

Test Report On
Tri-Band CDMA Cellular Phone with Bluetooth

Certification	
FCC Part 22, 24 & 27	
FCC ID:	OVF-K4802
Models:	K48-02, K48-03
Date:	October 20, 2009

STATEMENT OF CERTIFICATION	
<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>	
STATEMENT OF COMPLIANCE	
<i>This product has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.</i>	
Date of Test:	October 19 –20, 2009
Test performed by:	Kyocera Wireless Corp. 10300 Campus Point Drive San Diego, CA 92121
Report Prepared by:	Thuy To, Regulatory Engineer
Report Approved by:	C.K. Li, Director of Regulatory Engineering
Compliance Certification Services performed the tests that required an OATS site.	

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1 General Information

Applicant:	Kyocera Wireless Corp 10300 Campus Point Drive San Diego CA 92121		
FCC ID:	OVF-K4802		
IC #:	3572A-K48		
Product:	Tri-Band CDMA Cellular Phone with Bluetooth		
Model Numbers:	K48-02, K48-03 (identical)		
EUT Serial Number:	F0000032710966		
Type:	<input type="checkbox"/> Identical Prototype, <input checked="" type="checkbox"/> Pre-Production, <input type="checkbox"/> Production		
Device Category:	Portable		
RF Exposure Environment:	General Population / Uncontrolled		
Antenna:	Internal Antenna		
Detachable Antenna:	No		
External Input:	Audio/Digital Data		
Quantity:	Quantity production is planned		
FCC Rule Parts:	§22H	§27L	§24E
IC Rule Parts :	RSS132	RSS139	RSS133
Modes:	800 CDMA	1700 CDMA	1900 CDMA
Multiple Access Scheme:	CDMA	CDMA	CDMA
TX Frequency (MHz):	824 – 849	1710 - 1755	1850 - 1910
Emission Designators:	1M25F9W	1M25F9W	1M25F9W
Max. Output Power (W):	1.047 ERP	0.575 EIRP	0.447 EIRP

2 Summary of Results

FCC CFR 47	IC	Test	Results	Reference
Transmitter Section				
§2.1046(a) 22.913(a) 24.238(a) 27.50	RSS-GEN 4.9	Conducted RF output power	Pass	Section 5
§22.913(a)(2) 24.232(c) 27.50 (d)	RSS-132 RSS-133 (6.4) RSS-139 (6.4)	Radiated RF output Power	Pass	Section 4
§2.1049(h) 22.917(a) 24.238(a) 27.53(g)	RSS-GEN 4.6	Occupied Bandwidth	Pass	Section 5
§2.1051, 22.917(a) 24.238(a) 27.53(g)	RSS-132 (4.5) RSS-133 (6.5) RSS-139 (6.5)	Spurious emissions at antenna terminals	Pass	Section 6
§2.1053 22.917(a) 24.238(a) 27.53(g)	RSS-132, RSS-133 (6.3)	Spurious radiated emissions	Pass	Section 7

3 Justification

✓	The phone continues to meet all the applicable requirements.
✓	All measured data is within the tolerance of previously reported data. See section for tests which might be affected by the change.

4 Transmitter RF Power Output

4.1 Conducted Power

FCC: § 2.1046	IC: RSS-GEN 4.9
<p>Measurement Procedures:</p> <p>The RF output power was measured using a Giga-tronics 8541C Universal Power Meter. Terminated to a resistive coaxial load of 50 ohms.</p>	

Mode	Frequency (MHz)	Channel	Power (dBm)
CDMA 800	824.70	1013	24.35
	836.52	383	24.85
	848.31	777	24.37
CDMA 1700	1711.25	25	23.7
	1732.5	450	23.76
	1753.75	875	23.63
CDMA 1900	1851.25	25	23.15
	1880	600	23.86
	1908.75	1175	23.77

4.2 Radiated Power

FCC: § 22.913, § 24.232	IC: RSS-132, RSS-133 (6.4), RSS-139 (6.4)
<p>Measurement Procedures:</p> <p>Tests were performed in Compliance Certification Service using substitution method. See separated radiated emission report for details.</p>	

Mode	Frequency (MHz)	Channel	Max. Power (dBm)	Ref.
CDMA 800	824.70	1013	30.2	ERP
	836.52	383	28.4	
	848.31	777	26.8	
CDMA 1700	1711.25	25	27.2	EIRP
	1732.5	450	27.0	
	1753.75	875	27.6	
CDMA 1900	1851.25	25	25.7	EIRP
	1880.00	600	26.5	
	1908.75	1175	25.5	

5 Occupied Bandwidth

FCC:	§ 2.1049, § 22.917(b)(d), § 24.238, § 27.53(g)(1)	IC:	RSS-GEN 4.6
Measurement Procedures:			
<p>The RF output of the EUT was connected to the input of the spectrum analyzer (S.A.) with sufficient attenuation. The spectrum with no modulation was recorded.</p> <p>For Digital: Modulate with full rate all up power control bit.</p>			
S.A. Setting	RBW	VBW	
Bandwidth Measurement	30KHz	300kHz	
Band Edge Measurement	100KHz	100KHz	

List of Figures

Figure	Mode	Description
6-1	CDMA 800	CDMA @ Ch383
6-2		Lower Band Edge @ Ch 1013
6-3		Upper Band Edge @ Ch 777
6-4	CDMA 1700	AWS @ CH450
6-5		Lower Band Edge @ CH25
6-6		Upper Band Edge @ CH875
6-7	CDMA 1900	CDMA @ CH600
6-8		Lower Band Edge @ CH 25
6-9		Upper Band Edge @ CH 1175

CDMA

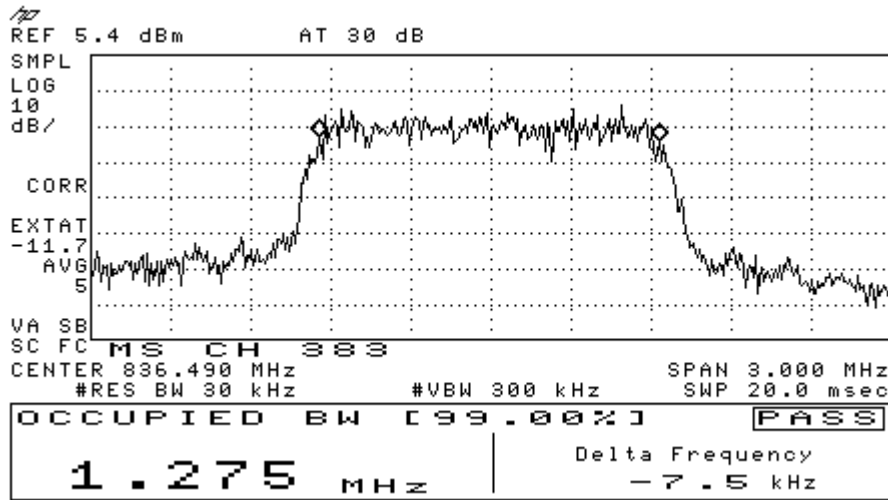


Figure 6-1 CDMA 800 @ CH 383

RL

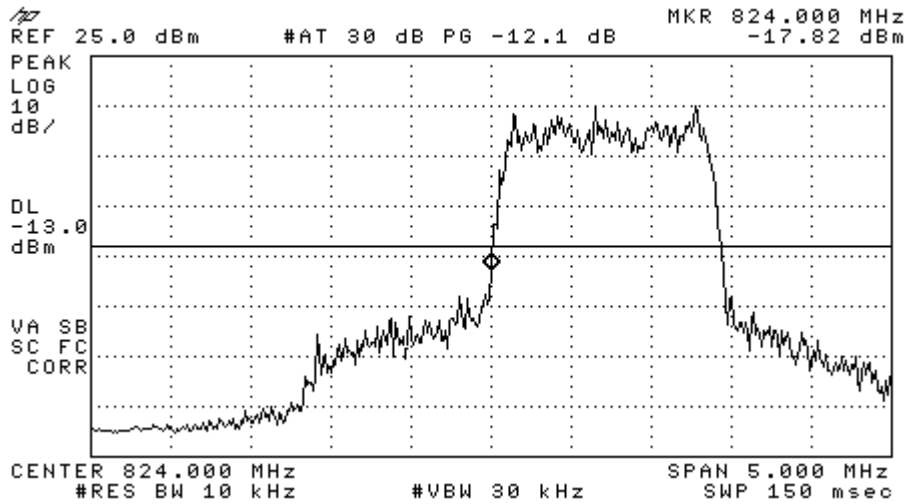


Figure 6-2 CDMA 800 Lower Band Edge @ CH 1013

RL

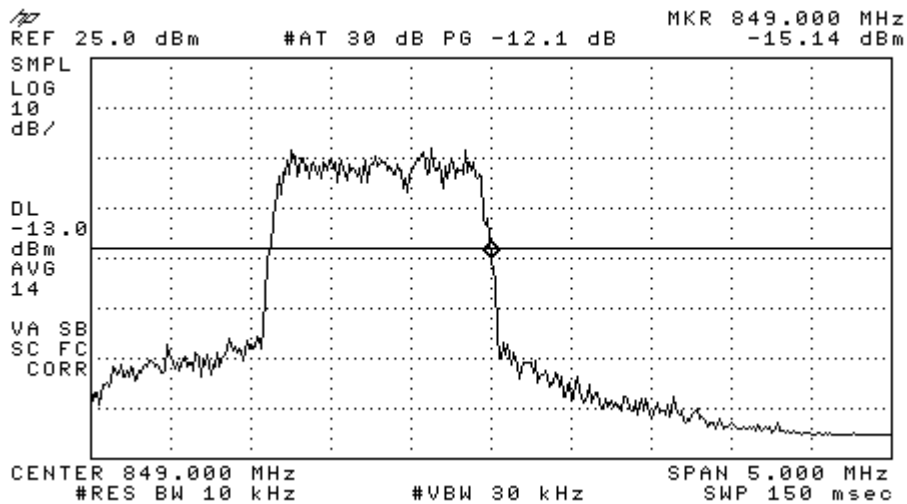


Figure 6-3 CDMA 800 Lower Band Edge @ CH 777

RT

CDMA

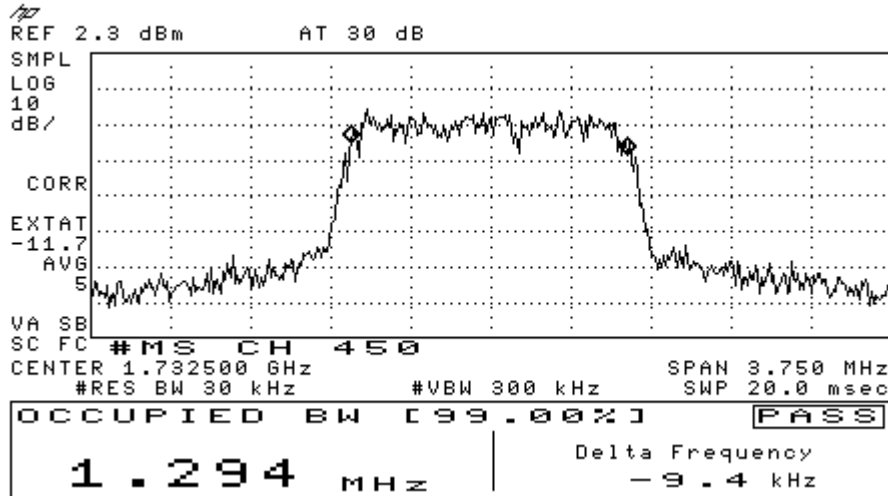


Figure 6-4 AWS 1700 @ CH 450

RT

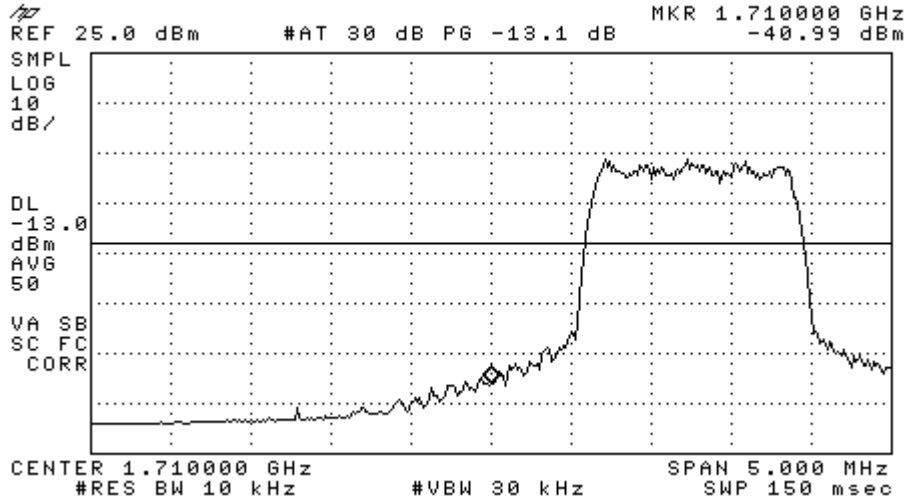


Figure 6-5 AWS 1700 Lower Band Edge @ CH 25

RL

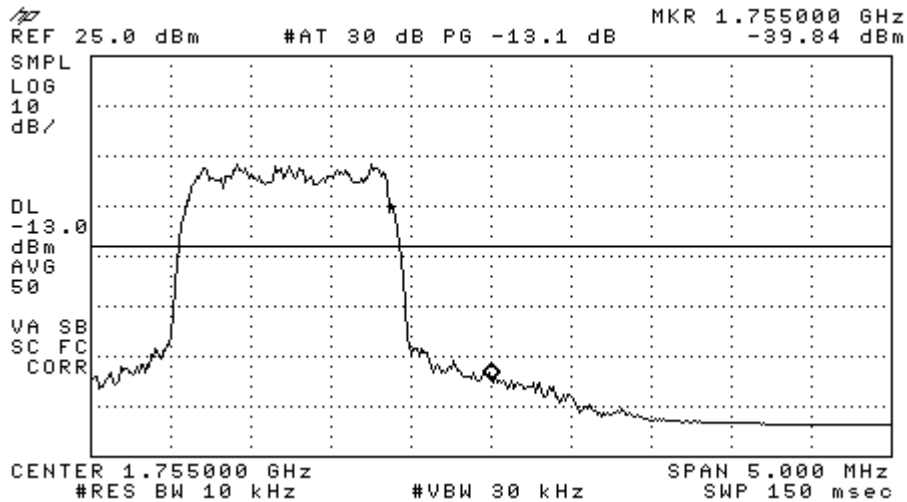
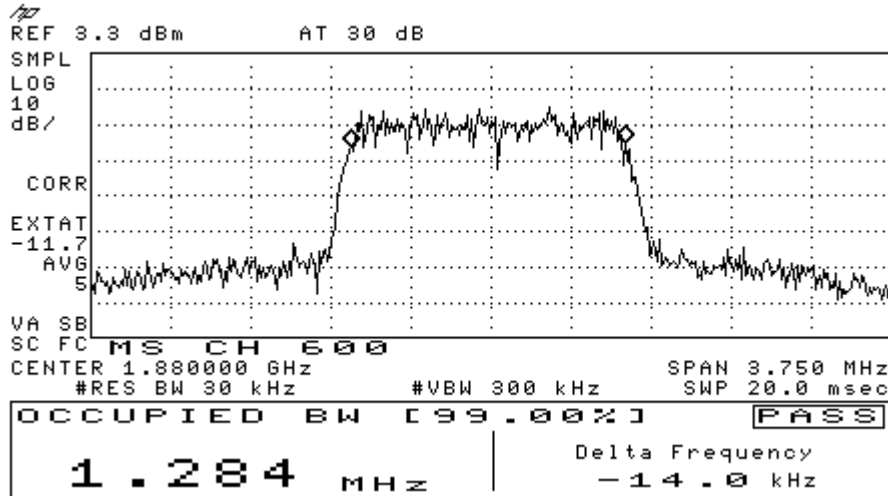


Figure 6-6 AWS 1700 Upper Band Edge @ CH 875

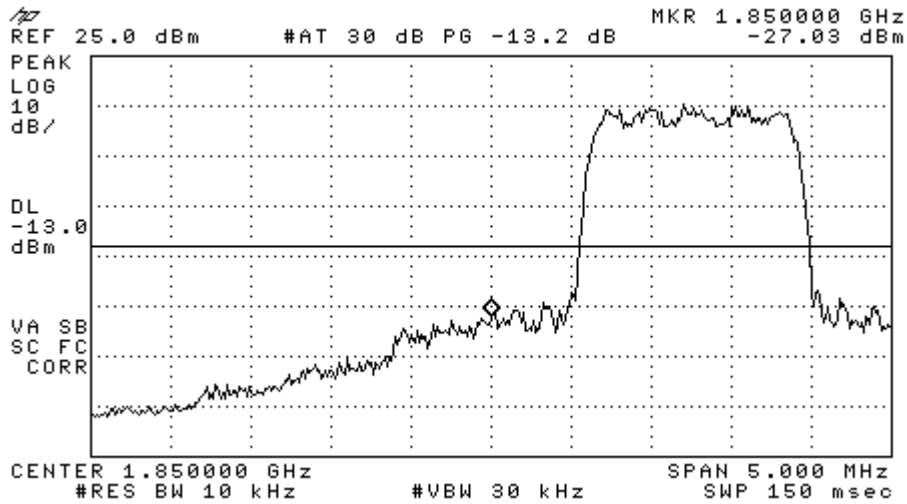
RT

CDMA



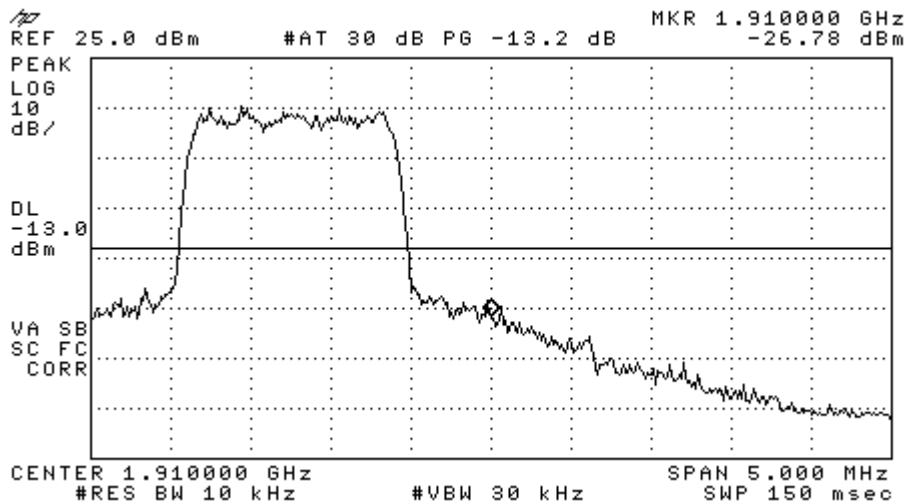
RL

Figure 6-7 CDMA 1900 @ CH 600



RL

Figure 6-8 CDMA 1900 Lower Band Edge @ CH 25



RL

Figure 6-9 CDMA 1900 Upper Band Edge @ CH 1175

6 Spurious Emissions At Antenna Terminals

FCC:	§ 2.1051, § 22.917(e)(f), § 24.238	IC:	RSS-132 (4.5), RSS-133 (6.5), RSS-139 (6.5),
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>			
S.A. Setting		RBW	VBW
Spurious Emissions Measurement		1MHz	1MHz

List of Figures:

Figure	Mode	Channel	Plot Description
7-1	CDMA 800	1013	Conducted spurious emissions, 9kHz to 10GHz
7-2		383	Conducted spurious emissions, 9kHz to 10GHz
7-3		777	Conducted spurious emissions, 9kHz to 10GHz
7-4	CDMA 1700	25	Conducted spurious emissions, 9kHz to 20GHz
7-5		450	Conducted spurious emissions, 9kHz to 20GHz
7-6		875	Conducted spurious emissions, 9kHz to 20GHz
7-7	CDMA 1900	25	Conducted spurious emissions, 9kHz to 20GHz
7-8		600	Conducted spurious emissions, 9kHz to 20GHz
7-9		1175	Conducted spurious emissions, 9kHz to 20GHz

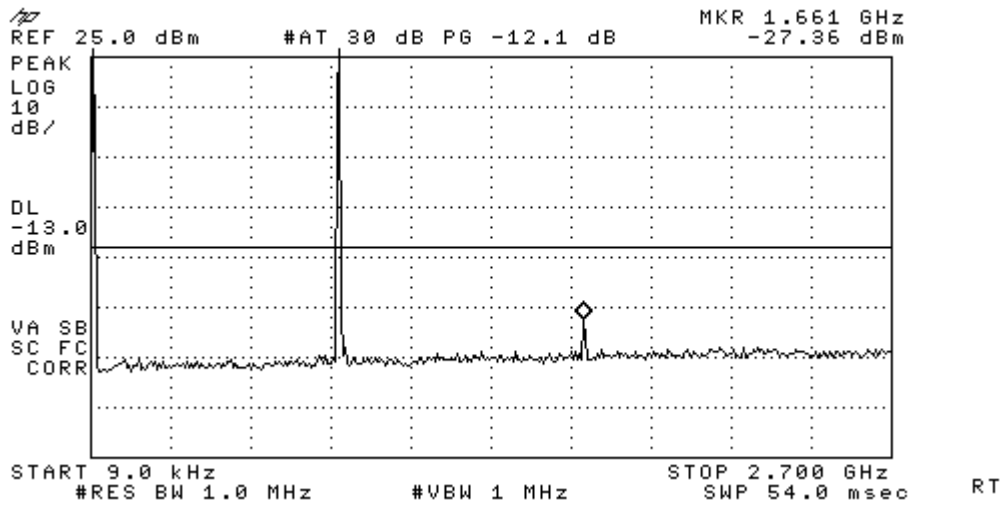


Figure 7-1a CDMA 800 – Conducted Spurious Emission (CH 1013)

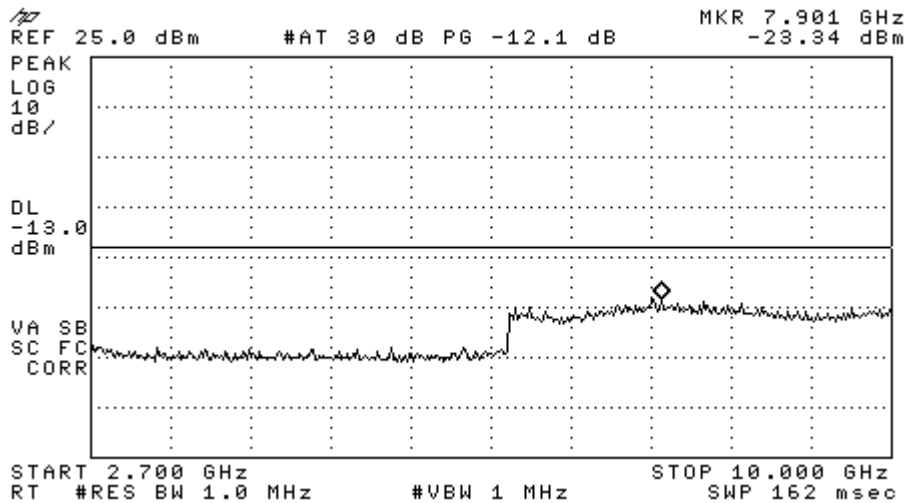


Figure 7-1b CDMA 800 – Conducted Spurious Emission (CH 1013)

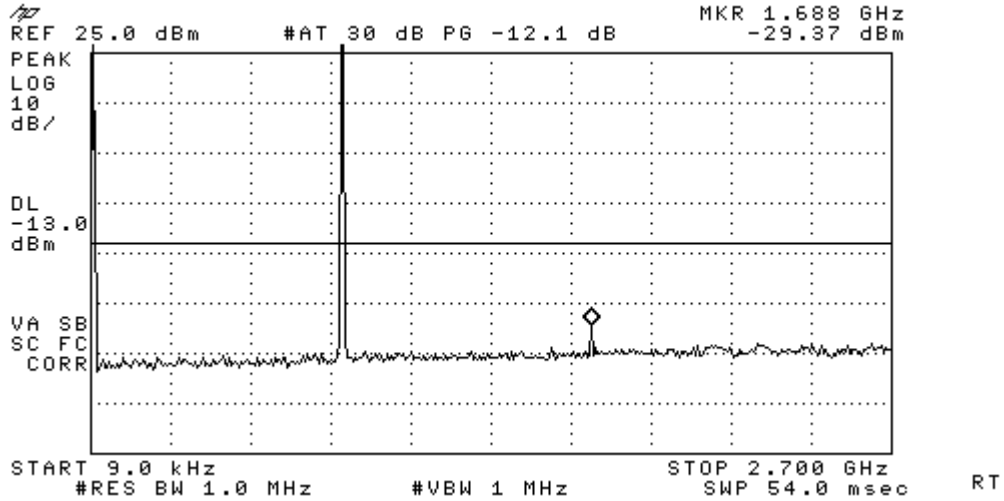


Figure 7-2a CDMA 800 – Conducted Spurious Emission (CH 383)

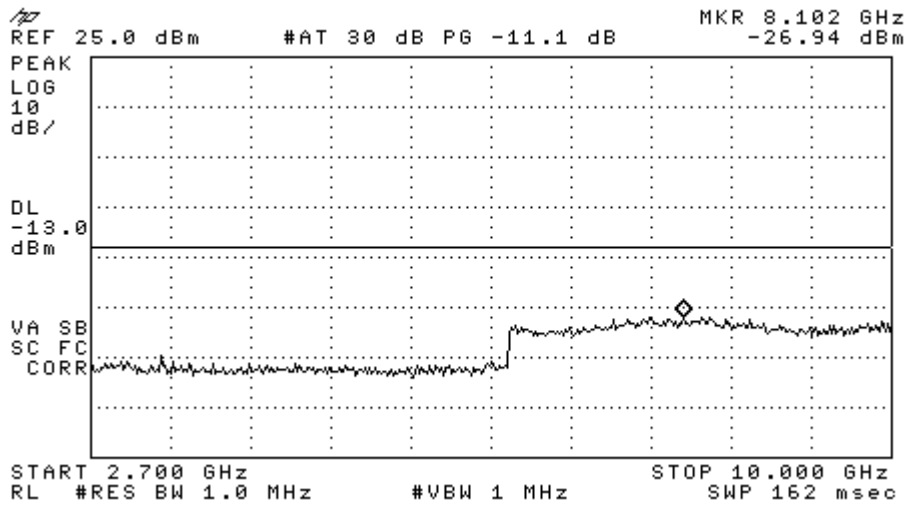


Figure 7-2b CDMA 800 – Conducted Spurious Emission (CH 383)

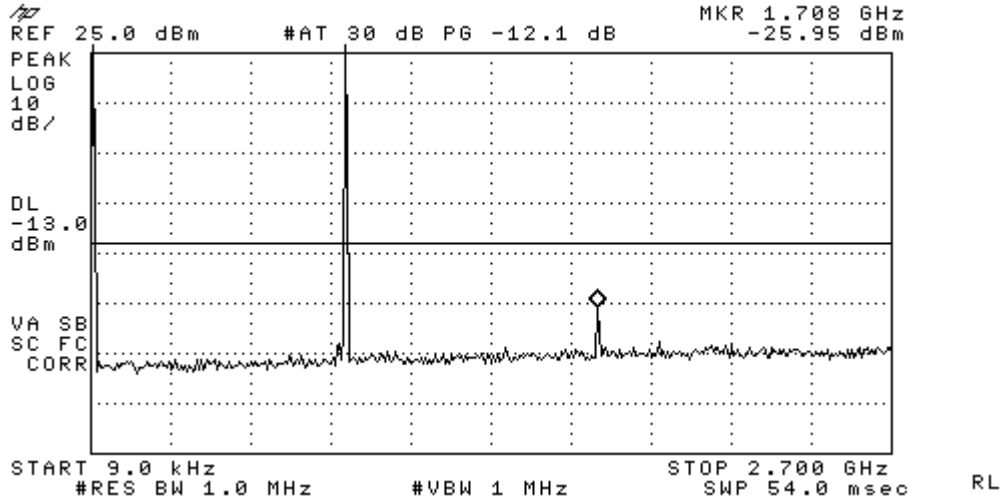


Figure 7-3a CDMA 800 – Conducted Spurious Emission (CH 777)

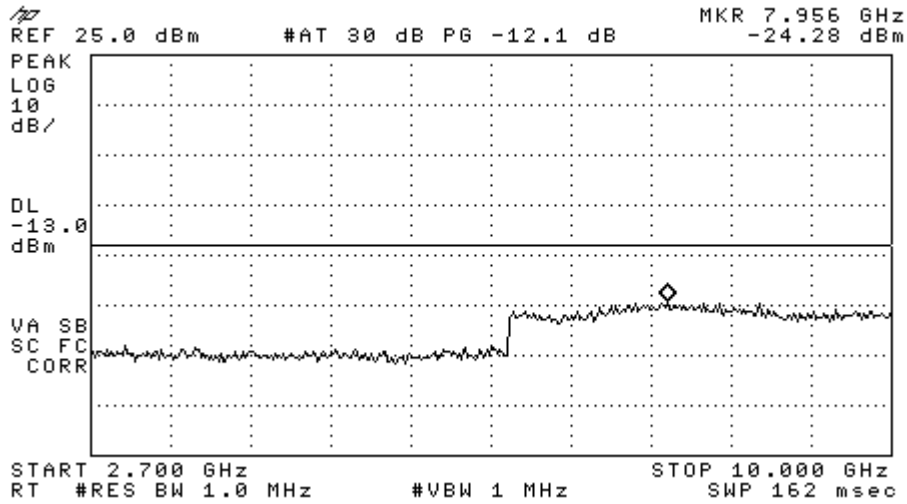


Figure 7-3b CDMA 800 – Conducted Spurious Emission (CH 777)

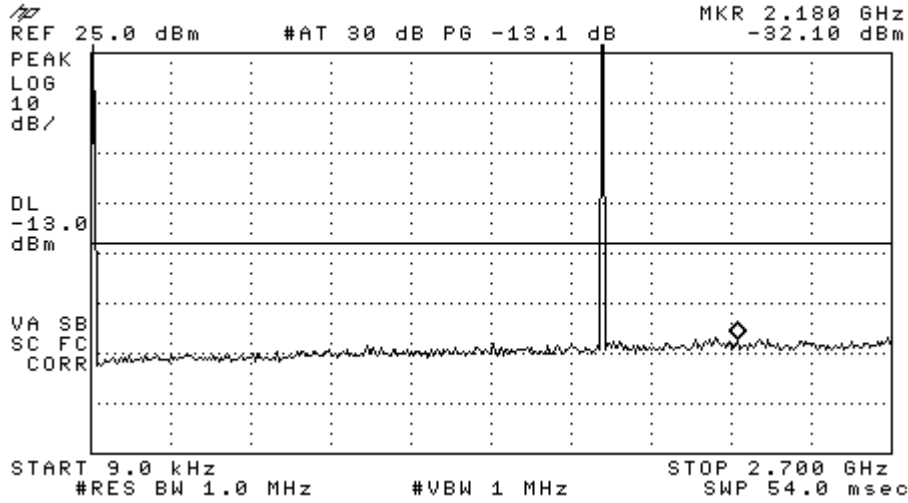


Figure 7-4a AWS 1700 - Conducted Spurious Emission (CH 25)

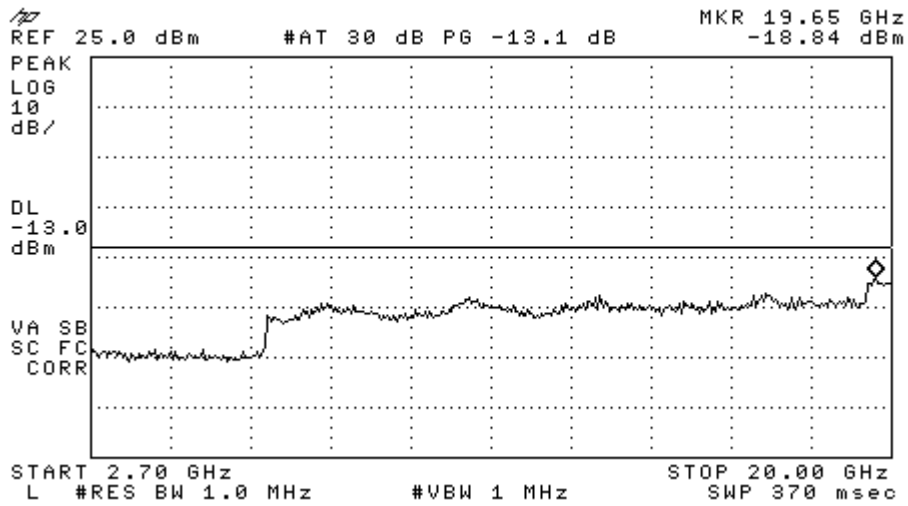


Figure 7-4b AWS 1700 - Conducted Spurious Emission (CH 25)

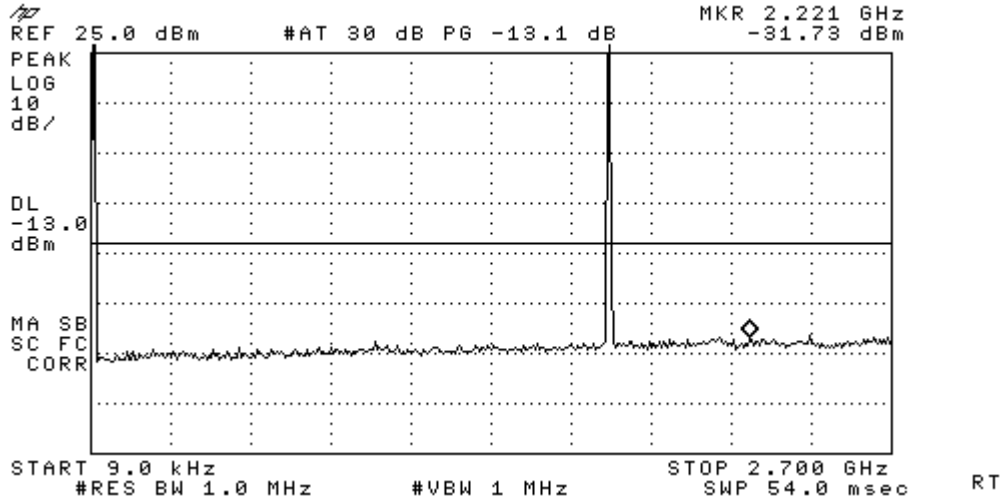


Figure 7-5a AWS 1700 - Conducted Spurious Emission (CH 450)

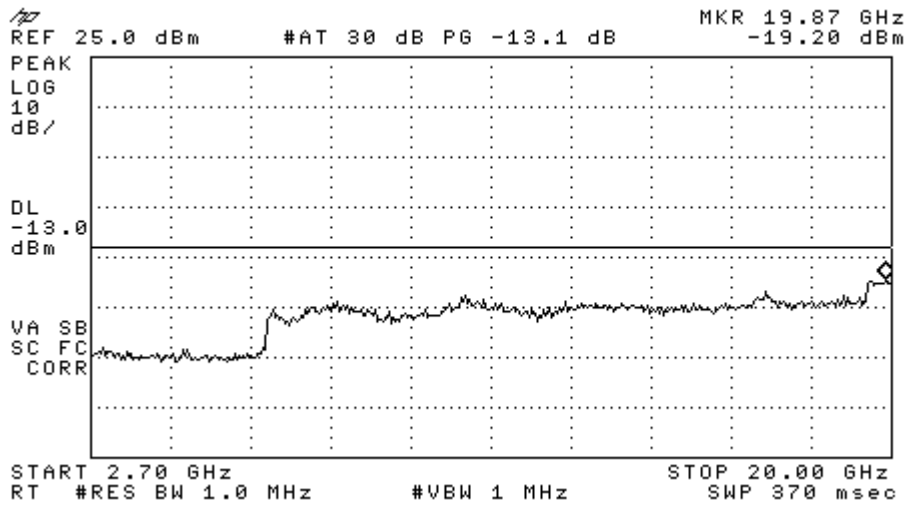


Figure 7-5b AWS 1700 - Conducted Spurious Emission (CH 450)

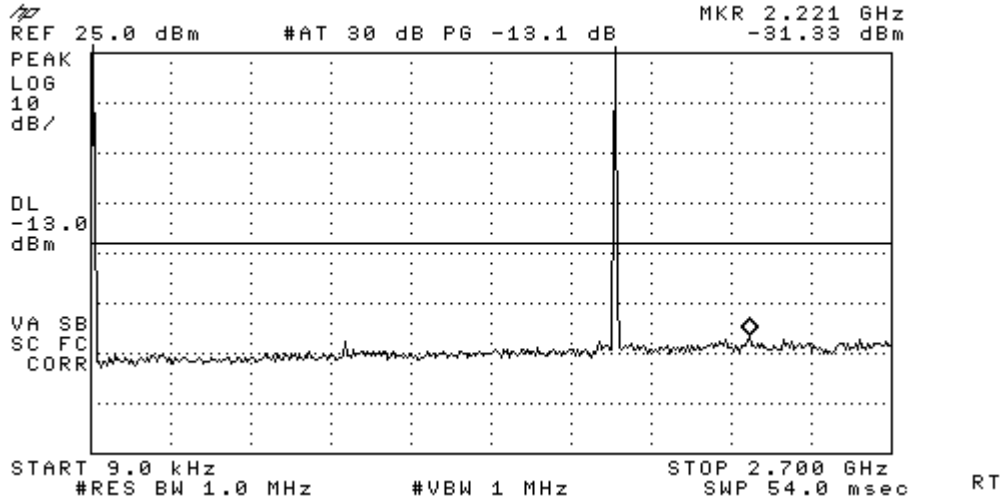


Figure 7-6a AWS 1700 - Conducted Spurious Emission (CH 875)

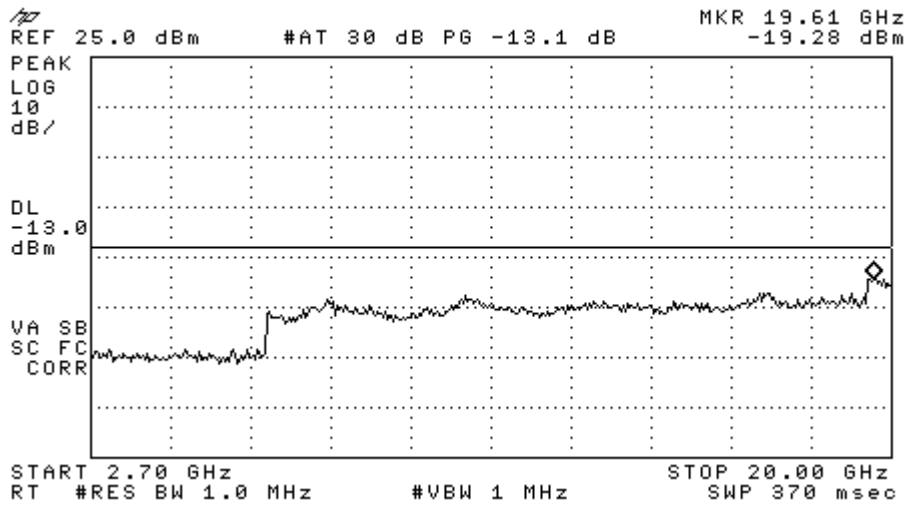


Figure 7-6b AWS 1700 - Conducted Spurious Emission (CH 875)

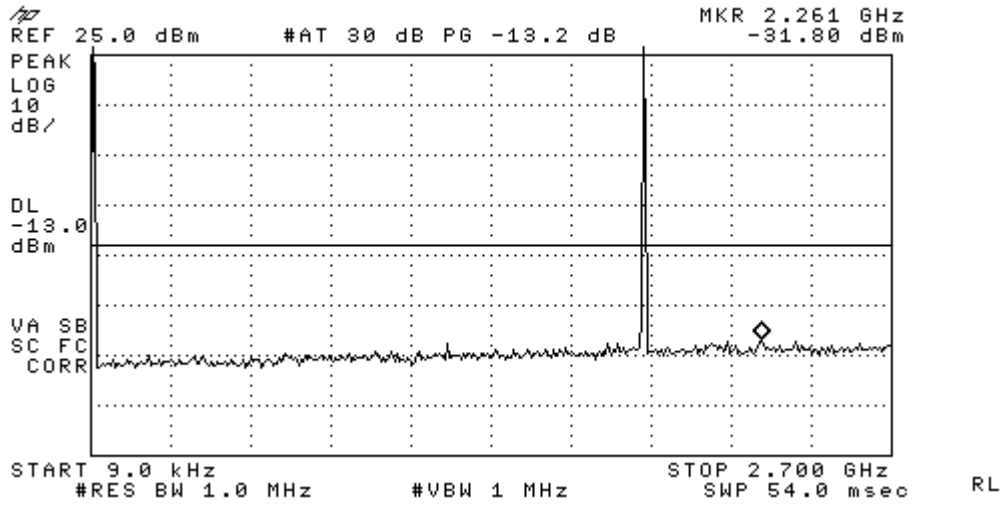


Figure 7-7a CDMA 1900 - Conducted Spurious Emission (CH 25)

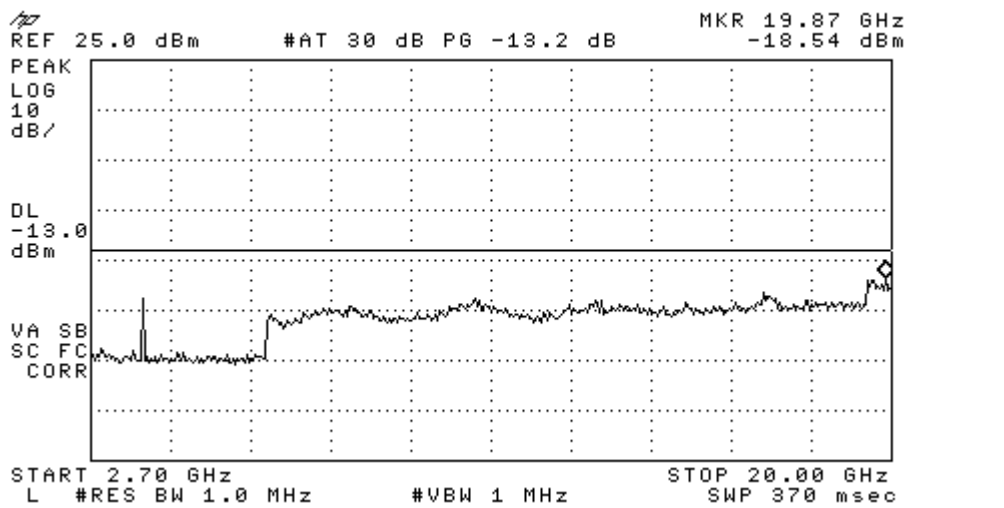


Figure 7-7b CDMA 1900 - Conducted Spurious Emission (CH 25)

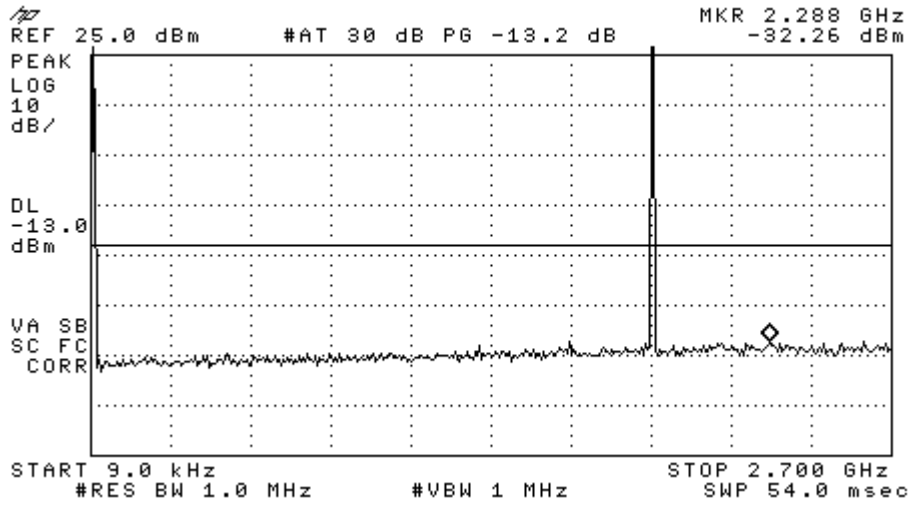


Figure 7-8a CDMA 1900 - Conducted Spurious Emission (CH 600)

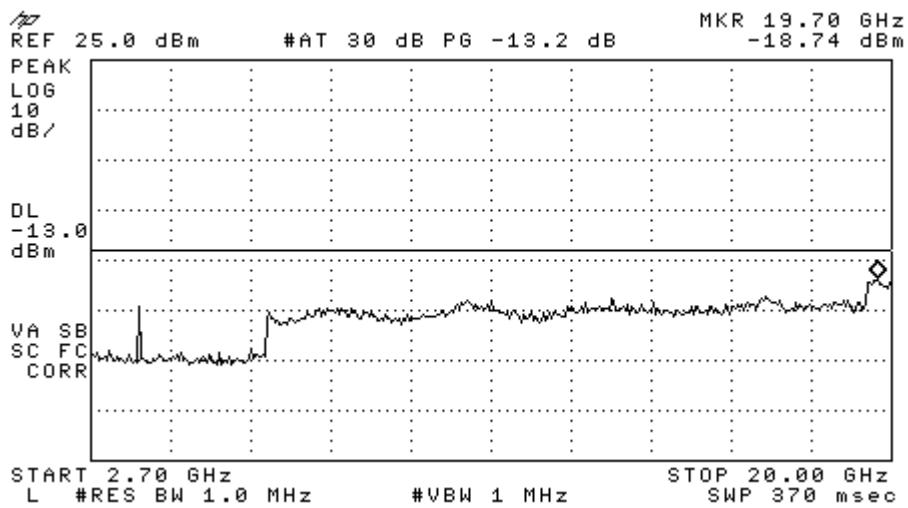


Figure 7-8b CDMA 1900 - Conducted Spurious Emission (CH 600)

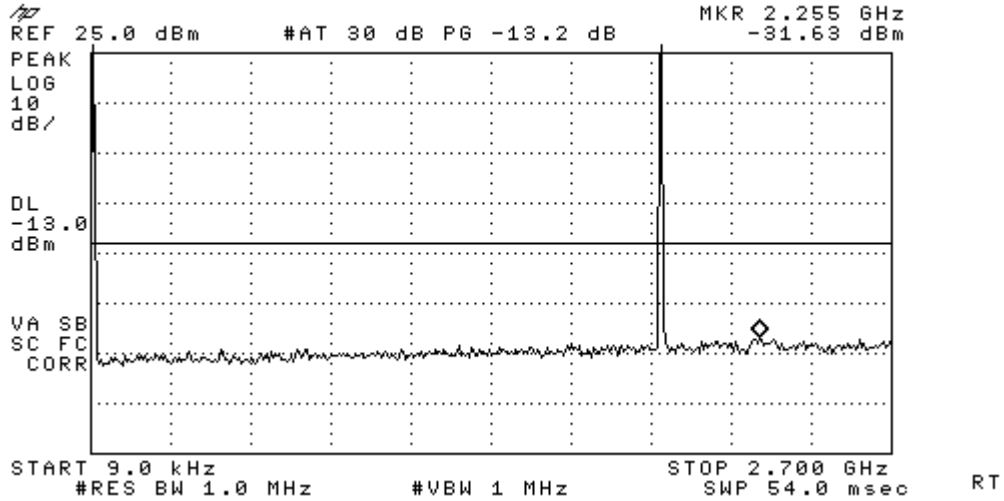


Figure 7-9a CDMA 1900 - Conducted Spurious Emission (CH 1175)

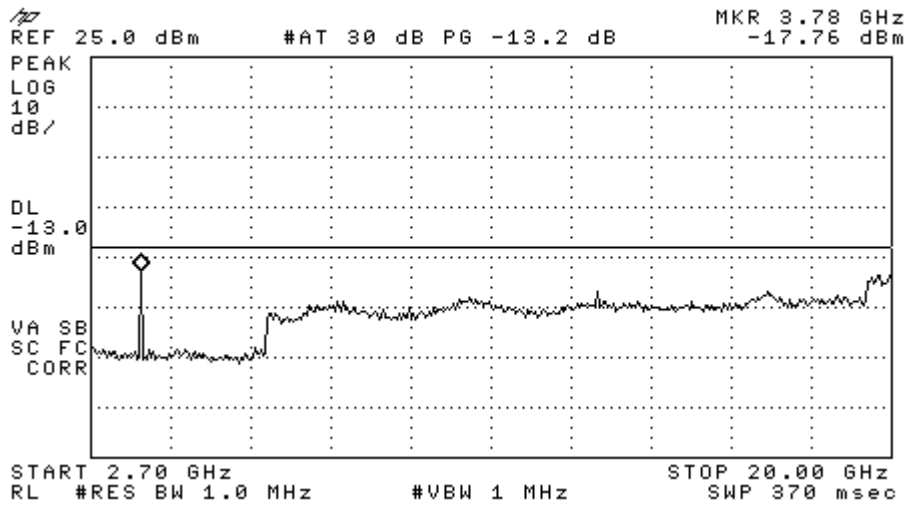


Figure 7-9b CDMA 1900 - Conducted Spurious Emission (CH 1175)

Figure	Mode	Channel	Plot Description
7-10	CDMA 800	1013	Emissions in base station frequency range, 869 - 894 MHz
7-11		383	Emissions in base station frequency range, 869 - 894 MHz
7-12		777	Emissions in base station frequency range, 869 - 894 MHz

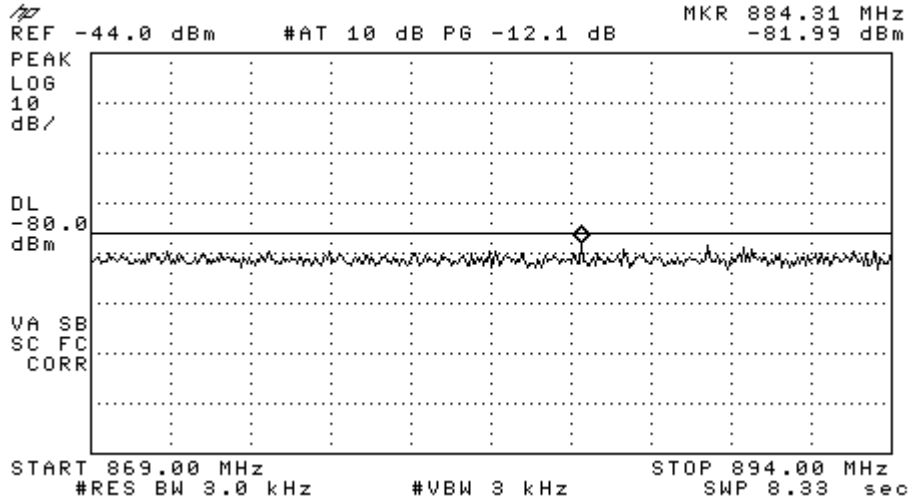


Figure 7-10 CDMA 800 - Emissions in base station frequency range (CH 1013)

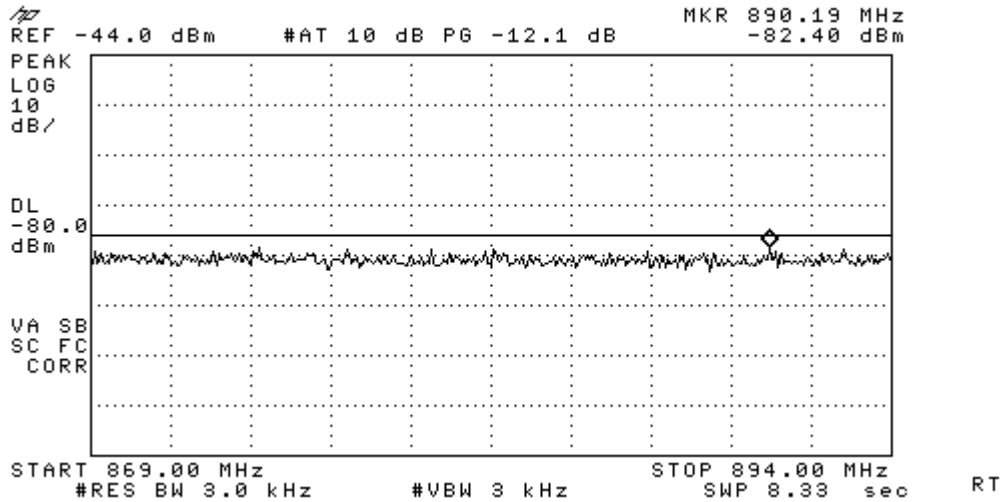


Figure 7-11 CDMA 800 - Emissions in base station frequency range (CH 383)

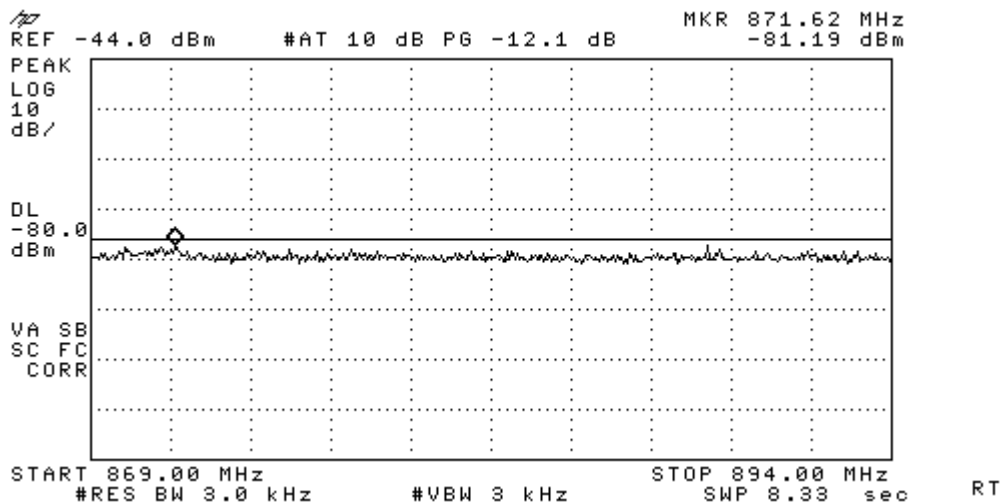


Figure 7-12 CDMA 800 - Emissions in base station frequency range (CH 777)

7 Transmitter Radiated Spurious Emissions Measured Data

FCC:	§ 2.1053, § 22.91, § 24.238, §27.53(g)	IC:	RSS-132, RSS-133 (6.3), RSS-139 (6.3)
<p>Measurement Procedures:</p> <p>The radiated spurious emission test was performed at Compliance Certification Service. The test report is attached in a separate attachment.</p>			

8 Test Equipment

Description	Manufacturer	Model Number	Serial Number	Cal Due Date
Power Meter	Giga-tronics	8541C	1832048	03/09/10
Spectrum Analyzer	Hewlett Packard	8593EM	3710A00203	03/04/10
Spectrum Analyzer	Hewlett Packard	8595E	3911A03899	07/20/11
Wireless Communications Test Set	Agilent	8960	GB44052789	05/19/10