XCAL-M User Guide

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Accuver Co., Ltd.,

Address: Innowireless B/D,190 Seohyeon-ro, Bundang-Gu, Seongnam-Si, Kyungki-Do, Korea

Web site: <u>www.Accuver.com</u>

Phone #: +82-31-788-1700

Fax #: +82-31-705-1246

Revision History

Rev	Product Version	Date	Description
0	3.04.xx	2015 September	Initial version

General Icons

Icon	Name	Description			
0	Caution	Alerts possible mechanical damage or malfunction.			
0	Note	Provides additional information or detailed specification of the			
		function and feature.			



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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 a 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 System Overview

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LTE(Adv)-Q Summary Graph (Mobile1)	🖀 🥃 Signalling Message (Mobile1) 👘 🖓 📮 Call Statistics/Current So	enario)
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-50	1356/01.4/23 DL PCCH v4/70 LTE paging Call Result	
-150	Cause	
Worksheet1 / Worksheet2 / Worksheet3 /		

XCAL Program Main Screen

Special Features

XCAL is provided with the following highlighted features:

Simple, Easy, Intuitive Graphic Interface

- To provide intuitive and user-friendly user interface.
- To provide useful and multiple icons and mouse menus.
- To provide simple and easy configurations for HW/SW installations and call tests.
- To visualize all call tests related status, real-time monitoring data, and statistics.

Log and Decode Data in Real-time

• To log and decode data in real-time.

Automatic Call Generation and Termination

- To create AutoCall scenarios by call types; Voice, FTP, HTTP, UDP, Email, VoIP, VOD, Ping, IPerf, SMS/MMS, etc.
- To measure Layer 1,2,3 messages and TCP/IP packet message by connecting mobiles and scanners to XCAL.
- To support call tests for maximum 20 mobiles at once.

All Commercially Available Mobile Chipsets Support

- 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, MediaTekc, Samsung chipset
- LTE: Qualcomm chipset, LGE chipset, Samsung chipset, GCT chipset, Sequans chipset, Altair chipset, HiSilicon chipset
 - XCAL series is provided with authorized license. Supporting items may vary according to license type.

Voice/Data performance test for different technologies/operators

• To compare and benchmark voice and data performance for different technologies and operators.

Real-Time Monitoring

- To visualize measurement data in real-time by linking GPS data.
- To monitor measurement data in real-time in various types; message, graph, table, chart, map, and etc.
- To provide comprehensive graphic analysis of signal and data throughput.
- To analyze handoff.

Diagnosis and Statistics

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- To declare call events; Call Drop, Setup Fail, Low Throughput, etc.
- To provide statistical data in multiple types.

Various Scanners Support

- 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)

Audible/Visible Alarms

• To provide audible and visible alarms for important call events.

Log File Replay

• To replay log file.

System Requirements

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

Minimum

Item	Minimum			
CPU	Core i7 or above			
Monitor	1024 * 768(16bit) or above			
RAM 4GB or above				
Hard Drive 500GB or above				
Operation System	Window XP/Vista/7/8/8.1 (Unavailable for Windows Server/2000)			

Recommended

Item Recommended			
CPU Core i7 processor or higher			
Monitor Full HD (Over 1920 * 1080, 16bit high color)			
RAM	8GB or above		
Hard Drive	1TB or larger hard disk for collecting data		
Operation System	Window XP/Vista/7/8/8.1		



This chapter describes what components are to be provided with the initial purchase and how to install SW, Key Lock driver, and USB GPS driver. Make sure all components are provided properly with the purchase and follow the instructions for corresponding installation procedures.

Installing Software (with Setup Package)

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

- Before installation of a new Setup Package, uninstall old XCAL if you have installed already in your PC.
- 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 a web link, find the **setup.exe** and run it.
- 2. Installation wizard is started, read carefully and follow installation instructions properly.
 - Configure a 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.
- 3. 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.

Installing Software (with Patch Files)

Software patch file should be installed after proper software is successfully installed in PC.

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

- Before installation of a new software patch file, uninstall old XCAL if you have installed already in your PC.
- 1. Download S/W patch from web link provided by ACCUVER.
- 2. S/W patch is generally provided in zipped file. Unzip it after downloading.
- 3. Copy and paste all unzipped files and folders into the folder where the previous XCAL files were installed. Replace all files with the patch files in the folder.

Installing Security Program (Key Lock Driver)

In order to run XCAL program, XCAL security program (Key Lock Driver) must be installed in the PC.

- 1. Execute *.exe file in program installation folder (C:\Program Files (x86)\Accuver\XCAL-M\Driver).
- 2. Installation wizard is started, read carefully and follow installation instructions properly.
- 3. Click **Finish** button to complete installation of Key Lock Driver.

Installing USB GPS Driver

In order to sync USB GPS to XCAL program, GPS driver must be installed in the PC.

- 1. Execute USB GPS installation file.
 - USB GPS installation file is provided by Accuver via FTP server. Contact to Accuver technical support.
- 2. Installation wizard is started, read carefully and follow installation instructions properly.
- 3. Click **Finish** button to complete installation of USB GPS driver.

Connecting Test Terminals to XCAL

XCAL allows to connect the folloing test terminals; Mobile Phone, Data Card, USB Modem (Dongle), Scanner, GPS

Appropriate drvier should be installed in test PC in advance to connect test terminals to XCAL. When test terminal is physically connected to XCAL and is not recognized in **Device** Manager in PC, XCAL cannot recognize test terminal as well.

- Driver file may vary for phone models and manufacturers. Contact to provider to get a proper driver.
- 1. Install a proper driver.
- 2. Plug in test terminals to HW PIU slots by using phone cables.
- 3. Check if test terminals are installed properly in **Device Manager** in PC.
- 4. If required, connect GPS antenna to HW GPS antenna slot. (Optional)

Executing XCAL Program

XCAL program is now successfully installed, and you're ready to use XCAL.

This chapter instructs how to run XCAL program.



XCAL main window

Graphic User Guide

XCAL is provided with intuitive and user friendly user interface.

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Classification	cation Description						
Menu Bar	Includes File, Setting, Window, and Help.						
	Menu items vary depending on supported technologies.						
Icon Bar	Icon Bar Provides easy access on basic functions.						
Workspace Display various parameter windows.							
Status Bar Shows status of slot, mobile, and GPS.							
Worksheet Saves currently opened windows and their settings in a worksheet. Y							
	create max 30 worksheets.						

Icon Bar

Icon	Description
X	Configures serial port setting between test mobiles and SW.
Port	For detail, see Configuring Port .
R	Saves measurement data.
Logging	For details, see Starting/Stopping Logging.
ş	Replays logging data.
Replay	For detail, see Replaying Measurement.
	Option for User Defined feature.
Trace	Trace data in past time. The orange icons on Trace bar moves 10 seconds back and

Icon	Description
	forth between data, and the pink icons moves 1 second back and forth.
	Transparent Rate
Alarm	Notifies special events.
6	Starts AutoCall.
AutoCall	For detail, see <u>Performing AutoCall Test</u> .
O CallStop	Stops AutoCall.
6	Displays major RF parameters and Call result on Real Time Mapping.
Мар	For detail, see Monitoring Data in Map in Real-Time (Real Time Mapping).

Status Bar

Classification	Description
Phone Status	
None	Slot in Port Setting window is not set. XCAL recognizes that there is no test
None	mobiles connected.
	Communication between XCAL and test mobile is failed due to the following
	reasons.
Mobile1 Error	No physical connection between mobile and PC.
MODIELEND	Wrong phone (chip) type in Port Setting window.
	Wrong port number in Port Setting window.
	Wrong log mask setting in Port Setting window.
01048589925	Port between XCAL and test mobile is set successfully.
01040303323	Test mobile number or Mobile# appears when successfully connected.
GPS Status	
No GPS	GPS in Port Setting window is not set. XCAL recognizes that there is no
	GPS connected.
[,]	GPS connection attempts.
[E0.0000,N0.0000,	No exact GPS location information is received from satellite.
m]	
GPS Alarm	GPS connection attempt is failed.
[E127.3XX,N33.7X	GPS connection attempt succeed.
XX,83m]	For details, see Monitoring Data - Statistics/Status - GPS Status.

Configuring Port

This chapter explains how to configure external devices (mobile station, GPS, Scanner, and etc that are conencted to XCAL HW) in XCAL SW.

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

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 **Configuring Mobile Port (In Mobile Alias Setting window)** – <u>Data Port section</u>.

- For port configuration for each technologes, refer to corresponding technologies' Features User Guide provided seperately.
- Status bar in main window allows you to make sure phones and GPS are connected and configured successfully.

Configuring Port

- 1. Click **Port** icon from Icon bar, or go to Menu bar **Setting Port Setting**.
- 2. Port Setting window appears.

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- 3. Enter a port setting alias name in **Interface** entry field, and click **Add/Edit** button.
- Select checkbox of Mobile# to activate mobile slot. Configure mobile options. For details, see <u>Configuring Mobile Port (In Mobile Alias Setting window)</u>.
 - Optional) When GPS antenna is connected to HW, select the checkbox of GPS and configure options.

Classification	Description
Туре	Selects GPS type.
	Supported GPS Type: NMEA, Trimble, Pioneer, Couei, TAIP(LN)
Port	Configures Com Port which receives location information from GPS.
	Make sure your Com Port information in Device Manager.
Baud	Configures communication speed between XCAL and GPS.
Flow Ctrl.	Select a flow control type; Hardware or Software. (Default: None)
Time Sync	Synchronizes time using GPS.

- Optional) When Scanner is connected to HW, select the checkbox of Scanner and configure options.
- 5. Or, click **Automatic Setting** button to configure automatically.

DM port, Modem/Network Adapter, AT Port are automatically configured according to the options configured while configuring mobile port in **Mobile Alias Setting** window.

6. Click **OK**.

Configuring Mobile Port (In Mobile Alias Setting window)

- 1. In **Port setting** window, select the checkbox of Mobile#.
- 2. Click **Mobile Alias Setting** in button next to **Interface** of Mobile# setting.
 - To edit existing mobile port setting, double-click a Mobile Alias name in Mobile Alias tab at the left side of Port Setting window.
- 3. Mobile Ailas Setting window appears.

83	Mobile Alias Setting 🛛 🚽 🗖 🗙
Mobile Alias LTE-Intel intel LTE-Qualcomm Ite_q_aano3 Ite_qc_dongle Ite_qc_dongle(sierra) Ite_qc_dongle2 LTE-QC_QMICM_Default LTF-QC_VOICE LTE-Samsung(FDD) Ite_q_aanoed LTE-SS_Smart_Default Mobile Test mobile test WCDMA-Qualcomm Ite_qc_dongle(sierra-w) w_qc_dongle(sierra-w)	Mobile Alias Setting Interface LTE-QC_QMICM_Default Phone Interface LCgMask Chip Type LTE-Quadcomm Interface Add/Edit Del Phone Model Mobile Message Adias Phone Model Mobile Message Alias Flow Control None Interface Interface Pont Type USB Interface Select All Default Recommend Inselect All Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Setting Image: Extended Mobile Message Image: Extended Mobile Messa
Mobile Test mobile test WCDMA-Qualcomm Ite_qc_dongle(sierra-w) w_qc_dongle(sierra-w) WiBRO/WiMAX GCT(GCT) WIBRO	Load DMC(QXDM Config) File Setting Image: Apply Min Setting Number Data Service Type Data Service Type C Modem C Network Adapter C Bandich AT CMD Image: C DMA Image: C DMA <
💠 Add/Edit 🛛 🗕 Del	EnableKeymess Image:
	Cancel

4. Select an existing default settings for mobile chipsets by double-clicking a mobile alias name in **Mobile Alias** tree at the left side of **Mobile Alias Setting** windiow.



5. Or, enter an Interface name in **Interface** entry field.

Interface names are saved and to be used for saving mobile port configuration to re-use.

Interface LTE-QC_Smart_Default

- 6. Configure **Phone**, **Data Service Type**, **Video Phone Option**, **Data Port**, **DUN**, **LogMask** section. For details, see the following sub-chapters.
- 7. Click **Add/Edit** button to save mobile port configurations. Make sure the newly configured mobile port configuraion is added in **Mobile Alias** list.
- 8. Click **OK**.

Phone section

Phone			
Chip Type LTE-Qualcomm 💌			
Phone Model etc.			
Baud Rate 115200 💌			
Flow Control None			
 Don't Use Key Emulation (USB Dongle and PCMCIA Modem Card) Streaming Logging 			
Extended Mobile Message Setting			
▼ Event Report Message Setting			
Load DMC(QXDM Config) File Setting			
Apply Min Setting Number			

Classification	Description
Chip Type	Defines the 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 Logging	 Determines if streaming logging is executed. Checked (default): XCAL sends Packet Request Logmask to mobile and the mobile will send data continuously without any other requests. Unchecked: XCAL 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

Classification	Description
	displayed once and then blank state will follow.
Extended Mobile	Additional mobile message
Message	User select extended mobile message which user want to see additionally.

Data Service Type section

-Data Service Type	
O Modem	🔘 Sierra AT CMD
O Network Adapter	C Bandrich AT CMD
QMICM Interface	O USB Tethering

Classification	Description
Modem	Selects when using modem network.
Network Adapter	Selects when using network adapter or connection manager program.
QMICM Interface	Selects when using QMICM (Qualcomm MDM (MSM) Interface
	Connection Manager).

Video Phone Option section

-Video Phone Optio	n	
Send Key Press	0x 50	
Receive Key Press	s 0x 50	
Before Dial	0x	
Delay for Receive	Key(ms) 0	¢

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 Press	Enters receive key value of test video mobile.
Delay for Receive Key	Enters receive key delay value of test video mobile.
(ms)	

Data Port section

Data Port Dial Num *98# User ID Password Extra Setting	
Classification	Description
Dial Num	Configures dial number to connect to packet data switch.
User ID	Configures User ID to connect to packet data switch.
Password Configures password to connect to packet data switch.	
Extra Setting	Configures 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 Domain of 3GPP TS 27.007 (AT command set for User Equipment (UE))"

DUN section

DUN IP Header Comp. Nego. multi-link S/W Mdm H/W Flow LCP	Comp. Ext.		
Classification	Description		
IP Header Comp	Selects for using IP Header Compressor.		
Nego. Multi-link	Negotiates multi link during initial LCP.		
S/W Comp	Selects for using software compression.		
Mdm H/W Flow	Selects for using hardware flow control.		
LCP Ext	Selects for using LCP expansion.		

LogMask section

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 in LogMask

list, you may save time for creating logging file and DM processing.

• LogMask list varies depending on mobile and chip type.



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 packets 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.

Starting/Stopping Logging

Signals and packet data collected during field test are saved in log file both manually and automatically.

- Log files are saved in the directory where the XCAL program files are saved in as default.
- To edit options for log files, go to main Menu bar **Setting Log File Setting**.
- Logging Info window displays logging status and detailed information. To open Logging Info window, go to main Menu bar – Statistics/Status – Logging Info. For details, Monitoring Data – Statistics/Status – Logging Info.

- Logging Info	
Directory	
	Mobile1
Directory	
File Name	
Start Time	
Elapsed Time	
Logging Size (drm/drx)	
Logging Size (drmp(x))	
Logging Size (drmmp(x))	
Disk Free Space	304.7 GB

Starting/Stopping Logging Manually

- 1. Click **Logging** button in Icon bar, or go to main Menu bar **File Logging On/Off**.
- 2. **Save Logging File** window appears.

ve togging II	ie (Free Spac	e: 33301.5 MB)		
Save in	12	2	• • • • •	
3	1			
My Recent Documents				
Desktop				
10 A				
ly Documents				
-				
89				
my composer				
	Henne			
and the second		DRIPHSS		Carine
My Network Places	File name:	1000000	and (ave

- 3. Designate a directory where the log file to be saved.
- 4. Click **Save**.
- 5. To stop logging manually, click **Logging** icon one more time.

Starting/Stopping Logging Automatically

While running an AutoCall test, log file is generated and saved automatically. In accordance with logging options in AutoCall Scenarios, XCAL generates and saves log file in designated directory.

AutoCall logging Option			
All Scenarios 💌	Setting		
 By Call End By Accurate Point By User Call End & Start 1st Call (with Keep Con.) 			
Extend logging time 5 Sec			
Stop logging when autocall finished			
Logging Wave Information			

When **All Scenarios** and **Stop Logging when AutoCall Finished** is configured in **AutoCall Logging Option** section in AutoCall Scenario, XCAL creates and saves all log files from the call start and stops saving logs at call end automatically.

For details, see Configuring AutoCall Scenario.

Performing AutoCall Test

XCAL generates and terminates various types of call tests based on pre-specified call scenario 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, Email, SMS/MMS, YouTube, App, and etc. AutoCall scenario should be pre-configured for each call type.

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

• Call types vary depending on License Key.

Configuring AutoCall Sceanrio

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

- 1. Click **AutoCall** icon from Icon bar, or go to main Menu bar **File AutoCall Start**.
- 2. AutoCall Scenario Setting window appears.

6		Auto	Call Sce	nario S	etting						
в	/Autocall Setting Alias / Autocall Alias	T	/pe	Idle	Setup	T.Setup	Traffic	Total	AutoCall Scen	ario Mobile	91
6656668									Sync Keep Con.	Enable	Y
	app_FTP_NT_out app_ping_out app_youtube_out I FTP	Port C Sync	Port 🔺 C Sync © Cycle 🗸						Network Type Group Coverage 1	All techno 1 Disable pp_FTP_N	• • •
	FTP_NT_in FTP_NT_in_test FTP_NT_in_test	All Scena	All Scenarios Setting					Apply Row	2 3 4		
	ping All Scenario	G By Call End C By Accurate Point G By User Call End & Start 1st Call (with Keep Con.)					6				
**	app_FTP_NT_out app_ping_out app_youtube_out FTP_NT_in FTP_NT_in_test	Extend logging time 5 Sec CSFB						7 8 9 10 11			
	ping	Addit [neservation] Call Control [WinAct WinBrol/Life Reep cont						12 13 14 15			
]	Save	ОК	Cance

3. Click Create New Scenario 膨 button at the top left corner in AutoCall Scenario

Setting window.

4. AutoCall Setup window appears.

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

Scenario Name

6. Configure AutoCall common timer 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			
Idle Time	Waiting time in Idle mode between call attempts			
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.

Voice FTP PPP VolP VI Ping CS

Following sections introduces how to configure common options for each call type. For details, see Voice, FTP, and HTTP.

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.

11. Click **OK**.

Voice

Select **Voice** tab and configure options for voice AutoCall measurement.

CDMA QC-WCDMA NOKIA TCC-WCDMA DEN TD-S	
Call Type : Drigination	Call Type : Origination Destination : None Dialed Digit : 01012345678 AMR Rate : 12.2kbps Call Flow : Using Only Alerting/Connect Success Time 0 Dial up Keypress
Call End End Button	Pick up 0 Button Call End End Button Atternation Play LCG Detection Tone
 Video Phone Call Send DTMF during Traffic Time Send DTMF in traffic setup Play Sound 	Video Phone Call Send DTMF during Traffic Time Send DTMF in traffic setup Play Sound
DTMF Setting MOS Calculation Setting Sound Setting	DTMF Setting MDS Calculation Setting Sound Setting

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.					
	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.					
	Iraffic 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
C Put File
Logging FTP Raw Data : 🥅
Port : [21 Passive Mode :]
Repeat
Count : 0 Delay(s) : 0
Release after LCP Ter nego : 🔽
C PPP/Ethernet © ETP
Start Time : 0 Sec
Interval: 0 Sec
Threshold : 0 Kbps
GPP QoS and APN

Option	Description			
Host	Designates IP number of host server to connect.			
Login ID	Configures Login ID of host server.			
Password	Configures Password of host server.			
Change Dir	Designates the directory of host server where file to be downloaded.			
Ger File	Designates file name to be downloaded.			
Put File	Designates file size to be uploaded. Select the file size from the drop down list. To transfer file size which is not on the list, type the number. - Unit: k = KB, m = MB - No unit = XCAL-MO assumes MB			
Logging FTP Raw	Check: logging payload data of TCP			
Data	Uncheck: logging only header data			
Port	Configures port number per protocol.			
Passive Mode	Selects the FTP server is connected with the passive mode			
Repeat	Designates repeat count. After server connection, it repeats the Get File or, the Put File command in traffic. * Count : Set the repeat count * Delay : Set the delay until the before get file			
Release after LCP Ter	If the option is checked, it will wait for PPP Release order after the			
nego	completion of Data transmission. If the option is unchecked, it does not			

Option	Description
	wait for PPP Release order and it ends call using the End button. User
	can confirm LCP packet from packet message window.
Pending	When measured traffic is kept lower than the configured conditions, XCAL
	release a current call forcibly and start the next call.
	The measured traffic is kept monitoring from Traffic Start. When the
	traffic lower than the configured condition [Threshold] is detected for
	[Interval] without any compulsory recover, Pending event is declared.
	PPP/Ethernet : Selects whether the pending condition will be applied
	to PPP/Ethernet layer throughput.
	FTP: Selects whether the pending condition will be applied to FTP
	(application) layer throughput.
	Start Time (sec): The duration between the traffic start time and
	when pending condition starts to be measured.
	Interval (sec): If the throughput value remains under the defined
	threshold value for the defined interval period, pending event is
	declared and the call is terminated.
	Threshold (Kbps): The desired throughput value in kbps
	If throughput remains under the defined threshold value for the
	defined interval period, pending event is declared and the call is
	terminated.
3GPP QoS and APN	Sets QoS and APN of PDP Context which is defined in 3GPP.
	Refer to 3GPP TS 27.007 (<u>http://www.3gpp.org/</u>)

нттр

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

Voice FTP PPP Ping Volf	HTT ()
Call Type : Web browser	
URL : ♥ http://www.google.co.k ♥ http://www.naver.com/ ♥ http://www.nate.com/	
L Into 22 us. vanoo.com/	
<	
Add Edit	Delete
C Open all per call	
C Open one by one per scenario	
Port : 80 Repeat : 1	
Interval : 5000	ms
Put File : 100k	
Logging HTTP Raw Data	
C PPP/Ethernet TCP/IP Start Time : O Sec	
Interval : 30 Sec Threshold : 0 Kbps	
GRP Oos and APN	
Classification	Description
classification	Description
Call Type	Selects a HTTP call type; Web Browser, Download, Upload.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses)
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call : Performs test all registered URL at once for one
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call : Performs test all registered URL at once for one call.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario continues the next URL.
Call Type URL	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario continues the next URL. Configures control port number for each protocol. (Default: 21)
Call Type URL Port Repeat	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario continues the next URL. Configures control port number for each protocol. (Default: 21) Enters number of access attempt to HTTP address to connect.
Call Type URL Port Repeat Pending	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario continues the next URL. Configures control port number for each protocol. (Default: 21) Enters number of access attempt to HTTP address to connect. When measured traffic is kept lower than the configured conditions,
Call Type URL Port Repeat Pending	Selects a HTTP call type; Web Browser, Download, Upload. Enters URL Address to connect. More than 2 addresses can be configured. (Maximum: 70 addresses) Enter an URL address in the entry field, and click Add button. Open all per call: Performs test all registered URL at once for one call. Open one per call: Performs test all registered URL sequentially for one call. Open one by one per scenairo: For multi call tests. Every call is processed taking the listed URL sequentially. If the first scenario is completed not finishing the all listed URL, the second scenario continues the next URL. Configures control port number for each protocol. (Default: 21) Enters number of access attempt to HTTP address to connect. When measured traffic is kept lower than the configured conditions, XCAL release a current call forcibly and start the next call.

traffic lower than the configured condition [Threshold] is detected for

Classification	Description
	[Interval] without any compulsory recover, Pending event is declared.
	PPP/Ethernet: Selects whether the pending condition will be
	applied to PPP/Ethernet layer throughput.
	FTP: Selects whether the pending condition will be applied to FTP
	(application) layer throughput.
	Start Time (sec): The duration between the traffic start time and
	when pending condition starts to be measured.
	Interval (sec): If the throughput value remains under the defined
	threshold value for the defined interval period, pending event is
	declared and the call is terminated.
	Threshold (Kbps): The desired throughput value in kbps
	If throughput remains under the defined threshold value for the
	defined interval period, pending event is declared and the call is
	terminated.
3GPP QoS and APN	Refer to 3GPP TS 27.007. (<u>http://www.3gpp.org/</u>)

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.
| | AutoCall S | icenai | rio Setti | ing | | | | | |
|---------------------------------------|-------------|--------|-----------|---------|---------|-------|-------------------|----------------|---|
| | | | | | | | AutoCall Scenario | | |
| Autocall Setting Alias Autocall Alias | Туре | Idle | Setup | T.Setup | Traffic | Total | 2 | Mobile1 | |
| AutoCall Alias | | | | | | | Repeat | 1 | |
| | | | | | | | Sync | Enable | Y |
| ann fhant | | _ | | | | | Keep Con. | | |
| | | | | | | | Network Type | All technology | • |
| 🖾 📕 All Scenario | Port | | | | | | Group | 1 | 7 |
| app_ftpnt | C Sync C As | ync | CO | icle | | | Coverage | Disable | - |
| | | | | | | | | app_ftpnt | |
| | | | | | | | 7.57 | | _ |

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

3		A	utoCal	Scena	rio Setti	ing					
								AutoCall Scenario			
В.	Autocall Setting Alias Autocall Alias	Туре	Idle	Setup	T.Setup	Traffic	Total		Mobile1	Mobile2	1
Ř	AutoCall Alias	App FTP NT DN	5	10	30	100	1	Repeat	1	1	
O		URI		~	Get	Put	-	Sync	Enable	Enable	Y
ð	- App	ftptest.innowir	eless.co.k	r/ Sava	1g			Keep Con.			
2				Jave				Network Type	All technology	 All technology 	•
4	app_ping	Port						Group	1	* 2	*
-	🖃 📕 All Scenario	C Sync 🔍	Async	C C	ycle	-		Coverage	Disable		-
	app_ftpnt app_ping	E LIGHT					-	2	app_ftpnt	app_ping	

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

						2	AutoCall Scenario						
Туре	Idle	Setup	T.Setup	Traffic	Total		V	Mobile1		Mobile2		Mobile3	
App Ping	5	10	20	50	1		Repeat	1		1		1	
URL			-	-	-		Sync	Enable	-	Enable	-	Enable	-
10.253.8	.39	_					Keep Con.		_		_		_
		Save					Network Type	All technology	•	All technology	•	All technology	-
Port							Group	1	-	2	-	3	-
⊂ Sync	sync	O Cy	cle		•		Coverage	Disable •	•	Disable	•	Disable	•
L							1	app_ftpnt				app_ping	
							_	l l					

Option	Description
Port	Sync: Synchronizes call start on every call attempt among multiple
Port	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.

Autocall Setting Alias Autocall Alias	Ty)e	Idle	Setup	T.Setup	Traffic	Total		Mobile
AutoCall Alias								Repeat	1
				-				Sync	Enable
app_FIP_NT_out app_ping_out app_youtbecout FIP_NT_in FIP_NT_in_test Ping ping All Scenario	Port C Sync All Scenari C By Use	ell logging C os ✓ End C E r Call End 8	Async Option — Sy Accurat Start 1st 1	C Cy e Point Call (with K	Cle Setting		Apply Row Apply All Delete All	Keep Con. Network Type Group Coverage 1 2 3 4 5 6	All techno All techno Disable pp_FTP_N
app_FTP_NT_out app_youtube_out fTP_NT_in FTP_NT_in_test ping	Extend log Stop log Export Re All Info (Detail Ir By Cour PESO o RTP Inf	ging time S gging when wave Info servation (of Call Statis fo of Call St t Result of f r POLQA Into (KLS)	autocall fir rmation Call Contro tics (JPG) atistics (T> vIOS Statis formation(>	Sec iished I WiMA2 (T) (tics(XLS) (LS)	≺(wiBro)/L	TE Keep	con.	7 8 9 10 11 12 13 13 14 15	

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

- 2. Save logging files window appears. Designate a directory to save log file.
- 3. Click Save.
- 4. Call Statistics (Current Scenario) window appears, and AutoCall test is started.

Stopping AutoCall Test

AutoCall test is stopped as configured in AutoCall scenario automatically. However, you may terminate a call test while the test is in progress.

- 1. Click **CallStop** icon from Icon bar, or go to main Menu bar **File AutoCall Stop**.
- 2. AutoCall test is terminated manually.

Monitoring Data

By performing manual and automatic call tests, multiple signal and packet data are collected, an d can be monitored in multiple formats in real-time.

This chapter introduces common monitoring windows; in **Messages**, **Statistics/Status**, and **User Define** menus in main Menu bar.

Provided monitoring windows vary depending on License Key.

Messages

Following sub-menus are listed under **Message** menu in main Menu bar.

Signaling Message

Signaling Message window shows Layer3 messages collected from test mobile.

- 1. Select main Menu Bar Message Signaling Message.
- 2. **Signaling Message (Mobile#)** window appears.

Signalling Message (Mobile	
Re1	
Message Filter : wcdma test 🛛 👻	Filtering Pause Export Packet Hex Clear Find MCC = 450 MNC = 5 LAC = 0x20
🔽 Show Step1 🗖 Show Step	p2 🗖 Show Step3
Time Channel 15:44:42.597 UL DCCH 15:44:42.597 UL 15:44:42.597 UL 15:44:42.599 UL DCCH 15:44:44.279 UL 15:44:44.278 UL DCCH 15:44:44.510 DL 15:44:44.510 DL 15:44:44.510 DL 15:44:44.510 UL 15:45:929:920 UI 15:45:929:920 UI	ID Message 2 radioBearerSetupComple ALERTING ===> Trans id or Skip indicator : 0(0x0) 3 uplinkDirectTransfer-ALE CONNECT uplinkDirectTransfer-CON 3 uplinkDirectTransfer-CON 3 uplinkDirectTransfer-CON 3 uplinkDirectTransfer-CON 1D Message
15:44:41.432 DL CCCH 15:44:41.790 DL DCCH 15:44:41.930 DL DCCH 15:44:42:210 DL DCCH 15:44:44:510 DL DCCH	0 rrcConnectionSetup 2 securityModeCommand 3 downlinkDirectTransfer-S 2 radioBearerSetup 3 downlinkDirectTransfer-C
Item	Description
Message Filter	Clicks Filtering button to select filter name.
	Filtered Message window shows the filtered message flow.
Filtering	Adds/Deletes/Edits message filter.
	1. Click Filtering button.
Pause/Resume	 Message Filtering Dialog window appears. Message Filtering Dialog New Add Delete Update OK Cancel Filter Name : CDMA E VDO WCDMA GSM GSM Click New button. Enter message filter name in Filter Name entry field. Select message type you want to filter. Click Add. Click OK. Pauses/Resumes message flow.
	If message flow is stopped by Pause button, messages are saved while
	logging is in progress.
Export	Exports the current message in the viewer in txt format.
Packet	Displays packet message with CAI message.
Clear	Deletes all messages shown in the window.
Find	Finds message.
Show Step 1,2,3	For WCDMA only.

Displays selected Step 1,2,3 parameter in real time.

Item	Description
Message window	The upper left section in Signaling Message window.
	Displays signaling message.
Filtered Message	The lower left section in Signaling Message window.
window	Displays the selected parameter inforamtion.
Detailed Message	The right section in Signaling Message window.
Information	Displays parameter information of the selected message.
window	
Time	Shows Time Stamp for CAI message flow.
Show Step	For WCDMA only.
	Displays Show Step 1, 2, 3 messages.
Channel	Shows message transfer channel.
ID	Shows message ID.
Message	Shows message name.

Alarm Event Manager

Alarm Event Manager window lists up alarm events.

- 1. Select Menu Bar Message Alarm Event Manager.
- 2. Alarm Event Manager (Mobile#) window appears.

	-	- T	1	
Export	AsEx	cel	As Txt	
Time(ms	ec)	Mes	sage	
9:48:3	0.091	Prot	cocol Revision (5	-> 6)
19:48:3	7.112	NID	$(15 \rightarrow 23297)$	
19:48:3	7 128	FA ((2103 - 24224) (100 -> 0)	
19:48:3	7.128	Best	PN (106 -> 25494	0
19:48:3	8.079	NID	(23297 -> 15)	
19:48:3	8.079	SID	(4224 -> 2189)	
19:48:3	8,080	Best	: PN (25494 -> 106	5) <u>-</u>
19:48:5	1.309	Colo	or Code $(15 \rightarrow 0)$	
19:48:5	1.388	COLO	or Code (U -> 15)	
19:48:5	2.082	Dest	100 × 25)	
10 40 1	4 088	FA (25 -> 100	
19 49 4	5 083	NID	$(15 \rightarrow 0)$	
19:49:4	5.108	SID	$(2189 \rightarrow 0)$	
19:49:4	5.108	FA ((100 -> 0)	
19:49:4	5.109	Best	PN (310 -> 0)	
19:50:2	1.620	Cal	Drop	
19:50:2	5.570	Sect	or ID	
19:50:2	6.075	FA ((100 -> 25)	

Item	Description
As Excel/Txt	Exports alarm event manager window in xls or txt.
Time	Displays time stamp of message.
Message	Displays event list which meet alarm condition.

Packet Message

Packet Message window displays message flow and detailed content of message of test mobile. Packets which generated from test mobile during data service such as LCP, CHAP, IPCP, IP, TCP, UDP, ICMP, and etc. are displayed in order.

- 1. Select Menu Bar Message Packet Message.
- 2. Packet Message (Mobile#) window appears.

Pause		
Mobile1	Code	[06:43:02 7841 MS Bx Data
15:43:02.521 T× 15:43:02.532 R× 15:43:02.574 R× 15:43:02.575 T× 15:43:02.577 R× 15:43:02.577 R× 15:43:02.577 R× 15:43:02.603 R× 15:43:02.604 T× 15:43:02.612 R× 15:43:02.649 R× 15:43:02.649 R× 15:43:02.649 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.679 R× 15:43:02.705 T× 15:43:02.705 T× 15:43:	Seq: 4184426336, Ack Seq: 1114235187, Ack Seq: 1114235187, Ack Seq: 1114237903, Ack Seq: 4184426336, Ack Seq: 4184426336, Ack Seq: 1114239436, Ack Seq: 1114239436, Ack Seq: 1114239436, Ack Seq: 1114241046, Ack Seq: 1114241046, Ack Seq: 1114241046, Ack Seq: 1114241275, Ack Seq: 1114241275, Ack Seq: 11142442035, Ack Seq: 11142443045, Ack Seq: 11142443045, Ack Seq: 1114244505, Ack Seq: 4184426336, Ack Seq: 4184426336, Ack Seq: 4184426336, Ack Seq: 1114245041, Ack	IP IP Header IP Version : 4 IP Header Length : 20 Type of Service : 00000000 (0x00) 000: Precedence - Routine 0: Normal Delay 0: Normal Throughput 0.: Normal Throughput 0.: Normal Reliability 0.: ECT bit - Normal Cost 0: CE bit - No Congestion Total Length : 1500 (0x05 DC) IP ID : 25419 (0x63 4B) Flag + Offset : 0x40 00 0 Reserved

Item	Description
Pause/Resume	Pause/Resume message flow.
Time	Show time stamp of message.
Dir	Show message flow direction.
	Rx : Receive (Network > PC / MS)
	Tx : Transmit (PC / MS > Network)
Туре	Show packet message type.
Code	Show message name and Seq/ACK number.
Message	The left section in Packet Message window.
display window	Display packets which generated from test mobile during data service
	such as LCP, CHAP, IPCP, IP, TCP, UDP, ICMP, and etc. are displayed in
	order.
Protocol	The right section in Packet Message window.
analysis	A protocol analyzer which analyzes captured packets and display packet
window	message.
	NOTE: Supported depending on product version.

Packet Capture Viewer

Packet Capture Viewer window displays captured packet messages.

- 1. Select Menu Bar Message Packet Capture Viewer.
- 2. Packet Capture Viewer (Mobile#) window appears.

<u>D</u> etail	Hex	Pause	<u>C</u> lear	Filter	Export	Manual C	apture	🔽 Display	Broadcast		
Count	Time	Source		De	stination		Туре	Info	I		
1	0:05:55.276	0.0.0.0		255.	255.255.255	D	HCP	DHC	P Request - Transa	ction ID 0x91f33c0)c
1	0:05:55.281	10.55.243.	230	10.5	5.243.229	D	HCP	DHC	PACK Transact	tion ID 0x91f33c0c	
1	0:05:55.291	00:a0:c6:0	0.00.01	ft:ft:f	f:ff:ff:ff	A	RP	Gratu	itous ARP for 10.55	.243.229 (Request	
1	0:05:55.738	10.55.243.3	229	224.	0.0.22	10	MP	V3 M	embership Report /	Join group 239.25	5.255.250
1	0:05:55.740	10.55.243.	229	239.	255 255 250	S	SDP	M-SE	ARCH * HTTP/1.1		
1	0:05:55.805	10.55.243.	229	10.5	5.243.231	N	BNS	Regi	stration NB INNO 00	02<00>	
11	0:05:56.526	00:a0:c6:0	0:00:01	ff:ff:f	f:ff:ff:ff	A	RP	Who	has 10.55.243.2303	7 Tell 10.55.243.2	29
10	0:05:56:526	00:a0:c6:0	0:00:ff	00:a	0:c6:00:00:0	1 A	RP	10.5	5.243.230 is at 00:a0):c6:00:00:ff	
1	0:05:56.526	10.55.243.	229	125.	145.12.66		CP	1054	> ftp [SYN] Seq=29	52894945 Win=65	535 Len=
	0.05-56 555	10.55 243	229	10.5	5 243 231	N	RMC	Bea	stration NR INNO 00	12/00\	-
1											
1 Frame 4 Etherne Internet	t II, Src: 00:al Protocol Vers	0:c6:00:00:01 sion 4, Src Ad	(00:a0:c6: dr: 10.55.2	00:00:01), 43.229 (0x	Dist: 01:00:56 0A37F3E5), [e:00:00:16 (0 Dst Addr: 224	11:00:5e:00: 1.00.00.22 (1	00:16) 0xE0000016)			
1 Frame 4 Etherne Internet	t II, Src: 00:al Protocol Vers Group Manaj	0:c6:00:00:01 ion 4, Src Ad gement Proto	(00:a0:c6: dr: 10.55.2 col	00:00:01), 43.229 (0x	Dst: 01:00:56 0A37F3E5), [e:00:00:16 (0 Dst Addr: 224	11:00:5e:00: 1.00.00.22 (1	00:16))xE0000016)		1	
1 Frame 4 Etherne Internet	t It II, Src: 00:al Protocol Vers Group Manaj	0:c6:00:00:01 ion 4, Src Ad gement Proto 5 6 7	(00:a0:c6: dr: 10:55:2- col 8 9 .	00:00:01), 43.229 (0x A B C	Dst: 01:00:56 0A37F3E5), [D E F	e:00:00:16 (0 Dst Addr: 224	11:00:5e:00: 1.00.00.22 (I 789ABCDE	00:16))xE 0000016) F			

PPP Frame Message

PPP Frame Message window displays PPP Frame information including UM/RM/AN Frame.

- 1. Select Menu Bar Message PPP Frame Message.
- 2. **PPP Frame Message (Mobile#)** window appears.

TIME(maec)	Type	Source	Destination	Protocol	Description	-
17:42:50.720	R×	203.236.43.93	10.150.16.211	UDP		
17:43:01.117	Tx	10.150.16.211	203.236.43.93	UDP		
17:43:02.122	HX D.	203,235,43,93	10.150.16.211	UUP		
17:43:03.112	RX Tv	203,230,43,93	203 236 43 93	LINP		
17:43:03.193	Tx	10.150.16.211	203.236.43.93	UDP		
17:43:04.322	Rx	203.236.43.93	10.150.67.212	UDP		-
17:43:04.904	R×	203,236,43,93	10.150.16.211	UDP		
17:43:05.167	Rx	203.236.43.93	10.150.16.211	UUP		12
17-43-05-017	1X-	10.100.10.211	200,200,40,30	UUP		N N
<						>
Internet Proto	col. Src Addr. 2	203 236 43 19 (203 236 43	19), Dst Addr. 10,150,10	1.3 (10.150.101.3)		1
internet rot						
- Version:	4					
Version: Header le	4 ength: 20 bytes					
Version: Header le ⊡ Differenti	4 ength: 20 bytes ated Services F	ield: 0x00 (DSCP 0x00: De	efault; ECN: 0x00)			
- Version: - Header k ⊡ Differenti - Total Ler	4 ength: 20 bytes ated Services F ngth: 152	ield: 0x00 (DSCP 0x00: De	efault; ECN: 0x00)			
Version: - Header Id ⊡- Differenti Total Ler Identifica	4 ength: 20 bytes ated Services F igth: 152 tion: 0xf923 (63	ield: 0x00 (DSCP 0x00: De 779)	efault; ECN: 0x00)			
Version: Header Is Total Ler Identifica Totals: Constant	4 ength: 20 bytes ated Services F ngth: 152 tion: 0xf923 (63 04 (Don't Fragm	ield: 0x00 (DSCP 0x00: De 779) ient)	efault; ECN: 0x00)			
Version: ··· Version: ··· Header Iv Total Ler ··· Identifica ⊡ Flags: 0x 0 1 2	4 angth: 20 bytes ated Services F igth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5	ield:0x00(DSCP0x00:De 779) eent) 6 7 8 9 A B 0	efault; ECN: 0x00) C D E F 012345	6789ABCDEF		
Version: Header Ik Differenti Total Ler Identifica ⊡ - Flags: 0x 0 1 2 0000;	4 ength: 20 bytes ated Services F igth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5	ield: 0x00 (DSCP 0x00: De 779) ent) 6 7 8 9 A B (efault; ECN: 0x00) C D E F 012345 45 00 000000	6789ABCDEF		
Version: Header k ⊡ Differenti Identifica ⊡ Flags: 0x 0 1 2 1000; 1010: 00 98 F5	4 ength: 20 bytes ated Services F igth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5 3 40 00 f	ield: 0x00 (DSCP 0x00: De 779) ient) 6 7 8 9 A B (77 11 77 C8 C8 EC 2	efault; ECN: 0x00) C D E F 012345 45 00 000000 B 13 04 96#0	6789ABCDEF 1000000 - E - w +		
	4 ength: 20 bytes ated Services F ogth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5 9 23 40 00 F	ield: 0x00 (DSCP 0x00: De 779) ient) 6 7 8 9 A B (7 11 77 C8 CB EC 2	efault; ECN: 0x00) C D E: F 012345 45 00 000000 B 13 0A 96#@_ e.com.	6789ABCDEF 1000000. E. .w+		
	4 ength: 20 bytes ated Services F ngth: 152 tion: 0x/923 (63 04 (Don't Fragm 3 4 5 0 23 40 00 F	ield: 0x00 (DSCP 0x00: De 779) eent) 6 7 8 9 A B (7 11 77 C8 CB EC 2	efault; ECN: 0x00) C D E F 012345 45 00 000000 B 13 0A 96#e. e.com.	6783ABCDEF 0000001_g. .w+		
	4 angth: 20 bytes ated Services F igth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5 3 4 5 1 23 40 00 1	ield: 0x00 (DSCP 0x00: De 779) emt) 6 7 8 9 A B 0 7 11 77 C8 CB EC 2	efault; ECN: 0x00) C D E F 012345 45 00 000000 B 13 0A 96#0 e.com. .dms3. dm	6783ABCDEF 1000000E. 		
	4 angth: 20 bytes ated Services F Igth: 152 tion: 0xf923 (63 04 (Don't Fragm 3 4 5 3 23 40 00 f	ield: 0x00 (DSCP 0x00: De 779) ent) 6 7 8 9 A B (77 11 77 C8 CB EC 2	efault; ECN: 0x00) C D E F 012345 45 00 000000 B 13 0A 96#0 e.com. dms3. dm	6789ABCDEF 1000000. ₫. ₩. + 154#		

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Statisticcs/Status

Following sub-menus are listed under **Statistics/Status** menu in main Menu bar.

Call Statistics (Current Scenario)

Call Statistics (Current Scenario) window appears automatically when starting an AutoCall test, and displays call statistics of currently processed scenario.

Detailed call statistics including detailed fail reason, call procedure and information (setup time, traffic time, IP address) are displayed.

- 1. Select Menu Bar Statistics/Status Call Statistics (Current Scenario).
- 2. Call Statistics (Current Scenario) window appears.

	Mobile1	Mobile2	Mobile3	01029214326	01029215772	Mobile9	01021462266	01021468027
Interface Name	LTE SKT 모뎀	.TE SKT 단말(음성	.TE SKT 단말(음성	KT-W 단말(음성)	KT-W 단말(음성)	LTE LG 모뎀	SKT-W 단말(음성)	SKT-W 단말(음성)
Scenario Name	FTP 업	toM ORG_1(SKT-	ItoM TER_2(SKT-I	ItoM ORG_1(KT-W	NtoM TER_2(KT-W	FTP 업	ItoM ORG_1(sk-W	/ItoM TER_2(sk-W
Phone Info	comm(USB Dongle	TE-Qualcomm(etc	TE-Qualcomm(etc	HDQ(etc.)	HDQ(etc.)	comm(USB Dongle	HUQ(etc.)	HUQ(etc.)
Total	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Success	0 (0%)	1 (100%)	1 (100%)	1 (100%)	1 (100%)	0 (0%)	1 (100%)	1 (100%)
Setup Fail	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Traffic Fail	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Drop	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Pending	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Time Out	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
End By C.P	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
End By M.R	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
ldle	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Error	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Time	15/3/0/0	20/10/0/65	26/4/0/66	20/9/0/65	32/5/0/65	15/3/0/10	20/8/0/65	32/5/0/65
Setup(A/C/S)	11					//0.26		
Current								
Avr_Time	0					2302.2		
Avr_Call		3.28	3.66	3.39	3.71	2302.2	3.78	3.75
Work Type	Up	Org - M3	Ter - M2	Org - M7	Ter - M6	Up	Org - M14	Ter - M13
Work Info1		MOS Stop	MOS Stop	MOS Stop	MOS Stop		MOS Stop	MOS Stop
Work Info2								
Progress	0.0%	100.0%	0.0%	100.0%	0.0%	3.0%	100.0%	0.0%
Current State	Call End	Call End	Call End	Call End	Call End	Call End	Call End	Call End
Call Result	End by user	Success	Success	Success	Success	End by user	Success	Success
Total Time								

Call Statistics window has All Info and Detailed Info tabs.

All Info tab (Voice)

All Info tab in Call Statistics window displays call statistics, procedure, information of test mobile.

All Info tab displays different statistics items depending on call type (Voice, Data Call).

Statistics(Current Scenario)		
Mobilez	Re1	Mobile2
Interface Name	mobile test	
Scenario Name		
Phone Info	HDQ	QC
Total	2/2	0/0
Success	1 (50%)	0 (0%)
Setup Fail	1 (50%)	0 (0%)
Traffic Fail	0 (0%)	0 (0%)
Drop	0 (0%)	0 (0%)
Pending	0 (0%)	0 (0%)
Time Out	0 (0%)	0 (0%)
End By C.P	0 (0%)	0 (0%)
End By M.R	0 (0%)	0 (0%)
ldle	0 (0%)	0 (0%)
Error	0 (0%)	0 (0%)
Time	15/8/0/0	0/0/0/0
Setup(A/C/S)		
Current		
Avr_Time		
Avr_Call		
Work Type	CS Video Call	None
Work Info1	4.2	
Work Info2	4.01	
Progress	0.0%	0.0%
Current State	MSG	
Call Result		
Total Time		

Item	Description
Interface	Shows name of Alias configured during Porting Setting.
Scenario	Shows the current scenario name (current count/total retry count).
Phone Info	Mobile Type (shows chip type and mobile type).
Total	The number of calls progressed/Total number of calls for auto call test
Success	The number and percentage of successful calls for attempted calls
Setup Fail	The number of setup fail calls (Setup fail occurs when radio link setup
	failure happens)
Drop	Call drop during progress of traffic
End By C.P	Disconnect by Counter party (release or drop)
	*This event is available for Voice and CS
End By M.R	Call disconnected by mobile, after traffic.
Idle	* CDMA : Fail to receive general page message
	* WCDMA : Fail to receive rrc Connection Request message
Error	Number of calls with various errors such as No ATDT, modem Error and
	port error. These errors are related to test phone
Time	Idle time/Setup time/Traffic setup time/Traffic time
Work Type	Autocall type such as FTP Up/Down state, Ping, HTTP and CS
Progress	It displays the progress of the current call
Current State	Indicate current state of application service
Call Result	Result of call

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All Info tab (Data)

All Info tab in Call Statistics window displays call statistics, procedure, information of test mobile.

All Info tab displays different statistics items depending on call type (Voice, Data Call).

Mobile2 All Info		
	Re1	Mobile2
Interface Name	mobile test	
Scenario Name		
Phone Info	HDQ	QC
Total	2/2	0/0
Success	1 (50%)	0 (0%)
Setup Fail	1 (50%)	0 (0%)
Traffic Fail	0 (0%)	0 (0%)
Drop	0 (0%)	0 (0%)
Pending	0 (0%)	0 (0%)
Time Out	0 (0%)	0 (0%)
End By C.P	0 (0%)	0 (0%)
End By M.R	0 (0%)	0 (0%)
ldle	0 (0%)	0 (0%)
Error	0 (0%)	0 (0%)
Time	15/8/0/0	0/0/0/0
Setup(A/C/S)		
Current		
Avr_Time		
Avr_Call		
Work Type	CS Video Call	None
Work Info1	4.2	
Work Info2	4.01	
Progress	0.0%	0.0%
Current State	MSG	
Call Result		
Total Time		

Item	Description
Interface	Shows name of Alias configured during Porting Setting.
Scenario	Shows the current scenario name (current count/total retry count) to
	run.
Phone Info	Mobile Type(shows chip type and mobile type)
Total	The number of calls progressed/Total number of calls for auto call test
Success	The number and percentage of successful calls for attempted calls
Setup Fail	Setup fail occurs when radio link setup failure happens
Traffic Fail	Traffic fail is declared if connection to application layer fails after
	finishing PPP layer connection.
	*This event is available for data service such as FTP, TFTP and HTTP
Drop	Call drop during progress of traffic
Pending	If throughput is sustained under predefined threshold for designated
	time threshold, then pending is declared and the call will be dropped
	For details, see Configuring AutoCall Scenario - FTP - Pending
	section.

Item	Description
Time Out	If download or upload from/to application can not be finished during
	predefined traffic time interval, then Time Out is declared
Error	Number of calls with various errors such as No ATDT, modem Error and
	port error. These errors are related to test phone.
Time	Idle time/Setup time/Traffic setup time/Traffic time
Setup(A / C / S)	Connection Time for Air link setup time/Core link setup time/Server
	setup time
	СДМА
	Air Time: ATDT ~ LCP Start(Traffic)
	Core Time : LCP Start(Traffic) ~ IPCP End
	Server Time: FTP Connecting ~ FTP Load CMD
	WCDMA
	Air Time: ATDT ~ RRC Connection Complete
	Core Time : RRC Connection Complete ~ Activate PDP Context
	Accept
	Server Time: FTP Connection ~ FTP Load CMD
	GSM
	Air Time: ATDT ~ PDP Context Request
	Core Time: Activate PDP Context Request ~
	Activate PDP Context Accept
	Server Time: FTP Connection ~ FTP Load CMD
Current	Displays throughput of proceeding call.
Avr_Time(Kbps)	Average throughput of calls averaged over time
Avr_Call(Kbps)	It is calculated as follows; Total received bytes / Total elapsed times of
	all FTP transmission
Work Type	Displays current call type.
Work Info1	IP address of application server before starting service application. File
	size to be downloaded or uploaded after starting service application
Work Info2	File name to be downloaded or uploaded before starting service
	service application
Progress	Indicates percentage of data quantity downloaded or uploaded over
	total file size
Current State	Indicates current state of application service
Call Result	Result of call.

Detailed Info tab

Detailed Info tab displays call statistics, procedure, and event.

Detailed Info window consists of the following three sectinos.

- Call Statistics View
- Call Result View
- Call Event History View

	Call Type		Idle			Setup		Treffic	Setup		Traffic																				
	HTTP		1071	a	6/30		6/30		5/30		5730		5/30		5/30		5/30		5/30		307100						Sector Sector Sector				
	Total S		Success		\$	Setup Fail		Traffic Fail			Drop		Pending	l.	Time Out	E	nd By C.P.		ldie .	Error											
	1/1		1 (100	%)		0 (0%)		8 (1	196)		0 (0%)		0 (0%)		0 (0%)		0 (0.01)		0 (0%)	0 (0%)											
											Set	up Fall Rea	sion					~													
1	Drail		LCP			Auth		P	CP.	-	Logan	0000000000000	Unknown																		
	:0		D			0			0		0		0																		
																	C-1	C		- V!											
																	Call	1 Sta	itistic	s view											
										- 17				_																	
												7442				_															
No	Stat Te	me End1	ine	Result	FA:	SID	NID	Scenario	Callype	i inio	22																				
	관철적	065 23 55 0	5.541 Las	Support	445	122	125	Voer	Voice	fittipiz4	70		International Property	and the second second	10.00	1.00	Contractory of			and the second second											
3	2375.44	424 23 06:0	1895 5	access				Price	Pep	List 1 317	LCPG07	Auto 140	IPOP 1 644	E HPP 2 22	 Logen 1.264. 	Mar 130 May 1	490. Ave 183		ad hours	Harpite 102											
4															D. Logen 1.345																
	2335.45	797 - 23/67 3		000010								Auto 4/1		. HPP:200	 Logorc 0.690. 		Throughout 7.5		44 28971												
6							_					_		-	_			Call	Recu	lt View											
<u>.</u>																		can	Resu												
				6.0																											
13 56 15																															
1200010	100	PEP Locito				AG 102 193																									
12 60 17		PTT Loolin	End																												
1210		Frank Stat																_													
156.27		Success															•														
1156 22	7.713	Finishing Star																													
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12 100 40	5 750	AT Formed																													
356.0	7,004	UDP StatFr																													
11100-0	1 284	COPIE AND	with:																												
13 Mil (4)	174	Los Concie																													
	4.31	AUTH Stat	and an																												
1998 AN	1438	IPOP Stat																													
1156-50	1490	PPE Lordin	Stat			25,132,16																									
0.98.51	1.345	PPPLagfin	End																												
12 562 51	1951	Traffic Setup																													
13 57 28	1033	Success																													
13 57 28	1033																														
1.04 1	2710	COS End																													

Call Statistics View

Call Statistics View shows the statistics of call result over the current auto call scenario such as success rate, setup fail rate, traffic fail rate, drop rate and the specific reason of failed calls.

Call Type	Idle	Setup	Traffic Setup	Traffic						
FTP	1/1	6 / 10	1 / 10	0 / 100						
Total	Success	Setup Fail	Traffic Fail	Drop	Pending	Time Out	End By C.P	Idle	Error	
1/1	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
				Setup Fa	il Reason					
Dial	LCP	Auth	IPCP	Logon	Unknown					
0	0	0	0	0	0					
	Traffic Fail Reason									
Connect	Change Dir	File Open	Time Out	Unknown						
1	0	0	0	0						
0%										

Item	Description
	AutoCall Setting
Call Type	Call Type (Voice, FTP)
Idle Time	Time interval between two successive calls
Setup Time	Time limit for the test phone to connect to Dial-Up Network. If the test phone cannot be connected to Dial-Up Network until the Setup Time expires, XCAL-MO counts it as fail call.

Item	Description
Traffic Setup	Duration from connecting to the FTP site to completion of downloading. If
Time	the call is dropped in the middle of the call before the Traffic setup Time
Traffic	expires, XCAL-MO counts it as drop call.
	Call summary
Total	The number of calls progressed/Total number of calls for auto call test
Success	The number and percentage of successful calls for attempted calls
Success	Sotup fail occurs when radio link sotup failure happens
	Traffic fail is declared if connection to application layer fails after finishing
	PPP laver connection
	*This event is available for data service such as FTP, TFTP and HTTP.
Drop	Call drop during progress of traffic
Pending	If throughput is sustained under predefined threshold for designated time
	threshold, then pending is declared the call will be dropped.
	*This event is available for FTP.
Time Out	If down load or up load from/to application can not be finished during
	*This event is available for FTP.
End By C.P	The number of calls progressed/Total number of calls for auto call test.
Idle	* CDMA : Fail to receive page response message
	* WCDMA : Fail to receive rrc Connection Request message
Error	Number of calls with error
Congestion	Receive mobile is on line.
No Service	Fail to receive service connect message
	Fail Reason
	Voice Call Setup Fail Reason (CDMA)
Origination Fail	Fail to send origination message within setup time in origination type call
Channel Assign	Fail to receive channel assignment message.
Fail N	N is number of Origination of Page Response Messages
No Service	Fail to receive service connect message
BS Ack Fail	Fail to receive base station acknowledgement message after receiving
	channel assignment message
Alert Fail	Fail to receive alert message
Connect	Setup fail occurred after alert Message is received
	Voice Call Setup Fail Reason (WCDMA)
Origination	Fail to send origination message within setup time in origination type call
RRC Reject	Fail to setup call by receiving RRC connection reject message
RRC phase	Fail to receive RRC Connection Complete message
CM Setup phase	Fail to receive Downlink Direct Transfer(Call Proceeding) message after
	receiving Initial Direct Transfer(CM Service request) message

Item	Description
RAB Failure	Fail to setup call by receiving Radio Bearer Failure message
RAB Setup phase	Fail to receive Radio Bearer Setup Complete message after receiving Radio Bearer Setup Message
Alerting phase	Fail to receive Alerting Connection and Connection Ack message after receiving Radio Bearer setup complete message
Disconnect	Fail to setup call by receiving Downlink direct transfer(Disconnect) message
Registration	Fail to setup call due to RT Area Update
Failure	
Network Busy	Receive mobile is on line.
	Data Call_Setup Fail Reason
Dial Fail	Dial fail is declared if radio link can't be set up during setup time threshold.
LCP Fail	LCP fail is declared if LCP negotiation phase can't be finished before setup timer expires.
Auth Fail	Auth fail is declared if authentication negotiation phase can't be finished
Origination	Origination is declared if there is no Detail Code1 46 (Call Setup Status)
ongination	while Setup Time in WCDMA/HSDPA/HSUPA.
RRC Connection	RRC Connection reject is declared if RRC Connection reject message is
reject	received while Setup Time in WCDMA/HSDPA/HSUPA.
RRC Phase	RRC Phase Failure is declared if RRC Connection setup complete message is
Failure	not received after RRC Connection request within Setup Time in WCDMA/HSDPA/HSUPA.
Service Setup	Service Setup Phase Failure is declared if RRC Connection Release message
Phase Failure	is received or RRC Connection Release message is sent within Setup Time in WCDMA/HSDPA/HSUPA.
Activate PDP	Activate PDP Context Reject is declared if Active PDP Context Reject,
Context Reject	Activate Secondary PDP Context Reject, or Request PDP Context Activation Reject is received after Activate PDP Context Request within Setup Time in WCDMA/HSDPA/HSUPA.
RAB Failure	RAB Failure is declared if RAB Setup Failure message is received within Setup Time in WCDMA/HSDPA/HSUPA.
RAB Setup	RAB Setup Phase is declared if RadioBearer Setup Complete is not received
Phase	after RadioBearer Setup message within Setup Time in
	WCDMA/HSDPA/HSUPA.
Activate PDP	Active PDP Context Phase is declared if there is no Activate PDP Context
Context Phase	WCDMA/HSDPA/HSUPA.
IPCP Fail	IPCP fail is declared if clients can't receive IP allocation from network
	before setup timer expires.
Logon Fail	Logon fail is declared if network Logon can't be finished before setup timer expires.
	Data Call_Traffic Fail Reason

Item	Description				
Connect Fail	Fail to connect to application server before traffic setup timer expires.				
Change Dir Fail	I Fail to locate directory of application server where download file is located				
	before traffic setup timer expires.				
File Open Fail	Fail to open download file before traffic setup timer expires.				
Time out Fail	Fail to start download before traffic setup timer expires.				
	Data Call_Ping Statistics				
Lost (%)	Percentage of lost ping count over total ping count in total call				
Min (ms)	Min RTT value in ms over total call				
Max (ms)	Max RTT value in ms over total call				
Avg (ms)	Average RTT value over total call				
Hops (Min)	Min hop count over total call				
Hops (Max)	Max hop count over total call				

Call Result View

Call Result View shows summarized results of each call such as setup time, FA, End Time, Result, FA, SID, NID, Scenario, Call Type and Information.

No	Start Time	End Time	Result	Scenario	CallType	Throughput(Kbps) Info (D:Dial, L:LCP, A:Auth, I:IPCP, P:PPP, L:Logon)
12	11:35:24.905	11:36:10.264	Success		Voice	Setup:11.14
13	11:36:57.134	11:37:39.770	Success		Voice	Setup:8.76
14	11:38:06.455	11:38:48.492	Success		Voice	Setup:8.37
15	11:39:04.259	11:39:48.464	Success		Voice	Setup:8.65
16	11:40:07.448	11:40:51.219	Success		Voice	Setup:8.59
17	11:41:07.624	11:41:50.630	Success		Voice	Setup:9.47
18	11:42:05.505	11:42:48.342	Success		Voice	Setup:8.68
19	11:43:10.598	11:43:51.821	Success		Voice	Setup:8.39
20	11:44:08.480	11:44:52.037	Success		Voice	Setup:8.36
21	11:46:21.128	11:46:49.713	Drop		Voice	Setup:7.80, Holding:20.28
22	11:47:36.144				Voice	Setup:22.67

Item	Description			
Νο	Number of call			
Start Time	Start time of call			
End Time	End time of call			
Result	eason of call termination			
Scenario	cenario name			
Call Type	Call Type (Voice, FTP, HTTP and Ping/TraceRT)			
Throughput	Displays the information depending on the scenario			
Info	Number of call			

Following items are displayed in Info cell in Call Result View section.

Item	Description		
Common	* D (Dial Time) : ATDT ~ LCP Start (First)		

Item	Description					
	* L (LCP) : L	CP Start (Traffic) ~ LCP Complete				
	* A (Auth) :	Auth Start ~ Auth Complete				
	* I (IPCP) : I	PCP Start ~ IPCP End				
	* P (PPP) : LCP Start (First) ~ IPCP End					
	* L (Logon) :	PPP Logon Start ~ PPP Logon End				
	CDMA	FA : Frequency Assignment.(Invalid on WCDMA)				
		SID : System Identification number(Invalid on WCDMA)				
		NID : Network Identification number(Invalid on WCDMA)				
Voice	CDMA	Setup: Elapsed time to setup radio link				
	WCDMA	Setup: Elapsed time to setup radio link				
		RRC : RRC Connection request ~ RRC Connection Setup				
		Complete				
		CM Setup : CM Service request ~ Call Proceeding				
		RAB : Radio Bearer Setup ~ Radio Bearer Setup Complete				
		RRC No : RRC Connection request Count				
FTP	Server	Elapsed time for FTP Connection				
	Traffic	Elapsed time for traffic				
	Throughput	Throughput of FTP application layer				
	RcvByte	Amount of total received bytes for a call				
	MaxByte	Maximum size of file to be received in byte unit for a call				
	Air, Core	Air, Core Time.				
		For detaileds, see Monitoring Data - Statistics/Status -				
		Call Statistics (Current Scenario) - All Info section.				
Ping	RTT(Min)	Minimum RTT in a call				
	RTT(Max)	Maximum RTT in a call				
	RTT(Avg)	Average RTT of a call				
	Rcv	Number of receive				
	Lost	Number of ping lost in a call and percentage of lost ping				
		count over total sent ping count in a call				

Call Event History View

Call Event History View shows history of important events in call processing with timestamp. It displays the important call event with timestamp.

Time	Status	Contents	
10.22:10.899 10.22:15.916 10.22:16.037 10.22:16.217 10.22:16.217 10.22:16.222 10.22:30.829 10.22:30.829 10.22:33.331 10.22:34.623 10.22:34.623 10.22:34.623 10.22:35.440 10.22:35.440 10.22:35.924 10.22:35.924 10.22:35.924 10.22:35.924 10.22:35.924 10.22:35.924	Idle Start Setup Start AT Call Start AT Connect LCP Start(First) Call Origination LCP Start(Traffi LCP Complete AUTH Start AUTH Complete PCP Start IPCP Start IPCP End PPP LogOn Sta PPP LogOn Star PPP LogOn Start Trace RT Start Success Release Start Call End	TraceRT AT 1 ATDT#777 c) e 211.235.138.252,192.168.144.246 152,2236,162	
Ite	m		Description
Tim	ne	Time information of events.	
Status		Detailed status of call in prog	ress.

Call Statistics (All Scenario)

Contents

Call Statistics (All Scenario) window displays overall statistics of all AutoCall scenarios.

1. Select Menu Bar - Statistics/Status - Call Statistics (All Scenarios).

Supplemental information for status.

2. Call Statistics (All Scenarios) window appears.

Scenario	Call Type	Repeat	Total	Setup Try	Success	Setup Fail	Incomplete	Error				
To	tal	1/3	2 / 15	2 (100.0%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)				
ftp up	Current	FA:25, S	ID:2189,	NID:15,	Server:1.6	7, Traffic	:27.20, T	hroughput	:94.9 Kbp	s, RovByt	e:322660,	MaxByte
Scenario	Call Type	Total	Success	Setup Fail	Traffic Fail	Drop	Pending	Timeout	End By C.P	End By M.R	Idle	Error
	Maina	1/3	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
voice	voice	Setup:3.0	Setup:3.04									
6- J	ETD.	1/3	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
rtp down	FIF	Server:1.3	25, Traffi	c:24.32, ⁻	Throughpu	it:345.0 Kł	ops, RevE	Byte: 10485	i76, Maxe	Byte: 10485	576 (D:1.4	44, L:0.0
	ETD	0/3	0	0	0	0	0	0	0	0	0	0
	FIF											
	000	0/3	0	0	0	0	0	0	0	0	0	0
PPP PPP												
	Et. a	0/3	0	0	0	0	0	0	0	0	0	0
ping	Fing											

Item	Description			
Scenario	Current scenario name			
Call Type	Current call type			
Repeat	Repeatition count of AutoCall scenario.			
Total The number of calls progressed for current call/Total number of calls				
	current auto call test.			
	(If user uses the Setup Try function, the total is PPP setup count.)			

Item	Description		
Setup Try	Repeat count of auto call scenario		
Success	Number of successful calls		
Setup Fail	Setup fail occurs after radio link setup failure		
Incomplete	Number of calls which are not successful. This parameter is for data service		
	only.		
Error	The number and percentage of error calls for attempted calls		

EVDO Session Assignment Test

In EVDO Session Assignment Test window, you are allowed to clear EVDO sessions by using NV Read/Write function automatically.

1. Select Menu Bar - Statistics/Status - EVDO Session Assignment Test.



2. Set values and click **Session Clear** button. The following items are displayed and the test mobile is reset.

Mobile1 SPC	000000 Session Clear	
Mode Change SPC Command NV Write Mode Change 16:20:33.283 UATIRequest 18:20:33.637 UATIAssignm UATI20iorCode: 66 UATI24: 1498204(0×16DC5C 16:20:33.646 UATIComplet Setup Time(sec) : 0.363	ent ;) e	
Item	Descri	otion
Mobile	Mobile Number	
SPC	Displays the code in SPC	
Session Clear	Resets the mobile	

Ping Status

Ping Status window displays test result of single ping test in graph and statistics.

- Mobile1 400 350 300 200 RTT Time(ms):Current=408, Min=4, Avg.=162.50, Max=408; Lost(%)=0.00 No State m 59.12.193.12: bytes=32 time=171ms TTL=118 oly from 59.12.193.12: bytes=32 time=9ms TTL=118 Reply from 59.12.193.12: bytes=32 time=273ms TTL=118 Reply from 59.12.193.12: bytes=32 time=288ms TTL=118 Reply from 59.12.193.12: bytes=32 time=363ms TTL=118 Reply from 59.12.193.12: bytes=32 time=108ms TTL=118 eply from 59.12.193.12: bytes=32 time=141ms TTL=118 ply from 59.12.193.12: bytes=32 time=8ms TTL=118 eply from 59.12.193.12: bytes=32 time=408ms TTL=118 111 . Description Item RTT Time (ms) Current: RTT Time of current ICMP Min: Minimum RTT time Avg.: Average RTT time Max: Maximum RTT time Lost(%): Loss rate of ICMP
- 1. Select Menu Bar Statistics/Status Ping Status.

TraceRT Status

TraceRT Status window displays TraceRT test result in statistics.

1. Select Menu Bar - Statistics / Status - TraceRT Status.

TTL	IP	Cur(ms)	Min(ms)	Max(ms)	Avg(ms)	Max-Min(ms)
1	Request timed out.	0				
2	10.100.0.67	859	203	859	531	656
3	10.128.6.1	243	191	243	217	52
4	10.128.1.2	193	193	433	313	240
5	10.128.1.14	197	197	197	197	0
6	10.128.1.25	447	214	447	330	233
7	10.36.10.65	255	164	255	209	91
8	10.36.10.26	421	181	421	301	240
9	128.134.40.129	202	202	210	206	8
10	220.73.168.26	234	191	234	212	43
11	220.73.168.1	277	277	603	440	326
12	168.126.109.6	218	218	234	226	16
13	168.126.88.66	186	165	186	175	21
14	168.126.88.118	272	200	272	236	72
15	221.148.91.226	576	203	576	389	373
16	211.196.214.78	377	267	377	322	110
17	221.148.52.99	381	381	433	407	52

Item	Description				
TTL	Time to Live				
IP	IP Address				
Cur (ms)	Displays RTT of current IP				
Min (ms)	Displays minimum RTT				
Max (ms)	Displays maximum RTT				
Avg (ms)	Displays average RTT				
Max-Min (ms)	Max RTT – Min RTT				

Throughput Info

Throughput Info window displays all throughput information.

1. Select Menu Bar - Statistics/Status - Throughput Info.

PPP Thr	oughput (bps)			M1
307.2K			Tx	
76.8K			Bs	98.3K
	rahnut (hns)			M1
307.2K			Ts	3.8K
76.8K			Pu	04.04
			118	04.UK
307.2K	P Throughput (bps)		-	Mil
76.8K			18	
		\sim	Rs.	81.8K
APP Thr	oughput (bps)			M1
307.2K			Ť×	
76.8K			Bx	
TCP Ret	ransmission Rate (%)			M1
			Ťx	0
			Bx	
	receiving Bute			MT
TUP net	ransmission byte		THE	1911
			10	
0			Bx	
Tx Throu	ughput (bps)		COLOR OF	M1
			IP IP	4.1K 3.8K
			T/U	0
0 By Thro	udbout (bos)			MI
307.2K			PPP	98.3K
76.8K			IP T at	84.0K
38.4K			APP	01.8K

Item	Description		
PPP Throughput	Displays throughput in PPP layer		
IP Throughput Throughput in IP layer that includes IP Header			
TCP / UDP	Throughput in TCP and UDP layer		
Throughput			
APP	Throughput of Specific port TCP		
Throughput	* FTP: 20, HTTP: 80		
ТСР	Provides TCP retransmission rate		
Retransmission			
Rate			
TCP Window	Buffer Window Size		
Size			
Tx Throughput	Provides PPP, IP, TCP / UDP, APP Tx Throughput		
Rx Throughput	Provides PPP, IP, TCP / UDP, APP Rx Throughput		

GPS Status

GPS Status window displays location and time information received from GPS.

1. Select Menu Bar - Statistics/Status - GPS Status.

GPS Status	
Time	10:05:57
Longitude	128.59997
Latitude	35.86535
Heading	81
Speed	0km/h(0.0miles/h)
Source	1
DataAge	2

Item	Description
GPS Time Current time information provided by GPS.	
Longitude	Longitudinal location information provided by GPS.
Latitude	Latitudinal location information provided by GPS.
Heading	Orientation of movement.
Speed	Current moving speed.
Source	A textual evaluation of the current signal being received by the GPS

Item	Description
	receiver. Possible values are: (GPS receiver does not report quality, mostly
	for ETAK receiver support), (bad reception, so no GPS position can be
	derived), (Standard), (a usable signal from a standard GPS receiver,
	accurate within 50 meters), (good signal from a differential GPS receiver,
	so the reported position is especially accurate within 5 meters)
Data Age	An indicator of the freshness of the GPS data: either Valid or Stale.

GPS Satellite Status

GPS Statellite Status window displays satellite information collected via GPS.

PNR 29 26 10 2 8 6 21 27 0 0 0 0 Elevation 80 61 55 36 28 27 19 12 0 0 0 0 0 Azimuth 262 235 54 145 59 265 314 40 0 <th>Satelite</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>11</th> <th>12</th>	Satelite	1	2	3	4	5	6	7	8	9	10	11	12
Elevation 80 61 55 36 28 27 19 12 0	PNR	29	26	10	2	8	6	21	27	0	0	0	0
Azimuth 262 235 54 145 59 265 314 40 0	Elevation	80	61	55	36	28	27	19	12	0	0	0	0
C/N 38 40 40 40 36 37 36 28 0 0 0 0	Azimuth	262	235	54	145	59	265	314	40	0	0	0	0
	C/N	38	40	40	40	36	37	36	28	0	0	0	0

1. Select Menu Bar - Statistics/Status – GPS Satellite Status.

Item	Description
Satellite	The number of satellites , GPS is receiving signal currently from
PNR	Satellite ID
Elevation	Elevation information of satellite
Azimuth	Azimuth information of satellite
C / N	Carrier to Noise ratio of the satellite signal

Logging Info

Logging Info window displays detailed information of log file.

1. Select Menu Bar - Statistics/Status - Logging Info.

C.A.	Logging Info					
Directory						
	Mobile1	Mobile2	Mobile3			
Directory						
File Name						
Start Time						
Elapsed Time						
Logging Size (drm/drx)						
Logging Size (drmp(x))						
Logging Size (drmmp(x))						
Disk Free Space	304.7 GB	304.7 GB	304.7 GB			

Item	Description
Directory The name of the directory the drive test file is being saved.	
File Name	Designated name for the drive test file.
Start Time	Start time of logging the drive test data.
Elapsed Time	Elapsed time from the start of logging.
Logging Size	Size of drive test file.
Disk Free Space	Free space of hard disk.

Communication Statistics

Communication Statistics window displays packet CRC error in statistics.

1. Select Menu Bar - Statistics/Status - Communication Statistics.

Communication Statistics				
		Mobile1		
Comport		COM-1		
Baudra	te	115200		
Streami	ng	On		
# of Tx Pa	icket	0		
# of Rx Pa	icket	3888		
# of CRC Error		0		
Throughput(Avr bps)		110733		
Throughpu	t(bps)	9266351		
Item		Descript		

Item	Description			
Comport	Designates communication port			

Item	Description
BaudRate Designates communication speed through DM port	
Streaming	Determine if streaming logging is executed
# of Tx Packet	Count of Total Tx Packet
# of Rx Packet	Count of Total Rx Packet
# of CRC Error	Count of Packet Error

QPCH Statistics

QPCH Statistics window displays QPCH parameter and QPCH of test mobile.

1. Select Menu Bar - Statistics/Status - QPCH Statistics.

Channel	80			
Rate			1	
PN		1	6	
Power Level		2	2	
Erasure Threshold		3	0	
Bit Threshold	4			
Туре	PI1	PI1 PI2		
Status	Detected	Not detected		
Bit Position	195	741		
I-channel Bit Energy	49 9 .			
Q-channel Bit Energy	35	13		
I-channel Pilot Energy	77	209		
Q-channel Pilot Energy	0	0		

Item	Description				
Channel	Provides QPCH Walsh channel				
Rate	Least significant bit – RATE; rate for QPCH paging indicators:				
	0 – 4800 bps				
	1 – 9600 bps				
	Upper seven bits – XFER_REASON; QPCH transfer reason				
	(why QPCH could transfer back to idle):				
	0 – QPCH_NO_XFER				
	1 – QPCH_SLOT_IMMINENT				
	2 – QPCH_MC_NOT_VALID				
	3 – QPCH_CH_EST_BAD_SIGNAL				
	4 – QPCH_XFER_BCAST_DATA				
	5 – QPCH_BP_AND_PG				
	6 – QPCH_BP_NOT_SUPPORTED				

Item	Description
	7 – QPCH_RWUP
	8 – QPCH_PI1_PI2_ON
	9 – QPCH_BI1_BI2_ON
	10 – QPCH_NEXT_SLOT_NOT_SUPPORTED
	11 – QPCH_CCI_HANDOFF
	12 – QPCH_CCI_ON
	13 – QPCH_DISABLE_BIO_SWITCH
PN	PN index of Pilot (0511)
Power Level	Power level for paging indicator $(0 \sim 7)$
	000 – 5 dB below Pilot Channel Transmit Power
	001 – 4 dB below Pilot Channel Transmit Power
	010 – 3 dB below Pilot Channel Transmit Power
	011 – 2 dB below Pilot Channel Transmit Power
	100 – 1 dB below Pilot Channel Transmit Power
	101 – Same as Pilot Channel Transmit Power
	110 – 1 dB above Pilot Channel Transmit Power
	111 – 2 dB above Pilot Channel Transmit Power
Erasure	Threshold used to determine if the PI / CCI bit is an erasure
Threshold	
Bit Threshold	Threshold used to determine if the PI / CCI bit is 1 or 0
Туре	Type of indicator (0~5)
	0 – Paging Indicator #1
	1 – Paging Indicator #2
	2 – Configuration Change Indicator #1
	3 – Configuration Change Indicator #2
	4 – Broadcast Indicator #1
	5 – Broadcast Indicator #2
Status	Result of indicator demodulation (0~4)
	U – Not applicable
	1 – Not detected
	2 - Detected
Bit Position	Position of indicator (0~768)
I-channel Bit	Indicator energy on I Channel (0~65535)
Energy	
Q-channel Bit	Indicator energy on Q Channel (0~65535)
Energy	
I-channel Pilot	Common pilot energy (0~65535)
Energy	
Q-channel Pilot	Diversity pilot energy (0~65535)
Energy	

Network Info

Network Info window displays detailed information of network.

1. Select Menu Bar - Statistics/Status -Network Info.

Time	10:05:56.394				
IP Address		10.55.243.229			
Subnet Mask	(255.255.255.252			
Default GateW	ay	10.55.243.230			
Primary DNS	;	211.219.86.1			
Secondary DN	IS	211.246.100.20			
MAC Address	6	00:A0:C6:00:00:01			
	Description				
Item			Description		
Item Time	Time	e when network informa	Description tion is collected		
Item Time IP Address	Time	e when network informa cated IP address	Description ition is collected		
ItemTimeIP AddressSubnet Mask	Time Alloo Cont	e when network informa cated IP address figured Subnet mask	Description ition is collected		
ItemTimeIP AddressSubnet MaskDefault	Time Alloc Cont	e when network informa cated IP address figured Subnet mask figured default gateway	Description ition is collected		
ItemTimeIP AddressSubnet MaskDefaultGateway	Time Alloc Cont	e when network informa cated IP address figured Subnet mask figured default gateway	Description tion is collected		
ItemTimeIP AddressSubnet MaskDefaultGatewayPrimary	Time Alloc Cont Cont	e when network informa cated IP address figured Subnet mask figured default gateway figured primary (second	Description tion is collected ary) DNS		
ItemTimeIP AddressSubnet MaskDefaultGatewayPrimary(Secondary)	Time Alloo Cont Cont	e when network informa cated IP address figured Subnet mask figured default gateway figured primary (second	Description tion is collected ary) DNS		
ItemTimeIP AddressSubnet MaskDefaultGatewayPrimary(Secondary)DNS	Time Alloc Cont Cont	e when network informa cated IP address figured Subnet mask figured default gateway figured primary (second	Description ation is collected ary) DNS		

User Define

Following sub-menus are listed under **User Defin** menu in main Menu bar.

User Define menu visualize all parameters in various analysis formats such as graph, table, summar info table, cell measurement table.

Graph

Graph window displays information of selected parameter in graph.

- 1. Select Menu Bar User Define Graph.
- 2. Select checkboxes for any parameters you want to display in graph from the parameter tree on the left section or drag it into the graph on the right section.

L.D. max		
Rx Power Tx Adjust Gain Tx Power FER FER	Re Power - 201 - 40	
Best PN Best Ec/lo Combined Ec/lo SCH PN SCH Eclo		Value -65.6
SCHO SetPoint SCHO SetPoint SCHO SER FWD T & RLP VCDMA GSM/SPRS Common Common SSM/SPRS	best PH 007	Value 148
T x APP Throughput R TCP/IDP Throughput T x TCP/IDP Throughput T x TCP/IDP Throughput T x IP Throughput T x IP Throughput T x IPP Throughput T x PPP Throughput	5	Maluet -4.7
	Combined EAb 4 5 5 6 10 10 10 10 10 10 10 10 10 10 10 10 10	Value -4.6
Parameter Masimum Apoly Minimum Unselect All Favorite Unselect All	Br. APP Throughput 2,007 - 1,000 - 000 -	Walture

3. Set maximum and X, Y axis value. Click **Apply**.

RSSI		
Maximum	0.0	🔲 Auto
Minimum	-100.0	Apply

4. Right click on Graph, and graph mouse menu appears.

	<u>R</u> emove
	<u>X</u> Range
	<u>C</u> reate Favorite <u>D</u> elete Favorite
Y	<u>S</u> how Parameter List
~	S <u>h</u> ow WCDMA Alarm Event WCDMA Event Color Setting

Item	Description
Remove	Deletes the chosen parameter.
X Range	Sets the range of X-axis of the Graph which displays the value of the
	chosen parameter. (unit: second)
Create Favorite	Saves the setting of the chosen parameter
Delete Favorite	Deletes the Favorite File previously generated
Show	Check : Displays the parameter set-up window
Parameter List	Uncheck : Doesn't show up the parameter set-up window

Item	Description
Show WCDMA	Check: Displays Attempt, Success. and Fail on Graph when Event
Alarm Event	Occurs Uncheck: Doesn't show Attempt, Success, and Fail on Graph when Event Occurs
WCDMA Event	This option appears only when Show WCDMA Alarm Event is
Color Setting	selected.
	Select WCDMA Event Color Setting, and Color Setting window
	appears.
	Totra Event Lolor
	Inter Frequency Handover
	Inter RAT 3G to 2G Handover
	Inter RAT 2G to 3G Handover
	Inter RAT 3G to 2G Cell Change
	Inter RAT 2G to 3G Cell Change
	Cel Update
	orka opuse
	Location Update
	GSM Handover
	Attach
	PDP Context Activation
	△ Attempt OSuccess × Fail
	OK Cancel

Table

Table window displays detailed information of selected parameter in table.

- 1. Select Menu Bar User Defined -Table.
- 2. Select checkboxes for any parameters you want to display in table from the parameter tree on the left section or drag it into the graph on the right section.

CDMA 🔺	Time	Call E SCI	H Bx BLP	Activ	Tx Po	Rx Po	TxAd	FER	Best	Best	Combi.	SC -
Rx Power	11:49:03			1		-66.9			148	-4.8	-4.6	
- 🔽 Tx Adjust Gain	11:49:04					-66,9			148		-4.6	
- Z Tx Power	11:49:05					-66.9			148	-5.4		
FER	11:49:06					-67.2			148	-5.4	-5.2	
Deet DN	11:49:07					-67.2			148	5.4	-5.2	
Best FN	11.49:08			1		67.2			148	5.4	-5.2	
Best Ec/lo	11:49:09					-67.2			148	-5.4	5.2	
─ ✓ Combined Ec/lo	11:49:11					-66.9			148	5.5	5.5	
SCH PN	11:49:12					-66.9			148	-5.6	5.5	
SCH Eclo	11:49:13					-66,9			148	5.6	-0.0	
- SCH0 SetPoint	11-49-15					20 0			140	4.0	4.0	
SCH EER DUD	11-49-16					-60.0			140	4.0	4.0	
Sch ren wo	11.49.17					68.9			148	4.0	4.0	
- HX HLP	11 49 18					68.9			148	4.8	4.6	
I X RLP	11:49:20					-68.9			148	-4.8	-4.6	
WCDMA	11:49:21					-71.6			148	-4.6	-4.3	
GSM/GPRS	11:49:22					-71.6			148	-4.6	-4.3	
Common	11:49:23								148	4.6	-4.3	
Call Event	11:49:24					-71.6			148	-4.6	-4.3	
Dy APP Throughout	11:49:25					-69.2			148	4.1	3.7	
The second secon	11:49:27					-69.2			148	-4.1	-3.7	
- Tx APP Throughput	11:49:28					-69.2			148	-4.1	-3.7	
— Rx TCP/UDP Throughpu	11:49:29					-69.2			148	-4.1	-3.7	
Tx TCP/UDP Throughput	11:49:30					-69.2			148	-4.1	-3.7	
— Rx IP Throughput	11 49:31					-66,9			148	-4.0	-3.6	
- Tx IP Throughout	11:49:32					-66.9			148	40	-3.6	
	11.49:33					-66.9			148	-4.0	-3.6	
•	11:49:34					-66.9			148	4.0	-3.6	
there are a	11.43.35					-00.0 ee.e			140	3.3	-3.5	
Unselect All	11-49-22					-00.6			140	29	2.5	
avorite	11 49 40					66.6			148	4 4	4.2	
/CDMA(Cell&RF Info)	•											•

3. Right click on Table, and table mouse menu appears.

<u>R</u> emove	
<u>C</u> reate Favorite <u>D</u> elete Favorite	

✓ Show Parameter List

✓ Show WCDMA Alarm Event

Item	Description
Remove	Deletes the chosen parameter
Create Favorite	Saves the setting of the chosen parameter
Delete Favorite	Deletes the Favorite file previously generated
Show Parameter	Check : Displays the parameter set-up window
List	Uncheck : Doesn't show up parameter set-up window
Show WCDMA	Check: Displays Attempt, Success. and Fail on Graph when Event
Alarm Event	Occurs
	Uncheck: Doesn't show Attempt, Success, and Fail on Graph when Event
	Occurs

Summary Info

Summary Info window displays current information of selected parameters. Parameter value of multiple test mobile can be monitored.

- 1. Select Menu Bar User Defined Summary Info.
- 2. Select checkboxes for any parameters you want to display in table from the parameter tree on the left section or drag it into the graph on the right section.

CDMA CM Bx Power Tx Adjust Gain Tx Power Tx Power		Mobile-1
- ♥ FEH - ♥ Best PN - ♥ Best Ec/In - ♥ Combined Ec/Io - ♥ Combined Ec/Io	Rx Power	-67.9
SCH Echo SCH Echo SCH Ech Switz SCH Ech TwD Sch Ech TwD Sch Ech TwD Sch Ech Sch E	FER	0.0
	Best PN	148
	Best Ec/lo	-4.5
Mobile Mobile-1 Mobile-2	Combined Ec/lo	-4.3
Favorite Unselect All	Tx Power	6.9

3. Right click on the table and Summary Info mouse menu appears.

<u>R</u> emove Mobile R <u>e</u> move Parameter		
✓ Show Parameter List		
<u>C</u> reate Favorite <u>D</u> elete Favorite		
Item	Description	
Remove Mobile	Hides parameter.	
Remove	Deletes parameter.	
Parameter		
Show Parameter	Shows/Hides parameter list section.	
List		
Create Favorite	Saves parameter selection setting in Favorite.	
	Parameter selection setting is added under Favorite tree.	
Delete Favorite	Deletes Favorite tree.	

Cell Measurement

Cell Measurement window displays PN information of corresponding technology.

Signal strength of neighboring base stations and providing information may differ in accordance with technology.

1. Select Menu Bar - User Defined – Cell Measurement.



Monitoring Data in Map in Real-Time (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, and (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>.

	GPS
Туре	NMEA -
Port	<none> •</none>
Baud	4800 -
Flow Ctrl.	None -
Time Sync.	Use Time Sync

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.

1ap BTS Repea	ater Serving Line Custom Draw E	TC Coverage Legend
Offset setting		
Longitude: 127	Latitude: 35	5
Map selection		
	○ Map× 5.x	○ MapXtreme
C MIF(GEO)		
C Smartmap(MIF/	(AB)	
C Using image file	H:\InnoWireless\OPTis Analyzer\	
Map laver		
Map Manager to	use ManX File	
	use maph i lie	

 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.

Mous General	e 색 Layers [) Data T	About MapX Theme Defaults
<u>G</u> eoSet:	C:₩default,gst		•
<u>Z</u> oom:	10,2029635941275		0
Center <u>X</u> :	139,638059932886	Redraw Int:	10
Center <u>Y</u> :	35,2552799129894		Projection
tle:		-	Title Style: 15
urrent Tool	: 1000 - Arrow	•	

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.

Mous	e	Colo	ors	Abo	out MapX
General	Layers	D	ata	Theme	Defaults
Мар					
GeoSet:	D:#Accuver#	#XCAL-\	w₩default.g	gst	•
Zoom:	7931.8700000	0001	Rotatic	on: 0	
CenterX:	18.862465		Redraw In	nt: 10	
CenterY:	54.531691			Projec	tion
Title:	1			Title 9	
Current Tool	1000 - Arrow			ส	ha
	1				

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

hoose Projection	×
Category	
Longitude / Latitude	•
Category Members Longitude / Latitude (Tokyo)\p4301 Longitude / Latitude (Tristan Astro 1968) Longitude / Latitude (Viti Levu 1916) Longitude / Latitude (WGK 66) Longitude / Latitude (WGS 66) Longitude / Latitude (WGS 66) Longitude / Latitude (WGS 66)	
Longitude / Latitude (WGS /2)\p4322 Longitude / Latitude (WGS /2)\p4326 Longitude / Latitude (Yacare)\p4309 Longitude / Latitude (Zanderij)\p4311	

3. Click **OK**.

Configuring for MapXtreme

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

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

C MapX 4.x	C MapX 5.x	MapXtreme
C Smartman(MIE/TAB)		
C Using image file		
4ap layer		
Tin) To Load a man f	INTAR CET MINEL of Ma	Vtroom
	INC (TAD, 031, MVV3) 01 Ma	ipxciealli,
	Control Icon) in Real Time	e Mapping window.
uses a (Layer		
uses a (Layer		
uses 🦰 (Laye		

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	
	1
🗃 Map1	
View Editing Tools	Style Coordinate System Extents I
Zoom (window width):	0.000000 mi
<u>M</u> ap scale:	1: 0.00000
<u>C</u> enter of window:	×: -1.00000
	Y: [-1,00000 deg
Botation angle:	
g	P
ОК	Apply 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.

- Map files in *.mif format with project type of WGS84 should be imported.
- 1. In Real Time Mapping window, click **Map Property** icon, and **Map Properties** window appears. Select **Map** tab.

Map selection		
С МарХ 4.х	⊂ МарХ 5.х	C MapXtreme
C MIF(GEO)		
Smartmap[MIF/TAB] C Using image file		
Map layer		
✓ MIF/TAB File		4
(Only WGS84)		-
		The second se
		<u> </u>
Theme C:\Pro	gram Files\Smartmap\Theme\Map	_Basic_Theme.SMT
	gram Files\Smartmap\Theme\Map	Basic_Theme.SMT

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



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



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.

Section	Description
	- 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).

- 3. 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 Icons

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	~ a	Selects map files by map engine, shows/hides cell sites, manages color legend of BTS, Repeater, Coverage, Serving		
Property		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		Zooms in/out the map.		
In/Out	~ ~			
Pause	00	Pauses measurement data displayed on the map in real time.		
Technology	WCDMA 💌	Selects a technology.		
		Shows measurement route of existing logging file in the map		
Trace	-	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				
Map Mark	2	Shows/Hides mark information display on map.		

Icon Name	Icon Image	Description
Show/Hide		
Bird View	1	Displays map from an elevated view.
3D Building		Displays buildings on the map in three dimention.
Rotate	4	Rotates map and change location.
Tracking Head	3	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.
Parameter Tree		Displays parameter tree on the right.
Parameter Tree		Displays parameter tree on the bottom.
Export		Exports current map file in *.bmp, *.kml, *.gif, *.jpg, and *.mif. Map file exported in *.kml format can be imported to

Icon Name	Icon Image	Description
		Google Earth.
Layer Control		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.

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		874)
Logging File	Gps File	
H:\drm\ARSmove_Full-1.drm 🗃	>> H:\drm\ARSmove_Full-1	.gps 📸

- 3. Click **Open** icon from **Extract GPS Info Logging File**. Select logging file to extract GPS information.
- 4. Click **Open** icon from **Extract GPS Info Gps File**. Select GPS export path.
- 5. Click \rightarrow 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.

Bor	der Setting Show Band	CDM/	4								
	Show Band	CDM/	ł								
-	Show Band	V		EVDC		WCDM	A	GSM		N	
Ē	Band	· · · · ·		~		~		•			
E		None	-	None	-	None	-	None	-		
	Border Width	3	•	3	-	3	•	3	-		
	Border Color										
	BTS Size	5	•	5	•	5	•	5	•		
	Label Gap	5	•	5	•	5	•	5	•		
	د	II	1						,		
BTS	6/Repeater Lai 7 Background Font Eng123			Display I CDMA BSC BTS DBTS Long Latitu Altitu Heigt	Label ID ID Name itude ide de	Option	BTS	PN Band Azimuth Angle Cell ID Sector ID Gain	0	• •	

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 Logging Data

XCAL 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.
 - **9** Parameter list shown in **Export Log File** window may vary dependent on products.



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

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

5. Click Close.

Replaying Measurement

XCAL 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.



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.	
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.



Regional offices

Hong Kong (Head Office)

Accuver APAC Unit 206, 2/F., No. 8 Science Park West Avenue Hong Kong Science Park Shatin, NT, HONG KONG

Tel : +852 2210 7004 Fax : +852 22<u>10 7017</u>

Enquiries : sales.apac@accuver.com support.apac@accuver.com

www.accuver.com

Japan

Accuver Japan 29F Shiroyama Trust Tower, 4-3-1 Toranomon, Minato-ku, Tokyo, 105-6029, Japan

Tel:+81-3-6430-2580

Enquiries : sales@accuver.jp support_aj_1@accuver.com http://www.accuver.jp/login.html www.accuver.com

United Kingdom

Accuver England Suite Two I/F Congress House 14 Lyon Road, Harrow Middlesex, HA1 2EN

Tel : +44 20 8863 1118 Fax : +44 20 8863 1688

Enquiries : sales.emea@accuver.com support.emea@accuver.com http://support2.accuver-emea.com

www.accuver.com

Korea

Innowireless B/D 190, Seohyeon-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea

Tel : +82 31 788 1700 Fax : +82 31 705 0712

Enquiries : sales@accuver.com www.innowireless.co.kr Poland

Accuver Poland Domaniewska 37 street 02-672 Warsaw, Poland

Tel:+48 22 3702518

Enquiries : sales.emea@accuver.com support.emea@accuver.com http://support2.accuver-emea.com

www.accuver.com

USA

Accuver Americas 500 N. Central Expressway Suite 210 Plano TX, 75074, USA

Tel : +1 469 241 6100 Fax : +1 469 241 6199

Enquiries : sales.usa@accuver.com support.usa@accuver.com http://help.usa.accuver.com/helpdesk www.accuver.com