REMOTE REEFER MONITORING

ELECTRONIC REMANUFACTURING

REPLACEMENT PARTS

TRIMBLE

PRODUCTS & SERVICES
RTE offers a variety of hardware options to fit your remote reefer monitoring needs. We look forward to hearing from you, and sharing our part in cold chain management.

RTE's GRASP™ remote monitoring system is the most advanced available in the market.

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Founded in 1981 by Laurence R. Brickner, RTE’s current owner & CEO, the company was formed to meet the emerging technological needs of the Refrigerated Shipping Industry.

RTE began as the first vendor for the repair & refurbishment of electronic controllers. And has evolved into a high technology computer software & electronic hardware company producing & remanufacturing products for Cold Chain Management, M&R Departments, Fleet Managers, Shipping Lines, Terminals/Depots, Trucking Companies & Public Transportation.

1981 - First company to offer electronic remanufacturing
1985 - First company to commercially release a PCT Remote Reefer Monitoring System
1993 - First company to release a Dual Data Rate PCT system complying with ISO 10368
2000 - Release of the GRASPNet™ PCT Networking System.
2006 - Release of GRIP™ Data Acquisition Device
2011-12 - Release of Wireless Reefer Acquisition Device (WRAD™).
2012 - Release of the Networked RRCE-T™ System
2013 - Release of GRASP 3.0 System

RTE offers the Refrigerated Shipping Industry the most complete & comprehensive line-up of Remote Reefer Monitoring solutions available

RTE is the world leader in the repair & refurbishment of electronic controllers including: Thermo King, Carrier, Daikin, Mitsubishi & Starcool

Remote Reefer Monitoring
Electronic Remanufacturing
Manufacturing New & Replacement Parts
Electronic Remanufacturing

RTE specializes in the remanufacturing of Thermo King, Carrier, Daikin, Mitsubishi, Starcool & other products. Visit us at rtelectronics.com for a complete list of remanufactured products and replacement parts.

Advance Controller  Decos Controller  MP3000 Main Relay Board  Keypads, Batteries, Sensors
COSMETIC REFURBISHMENT
Each unit is thoroughly cleaned, either by sandblasting or ultrasonic bath. We remove all old paint, rust and grime. Circuit boards are conformally coated if needed and metal parts are primed and repainted using top quality parts.

REPAIR
RTE routinely uses top-quality components for repairing electronic parts. Parts that are known to fail in a unit but have not yet failed are also replaced.

STAINLESS STEEL HARDWARE
All hardware is replaced with new stainless steel. Any missing parts such as metal brackets, bulbs, program chips, cabling, etc. are replaced for a nominal fee. If the part is not missing but has failed or is damaged, the part is replaced at no charge.

ENVIRONMENTAL TEST
RTE has a custom-made walk-in environmental chamber that “burns-in” each unit to check for borderline failures that may occur. The chamber’s temperature range cycles up to 170F. The chamber will cycle up and down several times during the burn-in period.

QUALITY CONTROL
RTE is an advocate of SPC quality. Each unit is sent through a rigorous quality control check system that finds additional failed components, cosmetic imperfections and other flaws. In addition, RTE monitors warranty returns, inspects incoming components from its vendors and uses this data to fine tune the repair process.

5 WORKING-DAY TURNAROUND
We know what downtime can be like and our process from start to finish is usually 5 working days or less.

FREE DOMESTIC RETURN FREIGHT
RTE will pay for the return freight to any domestic location. We also provide export services at the cost incurred by us with no additional markup. Simply inform us of any special shipping needs and we will make every effort to be accommodating.

NO QUESTIONS ASKED WARRANTY
We will warranty any unit we refurbish within one year from the date of shipment. Fire damaged, water damaged - it doesn’t matter.

Why Choose RTE?
GRASP™ 3.0 Remote Monitoring

GRASP™ 3.0 is a powerful & intuitive system that allows the user to monitor parameters, download trip records, PTI reefers & much more. Using the XML interface gives you the ability to interface with TOS, 3rd party software, or customize your own solution. System is available as both Web & Microsoft Applications.

Modular design allows the flexibility to add combinations of RTE's; RRCE™ Family, GRIP™ & PCT communication platforms under a common database & Man Machine Interface.

[Cold Chain Management]

with GRASP™ 3.0
Key Features

- System generates accurate connect & disconnect times, reducing the likelihood of a reefer not getting plugged in
- Information is electronically stored & can be retrieved in the event of a claim
- Creates labor efficiencies, freeing up time for technicians to perform other work
- Collection & Display of operating parameters - Temperatures, CA Information, Power Information
- Clear text description of alarms using manufacturers’ code & text
- Downloads of - Temperatures, Events, Alarms, PTI, USDA logs, etc.
- Remote control of - Set-points, PTI, Defrost, CA, etc.
- Integration available for TOS System & Loading Computer
- Graphical Bay / Yard Views

- OVER 700 SYSTEMS SOLD WORLDWIDE
- INCREASE EFFICIENCY IN LABOR & OPERATIONS
- EASILY ACCESS CONTAINER HISTORY IN THE EVENT OF A CLAIM

For more information please visit us at: rtelelectronics.com
Remote Reefer Communication Engine (RRCE) Family

- Based on Hardware / Software platforms that provide a common interface to controllers from different manufacturers
- Allows for multiple transmission methods (Zigbee, GSM, Satellite, WiFi)

HARDWARE

- Ability for real-time monitoring of reefer containers
- Flexible Architecture
- Allows for 3rd party integration
- All hardware platforms are compatible with GRASP™ 3.0
- Ideal for vessels and terminals that have rack systems
- Up to 10 inputs per unit
- LAN or WiFi connection
- Connects to data-port
- Status LED for visual confirmation
- IP 66 enclosure
- Networked switchover in case of power loss
- Easy access for maintenance / board replacement
- Change Set-point
- Activate automatic PTI
- Download Trip Records
- Set the controller clock
- Monitors Temperatures and Alarms
- Initiate Defrost
- Set trip record headers

RRCE-T™

- Change Set-point
- Activate automatic PTI
- Download Trip Records
- Set the controller clock
- Monitors Temperatures and Alarms
- Initiate Defrost
- Set trip record headers

Products
• Local wireless monitoring while on board a vessel or terminal
• Uses short range RF to transmit data, 802.15.4
• Available with GSM / GPS option for over the road monitoring and tracking
• Installed into existing reefer modem slot
• Monitors:
  ° Temperatures,
  ° Set-point, Alarms,
  ° Current / Voltage.
• Controls:
  ° Set-point,
  ° Downloads, PTI,
  ° Defrost, Clock,
  ° Clear Alarms

RRCE-Z™ (Zigbee)

• Wireless monitoring option for reefer containers
• Magnetically attaches to the container and connects via the data-port
• Ideal for 3rd party reefers

WRAD™

• Requires simple infrastructure
• Connects to GRASP™ 3.0 via LAN or WiFi
• Battery powered and rechargeable
  ° Up to 6 month battery life per charge
• LED lights for determining operating status
GRIP™ Handheld

- Allows users to manually monitor temperatures, download trip records and operating data from multiple reefer types:
  - Thermo King, Carrier, Daikin and Mitsubishi
- Collects operating parameters via reefer data-port
- Manually enter temperatures for electronic storage and processing
- Download temperature and event records
- Enter header information
- Rugged waterproof enclosure
- Change reefer parameters:
  - Set-point, Defrost interval, In-range parameters, Shutdown mode

Power-line Cable Transmission

- Communicates by injecting high frequency signals on the existing power-line
- Two types:
  - Wide-Band - 270 KHz
  - Narrow-Band - 55 KHz
- System requires each reefer unit to have a PCT Slave Modem
- Allows user to monitor the operating condition of the reefer, change the operating parameters and retrieve historical data
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<th>RRCE-T™</th>
<th>WRAD™ / RRCE-Z™</th>
<th>PCT</th>
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| **Connection**         | • Connects via the data-port located on each reefer container  
|                        | • Does not require reefer container to have PCT Modem  
|                        | • Connects to data-port (WRAD™) or modem-port (RRCE-Z™) on each container  
|                        | • Does not require reefer container to have PCT Modem  
|                        | • Connects to PCT Modem on each reefer container  |
| **Infrastructure**     | • Permanently mounted hardware reducing loss of monitoring equipment  
|                        | • Creates dynamic mesh network  
|                        | • Minimal equipment installed at each transformer  |
| **Best Use of Hardware**| • Large Terminals  
|                        | • Vessels  
|                        | • Reefer Fleets  
|                        | • Terminals and Depots  
|                        | • Terminals with a large percentage of modems  |
RTE is a proud partner and distributor of Trimble Mobile Computing products, including:

Trimble Recon Handheld Computer
Yuma 2 Rugged Tablet Computer
Juno T41 Rugged Handheld Computer
Nomad Outdoor Rugged Computer

To learn more about these & other Trimble products visit RTE’s Trimble page at rtelectronics.com/trimble
RTE has offices located in both the United States and Panama with plans to expand into Europe and Asia in the near future, bettering our ability to serve our global customers and increase our footprint throughout the Refrigerated Shipping Industry.