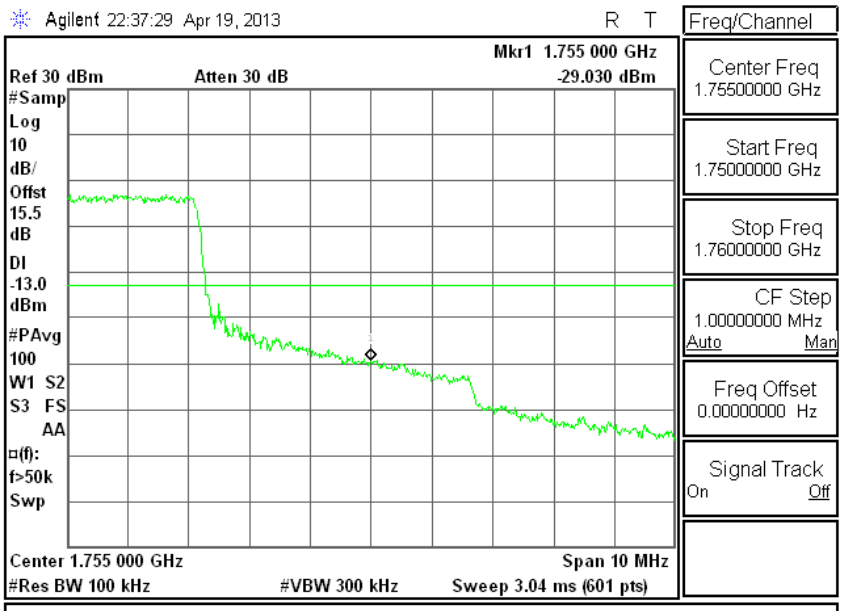
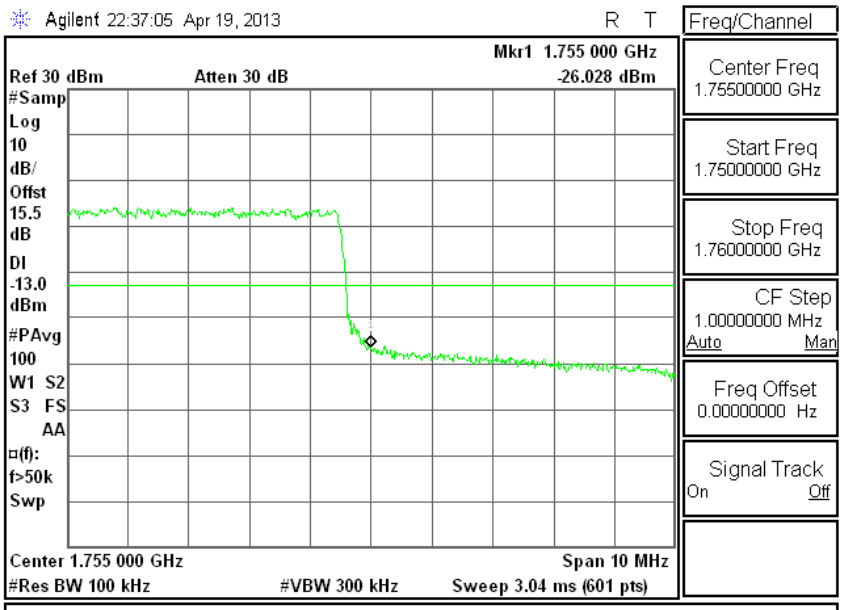
HIGH CH, RB25_12

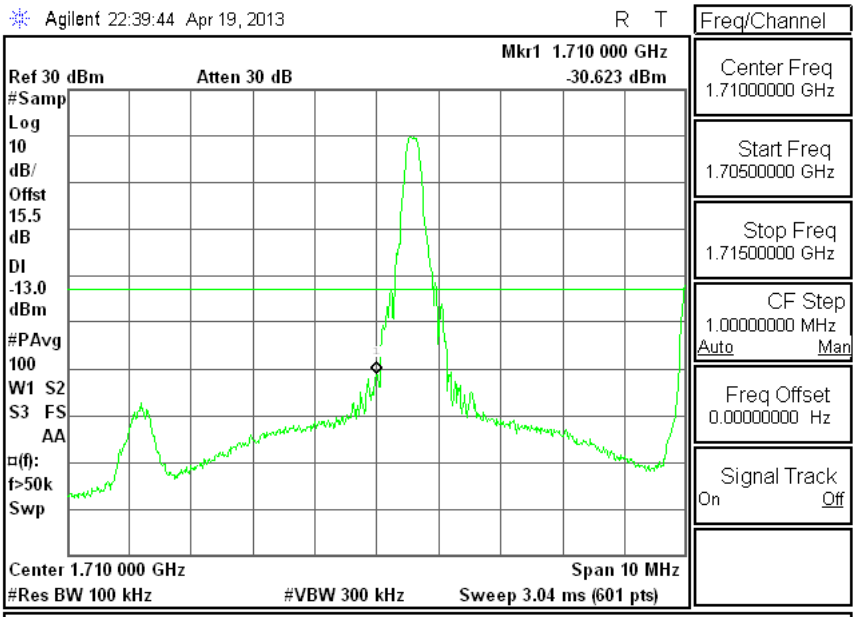


HIGH CH, RB50_0

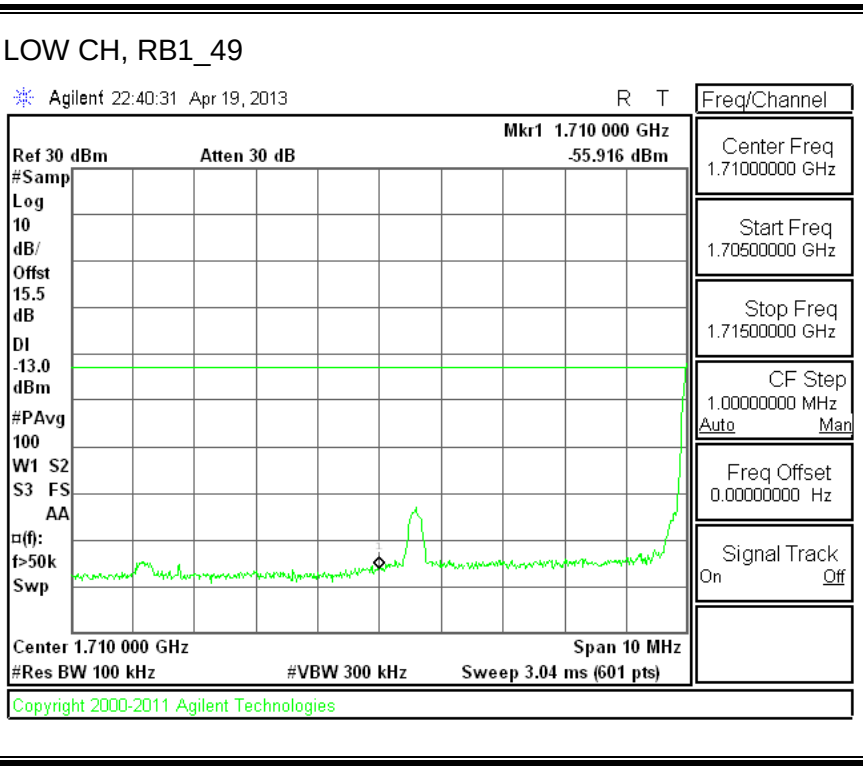


LOW-16QAM

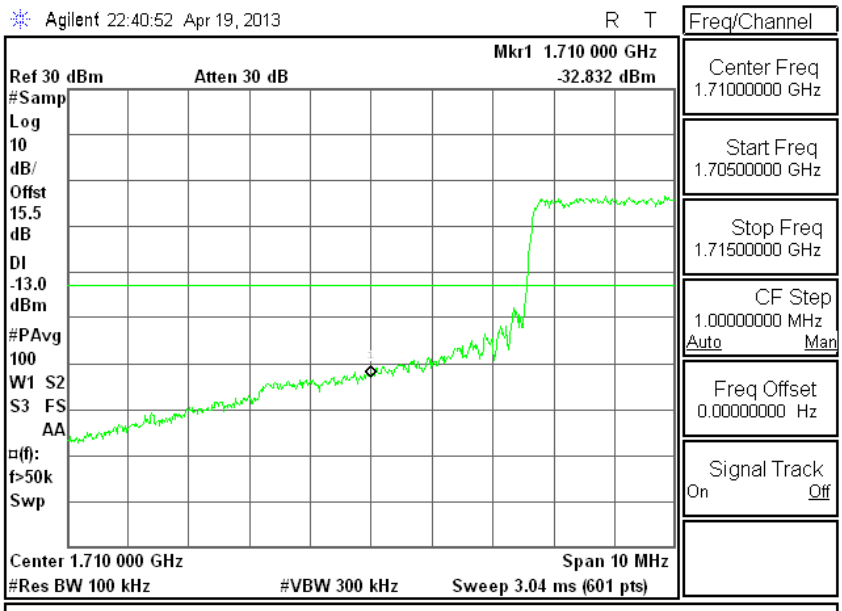
LOW CH, RB1_0



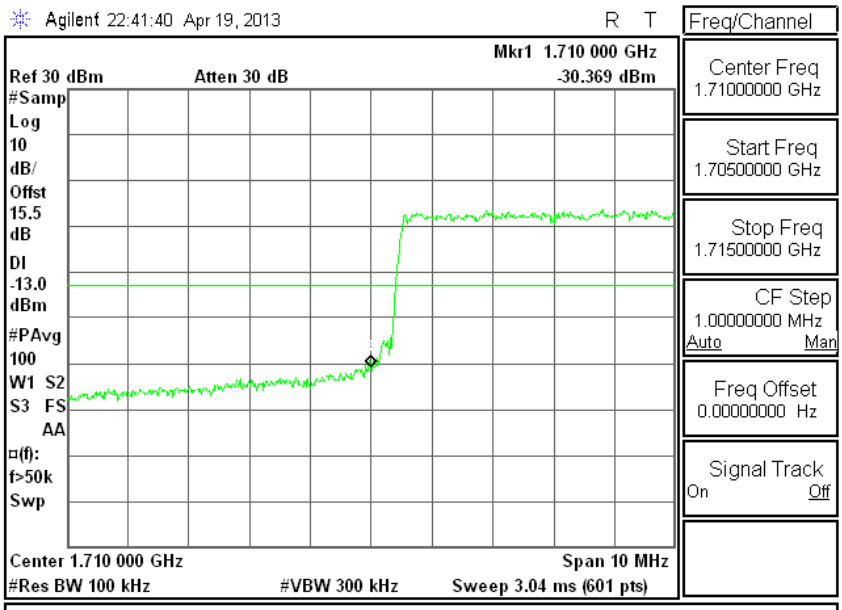
LOW CH, RB1_49



LOW CH, RB25_12

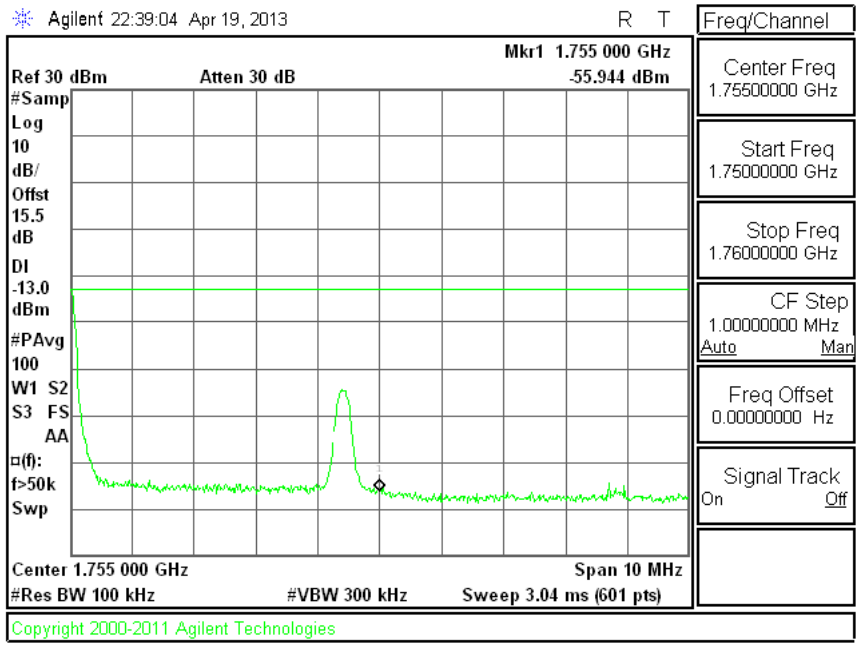


LOW CH, RB50_0

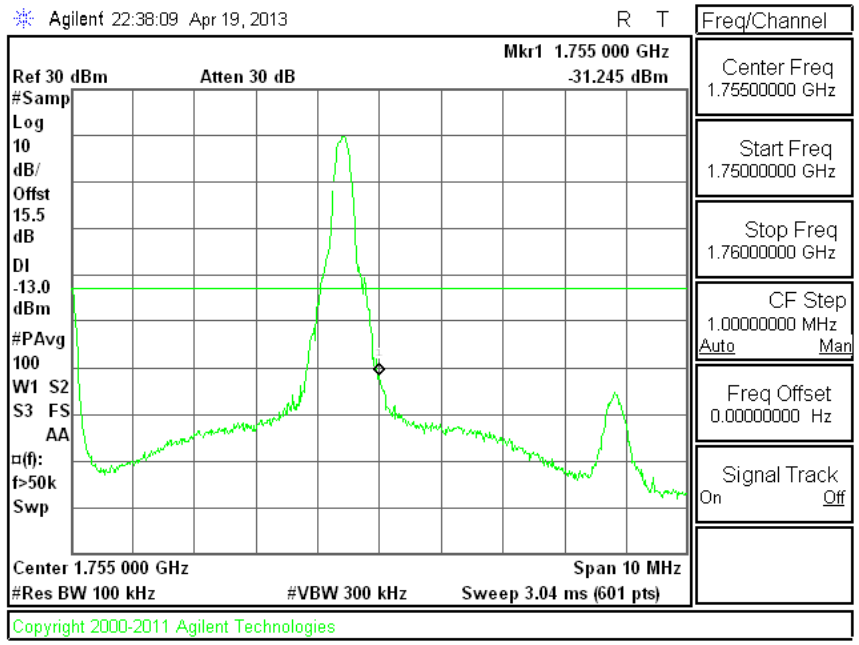


HIGH-16QAM

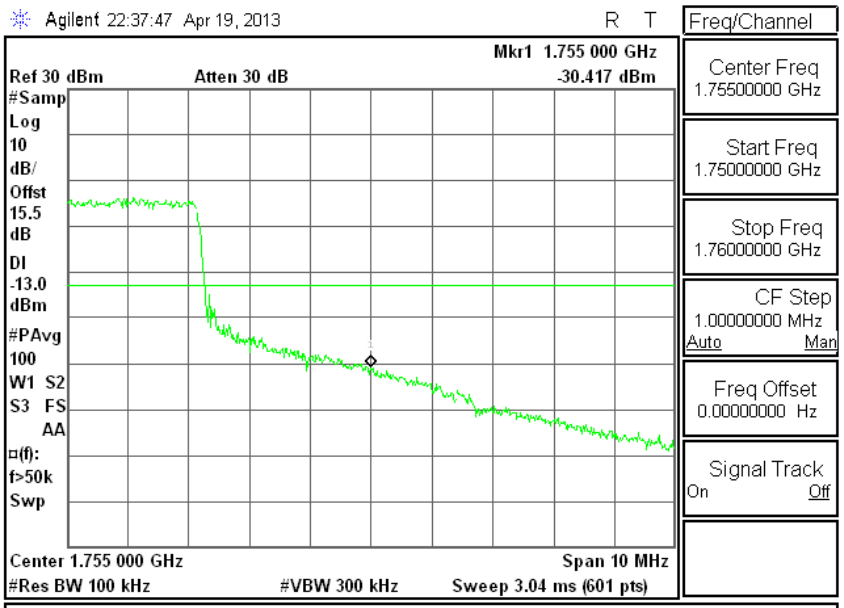
HIGH CH, RB1_0



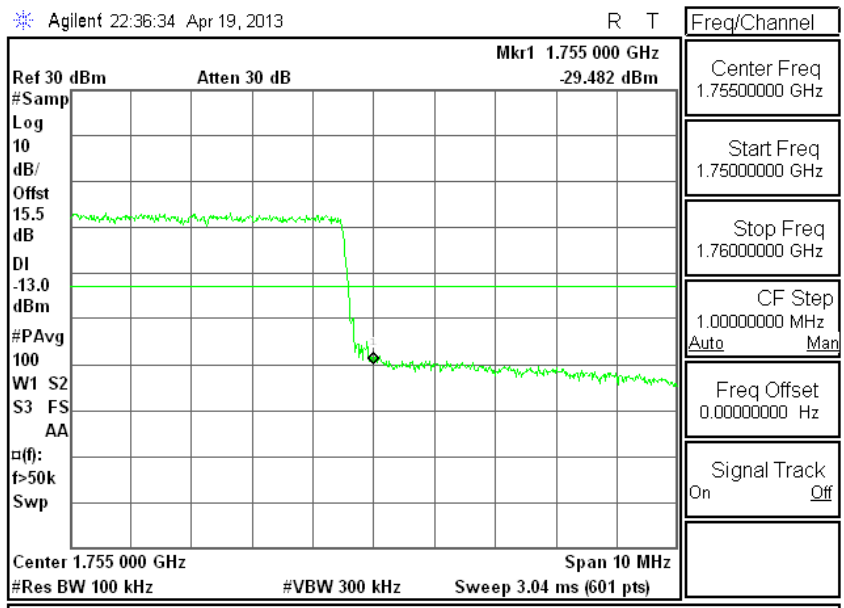
HIGH CH, RB1_49



HIGH CH, RB25_12



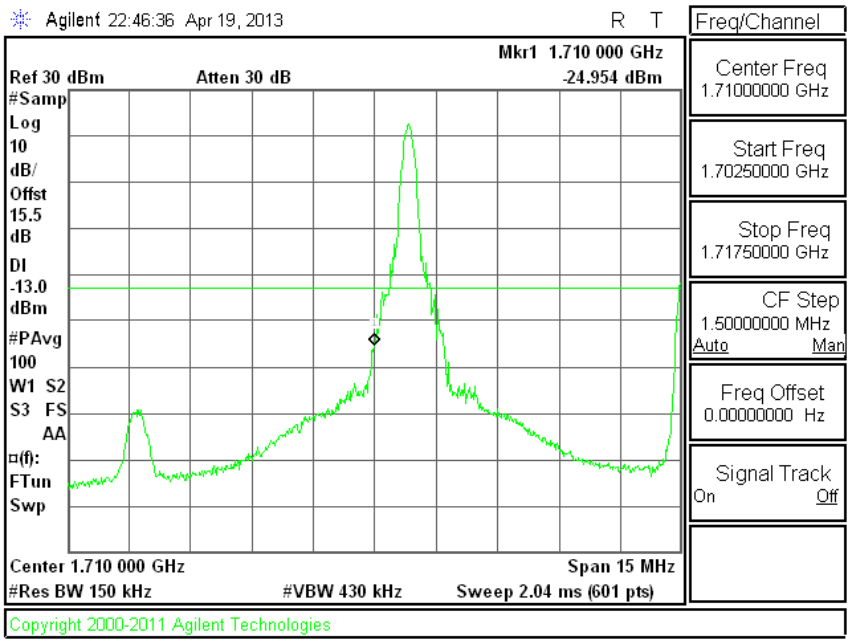
HIGH CH, RB50_0



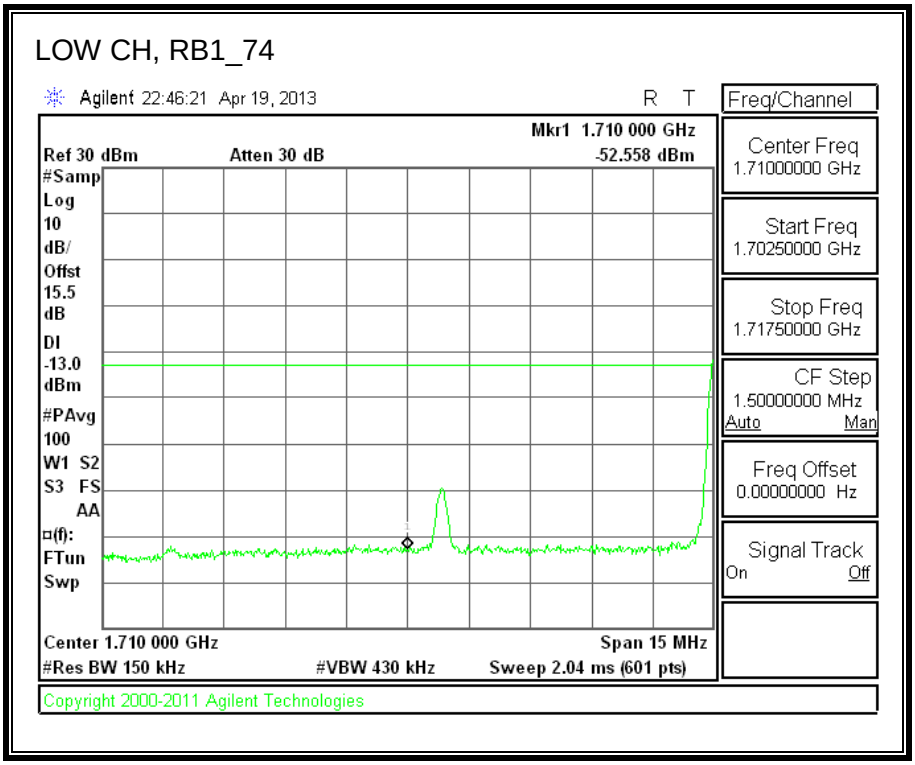
8.2.9. LTE BAND 4-15MHZ BANDWIDTH

LOW-QPSK

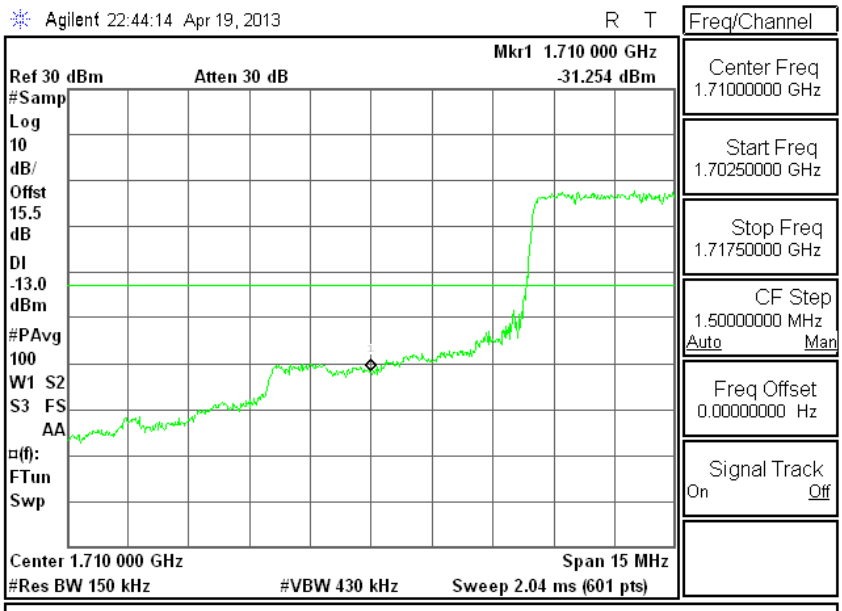
LOW CH, RB1_0



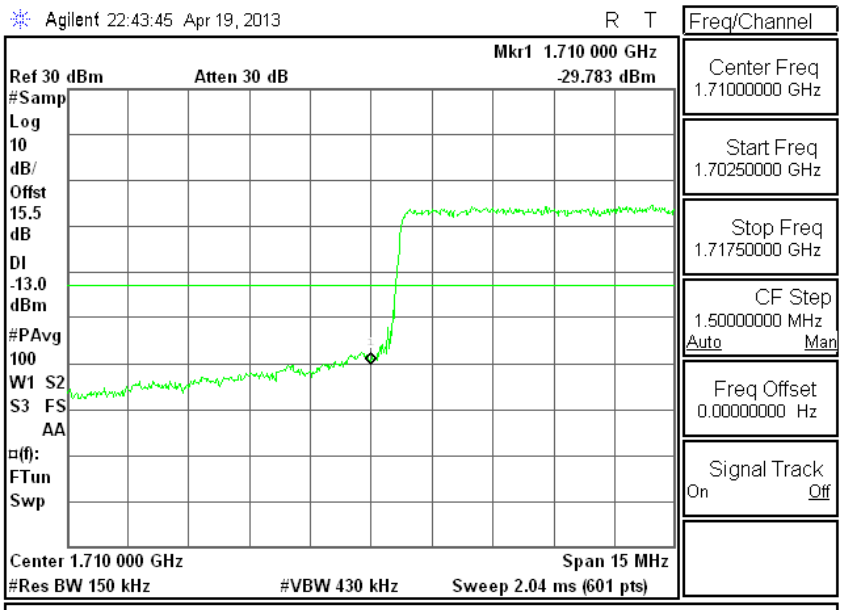
LOW CH, RB1_74



LOW CH, RB36_18

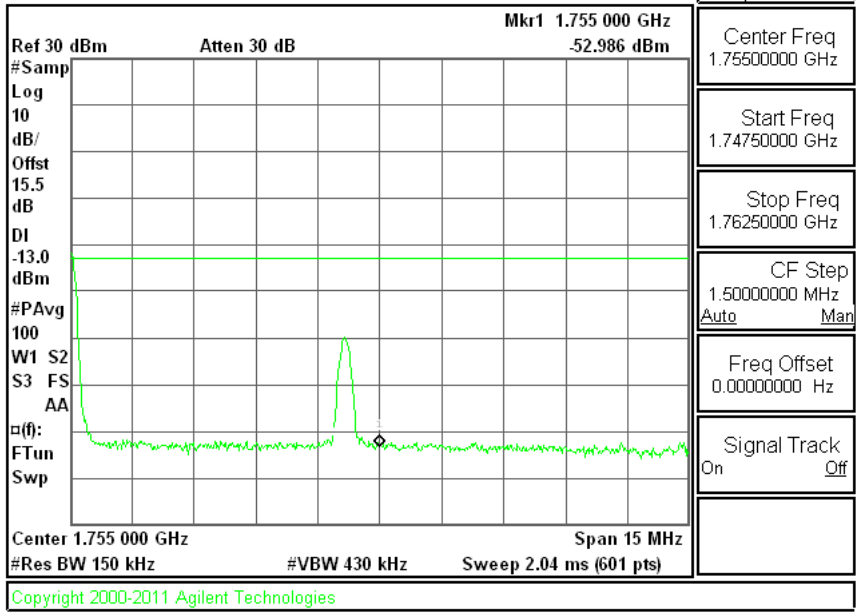


LOW CH, RB75_0

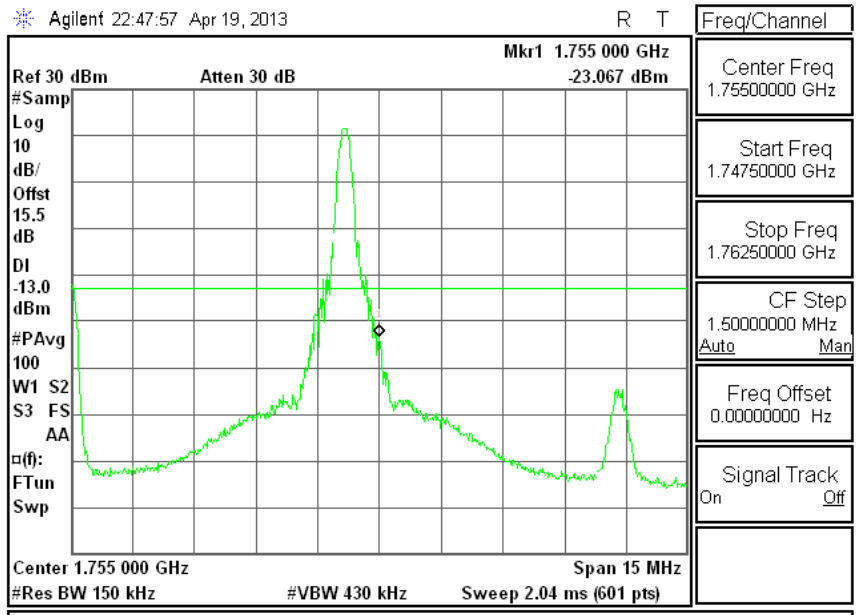


HIGH-QPSK

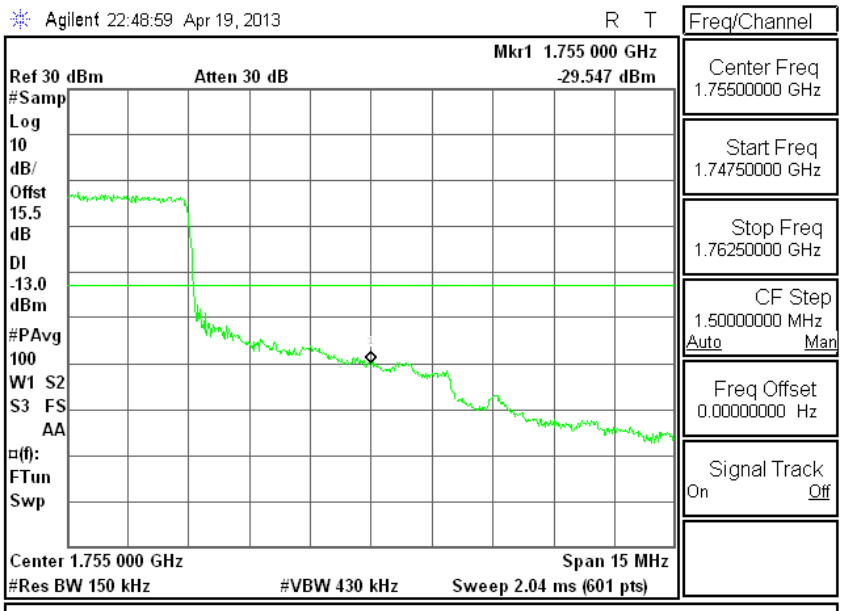
HIGH CH, RB1_0



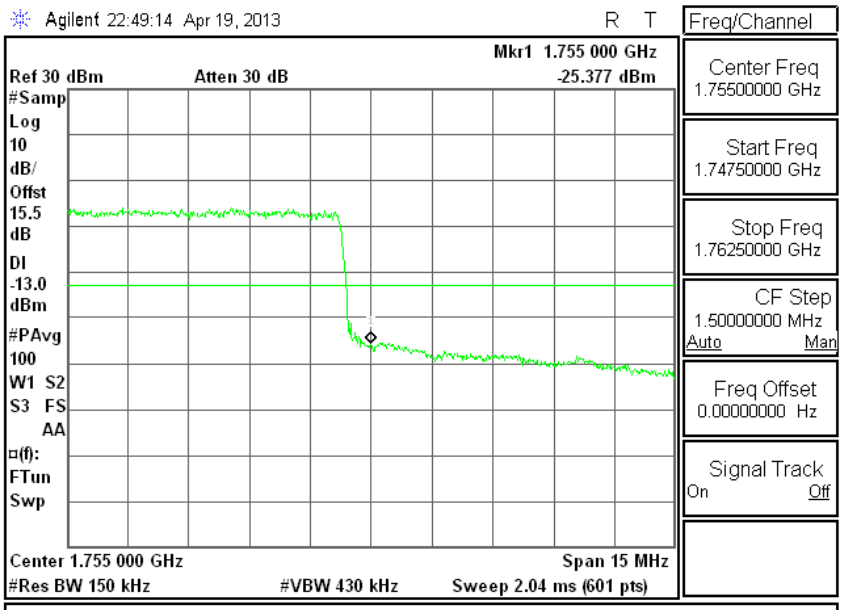
HIGH CH, RB1_74



HIGH CH, RB36_18

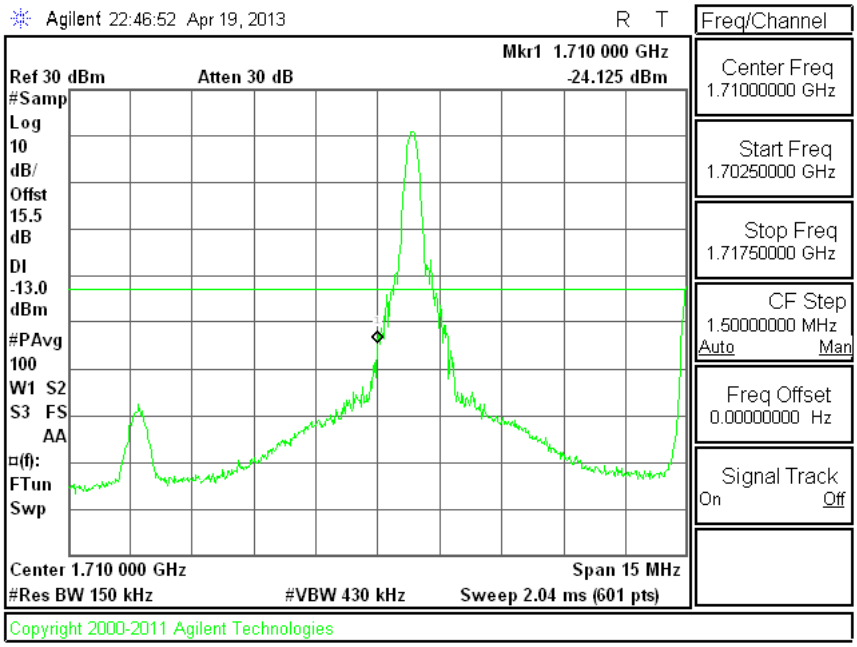


HIGH CH, RB75_0

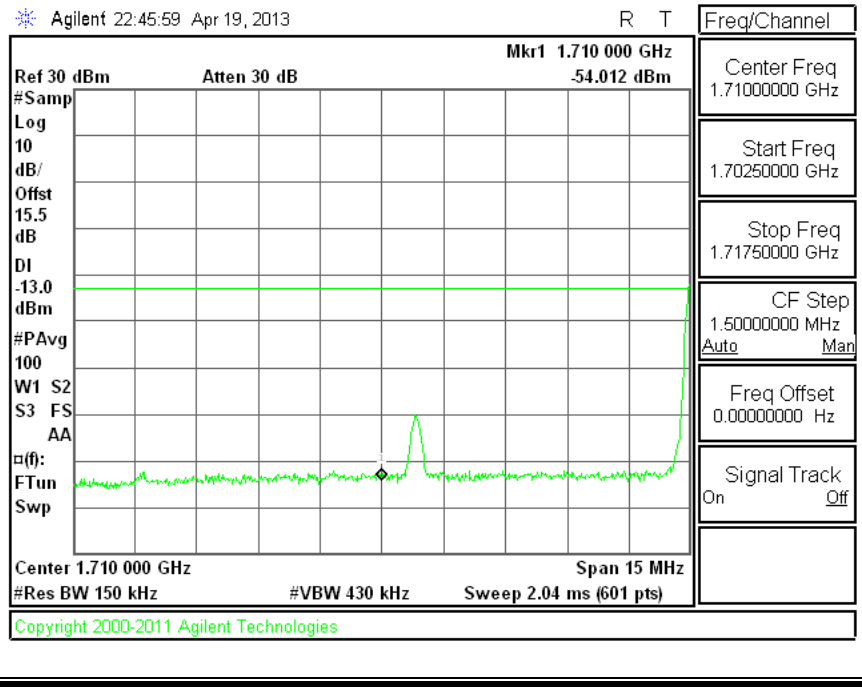


LOW-16QAM

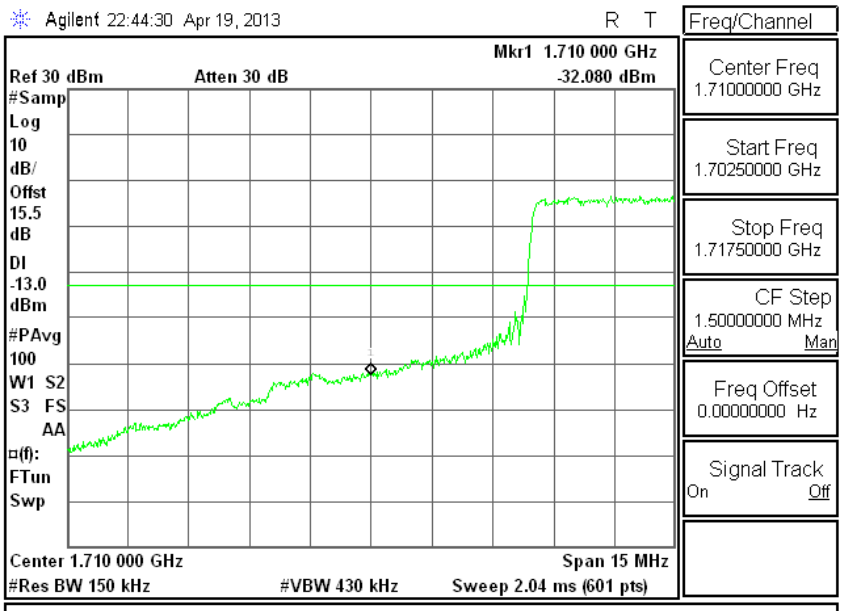
LOW CH, RB1_0



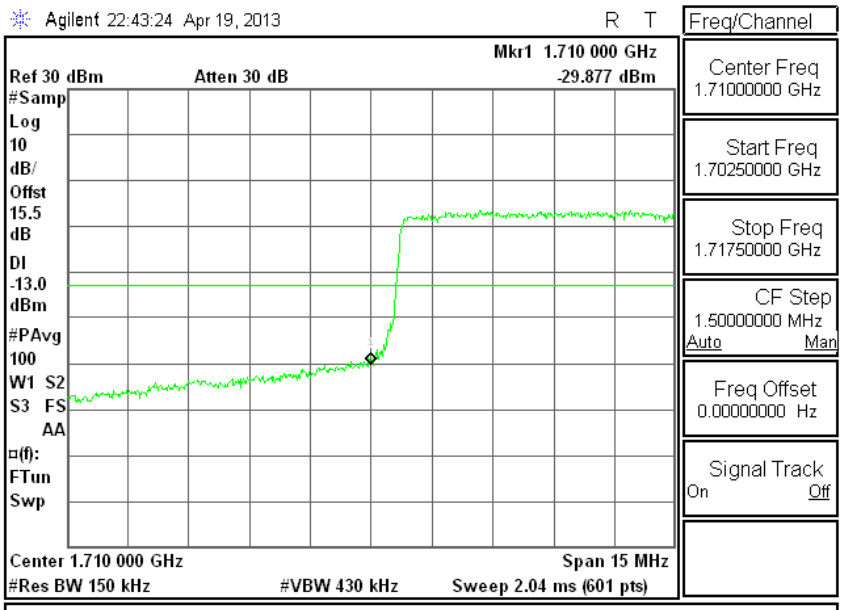
LOW CH, RB1_74



LOW CH, RB36_18

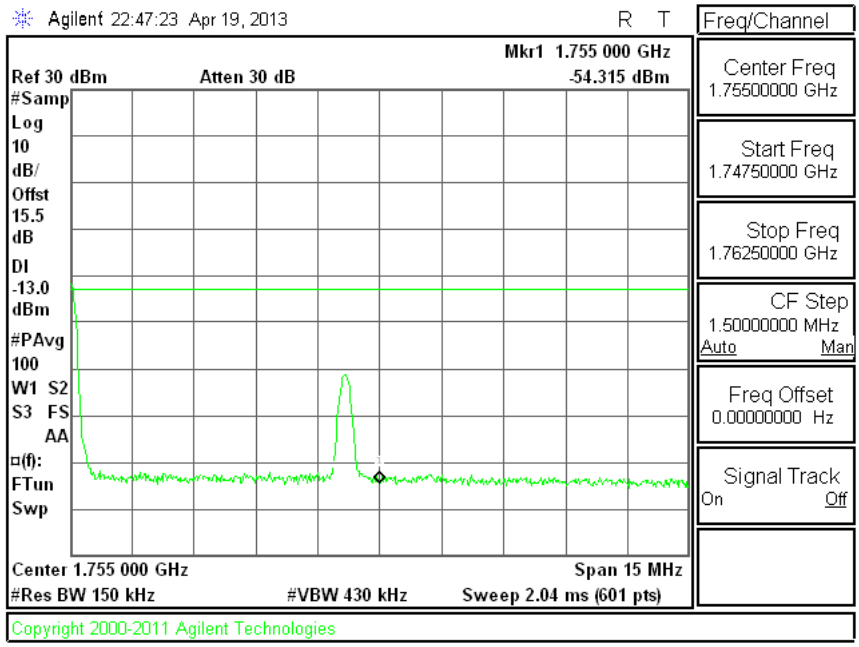


LOW CH, RB75_0

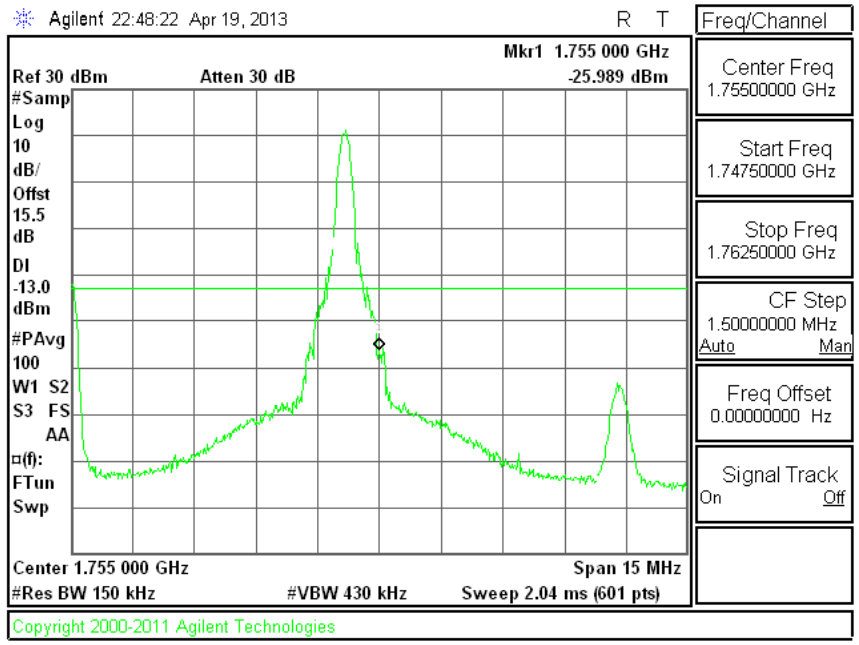


HIGH-QPSK

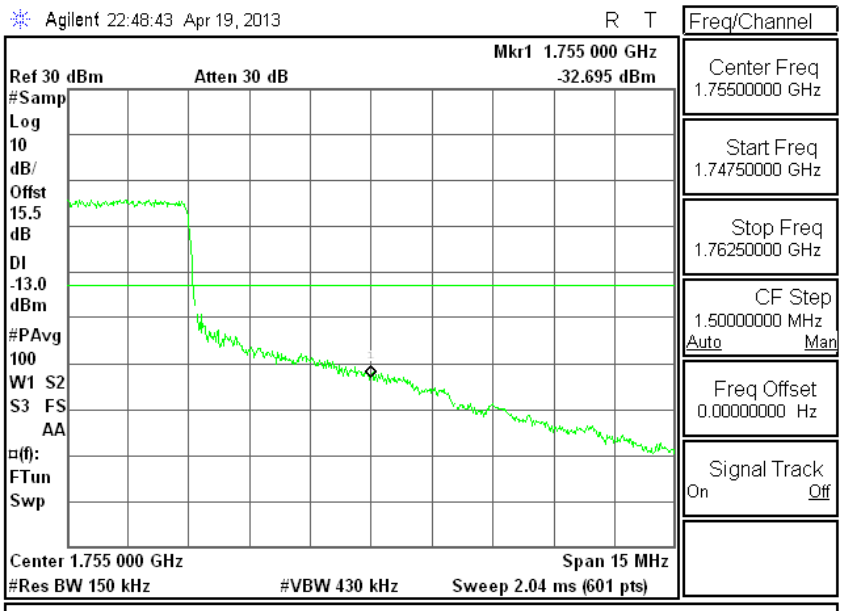
HIGH CH, RB1_0



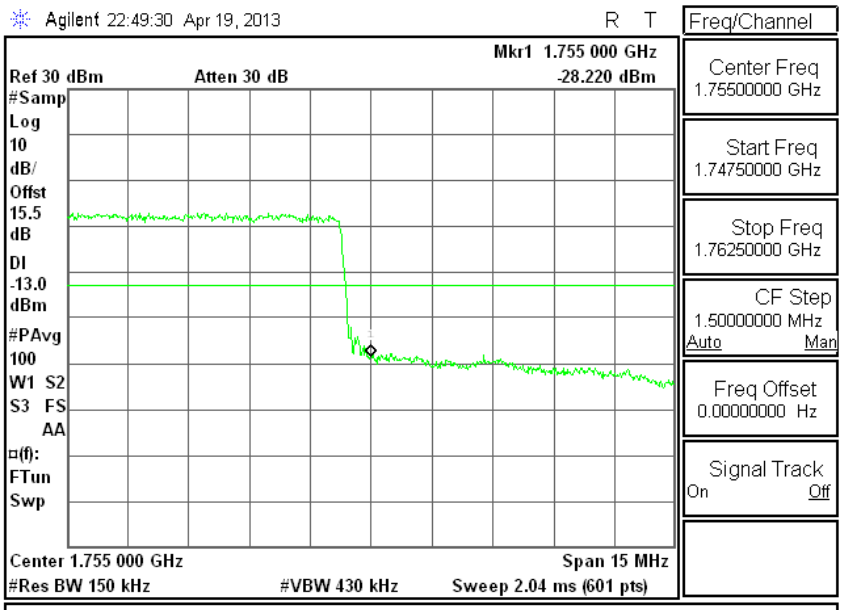
HIGH CH, RB1_74



HIGH CH, RB36_18



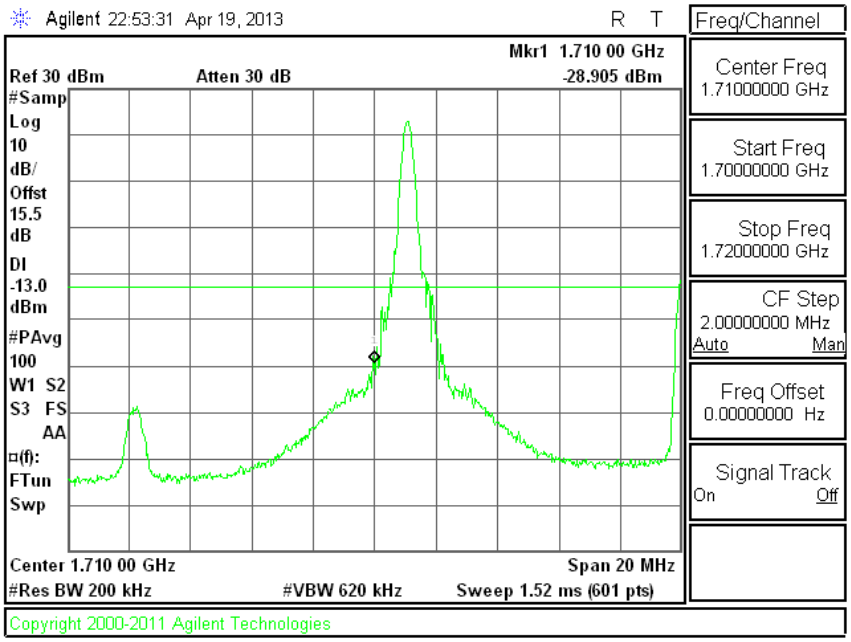
HIGH CH, RB75_0



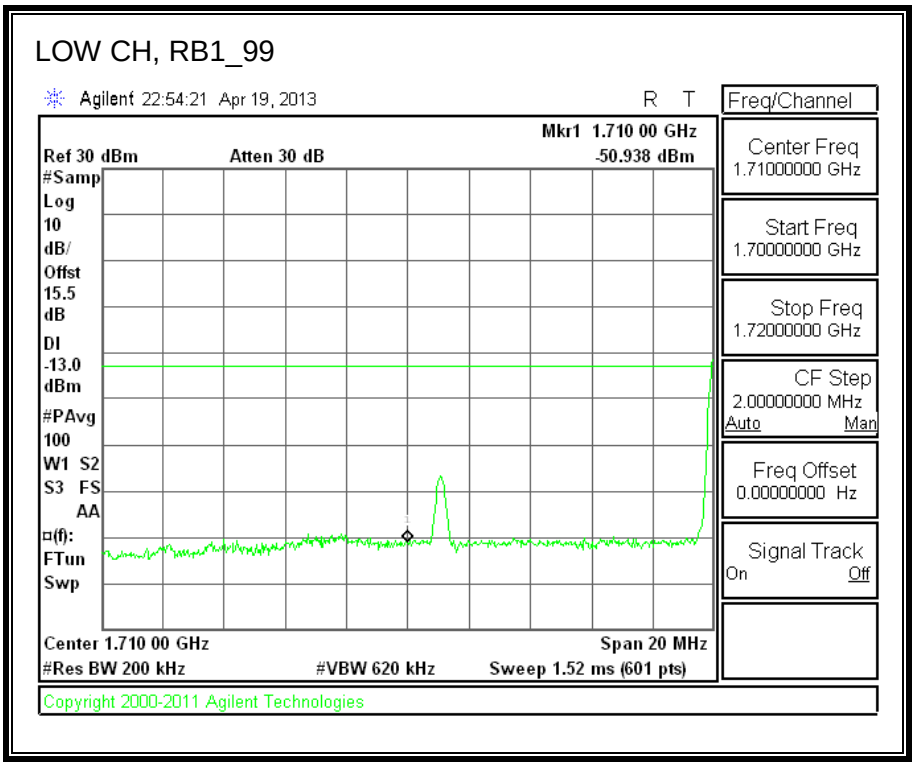
8.2.10. LTE BAND 4-20MHZ BANDWIDTH

LOW-QPSK

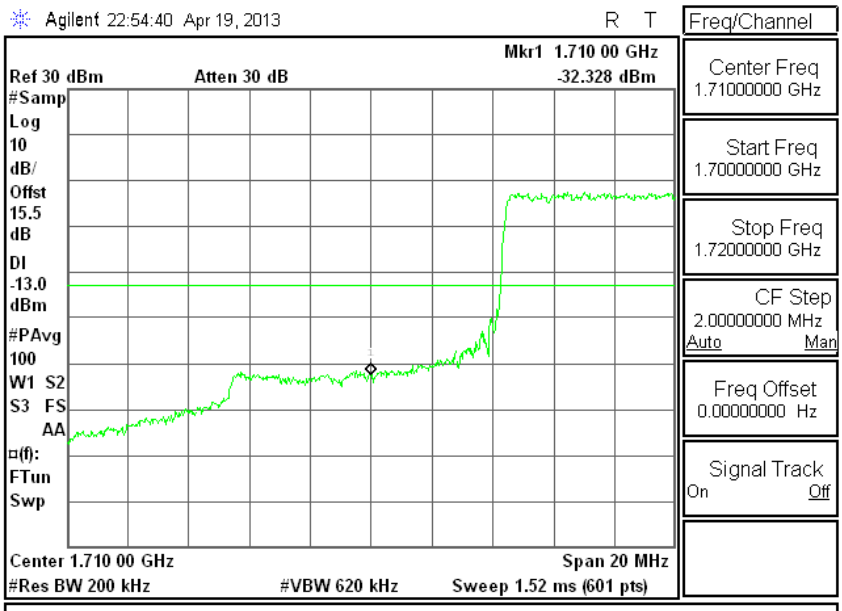
LOW CH, RB1_0



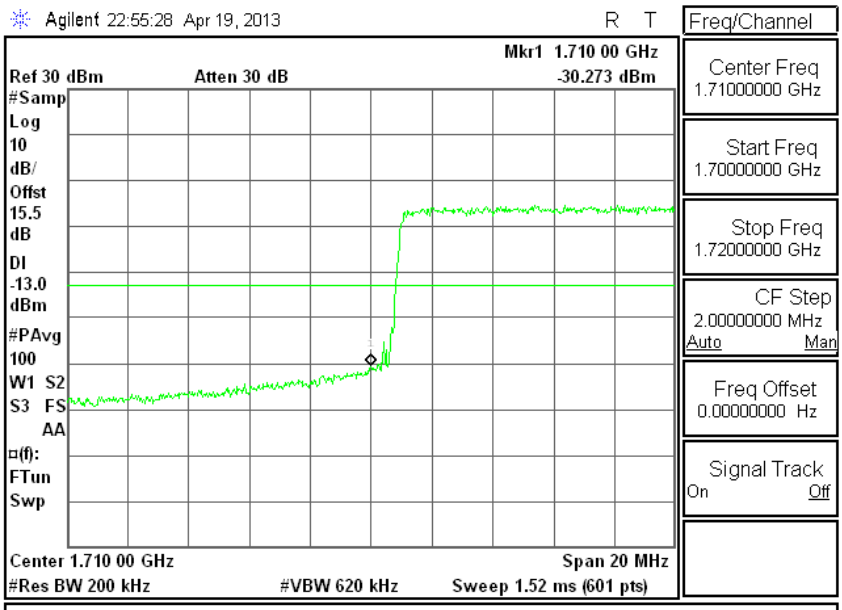
LOW CH, RB1_99



LOW CH, RB50_19

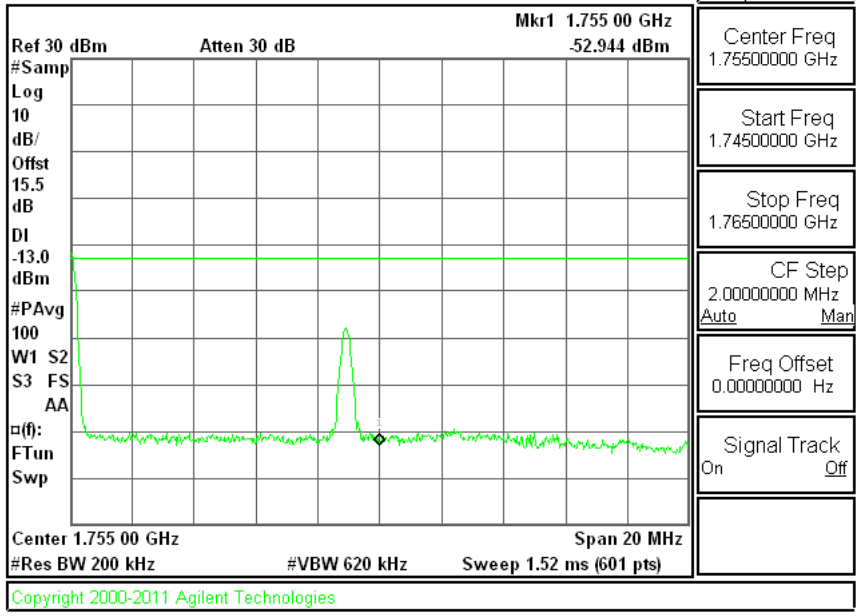


LOW CH, RB100_0

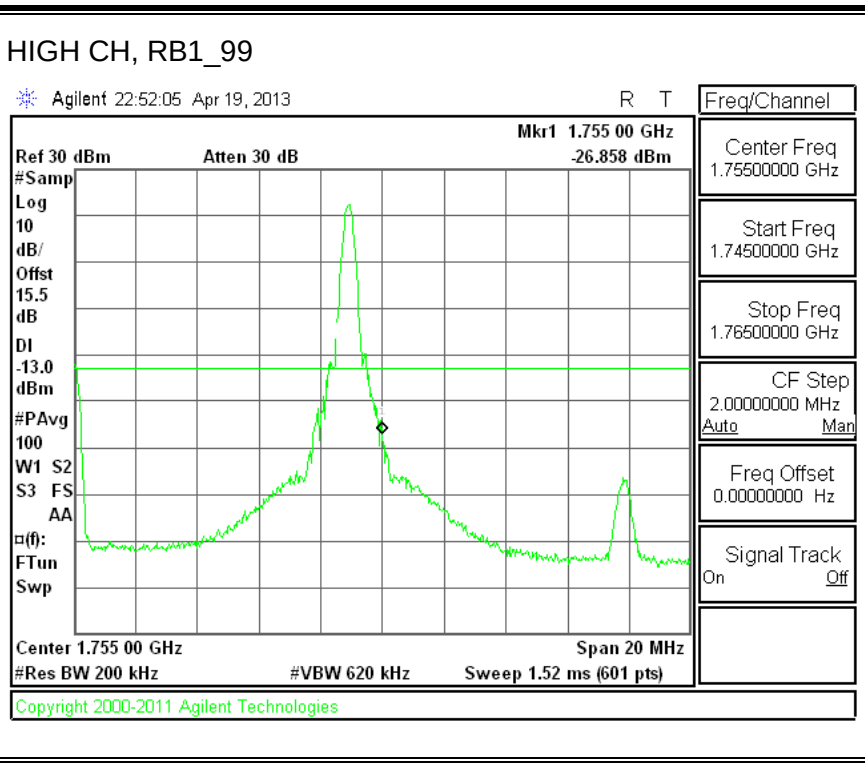


HIGH-QPSK

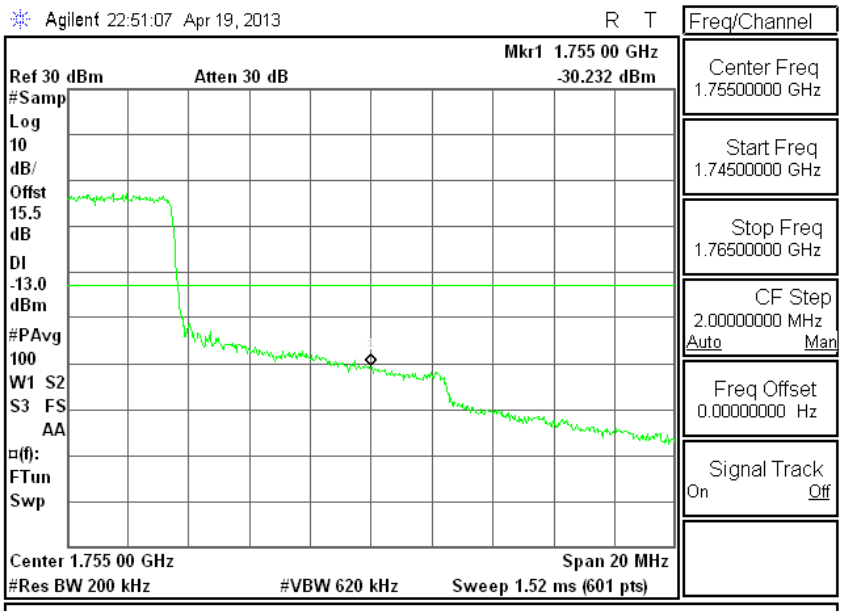
HIGH CH, RB1_0



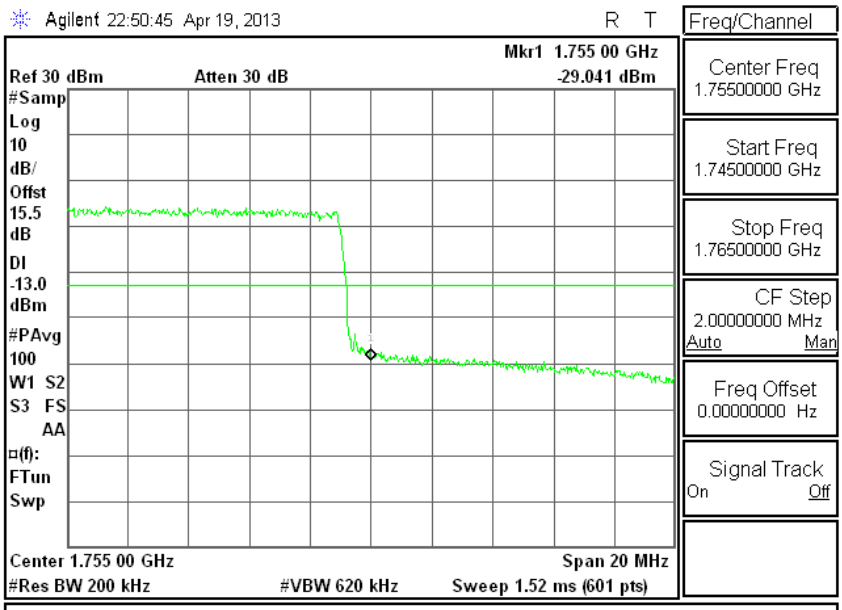
HIGH CH, RB1_99



HIGH CH, RB50_19

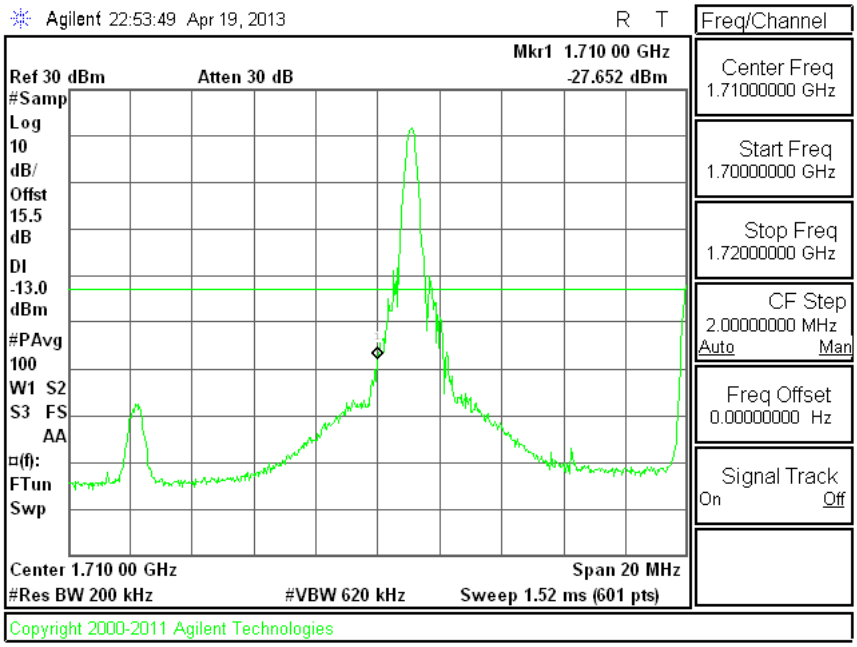


HIGH CH, RB100_0

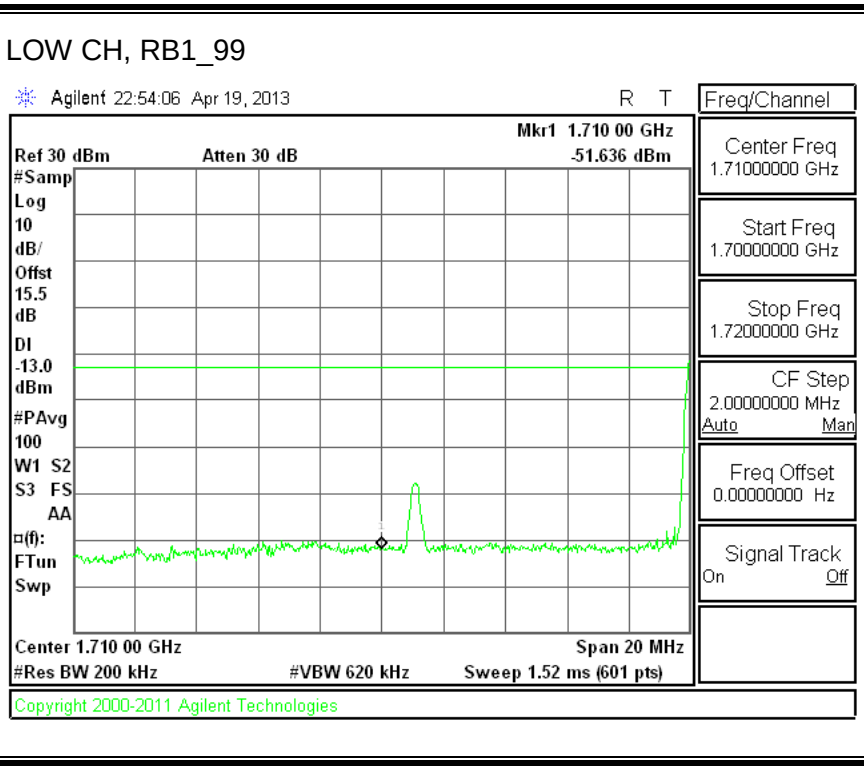


LOW-16QAM

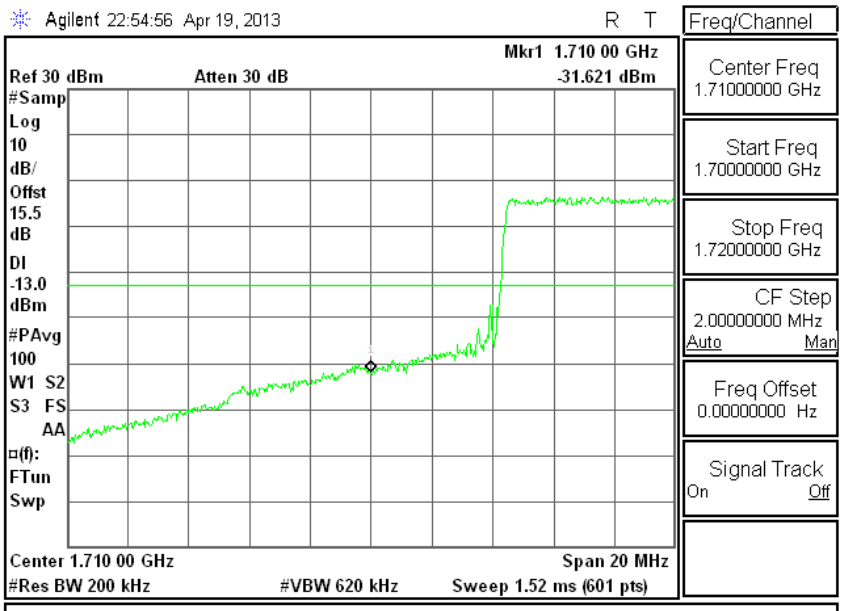
LOW CH, RB1_0



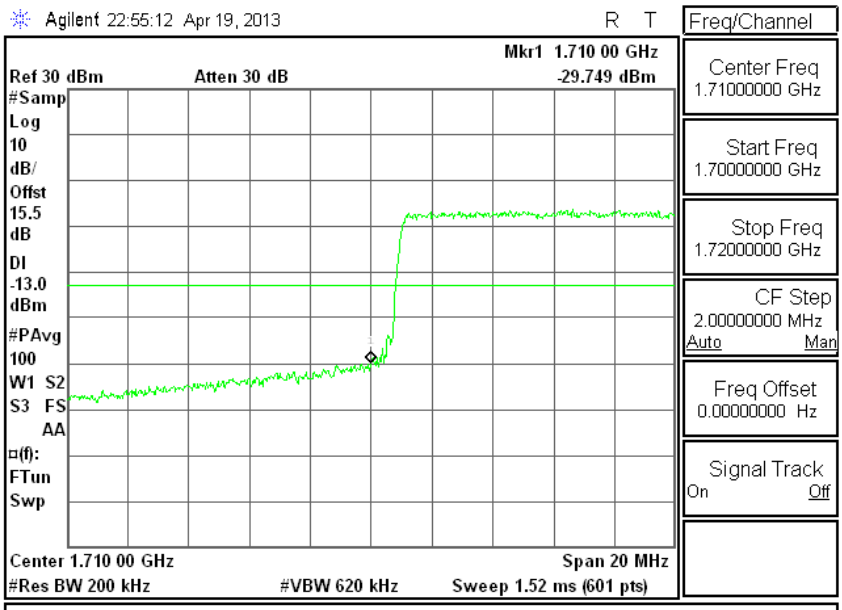
LOW CH, RB1_99



LOW CH, RB50_19

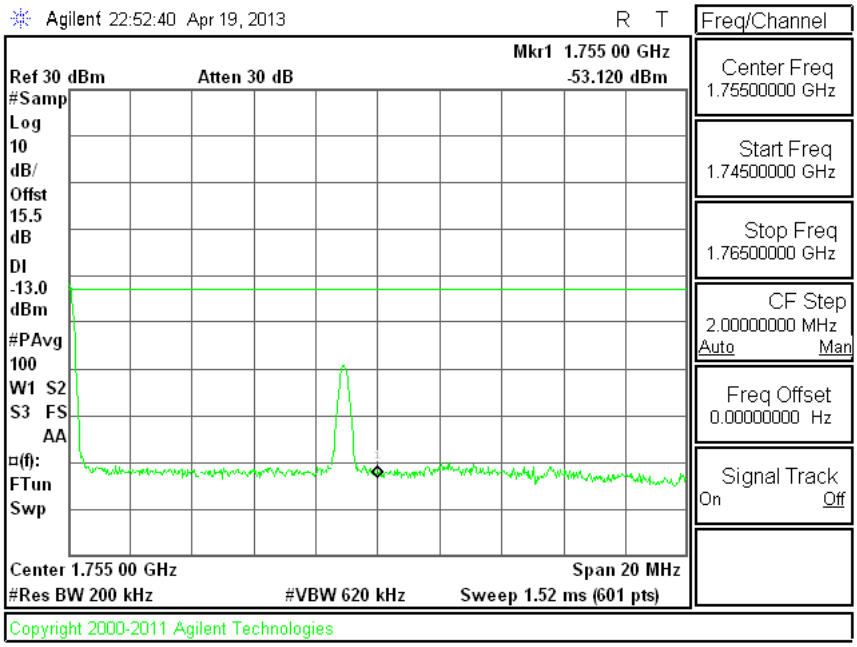


LOW CH, RB100_0

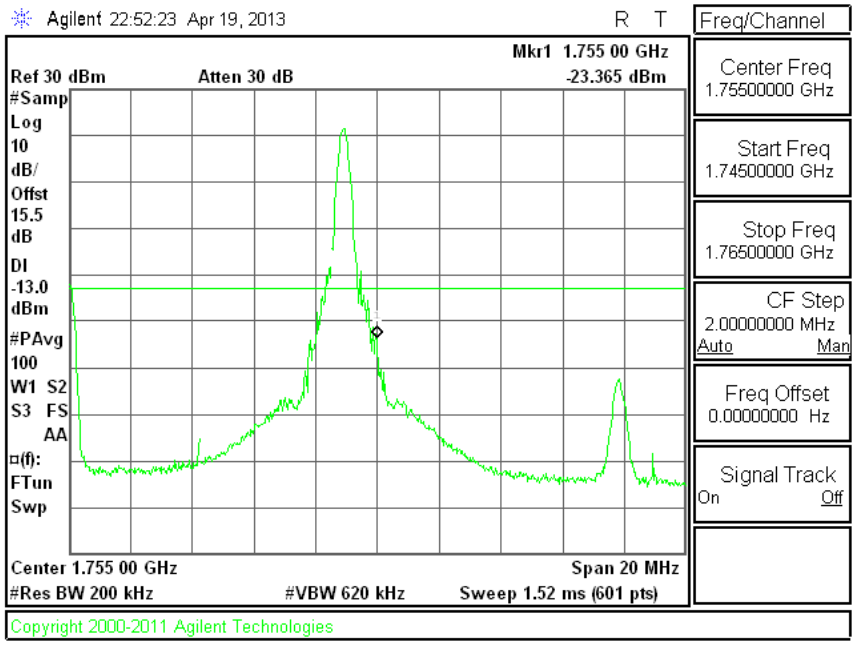


HIGH-16QAM

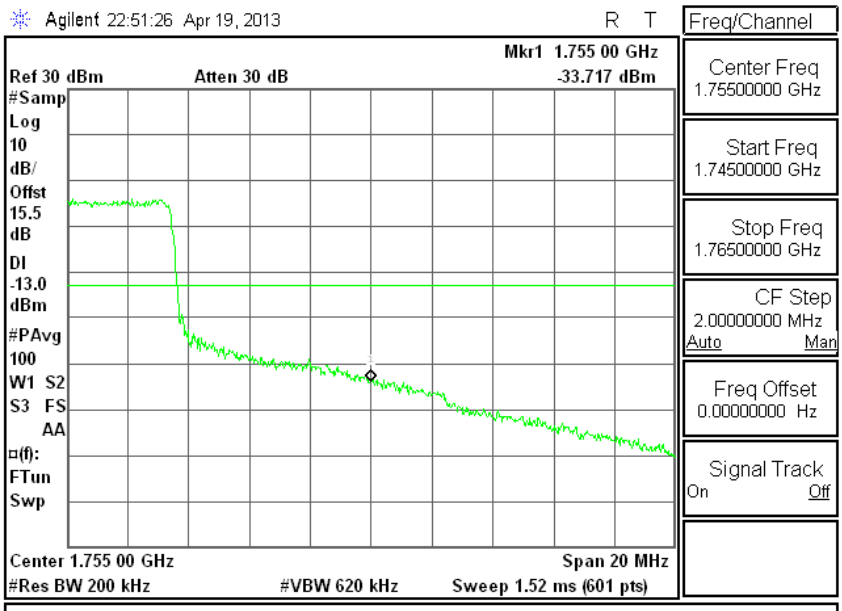
HIGH CH, RB1_0



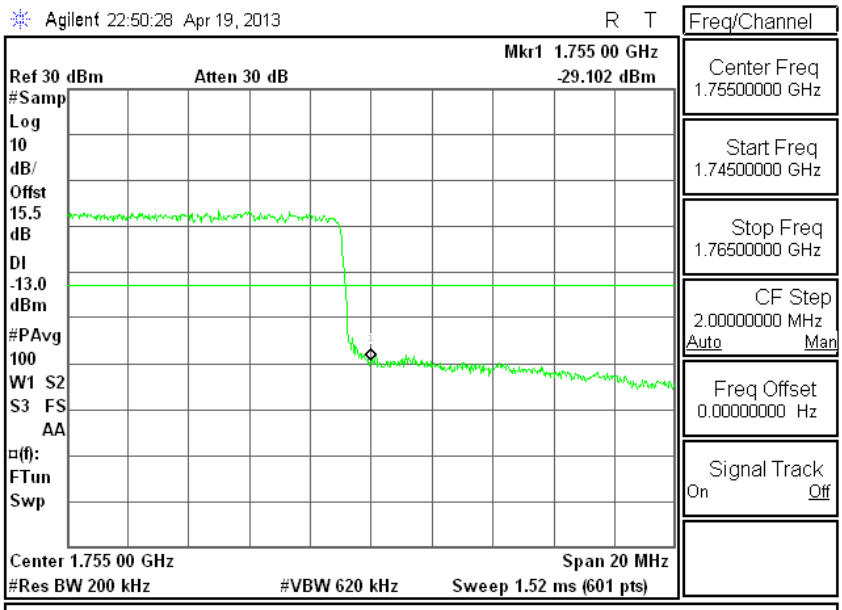
HIGH CH, RB1_99



HIGH CH, RB50_19

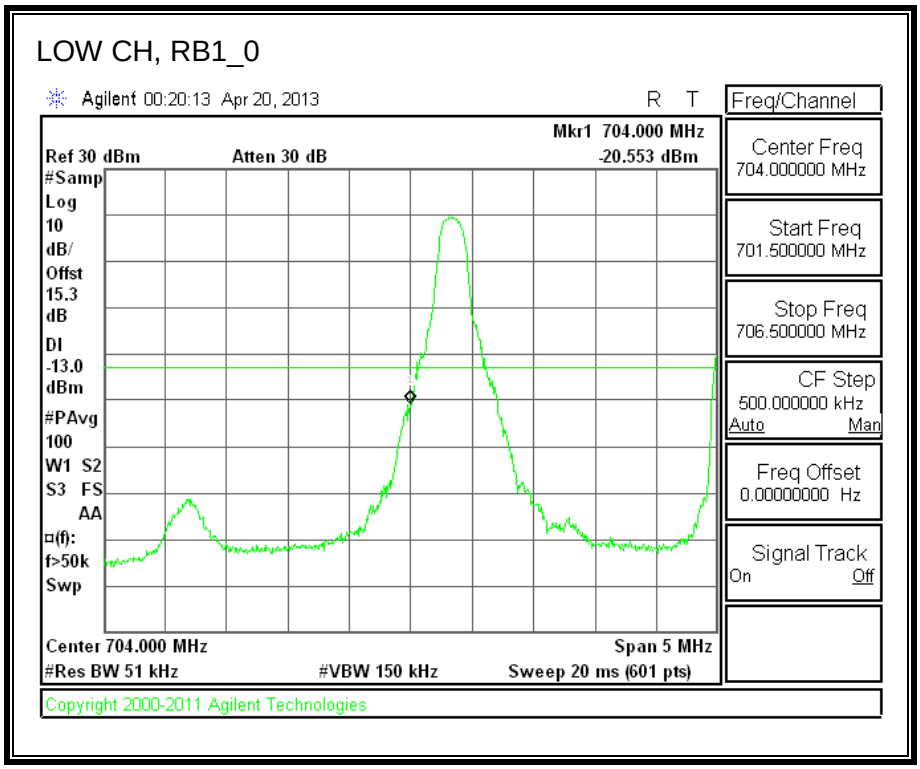


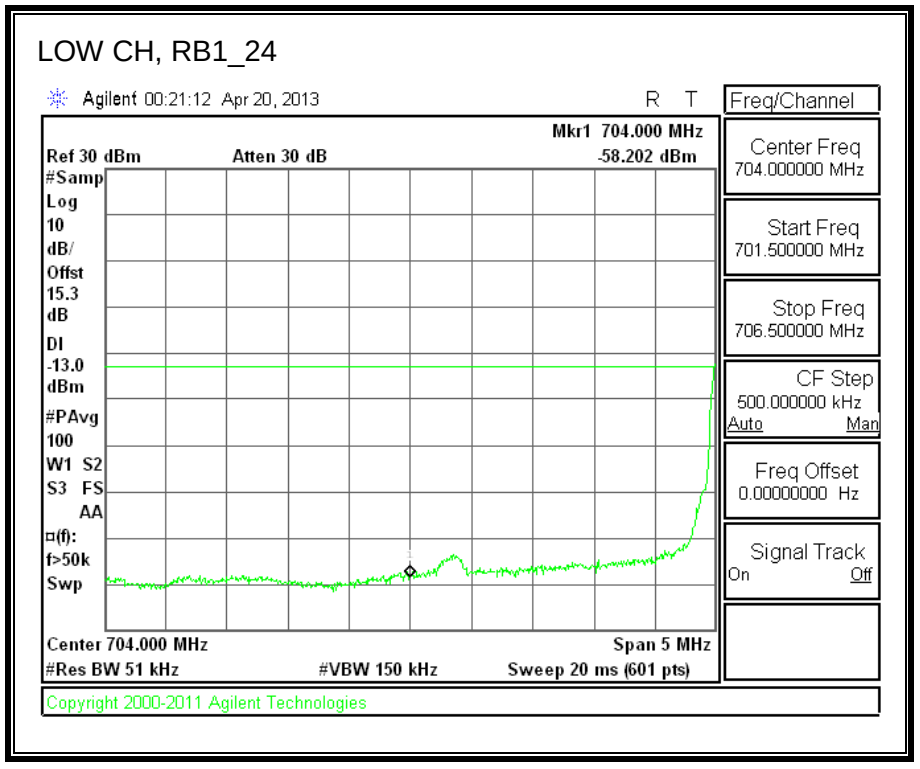
HIGH CH, RB100_0



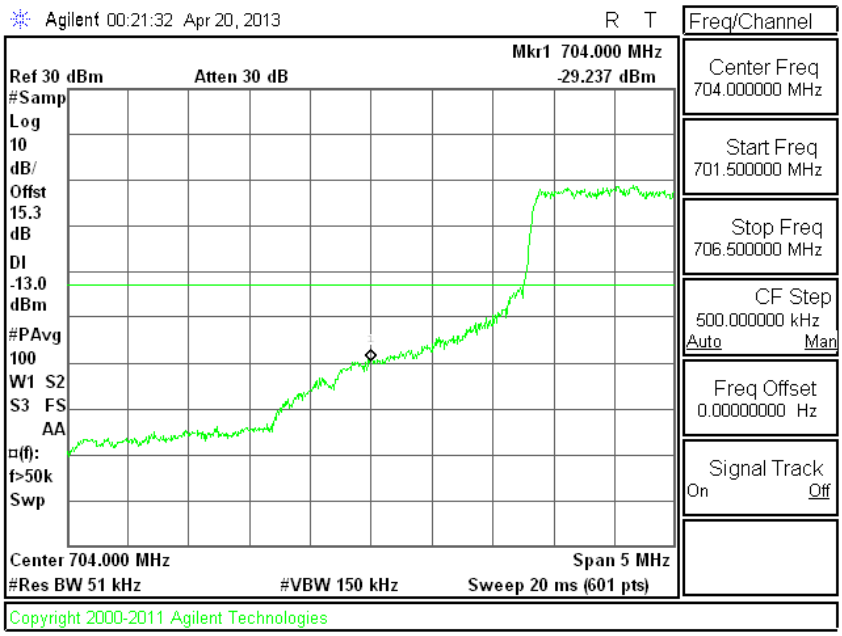
8.2.11. LTE BAND 17-5MHz BANDWIDTH

LOW-QPSK

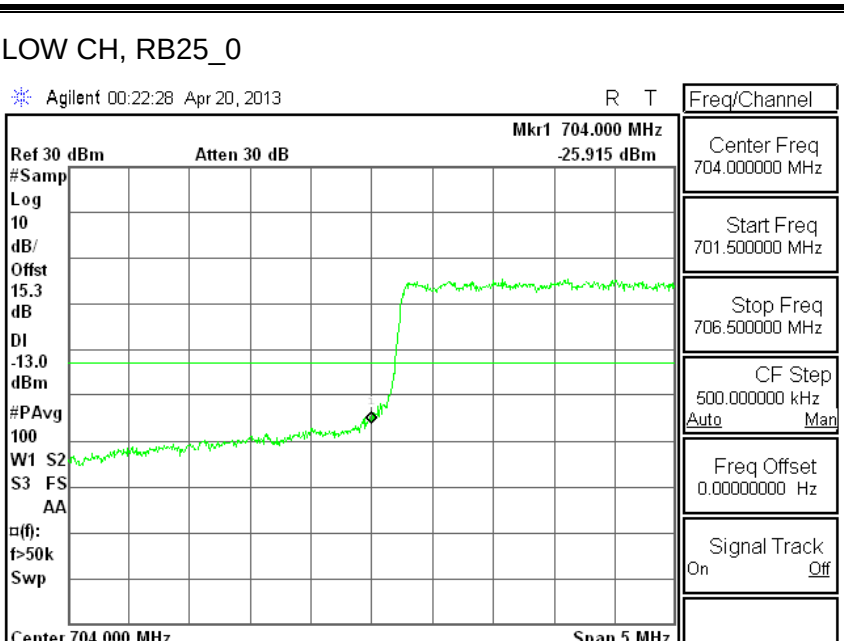




LOW CH, RB12_6

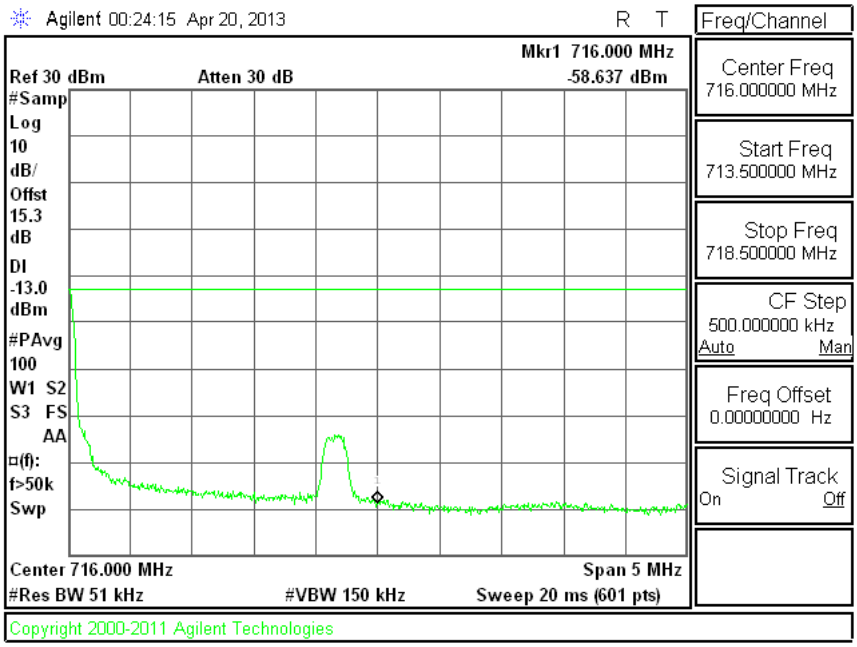


LOW CH, RB25_0

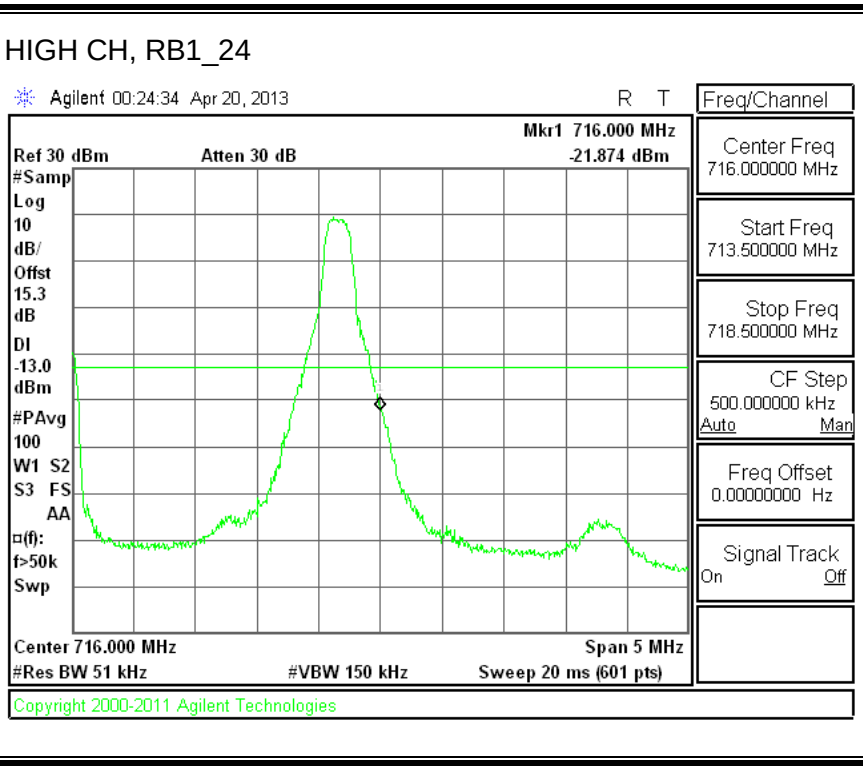


HIGH-QPSK

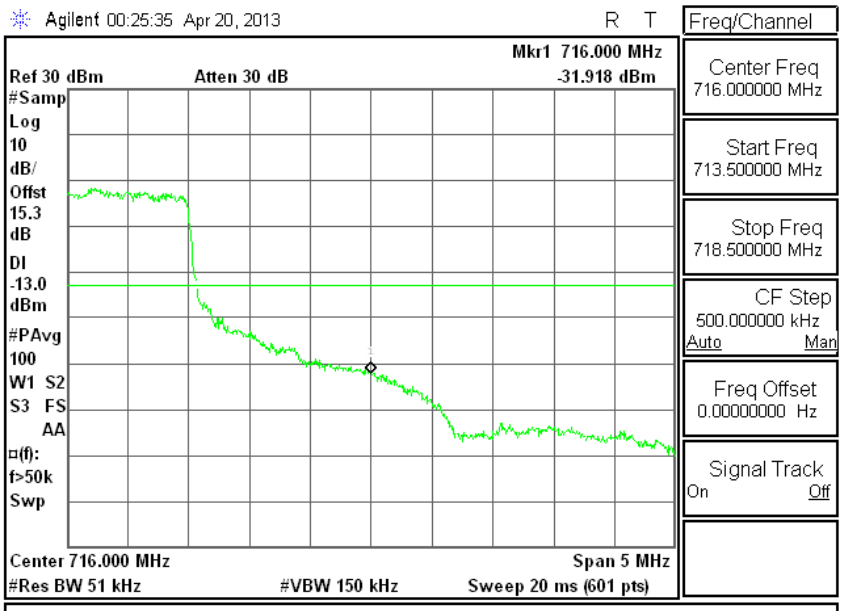
HIGH CH, RB1_0



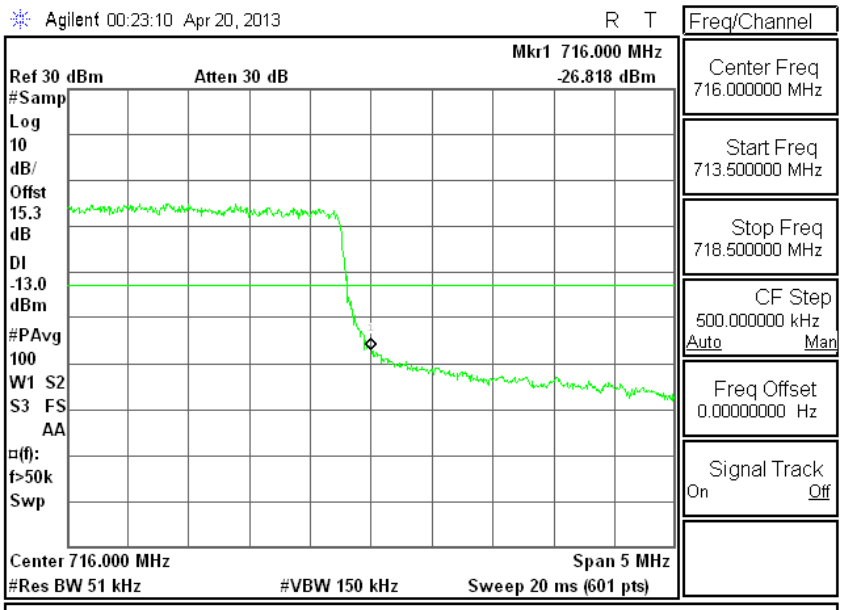
HIGH CH, RB1_24



HIGH CH, RB12_6

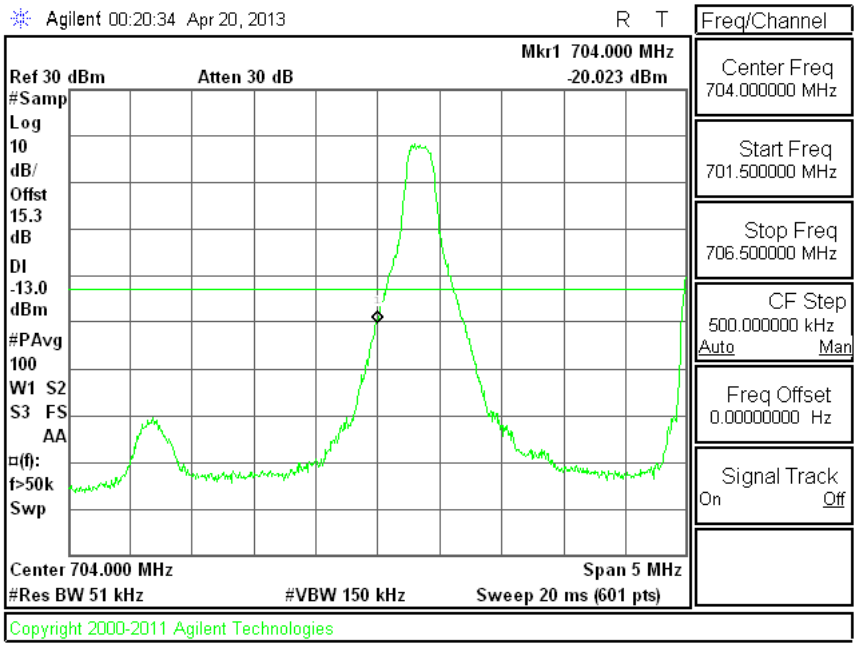


HIGH CH, RB25_0

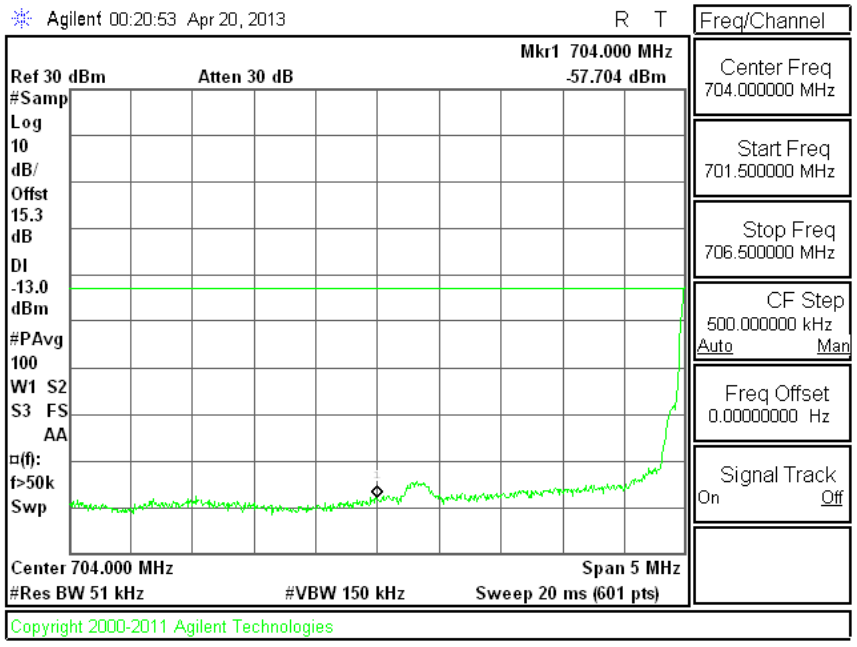


LOW-16QAM

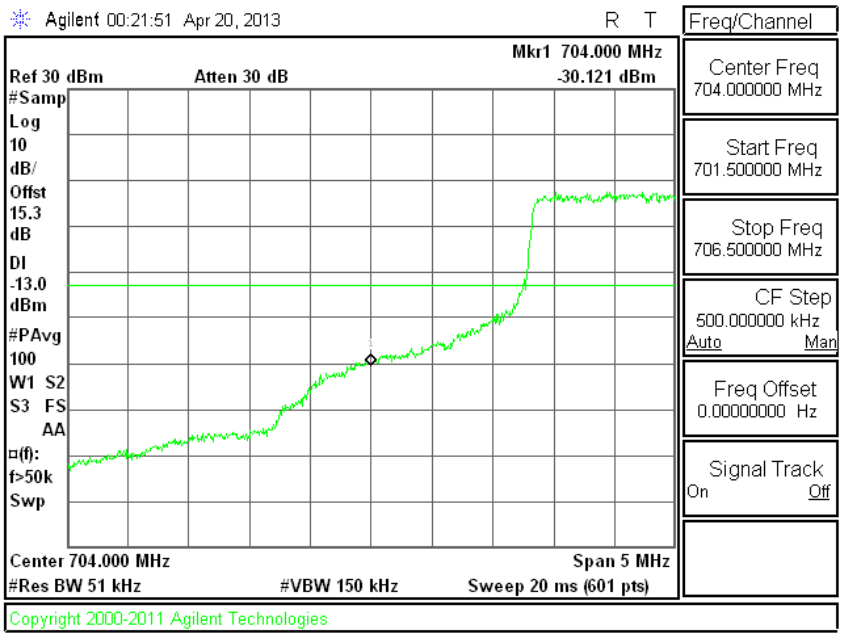
LOW CH, RB1_0



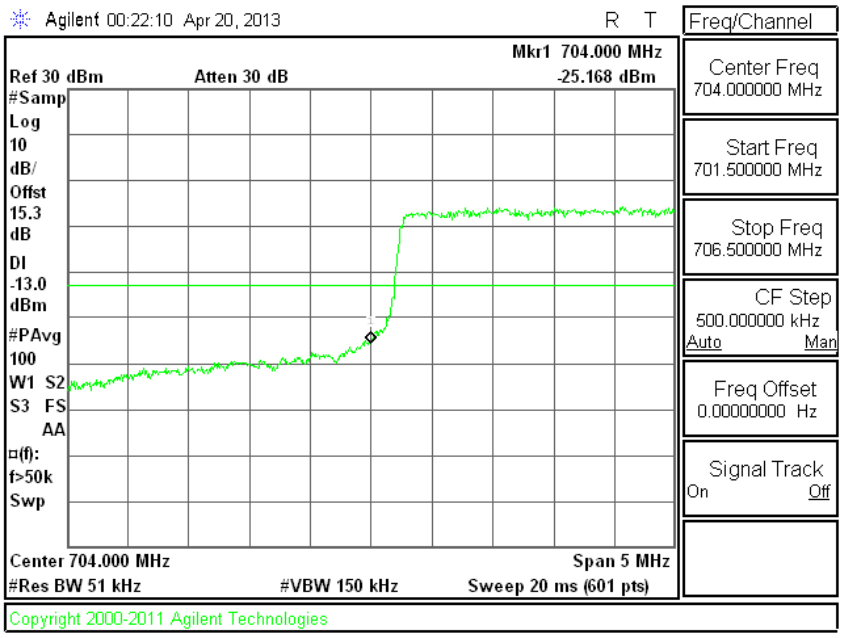
LOW CH, RB1_24



LOW CH, RB12_6

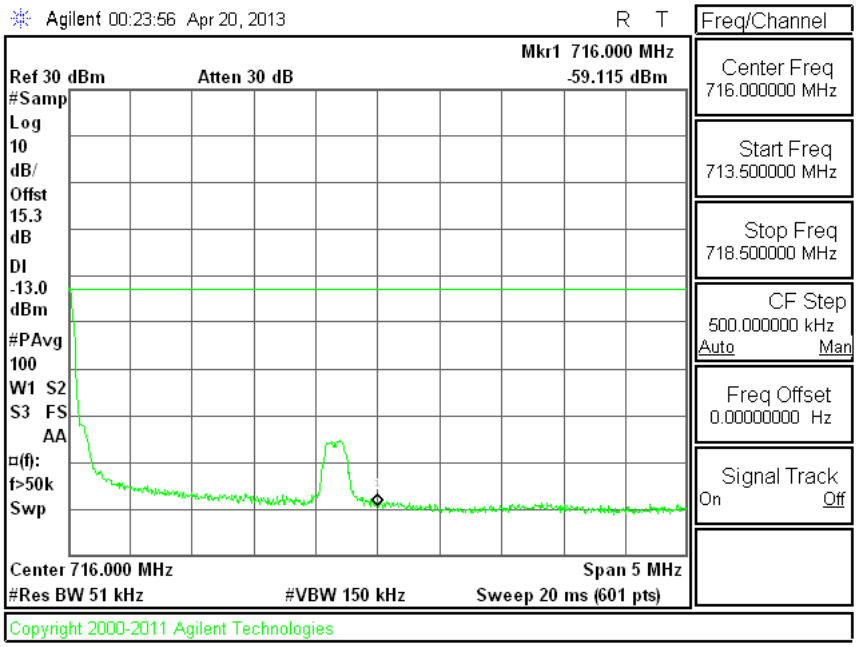


LOW CH, RB25_0

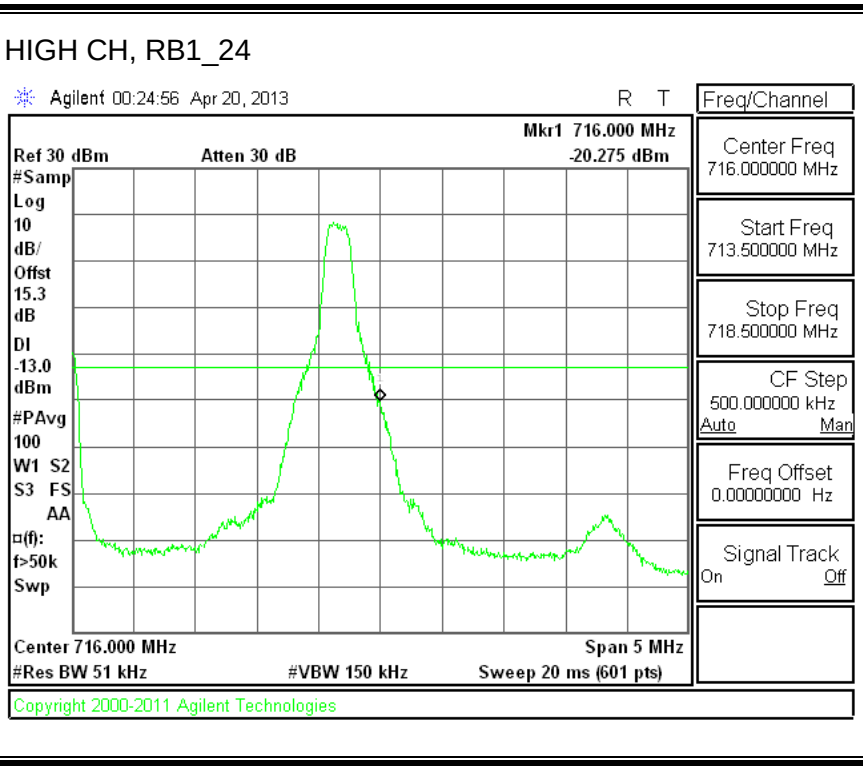


HIGH-16QAM

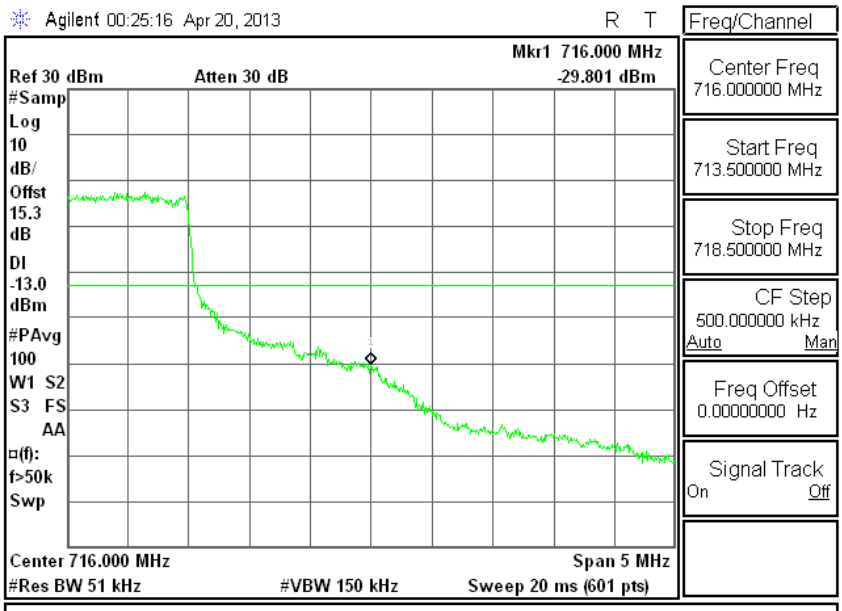
HIGH CH, RB1_0



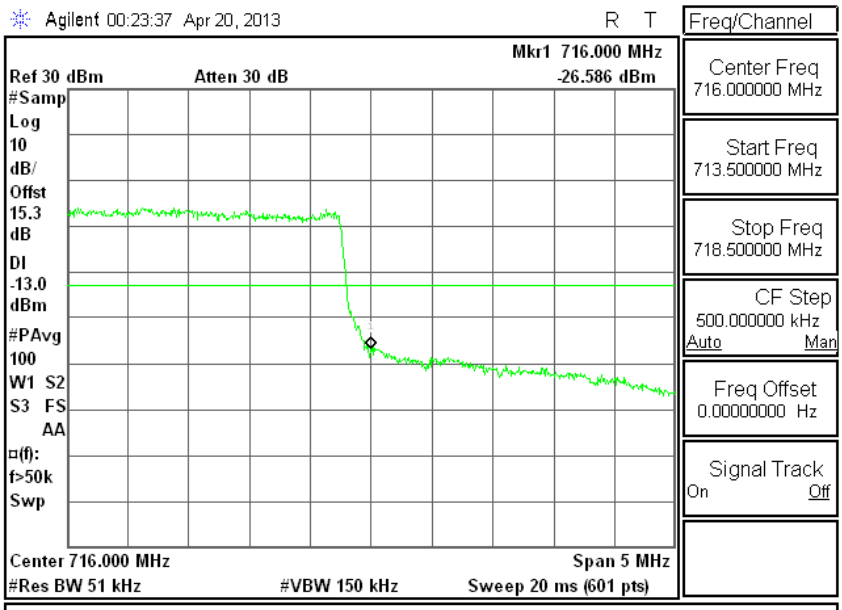
HIGH CH, RB1_24



HIGH CH, RB12_6

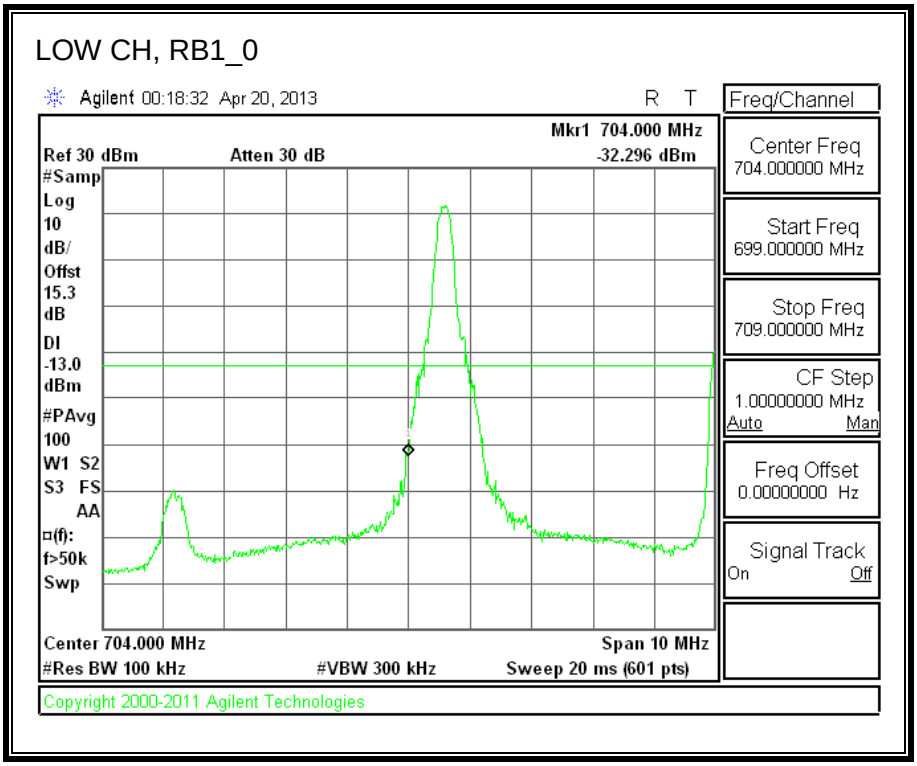


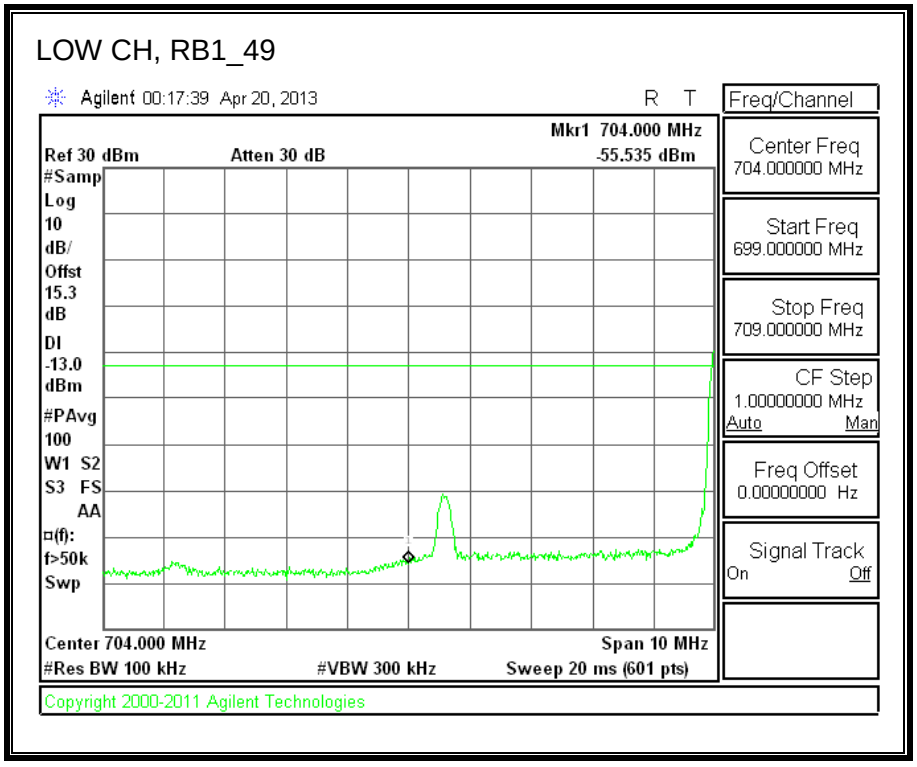
HIGH CH, RB25_0



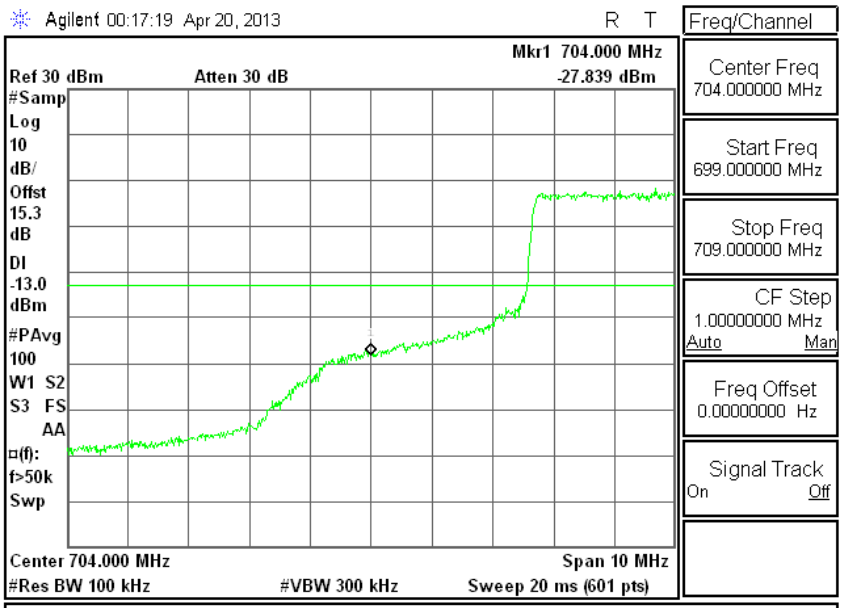
8.2.12. LTE BAND 17-10MHz BANDWIDTH

LOW-QPSK

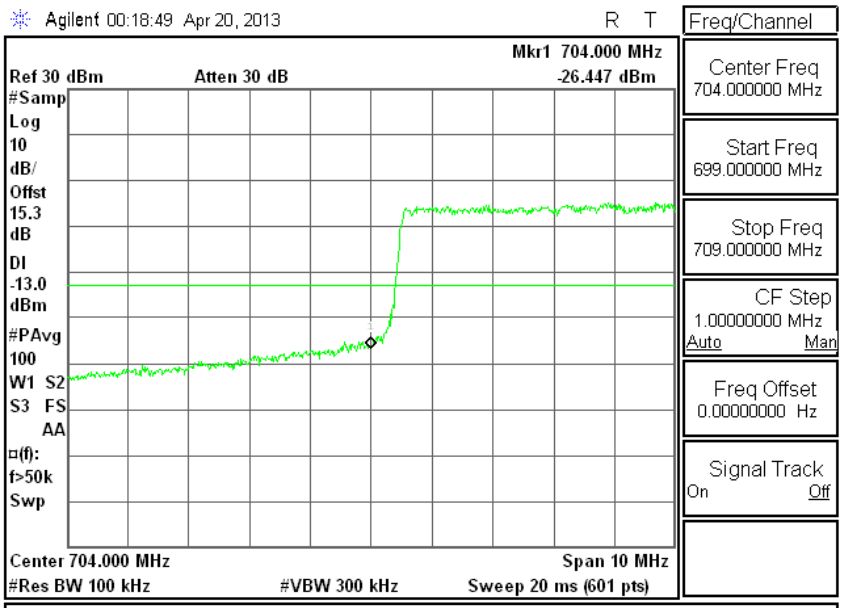




LOW CH, RB25_12

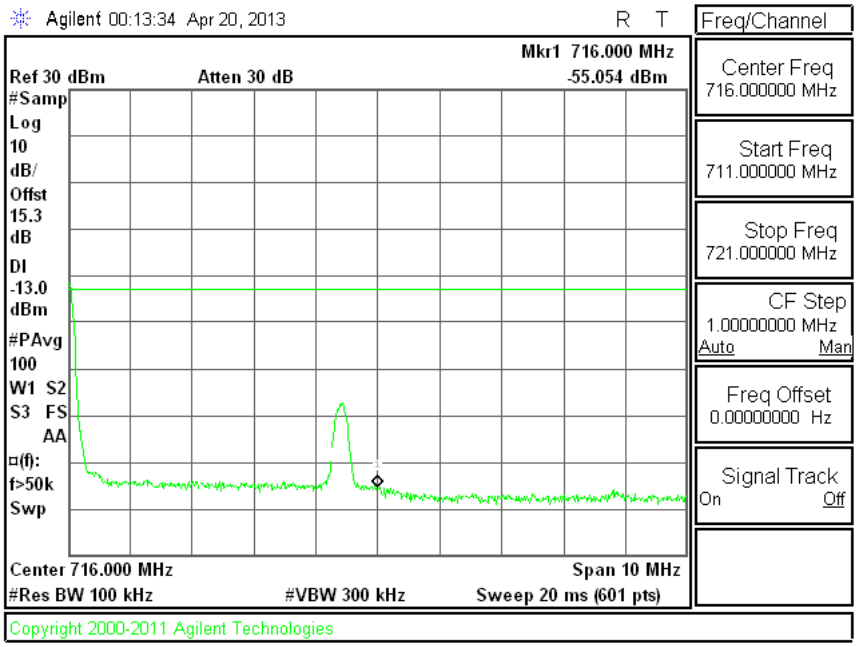


LOW CH, RB50_0

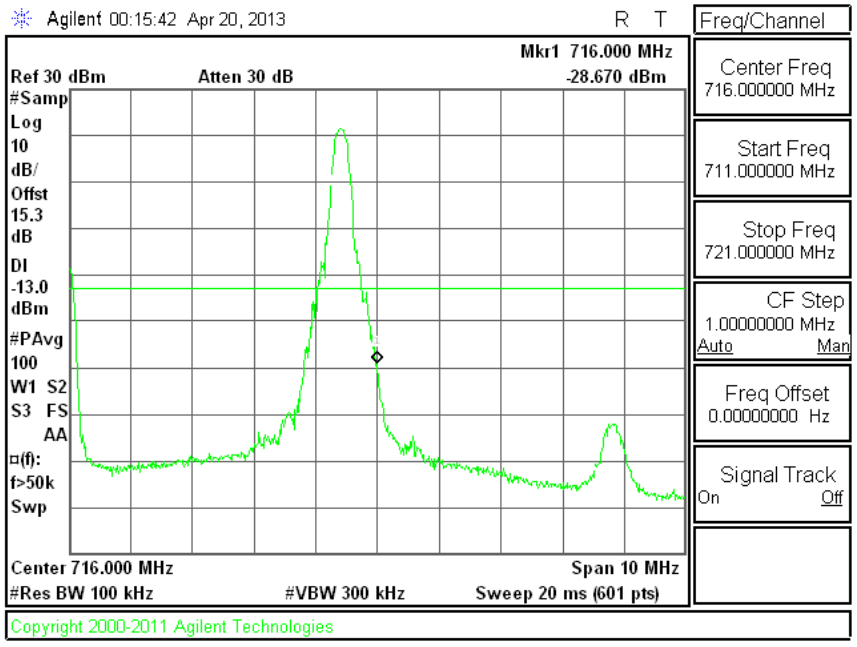


HIGH-QPSK

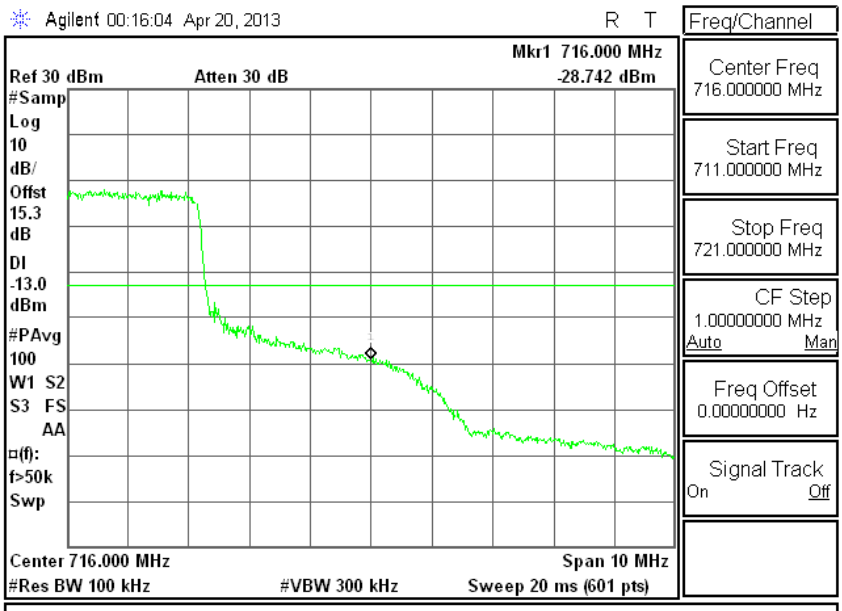
HIGH CH, RB1_0



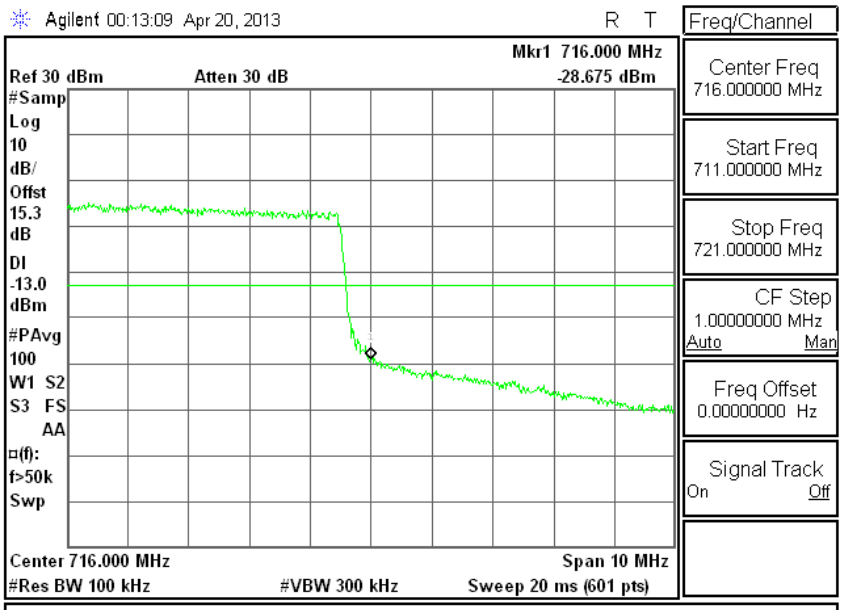
HIGH CH, RB1_49



HIGH CH, RB25_12

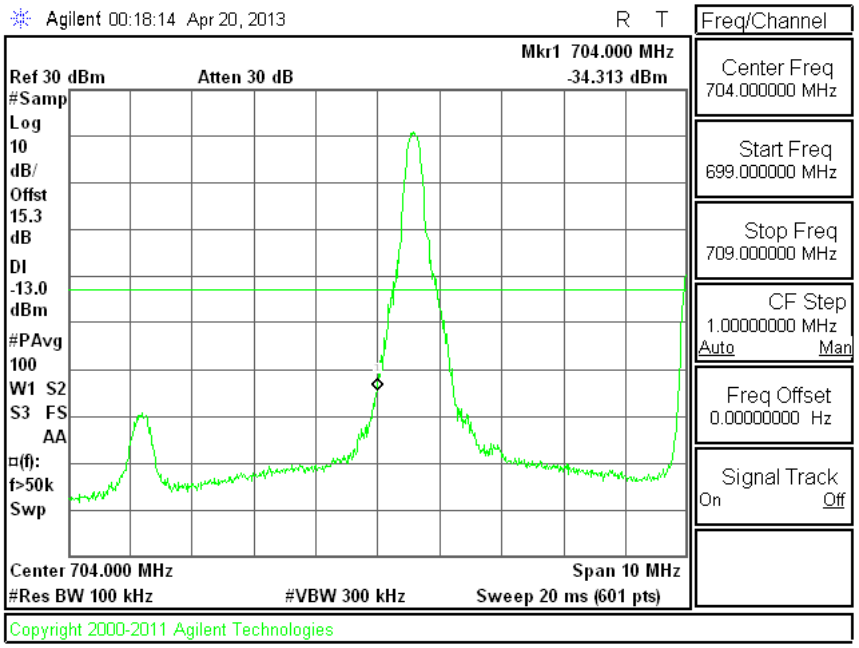


HIGH CH, RB50_0

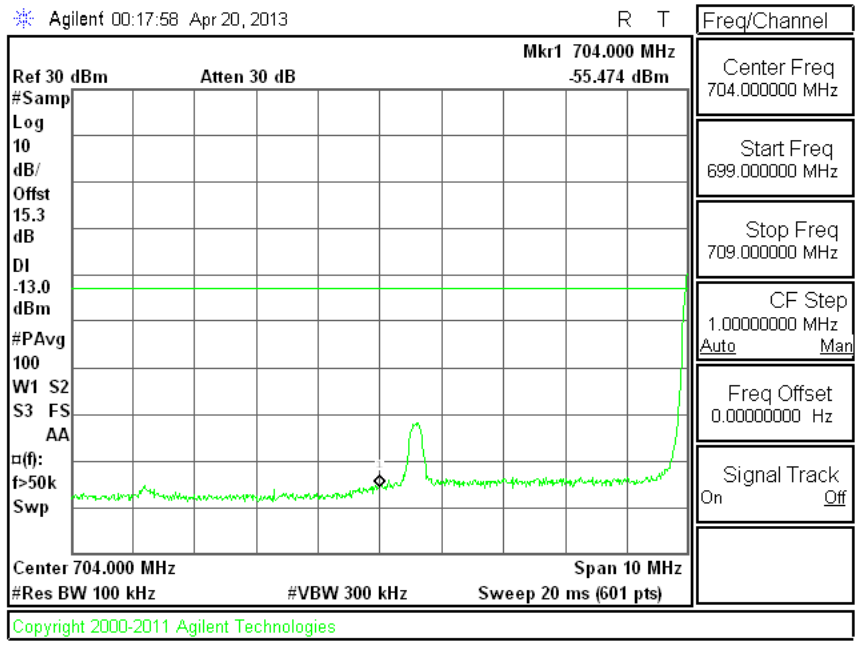


LOW-16QAM

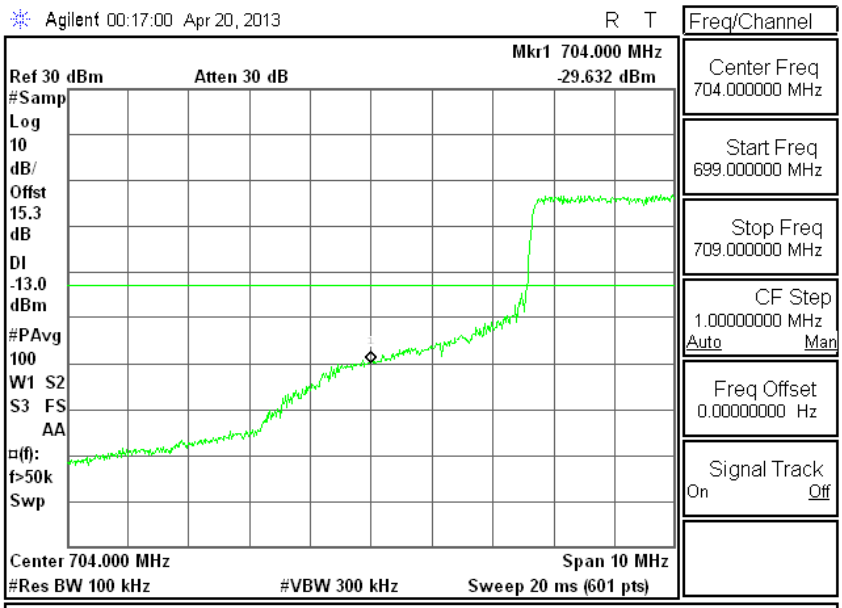
LOW CH, RB1_0



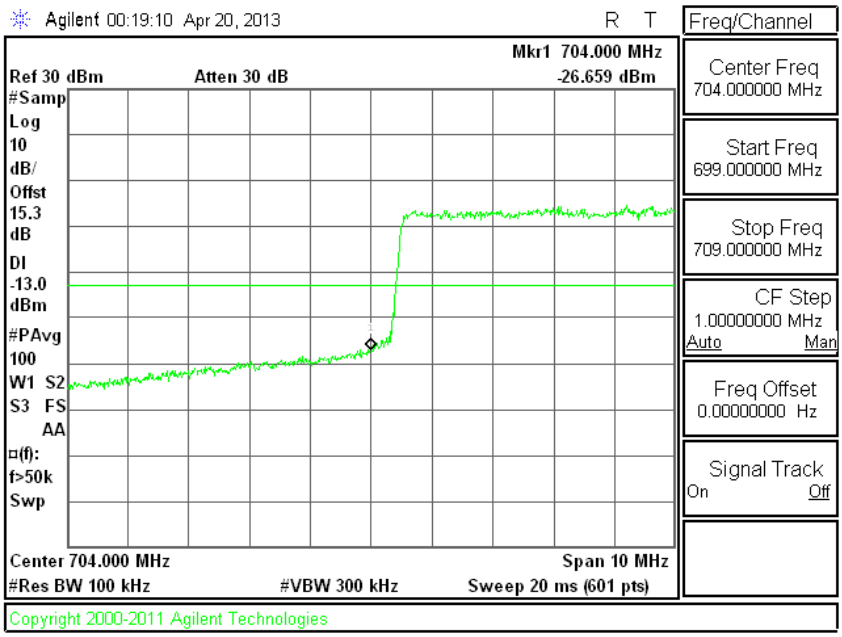
LOW CH, RB1_49



LOW CH, RB25_12

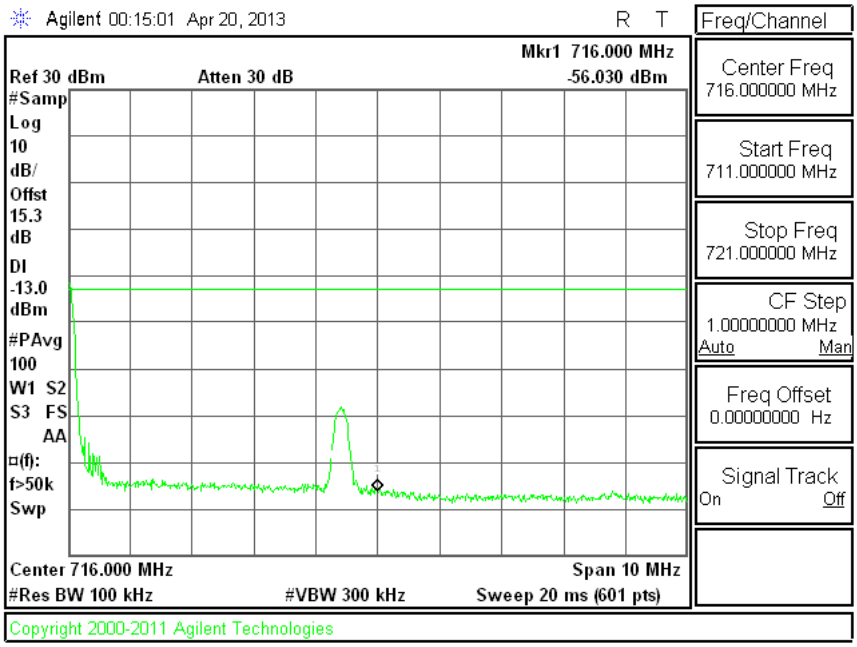


LOW CH, RB50_0

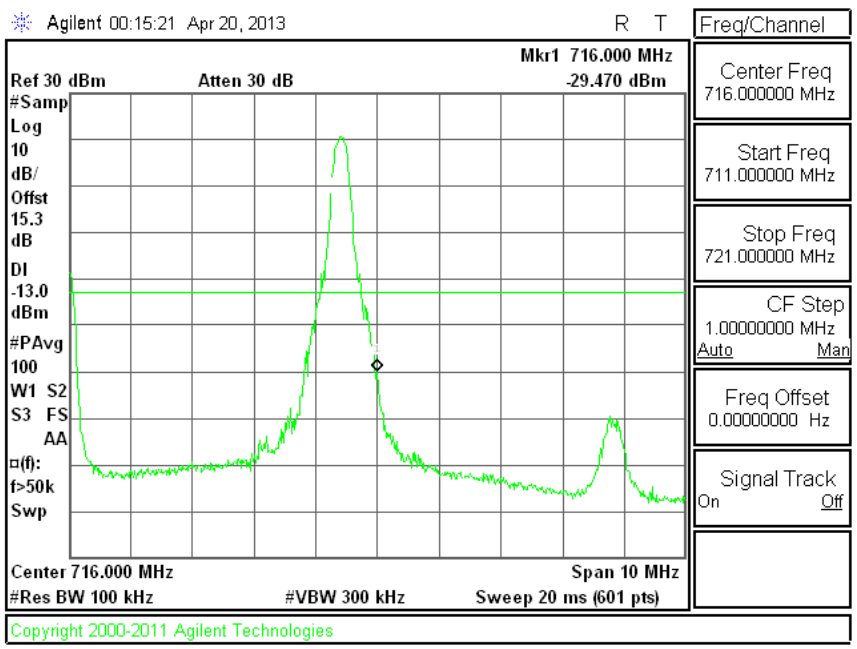


HIGH-16QAM

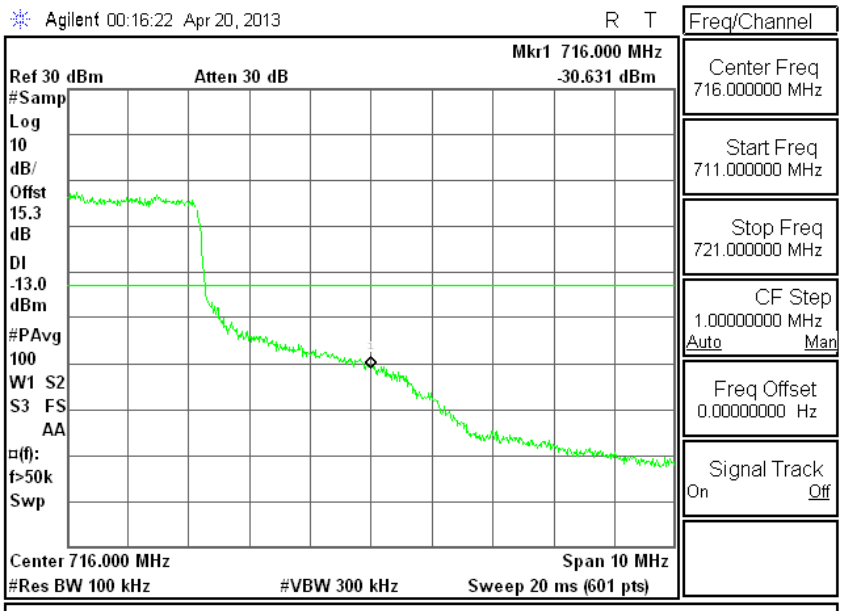
HIGH CH, RB1_0



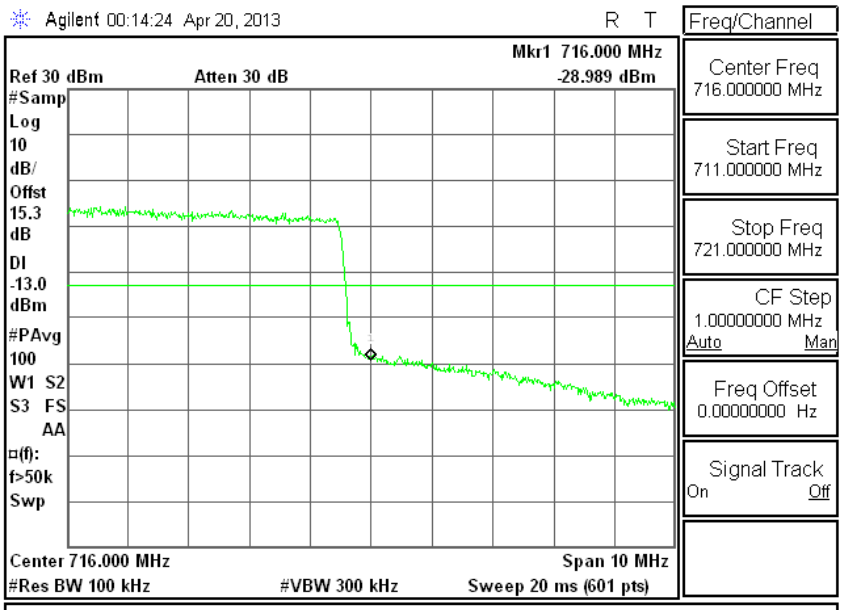
HIGH CH, RB1_49



HIGH CH, RB25_12



HIGH CH, RB50_0



8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

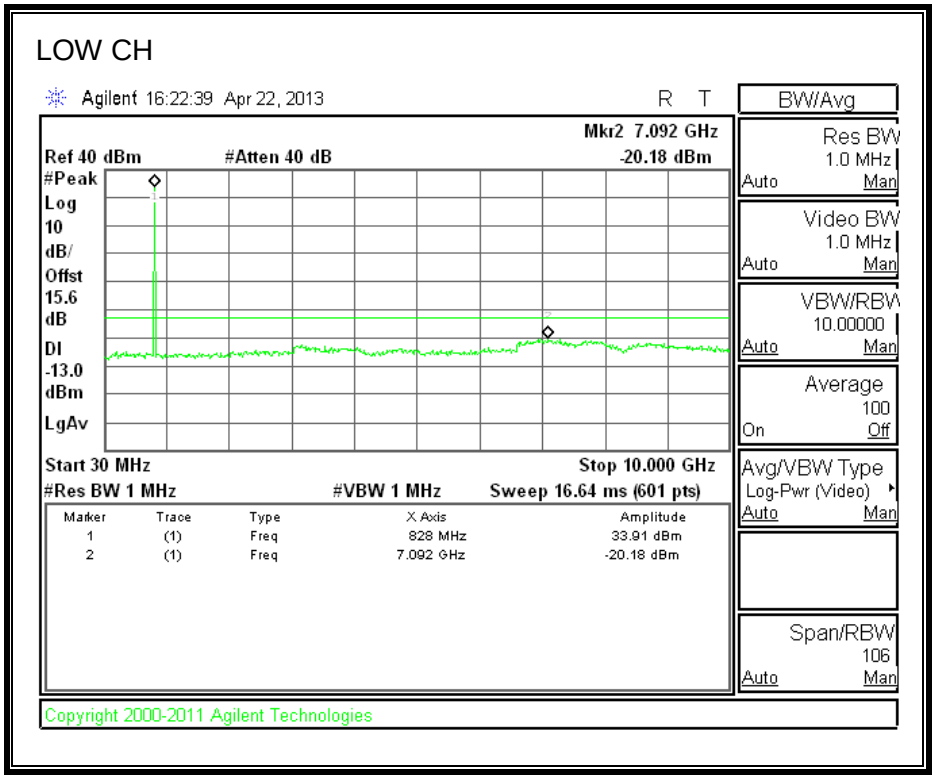
- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

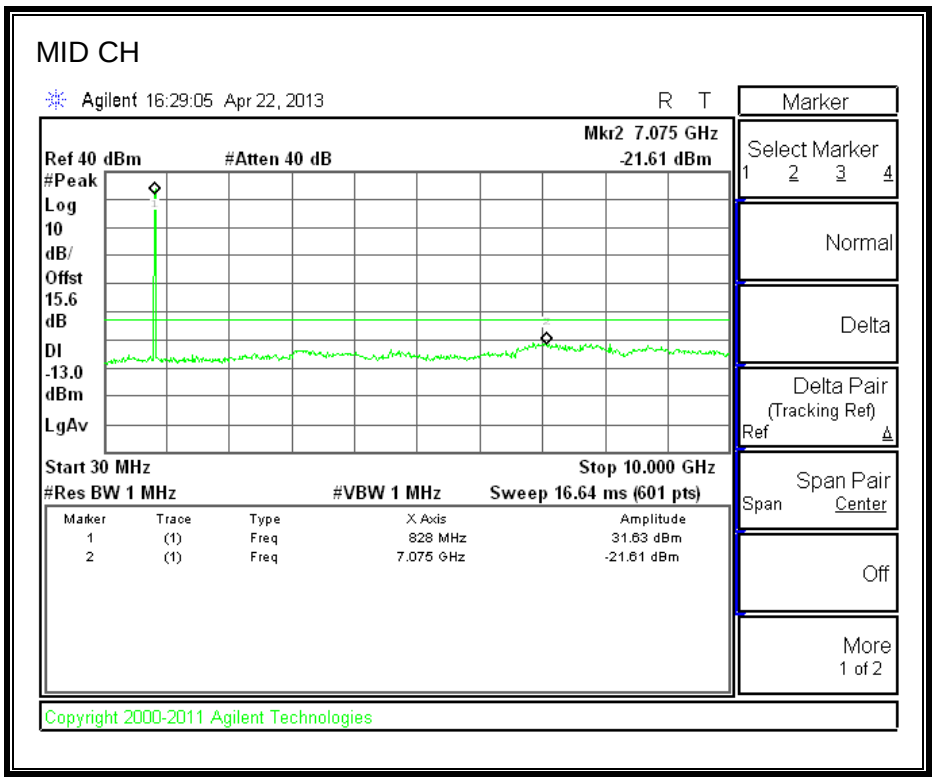
8.3.1. GSM-GPRS

CELL BAND

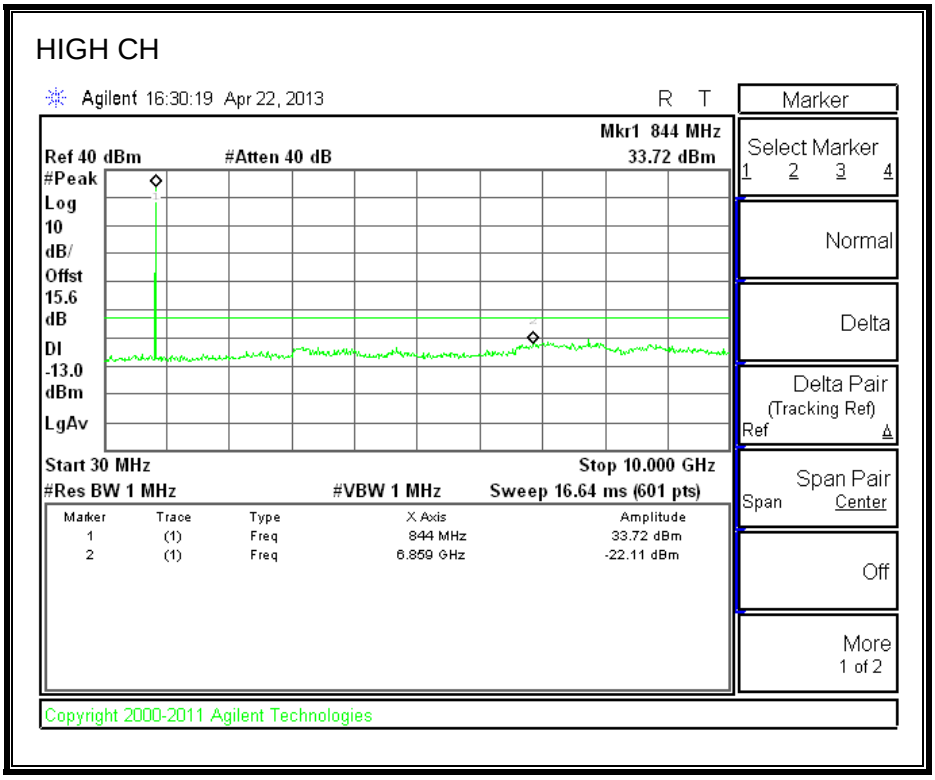
LOW CH



MID CH

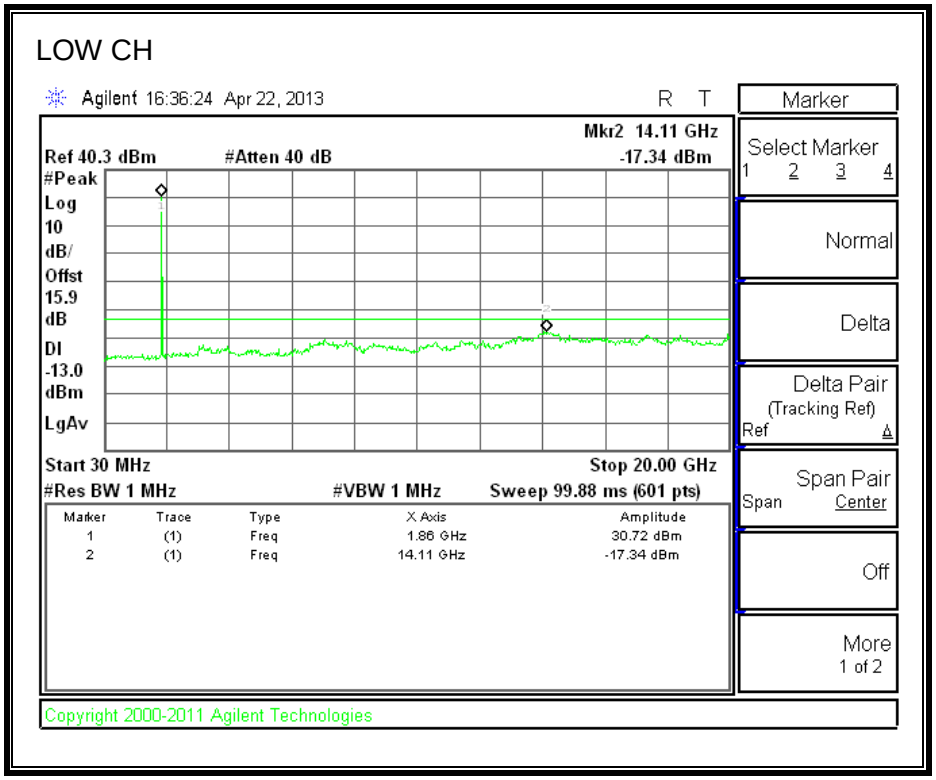


HIGH CH

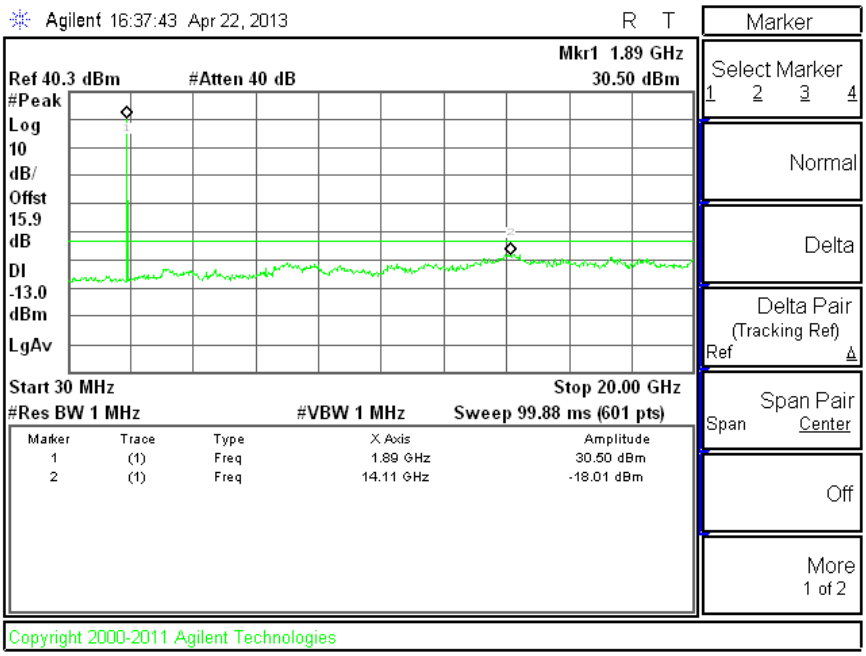


PCS BAND

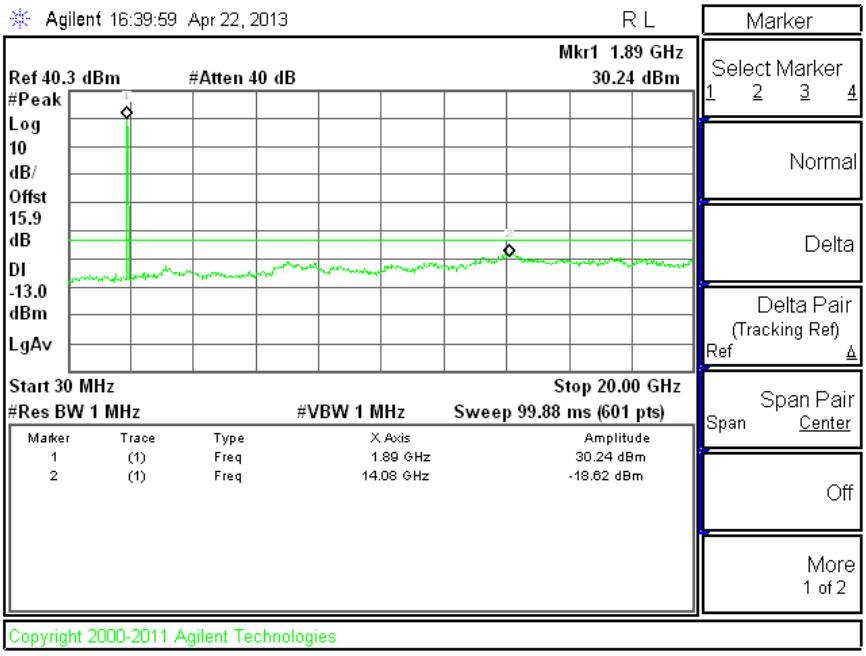
LOW CH



MID CH



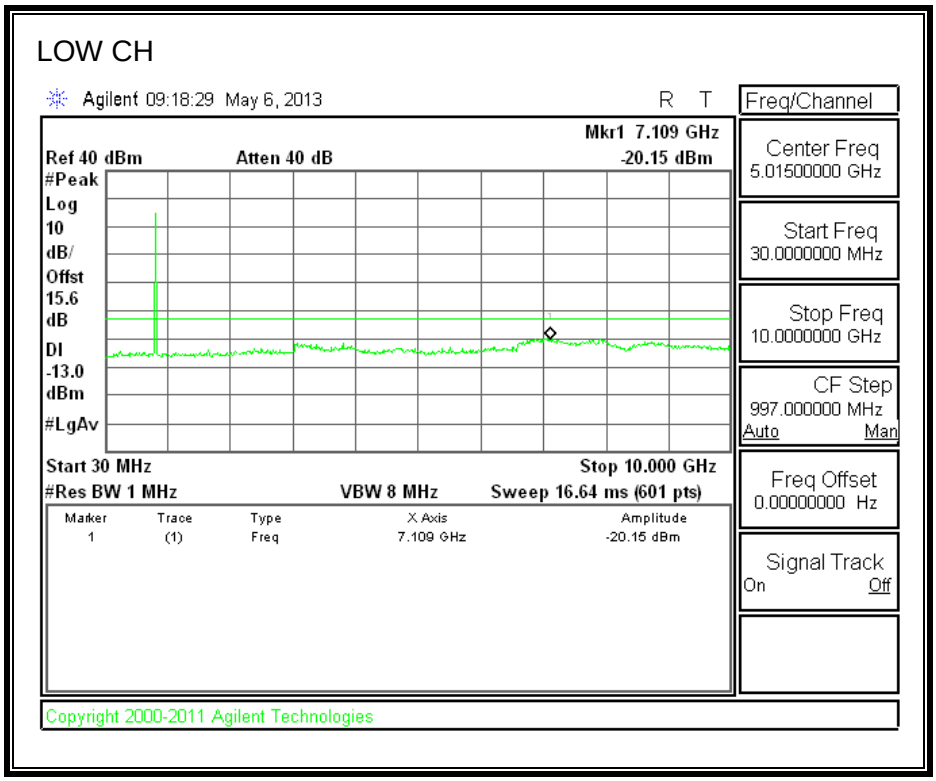
HIGH CH



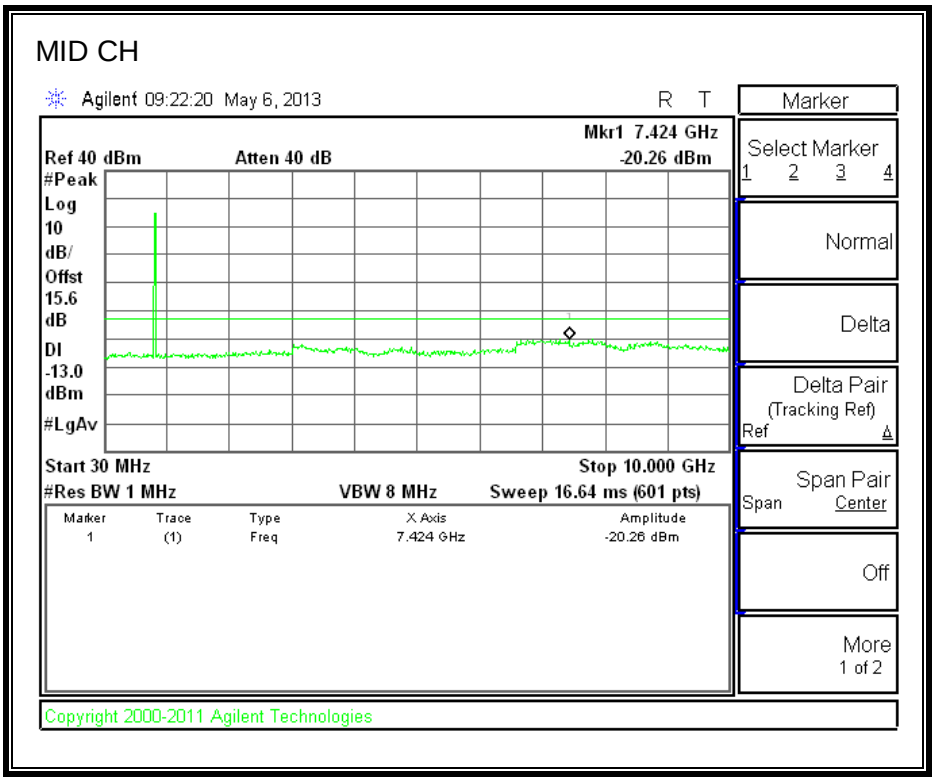
8.3.2. GSM-EGPRS

CELL BAND

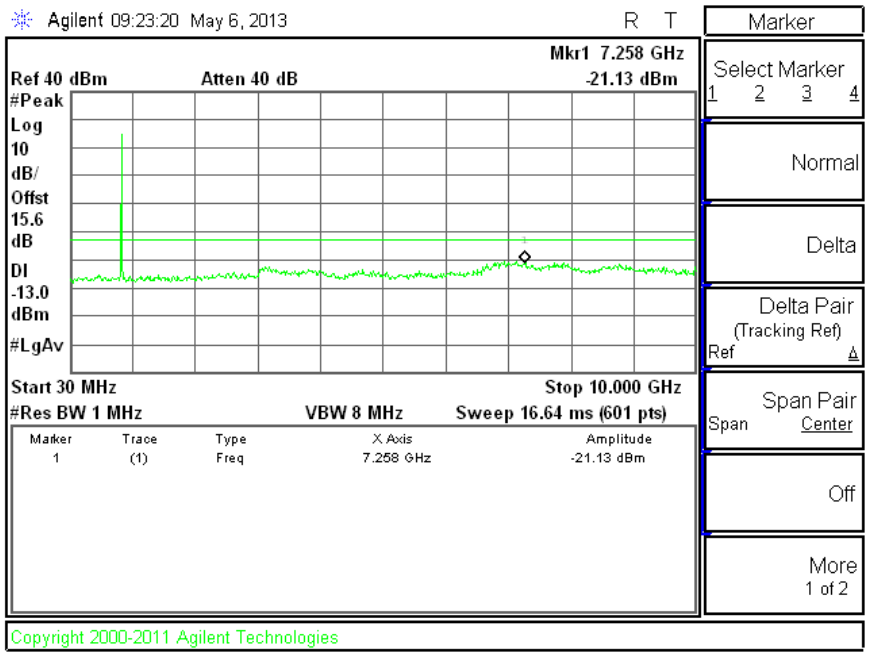
LOW CH



MID CH

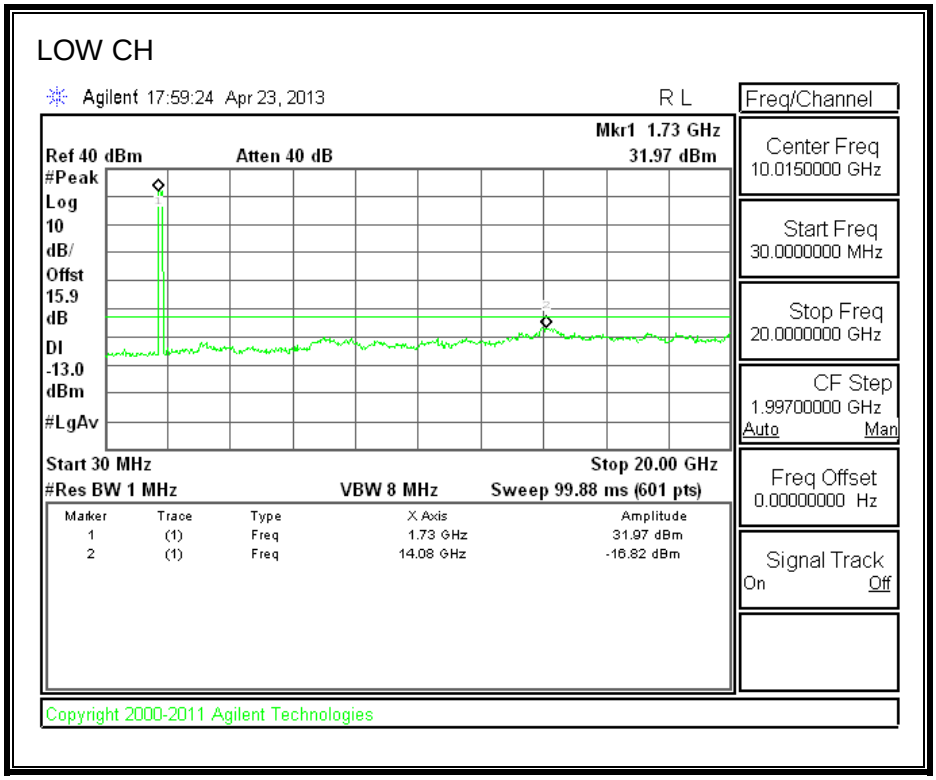


HIGH CH

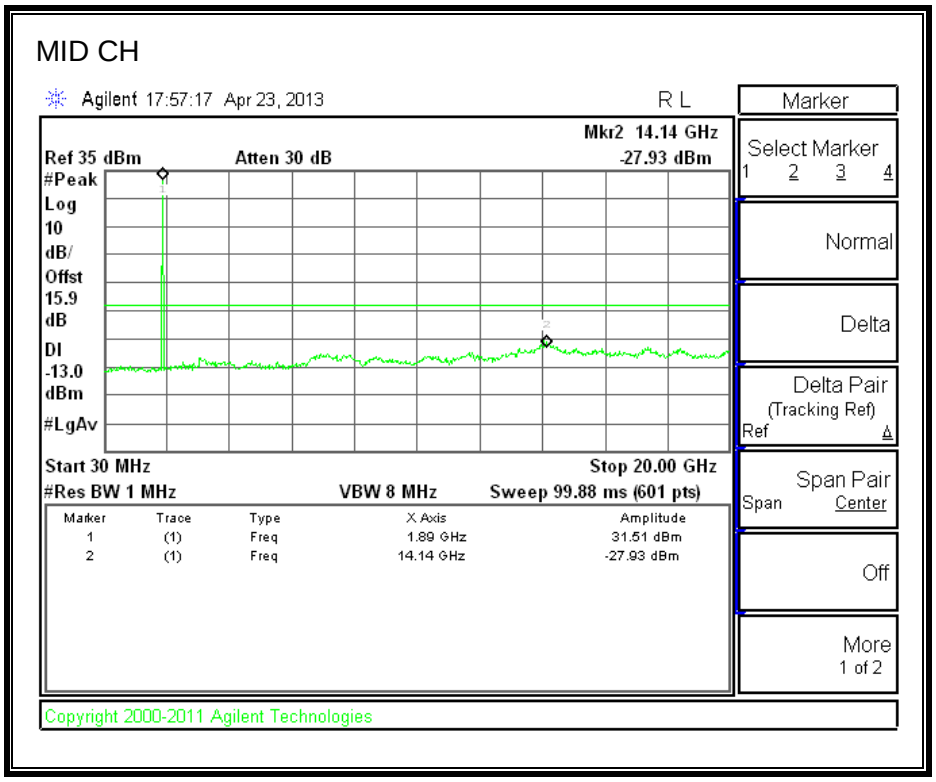


PCS BAND

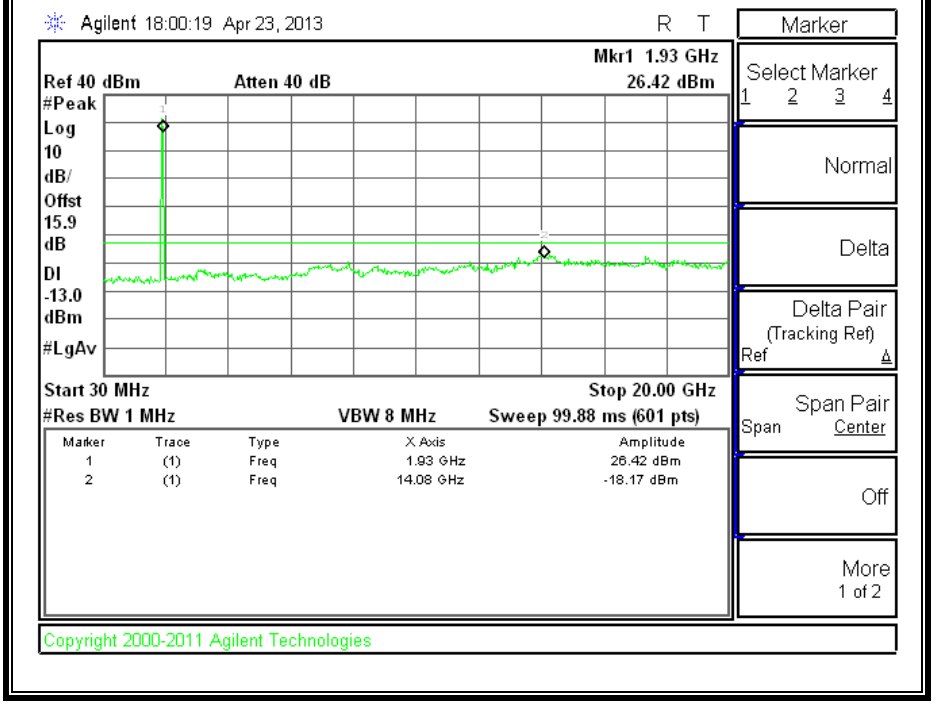
LOW CH



MID CH



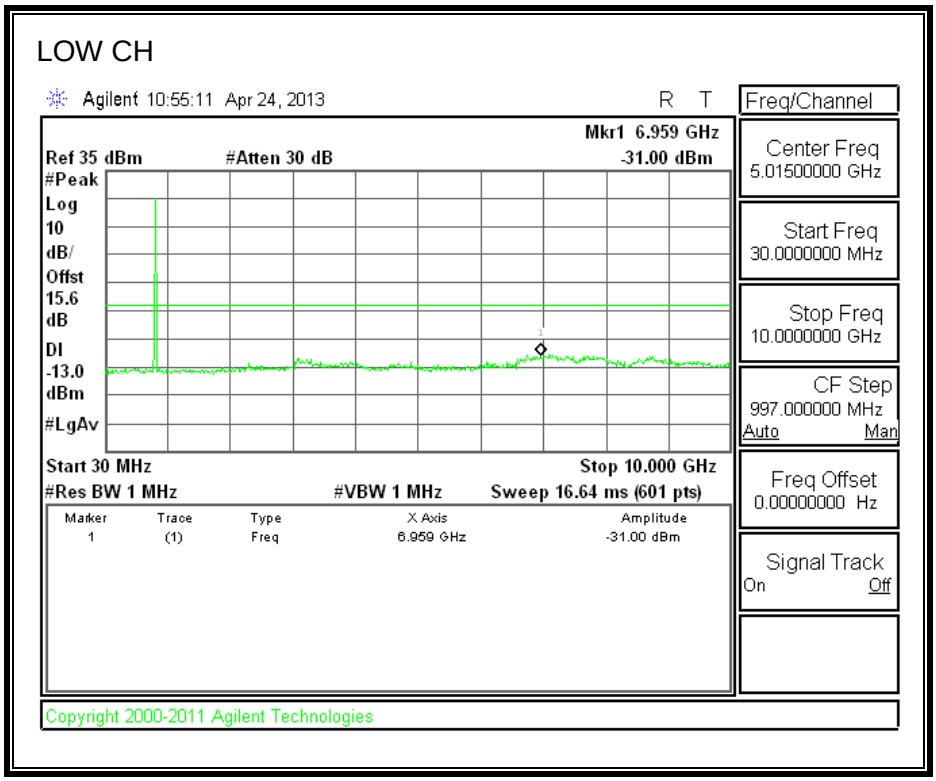
HIGH CH



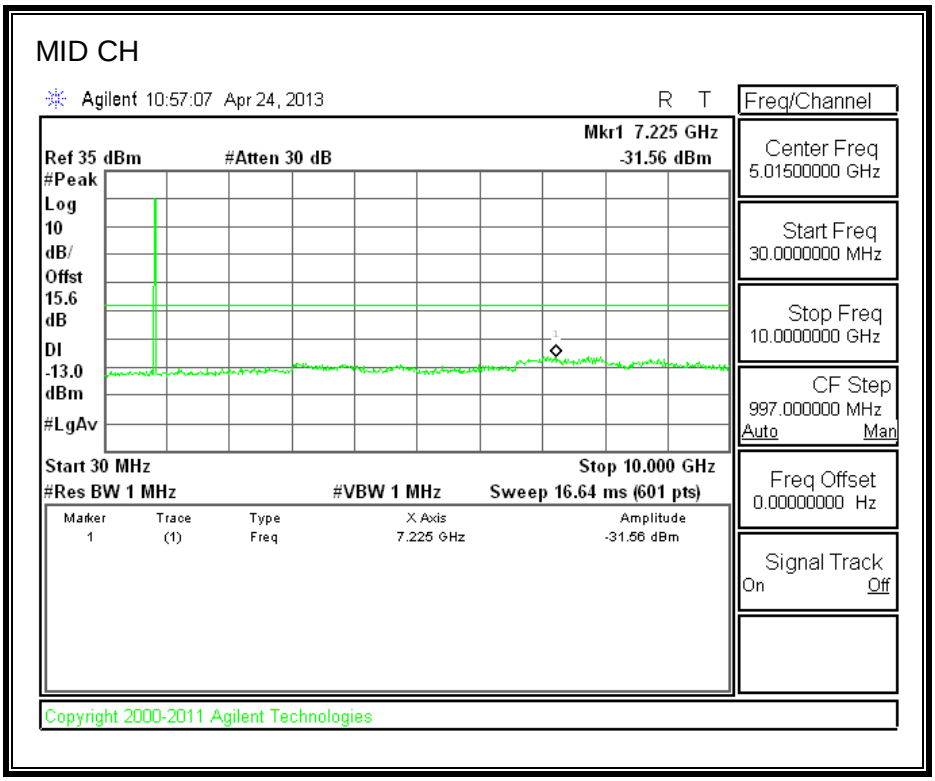
8.3.3. UMTS-REL 99

CELL BAND

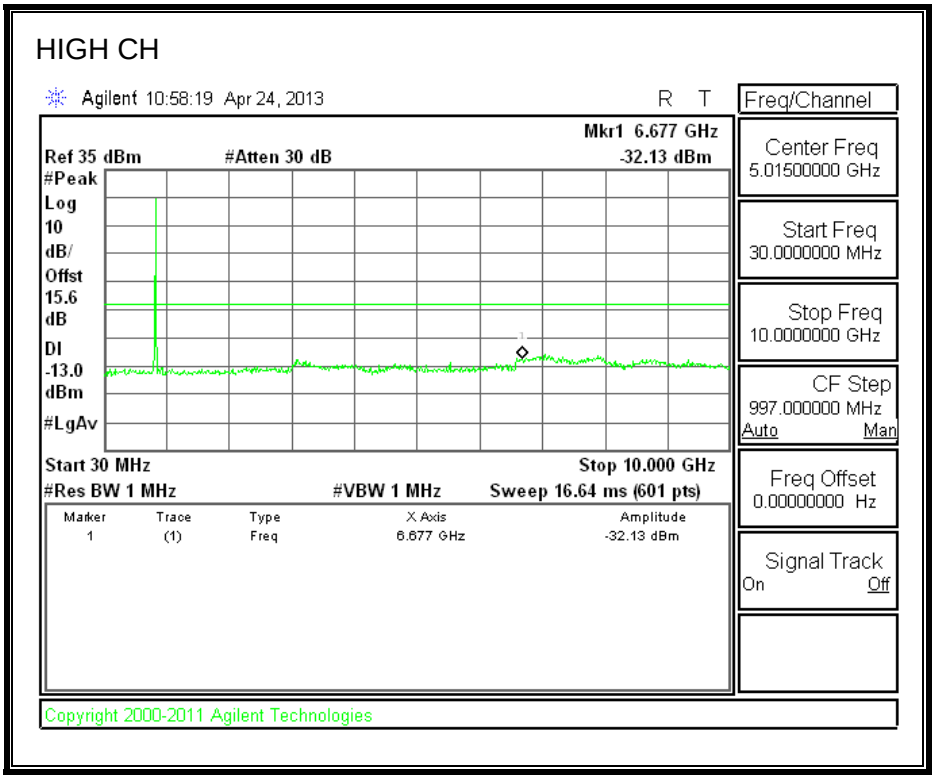
LOW CH



MID CH

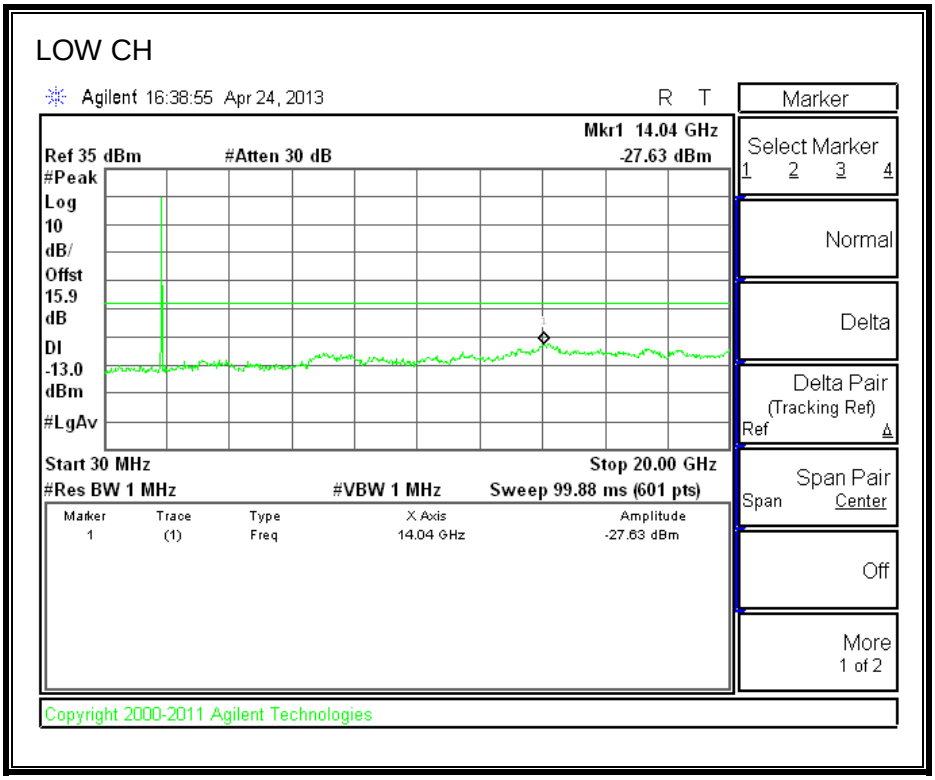


HIGH CH

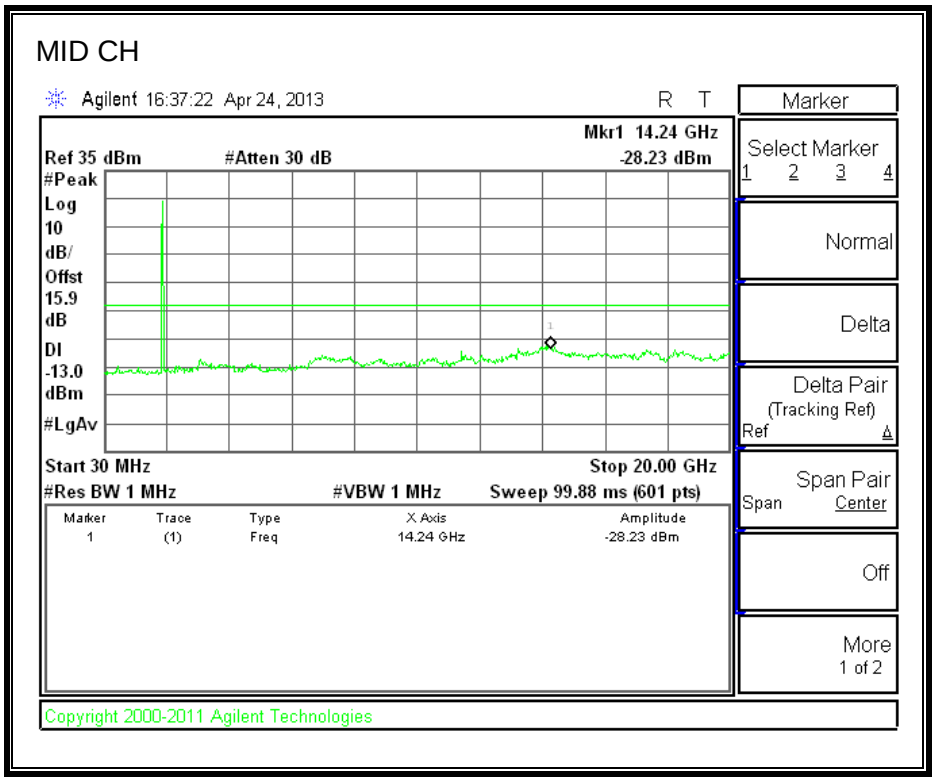


PCS BAND

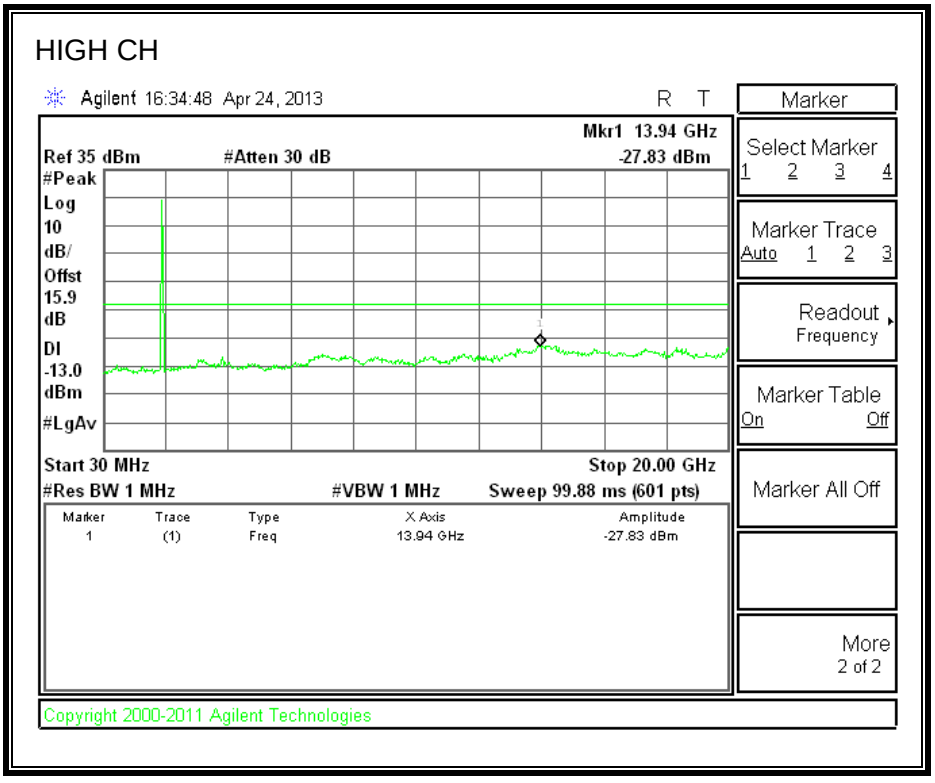
LOW CH



MID CH

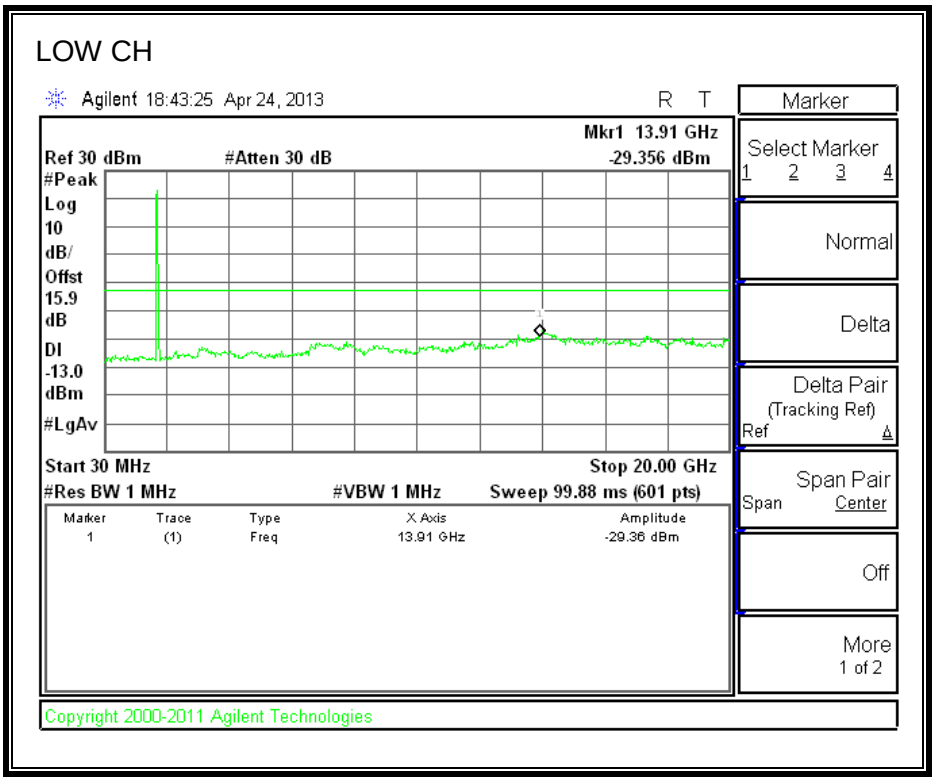


HIGH CH

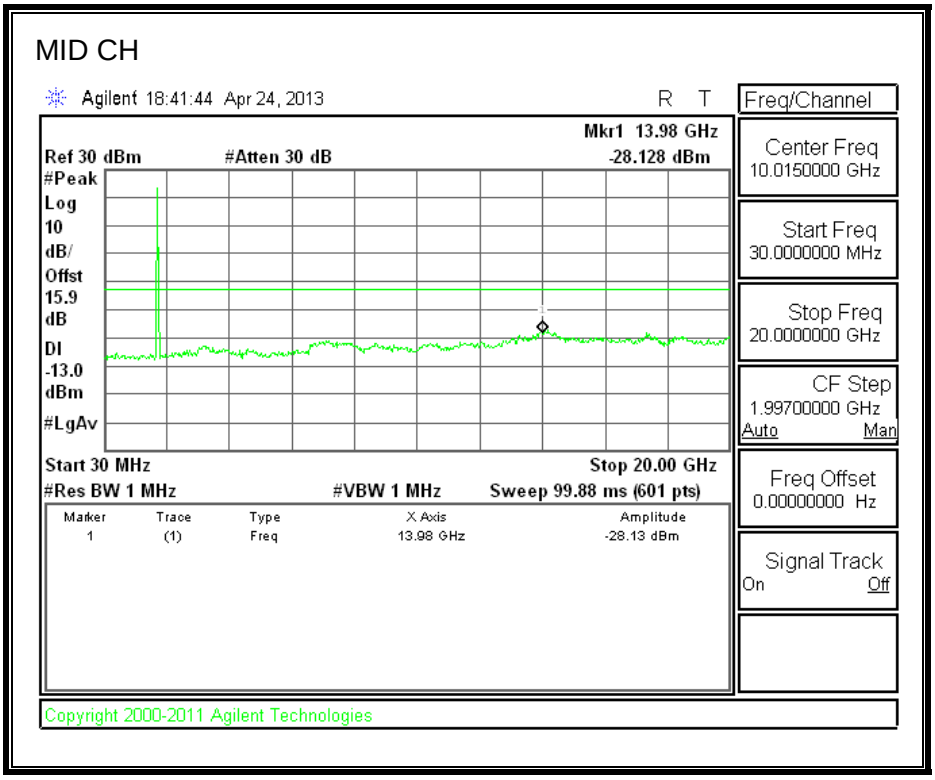


AWS BAND

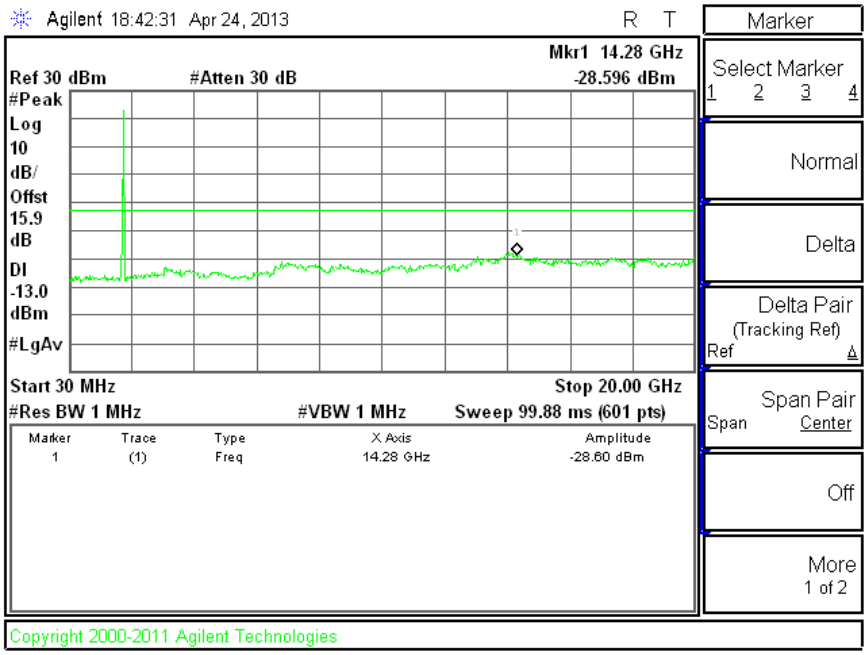
LOW CH



MID CH



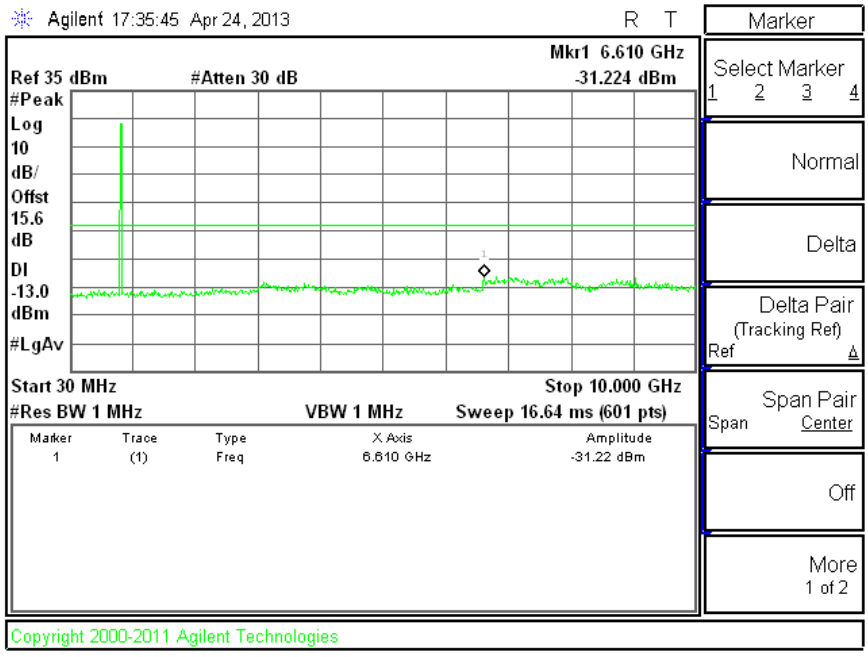
HIGH CH



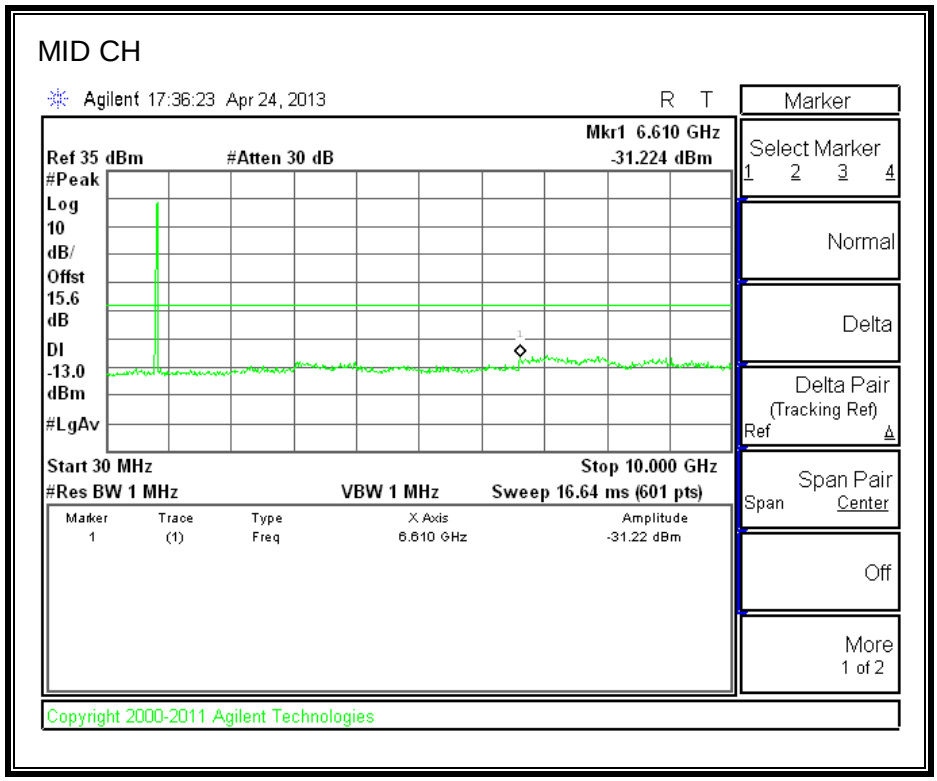
8.3.4. UMTS-HSDPA

CELL BAND

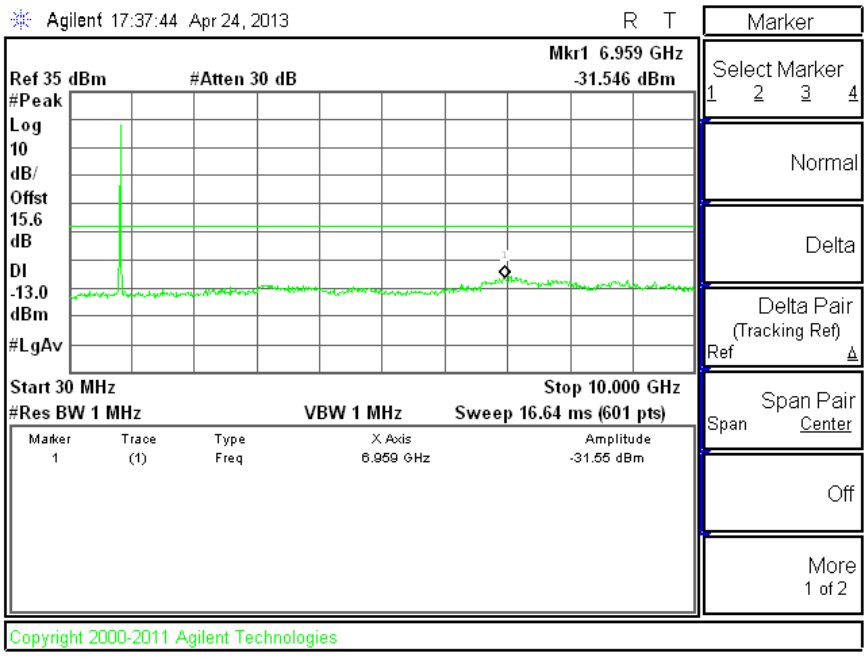
LOW CH



MID CH

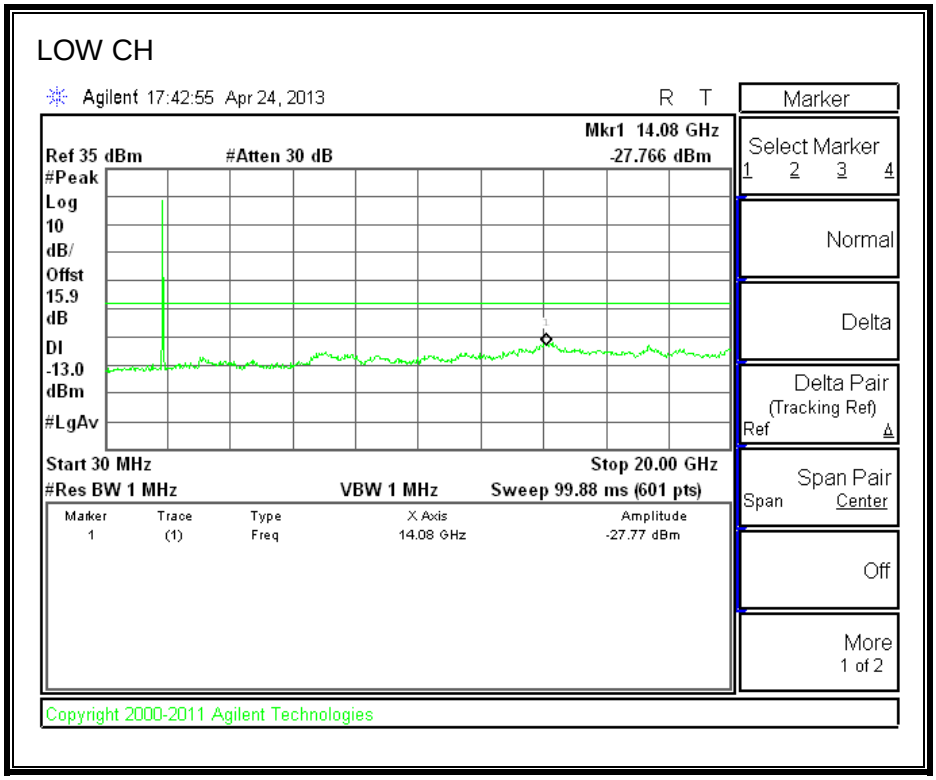


HIGH CH

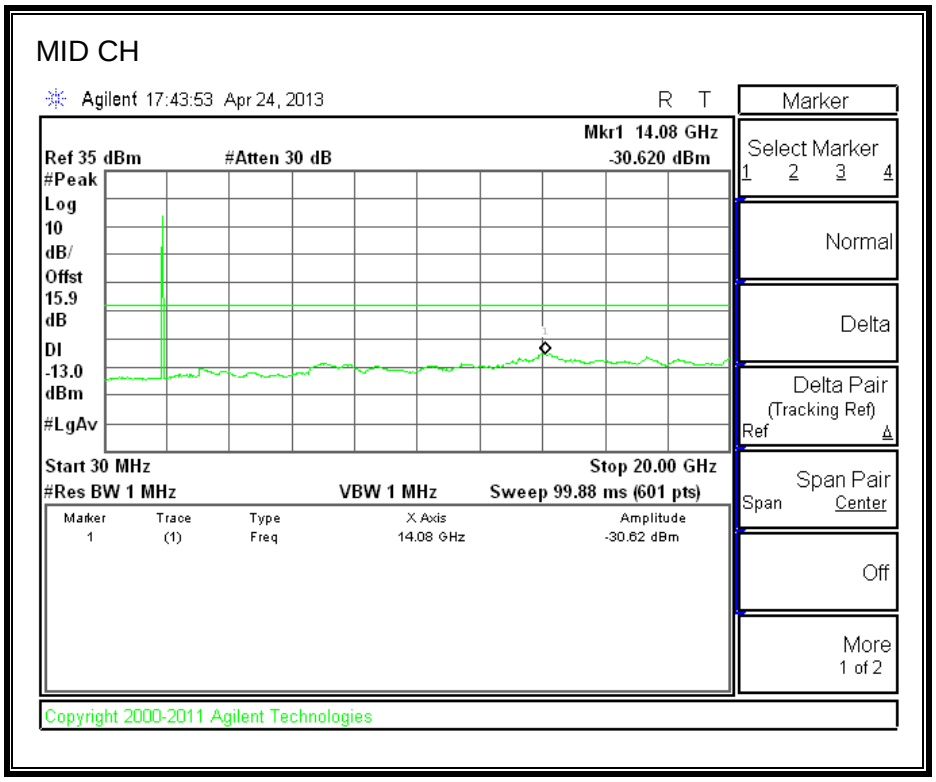


PCS BAND

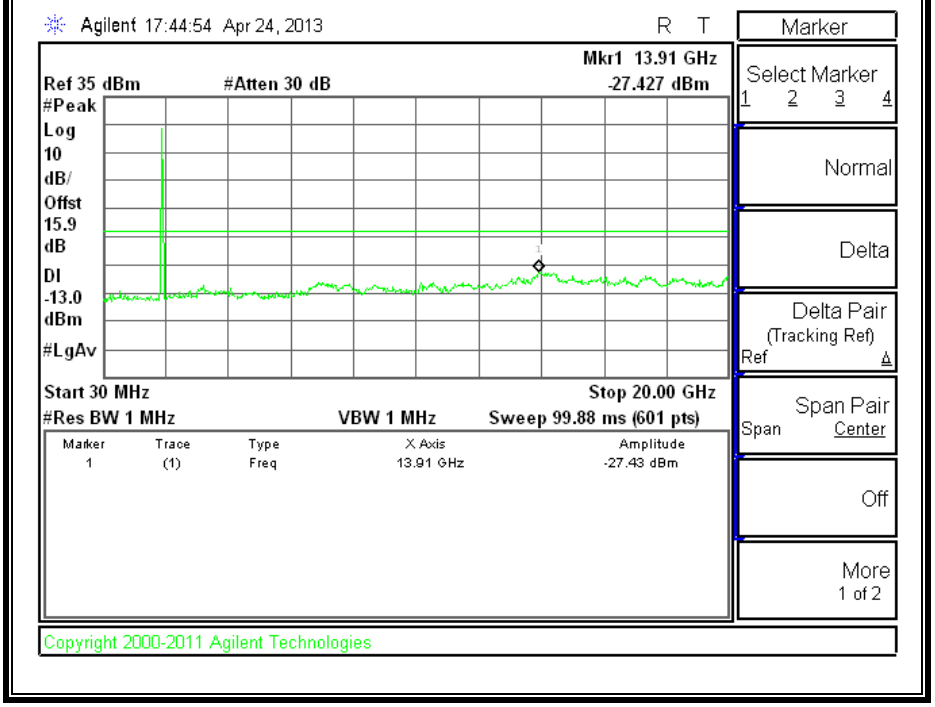
LOW CH



MID CH

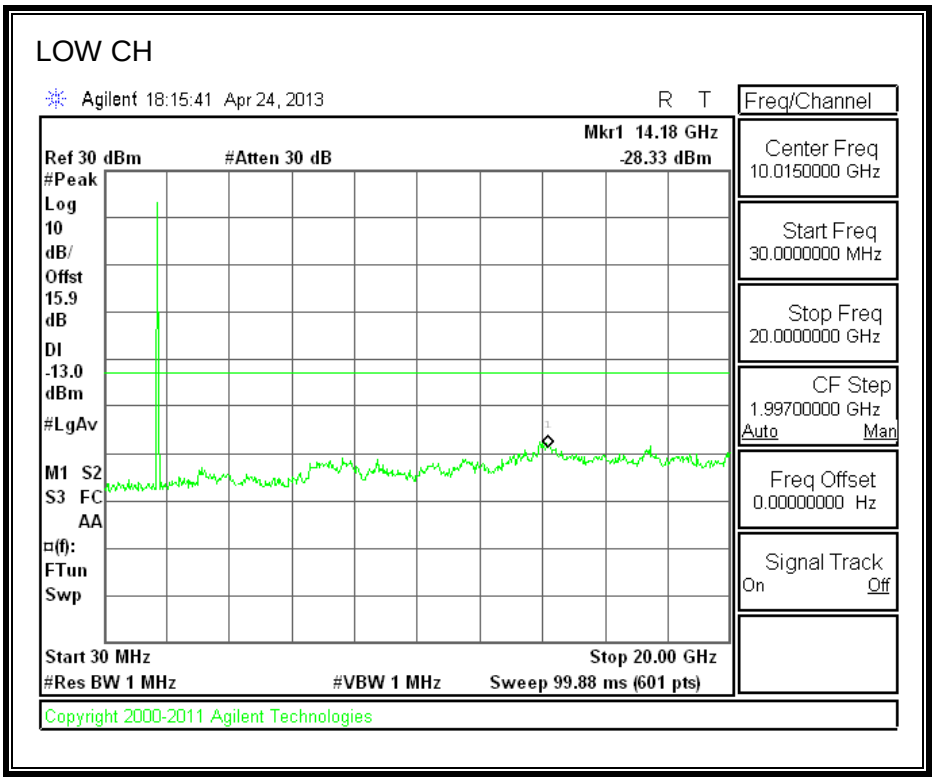


HIGH CH

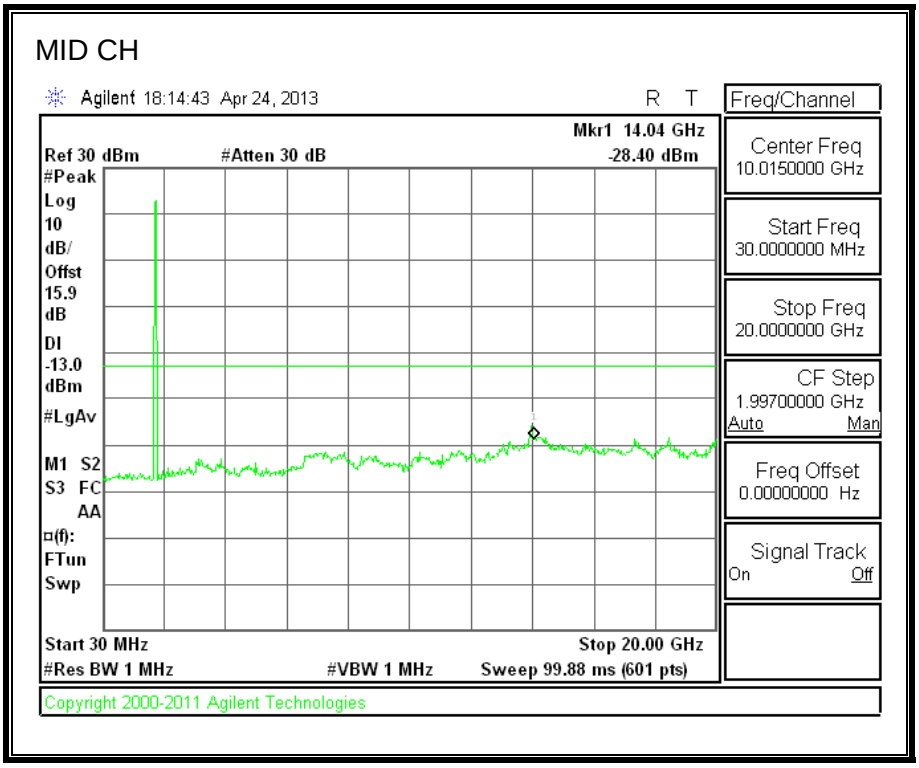


AWS BAND

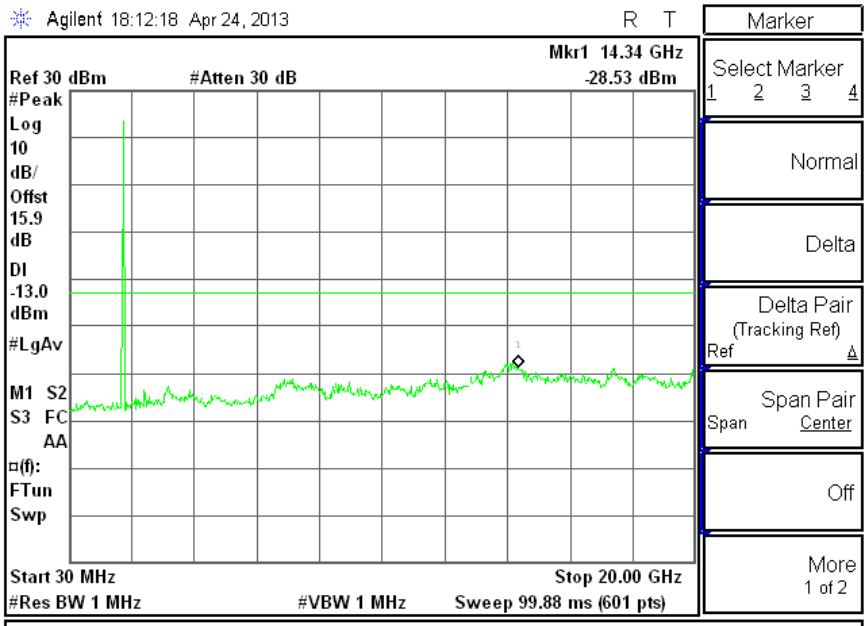
LOW CH



MID CH



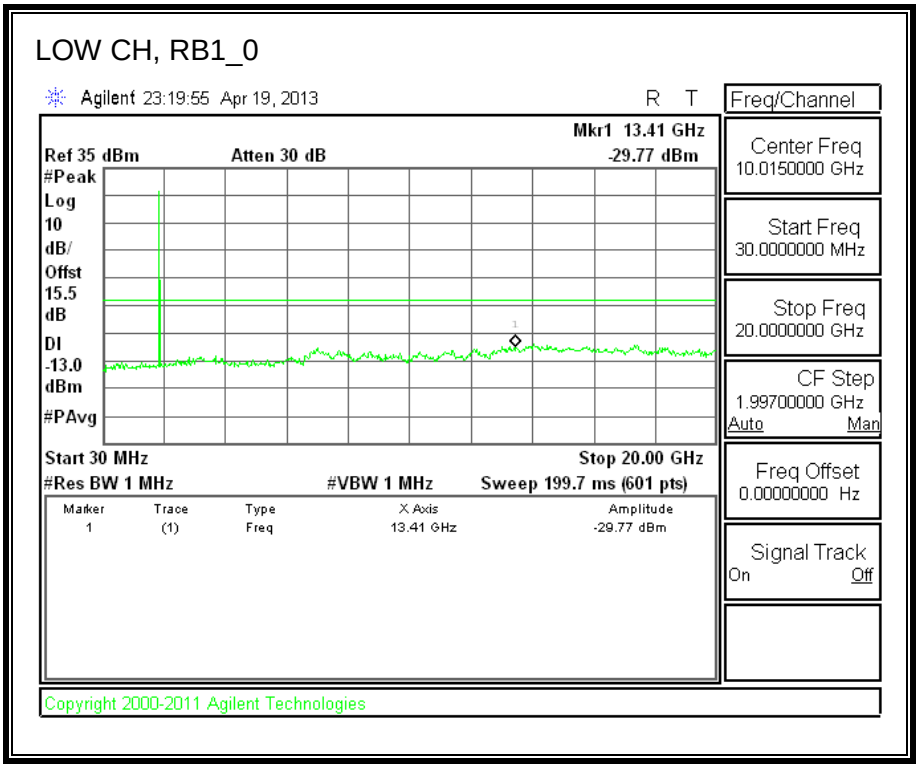
HIGH CH



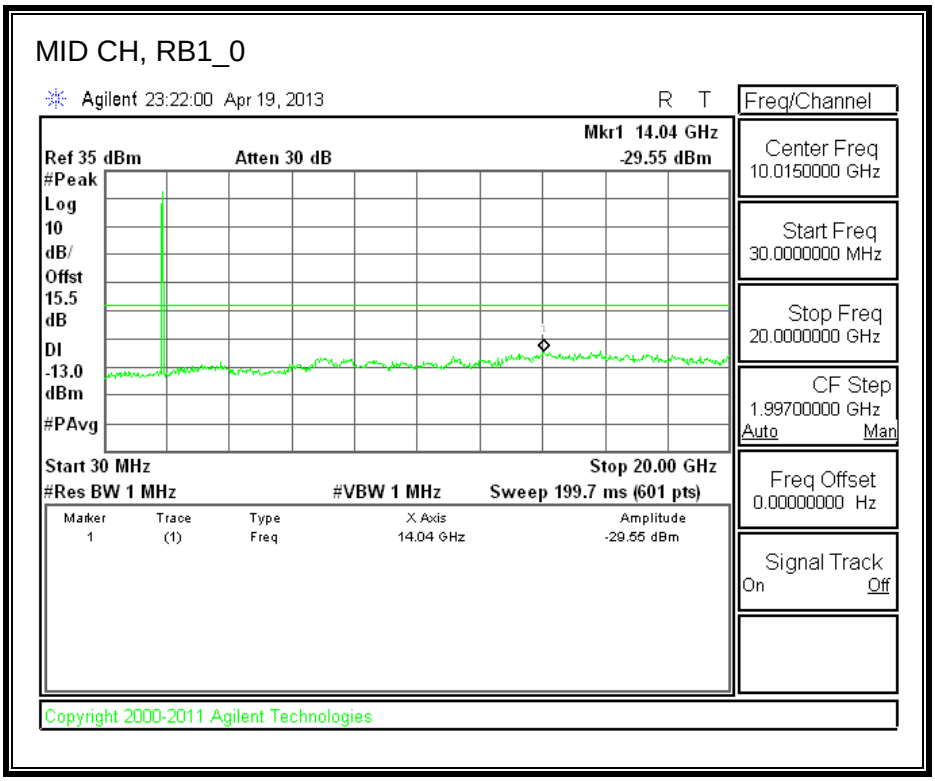
8.3.5. LTE BAND 2-5MHz BNADWIDTH

QPSK

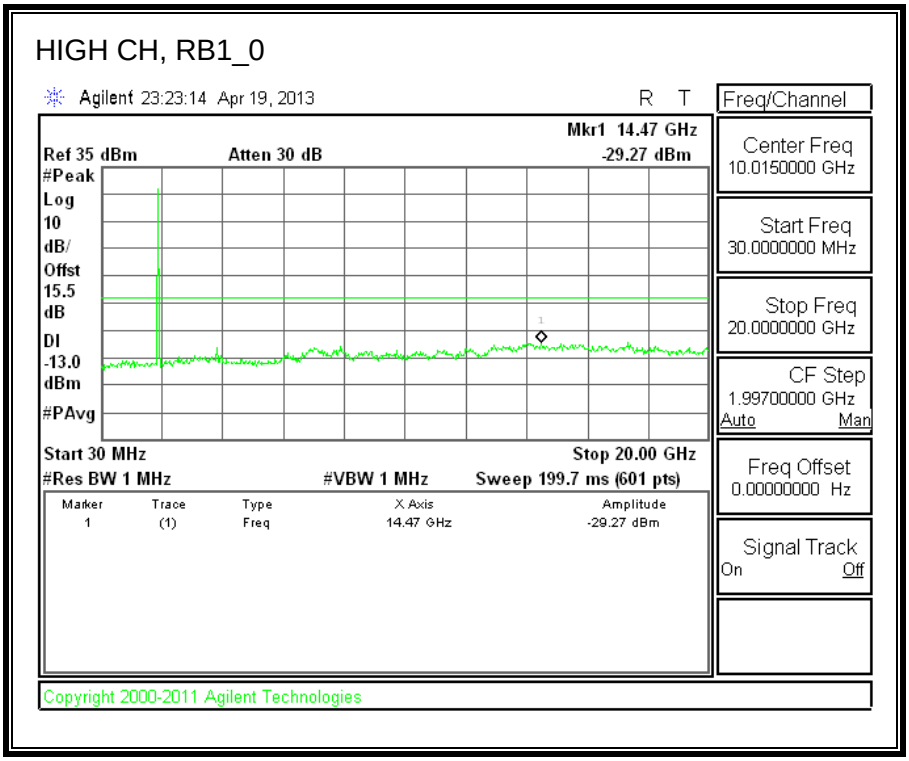
LOW CH, RB1_0



MID CH, RB1_0

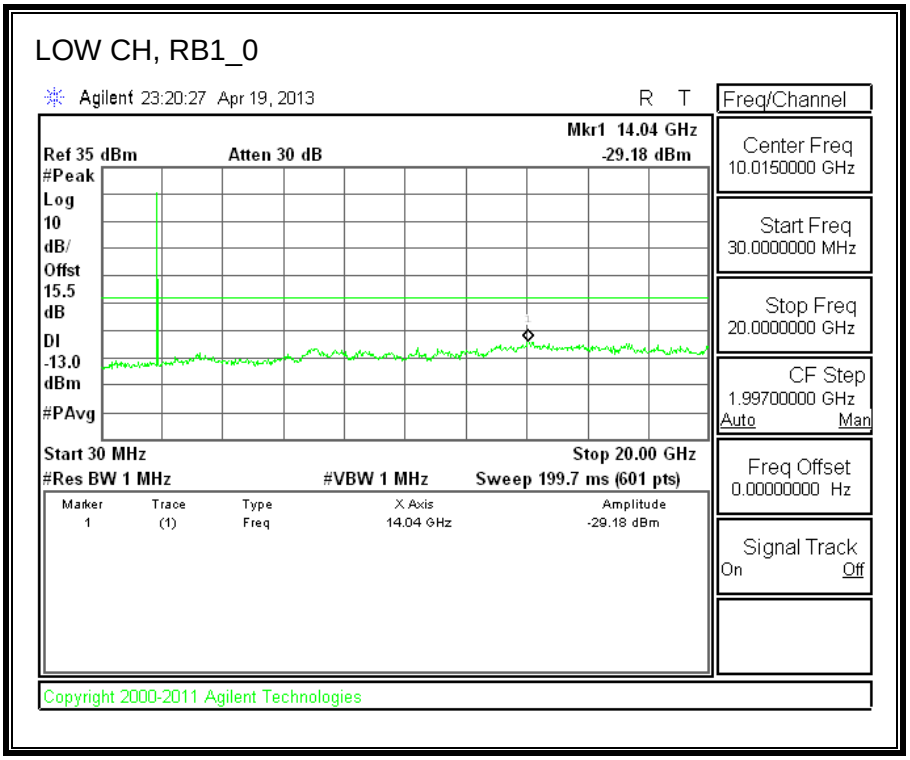


HIGH CH, RB1_0

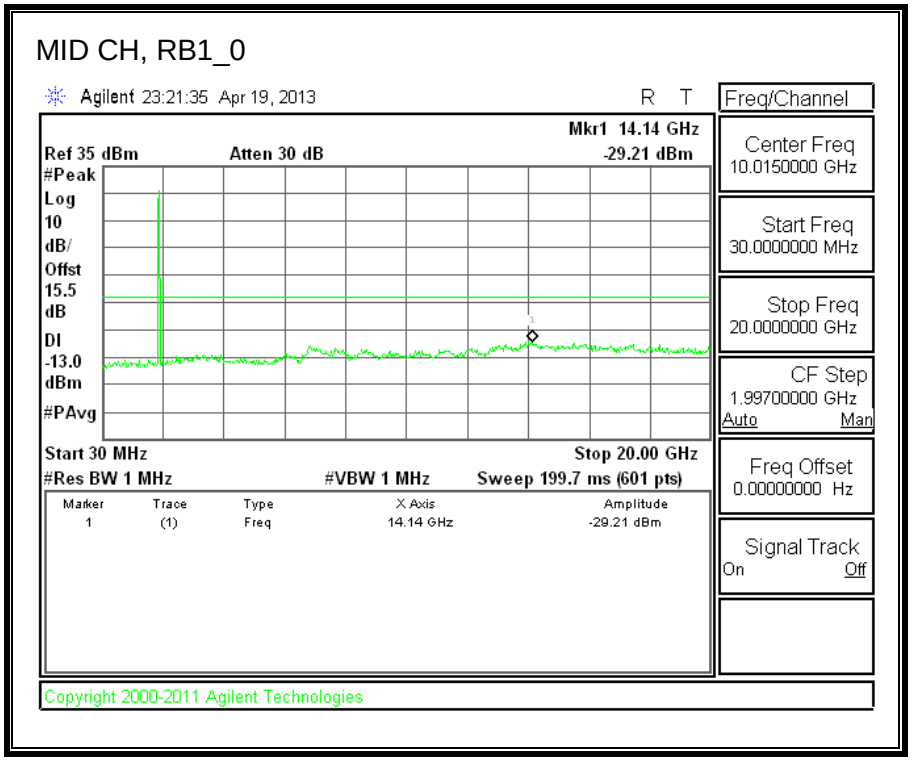


16QAM

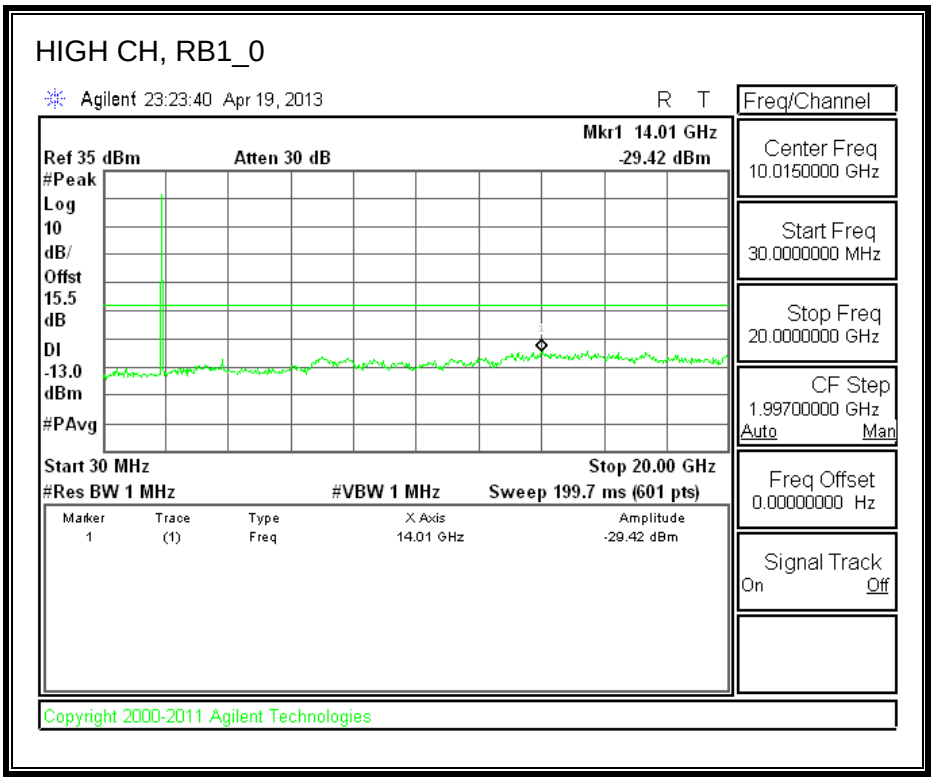
LOW CH, RB1_0



MID CH, RB1_0

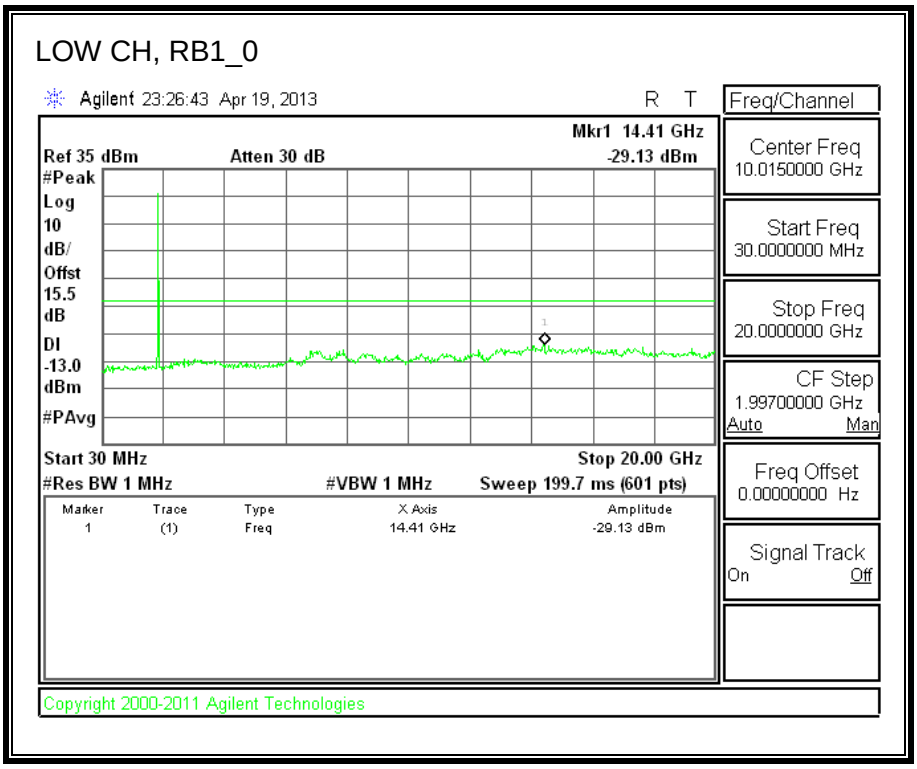


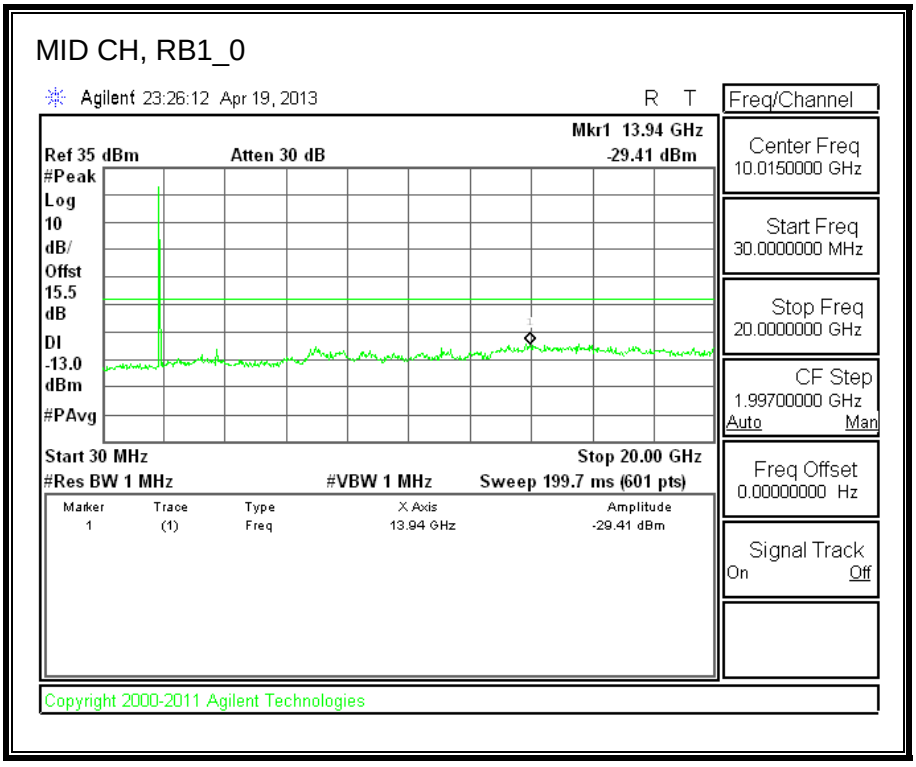
HIGH CH, RB1_0

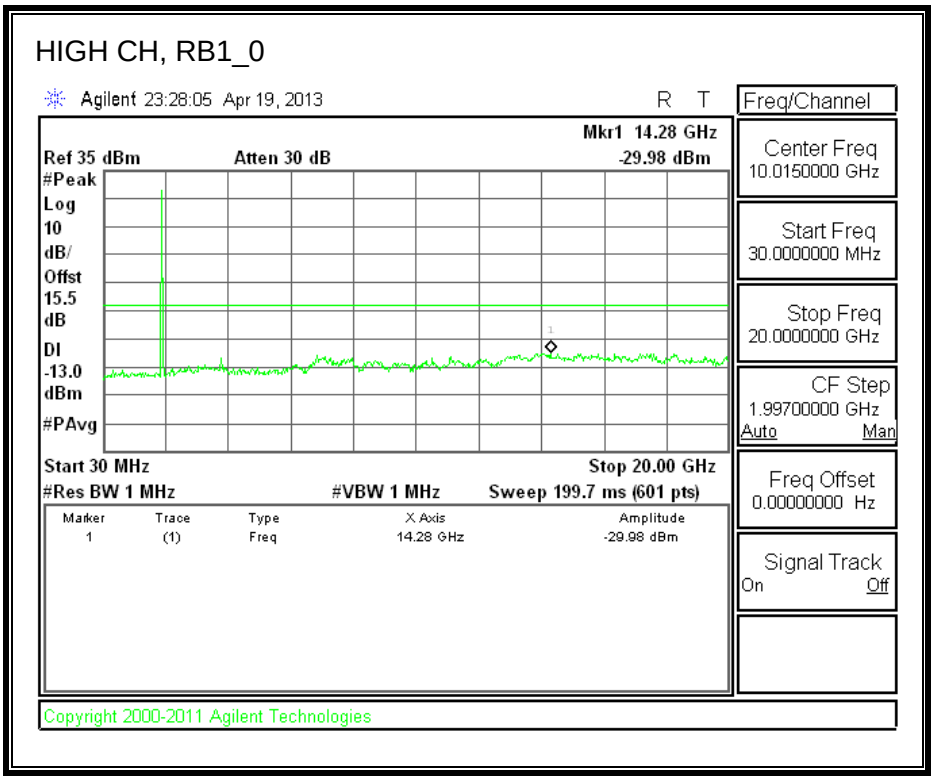


8.3.6. LTE BAND 2-10MHz BNADWIDTH

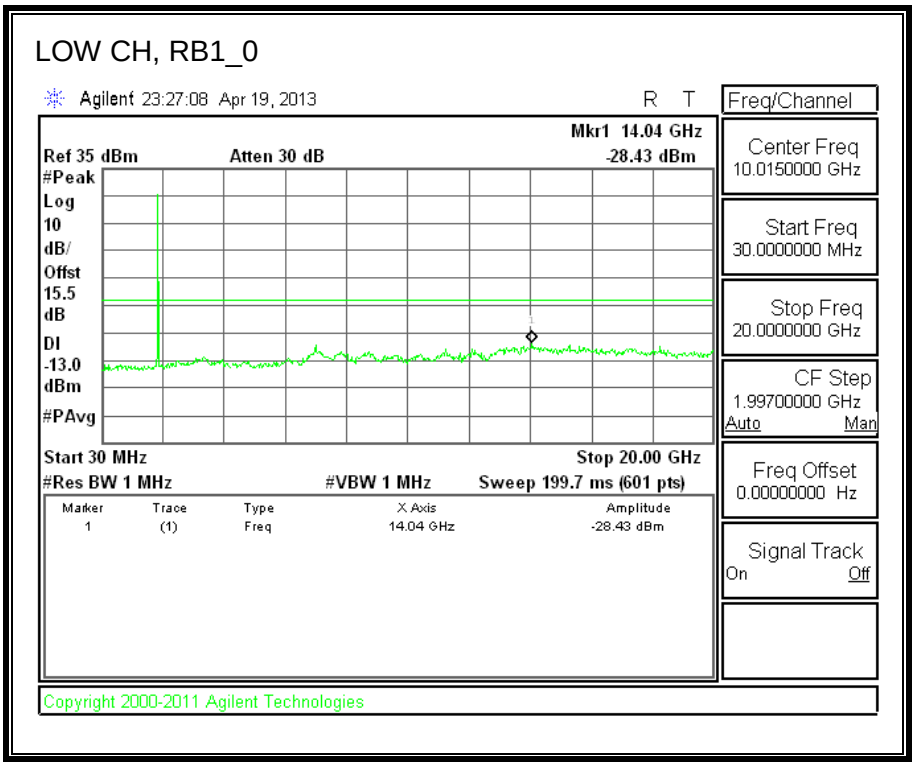
QPSK



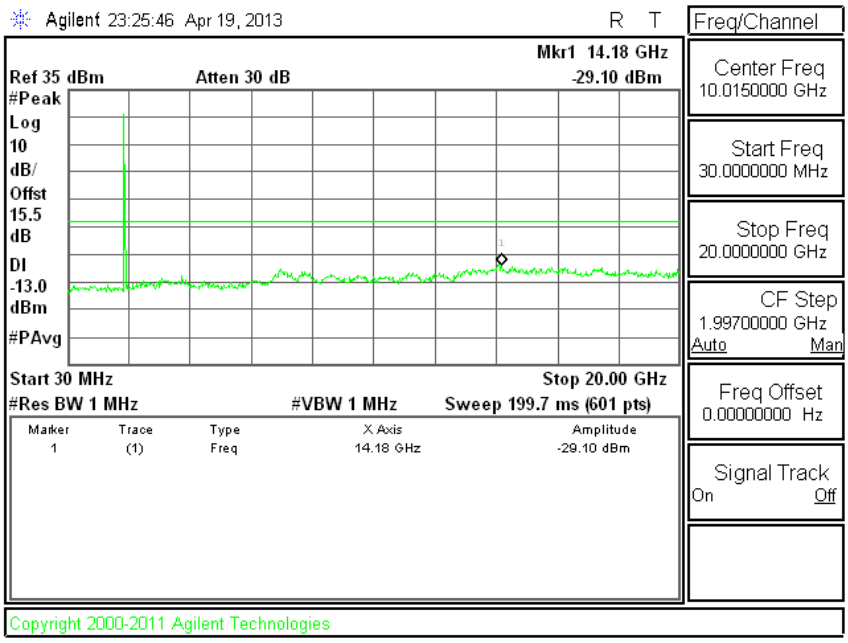




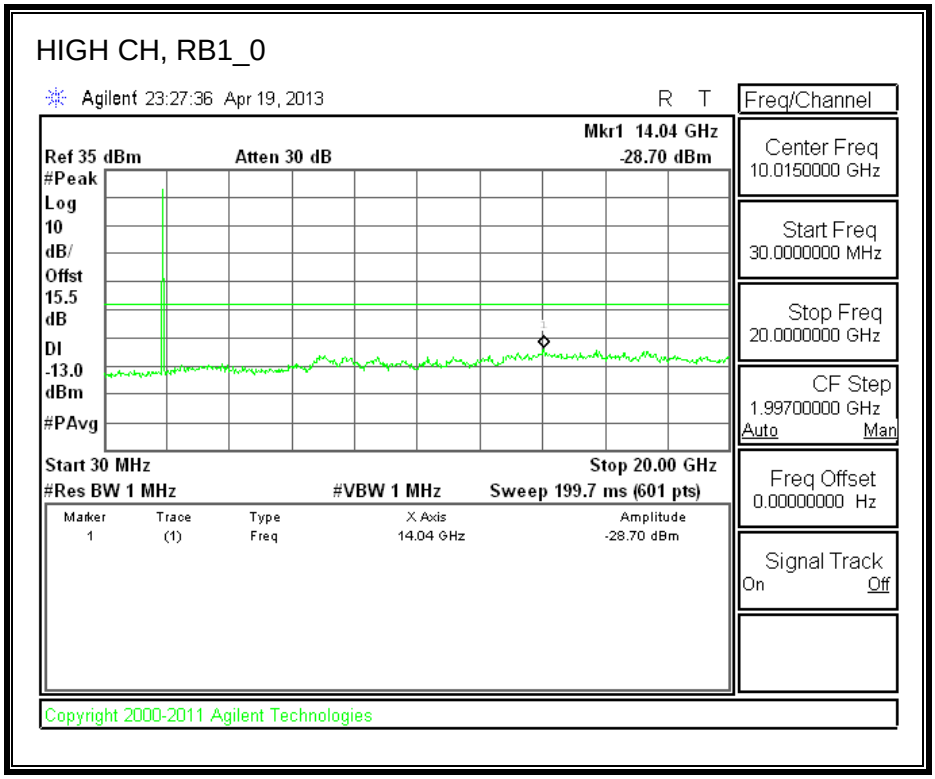
16QAM



MID CH, RB1_0

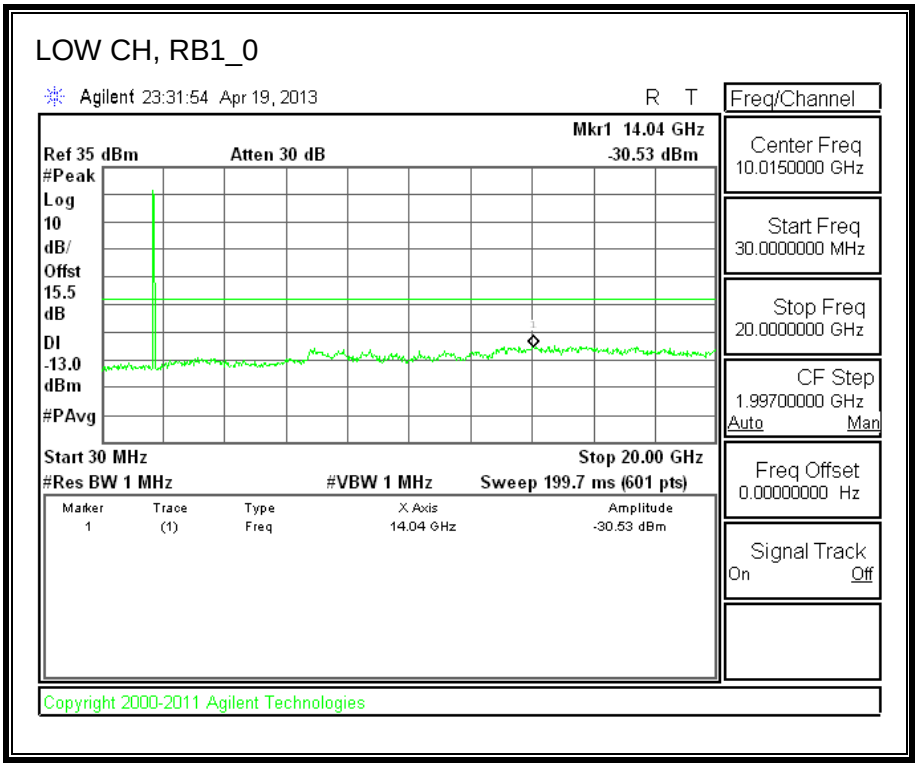


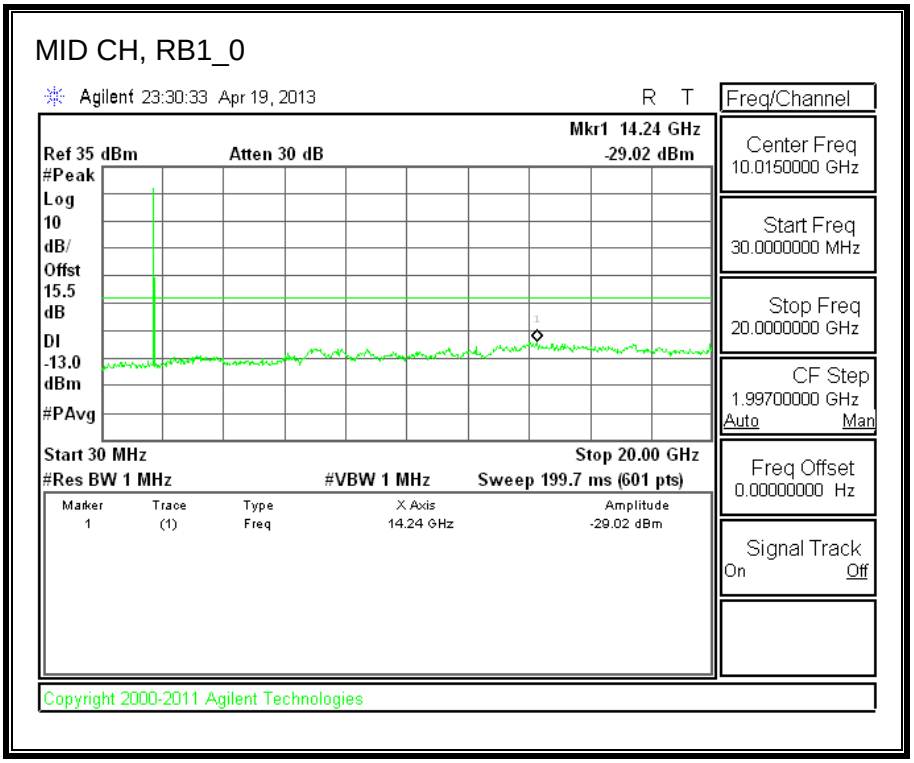
HIGH CH, RB1_0



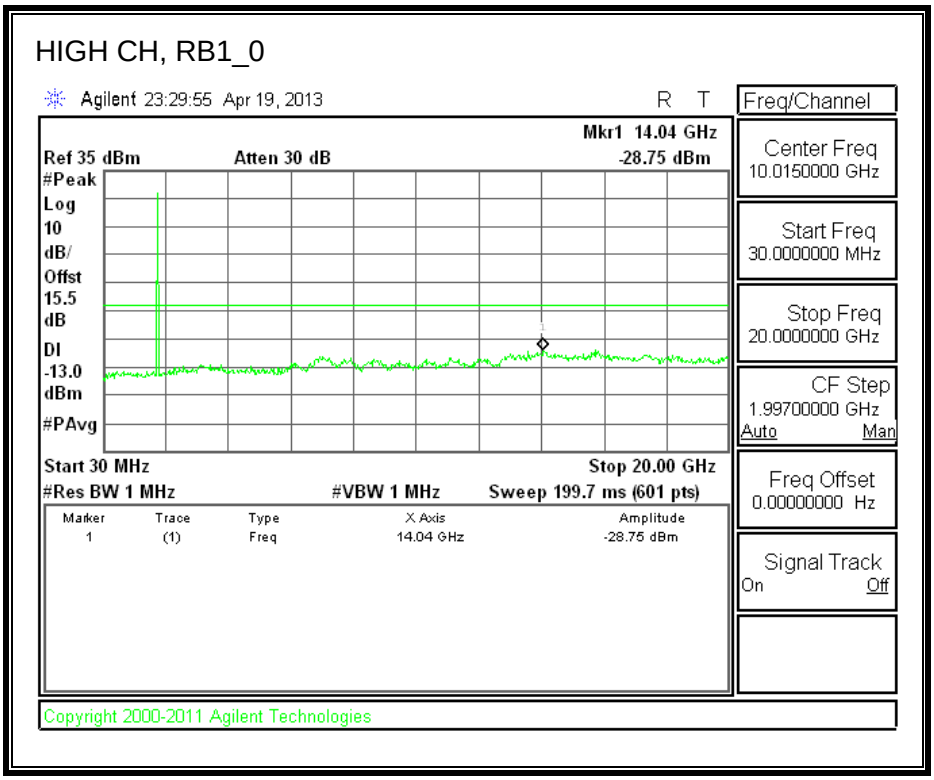
8.3.7. LTE BAND 2-5MHz BNADWIDTH

QPSK



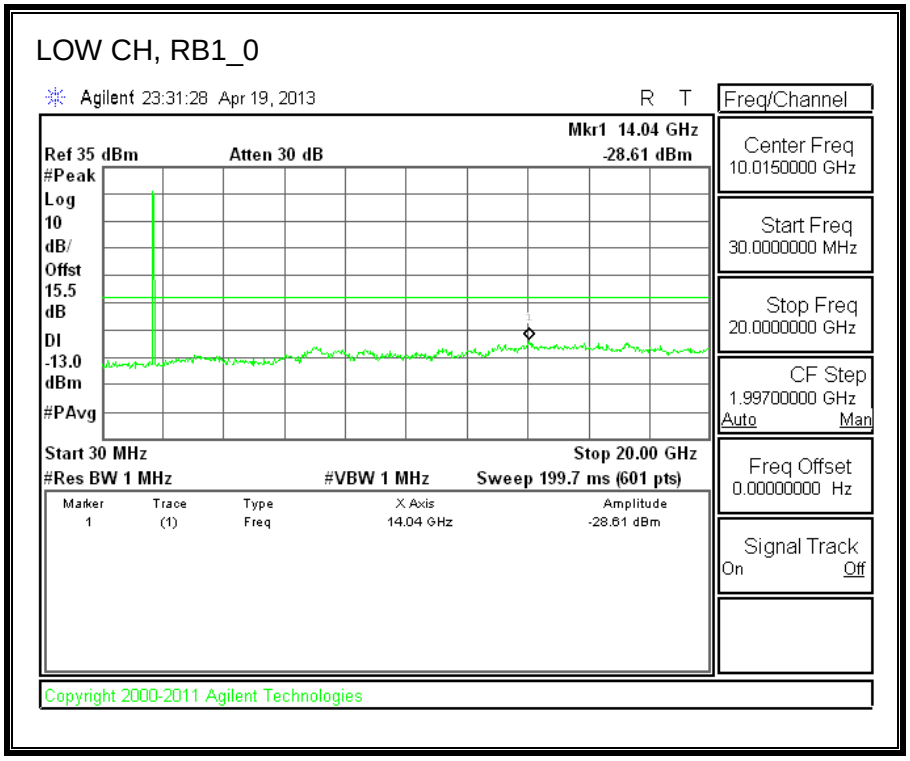


HIGH CH, RB1_0

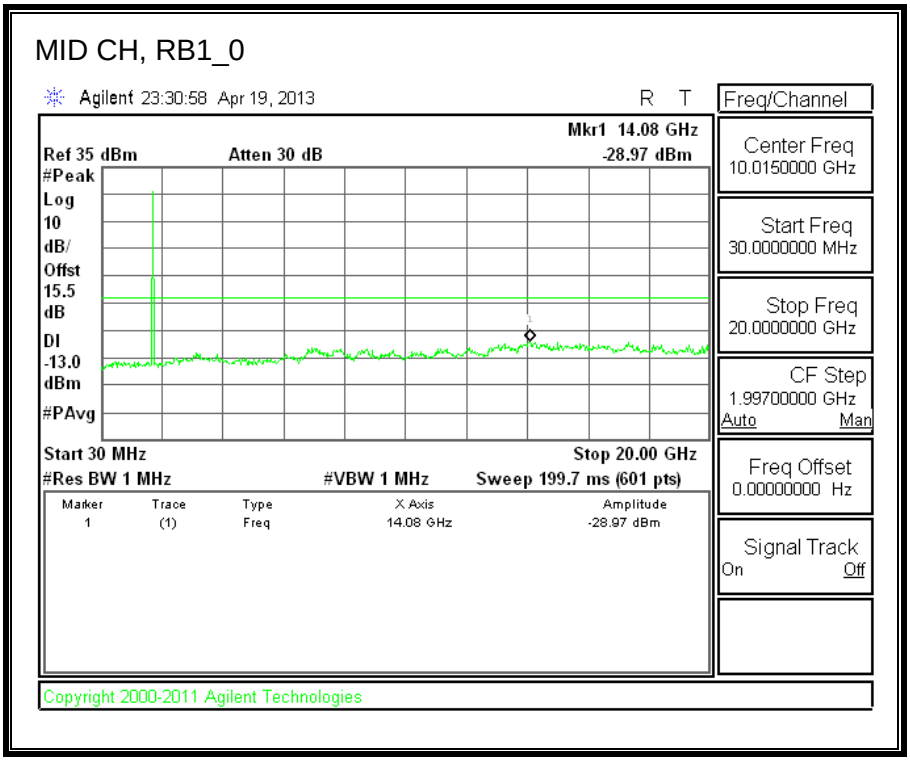


16QAM

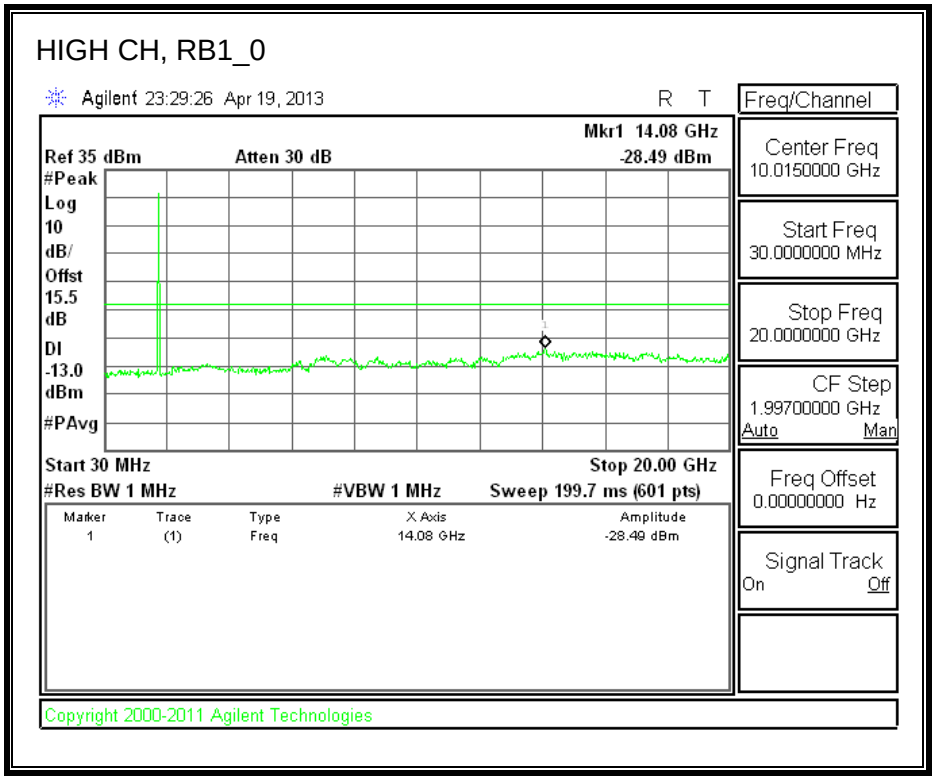
LOW CH, RB1_0



MID CH, RB1_0

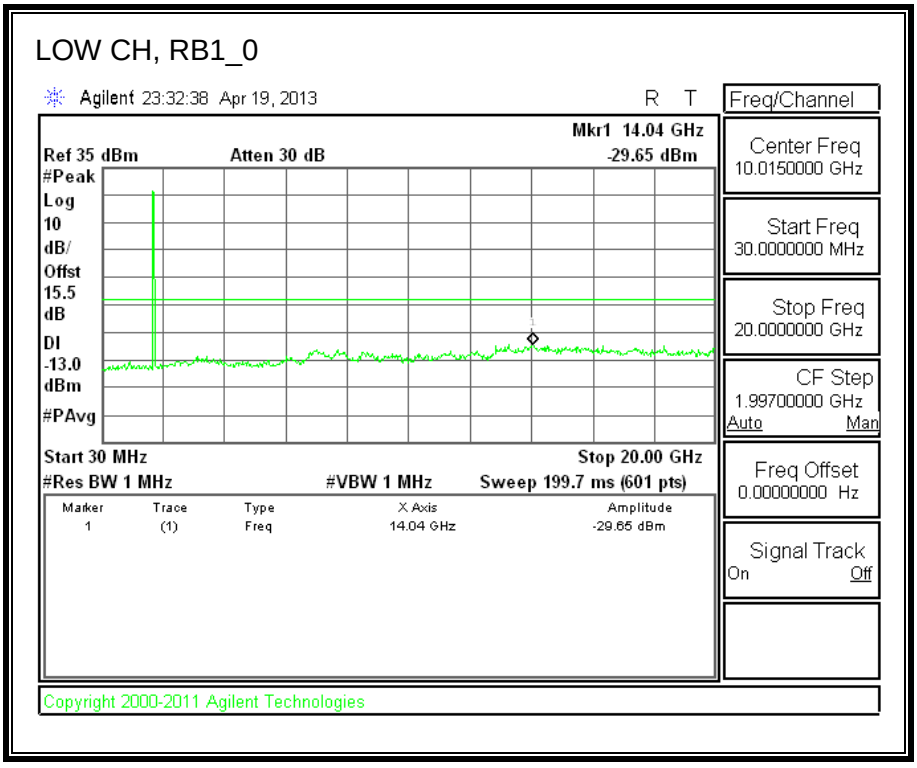


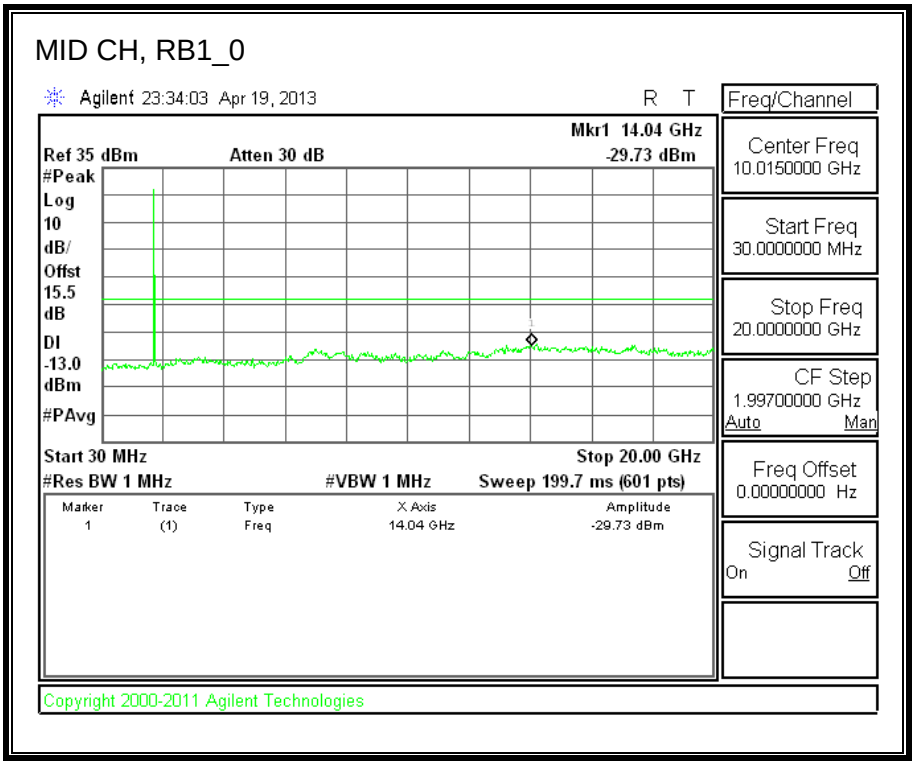
HIGH CH, RB1_0

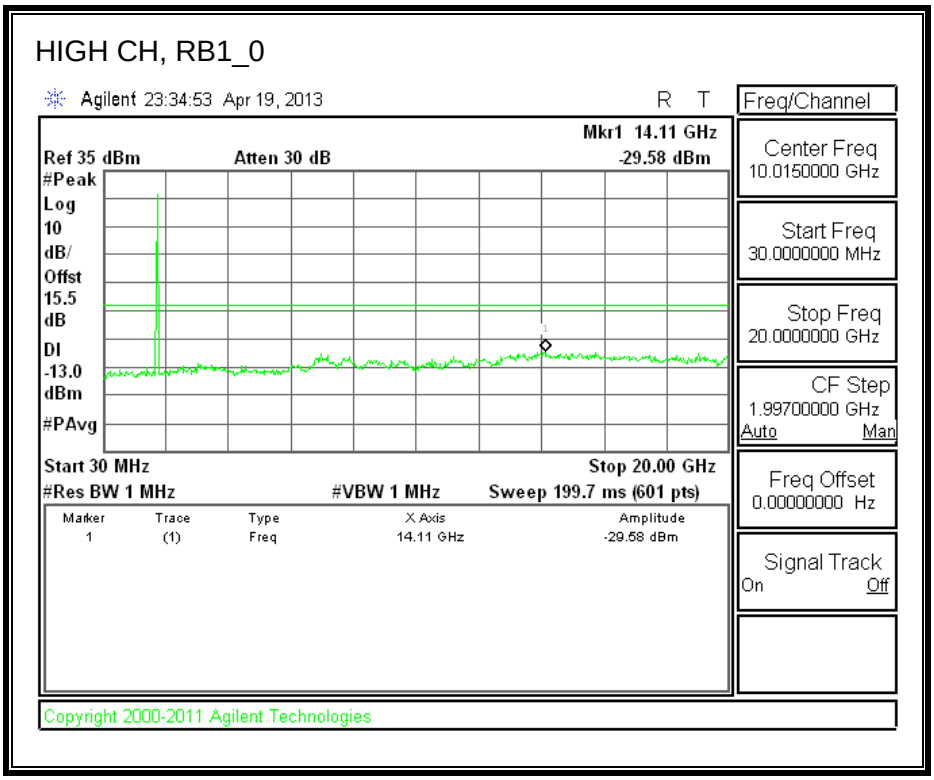


8.3.8. LTE BAND 2-10MHz BANDWIDTH

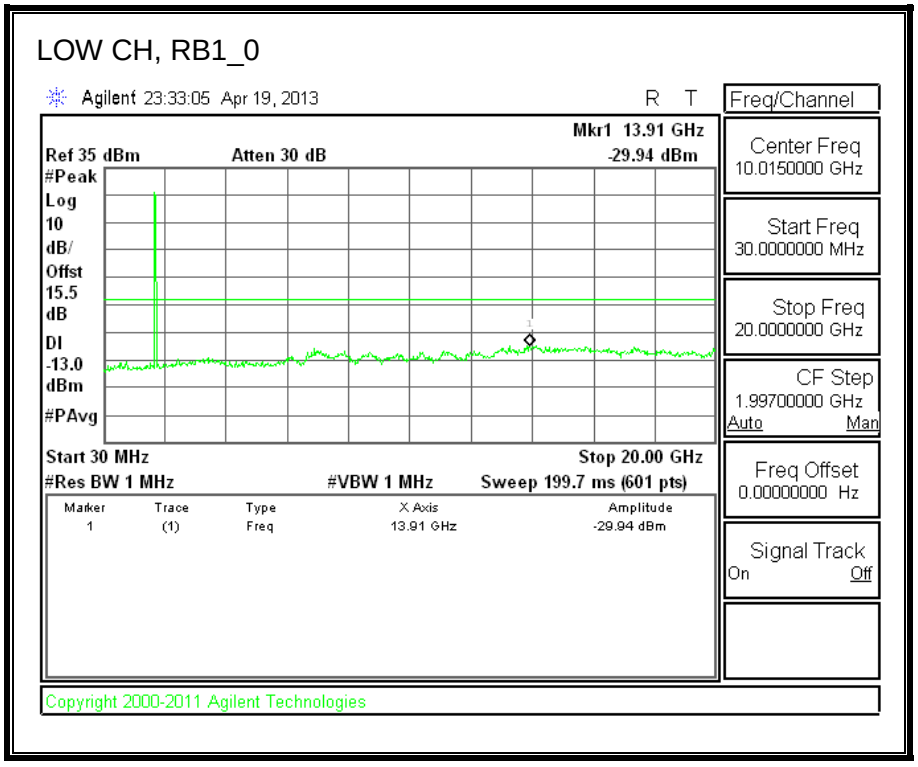
QPSK



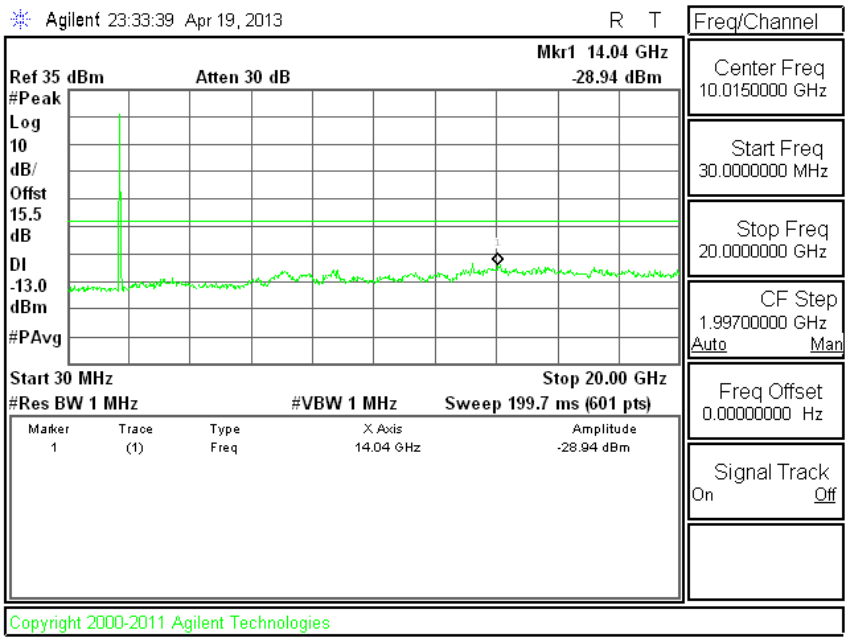




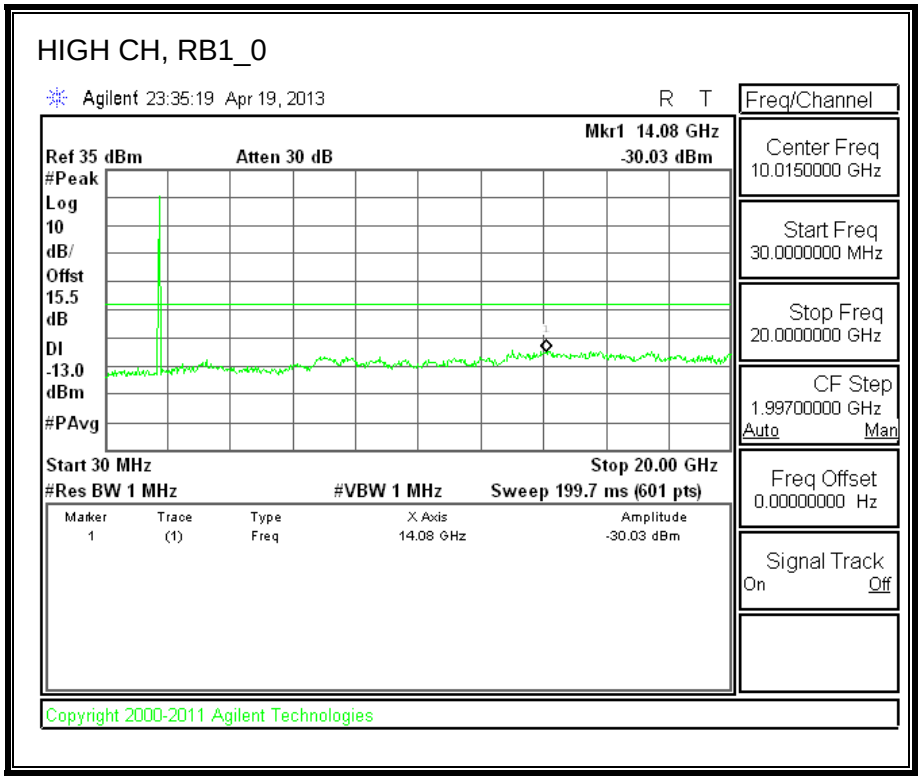
16QAM



MID CH, RB1_0

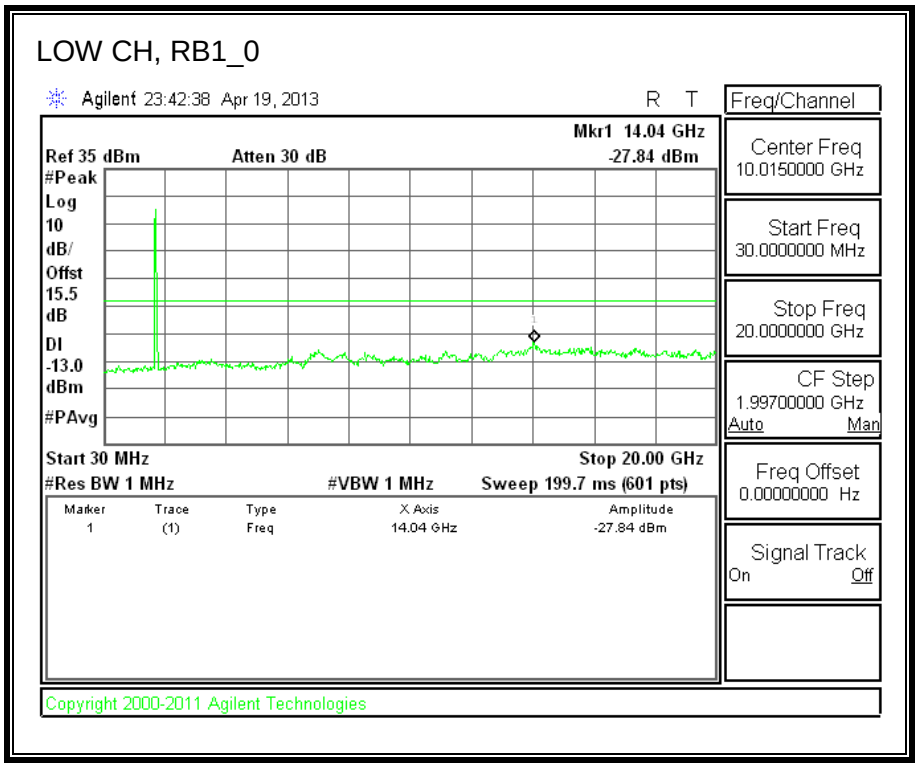


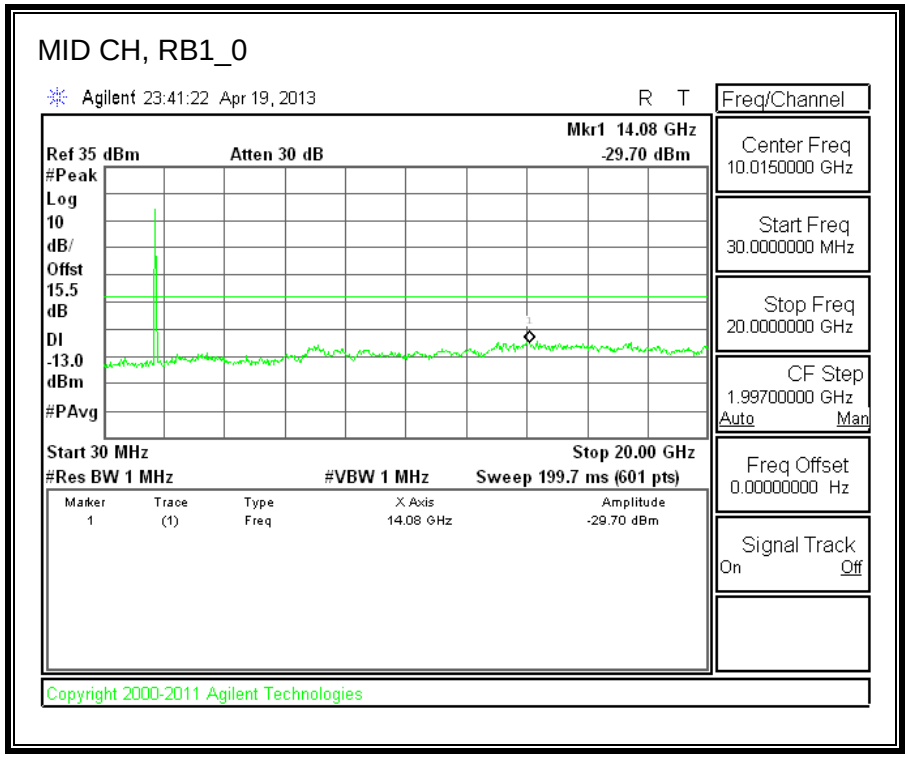
HIGH CH, RB1_0

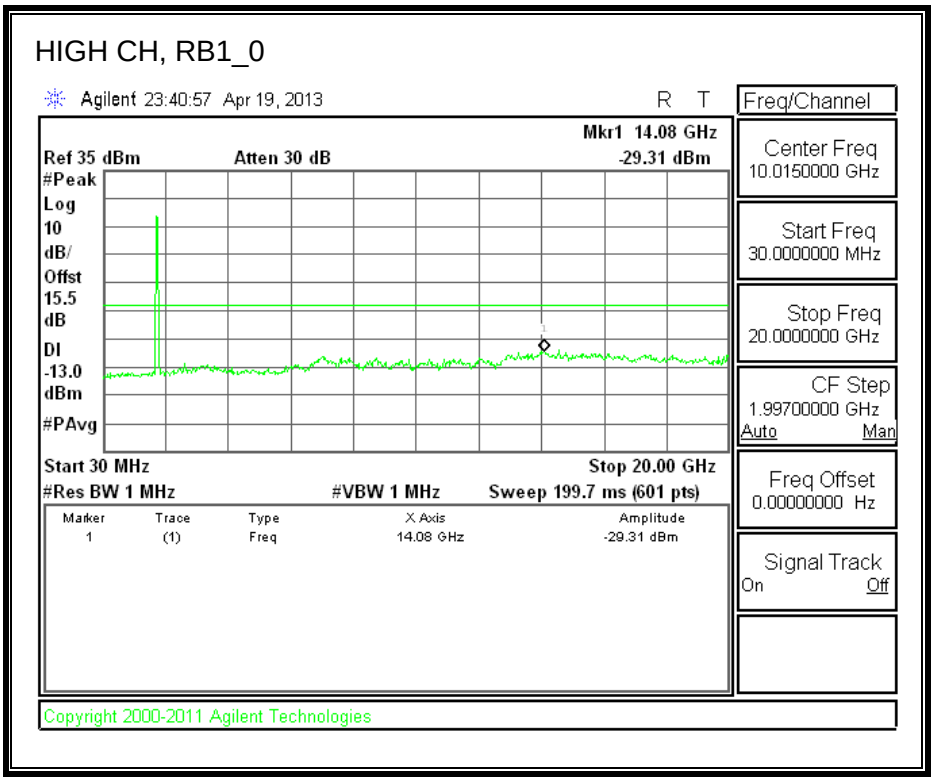


8.3.9. LTE BAND 2-15MHz BANDWIDTH

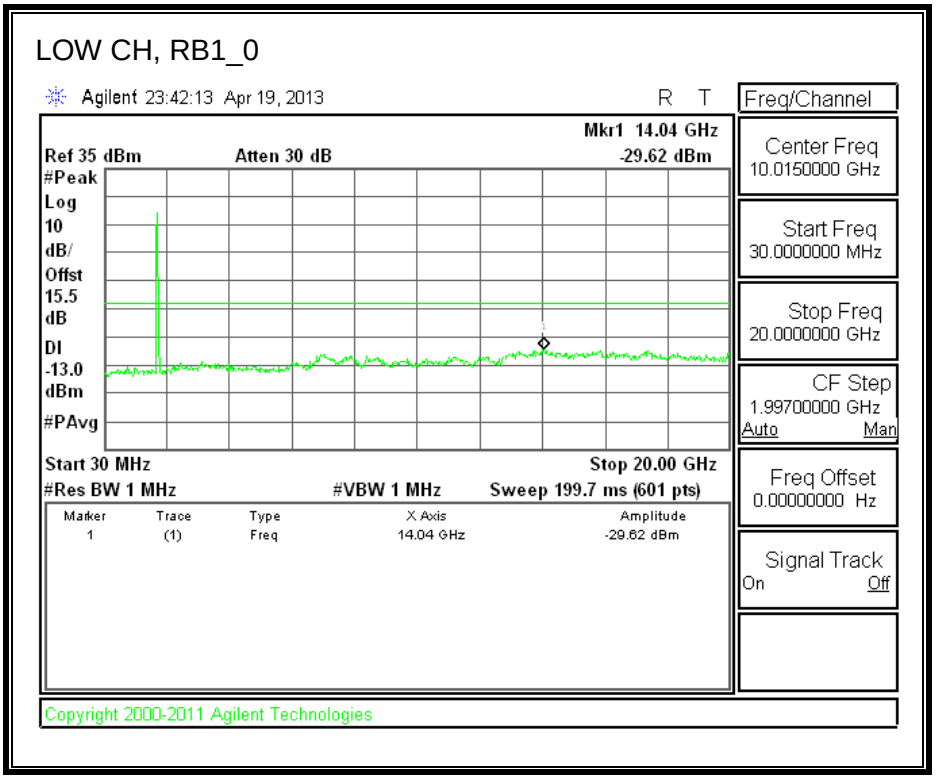
QPSK



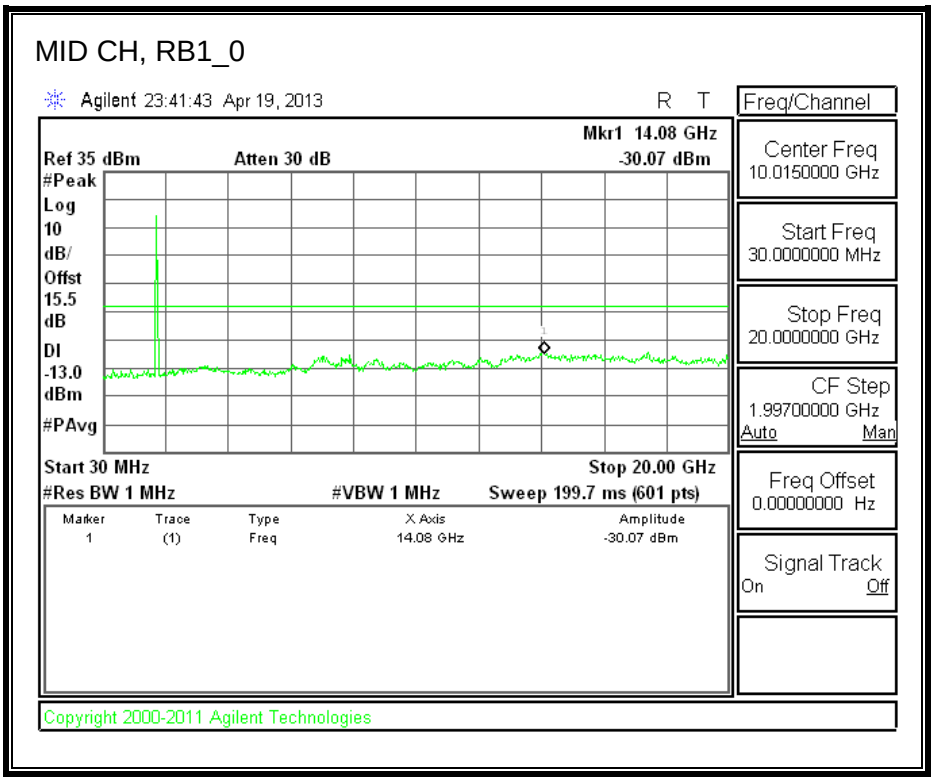




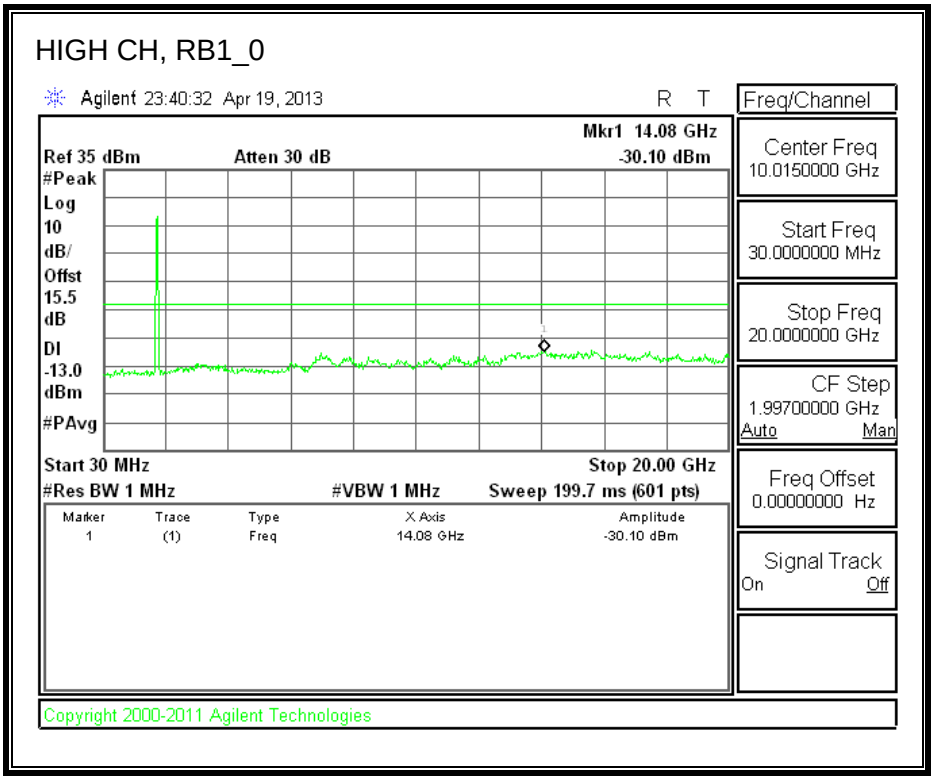
16QAM



MID CH, RB1_0

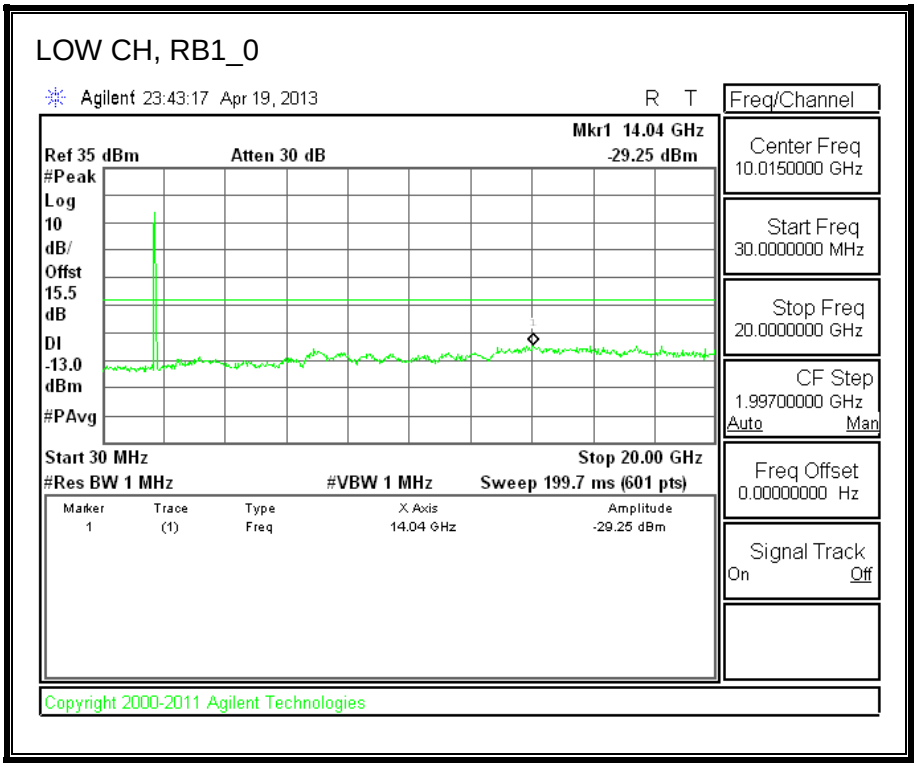


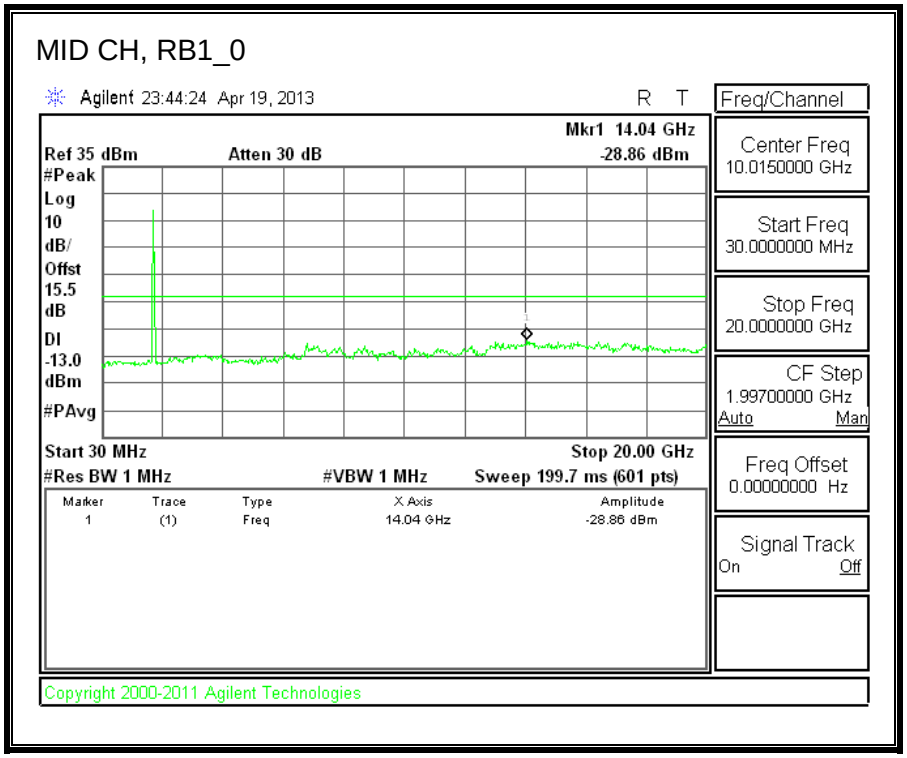
HIGH CH, RB1_0



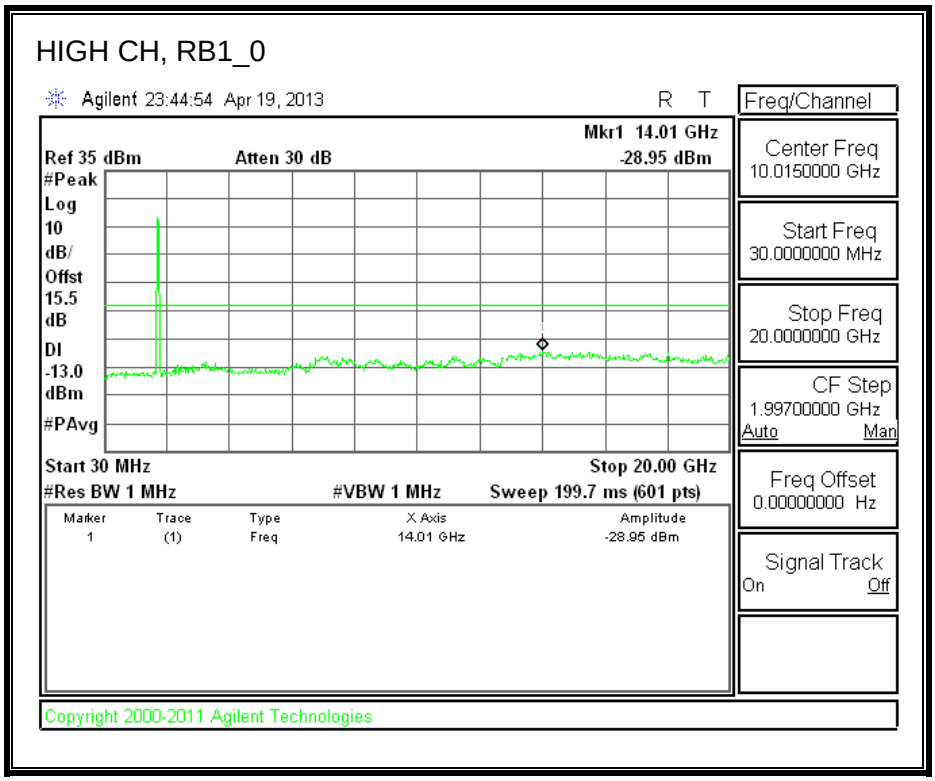
8.3.10. LTE BAND 2-20MHz BANDWIDTH

QPSK



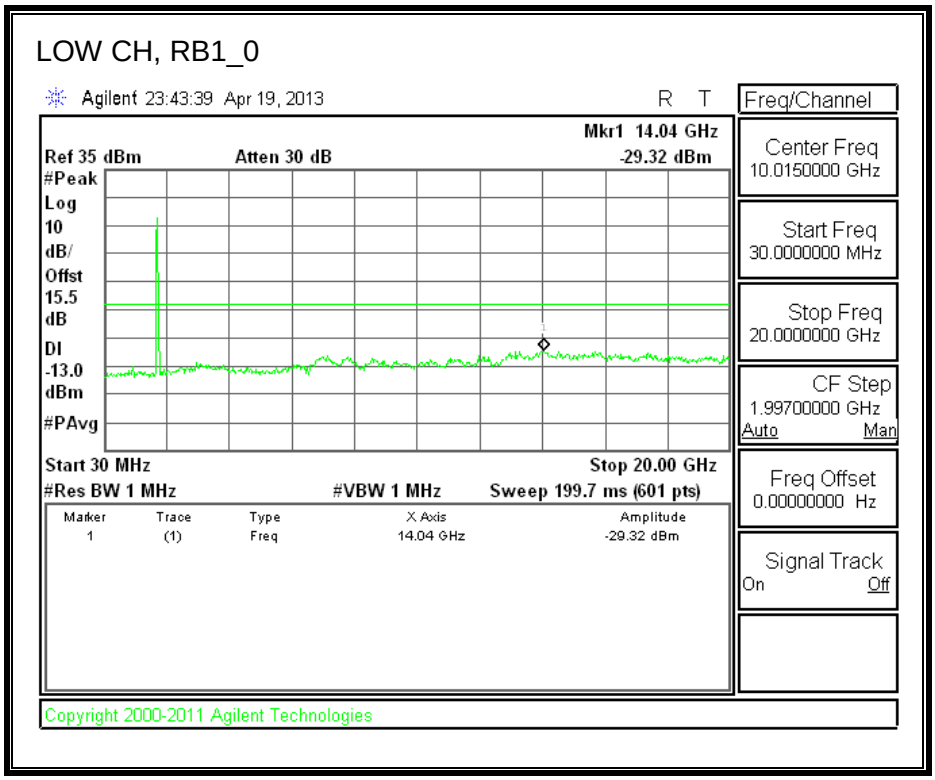


HIGH CH, RB1_0

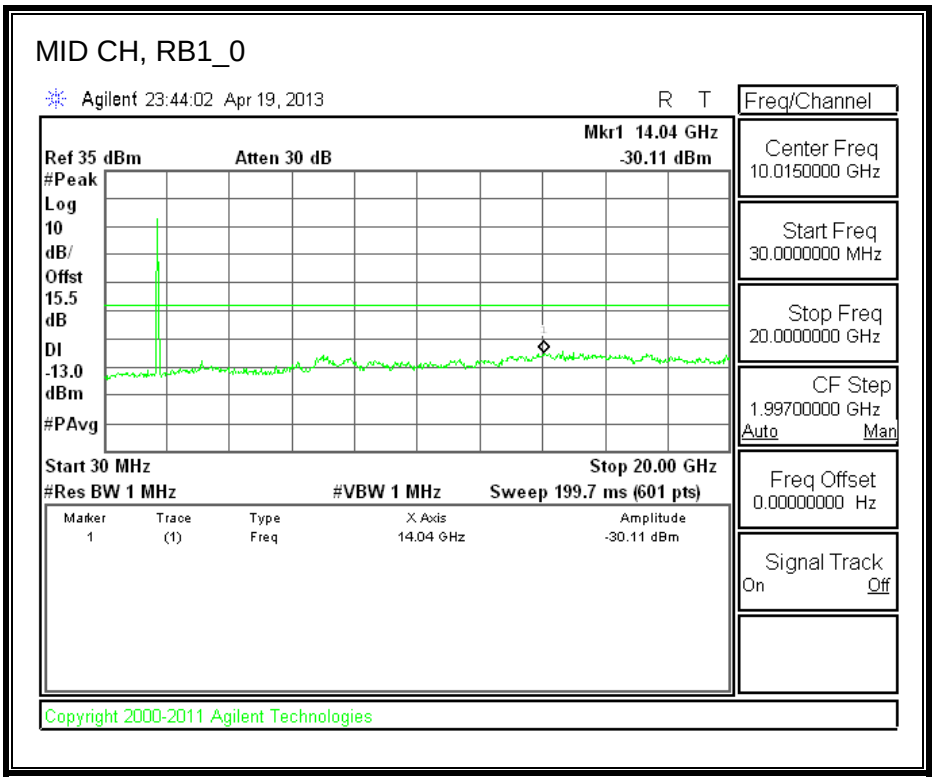


16QAM

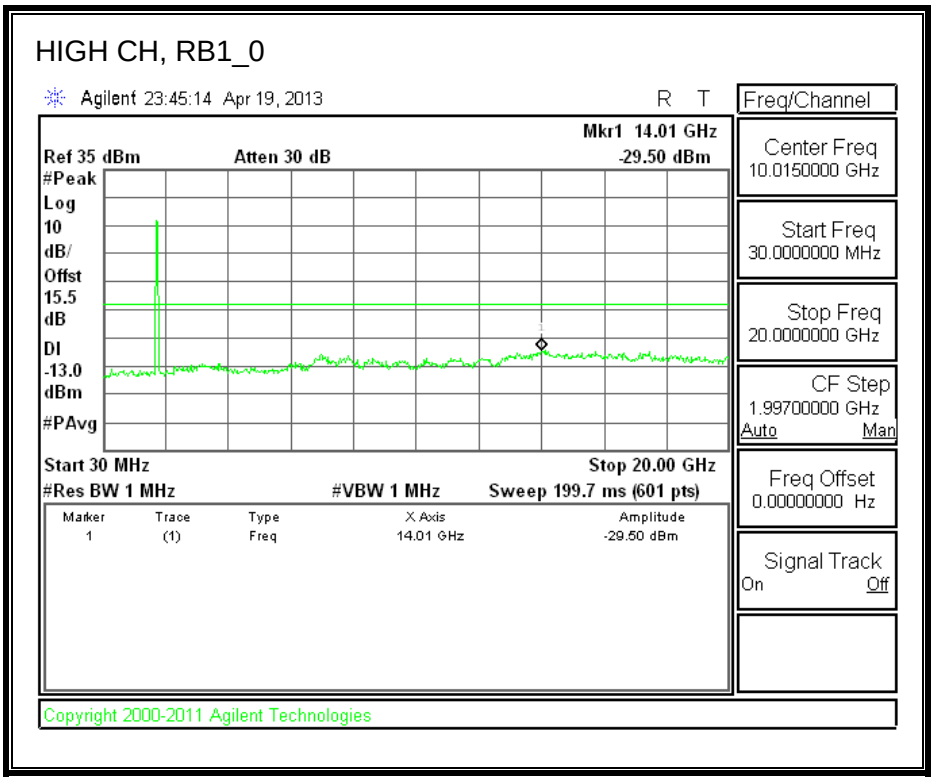
LOW CH, RB1_0



MID CH, RB1_0

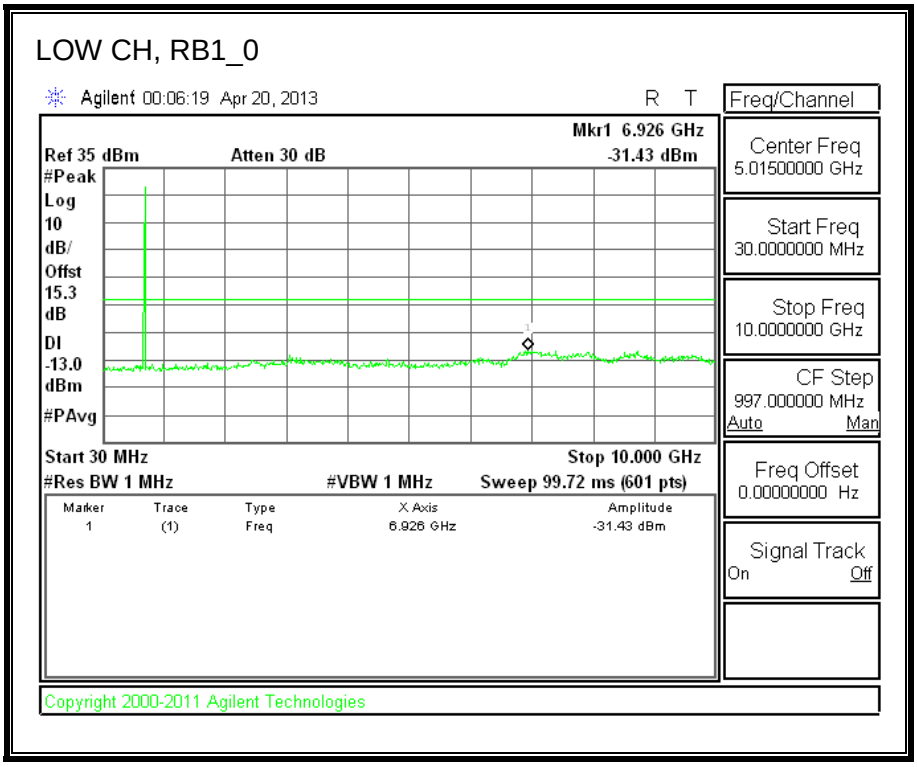


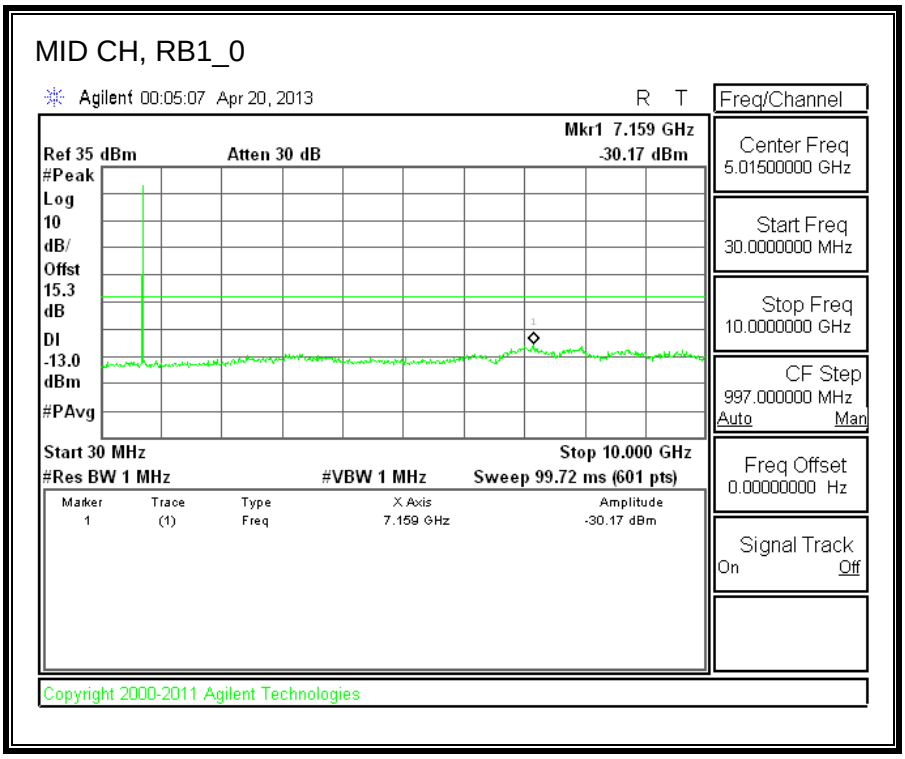
HIGH CH, RB1_0

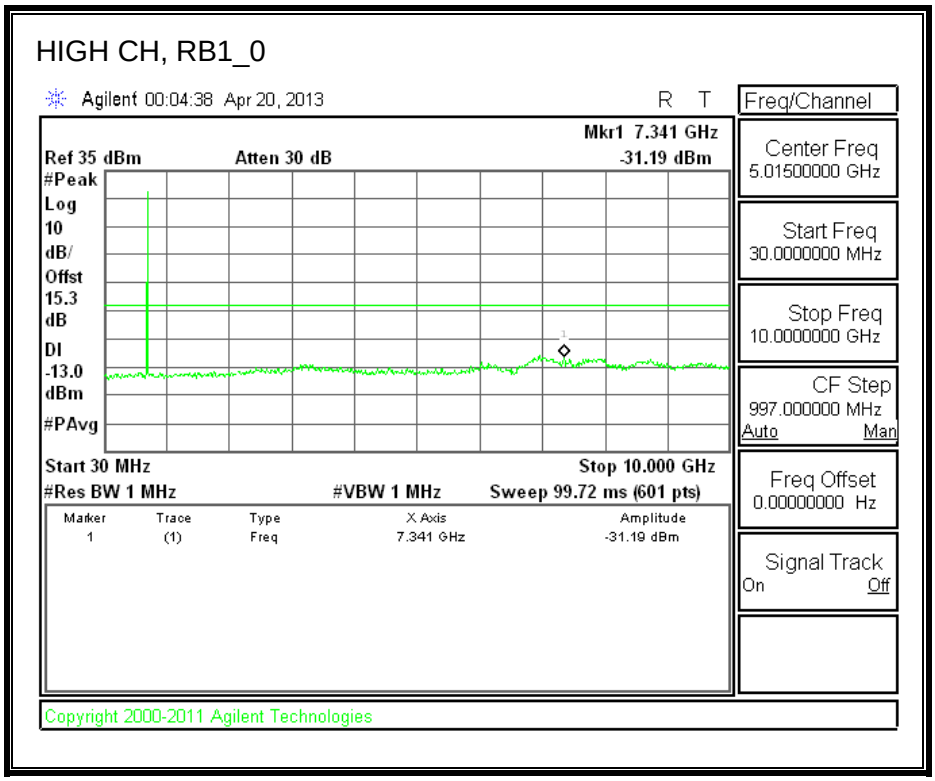


8.3.11. LTE BAND 17-5MHz BANDWIDTH

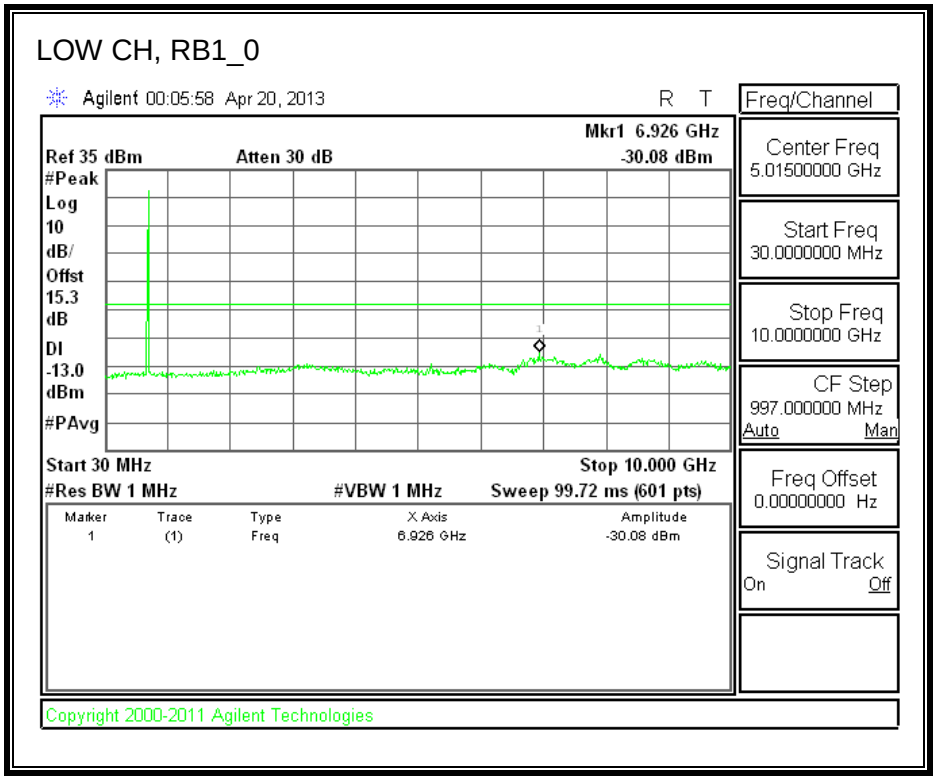
QPSK



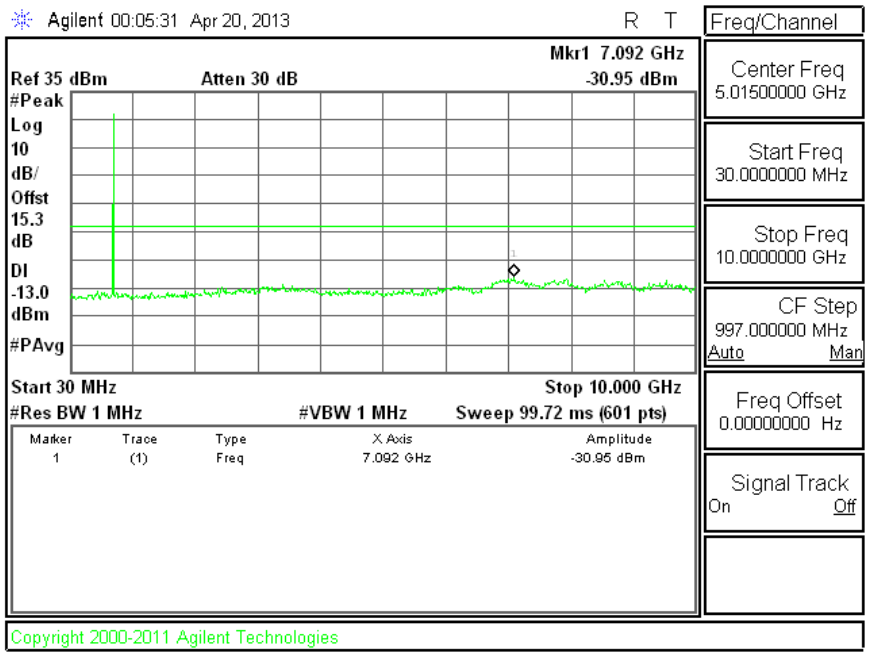




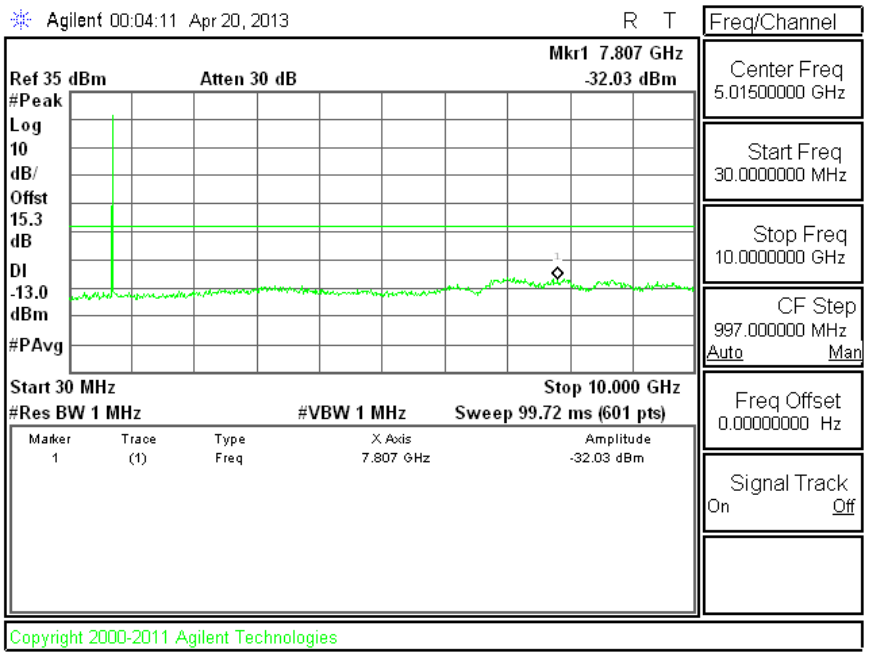
16QAM



MID CH, RB1_0



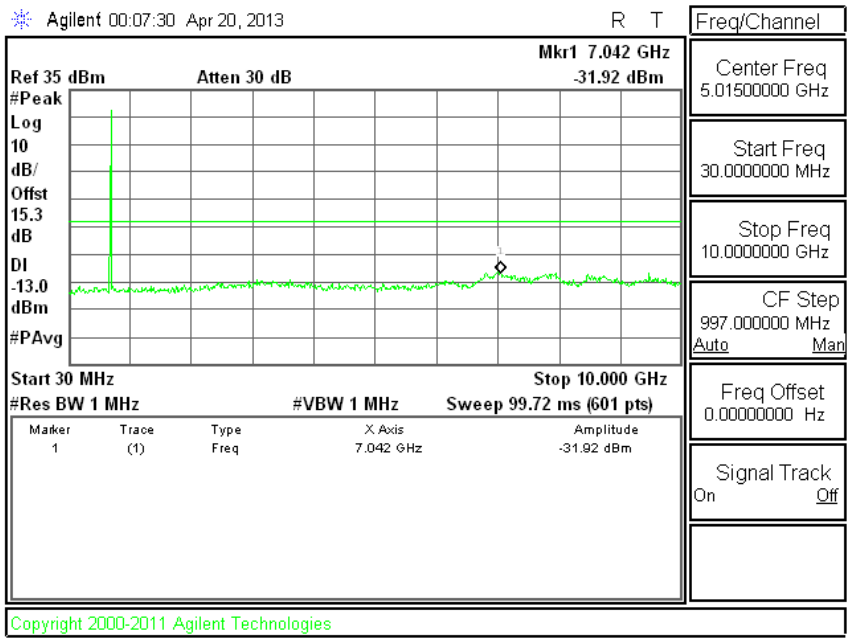
HIGH CH, RB1_0



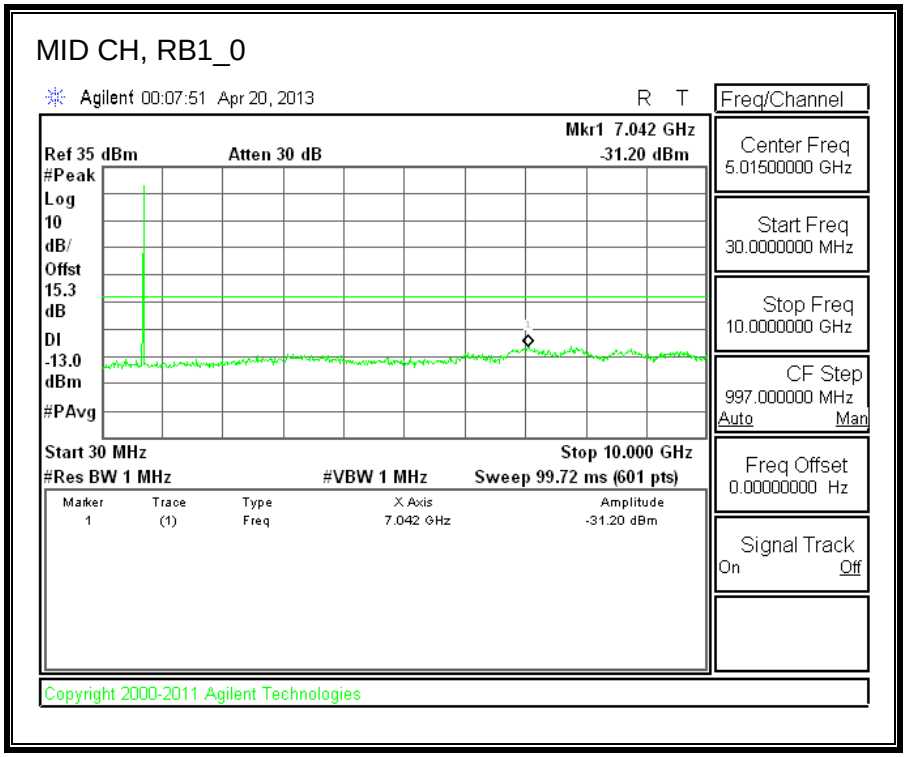
8.3.12. LTE BAND 17-10MHz BANDWIDTH

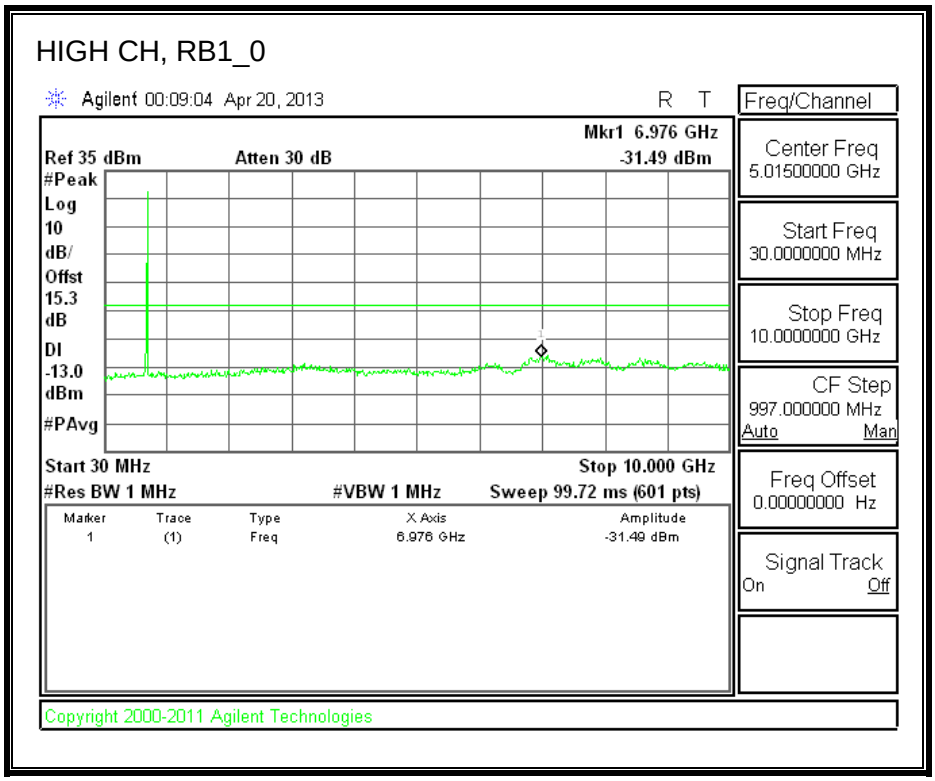
QPSK

LOW CH, RB1_0

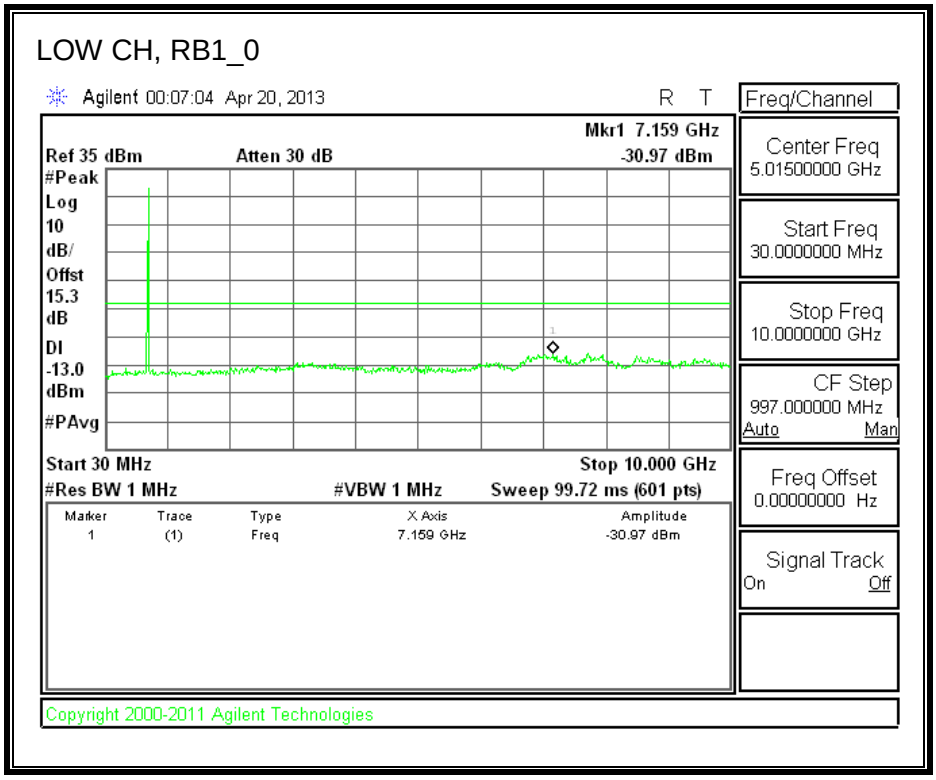


MID CH, RB1_0

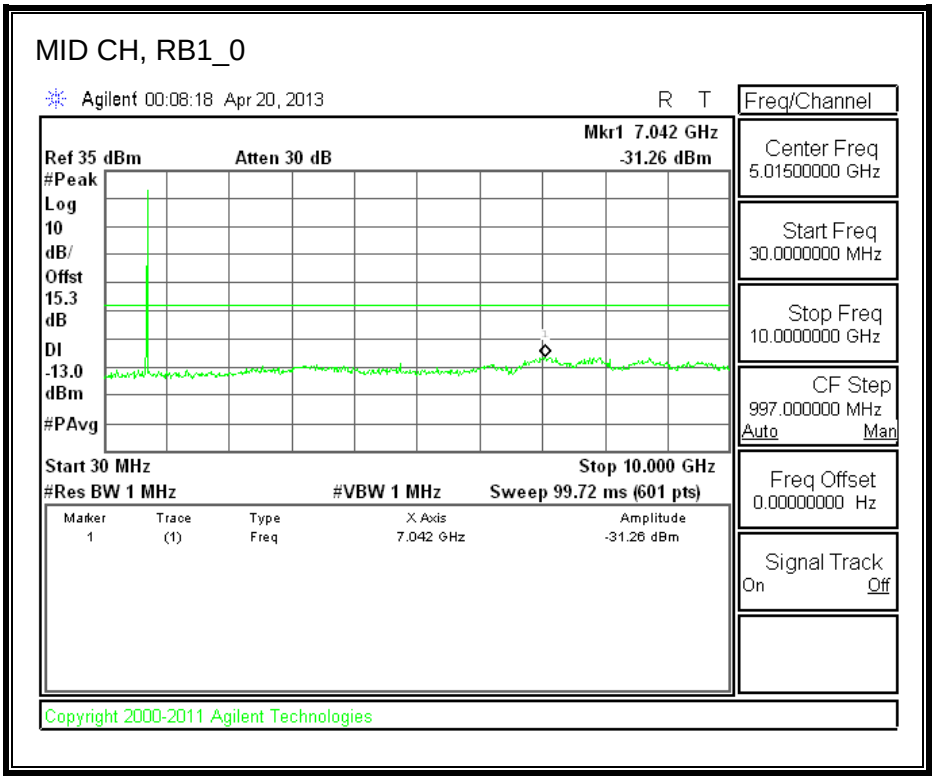




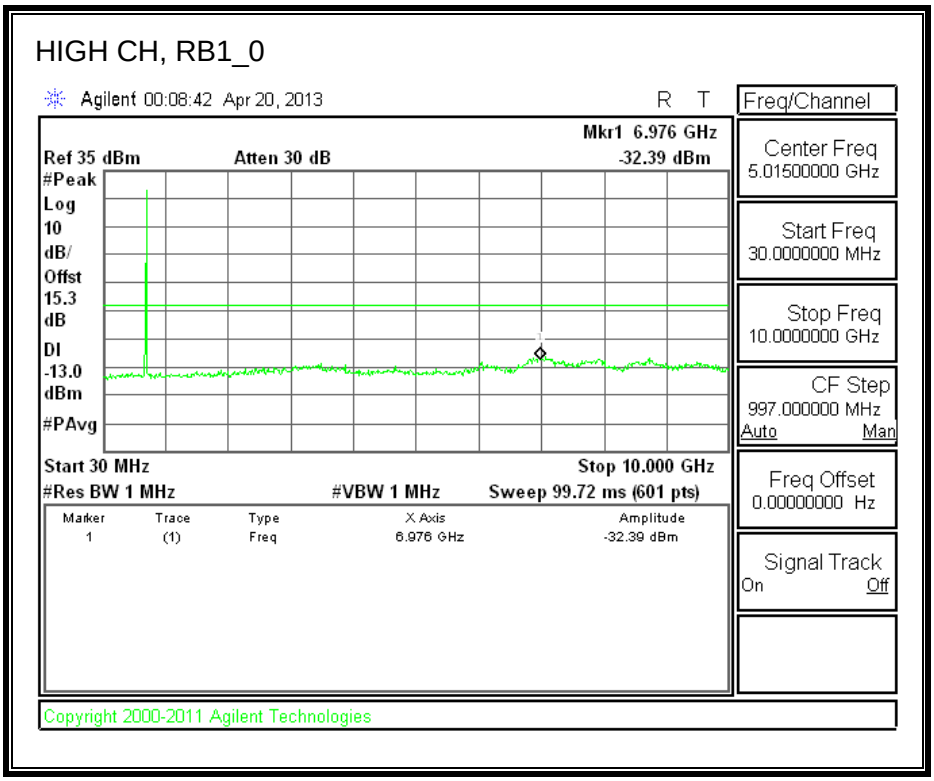
16QAM



MID CH, RB1_0



HIGH CH, RB1_0



9. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54.

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 & §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use Agilent 8960 and CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage = Normal, 3.7Vdc, Low, 3.5Vdc and High, 4.26Vdc.

Frequency Stability vs Temperature:
The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:
The peak frequency error is recorded (worst-case).

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

See the following pages.

CELL, GPRS MODULATION – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.600012MHz @ 20ºC Limit: to stay +- 2.5 ppm = 2091.500 Hz				
DC Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	836.600020	-0.010	2.5
3.70	40	836.600014	-0.002	2.5
3.70	30	836.600009	0.004	2.5
3.70	***20***	***836.600012***	***0***	2.5
3.70	10	836.600016	-0.005	2.5
3.70	0	836.600011	0.001	2.5
3.70	-10	836.600013	-0.001	2.5
3.70	-20	836.600014	-0.002	2.5
3.70	-30	836.600017	-0.006	2.5

Reference Frequency: Cellular Mid Channel 836.600012MHz @ 20ºC Limit: to stay +- 2.5 ppm = 2091.500 Hz				
DC Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	***836.600012***	***0.000***	2.5
4.20	20	836.599990	0.026	2.5
3.30	20	836.599985	0.032	2.5
End Volt (3.1)	20	836.599974	0.045	2.5

PCS, GPRS MODULATION – MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.999996	-0.003	2.5
3.70	40	1879.999997	-0.004	2.5
3.70	30	1879.999993	-0.002	2.5
3.70	***20***	1879.999990	***0***	***2.5***
3.70	10	1879.999988	0.001	2.5
3.70	0	1879.999980	0.005	2.5
3.70	-10	1879.999975	0.008	2.5
3.70	-20	1879.999976	0.007	2.5
3.70	-30	1879.999973	0.009	2.5

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	***20***	1879.999990	***0***	***2.5***
4.20	20	1879.999982	0.004	2.5
3.30	20	1879.999988	0.001	2.5
End Volt(3.1)	20	1879.999986	0.002	2.5

CELL WCDMA – MID CHANNEL

Reference Frequency: Cellular Mid Channel 835.999996MHz @ 20ºC Limit: to stay +- 2.5 ppm = 2090.000 Hz				
DC Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	835.999986	0.012	2.5
3.70	40	835.999988	0.010	2.5
3.70	30	835.999990	0.007	2.5
3.70	***20***	***835.999996***	***0***	2.5
3.70	10	835.999998	-0.002	2.5
3.70	0	835.999990	0.007	2.5
3.70	-10	835.999980	0.019	2.5
3.70	-20	835.999988	0.010	2.5
3.70	-30	835.999985	0.013	2.5

Reference Frequency: Cellular Mid Channel 835.999996MHz @ 20ºC Limit: to stay +- 2.5 ppm = 2090.000 Hz				
DC Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	835.999996	***0.000***	2.5
4.20	20	835.999990	0.007	2.5
3.30	20	835.999988	0.010	2.5
End Volt (3.1)	20	835.999977	0.023	2.5

PCS, WCDMA – MIDCHANNEL

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.999980	0.005	2.5
3.70	40	1879.999985	0.003	2.5
3.70	30	1879.999989	0.001	2.5
3.70	***20***	1879.999990	***0***	***2.5***
3.70	10	1879.999992	-0.001	2.5
3.70	0	1879.999989	0.001	2.5
3.70	-10	1879.999988	0.001	2.5
3.70	-20	1879.999980	0.005	2.5
3.70	-30	1879.999978	0.006	2.5

Reference Frequency: PCS Mid Channel 1879.999990MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	1879.999990	***0***	***2.5***
4.20	20	1879.999989	0.001	2.5
3.30	20	1879.999980	0.005	2.5
End Volt(3.1)	20	1879.999975	0.008	2.5

AWS WCDMA – MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.600007MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1732.600012	-0.003	2.5
3.70	40	1732.600009	-0.001	2.5
3.70	30	1732.600007	0.000	2.5
3.70	***20***	***1732.600007***	***0***	***2.5***
3.70	10	1732.600008	-0.001	2.5
3.70	0	1732.600009	-0.001	2.5
3.70	-10	1732.600011	-0.002	2.5
3.70	-20	1732.600012	-0.003	2.5
3.70	-30	1732.600010	-0.002	2.5

Reference Frequency: PCS Mid Channel 1732.600007MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	***20***	***1732.600007***	***0***	***2.5***
4.26	20	1732.600004	*0.002*	2.5
3.30	20	1732.600002	*0.003*	
End Volt (3.1)	20	1732.599990	*0.010*	2.5

LTE BAND 2 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999987MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999972	0.008	2.5
3.80	40	1879.999984	0.002	2.5
3.80	30	1879.999975	0.006	2.5
3.80	***20***	***1879.999987***	***0***	***2.5***
3.80	10	1879.999986	0.001	2.5
3.80	0	1879.999976	0.006	2.5
3.80	-10	1879.999976	0.006	2.5
3.80	-20	1879.999985	0.001	2.5
3.80	-30	1879.999974	0.007	2.5

Reference Frequency: PCS Mid Channel 1879.999987MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz				
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse		
(Vdc)	Temperature (ºC)	(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1879.999987***	***0***	***2.5***
4.37	20	1879.999976	0.006	2.5
3.23	20	1879.999976	0.006	2.5

LTE BAND 4 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.599985MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500012	57.701	2.5
3.80	40	1732.500011	57.702	2.5
3.80	30	1732.500014	57.700	2.5
3.80	***20***	***1732.599985***	***0***	***2.5***
3.80	10	1732.500010	57.702	2.5
3.80	0	1732.500011	57.702	2.5
3.80	-10	1732.500013	57.701	2.5
3.80	-20	1732.500011	57.702	2.5
3.80	-30	1732.500012	57.701	2.5

Reference Frequency: PCS Mid Channel 1732.599985MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1732.599985***	***0***	***2.5***
4.37	20	1732.499990	*57.714*	2.5
3.23	20	1732.499989	*57.714*	2.5

LTE BAND 17 – MID CHANNEL

Reference Frequency: Cellular Mid Channel 710.000014MHz @ 20ºC Limit: to stay +- 2.5 ppm = 1775.000 Hz				
DC Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	709.999991	0.033	2.5
3.80	40	709.999992	0.031	2.5
3.80	30	710.000008	0.009	2.5
3.80	***20***	***710.000014***	***0***	2.5
3.80	10	709.999991	0.032	2.5
3.80	0	709.999992	0.031	2.5
3.80	-10	710.000007	0.010	2.5
3.80	-20	709.999992	0.031	2.5
3.80	-30	710.000009	0.007	2.5

Reference Frequency: Cellular Mid Channel 710.000014MHz @ 20ºC Limit: to stay +- 2.5 ppm = 1775.000 Hz				
DC Power Supply (Vdc)	Environment Temperature (ºC)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***710.000014***	***0.000***	2.5
4.37	20	709.999991	0.032	2.5
3.23	20	709.999993	0.030	2.5

10. RADIATED TEST RESULTS

10.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, §27.50(d) (2)

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50 (c)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

Mode	Channel	f (MHz)	ERP	
			dBm	mW
GPRS	128	824.20	27.01	502.34
	190	836.60	28.10	645.65
	251	848.80	**28.82**	762.08
EGPRS	128	824.20	24.60	288.40
	190	836.60	24.81	302.69
	251	848.80	**25.44**	349.95

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
GPRS	512	1850.20	28.75	749.89
	661	1880.00	**29.35**	860.99
	810	1909.80	28.11	647.14
EGPRS	512	1850.20	26.63	460.26
	661	1880.00	**27.06**	508.16
	810	1909.80	25.73	374.11

Mode	Channel	f (MHz)	ERP	
			dBm	mW
UMTS850, REL 99	4357	826.40	21.64	145.88
	4405	836.00	20.38	109.14
	4455	846.00	**22.53**	179.06
UMTS850, HSDPA	4357	826.40	22.02	159.22
	4405	836.00	21.42	138.68
	4455	846.00	**23.72**	235.50

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
UMTS1900, REL 99	9662	1852.40	**25.87**	386.37
	9800	1880.00	25.81	381.07
	9938	1907.60	24.55	285.10
UMTS1900, HSDPA	9662	1852.40	**26.72**	469.89
	9800	1880.00	26.46	442.59
	9938	1907.60	25.50	354.81

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
UMTS1700, REL 99	1312	1712.40	**26.55**	451.86
	1413	1732.60	26.39	435.51
	1513	1752.60	24.63	290.40
UMTS1700, HSDPA	1312	1712.40	**27.36**	544.50
	1413	1732.60	27.20	524.81
	1513	1752.60	25.44	349.95

EIRP LTE BAND 2

Mode	RB/RB SIZE	f (MHz)	EIRP	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	1852.50	**28.07**	641.21
		1880.00	26.51	447.71
		1907.50	27.85	609.54
5.0 MHZ BAND 16QAM		1852.50	**27.17**	521.19
		1880.00	25.71	372.39
		1907.50	26.95	495.45
10.0 MHZ BAND QPSK	50/0	1855.00	**29.07**	807.24
		1880.00	27.91	618.02
		1905.00	28.25	668.34
10.0 MHZ BAND 16QAM		1855.00	**28.67**	736.21
		1880.00	27.31	538.27
		1905.00	27.45	555.90

EIRP LTE BAND 4

Mode	RB/RB SIZE	f (MHz)	EIRP	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	1712.50	26.77	475.34
		1732.50	**27.61**	576.77
		1752.50	26.15	412.10
5.0 MHZ BAND 16QAM		1712.50	26.47	443.61
		1732.50	**26.91**	490.91
		1752.50	25.65	367.28
10.0 MHZ BAND QPSK	50/0	1715.00	27.57	571.48
		1732.50	**28.01**	632.41
		1750.00	27.55	568.85
10.0 MHZ BAND 16QAM		1715.00	26.87	486.41
		1732.50	**27.01**	502.34
		1750.00	26.45	441.57
15.0 MHZ BAND QPSK	75/0	1717.50	27.97	626.61
		1732.50	28.61	726.11
		1747.50	**28.65**	732.82
15.0 MHZ BAND 16QAM		1717.50	26.97	497.74
		1732.50	27.81	603.95
		1747.50	**27.85**	609.54
20.0 MHZ BAND QPSK	100/0	1720.00	27.47	558.47
		1732.50	**27.61**	576.77
		1745.00	27.25	530.88
20.0 MHZ BAND 16QAM		1720.00	26.47	443.61
		1732.50	**27.11**	514.04
		1745.00	26.85	484.17

ERP LTE BAND 17

Mode	RB/RB SIZE	f (MHz)	EIRP	
			dBm	mW
5.0 MHZ BAND QPSK	25/0	706.50	18.78	75.51
		710.00	20.26	106.17
		713.50	**20.36**	108.64
5.0 MHZ BAND 16QAM		706.50	16.61	45.81
		710.00	18.99	79.25
		713.50	**19.07**	80.72
10.0 MHZ BAND QPSK	50/0	709.00	19.86	96.83
		710.00	20.14	103.28
		711.00	**21.02**	126.47
10.0 MHZ BAND 16QAM		709.00	18.75	74.99
		710.00	19.23	83.75
		711.00	**20.10**	102.33

10.1.1. GSM-GPRS

CELL BAND (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: Tx, GPRS Mode Cell Band

Test Equipment:
Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	27.61	V	0.6	0.0	27.01	38.5	-11.4	
824.70	12.57	H	0.6	0.0	11.97	38.5	-26.5	
Mid Ch								
836.52	28.70	V	0.6	0.0	28.10	38.5	-10.3	
836.52	16.43	H	0.6	0.0	15.83	38.5	-22.6	
High Ch								
848.31	29.42	V	0.6	0.0	28.82	38.5	-9.6	
848.31	14.00	H	0.6	0.0	13.40	38.5	-25.0	

Rev. 3.17.11

PCS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: Tx. GPRS Mode PCS Band

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.850	21.0	V	0.85	8.62	28.75	33.0	-4.3	
1.850	15.2	H	0.85	8.47	22.77	33.0	-10.2	
Mid Ch								
1.880	21.7	V	0.85	8.46	29.35	33.0	-3.7	
1.880	14.9	H	0.85	8.36	22.41	33.0	-10.6	
High Ch								
1.910	20.7	V	0.85	8.30	28.11	33.0	-4.9	
1.910	14.6	H	0.85	8.25	22.02	33.0	-11.0	

Rev. 3.17.11

10.1.2. GSM-EGPRS

CELL BAND (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: Tx, EGPRS Mode Cell Band

Test Equipment:
Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.70	25.20	V	0.6	0.0	24.60	38.5	-13.8	
824.70	10.05	H	0.6	0.0	9.45	38.5	-29.0	
Mid Ch								
848.31	25.41	V	0.6	0.0	24.81	38.5	-13.6	
848.31	12.06	H	0.6	0.0	11.46	38.5	-27.0	
High Ch								
848.31	26.04	V	0.6	0.0	25.44	38.5	-13.0	
848.31	12.13	H	0.6	0.0	11.53	38.5	-26.9	

Rev. 3.17.11

PCS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: Tx, EGPRS Mode PCS Band

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.850	18.9	V	0.85	8.62	26.63	33.0	-6.4	
1.850	13.4	H	0.85	8.47	21.04	33.0	-12.0	
Mid								
1.880	19.5	V	0.85	8.46	27.06	33.0	-5.9	
1.880	13.3	H	0.85	8.36	20.77	33.0	-12.2	
High Ch								
1.910	18.3	V	0.85	8.30	25.73	33.0	-7.3	
1.910	13.5	H	0.85	8.25	20.89	33.0	-12.1	

Rev. 3.17.11

10.1.3. UMTS-REL 99

CELL BAND (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only
Mode: TX, 850MHz BAND WCDMA Rel 99

Test Equipment:
Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	22.14	V	0.5	0.0	21.64	38.5	-16.8	
826.40	7.57	H	0.5	0.0	7.07	38.5	-31.4	
Mid Ch								
836.00	20.88	V	0.5	0.0	20.38	38.5	-18.1	
836.00	7.63	H	0.5	0.0	7.13	38.5	-31.3	
High Ch								
846.00	23.03	V	0.5	0.0	22.53	38.5	-15.9	
846.00	9.24	H	0.5	0.0	8.74	38.5	-29.7	

Rev. 3.17.11

PCS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only
Mode: TX PCS Band WCDMA_Rel 99

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.852	18.1	V	0.85	8.62	25.87	33.0	-7.1	
1.852	7.8	H	0.85	8.47	15.42	33.0	-17.6	
1.880	18.2	V	0.85	8.46	25.81	33.0	-7.2	
1.880	11.2	H	0.85	8.36	18.66	33.0	-14.3	
1.908	17.1	V	0.85	8.30	24.55	33.0	-8.5	
1.908	11.6	H	0.85	8.25	19.00	33.0	-14.0	

Rev. 3.17.11

AWS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only
Mode: TX, AWS 1700, Rel 99

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.712	18.8	V	0.85	8.62	26.55	33.0	-6.5	
1.712	11.6	H	0.85	8.47	19.21	33.0	-13.8	
1.733	18.8	V	0.85	8.46	26.39	33.0	-6.6	
1.733	14.5	H	0.85	8.36	22.05	33.0	-11.0	
1.753	17.2	V	0.85	8.30	24.63	33.0	-8.4	
1.753	13.4	H	0.85	8.25	20.79	33.0	-12.2	

Rev. 3.17.11

10.1.4. UMTS-HSDPA

CELL BAND (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only
Mode: TX, 850MHz BAND WCDMA HSDPA

Test Equipment:
Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	22.52	V	0.5	0.0	22.02	38.5	-16.4	
826.40	7.96	H	0.5	0.0	7.46	38.5	-31.0	
Mid Ch								
836.00	21.92	V	0.5	0.0	21.42	38.5	-17.0	
836.00	8.09	H	0.5	0.0	7.59	38.5	-30.9	
High Ch								
846.00	24.22	V	0.5	0.0	23.72	38.5	-14.7	
846.00	10.19	H	0.5	0.0	9.69	38.5	-28.8	

Rev. 3.17.11

PCS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only
Mode: TX PCS Band WCDMA_HSDPA

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.852	19.0	V	0.85	8.62	26.72	33.0	-6.3	
1.852	11.6	H	0.85	8.47	19.20	33.0	-13.8	
1.880	18.9	V	0.85	8.46	26.46	33.0	-6.5	
1.880	11.4	H	0.85	8.36	18.94	33.0	-14.1	
1.908	18.1	V	0.85	8.30	25.50	33.0	-7.5	
1.908	11.7	H	0.85	8.25	19.08	33.0	-13.9	

Rev. 3.17.11

AWS BAND (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT only with AC adapter
Mode: TX, AWS 1700, HSDPA

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.712	19.6	V	0.85	8.62	27.36	33.0	-5.6	
1.712	12.3	H	0.85	8.47	19.92	33.0	-13.1	
1.733	19.6	V	0.85	8.46	27.20	33.0	-5.8	
1.733	15.3	H	0.85	8.36	22.76	33.0	-10.2	
1.753	18.0	V	0.85	8.30	25.44	33.0	-7.6	
1.753	14.1	H	0.85	8.25	21.50	33.0	-11.5	

Rev. 3.17.11

10.1.5. LTE BAND 2-5MHz BANDWIDTH

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 2, 5MHz BW
QPSK, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	20.3	V	0.85	8.62	28.07	33.0	-4.9	
1.853	14.1	H	0.85	8.47	21.72	33.0	-11.3	
Mid Ch								
1.880	18.9	V	0.85	8.46	26.51	33.0	-6.5	
1.880	13.8	H	0.85	8.36	21.31	33.0	-11.7	
High Ch								
1.908	20.4	V	0.85	8.30	27.85	33.0	-5.2	
1.908	14.0	H	0.85	8.25	21.40	33.0	-11.6	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 2, 5MHz BW
16QAM, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.853	19.4	V	0.85	8.62	27.17	33.0	-5.8	
1.853	12.7	H	0.85	8.47	20.32	33.0	-12.7	
Mid Ch								
1.880	18.1	V	0.85	8.46	25.71	33.0	-7.3	
1.880	12.8	H	0.85	8.36	20.31	33.0	-12.7	
High Ch								
1.908	19.5	V	0.85	8.30	26.95	33.0	-6.1	
1.908	13.5	H	0.85	8.25	20.90	33.0	-12.1	

Rev. 3.17.11

10.1.6.

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 2, 10MHz BW
QPSK, Peak, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	21.3	V	0.85	8.62	29.07	33.0	-3.9	
1.855	14.2	H	0.85	8.47	21.82	33.0	-11.2	
Mid Ch								
1.880	20.3	V	0.85	8.46	27.91	33.0	-5.1	
1.880	13.9	H	0.85	8.36	21.41	33.0	-11.6	
High Ch								
1.905	20.8	V	0.85	8.30	28.25	33.0	-4.8	
1.905	14.6	H	0.85	8.25	22.00	33.0	-11.0	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 2, 10MHz BW
16QAM, Peak, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.855	20.9	V	0.85	8.62	28.67	33.0	-4.3	
1.855	13.7	H	0.85	8.47	21.32	33.0	-11.7	
Mid Ch								
1.880	19.7	V	0.85	8.46	27.31	33.0	-5.7	
1.880	13.8	H	0.85	8.36	21.31	33.0	-11.7	
High Ch								
1.905	20.0	V	0.85	8.30	27.45	33.0	-5.6	
1.905	14.3	H	0.85	8.25	21.70	33.0	-11.3	

Rev. 3.17.11

10.1.7. LTE BAND 4-5MHz BANDWIDTH

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 5MHz BW
QPSK, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.713	19.0	V	0.85	8.62	26.77	30.0	-3.2	
1.713	15.3	H	0.85	8.47	22.92	30.0	-7.1	
Mid Ch								
1.733	20.0	V	0.85	8.46	27.61	30.0	-2.4	
1.733	16.7	H	0.85	8.36	24.21	30.0	-5.8	
High Ch								
1.753	18.7	V	0.85	8.30	26.15	30.0	-3.9	
1.753	14.4	H	0.85	8.25	21.80	30.0	-8.2	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 5MHz BW
16QAM, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.713	18.7	V	0.85	8.62	26.47	30.0	-3.5	
1.713	14.5	H	0.85	8.47	22.12	30.0	-7.9	
Mid Ch								
1.733	19.3	V	0.85	8.46	26.91	30.0	-3.1	
1.733	15.3	H	0.85	8.36	22.81	30.0	-7.2	
High Ch								
1.753	18.2	V	0.85	8.30	25.65	30.0	-4.4	
1.753	14.1	H	0.85	8.25	21.50	30.0	-8.5	

Rev. 3.17.11

10.1.8. LTE BAND 4-10MHz BANDWIDTH

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 10MHz BW
QPSK, Peak, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.715	19.8	V	0.85	8.62	27.57	30.0	-2.4	
1.715	16.6	H	0.85	8.47	24.22	30.0	-5.8	
Mid Ch								
1.733	20.4	V	0.85	8.46	28.01	30.0	-2.0	
1.733	16.6	H	0.85	8.36	24.11	30.0	-5.9	
High Ch								
1.750	20.1	V	0.85	8.30	27.55	30.0	-2.5	
1.750	16.6	H	0.85	8.25	24.00	30.0	-6.0	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 10MHz BW
16QAM, Peak, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.715	19.1	V	0.85	8.62	26.87	30.0	-3.1	
1.715	15.7	H	0.85	8.47	23.32	30.0	-6.7	
Mid Ch								
1.733	19.4	V	0.85	8.46	27.01	30.0	-3.0	
1.733	15.9	H	0.85	8.36	23.41	30.0	-6.6	
High Ch								
1.750	19.0	V	0.85	8.30	26.45	30.0	-3.6	
1.750	15.0	H	0.85	8.25	22.40	30.0	-7.6	

Rev. 3.17.11

10.1.9. LTE BAND 4-15MHz BANDWIDTH

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 15MHz BW
QPSK, Peak, RB75-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.718	20.2	V	0.85	8.62	27.97	30.0	-2.0	
1.718	16.2	H	0.85	8.47	23.82	30.0	-6.2	
Mid Ch								
1.733	21.0	V	0.85	8.46	28.61	30.0	-1.4	
1.733	16.7	H	0.85	8.36	24.21	30.0	-5.8	
High Ch								
1.748	21.2	V	0.85	8.30	28.65	30.0	-1.4	
1.748	16.5	H	0.85	8.25	23.90	30.0	-6.1	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 15MHz BW
16QAM, Peak, RB75-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.718	19.2	V	0.85	8.62	26.97	30.0	-3.0	
1.718	15.5	H	0.85	8.47	23.12	30.0	-6.9	
Mid Ch								
1.733	20.2	V	0.85	8.46	27.81	30.0	-2.2	
1.733	16.1	H	0.85	8.36	23.61	30.0	-6.4	
High Ch								
1.748	20.4	V	0.85	8.30	27.85	30.0	-2.2	
1.748	15.6	H	0.85	8.25	23.00	30.0	-7.0	

Rev. 3.17.11

10.1.10. LTE BAND 4-20MHz BANDWIDTH

QPSK (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 20MHz BW
QPSK, Peak, RB100-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.720	19.7	V	0.85	8.62	27.47	30.0	-2.5	
1.720	15.6	H	0.85	8.47	23.22	30.0	-6.8	
Mid Ch								
1.733	20.0	V	0.85	8.46	27.61	30.0	-2.4	
1.733	16.4	H	0.85	8.36	23.91	30.0	-6.1	
High Ch								
1.745	19.8	V	0.85	8.30	27.25	30.0	-2.8	
1.745	15.6	H	0.85	8.25	23.00	30.0	-7.0	

Rev. 3.17.11

16QAM (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 04/20/13
Test Engineer: Mona Hua
Configuration: EUT Only
Mode: LTE band 4, 20MHz BW
16QAM, Peak, RB100-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.720	18.7	V	0.85	8.62	26.47	30.0	-3.5	
1.720	15.0	H	0.85	8.47	22.62	30.0	-7.4	
Mid Ch								
1.733	19.5	V	0.85	8.46	27.11	30.0	-2.9	
1.733	15.8	H	0.85	8.36	23.31	30.0	-6.7	
High Ch								
1.745	19.4	V	0.85	8.30	26.85	30.0	-3.2	
1.745	15.1	H	0.85	8.25	22.50	30.0	-7.5	

Rev. 3.17.11

10.1.11. LTE BAND 17-5MHz BANDWIDTH

QPSK (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: LTE Band 17, 5MHz BW
QPSK, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
706.50	19.28	V	0.5	0.0	18.78	34.8	-16.0	
706.50	10.61	H	0.5	0.0	10.11	34.8	-24.7	
Mid Ch								
710.00	20.76	V	0.5	0.0	20.26	34.8	-14.5	
710.00	12.53	H	0.5	0.0	12.03	34.8	-22.8	
High Ch								
713.50	20.86	V	0.5	0.0	20.36	34.8	-14.4	
713.50	12.82	H	0.5	0.0	12.32	34.8	-22.5	

Rev. 3.17.11

16QAM (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: LTE Band 17, 5MHz BW
16QAM, Peak, RB25-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
706.50	17.11	V	0.5	0.0	16.61	34.8	-18.2	
706.50	10.50	H	0.5	0.0	10.00	34.8	-24.8	
Mid Ch								
710.00	19.49	V	0.5	0.0	18.99	34.8	-15.8	
710.00	12.72	H	0.5	0.0	12.22	34.8	-22.6	
High Ch								
713.50	19.57	V	0.5	0.0	19.07	34.8	-15.7	
713.50	13.01	H	0.5	0.0	12.51	34.8	-22.3	

Rev. 3.17.11

10.1.12. LTE BAND 17-10MHz BANDWIDTH

QPSK (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: LTE Band 17, 10MHz BW
QPSK, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
709.00	20.36	V	0.5	0.0	19.86	34.8	-14.9	
709.00	13.09	H	0.5	0.0	12.59	34.8	-22.2	
Mid Ch								
710.00	20.64	V	0.5	0.0	20.14	34.8	-14.7	
710.00	12.41	H	0.5	0.0	11.91	34.8	-22.9	
High Ch								
711.00	21.52	V	0.5	0.0	21.02	34.8	-13.8	
711.00	13.50	H	0.5	0.0	13.00	34.8	-21.8	

Rev. 3.17.11

16QAM (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: LG
Project #: 13U14980
Date: 05/19/13
Test Engineer: Mengistu Mekuria
Configuration: EUT Only
Mode: LTE Band 17, 10MHz BW
16QAM, RB50-0

Test Equipment:
Receiving: Horn T59, and Chamber B SMA Cables
Substitution: Horn T217 Substitution, 4ft SMA Cable (244639001) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
709.00	19.25	V	0.5	0.0	18.75	34.8	-16.0	
709.00	11.76	H	0.5	0.0	11.26	34.8	-23.5	
Mid Ch								
710.00	19.73	V	0.5	0.0	19.23	34.8	-15.6	
710.00	11.58	H	0.5	0.0	11.08	34.8	-23.7	
High Ch								
711.00	20.51	V	0.5	0.0	20.01	34.8	-14.8	
711.00	12.57	H	0.5	0.0	12.07	34.8	-22.7	

Rev. 3.17.11

10.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, & §27.53

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

- GSM: GPRS and EGPRS
- UMTS: WCDMA and HSDPA
- LTE: Band 2, 4, and 17

RESULTS

10.2.1. GSM-GPRS

CELL BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 04/18/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: Tx, GPRS 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (824.2MHz)									
1.648	-15.2	V	3.0	38.2	1.0	-52.3	-13.0	-39.3	
2.473	-11.7	V	3.0	37.5	1.0	-48.2	-13.0	-35.2	
1.648	-17.4	H	3.0	38.2	1.0	-54.5	-13.0	-41.5	
2.473	-15.3	H	3.0	37.5	1.0	-51.8	-13.0	-38.8	
Mid Ch, (836.4MHz)									
1.673	-16.1	V	3.0	38.1	1.0	-53.2	-13.0	-40.2	
2.510	-12.2	V	3.0	37.5	1.0	-48.7	-13.0	-35.7	
1.673	-17.4	H	3.0	38.1	1.0	-54.5	-13.0	-41.5	
2.510	-13.6	H	3.0	37.5	1.0	-50.0	-13.0	-37.0	
High Ch, (848.8MHz)									
1.698	-14.7	V	3.0	38.1	1.0	-51.8	-13.0	-38.8	
2.546	-12.3	V	3.0	37.5	1.0	-48.8	-13.0	-35.8	
1.698	-13.7	H	3.0	38.1	1.0	-50.8	-13.0	-37.8	
2.546	-13.4	H	3.0	37.5	1.0	-49.9	-13.0	-36.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	13U14980
Date:	04/18/13
Test Engineer:	Lieu Nguyen
Configuration:	EUT with AC adapter and headset
Mode:	Tx, GPRS 1900

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1850.2MHz)									
3.700	-2.3	V	3.0	36.8	1.0	-38.1	-13.0	-25.1	
5.555	-0.4	V	3.0	36.3	1.0	-35.7	-13.0	-22.7	
3.700	-2.5	H	3.0	36.8	1.0	-38.3	-13.0	-25.3	
5.555	1.3	H	3.0	36.3	1.0	-33.9	-13.0	-20.9	
Mid Ch, (1880MHz)									
3.760	-4.1	V	3.0	36.8	1.0	-39.9	-13.0	-26.9	
5.640	1.8	V	3.0	36.3	1.0	-33.5	-13.0	-20.5	
3.760	-4.9	H	3.0	36.8	1.0	-40.7	-13.0	-27.7	
5.640	2.8	H	3.0	36.3	1.0	-32.5	-13.0	-19.5	
High Ch, (1909.8MHz)									
3.820	-4.5	V	3.0	36.7	1.0	-40.2	-13.0	-27.2	
5.729	1.7	V	3.0	36.3	1.0	-33.6	-13.0	-20.6	
3.820	-3.9	H	3.0	36.7	1.0	-39.6	-13.0	-26.6	
7.070	4.1	H	3.0	36.5	1.0	-31.4	-13.0	-18.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.2. GSM-EGPRS

CELL BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 04/18/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: Tx, EGPRS 850

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (824.2MHz)									
1.648	-15.9	V	3.0	38.2	1.0	-53.0	-13.0	-40.0	
2.473	-11.5	V	3.0	37.5	1.0	-48.0	-13.0	-35.0	
1.648	-17.0	H	3.0	38.2	1.0	-54.1	-13.0	-41.1	
2.473	-13.1	H	3.0	37.5	1.0	-49.6	-13.0	-36.6	
Mid Ch, (836.4MHz)									
1.673	-13.0	V	3.0	38.1	1.0	-50.1	-13.0	-37.1	
2.510	-12.2	V	3.0	37.5	1.0	-48.7	-13.0	-35.7	
1.673	-16.4	H	3.0	38.1	1.0	-53.5	-13.0	-40.5	
2.510	-15.1	H	3.0	37.5	1.0	-51.5	-13.0	-38.5	
High Ch, (848.8MHz)									
1.698	-11.5	V	3.0	38.1	1.0	-48.6	-13.0	-35.6	
2.546	-9.2	V	3.0	37.5	1.0	-45.7	-13.0	-32.7	
1.698	-13.1	H	3.0	38.1	1.0	-50.2	-13.0	-37.2	
2.546	-12.3	H	3.0	37.5	1.0	-48.8	-13.0	-35.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 04/18/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: Tx, EGPRS 1900

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T144 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1850.2MHz)									
3.700	-4.3	V	3.0	36.8	1.0	-40.1	-13.0	-27.1	
5.555	2.5	V	3.0	36.3	1.0	-32.8	-13.0	-19.8	
3.700	-3.8	H	3.0	36.8	1.0	-39.6	-13.0	-26.6	
5.555	1.7	H	3.0	36.3	1.0	-33.5	-13.0	-20.5	
Mid Ch, (1880MHz)									
3.760	-4.3	V	3.0	36.8	1.0	-40.1	-13.0	-27.1	
5.640	1.8	V	3.0	36.3	1.0	-33.5	-13.0	-20.5	
3.760	-1.7	H	3.0	36.8	1.0	-37.5	-13.0	-24.5	
5.640	2.8	H	3.0	36.3	1.0	-32.5	-13.0	-19.5	
High Ch, (1909.8MHz)									
3.820	-4.5	V	3.0	36.7	1.0	-40.2	-13.0	-27.2	
5.729	1.7	V	3.0	36.3	1.0	-33.6	-13.0	-20.6	
3.820	-3.9	H	3.0	36.7	1.0	-39.6	-13.0	-26.6	
7.070	4.1	H	3.0	36.5	1.0	-31.4	-13.0	-18.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.3. UMTS-REL 99

CELL BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date:01/29/2013 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: Tx, WCDMA, CELL Rel 99

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (826.4MHz)									
1.654	-13.1	V	3.0	35.5	1.0	-47.7	-13.0	-34.7	
2.475	-12.8	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
1.654	-13.9	H	3.0	35.5	1.0	-48.5	-13.0	-35.5	
2.475	-16.6	H	3.0	35.4	1.0	-51.0	-13.0	-38.0	
Mid Ch, (836MHz)									
1.672	-13.9	V	3.0	35.5	1.0	-48.4	-13.0	-35.4	
2.504	-8.3	V	3.0	35.4	1.0	-42.7	-13.0	-29.7	
1.672	-15.7	H	3.0	35.5	1.0	-50.3	-13.0	-37.3	
2.504	-10.8	H	3.0	35.4	1.0	-45.2	-13.0	-32.2	
High Ch, (846 MHz)									
1.693	-15.7	V	3.0	35.5	1.0	-50.2	-13.0	-37.2	
2.540	-10.9	V	3.0	35.4	1.0	-45.3	-13.0	-32.3	
1.693	-15.0	H	3.0	35.5	1.0	-49.6	-13.0	-36.6	
2.540	-13.2	H	3.0	35.4	1.0	-47.6	-13.0	-34.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: WCDMA,PCS Rel 99

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1852.4MHz)									
3.704	-15.0	V	3.0	35.4	1.0	-49.3	-13.0	-36.3	
7.408	-8.5	V	3.0	35.7	1.0	-43.2	-13.0	-30.2	
3.705	-14.5	H	3.0	35.4	1.0	-48.8	-13.0	-35.8	
7.410	-7.3	H	3.0	35.7	1.0	-42.0	-13.0	-29.0	
Mid Ch, (1880MHz)									
3.760	-17.9	V	3.0	35.3	1.0	-52.3	-13.0	-39.3	
7.520	-12.1	V	3.0	35.7	1.0	-46.8	-13.0	-33.8	
3.760	-14.7	H	3.0	35.3	1.0	-49.0	-13.0	-36.0	
7.520	-9.0	H	3.0	35.7	1.0	-43.7	-13.0	-30.7	
High Ch, (1907.6MHz)									
3.815	-15.9	V	3.0	35.3	1.0	-50.2	-13.0	-37.2	
7.630	-8.9	V	3.0	35.7	1.0	-43.6	-13.0	-30.6	
3.815	-13.6	H	3.0	35.3	1.0	-47.9	-13.0	-34.9	
7.630	-7.1	H	3.0	35.7	1.0	-41.8	-13.0	-28.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

AWS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: WCDMA, AWS, 1700 Rel 99

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.4MHz)									
3.424	-12.4	V	3.0	35.5	1.0	-46.9	-13.0	-33.9	
5.137	-6.2	V	3.0	35.3	1.0	-40.5	-13.0	-27.5	
6.848	-11.5	V	3.0	35.7	1.0	-46.2	-13.0	-33.2	
3.425	-14.9	H	3.0	35.5	1.0	-49.4	-13.0	-36.4	
5.137	-4.2	H	3.0	35.3	1.0	-38.5	-13.0	-25.5	
6.850	-8.0	H	3.0	35.7	1.0	-42.7	-13.0	-29.7	
Mid Ch, (1732.6MHz)									
3.465	-10.5	V	3.0	35.5	1.0	-45.0	-13.0	-32.0	
5.198	-8.0	V	3.0	35.3	1.0	-42.3	-13.0	-29.3	
6.930	-8.7	V	3.0	35.7	1.0	-43.4	-13.0	-30.4	
3.465	-9.1	H	3.0	35.5	1.0	-43.5	-13.0	-30.5	
5.198	-7.1	H	3.0	35.3	1.0	-41.4	-13.0	-28.4	
6.930	-1.9	H	3.0	35.7	1.0	-36.6	-13.0	-23.6	
High Ch, (1752.5MHz)									
3.505	-14.7	V	3.0	35.4	1.0	-49.1	-13.0	-36.1	
5.258	-9.7	V	3.0	35.3	1.0	-44.1	-13.0	-31.1	
7.010	-9.3	V	3.0	35.7	1.0	-44.0	-13.0	-31.0	
3.505	-12.8	H	3.0	35.4	1.0	-47.3	-13.0	-34.3	
5.258	-7.1	H	3.0	35.3	1.0	-41.4	-13.0	-28.4	
7.010	-6.9	H	3.0	35.7	1.0	-41.6	-13.0	-28.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.4. UMTS-HSDPA

CELL BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: Tx, WCDMA,CELL HSDPA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (826.4MHz)									
1.654	-13.2	V	3.0	35.5	1.0	-47.8	-13.0	-34.8	
2.479	-16.6	V	3.0	35.4	1.0	-51.0	-13.0	-38.0	
1.654	-16.1	H	3.0	35.5	1.0	-50.7	-13.0	-37.7	
2.479	-17.5	H	3.0	35.4	1.0	-51.9	-13.0	-38.9	
Mid Ch, (836MHz)									
1.672	-14.2	V	3.0	35.5	1.0	-48.7	-13.0	-35.7	
2.508	-12.8	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
1.672	88.3	H	3.0	35.5	1.0	53.7	-13.0	66.7	
2.508	-12.2	H	3.0	35.4	1.0	-46.6	-13.0	-33.6	
High Ch, (846.MHz)									
1.693	-15.0	V	3.0	35.5	1.0	-49.5	-13.0	-36.5	
2.540	-11.7	V	3.0	35.4	1.0	-46.1	-13.0	-33.1	
1.693	-14.6	H	3.0	35.5	1.0	-49.2	-13.0	-36.2	
2.540	-14.1	H	3.0	35.4	1.0	-48.5	-13.0	-35.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: WCDMA,PCS HSDPA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1852.4MHz)									
3.704	-8.1	V	3.0	35.4	1.0	-42.4	-13.0	-29.4	
7.408	-3.0	V	3.0	35.7	1.0	-37.7	-13.0	-24.7	
3.705	-6.3	H	3.0	35.4	1.0	-40.6	-13.0	-27.6	
7.410	-0.7	H	3.0	35.7	1.0	-35.4	-13.0	-22.4	
Mid Ch, (1880MHz)									
3.760	-10.1	V	3.0	35.3	1.0	-44.5	-13.0	-31.5	
7.520	-4.8	V	3.0	35.7	1.0	-39.5	-13.0	-26.5	
3.760	-8.8	H	3.0	35.3	1.0	-43.1	-13.0	-30.1	
7.520	0.4	H	3.0	35.7	1.0	-34.3	-13.0	-21.3	
High Ch, (1907.6MHz)									
3.815	-9.5	V	3.0	35.3	1.0	-43.8	-13.0	-30.8	
7.630	-2.9	V	3.0	35.7	1.0	-37.6	-13.0	-24.6	
3.815	-8.0	H	3.0	35.3	1.0	-42.3	-13.0	-29.3	
7.630	0.3	H	3.0	35.7	1.0	-34.4	-13.0	-21.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

AWS BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Lieu Nguyen
Configuration: EUT with AC adapter and headset
Mode: WCDMA, AWS, 1700 HSDPA

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.4MHz)									
3.424	-10.8	V	3.0	35.5	1.0	-45.3	-13.0	-32.3	
5.137	-5.2	V	3.0	35.3	1.0	-39.5	-13.0	-26.5	
6.848	-9.5	V	3.0	35.7	1.0	-44.2	-13.0	-31.2	
3.425	-13.9	H	3.0	35.5	1.0	-48.4	-13.0	-35.4	
5.137	-3.7	H	3.0	35.3	1.0	-38.0	-13.0	-25.0	
6.850	-6.5	H	3.0	35.7	1.0	-41.2	-13.0	-28.2	
Mid Ch, (1732.6MHz)									
3.465	-10.0	V	3.0	35.5	1.0	-44.5	-13.0	-31.5	
5.198	-7.6	V	3.0	35.3	1.0	-41.9	-13.0	-28.9	
6.930	-5.8	V	3.0	35.7	1.0	-40.5	-13.0	-27.5	
3.465	-9.6	H	3.0	35.5	1.0	-44.0	-13.0	-31.0	
5.198	-6.8	H	3.0	35.3	1.0	-41.1	-13.0	-28.1	
6.930	-1.9	H	3.0	35.7	1.0	-36.6	-13.0	-23.6	
High Ch, (1752.5MHz)									
3.505	-12.3	V	3.0	35.4	1.0	-46.7	-13.0	-33.7	
5.258	-9.7	V	3.0	35.3	1.0	-44.1	-13.0	-31.1	
7.010	-8.5	V	3.0	35.7	1.0	-43.2	-13.0	-30.2	
3.505	-11.7	H	3.0	35.4	1.0	-46.2	-13.0	-33.2	
5.258	-6.5	H	3.0	35.3	1.0	-40.8	-13.0	-27.8	
7.010	-4.7	H	3.0	35.7	1.0	-39.4	-13.0	-26.4	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.5. LTE BAND 2-5MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 2 5.0MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1852.5MHz)									
3.705	-12.5	V	3.0	35.4	1.0	-46.9	-13.0	-33.9	
5.558	-3.6	V	3.0	35.4	1.0	-38.0	-13.0	-25.0	
3.705	-12.4	H	3.0	35.4	1.0	-46.7	-13.0	-33.7	
5.558	-7.0	H	3.0	35.4	1.0	-41.4	-13.0	-28.4	
Mid Ch, (1880MHz)									
3.760	-14.6	V	3.0	35.3	1.0	-48.9	-13.0	-35.9	
5.640	-4.5	V	3.0	35.4	1.0	-38.9	-13.0	-25.9	
3.760	-59.2	H	3.0	35.3	1.0	-93.5	-13.0	-80.5	
5.640	-8.2	H	3.0	35.4	1.0	-42.6	-13.0	-29.6	
High Ch, (1907.5MHz)									
3.815	-11.8	V	3.0	35.3	1.0	-46.1	-13.0	-33.1	
5.723	-2.7	V	3.0	35.4	1.0	-37.2	-13.0	-24.2	
3.815	-13.2	H	3.0	35.3	1.0	-47.5	-13.0	-34.5	
5.723	-7.8	H	3.0	35.4	1.0	-42.3	-13.0	-29.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 2 5.0MHz BW, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1852.5MHz)									
3.705	-12.1	V	3.0	35.4	1.0	-46.4	-13.0	-33.4	
5.558	-3.6	V	3.0	35.4	1.0	-38.0	-13.0	-25.0	
3.705	-12.0	H	3.0	35.4	1.0	-46.4	-13.0	-33.4	
5.558	-8.5	H	3.0	35.4	1.0	-42.9	-13.0	-29.9	
Mid Ch, (1880MHz)									
3.760	-14.1	V	3.0	35.3	1.0	-48.4	-13.0	-35.4	
5.640	-6.8	V	3.0	35.4	1.0	-41.3	-13.0	-28.3	
3.760	-60.1	H	3.0	35.3	1.0	-94.4	-13.0	-81.4	
5.640	-9.8	H	3.0	35.4	1.0	-44.3	-13.0	-31.3	
High Ch, (1907.5MHz)									
3.815	-13.6	V	3.0	35.3	1.0	-47.9	-13.0	-34.9	
5.723	-3.8	V	3.0	35.4	1.0	-38.3	-13.0	-25.3	
3.815	-14.0	H	3.0	35.3	1.0	-48.3	-13.0	-35.3	
5.723	-5.0	H	3.0	35.4	1.0	-39.5	-13.0	-26.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.6. LTE BAND 2-10MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 2 10.0MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1855.0MHz)									
3.710	-13.5	V	3.0	35.4	1.0	-47.8	-13.0	-34.8	
5.565	-5.4	V	3.0	35.4	1.0	-39.8	-13.0	-26.8	
3.710	-14.5	H	3.0	35.4	1.0	-48.9	-13.0	-35.9	
5.565	-8.5	H	3.0	35.4	1.0	-42.9	-13.0	-29.9	
Mid Ch, (1880MHz)									
3.760	-15.3	V	3.0	35.3	1.0	-49.6	-13.0	-36.6	
5.640	-12.0	V	3.0	35.4	1.0	-46.4	-13.0	-33.4	
3.760	-60.0	H	3.0	35.3	1.0	-94.3	-13.0	-81.3	
5.640	-11.6	H	3.0	35.4	1.0	-46.0	-13.0	-33.0	
High Ch, (1905MHz)									
3.810	-14.2	V	3.0	35.3	1.0	-48.5	-13.0	-35.5	
5.715	-2.9	V	3.0	35.4	1.0	-37.4	-13.0	-24.4	
3.821	-14.8	H	3.0	35.3	1.0	-49.1	-13.0	-36.1	
5.715	-6.2	H	3.0	35.4	1.0	-40.7	-13.0	-27.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 2 10.0MHz BW, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1855.0MHz)									
3.710	-13.2	V	3.0	35.4	1.0	-47.6	-13.0	-34.6	
5.565	-6.6	V	3.0	35.4	1.0	-41.0	-13.0	-28.0	
3.710	-13.6	H	3.0	35.4	1.0	-47.9	-13.0	-34.9	
5.565	-9.3	H	3.0	35.4	1.0	-43.8	-13.0	-30.8	
Mid Ch, (1880MHz)									
3.760	-13.9	V	3.0	35.3	1.0	-48.3	-13.0	-35.3	
5.640	-4.4	V	3.0	35.4	1.0	-38.8	-13.0	-25.8	
3.760	-60.8	H	3.0	35.3	1.0	-95.2	-13.0	-82.2	
5.640	-7.1	H	3.0	35.4	1.0	-41.6	-13.0	-28.6	
High Ch, (1905MHz)									
3.810	-13.9	V	3.0	35.3	1.0	-48.2	-13.0	-35.2	
5.715	-5.8	V	3.0	35.4	1.0	-40.2	-13.0	-27.2	
3.821	-14.4	H	3.0	35.3	1.0	-48.7	-13.0	-35.7	
5.715	-6.3	H	3.0	35.4	1.0	-40.8	-13.0	-27.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.7. LTE BAND 4-5MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5MHz)									
3.425	-19.0	V	3.0	35.5	1.0	-53.5	-13.0	-40.5	
5.138	-18.3	V	3.0	35.3	1.0	-52.7	-13.0	-39.7	
3.425	-18.0	H	3.0	35.5	1.0	-52.5	-13.0	-39.5	
5.138	-17.7	H	3.0	35.3	1.0	-52.0	-13.0	-39.0	
Mid Ch, (1732.5MHz)									
3.465	-22.4	V	3.0	35.5	1.0	-56.9	-13.0	-43.9	
5.198	-18.3	V	3.0	35.3	1.0	-52.6	-13.0	-39.6	
3.465	-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
5.198	-13.7	H	3.0	35.3	1.0	-48.0	-13.0	-35.0	
High Ch, (1752.5MHz)									
3.505	-23.5	V	3.0	35.4	1.0	-57.9	-13.0	-44.9	
5.258	-19.0	V	3.0	35.3	1.0	-53.4	-13.0	-40.4	
3.505	-23.7	H	3.0	35.4	1.0	-58.1	-13.0	-45.1	
5.258	-13.7	H	3.0	35.3	1.0	-48.1	-13.0	-35.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/01/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 5MHz BW, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5MHz)									
3.425	-20.1	V	3.0	35.5	1.0	-54.5	-13.0	-41.5	
5.138	-14.5	V	3.0	35.3	1.0	-48.9	-13.0	-35.9	
3.425	-20.2	H	3.0	35.5	1.0	-54.7	-13.0	-41.7	
5.138	-13.9	H	3.0	35.3	1.0	-48.2	-13.0	-35.2	
Mid Ch, (1732.5MHz)									
3.465	-21.2	V	3.0	35.5	1.0	-55.7	-13.0	-42.7	
5.198	-15.4	V	3.0	35.3	1.0	-49.7	-13.0	-36.7	
3.465	-21.0	H	3.0	35.5	1.0	-55.5	-13.0	-42.5	
5.198	-13.5	H	3.0	35.3	1.0	-47.8	-13.0	-34.8	
High Ch, (1752.5MHz)									
3.505	-23.4	V	3.0	35.4	1.0	-57.9	-13.0	-44.9	
5.258	-19.0	V	3.0	35.3	1.0	-53.4	-13.0	-40.4	
3.505	-23.3	H	3.0	35.4	1.0	-57.7	-13.0	-44.7	
5.258	-14.0	H	3.0	35.3	1.0	-48.3	-13.0	-35.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.8. LTE BAND 4-10MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 10.0MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-18.9	V	3.0	35.5	1.0	-53.4	-13.0	-40.4	
5.145	-20.4	V	3.0	35.3	1.0	-54.8	-13.0	-41.8	
3.430	-18.7	H	3.0	35.5	1.0	-53.2	-13.0	-40.2	
5.145	-11.7	H	3.0	35.3	1.0	-46.0	-13.0	-33.0	
Mid Ch, (1732.5MHz)									
3.465	-21.5	V	3.0	35.5	1.0	-56.0	-13.0	-43.0	
5.198	-5.0	V	3.0	35.3	1.0	-39.4	-13.0	-26.4	
3.465	-19.7	H	3.0	35.5	1.0	-54.2	-13.0	-41.2	
5.198	-7.9	H	3.0	35.3	1.0	-42.3	-13.0	-29.3	
High Ch, (1750MHz)									
3.500	-21.9	V	3.0	35.4	1.0	-56.4	-13.0	-43.4	
5.250	-17.5	V	3.0	35.3	1.0	-51.9	-13.0	-38.9	
3.500	-24.3	H	3.0	35.4	1.0	-58.7	-13.0	-45.7	
5.250	-16.9	H	3.0	35.3	1.0	-51.2	-13.0	-38.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/02/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 10.0MHz BW, 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-20.4	V	3.0	35.5	1.0	-54.9	-13.0	-41.9	
5.145	-15.4	V	3.0	35.3	1.0	-49.8	-13.0	-36.8	
3.430	-18.9	H	3.0	35.5	1.0	-53.4	-13.0	-40.4	
5.145	-14.7	H	3.0	35.3	1.0	-49.1	-13.0	-36.1	
Mid Ch, (1732.5MHz)									
3.465	-21.5	V	3.0	35.5	1.0	-56.0	-13.0	-43.0	
5.198	-5.1	V	3.0	35.3	1.0	-39.4	-13.0	-26.4	
3.465	-20.2	H	3.0	35.5	1.0	-54.6	-13.0	-41.6	
5.198	-10.2	H	3.0	35.3	1.0	-44.5	-13.0	-31.5	
High Ch, (1750MHz)									
3.500	-23.4	V	3.0	35.4	1.0	-57.9	-13.0	-44.9	
5.250	-21.8	V	3.0	35.3	1.0	-56.2	-13.0	-43.2	
3.500	-23.1	H	3.0	35.4	1.0	-57.5	-13.0	-44.5	
5.250	-16.5	H	3.0	35.3	1.0	-50.9	-13.0	-37.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.9. LTE BAND 4-15MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/09/13
Test Engineer: Lieu Nguyen
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 15.0MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-18.2	V	3.0	35.5	1.0	-52.7	-13.0	-39.7	
5.145	-18.4	V	3.0	35.3	1.0	-52.8	-13.0	-39.8	
3.430	-16.9	H	3.0	35.5	1.0	-51.4	-13.0	-38.4	
5.145	-10.4	H	3.0	35.3	1.0	-44.8	-13.0	-31.8	
Mid Ch, (1732.5MHz)									
3.465	-20.8	V	3.0	35.5	1.0	-55.3	-13.0	-42.3	
5.198	-3.4	V	3.0	35.3	1.0	-37.8	-13.0	-24.8	
3.465	-18.1	H	3.0	35.5	1.0	-52.5	-13.0	-39.5	
5.198	-7.0	H	3.0	35.3	1.0	-41.3	-13.0	-28.3	
High Ch, (1750MHz)									
3.500	-21.3	V	3.0	35.4	1.0	-55.7	-13.0	-42.7	
5.250	-17.5	V	3.0	35.3	1.0	-51.9	-13.0	-38.9	
3.500	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
5.250	-15.6	H	3.0	35.3	1.0	-49.9	-13.0	-36.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/09/13
Test Engineer: Lieu Nguyen
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 20.0MHz BW, 16-QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-17.4	V	3.0	35.5	1.0	-51.9	-13.0	-38.9	
5.145	-15.6	V	3.0	35.3	1.0	-50.0	-13.0	-37.0	
3.430	-15.7	H	3.0	35.5	1.0	-50.2	-13.0	-37.2	
5.145	-10.2	H	3.0	35.3	1.0	-44.6	-13.0	-31.6	
Mid Ch, (1732.5MHz)									
3.465	-19.5	V	3.0	35.5	1.0	-54.0	-13.0	-41.0	
5.198	-3.5	V	3.0	35.3	1.0	-37.9	-13.0	-24.9	
3.465	-16.4	H	3.0	35.5	1.0	-50.8	-13.0	-37.8	
5.198	-6.8	H	3.0	35.3	1.0	-41.1	-13.0	-28.1	
High Ch, (1750MHz)									
3.500	-18.9	V	3.0	35.4	1.0	-53.3	-13.0	-40.3	
5.250	-16.6	V	3.0	35.3	1.0	-50.9	-13.0	-37.9	
3.500	-21.7	H	3.0	35.4	1.0	-56.1	-13.0	-43.1	
5.250	-15.4	H	3.0	35.3	1.0	-49.7	-13.0	-36.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.10. LTE BAND 4-20MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/09/13
Test Engineer: Lieu Nguyen
Configuration: EUT and AC Adapter
Mode: TX, LTE Band 4 20.0MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-16.4	V	3.0	35.5	1.0	-50.9	-13.0	-37.9	
5.145	-15.1	V	3.0	35.3	1.0	-49.5	-13.0	-36.5	
3.430	-15.6	H	3.0	35.5	1.0	-50.1	-13.0	-37.1	
5.145	-9.8	H	3.0	35.3	1.0	-44.2	-13.0	-31.2	
Mid Ch, (1732.5MHz)									
3.465	-18.9	V	3.0	35.5	1.0	-53.4	-13.0	-40.4	
5.198	-3.9	V	3.0	35.3	1.0	-38.3	-13.0	-25.3	
3.465	-15.9	H	3.0	35.5	1.0	-50.3	-13.0	-37.3	
5.198	-6.9	H	3.0	35.3	1.0	-41.2	-13.0	-28.2	
High Ch, (1750MHz)									
3.500	-19.1	V	3.0	35.4	1.0	-53.5	-13.0	-40.5	
5.250	-15.7	V	3.0	35.3	1.0	-50.0	-13.0	-37.0	
3.500	-21.3	H	3.0	35.4	1.0	-55.7	-13.0	-42.7	
5.250	-14.7	H	3.0	35.3	1.0	-49.0	-13.0	-36.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	13U14980
Date:	05/09/13
Test Engineer:	Lieu Nguyen
Configuration:	EUT and AC Adapter
Mode:	TX, LTE Band 4 15.0MHz BW, 16-QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715.0MHz)									
3.430	-16.8	V	3.0	35.5	1.0	-51.3	-13.0	-38.3	
5.145	-18.0	V	3.0	35.3	1.0	-52.4	-13.0	-39.4	
3.430	-15.9	H	3.0	35.5	1.0	-50.4	-13.0	-37.4	
5.145	-9.8	H	3.0	35.3	1.0	-44.2	-13.0	-31.2	
Mid Ch, (1732.5MHz)									
3.465	-19.6	V	3.0	35.5	1.0	-54.1	-13.0	-41.1	
5.198	-4.3	V	3.0	35.3	1.0	-38.7	-13.0	-25.7	
3.465	-16.8	H	3.0	35.5	1.0	-51.2	-13.0	-38.2	
5.198	-7.5	H	3.0	35.3	1.0	-41.8	-13.0	-28.8	
High Ch, (1750MHz)									
3.500	-19.9	V	3.0	35.4	1.0	-54.3	-13.0	-41.3	
5.250	-16.5	V	3.0	35.3	1.0	-50.8	-13.0	-37.8	
3.500	-22.1	H	3.0	35.4	1.0	-56.5	-13.0	-43.5	
5.250	-15.6	H	3.0	35.3	1.0	-49.9	-13.0	-36.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.11. LTE BAND 17-5MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/03/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: LTE Band 17, 5MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (706.5MHz)									
1.413	-31.2	V	3.0	35.8	1.0	-66.0	-13.0	-53.0	
2.119	-20.3	V	3.0	35.4	1.0	-54.6	-13.0	-41.6	
1.413	-28.9	H	3.0	35.8	1.0	-63.7	-13.0	-50.7	
2.119	-24.1	H	3.0	35.4	1.0	-58.5	-13.0	-45.5	
Mid Ch, (710MHz)									
1.420	-14.8	V	3.0	35.7	1.0	-49.5	-13.0	-36.5	
2.130	-14.3	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
1.420	-15.0	H	3.0	35.7	1.0	-49.7	-13.0	-36.7	
2.130	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
High Ch, (713.5MHz)									
1.427	-30.1	V	3.0	35.7	1.0	-64.8	-13.0	-51.8	
2.141	-25.9	V	3.0	35.4	1.0	-60.3	-13.0	-47.3	
1.427	-30.2	H	3.0	35.7	1.0	-64.9	-13.0	-51.9	
2.141	-26.5	H	3.0	35.4	1.0	-60.9	-13.0	-47.9	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/03/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: LTE Band 17, 5MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (706.5MHz)									
1.413	-29.6	V	3.0	35.8	1.0	-64.3	-13.0	-51.3	
2.119	-21.8	V	3.0	35.4	1.0	-56.2	-13.0	-43.2	
1.413	-30.4	H	3.0	35.8	1.0	-65.2	-13.0	-52.2	
2.119	-25.6	H	3.0	35.4	1.0	-59.9	-13.0	-46.9	
Mid Ch, (710MHz)									
1.420	-15.6	V	3.0	35.7	1.0	-50.3	-13.0	-37.3	
2.130	-12.9	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
1.420	85.3	H	3.0	35.7	1.0	50.6	-13.0	63.6	
2.130	-14.3	H	3.0	35.4	1.0	-48.7	-13.0	-35.7	
High Ch, (713.5MHz)									
1.427	-31.1	V	3.0	35.7	1.0	-65.8	-13.0	-52.8	
2.141	-25.7	V	3.0	35.4	1.0	-60.1	-13.0	-47.1	
1.427	-30.0	H	3.0	35.7	1.0	-64.7	-13.0	-51.7	
2.141	-26.6	H	3.0	35.4	1.0	-61.0	-13.0	-48.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

10.2.12. LTE BAND 17-10MHz BANDWIDTH

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/03/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: LTE Band 17, 10MHz QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (709MHz)									
1.418	-30.3	V	3.0	35.7	1.0	-65.1	-13.0	-52.1	
2.127	-25.7	V	3.0	35.4	1.0	-60.1	-13.0	-47.1	
1.418	-31.7	H	3.0	35.7	1.0	-66.4	-13.0	-53.4	
2.127	-24.1	H	3.0	35.4	1.0	-58.5	-13.0	-45.5	
Mid Ch, (710MHz)									
1.420	-28.6	V	3.0	35.7	1.0	-63.4	-13.0	-50.4	
2.130	-21.6	V	3.0	35.4	1.0	-55.9	-13.0	-42.9	
1.420	-28.4	H	3.0	35.7	1.0	-63.1	-13.0	-50.1	
2.130	-26.2	H	3.0	35.4	1.0	-60.6	-13.0	-47.6	
High Ch, (711MHz)									
1.422	99.4	V	3.0	35.7	1.0	64.7	-13.0	77.7	
2.133	-25.6	V	3.0	35.4	1.0	-60.0	-13.0	-47.0	
1.422	-29.2	H	3.0	35.7	1.0	-63.9	-13.0	-50.9	
2.133	-26.6	H	3.0	35.4	1.0	-61.0	-13.0	-48.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U14980
Date: 05/03/13
Test Engineer: Megistu Mekuria
Configuration: EUT and AC Adapter
Mode: LTE Band 17, 10MHz 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (709MHz)									
1.418	-28.7	V	3.0	35.7	1.0	-63.5	-13.0	-50.5	
2.127	-25.5	V	3.0	35.4	1.0	-59.9	-13.0	-46.9	
1.418	-31.2	H	3.0	35.7	1.0	-65.9	-13.0	-52.9	
2.127	-24.4	H	3.0	35.4	1.0	-58.8	-13.0	-45.8	
Mid Ch, (710MHz)									
1.420	-29.9	V	3.0	35.7	1.0	-64.6	-13.0	-51.6	
2.130	-24.9	V	3.0	35.4	1.0	-59.3	-13.0	-46.3	
1.420	-31.5	H	3.0	35.7	1.0	-66.2	-13.0	-53.2	
2.130	-24.1	H	3.0	35.4	1.0	-58.5	-13.0	-45.5	
High Ch, (711MHz)									
1.422	-30.7	V	3.0	35.7	1.0	-65.4	-13.0	-52.4	
2.133	-24.9	V	3.0	35.4	1.0	-59.3	-13.0	-46.3	
1.422	-29.8	H	3.0	35.7	1.0	-64.5	-13.0	-51.5	
2.133	-26.0	H	3.0	35.4	1.0	-60.3	-13.0	-47.3	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.