

Advanced  
Compliance

6 Randolph Way  
Hillsborough, NJ 08844  
Tel: (908) 927 9288  
Fax: (908) 927 0728

---

**Electromagnetic  
Emission  
Compliance  
Test Report**



**Equipment Under Test  
(EUT)  
Applicant**

Home Booster HB-20-1900  
Shyam Telecom Inc.

**In Accordance With**

FCC Part 24, Subpart E

**Test by**

Advanced Compliance Laboratory, Inc.  
6 Randolph Way  
Hillsborough, New Jersey 08844

**Authorized by**

Wei Li  
Lab Manager

Signature

**Date**

May 6, 2005

**AC Lab Report  
Number**

0048-050415-01



Lab Code:200101-0

**The test result in this report is supported and  
covered by the NVLAP accreditation.**

## Index

<b>Section 1. Summary of Test Results</b> .....	3
<b>Section 2. General Equipment Specification</b> .....	5
<b>Section 3. RF Output Power</b> .....	7
<b>Section 4. Occupied Bandwidth</b> .....	21
<b>Section 5. Spurious Emissions at Antenna Terminals</b> .....	47
<b>Section 6. Field Strength of Spurious</b> .....	109
<b>Section 7. Frequency Stability</b> .....	116
<b>Section 8. Out of Band Rejection</b> .....	118
<b>Section 9. Test Equipment List</b> .....	128
<b>Section 10. FCC ID Labeling</b> .....	129
<b>Section 11. Maximum Permissible Exposure</b> .....	130
<b>Section 12. Setup Photos</b> .....	131
<b>Section 13. EUT Photos</b> .....	136

**Section 1. Summary of Test Results**

Manufacturer: Shyam Telecom Inc.  
Model No.: Home Booster HB-20-1900  
Sample No.: HBDE040001

General: **All measurements are traceable to national standards**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 24, Subpart E.

- New Submission
- Production Unit
- Class II Permissive Change
- Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

“See Summary of Test Data”



**NVLAP LAB CODE: 200101-0**

Advance Compliance Laboratory, Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company’s employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Advance Compliance Laboratory, Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report applies only to the items tested.

**Summary of Test Data**

<b>RF Power Output</b>	22.913(a)	500W ERP	N/A*
	24.232(a)	100W EIRP	Complies
<b>Occupied Bandwidth (Voice &amp; SAT)</b>	2.1049(i)	Mask	N/A
<b>Occupies Bandwidth (Wideband Data)</b>	2.1049(i)	Mask	N/A
<b>Occupied Bandwidth (Digital)</b>	2.1049(i)	Mask	Complies
<b>Spurious Emissions at Antenna Terminals</b>	22.917	-13 dBm	N/A
	24.238	-13 dBm	Complies
<b>Field Strength of Spurious Emissions</b>	22.917	-13 dBm	N/A
	24.238	-13 dBm E.I.R.P.	Complies
<b>Frequency Stability</b>	22.355	1.5 ppm	N/A*
	24.235	1.5 ppm	N/A*

\* These items are NOT applied to the EUT.

The estimated uncertainty of the test result is given as following. The method of uncertainty calculation is provided in Advanced Compliance Lab. Doc. No. 0048-01-01.

	Prob. Dist.	Uncertainty(dB)	Uncertainty(dB)	Uncertainty(dB)
		30-1000MHz	1-6.5GHz	Conducted
Combined Std. Uncertainty $u_c$	norm.	$\pm 2.36$	$\pm 2.99$	$\pm 1.83$



Wei Li  
Lab Manager  
Advanced Compliance Lab

Date: May 6, 2005

**Section 2. General Equipment Specification**

<b>Supply Voltage</b>		9VDC				
<b>Frequency Range</b>	Cellular	N/A				
	PCS	UL/1850-1910MHz; DL/1930-1990MHz				
	Modulation	CDMA (F9W) <input checked="" type="checkbox"/>	GSM (GXW) <input checked="" type="checkbox"/>	NADC (DXW) <input type="checkbox"/>	CDPD (F9W) <input type="checkbox"/>	AMPS (F8W, F1D) <input type="checkbox"/>
<b>Output Impedance</b>		50ohm				
<b>Frequency Translation</b>		F1-F1 <input checked="" type="checkbox"/>	F1-F2 <input type="checkbox"/>	N/A <input type="checkbox"/>		
		Software <input type="checkbox"/>	Duplexer Change <input type="checkbox"/>	Full Band Coverage <input checked="" type="checkbox"/>		

**DC voltages and DC currents per 2.1033(c)(8)**

The input supply to the transmitter was set at 9 Volts DC. The RF power output was measured with the indicated voltage and current applied into the final RF amplifying device(s).

**1900 MHz Digital CDMA/GSM**

RF Output, DC Current and RF Input Power are all average values.

Measured Maximum RF output: 17.1dBm ( 0.051W)

Measured DC voltage: 9.12V

Measured DC current: 912 mA.

Measured Minimum RF output: -39.4dBm

Measured DC voltage: 9.10V

Measured DC current: 909 mA

**Tune-up procedure per 2.1033(c) (9)**

There are no user accessible adjustments or tuning in this portable transceiver. All necessary adjustments and tuning are performed during manufacture of the product. Any adjustments or tuning after service or repair are done as part of that process as special equipment is required to perform such adjustments.

## **Description of Operation**

This device is a home booster operating in both downlink and uplink spectrums of PCS bands.

## **System Diagram**

See Attachment.

**Section 3. RF Output Power**

<b>Name of Test:</b>	<i>RF Output Power</i>	<b>Test Standard:</b>	22.913(a) 24.232(a)
<b>Tested By:</b>	WEI LI	<b>Test Date:</b>	04/18/2005-05/06/2005

**Minimum Standard:** Para. No. 22.913(a). The maximum effective radiated power (ERP) of base station transmitters and cellular repeaters must not exceed 500 Watts (57dBm).

Para. No. 24.232(a). The maximum peak output power of base transmitters should not exceed 100 Watts EIRP (50dBm).

**Method of Measurement:** Detachable Antenna:  
The peak power at antenna terminals is measured using spectrum analyzer.

Integral Antenna:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation

$$\frac{GP}{4\pi R^2} = \frac{E^2}{120\pi}$$

and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

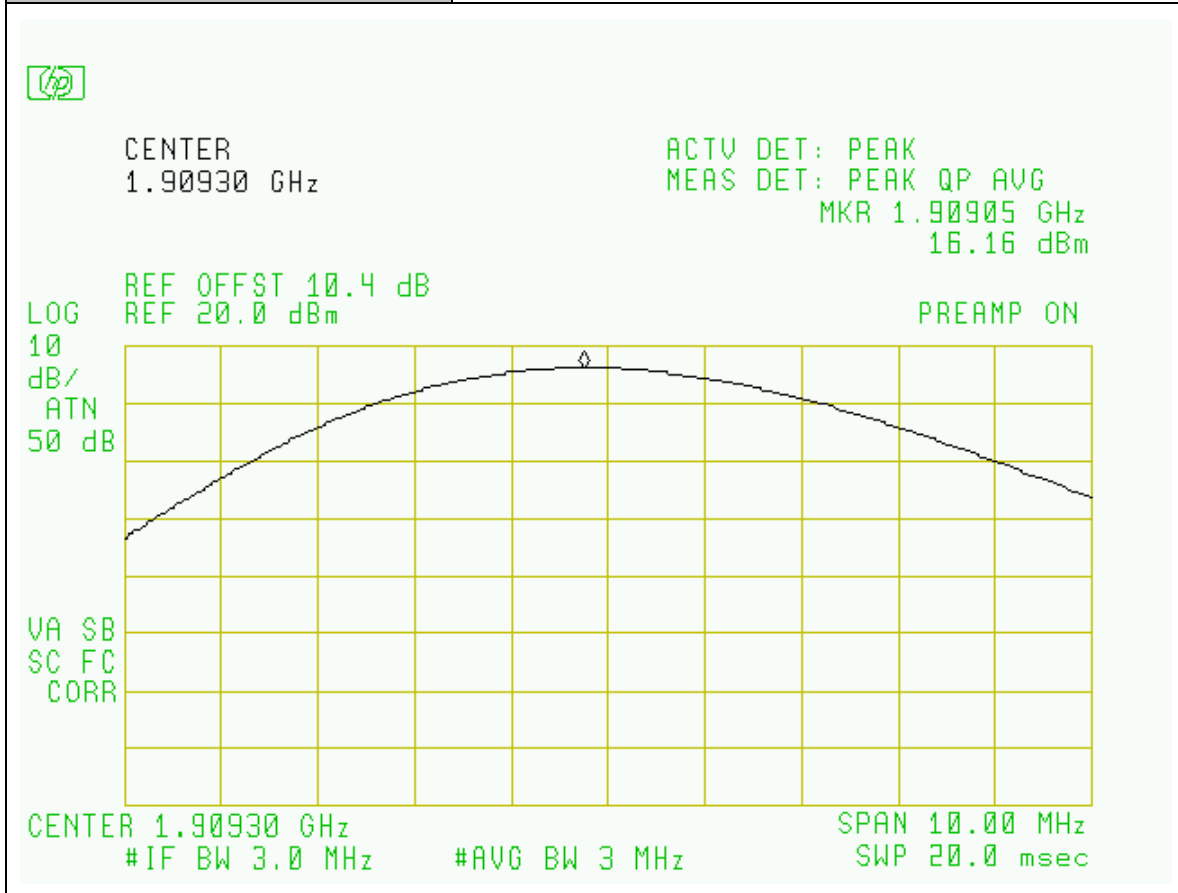
**Test Result:****Complies****Test Data:**

PCS Bands	Channel	Modulation	Power Output (dBm)	Limit (dBm)	Margin
<b>Uplink</b>	Hi	CDMA	16.16	50	-33.84
	Mid	CDMA	16.85	50	-33.15
	Low	CDMA	16.44	50	-33.56
	Hi	GSM	11.95	50	-38.05
	Mid	GSM	12.52	50	-37.48
	Low	GSM	11.58	50	-38.42
<b>Downlink</b>	Hi	CDMA	14.74	50	-35.26
	Mid	CDMA	17.10	50	-32.90
	Low	CDMA	15.56	50	-34.44
	Hi	GSM	11.92	50	-38.08
	Mid	GSM	13.59	50	-36.41
	Low	GSM	12.04	50	-37.96
<b>Input Power (dBm)</b>	-50 (Maximum gain)				
<b>Ref Offset</b>	Ref offset=Cable Factor +Attenuation=10/10.4dB				



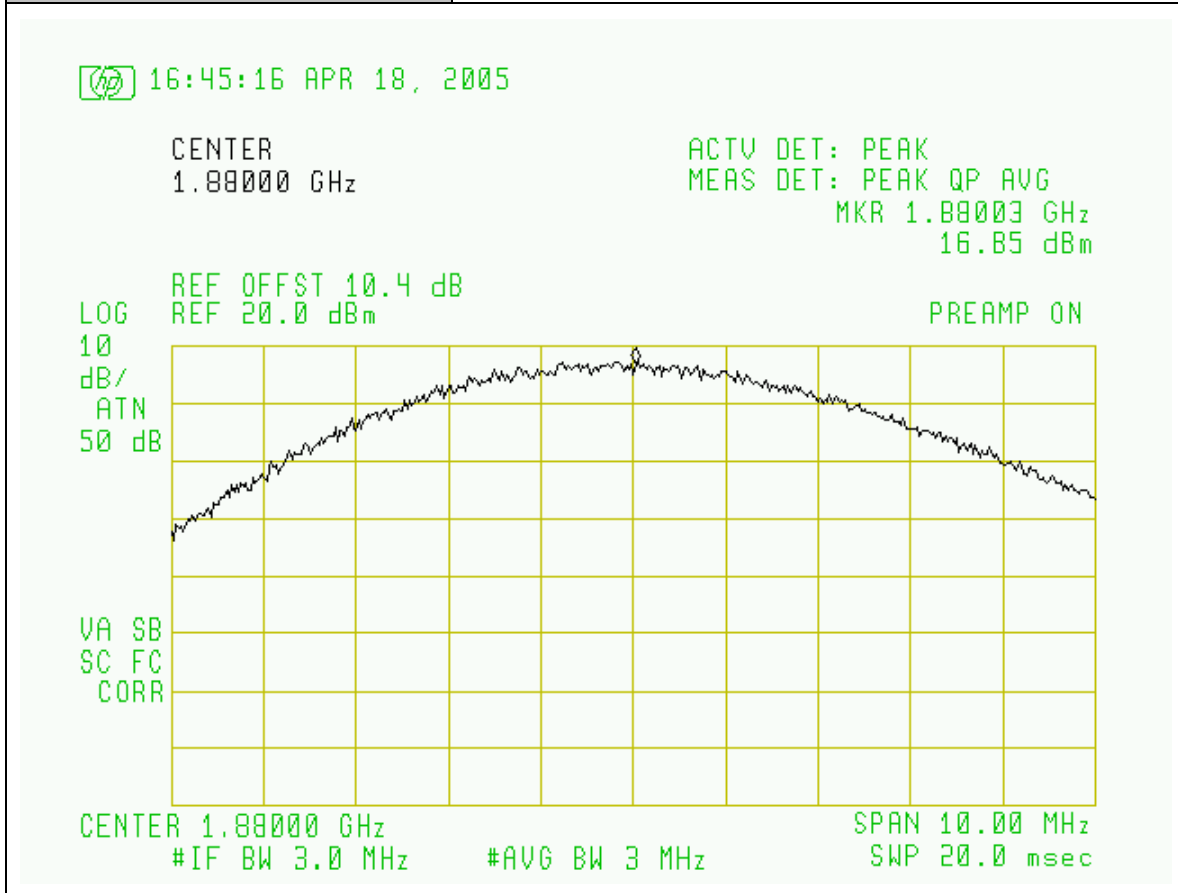
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel CDMA Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



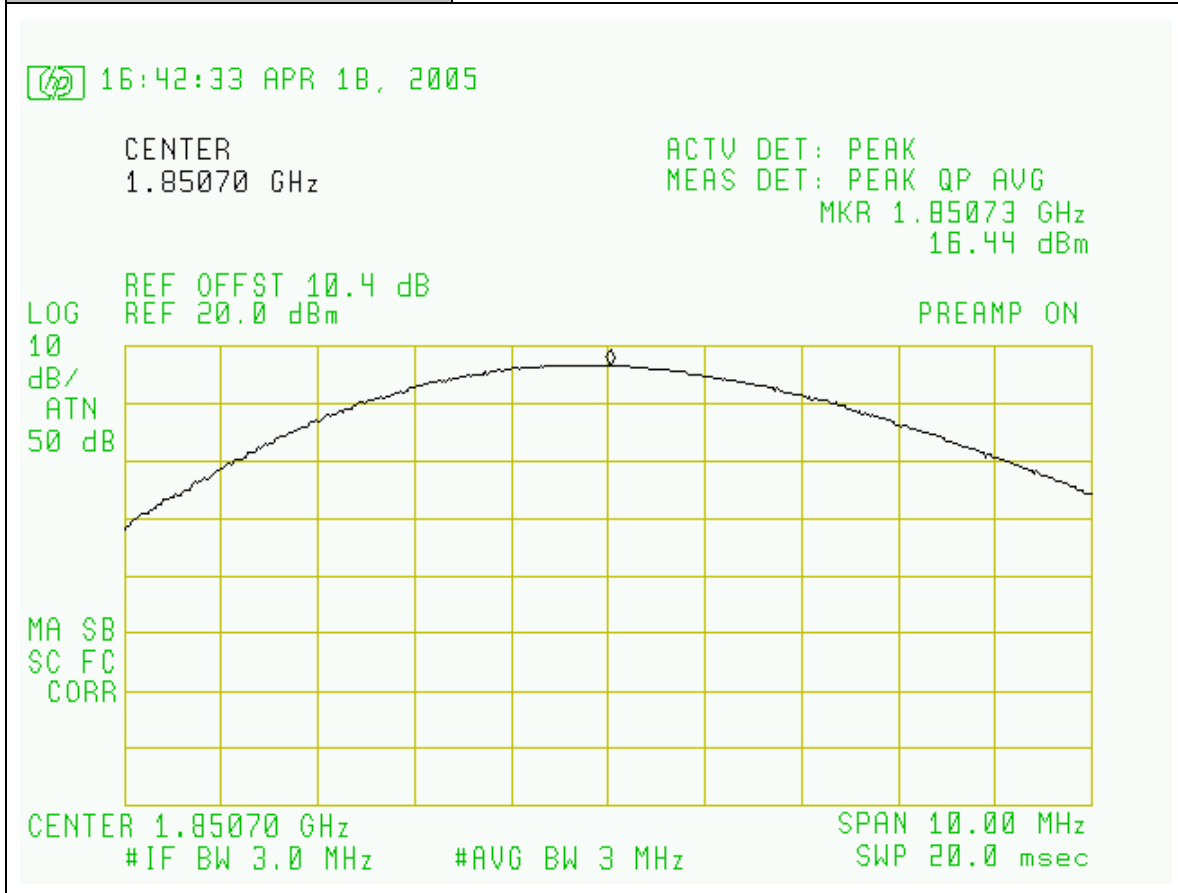
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Mid-Channel CDMA Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



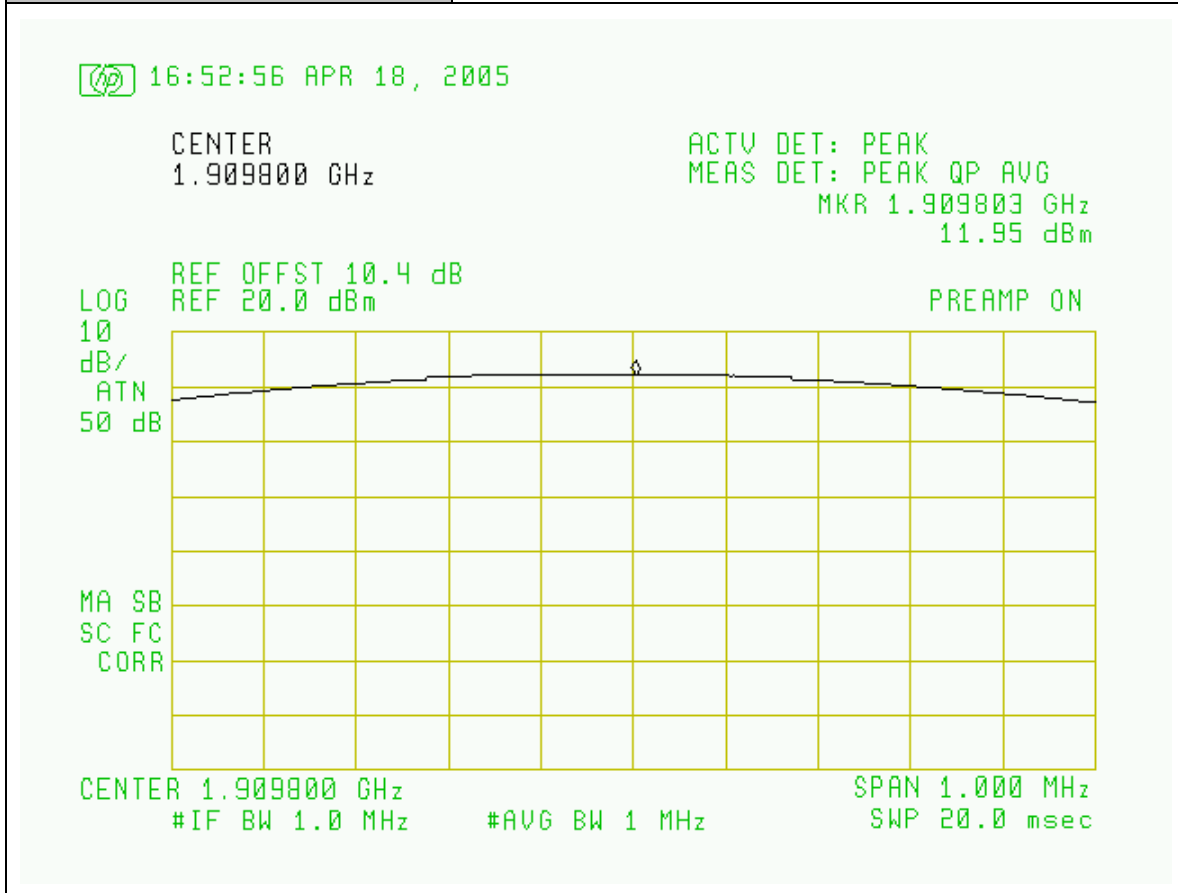
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel CDMA Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



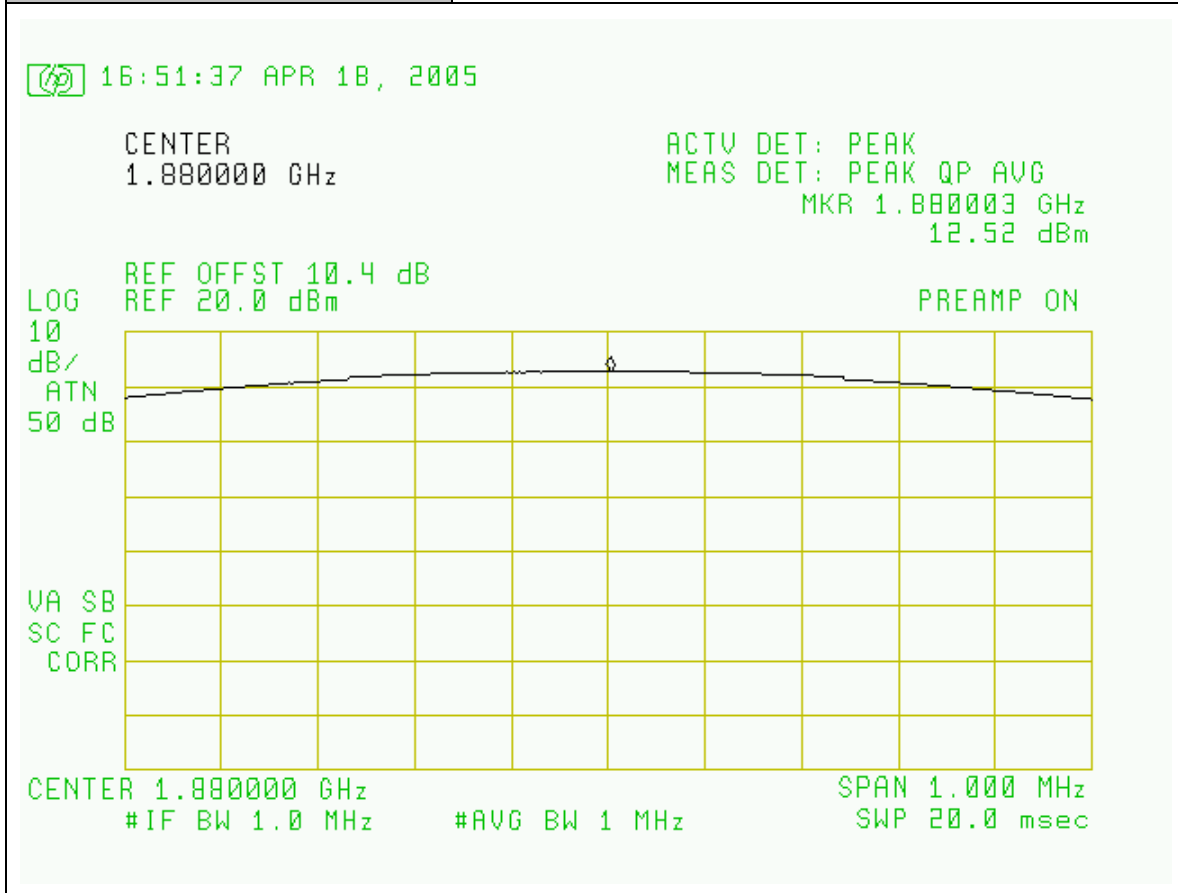
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel GSM Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



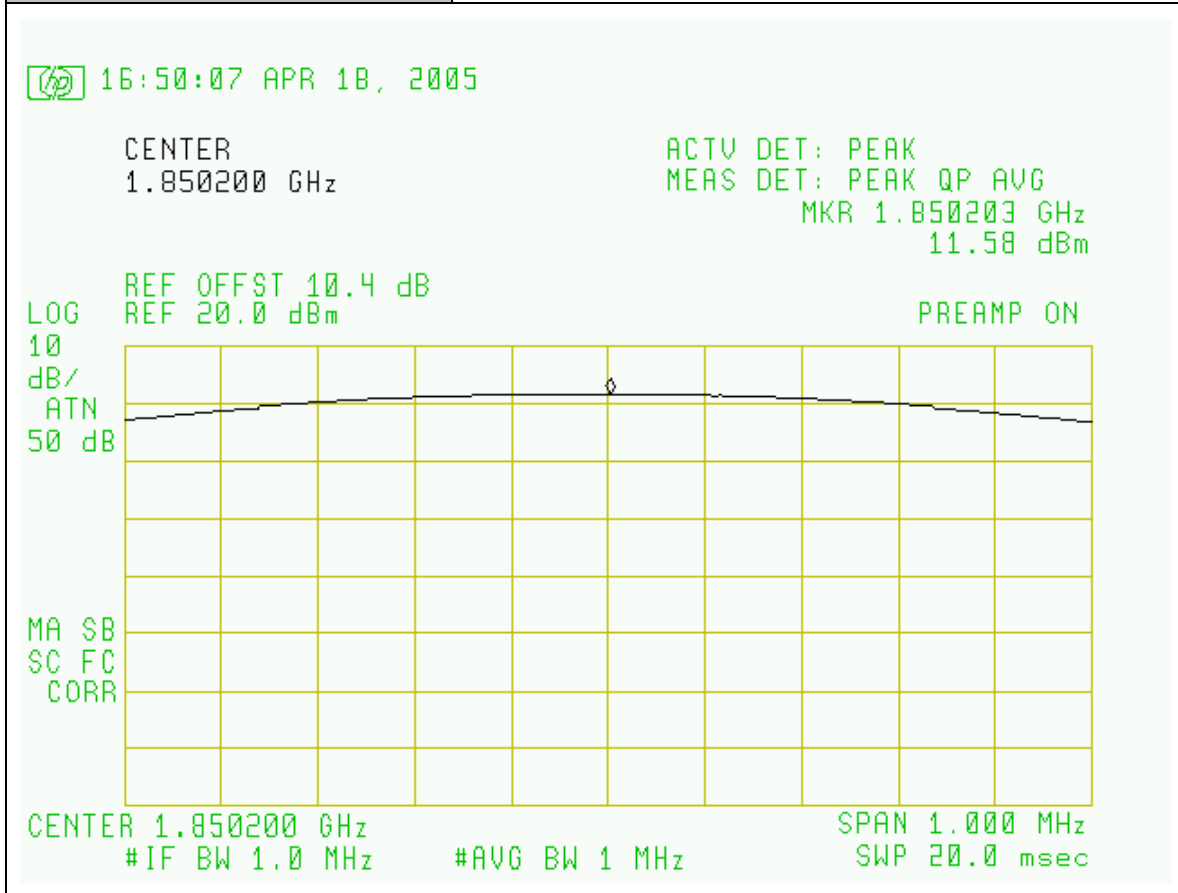
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Mid-Channel GSM Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



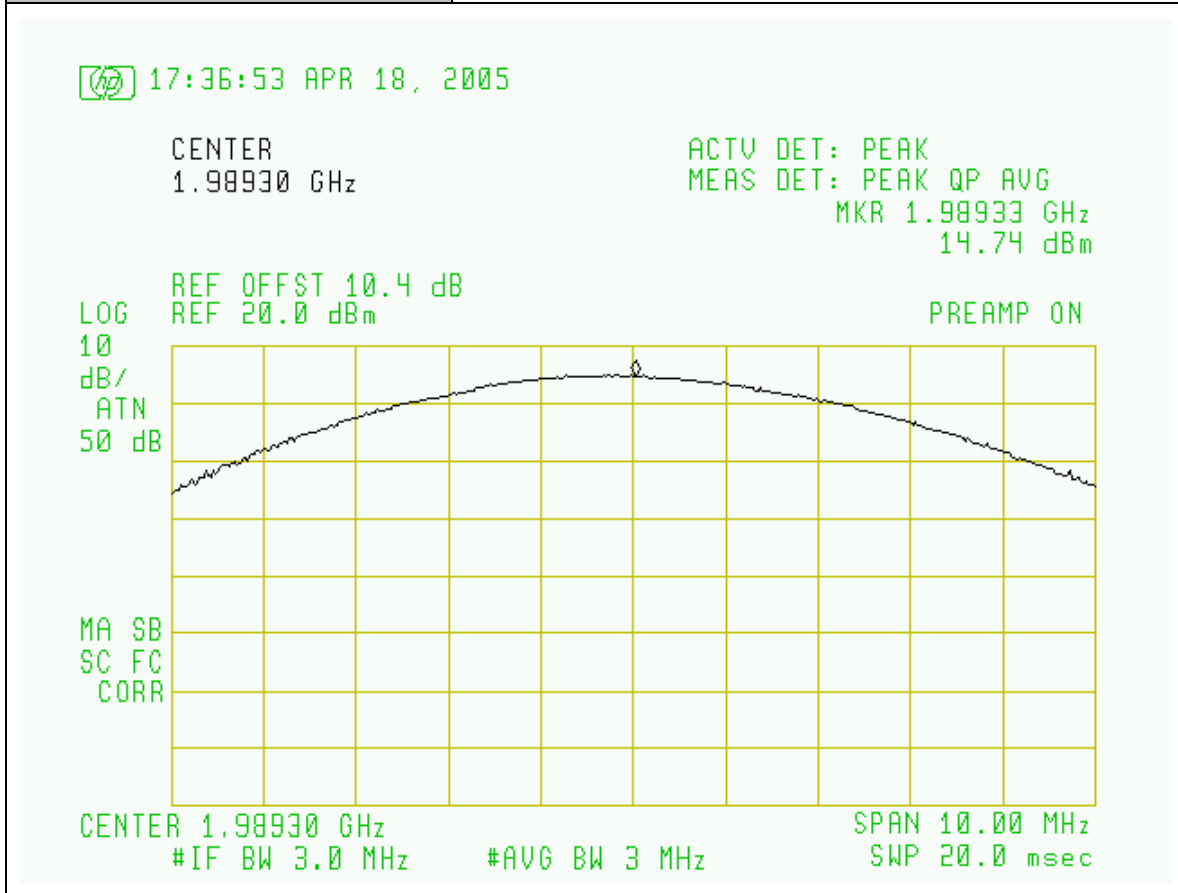
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel GSM Modulation
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -50dBm



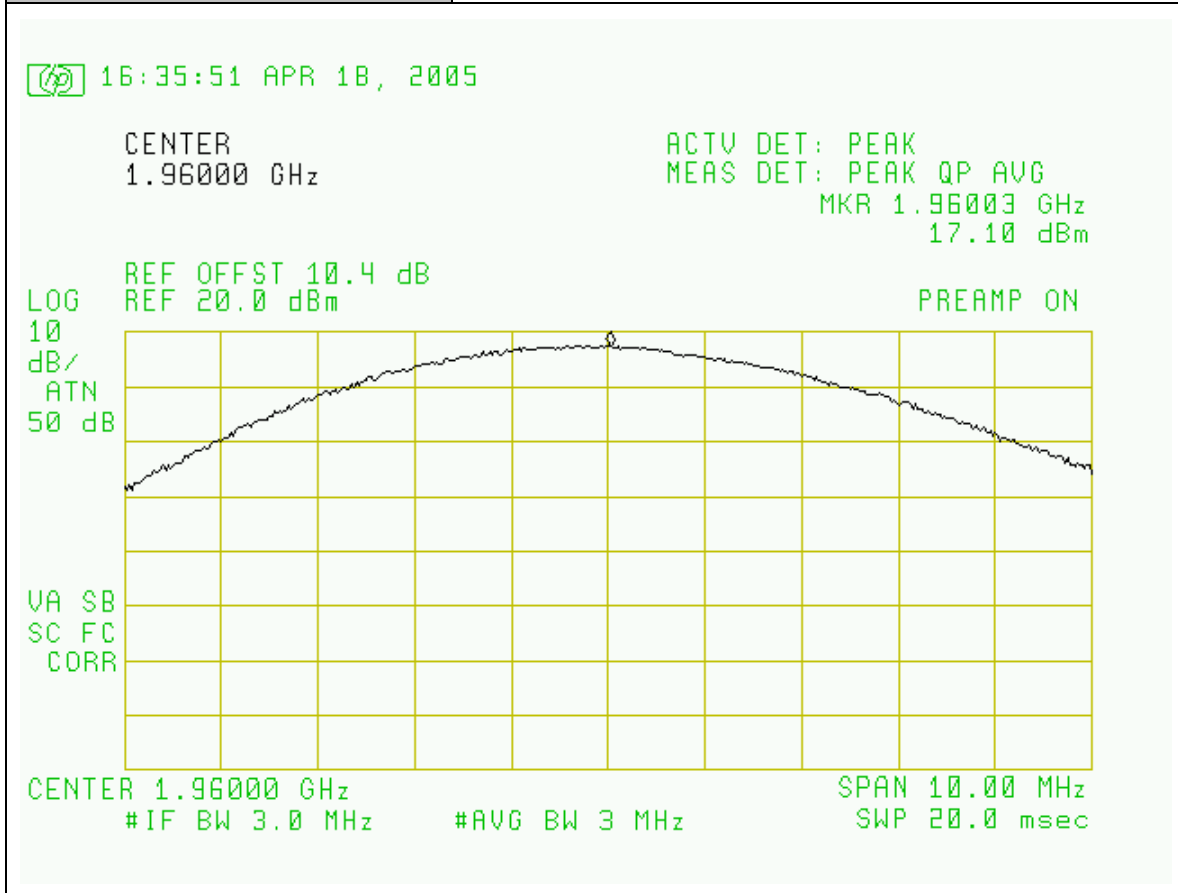
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel CDMA Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

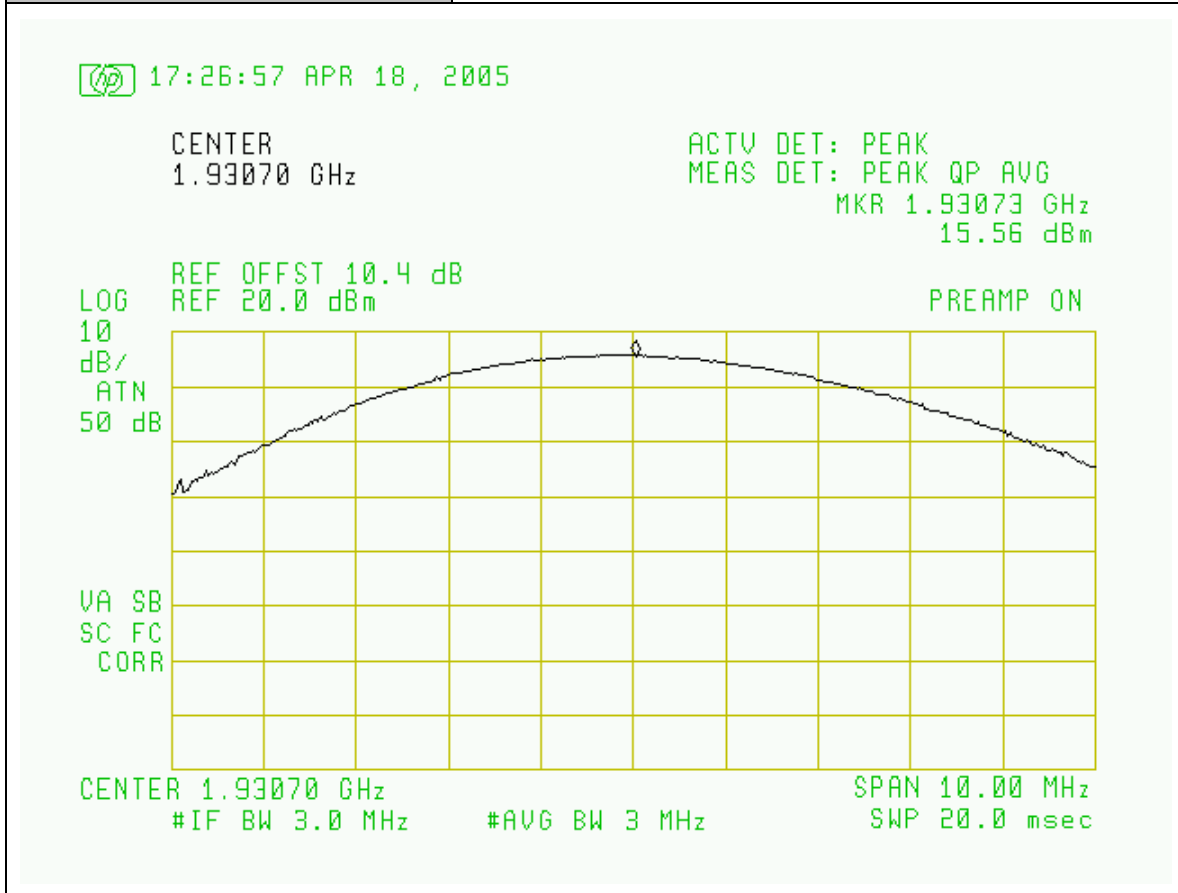
<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel CDMA Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm





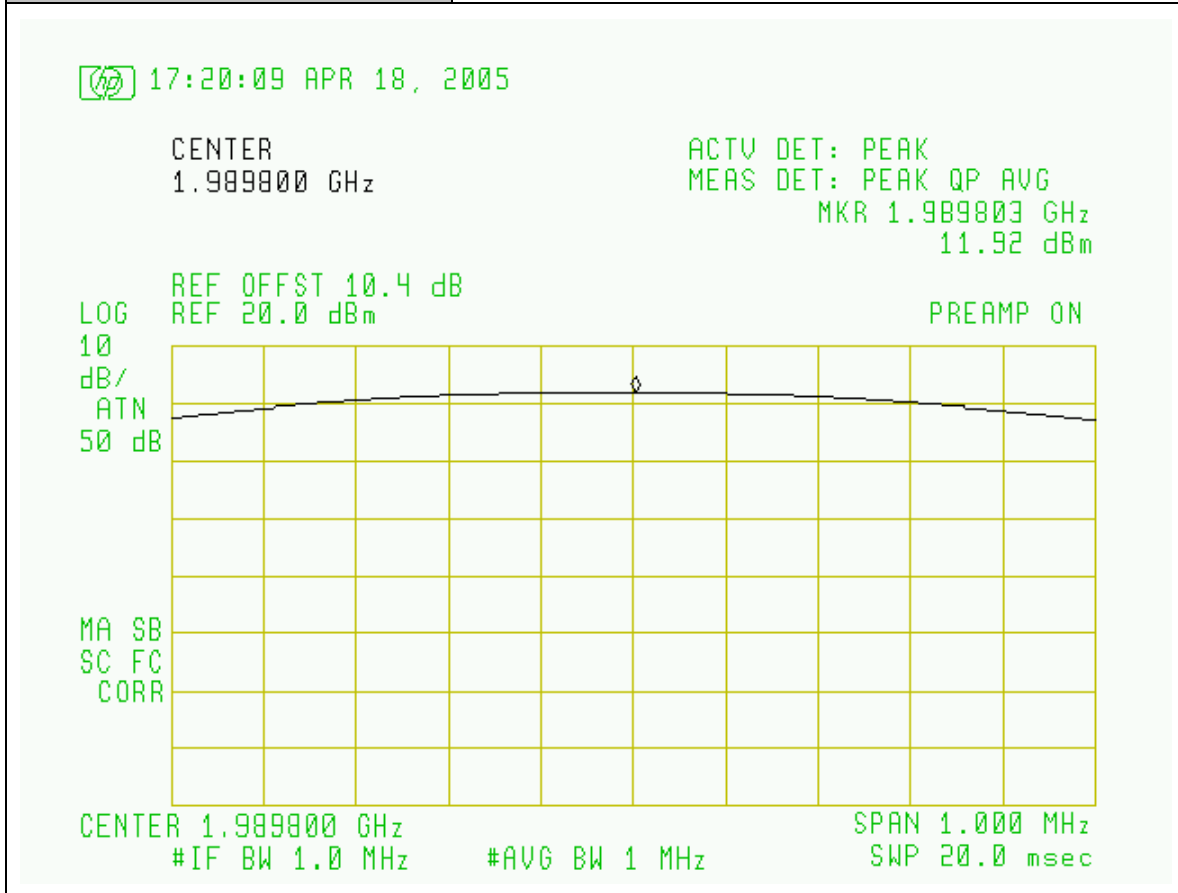
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel CDMA Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm



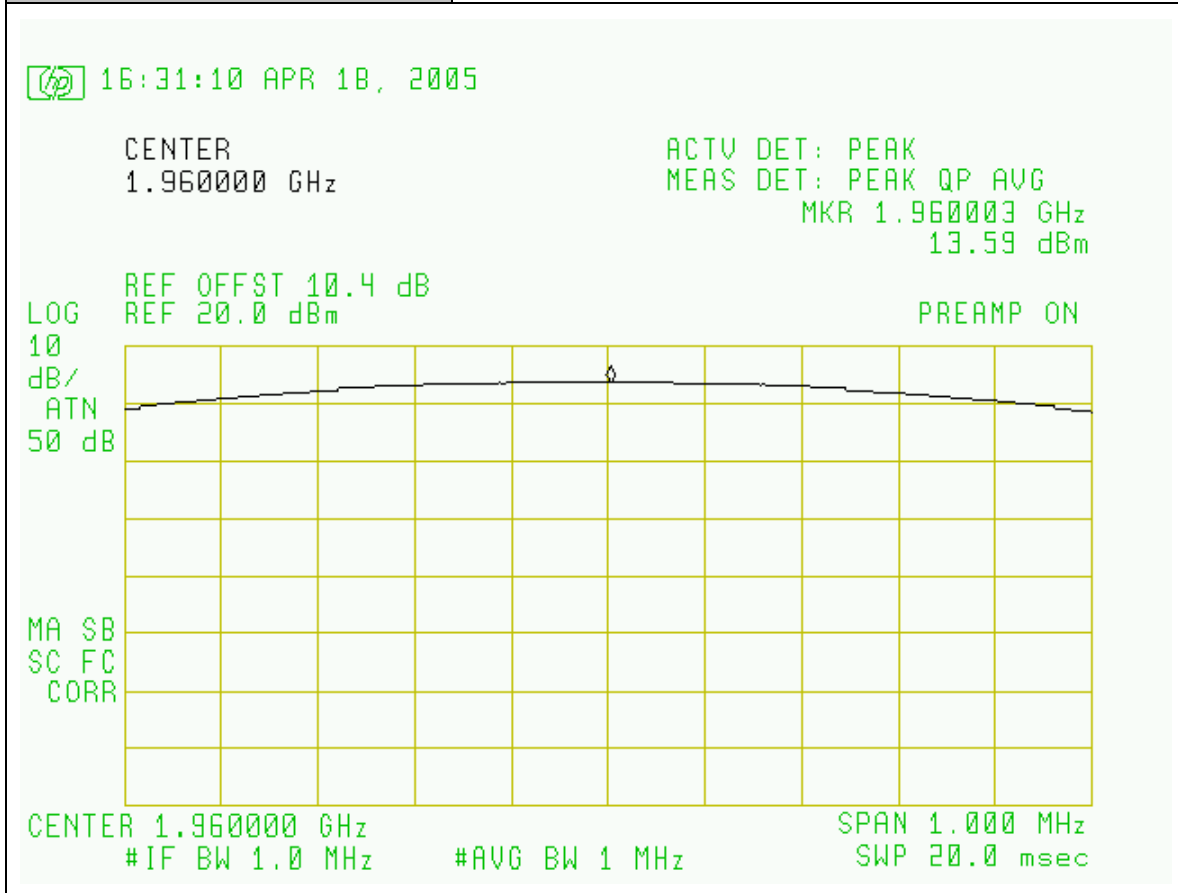
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel GSM Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm



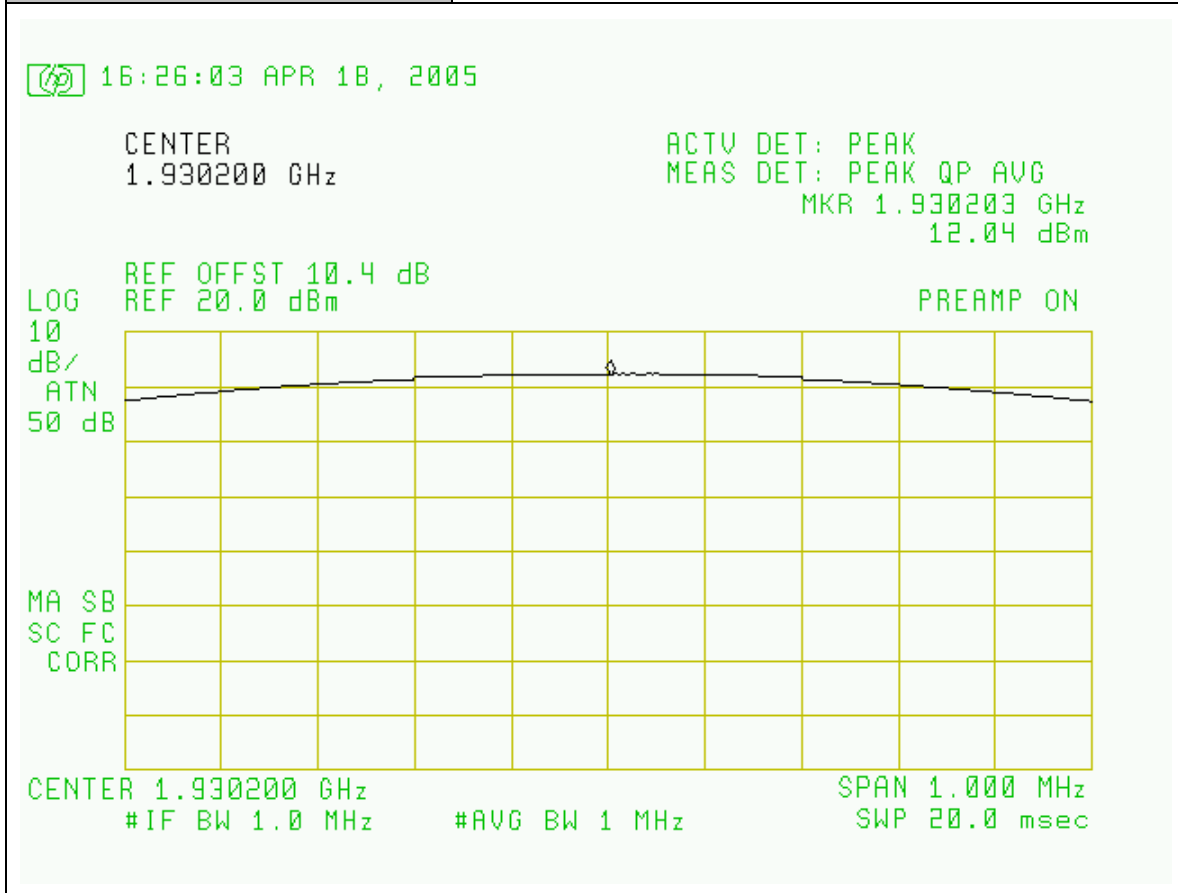
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel GSM Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	RF Output Power: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel GSM Modulation
<b>Configuration:</b>	Donor Antenna Connector was connected to SG. Input: -50dBm



**Section 4. Occupied Bandwidth**

<b>Name of Test:</b>	<i>Occupied Bandwidth</i>	<b>Test Standard:</b>	<i>2.1049(i)</i>
<b>Tested By:</b>	WEI LI	<b>Test Date:</b>	04/18/2005-05/06/2005

**Minimum Standard:** Not defined by FCC. Input vs. Output.

**Method of Measurement:** Spectrum Analyzer Settings:  
RBW: CDMA (30 kHz), GSM (30 kHz), NADC (1 kHz) and CDPD (1 kHz)  
VBW:  $\geq$ RBW  
Span: As required  
Sweep: Auto  
Input Signal Characteristics:  
RF level: Maximum recommended by manufacturer

**Test Result:**

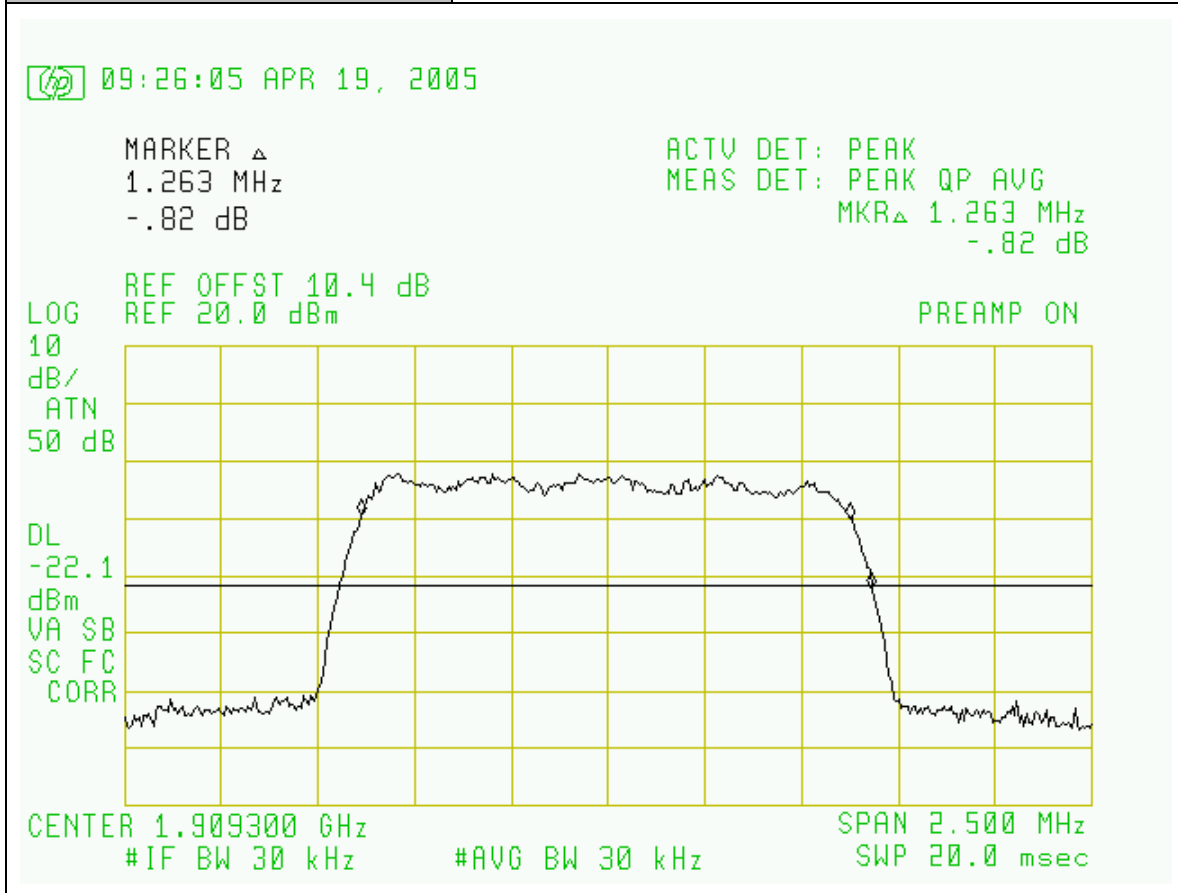
**Complies**

**Test Data:**

Attached Plots

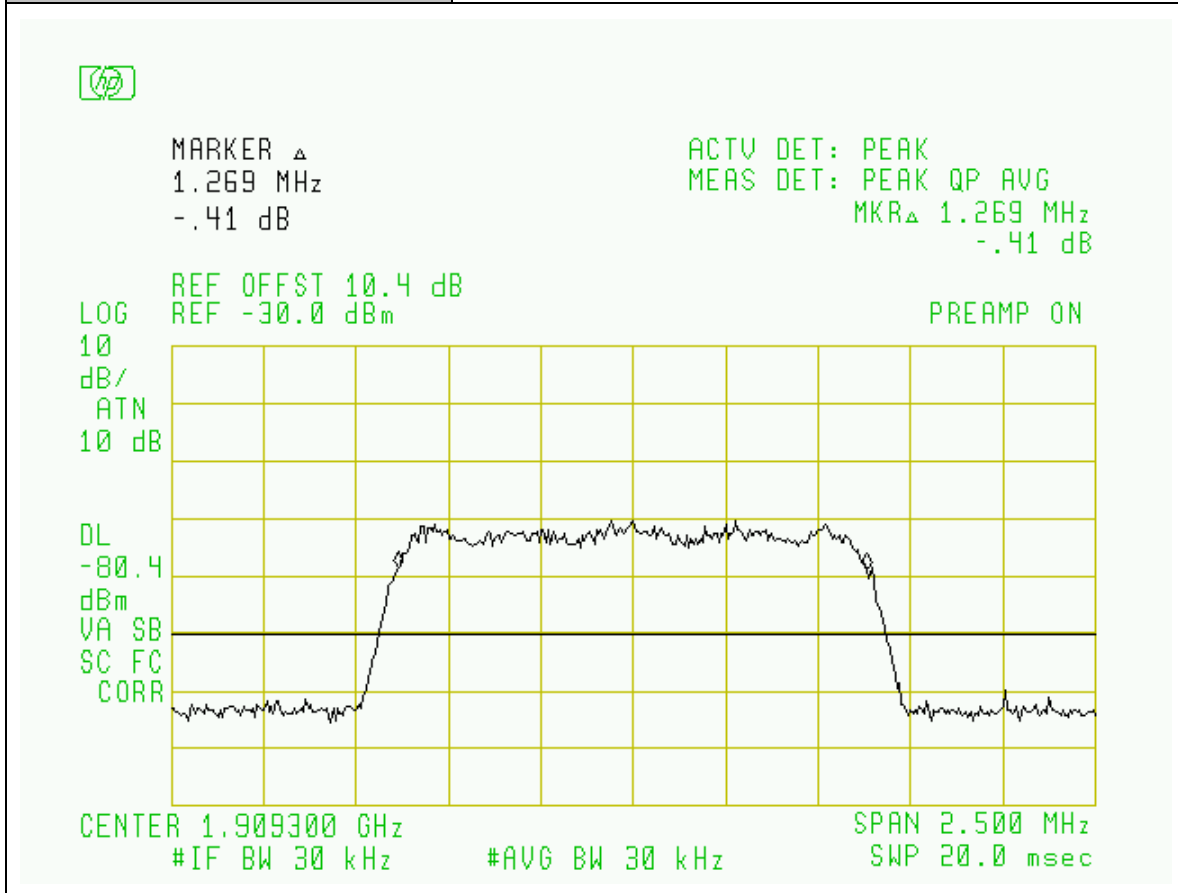
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

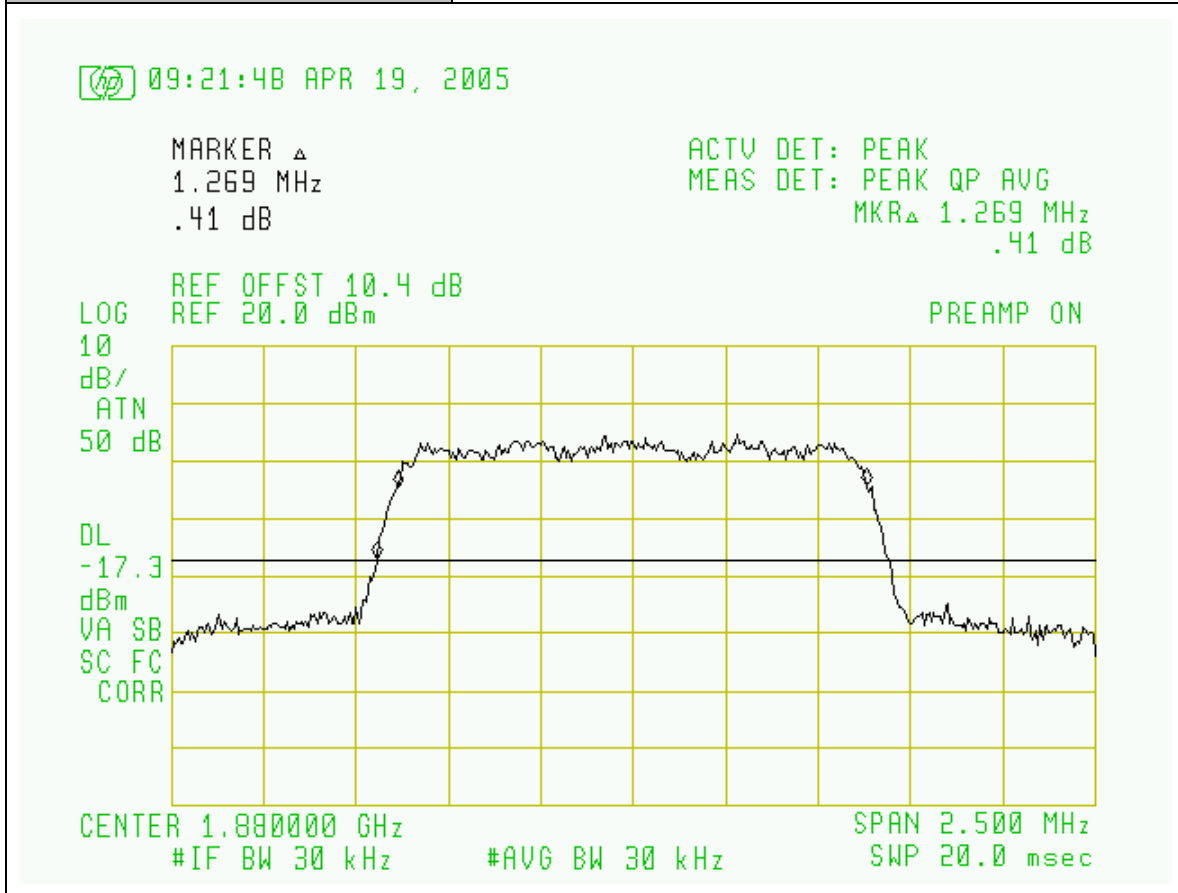
<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG





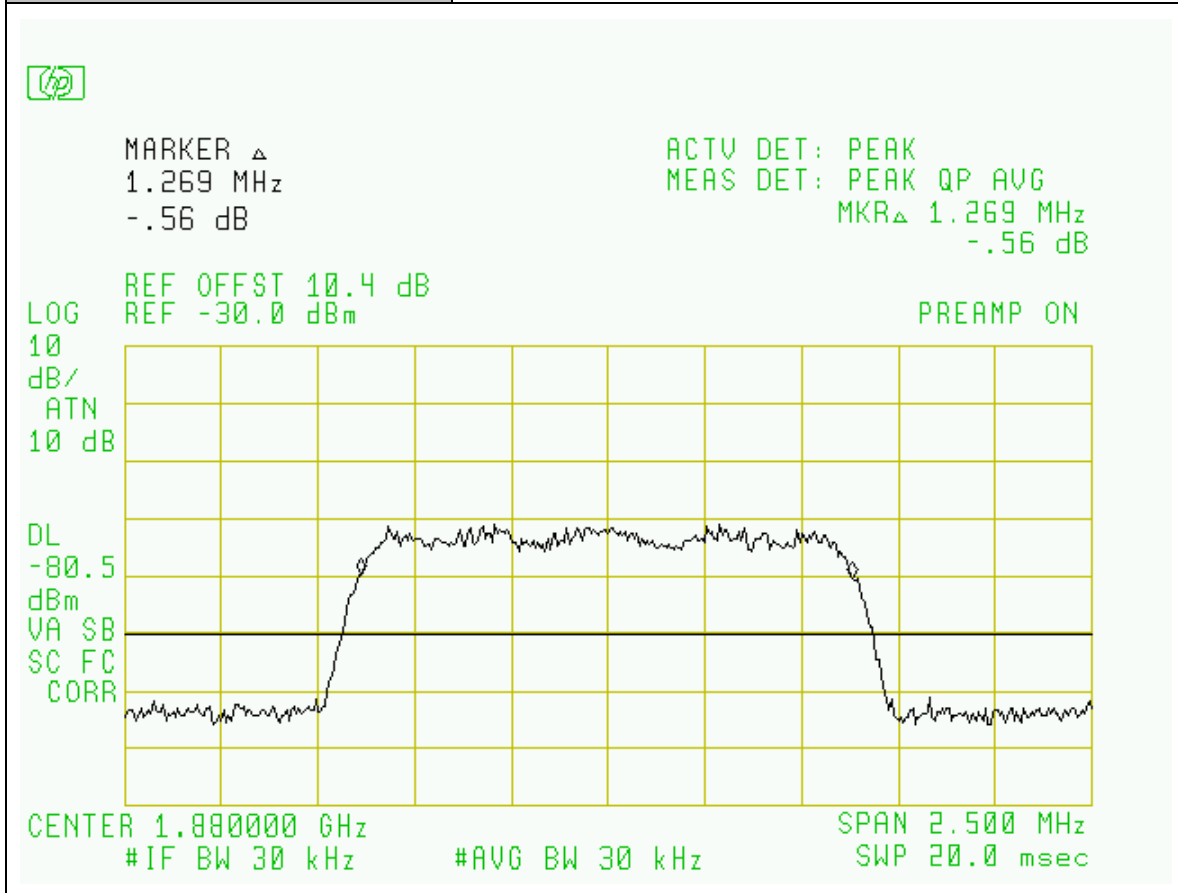
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: Cellular Bands
<b>Plot Name:</b>	Uplink, Mid-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



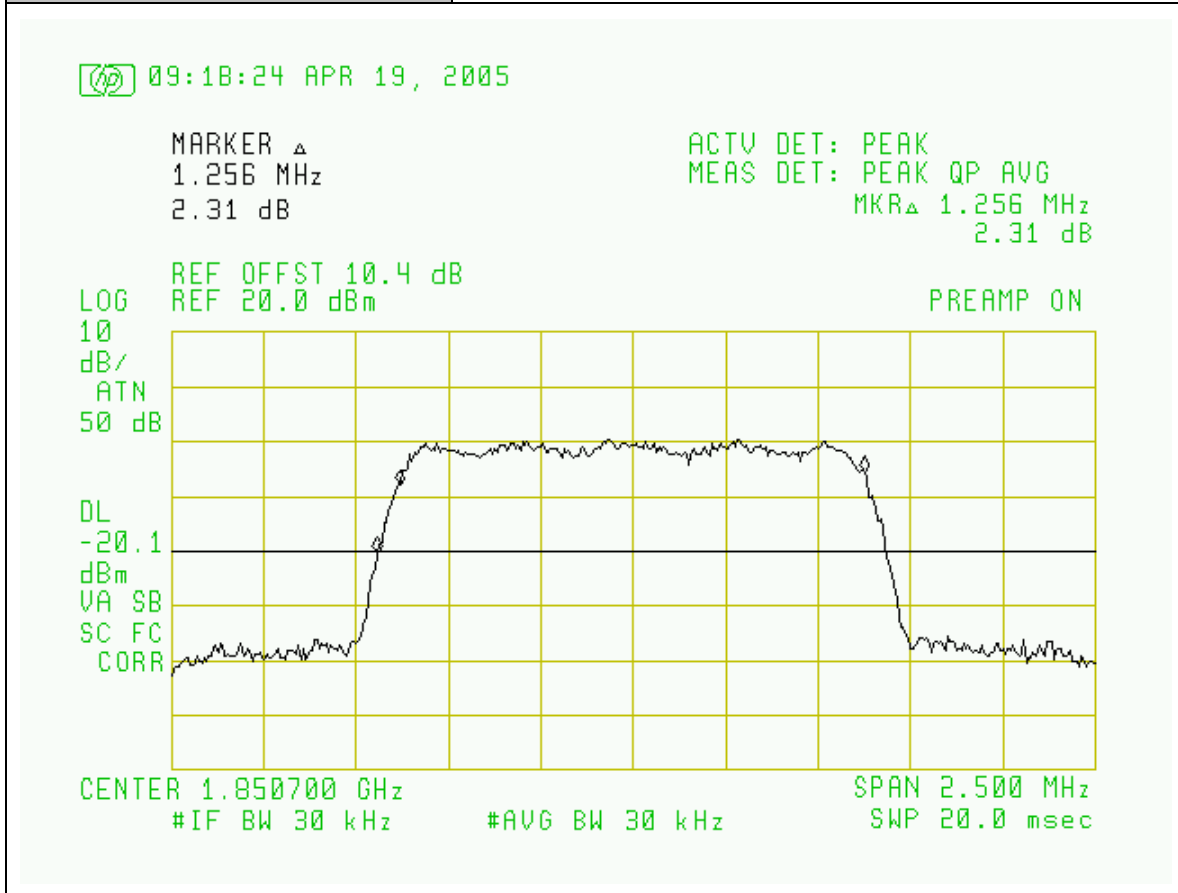
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Mid-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



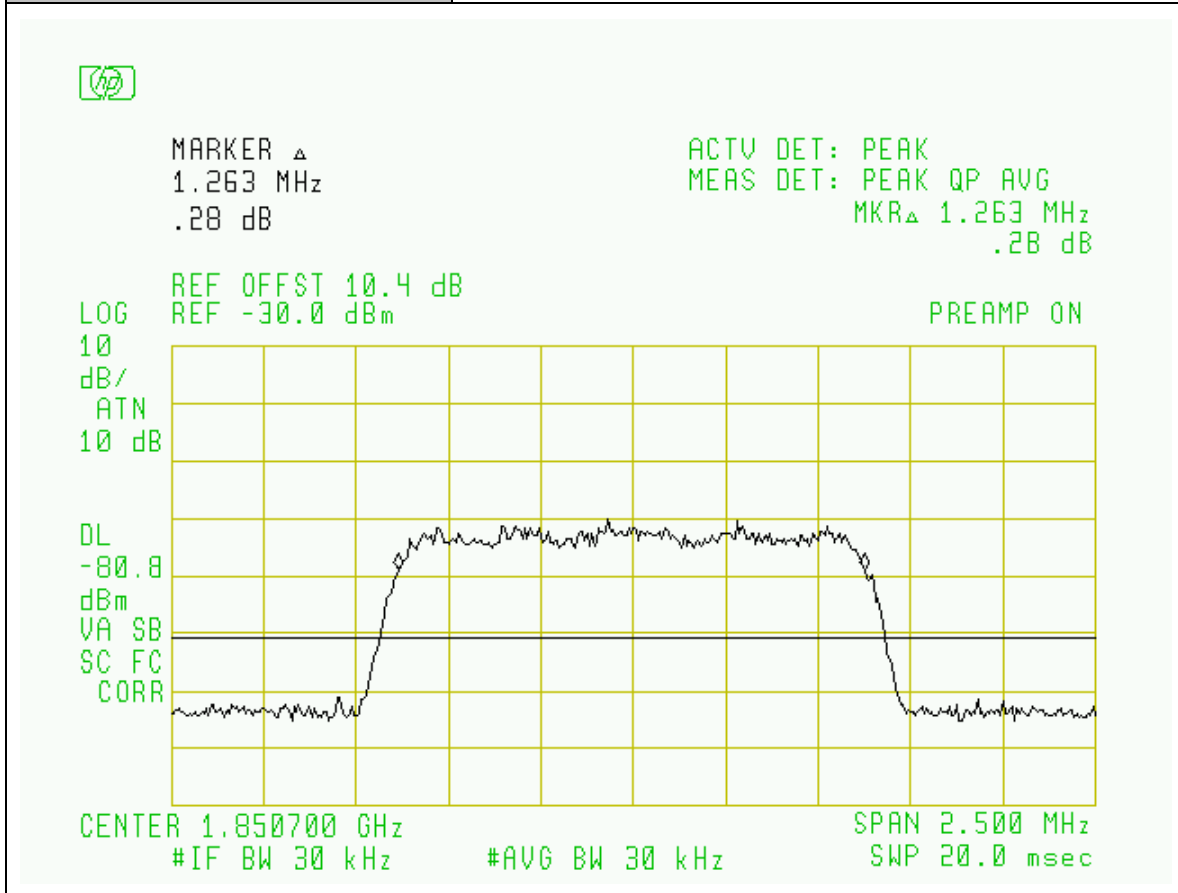
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



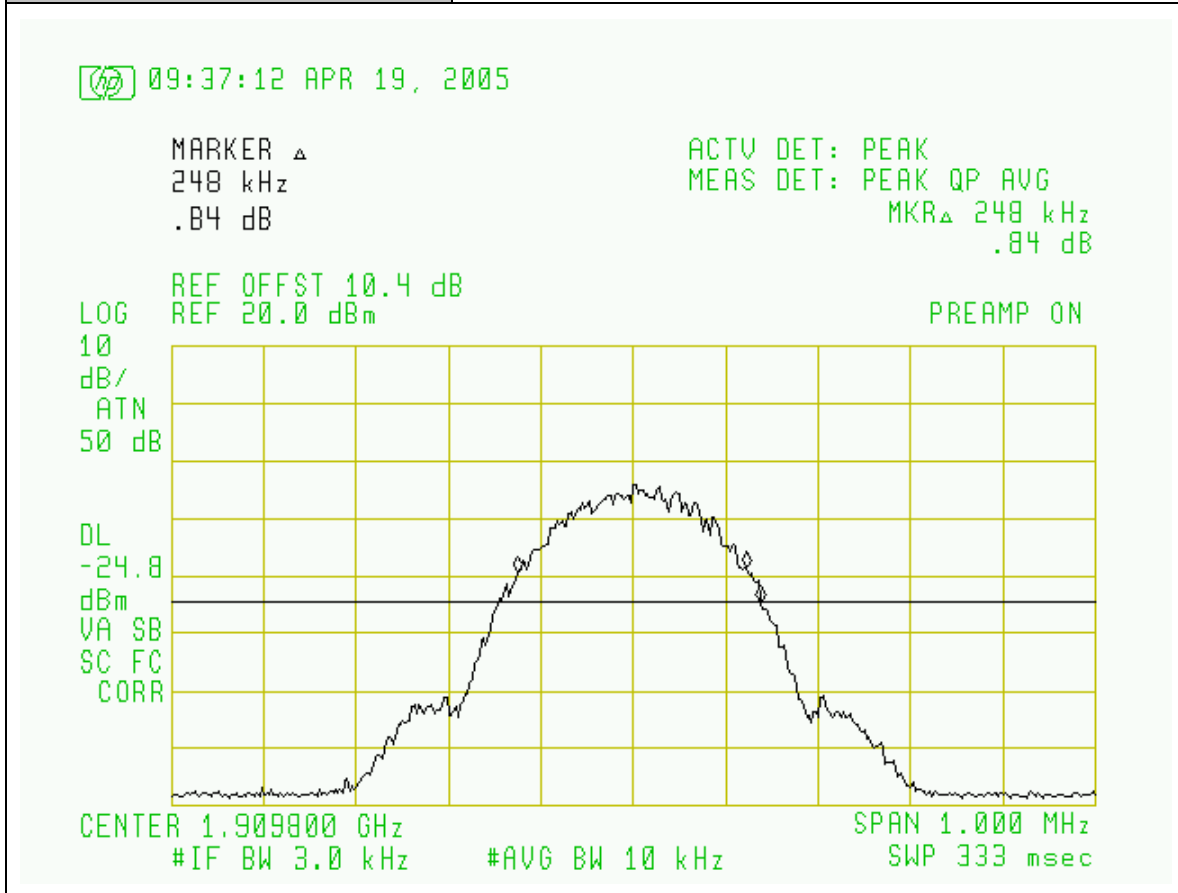
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



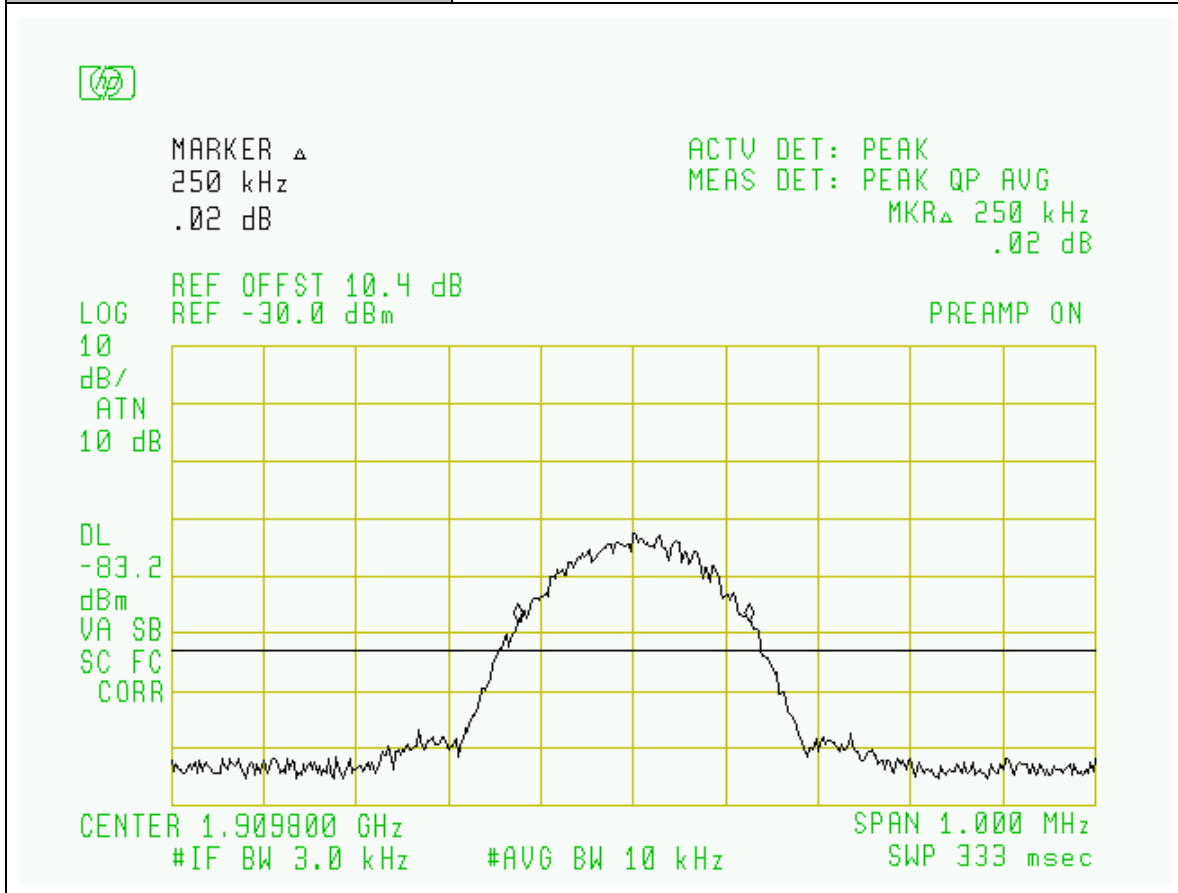
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



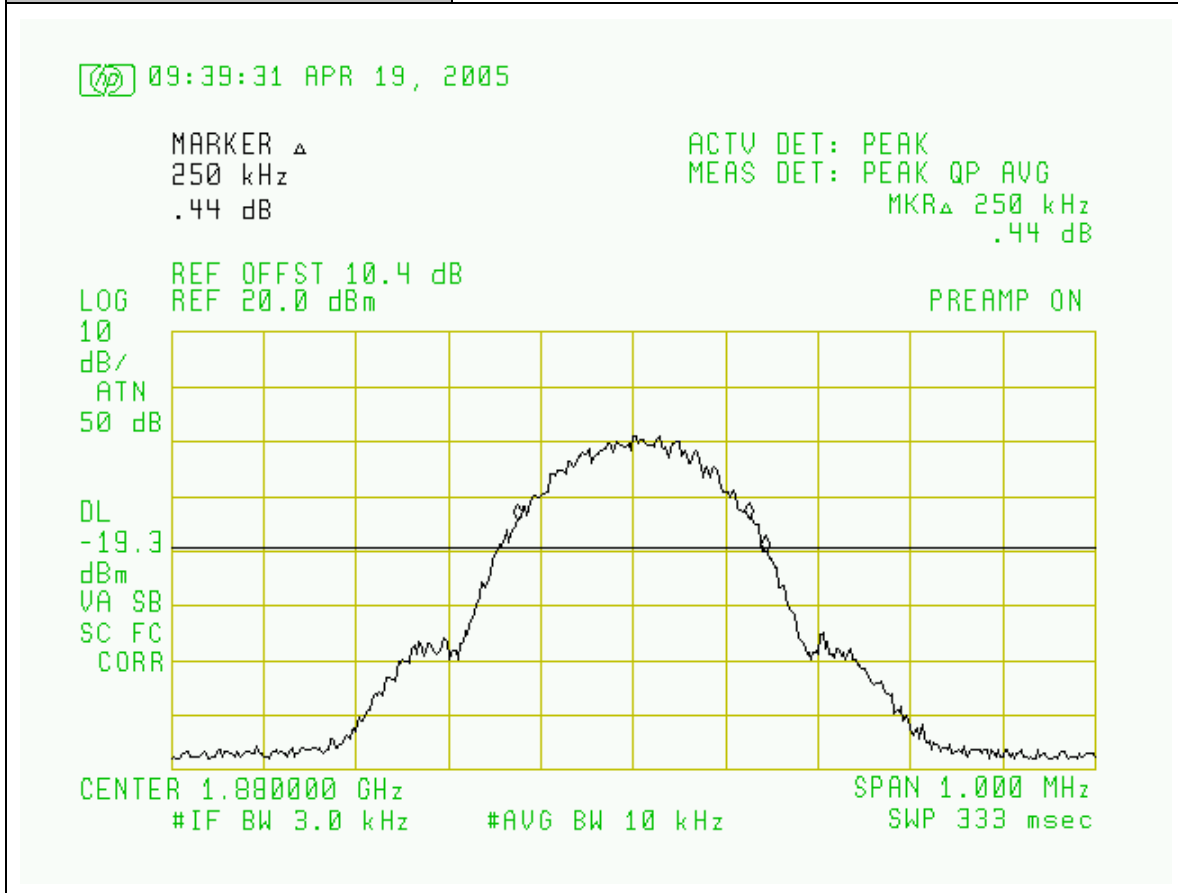
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Hi-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



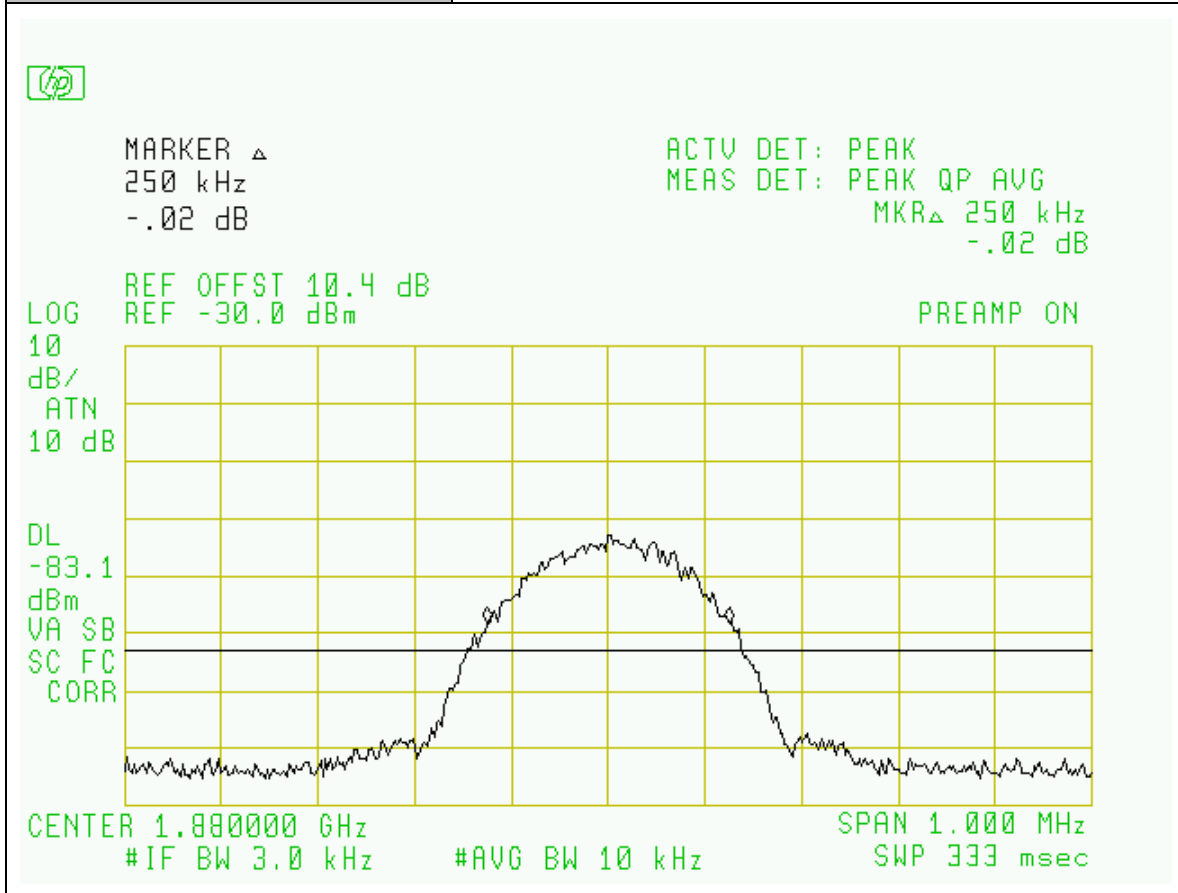
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Mid-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

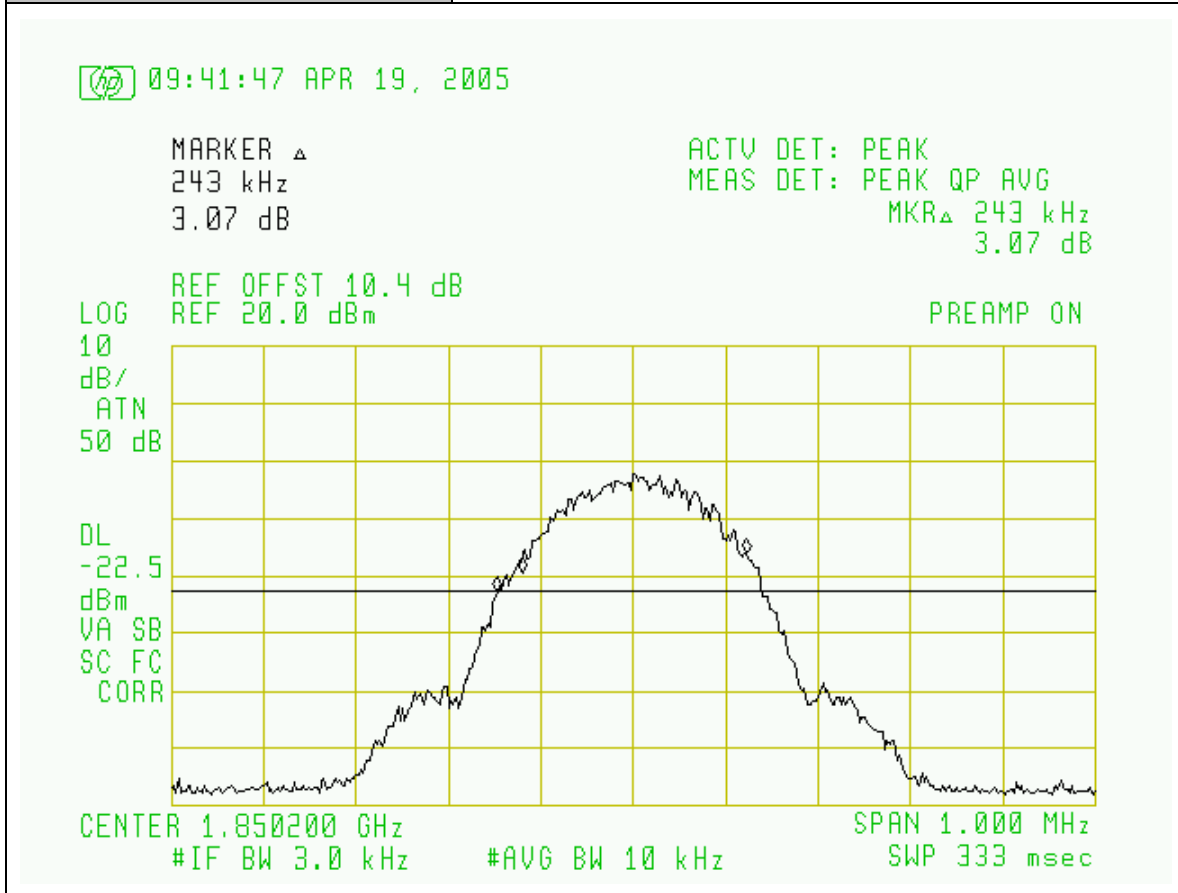
<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Mid-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG





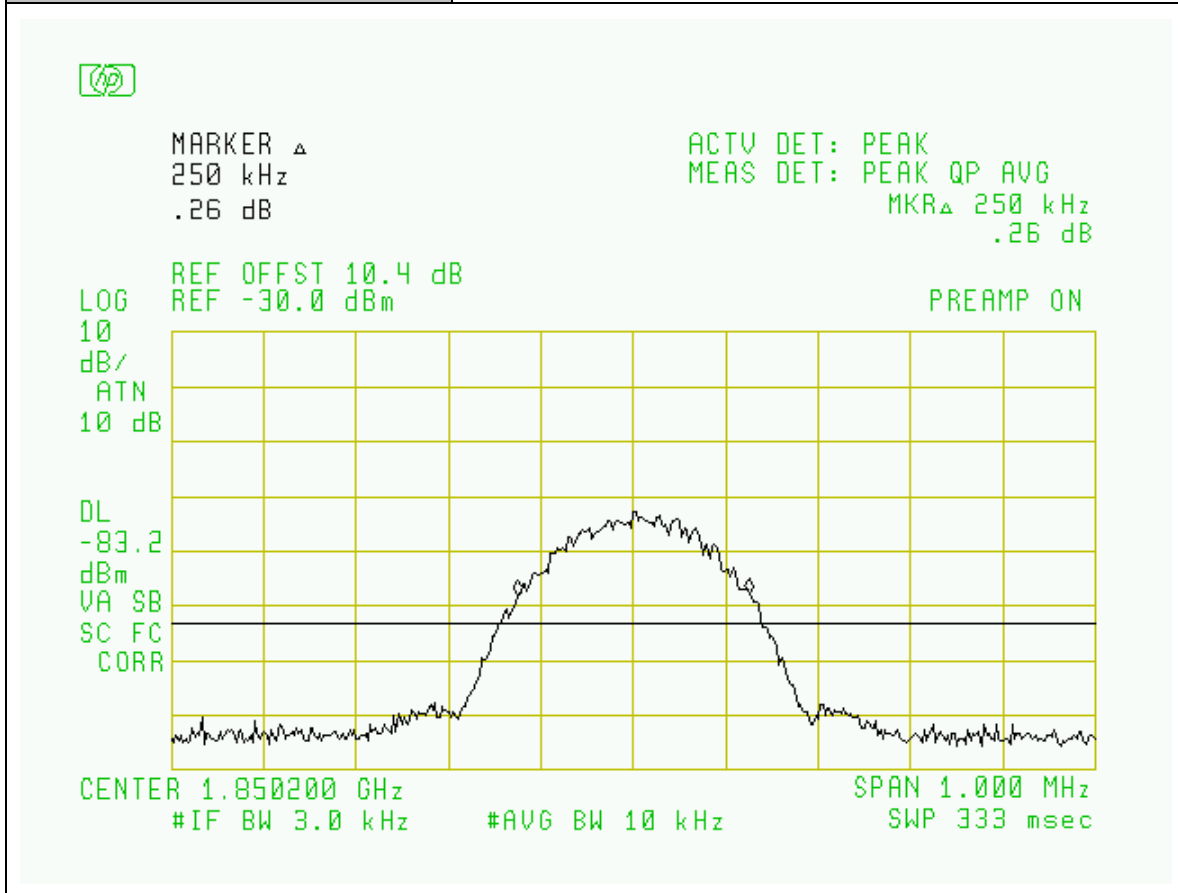
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT BTS



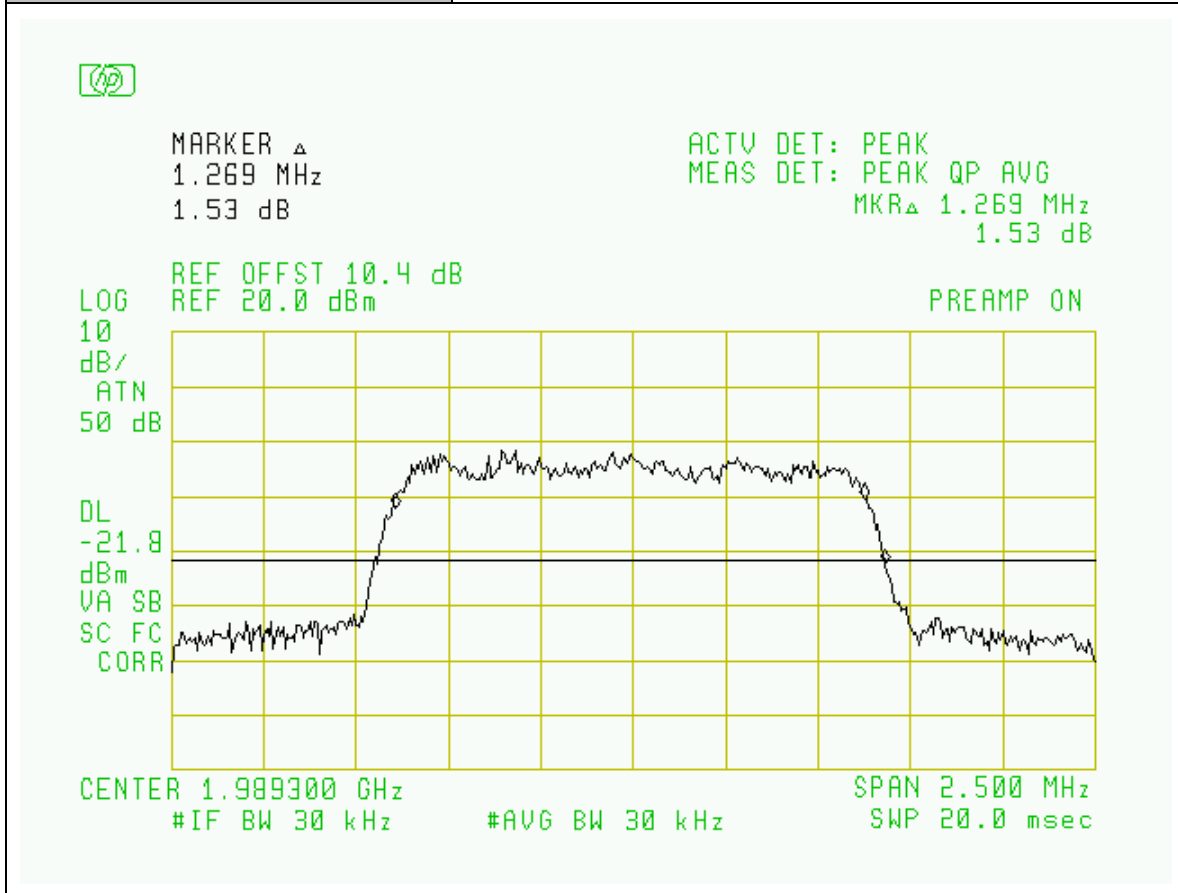
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Uplink, Low-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



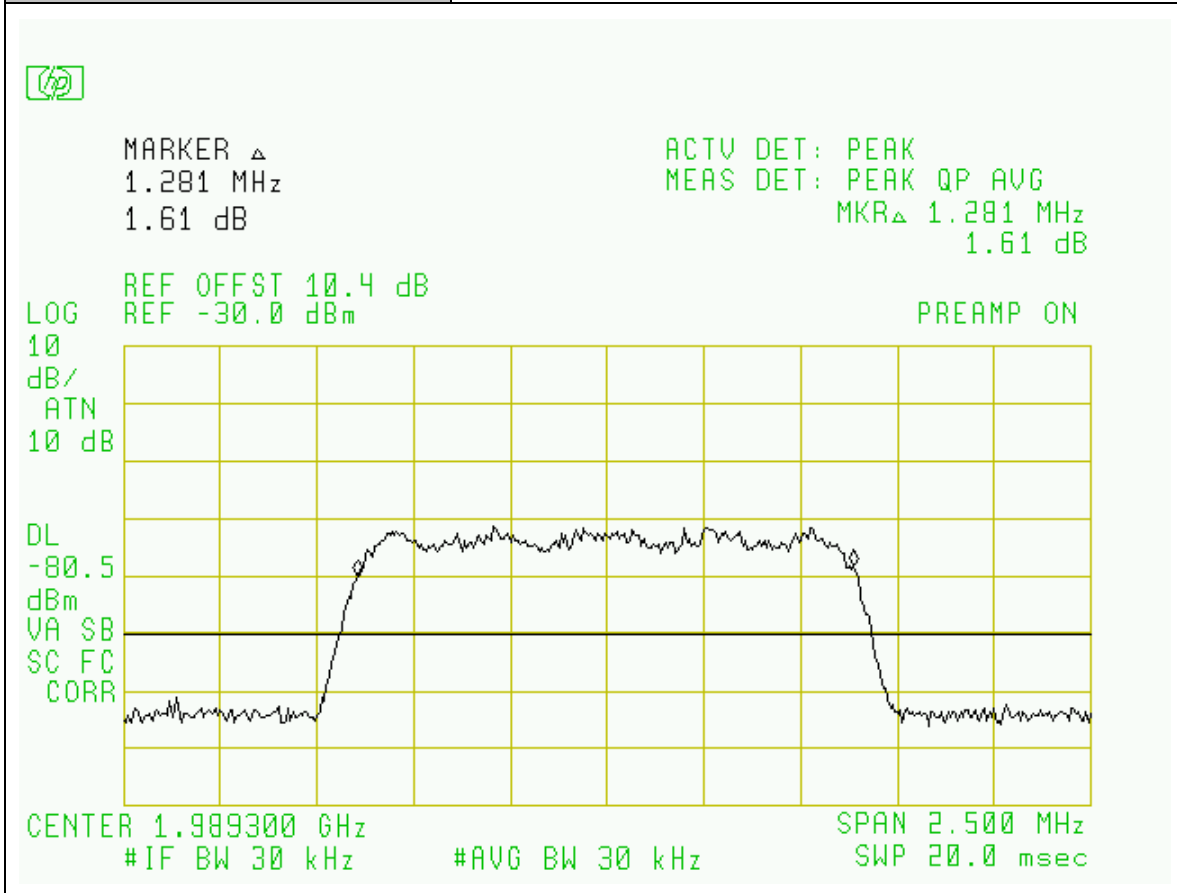
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT MOBILE



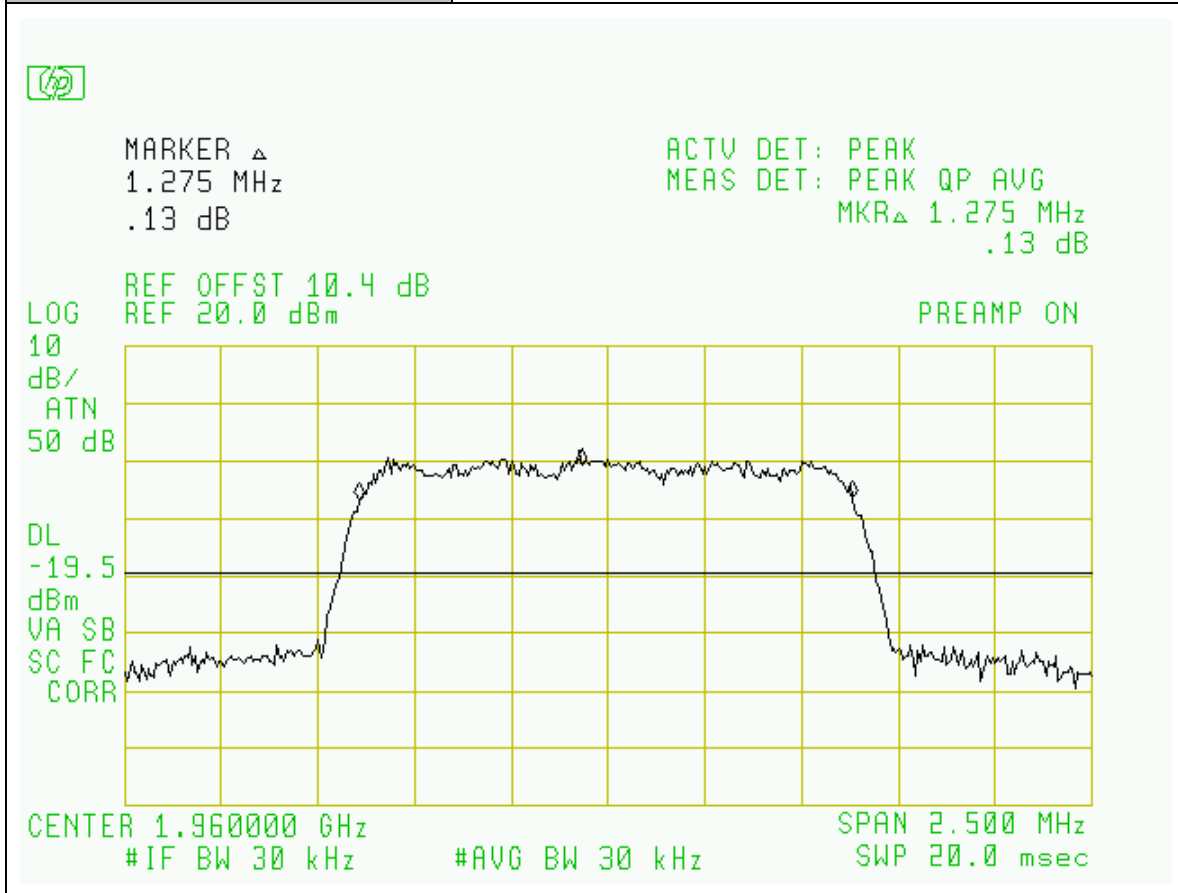
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



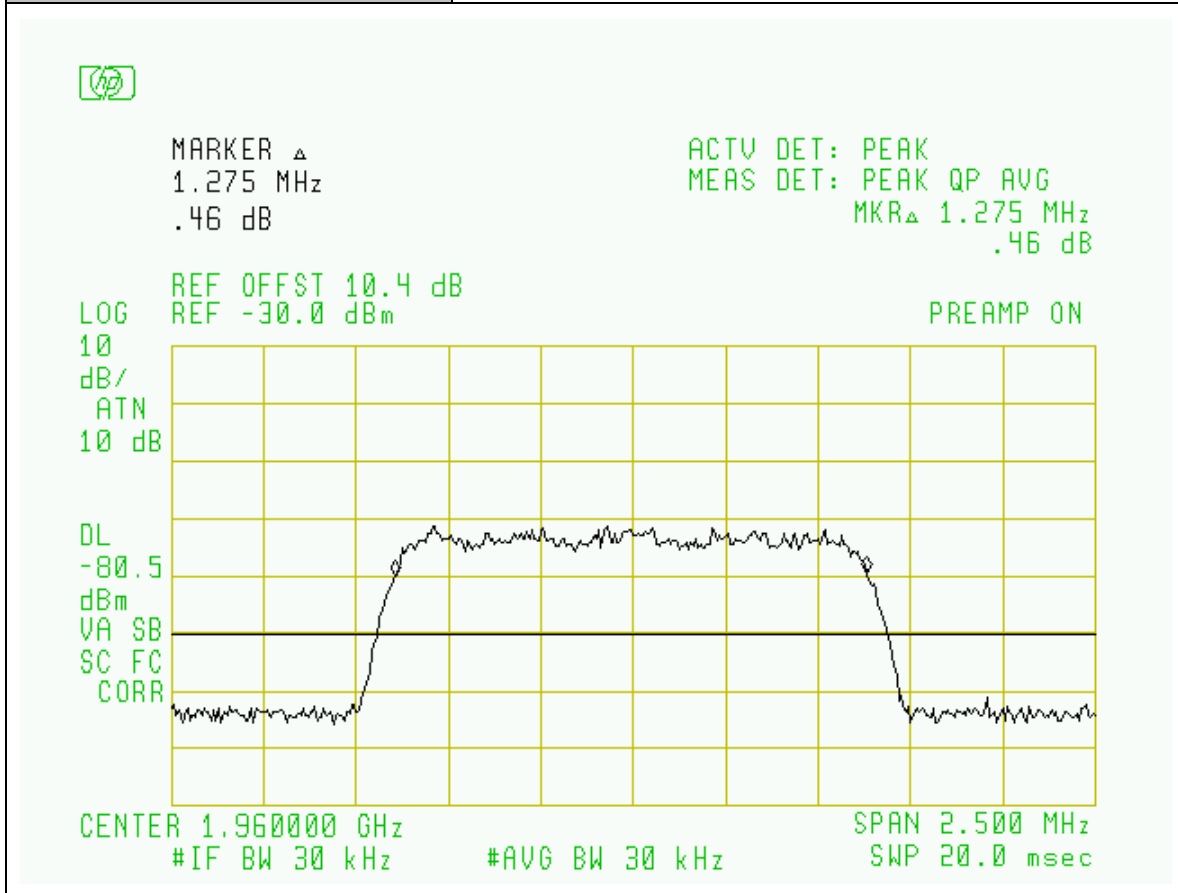
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT MOBILE



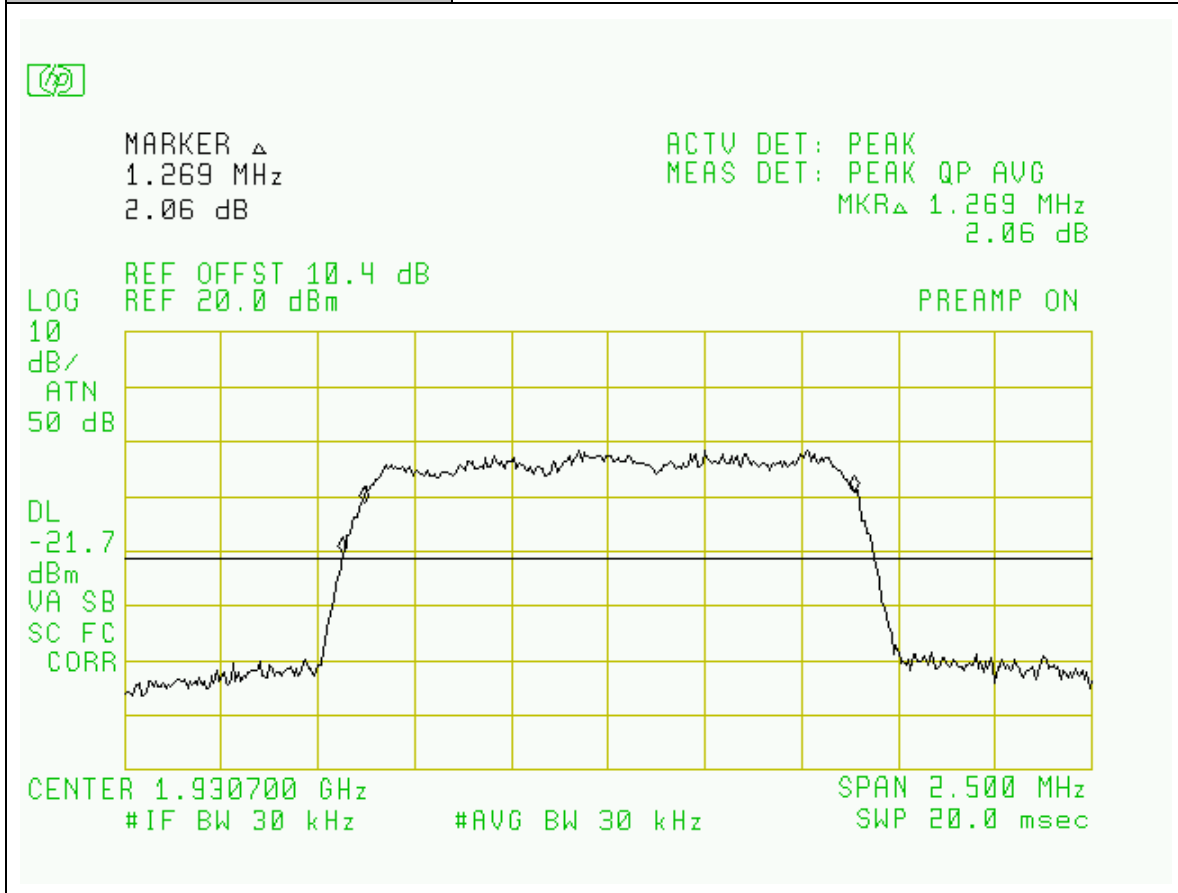
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



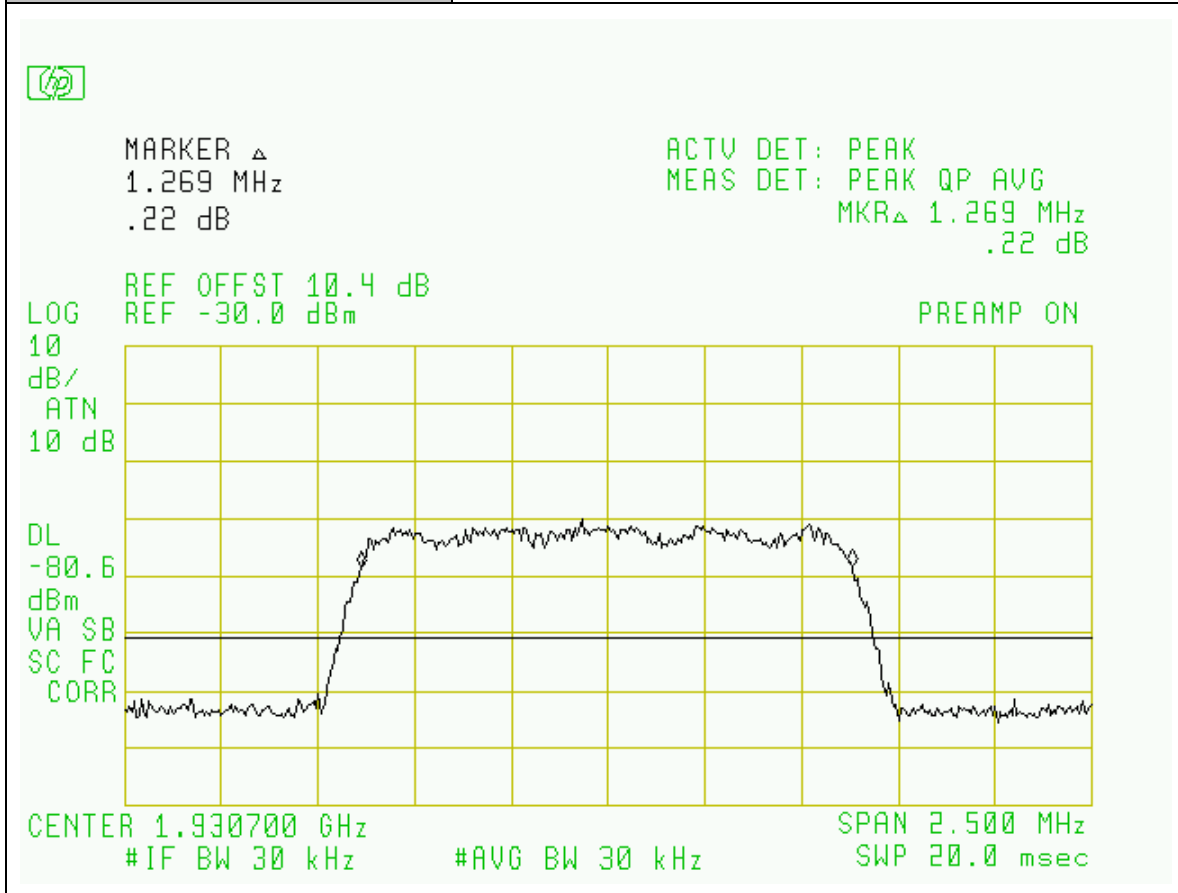
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT MIBILE



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

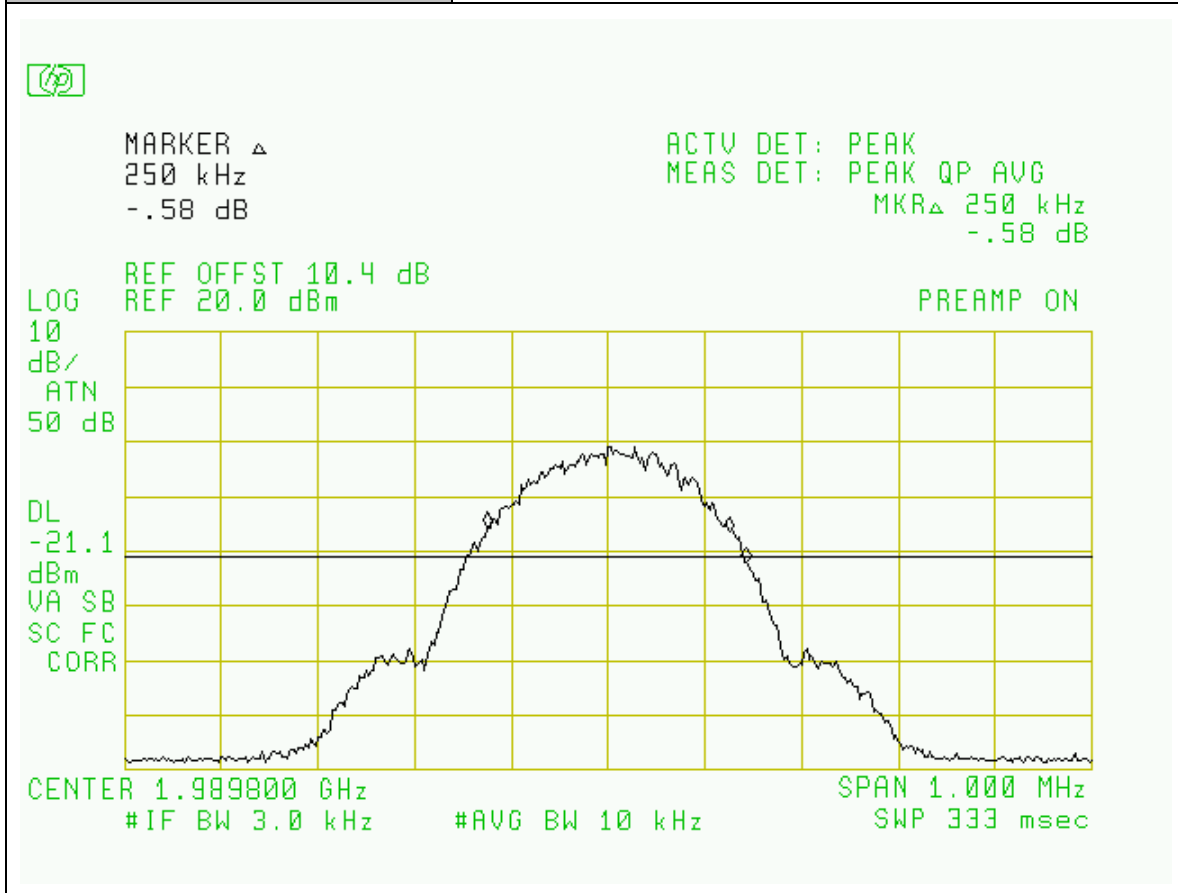
<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel, CDMA Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG





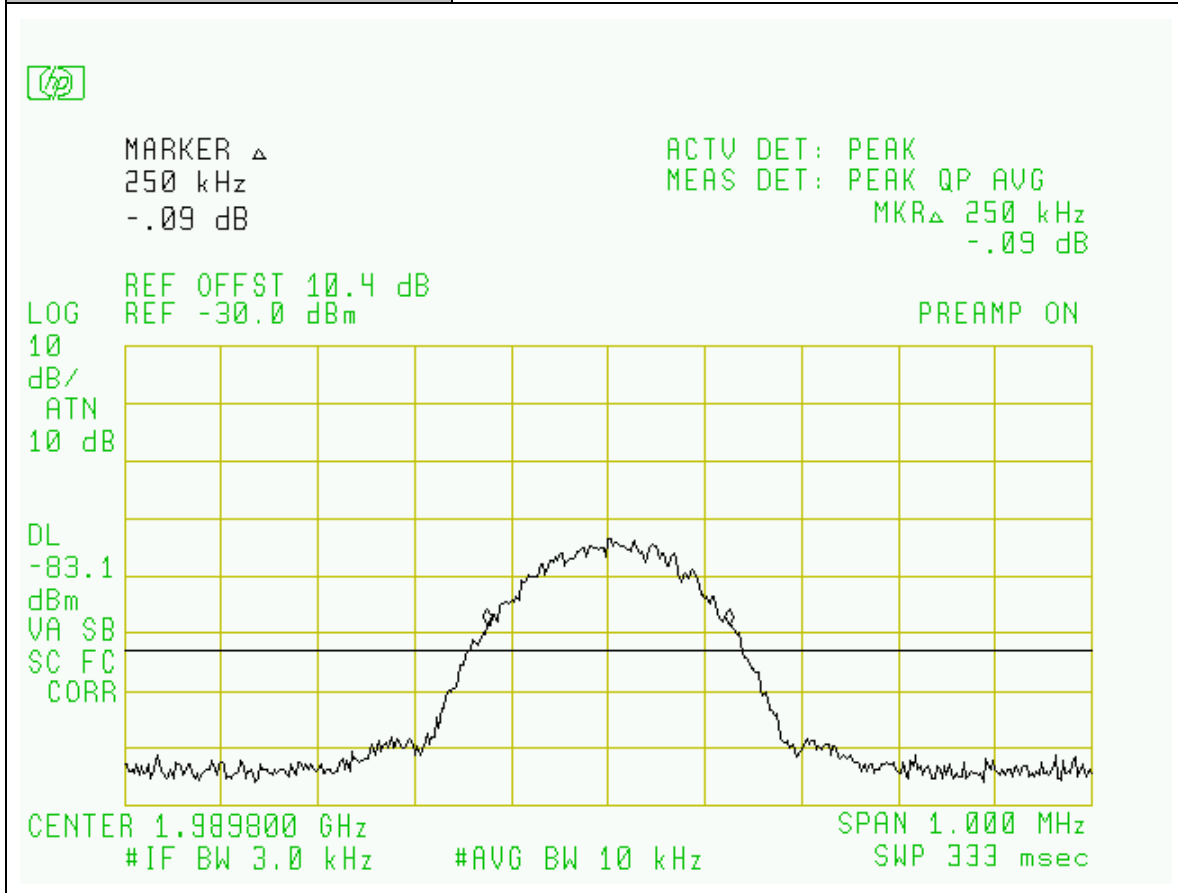
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT MOBILE



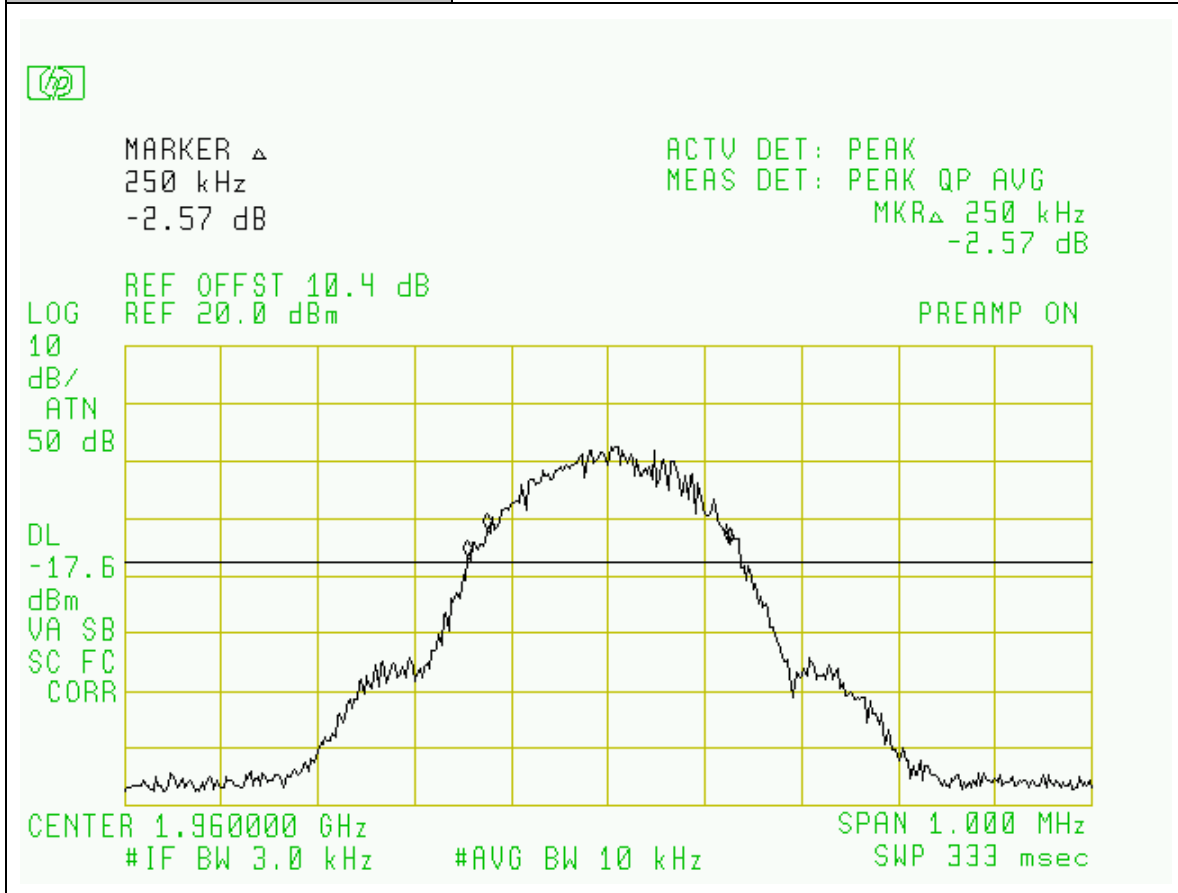
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Hi-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



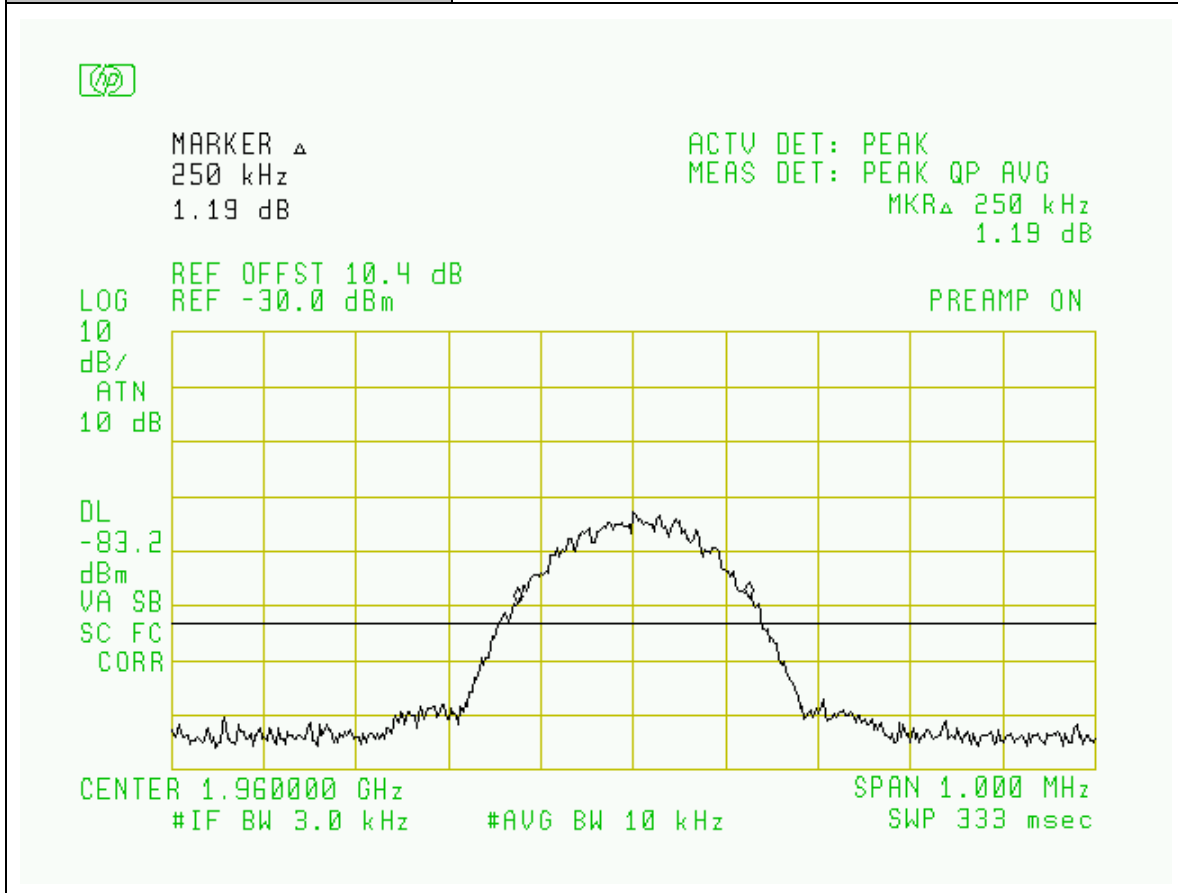
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: EUT MOBILE



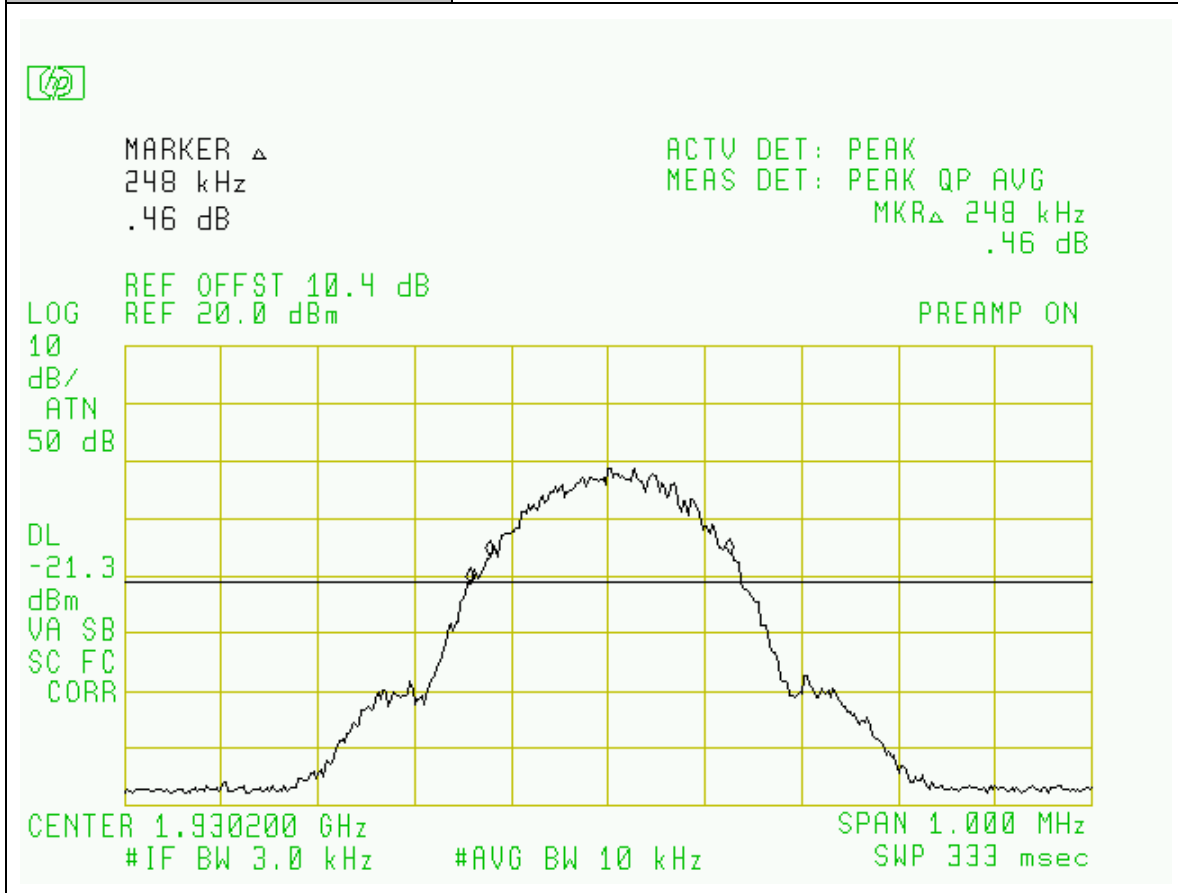
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Mid-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



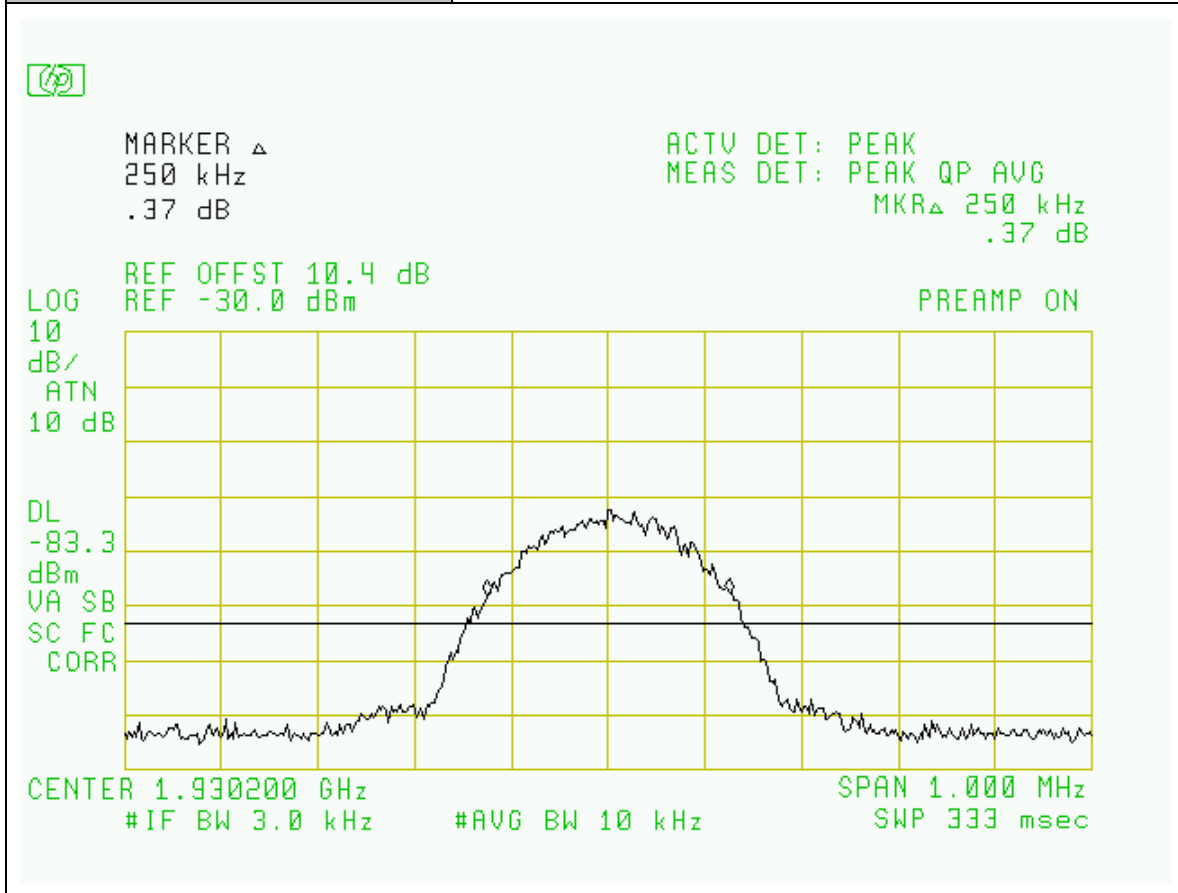
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -25dBm, Output Port: EUT MOBILE



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Occupied Bandwidth: PCS Bands
<b>Plot Name:</b>	Downlink, Low-Channel, GSM Modulation
<b>Configuration:</b>	SG Input: -55dBm, Output Port: SG



**Section 5. Spurious Emissions at Antenna Terminals**

<b>Name of Test:</b>	<i>Spurious Emissions at Antenna Terminals</i>	<b>Test Standard:</b>	22.917 24.238(a)
<b>Tested By:</b>	WEI LI EDWARD LEE	<b>Test Date:</b>	04/18/2005-05/06/2005

**Minimum Standard:** Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least  $43 + 10 \log P$ . This is equivalent to -13 dBm absolute power.

Para. No. 24.238(a). The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under conditions specified in the instruction manual and/or alignment procedure, shall not less than  $43+10 \log$  (mean output power in watts) dBc below the mean power output outside a licensee's frequency block (-13dBm).

**Method of Measurement:** Spectrum Analyzer Settings:  
 RBW: 100 kHz. As required for digital modulations.  
 RBW: 1MHz. When frequency is located above 1GHz.  
 VBW:  $\square$ RBW  
 Start Frequency: 0 MHz  
 Stop Frequency: 13 GHz (Cellular), 22GHz (PCS)  
 Sweep: Auto

For Inter-modulation measurement: Two RF signals set as inputs. The frequencies of both RF signals shall be within the repeater's operating band. The spacing between both RF signals shall be the minimum possible spacing applied in a network. The level of both RF input signals shall be increased, until the maximum rated output power per channel, as declared by the manufacturer, is reached.

Frequencies:  $f1=F_{(Low\ CH/Mid\ CH/High\ CH)}$ ,  $f2=f1 \pm \Delta$

Spacing  $\Delta=2.5\text{MHz}$  for CDMA and GSM

Each RF Input Level:

about -3dB comparing to the max. input level of single RF Input test

**Test Result:**

**Complies**

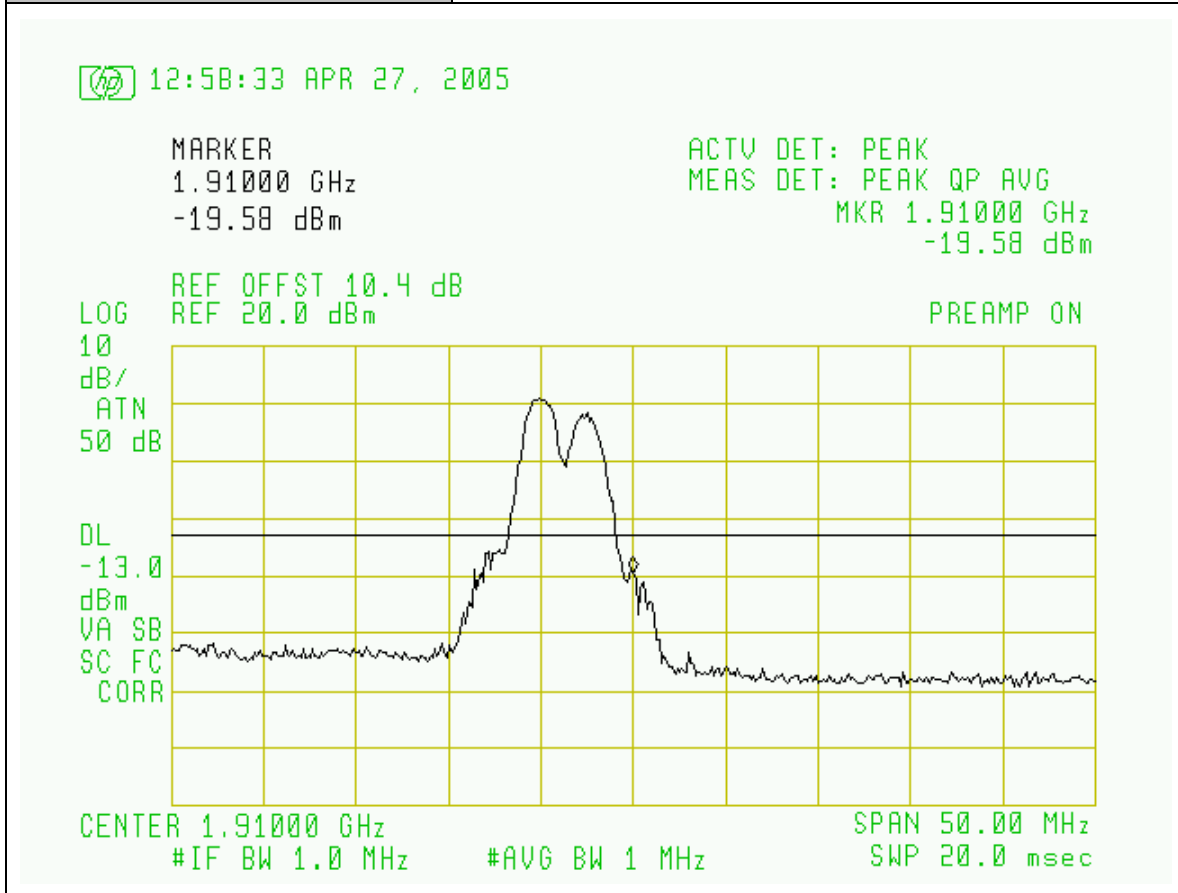
**Test Data:**

Attached Plots



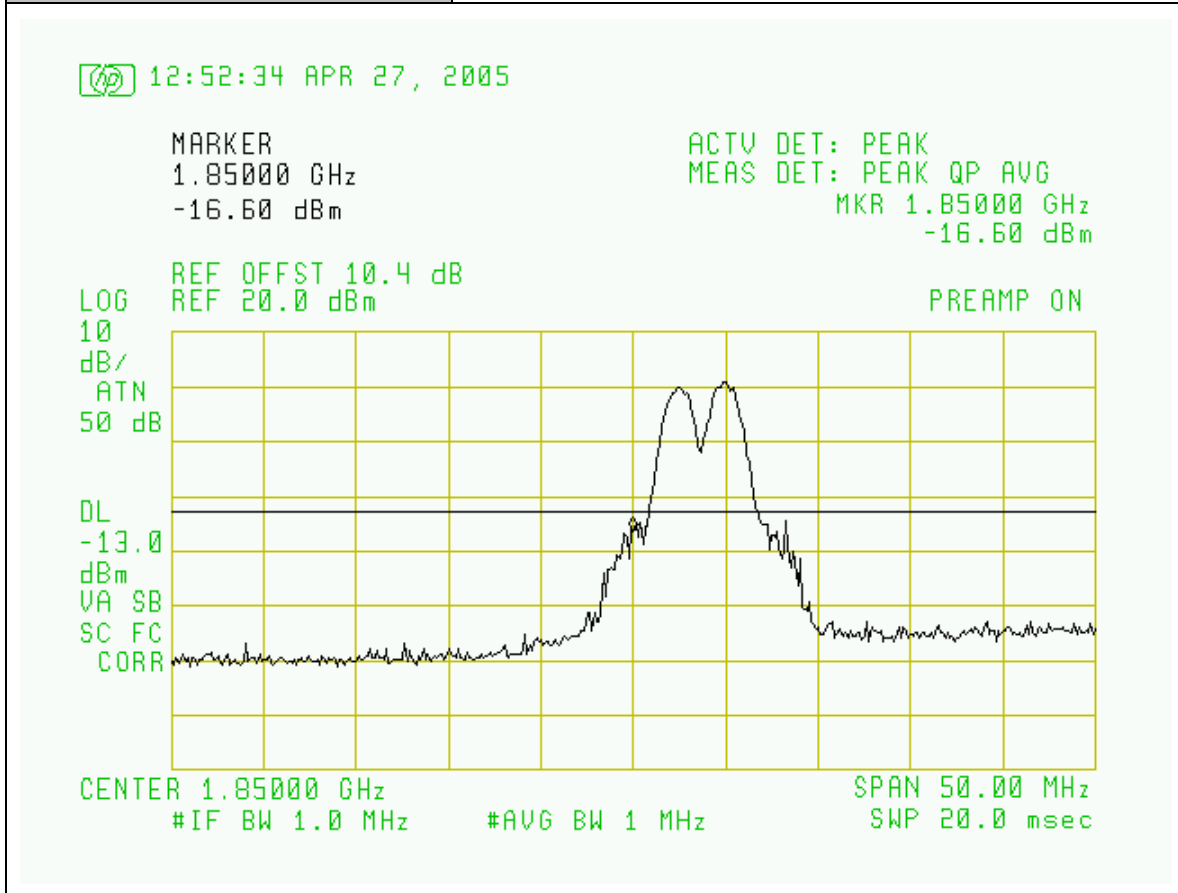
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	UL, Hi-Chn, Intermodulation, Upper Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



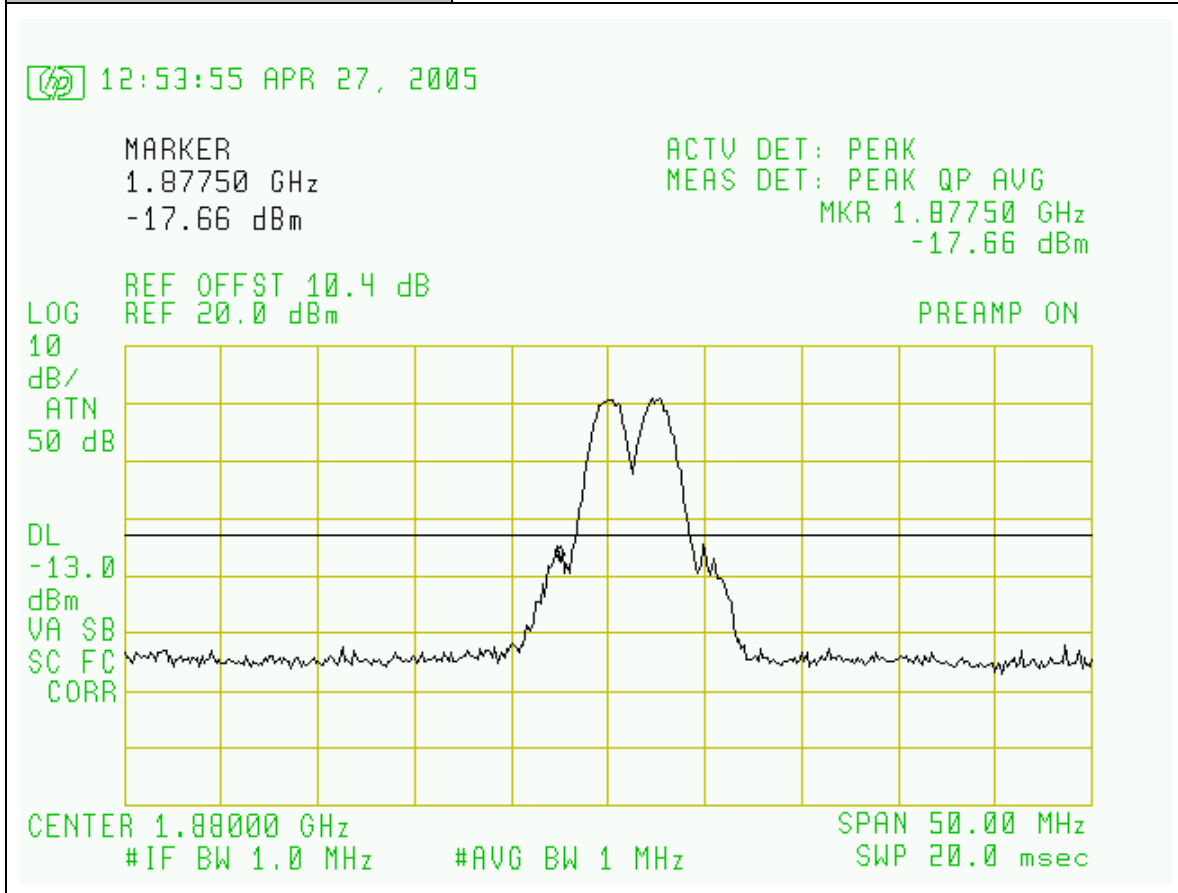
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	UL, Low-Chn, Intermodulation, Lower Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



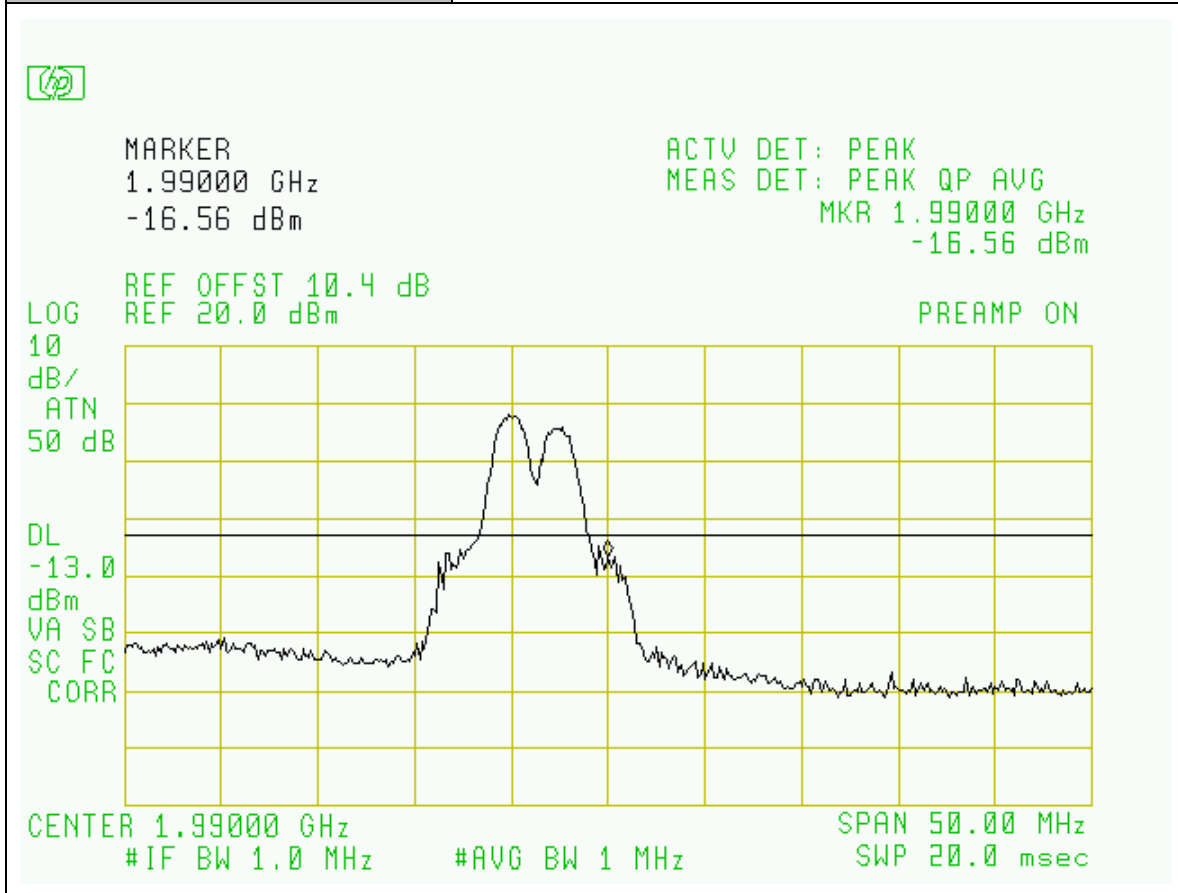
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Mid-Chn, Intermodulation
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



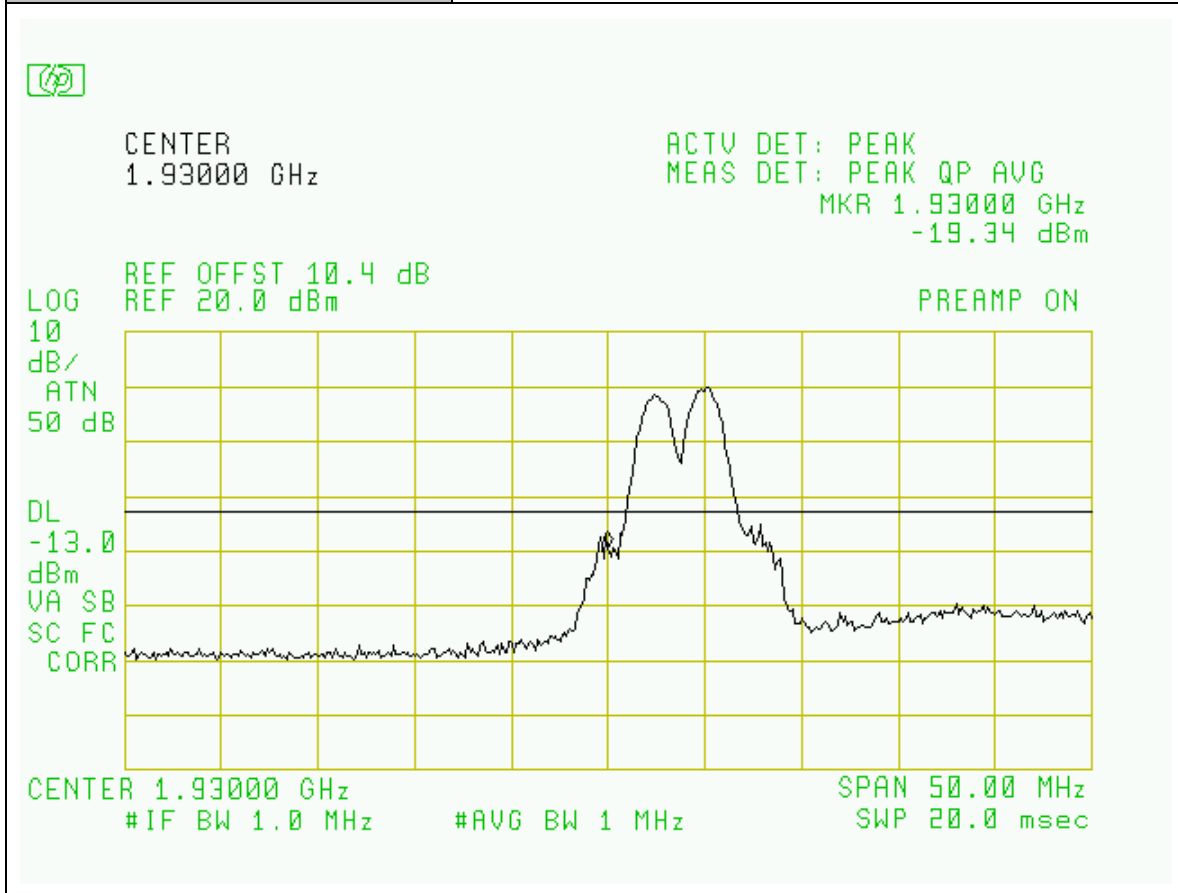
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	DL, High-Chn, Intermodulation, Upper Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



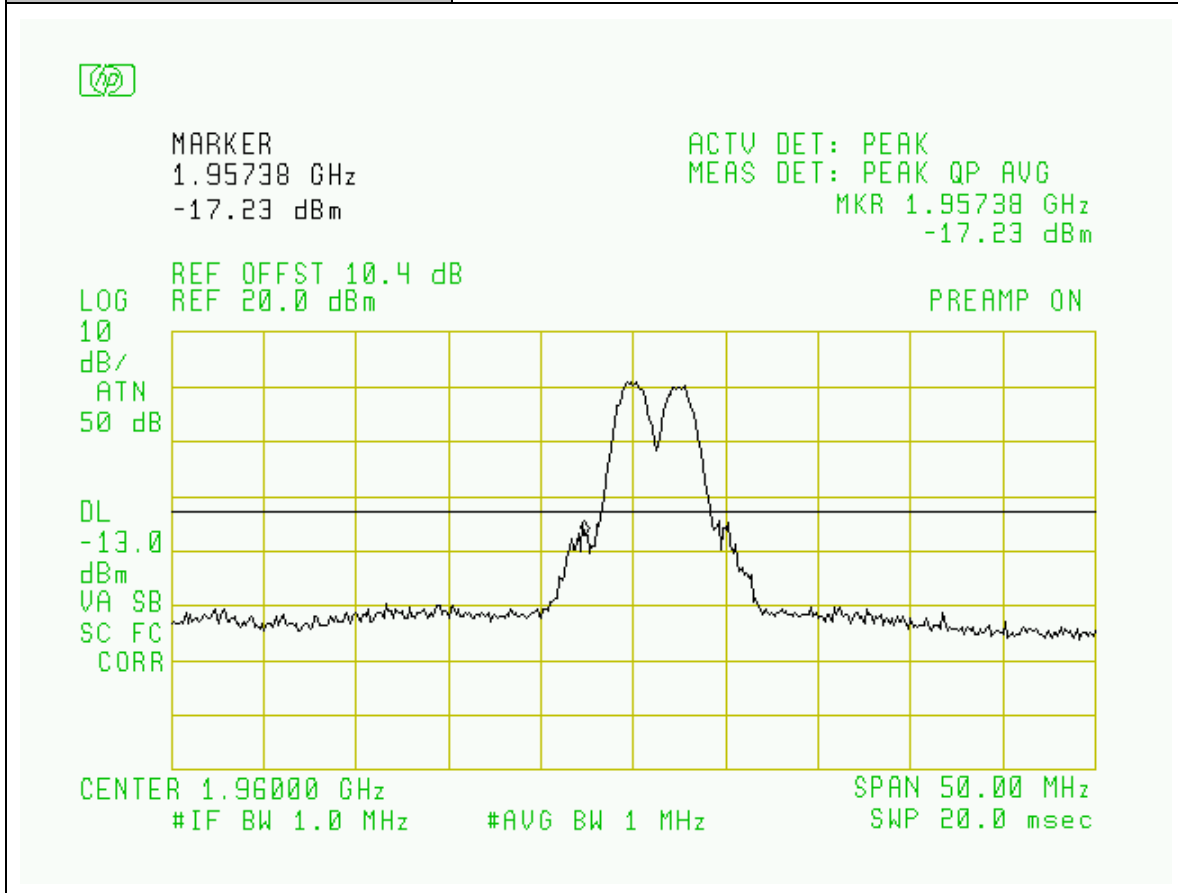
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>DL, Low-Chn, Intermodulation, Lower Bandedge</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



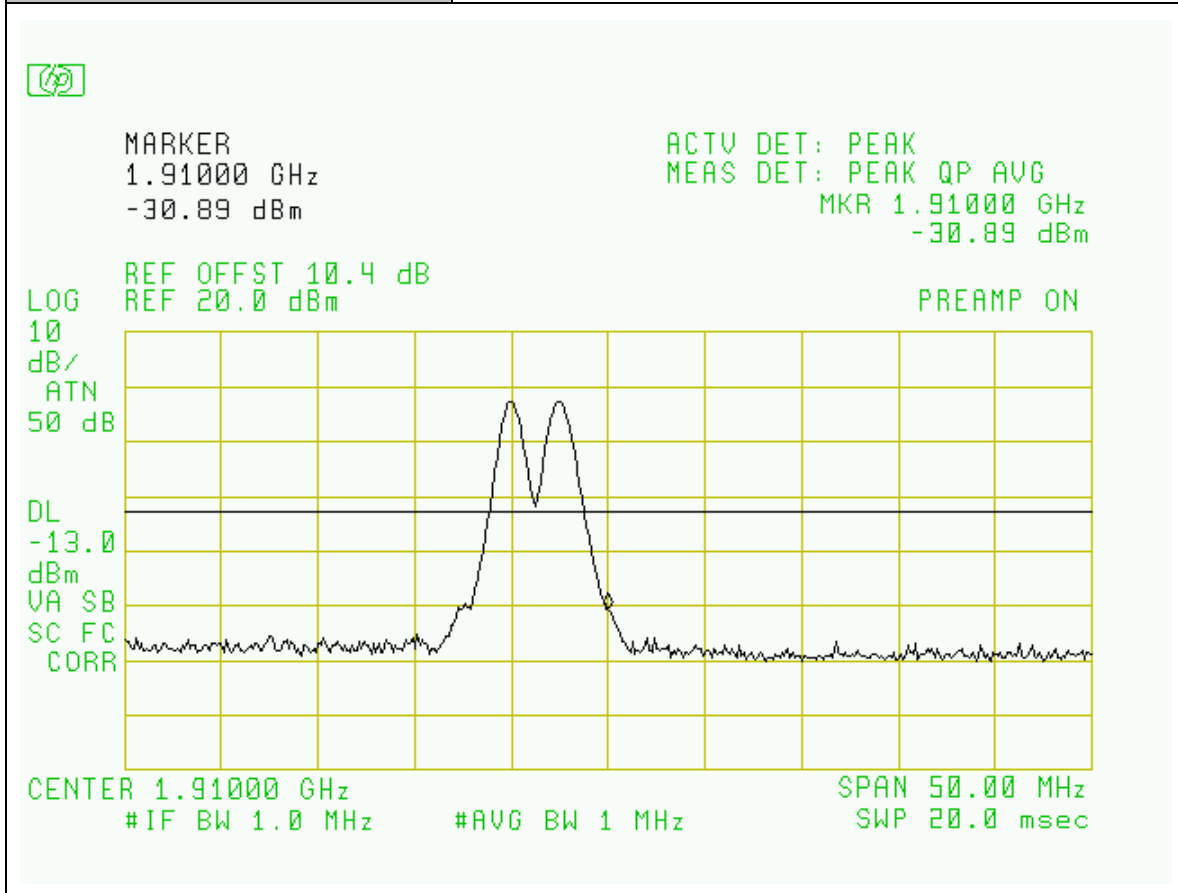
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Mid-Chn, Intermodulation
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



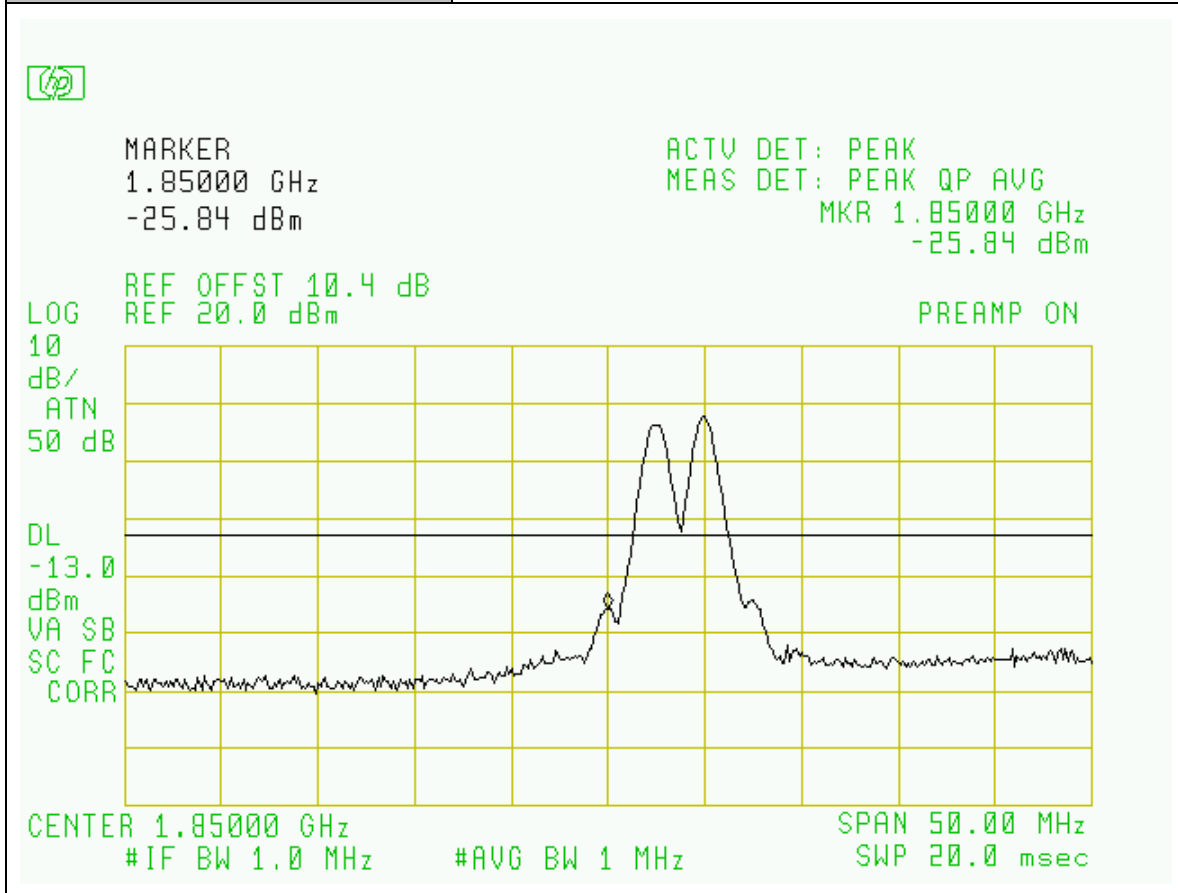
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	UL, Hi-Chn, Upper Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

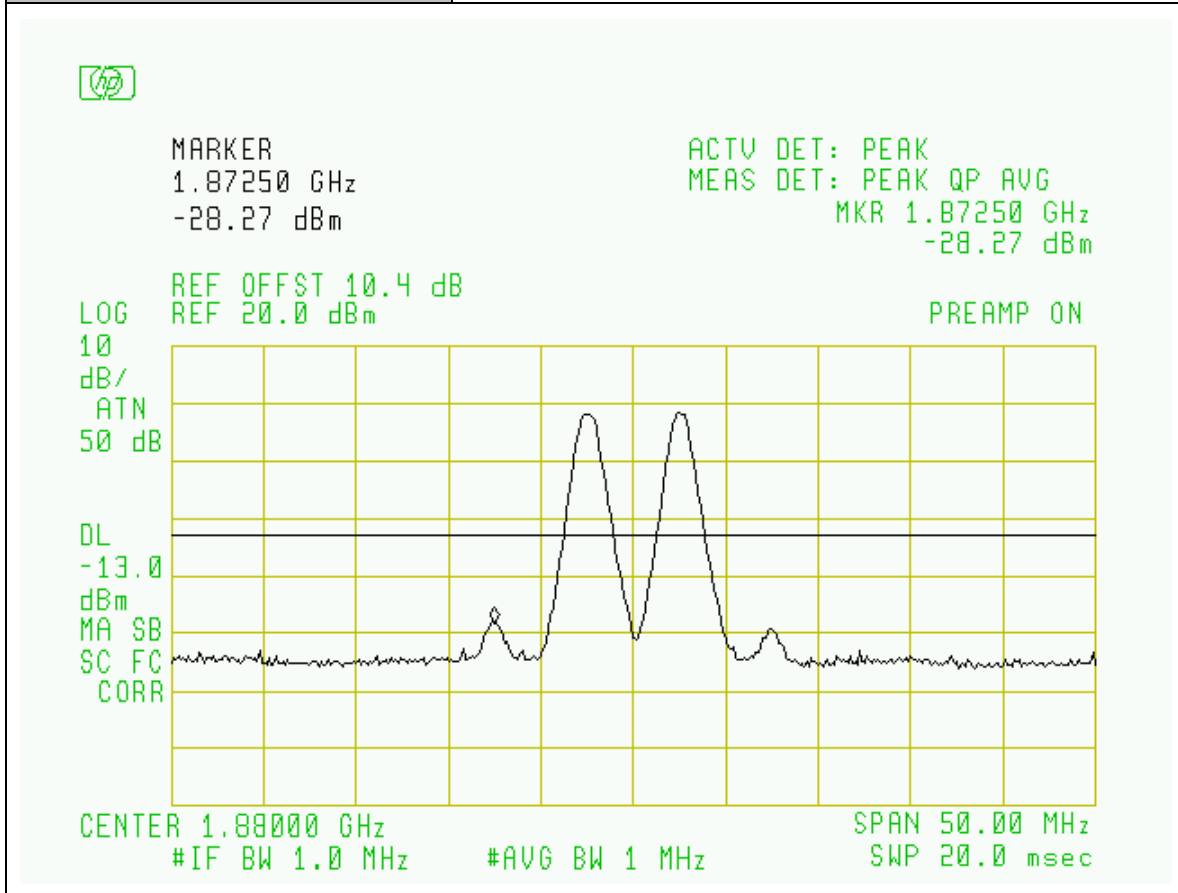
<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	UL, Low-Chn, Lower Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS





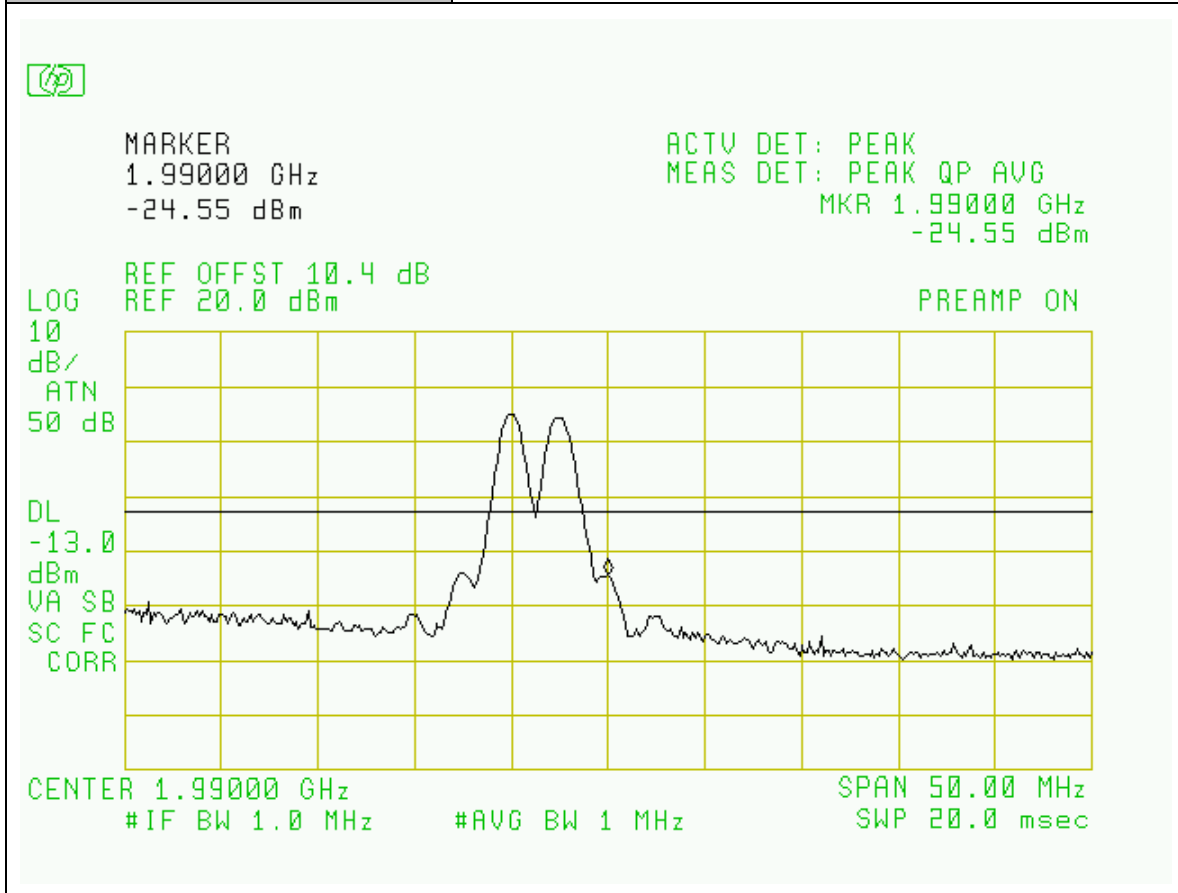
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Mid-Chn, Intermodulation
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



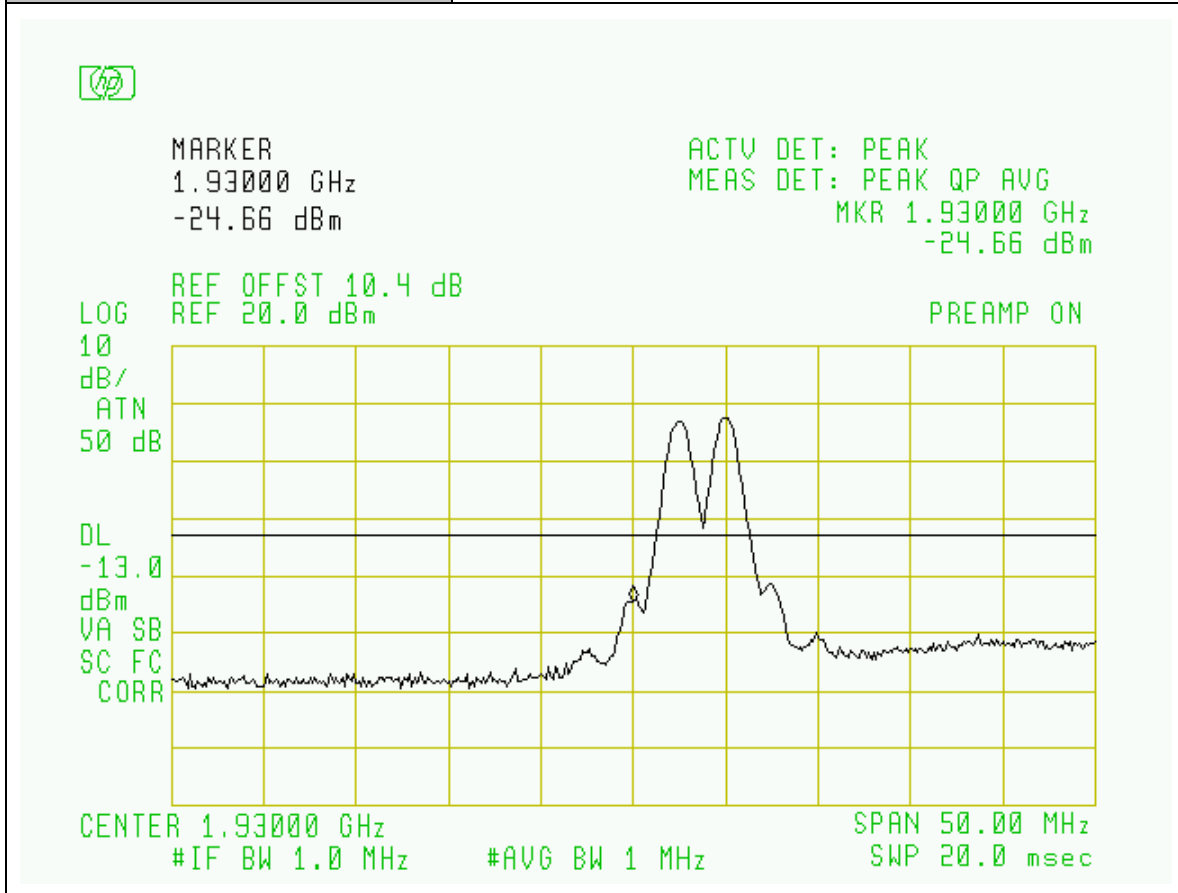
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Hi-Chn, Upper Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



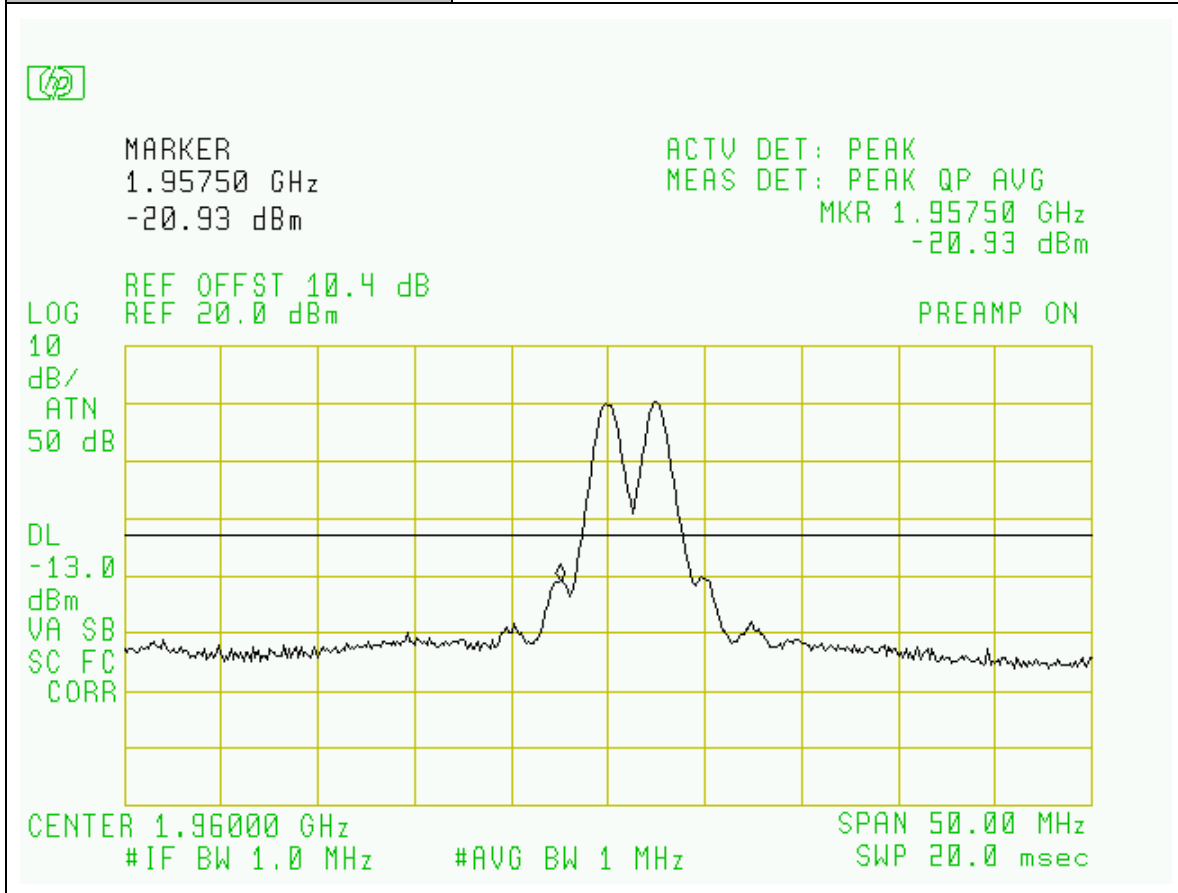
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Low-Chn, Lower Bandedge
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



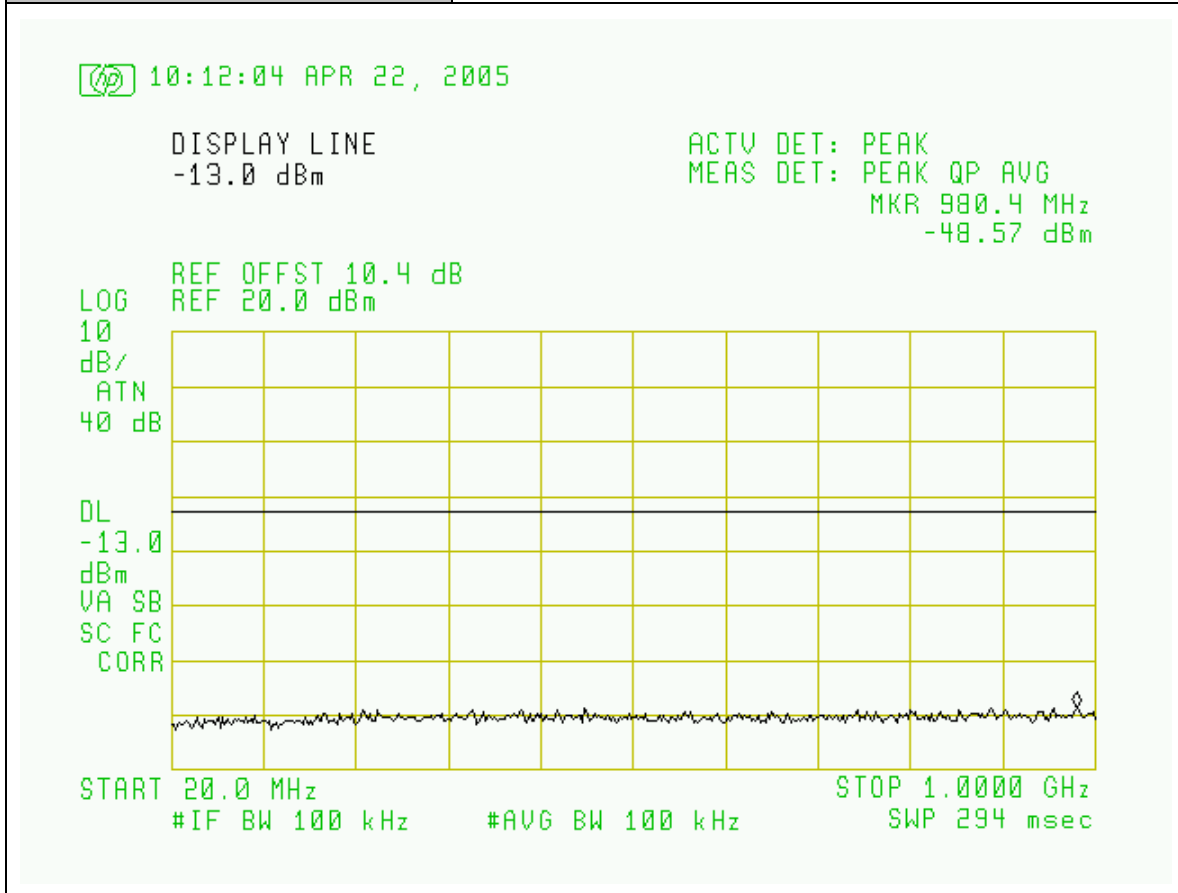
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Mid-Chn, Intermodulation
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



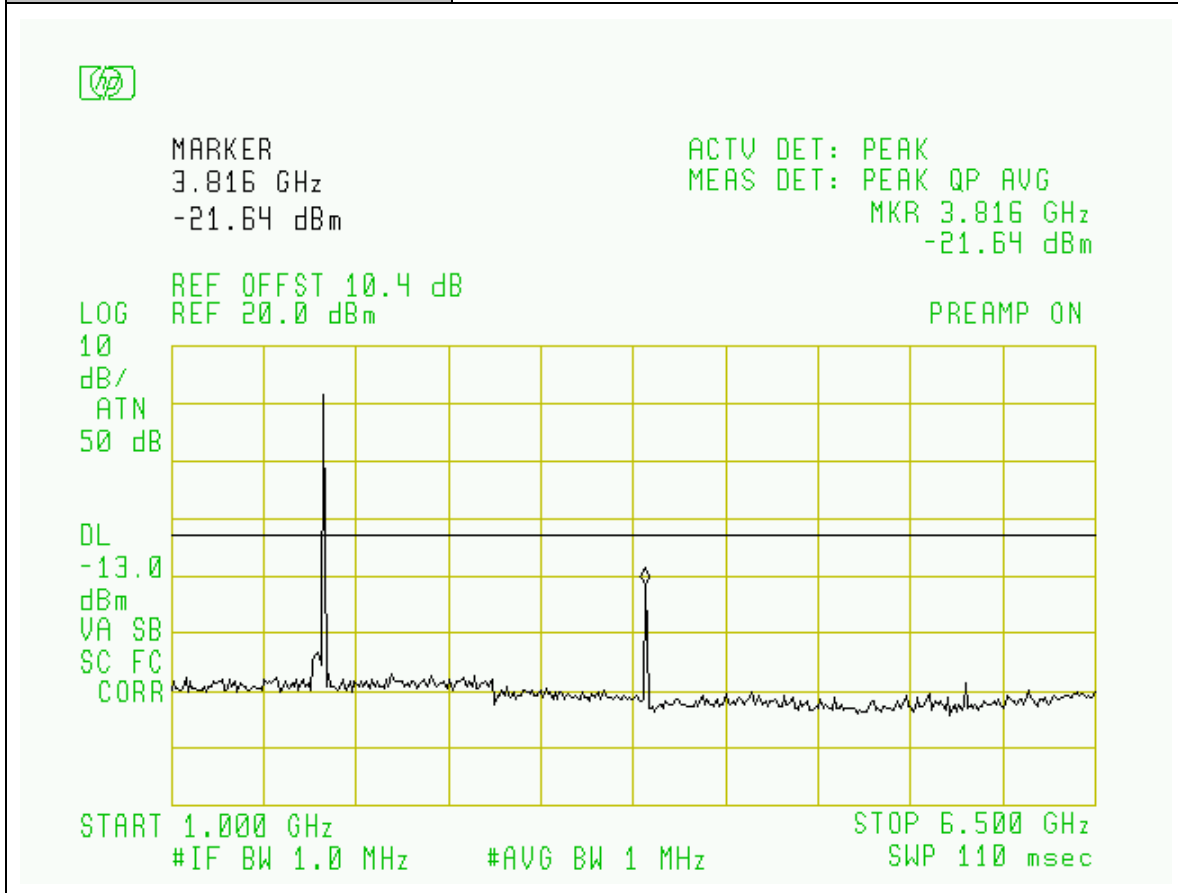
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



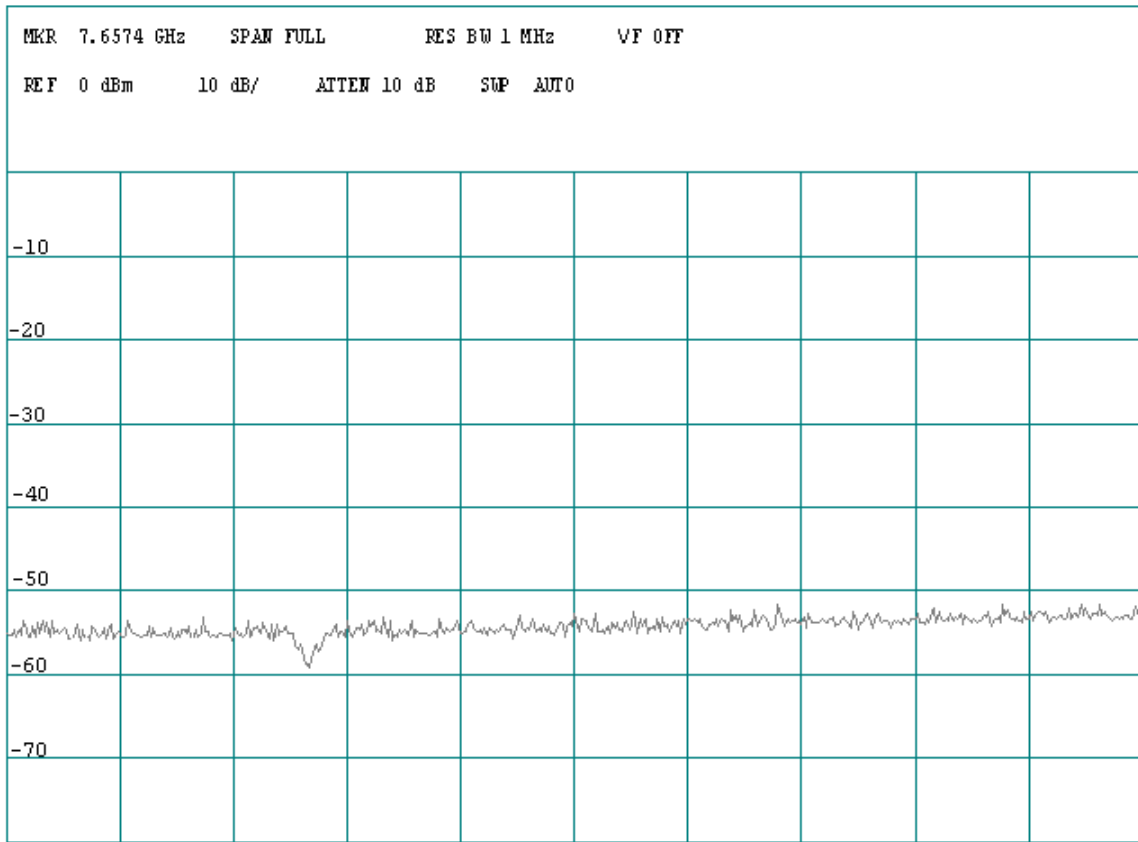
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



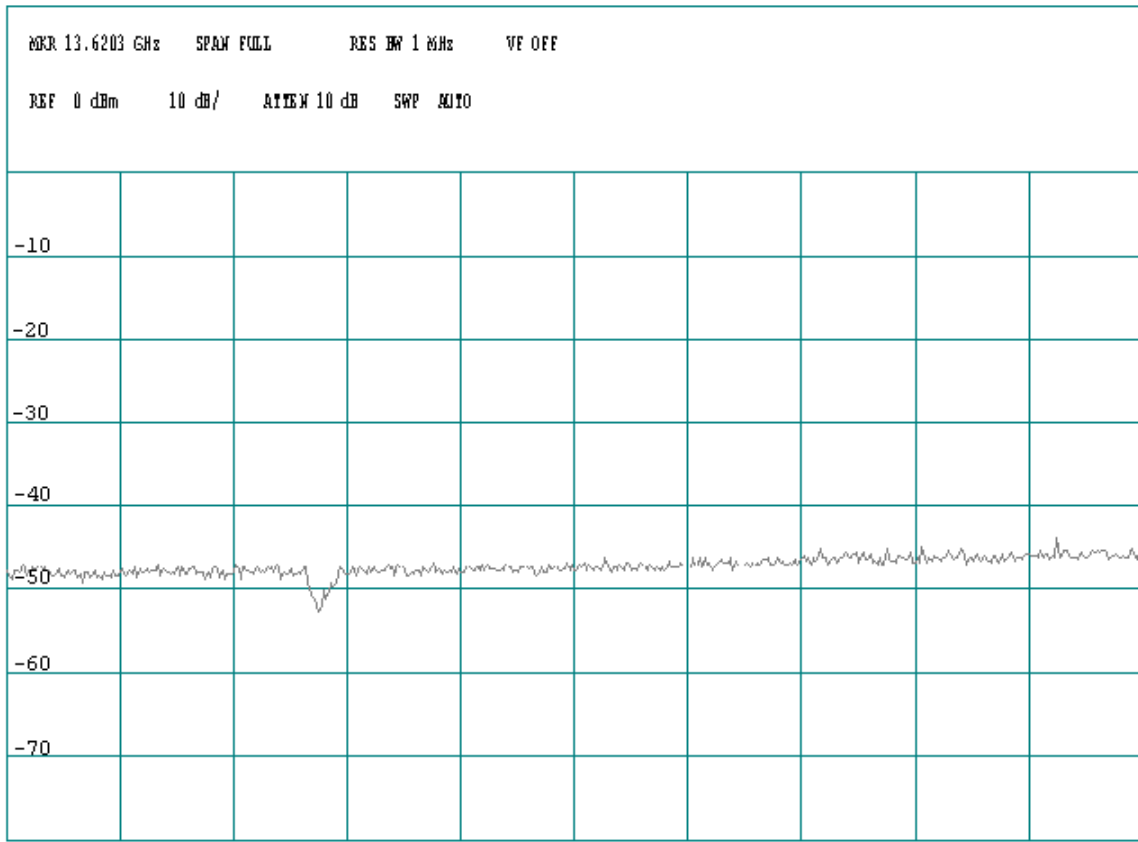
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

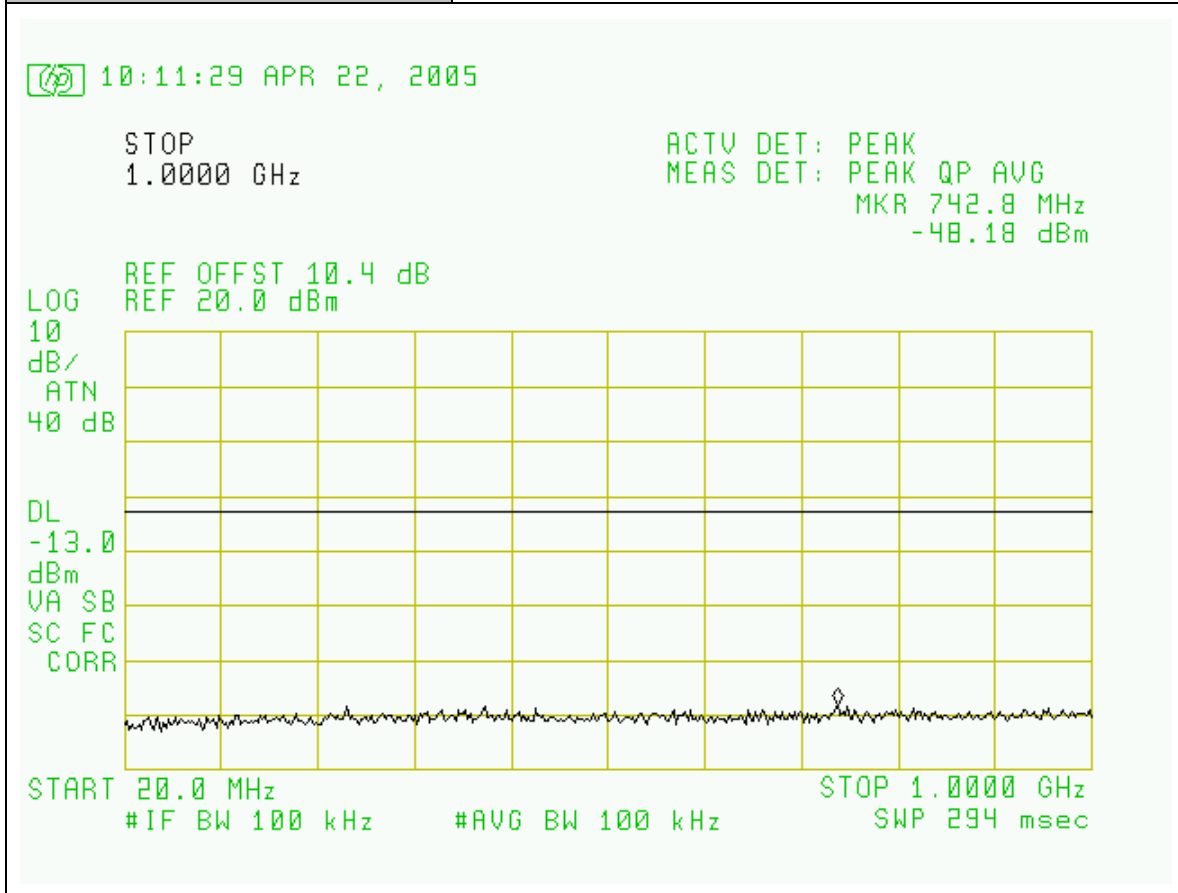
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Hi-Channel</b>
<b>Configuration:</b>	<b>SG Input: -50dBm, Output Port: EUT BTS</b>





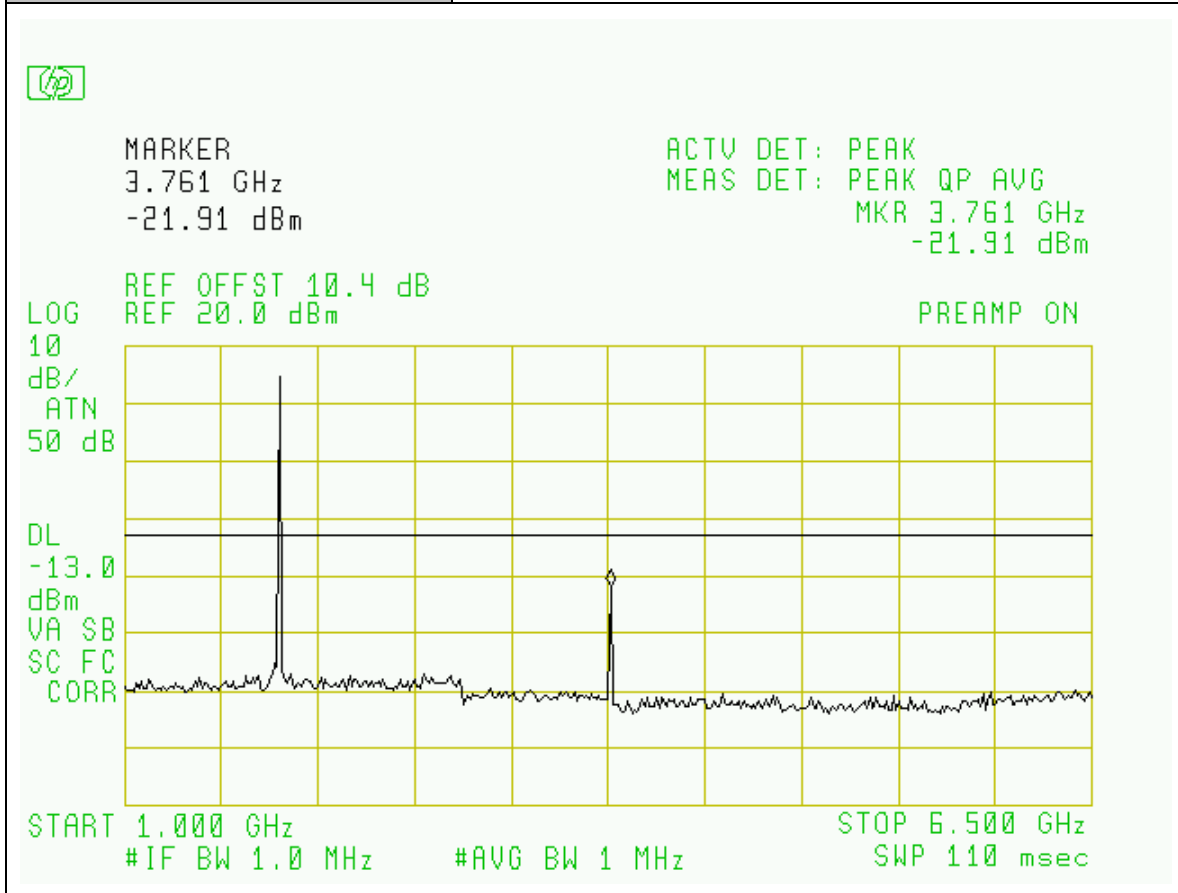
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



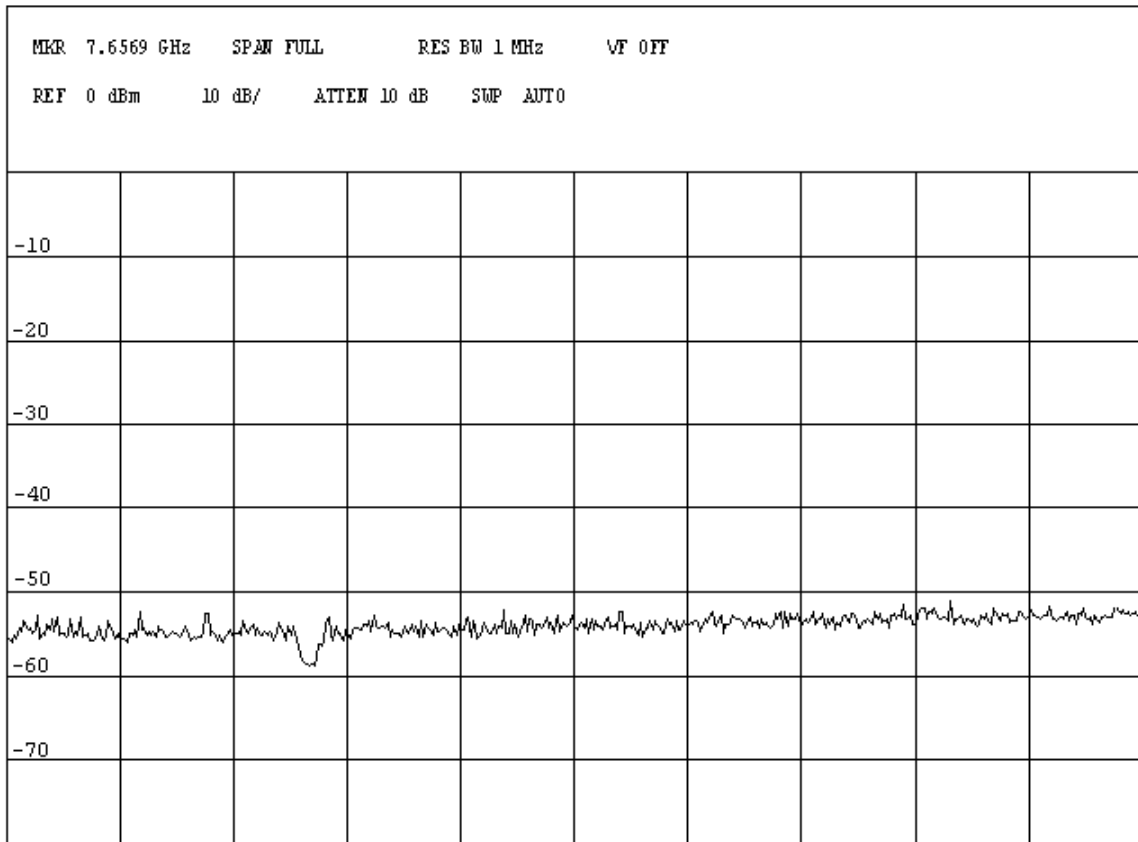
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



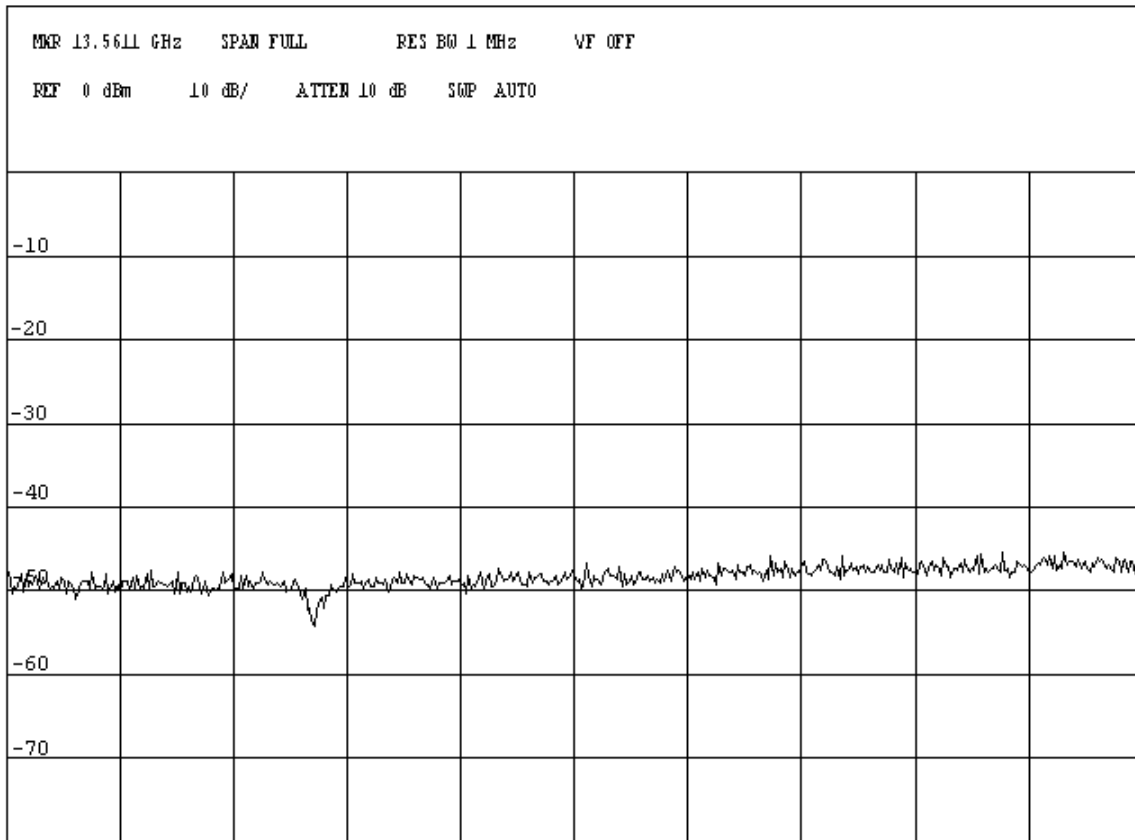
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



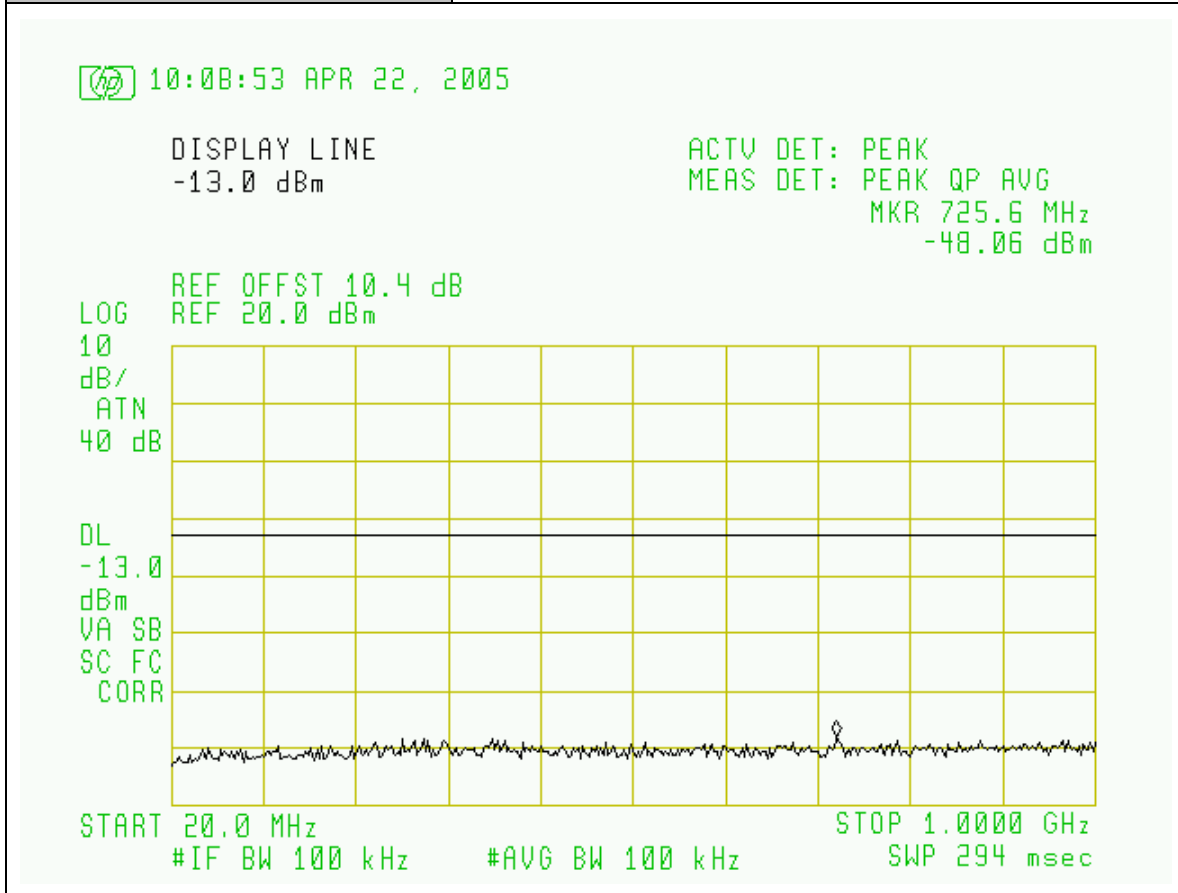
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



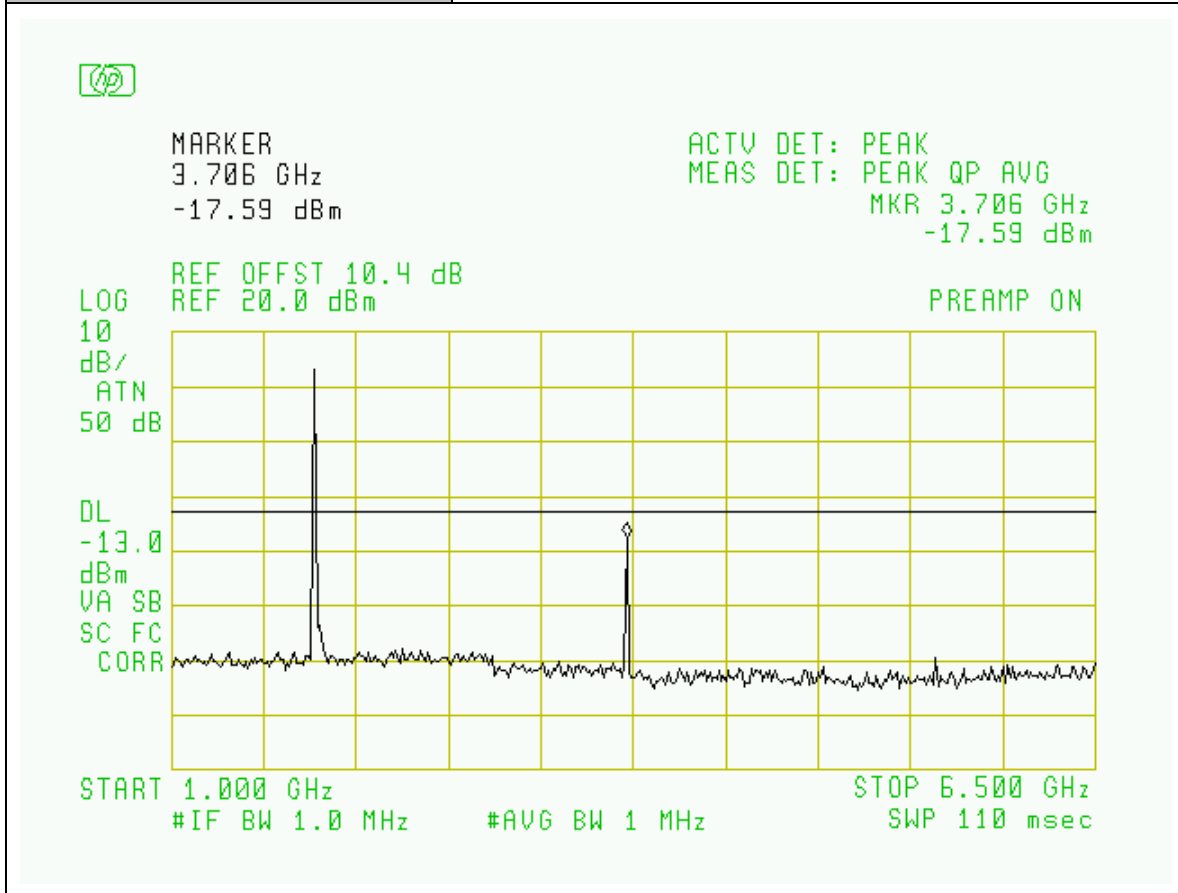
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



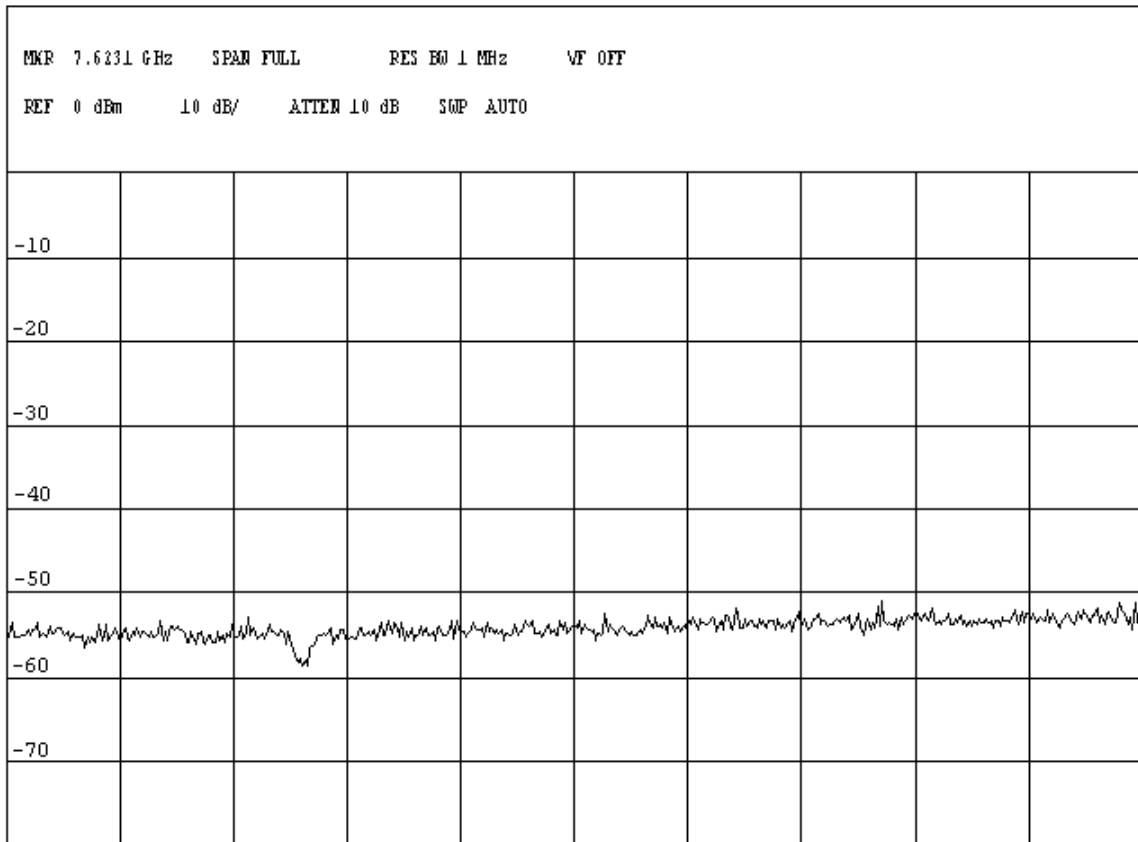
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Uplink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



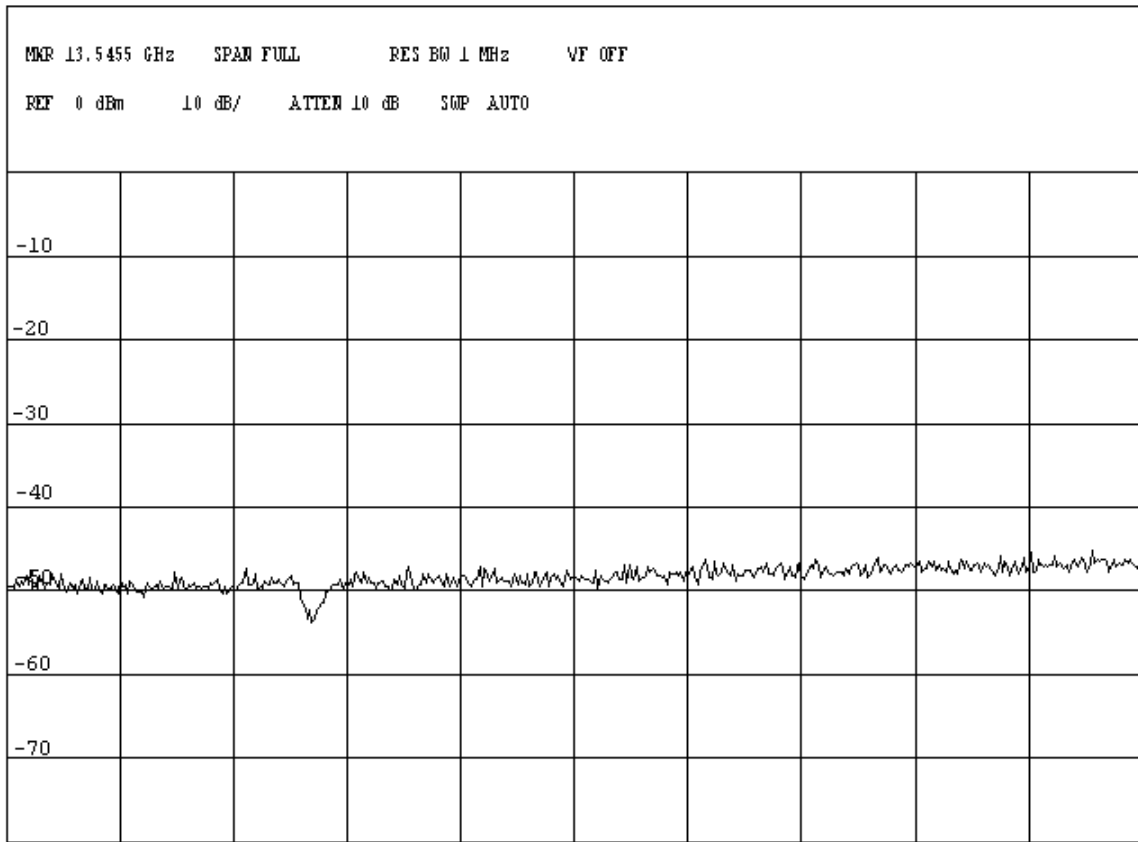
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

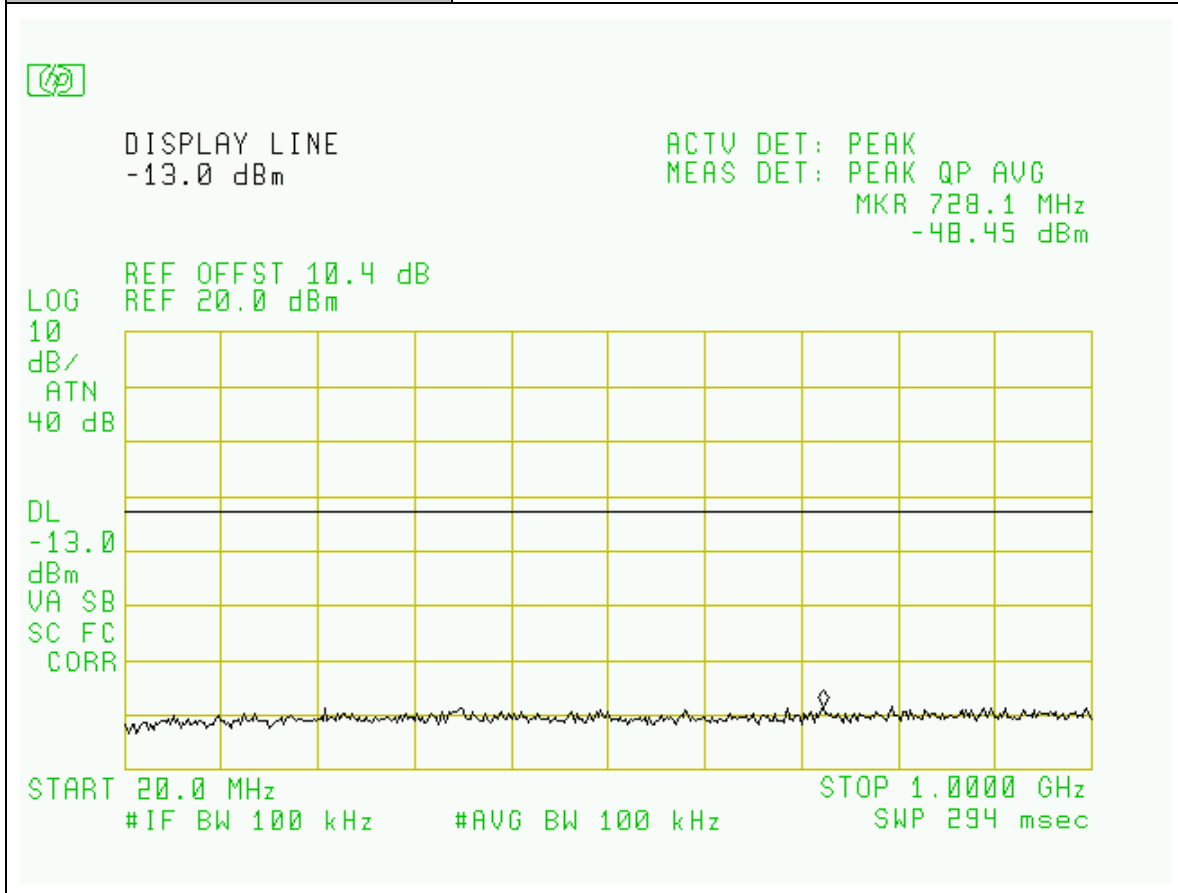
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS





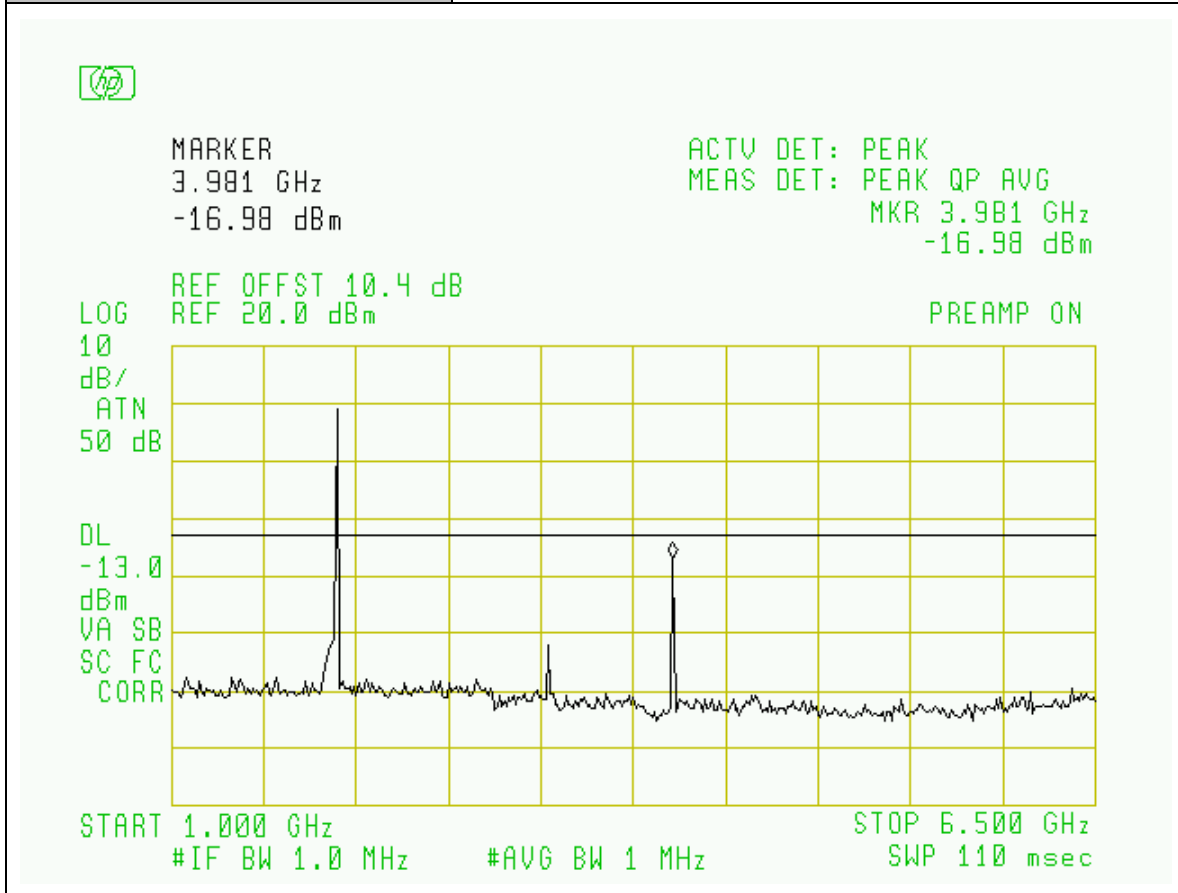
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



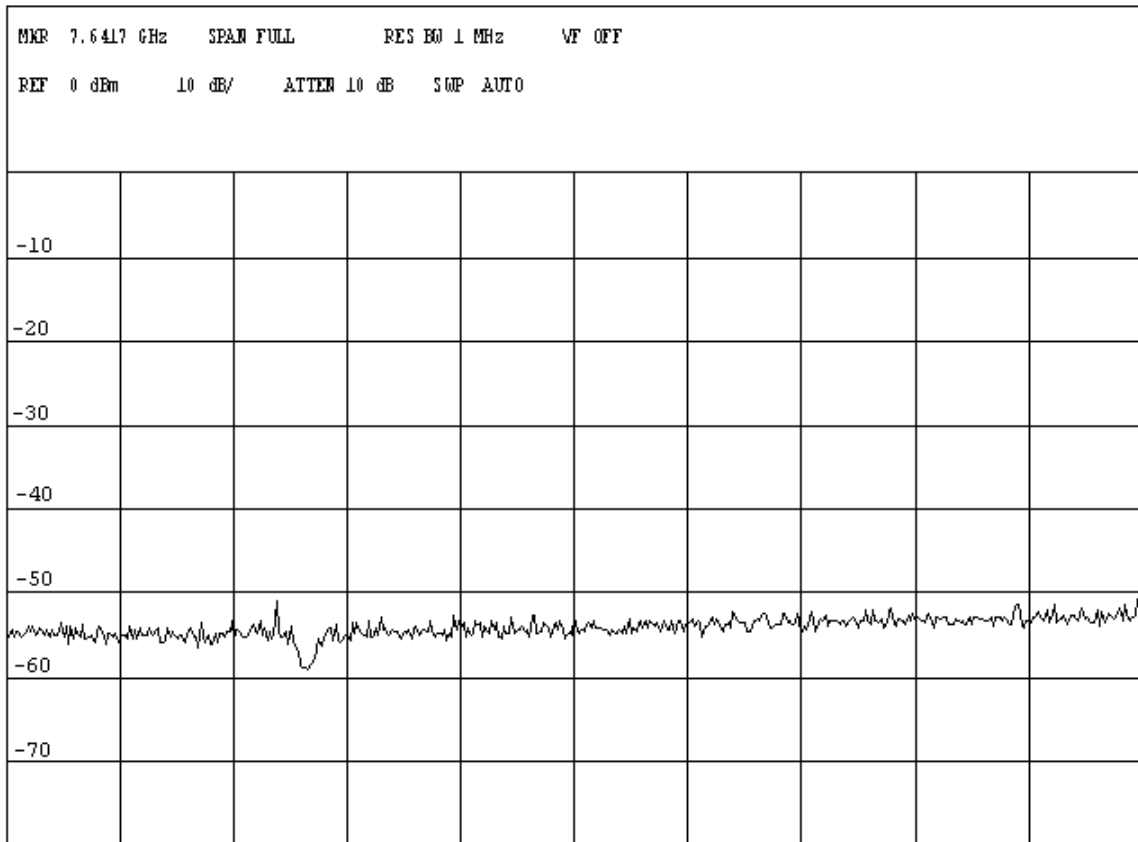
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



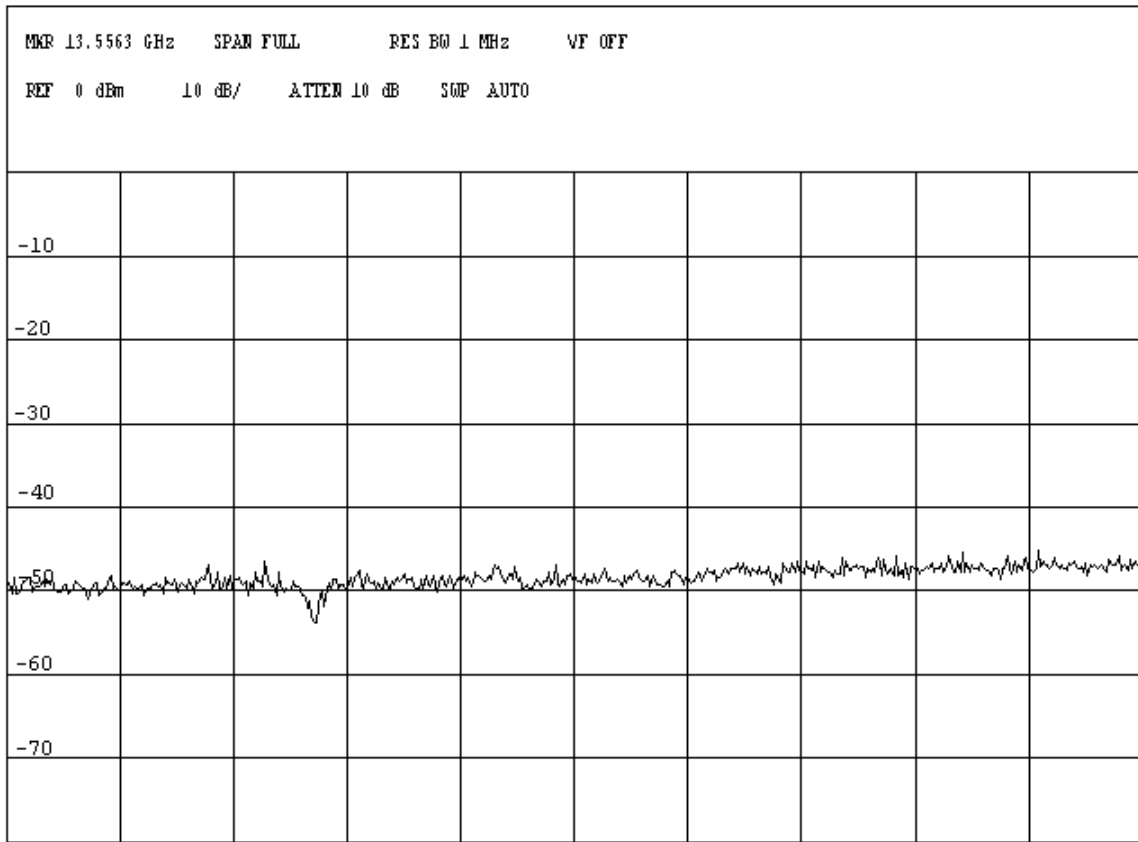
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



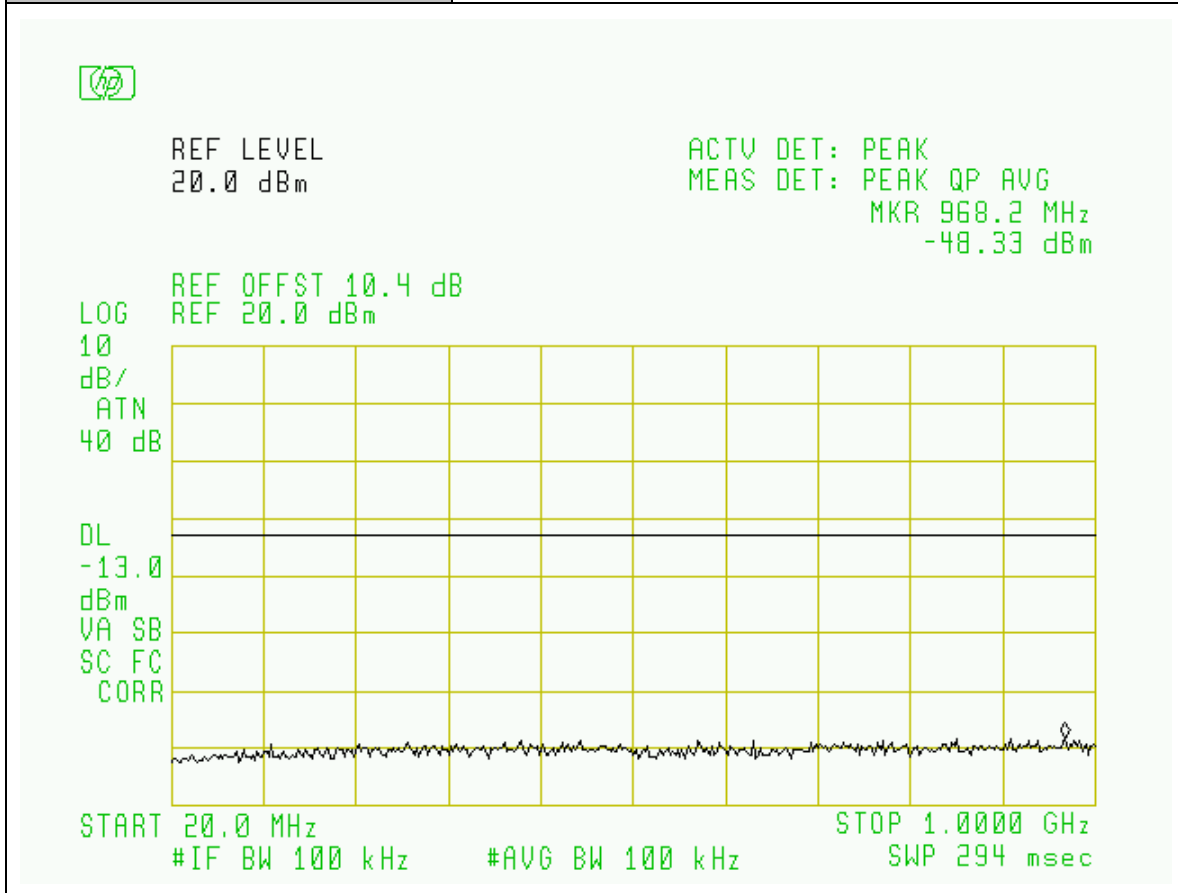
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



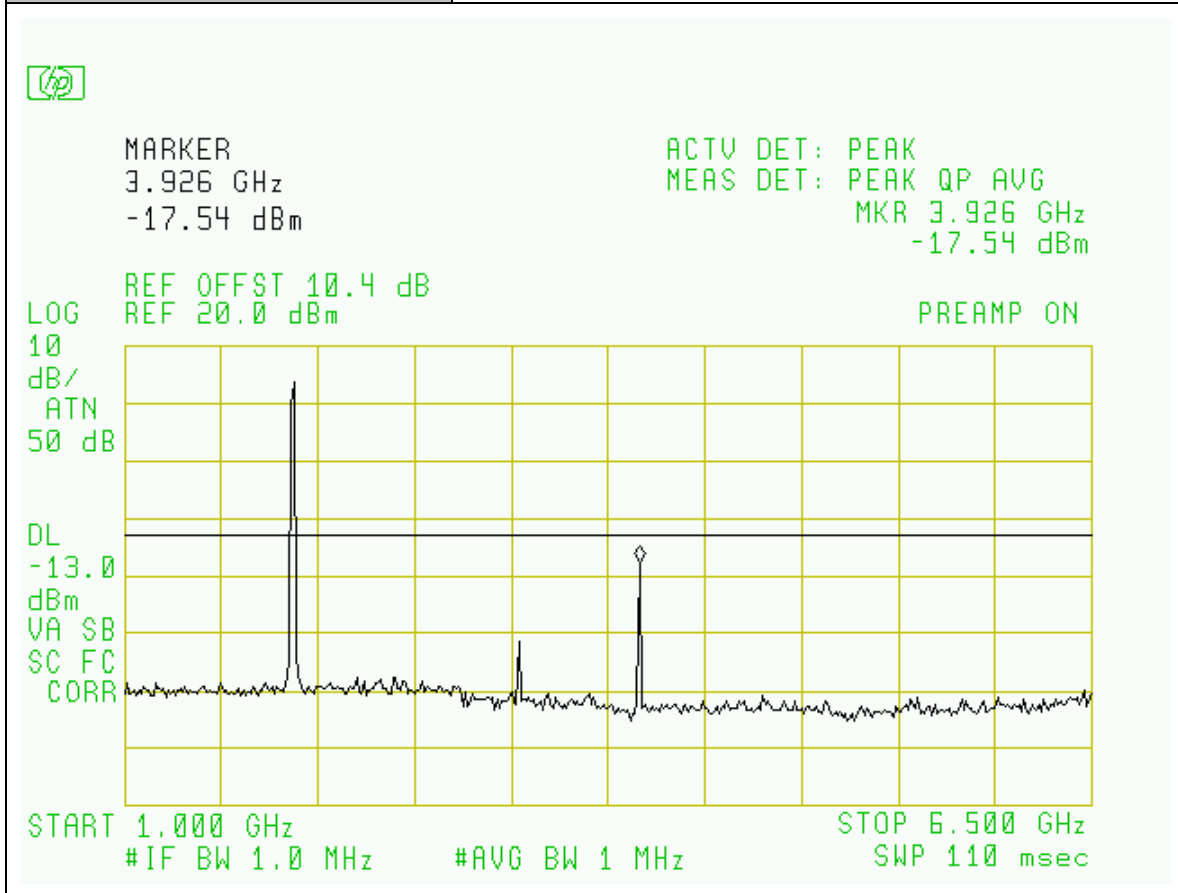
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70°F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



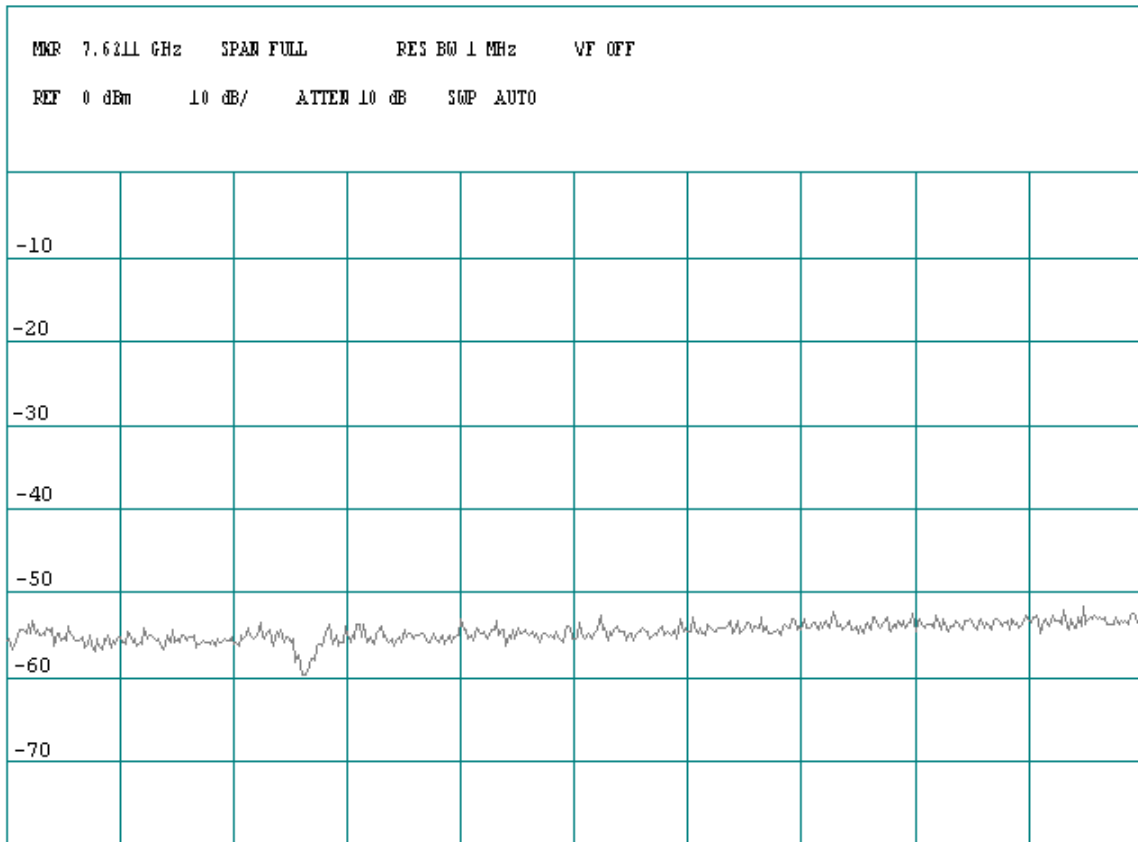
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



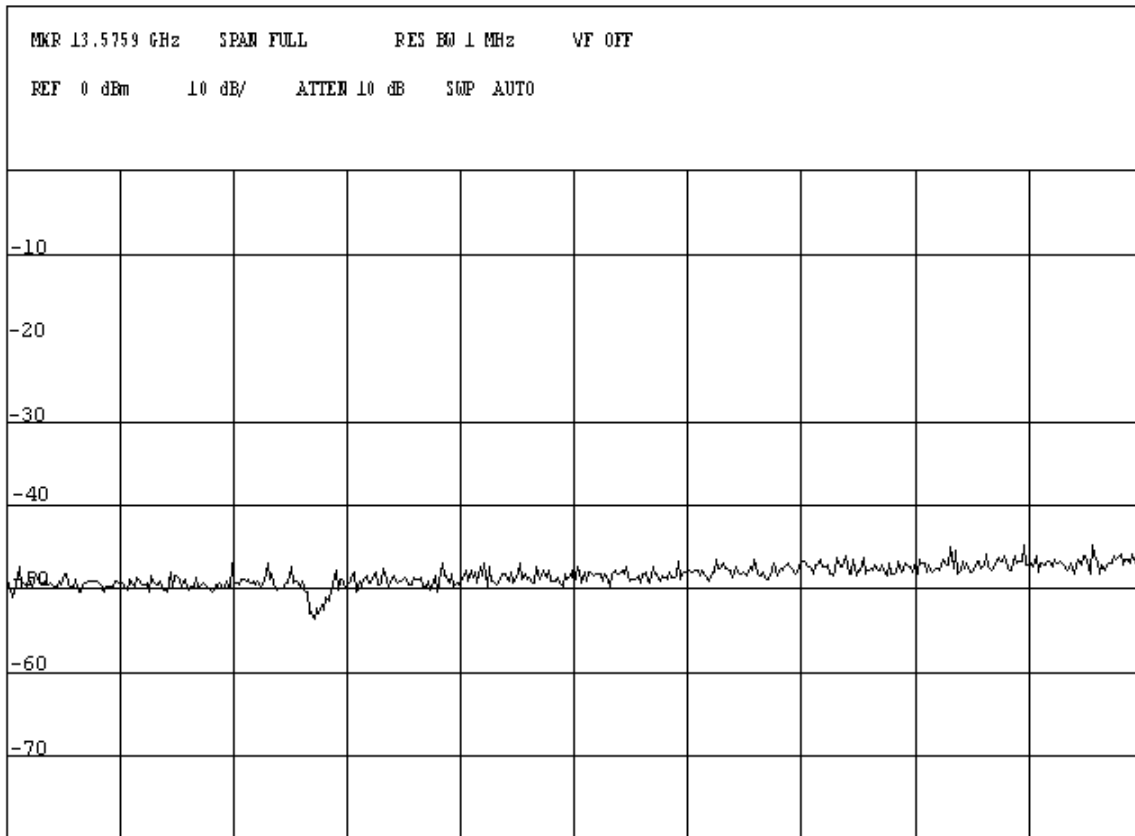
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

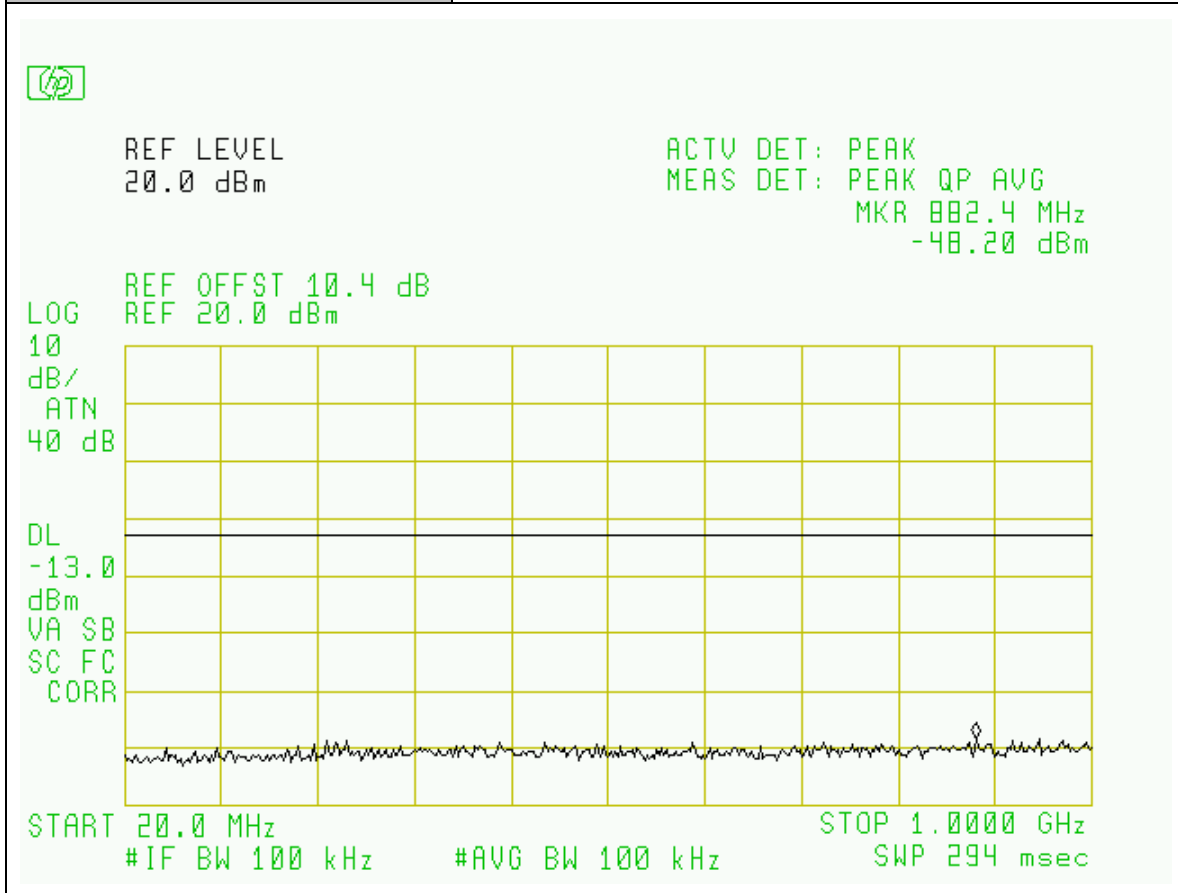
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE





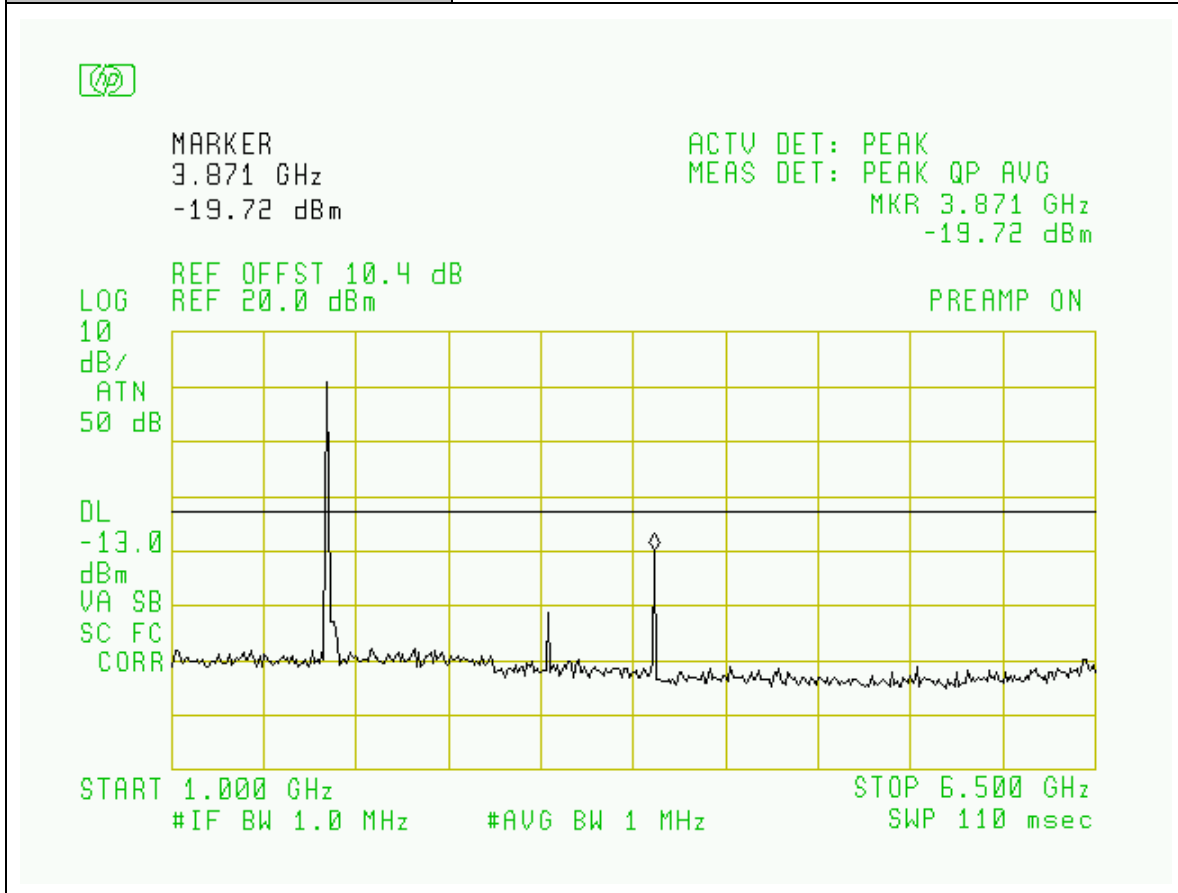
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



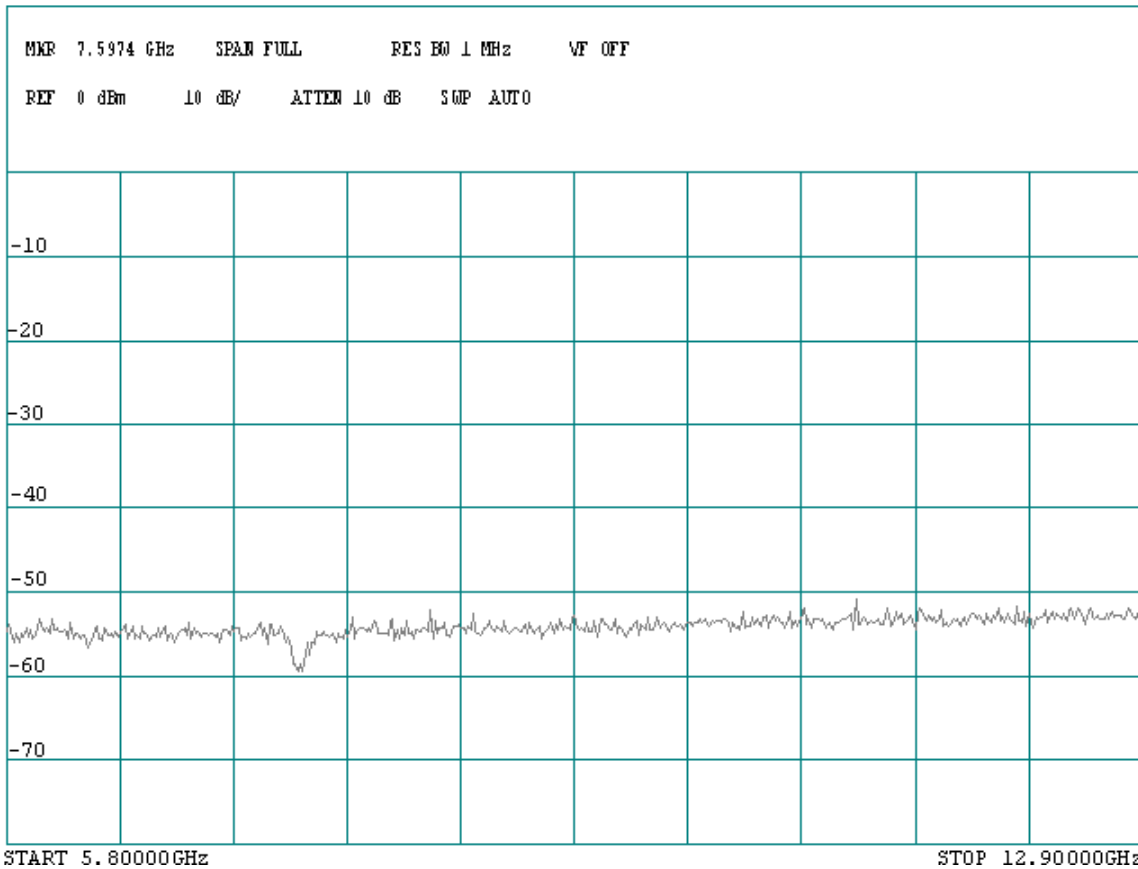
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation
<b>Plot Name:</b>	Downlink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



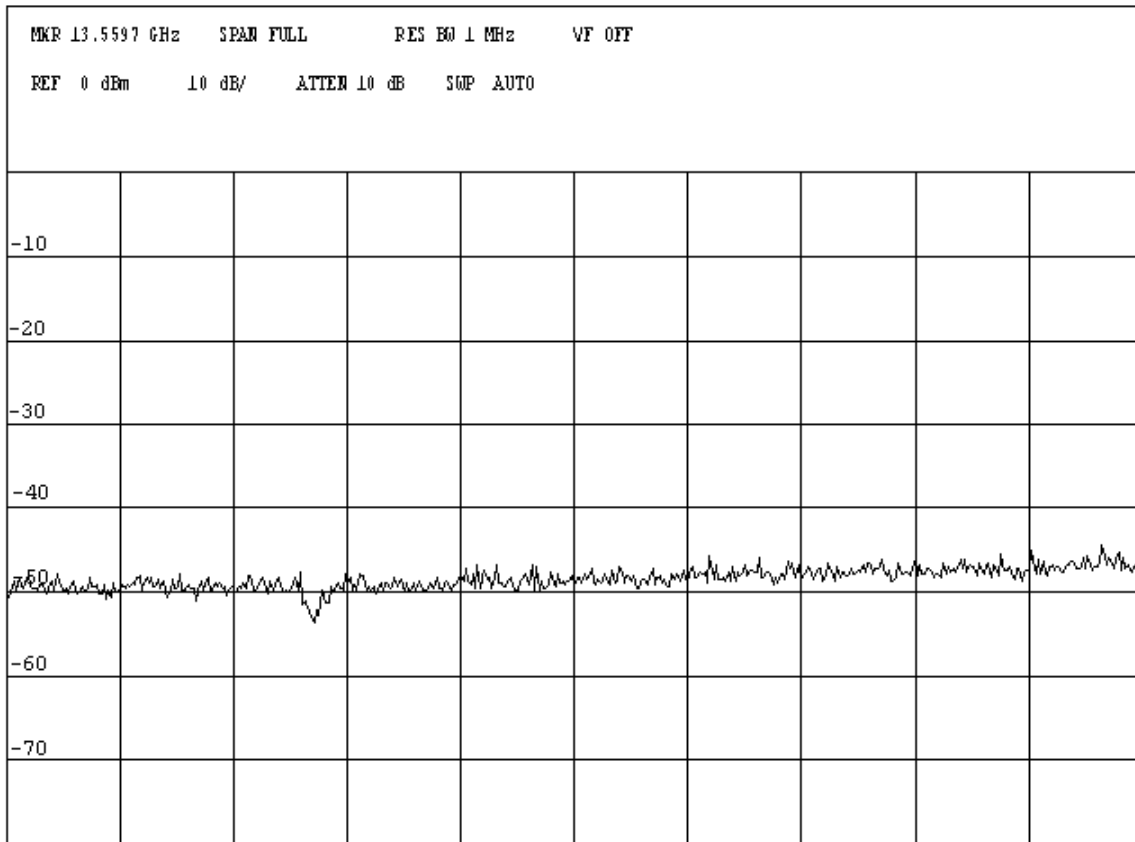
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



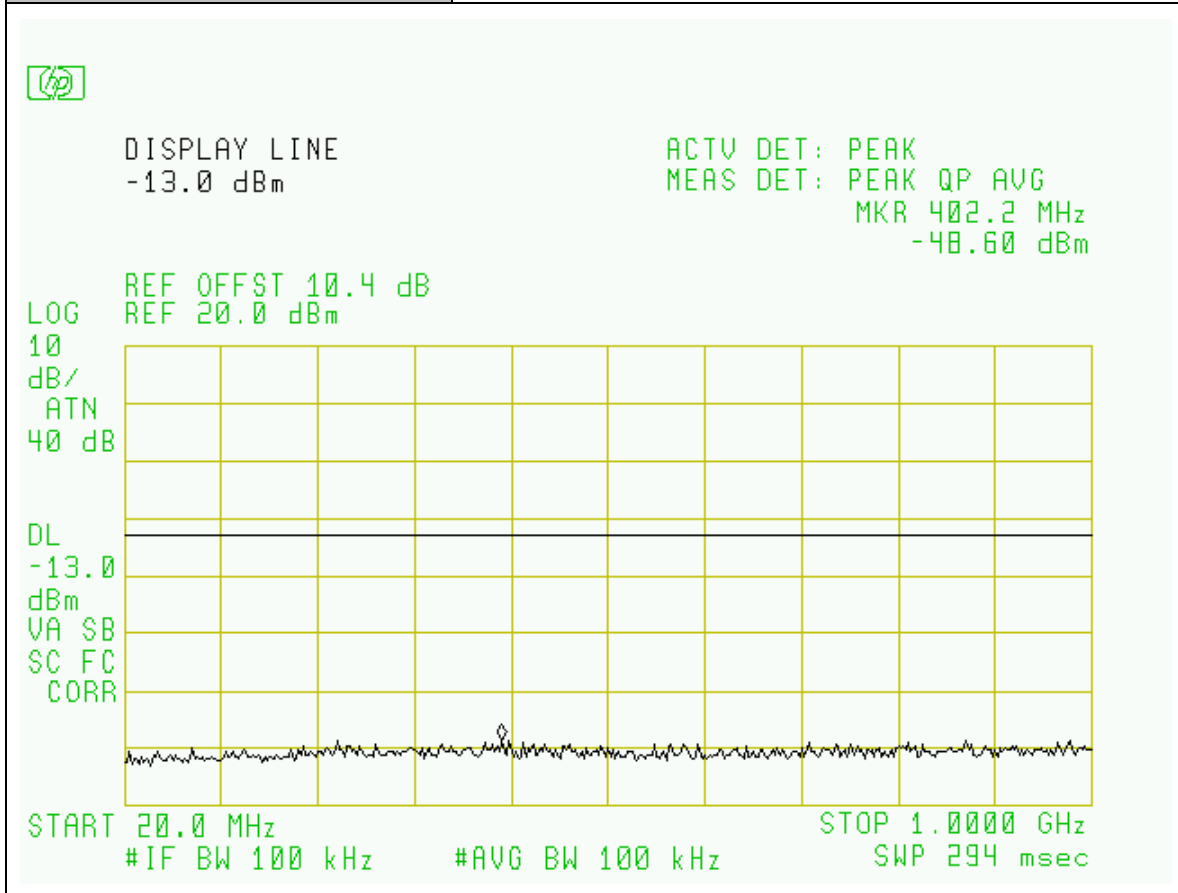
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Wei Li
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / CDMA Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



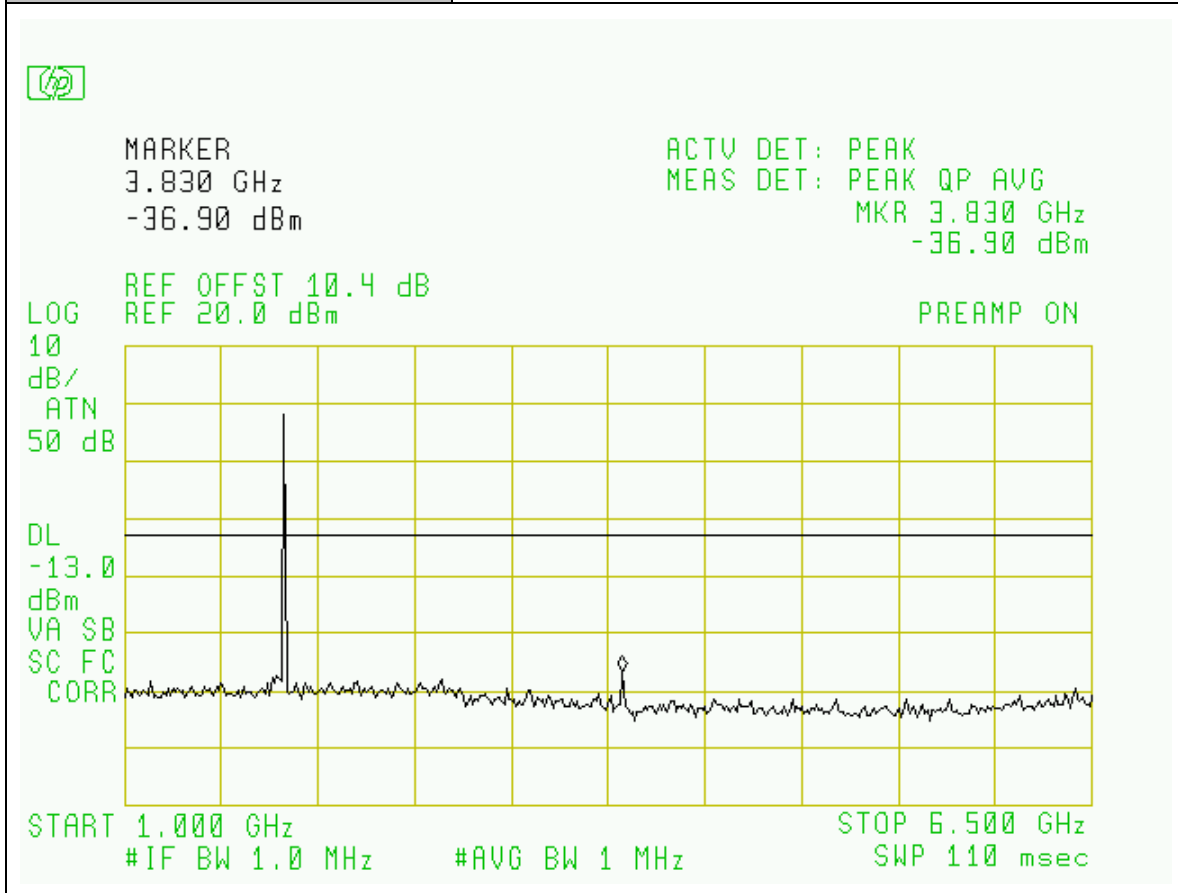
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



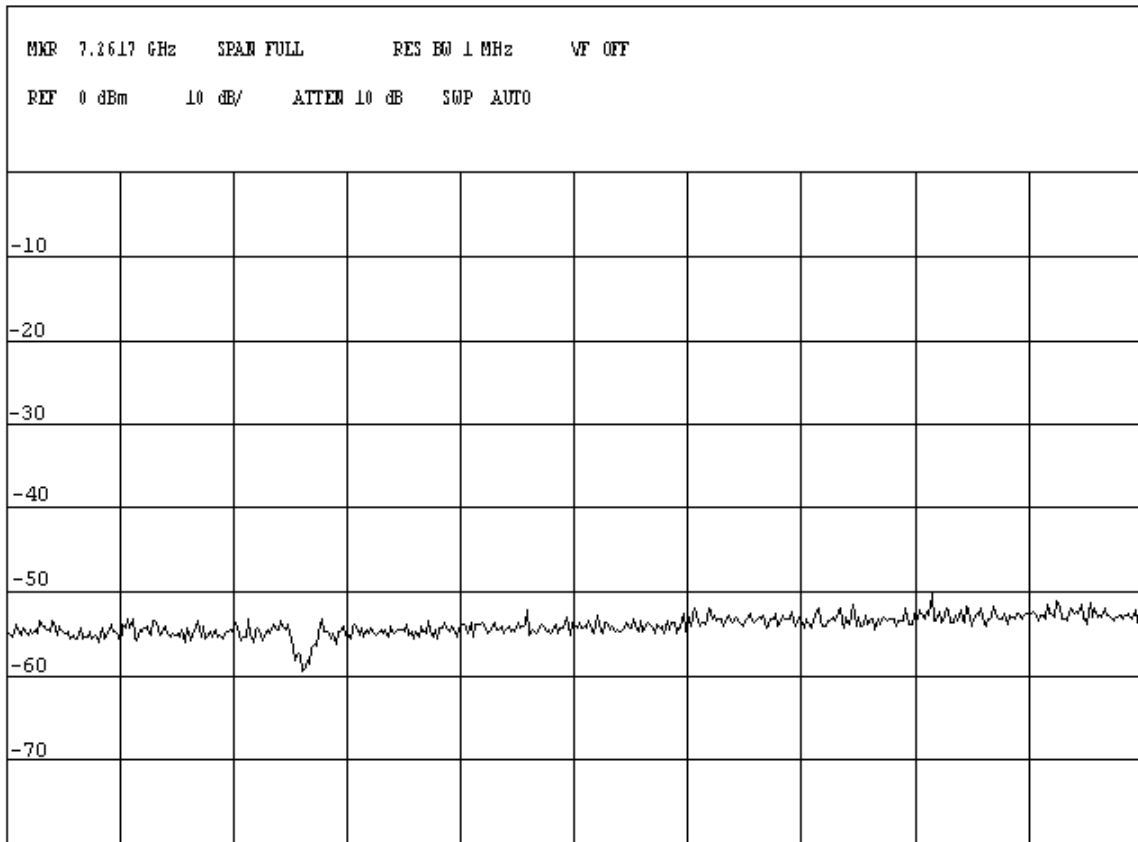
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



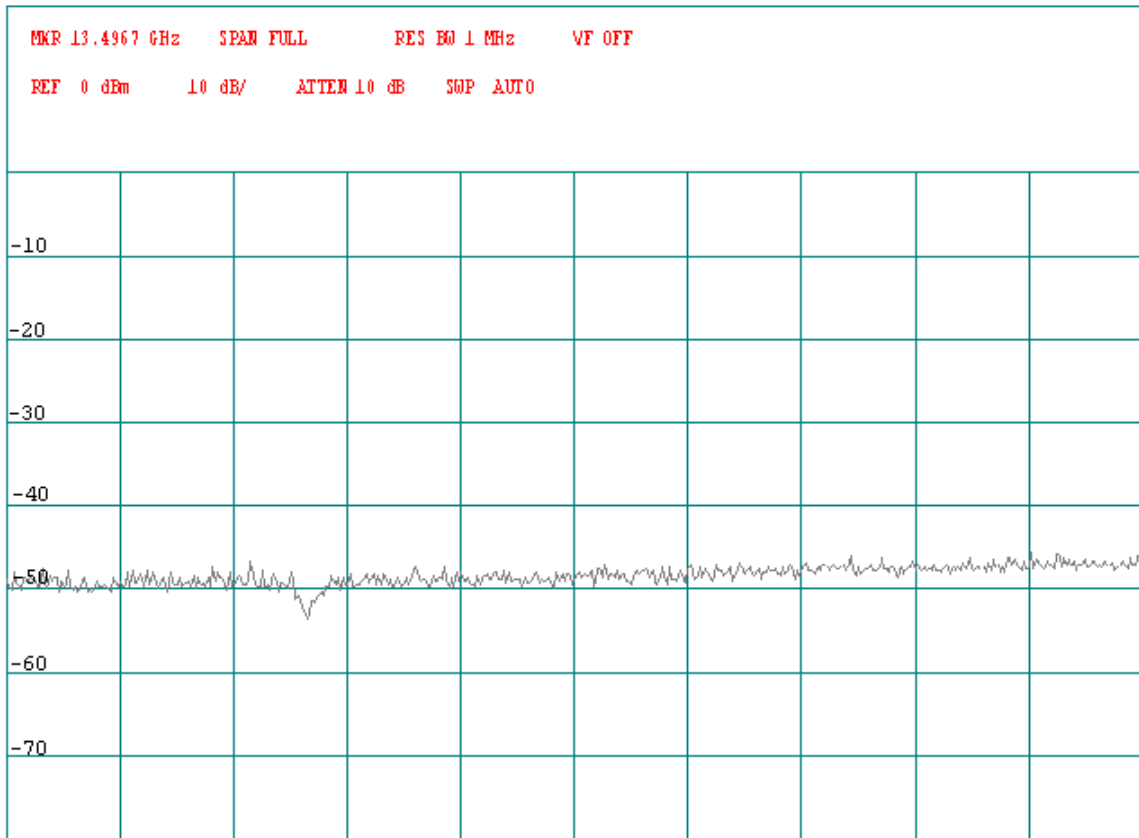
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

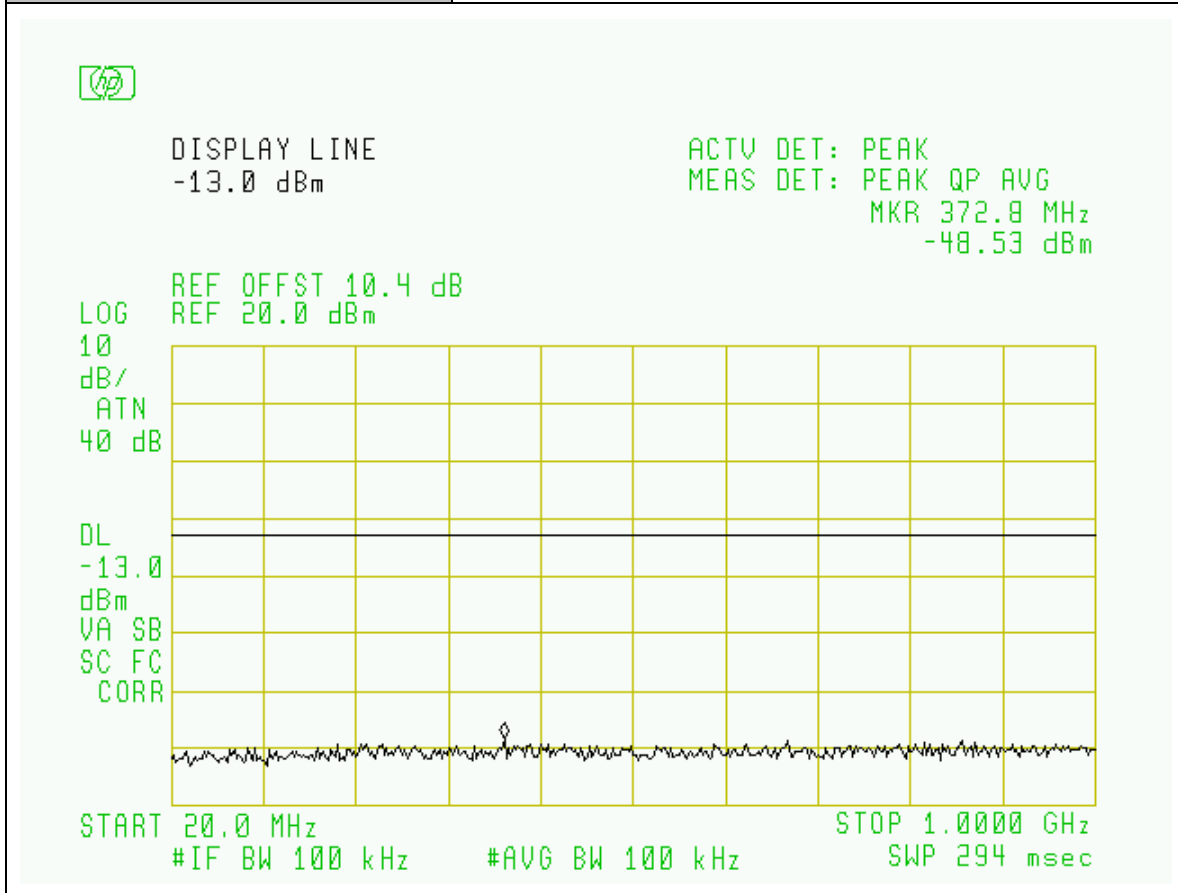
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS





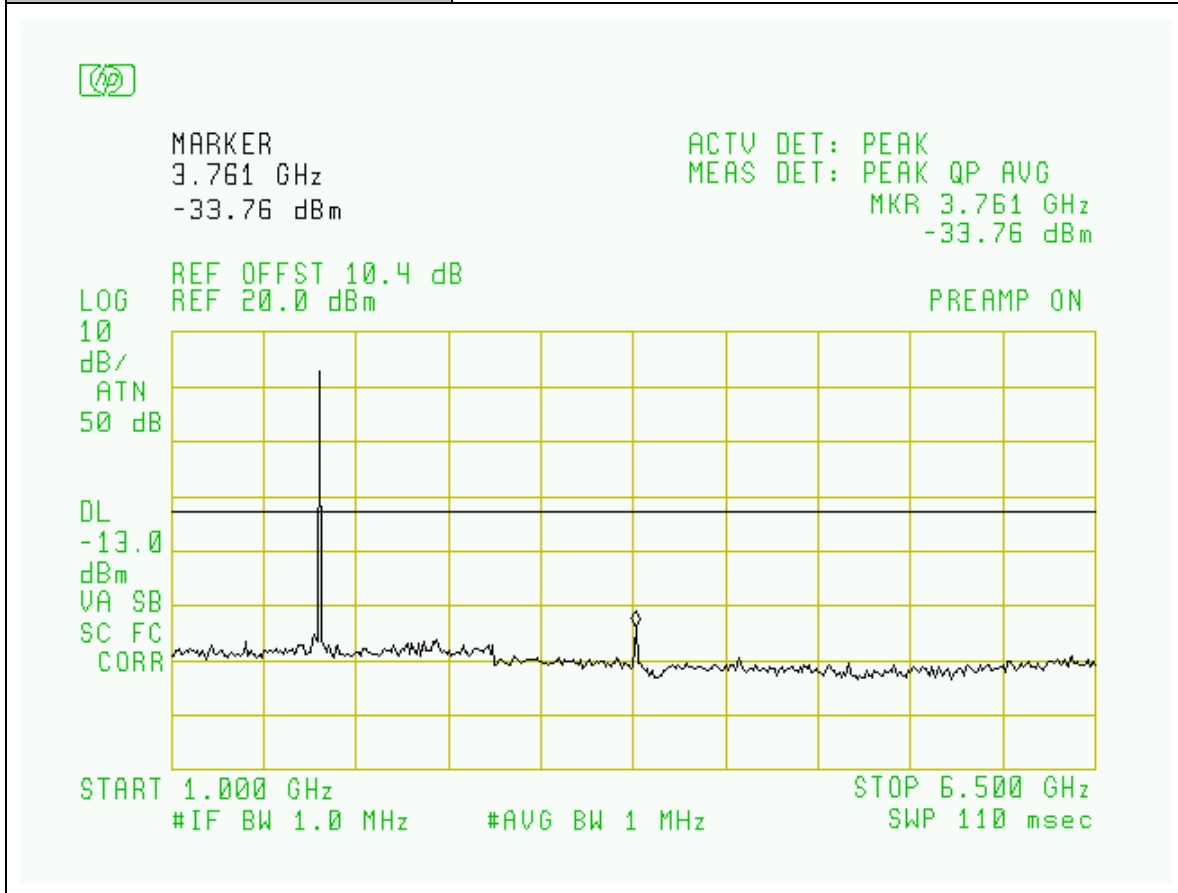
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



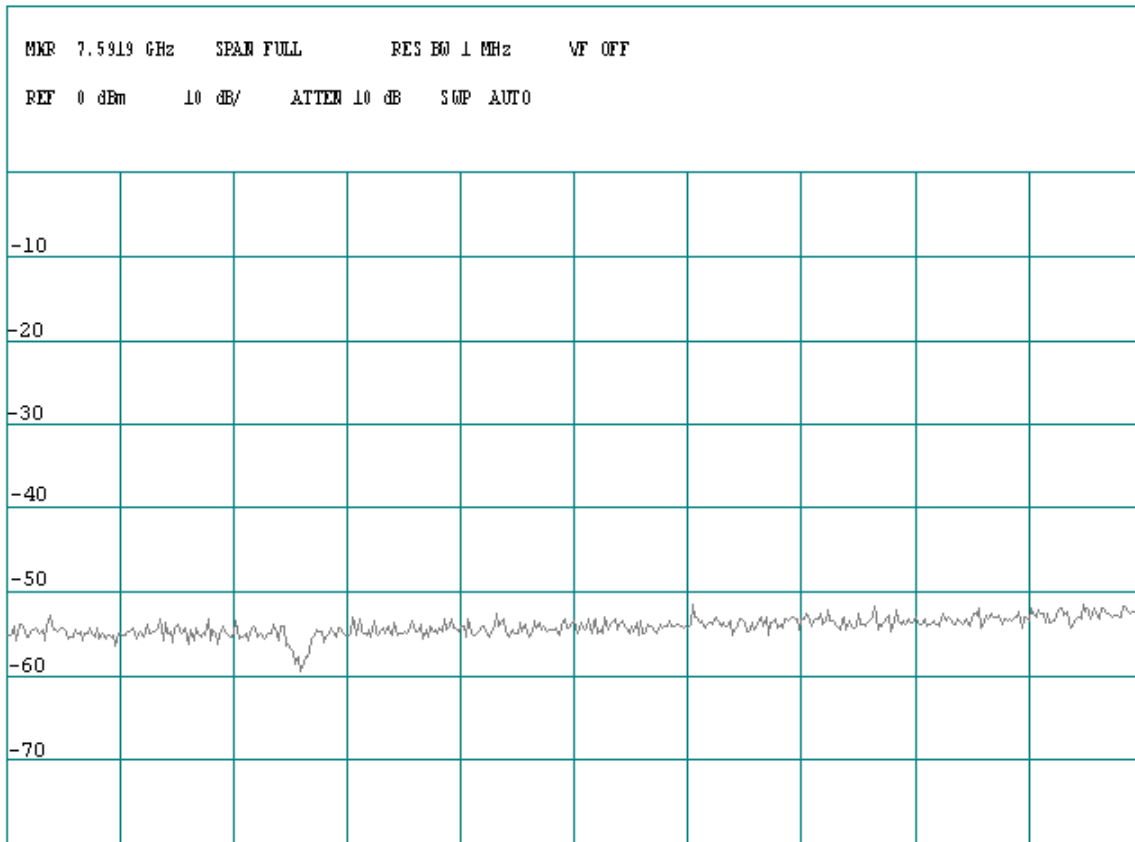
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



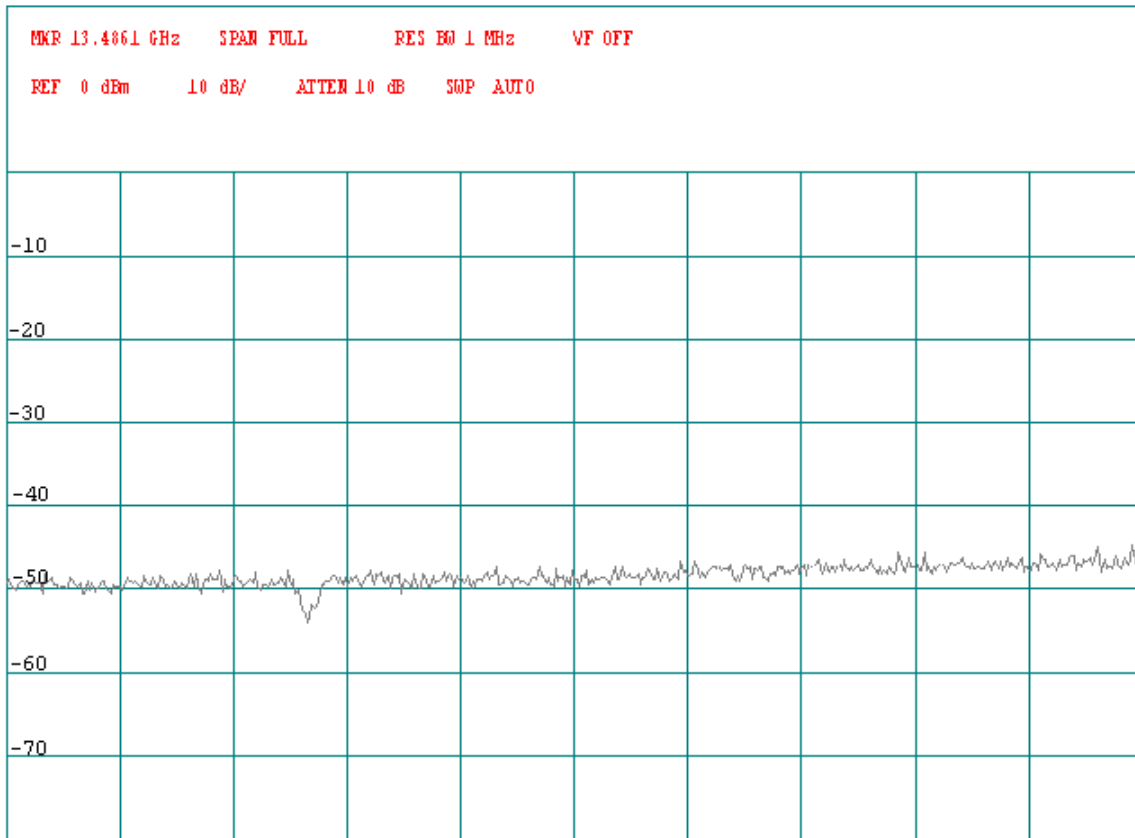
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

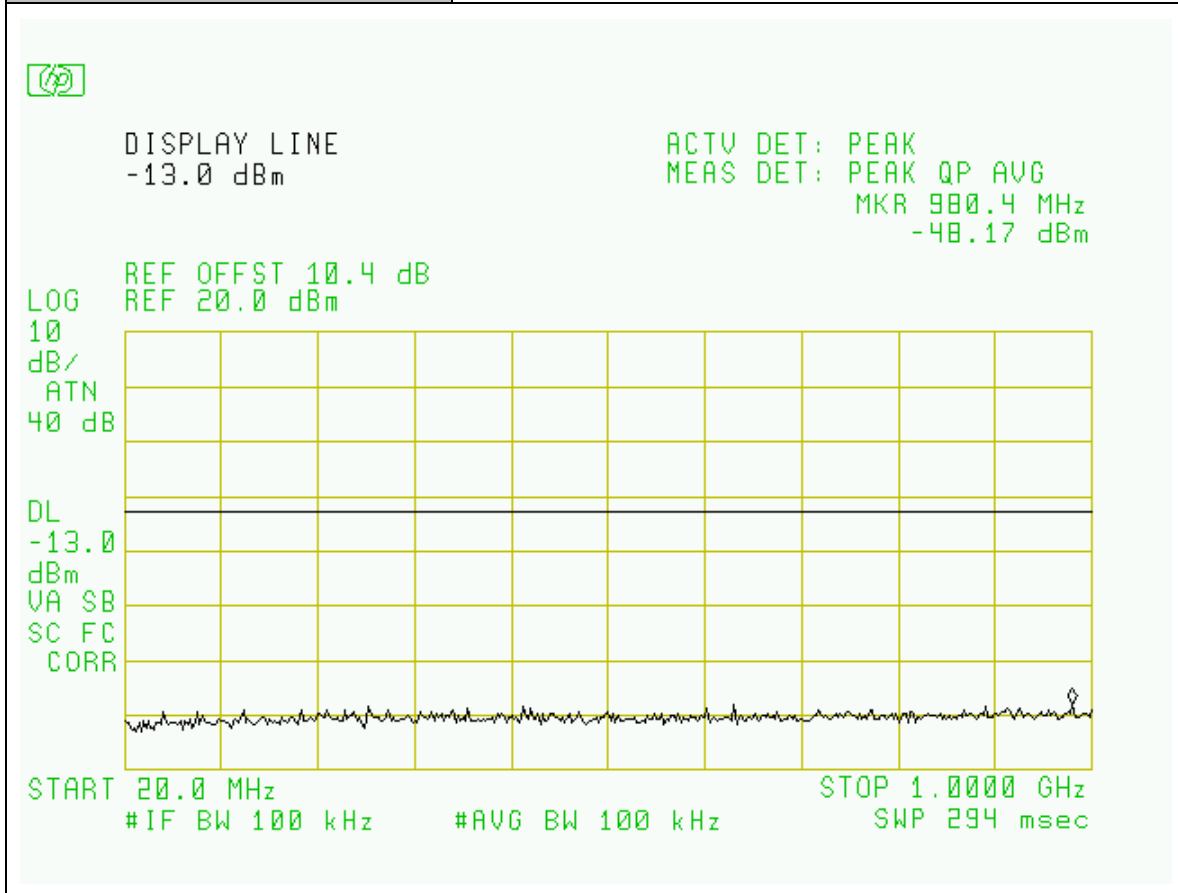
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



START 10.5000 GHz STOP 22.0000 GHz

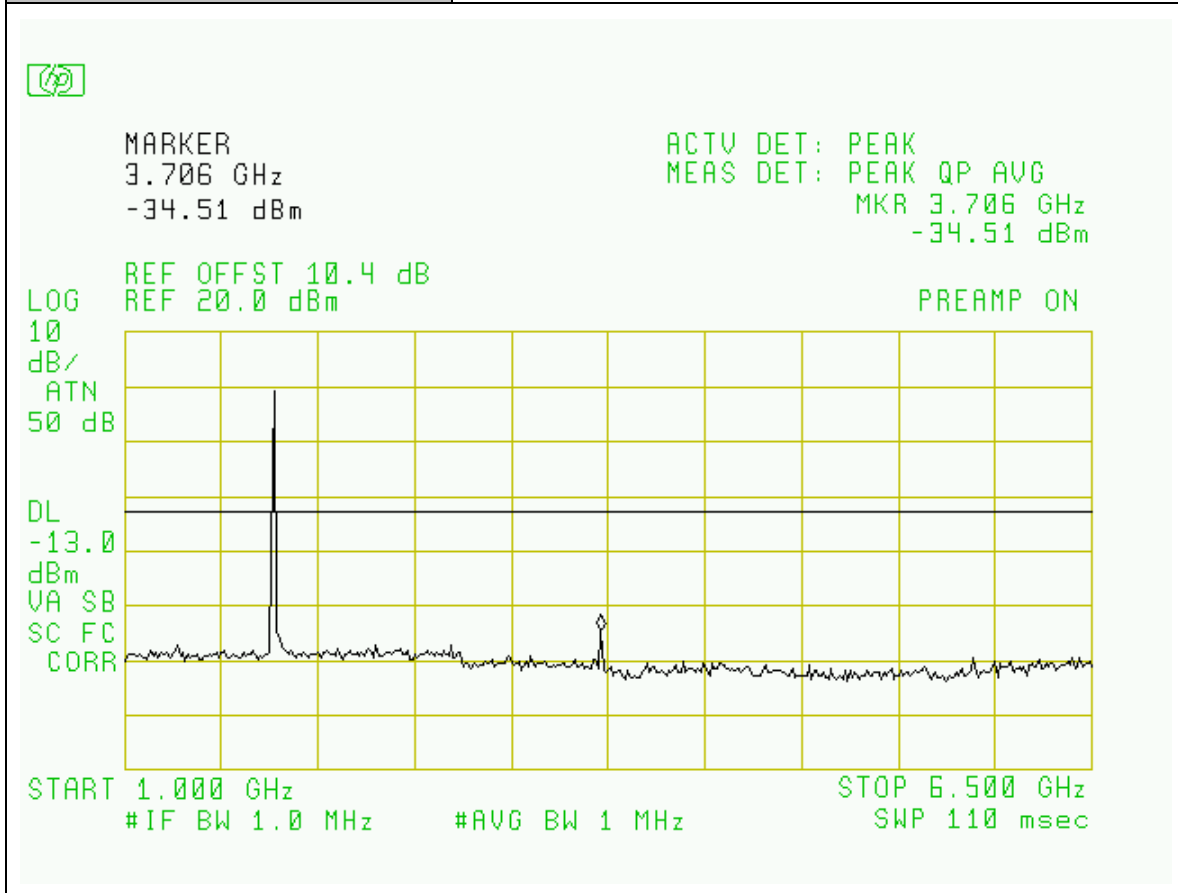
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



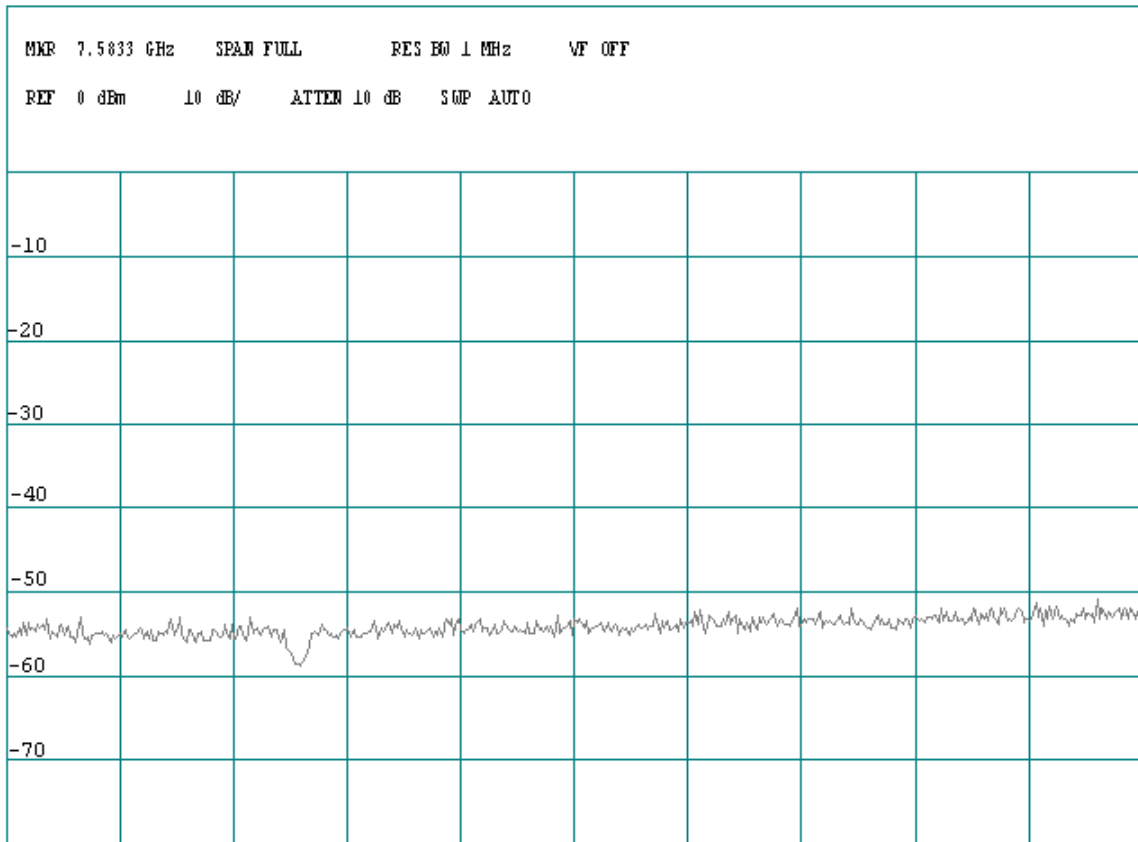
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Uplink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



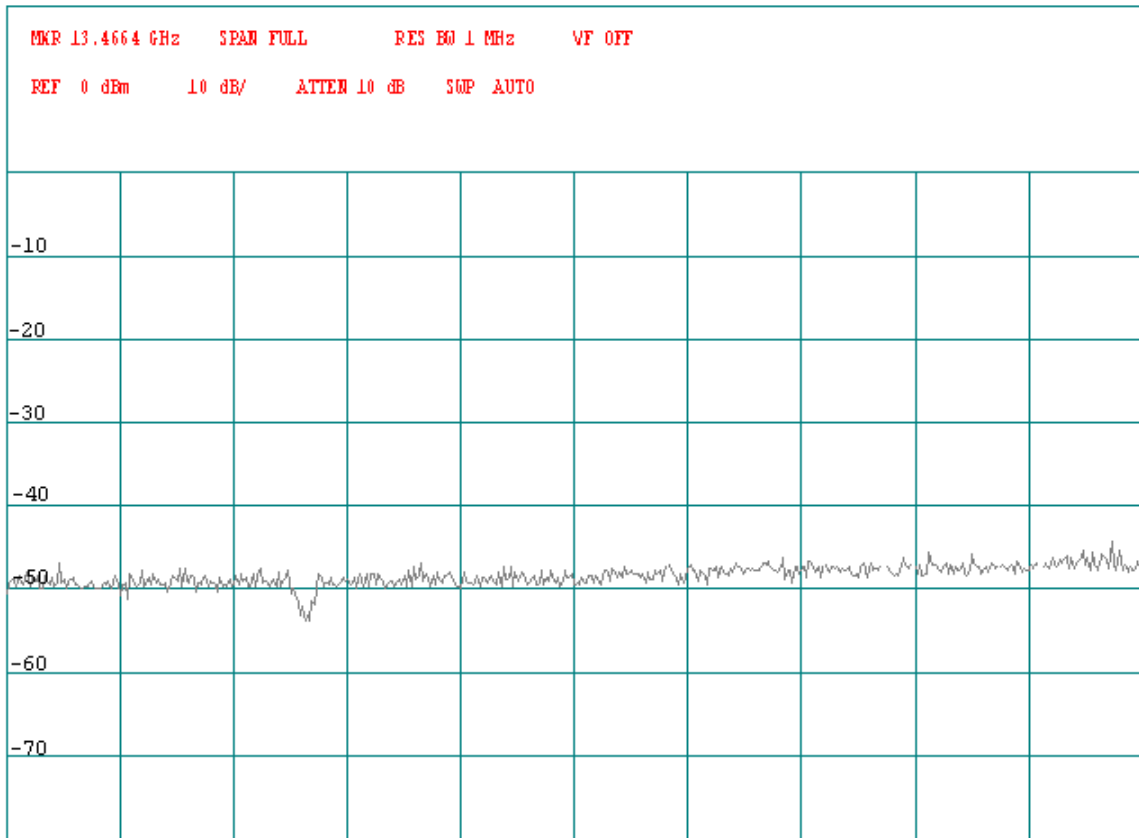
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

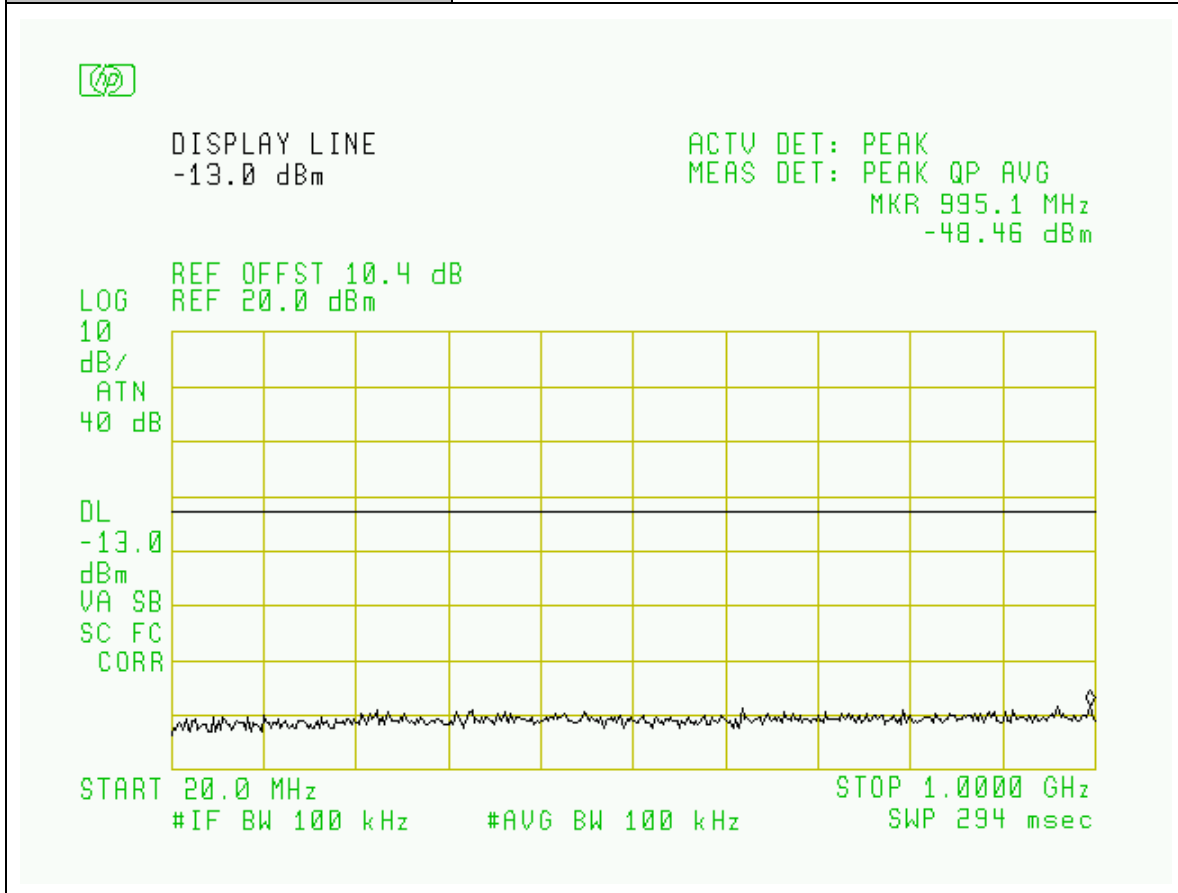
<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Uplink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT BTS





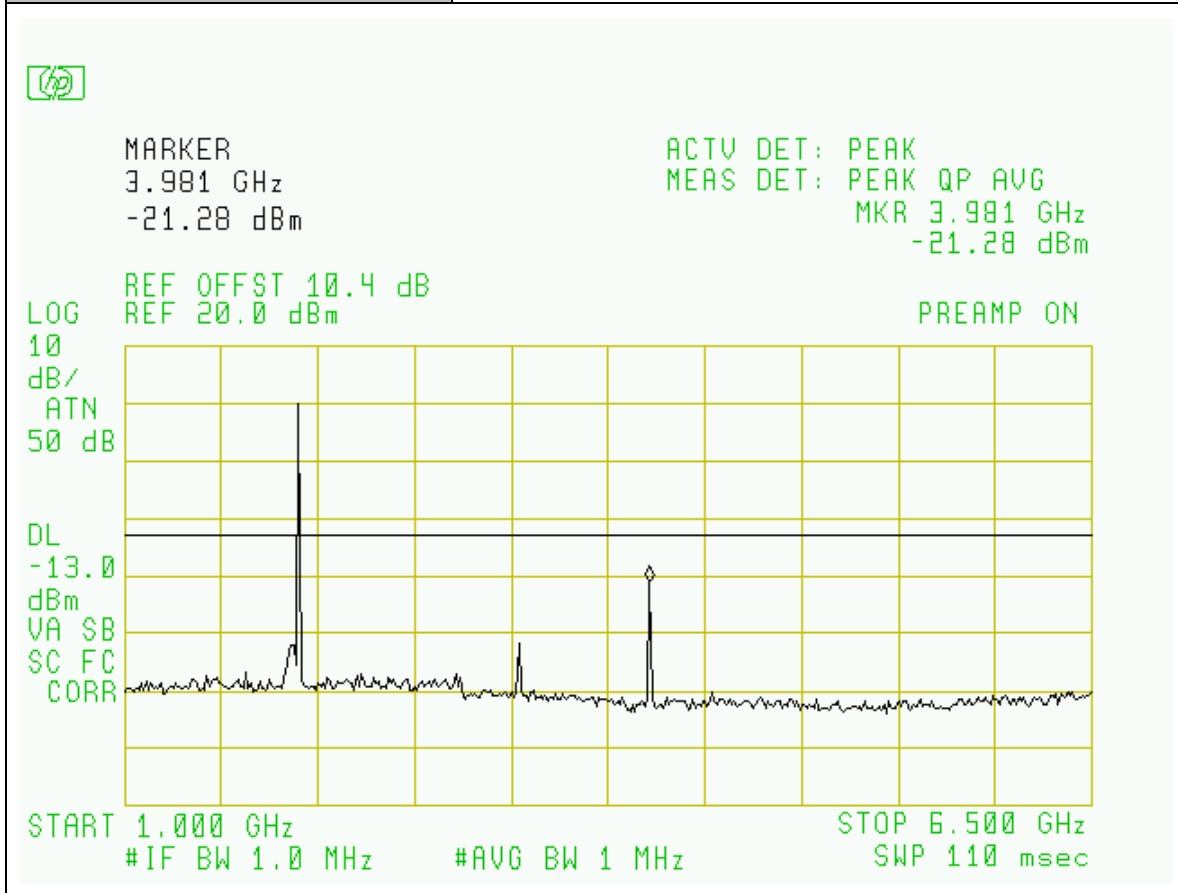
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



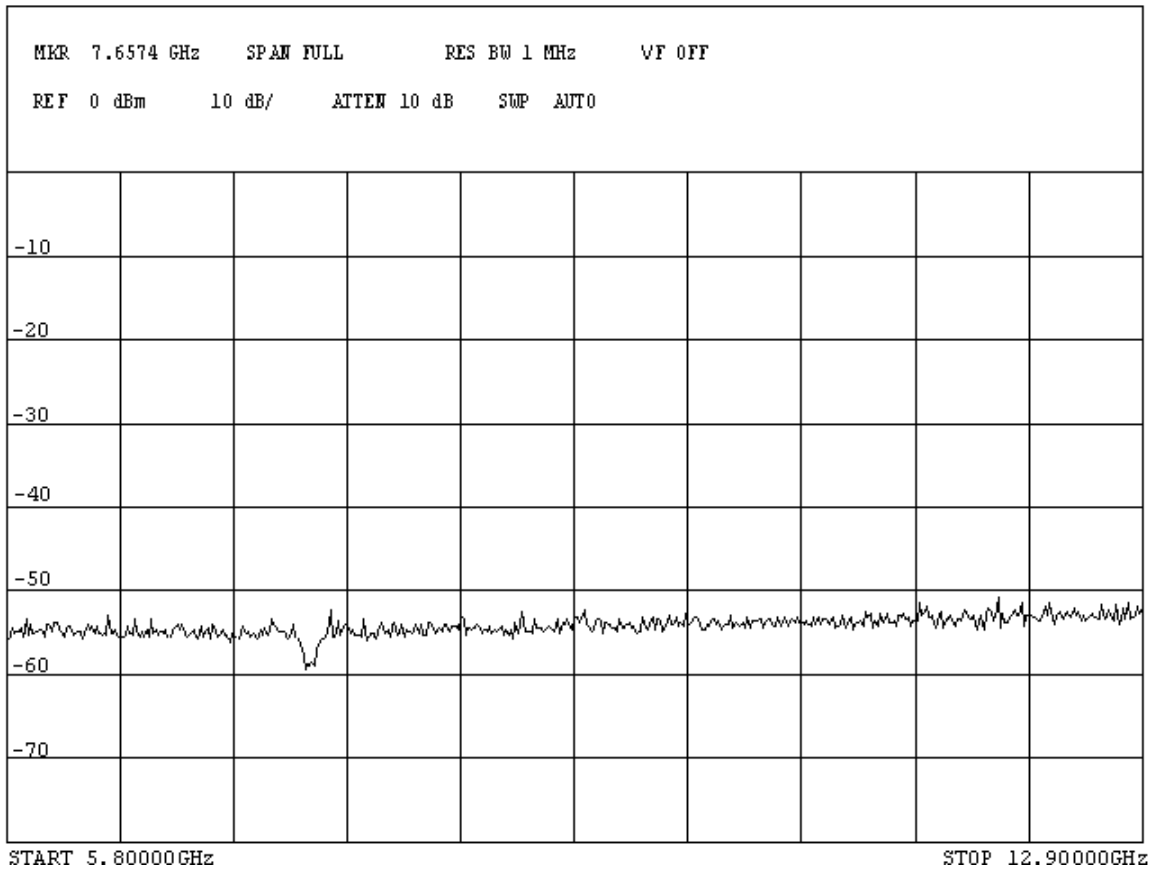
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Hi-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



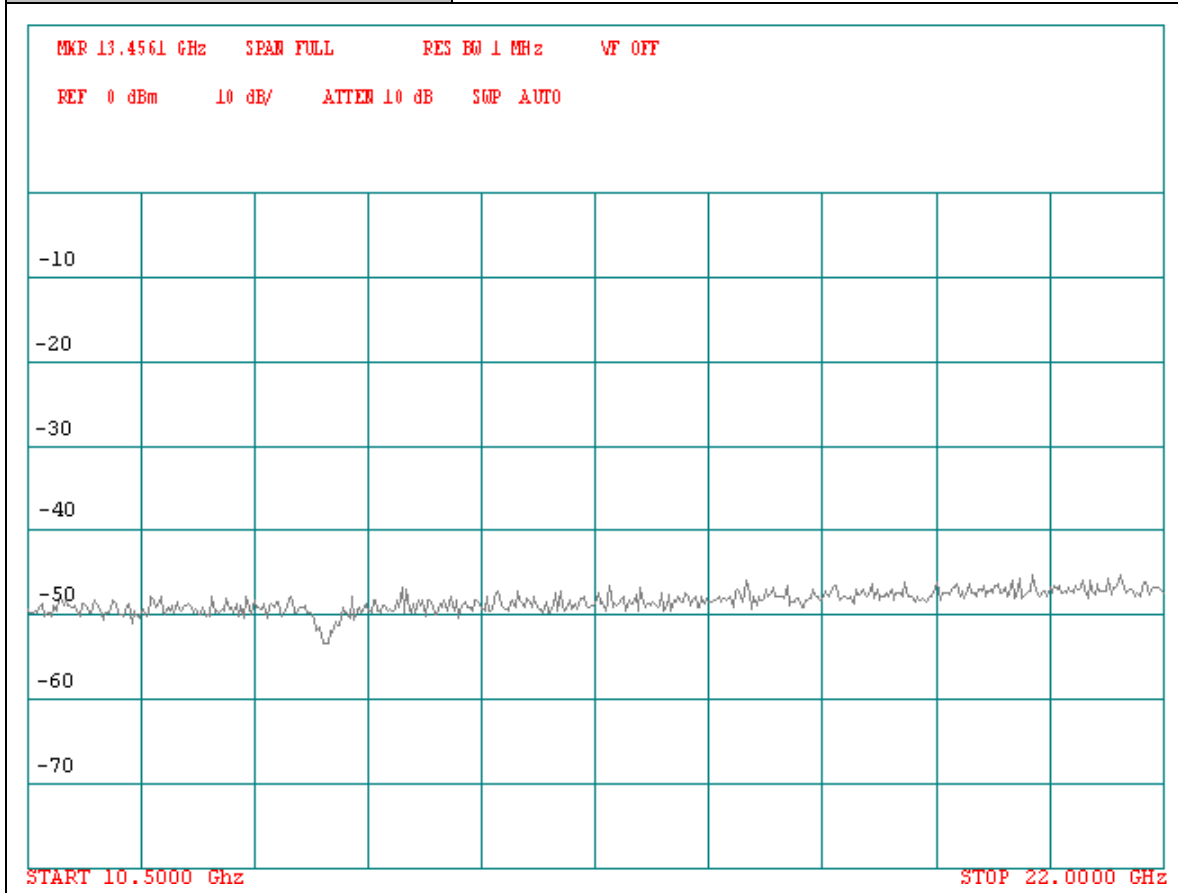
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



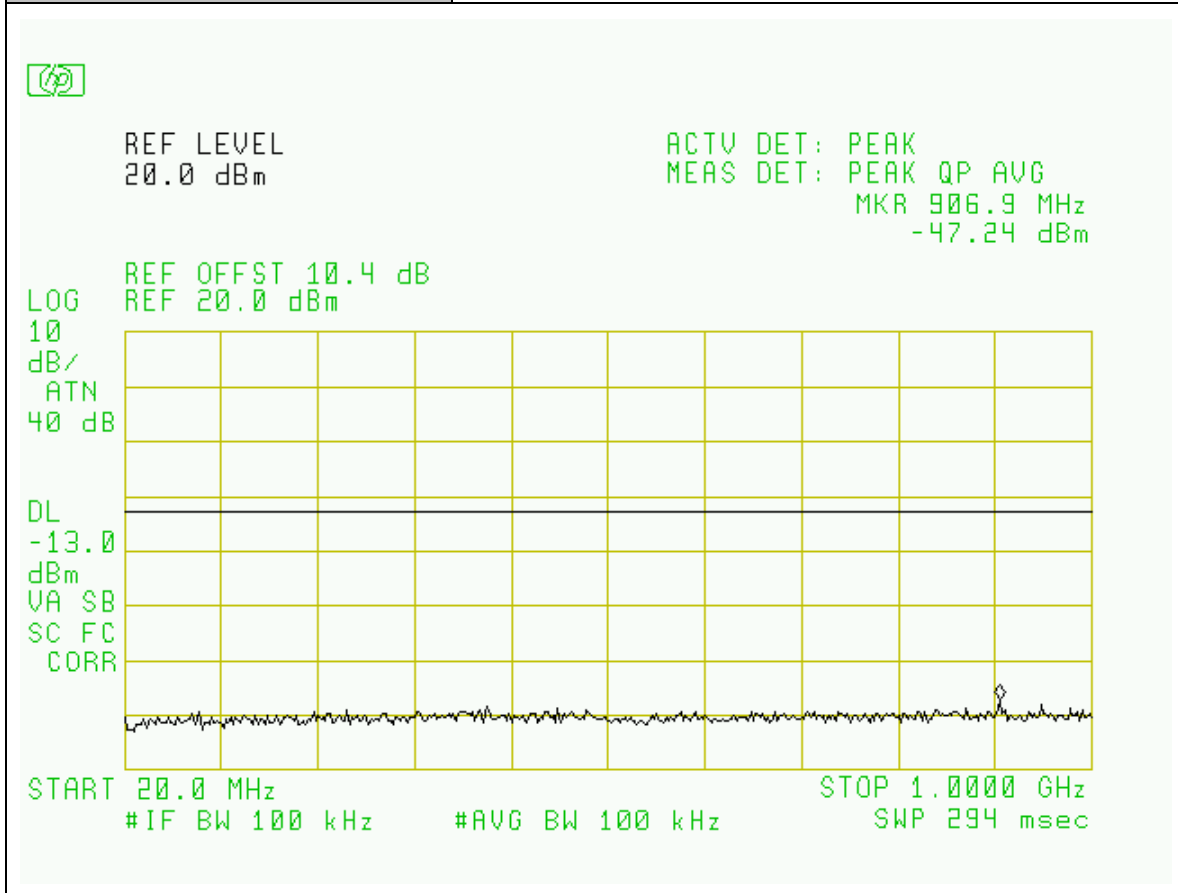
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Hi-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



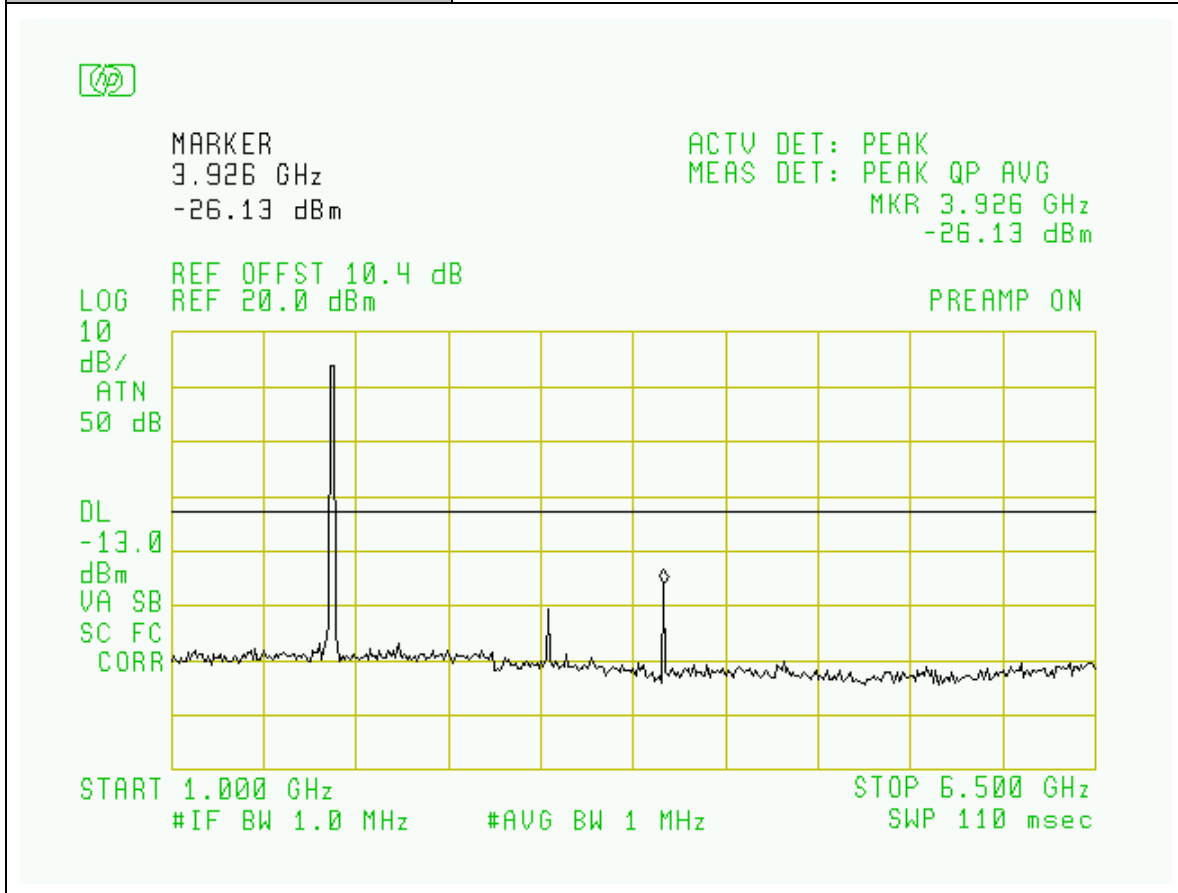
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



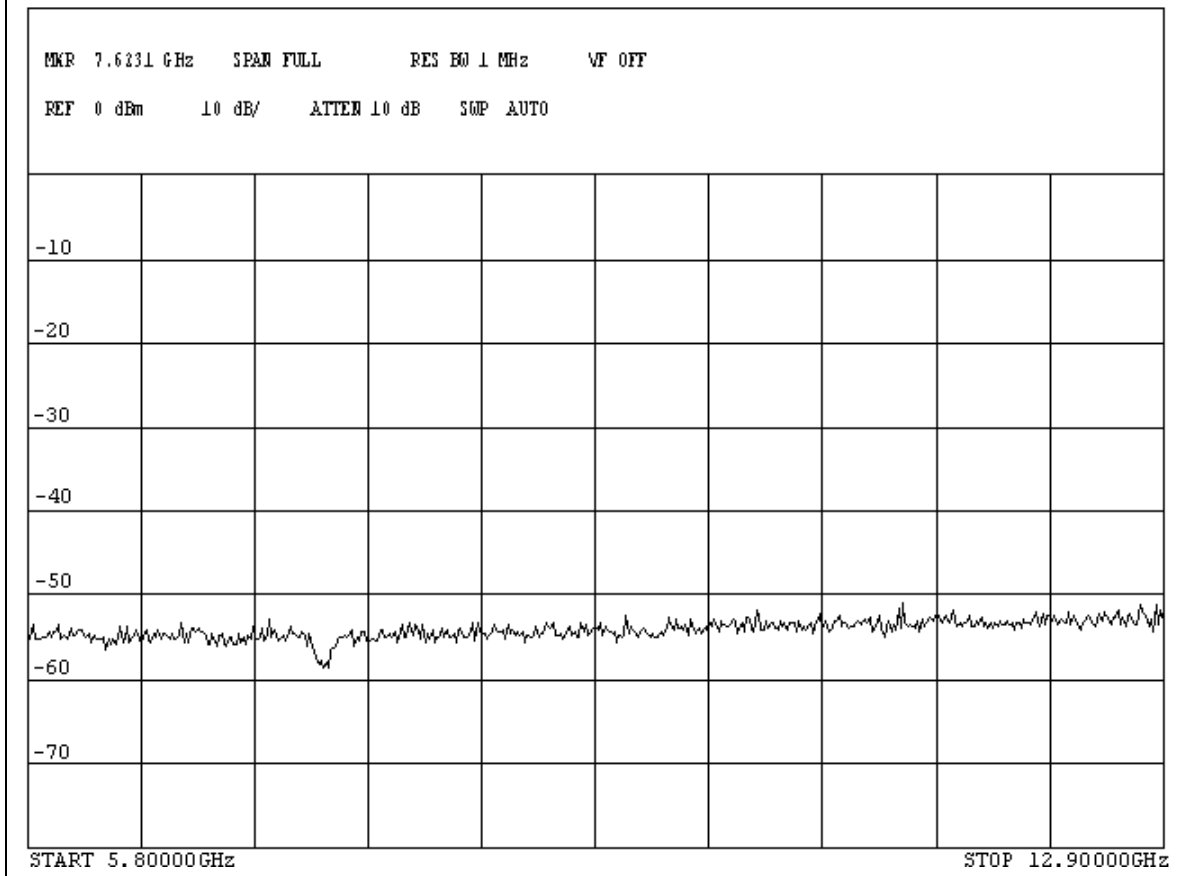
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Mid-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



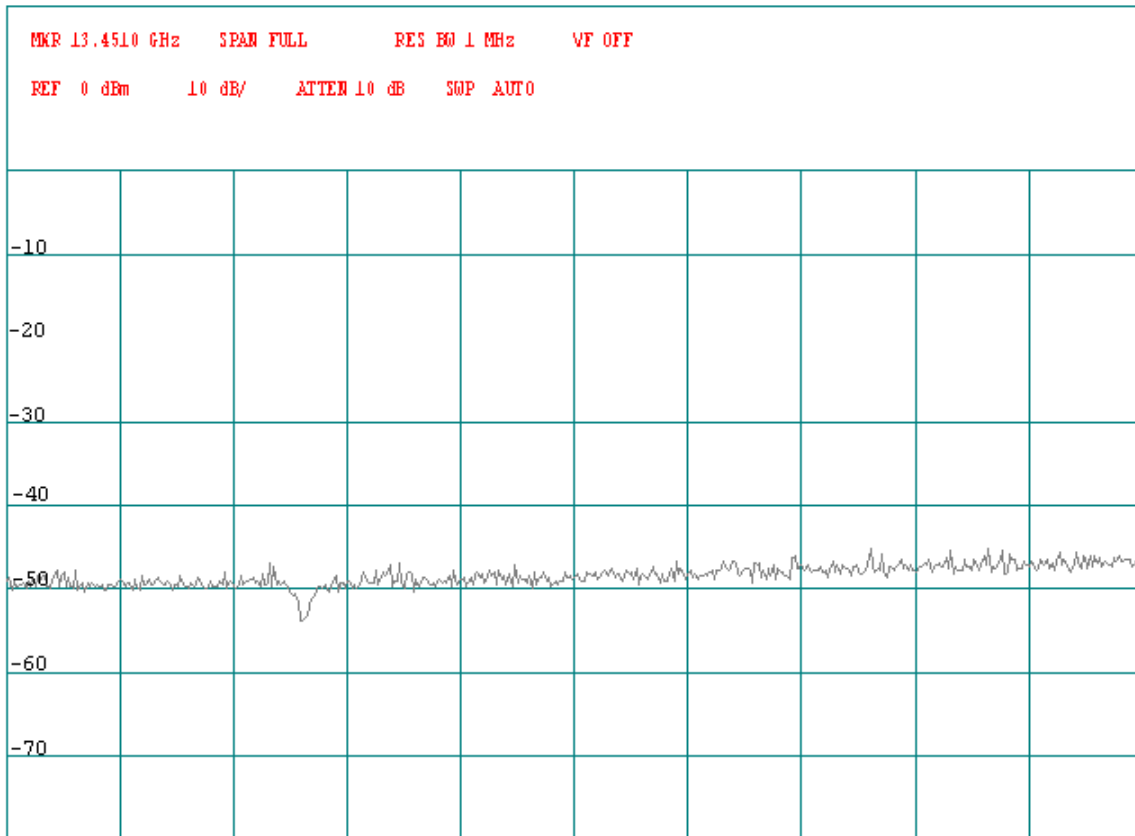
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Mid-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE

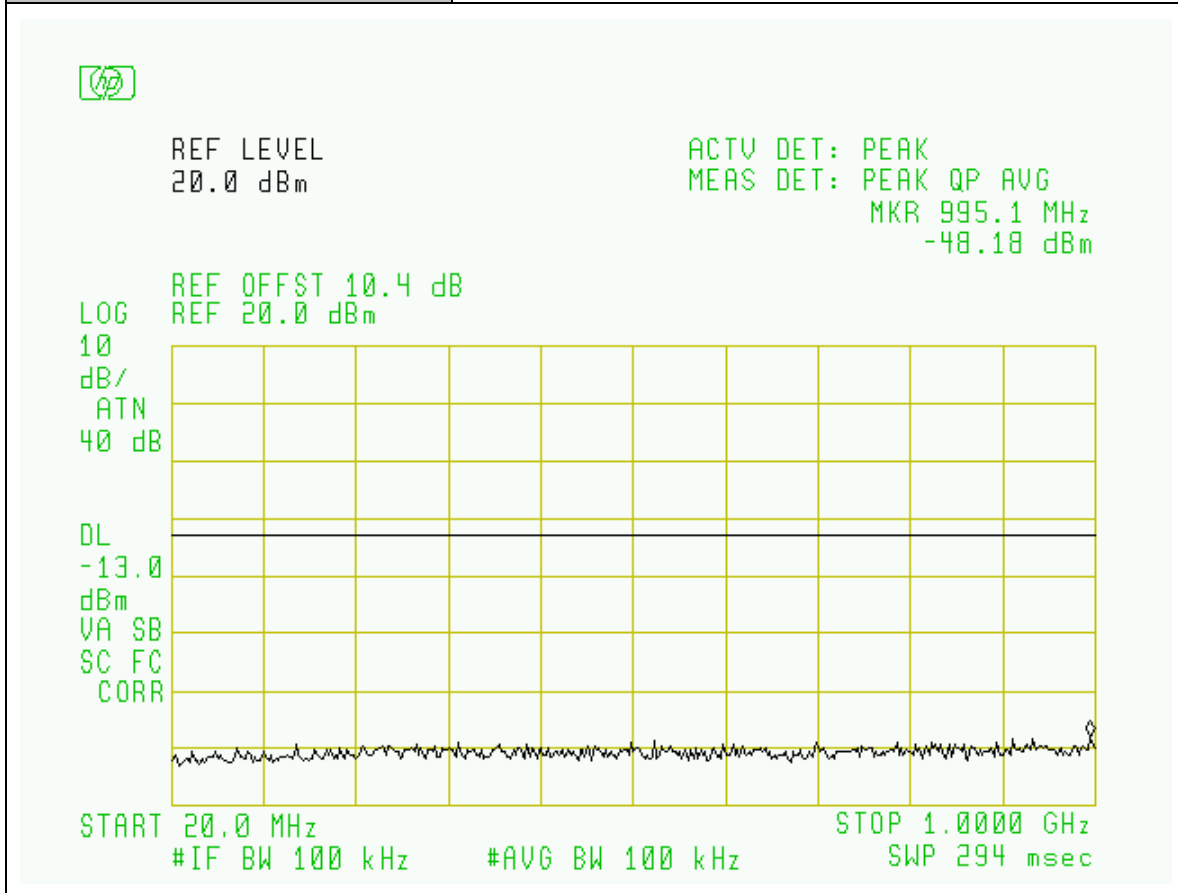


START 10.5000 GHz STOP 22.0000 GHz



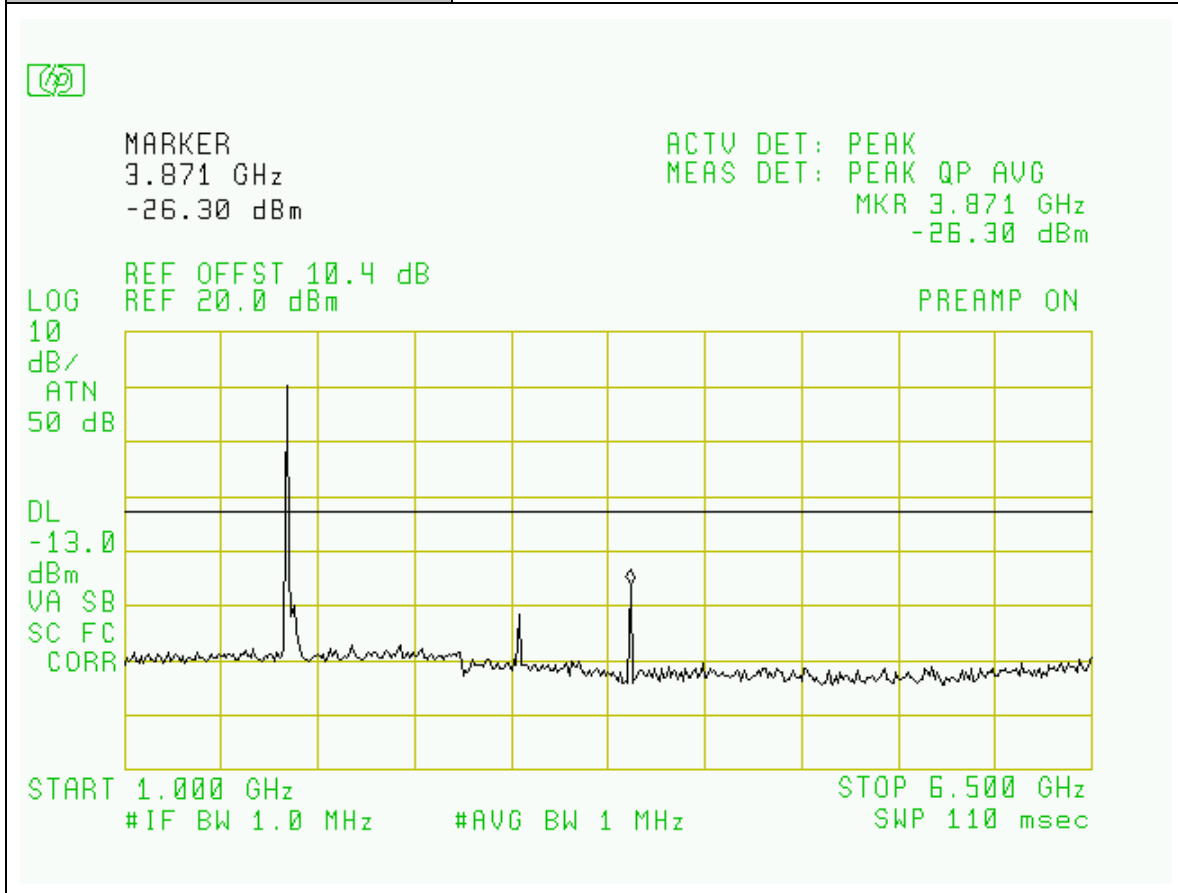
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



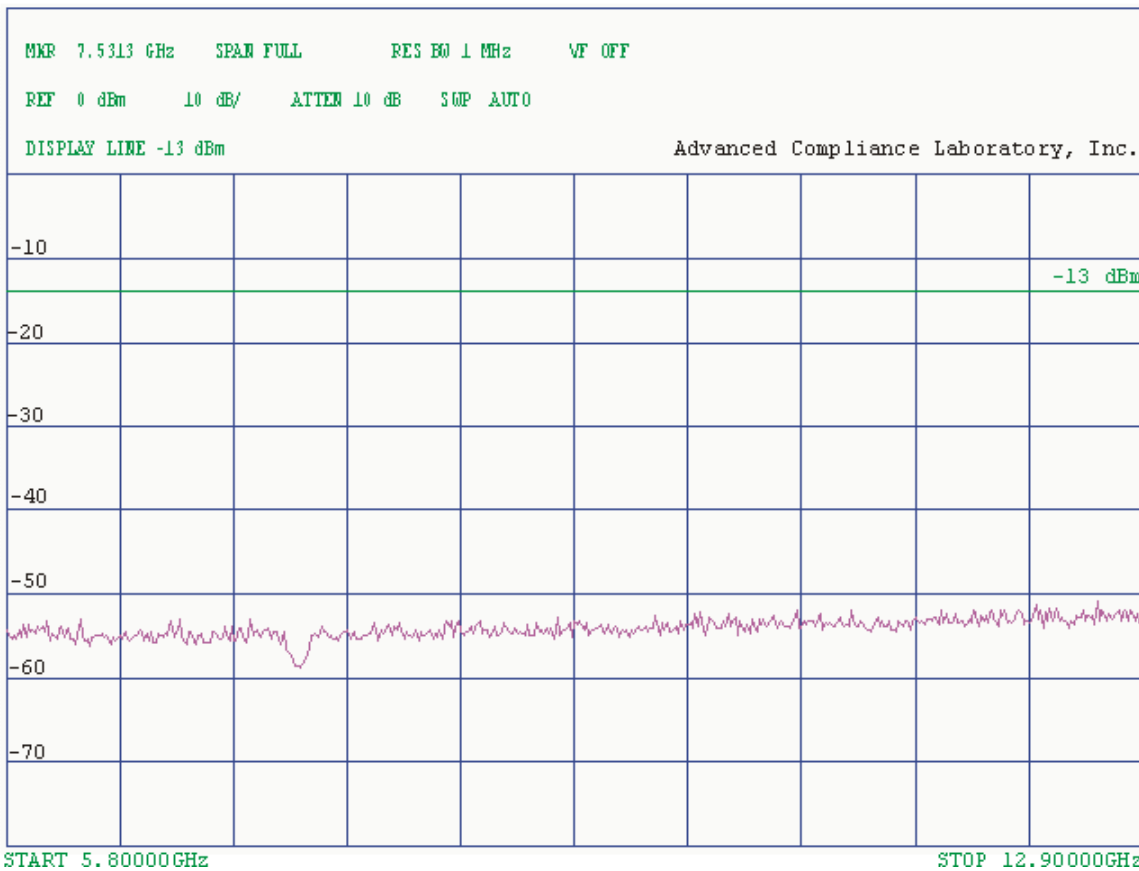
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation
<b>Plot Name:</b>	Downlink, Low-Channel
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



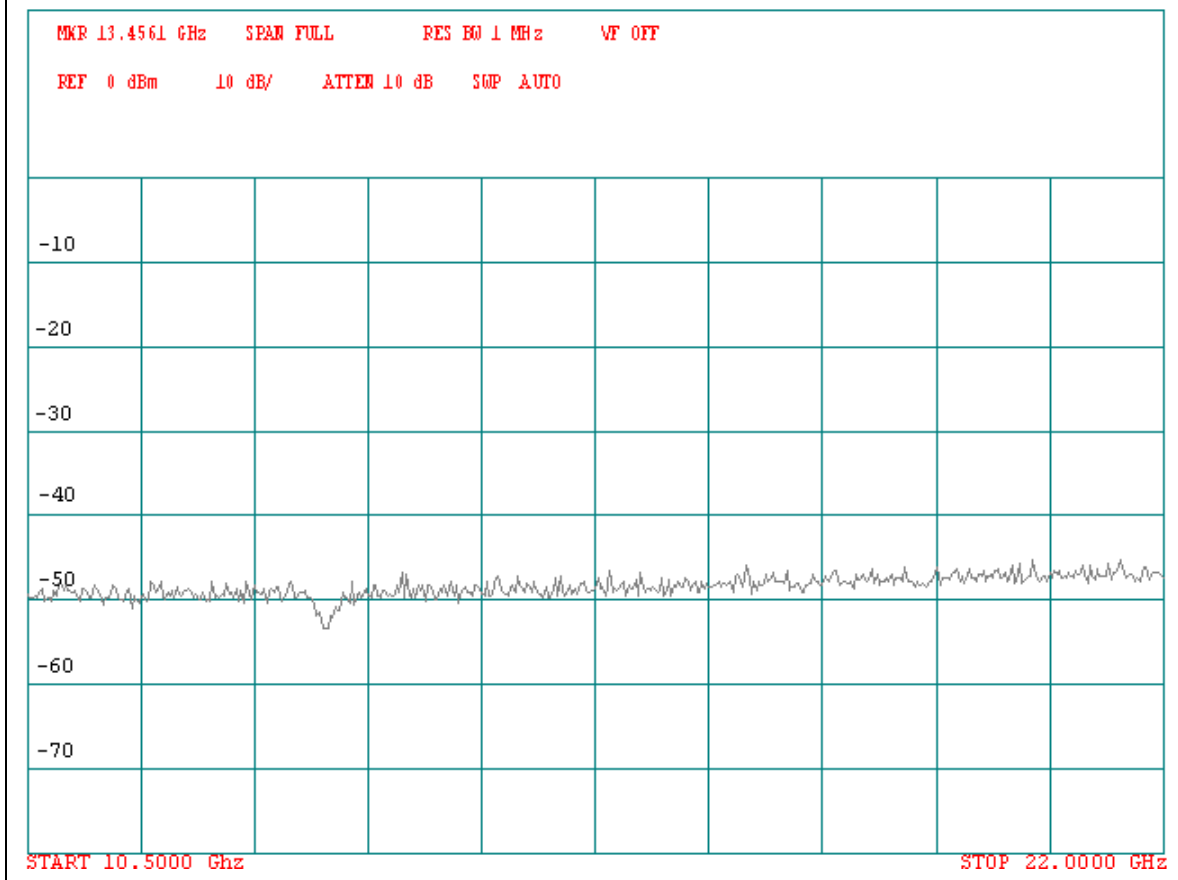
<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



<b>Project Number:</b>	0048-050318-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Tested By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	<b>Spurious Emissions at Antenna Terminals: PCS Bands / GSM Modulation</b>
<b>Plot Name:</b>	<b>Downlink, Low-Channel</b>
<b>Configuration:</b>	SG Input: -50dBm, Output Port: EUT MOBILE



**Section 6. Field Strength of Spurious**

<b>Name of Test:</b>	<i>Field Strength of Spurious</i>	<b>Test Standard:</b>	22.917 24.238
<b>Tested By:</b>	EDWARD LEE	<b>Test Date:</b>	04/18/2005-05/06/2005

**Minimum Standard:** Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least  $43 + 10 \log P$ . This is equivalent to -13 dBm absolute power.  
Para. No. 24.238(a). The magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under conditions specified in the instruction manual and/or alignment procedure, shall not less than  $43+10 \log$  (mean output power in watts) dBc below the mean power output outside a licensee's frequency block (-13dBm).

**Method of Measurement:** TIA/EIA-603-1992, Section 2.2.12  
The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The spurious emissions were measured at a distance of 3 meters. The EUT was then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna was fed with a signal at the spurious frequency. The level of the signal was adjusted to repeat the previously measured level. The resulting ERP is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

**Test Result:**

**Complies**

**Test Data:**

See Attached Table(s)

<b>Configuration</b>	PCS w/ Server Antenna
<b>Band</b>	Downlink
<b>Channel</b>	Low

Freq. (MHz)	H,V	SA Reading (dBuV)	SG Reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
3860.4	V	82.5	-42	1.8	9.6	-34.2	-13	-21.2
5790.6	V	56.7	-63	2.4	10.8	-54.6	-13	-41.6
7736.8	V	46.0	-73	2.8	10.6	-65.2	-13	-52.2
9671.0	V	42.8*	-77	3.1	10.9	-69.2	-13	-56.2
11605.2	V	44.0*	-78	3.4	12.1	-69.3	-13	-56.3
13539.4	V	44.6*	-78	3.9	12.1	-69.8	-13	-56.8
15473.6	V	46.0*	-77	4.2	14.9	-66.3	-13	-53.3
17407.8	V	48.0*	-72	4.5	10.6	-65.9	-13	-52.9
19342.0	V	48.0*	-71	4.8	8	-67.8	-13	-54.8

**NOTE:**

\* Measured noise floor

**SA:** Spectrum Analyzer**SG:** Signal Generator**CL:** SMA cable loss (6ft)**Worse case: Vertical****H=horizontal and V=vertical****EIRP =** SG reading - CL + Gain (dBi)**Margin =** EIRP - Limit

<b>Configuration</b>	PCS w/ Server Antenna
<b>Band</b>	Downlink
<b>Channel</b>	Mid

Freq. (MHz)	H,V	SA Reading (dBuV)	SG Reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
3920	V	84.0	-38	1.8	9.6	-30.2	-13	-17.2
5880	V	57.1	-63	2.4	10.8	-54.6	-13	-41.6
7840	V	49.0	-72	2.8	10.6	-64.2	-13	-51.2
9800	V	44.0*	-77	3.1	10.9	-69.2	-13	-56.2
11760	V	44.1*	-78	3.4	12.1	-69.3	-13	-56.3
13720	V	44.0*	-78	3.9	12.1	-69.8	-13	-56.8
15680	V	46.0*	-77	4.2	14.9	-66.3	-13	-53.3
17640	V	48.1*	-72	4.5	10.6	-65.9	-13	-52.9
19600	V	48.5*	-71	4.8	8	-67.8	-13	-54.8

**NOTE:**

\* Measured noise floor

**SA:** Spectrum Analyzer**SG:** Signal Generator**CL:** SMA cable loss (6ft)**Worse case: Vertical****H=horizontal and V=vertical****EIRP =** SG reading - CL + Gain (dBi)**Margin =** EIRP - Limit



<b>Configuration</b>	PCS w/ Server Antenna
<b>Band</b>	Downlink
<b>Channel</b>	High

Freq. (MHz)	H,V	SA Reading (dBuV)	SG Reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
3979.6	V	81.3	-44	1.8	9.7	-36.1	-13	-23.1
5969.4	V	55.0	-65	2.4	10.9	-56.5	-13	-43.5
7959.2	V	46.5	-74	2.8	10.2	-66.6	-13	-53.6
9949.0	V	44.5*	-76	3.1	10.9	-68.2	-13	-55.2
11938.8	V	44.0*	-78	3.4	12.0	-69.4	-13	-56.4
13928.6	V	44.5*	-78	3.9	11.8	-70.1	-13	-57.1
15918.4	V	46.8*	-77	4.2	15.5	-65.7	-13	-52.7
17908.2	V	48.0*	-72	4.5	9.8	-66.7	-13	-53.7
19898.0	V	48.0*	-71	4.8	7.8	-68	-13	-55

**NOTE:**

\* Measured noise floor

**SA:** Spectrum Analyzer**SG:** Signal Generator**CL:** SMA cable loss (6ft)**Worse case: Vertical****H=horizontal and V=vertical****EIRP =** SG reading - CL + Gain (dBi)**Margin =** EIRP - Limit

<b>Configuration</b>	PCS w/ Mobile Port Terminated
<b>Band</b>	Downlink
<b>Channel</b>	High +Mid +Low

Freq. (MHz)	H,V	SA Reading (dBuV)	SG Reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
3979.6	V	44.0	-75	1.8	9.7	-67.1	-13	-54.1
5969.4	V	44.6	-77	2.4	10.9	-68.5	-13	-55.5
7959.2	V	42.0	-78	2.8	10.2	-70.6	-13	-57.6
9949.0	V	43.9	-77	3.1	10.9	-69.2	-13	-56.2
11938.8	V	44.0	-78	3.4	12.0	-69.4	-13	-56.4
13928.6	V	44.5	-78	3.9	11.8	-70.1	-13	-57.1
15918.4	V	46.0	-77	4.2	15.5	-65.7	-13	-52.7
17908.2	V	48.0	-71	4.5	9.8	-65.7	-13	-52.7
19898.0	V	47.8	-71	4.8	7.8	-68	-13	-55

**NOTE:**

\* Measured noise floor

**SA:** Spectrum Analyzer**SG:** Signal Generator**CL:** SMA cable loss (6ft)**Worse case: Vertical****H=horizontal and V=vertical****EIRP =** SG reading - CL + Gain (dBi)**Margin =** EIRP - Limit

<b>Configuration</b>	PCS w/ BTS Port Terminated
<b>Band</b>	Uplink
<b>Channel</b>	High + Mid + Low

Freq. (MHz)	H,V	SA Reading (dBuV)	SG Reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
3819.6	V	45.0	-74	1.7	9.6	-66.1	-13	-53.1
5729.4	V	44.0	-75	2.3	10.7	-66.6	-13	-53.6
7639.2	V	41.9	-78	2.8	11.2	-69.6	-13	-56.6
9549.0	V	42.5	-78	3.0	11.2	-69.8	-13	-56.8
11458.8	V	44.7	-78	3.3	11.8	-69.5	-13	-56.5
13368.6	V	45.8	-78	3.8	12.0	-69.8	-13	-56.8
15278.4	V	47.0	-77	4.1	13.1	-68	-13	-55
17188.2	V	47.5	-76	4.4	13.2	-67.2	-13	-54.2
19098.0	V	47.7	-70	4.7	8.0	-66.7	-13	-53.7

**NOTE:**

\* Measured noise floor

**SA:** Spectrum Analyzer**SG:** Signal Generator**CL:** SMA cable loss (6ft)**Worse case: Vertical****H=horizontal and V=vertical****EIRP =** SG reading - CL + Gain (dBi)**Margin =** EIRP - Limit

**Section 7. Frequency Stability**

<b>Name of Test:</b>	<i>Frequency Stability</i>	<b>Test Standard:</b>	<i>2.1055 22.355&amp;24.235</i>
<b>Tested By:</b>	WEI LI	<b>Test Date:</b>	03/28-04/05/2005

**Minimum Standard:** Para. No. 22.355. The transmitter carrier frequency shall remain within the tolerances given in Table C-1.

TABLE C-1.—FREQUENCY TOLERANCE FOR TRANSMITTERS IN THE PUBLIC MOBILE SERVICES

Frequency range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50 .....	20.0	20.0	50.0
50 to 450 .....	5.0	5.0	50.0
450 to 512 .....	2.5	5.0	5.0
821 to 896 .....	1.5	2.5	2.5
928 to 929 .....	5.0	n/a	n/a
929 to 960 .....	1.5	n/a	n/a
2110 to 2220 .....	10.0	n/a	n/a

Para No. 24.235. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

**Method of Measurement:** Frequency Stability With Voltage Variation:  
The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. Set SA resolution bandwidth low enough (30Hz) to obtain the desired frequency resolution. (Using frequency counter method: The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10MHz ref, in of the signal generator). With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation:  
The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

**Test Result:**

**Complies**

---

**Test Data:**

See Attached Table(s)

***Not Applicable***

**Section 8. Out of Band Rejection**

<b>Name of Test:</b>	<i>Out of Band Rejection</i>	<b>Test Standard:</b>	
<b>Tested By:</b>	Edward Lee	<b>Test Date:</b>	04/18/2005-05/06/2005

---

**Minimum Standard:** The passband gain shall not exceed the nominal gain by more than 1.0 dB. The 20 dB bandwidth shall not exceed the nominal bandwidth that is stated by the manufacturer. Outside of the 20 dB bandwidth, the gain shall not exceed the gain at the 20 dB point.

---

**Method of Measurement:** Adjust the internal gain control of the equipment under test to the nominal gain for which equipment certification is sought. With the aid of a signal generator and spectrum analyzer, measure the 20 dB bandwidth of the amplifier (i.e. at the point where the gain has fallen by 20 dB). Measure the gain-versus-frequency response of the amplifier from the midband frequency  $f_0$  of the passband up to at least  $f_0 \pm 250\%$  of the 20 dB bandwidth.

---

**Test Result:**

**Complies**

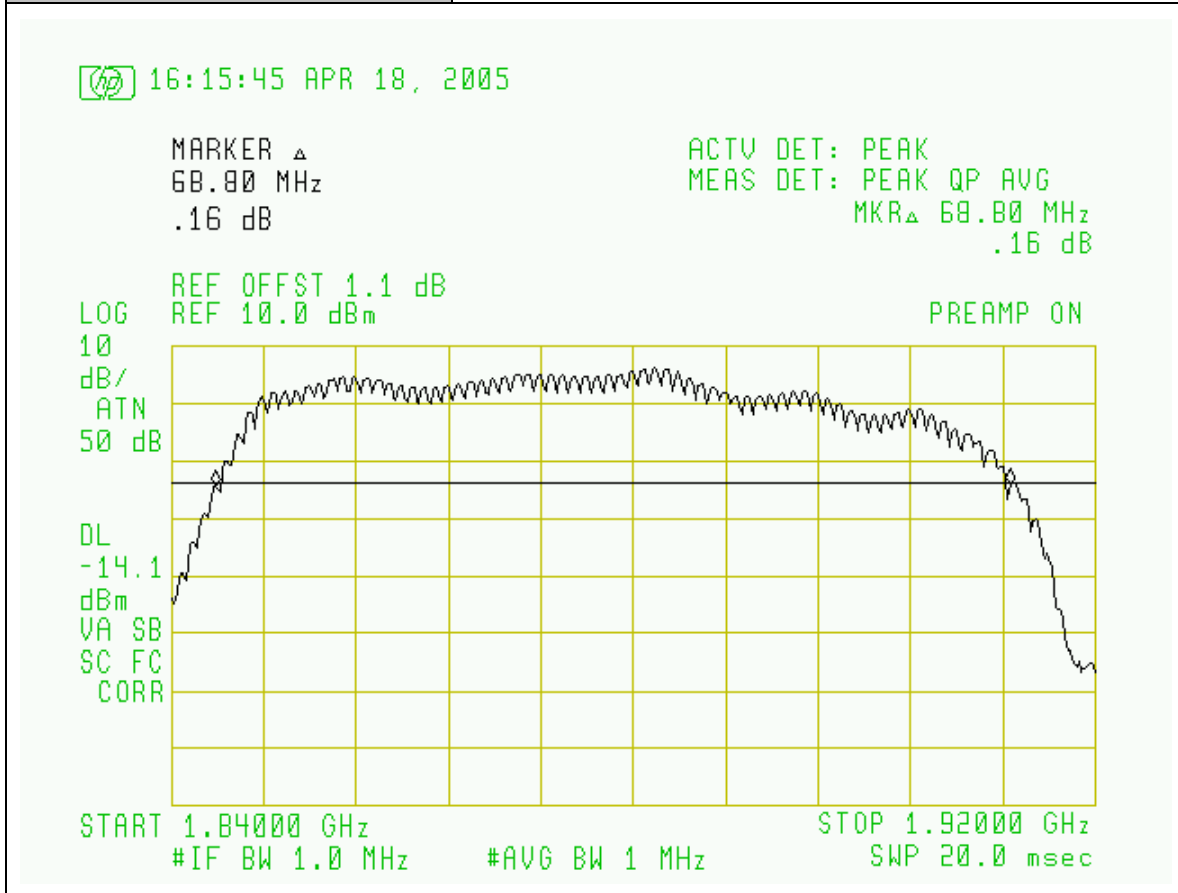
---

**Test Data:**

See Attached Table(s)

<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Test By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

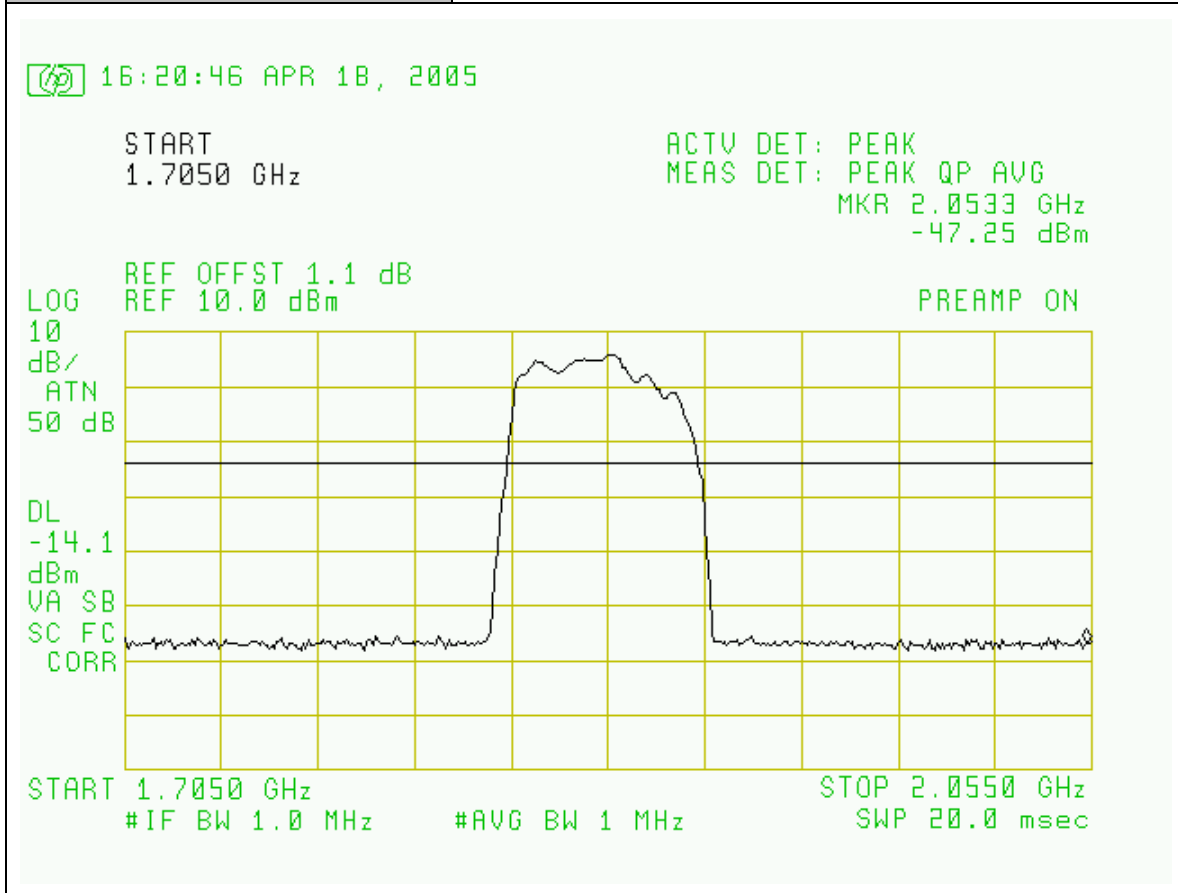
<b>Section:</b>	Pass Band Gain & 20dB Bandwidth
<b>Plot Name:</b>	1900 PCS Uplink Full Band-85MHz Span
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -60dBm





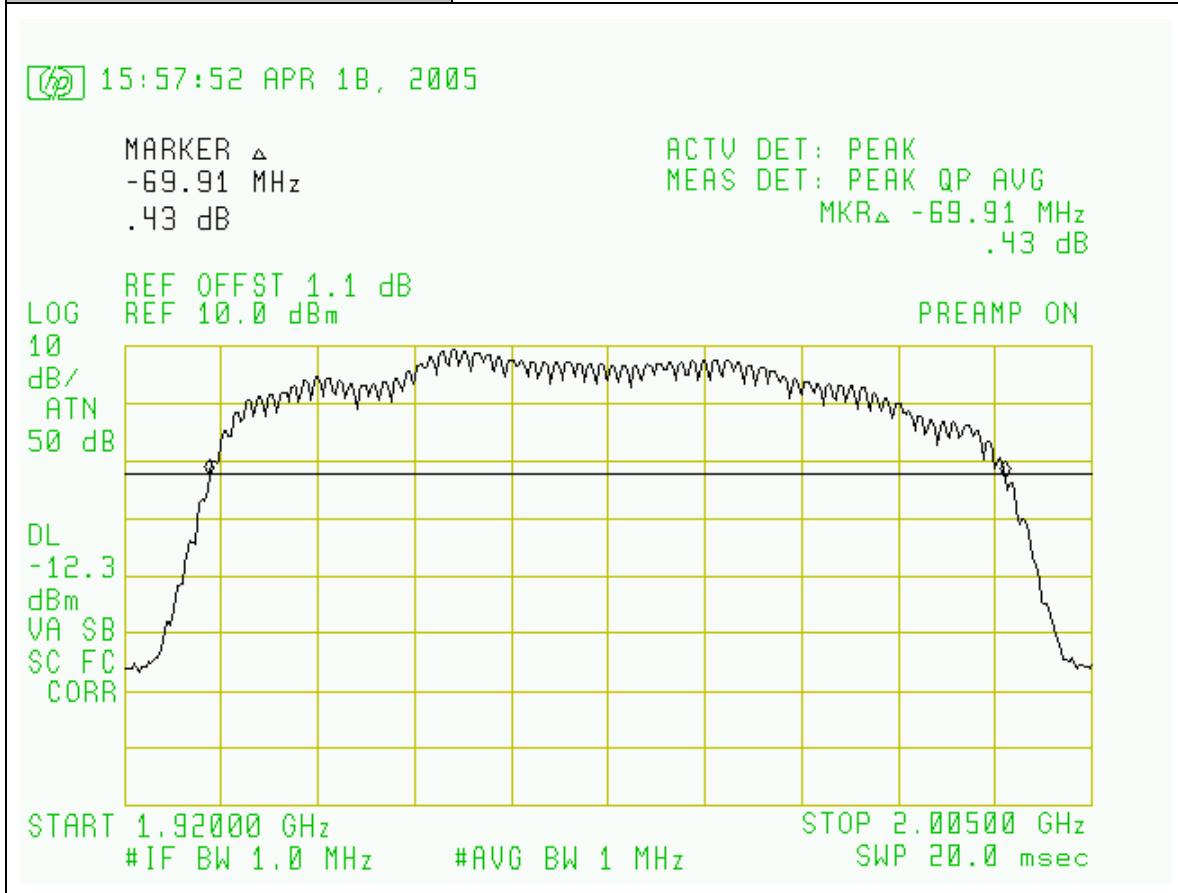
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Test By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Pass Band Gain & 20dB Bandwidth
<b>Plot Name:</b>	1900 PCS Uplink Full Band-250% Span
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -65dBm



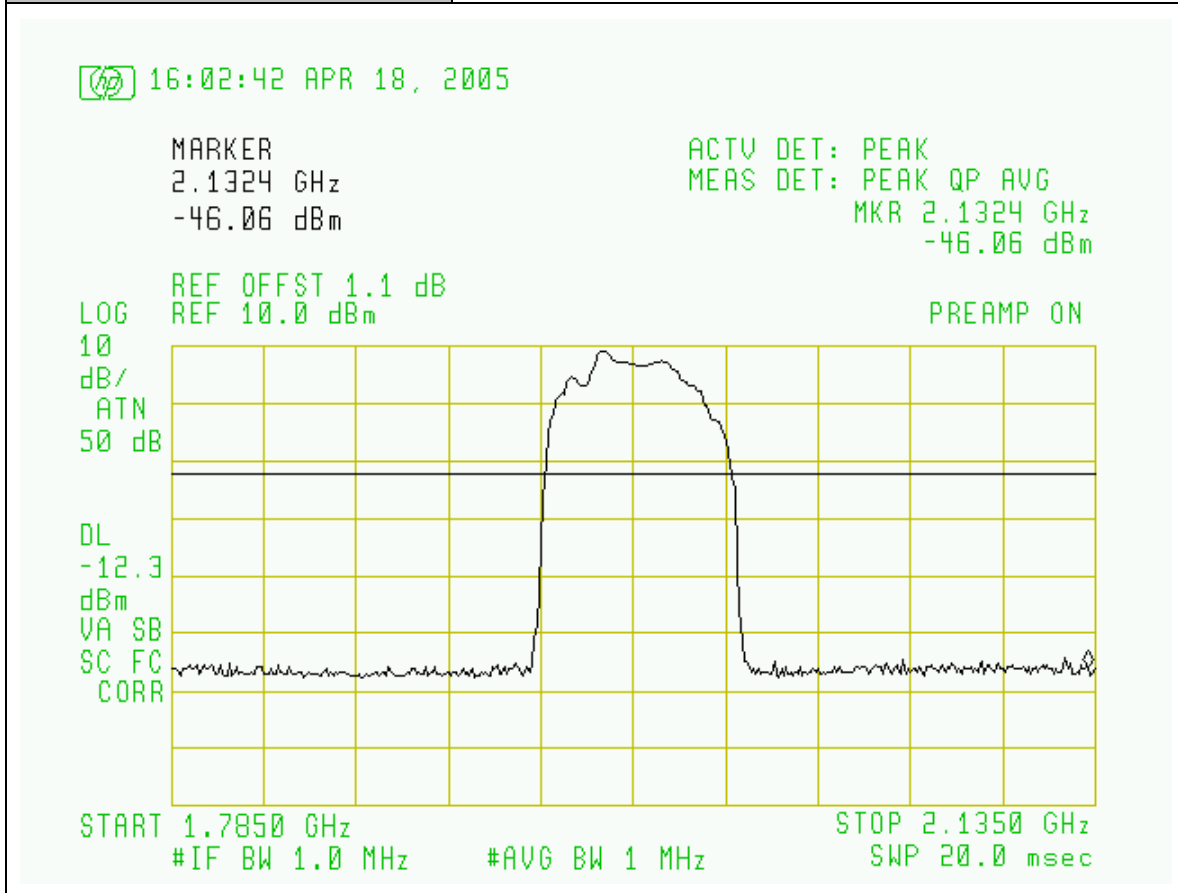
<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Test By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Pass Band Gain & 20dB Bandwidth
<b>Plot Name:</b>	1900 PCS Downlink Full Band-85MHz Span
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -65dBm



<b>Project Number:</b>	0048-050415-01
<b>EUT:</b>	Shyam Home Booster HB-20-1900
<b>SN:</b>	HBDE040001
<b>Test By:</b>	Edward Lee
<b>Temperature:</b>	70° F
<b>Humidity:</b>	30%

<b>Section:</b>	Pass Band Gain & 20dB Bandwidth
<b>Plot Name:</b>	1900 PCS Downlink Full Band-250% Span
<b>Configuration:</b>	Server Antenna Connector was connected to SG. Input: -60dBm



**Section 9. Test Equipment List**

<b>Manufacture</b>	<b>Model</b>	<b>Serial No.</b>	<b>Description</b>	<b>Last Cal dd/mm/ yy</b>	<b>Cal Due dd/mm/ yy</b>
HP	HP8546A	3448A00290	EMI Receiver	12/01/05	12/01/06
HP	E4432B	US38220355	250K-3GHz Signal Generator	17/09/03	17/09/05
EMCO	3104C	9307-4396	20-300MHz Biconical Antenna	12/02/05	12/02/06
EMCO	3146	9008-2860	200-1000MHz Log-Periodic Antenna	09/02/05	09/02/06
Fischer Custom	LISN-2	900-4-0008	Line Impedance Stabilization Networks	23/08/04	23/08/05
Fischer Custom	LISN-2	900-4-0009	Line Impedance Stabilization Networks	23/08/04	23/08/05
EMCO	6502	2665	10KHz-30MHz Active Loop Antenna	27/02/05	27/02/06
EMCO	3115	4945	Double Ridge Guide Horn Antenna	11/08/04	11/08/05
HP	8569B	2607A02802	1GHz-22GHz Spectrum Analyzer	10/02/05	10/02/06
Advantest	R3271	5003583	100Hz-26.5GHz Spectrum Analyzer	27/04/04	27/05/05
Delta Design	5900C	0-67-26	Temperature Chamber	24/03/05	24/03/06
HP	E8254A	US42110367	Signal Generator	23/03/05	23/03/06
Electro-Metrics	RGA-50	8-95	Double Ridge Guide Horn Antenna	10/02/05	10/02/06
EMCO	3116	4943	Double Ridge Guide Horn Antenna	11/01/05	11/01/06
Scientific-Atlanta	12A-18	441	Wave Guide Horn Antenna	04/08/04	04/08/05

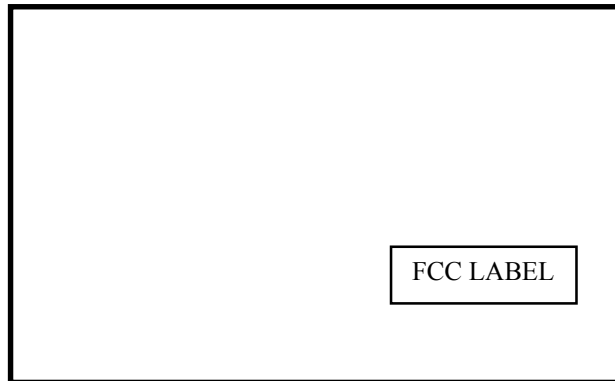
## Section 10. FCC ID Labeling

**FCC ID: S3CHB-20-1900**

This device complies with Part 2, 15, 22 & 24 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference. and
- (2) this device must accept any interference received, including interference that may cause undesired

### FCC ID Label



### Location of Label on Lower Side Wall

**Section 11. Maximum Permissible Exposure****MPE estimate is given per 2.1091 of FCC Rules:****Calculation Equation:**

$$d = 0.282 \times \frac{10^{\frac{P+G}{20}}}{\sqrt{S}}$$

Where, P(DL)= 17.1dBm, G=0 dBi (Server Antenna), P(UL)=16.85dBm, G=7 dBi (Donor Antenna), and from §1.1310 Table 1 (B), S = 0.55 mW/cm<sup>2</sup>

Plug all three items into the equation, and yields,

Power Density MPE Limit (mW/ cm <sup>2</sup> )	Output Power (dBm)	Server Antenna Gain (dBi)	Donor Antenna Gain (dBi)	Server MPE Distance (cm)	Donor MPE Distance (cm)
0.55	/	0	7	2.72	5.93

NOTE:

**For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.**