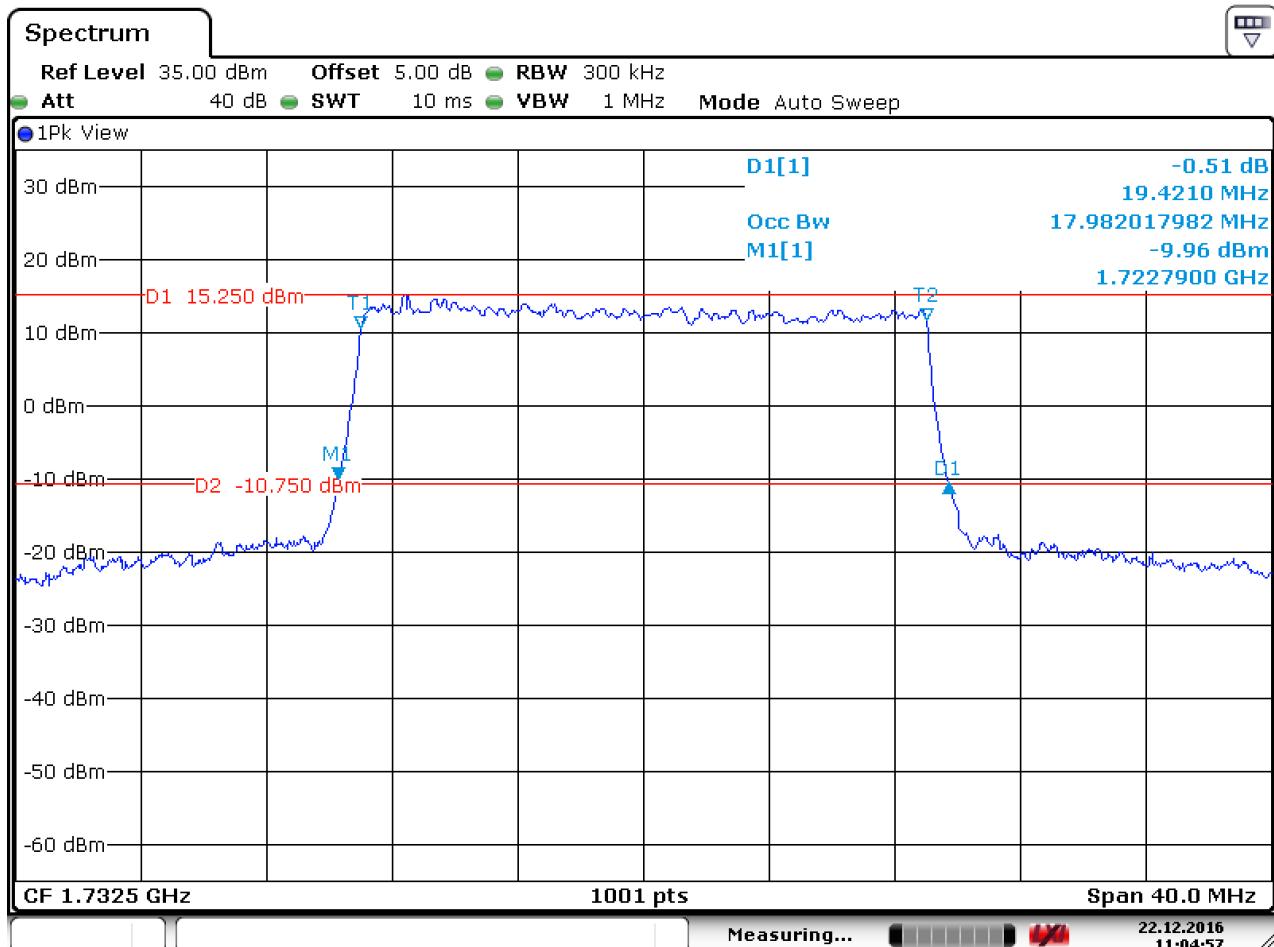
**4.1.1.11.2 Test Channel = MCH**

Date: 22.DEC.2016 11:06:56

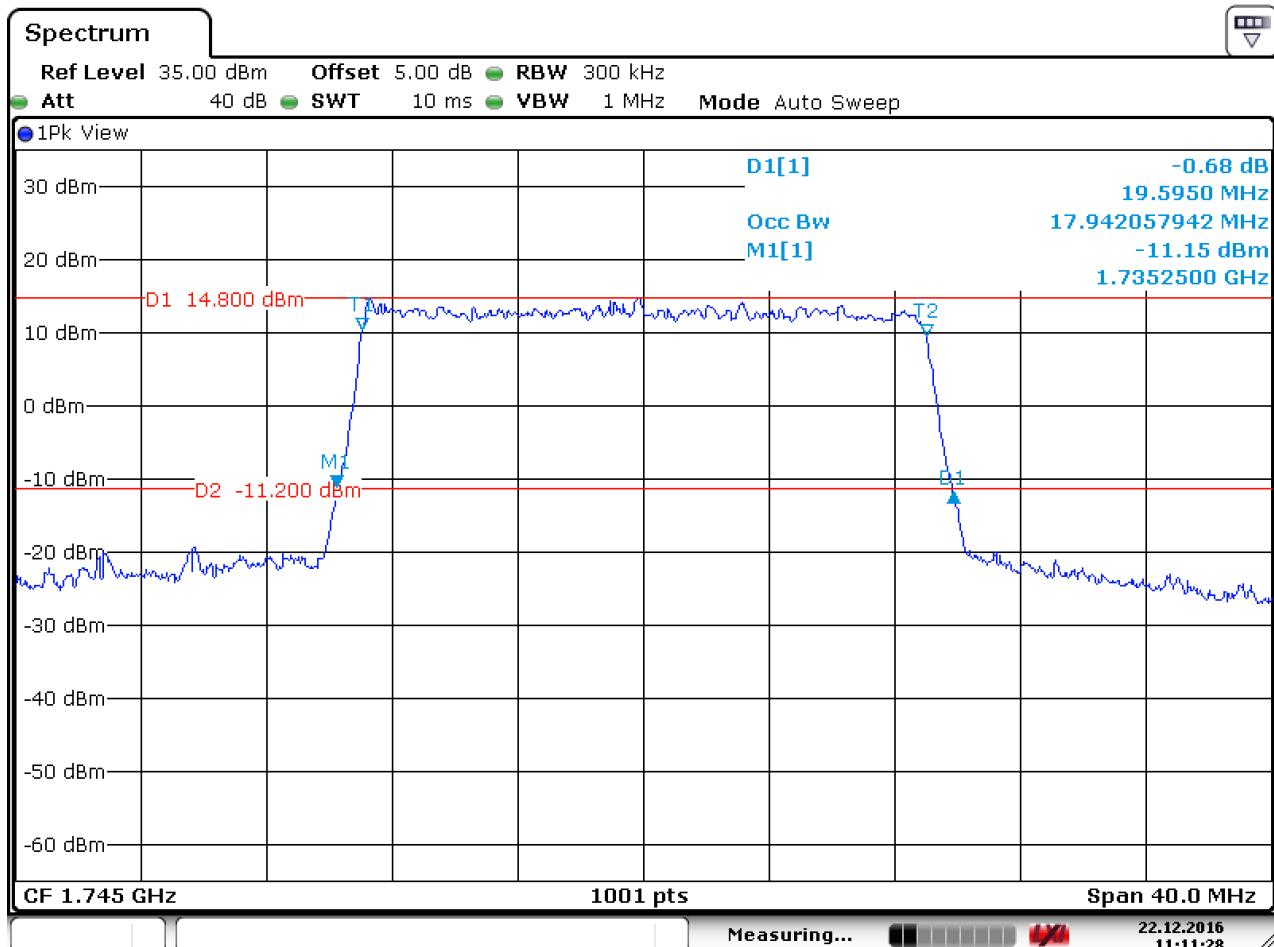
**4.1.1.11.3 Test Channel = HCH**

Date: 22.DEC.2016 11:12:42

**4.1.1.12 Test Mode = LTE/TM2 20MHz****4.1.1.12.1 Test Channel = LCH**

**4.1.1.12.2 Test Channel = MCH**

Date: 22.DEC.2016 11:04:58

**4.1.1.12.3 Test Channel = HCH**

Date: 22.DEC.2016 11:11:28

## 5 Band Edges Compliance

Part I –

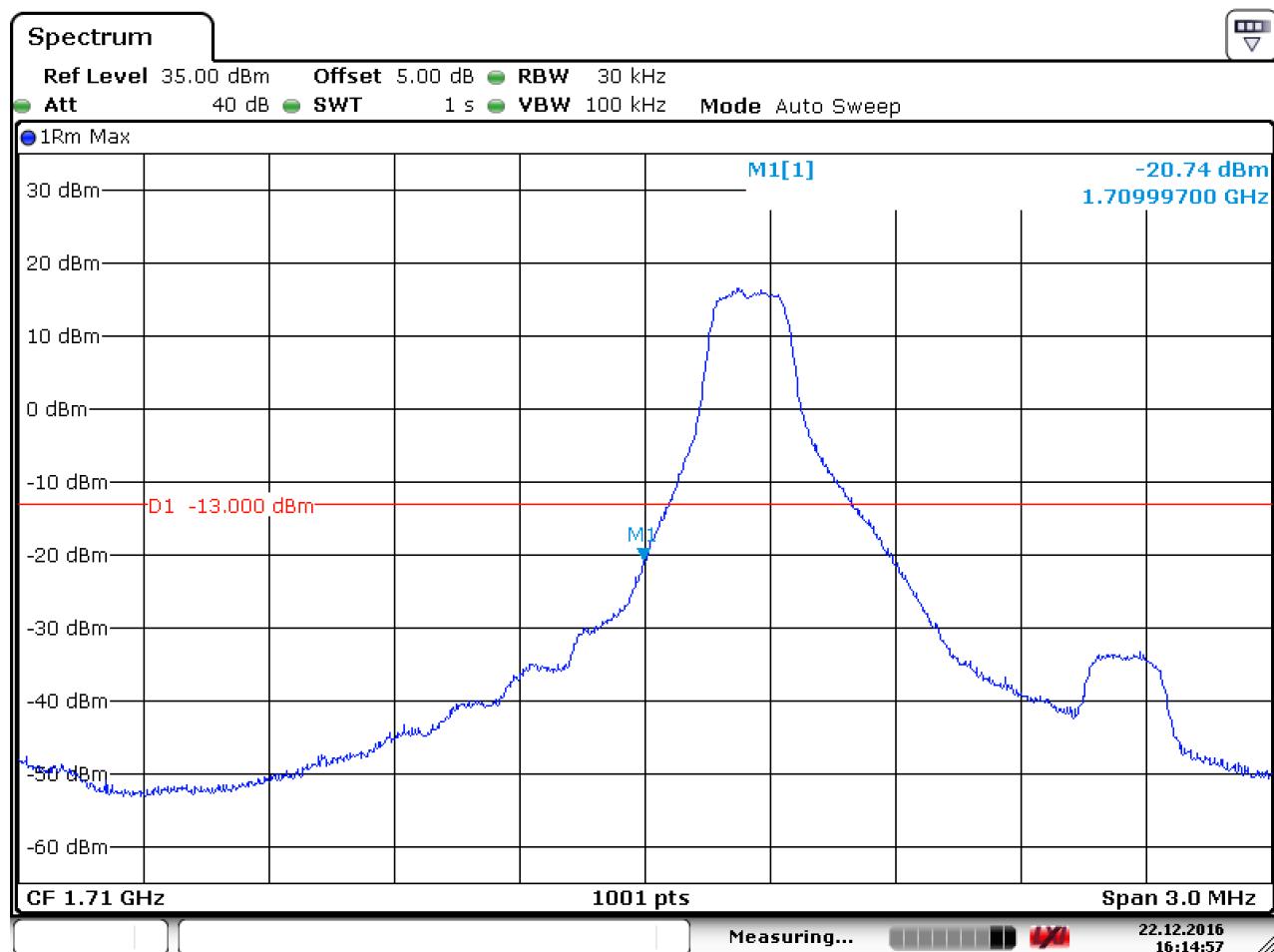
### 5.1 For LTE

#### 5.1.1 Test Band = LTE band4

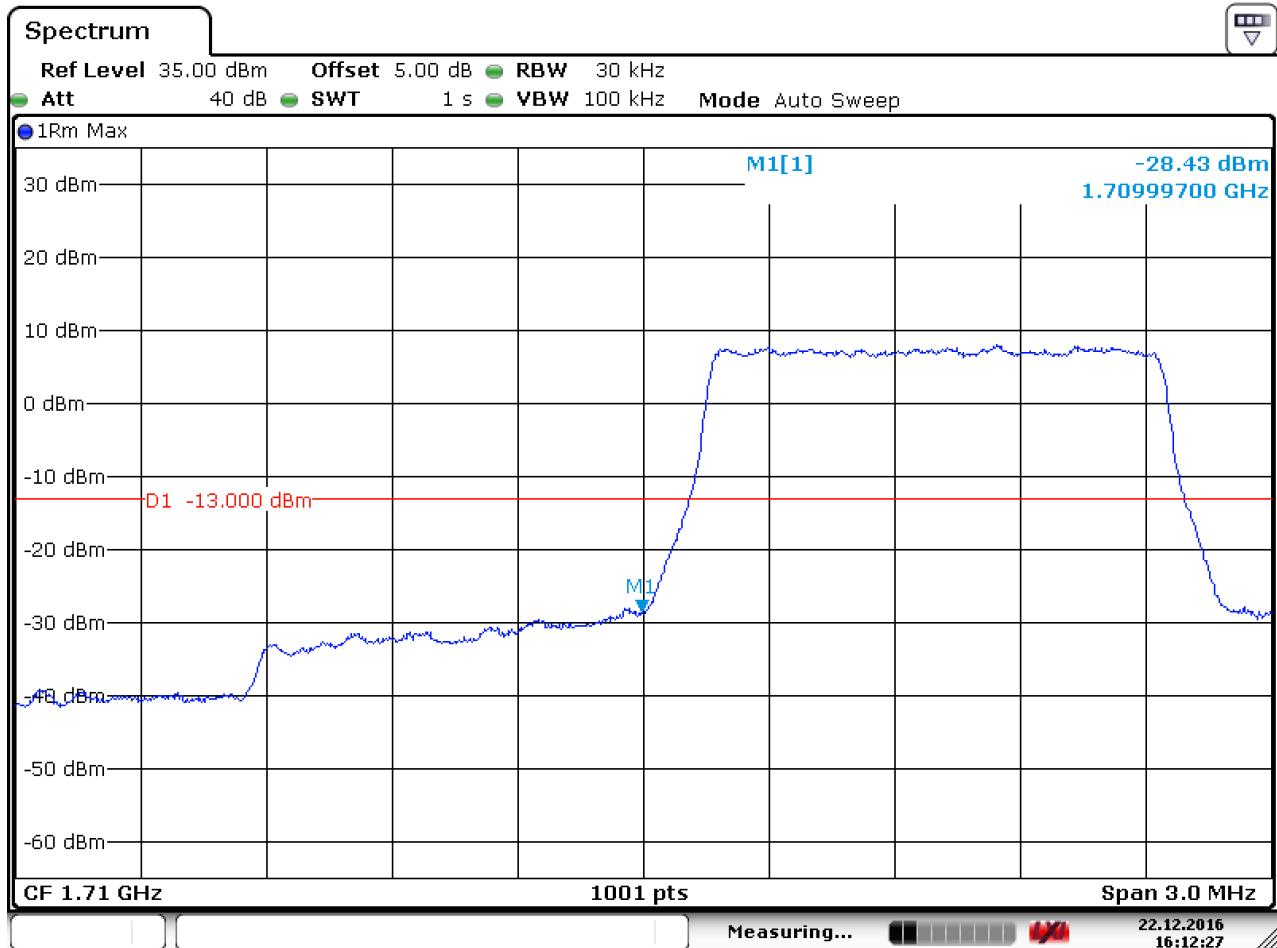
##### 5.1.1.1 Test Mode = LTE/TM1 1.4MHz

###### 5.1.1.1.1 Test Channel = LCH

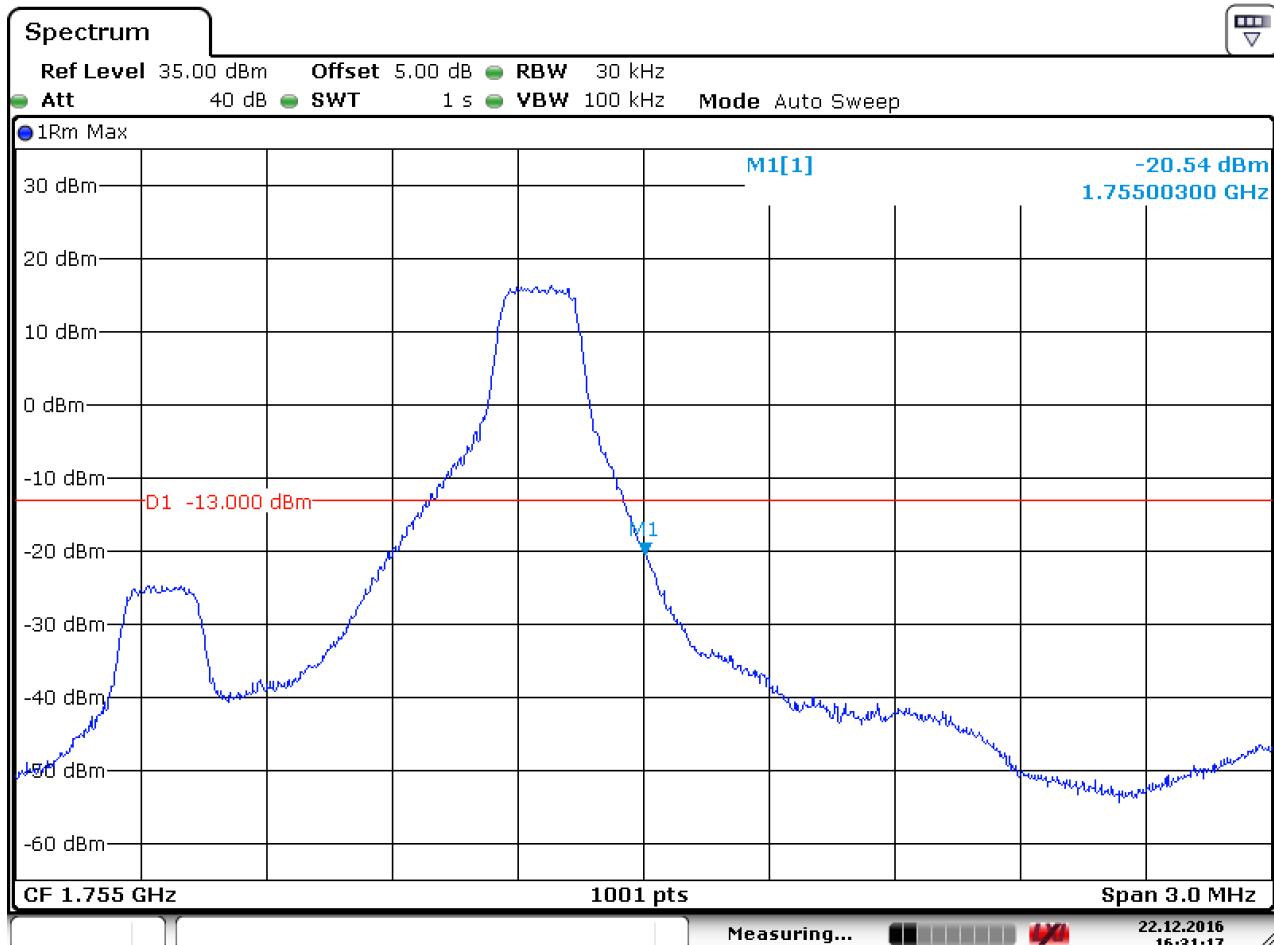
###### 5.1.1.1.1.1 Test RB=1RB



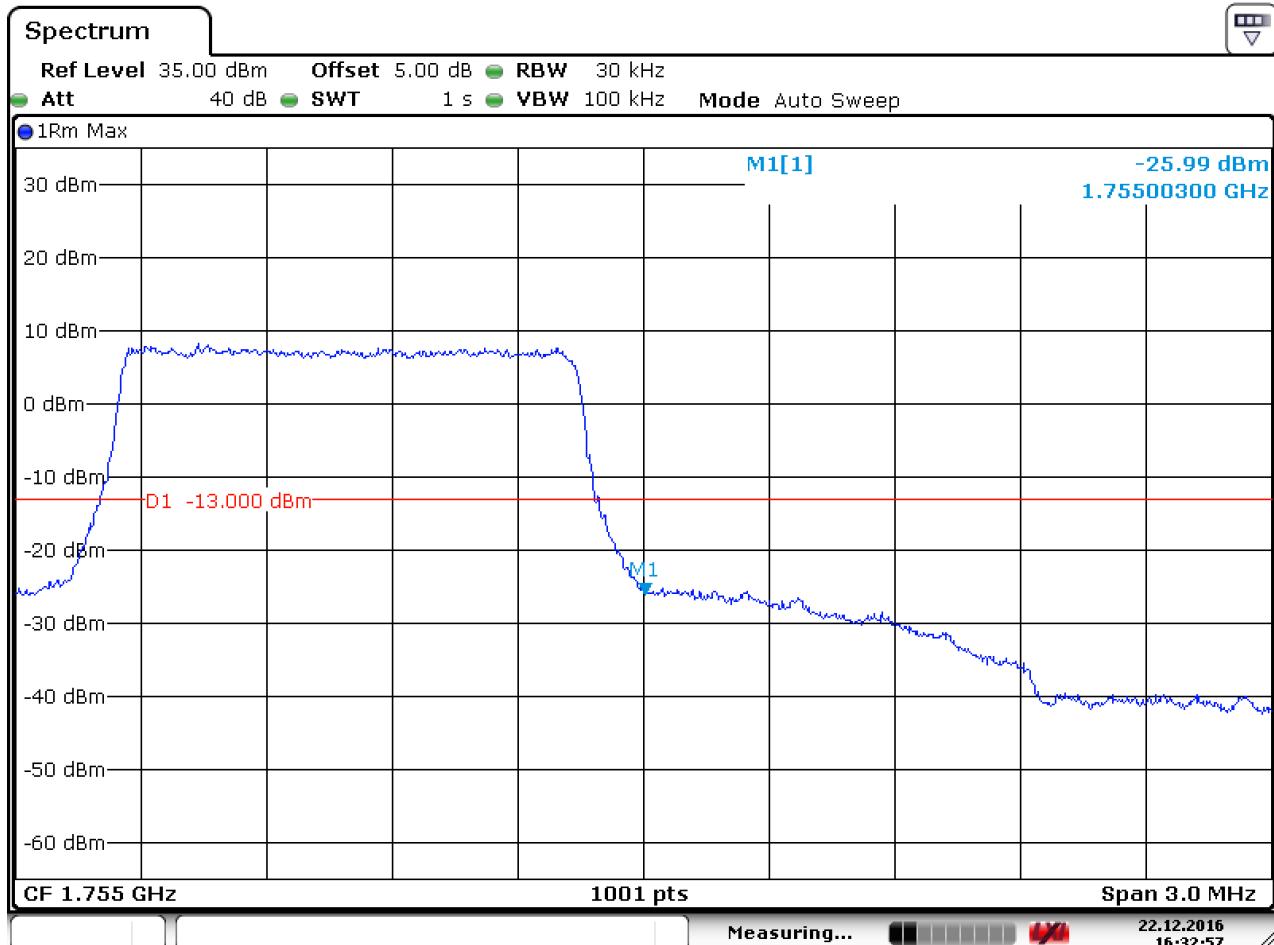
Date: 22.DEC.2016 16:14:57

**5.1.1.1.2 Test RB=6RB**

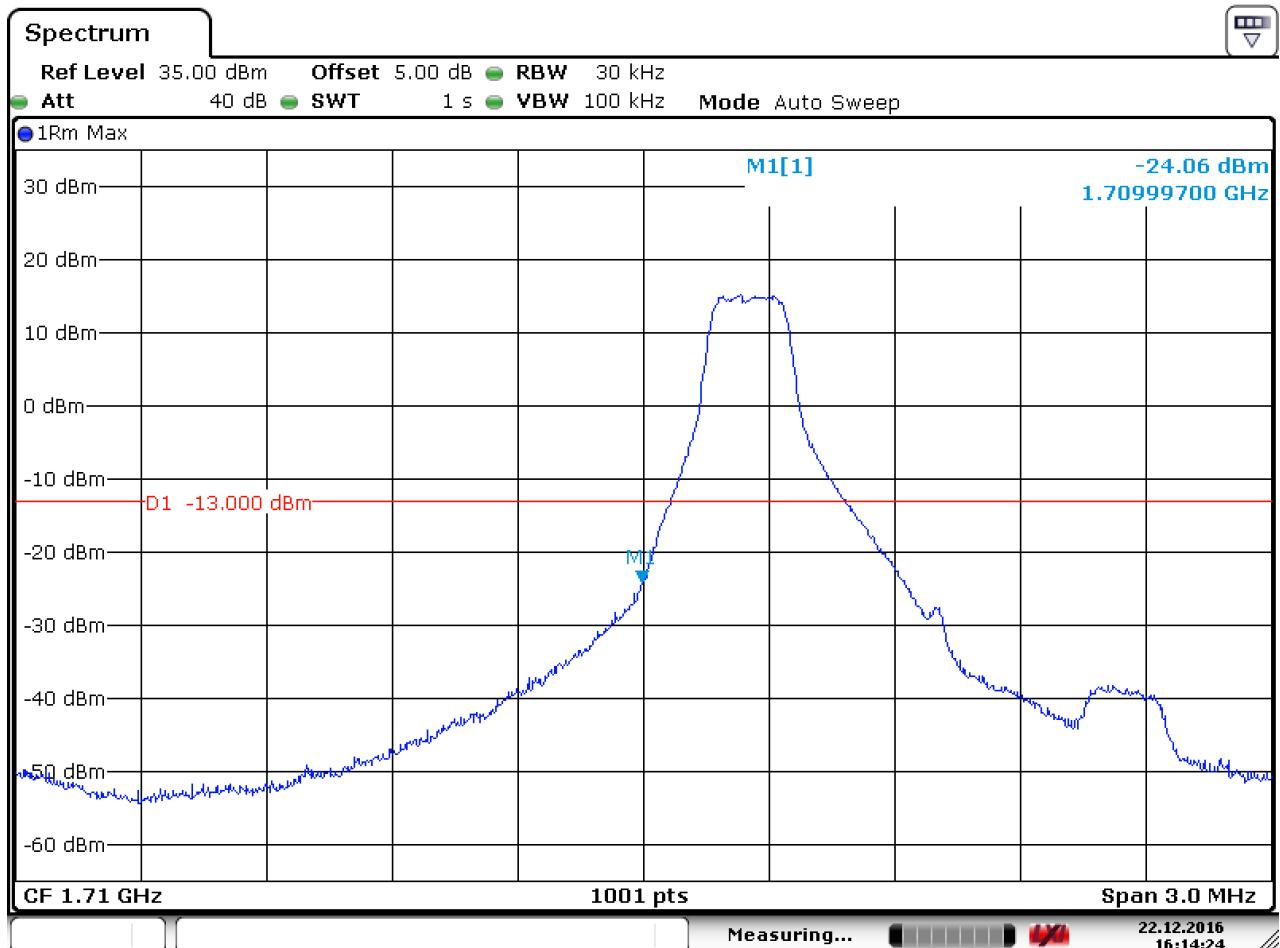
Date: 22.DEC.2016 16:12:28

**5.1.1.1.2 Test Channel = HCH****5.1.1.1.2.1 Test RB=1RB**

Date: 22.DEC.2016 16:31:17

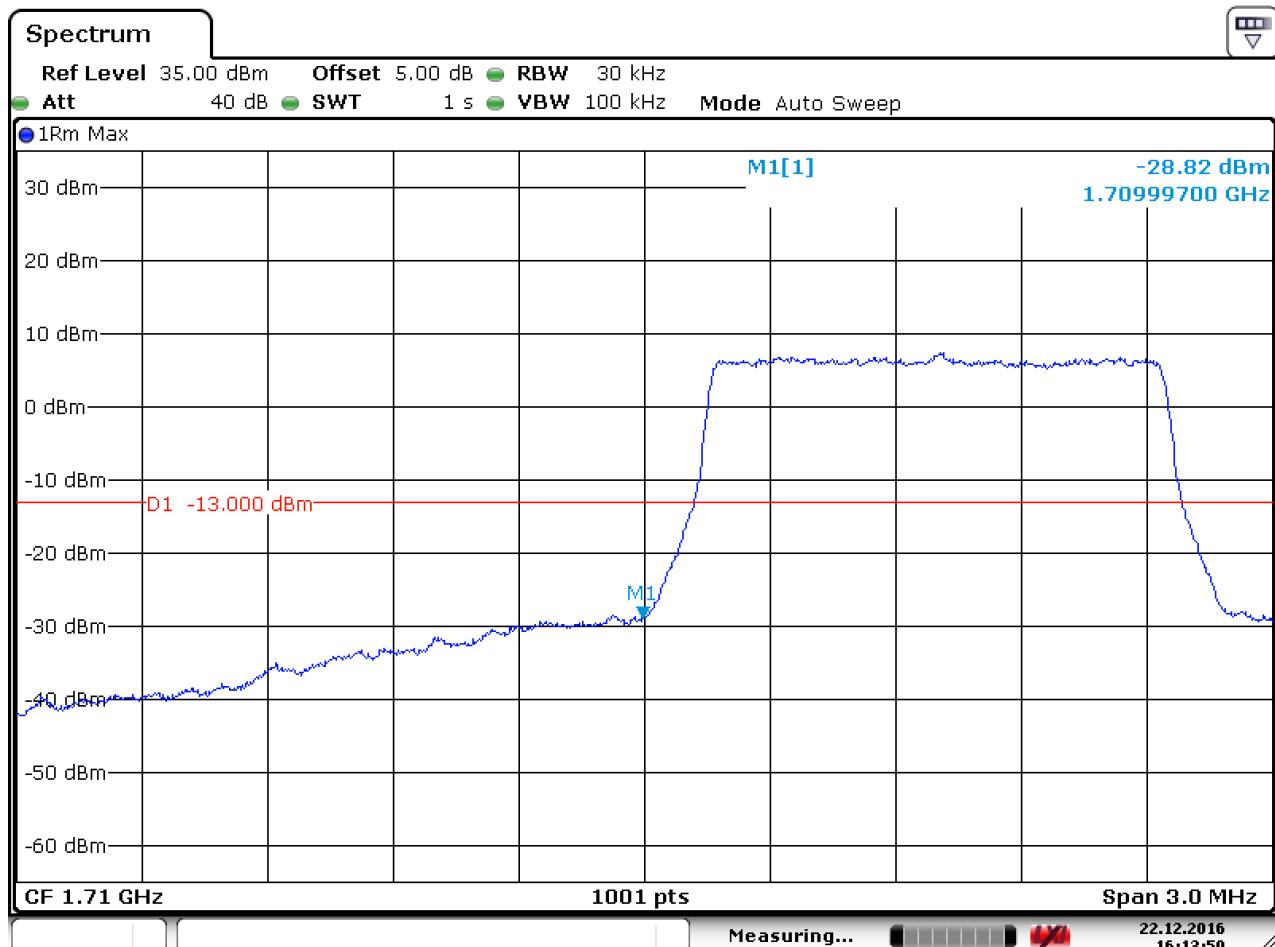
**5.1.1.1.2.2 Test RB=6RB**

Date: 22.DEC.2016 16:32:58

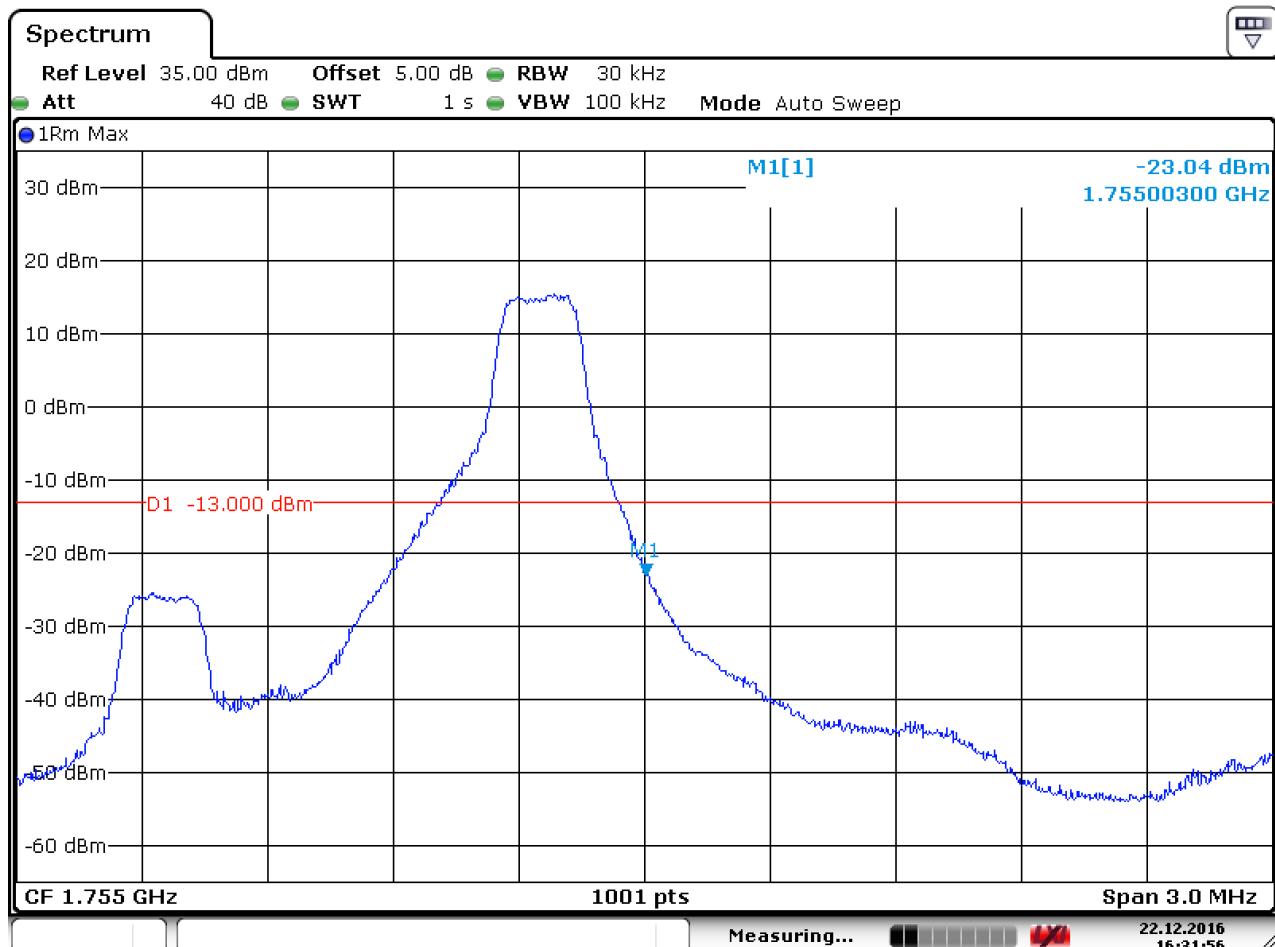
**5.1.1.2 Test Mode = LTE/TM2 1.4MHz****5.1.1.2.1 Test Channel = LCH****5.1.1.2.1.1 Test RB=1RB**

Date: 22.DEC.2016 16:14:24

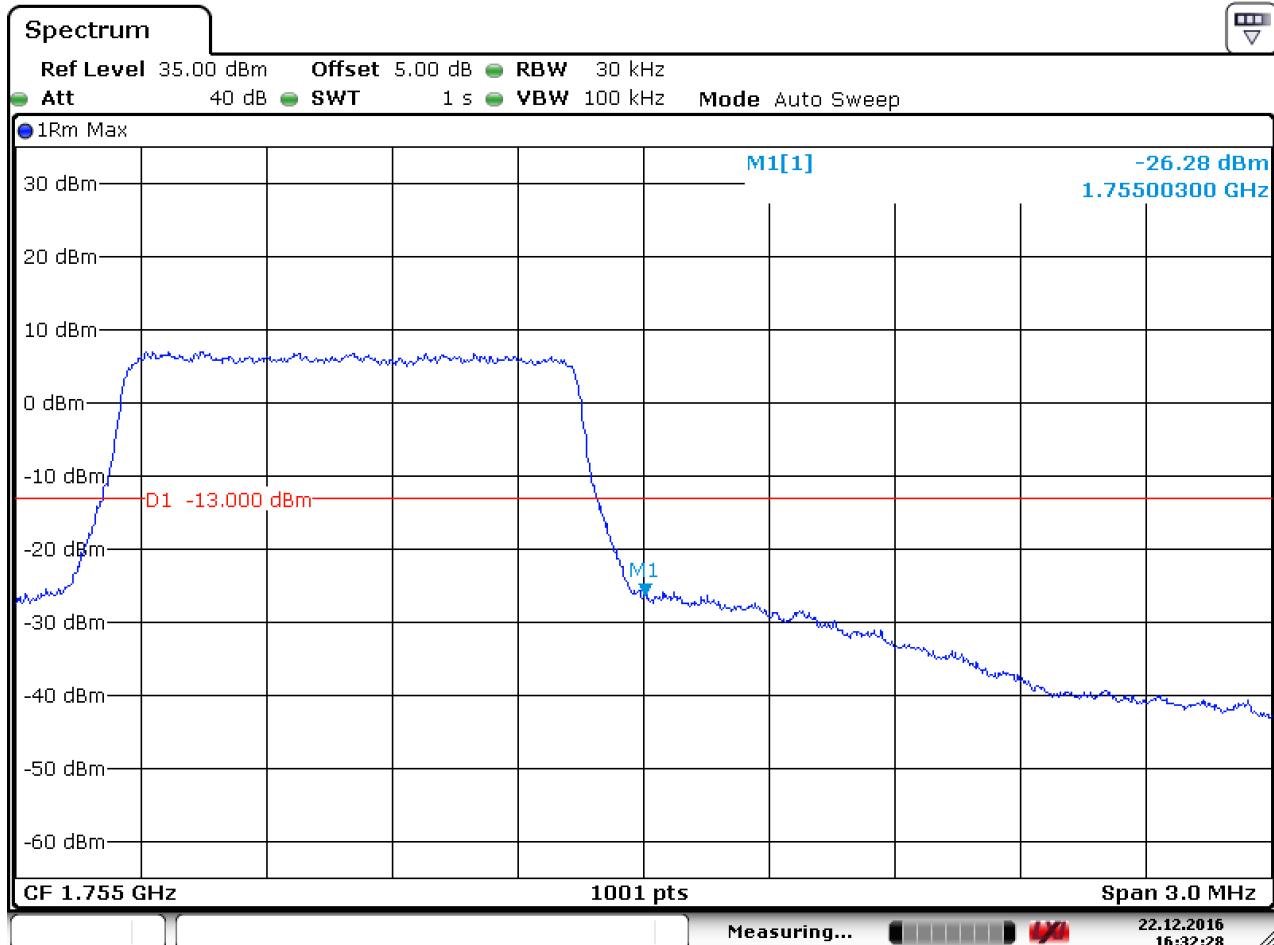
5.1.1.2.1.2 Test RB=6RB



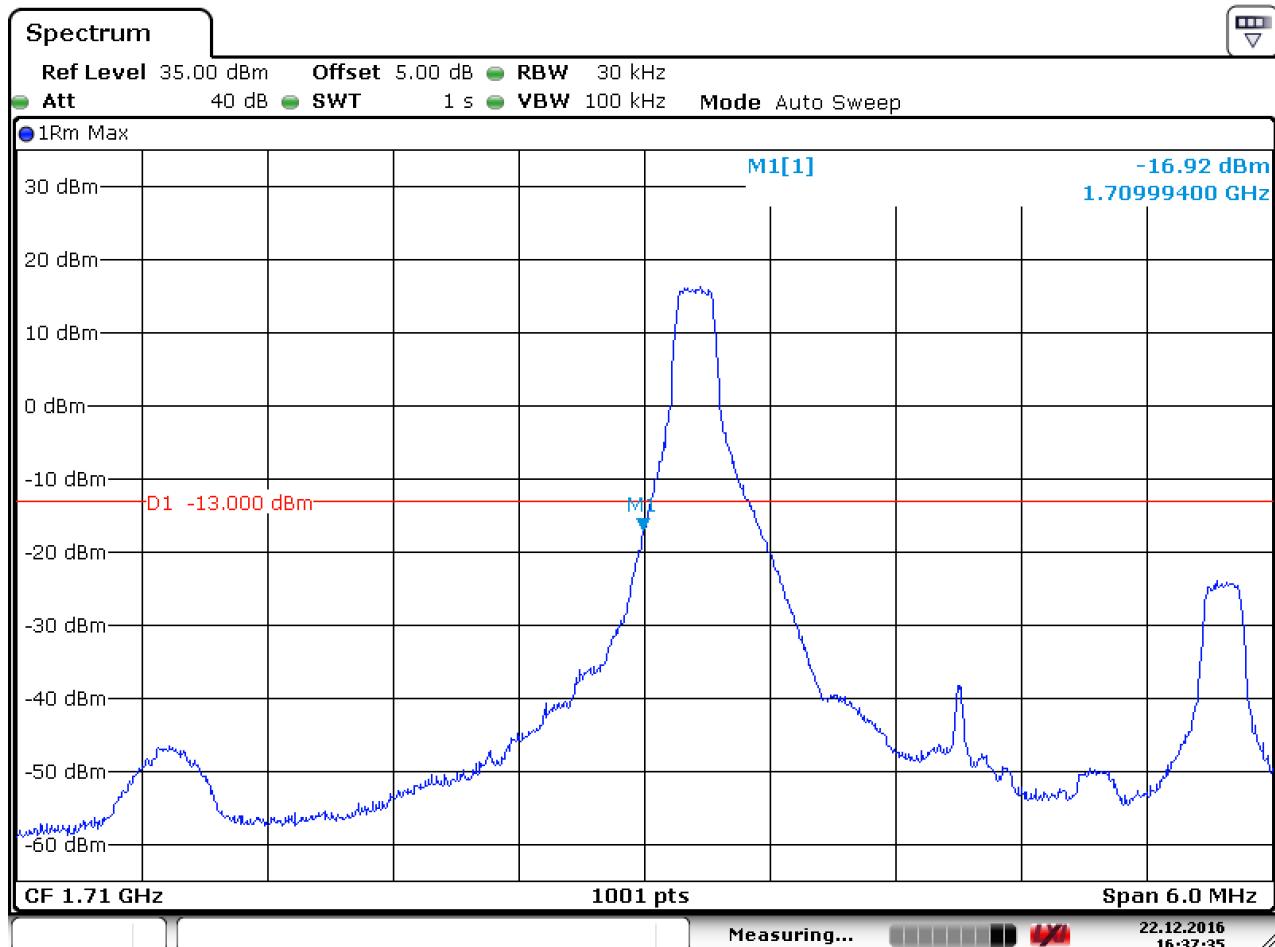
Date: 22.DEC.2016 16:13:50

**5.1.1.2.2 Test Channel = HCH****5.1.1.2.2.1 Test RB=1RB**

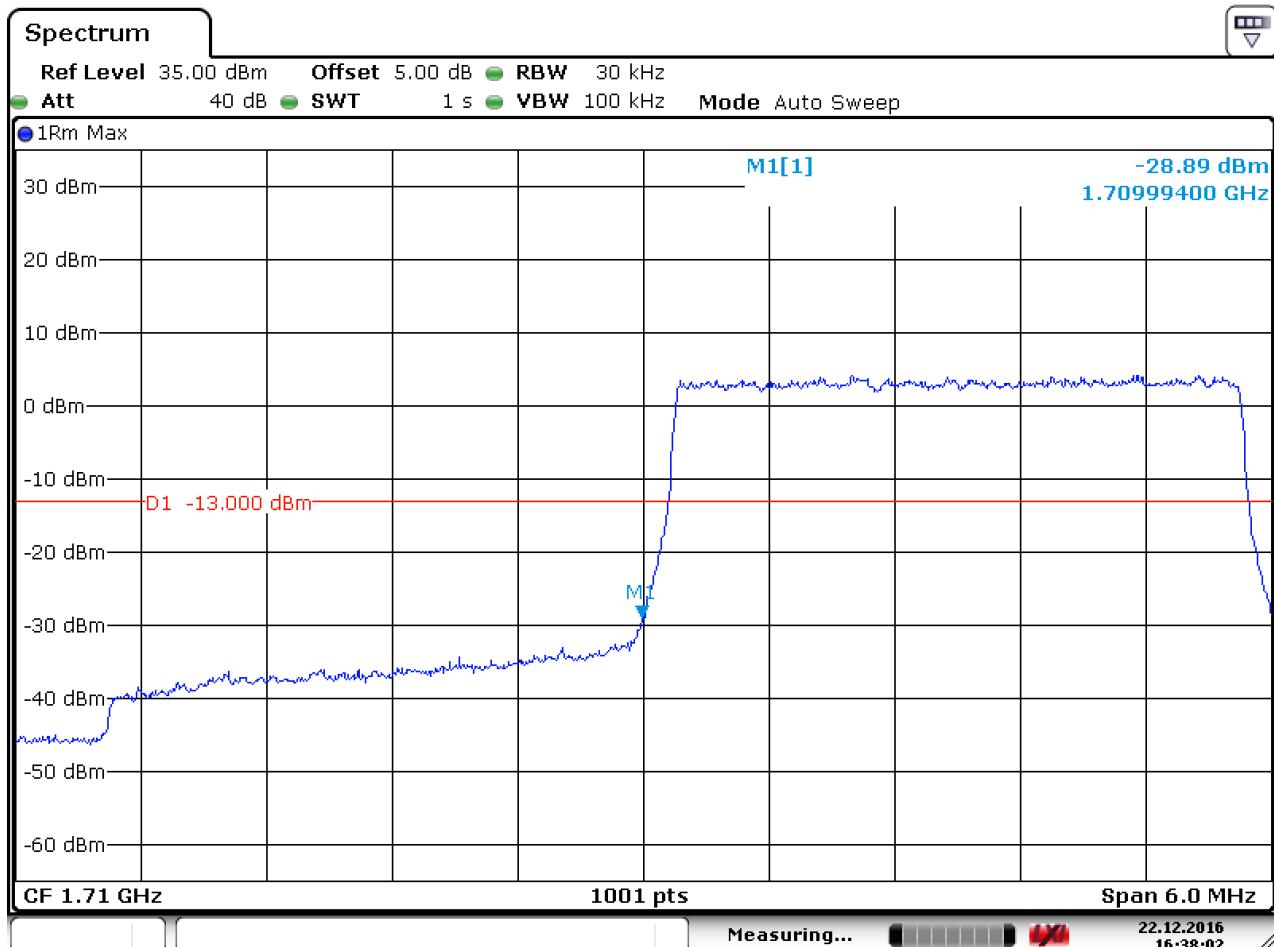
Date: 22.DEC.2016 16:31:57

**5.1.1.2.2.2 Test RB=6RB**

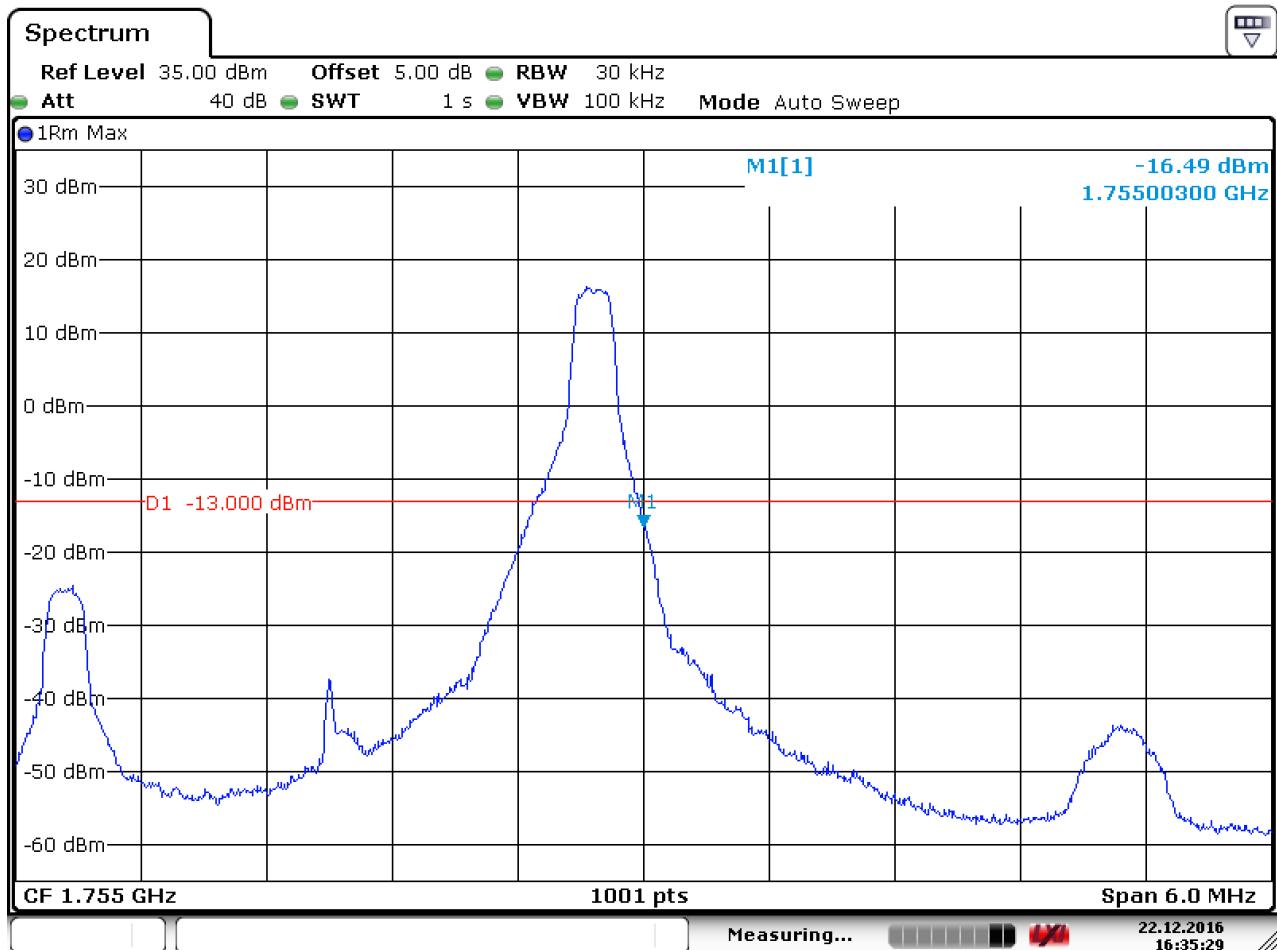
Date: 22.DEC.2016 16:32:28

**5.1.1.3 Test Mode = LTE/TM1 3MHz****5.1.1.3.1 Test Channel = LCH****5.1.1.3.1.1 Test RB=1RB**

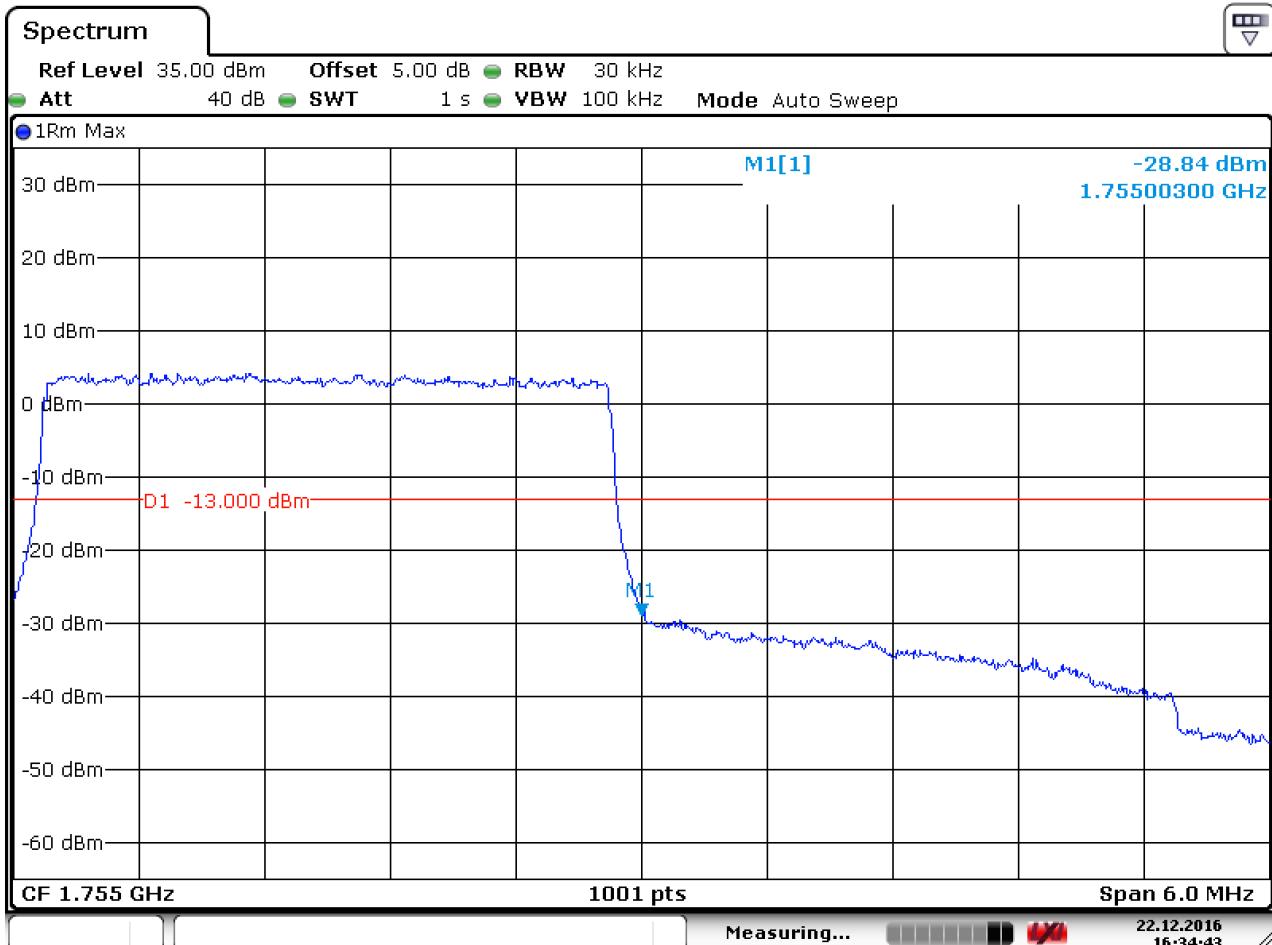
Date: 22.DEC.2016 16:37:35

**5.1.1.3.1.2 Test RB=15RB**

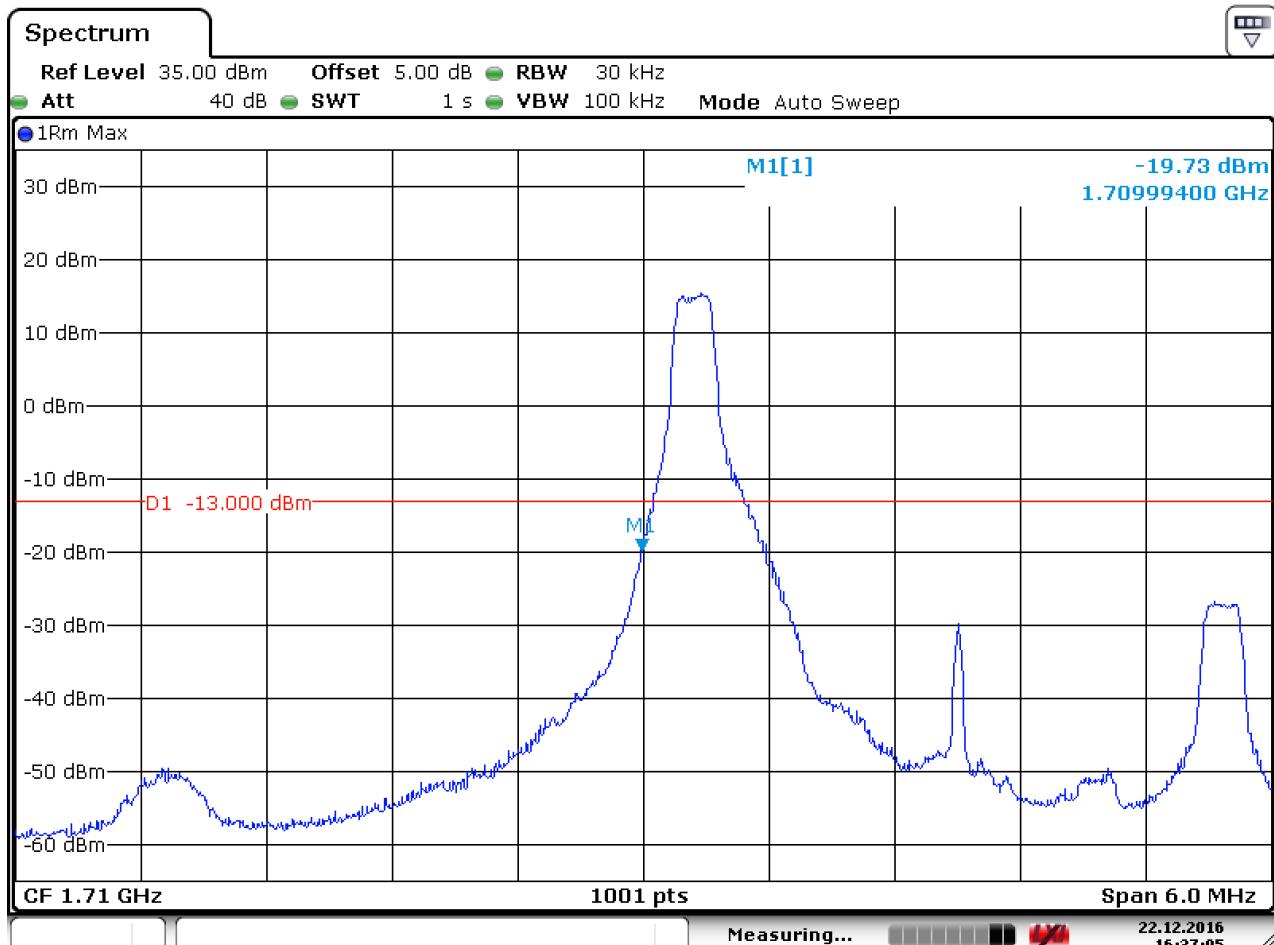
Date: 22.DEC.2016 16:38:03

**5.1.1.3.2 Test Channel = HCH****5.1.1.3.2.1 Test RB=1RB**

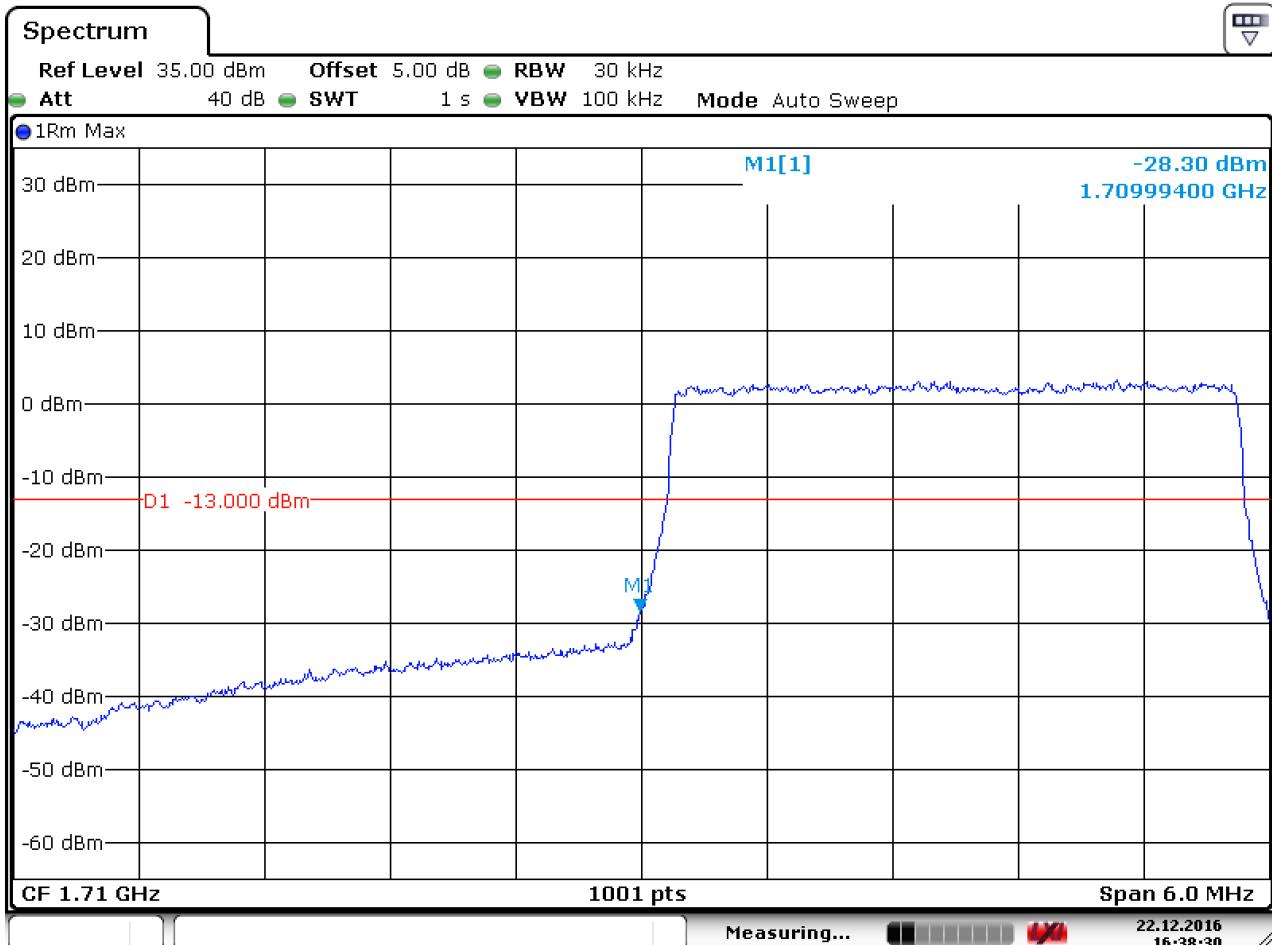
Date: 22.DEC.2016 16:35:29

**5.1.1.3.2.2 Test RB=15RB**

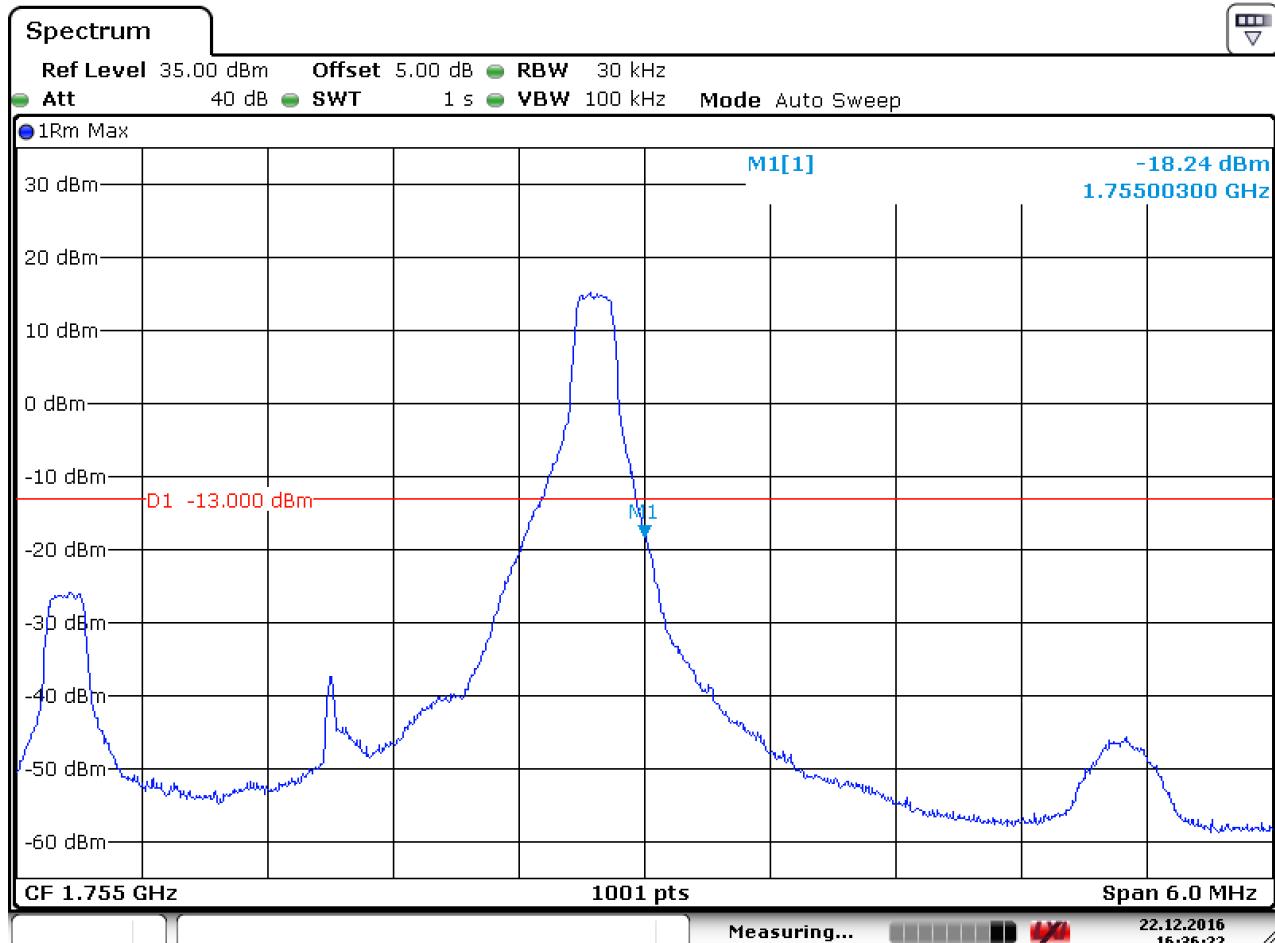
Date: 22.DEC.2016 16:34:43

**5.1.1.4 Test Mode = LTE/TM2 3MHz****5.1.1.4.1 Test Channel = LCH****5.1.1.4.1.1 Test RB=1RB**

Date: 22.DEC.2016 16:37:05

**5.1.1.4.1.2 Test RB=15RB**

Date: 22.DEC.2016 16:38:30

**5.1.1.4.2 Test Channel = HCH****5.1.1.4.2.1 Test RB=1RB**

Date: 22.DEC.2016 16:36:22