

Appendix D. – CDMA2000 1xRTT and 1xEVDO Test Modes

Test Summary:

The EUT supports IS95 2G networks, CDMA2000 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+SCH RC3 and 1xEVDO mode with the uplink data rate 153.6kbps for Cellular band, and CDMA2000 1xRTT mode with FCH+SCH RC3 and 1xEVDO mode with the uplink data rate 9.6kbps 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.

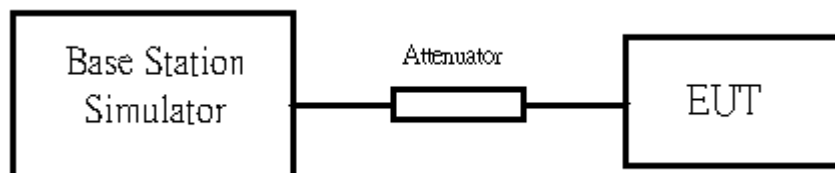
Maximum output power list:

Bands	Test Mode	Test Status	Modulation Type	Channel	Frequency (MHz)	Conducted Power (dBm)
CDMA2000 Cellular	1xRTT	FCH_RC1	BPSK	1013	824.70 (Low)	24.27
			BPSK	384	836.52 (Mid)	23.93
			BPSK	777	848.31 (High)	23.93
		FCH_RC3	BPSK	1013	824.70 (Low)	24.19
			BPSK	384	836.52 (Mid)	23.99
			BPSK	777	848.31 (High)	24.16
		FCH+SCH_RC3	BPSK	1013	824.70 (Low)	24.27
			BPSK	384	836.52 (Mid)	23.89
			BPSK	777	848.31 (High)	24.06
	1xEVDO	EVDO-UL: 9.6Kbps	BPSK	1013	824.70 (Low)	23.64
			BPSK	384	836.52 (Mid)	23.88
			BPSK	777	848.31 (High)	23.66
		EVDO-UL: 38.4Kbps	BPSK	1013	824.70 (Low)	23.98
			BPSK	384	836.52 (Mid)	23.85
			BPSK	777	848.31 (High)	23.78
		EVDO-UL: 153.6Kbps	BPSK	1013	824.70 (Low)	24.02
			BPSK	384	836.52 (Mid)	23.87
			BPSK	777	848.31 (High)	24.07



Bands	Test Mode	Test Status	Modulation Type	Channel	Frequency (MHz)	Conducted Power (dBm)
CDMA2000 PCS	1xRTT	FCH_RC1	BPSK	25	1851.25 (Low)	23.78
			BPSK	600	1880.00 (Mid)	23.17
			BPSK	1177	1908.75 (High)	23.20
		FCH_RC3	BPSK	25	1851.25 (Low)	23.66
			BPSK	600	1880.00 (Mid)	23.29
			BPSK	1177	1908.75 (High)	23.05
		FCH+SCH_RC3	BPSK	25	1851.25 (Low)	23.84
			BPSK	600	1880.00 (Mid)	23.39
			BPSK	1177	1908.75 (High)	23.11
	1xEVDO	EVDO-UL: 9.6Kbps	BPSK	25	1851.25 (Low)	23.84
			BPSK	600	1880.00 (Mid)	23.22
			BPSK	1177	1908.75 (High)	22.95
		EVDO-UL: 38.4Kbps	BPSK	25	1851.25 (Low)	23.78
			BPSK	600	1880.00 (Mid)	23.11
			BPSK	1177	1908.75 (High)	22.63
		EVDO-UL: 153.6Kbps	BPSK	25	1851.25 (Low)	23.78
			BPSK	600	1880.00 (Mid)	23.03
			BPSK	1177	1908.75 (High)	23.40

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 1xEVDO.
4. The transmitted maximum output power was recorded.

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

1xRTT in Radio Configuration 1 (FCH)



Call Setup Screen		
Call Control	Active Cell Operating Mode	Call Params
Operating Mode	<div>Mobile Station Information</div> <div>ESN (Hex): 0x6C32D3AE ESN (Dec): 108-03330990 NCC: NMC: NSIN: 3163712588 Slot Class: Slotted Slot Cycle Index: 2 Protocol Revision: 6 (IS-2000_Rev0) Band Class: us cell, us PCS NS Operating: DNA Max EIRP (dB): (Fud1, Rvs1) Registration: (Fud2, Rvs2) QPCH Support: (Fud3, Rvs3) Enhanced RC: (Fud4, Rvs3) Min Power Co: (Fud5, Rvs4) NS Called Pa</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	
1 of 2	Background Active Cell Connected + Data Sys Type: IS-2000	1 of 3

1xRTT in Radio Configuration 3 (FCH+SCH)

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 MAC 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 Node Attribute: On</div>	Cell Power
Active Cell		-60.00
		dBm/1.23 MHz
Start Data Connection		Cell Band
		US PCS
Close Session		Channel
		675
Handoff Setup		Application Config
		FTAP Rate
AT Max Power		307.2 kbps
23 dBm/1.23 MHz	(2 Slot, QPSK)	
	RTAP Rate	
	153.6 kbps	
1 of 3	Background Active Cell Session Open Sys Type: IS-856 Logging: No Conn. RTAP	1 of 3

1xEVDO 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