Remote Monitoring Modem (RMM+)

- Real time container monitoring and GPS tracking — anytime and anywhere
- Features built-in GPRS/UMTS/Positioning module for land based monitoring/tracking
- ISO 10368 Power Line interface for compliance with local reefer monitoring systems
- Easy installation as all brands of reefer containers are prepared for remote monitoring modem

Description

The RMM+ is a remote communication device designed for refrigerated containers. The RMM+ combine industry standard ISO10368 communication with wireless technologies for fast data transfer, long distance communication and tracking.

When no local monitoring system is available, the RMM+ will via GPRS/UMTS forward all exceptions such as alarms and power on/off events as they occur, and will provide full set of data at preset scheduled intervals to the Global Monitoring Server.

The RMM+ is further the key component in ISO 10368 power-line communication for monitoring and control of reefer containers on-board vessels or terminals. Each container equipped with an RMM+ is able to send data on its operating conditions and alarms to a local monitoring system, such as the REFCON system.

Besides monitoring, the RMM+ can be used to remotely control various reefer container functions, which include update of controller firmware, changing the setpoint, initiating PTI or defrost.

The RMM+ offers a number of important benefits, such as:
- Full transparency in the cooling chain
- Improved utilization of container fleet
- Reduced risk of potential cargo damage
- Reduction of operational cost due to less time-consuming manual inspections
- Minimize unexpected events such as container tampering, theft, diversion or holdups in transit.
- Improved safety of personnel
- Improve cargo documentation handling processes
- Optimization of reefer container operation with reduced risk of human errors
- Energy savings due to always updated reefer controller software, which enables the reefer container to run the latest energy efficient programs

Applications

Enables reefer containers for real time remote monitoring and tracking on vessels, in terminals and inland transportation

Centralized remote management of reefer container operating conditions, alarms, events, settings and positions.
**Environmental Specifications:**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-25°C &lt; T &lt; 70°C</td>
</tr>
<tr>
<td>Shock</td>
<td>20G operating, 50G non-operating</td>
</tr>
<tr>
<td>Vibration</td>
<td>Random (20Hz to 2kHz)</td>
</tr>
</tbody>
</table>

**Interfaces:**

- QUAD band GSM/GPRS (850/900/1800/1900 MHz) and TRI band UMTS (850/1900/2100 MHz) for long range wireless communication
- ISO10368 compliant power line communication
- 32-channel fix embedded positioning system
- RS232 interface toward host reefer container controller
- Status LED’s to indicate operating status
- Mod-bus interface for optional external sensors
- Digital input for optional door sensor
- 24VAC/DC power input

**Hardware:**

- FLASH memory for data and program storage, including controller firmware for automatic distribution
- In-built 3-axis motion sensor
- SIM card - Embedded
- Self-contained rechargeable battery for container off-power operation

**Software:**

- Over-the-Air firmware upgrade to apply new features
- Immediate notification of controller alarms and container power ON/OFF events
- Remote setting of scheduled transmission intervals and other communications rules
- Internal hourly condition logging until transmission is established
- Maximum operation in container power off mode: 120 days

**Supported controllers:**

- Carrier: Microlink 3, Microlink 2i
- Daikin: DECOS IIIe, DECOS IIId, DECOS IIIc
- Starcool: RCCU5, SCC6

Special version available for Thermo King controllers

**Included items:**

- Installation instruction
- Sticker “RMM+ modem installed”

**Max. physical dimensions:**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>326 mm</td>
</tr>
<tr>
<td>Width</td>
<td>121 mm</td>
</tr>
<tr>
<td>Height</td>
<td>50 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>750 g</td>
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