

Appendix F. FCC CDMA2000 SAR Measurement Procedures

Conducted Output Power:

The EUT was tested according to the requirements of the FCC 3G procedures and the 3.1.2.3.4.

A detailed analysis of the output power verification is provided as the table below:

Function Type	Reverse Traffic Channel	Test Mode	Radio Configuration		Service Option	Data Rates (kbps)	Power Control	Low Ch	Mid. Ch	High Ch
			Forward Traffic Channel (Fwd)	Reverse Traffic Channel (Rvs)				1013	384	777
CDMA2000 Cellular	FCH	1	1	1	55	Full	All Up	23.32	23.40	23.14
		3	3	3	55	Full	All Up	23.33	23.45	23.22
	F-SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	23.30	23.33	23.25
	SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	23.29	23.25	23.23

Function Type	Reverse Traffic Channel	Test Mode	Radio Configuration		Service Option	Data Rates (kbps)	Power Control	Low Ch	Mid. Ch	High Ch
			Forward Traffic Channel (Fwd)	Reverse Traffic Channel (Rvs)				25	600	1175
CDMA2000 PCS	FCH	1	1	1	55	Full	All Up	24.12	24.25	24.44
		3	3	3	55	Full	All Up	24.19	24.27	24.39
	F-SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	24.20	24.45	24.50
	SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	24.17	24.40	24.46

Function Type	Reverse Traffic Channel	Test Mode	Radio Configuration		Service Option	Data Rates (kbps)	Power Control	Ch
			Forward Traffic Channel (Fwd)	Reverse Traffic Channel (Rvs)				1275
CDMA2000 BC14	FCH	1	1	1	55	Full	All Up	22.39
		3	3	3	55	Full	All Up	22.38
	F-SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	22.04
	SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	22.06



Function Type	Reverse Traffic Channel	Test Mode	Radio Configuration		Service Option	Data Rates (kbps)	Power Control	Low Ch	Mid. Ch	High Ch
			Forward Traffic Channel (Fwd)	Reverse Traffic Channel (Rvs)				25	425	875
CDMA2000 BC15	FCH	1	1	1	55	Full	All Up	24.45	23.99	23.18
		3	3	3	55	Full	All Up	24.44	24.00	23.18
	F-SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	24.34	24.08	23.08
	SCH	3	3	3	32	FCH:Full,SCH 9.6	All Up	24.32	24.05	23.06

CDMA2000 Setup Configuration:

Setup Configuration

1. The EUT was connected to System Simulator, Agilent 8960. Refer to the drawing of Setup Configuration.
2. The RF path losses were compensated into the measurements.
3. A call was established between EUT and System Simulator with following setting:
 - a. For 1xRTT, set the Radio Configuration and the Service Option
 - b. For 1xEV-DO, set the Protocol Release and Data Rate
 - c. Set the Power Control to All Up Bits
4. The transmitted maximum output power was recorded.

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Params
	Mobile Station Information		Cell Power
	ESN (Hex):		-86.00
	ESN (Dec):		dBm/1.23 MHz
	NCC:		Cell Band
	NMC:		US PCS
	NSIN:		Channel
	Slot Class:		1175
	Slot Cycle Index: ----		Protocol Rev
	Protocol Revision:		6 (IS-2000-0)
FCH Service Option Setup		Value	Radio Config
Service Option f		\$055 (Loopback)	(Fudl, Rvs1)
Service Option f		\$09 (Loopback)	\$055 (Loopback)
Service Option f		\$01 (Voice)	\$055 (Loopback)
Service Option f		\$02 (Loopback)	\$055 (Loopback)
Service Option f		\$03 (Voice)	\$055 (Loopback)
Service Option f		\$06 (SIS)	\$055 (Loopback)
Service Option f		\$055 (Loopback)	Fch Service Option Setup
Service Option f		\$068 (Voice)	
Close Menu	Active Cell		Sys Type: IS-2000
	Idle		
		IntRef Offset	1 of 4

1xRTT setting for Radio Configuration 1 with Service Option 55

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Params
Close Menu	Mobile Station Information ESN (Hex): ESN (Dec): MCC: MNC: MSIN: Slot Class: Slot Cycle Index: ---- Protocol Revision:		Cell Power -86.00 dBm/1.23 MHz Cell Band US PCS Channel 1175
	FCH Service Option Setup		Protocol Rev 6 (IS-2000-0)
	Service Option for Fch Band		Radio Config (Fud3, Rvs3)
	Service Option		S055 (Loopback)
	S01 (Voice)		S09 (Loopback)
	S02 (Loopback)		S055 (Loopback)
	S03 (Voice)		S055 (Loopback)
	S06 (SMS)		S055 (Loopback)
	S055 (Loopback)		Fch Service Option Setup
	S032 (+ F-SCH)		Sys Type: IS-2000
Active Cell Idle		IntRef Offset	
		1 of 4	

1xRTT setting for Radio Configuration 3 with Service Option 55

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Params
Close Menu	Mobile Station Information ESN (Hex): ESN (Dec): MCC: MNC: MSIN: Slot Class: Slot Cycle Index: ---- Protocol Revision:		Cell Power -86.00 dBm/1.23 MHz Cell Band US PCS Channel 1175
	FCH Service Option Setup		Protocol Rev 6 (IS-2000-0)
	Service Option for Fch Band		Radio Config (Fud3, Rvs3)
	Service Option		S055 (Loopback)
	S02 (Loopback)		S09 (Loopback)
	S03 (Voice)		S032 (+ SCH)
	S06 (SMS)		S055 (Loopback)
	S055 (Loopback)		S055 (Loopback)
	S032 (+ F-SCH)		S032 (+ SCH)
	S032 (+ SCH)		Fch Service Option Setup
Active Cell Idle		Sys Type: IS-2000	
		IntRef Offset	
		1 of 4	

1xRTT setting for Radio Configuration 3 with Service Option 32

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Params
Operating Mode			Avs Power Ctrl
Active Cell	<div>Access Terminal Information (AT Reported)</div> <div>Session Seed:</div> <div>Hardware ID Type (Hex):</div> <div>Hardware ID (Hex):</div> <div>Hardware ID (Decimal):</div>		Active bits
	<div>Access Terminal Information (AM Assigned)</div> <div>UATI 024:</div> <div>UATI Color Code:</div> <div>NAC Index:</div>		Pwr Ctrl Step
Start Data Connection			1.0 dB
	<div>Protocol Release</div> <div>Session App: 0 (1xEV-DO)</div> <div>Test: Applica A (1xEV-DO-A)</div> <div>Limited TAP: B (1xEV-DO-B)</div> <div>AT Directed</div> <div>DRC Value Fr</div> <div>ACK Channel</div>		Call Drop Timer
Close Session			On
			Call Limit Mode
Handoff Setup			Off
AT Max Power			Protocol Rel
23 dBm/1.23MHz			0 (1xEV-DO)
	Active Cell	Sys Type: IS-856	
	Idle		
1 of 3	IntRef	Offset	PLSub0 RTAP 2 of 3

1xEV-DO setting for Protocol Release (Rev.0 or Rev.A)

Call Setup Screen			
Call Control	Active Cell Operating Mode		Call Params
Operating Mode			Cell Power
Active Cell	<div>Access Terminal Information (AT Reported)</div> <div>Session Seed:</div> <div>Hardware ID Type (Hex):</div> <div>Hardware ID (Hex):</div> <div>Hardware ID (Decimal):</div>		-86.00
	<div>Access Terminal Information (AM Assigned)</div> <div>UATI 024:</div> <div>UATI Color Code:</div> <div>NAC Index:</div>		dBm/1.23 MHz
Start Data Connection			Cell Band
	<div>RTAP Rate</div> <div>Session App: 9.6 kbps</div> <div>Test: Applica 19.2 kbps</div> <div>Limited TAP: 38.4 kbps</div> <div>AT Directed 76.8 kbps</div> <div>DRC Value Fr 153.6 kbps</div> <div>ACK Channel</div>		US PCS
Close Session			Channel
			1175
Handoff Setup			Application Config
AT Max Power			FTAP Rate
23 dBm/1.23MHz			307.2 kbps
			(2 Slot, QPSK)
			RTAP Rate
			9.6 kbps
	Active Cell	Sys Type: IS-856	
	Idle		
1 of 3	IntRef	Offset	PLSub0 RTAP 1 of 3

1xEV-DO setting for RTAP data rate (153.6 kbps)

Call Setup Screen																		
Call Control	Active Cell Operating Mode			Call Params														
Operating Mode	Access Terminal Information (AT Reported)			Cell Power														
Active Cell	Session Seed: Hardware ID Type (Hex): Hardware ID (Hex): Hardware ID (Decimal):			-86.00														
	Access Terminal Information (AN Assigned)			dBm/1.23 MHz														
Start Data Connection	UATI 024: ---- UATI Color Code: ---- NAC Index: ----			Cell Band														
				IS PCS														
Close Session	Application Configuration			Channel														
	<table border="1"> <thead> <tr> <th>R-Data Packet Size</th> <th>Application</th> </tr> </thead> <tbody> <tr> <td>128</td> <td>AP</td> </tr> <tr> <td>256</td> <td>2</td> </tr> <tr> <td>512</td> <td></td> </tr> <tr> <td>768</td> <td></td> </tr> <tr> <td>1024</td> <td></td> </tr> <tr> <td>1536</td> <td></td> </tr> </tbody> </table>			R-Data Packet Size	Application	128	AP	256	2	512		768		1024		1536		Application Config
R-Data Packet Size	Application																	
128	AP																	
256	2																	
512																		
768																		
1024																		
1536																		
Handoff Setup				F-Traffic Format														
				1/4 (1024, 2, 128)														
AT Max Power				(307.2k, QPSK)														
23 dBm/1.23MHz				R-Data Pkt Size														
				128														
				bits														
	Active Cell			Sys Type: IS-856														
	Idle																	
1 of 3		IntRef Offset	PLSub0 RETAP	1 of 3														

1xEV-DO setting for RETAP data rate (4096 kbps)



Reference:

- [1] SAR Measurement Procedures for 3G Devices CDMA 2000/Ev-Do/WCDMA/HSDPA, June 2006
Laboratory Division Office of Engineering and Technology Federal Communications Commission
- [2] 3.1.2.3.4 Maximum RF Output Power 3GPP2 C.S0033-0 Version 2.0, Date: 12 December 2003
Recommended Minimum Performance Standards for cdma2000 High Rate Packet Data Access
Terminal