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CERTIFICATE OF COMPLIANCE

TEST REPORT

GS Instruments Co., Ltd.

1385-14, Juan-Dong, Nam-Ku, Incheon,
402-200 Korea

Date of Issue: November 25, 2010

Test Report No.: HCTR1011FR09-2

Test Site: HCT CO., LTD.

FCC

:

U88-CC25K700

APPLICANT

:

GS Instruments Co., Ltd.

EUT Type: LTE Repeater
UL Frequency: 777.0 MHz – 787.0 MHz
698.5 MHz – 703.5 MHz
704.5 MHz – 709.5 MHz
DL Frequency: 746.0 MHz – 756.0 MHz
728.5 MHz – 733.5 MHz
734.5 MHz – 739.5 MHz
Max. RF Output Power: 24 dBm (251 mW)
Trade Name/Model(s): GS Instruments Co., Ltd. / CoverCell25K700
FCC Classification: Licensed Non-Broadcast Station Transmitter (TNB)
Application Type: Certification
FCC Rule Part(s): §2, §15 Subpart B, §27 Subpart C
Emission Designator(s): 8M61G7D (QPSK), 8M61D7D (16QAM), 8M61D7D (64QAM)

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in § 2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT Co., Ltd. Certifies that no party to this application has been denied FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C. 853(a)



Report prepared by
: Chang Seok Choi
Test engineer of RF Team



Approved by
: Sang Jun Lee
Manager of RF Team

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCTR1011FR09	November 08, 2010	First Approval Report
HCTR1011FR09-1	November 11, 2010	Change the Section 3 RF Exposure test limit.
HCTR1011FR09-2	November 25, 2010	Add Value to provide the calculation the limit is the lowest (698.5 MHz).

Table of Contents

1. SCOPE	4
3. DESCRIPTION OF TESTS	6
3.1 Conducted RF Power Test	7
3.2 Occupied bandwidth.....	2 0
3.3 Spurious Emissions at Antenna Terminal.....	4 1
3.4 Radiated Spurious Emissions.....	7 1
3.5 Frequency stability	7 3
3.6 RF Exposure Statement	7 5
4. LIST OF TEST EQUIPMENT	7 7
5. CONCLUSION.....	7 8

MEASUREMENT REPORT

1. SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

General Information

Company Name:	GS Instruments Co., Ltd.
Address:	1385-14, Juan-Dong, Nam-Ku, Incheon, 402-200 Korea
Tel. / Fax :	+ 82-32-870-5782 / + 82-32-870-5784
E-Mail:	excitingb b@gsinstrument.com

FCC:	U88-CC25K700
EUT Type:	LTE Repeater
Trade Name:	GS Instruments Co., Ltd.
Model(s):	CoverCell25K700
Frequency Ranges	Uplink : 777.0 MHz – 787.0 MHz 698.5 MHz - 703.5 MHz 704.5 MHz - 709.5 MHz Downlink: 746.0 MHz – 756.0 MHz 728.5 MHz - 733.5 MHz 734.5 MHz - 739.5 MHz
Application Type:	Certification
FCC Classification:	Licensed Non-Broadcast Station Transmitter (TNB)
FCC Rule Part(s):	§2, §15 Subpart B, §27 Subpart L
Modulation(s):	QPSK, 16QAM, 64QAM
RF Output Power:	Uplink: 24 dBm Downlink : 24 dBm

2. INTRODUCTION

EUT DESCRIPTION

The GS Instruments Co., Ltd. CoverCell25K700 LTE User Equipment.

Its basic purpose is used for communications.

It transmits from Uplink : 777 - 787 MHz, 698.5 - 703.5 MHz, 704.5 - 709.5 MHz
and receives from Downlink: 746 - 756 MHz, 728.5 - 733.5 MHz.

The RF power is rated at 0.251 W (24 dBm).

MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

TEST FACILITY

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 105-1, Jangam-ri , Majang-Myeon, Icheon-si, 467-811, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated June 10, 2009 (Registration Number: 90661)

3. DESCRIPTION OF TESTS

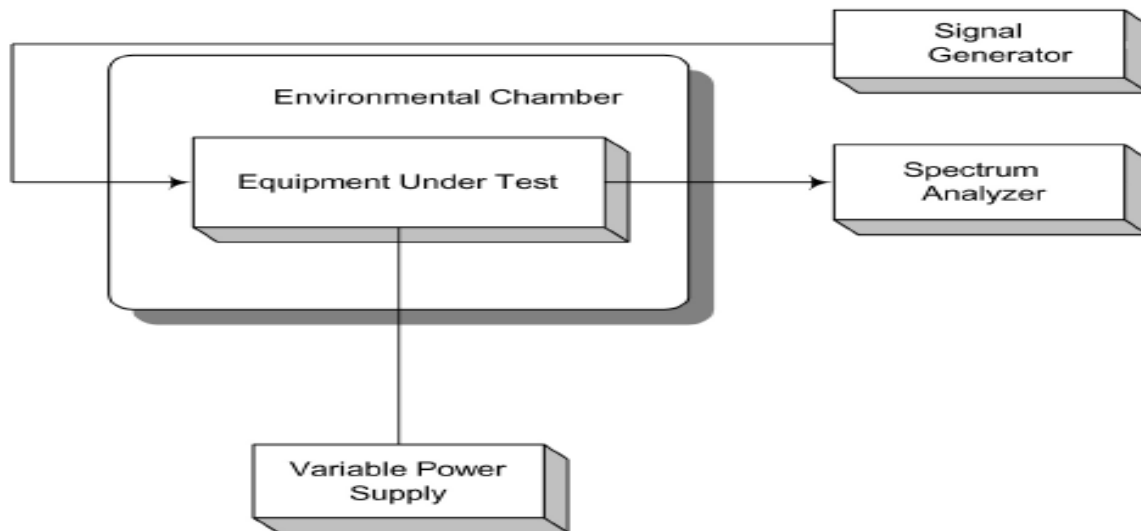
Test Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1046 27.50(d)	RF Power Output	N/A	Conducted	PASS	3.1
2.1049(i)	Occupied Bandwidth	N/A		PASS	3.2
2.1051 27.53(g)	Conducted Spurious Emissions at Antenna Terminals	$< 43 + 10\log_{10}(P[\text{Watt}])$		PASS	3.3
2.1053 27.53(g)	Spurious Emissions	$< 43 + 10\log_{10}(P[\text{Watt}])$ Radiated		PASS	3.4
2.1055 27.54	Frequency Stability	Within the allotted band	Conducted	PASS	3.5
2.1091 2.1093	RF Exposure	0.521 mW/cm ² SAR		PASS	3.6

Test Result: The product presented for testing complied with test requirements as shown above.

3.1 Conducted RF Power Test

Test Set-up



Test Procedure

According to FCC §2.1046 (A), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

- 1) The EUT was coupled to the spectrum analyzer and the base station simulator through a power divider. The radio frequency load attached to the EUT antenna terminal was 50 Ohm. The loss of the cables the test system is calibrated to correct the reading.
- 2) The spectrum analyzer was set to AVG Detector function and Average Trace mode.
- 3) The resolution bandwidth of the spectrum analyzer was comparable to the emission bandwidth.

Test Result- Down Link

Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
QPSK	Upper C	751	24.08	0.2559	-
	Lower A	731	23.92	0.2466	-
	Lower B	737	23.83	0.2415	-

Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
16QAM	Upper C	751	23.85	0.2427	-
	Lower A	731	23.80	0.2399	-
	Lower B	737	23.83	0.2415	-

Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
64QAM	Upper C	751	23.95	0.2483	-
	Lower A	731	23.84	0.2421	-
	Lower B	737	23.92	0.2466	-

Test Result- Up Link

Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
QPSK	Upper C	782	23.99	0.2512	-
	Lower A	701	23.50	0.2239	-
	Lower B	707	23.72	0.2355	-

Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
16QAM	Upper C	782	23.79	0.2393	-
	Lower A	701	23.53	0.2254	-
	Lower B	707	23.54	0.2259	-

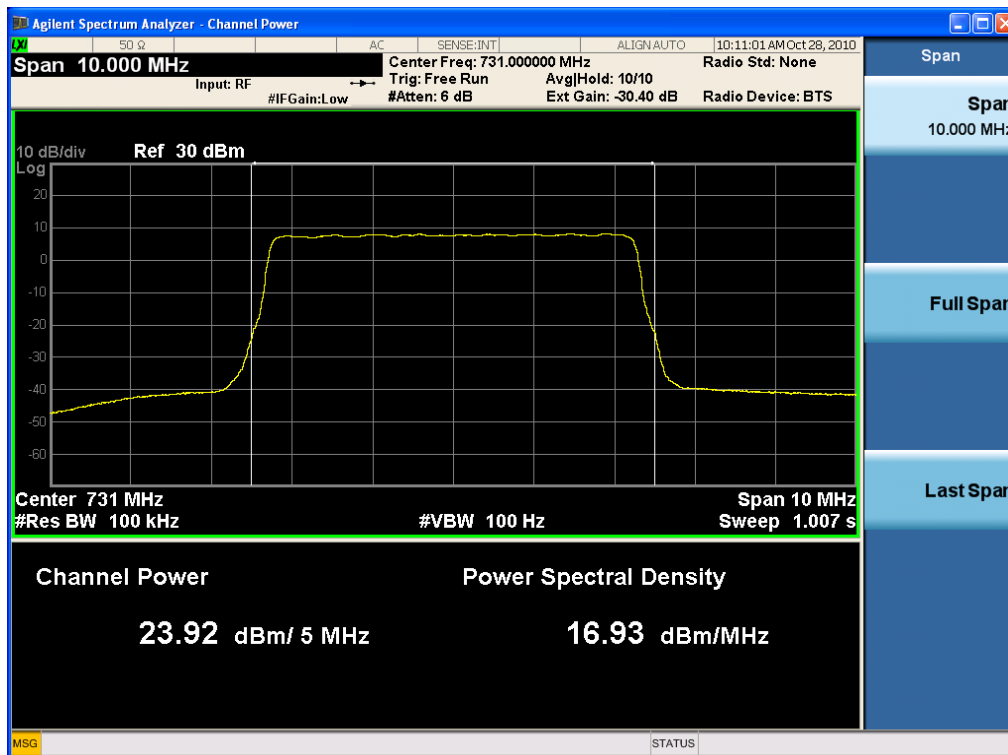
Modulation Type	Cannel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit
64QAM	Upper C	782	23.64	0.2312	-
	Lower A	701	23.45	0.2213	-
	Lower B	707	23.66	0.2323	-

Test Plots

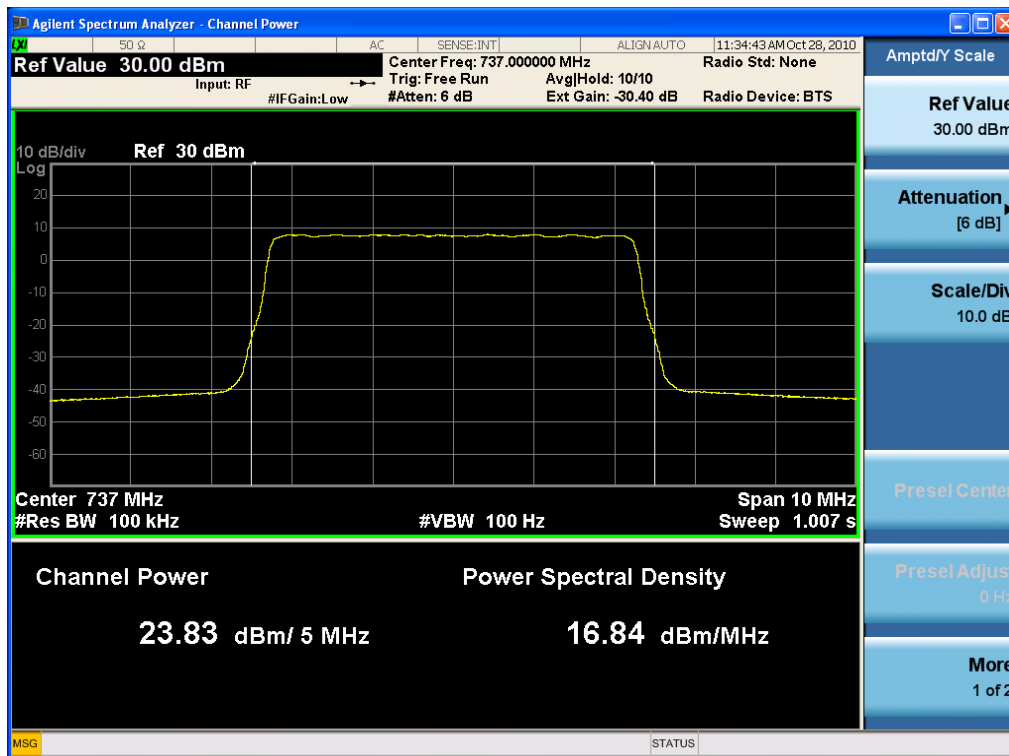
[QPSK]



(751 MHz)

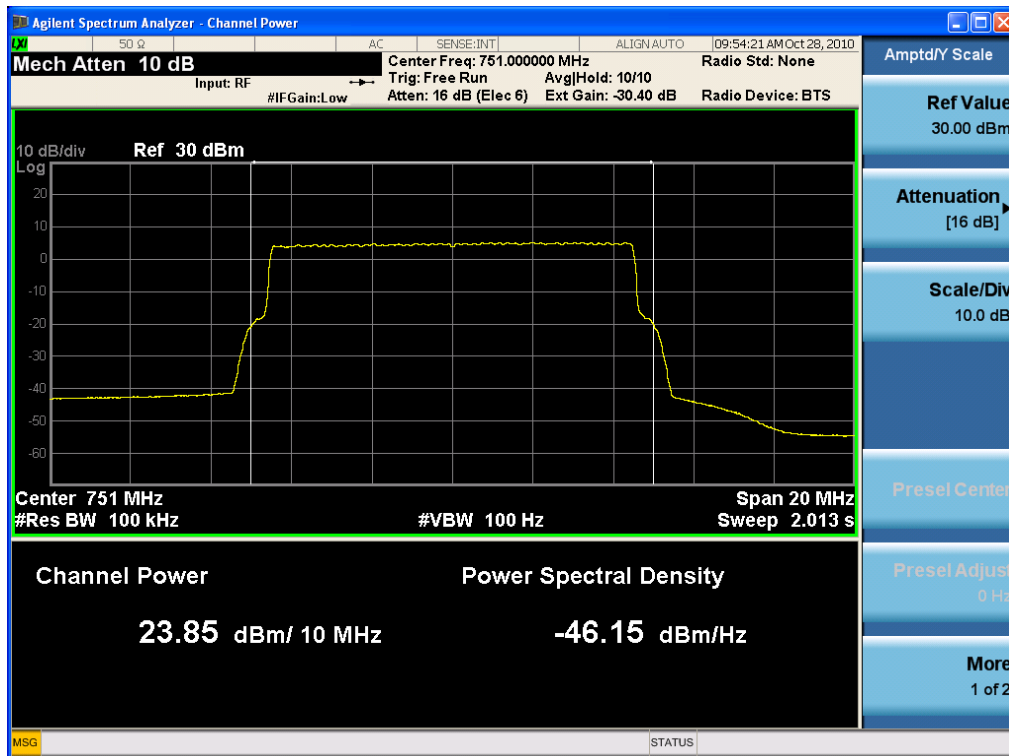


(731 MHz)

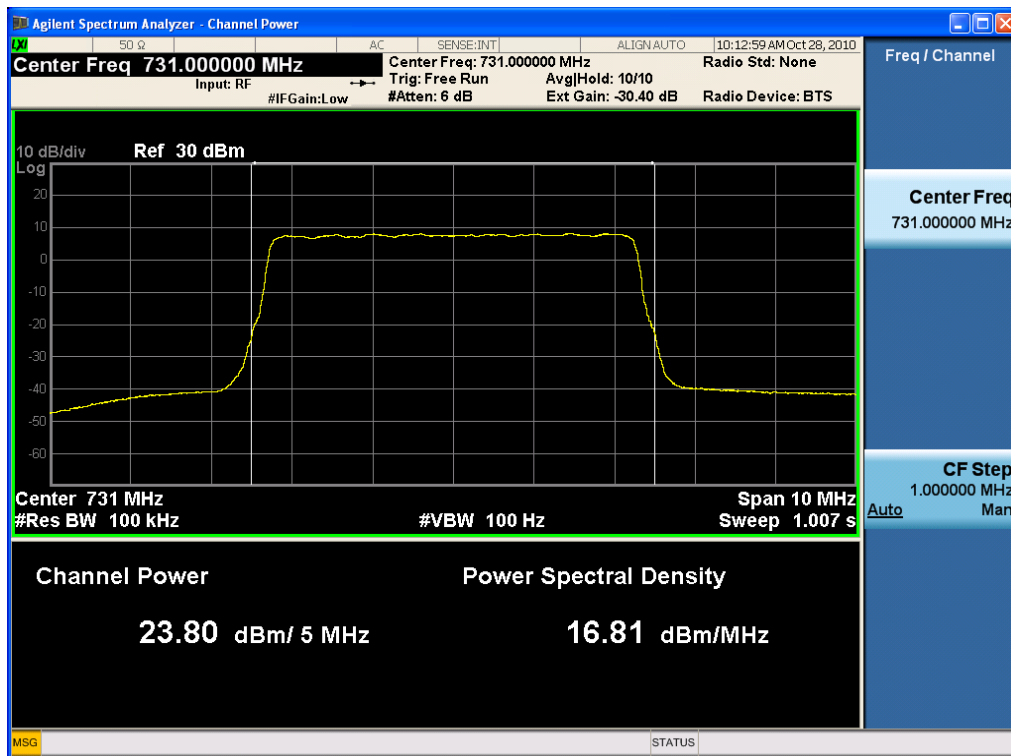


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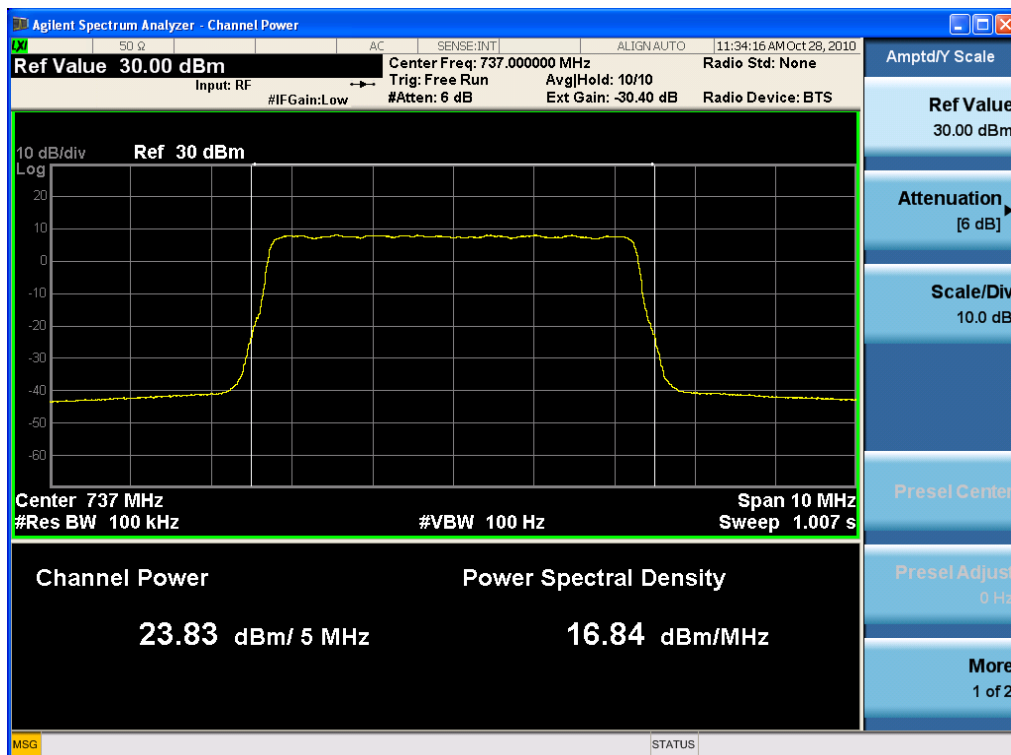
[16QAM]



(751 MHz)



(731 MHz)

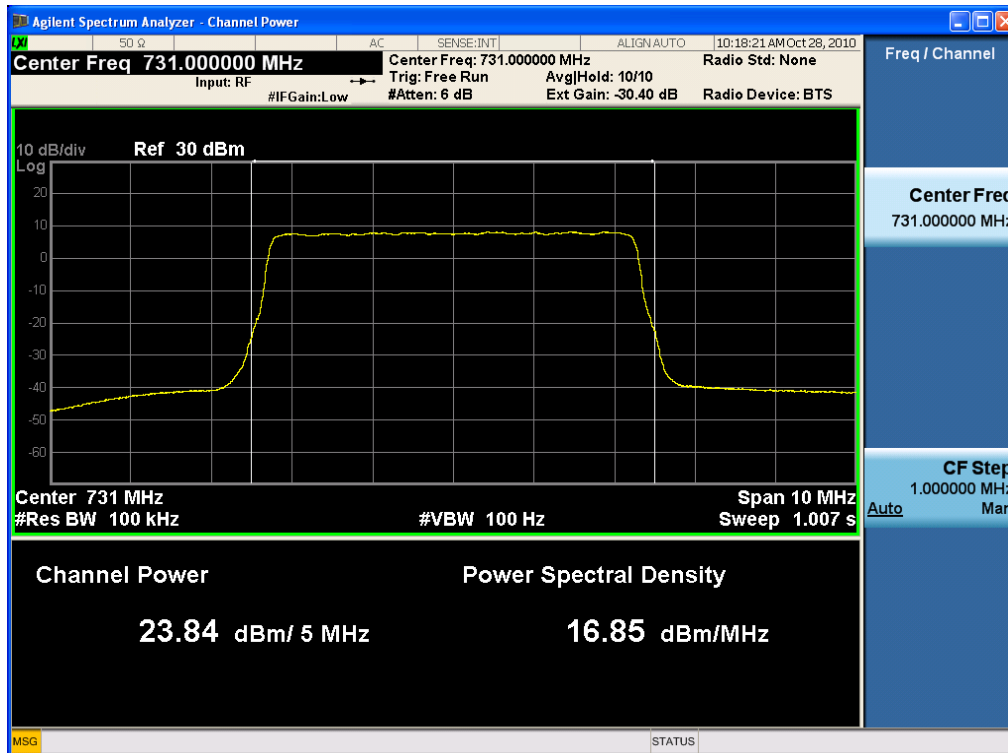


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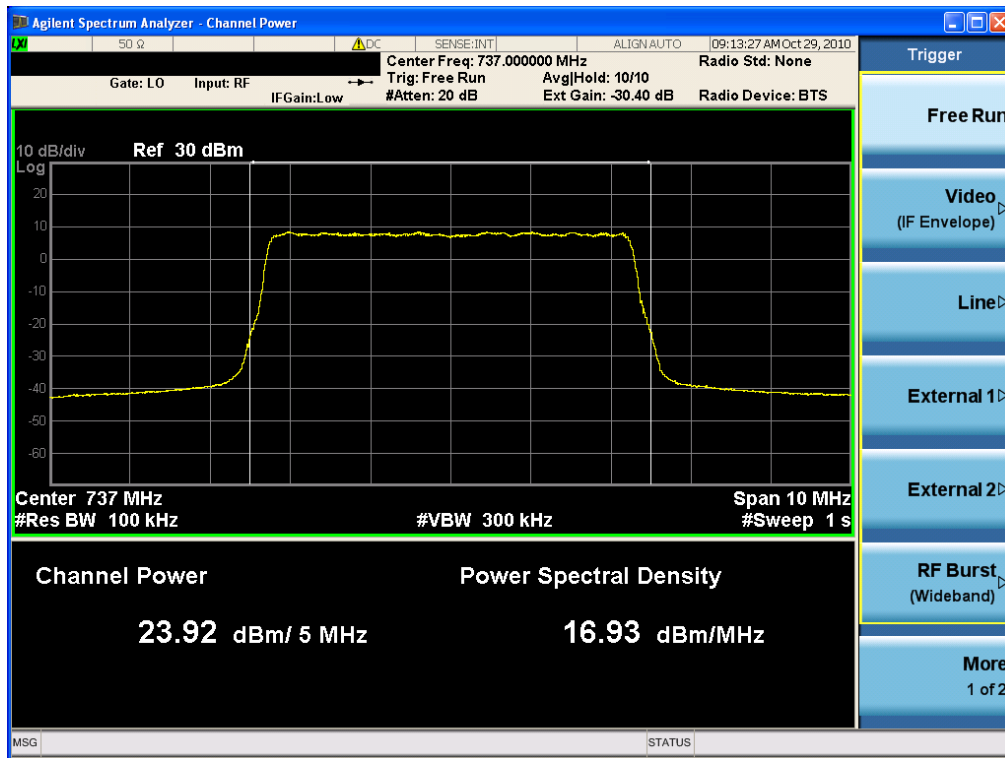
[64QAM]



(751 MHz)



(731 MHz)

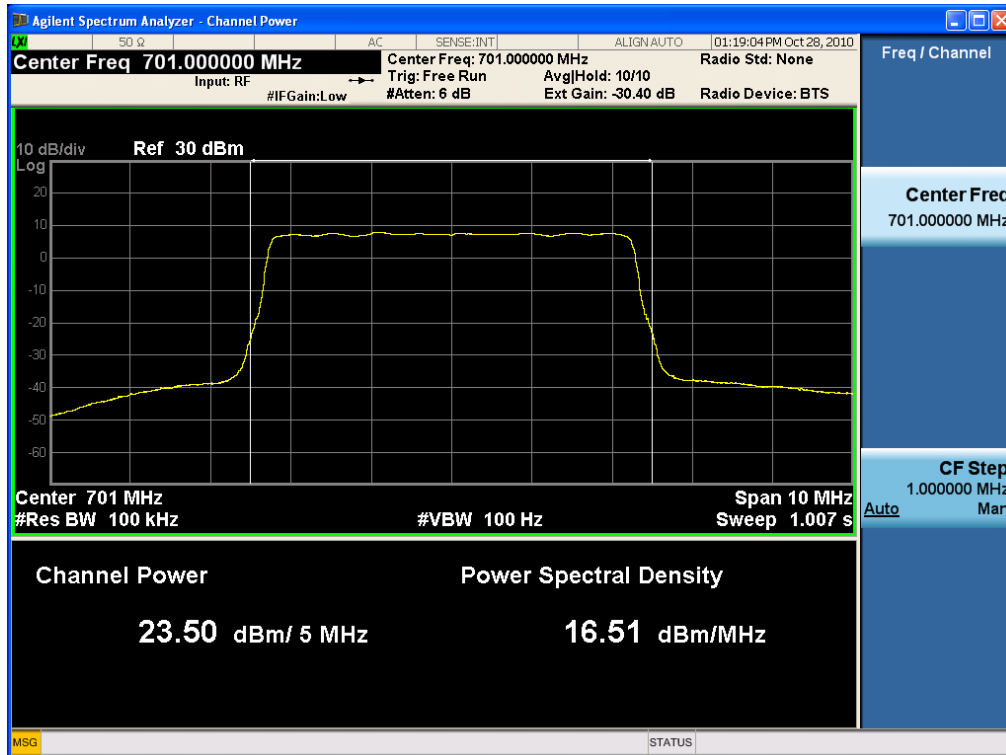


(737 MHz)

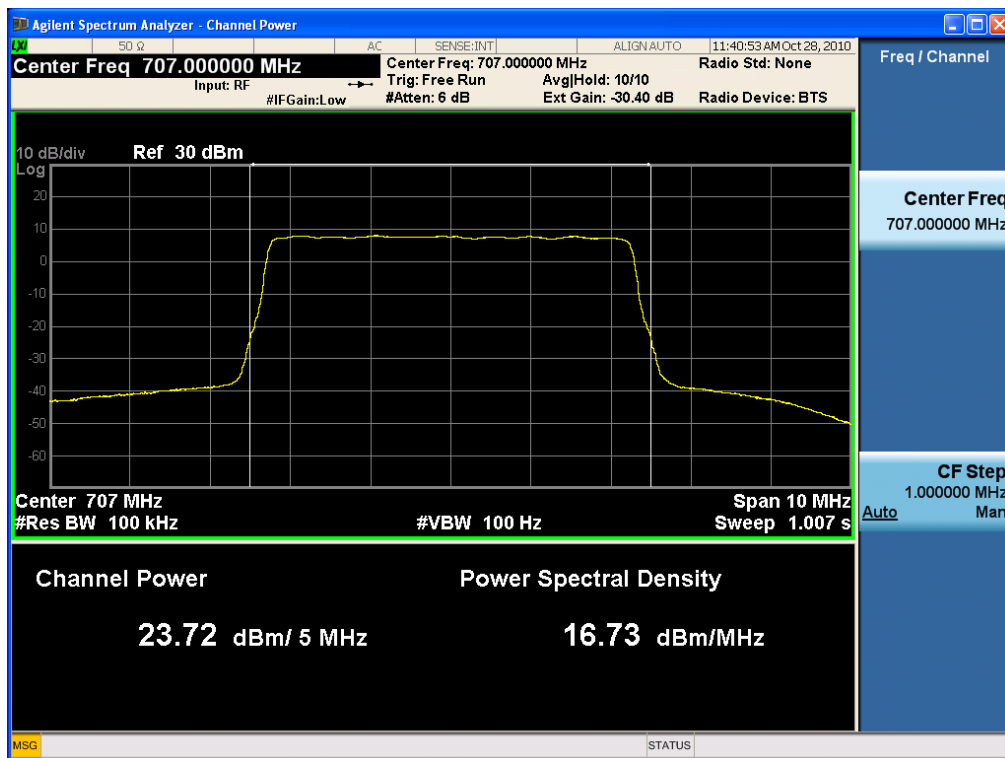
[QPSK]-Up Link



(782 MHz)

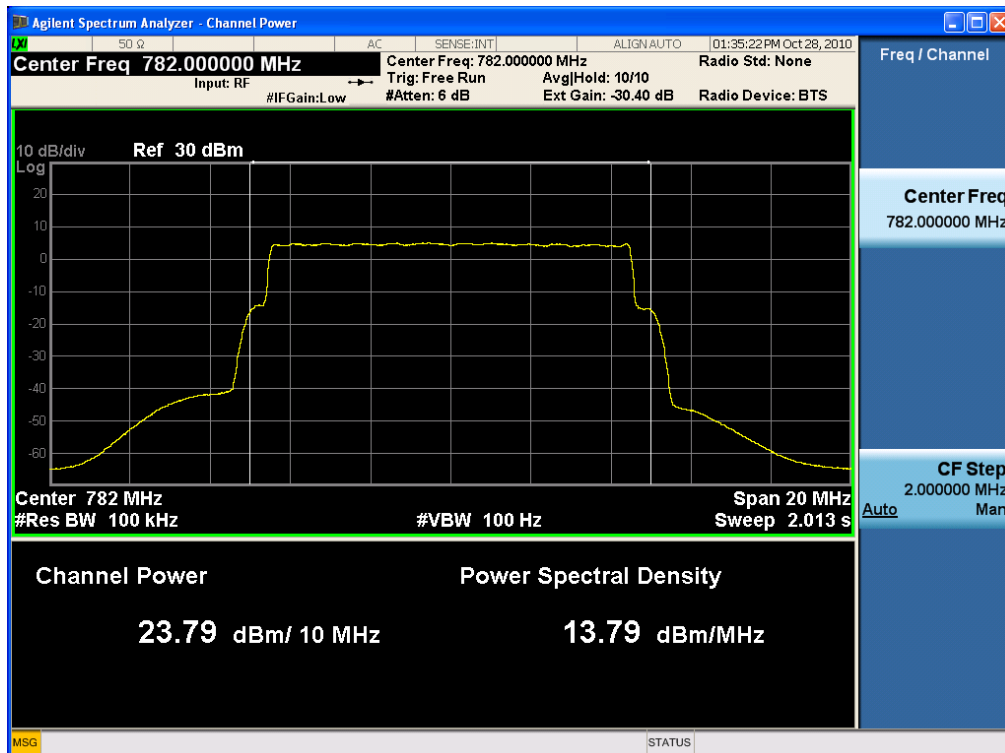


(701 MHz)



(707 MHz)

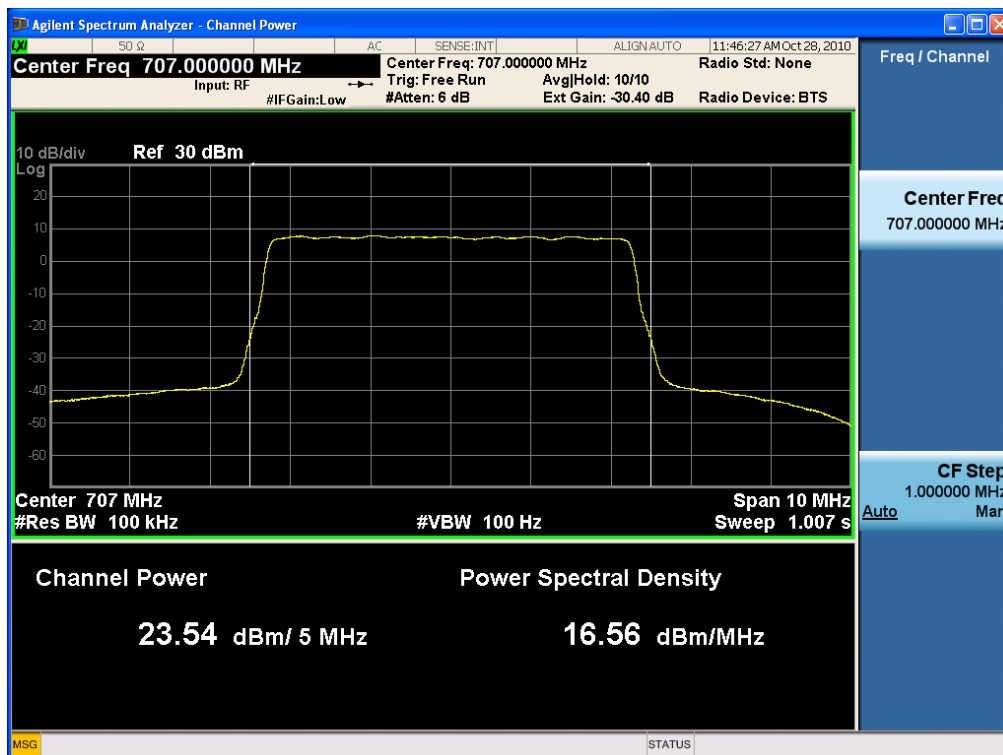
[16QAM] -Up Link



(782 MHz)



(701 MHz)

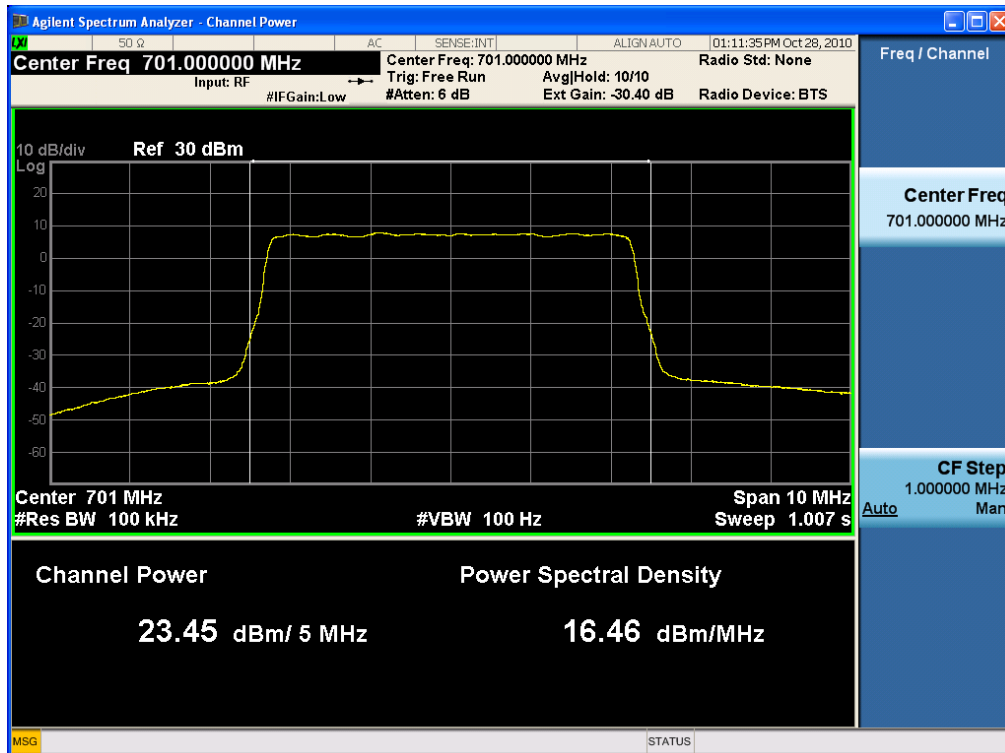


(707 MHz)

[64QAM] -Up Link



(782 MHz)



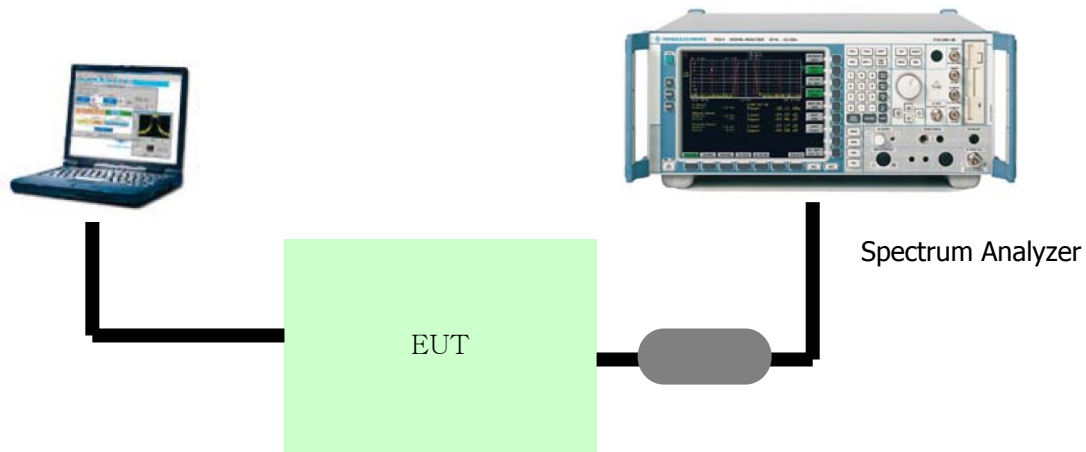
(701 MHz)



(707 MHz)

3.2 Occupied bandwidth

Test Set-up



Test Procedure

The EUT was setup to maximum output power at its lowest channel. The occupied bandwidth was measured using a spectrum analyzer. The measurements are repeated for the highest, lowest and a middle channel. The EUT's occupied bandwidth is measured by 99% bandwidth. Plots of the EUT's occupied bandwidth are shown herein.

Input Signal

INPUT SIGNAL	DOWNLINK	UPLINK
Source	LTE Forward Noise	LTE Reverse Noise
Power Level	- 60.9 dBm	- 59.2 dBm
Amplitude offset	- 30.4 dB	- 30.4 dB

Test Result- Down Link/ Output

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
QPSK	Upper C 751		9.453 -	
	Lower A	731	4.837	-
	Lower B 737		4.836 -	

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
16QAM	Upper C	751	10.010	-
	Lower A 731		4.844 -	
	Lower B	737	4.863	-

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
64QAM	Upper C	751	10.020	-
	Lower A 731		4.842 -	
	Lower B	737	4.842	-

Test Result- Down Link/ Input

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
QPSK	Upper C	751	9.243	-
	Lower A 731		4.893 -	
	Lower B	737	4.897	-

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
16QAM	Upper C	751	12.410	-
	Lower A 731		4.894 -	
	Lower B	737	4.901	-

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
64QAM	Upper C	751	12.43	-
	Lower A 731		4.895 -	
	Lower B	737	4.896	-

Test Result- Up Link/ Output

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
QPSK	Upper C	782	10.350	-
	Lower A	701	4.839	-
	Lower B 707		4.835 -	

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
16QAM	Upper C	782	10.360	-
	Lower A	701	4.845	-
	Lower B	707	4.849	-

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
64QAM	Upper C	782	10.340	-
	Lower A	701	4.853	-
	Lower B	707	4.841	-

Test Result- Up Link/ Input

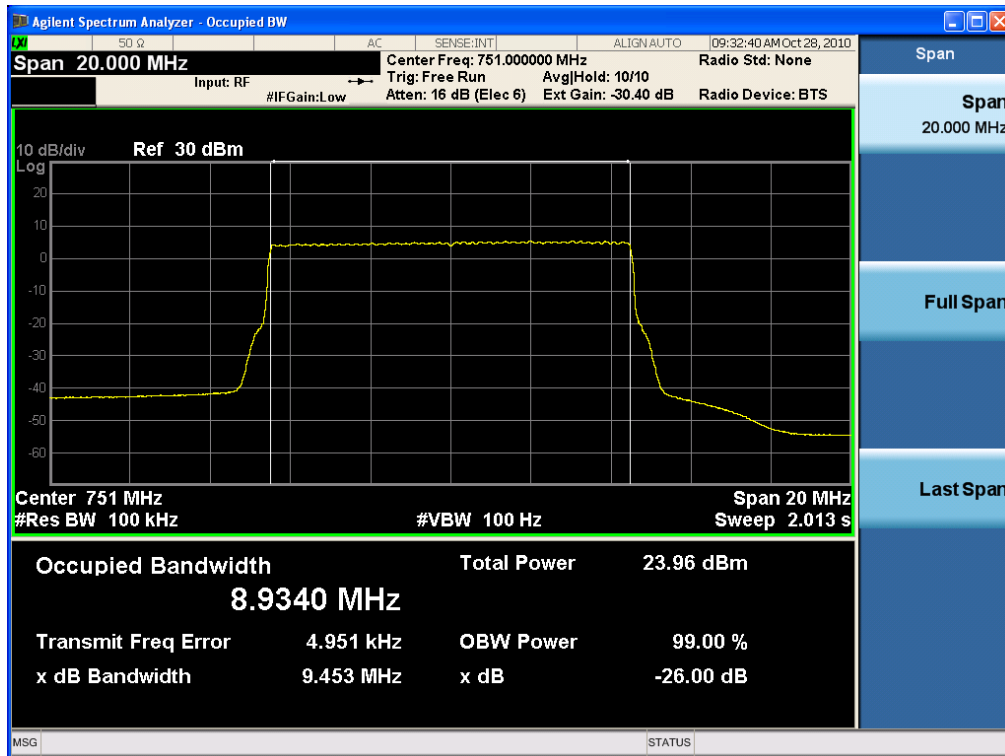
Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
QPSK	Upper C	782	12.340	-
	Lower A	701	4.849	-
	Lower B	707	4.852	-

Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
16QAM	Upper C	782	12.340	-
	Lower A	701	4.858	-
	Lower B	707	4.865	-

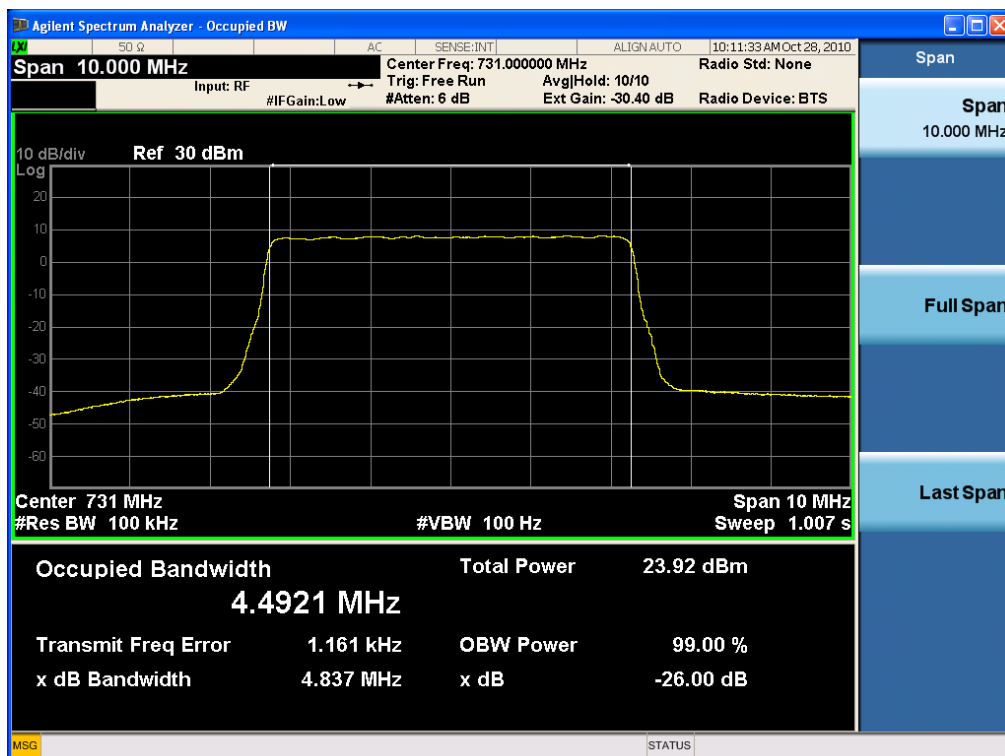
Modulation Type	Cannel	Frequency (MHz)	Occupied BandWidth (MHz)	Limit
64QAM	Upper C	782	12.350	-
	Lower A	701	4.845	-
	Lower B	707	4.860	-

Test Plots

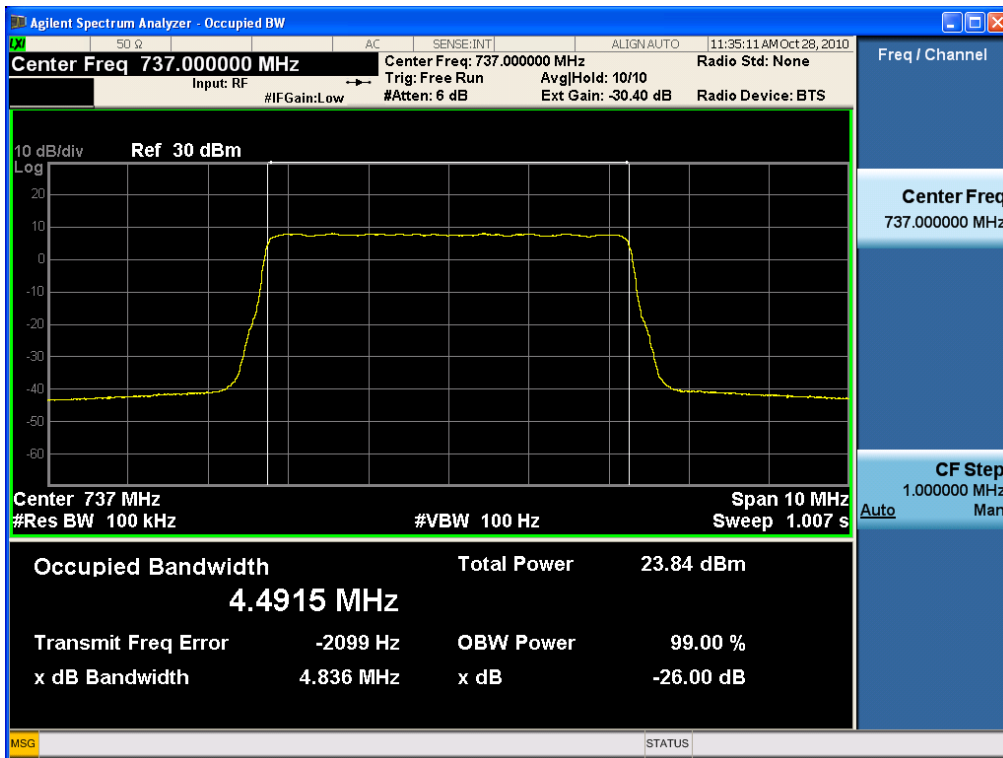
[QPSK] -Down Link (Output)



(751 MHz)

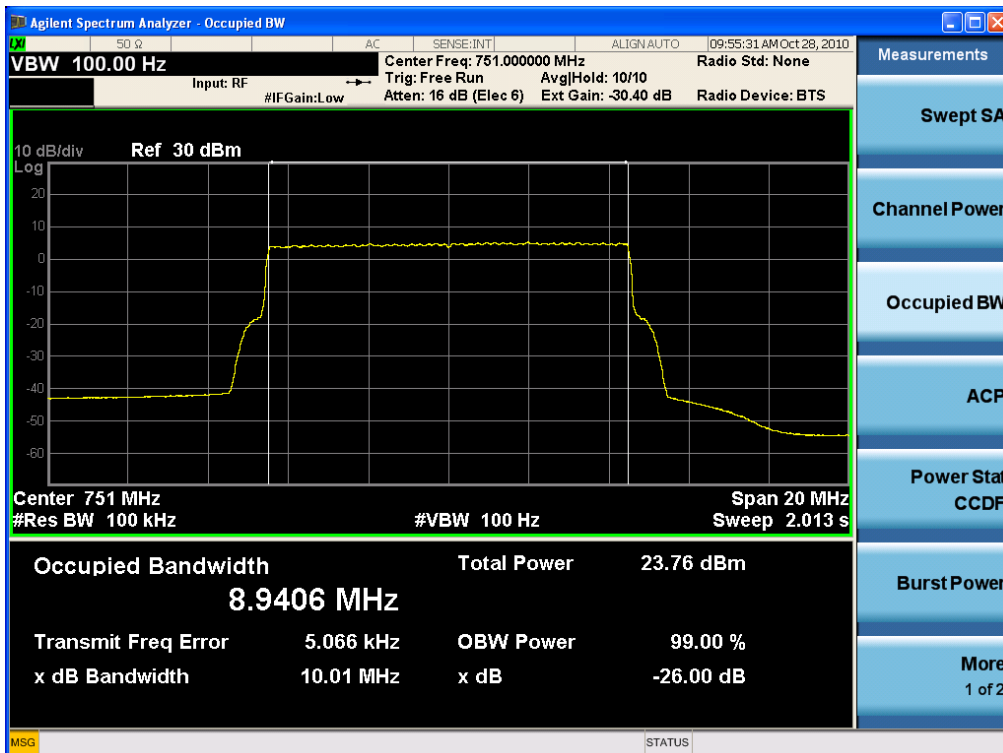


(731 MHz)

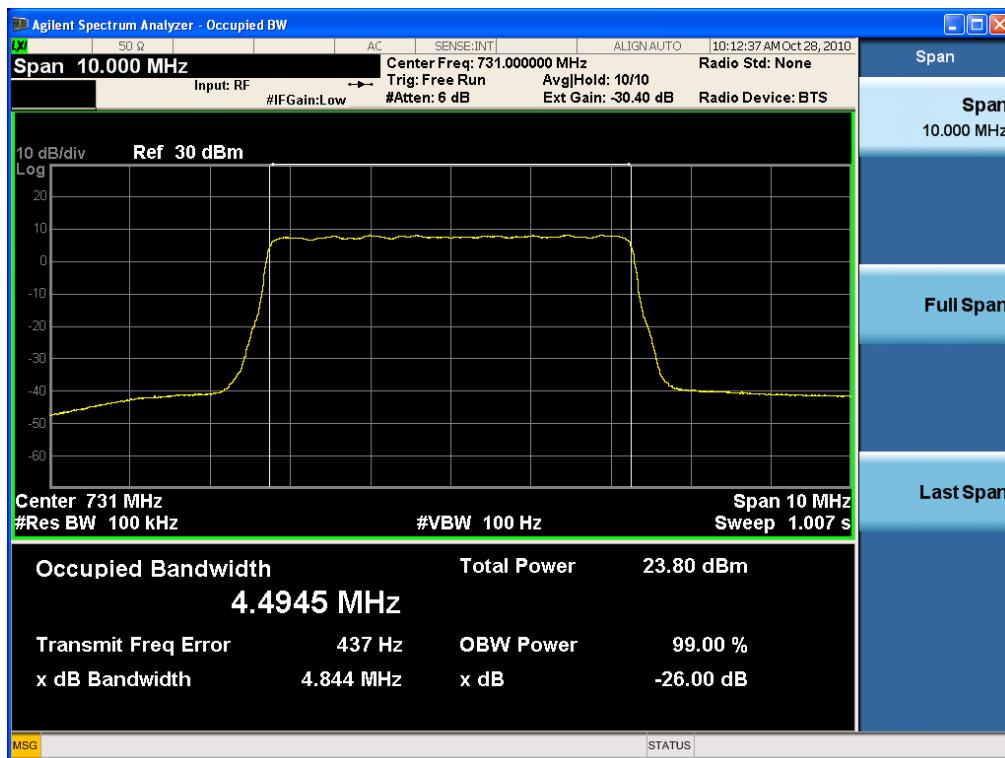


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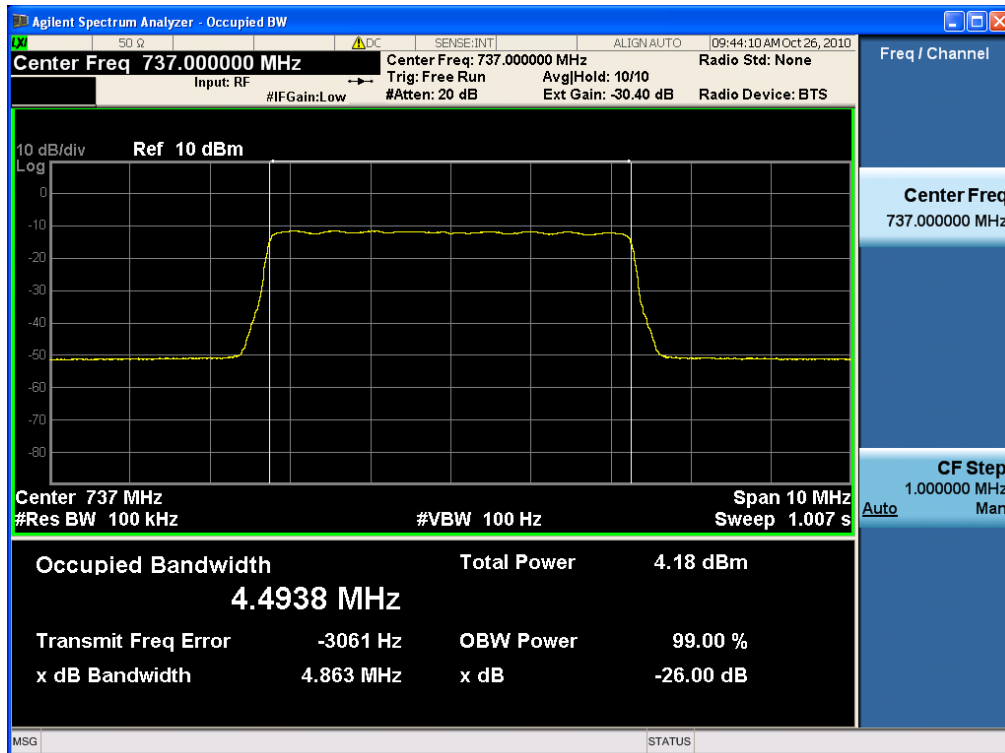
[16QAM] -Down Link (Output)



(751 MHz)

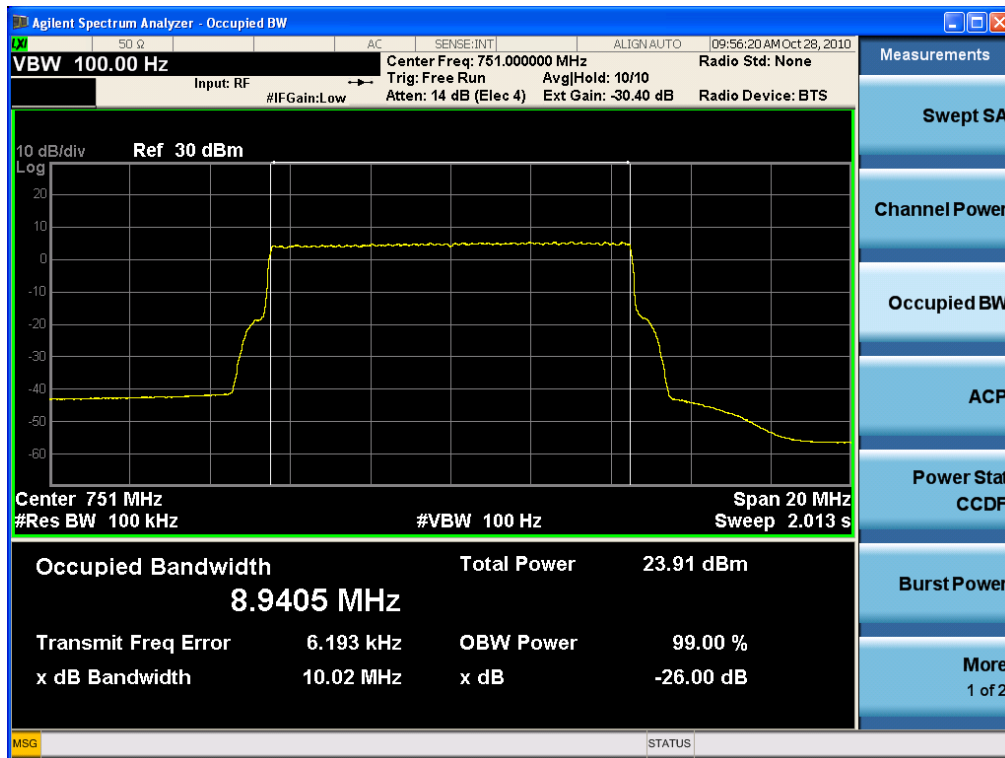


(731 MHz)

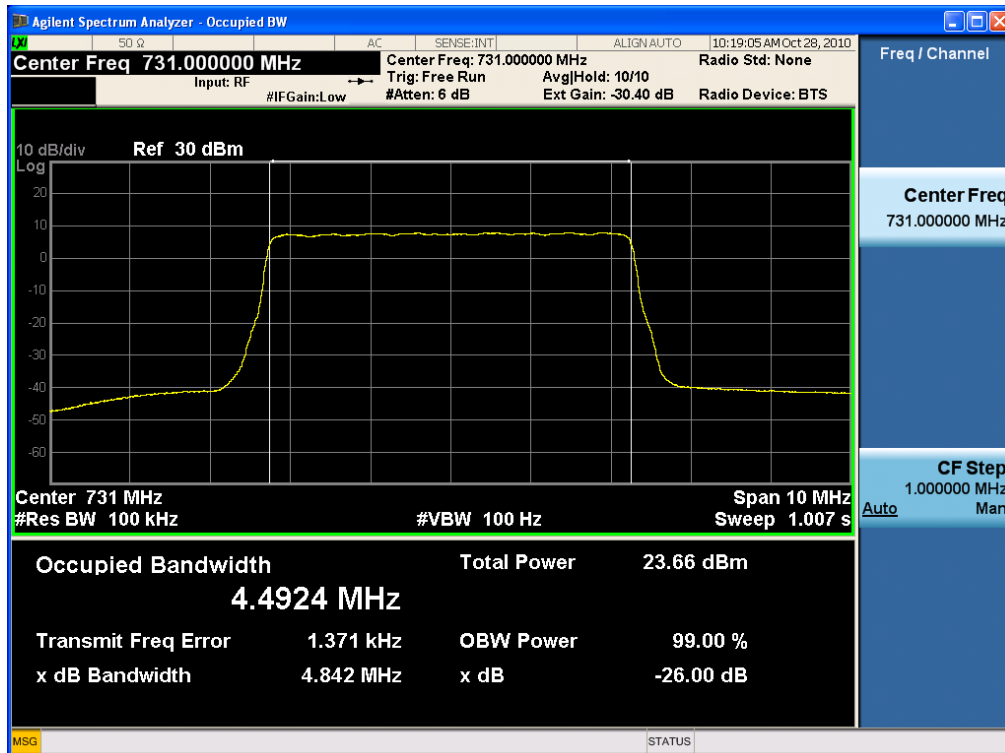


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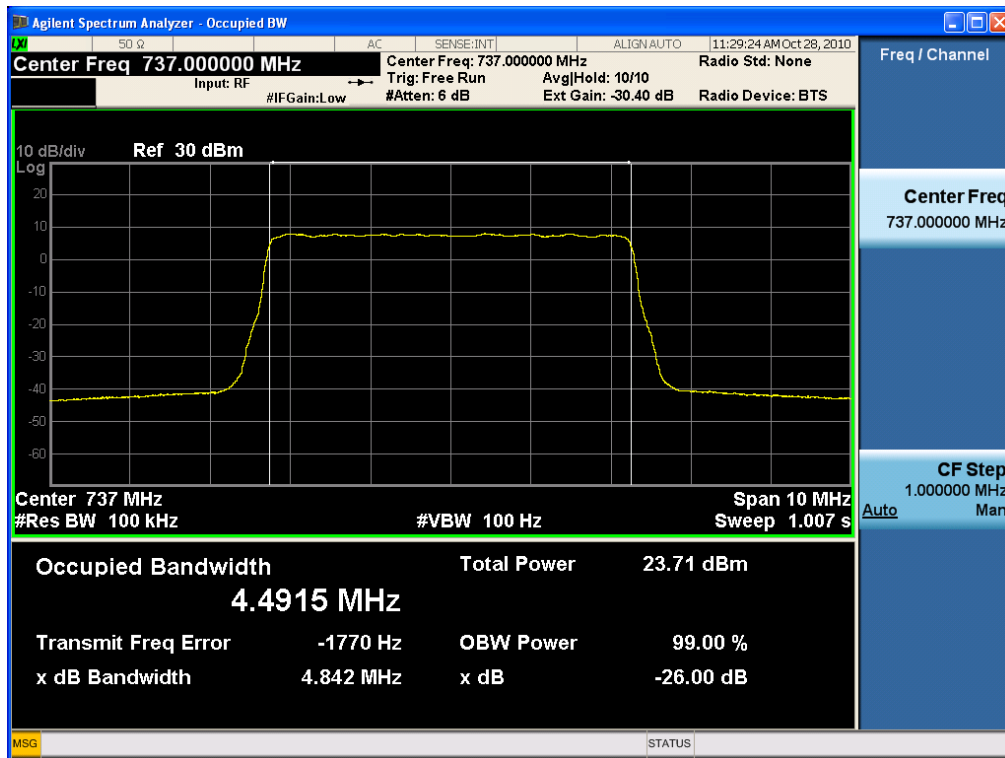
[64QAM] -Down Link (Output)



(751 MHz)

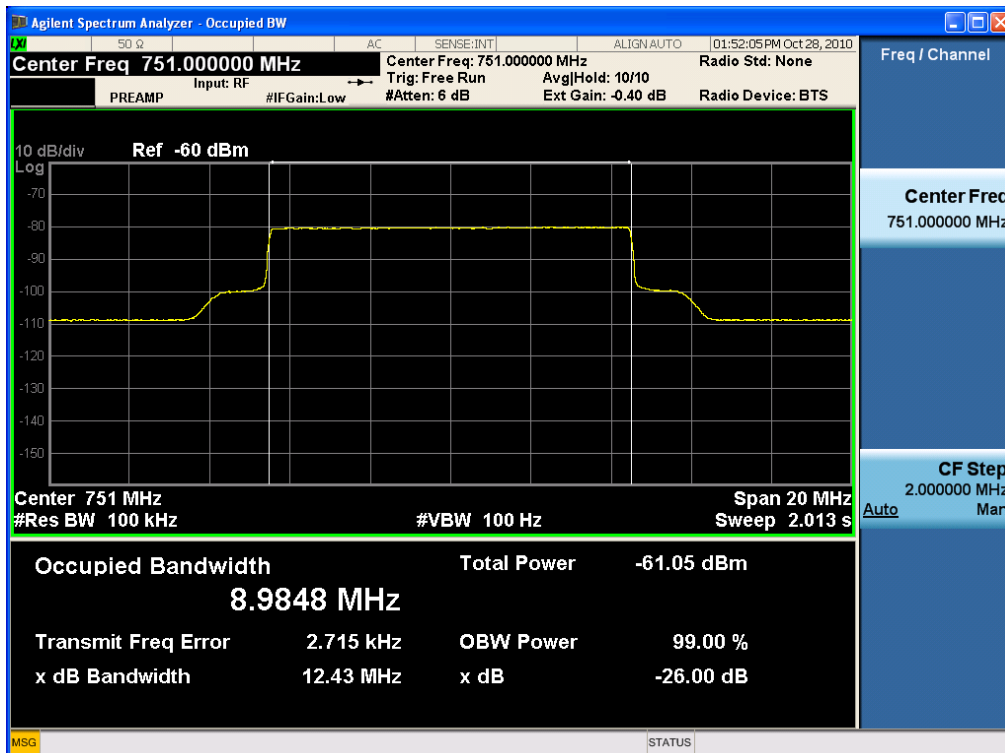


(731 MHz)

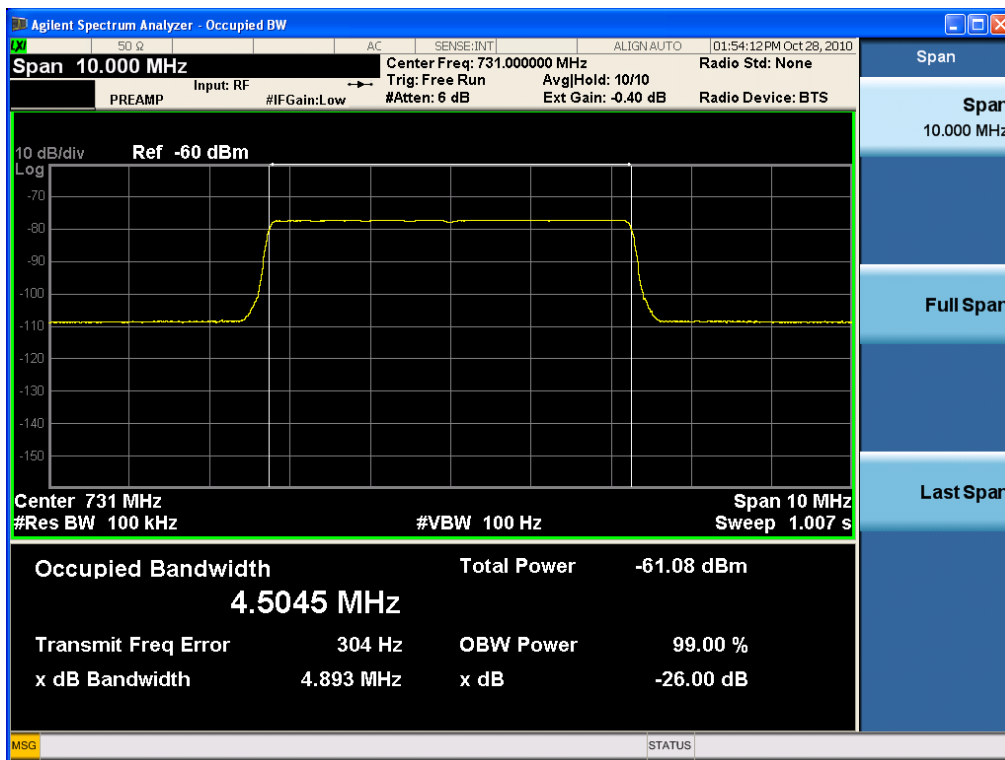


(737 MHz)

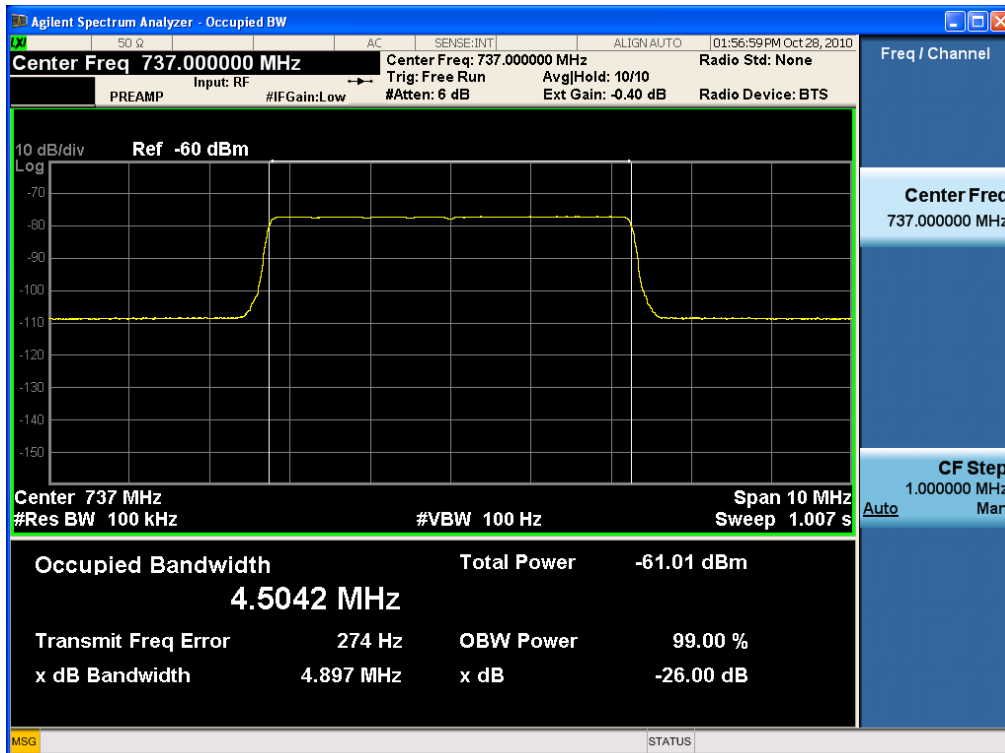
[QPSK]-Down Link (Input)



(751 MHz)

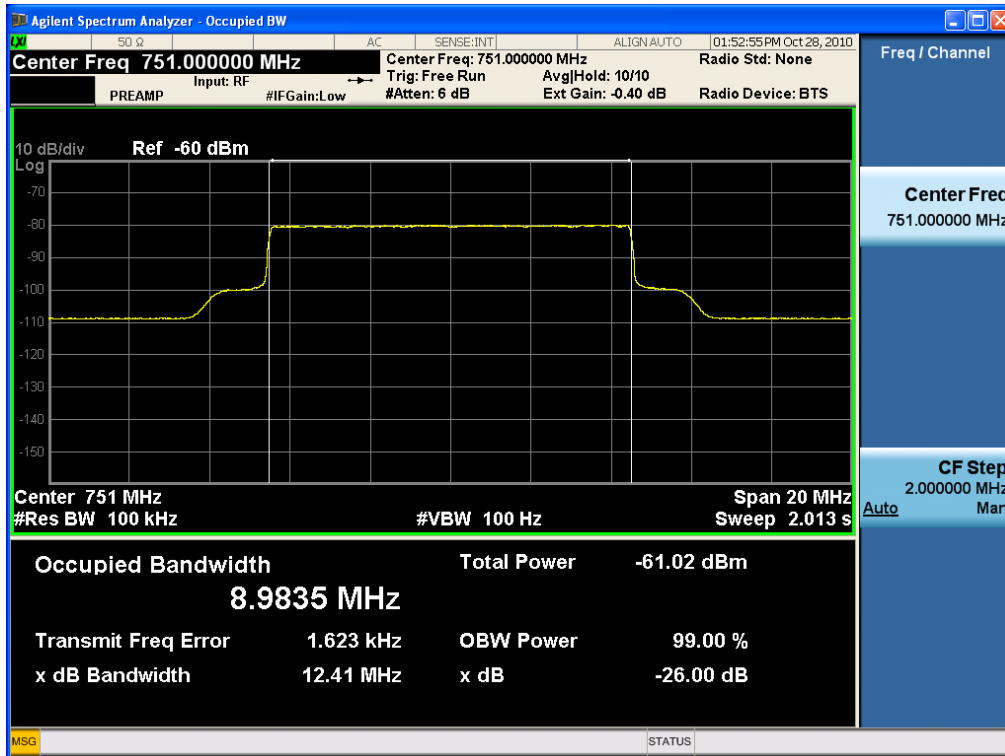


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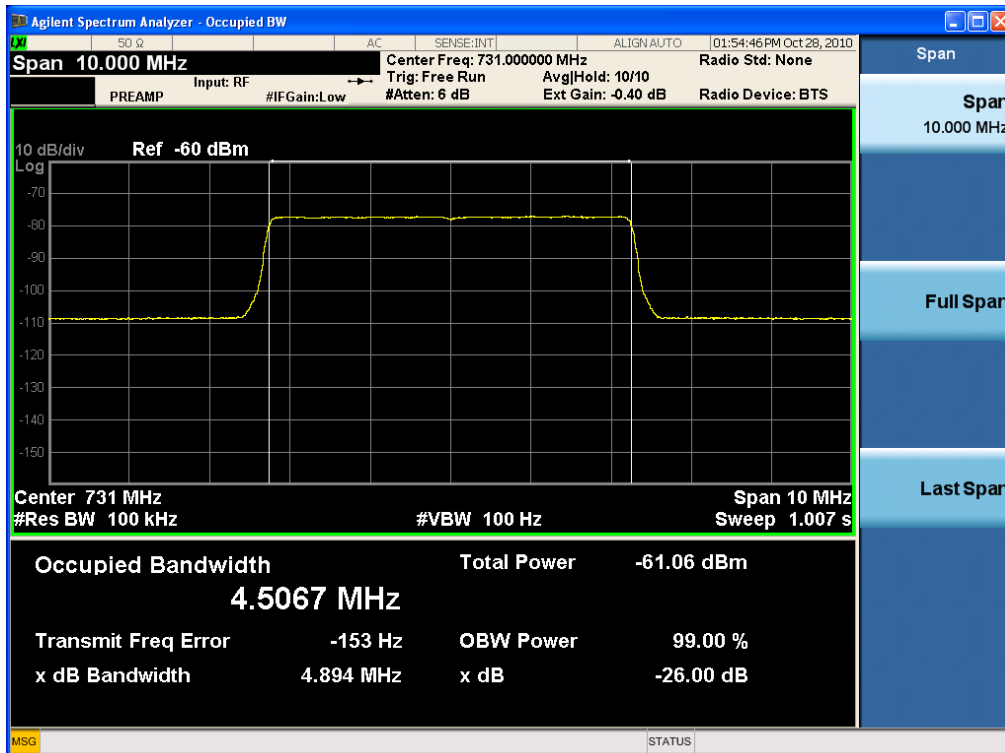


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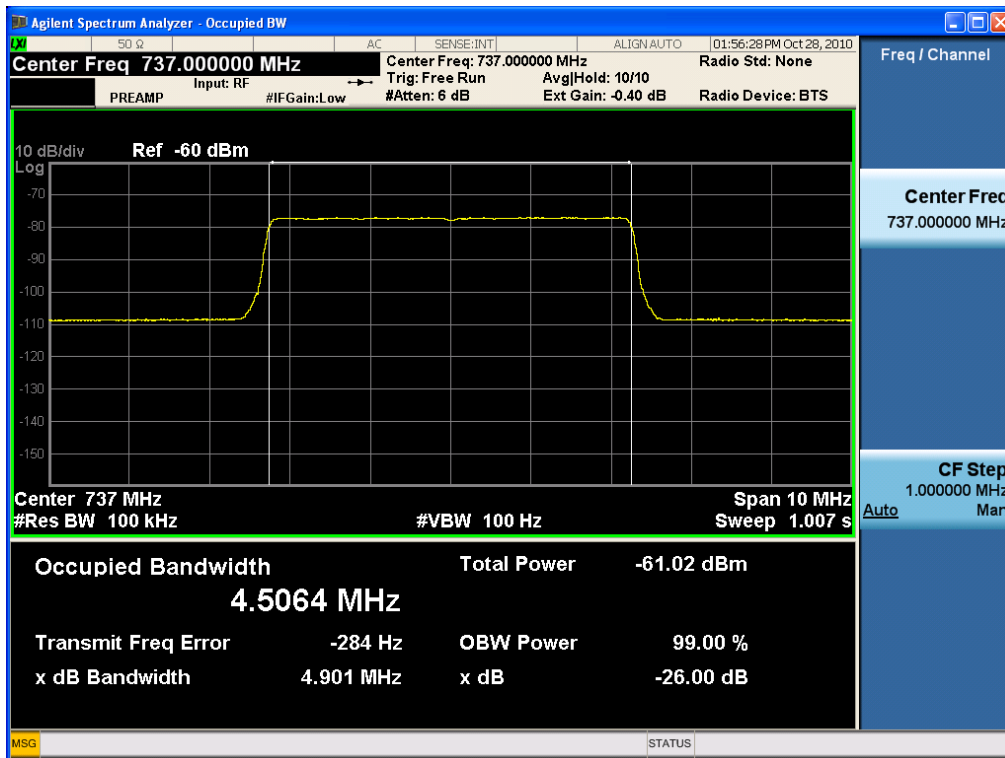
[16QAM] -Down Link (Input)



(751 MHz)

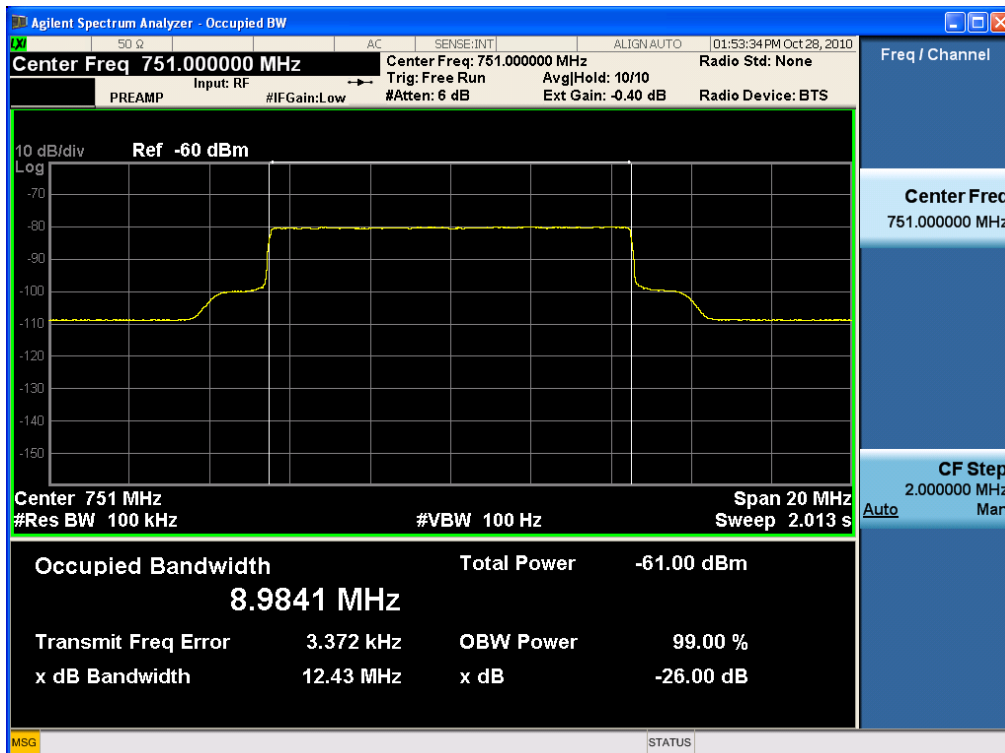


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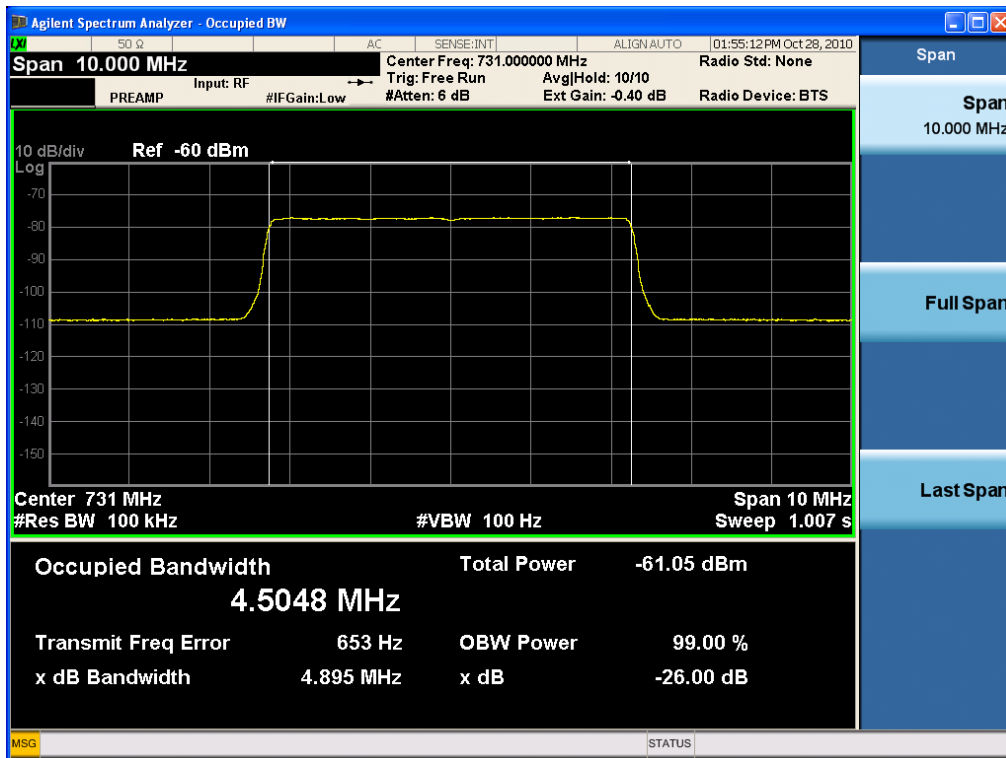


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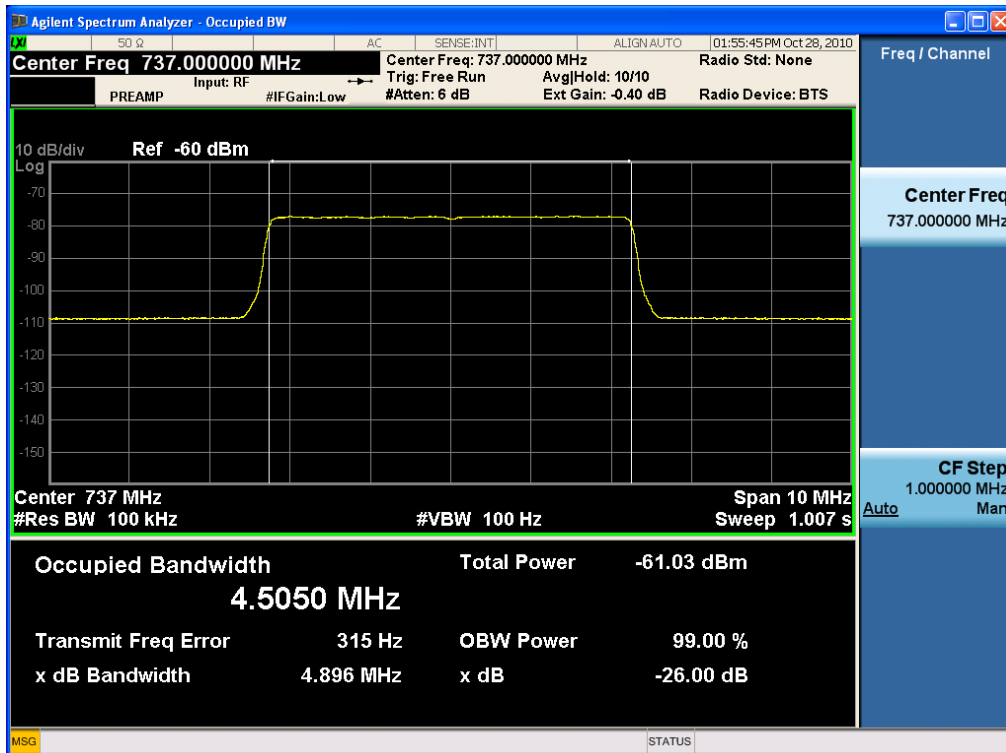
[64QAM] -Down Link (Input)



(751 MHz)

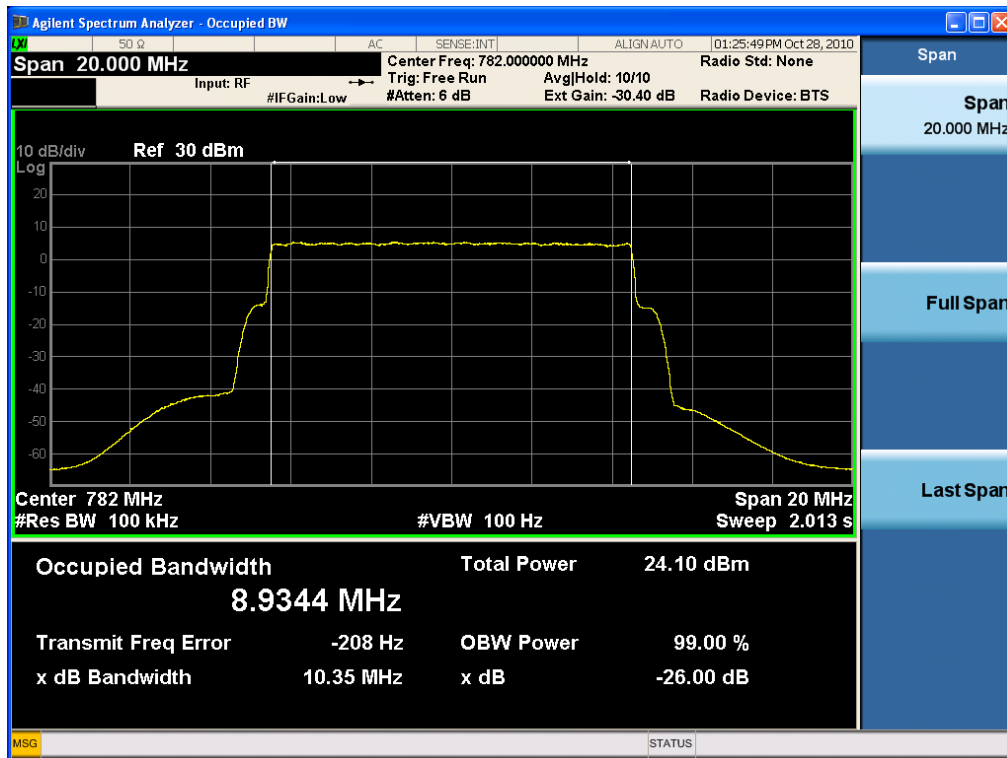


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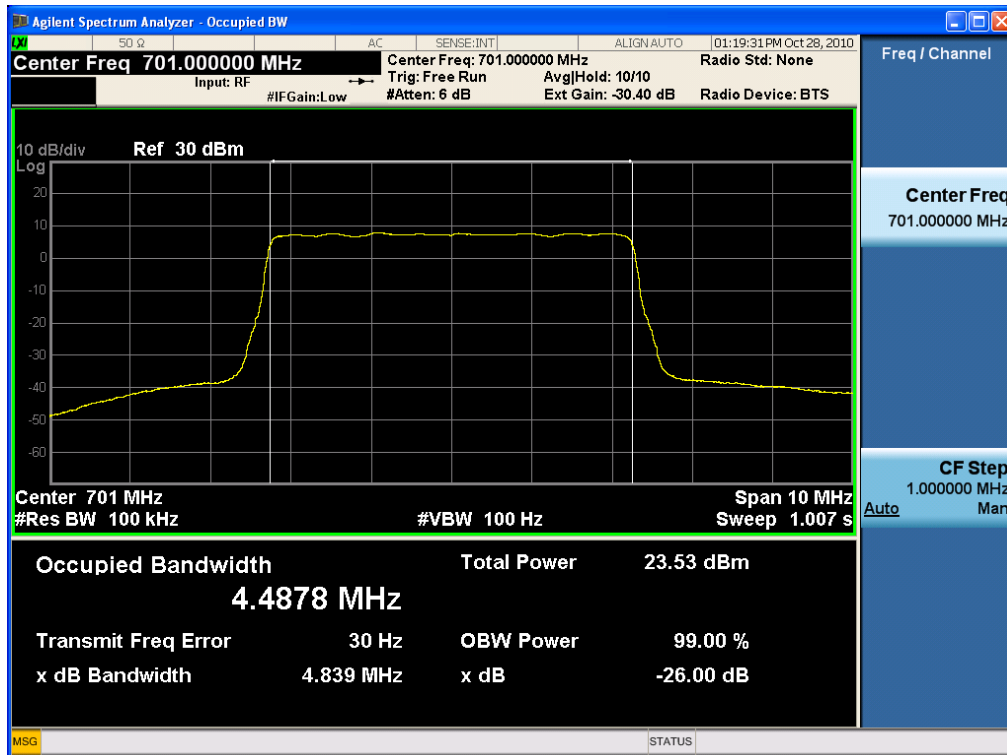


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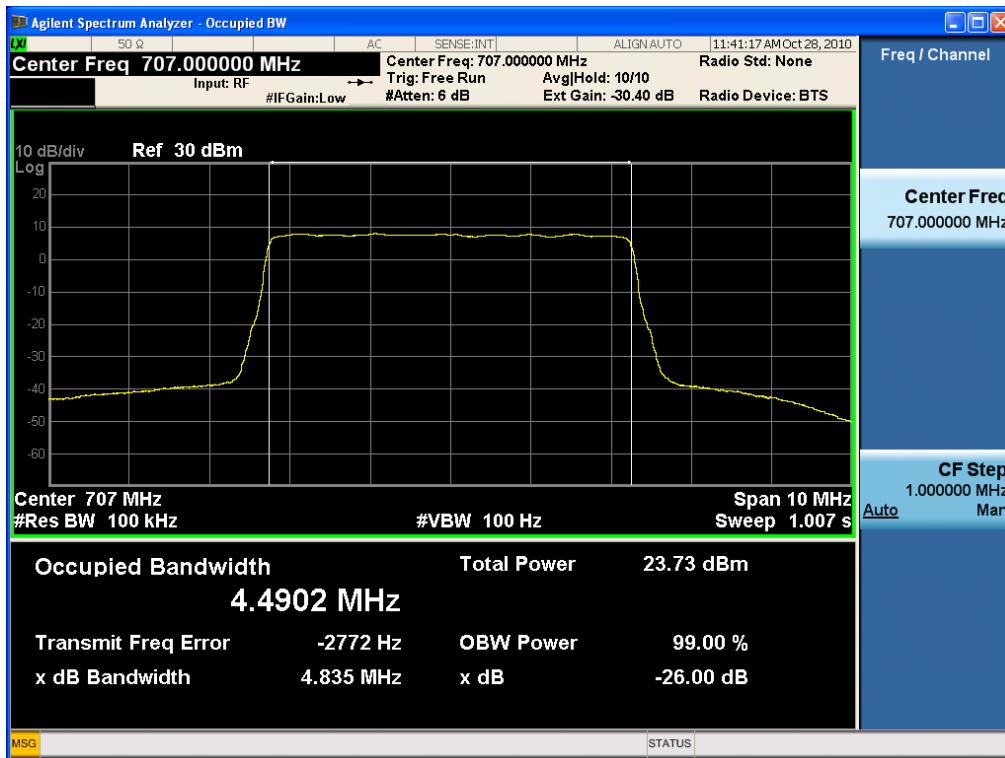
[QPSK]-Up Link (Output)



(782 MHz)

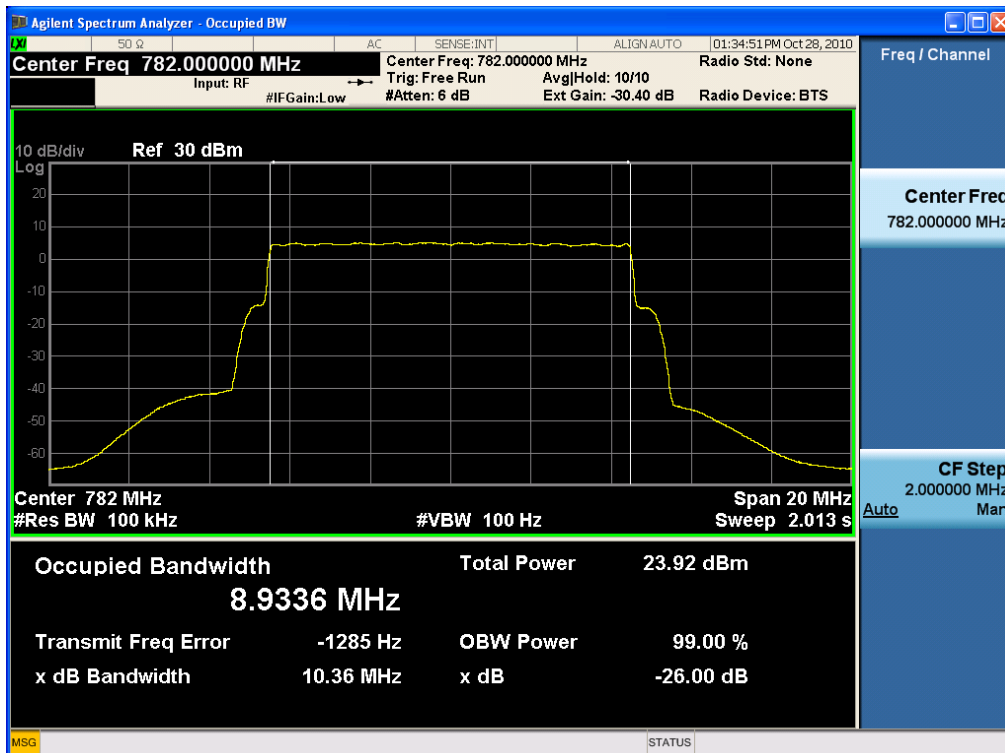


(701 MHz)

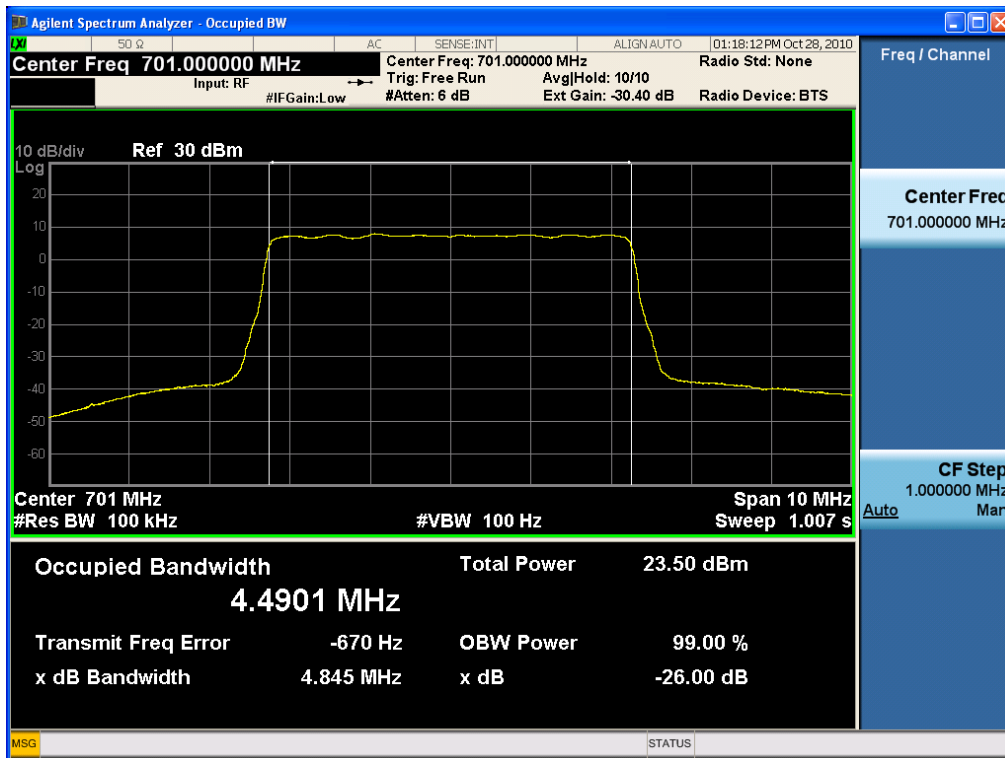


(707 MHz)

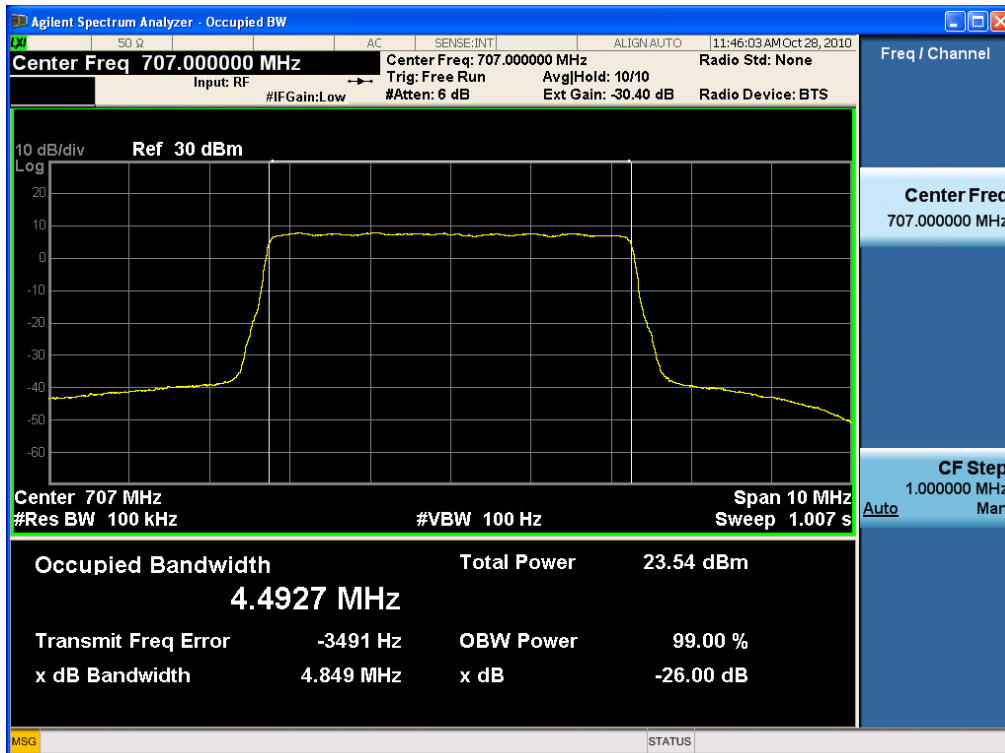
[16QAM] -Up Link (Output)



(782 MHz)

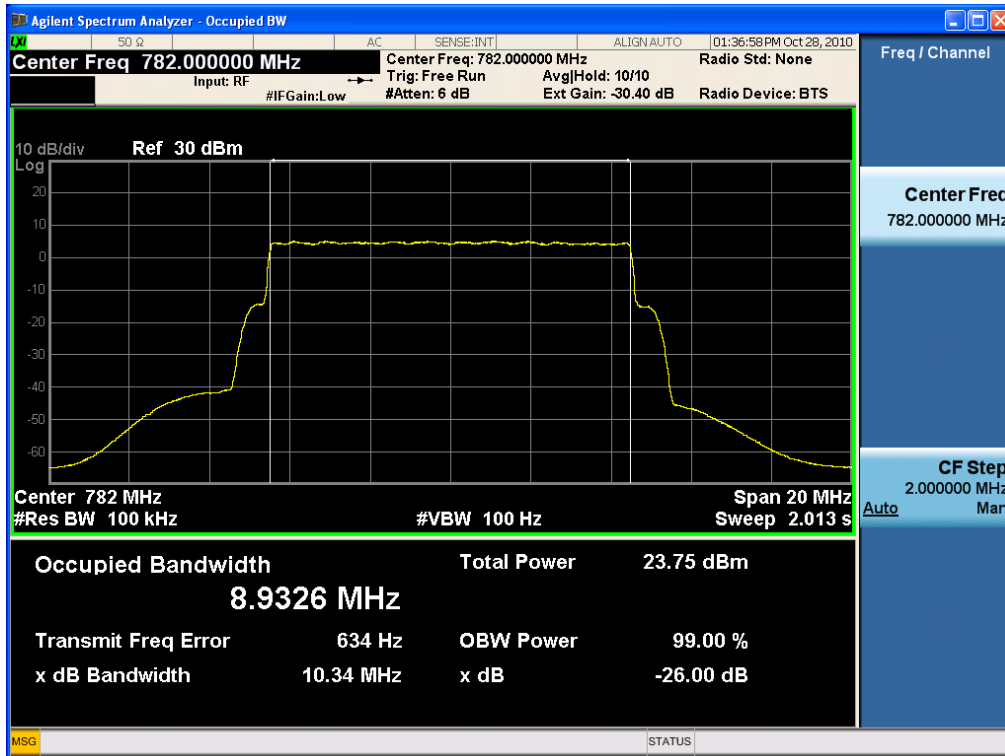


(701 MHz)

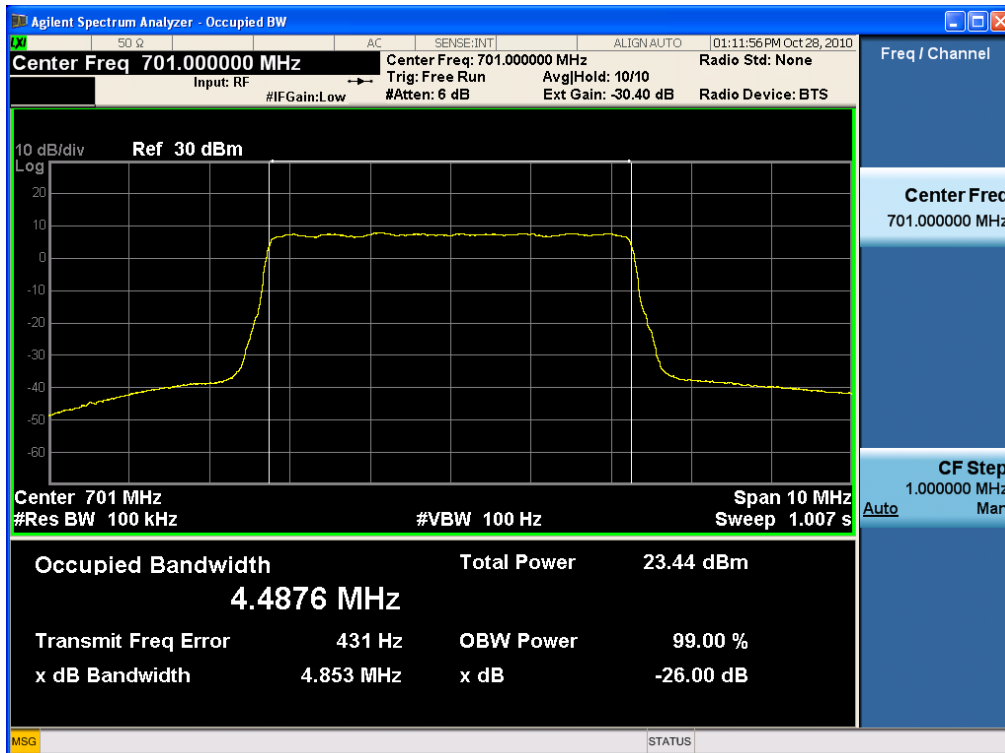


(707 MHz)

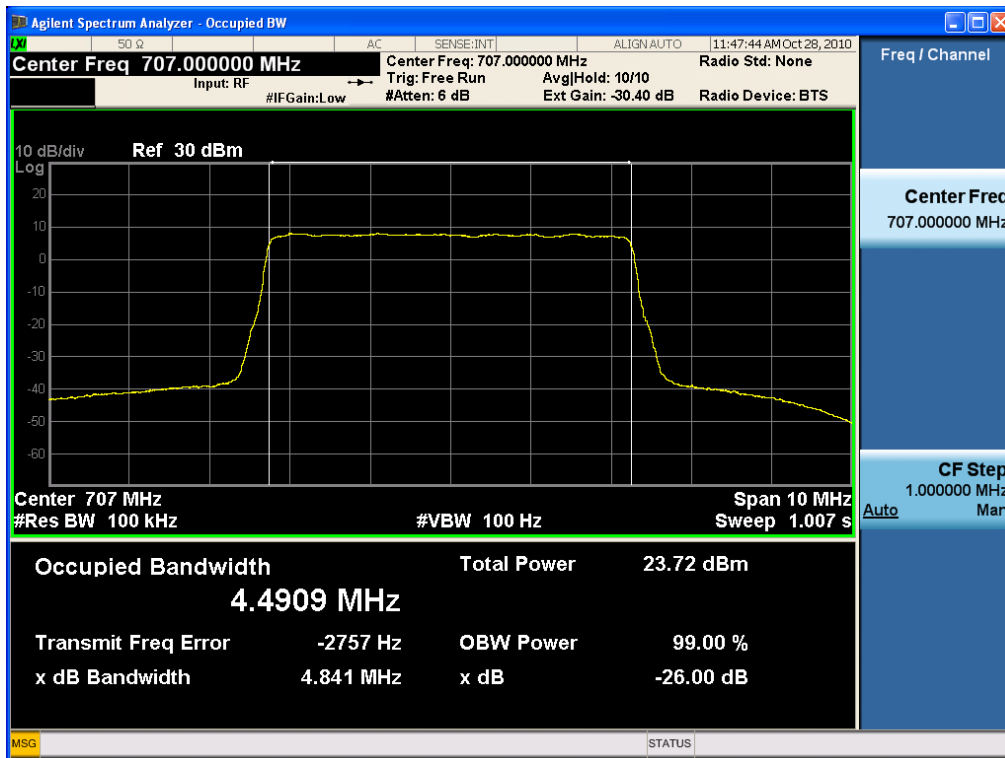
[64QAM] -Up Link (Output)



(782 MHz)

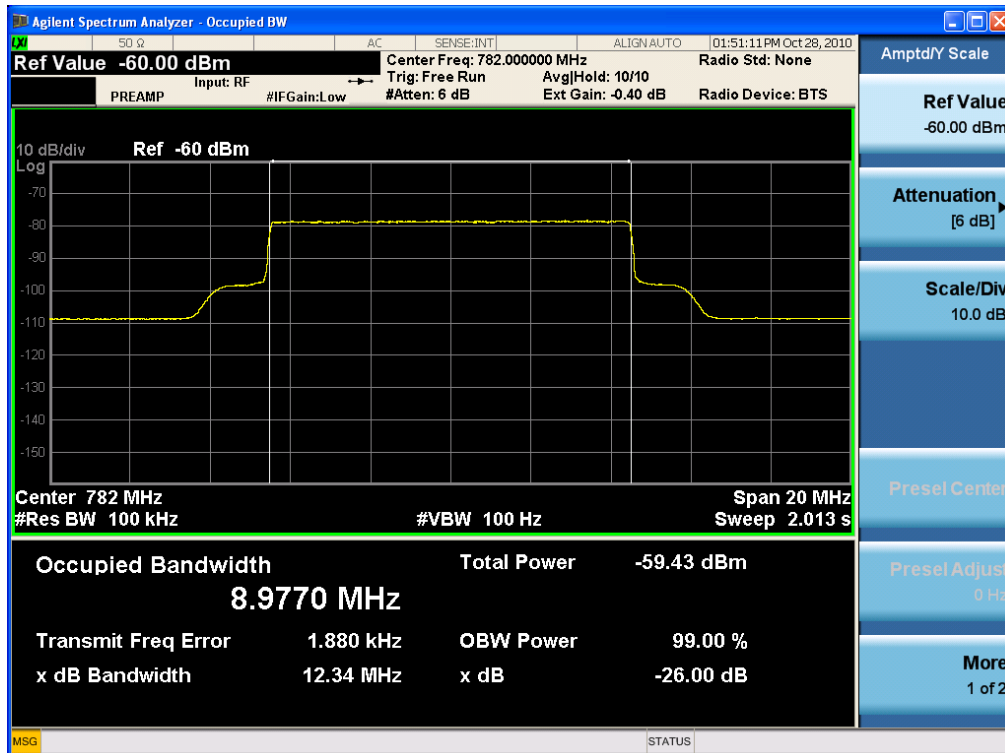


(701 MHz)

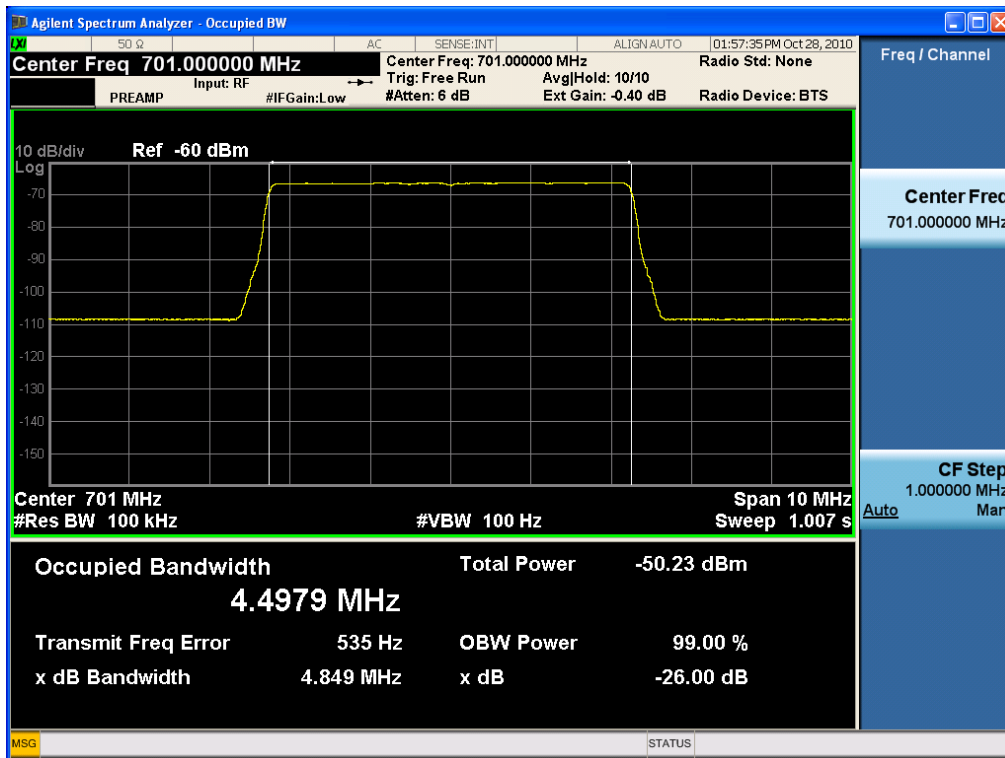


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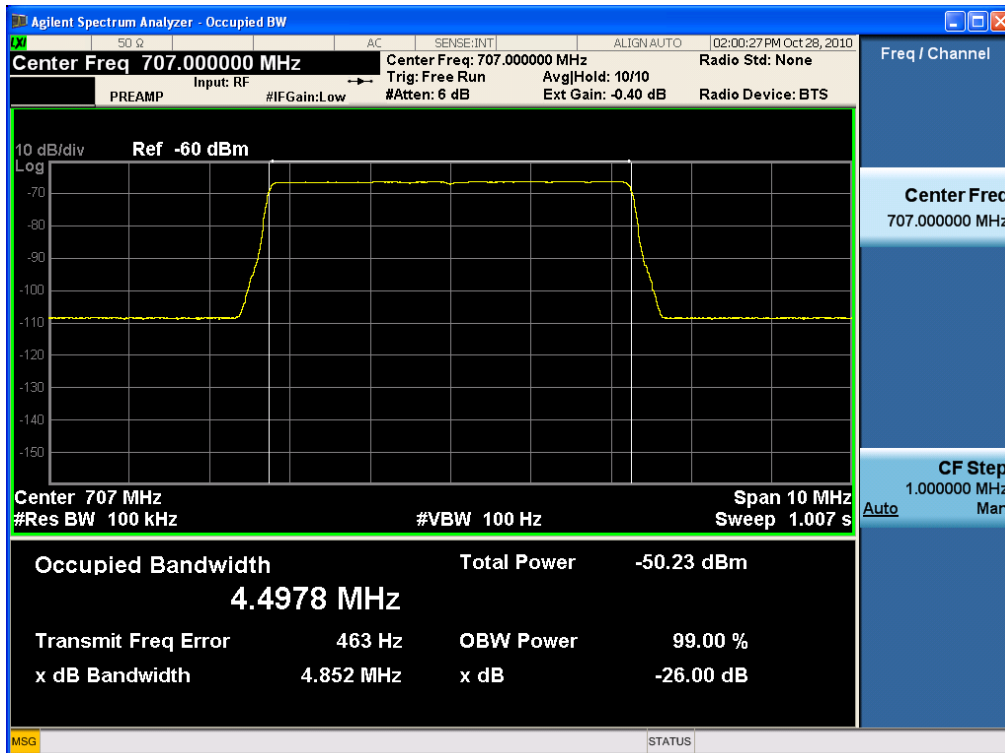
[QPSK]-Up Link (Input)



(782 MHz)

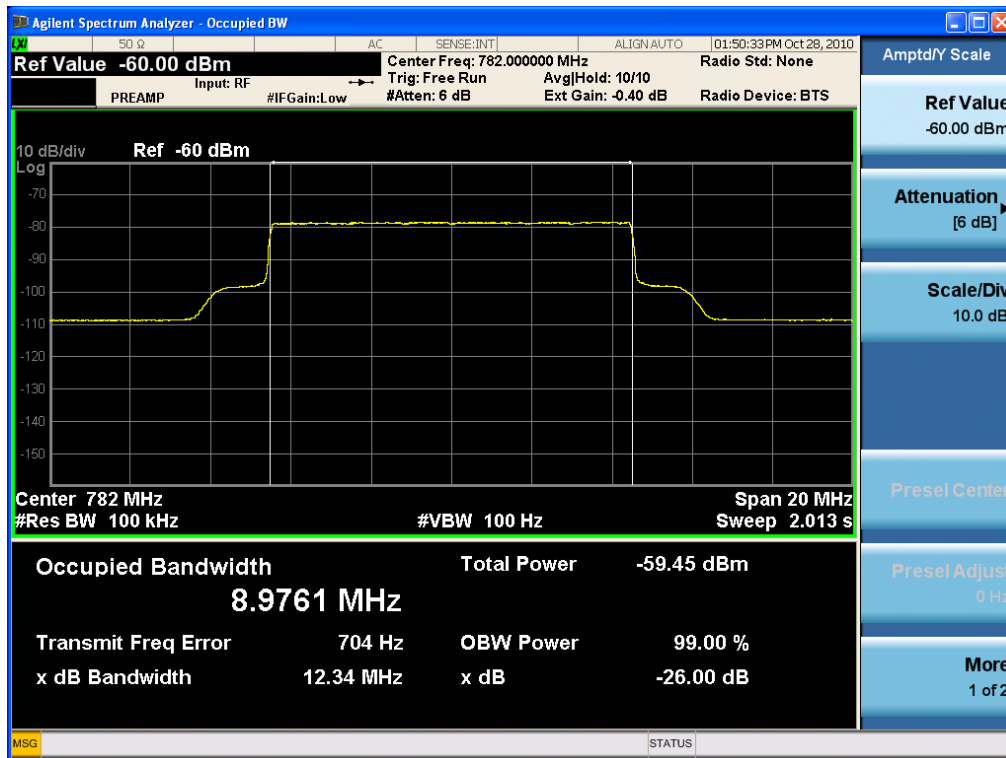


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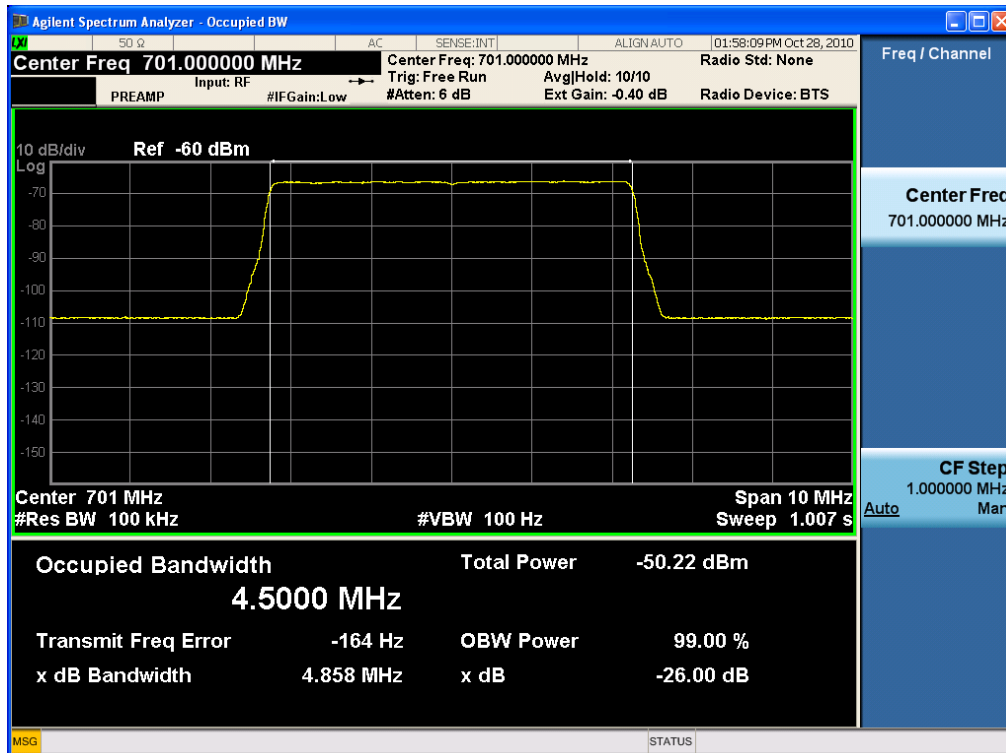


(707 MHz)

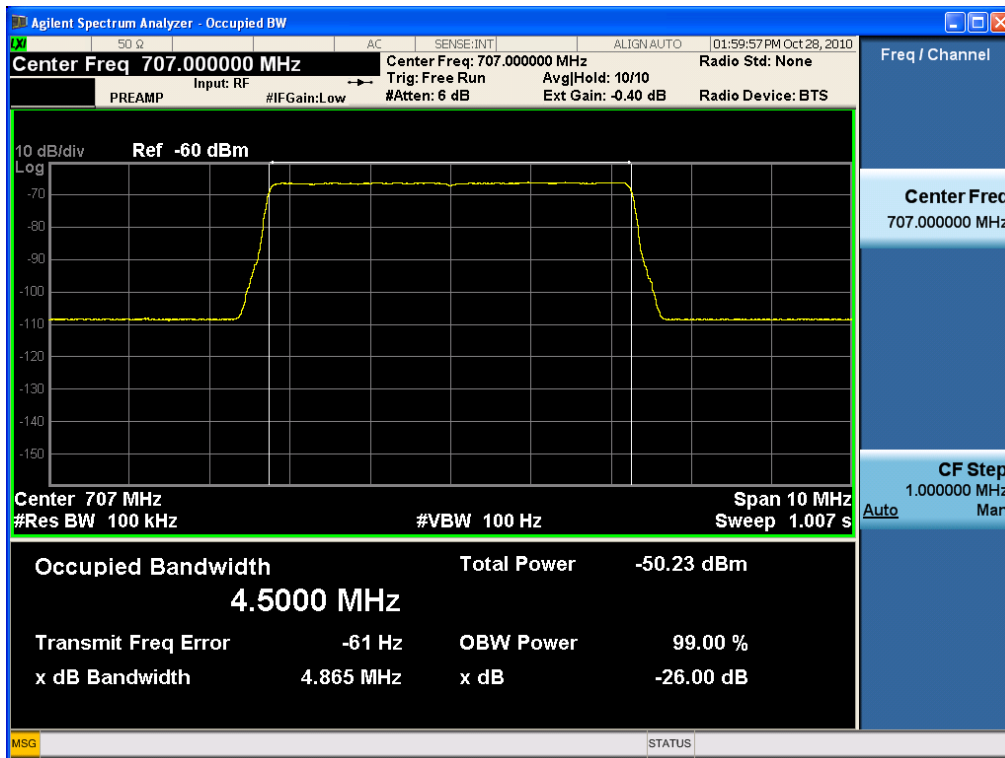
[16QAM] -Up Link (Input)



(782 MHz)

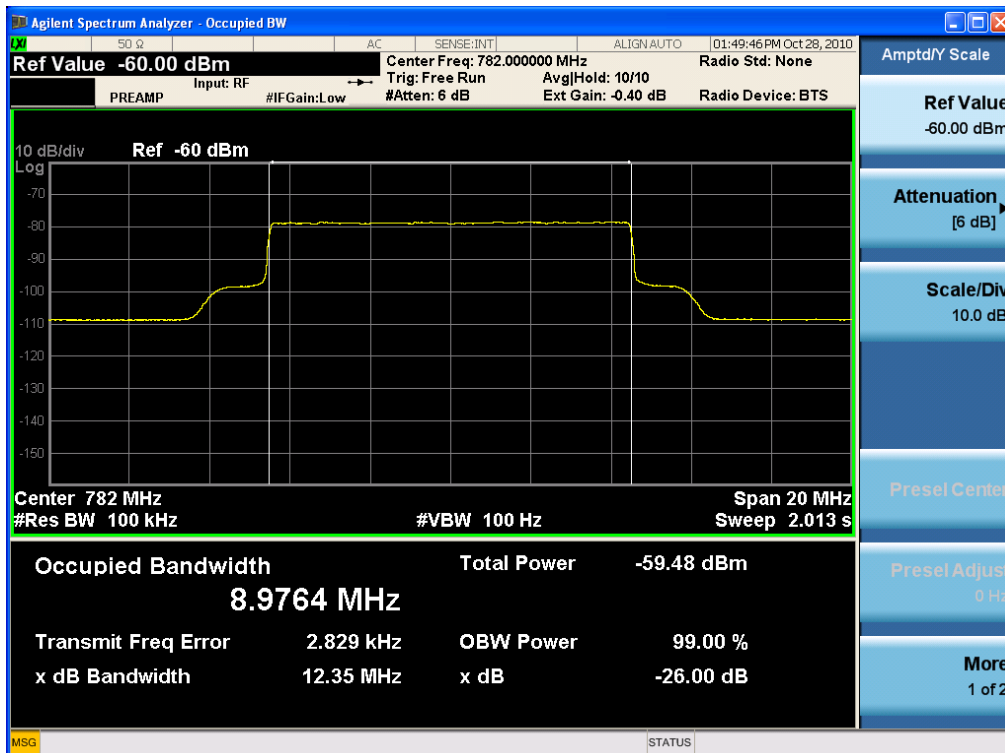


(701 MHz)

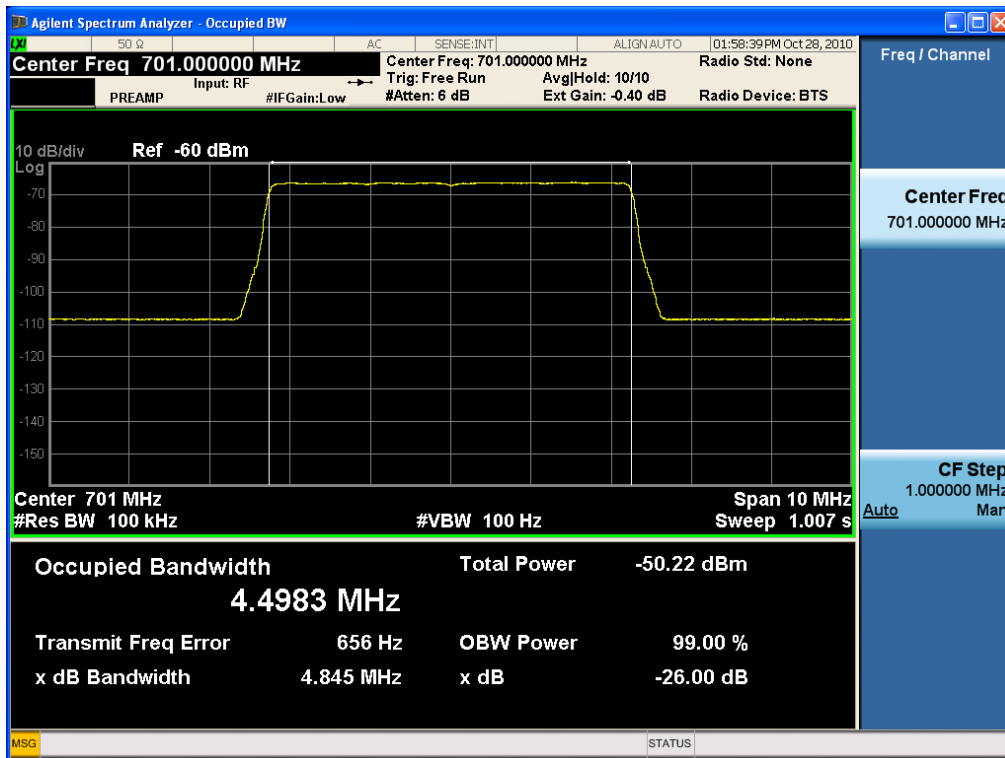


(707 MHz)

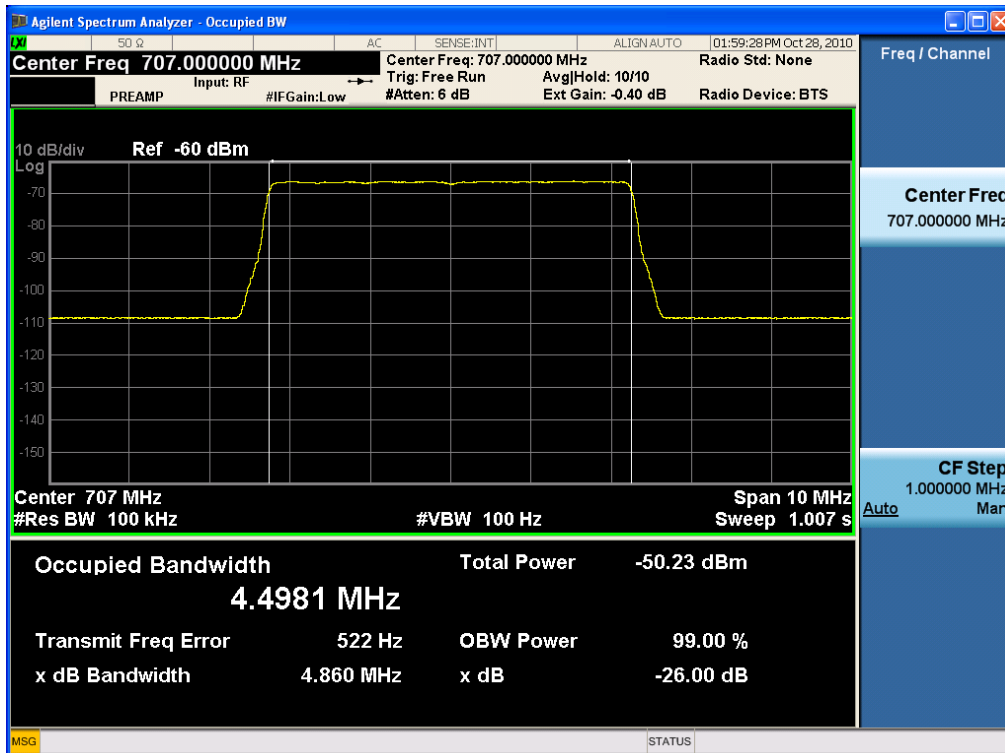
[64QAM] -Up Link (Input)



(782 MHz)



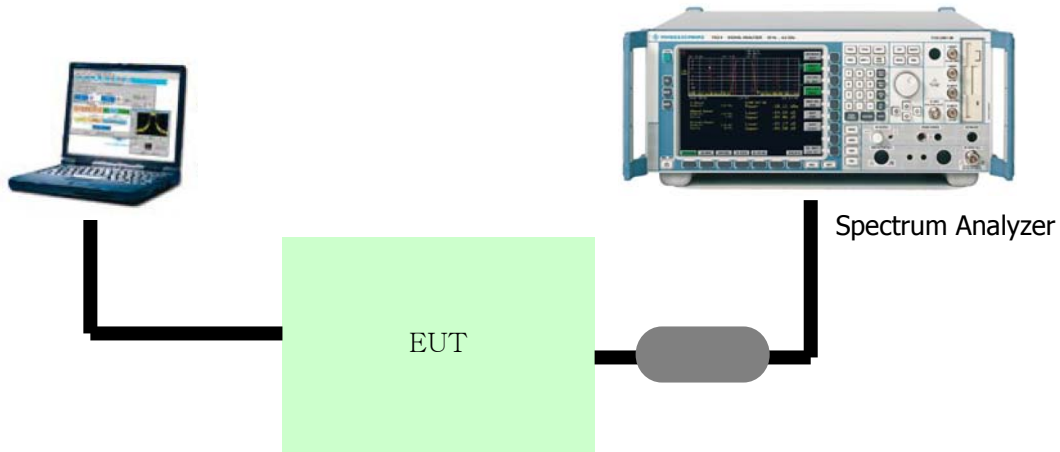
(701 MHz)



(707 MHz)

3.3 Spurious Emissions at Antenna Terminal

Test Set-up

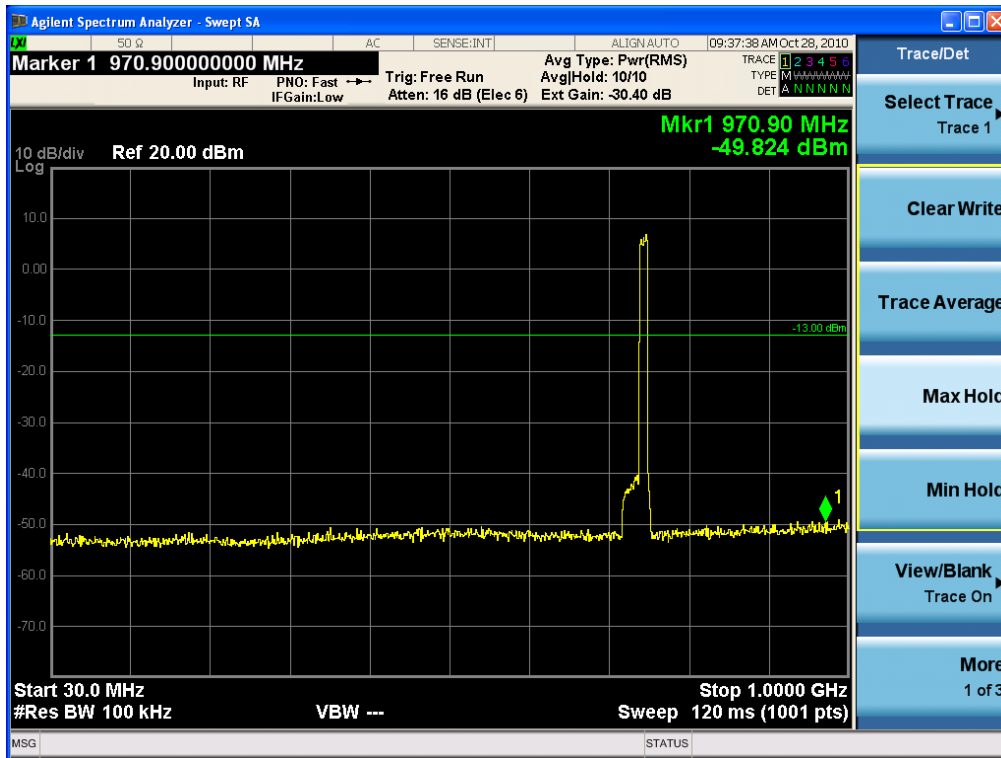


Test Procedure

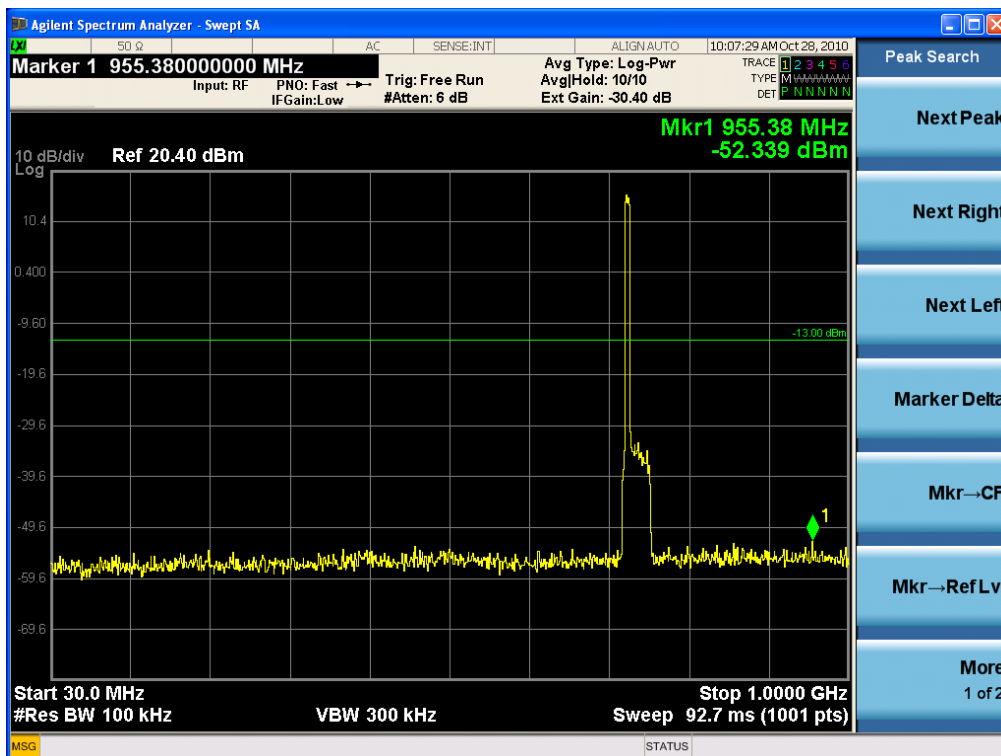
The EUT was setup to maximum output power at its lowest channel. The Resolution BW of the analyzer is set to 1 % of the emission bandwidth to show compliance with the - 13 dBm limit, in the 1 MHz bands immediately outside and adjacent to the edge of the frequency block. The 1 MHz RBW was used to scan from 10 MHz to 10 GHz.. A display line was placed at - 13 dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

Test Plots

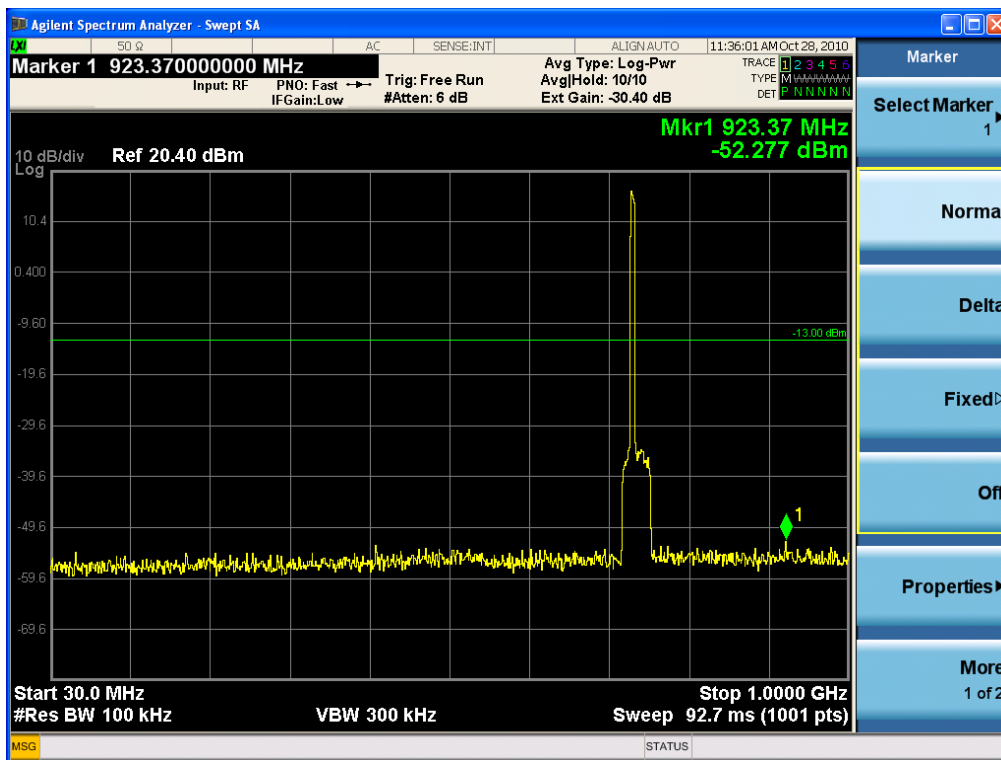
[Spurious Emission - QPSK]-Down Link



Upper C: (751 MHz)- CH 30 MHz ~ 1 GHz

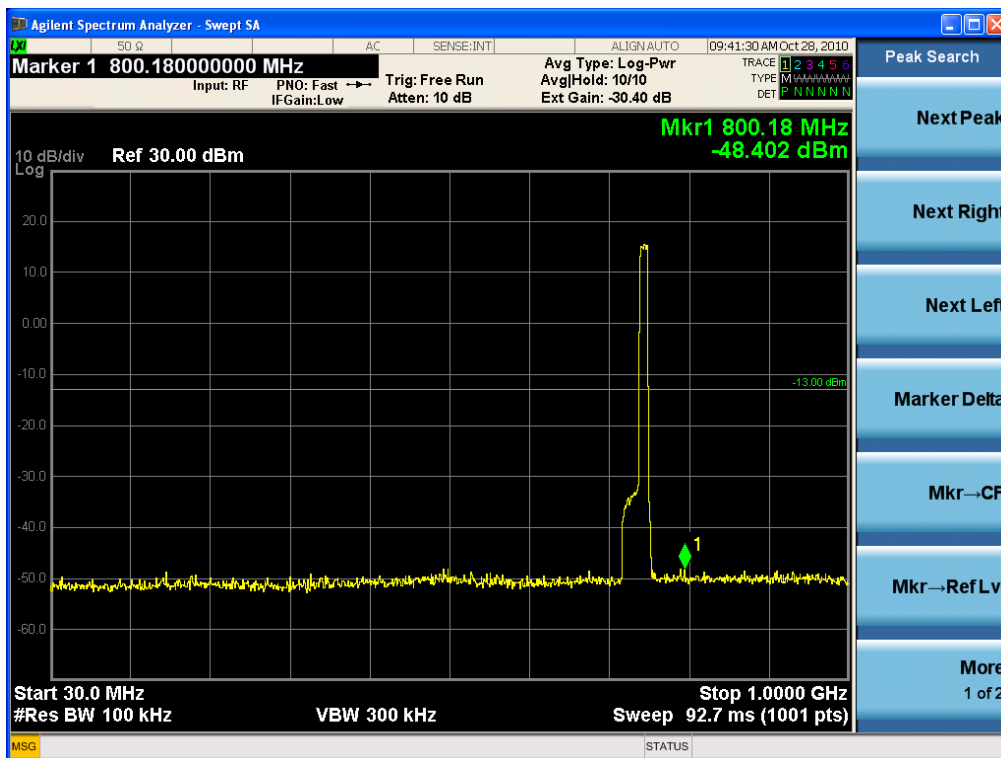


Lower A: (731 MHz) - CH 30 MHz ~ 1 GHz

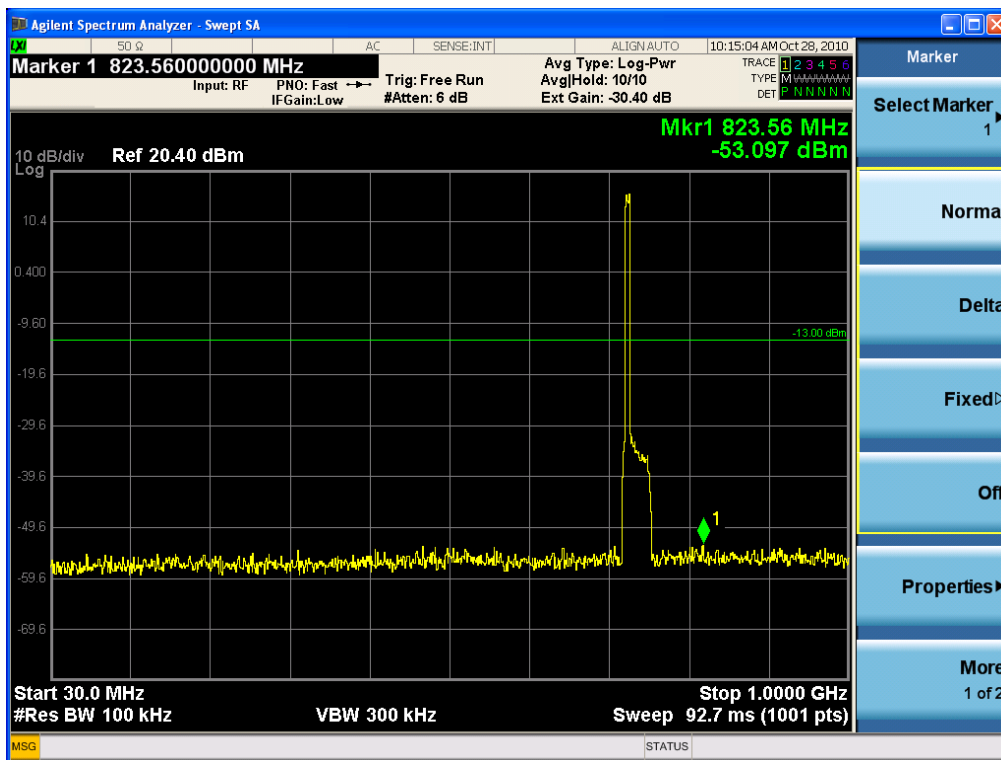


Lower B: (737 MHz) - CH 30 MHz ~ 1 GHz

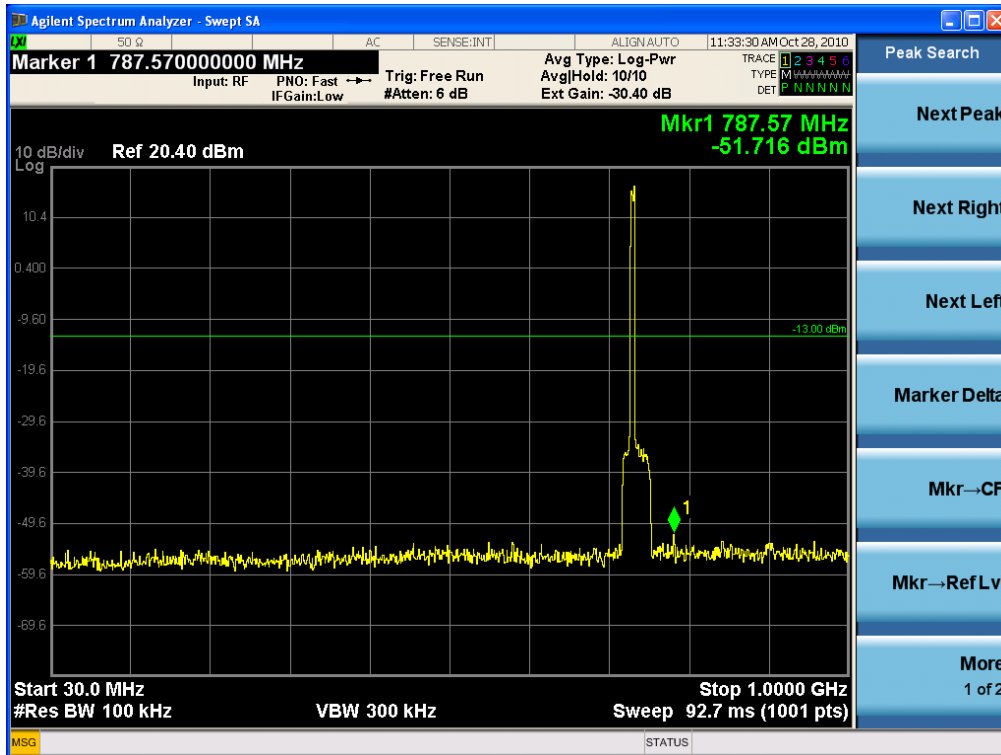
[Spurious Emission – 16QAM] -Down Link



Upper C: (751 MHz) - CH 30 MHz ~ 1 GHz

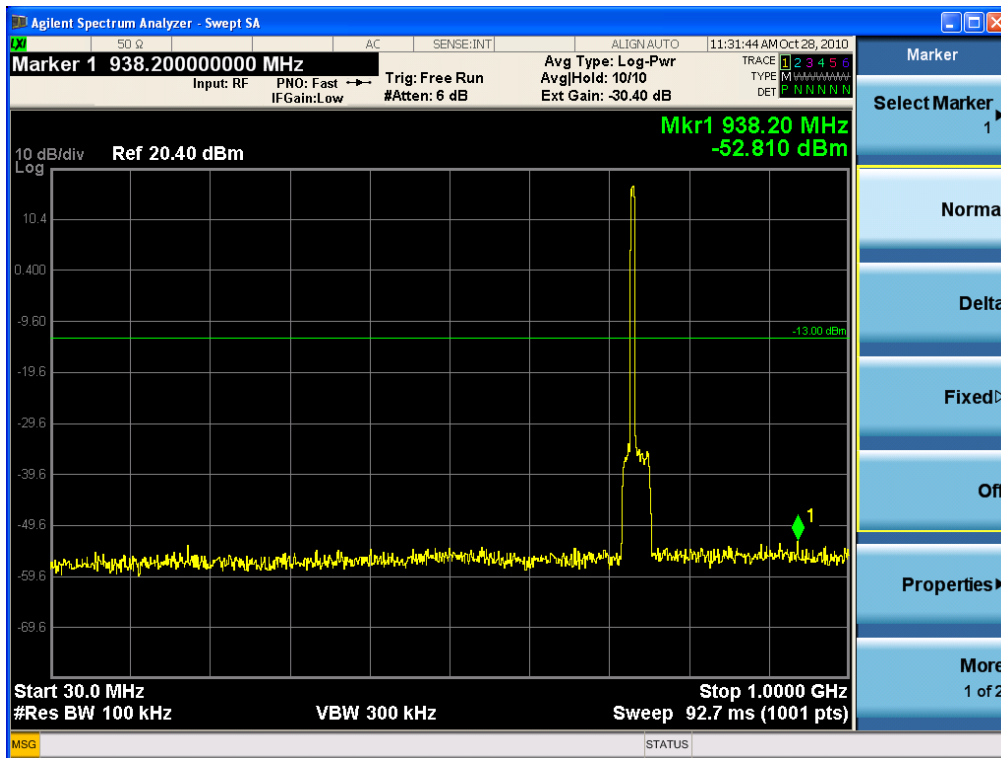


Lower A: (731 MHz) - CH 30 MHz ~ 1 GHz

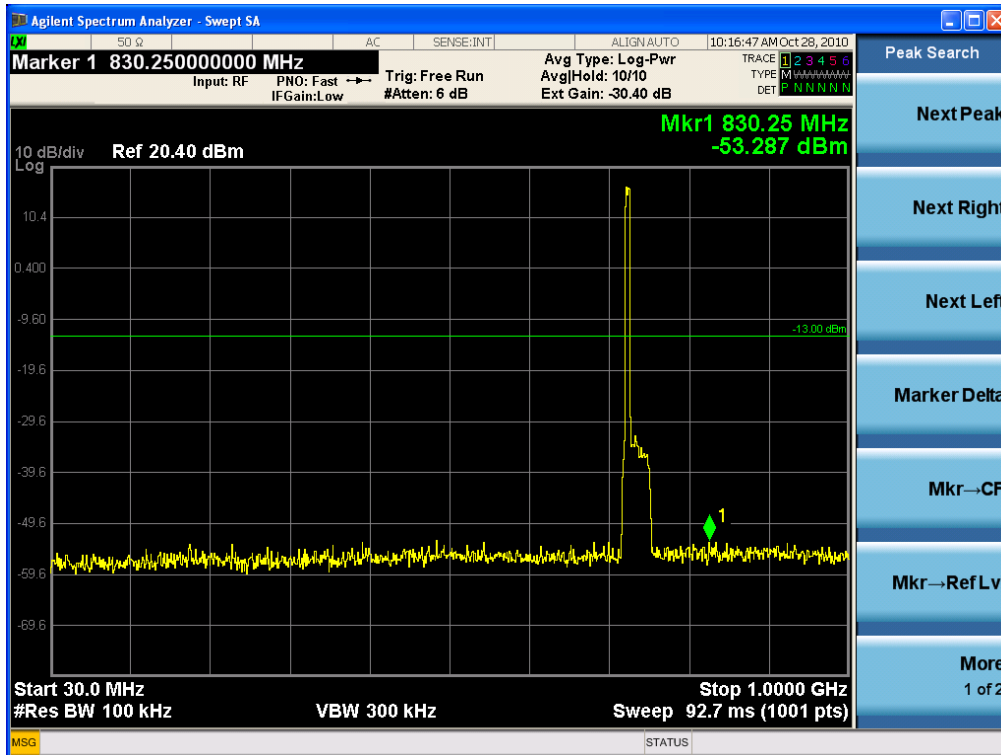


Lower B: (737 MHz) - CH 30 MHz ~ 1 GHz

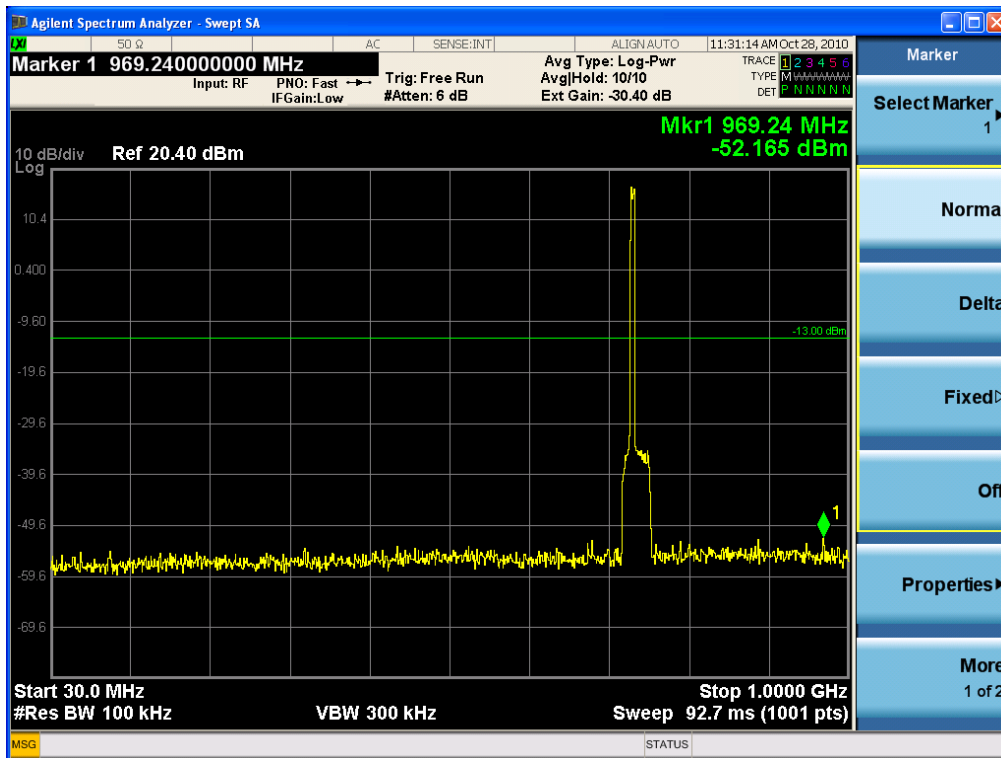
[Spurious Emission – 64QAM] -Down Link



Upper C: (751 MHz) - CH 30 MHz ~ 1 GHz



Lower A: (731 MHz) - CH 30 MHz ~ 1 GHz



Lower B: (737 MHz) - CH 30 MHz ~ 1 GHz

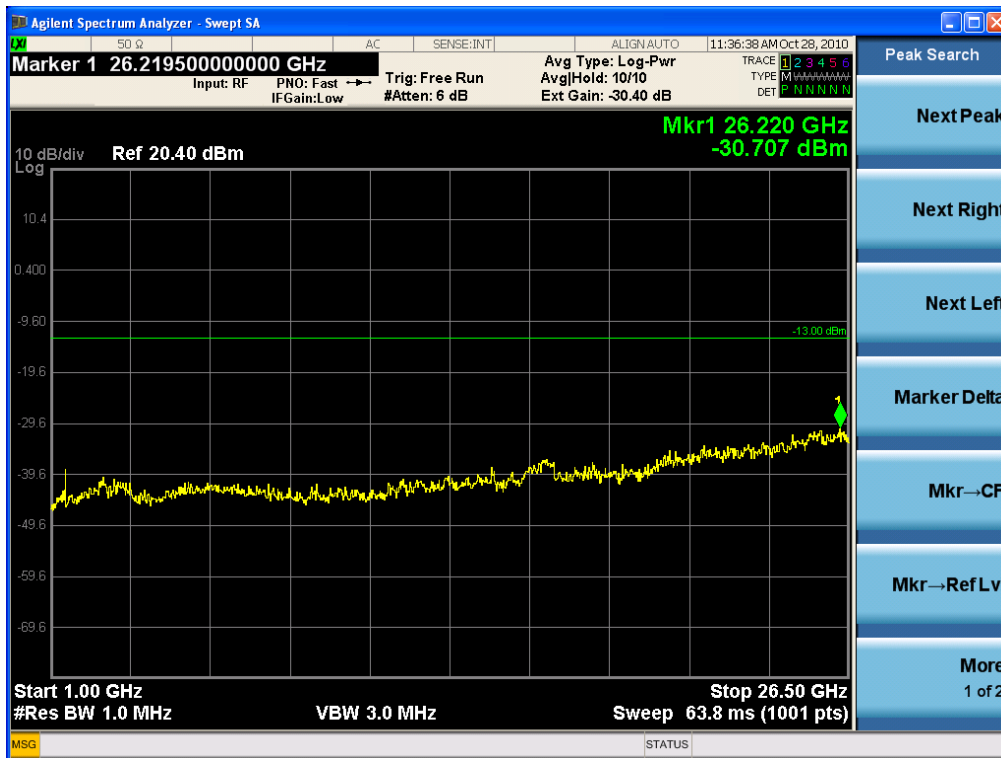
[Spurious Emission - QPSK] -Down Link



Upper C: (751 MHz)- CH 1 GHz ~ 26.5 GHz



Lower A: (731 MHz) - CH 1 GHz ~ 26.5 GHz



Lower B: (737 MHz) - CH 1 GHz ~ 26.5 GHz

[Spurious Emission – 16QAM] -Down Link



Upper C: (751 MHz)- CH 1 GHz ~ 26.5 GHz

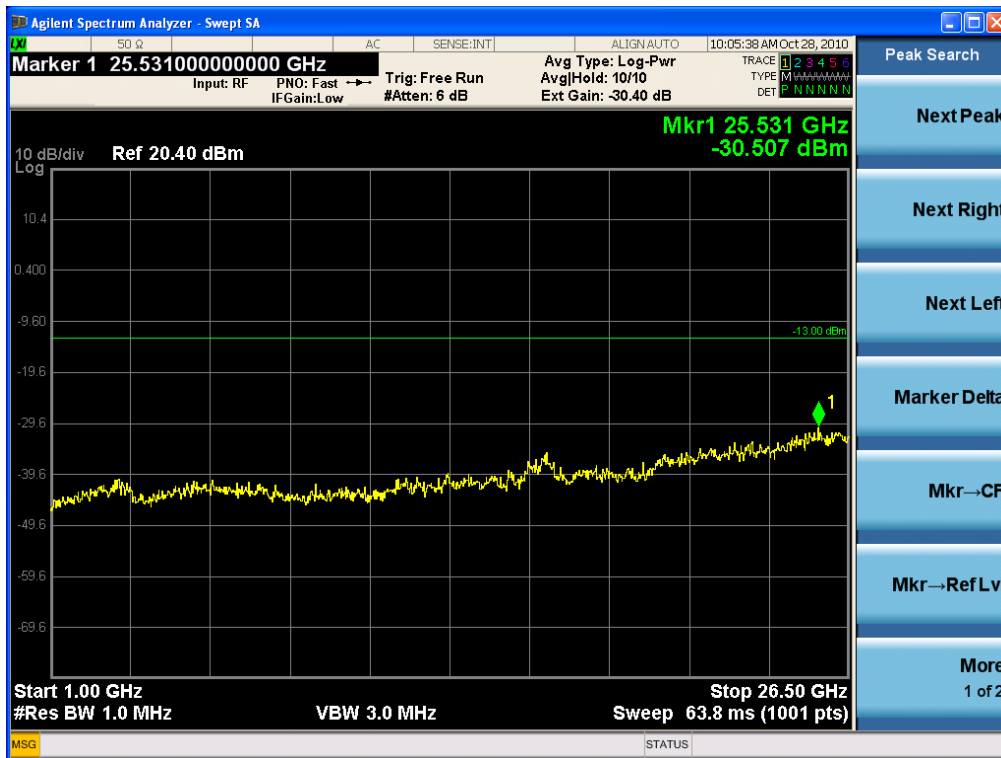


Lower A: (731 MHz) - CH 1 GHz ~ 26.5 GHz

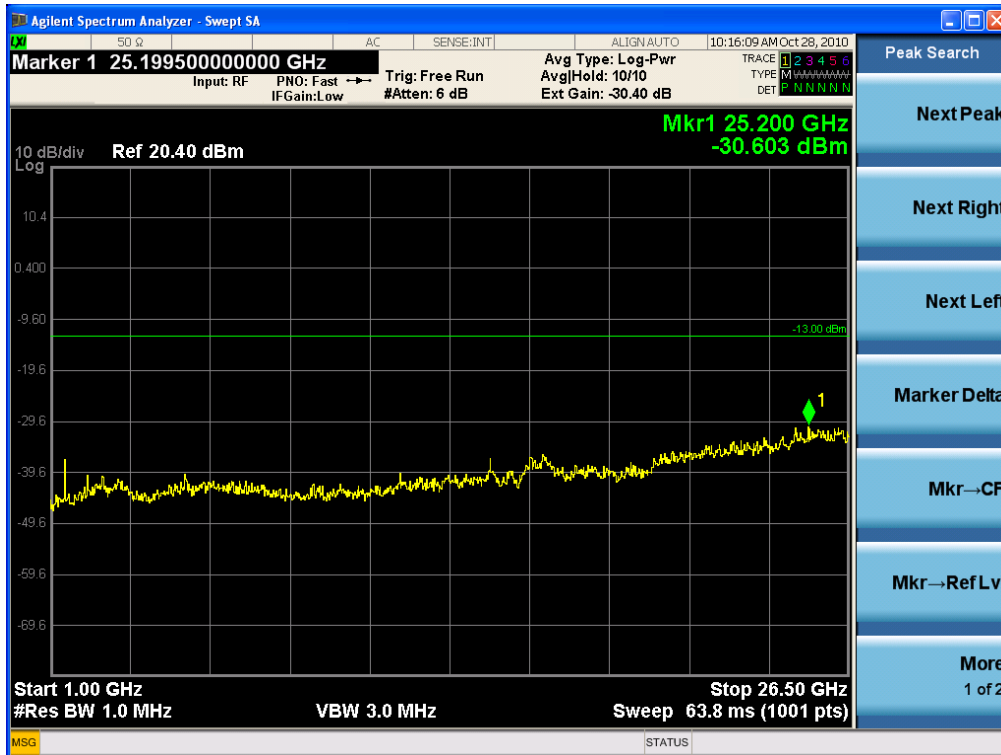


Lower B: (737 MHz) - CH 1 GHz ~ 26.5 GHz

[Spurious Emission – 64QAM] -Down Link



Upper C: (751 MHz)- CH 1 GHz ~ 26.5 GHz

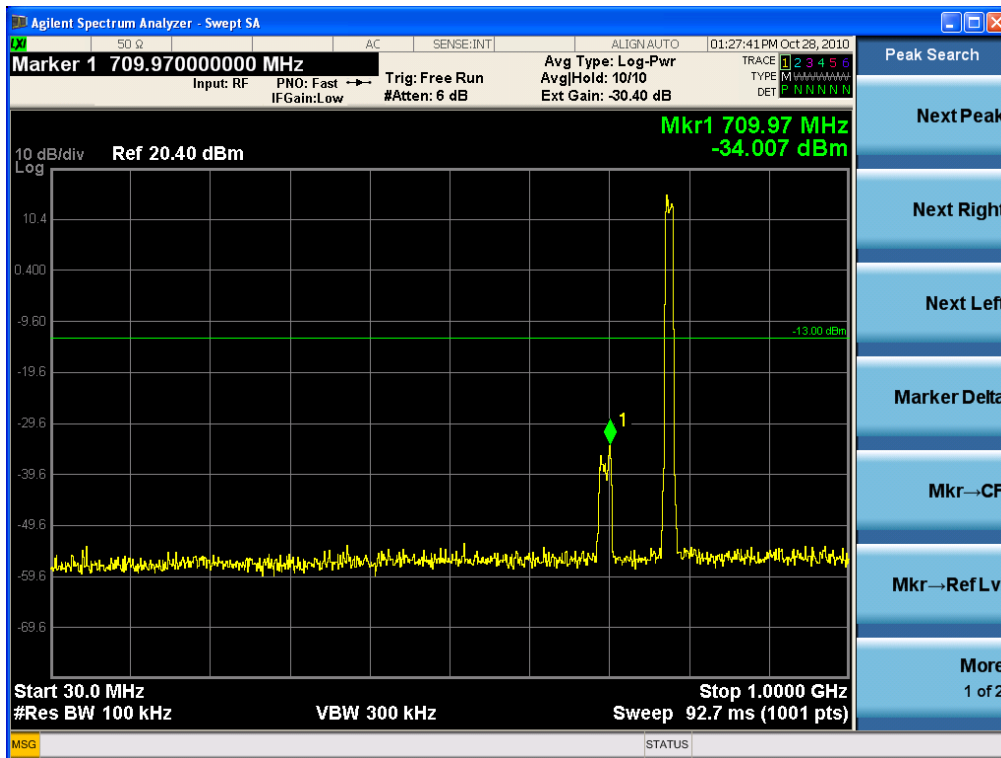


Lower A: (731 MHz) - CH 1 GHz ~ 26.5 GHz

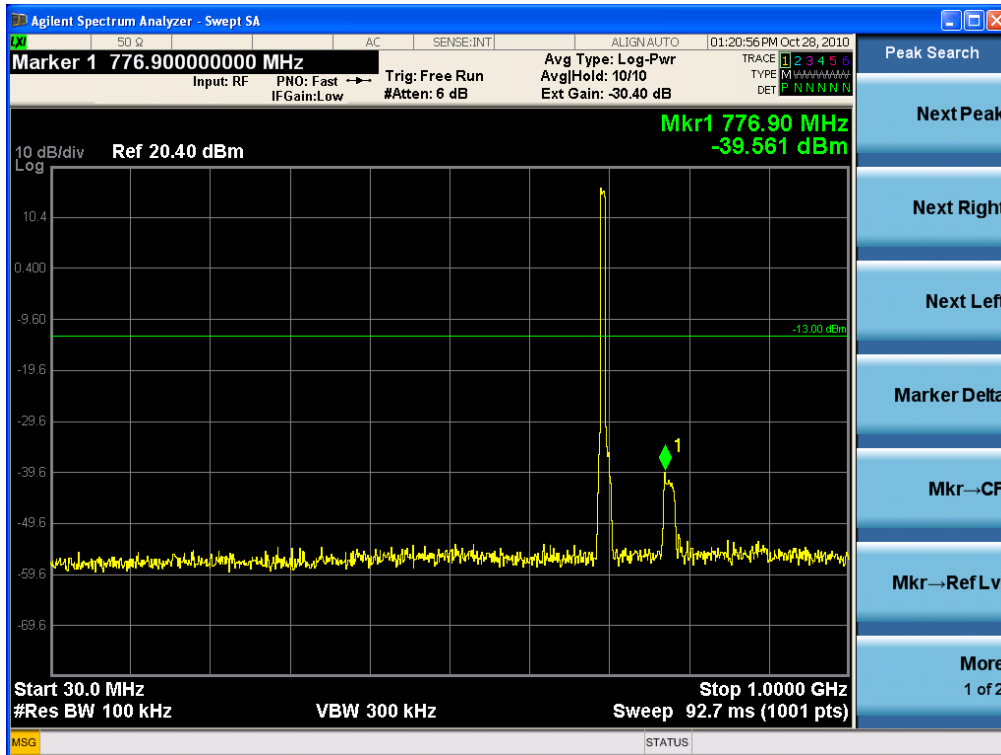


Lower B: (737 MHz) - CH 1 GHz ~ 26.5 GHz

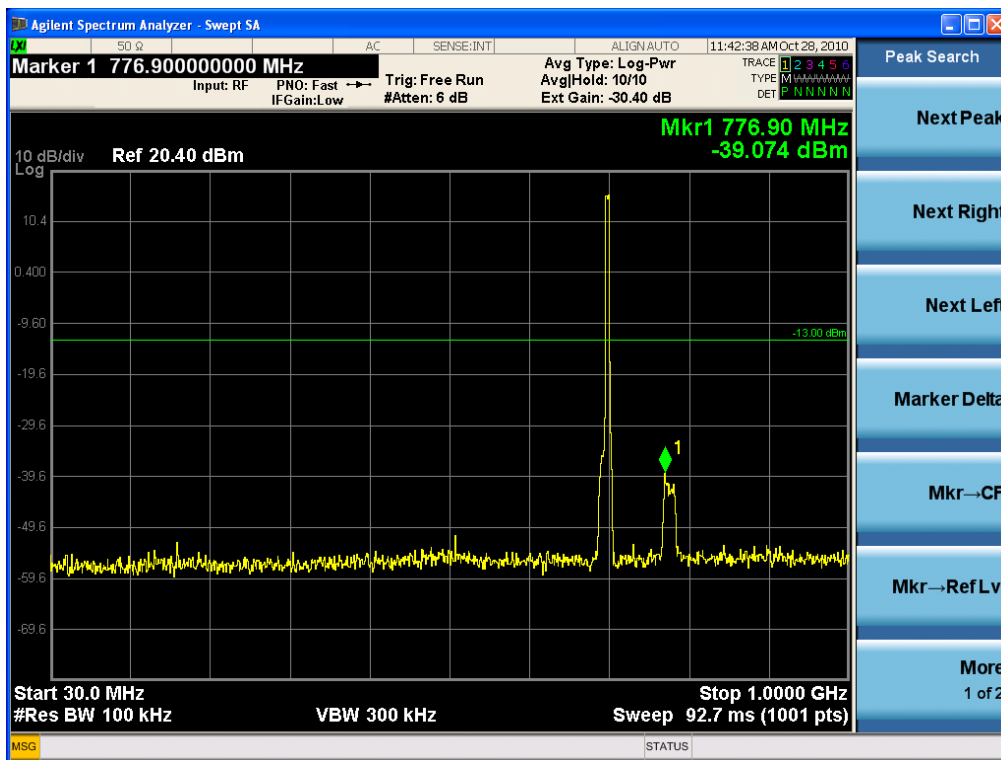
[Spurious Emission - QPSK]-Up Link



Upper C: (782 MHz)- CH 30 MHz ~ 1 GHz

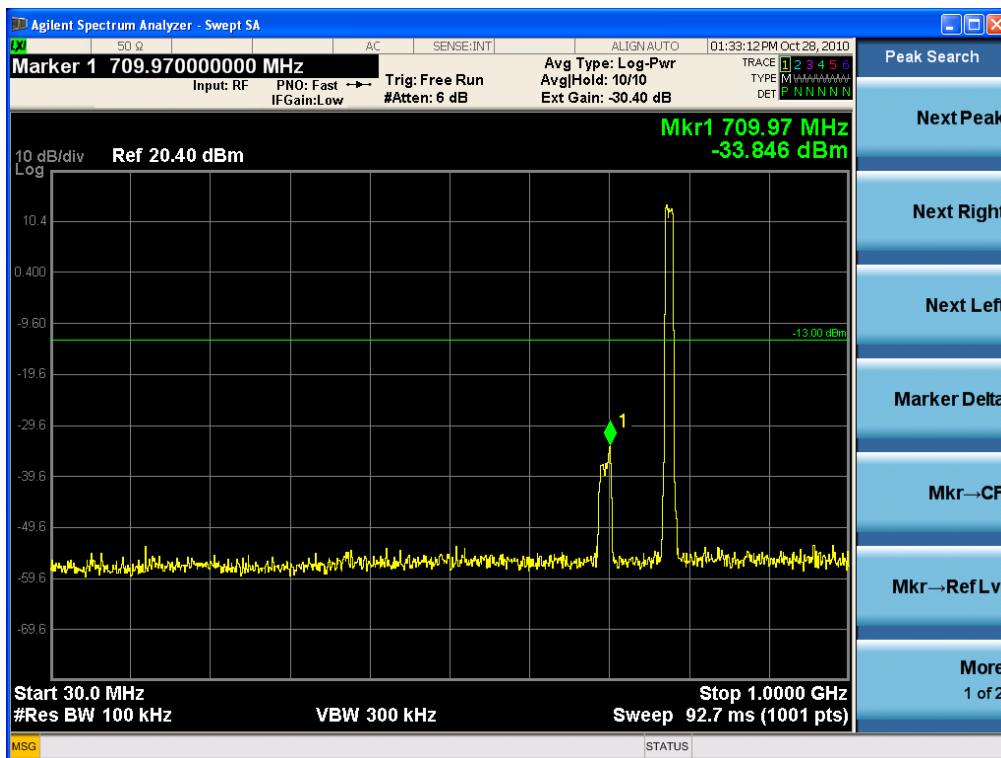


Lower A: (701 MHz) - CH 30 MHz ~ 1 GHz

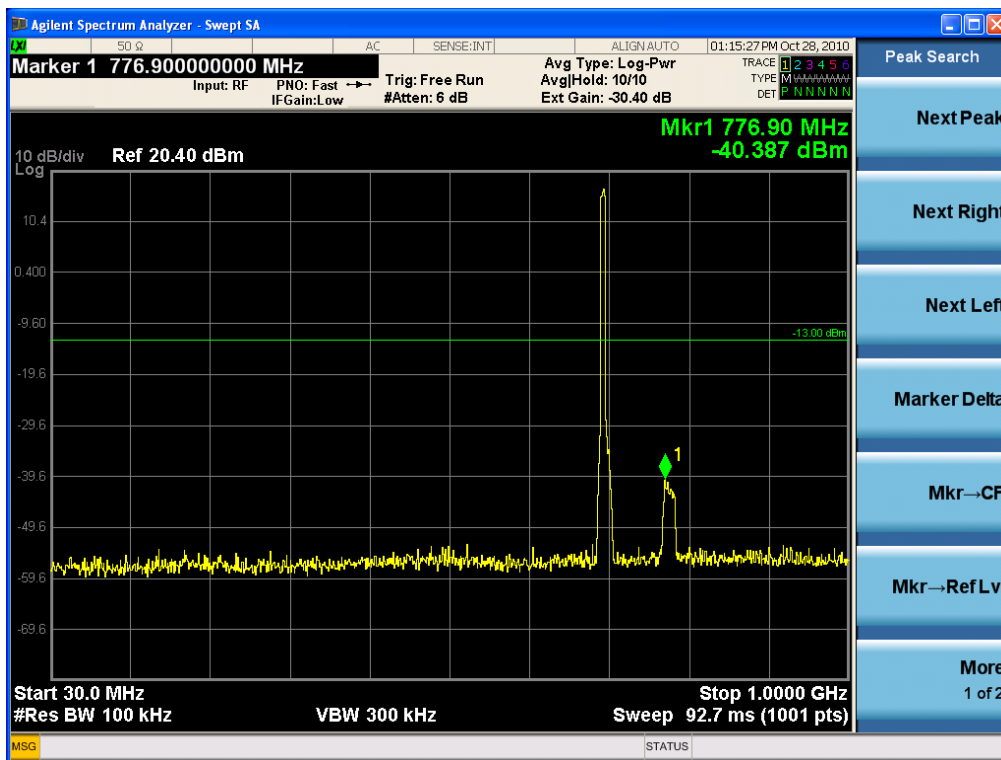


Lower B: (707 MHz) - CH 30 MHz ~ 1 GHz

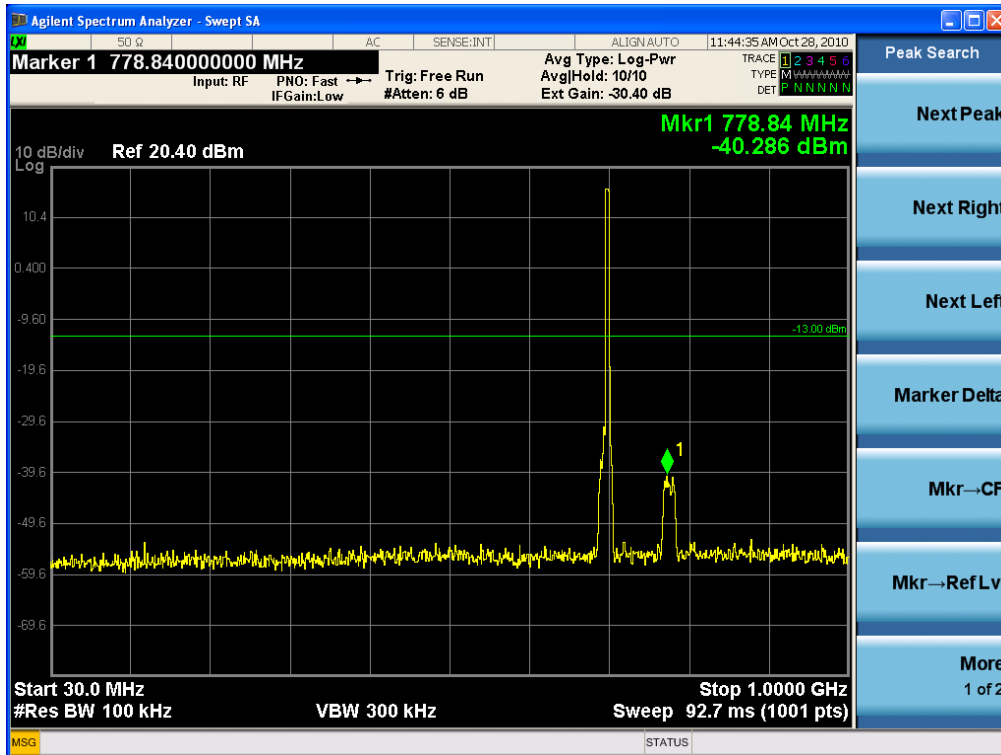
[Spurious Emission – 16QAM] -Up Link



Upper C: (782 MHz) - CH 30 MHz ~ 1 GHz

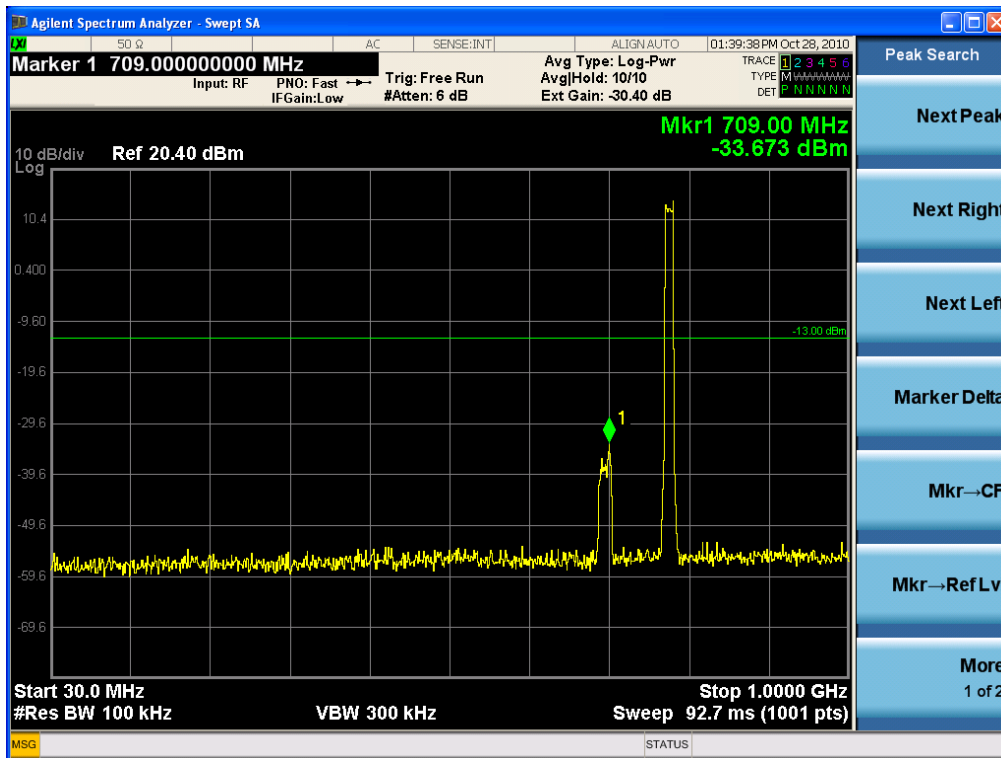


Lower A: (701 MHz) - CH 30 MHz ~ 1 GHz

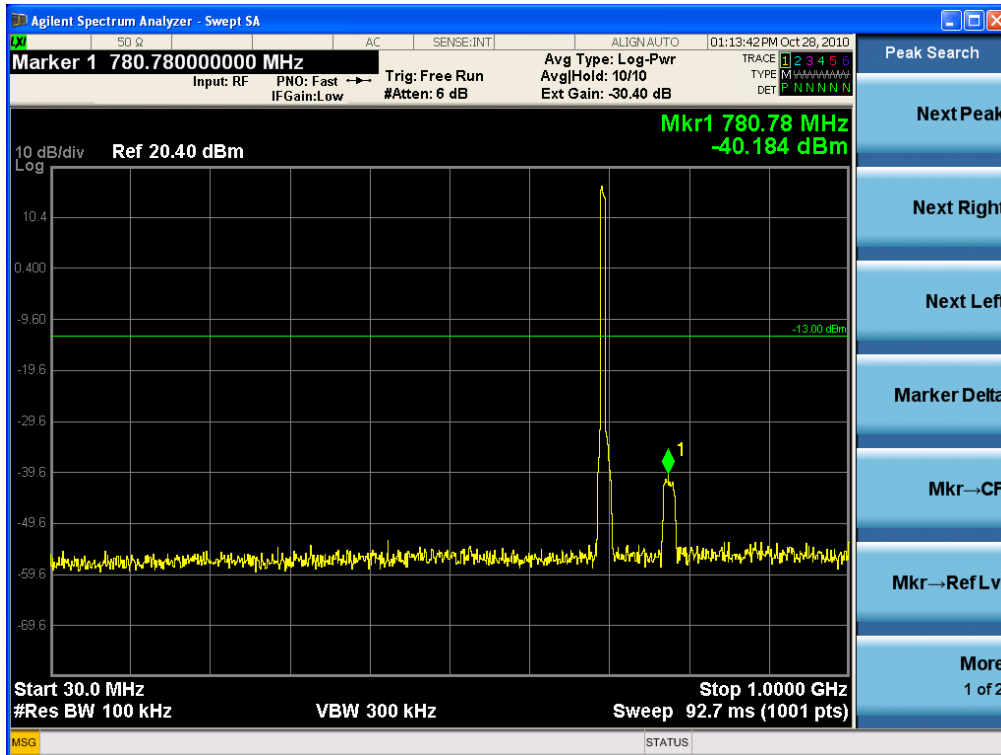


Lower B: (707 MHz) - CH 30 MHz ~ 1 GHz

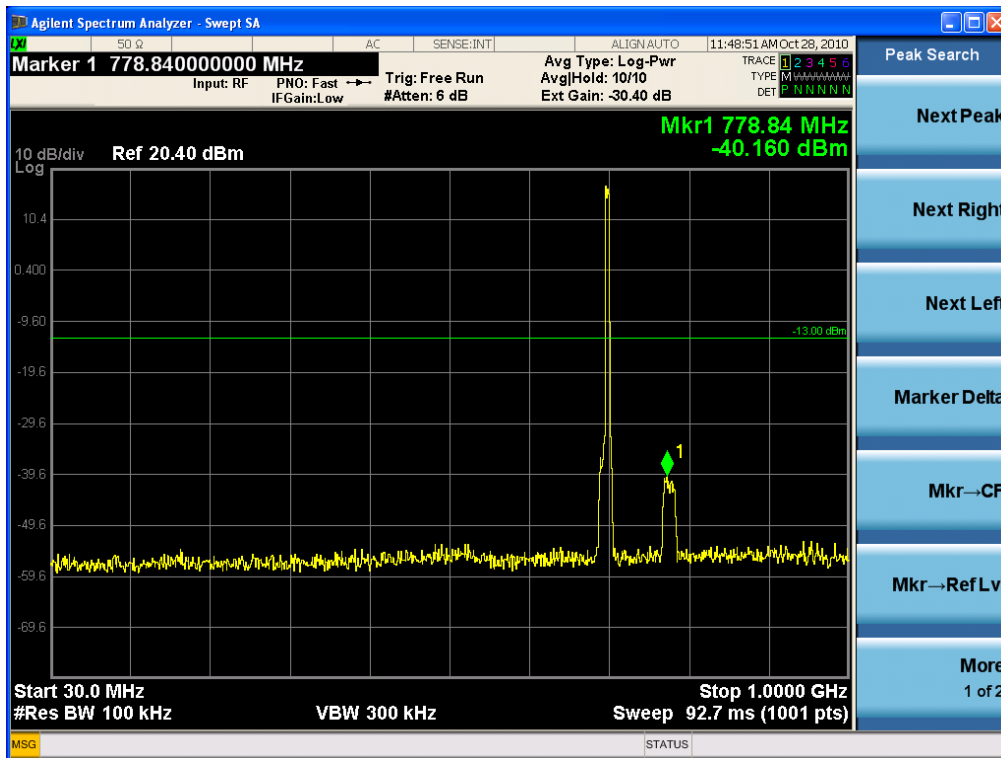
[Spurious Emission – 64QAM] -Up Link



Upper C: (782 MHz) - CH 30 MHz ~ 1 GHz

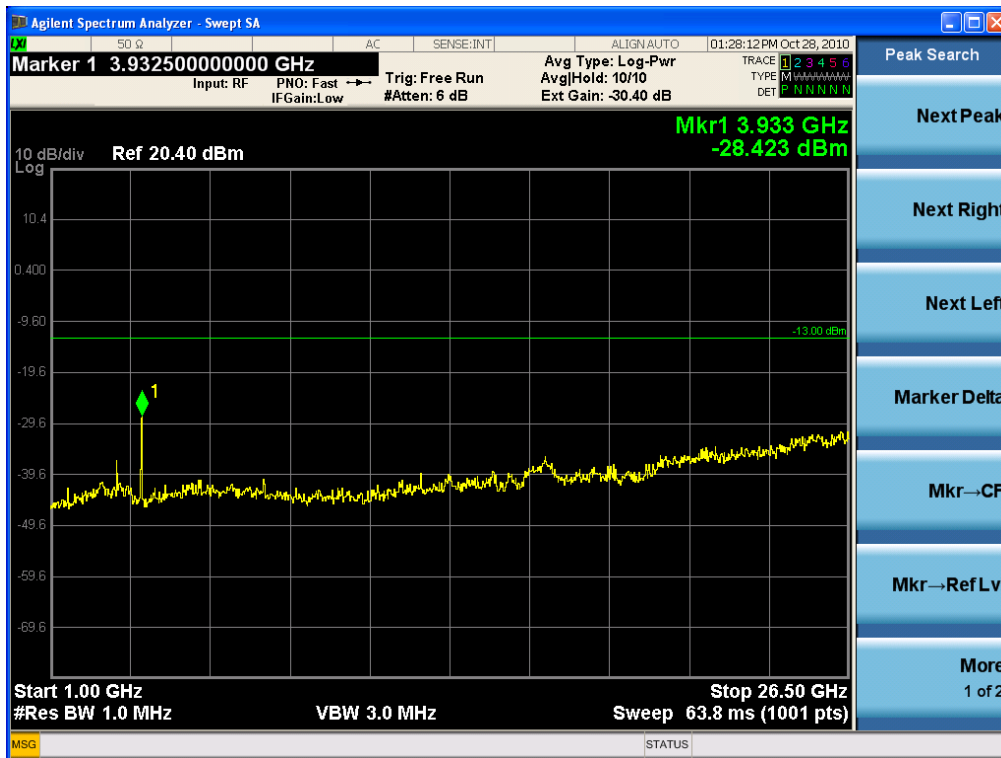


Lower A: (701 MHz) - CH 30 MHz ~ 1 GHz

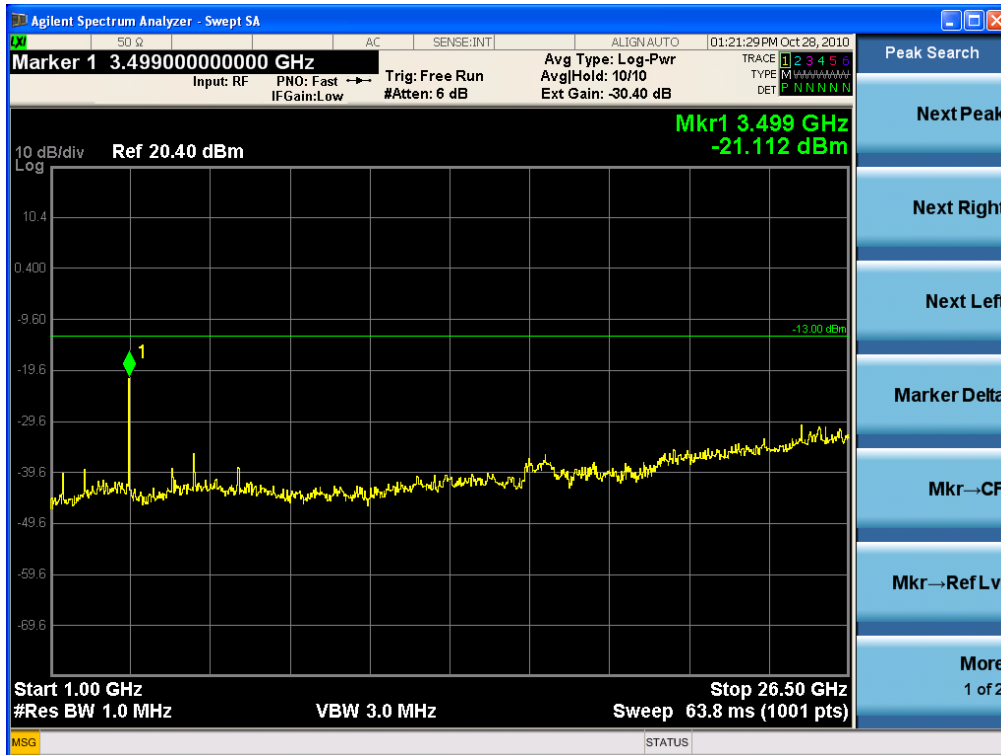


Lower B: (707 MHz) - CH 30 MHz ~ 1 GHz

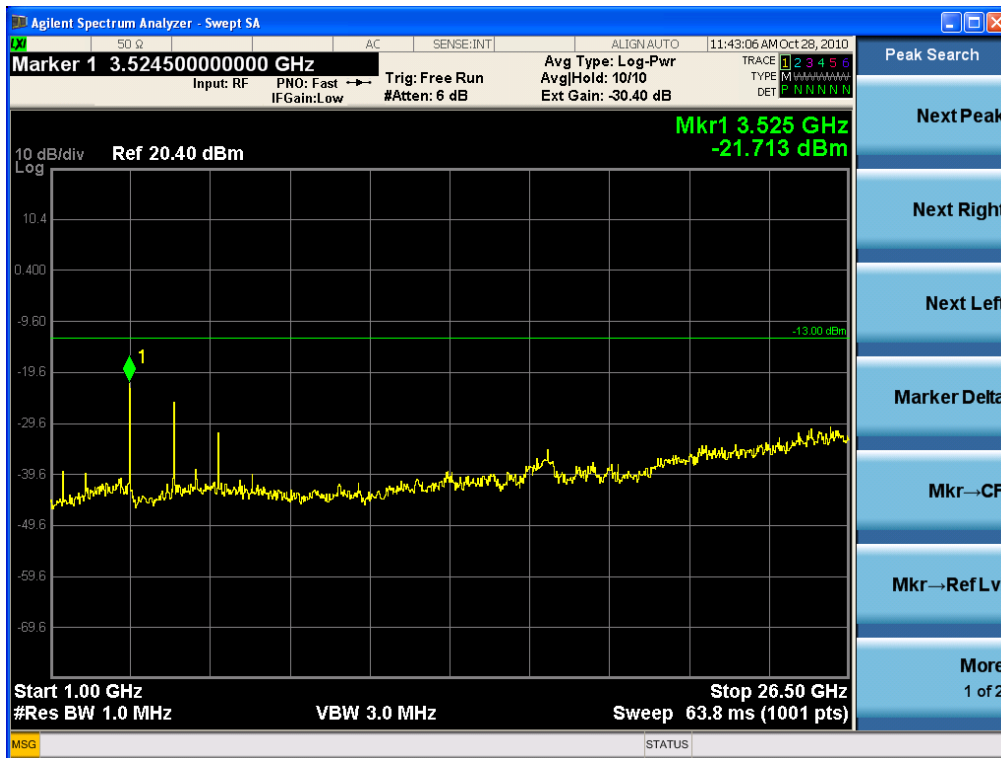
[Spurious Emission - QPSK] -Up Link



Upper C: (782 MHz)- CH 1 GHz ~ 26.5 GHz

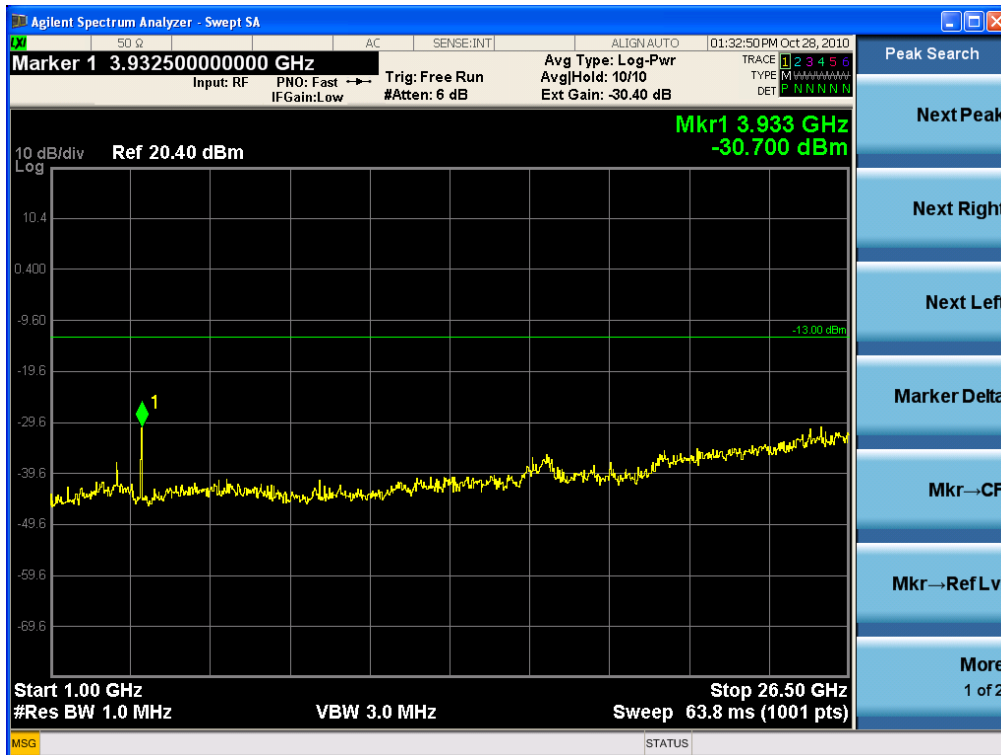


Lower A: (701 MHz) - CH 1 GHz ~ 26.5 GHz

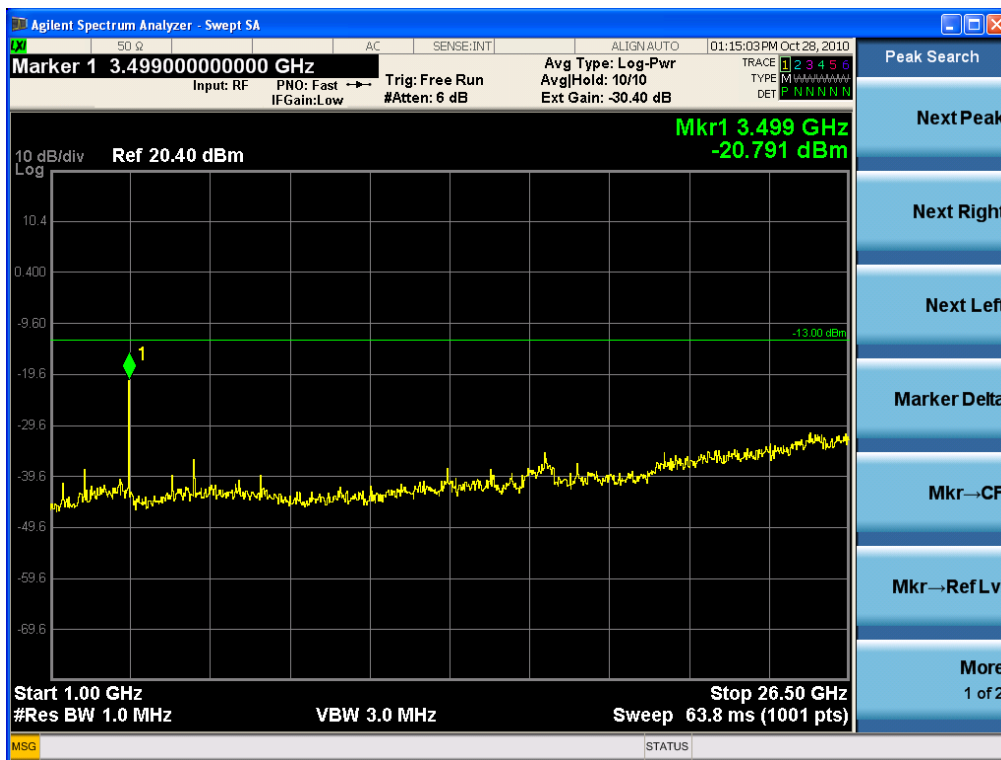


Lower B: (707 MHz) - CH 1 GHz ~ 26.5 GHz

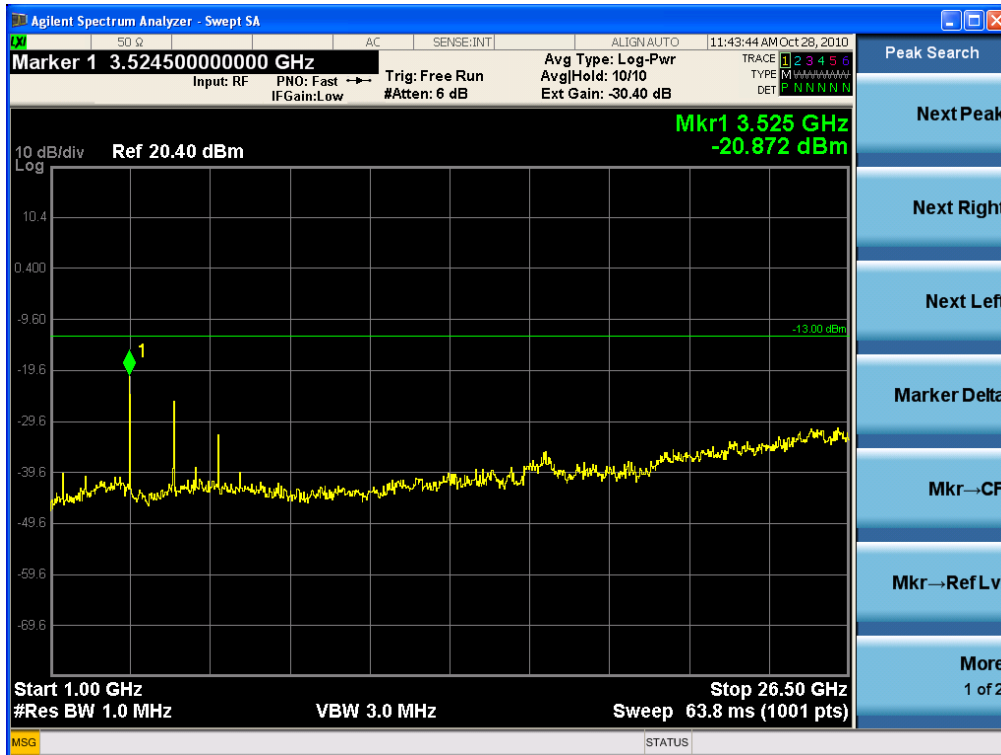
[Spurious Emission – 16QAM] -Up Link



Upper C: (782 MHz)- CH 1 GHz ~ 26.5 GHz

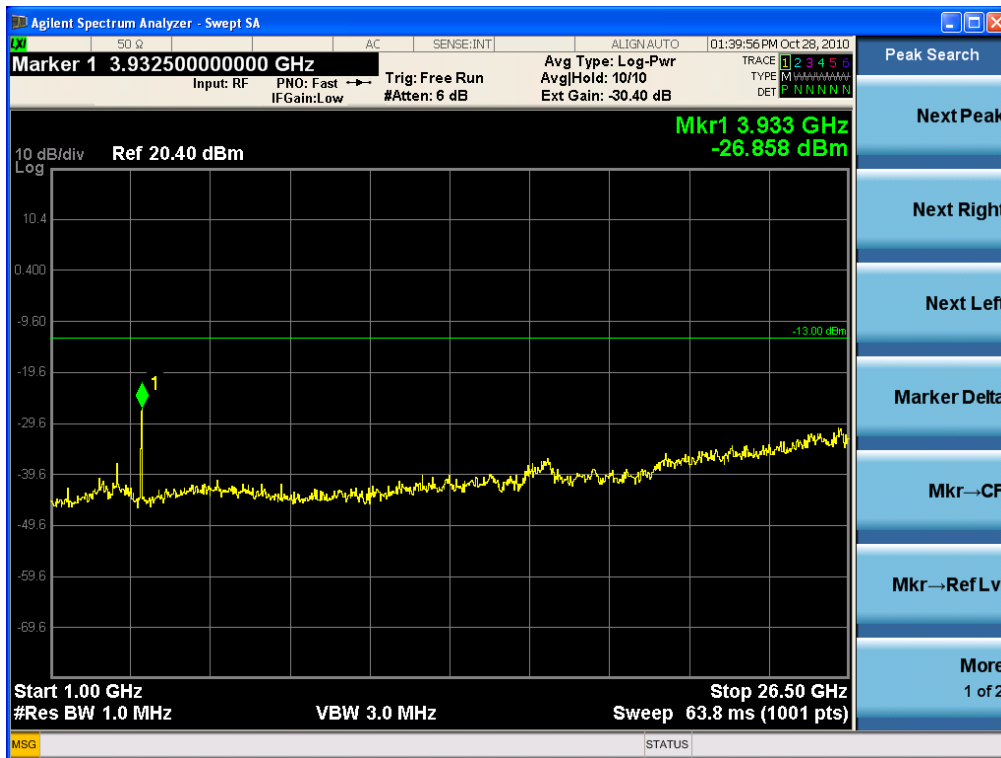


Lower A: (701 MHz) - CH 1 GHz ~ 26.5 GHz

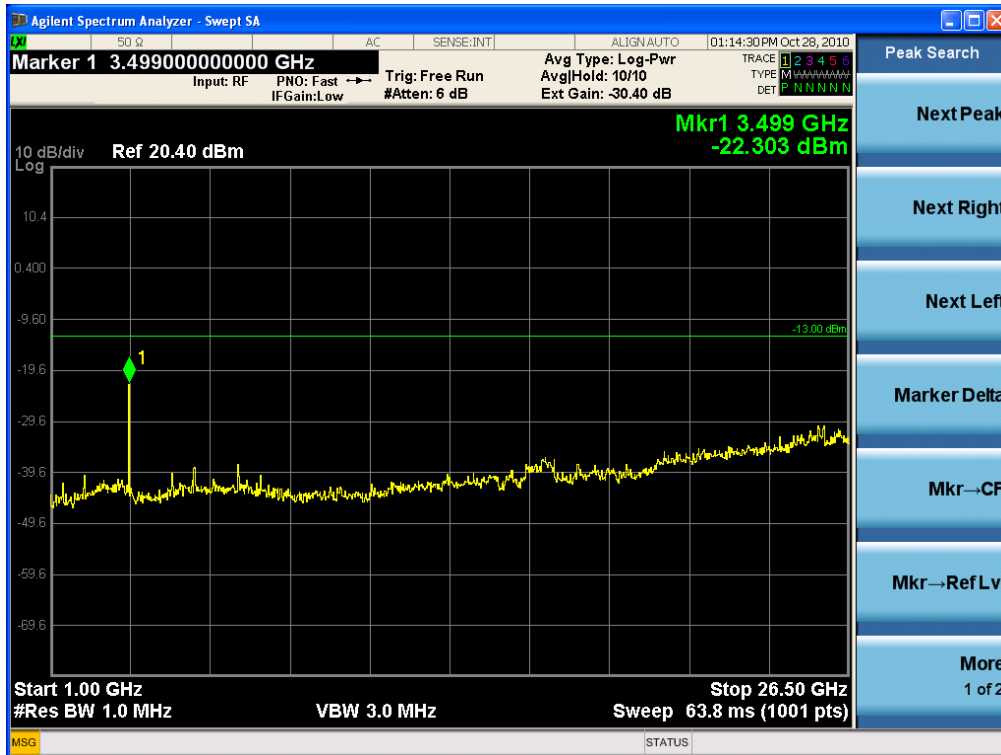


Lower B: (707 MHz) - CH 1 GHz ~ 26.5 GHz

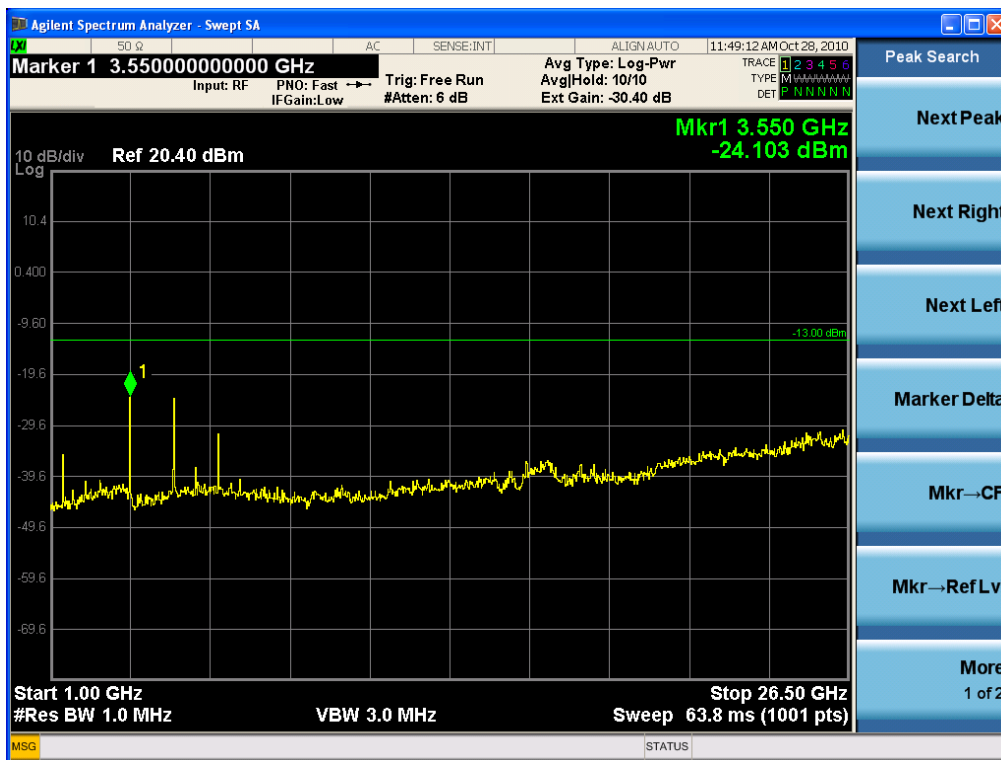
[Spurious Emission – 64QAM] -Up Link



Upper C: (782 MHz)- CH 1 GHz ~ 26.5 GHz



Lower A: (701 MHz) - CH 1 GHz ~ 26.5 GHz

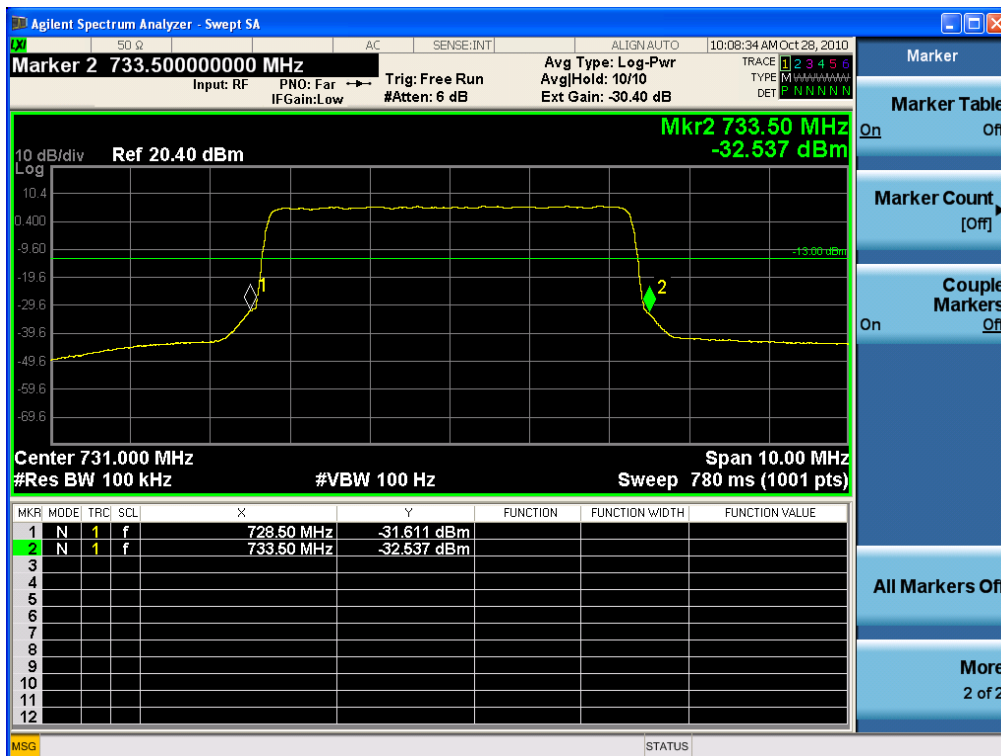


Lower B: (707 MHz) - CH 1 GHz ~ 26.5 GHz

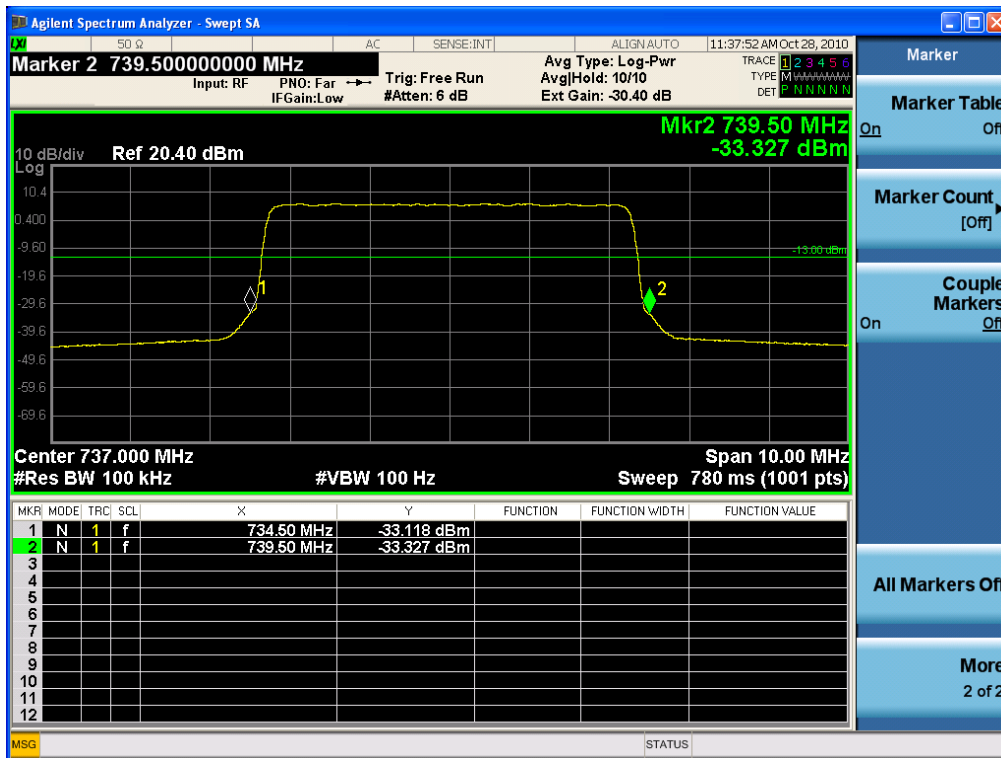
[Band Edge - QPSK] - Down Link



Upper C: (751 MHz)

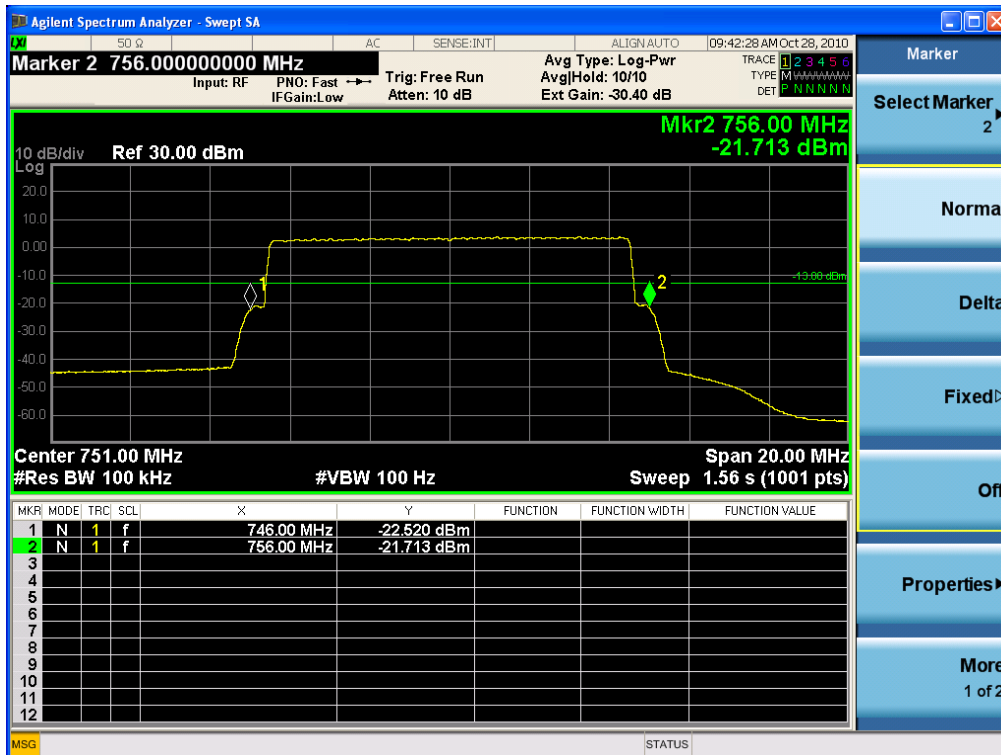


Upper C: (731 MHz)

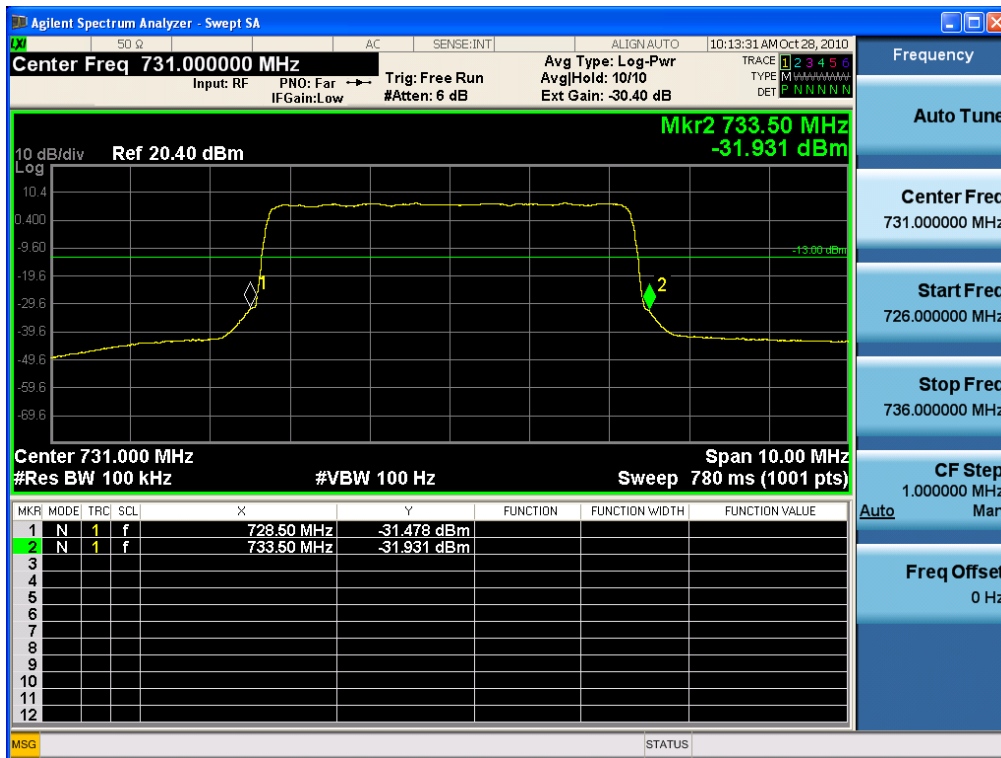


Upper C: (737 MHz)

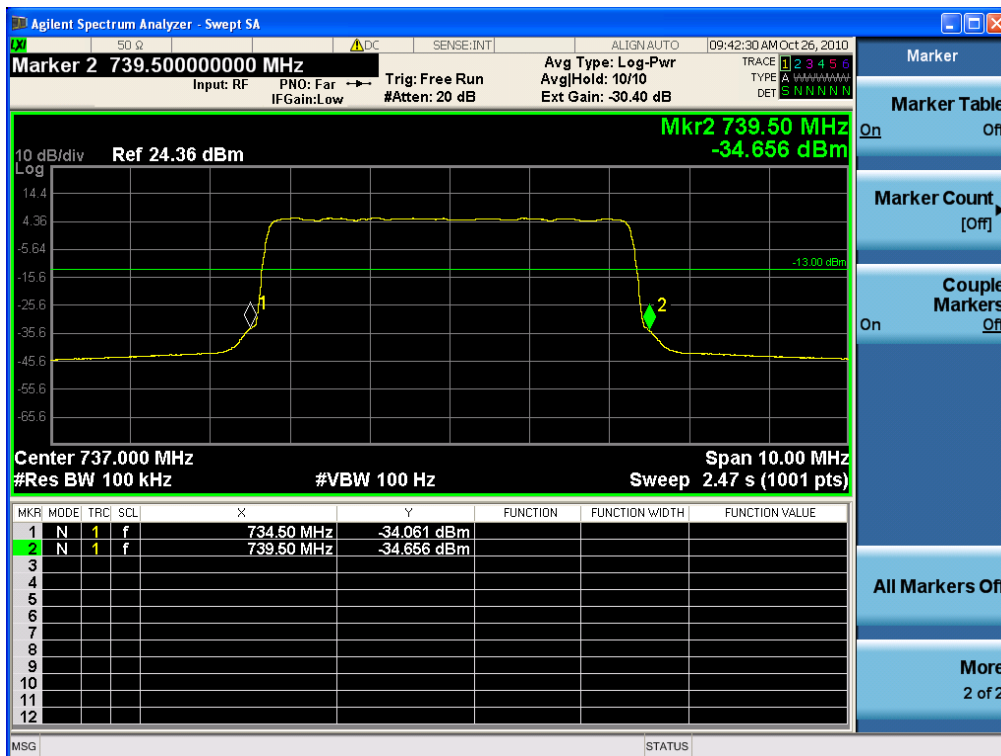
[Band Edge – 16QAM] - Down Link



Lower A: (751 MHz)

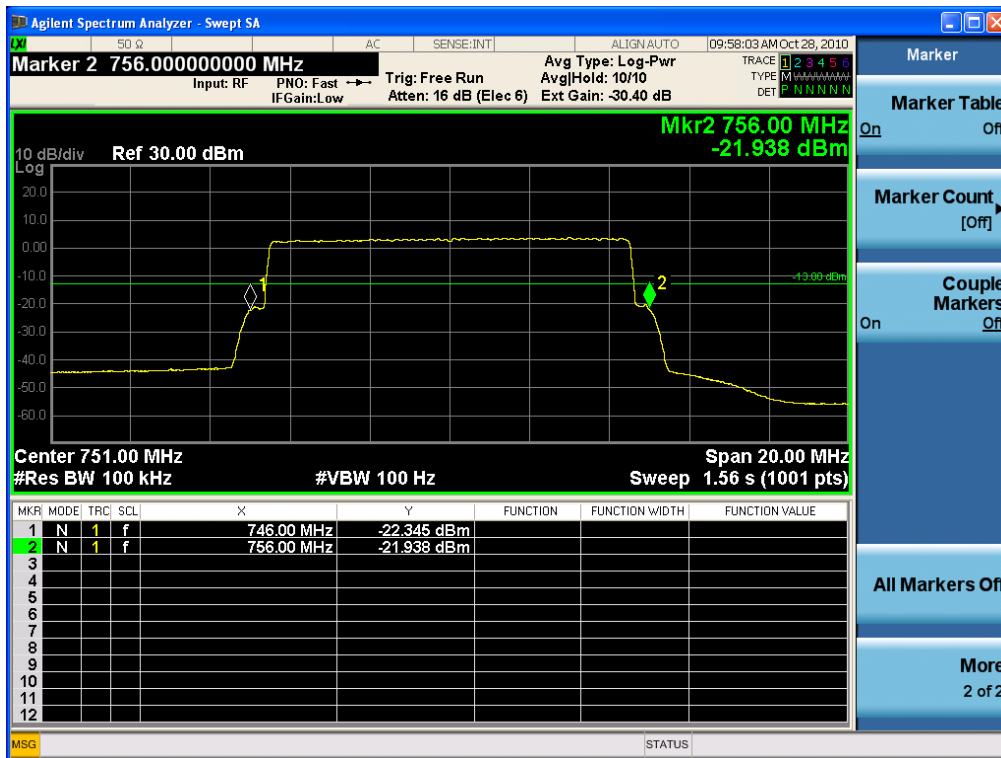


Lower A: (731 MHz)

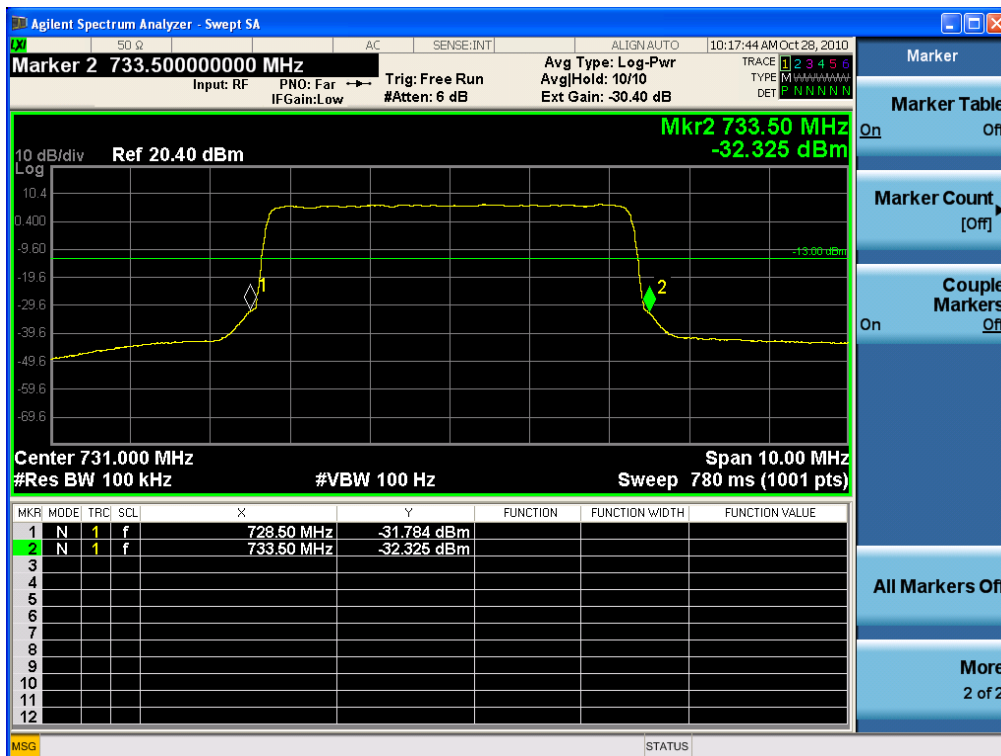


Lower A: (737 MHz)

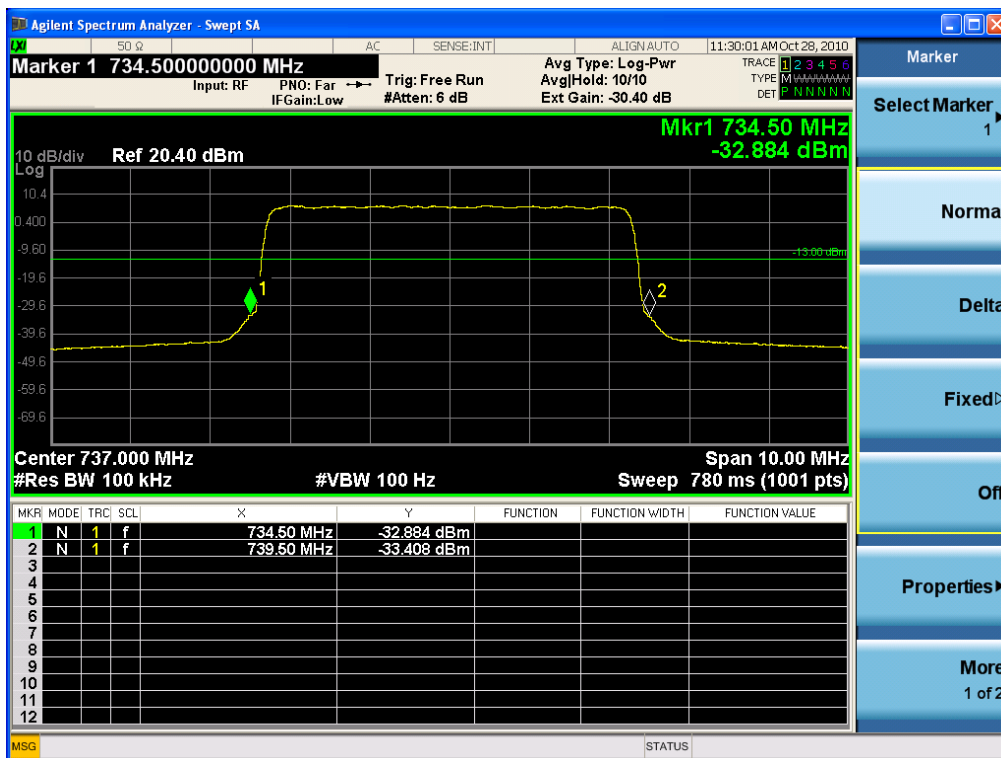
[Band Edge – 64QAM] - Down Link



Lower B: (751 MHz)

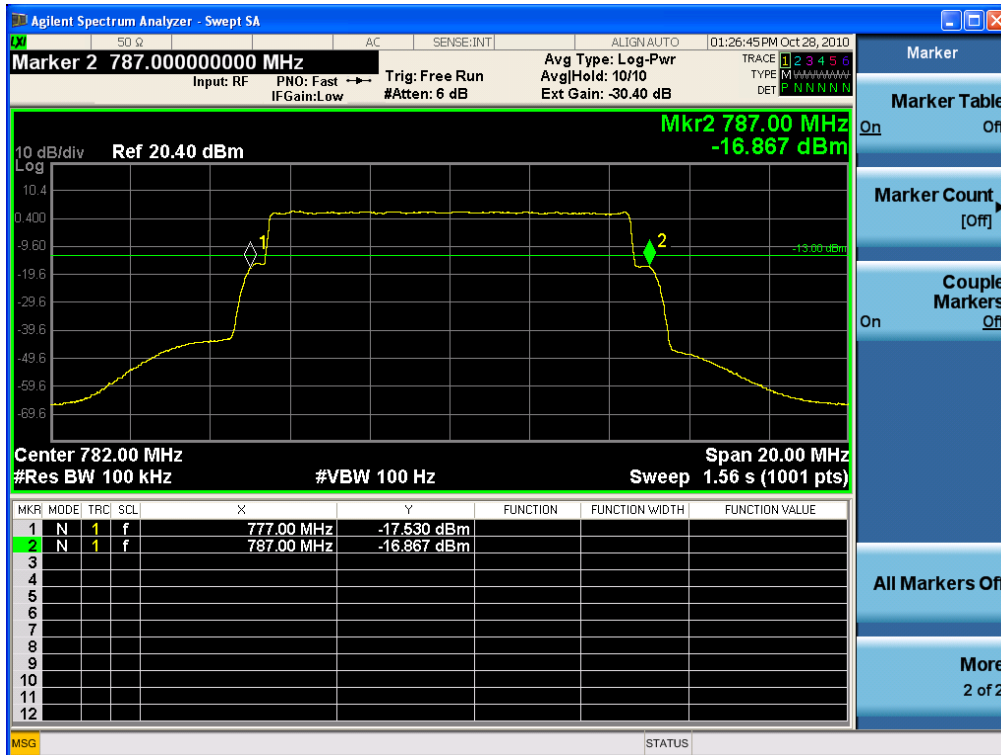


Lower B: (731 MHz)

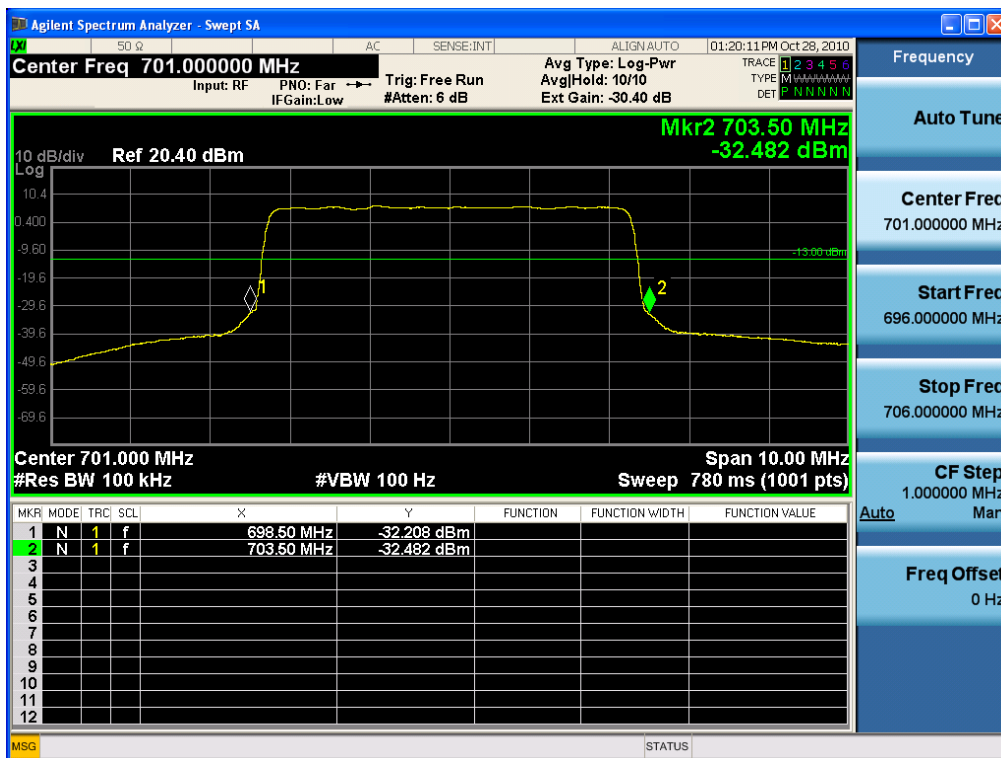


Lower B: (737 MHz)

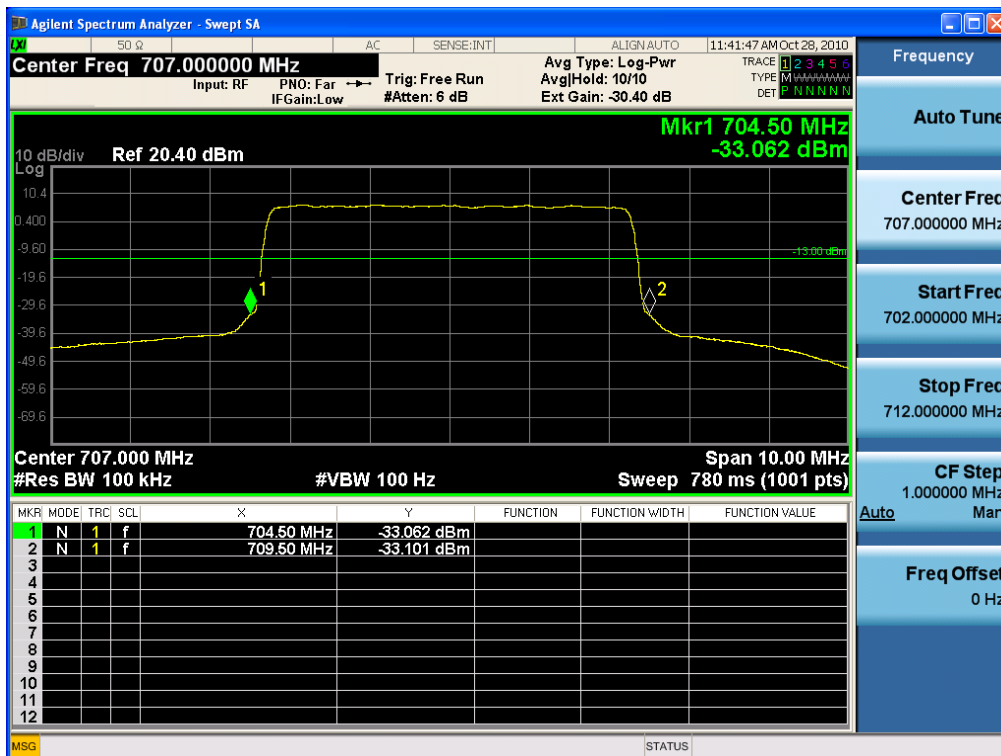
[Band Edge - QPSK]- Up Link



Upper C: (751 MHz)

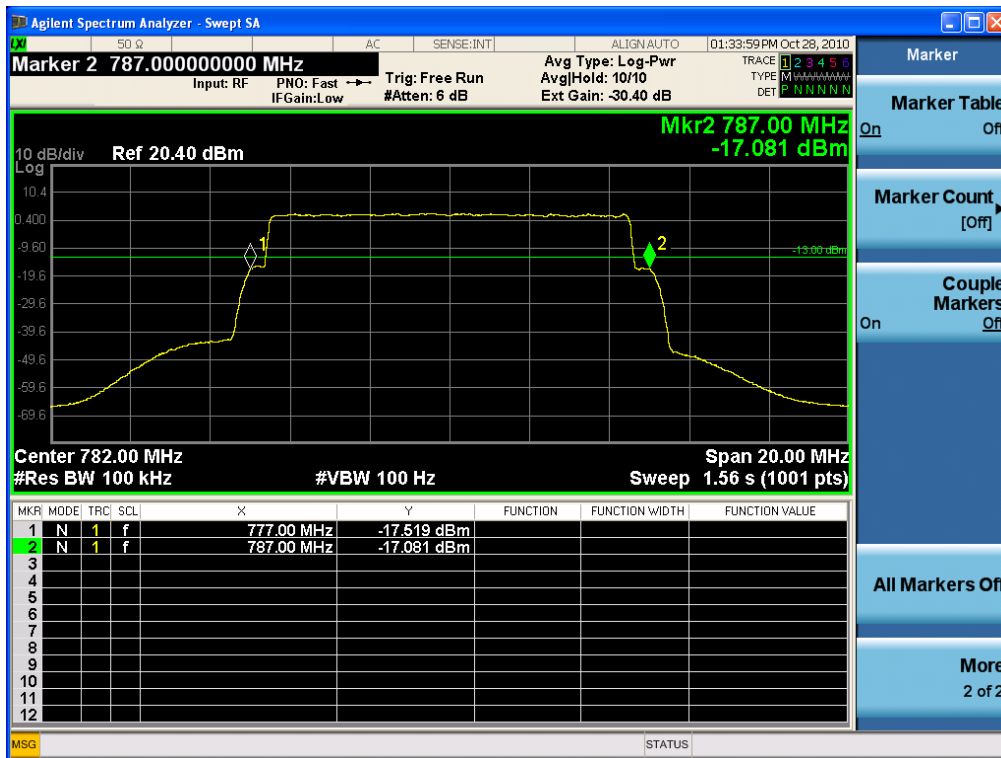


Upper C: (731 MHz)

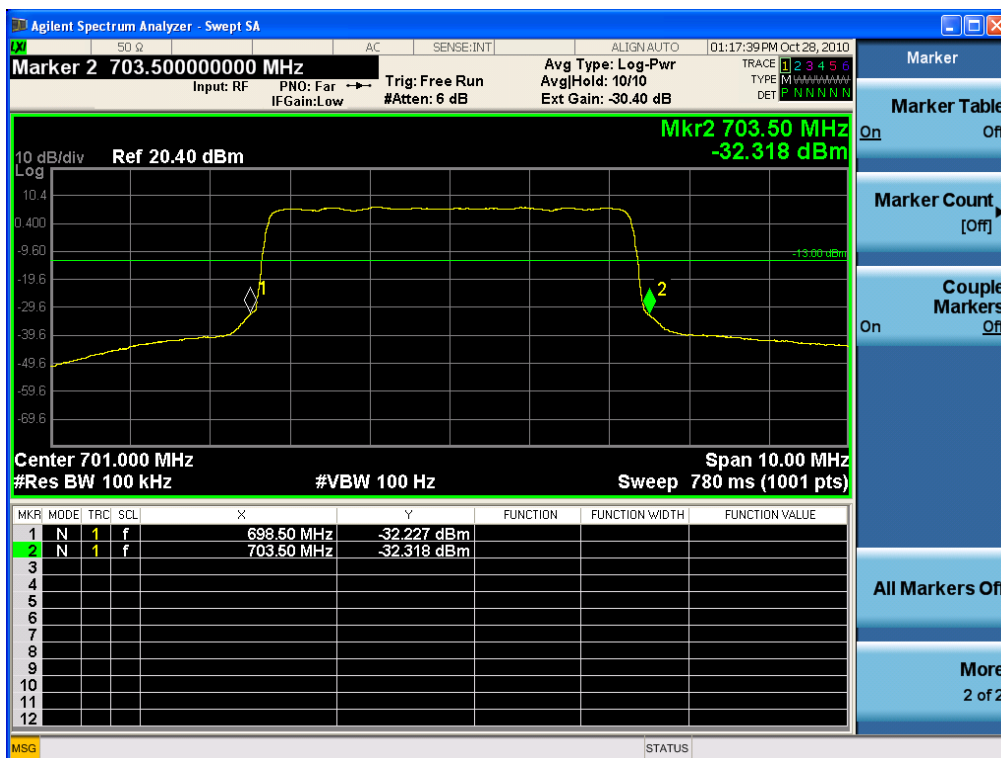


Upper C: (737 MHz)

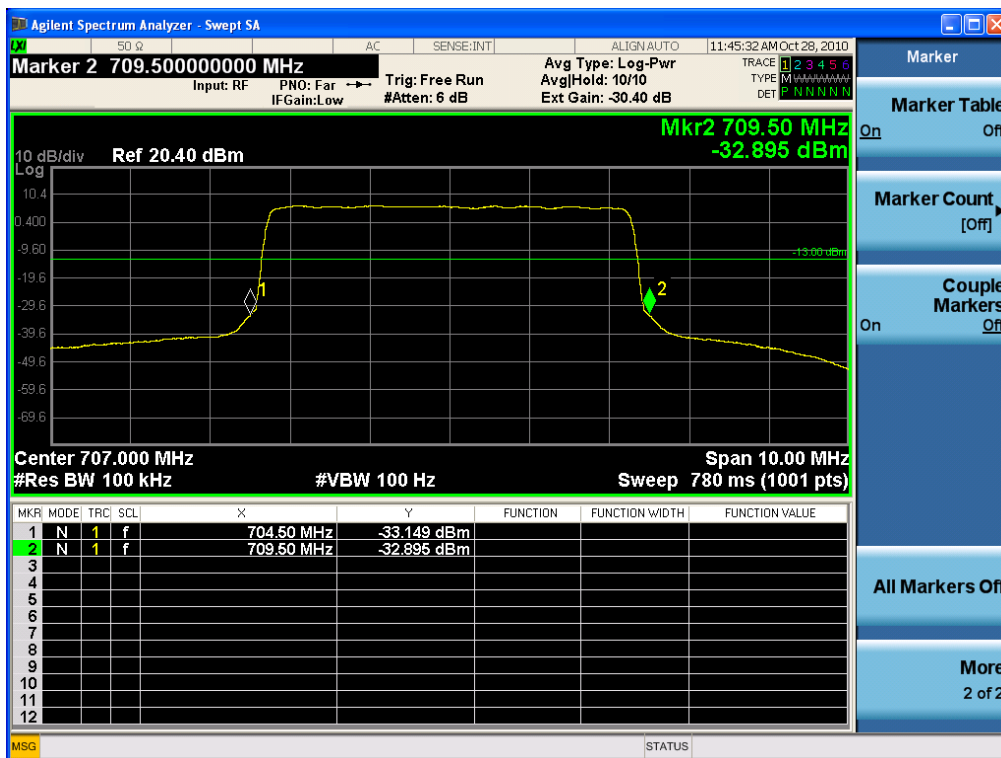
[Band Edge – 16QAM] - Up Link



Lower A: (751 MHz)

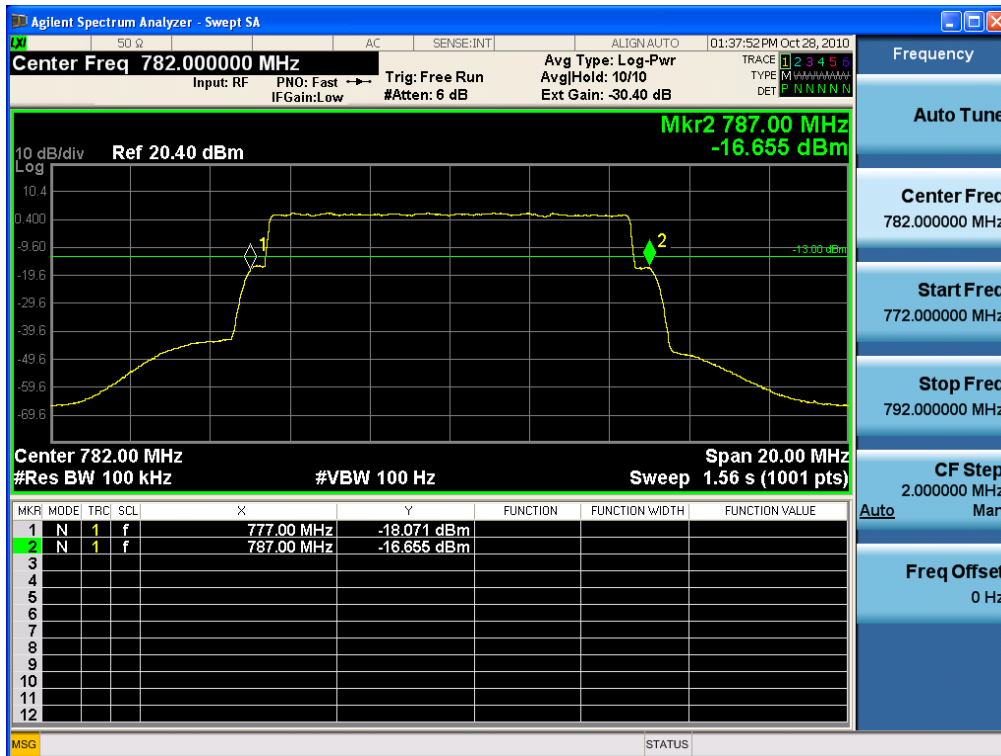


Lower A: (731 MHz)

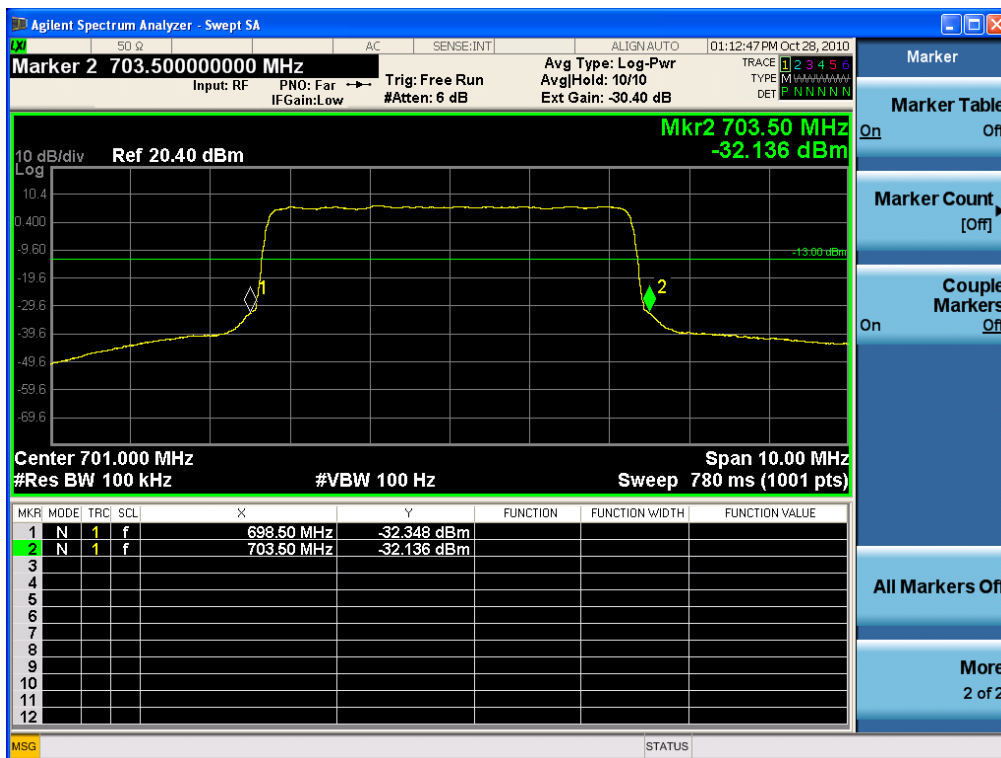


Lower A: (737 MHz)

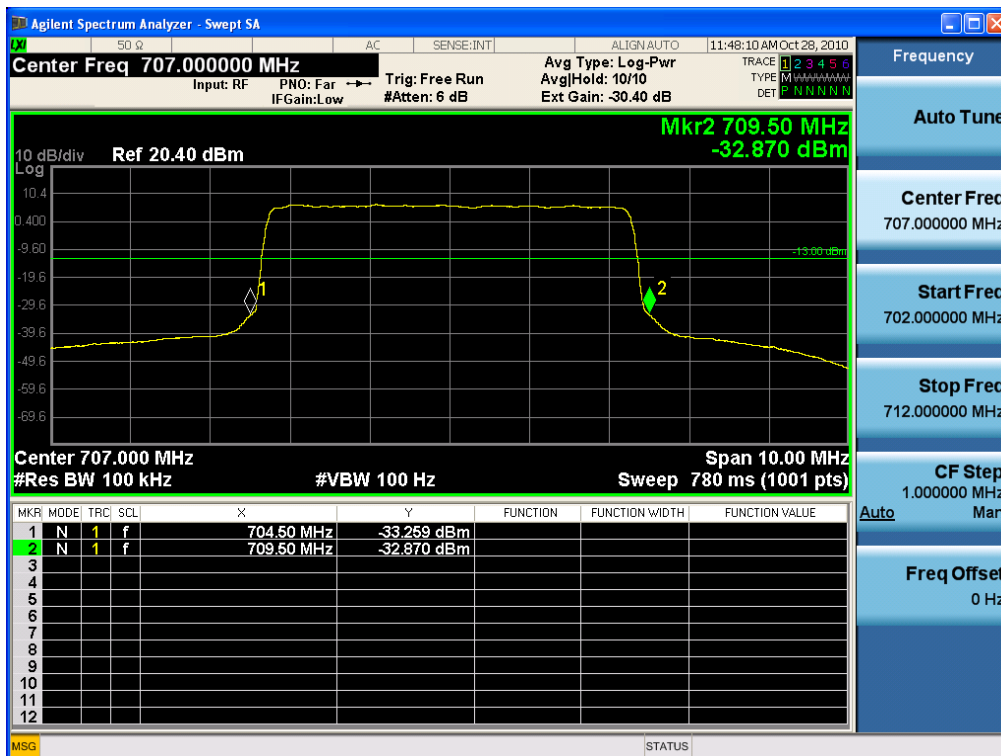
[Band Edge – 64QAM] - Up Link



Lower B: (751 MHz)



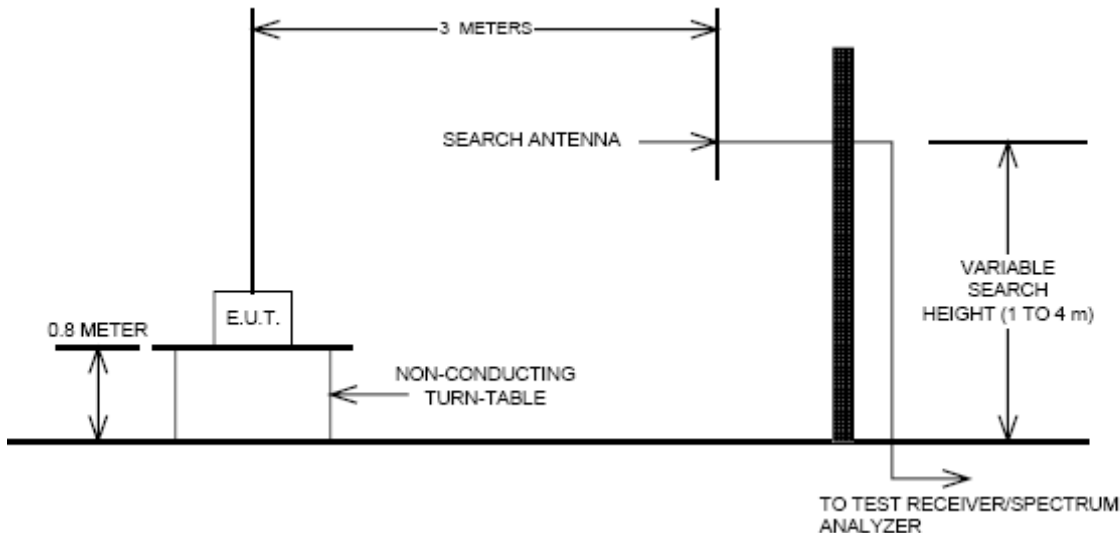
Lower B: (731 MHz)



Lower B: (737 MHz)

3.4 Radiated Spurious Emissions

Test Set-up



Test Procedure

As required by 47 CFR 2.1 053, *field strength of radiated spurious measurements* were made in accordance with the procedures of TIA/EIA-603-A-2001 "Land Mobile FM or PM Communications Equipment Measurement and Performance Standards".

Radiated emission measurements were performed inside a 10 meter semi-anechoic chamber.

The EUT was set at a distance of 3m from the receiving antenna. The EUT's RF ports were terminated to 50ohm load. The EUT was set to transmit at the low, mid and high channels of the transmitter frequency range at its maximum power level. The EUT was rotated about 360

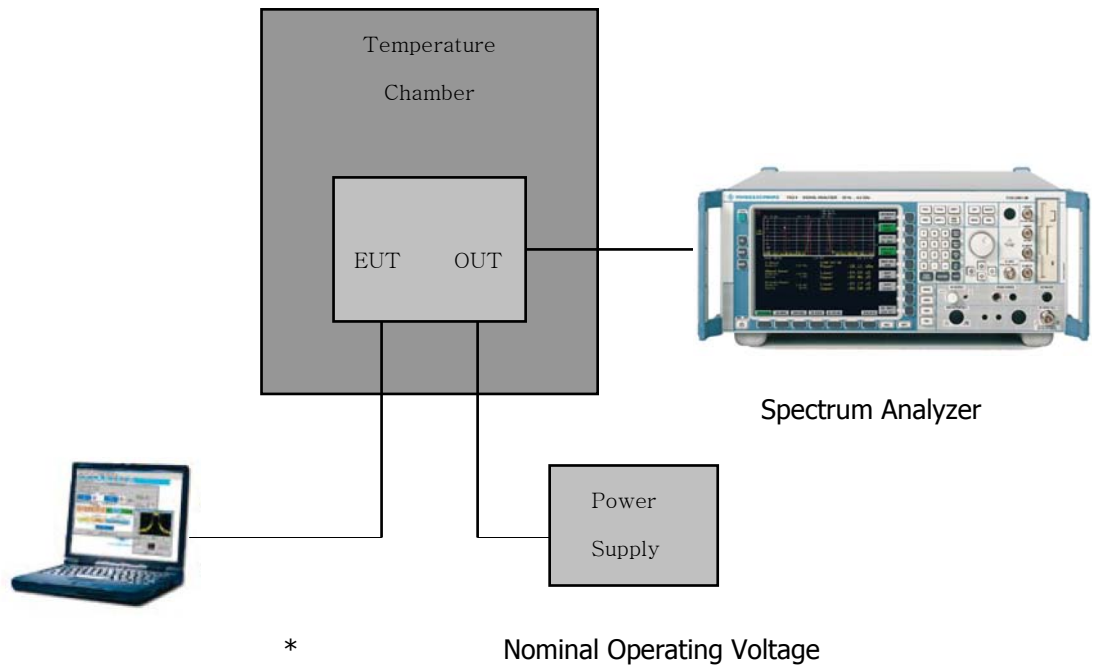
and the receiving antenna scanned from 1-4m in order to capture the maximum emission. A calibrated antenna source was positioned in place of the EUT and the previously recorded signal was duplicated. The maximum EIRP of the emission was calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps were carried out with the receiving antenna in both vertical and horizontal polarization. Harmonic emissions up to the 10th or 40GHz, whichever was the lesser, were investigated. The test was performed using all selective bands and modulation. There was not much difference between them. The test result is reported using the worst bands.

Test Result

Mode	Frequency	Freq.(MHz)	Substitute Level [dBm]	Ant. Gain (dBd)	C.L	Pol.	ERP (dBm)	Margin (dB)
DOWN -LINK	751.0	1502.0 -46.6		6.2491	2.18 H		-42.5809	-29.5809
		2253.0 -44	.5	8.0512	2.99 H		-39.4388	-26.4388
UPLINK 782.0		1564.0 -42.3		6.6862	2.23	H	-37.8438	-24.8438
		2346.0 -40.8		8.0884	3.10 H		-35.8116	-23.8116

3.5 Frequency stability

Test Set-up



Test Procedure

The frequency stability of the transmitter is measured by:

- Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.
- Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification — The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025 \%$ (± 2.5 ppm) of the center frequency.

NOTE: The EUT is tested 782 MHz, 16QAM.

Main Power [V]	Freq. Error [Hz]	Difference [Hz]	ppm
10.2	-10.87	-17.94	-0.01346
12.0	7.63	0	0.011758
13.8	-5.32	-12.37	-0.00731

(Frequency Drift with Supply Voltage Variation)

Temp. [Celsius]	Freq. Error [Hz]	Difference [Hz]	ppm
50	3.75	33.61	0.0045
40	-24.99	-2.72	-0.299
30	-43.88	-18.35	-0.525
20	-30.54	0	-0.365
10	-45.42	-23.88	-0.543
0	13.49	50.03	0.0161
-10	-43.72	-63.92	-0.0523
-20	48.28	108.21	0.0577

(Frequency Drift with Temperature Variation)

3.6 RF Exposure Statement

1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	*(100)	30
1.34 - 30.....	824/f	2.19/f	*(180/ f ²)	30
30 - 300.....	27.5	0.073	0.2	30
300 - 1500.....			f/1500	30
1500 - 100.000.....			1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Max Peak output Power at antenna input terminal	23.990	dBm
Max Peak output Power at antenna input terminal	250.611	mW
Prediction distance	40.000	cm
Prediction frequency	782.000	MHz
Antenna Gain(typical)	8.000	dBi
Antenna Gain(numeric)	6.310	-
Power density at prediction frequency(S)	0.07864	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.521	mW/cm ²

Max Peak output Power at antenna input terminal	23.530	dBm
Max Peak output Power at antenna input terminal	225.424	mW
Prediction distance	40.000	cm
Prediction frequency	698.500	MHz
Antenna Gain(typical)	8.000	dBi
Antenna Gain(numeric)	6.310	-
Power density at prediction frequency(S)	0.07074	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.466	mW/cm ²

3. RESULTS

The power density level at 40cm is 0.07864 mW/cm², which is below the uncontrolled exposure limit of 0.521 mW/cm² at 782 MHz

The power density level at 40cm is 0.07074 mW/cm², which is below the uncontrolled exposure limit of 0.466 mW/cm² at 698.5 MHz

4. LIST OF TEST EQUIPMENT

Manufacture	Model/ Equipment	Serial Number	Calibration Interval	Calibration Due
Agilent	N9020A / Spectrum Analyzer	US46220219	Annual	03/03/2011
Agilent	E4416A / Power Meter	GB41291412	Annual	01/14/2011
Agilent	E9327A / Power Sensor	MY4442009	Annual	07/23/2011
MITEQ	AFS44-00102650-42-10P-44-PS	1532439	Annual	04/05/2011
Wainwright	WHK1.2/15G-10EF/H.P.F	2	Annual	06/25/2011
Wainwright	WHK3.3/18G-10EF/H.P.F	1	Annual	06/25/2011
Digital	EP-3010 / Power Supply	3110117	Annual	01/08/2011
Korea Engineering	KR-1005L / Chamber	KRAC05063-3CH	Annual	12/28/2010
Schwarzbeck	VULB9168/ TRILOG Antenna	9168-200	Biennial	01/06/2011
Schwarzbeck	BBHA 9120D/ Horn Antenna	296	Biennial	09/23/2011
Agilent	E4416A / Power Meter	GB41291412	Annual	01/14/2011
Agilent	E9327A / Power Sensor	MY4442009	Annual	07/23/2011
MITEQ	AFS44-00102650-42-10P-44-PS	1532439	Annual	04/05/2011

5. CONCLUSION

The data collected shows that the LTE User Equipment **FCC ID: U88-CC25K700** complies with all the requirements of Parts 27 of the FCC rules.