Nemko Korea Co., Ltd.

300-2, Osan-Ri, Mohyeon-Myeon, Cheoin-Gu, Yongin-City, Gyeonggi-Do, KOREA
TEL:+82 31 322 2333 FAX:+82 31 322 2332

FCC EVALUATION REPORT FOR CERTIFICATION

Applicant :

SK telesys Co., Ltd.
10F Chorim Bldg.6-3, Sunae-Dong, Bundang-Gu, Seongnam-Si
Seoul, Korea, (Post code : 150-871)

Dates of Issue : March 11, 2010
Test Report No. : NK09R211
Test Site : Nemko Korea Co., Ltd.

FCC ID	VAWSMR-AI231
Brand Name	**SK telesys**
CONTACT PERSON	**SK telesys Co., Ltd.** **10F Chorim Bldg.6-3, Sunae-Dong, Bundang-Gu, Seongnam-Si** **Mr. Seung Moon Lee** **phone No. : +82 31 786-5764**

Applied Standard: FCC 47 CFR Part 27 & 2
EUT Type: WiMAX Pico-BTS

The device bearing the brand name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003. The client should not use it to claim product endorsement by TAF or any government agencies. The test results in the report only apply to the tested sample.

I attest to the accuracy of data and 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.

Tested By : Minchul Shin
Engineer

Reviewed By : H.H. Kim
Manager & Chief Engineer

TABLE OF CONTENTS

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 under FCC Part 2 & Part 27.

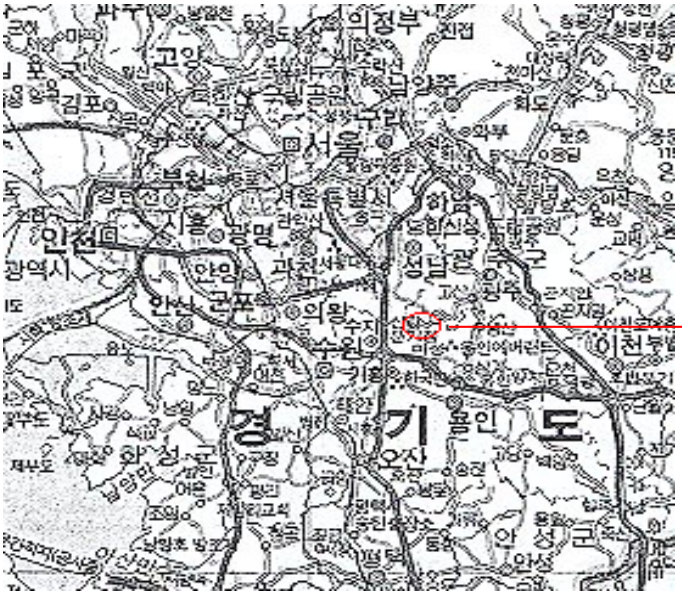
Responsible Party :	SK telesys Co., Ltd.
Contact Person :	Mr. Seung Moon Lee Tel No. : +82 31 786-5764
Manufacturer :	SK telesys Co., Ltd. 10F Chorim Bldg.6-3, Sunae-Dong, Bundang-Gu, Seongnam-Si

- FCC ID: VAWSMR-AI231
- Model: SMR-AI231
- Brand Name: SK telesys
- EUT Type: WiMAX Pico-BTS
- Electric Rating: 48Vdc PoE, AC/DC Adapter output 5.3Vdc
- Applied Standard: FCC 47 CFR Part 2
FCC 47 CFR Part 27
- Test Procedure(s): ANSI C63.4 (2003)
- Dates of Test: Dec. 14, 2009 ~ Mar. 10, 2010
- Place of Tests: Nemko Korea Co., Ltd.

2. Introduction (Site Description)

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) was used in determining radiated and conducted emissions emanating from ***SK telesys Co., Ltd.***
FCC ID : ***VAWSMR-AI231***

These measurement tests were conducted at ***Nemko Korea Co., Ltd.***
The site address is 300-2, Osan-Ri, Mohyeon-Myeon, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, KOREA
The area of Nemko Korea Corporation Ltd. Test site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18 miles) south-southeast from central Seoul.
It is located in the valley surrounded by mountains in all directions where ambient radio signal conditions are quiet and a favorable area to measure the radio frequency interference on open field test site for the computing and ISM devices manufactures.
The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 2003.



Nemko Korea Co., Ltd.
300-2,Osan-Ri, Mohyeon-Myeon,
Cheoin-Gu, Yongin-Si, Gyeonggi-Do,
KOREA 449-852
Tel) +82-31-322-2333
Fax) +82-31-322-2332

Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. and Incheon Airport.

3. Test Conditions & EUT Information

3.1 Operating During Test

The EUT is the MIMO transceiver which has two transmitter and two receiver chains. It support the 2TX, 2RX therefore some of conducted test were measured at combined mode.

The EUT have two channels in each frequency band for 5 MHz channel bandwidth, and it has one channel only in each frequency band for 10 MHz channel bandwidth.

It was tested all channels with the maximum RF power and all test data recorded in the report. During the test, the EUT was connected to notebook PC then a test commander was executed to operate EUT continuously.

3.2 Environmental Conditions

Temperature	22℃ ~ 25℃
Relative Humidity	35% ~ 55%

3.3 Description of EUT

Frequency Band	2305 MHz ~ 2315 MHz, 2350 MHz ~ 2360 MHz
Peak Output Power (2Tx/2Rx)	5MHz BW: EIRP 1.016 W(30.07 dBm) Peak EIRP 0.122 W(20.86 dBm) Average 10MHz BW: EIRP 1.045 W(30.19 dBm) Peak EIRP 0.156 W(21.94 dBm) Average
Access / Duplex	OFDMA / TDD
Modulation	Up Link :QPSK, 16QAM, 64QAM
	Down Link : QPSK, 16QAM, 64QAM
Channel Bandwidth	5MHz /10MHz
TX/RX type	2TX/2RX (MIMO)
Antenna Type	OMNI Antenna
Maximum Antenna Gain	2 dBi
Dimensions	203 mm x 130 mm x 60 mm
Input Power	48Vdc PoE, AC/DC Adapter output 5.3Vdc
Weight	Approx. 1070 g
Operating Conditions	0°C ~ +50°C

3.4 Test Frequency

Operating Frequency Band	Modulation Bandwidth	Test frequency
2305 MHz ~ 2315 MHz	5 MHz	2307.5 MHz
		2312.5 MHz
	10 MHz	2310.0 MHz
2350 MHz ~ 2360 MHz	5 MHz	2352.5 MHz
		2357.5 MHz
	10 MHz	2355.0 MHz

4. Measuring Instrument Calibration

All measurements were made with instruments calibrated according to the recommendation by manufacturer. Measurement of radiated emissions and conducted emissions were made with instruments conforming to American National Standards Institute, ANSI C63.4-2003.
The calibration of measuring instrument, including any accessories that may affect test results, were performed according to the recommendation by manufacturer.

5. Summary of Test Results

The EUT has been tested according to the following specification:

Description of Test	FCC Rule	Result
Occupied Bandwidth	§2.1049	Complies
Band Edge	§2.1051 §27.53(a)(1)(3)	Complies
Conducted Spurious Emissions	§2.1051 §27.53(a)(1)(3)	Complies
Conducted Output Power and Equivalent Isotropic Radiated Power	§2.1051 §27.50(a)(1)	Complies
Radiated Spurious Emissions	§2.1053 §27.53(a)(1)(3)	Complies
Frequency Stability / Temperature Variation	§2.1055 §27.54	Complies

6. RECOMMENDATION/CONCLUSION

The data collected shows that the **SK telesys WiMAX Pico-BTS FCC ID: VAWSMR-AI231** is in compliance with Part 2 & Part 27 of the FCC Rules.

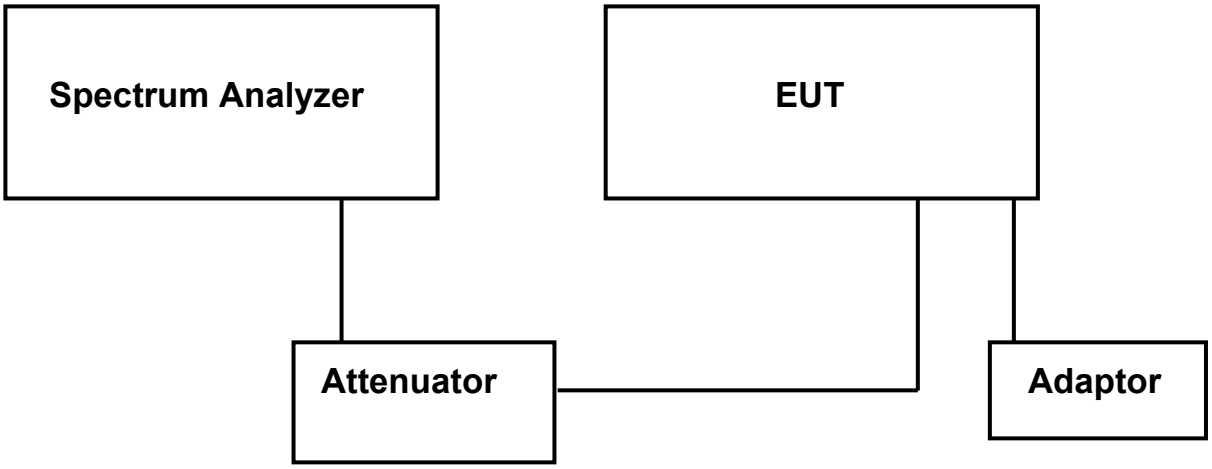
7. Test Equipment List

No.	Instrument	Manufacturer	Model	Serial No.	Calibration Date	Calibration Interval
1	*Test Receiver	R & S	ESCS 30	833364/020	Mar. 28 2009	1 year
2	*Test Receiver	R & S	ESCS 30	100302	Nov. 11 2009	1 year
3	*Amplifier	HP	8447F	2805A03427	Jul. 20 2009	1 year
4	*Amplifier	Sonoma Instrument	310N	291916	Jul. 22 2009	1 year
5	*Pre Amplifier	HP	8449B	3008A00107	Feb. 03 2010	1 year
6	*Pre Amplifier	HP	8447F	2805A03406	Apr. 09 2009	1 year
7	*Pre Amplifier	Agilent	83051A	3950M00201	Jun. 15 2009	1 year
8	*Spectrum Analyzer	Agilent	E4440A	MY44303257	Jul. 20 2009	1 year
9	*Spectrum Analyzer	Agilent	E4440A	MY44022567	Sep. 04 2009	1 year
10	*Spectrum Analyzer	R & S	FSP40	100361	Sep. 04 2009	1 year
11	*Loop Antenna	EMCO	6502	8911-2436	Jan. 11 2009	2 year
12	*Spectrum Analyzer	R & S	FSP40	100361	Sep. 04 2009	1 year
13	*Power Meter	R & S	NRVS	835360/002	Jan. 15 2010	1 year
14	*Peak Power Sensor	R & S	NRV-Z32	836019/028	Nov. 11 2009	1 year
15	*Biconical Log Antenna	ARA	LPB-2520/A	1209	Dec. 08 2008	2 year
16	*Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-508	Dec.11 2008	2 year
17	*Horn Antenna	SCHWARZBECK	BBHA9170	9170223	Jun. 16 2008	2 year
18	*Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-257	Apr. 21 2008	2 year
19	Signal Generater	R & S	SMP02	833286/003	Jul. 20 2009	1 year
20	*LISN	R & S	ESH3-Z5	833874/006	Nov. 11 2009	1 year
21	*LISN	R & S	ESH2-Z5	100227	Feb. 03 2010	1 year
22	*Position Controller	DAEIL EMC	N/A	N/A	N/A	N/A
23	*Turn Table	DAEIL EMC	N/A	N/A	N/A	N/A
24	*Antenna Mast	DAEIL EMC	N/A	N/A	N/A	N/A
25	*Anechoic Chamber	EM Eng.	N/A	N/A	N/A	N/A
26	*Shielded Room	EM Eng.	N/A	N/A	N/A	N/A
27	*Position Controller	Seo-Young EMC	N/A	N/A	N/A	N/A
28	*Turn Table	Seo-Young EMC	N/A	N/A	N/A	N/A
29	*Antenna Mast	Seo-Young EMC	N/A	N/A	N/A	N/A
30	*Anechoic Chamber	Seo-Young EMC	N/A	N/A	N/A	N/A
31	*Shielded Room	Seo-Young EMC	N/A	N/A	N/A	N/A

8. Description of Tests

8.1 6 Transmitter Conducted Output Power (EIRP)

Test Set-up:



Test Method:

The measurements were performed in max output power transmitting mode at all channels of the 2305 MHz ~ 2315 MHz and 2350 MHz ~ 2360 MHz frequency ranges under all data rate.

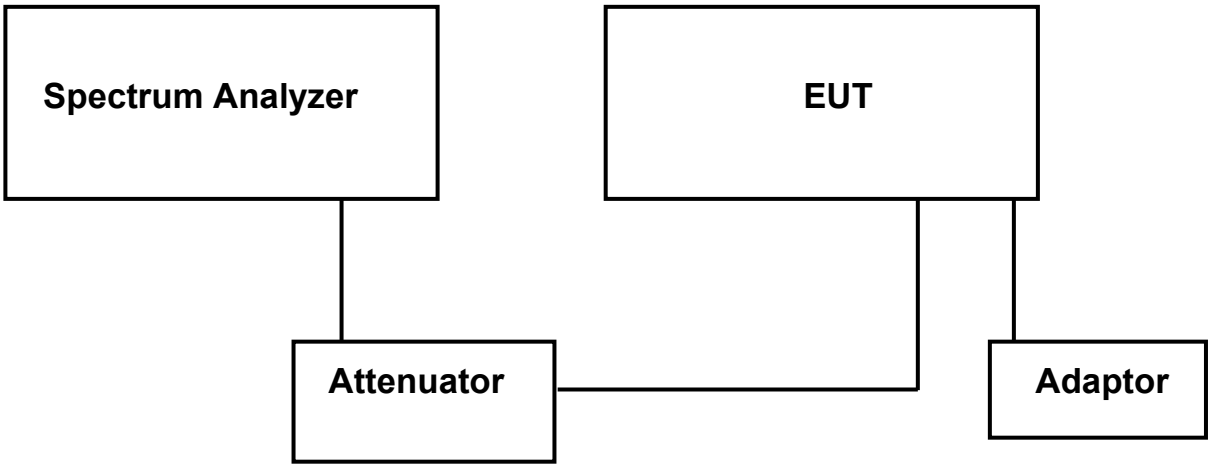
The EUT's output power was connected to the Spectrum Analyzer/peak power meter through appropriate attenuator.
The peak power was measured by peak power meter and average power was measured by spectrum analyzer with following setting.

Peak Power:
RBW, VBW = 100 kHz
Detect mode = peak
5/10 MHz channel power measurement function.

Average Power:
RBW, VBW = 100 kHz
Detect mode = average
5/10 MHz channel power measurement function.

8.2 26 dB Emission Bandwidth

Test Set-up:

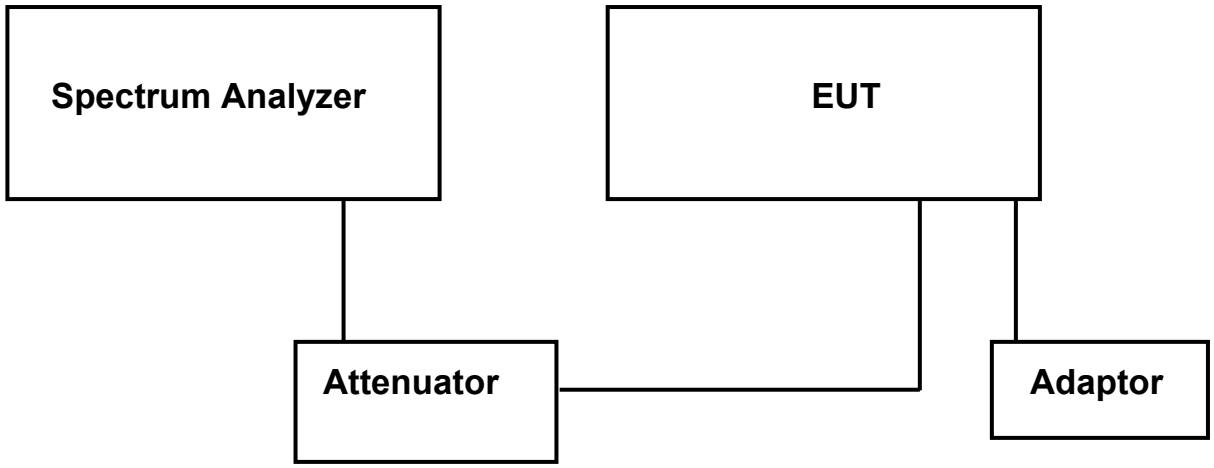


Test Method:

The EUT was setup to maximum output power at its lowest channel. The occupied bandwidth was measured using a spectrum analyzer's 26 dB bandwidth function. The measurements are repeated for the other channels.
The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

8.3 Conducted Spurious Emission at antenna Terminal

Test Set-up:



Minimum standard:

For operation in the bands 2305 MHz ~2315 MHz and 2350 MHz ~ 2360 MHz, the power of any emissions outside the 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 the following amounts:
Below 2300 MHz and above 2370 MHz by factor not less then 70+10log(P) dB.
On all frequencies from 2300 to 2320 MHz and 2345 to 2370 MHz by factor not less then 43+10log(P) dB.
On all frequencies from 2320 to 2345 MHz by factor not less then 80+10log(P) dB

Compliance with the out-of-band emissions requirement is based on test being performed with an analyzer resolution bandwidth of 1 MHz with average detect. However in the 1 MHz band immediately outside and adjacent to the frequency block a resolution bandwidth of at least 1 % of the fundamental emissions bandwidth may be employed.

The spurious emission limit can be equivalent to the absolute power with following calculation.

43 + 10 log(P) relates to -13 dBm absolute power

70 + 10 log(P) relates to -40 dBm absolute power

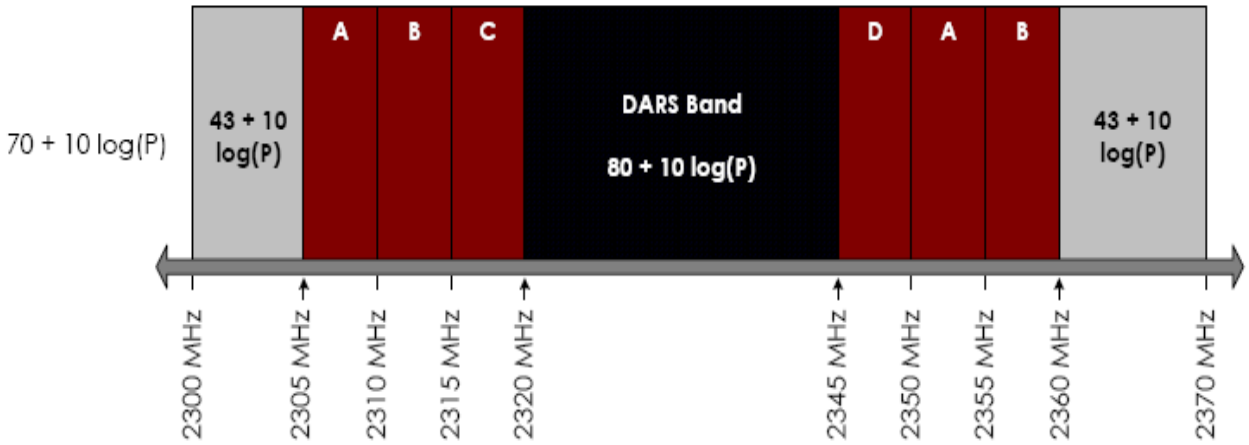
80 + 10 log(P) relates to -50 dBm absolute power

P : Average power

Test Method:

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 limit, in the 1 MHz bands immediately outside and adjacent to the edge of the frequency block.
The measurements are repeated for the EUT's other channels. For the Out-of-Band measurements a 1 MHz RBW was used to scan from 10 MHz to 24 GHz.

Frequency Band Blocks



Test frequency bands are A, B frequency band blocks.

8.4 Radiated Spurious & Harmonic Emission

Test Set-up:
Effective Radiated Power Output and Equivalent Isotropic Radiated Power output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2003.

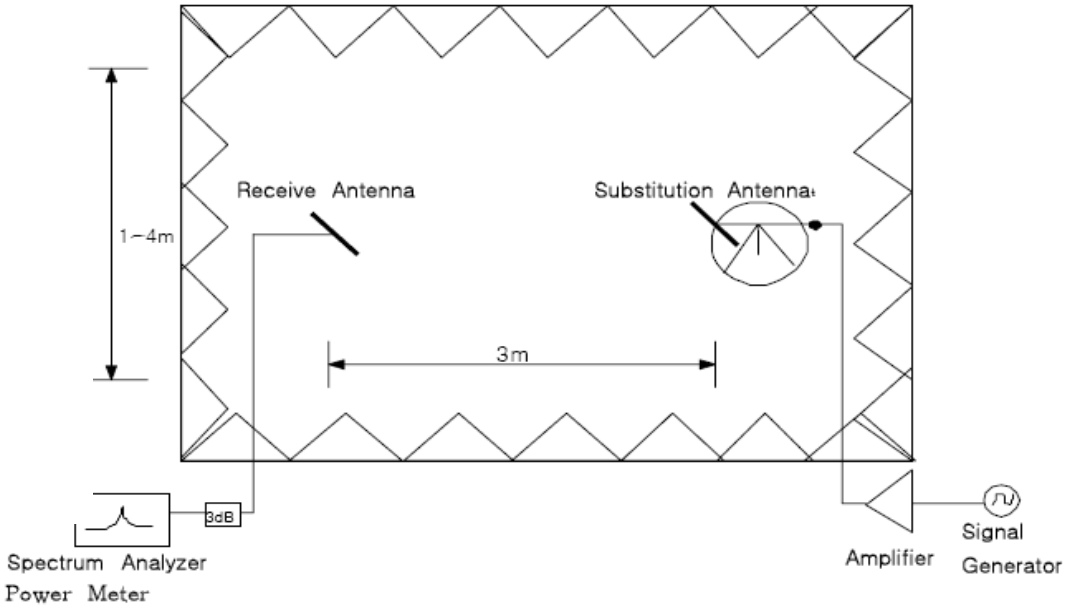


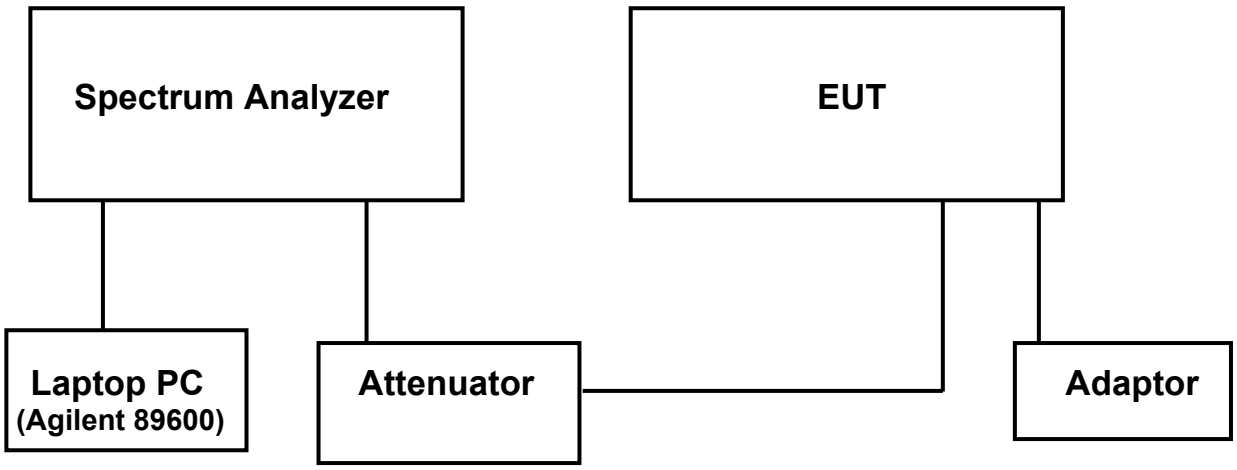
Diagram of Radiated Spurious & Harmonic test Set-up

The EUT was set on a non-conductive turntable in a semi anechoic chamber.
In the corner of the chamber there was a communication antenna, which was connected to the BS simulator located outside the chamber. The radiated power from the EUT was measured with an antenna fixed to a antenna tower.
The tower and turn table were remotely controlled to turn the EUT and change the antenna polarization. The measured signal was routed from the measuring antenna to the spectrum analyzer. The BS simulator was used to set the TX channel and power level and modulate the TX signal with different bit patterns.
The radiated spurious and harmonic emission were measured up to 10^{th} harmonic of the fundamental frequency.

Test Method :
1. The maximum power level was searched by moving the turn table and measuring antenna and manipulating the EUT. This level (P_{EUT}) was recorded.
2. For measurements the resolution bandwidth and video bandwidth were set to 100 kHz for emissions below 1GHz and 1 MHz for emissions over 1GHz.
3. The average detection was used.
4. The EUT was replaced with a substituting antenna.
5. The substituting antenna was fed with the power (P_{Subst_TX}) giving a convenient reading on the spectrum analyzer. That reading (P_{Subst_RX}) on spectrum analyzer was recorded.

8.5 Frequency Stability / Temperature Variation

Test Set-up:



Test Method:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature(20 °C to 25 °C to provide a reference).
2. The equipment is subjected to an overnight “soak” at -30 °C without any power applied.
3. After the overnight “soak” at -30 °C (Usually 14 ~ 16 hours), the equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within a three minute interval after applying power to the transmitter.
4. Frequency measurements are made at 10 °C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.
5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.
6. Frequency measurements are at 10 intervals starting at -30 °C up to + 50 °C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after re-applying power to the transmitter.
7. The artificial load is mounted external to the temperature chamber.

9. Test Data

9.1 Transmitter Conducted Output Power (EIRP)

Measurement Results: 5MHz Bandwidth

Frequency (MHz)	Modulation	Coding Rate	Peak Power (dBm)		Avg. Power (dBm)		Total Peak Power (EIRP) (dBm)	Total Avg. Power (EIRP) (dBm)
			Chain 0	Chain 1	Chain 0	Chain 1		
2307.5	QPSK	1/2	23.42	24.38	15.25	16.19	28.94	20.76
		3/4	23.40	24.35	15.28	16.17	28.91	20.76
	16QAM	1/2	23.53	24.42	15.32	16.20	29.01	20.79
		3/4	23.45	24.42	15.28	16.18	28.97	20.76
	64QAM	1/2	23.52	24.49	15.30	16.20	29.04	20.78
		2/3	23.49	24.41	15.26	16.15	28.98	20.74
		3/4	23.52	24.41	15.26	16.15	29.00	20.74
		5/6	23.51	24.47	15.28	16.17	29.03	20.76
2312.5	QPSK	1/2	23.50	24.50	15.25	16.38	29.04	20.86
		3/4	23.45	24.47	15.24	16.37	29.00	20.85
	16QAM	1/2	23.49	24.62	15.21	16.37	29.10	20.84
		3/4	23.49	24.57	15.21	16.36	29.07	20.83
	64QAM	1/2	23.57	24.68	15.23	16.38	29.17	20.85
		2/3	23.48	24.64	15.17	16.34	29.11	20.80
		3/4	23.53	24.63	15.20	16.38	29.13	20.84
		5/6	23.45	24.63	15.21	16.37	29.09	20.84

Measurement Results: 5MHz Bandwidth

Frequency (MHz)	Modulation	Coding Rate	Peak Power (dBm)		Avg. Power (dBm)		Total Peak Power (EIRP) (dBm)	Total Avg. Power (EIRP) (dBm)
			Chain 0	Chain 1	Chain 0	Chain 1		
2352.5	QPSK	1/2	24.40	25.48	16.18	17.19	29.98	21.72
		3/4	24.38	25.46	16.16	17.18	29.96	21.71
	16QAM	1/2	24.35	25.55	16.18	17.19	30.00	21.72
		3/4	24.36	25.48	16.19	17.16	29.97	21.71
	64QAM	1/2	24.49	25.57	16.19	17.16	30.07	21.71
		2/3	24.39	25.53	16.14	17.13	30.01	21.67
		3/4	24.40	25.47	16.18	17.13	29.98	21.69
		5/6	24.43	25.51	16.18	17.15	30.01	21.70
2357.5	QPSK	1/2	24.73	25.22	16.55	16.85	29.99	21.71
		3/4	24.62	25.16	16.55	16.86	29.91	21.72
	16QAM	1/2	24.73	25.31	16.57	16.89	30.04	21.74
		3/4	24.72	25.24	16.54	16.88	30.00	21.72
	64QAM	1/2	24.79	25.32	16.58	16.92	30.07	21.76
		2/3	24.74	25.32	16.55	16.88	30.05	21.73
		3/4	24.68	25.31	16.53	16.87	30.02	21.71
		5/6	24.77	25.25	16.54	16.90	30.03	21.73

Measurement Results: 10MHz Bandwidth

Frequency (MHz)	Modulation	Coding Rate	Peak Power (dBm)		Avg. Power (dBm)		Total Peak Power (EIRP) (dBm)	Total Avg. Power (EIRP) (dBm)
			Chain 0	Chain 1	Chain 0	Chain 1		
2310.0	QPSK	1/2	25.17	24.85	17.07	16.76	30.02	21.93
		3/4	25.13	24.86	17.06	16.75	30.01	21.92
	16QAM	1/2	25.20	24.98	17.08	16.77	30.10	21.94
		3/4	25.19	24.94	17.06	16.78	30.08	21.93
	64QAM	1/2	25.33	25.03	17.07	16.79	30.19	21.94
		2/3	25.25	25.01	17.02	16.74	30.14	21.89
		3/4	25.27	24.98	17.06	16.75	30.14	21.92
		5/6	25.31	24.99	17.07	16.78	30.16	21.94
2355.0	QPSK	1/2	24.98	24.75	16.88	16.62	29.88	21.76
		3/4	24.97	24.74	16.88	16.60	29.87	21.75
	16QAM	1/2	25.06	24.87	16.89	16.62	29.98	21.77
		3/4	25.05	24.87	16.87	16.59	29.97	21.74
	64QAM	1/2	25.14	24.86	16.89	16.61	30.01	21.76
		2/3	25.12	24.78	16.84	16.58	29.96	21.72
		3/4	25.12	24.83	16.81	16.58	29.99	21.71
		5/6	25.11	24.83	16.83	16.61	29.98	21.73

Note:

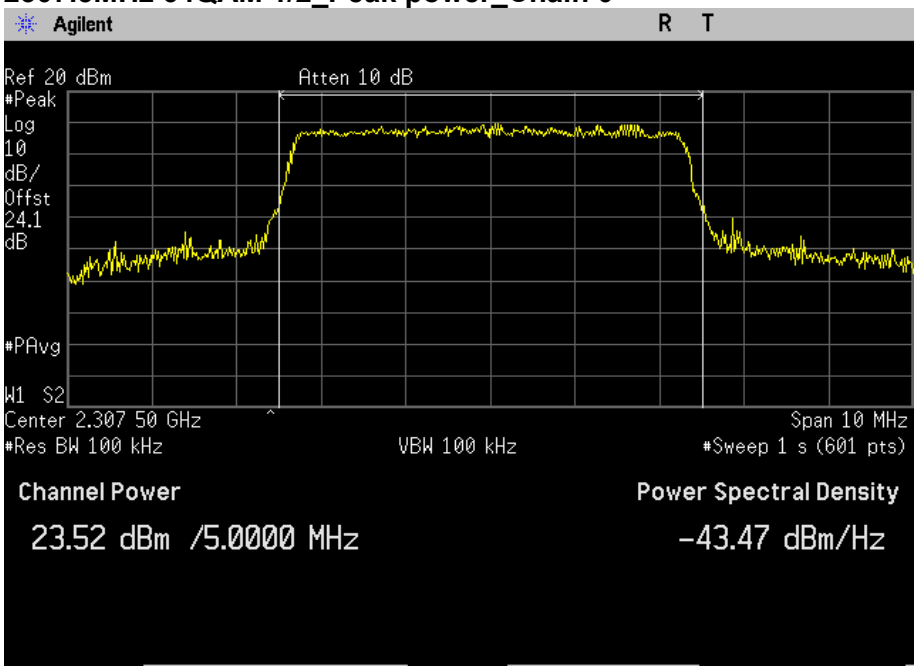
Total peak(avg.) power(EIRP) calculation formula:
10 log (10^ (Chain 0 Power / 10) + 10^ (Chain 1 Power / 10)) + Antenna gain(dBi)

The maximum antenna gain: 2.0 dBi

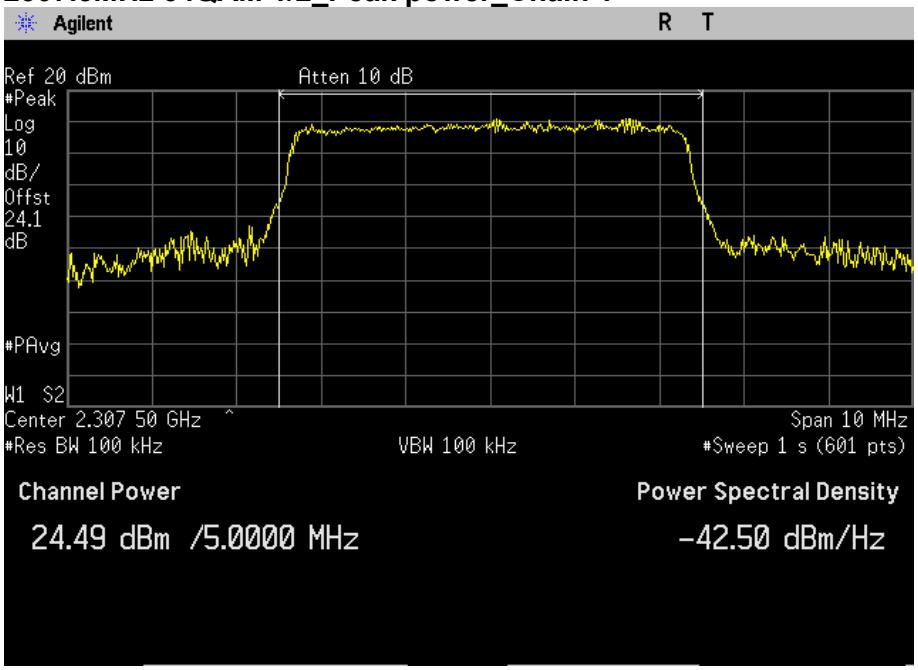
9.1.1. Test Plots (Maximum Power Mode)

5 MHz Bandwidth Peak Power

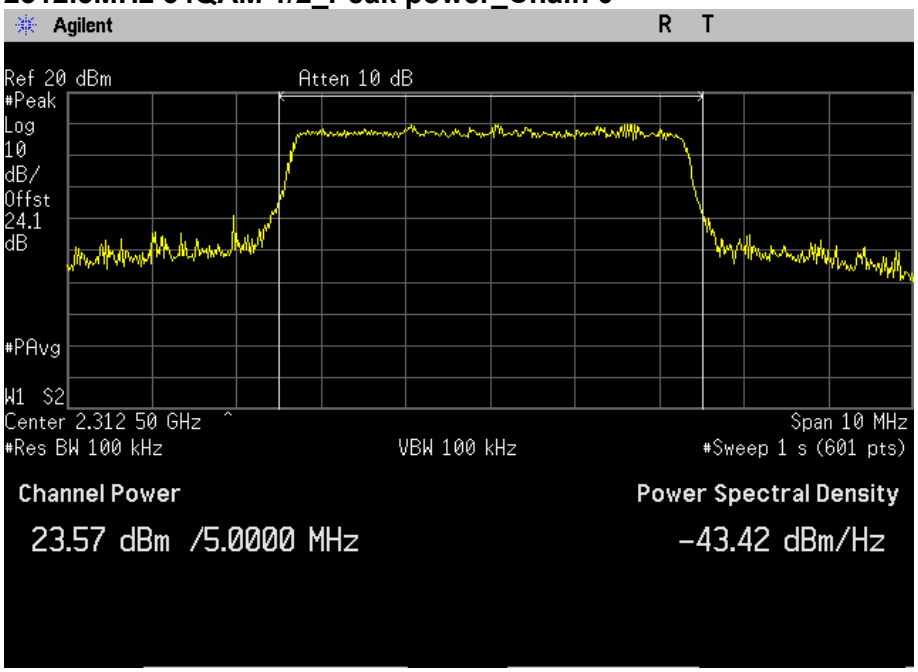
2307.5MHz 64QAM 1/2_Peak power_Chain 0



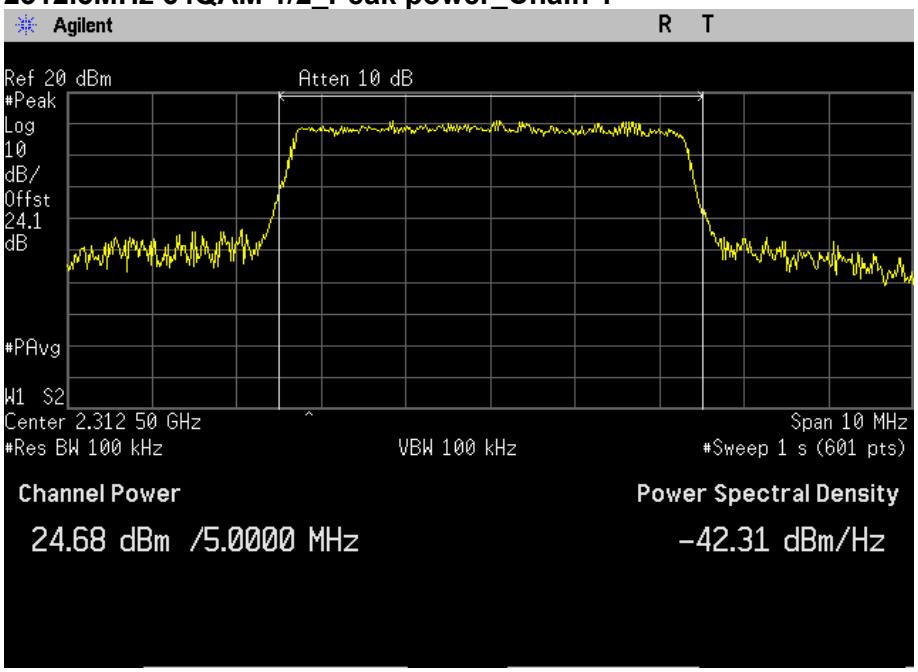
2307.5MHz 64QAM 1/2_Peak power_Chain 1



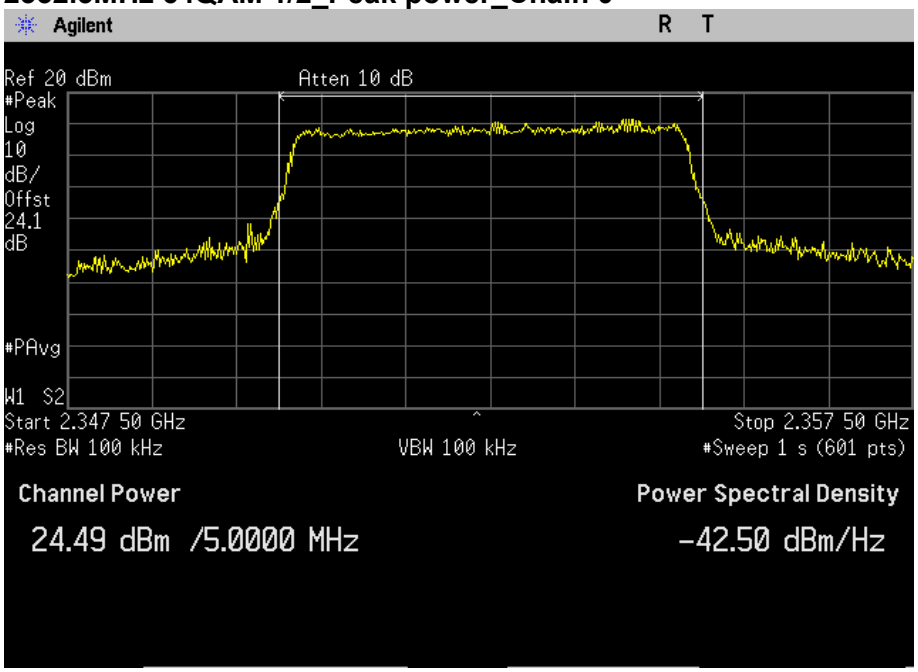
2312.5MHz 64QAM 1/2_Peak power_Chain 0



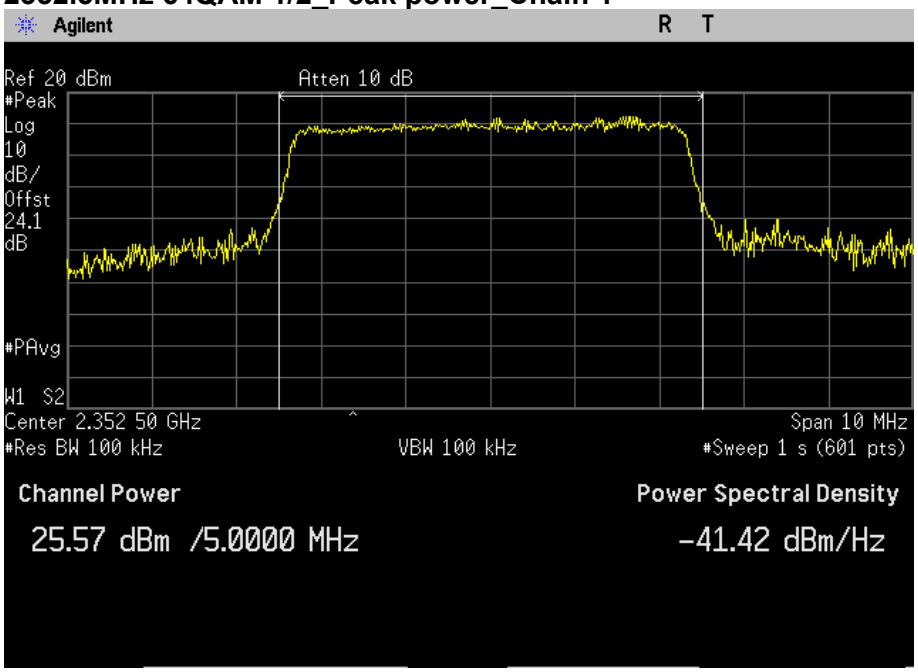
2312.5MHz 64QAM 1/2_Peak power_Chain 1



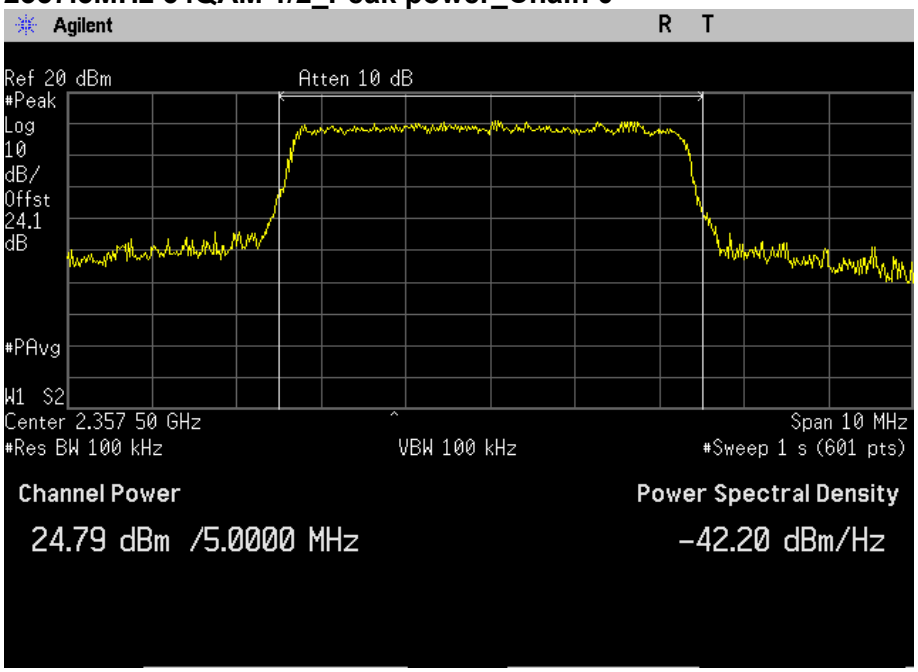
2352.5MHz 64QAM 1/2_Peak power_Chain 0



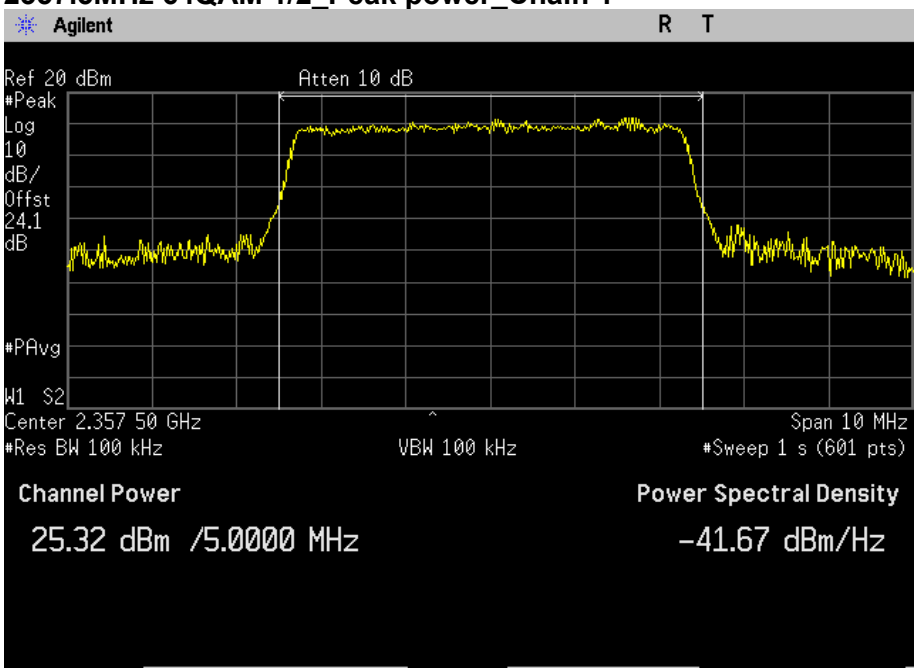
2352.5MHz 64QAM 1/2_Peak power_Chain 1



2357.5MHz 64QAM 1/2_Peak power_Chain 0

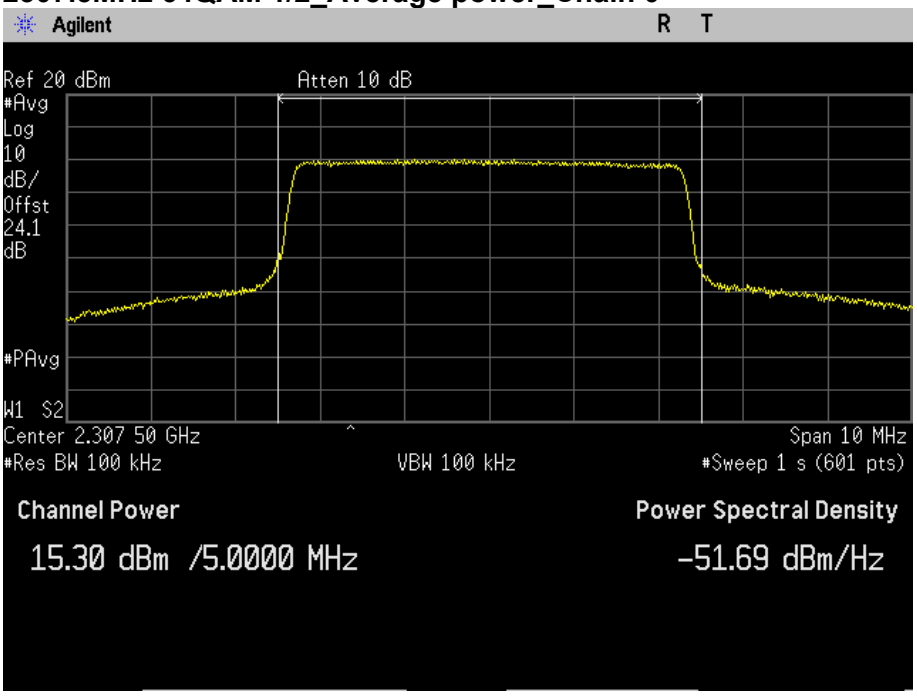


2357.5MHz 64QAM 1/2_Peak power_Chain 1

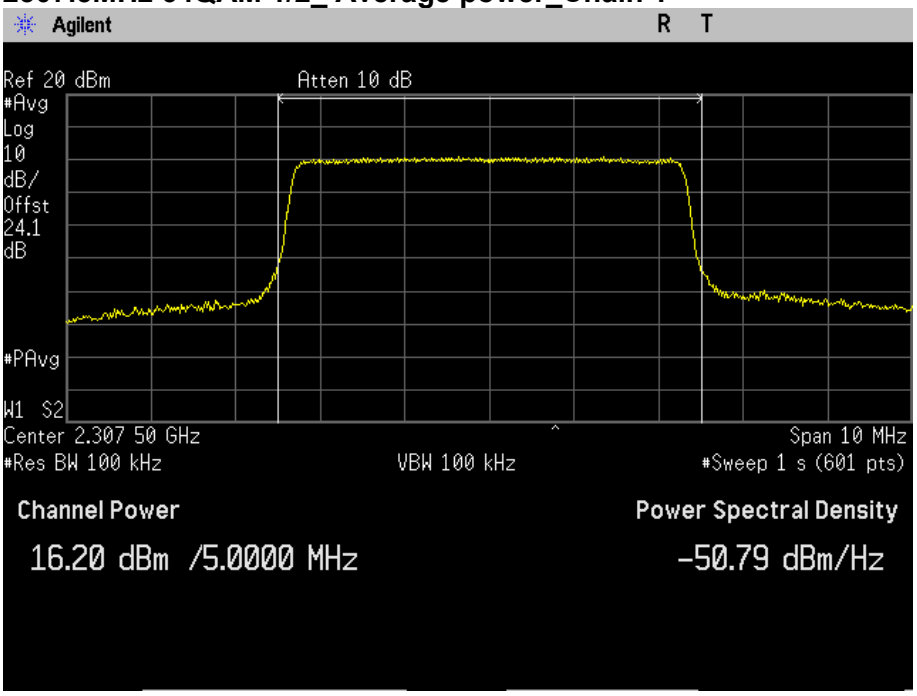


5 MHz Bandwidth_Average Power

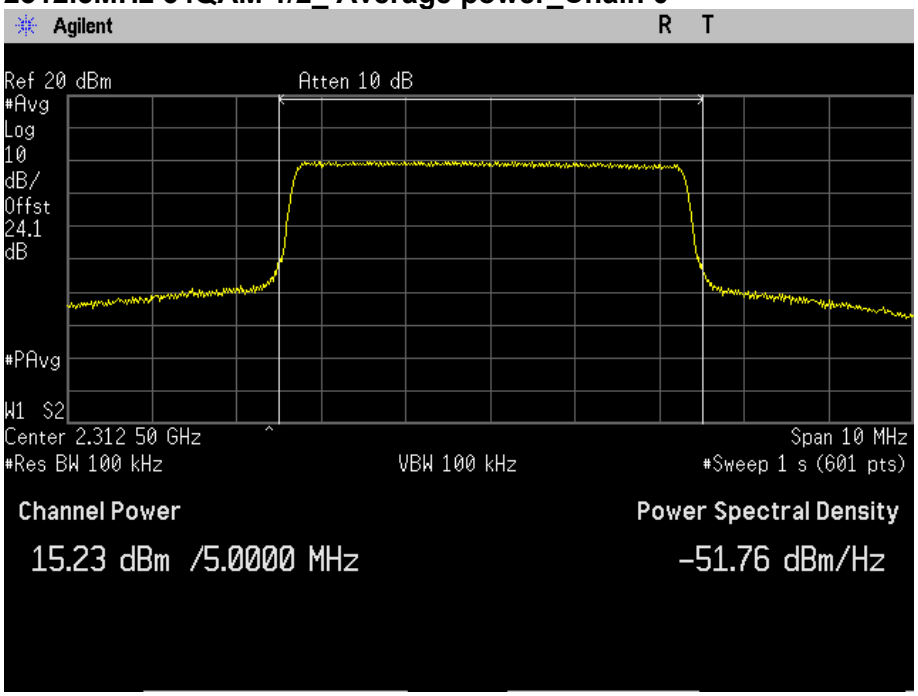
2307.5MHz 64QAM 1/2_Average power_Chain 0



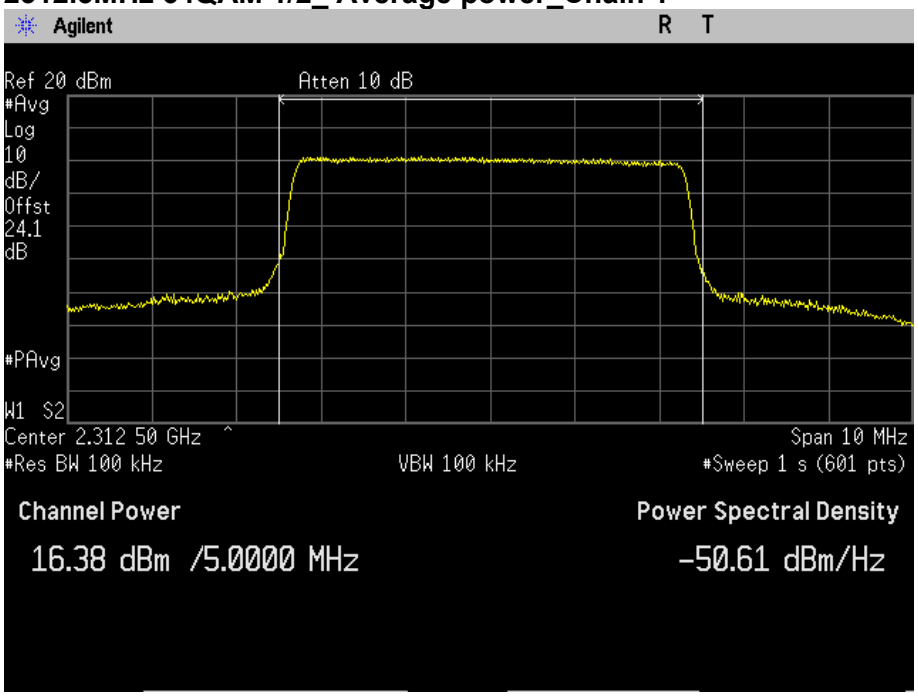
2307.5MHz 64QAM 1/2_ Average power_Chain 1



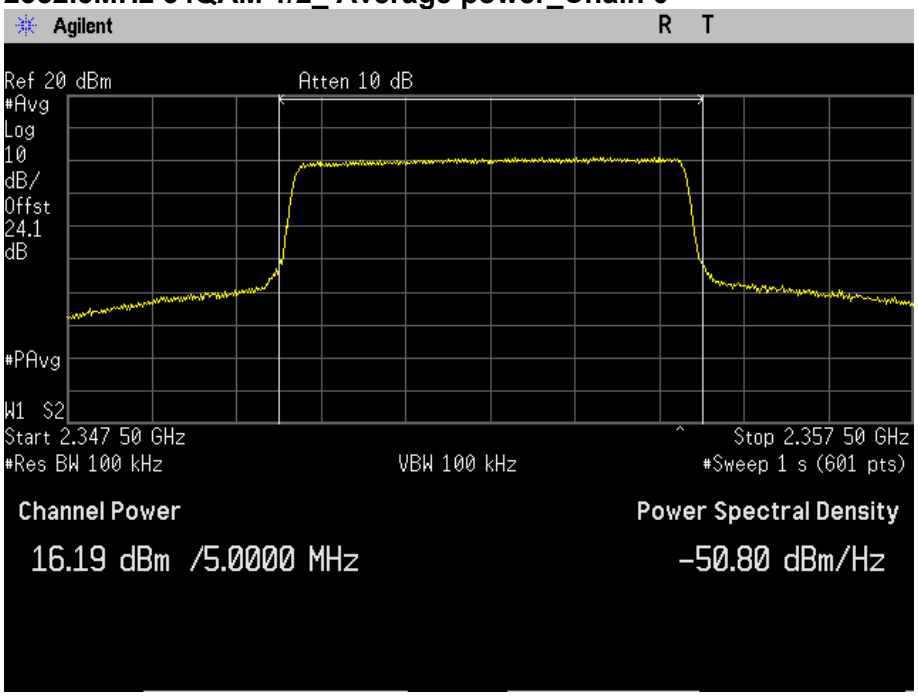
2312.5MHz 64QAM 1/2_ Average power_Chain 0



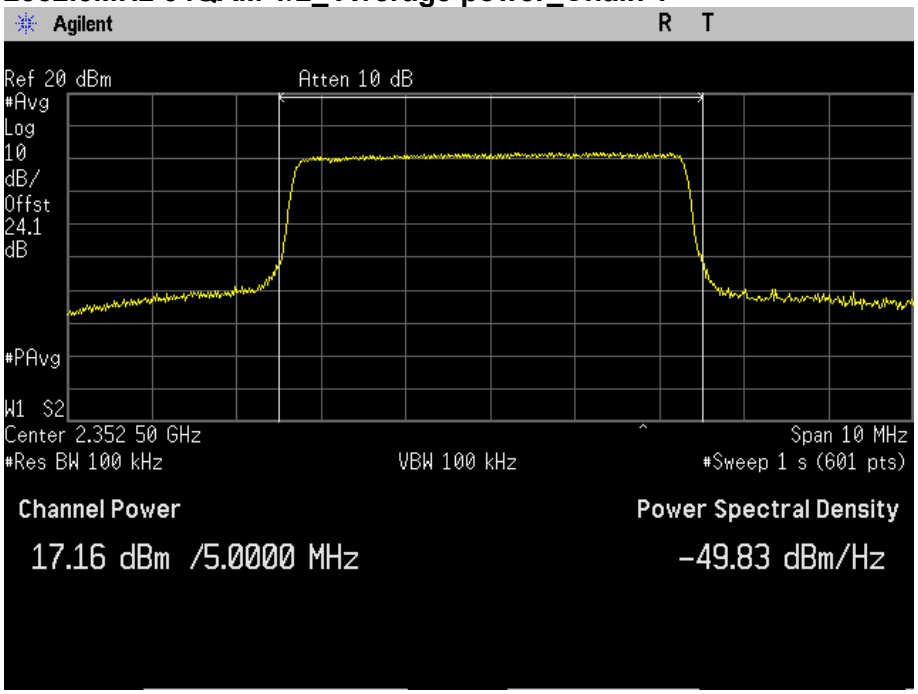
2312.5MHz 64QAM 1/2_ Average power_Chain 1



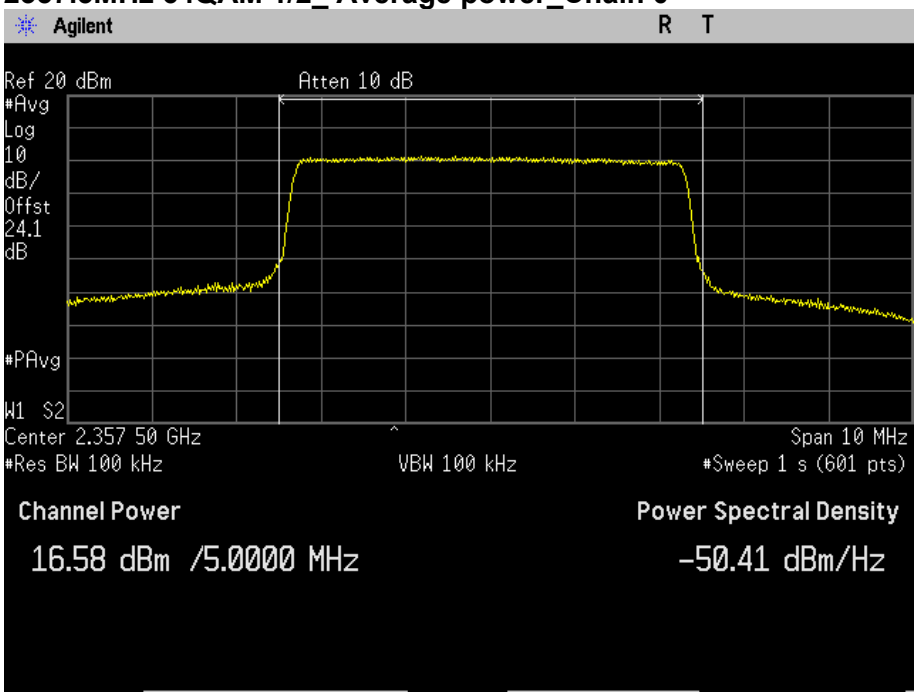
2352.5MHz 64QAM 1/2_ Average power_Chain 0



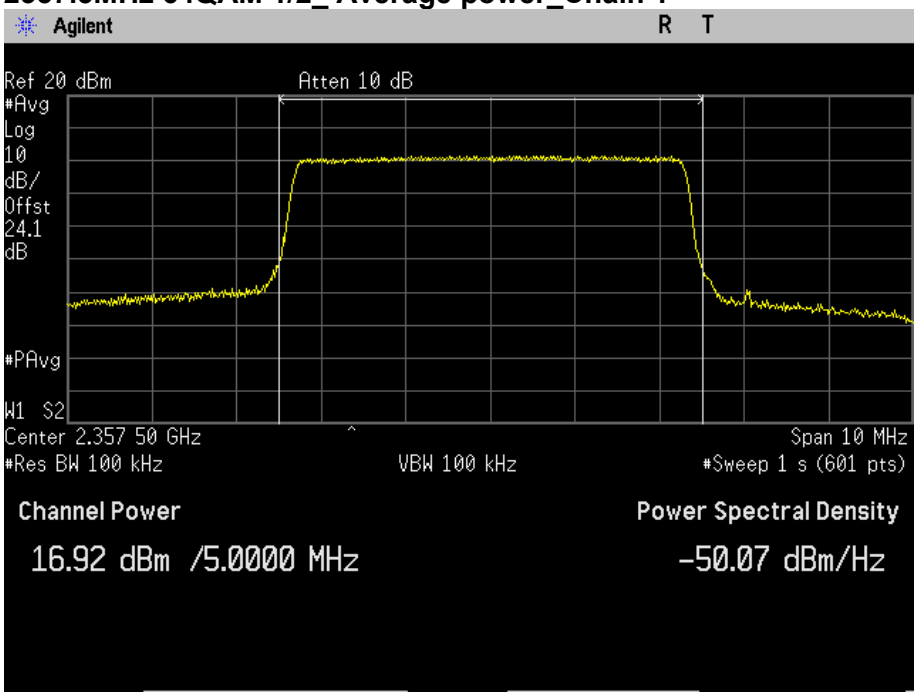
2352.5MHz 64QAM 1/2_ Average power_Chain 1



2357.5MHz 64QAM 1/2_ Average power_Chain 0

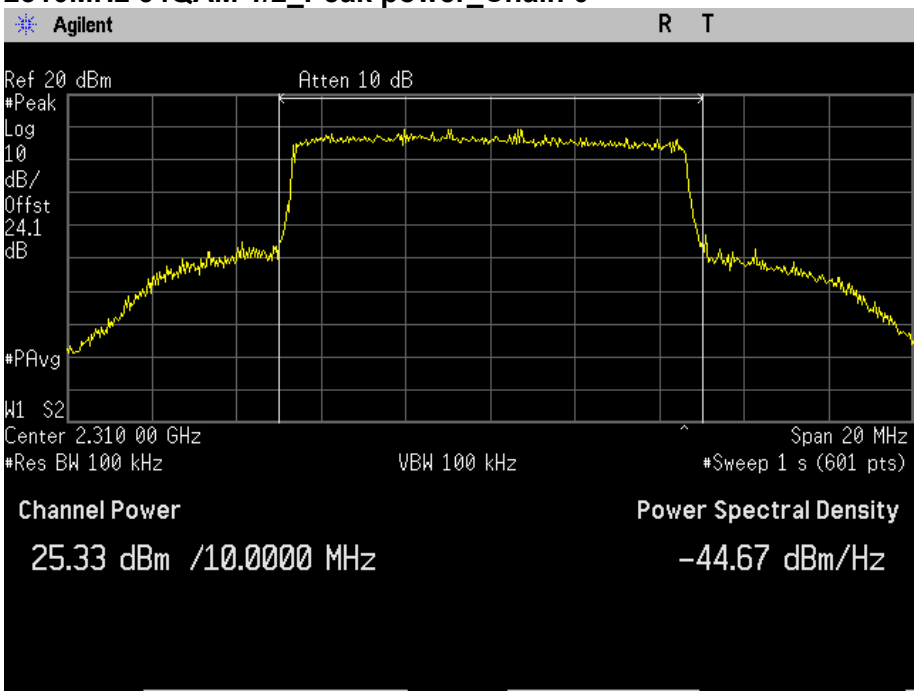


2357.5MHz 64QAM 1/2_ Average power_Chain 1

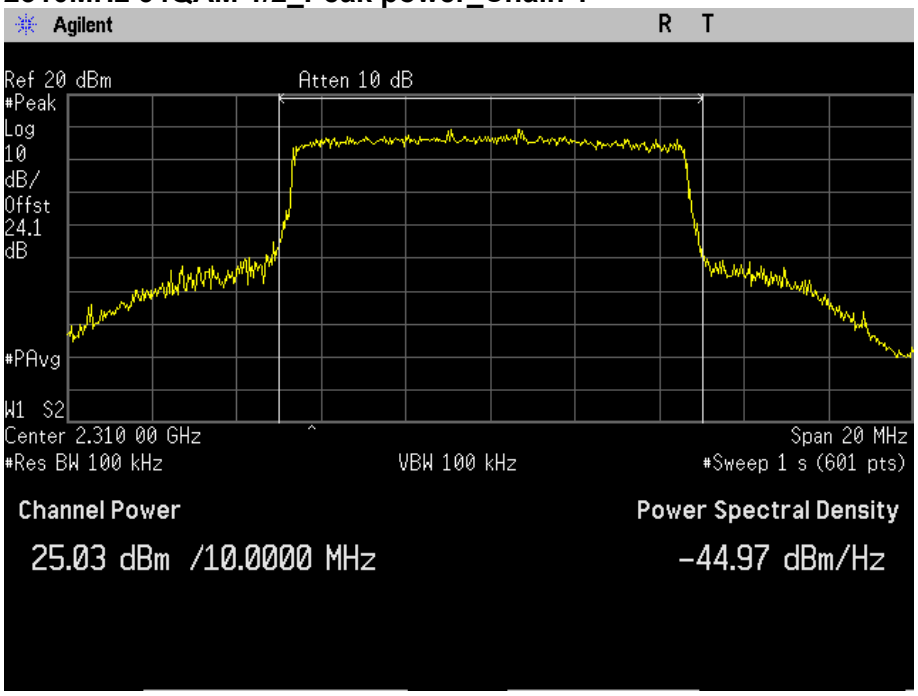


10 MHz Bandwidth_Peak Power

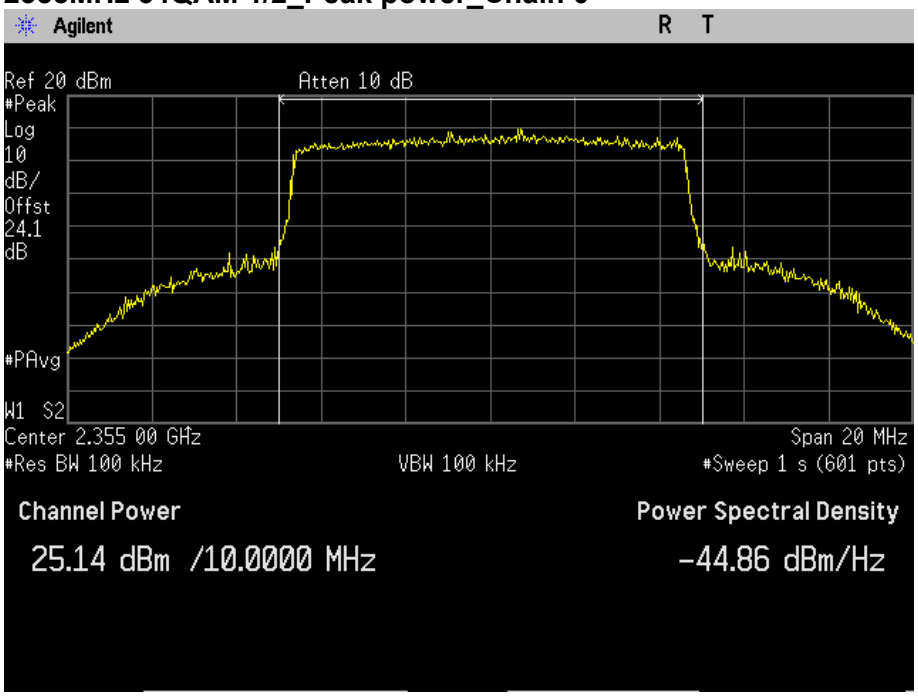
2310MHz 64QAM 1/2_Peak power_Chain 0



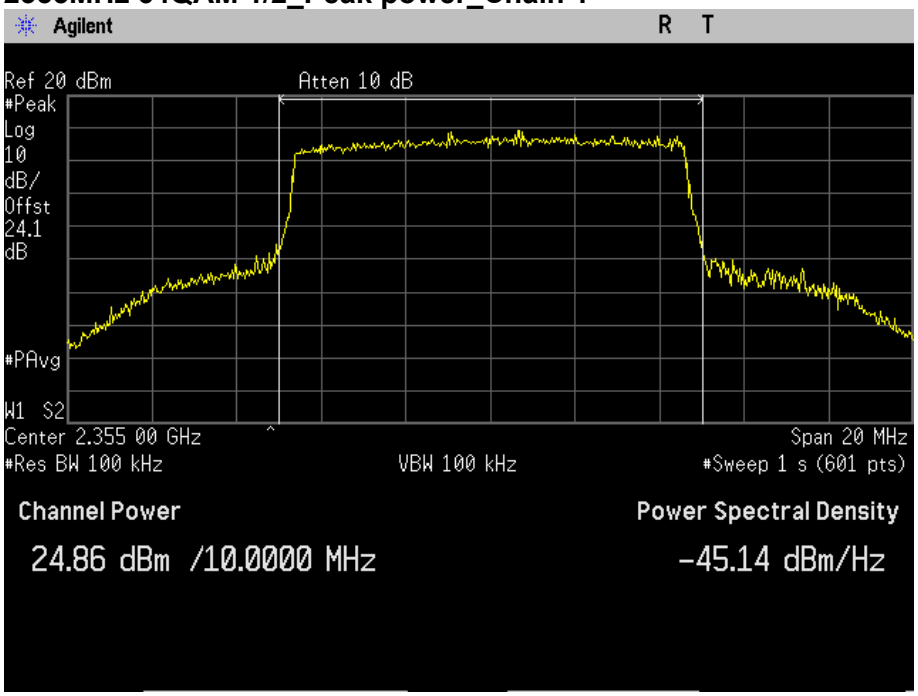
2310MHz 64QAM 1/2_Peak power_Chain 1



2355MHz 64QAM 1/2_Peak power_Chain 0

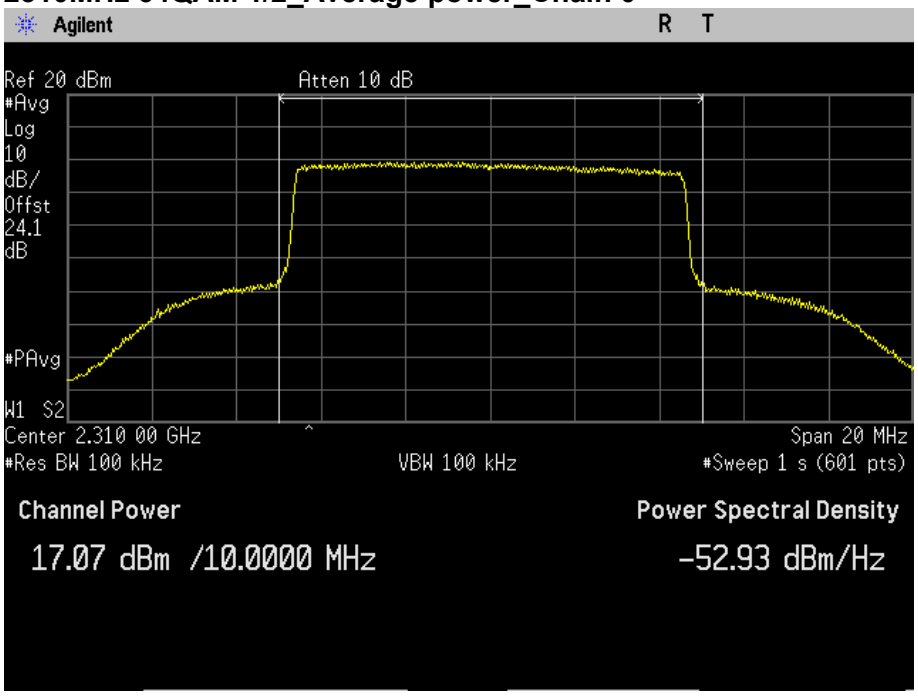


2355MHz 64QAM 1/2_Peak power_Chain 1

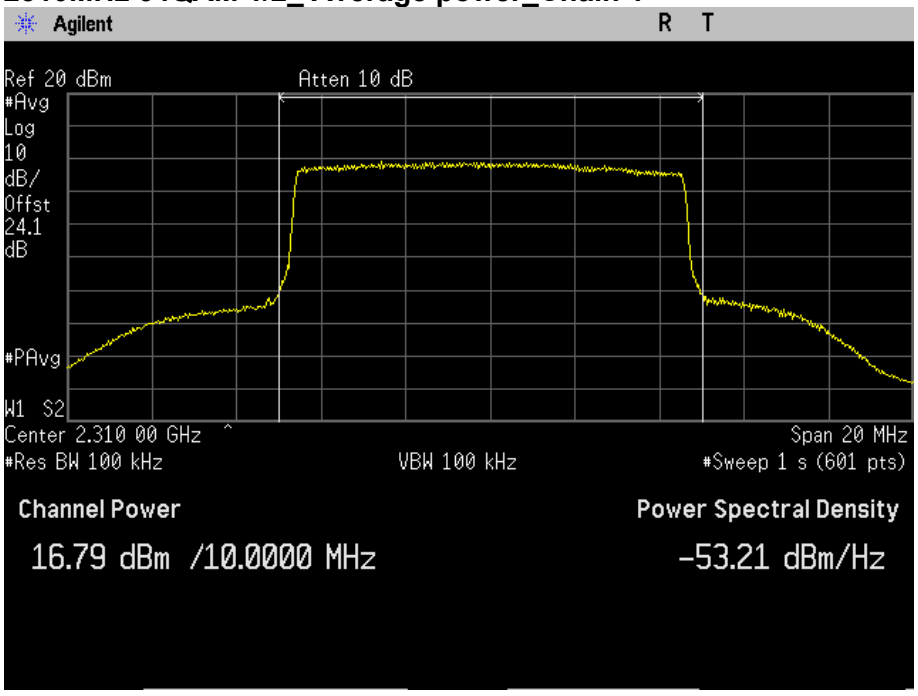


10 MHz Bandwidth_Average Power

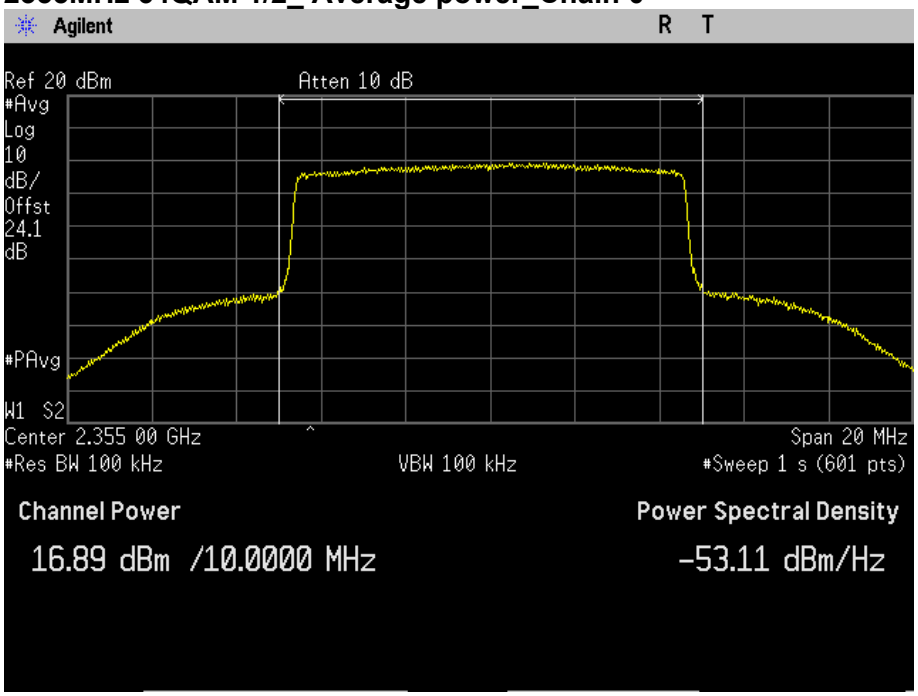
2310MHz 64QAM 1/2_Average power_Chain 0



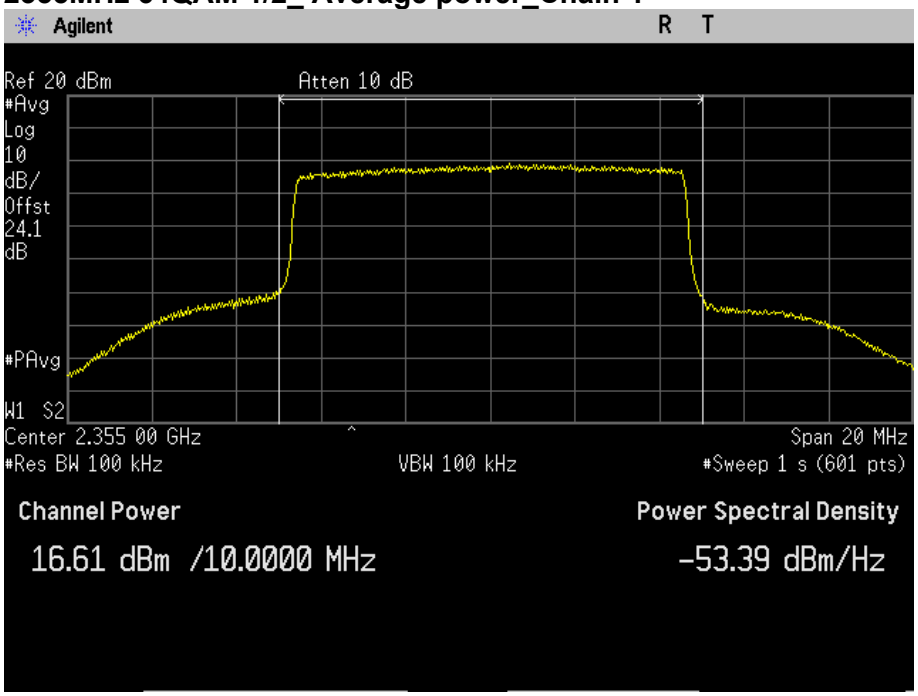
2310MHz 64QAM 1/2_ Average power_Chain 1



2355MHz 64QAM 1/2_ Average power_Chain 0



2355MHz 64QAM 1/2_ Average power_Chain 1



9.2 Occupied Bandwidth / 26dB Emission Bandwidth

Measurement Results : 5MHz Bandwidth_Chain 0

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2307.5	QPSK	1/2	4.5791	5.069
		3/4	4.5740	5.071
	16QAM	1/2	4.5756	5.066
		3/4	4.5721	4.985
	64QAM	1/2	4.5790	5.063
		2/3	4.5618	5.088
		3/4	4.5756	5.051
		5/6	4.5748	5.066
2312.5	QPSK	1/2	4.5727	5.062
		3/4	4.5822	5.089
	16QAM	1/2	4.5711	5.064
		3/4	4.5796	5.064
	64QAM	1/2	4.5726	5.000
		2/3	4.5733	5.038
		3/4	4.5840	5.055
		5/6	4.5828	5.072
2352.5	QPSK	1/2	4.5874	5.021
		3/4	4.5874	5.021
	16QAM	1/2	4.5826	5.062
		3/4	4.5735	5.042
	64QAM	1/2	4.5793	5.089
		2/3	4.5761	5.063
		3/4	4.5763	5.079
		5/6	4.5925	5.040
2357.5	QPSK	1/2	4.5718	5.060
		3/4	4.5866	5.024
	16QAM	1/2	4.5799	5.054
		3/4	4.5753	5.013
	64QAM	1/2	4.5831	5.052
		2/3	4.5752	5.076
		3/4	5.5671	5.055
		5/6	4.5740	5.065

Measurement Results : 5MHz Bandwidth_Chain 1

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2307.5	QPSK	1/2	4.5819	5.115
		3/4	4.5736	4.998
	16QAM	1/2	4.5680	5.096
		3/4	4.5792	5.068
	64QAM	1/2	4.5802	5.070
		2/3	4.5625	5.008
		3/4	4.5720	5.027
		5/6	4.5780	5.046
2312.5	QPSK	1/2	4.5794	5.098
		3/4	4.5867	5.066
	16QAM	1/2	4.5735	5.055
		3/4	4.5815	5.073
	64QAM	1/2	4.5769	5.047
		2/3	4.5807	5.043
		3/4	4.5677	5.086
		5/6	4.5793	5.077
2352.5	QPSK	1/2	4.5722	5.052
		3/4	4.5855	5.101
	16QAM	1/2	4.5820	5.038
		3/4	4.5756	5.080
	64QAM	1/2	4.5646	5.048
		2/3	4.5734	5.004
		3/4	4.5771	5.097
		5/6	4.5872	5.099
2357.5	QPSK	1/2	4.5771	5.021
		3/4	4.5798	5.083
	16QAM	1/2	4.5728	5.123
		3/4	4.5653	5.091
	64QAM	1/2	4.5790	5.069
		2/3	4.5823	5.032
		3/4	4.5817	5.024
		5/6	4.5776	5.083

Measurement Results : 5MHz Bandwidth_Combined

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2307.5	QPSK	1/2	4.5873	5.060
		3/4	4.5770	5.006
	16QAM	1/2	4.5689	5.025
		3/4	4.5780	4.985
	64QAM	1/2	4.5750	5.040
		2/3	4.5801	5.080
		3/4	4.5705	5.052
		5/6	4.5841	5.085
2312.5	QPSK	1/2	4.5562	5.012
		3/4	4.5615	4.969
	16QAM	1/2	4.5570	5.007
		3/4	4.5525	5.015
	64QAM	1/2	4.5731	4.999
		2/3	4.5676	5.022
		3/4	4.5686	5.040
		5/6	4.5627	5.016
2352.5	QPSK	1/2	4.5598	4.997
		3/4	4.5635	5.050
	16QAM	1/2	4.5889	5.013
		3/4	4.5550	4.991
	64QAM	1/2	4.5725	5.020
		2/3	4.5928	4.998
		3/4	4.5681	4.978
		5/6	4.5665	5.052
2357.5	QPSK	1/2	4.5876	5.044
		3/4	4.5768	5.032
	16QAM	1/2	4.5811	5.048
		3/4	4.5692	4.995
	64QAM	1/2	4.5796	5.024
		2/3	4.5744	5.033
		3/4	4.5709	5.019
		5/6	4.5865	5.049

Measurement Results : 10MHz Bandwidth_Chain 0

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2310.0	QPSK	1/2	9.0436	9.624
		3/4	9.0485	9.631
	16QAM	1/2	9.0594	9.670
		3/4	9.0481	9.614
	64QAM	1/2	9.0540	9.718
		2/3	9.0363	9.677
		3/4	9.0445	9.562
		5/6	9.0389	9.639
2355.0	QPSK	1/2	9.0177	9.604
		3/4	9.0211	9.635
	16QAM	1/2	9.0275	9.668
		3/4	9.0174	9.562
	64QAM	1/2	9.0173	9.706
		2/3	9.0123	9.542
		3/4	9.0155	9.632
		5/6	9.0151	9.622

Measurement Results : 10MHz Bandwidth_Chain 1

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2310.0	QPSK	1/2	9.0734	9.693
		3/4	9.0708	9.709
	16QAM	1/2	9.0941	9.674
		3/4	9.0623	9.647
	64QAM	1/2	9.0758	9.625
		2/3	9.0719	9.728
		3/4	9.0866	9.642
		5/6	9.0733	9.704
2355.0	QPSK	1/2	9.0513	9.627
		3/4	9.0411	9.634
	16QAM	1/2	9.0372	9.725
		3/4	9.0667	9.645
	64QAM	1/2	9.0529	9.626
		2/3	9.0360	9.600
		3/4	9.0533	9.606
		5/6	9.0352	9.685

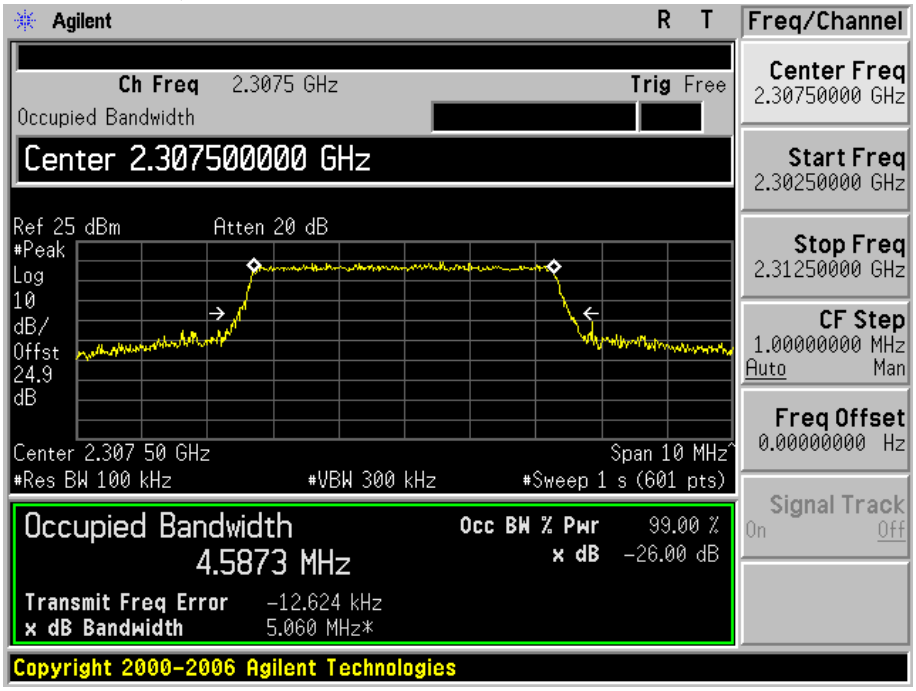
Measurement Results : 10MHz Bandwidth_Combined

Frequency (MHz)	Modulation	Coding Rate	Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)
2310.0	QPSK	1/2	9.0593	9.683
		3/4	9.0529	9.645
	16QAM	1/2	9.0565	9.674
		3/4	9.0680	9.644
	64QAM	1/2	9.0626	9.646
		2/3	9.0589	9.642
		3/4	9.0443	9.691
		5/6	9.0531	9.676
2355.0	QPSK	1/2	9.0186	9.600
		3/4	9.0452	9.658
	16QAM	1/2	9.0319	9.675
		3/4	9.0606	9.600
	64QAM	1/2	9.0289	9.589
		2/3	9.0177	9.616
		3/4	9.0418	9.615
		5/6	9.0265	9.633

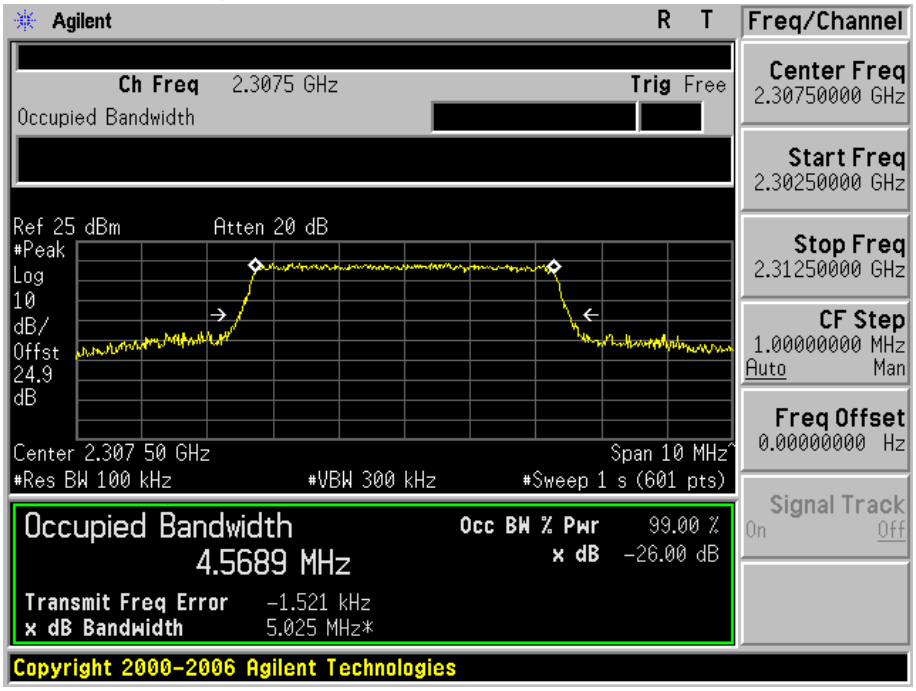
9.2.1. Test Plots (Combined mode)

5 MHz Bandwidth

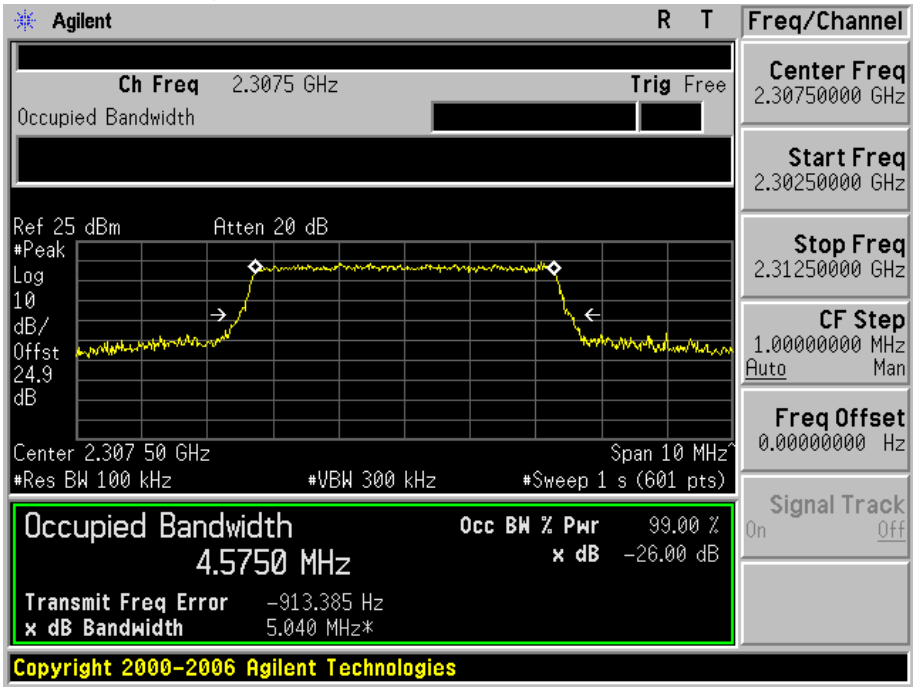
2307.5MHz QPSK 1/2



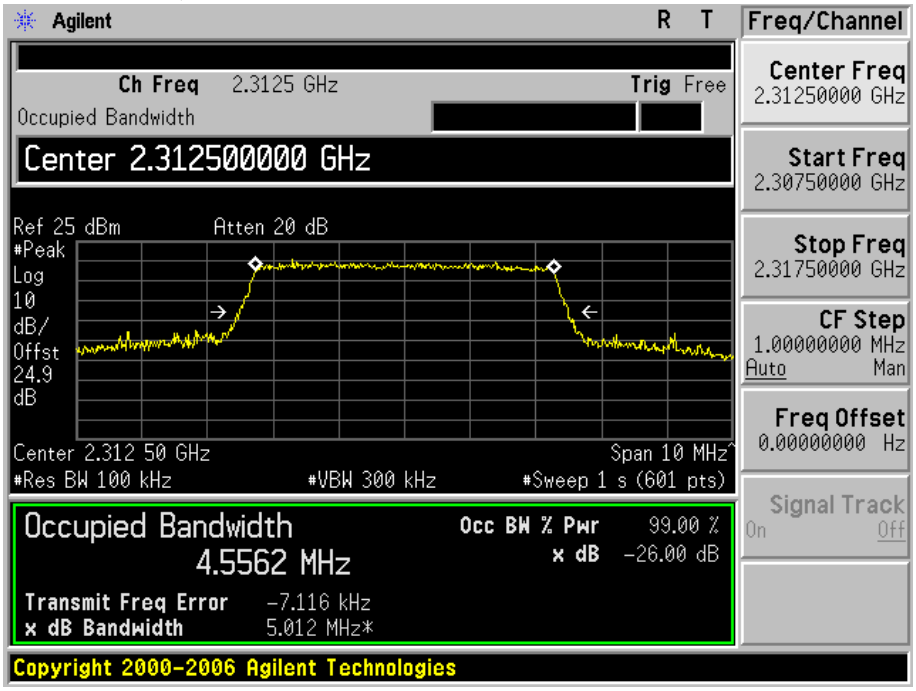
2307.5MHz 16 QAM 1/2



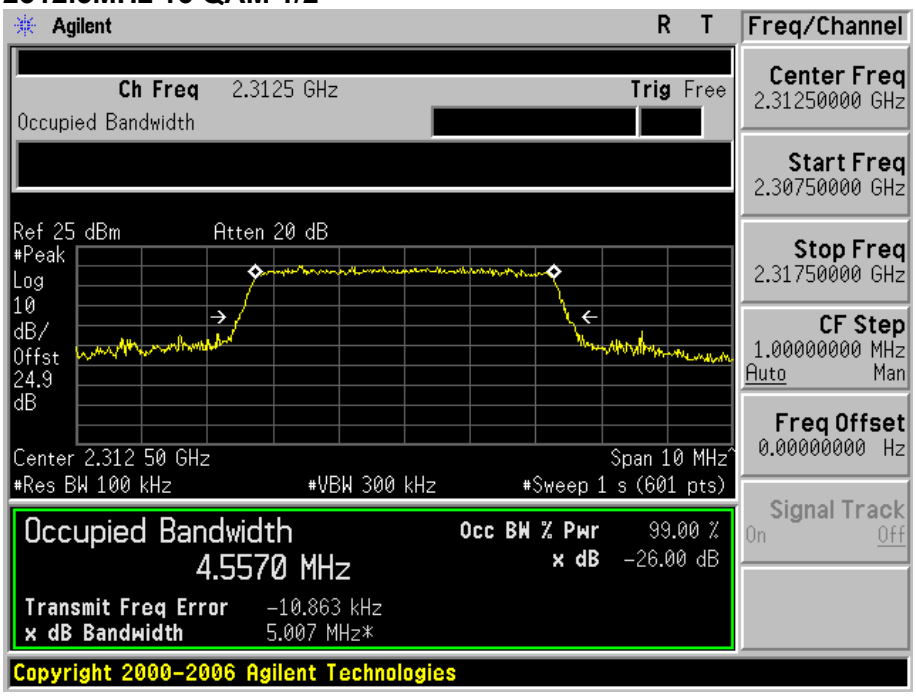
2307.5MHz 64QAM 1/2



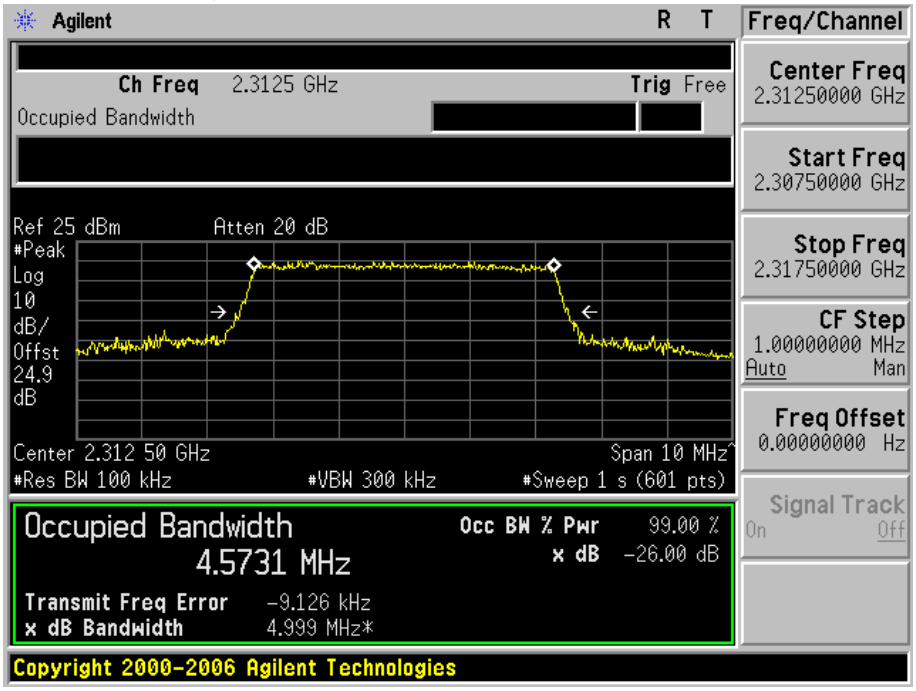
2312.5MHz QPSK 1/2



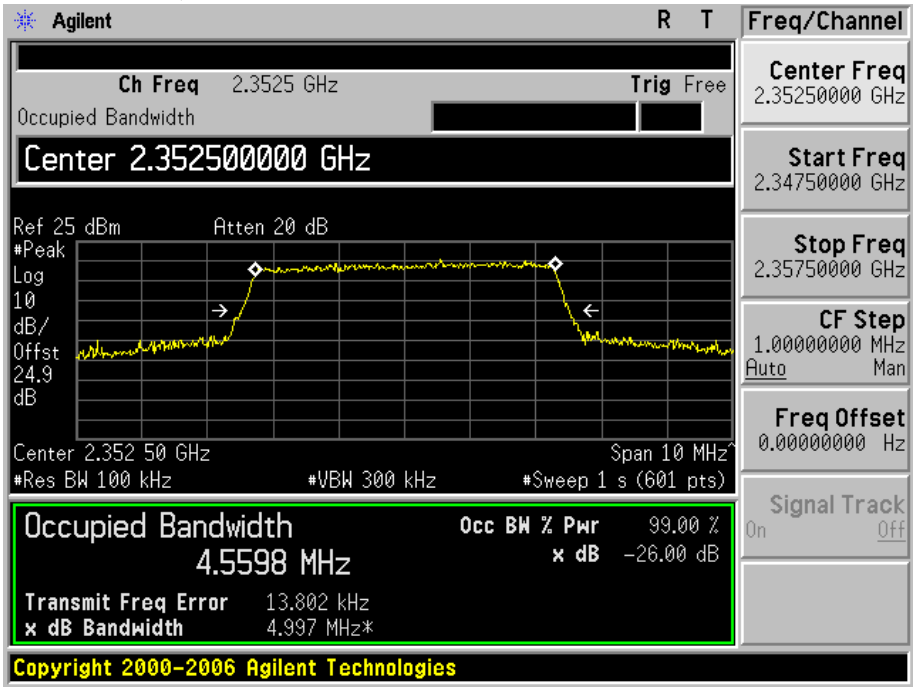
2312.5MHz 16 QAM 1/2



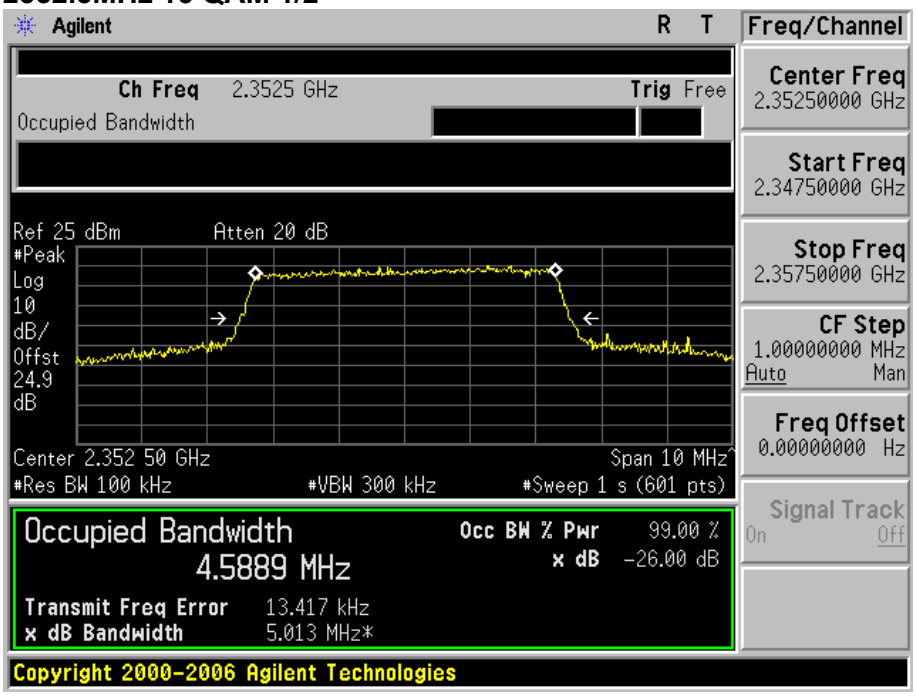
2312.5MHz 64QAM 1/2



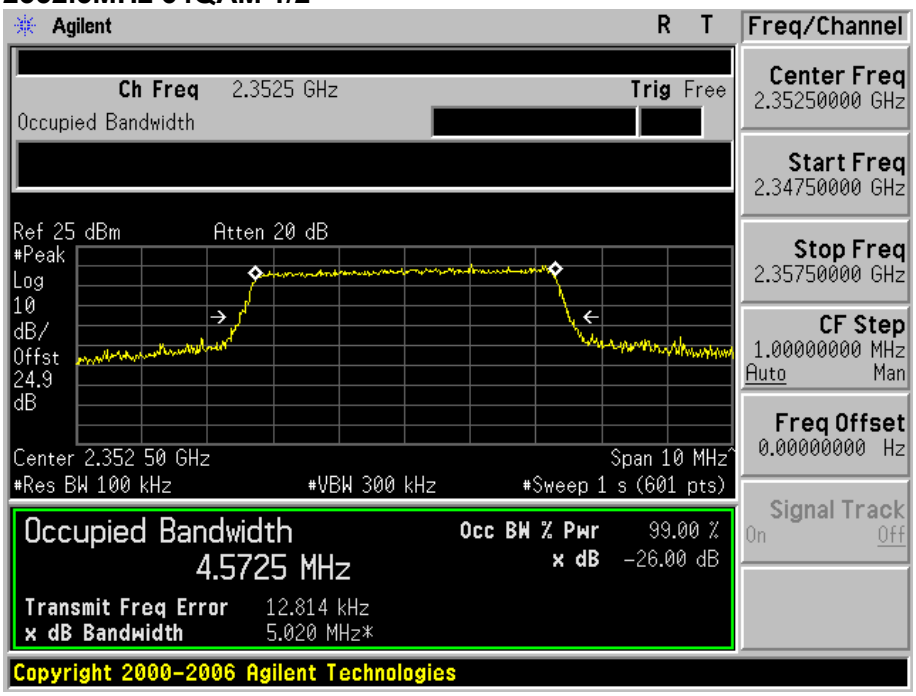
2352.5MHz QPSK 1/2



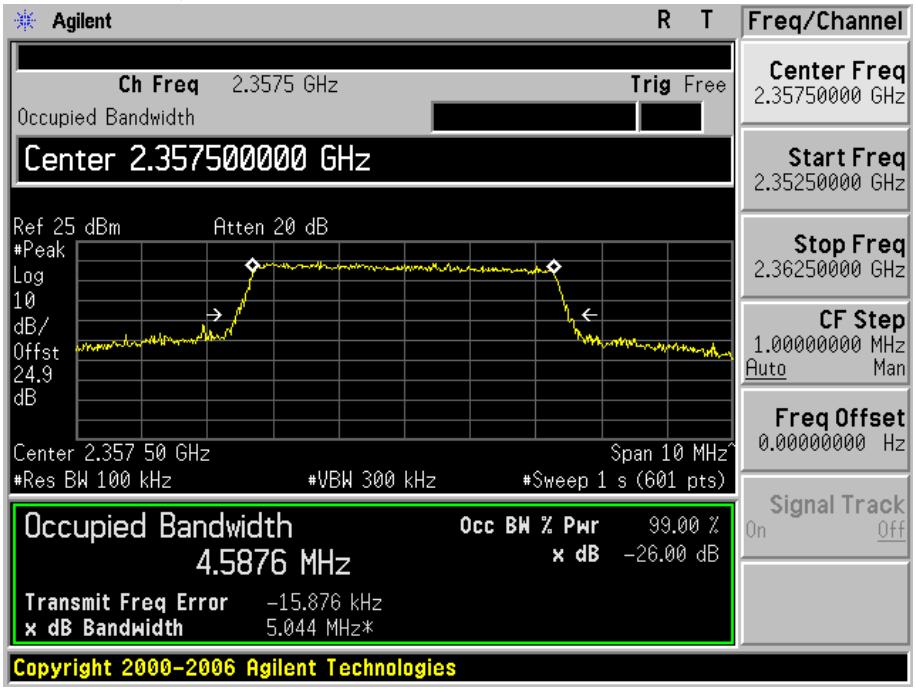
2352.5MHz 16 QAM 1/2



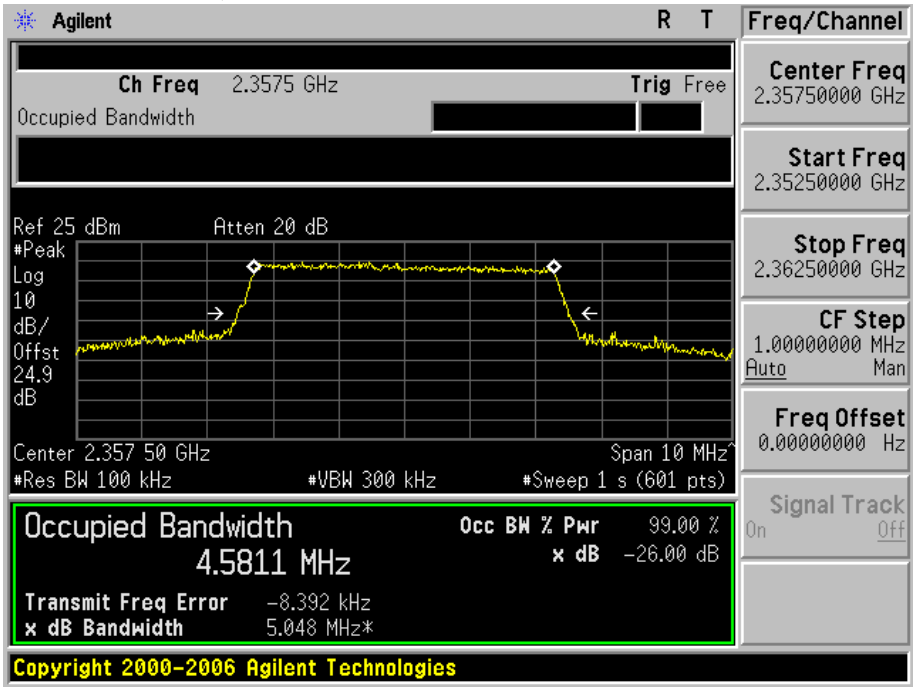
2352.5MHz 64QAM 1/2



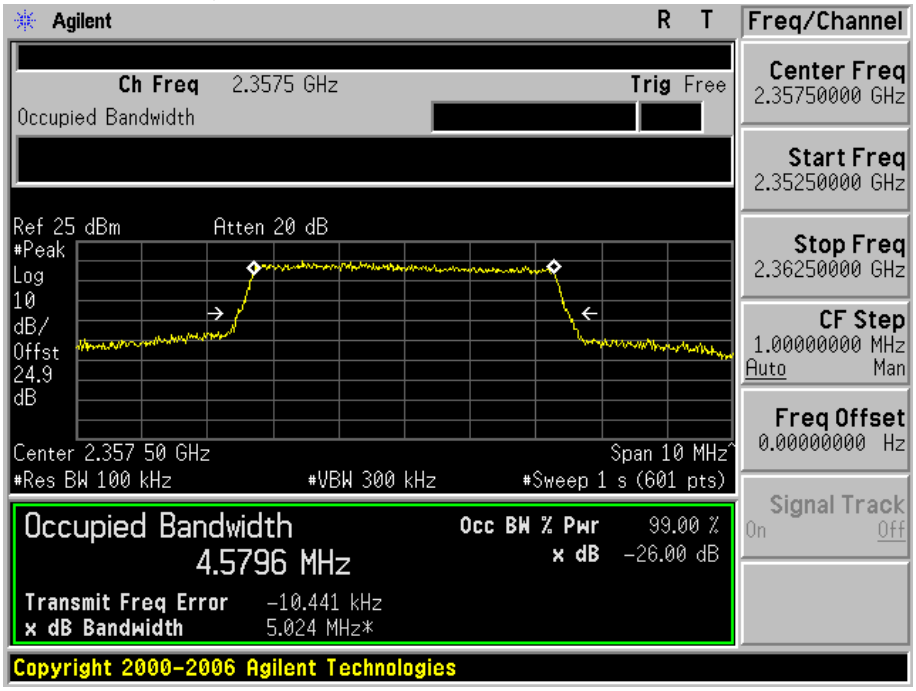
2357.5MHz QPSK 1/2



2357.5MHz 16 QAM 1/2

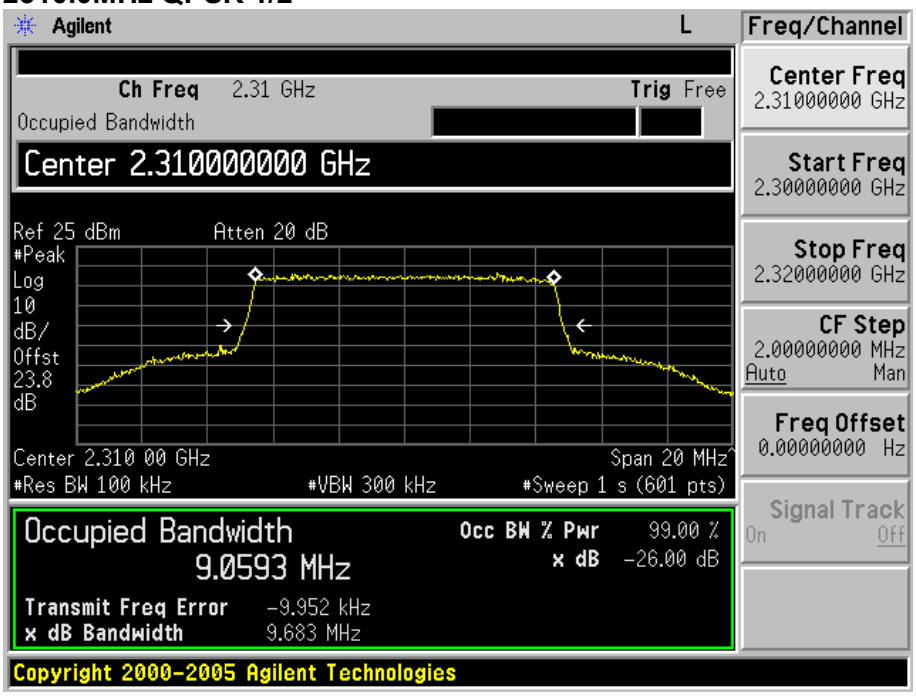


2357.5MHz 64QAM 1/2

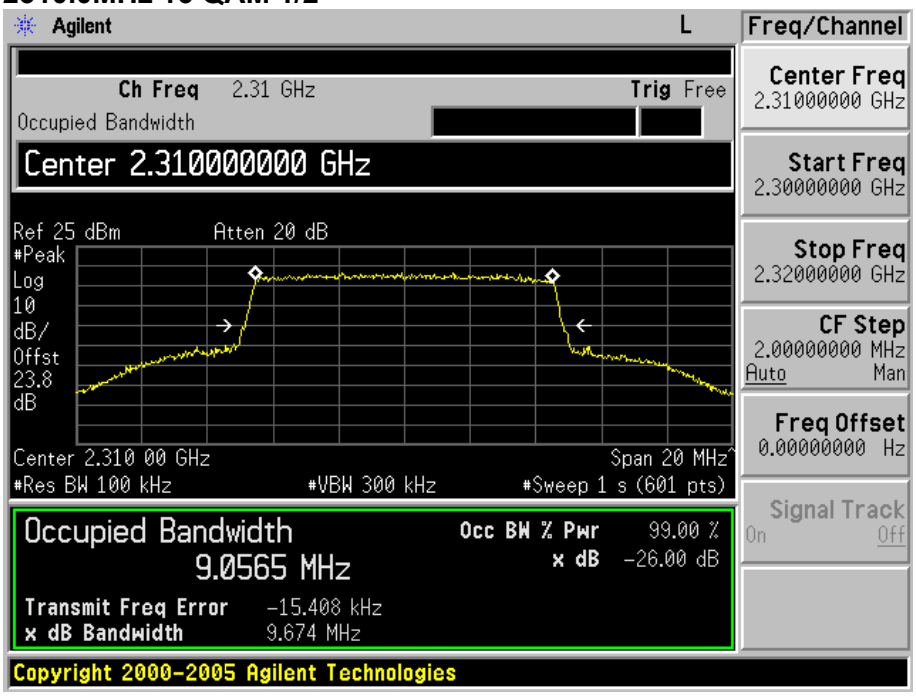


10 MHz Bandwidth

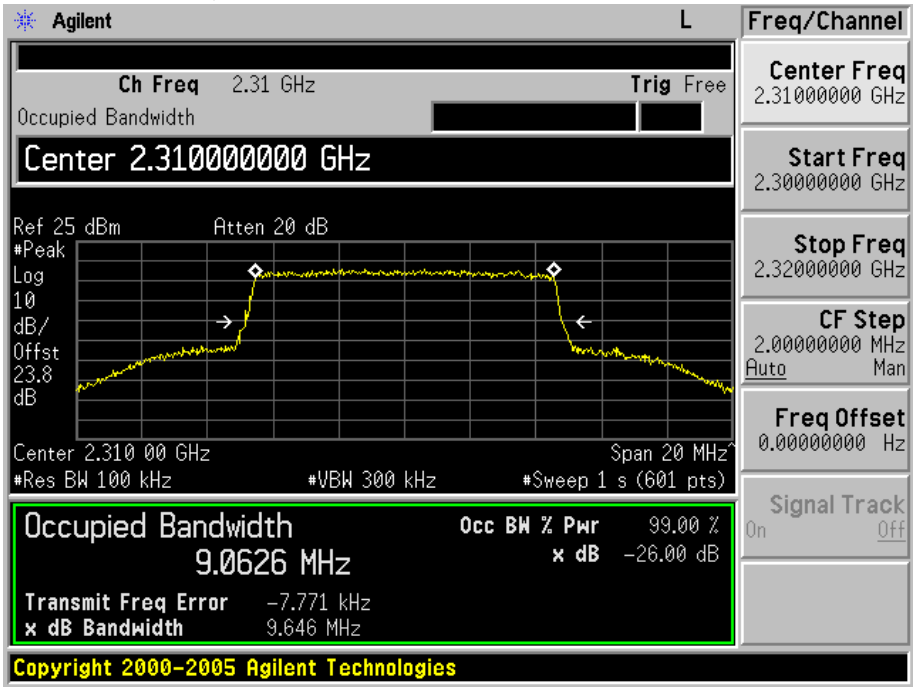
2310.0MHz QPSK 1/2



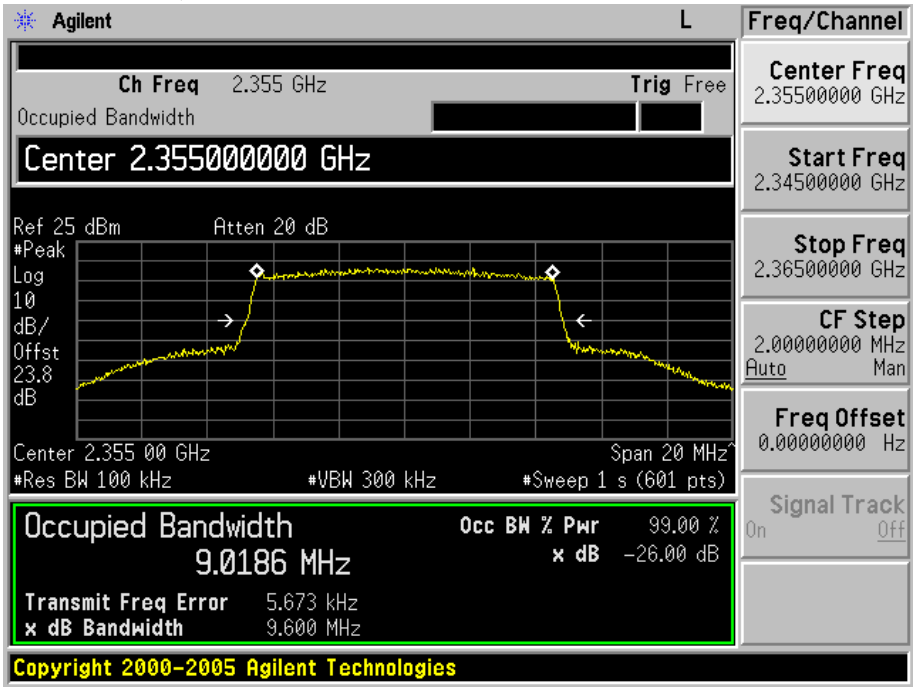
2310.0MHz 16 QAM 1/2



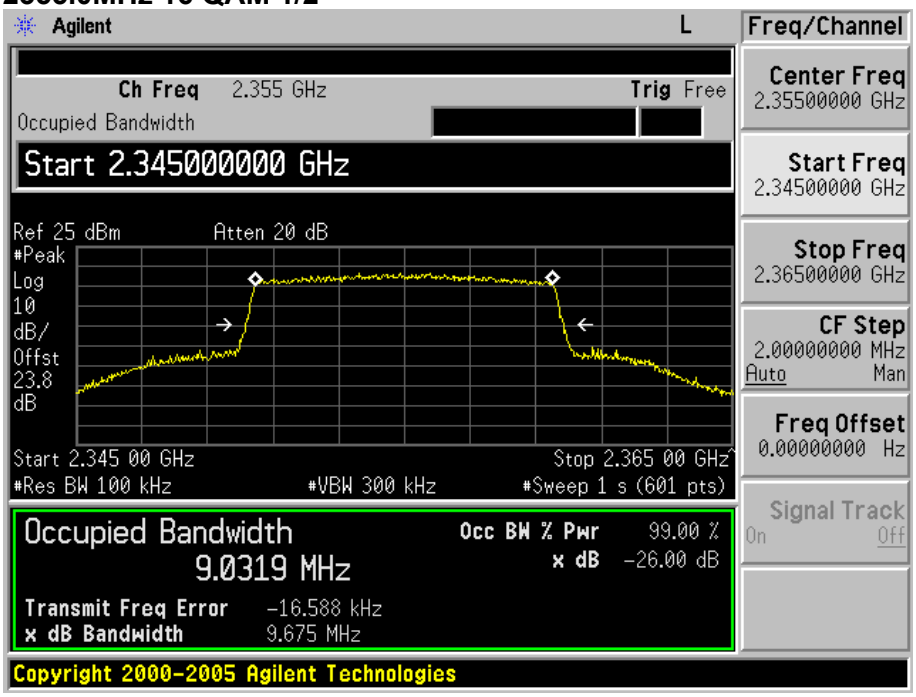
2310.0MHz 64QAM 1/2



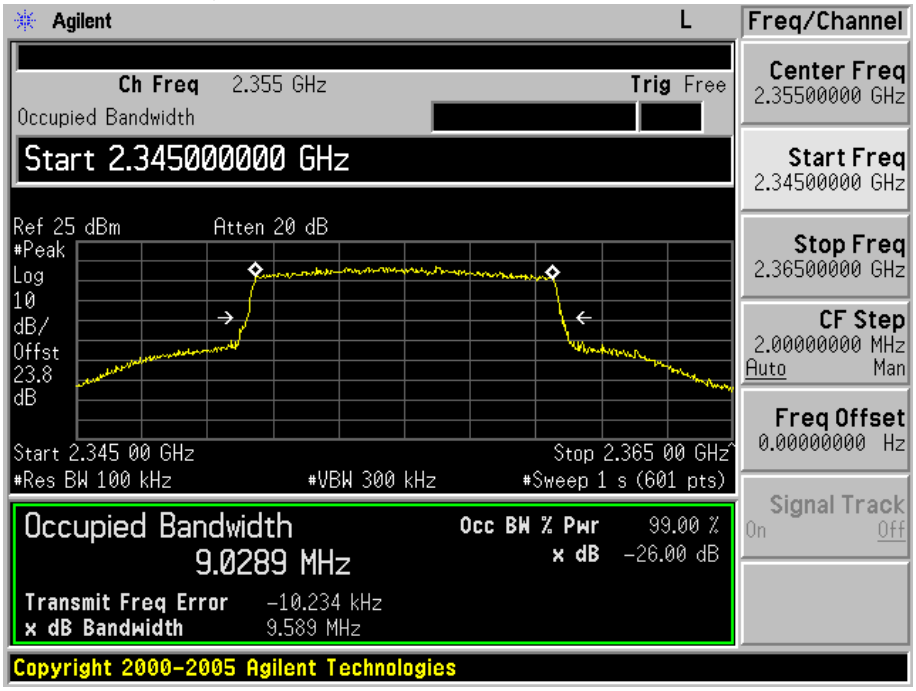
2355.0MHz QPSK 1/2



2355.0MHz 16 QAM 1/2



2355.0MHz 64QAM 1/2



9.3 Spurious Emission at antenna Terminal

5 MHz Bandwidth Chain 0

Measurement Results :

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2307.5 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 1-1,1-2,1-3
		2300~2320	Pass	Plot 1-4,1-5, 1-6,1-7
		2320~2345	Pass	Plot 1-8
		2345~2370	Pass	Plot 1-9
		2370~24000	Pass	Plot 1-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 1-11,1-12, 1-13
		2300~2320	Pass	Plot 1-14,1-15, 1-16,1-17
		2320~2345	Pass	Plot 1-18
		2345~2370	Pass	Plot 1-19
		2370~24000	Pass	Plot 1-20

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2312.5 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 2-1,2-2
		2300~2320	Pass	Plot 2-3,2-4, 2-5,2-6
		2320~2345	Pass	Plot 2-7
		2345~2370	Pass	Plot 2-8
		2370~24000	Pass	Plot 2-9
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 2-10,2-11
		2300~2320	Pass	Plot 2-12,2-13, 2-14,2-15
		2320~2345	Pass	Plot 2-16
		2345~2370	Pass	Plot 2-17
		2370~24000	Pass	Plot 2-18

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2352.5 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 3-1,3-2
		2300~2320	Pass	Plot 3-3
		2320~2345	Pass	Plot 3-4
		2345~2370	Pass	Plot 3-5,3-6, 3-7,3-8
		2370~24000	Pass	Plot 3-9,3-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 3-11,3-12
		2300~2320	Pass	Plot 3-13
		2320~2345	Pass	Plot 3-14
		2345~2370	Pass	Plot 3-15,3-16, 3-17,3-18
		2370~24000	Pass	Plot 3-19,3-20

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2357.5 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 4-1,4-2
		2300~2320	Pass	Plot 4-3
		2320~2345	Pass	Plot 4-4
		2345~2370	Pass	Plot 4-5,4-6, 4-7,4-8
		2370~24000	Pass	Plot 4-9,4-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 4-11,4-12
		2300~2320	Pass	Plot 4-13
		2320~2345	Pass	Plot 4-14
		2345~2370	Pass	Plot 4-15,4-16, 4-17,4-18
		2370~24000	Pass	Plot 4-19,4-20

5 MHz Bandwidth Chain 1

Measurement Results :

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2307.5 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 5-1,5-2,5-3
		2300~2320	Pass	Plot 5-4,5-5, 5-6,5-7
		2320~2345	Pass	Plot 5-8
		2345~2370	Pass	Plot 5-9
		2370~24000	Pass	Plot 5-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 5-11,5-12, 5-13
		2300~2320	Pass	Plot 5-14,5-15, 5-16,5-17
		2320~2345	Pass	Plot 5-18
		2345~2370	Pass	Plot 5-19
		2370~24000	Pass	Plot 5-20

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2312.5 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 6-1,6-2
		2300~2320	Pass	Plot 6-3,6-4, 6-5,6-6
		2320~2345	Pass	Plot 6-7
		2345~2370	Pass	Plot 6-8
		2370~24000	Pass	Plot 6-9
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 6-10,6-11
		2300~2320	Pass	Plot 6-12,6-13, 6-14,6-15
		2320~2345	Pass	Plot 6-16
		2345~2370	Pass	Plot 6-17
		2370~24000	Pass	Plot 6-18

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2352.5 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 7-1,7-2
		2300~2320	Pass	Plot 7-3
		2320~2345	Pass	Plot 7-4
		2345~2370	Pass	Plot 7-5,7-6, 7-7,7-8
		2370~24000	Pass	Plot 7-9,7-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 7-11,7-12
		2300~2320	Pass	Plot 7-13
		2320~2345	Pass	Plot 7-14
		2345~2370	Pass	Plot 7-15,7-16, 7-17,7-18
		2370~24000	Pass	Plot 7-19,7-20

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2357.5 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 8-1,8-2
		2300~2320	Pass	Plot 8-3
		2320~2345	Pass	Plot 8-4
		2345~2370	Pass	Plot 8-5,8-6, 8-7,8-8
		2370~24000	Pass	Plot 8-9,8-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 8-11,8-12
		2300~2320	Pass	Plot 8-13
		2320~2345	Pass	Plot 8-14
		2345~2370	Pass	Plot 8-15,8-16, 8-17,8-18
		2370~24000	Pass	Plot 8-19,8-20

5 MHz Bandwidth Combined

Measurement Results :

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2307.5 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 9-1,9-2,9-3
		2300~2320	Pass	Plot 9-4,9-5, 9-6,9-7
		2320~2345	Pass	Plot 9-8
		2345~2370	Pass	Plot 9-9
		2370~24000	Pass	Plot 9-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 9-11,9-12, 9-13
		2300~2320	Pass	Plot 9-14,9-15, 9-16,9-17
		2320~2345	Pass	Plot 9-18
		2345~2370	Pass	Plot 9-19
		2370~24000	Pass	Plot 9-20

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2312.5 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 10-1,10-2
		2300~2320	Pass	Plot 10-3,10-4, 10-5,10-6
		2320~2345	Pass	Plot 10-7
		2345~2370	Pass	Plot 10-8
		2370~24000	Pass	Plot 10-9
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 10-10,10-11
		2300~2320	Pass	Plot 10-12,10-13, 10-14,10-15
		2320~2345	Pass	Plot 10-16
		2345~2370	Pass	Plot 10-17
		2370~24000	Pass	Plot 10-18

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2352.5 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 11-1,11-2
		2300~2320	Pass	Plot 11-3
		2320~2345	Pass	Plot 11-4,11-5
		2345~2370	Pass	Plot 11-6,11-7, 11-8,11-9
		2370~24000	Pass	Plot 11-10,11-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 11-12,11-13
		2300~2320	Pass	Plot 11-14
		2320~2345	Pass	Plot 11-15,11-16
		2345~2370	Pass	Plot 11-17,11-18, 11-19,11-20
		2370~24000	Pass	Plot 11-21,11-22

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2357.5 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 12-1,12-2
		2300~2320	Pass	Plot 12-3
		2320~2345	Pass	Plot 12-4
		2345~2370	Pass	Plot 12-5,12-6, 12-7,12-8
		2370~24000	Pass	Plot 12-9,12-10
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 12-11,12-12
		2300~2320	Pass	Plot 12-13
		2320~2345	Pass	Plot 12-14
		2345~2370	Pass	Plot 12-15,12-16 12-17,12-18
		2370~24000	Pass	Plot 12-19,12-20

10 MHz Bandwidth Chain 0

Measurement Results :

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2310.0 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 13-1,13-2, 13-3
		2300~2320	Pass	Plot 13-4,13-5, 13-6,13-7
		2320~2345	Pass	Plot 13-8,13-9
		2345~2370	Pass	Plot 13-10
		2370~24000	Pass	Plot 13-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 13-12,13-13, 13-14
		2300~2320	Pass	Plot 13-15,13-16, 13-17,13-18
		2320~2345	Pass	Plot 13-19,13-20
		2345~2370	Pass	Plot 13-21
		2370~24000	Pass	Plot 13-22

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2355.0 MHz (Chain 0)	QPSK (1/2)	10 ~ 2300	Pass	Plot 14-1,14-2
		2300~2320	Pass	Plot 14-3
		2320~2345	Pass	Plot 14-4,14-5
		2345~2370	Pass	Plot 14-6,14-7, 14-8,14-9
		2370~24000	Pass	Plot 14-10,14-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 14-12,14-13
		2300~2320	Pass	Plot 14-14
		2320~2345	Pass	Plot 14-15,14-16
		2345~2370	Pass	Plot 14-17,14-18, 14-19,14-20
		2370~24000	Pass	Plot 14-21,14-22

10 MHz Bandwidth Chain 1

Measurement Results :

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2310.0 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 15-1,15-2, 15-3
		2300~2320	Pass	Plot 15-4,15-5, 15-6-,15-7
		2320~2345	Pass	Plot 15-8,15-9
		2345~2370	Pass	Plot 15-10
		2370~24000	Pass	Plot 15-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 15-12,15-13, 15-14
		2300~2320	Pass	Plot 15-15,15-16, 15-17,15-18
		2320~2345	Pass	Plot 15-19,15-20
		2345~2370	Pass	Plot 15-21
		2370~24000	Pass	Plot 15-22

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2355.0 MHz (Chain 1)	QPSK (1/2)	10 ~ 2300	Pass	Plot 16-1,16-2
		2300~2320	Pass	Plot 16-3
		2320~2345	Pass	Plot 16-4,16-5
		2345~2370	Pass	Plot 16-6,16-7, 16-8,16-9
		2370~24000	Pass	Plot 16-10,16-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 16-12,16-13
		2300~2320	Pass	Plot 16-14
		2320~2345	Pass	Plot 16-15,16-16
		2345~2370	Pass	Plot 16-17,16-18, 16-19,16-20
		2370~24000	Pass	Plot 16-21,16-22

10 MHz Bandwidth Combined

Measurement Results :

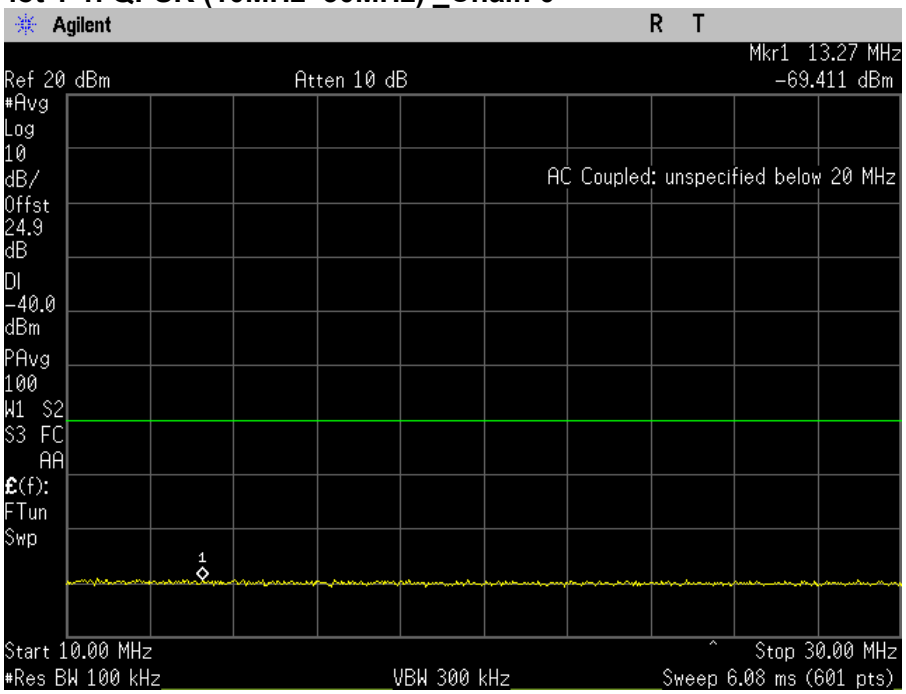
Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2310.0 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 17-1,17-2, 17-3
		2300~2320	Pass	Plot 17-4,17-5, 17-6-,17-7
		2320~2345	Pass	Plot 17-8,17-9
		2345~2370	Pass	Plot 17-10
		2370~24000	Pass	Plot 17-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 17-12, 17-13,17-14
		2300~2320	Pass	Plot 17-15,17-16, 17-17,17-18
		2320~2345	Pass	Plot 17-19,17-20
		2345~2370	Pass	Plot 17-21
		2370~24000	Pass	Plot 17-22

Test Frequency (Chain)	Modulation (Cording rate)	Spurious test band (MHz)	Result	Reference Plot
2355.0 MHz (Combined)	QPSK (1/2)	10 ~ 2300	Pass	Plot 18-1,18-2
		2300~2320	Pass	Plot 18-3
		2320~2345	Pass	Plot 18-4,18-5
		2345~2370	Pass	Plot 18-6,18-7, 18-8,18-9
		2370~24000	Pass	Plot 18-10,18-11
	64 QAM (1/2)	10 ~ 2300	Pass	Plot 18-12,18-13
		2300~2320	Pass	Plot 18-14
		2320~2345	Pass	Plot 18-15,18-16
		2345~2370	Pass	Plot 18-17,18-18, 18-19,18-20
		2370~24000	Pass	Plot 18-21,18-22

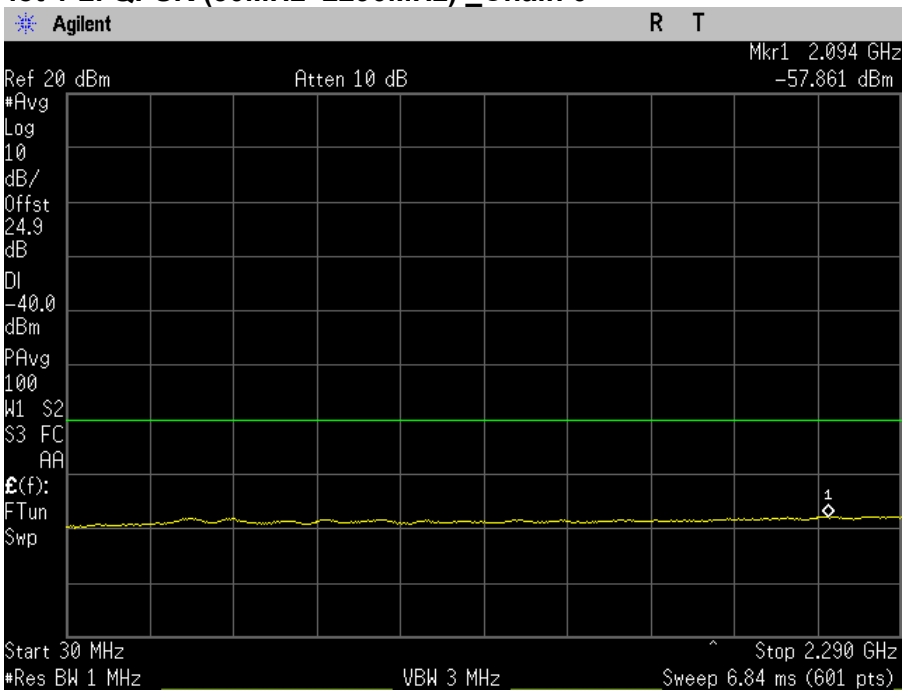
9.3.1. Test Plots (5 MHz Bandwidth_Chain 0)

- **2307.5 MHz_5 MHz Bandwidth_Chain 0**

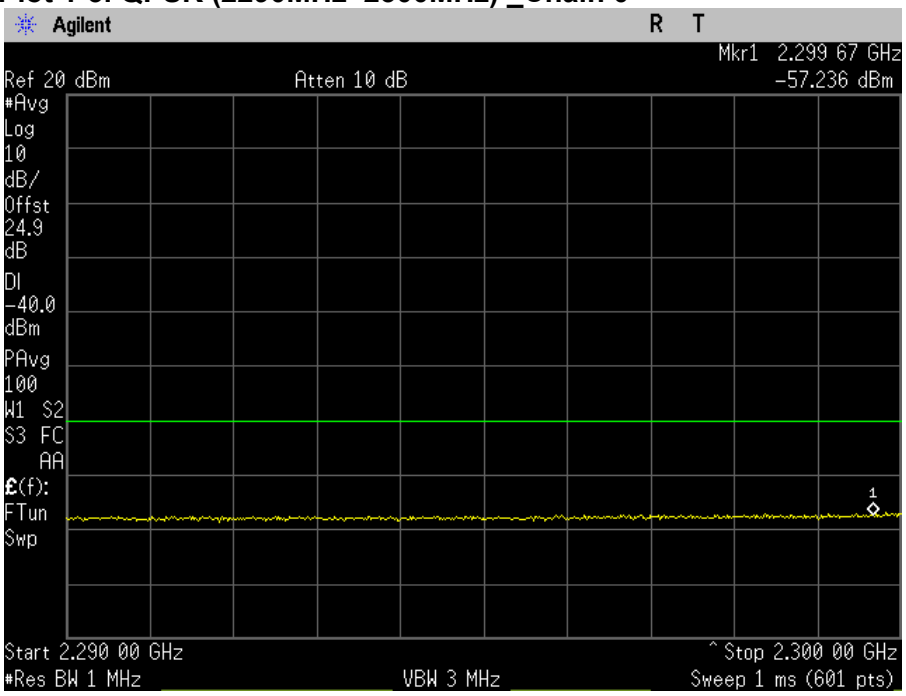
Plot 1-1. QPSK (10MHz~30MHz) _Chain 0



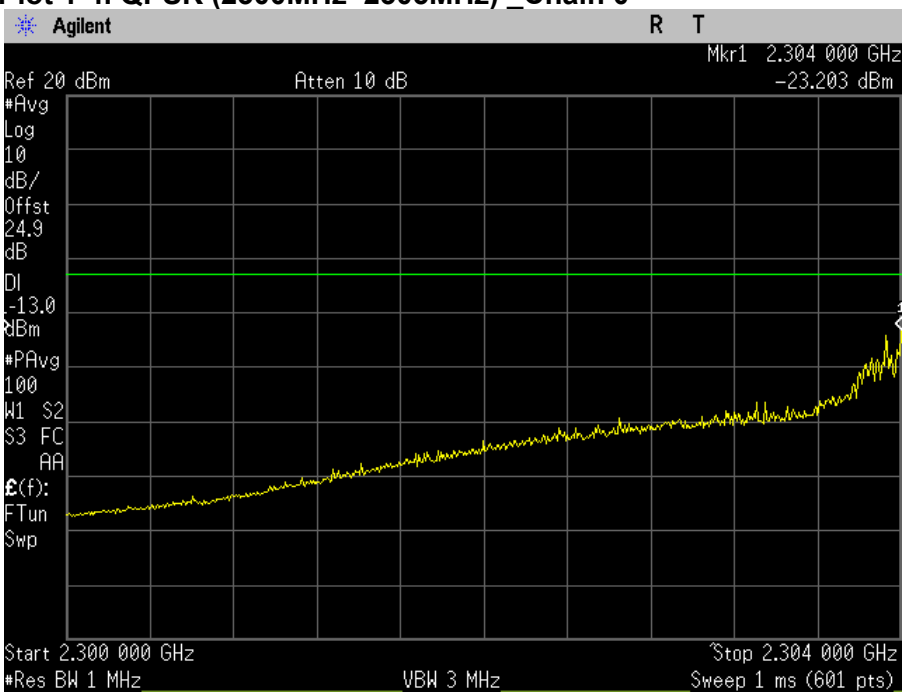
Plot 1-2. QPSK (30MHz~2290MHz) _Chain 0



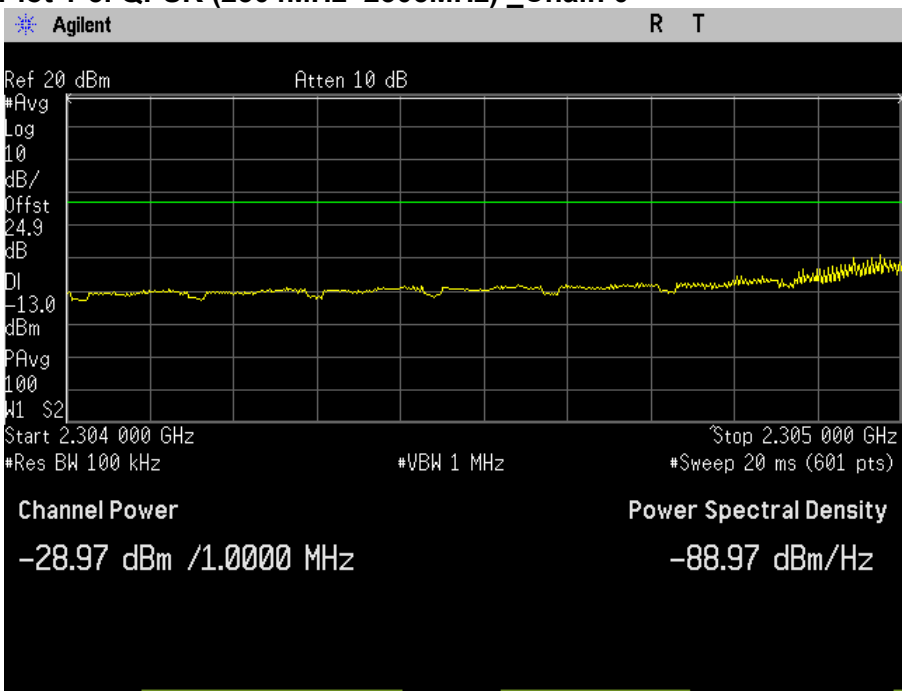
Plot 1-3. QPSK (2290MHz~2300MHz) _Chain 0



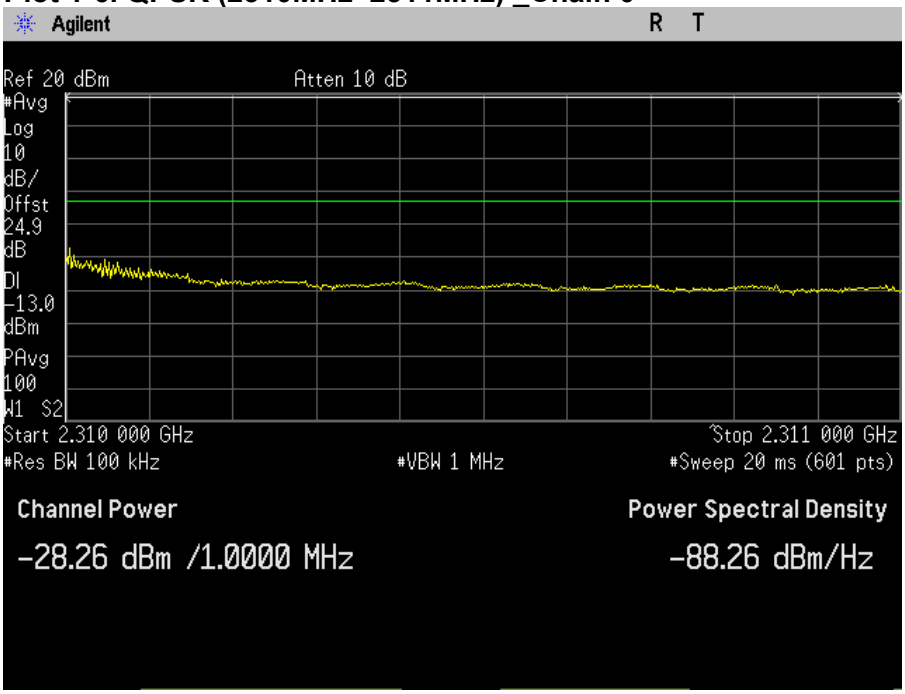
Plot 1-4. QPSK (2300MHz~2305MHz) _Chain 0



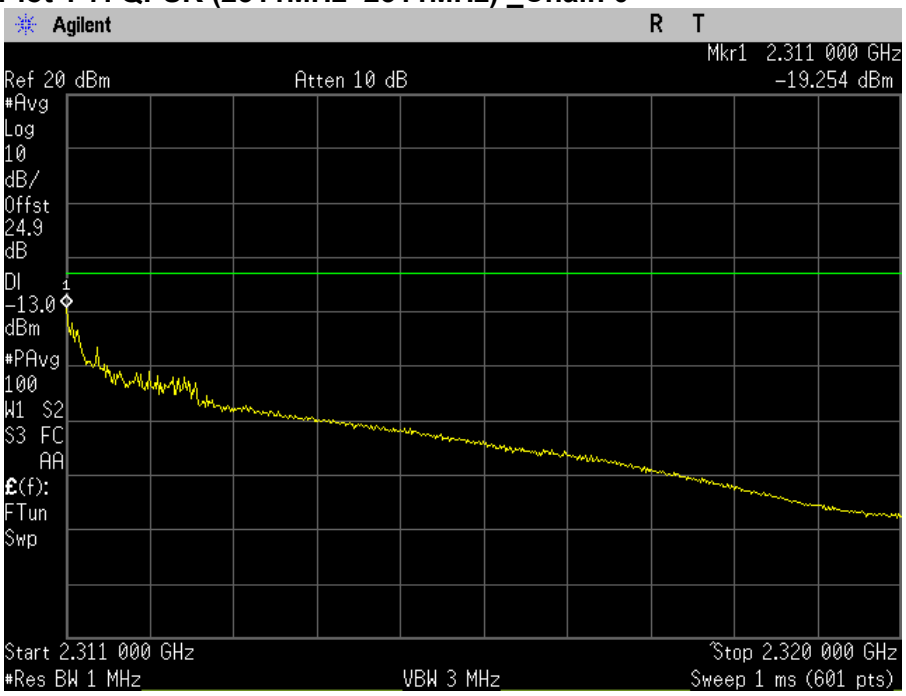
Plot 1-5. QPSK (2304MHz~2305MHz) _Chain 0



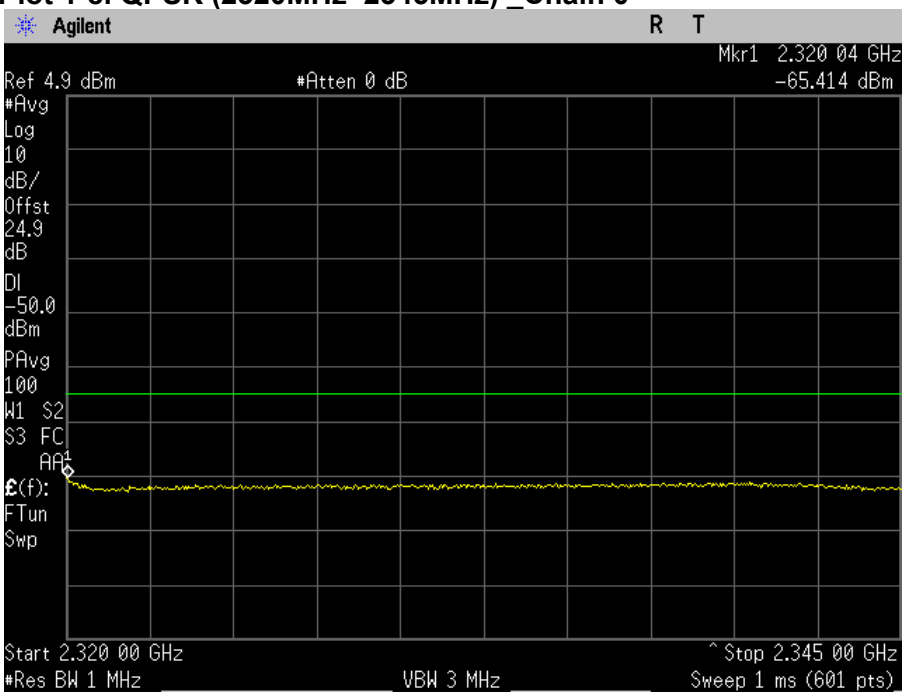
Plot 1-6. QPSK (2310MHz~2311MHz) _Chain 0



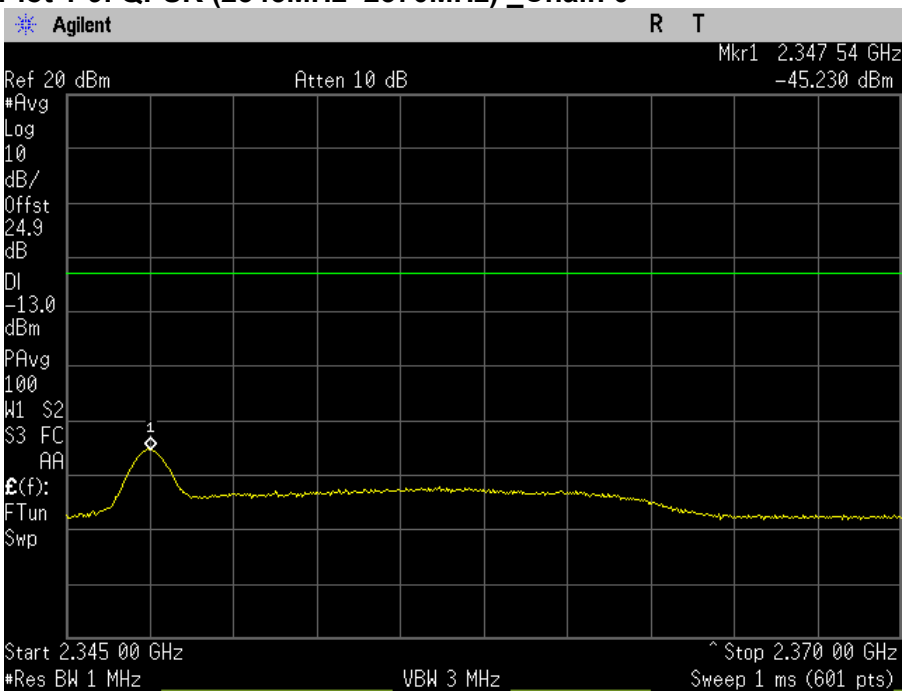
Plot 1-7. QPSK (2311MHz~2311MHz) _Chain 0



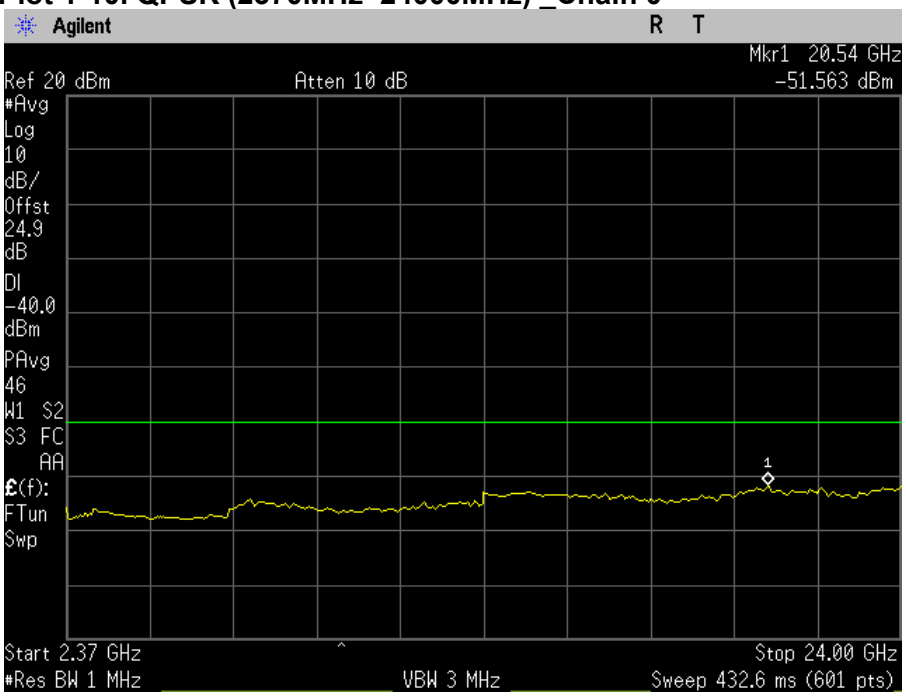
Plot 1-8. QPSK (2320MHz~2345MHz) _Chain 0



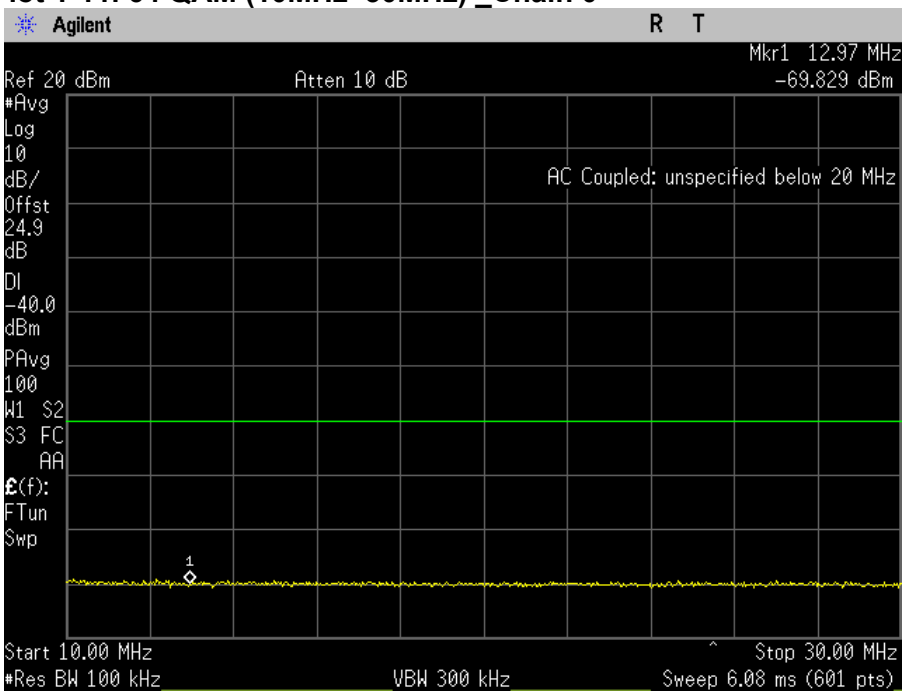
Plot 1-9. QPSK (2345MHz~2370MHz) _Chain 0



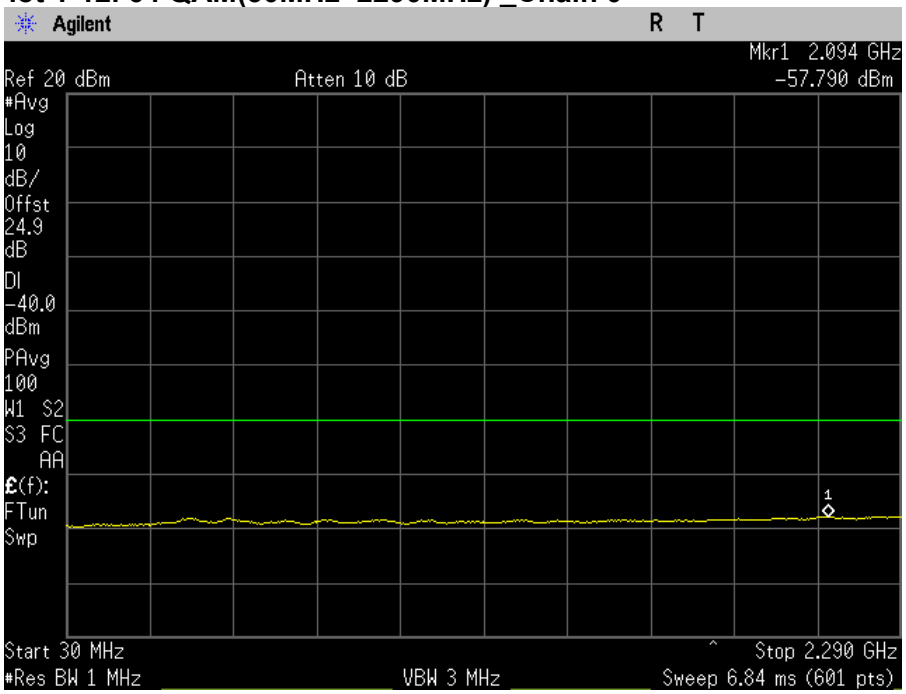
Plot 1-10. QPSK (2370MHz~24000MHz) _Chain 0



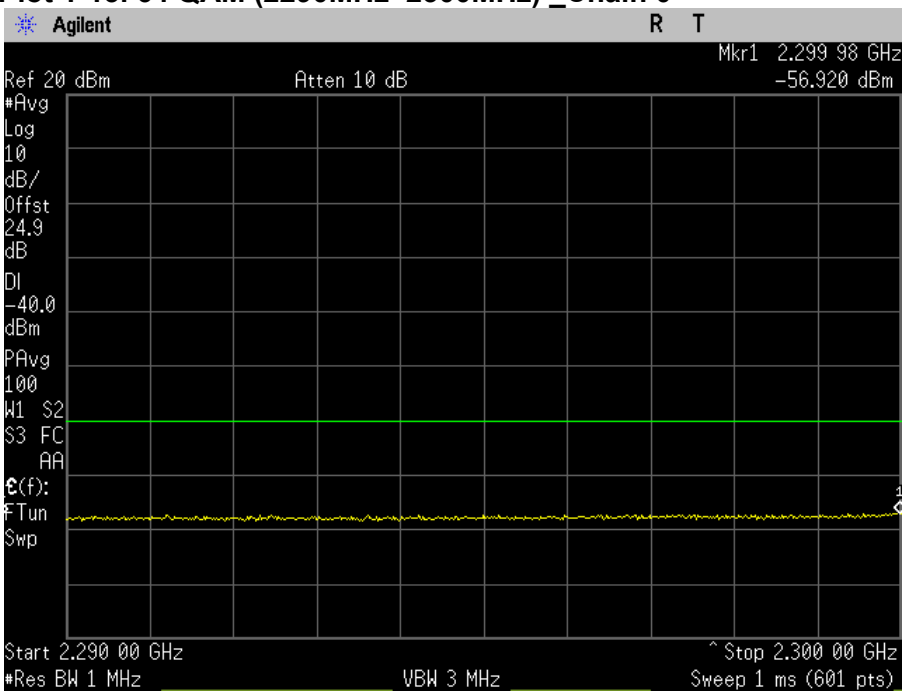
Plot 1-11. 64 QAM (10MHz~30MHz) _Chain 0



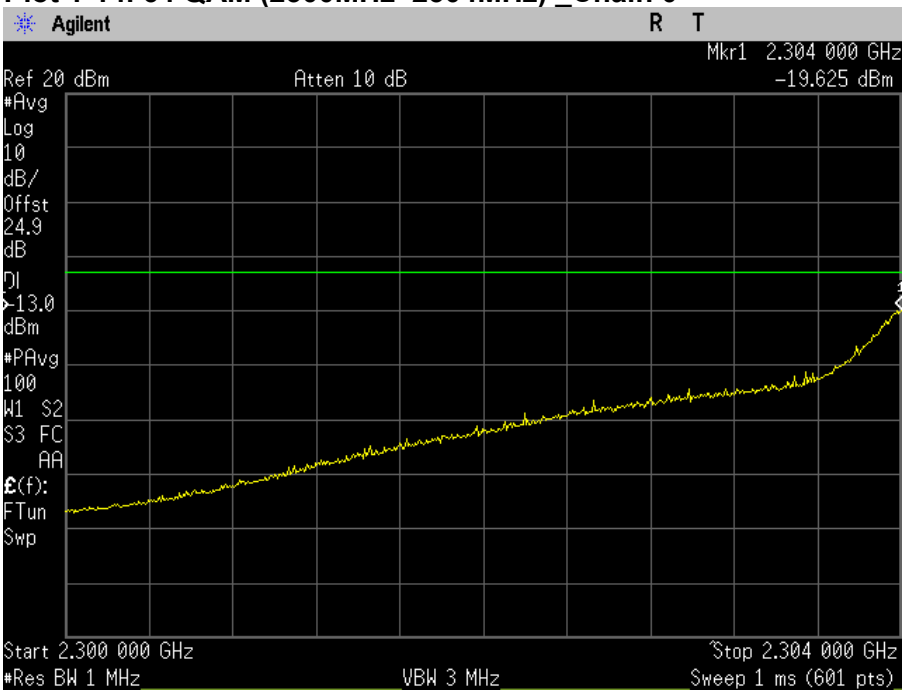
Plot 1-12. 64 QAM(30MHz~2290MHz) _Chain 0



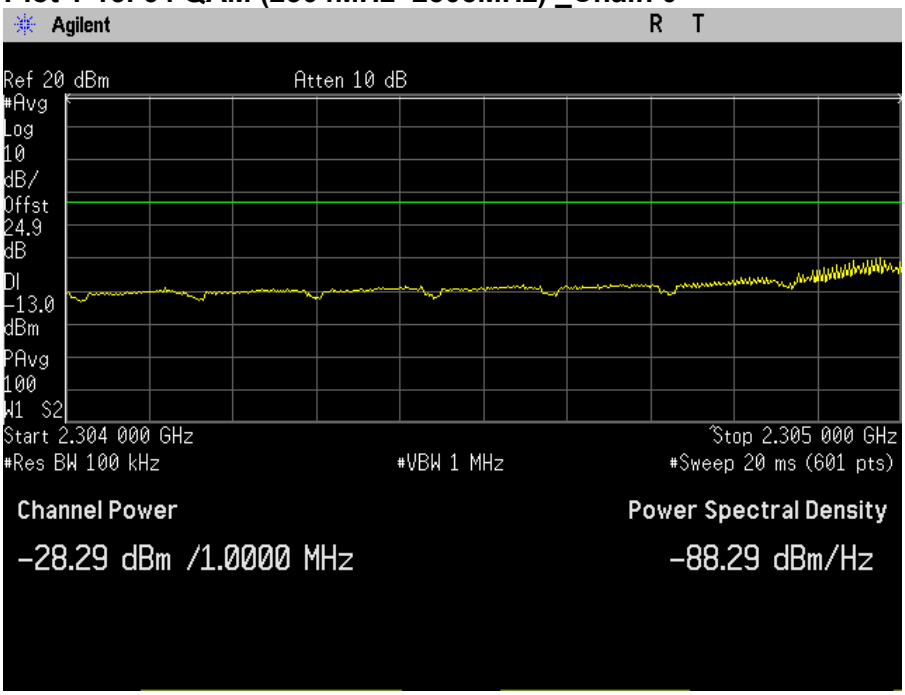
Plot 1-13. 64 QAM (2290MHz~2300MHz) _Chain 0



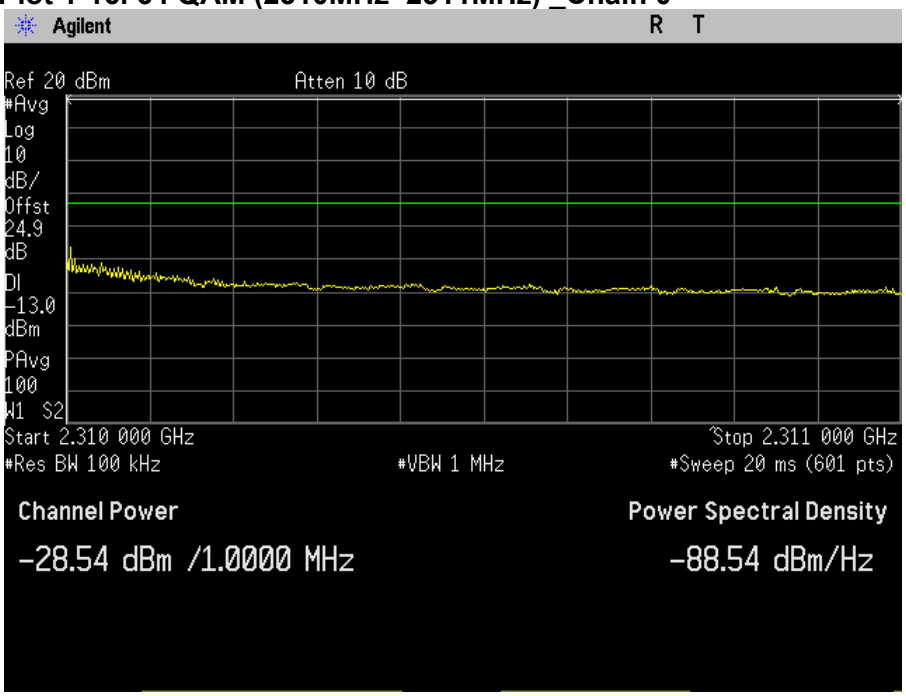
Plot 1-14. 64 QAM (2300MHz~2304MHz) _Chain 0



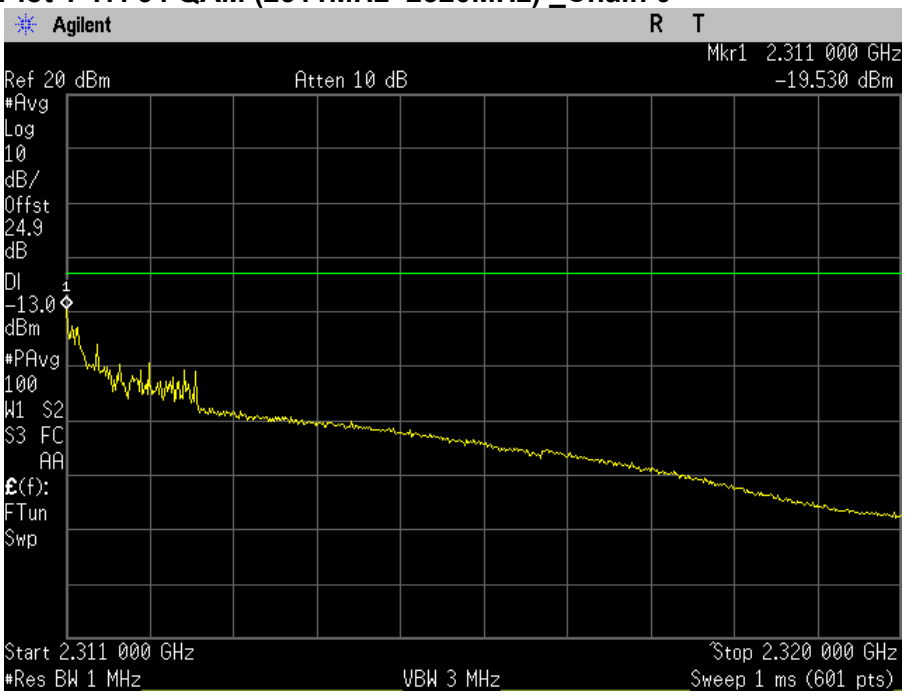
Plot 1-15. 64 QAM (2304MHz~2305MHz) _Chain 0



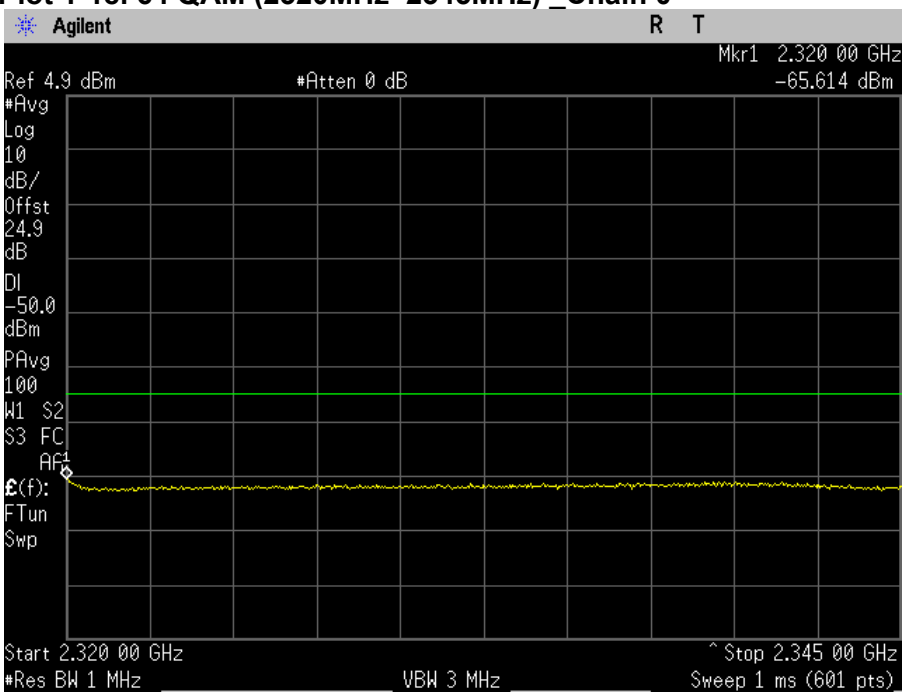
Plot 1-16. 64 QAM (2310MHz~2311MHz) _Chain 0



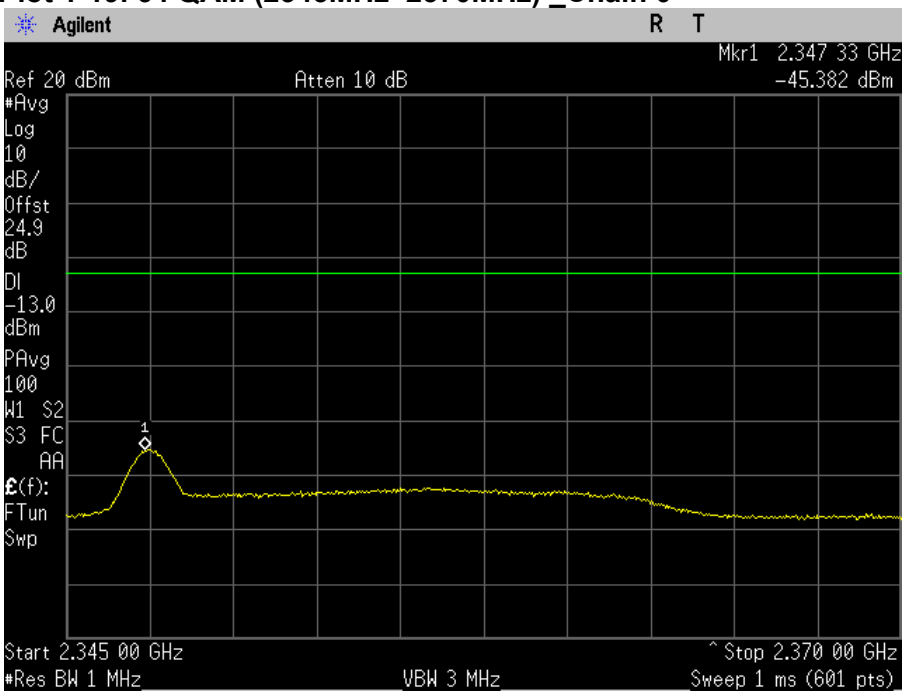
Plot 1-17. 64 QAM (2311MHz~2320MHz) _Chain 0



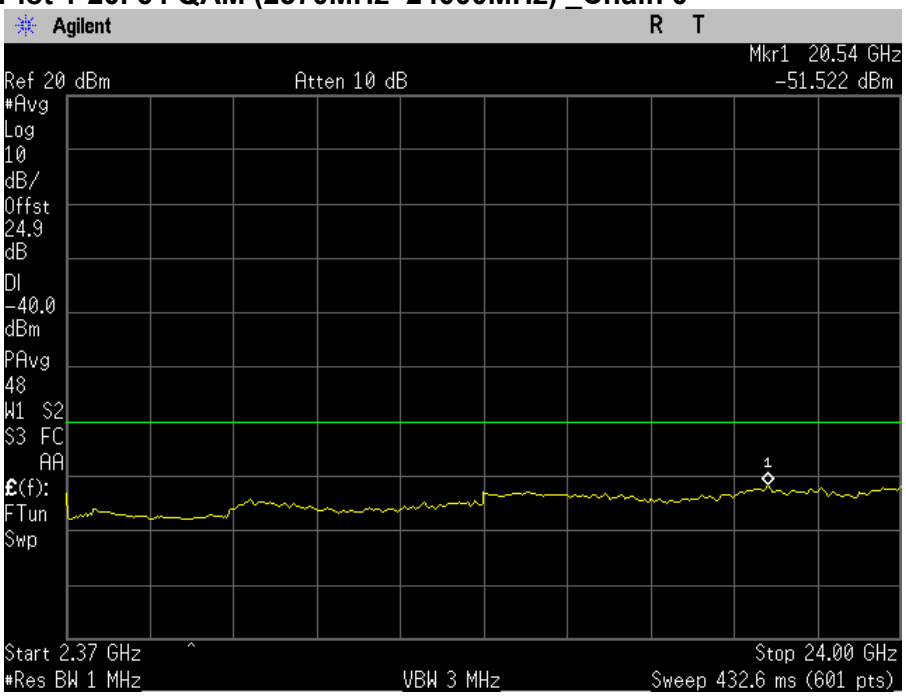
Plot 1-18. 64 QAM (2320MHz~2345MHz) _Chain 0



Plot 1-19. 64 QAM (2345MHz~2370MHz) _Chain 0

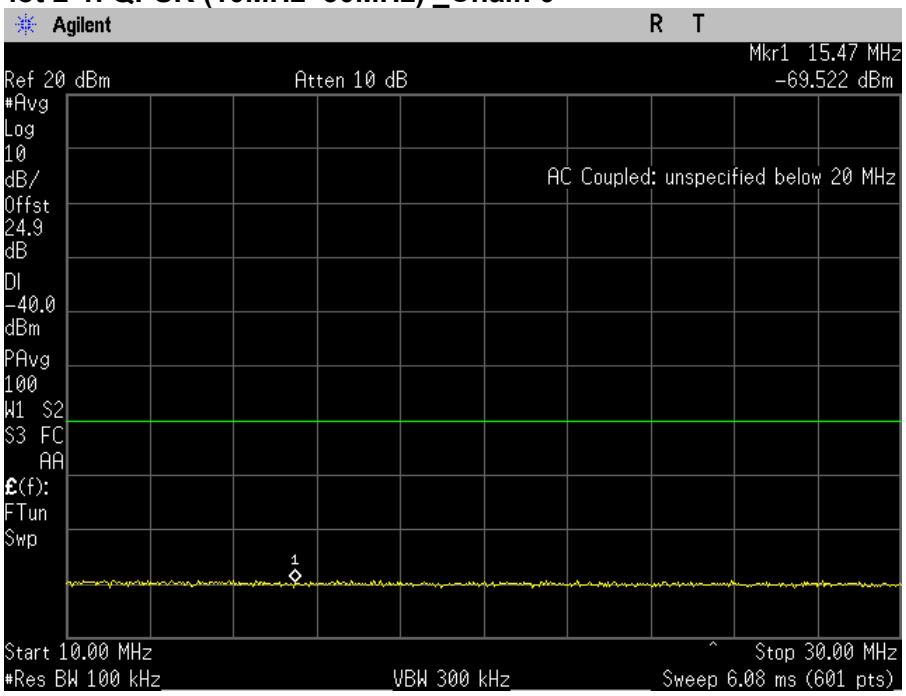


Plot 1-20. 64 QAM (2370MHz~24000MHz) _Chain 0

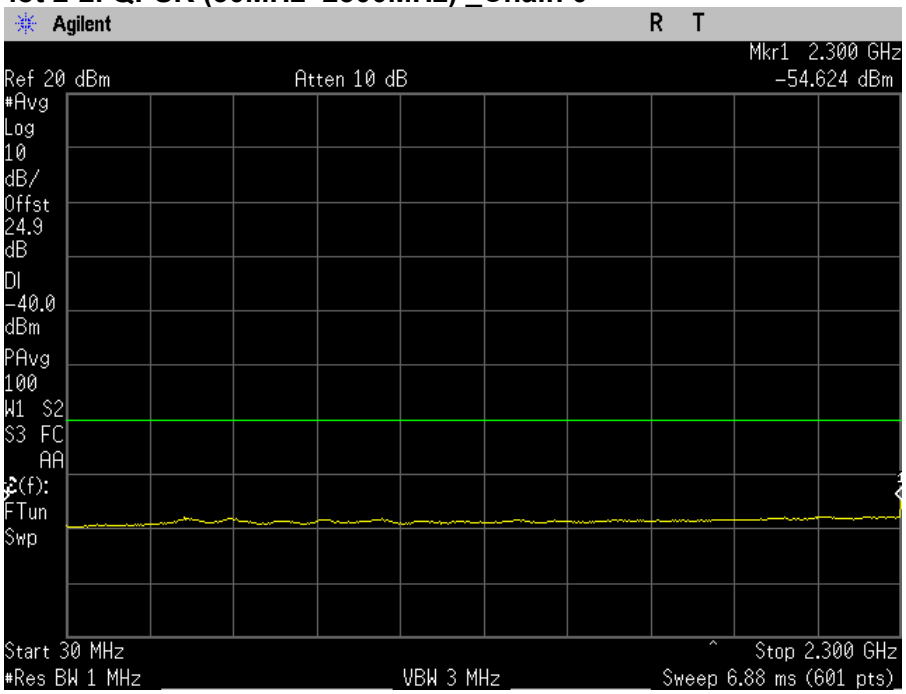


- **2312.5 MHz_5 MHz Bandwidth_Chain 0**

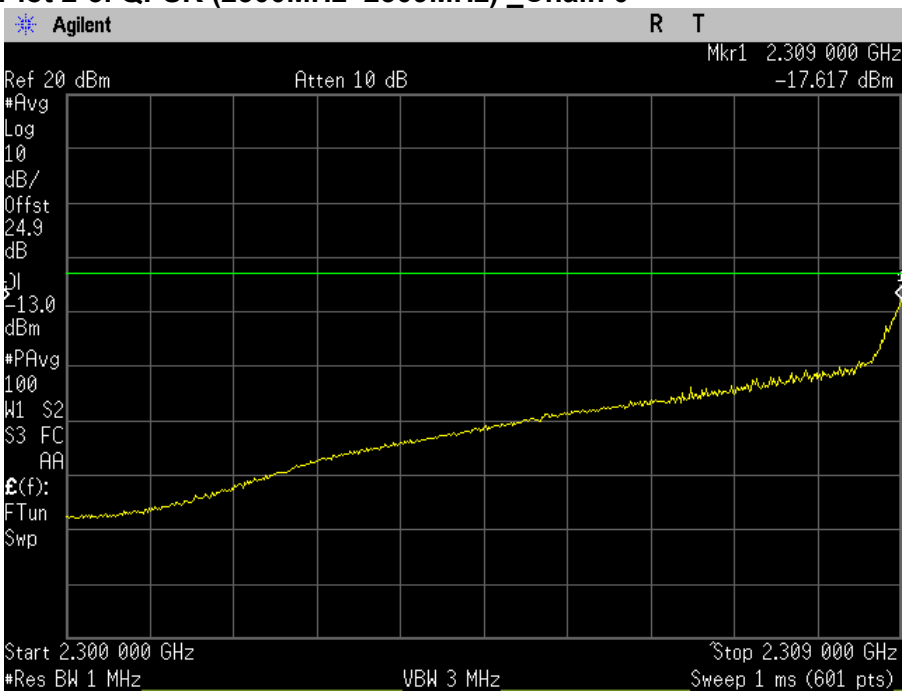
Plot 2-1. QPSK (10MHz~30MHz) _Chain 0



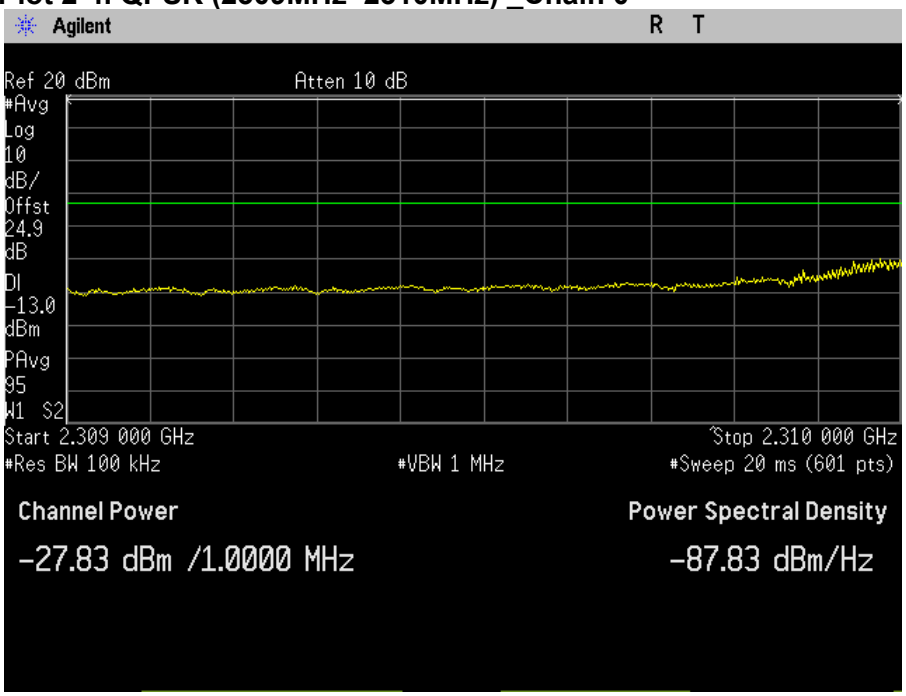
Plot 2-2. QPSK (30MHz~2300MHz) _Chain 0



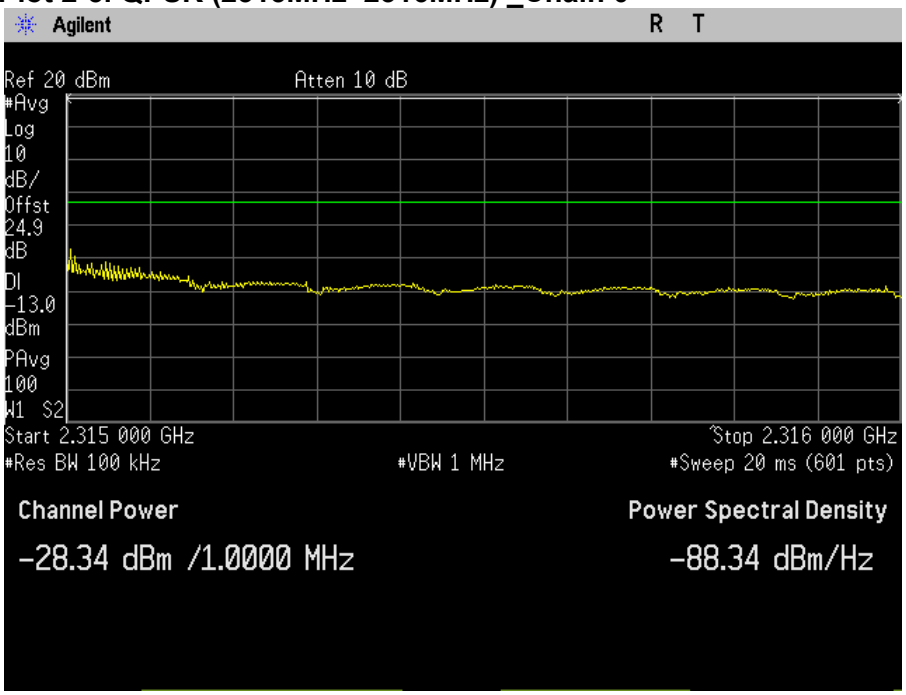
Plot 2-3. QPSK (2300MHz~2309MHz) _Chain 0



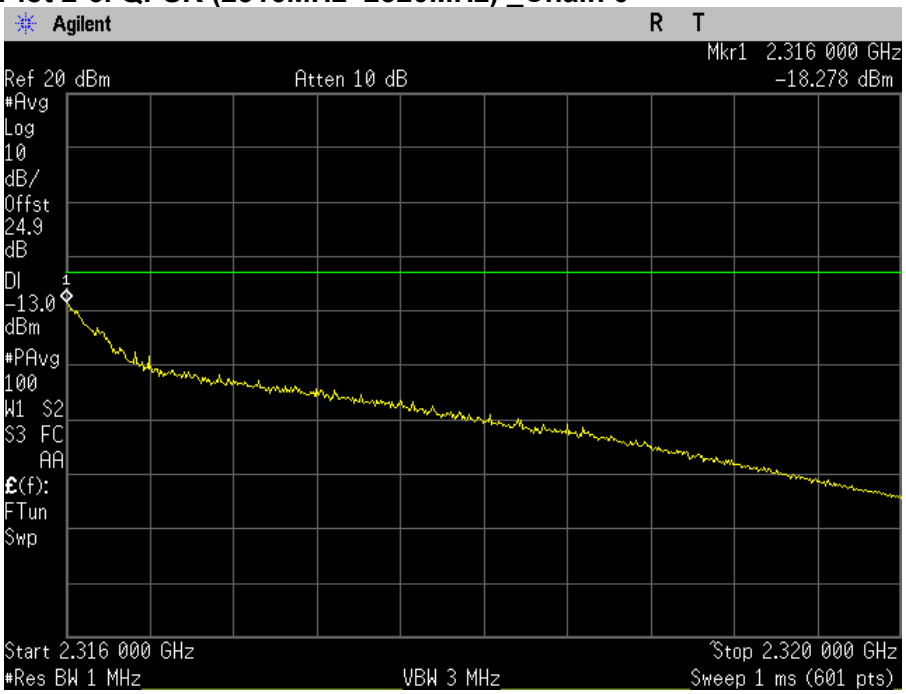
Plot 2-4. QPSK (2309MHz~2310MHz) _Chain 0



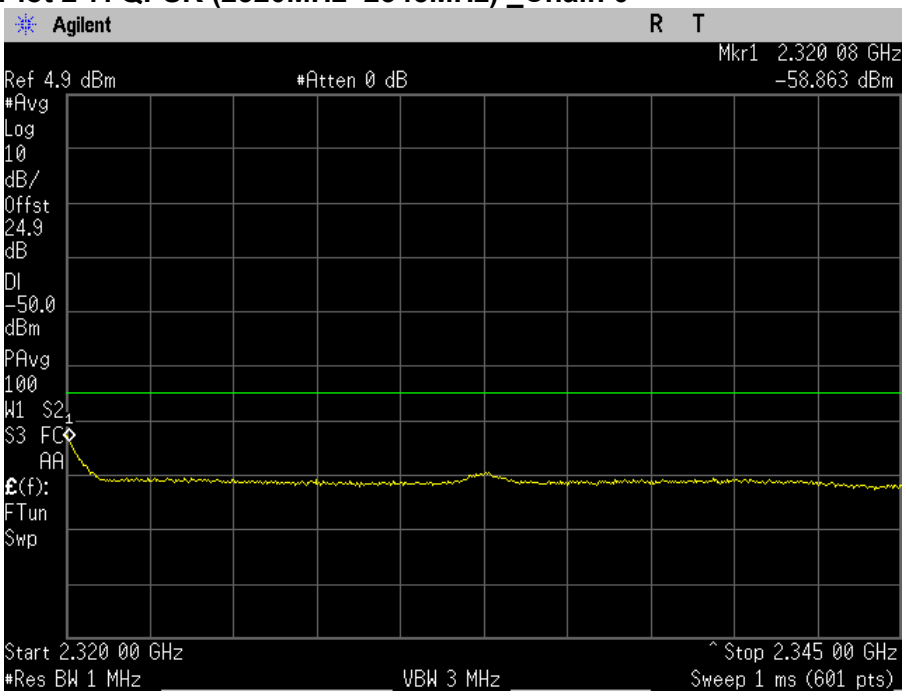
Plot 2-5. QPSK (2315MHz~2316MHz) _Chain 0



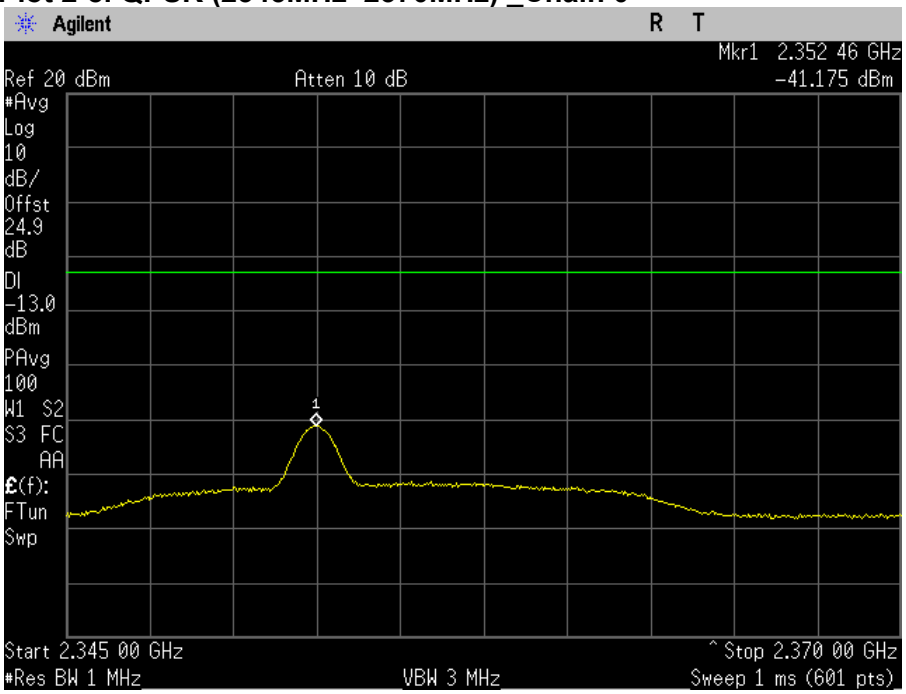
Plot 2-6. QPSK (2316MHz~2320MHz) _Chain 0



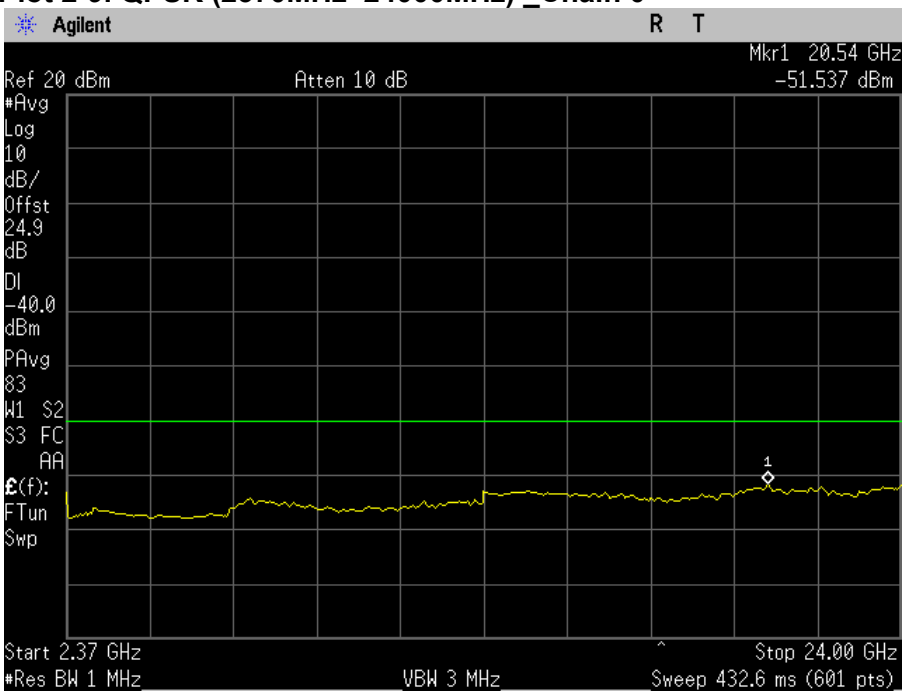
Plot 2-7. QPSK (2320MHz~2345MHz) _Chain 0



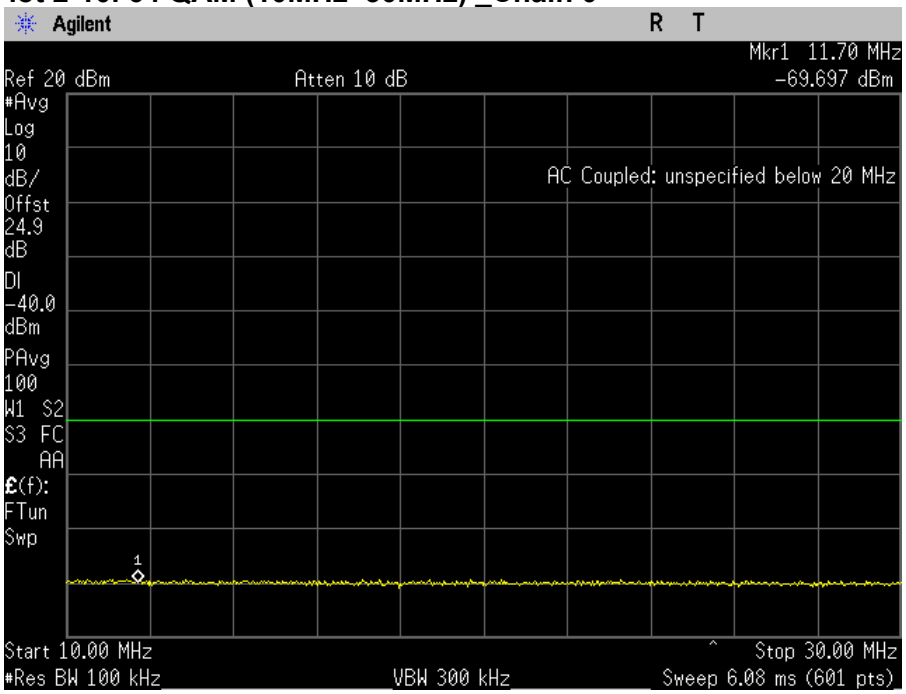
Plot 2-8. QPSK (2345MHz~2370MHz) _Chain 0



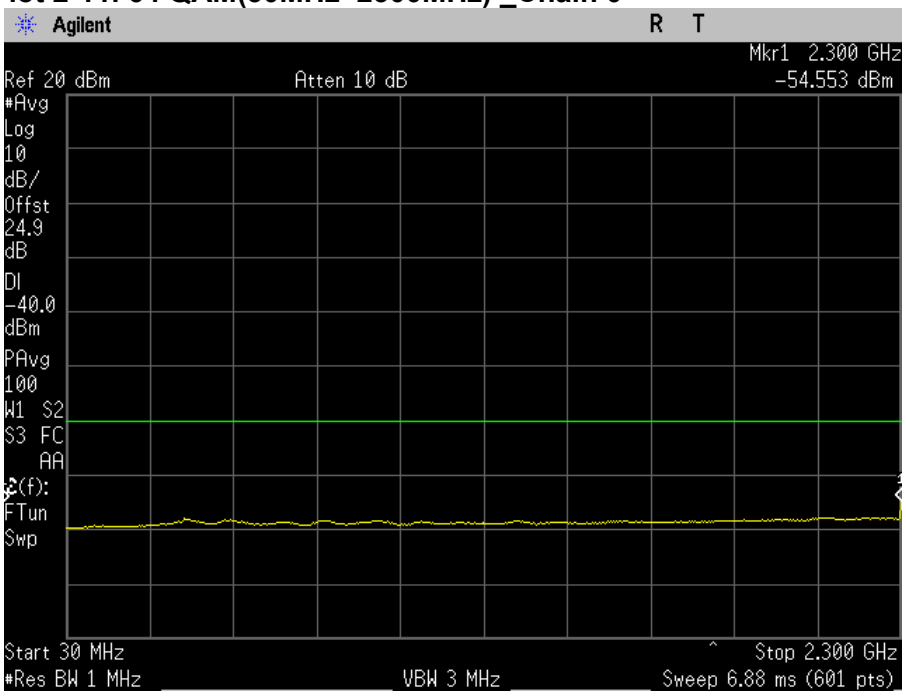
Plot 2-9. QPSK (2370MHz~24000MHz) _Chain 0



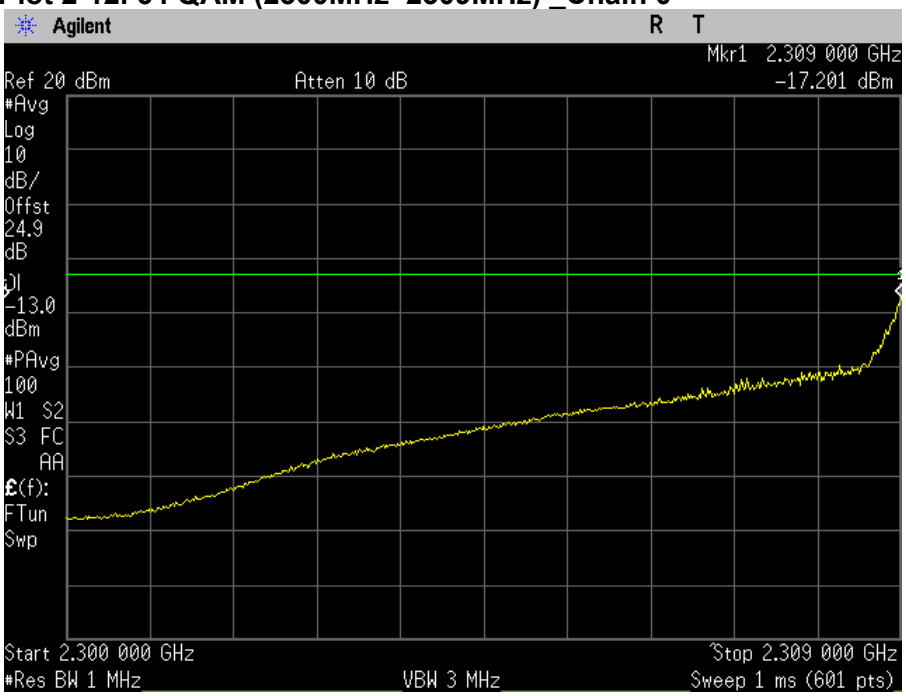
Plot 2-10. 64 QAM (10MHz~30MHz) _Chain 0



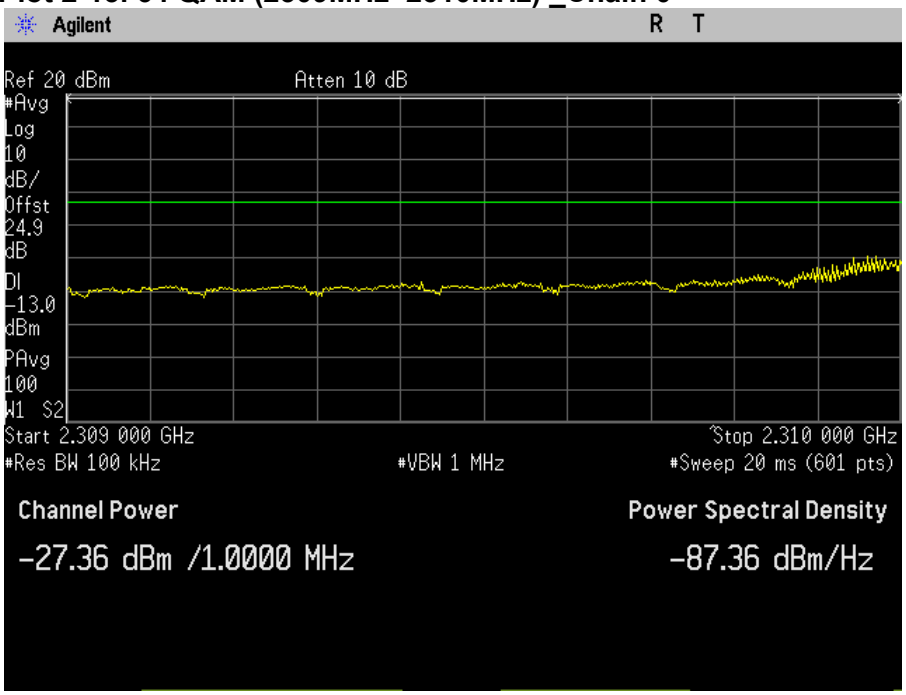
Plot 2-11. 64 QAM(30MHz~2300MHz) _Chain 0



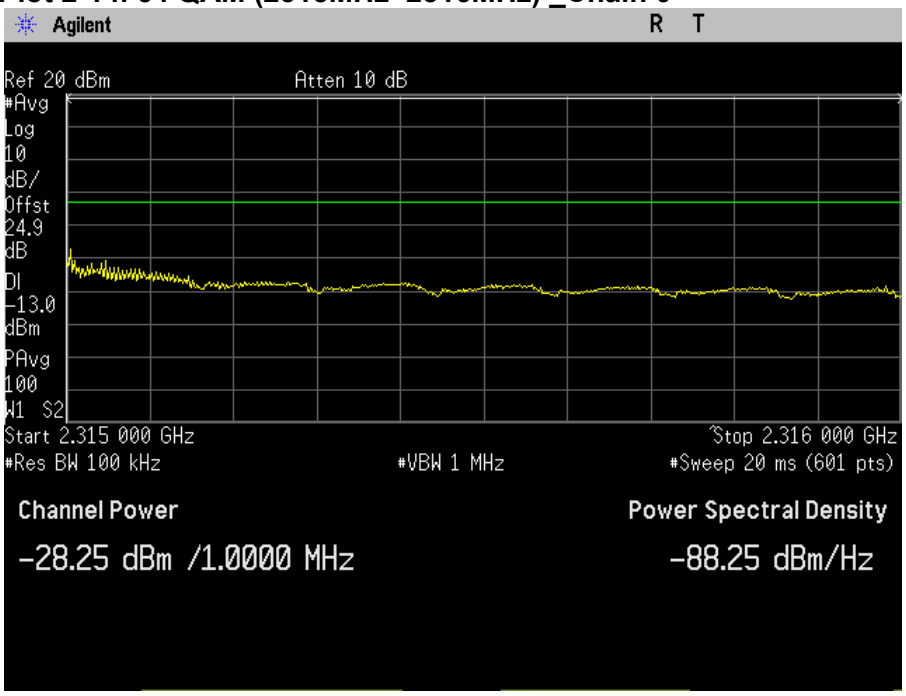
Plot 2-12. 64 QAM (2300MHz~2309MHz) _Chain 0



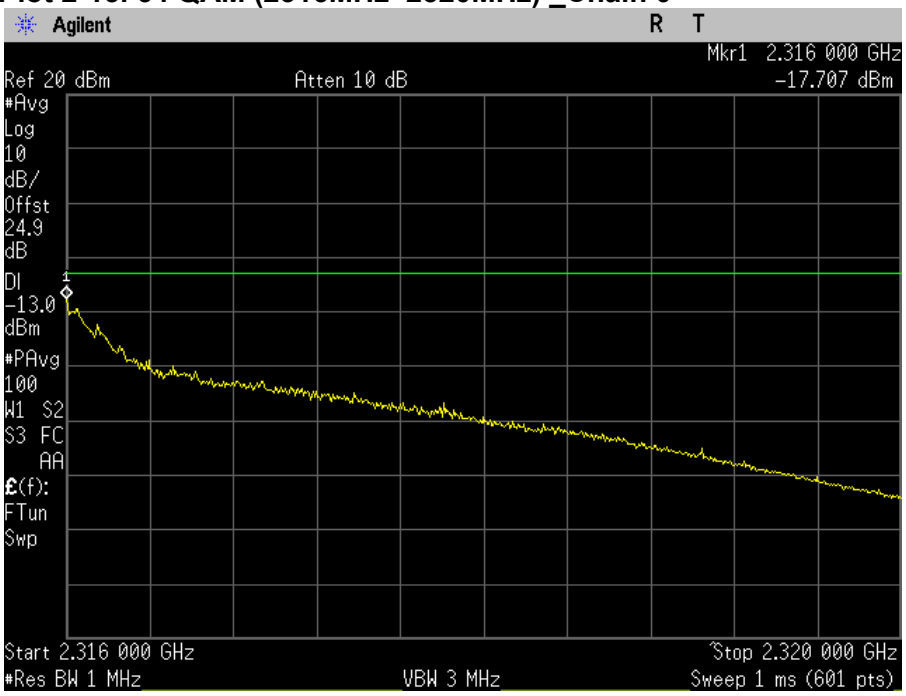
Plot 2-13. 64 QAM (2309MHz~2310MHz) _Chain 0



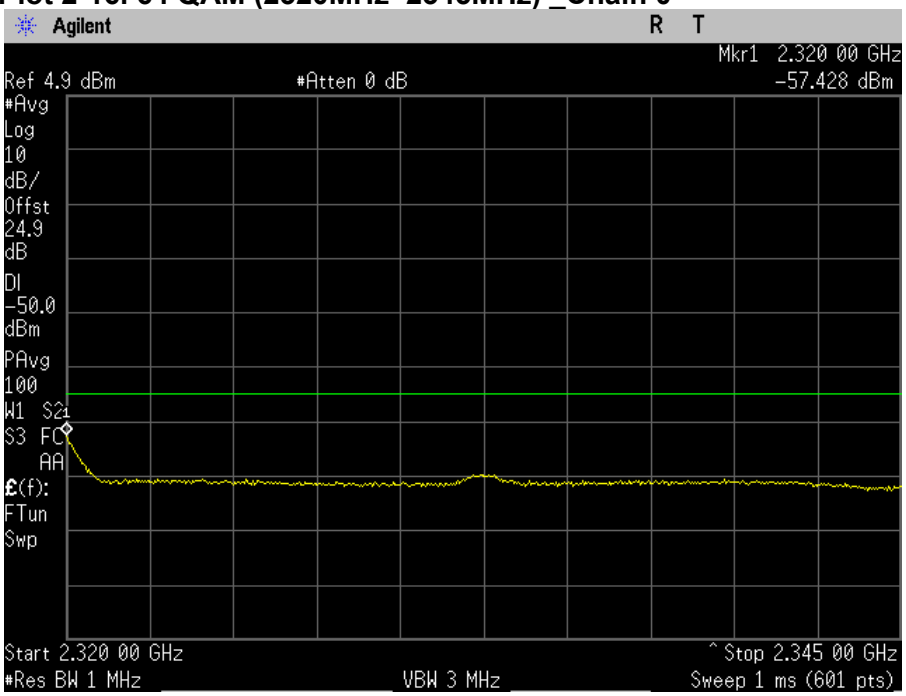
Plot 2-14. 64 QAM (2315MHz~2316MHz) _Chain 0



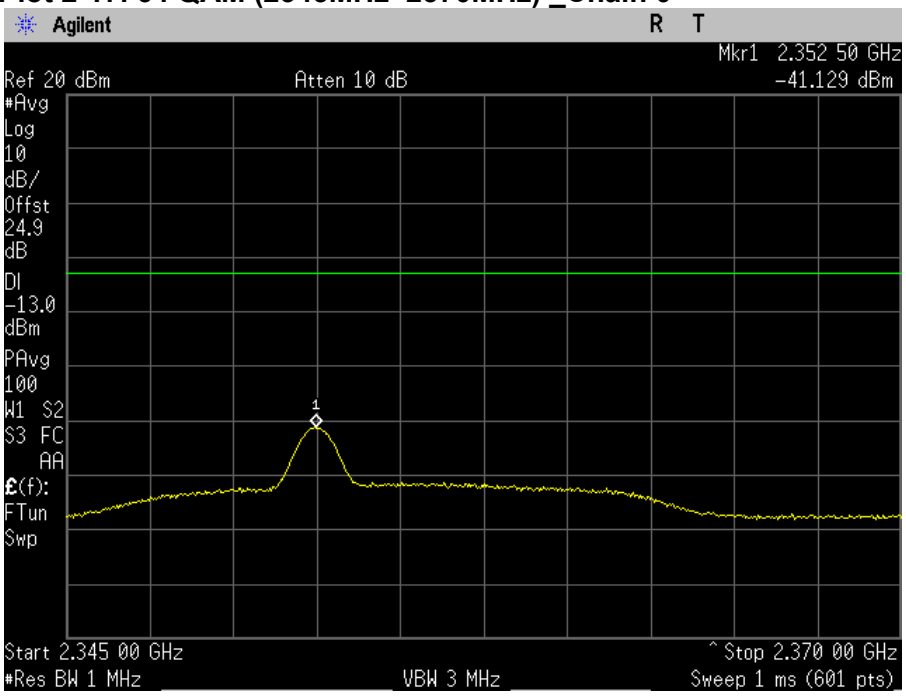
Plot 2-15. 64 QAM (2316MHz~2320MHz) _Chain 0



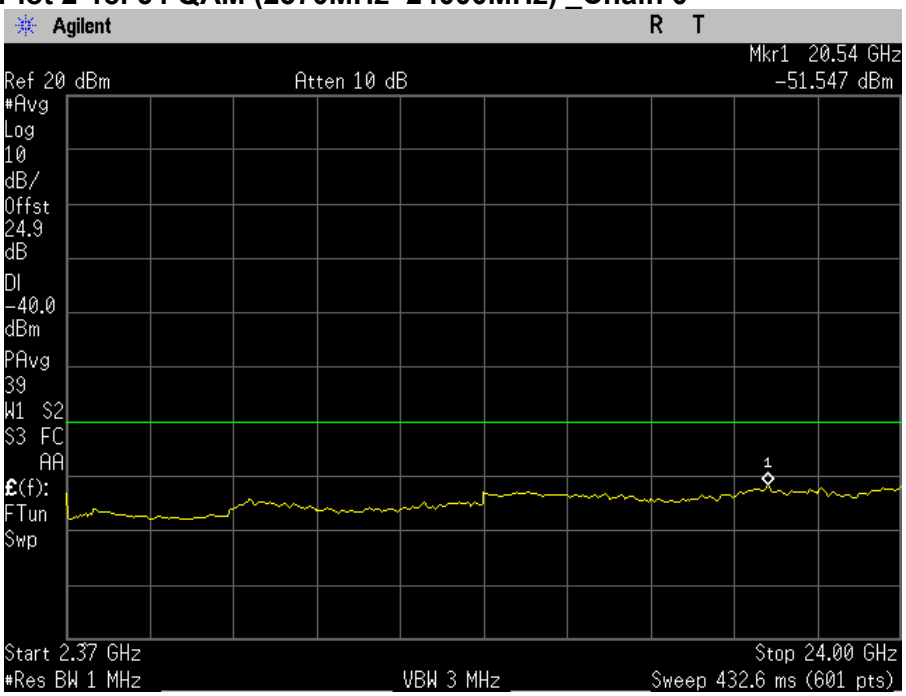
Plot 2-16. 64 QAM (2320MHz~2345MHz) _Chain 0



Plot 2-17. 64 QAM (2345MHz~2370MHz) _Chain 0

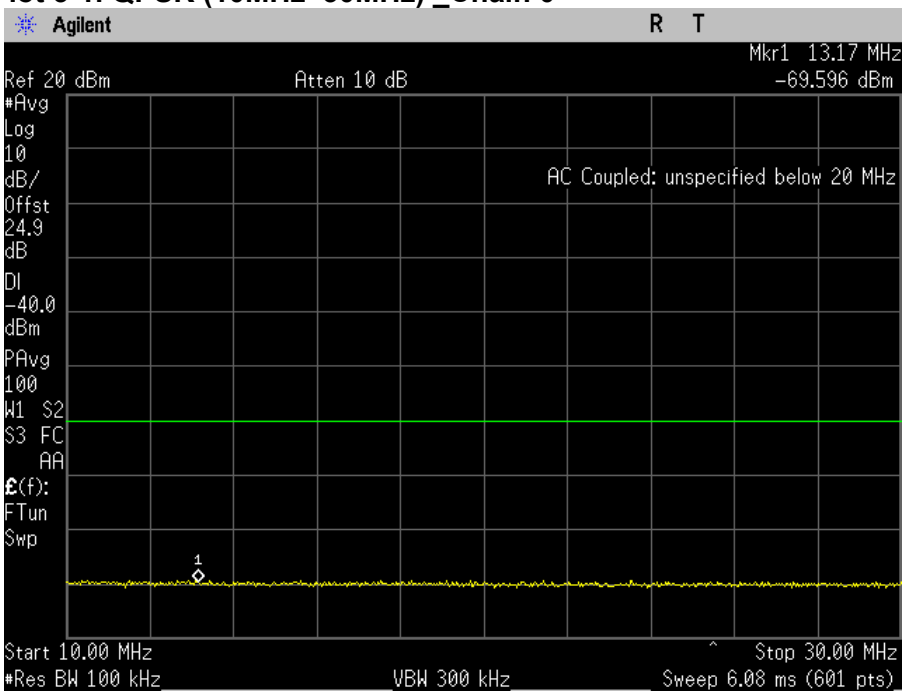


Plot 2-18. 64 QAM (2370MHz~24000MHz) _Chain 0

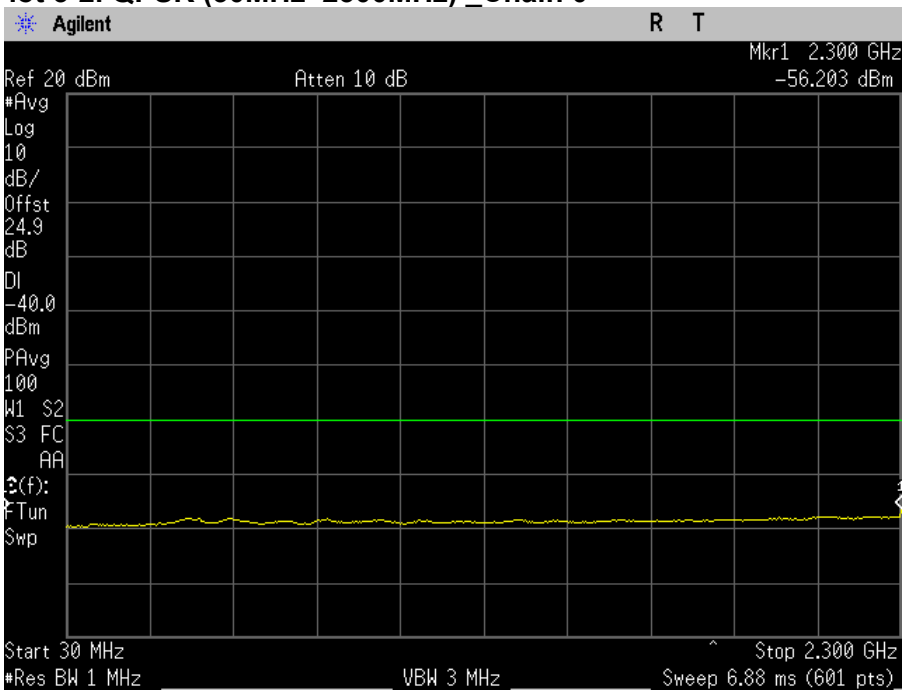


- **2352.5 MHz_5 MHz Bandwidth_Chain 0**

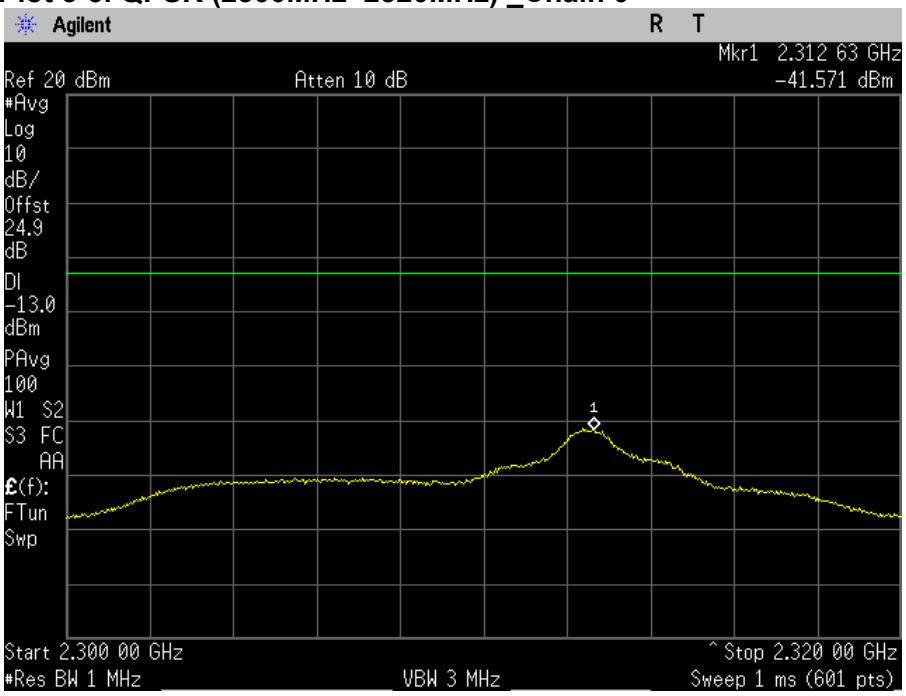
Plot 3-1. QPSK (10MHz~30MHz) _Chain 0



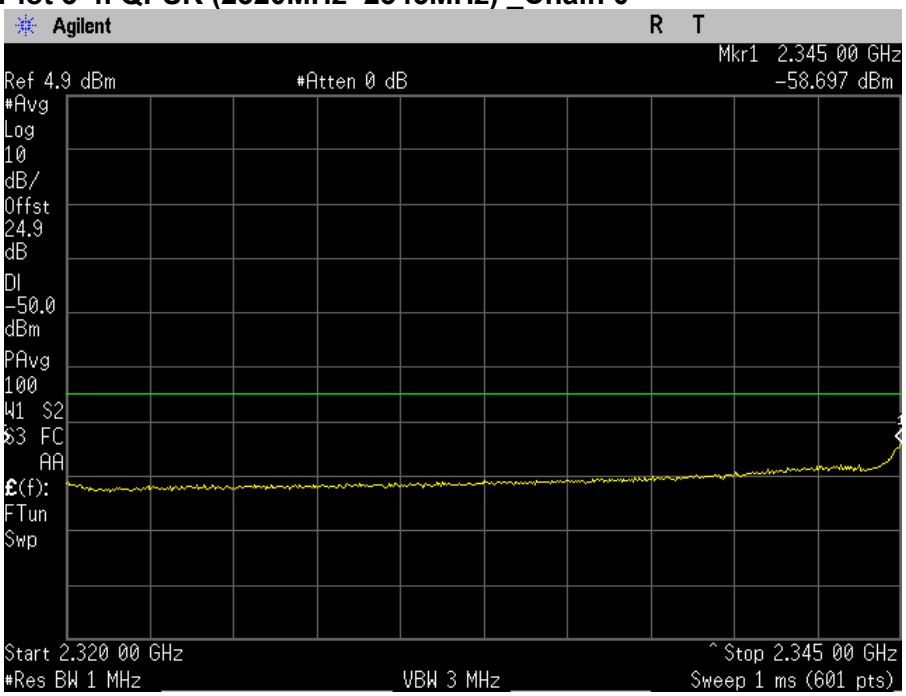
Plot 3-2. QPSK (30MHz~2300MHz) _Chain 0



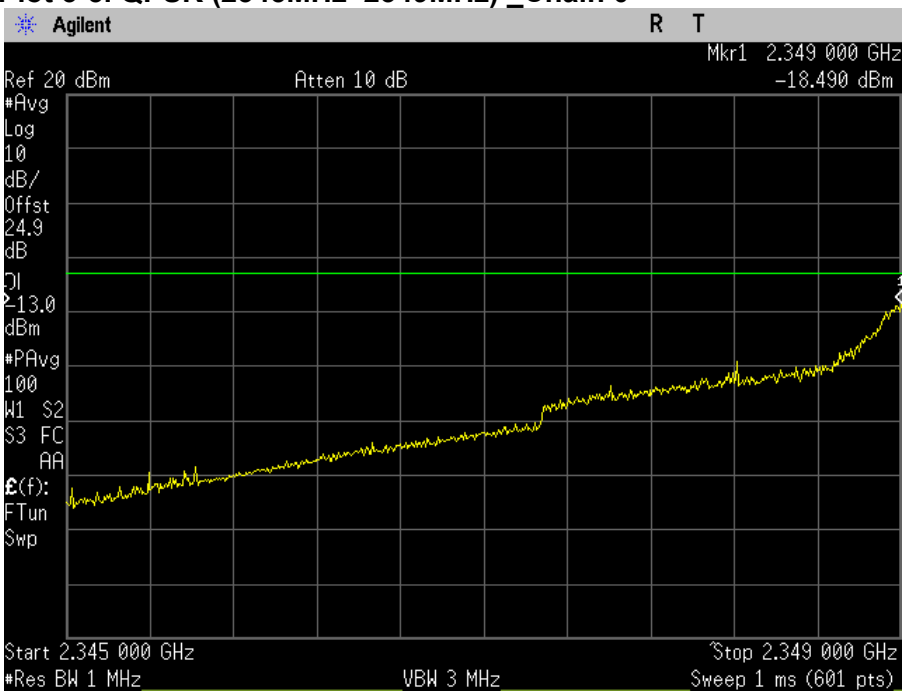
Plot 3-3. QPSK (2300MHz~2320MHz) _Chain 0



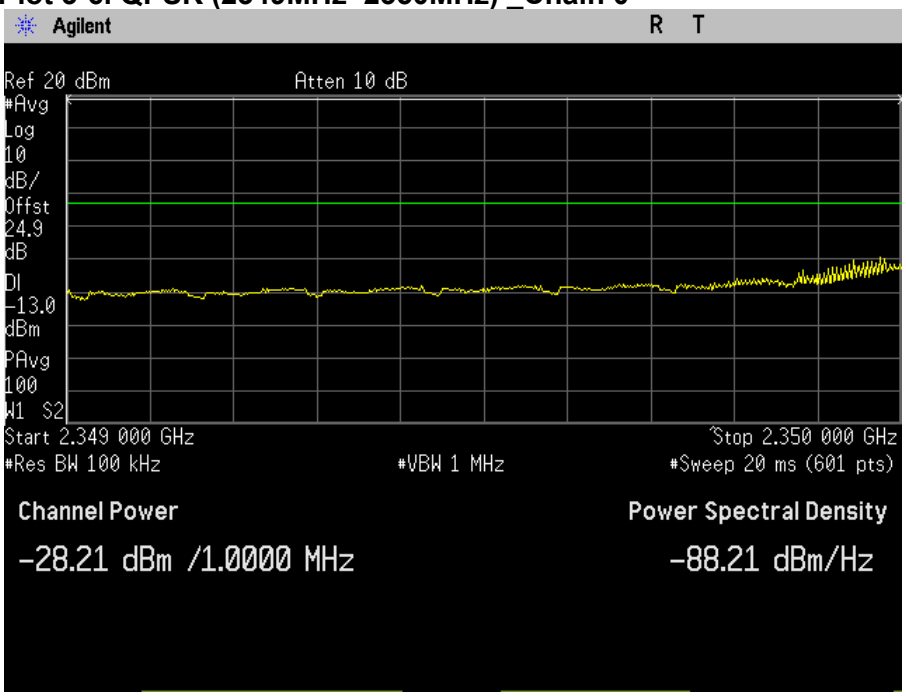
Plot 3-4. QPSK (2320MHz~2345MHz) _Chain 0



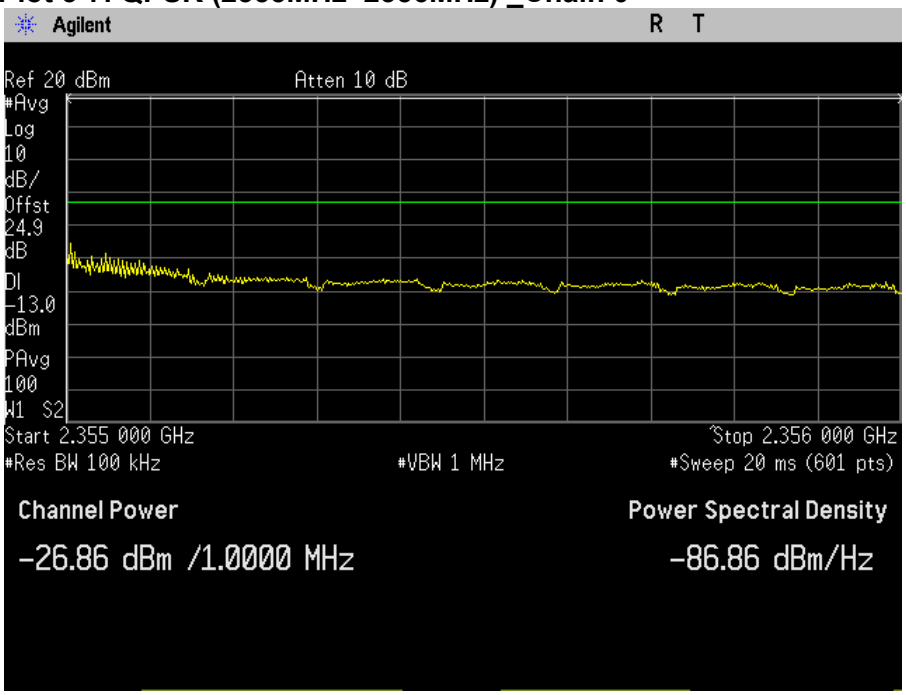
Plot 3-5. QPSK (2345MHz~2349MHz) _Chain 0



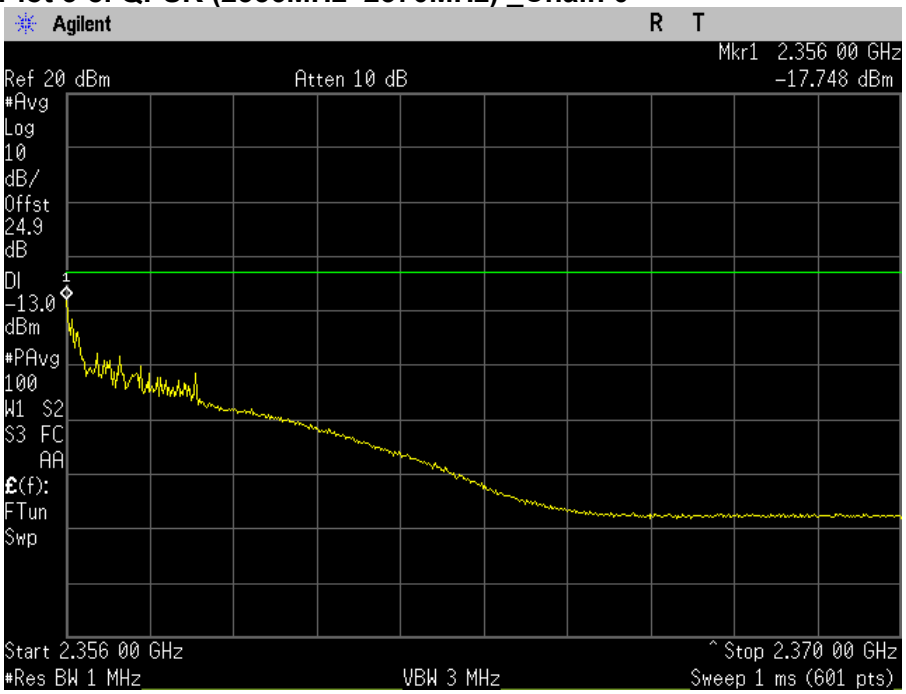
Plot 3-6. QPSK (2349MHz~2350MHz) _Chain 0



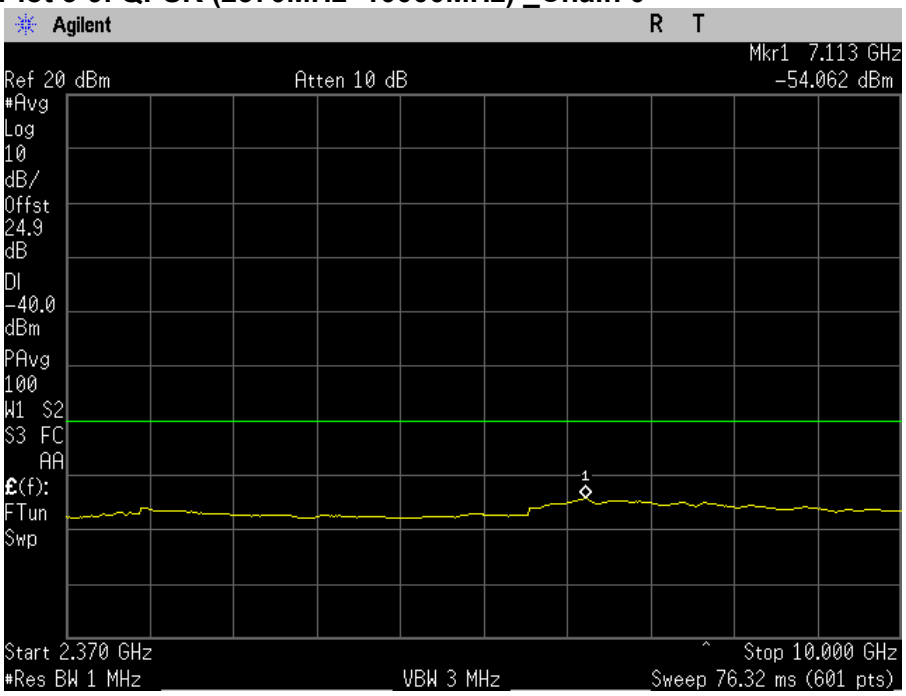
Plot 3-7. QPSK (2355MHz~2356MHz) _Chain 0



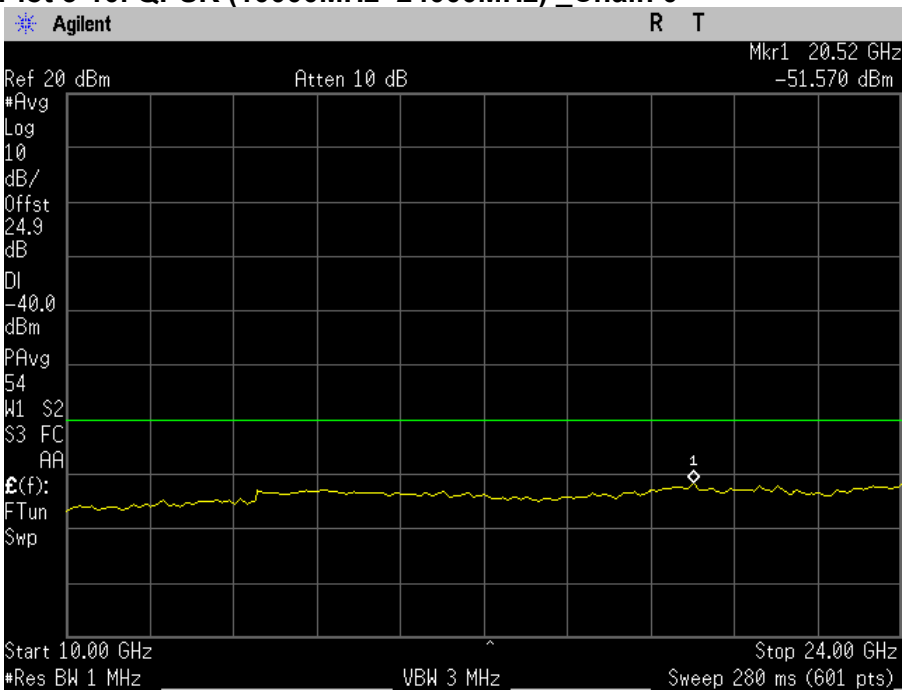
Plot 3-8. QPSK (2356MHz~2370MHz) _Chain 0



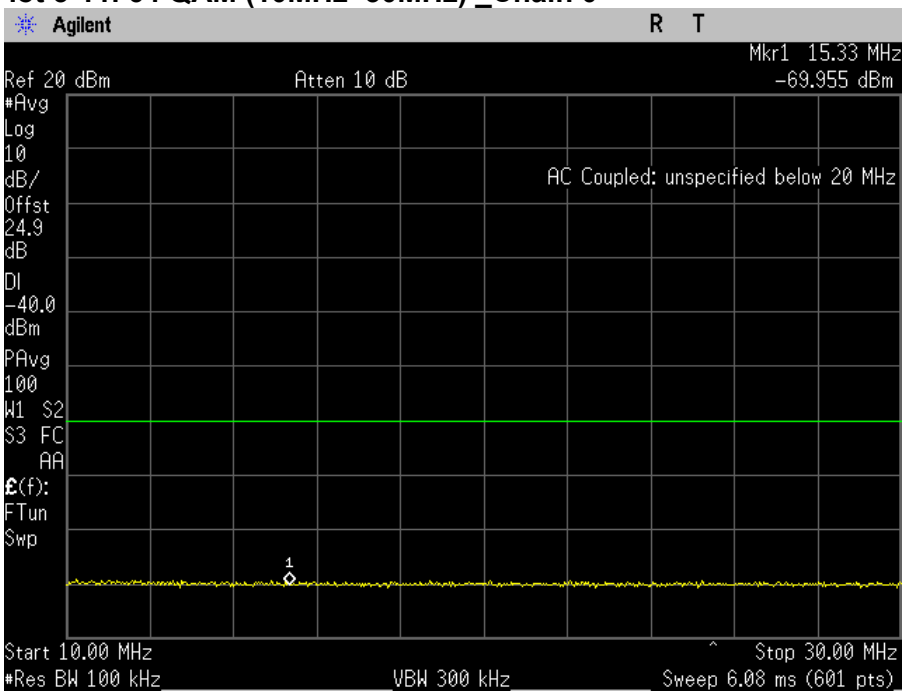
Plot 3-9. QPSK (2370MHz~10000MHz) _Chain 0



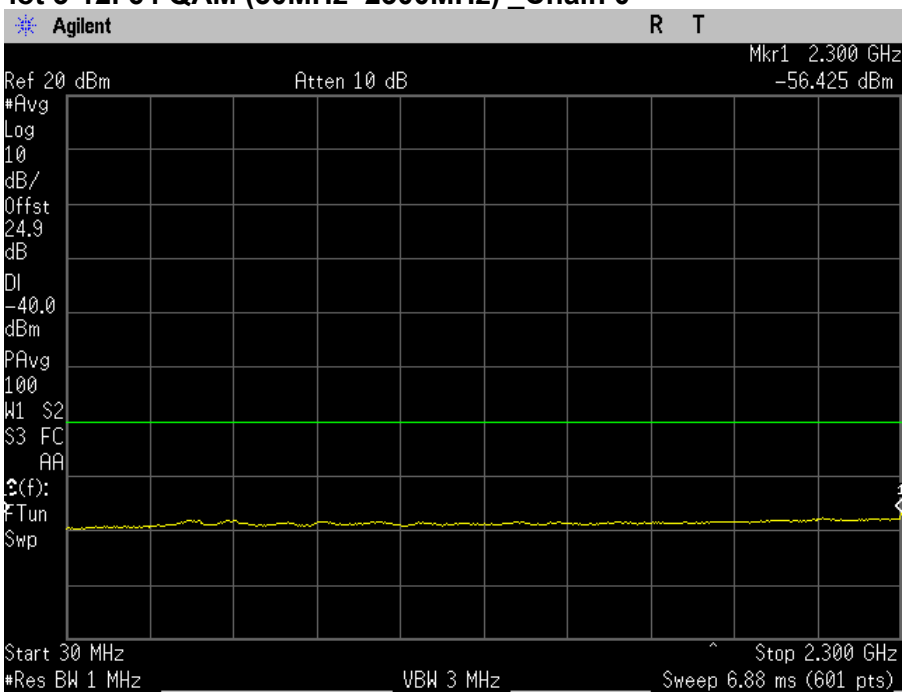
Plot 3-10. QPSK (10000MHz~24000MHz) _Chain 0



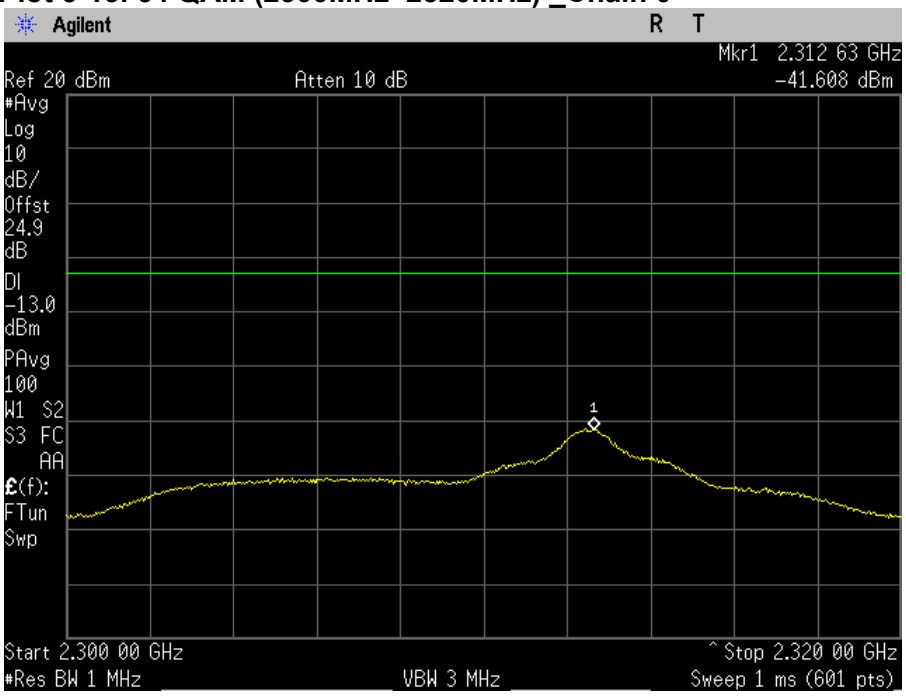
Plot 3-11. 64 QAM (10MHz~30MHz) _Chain 0



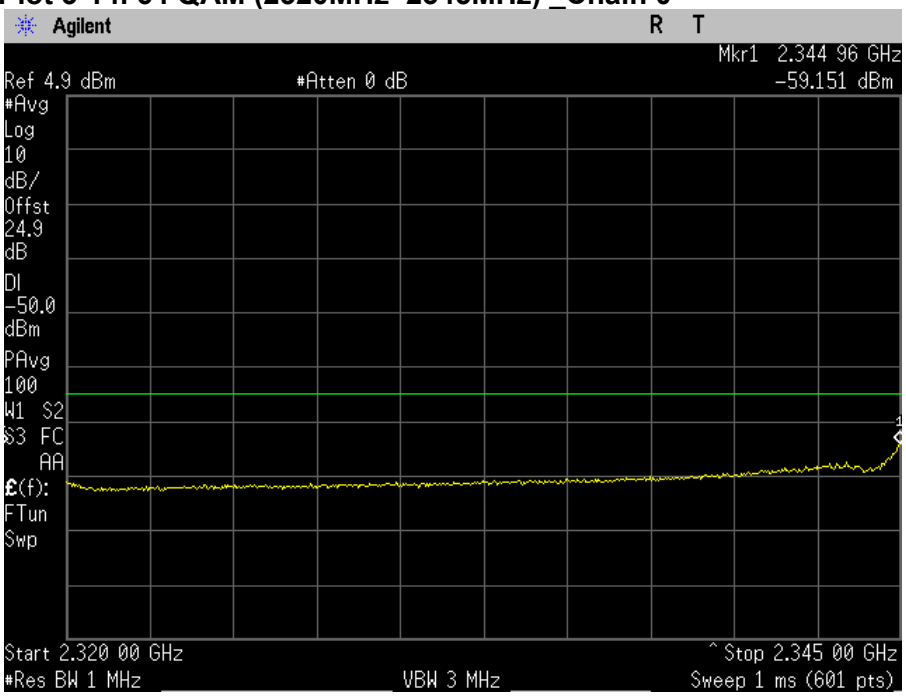
Plot 3-12. 64 QAM (30MHz~2300MHz) _Chain 0



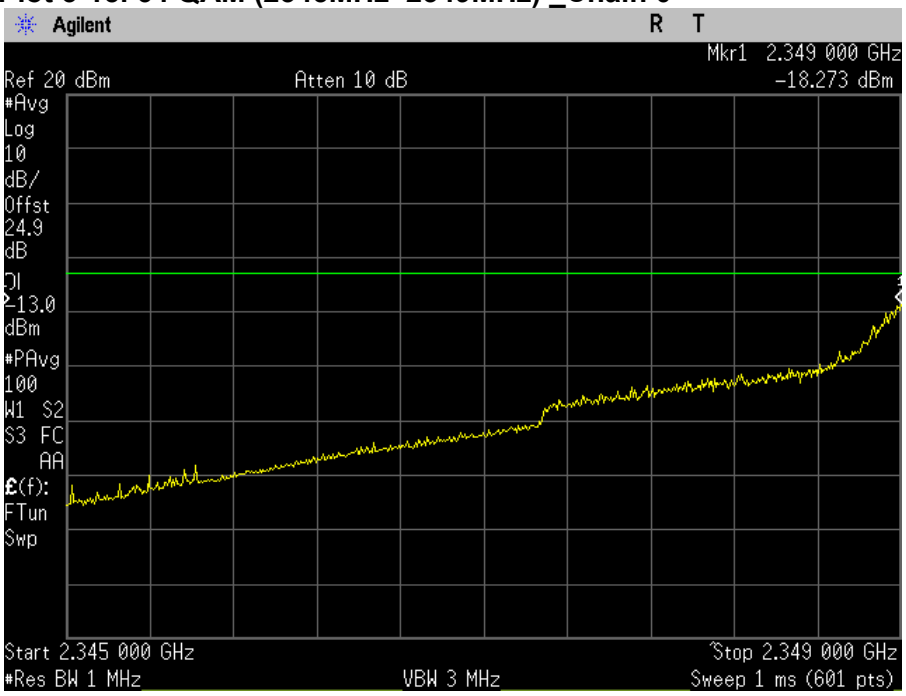
Plot 3-13. 64 QAM (2300MHz~2320MHz) _Chain 0



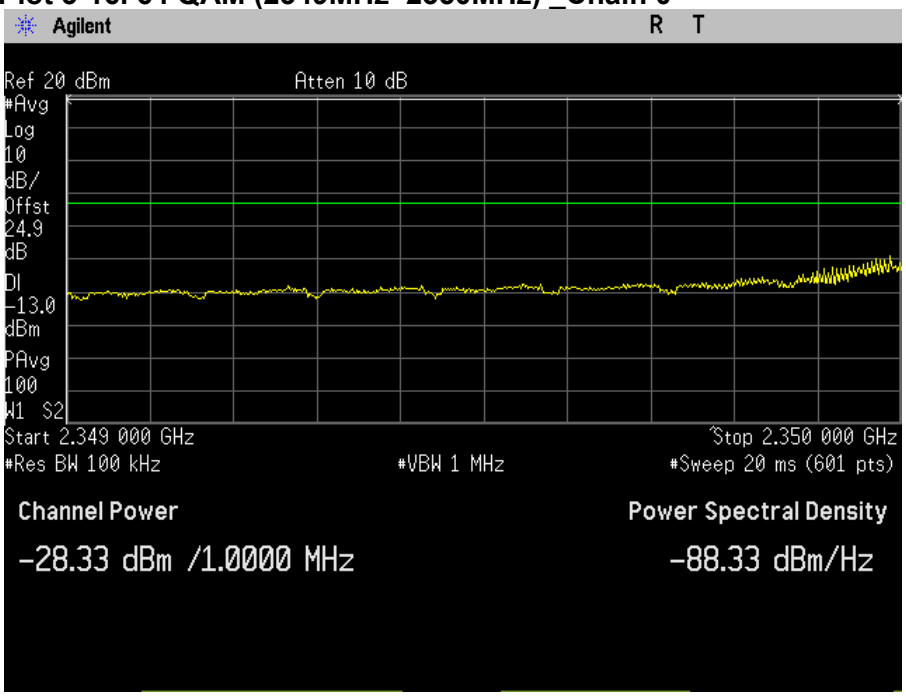
Plot 3-14. 64 QAM (2320MHz~2345MHz) _Chain 0



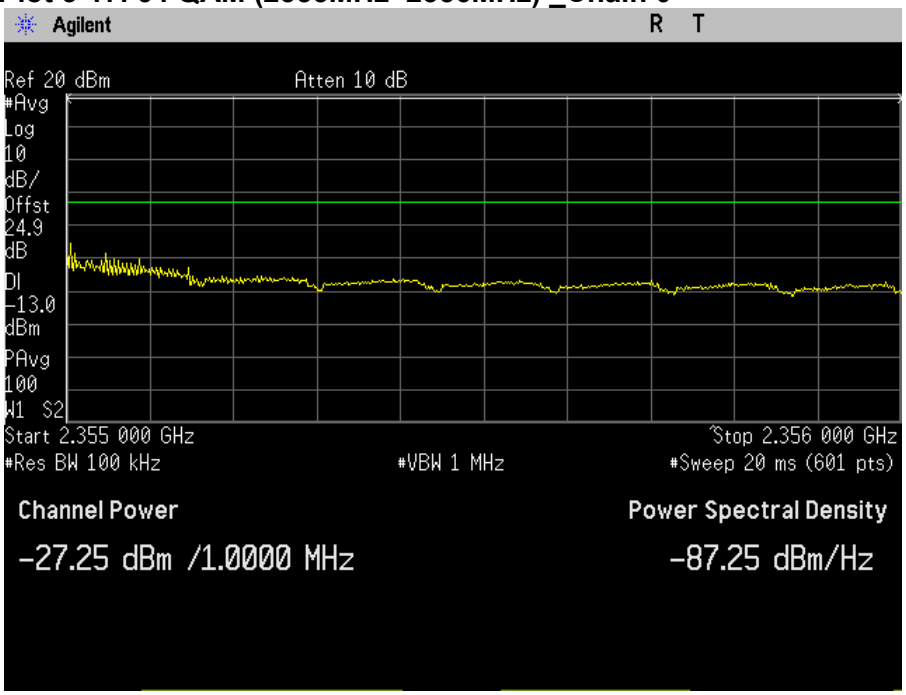
Plot 3-15. 64 QAM (2345MHz~2349MHz) _Chain 0



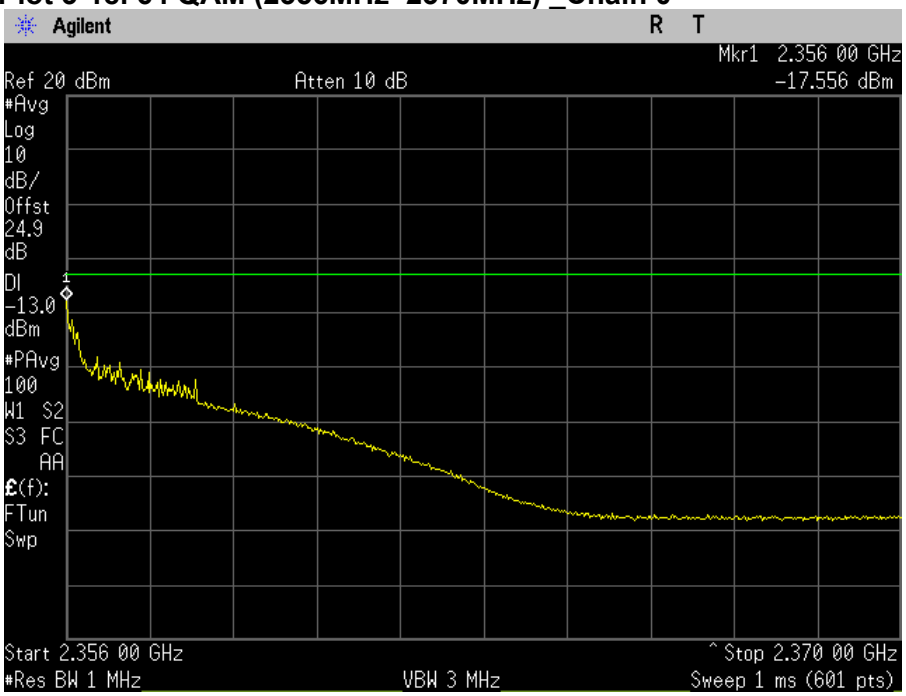
Plot 3-16. 64 QAM (2349MHz~2350MHz) _Chain 0



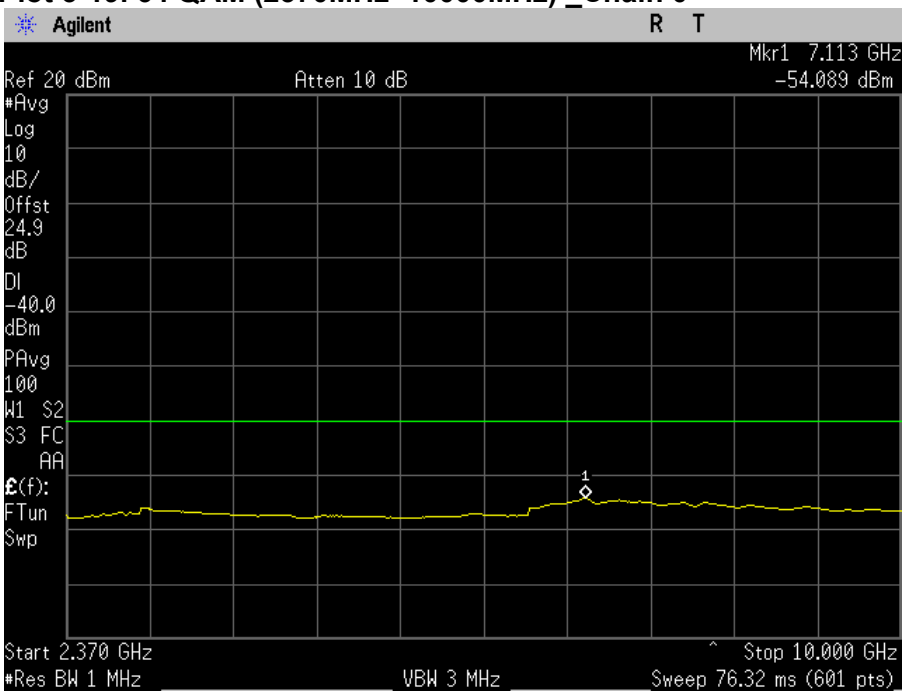
Plot 3-17. 64 QAM (2355MHz~2356MHz) _Chain 0



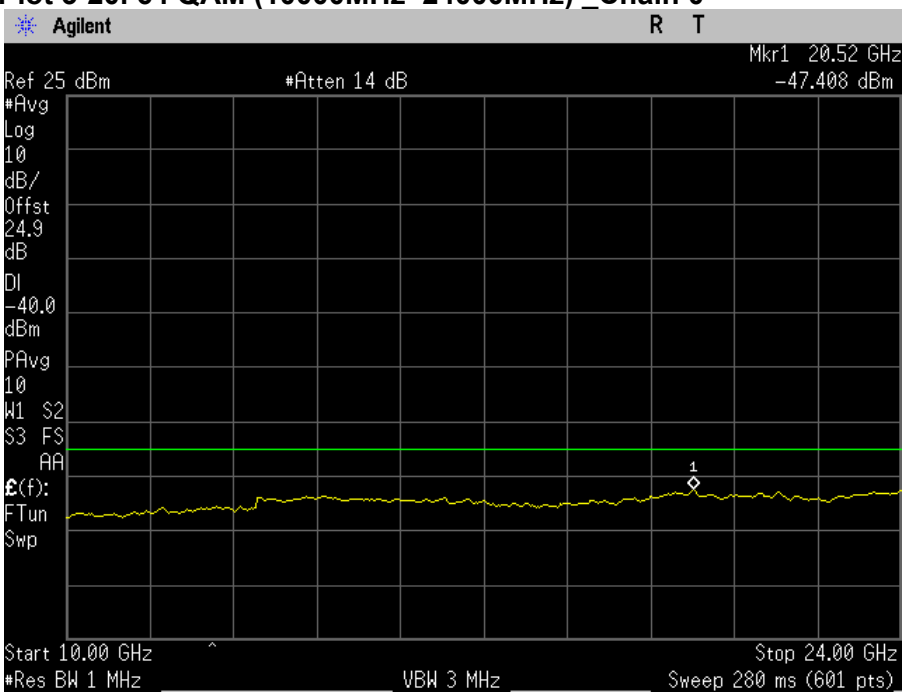
Plot 3-18. 64 QAM (2356MHz~2370MHz) _Chain 0



Plot 3-19. 64 QAM (2370MHz~10000MHz) _Chain 0

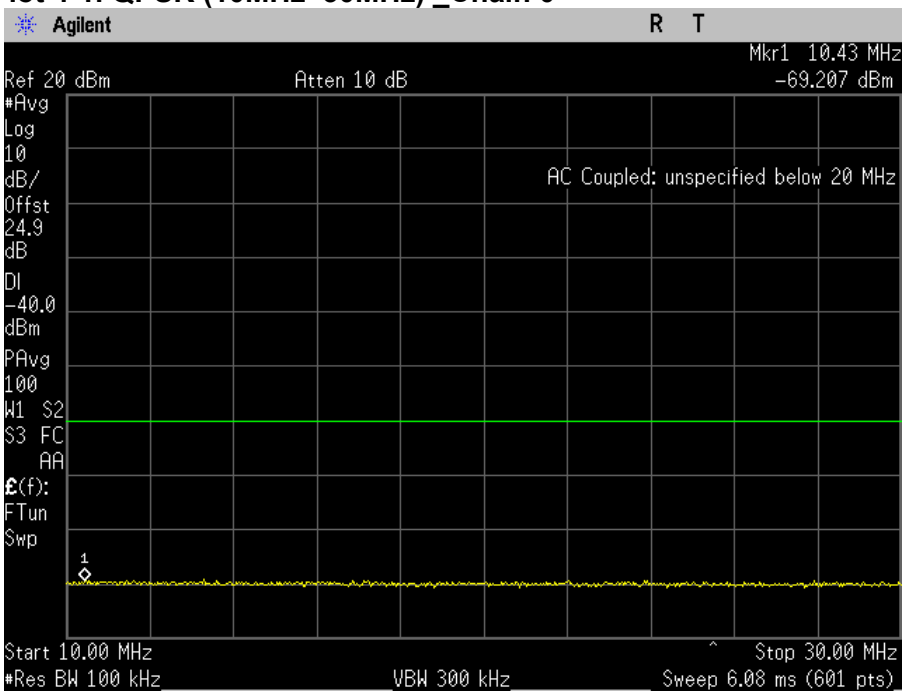


Plot 3-20. 64 QAM (10000MHz~24000MHz) _Chain 0

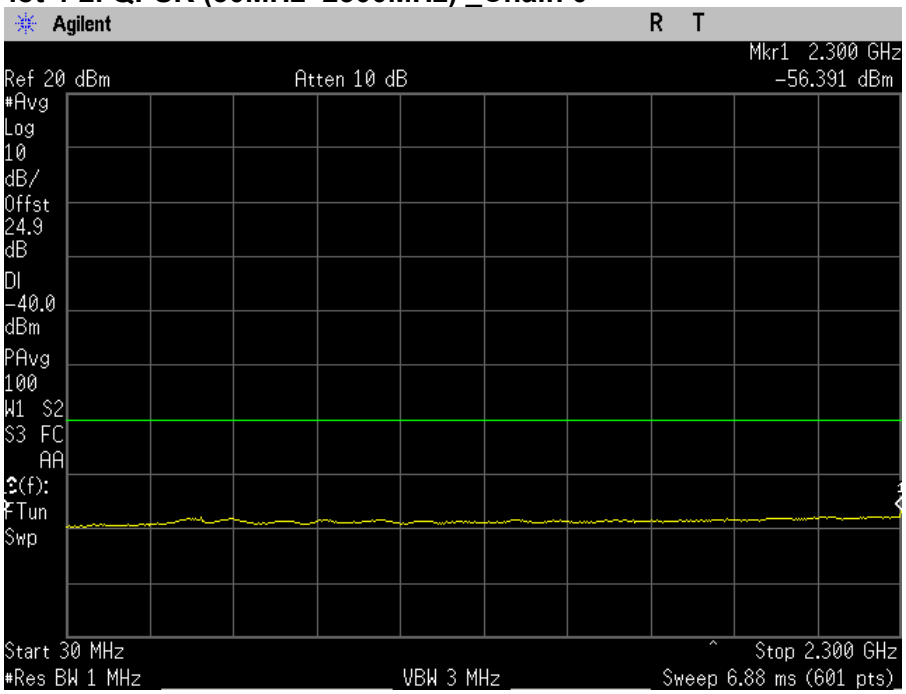


- **2357.5 MHz_5 MHz Bandwidth_Chain 0**

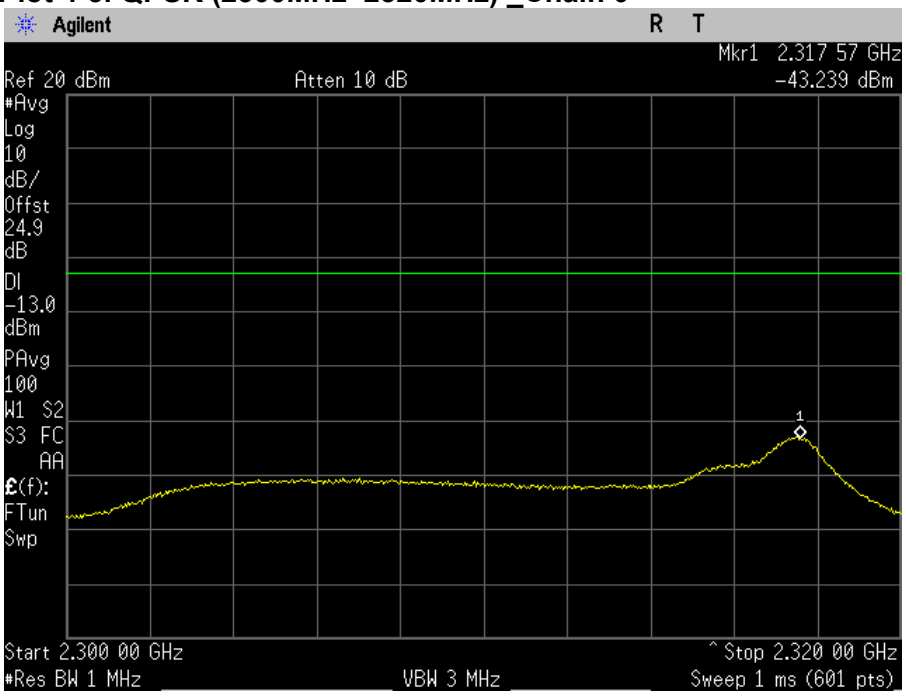
Plot 4-1. QPSK (10MHz~30MHz) _Chain 0



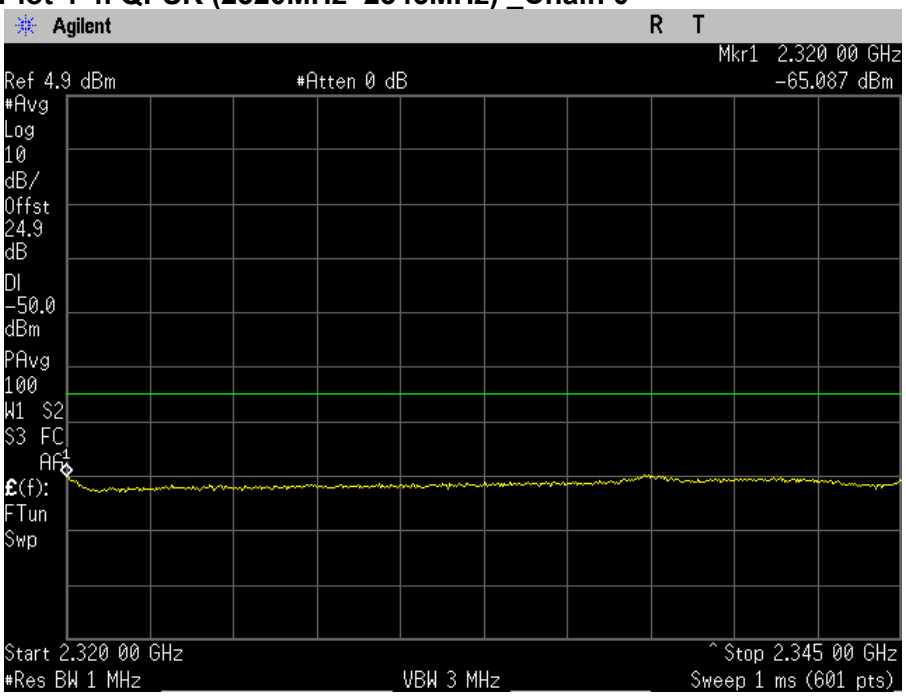
Plot 4-2. QPSK (30MHz~2300MHz) _Chain 0



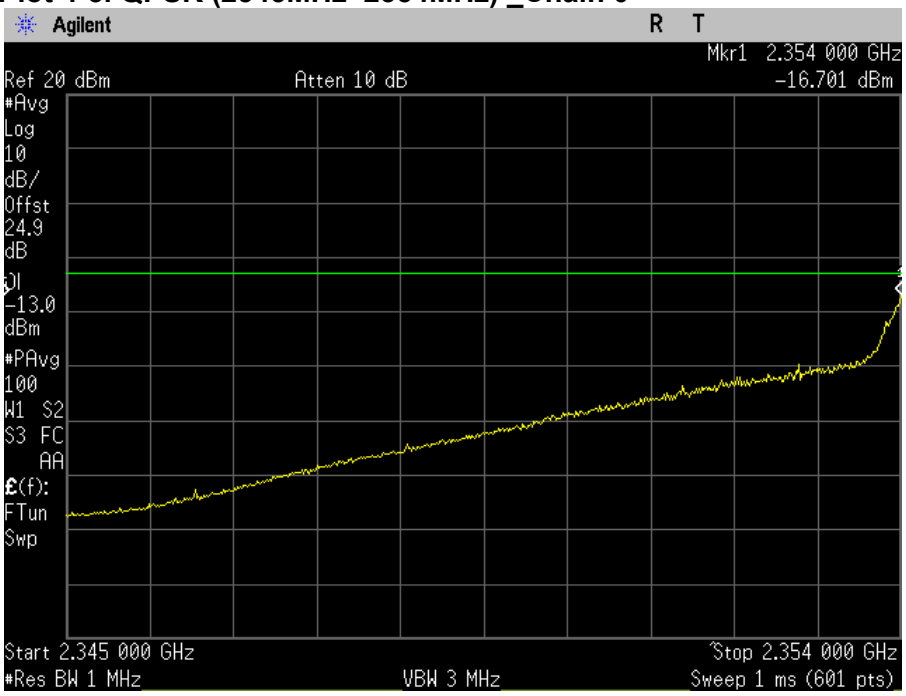
Plot 4-3. QPSK (2300MHz~2320MHz) _Chain 0



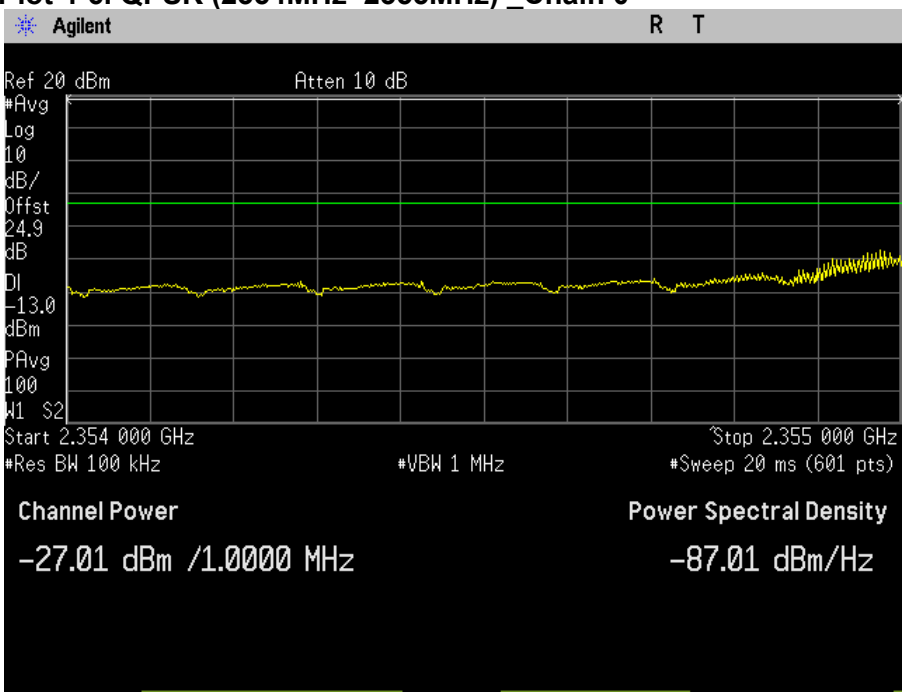
Plot 4-4. QPSK (2320MHz~2345MHz) _Chain 0



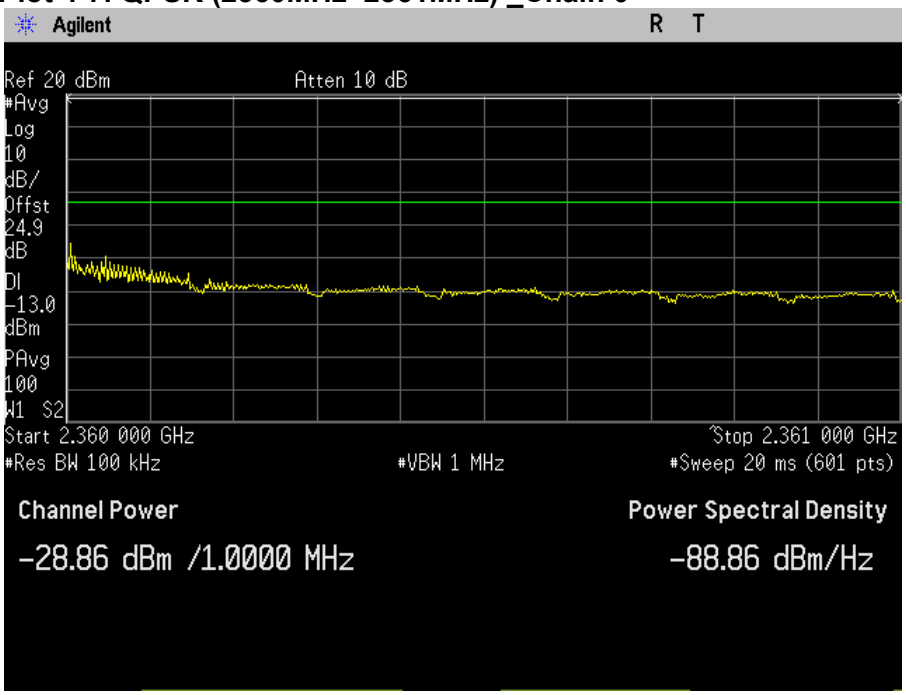
Plot 4-5. QPSK (2345MHz~2354MHz) _Chain 0



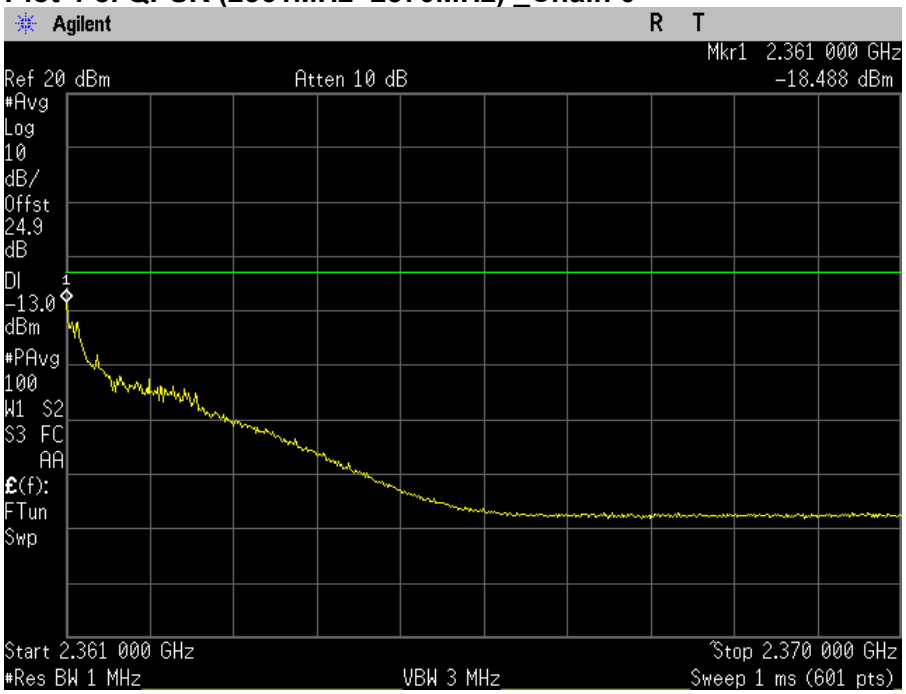
Plot 4-6. QPSK (2354MHz~2355MHz) _Chain 0



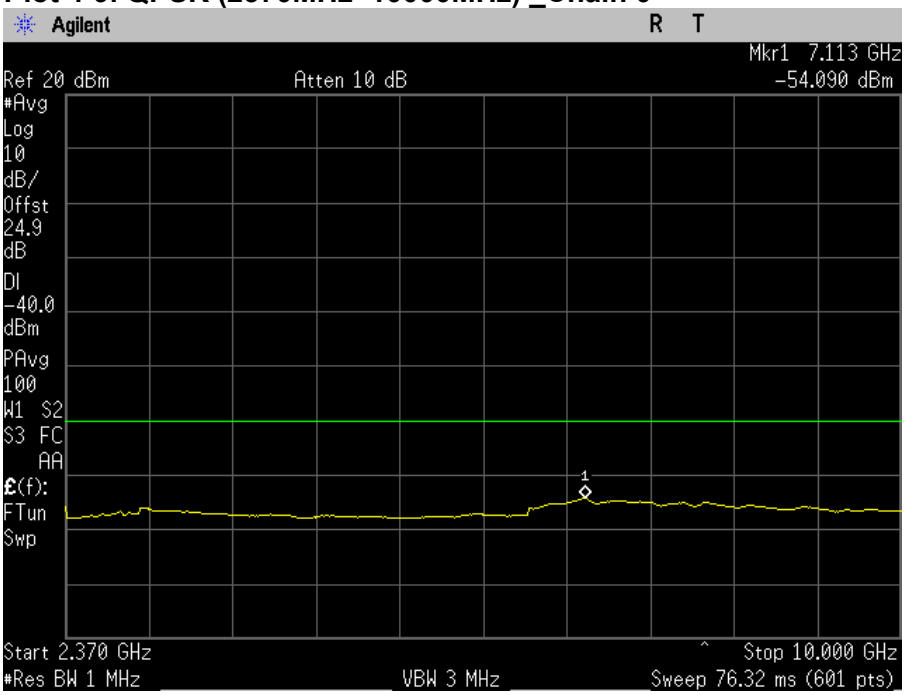
Plot 4-7. QPSK (2360MHz~2361MHz) _Chain 0



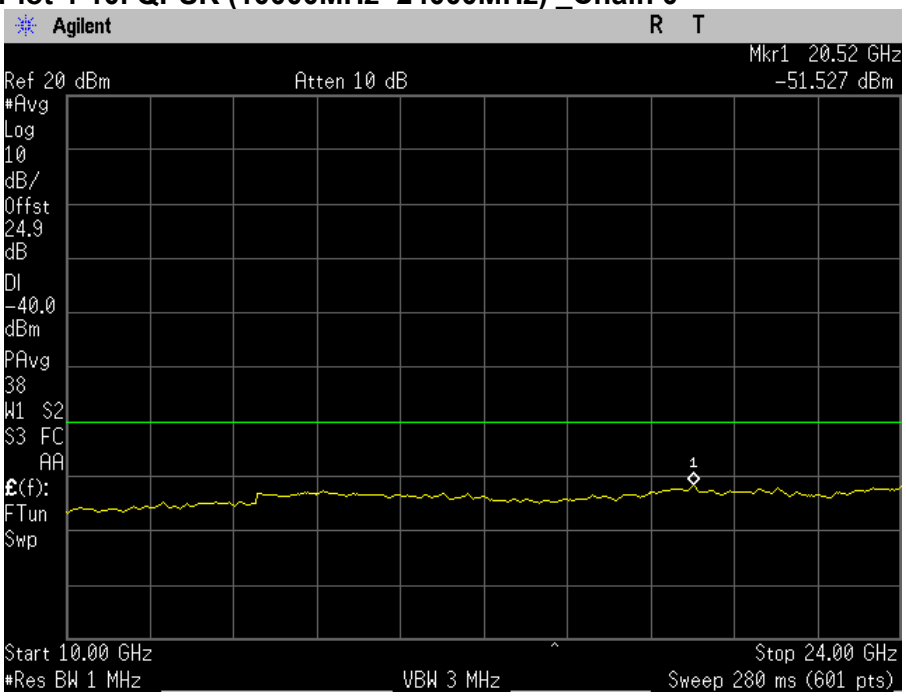
Plot 4-8. QPSK (2361MHz~2370MHz) _Chain 0



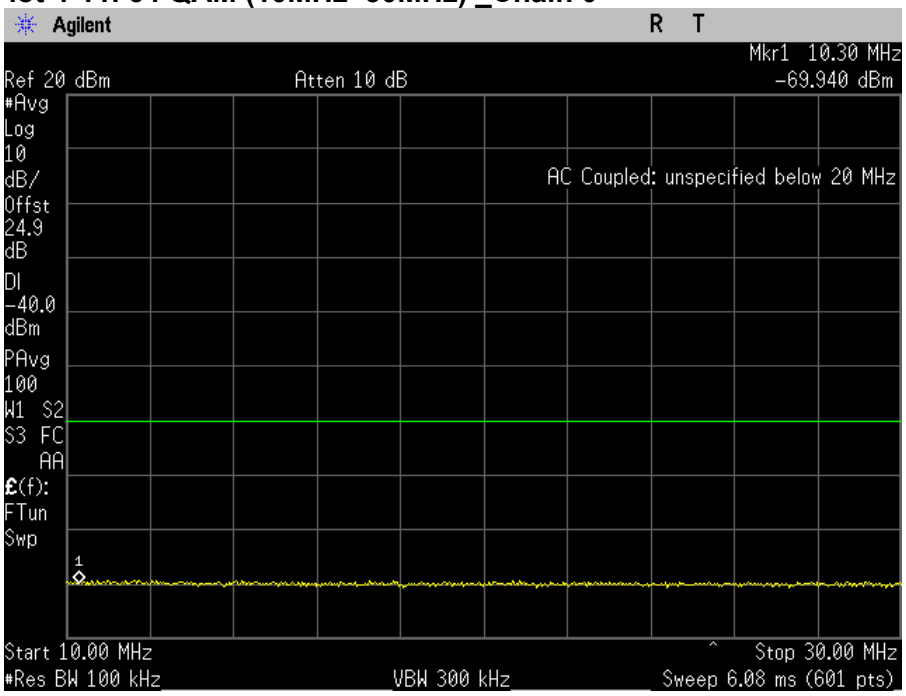
Plot 4-9. QPSK (2370MHz~10000MHz) _Chain 0



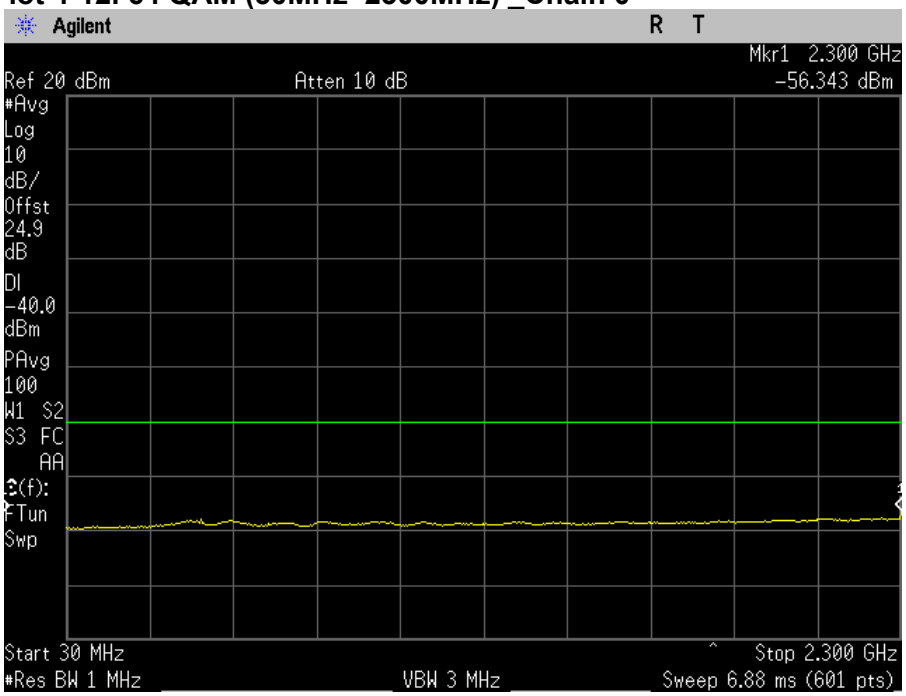
Plot 4-10. QPSK (10000MHz~24000MHz) _Chain 0



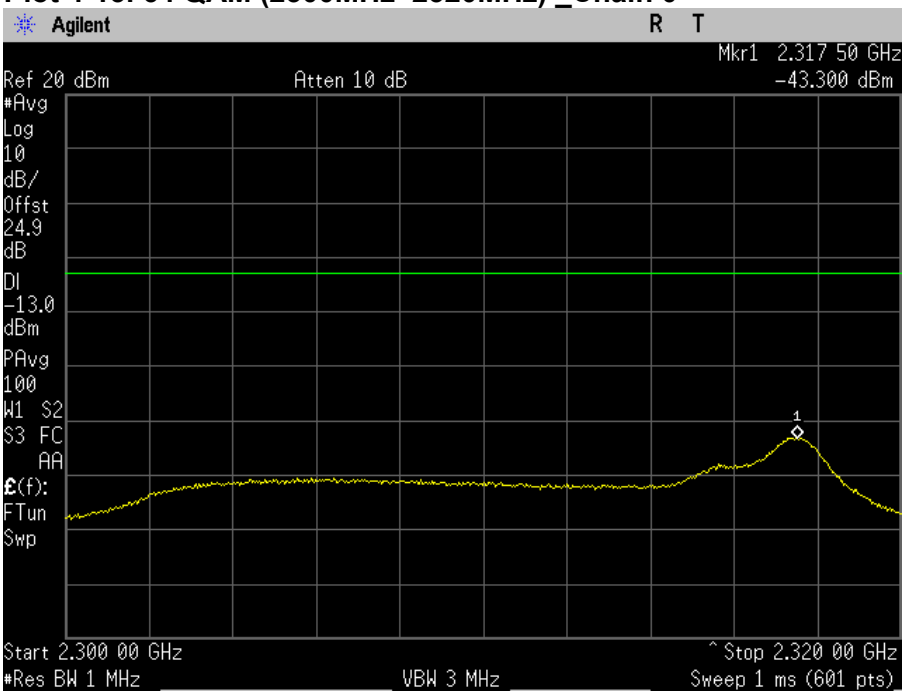
Plot 4-11. 64 QAM (10MHz~30MHz) _Chain 0



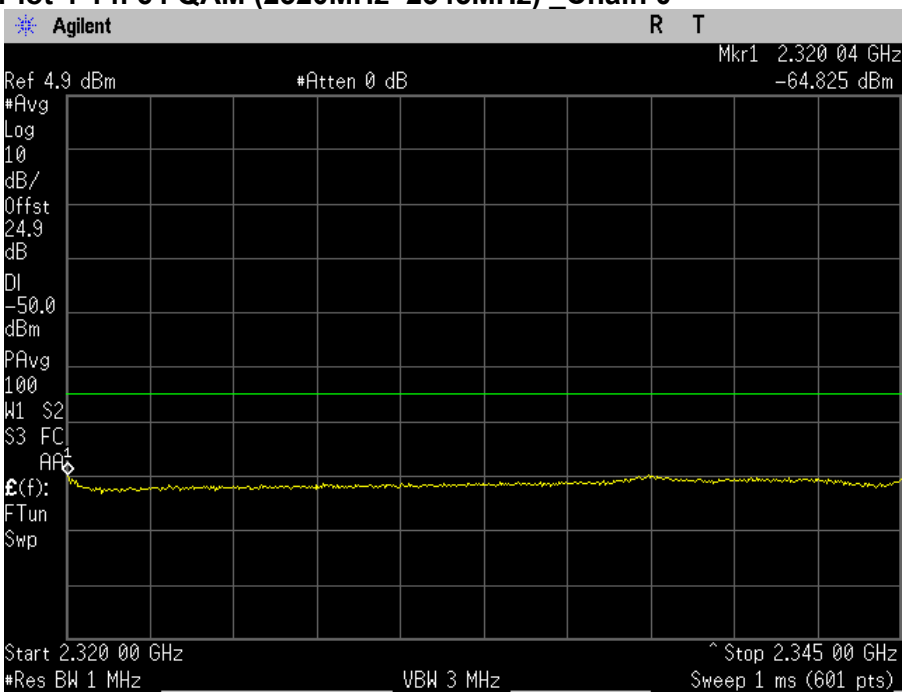
Plot 4-12. 64 QAM (30MHz~2300MHz) _Chain 0



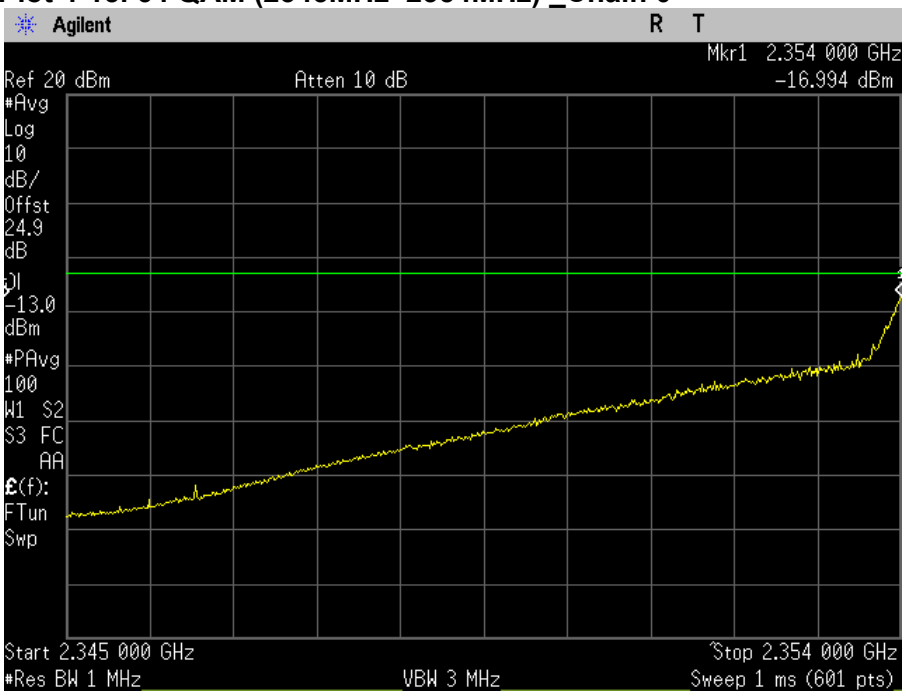
Plot 4-13. 64 QAM (2300MHz~2320MHz) _Chain 0



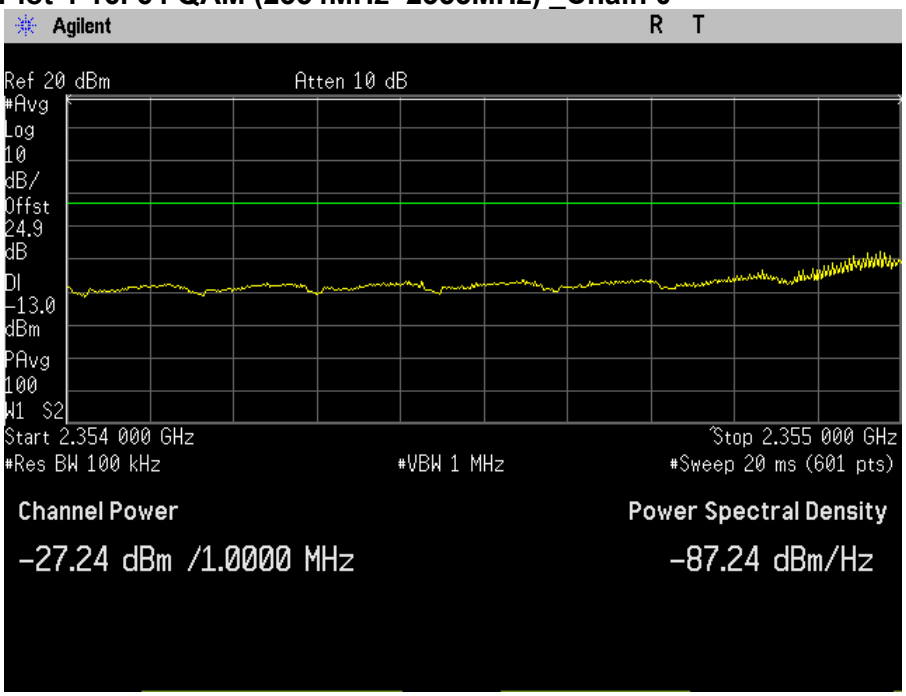
Plot 4-14. 64 QAM (2320MHz~2345MHz) _Chain 0



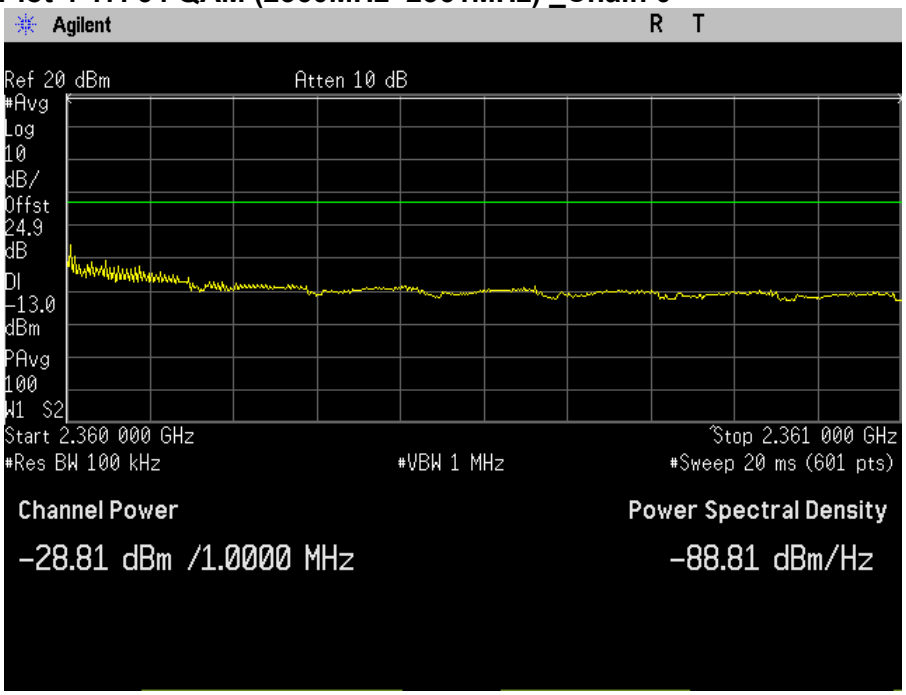
Plot 4-15. 64 QAM (2345MHz~2354MHz) _Chain 0



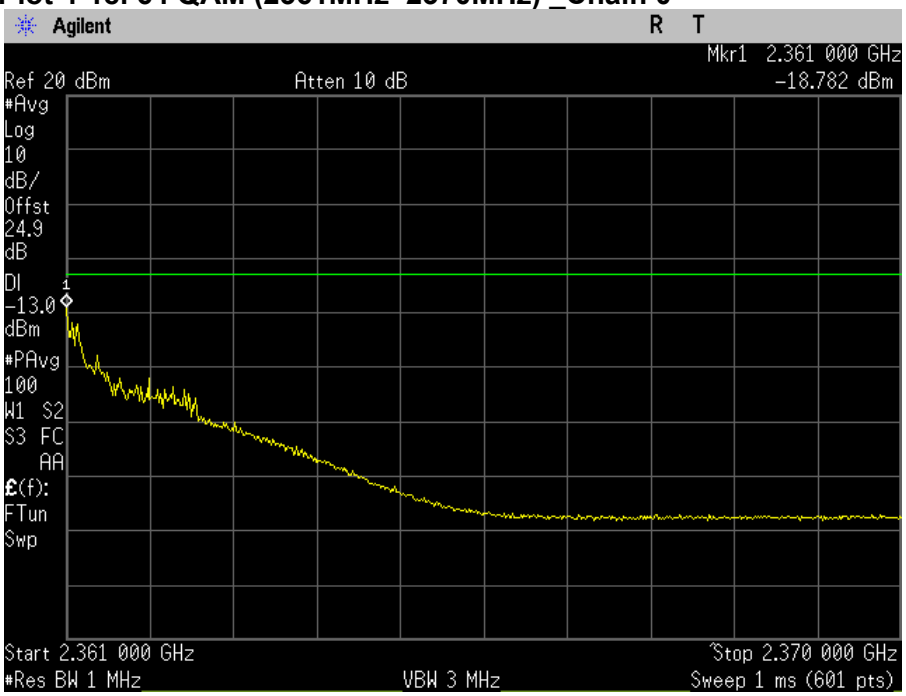
Plot 4-16. 64 QAM (2354MHz~2355MHz) _Chain 0



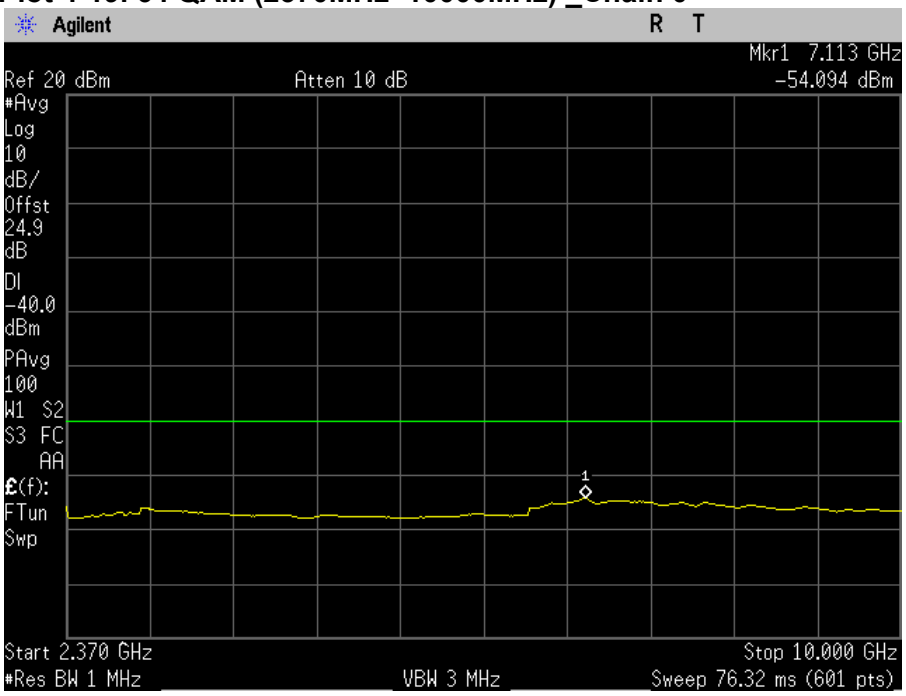
Plot 4-17. 64 QAM (2360MHz~2361MHz) _Chain 0



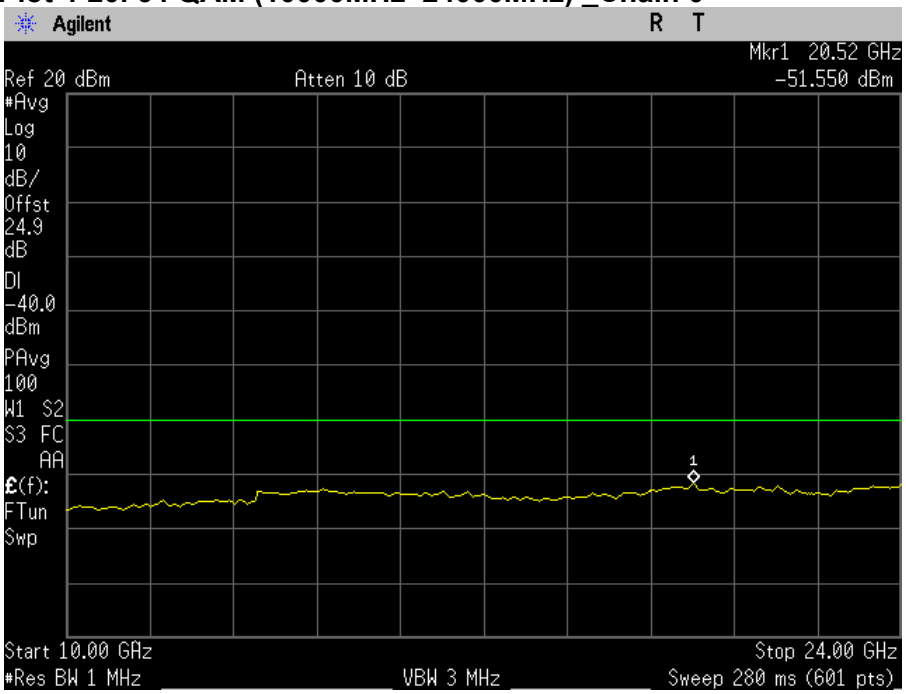
Plot 4-18. 64 QAM (2361MHz~2370MHz) _Chain 0



Plot 4-19. 64 QAM (2370MHz~10000MHz) _Chain 0



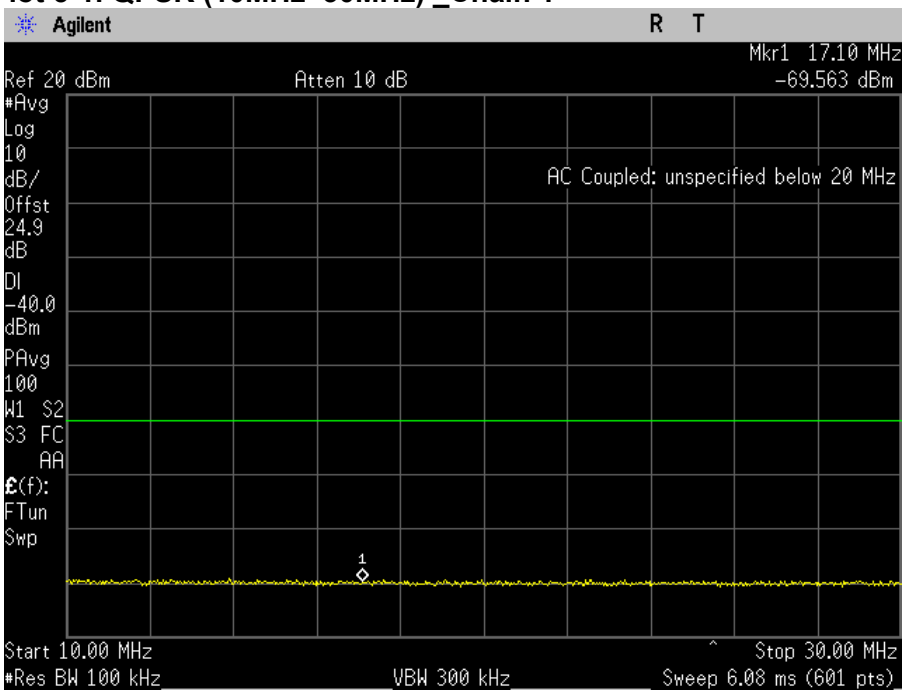
Plot 4-20. 64 QAM (10000MHz~24000MHz) _Chain 0



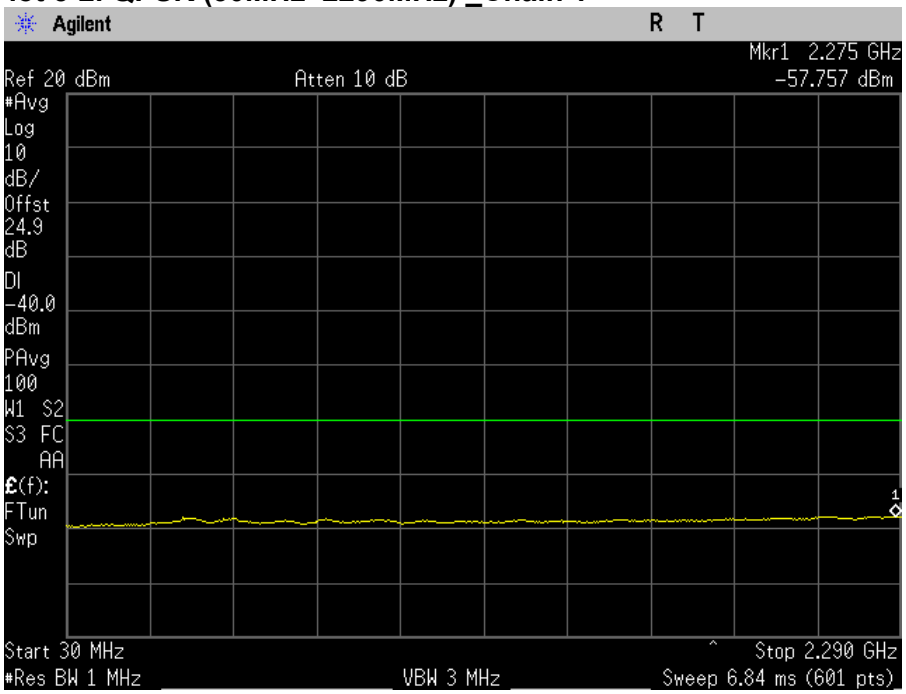
9.3.2. Test Plots (5 MHz Bandwidth_Chain 1)

- **2307.5 MHz_5 MHz Bandwidth_Chain 1**

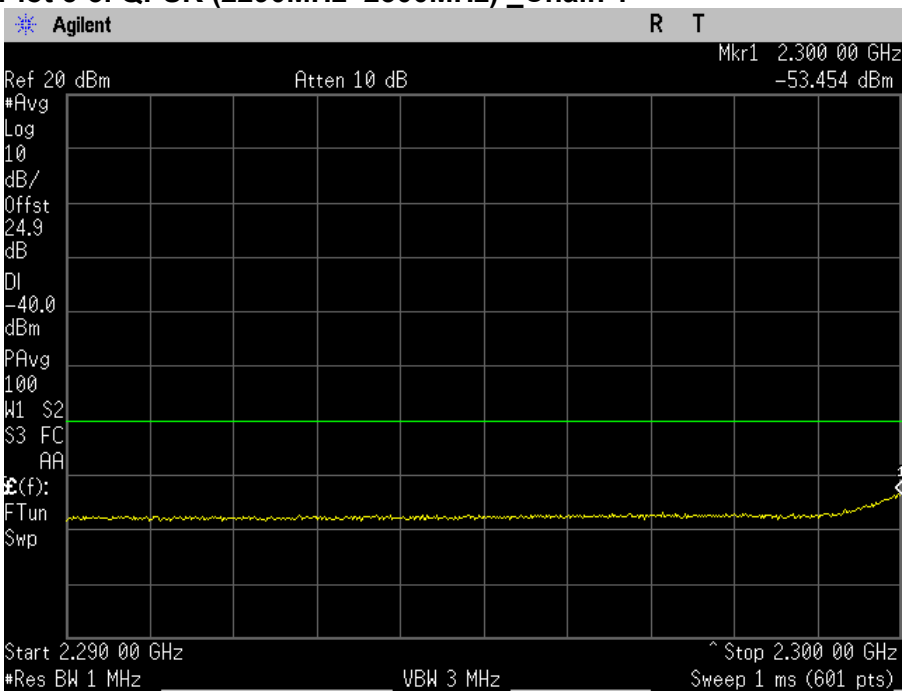
Plot 5-1. QPSK (10MHz~30MHz) _Chain 1



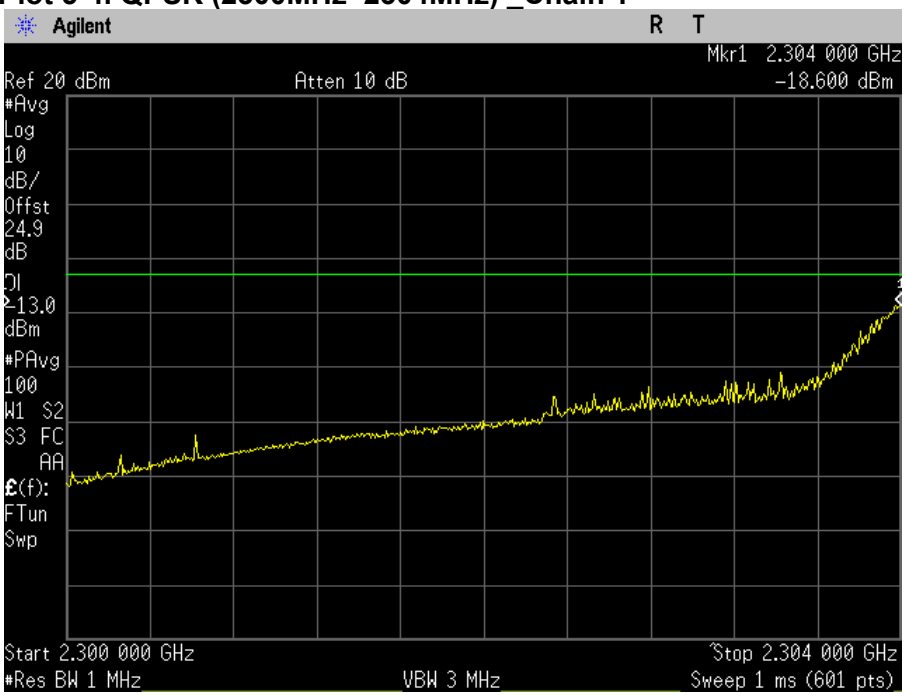
Plot 5-2. QPSK (30MHz~2290MHz) _Chain 1



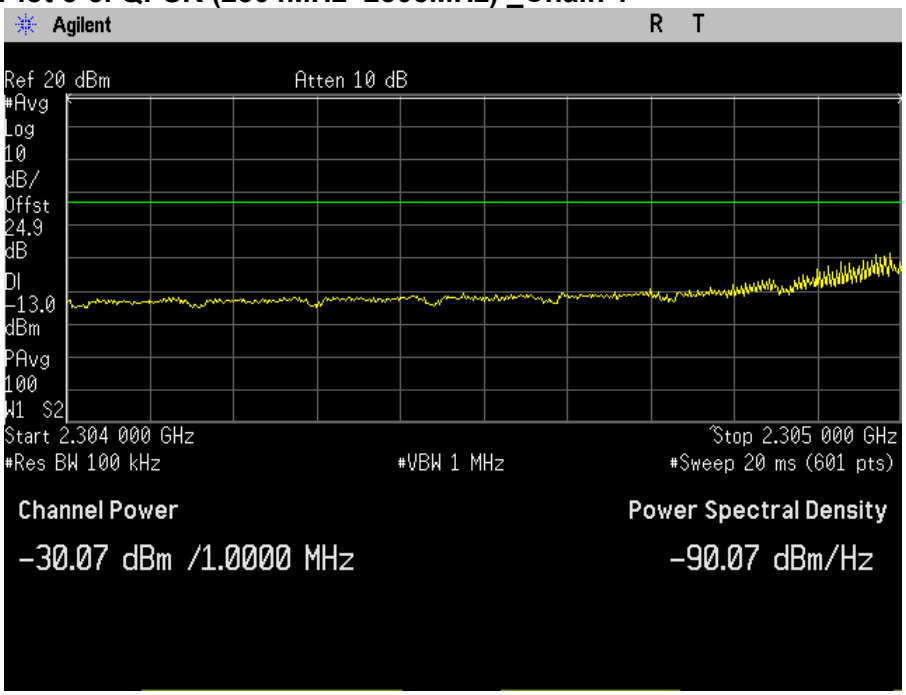
Plot 5-3. QPSK (2290MHz~2300MHz) _Chain 1



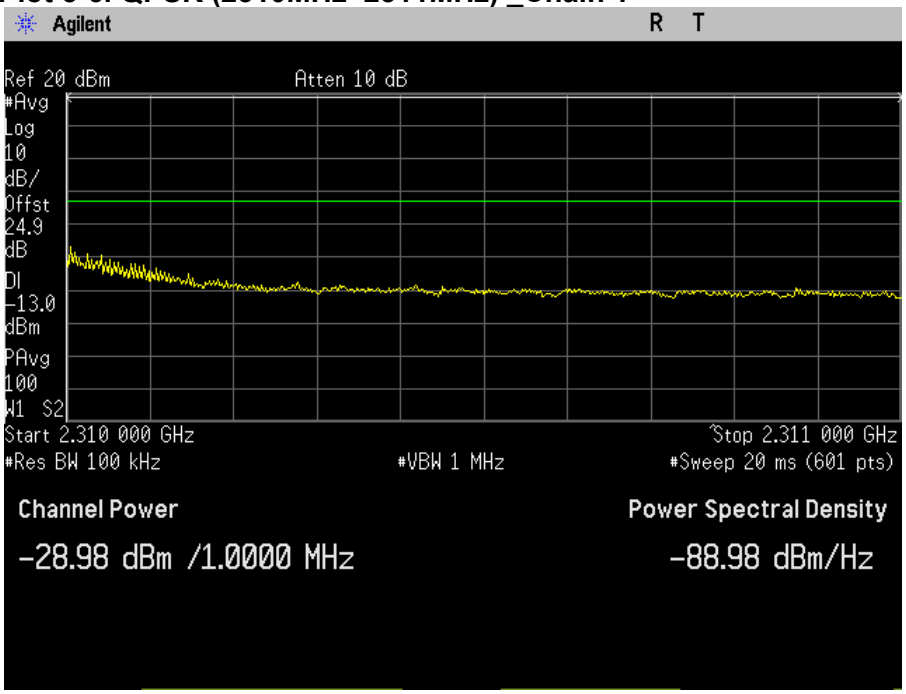
Plot 5-4. QPSK (2300MHz~2304MHz) _Chain 1



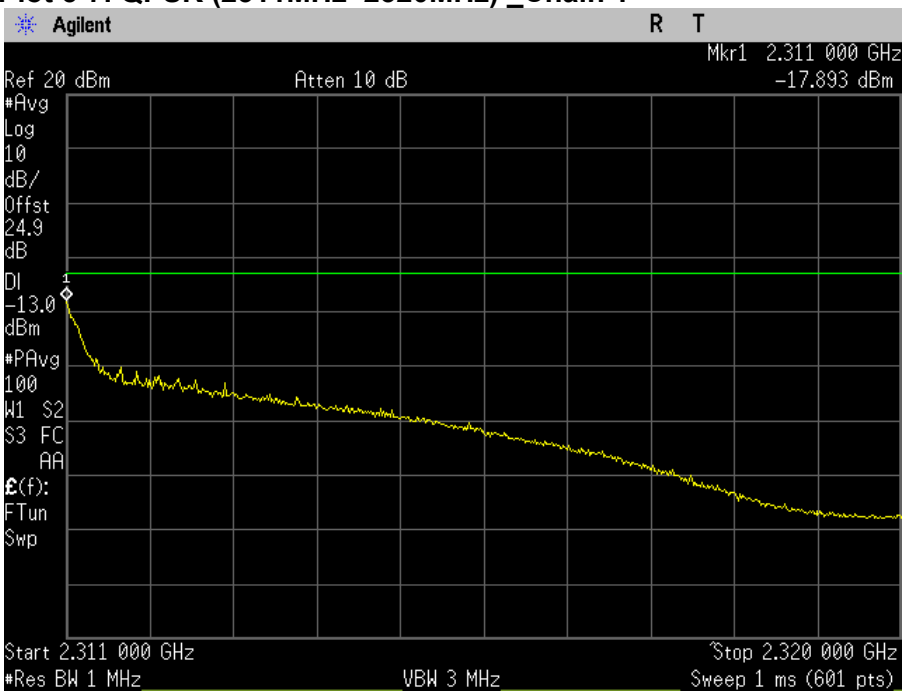
Plot 5-5. QPSK (2304MHz~2305MHz) _Chain 1



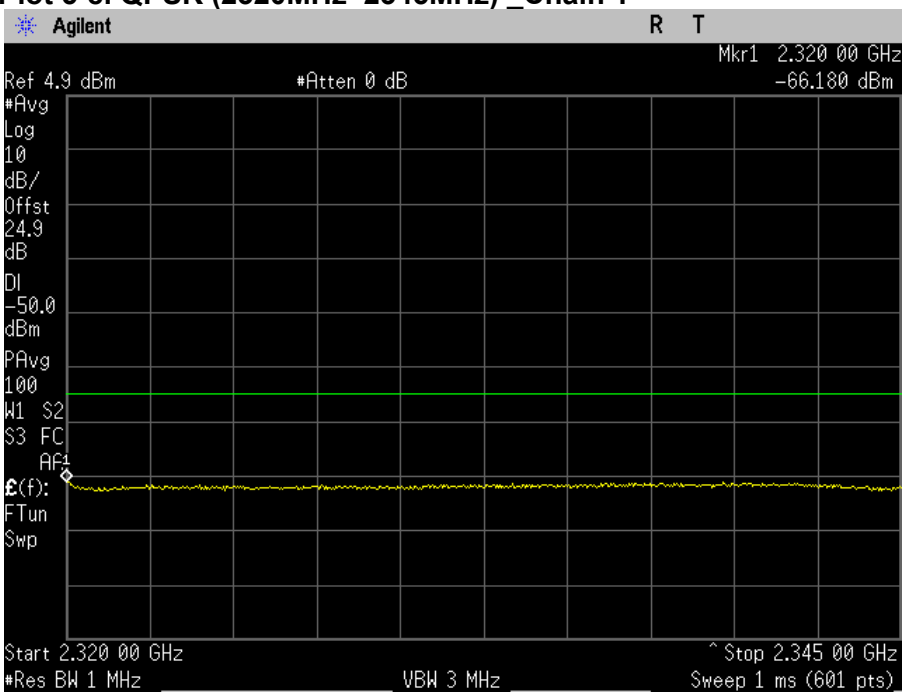
Plot 5-6. QPSK (2310MHz~2311MHz) _Chain 1



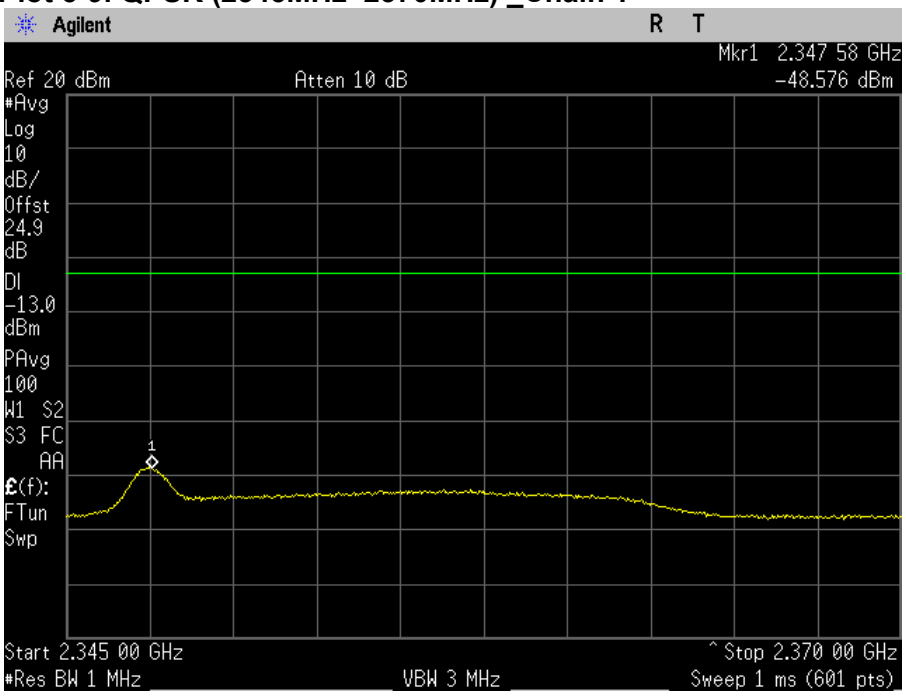
Plot 5-7. QPSK (2311MHz~2320MHz) _Chain 1



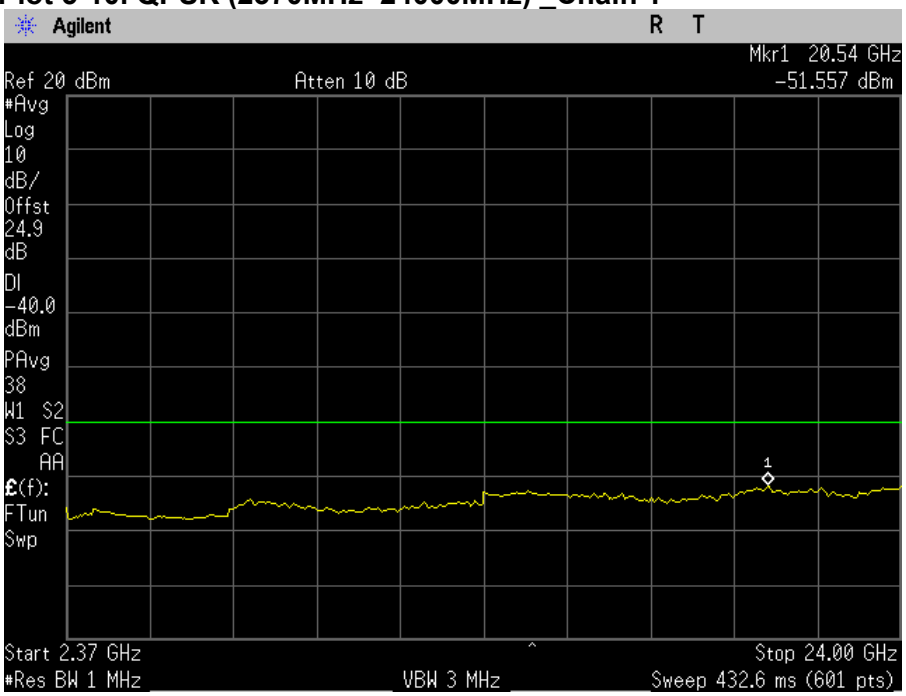
Plot 5-8. QPSK (2320MHz~2345MHz) _Chain 1



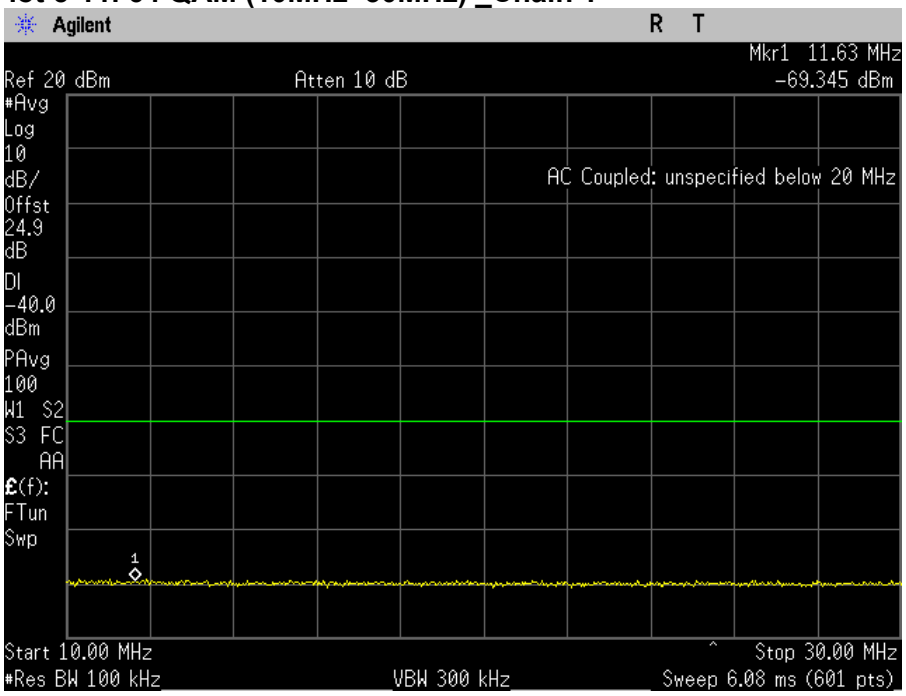
Plot 5-9. QPSK (2345MHz~2370MHz) _Chain 1



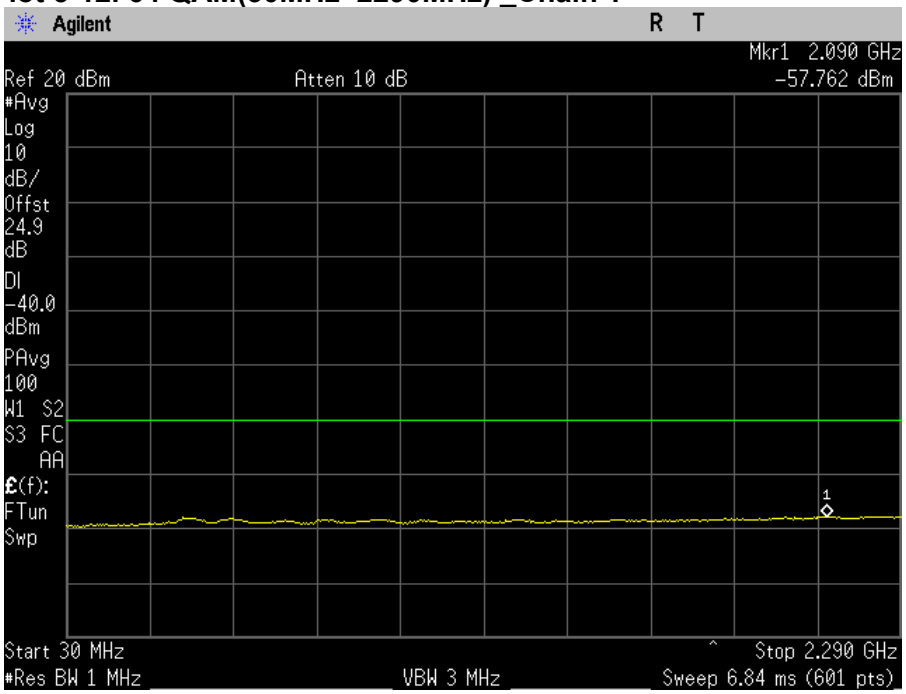
Plot 5-10. QPSK (2370MHz~24000MHz) _Chain 1



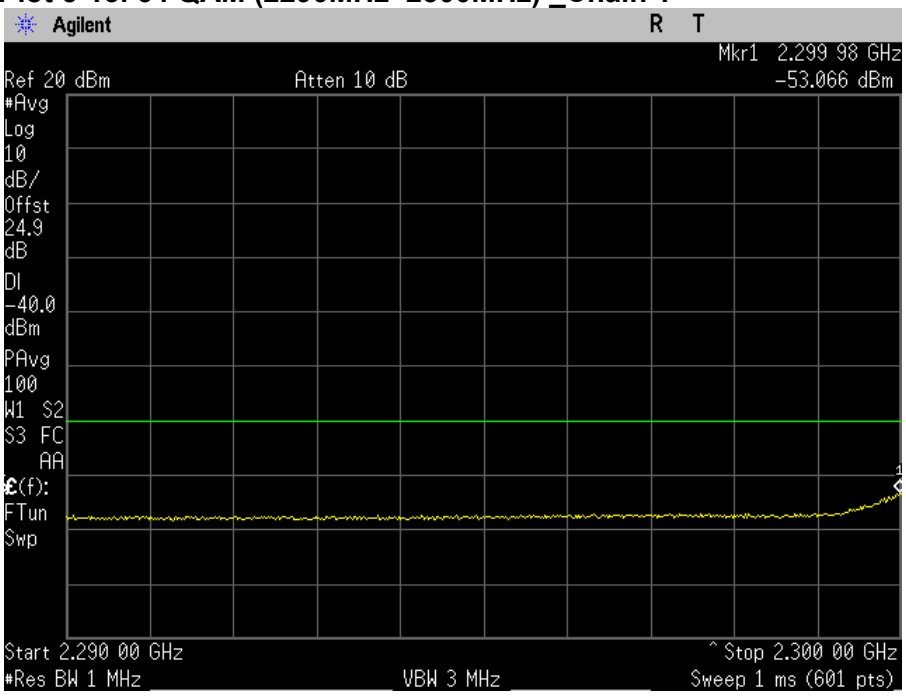
Plot 5-11. 64 QAM (10MHz~30MHz) _Chain 1



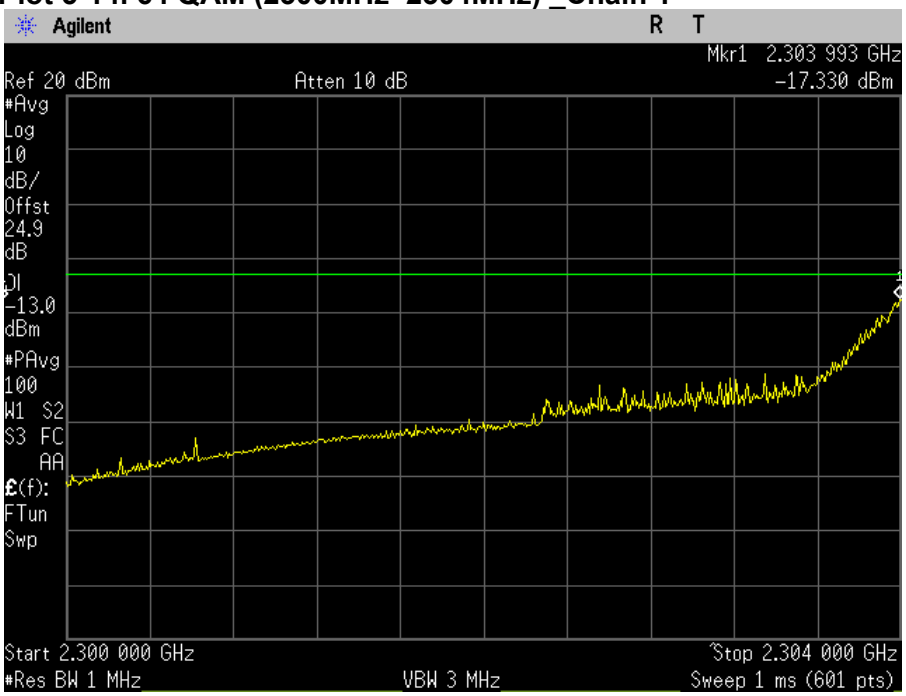
Plot 5-12. 64 QAM(30MHz~2290MHz) _Chain 1



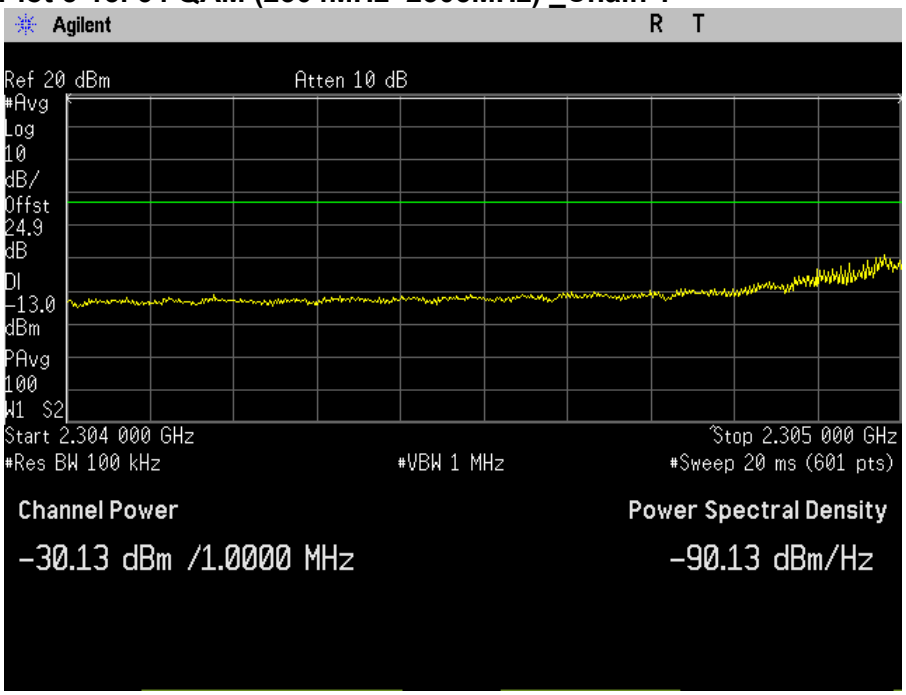
Plot 5-13. 64 QAM (2290MHz~2300MHz) _Chain 1



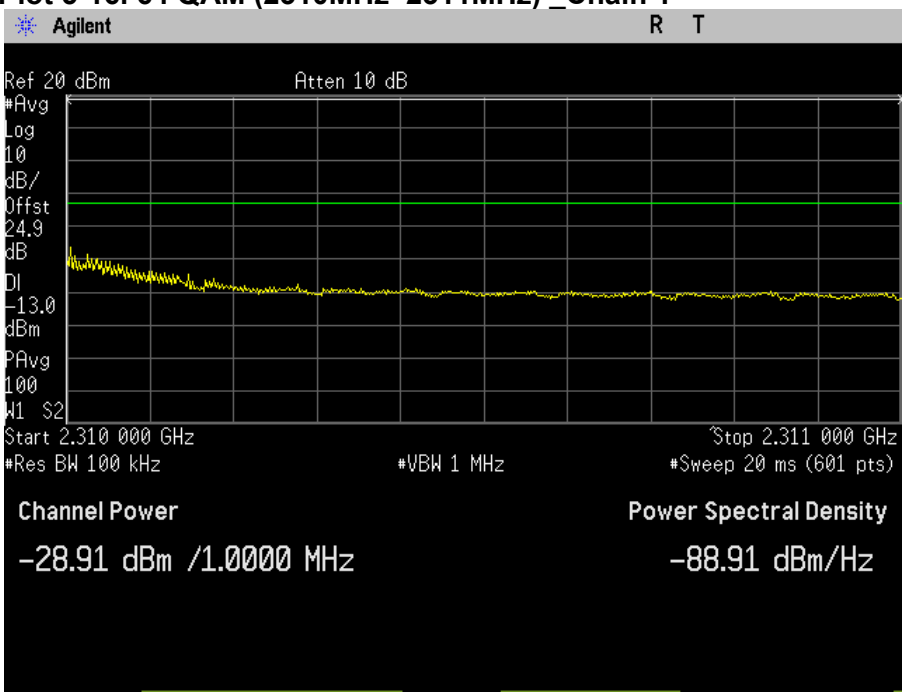
Plot 5-14. 64 QAM (2300MHz~2304MHz) _Chain 1



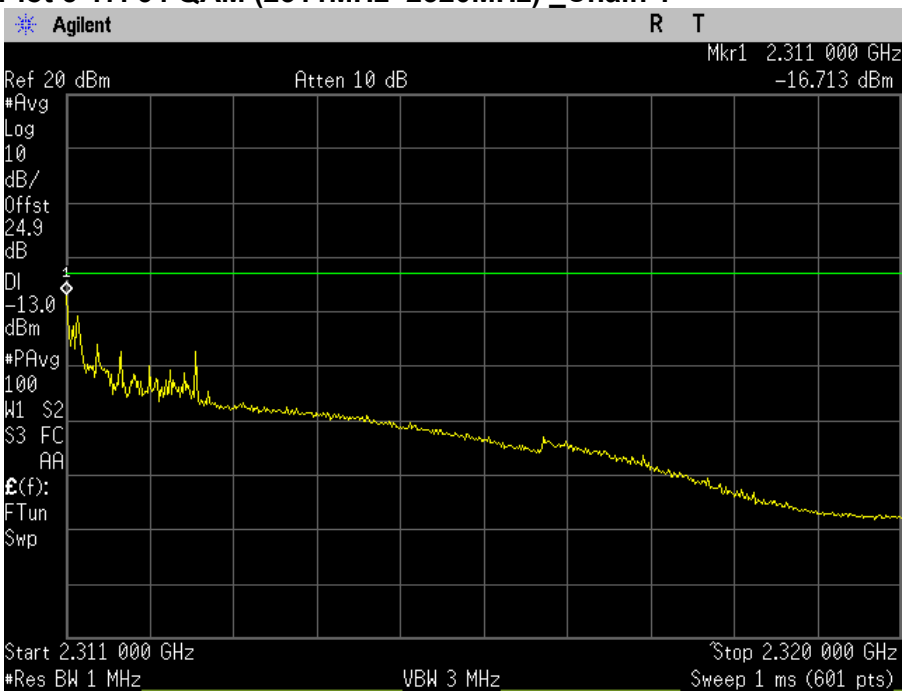
Plot 5-15. 64 QAM (2304MHz~2305MHz) _Chain 1



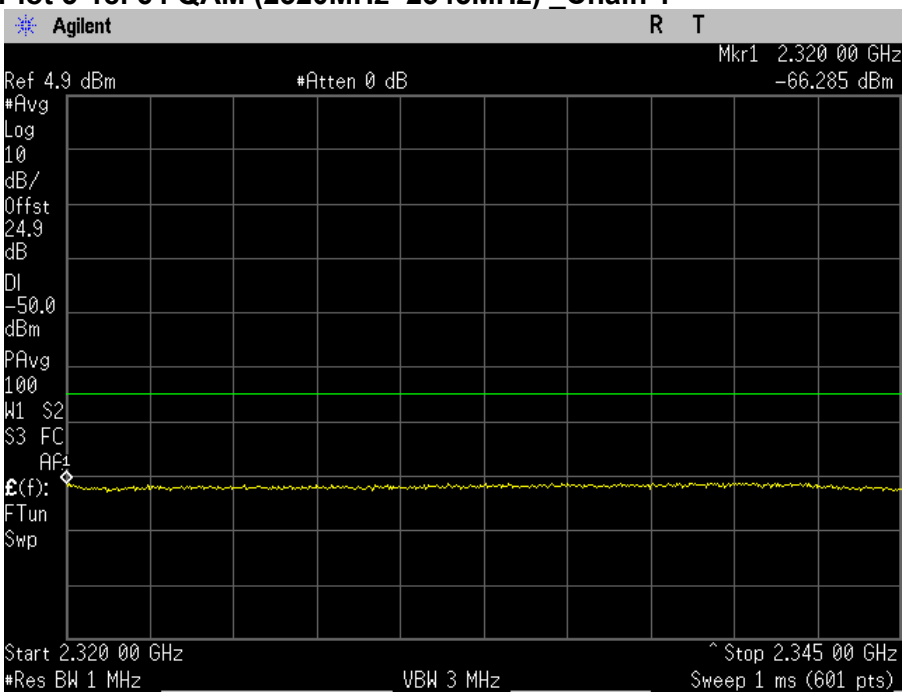
Plot 5-16. 64 QAM (2310MHz~2311MHz) _Chain 1



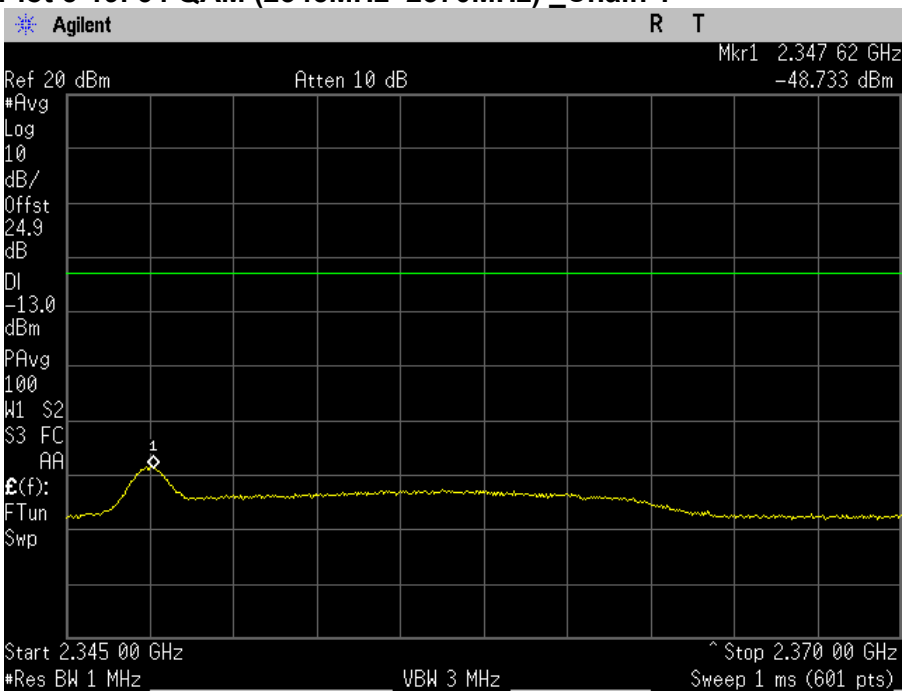
Plot 5-17. 64 QAM (2311MHz~2320MHz) _Chain 1



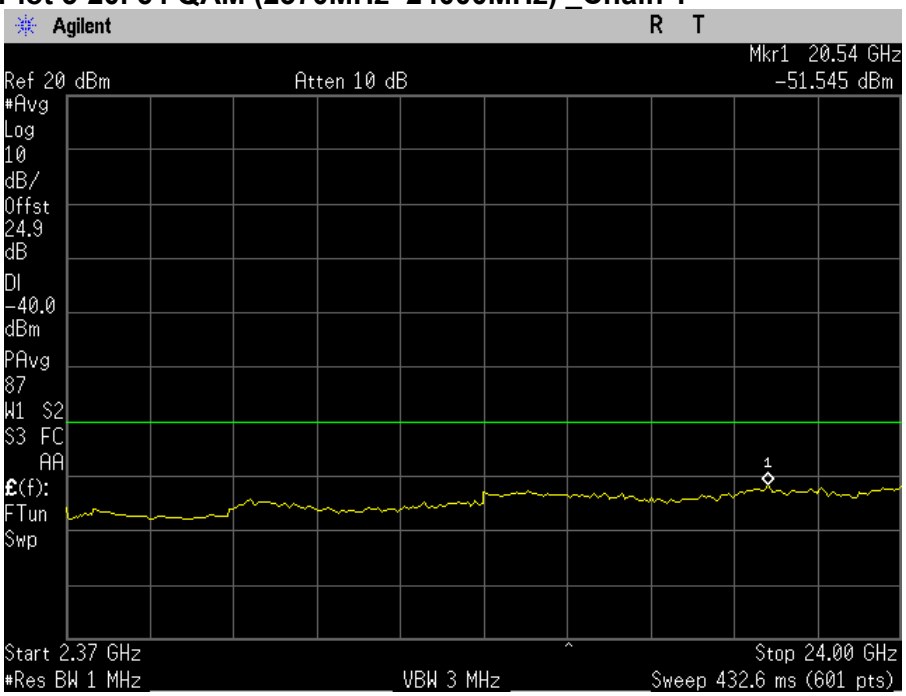
Plot 5-18. 64 QAM (2320MHz~2345MHz) _Chain 1



Plot 5-19. 64 QAM (2345MHz~2370MHz) _Chain 1

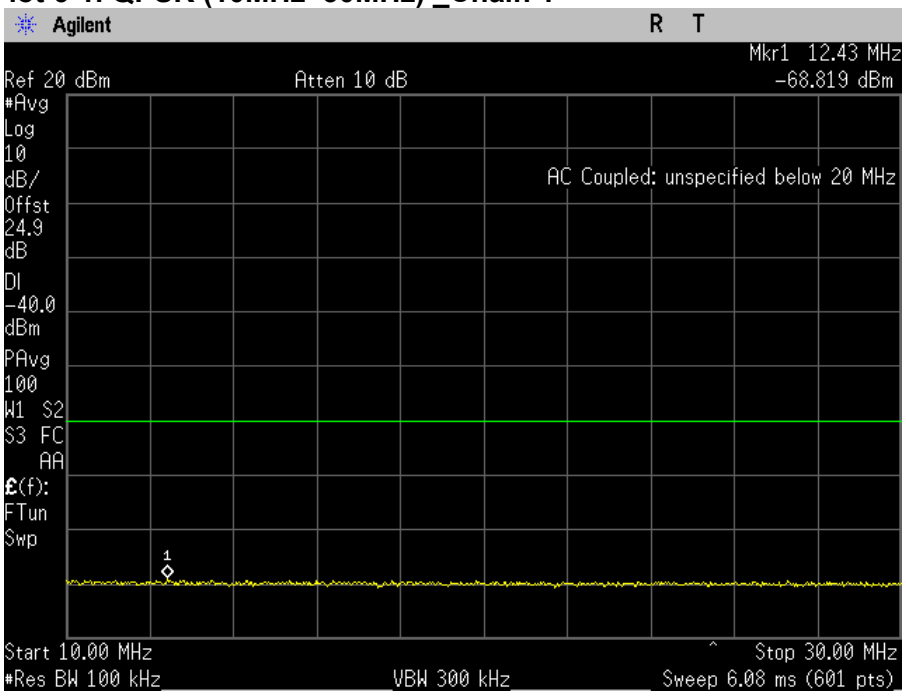


Plot 5-20. 64 QAM (2370MHz~24000MHz) _Chain 1

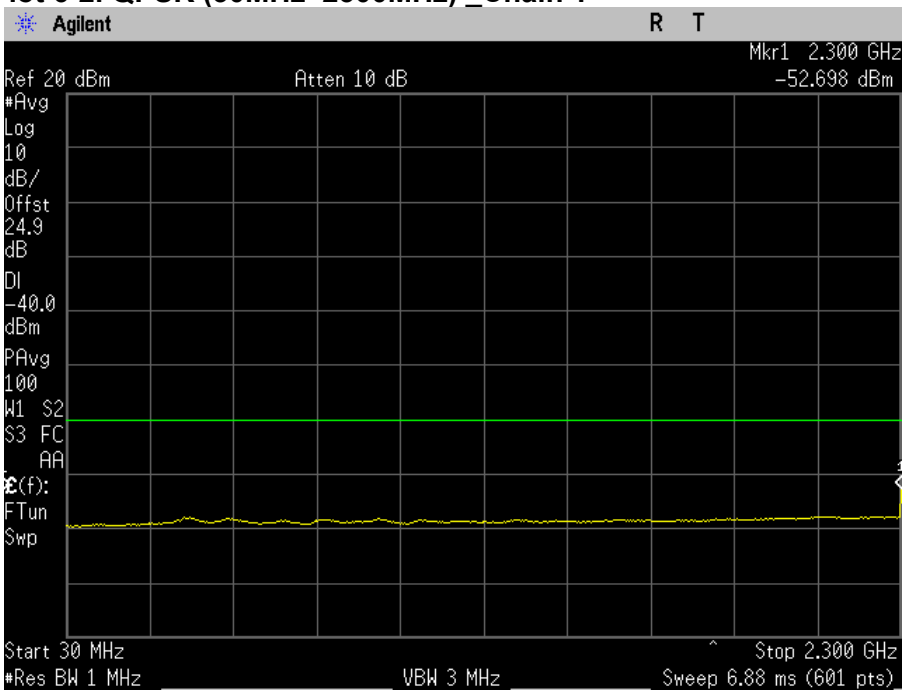


- **2312.5 MHz_5 MHz Bandwidth__Chain 1**

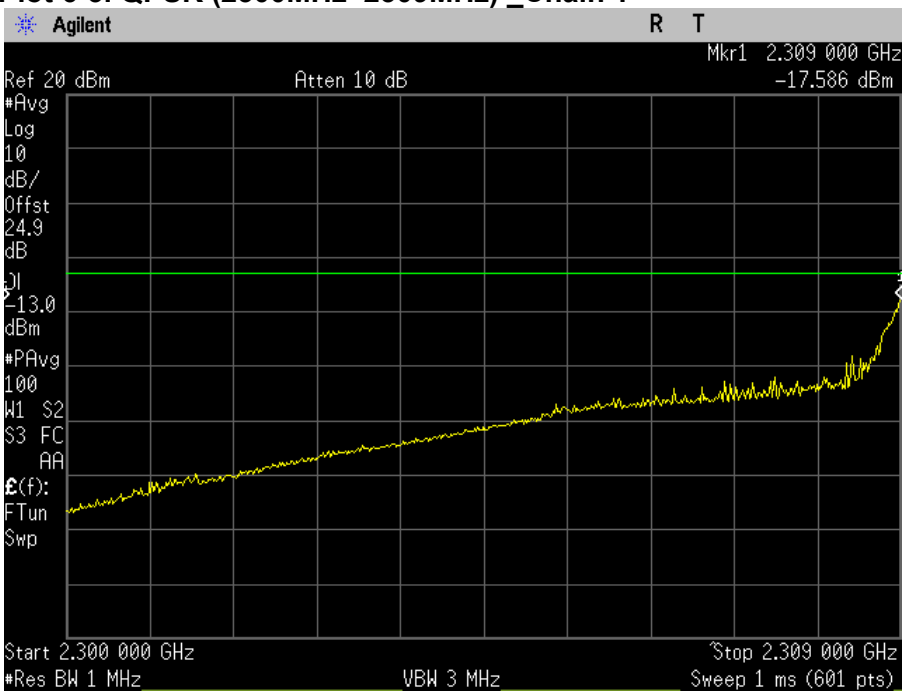
Plot 6-1. QPSK (10MHz~30MHz) _Chain 1



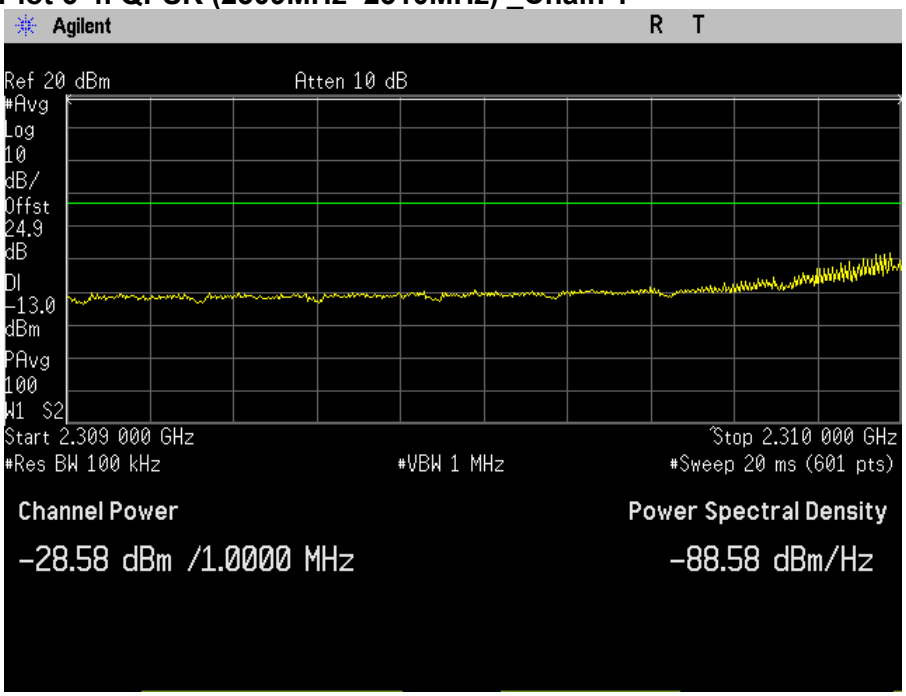
Plot 6-2. QPSK (30MHz~2300MHz) _Chain 1



Plot 6-3. QPSK (2300MHz~2309MHz) _Chain 1

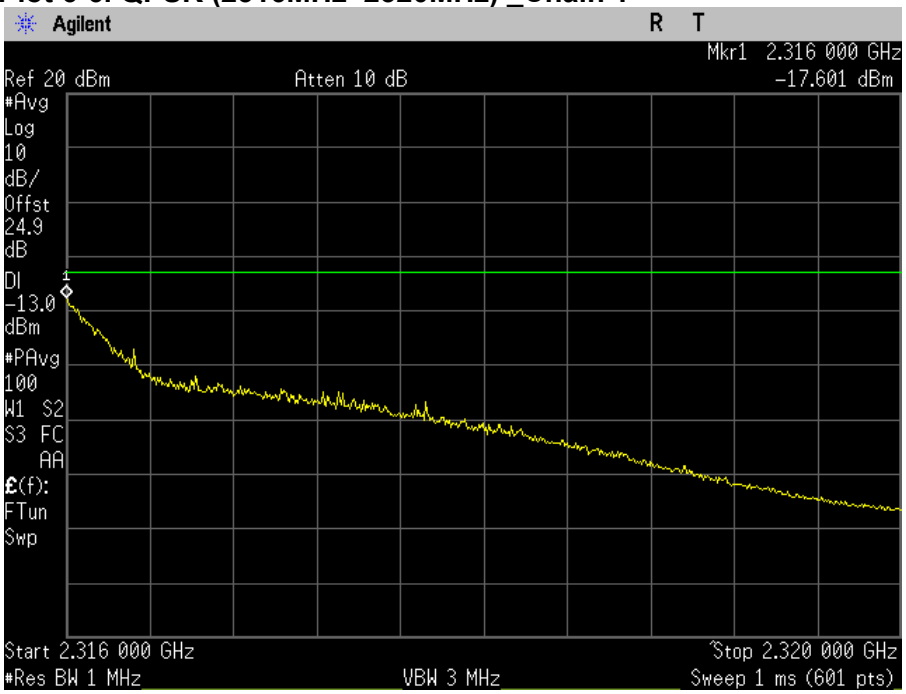


Plot 6-4. QPSK (2309MHz~2310MHz) _Chain 1

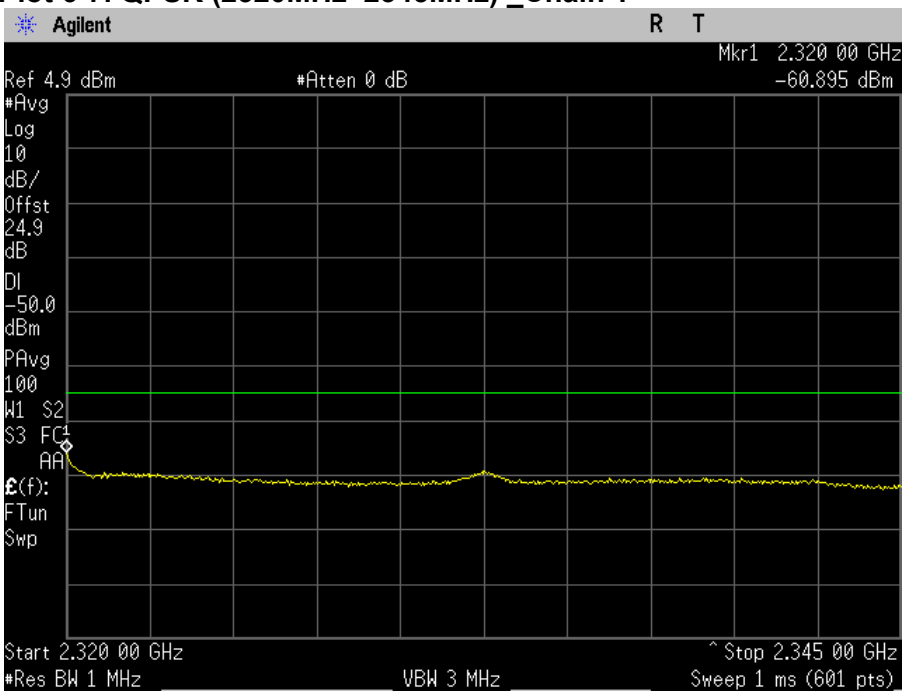


Plot 6-5. QPSK (2315MHz~2316MHz) _Chain 1

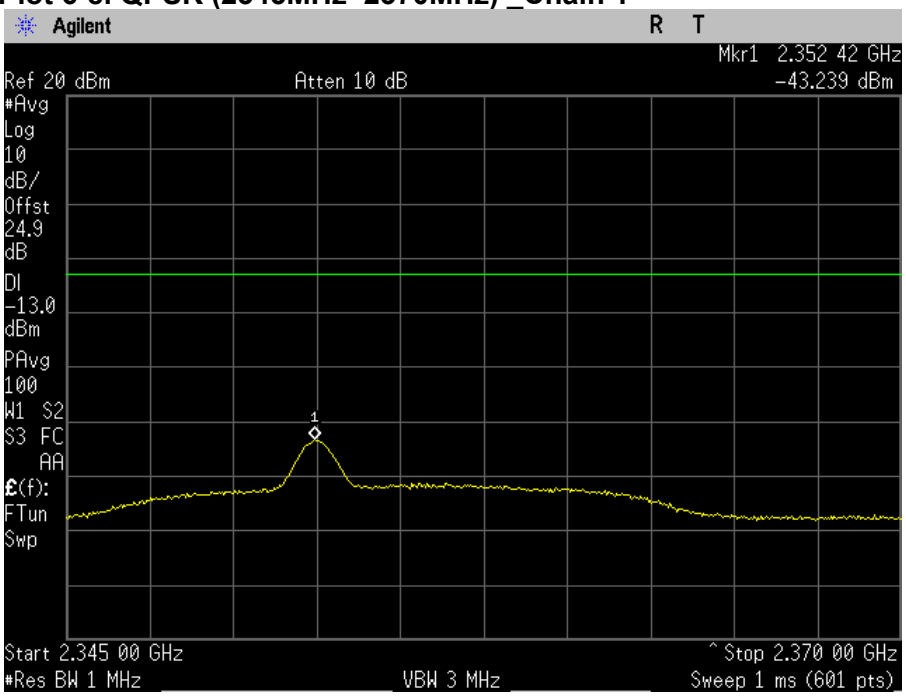
Plot 6-6. QPSK (2316MHz~2320MHz) _Chain 1



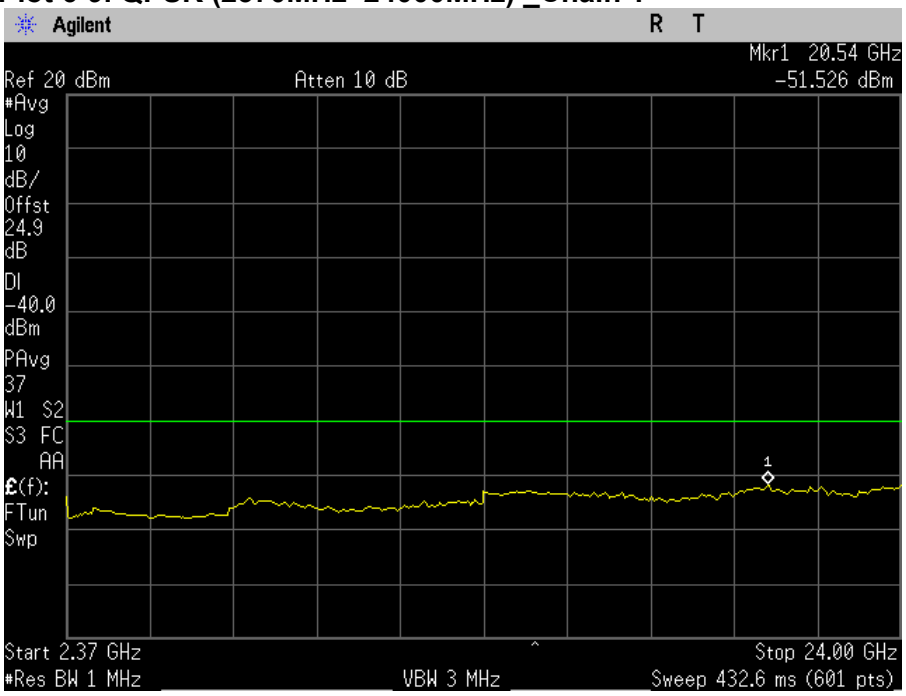
Plot 6-7. QPSK (2320MHz~2345MHz) _Chain 1



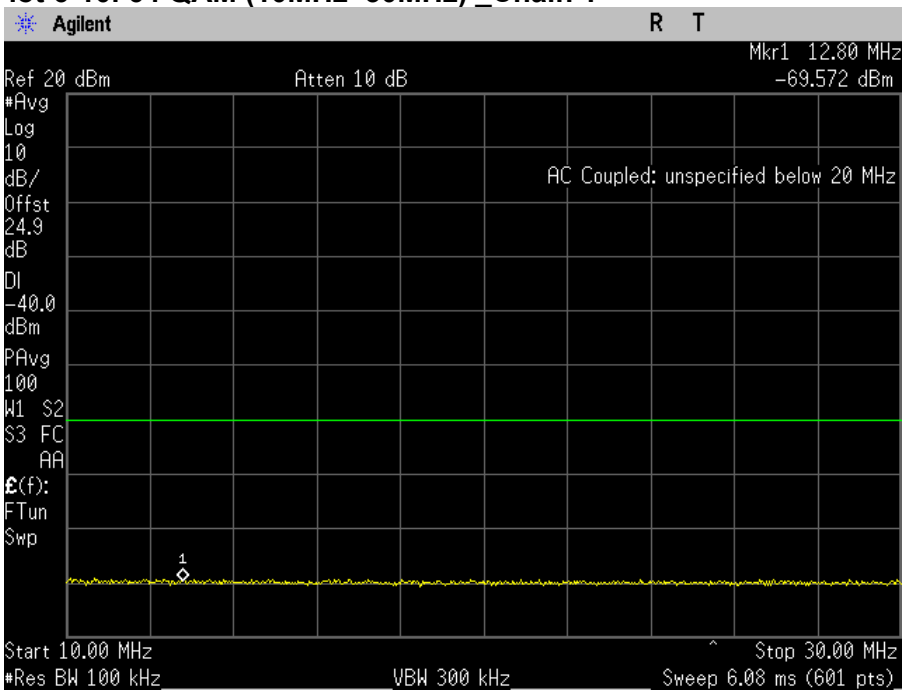
Plot 6-8. QPSK (2345MHz~2370MHz) _Chain 1



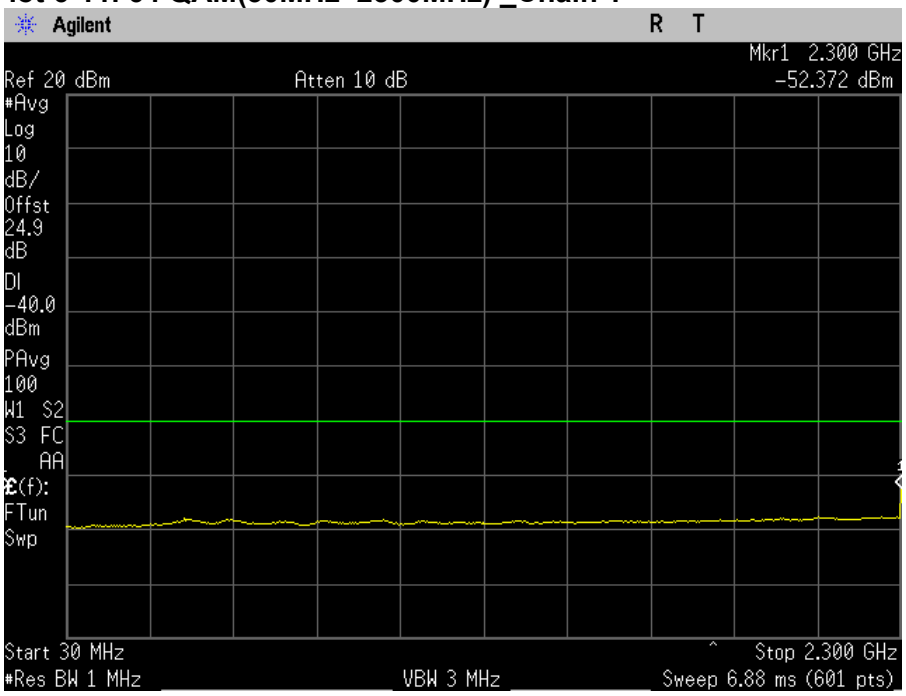
Plot 6-9. QPSK (2370MHz~24000MHz) _Chain 1



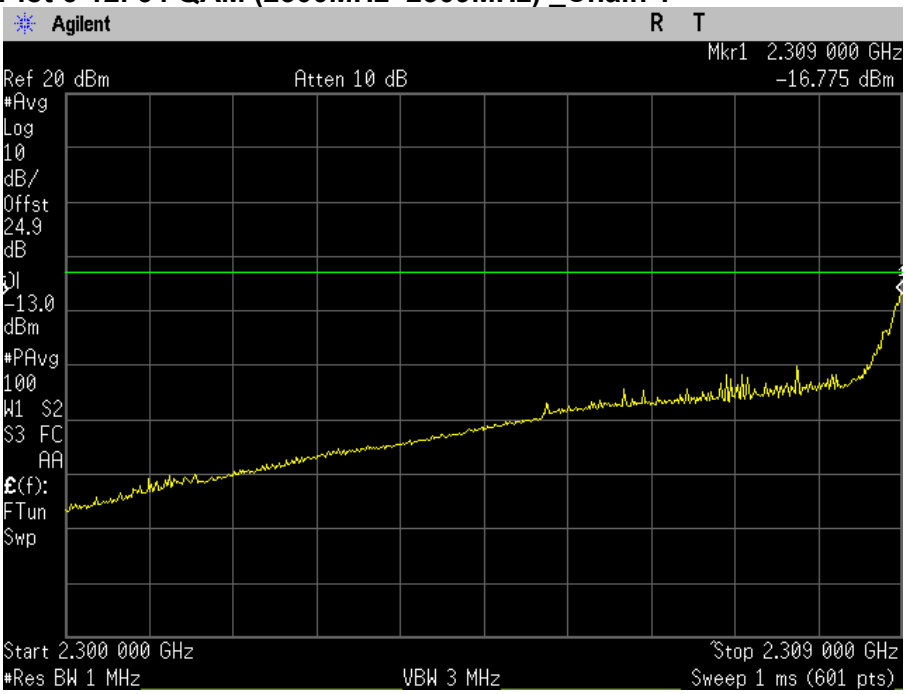
Plot 6-10. 64 QAM (10MHz~30MHz) _Chain 1



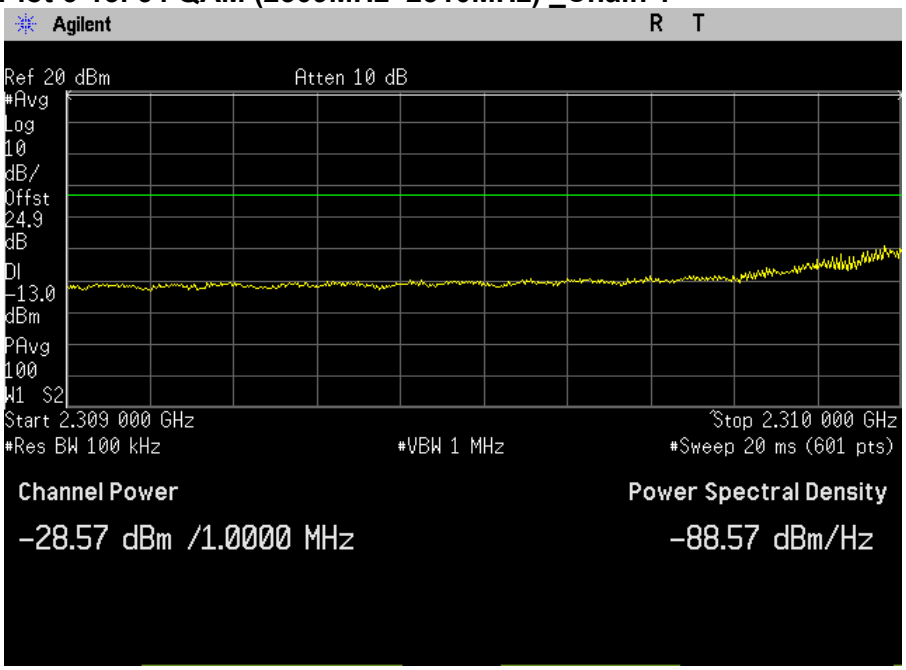
Plot 6-11. 64 QAM(30MHz~2300MHz) _Chain 1



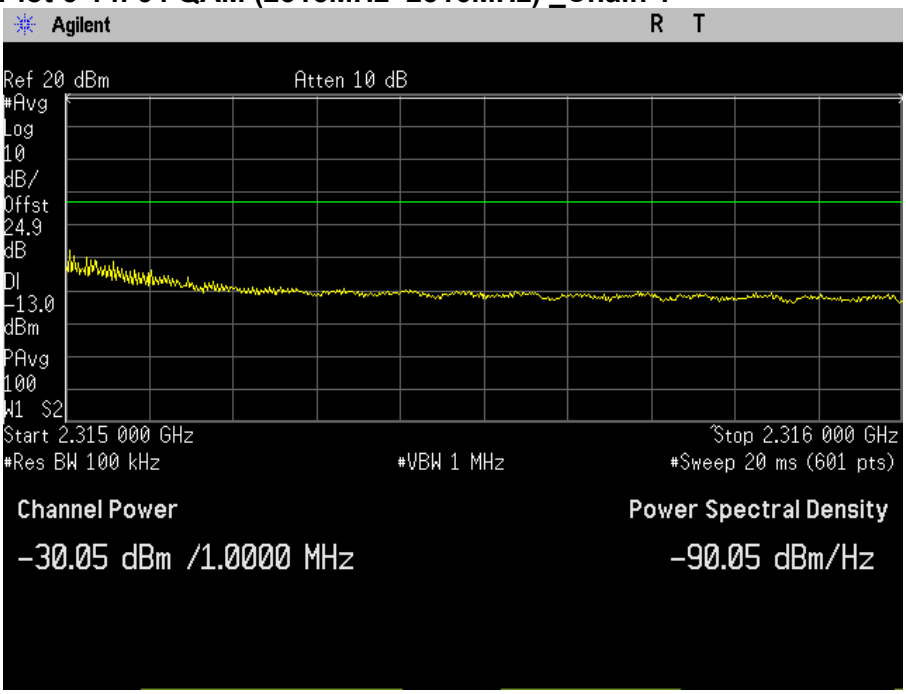
Plot 6-12. 64 QAM (2300MHz~2309MHz) _Chain 1



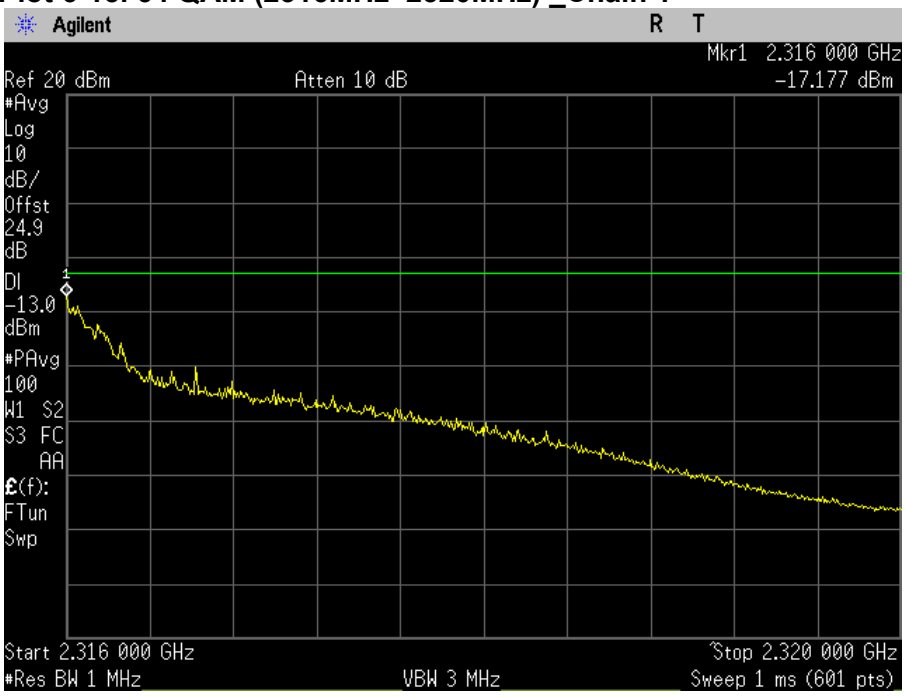
Plot 6-13. 64 QAM (2309MHz~2310MHz) _Chain 1



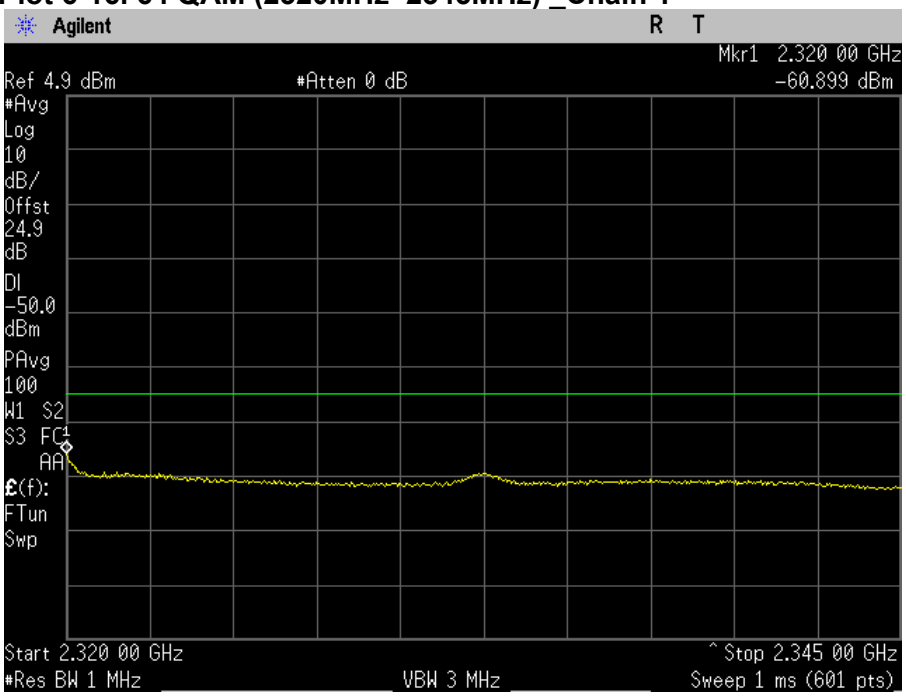
Plot 6-14. 64 QAM (2315MHz~2316MHz) _Chain 1



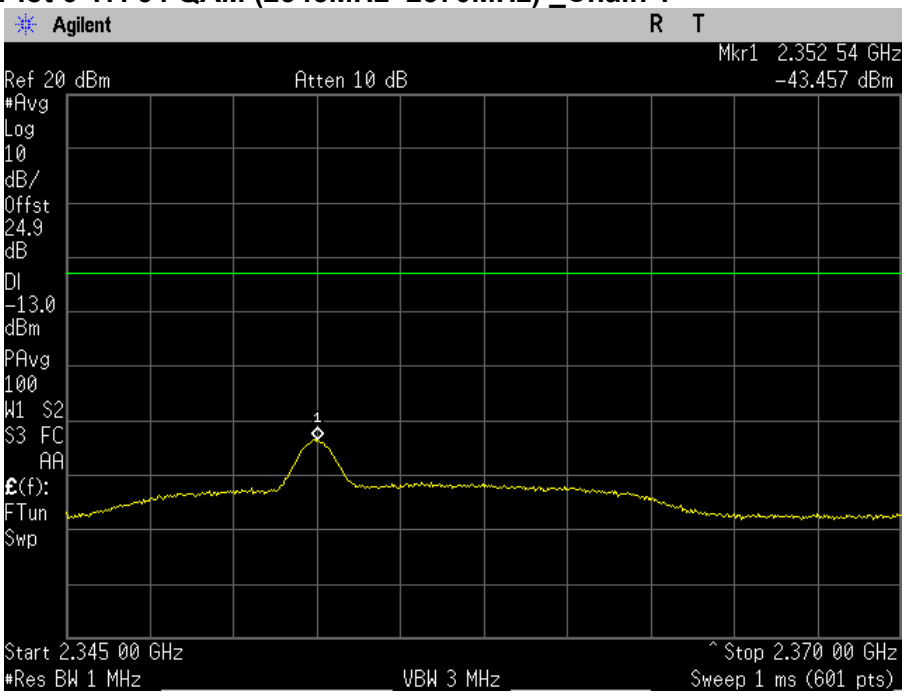
Plot 6-15. 64 QAM (2316MHz~2320MHz) _Chain 1



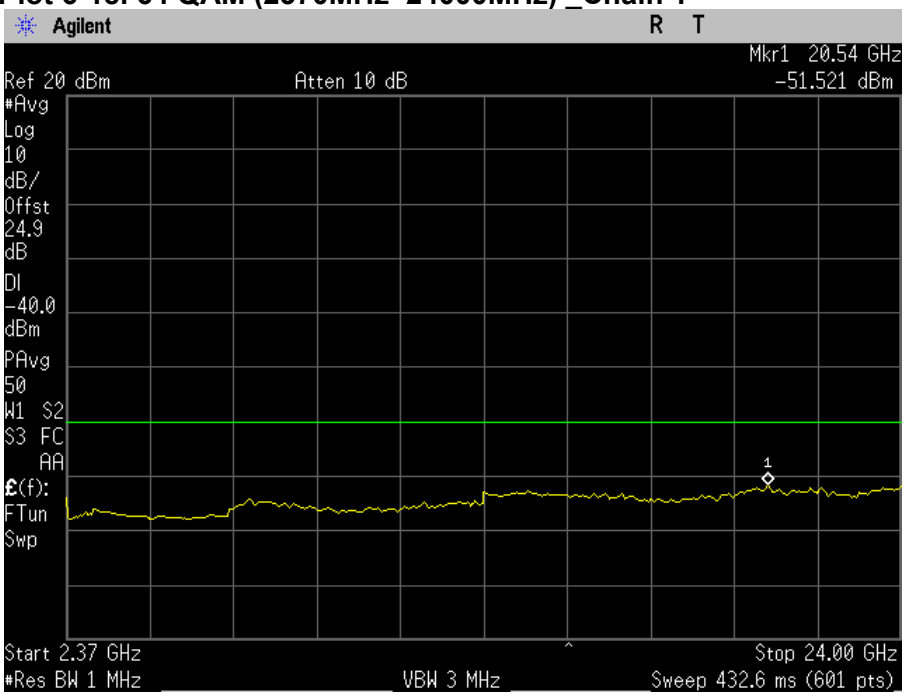
Plot 6-16. 64 QAM (2320MHz~2345MHz) _Chain 1



Plot 6-17. 64 QAM (2345MHz~2370MHz) _Chain 1

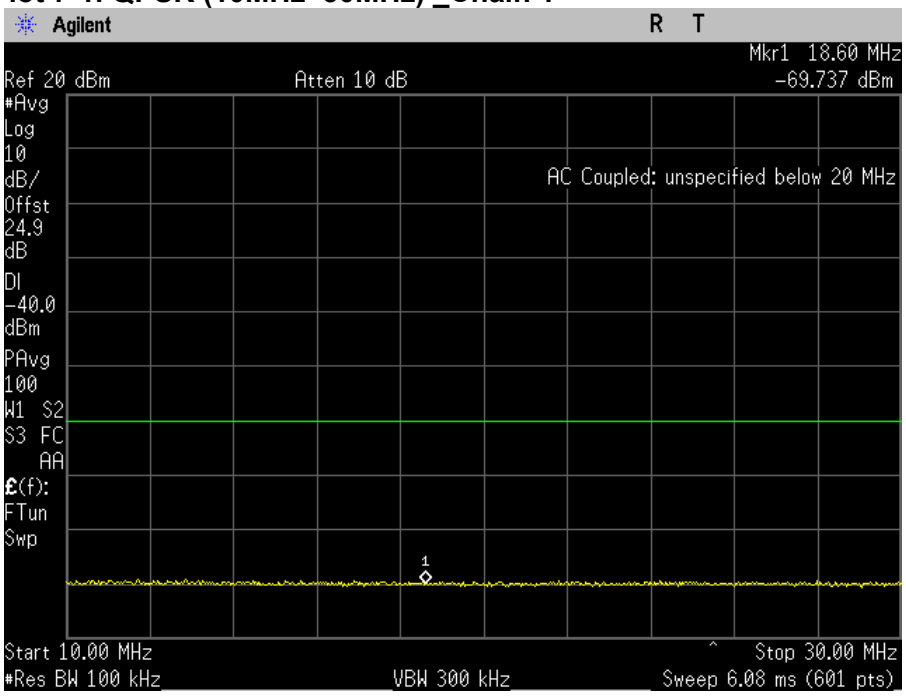


Plot 6-18. 64 QAM (2370MHz~24000MHz) _Chain 1

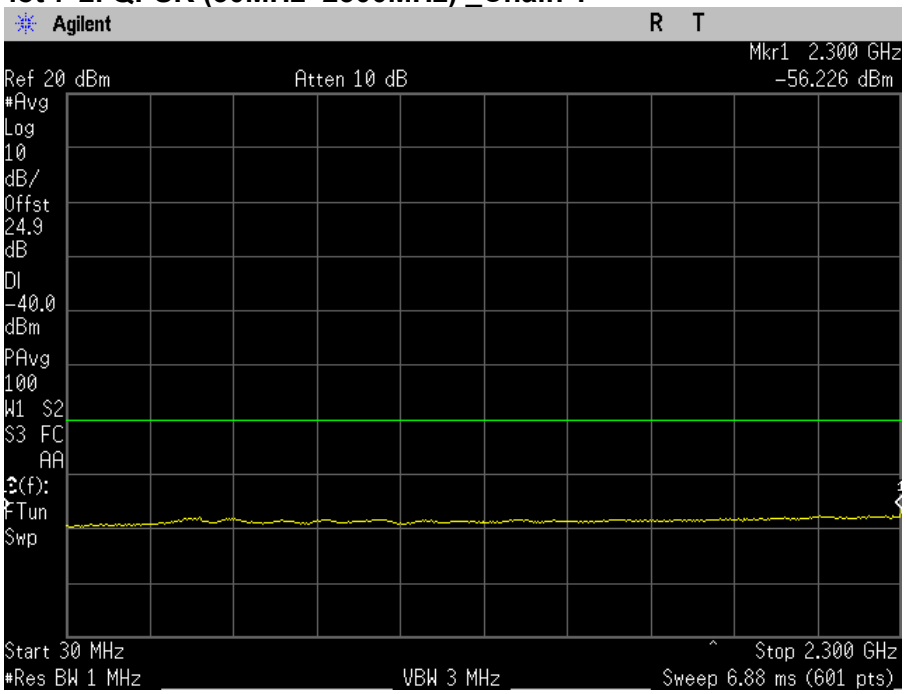


- **2352.5 MHz_5 MHz Bandwidth__Chain 1**

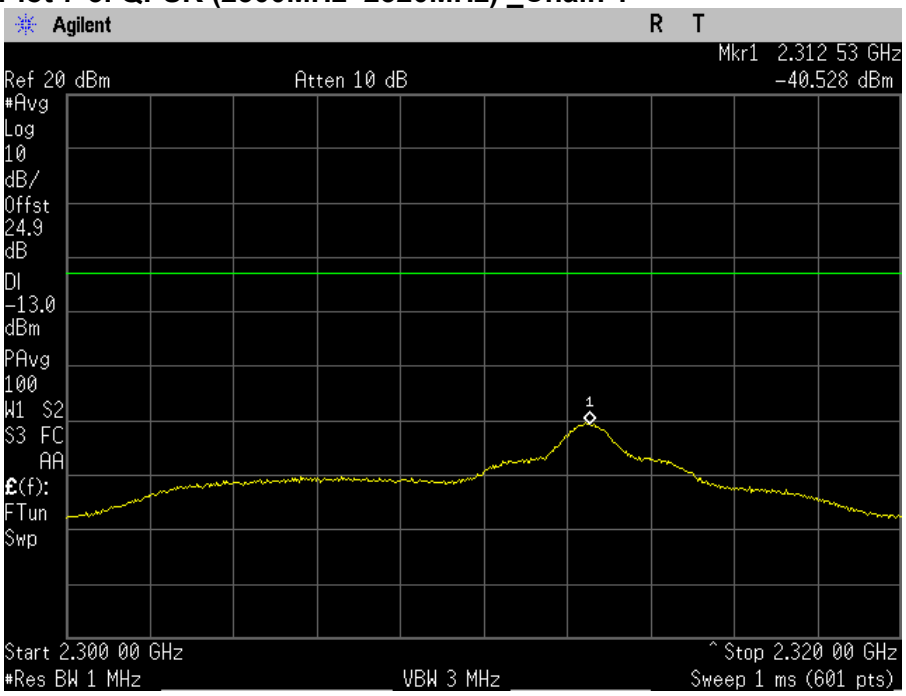
Plot 7-1. QPSK (10MHz~30MHz) _Chain 1



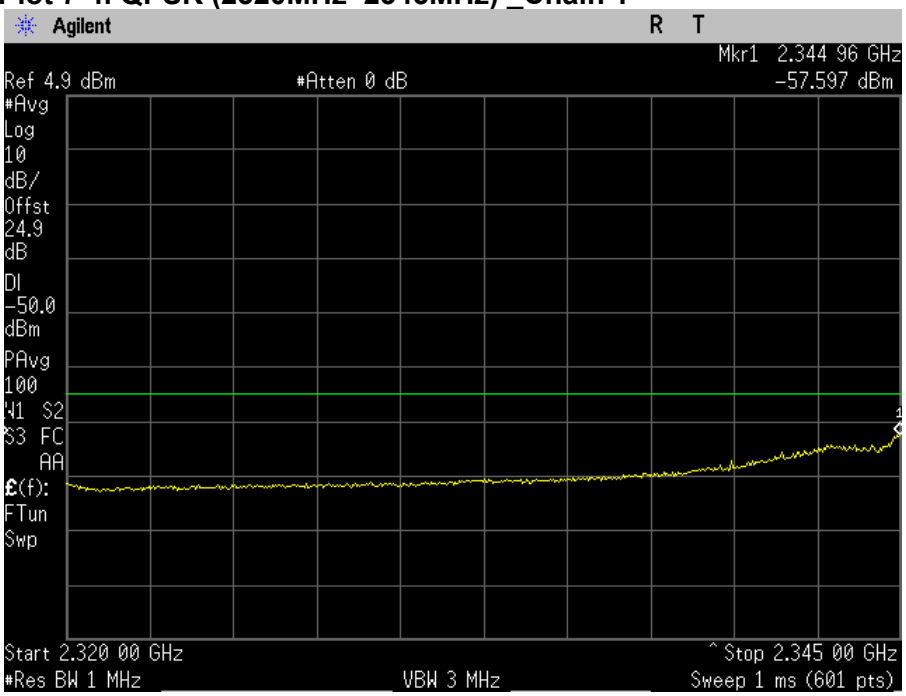
Plot 7-2. QPSK (30MHz~2300MHz) _Chain 1



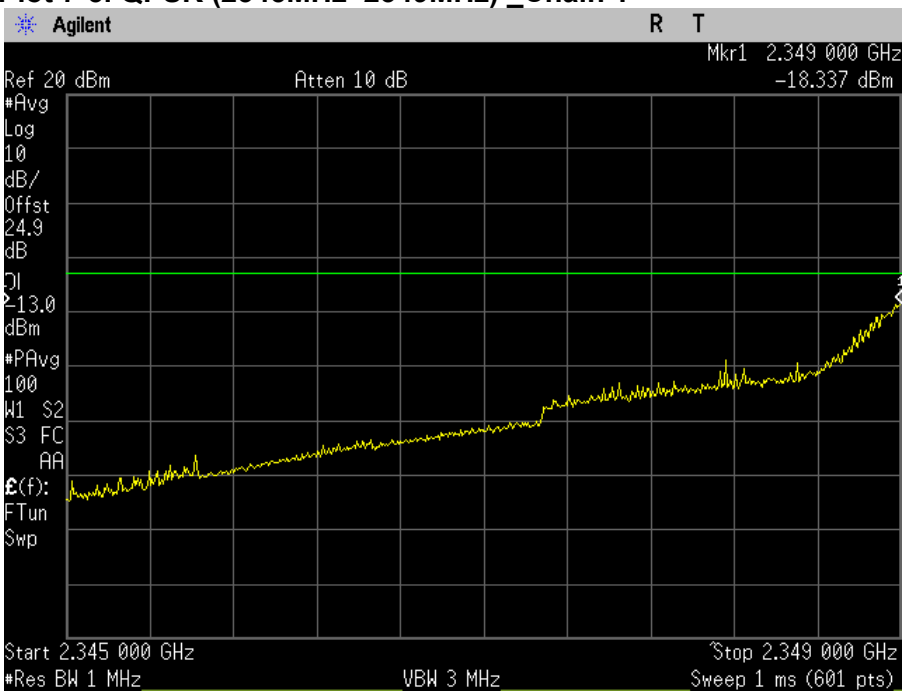
Plot 7-3. QPSK (2300MHz~2320MHz) _Chain 1



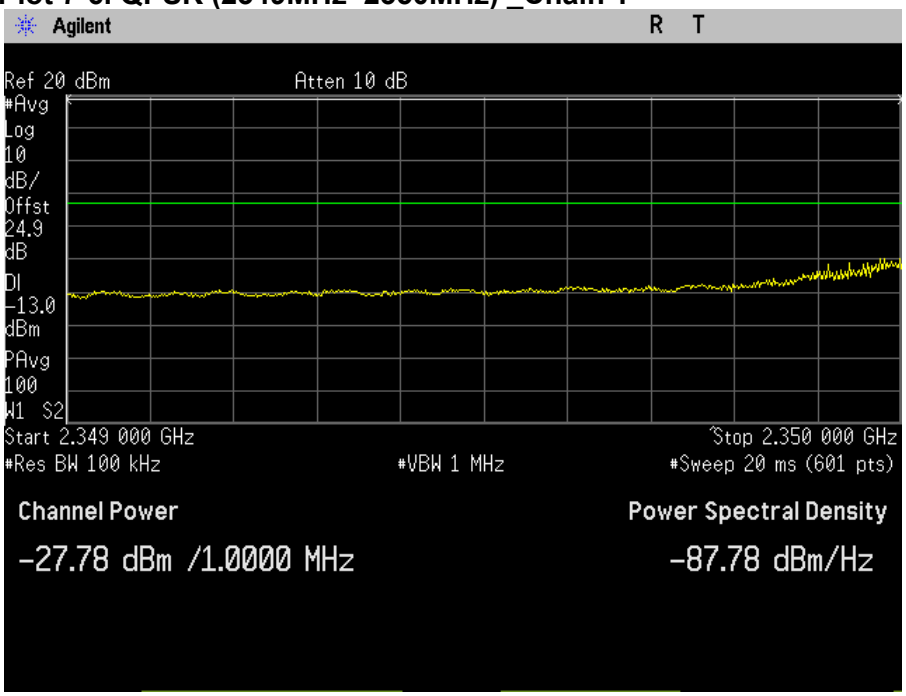
Plot 7-4. QPSK (2320MHz~2345MHz) _Chain 1



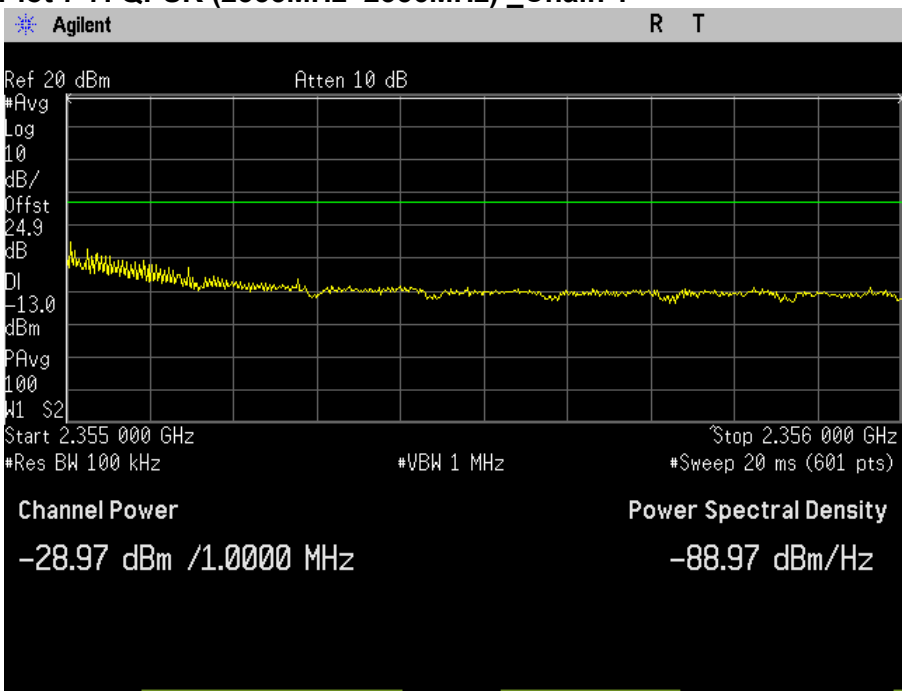
Plot 7-5. QPSK (2345MHz~2349MHz) _Chain 1



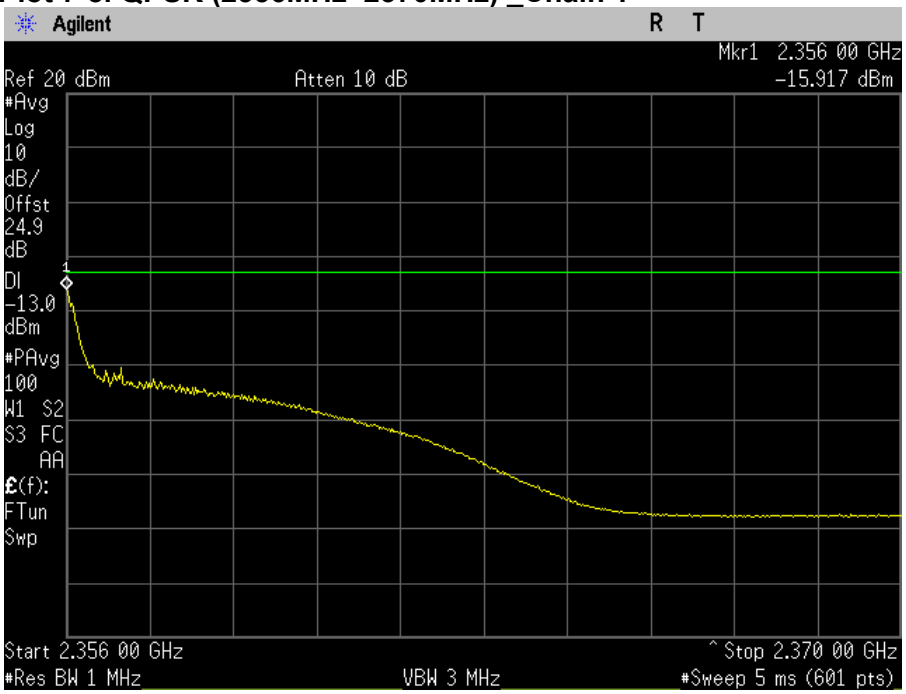
Plot 7-6. QPSK (2349MHz~2350MHz) _Chain 1



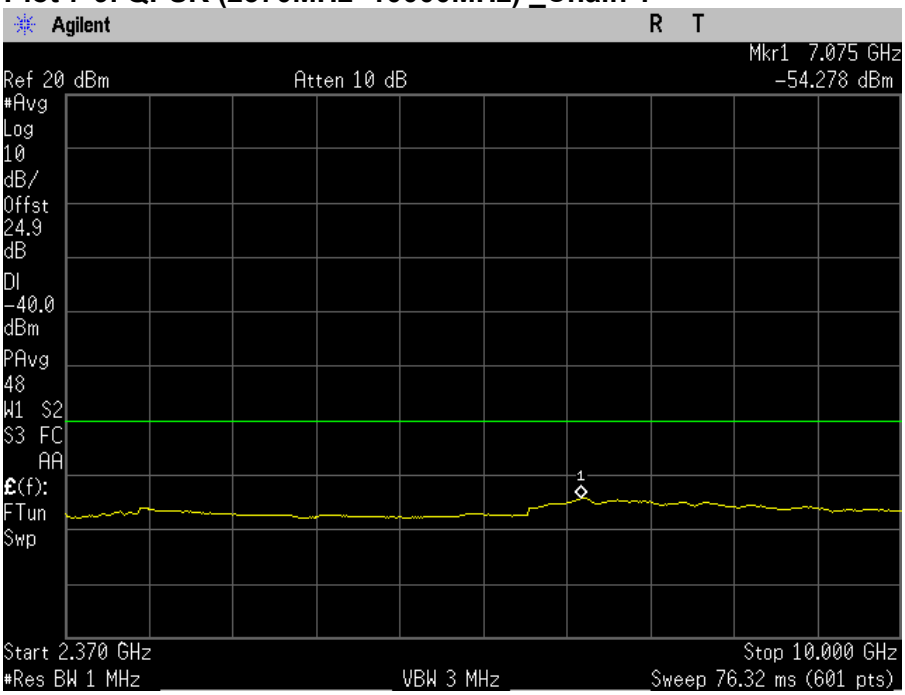
Plot 7-7. QPSK (2355MHz~2356MHz) _Chain 1



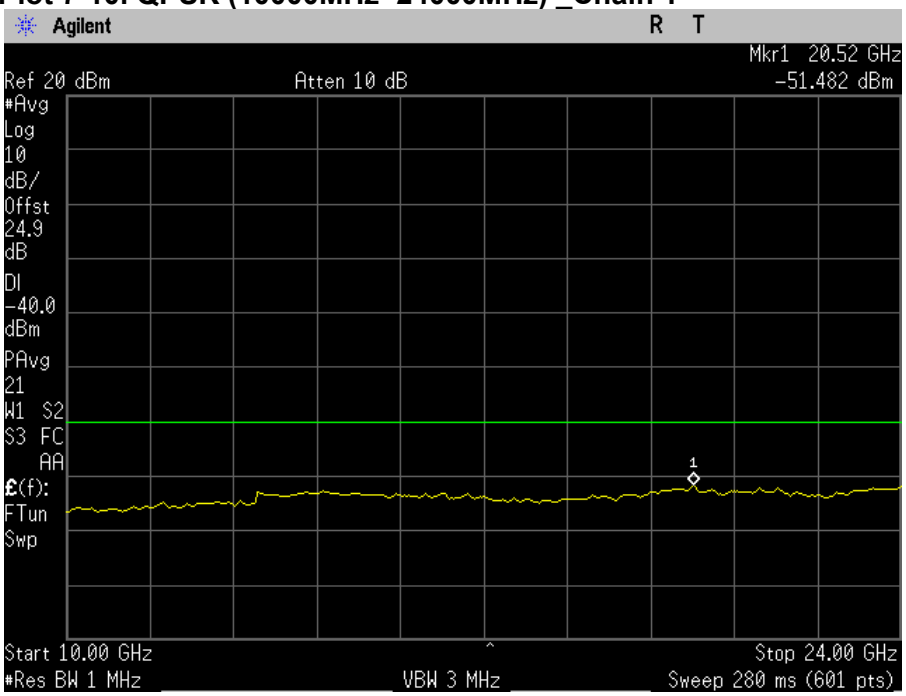
Plot 7-8. QPSK (2356MHz~2370MHz) _Chain 1



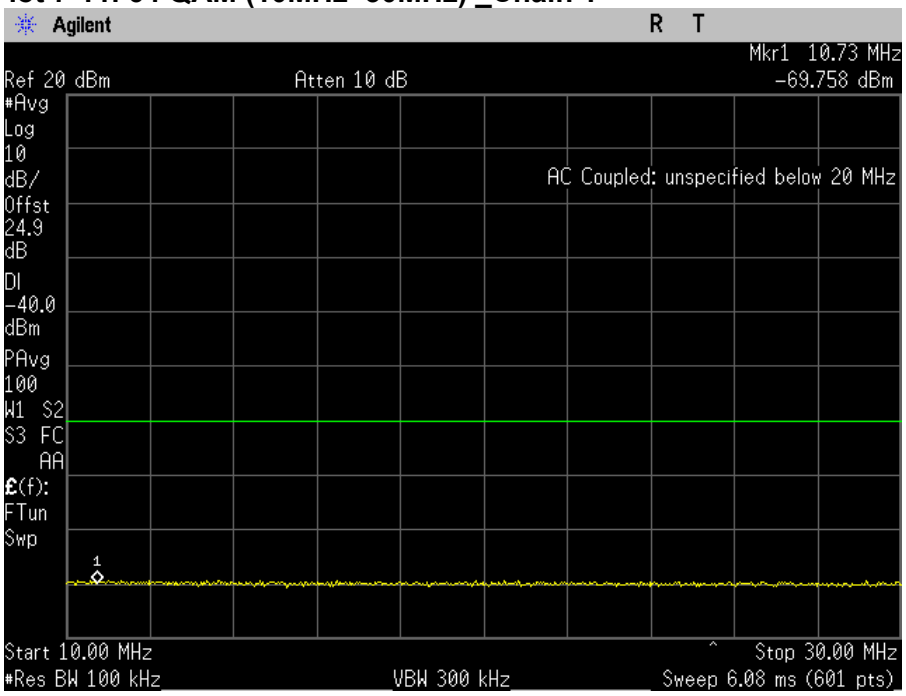
Plot 7-9. QPSK (2370MHz~10000MHz) _Chain 1



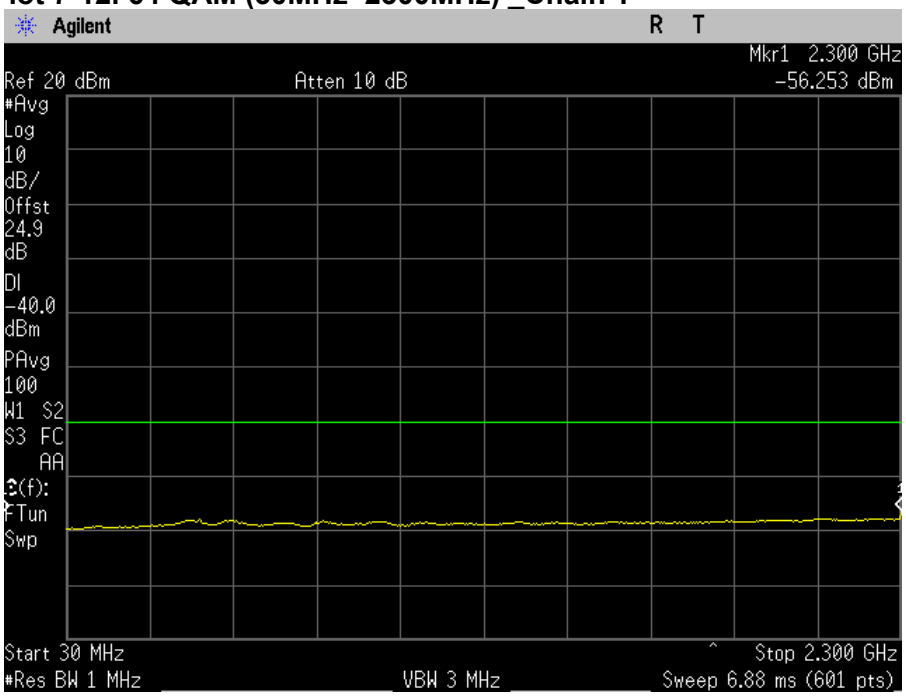
Plot 7-10. QPSK (10000MHz~24000MHz) _Chain 1



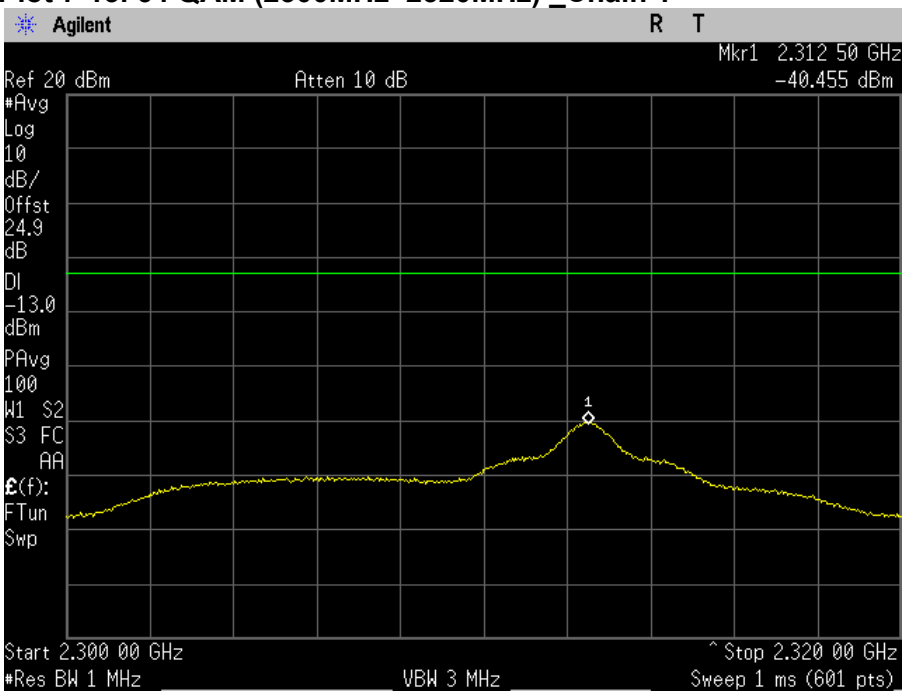
Plot 7-11. 64 QAM (10MHz~30MHz) _Chain 1



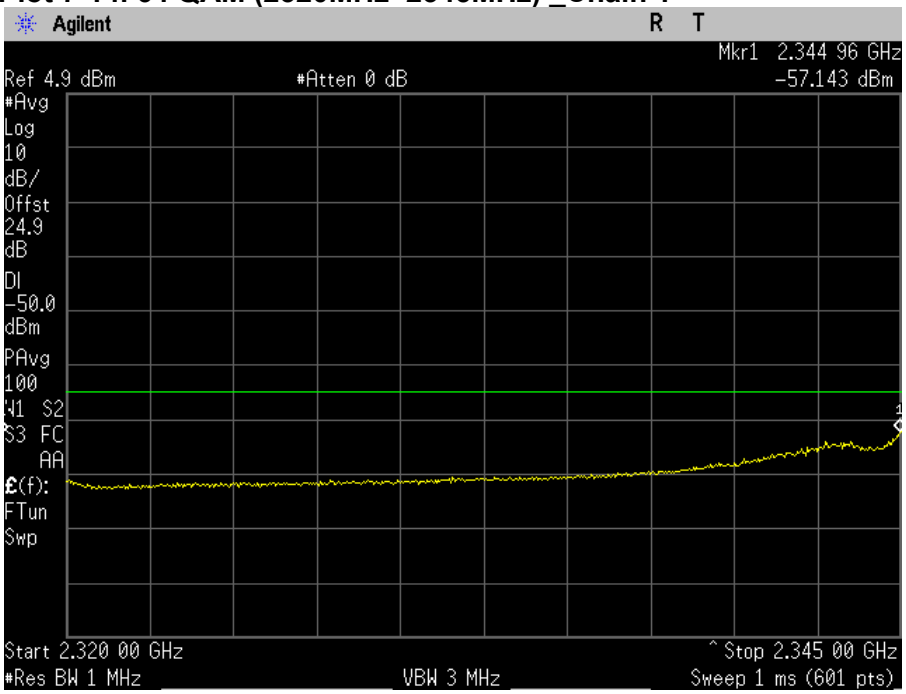
Plot 7-12. 64 QAM (30MHz~2300MHz) _Chain 1



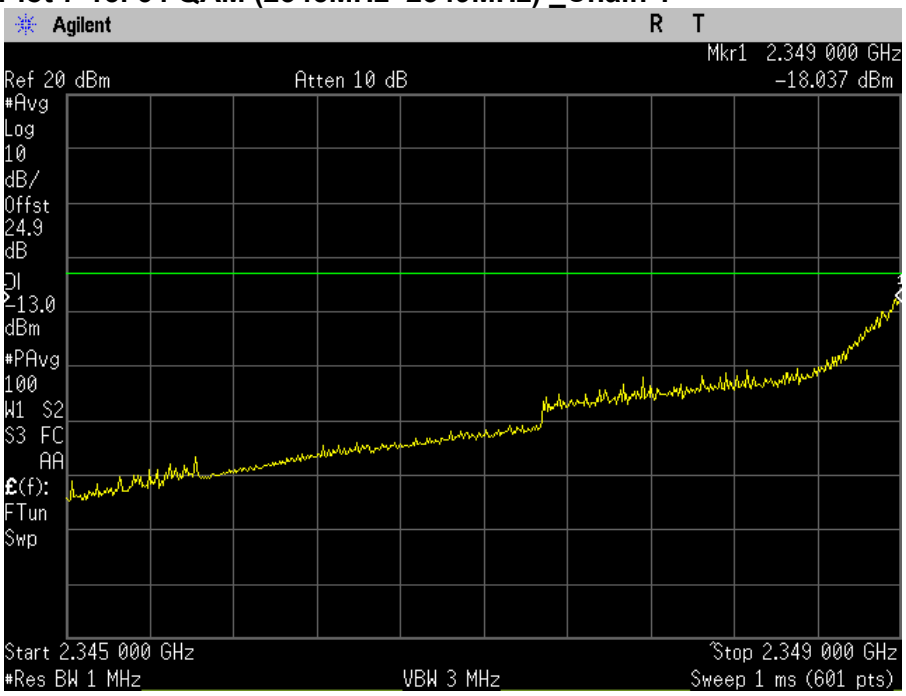
Plot 7-13. 64 QAM (2300MHz~2320MHz) _Chain 1



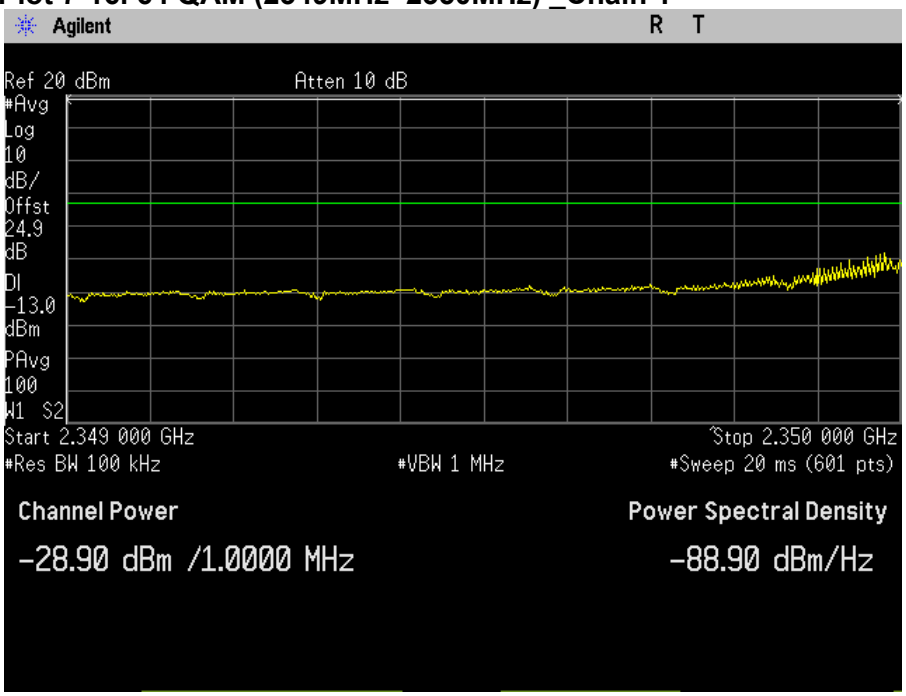
Plot 7-14. 64 QAM (2320MHz~2345MHz) _Chain 1



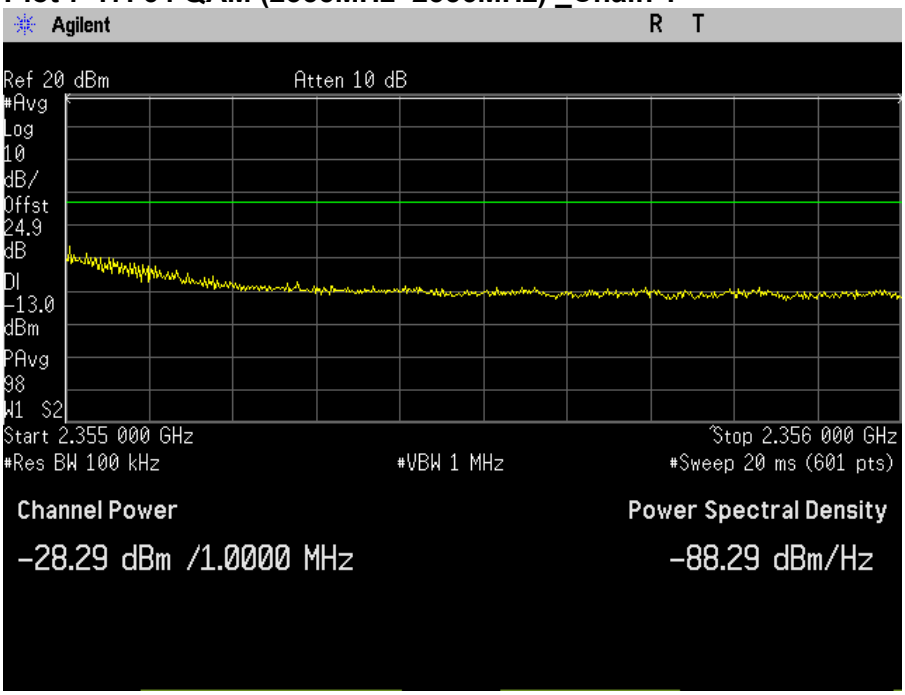
Plot 7-15. 64 QAM (2345MHz~2349MHz) _Chain 1



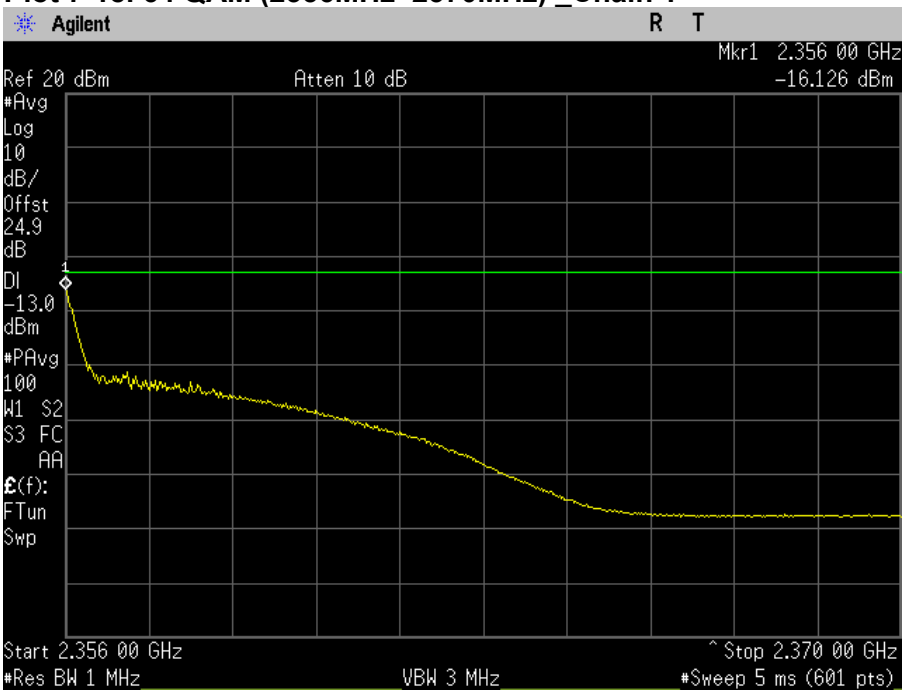
Plot 7-16. 64 QAM (2349MHz~2350MHz) _Chain 1



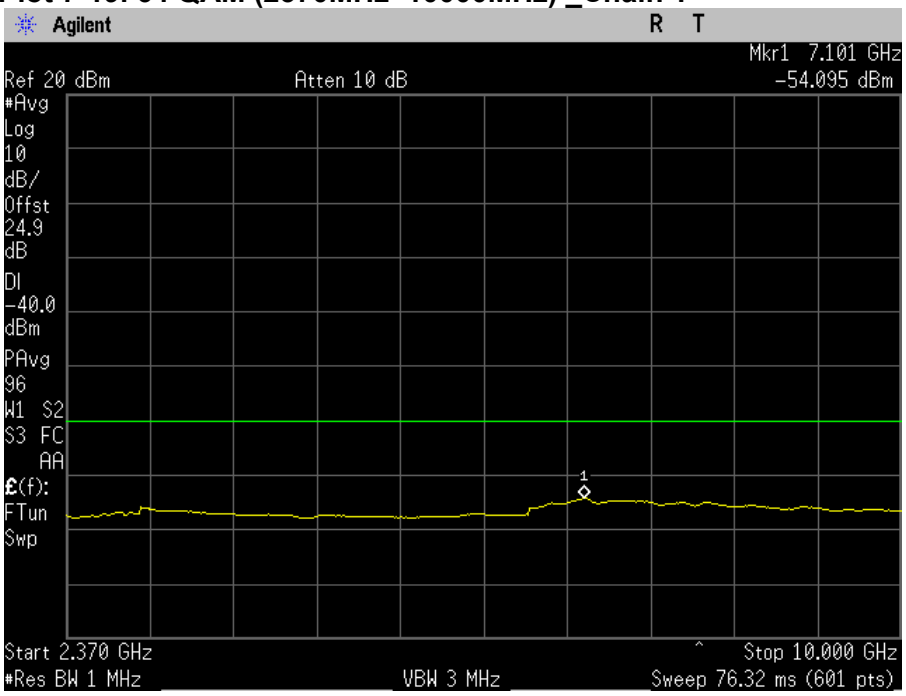
Plot 7-17. 64 QAM (2355MHz~2356MHz) _Chain 1



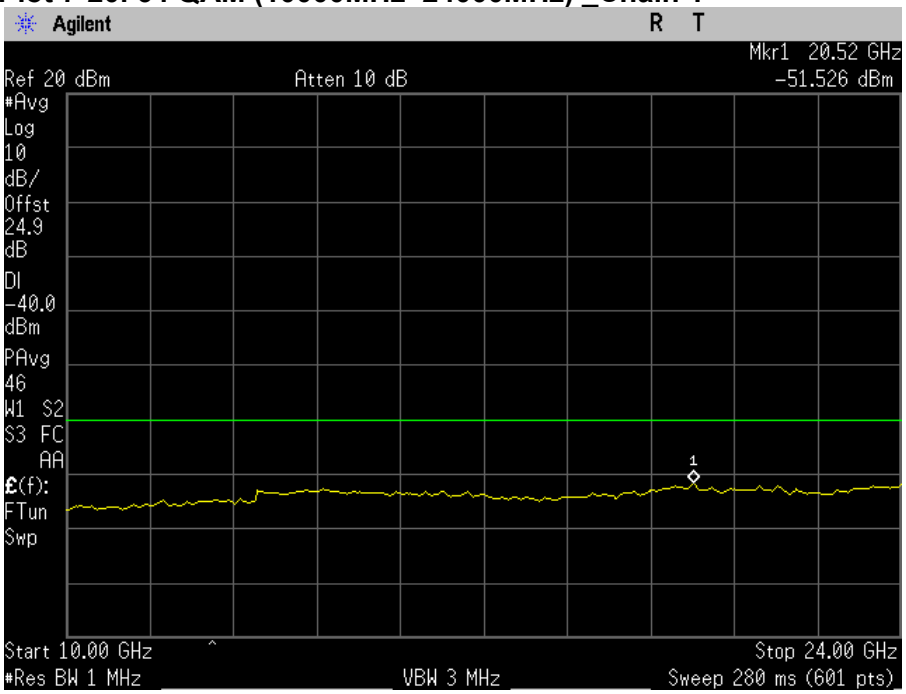
Plot 7-18. 64 QAM (2356MHz~2370MHz) _Chain 1



Plot 7-19. 64 QAM (2370MHz~10000MHz) _Chain 1

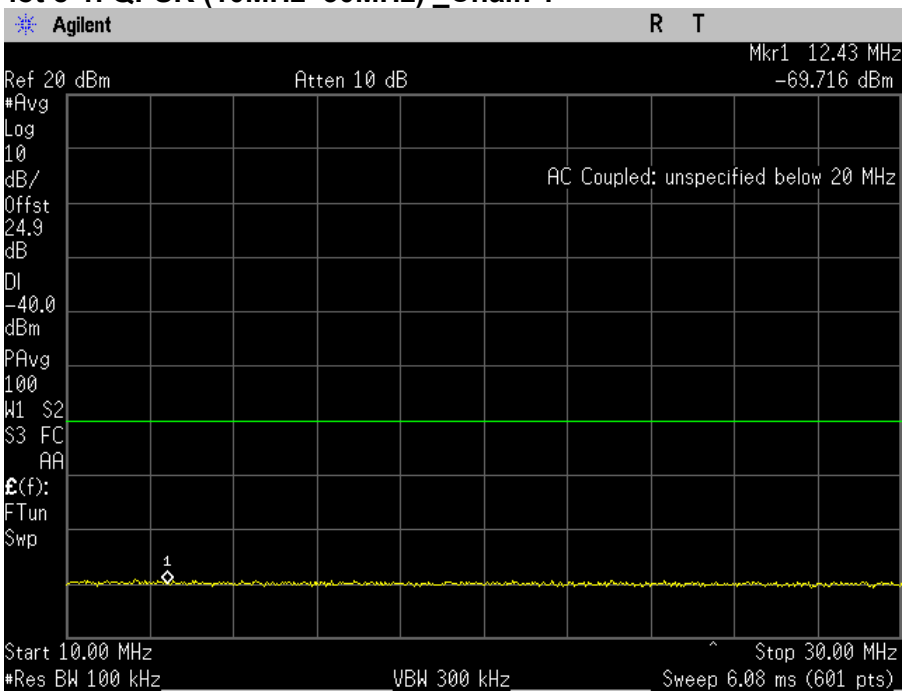


Plot 7-20. 64 QAM (10000MHz~24000MHz) _Chain 1

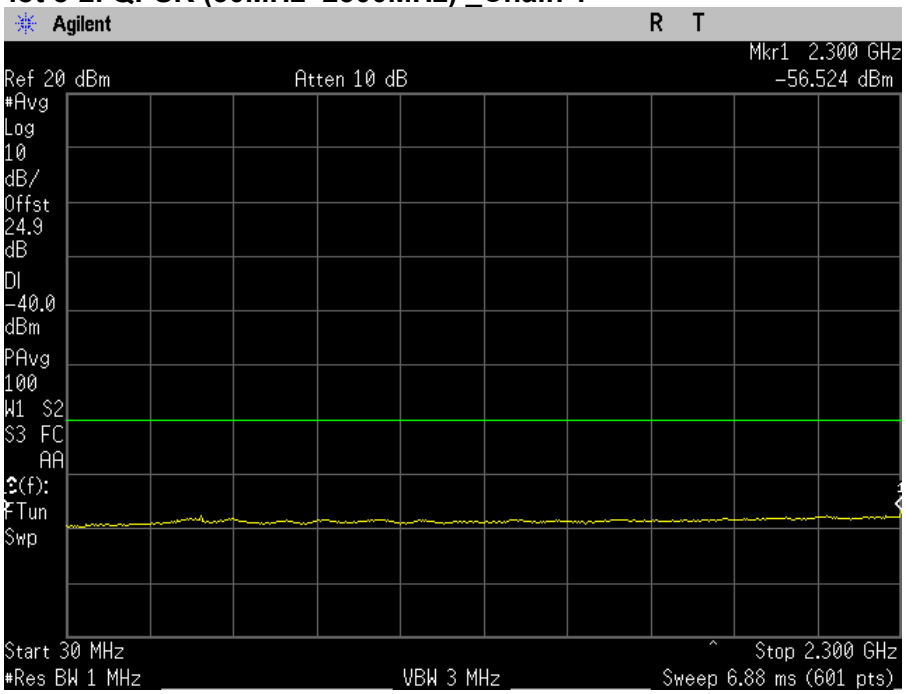


- **2357.5 MHz_5 MHz Bandwidth_Chain 1**

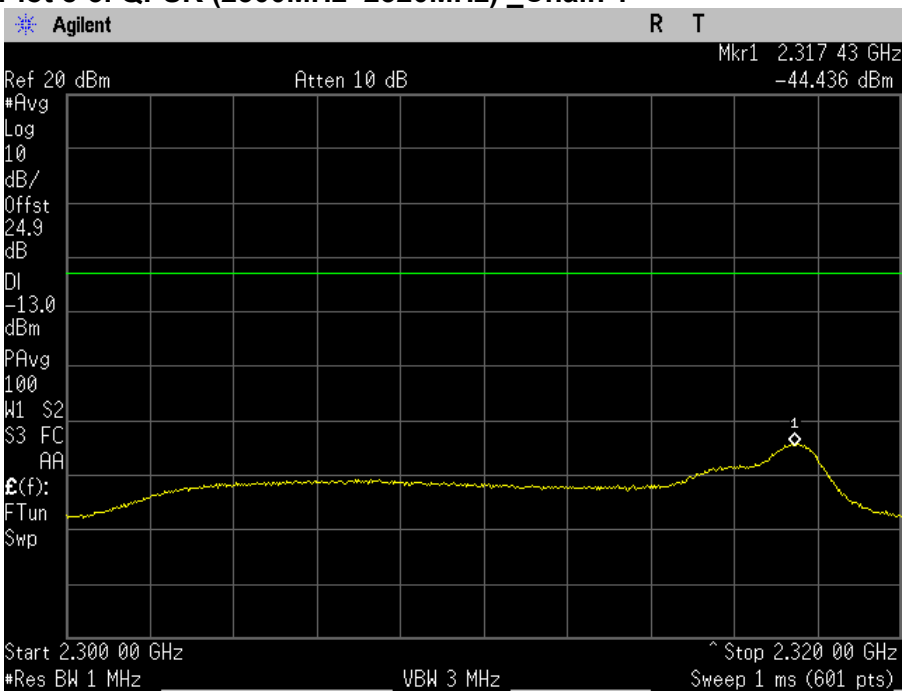
Plot 8-1. QPSK (10MHz~30MHz) _Chain 1



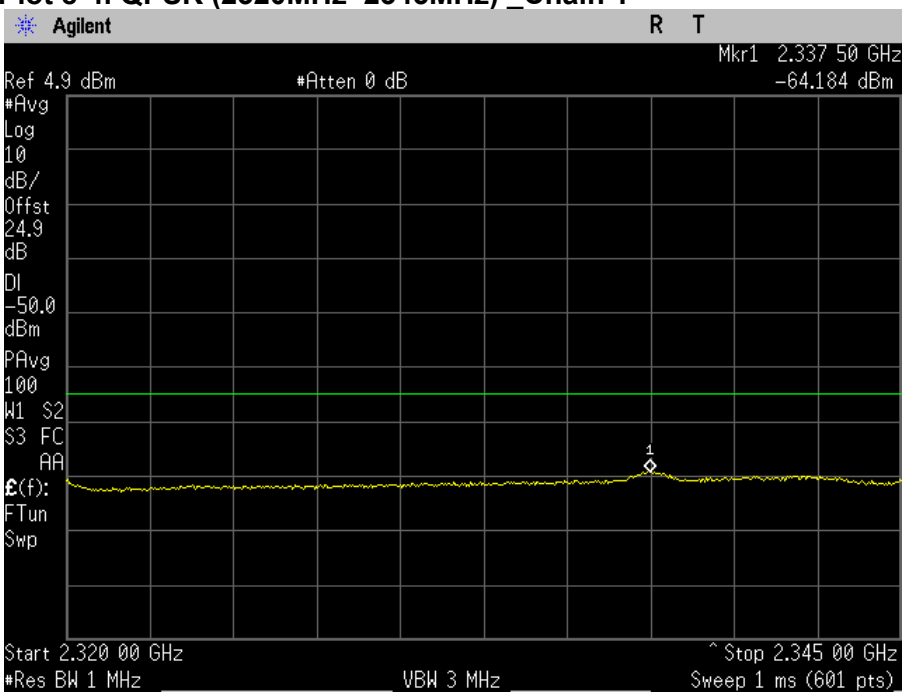
Plot 8-2. QPSK (30MHz~2300MHz) _Chain 1



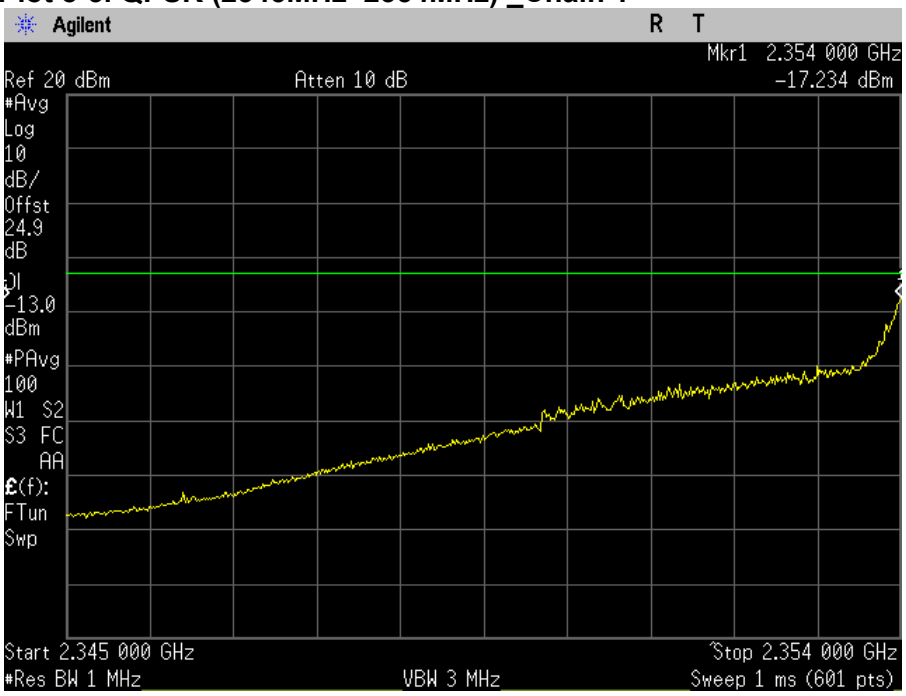
Plot 8-3. QPSK (2300MHz~2320MHz) _Chain 1



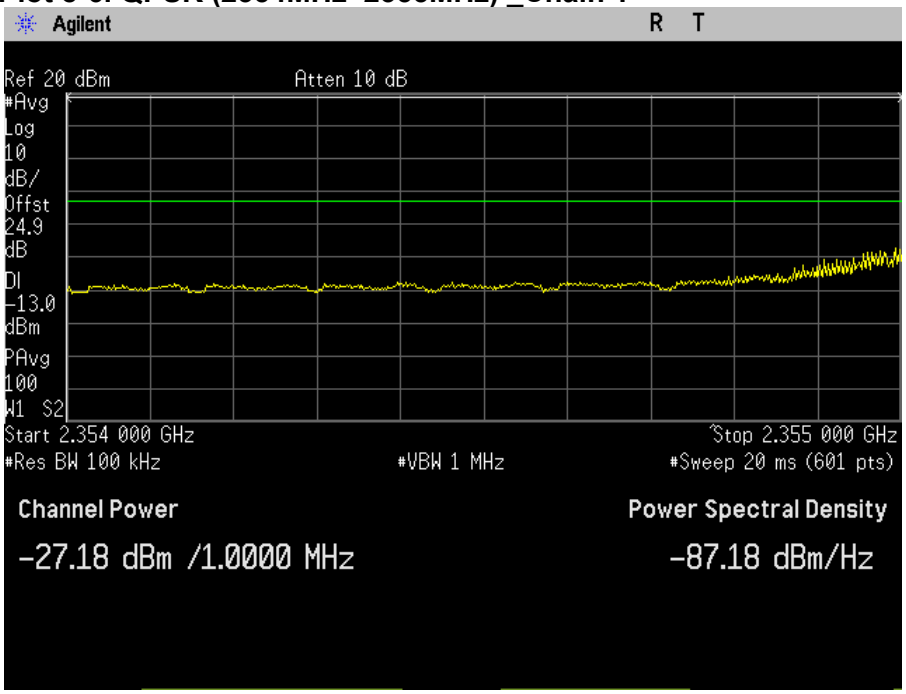
Plot 8-4. QPSK (2320MHz~2345MHz) _Chain 1



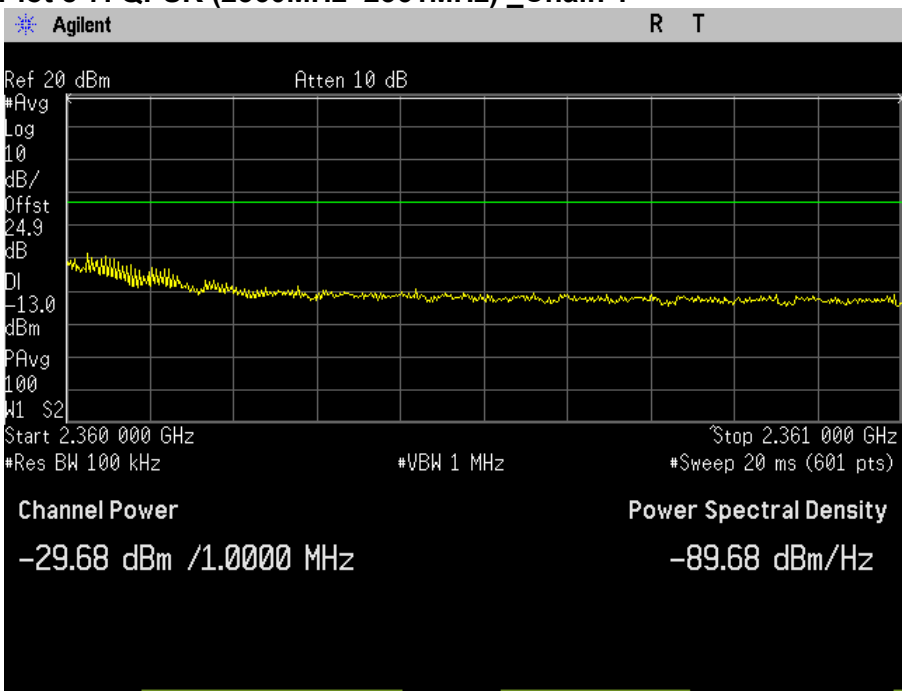
Plot 8-5. QPSK (2345MHz~2354MHz) _Chain 1



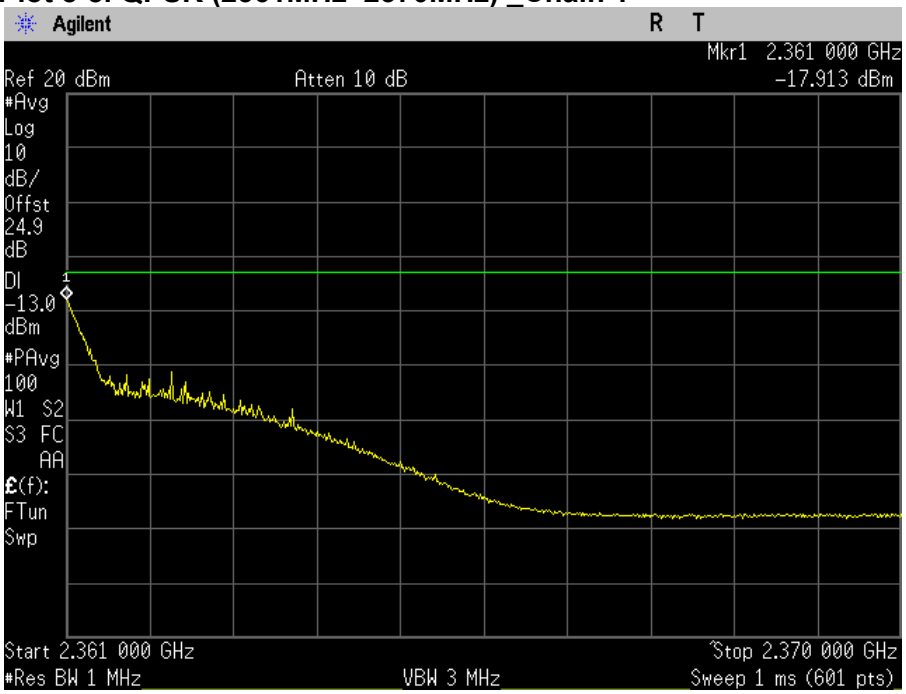
Plot 8-6. QPSK (2354MHz~2355MHz) _Chain 1



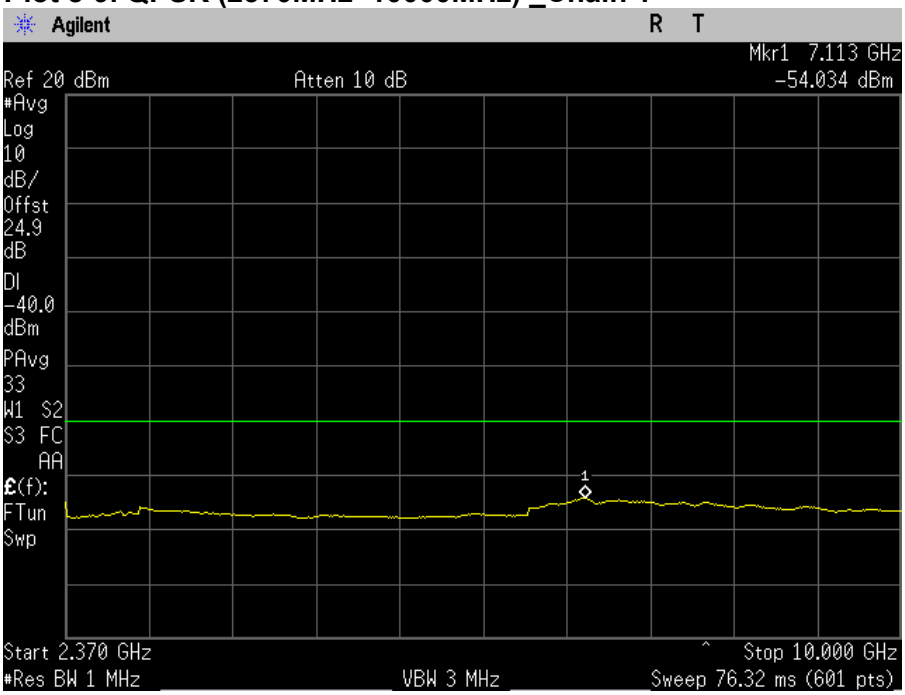
Plot 8-7. QPSK (2360MHz~2361MHz) _Chain 1



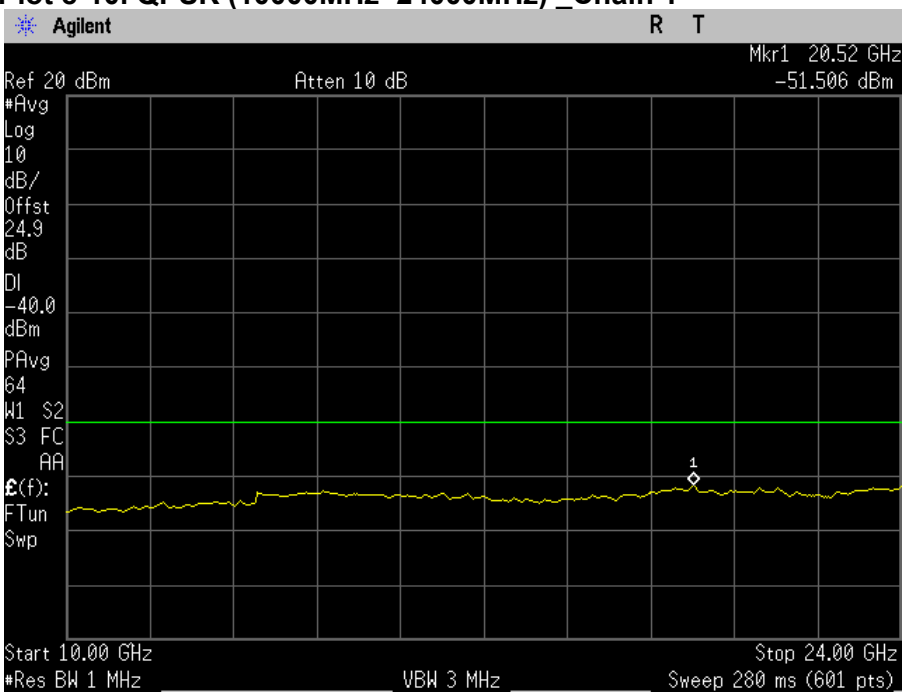
Plot 8-8. QPSK (2361MHz~2370MHz) _Chain 1



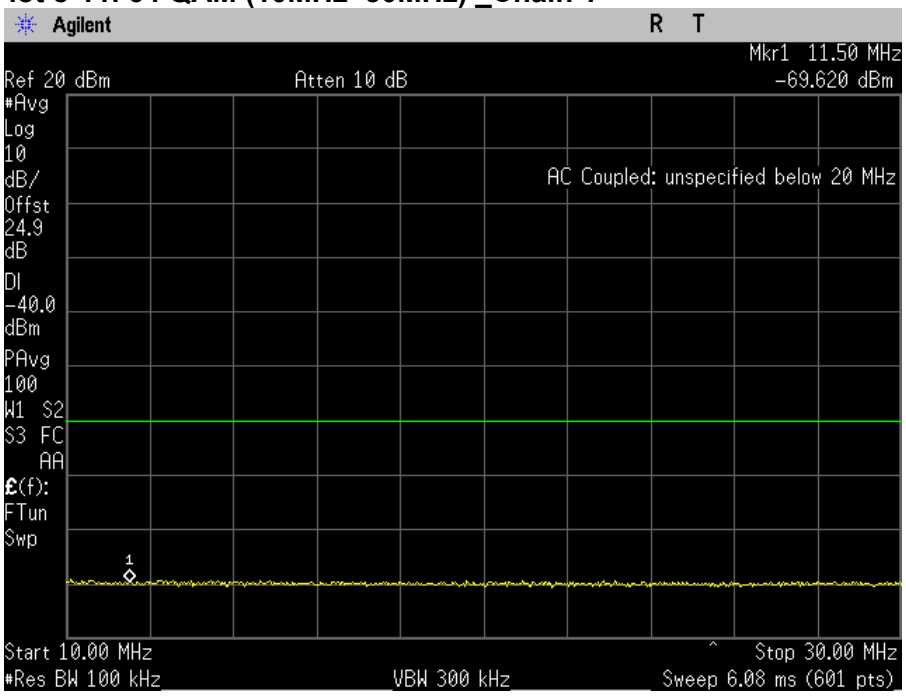
Plot 8-9. QPSK (2370MHz~10000MHz) _Chain 1



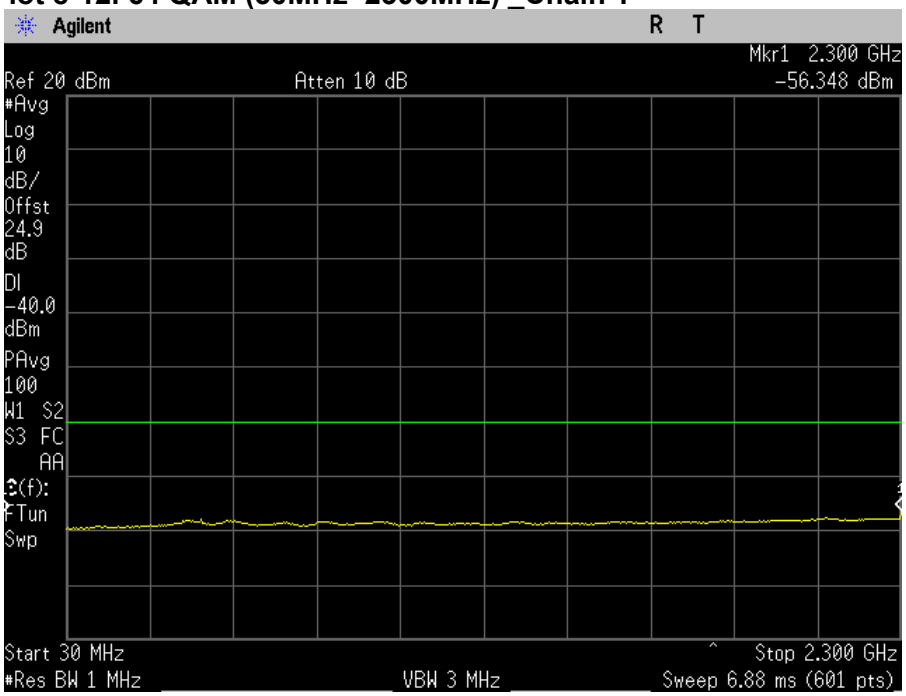
Plot 8-10. QPSK (10000MHz~24000MHz) _Chain 1



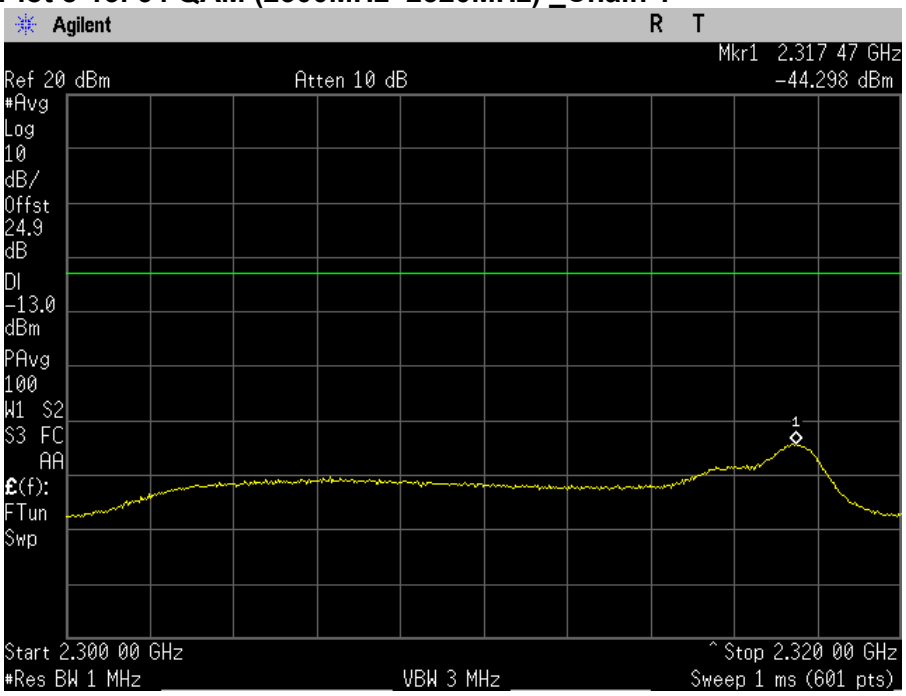
Plot 8-11. 64 QAM (10MHz~30MHz) _Chain 1



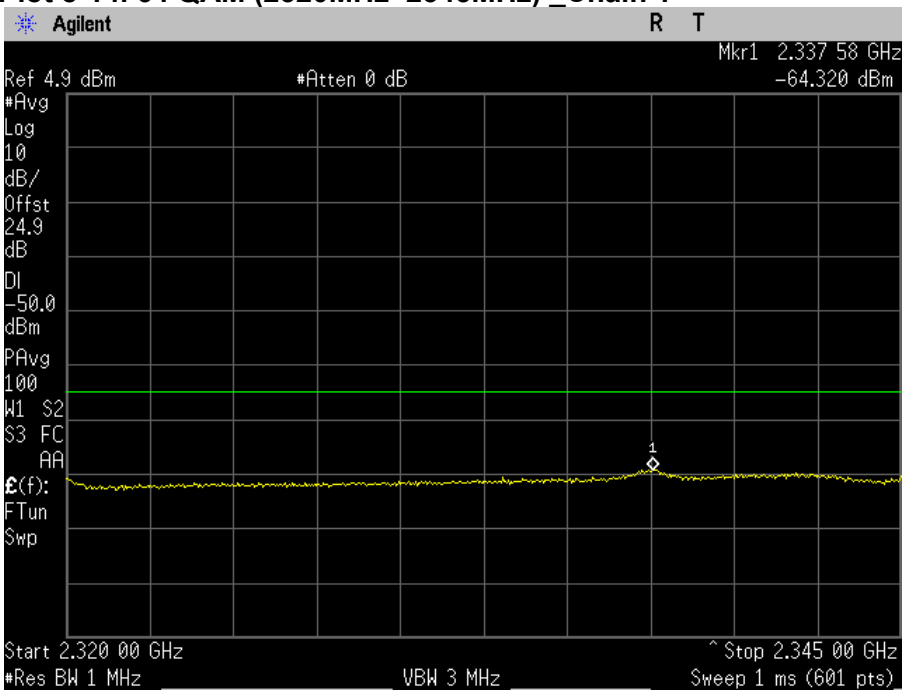
Plot 8-12. 64 QAM (30MHz~2300MHz) _Chain 1



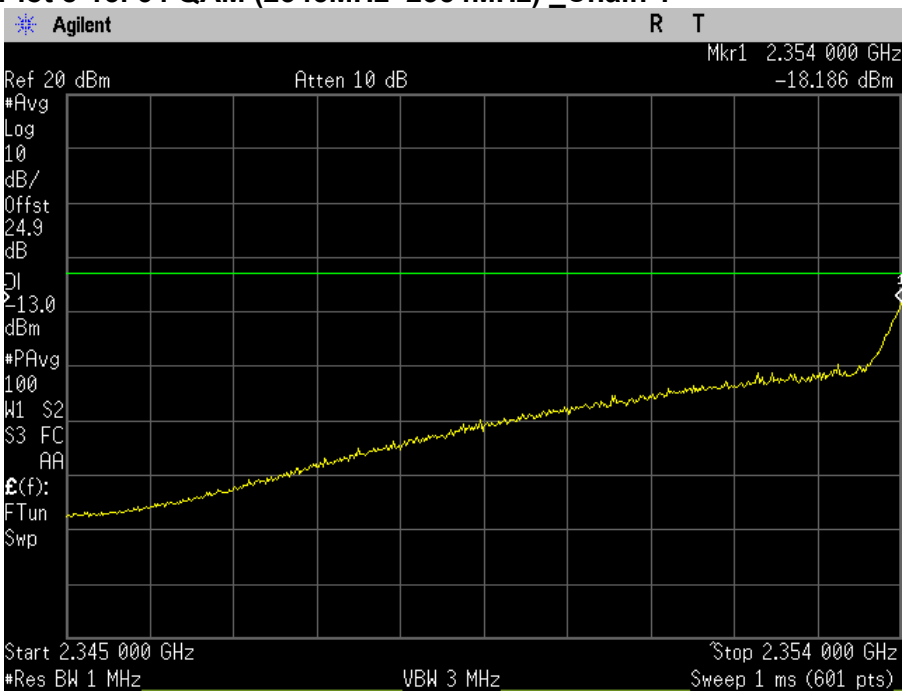
Plot 8-13. 64 QAM (2300MHz~2320MHz) _Chain 1



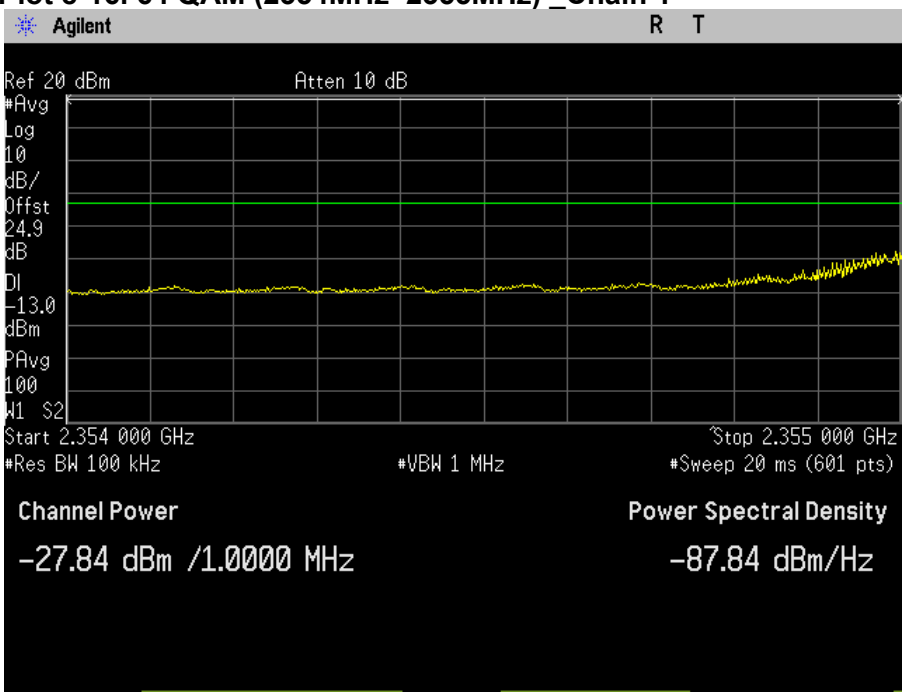
Plot 8-14. 64 QAM (2320MHz~2345MHz) _Chain 1



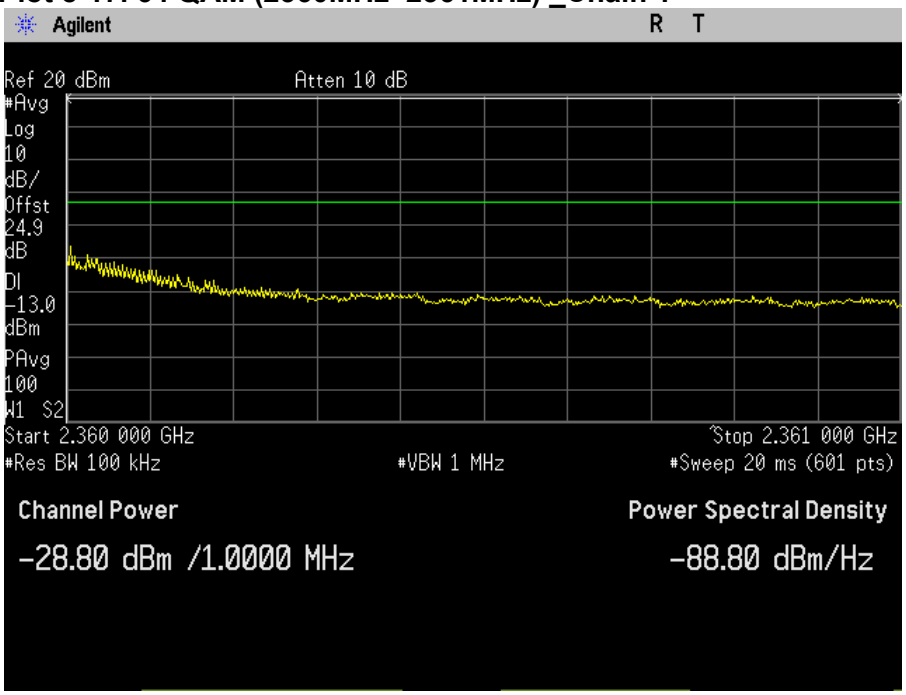
Plot 8-15. 64 QAM (2345MHz~2354MHz) _Chain 1



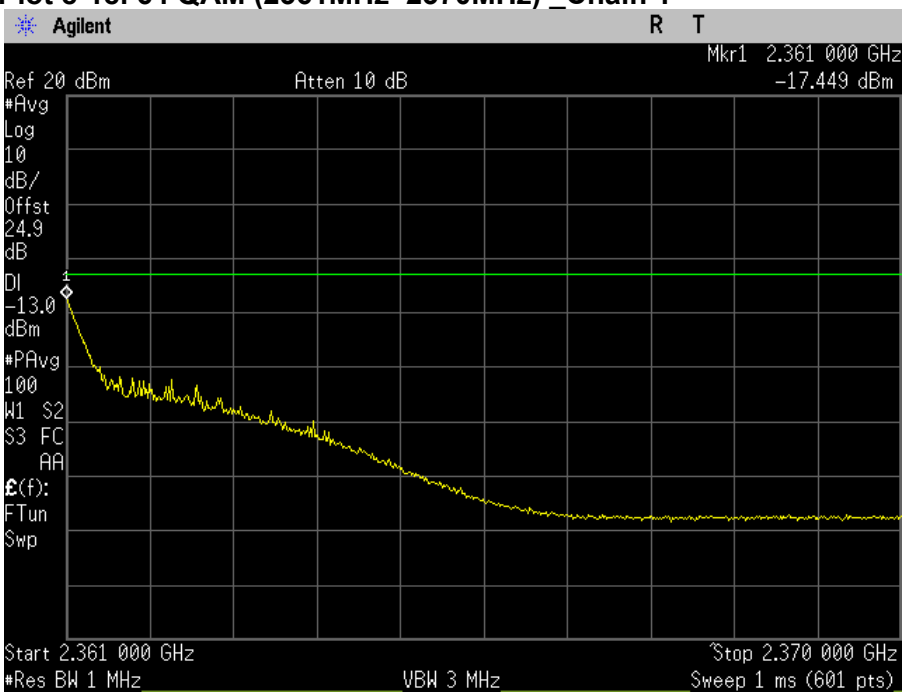
Plot 8-16. 64 QAM (2354MHz~2355MHz) _Chain 1



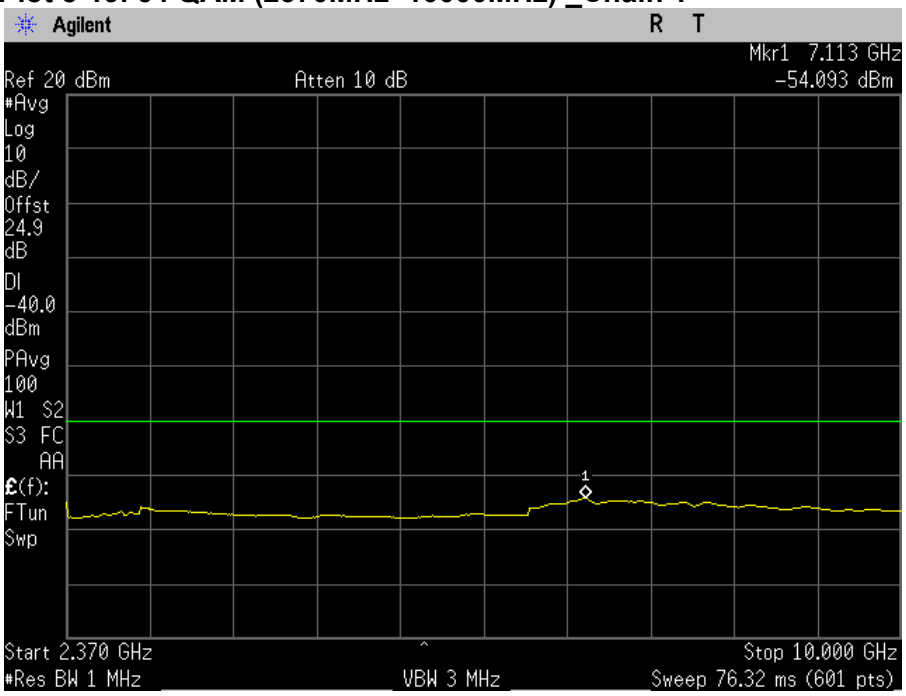
Plot 8-17. 64 QAM (2360MHz~2361MHz) _Chain 1



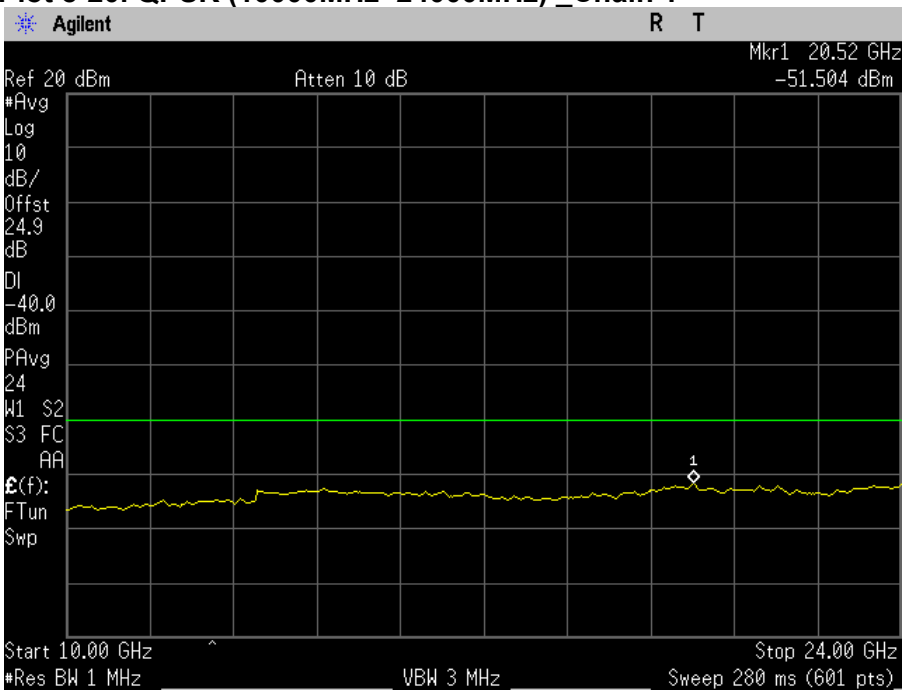
Plot 8-18. 64 QAM (2361MHz~2370MHz) _Chain 1



Plot 8-19. 64 QAM (2370MHz~10000MHz) _Chain 1



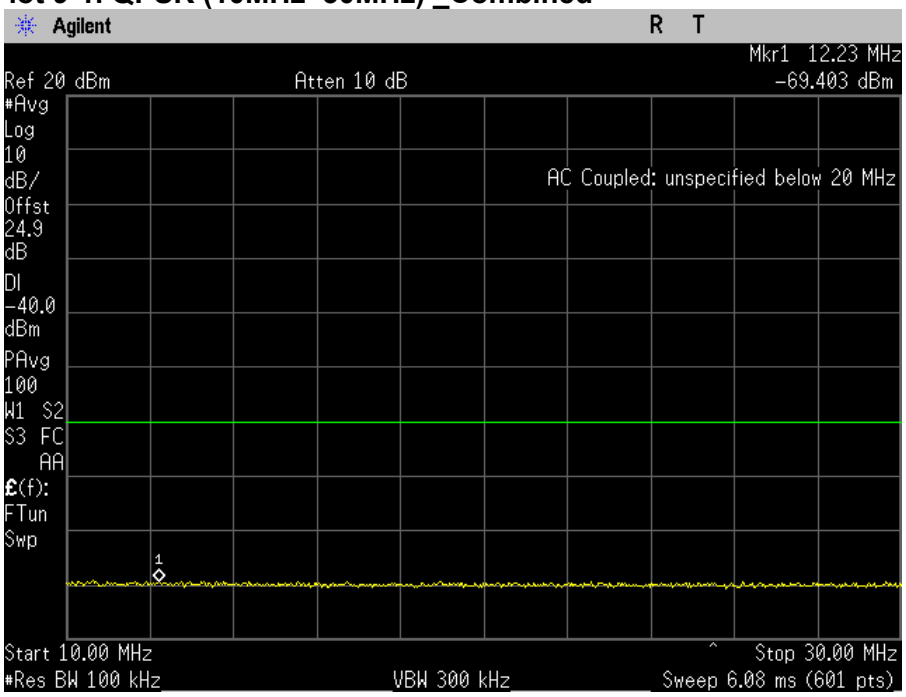
Plot 8-20. QPSK (10000MHz~24000MHz) _Chain 1



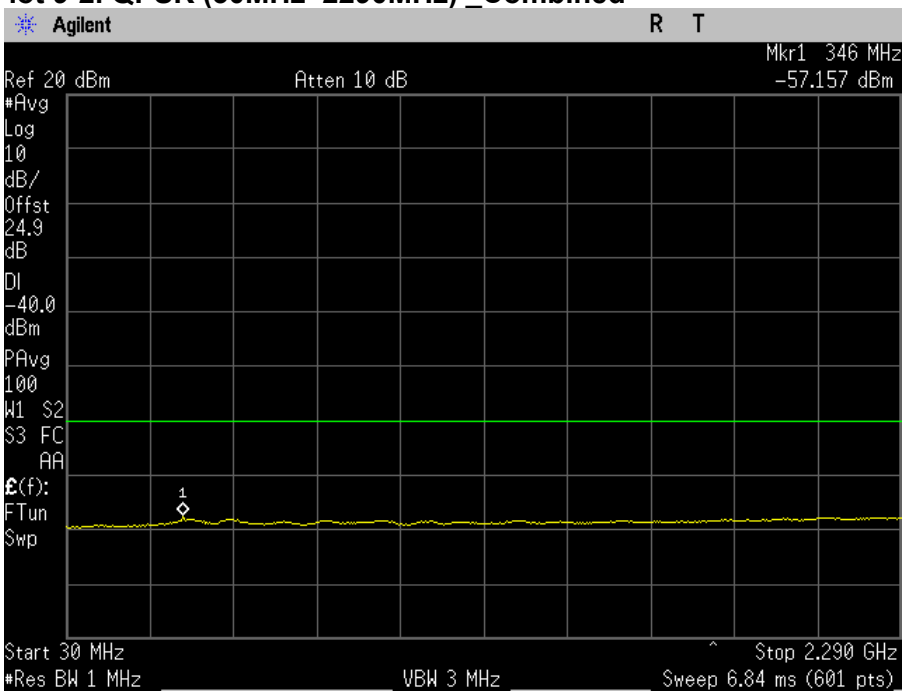
9.3.3. Test Plots (5 MHz Bandwidth_Combined)

- **2307.5 MHz_5 MHz Bandwidth_Combined**

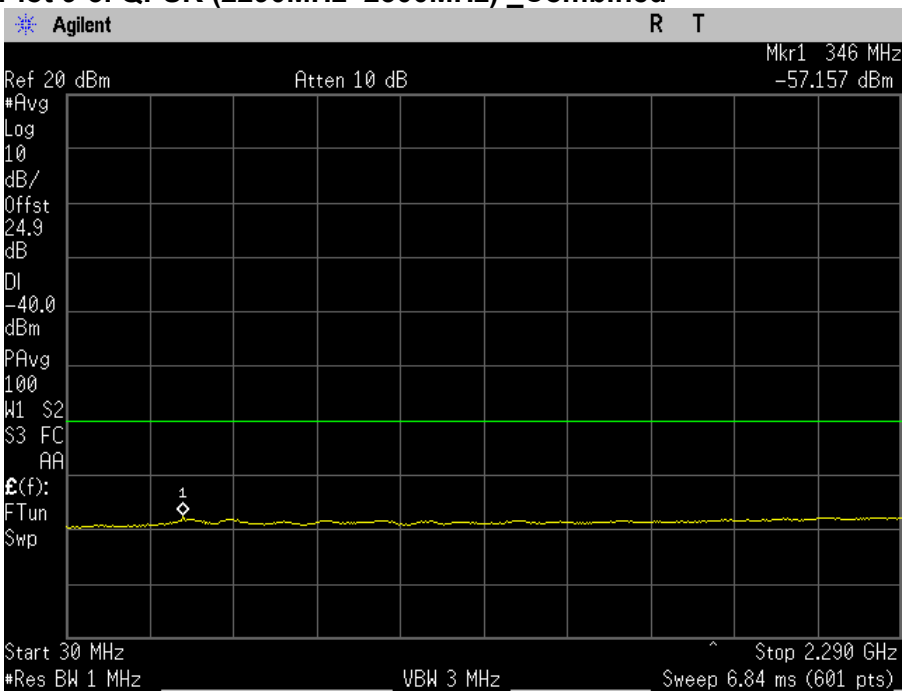
Plot 9-1. QPSK (10MHz~30MHz) _Combined



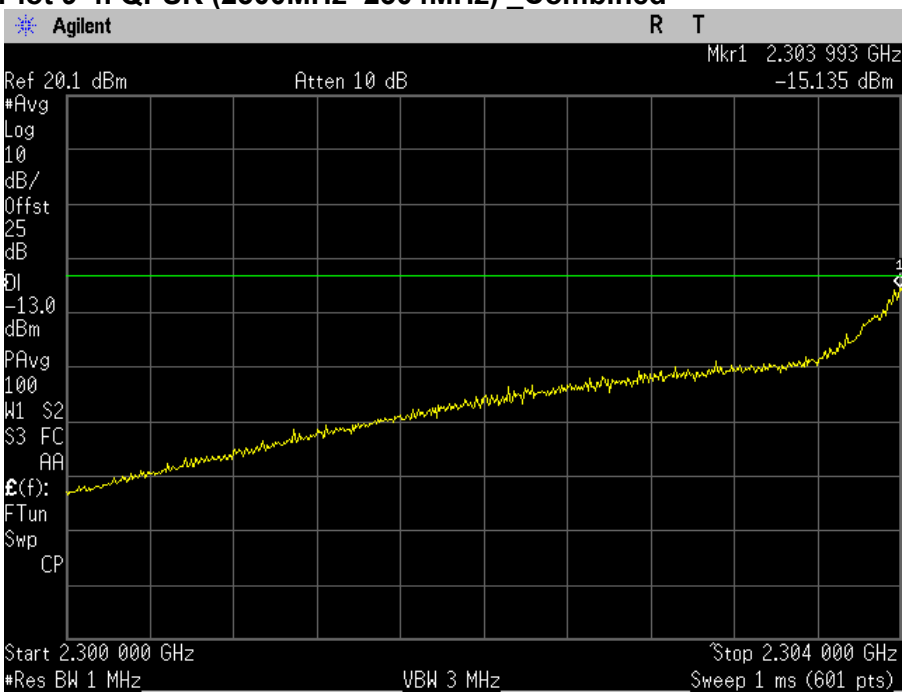
Plot 9-2. QPSK (30MHz~2290MHz) _Combined



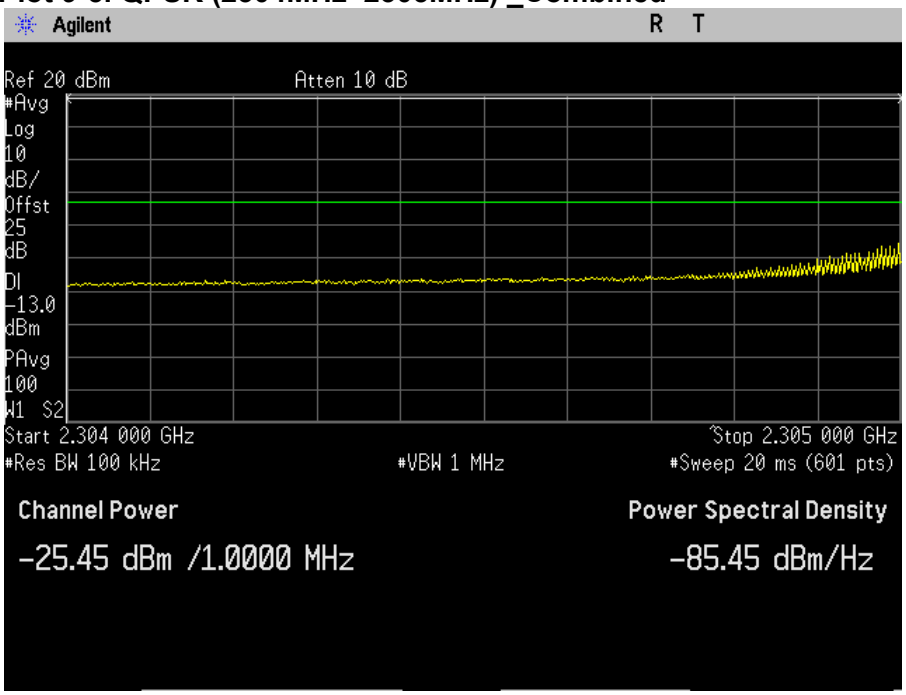
Plot 9-3. QPSK (2290MHz~2300MHz) _Combined



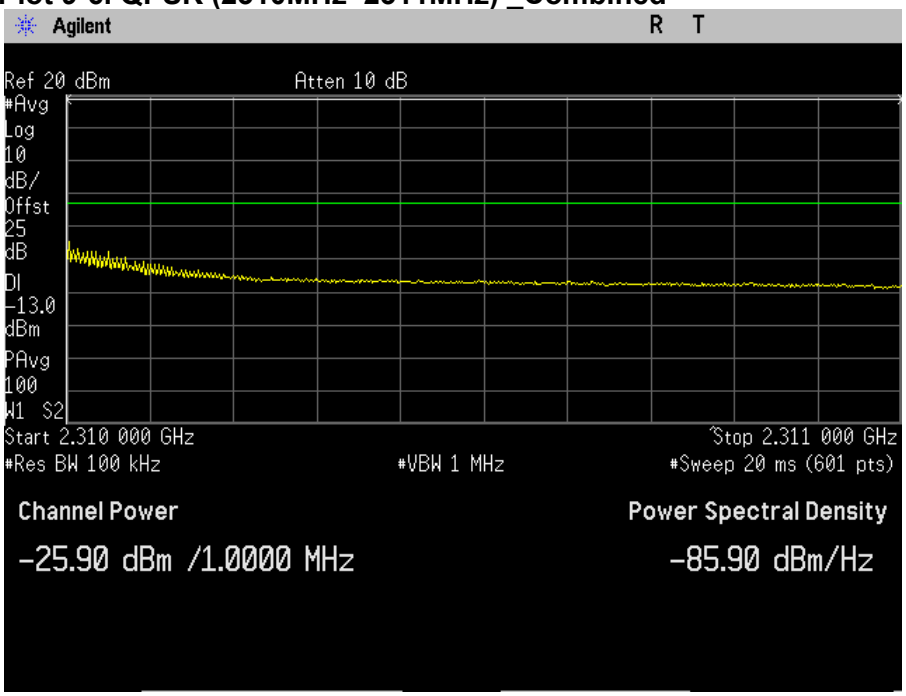
Plot 9-4. QPSK (2300MHz~2304MHz) _Combined



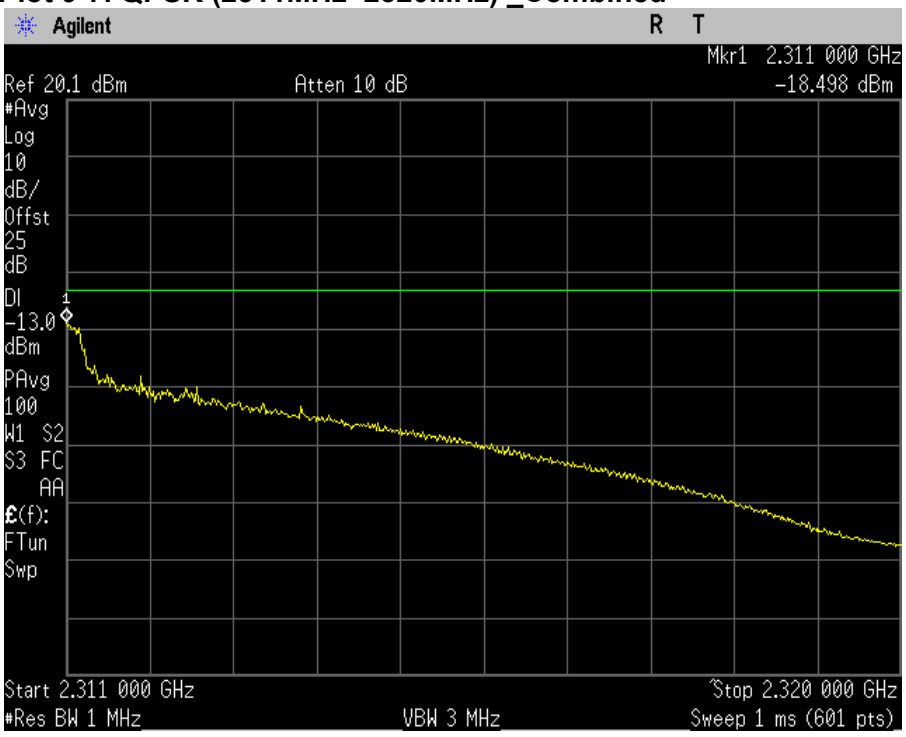
Plot 9-5. QPSK (2304MHz~2305MHz) _Combined



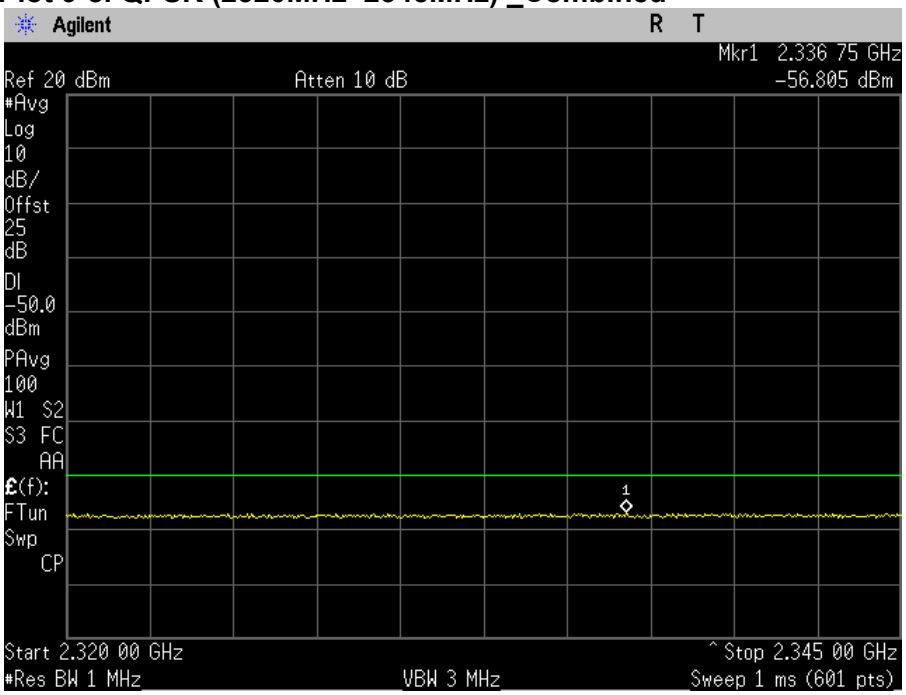
Plot 9-6. QPSK (2310MHz~2311MHz) _Combined



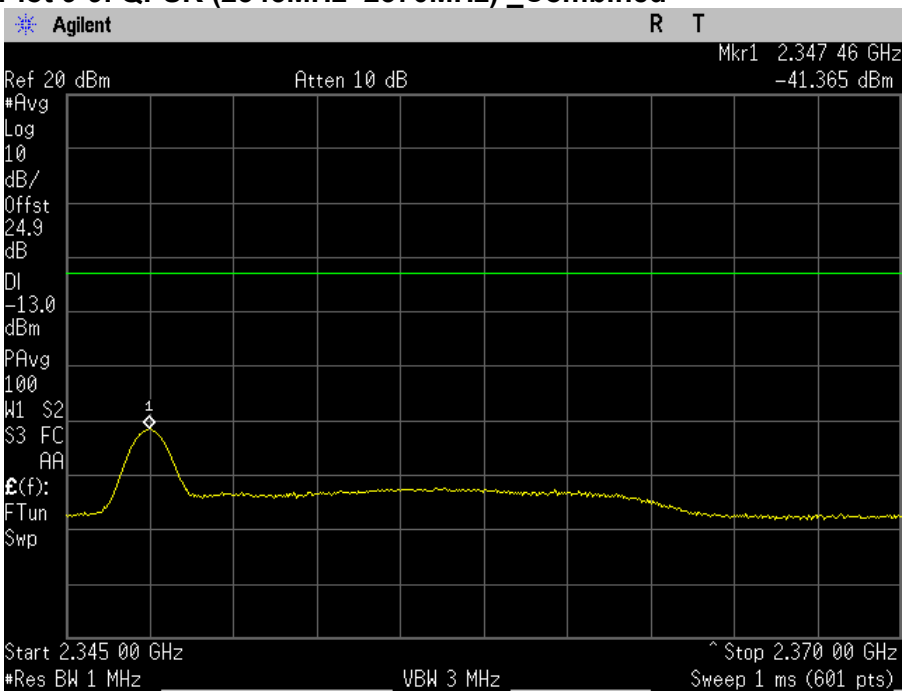
Plot 9-7. QPSK (2311MHz~2320MHz) _Combined



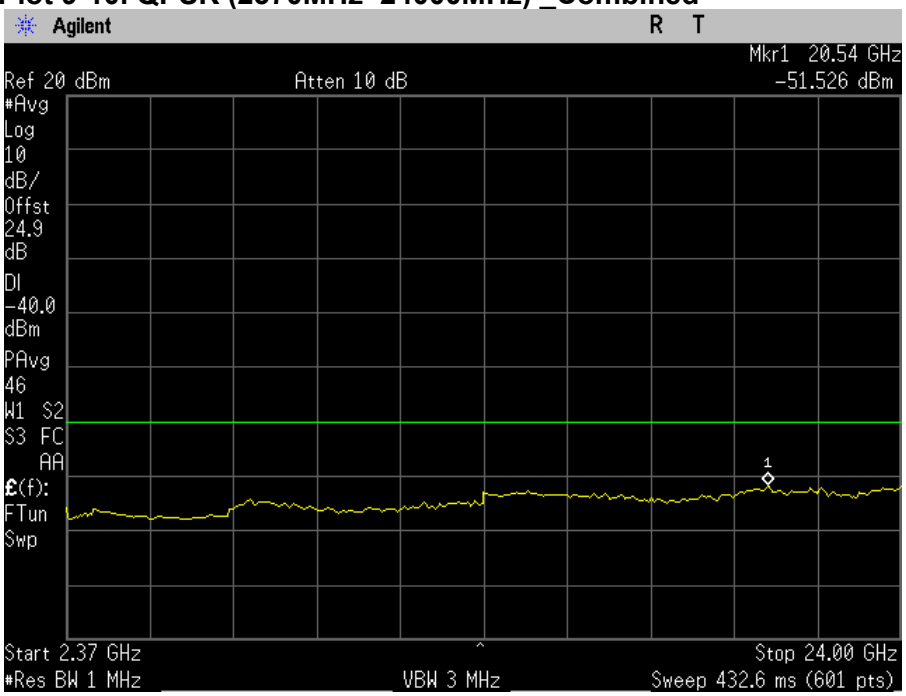
Plot 9-8. QPSK (2320MHz~2345MHz) _Combined



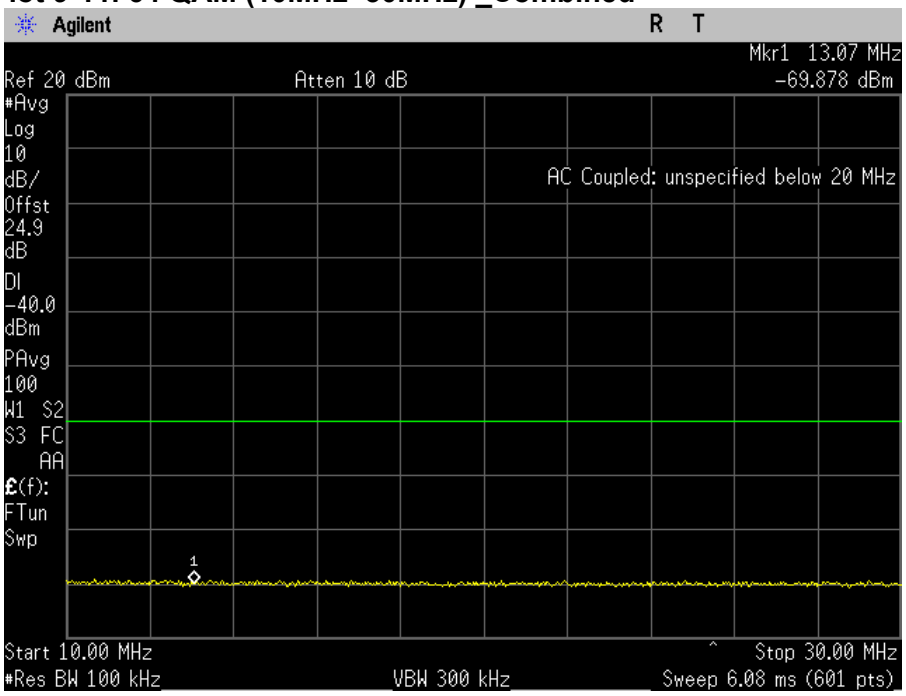
Plot 9-9. QPSK (2345MHz~2370MHz) _Combined



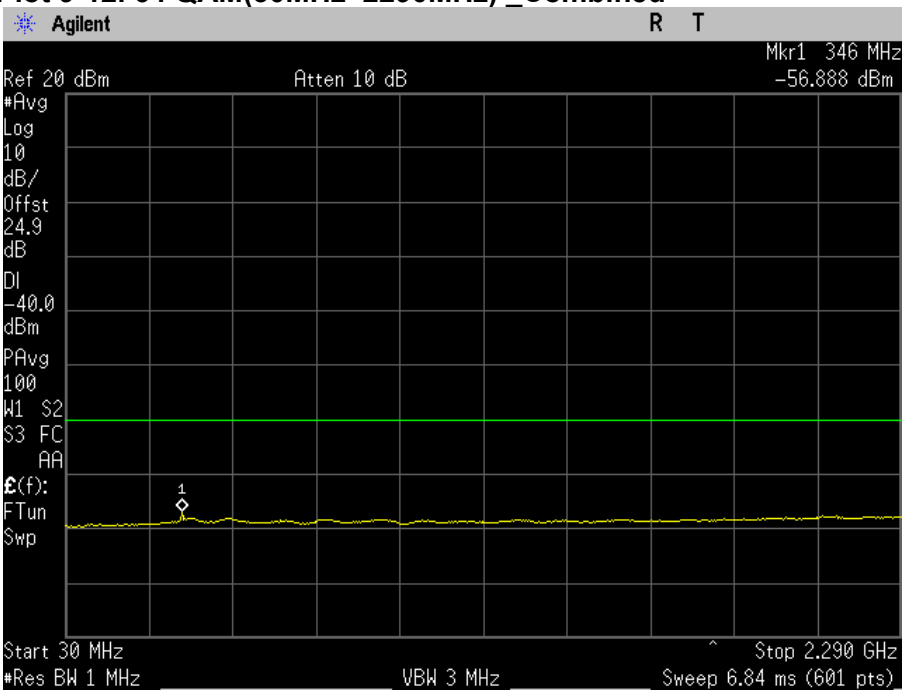
Plot 9-10. QPSK (2370MHz~24000MHz) _Combined



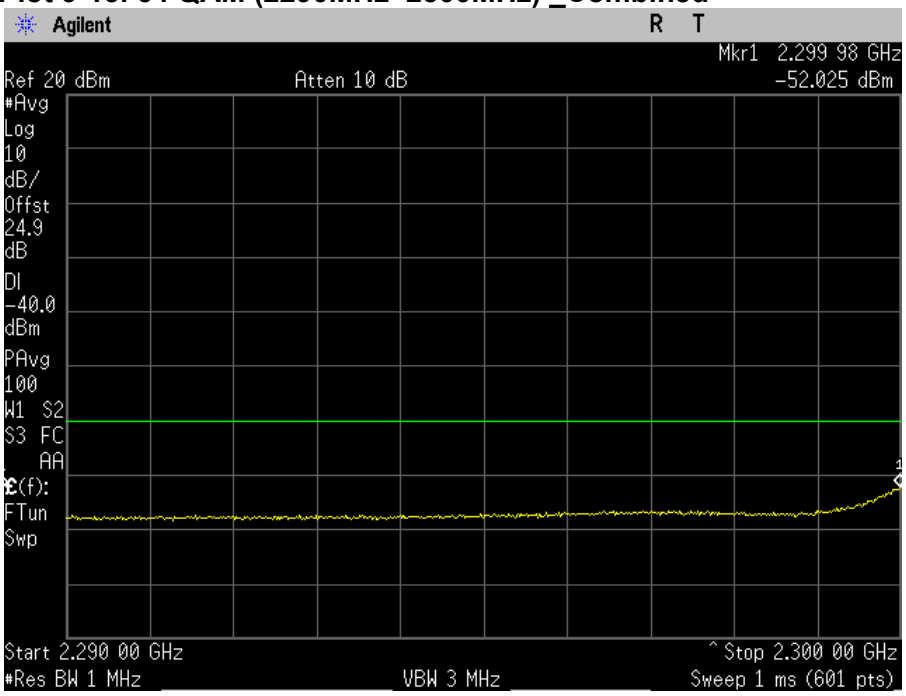
Plot 9-11. 64 QAM (10MHz~30MHz) _Combined



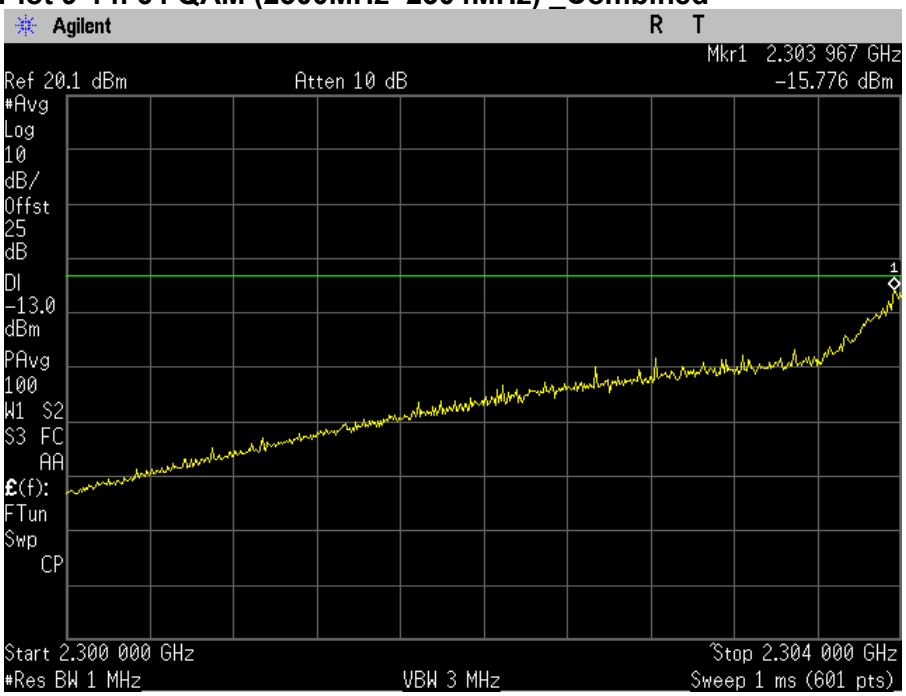
Plot 9-12. 64 QAM(30MHz~2290MHz) _Combined



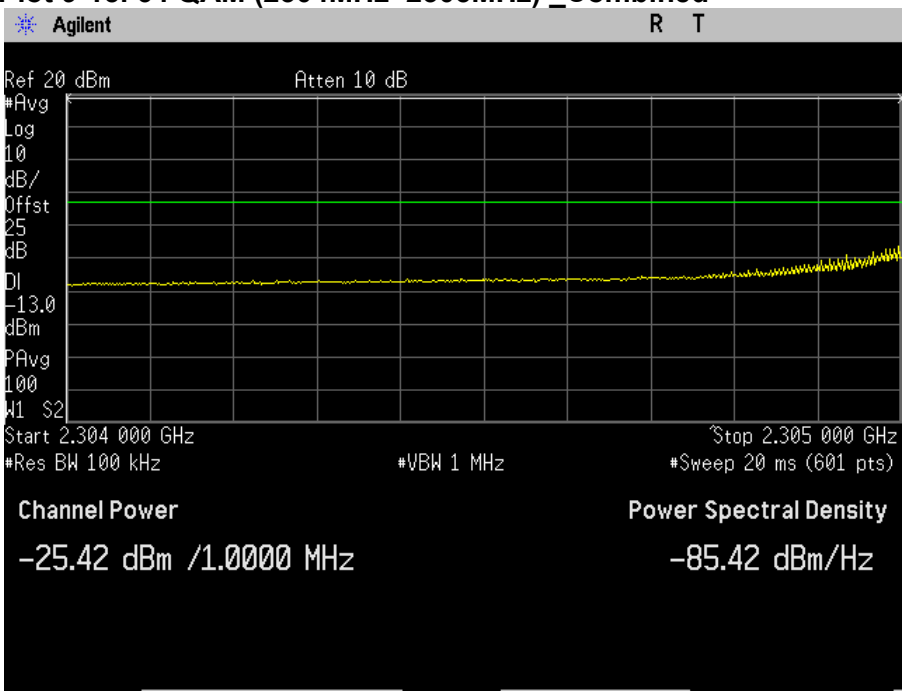
Plot 9-13. 64 QAM (2290MHz~2300MHz) _Combined



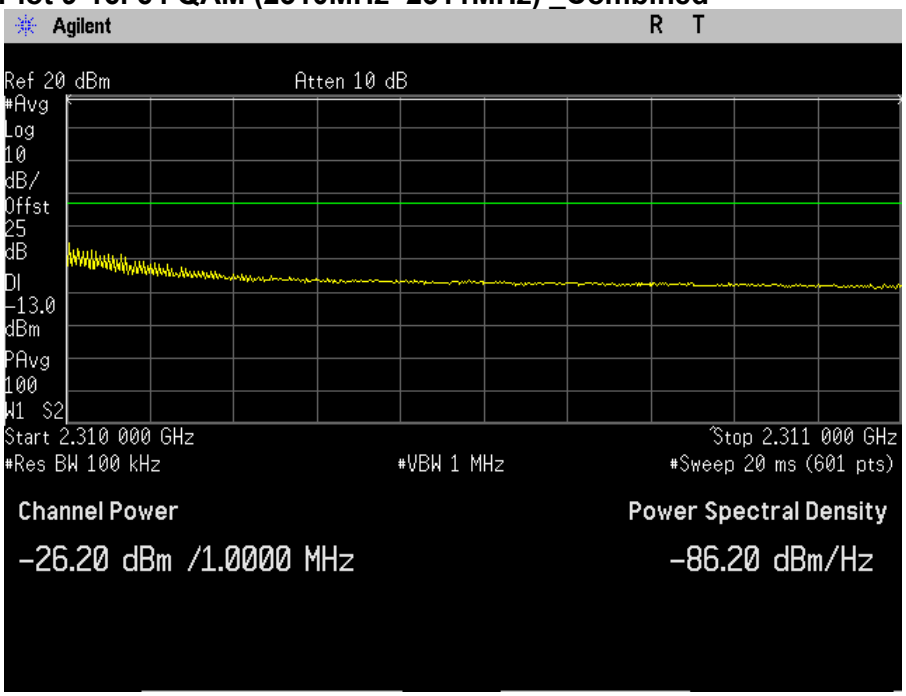
Plot 9-14. 64 QAM (2300MHz~2304MHz) _Combined



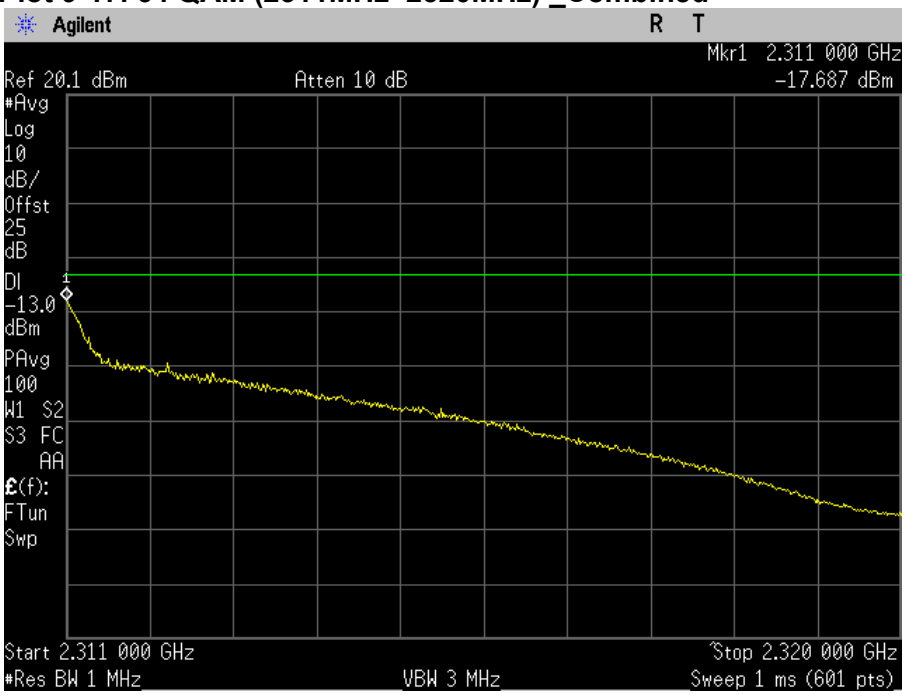
Plot 9-15. 64 QAM (2304MHz~2305MHz) _Combined



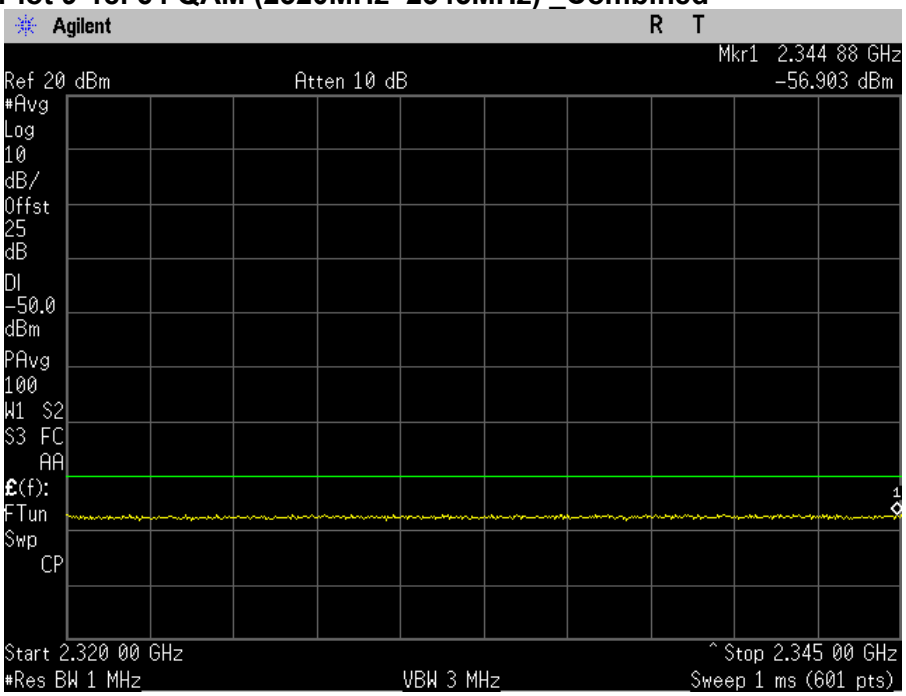
Plot 9-16. 64 QAM (2310MHz~2311MHz) _Combined



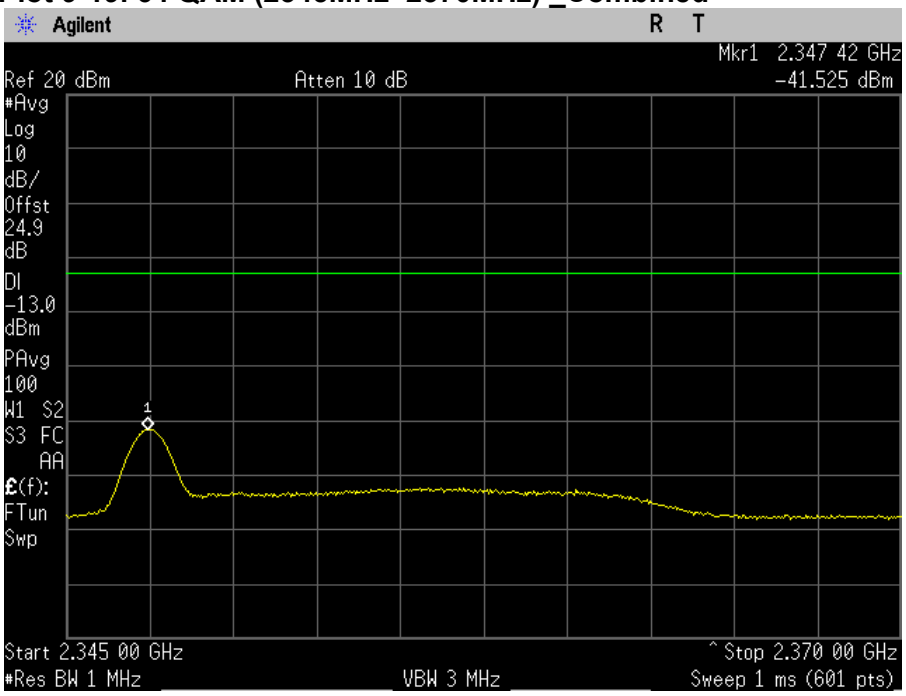
Plot 9-17. 64 QAM (2311MHz~2320MHz) _Combined



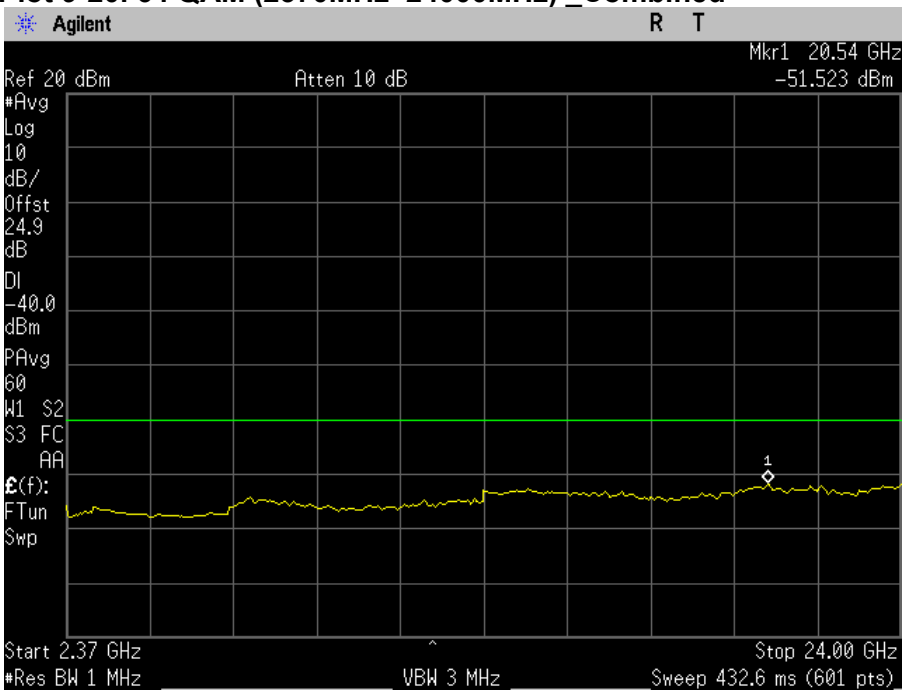
Plot 9-18. 64 QAM (2320MHz~2345MHz) _Combined



Plot 9-19. 64 QAM (2345MHz~2370MHz) _Combined

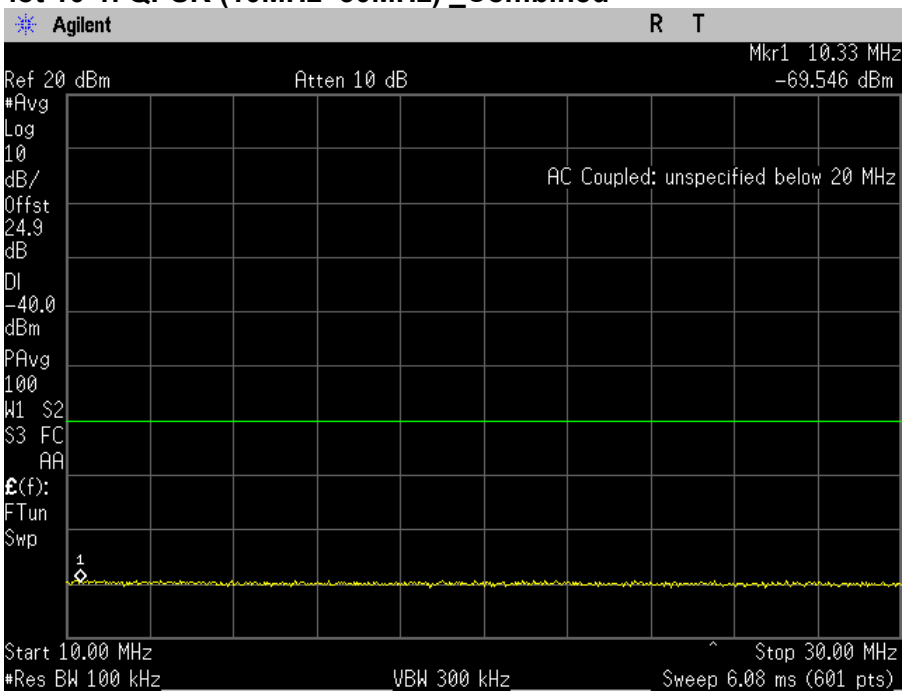


Plot 9-20. 64 QAM (2370MHz~24000MHz) _Combined

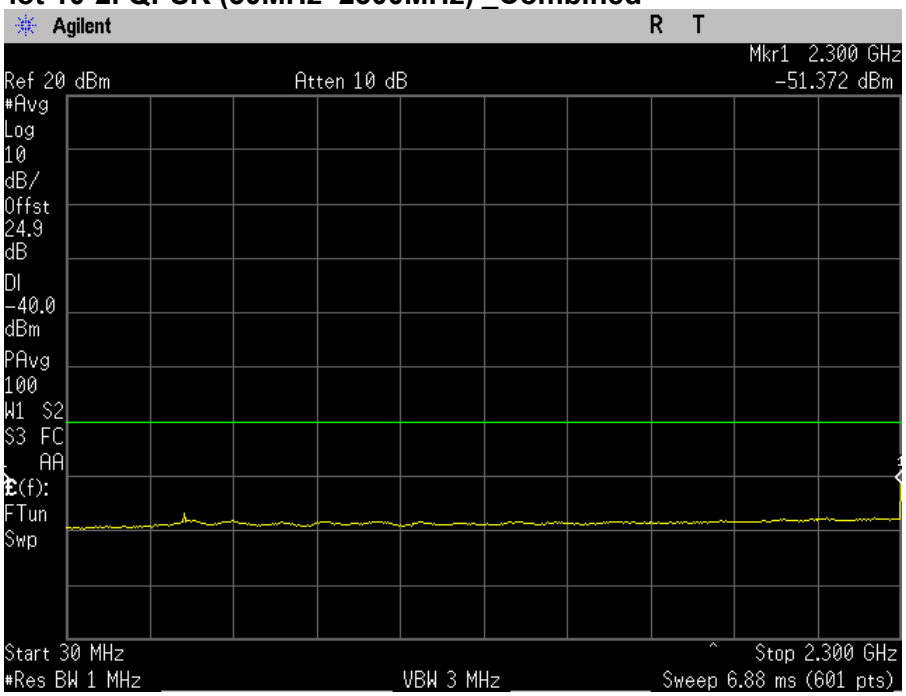


- **2312.5 MHz_5 MHz Bandwidth__Combined**

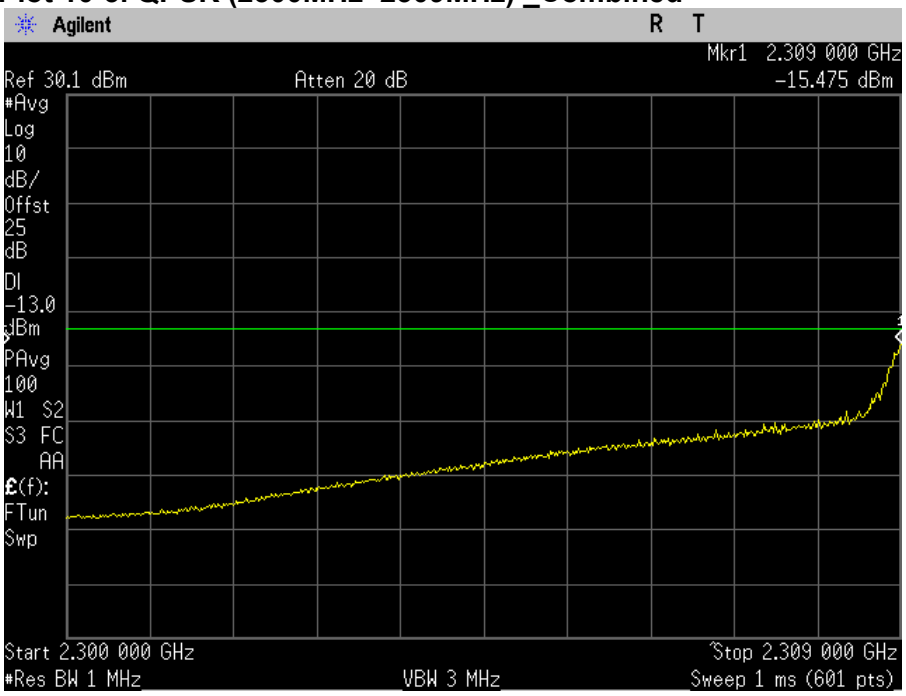
Plot 10-1. QPSK (10MHz~30MHz) _Combined



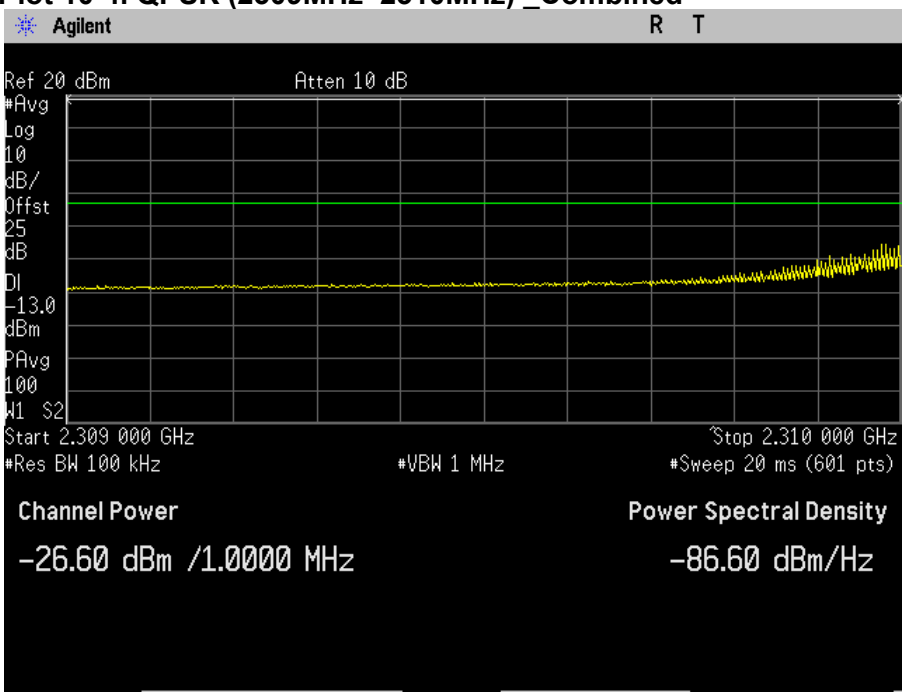
Plot 10-2. QPSK (30MHz~2300MHz) _Combined



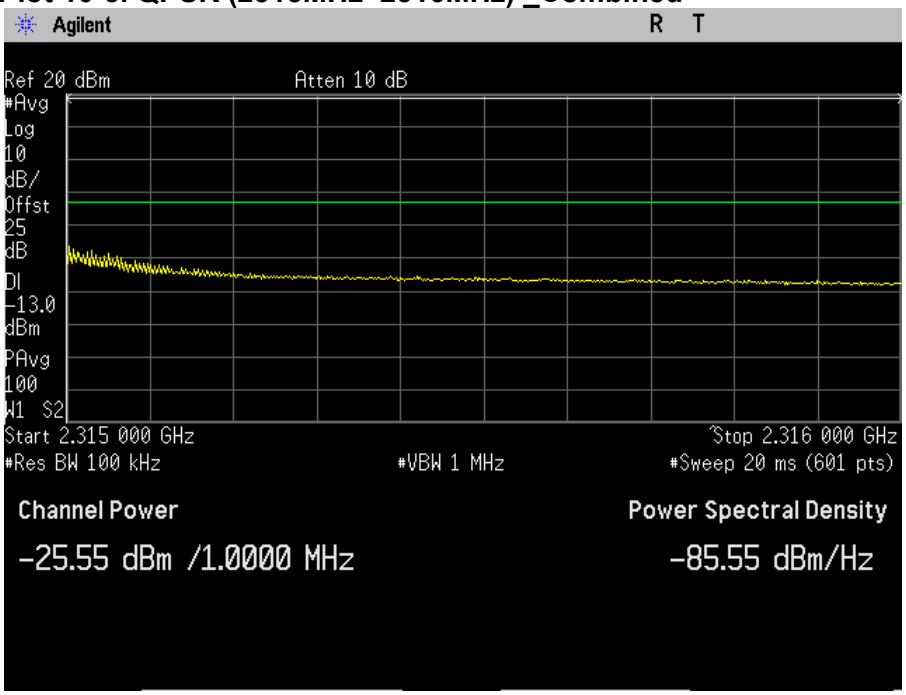
Plot 10-3. QPSK (2300MHz~2309MHz) _Combined



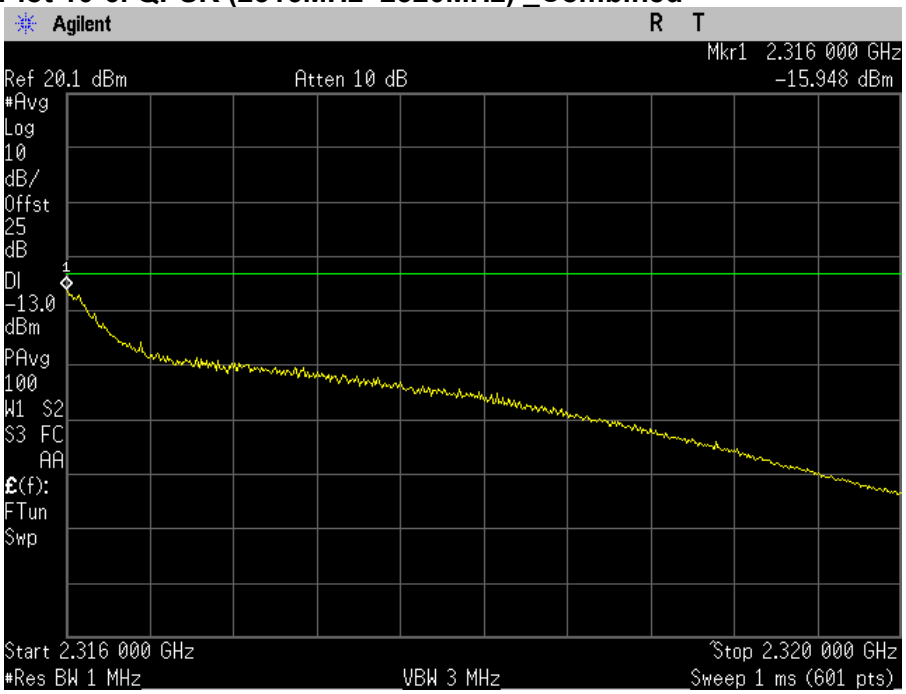
Plot 10-4. QPSK (2309MHz~2310MHz) _Combined



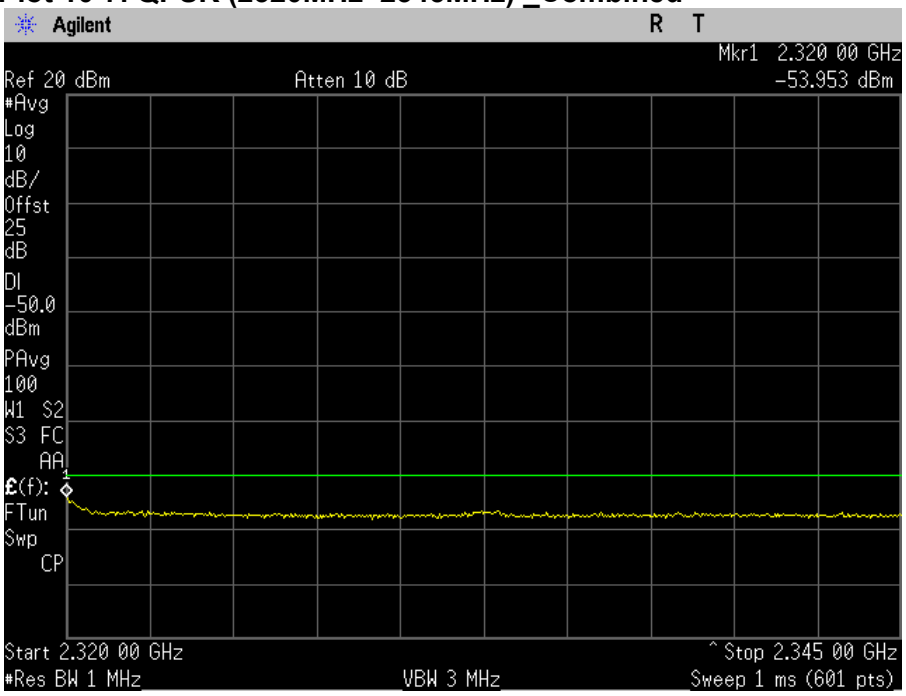
Plot 10-5. QPSK (2315MHz~2316MHz) _Combined



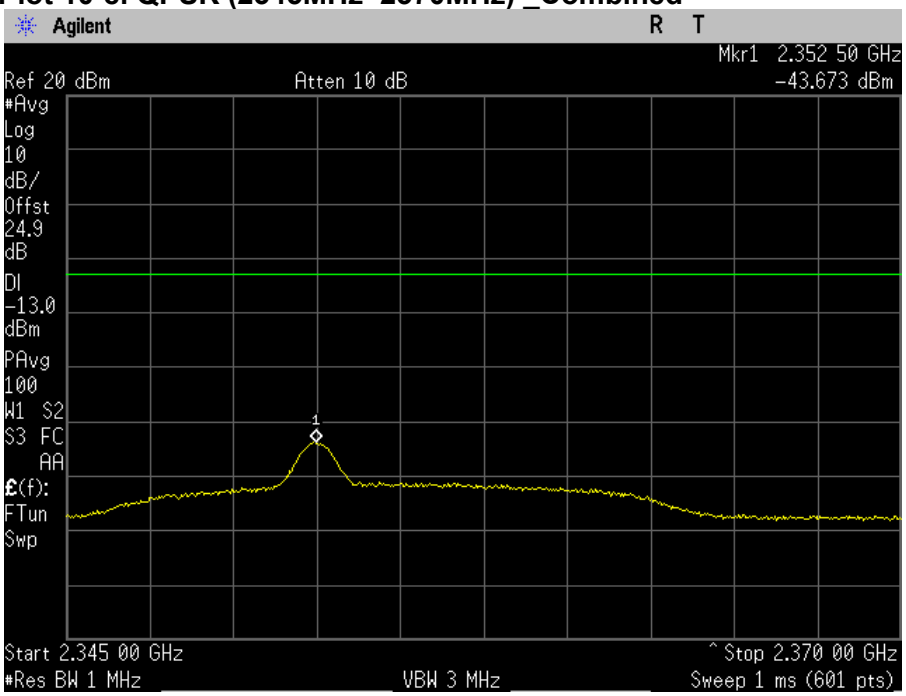
Plot 10-6. QPSK (2316MHz~2320MHz) _Combined



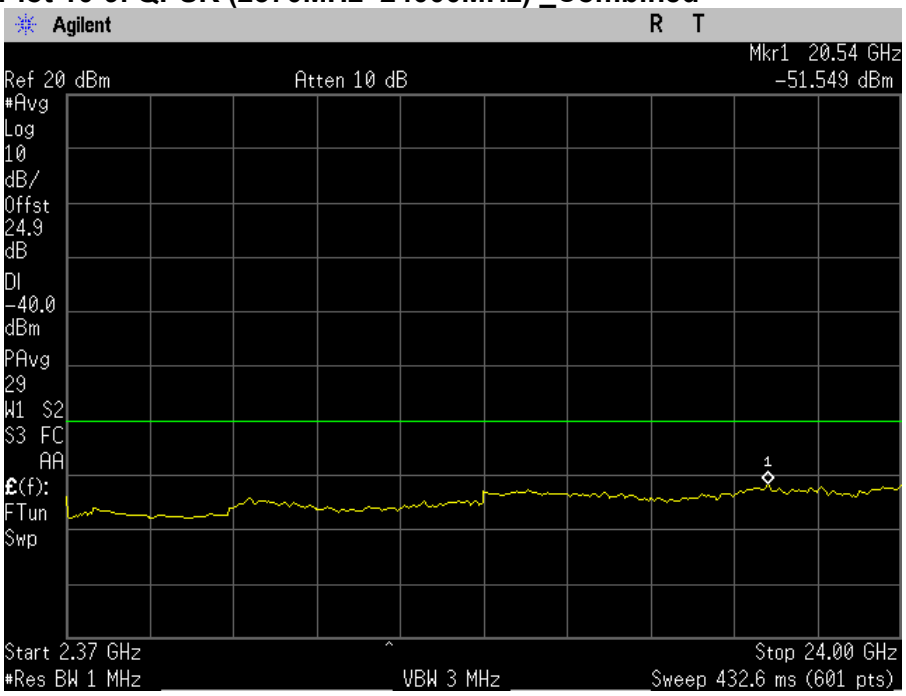
Plot 10-7. QPSK (2320MHz~2345MHz) _Combined



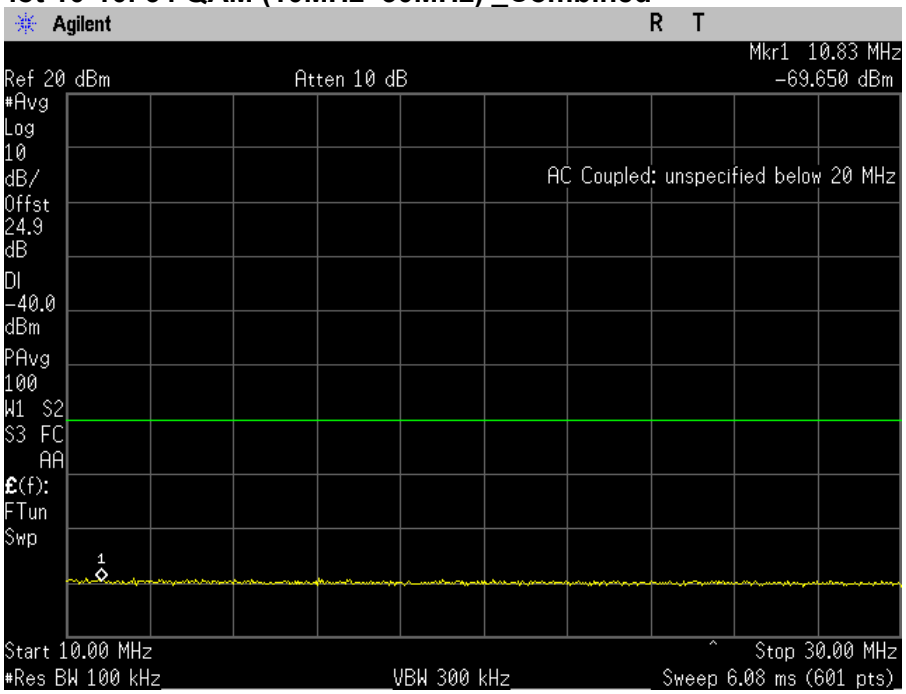
Plot 10-8. QPSK (2345MHz~2370MHz) _Combined



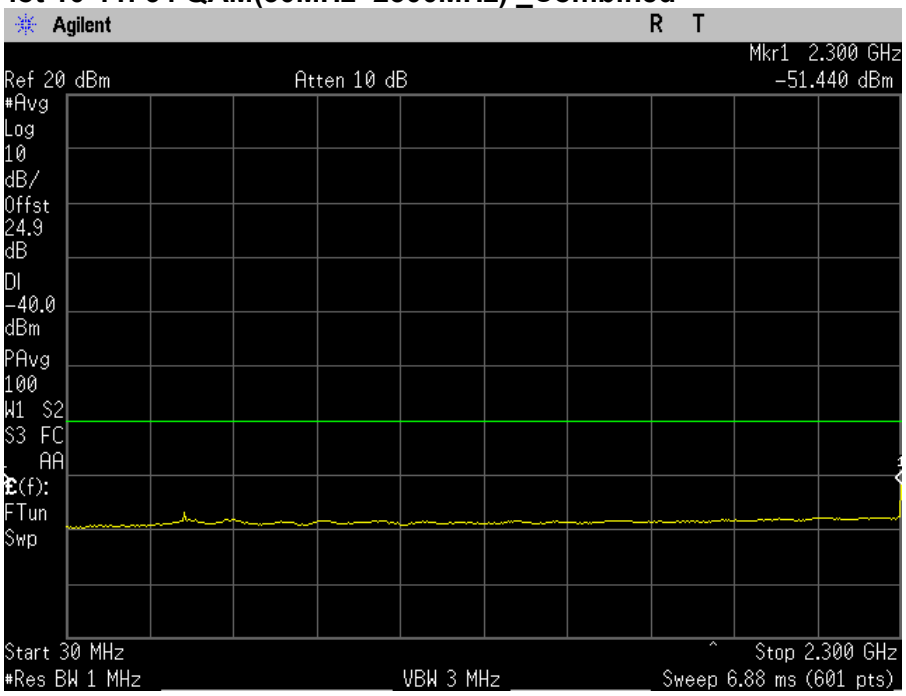
Plot 10-9. QPSK (2370MHz~24000MHz) _Combined



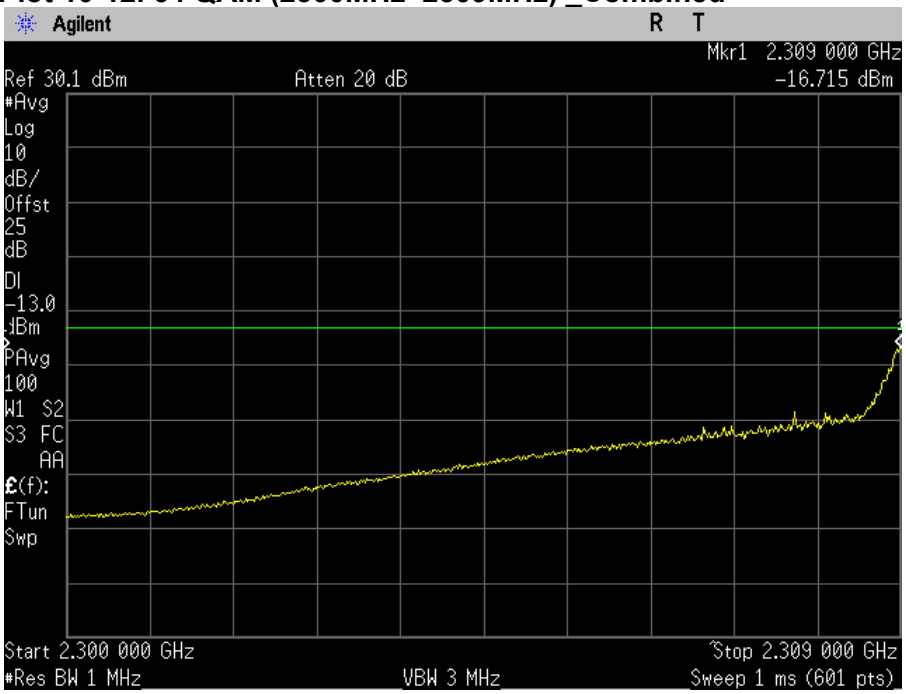
Plot 10-10. 64 QAM (10MHz~30MHz) _Combined



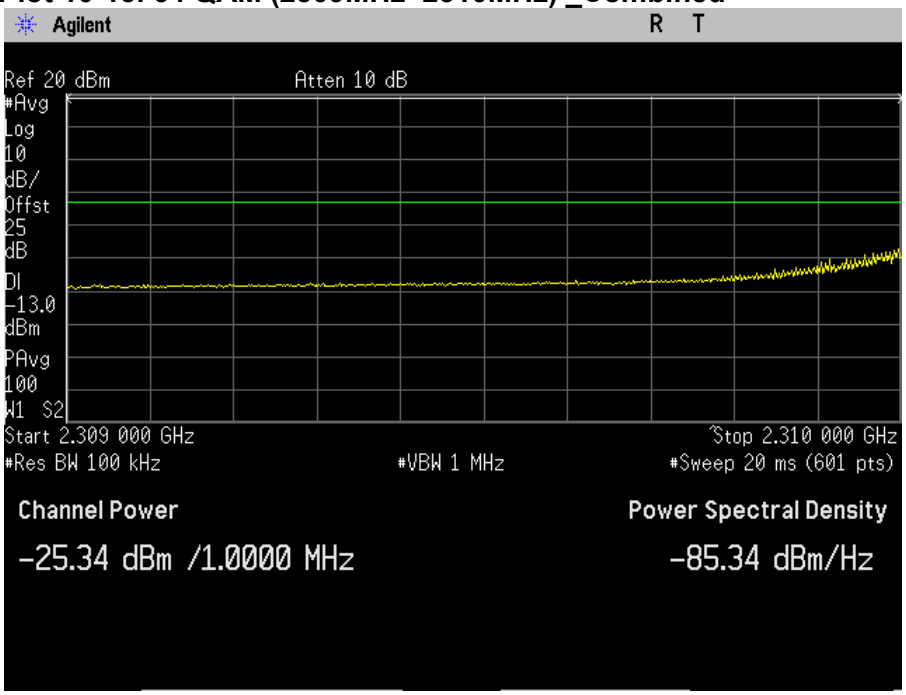
Plot 10-11. 64 QAM(30MHz~2300MHz) _Combined



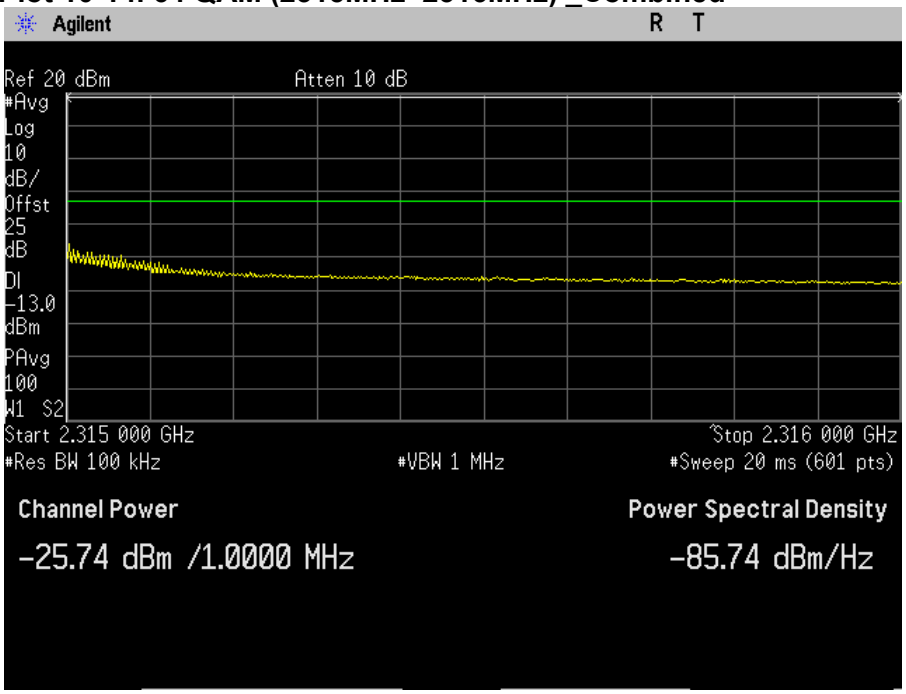
Plot 10-12. 64 QAM (2300MHz~2309MHz) _Combined



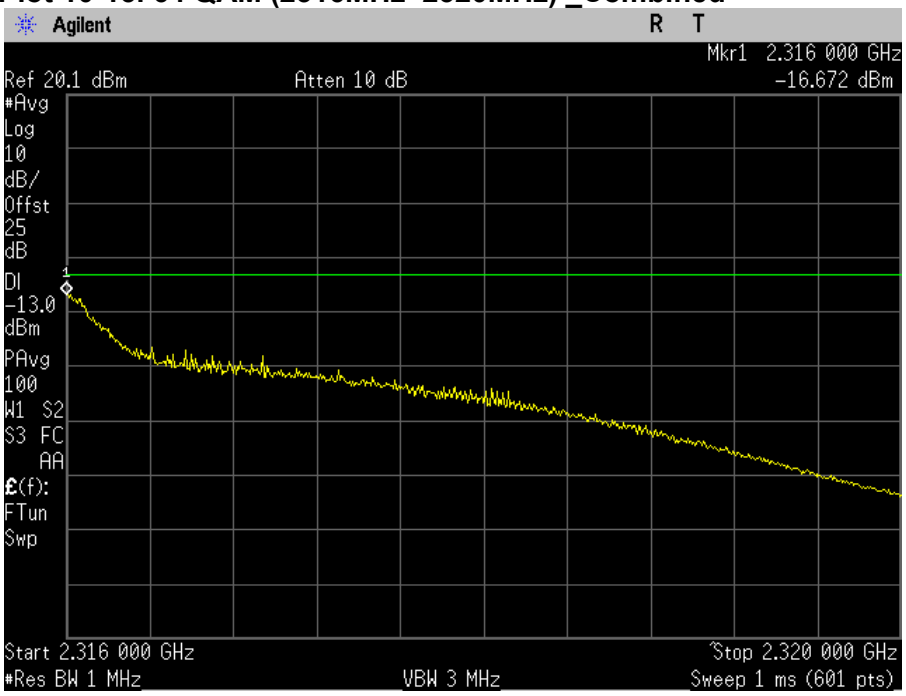
Plot 10-13. 64 QAM (2309MHz~2310MHz) _Combined



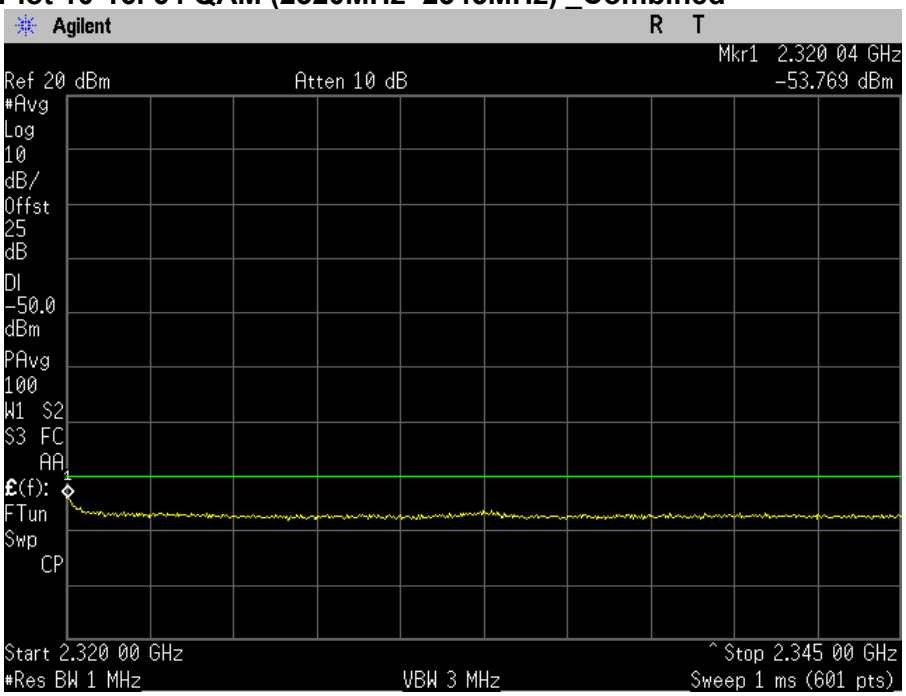
Plot 10-14. 64 QAM (2315MHz~2316MHz) _Combined



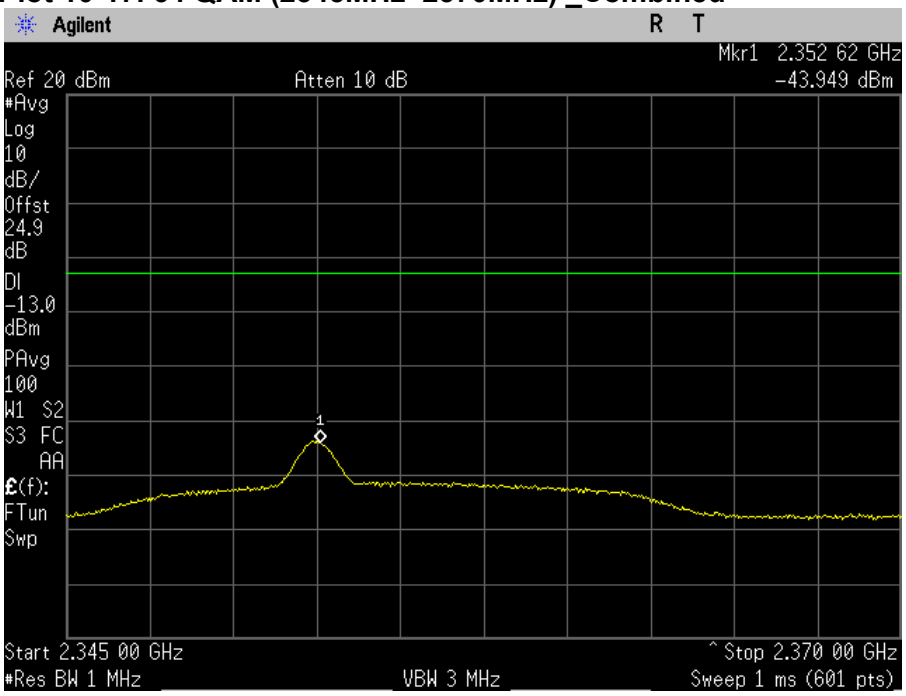
Plot 10-15. 64 QAM (2316MHz~2320MHz) _Combined



Plot 10-16. 64 QAM (2320MHz~2345MHz) _Combined



Plot 10-17. 64 QAM (2345MHz~2370MHz) _Combined



Plot 10-18. 64 QAM (2370MHz~24000MHz) _Combined