WARRANTY & LIMITATION OF LIABILITY

1. ROTEM warrants that the product shall be free of defects in materials or workmanship and will conform to the technical specification for a period of 1 (one) year from the date of initial installation on site (the "warranty period").

2. Load cells are not covered by ROTEM’s warranty.

3. ROTEM warrants that during said warranty period, any item/items or part/parts of equipment found defective with respect to materials or workmanship or which do not conform to the technical specification shall be repaired or replaced (at ROTEM’s sole discretion), free of charge.

4. During the warranty period, in the event of an alleged defect, authorized resellers in relevant regions should be notified as soon as possible from the date of noticing the said defect, but no longer than thirty (30) days from such a discovery. The report shall include (1) a short description of the defects noticed (2) type of card / component and its matching serial number.

5. ROTEM's sole liability under this warranty is the repair or replacement of the defective item of product.

Conditions and Limitations

1. ROTEM will not be responsible for any labor costs or expenses associated with replacement of defective items or other parts of the product or repair.

2. This warranty shall not cover: (i) product or part therein which has been modified (without prior written approval of ROTEM), or (ii) product or part therein which has not handled or installed by an authorized reseller of ROTEM or (iii) product or part therein which has either been handled or installed not in strict accordance with ROTEM's instructions, (iv) products which were used for a function other than the agriculture industry.

3. This warranty will not apply in the following cases: (i) if all components of the product are not originally supplied by ROTEM (ii) the defect is the result of an act of nature, lighting strikes, electrical power surge or interruption of electricity (iii) the defect is the result of accident, misuse, abuse, alteration, neglect, improper or unauthorized maintenance or repair.

ROTEM warns and alerts all users that the Product is inherently complex and may not be completely free of errors. ROTEM's products are designed and manufactured to provide reliable operation. Strict tests and quality control procedures are applied to every product. However, the possibility that something may fail beyond our control exists. Since these products are designed to operate climate control and other systems in confined livestock environments, where failure may cause severe damage, the user should provide adequate backup and alarm systems. These are to operate critical systems even in case of a ROTEM system failure. Neglecting to provide such a backup will be regarded as the user's willingness to accept the risk of loss, injury and financial damage.

In no event will ROTEM be liable to a user or any third party for any direct, indirect, special, consequential or incidental damages, including but not limited to any damage or injury to business earnings, lost profits or goodwill, personal injury, costs of delay, any failure of delivery, costs of lost or damaged data or documentation, lost or damaged products or goods, lost sales, lost orders, lost income.

Except for the above express warranty, ROTEM makes no other warranties, express or implied, relating to the products. ROTEM disclaims and excludes the implied warranties of merchantability and fitness for a particular purpose. No person is authorized to make any other warranty or representation concerning the performance of the products other than as provided by ROTEM.

Software Version: 3.04
Document Version: 2.6
ATTENTION!

The Communicator is the central communication center and provides critical alarm warnings.

THEREFORE IT IS CRITICAL THAT YOU CARRY OUT THE FOLLOWING MAINTENANCE CHECKS ACCORDING TO THE RECOMMENDED SCHEDULE:

1. Daily (minimum weekly) alarm tests. Refer to Setting the Test Schedule, page 12.
2. Monthly battery (minimum between flock) test.
   a) Disconnect power to Communicator
   b) Ensure Communicator transmits SMS and voice alarms.
   c) Wait one hour, and confirm that Communicator continues to transmit alarms.
   d) Restore power to Communicator.
3. Test the Alarm Backup Batteries monthly (refer to page 41).

WARNING! Communicator does not support pre-paid SIM cards. Use a regular card only!

CAUTION Use an exclusive phone line for the Communicator!

NOTE: Sometimes using a phone line via private switchboard might interfere with communication. Rotem recommends using a different line to the Communicator.

CAUTION As a backup to the Communicator, Rotem recommends installing an Emergency Light and Siren system. If the Communicator is unable to transmit alarms via SMS or the telephone (for example there is a complete power failure), the Emergency Light and Siren system sounds an alarm.
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1 FRONT MATTER

This section includes information on the manual and general information.

1.1 Introduction

Rotem manuals provide easy-to-use information regarding the installation, operation, long/short term planning and parts listing (this manual may not deal with all of the above subjects). The table of contents is an outline of the relevant information in this manual.

Read this manual before operating your Rotem product. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

If you have any questions or comments regarding your product please contact your local Rotem dealer.

1.2 Conventions

NOTE: Notes provide important details regarding specific procedures.

CAUTION Cautions alert you to potential damage to the controller if the procedures are not followed carefully.

WARNING! Warnings alert you to potentially hazardous situations which, if not avoided could result in death or personal injury.

1.3 Contact Information

Rotem Control and Management

Email: support@rotem.com
URL: www.rotem.com

1.4 Document Information

Revision History

<table>
<thead>
<tr>
<th>Revision Level / Date</th>
<th>Section Affected</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Hardware Installation</td>
<td>Board 3.1 added</td>
</tr>
<tr>
<td>2.2</td>
<td>4.3.1.2/4.3.1.3/4.1.15/4.3.2.2/12.3</td>
<td>Cellular dial out test/ Status reports/ SMS ringtones, installation summary provided</td>
</tr>
<tr>
<td>2.3 / July 2011</td>
<td>9/13/15.3/16</td>
<td>Added support information, updated troubleshooting, added compatibility issues, added appendix</td>
</tr>
<tr>
<td>2.4 / May 2012</td>
<td></td>
<td>Formatting</td>
</tr>
<tr>
<td>2.5 July 2012</td>
<td>10.5</td>
<td>Formatting, battery test</td>
</tr>
<tr>
<td>2.6 / Jan 2013</td>
<td>Appendix B</td>
<td>Added pager codes</td>
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</tbody>
</table>

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Document Number: 110048   Revision Number: 2.6

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Rotem will not accept responsibility for damage resulting from the use of this manual. Rotem also reserves the right to make changes and improvements to its products and/or the associated documentation without prior notice.
2 PRECAUTIONS

Observe the following precautions when using your unit.

- Grounding
- Checking the Battery Level

2.1 Grounding

**CAUTION** Always connect temperature and sensor shields to earth ground. Avoid mixing high voltage wiring with sensor and low voltage wiring.

**CAUTION** Keep the controller as far as possible from heavy contactor boxes and other sources of electrical interference.

**CAUTION** Do not connect communication wire shields, which go from one house to another at both ends. Connect them at one end only. Connection at both ends can cause ground loop currents to flow, which reduce reliability.

**CAUTION** The COM connection for communications is not the shield wire. The COM, RX and TX wires must connect to each other at all controllers.

2.2 Checking the Battery Level

**CAUTION** Check the battery once a year. The output must be 2.7 volts (minimum). Authorized personnel only must replace the battery if the output is below the minimum required level or every five years.
INTRODUCTION TO THE ROTEM COMMUNICATOR

ROTEM Communicator, Version 3.04 is a state-of-the-art alarm and communication center used by farmers to monitor and control their Rotem Controllers and accessories.

The Communicator has a user friendly interface with an alfa-numeric keypad, 20 character by 4 line LCD and indicative LED.

- Main Features, page 9
- What’s New in Version 3.04, page 9
- User Interface, page 10

3.1 Main Features

- Supports connectivity of several contacts simultaneously on various communication devices (such as dial-up, internet, GSM, USB).
- Voice Solution Plug-in: supports incoming and outgoing phone calls for alarms and status reports. Voice messages can be edited according to personal preference.
- Remote access via dial-up connection
- Send and receive functional text messages (CDMA/GSM networks)
- Pager support
- 8 digital inputs
- 3 dry contact, output relays 5 Amp
- Battery backup

3.2 What’s New in Version 3.04

- **SMS ringtones**: To ensure that you don’t miss alarm messages, enable this option. It causes your cell phone to play a ringtone when an alarm is sent. Refer to Configuring an SMS Ringtone, page 23.
- **Status reports**: You can receive reports on conditions in the house and animal statistics via SMS (refer to Status Report, page 22) or via a phone (refer to Receiving a Status Report, 17).
- **Cellular dial out test**: Ensure that the text and ringtone functions function as required. Refer to Testing the SMS Ringtone, page 21.

In addition, Communicator now sends:

- an acknowledgment that commands sent via SMS were performed
- confirmation of alarm reset

Refer to Introduction to Alarms and Responses, page 37, which explains the alarm distribution process.
3.3 User Interface

The following sections detail how to access and use the Communicator user interface.

- Front Panel, page 10
- Menu Tree, page 11

### 3.3.1 Front Panel

<table>
<thead>
<tr>
<th>LED</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC Com 1 TD/RD</td>
<td>PC is transmitting/receiving data to/from the Communicator</td>
</tr>
<tr>
<td>Modem Com 2 TD/RD</td>
<td>Modem is transmitting and receiving data</td>
</tr>
<tr>
<td>Modem Com 2 DTR/DCD</td>
<td>Data transmitter ready/Data carrier detect (technician only)</td>
</tr>
<tr>
<td>Cellular Com 3 TD/RD</td>
<td>Cellular modem is transmitting and receiving data</td>
</tr>
<tr>
<td>Controller Transmit Data Receive Data</td>
<td>Controller relays are transmitting and receiving data</td>
</tr>
<tr>
<td>Output 1 Output 2</td>
<td>Non-functional</td>
</tr>
</tbody>
</table>

- **Menu:** Displays the main menu and is used as an "Escape" key
- **Arrows:** Used to navigate to required selections and changing values
- **Enter:** Selection confirmation
- **Number keys:** Insert numbers or text. Click * to insert a decimal point
- **#:** Erase typing mistakes and use for Cold Starts (Refer to Installation)
- **?/+-:** Toggle choices, change values between positive and negative numbers, and mark selections
- **?:** Help key
3.3.2 Menu Tree

- **MY FARM**
  - 1. FARM NAME
  - 2. ADDRESS BOOK
  - 3. STATUS REPORT
  - 4. CONTROLLERS
  - 5. PASSWORD
  - 6. TIME & DATE

- **ALARM**
  - 1. RESET
  - 2. TEST SCHEDULE
  - 3. DISABLED ALARMS
  - 4. OPTIONS

- **HISTORY**
  - 1. ALARM
  - 2. USER EVENTS
  - 3. SYSTEM EVENTS

- **SYSTEM**
  - 1. TEST
  - 2. DIGITAL INPUT
  - 3. RELAY
  - 4. SAVE/RES SETTING
  - 5. LANGUAGE
  - 6. ADVANCED SETUP
  - 7. TECHNICIAN TOOLS

- **SIGNAL STRENGTH**
- **SEND TEXT MSG**
- **DIAL OUT**
4 INITIAL CONFIGURATION

This section describes how to configure the Communicator’s initial settings.

- Communication Recommendations, page 12
- Setting the Test Schedule, page 13
- Setting the Language, page 13
- Setting the Farm Site Name, page 13
- Identifying the Controllers, page 14
- Setting the Time & Date, page 14
- Adding Names to the Address Book, page 14
- Setting the Password, page 15

CAUTION Many of these settings are critical in ensuring the safety and well-being of your stock. These settings must be made as soon as Communicator is installed.

Refer to Installation, page 44 for complete installation instructions.

Refer to the sections listed below for information on other functions:

- Communicator to User Functions, page 16
- Communicator to Controller Functions, page 26
- Communicator to PC Configuration, page 33
- Configuring the Dry Contact Card, page 34
- Communicator Functions, page 35
- Alarms, page 37

NOTE: Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

4.1 Communication Recommendations

Rotem strongly recommends:

- enabling both the telephony and SMS functions to transmit alarms (via voice and SMS)
- enabling SMS alarm acknowledgment
- employing a secondary alarm system to act as a backup to Communicator’s primary monitoring and alarm system

WARNING! BECAUSE OF LIMITATIONS BUILT INTO SMS DELIVERY SYSTEMS, THERE MAY BE DELAYS IN THE ACTUAL SMS DELIVERY TIME. BY DEFAULT A REMINDER SMS IS TRANSMITTED AFTER TWO MINUTES. IF THE MESSAGE DELIVERY IS DELAYED FOR ANY REASON, INCLUDING DELAYS CAUSED BY THE INFRASTRUCTURE, A REMINDER SMS IS SENT. THEREFORE INCREASING THE DELAY TIME FOR A REMINDER PLACES YOUR LIVESTOCK AT RISK.
4.2 Setting the Test Schedule

1. Select ALARM > Test Schedule.
2. Configure the parameters.

![ALARM TEST]

- **FREQUENCY**: Daily, weekly, disabled
- **AT**: Time of day to perform the alarm test
- **DAY**: Define the day of the week to perform the alarm test (this is required only when FREQUENCY=WEEKLY)

**WARNING!** ROTEM STRONGLY RECOMMENDS REGULAR TESTING OF THE ALARMS., DO NOT DISABLE THIS TEST UNLESS THE HOUSE IS EMPTY!

4.3 Setting the Language

1. Select SYSTEM > Language.
2. Configure the parameters.

![LANGUAGE]

- **LANGUAGE**: Select the required language for the user interface.
- **REGION**: Select the site location.

**CAUTION** Select the correct region! The modem functions correctly only when the correct region is selected!

4.4 Setting the Farm Site Name

- Select MY FARM > Farm /Site Name.

![FARM/SITE NAME]

Define the site’s name and reference number. PC network software employs these parameters when sending an alarm. In case several Communicators are present, this will help in identifying each one separately.

**NOTE**: Be sure that each Communicator has a unique name and number.
4.5 Identifying the Controllers

1. Select MY FARM > Controllers.
2. Identify controllers that are present within the network.

- PRIMARY UNITS: Select the number of master controllers the site contains (for example Platinum/AC-2000)
- SECONDARY UNITS: Select the number of slave controllers the site contains (for example PigGuard)
- FOUND-PRIMARY/SECONDARY: Displays the number of controllers the Communicator was able to locate (read-only)

4.6 Setting the Time & Date

1. Select MY FARM > Time & Date.
2. Adjust the time and date in this menu.

- CLOCK: hh:mm: (24 hour format; for example 2:15 PM = 14:15)
- DATE: dd-mmm-yy: (for example 14-JAN-10)

4.7 Adding Names to the Address Book

- Select MY FARM > Address Book.

The address book contains the contact information of up eight users. Communicator contacts these users in the event of an alarm. Priority of contacts is defined by the user number (1-16). Top priority contacts should be entered into the address book first.

CAUTION Rotem strongly recommends entering contact information immediately.

Contact list fields:
- NAME: Enter the contact name using the keypad.
- VOICE: Enter the phone number for receiving the VOICE CALL service (refer to Setting the
Communicator | 3.04


- MOBILE NUMBER: Enter the mobile number for the text message service.
- PAGER: Enter the pager phone number. Refer to Pager Setup, page 20 for options and testing. In addition, refer to Configuring the Dial Delay, page 21.

NOTE: When entering the above numbers, refer to Phone Number Structure, page 15.

- MSG BY: Define which services the contact receives (Idle, Voice, Text, Voice+Text, Pager).
- FROM/TO: Time frame for receiving messages/calls (Default – FROM: 0:00; TO: 00:00 – time frame is 24 hours, meaning always receiving messages).
- LANGUAGE: Select the language in which SMS messages are written: English, Turkish, Russian, Spanish, Thai or Hebrew.

NOTE: Distribution of the alarm messages is according to the address book list, contact by contact. Each user receives all forms of communication that are selected (Msg. By option) before continuing to the next user.

The first user does NOT have a "FROM" or "TO" field to ensure there is always someone that receives the notification from Communicator.

4.7.1 Phone Number Structure

When entering the voice, mobile and pager numbers the phone number structure is:

- 9 (outside line, if needed), # # #  # # # #,

The commas are the dial delay. Refer to Configuring the Dial Delay, page 21.

NOTE: To enter a comma, press and hold the “1” button.

4.8 Setting the Password

1. Select MY FARM > Password.
2. Define a password and confirm it (to disable, type “0”).

If selected, a password is required for:

- Locally: Using the menu items
- Remotely: Acknowledge/disabling of alarms via phone

NOTE: If a password is defined, the Communicator locks the system when idle for five minutes or if you press “9” from the main menu.
5 COMMUNICATOR TO USER FUNCTIONS

The following sections detail how to use the:

- Voice, page 16
- Pager, page 20
- Text, page 21
- Common Functions, page 24

5.1 Voice Functions

The following sections detail Communicator’s basic and advanced Voice functions.

- Basic Voice Functions, page 16
- Advanced Voice Functions, page 18
- Responding to an Audio Alarm Message, page 19

5.1.1 Basic Voice Functions

This section details the basic Voice functions.

- Setting the Voice Parameters, page 16
- Testing Voice Quality, page 16
- Testing the Voice Call Service, page 17
- Testing the Cellular Signal Strength, page 17
- Receiving a Status Report, page 17

5.1.1.1 Setting the Voice Parameters

1. Select SYSTEM > Advanced Setup > Voice.

2. Define the speech VOLUME and SPEAKER volume and its SPEED (if using a TTS voice card).

3. Scroll down to TEST and press ENTER to hear the selected settings.

5.1.1.2 Testing Voice Quality

1. Select SYSTEM > Test > Voice.

2. Define speech VOLUME and SPEED.

3. To test, press ENTER.

NOTE: Voice Setting and Test Voice perform the same functions.
5.1.1.3 Testing the Voice Call Service

This menu tests the VOICE CALL service.

1. Select SYSTEM > Test > Dial Out.
2. Enter the required phone number to receive the “Test Call”.
3. Press ENTER.

5.1.1.4 Testing the Cellular Signal Strength

- Select SYSTEM > Test > GSM/CDMA.

This screen displays the cellular service provider’s Received Signal Strength Indicator. This screen displays the cellular service provider’s number, name, BER (Bit Error Rate (if available)), the reception bar graph as well as the measured signal reading.

NOTE: Signal strength must be between -113 dBm to -51 dBm.

5.1.1.5 Receiving a Status Report

You can receive a status report over the phone. Refer to Status Report, page 21 for details on the function.

To hear the status report:

1. Call the Communicator phone number.
2. When prompted, select Status report.
5.1.2 Advanced Voice Functions

This section details Communicator’s advanced Voice functions.

**CAUTION** Rotem recommends that only trained, authorized technicians configure these functions.

- Configuring the Telephone Modem, page 18
- Defining when Communicator Answers Incoming Calls, page 18

### 5.1.2.1 Configuring the Telephone Modem

- Select **SYSTEM > Advanced Setup > Line Modem**.

<table>
<thead>
<tr>
<th>LINE MODEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO ANSWER</td>
</tr>
<tr>
<td>LINE TEST</td>
</tr>
<tr>
<td>DIAL DELAY (, )</td>
</tr>
</tbody>
</table>

This screen defines the line modem specifications.

- **AUTO ANSWER**: Number of rings before the Communicator automatically answers a dialed-in call. For example: if set to **4** the Communicator answers a call after four rings.
- **LINE TEST**: Monitors the phone line and activates an alarm in case of disconnection. Default: **YES**.
- **INPUT GAIN**: For factory use only. If your Communicator is unable to connect your voice dial in phone line, consult your local dealer regarding this feature.
- **VOICE DIAL-IN**: This option enables the user to call in at any time and receive information from the communicator regarding alarms. To receive the information in voice mode only:
  1. Call the controller, wait for one ring less than the AUTO ANSWER set parameter number and hang up.
  2. Wait at least five seconds (but no longer than 60 seconds) and then call again. Follow the instructions given by the controller.
    - If the AUTO ANSWER parameter is set to zero (0), then the Communicator answers in voice mode.
    - If the AUTO ANSWER parameter is set to zero and the VOICE DIAL IN parameter is set to **YES**, the controller answers in voice mode every time.

### 5.1.2.2 Defining when Communicator Answers Incoming Calls

1. Select **SYSTEM > Advanced Setup > GSM/CDMA**.
2. In Auto Answer, define the number of rings until the Communicator answers through the cellular modem.

<table>
<thead>
<tr>
<th>CELLULAR MODEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEXT FROM</td>
</tr>
<tr>
<td>Auto Answer</td>
</tr>
<tr>
<td>Operator</td>
</tr>
</tbody>
</table>
5.1.3 Responding to an Audio Alarm Message

The Voice Dial Out service transmits audio alarm message, via telephony, from Communicator to the contacts entered in the Address Book (page 14). This section details the procedure to follow when an audio alarm is received.

NOTE: This service is provided by the Communicator ONLY if the Address book is properly defined with contacts and the "VOICE" service selected per contact.

CAUTION Communicator only broadcasts its alarm message AFTER someone speaks into the phone. Any word or sound is sufficient.

The following illustrates the sequence of ALARM messages:

"Good <Morning / Afternoon / Evening> farm <#> active alarm. Please, press 1 to listen."

"House <#> has <#> alarm message<".
• Alarm messages for the first house are played and then the following options are available:

- Enter password (if acknowledging for the first time this call) and press *.
- "Please wait... Reset for house <#> successful. <Next Message / Goodbye>.”
- Right after "Please wait" is heard, press * to access the ALARM OPTIONS MENU.

"Entering alarm options for House <#>"
• System reports alarm and then offers the following options:

NOTE: Disabling alarms disables them until 12:00 PM the following day.

"Disable <confirmed / failed>l" message is repeated and returns to House Alarm Messages

NOTE: If at any time an incorrect key is pressed or if nothing is pressed, the system repeats itself three times and then ends the call.
5.2 Pager Functions

The following sections detail the Communicator’s basic and advanced Pager functions.

- Basic Pager Functions, page 20
- Advanced Pager Functions, page 21

5.2.1 Basic Pager Functions

This section details the basic Pager functions.

- Pager Setup
- Pager Test

5.2.1.1 Pager Setup

1. Select SYSTEM > Advanced Setup > Pager.
2. Define the pager type, either BASIC or ENHANCED by using the +/- key.

   ![Pager Setup Diagram]

- BASIC: Pages are per house in the following format:

   ![Pager Setup Diagram]

   NOTE: If a house has more than one alarm active, then the multiple alarms code is sent (code: 255).

- ENHANCED: Pages are per house and can contain multiple alarms per page in the following format:

   ![Pager Setup Diagram]

   o HHH: House number (two stars separate between houses)
   o AAA: Alarm code

5.2.1.2 Pager Test

1. Select SYSTEM > Test > Pager.
2. Enter the pager phone number and press ENTER.

   ![Pager Test Diagram]

This feature tests the PAGER service. The pager number should include a dial delay. When dialing a pager service, there is usually a delay between the moment when the call is answered and when the message is recorded. For example: “Leave a message for Mr. Smith” takes about three seconds. The Dial Delay parameter is the amount of time that Communicator waits before transmitting its pager alert. Refer to Configuring the Dial Delay, page 21 for more information. Delay is also required when dialing for an outside line.

For example: If the required delay is three seconds and delay is set to two seconds, then two commas are required. The phone number structure is:

- 9 (outside line, if need), ###-####,,

NOTE: To enter a comma, press and hold the “1” button.
5.2.2 Advanced Pager Functions
The following section details the advanced Pager functions.

5.2.2.1 Configuring the Dial Delay
- Select SYSTEM > Advanced Setup > Line Modem.

When dialing a pager service, some services require additional tone menu browsing (interactive voice response). Use this feature to set a delay between the phone number and the tone browsing. Each “,” represents the number of seconds in delay between the phone number and the next browsing number. Refer to Pager Test, page 20 for more information.

5.3 Text Functions
The following sections detail the Communicator basic and advanced Text functions.
- Basic Text Functions, page 21
- Advanced Text Functions, page 23
- Text Message Responses, page 23

5.3.1 Basic Text Functions
The following sections detail the basic Text functions.
- Testing the Text Function, page 21
- Testing the SMS Ringtone, page 21
- Status Report, page 22

5.3.1.1 Testing the Text Function
This menu enables testing the text function.
1. Select SYSTEM > TEST > GSM/CDMA > SEND TEXT MSG.
2. Enter in the required mobile phone number to receive the “Test Text” and press ENTER.
3. Confirm that the mobile phone received the following text message:
   “Your Communicator is ready to send alerts via text messages.”

5.3.1.2 Testing the SMS Ringtone
This menu tests the SMS ringtone service.
1. Select SYSTEM > Test > Dial Out.
2. Enter the required phone number to receive the “Test Call”.
3. Press ENTER.
5.3.1.3 Status Report

Upon a user request, Communicator sends a status report on basic house functions and animal statistics. The report includes the following specifications:

- Target Temp
- Average Temp
- Vent Level
- Vent Mode (minimum ventilation, natural, tunnel)
- Humidity
- Weight (current average animal weight)
- Pressure (static pressure)
- Water Control (daily water consumption)
- Feed Count (daily feed consumption)
- Mortality

By default, the report only includes Target Temp, Average Temp, Vent Level and Humidity.

**NOTE:** Platinum Controllers, Version 3.0 and higher, support this function.

**To select the parameters:**
1. Select `SYSTEM > Advanced Setup > GSM/CDMA`.
2. Use the `+/` key to select the required parameter.
3. Press `Enter` to select/deselect the parameter.
4. Press Save.

The parameters are configured.

**To receive a status report:**

- **Receiving the Report for One House**
  ```
  ?SX > 'Send SMS' to the Communicator cell phone number.
  ? = Start of message
  S = Status report
  X = Represents house number (can be any positive number from 1 - 64)
  ```

- **Receiving the Report for Several Houses**
  ```
  ?S#X#X > 'Send SMS' to the Communicator cell phone number
  ? = Start of message
  S = Status report
  X = Represents house number (can be any positive number from 1-64)
  # = Sign separates between every house number
  ```
5.3.2 Advanced Text Functions

The following sections detail the advanced Text functions.

- Defining Who Can Text Communicator
- Configuring an SMS Ringtone

5.3.2.1 Defining Who Can Text Communicator

1. Select SYSTEM > Advanced Setup > GSM/CDMA.

This menu defines which cell phones can send messages to the Communicator via text.

2. In the Text From field, choose:
   - Addr. Book (only those addresses which are text enabled)
   - Any (enables sending text via any cell phone).

NOTE: Acknowledgement messages are only sent when Addr. Book is selected.

5.3.2.2 Configuring an SMS Ringtone

If desired, a ringtone can play when an SMS message from Communicator arrives, thereby alerting you of an upcoming message.

1. Select SYSTEM > Advanced Setup > GSM/CDMA.
2. In the Text Precall field, select Yes.
3. In the Precall time, enter the time (in seconds). This parameter ensures that there is sufficient time for the phone to ring before the SMS tone plays.

5.3.3 Text Message Responses

This section details how to respond to a text message sent from Communicator to a mobile phone. The response can reset a siren, an alarm, or acknowledge the messages.

Event Codes, page 38 lists the events corresponding to the codes sent in a text message.

- Resetting the Siren, page 23
- Resetting the Alarm, page 24
- Acknowledging a Message, page 24

5.3.3.1 Resetting the Siren

NOTE: After typing the text message, press the 'Send' button to send it to the Communicator.

In the procedures below, the **highlighted text** shows the SMS text to be sent.

- Resetting the Siren of One House
  **RX:** 'Send SMS' to the Communicator cell phone number.
  I = Start of message
R = Reset
X = Represents house number (can be any positive number from 1-64)

- **Resetting the Siren of Several Houses**
  
  \[RX\#X\#X\] > 'Send SMS' to the Communicator cell phone number
  
  ! = Start of message
  
  R = Reset
  
  X = Represents house number (can be any positive number from 1-64)
  
  # = Sign separates between every house number

- **Resetting the Siren for All Houses**
  
  \[RALL\] > 'Send' to the Communicator cell phone number
  
  ! = Start of message
  
  R = Reset
  
  ALL = Can be typed both in capital letters or small letters.

### 5.3.3.2 Resetting the Alarm

To reset all the alarms, send the following text message:

\[C\] > 'Send' to the Communicator cell phone number

! = Start of message

C = Communicator

### 5.3.3.3 Acknowledging a Message

If Message Repeat is enabled (refer to page 39), Communicator continues to send alarms until an acknowledgement is sent.

- **Requesting a Response for Every Sent Text Message**
  
  \[AON\] > 'Send' to the Communicator cell phone number
  
  ! = Start of message
  
  A = Acknowledgement

- **Canceling a Response for Every Sent Text Message**
  
  \[AOFF\] > 'Send' to the Communicator cell phone number
  
  ! = Start of message
  
  A = Acknowledgement.

### 5.4 Common Functions

The following sections detail functions which are common to all Communicator to User tasks.

- Selecting the CDMA Operator, page 24
- Technician Tools, page 25

#### 5.4.1 Selecting the CDMA Operator

- Select **SYSTEM > Advanced Setup > GSM/CDMA**

The **OPERATOR** menu enables a user to choose to choose one of the following operators:

- STD (standard)
- Sprint
- Verizon

**NOTE:** This menu only appears if a cellular modem (CDMA) is present.
5.4.2 Technician Tools

- Select SYSTEM > Technician Tools.

This menu provides testing tools used by an authorized technician only.

- Test
- Hyper Terminal
- Monitor

5.4.2.1 Test

- PHONE LINE: Measures the line voltage.
- INTERNET: (TBD).
- RELAYS: Toggle Relays 1, 2 and Alarm relay status by pressing ENTER.
- DIGITAL INPUT: Displays the status of the eight digital inputs.
- MEMORY: Performs EEPROM test by pressing the MENU key.
- KEYBOARD: Tests the functionality of each key. Test keys by pressing them and verifying visually that the right key is displayed on the screen.

5.4.2.2 Hyper Terminal

This is a dedicated function for system integrators ONLY!

5.4.2.3 Monitor

TBD
6 COMMUNICATOR TO CONTROLLER FUNCTIONS

The following sections detail how to configure the connections between Communicator and the controllers (local communication).

- Network Connection Configuration, page 26
- RS-232 Connection, page 29
- RS-485 Connection, page 30
- RF Connection, page 31
- Channel/Signal Tests, page 32

6.1 Network Connection Configuration

The following sections detail how to configure the baud rate and communication between the Communicator (master) and its subunits (slaves). Communication can be via RS-232, RS-485, or RF.

- Routing Methods, page 26
- Configuring the Channel Settings, page 27
- Displaying the Controllers, page 28
- Listing the Network Devices, page 28

6.1.1 Routing Methods

There are two common routing methods for running the communications connections; Daisy Chain (recommended) and Star connection (not recommended).

Figure 1: Daisy Chain

Figure 2: Daisy and Star Combination
| NOTE: | Employing a Rotem RS-232 or RS-485 Repeater enables star routing. Refer to the relevant manuals for details. |

6.1.2 Configuring the Channel Settings

- Select SYSTEM > Advanced Setup > RF/Wired Network.

![SERIAL PORT]

This menu defines data rate and settings between the Communicator and its subunits.

| NOTE: | This menu does not define the data rates to the PC. |

- **Baud Rate**: For communication to operate properly, set all controllers to the same Baud Rate.

| NOTE: | Set the Baud Rate to 9600 BPS. Incorrect definitions can result in alarms for missing controllers and communication from unidentified controllers. For detailed information on setting the RS-232/485 baud rate, refer to RS-232 Approximate Distances and Baud Rate, page 30 and Setting up the RS-485 Connection, page 31. |

- **CHANNEL**: Sets the module’s hopping channel number. A channel is one of three layers of addressing available to the XStream radio modem. For modules to communicate with each other, they must have the same channel number since each network uses a different hopping sequence. Different channels should be used to prevent modules from listening to transmissions from one another in the same network.

- **ADDRESS**: For future use: make sure it is in the OFF position (both squares remain unshaded).
6.1.3 Displaying the Controllers

- Press

This screen displays all the controllers that are connected to the system.

■ - Represents a recognized controller
□ - No controller is recognized

NOTE: The letter 'F' indicates that communication to that house has been lost. The 'F' continues to appear until the unit is reset (disconnect and reconnect the power).

6.1.4 Listing the Network Devices

- Select SYSTEM > Test > Network List.

<table>
<thead>
<tr>
<th>NETWORK LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY FOUND: 0</td>
</tr>
<tr>
<td>SECONDARY FOUND: 0</td>
</tr>
<tr>
<td>SCAN NETWORK? NO</td>
</tr>
</tbody>
</table>

- PRIMARY FOUND: Displays the number of primary units found in the network.
- SECONDARY FOUND: Displays the number of secondary units found in the network.
- SCAN NETWORK?: Use +/- key to select YES or NO and then press ENTER to scan the network to find/remove primary or secondary units.
6.2 RS-232 Connection

The following sections detail how to set up an RS-232 connection between the Communicator and the controllers.

- Setting up the RS-232 Connection, page 29
- RS-232 Approximate Distances and Baud Rate, page 30

6.2.1 Setting up the RS-232 Connection

Figure 4: Connecting the External Connection Box to Rotem’s Controllers via RS-232 Cards

NOTE: The cards shown are controller cards.

- The cable between the external connection box and the controllers should be a 3 Wire Shielded Cable (22 AWG minimum).
- This cable is daisy-chained to all controllers and to the communication line of the external connection box in the following manner:
  - The Black wire (COMMON) is connected to the COMMON in the communication terminal of the controller.
  - The Red wire, TX in the connection box, is connected to RX in the Controller.
  - The Green wire, RX in the connection box, is connected to TX in the Controller.
  - The shield should be connected to the earth (Safety Ground).

CAUTION  Connect the shield (safety ground) only on one side!
### 6.2.2 RS-232 Approximate Distances and Baud Rate

- **For one controller:**
  - ~2000 meters (~6500 feet): 9600 Baud
  - ~2500 meters (~8200 feet): 4800 Baud
  - ~3000 meters (~9800 feet): 2400 Baud
- **For 10 controllers:**
  - ~1200 meters (~4000 feet): 9600 Baud
  - ~1800 meters (~6000 feet): 4800 Baud
  - ~2400 meters (~7870 feet): 2400 Baud

**NOTE:** Baud rate depends on cable length and on the number of controllers.

### 6.3 RS-485 Connection

The following sections detail how to set up an RS-485 connection between the Communicator and the controllers.

- Setting up the RS-485 Connection, page 30
- RS-485 Approximate Distances & Baud Rates, page 31

#### 6.3.1 Setting up the RS-485 Connection

**Figure 5: Connecting the External Connection box to ROTEM’S Controllers via RS-485 Cards**

**NOTE:** The cards shown are controller cards.
The cable between the external connection box and the controllers should be a 2-wire shielded cable.

This cable is daisy-chained to all controllers and to external connection box:
- Connect the shield to the COM terminal of the controller on one side and leave unconnected on the other side.
- Red wire to terminal A of the controller and terminal A of the external connection box.
- Green wire to terminal B of the controller and terminal B of the external connection box.

### 6.3.2 RS-485 Approximate Distances & Baud Rates

- **For one controller:**
  - ~2000 meters (~6500 feet): 9600 Baud
  - ~2500 meters (~8200 feet): 4800 Baud
  - ~3000 meters (~9800 feet): 2400 Baud
- **For 10 controllers:**
  - ~1200 meter (~4000 feet): 9600 Baud
  - ~1800 meter (~6000 feet): 4800 Baud
  - ~2400 meter (~7870 feet): 2400 Baud

**NOTE:** Baud rate is dependent on cable length and number of controllers.

### 6.4 RF Connection

The following sections detail how to set up an RF connection to the controllers.

- Option A with Platinum RF (RCLP-RF), page 31
- Option B with Platinum RF Remote, page 32

#### 6.4.1 Option A with Platinum RF (RCLP-RF)
6.4.2 Option B with Platinum RF Remote

6.5 Channel/Signal Tests

The following sections detail how to test the controller communication channels.

- Testing the RS-232/485 Channel
- Testing the Radio RF Signal

6.5.1 Testing the RS-232/485 Channel

- Select SYSTEM > Test > Wired 232/485.

This menu tests the RS-232/485 communication channel.

Enter the required unit number and press ENTER to start and stop the test. The screen displays a shaded box in the Tx when transmitting and a shaded box by the Rx when receiving (when functioning properly the shading switches back and forth between the two boxes).

**NOTE:** If the checkbox remains blank, check all connections between the Communicator and the controller.

6.5.2 Testing the Radio RF Signal

- Select SYSTEM > Test > Radio RF Signal.

This menu tests the RF communication channel.

Enter the required unit number and press ENTER. The screen displays the reception bar graph as well as the measured signal reading once available (testing is continuous until exiting this menu).

Refer to RF Connection, page 31 for information on configuring the RF network.
7 COMMUNICATOR TO PC CONFIGURATION

The following sections detail the communication between the Communicator and the PC.

- Defining the Communication Speed with the Local PC
- Configuring the Data Connection

7.1 Defining the Communication Speed with the Local PC

- Select SYSTEM > Advanced Setup > COM/USB.

This screen defines the communication speed (BAUD RATE) corresponding with the local PC.

7.2 Configuring the Data Connection

- Select SYSTEM > Advanced Setup > Line Modem > Advanced.

The Communicator can compress data and send it faster. Use this screen to increase the transfer rate between the Communicator and a remote modem.

- MODULATION: Auto or V34 transmission. During connect negotiation at which the modems have determined which modulation and rate will be used, meaning before any error.
- COMPRESSION: Enables or disables data compression performed by the modem, also known as hardware compression. It reduces the amount of time required to transfer data. Make sure the modem you are connected to can read and decompress the received data.
- DATA FLOW: This feature enables the hardware to vary the data transmission rate.

CAUTION Rotem recommends that the user leave the Advanced menu items at their default settings.
8 CONFIGURING THE DRY CONTACT CARD

The following section details how to set up the dry contact cards. Communicator supports an eight dry contact digital input card that can be programmed as a normally open / close dry contact input. These inputs can be connected to a wide variety of sensors such as generator operation, magnetic door or window, thermostat, etc.

1. Select SYSTEM > Digital Input.

The figure above serves as an example of a digital input program. The programmed line No. 1 is set as normally closed for the house door. The message for this program is “door opened”. If the door opens, the dry contact is disconnected and changes from 1 to 0. This change triggers the alarm and the message “door opened” is sent to all addresses programmed in the Adding Names to the Address Book (page 14).

<table>
<thead>
<tr>
<th>#</th>
<th>MESSAGE</th>
<th>[ N ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>door opened</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

2. Use the alphanumeric keypad to enter in the message and press ENTER.
3. Define [N] as 1 or 0

The 'N' column’s two possibilities:
- 0: Represents the open contact (Normally Open). If there is a change from the usual state (closed state), an alarm occurs.
- 1: Represents closed contact (Normally Closed). If there is a change from the usual state (opened state), an alarm occurs.
9 COMMUNICATOR FUNCTIONS

The following sections detail functions which relate to the Communicator hardware and software.

- Saving and Restoring System Settings, page 35
- Test Functions, page 35
- Viewing Relay Settings, page 36

9.1 Saving and Restoring System Settings

- Select SYSTEM > Save/Res Setting > Restore.
  1. RESTORE: Use this feature to restore all settings that were previously saved (restore point is the date of the last save performed).

- Select SYSTEM > Save/Res Setting > Save.
  2. SAVE: Use this feature to save all settings (once a SAVE is performed, this is the new RESTORE point).

9.2 Test Functions

The following section details how to test Communicator functions.

- Testing the CPU Battery, page 35
- Viewing Device Status, page 36
- Viewing the Software and Hardware Version, page 36

9.2.1 3535 Testing the CPU Battery

This section details the CPU battery test.

- Select SYSTEM > Test > Battery.

To test the battery:

1. Unplug the unit.
2. View the battery test.

CAUTION In addition to this test, refer to Testing the Alarm Backup Batteries, page 41.
9.2.2 Viewing Device Status

- Select SYSTEM > Test > Hardware Profile.

HARDWARE PROFILE

1  VOICE  OK
2  LINE MODEM  OK
3  CELLULAR  OK

View functionality status of all possible installed devices.

9.2.3 Viewing the Software and Hardware Version

- Press ?

http://www.rotem.com
SOFTWARE  3.00r01-b
HARDWARE  2.04
U1  1.00

This screen displays the software and hardware version numbers.

9.3 Viewing Relay Settings

- Select SYSTEM > Relay.

RELAYS SETTING

<table>
<thead>
<tr>
<th>CODE</th>
<th>TIME (s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLY1</td>
<td>0</td>
</tr>
<tr>
<td>RLY2</td>
<td>0</td>
</tr>
</tbody>
</table>

TBD
10 ALARMS

This section details how to:

- Configure advanced alarm settings.
- View the history of alarms and events

Basic Alarm functions are defined in the Initial Configuration, page 12.

- Introduction to Alarms and Responses, page 37
- Event Codes, page 38
- Advanced Alarm Settings, page 38
- Alarm and Events History, page 40

10.1 Introduction to Alarms and Responses

Figure 6 illustrates the alarm sequence. The flow ends when an alarm is acknowledged or is no longer active.

Responding to alarms can be done over:

- **Land line**: Via verbal and interactive messaging
- **Cellular**: Via text messaging

**NOTE:** Communicator does not support verbal and interactive messaging via cell phones.
10.2 Event Codes

Table 1 lists the event codes sent in text messages.

<table>
<thead>
<tr>
<th>Event Code</th>
<th>LCD Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&quot;power off &quot;</td>
</tr>
<tr>
<td>2</td>
<td>&quot;power on&quot;</td>
</tr>
<tr>
<td>3</td>
<td>&quot;cold start&quot;</td>
</tr>
<tr>
<td>4</td>
<td>&quot;error-01&quot;</td>
</tr>
<tr>
<td>5</td>
<td>&quot;test running&quot;</td>
</tr>
<tr>
<td>6, 7, 9, 10, 11, 12, 16, 17</td>
<td>&quot;fail&quot;</td>
</tr>
<tr>
<td>8, 13</td>
<td>&quot;no answer &quot;</td>
</tr>
<tr>
<td>14</td>
<td>&quot;page sent &quot;</td>
</tr>
<tr>
<td>18</td>
<td>&quot;text sent &quot;</td>
</tr>
<tr>
<td>19, 20</td>
<td>&quot;ack alarm &quot;</td>
</tr>
<tr>
<td>21</td>
<td>&quot;disable alarm &quot;</td>
</tr>
<tr>
<td>22, 23, 24</td>
<td>&quot;low signal&quot;</td>
</tr>
</tbody>
</table>

10.3 Advanced Alarm Settings

The following sections detail the advanced alarm functions. Basic alarms are set up in the Initial Configuration.

- Reseting the Alarms, page 38
- Disabling Alarms, page 39
- Defining the Message Delay, page 39
- Defining the Message Repeat Parameter, page 39
- Defining the Internal Alarms, page 40
- Defining the Internal Alarms, page 40
- Defining the Battery Alarm, page 40

10.3.1 Reseting the Alarms

- Select ALARM > Reset.

This menu resets the alarms of any controller that exists within the network. The Communicator’s unit number is 0.

Use the +/- key to navigate to the required unit number.
10.3.2 Disabling Alarms

- Select ALARM > Disabled Alarms

View disabled alarms and re-enable these alarms.

**NOTE:** Alarms are disabled until 12:00 PM the following day.

- Scroll right to view message.
- Press +/- to re-enable the alarm and then press ENTER.

**NOTE:** Alarms that are re-enabled are cleared from the list.

10.3.3 Defining the Message Delay

- Select ALARM > Options.

This menu defines the waiting times between an alarm event and its reporting.

- **CALL-OUT (seconds):** Define the waiting time before the communicator begins the reporting sequence.
- **BETWEEN USERS (seconds):** Define the waiting time before contacting the next user within the address book.

10.3.4 Defining the Message Repeat Parameter

- Select ALARM > Options.

By default, when an alarm is sent, it must be acknowledged by one of the contacts. If there is no acknowledgment, Communicator resends the alarm (refer to Acknowledging a Message, page 24).

This menu defines the waiting time before Communicator reinitiates the reporting (VOICE, PAGER, TEXT).

**NOTE:** Enter 0 to disable this option.
10.3.5 Defining the Internal Alarms

- Select ALARM > Options.

Internal alarms are generated by the Communicator unit (external alarms are generated by the controllers). This menu defines:

- **DELAY (seconds):** Define the waiting time before the communicator generates an internal message.
- **REMINDER (minutes):** After an alarm has been acknowledged but not dealt with, the communicator recreates an internal message according to the amount of time defined. Define the time in this option.
- **POWER RESTORE MESSAGE:** Define YES/NO for a message to be sent after a Power Restore event.

10.3.6 Defining the Battery Alarm

- Select SYSTEM > Advanced Setup > Battery.

This menu defines the hold time (in seconds) before the communicator generates an alarm message regarding the battery charge.

10.4 Alarm and Events History

This section details how to view records of alarms and events.

- Displaying the Alarm History, page 40
- Displaying the User Events, page 41
- Displaying the System Events, page 41

10.4.1 Displaying the Alarm History

- Select HISTORY > Alarms.

This screen displays alarms from all houses as well as the Communicator (Communicator: 0 and Houses: 1 – 64).

- Use +/- to toggle the SORT BY option from: H=House; D=Date; and C=Code.
- Scroll right to view message.
10.4.2 Displaying the User Events

- Select ALARM > User Events.

<table>
<thead>
<tr>
<th>USER EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>18-JAN</td>
</tr>
<tr>
<td>07-FEB</td>
</tr>
</tbody>
</table>

Any changes or events created by users from the address book appear in this table.

- Scroll right to view alarm and user number.
- Code is the alarm code.

10.4.3 Displaying the System Events

- Select ALARM > System Events.

<table>
<thead>
<tr>
<th>SYSTEM EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>18-JAN</td>
</tr>
<tr>
<td>07-FEB</td>
</tr>
</tbody>
</table>

This menu displays all Communicator system events.

- Scroll right to view message.

10.5 Testing the Alarm Backup Batteries

To ensure that the Communicator continues to broadcast alarms in the event of a power outage, the unit comes equipped with a set of 12 V backup batteries. These batteries must be kept properly charged at all times.

**WARNING!** Failure to test your pack regularly and change the pack as required can result in losses in the event of a general power failure!

Rotem strongly recommends:

- Checking the backup battery pack once a month (see the procedure below).
- Replacing the battery pack once a year, regardless of the test results.
The following two tests provide accurate data regarding the backup battery pack’s charge level. Rotem recommends performing both tests.

If you need to replace the battery, order a Communicator Battery Pack (P/N: SP-COMM-BA).

**NOTE:** Rotem recommends keeping a spare pack in stock to avoid any shipping delays.

### 10.5.1 Dial-Up Test

- Unplug the unit.
  - If the batteries are charged, Communicator sends an SMS/voice/pager alarm message to the numbers configured in the Address Book. The message should arrive within several minutes.
  - If the batteries are not charged, Communicator does not send an alarm message. In addition, an alarm message appears on the screen.
### 10.5.2 Voltage Test

1. Remove the battery pack,
2. Using a voltmeter, test the pack. The voltage of a new, charged battery pack ranges between 7.2 V and 7.6 V. The voltage of a battery pack that has been in use for an extended period of time will be 7.2 V or lower.
   - If the power is above 7.0 volts or higher, continue using the battery pack.
   - If the power is below 7.0 volts, replace the pack immediately.

---

**CAUTION** Check the CPU Battery once a year, as described in Testing the CPU Battery, page 35.
11 INSTALLATION

The following sections detail how to install the Communicator.

CAUTION Rotem recommends that only an authorized technician install and configure the Communicator unit.

- Hardware Installation, page 44
- Completing the Installation, page 48

11.1 Hardware Installation

The following sections detail how to perform the Communicator’s physical setup.

- Preliminary Steps, page 44
- Connecting the Unit to External Components, page 46
- Additional Details, page 47
- USB Driver Installation, page 47

11.1.1 Preliminary Steps

1. Open the Communicator and verify that all required components are physically installed. Figure 9 and Figure 10 illustrate sample Communicators and their components.

![Figure 9: External Connection Box Connector and Internal Components (Sample) Board Version 2.3](image-url)
Figure 10: External Connection Box Connector and Internal Components (Sample) Board
Version 3.1 (line and port cards not shown)

NOTE: This version supports two sockets for communication adaptors.

2. Connect the ground cable to the dedicated ground terminal (Figure 11).

Figure 11: Grounding Terminal (Version 3.1)

CAUTION The Communicator must be grounded at all times!
3. Apply power while pressing \# Del until the Cold Start screen appears.

![Cold Start Screen]

4. Select YES.

**NOTE:** The COLD START resets the Communicator to original factory settings and erases previous history. Perform COLD START when installing new hardware, changing the software version, or if instructed by a ROTEM technician.

5. Select SYSTEM > Test > Hardware Profile.

![Hardware Profile]

6. Ensure that Communicator recognizes the components.

7. Select SYSTEM > Test > Battery.

![Battery Test]

8. Check for battery recognition and charging. As long as the communicator unit is plugged in, the charger inactive note is displayed.

9. Install the communication software using the accompanying CD (for installation instructions, refer to USB Driver Installation, page 47).

### 11.1.2 Connecting the Unit to External Components

1. Connect the External Connection Box to the Communicator as shown in Figure 9 or Figure 10.
2. Connect the External Connection box to a controller as shown in Figure 12.
3. Connect the local computer by via the PC Port or a USB cable.

**NOTE:** If you use the USB drive, install the Rotem driver (refer to USB Driver Installation, page 47).

4. Connect the line and phone cables.
5. Connect the ethernet cable to ethernet access point; for example an ADSL modem/router (Version 3.1 only).
11.1.3 Additional Details

- Table 2 details the communication card types.

<table>
<thead>
<tr>
<th>Table 2: Communication Card Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232 Card</td>
</tr>
</tbody>
</table>

- Figure 12 illustrates how to wire the External Communication Box to a controller and an ELS system.

11.1.4 USB Driver Installation

The following procedure details how to install R-USB Driver version 5.00. This driver must be installed before plugging in the USB cable between the host computer and the R-USB plug.

1. Ensure that the USB cable is disconnected from Communicator before installing the driver.

2. On the CD, click...
3. Click .
4. Follow the instructions.
5. Restart the computer.
6. Connect a USB cable from the Communicator to the computer.

**NOTE:** If older versions of the driver exist on the computer, the installation program must delete them. Click Yes if prompted.

### 11.2 Completing the Installation

The following section summarizes the steps needed to complete the installation. Refer to the relevant sections in the manual for further details.

**NOTE:** Before beginning, verify that all cables are connected properly (refer to Hardware Installation, page 44).

- Configuring the Communication to Outside Devices, page 48
- Setting Up an Internet Connection, page 48
- Setting Up a Network Using RotemNet, page 50

#### 11.2.1 Configuring the Communication to Outside Devices

1. Set the baud rate to the controllers (refer to Routing Methods, page 26).
2. Test the connection to each controller (refer to Displaying the Controllers, page 28).
3. Test the communication channel to each controller (refer to Channel/Signal Tests, page 32).
4. Set the baud rate to the local computer (refer to Defining the Communication Speed with the Local PC, page 33).

#### 11.2.2 Setting Up an Internet Connection

Accessing the Communicator and controllers via a web browser enables viewing the controller parameters.

**NOTE:** For full control, use RotemNet. (refer to Setting Up a Network Using RotemNet, page 50).

Internet is supported by:

- Communicator, software version 3.0 and higher
- Platinum Controllers, software version 3.0 and higher
- Rotem Net, version 1.3.17 and higher

**NOTE:** This section refers to Communicator Version 3.1 only equipped with Ethernet mode cards. Users having Version 2.3 should contact technical support.

1. In the Communicator screen, select SYSTEM > Advanced Setup > Internet > My Account.
2. Write down the Ethernet device serial number.
3. On the Ethernet cable port (Figure 10), verify that:
   - the green lights remains on
   - the yellow light blinks
4. Set the Communicator Internet settings.
   a. In a web browser, go to http://www.myrotem.net.
   b. In the Account Name field, type Rotem.
c. In the Password field, type 1.
The Register page appears.
d. Fill out all of the fields.

NOTE: The Allowed S/N is the Device S/N found in SYSTEM > Advanced Setup > Internet.

NOTE: If you want to add a picture to your Internet account, click Browse and select the file.

e. Type the CAPTCHA letters.
f. Click Submit.
A confirmation message will be sent to you.

5. In SYSTEM > Advanced Setup > Internet > My Account
   a. Edit the IP number or address (myrotem.net) and PORT number as required.
   b. In the Name field, type the name.
   c. In the Account name, type the account name that you chose on the myrotemnet page.
   d. In the Users field, type the maximum number of users that can simultaneously access the network.
   e. Click Save.

The Internet connection is now configured.

6. In a web browser, go to http://www.myrotem.net and login using the name and password that you chose.

Figure 13 appears
- If the Communicator is defined correctly, it is displayed on the site with its name and its status is a green circle.
- If the Communicator is not defined correctly, it does not appear on the screen.
- The red exclamation mark (!) indicates that the chip is not online. This means that there is a connectivity problem, lost internet connection, or other possible problems. It does not mean that the Communicator is not defined properly.
7. Click to view the controller details. Figure 14 appears.

- Rotem recommends the following resolutions when viewing the web:
  - PC: 1280/1024 Text size medium
  - Laptop: 1024/768 Text size medium

### 11.2.3 Setting Up a Network Using RotemNet

Accessing the Communicator or controllers via RotemNet enables local and remote management of your equipment. The following is a summary of the steps needed to setup a remote network using the RotemNet software. For complete instructions, refer to the RotemNet manual.

1. Using the provided CD, install and run RotemNet.
2. Refer to the following sections:
   - Local Network
   - Remote Network
11.2.3.1  Local Network

1. Under Network Setup, select Local Network.
2. Select the required baud rate.

**NOTE:** The selected baud rate must be the same as the rate selected in the Communicator.

3. Select the communication port.

**NOTE:** If the connection is via the USB port, select Communicator.

4. Select the number of controllers and the controller type.
5. Press **Start Scan**.
   RotemNet scans the system and lists the controllers.

11.2.3.2  Remote Network

1. In RotemNet, select Internet and click **OK**.
2. In the Internet Communication window set the:
   a) Farms account name
   b) Account Name
   c) Chip serial number

**NOTE:** This information must be the same as the data entered in Communicator.

3. If you are configuring multiple farms:
   a) Enter a name for each farm.
   b) Enter an Ethernet chip number for each farm.
   c) Configure the controller setup for each farm.
4. To connect to a farm, click **Connect**.

**NOTE:** Refer to Initial Configuration, page 12 for instructions on the initial configuration.
12 TROUBLESHOOTING

The following section details common troubleshooting procedures.

- Hardware, page 52
- Communication to Controllers/PC, page 52
- Cellular Modem, page 54
- RF Communication, page 55
- Voice Card, page 56
- Alarm, page 57
- Line Modem, page 57

NOTE: Lists of part numbers and their descriptions are located in Ordering Information, page 61.

12.1 Hardware

Connected hardware is not recognized in the hardware profile list under system Menu (voice, cell modem, Line modem)

Refer to Viewing Device Status, page 36.

The Communicator displays O.K. for an installed device and N/A for a device that is not available.

1. Reset the hardware: Turn the battery switch OFF and unplug the power source.
2. Reconnect the power and switch the battery ON so that the unit rescans the hardware.
3. Open the Communicator and check that the device is installed properly.
4. If still not operating, replace the device.

Battery failure alarm is received

1. Make sure the Communicator is connected to an electric power supply.
2. In ‘Battery Test’ menu (page 35), check the battery and charger status.
3. Open the Communicator’s box and check the battery’s wiring (Figure 9, page 44).
4. If the wiring connections are OK, replace the battery pack. (Part number: SP-COMM-BAT).

NOTE: If you replace the voice card, Ethernet card, line modem or cell modem, perform a Cold Start after replacing the device (Section 11.1, page 44).

12.2 Communication to Controllers/PC

NOTE: Refer to Displaying the Controllers, page 28 to display the controller.

Not all units found due to updating primary units. In other words, the number of controllers is not identical to the number of controllers entered in the Controllers menu (Identifying the Controllers, page 14).

1. Make sure the Communicator is connected to an electric power supply.
2. Press Hot Key 0 (page 28) and check if either some of the controllers are missing (empty squares), or all of them.
3. Check communication with the missing unit:
   o If the system has a wired connection, refer to Channel/Signal Tests, page 32.
   o If the system has an RF link, refer to page 32.
4. Check Baud Rate (refer to the relevant section in Network Connection, page 26) on both sides if using 232/485 communication card.
5. Go over the number of controllers and make sure there is no conflict between the units (make sure that two units do not have the same configuration number).

6. If all above are OK:
   a) Check the wiring for 232/485 communication card.
   b) Check RF card signal strength (refer to Testing the Cellular Signal Strength, page 17).

'Lost unit number' alarm

1. Verify that the Communicator is connected to a power supply.
2. Press Hot Key 0 (page 28) and check if either some or all of the controllers are missing (empty squares).
3. Verify communication with the missing unit:
   a) If the system has a wired connection, go to System – Test – Wired RS232/485 (refer to page 32).
   b) If the system has an RF link, go to Radio System – Test Radio RF Signal (Refer to page 32).
4. If you are using a 232/485 communication card, check the Baud Rate on both sides (refer to Routing Methods, page 26).
5. If an RF communication card is being used, check Additional Channel Setting (refer to Routing Methods, page 26).
6. Go over the controller numbers and make sure there is no conflict between the units (make sure two units do not have the same configuration number).
7. If all above are Ok:
   a) Make sure the wiring is OK for communication card 232/485.
   b) Check signal strength for RF card (refer to Testing the Cellular Signal Strength, page 17).

No local communication with PC

1. Ensure that the serial port Baud Rate matches the PC baud rate (refer to Routing Methods, page 26).
2. Go to Computer Port list. 'Com 1 RD' LED should flash on the front panel. Test the communicator through RotemNet software.

NOTE: If the LED does not flash, it is not the right computer port.

3. If using a USB cable, reinstall the driver from the CD (refer to USB Driver Installation, page 47).
Problem in signal strength

- To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area.
- Reboot through unplugging the power.

1. If signal does not improve, insert the SIM card into a cell phone and check the signal (GSM only).
2. If the signal is weak, check with your service provider.
3. If the signal is OK, change the module.
4. If no signal exists:
   a) Check antenna connection.
   b) Check connection to the module (GSM).
   c) Check the wiring. If there is a problem, contact the dealer.

Refer to the appropriate section in Appendix A: replacing communication cards and Modems, page 65 for detailed instructions on exchanging the modem.

- Text test failure in menu (refer to Testing the Text Function, page 21).

The modem has to be placed in a way that ensures sufficient signal strength. To improve signal strength, the antenna can be moved to another position. Signal strength may depend on how close the modem is to a radio base station. You must ensure that the location, at which you intend to use the modem, is within the network coverage area.

12.4 RF Communication

No RF connection

- Check the signal strength (refer to Testing the Radio RF Signal, page 32).
  - If it is weak, change the antenna location.
  - If the strength is zero:
    1. Check the baud rate and the channel address (refer to Configuring the Channel Settings, page 26). Correct if needed.
    2. Ensure that the Communicator’s baud rate matches the controllers’ baud rate.
- Check RF card configuration:
  - Try to change the baud rate and channels on both sides (refer to Configuring the Channel Settings, page 26).

**NOTE:** In this situation, lower the baud rate.

- Improve the antenna's location.
- Replace P-COMM-RF10-9-S COMMUNICATOR RF (Refer to Replacing the RF-Card, page 67).
12.5 Voice Card

Voice does not function

1. Refer to Testing Voice, page 16 and perform voice test.
2. Change the parameters as required (refer to Setting the Voice, page 16).

**NOTE:** Do not forget to confirm by moving the cursor to the ‘TEST’ parameter and pressing ‘ENTER’.

3. Verify speaker cable is connected.
4. Turn volume trimmer on voice card until required volume is reached (Figure 19) (Refer to Figure 9, page 44 / Figure 10, page 45 to see the voice card location).
5. If none of the above helps, contact your dealer.

---

**Figure 18: Voice Card Location**

- Refer to Testing Voice, page 16 and perform voice test.
- Change the parameters as required (refer to Setting the Voice, page 16).

**NOTE:** Do not forget to confirm by moving the cursor to the ‘TEST’ parameter and pressing ‘ENTER’.

3. Verify speaker cable is connected.
4. Turn volume trimmer on voice card until required volume is reached (Figure 19) (Refer to Figure 9, page 44 / Figure 10, page 45 to see the voice card location).
5. If none of the above helps, contact your dealer.

**Figure 19: Volume Trimmer**
12.6 Alarm

No messages are being received from the Communicator

1. Verify active alarms are not defined as disable state (refer to Setting the Test Schedule, page 12).
2. Go over the contact group, make sure the users are not set to 'idle' (refer to Adding Names to the Address Book, page 14) and that the contact information is entered correctly.
3. Verify that the controllers are functioning properly (meaning are transmitting alarms or messages).

Alarm LED is ON but the siren does not operate

1. Check the siren's connection to the relay with battery (see Figure 12, page 47).
2. Perform an alarm relay test found in SYSTEM->Technician Tools->Test->Relays (refer to Test, page 25).

12.7 Line Modem

‘No dial tone’ alarm

1. Verify that there is a line by using a phone connected to the phone jack.
2. Perform PHONE LINE VOLTAGE test, (SYSTEM – Technician Tools – Test – Phone Line (page 25)). Voltage should be above 40 V (normally it is 48 V or more).
3. If it is above 40 V, connect a regular phone for testing.
4. If the line is not operating, check with your service provider.
5. If the line is operational, perform power cycle for Communicator (turn device off and then back on). Allow a few minutes until the Communicator recovers.

Dial Out is not functioning

1. Insert extra delay by adding commas (refer to Configuring the Dial Delay, page 21).
2. If you have an ADSL modem on the same line, verify that your ADSL line filter meets your service provider's specifications (high quality line balanced).
3. Contact technical support.
## 13 SPECIFICATIONS

### Power Supply

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains Voltage</td>
<td>Single Phase 230 VAC (outside the US &amp; Canada)</td>
</tr>
<tr>
<td>115 VAC</td>
<td>0.5 A (US &amp; Canada)</td>
</tr>
<tr>
<td>Mains Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Maximum Power Consumption</td>
<td>40 W</td>
</tr>
</tbody>
</table>

### Main Fuse

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Fuse (12 V)</td>
<td>125/250 V, 100 mA T</td>
</tr>
<tr>
<td>Main Fuse (Switching P.S.)</td>
<td>125/250 V, 2 A T</td>
</tr>
</tbody>
</table>

### Connection Box Peripherals

#### Digital Inputs

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Digital Inputs</td>
<td>Dry Contact, 5V /2 mAmp</td>
</tr>
</tbody>
</table>

#### Relays Outputs

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.C/N.O. (OMI) Blue Small Low Power Relay</td>
<td>5 Amps, 250 VAC</td>
</tr>
</tbody>
</table>

#### Alarm Output

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.O and N.C (Double) (OMI) Pilot Duty</td>
<td>5 Amps, 250 VAC</td>
</tr>
</tbody>
</table>

### Housing

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Box Dimensions (L x W x H)</td>
<td>262 x 262 x 80 mm</td>
</tr>
</tbody>
</table>

### Ambient Climate

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature Range</td>
<td>0° to +50° C / 32° to 125° F</td>
</tr>
<tr>
<td>Operating Humidity Range</td>
<td>0% to 95%</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>-10° to +70° C / 14° to 158° F</td>
</tr>
</tbody>
</table>
14 PARTS CATALOG

The following sections illustrate the components that come with the Communicator.

- Standard Components, page 59
- Additional Components, page 60
- Ordering Information, page 61
- Compatibility Issues with the Communicator CPU, page 64

14.1 Standard Components

The following components are included in every order.

<table>
<thead>
<tr>
<th>Power Line Protector</th>
<th>Communicator</th>
<th>Keys</th>
<th>External Connection Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modem Line Cable</td>
<td>External Connection Cable</td>
<td>PC Cable</td>
<td>USB Cable</td>
</tr>
</tbody>
</table>
### 14.2 Additional Components

The following components are specific for each installation.

<table>
<thead>
<tr>
<th>Component Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-COMM-RS485</td>
<td>Communicator RS-485 Card</td>
</tr>
<tr>
<td>P-COMM-RS232</td>
<td>Communicator RS-232 Card</td>
</tr>
<tr>
<td>P-COMM-LM-S</td>
<td>Communicator Line Modem Set</td>
</tr>
<tr>
<td>P-COMM-RF5-24-S</td>
<td>Communicator RF 50 mW 2.4 GHz set</td>
</tr>
<tr>
<td>P-COMM-RF10-9-S</td>
<td>Communicator RF 100 mW 900 MHz Set</td>
</tr>
<tr>
<td>P-COMM-RF232-S2</td>
<td>Communicator RF &amp; RS232 900 MHz Set</td>
</tr>
<tr>
<td>A-RF5-24-AN-D</td>
<td>RF 2.4 GHz Directional Antenna</td>
</tr>
<tr>
<td>A-RF10-9-AN-D</td>
<td>RF 900 MHz Directional Antenna</td>
</tr>
<tr>
<td>P-COMM-GSM-S</td>
<td>Communicator GSM modem Set</td>
</tr>
</tbody>
</table>
14.3 Ordering Information

The following tables list every Communicator component.

![Diagram of Communicator components]

The basic unit includes the following parts list.

<table>
<thead>
<tr>
<th>#</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C-COMM-BOX</td>
<td>Communicator Connection Box Card</td>
</tr>
<tr>
<td>2</td>
<td>C-COMM-CPU</td>
<td>Communicator CPU Card</td>
</tr>
<tr>
<td>3</td>
<td>C-COMM-KBD</td>
<td>Communicator Keyboard Card w/o Display</td>
</tr>
<tr>
<td>4</td>
<td>C-COMM-PS-V1</td>
<td>Communicator Power Supply Card 115 Volt</td>
</tr>
<tr>
<td>5</td>
<td>C-COMM-VOICE</td>
<td>Communicator Voice Card</td>
</tr>
<tr>
<td>6</td>
<td>SP-COMM-BAT</td>
<td>Communicator Battery Pack</td>
</tr>
<tr>
<td>7</td>
<td>SP-COMM-LCD</td>
<td>Communicator Display</td>
</tr>
<tr>
<td>8</td>
<td>SP-COMM-SPEAKER</td>
<td>Communicator Voice Speaker</td>
</tr>
<tr>
<td>9</td>
<td>C-COMM-RJM10</td>
<td>Communicator Power To CPU Jumper Card</td>
</tr>
<tr>
<td>10</td>
<td>C-COMM-LM-RJM10</td>
<td>Communicator Protect To CPU Jumper Card</td>
</tr>
<tr>
<td>11</td>
<td>SP-COMM-F</td>
<td>Communicator Flat Cable</td>
</tr>
</tbody>
</table>
Table 4 lists the part number of kits containing the basic unit along with additional components.

**Table 4: Basic Unit and Additional Units**

<table>
<thead>
<tr>
<th>#</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P-COMM-232-S-V1</td>
<td>Communicator Set 115Volt (LM, RPLP, RS232)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicator basic unit + Line Modem, RPLP-1, and RS-232 Card</td>
</tr>
<tr>
<td>2</td>
<td>P-COMM-RF-S-V1</td>
<td>Communicator Set 115Volt (LM, RPLP, RF, C15)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicator basic unit + Line Modem, RPLP-1, and RF Card with 15 meter (50 feed) cable and Antenna</td>
</tr>
<tr>
<td>3</td>
<td>P-COMM-485-S-V1</td>
<td>Communicator Set 115Volt (LM, RPLP, RS-485)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicator basic unit + Line Modem, RPLP-1, and RS-485 Card</td>
</tr>
</tbody>
</table>

**Table 5: Cables and Communicator Box**

<table>
<thead>
<tr>
<th>#</th>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A-COMM-BOX</td>
<td>Communicator Connection Box</td>
</tr>
<tr>
<td>2</td>
<td>A-COMM-C-CB</td>
<td>Cable For Connection Box</td>
</tr>
<tr>
<td>3</td>
<td>A-COMM-C-PC</td>
<td>Serial DB9 Cable For PC</td>
</tr>
<tr>
<td>4</td>
<td>A-COMM-C-USB</td>
<td>USB Cable For PC</td>
</tr>
<tr>
<td>5</td>
<td>A-COMM-LM-C</td>
<td>Communicator Line Modem Telephone Cable</td>
</tr>
<tr>
<td>#</td>
<td>Part #</td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>C-COMM-GSM-AD</td>
<td>Communicator GSM Adaptor Card w/o Module</td>
</tr>
<tr>
<td>2</td>
<td>C-COMM-GSM-M</td>
<td>Communicator GSM Module Only</td>
</tr>
<tr>
<td>3</td>
<td>P-COMM-GSM-S</td>
<td>Assembled Communicator GSM Modem Set</td>
</tr>
<tr>
<td></td>
<td>C-COMM-GSM-S</td>
<td>Spare Communicator GSM Modem Set</td>
</tr>
<tr>
<td>4</td>
<td>A-COMM-GSM-AN</td>
<td>Call Antenna</td>
</tr>
<tr>
<td>5</td>
<td>C-COMM-LM-M</td>
<td>Communicator Line Modem Module Only</td>
</tr>
<tr>
<td>6</td>
<td>C-COMM-LM-PRO</td>
<td>Communicator Line Modem Protect Card</td>
</tr>
<tr>
<td>7</td>
<td>C-COMM-LM- RJM14</td>
<td>Communicator Protect To CPU Jumper Card</td>
</tr>
<tr>
<td>8</td>
<td>P-COMM-LM-S</td>
<td>Assembled Communicator Line Modem Set</td>
</tr>
<tr>
<td></td>
<td>C-COMM-LM-S</td>
<td>Spare Communicator Line Modem Set</td>
</tr>
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<td>9</td>
<td>P-COMM-ETH-S</td>
<td>Communicator Ethernet Card Set</td>
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<td>10</td>
<td>C-COMM-RF-AD</td>
<td>Communicator RF Adapter Card w/o Module</td>
</tr>
<tr>
<td>11</td>
<td>C-COMM-RF10-9-M</td>
<td>Communicator RF 100 mW 900 MHz Module Only</td>
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<td>P-COMM-RF10-9-S</td>
<td>Assembled Communicator RF 100 mW 900 MHz SET</td>
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<tr>
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<td>Spare Communicator RF 100 mW 900 MHz SET</td>
</tr>
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<td>13</td>
<td>A-RF-AN-2-C6-58</td>
<td>RF 6 M RG58 Cable &amp; Clip for 2 dBi Antenna</td>
</tr>
<tr>
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<td>RF 15 M RG58 Cable &amp; Clip for 2 dBi Antenna</td>
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<td>A-RF-AN-2-C23-58</td>
<td>RF 2 3M RG58 Cable &amp; Clip for 2 dBi Antenna</td>
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<td>14</td>
<td>C-COMM-RS232</td>
<td>Communicator RS232 Card</td>
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<td>15</td>
<td>C-COMM-RS485</td>
<td>Communicator RS-485 Card</td>
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<tr>
<td>16</td>
<td>A-RF10-9-AN-2</td>
<td>RF 900 MHz 2 dBi Antenna</td>
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</tbody>
</table>
14.4 Compatibility Issues with the Communicator CPU

There are occasions when upgrading or replacing the Rotem Communicator CPU in which the replacement unit does not support the existing hardware.

The CPU replacement card is P/N: COMM–CPU Version 2.3 or 3.1.

**Supported Hardware:**

- Keyboard P/N: COMM–KBD Version 2.3 and higher
- Connection Box P/N: COMM–BOX Version 2.0 and higher

**NOTE:** Version 1.4 is supported but lacks recommended lightening protection. Rotem recommends installing Version 2.0 or higher.


**NOTE:** Version 1.4 is supported but lacks recommended lightening protection. Rotem recommends installing Version 2.0 or higher.

- Power Supply P/N: COMM–PS. All versions are supported

**NOTE:** Most Communication Cards, Version 2.0 have a wired correction added to the card. The CPU supports these cards as well. Card lacking the correction are not supported.

- RS-485 Communication Card P/N: COMM–RS485 Version 2.0 and higher
- Voice Card P/N: COMM–Voice Version 2.1 and higher

**NOTE:** Version 2.0 is also supported. However the speaker must be plugged directly into the voice card.
15 APPENDIX A: REPLACING COMMUNICATION CARDS AND MODEMS

The following sections illustrate how to replace various communication cards.

- Replacing the RS-232 Card, page 65
- Replacing the RS-485 Card, page 66
- Replacing the RF-Card, page 67
- Installing a CDMA, GSM-S, or GSM-W Card, page 68

15.1 Replacing the RS-232 Card
15.2 Replacing the RS-485 Card

The first controller is cross-wired: RX-TX TX-RX

Relay 1, 2

... Up to 32 controllers
15.3 Replacing the RF-Card

1. Insert the card to its socket in the communicator.

2. Fit the black wire through the hole as illustrated above and connect to the RF card. Screw nuts connected to the RF card (make sure you leave enough slack for antenna cable).

3. Set the dipswitches. Refer to the RF Communication Card Installation sheet for more information.
15.4 Installing a CDMA, GSM-S, or GSM-W Card

NOTE: Before installing a SIM card, disable the PIN code (if the card has this code). Communicator text functions are disabled if the SIM card has a PIN code.

1. Turn off the Communicator and open the cover.
2. Place the card in place.

CDMA does not require a SIM Card.

Insert a SIM card into GSM-S to enable the Voice Dial-In feature.

Insert a SIM Data card into GSM-W to enable the Voice Dial-In feature.

WARNING! Communicator does not support pre-paid SIM cards. Use a regular card only!
## APPENDIX B: PAGER CODES

The following table lists the pager codes and their description.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Unknown Alarm</td>
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<tr>
<td>1</td>
<td>Low Temperature</td>
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<tr>
<td>2</td>
<td>High Temperature</td>
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<tr>
<td>3</td>
<td>Sensor 1 Low Temperature</td>
</tr>
<tr>
<td>4</td>
<td>Sensor 1 High Temperature</td>
</tr>
<tr>
<td>5</td>
<td>Emergency 1 Low Temperature</td>
</tr>
<tr>
<td>6</td>
<td>Emergency 1 High Temperature</td>
</tr>
<tr>
<td>7</td>
<td>Circuit Breaker High Temperature</td>
</tr>
<tr>
<td>8</td>
<td>Egg Room Low Temperature</td>
</tr>
<tr>
<td>9</td>
<td>Egg Room High Temperature</td>
</tr>
<tr>
<td>10</td>
<td>Temperature Sensor 1 Out of Range</td>
</tr>
<tr>
<td>11</td>
<td>Difference Between Outside Sensors</td>
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<tr>
<td>12</td>
<td>Low Relay Current</td>
</tr>
<tr>
<td>13</td>
<td>High Relay Current</td>
</tr>
<tr>
<td>21</td>
<td>Low Humidity</td>
</tr>
<tr>
<td>22</td>
<td>High Humidity</td>
</tr>
<tr>
<td>23</td>
<td>Egg Room Low Humidity</td>
</tr>
<tr>
<td>24</td>
<td>Egg Room High Humidity</td>
</tr>
<tr>
<td>31</td>
<td>Low Pressure</td>
</tr>
<tr>
<td>32</td>
<td>High Pressure</td>
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<tr>
<td>33</td>
<td>Emergency Pressure</td>
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<td>34</td>
<td>Low System Pressure</td>
</tr>
<tr>
<td>40</td>
<td>Valve 1 Low EC</td>
</tr>
<tr>
<td>41</td>
<td>Valve 1 High EC</td>
</tr>
<tr>
<td>42</td>
<td>Valve 1 Low PH</td>
</tr>
<tr>
<td>43</td>
<td>Valve 1 High PH</td>
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<tr>
<td>44</td>
<td>EC Pre-Control Valve 1 Low</td>
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<td>45</td>
<td>EC Pre-Control Valve 1High</td>
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<td>46</td>
<td>EC Sensor 1 Failure</td>
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<td>47</td>
<td>pH Sensor 1 Failure</td>
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<td>48</td>
<td>EC Pre-Control Sensor Failure</td>
</tr>
<tr>
<td>49</td>
<td>EC Sensors High Difference</td>
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<td>50</td>
<td>pH Sensors High Difference</td>
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<td>51</td>
<td>Emergency Wind Speed</td>
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<td>Code</td>
<td>Description</td>
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<td>----------------------------------------------</td>
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<tr>
<td>52</td>
<td>High Ammonia</td>
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<td>53</td>
<td>Weather Station Lost</td>
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<td>54</td>
<td>Low Oxygen</td>
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<td>Oxygen Sensor Failure</td>
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<td>56</td>
<td>Radiation Factor Is 0</td>
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<td>82</td>
<td>Feeder 1 in Overtime</td>
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<td>83</td>
<td>Female Auger in Overtime</td>
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<td>84</td>
<td>Male Auger in Overtime</td>
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<td>85</td>
<td>Auger 1 In Overtime</td>
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<td>89</td>
<td>Low Feed In Female Bin</td>
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<td>Low Feed In Male Bin</td>
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<td>Low Feed in Bin 1</td>
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<td>92</td>
<td>Feed Container Overflow</td>
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<td>93</td>
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<td>101</td>
<td>Water Overflow</td>
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<td>102</td>
<td>Water Shortage</td>
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<td>103</td>
<td>Water Meter 1 Leak *</td>
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<td>104</td>
<td>Valve 1 High Flow</td>
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<td>Valve 1 No Flow</td>
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<td>107</td>
<td>System Stopped by Flow Alarm</td>
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<td>108</td>
<td>Negative Flow</td>
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<td>109</td>
<td>Low Water Pressure</td>
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<td>Temperature Sensor 1 Shorted</td>
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<td>112</td>
<td>Temperature Sensor 1 Opened</td>
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<td>113</td>
<td>Zone 1 Temperature Failure</td>
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<tr>
<td>114</td>
<td>Outside Temperature Failure</td>
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<td>116</td>
<td>Humidity Sensor 1 Failure</td>
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<td>Pressure Sensor Failure</td>
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<td>Emergency Sensor 1 Shorted</td>
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<td>Emergency Sensor 1 Opened</td>
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<td>Indoor Pressure Sensor Failure</td>
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<td>Outside Pressure Sensor Failure</td>
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<td>Short Circuit</td>
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<td>Indoor Humidity Failure</td>
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<td>Outside Humidity Failure</td>
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<td>130</td>
<td>Fogger Overflow</td>
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<td>131</td>
<td>Feed Bin 1 Failure</td>
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<td>Feed Container Failure</td>
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<td>133</td>
<td>Scale 1 Failure</td>
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<td>134</td>
<td>Incompatible hardware</td>
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<td>Bird Scale 1 Failure</td>
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<td>136</td>
<td>Clock Failure</td>
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<td>137</td>
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<td>Scale Card Plug Failure</td>
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<td>Curtain 1 Failure</td>
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<td>Extension Box 1 Error</td>
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<td>156</td>
<td>Generator Activated</td>
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<td>GSM Modem Not Powered</td>
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<td>GSM Modem SIM Not Present</td>
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<td>GSM Modem Not Registered to Cellular Operator</td>
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<td>160</td>
<td>GSM Modem RF Signal Low</td>
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<td>161</td>
<td>Emergency Card 1 Battery Failure</td>
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<tr>
<td>162</td>
<td>Emergency Card 1 Low Battery</td>
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<td>163</td>
<td>Low Battery</td>
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<td>164</td>
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<td>Backup Battery Connected</td>
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<td>Emergency Power Down</td>
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<td>IDLE_MODE Due to Low Power</td>
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<td>171</td>
<td>Bus Failure</td>
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<td>Lost Communication Port</td>
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<td>Remote Unit 1 Communication Failure</td>
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<td>Single Net Communication Off</td>
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<td>Secondary unit missing</td>
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<td>Single Net Host Error</td>
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<td>Dosing Channel 1 Leak</td>
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<td>Dosing Channel 1 Failure</td>
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<td>Dosing Booster Protection Activated</td>
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<td>Irrigation Without Drainage</td>
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<td>Fresh Tank Empty</td>
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<td>Drainage Tank Empty</td>
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<td>187</td>
<td>EC Emergency High</td>
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<td>Pressure Sensors Difference</td>
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<td>Auxiliary 1 Activated</td>
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<td>Fail Safe Active</td>
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<td>Insufficient number of Tunnel Fans</td>
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<td>No Ventilation Mode Defined</td>
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<td>Sensor 1 Defined Error</td>
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<td>Code</td>
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<td>Temperature Sensor Not Defined</td>
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<td>Switches Changed</td>
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<td>Memory Failure Check All Settings</td>
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<td>Outside Sensor Conflict</td>
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<td>Poultry Inventory not defined</td>
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<td>Outside Temperature Error</td>
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<td>Alarm Definition Conflict</td>
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<td>213</td>
<td>Insufficient Air supply</td>
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<td>214</td>
<td>Soft Minimum Sensor Error</td>
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<td>231</td>
<td>Alarm Test</td>
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