



SAMSUNG ELECTRONICS Co., Ltd.,
Regulatory Compliance Group
IT R&D Center
416, Maetan-3Dong,
Youngtong-Gu, Suwon-city,
Gyeonggi-Do, Korea 442-600

FCC CFR47 PART 15 SUBPART CERTIFICATION REPORT

Model Tested: SCH-i730
Additional Model: SCH-i731, SCH-i732
SCH-i733, SCH-i734
FCC ID (Requested): A3LSCHI730
Report No: FB-68-R1
Job No: FB-068
Date issued: Dec. 08, 2004

- Abstract -

All measurement reported herein accordance with FCC Rules, 47CFR
Part2, Part15.

Prepared By	_____	Date	_____
	SS LEE – Test Engineer		
Checked By	_____	Date	_____
	JH CHOI - Engineer		
Authorized By	_____	Date	_____
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MEASUREMENT REPORT

1. FCC CERTIFICATION INFORMATION

The following information is in accordance with FCC Rules, 47CFR Part15, Subpart C

1.1 §2.1033 GENERAL INFORMATION

- Applicant Name: SAMSUNG ELECRONICS CO., LTD.
- Address: 416, Maetan-3Dong, Youngtong-Gu, Suwon City
Gyeonggi-Do, KOREA 442-600
- Attention: Wallace Oh, Engineering Manager (QA Lab)
- FCC ID: A3LSCHI730
- Additional Model: SCH-i731, SCH-i732, SCH-i733, SCH-i734
- Quantity: Quantity production is planned.
- Equipment (EUT) Type: Samsung CDMA/PCS Phone with Bluetooth / WLAN
- FCC Classification(s): FCC Part15 Digital Transmission System (DTS)
- Frequency Range: 2412 ~ 2462MHz(WLAN)
- Max. Output Power: 0.080W(19.05dBm)Conducted
- FCC Rule Part(s): §15.247, §2
- Dates of Test: Dec.06-08, 2004
- Place of Test: SAMSUNG Lab,
- Test Report S/N: FB-068-R1

2. INTRODUCTION

2.1 SAMSUNG TEST LOCATION

These measurement test were conducted at the **SAMSUNG ELECTRONICS CO., LTD(SUWON)**. The site address is 416, Maetan-3Dong, Youngtong-Gu, Suwon City, Gyeonggi-Do, KOREA 442-600. The site has 1 Fully-anechoic chamber and measurement facility.

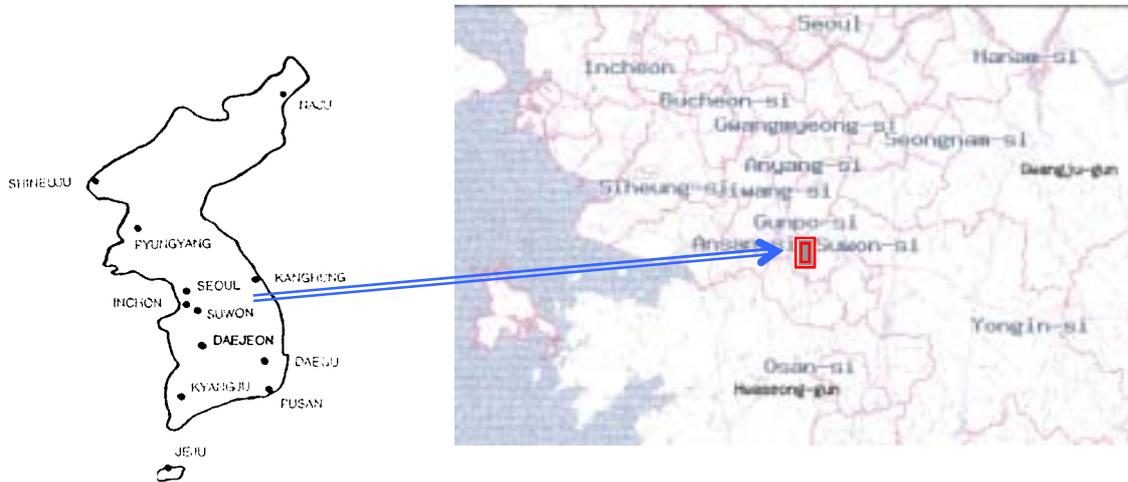


Figure1. Map of the Suwon City area.

2.2 SCOPE

All measurement tests were conducted at the SAMSUNG Lab, except Radiated Emission & Conducted Emission test. RE and CE measurement test reports are issued separately.

2.3 MEASUREMENT PROCEDURE

The radiated and spurious measurements were made Fully-anechoic chamber at a 3-meter test range (see Figure2). The equipment under testing was placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

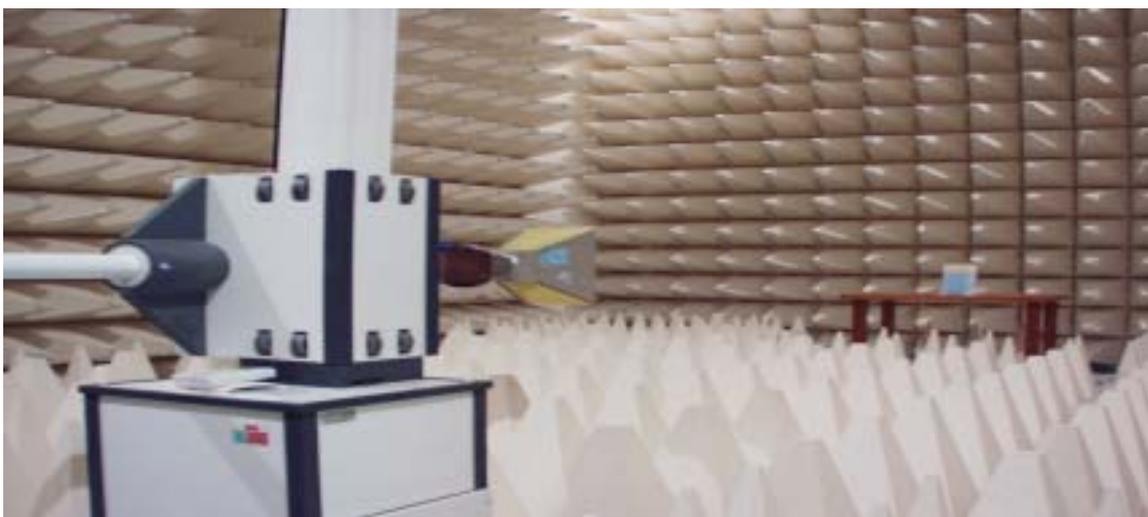


Figure2. Photograph of 3m Fully Anechoic Chamber

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3. TEST EQUIPMENT LIST

Name of Equipment	Model	Serial No.	Due Date
Spectrum Analyzer	ESI26	836119/010	2005-09-20
	E4440A(3Hz~26.5GHz)	MY41000236	2005-10-27
	E4440A(3Hz~26.5GHz)	MY41000233	2005-11-04
Signal Generator	SMR27	100039	2005-08-11
Pre-Amplifier	8449B	3008A00691	2005-01-16
Antenna Master	MA0001	ANT0967	Not Required
Controller	HD100	100/756	Not Required
Horn Antenna	SEP-60	83845	2005-08-10
	HF906	100134	2005-05-02
High Pass Filter	WHK/3.5/18G-10SS	3	Not Required
	WHK/3.5/18G-10SS	4	Not Required
Shielded Fully-Anechoic Chamber	RF0002	ANT0001	Not Required
Power Meter	E4419B	GB41293846	2005-09-21
Power sensor	8481B	3318A10325	2005-10-06
Power sensor	8485A	3318A19924	2005-09-20
Network Analyzer	8753E	JP38160590	2005-07-22
Power Supply	E3640A	MY40003595	2005-06-30
Power Supply	E3640A	MY40003594	2005-07-02

4. TECHNICAL CHARACTERISTICS TEST

4.1 6dB Bandwidth

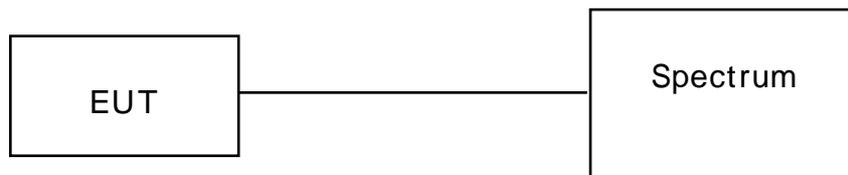
FCC Part15, Subpart C Section 15.247(a)

4.1.1 LIMIT

System using digital modulation techniques may operate in the 2400-2483.5 MHz band. The minimum 6dB bandwidth shall be at least 500 kHz.

Frequency(MHz)	Channel no.	6dB Bandwidth LIMIT(kHz)
2412	1	>500
2437	6	>500
2462	11	>500

4.1.2 TEST SET - UP



The EUT was connected to a spectrum through a 50ohm RF cable.

4.1.3 TEST PROCEDURE

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect it to measurement instrument. Then set it to any one proper frequency within its operating range.
3. Measure the frequency difference of two frequencies that were attenuated 20dB from the highest peak value. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

4.1.4 TEST RESULT

Frequency(MHz)	Channel no.	6dB Bandwidth(MHz)	6dB Bandwidth LIMIT(kHz)	Pass/Fail
2412	1	9.39	>500	Pass
2437	6	9.45	>500	Pass
2462	11	8.63	>500	Pass

4.2 OUTPUT POWER MEASUREMENT

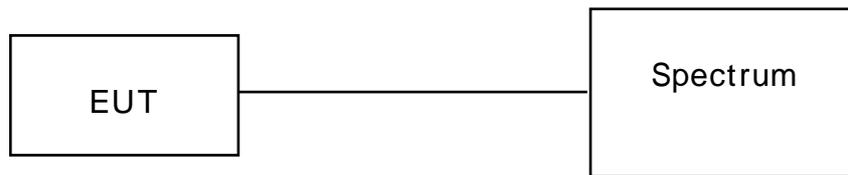
FCC Part15, Subpart C Section 15.247(b)

4.2.1 LIMIT

For systems using digital modulation in the 2400-2483.5 MHz : 1 Watt (30dBm)

Frequency Range(MHz)	2400~2483.5
Limit(dBm)	<30

4.2.2 TEST SET - UP



The EUT was connected to a spectrum through a 50ohm RF cable

4.2.3 TEST PROCEDURE

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn the EUT and connect it to measurement instrument. Then set it to any one proper frequency within its operating range.

4.2.4 TEST RESULT

Frequency(MHz)	Channel no.	Power Output(dBm)	Power Output LIMIT(dBm)	Pass/Fail
2412	1	19.03	<30	Pass
2437	6	19.05	<30	Pass
2462	11	19.04	<30	Pass

4.3 CONDUCTED SPURIOUS EMISSION TEST

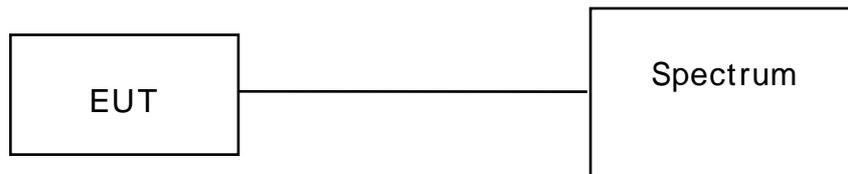
FCC Part15, Subpart C Section 15.247(d)

4.3.1 LIMIT

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Frequency(MHz)	Channel no.	LIMIT (30MHz – 25GHz)
2412	1	>20dBc
2437	6	>20dBc
2462	11	>20dBc

4.3.2 TEST SET - UP



The EUT was connected to a spectrum through a 50ohm RF cable

4.3.3 TEST PROCEDURE

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. The transmitter output was connected to the spectrum analyzer via a low loss cable.
3. Turn the EUT and connect it to measurement instrument. Then set it to any one proper frequency within its operating range.

4.3.4 TEST RESULT

Frequency(MHz)	Channel no.	Actual attenuation below frequency of operation(dBc)	LIMIT (30MHz – 25GHz)	Pass/Fail
2412	1	60.54	>20dBc	Pass
2437	6	61.42	>20dBc	Pass
2462	11	60.94	>20dBc	Pass

4.4 BAND EDGE COMPLIANCE

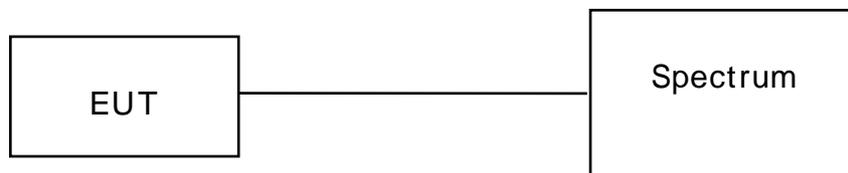
FCC Part15, Subpart C Section 15.247(d)

4.4.1 LIMIT

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

Frequency Range(MHz)	2400~2483.5
Band edge LIMIT(dBc)	>20

4.4.2 TEST SET - UP



The EUT was connected to a spectrum through a 50ohm RF cable

4.4.3 TEST PROCEDURE

1. Turn the EUT and connect it to measurement instrument. Then set it to any one proper frequency within its operating range.
2. The transmitter output was connected to the spectrum analyzer via a low loss cable.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100MHz bandwidth from band edge.

4.4.4 TEST RESULT

Frequency(MHz)	Result of Band edge(dBc)	Band edge LIMIT(dBc)	Pass/Fail
<2400	39.27	>20	Pass
>2483.5	59.88	>20	Pass

4.5 POWER DENSITY

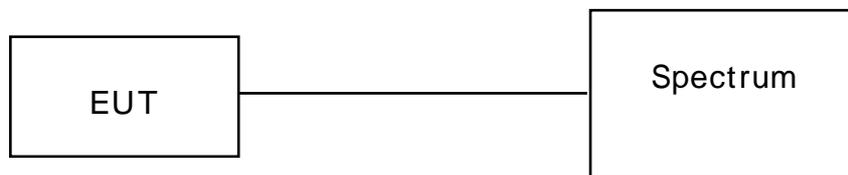
FCC Part15, Subpart C Section 15.247(e)

4.5.1 LIMIT

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

Frequency Range(MHz)	2400~2483.5
LIMIT(dBm)	<8

4.5.2 TEST SET - UP



The EUT was connected to a spectrum through a 50ohm RF cable

4.5.3 TEST PROCEDURE

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Turn on the EUT and connect its antenna terminal to measurement via a low loss cable. Then set it to any one measured frequency within its operation range.
3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3kHz RBW and 3kHz VBW.

4.5.4 TEST RESULT

Frequency(MHz)	Channel no.	Power Density(dBm)	Power Density LIMIT(dBm)	Pass/Fail
2412	1	-3.99	<8	Pass
2437	6	-2.46	<8	Pass
2462	11	-3.34	<8	Pass

4.6 RADIATED HARMONIC MEASUREMENT

FCC Part15, Subpart C Section 15.249, 15.209

4.6.1 LIMIT

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

FUNDAMENTAL FREQUENCY(MHz)	FIELD STRENGTH OF HARMONICS(dBuV/m) (at 3m)
2400 - 2483.5	<54

4.6.2 TEST SET - UP

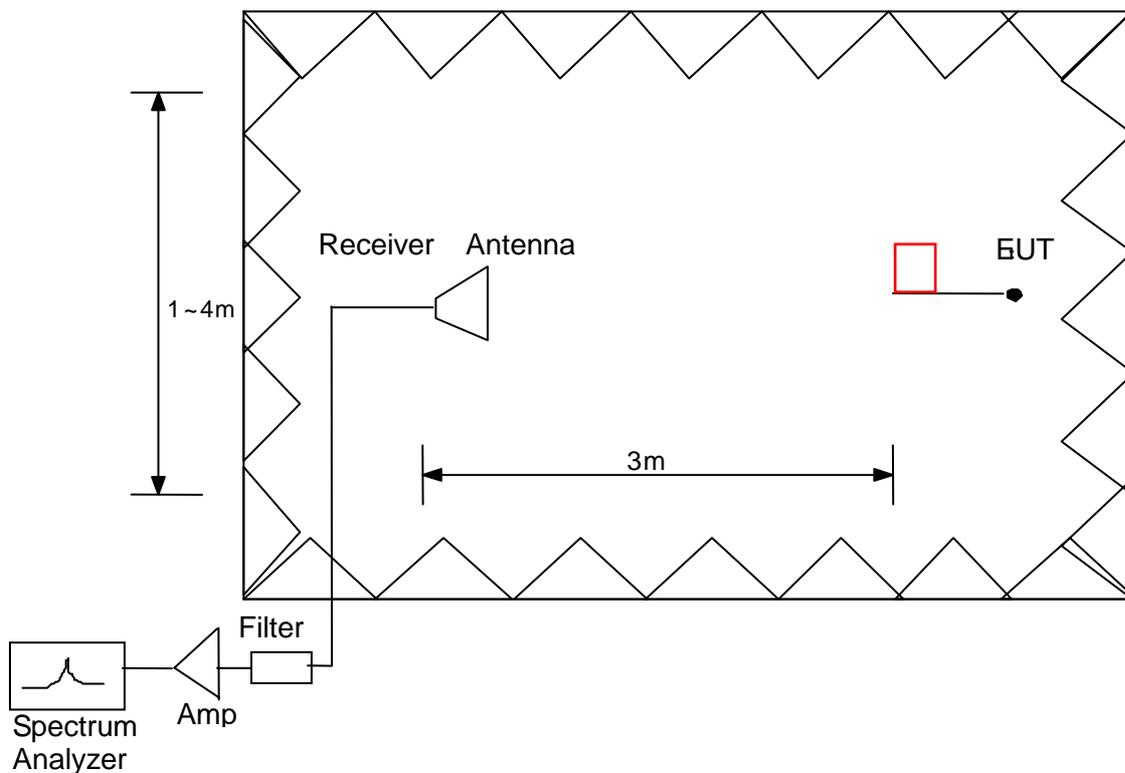


Figure 3. Diagram of Radiated harmonic test Set-up

4.6.3 TEST PROCEDURE

1. The EUT was placed on the top of a rotating table 1meters above the ground at a 3meter fully-anechoic chamber. The table was rotated 360degrees to determine the position of the highest radiation.
2. The EUT was set 3meters from the receiver antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna is a horn antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4meters and the rotatable table was turned from 0degrees to 360degrees to find the maximum reading.
5. The test-receiver system was set to Average Detect Function and Specified Bandwidth with Maximum Hold Mode.

4.6.4 TEST RESULT

Test mode : Ch1

FREQ. (MHz)	Reading	Cable loss(dB)	Ant. Fact. (dB)	POL. (H/V)	F/S (dBuV/m)	Limit (dBuV/m)	Margin	Pass/Fail
4824	-68.54	-15.89	10.16	H	32.73	<54.0	-21.27	Pass
7226	*	*	10.51	*	*	<54.0	*	Pass
9628	*	*	11.68	*	*	<54.0	*	Pass

Test mode : Ch6

FREQ. (MHz)	Reading	Cable loss(dB)	Ant. Fact. (dB)	POL. (H/V)	F/S (dBuV/m)	Limit (dBuV/m)	Margin	Pass/Fail
4874	-68.47	-17.82	10.16	H	30.87	<54.0	-23.13	Pass
7315	*	*	10.51	*	*	<54.0	*	Pass
9756	*	*	11.68	*	*	<54.0	*	Pass

Test mode : Ch11

FREQ. (MHz)	Reading	Cable loss(dB)	Ant. Fact. (dB)	POL. (H/V)	F/S (dBuV/m)	Limit (dBuV/m)	Margin	Pass/Fail
4924	-68.58	-17.58	10.16	H	31.00	<54.0	-23.00	Pass
7404	*	*	10.51	*	*	<54.0	*	Pass
9884	*	*	11.68	*	*	<54.0	*	Pass

NOTE :

1. "*" Measurement does not apply for this frequency.
2. The test data reported are the worst-case field strength value of harmonics.
3. All modes of operation were investigated, and the worst-case results are reported.



5. CONCLUSION

The data collected shows that the SAMSUNG WLAN Phone.
FCC ID : A3LSCHI730 complies with the requirements of Parts 15 of the FCC Rules.

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6. TEST PLOTS

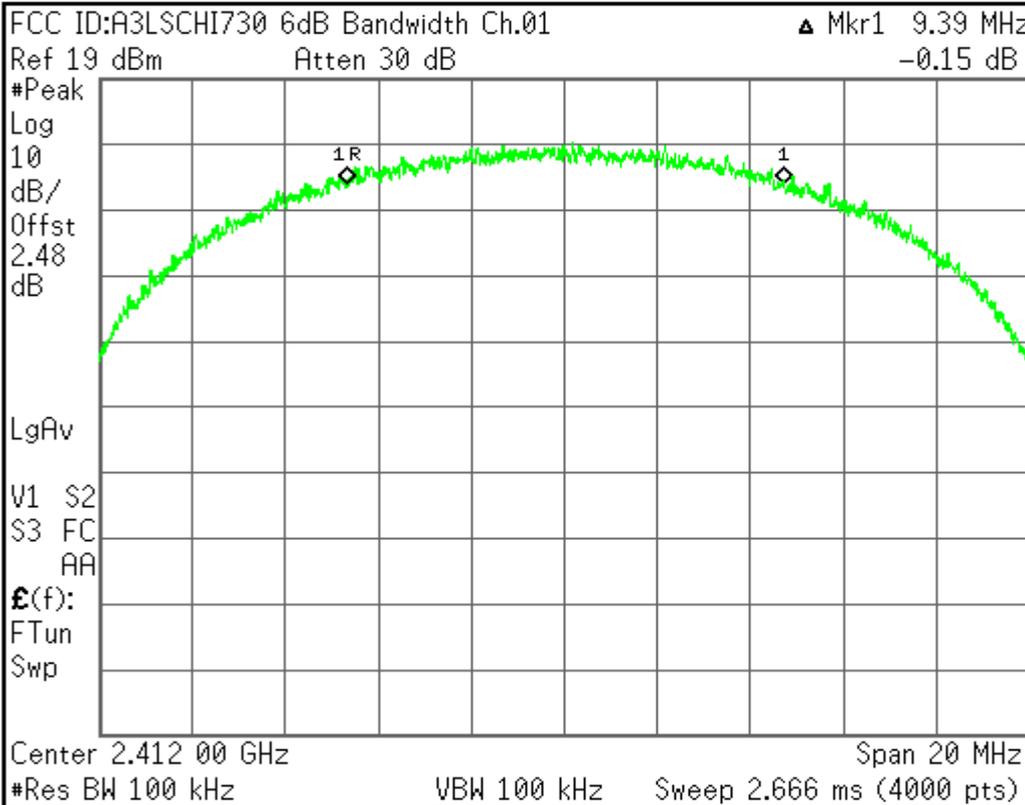
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A3LSCHI730(WLAN)

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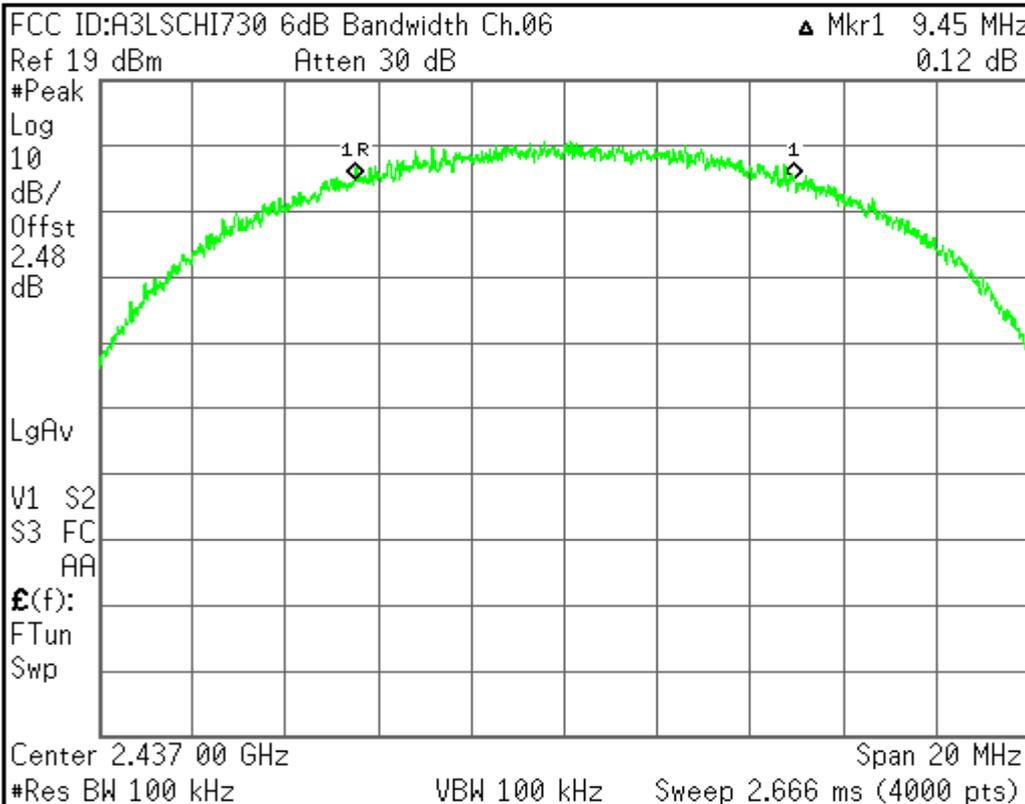
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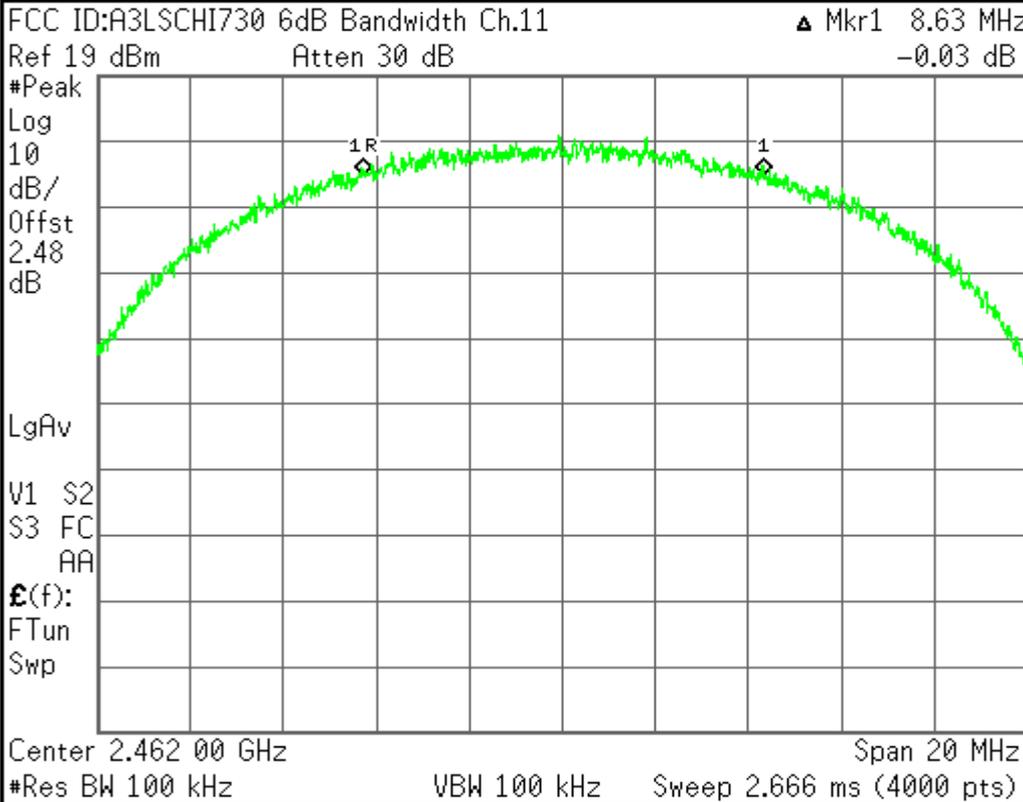
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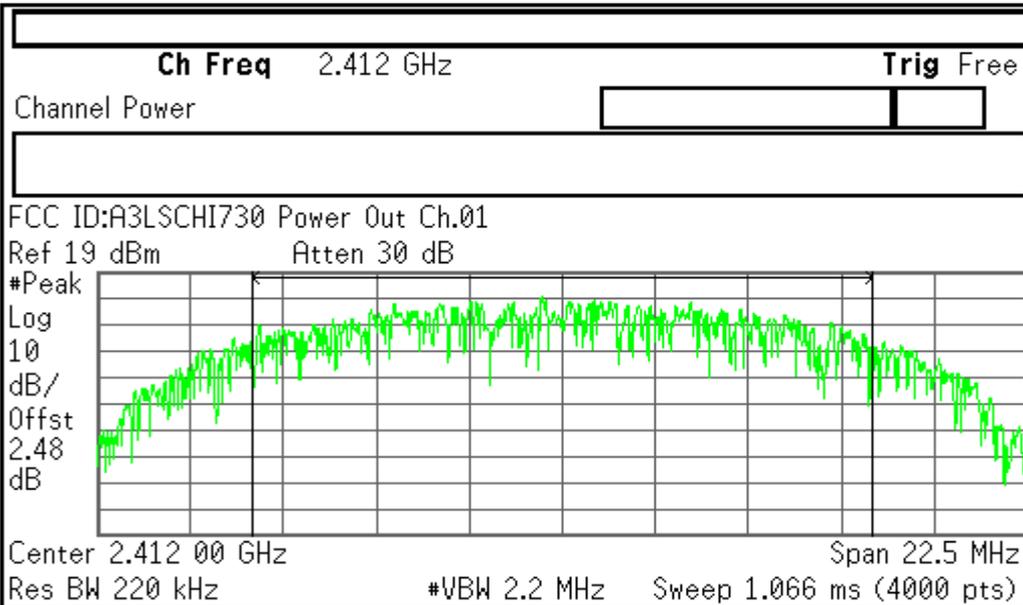
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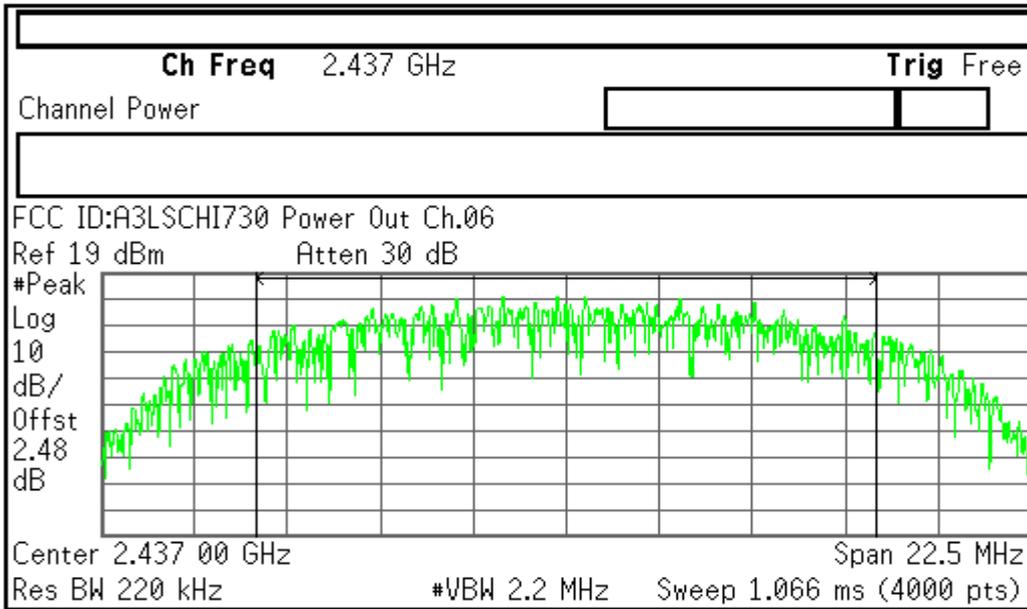
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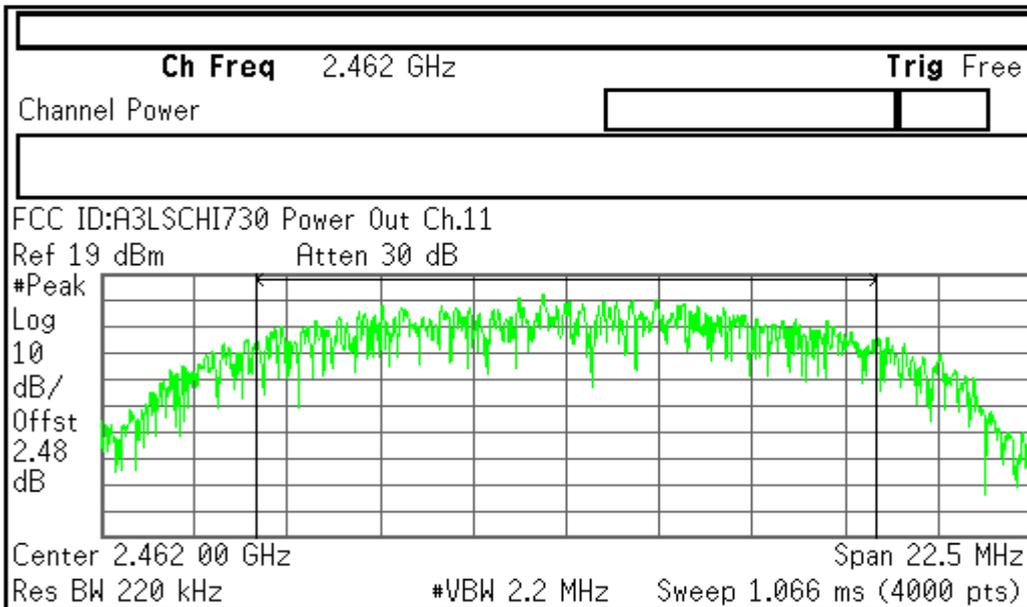
Channel Power 19.03 dBm /15.0000 MHz	Power Spectral Density -52.73 dBm/Hz
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Stop Freq 2.44825000 GHz
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Channel Power	Power Spectral Density
19.05 dBm /15.0000 MHz	-52.71 dBm/Hz



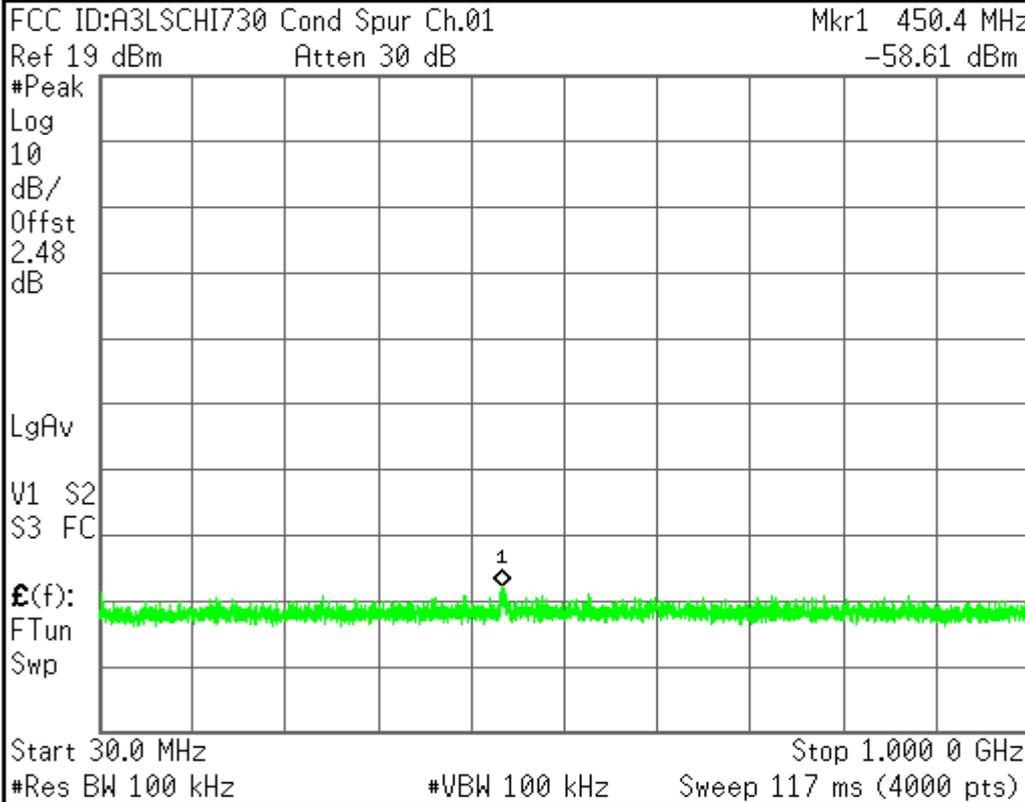
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Stop Freq 2.47325000 GHz
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Signal Track On Off

Channel Power	Power Spectral Density
19.04 dBm /15.0000 MHz	-52.72 dBm/Hz

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Freq/Channel



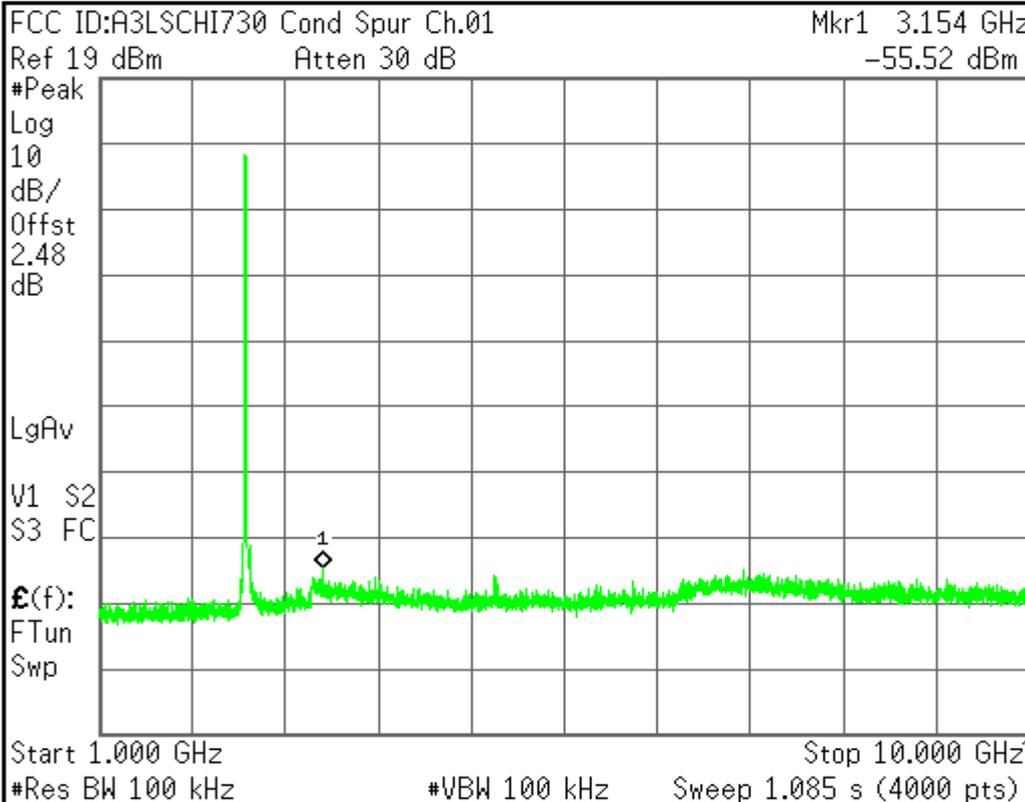
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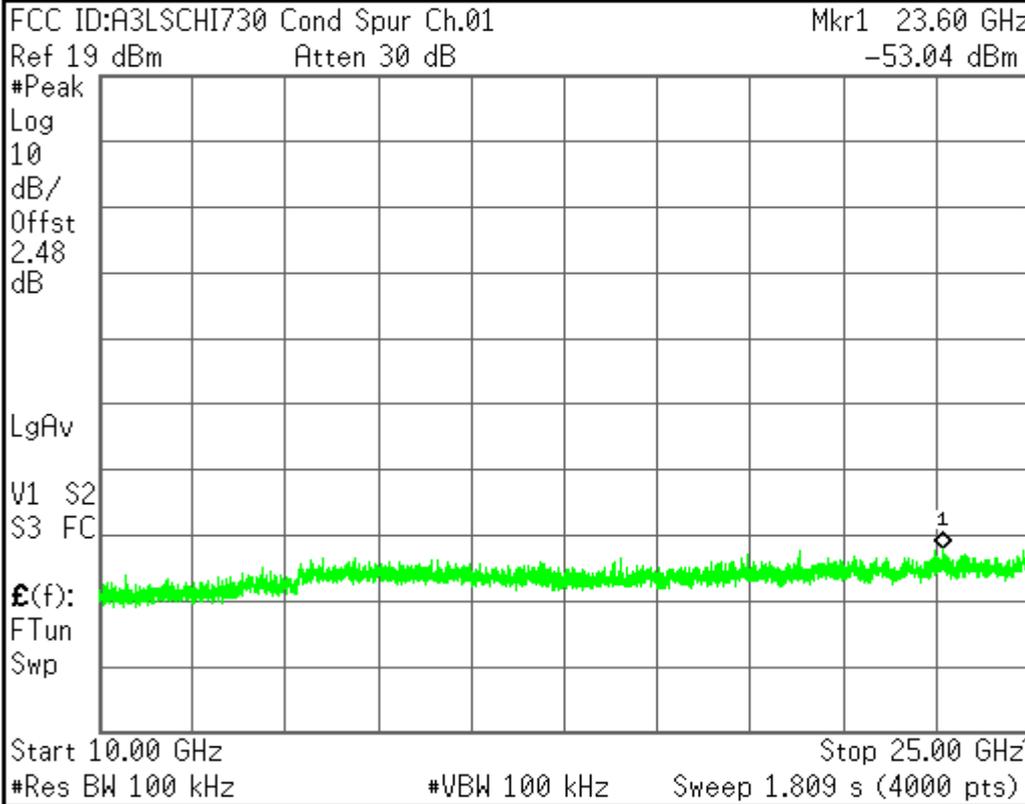
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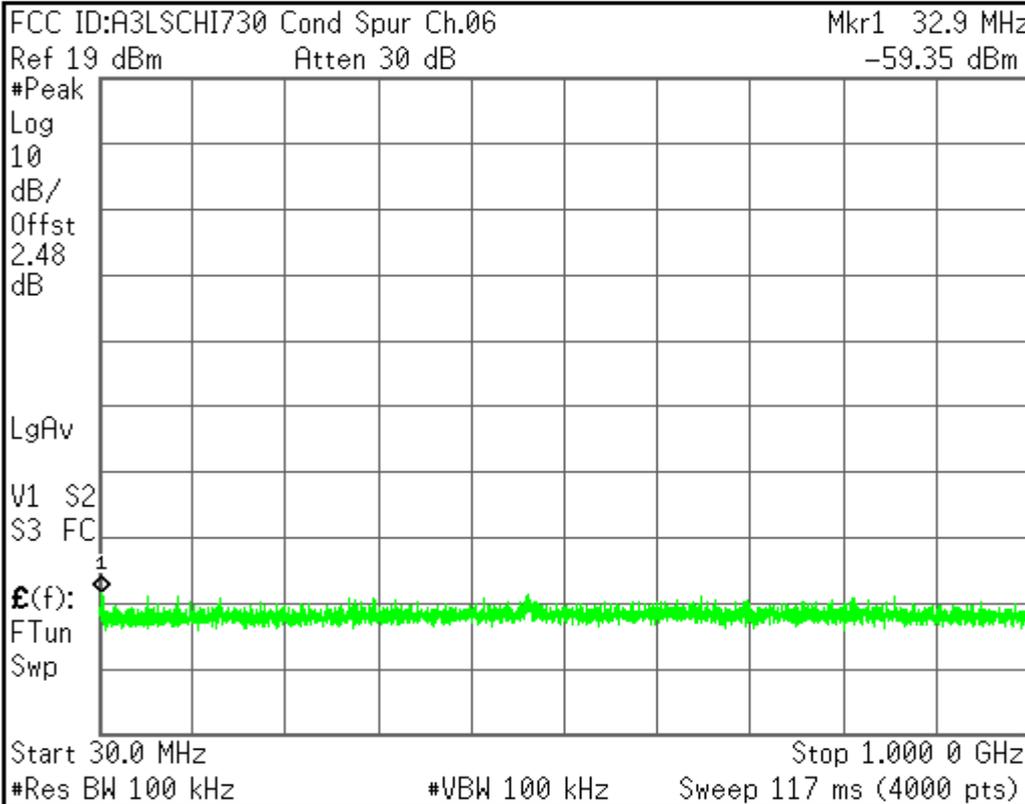
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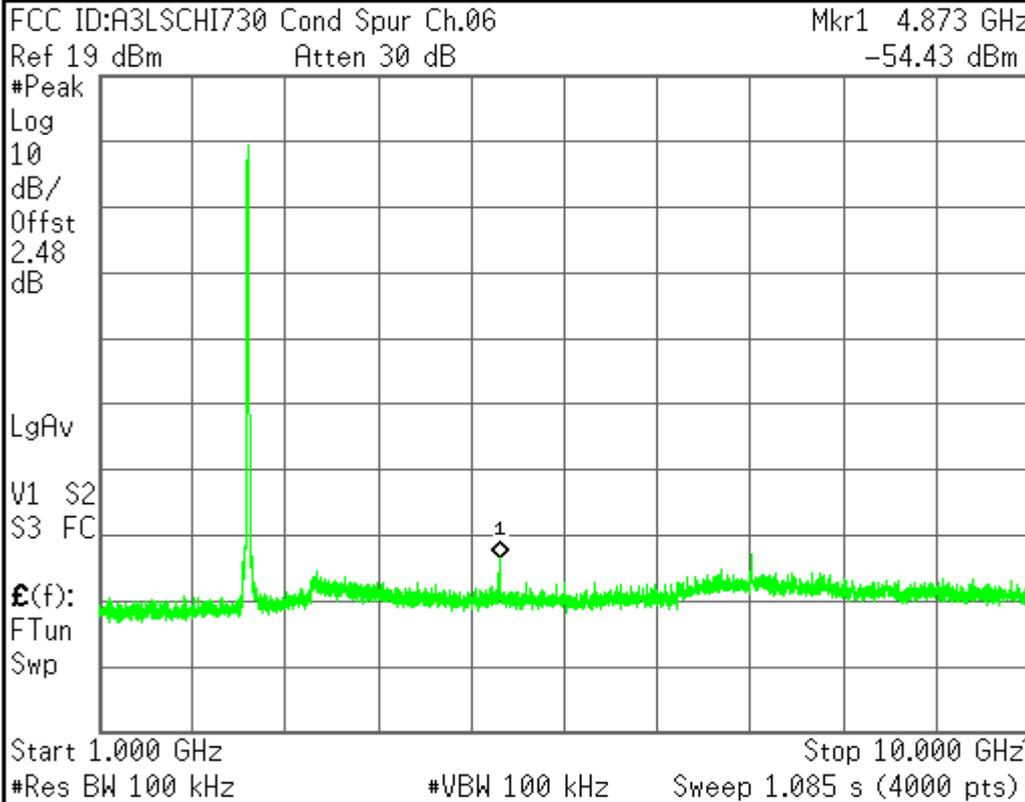
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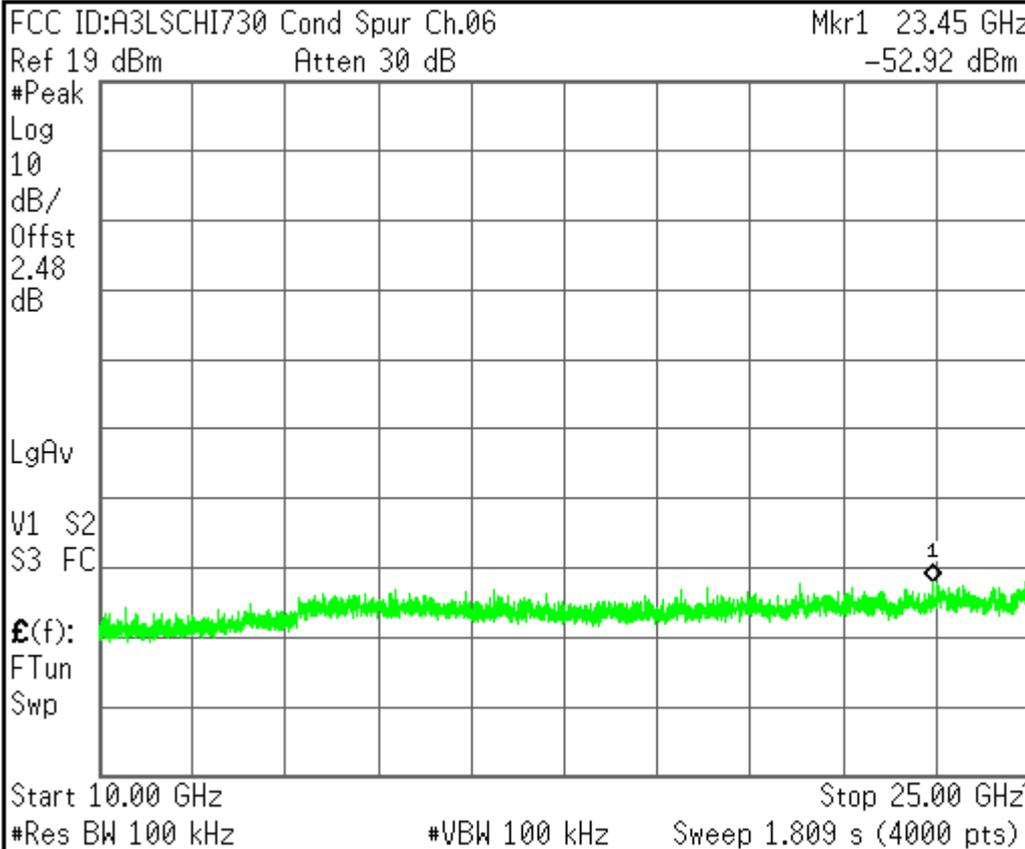
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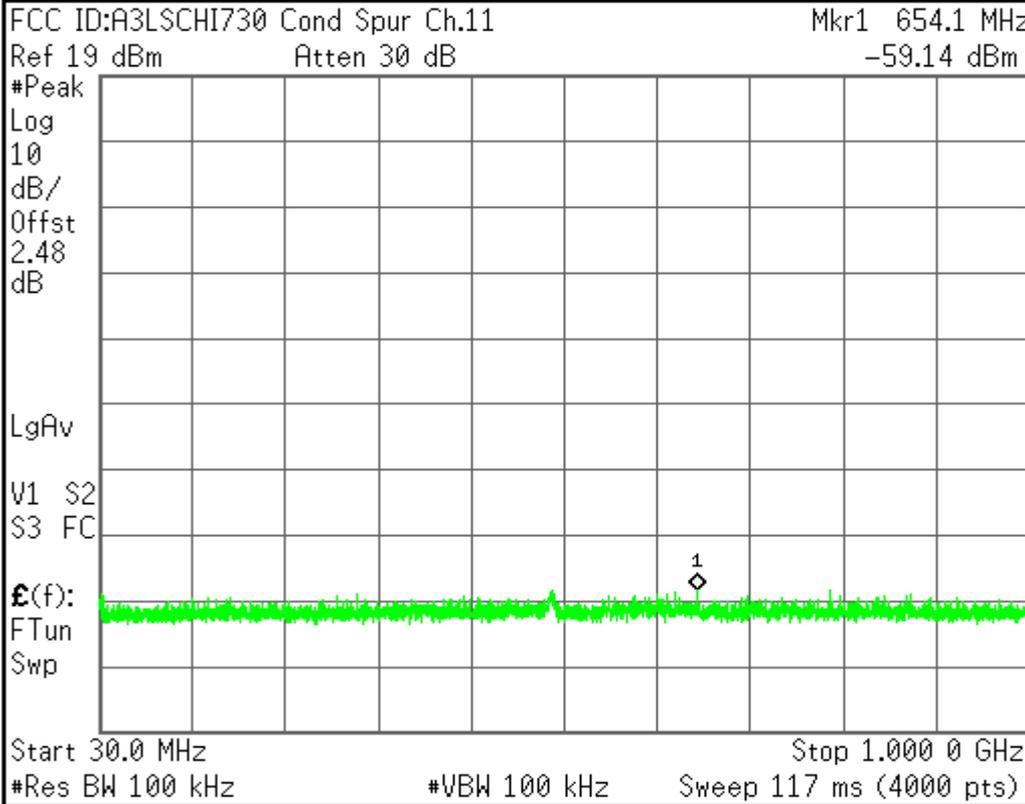
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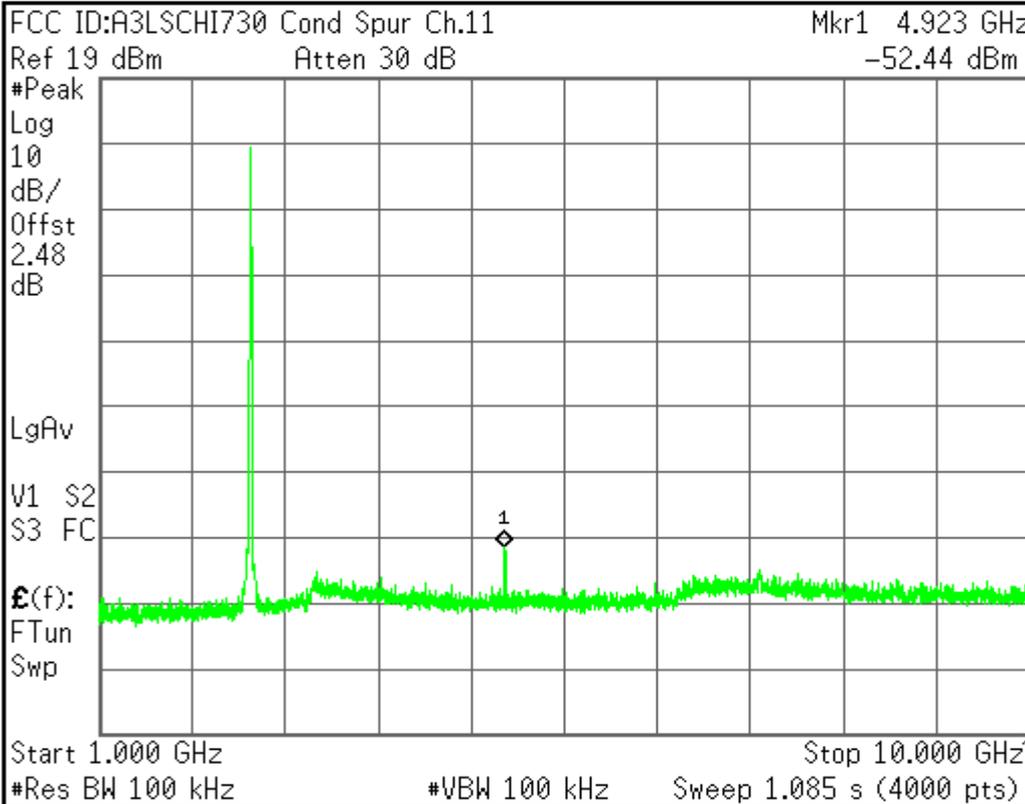
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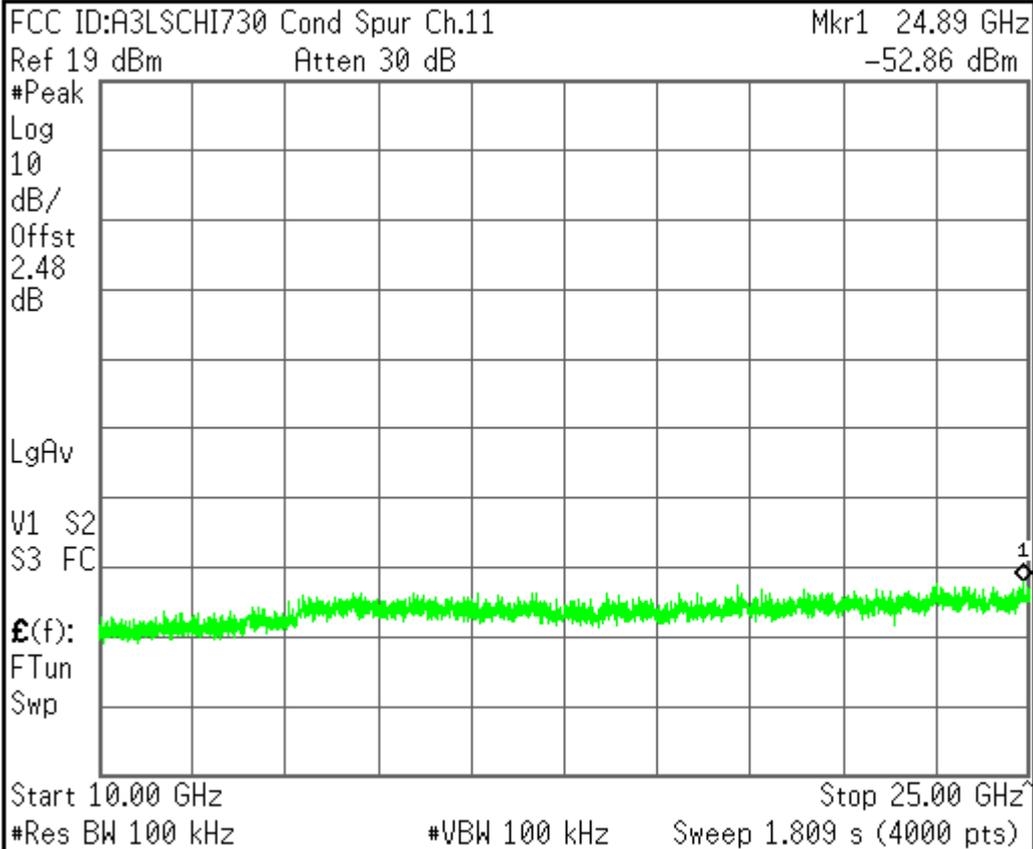
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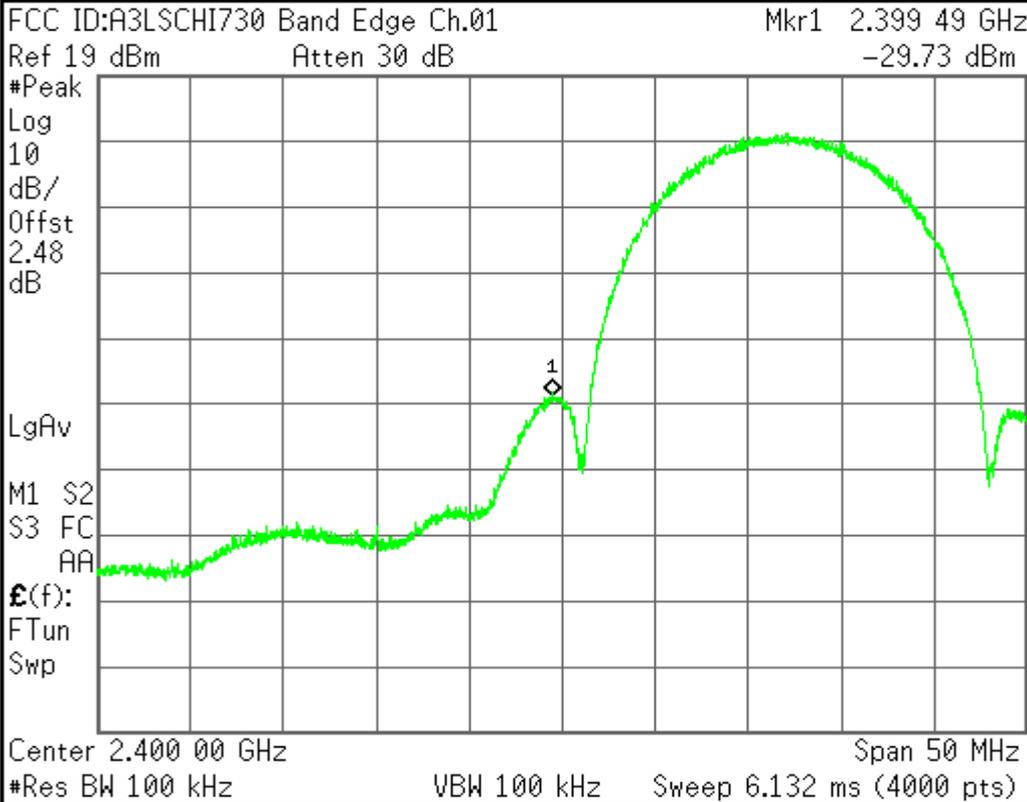
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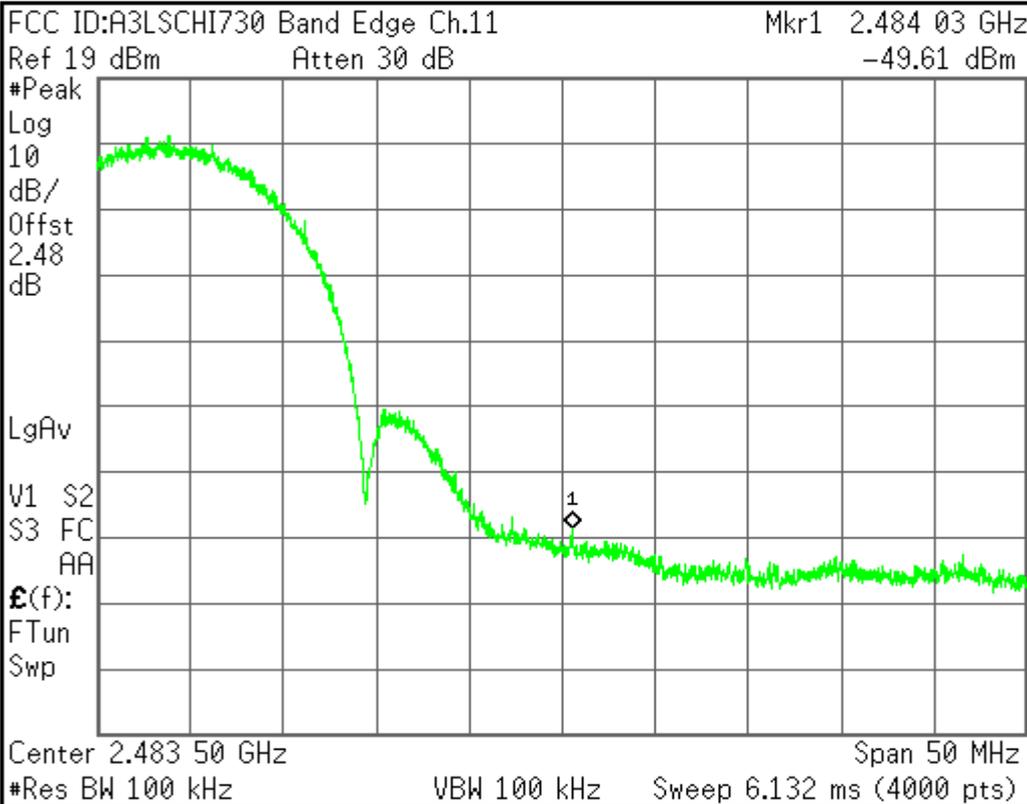
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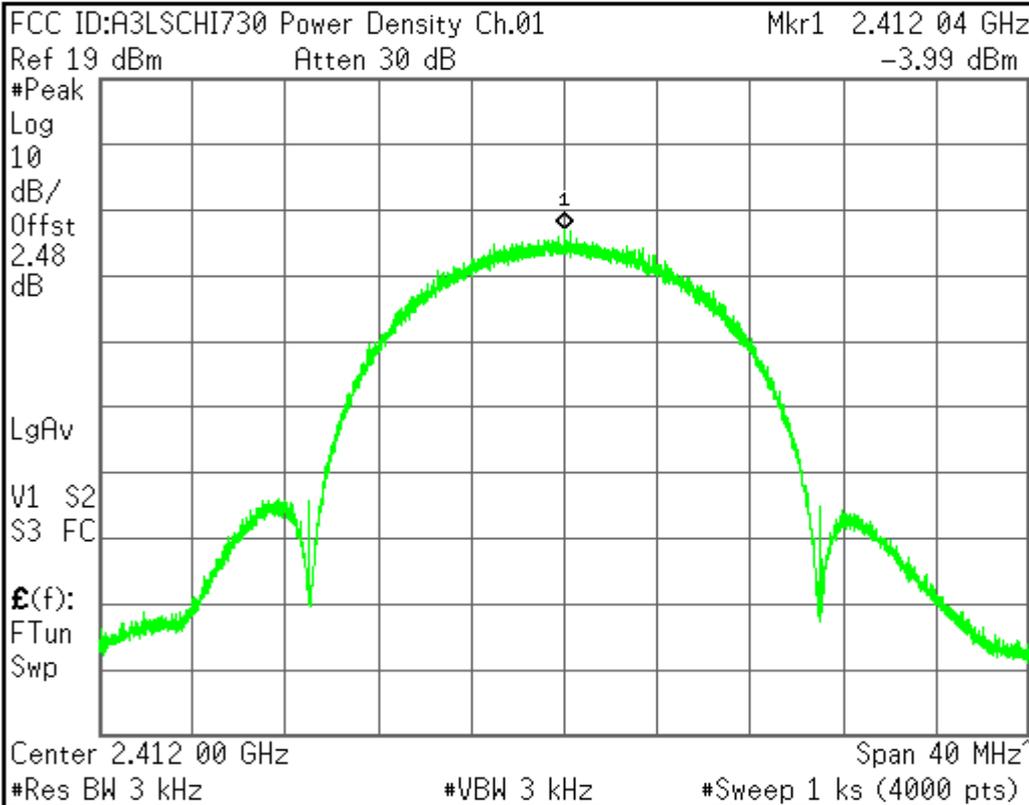
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Freq/Channel



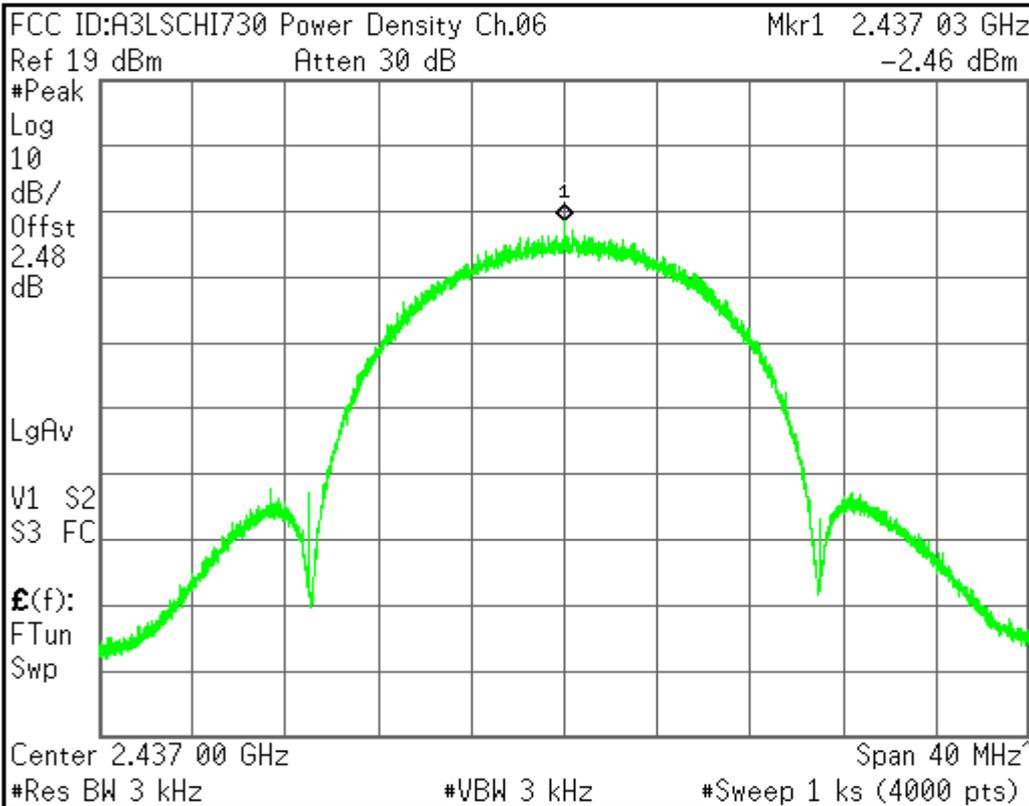
Center Freq 2.41200000 GHz
Start Freq 2.39200000 GHz
Stop Freq 2.43200000 GHz
CF Step 4.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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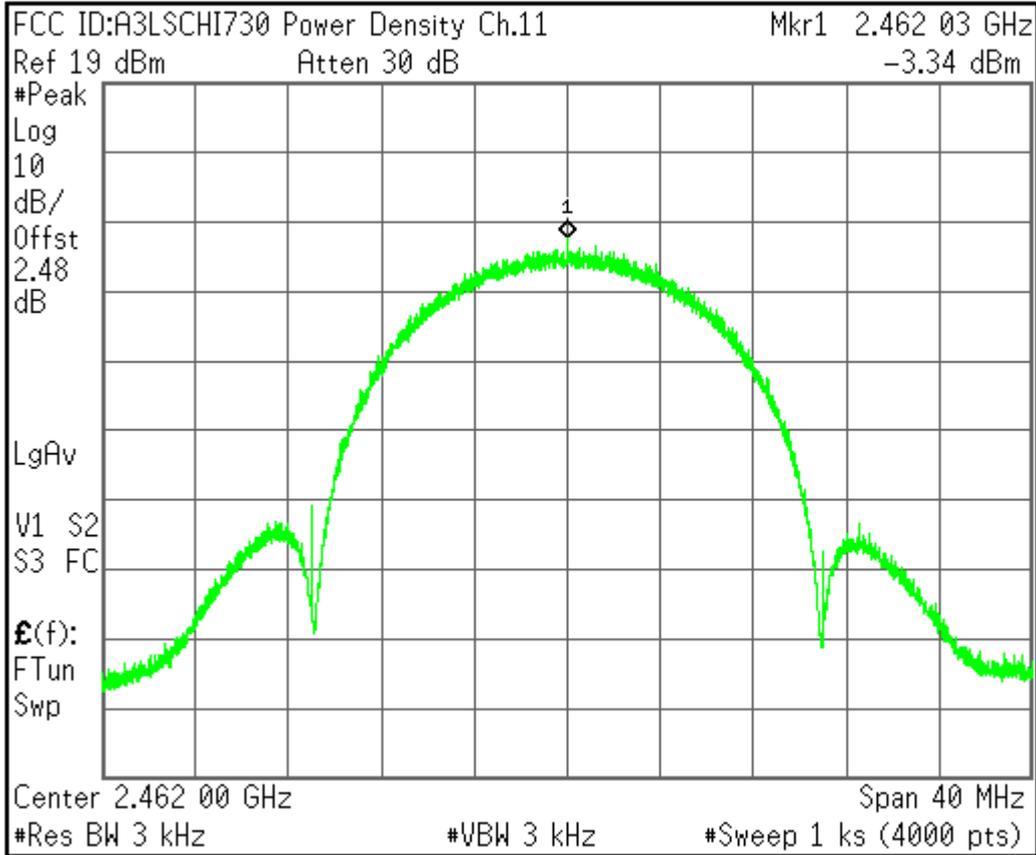
L

Freq/Channel



Center Freq 2.43700000 GHz
Start Freq 2.41700000 GHz
Stop Freq 2.45700000 GHz
CF Step 4.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Freq/Channel
Center Freq 2.46200000 GHz
Start Freq 2.44200000 GHz
Stop Freq 2.48200000 GHz
CF Step 4.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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