

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

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.

STATEMENT OF COMPLIANCE

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 \S 2.947.

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 require	Tests that required an OATS site were performed by Nemko.						



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1 General Information

Applicant:	Kyocera Wireless Co	กาก					
	10300 Campus Poin						
	San Diego CA 9212						
FCC ID:	OVFKWC-KPC650						
Product:		00/1900 PCMCIA Card					
Model Numbers:	KPC 650						
EUT Serial Number:	7Y-X102G0Y (mc	,					
Туре:	[] Prototype, [X] Pr	e-Production, [] Productio	n				
Device Category:	Portable						
RF Exposure	General Population /	Uncontrolled					
Environment:							
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	CDMA	CDMA	CDMA				
Scheme:							
TX Frequency (MHz):	824 – 849	824 – 849	1850 - 1910				
Emission	1M25F9W						
Designators:							
Max. Output Power	0.339 ERP		0.262 EIRP				
(W)							

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).

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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
Measu	rement 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 a report is attached in a separate a	ormed at Nemko in San Diego, California. The test ttachment.

7 Occupied Bandwidth

 FCC:
 § 2.1049, § 22.917(b)(d), § 24.238
 IC:
 RSS-129 §6.3, §8.1

 Measurement Procedures:
 IC:
 IC:</

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.

For Digital: Modulate with full rate.

List of Figures

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



25.0=						
20.0						
10.0	unether water and a second					
0.0						
-10.0						
-20.0						
-30.0						
-40.0 10 Mar Mars WY	- Worker -					
-50.0						
Screen Title: OVFKWC-KPC650	Occupied BW (99%): 1.282 MHz					
Center Frequency: 836.490 MHz	Result: PASS					
Reference Level: 25.0 dBm						
Amplitude Offset: 11.6 dB						
Amplitude Scale: LOG 10 dB/Div						
Video Average: 10						
Span: 3.000 MHz						
Resolution Bandwidth: 30 kHz						
Video Bandwidth: 300 kHz	8/31/2004 2:49:17 PM					

Figure 7-1 CDMA 800 at RC1

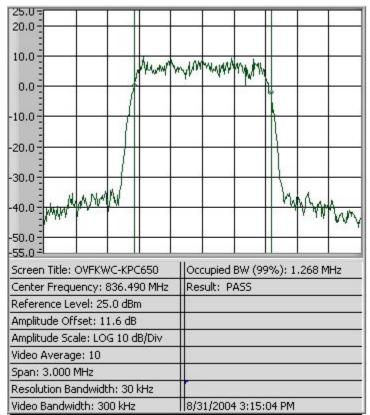


Figure 7-2 CDMA 800 1X at RC3



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-40.0	WW	W		-	_		_	P ^r	marty	-
-50.0				-					-	
-56.5		1 2		1	_				1	
Screen Titl	e: OVFK\	NC-KP	C650		00	cupied	BW (99	9%):	1.268 N	1Hz
Center Fre	quency:	1880.	000 M	1Hz	Result: PASS					
Reference	Level: 2	3.5 dB	m							
Amplitude	Offset: 1	2.0 df	3							
Amplitude	Scale: LC)G 10 (dB/Div	r [
Video Avei	age: 10									
Span: 3.00)0 MHz									
Resolution	Bandwid	th: 30	kHz							
Video Bano	Video Bandwidth: 300 kHz						4 2:51:	36 PM	1	

Figure 7-3 CDMA 1900 at RC1

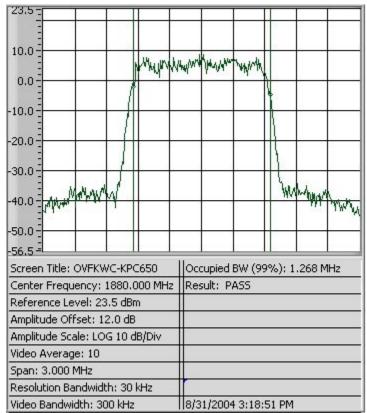


Figure 7-4CDMA 1900 1X at RC3



23.5			-		-			
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-30.0	Wand				W	TWILM	Whites	
-40.0							Υμητ	
-50.0					-			
-56.5 -								
Screen Title: O	VFKWC-KPC6	650	Result	: PASS				
Center Freque	ncy: 1851.25	50 MHz	Chan Ref Power: 23.23 dBm/1.40 M					
Reference Lev	el: 23.5 dBm		-1.25625 MHz Offset: -60.61 dBc					
Amplitude Offs	et: 12.5 dB		-2.75 MHz Offset: -55.50 dBc					
Amplitude Scal	e: LOG 10 dB	/Div						
Video Average	: 10							
Span: 3.0 MHz								
Resolution Ban	dwidth: 30 kł	Hz						
Video Bandwid	th: 300 kHz	1	8/31/2	2004 2:53	7:14 PM		2	

Figure 7-5 CDMA 1900 Lower Band Edge

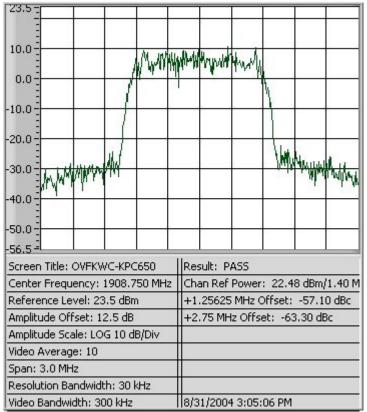


Figure 7-6 CDMA 1900 Upper Band Edge



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:

<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.

Base Band: Spectrum was investigated from 869-894 MHz for Cellular.

List of Figures:

Figure	Mode	Channel	Plot Description
8-1		1013	Emissions in base station frequency range, 869 - 894 MHz
8-2		1013	Conducted spurious emissions, 9kHz to 10GHz
8-3	CDMA	383	Emissions in base station frequency range, 869 - 894 MHz
8-4	800	303	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		25	Conducted spurious emissions, 9kHz to 20GHz
8-8	CDMA 1900	600	Conducted spurious emissions, 9kHz to 20GHz
8-9	1900	1175	Conducted spurious emissions, 9kHz to 20GHz



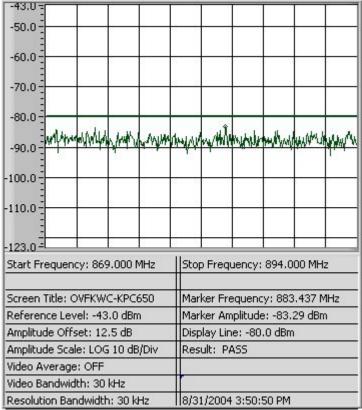


Figure 8-1 CDMA 800 - Emissions in base station frequency range (CH 1013)

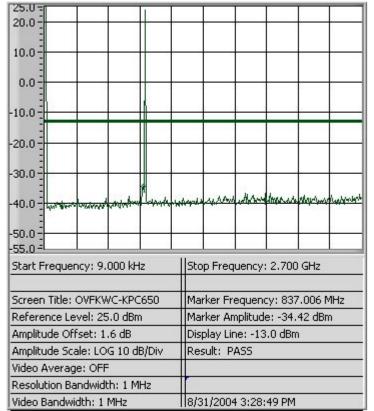


Figure 8-2a CDMA 800 – Conducted Spurious Emission (CH 1013)



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-40.0 -	Arrach			ę			· · · · ·		
-50.0 -									
Start Frequer	ncy: 2.7	00 GH	lz	Sto	p Freq	luency	: 20.00	00 GHz	
Screen Title: OVFKWC-KPC650			Marker Frequency: 19524.250 MHz						
Screen Title:	OVFKW	С-КРС	650	Mai	rker Fr	equen	cy: 195	524.25	0 MHz
Screen Title: Reference Le					_			524.25 .74 dBr	
	vel: 25.	0 dBm		Mai	rker Ar	nplitud		.74 dBr	
Reference Le	vel: 25. fset: 1.6	0 dBm 5 dB	1	Ma Dis	rker Ar	nplitud ne: -13	e: -20.	.74 dBr	
Reference Le Amplitude Off	ivel: 25. fset: 1.6 ale: LOG	0 dBm 5 dB	1	Ma Dis	rker Ar play Lir	nplitud ne: -13	e: -20.	.74 dBr	
Reference Le Amplitude Off Amplitude Sca	ivel: 25. fset: 1.6 ale: LOG ie: OFF	0 dBm 5 dB i 10 dt	ı 3/Di∨	Ma Dis	rker Ar play Lir	nplitud ne: -13	e: -20.	.74 dBr	

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

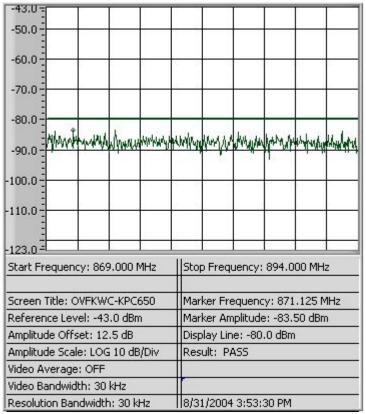


Figure 8-3 CDMA 800 - Emissions in base station frequency range (CH 383)



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-50.0 - -55.0 -									: :		
Start Fr	equer	ncy: 9.	000 ki	Hz	1	itop Fi	reque	ency:	2.70) GHz	
Screen	Title: (OVFKV	VC-KP	C650	-	/larker	Freq	ueno	:y: 84	3.756	MHz
Referer	nce Le	vel: 25	5.0 dB	m	ľ	Marker Amplitude: 24.75 dBm					
Amplitu	de Off	set: 1	.6 dB			Display	Line	: -13	.0 dBr	n	
Amplitu	de Sca	ale: LO	G 10 d	B/Div	F	lesult:	PAS	is			
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Resoluti	ion Ba	ndwid	th: 1 M	4Hz	10						

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

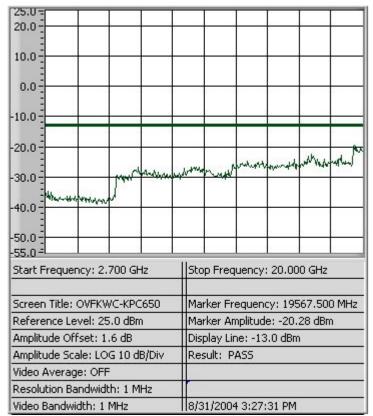


Figure 8-4b CDMA 800 – Conducted Spurious Emission (CH 383)



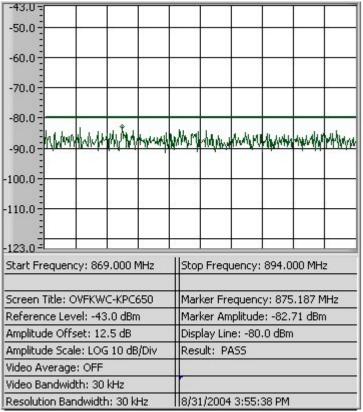


Figure 8-5 CDMA 800 - Emissions in base station frequency range (CH 777)

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-10.0					_					
-20.0										
-30.0 =										
-40.0	(Astronomy)	Marriel .	-	. Lesiense	45,4/4000	H. selve	have	an a	areautry	-hoopen-
-50.0										
Start Fre	equen	icy: 9.	000 ki	Hz	Sto	p Frec	uency	: 2.700) GHz	
Screen 1	Fitle: (OVEKV	VC-KP	C650	Ma	rker Fr	equen	cy: 85	D.506 M	1Hz
Referen	ce Lev	vel: 25	5.0 dB	m	Ma	Marker Amplitude: -33.93 dBm				
Amplitude Offset: 1.6 dB			Dis	Display Line: -13.0 dBm						
Amplitud	Amplitude Scale: LOG 10 dB/Div			Re	Result: PASS					
Video Av	/erage	e: OFF	-							
Resolutio		1 . 1		AL 1-						
Resoluci	on Bai	ndwidi	(U): T I	4HZ	100					

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



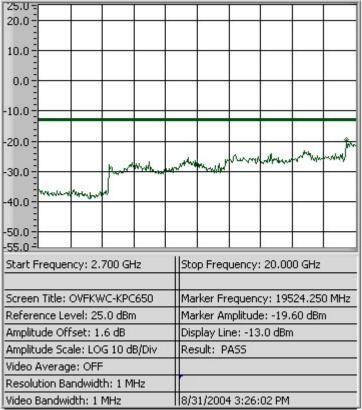


Figure 8-6b CDMA 800 – Conducted Spurious Emission (CH 777)

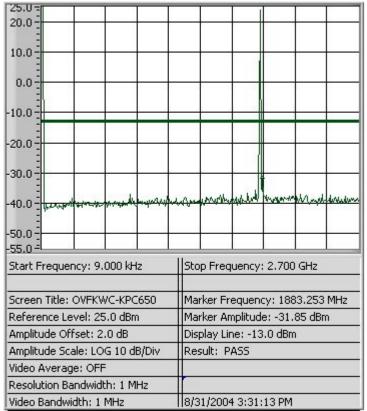


Figure 8-7a CDMA 1900 - Conducted Spurious Emission (CH 25)



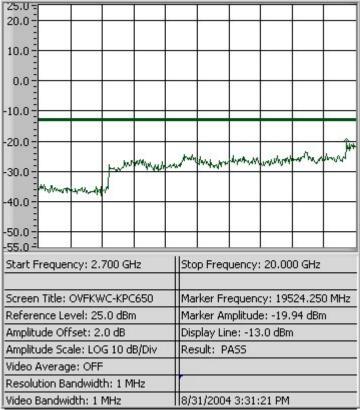


Figure 8-7b CDMA 1900 - Conducted Spurious Emission (CH 25)

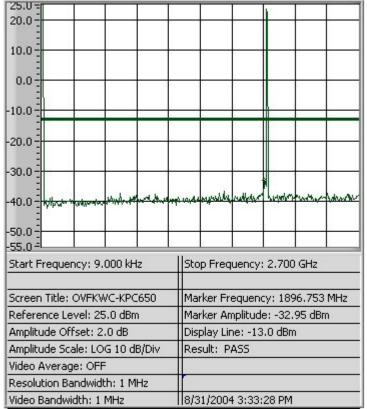


Figure 8-8a CDMA 1900 - Conducted Spurious Emission (CH 600)



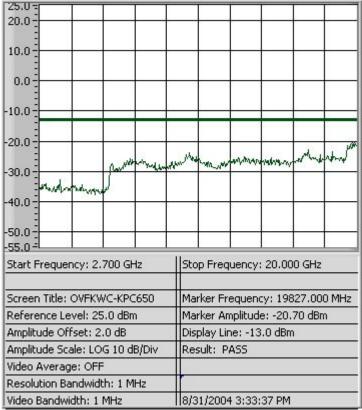


Figure 8-8b CDMA 1900 - Conducted Spurious Emission (CH 600)

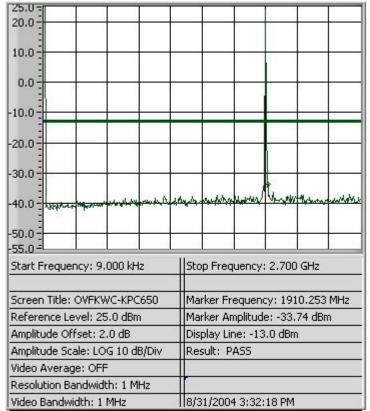


Figure 8-9a CDMA 1900 - Conducted Spurious Emission (CH 1175)



25.0-					
20.0					
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0.0					
-10.0					
-20.0					
-30.0	when the man an and a second a second				
-40.0					
-50.0					
Start Frequency: 2.700 GHz	Stop Frequency: 20,000 GHz				
Screen Title: OVFKWC-KPC650	Marker Frequency: 19567.500 MHz				
Reference Level: 25.0 dBm	Marker Amplitude: -20.07 dBm				
Amplitude Offset: 2.0 dB	Display Line: -13.0 dBm				
Amplitude Scale: LOG 10 dB/Div	Result: PASS				
Video Average: OFF					
Resolution Bandwidth: 1 MHz					
Video Bandwidth: 1 MHz	8/31/2004 3:32:27 PM				

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
Measure	ement 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:
 IC:
 IC:

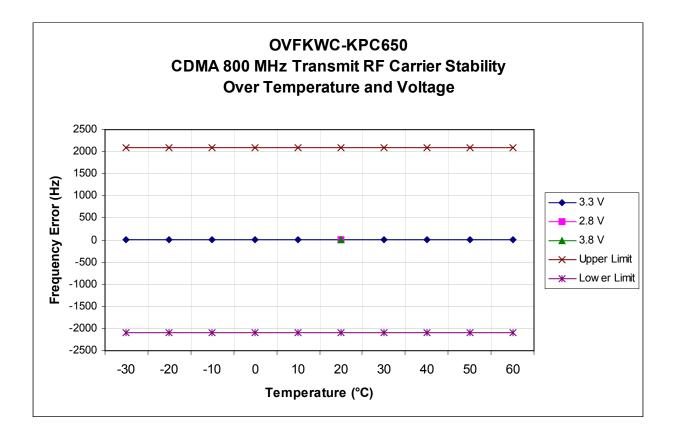
The EUT was placed in an environmental chamber. The RF output of the EUT was connected to Agilent 8960 Series 10 E5515C. A power supply was connected as primary voltage supply.



11.1 CDMA 800 Mode

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

Tomoretune	Devia	tion of Carri	Specification (Hz)		
Temperature (°C)	e 2.8V 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

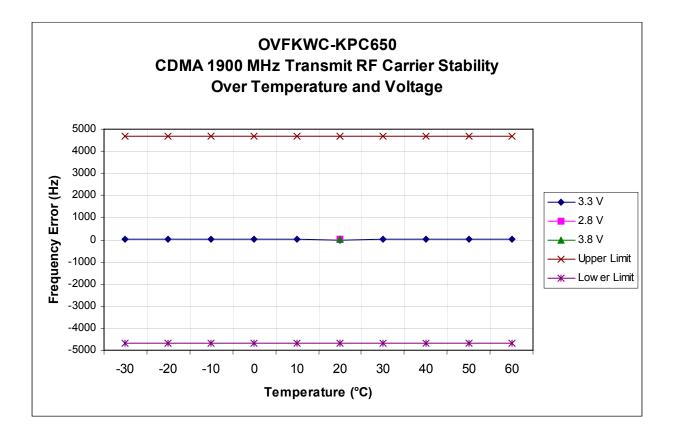




11.2 CDMA 1900 Mode

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

Tommonoturo	Devia	tion of Carrie	Specification (Hz)		
Temperature (°C)	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



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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