

Test Report

From

Kyocera Wireless Corp

Dual-band CDMA 800/1900 PCMCIA Card

FCC Part 22 & 24 Certification IC RSS-129 & 133	
FCC ID:	OVFKWC-KPC650
Models:	KPC 650

STATEMENT OF CERTIFICATION			
<p><i>The data, data evaluation and equipment configuration represented herein are a true and accurate representation of the measurements of the sample's radio frequency interference emissions characteristics as of the dates and at the times of the test under the conditions herein specified.</i></p>			
STATEMENT OF COMPLIANCE			
<p><i>This product has been shown to be capable of compliance with the applicable technical standards as indicted in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.</i></p>			
Test performed by:	Fernando Calimbahin Engineer	Date of Test:	August 31, 2004
Report Prepared by:	Fernando Calimbahin Engineer	Date of Report:	December 20, 2004
Report Reviewed by:	C. K. Li Engineer, Senior Staff/Manager	Date of Review:	December 20, 2004
Tests that required an OATS site were performed by Nemko.			

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1 General Information

Applicant:	Kyocera Wireless Corp 10300 Campus Point Drive San Diego CA 92121		
FCC ID:	OVFKWC-KPC650		
Product:	Dual-band CDMA 800/1900 PCMCIA Card		
Model Numbers:	KPC 650		
EUT Serial Number:	7Y-X----102G0Y (model KPC 650)		
Type:	<input type="checkbox"/> Prototype, <input checked="" type="checkbox"/> Pre-Production, <input type="checkbox"/> Production		
Device Category:	Portable		
RF Exposure Environment:	General Population / Uncontrolled		
Antenna:	Integrated dipole		
Detachable Antenna:	No		
External Input:	Audio/Digital Data		
Quantity:	Quantity production is planned		
FCC Rule Parts:	§22H	§22.901(d)	§24E
Modes:	800 CDMA	800 CDMA1X	1900 CDMA
Multiple Access Scheme:	CDMA	CDMA	CDMA
TX Frequency (MHz):	824 – 849	824 – 849	1850 - 1910
Emission Designators:	1M25F9W		
Max. Output Power (W)	0.339 ERP		0.262 EIRP

2 Product Description

The PCMCIA card OVFKWC-KPC650 is a dual-band product. The dual-band architecture is defined as 1900Mhz (PCS CDMA) and 800Mhz (cellular CDMA).

The model included in the OVFKWC-KPC650 filing has an integrated antenna for receiving and transmitting. An external antenna for receiving only is available as an accessory. All frequency and power adjustments are set at the factory and there are no field adjustments for this product.

This product is designed in compliance with the technical specifications for compatibility of mobile and base stations in the Cellular Radio telephone service contained in “Cellular System Mobile Station – Land Station Compatibility Specification” as specified in OET Bulletin 53 and TIA Standards.

The PCMCIA card will support certain CDMA2000 radio-configurations (RC) and EvDO as describe in Exhibit 1 (Operational Description).

3 Electronic Serial Numbers (ESN) Protection

The Dual-band PCMCIA card, FCC ID: OVFKWC-KPC650 uses ESN. The ESN is a unique identification number to each phone, which is contained in the Numeric Assignment Module and is automatically transmitted to the base station whenever a call is placed. The ESN is stored in an EPROM and is isolated from fraudulent contact and tampering. Any attempt to change the ESN will render the portable phone inoperative.

The PCMCIA card complies with all requirements for ESN under Part 22.919.

4 FCC Compliance Emergency 911

FCC § 22.921
The OVFKWC-KPC650 PCMCIA card is a data only device. It has no voice capability; therefore, the FCC Compliance Emergency 911 is not applicable.

5 TTY compliance

FCC § 255 of the Telecom Act
The OVFKWC-KPC650 PCMCIA card is a data only device. It has no voice capability; therefore, the TTY Compliance with Cellular Compatibility Standard is not applicable.

6 Transmitter RF Power Output

6.1 Conducted Power

FCC: § 2.1046	IC: RSS-129 §7.1, RSS-133 §6.2
Measurement Procedures:	
The RF output power was measured using a Giga-tronics 8541C Universal Power Meter and HP 8594E Spectrum Analyzer that has the CDMA personality option. Terminated to a resistive coaxial load of 50 ohms.	

Mode	Frequency (MHz)	Channel	Power (dBm)
CDMA 800	824.70	1013	25.06
	836.52	384	25.00
	848.31	777	25.08
CDMA 1900	1851.25	25	23.56
	1880.00	600	23.58
	1908.75	1175	23.47

6.2 Radiated Power

FCC: § 22.913, § 24.232	IC: RSS-129 §7.1 and §9.1, RSS-133 §6.2
Measurement Procedures:	
The radiated power test was performed at Nemko in San Diego, California. The test report is attached in a separate attachment.	

7 Occupied Bandwidth

FCC: § 2.1049, § 22.917(b)(d), § 24.238	IC: RSS-129 §6.3, §8.1
Measurement Procedures:	
The RF output of the EUT was connected to the input of the spectrum analyzer with sufficient attenuation. The spectrum with no modulation was recorded.	
<u>For Digital:</u> Modulate with full rate.	

List of Figures

Figure	Mode	Description
7-1	CDMA 800	CDMA at RC1
7-2		CDMA 1X, at RC3
7-3	CDMA 1900	CDMA at RC1
7-4		CDMA 1X, at RC3
7-5		Lower Band Edge @ CH 25
7-6		Upper Band Edge @ CH 1175

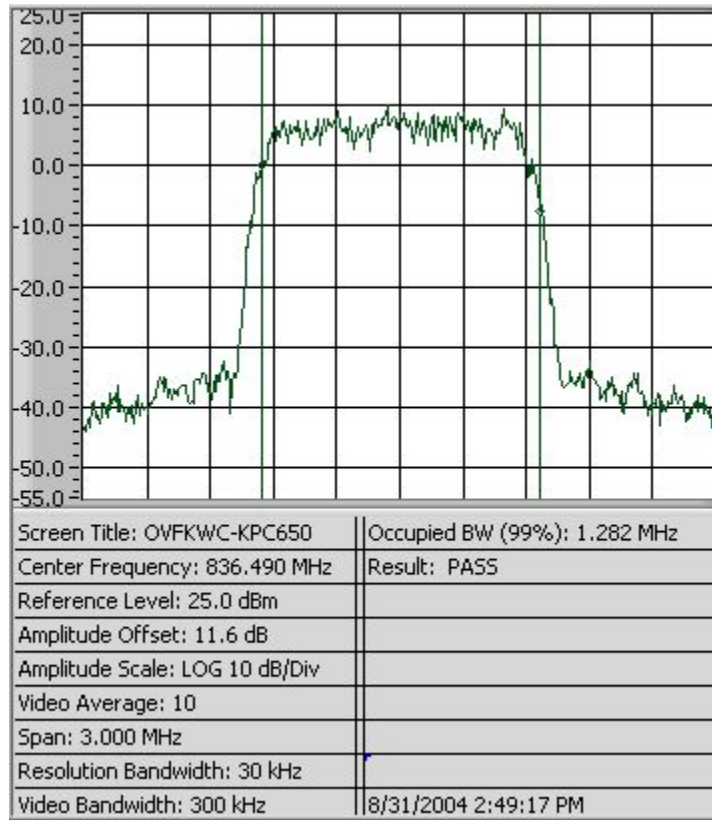


Figure 7-1 CDMA 800 at RC1

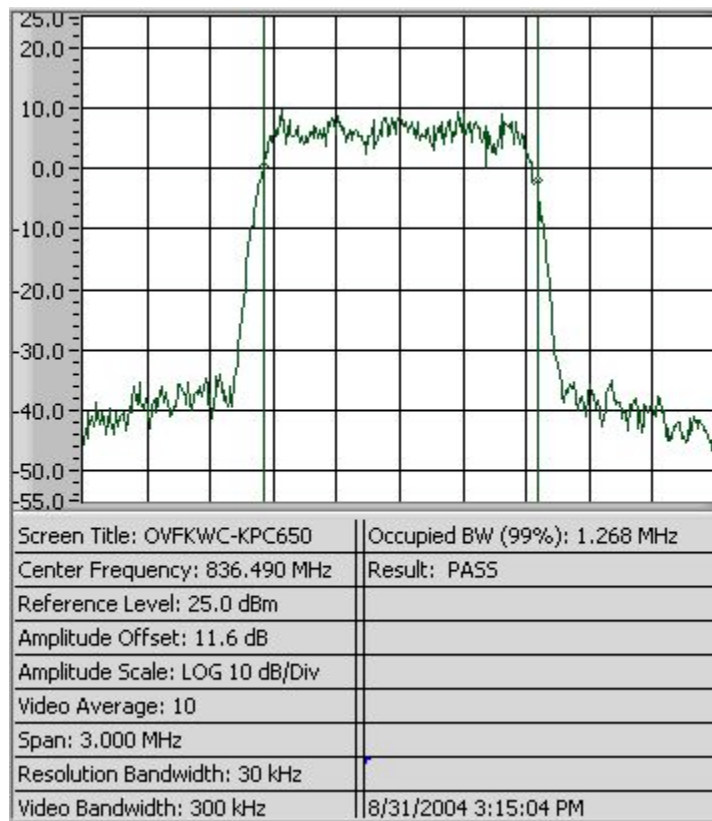


Figure 7-2 CDMA 800 1X at RC3

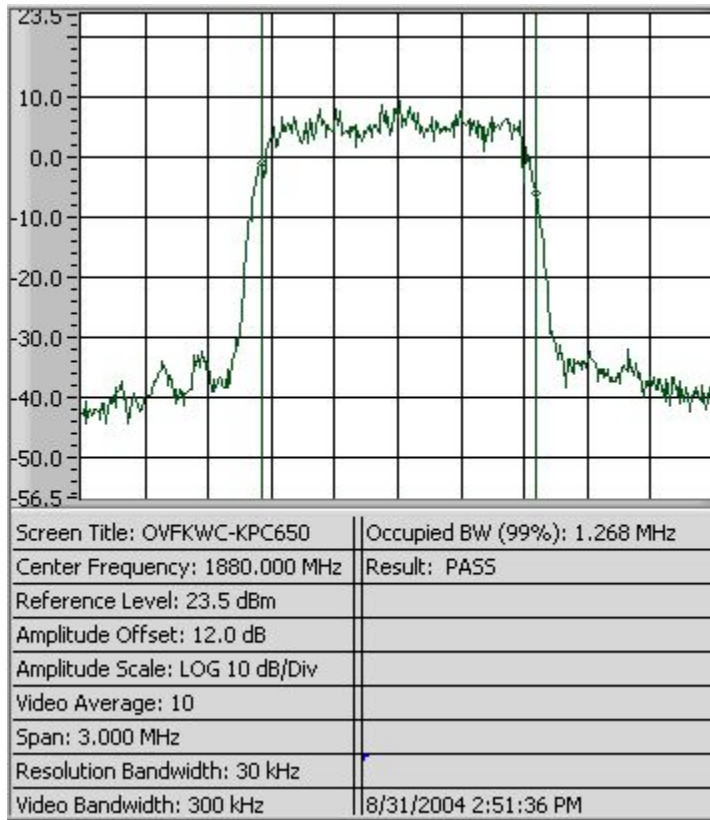


Figure 7-3 CDMA 1900 at RC1

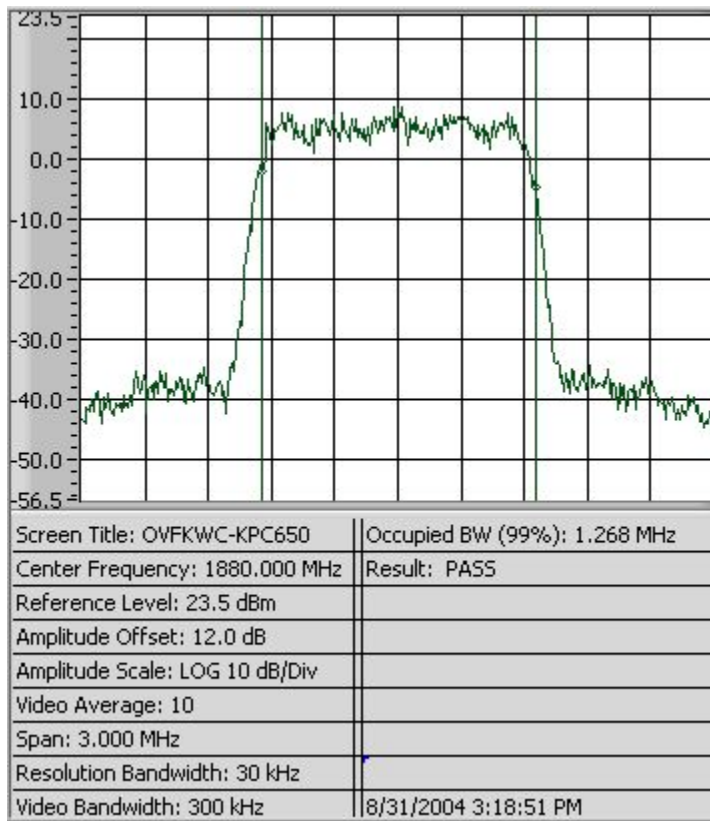


Figure 7-4CDMA 1900 1X at RC3

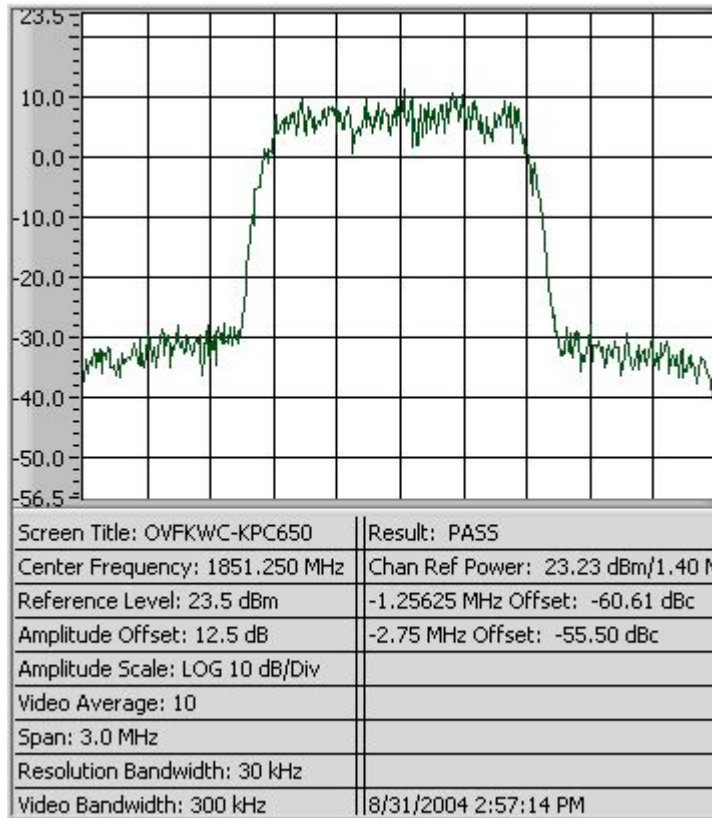


Figure 7-5 CDMA 1900 Lower Band Edge

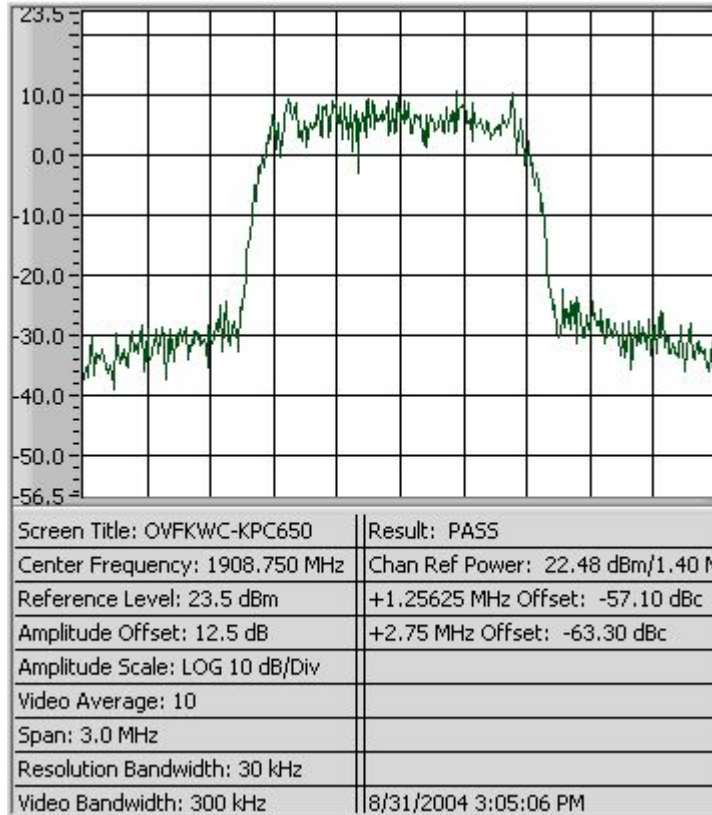


Figure 7-6 CDMA 1900 Upper Band Edge

8 Spurious Emissions At Antenna Terminals

FCC: § 2.1051, § 22.917(e)(f), § 24.238	IC: RSS-129 §6.3, §8.1, RSS-133 §6.3
Measurement Procedures:	
<p><u>Out of Band:</u> The RF output of the EUT was connected to the input of the spectrum analyzer with sufficient attenuation. The modulating signal was applied accordingly. The frequency spectrum was investigated from the lowest frequency signal generated up to at least the tenth harmonic of the fundamental.</p> <p><u>Base Band:</u> Spectrum was investigated from 869-894 MHz for Cellular.</p>	

List of Figures:

Figure	Mode	Channel	Plot Description
8-1	CDMA 800	1013	Emissions in base station frequency range, 869 - 894 MHz
8-2			Conducted spurious emissions, 9kHz to 10GHz
8-3		383	Emissions in base station frequency range, 869 - 894 MHz
8-4			Conducted spurious emissions, 9kHz to 10GHz
8-5		777	Emissions in base station frequency range, 869 - 894 MHz
8-6			Conducted spurious emissions, 9kHz to 10GHz
8-7	CDMA 1900	25	Conducted spurious emissions, 9kHz to 20GHz
8-8		600	Conducted spurious emissions, 9kHz to 20GHz
8-9		1175	Conducted spurious emissions, 9kHz to 20GHz

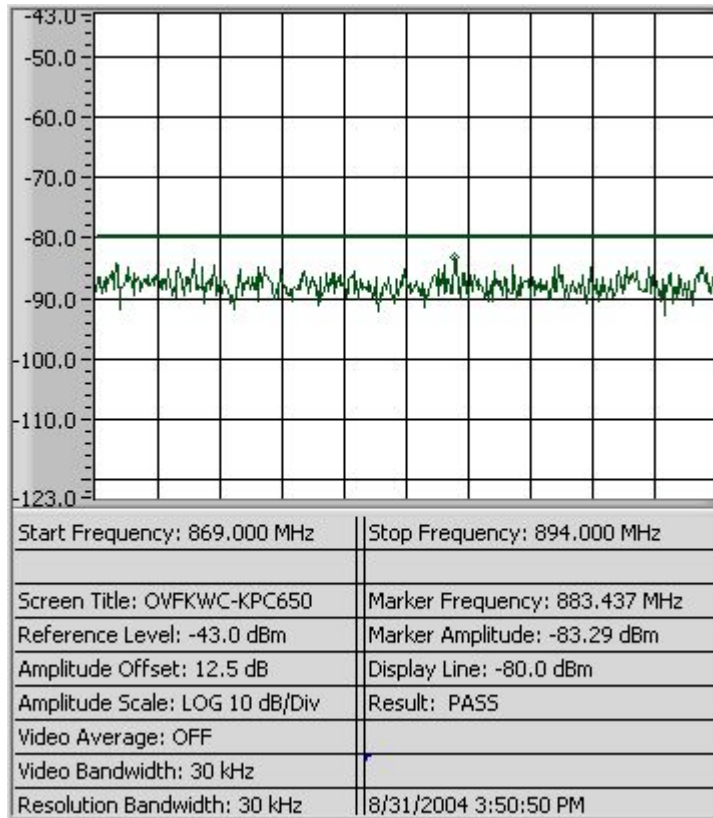


Figure 8-1 CDMA 800 - Emissions in base station frequency range (CH 1013)

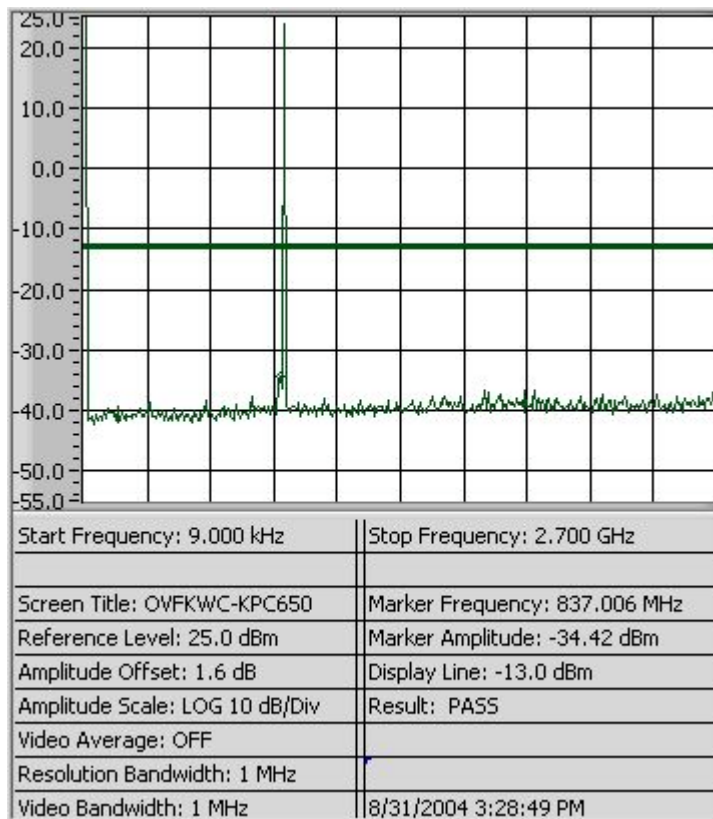


Figure 8-2a CDMA 800 – Conducted Spurious Emission (CH 1013)

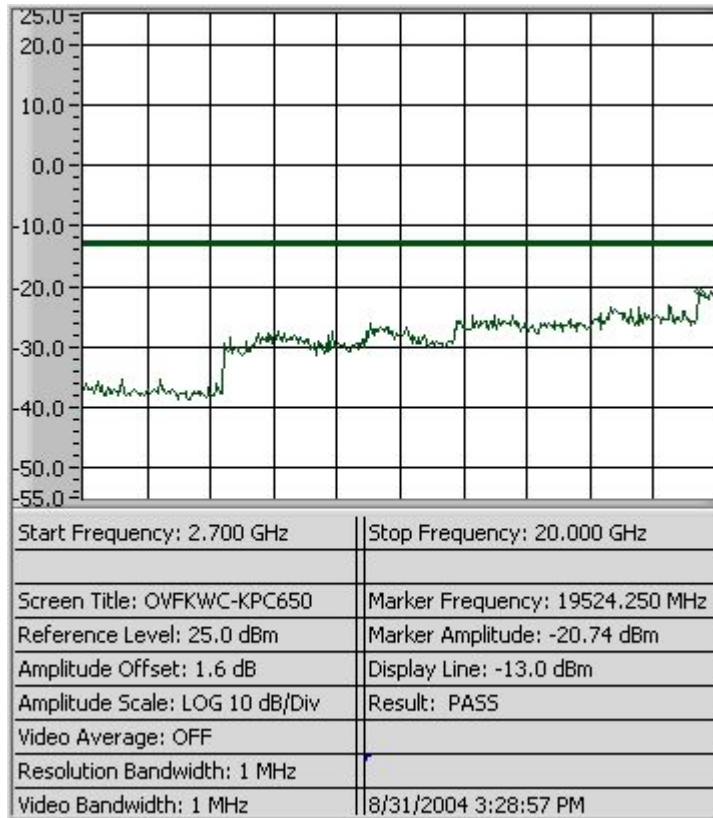


Figure 8-2b CDMA 800 – Conducted Spurious Emission (CH 1013)

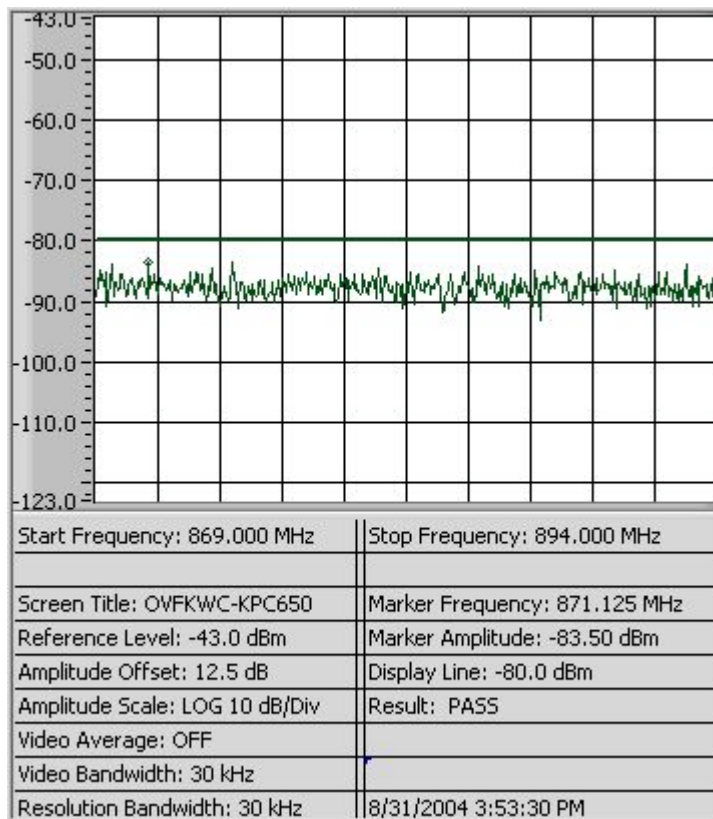


Figure 8-3 CDMA 800 - Emissions in base station frequency range (CH 383)

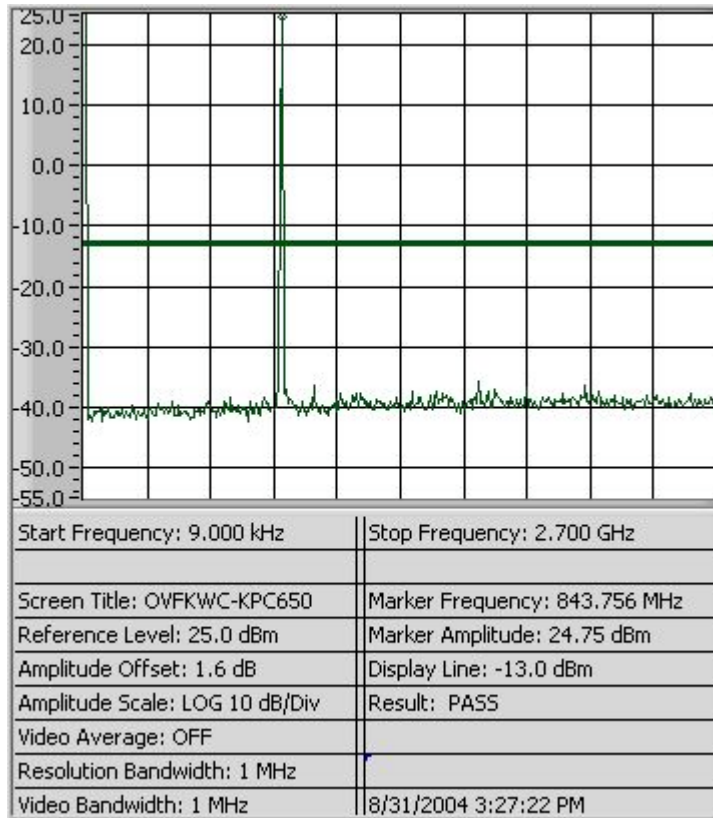


Figure 8-4a CDMA 800 – Conducted Spurious Emission (CH 383)

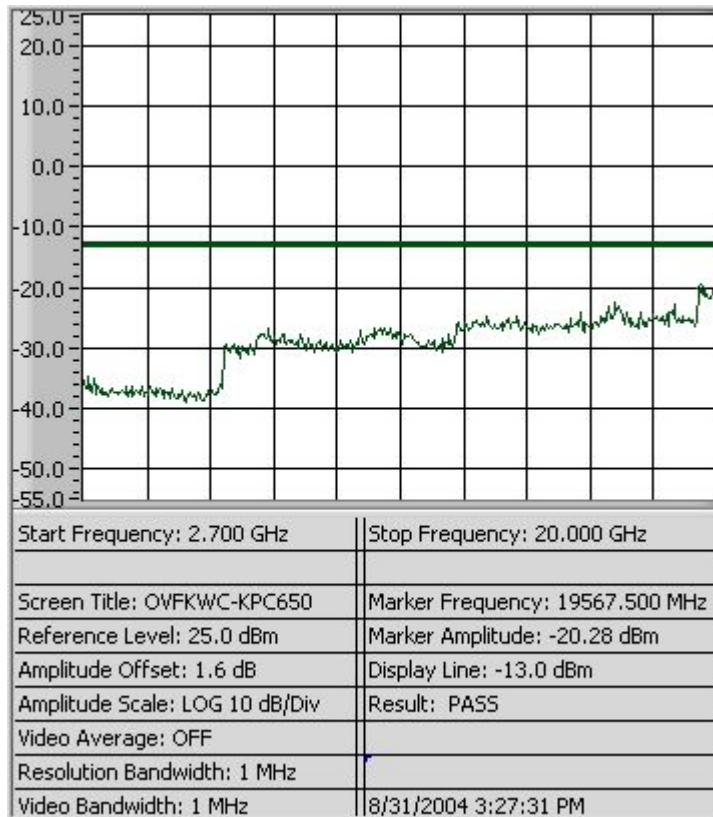


Figure 8-4b CDMA 800 – Conducted Spurious Emission (CH 383)

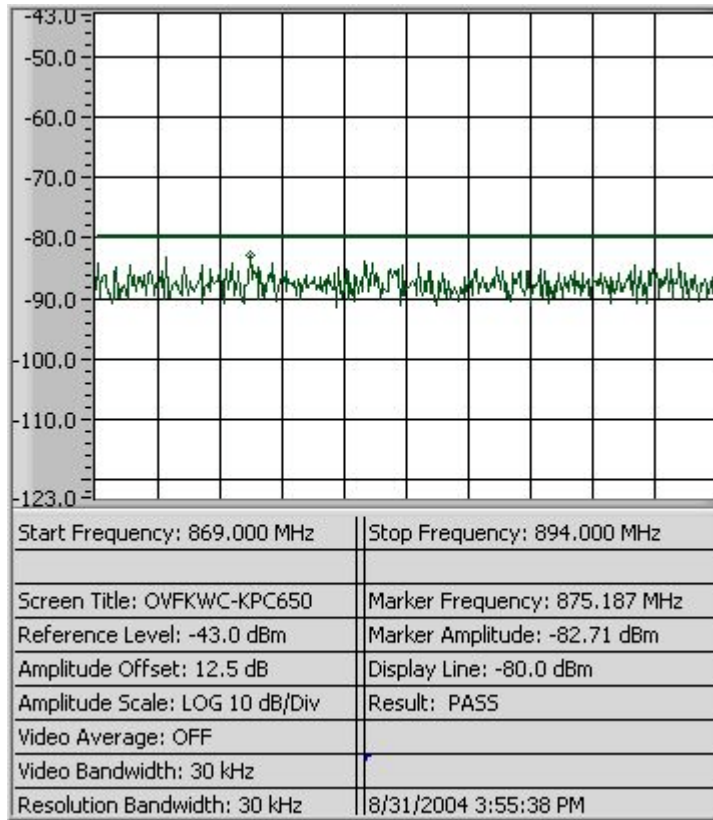


Figure 8-5 CDMA 800 - Emissions in base station frequency range (CH 777)

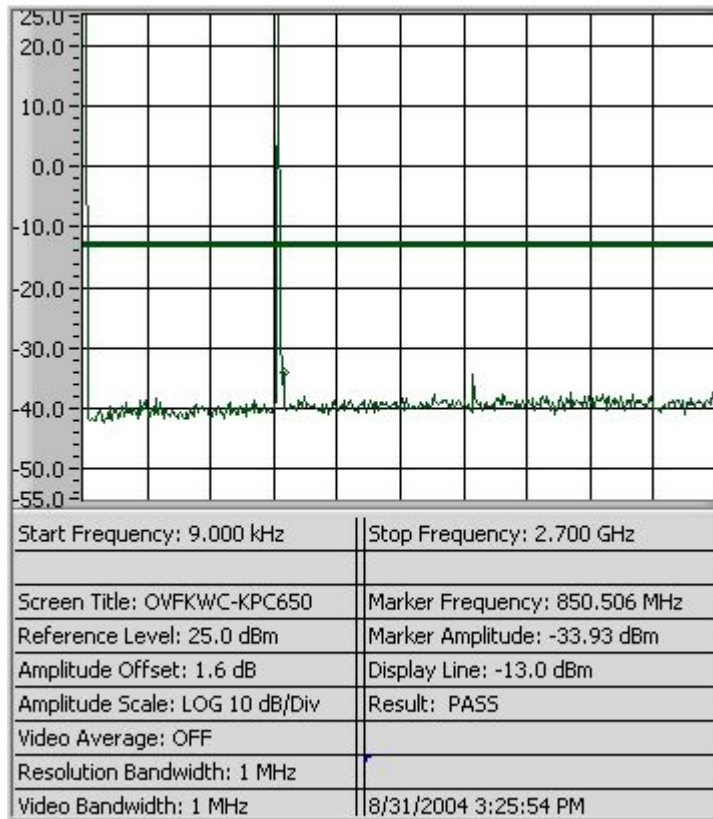


Figure 8-6a CDMA 800 – Conducted Spurious Emission (CH 777)

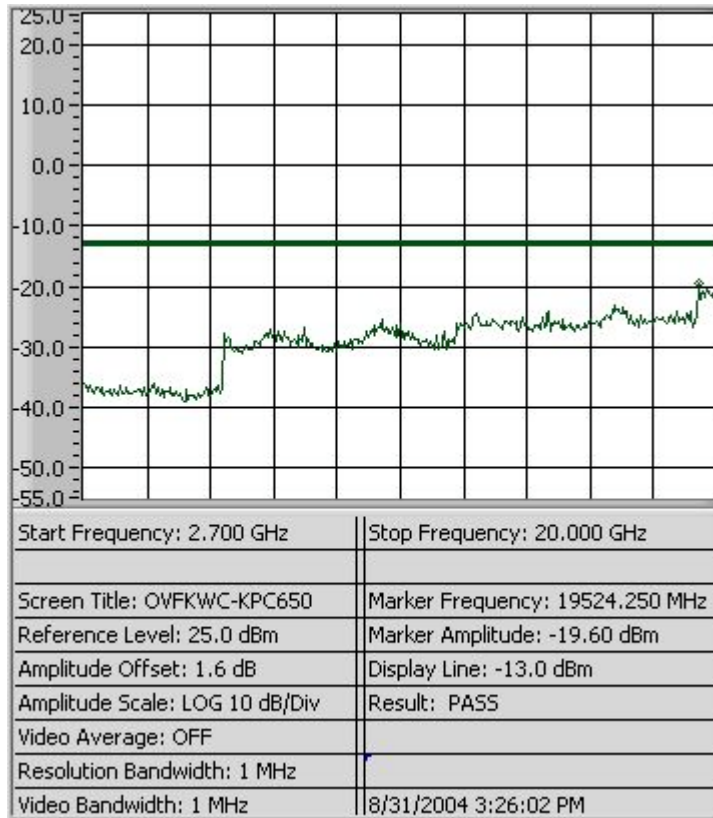


Figure 8-6b CDMA 800 – Conducted Spurious Emission (CH 777)

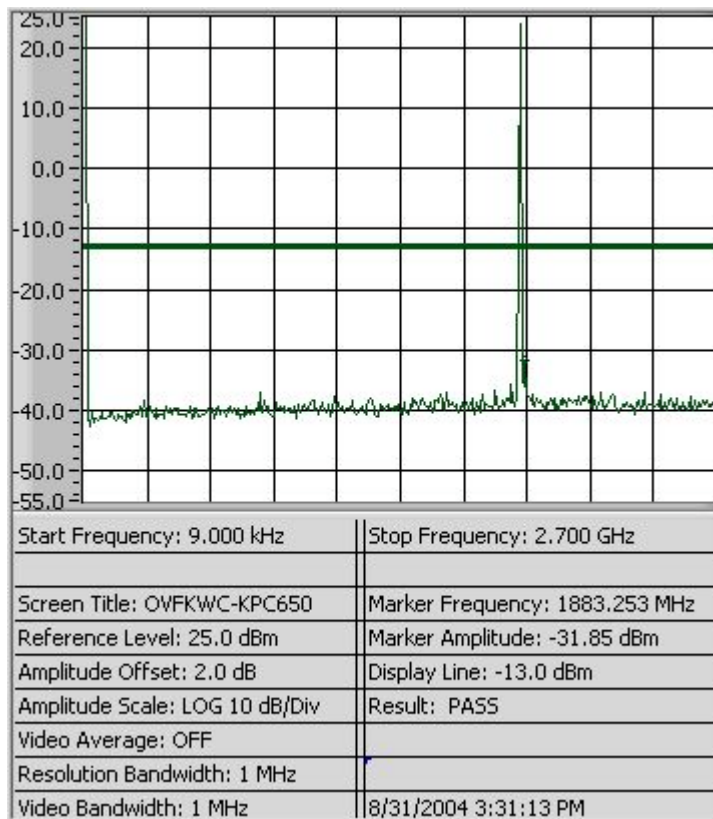


Figure 8-7a CDMA 1900 - Conducted Spurious Emission (CH 25)

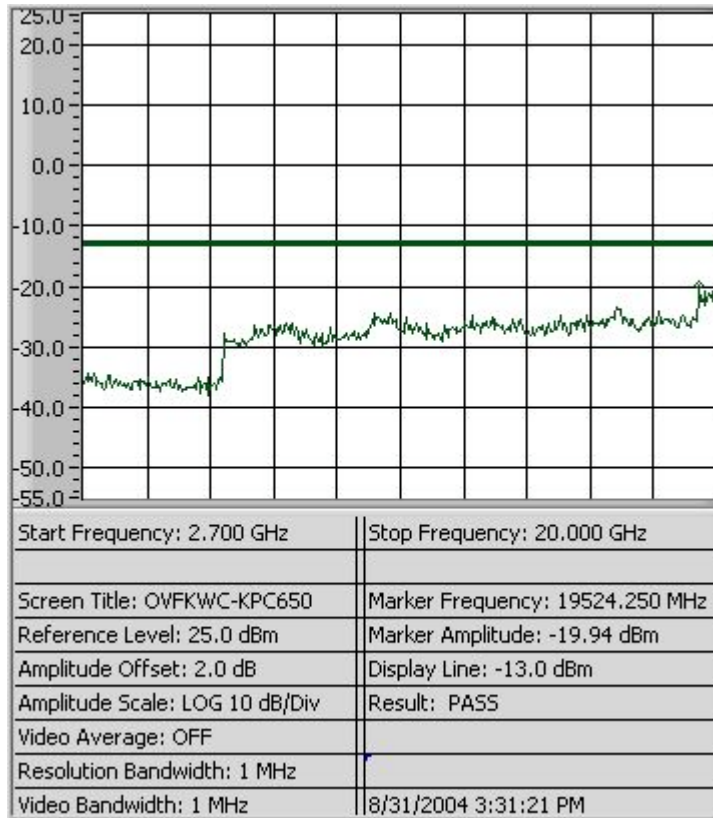


Figure 8-7b CDMA 1900 - Conducted Spurious Emission (CH 25)

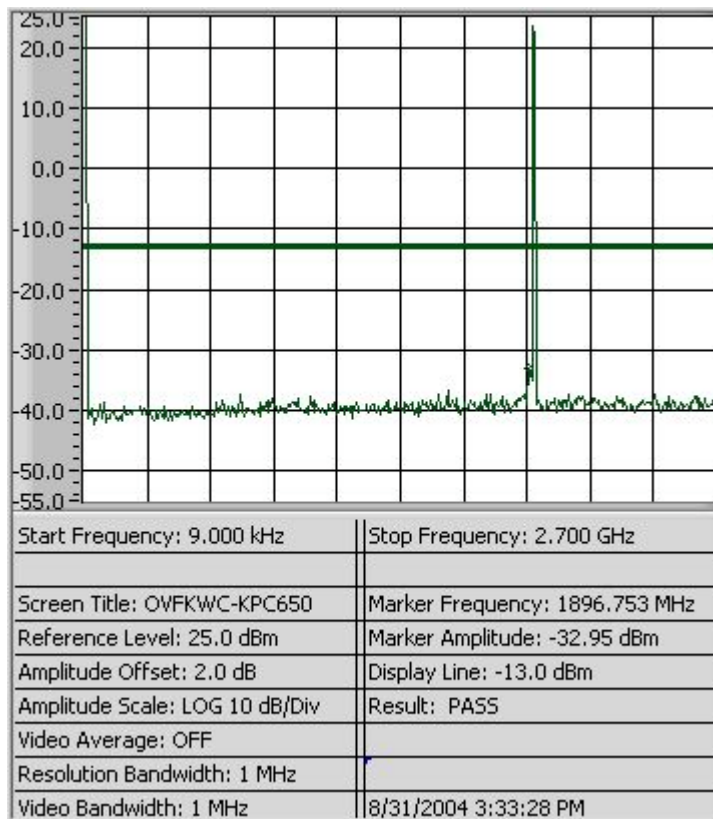


Figure 8-8a CDMA 1900 - Conducted Spurious Emission (CH 600)

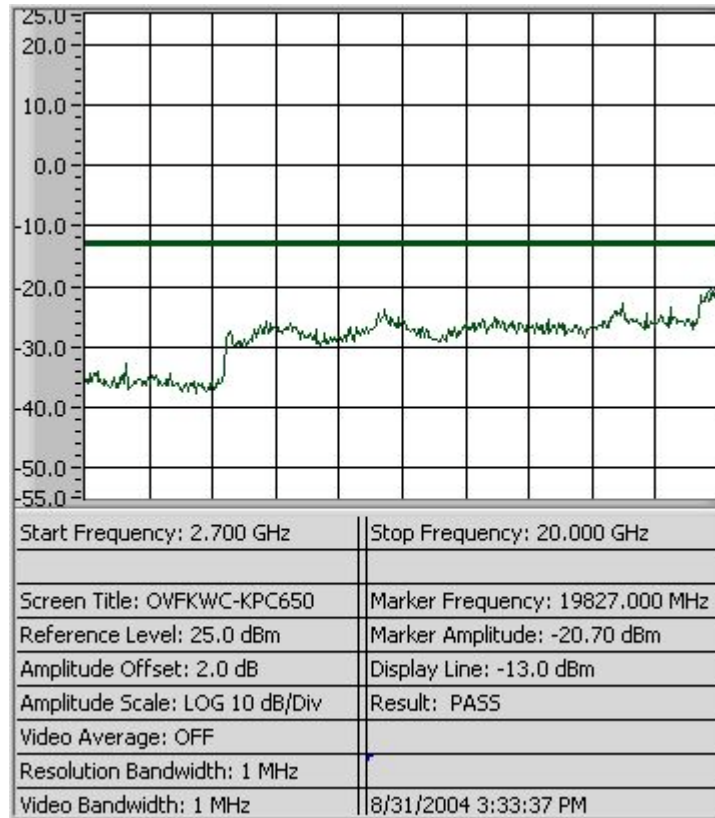


Figure 8-8b CDMA 1900 - Conducted Spurious Emission (CH 600)

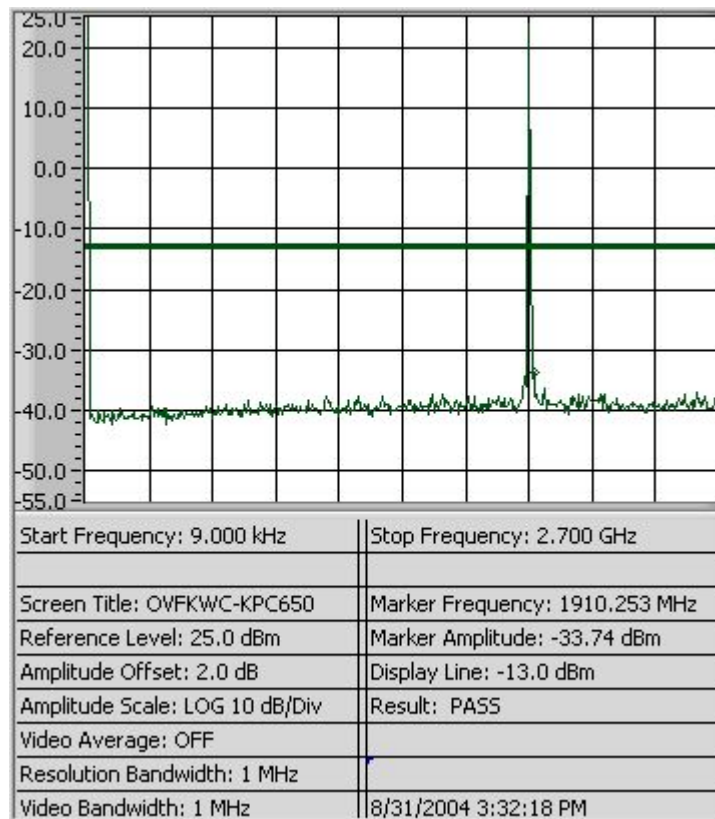


Figure 8-9a CDMA 1900 - Conducted Spurious Emission (CH 1175)

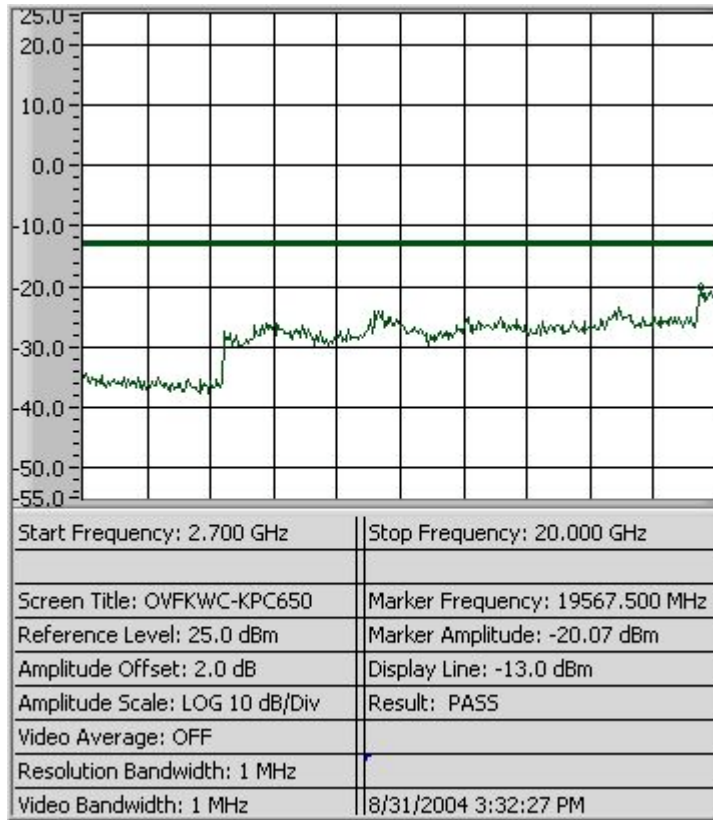


Figure 8-9b CDMA 1900 - Conducted Spurious Emission (CH 1175)

9 Transmitter Radiated Spurious Emissions Measured Data

FCC: § 2.1053, § 22.91, § 24.238	IC: RSS-129 §8.1, RSS-133 §6.3
Measurement Procedures: The radiated spurious emission test was performed at Nemko in San Diego, California. The test report is attached in a separate attachment.	

10 Receiver Spurious Emissions

FCC: § 15.109	IC: RSS-129 §10, RSS-133 §9
Measurement Procedures: The receiver radiated spurious emission test was performed at Nemko in San Diego, California. The test report is attached in a separate attachment.	

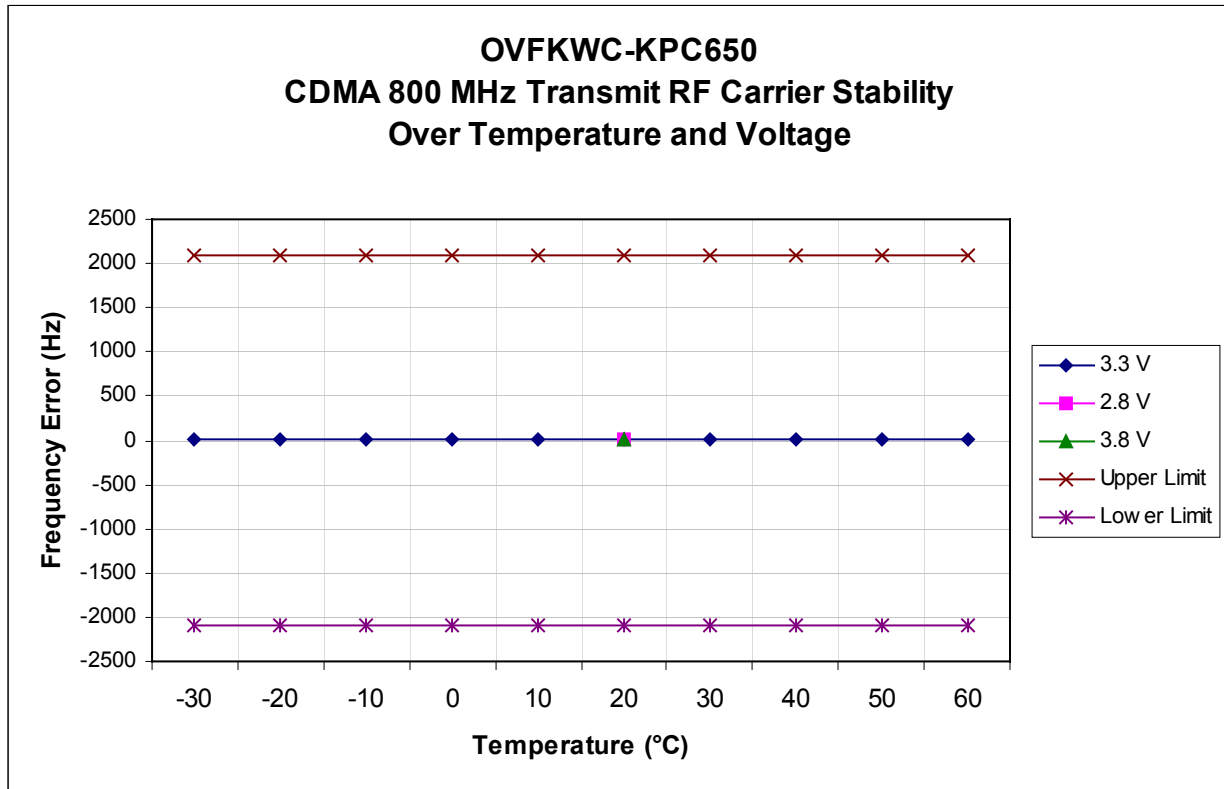
11 Transmitter RF Carrier Frequency Stability

FCC: § 2.1055, § 22.355, § 24.235	IC: RSS-129 §7.2 and §9.2, RSS-133 §7
Measurement Procedures: The EUT was placed in an environmental chamber. The RF output of the EUT was connected to Agilent 8960 Series 10 E5515C. A power supply was connected as primary voltage supply.	

11.1 CDMA 800 Mode

TX Frequency: 836.49 MHz	Voltage : 3.3V
Tolerance: +/- 2.5 Ppm (+/- 2091 Hz)	Ch: 383

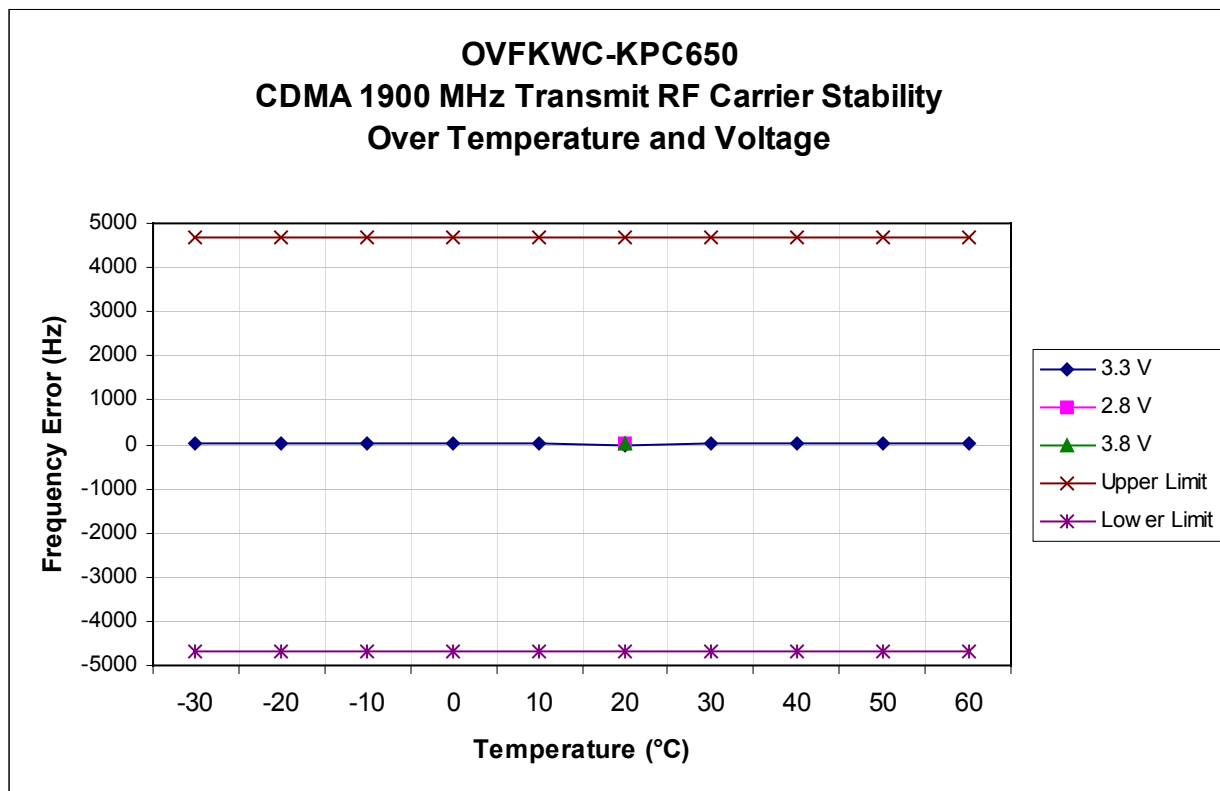
Temperature (°C)	Deviation of Carrier (Hz)			Specification (Hz)	
	2.8V (85%)	3.3V	3.8V (115%)	Lower limit	Upper limit
-30		0.12		-2091	2091
-20		0.65		-2091	2091
-10		0.79		-2091	2091
0		0.05		-2091	2091
10		0.33		-2091	2091
20	0.33	0.27	1.21	-2091	2091
30		0.19		-2091	2091
40		0.84		-2091	2091
50		0.44		-2091	2091
60		0.69		-2091	2091



11.2 CDMA 1900 Mode

TX Frequency: 1880.00 MHz	Voltage : 3.3V
Tolerance: +/- 2.5 Ppm (+/-4700 Hz)	Ch: 600

Temperature (°C)	Deviation of Carrier (Hz)			Specification (Hz)	
	2.8 (85%)	3.3V	3.8V (115%)	Lower limit	Upper limit
-30		1.55		-4700	4700
-20		1.28		-4700	4700
-10		1.58		-4700	4700
0		1.04		-4700	4700
10		0.39		-4700	4700
20	0.77	-1.19	1.35	-4700	4700
30		0.55		-4700	4700
40		0.72		-4700	4700
50		0.04		-4700	4700
60		0.90		-4700	4700



12 Exposure of Humans to RF Fields (SAR)

The SAR Test Report is showed in a separate attachment as Exhibit 9.

13 Test Equipment

Description	Manufacturer	Model Number	Serial Number	Cal Due Date
Power Meter	Giga-tronics	8541C	1835328	11/28/04
Power Meter Sensor	Giga-tronics	80601A	1830381	04/29/05
Spectrum Analyzer	Hewlett Packard	8593EM	3710A00203	04/30/05
Wireless Communications Test Set	Agilent	8960	U841070147	04/06/06
Wireless Communications Test Set	Agilent	8960	GB44052736	07/16/06
Multimeter	Hewlett Packard	34401A	US36081593	03/31/06
Temperature Chamber	ESZ	Z2033	Z9043034	04/02/05