

# 1.1 Test Data

## 1.2 Effective Radiated Power Output

### A. POWER: Low (Analog Mode)

Freq. Tuned (MHz)	REF. LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)
824.04	-37.400	H	0.002	3.873
836.49	-37.600	H	0.002	3.829
848.97	-37.655	H	0.002	3.930

### B. POWER: High (Analog Mode)

Freq. Tuned (MHz)	REF. LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.04	-17.400	H	0.244	23.873	Standard
836.49	-17.600	H	0.241	23.829	Standard
848.97	-17.655	H	0.247	23.930	Standard
836.49	-17.650	H	0.239	23.779	Extended

Note: Standard and extended batteries are options for this phone

#### NOTES:

Effective Radiated Power Output Measurements by Substitution Method  
according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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 the dipole is measured. The ERP is recorded.

PCTEST™ PT. 22/24 SUPPLEMENT	 <b>FCC MEASUREMENT SUPPLEMENT</b>		Reviewed By: Quality Manager
Test Report S/N: 0502040066	Test Dates: February 9, 2005	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPA860
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## 2.1 Test Data

### 2.2 AMPS Radiated Measurements

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 824.04 MHz  
 CHANNEL: 0991 (Low)  
 MEASURED OUTPUT POWER: 23.930 dBm = 0.247 W  
 MODULATION SIGNAL: FM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10}(W) =$  36.93 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1648.08	-40.98	6.10	-34.88	H	58.8
2472.12	-41.28	6.70	-34.58	H	58.5
3296.16	-42.88	6.80	-36.08	H	60.0
4120.20	-43.78	6.50	-37.28	H	61.2

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001: \_\_\_\_\_

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

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Test Report S/N: 0502040066	Test Dates: February 9, 2005	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHA860
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## 2.1 Test Data (Continued)

### 2.3 AMPS Radiated Measurements

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 836.49 MHz  
 CHANNEL: 0383 (Mid)  
 MEASURED OUTPUT POWER: 23.930 dBm = 0.247 W  
 MODULATION SIGNAL: FM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  36.93 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-51.08	6.10	-44.98	H	68.9
2509.47	-40.88	6.70	-34.18	H	58.1
3345.96	-43.48	6.80	-36.68	H	60.6
4182.45	-43.58	6.50	-37.08	H	61.0

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001: \_\_\_\_\_

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

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## 2.1 Test Data (Continued)

### 2.4 AMPS Radiated Measurements

#### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 848.97 MHz  
 CHANNEL: 0799 (High)  
 MEASURED OUTPUT POWER: 23.930 dBm = 0.247 W  
 MODULATION SIGNAL: FM (Internal)  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10} (W) =$  36.93 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
1697.94	-48.98	6.10	-42.88	H	66.8
2546.91	-41.08	6.70	-34.38	H	58.3
3395.88	-44.38	6.80	-37.58	H	61.5
4244.85	-44.28	6.50	-37.78	H	61.7

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method  
 according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:—

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz. 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.

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Test Report S/N: 0502040066	Test Dates: February 9, 2005	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHA860
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## 3.1 Test Data

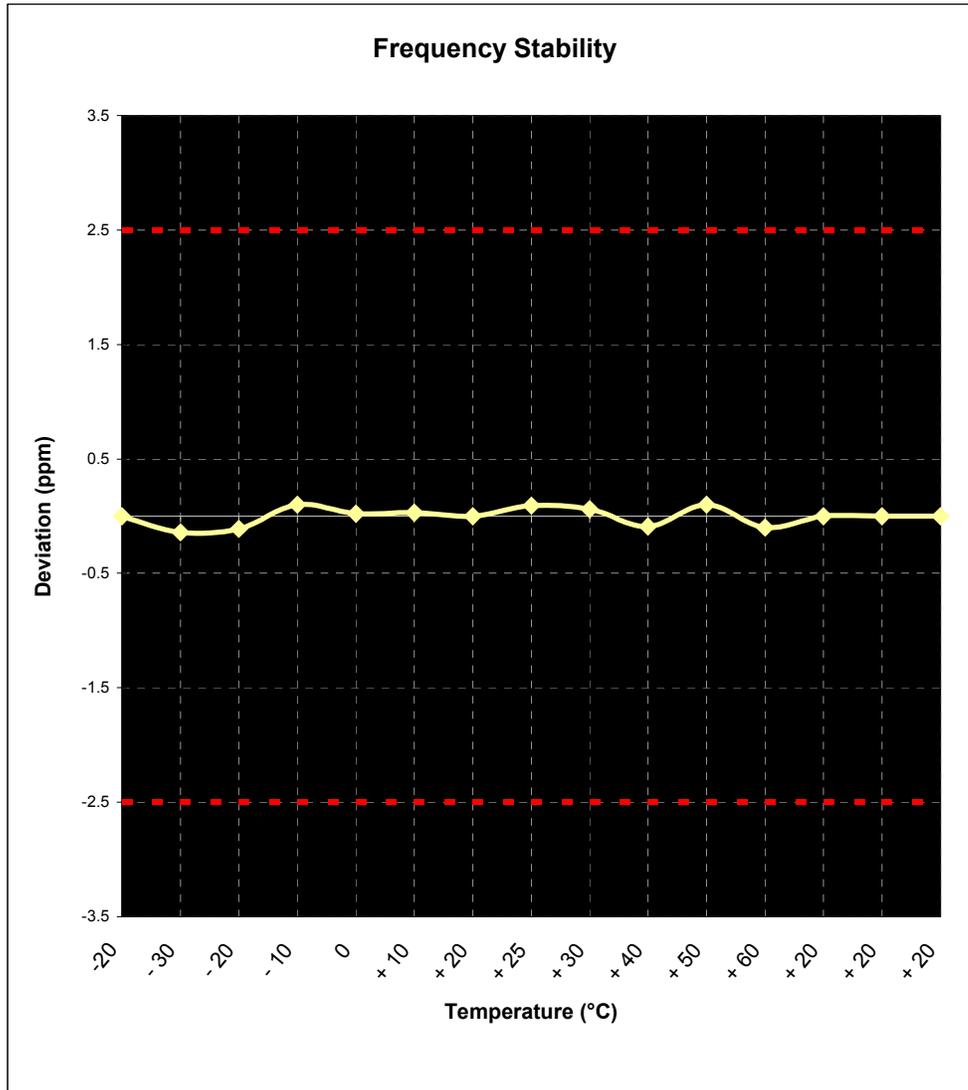
### 3.2 FREQUENCY STABILITY (AMPS)

OPERATING FREQUENCY: 836,490,003 Hz  
 CHANNEL: 383  
 REFERENCE VOLTAGE: 3.7 VDC  
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

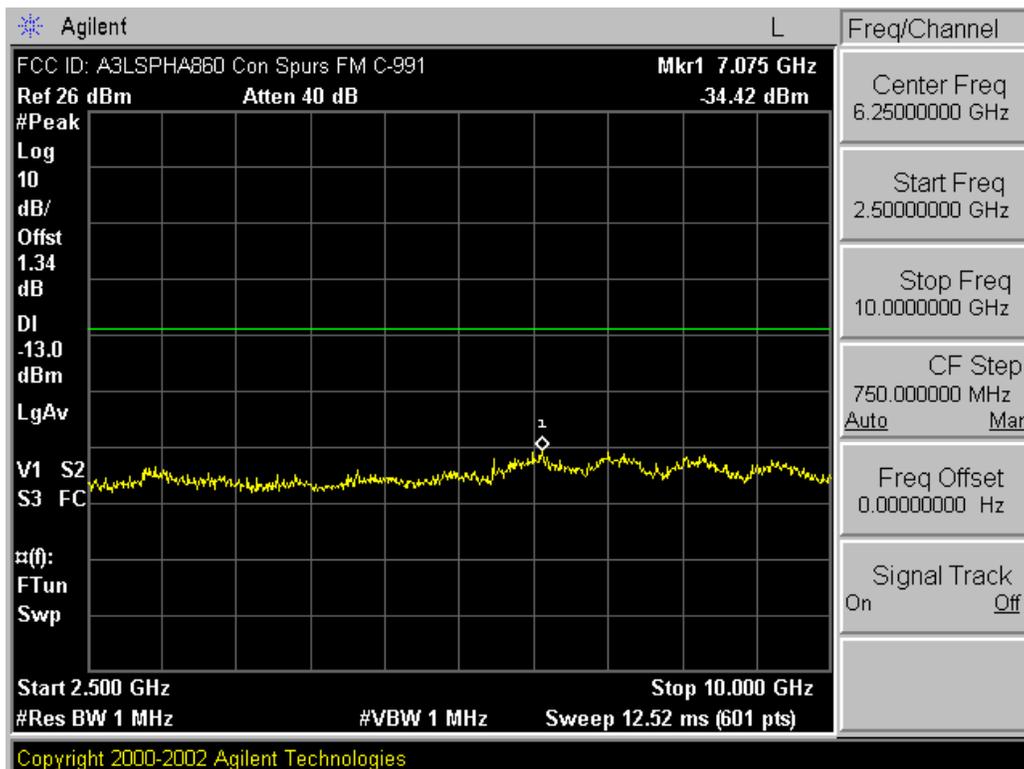
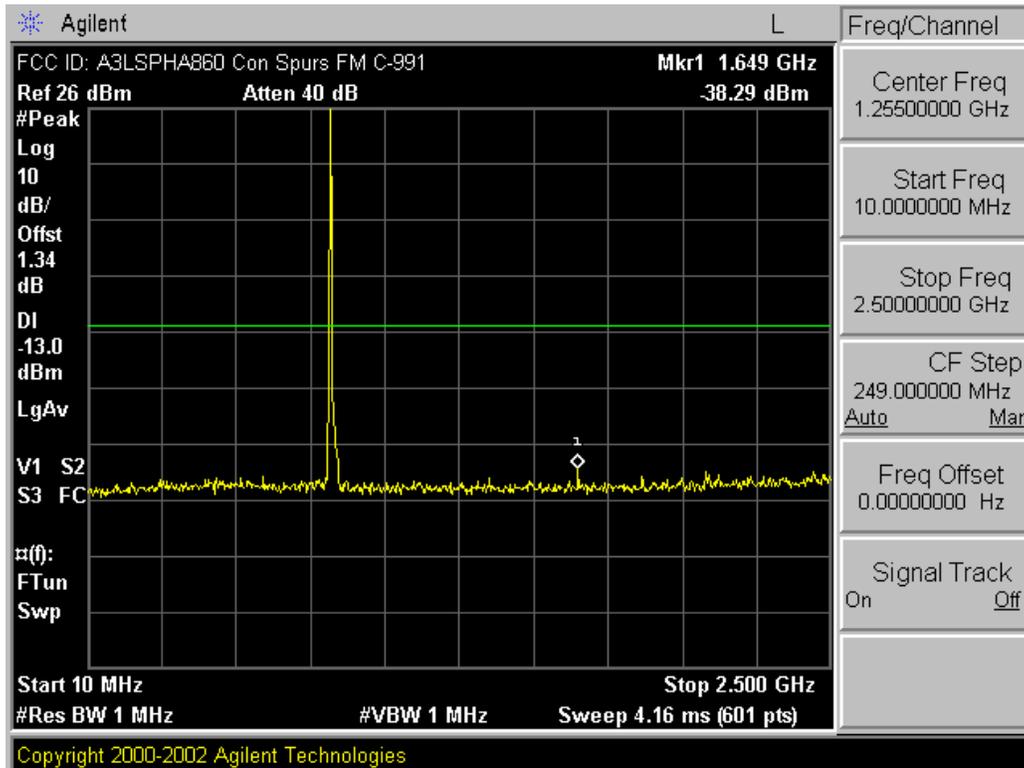
VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQ. (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	836,490,003	0.00	0.000000
100 %		- 30	836,490,120	-117.11	-0.000014
100 %		- 20	836,490,095	-92.01	-0.000011
100 %		- 10	836,489,919	83.65	0.000010
100 %		0	836,489,986	16.73	0.000002
100 %		+ 10	836,489,978	25.09	0.000003
100 %		+ 20	836,490,003	0.00	0.000000
100 %		+ 25	836,489,928	75.28	0.000009
100 %		+ 30	836,489,953	50.19	0.000006
100 %		+ 40	836,490,078	-75.28	-0.000009
100 %		+ 50	836,489,919	83.65	0.000010
100 %		+ 60	836,490,087	-83.65	-0.000010
85 %		3.30	+ 20	836,490,003	0.00
115 %	4.26	+ 20	836,490,003	0.00	0.000000
BATT. ENDPOINT	3.30	+ 20	836,490,003	0.00	0.000000

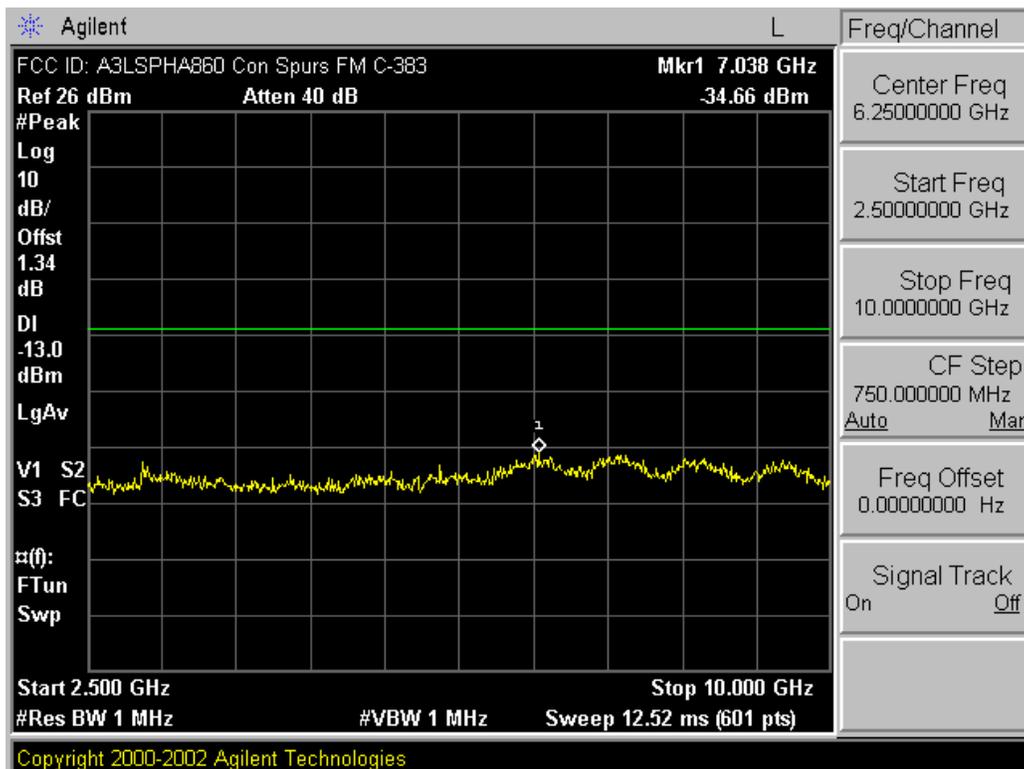
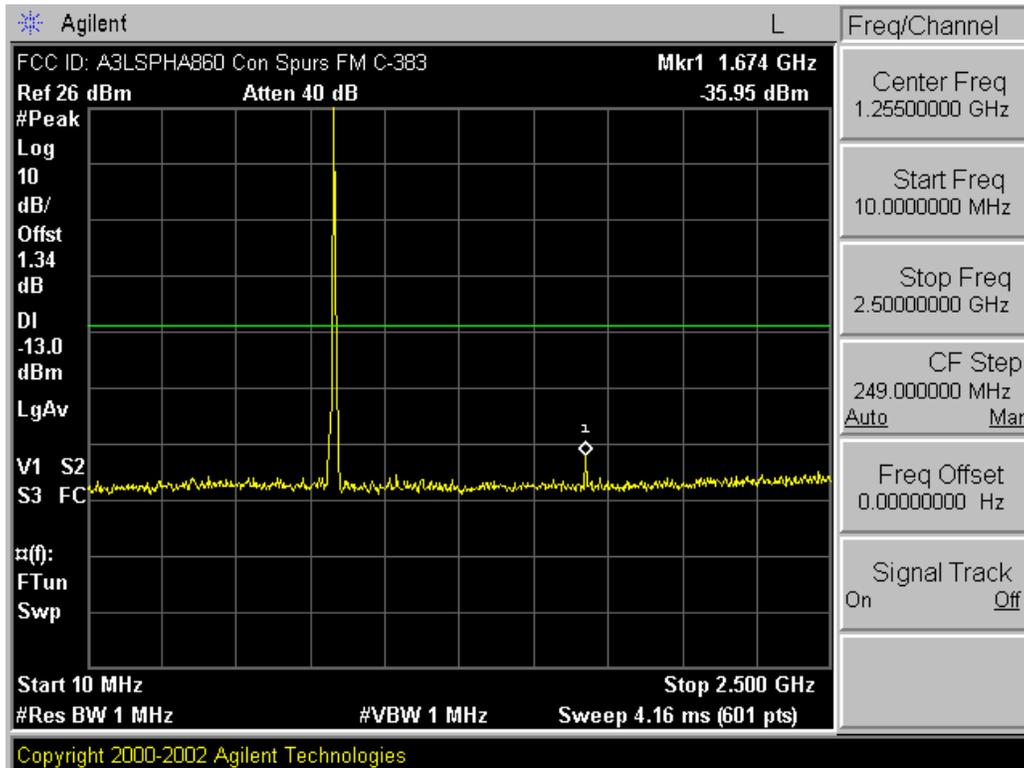
## 3.1 Test Data (Continued)

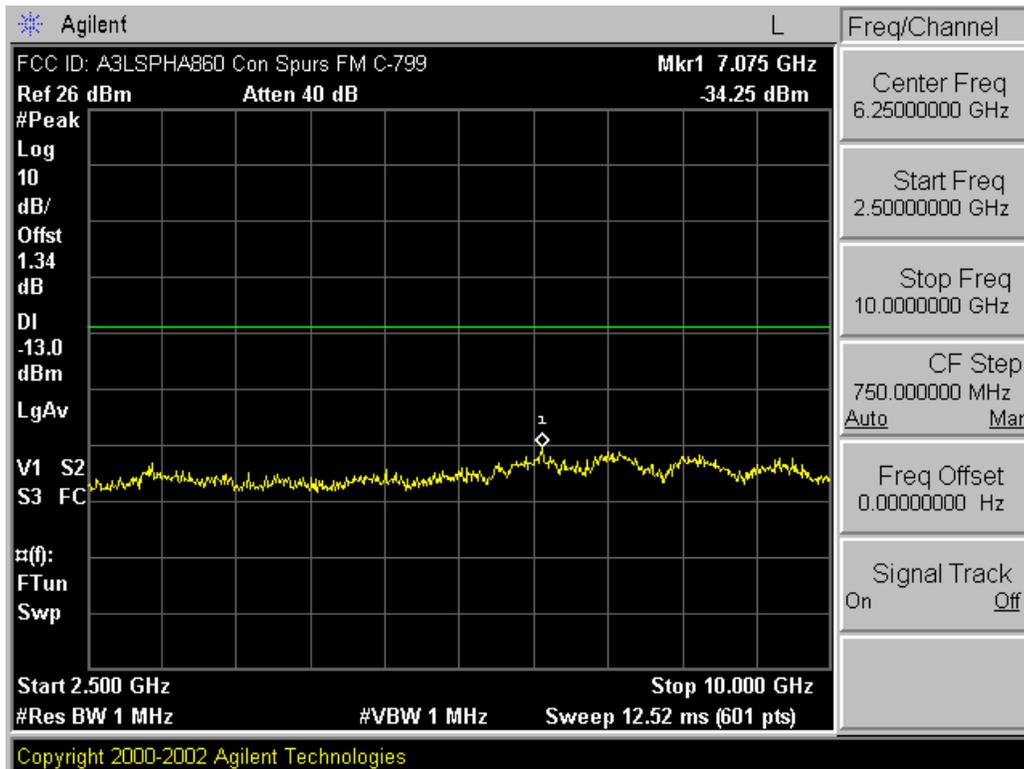
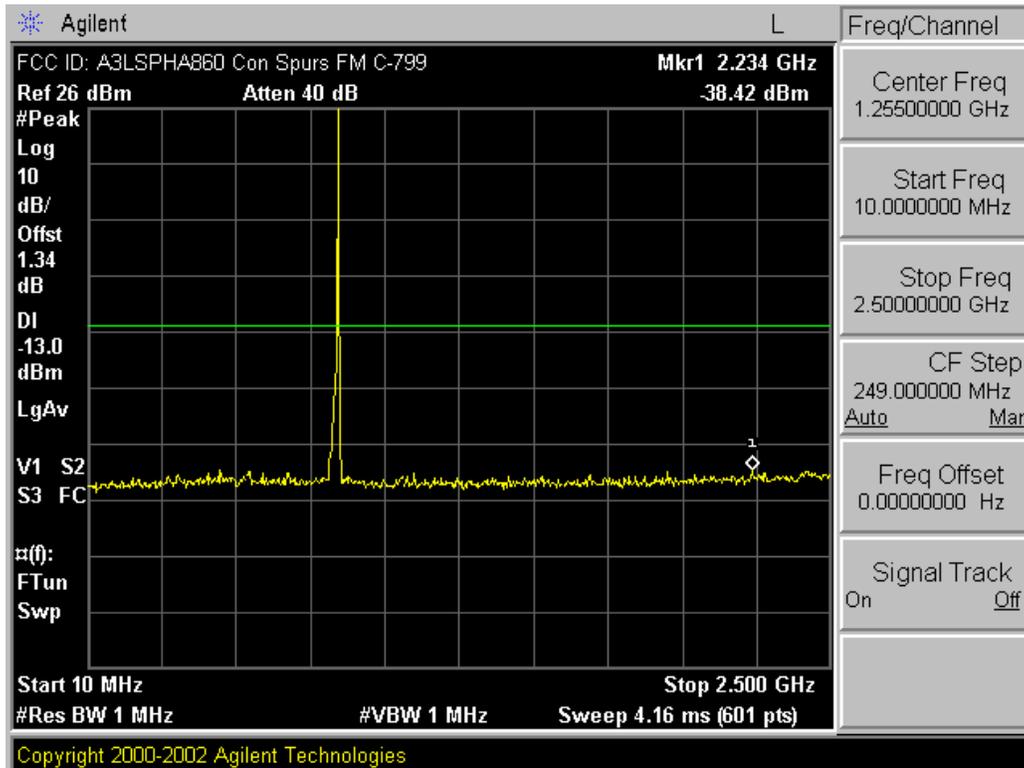
### 3.3 FREQUENCY STABILITY (AMPS)



PCTEST™ PT. 22/24 SUPPLEMENT	 <b>FCC MEASUREMENT SUPPLEMENT</b>		Reviewed By: Quality Manager
Test Report S/N: 0502040066	Test Dates: February 9, 2005	Phone Type: Tri-Mode Dual-Band	FCC ID: A3LSPHA860
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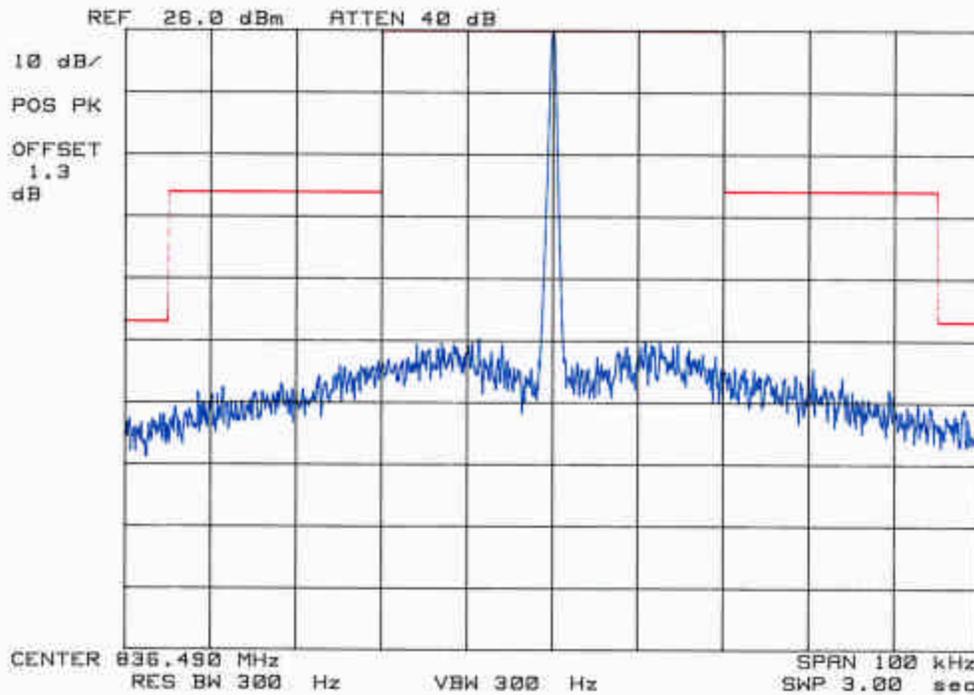


# PCTEST Engineering Lab.

## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:Unmodulated Signal

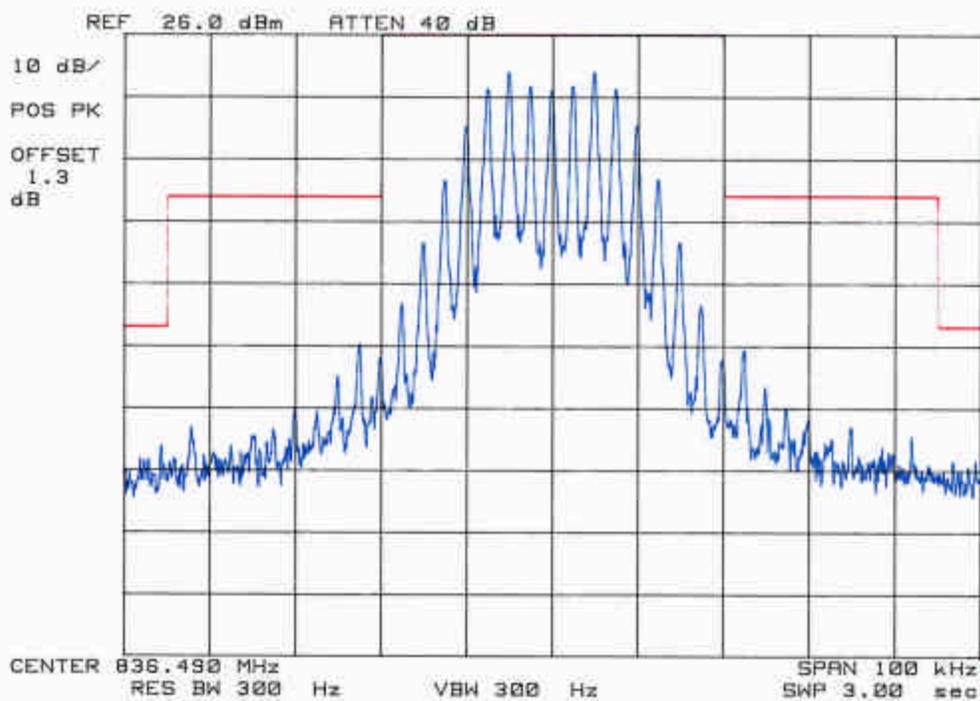


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## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:Voice

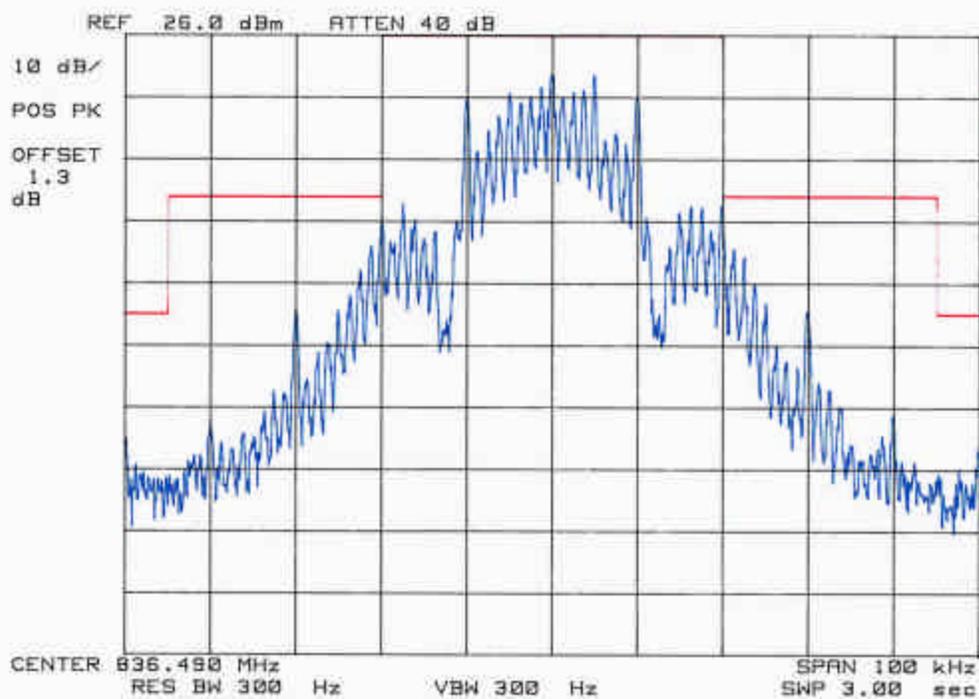


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## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:Wide Band Data

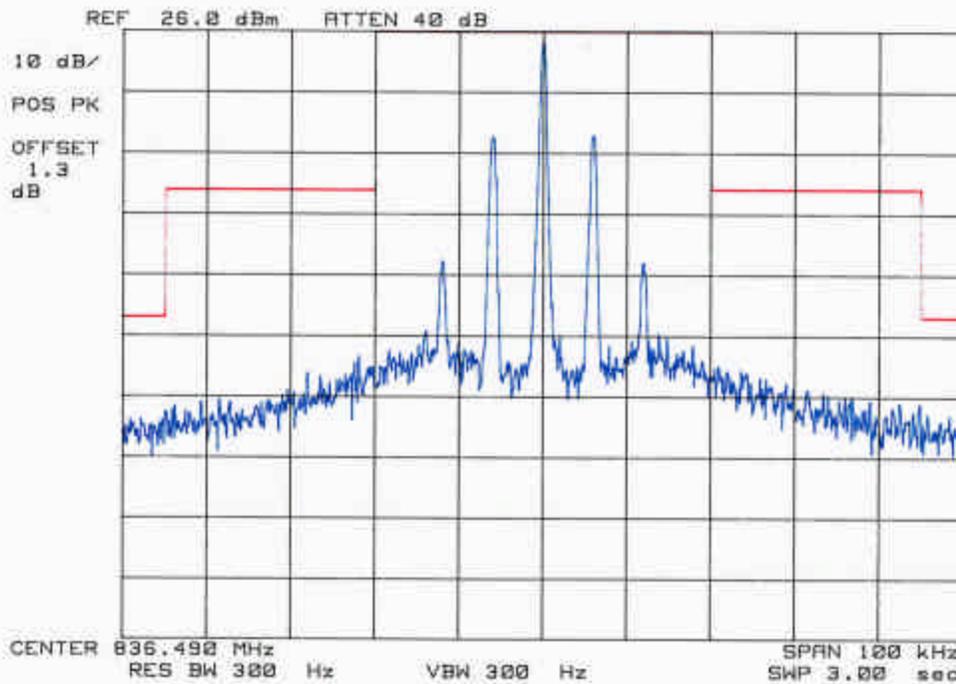


# PCTEST Engineering Lab.

## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:SAT

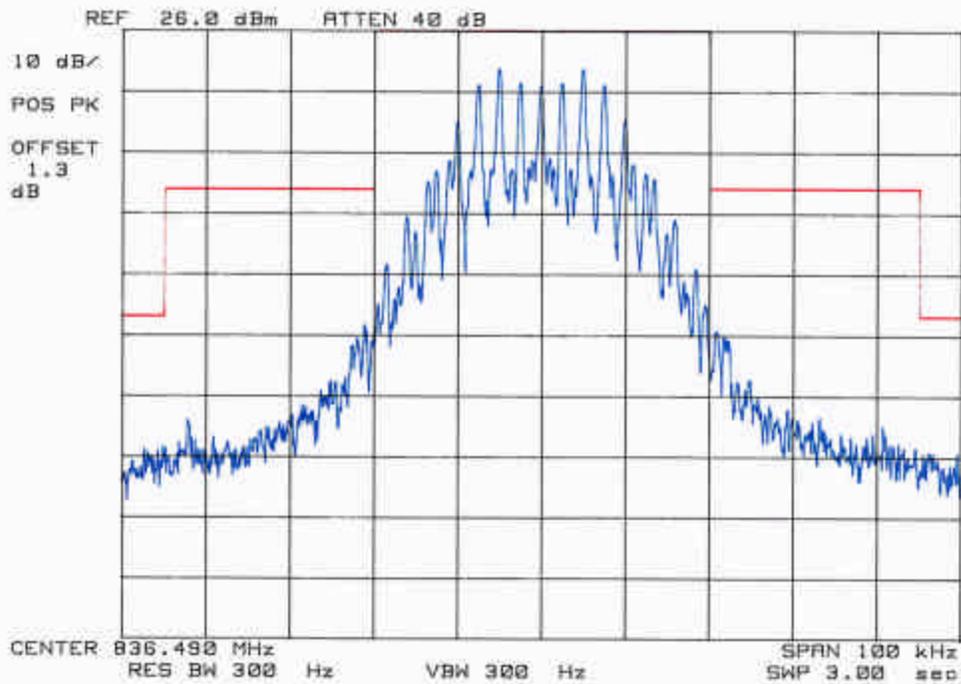


# PCTEST Engineering Lab.

## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:SAT + Voice

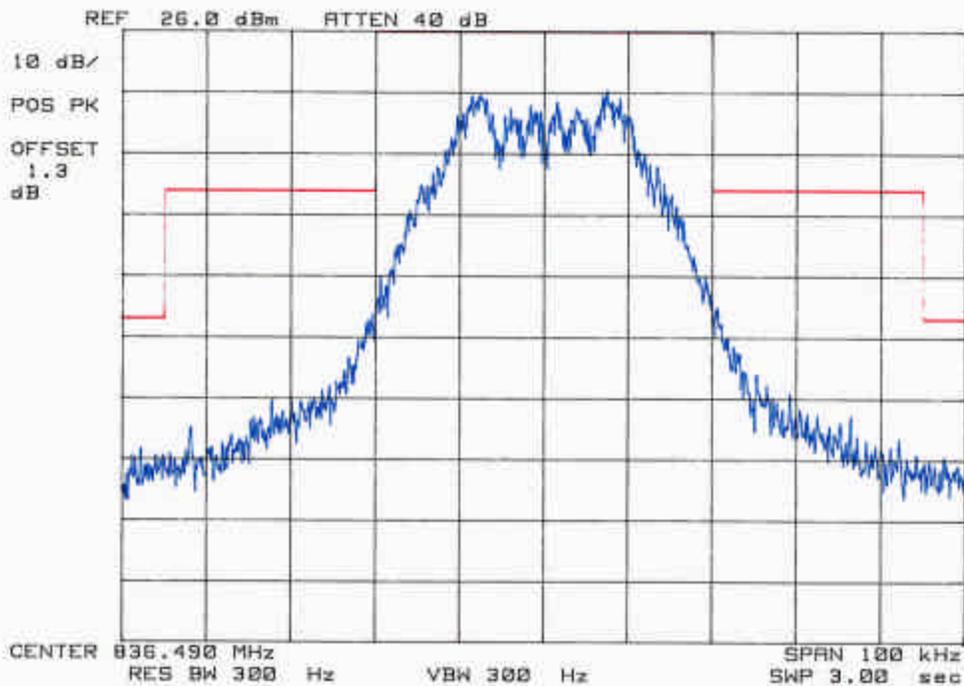


# PCTEST Engineering Lab.

## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:SAT + DTMF

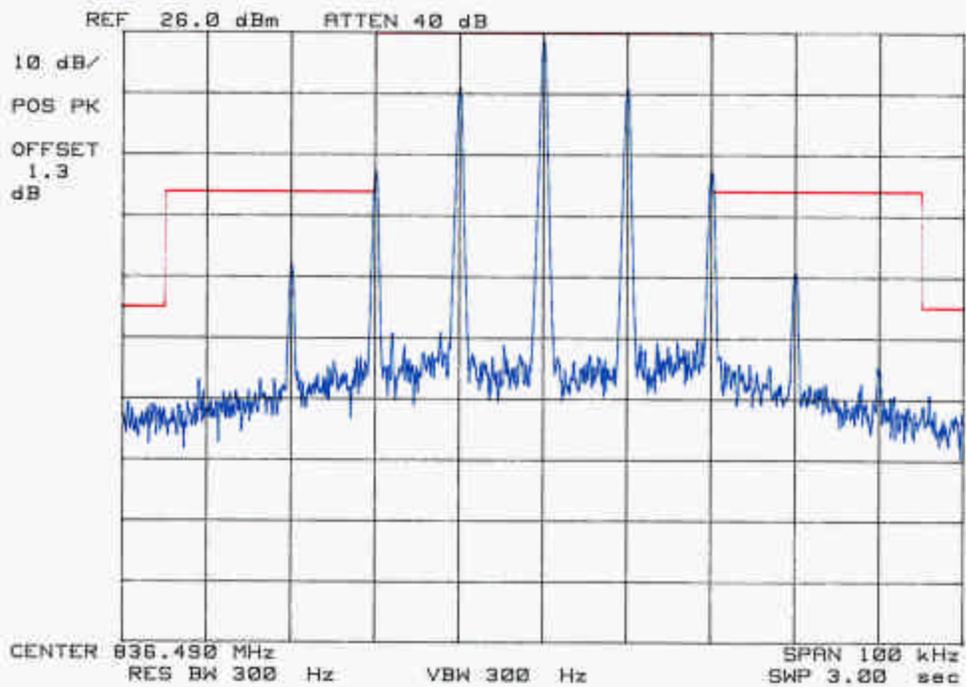


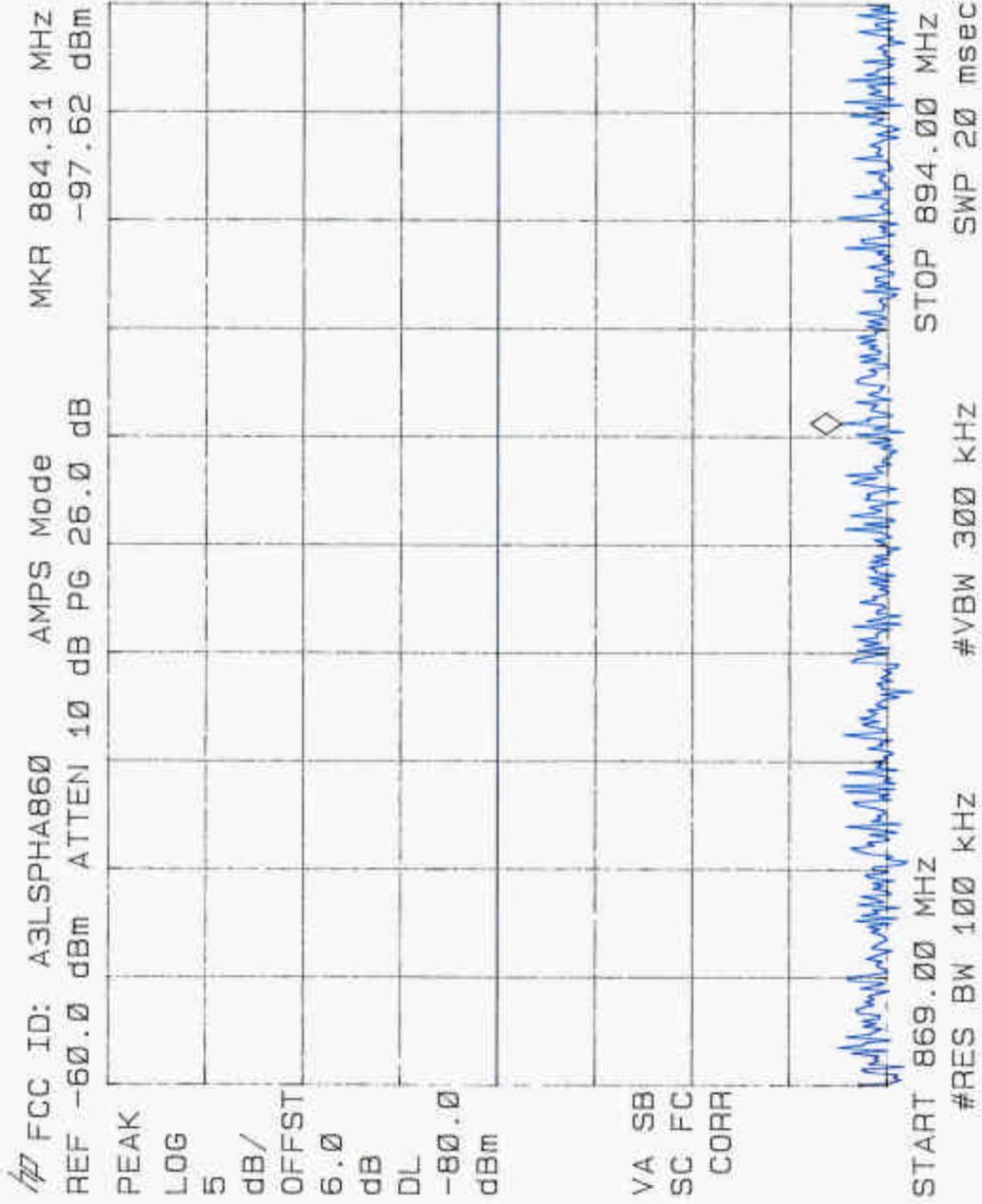
# PCTEST Engineering Lab.

## SPECTRUM ANALYZER PRESENTATION

FCC ID:A3LSPHA860  
SAMSUNG  
Tri-Mode Phone  
FM Channel 383  
Operating Frequency: 836.490 MHz  
Output Power : 26.0 dBm

Test Mode:ST





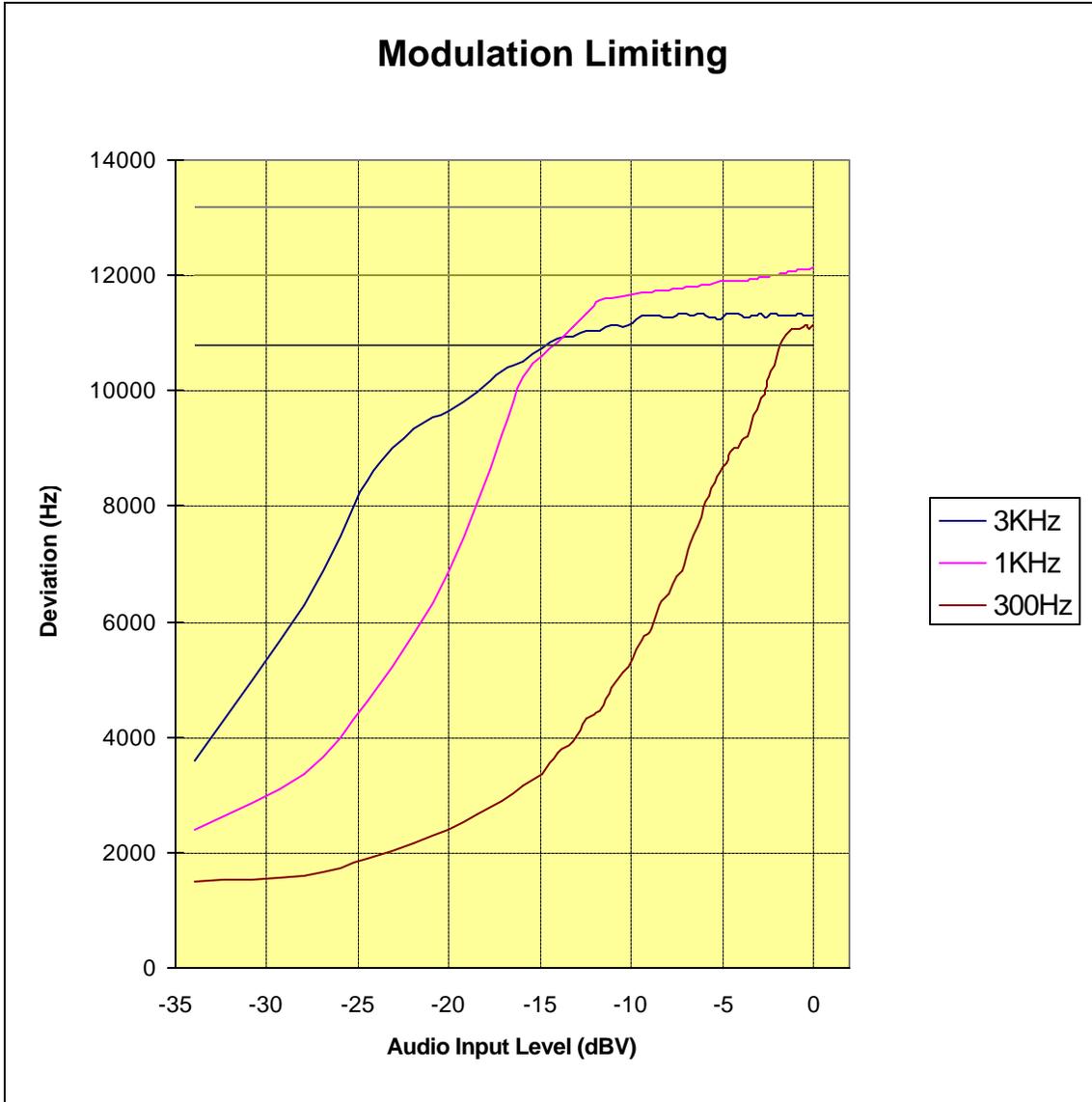
**PCTEST Engineering Lab., Inc.**

**SUBJECT:** Modulation Characteristics  
FCC Part 24/22

Test Report No.: 0502040066  
Test Date: 2.9.2005

**EUT:** Tri-Mode Dual-Band Analog/PCS Phone (AMPS/CDMA)  
**Model:** SPH-A860  
**FCC ID:** A3LSPHA860

**REFERENCE:** 1 kHz = 0 dB



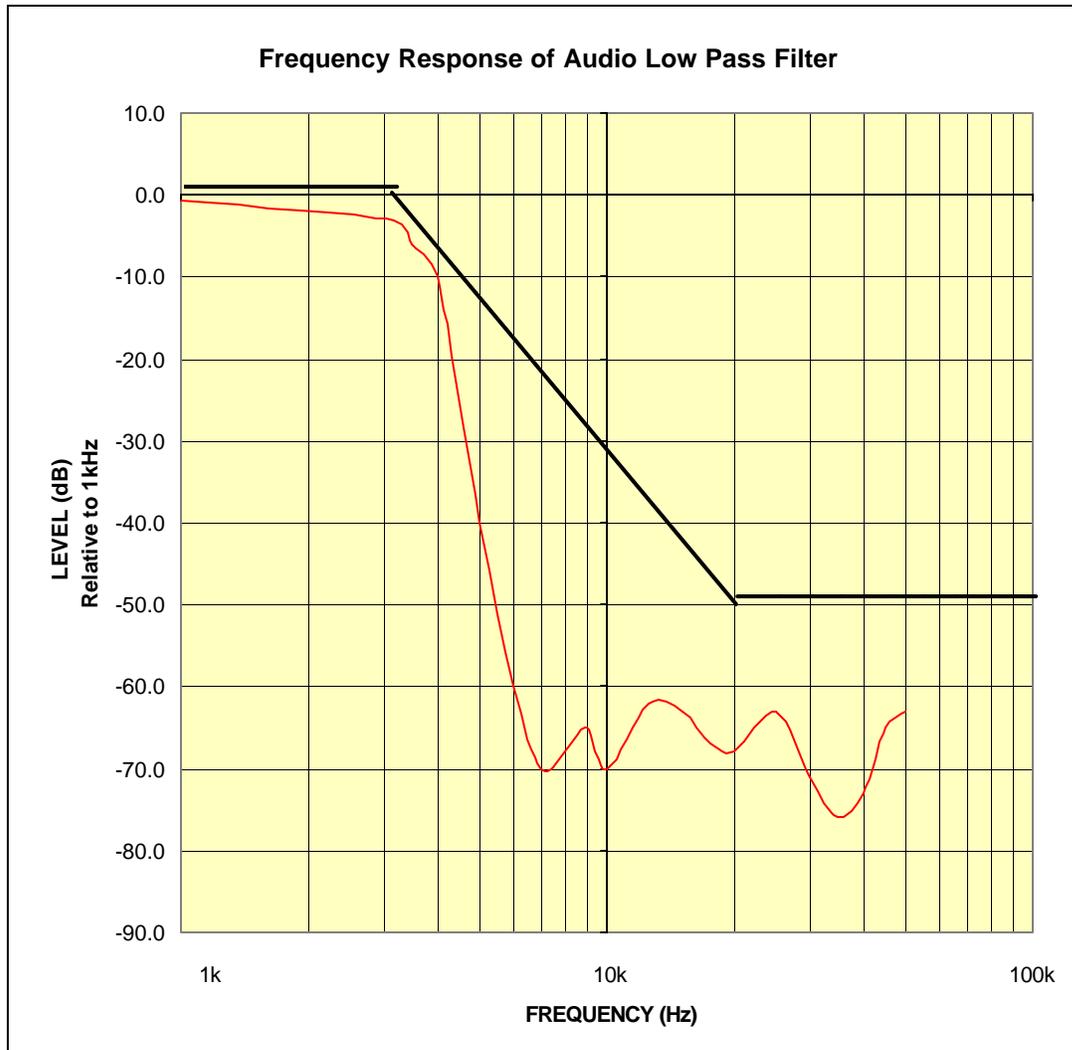
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