



Appendix B

E-UTRA BAND 12



CONTENT

1.	EFFECTIVE (ISOTROPIC) RADIATED POWER.....	3
1.1.	Test Result.....	3
2.	PEAK-TO-AVERAGE RATIO(CCDF).....	8
2.1.	Test Result.....	8
2.2.	Test Plots.....	8
3.	MODULATION CHARACTERISTICS	11
3.1.	Test BAND = LTE BAND12	11
3.1.1.	Test Mode = LTE /TM1 10MHz.....	11
3.1.1.1.	Test Channel = MCH.....	11
3.1.2.	Test Mode = LTE /TM2 10MHz.....	12
3.1.2.1.	Test Channel = MCH.....	12
4.	26dB BANDWIDTH AND OCCUPIED BANDWIDTH	13
4.1.	Test Result.....	13
4.2.	Test Plots.....	14
5.	BAND EDGE COMPLIANCE	23
5.1.	Test Plots.....	23
6.	SPURIOUS EMISSION AT ANTENNA TERMINAL	40
6.1.	Test Plots.....	40
7.	FIELD STRENGTH OF SPURIOUS RADIATION	45
7.1.	Test BAND = LTE BAND 12	45
7.1.1.	Test Mode =LTE/TM1 10MHz	45
7.1.1.1.	Test Channel = LCH.....	45
7.1.1.2.	Test Channel = MCH.....	45
7.1.1.3.	Test Channel = HCH.....	46
8.	FREQUENCY STABILITY	47
9.1.	Frequency Vs Voltage.....	47
9.2.	Frequency Vs Temperature	47



1. Effective (Isotropic) Radiated Power

1.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
BAND12	1.4MHz	QPSK	23017	1RB#0	22.92	19.77	34.77	PASS
BAND12	1.4MHz	QPSK	23017	1RB#2	23.08	19.93	34.77	PASS
BAND12	1.4MHz	QPSK	23017	1RB#5	23.09	19.94	34.77	PASS
BAND12	1.4MHz	QPSK	23017	3RB#0	23.04	19.89	34.77	PASS
BAND12	1.4MHz	QPSK	23017	3RB#1	23.18	20.03	34.77	PASS
BAND12	1.4MHz	QPSK	23017	3RB#3	23.00	19.85	34.77	PASS
BAND12	1.4MHz	QPSK	23017	6RB#0	22.24	19.09	34.77	PASS
BAND12	1.4MHz	QPSK	23095	1RB#0	22.92	19.77	34.77	PASS
BAND12	1.4MHz	QPSK	23095	1RB#2	23.09	19.94	34.77	PASS
BAND12	1.4MHz	QPSK	23095	1RB#5	23.13	19.98	34.77	PASS
BAND12	1.4MHz	QPSK	23095	3RB#0	22.81	19.66	34.77	PASS
BAND12	1.4MHz	QPSK	23095	3RB#1	23.16	20.01	34.77	PASS
BAND12	1.4MHz	QPSK	23095	3RB#3	23.20	20.05	34.77	PASS
BAND12	1.4MHz	QPSK	23095	6RB#0	22.20	19.05	34.77	PASS
BAND12	1.4MHz	QPSK	23173	1RB#0	22.64	19.49	34.77	PASS
BAND12	1.4MHz	QPSK	23173	1RB#2	22.55	19.4	34.77	PASS
BAND12	1.4MHz	QPSK	23173	1RB#5	22.72	19.57	34.77	PASS
BAND12	1.4MHz	QPSK	23173	3RB#0	22.83	19.68	34.77	PASS
BAND12	1.4MHz	QPSK	23173	3RB#1	22.86	19.71	34.77	PASS
BAND12	1.4MHz	QPSK	23173	3RB#3	22.74	19.59	34.77	PASS
BAND12	1.4MHz	QPSK	23173	6RB#0	22.03	18.88	34.77	PASS
BAND12	1.4MHz	16QAM	23017	1RB#0	22.25	19.1	34.77	PASS
BAND12	1.4MHz	16QAM	23017	1RB#2	22.40	19.25	34.77	PASS
BAND12	1.4MHz	16QAM	23017	1RB#5	22.43	19.28	34.77	PASS
BAND12	1.4MHz	16QAM	23017	3RB#0	22.38	19.23	34.77	PASS
BAND12	1.4MHz	16QAM	23017	3RB#1	22.52	19.37	34.77	PASS
BAND12	1.4MHz	16QAM	23017	3RB#3	22.15	19	34.77	PASS
BAND12	1.4MHz	16QAM	23017	6RB#0	21.12	17.97	34.77	PASS
BAND12	1.4MHz	16QAM	23095	1RB#0	22.20	19.05	34.77	PASS
BAND12	1.4MHz	16QAM	23095	1RB#2	22.44	19.29	34.77	PASS
BAND12	1.4MHz	16QAM	23095	1RB#5	22.35	19.2	34.77	PASS
BAND12	1.4MHz	16QAM	23095	3RB#0	22.54	19.39	34.77	PASS
BAND12	1.4MHz	16QAM	23095	3RB#1	22.53	19.38	34.77	PASS
BAND12	1.4MHz	16QAM	23095	3RB#3	22.52	19.37	34.77	PASS



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

Report No.: SZEM180600485001

Page: 4 of 48

BAND12	1.4MHz	16QAM	23095	6RB#0	21.33	18.18	34.77	PASS
BAND12	1.4MHz	16QAM	23173	1RB#0	22.01	18.86	34.77	PASS
BAND12	1.4MHz	16QAM	23173	1RB#2	22.20	19.05	34.77	PASS
BAND12	1.4MHz	16QAM	23173	1RB#5	22.09	18.94	34.77	PASS
BAND12	1.4MHz	16QAM	23173	3RB#0	22.33	19.18	34.77	PASS
BAND12	1.4MHz	16QAM	23173	3RB#1	22.09	18.94	34.77	PASS
BAND12	1.4MHz	16QAM	23173	3RB#3	22.15	19	34.77	PASS
BAND12	1.4MHz	16QAM	23173	6RB#0	20.98	17.83	34.77	PASS
BAND12	3MHz	QPSK	23025	1RB#0	23.18	20.03	34.77	PASS
BAND12	3MHz	QPSK	23025	1RB#8	23.04	19.89	34.77	PASS
BAND12	3MHz	QPSK	23025	1RB#14	22.65	19.5	34.77	PASS
BAND12	3MHz	QPSK	23025	8RB#0	22.20	19.05	34.77	PASS
BAND12	3MHz	QPSK	23025	8RB#4	22.11	18.96	34.77	PASS
BAND12	3MHz	QPSK	23025	8RB#7	21.93	18.78	34.77	PASS
BAND12	3MHz	QPSK	23025	15RB#0	22.04	18.89	34.77	PASS
BAND12	3MHz	QPSK	23095	1RB#0	22.84	19.69	34.77	PASS
BAND12	3MHz	QPSK	23095	1RB#8	23.15	20	34.77	PASS
BAND12	3MHz	QPSK	23095	1RB#14	23.21	20.06	34.77	PASS
BAND12	3MHz	QPSK	23095	8RB#0	22.09	18.94	34.77	PASS
BAND12	3MHz	QPSK	23095	8RB#4	22.21	19.06	34.77	PASS
BAND12	3MHz	QPSK	23095	8RB#7	22.36	19.21	34.77	PASS
BAND12	3MHz	QPSK	23095	15RB#0	22.20	19.05	34.77	PASS
BAND12	3MHz	QPSK	23165	1RB#0	22.83	19.68	34.77	PASS
BAND12	3MHz	QPSK	23165	1RB#8	22.51	19.36	34.77	PASS
BAND12	3MHz	QPSK	23165	1RB#14	22.63	19.48	34.77	PASS
BAND12	3MHz	QPSK	23165	8RB#0	22.16	19.01	34.77	PASS
BAND12	3MHz	QPSK	23165	8RB#4	21.80	18.65	34.77	PASS
BAND12	3MHz	QPSK	23165	8RB#7	21.81	18.66	34.77	PASS
BAND12	3MHz	QPSK	23165	15RB#0	22.00	18.85	34.77	PASS
BAND12	3MHz	16QAM	23025	1RB#0	22.48	19.33	34.77	PASS
BAND12	3MHz	16QAM	23025	1RB#8	22.16	19.01	34.77	PASS
BAND12	3MHz	16QAM	23025	1RB#14	21.99	18.84	34.77	PASS
BAND12	3MHz	16QAM	23025	8RB#0	21.48	18.33	34.77	PASS
BAND12	3MHz	16QAM	23025	8RB#4	21.32	18.17	34.77	PASS
BAND12	3MHz	16QAM	23025	8RB#7	21.02	17.87	34.77	PASS
BAND12	3MHz	16QAM	23025	15RB#0	21.18	18.03	34.77	PASS
BAND12	3MHz	16QAM	23095	1RB#0	22.35	19.2	34.77	PASS
BAND12	3MHz	16QAM	23095	1RB#8	22.27	19.12	34.77	PASS
BAND12	3MHz	16QAM	23095	1RB#14	22.39	19.24	34.77	PASS
BAND12	3MHz	16QAM	23095	8RB#0	21.11	17.96	34.77	PASS
BAND12	3MHz	16QAM	23095	8RB#4	21.20	18.05	34.77	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.: SZEM180600485001

Page: 5 of 48

BAND12	3MHz	16QAM	23095	8RB#7	21.15	18	34.77	PASS
BAND12	3MHz	16QAM	23095	15RB#0	21.52	18.37	34.77	PASS
BAND12	3MHz	16QAM	23165	1RB#0	22.08	18.93	34.77	PASS
BAND12	3MHz	16QAM	23165	1RB#8	22.02	18.87	34.77	PASS
BAND12	3MHz	16QAM	23165	1RB#14	21.84	18.69	34.77	PASS
BAND12	3MHz	16QAM	23165	8RB#0	20.91	17.76	34.77	PASS
BAND12	3MHz	16QAM	23165	8RB#4	20.81	17.66	34.77	PASS
BAND12	3MHz	16QAM	23165	8RB#7	20.82	17.67	34.77	PASS
BAND12	3MHz	16QAM	23165	15RB#0	21.25	18.1	34.77	PASS
BAND12	5MHz	QPSK	23035	1RB#0	23.04	19.89	34.77	PASS
BAND12	5MHz	QPSK	23035	1RB#12	22.73	19.58	34.77	PASS
BAND12	5MHz	QPSK	23035	1RB#24	22.64	19.49	34.77	PASS
BAND12	5MHz	QPSK	23035	12RB#0	22.26	19.11	34.77	PASS
BAND12	5MHz	QPSK	23035	12RB#6	21.92	18.77	34.77	PASS
BAND12	5MHz	QPSK	23035	12RB#13	21.97	18.82	34.77	PASS
BAND12	5MHz	QPSK	23035	25RB#0	22.08	18.93	34.77	PASS
BAND12	5MHz	QPSK	23095	1RB#0	22.82	19.67	34.77	PASS
BAND12	5MHz	QPSK	23095	1RB#12	22.89	19.74	34.77	PASS
BAND12	5MHz	QPSK	23095	1RB#24	23.07	19.92	34.77	PASS
BAND12	5MHz	QPSK	23095	12RB#0	22.02	18.87	34.77	PASS
BAND12	5MHz	QPSK	23095	12RB#6	22.37	19.22	34.77	PASS
BAND12	5MHz	QPSK	23095	12RB#13	22.40	19.25	34.77	PASS
BAND12	5MHz	QPSK	23095	25RB#0	22.12	18.97	34.77	PASS
BAND12	5MHz	QPSK	23155	1RB#0	23.02	19.87	34.77	PASS
BAND12	5MHz	QPSK	23155	1RB#12	22.51	19.36	34.77	PASS
BAND12	5MHz	QPSK	23155	1RB#24	22.62	19.47	34.77	PASS
BAND12	5MHz	QPSK	23155	12RB#0	22.26	19.11	34.77	PASS
BAND12	5MHz	QPSK	23155	12RB#6	21.88	18.73	34.77	PASS
BAND12	5MHz	QPSK	23155	12RB#13	21.80	18.65	34.77	PASS
BAND12	5MHz	QPSK	23155	25RB#0	22.01	18.86	34.77	PASS
BAND12	5MHz	16QAM	23035	1RB#0	22.44	19.29	34.77	PASS
BAND12	5MHz	16QAM	23035	1RB#12	22.11	18.96	34.77	PASS
BAND12	5MHz	16QAM	23035	1RB#24	21.88	18.73	34.77	PASS
BAND12	5MHz	16QAM	23035	12RB#0	21.34	18.19	34.77	PASS
BAND12	5MHz	16QAM	23035	12RB#6	21.20	18.05	34.77	PASS
BAND12	5MHz	16QAM	23035	12RB#13	21.15	18	34.77	PASS
BAND12	5MHz	16QAM	23035	25RB#0	21.10	17.95	34.77	PASS
BAND12	5MHz	16QAM	23095	1RB#0	22.38	19.23	34.77	PASS
BAND12	5MHz	16QAM	23095	1RB#12	22.28	19.13	34.77	PASS
BAND12	5MHz	16QAM	23095	1RB#24	22.34	19.19	34.77	PASS
BAND12	5MHz	16QAM	23095	12RB#0	21.41	18.26	34.77	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.: SZEM180600485001

Page: 6 of 48

BAND12	5MHz	16QAM	23095	12RB#6	21.45	18.3	34.77	PASS
BAND12	5MHz	16QAM	23095	12RB#13	21.20	18.05	34.77	PASS
BAND12	5MHz	16QAM	23095	25RB#0	21.15	18	34.77	PASS
BAND12	5MHz	16QAM	23155	1RB#0	22.28	19.13	34.77	PASS
BAND12	5MHz	16QAM	23155	1RB#12	22.41	19.26	34.77	PASS
BAND12	5MHz	16QAM	23155	1RB#24	21.89	18.74	34.77	PASS
BAND12	5MHz	16QAM	23155	12RB#0	21.15	18	34.77	PASS
BAND12	5MHz	16QAM	23155	12RB#6	20.94	17.79	34.77	PASS
BAND12	5MHz	16QAM	23155	12RB#13	20.95	17.8	34.77	PASS
BAND12	5MHz	16QAM	23155	25RB#0	20.98	17.83	34.77	PASS
BAND12	10MHz	QPSK	23060	1RB#0	22.90	19.75	34.77	PASS
BAND12	10MHz	QPSK	23060	1RB#24	22.65	19.5	34.77	PASS
BAND12	10MHz	QPSK	23060	1RB#49	22.89	19.74	34.77	PASS
BAND12	10MHz	QPSK	23060	25RB#0	22.17	19.02	34.77	PASS
BAND12	10MHz	QPSK	23060	25RB#12	21.83	18.68	34.77	PASS
BAND12	10MHz	QPSK	23060	25RB#25	21.99	18.84	34.77	PASS
BAND12	10MHz	QPSK	23060	50RB#0	22.20	19.05	34.77	PASS
BAND12	10MHz	QPSK	23095	1RB#0	22.79	19.64	34.77	PASS
BAND12	10MHz	QPSK	23095	1RB#24	23.02	19.87	34.77	PASS
BAND12	10MHz	QPSK	23095	1RB#49	23.10	19.95	34.77	PASS
BAND12	10MHz	QPSK	23095	25RB#0	21.97	18.82	34.77	PASS
BAND12	10MHz	QPSK	23095	25RB#12	22.23	19.08	34.77	PASS
BAND12	10MHz	QPSK	23095	25RB#25	22.37	19.22	34.77	PASS
BAND12	10MHz	QPSK	23095	50RB#0	22.13	18.98	34.77	PASS
BAND12	10MHz	QPSK	23130	1RB#0	22.95	19.8	34.77	PASS
BAND12	10MHz	QPSK	23130	1RB#24	23.44	20.29	34.77	PASS
BAND12	10MHz	QPSK	23130	1RB#49	22.16	19.01	34.77	PASS
BAND12	10MHz	QPSK	23130	25RB#0	22.48	19.33	34.77	PASS
BAND12	10MHz	QPSK	23130	25RB#12	22.41	19.26	34.77	PASS
BAND12	10MHz	QPSK	23130	25RB#25	22.01	18.86	34.77	PASS
BAND12	10MHz	QPSK	23130	50RB#0	22.10	18.95	34.77	PASS
BAND12	10MHz	16QAM	23060	1RB#0	22.05	18.9	34.77	PASS
BAND12	10MHz	16QAM	23060	1RB#24	22.18	19.03	34.77	PASS
BAND12	10MHz	16QAM	23060	1RB#49	22.30	19.15	34.77	PASS
BAND12	10MHz	16QAM	23060	25RB#0	21.13	17.98	34.77	PASS
BAND12	10MHz	16QAM	23060	25RB#12	21.08	17.93	34.77	PASS
BAND12	10MHz	16QAM	23060	25RB#25	21.12	17.97	34.77	PASS
BAND12	10MHz	16QAM	23060	50RB#0	21.11	17.96	34.77	PASS
BAND12	10MHz	16QAM	23095	1RB#0	22.81	19.66	34.77	PASS
BAND12	10MHz	16QAM	23095	1RB#24	22.32	19.17	34.77	PASS
BAND12	10MHz	16QAM	23095	1RB#49	22.06	18.91	34.77	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.: SZEM180600485001

Page: 7 of 48

BAND12	10MHz	16QAM	23095	25RB#0	21.25	18.1	34.77	PASS
BAND12	10MHz	16QAM	23095	25RB#12	21.33	18.18	34.77	PASS
BAND12	10MHz	16QAM	23095	25RB#25	21.18	18.03	34.77	PASS
BAND12	10MHz	16QAM	23095	50RB#0	21.19	18.04	34.77	PASS
BAND12	10MHz	16QAM	23130	1RB#0	22.28	19.13	34.77	PASS
BAND12	10MHz	16QAM	23130	1RB#24	22.25	19.1	34.77	PASS
BAND12	10MHz	16QAM	23130	1RB#49	22.04	18.89	34.77	PASS
BAND12	10MHz	16QAM	23130	25RB#0	21.37	18.22	34.77	PASS
BAND12	10MHz	16QAM	23130	25RB#12	21.04	17.89	34.77	PASS
BAND12	10MHz	16QAM	23130	25RB#25	21.25	18.1	34.77	PASS
BAND12	10MHz	16QAM	23130	50RB#0	21.32	18.17	34.77	PASS

Note:

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

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

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

b: SGP=Signal Generator Level

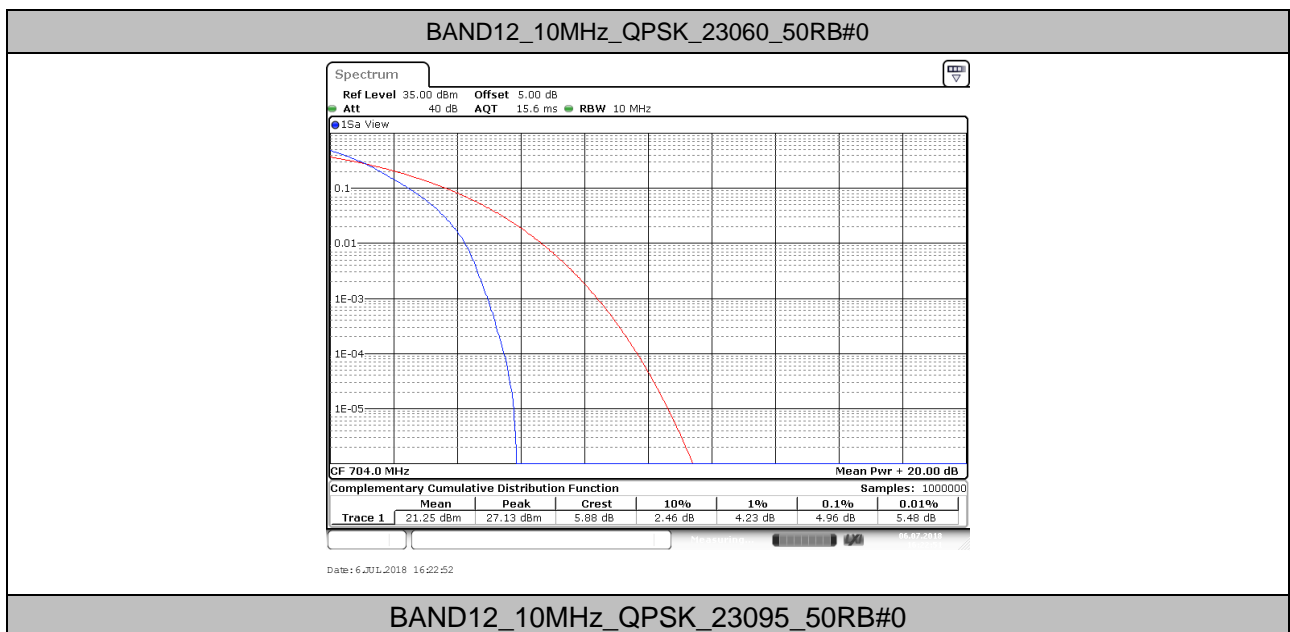


2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
BAND12	10MHz	QPSK	23060	50RB#0	4.96	13	PASS
BAND12	10MHz	QPSK	23095	50RB#0	5.22	13	PASS
BAND12	10MHz	QPSK	23130	50RB#0	5.28	13	PASS
BAND12	10MHz	16QAM	23060	50RB#0	5.88	13	PASS
BAND12	10MHz	16QAM	23095	50RB#0	6.00	13	PASS
BAND12	10MHz	16QAM	23130	50RB#0	6.14	13	PASS

2.2. Test Plots

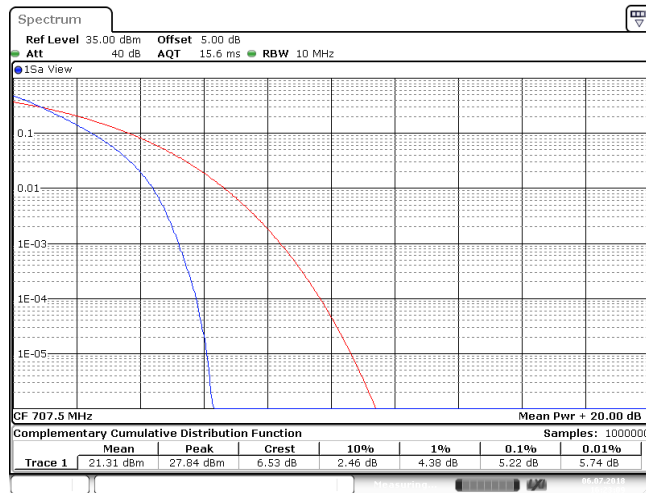




SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

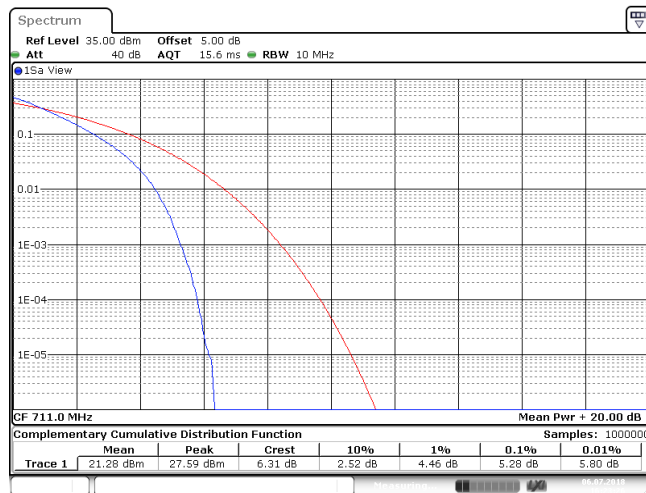
Report No.: SZEM180600485001

Page: 9 of 48



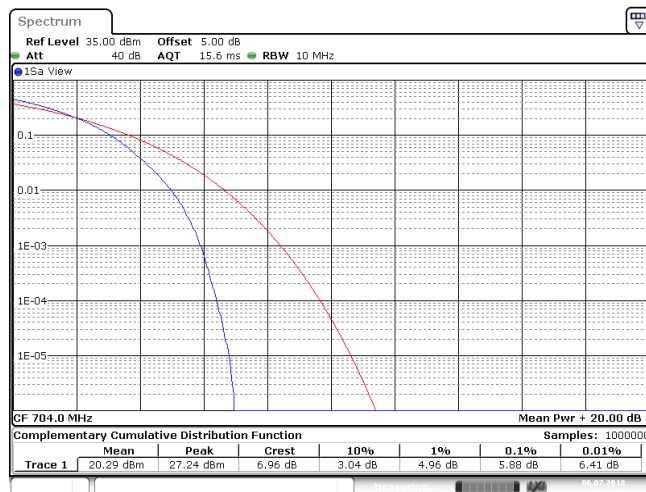
Date: 6 JUL 2018 16:23:09

BAND12_10MHz_QPSK_23130_50RB#0



Date: 6 JUL 2018 16:23:26

BAND12_10MHz_16QAM_23060_50RB#0



Date: 6 JUL 2018 16:23:01

BAND12_10MHz_16QAM_23095_50RB#0

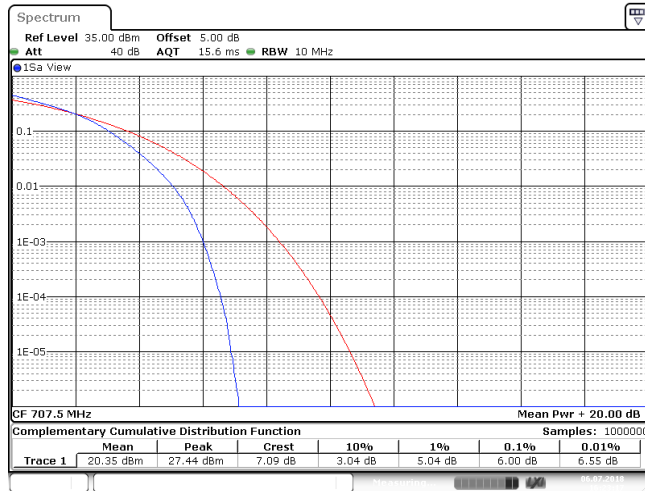
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>.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

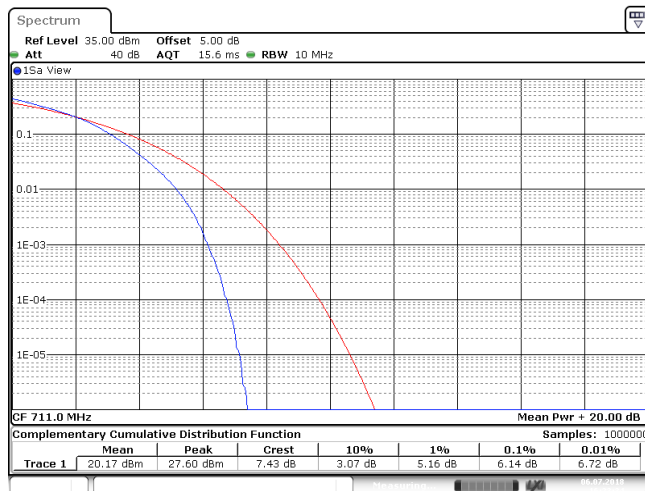
Report No.: SZEM180600485001

Page: 10 of 48



Date: 6 JUL 2018 16:23:18

BAND12_10MHz_16QAM_23130_50RB#0



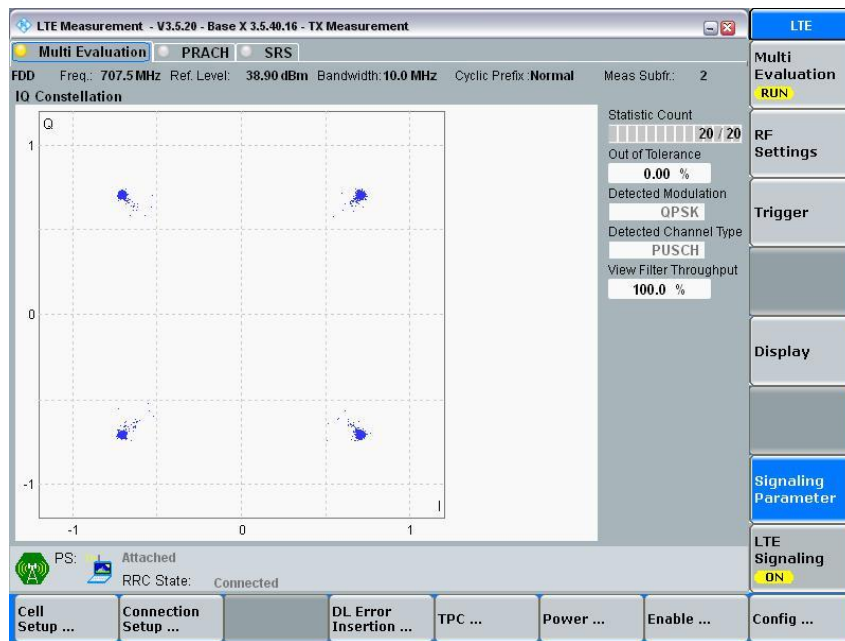
Date: 6 JUL 2018 16:23:35

3. Modulation Characteristics

3.1. Test BAND = LTE BAND12

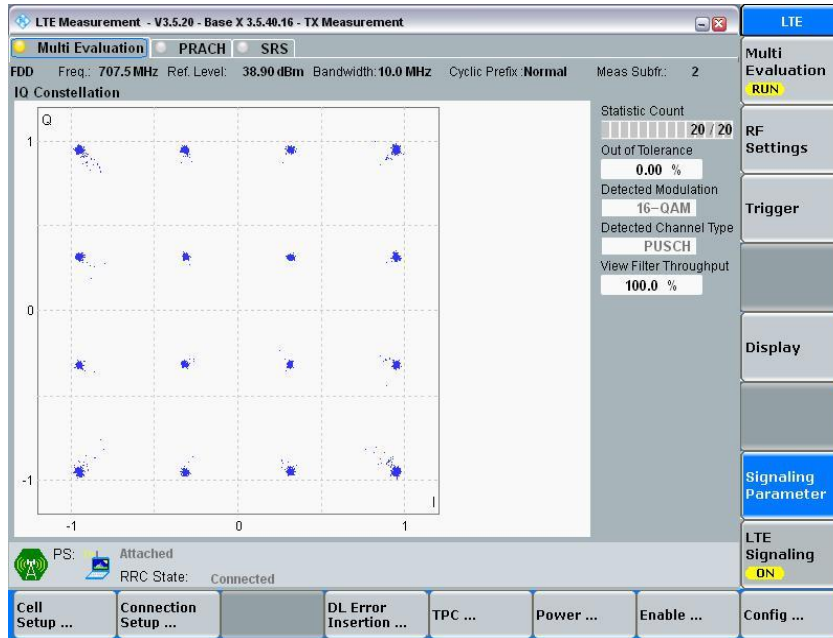
3.1.1. Test Mode = LTE /TM1 10MHz

3.1.1.1. Test Channel = MCH



3.1.2. Test Mode = LTE /TM2 10MHz

3.1.2.1. Test Channel = MCH





4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
BAND12	1.4MHz	QPSK	23017	6RB#0	1.094	1.290	PASS
BAND12	1.4MHz	QPSK	23095	6RB#0	1.097	1.305	PASS
BAND12	1.4MHz	QPSK	23173	6RB#0	1.094	1.293	PASS
BAND12	1.4MHz	16QAM	23017	6RB#0	1.091	1.284	PASS
BAND12	1.4MHz	16QAM	23095	6RB#0	1.091	1.284	PASS
BAND12	1.4MHz	16QAM	23173	6RB#0	1.091	1.290	PASS
BAND12	3MHz	QPSK	23025	15RB#0	2.697	2.988	PASS
BAND12	3MHz	QPSK	23095	15RB#0	2.703	3.000	PASS
BAND12	3MHz	QPSK	23165	15RB#0	2.697	2.994	PASS
BAND12	3MHz	16QAM	23025	15RB#0	2.691	2.970	PASS
BAND12	3MHz	16QAM	23095	15RB#0	2.691	2.976	PASS
BAND12	3MHz	16QAM	23165	15RB#0	2.685	2.970	PASS
BAND12	5MHz	QPSK	23035	25RB#0	4.476	4.930	PASS
BAND12	5MHz	QPSK	23095	25RB#0	4.476	4.940	PASS
BAND12	5MHz	QPSK	23155	25RB#0	4.466	4.920	PASS
BAND12	5MHz	16QAM	23035	25RB#0	4.496	4.940	PASS
BAND12	5MHz	16QAM	23095	25RB#0	4.496	4.960	PASS
BAND12	5MHz	16QAM	23155	25RB#0	4.486	4.950	PASS
BAND12	10MHz	QPSK	23060	50RB#0	8.911	9.680	PASS
BAND12	10MHz	QPSK	23095	50RB#0	8.931	9.740	PASS
BAND12	10MHz	QPSK	23130	50RB#0	8.931	9.800	PASS
BAND12	10MHz	16QAM	23060	50RB#0	8.911	9.680	PASS
BAND12	10MHz	16QAM	23095	50RB#0	8.931	9.760	PASS
BAND12	10MHz	16QAM	23130	50RB#0	8.931	9.800	PASS



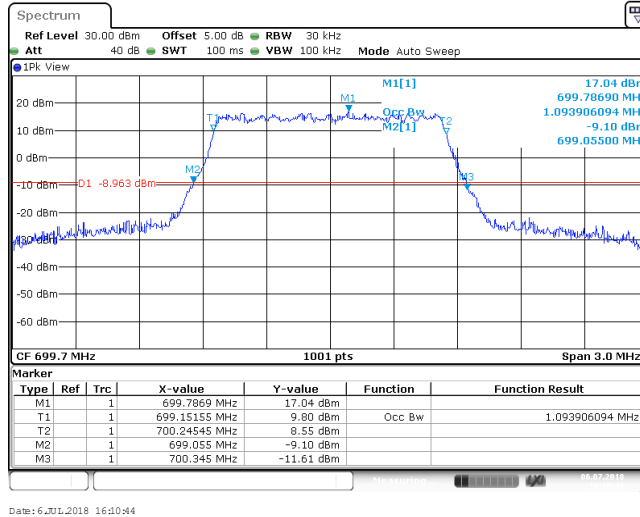
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

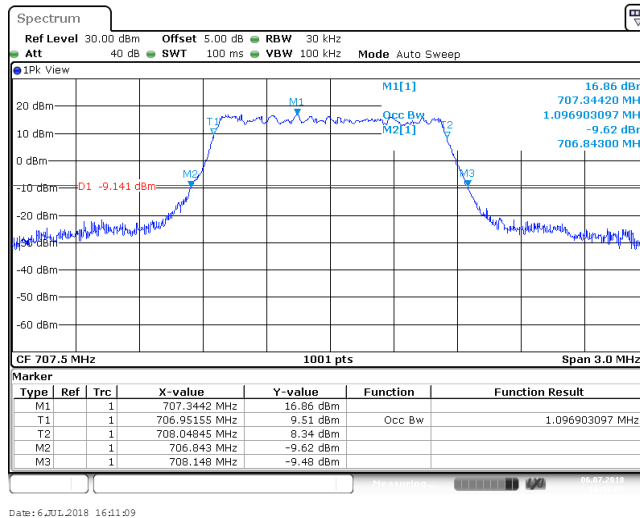
Page: 14 of 48

4.2. Test Plots

BAND12_1.4MHz_QPSK_23017_6RB#0



BAND12_1.4MHz_QPSK_23095_6RB#0



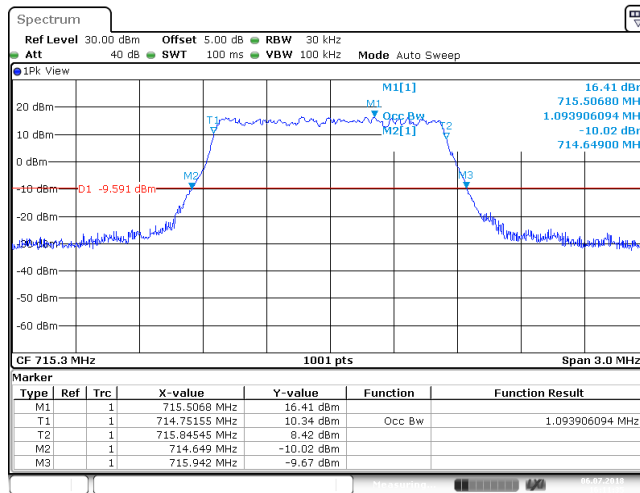
BAND12_1.4MHz_QPSK_23173_6RB#0



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

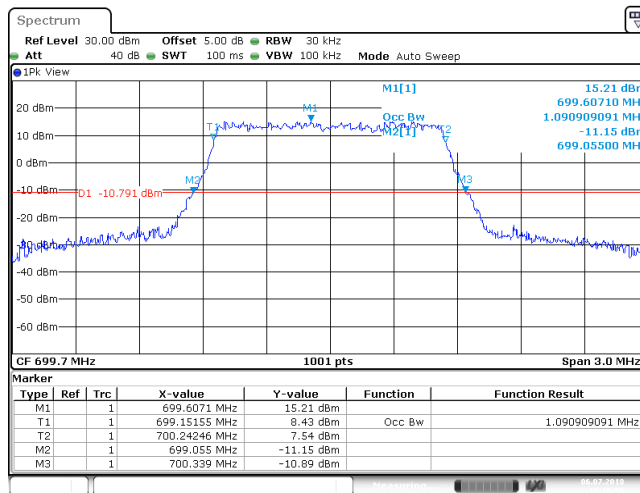
Report No.: SZEM180600485001

Page: 15 of 48



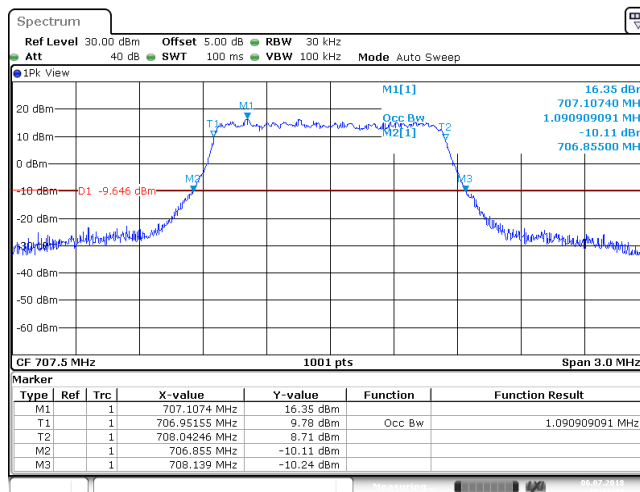
Date: 6 JUL 2018 16:11:35

BAND12_1.4MHz_16QAM_23017_6RB#0



Date: 6 JUL 2018 16:10:56

BAND12_1.4MHz_16QAM_23095_6RB#0



Date: 6 JUL 2018 16:11:22

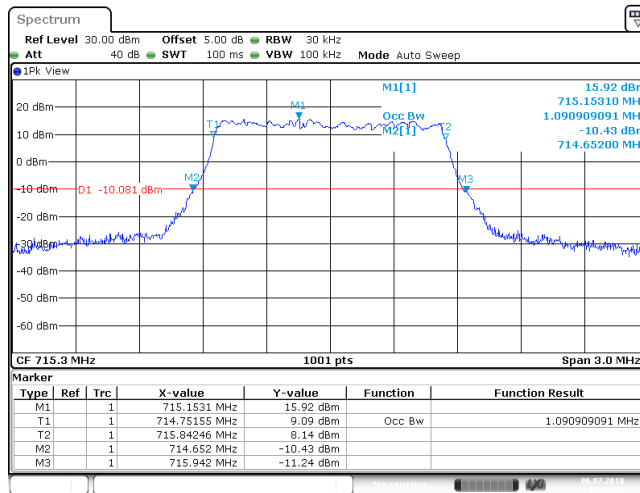
BAND12_1.4MHz_16QAM_23173_6RB#0



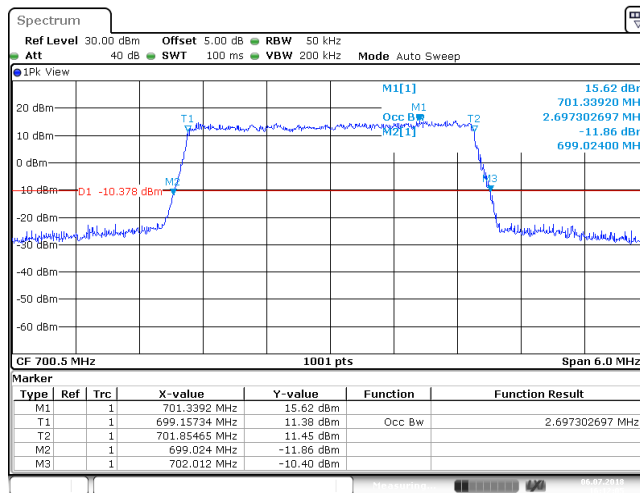
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

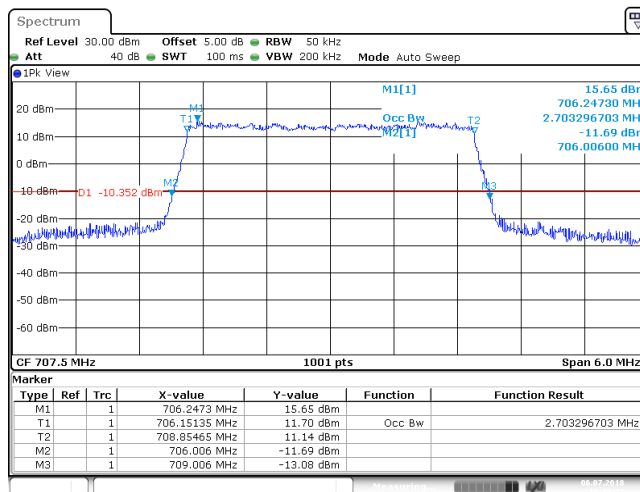
Page: 16 of 48



BAND12_3MHz_QPSK_23025_15RB#0



BAND12_3MHz_QPSK_23095_15RB#0



BAND12_3MHz_QPSK_23165_15RB#0

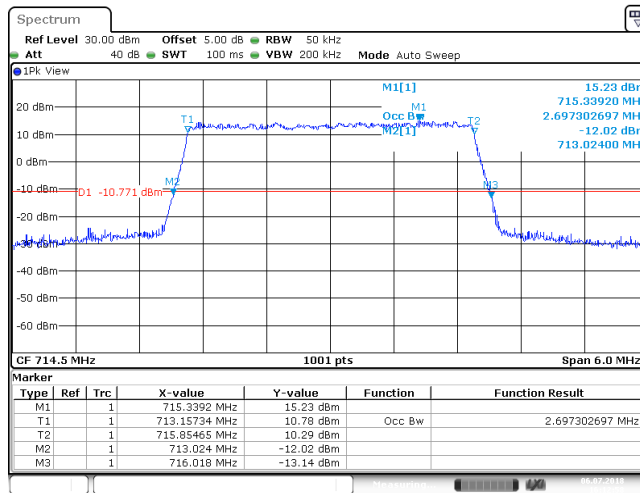
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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



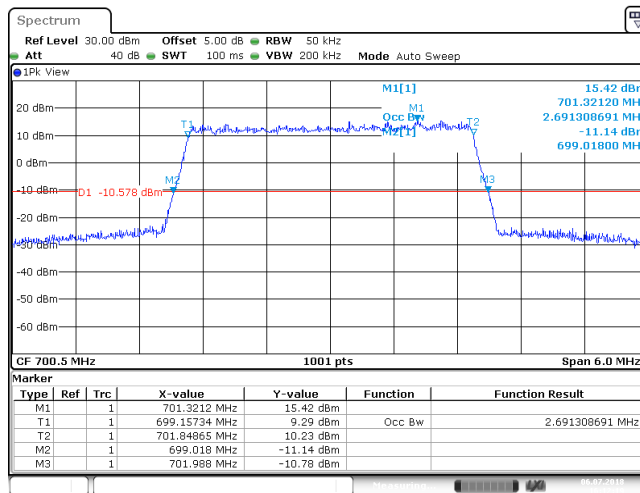
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

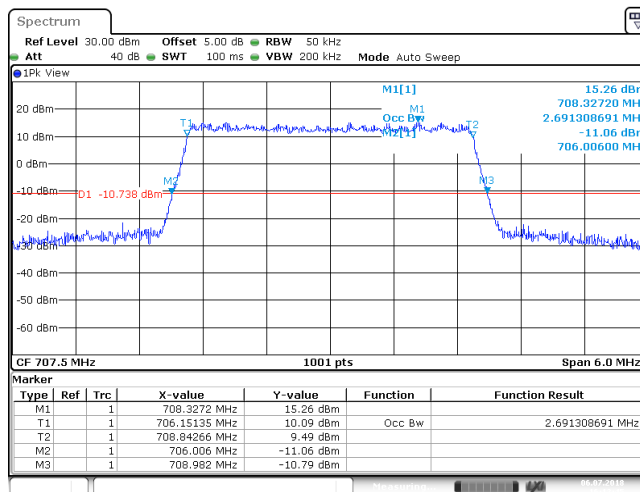
Page: 17 of 48



BAND12_3MHz_16QAM_23025_15RB#0



BAND12_3MHz_16QAM_23095_15RB#0



BAND12_3MHz_16QAM_23165_15RB#0

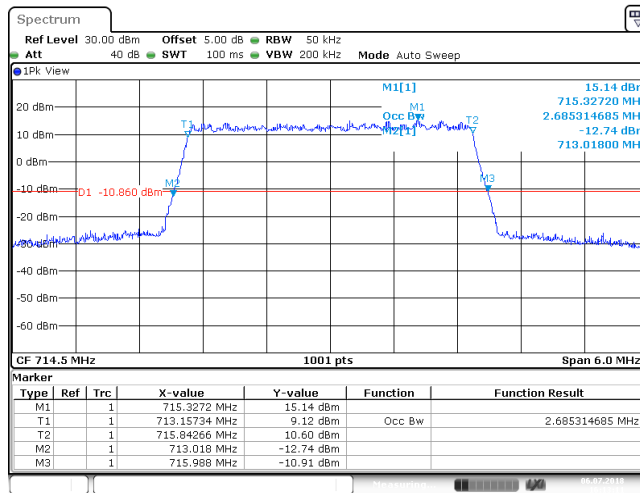
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.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



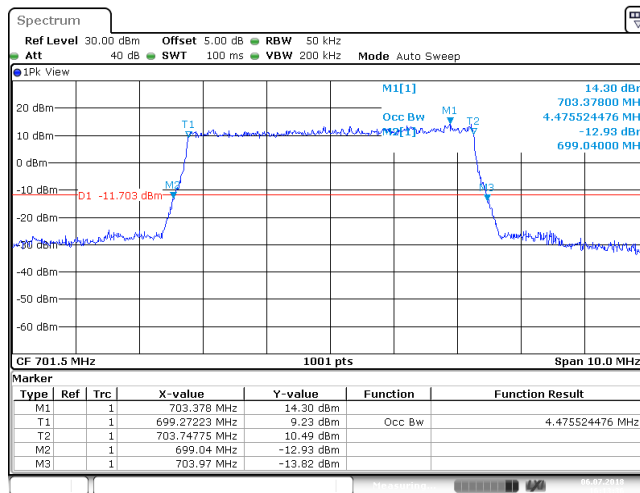
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

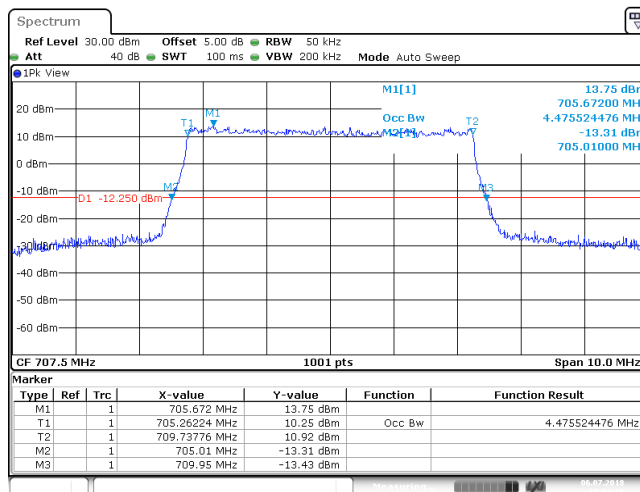
Page: 18 of 48



BAND12_5MHz_QPSK_23035_25RB#0



BAND12_5MHz_QPSK_23095_25RB#0



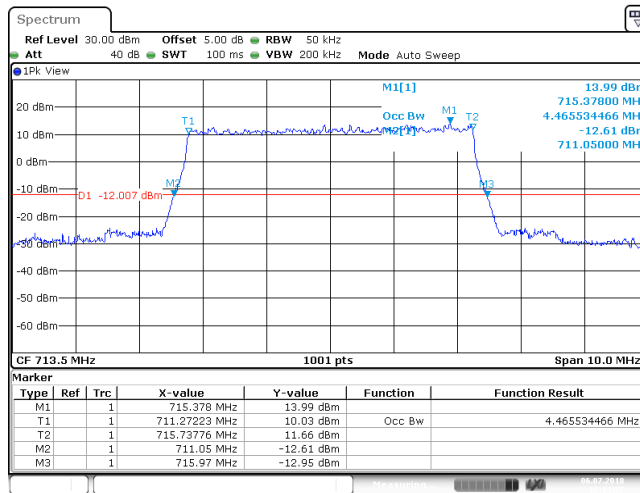
BAND12_5MHz_QPSK_23155_25RB#0



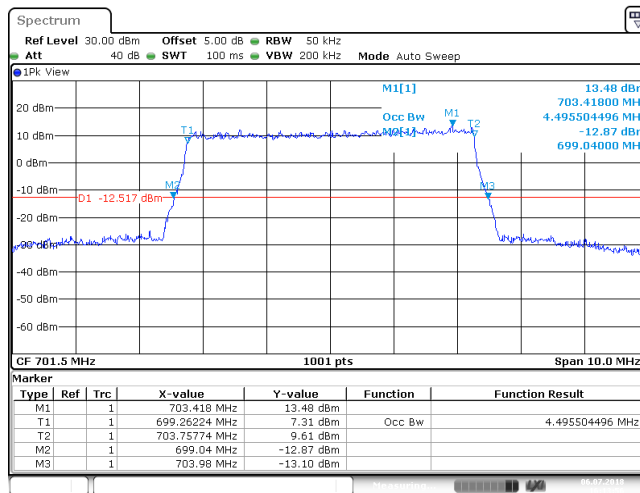
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

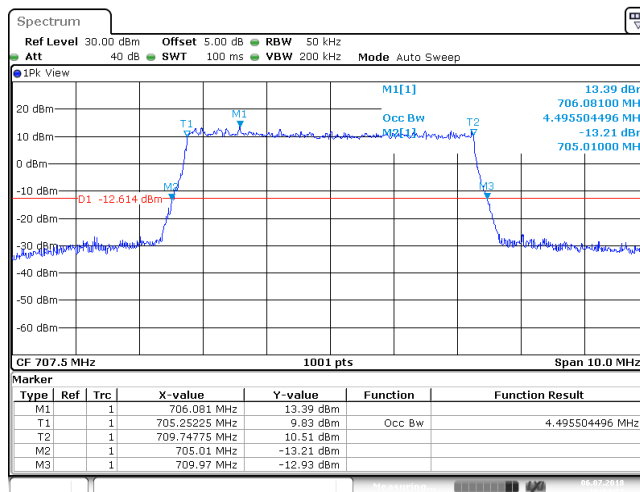
Page: 19 of 48



BAND12_5MHz_16QAM_23035_25RB#0



BAND12_5MHz_16QAM_23095_25RB#0



BAND12_5MHz_16QAM_23155_25RB#0

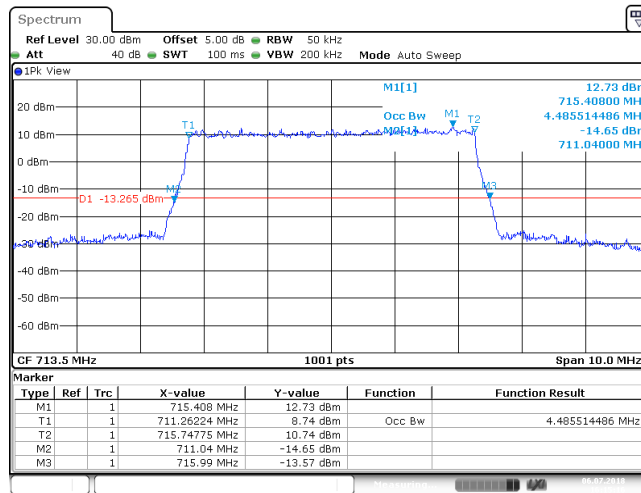
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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

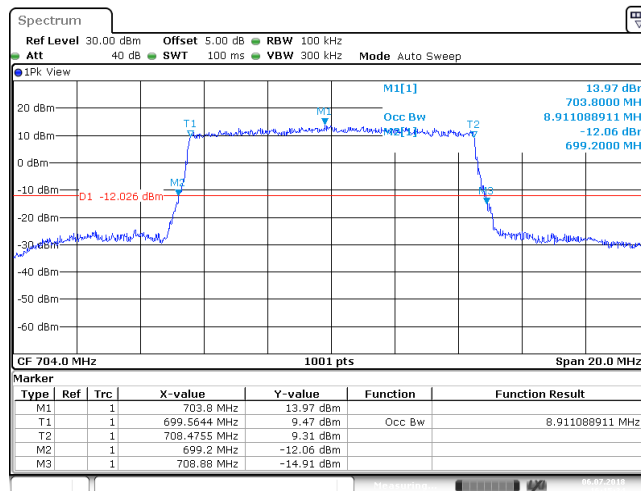
Report No.: SZEM180600485001

Page: 20 of 48



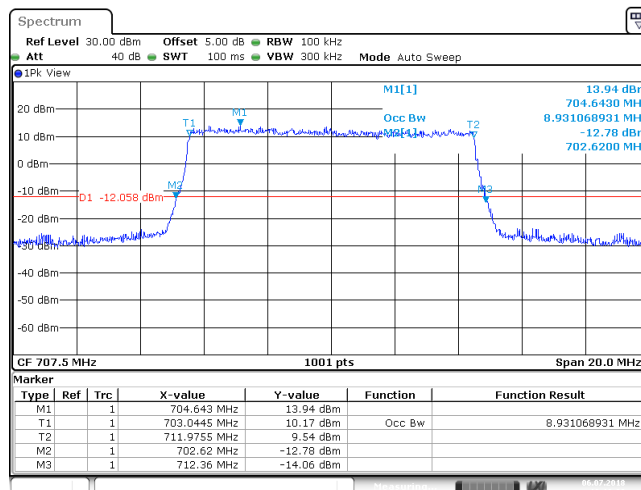
Date: 6 JUL 2018 16:15:17

BAND12_10MHz_QPSK_23060_50RB#0



Date: 6 JUL 2018 16:15:35

BAND12_10MHz_QPSK_23095_50RB#0



Date: 6 JUL 2018 16:16:01

BAND12_10MHz_QPSK_23130_50RB#0

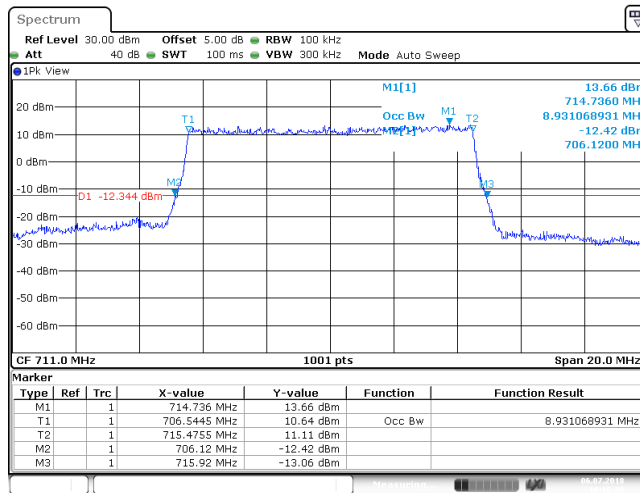
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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

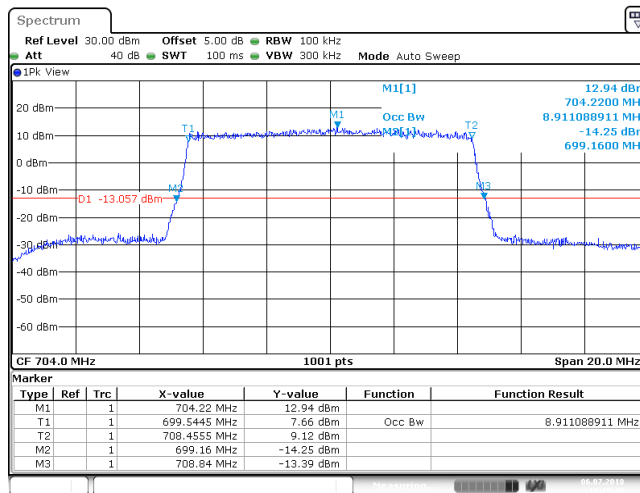
Report No.: SZEM180600485001

Page: 21 of 48



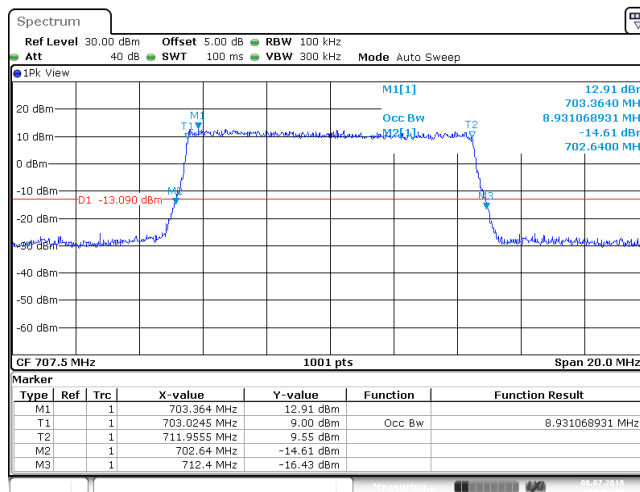
Date: 6 JUL 2018 16:16:27

BAND12_10MHz_16QAM_23060_50RB#0



Date: 6 JUL 2018 16:15:47

BAND12_10MHz_16QAM_23095_50RB#0



Date: 6 JUL 2018 16:16:13

BAND12_10MHz_16QAM_23130_50RB#0

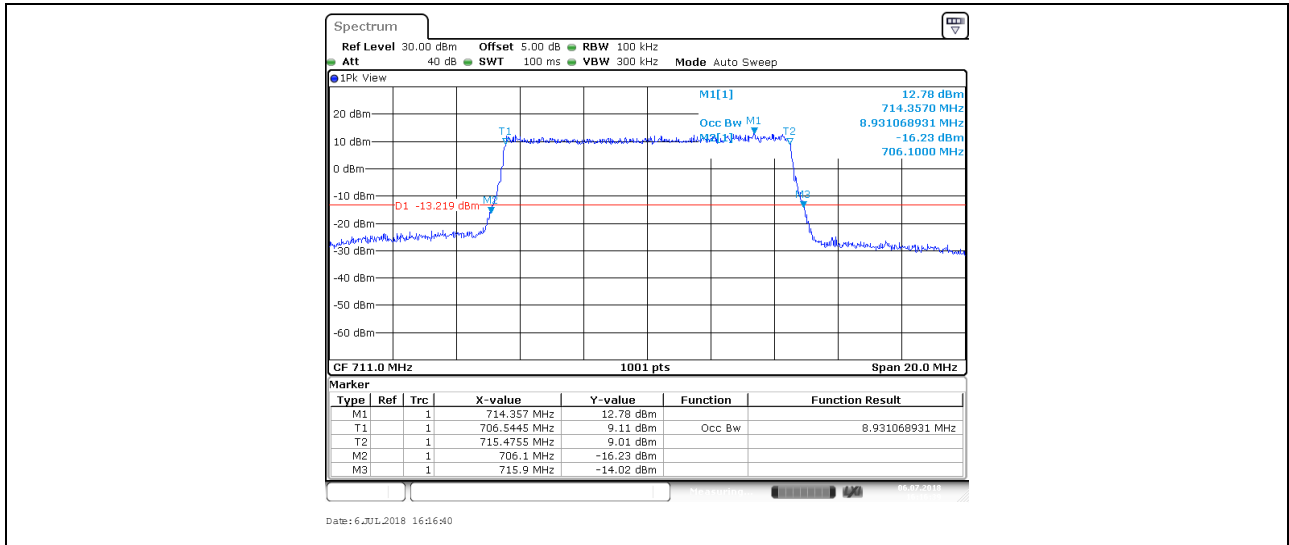
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. 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.: SZEM180600485001

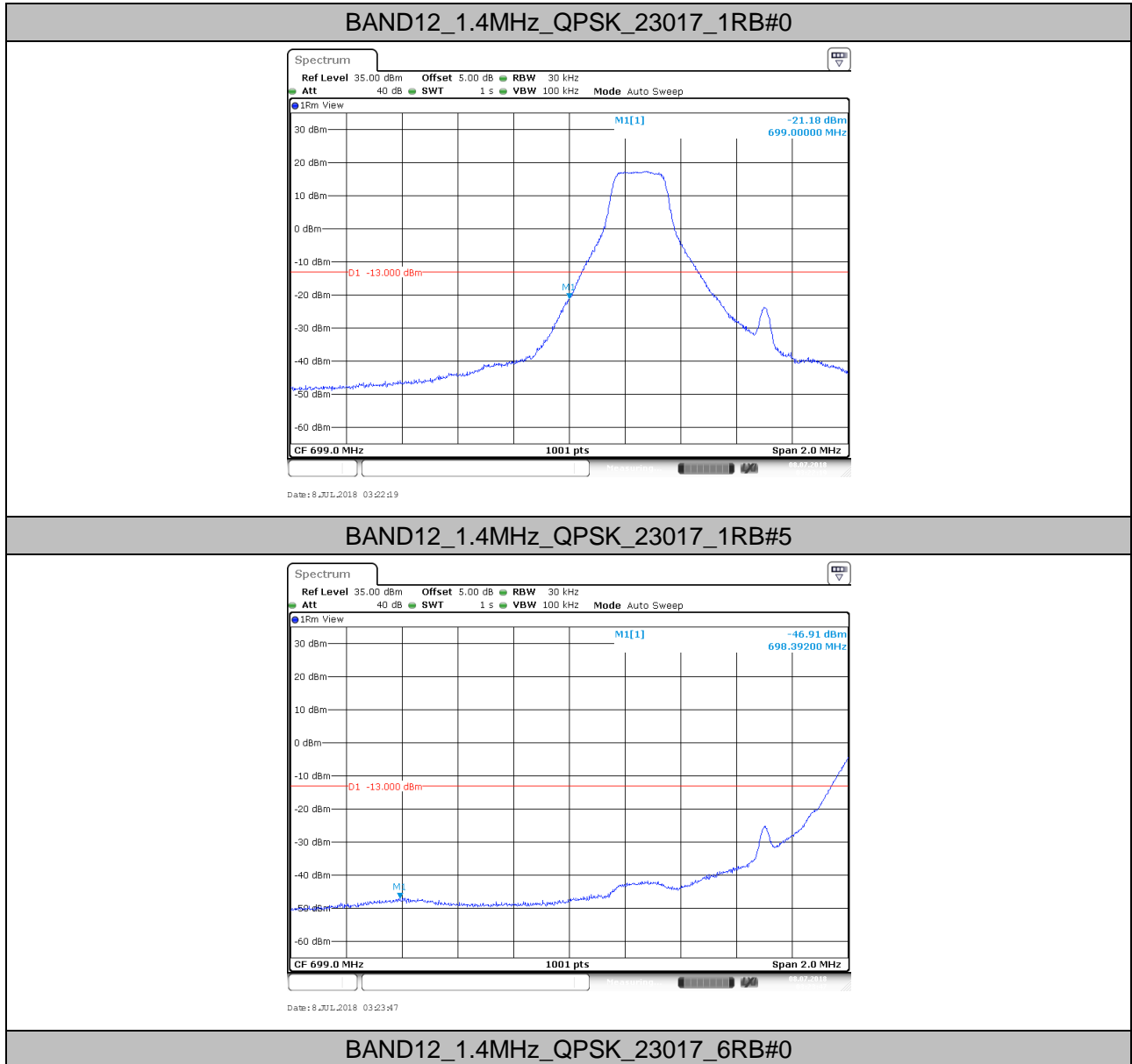
Page: 22 of 48





5. Band Edge Compliance

5.1. Test Plots

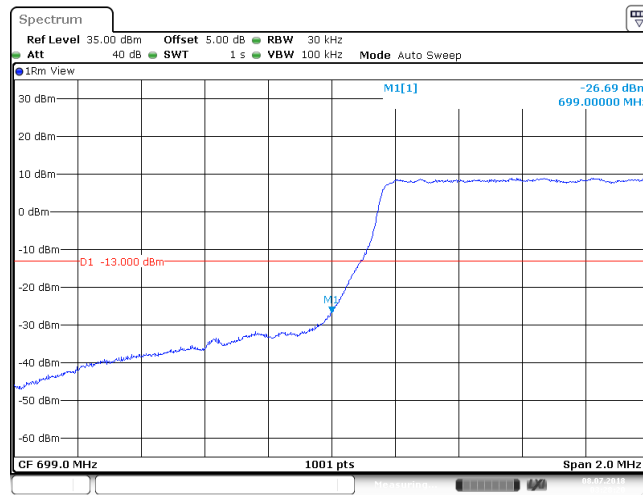




SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

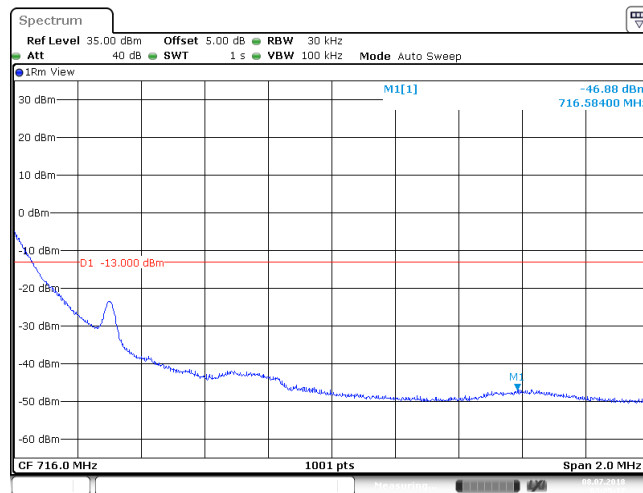
Report No.: SZEM180600485001

Page: 24 of 48



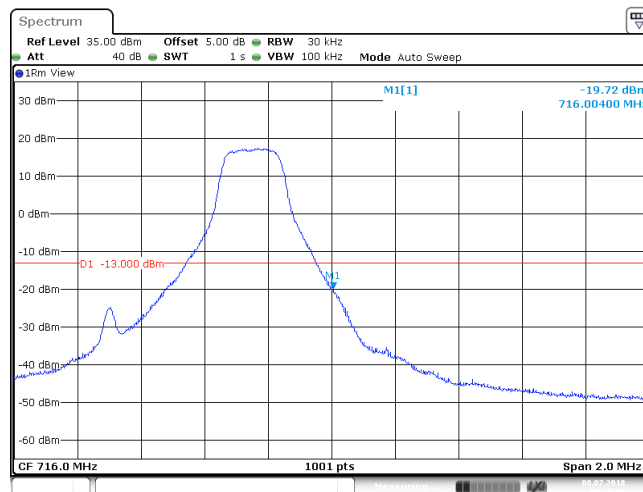
Date: 8 JUL 2018 03:28:20

BAND12_1.4MHz_QPSK_23173_1RB#0



Date: 8 JUL 2018 03:25:18

BAND12_1.4MHz_QPSK_23173_1RB#5



Date: 8 JUL 2018 03:26:46

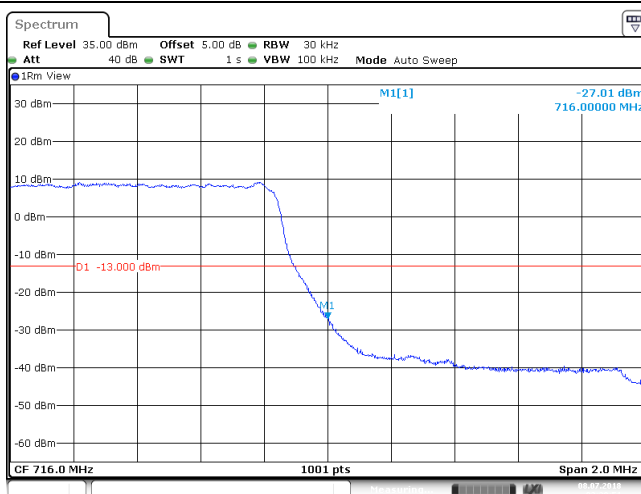
BAND12_1.4MHz_QPSK_23173_6RB#0



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

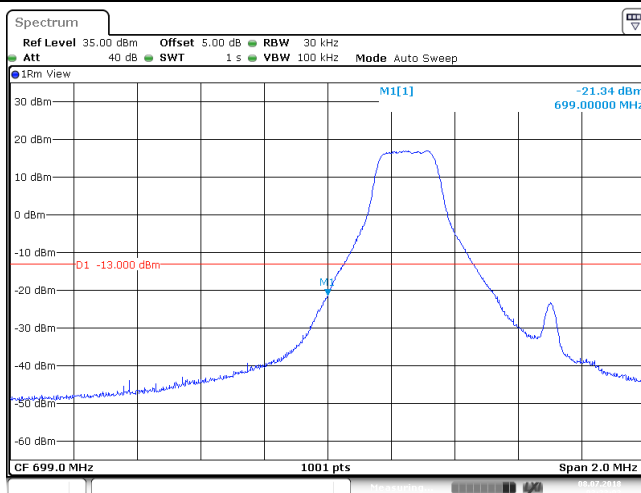
Report No.: SZEM180600485001

Page: 25 of 48



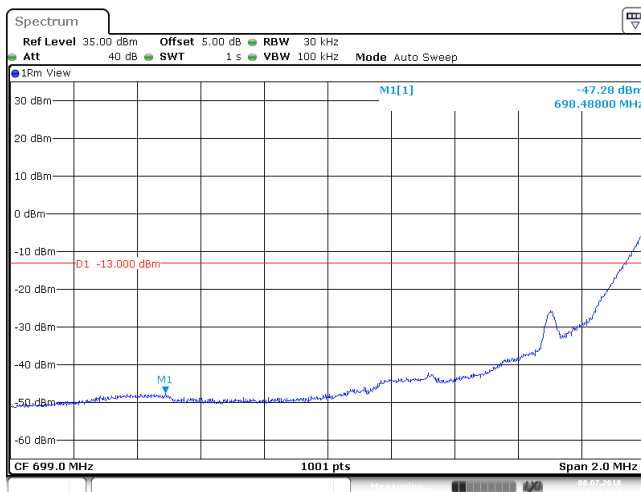
Date: 8 JUL 2018 03:29:51

BAND12_1.4MHz_16QAM_23017_1RB#0



Date: 8 JUL 2018 03:23:03

BAND12_1.4MHz_16QAM_23017_1RB#5



Date: 8 JUL 2018 03:24:31

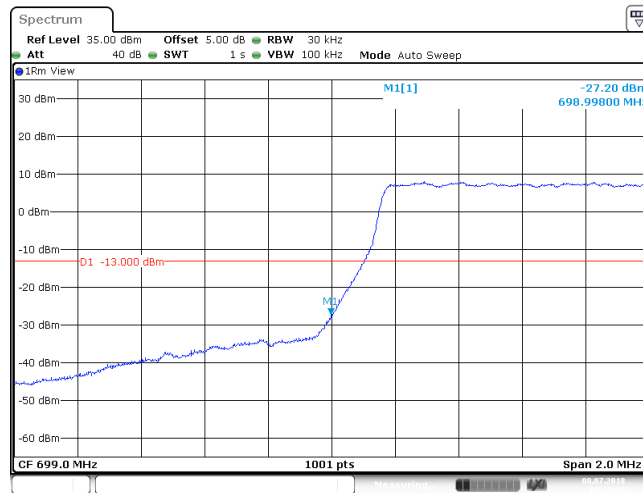
BAND12_1.4MHz_16QAM_23017_6RB#0



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

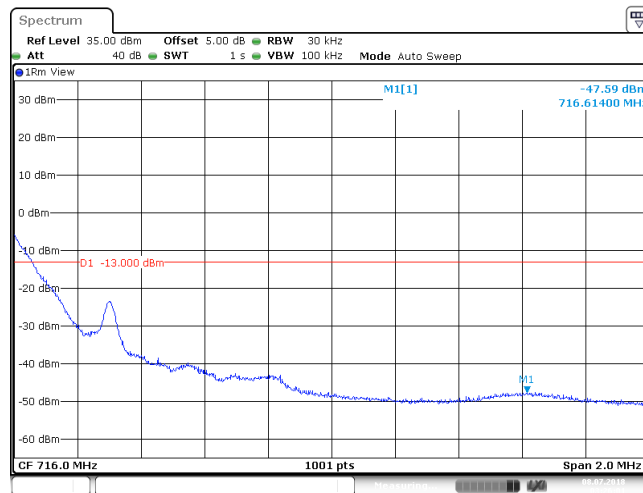
Report No.: SZEM180600485001

Page: 26 of 48



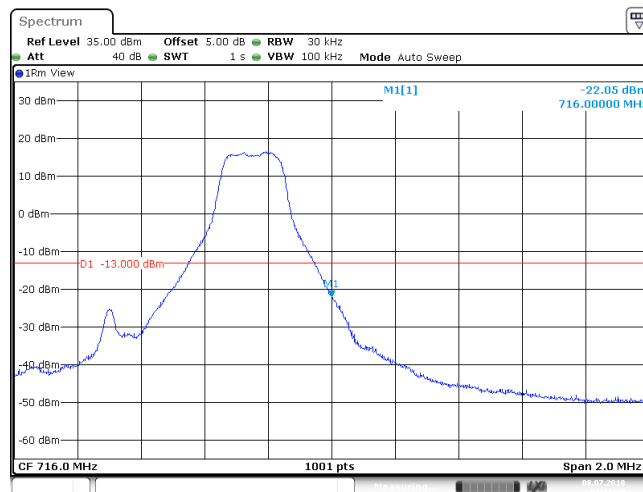
Date: 8 JUL 2018 03:29:04

BAND12_1.4MHz_16QAM_23173_1RB#0



Date: 8 JUL 2018 03:26:01

BAND12_1.4MHz_16QAM_23173_1RB#5



Date: 8 JUL 2018 03:27:30

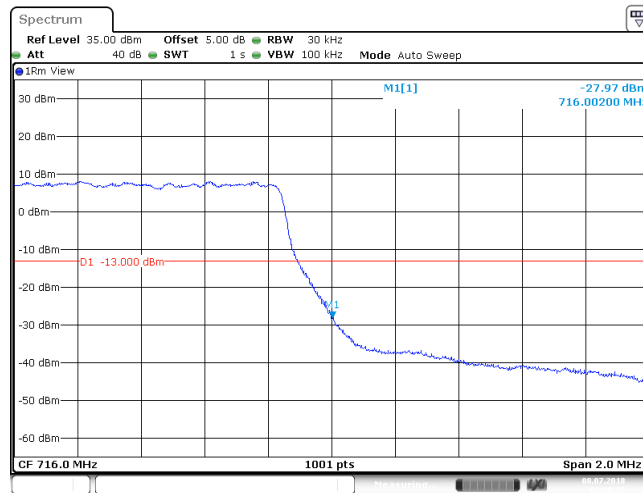
BAND12_1.4MHz_16QAM_23173_6RB#0



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

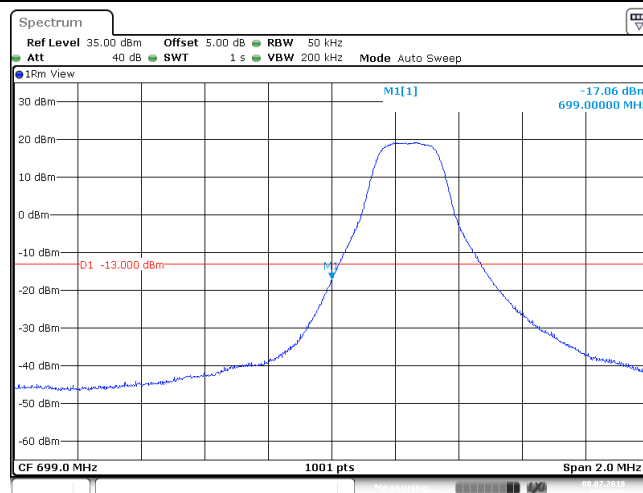
Report No.: SZEM180600485001

Page: 27 of 48



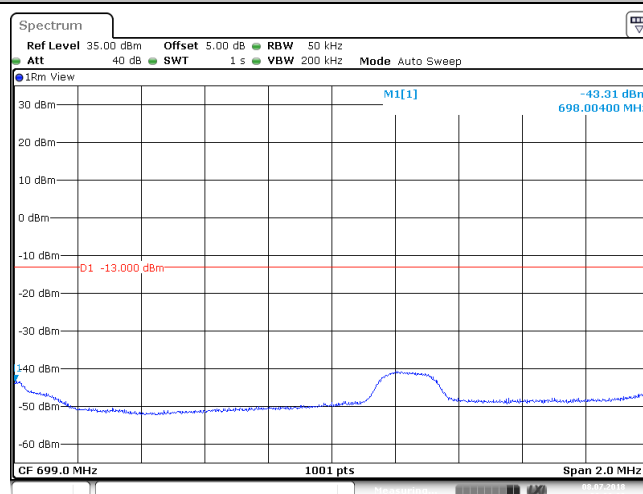
Date: 8_JUL_2018 03:30:35

BAND12_3MHz_QPSK_23025_1RB#0



Date: 8_JUL_2018 03:32:00

BAND12_3MHz_QPSK_23025_1RB#14



Date: 8_JUL_2018 03:33:28

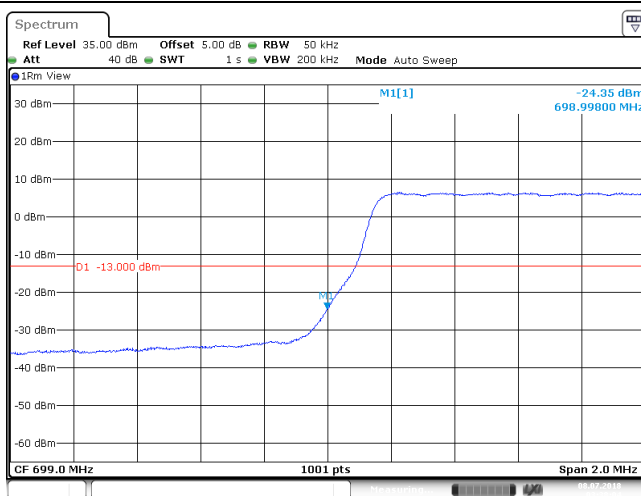
BAND12_3MHz_QPSK_23025_15RB#0



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

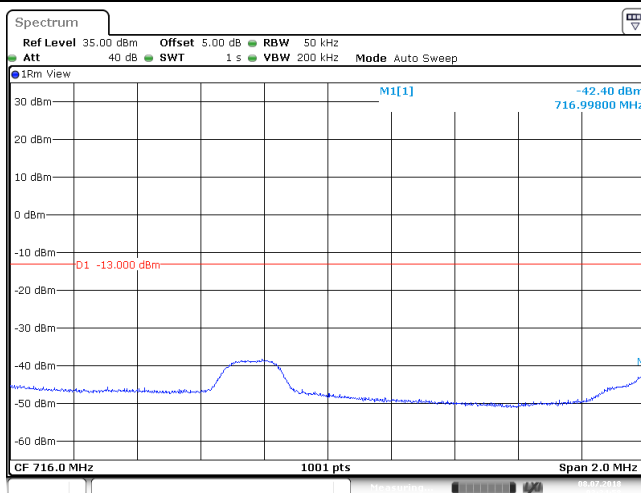
Report No.: SZEM180600485001

Page: 28 of 48



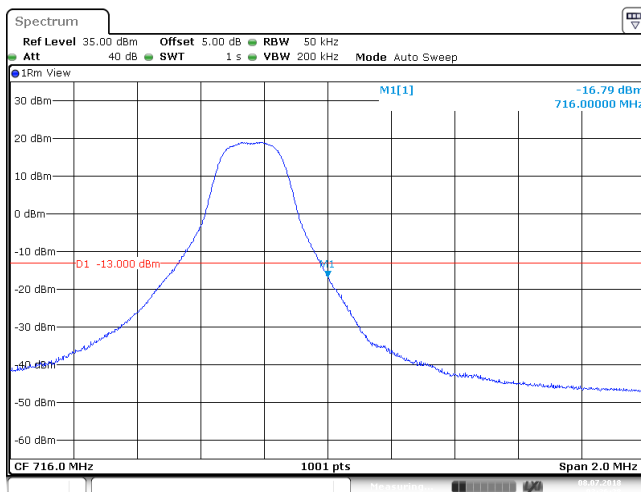
Date: 8 JUL 2018 03:38:04

BAND12_3MHz_QPSK_23165_1RB#0



Date: 8 JUL 2018 03:34:59

BAND12_3MHz_QPSK_23165_1RB#14



Date: 8 JUL 2018 03:36:28

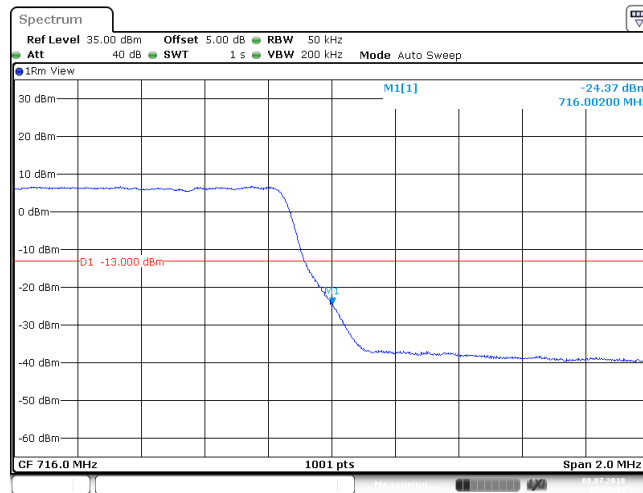
BAND12_3MHz_QPSK_23165_15RB#0



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

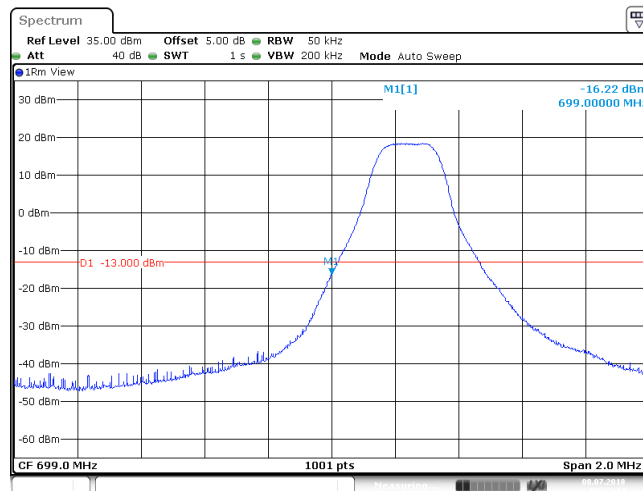
Report No.: SZEM180600485001

Page: 29 of 48



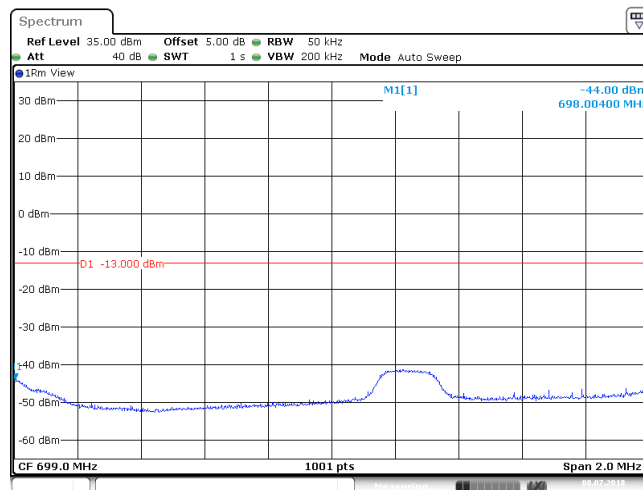
Date: 8_JUL_2018 03:39:35

BAND12_3MHz_16QAM_23025_1RB#0



Date: 8_JUL_2018 03:32:44

BAND12_3MHz_16QAM_23025_1RB#14



Date: 8_JUL_2018 03:34:12

BAND12_3MHz_16QAM_23025_15RB#0

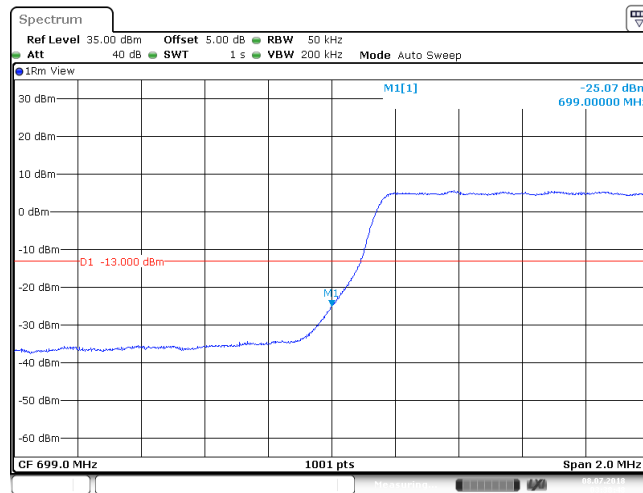
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>.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

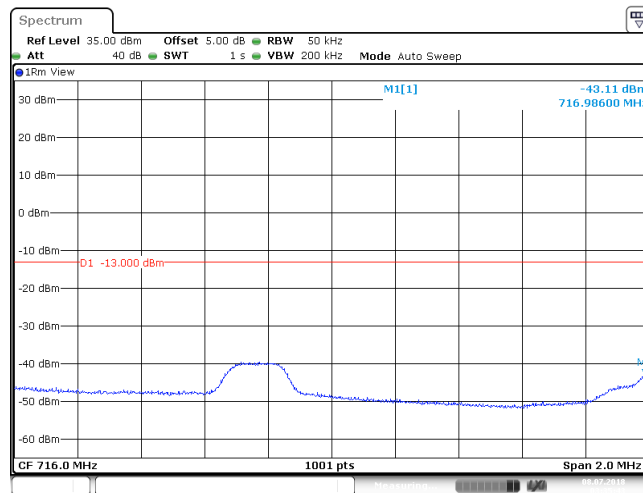
Report No.: SZEM180600485001

Page: 30 of 48



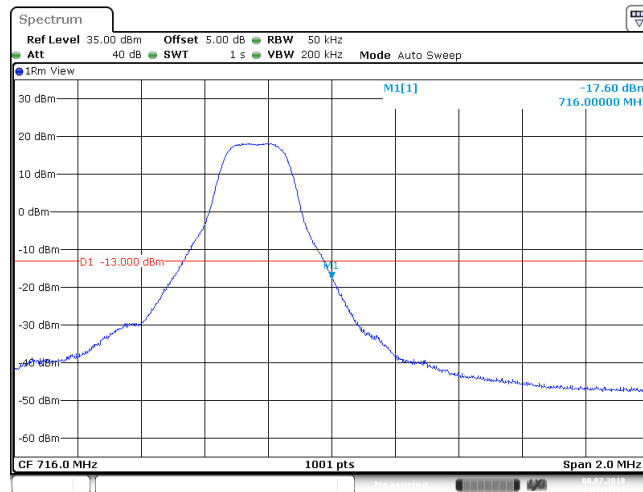
Date: 8_JUL_2018 03:38:48

BAND12_3MHz_16QAM_23165_1RB#0



Date: 8_JUL_2018 03:35:43

BAND12_3MHz_16QAM_23165_1RB#14



Date: 8_JUL_2018 03:37:12

BAND12_3MHz_16QAM_23165_15RB#0

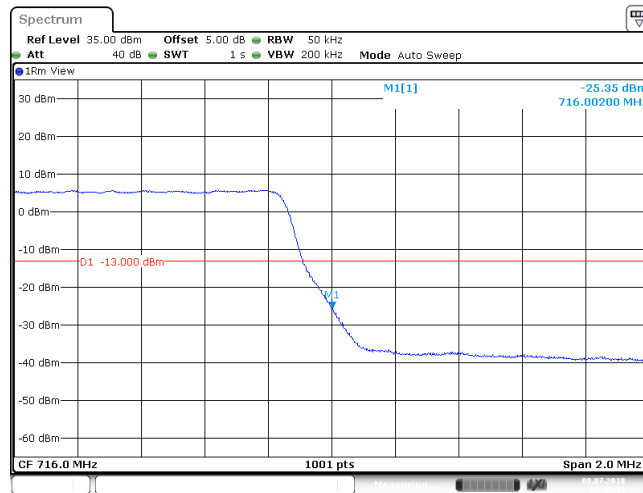
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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

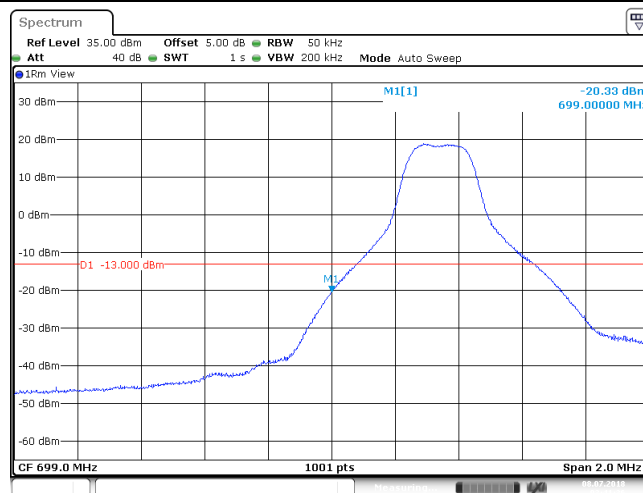
Report No.: SZEM180600485001

Page: 31 of 48



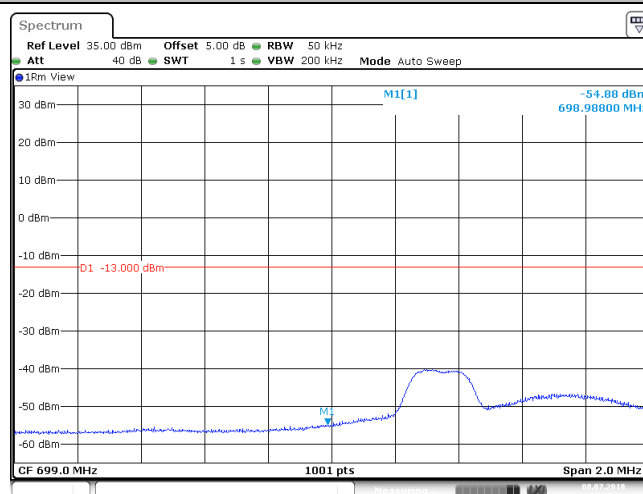
Date: 8 JUL 2018 03:40:19

BAND12_5MHz_QPSK_23035_1RB#0



Date: 8 JUL 2018 03:41:36

BAND12_5MHz_QPSK_23035_1RB#24



Date: 8 JUL 2018 03:43:04

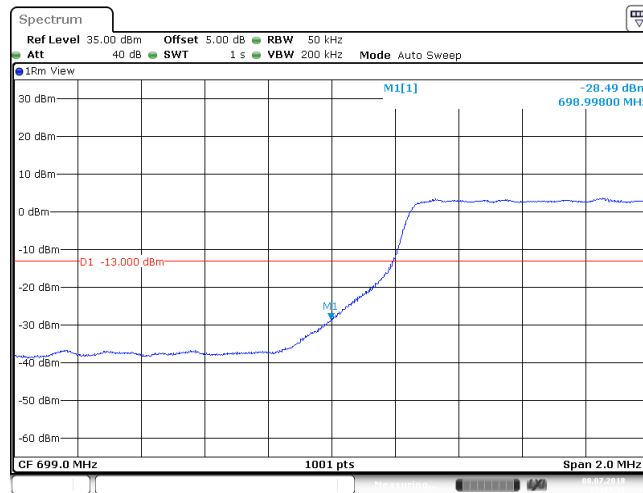
BAND12_5MHz_QPSK_23035_25RB#0



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

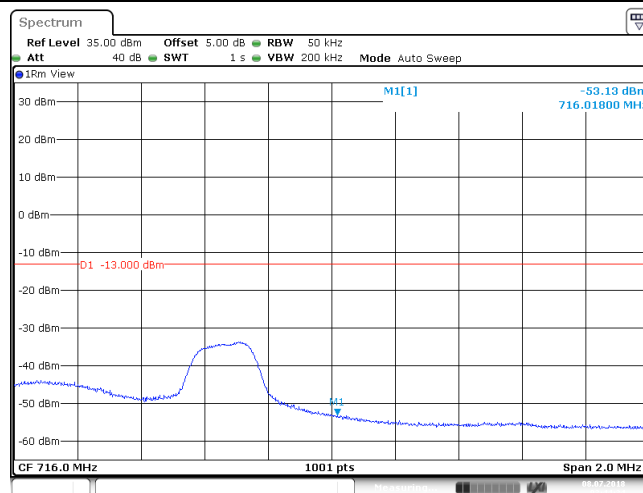
Report No.: SZEM180600485001

Page: 32 of 48



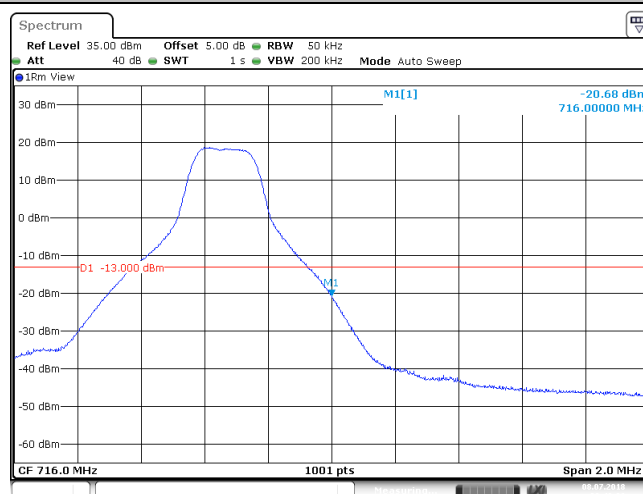
Date: 8 JUL 2018 03:47:39

BAND12_5MHz_QPSK_23155_1RB#0



Date: 8 JUL 2018 03:44:35

BAND12_5MHz_QPSK_23155_1RB#24



Date: 8 JUL 2018 03:46:03

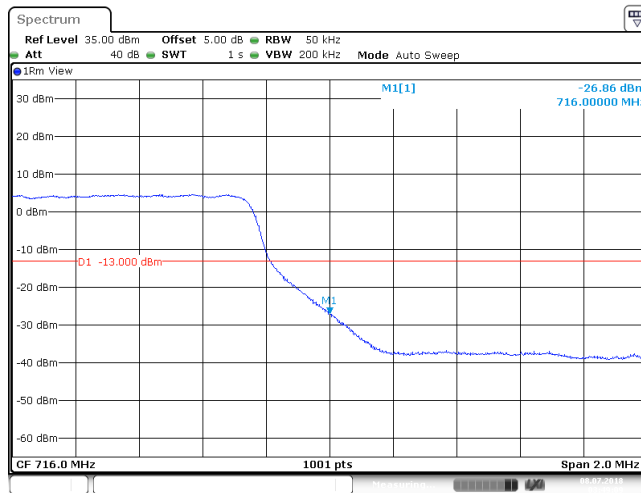
BAND12_5MHz_QPSK_23155_25RB#0



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

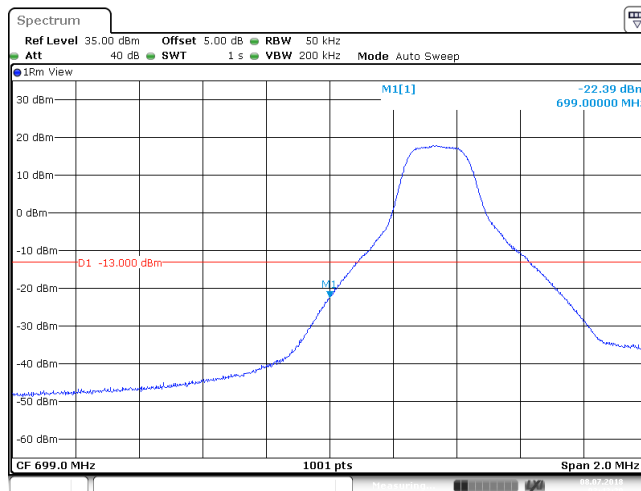
Report No.: SZEM180600485001

Page: 33 of 48



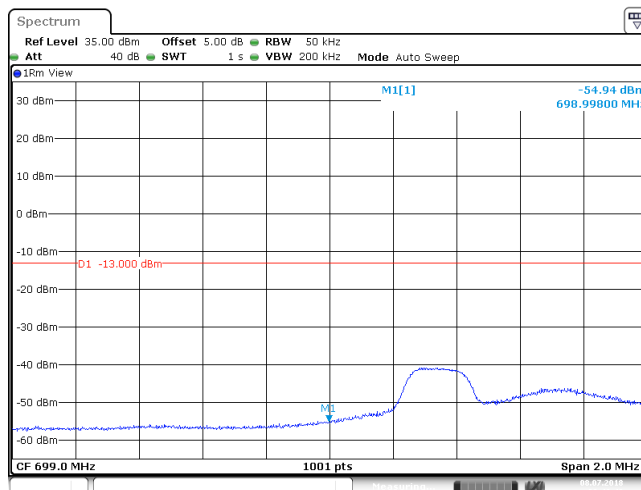
Date: 8 JUL 2018 03:49:09

BAND12_5MHz_16QAM_23035_1RB#0



Date: 8 JUL 2018 03:42:20

BAND12_5MHz_16QAM_23035_1RB#24



Date: 8 JUL 2018 03:43:48

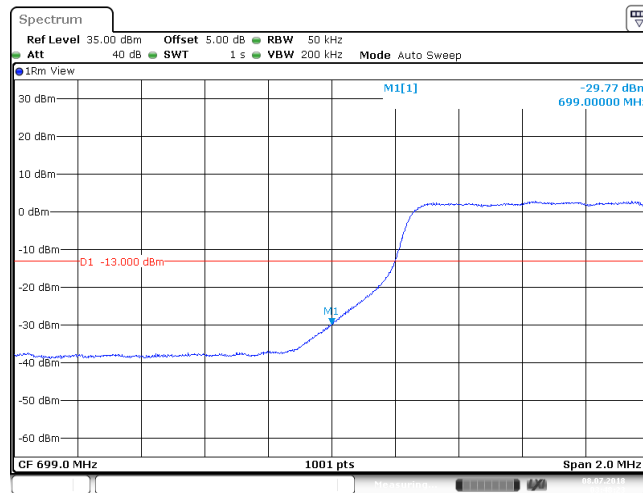
BAND12_5MHz_16QAM_23035_25RB#0



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

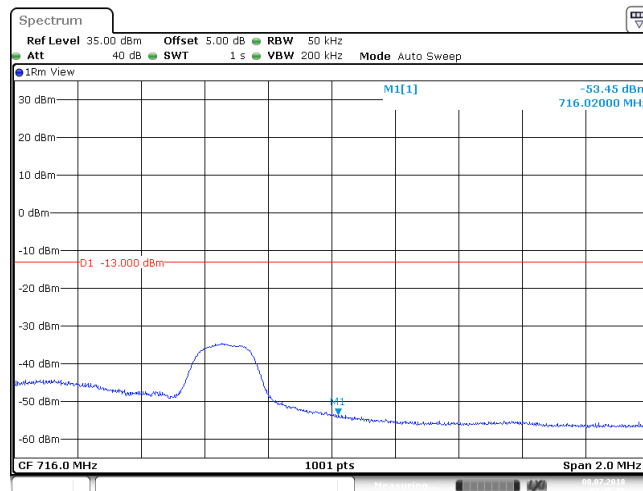
Report No.: SZEM180600485001

Page: 34 of 48



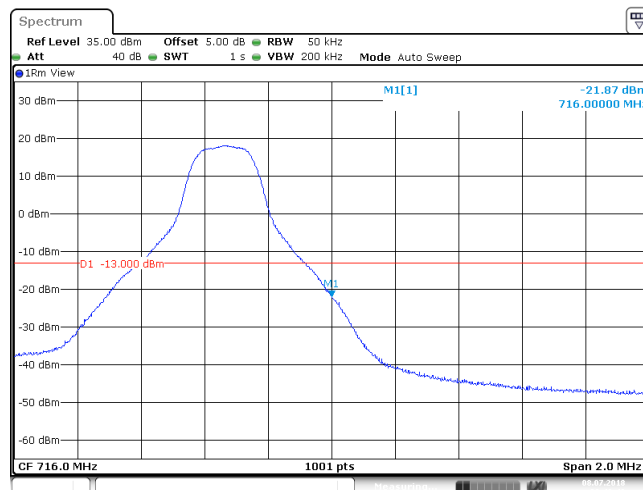
Date: 8 JUL 2018 03:48:23

BAND12_5MHz_16QAM_23155_1RB#0



Date: 8 JUL 2018 03:45:19

BAND12_5MHz_16QAM_23155_1RB#24



Date: 8 JUL 2018 03:46:47

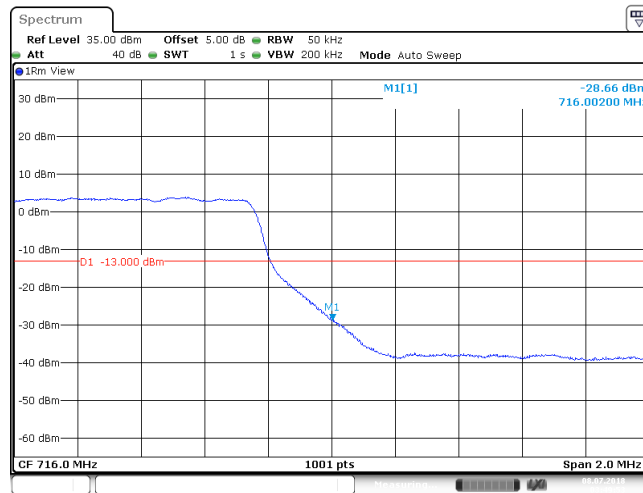
BAND12_5MHz_16QAM_23155_25RB#0



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

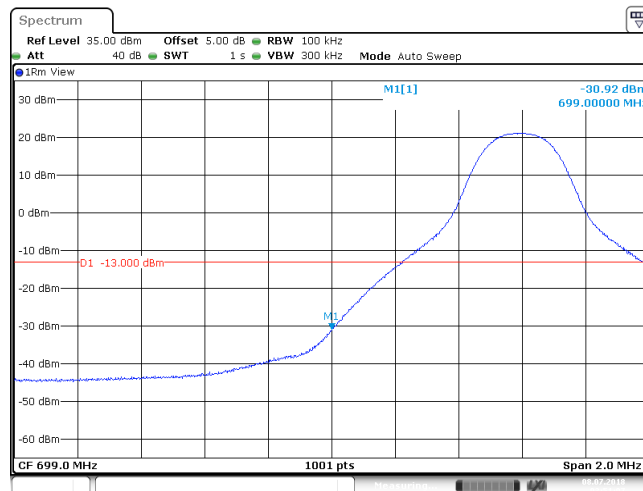
Report No.: SZEM180600485001

Page: 35 of 48



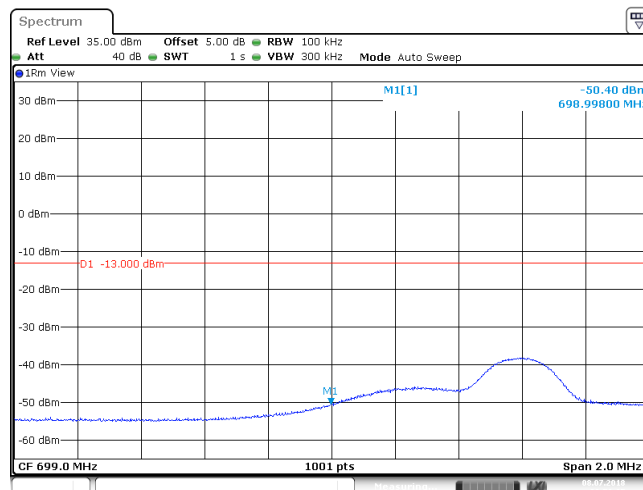
Date: 8_JUL_2018 03:49:53

BAND12_10MHz_QPSK_23060_1RB#0



Date: 8_JUL_2018 03:51:07

BAND12_10MHz_QPSK_23060_1RB#49



Date: 8_JUL_2018 03:52:35

BAND12_10MHz_QPSK_23060_50RB#0

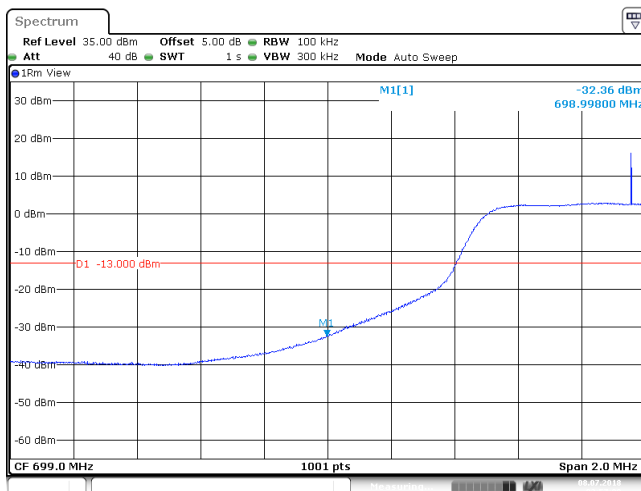
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>.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

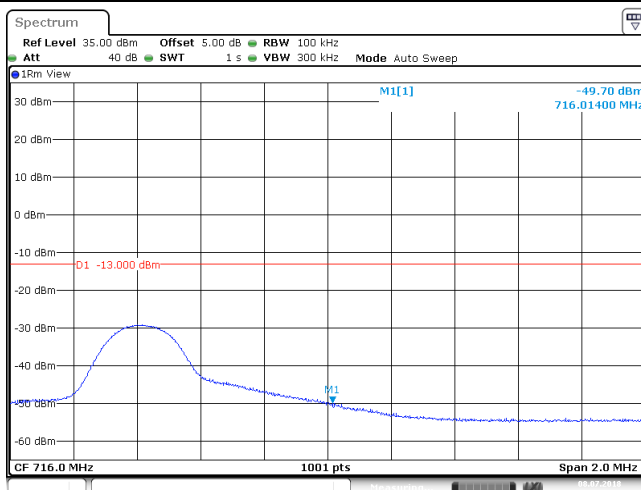
Report No.: SZEM180600485001

Page: 36 of 48



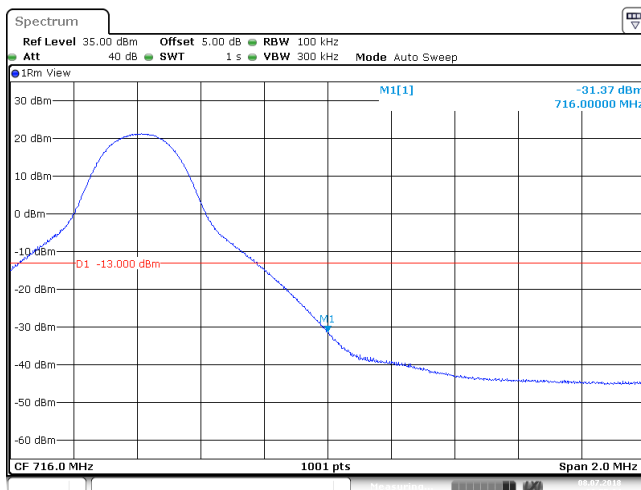
Date: 8 JUL 2018 03:57:10

BAND12_10MHz_QPSK_23130_1RB#0



Date: 8 JUL 2018 03:54:06

BAND12_10MHz_QPSK_23130_1RB#49



Date: 8 JUL 2018 03:55:34

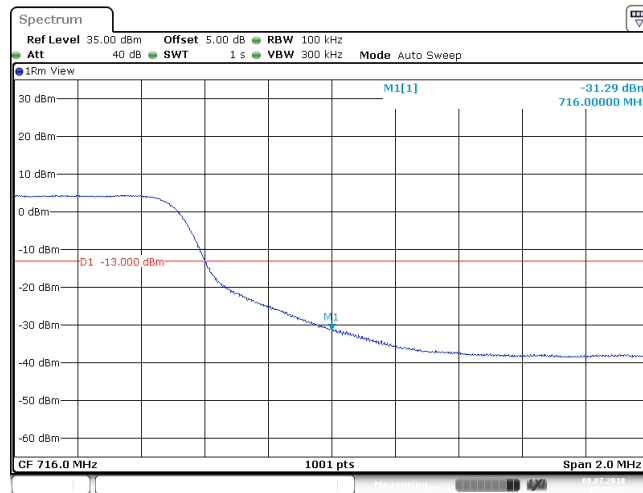
BAND12_10MHz_QPSK_23130_50RB#0



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

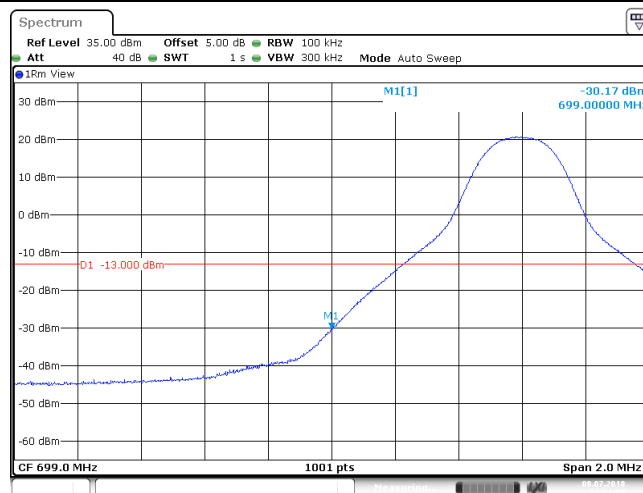
Report No.: SZEM180600485001

Page: 37 of 48



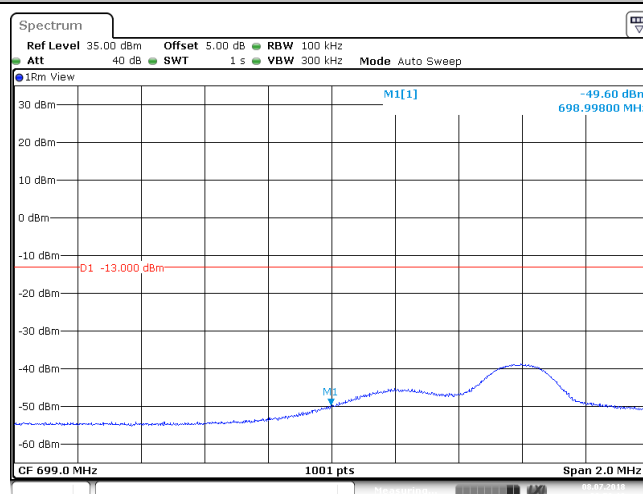
Date: 8 JUL 2018 03:58:42

BAND12_10MHz_16QAM_23060_1RB#0



Date: 8 JUL 2018 03:51:51

BAND12_10MHz_16QAM_23060_1RB#49



Date: 8 JUL 2018 03:53:19

BAND12_10MHz_16QAM_23060_50RB#0

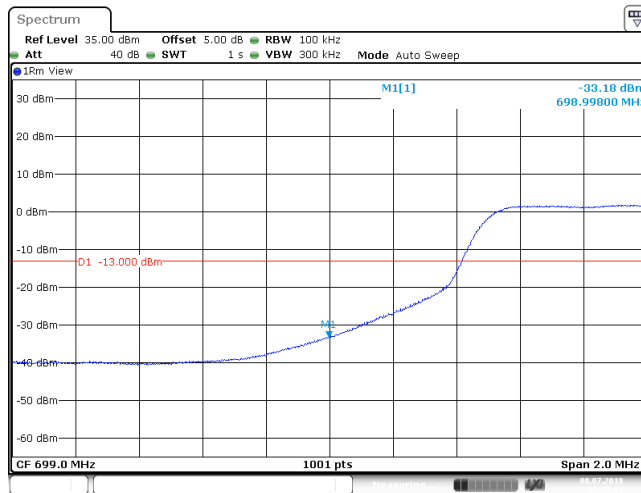
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>.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

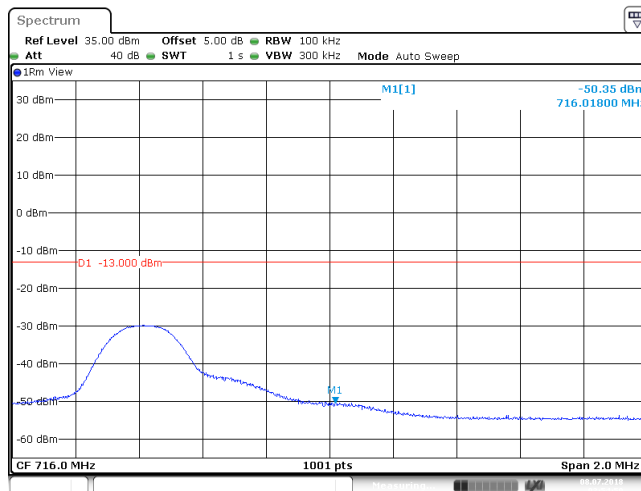
Report No.: SZEM180600485001

Page: 38 of 48



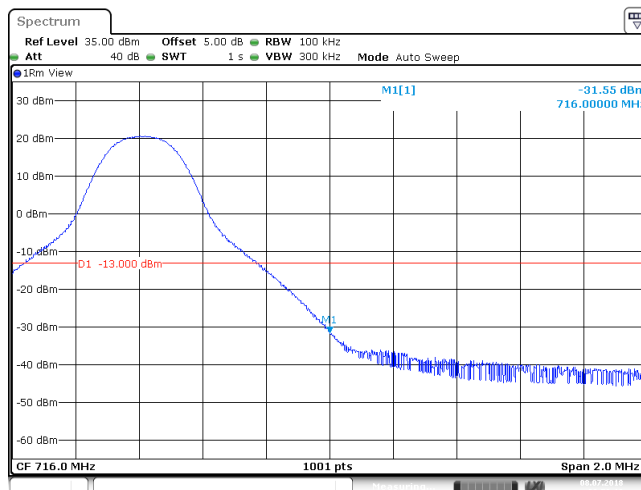
Date: 8 JUL 2018 03:57:54

BAND12_10MHz_16QAM_23130_1RB#0



Date: 8 JUL 2018 03:54:50

BAND12_10MHz_16QAM_23130_1RB#49



Date: 8 JUL 2018 03:56:18

BAND12_10MHz_16QAM_23130_50RB#0

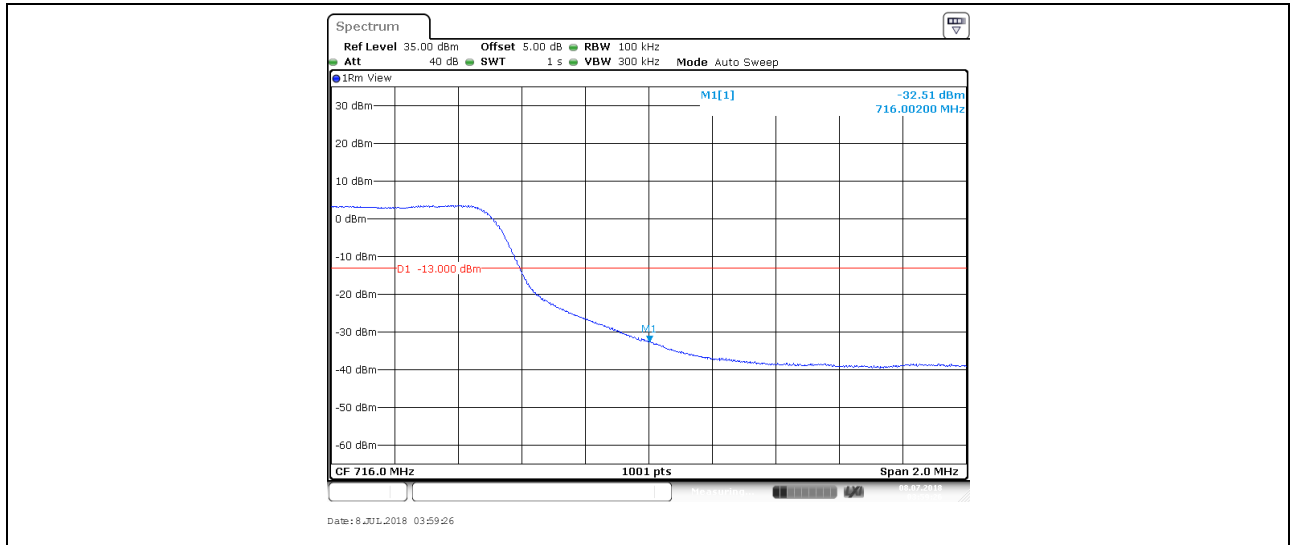
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. 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.: SZEM180600485001

Page: 39 of 48

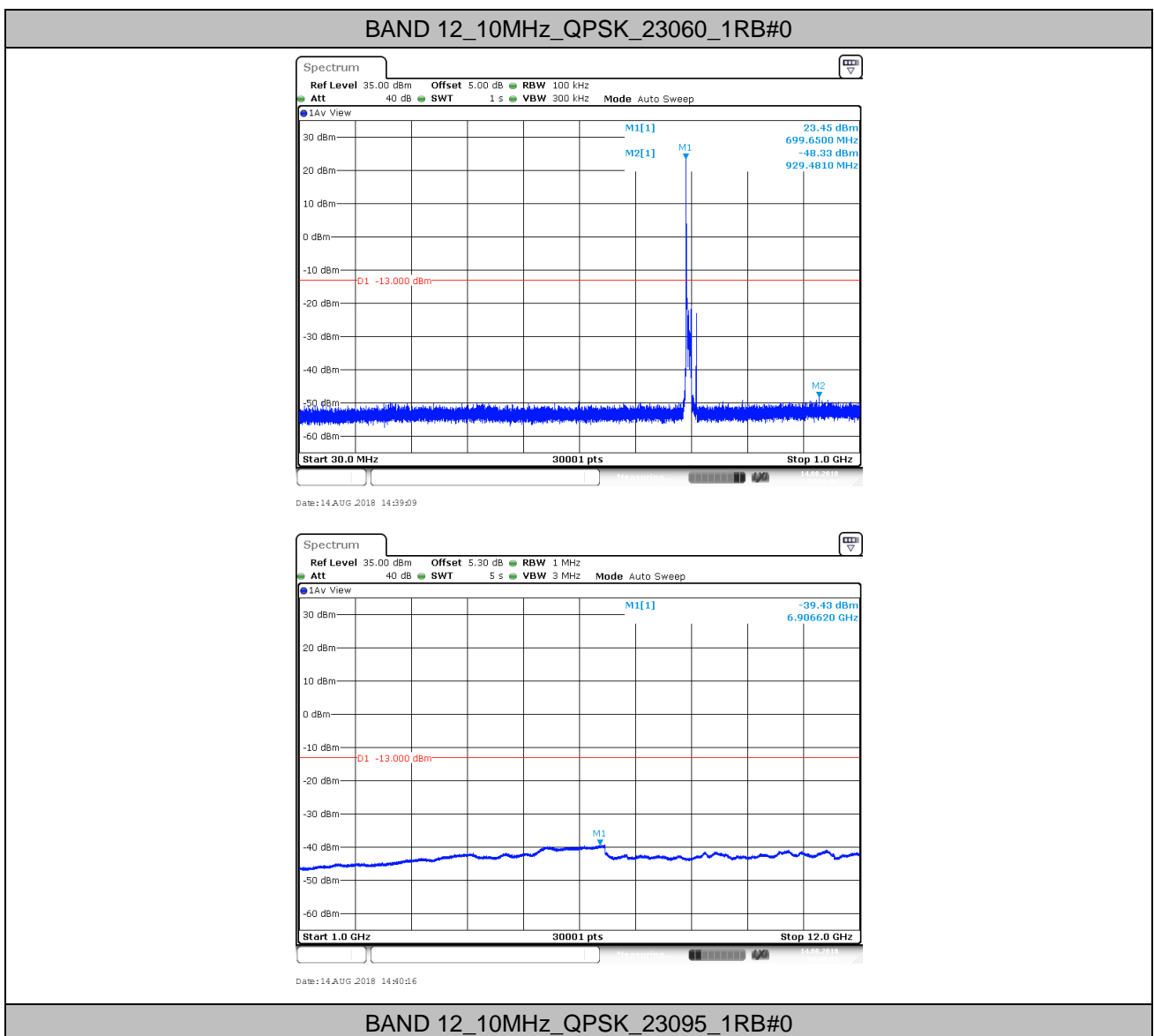




6. Spurious Emission at Antenna Terminal

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

6.1. Test Plots

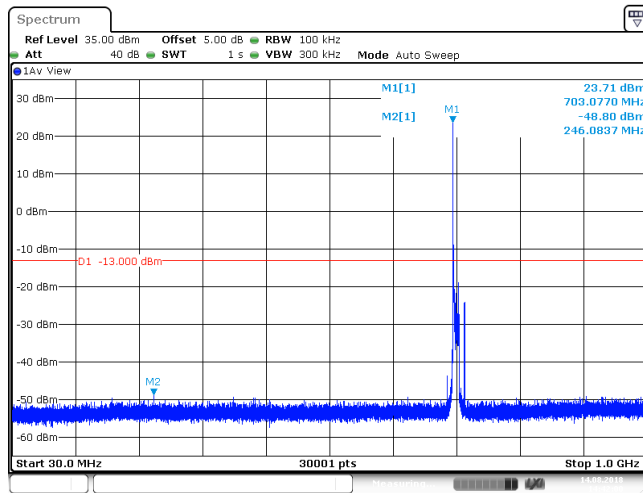




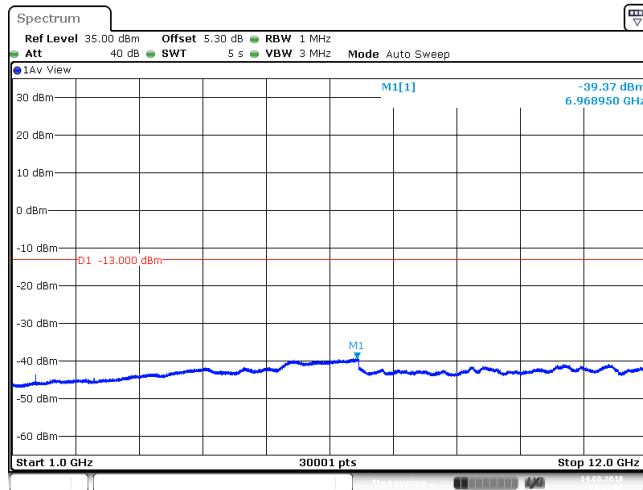
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

Page: 41 of 48

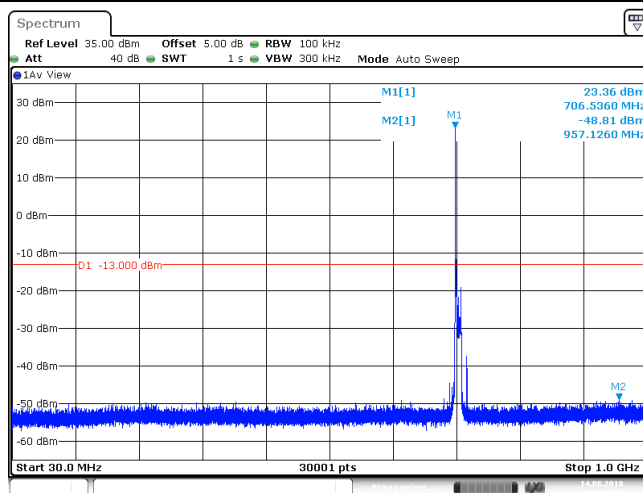


Date: 14 AUG 2018 14:42:50



Date: 14 AUG 2018 14:43:07

BAND 12_10MHz_QPSK_23130_1RB#0



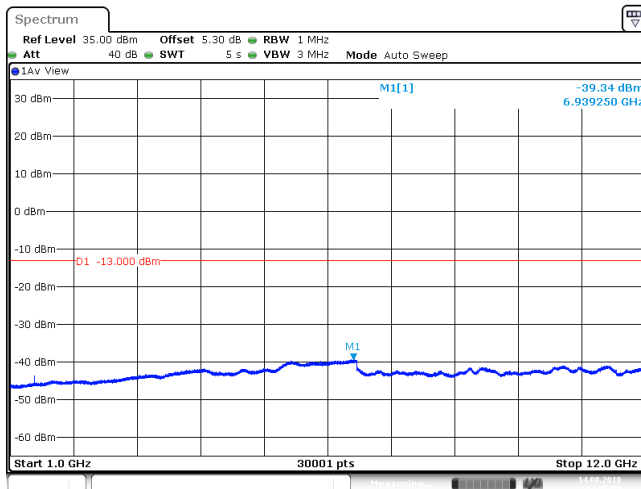
Date: 14 AUG 2018 14:44:51



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

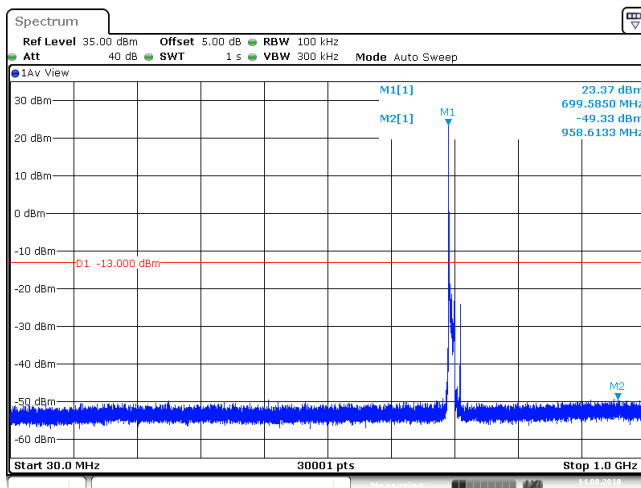
Report No.: SZEM180600485001

Page: 42 of 48

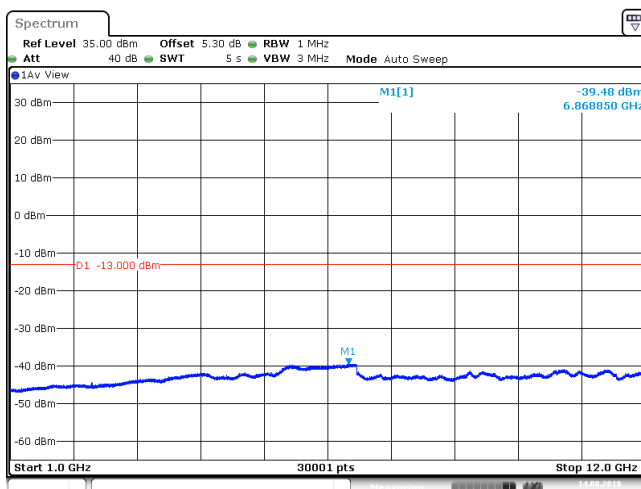


Date: 14 AUG 2018 14:45:58

BAND 12_10MHz_16QAM_23060_1RB#0



Date: 14 AUG 2018 14:40:33



Date: 14 AUG 2018 14:41:40

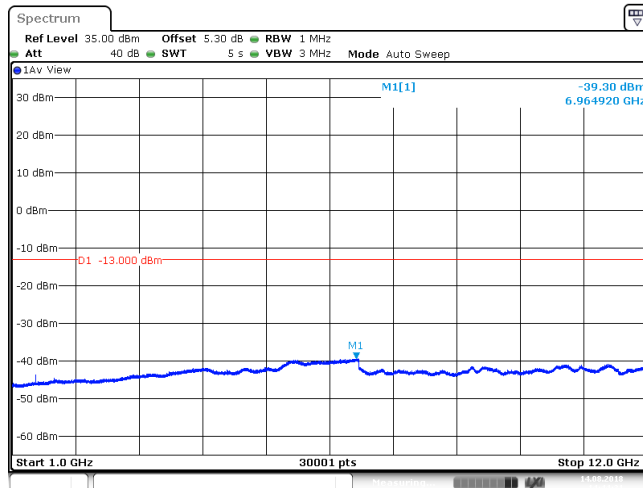
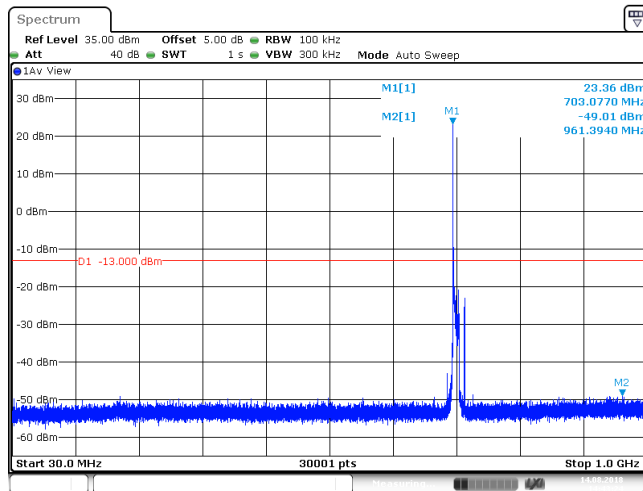
BAND 12_10MHz_16QAM_23095_1RB#0



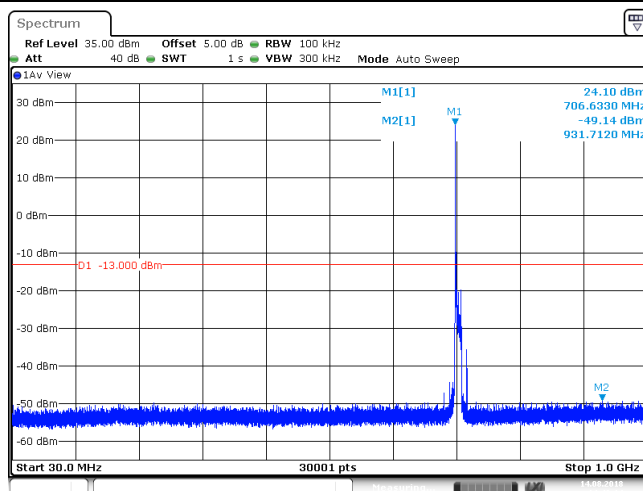
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Report No.: SZEM180600485001

Page: 43 of 48



BAND 12_10MHz_16QAM_23130_1RB#0





7. Field Strength of Spurious Radiation

7.1. Test BAND = LTE BAND 12

7.1.1. Test Mode = LTE/TM1 10MHz

7.1.1.1. Test Channel = LCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
63.973333	-81.89	-13.00	68.89	Vertical
124.966667	-86.31	-13.00	73.31	Vertical
1399.000000	-54.54	-13.00	41.54	Vertical
2099.000000	-60.85	-13.00	47.85	Vertical
4197.300000	-64.19	-13.00	51.19	Vertical
62.526667	-77.72	-13.00	64.72	Horizontal
142.326667	-90.13	-13.00	77.13	Horizontal
275.793333	-87.65	-13.00	74.65	Horizontal
1399.000000	-54.48	-13.00	41.48	Horizontal
2099.000000	-58.67	-13.00	45.67	Horizontal
4197.300000	-61.68	-13.00	48.68	Horizontal

7.1.1.2. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
63.646667	-82.32	-13.00	69.32	Vertical
124.966667	-86.12	-13.00	73.12	Vertical
369.080000	-86.33	-13.00	73.33	Vertical
1406.000000	-62.56	-13.00	49.56	Vertical
2109.500000	-60.37	-13.00	47.37	Vertical
4218.262500	-64.82	-13.00	51.82	Vertical
62.340000	-78.04	-13.00	65.04	Horizontal
147.273333	-90.62	-13.00	77.62	Horizontal
274.393333	-87.58	-13.00	74.58	Horizontal
1406.000000	-62.33	-13.00	49.33	Horizontal
2109.500000	-61.16	-13.00	48.16	Horizontal



4218.262500	-62.55	-13.00	49.55	Horizontal
-------------	--------	--------	-------	------------

7.1.1.3. Test Channel = HCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin(dB)	Polarization
63.553333	-82.07	-13.00	69.07	Vertical
124.966667	-86.07	-13.00	73.07	Vertical
249.986667	-88.57	-13.00	75.57	Vertical
1413.000000	-56.99	-13.00	43.99	Vertical
2120.000000	-52.82	-13.00	39.82	Vertical
4239.225000	-61.59	-13.00	48.59	Vertical
63.320000	-78.03	-13.00	65.03	Horizontal
141.626667	-90.34	-13.00	77.34	Horizontal
275.233333	-87.41	-13.00	74.41	Horizontal
1413.000000	-57.00	-13.00	44.00	Horizontal
2120.000000	-51.45	-13.00	38.45	Horizontal
4239.225000	-59.49	-13.00	46.49	Horizontal

NOTE:

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



8. Frequency Stability

9.1. Frequency Vs Voltage

Voltage										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND12	10MHz	QPSK	23060	50RB#0	VL	NT	-6.57	-0.009332	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	VN	NT	-6.22	-0.008835	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	VH	NT	-6.58	-0.009347	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	VL	NT	-5.89	-0.008325	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	VN	NT	-7.25	-0.010247	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	VH	NT	-5.52	-0.007802	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	VL	NT	-8.15	-0.011463	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	VN	NT	-6.07	-0.008537	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	VH	NT	-7.10	-0.009986	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	VL	NT	-6.41	-0.009105	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	VN	NT	-6.85	-0.009730	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	VH	NT	5.55	0.007884	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	VL	NT	4.75	0.006714	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	VN	NT	-6.35	-0.008975	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	VH	NT	-6.31	-0.008919	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	VL	NT	-6.51	-0.009156	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	VN	NT	-6.79	-0.009550	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	VH	NT	-8.17	-0.011491	±2.5	PASS

9.2. Frequency Vs Temperature

Temperature										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND12	10MHz	QPSK	23060	50RB#0	NV	-30	-6.71	-0.009531	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	NV	-20	-6.15	-0.008736	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	NV	0	-5.34	-0.007585	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	NV	10	-6.32	-0.008977	±2.5	PASS
BAND12	10MHz	QPSK	23060	50RB#0	NV	20	-7.14	-0.010142	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	NV	-30	-5.19	-0.007336	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	NV	-20	-6.27	-0.008862	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	NV	0	-5.85	-0.008269	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	NV	10	-5.84	-0.008254	±2.5	PASS
BAND12	10MHz	QPSK	23095	50RB#0	NV	20	-6.02	-0.008509	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	NV	-30	-5.99	-0.008425	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	NV	-20	-7.88	-0.011083	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	NV	0	-6.49	-0.009128	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	NV	10	-5.69	-0.008003	±2.5	PASS
BAND12	10MHz	QPSK	23130	50RB#0	NV	20	-7.37	-0.010366	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	NV	-30	-5.99	-0.008509	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	NV	-20	5.72	0.008125	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	NV	0	-7.42	-0.010540	±2.5	PASS



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

Report No.: SZEM180600485001

Page: 48 of 48

BAND12	10MHz	16QAM	23060	50RB#0	NV	10	-7.21	-0.010241	±2.5	PASS
BAND12	10MHz	16QAM	23060	50RB#0	NV	20	-6.21	-0.008821	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	NV	-30	-6.58	-0.009300	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	NV	-20	-7.05	-0.009965	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	NV	0	-6.07	-0.008580	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	NV	10	-6.09	-0.008608	±2.5	PASS
BAND12	10MHz	16QAM	23095	50RB#0	NV	20	-6.05	-0.008551	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	NV	-30	-7.42	-0.010436	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	NV	-20	-7.14	-0.010042	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	NV	0	-6.34	-0.008917	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	NV	10	-6.65	-0.009353	±2.5	PASS
BAND12	10MHz	16QAM	23130	50RB#0	NV	20	-7.82	-0.010999	±2.5	PASS

The End