

# PRODUCT INTRODUCTION

## MD8470A Signalling Tester

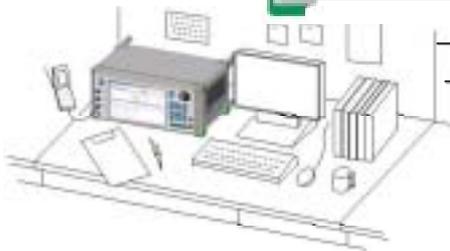
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# **MD8470A Signalling Tester**

## **– Product Introduction –**



– *Mobile Communications Network on the Desk* –  
– *Signalling Tester for Wireless Application* –

**July 2004**  
**Product Marketing Dept.**  
**Wireless Measurement Div.**  
**Anritsu Corporation**  
**Ver 1.00**

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# 1. Product Overview and Features

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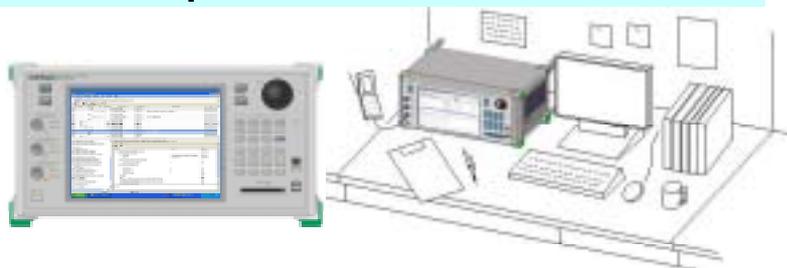
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## Global Mobile Communications Network Realized on the Desks of Wireless Application Developers

In today's wireless communication market, packet data services and third generation systems are growing globally. Factors for succeeding in the wireless communication business are shifting from basic communication technology to the ability to plan and develop attractive mobile devices and services.

**The MD8470A Signalling Tester supports wireless application engineers in accelerating the development and reducing the test cycle of these ever-increasing product and service requirements.**

**MD8470A  
Signalling Tester**



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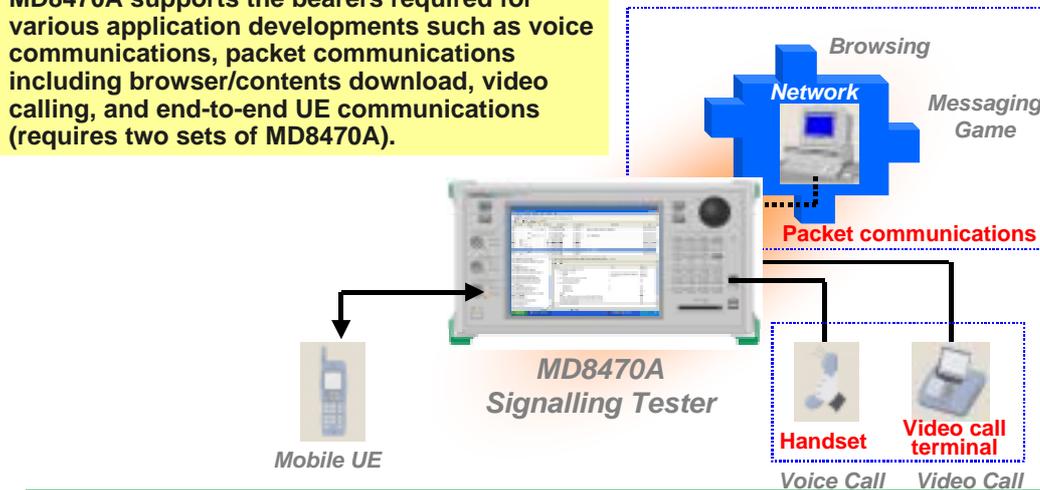
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## Product Overview and Features

(1) A single platform implements functional testing of UE applications such as voice communications, video calling, and contents download.

MD8470A supports the bearers required for various application developments such as voice communications, packet communications including browser/contents download, video calling, and end-to-end UE communications (requires two sets of MD8470A).



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## Product Overview and Features(cont.)

(2) Supports standard call processing

Basic call processing is supported as standard for W-CDMA; voice communications/video call/packet communications, GSM; voice communications and GPRS; packet communications.

■ MD8470A List of supported functions (provides sample scenarios for connection tests below.)

|                              | Function   | Description  |
|------------------------------|--|--|
| W-CDMA                       | Location registration  |  |
|                              | MS(Mobile Station) originated voice call   | Performs loopback or handset communication test.   |
|                              | MS terminated voice call   | Performs loopback or handset communication test.   |
|                              | Voice call released from MS  |  |
|                              | Voice call released from NW(Network)   |  |
|                              | MS originated video call   | Performs communications test with video call UE. *ISDN interface(option) is used.          |
|                              | MS terminated video call   | Performs communications test with video call UE. *ISDN interface(option) is used.          |
|                              | MS originated video call(the end-to-end MS test)   | Performs end-to-end video call test between two sets of MS. *Two sets of MD8470A are used. |
|                              | MS terminated video call(the end-to-end MS test)   | Performs end-to-end video call test between two sets of MS. *Two sets of MD8470A are used. |
|                              | Video call released from MS  |  |
| Video call released from NW  |  |  |
| MS originated packet call    | Performs application tests utilizing packet data communications by connecting to a server. |  |
| Packet call released from MS |  |  |
| GSM/GPRS                     | Location registration  |  |
|                              | MS originated voice call   | Performs loopback or handset communication test.   |
|                              | MS terminated voice call   | Performs loopback or handset communication test.   |
|                              | Voice call released from MS  |  |
|                              | Voice call released from NW  |  |
|                              | MS originated packet call  | Performs application tests utilizing packet data communications by connecting to a server. |
| Packet call released from MS |  |  |

\*W-CDMA:MU847010A(W-CDMA Signalling Unit) and MX847010A(W-CDMA/GSM Simulation Kit) are mandatory.

\*as of July 2004

\*GSM/GPRS:MU847020A(GSM Signalling Unit) and MX847010A(W-CDMA/GSM Simulation Kit) are mandatory.

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## Product Overview and Features(cont.)

### **(3) Supports multiple communication systems (W-CDMA, GSM/GPRS)**

Complies with the world's major 2.5G and 3G mobile communication systems; GSM/GPRS and W-CDMA standards.

### **(4) Covers 400MHz~2700MHz of frequency range**

Easily supports further frequency expansion of systems, covering wide frequency range (400MHz~2700MHz) seamlessly.



*MD8470A  
Signalling Tester*

*W-CDMA Signalling Unit*

*GSM Signalling Unit*

*W-CDMA/GSM Simulation Kit*

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## **2. Platform / Interface**

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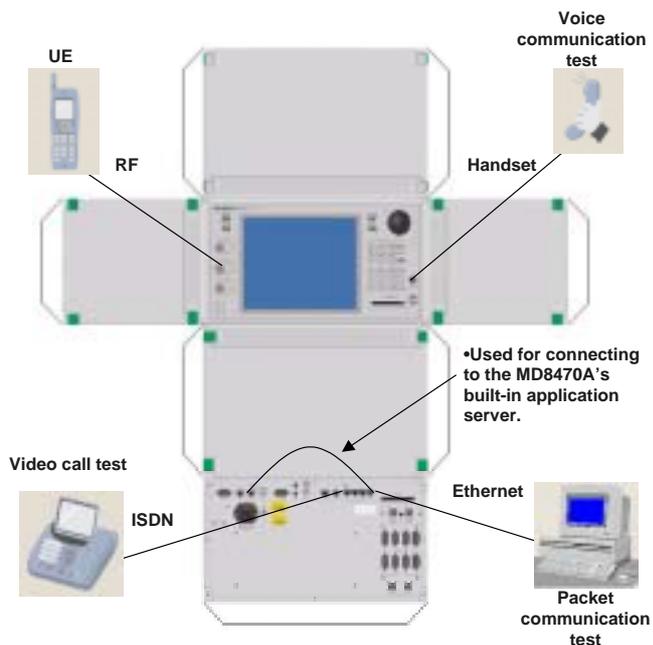
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## Platform / Interface

✓ The BTS simulator function is accomplished by installing the communication system hardware and the control software.

✓ Equipped with Ethernet, ISDN, Handset and Serial I/O interfaces that support various data communication services.

✓ Chassis is designed with a small footprint for use in personal simulation environments (Depth:281mm, Width:426mm, Height:221.5mm)



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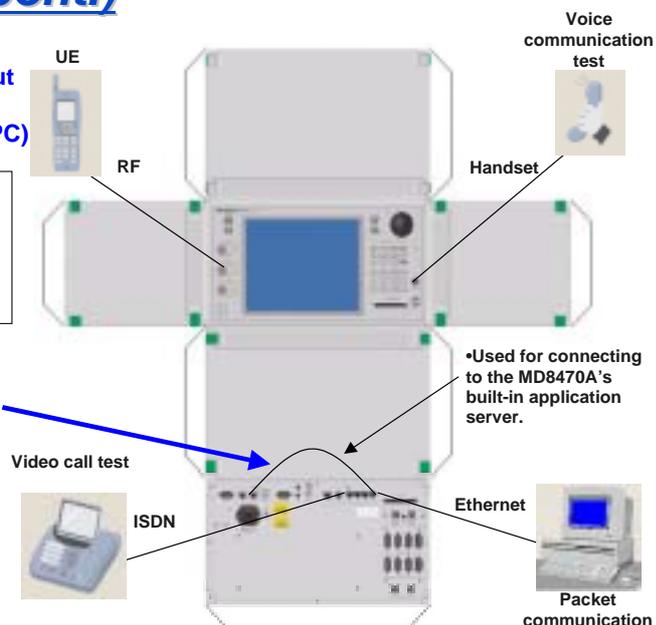
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## Platform / Interface(cont.)

✓ Simulations can be controlled without using a remote PC. (Windows® XP is installed in a built-in PC)

**\*\*Spec. of a built-in PC**  
 -OS: Windows® XP Professional  
 -CPU:Mobile Intel® Pentium®4 1.7GHz  
 -HDD:40G Byte  
 -RAM:512M Byte

✓ An application server is installed in the MD8470A's built-in PC. A single platform is able to perform the functional test of applications utilizing packet communications by connecting the Call Proc Ethernet and the Ethernet (0 or 1) of the MD8470A's built-in PC. (An external server can be connected, too.)



**A remote control PC is not necessary. A single platform is able to create the development environment including the application server function.**

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 \*Intel Pentium is a registered trademark of Intel Corporation in the U.S. and other countries.

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### 3. W-CDMA and GSM/GPRS Simulations

**–Simulation environment implemented without being conscious of scenarios–  
WNS: Wireless Network Simulator**

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### W-CDMA and GSM/GPRS Simulations

#### **WNS: Wireless Network Simulator (Reference)**

- ✓ Simulates interactive BTS operations. Basic connection test can be performed **without being conscious of scenarios** (W-CDMA and GSM/GPRS are supported).
- ✓ Effective for the testing of UE(on user plane) applications.  
–Voice, video call, browsing/contents download, etc.

#### **–Features –**

- Just a connection to UE realizes interactive operations
- Implements actions from network side as well as UE side



Wireless Network Simulator (WNS)

**\* This is offered as a demo version at the first-release of MD8470A.**

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## W-CDMA and GSM/GPRS Simulations(cont.)

### WNS: Wireless Network Simulator (Reference)

Automatically responds to voice and videophone call origination and disconnection from UE side and performs call setup and release. Browsing is supported, too.

Call processing status is displayed in three separate windows (status transition, network structure and virtual end-to-end UE) for easy view.

NW (MD8470A) side can make UE side receive a call by giving an instruction of voice and video call origination. Disconnection is also possible.



Mobile UE



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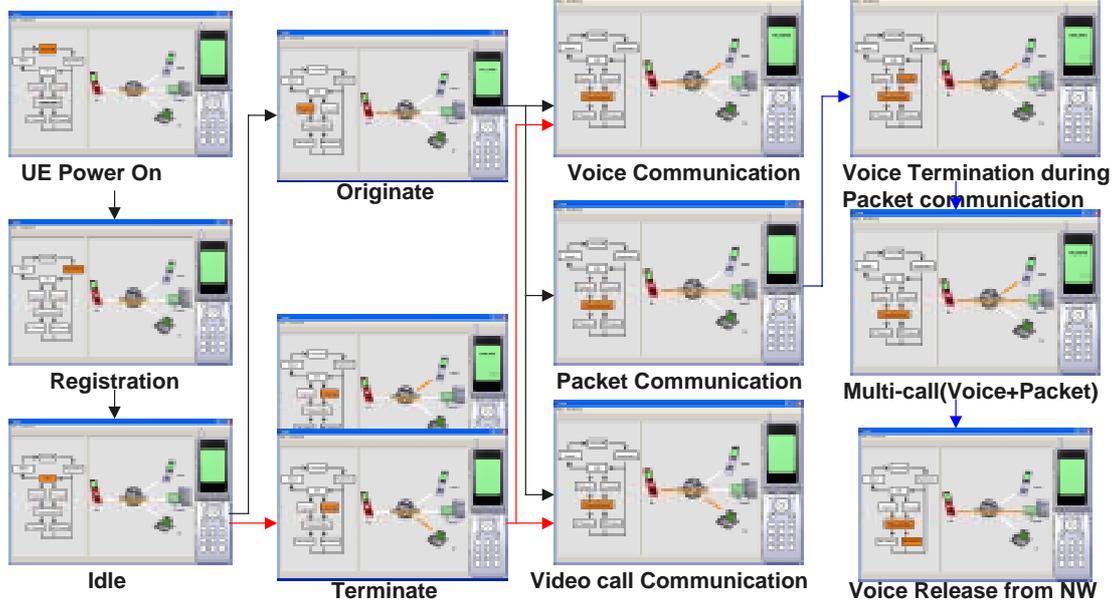
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## W-CDMA and GSM/GPRS Simulations(cont.)

### WNS: Wireless Network Simulator (Example)



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## 4. Application Test Examples

**–Call processing performed by simple operations–**

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### Application Test Examples (1/3)

#### ✓ **Voice test** **Standard support**

Voice communication test is performed between an UE and a handset by connecting a handset(standard accessory) to the MD8470A. Also, voice loop-back in the MD8470A performs voice communication test.



#### ✓ **Video call test** **Standard support**

Video and voice communication test can be performed between an UE and a video call terminal by connecting video call terminal to the MD8470A. (Video call test requires ISDN interface unit option separately.)



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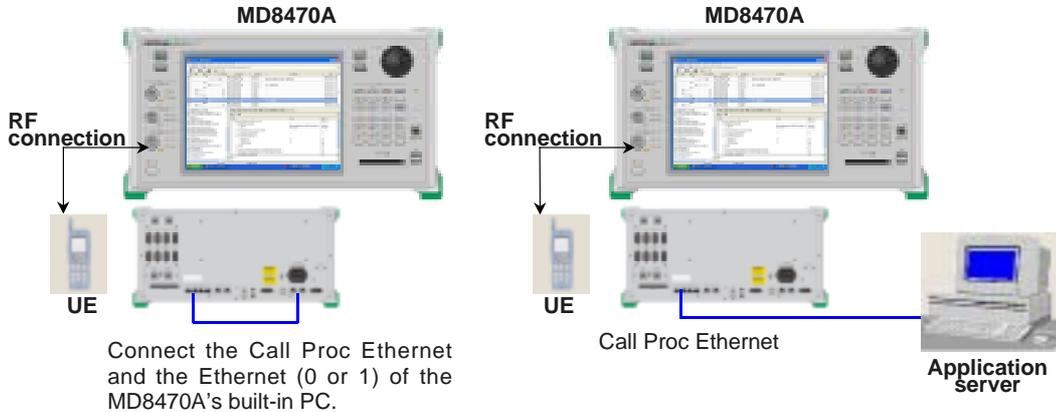
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## Application Test Examples (2/3)

### ✓ Packet communication test **Standard support**

A single platform is able to perform the functional test of applications utilizing packet communications when an application server is installed in the MD8470A's built-in PC. (Also, various application servers can be connected externally.)



*In case an application server is installed in the MD8470A's built-in PC.*

*In case an external application server is used.*

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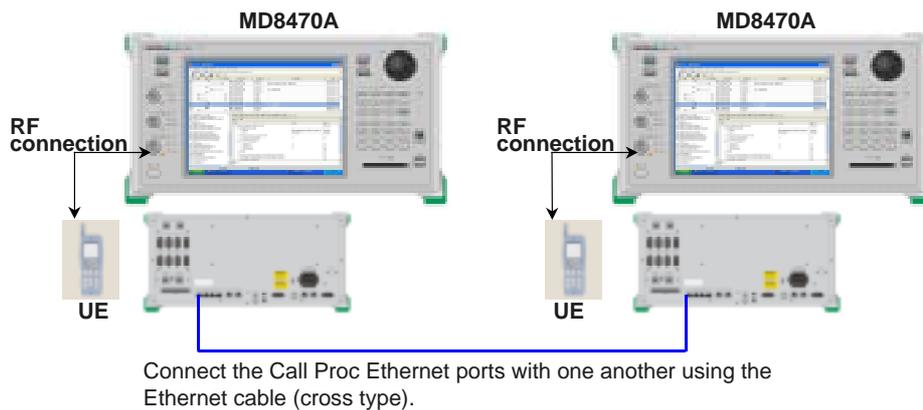
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## Application Test Examples (3/3)

### ✓ End-to-End UE test **Standard support**

The end-to-end video call tests can be performed between two sets of UE by connecting two sets of MD8470A with the Ethernet cable(cross type).



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## 5. Unit/Option/Software

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### Unit/Option/Software

- ✓ **Mainframe**
  - MD8470A Signalling Tester
- ✓ **Hardware Option**
  - MU847010A W-CDMA Signalling Unit
  - MU847020A GSM Signalling Unit
  - MU847090A ISDN Interface Unit
- ✓ **Software Option**
  - MX847010A W-CDMA/GSM Simulation Kit
  - MX847011A W-CDMA Ciphering Software
- ✓ **Software Support Contract**
  - MX847010A-20 MX847010A Support Service(One year) **\*Note**  
**\*Note:** For customers who have purchased MD8470A by March 31 in 2005, it is offered with one-year support fee discount for the first year only. (For the following years, support contract fee must be paid at renewal of contracts.)
- ✓ **Service Option**
  - MD8470A-90 Extended Three-year Warranty Service
  - MD8470A-91 Extended Five-year Warranty Service

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## Unit/Option/Software (cont.)

### ■ Example of test configurations

| Unit/Option<br>/Software     | MU847010A<br>W-CDMA<br>Signalling Unit | MU847020A<br>GSM<br>Signalling Unit | MU847090A<br>ISDN<br>Interface Unit | MX847010A<br>W-CDMA/GSM<br>Simulation Kit | MX847011A<br>W-CDMA<br>Ciphering<br>Software |
|------------------------------|--|-------------------------------------|-------------------------------------|---|--|
| W-CDMA test config.          | 1                                      |                                     | 0/1*                                | 1   | 0/1*   |
| GSM/GPRS test config.        |  | 1                                   |                                     | 1   |  |
| W-CDMA/GSM/GPRS test config. | 1                                      | 1                                   | 0/1*                                | 1   | 0/1*   |

W-CDMA test config.: Performs the simulation corresponding to 1BTS for W-CDMA.

GSM/GPRS test config.: Performs the simulation corresponding to 1BTS for GSM/GPRS.

W-CDMA/GSM/GPRS test config.: Includes the functions of W-CDMA test config. and GSM/GPRS test config.

\*: "0/1" means it is selectable.

**\*Scenario compiling requires Microsoft® Visual C++® .NET (Standard 2003) separately. Also, the USB-connectable CD or DVD drive is required separately when installing the Visual C++® .NET (Standard 2003) in the MD8470A mainframe.**

**\*Either English or Japanese version of Windows® XP must be selected when ordering MD8470A.**

\*Microsoft Visual C++ is a registered trademark of Microsoft Corporation in the U.S. and other countries.

\*Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

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## 6. Outline of Support Service

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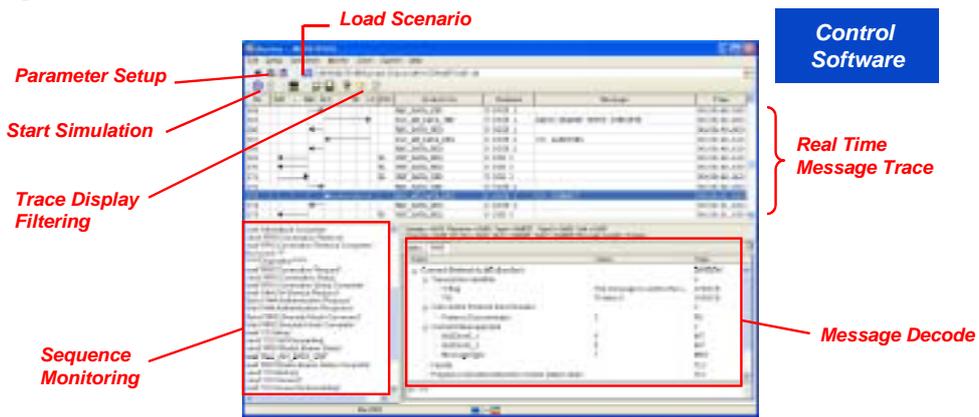
## MX847010A-20: MX847010A Support Service (One year)

- Basic policy
  - One-year support contract
  - For customers who have purchased MD8470A by March 31 in 2005, it is offered with one-year support fee discount for the first year only. (For the following years, support contract fee must be paid at renewal of contracts.)
- Support detail
  - Responses to inquiries
    - Customer support contact: [MX847010A-Wsupport@zy.anritsu.co.jp](mailto:MX847010A-Wsupport@zy.anritsu.co.jp)
  - Provision of maintenance releases (incl. bug fix)
  - New-model UE (commercial UE) support by basic call processing scenarios and WNS\* \*WNS: Wireless Network Simulator
  - Distribution of FAQ by mail
    - Extracted from Q&A list within permissible limits.

This option is mandatory.

## **7. Supported Functions of Control Software**

# Supported Functions of Control Software



## List of supported functions of control software

| Function                    | Description  |
|-----------------------------|--|
| Scenario execution          | Reads and executes the compiled DLL scenarios.                             |
| Realtime trace              | Displays signaling messages and user data during simulations in real time. |
| Trace log save/load         | Saves(binary/text) and recalls(binary only) the traced log data.           |
| Trace display filtering     | Displays the trace filtered by channel and primitive classification.       |
| Message decode and analysis | Translates and displays the traced messages (RRC, NAS*, Config).           |
| Scenario library function   | Provides the C language library function for creating scenarios.           |

\*: supports CC, MM, GMM, SM and SMS.

\*as of July 2004

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Specifications are subject to change without notice.

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