



SAMSUNG ELECTRONICS Co., Ltd.,  
Regulatory Compliance Group  
IT R&D Center  
416 Maetan3-Dong,  
Yeongtong-gu, Suwon city,  
Gyeonggi-Do, Korea 443-742

## FCC CFR47 PART 15 SUBPART CERTIFICATION REPORT

**Model Tested:** **SGH-Z710**  
**FCC ID (Requested):** **A3LSGHZ740**  
**Report No:** **FD-036-R2**  
**Job No:** **FD-036**  
**Date issued:** **April 03, 2006**

- Abstract -

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

**Prepared By**

**Date** 2006.04.03

YE PARK – Test Engineer

**Checked By**

**Date** 2006.04.03

WW JANG – Manager

**Authorized By**

**Date** 2006.04.04

SH PARK – Senior Manager

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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 ELECTRONICS CO., LTD.
- Address: 416 Maetan3-Dong, Yeongtong-gu, Suwon City  
Gyeonggi-Do, Korea 443-742
- Attention: SungJoo KIM, Engineering Manager (QA Lab)
- FCC ID: A3LSGHZ710
- Quantity: Quantity production is planned.
- Equipment (EUT) Type: Single-Band PCS GSM Phone with Bluetooth
- This Bluetooth Module has been tested by Bluetooth Qualification Lab, and we confirm the following:
  - A) The hopping sequence is pseudorandom
  - B) All Channels were used equally on average
  - C) The receiver input bandwidth equals the transmit bandwidth
  - D) the receiver hops in sequence with the transmit signal
- 15.247(g): In accordance with the Bluetooth Industry Standard, the system is designed to comply with all of the regulations in Section 15.247 when the transmitter is presented with a continuous data (or information) stream.
- 15.247(h): In accordance with the Bluetooth Industry Standard, the system does not coordinate its channel selection/hopping sequence with other frequency hopping systems for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters.
- FCC Classification(s): FCC Part15 Spread Spectrum Transceiver (DSS)
- Frequency Range: 2402 ~ 2480MHz(Bluetooth)
- Max. Output Power: 0.0010W(-0.08dBm) Conducted
- FCC Rule Part(s): §15.247, §2
- Dates of Test: March 28. 2006
- Place of Test: SAMSUNG Lab,
- Test Report S/N: FD-036-R2

- End of page -

## 2. INTRODUCTION

### 2.1 SAMSUNG TEST LOCATION

These measurement test were conducted at the **SAMSUNG ELECTRONICS CO., LTD(SUWON)**. The site address is 416 Maetan3-Dong, Yeongtong-gu, Suwon City, Gyeonggi-Do, Korea 442-742. The site has 1 Fully-anechoic chamber and measurement facility.

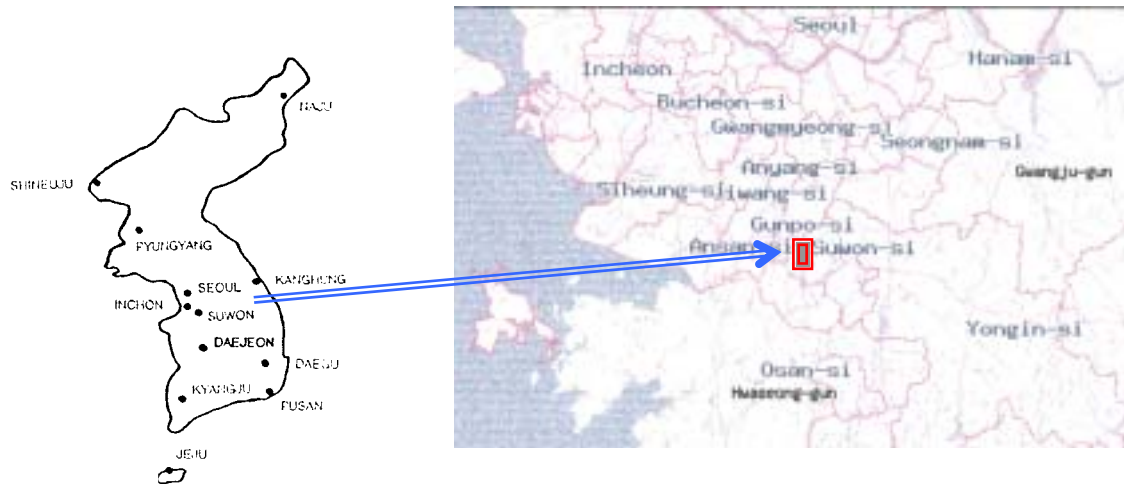


**Figure1. Map of the Suwon City area.**

### 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**

- End of page -

### 3. TEST EQUIPMENT LIST

| Name of Equipment                    | Model               | Serial No. | Due Date     |
|--------------------------------------|---------------------|------------|--------------|
| Spectrum Analyzer                    | ESI26               | 836119/010 | 2006-09-26   |
|                                      | E4440A(3Hz~26.5GHz) | MY41000236 | 2006-10-13   |
|                                      | E4440A(3Hz~26.5GHz) | MY41000233 | 2006-10-20   |
| Signal Generator                     | SMR20               | 835197/030 | 2007-01-10   |
| Pre-Amplifier                        | 8449B               | 3008A00691 | 2007-01-02   |
| Antenna Master                       | MA0001              | ANT0967    | Not Required |
| Controller                           | HD100               | 100/756    | Not Required |
| Horn Antenna                         | HF906               | 100134     | 2006-04-25   |
| 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 | 2006-09-07   |
| Power sensor                         | 8481B               | 3318A10325 | 2006-09-08   |
| Power sensor                         | 8485A               | 3318A19924 | 2006-09-08   |
| Network Analyzer                     | 8753E               | JP38160590 | 2006-06-30   |
| Power Supply                         | E3640A              | MY40003595 | 2006-06-16   |
| Power Supply                         | E3640A              | MY40003594 | 2006-06-29   |
| UNIVERSAL RADIO COMMUNICATION TESTER | CMU200              | 838115/081 | 2006-04-08   |

## 4. TECHNICAL CHARACTERISTICS TEST

### 4.1 20dB BANDWIDTH

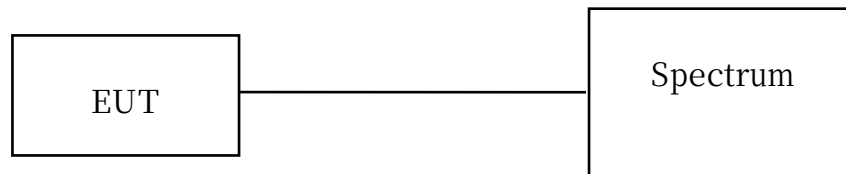
FCC Part15, Subpart C Section 15.247(a)

#### 4.1.1 LIMIT

For frequency hopping system operation in the 2400-2483.5MHz and 5725-5850MHz bands, the maximum 20dB bandwidth of the hopping channels is 1MHz.

| Frequency(MHz) | Channel no. | 20dB Bandwidth<br>LIMIT(kHz) |
|----------------|-------------|------------------------------|
| 2402           | 0           | <1000                        |
| 2441           | 39          | <1000                        |
| 2480           | 78          | <1000                        |

#### 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.
4. Repeat above procedures until all frequencies measured were complete.

#### 4.1.4 TEST RESULT

| Frequency(MHz) | Channel no. | 20dB Bandwidth(kHz) | 20dB Bandwidth<br>LIMIT(kHz) | Pass/Fail |
|----------------|-------------|---------------------|------------------------------|-----------|
| 2402           | 0           | 855                 | <1000                        | Pass      |
| 2441           | 39          | 839                 | <1000                        | Pass      |
| 2480           | 78          | 879                 | <1000                        | Pass      |

## 4.2 OUTPUT POWER MEASUREMENT

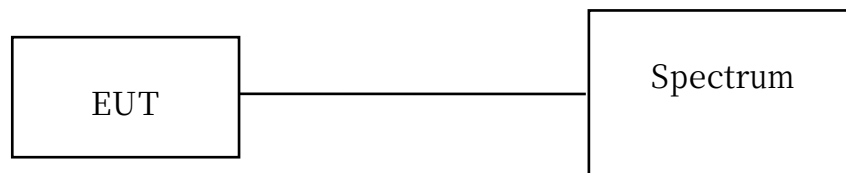
FCC Part15, Subpart C Section 15.247(b)

### 4.2.1 LIMIT

For frequency hopping systems in the 2400-2483.5MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850 MHz BAND : 1 Watt (30dBm)

|                             |             |
|-----------------------------|-------------|
| Frequency Range(MHz)        | 2400~2483.5 |
| Quantity of Hopping Channel | >75         |
| Limit(W)                    | 1           |

### 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. Set a reference level on the measuring instrument equal to the highest peak value.
3. The center frequency of the spectrum analyzer is set to the fundamental frequency and using 3MHz RBW and 3MHz VBW.

### 4.2.4 TEST RESULT

| Frequency(MHz) | Channel no. | Power Output(dBm) | Power Output LIMIT(dBm) | Pass/Fail |
|----------------|-------------|-------------------|-------------------------|-----------|
| 2402           | 0           | -0.27             | <30                     | Pass      |
| 2441           | 39          | -0.08             | <30                     | Pass      |
| 2480           | 78          | -0.48             | <30                     | Pass      |

### 4.3 CONDUCTED SPURIOUS EMISSION TEST

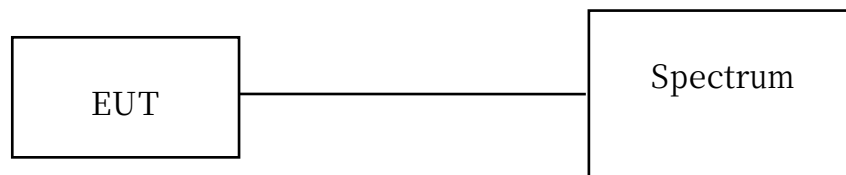
FCC Part15, Subpart C Section 15.247(d)

#### 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<br>(30MHz – 25GHz) |
|----------------|-------------|--------------------------|
| 2402           | 0           | >20dBc                   |
| 2441           | 39          | >20dBc                   |
| 2480           | 78          | >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<br>(30MHz – 25GHz) | Pass/Fail |
|----------------|-------------|------------------------------------------------------|--------------------------|-----------|
| 2402           | 0           | 47.39                                                | >20dBc                   | Pass      |
| 2441           | 39          | 45.74                                                | >20dBc                   | Pass      |
| 2480           | 78          | 45.24                                                | >20dBc                   | Pass      |

## 4.4 BAND EDGE COMPLIANCE

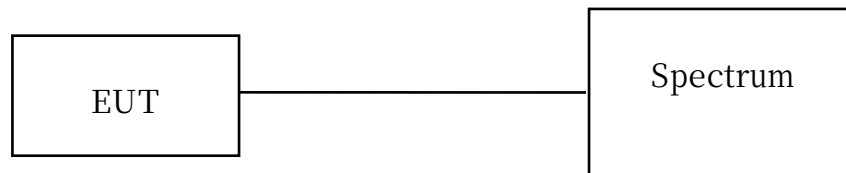
FCC Part15, Subpart C Section 15.247(d)

### 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 100kHz 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          | 61.33                    | >20                  | Pass      |
| >2483.5        | 67.56                    | >20                  | Pass      |

## 4.5 NUMBER OF HOPPING CHANNELS

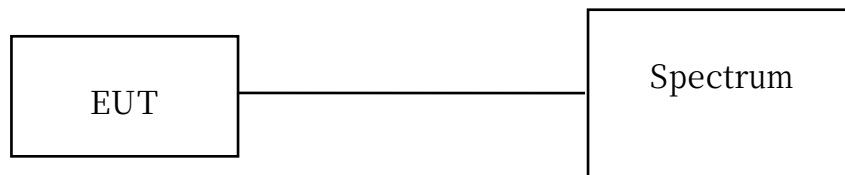
FCC Part15, Subpart C Section 15.247(a)

### 4.5.1 LIMIT

At least 75 hopping frequencies

|                                    |             |
|------------------------------------|-------------|
| Frequency Range(MHz)               | 2400~2483.5 |
| LIMIT(Quantity of Hopping Channel) | >75         |

### 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 and make sure the instrument is operated in its linear range.
3. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode.

### 4.5.4 TEST RESULT

| HOPPING CHANNEL<br>FREQUENCY<br>RANGE(MHz) | QUANTITY OF<br>HOPPING CHANNEL<br>READ VALUE | QUANTITY OF<br>HOPPING CHANNEL<br>LIMIT | Pass/Fail |
|--------------------------------------------|----------------------------------------------|-----------------------------------------|-----------|
| 2400~2483.5                                | 79                                           | >75                                     | Pass      |

## 4.6. CHANNEL SEPARATION TEST

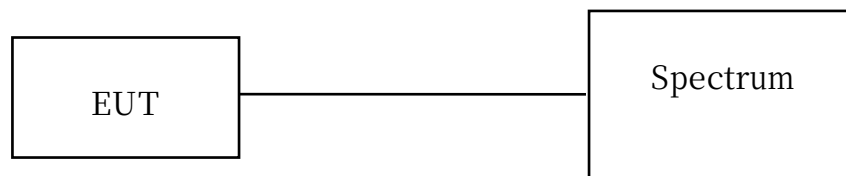
FCC Part15, Subpart C Section 15.247(a)

### 4.6.1 LIMIT

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

|                      |             |
|----------------------|-------------|
| Frequency Range(MHz) | 2400~2483.5 |
| LIMIT(KHz)           | >25         |

### 4.6.2 TEST SET-UP



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

### 4.6.3 TEST PROCEDURE

1. Check the calibration of the measuring instrument 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. By using the Max Hold function record the separation of two adjacent channels.
4. Measure the frequency difference of these two adjacent channels by SA MARKER function.

### 4.6.4 TEST RESULT

| CHANNEL NUMBER | CHANNEL FREQUENCY | SEPARATION READ VALUE(KHz) | SEPARATION LIMIT(KHz) | Pass/Fail |
|----------------|-------------------|----------------------------|-----------------------|-----------|
| 39             | 2441              | 1000                       | >25                   | Pass      |

## 4.7. DWELL TIME

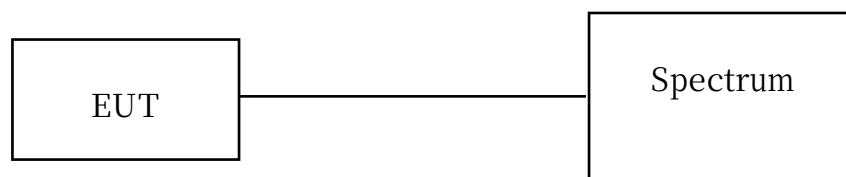
FCC Part15, Subpart C Section 15.247

### 4.7.1 LIMIT

The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

|                      |             |
|----------------------|-------------|
| Frequency Range(MHz) | 2400~2483.5 |
| LIMIT(ms)            | <400        |

### 4.7.2 TEST SET-UP



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

### 4.7.3 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 and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of SA on any frequency be measured and set SA to zero span mode. And then, set RBW and VBW of spectrum analyzer to proper value.
4. Measure the time duration of one transmission on the measured frequency.

### 4.7.4 TEST RESULT

| CHANNEL NUMBER | CHANNEL FREQUENCY(MHz) | Time of occupancy (Dwell Time) (ms) | Time of occupancy limit(ms) | Pass/Fail |
|----------------|------------------------|-------------------------------------|-----------------------------|-----------|
| 39             | 2441.00                | 164.506                             | <400                        | Pass      |

## 4.8 RADIATED HARMONIC MEASUREMENT

FCC Part15, Subpart C Section 15.249, 15.209

### 4.8.1 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                                         |

### 4.8.2 TEST SET-UP

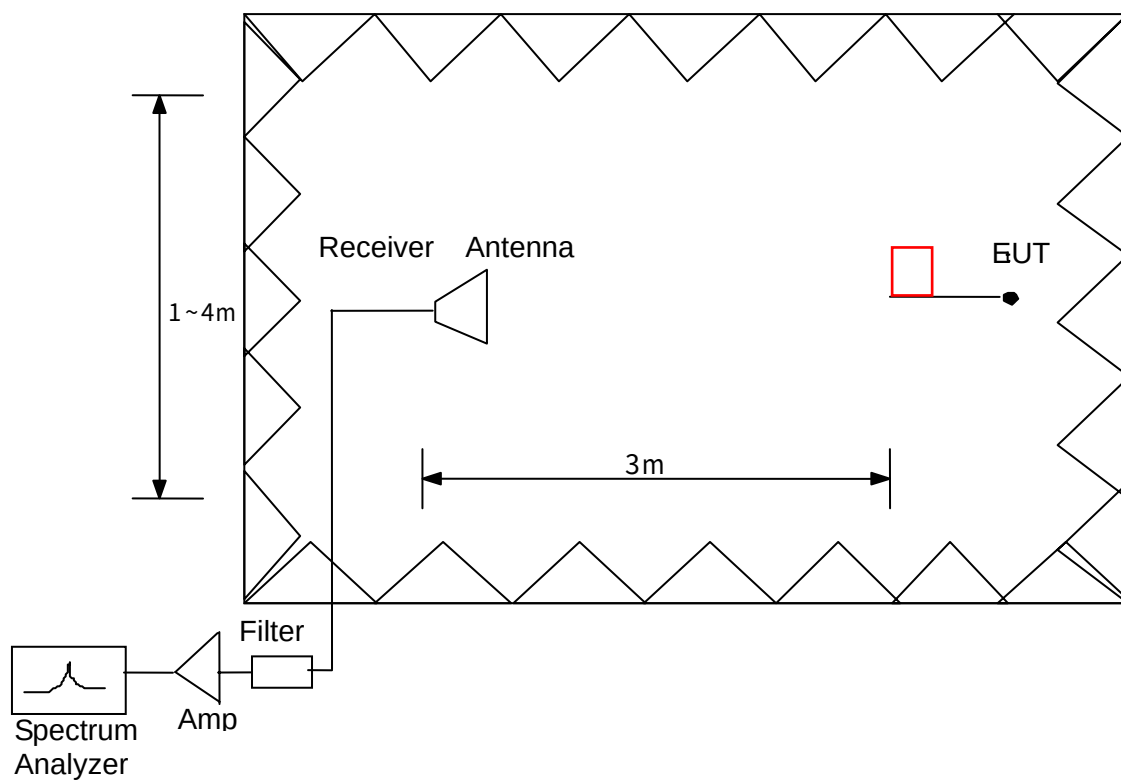


Figure 3. Diagram of Radiated harmonic test Set-up

### 4.8.3 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 away 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.

#### 4.8.4 TEST RESULT

Test mode : Ch0

| FREQ.<br>(MHz) | Reading | Cable loss<br>(dB) | Ant. Fact.<br>(dB) | POL.<br>(H/V) | F/S<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN | Pass<br>/Fail |
|----------------|---------|--------------------|--------------------|---------------|-----------------|-------------------|--------|---------------|
| 4804           | -68.35  | -18.36             | 11.05              | H             | 31.34           | <54.0             | -22.66 | Pass          |
| 7206           | *       | -15.45             | 11.44              | *             | *               | <54.0             | *      | Pass          |
| 9608           | *       | -12.57             | 12.17              | *             | *               | <54.0             | *      | Pass          |

Test mode : Ch39

| FREQ.<br>(MHz) | Reading | Cable loss<br>(dB) | Ant. Fact.<br>(dB) | POL.<br>(H/V) | F/S<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN | Pass<br>/Fail |
|----------------|---------|--------------------|--------------------|---------------|-----------------|-------------------|--------|---------------|
| 4882           | -68.56  | -17.97             | 11.05              | H             | 31.52           | <54.0             | -22.48 | Pass          |
| 7323           | *       | -15.14             | 11.44              | *             | *               | <54.0             | *      | Pass          |
| 9764           | *       | -11.41             | 12.17              | *             | *               | <54.0             | *      | Pass          |

Test mode : Ch78

| FREQ.<br>(MHz) | Reading | Cable loss<br>(dB) | Ant. Fact.<br>(dB) | POL.<br>(H/V) | F/S<br>(dBuV/m) | LIMIT<br>(dBuV/m) | MARGIN | Pass<br>/Fail |
|----------------|---------|--------------------|--------------------|---------------|-----------------|-------------------|--------|---------------|
| 4960           | -67.93  | -17.78             | 11.05              | H             | 32.34           | <54.0             | -21.66 | Pass          |
| 7440           | *       | -15.49             | 11.44              | *             | *               | <54.0             | *      | Pass          |
| 9920           | *       | -9.93              | 12.17              | *             | *               | <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.



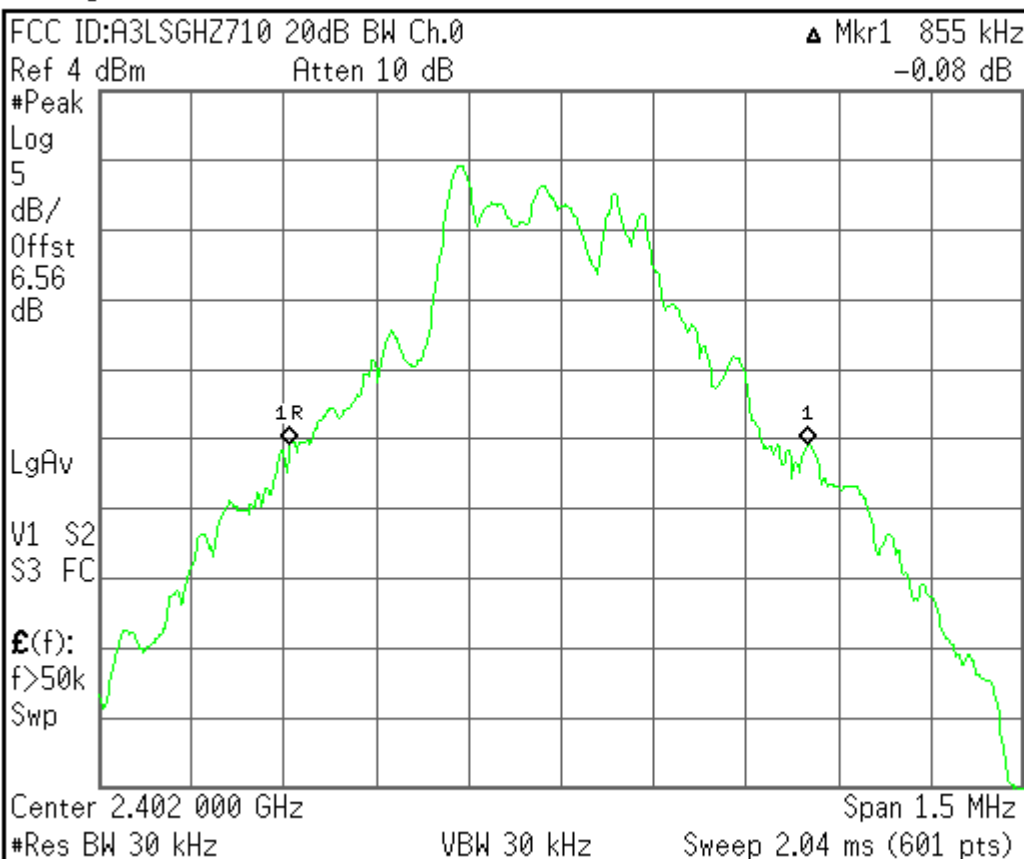
## 5. CONCLUSION

The data collected shows that the Single modulation Single-Band PCS GSM Phone with Bluetooth. FCC ID : A3LSGHZ710 complies with the requirements of Parts 15 of the FCC Rules.

- End of page -

## 6. TEST PLOTS

- End of page -



Freq/Channel

**Center Freq**  
2.40200000 GHz

**Start Freq**  
2.40125000 GHz

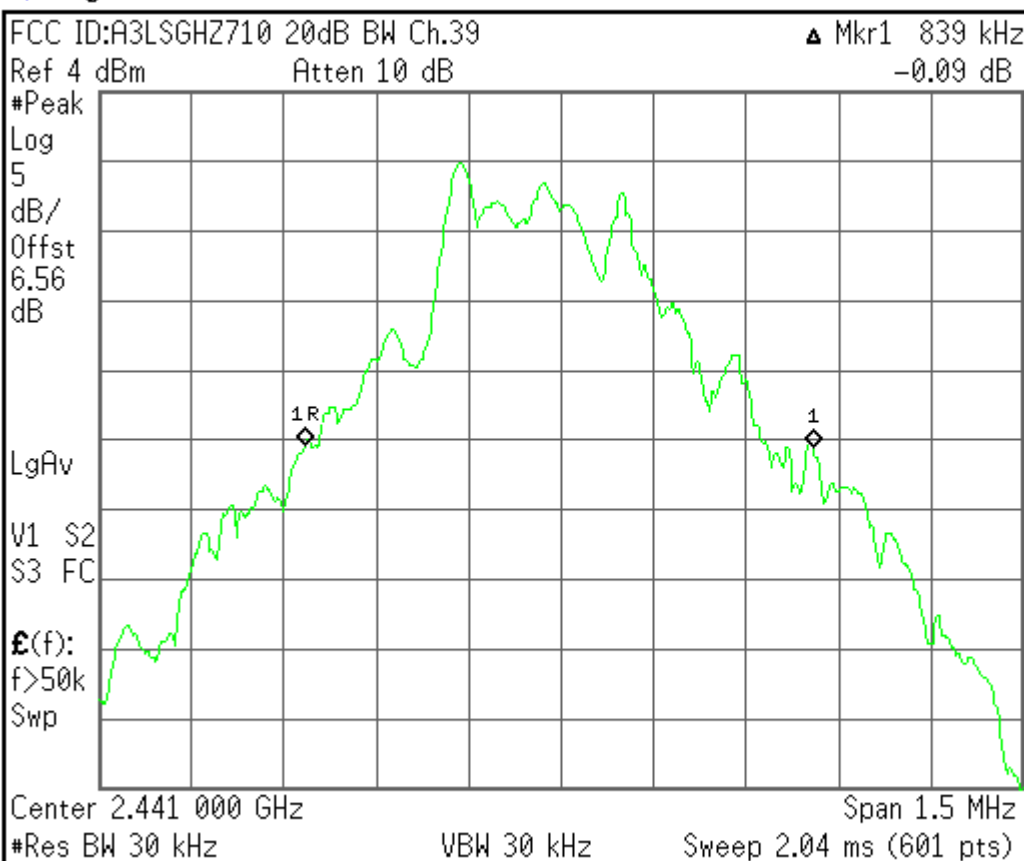
**Stop Freq**  
2.40275000 GHz

**CF Step**  
150.000000 kHz  
Auto Man

**Freq Offset**  
0.00000000 Hz

**Signal Track**  
On Off

Copyright 2000-2002 Agilent Technologies



Freq/Channel

**Center Freq**  
2.44100000 GHz

**Start Freq**  
2.44025000 GHz

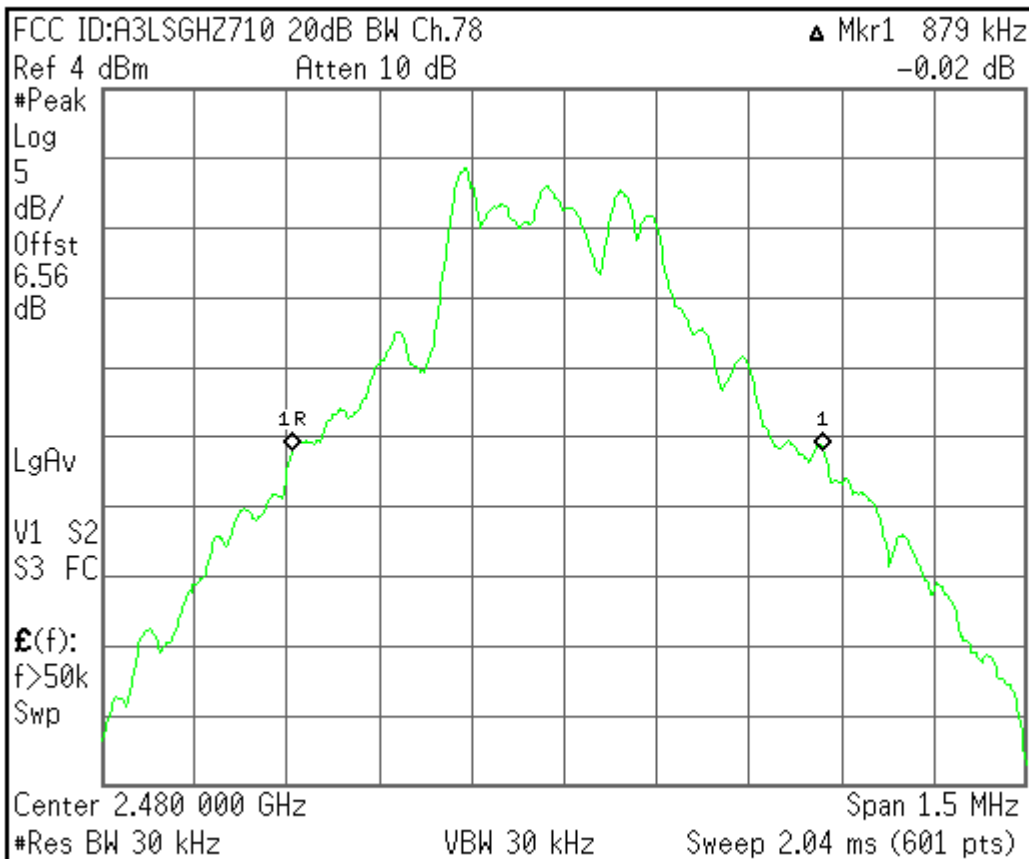
**Stop Freq**  
2.44175000 GHz

**CF Step**  
150.000000 kHz  
Auto Man

**Freq Offset**  
0.00000000 Hz

**Signal Track**  
On Off

Copyright 2000-2002 Agilent Technologies



Freq/Channel

**Center Freq**  
2.48000000 GHz

**Start Freq**  
2.47925000 GHz

**Stop Freq**  
2.48075000 GHz

**CF Step**  
150.000000 kHz  
Auto Man

**Freq Offset**  
0.00000000 Hz

**Signal Track**  
On Off

Copyright 2000-2002 Agilent Technologies

FCC ID:A3LSGHZ710 Power Out Ch.0

Ref 4 dBm

Atten 10 dB

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

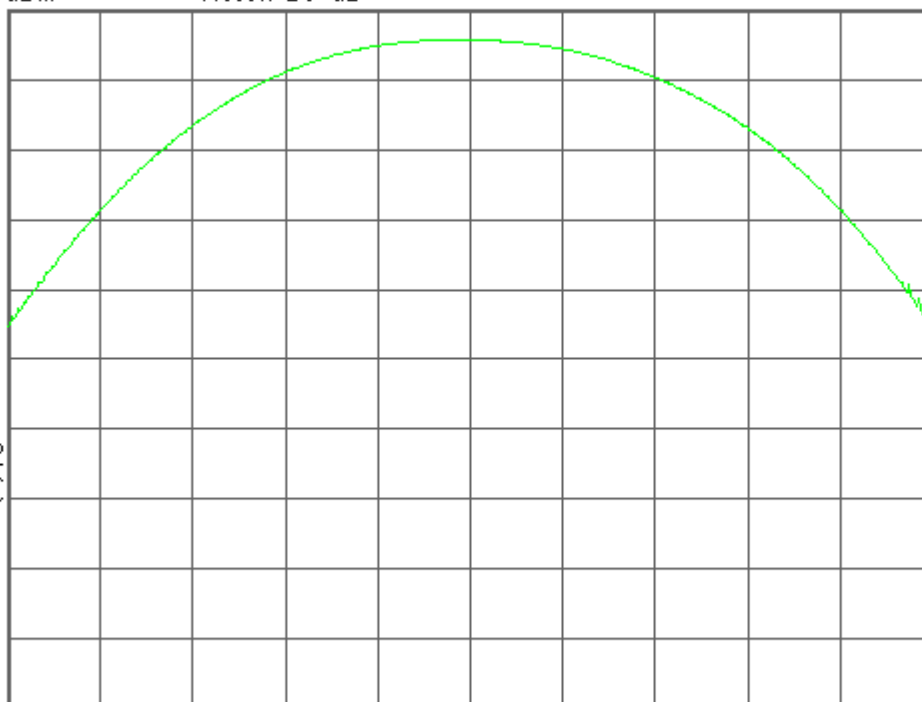
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Center 2.402 00 GHz

Span 10 MHz

#Res BW 3 MHz

VBW 3 MHz

Sweep 1 ms (601 pts)

Freq/Channel

Center Freq

2.40200000 GHz

Start Freq

2.39700000 GHz

Stop Freq

2.40700000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

Copyright 2000-2002 Agilent Technologies

FCC ID:A3LSGHZ710 Power Out Ch.39

Ref 4 dBm

Atten 10 dB

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

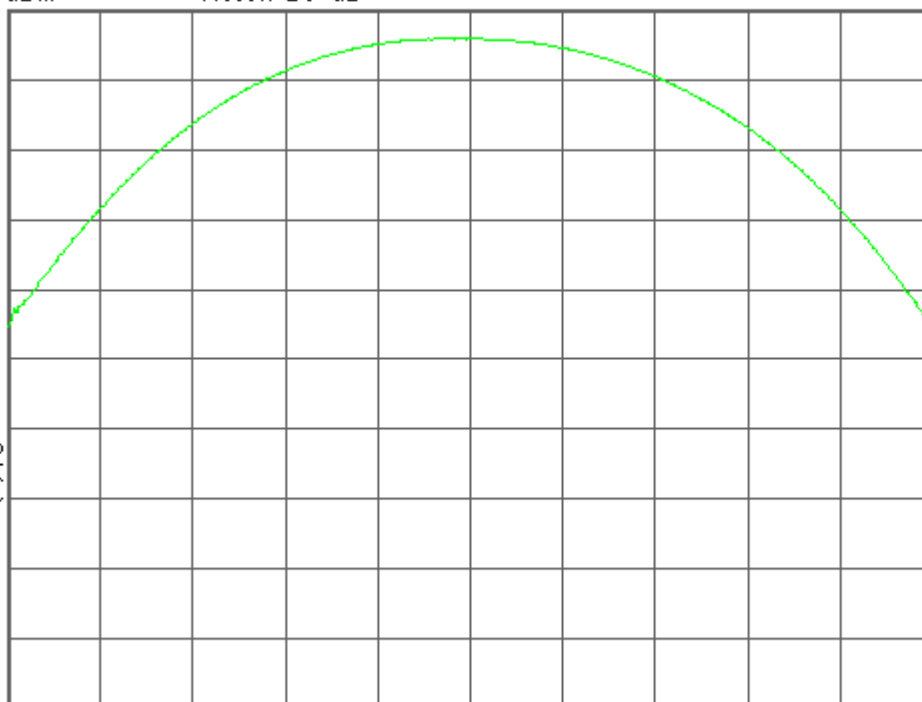
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Center 2.441 00 GHz

Span 10 MHz

#Res BW 3 MHz

VBW 3 MHz

Sweep 1 ms (601 pts)

Freq/Channel

Center Freq

2.44100000 GHz

Start Freq

2.43600000 GHz

Stop Freq

2.44600000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

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FCC ID:A3LSGHZ710 Power Out Ch.78

Ref 4 dBm

Atten 10 dB

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

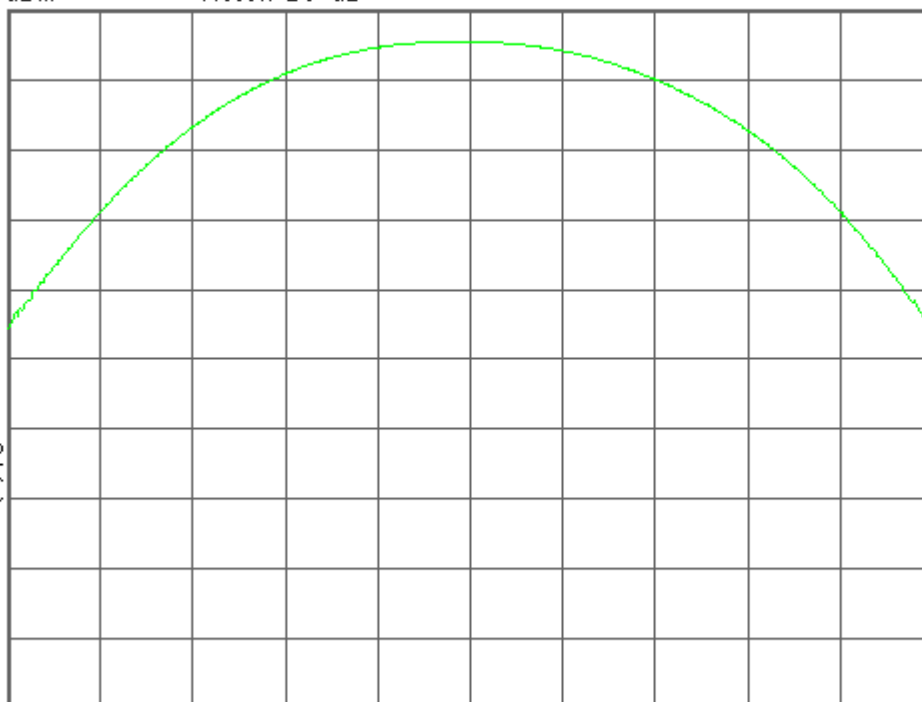
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Center 2.480 00 GHz

Span 10 MHz

#Res BW 3 MHz

VBW 3 MHz

Sweep 1 ms (601 pts)

Freq/Channel

Center Freq

2.48000000 GHz

Start Freq

2.47500000 GHz

Stop Freq

2.48500000 GHz

CF Step

1.00000000 MHz

Auto

Man

Freq Offset

0.00000000 Hz

Signal Track

On

Off

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FCC ID:A3LSGHZ710 Cond Spur Ch.0

Mkr1 31.6 MHz

Ref 4 dBm

Atten 10 dB

-60.46 dBm

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

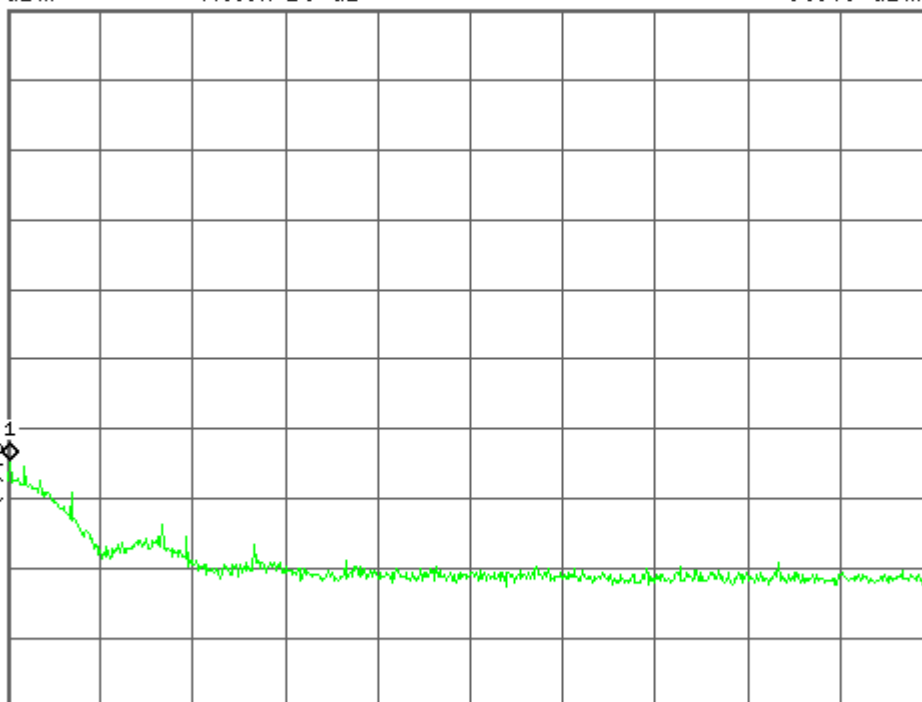
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Start 30.0 MHz

Stop 1.000 0 GHz

#Res BW 100 kHz

VBW 100 kHz

Sweep 117 ms (601 pts)

Freq/Channel

Center Freq

515.000000 MHz

Start Freq

30.0000000 MHz

Stop Freq

1.00000000 GHz

CF Step

97.0000000 MHz

Auto

Man

Freq Offset

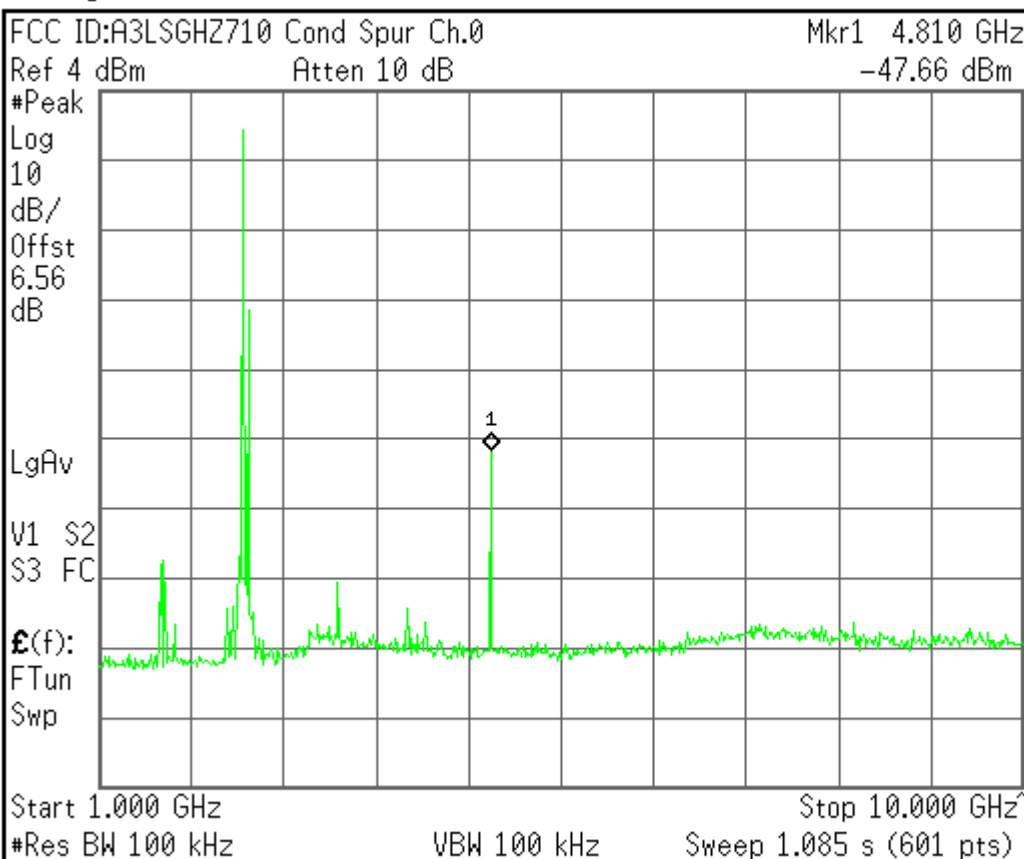
0.00000000 Hz

Signal Track

On

Off

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Freq/Channel

Center Freq  
 5.50000000 GHz

Start Freq  
 1.00000000 GHz

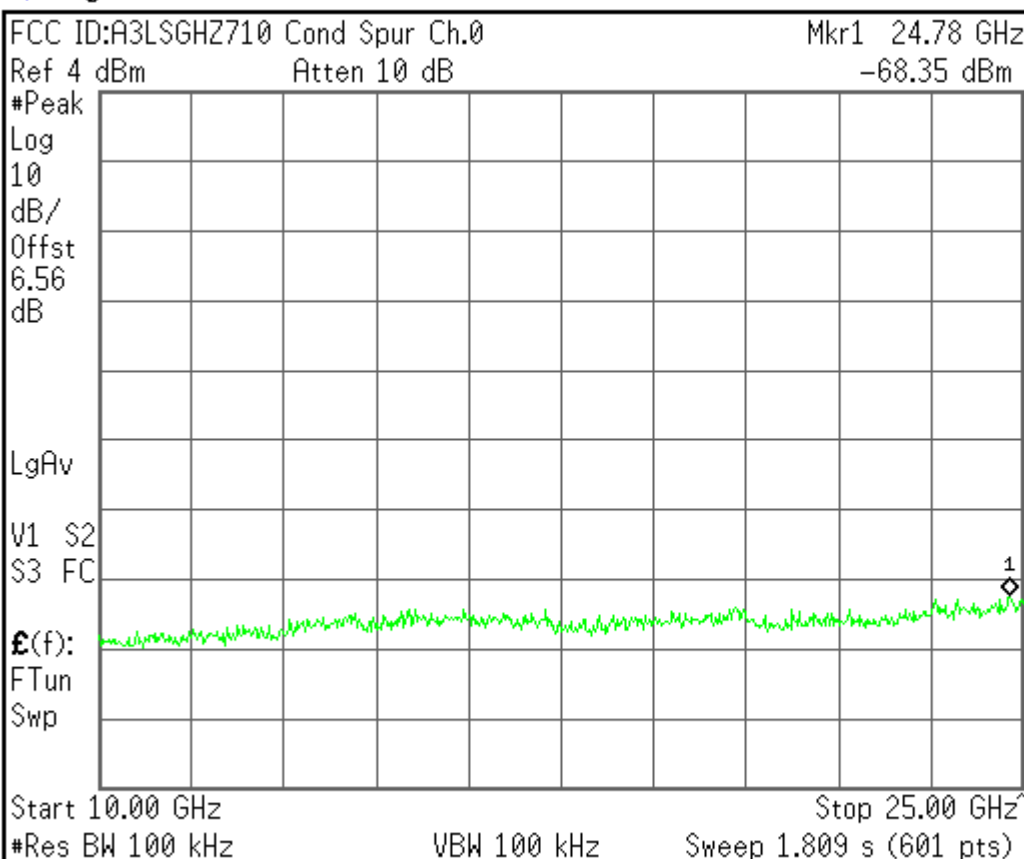
Stop Freq  
 10.00000000 GHz

CF Step  
 900.000000 MHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Freq/Channel

Center Freq  
 17.50000000 GHz

Start Freq  
 10.00000000 GHz

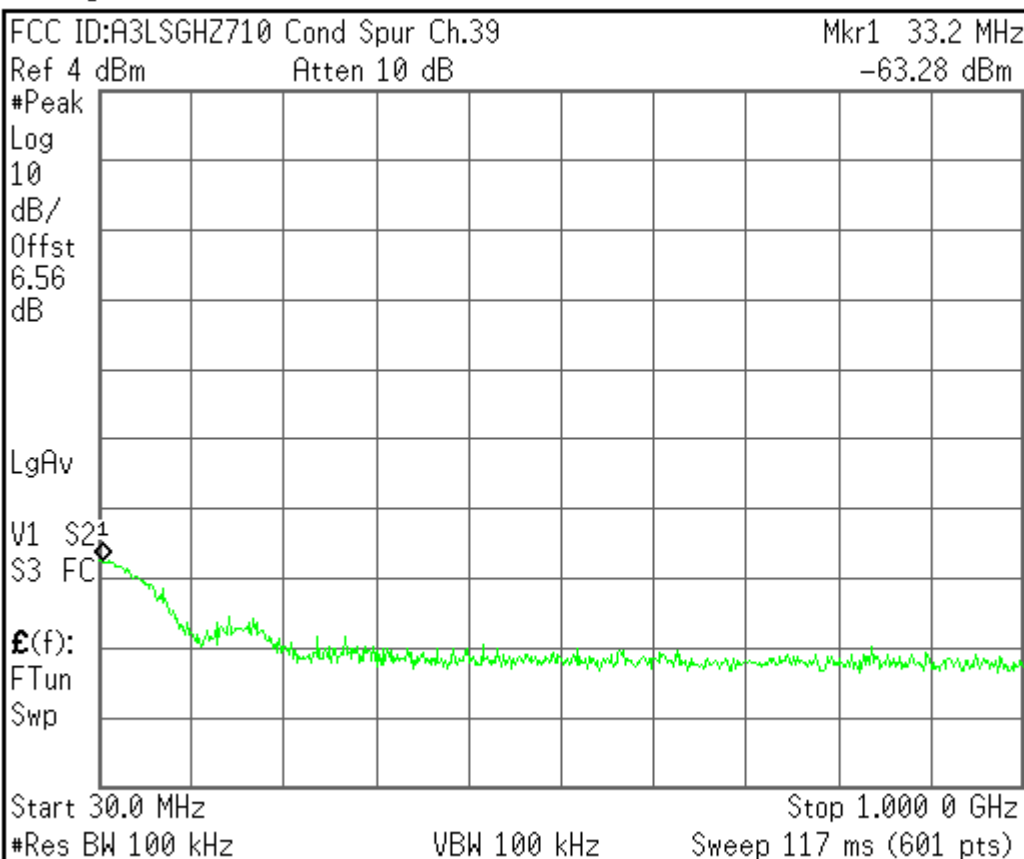
Stop Freq  
 25.00000000 GHz

CF Step  
 1.50000000 GHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Center Freq  
515.0000000 MHz

Start Freq  
30.0000000 MHz

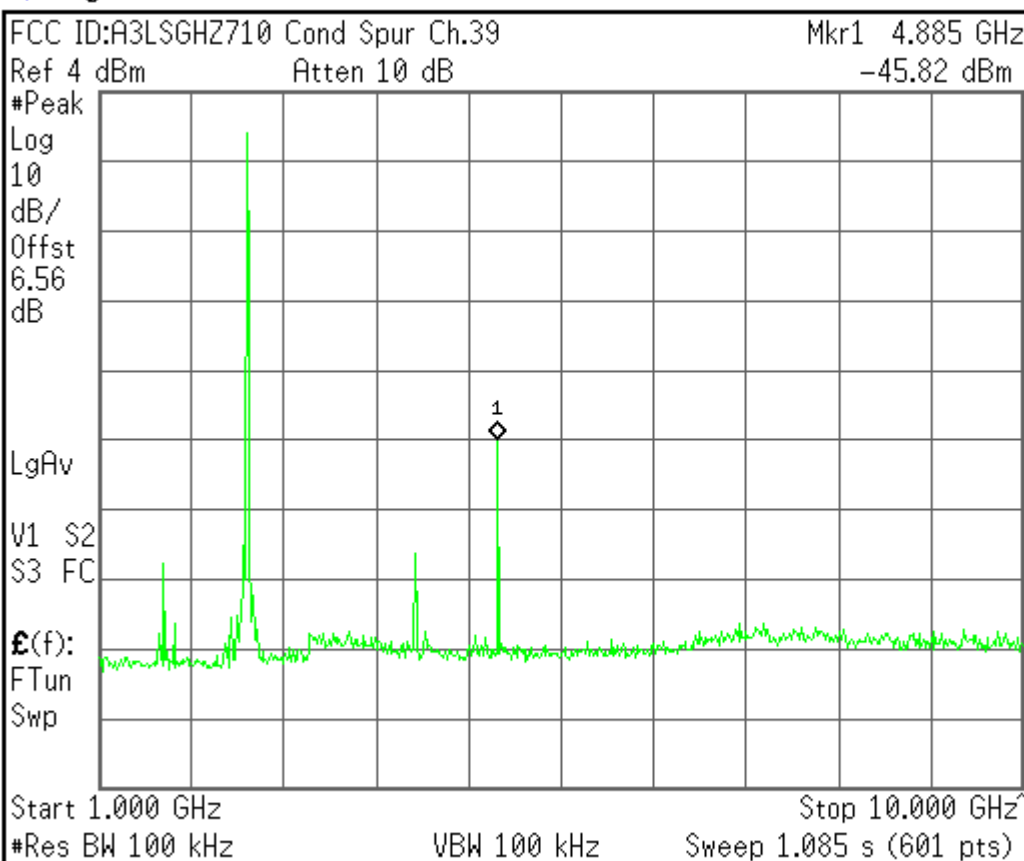
Stop Freq  
1.000000000 GHz

CF Step  
97.00000000 MHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

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Center Freq  
5.500000000 GHz

Start Freq  
1.000000000 GHz

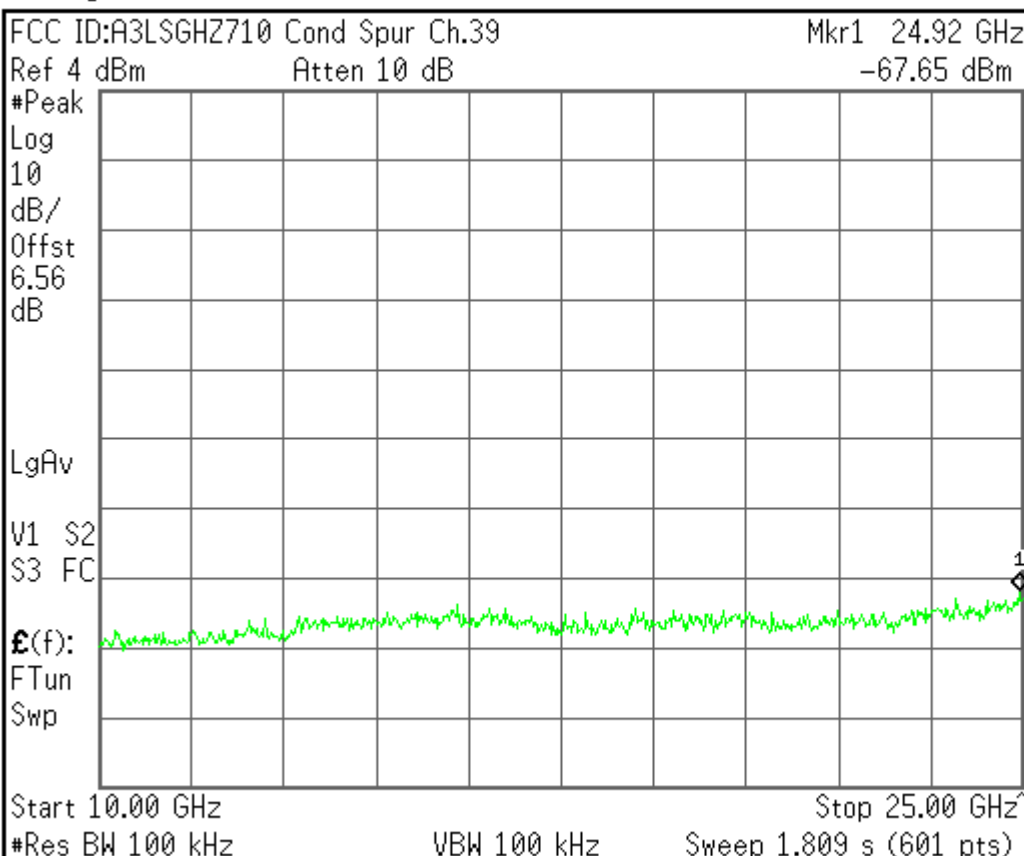
Stop Freq  
10.00000000 GHz

CF Step  
900.0000000 MHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

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Center Freq  
17.5000000 GHz

Start Freq  
10.0000000 GHz

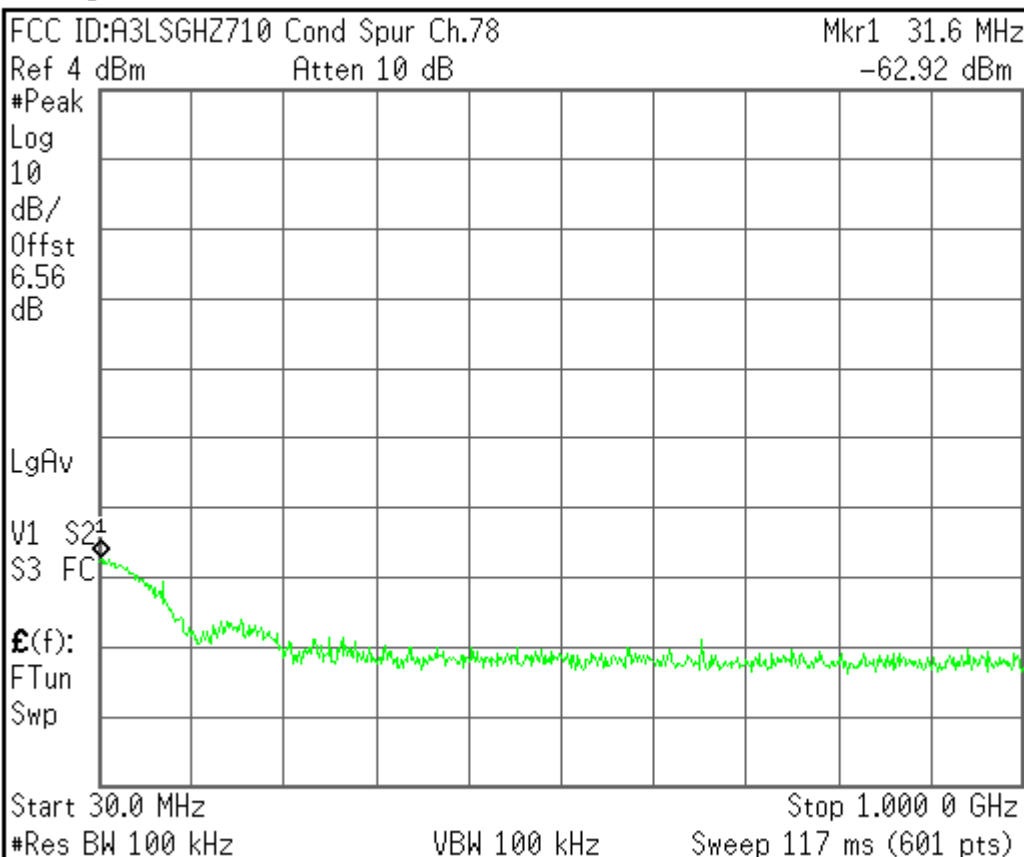
Stop Freq  
25.0000000 GHz

CF Step  
1.50000000 GHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

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Center Freq  
515.000000 MHz

Start Freq  
30.0000000 MHz

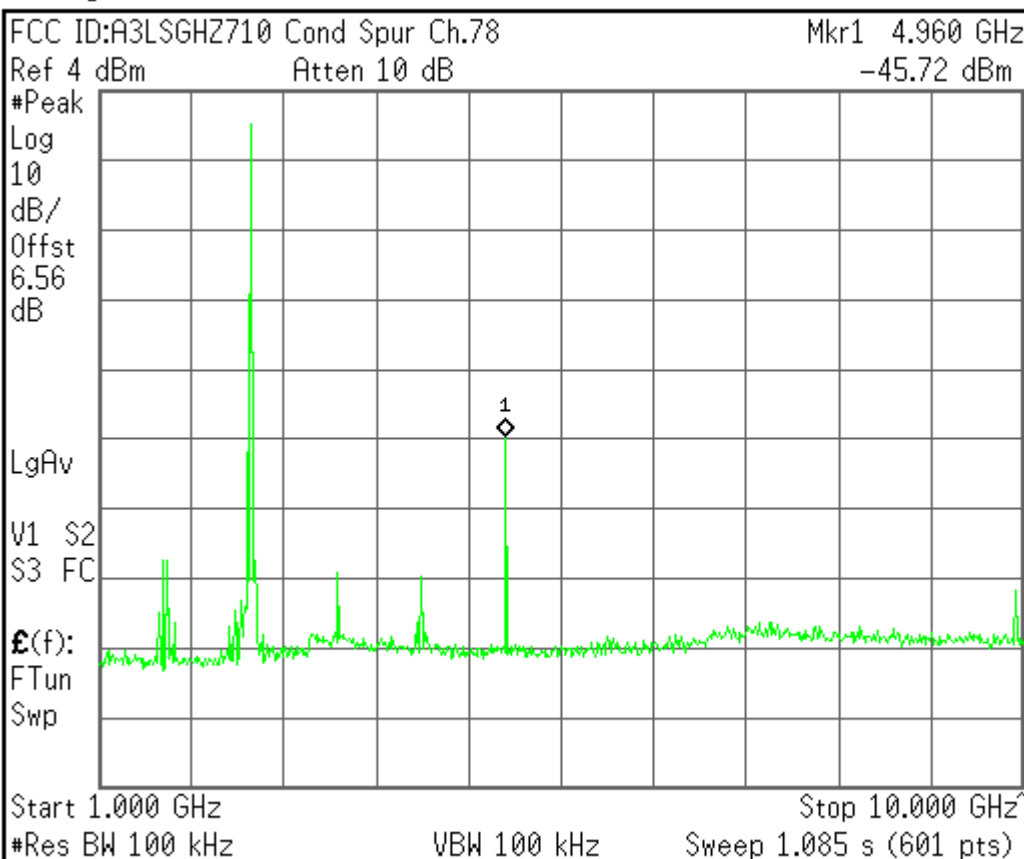
Stop Freq  
1.00000000 GHz

CF Step  
97.0000000 MHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

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Freq/Channel

Center Freq  
 5.50000000 GHz

Start Freq  
 1.00000000 GHz

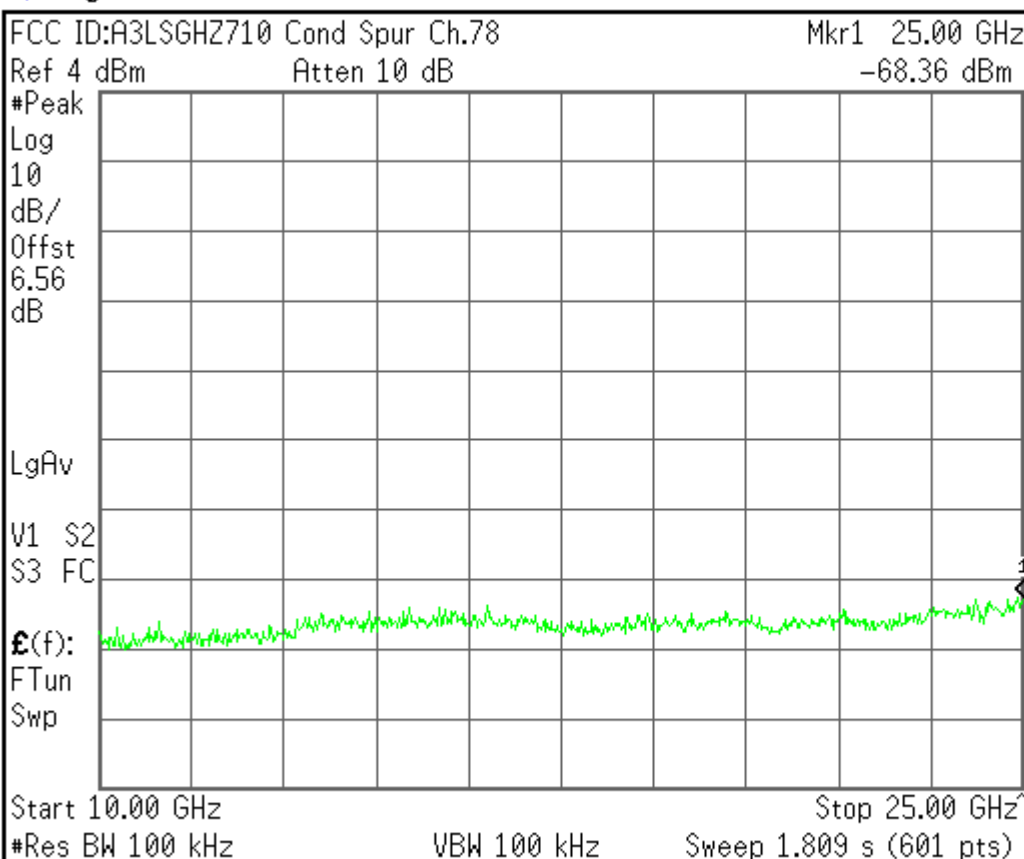
Stop Freq  
 10.00000000 GHz

CF Step  
 900.000000 MHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Freq/Channel

Center Freq  
 17.50000000 GHz

Start Freq  
 10.00000000 GHz

Stop Freq  
 25.00000000 GHz

CF Step  
 1.50000000 GHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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FCC ID:A3LSGHZ710 Bluetooth Hopping

Ref 4 dBm

Atten 10 dB

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

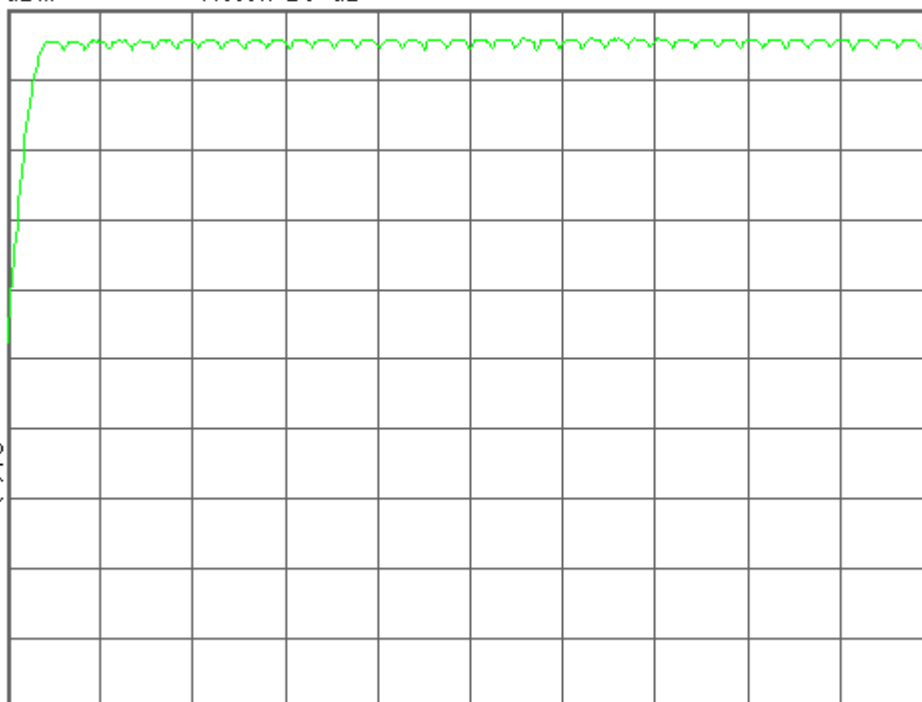
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Center 2.420 50 GHz

Span 41 MHz

#Res BW 1 MHz

VBW 1 MHz

Sweep 1 ms (601 pts)

**Center Freq**  
2.42050000 GHz

**Start Freq**  
2.40000000 GHz

**Stop Freq**  
2.44100000 GHz

**CF Step**  
4.10000000 MHz  
Auto Man

**Freq Offset**  
0.00000000 Hz

**Signal Track**  
On Off

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FCC ID:A3LSGHZ710 Bluetooth Hopping

Ref 4 dBm

Atten 10 dB

#Peak

Log

10

dB/

Offst

6.56

dB

LgAv

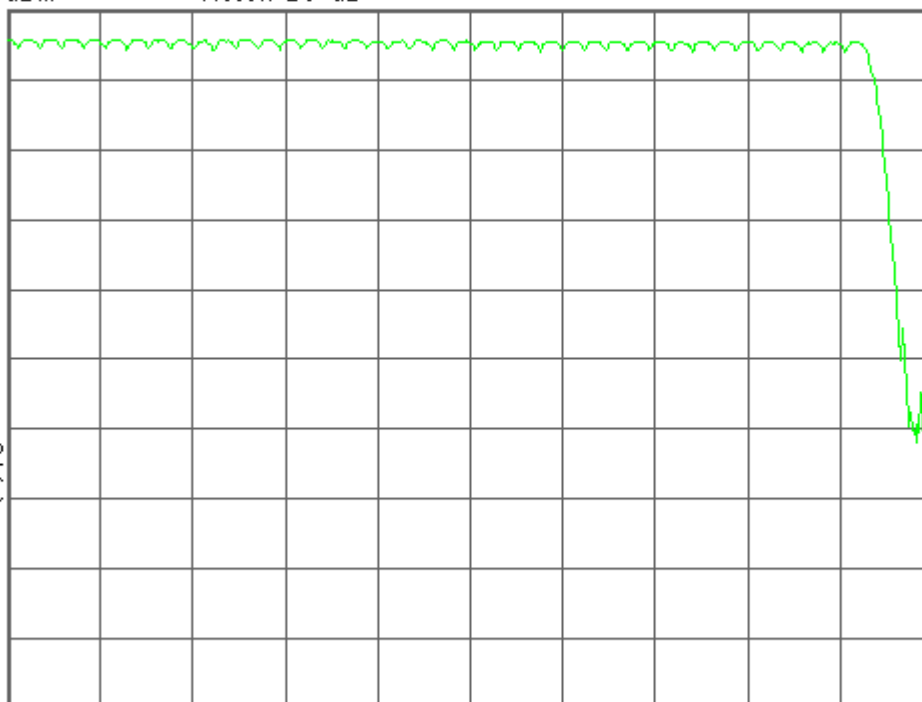
V1 S2

S3 FC

$\mathcal{E}(f)$ :

FTun

Swp



Start 2.441 00 GHz

Stop 2.483 50 GHz

#Res BW 1 MHz

VBW 1 MHz

Sweep 1 ms (601 pts)

**Center Freq**  
2.46225000 GHz

**Start Freq**  
2.44100000 GHz

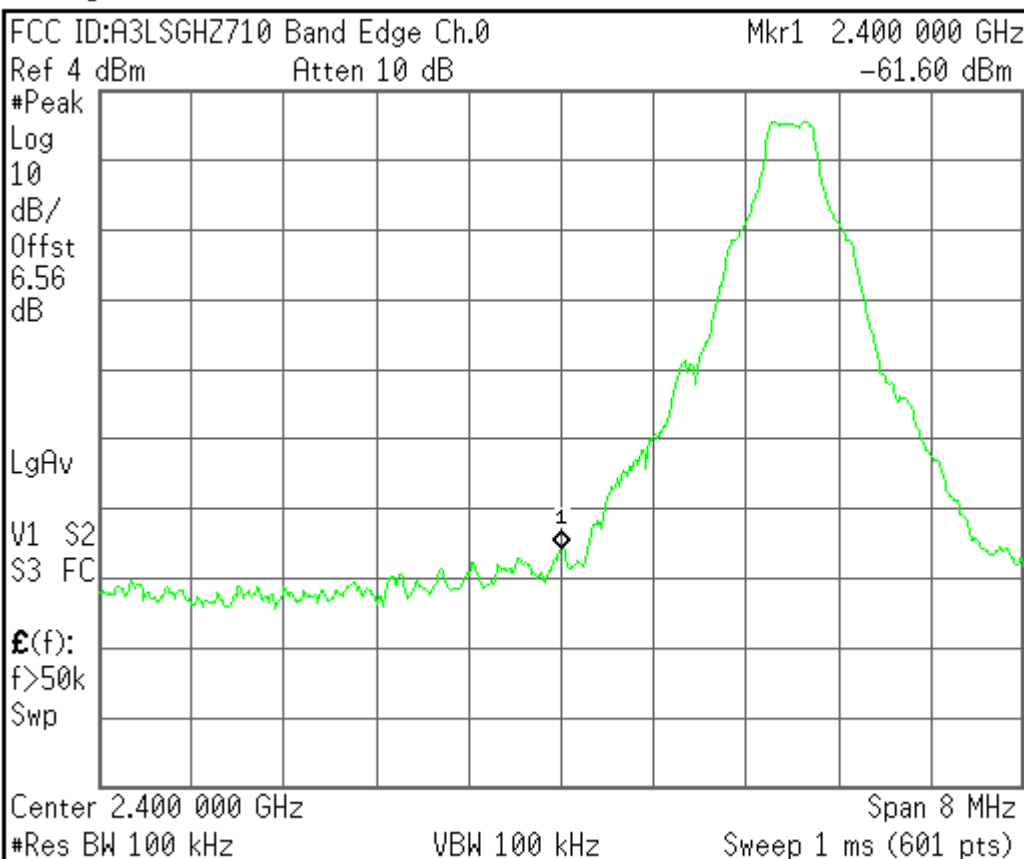
**Stop Freq**  
2.48350000 GHz

**CF Step**  
4.25000000 MHz  
Auto Man

**Freq Offset**  
0.00000000 Hz

**Signal Track**  
On Off

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Freq/Channel

Center Freq  
 2.40000000 GHz

Start Freq  
 2.39600000 GHz

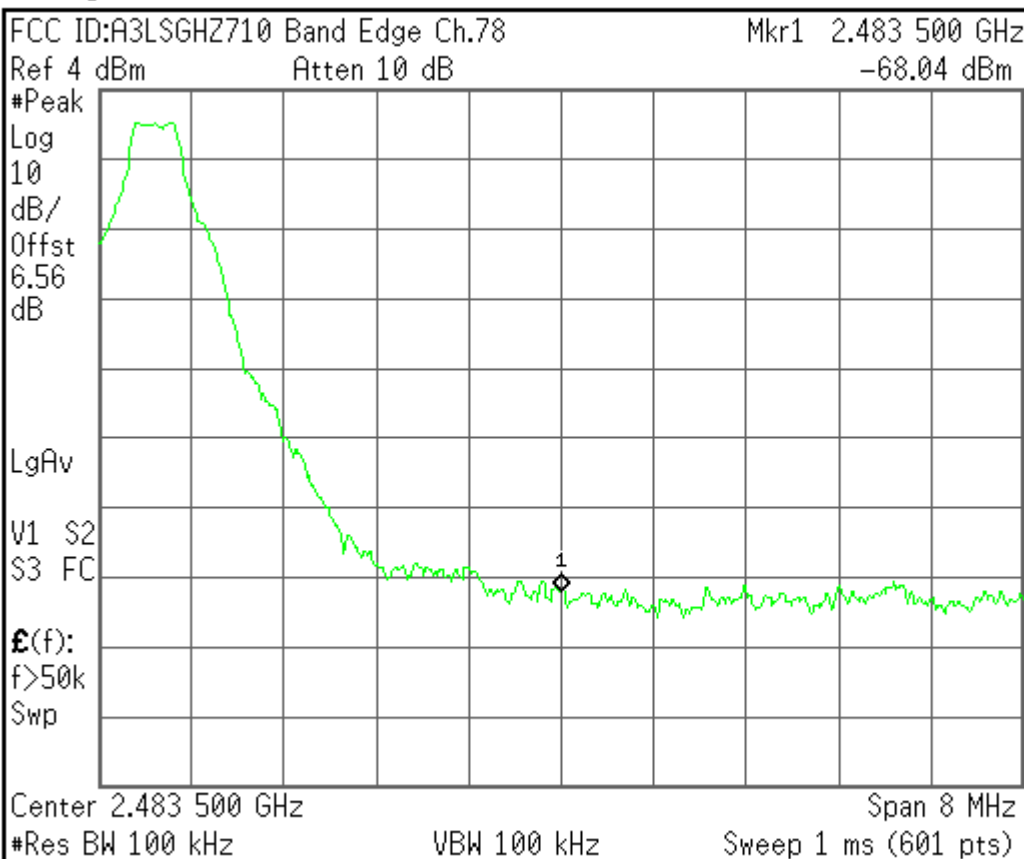
Stop Freq  
 2.40400000 GHz

CF Step  
 800.000000 kHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Freq/Channel

Center Freq  
 2.48350000 GHz

Start Freq  
 2.47950000 GHz

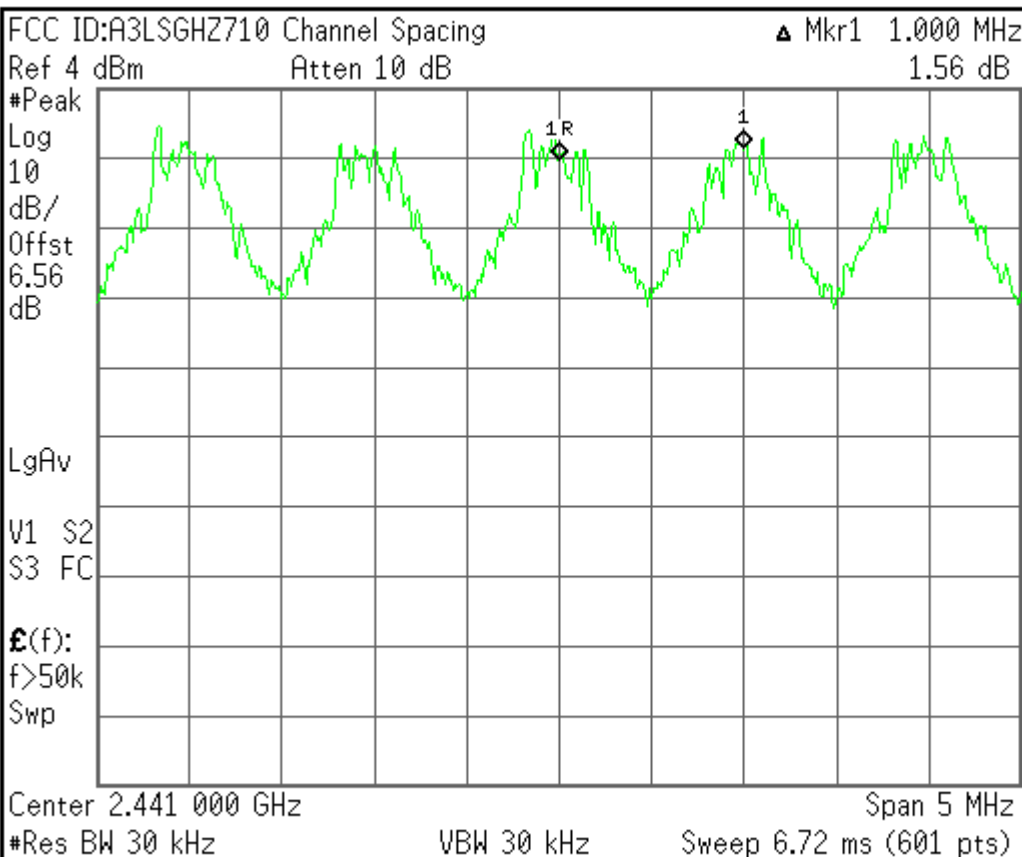
Stop Freq  
 2.48750000 GHz

CF Step  
 800.000000 kHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Freq/Channel

Center Freq  
 2.44100000 GHz

Start Freq  
 2.43850000 GHz

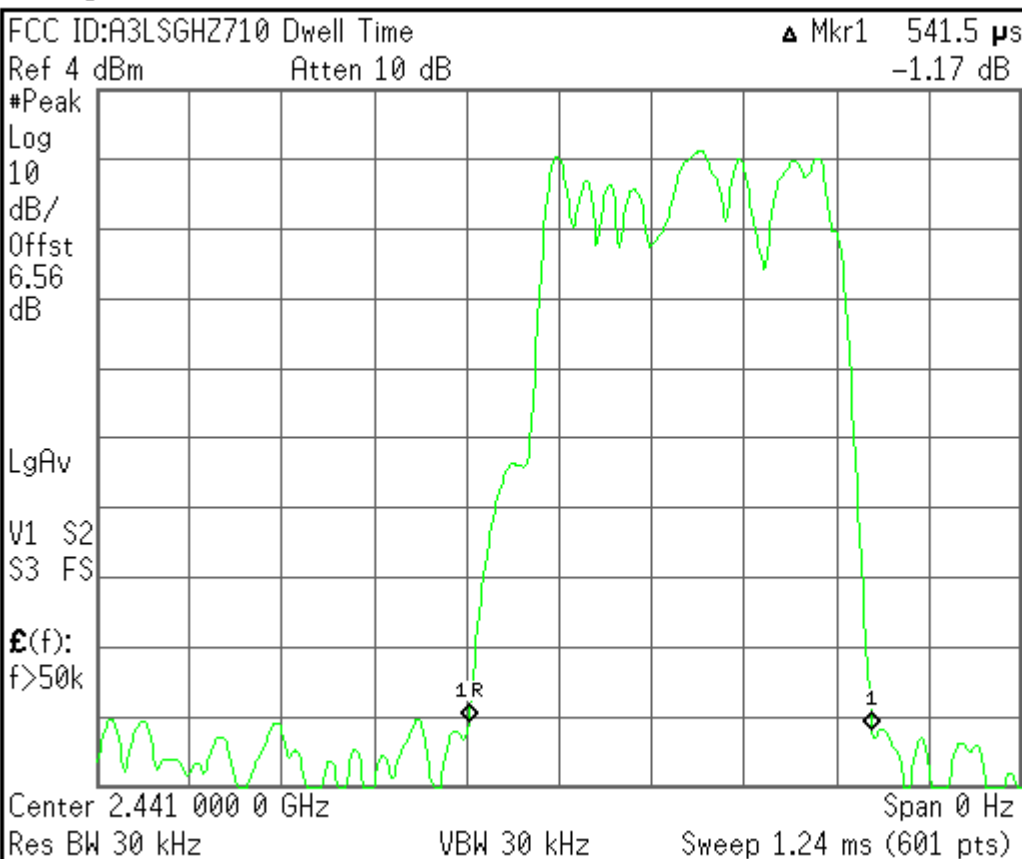
Stop Freq  
 2.44350000 GHz

CF Step  
 500.000000 kHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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Freq/Channel

Center Freq  
 2.44100000 GHz

Start Freq  
 2.44100000 GHz

Stop Freq  
 2.44100000 GHz

CF Step  
 30.0000000 kHz  
 Auto Man

Freq Offset  
 0.00000000 Hz

Signal Track  
 On Off

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