



Appendix F. FCC 3G SAR Measurement Procedures

Conducted Output Power:

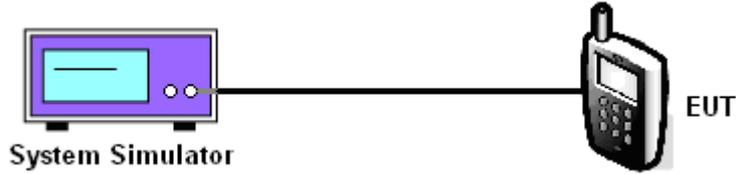
The EUT was tested according to the requirements of the FCC 3G procedures and the 3.1.2.3.4.

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	23.58	22.92	22.90
		3	3	3	55	Full	All Up	23.51	23.01	22.96
		3	3	3	32	Full	All Up	23.62	23.00	22.87
	EVDO Rev.0*	Subtype:0/1				RTAP 153.6	All Up	23.59	23.02	22.87
	EVDO Rev.A*	Subtype:2				RETAP 4096	All Up	23.57	23.00	22.86

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	23.16	23.59	23.24
		3	3	3	55	Full	All Up	23.29	23.66	23.38
		3	3	3	32	Full	All Up	23.29	23.55	23.33
	EVDO Rev.0*	Subtype:0/1				RTAP 153.6	All Up	23.22	23.58	23.35
	EVDO Rev.A*	Subtype:2				RETAP 4096	All Up	23.08	23.52	23.33

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 Parm	
Close Menu	Mobile Station Information				Cell Power	-86.00
	ESN (Hex):				dBm/1.23 MHz	
	ESN (Dec):				Cell Band	US PCS
	NCC:				Channel	1175
	NMC:				Protocol Rev	6 (IS-2000-0)
	NSIN:				Radio Config	(Fud1, Rus1)
	Slot Class:				FCH Service Option Setup	S055 (Loopback)
	Slot Cycle Index: ----				Service Option	S09 (Loopback)
	Protocol Revision:				Service Option f	S01 (Voice)
					Service Option f	S02 (Loopback)
				Service Option f	S03 (Voice)	
				Service Option f	S06 (SIS)	
				Service Option f	S055 (Loopback)	
				Service Option f	S068 (Voice)	
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 Parm																		
Close Menu	Mobile Station Information ESN (Hex): ESN (Dec): MCC: MNC: MSIN: Slot Class: Slot Cycle Index: ---- Protocol Revision:																			
	FCH Service Option Setup																			
	<table border="1"> <thead> <tr> <th>Service Option</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>S055 (Loopback)</td> <td>S055 (Loopback)</td> </tr> <tr> <td>S09 (Loopback)</td> <td>S09 (Loopback)</td> </tr> <tr> <td>S01 (Voice)</td> <td>S055 (Loopback)</td> </tr> <tr> <td>S02 (Loopback)</td> <td>S055 (Loopback)</td> </tr> <tr> <td>S03 (Voice)</td> <td>S055 (Loopback)</td> </tr> <tr> <td>S06 (SMS)</td> <td>S055 (Loopback)</td> </tr> <tr> <td>S055 (Loopback)</td> <td></td> </tr> <tr> <td>S032 (+ F-SCH)</td> <td></td> </tr> </tbody> </table>		Service Option	Value	S055 (Loopback)	S055 (Loopback)	S09 (Loopback)	S09 (Loopback)	S01 (Voice)	S055 (Loopback)	S02 (Loopback)	S055 (Loopback)	S03 (Voice)	S055 (Loopback)	S06 (SMS)	S055 (Loopback)	S055 (Loopback)		S032 (+ F-SCH)	
	Service Option	Value																		
	S055 (Loopback)	S055 (Loopback)																		
	S09 (Loopback)	S09 (Loopback)																		
	S01 (Voice)	S055 (Loopback)																		
	S02 (Loopback)	S055 (Loopback)																		
	S03 (Voice)	S055 (Loopback)																		
	S06 (SMS)	S055 (Loopback)																		
S055 (Loopback)																				
S032 (+ F-SCH)																				
Active Cell Idle																				
Sys Type: IS-2000																				
IntRef Offset																				
1 of 4																				
Call Parm Cell Power: -86.00 dBm/1.23 MHz Cell Band: US PCS Channel: 1175 Protocol Rev: 6 (IS-2000-0) Radio Config: (Fud3, Rvs3) S055 (Loopback) FCH Service Option Setup																				

1xRTT setting for Radio Configuration 3 with Service Option 55

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

1xRTT setting for Radio Configuration 3 with Service Option 32



Call Setup Screen																																		
Call Control	Active Cell Operating Mode	Call Parm																																
Operating Mode	<table border="1"> <thead> <tr> <th colspan="2">Access Terminal Information (AT Reported)</th> </tr> </thead> <tbody> <tr> <td>Session Seed:</td> <td></td> </tr> <tr> <td>Hardware ID Type (Hex):</td> <td></td> </tr> <tr> <td>Hardware ID (Hex):</td> <td></td> </tr> <tr> <td>Hardware ID (Decimal):</td> <td></td> </tr> <tr> <th colspan="2">Access Terminal Information (AN Assigned)</th> </tr> <tr> <td>UATI 024:</td> <td>----</td> </tr> <tr> <td>UATI Color Code:</td> <td>----</td> </tr> <tr> <td>NAC Index:</td> <td>----</td> </tr> <tr> <th colspan="2">Protocol Release</th> </tr> <tr> <td>Session App:</td> <td>0 (1xEV-DO) Application</td> </tr> <tr> <td>Test Applica:</td> <td>A (1xEV-DO-A)</td> </tr> <tr> <td>Limited TAP:</td> <td>B (1xEV-DO-B)</td> </tr> <tr> <td>AT Directed:</td> <td></td> </tr> <tr> <td>DRC Value Fi:</td> <td></td> </tr> <tr> <td>ACK Channel:</td> <td></td> </tr> </tbody> </table>	Access Terminal Information (AT Reported)		Session Seed:		Hardware ID Type (Hex):		Hardware ID (Hex):		Hardware ID (Decimal):		Access Terminal Information (AN Assigned)		UATI 024:	----	UATI Color Code:	----	NAC Index:	----	Protocol Release		Session App:	0 (1xEV-DO) Application	Test Applica:	A (1xEV-DO-A)	Limited TAP:	B (1xEV-DO-B)	AT Directed:		DRC Value Fi:		ACK Channel:		Rvs Power Ctrl
Access Terminal Information (AT Reported)																																		
Session Seed:																																		
Hardware ID Type (Hex):																																		
Hardware ID (Hex):																																		
Hardware ID (Decimal):																																		
Access Terminal Information (AN Assigned)																																		
UATI 024:		----																																
UATI Color Code:		----																																
NAC Index:		----																																
Protocol Release																																		
Session App:	0 (1xEV-DO) Application																																	
Test Applica:	A (1xEV-DO-A)																																	
Limited TAP:	B (1xEV-DO-B)																																	
AT Directed:																																		
DRC Value Fi:																																		
ACK Channel:																																		
Active Cell		Active bits																																
		Pur Ctrl Step																																
		1.0 dB																																
Start Data Connection		Call Drop Timer																																
		On																																
Close Session		Call Limit Mode																																
		Off																																
Handoff Setup		Protocol Rel																																
		0 (1xEV-DO)																																
AT Max Power																																		
23 dBm/1.23MHz																																		
	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 Parm																																
Operating Mode	<table border="1"> <thead> <tr> <th colspan="2">Access Terminal Information (AT Reported)</th> </tr> </thead> <tbody> <tr> <td>Session Seed:</td> <td></td> </tr> <tr> <td>Hardware ID Type (Hex):</td> <td></td> </tr> <tr> <td>Hardware ID (Hex):</td> <td></td> </tr> <tr> <td>Hardware ID (Decimal):</td> <td></td> </tr> <tr> <th colspan="2">Access Terminal Information (AN Assigned)</th> </tr> <tr> <td>UATI 024:</td> <td>----</td> </tr> <tr> <td>UATI Color Code:</td> <td>----</td> </tr> <tr> <td>NAC Index:</td> <td>----</td> </tr> <tr> <th colspan="2">RTAP Rate</th> </tr> <tr> <td>Session App:</td> <td>9.6 kbps Application</td> </tr> <tr> <td>Test Applica:</td> <td>19.2 kbps</td> </tr> <tr> <td>Limited TAP:</td> <td>38.4 kbps</td> </tr> <tr> <td>AT Directed:</td> <td>76.8 kbps</td> </tr> <tr> <td>DRC Value Fi:</td> <td>153.6 kbps</td> </tr> <tr> <td>ACK Channel:</td> <td></td> </tr> </tbody> </table>	Access Terminal Information (AT Reported)		Session Seed:		Hardware ID Type (Hex):		Hardware ID (Hex):		Hardware ID (Decimal):		Access Terminal Information (AN Assigned)		UATI 024:	----	UATI Color Code:	----	NAC Index:	----	RTAP Rate		Session App:	9.6 kbps Application	Test Applica:	19.2 kbps	Limited TAP:	38.4 kbps	AT Directed:	76.8 kbps	DRC Value Fi:	153.6 kbps	ACK Channel:		Cell Power
Access Terminal Information (AT Reported)																																		
Session Seed:																																		
Hardware ID Type (Hex):																																		
Hardware ID (Hex):																																		
Hardware ID (Decimal):																																		
Access Terminal Information (AN Assigned)																																		
UATI 024:		----																																
UATI Color Code:		----																																
NAC Index:		----																																
RTAP Rate																																		
Session App:	9.6 kbps Application																																	
Test Applica:	19.2 kbps																																	
Limited TAP:	38.4 kbps																																	
AT Directed:	76.8 kbps																																	
DRC Value Fi:	153.6 kbps																																	
ACK Channel:																																		
Active Cell		-86.00																																
		dBm/1.23 MHz																																
		Cell Band																																
		US PCS																																
Start Data Connection		Channel																																
		1175																																
Close Session		Application Config																																
Handoff Setup		FTAP Rate																																
		307.2 kbps																																
		(2 Slot, QPSK)																																
AT Max Power		RTAP Rate																																
23 dBm/1.23MHz		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



Call Setup Screen																				
Call Control	Active Cell Operating Mode				Call Parms															
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 (AM Assigned)				dBm/1.23 MHz															
Start Data Connection	UATI 024: ---- UATI Color Code: ---- MAC Index: ----				Cell Band															
	Application Configuration				US PCS															
Close Session	<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>Z</td> </tr> <tr> <td>512</td> <td></td> </tr> <tr> <td>768</td> <td></td> </tr> <tr> <td>1024</td> <td>Capacity</td> </tr> <tr> <td>1536</td> <td>kbps</td> </tr> </tbody> </table>				R-Data Packet Size	Application	128	AP	256	Z	512		768		1024	Capacity	1536	kbps	Channel	
R-Data Packet Size	Application																			
128	AP																			
256	Z																			
512																				
768																				
1024	Capacity																			
1536	kbps																			
Handoff Setup					1175															
AT Max Power					Application Config															
23 dBm/1.23MHz					F-Traffic Format															
	Active Cell				4 (1024,2,128)															
	Idle				(307.2k, QPSK)															
	Sys Type: IS-856				R-Data Pkt Size															
	IntRef Offset				128															
1 of 3	PLSub0 RETAP				bits															
					1 of 3															

1xEV-DO setting for RETAP data rate



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