

Appendix D. – CDMA2000 1XEV-DO and 1XRTT Test Modes

Test Summary:

The EUT supports IS95 2G networks, CDMA 2000 1xRTT, and 1xEVDO Rev. 0 for Cellular band and PCS band. The maximum output power is chosen for EMC and SAR testing for worst case scenario. A full EMC measurement in this report is done in CDMA2000 1xRTT mode with FCH RC1 and 1xEV-DO mode with the uplink data rate 153.6kbps for Cellular band, and CDMA2000 1x RTT mode with FCH RC1 and 1xEV-DO mode with the uplink data rate 153.6kbps for PCS band.

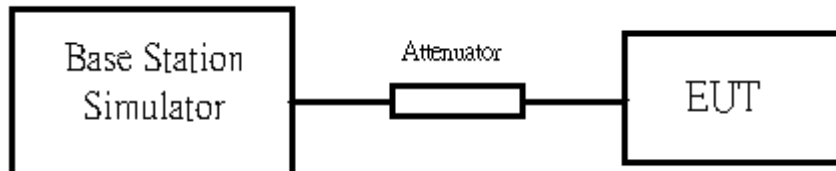
Based on all the uplink channels using the same modulation type, BPSK, and those maximum output power are very closer, above test modes could reflect compliance under all operational modes.

Maximum output power list:

Bands	Test Mode	Test Status	Modulation Type	Channel	Frequency (MHz)	Conducted Power (dBm)
CDMA2000 Cellular 850	1xRTT	FCH_RC1	BPSK	1013	824.70 (Low)	24.08
			BPSK	384	836.52 (Mid)	24.09
			BPSK	777	848.31 (High)	24.18
		FCH_RC3	BPSK	1013	824.70 (Low)	23.99
			BPSK	384	836.52 (Mid)	24.11
			BPSK	777	848.31 (High)	24.13
		FCH+SCH_RC3	BPSK	1013	824.70 (Low)	23.97
			BPSK	384	836.52 (Mid)	24.12
			BPSK	777	848.31 (High)	24.10
	1xEV-DO	EVDO-UL: 9.6Kbps	BPSK	1013	824.70 (Low)	24.08
			BPSK	384	836.52 (Mid)	24.31
			BPSK	777	848.31 (High)	24.28
		EVDO-UL: 38.4Kbps	BPSK	1013	824.70 (Low)	24.11
			BPSK	384	836.52 (Mid)	24.30
			BPSK	777	848.31 (High)	24.26
		EVDO-UL: 153.6Kbps	BPSK	1013	824.70 (Low)	24.09
			BPSK	384	836.52 (Mid)	24.31
			BPSK	777	848.31 (High)	24.24



Bands	Test Mode	Test Status	Modulation Type	Channel	Frequency (MHz)	Conducted Power (dBm)
CDMA2000 PCS 1900	1xRTT	FCH_RC1	BPSK	25	1851.25 (Low)	23.51
			BPSK	600	1880.00 (Mid)	23.44
			BPSK	1177	1908.75 (High)	23.57
		FCH_RC3	BPSK	25	1851.25 (Low)	23.42
			BPSK	600	1880.00 (Mid)	23.36
			BPSK	1177	1908.75 (High)	23.51
		FCH+SCH_RC1	BPSK	25	1851.25 (Low)	23.45
			BPSK	600	1880.00 (Mid)	23.40
			BPSK	1177	1908.75 (High)	23.50
	1xEV-DO	EVDO-UL: 9.6Kbps	BPSK	25	1851.25 (Low)	23.36
			BPSK	600	1880.00 (Mid)	23.40
			BPSK	1177	1908.75 (High)	23.49
		EVDO-UL: 38.4Kbps	BPSK	25	1851.25 (Low)	23.34
			BPSK	600	1880.00 (Mid)	23.42
			BPSK	1177	1908.75 (High)	23.51
		EVDO-UL: 153.6Kbps	BPSK	25	1851.25 (Low)	23.37
			BPSK	600	1880.00 (Mid)	23.39
			BPSK	1177	1908.75 (High)	23.51

Setup Configuration


1. The EUT was connected to Base Station, Agilent 8960.
Refer to the drawing of Setup Configuration.
2. The RF path losses was compensated into the measurements.
3. A call was established between EUT and Base Station for each modes with following settings:
 - a. Set the Power control All Up for FCH_RC3 and FCH_RC1 with Service Option 55.
 - b. Set the Power control All Up for FCH+SCH with Service Option 32.
 - c. Set the Power control All Up for different rates on CDMA2000 1XEV-DO.
4. The transmitted maximum output power was recorded.

Test Mode 1 in Radio Configuration 1 (FCH_RC1)

Call Setup Screen										
Call Control	Active Cell Operating Mode							Call Params		
	Mobile Station Information							Cell Power		
	ESN (Hex): 0x6C32D3AE							-86.00		
	ESN (Dec): 108-03330990							dBm/1.23 MHz		
	NCC:							Cell Band		
	MNC:							US PCS		
	MSIN: 3163712588							Channel		
	Slot Class: Slotted							1175		
	Slot Cycle Index: 2							Protocol Rev		
	FCH Service Option Setup							6 (IS-2000)		
	Value							Radio Config		
Close Menu	Service Option for Fud1, Rvs1							(Fud1, Rvs1)		
	S055 (Loopback)							S055 (Loopback)		
	Service Option for Fud2, Rvs2									
	S09 (Loopback)									
	Service Option for Fud3, Rvs3									
	S032 (+ SCH)									
	Service Option for Fud4, Rvs3									
	S055 (Loopback)									
	Service Option for Fud5, Rvs4									
	S055 (Loopback)									
	Background							Active Cell	Sys Type: IS-2000	
								Idle		
								IntRef	Offset	
1 of 3										

Test Mode 3 in Radio Configuration 3 (FCH+SCH)

Call Setup Screen									
Call Control		Active Cell Operating Mode						Call Parm's	
Operating Mode		<div>Mobile Station Information</div> <div> <div>ESN (Hex): 0x6C32D3AE</div> <div>ESN (Dec): 108-03330990</div> <div>NCC:</div> <div>INC:</div> <div>NSIN: 3163712588</div> <div>Slot Class: Slotted</div> <div>Slot Cycle Index: 2</div> <div>Protocol Revision: 6 (IS-2000_Rev0)</div> <div>Band Class: US Cell, US PCS</div> <div>NS Operating Mode: DMA</div> <div>Max EIRP (dBm): (Fud1, Rvs1) 7</div> <div>Registration: (Fud2, Rvs2)</div> <div>QPCH Support: (Fud3, Rvs3)</div> <div>Enhanced AC: (Fud4, Rvs3)</div> <div>Min Power Co: (Fud5, Rvs4)</div> <div>NS Called Pa</div> </div> <div>Radio Config</div>						Cell Power	
Active Cell								-86.00	
System Type								dBm/1.23 MHz	
IS-2000								Cell Band	
								US PCS	
End Call								Channel	
								1175	
Paging INSI Setup								Protocol Rev	
								6 (IS-2000)	
Handoff Setup								Radio Config	
		(Fud3, Rvs3)							
		S032 (+ SCH							
		FCH Service Option Setup							
Background		Active Cell		Sys Type: IS-2000					
		Connected + Data							
1 of 2		IntRef Offset				1 of 3			

Test Mode 3 in Radio Configuration 3 (Service Option32)

Call Setup Screen									
Call Control		Active Cell Operating Mode						Call Params	
Operating Mode		<div>Access Terminal Information (AT Reported)</div> <div> Session Seed: 0x7722375A Hardware ID Type (Hex): 0x010000 ESN Hardware ID (Hex): 0x602D699F Hardware ID (Decimal): 096-02976159 </div> <div>Access Terminal Information (AN Assigned)</div> <div> UATI 024: 2 UATI Color Code: 64 NAC Index: 5 </div> <div>Access Terminal Information (User Entered)</div> <div> AT Max Power: 23 dBm/1.23 MHz </div> <div>Application Configuration</div> <div> Session Application Type: Test Application Test Application Protocol: RTAP Limited TAP: Off AT Directed Packets: 50 % ACK Channel Bit Fixed Mode Attribute: On </div>						Cell Power	
Active Cell								-60.00	
		dBm/1.23 MHz							
		Cell Band							
		US PCS							
		Channel							
Start Data Connection		675							
Close Session		Application Config							
Handoff Setup		FTAP Rate							
		307.2 kbps							
		(2 Slot, QPSK)							
AT Max Power		RTAP Rate							
23 dBm/1.23 MHz		153.6 kbps							
<input type="checkbox"/> Background		Active Cell		Sys Type: IS-856					
		Session Open		Logging: No Conn.					
1 of 3		IntRef		RTAP					
		Offset							

1XEVD0 setting with RTAP 153.6kbps

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