



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 22 & 24 SUBPART CERTIFICATION REPORT

Model Tested : GT-B6520L  
FCC ID (Requested) : A3LGTB6520L  
Report No : FH-154-R1  
Job No : FH-154  
Date issued : June 19, 2010

- Abstract -

All measurement reported herein accordance with FCC Rules, 47CFR Part2,  
Part22, Part24.

**Prepared By**

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KJ KWON – Test Engineer

**Authorized By**

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WT JANG – Technical Manager



# TABLE OF CONTENT

<b>MEASUREMENT REPORT</b>	<b>Page</b>
<b>1. FCC CERTIFICATION INFORMATION</b> .....	<b>3</b>
1.1. §2.1033 General Information .....	3
<b>2. INTRODUCTION</b> .....	<b>4</b>
2.1. General .....	4
<b>3. MEASURING INSTRUMENT CALIBRATION</b> .....	<b>5</b>
<b>4. TEST EQUIPMENT LIST</b> .....	<b>6</b>
<b>5. DESCRIPTION OF TESTS</b> .....	<b>7</b>
5.1. Effective Radiated Power / Equivalent Isotropic Radiated Power .....	7
5.2. Radiated Spurious & Harmonic Emission .....	8
5.3. Peak-Average Ratio .....	9
5.4. Occupied Bandwidth .....	10
5.5. Spurious and Harmonic Emission at Antenna Terminal .....	10
5.5.1. Occupied Bandwidth Emission Limits .....	10
5.5.2. Conducted Spurious Emission .....	12
5.6. Frequency Stability / Temperature Variation .....	13
<b>6. TEST DATA</b> .....	<b>14</b>
6.1. Conducted Output Power .....	14
6.2. Effective Radiated Power (E.R.P.) .....	15
6.3. Equivalent Isotropic Radiated Power (E.I.R.P.) .....	16
6.4. GSM850 Radiated Spurious & Harmonic measurement .....	17
6.5. GSM1900 Radiated Spurious & Harmonic measurement .....	18
6.6. GSM850 Radiated Spurious & Harmonic Conversion Table .....	19
6.7. GSM1900 Radiated Spurious & Harmonic Conversion Table .....	20
6.8. Frequency Stability .....	21
6.8.1. GSM850 Frequency Stability Table .....	21
6.8.2. GSM850 Frequency Stability Graph .....	22
6.8.3. GSM1900 Frequency Stability Table .....	24
6.8.4. GSM1900 Frequency Stability Graph .....	25
<b>7. CONCLUSION</b> .....	<b>27</b>
<b>8. TEST PLOTS</b> .....	<b>28</b>



# MEASUREMENT REPORT

## 1. FCC Certification Information

The following information is in accordance with FCC Rules, 47CFR Part2, Subpart J, Sections 2.1033 – 2.1055.

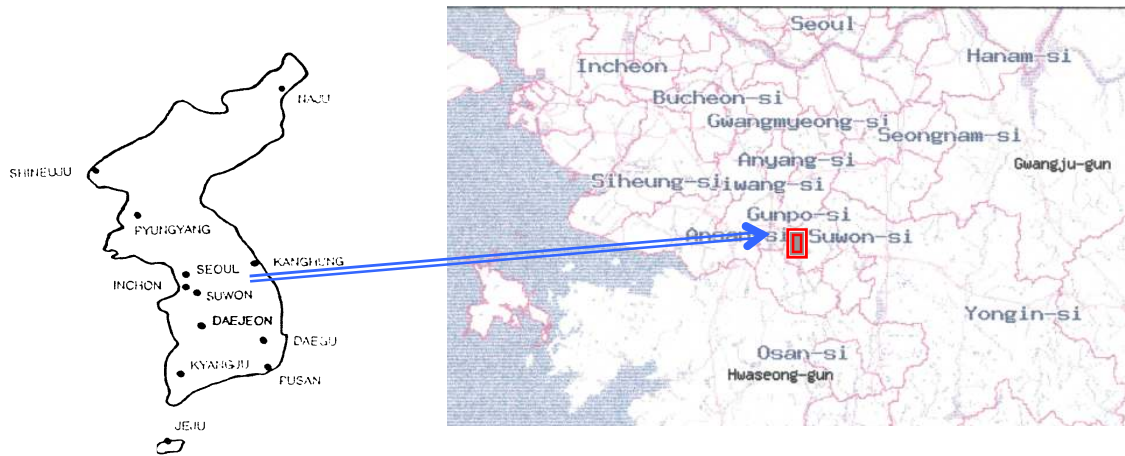
### 1.1. §2.1033 General Information

- Applicant Name : SAMSUNG ELECTRONICS CO., LTD.
- Address : 416 Maetan3-Dong, Yeongtong-gu, Suwon City  
Gyeonggi-Do, Korea 443-742
- FCC ID : A3LGTB6520L
- Model : GT-B6520L
- Quantity : Quantity production is planned
- Emission Designators : 250KGXW(GSM850)  
248KGXW(GSM1900)
- Tx Freq. Range : 824.2 - 848.8MHz (GSM850)  
1850.2MHz - 1909.8MHz (GSM1900)
- Rx Freq. Range : 869.2 - 893.8 MHz (GSM850)  
1930.2MHz - 1989.8MHz (GSM1900)
- Max. Power Rating : 0.794 W ERP GSM850 (29.00 dBm)  
1.306 W EIRP GSM1900 (31.16 dBm)
- FCC Classification(s) : PCS Licensed Portable Tx Held to Ear (PCE)
- Equipment (EUT) Type : *850/1900 GSM/GPRS and WCDMA Phone with Bluetooth,  
EDGE Rx only and WLAN*
- Frequency Tolerance :  $\pm 0.00025\%$  (2.5ppm)
- FCC Rule Part(s) : §24(E), §22(H), §2.
- Dates of Test : June 12-13, 2010
- Place of Test : SAMSUNG Lab,
- Test Report S/N : FH-154-R1

## 2. INTRODUCTION

### 2.1. General

These measurement test were conducted at **SAMSUNG ELECTRONICS CO., LTD(SUWON)**. The site address is 416 Maetan3-Dong, Yeongtong-gu, Suwon City, Gyeonggi-Do, Korea 443-742. The site have 1 Fully-anechoic chamber and measurement facility.



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

### **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 Non-conducted 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. The substitution antenna will replace the EUT antenna it the same position and in vertical polarization. The frequency of the signal generator shall be set to the frequencies that were measured on the EUT. The test antenna shall be raised and lowered, if necessary, to ensure that the maximum signal is still being received. The signal generator, output level, shall be adjusted until an equal or a known related level to what was measured from the EUT is obtained in the spectrum analyzer. This level was recorded.

For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.



**Figure2. Photograph of 3m Fully-Anechoic Chamber**



### **3. MEASURING INSTRUMENT CALIBRATION**

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



#### 4. TEST EQUIPMENT LIST

Name Of Equipment	Model	Serial No.	Due Date
Spectrum Analyzer	ESI26	836119/010	2010-10-20
	E4440A(3Hz~26.5GHz)	MY46187454	2011-03-08
	E4440A(3Hz~26.5GHz)	MY41000236	2011-04-13
Network Analyzer	8753E	JP38160590	2011-06-18
Pre-Amplifier	8449B	3008A00691	2010-12-15
Communication test set	8960	MY47510060	2011-03-08
	8960	GB42230535	2010-12-18
Controller	CO2000	CO2000/424	Not Required
Turn Unit	CT0800	CT0800/057	Not Required
Rotating Device	DE3600-RH-PR	DE3600-RH-PR/050	Not Required
Antenna Master	MA4000	MA4000/204	Not Required
Horn Antenna	HF906	100134	2011-09-23
Dipole Antenna	UHA 9105	9105-2412	2011-10-06
	3121C-DB4	9007-587	2011-04-15
Receive Antenna	HL040	353255/019	2011-10-26
Power Supply	E3640A	MY40003594	2011-06-17
	E3640A	MY40003595	2011-05-17
	E3632A	MY40022438	2011-03-05
Divider	11636B	51946	2011-06-25
	11636B	51942	2011-07-09
	11636B	56918	2011-08-31
High Pass Filter	WHK/3.0/18G-10SS	492	Not Required
	WHK/3.5/18G-10SS	4	Not Required
Environmental Chamber	SH-241	92000549	2010-11-11
	SH-241	92000548	2010-11-11
Shielded Fully Anechoic Chamber	CHAMBER	ANT0001	Not Required

## 5. DESCRIPTION OF TESTS

### 5.1. Effective Radiated Power / Equivalent Isotropic Radiated Power

#### Test Set-up for the ERP/EIRP TEST

Effective Radiated Power Output and Equivalent Isotropic Radiated Power output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004

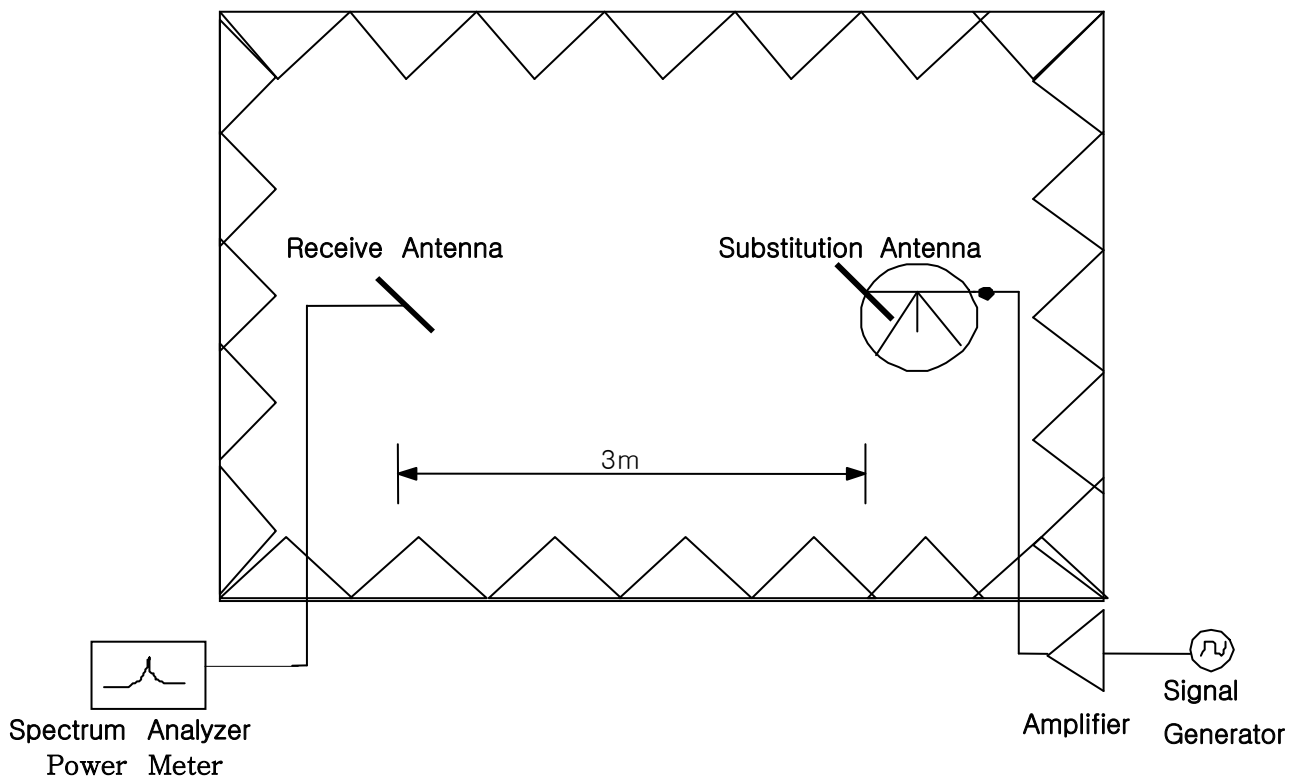


Figure 3. Diagram of ERP/EIRP test Set-up

The EUT was placed on the rotating device at 3-meters from the receive antenna. The turn unit and rotating device was adjusted for the highest reading on the receive spectrum analyzer. For GSM signals, an average detector is used, with RBW=VBW=3MHz, SPAN=10MHz. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of dipole is measured. The ERP and EIRP are recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

## 5.2. Radiated Spurious & Harmonic Emission

### Test Set-up for the Radiated Emission TEST

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004

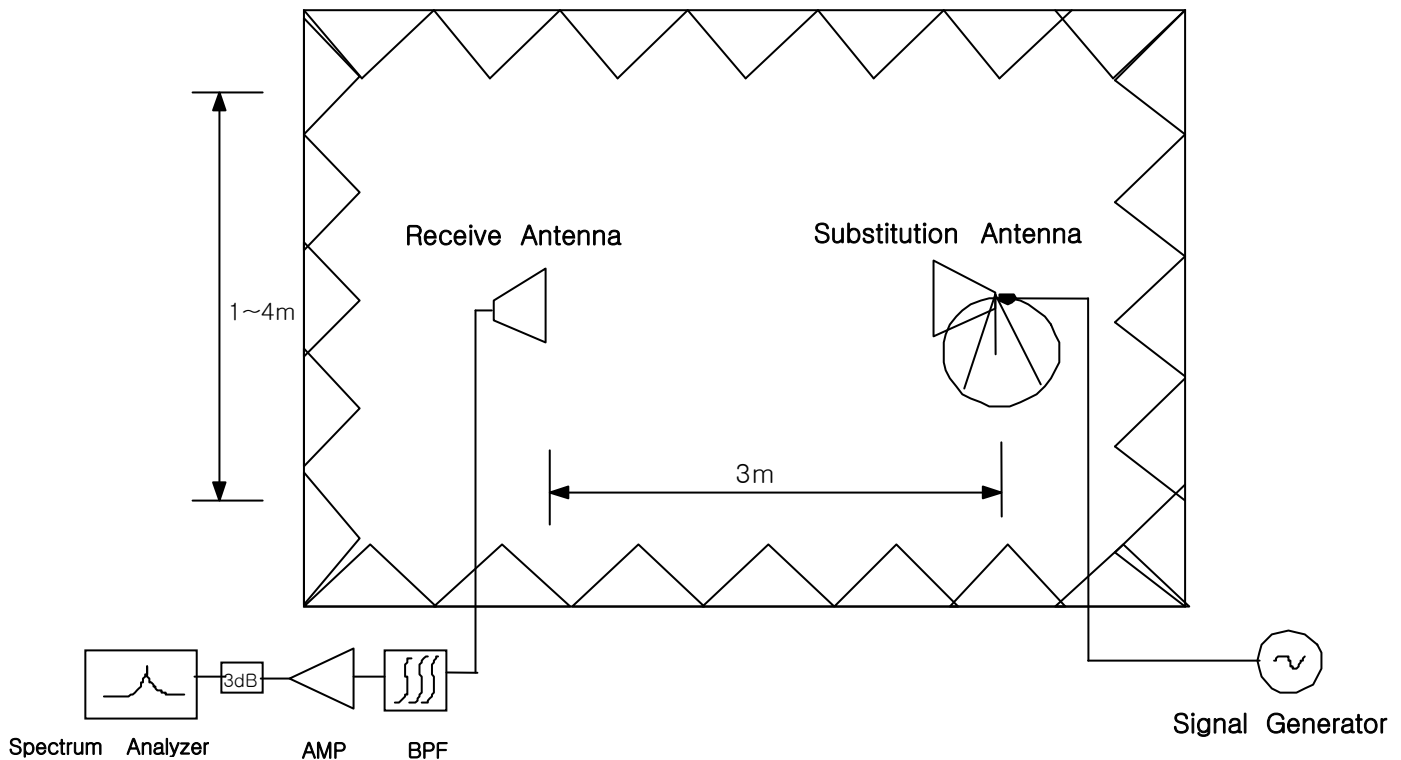


Figure 4. Diagram of Radiated Spurious & Harmonic test Set-up

The EUT was placed on the rotating device at 3-meters from the receive antenna. The turn unit and rotating device was adjusted for the highest reading on the receive spectrum analyzer. The Spectrum was investigated from 30MHz to the 10<sup>th</sup> Harmonic of the fundamental. A peak detector is used, with RBW=VBW=1MHz. The value that we could measure was only reported. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

## SAMPLE CALCULATION

### **Example: Channel 661 , Second Harmonic(3760.00MHz)**

The receive analyzer reading at 3meters with the EUT on the turntable was  $-81.0\text{dBm}$ . The gain of the substituted antenna is  $8.1\text{dBi}$ . The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of  $-81.0\text{dBm}$  of the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is  $2.0\text{dB}$  at  $3760.00\text{MHz}$ . So  $6.1\text{dB}$  is added to the signal generator reading of  $-30.9\text{dBm}$  yielding  $-24.8\text{dBm}$ . The fundamental EIRP was  $25.5\text{dBm}$  so this harmonic was  $25.5\text{dBm} - (-24.8) = 50.3\text{dBc}$ .

### 5.3. Peak-Average Ratio

A peak to average ratio measurement is performed at the conducted port of the EUT. An average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth.

## 5.4. Occupied Bandwidth

### **Test Procedure**

The EUT was setup to maximum output power at its lowest channel. The occupied bandwidth was measured using a spectrum analyzer. The measurements are repeated for the highest and a middle channel. 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 26dB below the transmitter power.

Plots of the EUT's occupied bandwidth are shown herein.

## 5.5. Spurious and Harmonic Emission at Antenna Terminal

### 5.5.1. Occupied Bandwidth Emission Limits

- (a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB.
- (b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- (c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- (d) The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

<b>BLOCK</b>	<b>Freq. Range (MHz) Transmitter (Tx)</b>	<b>Freq. Range (MHz) Receiver (Rx)</b>
A	1850 – 1865	1930 – 1945
B	1870 – 1885	1950 – 1965
C	1895 – 1910	1975 – 1990
D	1865 – 1870	1945 – 1950
E	1885 – 1890	1965 – 1970
F	1890 – 1895	1970 – 1975

**Table 1. Broadband PCS Service Frequency Blocks**

<b>BLOCK</b>	<b>Freq. Range (MHz) Transmitter (Tx)</b>	<b>Freq. Range (MHz) Receiver (Rx)</b>
A* Low + A	824 ~ 835	869 ~ 880
B	835 ~ 845	880 ~ 890
A* High	845 ~ 846.5	890 ~ 891.5
B*	846.5 ~ 849	891.5 ~ 894

**Table 2. Cellular Service Frequency Blocks**

## 5.5.2. Conducted Spurious Emission

### **Minimum standard:**

On any frequency outside a license frequency block, the power of any emission shall be attenuated below the transmitter power(P) by at least  $43+10\log(P)$ dB. Limit equivalent to -13dBm, calculation shown below.

$$43 + 10\log ( 0.766 \text{ W} ) = 41.84 \text{ dB}$$

$$28.84 \text{ dBm} - 41.84 \text{ dB} = -13 \text{ dBm}$$

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

In case of GSM :  $0.01 * 273\text{KHz} = 2.73\text{KHz}$   
A Resolution BW of 3KHz was used for measurement at the band edges.

### **Test Procedure:**

The EUT was setup to maximum output power at its lowest channel. The Resolution BW of the analyzer is set to 1% of the emission bandwidth to show compliance with the -13dBm limit, in the 1MHz bands immediately outside and adjacent to the edge of the frequency block. The measurements are repeated for the EUT's highest channel. For the Out-of-Band measurements a 1MHz RBW was used to scan from 10MHz to 10GHz. (GSM1900 Mode : 10MHz to 20GHz). A display line was placed at -13dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

Plots are shown herein.

## 5.6. Frequency Stability / Temperature Variation

The frequency stability of the transmitter is measured by:

- a.) Temperature: The temperature is carried from  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  using an environmental chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

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

Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature ( $25^{\circ}\text{C}$  to  $27^{\circ}\text{C}$  to provide a reference).
2. The equipment is subjected to an overnight "soak" at  $-30^{\circ}\text{C}$  without any power applied.
3. After the overnight "soak" at  $-30^{\circ}\text{C}$  (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 to the transmitter.
4. Frequency measurements are made at  $10^{\circ}\text{C}$  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  $-30^{\circ}\text{C}$  up to  $+60^{\circ}\text{C}$  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.

NOTE : The EUT is tested down to the battery endpoint.

## 6. TEST DATA

### 6.1. Conducted Output Power

A base station simulator was used to establish communication with the Samsung 850/1900 GSM/GPRS and WCDMA Phone with Bluetooth, EDGE Rx only and WLAN. FCC ID: A3LGTB6520L. The base station simulator parameters were set to produce the maximum power from the EUT. This device was tested under all configurations and the highest power is reported in GSM mode and using a Power Control Level of “0” in the PCS BAND and “5” in the Cellular Band. The GSM conducted powers are reported below, respectively.

BAND	Channel	RF Conducted Power Table				
		Voice	GPRS Data			
			1 Tx Slot	2 Tx Slot	3 Tx Slot	4 Tx Slot
PCS	512	29.72	29.77	29.62	27.26	24.80
	661	29.29	29.26	29.16	26.84	24.40
	810	28.92	28.90	28.79	26.53	24.05
Cellular	128	32.41	32.38	32.42	30.05	27.52
	190	32.33	32.32	32.37	30.03	27.49
	251	32.31	32.25	32.31	29.95	27.42

Table 6-1 GSM Conducted Output Powers

## 6.2. Effective Radiated Power (E.R.P.)

Supply Voltage : 3.7VDC

Modulation : GSM850

### Reference level

Frequency (MHz)	Output (dBm)	Polarization (H/V)	S/A (dBm)	Ant gain (dBd)	Ref level (dBm)
824.20	29.00	H	-7.44	-0.67	-6.77
		V	-8.28	-0.67	-7.61
836.60	28.00	H	-8.97	-0.73	-8.24
		V	-9.24	-0.73	-8.51
848.80	27.00	H	-12.18	-0.79	-11.39
		V	-11.36	-0.79	-10.57

### Result

Frequency (MHz)	Tested level (dBm)	Polarization (H/V)	Azimuth (angle)	ERP (dBm)	ERP (W)	Battery
824.20	-6.77	H	289/100	29.00	0.794	Standard
836.60	-8.49	H	289/100	27.75	0.596	Standard
848.80	-11.00	H	287/100	27.39	0.548	Standard

**NOTE :** Standard batteries are the only battery options for this phone

- All modes of operation were investigated, and the worst-case results are reported.

### Radiated measurements at 3 meters by Substitution Method

### 6.3. Equivalent Isotropic Radiated Power (E.I.R.P.)

Supply Voltage : 3.7VDC

Modulation : PCS 1900

#### Reference level

Frequency (MHz)	Output (dBm)	Polarization (H/V)	S/A (dBm)	Ant gain (dBi)	Ref level (dBm)
1850.20	29.00	H	-10.32	9.60	-19.92
		V	-9.91	9.60	-19.51
1880.00	30.00	H	-8.95	9.60	-18.55
		V	-9.32	9.60	-18.92
1909.80	31.00	H	-8.49	9.60	-18.09
		V	-8.17	9.60	-17.77

#### Result

Frequency (MHz)	Tested level (dBm)	Polarization (H/V)	Azimuth (angle)	EIRP (dBm)	EIRP (W)	Battery
1850.20	-19.65	V	214/90	28.86	0.769	Standard
1880.00	-19.25	V	217/80	29.67	0.927	Standard
1909.80	-17.61	V	214/90	31.16	1.306	Standard

**NOTE :** Standard batteries are the only battery options for this phone

- All modes of operation were investigated, and the worst-case results are reported.

#### Radiated measurements at 3 meters by Substitution Method



## 6.4. GSM850 Radiated Spurious & Harmonic measurement

Operating Frequency : 824.20 MHz(Low), 836.60MHz(Middle), 848.80MHz(High)

Measured Output Power : 29.00 dBm = 0.794 W

Modulation Signal : GSM850

Limit :  $43 + 10\log_{10}(P) = 41.84$  dBc

### Result

Channel	Harmonic	Frequency (MHz)	From EUT Tested level (dBm)	POL (H/V)	Result (dBc)
128	2	1648.40	-50.32	V	67.21
	3	2472.60	-62.95	V	75.09
	4	3296.80	-66.83	V	75.36
	5	4121.00	-	-	-
	6	4945.20	-	-	-
	7	5769.40	-	-	-
190	2	1673.20	-51.04	H	67.07
	3	2509.80	-64.34	V	76.23
	4	3346.40	-66.67	H	74.53
	5	4183.00	-	-	-
	6	5019.60	-	-	-
	7	5856.20	-	-	-
251	2	1697.60	-51.54	H	66.48
	3	2546.40	-49.90	H	61.38
	4	3395.20	-67.08	V	75.27
	5	4244.00	-	-	-
	6	5092.80	-	-	-
	7	5941.60	-	-	-

#### NOTE :

1. "-" Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. The spectrum is measured from 30MHz to the 10<sup>th</sup> harmonic and All modes of operation were investigated, and the worst-case results are reported..

### Radiated Spurious Emission measurements at 3 meters by Substitution Method



## 6.5. GSM1900 Radiated Spurious & Harmonic measurement

Operating Frequency : 1850.2 MHz(Low), 1880.00 MHz(Middle), 1909.80 MHz(High)

Measured Output Power : 31.16 dBm = 1.306 W

Modulation Signal : GSM1900

Limit :  $43 + 10\log_{10}(P) = 44.16$  dBc

### Result

Channel	Harmonic	Frequency (MHz)	From EUT Tested level (dBm)	POL (H/V)	Result (dBc)
512	2	3700.40	-58.73	H	65.47
	3	5550.60	-66.29	H	68.02
	4	7400.80	-68.87	V	65.49
	5	9251.00	-	-	-
	6	11101.20	-	-	-
	7	12951.40	-	-	-
661	2	3760.00	-61.83	H	68.06
	3	5640.00	-67.06	V	68.49
	4	7520.00	-67.87	V	64.81
	5	9400.00	-	-	-
	6	11280.00	-	-	-
	7	13160.00	-	-	-
810	2	3819.60	-64.23	H	70.15
	3	5729.40	-66.78	H	67.89
	4	7639.20	-68.58	V	65.21
	5	9549.00	-	-	-
	6	11458.80	-	-	-
	7	13368.60	-	-	-

#### NOTE :

1. "-" Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. The spectrum is measured from 30MHz to the 10<sup>th</sup> harmonic and All modes of operation were investigated, and the worst-case results are reported.

### Radiated Spurious Emission measurements at 3 meters by Substitution Method



## 6.6. GSM850 Radiated Spurious & Harmonic Conversion Table

Date : June 13, 2010

Test Engineer : KJ KWON

- ① Tx Cable loss
- ② Tx Horn Ant Gain
- ③ Tx Level to radiate -13dBm
- ④ ESI Level received from Tx with-13dBm
- ⑤ Tested Level from EUT
- ⑥ = ERP+ 2.15 - (-13 + ⑤ - ④)

CH	Har	Frequency (MHz)	① Tx C/L dB	②Tx Horn Gain dBi	③Tx Level dBm	④ ESI Level : H dBm	④ ESI Level : V dBm	⑤Tested EUT Level : H dBm	⑤Tested EUT Level : V dBm	⑥ Result EUT : H (dBc)	⑥ Result EUT : V (dBc)
128	2	1648.40	-9.34	9.50	-13.20	-27.60	-27.25	-50.82	-50.32	67.36	67.21
	3	2472.60	-11.66	10.70	-12.00	-32.50	-32.00	-64.45	-62.95	76.09	75.09
	4	3296.80	-13.53	12.30	-11.80	-36.01	-35.61	-66.87	-66.83	75.00	75.36
	5	4121.00	-15.09	12.50	-10.40	-38.76	-38.44	-	-	-	-
	6	4945.20	-16.89	12.70	-8.80	-41.87	-40.99	-	-	-	-
	7	5769.40	-18.42	12.90	-7.50	-43.37	-43.42	-	-	-	-
190	2	1673.20	-9.39	9.50	-13.10	-28.11	-28.27	-51.04	-51.84	67.07	67.71
	3	2509.80	-11.68	10.70	-12.00	-32.67	-32.25	-65.14	-64.34	76.61	76.23
	4	3346.40	-13.62	12.30	-11.70	-36.28	-36.70	-66.67	-66.72	74.53	74.16
	5	4183.00	-15.33	12.50	-10.20	-38.60	-38.48	-	-	-	-
	6	5019.60	-17.17	12.70	-8.50	-42.15	-41.72	-	-	-	-
	7	5856.20	-18.51	12.90	-7.40	-44.68	-44.47	-	-	-	-
251	2	1697.60	-9.42	9.50	-13.10	-29.20	-28.39	-51.54	-56.79	66.48	72.54
	3	2546.40	-11.69	10.70	-12.00	-32.66	-32.59	-49.90	-67.03	61.38	78.58
	4	3395.20	-13.58	12.30	-11.70	-36.31	-35.95	-67.51	-67.08	75.34	75.27
	5	4244.00	-15.43	12.50	-10.10	-39.14	-39.12	-	-	-	-
	6	5092.80	-17.20	12.70	-8.50	-42.76	-42.76	-	-	-	-
	7	5941.60	-18.66	12.90	-7.20	-44.34	-44.02	-	-	-	-



## 6.7. GSM1900 Radiated Spurious & Harmonic Conversion Table

Date : June 13, 2010

Test Engineer : KJ KWON

- ① Tx Cable loss
- ② Tx Horn Ant Gain
- ③ Tx Level to radiate -13dBm
- ④ ESI Level received from Tx with-13dBm
- ⑤ Tested Level from EUT
- ⑥ = EIRP - (-13 + ⑤ - ④)

CH	Har	Frequency (MHz)	① Tx C/L dB	②Tx Horn Gain dBi	③Tx Level dBm	④ ESI Level : H dBm	④ ESI Level : V dBm	⑤Tested EUT Level : H dBm	⑤Tested EUT Level : V dBm	⑥ Result EUT : H (dBc)	⑥ Result EUT : V (dBc)
512	2	3700.40	-14.27	12.40	-11.10	-37.42	-37.29	-58.73	-63.14	65.47	70.01
	3	5550.60	-17.89	12.90	-8.00	-42.43	-42.51	-66.29	-66.46	68.02	68.11
	4	7400.80	-20.68	10.50	-2.80	-47.70	-47.31	-69.03	-68.87	65.49	65.72
	5	9251.00	-24.00	11.20	-0.20	-51.55	-50.34	-	-	-	-
	6	11101.20	-27.10	11.60	2.50	-55.14	-55.44	-	-	-	-
	7	12951.40	-29.17	12.90	3.30	-58.61	-58.58	-	-	-	-
661	2	3760.00	-14.42	12.40	-11.00	-37.93	-37.89	-61.83	-65.63	68.06	71.90
	3	5640.00	-18.03	12.90	-7.90	-42.58	-42.73	-67.35	-67.06	68.93	68.49
	4	7520.00	-20.87	10.60	-2.70	-47.19	-47.22	-68.54	-67.87	65.51	64.81
	5	9400.00	-23.58	11.60	-1.00	-51.70	-51.98	-	-	-	-
	6	11280.00	-26.58	12.10	1.50	-55.95	-56.35	-	-	-	-
	7	13160.00	-28.58	12.80	2.80	-58.92	-59.14	-	-	-	-
810	2	3819.60	-14.46	12.40	-10.90	-38.24	-38.04	-64.23	-65.74	70.15	71.86
	3	5729.40	-18.26	13.00	-7.70	-43.05	-42.89	-66.78	-67.11	67.89	68.38
	4	7639.20	-21.26	11.20	-2.90	-47.42	-47.53	-68.66	-68.58	65.40	65.21
	5	9549.00	-23.84	11.70	-0.90	-52.67	-51.88	-	-	-	-
	6	11458.80	-27.12	11.70	2.40	-56.20	-55.97	-	-	-	-
	7	13368.60	-28.83	12.30	3.50	-60.16	-59.86	-	-	-	-

## 6.8. Frequency Stability

### 6.8.1. GSM850 Frequency Stability Table

Operating Frequency : 836,600,000 Hz

Channel : 190

Reference Voltage : 3.7VDC

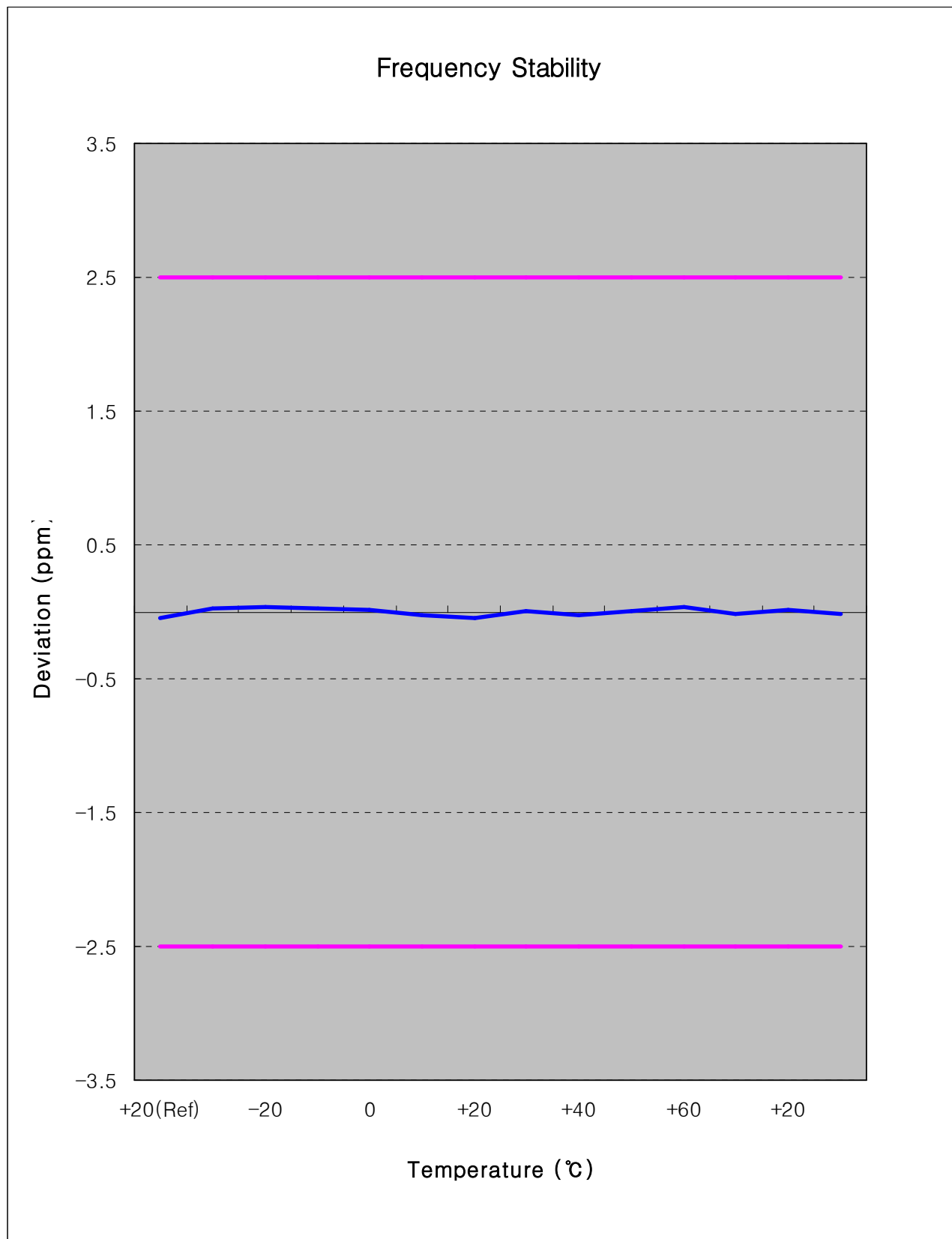
**Deviation Limit :  $\pm 0.00025$  % or 2.5ppm**

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency Error (Hz)	Frequency (Hz)	Deviation (%)	ppm
100%	3.70	+20(Ref)	-37.20	836,599,963	-0.000004	-0.044
100%		-30	21.40	836,600,021	0.000003	0.026
100%		-20	32.60	836,600,033	0.000004	0.039
100%		-10	24.20	836,600,024	0.000003	0.029
100%		0	10.40	836,600,010	0.000001	0.012
100%		+10	-18.30	836,599,982	-0.000002	-0.022
100%		+20	-37.20	836,599,963	-0.000004	-0.044
100%		+30	7.00	836,600,007	0.000001	0.008
100%		+40	-24.10	836,599,976	-0.000003	-0.029
100%		+50	3.70	836,600,004	0.000000	0.004
100%		+60	32.00	836,600,032	0.000004	0.038
85%		3.35	+20	-9.20	836,599,991	-0.000001
115%	4.26	+20	13.20	836,600,013	0.000002	0.016
Batt.Endpoint	3.35	+20	-9.20	836,599,991	-0.000001	-0.011

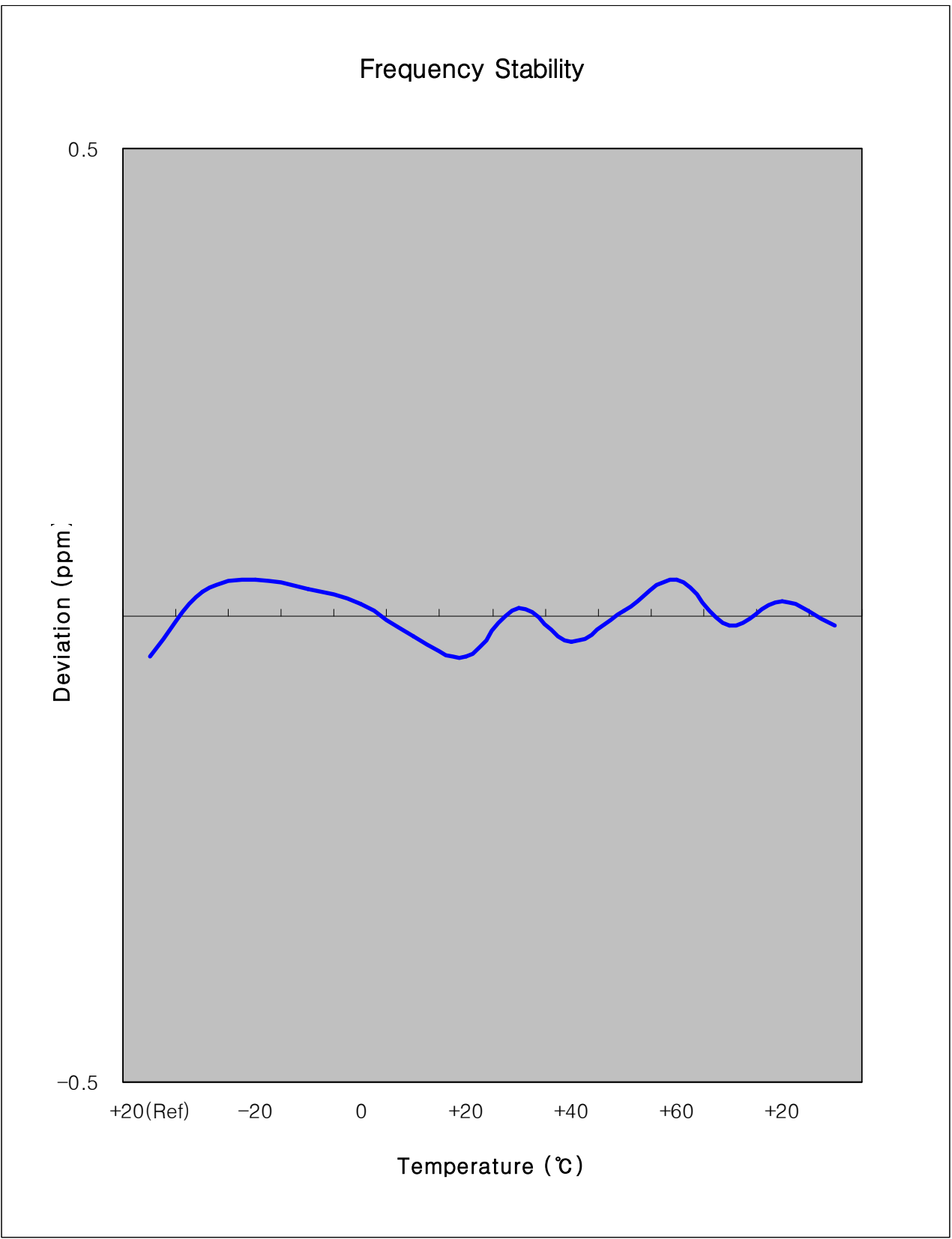
**Note : The temperature is varied from -30 °C to +60 °C using an environmental chamber.**

**The EUT is tested down to the battery end point.**

### 6.8.2. GSM850 Frequency Stability Graph



**Zoom IN**



### 6.8.3. GSM1900 Frequency Stability Table

Operating Frequency : 1,880,000,000 Hz

Channel : 661

Reference Voltage : 3.7VDC

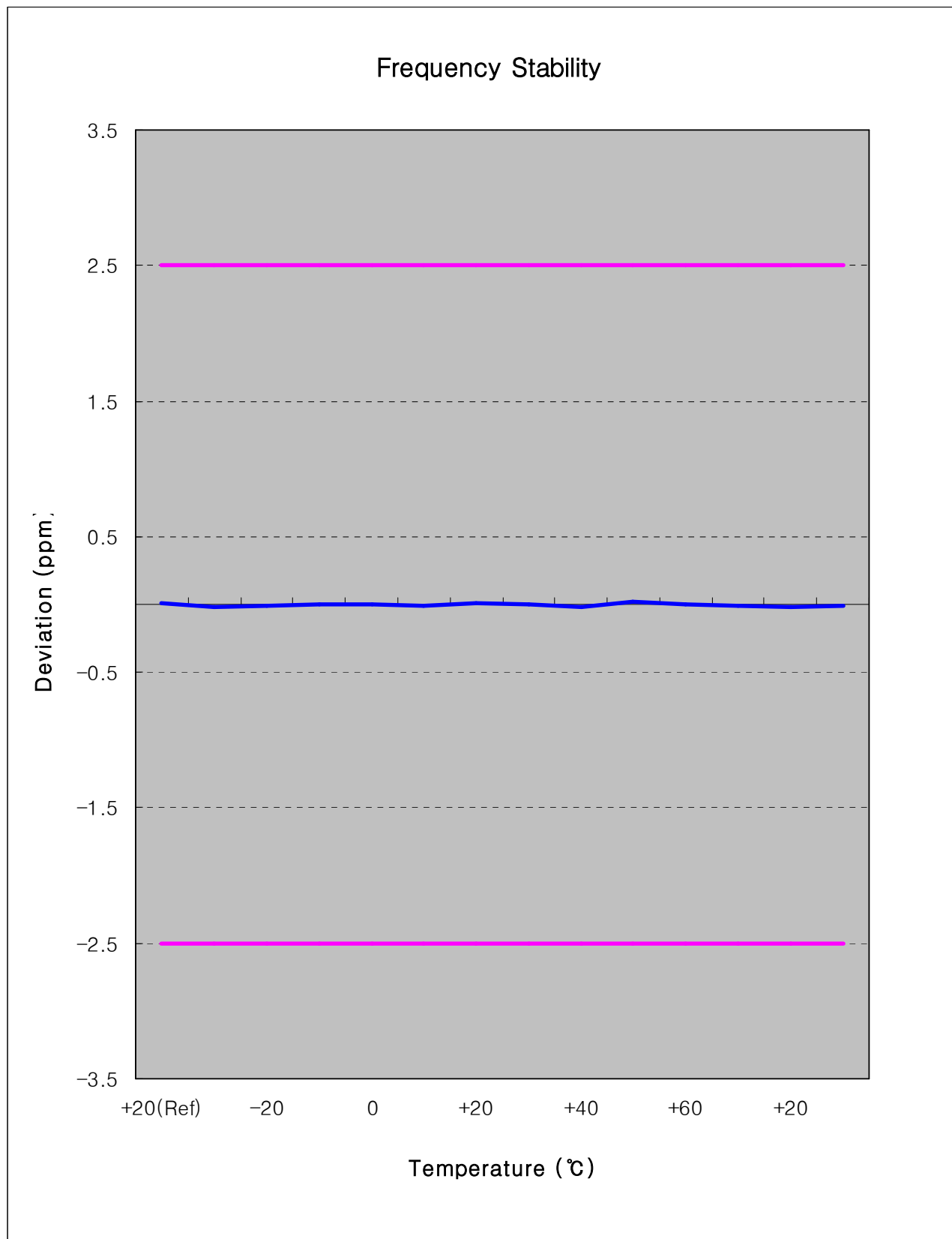
**Deviation Limit :  $\pm 0.00025$  % or 2.5ppm**

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency Error (Hz)	Frequency (Hz)	Deviation (%)	ppm
100%	3.70	+20(Ref)	22.60	1,880,000,023	0.000001	0.012
100%		-30	-31.80	1,879,999,968	-0.000002	-0.017
100%		-20	-17.40	1,879,999,983	-0.000001	-0.009
100%		-10	6.20	1,880,000,006	0.000000	0.003
100%		0	-1.70	1,879,999,998	0.000000	-0.001
100%		+10	-26.10	1,879,999,974	-0.000001	-0.014
100%		+20	22.60	1,880,000,023	0.000001	0.012
100%		+30	-3.60	1,879,999,996	0.000000	-0.002
100%		+40	-38.30	1,879,999,962	-0.000002	-0.020
100%		+50	33.00	1,880,000,033	0.000002	0.018
100%		+60	-2.50	1,879,999,998	0.000000	-0.001
85%		3.35	+20	-17.00	1,879,999,983	-0.000001
115%	4.26	+20	-38.10	1,879,999,962	-0.000002	-0.020
Batt.Endpoint	3.35	+20	-17.00	1,879,999,983	-0.000001	-0.009

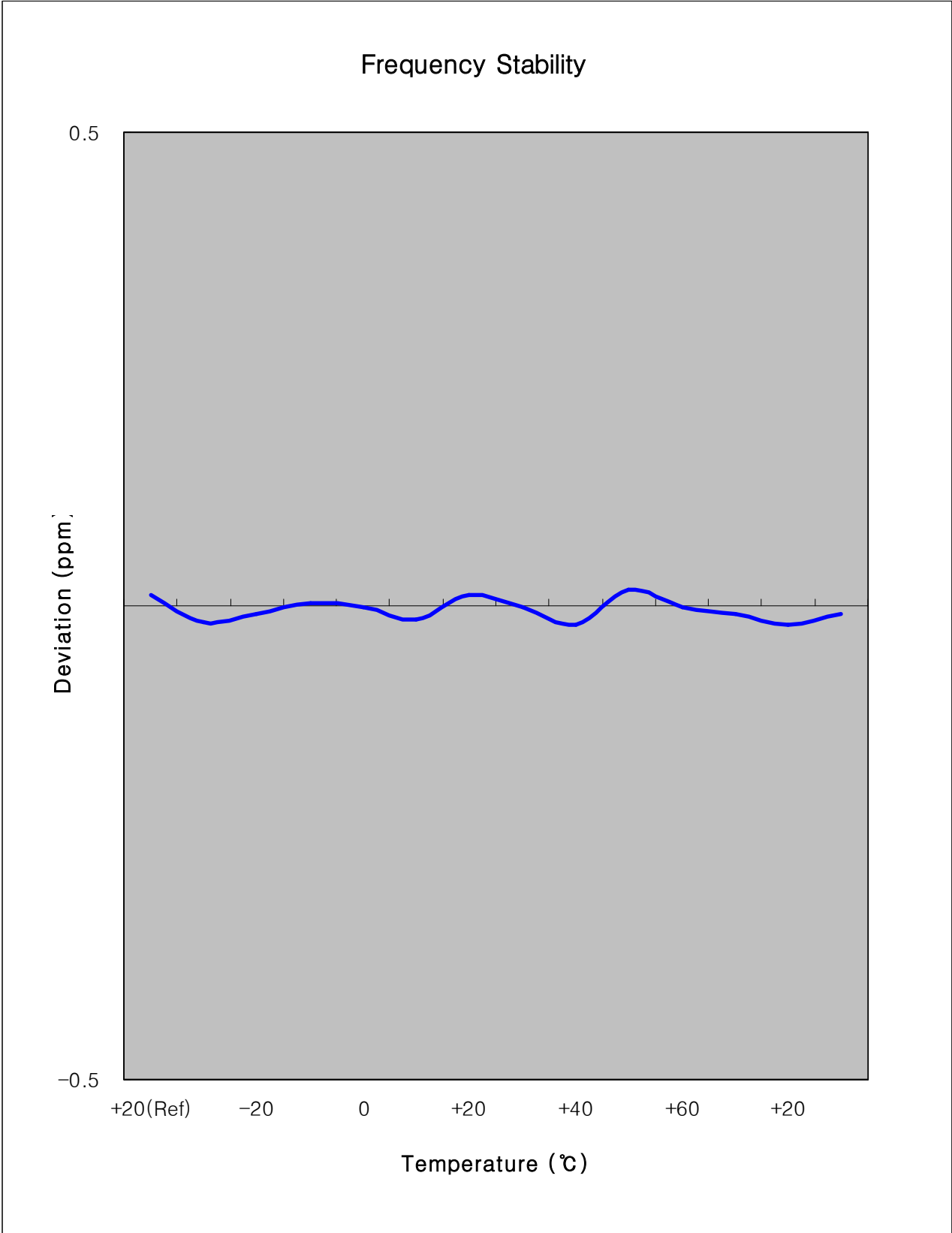
**Note : The temperature is varied from -30 °C to +60 °C using an environmental chamber.**

**The EUT is tested down to the battery end point.**

### 6.8.4. GSM1900 Frequency Stability Graph



**Zoom IN**





## 7. CONCLUSION

The data collected shows that the SAMSUNG 850/1900 GSM/GPRS and WCDMA Phone with Bluetooth, EDGE Rx only and WLAN. FCC ID : A3LGTB6520L complies with all the requirements of Parts 2,22,24 of the FCC Rules.

## 8. TEST PLOTS

Agilent

R T

<b>Ch Freq</b> 824.2 MHz <b>Trig</b> Free		<b>Freq/Channel</b>	
Occupied Bandwidth		<b>Center Freq</b> 824.200000 MHz	
FCC ID:A3LGTB6520L 0BW Ch.128 Ref 33 dBm Atten 40 dB		<b>Start Freq</b> 823.700000 MHz	
		<b>Stop Freq</b> 824.700000 MHz	
Center 824.200 MHz Span 1 MHz #Res BW 3 kHz #VBW 3 kHz #Sweep 1 s (601 pts)		<b>CF Step</b> 100.000000 kHz Auto Man	
<b>Occupied Bandwidth</b> 249.8250 kHz <b>Occ BW % Pwr</b> 99.00 % <b>x dB Bandwidth</b> 314.185 kHz <b>x dB</b> -26.00 dB		<b>Freq Offset</b> 0.00000000 Hz	
<b>Transmit Freq Error</b> 545.187 Hz		<b>Signal Track</b> On Off	
File Operation Status, C:\TEMP.GIF file saved			

Agilent

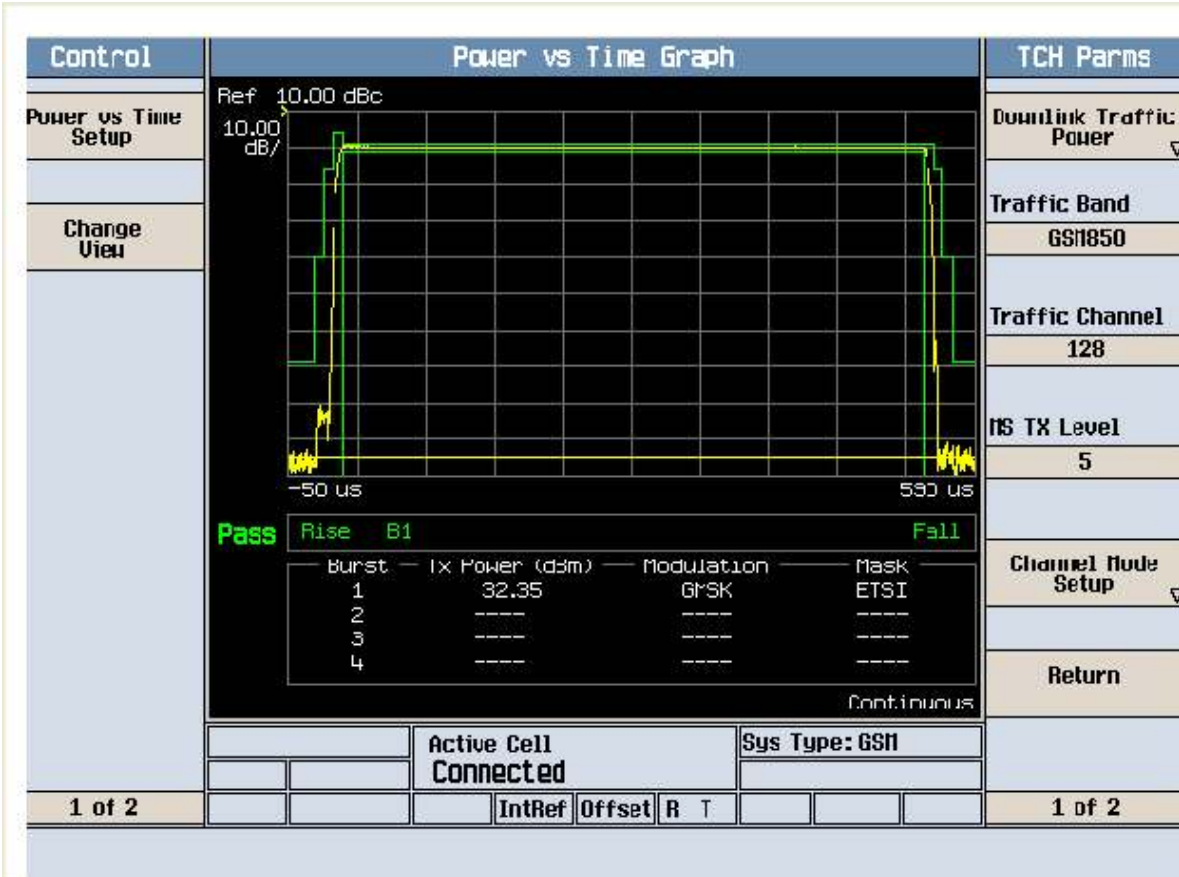
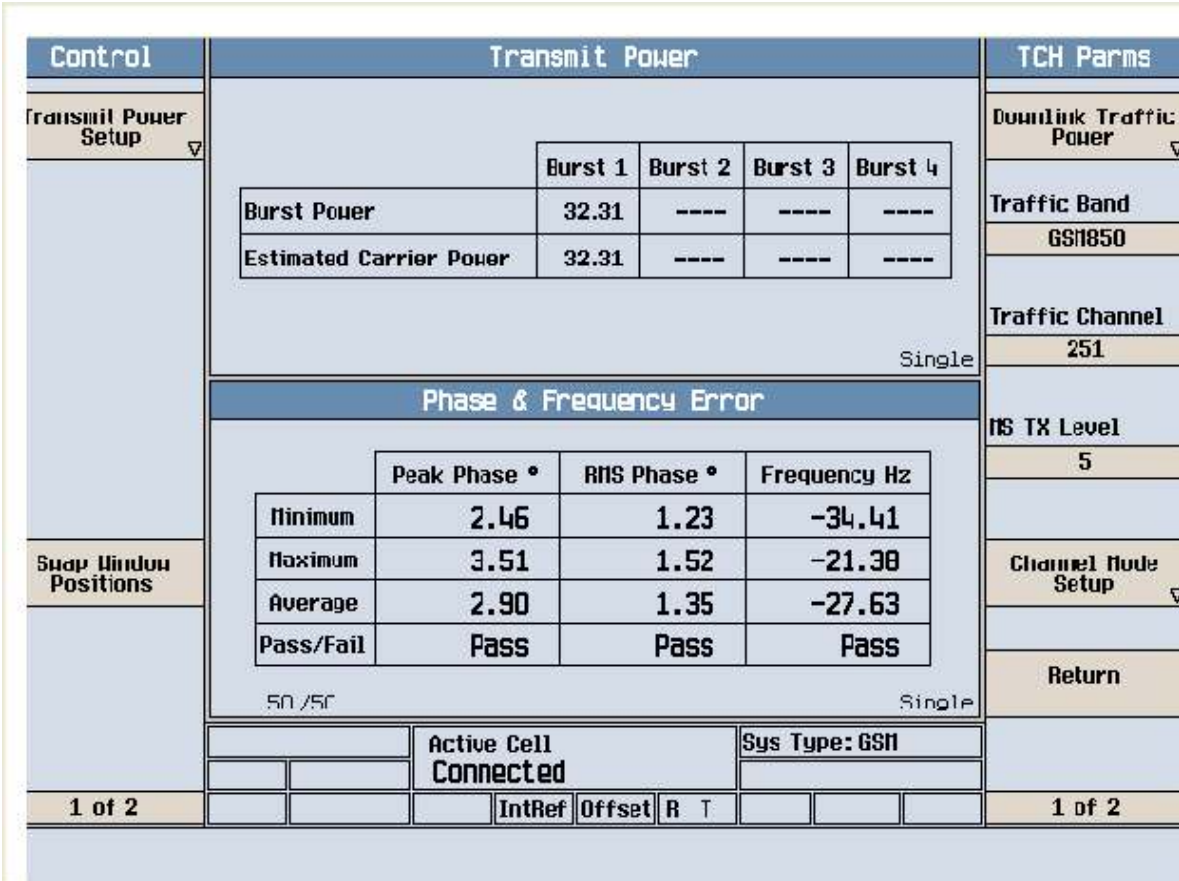
R T

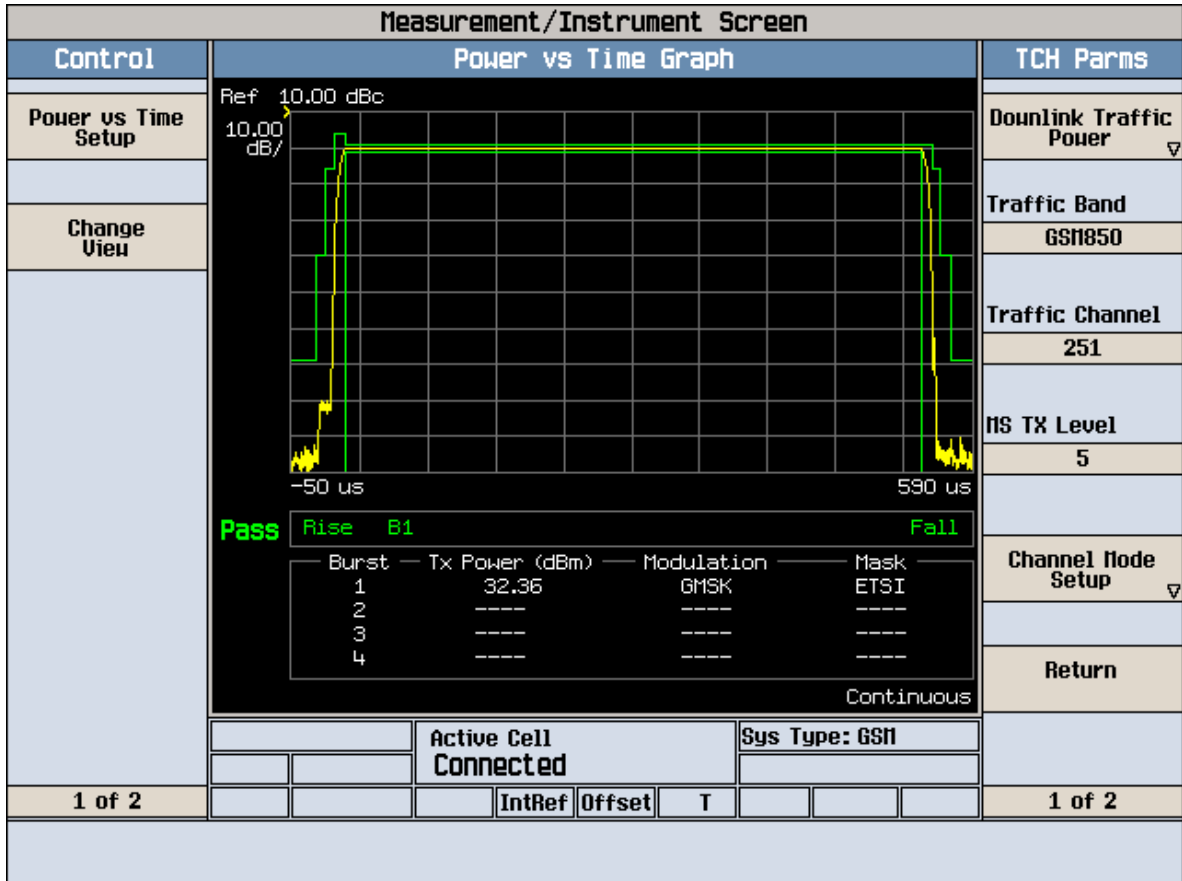
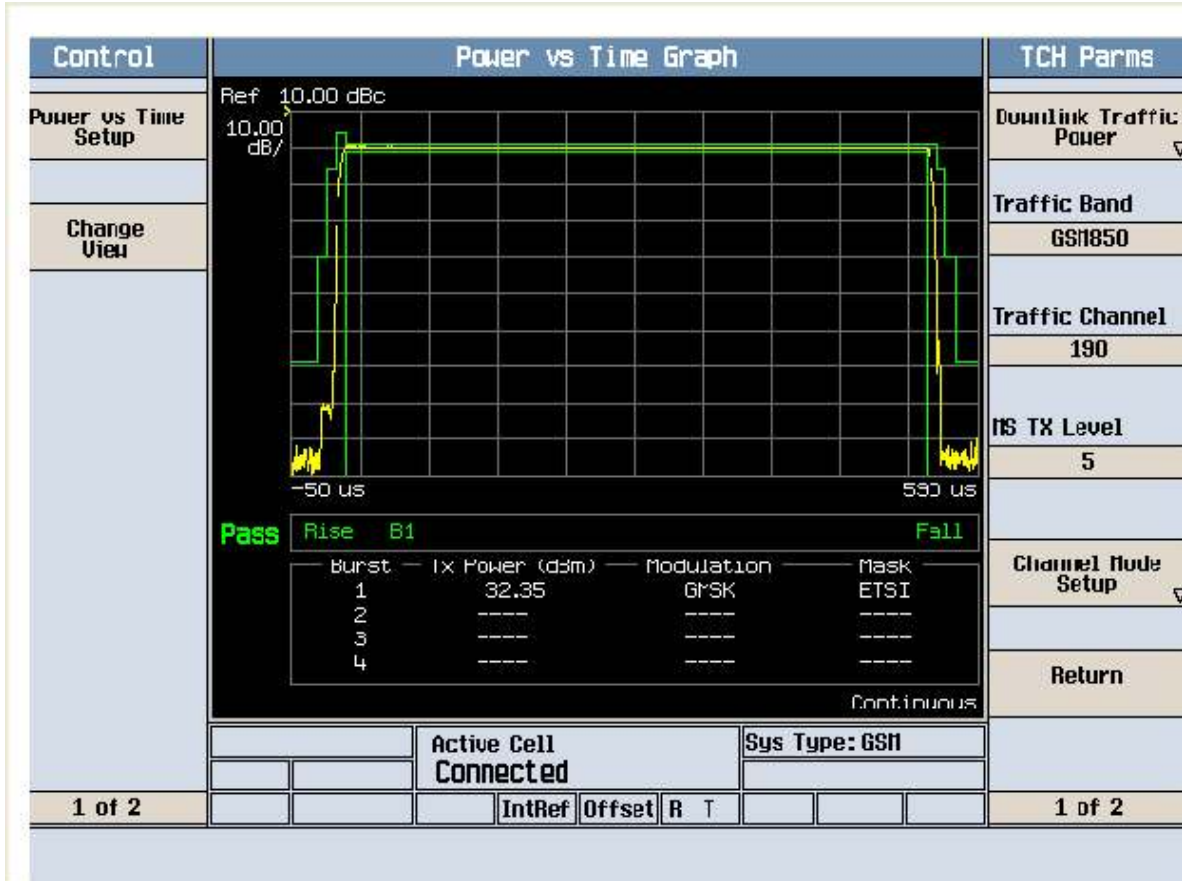
<b>Ch Freq</b> 836.6 MHz <b>Trig</b> Free		<b>Freq/Channel</b>	
Occupied Bandwidth		<b>Center Freq</b> 836.600000 MHz	
FCC ID:A3LGTB6520L 0BW Ch.190 Ref 33 dBm Atten 40 dB		<b>Start Freq</b> 836.100000 MHz	
		<b>Stop Freq</b> 837.100000 MHz	
Center 836.600 MHz Span 1 MHz #Res BW 3 kHz #VBW 3 kHz #Sweep 1 s (601 pts)		<b>CF Step</b> 100.000000 kHz Auto Man	
<b>Occupied Bandwidth</b> 247.1108 kHz <b>Occ BW % Pwr</b> 99.00 % <b>x dB Bandwidth</b> 301.907 kHz <b>x dB</b> -26.00 dB		<b>Freq Offset</b> 0.00000000 Hz	
<b>Transmit Freq Error</b> 741.679 Hz		<b>Signal Track</b> On Off	
File Operation Status, C:\TEMP.GIF file saved			

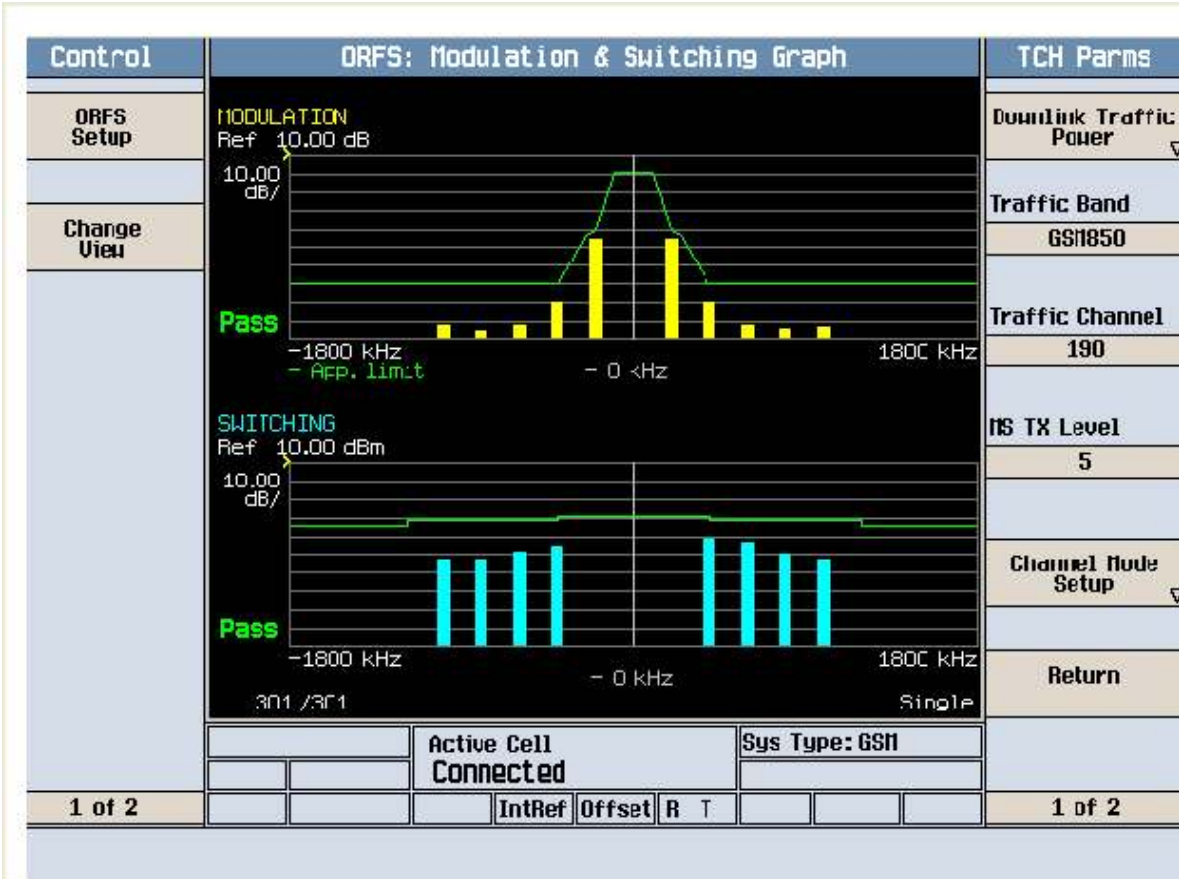
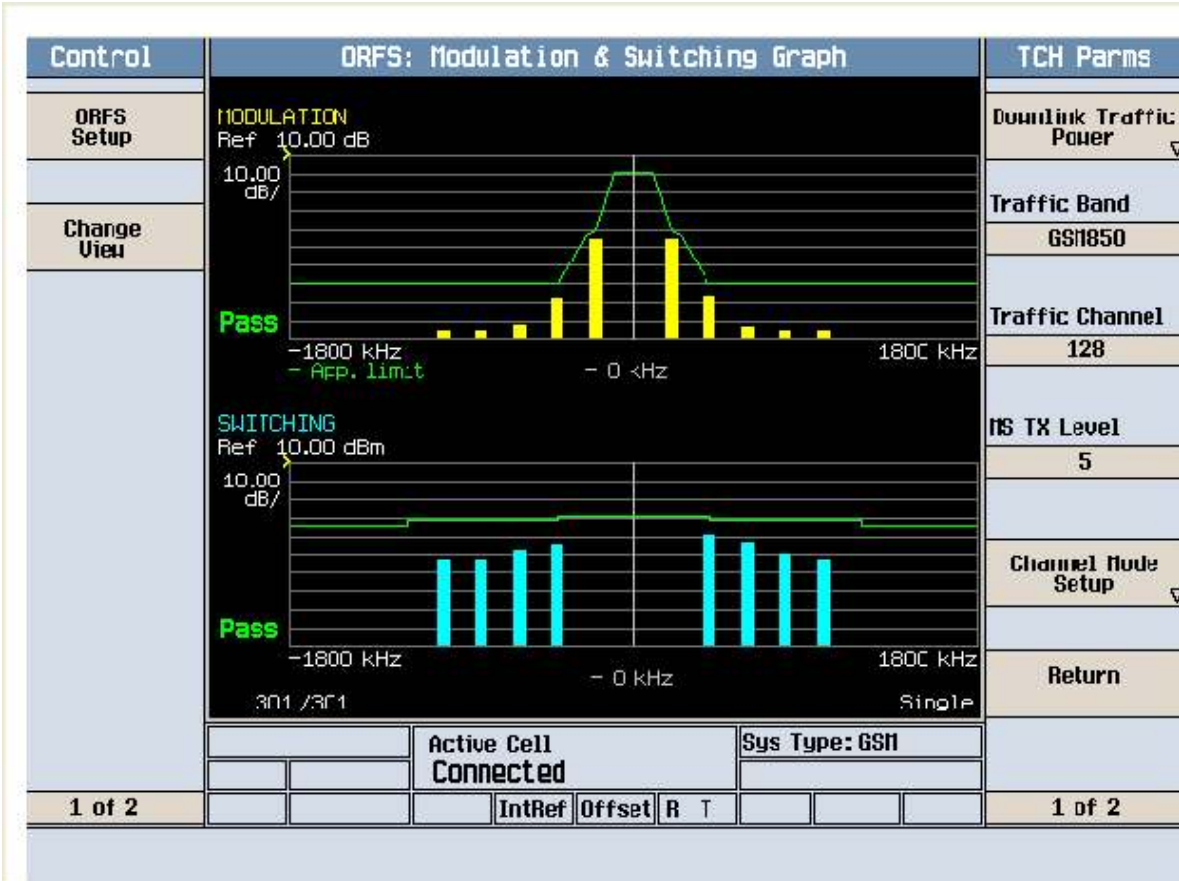
<b>Ch Freq</b> 848.8 MHz <span style="float:right"><b>Trig</b> Free</span>		<b>Freq/Channel</b>	
Occupied Bandwidth <span style="float:right">[ ] [ ]</span>		<b>Center Freq</b> 848.800000 MHz	
FCC ID:A3LGTB6520L 0BW Ch.251 Ref 33 dBm Atten 40 dB		<b>Start Freq</b> 848.300000 MHz	
		<b>Stop Freq</b> 848.300000 MHz	
Center 848.800 MHz <span style="float:right">Span 1 MHz</span> #Res BW 3 kHz <span style="margin-left: 100px">#VBW 3 kHz</span> <span style="float:right">#Sweep 1 s (601 pts)</span>		<b>CF Step</b> 100.000000 kHz Auto Man	
<b>Occupied Bandwidth</b> <span style="float:right"><b>Occ BW % Pwr</b> 99.00 %</span> 248.2860 kHz <span style="float:right"><b>x dB</b> -26.00 dB</span>		<b>Freq Offset</b> 0.00000000 Hz	
<b>Transmit Freq Error</b> 324.515 Hz <b>x dB Bandwidth</b> 308.101 kHz		<b>Signal Track</b> On Off	
<b>File Operation Status, C:\TEMP.GIF file saved</b>			

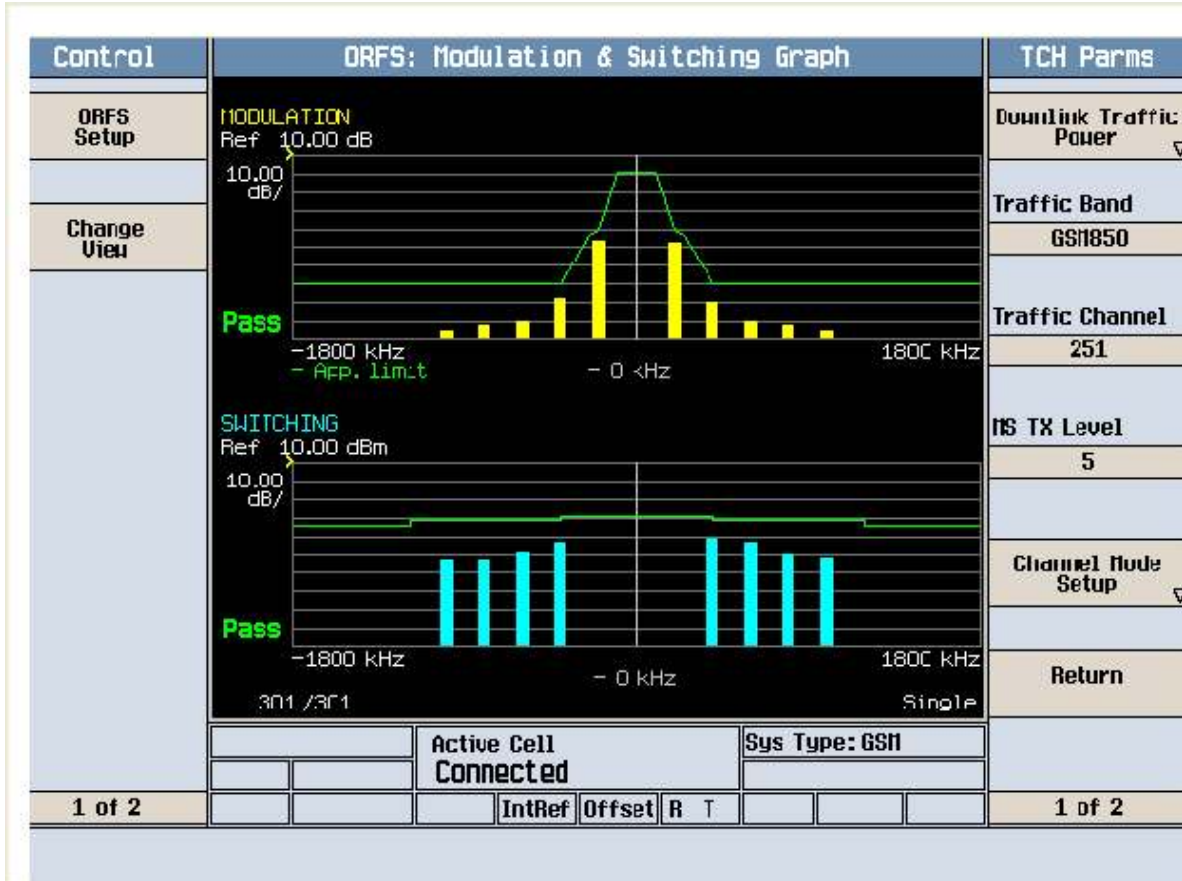
Control	Transmit Power								TCH Parms		
Transmit Power Setup					Burst 1	Burst 2	Burst 3	Burst 4	Downlink Traffic Power		
	Burst Power				32.41	----	----	----	Traffic Band		
Swap Window Positions	Estimated Carrier Power				32.41	----	----	----	GSN850		
	Single								Traffic Channel		
	50 / 50								128		
	Single								MS TX Level		
								5			
								Channel Mode Setup			
								Return			
								1 of 2			
		Active Cell Connected				Sys Type: GSM					
1 of 2				IntRef	Offset	R	T			1 of 2	

Control	Transmit Power								TCH Parms		
Transmit Power Setup					Burst 1	Burst 2	Burst 3	Burst 4	Downlink Traffic Power		
	Burst Power				32.33	----	----	----	Traffic Band		
Swap Window Positions	Estimated Carrier Power				32.33	----	----	----	GSN850		
	Single								Traffic Channel		
	50 / 50								190		
	Single								MS TX Level		
								5			
								Channel Mode Setup			
								Return			
								1 of 2			
		Active Cell Connected				Sys Type: GSM					
1 of 2				IntRef	Offset	R	T			1 of 2	





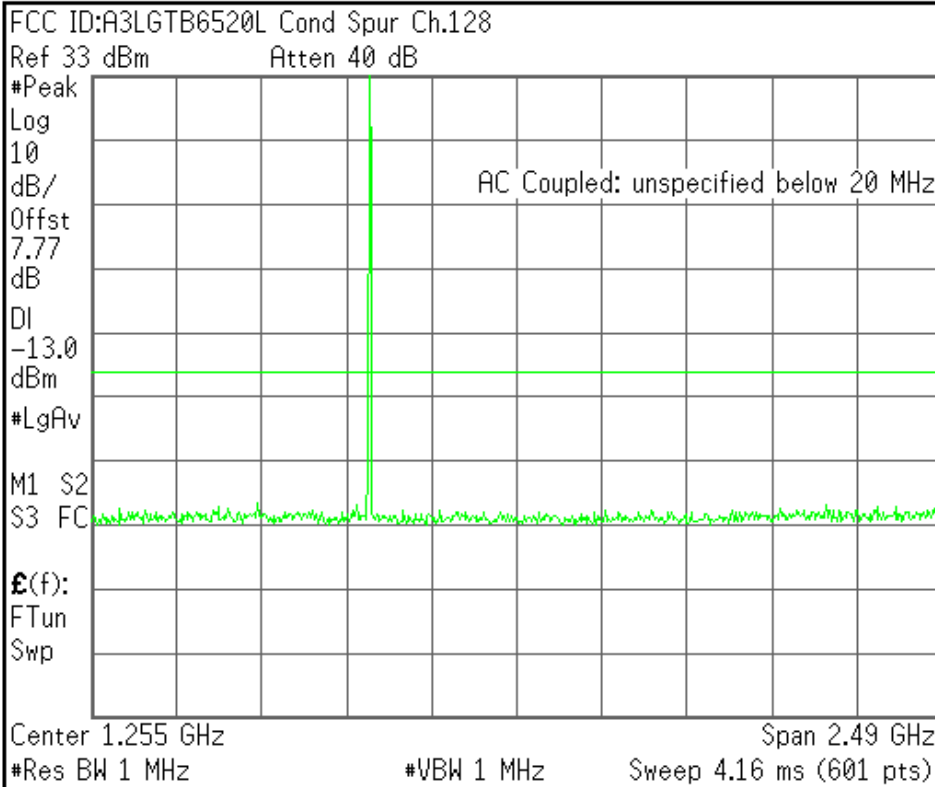




Agilent

R L

Freq/Channel



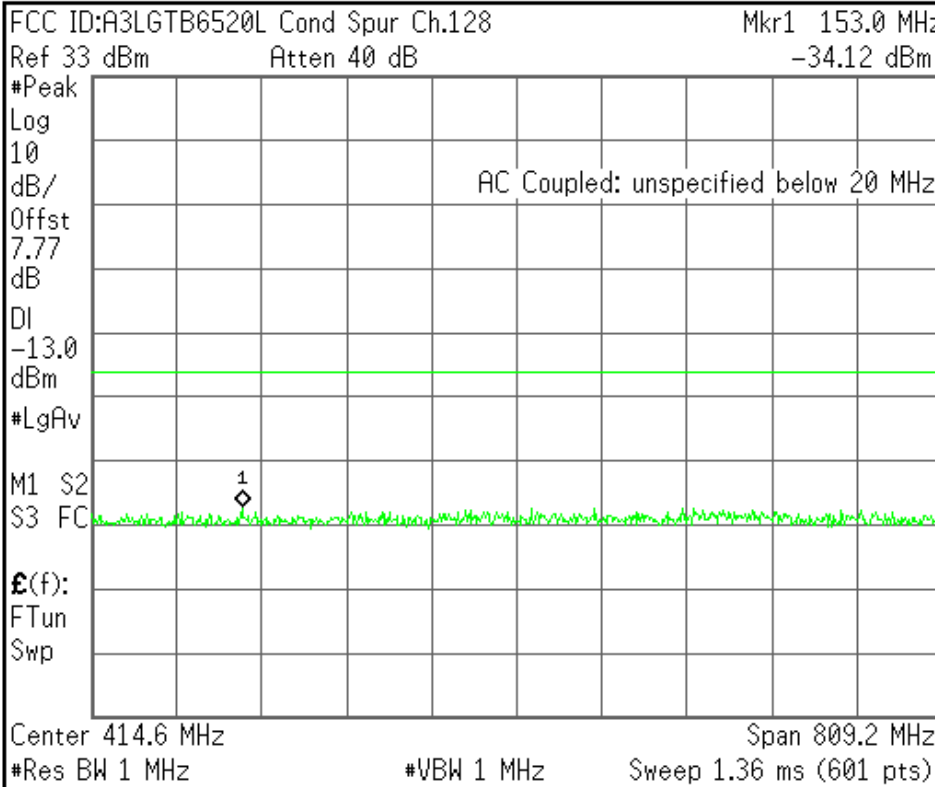
<b>Center Freq</b>	1.25500000 GHz
<b>Start Freq</b>	10.0000000 MHz
<b>Stop Freq</b>	2.50000000 GHz
<b>CF Step</b>	249.000000 MHz Auto Man
<b>Freq Offset</b>	0.00000000 Hz
<b>Signal Track</b>	On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



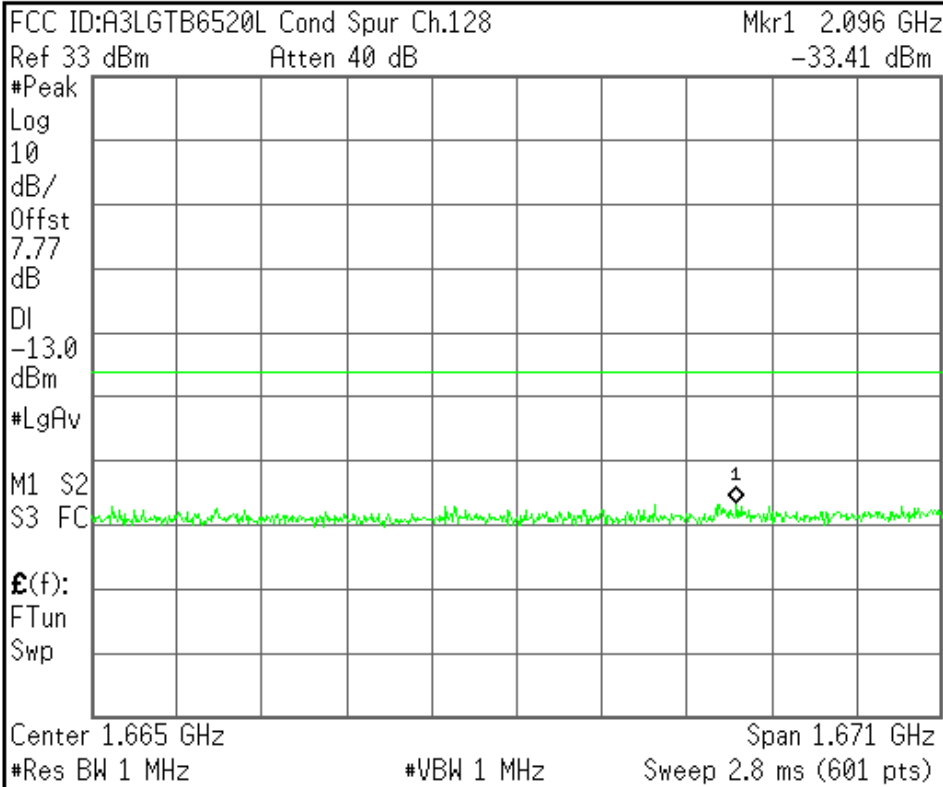
<b>Center Freq</b>	414.600000 MHz
<b>Start Freq</b>	10.0000000 MHz
<b>Stop Freq</b>	819.200000 MHz
<b>CF Step</b>	80.9200000 MHz Auto Man
<b>Freq Offset</b>	0.00000000 Hz
<b>Signal Track</b>	On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



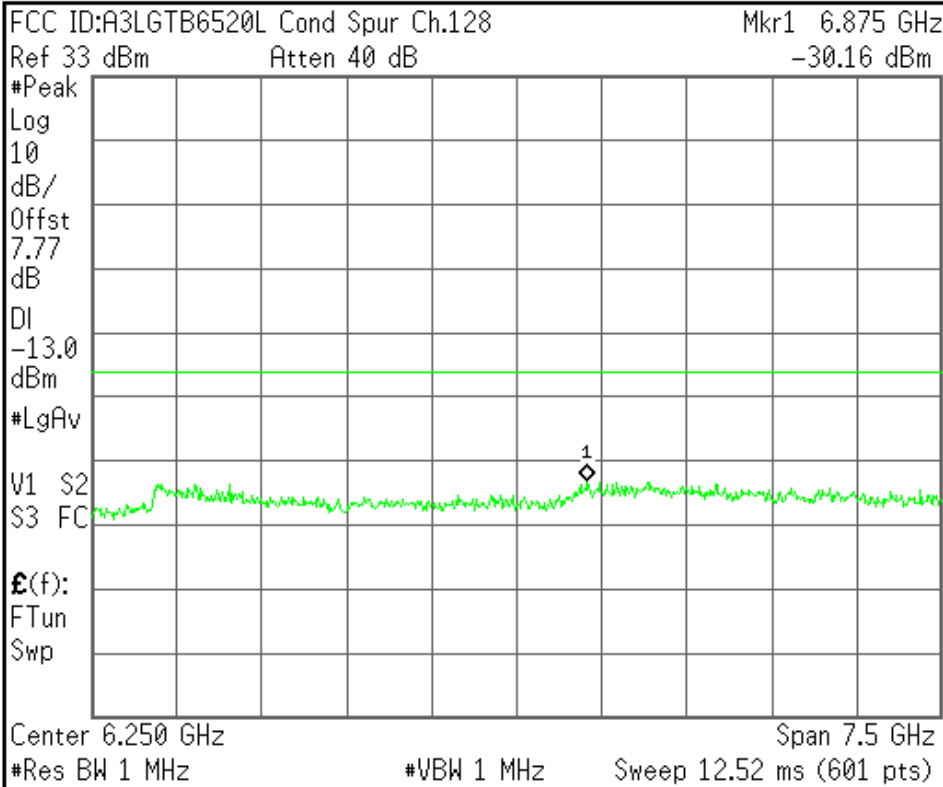
<b>Center Freq</b> 1.66460000 GHz
<b>Start Freq</b> 829.200000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 167.080000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



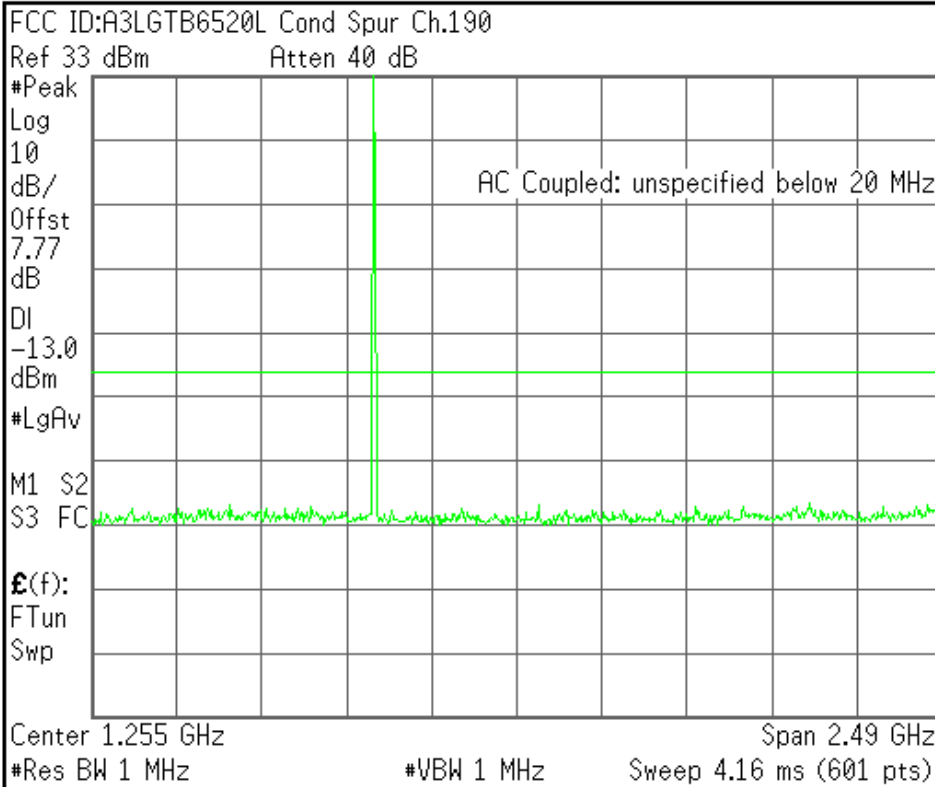
<b>Center Freq</b> 6.25000000 GHz
<b>Start Freq</b> 2.50000000 GHz
<b>Stop Freq</b> 10.00000000 GHz
<b>CF Step</b> 750.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



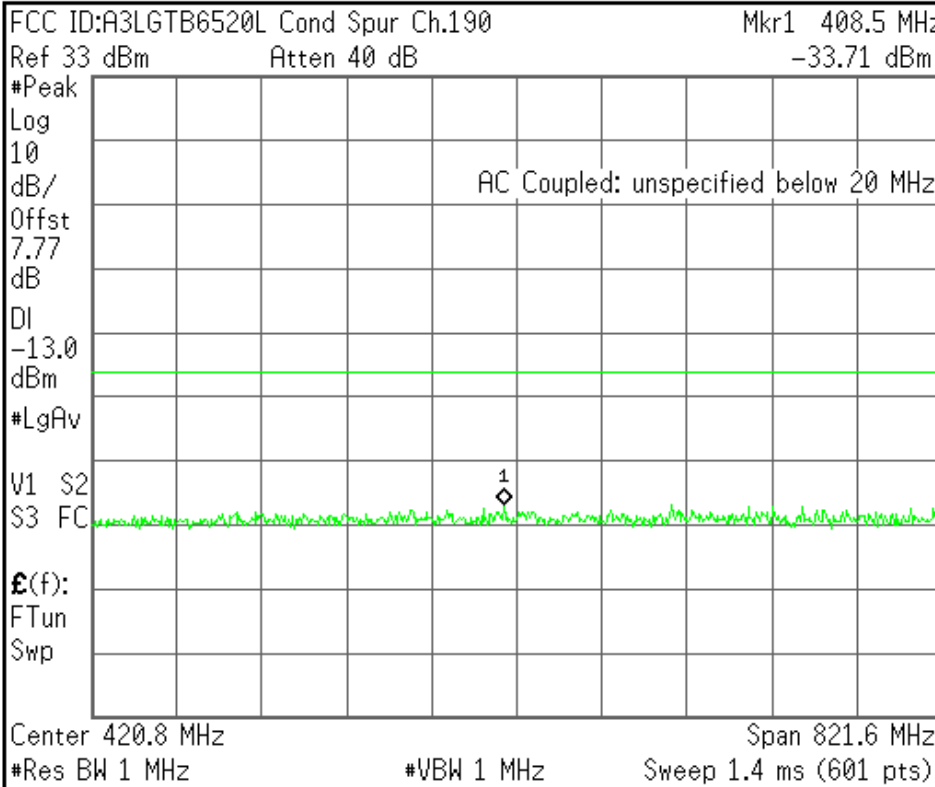
<b>Center Freq</b> 1.25500000 GHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 249.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



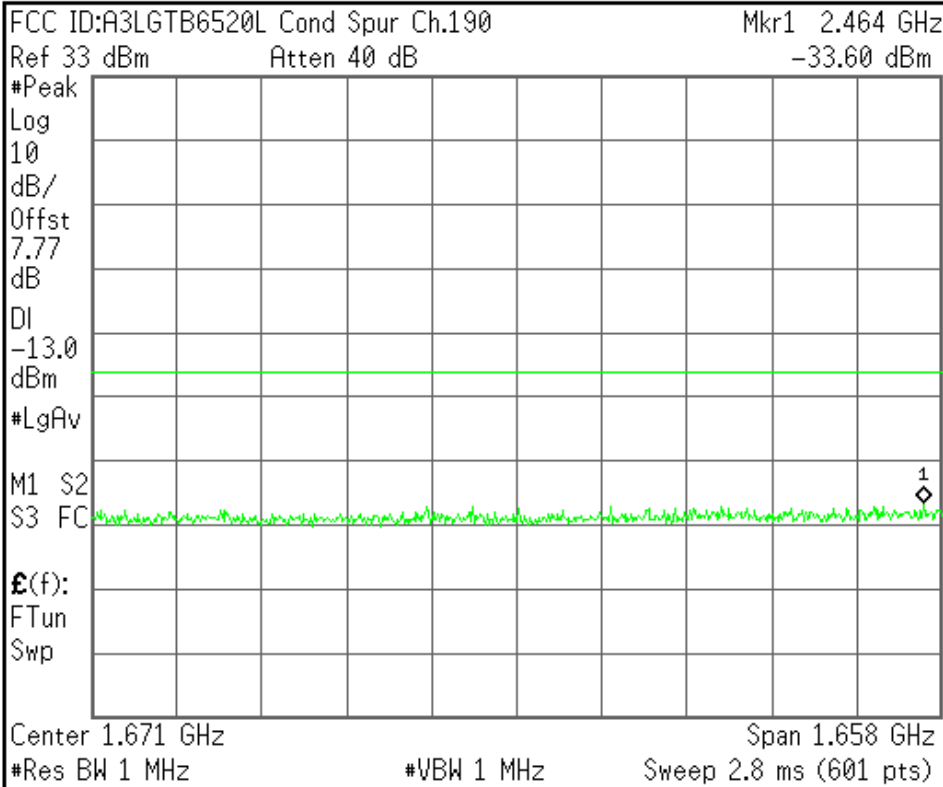
<b>Center Freq</b> 420.800000 MHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 831.600000 MHz
<b>CF Step</b> 82.1600000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



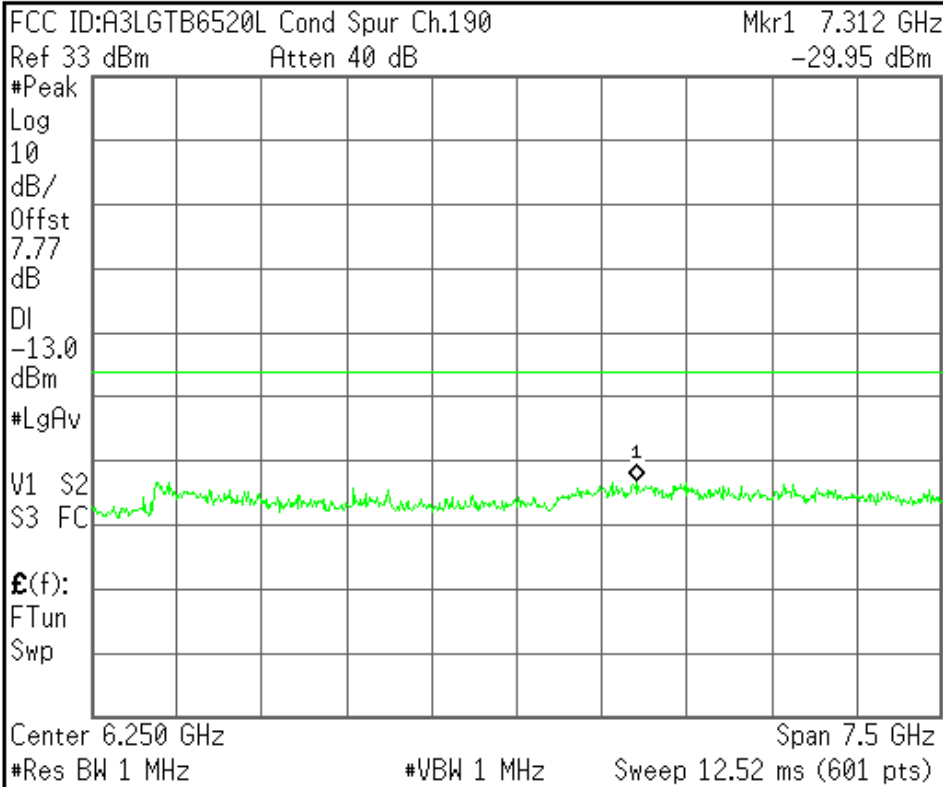
<b>Center Freq</b> 1.67080000 GHz
<b>Start Freq</b> 841.600000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 165.840000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



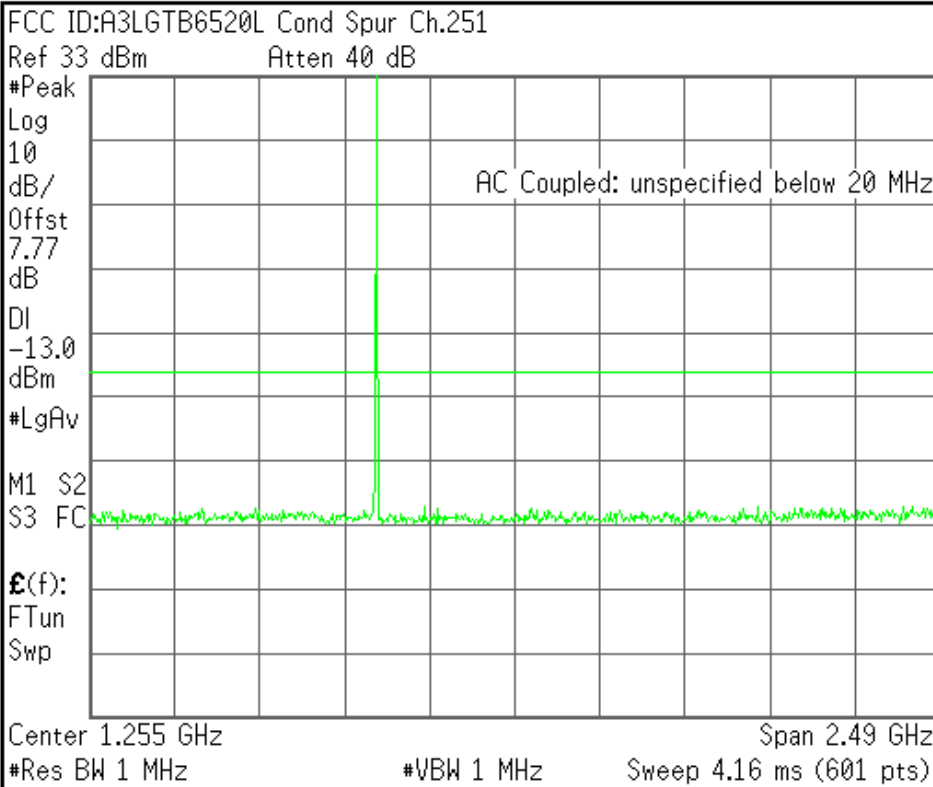
<b>Center Freq</b> 6.25000000 GHz
<b>Start Freq</b> 2.50000000 GHz
<b>Stop Freq</b> 10.00000000 GHz
<b>CF Step</b> 750.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



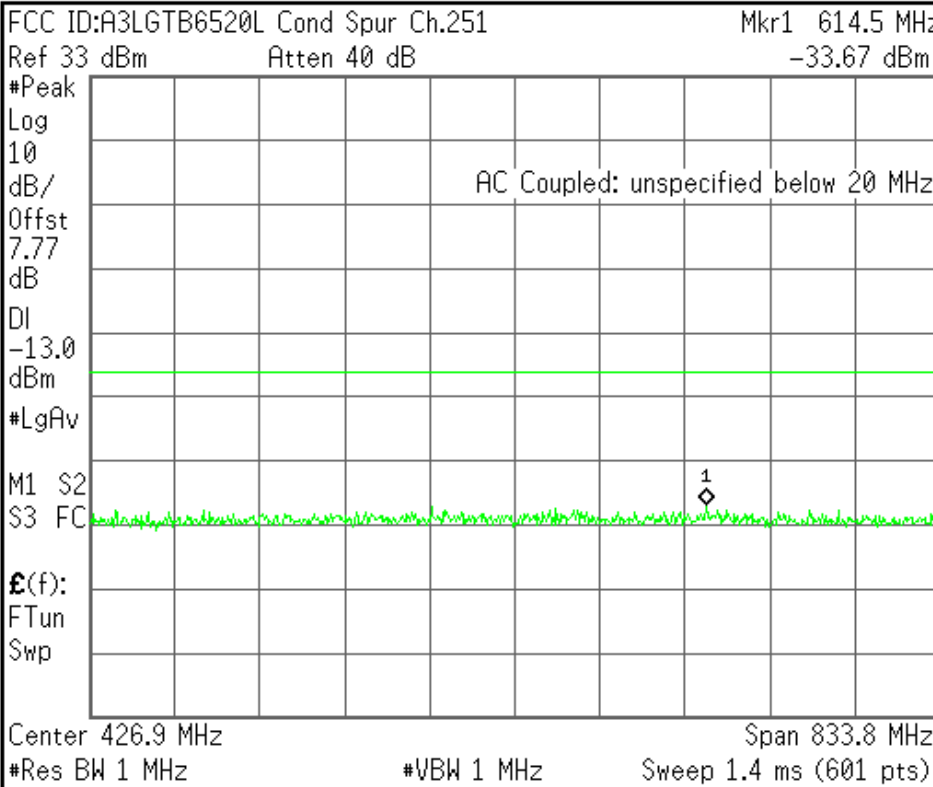
<b>Center Freq</b> 1.25500000 GHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 249.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

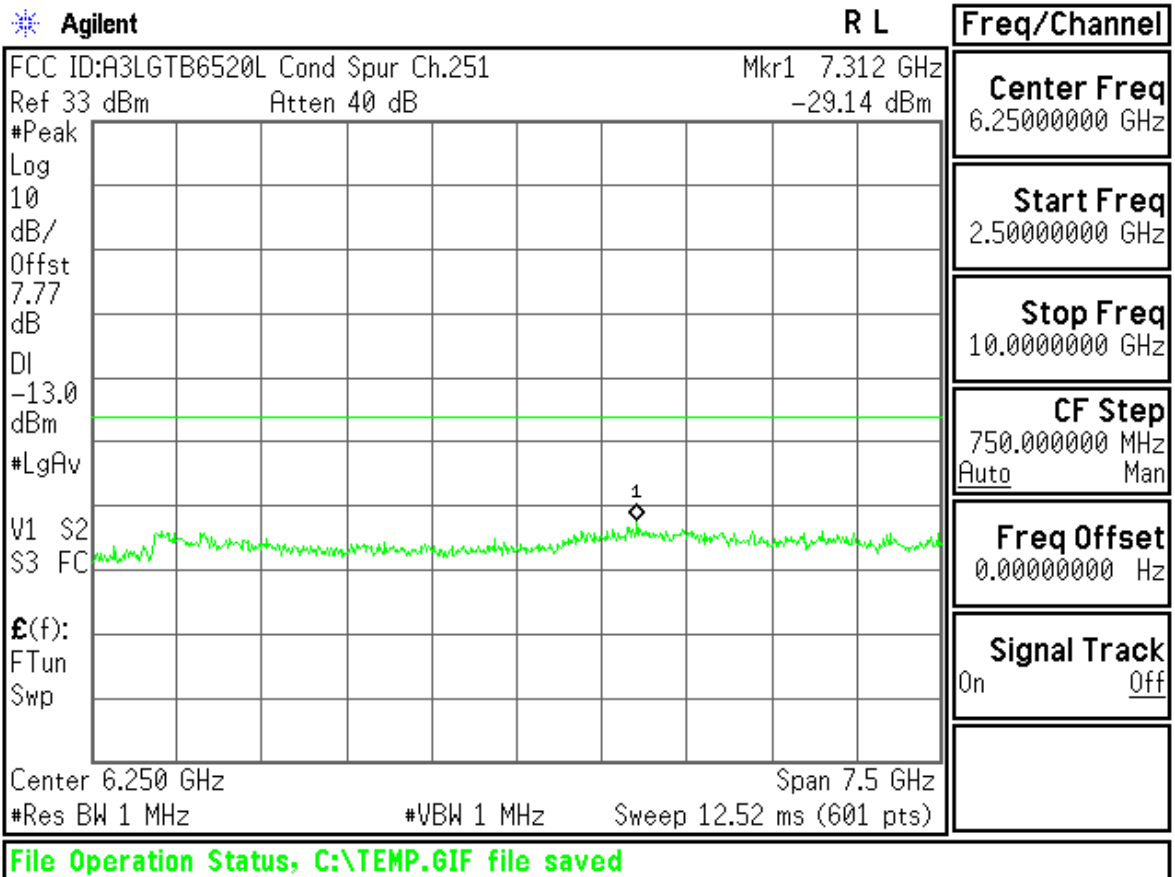
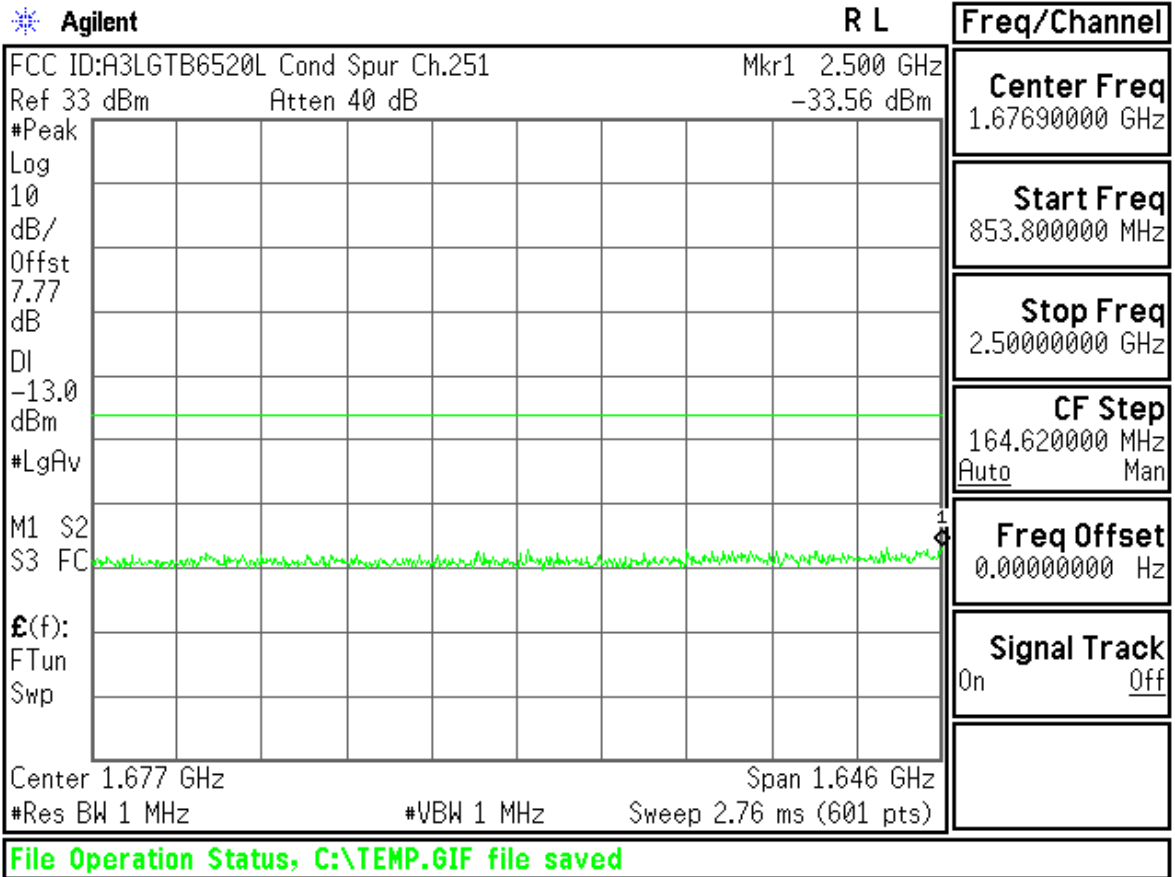
R L

Freq/Channel



<b>Center Freq</b> 426.900000 MHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 843.800000 MHz
<b>CF Step</b> 83.3800000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved



Agilent

R L

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.128

Ref 33 dBm

Atten 40 dB

#Avg

Log

10

dB/

Offst

7.77

dB

DI

-13.0

dBm

#LgAv

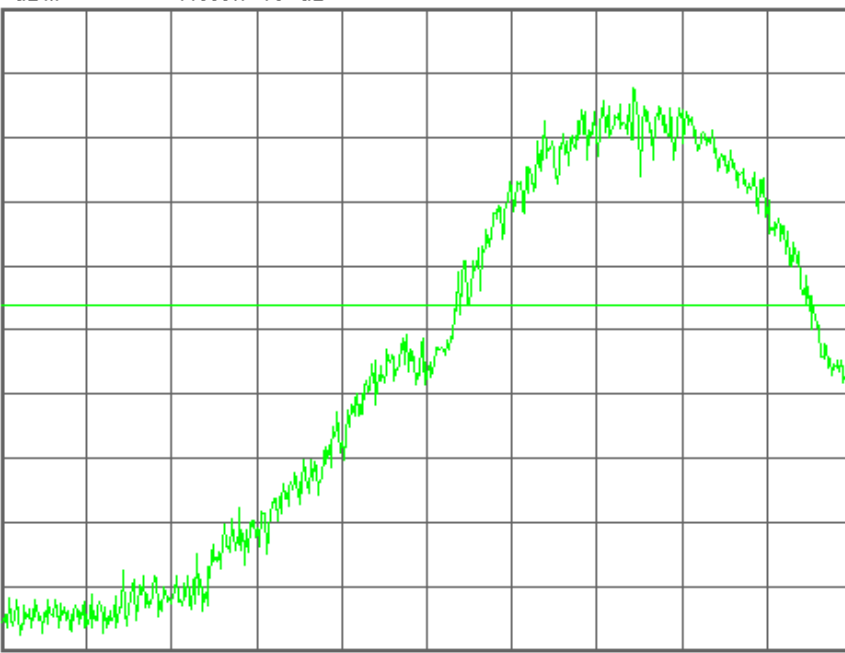
M1 S2

S3 FC

£(f):

f>50k

Swp



Center 824.000 0 MHz

Span 810 kHz

#Res BW 3 kHz

#VBW 3 kHz

Sweep 343.2 ms (601 pts)

Center Freq  
824.000000 MHz

Start Freq  
823.595000 MHz

Stop Freq  
824.405000 MHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.128

Mkr1 823.977 3 MHz

Ref 33 dBm

Atten 40 dB

-16.71 dBm

#Avg

Log

10

dB/

Offst

7.77

dB

DI

-13.0

dBm

#LgAv

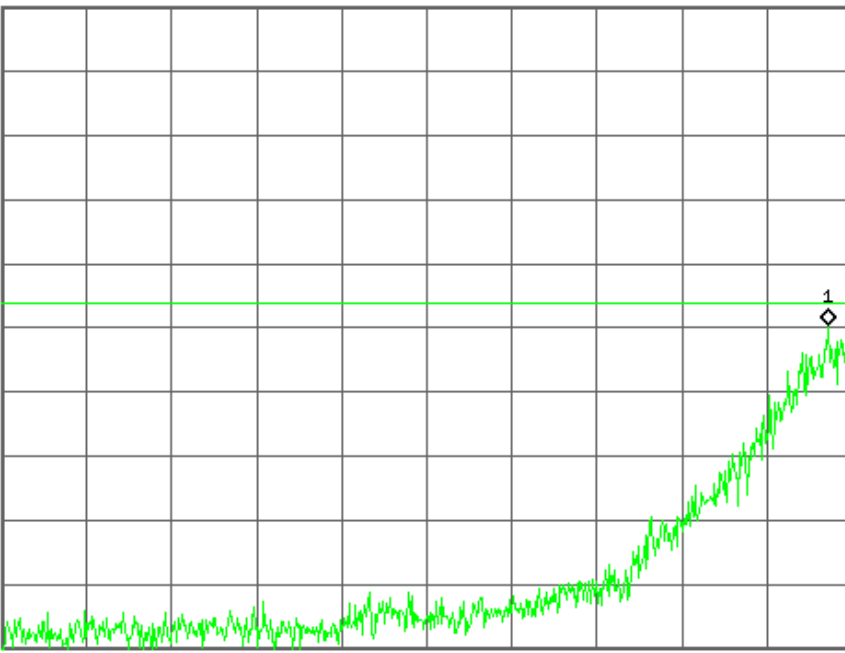
M1 S2

S3 FC

£(f):

f>50k

Swp



Center 823.595 0 MHz

Span 810 kHz

#Res BW 3 kHz

#VBW 3 kHz

Sweep 343.2 ms (601 pts)

Center Freq  
823.595000 MHz

Start Freq  
823.190000 MHz

Stop Freq  
824.000000 MHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.251

Ref 33 dBm Atten 40 dB

#Avg

Log

10

dB/

Offst

7.77

dB

DI

-13.0

dBm

#LgAv

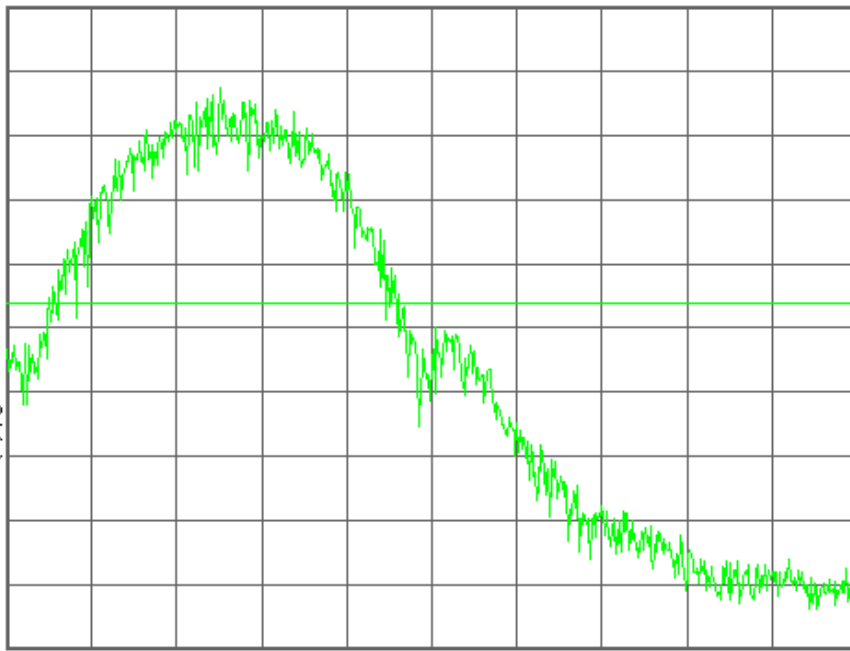
M1 S2

S3 FC

£(f):

f>50k

Swp



Center 849.000 0 MHz

Span 810 kHz

#Res BW 3 kHz

#VBW 3 kHz

Sweep 343.2 ms (601 pts)

Center Freq  
849.000000 MHz

Start Freq  
848.595000 MHz

Stop Freq  
849.405000 MHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.251

Mkr1 849.004 0 MHz

Ref 33 dBm Atten 40 dB

-16.98 dBm

#Avg

Log

10

dB/

Offst

7.77

dB

DI

-13.0

dBm

#LgAv

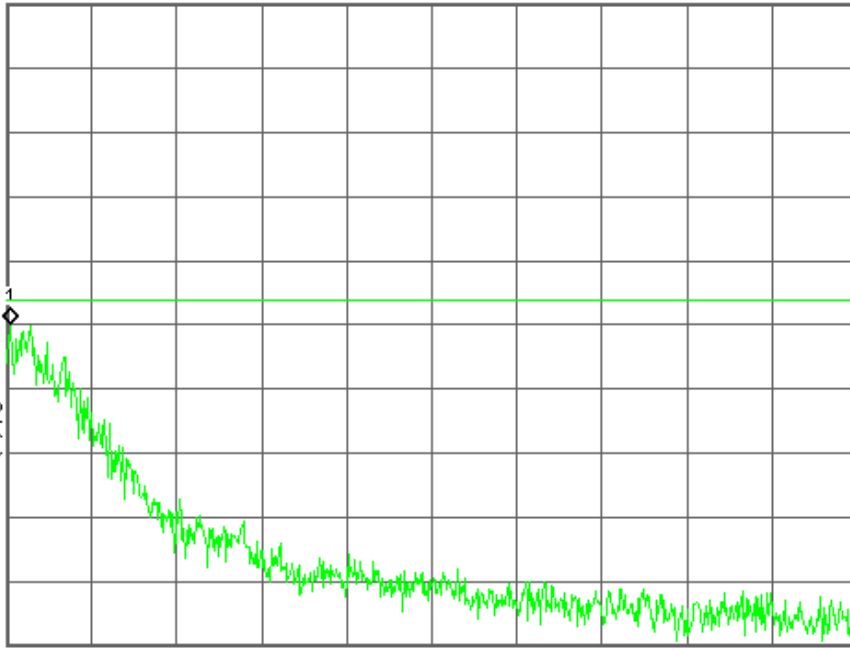
M1 S2

S3 FC

£(f):

f>50k

Swp



Center 849.405 0 MHz

Span 810 kHz

#Res BW 3 kHz

#VBW 3 kHz

Sweep 343.2 ms (601 pts)

Center Freq  
849.405000 MHz

Start Freq  
849.000000 MHz

Stop Freq  
849.810000 MHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

<b>Ch Freq</b> 1.8502 GHz		<b>Trig</b> Free	
Occupied Bandwidth			
FCC ID:A3LGTB6520L 0BW Ch.512			
Ref 30 dBm		Atten 40 dB	
#Peak			
Log	Center 1.850 200 GHz		
10	#Res BW 3 kHz		
dB/	#VBW 3 kHz		
Offst	#Sweep 1 s (601 pts)		
8.75	Span 1 MHz		
dB			
<b>Occupied Bandwidth</b>		<b>Occ BW % Pwr</b>	99.00 %
245.0533 kHz		<b>x dB</b>	-26.00 dB
<b>Transmit Freq Error</b>		-304.357 Hz	
<b>x dB Bandwidth</b>		306.946 kHz	

<b>Freq/Channel</b>
<b>Center Freq</b> 1.85020000 GHz
<b>Start Freq</b> 1.84970000 GHz
<b>Stop Freq</b> 1.85070000 GHz
<b>CF Step</b> 100.000000 kHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

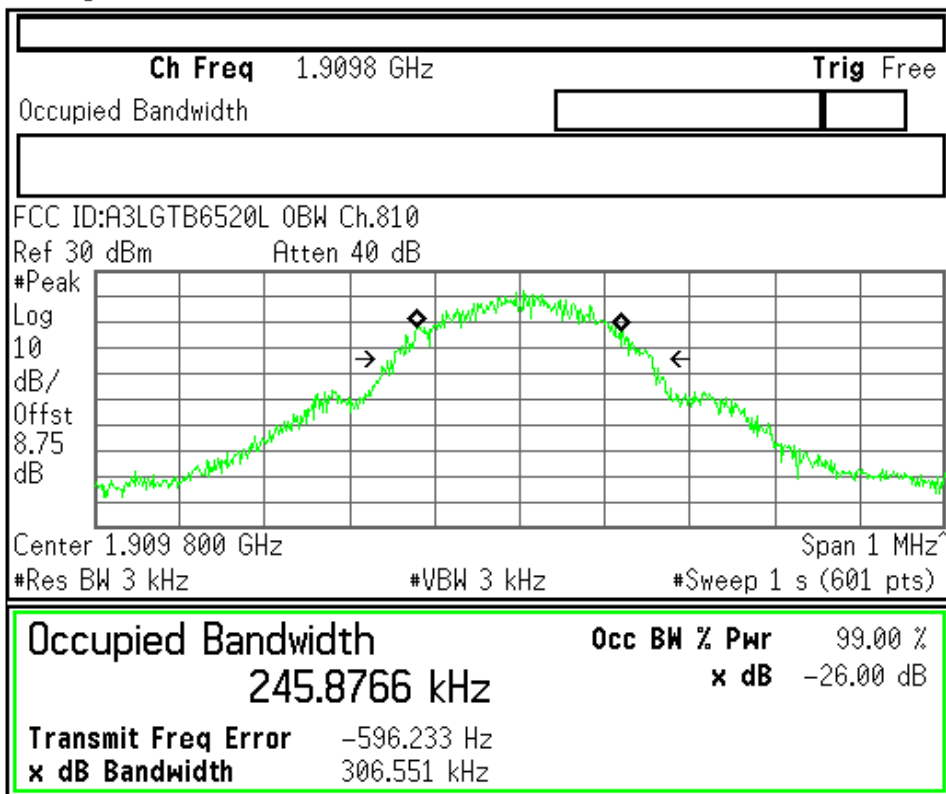
Agilent

R T

<b>Ch Freq</b> 1.88 GHz		<b>Trig</b> Free	
Occupied Bandwidth			
FCC ID:A3LGTB6520L 0BW Ch.661			
Ref 30 dBm		Atten 40 dB	
#Peak			
Log	Center 1.880 000 GHz		
10	#Res BW 3 kHz		
dB/	#VBW 3 kHz		
Offst	#Sweep 1 s (601 pts)		
8.75	Span 1 MHz		
dB			
<b>Occupied Bandwidth</b>		<b>Occ BW % Pwr</b>	99.00 %
248.1689 kHz		<b>x dB</b>	-26.00 dB
<b>Transmit Freq Error</b>		232.228 Hz	
<b>x dB Bandwidth</b>		314.736 kHz	

<b>Freq/Channel</b>
<b>Center Freq</b> 1.88000000 GHz
<b>Start Freq</b> 1.87950000 GHz
<b>Stop Freq</b> 1.88050000 GHz
<b>CF Step</b> 100.000000 kHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved



<b>Freq/Channel</b>
<b>Center Freq</b> 1.90980000 GHz
<b>Start Freq</b> 1.90930000 GHz
<b>Stop Freq</b> 1.91030000 GHz
<b>CF Step</b> 100.000000 kHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

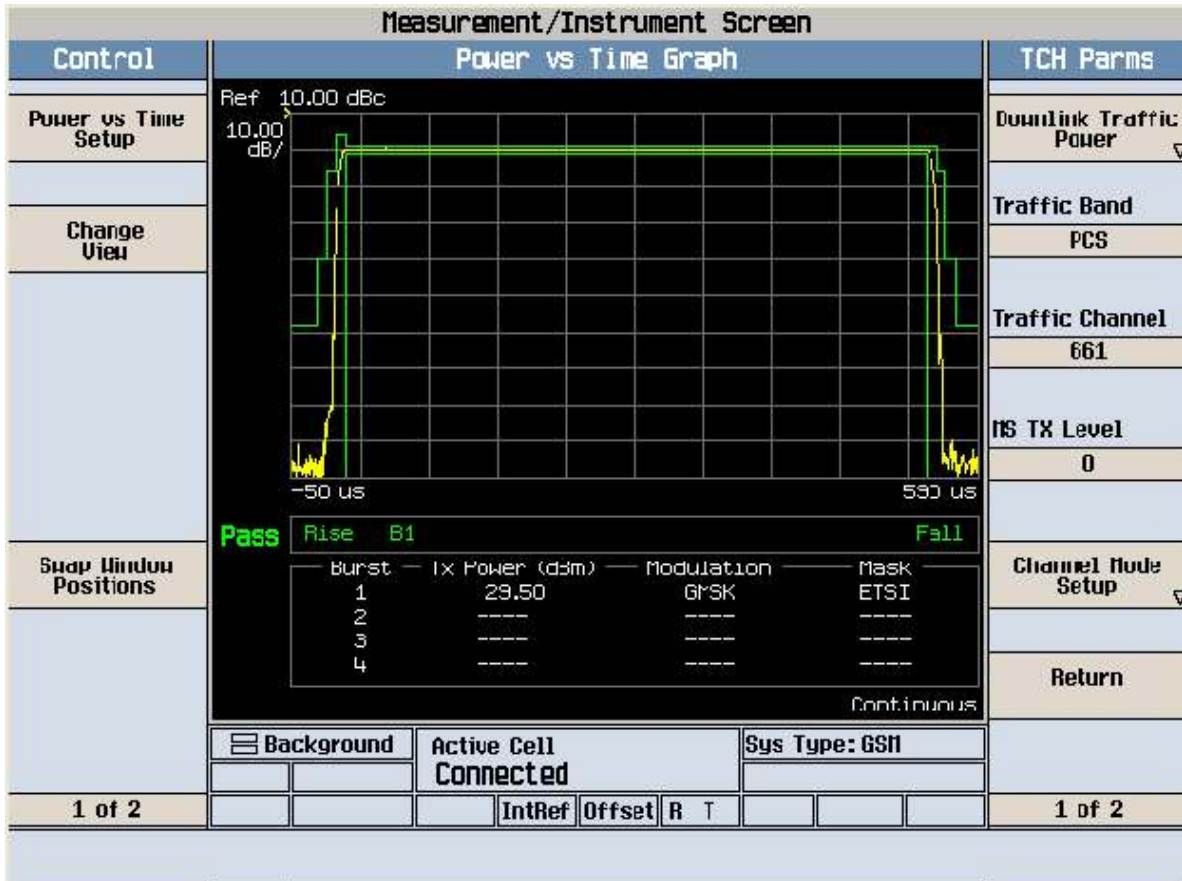
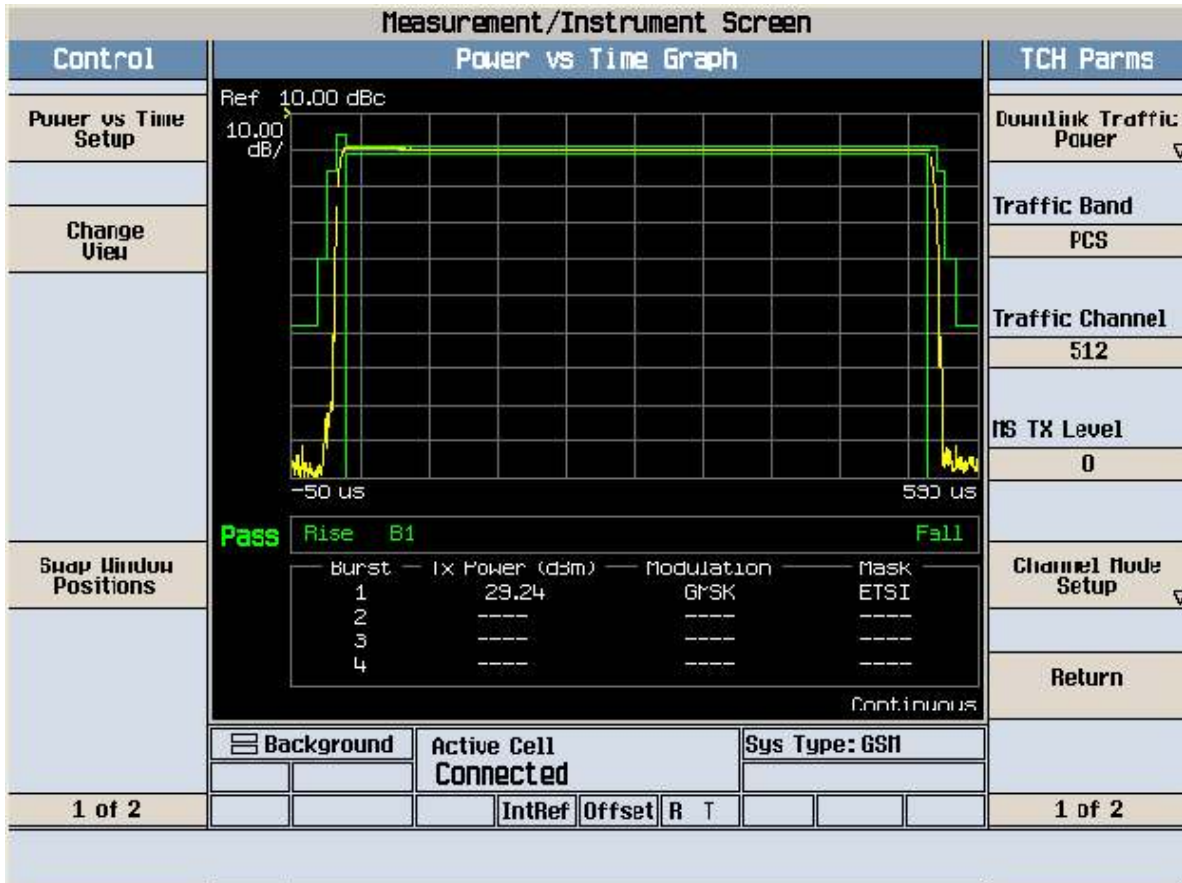
File Operation Status, C:\TEMP.GIF file saved

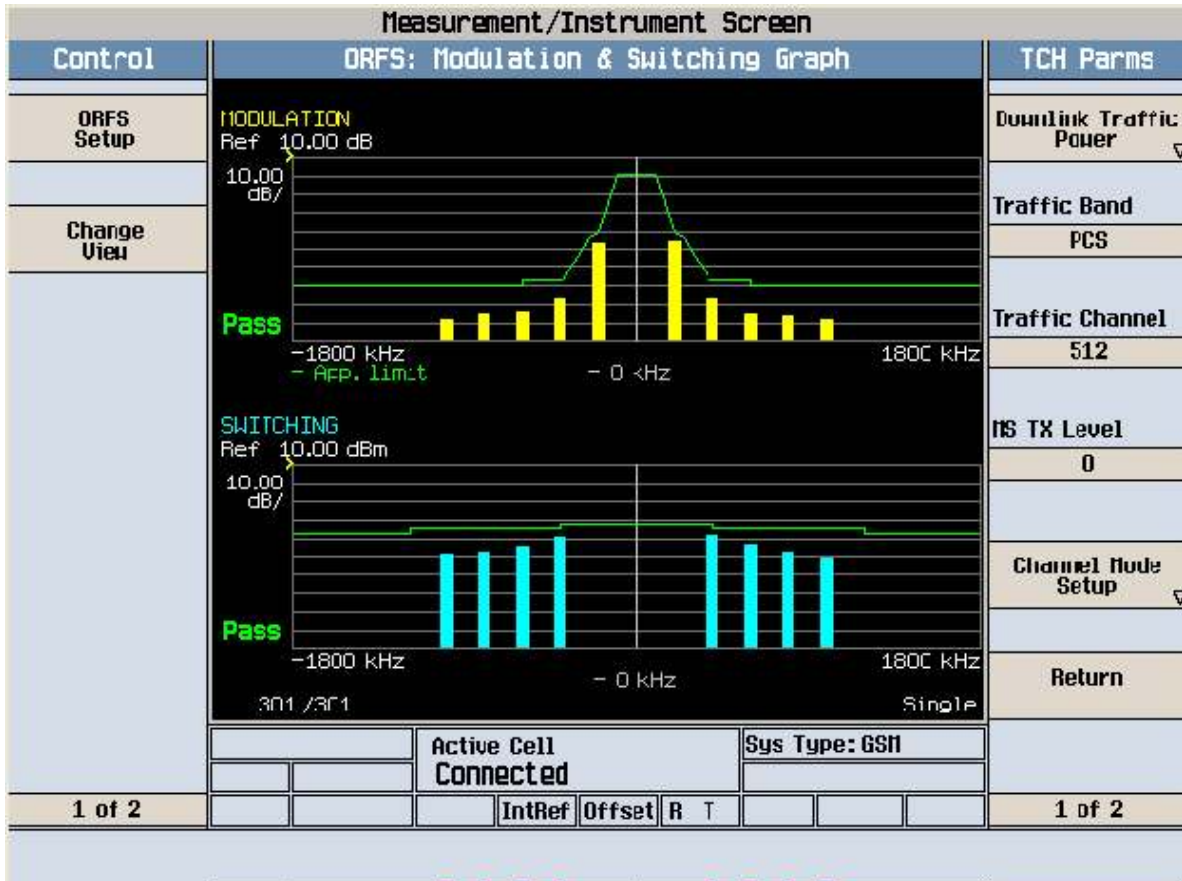
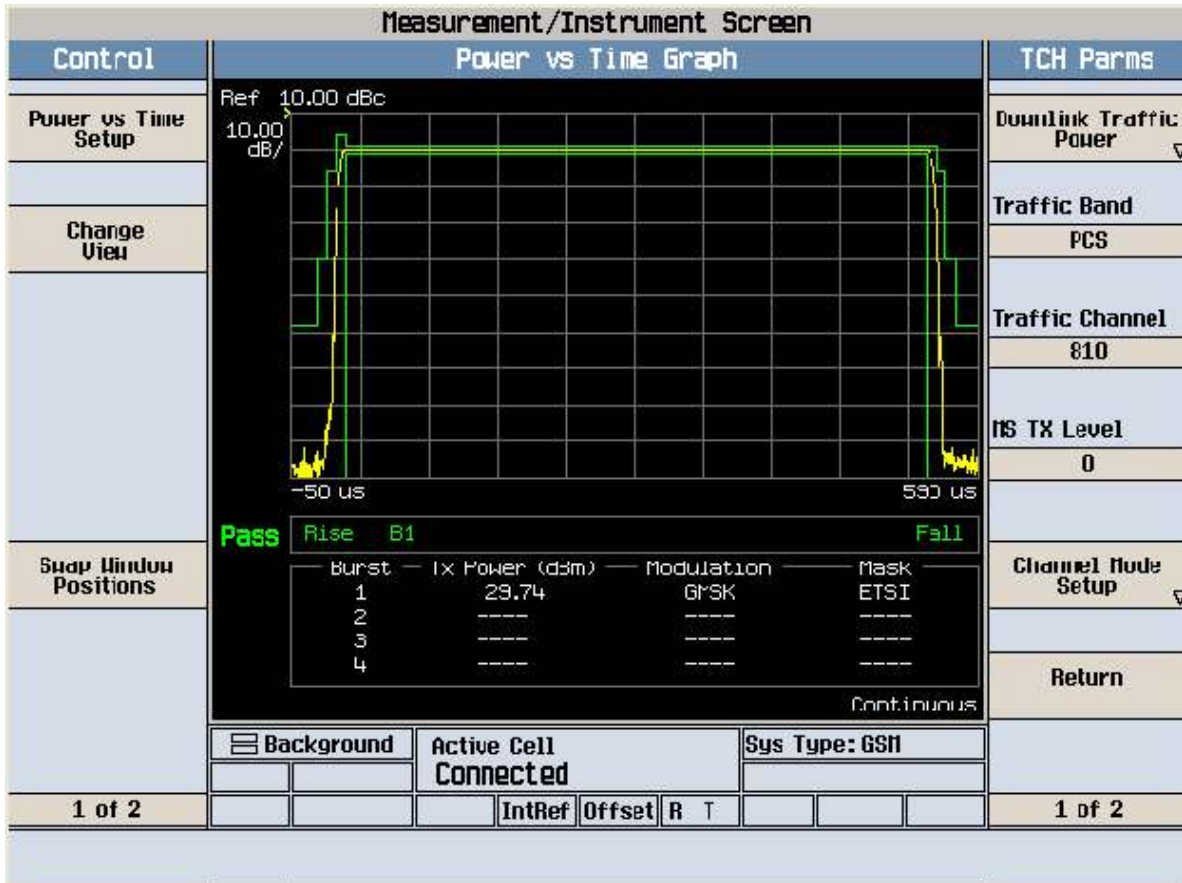
FCC ID : A3LGTB6520L Transmit Power 512CH

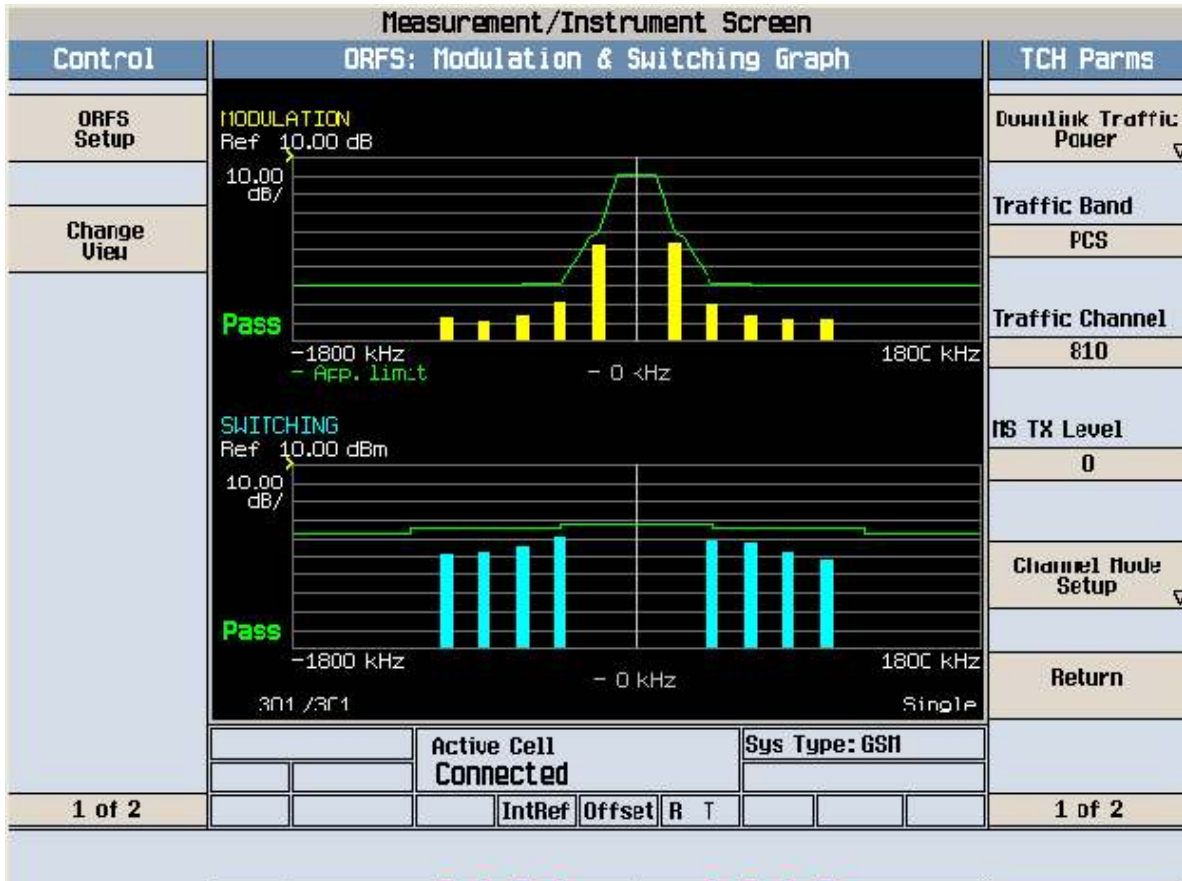
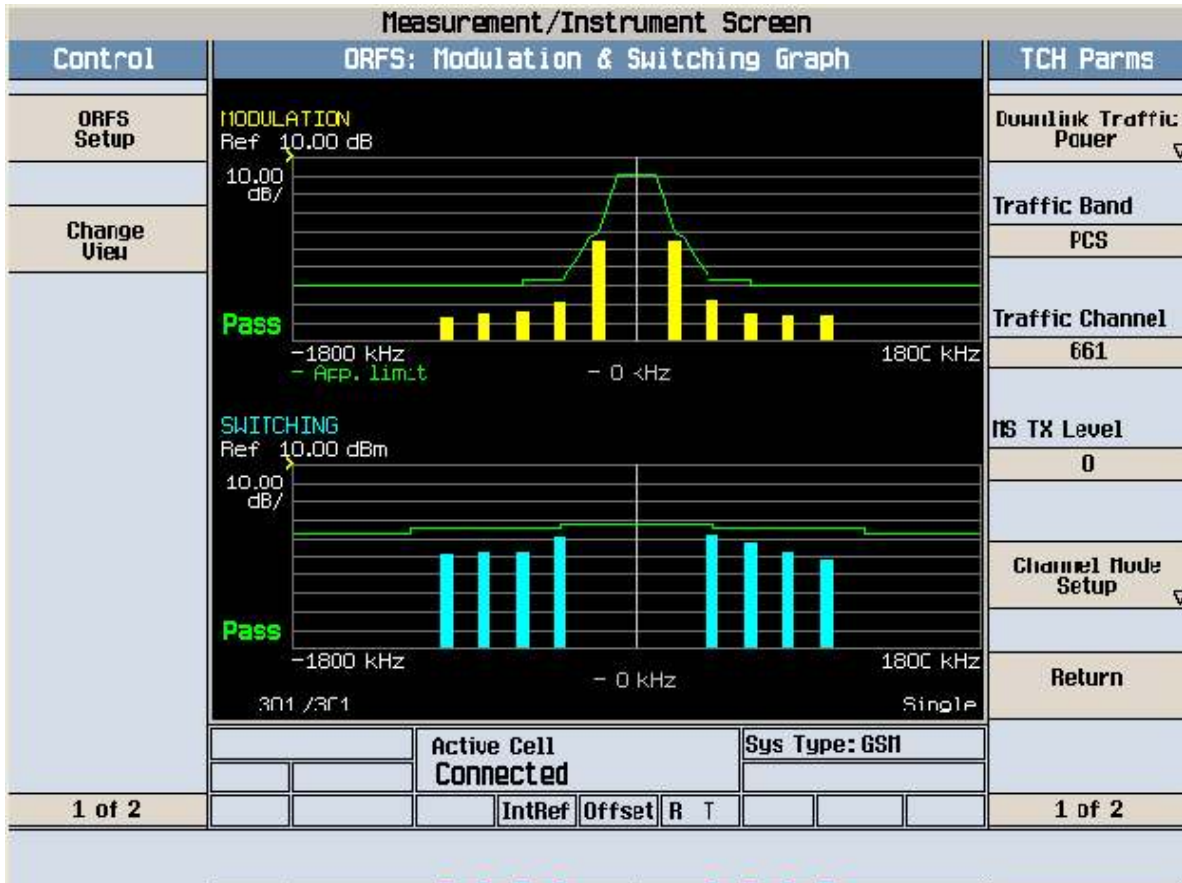
Control		Transmit Power				TCH Parms	
Transmit Power Setup		Burst 1	Burst 2	Burst 3	Burst 4	Downlink Traffic Power	
	Burst Power	29.72	----	----	----	Traffic Band	
Snap Window Positions	Estimated Carrier Power	29.72	----	----	----	PCS	
		Single				Traffic Channel	
						512	
						TIS TX Level	
		Phase & Frequency Error				0	
		Peak Phase °	RMS Phase °	Frequency Hz		Channel Mode Setup	
	Minimum	2.27	1.00	-44.81		Return	
	Maximum	5.04	1.56	-17.71			
	Average	3.40	1.28	-34.57			
	Pass/Fail	Pass	Pass	Pass			
		50 / 50				Single	
	Background	Active Cell Connected		Sys Type: GSM			
1 of 2		IntRef	Offset	R T		1 of 2	

Measurement/Instrument Screen																																	
Control	Transmit Power							TCH Parms																									
Transmit Power Setup ▾								Downlink Traffic Power ▾																									
	<table border="1"> <thead> <tr> <th></th> <th>Burst 1</th> <th>Burst 2</th> <th>Burst 3</th> <th>Burst 4</th> </tr> </thead> <tbody> <tr> <td>Burst Power</td> <td>29.29</td> <td>----</td> <td>----</td> <td>----</td> </tr> <tr> <td>Estimated Carrier Power</td> <td>29.29</td> <td>----</td> <td>----</td> <td>----</td> </tr> </tbody> </table>								Burst 1	Burst 2	Burst 3	Burst 4	Burst Power	29.29	----	----	----	Estimated Carrier Power	29.29	----	----	----	Traffic Band										
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							661																										
							MS TX Level																										
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							1 of 2																										
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Measurement/Instrument Screen																																	
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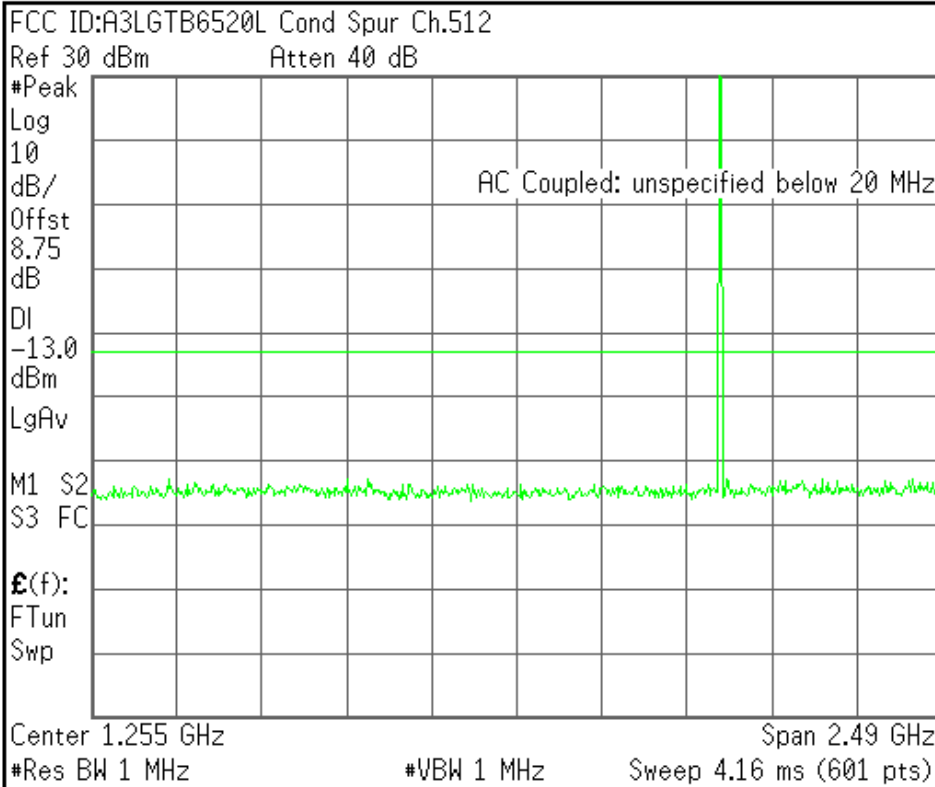




Agilent

R L

Freq/Channel



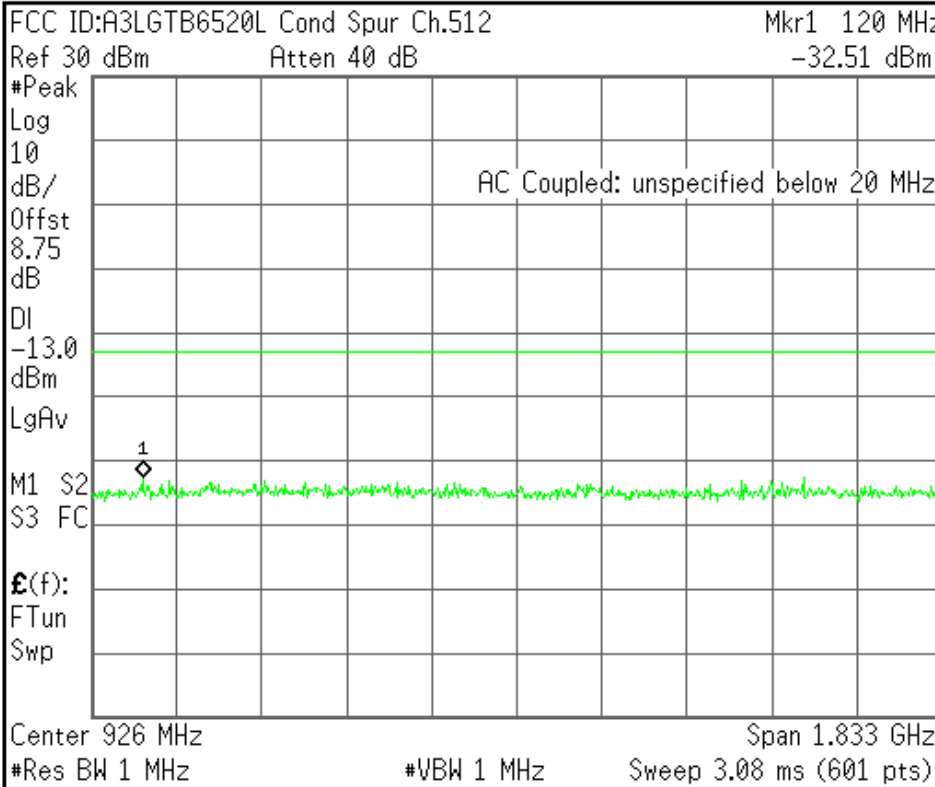
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<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 249.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

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Agilent

R L

Freq/Channel



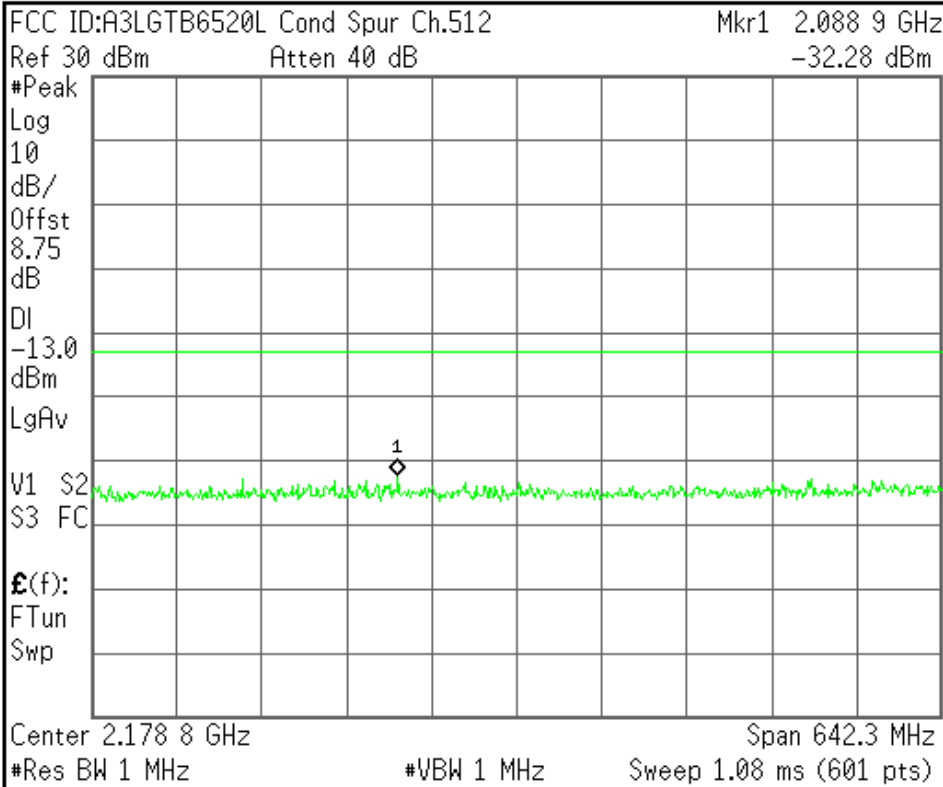
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<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 1.84270000 GHz
<b>CF Step</b> 183.270000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



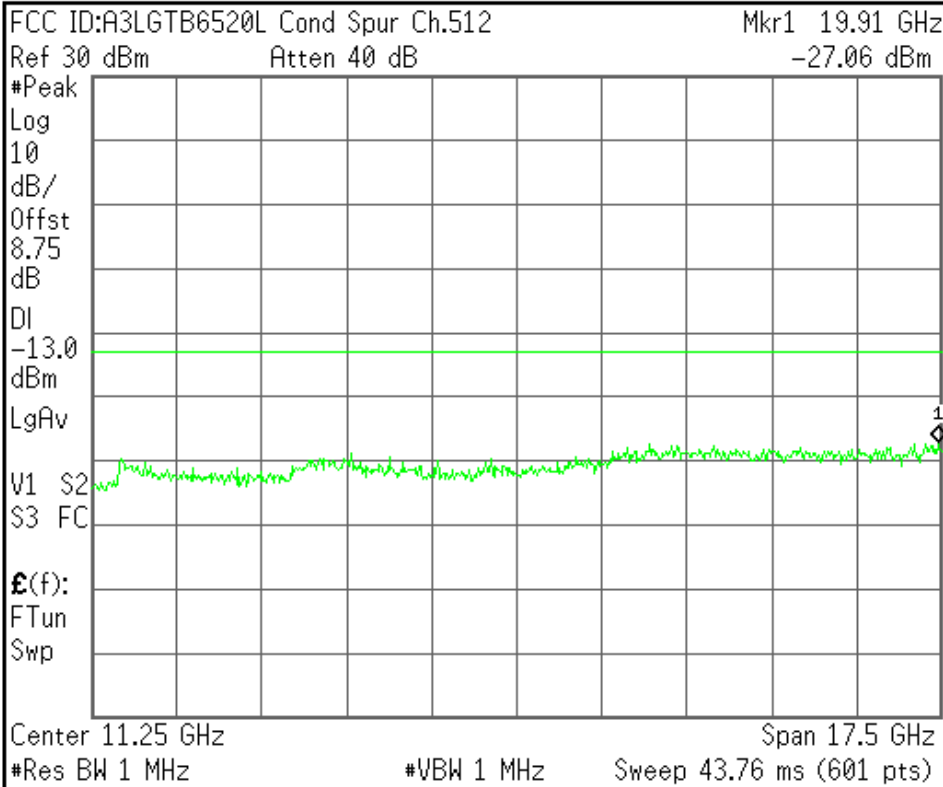
<b>Center Freq</b> 2.17885000 GHz
<b>Start Freq</b> 1.85770000 GHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> Auto Man 64.2300000 MHz
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

Freq/Channel



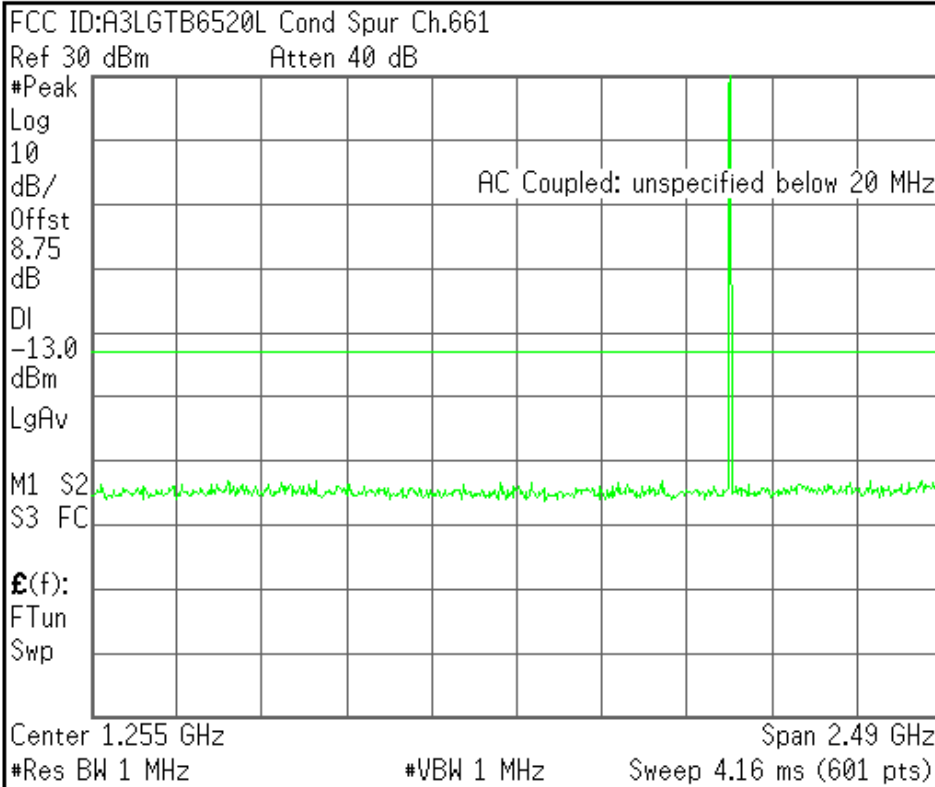
<b>Center Freq</b> 11.2500000 GHz
<b>Start Freq</b> 2.50000000 GHz
<b>Stop Freq</b> 20.0000000 GHz
<b>CF Step</b> Auto Man 1.75000000 GHz
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



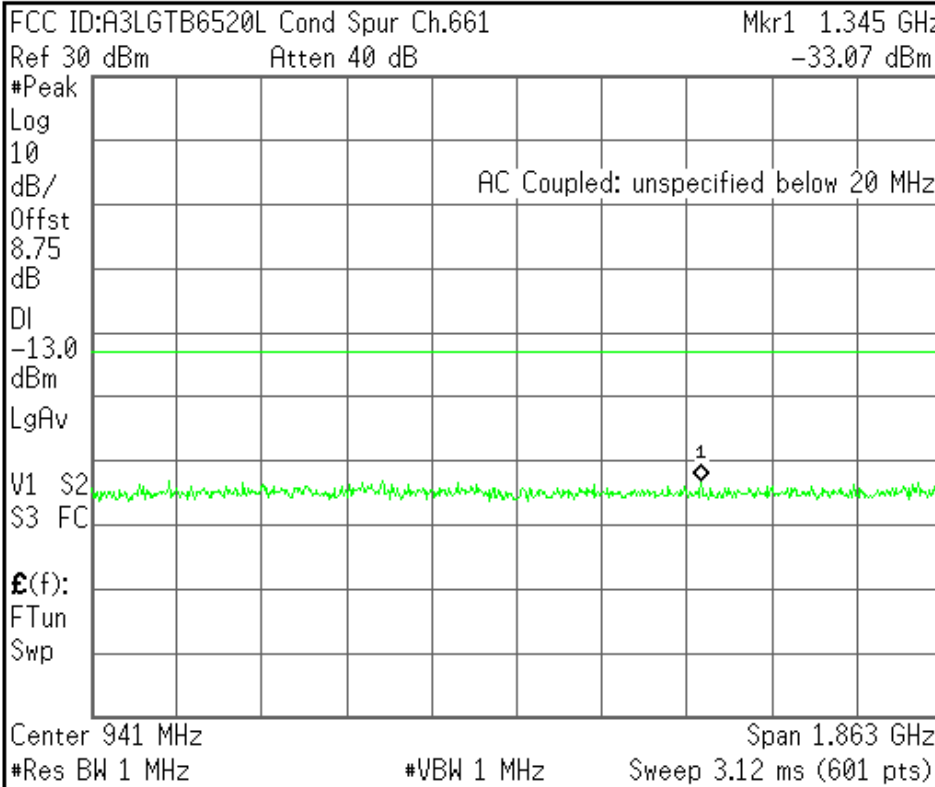
<b>Center Freq</b> 1.25500000 GHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 249.000000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



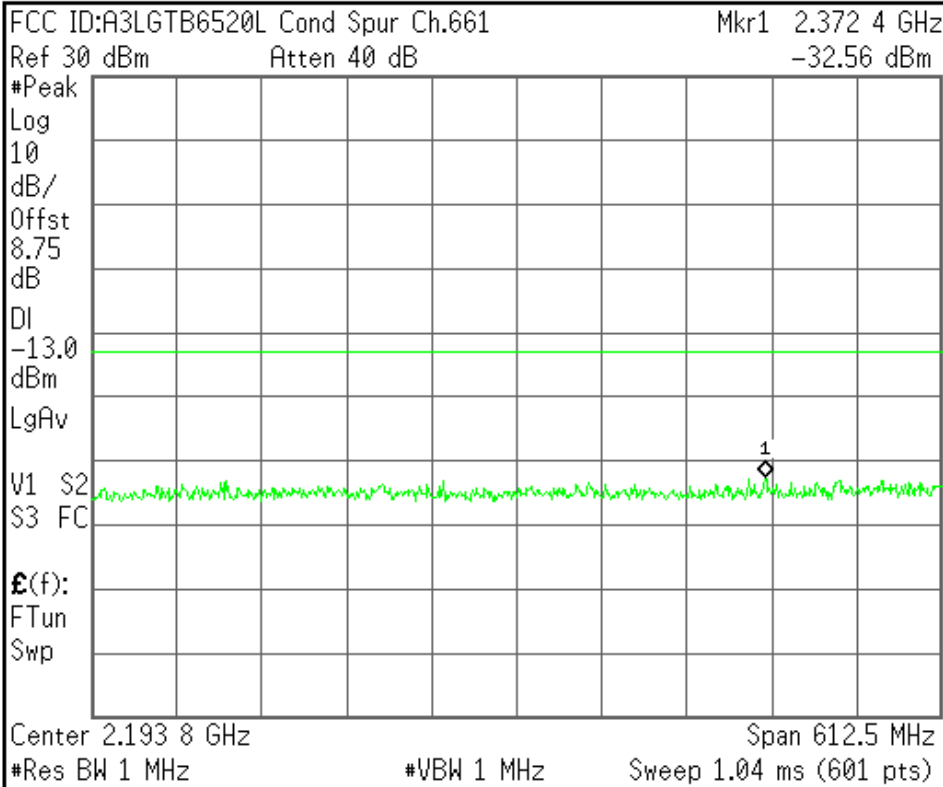
<b>Center Freq</b> 941.250000 MHz
<b>Start Freq</b> 10.0000000 MHz
<b>Stop Freq</b> 1.87250000 GHz
<b>CF Step</b> 186.250000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



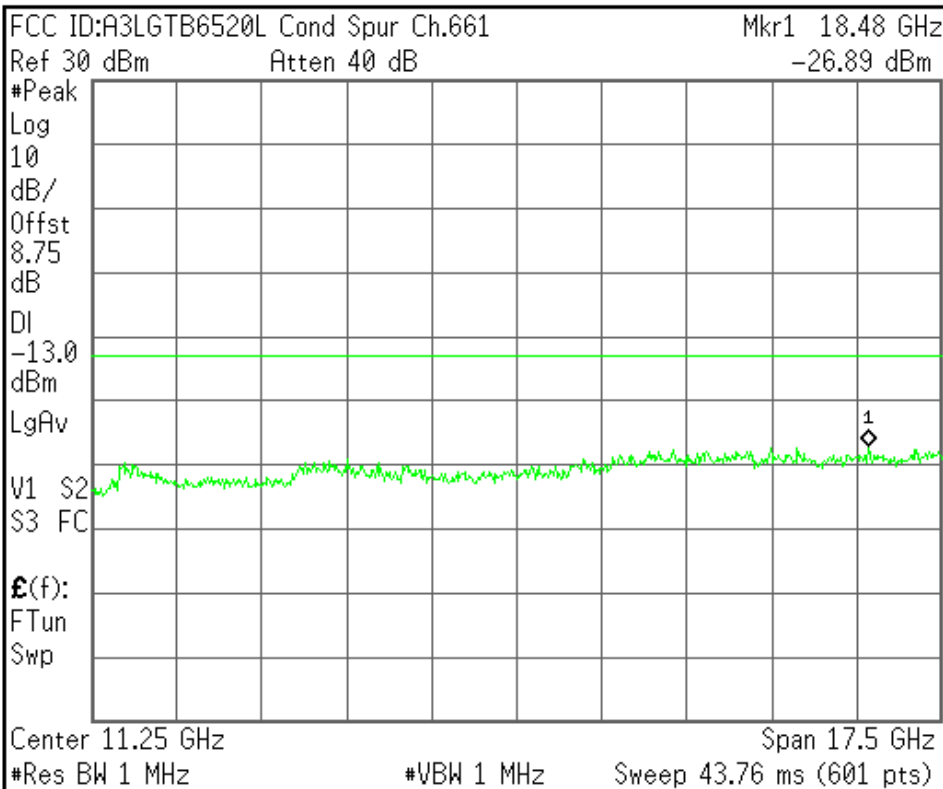
<b>Center Freq</b> 2.19375000 GHz
<b>Start Freq</b> 1.88750000 GHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> 61.2500000 MHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

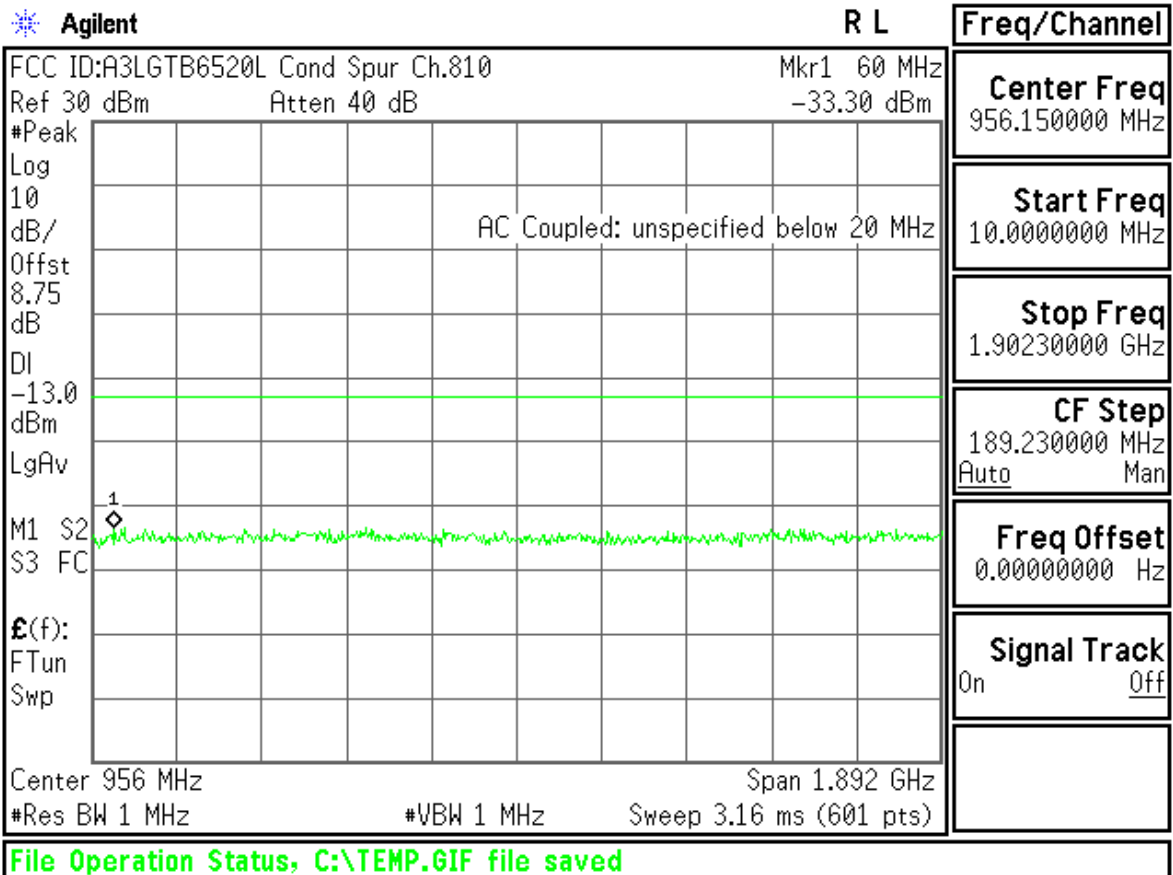
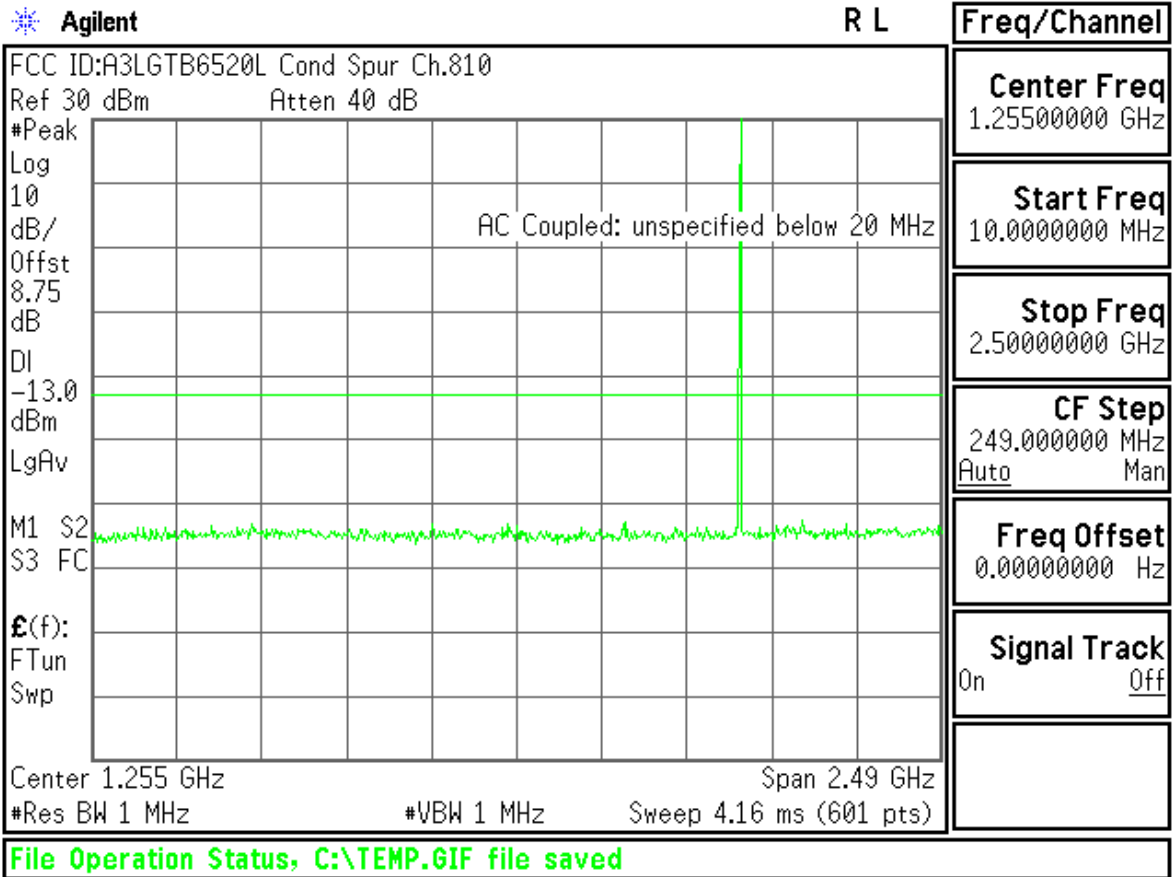
R L

Freq/Channel



<b>Center Freq</b> 11.2500000 GHz
<b>Start Freq</b> 2.50000000 GHz
<b>Stop Freq</b> 20.0000000 GHz
<b>CF Step</b> 1.75000000 GHz Auto Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

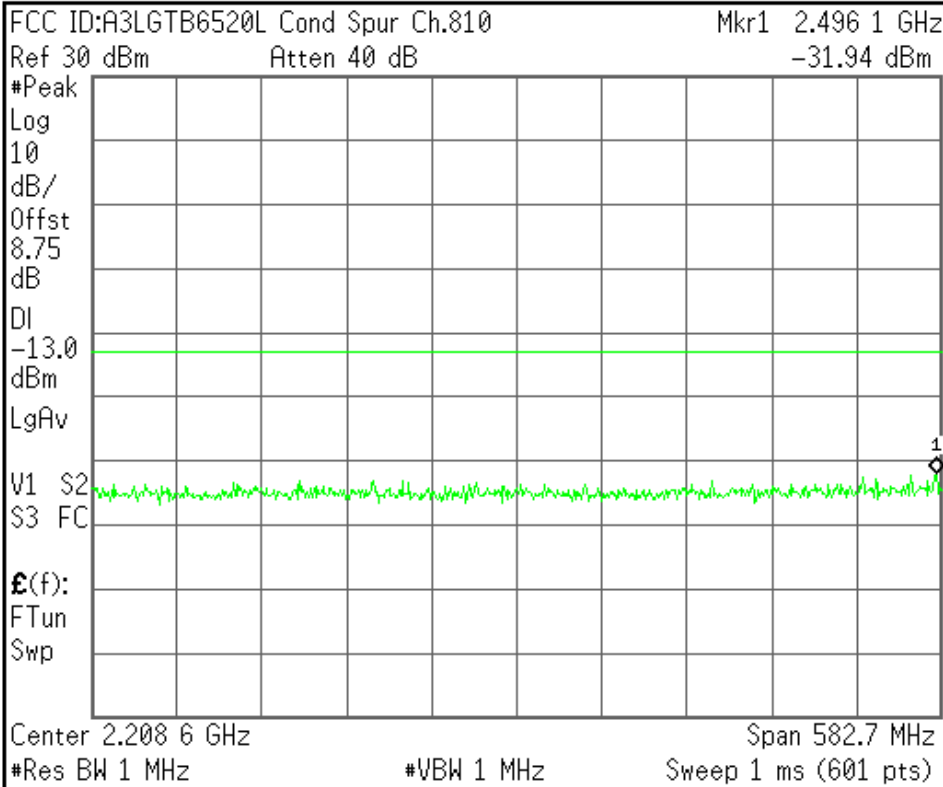
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Agilent

R L

Freq/Channel



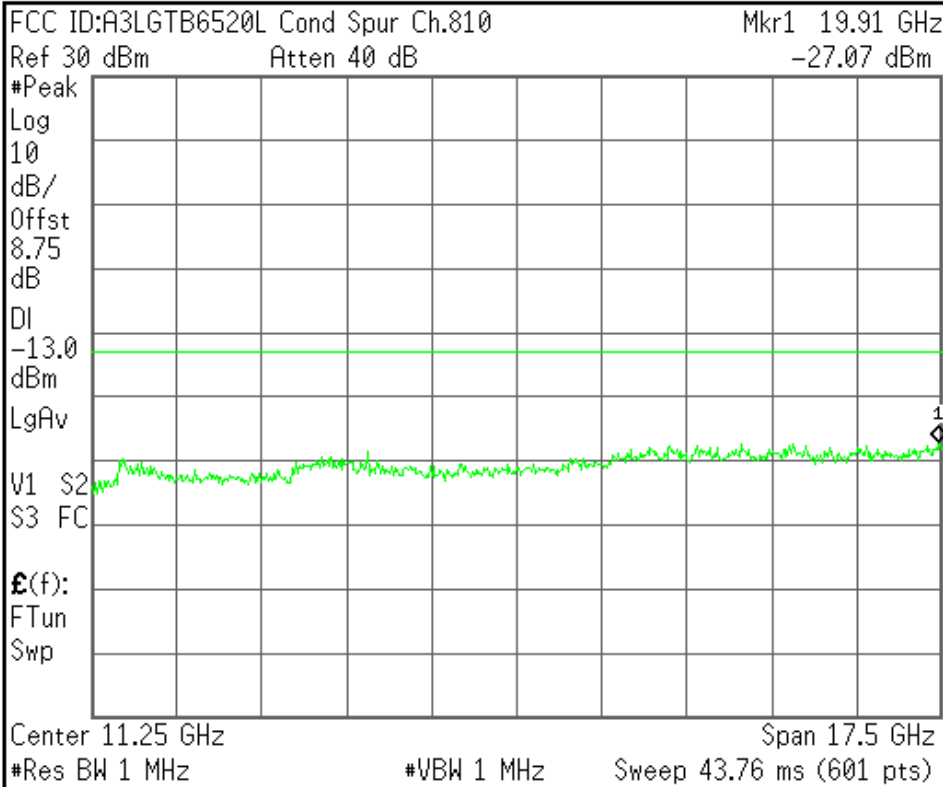
<b>Center Freq</b> 2.20865000 GHz
<b>Start Freq</b> 1.91730000 GHz
<b>Stop Freq</b> 2.50000000 GHz
<b>CF Step</b> Auto Man 58.2700000 MHz
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R L

Freq/Channel



<b>Center Freq</b> 11.2500000 GHz
<b>Start Freq</b> 2.50000000 GHz
<b>Stop Freq</b> 20.0000000 GHz
<b>CF Step</b> Auto Man 1.75000000 GHz
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

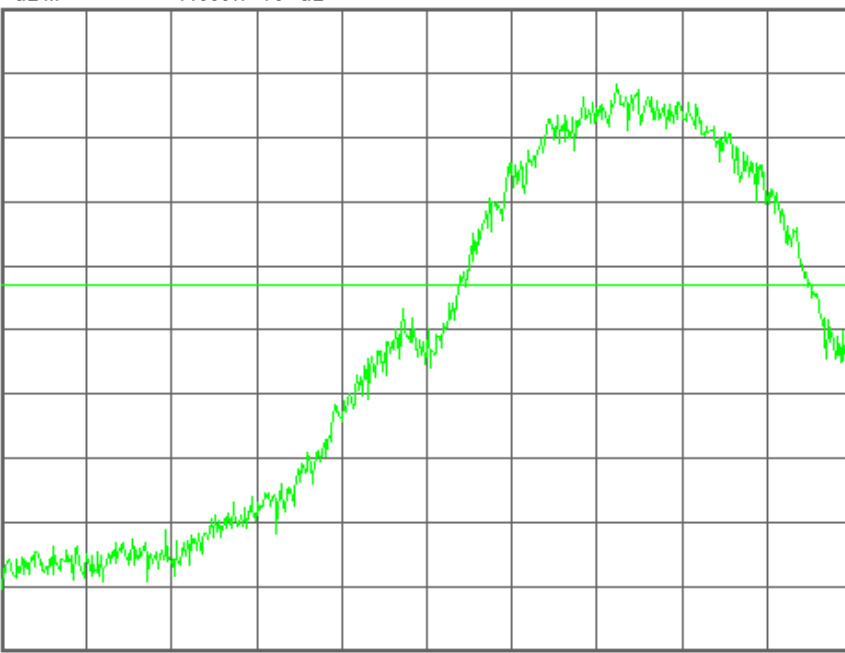
R L

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.512

Ref 30 dBm Atten 40 dB

#Avg  
Log  
10  
dB/  
Offst  
8.75  
dB  
DI  
-13.0  
dBm  
PAvg  
M1 S2  
S3 FC  
£(f):  
f>50k  
Swp



Center 1.850 000 0 GHz Span 810 kHz  
#Res BW 3 kHz #VBW 3 kHz Sweep 343.2 ms (601 pts)

Center Freq  
1.85000000 GHz

Start Freq  
1.84959500 GHz

Stop Freq  
1.85040500 GHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

Freq/Channel

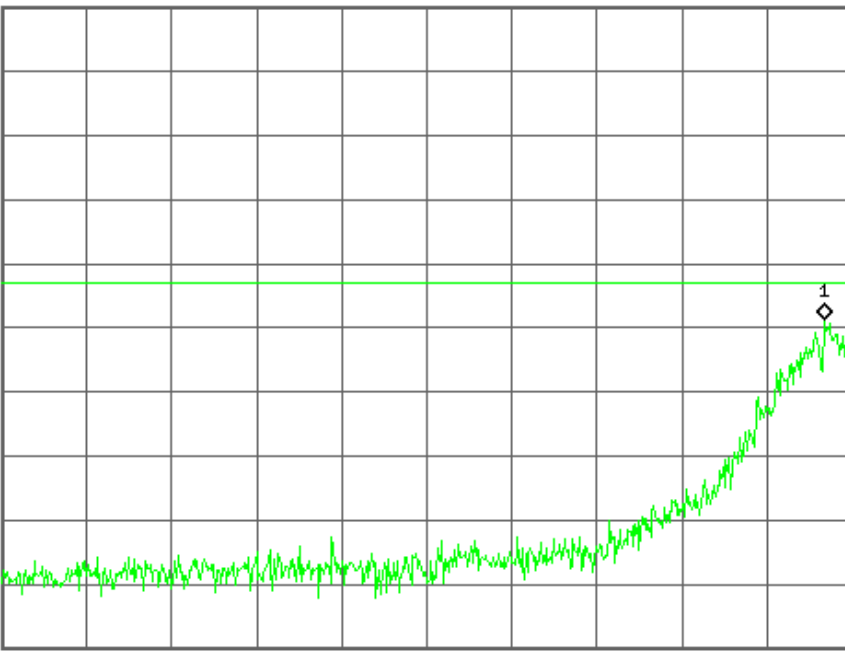
FCC ID:A3LGTB6520L Band Edge Ch.512

Mkr1 1.849 973 3 GHz

Ref 30 dBm Atten 40 dB

-18.71 dBm

#Avg  
Log  
10  
dB/  
Offst  
8.75  
dB  
DI  
-13.0  
dBm  
PAvg  
M1 S2  
S3 FC  
£(f):  
f>50k  
Swp



Center 1.849 595 0 GHz Span 810 kHz  
#Res BW 3 kHz #VBW 3 kHz Sweep 343.2 ms (601 pts)

Center Freq  
1.84959500 GHz

Start Freq  
1.84919000 GHz

Stop Freq  
1.85000000 GHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

File Operation Status, C:\TEMP.GIF file saved

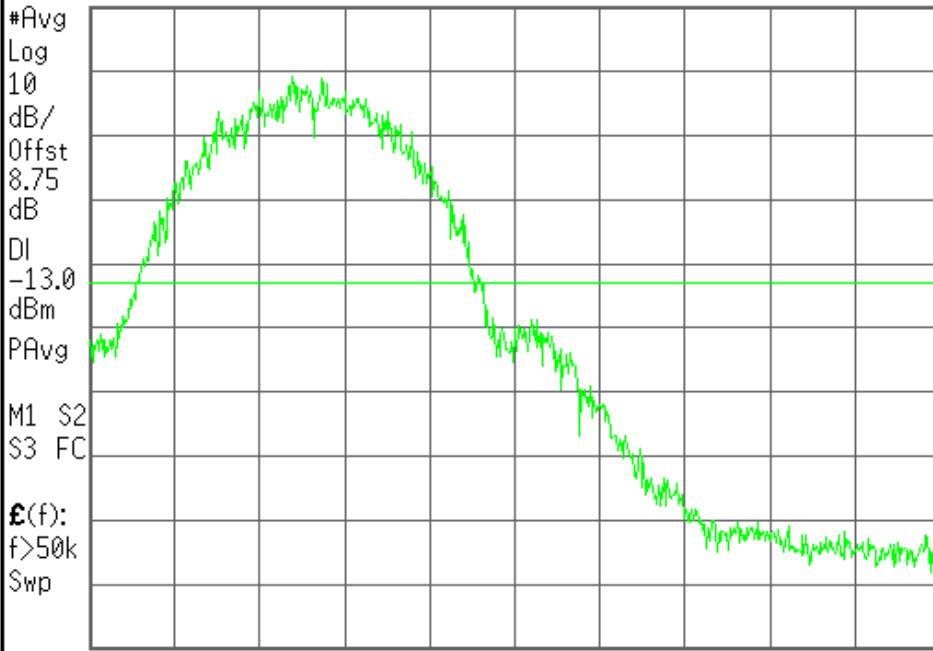
Agilent

R L

Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.810

Ref 30 dBm Atten 40 dB



Center Freq  
1.91000000 GHz

Start Freq  
1.90959500 GHz

Stop Freq  
1.91040500 GHz

CF Step  
81.0000000 kHz  
Auto Man

Freq Offset  
0.00000000 Hz

Signal Track  
On Off

Center 1.910 000 0 GHz Span 810 kHz

#Res BW 3 kHz #VBW 3 kHz Sweep 343.2 ms (601 pts)

File Operation Status, C:\TEMP.GIF file saved

Agilent

R T

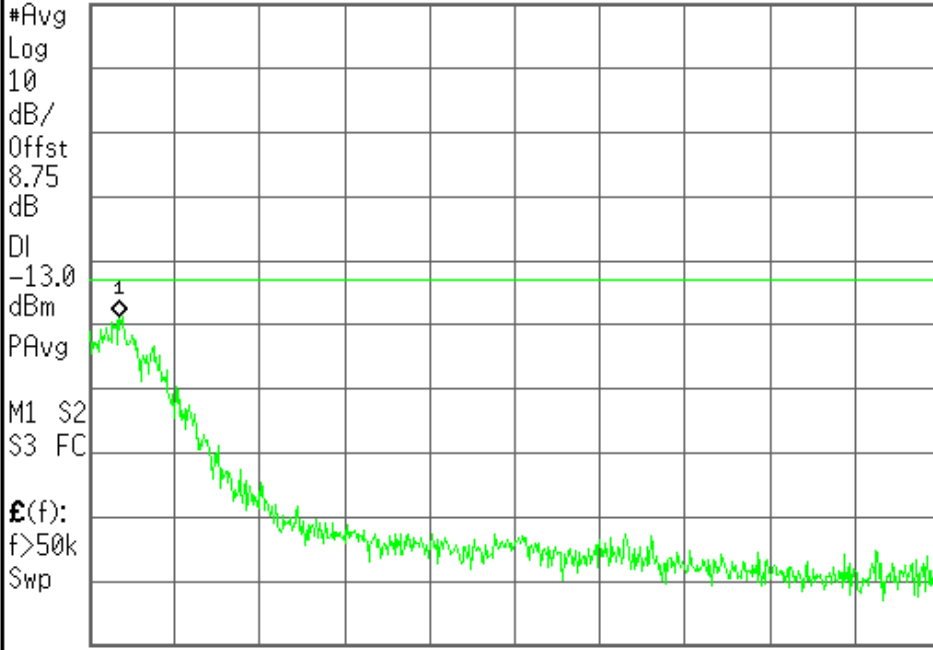
Freq/Channel

FCC ID:A3LGTB6520L Band Edge Ch.810

Mkr1 1.910 020 4 GHz

Ref 30 dBm Atten 40 dB

-18.77 dBm



Center Freq  
1.91040500 GHz

Start Freq  
1.91000000 GHz

Stop Freq  
1.91081000 GHz

CF Step  
81.0000000 kHz  
Auto Man

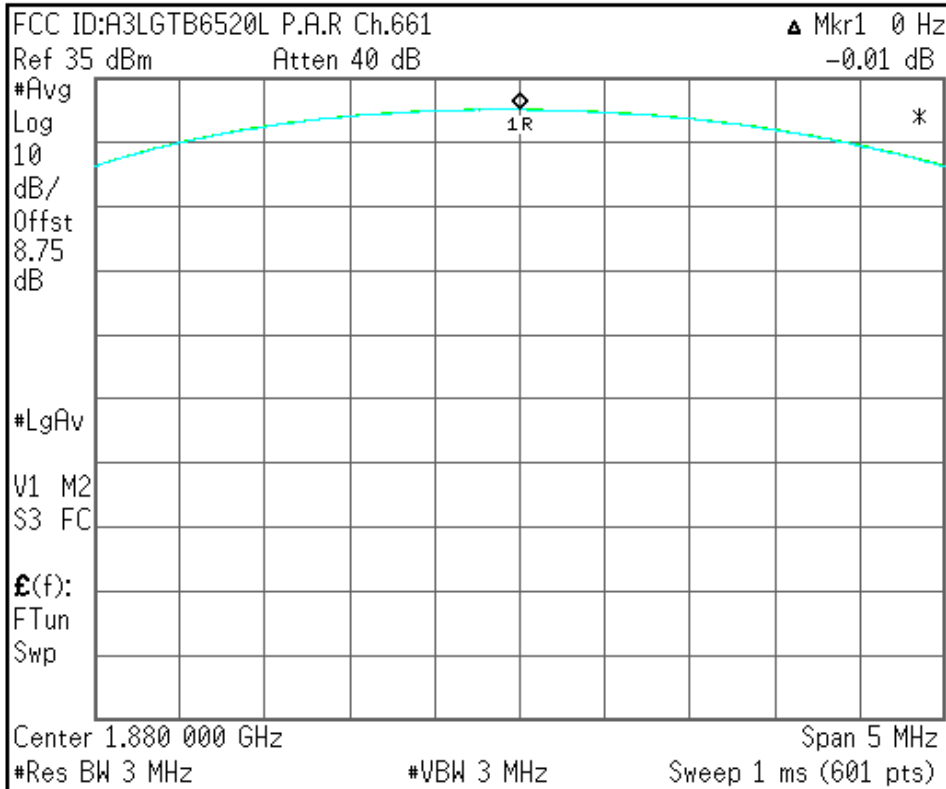
Freq Offset  
0.00000000 Hz

Signal Track  
On Off

Center 1.910 405 0 GHz Span 810 kHz

#Res BW 3 kHz #VBW 3 kHz Sweep 343.2 ms (601 pts)

File Operation Status, C:\TEMP.GIF file saved



<b>Freq/Channel</b>
<b>Center Freq</b> 1.88000000 GHz
<b>Start Freq</b> 1.87750000 GHz
<b>Stop Freq</b> 1.88250000 GHz
<b>CF Step</b> 500.000000 kHz Auto      Man
<b>Freq Offset</b> 0.00000000 Hz
<b>Signal Track</b> On      Off

File Operation Status, C:\TEMP.GIF file saved