XCAL Common User Guide

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3

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Revision History

Doc Revision	Product Release Version	Date of Release	Note
0	3.2		
1	3.2		
2	3.2		
3	3.2	2012 Sep	AutoCall update
4	3.2	2012 Sep	System Requirement update

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ntroduction

Overview

XCAL is a real-time software solution for wireless network optimization and performance measurement. It interfaces Test Terminals such as Mobile Phones, Modems, Network Cards, and Scanners to collect Data and to perform QoS Tests

XCAL collects Layer 1, 2, 3 messages, and TCP/IP packets from both the air and data interface of all commercially available technologies [CDMA IS95A/B, 1XRTT, EVDO (Rev. 0, Rev. A, and Rev. B), GSM, GPRS, EDGE, UMTS, HSDPA, HSUPA, HSPA+, DC-HSDPA, WiMAX, and LTE].

It also performs various QoS Test on Voice and Data Service by embedded automated Call Scripts.

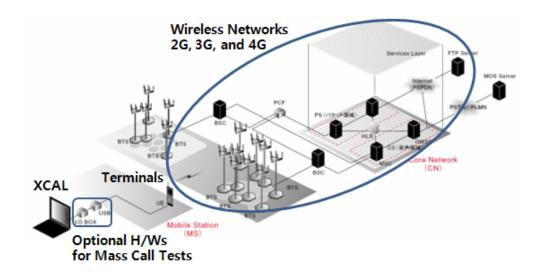
XCAL combines RF Air Interface information and QoS Tests in same platform for overall performance measurement and analysis.

XCAL has been also proven as a good solution in global to significantly reduce overhead and improve operational efficiency.

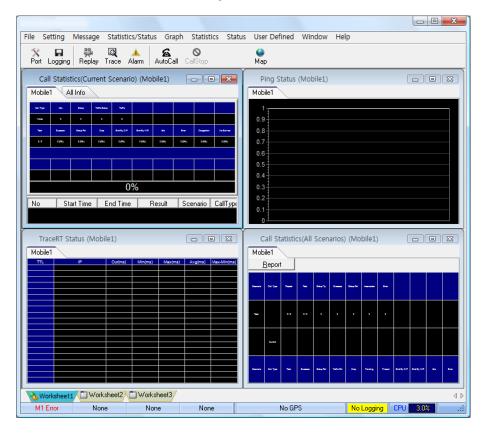
XCAL is basically developed for Single PC (Laptop) solution but it could be extended to Mass Call Test Solution with additional H/Ws to run quite a lot of Terminals in parallel for benchmarking test and Capacity test.

XCAL could be classified to various product names by the license options included.

For example, XCAL is generally called as XCAL-X with WiMAX License only.



XCAL System Overview



XCAL Program Main Screen

Features

The key features of XCAL are as follows:

- To collect data over both layer 1/2/3 messages and TCP/IP packets simultaneously of different technologies.
- To support CDMA IS95-A/B, 1XRTT, EVDO (Rev. 0, Rev. A, and Rev. B), GSM, GPRS, EDGE, UMTS, HSDPA, HSUPA, HSPA+, DC-HSDPA, WiMAX, and LTE.
- To support Various Mobile Chipsets.

CDMA/EVDO: Qualcomm chipset & VIA Chipset

GSM/GPRS/EDGE: Qualcomm Chipset & Nokia Chipset

WCDMA/HSDPA/HSUPA:

Qualcomm chipset, Nokia Chipset, Samsung Chipset, Icera Chipset & Infineon Chipset

DC-HSDPA: Qualcomm Chipset

HSPA+: Qualcomm Chipset & Infineon Chipset

WiMAX:

Runcom Chipset, Beceem chipset, GCT Chipset, Sequans Chipset, Intel Chipset, MediaTek Chipset, Samsung Chipset

LTE:

Qualcomm Chipset, LGE Chipset, Samsung Chipset, GCT Chipset, Sequans Chipset, Altair Chipset, HiSilicon Chipset

• To support Various Scanners.

PCTel Scanner: LX Scanner, EX Scanner, PCI Scanner (MX Scanner by OCT-2011)

Anritsu Scanner: 8720, 8740, 8780

DRT Scanner: CDMA/EVDO, GSM/WCDMA, WiMAX (LTE by the end of 2011)

Panasonic Scanner: WCDMA

R&S Scanner: TSMW (LTE only), (TSMQ & TSMW by the end of 2011)

• To log and decode RRC/NAS/RLC/RLP, and TCP/IP message in real-time platform

- To display measured data in various types of viewer window
 Line Graph, Bar Graph, Map View, Table View, Statistics View, and Message View in real-time.
- To support automatic call scripts and QoS measurements
 Voice, FTP, HTTP, UDP, Email, VoIP, VOD, Ping, IPerf, SMS/MMS Call Tests
 Voice MOS & Video MOS measurements
- To support Audible and visible Alarm for important events.
- To support log file (DRM and Qualcomm MDM) replay.
- To support GPS interface and GIS mapping plot.
- To support an export a Log to CSV file format.
- To support an export a log to Google & MapInfo map format.
- To support a favorite and template screen view.

System Requirements

Before you begin, ensure that your system meets the following requirements.

Μ	inimum

Item	Minimum
CPU	Pentium Dual Core processor,
CPU	1.5 GHz or higher processor
Monitor	1024 * 768(16bit) or above
RAM	2GB or above
Hard Drive	120GB or larger hard disk for collecting data
Operation	Windows VD or higher
System	Windows XP or higher

Recommended

Recommended system requirement varies depending on mobile chipset type.

[For 3G/WiMAX]

Item	Recommended
CPU	Pentium Core2Duo processor,
	2.0 GHz or higher processor
Monitor	1280 * 1024(32bit) or above
RAM	4GB or above
Hard Drive	300GB (7200 RPM) or larger hard disk for collecting data
Operation System	Windows XP or higher

[For LTE]

Item	Recommended
CPU	Core I5 processor or higher processor
Monitor	1024 * 768(16bit) or above
RAM	4GB or above
Hard Drive	500 (7200 RPM) or larger hard disk for collecting data
Operation System	Windows XP or higher

Getting Start

Components

Following components are provided with purchase.

- Software Installation CD (include User Guide) or S/W file in Web Link.
- Key Lock Dongle (USB) or S/W license file.
- Optional GPS Antenna (USB)

Installing Software (with Setup Package)

Before installation of new Setup Package, you are kindly requested to uninstall old XCAL if you have it already installed before.

Following procedure enables you to install XCAL software on test PC appropriately. All applications should be closed on your PC before beginning installation.

1. Insert the supplied CD-ROM into your CD-ROM drive.

The CD-ROM shall automatically run, and installation wizard is started.

If the installation window does not appear, find the **setup.exe** from the supplied CD-ROM/XCAL Setup.

(In case you have a Setup S/W via Web Link, please find the **setup.exe** and run it.)

2. Installation wizard is started, read carefully and follow installation instructions properly.

The S/W will install the following S/W modules;

- > XCAL main S/W application
- Microsoft Dot Net Frame Work Application (Only for Windows XP)
- SmartMap Engine Application
- WinPCAP Application
- > HHD Serial Port Monitoring Module
- MapXtreme OEM Application
- Microsoft Dot NetFrame Work Application
- 3. In middle of Installation, you will be requested the following things;
 - Type Name and Company Name
 - > Assign Program Group and Program Folder

(In default, it will use 'ACCUVER' as Program Group and 'program files/ACCUVER/XCAL' or 'program files(x86)/ACCUVER/XCAL' as Program Folder.)

Press <Next>, <Update>, <OK>, and <Finish> buttons.

Installing Software (with Patch Files)

Before installation of new Patch files, you must have XCAL installed before.

Following procedure enables you to install XCAL software patch on test PC appropriately. All applications should be closed on your PC before beginning installation.

1. Download a S/W patch from Web Link provided by ACCUVER.

A S/W patch is generally provide in Zipped file. You are kindly requested to unzip it after downloading.

2. Copy and Paste all unzipped files and folders into the folder where previous XCAL was installed. Please replace all files with the Patch Files.

Installing License (with USB License Dongle)

If you have a USB License Dongle, please be sure to install a Driver File first before to plug in. If not, please skip this procedure.

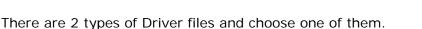
Following procedure enables you to install XCAL software patch on test PC appropriately. All applications should be closed on your PC before beginning installation.

- 1. USB Dongle Driver files are in the folder of 'Driver' in root folder of XCAL as following;
 - HASP Win7 64bit driver HASP4 keylock driver Rainbow Keylock driver Safenet keylock driver

Evaluation USB Dongle License (Time-Locked)

HASP Win7 64bit driver : Driver file for Windows 7 64 Bit OS HASP4 Keylock driver : Driver file for Windows XP, Vista, 7 32 bit OS

Commercial USB Dongle License (Permanent License)



Rainbow Keylock driver : Driver file for Windows XP, Vista, & 7 Safenet KeyLock driver : Driver file for Windows Vista, & 7

- 2. Run Setup Files of proper license driver.
- 3. After installation, plug in a USB Dongle.

Installing License (with machine code)

If you have a License based on S/W file license on your machine code, please follow these steps to install a License File. If not, please skip these procedures.

- 1. Download a License Manager Application from ACCUVER.
- 2. Run it and get machine code file of your Laptop.

When Machine Code file (*.mc) is created, send it to ACCUVER.

3. ACCUVER will provide a proper license file on a given Machine Code.

Please keep in mind that a S/W license will work only on a matched machine code. It could not be transferrable to other laptop.

4. Run a License Manager Application again and register(Add) a License File.



Please make it sure that you have a good internet connection.

A S/W license is requested once to check

Rate	Application	Expire	Get MachineCode
			Add License
			Delete License

Installing License (with Network License)

If you have a License based on Network License Server, please follow these steps to install a License File. If not, please skip these procedures.

1. Open an URL of License Server.

Please contact to your Network License Manager to know the URL.

Please use an MS Internet Explorer 8 or older in Web Browsing.

2. On first access, you are requested to install an Network License ActiveX.

Please disable all firewall and lower security level.

- > go to Internet Options and Advanced,
- run Restore advanced settings
- run Reset Internet Explorer settings
- Check if "Allow software to run or install even if the signature is invalid" is checked or not. If not, check this one.

eneral	Security	Privacy	Content	Connections	Programs	Advanc
Setting	s					
© Sec	Just displa curity Allow activ Allow activ	wit unkno withe resi re content re content wore to ru	win addres ults in the r t from CDs t to run in f	to run on My Co files on My Com even if the sig e revocation	omputer* puter*	
>>>	Check for Check for Do not say Empty Ter Enable DO Enable Int	server cei signature: ve encrypi nporary Ir M Storage egrated V	rtificate re s on downl ted pages nternet File e Vindows Ac	vocation* oaded program to disk is folder when l uthentication*		osed +
Reset Rese cond	Internet Ex ets Interne lition.	plorer set t Explorer	tings 's settings	to their default	KCS	et

3. Log in to a License Server Web Page.

Please contact to your Network License Manager to know ID and PASS.

001001100100000001	Accurer ACCUTAGE and VERIfied TAM equipment Welcome to ACCUVER product registration web-site.
Harmonized relationship With cellular operatores	Access to SWKey web-site, download ActiveX patch version, and reboot your system.
(* Support Site	USER ID PASSWORD LOGIN

4. After Log on, you will see the page of 'Key (Network License) download'.

Please click the button of 'Key Download' to get a Network License.

Then move to 'Product Download' part to get a XCAL Main S/W Package.

	Αςςι	IVER		
		Ified T&M equipment		
	* Notice			
AP(ALU)Test-100401	Data Not found			
	+ ALU Key User Inform	mtion		
	Login ID	jachward3	Name	1/h
Notice	Email	ijh5634@innowireless.co.kr	Valid During	30 Days
Product Download	-			
Key Manager	* When you format y	our PC, please return your License Key.		
to US tech Support 469-341-6100 option 2		C	• Key Download	
	· · · · · · · · · · · · · · · · · · ·			
	the state of the s			
	Product information Product	XCAP		

- 5. Network License will be valid for an allowed Time Duration in Network Server.
 - Once a Network License is given, same license is not allowed to be regenerated until expiry of allowed Time Usage.
 - When you need to handover your license to others before expiry, you must return your license to Network Server.

The process of Returning License is following;

- A. Log in to Network Server
- B. After log on, there will be 2 options of 'Key Restore' and 'Key Extend'.
- C. Click the button of 'Key Restore' and now the pre-occupied license is released.
- When you want to use a Network License after Expiry, please click the button of 'Key Extend' instead of 'Key Restore' in above procedure.

Setting for Windows OS

The following Windows settings are requested to assure a correct test and get a best test result.

Set Item	State	Purpose
Firewall	Off*	To access to mobile station
Windows Update	Not automatically	To maximize the performance of data call
Synchronization with Internet Time	Not synchronized	To prevent a logging time from being mixed up owing to the automatic change of time by this synchronization with the time from internet server
User Account Control	Off	To create a log file of call test
Etc.		To maximize the performance of data call, all programs accessing to Internet network automatically such as messenger, Internet Explorer should be closed.

Remark)

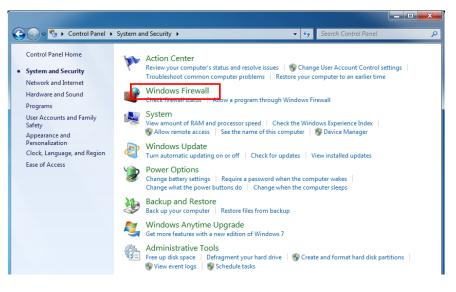
*: When XCAL LTE S/W is launched, firewall is automatically set as Off. But, to check whether this automatic setting is done well may be required according to your PC system.

See the following procedures to set the above items according to Windows OS.

Windows7

[Firewall]

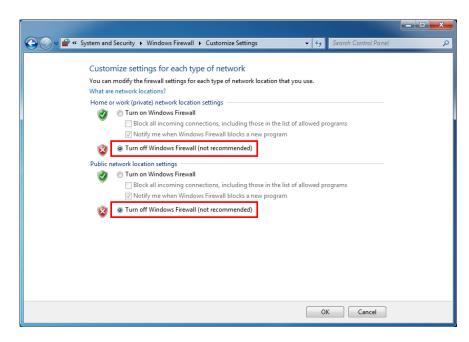
1. Go to Start – Control Panel – System and Security – Windows Firewall.



2. Select Turn Windows Firewall on or off.

Control Panel >	System and Security Windows Firewall	- 4 Search Control Panel
Control Panel Home Allow a program or feature through Windows Firewall Change notification settings Turn Windows Firewall on or off Restore defaults Advanced settings Troubleshoot my network	Help protect your computer with Wi Windows Firewall can help prevent hackers or m through the Internet or a network. How does a firewall help protect my computer? What are network locations? What are network locations? Home or work (private) netw Networks at home or work where you know an Windows Firewall state: Incoming connections: Active home or work (private) networks: Notification state:	ndows Firewall nalicious software from gaining access to your computer works Connected
See also Action Center Network and Sharing Center	Public networks	program Not Connected 🕥

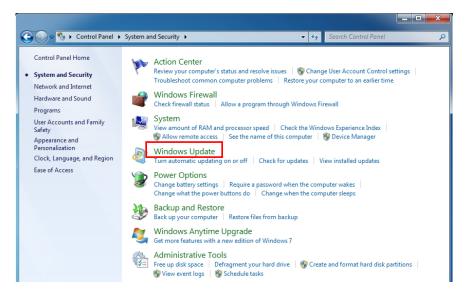
 Select the checkbox for Turn off Windows Firewall (not recommended) of Home or work (private) network location settings, and select the checkbox for Turn off Windows Firewall (not recommended) of Public network location settings.



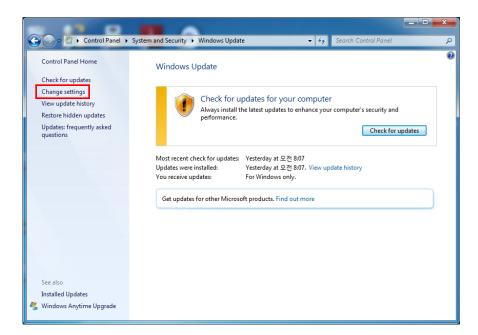
4. Click OK.

[Windows Update]

1. Go to Start – Control Panel – System and Security – Windows Update.



2. Select Change settings.



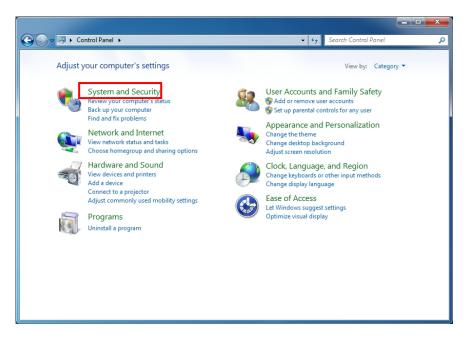
3. Select Never check for updates (not recommended).

ystem and Security > Windows Update > Change settings • 47 Search Control Panel	Q
Choose how Windows can install updates When your computer is online, Windows can automatically check for important updates and install them using these settings. When new updates are available, you can also install them before shutting down the computer. How does automatic updating help me? Important updates	
Never check for updates (not recommended) Install new updates: Every day 기 at 오전 3:00 기	
Recommended updates Image: Size of the same way I receive important updates	
Who can install updates Ø Allow all users to install updates on this computer	
Note: Windows Update might update itself automatically first when checking for other updates. Read our privacy statement online.	
OK Cancel	

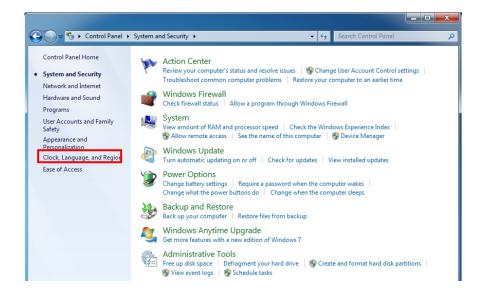
4. Click OK.

[Synchronization with Internet Time]

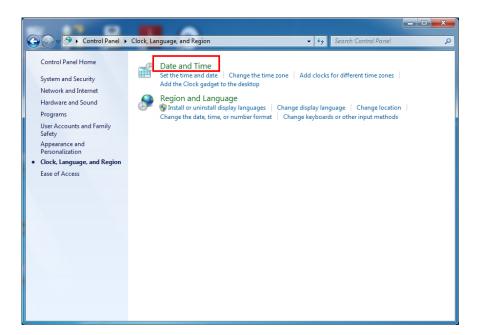
1. Go to Start - Control Panel - System and Security.



2. Select Clock Language and Region.



3. Select Date and Time.



4. **Date and Time** window appears. Select **Internet Time** tab, and click **Change settings...** button.

Date and Time	×
Date and Time Additional Clocks Inter	net Time
This computer is not set to automat server.	ically synchronize with an Internet time
	Change settings
What is Internet time synchronization	<u>n?</u>
	OK Cancel Apply

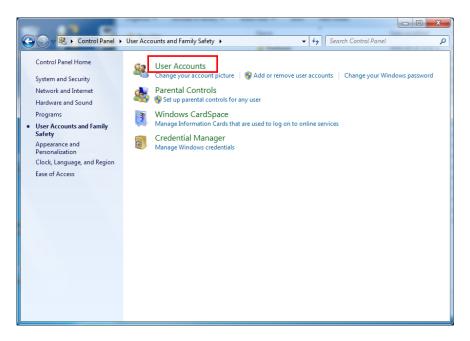
5. Unselect the checkbox for Synchronize with an Internet time server.

Internet Time Settings	x
Configure Internet time settings:	
Synchronize with an Internet time server	
Server: time.windows.com	▼ Update now
	OK Cancel

6. Click OK.

[User Account Control]

1. Go to Start – Control Panel – User Accounts and Family Safety – User Accounts.



2. Select Change User Account Control settings.



3. Move the control bar at the lowest level.

User Account Control Tell me more about U	be notified about changes to your computer helps prevent potentially harmful programs from making changes to your computer. ser Account Control settings
Always notify	
- [-	Never notify me when:
	 Programs try to install software or make changes to my computer I make changes to Windows settings
 Never notify	Not recommended. Choose this only if you need to use programs that are not certified for Windows 7 because they do not support User Account Control.
	Cancel

4. Click OK.

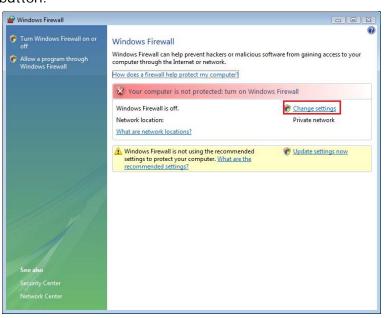
Vista

[Firewall]

 Go to Start – Control Panel –Security. Select Windows Firewall tab.

C Windows Security Center		101000
 Western Upstein Western Frenzill Western Detender 	Security essentials To help potent your computer, make sum the few CN: Using Windows Terarty Center	e security essentials below are marked On or
Delarest Options	Torosat	Off 😖 🛞
 Set the latest taxarily and object information unline from Microsoft 	Windows Firewell is turned off. Down the my buckletis options.	@Tarmag.new
Change the way faculty Center alerts me	Note: Two or researches allo survive at the same How does a firewall help protect my computer?	time can conflict with each other.
	Automatic spelwing	Not adomutic 🔒 🛞
	Malware protection	Check settings 🧕 🛞
	Other security settings	ox e 🛞

2. Windows Firewall window appears. Click **Change settings** button.



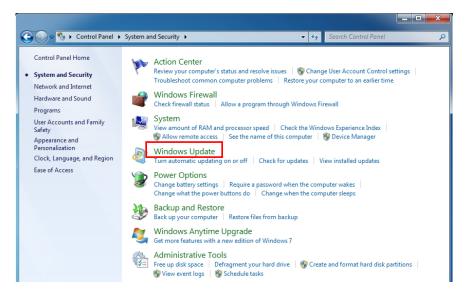
3. Windows Firewall Settings window appears. Select checkbox for **Off (not recommended)**.



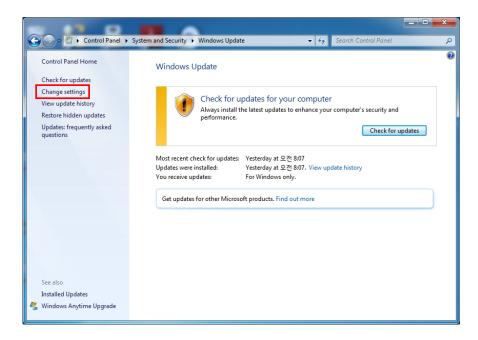
4. Click OK.

[Windows Update]

1. Go to Start – Control Panel – System and Security – Windows Update.



2. Select Change settings.



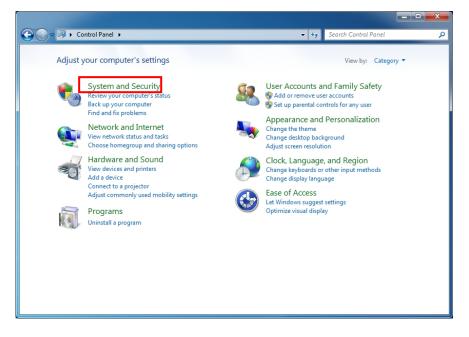
	- • ×
Search Control Panel	Q
Choose how Windows can install updates When your computer is online, Windows can automatically check for important updates and install them using these settings. When new updates are available, you can also install them before shutting down the computer. How does automatic updating help me? Important updates Important updates Install new updates: Ever check for updates (not recommended) Install new updates: Every day at 오전 3:00 Give me recommended updates the same way I receive important updates Who can install updates Install ouddates Install ouddates Install updates Install updates to install updates on this computer Note: Windows Update might update itself automatically first when checking for other updates. Read our privacy statement online.	
OK Cancel	

3. Select Never check for updates (not recommended).

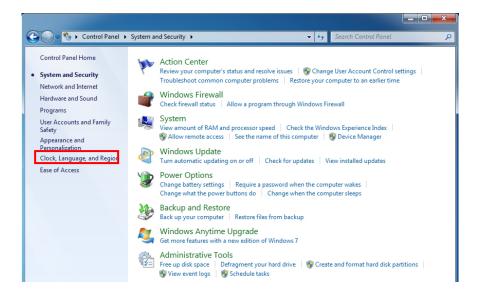
Click OK.

[Synchronization with Internet Time]

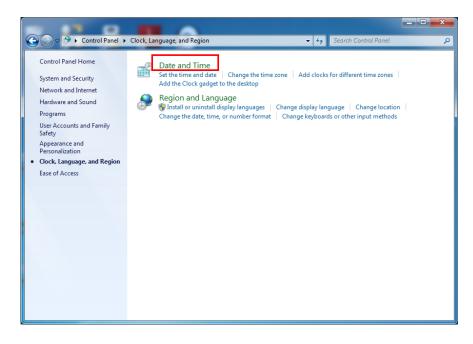
1. Go to Start – Control Panel – System and Security.



2. Select Clock Language and Region.



3. Select Date and Time.



4. **Date and Time** window appears. Select **Internet Time** tab, and click **Change settings...** button.

Bate and Time
Date and Time Additional Clocks Internet Time
This computer is not set to automatically synchronize with an Internet time server.
😯 Change settings
What is Internet time synchronization?
OK Cancel Apply

5. Unselect the checkbox for **Synchronize with an Internet time server**.

Internet Time Settings	X
Configure Internet time settings:	
Synchronize with an Internet time se	rver
Server: time.windows.com	Update now
	OK Cancel
L	

6. Click OK.

[User Account Control]

1. Click Start - Control Panel - User Accounts.



2. Click on Turn User Account Control on or off.



3. Uncheck the box for Use User Account Control (UAC) to help protect your computer.



- 4. Click OK.
- 5. Reboot the PC.

Connecting Device

Following procedure explains how to connect mobile station and host PC.

Connecting Device in XCAL

XCAL allows some devices as following;

- Mobile Phone with Data Cable
- Data Card
- USB Modem (Dongle)
- Scanner
- GPS

To connect a Device to XCAL, you are requested to install a proper driver first in your laptop.

If your laptop do not recognize the device in Device Manager in Windows OS, XCAL can not recognize the device as well.

1. Install a proper device driver.

Driver file of Device would be different per device model and manufacturer.

Please contact to Device Provider to get a proper driver.

- 2. Plug in a device.
- 3. Check the installation of Device in 'Device Manager' in Windows OS.
- 4. Run XCAL.

Connecting Device in XCAL-MO and in P8E

XCAL-MO and P8E allows some devices as following;

- Mobile Phone with Data Cable
- Data Card
- USB Modem (Dongle)

To connect a Device to XCAL-MO & P8E, you are requested to install a proper driver first as like as XCAL.

In case of XCAL-MO and P8E, it has an individual Windows OS in each H/W slot and you are kindly requested to install a driver file on each H/W slot in separate.

If your H/W slot does not recognize the device in Device Manager in internal Windows OS, XCAL-MO & P8E can not recognize the device.

- 1. Turn on XCAL-MO and P8E.
- 2. Run XCAL-MO/P8E Host Program and it will activate H/W Slots.
 - A. Slot Recognition (Slot On/Off) and Click <OK> button.
 - B. Slot H/W S/W update go on and after completion of S/W update, XCAL-MO Main window will show up.
- 3. Access to H/W Slot via VNC.

VNC is a remote desktop application to access to an internal Windows OS in H/W slot.

You can get a freeware application of VNC from the following link;

http://www.realvnc.com/cgi-bin/download.cgi

cf) A free version of VNC for Windows works on Windows Vista and 7 as well even a Web page says it works only up to Windows XP.

The address of each H/W slot is following;

H/W Slot 1 ~ 5 : 1.1.2.1 ~ 1.1.2.5

If a VNC asks a password, please type 'accuver'.

4. Copy a driver file to a general USB Memory Stick and plug it in a H/W slot.

Via VNC, open a USB Memeory in a Windows Explorer in H/W slot and install a driver file into H/W slot.

- Plug in a Device and check the installation of Device in 'Device Manage' in a H/W slot. If a device is not recognized properly in a H/W Slot, XCAL-MO and P8E can not recognize the device as well.
- 6. If you want to use the device on all ports of a H/W slot, please repeat the step of 5 per port.
- 7. Via VNC, open a Command Window (DOS Prompt Window).

Type 'C:\>ewfmgr c: -commit' and press <Enter>

Type 'C:\>exit'

- 8. Via VNC, Press <ALT> + <F4> button in same time to restart an internal Window OS in a H/W slot.
- 9. After rebooting of H/W slot, your driver file will be kept permanently in a H/W slot.

Without the proper procedure above, the driver file will be lost after rebooting of a H/W slot because it has auto-recovery feature to the original state of Windows OS.

Running XCAL

- 1. Go to Start Accuver XCAL, or double click on XCAL icon on desktop.
- 2. XCAL program is run, and XCAL main window appears.

File Setting VOD Statistics/Status Message WiBro/W	/iMax Data(GCT) MOS	User Defined	Inbuilding	Window	/ Help					
X Image: Figure and the second s	e Map	Inbuilding	1							
🔐 GCT Summary Graph (Mobile1)		🗙 🚾 Call S		s(Currer		rio) (M	obile1)			_ 0
Mobile1 Michael 4										
CINR(dB) Threshold: 0 dB Active	ANT 1 CINR(dB)	Call Type	Ide	Setup	Traffic Setup	Traffic				
뜅 1	ANT 2 CINR(dB)	FTP	0	0	0	0				
RSSI(dBm)	ANT 1 RSSI(dBm)								_	
	ANT 2 RSSI(dBm)		Success 0 (0%)	Setup Fail	Traffic Fail	Drop 0 (0%)	Pending 0 (0%)	Time Out	Error 0 (0%)	No Cove
Tx Power(dBm)	TxPower(dBm)					Fail R				
9 0 4		Dial	LCP	Auth	IPCP	Lagon	Unknown			
MAC Layer Throughput Graph - DL (kbps)	DL(kbps)									
§ 1				I	T	: Fail R				I
Packet Capture Viewer (Mobile1)		🗙 🏧 Basid	Statue	Toble (cuson		ſ	
		Mobile1	. 0.0.00			/			l	
Detail <u>H</u> ex <u>P</u> ause <u>C</u> lear		MODIICT		Time						
Cnt Time Source Destination	Type		Fra	me Number						
				BSID IL Cell ID						
				ULCID						
		I		DL CID						
				AC Address						
			Frame	Ratio(DL:UL))					
			Free	quency(KHz)						
				FCH						
			N	AC State						
)
Worksheet1 Worksheet2 Worksheet3										
M1 Error None No GPS	No Logging CPU	25.0%								

XCAL main window

Configuring Port

This chapter explains how to configure external devices such as mobile station, GPS, scanner, and etc that are conencted to XCAL.

One slot supports one test mobile. You may test with several test mobiles by activating each slot in **Port Setting** window.

NOTE: Before you begine port setting, check SIO mode. SIO mode in mobile may vary, check ISO mode depending on test mobile type.

Port setting, which is configured in mobile, and Data Port setting in XCAL should correpond. For detail of Data Port setting, see <u>Configuring Data Port part</u>.

NOTE: For port configuration for each technologes, refer to corresponding technologies' Features User Guide provided seperately.

Starting Port Configuration

- To open Port Setting window, select Menu bar Setting Port Setting, or click on Port icon from Icon bar.
- 2. Port Setting window appears.

🔀 Port Settin	9	
Mobile	2	GPS/Scanner Setting
Mobile		GPS
Interface	WCDMA	Com Port
DM Port	COM283 LGE Mobile USB Serial Port	User Port COM 1
Modem	COM284 LGE Mobile USB Modem #6	GPS Type NMEA
AT Port	<none></none>	Baud Rate 9600
	2	Flow Control None
Interface	- MT -	GPS Time Sync
DM Port		
Modem	로컬 영역 연결 Intel(R) 82577LM Gigabit Network C(▼	Scanner1
AT Port	<pre></pre>	Interface <pre></pre>
		Com Port1 <none></none>
Mobile		Com Port2 <none></none>
Interface	<none></none>	Log With <none></none>
DM Port	<none></none>	Scanner2
Modem	<none></none>	Interface <none></none>
AT Port	<none></none>	Com Port1 <none></none>
- Mobile	4	Com Port2 <none></none>
Interface	<none></none>	Log With (NONE)
DM Port	<none></none>	,
Modem	<none></none>	
AT Port	<none></none>	
	,	
🔽 Enable DH		idit OK Cancel
, chable bi		

Configuring Mobile Port (In Mobile Alias Setting window)

In **Port Setting** window, each Mobile# for **Mobile Setting** area is for each mobile port configuration.

- 1. Select the checkbox for Mobile# you want configure and start configuration.
- 2. To open Mobile Alias Setting window, click icon next to Interface in Port Setting window.

rt Setting			
Mobile	-		
Mobile			
Interface	<none></none>	-	
DM Port	<none></none>		-
Modem	<none></none>		Ŧ
AT Port	<none></none>		-

3. Mobile Alias Setting window appears.

/oce/Data	Interface WCDMA		
105	Phone	LogMask	
7		LogMask Alao WCDMA Add/Edit Del	
DMA		cogrege real months	Alan
ialag/S2_LTE	Phone Model LG KH1200 -	Mobile Message Qualcon Version	WCDMA Recommend
níneon	Baud Rate 115200 •	No Mig • WCDMAXF •	WLDMA Hecommend
nfineon_LG	Flow Control None	VMPSProtocol Services] Data	WILLING .
n/neon_Samoung	Burth Har Far Far Internet	Select All Recommend Unselect All	
G_nineon	Don't Use Key Emilaton STE Dangle and POHOLA Moden Cardi		1
TE	P Streaming Logging	COMA & EVDO	
TE_711	☐ SaleMode	CDMA	
1E_Siena	Extended Mobile Message	EVD0	
TE-Samoung(FDD) toble Test	 Zoply nin setting numer 	EVDO-RevA	
fobler Fest	Data Service Type	PPP(IP) Data Frame	
amoung infineon	@ Moden C SemaAT D40	(I) WCDMA	
amoung_mmeon hockwave	C Network Adapter C Bandvich AT CMD		
hockwave	C ONION Interface		
ECOMA.		WCDMA Layer1 AGC Log	
		WCDMA Layer1 Default Log	
	- Data Post	IN COMA Layer1 Etc Log	
	Data Post	WCDMA Layer1 Finger Info Log	
	User ID	CONTRACT Power Control Log	
	Parroword	Image: WCDMA Layer1 Step1~3 search Log	
	Extra Setting	WCDMA Laver2 RLC Default Log	
	DUN		
	I P Header Comp.	■ WCDMA Layer2 RLC AM signaling Log	
	T Nego multi-link, T S/W Comp	WCDMA Layer2 RLCBMAC Etc Log	
	T Mdm H/W Flow T LOP Ext.	(i) ♥ WCDMA Layer3 RRC Default Log	
	Will Setting		
	IT MAC FEFFFFFFFFFF	Image: H324 \$36(H245)	
	The second s	G GSWGPRS	
	1.0	GRR/MAC/SM/GMM Signaling Message	
		GSN Layer1	
		GSM Layer2 & Layer3	
		GSM CS Data & WMS Cell Broadest	
		GSM Inter-RAT Measurements	
		GPRS Layer1	
	Buetoofi	GPRS GRR-Related	
	□ Voice Control of Bluetooth		
	Use New Bluetooth Module	GPRS SNDCP & MAC	
		EGPRS	
	Using Figual Mag or BT Mag to Call Event	Obsolete & Reserved	
	Use Headset Audio for MOS +		
	P Request RSSIAT-CS01		
	P Request Batters(AT+CBC)	UMTS/GSM NAS Default	
		UMTS/GSM NAS Etc	
		UMTS/GSM Vocoder packet	
Add/Edit - Del			
Adstat - Del			

Defining Interface Name

Interface names are to be used for saving mobile configuration in order to reuse configured mobile settings for other mobile ports and model.

III Mobile Alias Setting	
2 Voice/Data	
Date Color Type VCCDNL Againsme Import Muddle Model Marce Prove Muddle more Muddle Model Marce Model Marce Rese Careful Name Import Muddle Name Prove Careful Name Import Muddle Name Prove Careful Name Import Muddle Name Prove Careful Import Muddle Import Muddle Import Muddle Import Type Import Muddle Import Muddle Import Muddle Import	presed Mode Log rt ACE Log rt ACE Log rt Bisturg rt Bisturg rt Bisturg rt Bisturg rt Bisturg rt Bisturg Statistics S
AdST(8) = Del	Select All Unselect All
	OK. Cancel

1. Enter an Interface name in **Interface** entry field.

Configuring Phone Part

1. Configure mobile information in **Phone** part in **Mobile Alias Setting** window.

2 Voice Date	- Interface	Phone
	Dig Type VCDMA-Quakown LogMax Phone Model etc. V Mobile M	Chip Tupe NA/CDMA Qualcomm
	Row Carted Nove w	Phone Model ETC
	Don't Use Key Emolation For Special Card Phone) Streaming Logging	Baud Rate 115200 💌
	Extended Mobile Memage Section	Flow Control None
	Receive Kay Pees Ga 100 8 5 Delay for Receive Kay(m) 0 \$	Port Type USB
	Dar Nut % 5 Passeod % 5 Exas Seting % 17 OV % 7 OV % 7 OV % 7	Don't Use Key Emulation (For Special Card Phone)
• Add T de = 0		

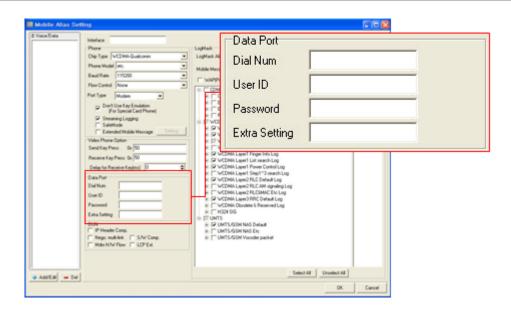
 Click combo box for Chip Type and Phone Model to configure corresponding chip type and phone model name of mobile to connect for mobile port.

Classification	Description		
Chip Type	Defines the modem chipset of the mobile.		
Phone Model	Selects the mobile model.		
Baud Rate	Designates the communication speed through DM port.		
Flow Control	Designates the method of flow control.		
Don't Use Key	For specific card phone, key emulation function is note applied.		
Emulation (For			
Special Card			
Phone)			
Streaming	Determines if streaming logging is executed.		
Logging	- Checked (default): XCAL-MO sends Packet Request Logmask to mobile and the mobile will send data continuously without any other requests.		
	 Unchecked: XCAL-MO sends Packet Request Logmask to mobile periodically and the mobile will sends data packets as per the requests. If streaming logging is checked for non streaming mobile, data is 		
	displayed once and then blank state will follow.		
Safe Mode	In case specific old non streaming mobile, message loss is happened a lot. If user checks this item, message loss should be reduced.		
Extended Mobile	Additional mobile message		
Message	User select extended mobile message which user want to see additionally.		

Configuring Data Port part

Data Port part in **Mobile Alias Setting** window is for test of PS Data Call such as FTP, HTTP, and etc. It configures general options for Dial-Up Network.

If you want to carry out test with PS data call, you should configure items in **Data Port** part.

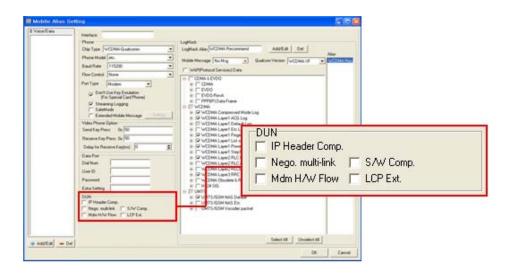


Classification	Description		
Dial Num	Dial number to connect to packet data switch.		
User ID	User ID to connect to packet data switch.		
Password	Password to connect to packet data switch		
Extra Setting	at+crm value used by packet data switch.		
	*CDMA/EVDO: at+crm=1, at+crm=150, at+crm=160		
	*WCDMA :		
	Example:		
	AT+CGDCONT=1,IP+CGEQREQ=1,3,128,384		
	Note: Refer to standards document "Commands for Packet Domai		
	of 3GPP TS 27.007 (AT command set for User Equipment (UE))"		

Configuring DUN Part

DUN part in Mobile Alias Setting window is for configuration of PPP (Point to Protocol) test.

If you want to carry out test for PPP call, you should configure items in **DUN Port** part.

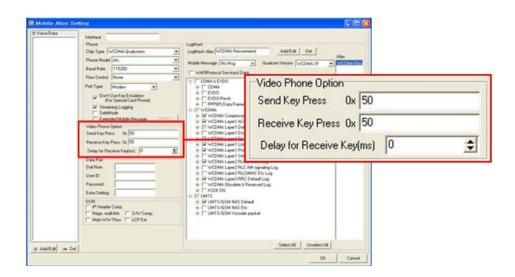


Classification	Description	
IP Header Comp	Use IP Header compression.	
Nego. Multi-link	Negotiate multi link during initial LCP	
S/W Comp	Use software compression.	
Mdm H/W Flow	Use hardware control.	
LCP Ext	Use LCP expansion.	

Configuring Video Phone Option Part

Video Phone Option part in Mobile Alias Setting window is for video telephony call tests.

If you want to carry out test with video telephony call, you should configure items in **Video Phone Option** part.



Classification	Description		
Send Key Press	Enters send key value of test video mobile.		
	If your send key value is 0x10, enter 10.		
	If you need to enter more than one send key values, use semi		
	colon between key values (e.g. 10;20;30).		
Receive Key	Enters receive key value of test video mobile.		
Press			
Delay for	Enters receive key delay value of test video mobile.		
Receive Key			
(ms)			

Configuring LogMask

LogMask part in Mobile Alias Setting window enables you to define log packets to receive from mobile and monitor in XCAL. By selecting necessary log packets, you may save time for creating logging file and DM processing.

LogMask list varies depending on mobile and chip type.

LogMask				
LogMask Alias Add/Edit Del				
Alias				
Mobile Message No Msg 💽 Qualcom Version WCDMA XF 💌 WCDMA Reci				
WAP(Protocol Services) Data				
E CDMA				
🕀 🗖 EVDO				
EVDO-RevA				
🕀 🔽 PPP(IP) Data Frame				
🗄 🔽 WCDMA Compressed Mode Log				
🕀 📈 WCDMA Layer1 ACG Log				
🗄 🔽 WCDMA Layer1 Default Log				
🗄 🔽 WCDMA Layer1 Etc Log				
🕀 🗹 WCDMA Layer1 Finger Info Log				
🗄 🗹 WCDMA Layer1 List search Log				
🕀 🗹 WCDMA Layer1 Power Control Log				
😟 🗹 WCDMA Layer1 Step1~3 search Log				
🕀 🗹 WCDMA Layer2 RLC Default Log				
🕀 🔽 WCDMA Layer2 RLC AM signaling Log				
🕀 🗹 WCDMA Layer2 RLC&MAC Etc Log				
🕀 🗹 WCDMA Layer3 RRC Default Log				
🕀 🔽 WCDMA Obsolete & Reserved Log				
⊞, 🗹 H324 SIG				
GSM/GPRS				
🕀 🔽 GRR/MAC/SM/GMM Signaling Message				
🕀 🗖 GSM Layer1				
GSM Layer2 & Layer3				
E I I I I I I I I I I I I I I I I I I I				
Select All Unselect All				

1. Enter a LogMask Alias name in LogMask Alias entry field.

LogMask name are to be used for saving LogMask list configuration in order to re-use configured LogMask list for other mobile ports and model.

- 2. Select checkboxes for each packet in LogMask list.
- 3. Click **Add/Edit** button to save LogMask setting.
- 4. Make sure that the new LogMask setting is added to LogMask **Alias** list on the right side of LogMask part.

LogMask LogMask Alias ACCUVER HSPA Add/Edit Del	Alias
Mobile Message No Msg Qualcom Version WCDMA XF	WCDNA Reci ACCUVER H:
WAP(Protocol Services) Data	ACCOVER IN

Saving Configuration

1. Click **Add/Edit** button on the left lower side of Mobile Alias Setting window to save all configured settings for mobile port.

🖀 Mobile Alias Setting	
A Voice/Data WLAN P-Phone 229	Interface P-Phone 223 Phone Chip Type HSUPA-Qualcomm Phone Model etc. Baud Rate 115200 Flow Control None Don't Use Key Emulation (For Special Card Phone) Streaming Logging SafeMode
Add/Edit – Del	Extended Mobile Message Setting Video Phone Option Send Key Press 0x Send Key Press 0x 50 Before Dial 0x 0 Delay for Receive Key(ms) 0 Image: Comparison of the second se

2. Click OK to close Mobile Alias Setting window.

Logging Start/Stop

Start/Stop logging to save measurement data of mobile station into a log file.

Prior to start/stop logging, configuring port process should be done.

- 1. Select Menu bar File Logging On/Off, or click on Logging icon from Icon bar.
- 2. Save logging files window appears.

👯 Save logging file	(Free Space : 1651	80.6 MB)			×
저장 위치([):	17		• •	-11 📩	
C.	이름				
최근 위치		이 폴더는 비	이어 있습니다.		
바탕 화면					
Chaekyung					
지 기관					
네트워크					
	파일 이름(<u>N</u>): 파일 형식(<u>T</u>):	DR17182124 Logging files (*,drm, *,so	:n)	•	저장(<u>S</u>) 취소

Save logging file window

- 3. Designate a directory to save log file.
- 4. Click Save.

NOTE: If you select on **Logging** icon while AutoCall is in progress, logging process is initiated.

AutoCall Test

XCAL generates and terminates various types of call tests based on pre-specified call scenario (script) automatically. Multiple call types are avaiable for AutoCall test of XCAL such as voice, video telephony call (WCDMA), FTP, HTTP, PPP, Ping & Trace RT call, and etc. AutoCall scenario should be configured for each call type.

This chapter guides you how to configure AutoCall scenarios for different call types, starts and terminates call tests automatically. XCAL Common User Guide instructs common call types; Voice, FTP, HTTP.

Configuring AutoCall Sceanrio

Before starting AutoCall test, AutoCall scenario (script) for each call type should be configured in advance.

- To open AutoCall scenario configuration window, select Menu bar File AutoCall Start, or click on AutoCall icon from Icon bar.
- 2. AutoCall Scenario Setting window appears.

Au	itoCall Scenario Set	ting						— X
	Alias List				Por	t	AutoCall Scena	rio
	FTP Ping					Sync Async	Repeat	Mobile1 9999
	E PPP				0	Cycle	Sync	Enable 🔻
₽ 							Keep Con.	
						•	Network Type	All technc 💌
Ь							Group	1 🚽
					_	•	1	í — —
	Туре	Idle	Setup	T.Setup	Traffic	Total	2	
	FTP DN	5	25	30	9999	1	3	
	UF			Get	Put	Session	4	
	ftptest.innowire		tptest	10m		1	5	
	AutoCall loggin	ng Option			- An	ply Row	6	
	Per File Size	•	200	MB		ply 110	7	
		~ • •			A A	oply All	8	
	 By Call End (By User Call End 	-		Kaan Can	, De	elete All	9	
		iuαstatti	st Call (with —	і кеер соп.			10	
	Extend logging time 5 Sec				. 11			
	🔽 Stop logging wh	ien autocall	finished				12	
	🔽 Logging Wave I	nformation					13	
							14	
	Export Reservation	n Call Cor	ntrol WiM	AX(WiBro)/	LTE Keep	con.	15	
	All Info of Call St	atistics (JP)	- -					
	Detail Info of Cal	li Statistics	[1X1]					
								OK Cancel

AutoCall Scenario Setting window

3. Click Create New Scenario button in AutoCall Scenario Setting window.

AL	ItoCall Scen	ario Sett	ing	
EX.				_
Ð				
Þ	Ping PPP			
Ň				
P				
E.				

4. AutoCall Setup window appears.

🙀 AutoCall Setup		
FTP	Scenario Name FTP	Fill in colored fields
Ping 🔶	Auto Call	Voice FTP PPP Ping HTTP App
PPP	Setup Time : 25	Host : [tptest.innowireless.co.kr
	T.Setup Time : 30	Login ID : ftptest
	Total Setup : 100	Password : *******
	TrafficTime : 9999	Change Dir : //tptest
	Total Traffic : 0	Get File
	Call Count : 1	C Put File
	Total Time(sec) 0	DEL Put file in HOST
	Dial In No Service	Wait Time(sec): 0
	Time: 0 Sec	Session 1
	Allow Dormant State	Logging FTP Raw Data : 🥅
	WiMAX(WiBro)/LTE Option	Port : 21 Passive Mode :
	Conly Network Entry	Post.
	Waiting time until Release 3 sec	Repeat Count : 1 Delay(s) : 1
		Release after LCP Ter nego :
		C PPP/Ethernet FTP
		Start Time : 0 Sec
		Interval: 30 Sec
		Threshold : 0 Kbps
		Success(Continuance Traffic Time)
		Receive Byte for Success 0 KByte
		_
Add/Edit – Del		<u>Q</u> k <u>C</u> ancel

AutoCall Setup window

5. Enter an AutoCall Scenario name in **Scenario Name** entry field.

Scenario Name

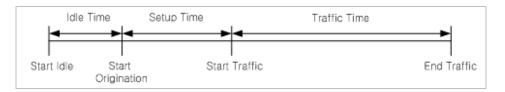
6. Configure AutoCall common options at the left side of **AutoCall Setup** window.

Auto Call	
Idle Time 💠	15
Setup Time :	70
T.Setup Time :	30
Total Setup :	100
TrafficTime :	100
Total Traffic :	0
Call Count :	1
🔲 Total Time(sec)	0

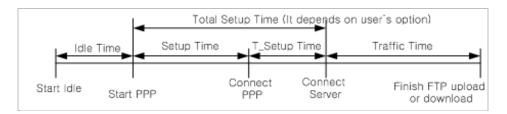
Option	Description
I dle Time	Waiting time in Idle mode between call attempts

Option	Description			
Setup Time	Maximum allowance time to connect call to network after			
	Idle Time end and call attempt. (unit: sec)			
T.Setup Time	Maximum time period to connect to application server after			
	establishment of PPP connection. This field is valid for			
	packet data service application.			
Total Setup	Setup time plus T_Setup time			
	* Applies for only FTP & HTTP Call.			
Traffic Time	Session maintenance time to determine call success after			
	session is opened. (unit: sec)			
Call Count	Repeat counts each call that Idle / Setup(T_Setup) / Traffic			
	Time			
Total Time (sec)	Time interval between calls			
	Enter more than the time of (Idle Time + Setup Time			
	(+T_Setup Time) + Traffic Time)			

[Time diagram for Voice calls]



[Time diagram for Data calls]



7. Select a call type tab, and configure call test options for each call type.

Options in green color should be configured.



Following sections introduces how to configure common options for each call type. For detail, see <u>Voice</u>, <u>FTP</u>, <u>Ping</u>, and <u>HTTP</u>.

8. When all necessary options are properly configured, click **Add/Edit** button at the lower left side of **AutoCall Setup** window to add the configured automated call

script options to Alias list.

Once an automated call script is created and saved in the Alias list, it is able to be used for other call tests.

- 9. Click OK button in AutoCall Setup window.
- 10. Backing to **AutoCall Scenario Setting** window, make sure that the configured AutoCall scenario is listed in AutoCall Scenario **Alias list**.

Once a call scenario is created, it is stored in AutoCall Scenario **Alias list** and is able to be used for other call tests.

AutoCall Setup				
Scenario Name test	Fill in color	red fields	L	
Auto Call Ide Time : 1 Setup Time : 10 Total Setup : 0 TrafficTime : 1 Call Court : 1 Total Time(sec) 0 F Dial In No Service	Voice FTP PPP Ping CS Host : Login ID : Password : Change Dir : Get File C Put File	VolP V		
			AutoCall Scenario Setting	×
		<u>k</u> ancel	Alias List Scenario Name Itest	Autocall Scenario C Sync Mobie1 C Async Sync C Cycle Sync Group 1 1 2 3 3

11. Click **OK**.

Voice

Select Voice tab and configure options for voice AutoCall measurement.

Voice FTP PPP Ping HTTP	Voice FTP PPP Ping HTTP
CDMA QC-WCDMA	CDMA QC-WCDMA
Call Type : Idle	Cal Type : Idle
Destination : None	Destination : None
	Dialed Digit :
Dialed Digit :	AMB Bate : 12.2kbps
Service Option: EVRC	Call Flow : Using Alert message
Success Time : 0	
	Success Time : 0
Dial up Keypress 💌	Dial up Keypress 💌
Pick up D Button	Pick up D Button
Alternation	Alternation
End Call Using "End" Button	End Call Using End Button
Video Phone Call	☐ Video Phone Call
Send DTMF during Traffic Time	Send DTMF during Traffic Time

Voice tab in AutoCall Setup window

Option	Description			
Call Type	Set AutoCall test type.			
	Idle: Connect no calls and keep idle condition.			
	Origination: Test mobile transmit call test.			
	Termination: Test mobile receive call test. Sufficient Idle			
	Time should be set due to it page responses in Idle Time.			
	Continuous Call: The same as Origination, but it maintains			
	a call continuously regardless of Traffic time on Auto Call Part.			
	M to M Org : Calling the other mobile in case 2 mobiles are connected to XCAL. (Assign the other mobile in the			
	Destination field). M to M Ter : Receiving a call from the other mobile in case 2			
	mobiles are connected to XCAL. (Assign the other mobile in			
	the Destination field).			
	· · · · · · · · · · · · · · · · · · ·			
Destination	For M to M Org and M to M Ter type test. Select destination mobile number.			
Dialed Digit	Designate phone number to be dialed.			
Service Option	Designate Service Option for voice call.			
	It is valid on the phones with CDMA Qualcomm chipset.			
Dial up	Select how to dial up test mobile.			
	QC Command: Dial up through QC Command.			
	Keypress: Dial up through mobile key press.			

Option	Description			
	AT Command: Dial up through AT Command.			
Pick up	Select how to pick up test mobile.			
	Send button: Click Send button on test mobile to receive			
	call.			
	0 button: Click zero (0) button on test mobile to receive call.			
	AT Command: Receive through AT Command.			
	NOTE: For some WCDMA mobiles, it is impossible to receive			
	call by zero (0) button.			
AMR Rate	Designate AMR rate. It is valid on the phones with WCDMA			
	Qualcomm chipset.			
Call Flow	Designate the starting point for traffic state.			
	Traffic state starts when RB Setup, Alert, or Connect message			
	is detected.			

FTP

Select **FTP** tab and configure options for FTP AutoCall measurement.

Voice FTP	PPP Ping
Host	:
Login ID	:
Password	:
Change Dir	:
📀 Get File	
O Put File	-
Change Dir Get File	

Option	Description	
Host	Designate IP number of host server to connect	
Login ID	Login ID of host server	
Password	Password of host server	
Change Dir	Designate the directory of host server where file to be	
	downloaded.	
Ger File	Designate file name to be downloaded.	
Put File	Designate file size to be uploaded. Select the file size from	
	the drop down list. To transfer file size which is not on the	

Option	Description
	list, type the number.
	- Unit: $k = KB$, $m = MB$
	- No unit = XCAL assumes MB

Ping

Select **Ping** tab and configure options for Ping AutoCall measurement.

Voice FTP PPP	Ping	
Classification Single Ping		
C TraceRT		
Destination :		

Ping tab in AutoCall Setup window

Option	Description		
Classification	Single Ping: Meausre delay rate, packet loss rate, and etc.		
	TraceRT: Measure delay rate, packet loss rate at network		
	route.		
Destination	Enter IP Address and URL for Ping test.		

HTTP

Select **HTTP** tab and configure options for FTP AutoCall measurement.

HTTP	
Call Typ	e : Web browser 💌
URL	:
Port	: 80
Repeat	: 0
Put File	; 100k 💌

HTTP tab in AutoCall Setup window

Option	Description	
URL Enter HTTP Address to connect.		
Repeat Enter number of access attempt to HTTP address to compare the tempt to tempt		

Configuring Call Scheduler

Now, you completed necessary AutoCall Scenario options for each call type, and the configured AutoCall scenarios are listed in AutoCall Scenario **Alias List**.

You need to give sequences on the configured AutoCall scenario by using Call Scheduler in **AutoCall Scenario Setting** window. You may perform call tests sequentially or in parallel with multiple mobile connections.

- 1. To list pre-configured AutoCall scenario from AutoCall Scenario **Alias List**, drag a call scenario from **Alias List** to Call Scheduler section.
- 2. If you want to perform call test sequentially, drag and drop more call scripts on Call Scheduer. XCAL will run AutoCall test in sequence as scenario is listed.

Alias List			Autocall Sce	enario	
.[Scenario Name	Port (Sync		Mobile1	
	E test	C Async	Repeat	1	
	test 1	C Cycle	Sync	Enable 💌	
	In the second		Keep Con.		
			Group	1 -	
			1	test	
			2	test 1	
		•	3		
. *					

3. If you want to perform call test in parallel with multiple mobile connections, drag and drop call scenario for other mobile ports.

	Alias List		Autocall Sce	enario	
3	Scenario Name	Port (• Sync		Mobile1	Mobil 2
	E test	C Async	Repeat	1	1
Þ	test 1	C Cycle	Sync	Enable 💌	Enable
2			Keep Con.		
5			Group	1 -	1
4			+	test	test 1
			2		
-			3		
1.1				1	

4. If multiple mobiles are configured in Call Scheduler, configure port options.

Port	AutoCall Scen	ario					
Sync		Mobile	1	Mobile	2	Mobile	e3
C Async	Repeat	1		1		1	
C Cycle	Sync	Enable	-	Enable	-	Disable	-
	Keep Con.						
	Network Type	All	-	All	-	All	-
	Group	1	\mathbf{v}	2	\mathbf{v}	3	-
-	1	P Downloa	ad 1(P Downloa	ad 1(P Downlo	ad 10

Option	Description	
Port	Sync: Synchronizes call start on every call attempt amng	
Port	multiple mobiles.	
C Async	Async: Perofrms call test independently.	
C Cycle	Cycle: Performs call test in turn.	
Repeat	Configures how many times a call scenario to be repeated by	
	each mobile.	
Sync	Selects between enable or disable sync option. If it is	
	configured to be Enable , the mobile port is affected by Sync	
	option setting.	
Keep Con.	Keeps a PPP connection between multiple PS calls. If it is not	
	selected, XCAL releases PPP connection on every call.	
Network Type	Selects network type to perform a call test in.	

Starting AutoCall Test

Configuration of AutoCall scenario and AutoCall scheduler is completed. You may start AutoCall test.

1. When all settings are configured in **AutoCall Scenario Setting** window, click **OK** button.

Mobile1 Mobile2 Repeat 9999 9999 Sync Enable Enable Keep Con. Image: Constraint of the sync All technic Group 1 1 1 test test1 2 2
Sync Enable Enable Keep Con. Image: Constraint of the synchronic synched synched synchronic synched synchronic synched synchronic synche
Keep Con. Image: Constraint of the second
Network Type All technc ✓ All technc Group 1 ▼ 1 1 test test1
Group 1 v 1 1 test test1
1 test test1
al 2
3
<u>4</u>
N 6
7
9
10
11
13
14
15

- 2. Save logging files window appears. Designate a directory to save log file.
- 3. Click Save.
- 4. AutoCall test is started.

Real Time Mapping

XCAL is able to show measurement data on map graphically in real-time when conducting a measurement project with a connection of a GPS receiver. XCAL's real-time map displays major parameters, call events (Drop, Setup Fail, Success, and etc.), BTS/Repeater positions, serving lines, coverage, and etc. The intuitive graphic User Interface for real-time map enables you to visualize features in the map by configuring colors and shape of marks by data range.

This chapter explains how to a) connect GPS receiver to XCAL, b) open map files by map engines, c) start and manage XCAL real-time mapping window.

XCAL real-time map supports the following map engines; MapX, MapXtreme, Smart Map.

Connecting a GPS Receiver

XCAL visualizes BTS, test mobile, measurement route, serving lines, and etc only when GPS receiver is connected to XCAL properly and transfers valid GPS data to XCAL.

To interface with a GPS receiver, connect a GPS receiver by

- a) Conencting USB type GPS to host PC which is installed with XCAL program.
- b) Connecting internal GPS on XCAL hardware. (Optional)

USB GPS

XCAL receives and displays GPS data through serial port of host PC, and supports general GPS supporting NMEA specification.

- 1. Install a GPS drvier which is provided with a purchase of GPS receiver, and configure COM port in **Device Manager**.
- Select the COM Port connected to USB GPS receiver in Port Setting window. For details of Port Setting window, see <u>Configuring Port</u>.

Slot 1	Slot 2	Slot 3	Slot 4	Mobile13	GPS Set	ting
Voice/Data	Voice/Data	Voice/Data	SlotType	Voice/Data 💌	Com Port	Prolific USB to Serial 👻
LG KH1000/SF	<none></none>	<none></none>	Interface	<none></none>	User Port	СОМ
<none></none>	<none></none>	<none></none>	Adapter	<none></none>	GPS Type	NMEA 💌
Entra	Euro				Baud Rate	4800 💌
Mobile2	Mobile6	Mobile10		Mobile14	Flow Control	None 💌
Voice	Voice	Voice	SlotType	Voice 🔹	GPS Tir	me Sync
<none></none>	<none></none>	<none></none>	Interface	<none></none>		evision(sec) 14
<none></none>	<none></none>	<none></none>	Adapter	<none></none>		

Internal GPS on XCAL H/W

Internal GPS is provided optionally with a purchase of XCAL.

1. Plug in GPS antenna connector to GPS port on XCAL hardware.



 Select the Inside GPS for Com Port in Port Setting window. For details of Port Setting window, see <u>Configuring Port</u>.

Slot 1	Slot 2	Slot 3	Slot 4		GPS Sett	ing	
Voice/Data	Voice/Data	Voice/Data	SlotType	Voice/Data	Com Port	Inside GPS	•
LG KH1000/SF	<none></none>	<none></none>	Interface	<none></none>	User Port	COM	
<none></none>	<none></none>	<none></none>	Adapter	<none></none>	GPS Type	NMEA	•
		Mobile10 -			Baud Rate	4800	•
Voice	Voice	Voice	SlotType	Voice	Flow Control	None None	.
<none></none>	<none></none>	<none></none>	Interface	<none></none>		evision(sec) 14	-
<none></none>	<none></none>	<none></none>	Adapter	<none></none>	-		

Opening Map Files

XCAL real-time map supports the following map engines; MapX(of MapInfo), MapXtreme (of MapInfo), Smart Map (free map engine).

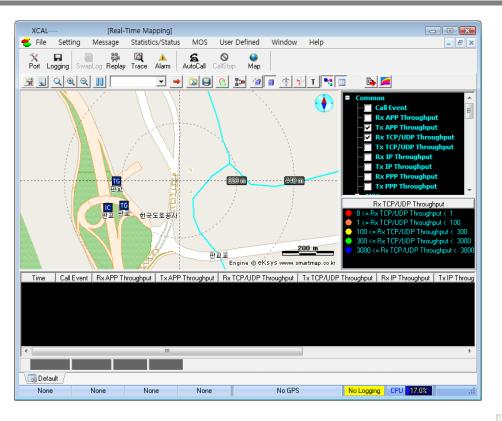
Install a Map Engine with a valid license, and configure in XCAL program for each Map Engine type in order to open Map files.

Starting XCAL Real Time Mapping Window

1. To start XCAL real-time map, select main Menu bar - File - Real Time

Mapping, or click Map icon from Icon bar.

2. Real Time Mapping window appears.



3. Configure map options to import map files by clicking **Map Property** icon at the upper left side of real time mapping window.

Following sub-chapters will show how to configure map options to import map files by map engine.

Configuring for MapX Engine

MapX engine is provided with map files in *.tab format.

Map files in *.gst format can be imported to XCAL. Map files in *.tab can be converted to *.gst format by using Geoset which is provided as a bundle with the purchase of MapX engine from MapInfo.

 In Real Time Mapping window, click Map Property icon, and Map Properties window appears. Select Map tab.

*		
Map Properties		×
Map BTS Repeater Serv	ing Line Custom Draw Co	overage Call Event ETC Legend
Offset setting		
Longitude: 0	Latitude: 0	
Map selection		
⊙ МарХ 4.х	MapX 5.x	⊂ MapXtreme
C MIF(GEO)		
C Smartmap(MIF/TAB)		
O Using image file		
Map layer		
Map Manager to use Map>	File	
		<u>O</u> K <u>C</u> ancel

Select applicable version of MapX engine between MapX4.x or MapX 5.x in Map Selection.

Offset setting: Configures offset value for longitude and latitude. Enter value in each entry field.

- 3. To load map file in *.gst format, select **Map Manager to use MapX File** button. **Layer Control** window appears.
- 4. Select **Layers** tab, and click **Add** button to import a map file in *.tab format.

MapInfo Map	CV4 Proper	ties		×
Mouse General	Layers	Colors Data	, Theme	About MapX Defaults
Europe		,		Up Down Add Remove
✓ Visible Zoom Layering ✓ Selectable Min: 0.000000 ▲ Auto Labels Style Override Label Style: Aa				tax: 0.000000
		OK	Cance	I Apply

5. Click **OK**.

[Configuring Lat/Lon WGS(84)]

XCAL supports projection category of Lat/Lon WGS(84).

1. Select General tab in MapInfoMapX Properties window.

MapInfo Map	oX V4 Propert	ies			×
Mouse Colo			:	Abo	ut MapX
General	Layers Da		a	Theme	Defaults
_ Мар					
GeoSet:	D:₩Accuver₩>	CAL-W	₩default.g	ist	-
Zoom:	7931.87000000	001	Rotatio	n: 0	
CenterX:	18.862465		Redraw In	it 10	
CenterY:	54.531691			Project	tion
Title:				Title SI	we: Aa
Current Tool:	Current Tool: 1000 - Arrow				
	,				
OK Cancel Apply					

 Click Projection button, and Choose Projection window appears. Select Lat/Lon WGS(84).

Choose Projection	×
Category	
Longitude / Latitude	-
Category Members	
Longitude / Latitude (Tokyo)\p4301 Longitude / Latitude (Tristan Astro 1968) Longitude / Latitude (Viti Levu 1916) Longitude / Latitude (W4ke-Eniwetok 1960) Longitude / Latitude (WGS 60) Longitude / Latitude (WGS 66) Longitude / Latitude (WGS 72)\p4322 Longitude / Latitude (WGS 14)\p4326 Longitude / Latitude (Yacare)\p4309 Longitude / Latitude (Zanderij)\p4311	
OK Cancel	

3. Click OK.

Configuring for MapXtreme

For MapXtreme engine, map files in *.tab, *.gst, and *.mws format can be imported to XCAL.

 In Real Time Mapping window, click Map Property icon, and Map Properties window appears. Select Map tab.

Map Properties		×			
Map BTS Repeater Se	erving Line Custom Draw Co	overage Call Event ETC Legend			
Offset setting Longitude: 0	Latitude: 0				
Map selection					
⊖ МарХ 4.х	⊙ МарХ 5.х	Map≍treme Map			
MIF(GEO)					
C Smartmap(MIF/TAB)					
C Using image file					
Map layer					
Tip) To Load a map f					
Tip) To Load a map file(TAB, GST, MWS) of MapXtream,					
uses 🚄 (Layer	Control Icon) in Real Time	Mapping window.			
		<u>O</u> K <u>C</u> ancel			

2. Select MapXtreme in Map Selection.

Offset setting: Configures offset value for longitude and latitude. Enter value in each entry field.

- 3. Click OK.
- 4. Re-start (close and open) Real Time Mapping window.
- 5. To import map files, click **Layer Control** icon in main Real Time Mapping window.
- 6. Layer Control window appears.

🚄 Layer Control	
🗲 Map1	
View Editing Tools Style	Coordinate System Extents 💶 🕨
Zoom (window width):), 000000 mi
<u>M</u> ap scale: 1: [), 00000
Center of window: X:	-1,00000
Y: [-	-1,00000 deg
<u>R</u> otation angle:	eg deg
	pply Cancel

7. Click **Add** button and select a map file.

Map files in *.tab, *.gst, and *.mws format can be imported to XCAL.

8. Click **OK**.

Configuring for Smart Map

For Smart Map engine, map files in *.mif and *.tab can be imported to XCAL.

Wap files in *.mif format with project type of WGS84 should be imported.

 In Real Time Mapping window, click Map Property icon, and Map Properties window appears. Select Map tab.

Max Descention		
Map Properties	5 5	
Map BTS Repeater Serving Line Custom Draw Coverag	je Call Event E	ETC Le
Confiset setting		
		-
Longitude: 0 Latitude: 0		
Map selection		
С МарХ 4.х С МарХ 5.х	⊙ MapXtrer	ne
C MIF(GEO)		
Smartmap(MIF/TAB)		
C Using image file		
Map layer		
MIF/TAB File		4
(Only WGS84)		
	TI OUT	
Theme C:\Program Files\Smartmap\Theme\Map_Bas	ic_Theme.SMT	
	<u>0</u> K	Cancel

2. Select Smartmap[MIF/TAB] in Map Selection.

Offset setting: Configures offset value for longitude and latitude. Enter value in each entry field.

3. To import map file, click the checkbox for MIF/TAB File in Map Layer,

and click Add 🕂 button.

Map files in *.mif and *.tab format can be imported to XCAL.

9. Click **OK**.

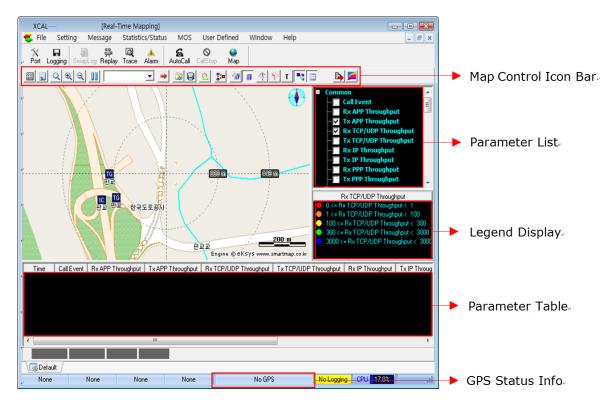
Starting Real Time Mapping Window

This section explains how to open and manage XCAL Real Time Mapping window.

1. To start XCAL real-time map, select main Menu bar - File - Real Time

Mapping, or click Map icon from Icon bar.

2. Real Time Mapping window appears.



Section	Description		
Map Control Icon Bar	Controls overall map options.		
	- Scrolls and zooms in/out the map display.		
	- Selects technologies to display in the map.		
	[Map Property icon]		
	- Selects map files by map engine.		
	- Show/hide cell sites.		
	- Manages color legend of BTS, Repeater, Coverage, Serving		
	Line, call events, and etc.		
	For details, see Map Control Icons.		
Parameter List	Selects parameters to be displayed in the map.		
Legend Display	Shows legend color of the selected parameter.		
Parameter Table	Shows parameters in Parameter List in table.		
GPS Status Info	Shows GPS coordinates (longitude, latitude) and speed of test		
	mobile (km/h).		

- Select checkboxes for parameters from the Parameter List to graphically display in the map. Corresponding parameter data is displayed in map and Parameter Table in real-time.
- 4. Use Map Control Icons to control and manage measurement data display properties, and etc.

Map Control I cons

Map Control Icons section includes map basic controls (scrolling, zooming in and out, removing data, selecting technologies to show in the map) along with specialized map control icon of Map Property (selecting map file by map engine, showing/hiding BTS, Repeater, coverage, call events, serving lines, and etc.)

Icon Name	Icon Image	Description	
Мар	~~	Selects map files by map engine, shows/hides cell	
Property	<u></u>	sites, manages color legend of BTS, Repeater,	
		Coverage, Serving Line, call events, and etc.	
Clear		Removes all data displayed in the map.	
File Scale	Q	Places center of the map to the current location.	
Zoom In/Out	€ €	Zooms in/out the map.	
Pause	nnl	Pauses measurement data displayed on the map in	
		real time.	
Technology	WCDMA 💌	Selects a technology.	
Trace	+	Shows measurement route of existing logging file in	
		the map by extracting from an existing logging file.	
		Able to measure data chasing in the existing test	
		route.	
Map Mark		Saves/Imports mark information displayed on map.	
Open/Save			

Icon Name	Icon Image	Description	
Map Mark Show/Hide	2	Shows/Hides mark information display on map.	
Bird View	1	Displays map from an elevated view.	
3D Building	1	Displays buildings on the map in three dimention.	
Rotate	4	Rotates map and change location.	
Tracking Head	4	Displays the direction of the map toward north.	
Trace	T	Saves GPS information in txt format automatically. Display measurement route by using txt file. Able to remove txt file by using Delete button. Trace List Trace File 2007-12:15.txt Delete UK	
Parameter Tree	•	Displays parameter tree on the right.	
Parameter Tree		Displays parameter tree on the bottom.	

Icon Name	Icon Image	Description
Export		 Exports current map file in *.bmp, *.kml, *.gif, *.jpg, and *.mif. Map file exported in *.kml format can be imported to Google Earth.
Layer Control	2	Imports and configures map file of MapXtreme and SmartMap.

Using Trace Icon

Trace icon helps to extract GPS data from existing log file and display them on real time mapping window. It enables testing along the existing test route.

- 1. Select Enable Trace icon in Real Time Mapping window.
- 2. Load GPS Info window appears.

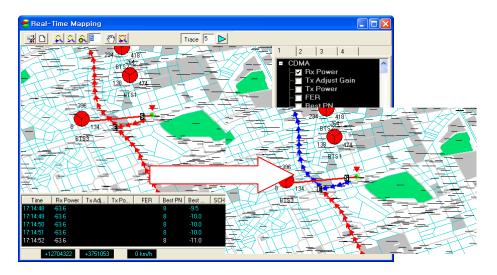
Load GPS Info	×	
GPS File	Modified Time Add	
H:\drm\ARSmove_Full-1.gps	08-12-23 10:52:12 Delete	
	Up	
	Down	
	OK Cancel	
Extract GPS Info		
Logging File	Gps File	
H:\drm\ARSmove_Full-1.drm 🚅	>> H:\drm\ARSmove_Full-1.gps	
10573K/10573K		

- Click Open icon from Extract GPS Info Logging File. Select logging file to extract GPS information.
- Click Open icon from Extract GPS Info Gps File. Select GPS export path.
- 5. Click \longrightarrow icon to create a file with GPS information.

The status bar shows its progress.

- 6. Repeat step 3 and 4 to extract GPS information from more than one logging files.
- 7. Click Add button. The converted GPS file is added to GPS File list.
- 8. Click OK.
- 9. Loaded GPS route is displayed with red line in **Real Time Mapping** window.

Confirm start and end point of the route.



Displaying BTS / Repeater / Serving Line /

Coverage

Map Layer Property icon in Map Control Icon bar enables show/hide BTS, Repeater, coverage, call events, serving lines, and etc.

- 1. Click Map Layer Property 📓 icon.
- 2. Map Properties window appears.

Map P	Map Properties					
Bo	order Setting					
		CDMA	EVDO	WCDMA	GSM	N I
	Show	•		V	✓	
	Band	None 🔻	None 🔻	None 🔻	None 💌	
	Border Width	3 🔻	3 🔻	3 🔻	3 🔻	
	Border Color					
	BTS Size	5 🔻	5 💌	5 🔻	5 🔻	
	Label Gap	5 🔻	5 🔻	5 💌	5 🔻	
	•					F
	BTS/Repeater Label Display Label Option					
	Font		BSC ID BTS ID BTS Nam Longitude	•	PN Band Azimuth Angle	* III
	Eng123	3	☐ Latitude ☐ Altitude ☐ Height ☐ Cell Size		Cell ID Sector ID Gain Tx Power	-
					<u>0</u> K	Cancel

3. Select a tab to show/hide in the map, and configure map display options.

Tab	Description	
BTS	To show BTS icon in the map, selects the checkbox for Show for	
	each technology column. Configures BTS shape, color, size, and	
	etc.	
Repeater	To show Repeater icon in the map, selects the checkbox for	
	Show Repeater. Configures link, label, and etc of repeater.	
Serving Line	To show serving line in the map, selects the checkbox for Show	
	for Active, Candidate, Neighbor Set respectively. Configures	
	colors according to technology type and Ec/Io or RSSI threshold	
	range.	
Coverage	Configures colors of BTS coverage line for each range.	

Exporting LoggingData

XCAP supports to export logging data of selected parameters to file in xls, csv, txt format.

- 1. Select Menu bar File Export Log File.
- 2. Export Log File window appears.

NOTE: Parameter list shown in **Export Log File** window may vary depending on products.

Export Log	g File	-	×
	WCDMA GSM/GPRS HSDPA HSDPA HSPA CDMA EVDO Rev0 EVDO Rev0 EVDO Rev4 Nokia EDGE WiBro/WiMax(BDM/ZyXEL) WiBro/WiMax(SDM) Beceem GCT WiBro/WiMax(Runcom) DC-HSDPA Common		
File Type	: Excel(*.xls) Scanner Time	💌 🔽 Include G	iPS Info
Convert	t Log		<u>C</u> lose

Export Log File window

- 3. Select parameters you want to export to a file.
- 4. Define export options.

Option	Description
File Type	Select export file type (xls, csv, txt).
Include GPS Info	Include GPS information in export file.

5. Click Close.

Replaying Measurement

XCAP enables you to replay existing logging file during drive test.

- 1. Select Menu bar File Replay, or click on Replay icon from Icon bar.
- 2. **Open** window appears. Select a logging file you want to replay, and click **Open**.
- 3. Replay Control bar appears.



Replay Control bar

4. Select chipset type of mobile station and replay speed.

Icon	Description	
Open	Open existing logging file.	
Play	Start or resume replay.	
Rev.	Reverse replay.	

Icon	Description
Pause	Pause replay.
Stop	Stop replay.
Chip type	Select chipset type.
Speed	Control replay speed (0.5x, 1.0x, 2.0x, etc.).
Current Time	Show replay process time.
Time bar	Show replay status.

5. Click **Play** icon to start replay.





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