# SCF-V01

# **User Manual**

# VIA Telecom CBP7.1C CDMA Solution

**REV 0.1** 

Samsung Electro-Mechanics

2012-06-18

# Summary

This datasheet presents the general performance and specifications of SCF-V01 CDMA2000 A 1x Rel.0 and 1X EV-DO Rev.A Module.

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## SCF-V01 User Manual

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# **1** General Description

## **1.1 Functional Description**

SCF-V01 is the cellular module for either the CDMA2000 A 1x Rel.0 or 1X EV/DO Rev. A at embedded and wireless M2M applications. It provides all the RF, Processing, Memory, Power Management and software, which is based on the Via Telecom CBP6.x or CBP7.x solution. It supports Cell and PCS bands.

## **1.2 Features**

- Dual band cellular and PCS voice and data
- Variant module : CDMA2000 A 1x Rel.0 or 1X EV/DO Rev. A
- Optional GPS and RX Diversity reception
- Support Cell and PCS bands
- GPS (optional)
- 3 U.FL Antenna port : Main, AUX, & GPS (50 Ohm)
- Low power consumption
- Dimension: 50.95 x 30.0mm / Hmax : 4.75 mm
- USB2.0 full speed USB driver
- RoHS compliant
- Operating temperature range: -20 to 60 °C

## **1.3 Applications**

- All CDMA M2M devices (Energy, Industrial & Infrastructure, Security, etc.)
- CDMA equipment laptop PC
- CDMA portable device (Tablet, MID, PMP, etc.)
- Desktop CDMA CPE



## 1.4 Block Diagram

The following SCF-V01 block diagram highlights the major functional blocks and interfaces.



Figure 1-1. SCF-V01 Hardware Block Diagram



# 2 Dimension and Pin Assignments

## **2.1 Mechanical Dimension**

• Form factor : Standard PCI Express® Mini Card Electromechanical Specification

(Full-Mini Card)

- Size : W x L x H (50.95 x 30.0 x 4.75mm) with 1.0mm PCB
- Weight : 9.8g



Figure 2-1. SCF-V01 Mechanical Dimension (Top View)



## 2.2 Antenna Connection

U.FL connector for the Main ANT, Diversity ANT, and GPS ANT



### Figure 2-2. Antenna Connector Mechanical Dimension

### Attaching an antenna to the SCF-V01 :

- Use a Hirose U.FL connector (Part No. : U.FL-R-SMT, CL No. : 331-0471-0-10) to attach an antenna to a connection point on the SCF-V01.
- Match coaxial connections between the SCF-V01 and the antenna to 50 Ω.
- Minimize RF cable losses between the SCF-V01 and the antenna to less than 0.5 dB.

### 2.3 Ground Connection

### Connecting the SCF-V01 to system ground :

- Connect to system ground for preventing noise leakage.
- Connect with host connector, two mounting holes, and PCI express® mini card connector.



# **3** Pin Assignments and Descriptions

# **3.1 Pin Assignments**

Pin#	Mini Card Standard	SCF-V01 Pin name	Pin#	Mini Card Standard	SCF-V01 Pin name
51	Reserved	(JTAG_RST_N)	52	+3.3Vaux	+3.3V
49	Reserved	(JTAG_TDI)	50	GND	GND
47	Reserved	(JTAG_TDO)	48	+1.5V	N.C
45	Reserved	(JTAG_TMS)	46	LED_WPAN#	N.C
43	GND	GND	44	LED_WLAN#	N.C
41	+3.3Vaux	+3.3V	42	LED_WWAN#	LED_WWAN#
39	+3.3Vaux	+3.3V	40	GND 📃	GND
37	GND	GND	38	USB_D+	USB_D+
35	GND	GND	36	USB_D-	USB_D-
33	PETp0	(JTAG_CLK)	34	GND	GND
31	PETn0	(JTAG_RTCK)	32	SMB_DATA	N.C
29	GND	GND	30	SMB_CLK	N.C
27	GND	GND	28	+1.5V	N.C
25	PERp0	(RXD0)	26	GND	GND
23	PERn0	(TXD0)	24	+3.3Vaux	+3.3V
21	GND	GND	22	PERST#	RESET_N
19	UIM_C4	N.C	20	W_DISABLE#	W_DISABLE#
17	UIM_C8	N.C	18	GND	GND
		Mech	anical K	ey	
15	GND	GND	16	UIM_VPP	N.C
13	REFCLK+	N.C	14	UIM_RESET	UIM_RESET_N
11	REFCLK-	N.C	12	UIM_CLK	UIM_CLK
9	GND	GND	10	UIM_DATA	UIM_IO
7	CLKREQ#	N.C	8	UIM_PWR	VDD_UIM
5	COEX2	N.C	6	1.5V	N.C
3	COEX1	N.C	4	GND	GND
1	WAKE#	N.C	2	3.3Vaux	+3.3V

 Table 3-1. Pin Assignments



## SCF-V01 User Manual

# 3.2 Pin Description

Pin#	Signal Name	Туре	Connection to IC Pin	Power Domain	Description
JTAG In	terface			•	•
33	JTAG_CLK	Ι	CP_TCK		(N.C) JTAG Clock
47	JTAG_TDO	0	CP_TDO		(N.C) Data Out
45	JTAG_TMS	Ι	CP_TMS		(N.C) Mode Select
49	JTAG_TDI	Ι	CP_TDI		(N.C) Data In
51	JTAG_RST_N	Ι	CP_TRST_N		(N.C) JTAG Reset
31	JTAG_RTCK	0	CP_RTCK		(N.C) JTAG Return Clock
UART II	nterface				
23	TXD0	0	CP_UART0_OUT		(N.C) UARTO data out
25	RXD0	Ι	CP_UART0_IN		(N.C) UART0 data in
USB Int	erface				
38	USB_D-	IO	USB_DMN		Inverted USB transceiver data
36	USB_D+	IO	USB_DPS		Non-inverted USB transceiver data
UIM Int	erface				
10	UIM_IO	IO	UIM_IO		UIM data input-output
12	UIM_CLK	0	UIM_CLK		UIM clock signal
14	UIM_RST_N	0	UIM_RSTN		UIM reset signal
GPIOs a	and Miscellaneous	;			
22	PERST#	Ι	PM Reset		Functional Reset
20	W_DISABLE#	I	GPIO[01]		RF Disable, Active low signal
42	LED_WWAN#	0	GPIO[06]		Status indicator via LED device, Active low signal
Power S	Supplies				
41	+3.3V	Ι			3.3V Source
39	+3.3V	I			3.3V Source
52	+3.3V	Ι			3.3V Source
24	+3.3V	I			3.3V Source
8	VDD_UIM	0			UIM power output
2	+3.3V	I			3.3V Source
Ground			1	1	
43	GND	-			Ground
37	GND	-			Ground
35	GND	-			Ground
29	GND	-			Ground
27	GND	-			Ground
21	GND	-		-	Ground
15	GND	-		-	Ground
9	GND	-		-	Ground
50	GND	-		-	Ground
40	GND	-		-	Ground



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34	GND	-	-	Ground
26	GND	-	-	Ground
18	GND	-	-	Ground
4	GND	-	-	Ground

Type: I=Input, O=Output, I/O=Bi-directional

### Table 3-2. Pin Descriptions



# **4** Electrical Characteristics

### 4.1 DC Characteristics

Symbol	Parameter	Min	Тур.	Max	Unit
+3.3V	Main input supply from battery to switcher	-0.5	-	+4.8	V

### Table 4-1. Absolute Maximum Ratings

Symbol	Parameter	Min	Тур.	Max	Unit
+3.3	Main input supply from battery to switcher	3.0	3.3	3.6	v

### Table 4-2. Recommended Operating Conditions

## 4.2 Environmental Characteristics

Symbol	Parameter	Conditions	Min.	Max.	Unit
ESD	Electro-static discharge voltage	НВМ		Class 1C	
То	Operating temperature		-20	+60	°C
Те	Extended operating temperature		-30	+85	°C
Ts	Storage temperature		-40	+125	°C

\* Extended operating temperature range is not fully 3GPP2 CDMA specification compliant.

### **Table 4-3. Environmental Characteristics**



### SCF-V01 User Manual

## 4.3 Power Consumption

Format	RF Band	Mode		Current @ 3.3V	Condition @ Room Temp
		Idle Mode	Тур	160mA	
	DCC	Min Tx Power	Тур	250mA	Cell Power -25dBm
	PCS		Тур	670mA	Ty Dower 22 EdBm
1.4 077		TX Max Power	Max	750mA	TX POwer 25.50011
IX_RTT		Idle Mode	Тур	160mA	
	Calleday	Min Tx Power	Тур	220mA	Cell Power -25dBm
	Cellular	T Ma Da	Тур	610mA	Tx Power 23.5dBm
		TX Max Power	Max	650mA	
	PCS	Idle Mode	Тур	200mA	
		Min Tx Power	Тур	340mA	Cell Power -25dBm
		To May Davis	Тур	900mA	
EVDO		TX Max Power	Max	940mA	TX Power 23.50Bm
[Rev 0]		Idle Mode	Тур	200mA	
	Callular	Min Tx Power	Тур	330mA	Cell Power -25dBm
	Cellular	Ty May Dower	Тур	800mA	Ty Dower 22 EdBra
		TX Max Power	Max	850mA	TX POwer 23.50Bm



# 5 **RF Specifications**

All measurements are made under nominal supply voltage and room temperature conditions.

### 5.1 Basic performance of RF Specifications

Frequency : Band Class0 : TX:824MHz-849MHz; RX:869MHz-894MHz Band Class1 : TX:1850MHz-1910MHz; RX:1930MHz-1990MHz Impendence : 500hm

VSWR : < 3

Transmitter Specification	Value
Operating Frequency	824MHz ~ 849MHz (Cellular Band) 1850MHz~1910MHz(PCS Band)
Modulation	OQPSK/HPSK
Conversion Method	GCT`s intrinsic zero-IF (intermediate frequency) & low-IF radio technology
Oscillation Method	VCTCXO & PLL Synthesizer
RF Output Power	Maximum 0.2W Minimum 10nW (-50dBm)
Frequency Stability	+/- 300Hz

### **Table 5-1. Transmitter Specifications**

<b>Receiver Specification</b>	Value
Operating Frequency	869MHz ~ 894MHz (Cellular Band) 1930MHz~1990MHz (PCS Band)
Modulation	OQPSK/HPSK
Conversion Method	Zero-IF (intermediate frequency) & low-IF
Oscillation Method	VCTCXO & PLL Synthesizer
Receiver Sensitivity	-104dBm @ FER 0.5% for 1X -105.5dBm @ FER 0.5% for EVDO

### Table 5-2. Receiver Specifications

### **SCF-V01 User Manual**



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TTEM	Spec				Tast Condition	
	LCL	Тур	UCL	Unit	Test Condition	
Tx Max	23.0	23.5	24.0	dBm	Cellular Band(824.7MHz,836.52MHz , 848.41MHz) Cal Target : 23.7dBm	
Power	23.0	23.5	24.0	dBm	PCS Band(1851.25MHz , 1880MHz , 1908.75MHz) Cal Target : 23.7dBm	
Ty Min Dowor			-50	dBm	Cellular Band(824.7MHz,836.52MHz , 848.41MHz)	
			-50	dBm	PCS Band(1851.25MHz , 1880MHz , 1908.75MHz)	
Dhe	0.944		1		Cellular Band(824.7MHz,836.52MHz , 848.41MHz)	
Rho	0.944		1		PCS Band(1851.25MHz , 1880MHz , 1908.75MHz)	
Frequency	-300		300	Hz	Cellular Band(824.7MHz,836.52MHz, 848.41MHz)	
Error	-150		150	Hz	PCS Band(1851.25MHz , 1880MHz , 1908.75MHz)	
Time Frror	_1		1		Cellular Band(824.7MHz,836.52MHz , 848.41MHz)	
	-		-		PCS Band(1851.25MHz , 1880MHz , 1908.75MHz)	
Rx Sensitivity			0.5	%	Cellular Band(869.7MHz,881.52MHz , 893.31MHz) Cell Power : -105dBm , 95% Confidence	
(Primary / Secondary)			0.5	%	PCS Band(1931.25MHz , 1960MHz , 1988.75MHz) Cell Power : -105dBm , 95% Confidence	

### Table 5-3. RF Conduction Specifications



# 6 Label Information

## 6.1 Module Label

The Label contains Model Name, Product Code, FCC ID, MEID and Serial Number.



### Figure 6-1. Label Information

[Information]

- ① Model : SCF-V01
- ② Product Code : CEMF10V01D0101
- ③ FCC ID : E2XSCF-V01
- ④ MEID : Mobile Equipment Identifier
- ⑤ S/N : Serial Number
- 6 MAIN : Main Antenna connection
- O GPS : GPS Antenna connection
- (8) AUX : Diversity Antenna connection

## 6.1.1 S/N(Serial Number)

### Ex)

# <u>SQGB00001</u>0234 S

S	Q	G	В	000001
0	2	3	4	5
Company S: Samsung	Custom Model Q : CEMF10V01D0101	Year F:2011 G:2012	Month 1~9:Jan~SEP A:OCT, B:Nov, C:Dec	000001~FFFFFF Serial No(Hex)

Table 6-1	. Serial	Number	Information
-----------	----------	--------	-------------



# 7 Safety Information

## 7.1 Certification

FCC ID : E2XSCF-V01

	Warning: Exposure to Radio Frequency Radiation The radiated
	output power of this device is far below the FCC radio frequency
	exposure limits. Nevertheless, the device should be used in such a
Λ	manner that the potential for human contact during normal operation
	is minimized. In order to avoid the possibility of exceeding the FCC
	radio frequency exposure limits, human proximity to the antenna
	should not be less than 20 cm during normal operation. The gain of
	the antenna for Cellular band must not exceed 2 dBi and PCS band
	must not exceed 2 dBi.

Can be found under the Display Grant section of <u>www.fcc.gov/oet/ea/fccid</u> after searching on FCC ID: E2XSCF-V01

# **FCC Compliance Information**

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received.

Including interference that may cause undesired operation.

## 7.2 Caution

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



## SCF-V01 User Manual

# **Revision History**

Revision	Date	Descriptions
0.0	2012-02-10	Initial Release
0.1	2012-06-18	Add Label Information, Add Safety Information



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

For label requirement when transmitter module is installed in a host,

the host shall have an additional permanent label referring to the enclosed module

"Contains Transmitter Module FCC ID: } j-SCF-V01



# SCF-V01 ETS(Engineer Test Software) User Manual

REV 0

Steve Heo, Software Application Engineer

Software Part WS Development Team Samsung Electro-Mechanics

2012-06-28

**Background & Summary** This document describes how to use ETS.

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Release

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# **1** Introduction

This document provides high-level functional descriptions of the CBP 5.X CDMA Baseband Processor digital hardware subsystems.

## **1.1 Acronyms**

ADC	Analog-to-Digital Converter
AMPS	Advanced Mobile Phone System
APB	ARM Peripheral Bus
CBP5.X	CDMA Baseband Processor version 4.1/5.0/5.1
СР	Control Processor
DAI	Digital Audio Interface
DAC	Digital-to-Analog Converter
DSPM	Digital Signal Processor - Modem
DSPV	Digital Signal Processor – Voice
DUT	Device Under Test
EBI	External Bus Interface
ICE	In-Circuit Emulator
MMI	Man-Machine Interface
PCG	Power Control Group
PLL	Phase Locked Loop
PWM	Pulse-Width Modulator
RTOS	Real-Time Operating System
SAT	Supervisory Audio Tones
SPI	Serial Programming Interface
ST	Signaling Tone
THRE	Transmitter Holding Register Empty
UART	Universal Asynchronous Receiver/Transmitter
UIM	User Identity Module
WBD	Wideband Data

## 1.2List of Terms

Table 1 contains a list of terms and abbreviations used in this section.

Туре	Description
pu <sup>1</sup>	Internal pull-up
pd <sup>2</sup>	Internal pull-down
ldrv1	CMOS, low drive strength (1ma)
ldrv2	CMOS, low drive strength (2ma)
mdrv	CMOS, medium drive strength (4ma)
hdrv	CMOS, high drive strength (8ma)
_N	Indicates an active low signal
Z	Tri-state
od	Open-drain
vanlg	Input or output with analog voltage levels
dvdd_c	Digital VDD to core cells (1.8V)
dvss_c	Digital VSS to core cells.
dvdd_r	Digital VDD to pad ring (3V)
dvss_r	Digital VSS to pad ring
avdd	Analog VDD (3V)
avss	Analog VSS

 Table 1 - External Interface Pin Attributes

<sup>1</sup>Internal pull-up resistors are non-linear elements; they have a resistance of about 80 K at operating conditions of nominal process, 25° C and 3 V I/O supply voltage. They exhibit 140 K at operating conditions of WC process, 125°C junction and 2.85 V I/O supply and 42 K at conditions of BC process, 0° C and 3.15 V supply voltage.

<sup>2</sup>Internal pull-down resistors: The same conditions apply as listed above for internal pull-up resistors.

Туре	Description
Z	Tri-State
Н	Tri-State with Pull-Up
	Tri-State with Pull-Down
	CMOS High
0	CMOS Low
X	Unknown

### Table 2 - Reset Legend

# 2 Setup and Quick Start

### **2.1System Requirements**

The following are the minimum requirements for running ETS:

Operating System: Windows 2000/XP or later

Memory: At least 128 MB of RAM Processor: Pentium II or better

### 2.2Installing and Removing

### 2.2.1Installing ETS

VIA Telecom delivers the installation program, "*ETS.exe*", as part of the software release package. VIA Telecom strongly recommends installing **ETS** in the default directory as the installing shell indicated. The VIA Telecom software releases are typically numbered "rX.Y.Z" where:

- X = Major Release Number
- Y = Minor Release Number
- Z = Patch to Minor Release

The VIA Telecom complete software package contains:

- a. The VIA Telecom CP code, which executes on the ARM7TDMI-S<sup>™</sup> processor embedded in the CBP5.X chip.
- b. An ".img" Image file, which contains code or code patches that will run on the DSPM and DSPV embedded Oak processors.
- c. The "ETS.exe" and "ETS\_Config\_x.exe" package, which installs ETS.

#### Example

Assume that the VIA Telecom software release is: **r6.0.6**.

- 1. The ETS installation program would be: <Customer Path>\ PCTools\ ets\ ETS\_6.0.6.exe and ETS\_Config\_0.14.2\_vtui2\_5x.
- Run ETS\_6.0.6.exe and ETS\_Config\_0.14.2\_vtui2\_5x . For this example, ETS is installed in "C:\ Program Files\ VIA Telecom\ VTC-ETS\ ", ETS\_Config is in "C:\ Program Files\ VIA Telecom\ ETS\_Config\ ".



3. For other items which will meet in installing process, use default setting is fine. Since from now on, all of CBP5.X reference software will use same ETS.exe, you **NEED NOT** pay additional attention to associate version number between the software release and ETS.

### 2.2.2Removing ETS

Use the standard Windows method to remove (uninstall) software.

- 1. Go to the Control Panel and select Add or Remove Programs.
- 2. Select **ETS** and click the **Add/Remove** button. Follow the standard procedure for uninstalling Windows-based software.

🐻 Add or Ren	nove Programs		
5	Currently installed programs:	Sort by: Name	*
Change or Remove	ACDSee 4.0	Size	23.42MB 🔷
Programs	🗏 Adobe Acrobat 7.0.5 Professional - ChineseS	Size	651.00MB
	🔀 ARM Developer Suite v1.1	Size	125.00MB
Add New	Beyond Compare Version 2.0.2	Size	5.45MB
Programs	Broadcom 440× 10/100 Integrated Controller	Size	0.13MB
<b>F</b>	🕞 Conexant HDA D110 MDC V.92 Modem	Size	0.55MB
Add/Remove	🚱 DataManager M816	Size	0.90MB
Windows	🔁 Dell ResourceCD	Size	2.73MB
Components	👔 ) Dell Wireless WLAN Card	Size	1.38MB
	💾 ETS	Size	13.86MB
Set Program	Click here for support information.	Used	<u>rarely</u>
Access and Defaults		Last Used On	11/21/2006
	To change this program or remove it from your computer, click Change or Remove.	Change	Remove
	FUJIFILM USB Driver	Size	1.13MB
	Soogle Earth	Size	30.96MB
	a Google Toolbar for Internet Explorer	Size	35.36MB
	📴 High Definition Audio Driver Package - KB835221		
	得 Intel(R) Graphics Media Accelerator Driver		~

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### 2.3 Running ETS for the First Time

Continuing with the example in Section 2.21, start ETS by selecting:



Windows Desktop  $\rightarrow$  ETS(Config 0.14.2\_vtui2\_5x\_Selle\_P1):

Now follow the steps in Section\_2.5.1.

### 2.4 How to Exit

1. From the ETS menu, select **File**  $\rightarrow$  **Exit**.

See Section 2.5.2 for details on how to save the ETS configuration when exiting.

E Et	slain	. –	USB 1						
<u>F</u> ile	Debug	<u>C</u> ₽	DSP <u>M</u>	DSP <u>V</u>	RF	Vtilities	<u>W</u> indow	Help	

## 2.5Opening and Saving Configuration Files

### 2.5.10pening Configuration Files

1. From the ETS menu, select File  $\rightarrow$  Open...



2. Continuing with the *Example* of Section 2.2.1, in the Window below select the Path:

 $\label{eq:c:program_Files_VIA_Telecom_ETS_Config_ 0.14.2_vtui2_5x_Selle_P1\ config\ cdma\ and\ then\ select\ the\ file\ default.cfg$ 

Samsung Electro-Mechanics Co., Ltd. Proprietary

Open			? 🗙	
Look <u>i</u> n: 🔀	) cdma		* 🎟 🕶	
Config	🚞 dspv			
i cust				
🛄 do Canada do pi	erauic S fsi_default			1
i dspm				
File <u>n</u> ame:	default		<u>O</u> pen	X
Files of <u>typ</u> e:	Config Files (*.cfg)	<u> </u>	Cancel	$\chi O$
	Open as read-only			$\odot$
				0
			100	
		$\bigcirc$	S,	
		j (D)		
	. 2	(C)		
	1) x	5		
	$\mathcal{C}$			
	$\bigcap$			
A (				
CV.				

3. After opening **default.cfg** you should see a screen, which looks similar to the picture below. This screen has all the standard ETS sub-windows which are typically used at VIA Telecom.

🏧 EtsMain - USB - [ogram Files\ET	S\default.cfg]	🧮 Virt Mmi 🛛 🗖 🔀	Spy Overhead Paging Mess	ages 📃 🗖
File Debug CP DSPM DSPV RF Custo CP Search Results  Print 1 Sys Time:0xdf9c8ce6 Num Act0x01 Num Cand:0x00 Num Nghbr:0x18 Acting Data	DUbliktes Window Help DSPM Rfc RxTx Print 2 Sys Time: 0xdf9c8ce7 Received Power (dBm): -57.34 Receive PDM Value:	S< ∧ R> + < Ok > CMR - V	Log , IMSI_DUM , ORDERED , BROADCA , RESERVEL , ADD_LEN( , ADD_PFIE , PDU_PADI	NE=U D_TMSIS=0 ST_DONE=1 D=0 GTH=0 LD= DING=0
State         Notes         Strength           1         0         54         3457         4.6584           2         1         0         0         1.#INF           Cand Data:	Dx0000     Rx Gain State:       2     Transmit Power (dBm):       -150.00     Transmit PDM Value:       0x0000     Transmit PDM Value:	Send         <         End           1         2         3           4         5         6           7         8         9           *         0         #	Log Enable=1 14:29:32.0 < ETS, Id=CP Spy, ENG_ACCESS_PROC_TR 1 4 14:29:32.0 < ETS, Id=CP Spy, 13 57, Enable=1 14:30:30.0 < ETC_IL=CP December 20	Spyld=CP PE 0, Enable=1 Spyld=CP PE ENG_LAYER; Spyld=CP PE ENG_PAGE_*
3         1         0         0         -1.#INF           4         1         0         0         1.#INF           4         1         0         0         1.#INF           •         •         •         •         •           •         •         •         •         •           •         •         •         •         •           •         •         •         •         •           •         •         •         •         •           •         •         •         •         •           •         •         •         •         •         •           •         •         •         •         •         •         •           1         0         •         •         •         •         •         •           2         0         390         24960         •         •         •         •           3         0         405         25920         •         •         •         •         •         •         •         •         •         •         •         •         •         • <td< td=""><td>Log 14:29:34.8&gt; UXDF9C8CE3 L10 CM 14:29:34.8&gt; 0xDF9C8CE4 L10 CM 14:29:34.9&gt; 0xDF9C8CE6 L10 CM L1D_IDLE_SETS_LIST_UPDATE_V 14:29:34.9&gt; 0xDF9C8CE6 L10 CM L1D_SRCH_RESULT_COMPLETE_ 14:29:34.9&gt; 0xDF9C8CE7 L10 CM 14:29:34.9&gt; 0xDF9C8CE7 L10 CM</td><td>a Mbox: Msg la - LIU_USHA d Mbox: Msg la - LIU_USHA d Mbox: Msg la - MSG d Mbox: Msg la - MSG d Mbox: Msg la - LID_SLEE d Mbox: Msg la - LID_DSPA</td><td>A SLUTIED MSG _SLOTTED_MSG P_MSG A SLOTTED_MSG</td><td>Spyld=CP PE ENG_CP_TR Spyld=CP PE ENG_RTC_TF Sync Messages</td></td<>	Log 14:29:34.8> UXDF9C8CE3 L10 CM 14:29:34.8> 0xDF9C8CE4 L10 CM 14:29:34.9> 0xDF9C8CE6 L10 CM L1D_IDLE_SETS_LIST_UPDATE_V 14:29:34.9> 0xDF9C8CE6 L10 CM L1D_SRCH_RESULT_COMPLETE_ 14:29:34.9> 0xDF9C8CE7 L10 CM 14:29:34.9> 0xDF9C8CE7 L10 CM	a Mbox: Msg la - LIU_USHA d Mbox: Msg la - LIU_USHA d Mbox: Msg la - MSG d Mbox: Msg la - MSG d Mbox: Msg la - LID_SLEE d Mbox: Msg la - LID_DSPA	A SLUTIED MSG _SLOTTED_MSG P_MSG A SLOTTED_MSG	Spyld=CP PE ENG_CP_TR Spyld=CP PE ENG_RTC_TF Sync Messages
6       0       153       9792       -21.5372         7       0       141       9024       -23.2233         8       0       234       14976       -22.7992         9       0       297       19008       -22.6018         10       0       36       2204       -22.1442         11       0       66       4224       -21.7699         12       0       27       1728       -21.8911         13       0       51       3264       -22.2319         14       0       477       30528       -22.9014	Ain Log Window. Log Id=L1D_DSPM_SLOTTED_MSG 14:29:34.9> ETS, Id=CP Trace, Tra Id=L1D_DLE_SETS_LIST_UPDAT 14:29:34.9> ETS, Id=CP Trace, Tra Id=L1D_SRCH_RESULT_COMPLE 14:29:34.9> ETS, Id=CP Trace, Tra Id=L1D_SLEEP_MSG 14:29:34.9> ETS, Id=CP Trace, Tra Id=L1D_SDEMSG	iceld=CP L1d Cmd Mbox, Sy E_MSG iceld=CP L1d Cmd Mbox, Sy TE_MSG iceld=CP L1d Cmd Mbox, Sy iceld=CP L1d Cmd Mbox, Sy	/s Time=0xdf9c8ce6, Msg /s Time=0xdf9c8ce6, Msg /s Time=0xdf9c8ce7, Msg /s Time=0xdf9c8ce7, Msg	14-27-41 EZ ETS 14-00 Sp
CP 00S Area Parms	Fault Log     Definition revision: 1.1     Config revision: 1.2     14:29:32.4: Couldn't find config en	• –		14:27:41:35 E163, IB-CF 36 Spyld-CP PE ENG_LAYER 13 15, Enable=1 14:29:32.04 ETS, Id=CP Sp Spyld=CP PE ENG_LAYER 13 15, Enable=1

## 2.5.2 Saving Configuration Files

1. If you have used any special ETS commands during your present session which you'd like to use in a future session then you can explicitly save the present configuration by using the ETS Main Menu command:



2. Enter the name and path for your configuration file in the dialog box below, or you can choose to overwrite the present configuration file (typically, "default.cfg").

## 2.6 ETS Defines

File  $\rightarrow$  Defines

ETS allows the user to configure the tool for various standard definitions:

Configuration Defines 🛛 🗙		
🗖 Lite Message Set		
🔲 Do NOT Decode Signaling Messages		
🖵 Enable SMS Submit Hex		
🖵 Enable Dual Nam Support		
CBP Asic Revision		
SYS_ASIC_CBP4PLUS_ROMC2		
RF Target Option		
SYS_RF_GCT_DCR		
SYS_RF_GCT_DCR SYS_ASIC_CBP4PLUS_ROMC2		
OK Cancel		

### Note:

1. This defines must be configured correct as the target HW you using. Else it will case some UN-expect error. If you don't sure which option you should select, call VIA application engineer for help.

2. After you changed the definition, should close and restart ETS to make the effort available.

### 2.7 ETS Options

#### $\text{File} \rightarrow \text{Options}$

There are some parameters you can modify, the value depend on the CP request. Special for **Flash Download Timeout (Sec)**, we recommend you adjust it longer than the total CP erase time (the lager CP size is, the longer erase time is). **200s** is the typically value VIA internal used.

Ets Options
Max messages per Second: 0
Max messages in Log Window: 1000
Max messages in Trace Window: 1000
Transfer Window Size: 4
Initial Baud Rate: 115200
Data Download Start Addr: 0x2000000
Data Upload Start Addr: 0x2040000
Flash Download Timeout (Sec): 25
Popup Fault Log Popup Comm Status on Error Disable Startup Commands Maximum Menu Entries: 40
Ignore Underflow Errors 🔽 Log Notes to Trace Window 🗖 Serial Port DTR Enable 🗖
Use C-Type Pathing for Printing 🔲
Preamble Delay in Msec: 20
Send Break Char In Msg Preamble 🛛 🔽
Log Message Received Errors
Auto Conrig Load
Cancel

# **3 Idle Mode**

### 3.1 RSSI for CDMA

CDMA: DSPM  $\rightarrow$  Spy  $\rightarrow$  RFC  $\rightarrow$  DSPM Rfc RxTx

Usually this window is opened from loading the "default.cfg" configuration file.

DSPI Rfc RxIx	
🔽 Print 3	
Sys Time:Dxa248d231	
Received Power (dBm):-68.13	× 1
Receive PDM Value:0x0000	
Rx Gain State:3	X
Transmit Power (dBm):-150.00	0.
Transmit PDM Value:0x0000	
Tx Gain State:0	02
RxDAgc Value:	~°°
Bitsel Gain HwVal	
1 -5 7 0xfec7	

Window Entries	Definition		
Print	If checked, the window will be printed onto the main log as a trace:		
	15:17:28.8> ETS, Id=DSPM Spy, SpyId=DSPM Rfc RxTx, Sys Time=0xa248d231, Received Power (dBm)=-68.13, Receive PDM Value=0x0000, Rx Gain State=3, Transmit Power (dBm)=-150.00, Transmit PDM Value=0x0000, Tx Gain State=0, Bitsel=-5, Gain=7, HwVal=0xfec7		
Sys Time	Recorded system time for reference purposes.		
Received Power (dBm)	Received power from the BS interpreted by the MS.		
Receive PDM Value	Received power from the BS interpreted by the MS in PDM. This area used for superhet solution.		
Rx Gain State	Gain state that the MS receiver is in.		
Transmit Power (dBm)	Transmit power to the BS interpreted by the MS in dBm.		
Transmit PDM Value	Transmit power to the BS interpreted by the MS in PDM.		
Tx Gain State 🦱 🔍	Gain state that the MS transmitter is in.		
RxDAgc Value	Received power from the BS interpreted by the MS, this area used for DCR solution.		

# 3.2 Overhead Paging Spy

 $CP \rightarrow SPY \rightarrow PS \rightarrow Call Proc \rightarrow Engine \rightarrow Eng_Layer2_TR \rightarrow CP PE ENG_LAYER2_TR 13 13 (for CDMA)$ 

The spy is enabled automatically once the "default.cfg" is loaded. This spy displays all CDMA overhead paging messages broadcast from the base station.

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## 3.3 Registration Message Spy

 $\mathsf{CP} \to \mathsf{SPY} \to \mathsf{PS} \to \mathsf{Call} \; \mathsf{Proc} \to \mathsf{Engine} \to \mathsf{ENG}\_\mathsf{ACCESS}\_\mathsf{PROC}\_\mathsf{TR} \to \mathsf{CP}$ 

ENG\_ACCESS\_PROC\_TR 1 40

The spy is enabled automatically once the "default.cfg" is loaded. This spy displays all messages from mobile to the base station during idle mode, through access channel.

Spy Signalling Tessages	X
Log	
15:28:08.9> ETS, Id=CP Spy, SpyId=CP PE ENG_ACCESS_PROC_TR 1 40, Sys Time=0xa2494f36, PREV=0x06, Length=0x2d , PD=1 , <<< Msg Id=AC - Origination , LAC_LENGTH=18	~
, ACK_SEQ=4 , MSG_SEQ=4 , ACK_REQ=1 , VALID_ACK=0 , ACK_TYPE=0	
, MSID_TYPE=IMSI and ESN , MSID_LEN=10	

# 3.4 Tx PWR Detect Measurements Spy

 $CP \rightarrow Spy \rightarrow HWD \rightarrow CP Tx Pwr Detect Measurements$ 

This spy only works in the following conditions:

Tx Pwr Detect cal tables "Tx Pwr Detect" and "Tx Pwr Det Freq Adj" and "Det Temp Adj" are populated.

Mobile is transmitting beyond the threshold that AUX ADC actually kicks in (typically +15dBm or above)



Sys Time	Display system time for reference.
Measured AUX ADC	Reads AUX ADC value of Tx Pwr Detect.
Tx Pwr (dBm)	Displays mobile's final transmitting power in dBm.
Tx Pwr Freq Adj (dBm)	Display corresponding Adj read from cal table.
Tx Pwr Temp Adj (dBm)	Display corresponding Adj read from cal table.
Unadj Tx Pwr (dBm)	Display the unadjusted Tx power transmitted.

# **3.5 HWD Frequency Channel Trace**

 $\mathsf{CP} \to \mathsf{Trace} \to \mathsf{HWD} \to \mathsf{CP} \; \mathsf{Freq} \; \mathsf{Channel}$ 

This trace is enabled automatically once the "default.cfg" is loaded. This trace displays the channels that the mobile searches in the Trace Log Window when the protocol stack is on:

Trace Log Vindow	
Log	
15:33:46.6≻ U×A249912F UP - HYYD PLL: BAND_ULASS_U Uhan 201 A 1494835 B U	~
15:33:49.2> 0×A24991AF CP - HWD PLL: BAND_CLASS_0 Chan 201 A 1494835 B 0	_
15:33:51.8> 0xA249922F CP - HWD PLL: BAND_CLASS_0 Chan 201 A 1494835 B 0	
15:33:54.3> 0×A24992AF CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
15:33:55.0> 0xA24992CF CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
15:33:55.3> 0xA24992DF CP - HWD PLL: BAND CLASS 0 Chan 201 A 160801267 B 1	
15:33:55.9> 0xA24992FE CP - HWD PLL: BAND CLASS 0 Chan 283 A 1498771 B 0	
15:33:55.9> 0xA24992FE CP - HWD PLL: BAND CLASS 0 Chan 283 A 160805203 B 1	
15:34:07.6> 0xA2499547 CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
15:34:12.2> 0xA249962F CP - HWD PLL: BAND_CLASS_0_Chan_201_A_1494835_B0	
15:34:14.8> 0xA24996AF CP - HWD PLL: BAND_CLASS_0_Chan_201_A_1494835_B0	
15:34:16.7> 0xA249970E CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
15:34:17.4> 0xA249972F CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
15:34:18.1> 0xA2499749 CP - HWD PLL: BAND_CLASS_0_Chan_201_A_1494835_B0	
15:34:22.5> 0xA249982F CP - HWD PLL: BAND_CLASS_0 Chan 201 A 1494835 B 0	~

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### **3.6 Pilot Strength Spy**

#### $CP \rightarrow Spy \rightarrow L1D \rightarrow CP$ Search Results Active

Usually this window is opened from loading the "default.cfg" configuration file. This spy display information of Active PNs involved, candidate PNs that are possible for handoffs, and neighbor PNs that are available for possible handoffs.



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Window Selections	Definition		
Print	If checked, the window will be printed onto the main log as a trace:		
	15:36:10.1> ETS, Id=CP Spy, SpyId=CP Search Results Active, Sys Time=0xa249ad32, Num Act=0x01, Num Cand=0x00, Num Nghbr=0x17		
	, Stale.0=0, Pilot PN.0=54, Phase.0=3457, Strength.0=-4.4224, Stale.1=1, Pilot PN.1=0, Phase.1=0, Strength.1=-1.#INF, Stale.2=1, Pilot PN.2=0, Phase.2=0, Strength.2=-1.#INF, Stale.3=1, Pilot PN.3=0, Phase.3=0, Strength.3=-1.#INF, Stale.4=1, Pilot PN.4=0, Phase.4=0, Strength.4=-1.#INF, Stale.5=1, Pilot PN.5=0, Phase.5=0, Strength.5=-1.#INF		
	, Stale.0=1, Pilot PN.0=0, Phase.0=0, Strength.0=-1.#INF , Stale.1=1, Pilot PN.1=0, Phase.1=0, Strength.1=-1.#INF , Stale.2=1, Pilot PN.2=0, Phase.2=0, Strength.2=-1.#INF , Stale.3=1, Pilot PN.3=0, Phase.3=0, Strength.3=-1.#INF , (etc. up to Stale39=)		
Sys Time	Display system time for reference.		
Num Act	Number of PNs currently on the active list.		
Num Cand	Number of PNs currently on the candidate list.		
Num Nghbr	Number of PNs currently on the neighbor list.		
Stale	"1" = such PN is actually available for communications to mobile.		
Pilot PN	Display the PN number(s) of the pilot(s) that the mobile is aware of.		
Phase	Display the phase of the pilot seen by the mobile.		
Strength	Display the strength of the pilot seen by the mobile.		

4-31th

# 4 In-Call Mode

## 4.1 Voice Call Initiate

Utilities -> Virtual MMI Utility

To initiate a call, first click "Power" then dial any number and click "Send" Key on the Virt MMI.

S< ^ R> + < Ok > CMR - V
S< ∧ R> + < Ok > CMR - V
+ < Ok > CMR
Send << End
1 2 3
4 5 6
7 8 9
* 0 #
Mem Power

As an alternative to using the Virtual MMI, calls can be initiated using:

### $\mathsf{CP} \to \mathsf{PS} \to \mathsf{UI}\xspace$ CP Call Initiate

CP Call Initiate		
Send 🔽 Tack		
Otasp:		
Otasp Mode:[0	]	
E911 Call:		
Request Mode: Cdma Only	•	
Service Type: Voice Service	-	Part of the second seco
Privacy Mode:	_	
Encoded:		$\langle O \rangle$
Digit Mode:		
Number Type: Unknown	-	0
Number Plan: Number Plan Unknown	-	
Number of Digits:[7		
Digits:[3505560	]	

Window Selections	Definition	
Send	Send to perform call initiate command.	
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".	
Otasp	Check if it is an OTASP call.	
Otasp Mode	If it is an OTASP call, entry OTASP mode.	
E911 Call	Check if it is calling "E911".	
Request Mode		
Service Option	Choice a service option	
Privacy Mode		
Encoded		
Digit Mode	cv	
Number Type		
Number Plan		
Number of Digits		
Digits		

# 4.2 Voice Call Answer

Similar to section <u>4.1</u>, there are two ways of achieving this: through Virtual MMI or CP command.

- 1. Using Virtual MMI, click "Send" when "Call Alert" is displayed.
- 2. Or use CP  $\rightarrow$  PS  $\rightarrow$  UI Command  $\rightarrow$  CP Call Answer and click "Send"

CP Call Answer	
Send 🔽 Tack	

## 4.3Voice Call Hang Up

Similar to section <u>4.1</u>, there are two ways of achieving this: through Virtual MMI or CP command.

Using Virtual MMI, click "End" to terminate a call.

Or use CP  $\rightarrow$  PS  $\rightarrow$  UI Command  $\rightarrow$  CP Call Hangup and click "Send"

CP Call Hangup	
Send 🔽 Tack	

## 4.4Voice Call Configuration

### 4.4.1Voice Privacy Enable/Disable

 $\text{CP} \rightarrow \text{UI} \rightarrow \text{CP}$  Set Privacy Mode

CP Set Privacy Lode	
Send 🔽 Tack	
Mode: Disabled	•

 $\text{CP} \rightarrow \text{PS} \rightarrow \text{Voice Privacy} \rightarrow \text{CP}$  Voice Privacy Enable (or Disable)



## 4.4.2Protocol Rev in Use

 $\mathsf{CP}\to\mathsf{PS}\to\mathsf{CP}$  Protocol Rev in use



This command returns the protocol revision in use for the mobile which responds as follows:

17:05:46.6< ETS, Id=CP Protocol Rev in use

17:05:46.7> ETS, Id=CP Protocol Rev in use, P\_REV in use=IS\_2000

2010250,014

### 4.4.3 OOS Parameters

 $\text{CP} \rightarrow \text{PS} \rightarrow \text{CP}$  OOS Area Parms

Sending this command with the default values shown disables the phone from going out of service (sleep) when the base station is not available for an extended period of time.



Window Selections	Definition
P1-P4	# of attempts in phase 1-4
P1 Delay-P4 Delay	sec delay between phase 1-4 attempts
P1 Cycles-P3 Cycles	number of repeats of N attempts + a delay

## 4.4.4Set Deep Sleep Slice Time

 $\text{CP} \rightarrow \text{UI} \rightarrow \text{CP}$  Set Deep Sleep Time Slice

🔲 СР	UI Set DeepSleep 💶 🗖 🗙	
Send	🔽 Tack	
	TimeSlice (in msec - 0 is off):[1000 ]	

Window Selections	Definition
Send	Send to perform the command.
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Time Slice	
# 4.5 Radio Control

## 4.5.1 Tx Pwr Detect Measurements Spy

Please refer to section 3.4 for detailed description.

## 4.5.2 RSSI for AMPS and CDMA

Please refer to section 3.1 for detailed description.

# 4.5.3 DSPM AFC Frequency Error Spy

 $\mathsf{DSPM} \to \mathsf{Spy} \to \mathsf{Rfc} \to \mathsf{DSPM}$  Rfc Afc Freq Error

ase refer to section 3.1 for detailed description.	The second secon
5.3 DSPM AFC Frequency Error Spy	
$PM \rightarrow Spy \rightarrow Rfc \rightarrow DSPM Rfc Afc Freq Error$	×0 <sup>4</sup>
DSPI Rfc Afc Freq Error	
Print 7	SO
Sys Time:0xa24ad630	
Frequency Error (Hz):-10	
AFC PDM Value:0x087f	
AFC Enabled:1	
Coarse Freq Error(Hz):2100	
X	

Window Selections	Definition
Print	If checked, the window will be printed onto the main log as a trace:
	16:01:30.6> ETS, Id=DSPM Spy, SpyId=DSPM Rfc Afc Freq Error, Sys Time=0xa24ad630, Frequency Error (Hz)=-10, AFC PDM Value=0x087f, AFC Enabled=1, Coarse Freq Error(Hz)=2100
Sys Time	Display system time for reference.
Frequency Error (Hz)	Frequency error recorded.
AFC PDM Value	AFC PDM Value used.
AFC Enabled	AFC enabling state.
Coarse Freq Error (Hz)	Display coarse frequency error.

# 4.5.4 HWD Freq Channel Trace

Please see section 3.5 for detailed descriptions.

# 4.5.5 Pilot Strength Spy

Please see section 3.6 for detailed descriptions.

# 5 Test/Debug Capability

# 5.1 Basics

# **5.1.1 Communication Port Configuration**

## **USB** Port

Debug -> Comm -> USB

Then the ETS will show the connect port as USB

📅 Etslain - USB1	
<u>F</u> ile <u>D</u> ebug <u>C</u> P DSP <u>M</u> DSP <u>V</u> R	F Utilities <u>W</u> indow <u>H</u> elp
USB Port Selection	250
Port	Rele-
Cancel	
Serial Port	

 $\text{Debug} \rightarrow \text{Comm} \rightarrow \text{Serial},$  to select a COM port for communicate with DUT.

Serial Port Configuration	
	ОК
Port: COM3 -	
[LUM4	Cancel
J	

CP -> Options, set the Initial Baud Rate as 115200.

Ets Options
Max messages per Second: 0
Max messages in Log Window: 1000
Max messages in Trace Window: 1000
Transfer Window Size: 4
Initial Baud Rate: 115200
Data Download Start Addr: 0x2000000
Data Upload Start Addr: 0x2040000
Flash Download Timeout (Sec): 120
Popup Fault Log
Disable Startup Commands
Log Notes to Trace Window
Serial Port DTR Enable
Preamble Delay in Msec: 20
Send Break Char In Msg Preamble 🔽
Log Message Received Errors 📃
Auto Config Load
Reset Polarity/Inverted Default
Cancel
$\bigcirc$

# 5.1.2 Loopback Test

 $\text{Debug} \rightarrow \text{Loopback}$ 

This function used to test the USB/COM communications with CP, DSPM, or DSPV. Calls CP Loopback, DSPM Loopback, and DSPV Loopback.

Loopback Mess	age Test	
Send One	0	Number of Messages
	0	Number of Timeouts
🗖 Cycle	0	Number of MisMatches
🔲 Windowed	4	E Sequenced
Data Pattern		
	(	• Random
C Fixed C Counting		
0123456789		
	1 M s	fessage timeout in econds
O DSPV 🛛	Disable Prin	ting 🔲 🔲 Stop On Error

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<ul> <li>○ Fixed</li> <li>○ 123456789</li> <li>○ CP</li> <li>○ DSPM</li> <li>○ DSPV</li> <li>□ Disable Printing</li> </ul>	Counting ssage timeout in onds g I Stop On Error	25° tor th	
Window Selections		Definition	
Number of Messages	Number of messages	s sent.	
Number of Timeouts	Number of failures.	$\langle \rangle$	
Number of Mismatches	Number of difference	s between what was sent and what was received.	
Send One Start Loopback test,		one click will only sends out one command.	
Cycle	When checked, loopback test will continuously run until either Cycle is un- checked or the Loopback window is closed. Will stop if you double clicked.		
Windowed When checked, four I Then sends and repli		loopback requests are sent before any reply is received. ies will alternate.	
Fixed Pattern The user can supply a patt of: CP 0x00 – 0xff and 0x0		a pattern of choice. Multiple words can be sent with a size d 0x0000 – 0xffff for both DSPV and DSPM.	
Stop On Error	Test will stop on time	est will stop on timeout or mismatch errors.	
CP Tests the loopbac		vith the CP.	
DSPM Tests the loopback w		vith the DSPM.	
DSPV Tests the loopback w		vith the DSPV.	
Message timeout in seconds Length of time the s		stem will wait for a reply before issuing the message,	
	"15:44:32.4: Timeout	on message loopback"	
Disable Printing	When checked, mess	sages to the Main Log window are suspended.	

# CP, DSPM, DSPV

Referring to Section 5.1.2 above, selecting CP, DSPM or DSPV for the loopback debug ensures functionality of the specific sector in the mobile.

# 5.1.3 Raw Rx/Tx Serial Data

## $\text{File} \rightarrow \text{Raw} \rightarrow \text{Tx or } \text{Rx}$

This command enables printing the raw data onto the Main Log window that describes the transfer of serial data between ETS and the board.

## Samsung Electro-Mechanics Co., Ltd. Proprietary

Iain Log Vindov.	
Log	
10.00.42.3% E13, 10-68 VEISION	~
16:06:42.3[ Raw Tx: Len=2, 0xc8 0x00	
16:06:42.3] Raw Rx: Len=20, 0xc8 0x00 0x00 0x0a 0x03 0x00 0x0c 0x0c 0x08 0x10 0x1d 0x00 0x0a 0x03 0x00	
0x0c 0x0c 0x08 0x10 0x1d	
16:06:42.3> ETS, Id=CP Version	
, Unit.0=CP, Major.0=10, Minor.0=3, Rev.0=0, Month.0=12, Day.0=12, Year.0=8, Hour.0=16, Min.0=29	
, Unit.1=CP, Major.1=10, Minor.1=3, Rev.1=0, Month.1=12, Day.1=12, Year.1=8, Hour.1=16, Min.1=29	~

## 5.1.4 Enable Generic Ack

 $\text{Debug} \rightarrow \text{Enable Generic Ack}$ 

This command controls the display of the acknowledgement to any command sent from ETS to the mobile. If enabled, a response message for each command is returned. A check mark displays next to the command if enabled.

Tain Log Vindow.	
Log	
16:12:20 07 ETC Id=CD Enter Collibration Mode	~
16:12:38:84 ETS, IO=UP Enter Calibration Mode 16:12:41 37 ETS, Id=Enable Generic Ack, Enable=1	
16:12:41.3> ETS, Id=Enable Generic Ack	
16:12:42.6< ETS, Id=CP Enter Calibration Mode	
16:12:42.6> ETS, Id=Generic Ack, MsgId=CP Enter Calibration Mode	~

# **5.2 Test Modes**

# 5.2.1 CP Sleep Control

 $CP \rightarrow MON \rightarrow CP$  Sleep Control



This command enables/disables the sleep operation of the CBP5.X software so the unit does/does not power down for a sleep period and wakes up for only the wake-up period duration.

## **5.2.2 Slotted Mode Enable/Disable**

 $CP \rightarrow PS \rightarrow Test mode \rightarrow CP Test Modes$ 

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CP Test	t Lodes 📃 🗖 🔀	
Send 🔽 T	ack	
Mode:	Enable/Disable CRC 🗸 💌	ĺ
Qualifier:	Off 🗸 🗸	
Value:[	0x0000	]

2010250 401 44 To disable slotted: Set Qualifier to "Off" and click "Send" (Value entry is ignored). To enable slotted: Set Qualifier to "On" and click "Send" (Value entry is ignored).

## 5.2.3 Pwr Savings Mode Config

 $\text{CP} \rightarrow \text{HWD} \rightarrow \text{Pwr} \ \text{Savings} \rightarrow \text{CP} \ \text{Power} \ \text{Savings} \ \text{Mode} \ \text{Config}$ 

CP Pwr Savin	ngs Node Config 📘 🗖 🔀
Send 🔽 Tack	
Ctrl Mode:	Automatic 🗾
Pwr Saving Mode:	Power Up 🗾 💌
Voice/Data Mode:	Idle 🗾 🔽

sets the power savings mode

Window Selections	Options	Definition
Send		Send to perform power savings mode configuration.
Tack	$\hat{O}$	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Ctrl Mode	Automatic	Stack values are used – selections in Band and Channel are ignored.
	Disable	
	Manual	Values selected in Band and Channel are used
Pwr Saving Mode	Power Up	
N	Power Up Qpch	
	CDMA Rx Acq	
	CDMA Rx	
Voice/Data Mode	Idle	
	Mic On	
	Spkr On	
	Mic+Spkr On	

# 5.2.4 Pwr Savings Config

 $CP \rightarrow HWD \rightarrow Pwr \ Savings \rightarrow CP \ Pwr \ Savings \ Config$ 

CP Pwr	Savings Config	
Send 🔽 T	ack	
Ctrl Mode:	Automatic	•
Hw Blks:	All Blocks	-
Status:	Off	-

Window Selections	Options	Definition
Send		Send to perform power savings configuration.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Ctrl Mode	Automatic	Stack values are used – Hw Blks and Status are ignored.
	Disable	
	Manual	Selections made under "Hw Blks" and "Status" are used.
Hw Blks	All Blocks	This is the recommended setting for manual control.
Status	On	To turn blocks ON.
	Off	To turn blocks OFF.

0,

# 5.2.5 Pwr Savings Status Get

 $CP \rightarrow HWD \rightarrow Pwr$  Savings  $\rightarrow CP$  Pwr Savings HW Status Get

CP F	e are	Savings	Ηw	Status	Get	
Send	V Ta	ack				

This command responds with the ON/OFF states of blocks within the chip. An example is shown below:

Iain Log Vindov.	$\mathbf{X}$
Log	
16:20:34.7< ETS, Id=CP Pwr Savings Hw Status Get	^
16:20:34.7> ETS, Id=CP Pwr Savings Hw Status Get, Clk32=Off, Clk1=On, Clk9[Gtxi]=Off, Clk480=Off, Clk9[Tx]=Off,	
Cika(Exj=On, Cik19=Off, Cika(Oimj=Off, Cik39=Off, Cika(Gpcti)=Off, Cik(Storrj=Off, Cik(Viterby)=Off, Cik360=Of, Cik80=On, Cik8K=On, Cik(Gsni)=On, Cik39Bx=Off, Cik(Bha)=Off, Cik(Tha)=Off, Cik(DsnM)=On, Cik(DsnV)=On,	
Clk19A=On, Clk2=Off, BandgapRefVolt=On, AuxiliaryAdc=Off, MSBias=On, RxAdc=Off, TxDacl=Off, TxDacQ=Off,	
PdmDe2=Off, PdmDe3=Off, PdmDe4=128, PdmSe0=Off, PdmSe1=128, PdmSe2=Off, PdmSe3=128, AmpsComps=On	6
SerialCtrl=Off, Uart1Jitter=Off, Uart2Jitter=Off, MxsTxClkCtrl=Off, MxsRxSdAckCtrl=Off, MxsRxSdCdmaDckCtrl=Off,	
MXSAMpSUM=UN, MXSPamUM=UN, VLoaecDigPam=UN, VoiceDac=UN, VoiceAac=UN, Microphone=UN, VniceDacAmp1=Off_VniceDacAmp2=On	-

# 5.2.6 Pwr Savings Get Mode

 $\text{CP} \rightarrow \text{HWD} \rightarrow \text{Pwr Savings} \rightarrow \text{CP Pwr Savings Get Mode}$ 

CP Pwr Savings Get Mode	
Send 🔽 Tack	

Below shows the command and respond while the mobile is in traffic:

Iain Log Vindov.	
Log	
	^
16:21:30.4< ETS, Id=CP Pwr Savings Get Mode	
16:21:30.4> ETS, Id=CP Pwr Savings Get Mode, Pwr Saving Mode=Power Up	~

,250,01

## 5.2.7 Diagnostic Parameters (L1D, LMD)

#### 5.2.8 Phone State And Event Control

 $\mathsf{CP} \to \mathsf{PS} \to \mathsf{CP}$  Phone State and Event Count



Below shows an example when the mobile is on paging:

Tain Log Vindov.	
Log	
	~
16:22:47.9< ETS, Id=CP Phone State and Event Count	
16:22:47.9> ETS, Id=CP Phone State and Event Count, State=IdIe, Event count=91	~

## 5.2.9 Get Retrievable Statistics

 $CP \rightarrow PS \rightarrow Retrievable Stat \rightarrow CP Get Retrievable Statistics$ 

CP Get Retrievable Statistics	
Send Tack	
Statistics Counter Group: MUX1_REV_FCH	•

Window Selections	Options	Definition
Send		Send to perform the command, with a response as follow:
$\mathbf{O}$		16:24:10.6< ETS, Id=CP Get Retrievable Statistics, Statistics
		Counter Group=MUX1_REV_FCH
		16:24:10.6> ETS, Id=CP Get Retrievable Statistics
		, Statistics Counter Group=MUX1_REV_FCH
		, MUX1 REV FCH 1=0x000000a7
		, MUX1 REV FCH 2=0x0000000a
		, MUX1 REV FCH 3=0x00000000
		, MUX1 REV FCH 4=0x00000014
		, MUX1 REV FCH 5=0x00000024
		, MUX1 REV FCH 6=0x00000049

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		, MUX1 REV FCH 7=0x0000000
		, MUX1 REV FCH 8=0x0000047e
		, MUX1 REV FCH 9=0x0000000
		, MUX1 REV FCH 10=0x0000000
		, MUX1 REV FCH 11=0x0000000
		, MUX1 REV FCH 12=0x0000000
		, MUX1 REV FCH 13=0x0000000
		, MUX1 REV FCH 14=0x00000000
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Statistics Counter Group	MUX1_REV_FCH	
	MUX1_FOR_FCH	
	PAG	
	ACC	
5.2.11 PS Ena	ble/Disable	001000
CP Power:		
$CP\toPS\toUI\;Com$	mand $\rightarrow$ CP Power	
CP Power Send Tack		
This command enab	les/disables the proto	col stack but does not perform any resets to the system. It

# 5.2.10 Timer Enable

# 5.2.11 PS Enable/Disable

#### **CP Power:**

CP Power
Send 🔽 Tack
Power: Down

This command enables/disables the protocol stack but does not perform any resets to the system. It serves the same purpose as the "Power" button on the MMI, which in turn performs a soft reset to the system.

# 5.2.12 OOS Parameter

Please refer to section 4.4.3.

# 5.2.13 Service Option - SO (TBD)

# 5.3 RF Interface and Control

# 5.3.1 CDMA Configuration

## **CP PLL Channel Config**

🗖 CP PSV PLL Channel Config 💦 🔲 🗖 🗙
Send 🔽 Tack
Ctrl Mode: Automatic
Band: BAND_CLASS_0
Channel:[0 ]

CP PLL Channel Co	nfig	
$RF \to CP PSW PLL C$	hannel Config	the second se
CP PSV PLL Send V Tack Ctrl Mode: Auton Band: BAND Channel:0	Channel Confi natic 0_CLASS_0	
Window Selections	Options	Definition
Send		Send to perform the PLL channel configuration.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Ctrl Mode	Automatic	Stack values are used – selections in Band and Channel are ignored.
	Disable	
	Manual	Values selected in Band and Channel are used
Band	PCS	Selects BAND_CLASS_1
	AMPS	(NONE)
	Cellular	Selects BAND_CLASS_0
	JTACS	Selects BAND_CLASS_3 (Japanese Cellular)
	Korean KPCS	Selects BAND_CLASS_4 (Korean PCS)
	450M NMT	Selects BAND_CLASS_5
Channel	User defined chann	nel number

# **CP PLL Register Config**

# **CP Cal initialize**

 $RF \rightarrow CP$  Cal Initialize



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Window Selections	Options	Definition
Send		Send to perform the Cal Initialize command.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Calib Mode	NVRAM	This loads DBM cache of the DB templates onto the SRAM cache for execution.
	Default	This loads a default cal file onto flash. Command "CP CAL Init NVRAM" (under RF) is needed in conjunction after the Cal Initialize command.

## **CP PDM Config**



CP PDM Config		
$RF \rightarrow CP PDM Config$		
CP PDI Config Send I Tack Ctrl Mode: Automatic PDM Number: Battery Cha Value:[0x0000	rge	26256401
Window Selections	Options	Definition
Send		Send to perform PDM Configuration Control.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Ctrl Mode	Automatic	Stack values are used – selections in PDM Number and Value are ignored.
	Manual	Values selected in Band and Channel are used
	Disable	
PDM Number	Battery Charge	Battery Charge PDM value set
	Afc	Automatic Frequency Control PDM value set
	Tx Agc	TX AGC PDM value set
	Rx Agc	RX ACG PDM Value set
Value		Hex value in the format of 0x0000

# **CP PDM Read value**



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Window Selections	Options	Definition
Send		Send to perform specified PDM Read.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
PDM Number	Battery Charge	Battery Charge PDM value set
	Afc	Automatic Frequency Control PDM value set
	Tx Agc	TX AGC PDM value set
	Rx Agc	RX ACG PDM Value set

## **CP Get PLL Channel**

 $RF \rightarrow CP$  Get PLL Channel

CP Get PLL Channel	
Send 🔽 Tack	

Window Selections	Definition
Send	Send to perform the command of getting PLL channel, response as shown:
	16:35:21.8< ETS, Id=CP Get PLL Channel
	16:35:21.8> ETS, Id=CP Get PLL Channel, Band=BAND_A, Channel=0x00c9
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

Note, the returned value is in Hex mode.

# CP RF Rx Reg Read (TBD)

 $RF \rightarrow RF$  Registers  $\rightarrow$  CP RF Rx Reg Read

🔲 СР	RF Rx Reg Read
Send	✓ Tack
Band:	BAND_A

This message will select the relevant RF registers based on the Radio Design selected by the "RF Target Option" in Section 2.6

# CP RF Rx Reg Write (TBD)

 $RF \rightarrow RF$  Registers  $\rightarrow$  CP RF Rx Reg Write



This message will select the relevant RF registers based on the Radio Design selected by the "RF Target Option" in Section 2.6

# CP RF Tx Reg Read (TBD)

 $\mathsf{RF} \to \mathsf{RF} \text{ Registers} \to \mathsf{CP} \mathsf{RF} \mathsf{Tx} \mathsf{Reg} \mathsf{Read}$ 

CP RF Tx Reg Read	
Send 🔽 Tack	
Band: BAND_A	•

This message will select the relevant RF registers based on the Radio Design selected by the "RF Target 3/025 Option" in Section 2.6

# CP RF Tx Reg Write (TBD)

 $RF \rightarrow RF$  Registers  $\rightarrow CP$  RF Tx Reg Write

CP RF Tx Reg Vrite	, 🗌 🗖 🔀
Send 🔽 Tack	
Band: Update Divisor Values(?): Force Load Values Now(?):	BAND_A  No (Mode/Config Reg only) No

This message will select the relevant RF registers based on the Radio Design selected by the "RF Target Option" in Section 2.6

# 5.3.2 CDMA Receiver

# **CP CDMA Receiver Control**

 $RF \rightarrow CDMA \rightarrow CP CDMA Receiver Ctrl$ 

CP Cdma Receiver Ctrl	
Send 🔽 Tack	
Mode: Off	•

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Window Selections	Options	Definition
Send		Send to perform CDMA Receiver Control command.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Mode	Off	Turn CDMA Receiver OFF.
	On	Turn CDMA Receiver ON.

#### **CDMA PLL Channel Config**

Freq Error Trace

**RSSI Trace** 

#### **HWD CP Serializer Trace**

 $\mathsf{CP} {\rightarrow} \mathsf{TRACE} {\rightarrow} \mathsf{HWD} {\rightarrow} \mathsf{CP} \mathsf{Serializer}$ 

This trace is useful for monitoring all the activity on the serializer bus, particularly for control of the RF

#### chips

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#### **HWD Freq Channel Trace**

 $\mathsf{CP} \to \mathsf{TRACE} \to \mathsf{HWD} \to \mathsf{CP} \text{ Freq Channel}$ 

This trace shows the channels which the CP cycles through while trying to acquire a Base Station.

Trace Log Vindov	
Log	
	~
16:53:38.8> 0x424D30AF CP - HWD PLL: BAND_CLASS_0 Chail 201 A 1494035 B 0	
16:53:41.4> 0×A24D39AF CP - HWD PLL: BAND CLASS 0 Chan 201 A 1494835 B 0	
16:53:44.0> 0xA24D3A2F CP - HWD PLL: BAND_CLASS_0 Chan 201 A 1494835 B 0	~

#### L1D Search Results Active

Refer to 3.6

## **Rx AGC Parameters (L1D)**

#### **Clear FER**

## 5.3.3 CDMA Transmitter

#### **CP CDMA Transmitter Control**

 $\text{RF} \rightarrow \text{CDMA} \rightarrow \text{CP}$  CDMA Transmitter Ctrl

🖃 СР	Cdma Transmitter Ctrl	
Send	🔽 Tack	
Mode:	Off	•

Window Selections	Options	Definition
Send		Send to perform Transmitter control command.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Mode	On	Turn CDMA transmitter ON.
	Off	Turn CDMA transmitter OFF.

## DSPM Tx AGC Get Params

 $RF \rightarrow CDMA \rightarrow DSPM Tx AGC Get Parms$ 



Window Selections	Definition
Send	Send to get the HW Value of the Tx AGC currently operating at, response as shown:
	16:55:08.8< ETS, Id=DSPM Tx Agc Get Parms
	16:55:08.8> ETS, Id=DSPM Tx Agc Get Parms, Power=0.000000, HW
	Value=0x0994
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

## DSPM Tx AGC Config

 $\text{RF} \rightarrow \text{CDMA} \rightarrow \text{DSPM}$  Tx AGC Config

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Send Tack		Send to perform Tx AGC control command
Tack		
		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Ctrl Mode	Automatic	Stack values are used – selections in preceding entries are ignored.
	Manual	Values entered in the preceding entries are used.
Method	HW Value	Set to use PDM value from the Tx AGC Cal table. Selecting this ignores the field "Power(dBm)".
	dB Gain	Set to use "power" column from the Tx AGC Cal table for reference to transmit. Selecting this ignores the field "HW Val".
HW Val		PDM value in Hex referenced from CP DB HWD Tx AGC table.
Hyst State	Low/Mid/High	Gain state for the transmitter.
Power(dBm)		Actual transmitted power in dBm referenced from CP DB HWD Tx AGC table.
CP CDMA Tx Test	AA Tost	

# **CP CDMA Tx Test**

CP Tx CDMA Test	
Send 🔽 Tack	
Rate: Tx Test Off	•

Window Selections	Options	Definition
Send		Send to enable TX CDMA test in specified Tx rate.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Rate	Tx Test Off	Turn Tx OFF.
	Access	Turn TX ON to full rate but transmit through Access channel.
	Tr Full Rate	Turn Tx ON to full rate. This is used for debug purposes most.
	Tr ½ Rate	Turn Tx ON to half rate.
	Tr ¼ Rate	Turn Tx ON to quarter rate.
	Tr 1/8 Rate	Turn Tx ON to eighth rate.

## **Tx Tone Test**

 $RF \rightarrow CP TX$  Tone Test

CP IX Tone Test	
Send 🔽 Tack	
Enable: On	-
Amplitude:[0x0000	

Window Selections	Ontiono	Definition
window Selections	Options	Deminition
Send		Send to transmit a single tone from the transmitter instead of a CDMA spectrum.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Enable	On/Off	Turn TX tone ON or OFF.
Amplitude		Amplitude of tone desired, typical value: 0x0200, in Hex.
HWD CP Serializer Trace		
HWD Freq Channel Trace		
Tx AGC Parameters (L1D)		
CP Tune Radio		
Get RSSI		

**Rx Calibration** 

# Signaling Tone Mode (TBD)

 $\text{DSPV} \rightarrow \text{DSPV}$  Amp Rev Path  $\rightarrow$  DSPV Amp Signalling Tone Mode

DSPV Amp Signalling Tone Mode	
Send 🔽 Tack	
ST Mode: ST Off	•

Set Busy Idle Status

**Tx Fixed Freq** 

**Tx Calibration** 

5.3.4AFC

**DSPM AFC Get Params** 

**DSPM AFC Config** 

AFC Cal Parameters (L1D)

## 5.3.5RF Pin Control

#### **CP TXON Control**

 $RF \rightarrow CP TXON Control$ 

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Window Selections	Options	Definition
Send		Send to enable TXON Control
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
TxOn [0:4]	Off	Turn TxOn OFF.
	On	Turn TxOn ON.
	Auto	Allow CBP software to control the TxOn

#### **CP RXON Control**

RF → CP RXON Control

CP I	RFON Control	
Send	🔽 Tack	
RfOn0:	Auto	•
RfOn1:	Auto	-
RfOn2:	Auto	-
RfOn3:	Auto	-
RfOn4:	Auto	-
RfOn5:	Auto	-
RfOn6:	Auto	-
RfOn7:	Auto	-

Window Selections	Options	Definition
Send		Send to enable RFON Control
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
RfOn [0:7]	Off	Turn RfOn OFF.
	On	Turn RfOn ON.
	Auto	Allow CBP software to control the RfOn
CP TXON Read		
$RF \to CP TXON Read$		
CP TXON Read		

## **CP TXON Read**

CP TXON Read
Send Tack
COL
Iain Log Vindov.
Log
6:59:43.0< ETS, Id=CP TXON Read
6:59:43.0> ETS, Id=CP TXON Read, TxOn0=Off, TxOn1=Off, TxOn2=Off, TxOn3=Auto, TxOn4=Auto, xOnInt=Off

+++

## **CP RXON Read**

 $RF \rightarrow CP RXON Read$ 

CP RFON Read	
Send 🔽 Tack	

Iain Log Vindow.	
Log	
	^
17:00:25.3< ETS, Id=CP RFON Read	
17:00:25.3> ETS, Id=CP RFON Read, RfOn0=Off, RfOn1=Off, RfOn2=Off, RfOn3=Off, RfOn	14=Off, 📃
RfOn5=Off, RfOn6=Off, RfOn7=Off	~
5.3.6GPIO Control	
GPIO Read / GPIO Write	
$CP \rightarrow MON \rightarrow GPIO \rightarrow CP \text{ Read } GPIO$	
CP Read GPIO	
Send V Tack	

## 5.3.6GPIO Control

## **GPIO Read / GPIO Write**

CP Read GPIO	
Send 🔽 Tack	
GPIO Num:[0	]

Window Selections	Options	Definition
Send		Send to read the relevant GPIO. <b>Caution:</b> This command will set the GPIO to INPUT mode and perform the read. The original state is not preserved so this command should only be performed on GPIOs which are known to be Inputs.
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
GPIO Num	[0:47]	Read the Relevant GPIO

 $\text{CP} \rightarrow \text{MON} \rightarrow \text{GPIO} \rightarrow \text{CP}$  Set Clear GPIO

CP Set Clear GPIO	
Send 🔽 Tack	
GPIO Num:[0	]
Action: CLEAR	•

Window Selections	Options	Definition
Send		Send to read the relevant GPIO
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
GPIO Num	[0:47]	Read the Relevant GPIO
Action	SET	Sets the GPIO to "0"
	CLEAR	Clears the GPIO to "1"

#### **GPIO Read Monitor**

CP Monitor GPI0	
Send 🔽 Tack	
GPIO Num:[0	]

	CLEAR	Clears the GPIO to "1"
GPIO Read Monitor		250
$CP \to MON \to GPIO \to$	CP Monitor GPIO	
		$\sim$
CP Lonitor (	5P10	
Send 🔽 Tack		
GPIO Num:[0		
	. 8	
Window Selections	Options	Definition
Send		Send to Monitor the relevant GPIO
Tack	$CO^{2}$	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
GPIO Num	[0:47]	

# GPIO (trace ???)

# 5.3.7 Serializer

This section should be read in conjunction with the Serial Programmer chapters in References [2][3].

#### **Serializer Configuration**

 $CP \rightarrow HWD \rightarrow CP$  Serializer Config

]
]
]

Window Selections	Definition				
Send	Send to set the Serializer Configuration				
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".				
Control	Programs the register SER0_CTRL (listed as SER#_CTRL in Reference [3]). The PTR field can only be set to "000".				
Load Enable	Programs the register SER0_LE (listed as SER#_LE in Reference [3])				
NumBits-1 to Shift	Programs the register SER0_BC (listed as SER#_BC in Reference [3])				
Serializer Write					
$CP \rightarrow HWD \rightarrow CP$ Seria	alizer Write				
CP Serialize					

#### **Serializer Write**

		00000
Send 🔽 Tack		$\sim$
Data:[0x0000	]	

Window Selections	Definition
Send	Send to set the Serializer Configuration
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Data	Write Data to Serializer, which has been configured (see Section 0). This data is loaded into the registers SER0_D1, SER0_D0 (listed as SER#_D1, SER#_D0 in Reference [3])

# 5.4 SMS

Here, we only provide a brief summary to allow the user the user to access the SMS menu. The details of the SMS messages are covered in great detail in [6], while background information on SMS is provided in [5].

# 5.4.1 Connect (CP $\rightarrow$ PS $\rightarrow$ SMS $\rightarrow$ CP SMS Connect)

- 5.4.2 Disconnect (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Disconnect)
- 5.4.3 Broadcast Connect (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Bcast Connect)
- 5.4.4 Broadcast Disconnect (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Bcast Disconnect)
- 5.4.5 User Ack (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS User Ack)
- 5.4.6 Service Option Pref (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Srv Opt Pref)
- 5.4.7 Cancel (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Cancel)
- 5.4.8 Broadcast Parameters (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Bcast Parms)
- 5.4.9 Term Status (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Term Status)
- 5.4.10 Cause Code Status (CP  $\rightarrow$  PS  $\rightarrow$  SMS  $\rightarrow$  CP SMS Cause Code Status)

# 5.5 Database Upload/Download

## 5.5.1 Flash Device

## **Flash Download for Reference Phones**

- 1. Phone has been connected to the ETS.
- Before you begin to download cp.rom, set Flash Download Timeout to 200. Open File >Options and then set Flash Download Timeout to 200, then click OK button, see the following dialog box.

	Ets Options 🛛 🔀	
	Max messages per Second: 0	
	Max messages in Log Window: 1000	
	Max messages in Trace Window: 1000	
	Transfer Window Size: 4	1
	Initial Baud Rate: 115200	
	Data Download Start Addr: 0x2000000	
	Data Upload Start Addr: 0x2040000	, A
	Flash Download Timeout (Sec): 200	X
	Popup Fault Log 🔽 Popup Comm Status on Error 🗖 Disable Startup Commands 🗖 Maximum Menu Entries: 40	
	Ignore Underflow Errors 🔽 Log Notes to Trace Window 🗔 Serial Port DTR Enable 🗖	
	Use C-Type Pathing for Printing 🔲	
	Preamble Delay in Msec: 20	
	Send Break Char In Msg Preamble 🔽	
	Log Message Received Errors	
	Auto Config Load	
· C	OK Cancel	

Open File->Flash Download, you can see the flash memory download dialog, see the following bitmap. Select the drop down box CP Boot for Flash Section; click the Browse to set your new boot.rom path, set "wait for boot load command" check box on, then the "Download" button will be disabled.

Flash Memory Download		
Flash Section: CP Boot	Jump to Loader	
Path: E:\Working_CP\cp\ram_revc2\boot.rom	Browse	
<ul> <li>Print Cmds</li> <li>Print Responses</li> <li>Wait for Boot Load Command</li> </ul>	Exit	H

4. **Power OFF** the phone, connect the phone with PC and **Power ON** the phone, "Wait for boot load command" check box becomes unchecked, and "Download" button is enabled.

Flash Memory Download		
Flash Section: CP Boot		Jump to Loader
Path:		
E:\Working_CP\cp\ram_revc2\boot.ro	m	Browse
🔲 Print Cmds		
Print Responses		
Wait for Boot Load Command	Download	Exit
·		
	<u>10</u>	

You will see "CP Boot Loader" in the ETS Log Window.

Main Log Window.	
Log	
16:27:23.5: USB Status: Connected	~
16:27:23.5< ETS, Id=CP Boot To Loader	
16:27:23.5> ETS, Id=CP Boot To Loader	~

5. Click "**Download**" button to begin download boot.rom, you can see the CP Flash Download dialog. ETS erases the flash, and then begin to write boot.rom in flash, and you can see the download progress.

CP Boot Flash Download	×
Downloading boot.rom to the Flash	
	_
Erasing Flash	
Cancel	

6. Open File->Flash Download, you can see the flash memory download dialog, see the following bitmap. Select the drop down box CP for Flash Section; click the Browse to set your new cp.rom path, set "wait for boot load command" check box on, then the "Download" button will be disabled.

	V
Flash Memory Download	X
Flash Section: CP 🗸	ump to Loader
Path:	
E:\Working_CP\cp\ram_revc2\4m_usb_nouim_nominlock_cp	Browse
Print Cmds	
Print Responses	
Wait for Boot Load Command	Exit

7. **Power OFF** the phone, then **Power ON** the phone again, "Wait for boot load command" check box becomes unchecked, and "Download" button is enabled.

	Flash Memory Download 🛛 🔀
	Flash Section: CP Jump to Loader
0	Path: E:\Working_CP\cp\ram_revc2\4m_usb_nouim_nominlock_cp - Browse
	Print Cmds     Print Responses
	Wait for Boot Load Command Download Exit

You	will	see	"CP	Boot	Loader"	in	the	ETS	Log	Window.
ш м	ain Log	Window	ç							
Log										
16:27	':23.5: I	JSB Sta	tus: Cor	inected			~			
16:27	/:23.5<	ETS, Id:	CP Boo	t To Load	er					
16:27	/:23.5>	ETS, Id	CP Boo	t To Load	er		~			1

 Click "Download" button to begin download cp.rom, you can see the CP Flash Download dialog. ETS erases the flash, and then begin to write cp.rom in flash, and you can see the download progress.

	$O_{\Lambda}$	
CP Flash Download		×
Downloading cp.rom to the Flash		
Flash Bytes Acked: 1123200 out of 9817632		
·		
Cancel		

9. After download finished, **power off** the phone (If there is a battery in your phone, please remove and re-insert), then **power on** the phone.

# Flash Download FOR CDS Products (NOT FOR Reference Phones)

## $\text{File} \rightarrow \text{Flash Download}$

Use to download CP Boot, CP, DSPM, and DSPV code to flash memory. System must be in boot mode to download any section of flash. See Reference [8] for more details.

Flash Memory Download		×
Flash Section: CP	•	Jump to Loader
Path:		
C:\Documents and Settings\am	onteir.VIATELECOM\Deskt	Browse
Print Cmds		
Print Besponses		
	Download	Exit

Window Selections	Ontions	Definition
window Selections	Options	Denniuon
Flash Section:	CP Boot	Downloads CP Boot code to flash memory when Download is clicked.
	CP	Downloads CP code to flash memory when Download is clicked.
	DSPM	Downloads DSPM code or DSPM patches to flash memory when Download is clicked.
	DSPV	Downloads DSPV code or DSPV patches to flash memory when Download is clicked.
	ALL FLASH	Downloads FLASH Image to flash memory when Download is clicked.
	FSM_DATA/FSM _USER	Downloads File system to flash memory when Download is clicked.
Path		Select recent paths or Browse mounted disks
Print Cmds		Used to print the commands sent from ETS to the Flash.
Print Response		Used to print the responses sent from Flash to ETS.
Download		Execute download of selected file
Exit		Close window

## Flash Program

 $CP \rightarrow Flash \rightarrow CP Flash Program$ 

SEMO

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# Flash ID

 $CP \rightarrow Flash \rightarrow CP Flash ID$ 

Used to display the type and manufacture of the Flash device in usi. The customer must update *hwdflash.c* if any other than the AMD AM29DL163CB flash is used.



Window Selections	Definition
Send	Data that is displayed in the Main Log window when Send is clicked in the above example.
	10:17:40.1< ETS, Id=CP Flash Id 10:17:40.1> ETS, Id=CP Flash Id, Manf Id=0x0001, Dev Id=0x002b
	In this example, the flash used is an AM29DL163CB manufactured by AMD. See hwdflash.c for more details.
Tack	When checked, window will remain on screen after every Send. When not checked, window will close after a Send

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H

# Flash Erase

 $\mathsf{CP} \to \mathsf{Flash} \to \mathsf{CP} \; \mathsf{Flash} \; \mathsf{Erase}$ 

🔲 СР	Flash Erase 📃 🗖 🔀
Send	🔽 Tack
	Section Type: CP Boot

Window Selections	Options	Definition
Send		Data that is displayed in the Main Log window when Send is clicked
		in the above example.
Tack		When checked, window will remain on screen after every Send.
		When not checked, window will close after a Send
Section Type	CP Boot	Selects the CP Boot section of Flash.
	СР	Selects the CP section of Flash.
	DSPM	Selects the DSPM section of Flash.
	DSPV	Selects the DSPV section of Flash
	All	Selects all sections of Flash.
Configure Timers		il al
IQ Polarity	. (	$\langle \mathcal{C} \rangle$

Configure Timers
IQ Polarity
Tx Voice Mode
Random Distribution Rx Word Sync
Rx RSSI AFC
Tx Levels

## 5.5.2RF Calibration Data

#### Hwd AFC Data

 $CP {\rightarrow} DB {\rightarrow} DB \text{ Templates} {\rightarrow} Common {\rightarrow} CP \text{ DB HWD AFC Data}$ 

#### **Hwd Battery Data**

 $CP \rightarrow DB \rightarrow DB$  Templates  $\rightarrow Common \rightarrow CP$  DB HWD Battery Data.

#### Hwd Temperature Data

 $CP \rightarrow DB \rightarrow DB \text{ Templates} \rightarrow Common \rightarrow CP \text{ DB HWD Temperature Data}$ 

#### Hwd Aux ADC Data

#### Hwd PDM Data

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \mathsf{Common} {\rightarrow} \mathsf{CP} \text{ DB HWD PDM Voltage Data}$ 

#### Hwd Bandgap Trim Data

 $CP \rightarrow DB \rightarrow DB$  Templates  $\rightarrow Common \rightarrow CP$  DB HWD BandGap Trim Data

#### Hwd Misc Cal Data ?

## PCS Tx AGC

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B Tx AGC}$ 

## PCS Tx AGC Freq Chan Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B } \mathsf{Tx} \text{ AGC Freq Chan Adj}$ 

## PCS Tx AGC Temp Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B } \mathsf{Tx} \text{ AGC Temp Adj}$ 

## PCS Tx AGC Battery Voltage Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD } \text{ BAND B Tx AGC Batt Volt Adj.}$ 

#### PCS Tx AGC Limit Freq Chan Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B} {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B} \text{ Tx Limit Freq Chan Adj}$ 

258 tort

## PCS TxAGC Limit Temperature Adjustment

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B } \mathsf{Tx} \text{ Limit Temp Adj.}$ 

## PCS TxAGC Closed Loop RF Power Measurement

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B } \mathsf{Tx} \text{ Pwr Detect}$ 

## PCS TxAGC Closed Loop Frequency Channel Adjustment

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B} {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B} \text{ Tx AGC Pwr Det Freq Chan Adj.}$ 

## PCS TxAGC Closed Loop Battery Voltage Adjustment

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND B  $\rightarrow$  CP DB HWD BAND B Tx Pwr Det Max Pwr Batt Voltage Adj.

## PCS TxAGC Closed Loop Temperature Adjustment

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND B  $\rightarrow CP$  DB HWD BAND B Tx AGC Pwr Det Temp Adj.

## PCS Rx AGC

CP->DB->DB Templates-> BAND B ->CP DB HWD BAND B RxAGC CP DB HWD PCS RxAGC

## PCS Rx AGC Freq Chan Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND B } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND B } \mathsf{Rx} \text{ AGC Freq Chan Adj}$ 

## PCS Rx AGC Temp Adj

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND B  $\rightarrow CP$  DB HWD BAND B Rx AGC Temp Adj

## **CELL Tx AGC**

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A Tx AGC}$ 

# CELL Tx AGC Freq Chan Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A } \mathsf{Tx} \text{ AGC Freq Chan Adj}$ 

# CELL Tx AGC Temp Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A } \mathsf{Tx} \text{ AGC Temp Adj}$ 

## CELL Tx AGC Battery Voltage Adj

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD } \text{ BAND A } \mathsf{Tx} \text{ AGC Batt Volt Adj.}$ 

## **CELL Tx AGC Limit Freq Chan Adj**

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A Tx Limit Freq Chan Adj}$ 

## CDMA TxAGC Max Power Limit Temperature Adjustment

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A Tx Limit Temp Adj.}$ 

## CELL TxAGC Closed Loop RF Power Measurement

 $\mathsf{CP} {\rightarrow} \mathsf{DB} {\rightarrow} \mathsf{DB} \text{ Templates} {\rightarrow} \text{ BAND A } {\rightarrow} \mathsf{CP} \text{ DB HWD BAND A } \mathsf{Tx} \text{ Pwr Detect}$ 

## CELL TxAGC Closed Loop Frequency Channel Adjustment

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND A  $\rightarrow CP$  DB HWD BAND A Tx AGC Pwr Det Freq Chan Adj.

## CELL TxAGC Closed Loop Battery Voltage Adjustment

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND A  $\rightarrow$  CP DB HWD BAND A Tx Pwr Det Max Pwr Batt Voltage Adj.

## **CELL TxAGC Closed Loop Temperature Adjustment**

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND A  $\rightarrow CP$  DB HWD BAND A Tx AGC Pwr Det Temp Adj.

## **CELL Rx AGC**

CP->DB->DB Templates-> BAND A ->CP DB HWD BAND A RxAGC CP DB HWD CELL RxAGC

# CELL Rx AGC Freq Chan Adj

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND A  $\rightarrow CP$  DB HWD BAND A Rx AGC Freq Chan Adj

# CELL Rx AGC Temp Adj

 $CP \rightarrow DB \rightarrow DB$  Templates $\rightarrow$  BAND A  $\rightarrow CP$  DB HWD BAND A Rx AGC Temp Adj

# 5.5.3Non-RF Database

## Init MS capabilities

 $\text{CP} \rightarrow \text{PS} \rightarrow \text{Database} \rightarrow \text{CP}$  Init MS Cap Db

CP Init MS Cap Db	
Send 🔽 Tack	

## **Clear MRU**

 $\mathsf{CP} \to \mathsf{PS} \to \mathsf{Database} \to \mathsf{CP} \ \mathsf{Clear} \ \mathsf{MRU}$ 

CP Clear MRU	
Send 🔽 Tack	

Window Selections	Definition
Send	The MRU (Most Recently Used Channels) is a list of (Band, Channel #) which is stored in Flash. At Power Up the CBP4 software first scans the channels in the MRU, and then goes to the PRL. Clearing the MRU ensures that the PRL will be scanned first.
	This command is particularly useful when a new PRL is downloaded to the phone.
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Init NAM	
$CP \rightarrow PS \rightarrow Database \rightarrow C$	CP Init Nam
CP Init Nam	

#### Init NAM

CP Init Nam	
Send 🔽 Tack	

Window Selections	Definition
Send	Initializes the NAM with default values
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

# **Select Active NAM**

 $\mathsf{CP} \to \mathsf{PS} \to \mathsf{Database} \to \mathsf{CP} \text{ Select Active NAM}$ 

🗖 CP Select Active NAT 💦 🔲 🗙
Send 🔽 Tack
Active NAM: NAM1

Window Selections	Options	Definition
Send		Send to set the active NAM
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Active NAM	NAM1	Select "NAM1" as the active NAM
	NAM2	Select "NAM2" as the active NAM

#### **Get active NAM**

CP Get Active NAM	
Send 🔽 Tack	

→ CP Get Active Nam
Definition
Send to get the active NAM
If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

## NAM Lock, Unlock

 $\text{CP} \rightarrow \text{DB} \rightarrow \text{CP}$  DB NAM Lock



Window Selections	Options	Definition	
Send		Send to Lock/Unlock the Active NAM	
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".	
DB NAM Status	Lock	This option locks the NAM and prevents modifications	
	Unlock	This option unlocks the NAM and allows modifications	
Confirm Change	Yes	Confirm the change you will perform	
	No		

#### Set the A-Key

 $CP \rightarrow PS \rightarrow Database \rightarrow CP$  Enter A Key

CP Enter AKey	
Send 🔽 Tack	
A-Key:[0	]
Checksum:[0	]
ESN:(0x00000000	]

Window Selections	Options	Definition
Send		Send to write the A-Key
A-Key		20 decimal digit A-Key
Checksum		6 digit checksum
ESN		32-bit (8 hexadecimal) ESN

Some Notes Regarding this command:

- 1. The A-Key is only updated in the Active NAM. Therefore the <u>Select Active NAM</u> command should be executed prior to this Akey command to explicitly select the NAM where the Akey should be updated.
- 2. The ValidAkey field in the NAM is asserted after this command is executed
- 3. The entire **Checksum** of the NAM structure is updated after this command is executed. To be explicit, please note that this NAM checksum is independent of the A-key checksum.
- 4. There is also a tool help you calculate A-Key checksum, find it from Utilities->A Key Calculator. Put the Akey and ESN number into calculator, click "Calculate Checksum".

	Calculate Akey Checksum	X
	Akey: 64 bits     Akey: 32 bits     ESN:     CheckSum:	Hex starts with Ox
0	Calculate Checksum	
	Is Checksum OK?	
	CP Enter Akey	
### **Data services**

PRL

Voice Memo 1

Voice Memo 2

Voice Rec 1

Voice Rec 2

5.5.4DB Clear, Flush, Cache

5.5.5DB Write

5.5.6DB Read

# 5.6Software Operation Status

# Release 5.6.1Software Version CP, DSPM, DSPV, ETS

### **CBP** Version

 $\mathsf{CP} \to \mathsf{MON} \to \mathsf{CBP} \text{ Version}$ 

CP CBP Version	
Send 🔽 Tack	

Window Selections	Definition
Send	Send to Log Details of CBP version in the ETS Main Log Window
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

### REV 0

🗖 Lain Log Vindov.	
Log	
17:21:47.9< ETS, Id=CP CBP Version 17:21:47.9> ETS, Id=CP CBP Version, Asic Type=ROM Rev D0, Chip Id Hi=0x0000, Chip Id Low=0x45d0 , DSPM Num Patches=11, DSPM Build Date=Fri 13-Jun-08, DSPM Build Time=12:45:37, DSPM Patch Revision=7.0.2.1 , DSPM Patch Address.0=0x1000, DSPM Match Address.0=0x828e , DSPM Patch Address.1=0x1011, DSPM Match Address.0=10x828e , DSPM Patch Address.2=0x10a7, DSPM Match Address.2=0x9acc , DSPM Patch Address.3=0x10a7, DSPM Match Address.2=0x9acc , DSPM Patch Address.3=0x10a2, DSPM Match Address.4=0x7201 , DSPM Patch Address.4=0x10b2, DSPM Match Address.4=0x7201 , DSPM Patch Address.5=0x10d4, DSPM Match Address.5=0x6927 , DSPM Patch Address.7=0x10b3, DSPM Match Address.7=0x14f9 , DSPM Patch Address.8=0x1158, DSPM Match Address.8=0x904c , DSPM Patch Address.8=0x1158, DSPM Match Address.9=0x4048 , DSPM Patch Address.1=0x1171, DSPM Match Address.1=0x4b48 , DSPV Patch Address.1=0x1171, DSPM Match Address.1=0x4b48 , DSPV Patch Address.1=0x1174, DSPM Match Address.1=0x4b48 , DSPV Patch Address.1=0x1041, DSPV Match Address.1=0x4b48 , DSPV Patch Address.1=0x1041, DSPV Match Address.1=0x94b48 , DSPV Patch Address.1=0x1041, DSPV Match Address.1=0x98e , DSPV Patch Address.2=0x1040, DSPV Match Address.1=0x98e , DSPV Patch Address.2=0x1041, DSPV Match Address.3=0x1430 , DSPV Patch Address.2=0x1040, DSPV Match Address.4=0x3111 , DSPV Patch Address.2=0x1040, DSPV Match Address.4=0x301d , DSPV Patch Address.5=0x1050, DSPV Match Address.4=0x301d , DSPV Patch Address.6=0x1050, DSPV Match Address.4=0x301d , DSPV Patch Address.6=0x1050, DSPV Match Address.5=0x3197 , DSPV Patch Address.6=0x1050, DSPV Match Address.5=0x3197 , DSPV Patch Address.6=0x1050, DSPV Match Address.7=0x141a	
CP Version	
$CP \rightarrow MON \rightarrow CP$ Version	
Send Tack	

### **CP Version**



Window Selections	Definition
Send	Send to Log Details of CP Flash code in the ETS Main Log Window
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".



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### **DSPM Version**

 $\mathsf{DSPM} \to \mathsf{DSPM} \; \mathsf{Version}$ 

DSPI Version	
Send 🔽 Tack	

Vindow Selections	I Version, Major=7, Minor=0, Patch=2, Month=1, Day=19, Year=7, Hour=14, Min=55 Definition
Send	Send to Log Details of DSPM Flash code in the ETS Main Log Window
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
DSPV Version DSPV → MON → DSPV N DSPV Version Send V Tack	/ersion
DSPV Version DSPV $\rightarrow$ MON $\rightarrow$ DSPV V DSPV Version Send $\nabla$ Tack	/ersion
DSPV Version DSPV → MON → DSPV \ DSPV Version Send Version Send Version Send Version	/ersion

Window Selections	Definition
Send	Send to Log Details of DSPV Flash code in the ETS Main Log Window
Tack	If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".

### **ETS Version**

 $\text{Help} \rightarrow \text{About EtsMain}$ 

About EtsMain	
EtsMain Version 6,0,0,0 Product Version 7,5,0	OK
Copyright (c) 2008, VIA Telecom, Inc.	
Oct 14 2008 19:09:43	
Project:vtui2_5x Ets Version:0.14.0	^
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\EtsMsg.txt	Jul 01, 20( 📄 👔
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cust\cust_defines.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\ps\ps_log_extra.txt C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\ps\ps_log_extra.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\etsver.txt	Nov 20, 21
C:\Program Files\VIA Telecom\ETS_Config\U.14.2_vtui2_5x_Selle_P1\msg_id.txt C:\Program Files\VIA Telecom\ETS_Config\U.14.2_vtui2_5x_Selle_P1\cp\mon\mon_cp_msg_i	Jun 06, 20 ditet
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\dbm\dbm_msg_id.txl	t Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\hwd\hwd_msg_id.txt	t Oct 08, 20
U:\Program Files\VIA_Lelecom\ETS_Config\U.14.2_vtui2_5x_Selle_P1\cp\pde\pde_msg_id.txt C\Program Files\VIA_Lelecom\ETS_Config\0.14.2_vtui2_5v_Selle_P1\cp\I1a\I1a_msg_id.txt	Jun 06, 20 Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_11\cp\11d\11d msg_id.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\lmd\lmd_msg_id.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\ps\ps_msg_id.txt	Jul 14, 20(
L:\Program Files\VIA_Lelecom\ETS_Config\0.14.2_vtui2_5x_Selle_PT\cp\val\val_msg_id.txt C\\Program Files\VIA_Lelecom\ETS_Config\0.14.2_vtui2_5x_Selle_PT\cp\val\val_msg_id.txt	NOV 06, 21 Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\ai\ai_msg_id.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\hl\hl_msg_id.txt	Jun 06, 20
U:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\cp\ui\ui_msg_id.txt	Jun 06, 20 Jun 06, 20
C:\Program Files\ViA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_F1\Cp\ullin\ullin\nisg_ld.txt	Jun 06, 20
C:\Program Files\VIA Telecom\ETS_Config\0.14.2_vtui2_5x_Selle_P1\dspv\dspv_msg_id.txt	Jun 06, 20 💌

# 5.6.2Memory Peek

### **CP Peek**

 $CP \rightarrow MON \rightarrow CP Peek$ 



Window Selections	Options	Definition
Send		Send to Peek the CP Memory Location(s) or Register(s)
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Address		Address of CP Memory or Register

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Window Selections	Options	Definition
Words(16)		Number of words, up to 16 to Peek. Valid values: 1-16
Addr Adv	Memory (advanced by 2 bytes)	Use this option to Peek Memory
	Register (advanced by 4 bytes)	Use this option to Peek Registers

### **DSPM Peek**

 $DSPM \rightarrow DSPM$  Peek

DSPI Peek	
Send 🔽 Tack	
Address:[0x0000	]
Words (16):[0x0001	]

10298 401 AA

Window Selections	Options	Definition
Send		Send to Peek the DSPM Memory Location(s) or Register(s)
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Address		Address of DSPM Memory or Register
Words(16)		Number of words, up to 16 to Peek. Valid values: 1-16
DSPV Peek	j.	
DSPV $\rightarrow$ MON $\rightarrow$ DSPV Peek		
$\sim 0^{1}$		

### DSPV Peek

DSPV Peek	
Send 🔽 Tack	
Address:[0x0000	]
Words (16):[0x0001	]

Window Selections	Options	Definition	
Send		Send to Peek the DSPV Memory Location(s) or Register(s)	
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".	
Address		Address of DSPV Memory or Register	
Words(16)		Number of words, up to 16 to Peek. Valid values: 1-16	

# 5.6.3Memory Poke

### **CP Poke**

 $\mathsf{CP} \to \mathsf{MON} \to \mathsf{CP} \; \mathsf{Poke}$ 

CP Poke		
Send 🔽 Tack		
Address:[0x0000000	]	
Words (16):[0x00	]	
Addr Adv: Memory (advanced by 2 bytes)	•	
Data:		
		$\langle O \rangle$
		0
		CV
		20
		0
	<u></u>	

Window Selections Options		Definition		
Send		Send to Poke the CP Memory Location(s) or Register(s)		
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".		
Address		Address of CP Memory or Register		
Words(16)		Number of words, up to 16 to Poke. Valid values: 1-16		
Addr Adv	Memory (advanced by 2 bytes)	Use this option to Poke Memory		
	Register (advanced by 4 bytes)	Use this option to Poke Registers		

# **DSPM** Poke

 $\mathsf{DSPM} \to \mathsf{DSPM} \; \mathsf{Poke}$ 

DSPII Poke	
Send 🔽 Tack	
Address:[0x0000	]
Words (16):[0x0000	]
Data:	
	<u> </u>
L	~

Window Selections	Options	Definition V
Send		Send to Poke the DSPM Memory Location(s) or Register(s)
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Address		Address of DSPM Memory or Register
Words(16)		Number of words, up to 16 to Poke. Valid values: 1-16
DSPV Poke		Rel
$DSPV \to MON \to DSPV \ P$	oke	
DSPV Poke		

### **DSPV** Poke

DSPV Poke	
Send 🔽 Tack	
Address:[0x0000	]
Words (16):[0x0000	]
Data:	
	~
	~
N.	

Window Selections	Options	Definition
Send		Send to Poke the DSPV Memory Location(s) or Register(s)
Tack		If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send".
Address		Address of DSPV Memory or Register
Words(16)		Number of words, up to 16 to Poke. Valid values: 1-16

, tt

### 5.6.4Disabling All Spies And Traces

### 5.6.5Msgs Buffer Stats Spy

 $\text{CP} \rightarrow \text{Spy} \rightarrow \text{MON} \rightarrow \text{CP}$  Msg Buff Stats



显示消息缓冲区的信息。

Window Display	Description
Print	如果选中,窗口中的信息将显示在 main log window 中
Sys Time	
Num Msg Buffs In Use	当前从缓冲区 1-4 中分配的消息总数量
Max Num Msg Buffs Used	曾经从缓冲区 1-4 中分配的消息的最大数量
Num Msg Buffs[1:4] In Use	缓冲区 1-4 中,当前分配的消息数量
Max Num Msg Buffs[1:4]	缓冲区 1-4 中,曾经分配的消息的最大数量
Max Msg Buff[1:4] Size	缓冲区 1-4 中,可分配的消息的最大字节数

# 5.6.6Msgs Mbox Stats Spy

 $\text{CP} \rightarrow \text{Spy} \rightarrow \text{MON} \rightarrow \text{CP}$  Msg Mbox Stats

- 0	CP Isg II	oox Stats	
	Print 16	3	
S	iys Time: Dxa4	1e4eaa	
	Data:		
_	Task Id	Num Msa:	\$
1	IPC	0	
2	IUP Secol	2	
3	opare i L1D Mdm	0	
4	MON	0	
8	MON Idle	0	
7	HWD	0	
8	DBM	0	
9	TST	0	
10	PSW	1	
11	LMD	0	
12	LMD S	0	
13	VAL	0	
14	L1D Amp	0	
15	RLP	0	
16	HLW	0	
17	AlW	0	
18	Spare2	0	
19	PSW S	0	
20	Spare3	0	
21	PDE	0	
22		1	
23	UIM	0	
24	FSM DM	0	
20		0	
20	ESIM PST	0	
28	101 5	0	
29	BBEW	0	
30	Media	0	
		-	

显示任务消息队列的状态。

Window Display	Explanation
Print	如果选中,窗口中的信息将显示在 main log window 中
Sys Time	
Task Id	任务 ID
Num Msgs	任务消息队列中的消息数量
$\sim$	

# 5.6.7Msgs Buf Ptr Stats Spy

 $\mathsf{CP} \to \mathsf{Spy} \to \mathsf{MON} \to \mathsf{CP}$  Msg Buff Ptr Stats

E		P ∎sg Buf	f Ptr Sta	nts 📃 🗆 🔀
		Print 299		
	S	ys Time:0xa420	)bc93	
		Data:		
		Alloc By Task	Sent To Task	Msa Id
	1	L1D Mdm	PSW	11
	2	L1D Mdm	PSW	4
	3	IPC	LMD	0
	4	255	255	255
	5	255	255	255
	6	255	255	255
	7	255	255	255
	8	255	255	255
	9	255	255	255
	10	255	255	255
	11	255	255	255
	12	255	255	255

	5 6 7 8 9 10 11 12	255 255 255 255 255 255 255 255 255	255 255 255 255 255 255 255 255 255	255 255 255 255 255 255 255 255 255				
显示	消息	指针的有关1	信息。					
	W	/indow Displ	ay	Explanation				
Prin	Print			如果选中,窗口中的信息将显示在 main log window 中				
Sys Time								
Allo	Alloc By Task			创建消息的任务 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				
Sent To Task				接收消息的任务				
Msg	ld			消息 ID 《 C V V				

### **5.6.8Action Time Stats**

CP->Spy->MON->CP Action Time Stats



Window Display	Explanation
Print	
Sys Time	
Num Action Times In Use	
Max Num Action Times Used	

### 5.6.9Clear TDSO Stats

- 5.6.10 **Clear FER**
- **5.7CBP Hardware**
- 5.7.1HW Version
- 5.7.2Reset Processor
- CP, DSPM, DSPV

### 5.7.3Initializing Hardware Control

### 5.7.4Hwd Init

CP HVD Init	
Send 🔽 Tack	

5.7CBP Hardware		
5.7.1HW Version		1+
5.7.2Reset Processo	)r	
CP, DSPM, DSPV		×0 <sup>1</sup>
5.7.3Initializing Ha	dware Control	S
5.7.4Hwd Init		
$CP \rightarrow HWD \rightarrow HWD$ Init	<	2010
CP HTD Init Send I Tack		
		<b>.</b>
Window Selections	Cond to Initialize Hardware Driver	Definition
Tack	If checked, the window will remain close after clicking "Send".	after clicking "Send". If not checked, window will

# 5.7.5Aux ADC Get

 $\mathsf{CP} \to \mathsf{HWD} \to \mathsf{CP} \ \mathsf{AUX} \ \mathsf{ADC} \ \mathsf{Get}$ 

1	CP AUX ADC Get
	Send 🔽 Tack
	AUX ADC Channel: AUX ADC Ch0
	Tx PCG Sync: Off

Window Selections	Options	Definition
Send		Send to Read the AUX ADC Channel

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### Window Selections Options Definition Tack If checked, the window will remain after clicking "Send". If not checked, window will close after clicking "Send". AUX ADC Channel AUX ADC Ch[0-15] Read the Relevant AUX ADC Channel. There are 16 channels [0-15] Tx PCG Sync Off Take the AUX ADC reading immediately Wait till an Active PCG to make a measurement. This is On especially usefully for measuring Transmit Power from the Power Amplifier; selecting this option ensures that the Power Amplifier is ON.

# **6** Utilities

# 6.1Virtual MMI

pad. child Utilities -> Virtual MMI Utility, operate the handset just link press keypad. (



# 6.2Script Utility

Utilities -> Script Utility

The following steps descript how to record an ETS script. Give an example of record data of command cp->DB->DB Templates->common->cp DB NAM 1, CP/DB/DB Templates/cellular/CP DB HWD Rx AGC.

1. Connect the phone to your computer, make sure all connection is ok.

0

2. Open **ETS**.

3. Run script thru **Utilities -> Script Utility**. In the **Script**, Select **Script->Record** command to let Script application in Recording status. Then Script.exe will record all commands that printed in ETS main window.



4. In ETS application, select CP->DB->CP DB NAM LOCK command to unlock the NAM. Then select CP->DB->DB Templates->common->CP DB NAM 1 command to open the dialog of CP DB NAM1. And select CP->DB->DB Templates->BAND A->CP DB HWD BAND A Rx AGC to open the dialog of CP DB HWED Rx AGC. If you want record more you can select the commands you want to record.



<b></b>									
Etslair	- USB1								
<u>F</u> ile <u>D</u> ebug	<u>C</u> P DSPM	DSPV	RF	Utilities	<u>W</u> indow	Help			
🗖 Nain Lo	<u>T</u> race								
Log	мом								
206	Flash	• 📃							
	DB	) c	P DB	Clear		1			
	HWD	► c	P DB	Cache					
	PDE	• c	P DB	Flush					
	L1A	• D	B Rea	ad	•				
	L1D		B Wri	ite	•				
	LMD		P DB	NAM Lock					
	rs VAT		r DB B Tee	NAM Lock S	tatus	Common		CP DB NAM1	
	RLP		<u>л 1</u> еп	ipraces		BAND A	•	CP DB NAM2	
	AIW	• I				BAND B	•	CP DB PSW MRU1	
	HLW	•				BANDC	•	CP DB PSW MRU2	
	л	•				BAND D	•	CP DB PSW MS CAP DB	
	VIM	•				BAND E	•	CP DB MMI	
						Service History 🕨	•	CP DB PSW MISC	
								CP DB HSPD	
								CP DB HWD AFC Data	
								CP DB HWD Temperature Data	
								CP DB HWD Temp Offset Data	
								CP DP NWD PDW V-1+ D-+-	
								CF DE HWD BandGan Trim Data	
								CP DB HWD Tx Filter Data	
								CP DB HWD AFC Temp Adj	
								CP DB HWD IAFC Value	
			5	2011					

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<u>F</u> ile <u>D</u> ebug	<u>C</u> P DSP <u>M</u>	DS	SP <u>V</u> RF Utilities	<u>W</u> indow	<u>H</u> elp		
Junin Lo	<u>T</u> race	۲					
	Spy						
Log	MON						
	Flash		L				
	DB		CP DB Clear				
	HWD	!	CP DB Cache				
	PDE	!	CP DB Flush				
	LIA	!	DB Read				
	LID	!	DB Write	•			
			CP DB NAM Lock				
	rs		CP DB NAM Lock St	atus			
	VAL	Ϊ,	- DB <u>T</u> emplates	· ·	Lommon		
	KLF ATW	[]			BAND A	4	CF DE HND BAND A IX AGU
		[]			DANU D		CF DD RHD DAND A IX AGC Freq Chan Adj
		[]			DANU C		CF DE RED BAND A IX AGE Iemp Adj
	1111	.			DAND D		CF DD RHD DAND A IX AGE Dattery Adj
	OTW	<u> </u>	1		DANU L Constine Vietore		CF DE RED BARD & IX Limit Freq Chan Adj
				L	Service Aistory	-	CF DE HND BAND A IX Limit lemp Adj
							CF DD HWD DAND A IX Limit Dattery Adj
							CF DD RHD DARD A IX FWF Detect
							CF DD RHD DARD A IX FWF Det Freq Adj
							CF DD RWD DAWD A IX FWF Det lemp Adj
							CP DE HWD BAND & Ex IWF Det Dattery Adj
							CP DE HWD BAND & Ry ACC Eyes Char Add
							CP DE HWE BAND & Ry ACC Trey chan Adj
						L	CI DD JUD DAND A NA AGC TEMP AU

09:45:37.9> , Id=CP Printf, Sys Time=0xA27B8C4B, AppCallDebug: OnRssiChanged

5. Click the "Read" commands in all dialog, For example In CP DB NAM1 dialog press the key "Read" to read NAM1 data from the phone, and in "CP DB HWD BAND A Rx AGC " dialog , press the key "Read" to read Rx AGC data from the phone.

SEMO

CP DB WAHI
Write 🔽 Tack Read
MobTermNid: TBLIF
BcastAddrLen:0
BcastAddr:
Heserved4:*
Mannumpigits:ju j
HomeSid:[231
Ex:[0
Analog FirstChP:[333 ]
Analog Dtx:[0 ]
Analog FccA:[333 ]
Analog LccA:[313 ]
Analog FccB:[334 ]
Analog LccB:[354 ]
NXTREGsp:[0 ]
SIDsp:[0
LOCAIDsp:[0
PUREGsp:
CDMA Pri Ch A:[283
CDMA Sec Ch A:[691
CDMA Pri Ch B:(384 ]
CDMA Sec Ch B:(777 J
ValidAKey:Valid
VP_Enable: Disabled
Reserved6:
SMS TL Max Retry:[0 ]
UIM ID:0x8311a2d8
SV

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CP DB HWD BAND A Rx AGC							
Write 🔽 Tack 🛛 🕅	ead						
BAND A DI	igital Gain States: Con	aital Gain States					
BAND A Bef	erence Level dB (-95.)	nnnnn					
BAND & Befer	rence Gain State:[5		1				
Beference Digi	ital Gain Settings:		1				
Diai BitSel	ital Gain Settings.	Diai Gain					
1 -4 40							
Gain Sta	ite Switch Levels:	Honer Switch	Level dB				
1 -35.000000	0.000000	Obber Switch					
2 -50.000000	-29.000000						
3 -70.000000	-44.000000						
4 -83.000000	-64.000000						
5 -93.000000	-80.000000						
6 -120.000000	-88.000000						
7 0.000000	0.000000						
8 0.000000	0.000000						
Gain State Trans	sition Parameters:	Lia	h Stop Dolay Count				
1 15.156250 0	UW STED DEIAV COUNT	0					
2 19.640625 0		0					
3 19.765625 0	l	0					
4 10.203125 0	l	0					
5 6.234375 0		0					
6 0.000000 0		0					
7 0.000000 0		0					
High Gain	Hyst Parameters:						
High Gain Hyst Thresh	nold dB	High Gain Hy	ist Delay Count				
1 -92.000000	10						

6. Then in ETS, click "Write" in all dialogs that you have opened. In CP DB NAM1 dialog press the key "Write" to write NAM1 data into the phone, then this command will be printed in ETS main window and be sent to Script.exe. It will be recorded in the Script.exe main window. In "CP DB HWD BAND A Rx AGC " dialog press the key "Write", the Rx AGC data will be recorded into script main window. (See Picture <4>)

□ 无标题 - Script	
<u>F</u> ile <u>E</u> dit <u>S</u> cript <u>H</u> elp	
🔁 🗅 🚅 🔚 🔏 📽 😢 🕨 🖃 🦞 🖉 🖉 🕀 🔉 🖓	
ETS, Id=CP DB NAM Lock, DB NAM Status=Unlock, Confirm Change=Yes	^
WAIT 3609	
ETS, Id=CP DB Read, DB Id=CP Read, Segment=DB PSW NAM1, Offset=0, Bytes=548	
DatabaseRead=CP DB NAM1	
WAIT 2188	
ETS, Id=CP DB Read, DB Id=RF Read, Segment=DB HWD BAND A RXAGC, Offset=0,\	_
Bytes=110	-
DatabaseRead=CP DB HWD BAND A R× AGC	
WAIT 3912	
natabase=CB.DB.NAM1_ESN=0vff0.4ffff_SCM=0v2a.0vaa.0v00.0v20.0va8.V	
SlotCycleIndex=2 MohFirmBey=0 MohModel=0 MohPBey=6 6 0 6 6 \	
ValidZoneEntry=1 Zonel ist BegZone=11 Zonel ist Sid=14121 Zonel ist Nid=1 \	
Zonel ist AneTimer=0. Zonel ist TimerEnabled=0. Zonel ist PcsBlock=0.\	
ZoneList BandClass=Band Class 0. ValidSidNidEntry=1. SidNidList Sid=14121.	
SidNidList Nid=1, SidNidList AgeTimer=0, SidNidList TimerEnabled=0,\	
SidNidList PcsBlock=0, SidNidList CdmaBand=Band Class 0, BaseLat=434604,\	
BaseLong=1730256, Distance=0x0000, LockCodeReason=0x00, MaintReason=0x00,\	
DigitalReg=0, PrefBand=Eng Pref Band 0 Only,\	
PrefMode=Eng Pref Mode Cdma Only, PrefBlockBand1=All Blocks,\	
PrefServBand0=Eng Pref Sys A, PRL PRev=1X95_683_A_B, Reserved1=, Reserved2=,\	
Reserved3=, Count=0, ImsiMValid=Valid, ImsiTValid=Not Valid, M_MCC=359,\	
M_IMSI_11_12=92, M_IMSI_S2=503, M_IMSI_S1=15716883, M_IMSI_Class=0,\	
M_AddrNum=0, T_MCC=0, T_IMSI_11_12=0, T_IMSI_S2=0, T_IMSI_S1=0,\	
T_IMSI_Class=0, T_AddrNum=0, AssignTmsiZoneLen=0x00,\	
AssignTmsiZone=0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x0	
TmsiExpTime=0x0000000,\	
Positive Sids=14121 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Positive Nide=65535 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

7. Switch to **script**, select **Script->Record**, to stop recording the script, and save the script in a file. The file will be saved as \*\*\*\*\*.srp. Then you have recorded the NAM1 data in a script file.

**Note:** Usually if you want to run the write NAM data into the phone, you should set the NAM unlock. So you need add the command "ETS, Id=CP DB NAM Lock, DB NAM Status=Unlock, Confirm Change=No" in the first line of script file. This command can also be directory recorded into script file. The script file is TXT file, so you can edit it, copy some ETS command into the file.

# **Revision History**

Revision	Date	Descriptions
1	2012-06-05	Created
2		
2		
		sontidential Release tor the