Product Introduction

MX847030A
CDMA2000® Simulation Kit

MD8470A
Signalling Tester

Anritsu

MD8470A Signalling Tester

MX847030A
CDMA2000® Simulation Kit
Product Introduction

— A Mobile Communications
Network on Your Desk —

CDMA2000
1X/1xEV-DO

October 2006
ANRITSU CORPORATION
Ver. 2.00

Contents

1. Product Overview
2. Control/Trace Function
3. Applications
4. Product Specifications
5. Units/Software/Options
6. Future Prospects

Product Overview — MD8470A Platform —

The MD8470A Signalling Tester supports efficient testing of mobile functions and service upgrades.

Multi-system Platform
— Base stations are simulated by installing hardware and control software supporting each communication system. The MD8470A covers the 400 to 2700 MHz frequency band and supports CDMA2000 (1X/1xEV-DO), W-CDMA/GSM/GPRS/EGPRS and TD-SCDMA systems.

Windows®-based GUI
— The built-in Windows® XP-based PC supports simulation control without an external application server or PC controller.

Compact Package
— The space-saving design makes configuration of a personal simulation environment easy (281 D x 426 W x 221.5 H mm).

Discover What's Possible™

Slide 3
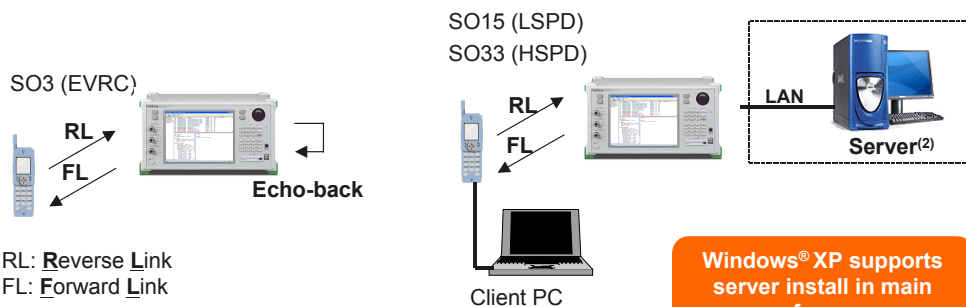
/Inritsu

MX847030A-E-I-1

Product Overview — CDMA2000® Simulation Kit (1/2) —

Supports Basic Call Processing

This option with bundled sample scripts simulates CDMA2000 and supports basic call processing, such as voice calls and packet communications.

Voice Call Tests using Echo-back[1]

Tests such as Data Download

SO15 (LSPD)
SO33 (HSPD)

SO3 (EVRC)

RL
FL

Echo-back

RL: **R**everse **L**ink
FL: **F**orward **L**ink

RL
FL

LAN

Server[2]

Client PC

Windows® XP supports server install in main frame

(1) Not supported for communication test with handset
(2) Not required when server software installed in MD8470A main frame

Discover What's Possible™

Slide 4

/Inritsu

MX847030A-E-I-1

2

Product Overview — CDMA2000® Simulation Kit (2/2) —

Built-in PPP Simulator

The MX847030A CDMA2000® Simulation Kit incorporates PPP simulation, a packet communication connection protocol. This supports concurrent CDMA2000 simulation and PPP log browsing.

PC Controller

Built-in

MD8470A

Built-in

PPP Simulator

Built-in PPP Simulator
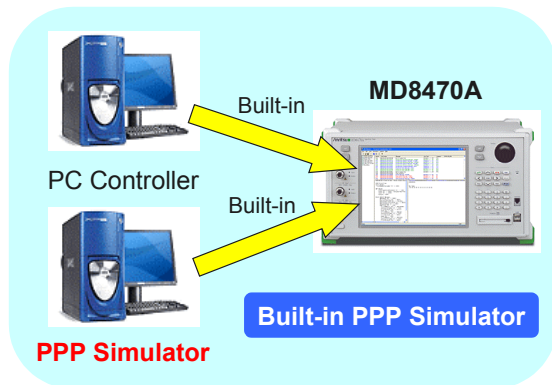
— Provides simple test environment
Incorporates PPP simulator and PC controller
— PPP simulation at Soft Handoff
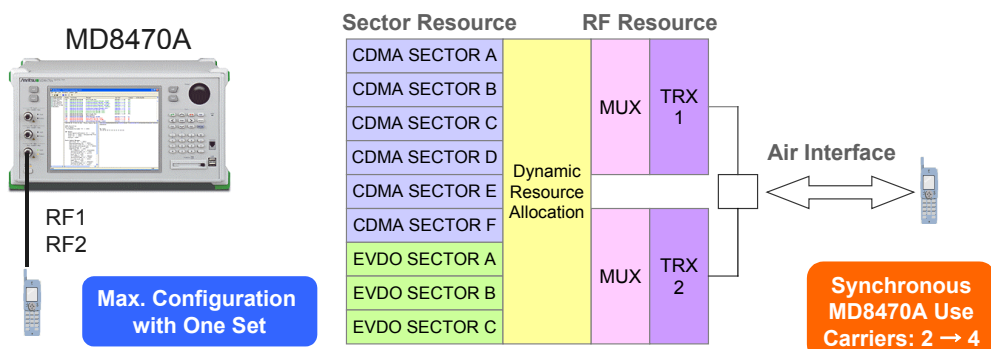Performs PPP simulation with single MD8470A during Soft Handoff, facilitating interface analysis
— Data communications after PPP session
Supports data communication simulation after connection as well as PPP session check during Soft Handoff

Discover What's Possible™

Slide 5

/Inritsu

MX847030A-E-I-1

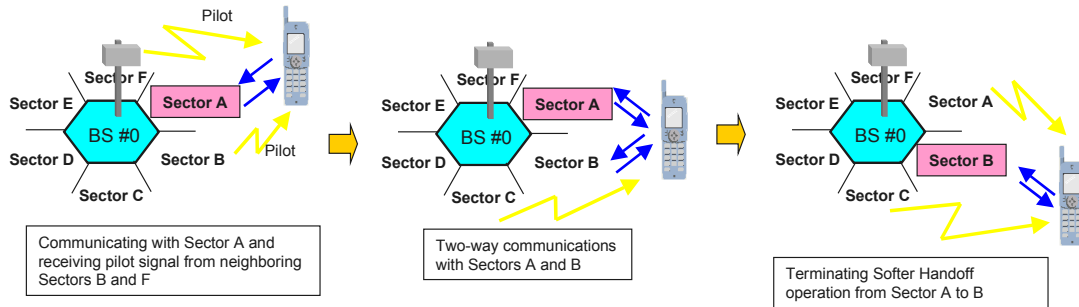# Product Overview — Multi-Sector/Multi-Carrier (1/3) —

One Unit Simulates Various Handoff Tests (Option)

Various CDMA2000 1X/1xEV-DO handoff tests (Soft, Softer, Hard, Idle, Access etc.) can be simulated with multiple frequency carriers (max. 2) and multiple sectors (1X: max. 6, 1xEV-DO: max. 3). One MD8470A unit supports testing in multi-carrier/multi-sector test environments where verification using a live network is difficult. Additionally, handoff testing under a multi-carrier (max. 2 ->4) environment is supported by synchronizing multiple MD8470A units.

MD8470A

RF1
RF2

Max. Configuration with One Set

Sector Resource

CDMA SECTOR A
CDMA SECTOR B
CDMA SECTOR C
CDMA SECTOR D
CDMA SECTOR E
CDMA SECTOR F
EVDO SECTOR A
EVDO SECTOR B
EVDO SECTOR C

Dynamic Resource Allocation

RF Resource

MUX | TRX 1

MUX | TRX 2

Air Interface

Synchronous MD8470A Use Carriers: 2 → 4

Discover What's Possible™

Slide 6

/Inritsu

MX847030A-E-I-1

3

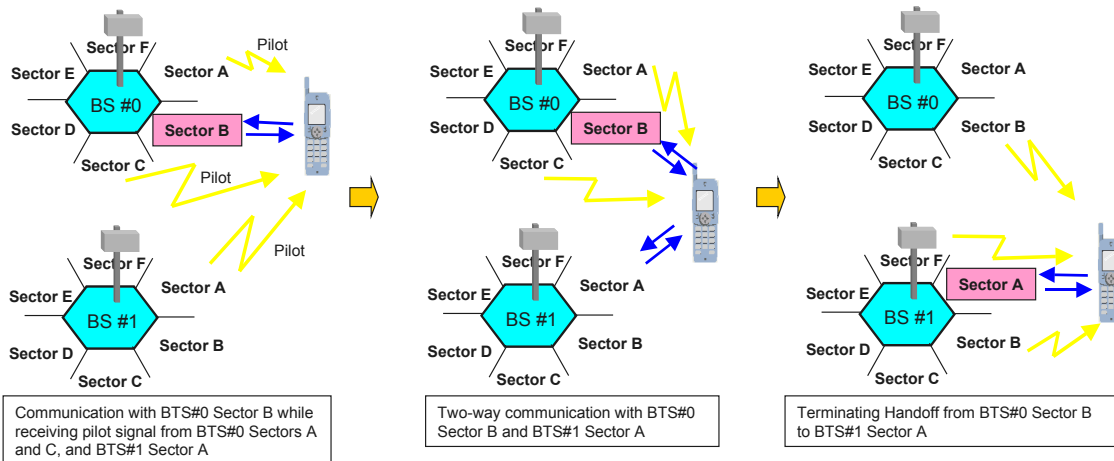# Product Overview — Multi-Sector/Multi-Carrier (2/3) —

Softer Handoff tests between any sectors and 2-way communications between two sectors occurring during Softer Handoff can be simulated in a near-to-live network environment, because a basic Physical Channel is mounted in each sector in the MD8470A (requires MX847030A-01 Multi Sector/Multi Carrier option).

Pilot

Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Pilot
Sector C

Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Sector C

Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Sector C

Communicating with Sector A and receiving pilot signal from neighboring Sectors B and F

Two-way communications with Sectors A and B

Terminating Softer Handoff operation from Sector A to B

Examples of Softer Handoff in Same BS (Cell)

Discover What's Possible™

Slide 7

Anritsu

MX847030A-E-I-1

Product Overview — Multi-Sector/Multi-Carrier (3/3) —

Soft Handoff between two base stations with different frequencies is supported because one MD8470A unit supports simultaneous sending and receiving of up to two frequency carriers. And using two MD8470A units supports Soft/Hard Handoff testing with sending of four frequency carriers.
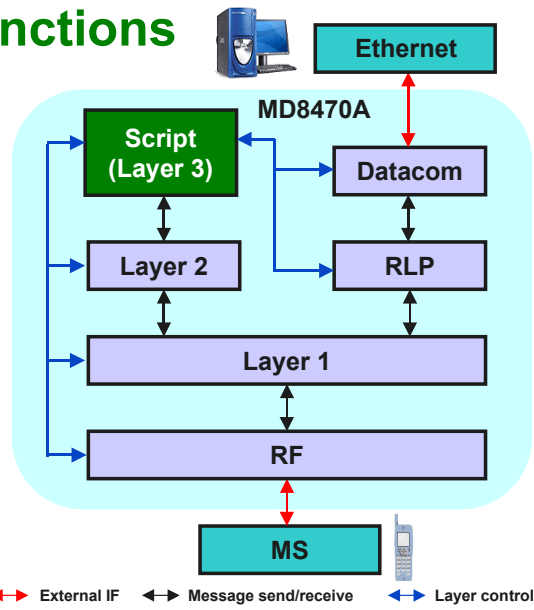
Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Sector C
Pilot

Sector F
Sector E
Sector A
BS #1
Sector D
Sector B
Pilot
Sector C
Pilot

Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Sector C

Sector F
Sector E
Sector A
BS #1
Sector D
Sector B
Sector C

Sector F
Sector E
Sector A
BS #0
Sector D
Sector B
Sector C

Sector F
Sector E
Sector A
BS #1
Sector D
Sector B
Sector C

Communication with BTS#0 Sector B while receiving pilot signal from BTS#0 Sectors A and C, and BTS#1 Sector A

Two-way communication with BTS#0 Sector B and BTS#1 Sector A

Terminating Handoff from BTS#0 Sector B to BTS#1 Sector A

Examples of Soft Handoff between Two BSs
Examples of Hard Handoff between Two Frequencies

Discover What's Possible™

Slide 8

Anritsu

MX847030A-E-I-1

4

Control and Trace Functions

The CDMA2000® Simulation Kit has built-in control and trace functions supporting flexible verification of both normal and quasi-normal operations between a BS and mobile.

It provides an API (Perl module) enabling Perl descriptions for running simulations of Layer-3 operations, condition settings for each Layer, and data communications with a single script.

Furthermore, multi-session simulations are supported by using multiple scripts.

Script and Protocol Stack Relationships

Ethernet	MD8470A
Script (Layer 3)	Datacom
Layer 2	RLP
Layer 1	
RF	
MS	

External IF   ◆ Message send/receive   ◆ Layer control

Discover What's Possible™

Slide 9

Anritsu

MX847030A-E-I-1

Control and Trace Functions
— Protocol Visualization Tool (PVT) —

Scripting is performed using the Protocol Visualization Tool (PVT) software bundled with the CDMA2000® Simulation Kit, supporting signalling messaging, PPP message tracing, message filtering, and decode display.

The decode display function supports the CDMA2000 LAC Layer, Layer-3 messages, and all IPCP/PAP/LCP/CHAP messages used in PPP sessions.

Type	Explanation
Signaling Link Access Control (LAC)	LAC Layer protocol defined in 3GPP2 C.S0004
CDMA2000 1X Upper Layer (Layer 3)	Layer-3 messages defined in 3GPP2 C.S0005
PPP Internet Protocol Control Protocol (IPCP)	IPCP Messages defined in RFC 1332
PPP Authentication Protocols (PAP)	Authentication messages defined in RFC 1334
Link Control Protocol (LCP)	LCP Messages defined in RFC 1471
Challenge Handshake Authentication Protocol (CHAP)	CHAP Messages defined in RFC 1994

Decode Display Supported Messages

Discover What's Possible™

Slide 10

Anritsu

MX847030A-E-I-1

Control and Trace Functions
— Protocol Visualization Tool (PVT) —

[Tool bar]
Executes log file
Open/Save, scripts, etc.

[Filter display]
Executes filter setup and
display for each trace,
such as CDMA2000
signalling messages,
PPP messages

[Decode data display]
Displays decode data of
messages selected in
trace display field

[Trace display]
Displays record number,
time stamp, message
type, call flow, channel
name, protocol revision
information, etc.

[Binary data display]
Displays binary data of
messages selected in
trace display field

Protocol Visualization Tool (PVT)

Discover What's Possible™

Slide 11

MX847030A-E-I-1

Anritsu

Applications — CDMA2000® Simulation Kit —

Simulations can be run easily using the flexible script editing function of the Simulation Kit. And the built-in PPP support plus various I/Fs for data communications testing are ideal for tests ranging from the final stage of mobile development thru to final inspection tests.
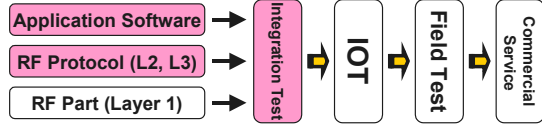
Typical Mobile R&D/Evaluation Flow

Application Software

RF Protocol (Layer 2, 3)

RF Part (Layer 1)

Integration

Integration Test

Interoperability Test (IOT)

Field Test

Commercial Service

Development phase

Evaluation phase

Supported by MX847030A CDMA2000® Simulation Kit

Discover What's Possible™

Slide 12

MX847030A-E-I-1

Anritsu

6
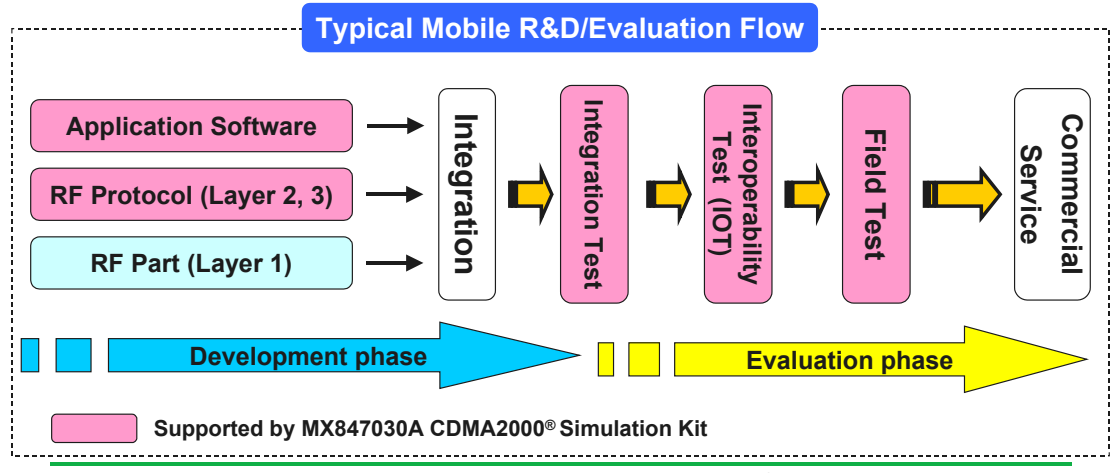
Applications
— Mobile Development Verification —

Application Software →	Integration Test	→	IOT	→	Field Test	→	Commercial Service
RF Protocol (L2, L3) →							
RF Part (Layer 1) →							

The MD8470A supports RF protocol stand-alone testing during mobile development as well as general operation testing following integration with application software. At integration testing, in addition to checking basic application operations, one MD8470A unit supports confirmation of communications from lower (RF Layer 1) to upper layers (Application Layer), including PPP session at Handoff, data communications, etc.

R&D to integration Tests

Application Software

Mobile built-in software, such as data communications, email, rich content, SMS

RF Protocol Tests

Connection protocol, normal/quasi-normal operation verification, parametric tests, etc.

Integration Tests

General operation check in Layer 1 to mobile application integrated environment

PPP session at handoff, data communication operation checks, etc.
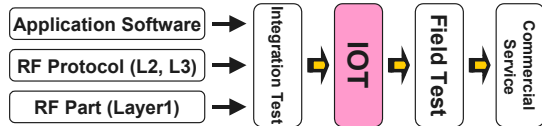
Discover What's Possible™

Slide 13

Anritsu
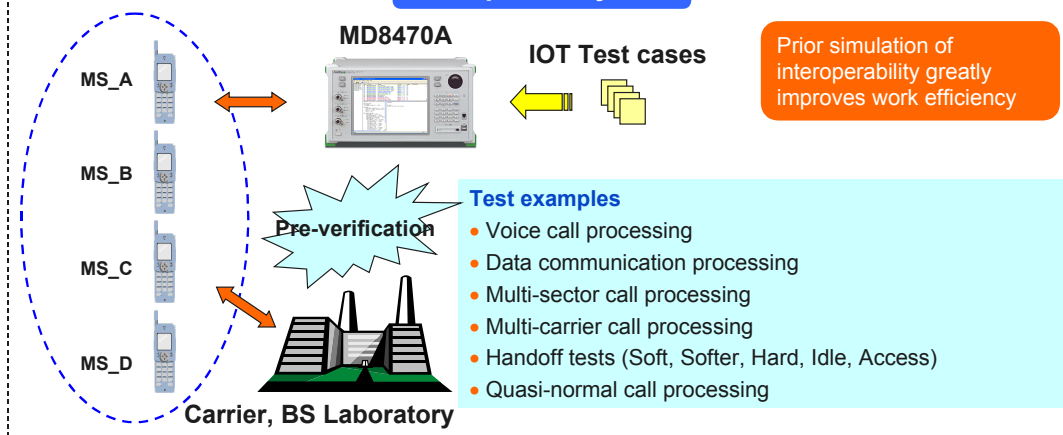
MX847030A-E-I-1

Applications
— Interoperability Test —

Application Software →	Integration Test	→	IOT	→	Field Test	→	Commercial Service
RF Protocol (L2, L3) →							
RF Part (Layer1) →							

Work efficiency is greatly improved by running pre-verification IOT test sequences with the MD8470A to check interoperability between the BS and mobile.
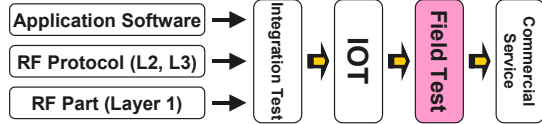
Interoperability Test

MD8470A

IOT Test cases

Prior simulation of interoperability greatly improves work efficiency

MS_A

MS_B

Pre-verification

MS_C

MS_D

Carrier, BS Laboratory

Test examples
- Voice call processing
- Data communication processing
- Multi-sector call processing
- Multi-carrier call processing
- Handoff tests (Soft, Softer, Hard, Idle, Access)
- Quasi-normal call processing

Discover What's Possible™
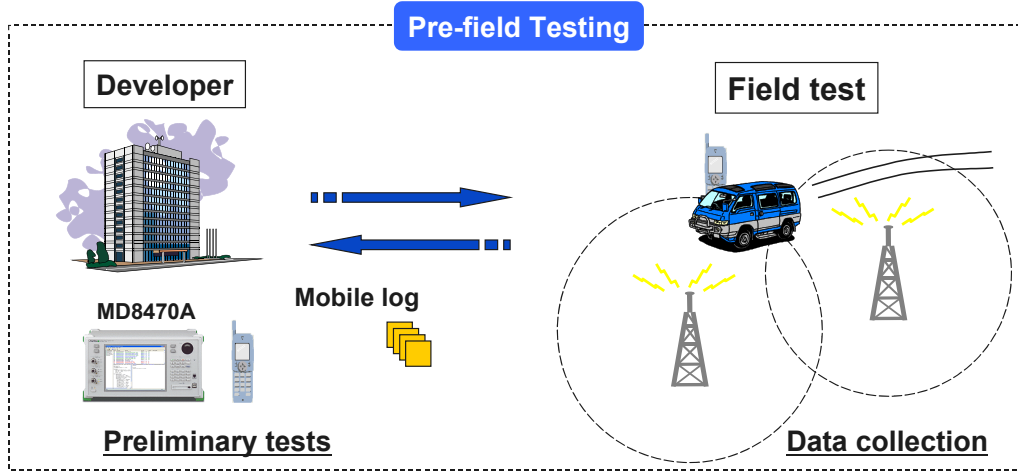
Slide 14

Anritsu

MX847030A-E-I-1

Applications
— Pre-field Testing —

Work efficiency is greatly improved by testing with the MD8470A before field tests. Preliminary handoff checks are especially valuable because field verification is difficult.

Pre-field Testing

Developer

Field test

MD8470A

Mobile log

Preliminary tests

Data collection

Discover What's Possible™

Slide 15

/Inritsu

MX847030A-E-I-1

1xEV-DO BCMCS[1] — Broadcast/Multicast Services —

The MD8470A and mobile are connected by 1xEV-DO. The mobile packet connection starts at content distribution from the BCMCS server[2] and Multicast IP packets with self-assigned Flow ID are received.

MD8470A

LAN

BCMCS Server[2]
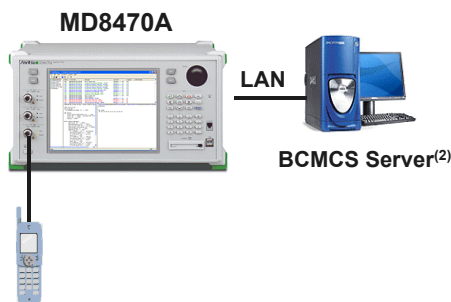
MX847030A-supported Protocols (BCMCS)
- BCMCS Broadcast Control Protocol
- BCMCS Broadcast Framing Protocol
- BCMCS Broadcast MAC Protocol

(1) CDMA2000® 1xEV-DO function. Unlike previous point-to-point data transfer, BCMCS (Broadcast/Multicast Services) supports point-to-multipoint services (multicast), meaning multiple users receive the same data from one source.

(2) Please prepare separately.

1xEV-DO BCMCS Configuration

Discover What's Possible™

Slide 16

/Inritsu

MX847030A-E-I-1

1xEV-DO Rev. A — IP Videophone (QoS) —

The MD8470A and mobile are connected by 1xEV-DO. The call between the mobile and videophone server uses VoIP (Video over IP).

MD8470A

LAN

IP Videophone Server[1]

(1) Please prepare separately.

MX847030A-supported Protocols (Rev. A)
- RTC MAC Protocol Subtype 1
- Generic Attribute Update Protocol (GAUP)
- Physical Layer Subtype 2
- RTC MAC Protocol Subtype 3
- Enhanced FTC MAC Protocol
- Enhanced Idle State Protocol
- Multi-Flow Packet Application
- QoS Control for Each RLP (RSVP)
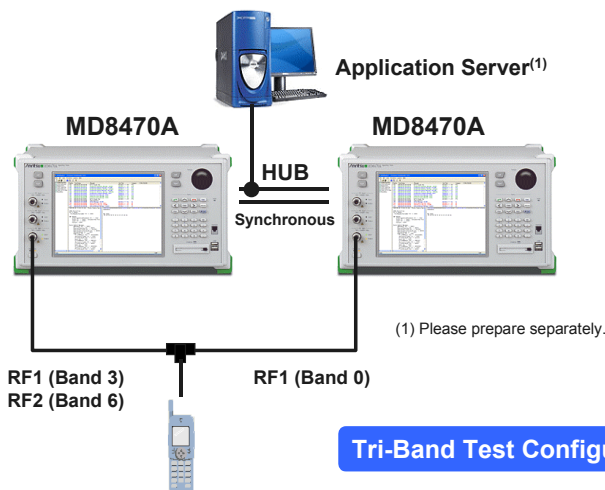
1xEV-DO IP Videophone Test

Multi-Band Test — Synchronous Function —

The mobile can perform various handoff tests while receiving up to four carrier frequencies from the MD8470A (two connected units).

Application Server[1]

MD8470A   **MD8470A**

HUB

Synchronous

Example of Synchronous Test (Two MD8480A Units)
- Tri-Band Test
  (Band 3, Band 6, Band 0)

(1) Please prepare separately.

RF1 (Band 3)
RF2 (Band 6)   **RF1 (Band 0)**

Tri-Band Test Configuration
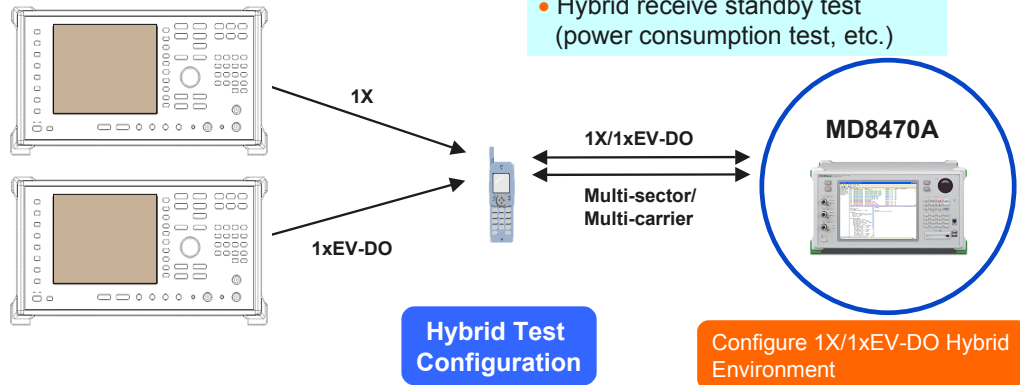
Hybrid Test — 1X/1xEV-DO Hybrid Simulation —

A 1X/1xEV-DO Hybrid mobile can run the 1xEV-DO→1X Hand-down test, etc.,
while simultaneously receiving both CDMA2000 1X and 1xEV-DO signals from the
MD8470A.

MX847030A Hybrid Test Example
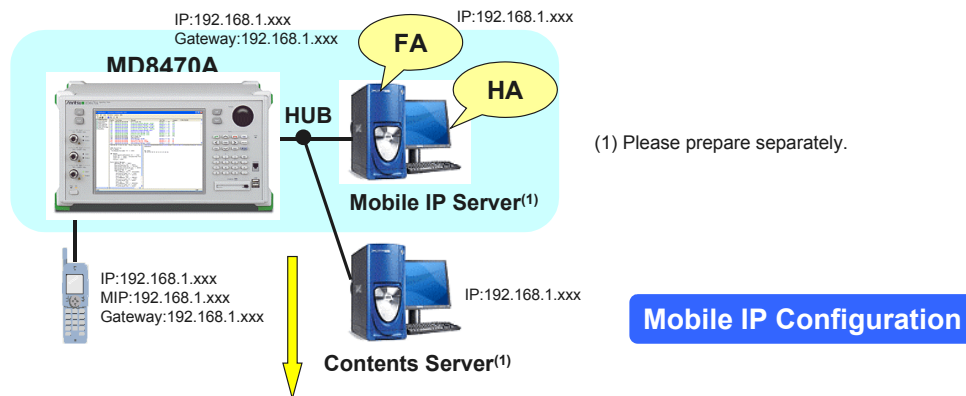- Hand-down test
  (1xEV-DO → 1X)
- Hybrid receive standby test
  (power consumption test, etc.)

Two Simulators of Maker X

1X

1xEV-DO

1X/1xEV-DO

Multi-sector/
Multi-carrier

MD8470A

**Hybrid Test
Configuration**

Configure 1X/1xEV-DO Hybrid
Environment

Mobile IP — Foreign Agent (FA)/Home Agent (HA) —

Mobile IP simulation is supported using a Mobile IP server[1].

IP:192.168.1.xxx
Gateway:192.168.1.xxx

IP:192.168.1.xxx

FA

HA

MD8470A

HUB

(1) Please prepare separately.

Mobile IP Server[1]

IP:192.168.1.xxx
MIP:192.168.1.xxx
Gateway:192.168.1.xxx

IP:192.168.1.xxx

Mobile IP Configuration

Contents Server[1]

A built-in MIP server is planned.

10

Product Specifications

— MU847030A CDMA2000® 1X Signalling Unit —

CDMA2000 1X	Transmitter characteristics	Frequency range: 400 to 2700 MHz Frequency setting resolution: 100 Hz Channel[*1]: Sync, Pilot, PCH, BCCH, CCCH, FCH, DCCH, SCH, QPCH, OCNS Channel level setting range: −30 to 0 dB, 0.25-dB steps (Relative level for Ior) Sector level setting range: −30 to 0 dB, 0.1-dB steps (Relative level for Ior) AWGN Level setting range: −20 to +12 dB (Relative level for Ior) Waveform quality: ?0.99 (Only Pilot, AWGN OFF)
	Receiver characteristics	Frequency range: 400 to 2700 MHz Input level range: −60 to +34 dBm Channel[*1]: ACH, EACH, FCH, DCCH, SCH
	Standard	CDMA2000 1X Release 0/A/C[*2]
	Protocol revision	PREV6, PREV7, PREV9/10 (non-EVDV)
	Service options	SO3 (EVRC), SO15 (LSPD), SO33 (HSPD), SO6 (SMS), SO32768
	Data communications	Transparent IP data transmission/Simple IP PPP Simulation: LCP/IPCP/PAP/CHAP
	Functions	Transmitter: 3GPP2-compliant channels Receiver: 3GPP2-compliant channels

*1: There are restrictions on the combination of frame duration, rate, and channel.

*2: PREV 9/10, BCMCS, and 1xEV-DO Rev. A feature availability is controlled due to agreements Anritsu has with Qualcomm Incorporated and requires a separate license or written consent from Qualcomm Incorporated in order to gain access to and/or use such features. To gain consent, customers should send inquiries to the following Qualcomm email address: testequipment@qualcomm.com

---

Product Specifications

— MU847032A CDMA2000® 1xEV-DO Signalling Unit —

CDMA2000 1xEV-DO	Transmitter characteristics	Frequency range: 400 to 2700 MHz Frequency setting resolution: 100 Hz Channel[*1]: Pilot, MAC, Control, Traffic Sector level setting range: −30 to 0 dB, 0.1-dB steps (Relative level for Ior) AWGN Level setting range: −20 to +12 dB (Relative level for Ior) Waveform quality: ?0.99 (Only Pilot, AWGN OFF)
	Receiver characteristics	Frequency range: 400 to 2700 MHz Input level range: −60 to +34 dBm Channel[*1]: Access, Traffic
	Standard	CDMA2000 1xEV-DO Revision 0/A, BCMCS[*2]
	Data communications	Transparent IP data transmission/Simple IP PPP Simulation: LCP/IPCP/PAP/CHAP
	Functions	Transmitter: 3GPP2-compliant channels Receiver: 3GPP2-compliant channels

*1: There are restrictions on the combination of frame duration, rate, and channel.

*2: PREV 9/10, BCMCS, and 1xEV-DO Rev. A feature availability is controlled due to agreements Anritsu has with Qualcomm Incorporated and requires a separate license or written consent from Qualcomm Incorporated in order to gain access to and/or use such features. To gain consent, customers should send inquiries to the following Qualcomm email address: testequipment@qualcomm.com

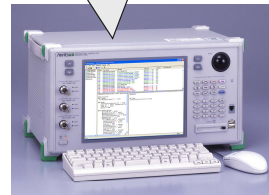# Units/Options/Software

✔ Main frame
  – **MD8470A Signalling Tester**

✔ Hardware options
  – MD8470A-01 Second RF Option
  – **MU847030A CDMA2000® 1X Signalling Unit**
  – MU847032A CDMA2000® 1xEV-DO Signalling Unit

✔ Software options
  – **MX847030A CDMA2000® Simulation Kit**
  – MX847030A-01 Multi Sector/Multi Carrier

✔ Software support contract
  – **MX847030A-20 MX847030A Support Service (1 year)**

✔ Service options
  – MD8470A-90 Extended Three Year Warranty Service
  – MD8470A-91 Extended Five Year Warranty Service
  – MD8470A-ES312 3 Years Standard Calibration Service

Note: Options in bold are mandatory.

The following options can be installed simultaneously:
・W-CDMA (MU847010A)
・GSM/GPRS/EGPRS
   (MU847020B)
・TD-SCDMA
   (MU847040A)

Units/Options/Software

✔ Configurations*1

Units/Options/Software \\ Configurations	MU847030A CDMA2000® 1X Signalling Unit	MU847032A CDMA2000® 1xEV-DO Signalling Unit	MD8470A-01 Second RF Option	MX847030A CDMA2000® Simulation Kit	MX847030A-01 Multi Sector/ Multi Carrier
CDMA2000 1X Test Configuration*2	Required			Required	
CDMA2000 1X + Multi Sector/ Multi Carrier Test Configuration*3	Required		Required	Required	Required
CDMA2000 1X/1xEV-DO Test Configuration*4	Required	Required	Required	Required	
CDMA2000 1X/1xEV-DO + Multi Sector/ Multi Carrier Test Configuration*5	Required	Required	Required	Required	Required

*1: Select either the English or Japanese version of Windows® XP when ordering the MD8470A.
*2: CDMA2000 1X Test Configuration: Simulates CDMA2000 1X with one carrier and one sector
*3: CDMA2000 1X + Multi Sector/Multi Carrier Test Configuration: Simulates CDMA2000 1X with multi-carriers and multi-sectors
*4: CDMA2000 1X/1xEV-DO Test Configuration: Simulates CDMA2000 1X/1xEV-DO with one carrier and one sector
*5: CDMA2000 1X/1xEV-DO + Multi Sector/Multi Carrier Test Configuration: Simulates CDMA2000 1X/1xEV-DO with multi-carriers and multi-sectors

Windows® is a registered trademark of Microsoft Corporation in the USA and other countries.

Units/Options/Software

✓ MX847030A-20: MX847030A Support Service (1 year)

- **Basic policy**
  - One-year support contract

- **Support details**
  - Responses to enquiries by email
  - Software version upgrades for contract duration (Web download)
  - Maintenance releases (including bug fixes)

This option is mandatory.

Others

✓ Sample Scripts (Standard Software Bundle)

- 1X Voice Call (SO3)
- 1X Voice Call HHO (SO3)
- 1X Voice Call SHO (SO3)
- 1X Data Call (SO33)
- 1X Data Call SHO (SO33)
- 1xEV-DO
- Hybrid (1X + 1xEV-DO) (SO3, SO33)
- 1X Dual Band (4RF: Band Class3, 6) (SO3, SO33)

Further scripts are planned.

Future Prospects

The following materials are possible future ideas. They are not in the development program yet. We shall add further functions, based on customers' ideas and requests.

WNS c2k — Wireless Network Simulator for CDMA2000® (1/2) —

1This would simulate interactive BS operation for effective basic mobile connection tests without a scenario.
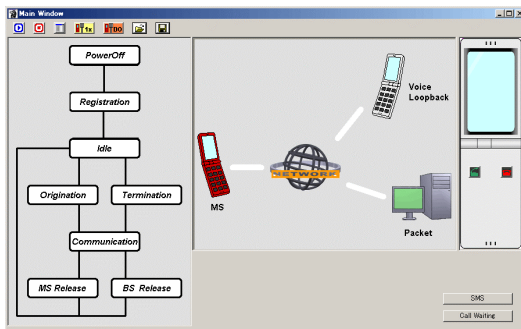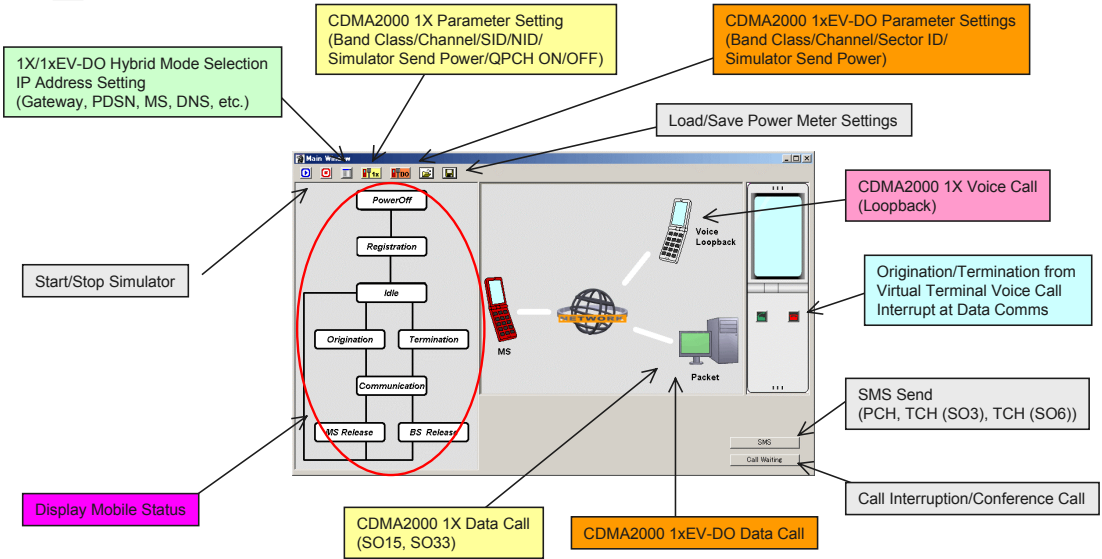

Features

- Interactive operation by connecting mobile
  (Voice/Packet Communication, SMS, etc.)
- Operation from both mobile and network sides
- Supports 1X, 1xEV-DO hybrid mobile tests for at-a-glance confirmation

WNS c2k Concept(1)

(1) Image still under construction

14

WNS c2k — Wireless Network Simulator for CDMA2000® (2/2) —

1X/1xEV-DO Hybrid Mode Selection
IP Address Setting
(Gateway, PDSN, MS, DNS, etc.)

CDMA2000 1X Parameter Setting
(Band Class/Channel/SID/NID/
Simulator Send Power/QPCH ON/OFF)

CDMA2000 1xEV-DO Parameter Settings
(Band Class/Channel/Sector ID/
Simulator Send Power)

Load/Save Power Meter Settings

Start/Stop Simulator

CDMA2000 1X Voice Call
(Loopback)

Origination/Termination from
Virtual Terminal Voice Call
Interrupt at Data Comms

SMS Send
(PCH, TCH (SO3), TCH (SO6))

Display Mobile Status

Call Interruption/Conference Call

CDMA2000 1X Data Call
(SO15, SO33)

CDMA2000 1xEV-DO Data Call

PowerOff
Registration
Idle
Origination   Termination
Communication
MS Release   BS Release

Voice Loopback
MS
NETWORK
Packet
SMS
Call Waiting

Explanation of WNS c2k Parts[1]

(1) Image still under construction

/Anritsu

Anritsu Corporation
5-1-1 Onna, Atsugi-shi, Kanagawa, 243-8555 Japan
Phone: +81-46-223-1111
Fax: +81-46-296-1264

● **U.S.A.**
Anritsu Company
1155 East Collins Blvd., Richardson, TX 75081, U.S.A.
Toll Free: 1-800-267-4878
Phone: +1-972-644-1777
Fax: +1-972-671-1877

● **Canada**
Anritsu Electronics Ltd.
700 Silver Seven Road, Suite 120, Kanata,
Ontario K2V 1C3, Canada
Phone: +1-613-591-2003
Fax: +1-613-591-1006

● **Brazil**
Anritsu Eletrônica Ltda.
Praca Amadeu Amaral, 27 - 1 Andar
01327-010-Paraiso-São Paulo-Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

● **U.K.**
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

● **France**
Anritsu S.A.
9 Avenue du Québec, Z.A. de Courtabœuf
91951 Les Ulis Cedex, France
Phone: +33-1-60-92-15-50
Fax: +33-1-64-46-10-65

● **Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

● **Italy**
Anritsu S.p.A.
Via Elio Vittorini 129, 00144 Roma, Italy
Phone: +39-6-509-9711
Fax: +39-6-502-2425

● **Sweden**
Anritsu AB
Borgafjordsgatan 13, 164 40 KISTA, Sweden
Phone: +46-8-534-707-00
Fax: +46-8-534-707-30

● **Finland**
Anritsu AB
Teknobulevardi 3-5, FI-01530 VANTAA, Finland
Phone: +358-20-741-8100
Fax: +358-20-741-8111

● **Denmark**
Anritsu A/S
Kirkebjerg Allé 90, DK-2605 Brøndby, Denmark
Phone: +45-72112200
Fax: +45-72112210

● **United Arab Emirates**
Anritsu EMEA Ltd.
Dubai Liaison Office
P O Box 500413 - Dubai Internet City
Al Thuraya Building, Tower 1, Suit 701, 7th Floor
Dubai, United Arab Emirates
Phone: +971-4-3670352
Fax: +971-4-3688460

● **Singapore**
Anritsu Pte. Ltd.
10, Hoe Chiang Road, #07-01/02, Keppel Towers,
Singapore 089315
Phone: +65-6282-2400
Fax: +65-6282-2533

● **P.R. China (Hong Kong)**
Anritsu Company Ltd.
Suite 923, 9/F., Chinachem Golden Plaza, 77 Mody Road,
Tsimshatsui East, Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

● **P.R. China (Beijing)**
Anritsu Company Ltd.
Beijing Representative Office
Room 1515, Beijing Fortune Building,
No. 5, Dong-San-Huan Bei Road,
Chao-Yang District, Beijing 10004, P.R. China
Phone: +86-10-6590-9230
Fax: +86-10-6590-9235

● **Korea**
Anritsu Corporation, Ltd.
8F Hyunjuk Building, 832-41, Yeoksam Dong,
Kangnam-ku, Seoul, 135-080, Korea
Phone: +82-2-553-6603
Fax: +82-2-553-6604

● **Australia**
Anritsu Pty. Ltd.
Unit 21/270 Ferntree Gully Road, Notting Hill,
Victoria 3168, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

● **Taiwan**
Anritsu Company Inc.
7F, No. 316, Sec. 1, Neihu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

● **India**
Anritsu Corporation
India Liaison Office
Unit No. S-3, Second Floor, Esteem Red Cross Bhavan,
No. 26, Race Course Road, Bangalore 560 001, India
Phone: +91-80-32944707
Fax: +91-80-22356648

Please Contact:

060906

No. MX847030A-E-I-1-(2.00)   公知   Printed in Japan   2006-10   AKD