Product Introduction

MX882002C  CDMA2000 Measurement Software
MX882006C  1xEV-DO Measurement Software

MT8820B
Radio Communication Analyzer
MX882002C
CDMA2000 Measurement Software
MX882006C
1xEV-DO Measurement Software
Product Introduction

MT8820B-003/-103, MT8820B-005/-105,
MX882002C, MX882002C-001, MX882002C-002
MX882006C, MX882006C-002, MX882006C-011

Version 2.00
July 2009

Anritsu Corporation
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Key Features of MX882002C
CDMA2000 Measurement Software
Key Features of MX882002C CDMA2000 Measurement Software

All-in-One Call Processing and RF Tx/Rx Testing of CDMA200 Mobiles

The MT8820B can easily test the basic RF Tx/Rx characteristics of CDMA2000 mobiles. It also supports call processing tests, such as origination and termination.
Key Features of MX882002C CDMA2000 Measurement Software

Wide Range of Measurement Functions

In addition to supporting basic Tx/Rx measurements of CDMA2000 1x mobile terminals, the access probe send power and open loop power control time response can be measured. Adding software options supports tests of CDMA2001 1x mobile external servers and packet communications functions.

Fundamental Measurement Screen (Tx Measurement)

Fundamental Measurement Screen (Rx Measurement)

Access Probe Measurement Screen
Key Features of MX882002C CDMA2000 Measurement Software

Functional Test of CDMA2000 Mobiles

Both voice calling and PPP/IP connections tests with an external server (Packet Connection Test) are both supported.
Key Features of MX882002C CDMA2000 Measurement Software

High-speed Tx Measurement

The Tx measurement times\(^1\) (excluding Rx measurement and signalling) are shown below. The MT8820B is two times faster than the MT8820A.

\*1: The MT8820B can test faster than the MT8820A with core TX measurement item.
MX882002C CDMA2000 Measurement Software
### Key Specifications

- **Frequency range**: 300 to 2700 MHz
- **Maximum input level**: +35 dBm
- **Amplitude measurement accuracy**:
  - ±0.5 dB (−25 to +35 dBm)
  - ±0.7 dB (−55 to −25 dBm)
  - ±0.9 dB (−65 to −55 dBm) after calibration
- **Residual waveform quality**: >0.999
- **FER Measurement**: Measurement at Service Option 2, 9, 55, and 32 (TDSO)
### Supported Tx Measurements

<table>
<thead>
<tr>
<th>Item</th>
<th>3GPP2 C.S0011-C (Release C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. 1</td>
<td>Frequency Accuracy</td>
</tr>
<tr>
<td>4. 3. 4</td>
<td>Waveform Quality and Frequency Accuracy</td>
</tr>
<tr>
<td>4. 3. 5</td>
<td>Code Domain Power</td>
</tr>
<tr>
<td>4. 4. 2</td>
<td>Time Response of Open Loop Power Control</td>
</tr>
<tr>
<td>4. 4. 5</td>
<td>Maximum RF Output Power</td>
</tr>
<tr>
<td>4. 4. 6</td>
<td>Minimum Controlled Output Power</td>
</tr>
<tr>
<td>4. 5. 3</td>
<td>Occupied Bandwidth</td>
</tr>
</tbody>
</table>

*Since Band Class 5 and Band Class 11 Forward Link and Reverse Link are separated by only 10 MHz, accurate Minimum Controlled Output Power measurement may not be possible if the call connection is cut for some reason.*

### Supported Rx Measurements

<table>
<thead>
<tr>
<th>Item</th>
<th>3GPP2 C.S0011-C (Release C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 4. 1</td>
<td>Demodulation of Forward Traffic Channel in Additive White Gaussian Noise (Test 1 to 12, 16 to 21, 25 to 30, &amp; 34 to 39 for FCH&amp;SCH)</td>
</tr>
<tr>
<td>3. 5. 1</td>
<td>Receiver Sensitivity and Dynamic Range</td>
</tr>
</tbody>
</table>

Yes: Supported; Partially: Partly Yes; Sys: Requires external equipment (SPA or SG); No: Not Supported
Batch Measurements at Fundamental Measurement Screen

The Tx measurement items below can be measured simultaneously (batch measurement), making measurement much faster.

<table>
<thead>
<tr>
<th>Measurement item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmitter Characteristics</td>
</tr>
<tr>
<td>Time Reference</td>
</tr>
<tr>
<td>Waveform Quality and Frequency Accuracy</td>
</tr>
<tr>
<td>Code Domain Power</td>
</tr>
<tr>
<td>Maximum RF Output Power</td>
</tr>
<tr>
<td>Conducted Spurious Emissions</td>
</tr>
<tr>
<td>Occupied Bandwidth</td>
</tr>
</tbody>
</table>

*The combination of batch measurement items varies with measurement conditions.*
The batch measurement results screens for both Tx characteristics are shown below. The results can be read simultaneously via GPIB.
Efficient repair and maintenance

At-a-glance Pass/Fail evaluation because spectrum and template mask displayed simultaneously

*Spectrum Display Function (Spectrum Emission Mask)

*The spectrum can also be read via GPIB.
Graphical Gated Power Measurement

At gated Tx power measurement*1, the Tx power of the mobile is measured in the gated condition. Template evaluation is also supported.

*1: MS output becomes gating (burst) status when Radio Configuration is Fwd. RC 1 + Rev. RC 1 or Fwd. RC 2 + Rev. RC 2 while FCH data rate is 1/2, 1/4 or 1/8 rate.
MX882002C CDMA2000 Measurement Software

Graphical Open Loop Time Response Measurement
The mobile open loop Tx power control time response can be measured at the Open Loop Time Response screen.

Open Loop Time Response Measurement

Template Line

Open Loop Time Response Measured Value

Template Line

Template Evaluation Result
Handoff Function

The parameters after handoff (Standard, Band Class Channel, Protocol Revision (P_REV), Radio Configuration, Service Option) can be set at the Handoff pop-up window. Handoff is performed according to the set parameters.
MX882002C CDMA2000 Measurement Software

MS Report Function
This screen displays the periodically reported CDMA2000 1X terminal status.

Call Processing Test Function
Call processing can be tested.

Call Processing Test Items
Location Registration
Origination
Termination
Disconnect from UE
Disconnect from Network
Handoff
MX882002C-001 CDMA2000 Voice CODEC
MX882002C-001 CDMA2000 Voice Codec

Overview

The MX882002C-001 CDMA2000 Voice Codec software option adds real-time voice encoding/decoding to the CDMA2000 measurement software. Live end-to-end communication tests between a handset and CDMA2000 mobile are supported by installing the MT8820B-011 Audio Board.
When a handset is connected to the MT8820B RJ11 connector, live end-to-end communication between the handset and a CDMA2000*1 mobile can be tested.

*1: The CDMA2000 Voice Codec supports EVRC.
MX882002C-002 CDMA2000

External Packet Data
End-to-end data transfer between an application server connected to the MT8820B and a CDMA2000 mobile or client PC connected to the CDMA2000 mobile can be tested using the MX882002C-002 CDMA2000 External Packet Data Option. The transferred PPP and IP packet data can be measured.
As shown below, packet data transfer via the CDMA2000 mobile PPP connection can be tested by a client PC using a server PC service such as FTP, HTPP, etc. The CDMA2000 mobile operates as a modem for the client PC.
## Specifications

<table>
<thead>
<tr>
<th>Service Option</th>
<th>SO33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Configuration</td>
<td>F-RC3+R-RC3, F-RC4+R-RC3</td>
</tr>
</tbody>
</table>
| Signalling Ch      | Encoding: Convolutional, Turbo  
|                    | Data Rates: 9.6, 19.2, 38.4, 76.8, 153.6 Kbps |
| RLP (Radio Link Protocol) | Interactive or background/UL: 64 DL: 384 Kbps/PS RAB |
| Packet Data Mode   | RLP Loopback, PPP/IP  
|                    | RLP Loop: Mode for looping back RLP data unit received at Reverse Link to Forward Link  
|                    | PPP/IP: Mode for transferring IP packet data between mobile and server |
CDMA2000 High-speed Adjustment
(MT8820B-003, MX882002C)
CDMA2000 High-speed Adjustment (MT8820B-003, MX882002C)

CDMA2000 High-speed Adjustment is a function for fast adjustment of the RF Tx part of CDMA2000 1X terminals. High-speed adjustment is performed in conjunction with the mobile adjustment function.

Multi-power Measurement

Adjustment of transmitter output power in one sweep

![Diagram showing Multi-power Measurement process]
Key Features of MX882006C
1xEV-DO Measurement Software

*The MX882006C is compatible with the MX882003C measurement items; the MX882006C supports RF tests for 1xEV-DO (Rev. 0) mobiles. To perform RF tests for 1xEV-DO Rev. A mobiles, add the MX882006-011 software option.

<table>
<thead>
<tr>
<th>Model</th>
<th>Protocol Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX882006C</td>
<td>IS-856-0 (1xEVDO Rev.0)</td>
</tr>
<tr>
<td>MX882006C-002</td>
<td>IS-856-0 (1xEVDO Rev.0)</td>
</tr>
<tr>
<td>MX882006C-011</td>
<td>IS-856-A (1xEVDO Rev.A)</td>
</tr>
</tbody>
</table>
Key Features of MX882006C 1xEV-DO Measurement Software

All-in-One Call Processing and RF Tx/Rx Testing of 1xEV-DO Rev. 0 Mobiles

The MT8820B can easily test the basic RF Tx/Rx characteristics of 1xEV-DO (Rev. 0) mobiles. It also supports call processing tests, such as origination and termination.
Key Features of MX882006C 1xEV-DO Measurement Software
Wide Range of Measurement Functions

In addition to supporting basic Tx/Rx measurements of CDMA2000 1xEV-DO (Rev. 0) mobile terminals, the access probe send power and open loop power control time response can be measured. Adding software options supports tests of CDMA2000 1xEV-DO (Rev. 0) mobile external servers and packet communications functions.

Fundamental Measurement Screen (Tx Measurement)
Key Features of MX882006C 1xEV-DO Measurement Software

Functional Test of 1xEV-DO (Rev. 0) Mobiles

Voice calling and PPP/IP connections tests with an external server (Packet Connection Test) are both supported.
MX882006C 1xEV-DO
Measurement Software
MX882006C 1xEV-DO Measurement Software

Key Specifications

- Frequency range: 300 to 2700 MHz
- Maximum input level: +35 dBm
- Amplitude measurement accuracy:
  - ±0.5 dB (−25 to +35 dBm)
  - ±0.7 dB (−55 to −25 dBm)
  - ±0.9 dB (−65 to −55 dBm) after calibration
- Residual waveform quality: >0.999
- PER Measurement: PER Measurement at F-TAP
- Call Processing: FTAP, RTAP, FTAP+ RTAP
### Supported Tx Measurements

<table>
<thead>
<tr>
<th>3GPP2 C.S0033-B</th>
<th>Item</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Physical Layer Transmitter Minimum Standards</td>
<td>-</td>
</tr>
<tr>
<td>4.1</td>
<td>Frequency Requirements</td>
<td>-</td>
</tr>
<tr>
<td>4.1.1</td>
<td>Frequency Coverage</td>
<td>Yes</td>
</tr>
<tr>
<td>4.1.2</td>
<td>Frequency Accuracy</td>
<td>Yes</td>
</tr>
<tr>
<td>4.2</td>
<td>Modulation Requirements</td>
<td>-</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Time Reference</td>
<td>Partially</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Waveform Quality and Frequency Accuracy</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3</td>
<td>RF Output Power Requirements</td>
<td>-</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Time Response of Open Loop Power Control</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Maximum RF Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Minimum Controlled Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.7</td>
<td>RRI Channel Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.8</td>
<td>Code Domain Power</td>
<td>-</td>
</tr>
<tr>
<td>4.3.8.1</td>
<td>DRC Channel Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.8.2</td>
<td>ACK Channel Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.3.8.3</td>
<td>Data Channel Output Power</td>
<td>Partially</td>
</tr>
<tr>
<td>4.3.8.4</td>
<td>DSC Channel Output Power</td>
<td>Yes</td>
</tr>
<tr>
<td>4.4</td>
<td>Limitations on Emission</td>
<td>-</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Conducted Spurious Emission</td>
<td>Partially</td>
</tr>
<tr>
<td>4.4.3</td>
<td>Occupied Bandwidth</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Since Band Class 5 and Band Class 11 Forward Link and Reverse Link are separated by only 10 MHz, accurate Minimum Controlled Output Power measurement may not be possible if the call connection is cut for some reason.

Yes: Supported; Partly: Partly Yes; Sys: Requires external equipment (SPA or SG); No: Not Supported
## Supported Rx Measurements

<table>
<thead>
<tr>
<th>3GPP2 C.S0033-A</th>
<th>Item</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Physical Layer Receiver Minimum Standards</td>
<td>-</td>
</tr>
<tr>
<td>3.2</td>
<td>Demodulation Requirements</td>
<td>-</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Demodulation of Forward Traffic Channel in AWGN</td>
<td>Partially</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Demodulation of Forward Traffic Channel in Multipath Fading Channel</td>
<td>Sys</td>
</tr>
<tr>
<td>3.3</td>
<td>Receiver Performance</td>
<td></td>
</tr>
<tr>
<td>3.3.1</td>
<td>Receiver Sensitivity and Dynamic Range</td>
<td>Yes</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Single Tone Desensitization</td>
<td>Sys</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Intermodulation Spurious Response Attenuation</td>
<td>Sys</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Adjacent Channel Selectivity</td>
<td>Sys</td>
</tr>
<tr>
<td>3.3.5</td>
<td>Receiver Blocking Characteristics</td>
<td>Sys</td>
</tr>
</tbody>
</table>

Yes: Supported; Partially: Partly Yes; Sys: Requires external equipment (SPA or SG); No: Not Supported
**Batch Measurements at Fundamental Measurement Screen**

The Tx measurement items below can be measured simultaneously (batch measurement), making measurement much faster.

<table>
<thead>
<tr>
<th>Measurement item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transmitter Characteristics</strong></td>
</tr>
<tr>
<td>Time Reference</td>
</tr>
<tr>
<td>Waveform Quality and Frequency Accuracy</td>
</tr>
<tr>
<td>Maximum RF Output Power</td>
</tr>
<tr>
<td>Code Domain Power</td>
</tr>
<tr>
<td>RRI Channel Output Power</td>
</tr>
<tr>
<td>Maximum RF Output Power</td>
</tr>
<tr>
<td>DRC Channel Output Power</td>
</tr>
<tr>
<td>ACK Channel Output Power</td>
</tr>
<tr>
<td>Conducted Spurious Emissions</td>
</tr>
<tr>
<td>Occupied Bandwidth</td>
</tr>
</tbody>
</table>

*The combination of batch measurement items varies with measurement conditions.*
The batch measurement results screens for Tx characteristics are shown below. The results can be read simultaneously via GPIB.
Efficient repair and maintenance

The graphical interface supports easy maintenance because the Tx characteristics of CDMA mobiles can be understood at a glance by viewing the spectrum.

Spectrum Display Function (Spectrum Emission Mask)

At-a-glance Pass/Fail evaluation because spectrum and template mask displayed simultaneously

*The spectrum can also be read via GPIB.
MX882006C 1xEV-DO Measurement Software

Graphical Open Loop Time Response Measurement
The mobile open loop Tx power control time response can be measured at the Open Loop Time Response screen.

Open Loop Time Response Measurement

Template Evaluation Result

Open Loop Time Response Measured Value
MX882006C 1xEV-DO Measurement Software

AT Report Function

This screen displays the periodically reported 1xEV-DO terminal status.

AT Report Screen

Call Processing Test Items
- Open Session
- Close Session
- AT Origination
- NW Origination
- AT Release
- NW Release
- Hard Handoff
- Softer Handoff

Call Processing Test Function

Call processing can be tested.
MX882006C-002 1xEV-DO
External Packet Data

*The MX882006C-002 is compatible with the MX882003C-002 measurement functions. The MX882006C-002 supports the external Packet Function test for 1xEV-DO (Rev. 0) mobiles but not for 1xEV-DO Rev. A mobiles.
End-to-end data transfer between an application server connected to the MT8820B and a 1xEV-DO (Rev. 0) mobile or client PC connected to the 1xEV-DO (Rev. 0) mobile can be tested using the MX882006C-002 CDMA2000 External Packet Data Option. The transferred PPP and IP packet data can be measured.
As shown below, packet data transfer via the 1xEV-DO (Rev. 0) mobile PPP connection can be tested by a client PC using a server PC service such as FTP, HTTP, etc. The 1xEV-DO (Rev. 0) mobile operates as a modem for the client PC.
### Specifications

<table>
<thead>
<tr>
<th>Application Protocol</th>
<th>Default Packet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packet Data Mode</td>
<td>PPP/IP: Mode for transferring IP packet data between mobile and server</td>
</tr>
</tbody>
</table>
Key Features of MX882006C-011
1xEV-DO Rev. A Measurement Software
**Overview**

- Easy software upgrades and supports major RF Tx/Rx tests
- Supports Call Processing (ETAP) function

**Key Specifications**

- **Frequency range**: 300 to 2700 MHz
- **Maximum input level**: +35 dBm
- **Amplitude measurement accuracy**:
  - ±0.5 dB (−25 to +35 dBm)
  - ±0.7 dB (−55 to −25 dBm)
  - ±0.9 dB (−65 to −55 dBm) after calibration
- **Residual waveform quality**: >0.999
- **FER Measurement**: Measurement at FETAP
- **Call Processing**: FETAP, RETAP, FETAP + RETAP
Batch Measurements at Fundamental Measurement Screen

The batch measurement results screens for both Tx characteristics are shown below. The results can be read simultaneously via GPIB. MX882006C-011 test items are same with MX882006C.
Support Protocol Revision IS-856-A (1xEV-DO Rev. A)

The MX882006C-011 supports call processing (ETAP) with IS-865-A (1xEV-DO Rev. A) for the Tx/Rx signals under test.

<table>
<thead>
<tr>
<th>Physical Layer Protocol</th>
<th>Application Protocol</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS-856-0</td>
<td>FTAP, RTAP, FTAP+RTAP</td>
<td>1xEVDO Rev. 0</td>
</tr>
<tr>
<td>IS-856-A</td>
<td>FETAP, RETAP, FETAP+RETAP</td>
<td>1xEVDO Rev. A</td>
</tr>
</tbody>
</table>
The MT8820B can measure DSC and Aux Pilot added to 1xEV-DO Rev. A Code Domain Power Measurement.

Packet Error Rate Measurement

PER (Packet Error Rate) measurement and Pass/Fail evaluation can be performed in FETAP to display the PER, error packet count, transmission packet count, confidence level, and Pass/Fail results.

*PER Measurement can test with FETAP. However, Anritsu approves Rx measurement in the Non-Call processing mode.
RF test for 1xEV-DO terminal supporting multi carriers*¹

The MT8820B tests RF measurement for 1xEV-DO terminal supporting multi carriers with test mode.

*¹: RF measurement can test with test mode. This feature is standard function of the MX882006C-011.

TX and RX Test Items*²

- Power Measurement
- Modulation Analysis
- Spurious Emission (RL: Max 3 Carriers)
- PER (FL: 1 carrier)

*²: Forward Link signal does not support 64QAM. Forward Link signal outputs only one carrier.
AMPS Measurement
MT8820B-011 Audio Board
MX882002C CDMA2000 Measurement Software
Overview of AMPS Measurement

Overview

When the MT8820B-002, MX882002C, and MT8820B-011 audio boards are installed in the MT8820B, the RF of AMPS (American Mobile Phone System) mobiles can be measured and the AF signal can be output and measured.

*Call Processing not currently supported
Key Features of AMPS Measurement
Tx and Audio Measurements

In addition to measuring the fundamental RF Tx and Rx characteristics of AMPS mobiles, the Audio can be tested.

Fundamental Measurement Screen (Tx Measurement)

Fundamental Measurement Screen (FM Measurement)

Audio Measurement Screen

Frequency, Level, SINAD (Signal to Noise And Distortion), Distortion can be measured and displayed simultaneously.
Key Features of AMPS Measurement

Audio Measurement

**CDMA2000 1X:** CDMA2000 Measurement hardware + audio board + CDMA2000 Measurement Software Option

<Audio Rx measurement including mobile speaker>

<Tx Measurement including mobile microphone>
Key Features of AMPS Measurement

Specifications

- AMPS Measurement
  - Frequency : 800 to 960 MHz
  - Input Level max. : +35 dBm
  - Amplitude Measurement
    - Accuracy : ±0.5 dB (−25 to +35 dBm)
    - ±0.7 dB (−55 to −25 dBm)
    - ±0.9 dB (−65 to −55 dBm) after calibration
  - Demodulation frequency range : 30 Hz to 20 kHz
  - Residual FM : 10 Hz rms (at 300 Hz to 3 kHz demodulation frequency)
Key Features of AMPS Measurement

Specifications

- **AF Measurement**
  - **Input frequency range**: 50 Hz to 10 kHz
  - **Input level range**: 1 mVpeak to 5 Vpeak (AF Input)
  - **Amplitude measurement accuracy**: ±0.2 dB (≥−10 mVpeak, ≥50 Hz), ±0.4 dB (≥−1 mVpeak, ≥1 kHz)
  - **Input impedance**: 100 kΩ
  - **Output frequency range**: 30 Hz to 10 kHz
  - **Output level range**: 0 to 5 Vpeak (AF Output)
  - **Amplitude measurement accuracy**: ±0.2 dB (≥−10 mVpeak, ≥50 Hz), ±0.3 dB (≥10 mVpeak, <50 Hz)
  - **Output impedance**: <1 Ω
  - **Output current max**: 100 mA
CDMA2000 1x, 1xEV-DO
Synchronous Mode (Hybrid)
Overview of Synchronous Mode (Hybrid)

Overview

By using the MX882002C and MX882006C, a Forward Link signal synchronized with system time can be output for cdma2000 1x and 1xEV-DO (Rev. 0) mobiles either using two MT8820B units or one MT8820B unit with the Parallelphone™ option installed. This supports function testing of both cdma2000 1x and 1xEV-DO (Rev. 0) systems. Using the MX882002C, MX882006C, and MX882006C-011 supports UE-connection tests with ETAP only.

*Parallelphone is a registered trademark of Anritsu Corporation.
Overview of Synchronous Mode (Hybrid)

Function Overview

Finally, the 1X side becomes Idle (Regist), and the 1xEV-DO (Rev. 0) side becomes Idle (Session Opened)

*Installing the MX882006C-011 option supports the UE-connection test with ETAP only.

<table>
<thead>
<tr>
<th>Phone 2 side</th>
<th>Phone 1 side</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter</strong></td>
<td><strong>Parameter</strong></td>
</tr>
<tr>
<td>1xEV-DO : Stop</td>
<td>CDMA2000 1X</td>
</tr>
</tbody>
</table>
Overview of Synchronous Mode (Hybrid)

- **Voice Call Test Function during 1xEV-DO Data Communications**

1. Use the hybrid mobile to start downloading data from the Server PC.
2. Originate a voice call at the CDMA2000 1x side during the data download. The hybrid mobile answers the call after steps (1) and (2).

- **Hand-down Function Test**

1. Use the hybrid mobile to start downloading data from the Server PC.
2. After starting downloading, send the disconnect signal (off). The hybrid mobile answers the call after steps (1) and (2).