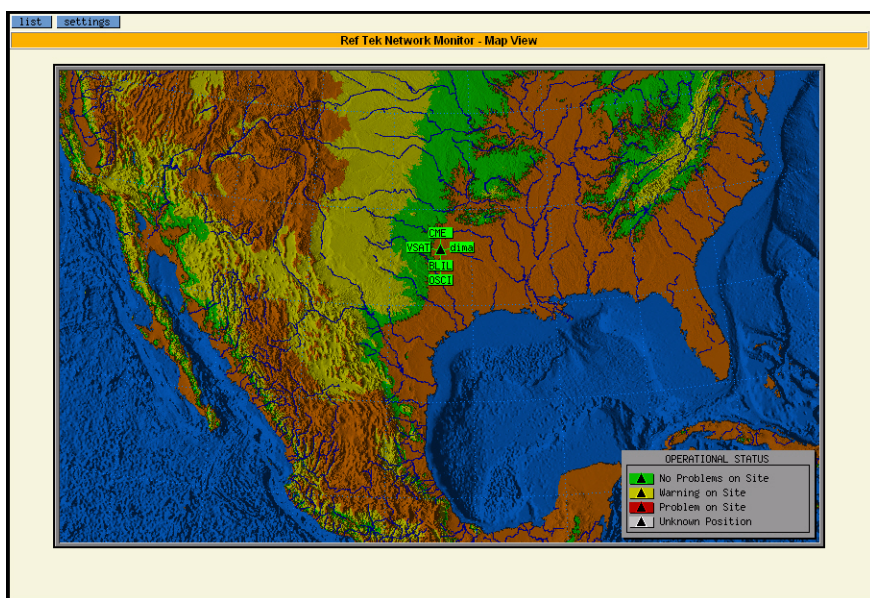




## RTPMonitor 2.1.0.0 Installation and Users Guide

Refraction Technology™



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# Notation Conventions

The following notation conventions are used throughout Ref Tek documentation:

Notation	Description
ASCII	Indicates the entry conforms to the American Standard Code for Information Interchange definition of character (text) information.
Binary	Indicates the entry is a raw, numeric value.
Hex	Indicates hexadecimal notation. This is used with both ASCII characters (0 – 9, A – F) and numeric values.
BCD	Indicates the entry is a numeric value where each four bits represents a decimal digit.
FP $n$	Indicates the entry is the ASCII representation of a floating-point number with $n$ places following the decimal point.
< $n$ >	Indicates a single 8-bit byte. When the contents are numeric, it indicates a hexadecimal numeric value; i.e. <84> represents hexadecimal 84 (132 decimal). When the contents are capital letters, it represents a named ASCII control character; i.e. <SP> represents a space character, <CR> represents a carriage return character and <LF> represents a line feed character.
MSB	Most Significant Byte of a multi-byte value.
MSbit	Most Significant Bit of a binary number.
LSB	Least Significant Byte of a multi-byte value.
LSbit	Least Significant Bit (bit 0) of a binary number.
YYYY	Year as a 4-digit number
DDD	Day of year
HH	Hour of day in 24-hour format
MM	Minutes of hour
SS	Seconds of minute
TTT	Thousandths of a second (milliseconds)
IIII	Unit ID number
n, nS	nano, nanoSecond; $10^{-9} = 0.000000001$
u, uS	micro, microSecond; $10^{-6} = 0.000001$
m, mS	milli, milliSecond; $10^{-3} = 0.001$
K, KHz	Kilo, KiloHertz; $10^3 = 1,000$
M, MHz	Mega, MegaHertz; $10^6 = 1,000,000$
G, GHz	Giga, GigaHertz; $10^9 = 1,000,000,000$
Kb, KB	Kilobit, KiloByte; $2^{10} = 1,024$
Mb, MB	Megabit, MegaByte; $2^{20} = 1,048,576$
Gb, GB	Gigabit, GigaByte; $2^{30} = 1,073,741,824$

### Related Manuals:

130-01 System Documents	Number	PDF file
130-01 System Startup	Doc-130-Ops	130_startup_01.pdf
PFC_130 Users Guide	Doc-130-PFC	130_pfc.pdf
Data Utilities Users Guide	Doc-DataUtils	130_utilities.pdf
Archive Utilities	Doc-ArcUtils	arcutil.pdf
130 Theory of Operations	Doc-130-Theory	130_theory.pdf
130 PFC Release Notes	Doc-130-PFCRel	130_PFCRN.pdf
130 CPU Release Notes	Doc-130-CPUrel	130_CPURN.pdf
130 Command Reference	Doc-130-Cmd	130_command.pdf
130 Recording Format	Doc-130-Record	130_record.pdf
130-GPS Manual	Doc-GPS-Ops	130_gps.pdf
130-01 Board Documents	Number	PDF file
<b>RT505</b> - A/D Board	Doc-130-RT505	RT505r.pdf <sup>a</sup>
<b>RT506</b> - CPU Board	Doc-130-RT506	RT506r.pdf
<b>RT520</b> - Lid Interconnect Board	Doc-130-RT520	RT520r.pdf
<b>RT526</b> - MicroDrive/Flash Board	Doc-130-RT526	RT526rB01.pdf
<b>RT527</b> - Sensor Control Board (Optional)	Doc-130-RT527	RT527rB01.pdf
<b>RT535</b> - Mass Memory Board (Optional)	Doc-130-RT535	RT535rB01.pdf
Optional Manuals	Number	PDF file
SNDP Reference Guide	Doc-SNDP-Ref	SNDPRef.pdf
SNDP Installation and Users Guide	Doc-SNDP-Install	SNDPUser.pdf
RTPD Installation and Users Guide	Doc-RTPD	RTPD.pdf
RTP Protocol	Doc-RTP	RTP.pdf
RT_View Users Guide*	Doc-RTView	RTView.pdf
RTCC Command and Control Users Guide*	Doc-RTCC	RTCC.pdf
130 RTCC Release Notes*	Doc-RTCCRel	130_RTCCRN.pdf
RT_Display Users Guide*	Doc-RTDis	RTDisplay.pdf
RTPMonitor Installation and Users Guide	Doc-RTPMon	RTPM.pdf
131A-01/3 Standard Triaxial Accelerometer	Doc-131A-01/3	131A.pdf
131A-01/2 Low Noise Triaxial Accelerometer	Doc-131A-01/2	
131B-01/1 Uniaxial Accelerometer	Doc-131B-01/1	131A011.pdf

a. r = Revision level of 130 Board

\* = Programs included in the optional Reftek Command and Control Interface (RTI)

## Update Notification

### **REF TEK** Support and update notifications

As a valued user of REF TEK equipment we would like to provide the best support possible by keeping you up to date with our product updates.

If you would like to be notified of any REF TEK product updates please spend a couple of minutes to register with the reftek customer support team.

To Register, either send an email to [updates@reftek.com](mailto:updates@reftek.com) giving us your name and REF TEK product you currently have or fill out our online registration form at [www.reftek.com/registration](http://www.reftek.com/registration)

Once we register your contact we will only send necessary notifications via email. The same notifications will be shown on our website's [www.reftek.com/support](http://www.reftek.com/support) page

Thanks,

Your REF TEK support team

## Revision History

Rev	Date	Reason for change	Affected Pages
1.0	11/11/04	Initial Draft	All
A	8/23/05	Added Histogram plot update for number of days	1-6 and 1-7
B	10/31/05	Added Solaris and Linux platform support	
	3/23/07	Updated to Version 2.1.0.0 (RTPD)	All

## Preface

### About this guide

### Related information

See the RTPD Installation and Users Guide

See the RTCC Users Guide

### Who Should Use This Manual

This manual was written assuming the user has basic computer skills and is familiar with operating systems and networking concepts.

Additional information on background infrastructure supporting the **REF TEK** RNC2 Network Controller operation may be found at following sites:

- SUN Solaris Documentation at <http://docs.sun.com>

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## Section 1 RTPMonitor for Windows

---

### 1.1 RTPD Communications Monitor

The **rtpid** module monitors incoming data and issues a **REF TEK** 130 id request through **RTPD** if no data is received from a unit for a period of time. The **rtpid** data client monitors the communications received by **RTPD** from all connected 130 DAS units. The **rtpid** module tracks only DAS units that send information to **RTPD** after **rtpid** starts. As additional units send information to **RTPD**, **rtpid** adds them to the list of units it monitors. If one of these units does not send information for a specified time-out period, **rtpid** issues a 130 ID command to the specific unit. If **rtpid** issues 5 ID requests to a specific unit without receiving something from the unit, it removes the unit from its list of units.

The **rtpid** module logs all of its actions to its logfile, **rtpdid.log**. The file is located in the current directory from which **rtpid** was invoked. The **rtpid** module also echoes all log entries to the console.

## 1.2 REF TEK Network Monitor

RTPMonitor (**REF TEK** Network Monitor) provides an up-to-date status report of a network of 130 DAS units to the user. RTPMonitor is a console program that connects to RTPD and requests status from all connected 130's. RTPMonitor also listens for incoming Client connections on a user settable port and acts as an html server on this port. RTPMonitor serves up html pages that can be displayed in any standard web browser. RTPMonitor provides both a map and list overview as well as details for each particular 130 DAS. Most of the RTPMonitor Status Views provide easy to read, Green, Yellow, and Red indicators for quick station status checks. The Green, Yellow, and Red thresholds are all user editable allowing each user to customize the warning levels to meet their needs. RTPMonitor also maintains a ring buffer on disk for the status of each 130. The ring buffer holds at least 3 days worth of status for each DAS. RTPMonitor can display this 3 days worth of status as a histogram plot.

## 1.3 System Requirements

RTP Monitor supports the following software platforms:

- Microsoft™ Windows 2000 and XP
- Microsoft™ Windows NT 4.0 with Service Pack 4.0 or higher installed
- Red Hat™ Linux 9.0 or higher
- SUN™ Solaris 8 (SPARC) or higher

**WARNING: RTPD should be installed prior to installation of RTPMonitor.**

## 1.4 Install RTP Monitor

### To install RTP Monitor on the Windows platform

1. Create a folder on the hard disk for the installation, such as *c:\reftek\RTPMonitor*.

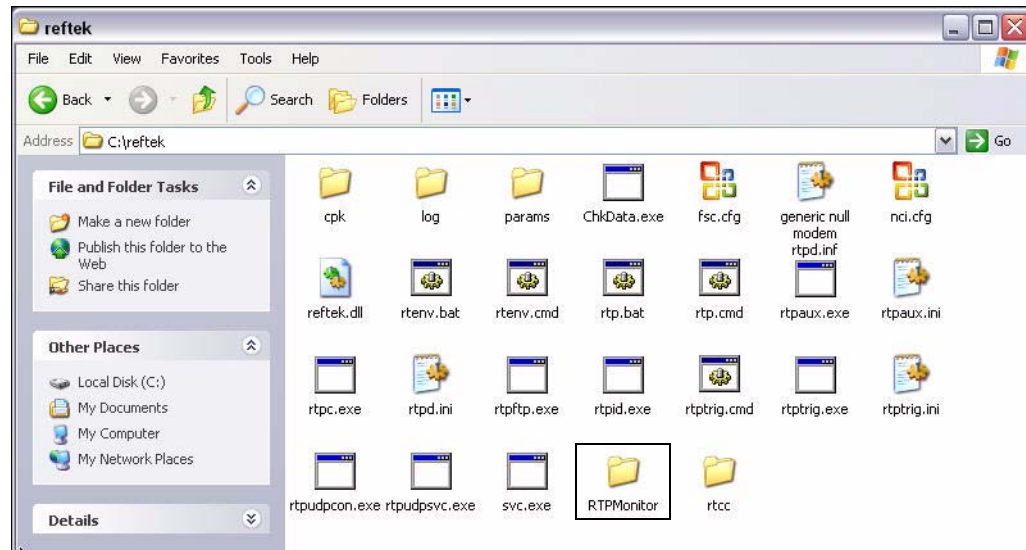


Figure 1 - 1 C:\reftek directory

2. Load the CD and open explorer.
3. Select the **RTPMonitor** folder from the RTPM CD.

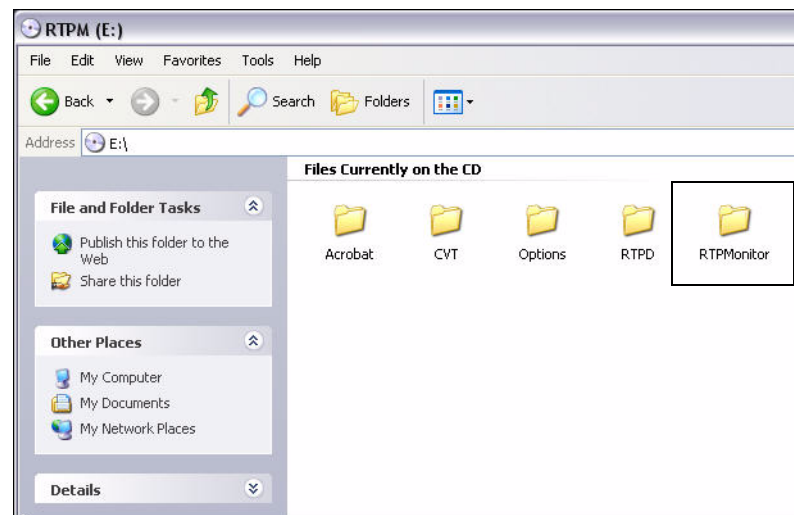


Figure 1 - 2 RTPMonitor CD contents

4. Use the **Copy this folder** command to copy the folder from the CD to the **c:\reftek** folder.

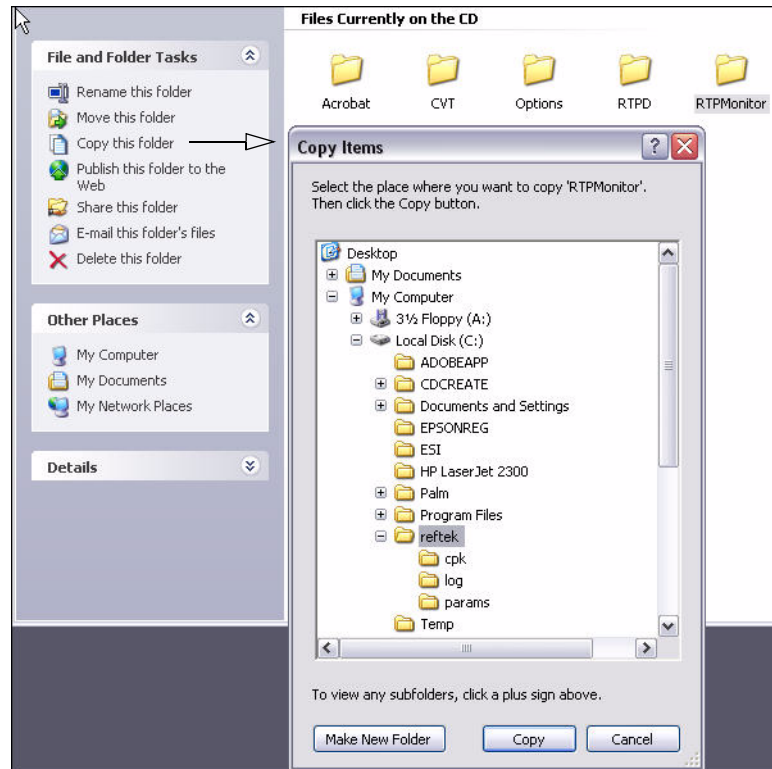


Figure 1 - 3 Platform and common files

5. Open the **RTPMonitor** folder

### 1.4.1 Copy win32 files

1. Open the **RTPMonitor\win32** folder.

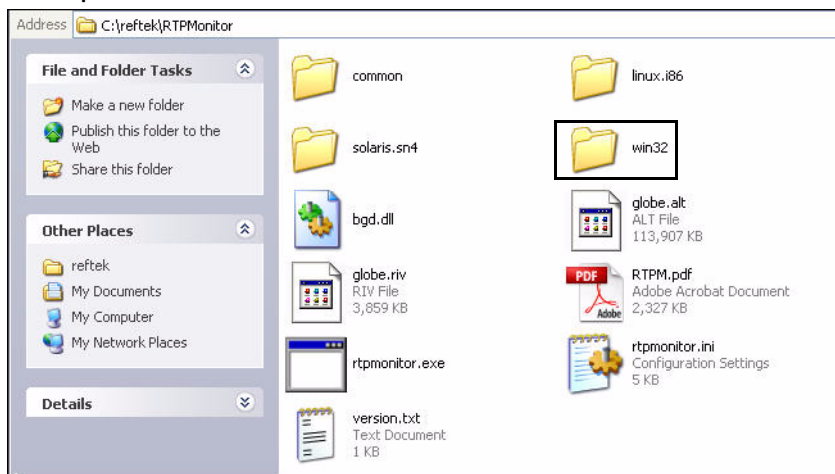


Figure 1 - 4 RTPMonitor folder contents

2. Select the **win32** folder contents with the **Edit/Select All** command:

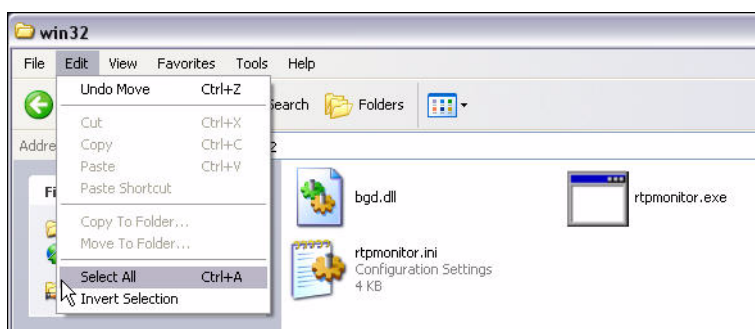


Figure 1 - 5 win32 folder

3. Move the contents of the **win32** directory with the **Move the selected items** command.

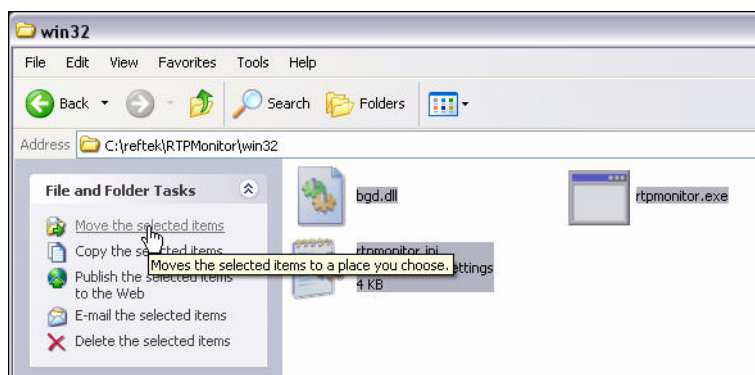


Figure 1 - 6 Move selected win32 files

4. Move the items to the **C:\reftek\RTPMonitor** folder by highlighting the folder and selecting the **Move** button.

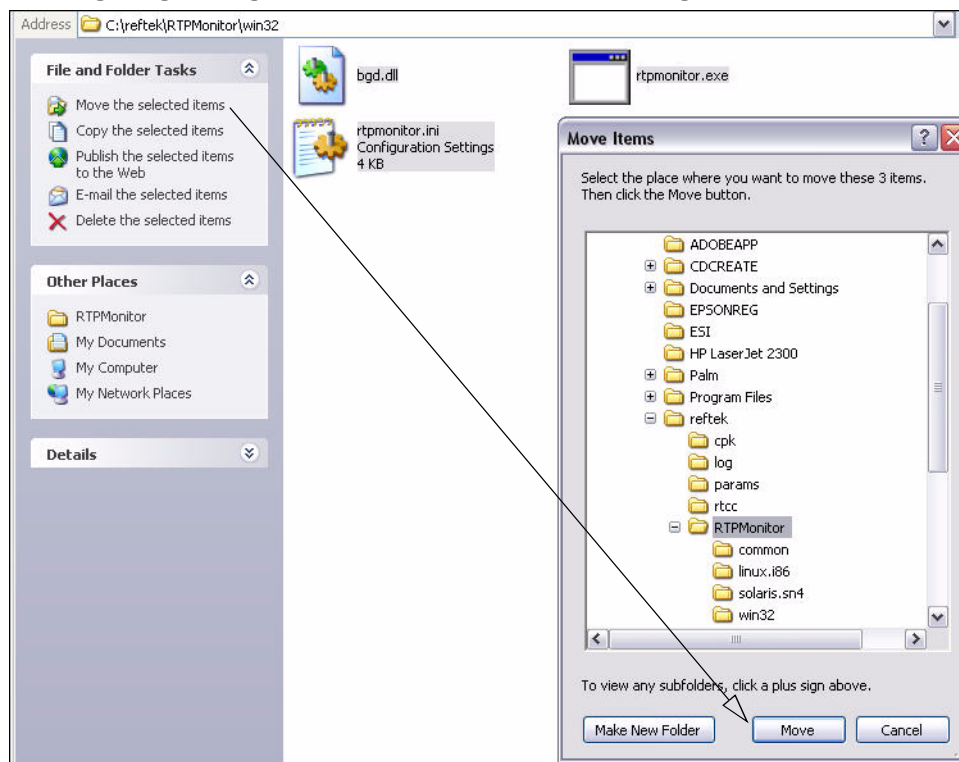


Figure 1 - 7 Move win32 files to RTPMonitor folder

5. The **RTPMonitor** folder should now show the **win32** files.

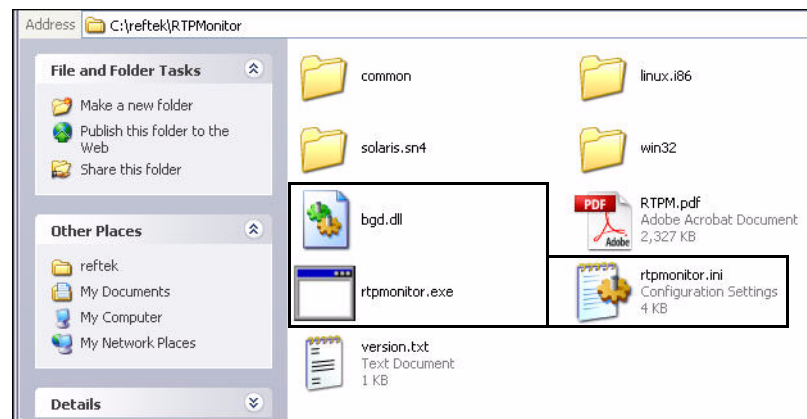


Figure 1 - 8 RTPMonitor folder contents

## 1.4.2 Copy common files

1. Select all the files from the **RTPMonitor\common** folder to the win32 folder.  
(Use the **Edit/Select All** command)

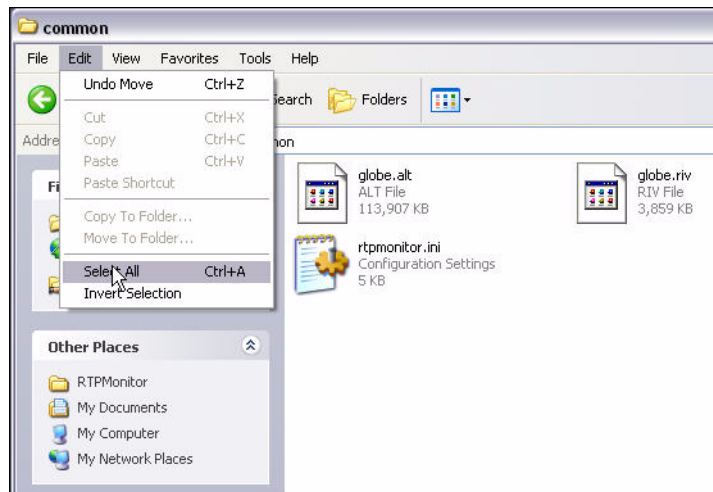


Figure 1 - 9 Select common folder files

2. Move the selected files to the **c:\reftek\RTPMonitor** folder.

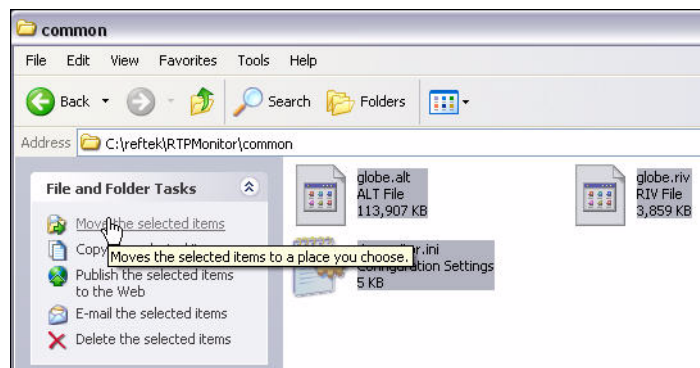


Figure 1 - 10 RTPMonitor common files



3. Select the destination folder (RTPMonitor).
4. Select the **Move** button to move the files.

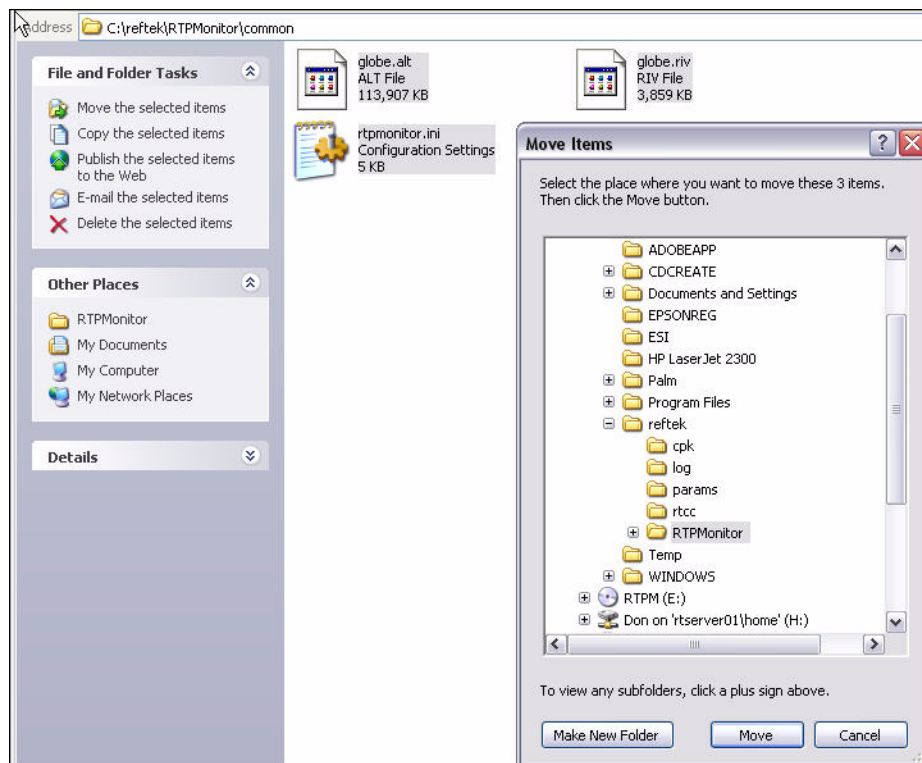


Figure 1 - 11 Move common files

5. Verify the following files are in the **RTPMonitor** folder.

**Bgd.dll**  
**globe.alt**  
**globe.riv**  
**rtpmonitor.exe**  
**rtpmonitor.ini**

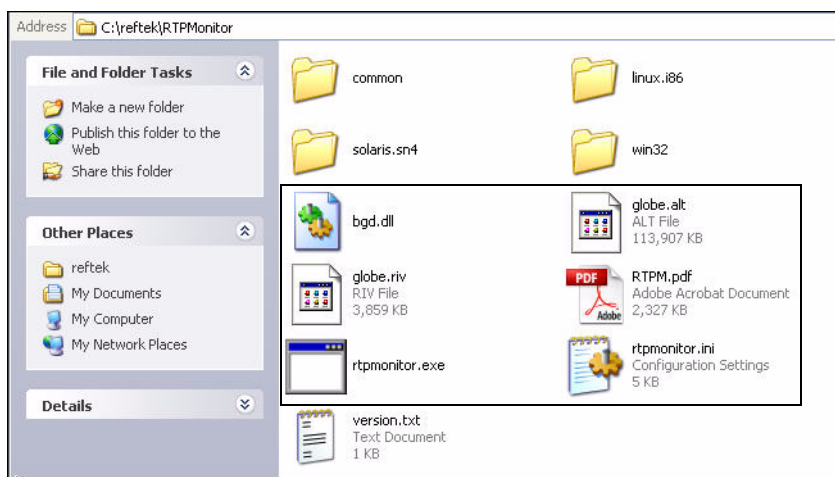


Figure 1 - 12 RTPMonitor folder

6. Use the **Make a new folder** command and make a new folder for **Ringfolder** contents.

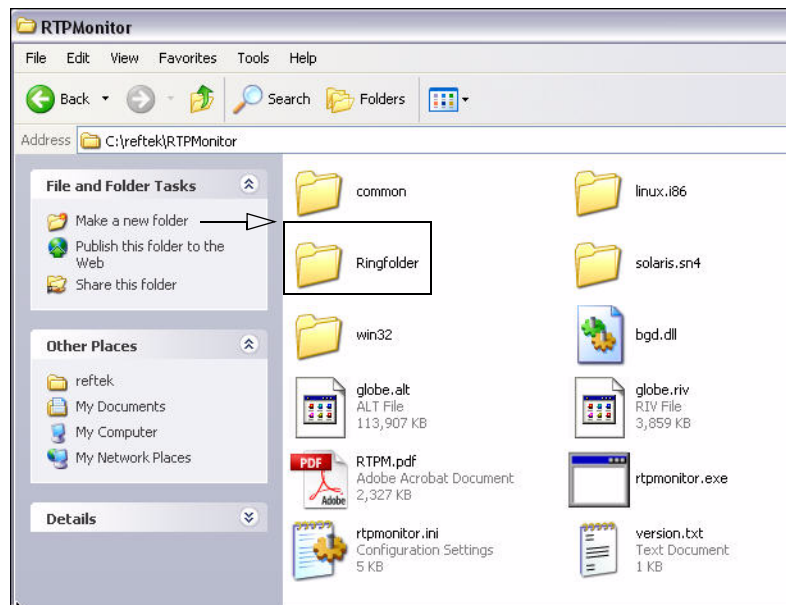


Figure 1 - 13 Ringfolder

### 1.4.3 Change permissions of the rtpmonitor.ini

Change permissions of the rtpmonitor.inifile to make it writable.

1. Right-click on the **rtpmonitor.ini** file and chose the **Properties** option.
2. Under the Attributes property uncheck the **Read-only** box.
3. Click **Apply** to save the changes.
4. Click **OK** to close the properties window.

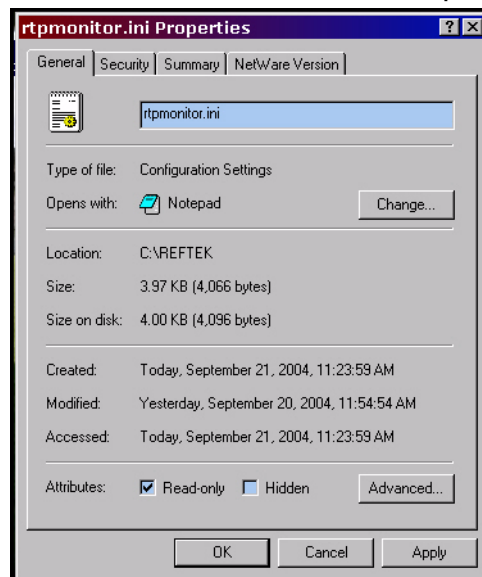


Figure 1 - 14 rtpmonitor.ini properties



**Note:** The machine that is running RTPMonitor must be setup as a "CmdClientIPAddr" in the *rtpd.ini* file so that RTPMonitor has permission to send it's status requests to all 130 DAS units through RTPD. See the RTPD manual "Configuration options - rtpd.ini file" on page A-77 for more information.

## 1.5 Edit the *rtpmonitor.ini* file

Most of the settings in the *rtpmonitor.ini* file are already set to acceptable default settings except for Step 2 (RTPD IP address). For an example .ini file see the "Complete listing of rtpmonitor.ini file" on page 1-17.

### To configure the *rtpmonitor.ini* file:

1. Open the *rtpmonitor.ini* file in a text editor. (Such as notepad.)

**WARNING: The command text is case sensitive within the .ini file.**

2. Find the following line and change the IP address to that of the machine running RTPD.

```
RtpMonitor.RtpdIP=192.168.100.34
```

3. Check the port number on which RTPD is listening for Client connections. This is almost always left as the default 2543.

```
RtpMonitor.RtpdPort=2543
```

4. If necessary, change the RTPMonitor port for html pages. This is the port on which RTPMonitor will listen for client connections, and serve up html pages. This port should be a free port on the machine running RTPMonitor. Usually port 4000 or 4001 is a good choice.

```
RtpMonitor.HttpPort=4000
```

5. Set the maximum number of allowed web client connections to RTPMonitor at one time.

```
RtpMonitor.MaxHttpClient=30
```

6. Certain RTPMonitor settings can be changed through the browser. These include all the Green, Yellow, Red alarm settings and the station locations, as well as all the Map View settings.

In order for a Web Client to be able to change any of these settings, add it's IP address to the following list. As many clients as necessary can be listed.



**Note:** Any web client is allowed to connect to RTPMonitor and view the settings screen, but if they are not in the following list then the screen will be in READ ONLY mode.

```
RtpMonitor.IPSettings=127.0.0.1
RtpMonitor.IPSettings=192.168.100.185
RtpMonitor.IPSettings=192.168.100.198
```

7. Change the following line to set the RTPMonitor request interval (in seconds) for checking the current status of all dases.

```
RtpMonitor.RqInterval=300
```

8. Set the number of days to display on histograms plots from a 1 to 14 day period. This example parameter graphs data over an 8 day period of time.

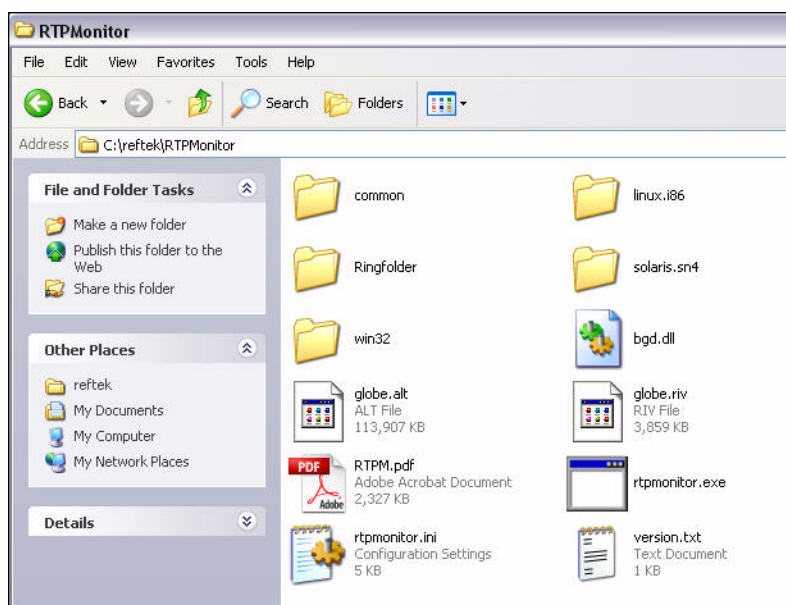
```
RtpMonitor.NumberDays=8
```

9. Set the location where RTPMonitor will store the ring buffers it maintains. The ring buffers are used to create the histogram plots.



**Note:** This folder must exist before you run RTPMonitor.

```
RtpMonitor.RingFolder=C:\reftek\RTPMonitor\Ringfolder
```



**Figure 1 - 15 Ringfolder location**

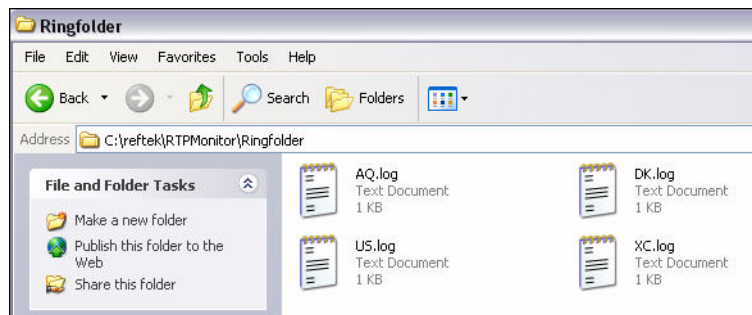
10. Change the following value to the maximum number of records that will be stored in the ring buffer files. The minimum recommended value is: (Number of possible DAS units \* 3days \* 24 \* 3600) / RqInterval (from above)

**Example**=(20 possible DASes \* 3 days\*24\*3600)/300 = 17280

**RtpMonitor.RecordsInRing=20000**



**Note:** Always delete all ring buffer files (DK.log, XC.log, AQ.log, US.log files from the Ringfolder) if you change this value.



**Figure 1 - 16 Ringfolder contents**

11. The following file will contain the station coordinates for all the stations.

**RtpMonitor.StationFile=C:\reftek\RTPMonitor\stations.dat**

**All fields below this area are editable through the html settings page. So, it is recommended to edit these parameters through the Settings html page when connected to RTPMonitor**

Example ini file:

```

#
#Ini file is case sensitive & parameter name should start from
#first character in the line, '=' character should present!!!!
#
#
#IP number of running RTPD
#
RtpMonitor.RtpdIP=                192.168.100.34
#
#
#Port number of running RTPD
#
RtpMonitor.RtpdPort=              2543
#
#
#Port for web clients connections to rtpmonitor
#
RtpMonitor.HttpPort=              4000
#
#
#Maximum number of web clients connections to rtpmonitor
#
RtpMonitor.MaxHttpClient=        30
#
#
#IPs of clients who can change settings on the fly
#all other clients will have the same screen but in read only mode!!!
#
RtpMonitor.IPSettings=            127.0.0.1
RtpMonitor.IPSettings=            192.168.100.185
RtpMonitor.IPSettings=            192.168.100.198
#
#
#Request interval in seconds for checking current status of all dases
#
RtpMonitor.RqInterval=            300
#RtpMonitor.RqInterval=            3600
#
#
#Number of days for Histogram Plots (1-14)
#
RtpMonitor.NumberDays=            8
#
#
#Folder with ring buffers for plots
#!!!! This Folder Must exists before you run rtpmonitor!!!!
#
RtpMonitor.RingFolder=            C:\reftek\RTPMpnitor\Ringfolder
#
#
#Number of records in ring Buffers,
#recomended value = (Number of possible dases * 3days*24*3600)/RqInterval
#!!!! always delete all ring buffers (DK.log,XC.log,AQ.log,US.log)
#if you change this value
#
RtpMonitor.RecordsInRing=          20000
#
#
#file wich contains station coordinats
#(!!!!at least the folder must exists!!!!)
#
RtpMonitor.StationFile=            C:\reftek\RTPMonitor\stations.dat
#
#
#Map image parameters delemeted by comma without spaces:
#HorizontalImageSize(pixels),VerticalImageSize(pixels),
#Central Latitude of Image(degrees),Central Longitude of Image(degrees),
#Map Scale(Number of kilometers in one pixel),
#Map View rotation angle(degrees),Map Mode(0-fine,1-good,2-draft)
RtpMonitor.MapParameters=          800,500,30,-97,5,0,0
#
#

```

**Below this arrow, these fields are editable through the settings display.**

**Figure 1 - 17 Example RTPMonitor ini file**

## 1.6 Running RTPMonitor from command prompt

To run RTPMonitor from a command prompt:

1. Open a command window in the **c:/reftek/RTPMonitor** directory.
2. At the command line type **RTPMonitor** and <CR>.
3. Minimize the command prompt.
4. Open a web browser and enter the IP address of the computer where your running **RTPMonitor**.

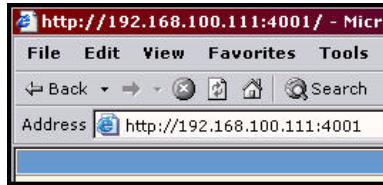


Figure 1 - 18 Web browser process



## 1.6.1 Complete listing of *rtpmonitor.ini* file

```
#
#Ini file is case sensitive & parameter name should start from
#first character in the line, '=' character should present!!!!
#
#
#IP number of running RTPD
#
#RtpMonitor.RtpdIP=192.168.100.239
#RtpMonitor.RtpdIP=192.168.100.34
#RtpMonitor.RtpdIP=62.169.201.199
#RtpMonitor.RtpdIP=136.177.30.226
#RtpMonitor.RtpdIP=192.168.100.198
RtpMonitor.RtpdIP=192.168.100.185
#
#
#Port number of running RTPD
#
RtpMonitor.RtpdPort=2543
#
#
#Port for web clients connections to rtpmonitor
#
RtpMonitor.HttpPort=4000
#
#
#Maximum number of web clients connections to rtpmonitor
#
RtpMonitor.MaxHttpClient=30
#
#
#IPs of clients who can change settings on the fly
#all other clients will have the same screen but in read only mode!!!
#
RtpMonitor.IPSettings=127.0.0.1
RtpMonitor.IPSettings=192.168.100.185
RtpMonitor.IPSettings=192.168.100.198
RtpMonitor.IPSettings=192.168.100.9
RtpMonitor.IPSettings=141.89.73.7
RtpMonitor.IPSettings=141.89.73.8
#RtpMonitor.IPSettings=194.84.170.115
#
#
#Request interval in seconds for checking current status of all dases
#
RtpMonitor.RqInterval=300
#RtpMonitor.RqInterval=3600
#
#
#Number of days for Histogram Plots (1-14)
#
RtpMonitor.NumberDays=8
#
#
#Folder with ring buffers for plots
#!!!! This Folder Must exists before Yor run rtpmonitor!!!!
#
RtpMonitor.RingFolder=C:\reftek\RTPMonitor\Ringfolder
#
#
#Number of records in ring Buffers,
#recomended value = (Number of possible dases * 3days*24*3600)/RqInterval
#!!!! always delete all ring buffers (DK.log,XC.log,AQ.log,US.log)
#if Your change this value
#
RtpMonitor.RecordsInRing=120000
#
#
```

---

```
#file wich contains station coordinats
#(!!!!at least the folder must exists!!!)
#
RtpMonitor.StationFile=C:\reftek\RTPMonitor\stations.dat
#
#
#Map image parameters delemeted by comma without spaces:
#HorizontalImageSize(pixels),VerticalImageSize(pixels),
#Central Latitude of Image(degrees),Central Longitude of Image(degrees),
#Map Scale(Number of kilometers in one pixel),
#Map View rotation angle(degrees),Map Mode(0-fine,1-good,2-draft)
RtpMonitor.MapParameters=900,500,35,-102,30,0,0
#
#
#Input Power Red Yellow values valid interval 0-20 V !!!!Y>R
#
RtpMonitor.InputPowerYellowRed=11,10
#
#
#Backup Power interval 0-3.3 V !!!!Y>R
#
RtpMonitor.BackupPowerYellowRed=2.8,2.3
#
#
#Ram Used interval 0-100!!!!Y<R
#
RtpMonitor.RamUsedYellowRed=60,80
#
#
#Disk1 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk1UsedYellowRed=60,80
#
#
#Disk2 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk2UsedYellowRed=60,80
#
#
#Das not responding interval in Requestq Interval steps !!!!Y<R
#
RtpMonitor.DelayYellowRed=2,4
#
#
#Gps not responding unlocked interval in hours values !!!!Y<R
#
RtpMonitor.GpsLastLockYellowRed=0.5,1
#
#
#Gps error - difference between das location in station file
#& average location from gps in meters !!!!Y<R
RtpMonitor.LocationYellowRed=100,200
#
#
#Starting html page 0-MapView 1-ListView
RtpMonitor.DefaultPage=1
#
```

---



## Section 2 RTPMonitor for Linux

---

### 2.1 RTPD Communications Monitor

The **rtpid** module monitors incoming data and issues a **REF TEK** 130 id request through **RTPD** if no data is received from a unit for a period of time. The **rtpid** data client monitors the communications received by **RTPD** from all connected 130 DAS units. The **rtpid** module tracks only DAS units that send information to **RTPD** after **rtpid** starts. As additional units send information to **RTPD**, **rtpid** adds them to the list of units it monitors. If one of these units does not send information for a specified time-out period, **rtpid** issues a 130 ID command to the specific unit. If **rtpid** issues 5 ID requests to a specific unit without receiving something from the unit, it removes the unit from its list of units.

The **rtpid** module logs all of its actions to its logfile, **rtpdid.log**. The file is located in the current directory from which **rtpid** was invoked. The **rtpid** module also echoes all log entries to the console.

## 2.2 REF TEK Network Monitor

RTPMonitor (**REF TEK** Network Monitor) provides an up-to-date status report of a network of 130 DAS units to the user. RTPMonitor is a console program that connects to RTPD and requests status from all connected 130's. RTPMonitor also listens for incoming Client connections on a user settable port and acts as an html server on this port. RTPMonitor serves up html pages that can be displayed in any standard web browser. RTPMonitor provides both a map and list overview as well as details for each particular 130 DAS. Most of the RTPMonitor Status Views provide easy to read, Green, Yellow, and Red indicators for quick station status checks. The Green, Yellow, and Red thresholds are all user editable allowing each user to customize the warning levels to meet their needs. RTPMonitor also maintains a ring buffer on disk for the status of each 130. The ring buffer holds at least 3 days worth of status for each DAS. RTPMonitor can display this 3 days worth of status as a histogram plot.

## 2.3 System Requirements

The **REF TEK** Monitor program supports the following software platforms:

- Microsoft™ Windows 2000 and XP
- Microsoft™ Windows NT 4.0 with Service Pack 4.0 or higher installed
- Red Hat™ Linux 9.0 or higher
- SUN™ Solaris 8 (SPARC) or higher

## 2.4 Linux Installation

In general, RTPM consists of an HTML server application running on a master workstation.

The RTPM software must be first installed from a CDROM, supplied by **REF TEK**.

### 2.4.1 Prerequisites

During the installation process you may need to execute several actions which require super-user / administrator privileges.



**Note:** The workstation should be connected to the network before starting installation.

### 2.4.2 Copy the RTPM files

1. Open a new terminal window.
2. Login as **reftek** with passwd **reftek** if necessary.
3. In the **/home/reftek** directory make an **rtpm** directory.
4. Insert the CD into the CD drive.
5. Change to the CD **RTPMonitor/linux.i86** directory.
6. Copy the files from this CD directory to the **/home/reftek/rtpm** directory.
7. Change to the CD **RTPMonitor/common** directory.
8. Copy the files from this CD directory to the **/home/reftek/rtpm** directory
9. Change to the **/export/home/reftek/rtpm** directory.
10. Make a **ringfolder** directory
11. The **rtpm** directory should contain the following files:

```
libgd.so.2.0.0 - library file
globe.alt
globe.riv
rtpmonitor - executable
rtpmonitor.ini
```



**Note:** The machine that is running RTPMonitor must be setup as a "CmndClientIPAddr" in the *rtpd.ini* file so that RTPMonitor has permission to send it's status requests to all 130 DAS units through RTPD. See the RTPD manual "Configuration options - rtpd.ini file" on page A-77 for more information.

---

## 2.5 Edit of rtpm.ini file

**Before execution of the RTCC program the rtpm.ini file must be modified with an editor.**

Most of the settings in the *rtpmonitor.ini* file are already set to acceptable default settings except for Step 2 (RTPD IP address). For an example .ini file see the "Example rtpmonitor.ini file" on page 2-26.

**To configure the *rtpmonitor.ini* file:**

1. Open the *rtpmonitor.ini* file in a text editor.

**WARNING: RTPMonitor is case sensitive within the .ini file.**

2. Find the following line and change the IP address to that of the machine running RTPD.

```
RtpMonitor.RtpdIP=192.168.100.34
```

3. Check the port number on which RTPD is listening for Client connections. This is almost always left as the default 2543.

```
RtpMonitor.RtpdPort=2543
```

4. If necessary, change the RTPMonitor port for html pages. This is the port on which RTPMonitor will listen for client connections, and serve up html pages. This port should be a free port on the machine running RTPMonitor. Usually port 4000 or 4001 is a good choice.

```
RtpMonitor.HttpPort=4000
```

5. Set the maximum number of allowed web client connections to RTPMonitor at one time.

```
RtpMonitor.MaxHttpClient=30
```

Certain RTPMonitor settings can be changed through the browser. These include all the Green, Yellow, Red alarm settings and the station locations, as well as all the Map View settings.

6. In order for a Web Client to be able to change any of these settings, add it's IP address to the following list. As many clients as necessary can be listed.



**Note:** Any web client is allowed to connect to RTPMonitor and view the settings screen, but if they are not in the following list then the screen will be in READ ONLY mode.

```
RtpMonitor.IPSettings=127.0.0.1  
RtpMonitor.IPSettings=192.168.100.185  
RtpMonitor.IPSettings=192.168.100.198
```

7. Change the following line to set the RTPMonitor request interval (in seconds) for checking the current status of all dases.

```
RtpMonitor.RqInterval=300
```

8. Set the number of days to display on histograms plots from a 1 to 14 day period. This example parameter graphs data over an 8 day period of time.

```
RtpMonitor.NumberDays=8
```

9. Set the location where RTPMonitor will store the ring buffers it maintains. The ring buffers are used to create the histogram plots.

```
RtpMonitor.RingFolder= /home/reftek/rtpm/ringfolder
```



**Note:** This folder must exist before you run RTPMonitor.

10. Change the following value to the maximum number of records that will be stored in the ring buffer files. The minimum recommended value is: (Number of possible DAS units \* 3days \* 24 \* 3600) / RqInterval (from above)



**Note:** Always delete all ring buffer files (DK.log, XC.log, AQ.log, US.log files from the Ringfolder) if you change this value.

```
Example=(20 possible DAses *3 days*24*3600)/300 = 17280  
RtpMonitor.RecordsInRing=20000
```



11. The following file will contain the station coordinates for all the stations.

```
RtpMonitor.StationFile= home/reftek/rtpm/stations.dat
```

**All fields below this area are editable through the html settings page. So, it is recommended to edit these parameters through the Settings html page when connected to RTPMonitor.**

## 2.5.1 Example *rtpmonitor.ini* file

```

rtpmonitor - Notepad
File Edit Format View Help
#
#ini file is case sensitive & parameter name should start from
#first character in the line, '=' character should present!!!!
#
#
#IP number of running RTPD
RtpMonitor.RtpdIP=          192.168.100.34
#
#Port number of running RTPD
RtpMonitor.RtpdPort=        2543
#
#Port for web clients connections to rtpmonitor
RtpMonitor.HttpPort=        4000
#
#Maximum number of web clients connections to rtpmonitor
RtpMonitor.MaxHttpClient=   30
#
#IPs of clients who can change settings on the fly
#all other clients will have the same screen but in read only mode!!!
RtpMonitor.IPSettings=      127.0.0.1
RtpMonitor.IPSettings=      192.168.100.185
RtpMonitor.IPSettings=      192.168.100.198
#
#Request interval in seconds for checking current status of all dases
RtpMonitor.RqInterval=      300
#RtpMonitor.RqInterval=     3600
#
#Number of days for Histogram Plots (1-14)
RtpMonitor.NumberDays=      8
#
#Folder with ring buffers for plots
#!!!! This Folder Must exists before yor run rtpmonitor!!!!
RtpMonitor.RingFolder=      home/reftek/rtpm/ringfolder
#
#Number of records in ring Buffers,
#recomended value = (Number of possible dases * 3days*24*3600)/RqInterval
#!!!! always delete all ring buffers (DK.log,XC.log,AQ.log,US.log)
#if Your change this value
RtpMonitor.RecordsInRing=     120000
#

```

**Figure 2 - 1 rtpmonitor.ini file**

## rtpmonitor.ini file

```

rtpmonitor - Notepad
File Edit Format View Help
#
RtpMonitor.RecordsInRing=      120000
#
#
#file wich contains station coordinats
#(!!!!at least the folder must exists!!!)
#
RtpMonitor.StationFile=      home/reftek/rtpm/stations.dat
#
#
#Map image parameters delemeted by comma without spaces:
#HorisontalImageSize(pixels),VerticalImageSize(pixels),
#Central Latitude of Image(degrees),Central Longitude of Image(degrees),
#Map Scale(Number of kilometers in one pixel),
#Map view rotation angle(degrees),Map Mode(0-fine,1-good,2-draft)
RtpMonitor.MapParameters=      800,500,30,-97,5,0,0
#
#
#Input Power Red Yellow values valid interval 0-20 V  !!!!Y>R
#
RtpMonitor.InputPowerYellowRed= 11,10
#
#
#Backup Power interval 0-3.3 V  !!!!Y>R
#
RtpMonitor.BackupPowerYellowRed=2.8,2.3
#
#
#Ram Used interval 0-100!!!!Y<R
#
RtpMonitor.RamUsedYellowRed=    60,80
#
#
#Disk1 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk1UsedYellowRed=  60,80
#
#
#Disk2 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk2UsedYellowRed=  60,80
#
#
#Das not responding interval in Requestq Interval steps  !!!!Y<R
#
RtpMonitor.DelayYellowRed=      2,4
#
#
#Gps not respondingunlocked interval in hours values  !!!!Y<R
#
RtpMonitor.GpsLastLockYellowRed=0.5,1
#
#
#Gps error - difference between das location in station file
#& average location from gps in meters  !!!!Y<R
RtpMonitor.LocationYellowRed=   100,200
#
#Starting html page 0-Mapview 1-Listview
RtpMonitor.DefaultPage=0
#

```

## 2.6 Linux RTPM from command prompt

To run RTPM from a command prompt:

1. Open a terminal window in the **/home/reftek/rtpm** directory.
2. At the command line type **rtpmonitor** and <CR>.
3. Minimize the command prompt.
4. Open a web browser and enter the IP address of the computer where your running RTPMonitor.

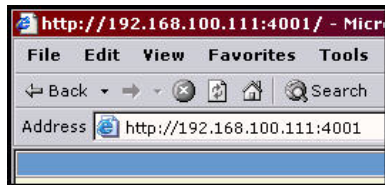


Figure 2 - 2 Web browser process



## Section 3 RTPMonitor for Solaris

---

### 3.1 RTPD Communications Monitor

The **rtpid** module monitors incoming data and issues a **REF TEK** 130 id request through **RTPD** if no data is received from a unit for a period of time. The **rtpid** data client monitors the communications received by **RTPD** from all connected 130 DAS units. The **rtpid** module tracks only DAS units that send information to **RTPD** after **rtpid** starts. As additional units send information to **RTPD**, **rtpid** adds them to the list of units it monitors. If one of these units does not send information for a specified time-out period, **rtpid** issues a 130 ID command to the specific unit. If **rtpid** issues 5 ID requests to a specific unit without receiving something from the unit, it removes the unit from its list of units.

The **rtpid** module logs all of its actions to its logfile, **rtpdid.log**. The file is located in the current directory from which **rtpid** was invoked. The **rtpid** module also echoes all log entries to the console.

## 3.2 REF TEK Network Monitor

RTPMonitor (**REF TEK** Network Monitor) provides an up-to-date status report of a network of 130 DAS units to the user. RTPMonitor is a console program that connects to RTPD and requests status from all connected 130's. RTPMonitor also listens for incoming Client connections on a user settable port and acts as an html server on this port. RTPMonitor serves up html pages that can be displayed in any standard web browser. RTPMonitor provides both a map and list overview as well as details for each particular 130 DAS. Most of the RTPMonitor Status Views provide easy to read, Green, Yellow, and Red indicators for quick station status checks. The Green, Yellow, and Red thresholds are all user editable allowing each user to customize the warning levels to meet their needs. RTPMonitor also maintains a ring buffer on disk for the status of each 130. The ring buffer holds at least 3 days worth of status for each DAS. RTPMonitor can display this 3 days worth of status as a histogram plot.

### 3.3 System Requirements

The **REF TEK** Monitor program supports the following software platforms:

- Microsoft™ Windows 2000 and XP
- Microsoft™ Windows NT 4.0 with Service Pack 4.0 or higher installed
- Red Hat™ Linux 9.0 or higher
- SUN™ Solaris 8 (SPARC) or higher

## 3.4 Solaris Installation

In general, RTPM consists of an HTML server application running on a master workstation.

The RTPM software must be first installed from a CDROM, supplied by **REF TEK**.

### 3.4.1 Prerequisites

During the installation process you may need to execute several actions which require super-user / administrator privileges.



**Note:** The workstation should be connected to the network before starting installation.

### 3.4.2 Copy the RTPM files

1. Open a new terminal window.
2. Login as **reftek** with passwd **reftek** if necessary.
3. In the **/home/reftek** directory make an **rtpm** directory.
4. Insert the CD into the CD drive.
5. Change to the CD **RTPMonitor/solaris.sn4** directory.
6. Copy the file from this CD directory to the **/home/reftek/rtpm** directory.
7. Change to the CD **RTPMonitor/common** directory.
8. Copy the files from this CD directory to the **/home/reftek/rtpm** directory
9. Change to the **/export/home/reftek/rtpm** directory.
10. Make a **ringfolder** directory
11. The **rtpm** directory should contain the following files:

```
globe.alt
globe.riv
rtpmonitor - executable
rtpmonitor.ini
```



**Note:** The machine that is running RTPMonitor must be setup as a "CmndClientIPAddr" in the *rtpd.ini* file so that RTPMonitor has permission to send it's status requests to all 130 DAS units through RTPD. See the RTPD manual "Configuration options - rtpd.ini file" on page A-77 for more information.



## 3.5 Edit of rtpm.ini file

**Before execution of the RTCC program the rtpm.ini file must be modified with an editor.**

Most of the settings in the *rtpmonitor.ini* file are already set to acceptable default settings except for Step 2 (RTPD IP address). For an example .ini file see the "Example rtpmonitor.ini file" on page 3-36.

**To configure the *rtpmonitor.ini* file:**

1. Open the *rtpmonitor.ini* file in a text editor. (Such as notepad.)

**WARNING: RTPMonitor is case sensitive within the .ini file.**

2. Find the following line and change the IP address to that of the machine running RTPD.

```
RtpMonitor.RtpdIP=192.168.100.34
```

3. Check the port number on which RTPD is listening for Client connections. This is almost always left as the default 2543.

```
RtpMonitor.RtpdPort=2543
```

4. If necessary, change the RTPMonitor port for html pages. This is the port on which RTPMonitor will listen for client connections, and serve up html pages. This port should be a free port on the machine running RTPMonitor. Usually port 4000 or 4001 is a good choice.

```
RtpMonitor.HttpPort=4000
```

5. Set the maximum number of allowed web client connections to RTPMonitor at one time.

```
RtpMonitor.MaxHttpClient=30
```

Certain RTPMonitor settings can be changed through the browser. These include all the Green, Yellow, Red alarm settings and the station locations, as well as all the Map View settings.

6. In order for a Web Client to be able to change any of these settings, add it's IP address to the following list. As many clients as necessary can be listed.



**Note:** Any web client is allowed to connect to RTPMonitor and view the settings screen, but if they are not in the following list then the screen will be in READ ONLY mode.

```
RtpMonitor.IPSettings=127.0.0.1  
RtpMonitor.IPSettings=192.168.100.185  
RtpMonitor.IPSettings=192.168.100.198
```

7. Change the following line to set the RTPMonitor request interval (in seconds) for checking the current status of all dases.

```
RtpMonitor.RqInterval=300
```

8. Set the number of days to display on histograms plots from a 1 to 14 day period. This example parameter graphs data over an 8 day period of time.

```
RtpMonitor.NumberDays=8
```

9. Set the location where RTPMonitor will store the ring buffers it maintains. The ring buffers are used to create the histogram plots.

```
RtpMonitor.RingFolder=home/reftek/rtpm/ringfolder
```



**Note:** This folder must exist before you run RTPMonitor.

10. Change the following value to the maximum number of records that will be stored in the ring buffer files. The minimum recommended value is: (Number of possible DAS units \* 3days \* 24 \* 3600) / RqInterval (from above)



**Note:** Always delete all ring buffer files (DK.log, XC.log, AQ.log, US.log files from the Ringfolder) if you change this value.

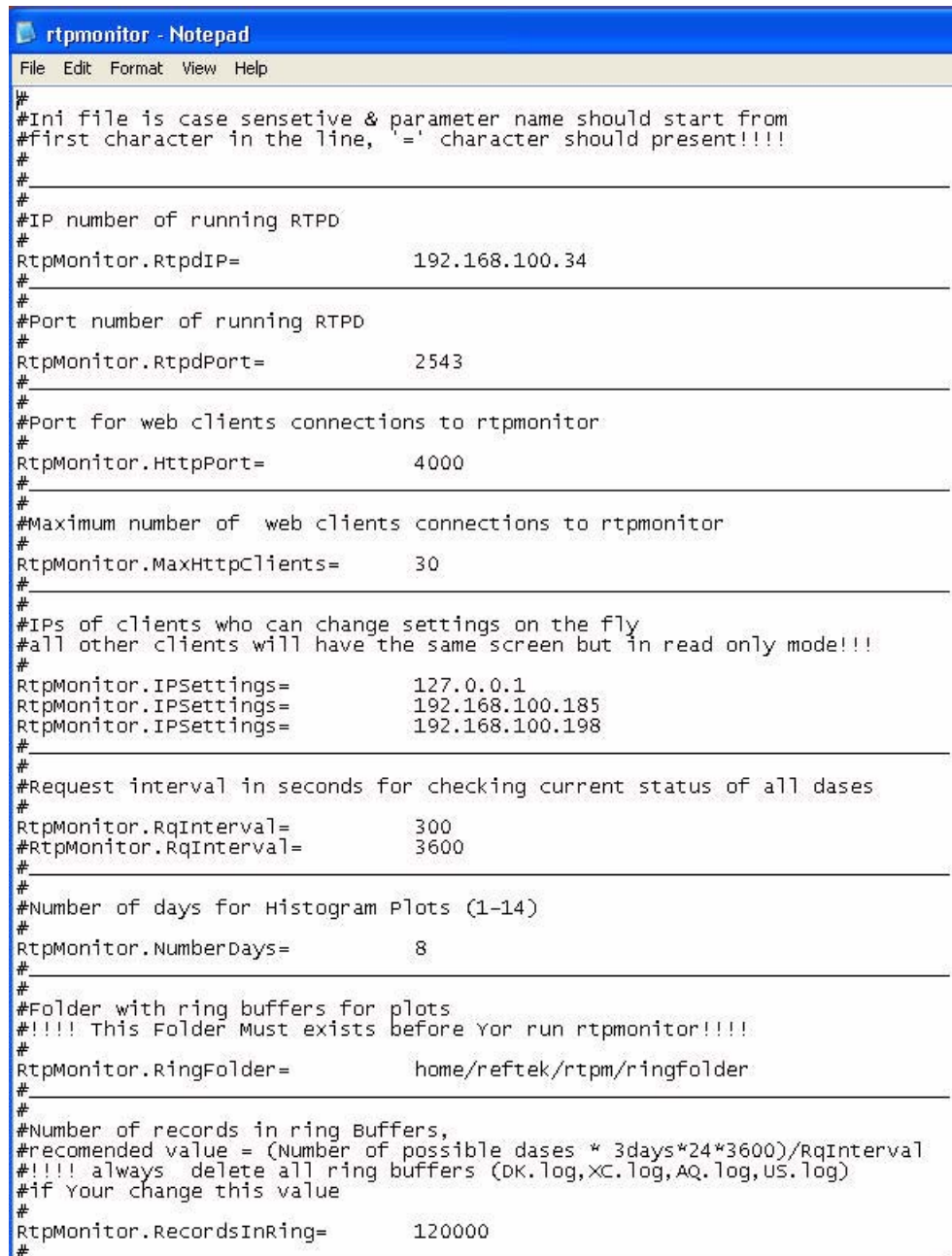
```
Example=(20 possible DASEs *3 days*24*3600)/300 = 17280  
RtpMonitor.RecordsInRing=20000
```

11. The following file will contain the station coordinates for all the stations.

```
RtpMonitor.StationFile=home/reftek/rtpm/stations.dat
```

**All fields below this area are editable through the html settings page. So, it is recommended to edit these parameters through the Settings html page when connected to RTPMonitor.**

### 3.5.1 Example *rtpmonitor.ini* file



```

rtpmonitor - Notepad
File Edit Format View Help
#
#ini file is case sensitive & parameter name should start from
#first character in the line, '=' character should present!!!!
#
#
#IP number of running RTPD
#
RtpMonitor.RtpdIP=          192.168.100.34
#
#
#Port number of running RTPD
#
RtpMonitor.RtpdPort=        2543
#
#
#Port for web clients connections to rtpmonitor
#
RtpMonitor.HttpPort=        4000
#
#
#Maximum number of web clients connections to rtpmonitor
#
RtpMonitor.MaxHttpClient=   30
#
#
#IPs of clients who can change settings on the fly
#all other clients will have the same screen but in read only mode!!!
#
RtpMonitor.IPSettings=      127.0.0.1
RtpMonitor.IPSettings=      192.168.100.185
RtpMonitor.IPSettings=      192.168.100.198
#
#
#Request interval in seconds for checking current status of all dases
#
RtpMonitor.RqInterval=      300
#RtpMonitor.RqInterval=      3600
#
#
#Number of days for Histogram Plots (1-14)
#
RtpMonitor.NumberDays=      8
#
#
#Folder with ring buffers for plots
#!!!! This Folder Must exists before you run rtpmonitor!!!!
#
RtpMonitor.RingFolder=      home/reftek/rtpm/ringfolder
#
#
#Number of records in ring Buffers,
#recomended value = (Number of possible dases * 3days*24*3600)/RqInterval
#!!!! always delete all ring buffers (DK.log,XC.log,AQ.log,US.log)
#if you change this value
#
RtpMonitor.RecordsInRing=    120000
#

```

Figure 3 - 1 rtpmonitor.ini file

```

rtpmonitor - Notepad
File Edit Format View Help
#
RtpMonitor.RecordsInRing=      120000
#
#
#file wich contains station coordinats
#(!!!!at least the folder must exists!!!)
#
RtpMonitor.StationFile=      home/reftek/rtpm/stations.dat
#
#
#Map image parameters delemeted by comma without spaces:
#HorisontalImageSize(pixels),VerticalImageSize(pixels),
#Central Latitude of Image(degrees),Central Longitude of Image(degrees),
#Map Scale(Number of kilometers in one pixel),
#Map view rotation angle(degrees),Map Mode(0-fine,1-good,2-draft)
RtpMonitor.MapParameters=      800,500,30,-97,5,0,0
#
#
#Input Power Red Yellow values valid interval 0-20 V !!!!Y>R
#
RtpMonitor.InputPowerYellowRed= 11,10
#
#
#Backup Power interval 0-3.3 V !!!!Y>R
#
RtpMonitor.BackupPowerYellowRed=2.8,2.3
#
#
#Ram Used interval 0-100!!!!Y<R
#
RtpMonitor.RamUsedYellowRed=    60,80
#
#
#Disk1 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk1UsedYellowRed=  60,80
#
#
#Disk2 Used interval 0-100!!!!Y<R
#
RtpMonitor.Disk2UsedYellowRed=  60,80
#
#
#Das not responding interval in Requestq Interval steps !!!!Y<R
#
RtpMonitor.DelayYellowRed=      2,4
#
#
#Gps not respondingunlocked interval in hours values !!!!Y<R
#
RtpMonitor.GpsLastLockYellowRed=0.5,1
#
#
#Gps error - difference between das location in station file
#& average location from gps in meters !!!!Y<R
RtpMonitor.LocationYellowRed=   100,200
#
#Starting html page 0-Mapview 1-ListView
RtpMonitor.DefaultPage=0
#

```

Figure 3 - 2 rtpmonitor.ini file

## 3.6 Solaris RTPM from command prompt

To run RTPM from a command prompt:

1. Open a terminal window in the **/home/reftek/rtpm** directory.
2. At the command line type **rtpmonitor** and <CR>.
3. Minimize the command prompt.
4. Open a web browser and enter the IP address of the computer where your running RTPMonitor.

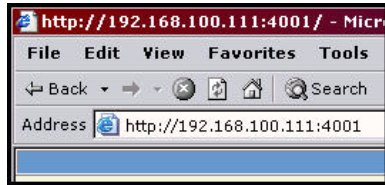


Figure 3 - 3 Web browser process





## Section 4 RTPMonitor operation

### 4.1 Map View screen

The RTPMonitor map screen displays a map of unit locations on a map and their current status (Red, Green, and Yellow).

1. To check status of an individual DAS click the DAS Station Name.

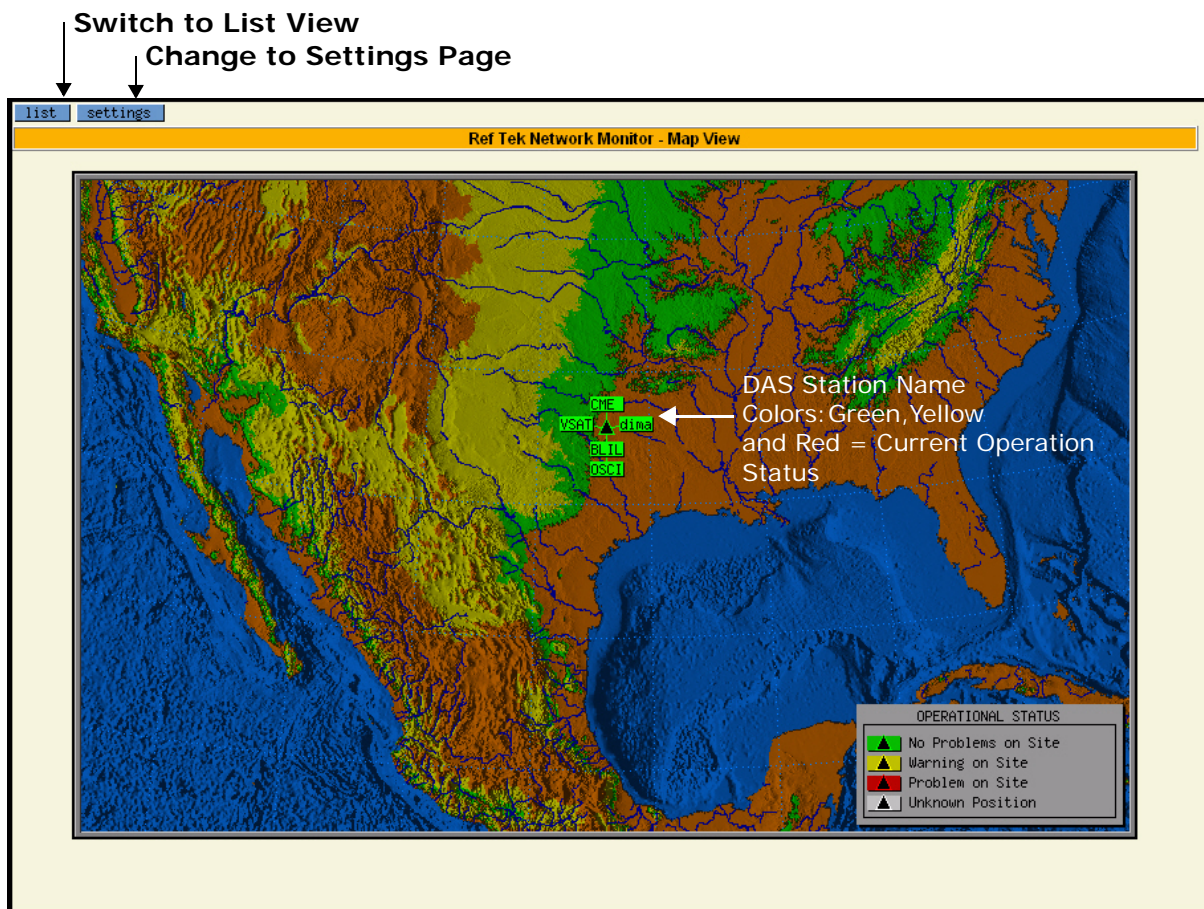


Figure 4 - 1 RTPMonitor Map View

### 4.1.1 RTPMonitor List View screen

The RTPMonitor List View screen shows the status summary of each DAS. By selecting the bold letters in each status column it is possible to select and view a histogram for each particular status. The histogram includes the previous 72 hours worth of status for a particular DAS.

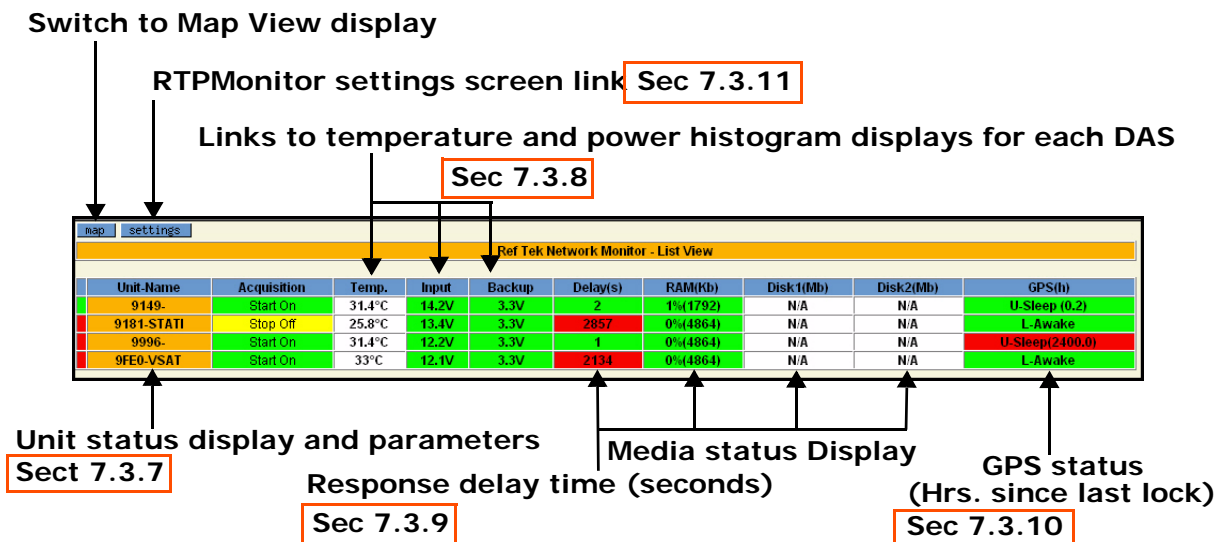


Figure 4 - 2 RTPMonitor List View page



## 4.1.2 Unit Status screen

The **Unit Status** screen shows an updated status report of settings for individual DAS units. Selecting the bold **Stream** field will display data stream trigger information.

maplistsettings

Ref Tek Network Monitor-DAS UNIT#9149

Unit-Name	Acquisition	Temp.	Input	Backup	Delay(s)	RAM(Kb)	Disk1(Mb)	Disk2(Mb)	GPS(h)
9149-	Start On	31.4°C	14.2V	3.3V	1	1% (1792)	N/A	N/A	U-Sleep (0.3)

Status Information (SS)

Experiment Number	Experiment Name	Station Number	Station Name	Latitude	Longitude	Altitude	Ph.Error(Sec.)
0		0		32.8662	-96.8879	109	-0.000002

CPU Version	Board Number	Board Revision	Board Acronym	Board Serial Number	FPGA Board Number	FPGA Minimum brd.rev.	FPGA Version
gar012	520	B	LID	149	0		
gar012	506	C	CPU	325	506	A	C03
gar012	505	D	ATD	535	505	A	E02
gar012	505	D	ATD	644	505	A	E02

Network Parameters (PN)

Port Number	IP Address	Device Power	IP Mask	RTPD	Gateway	Line Down	Line Mode	Port Speed	Toss Delay
Ethernet	192.168.100.047	P	255.255.255.000	192.168.100.034	192.168.100.001	T	D	9600	20
Serial PPP	000.000.000.000		000.000.000.000	000.000.000.000	000.000.000.000	K	A	9600	0

Channel Parameters (PC)

Channel	Name	Azimuth	Incline	Latitude	Longitude	Altitude	Gain	Model	Serial N
1	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN
2	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN
3	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN
4	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN
5	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN
6	NEW_CH	0	0	0	0	0	1	UNKNOWN	UNKNOWN

Data Stream Parameters (PD)

Stream	Stream Name	Recording Destination	Channels	Sample Rate	Data Format	Trigger Type
1	NEW_STREAM	Ethernet	1,2,3,4,5,6	200	CO	CON

Stream

Figure 4 - 3 Status information screen

Ref Tek Network Monitor-DAS UNIT#9149 STREAM#1	
Continuous Trigger Description (CON)	
Description	Value
Record Length	3600
First Trigger Time	2001001000000

Figure 4 - 4 Stream information screen

### 4.1.3 Temperature, Input and backup power displays

This DAS unit status screen displays views showing Backup power level (Volts), Temperature (C°) and Input power (Volts) to the DAS over a time period (in hours).

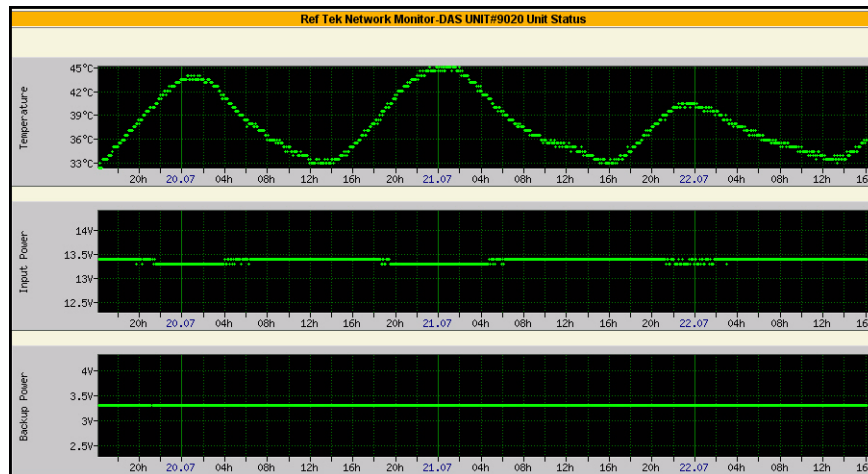


Figure 4 - 5 Unit status of temperature, power

#### 4.1.4 Media status displays and Response Intervals

The media status displays shows the response interval (in seconds), amount of RAM used (as a % of total), and amount of disk space used over a 72 hour time period.

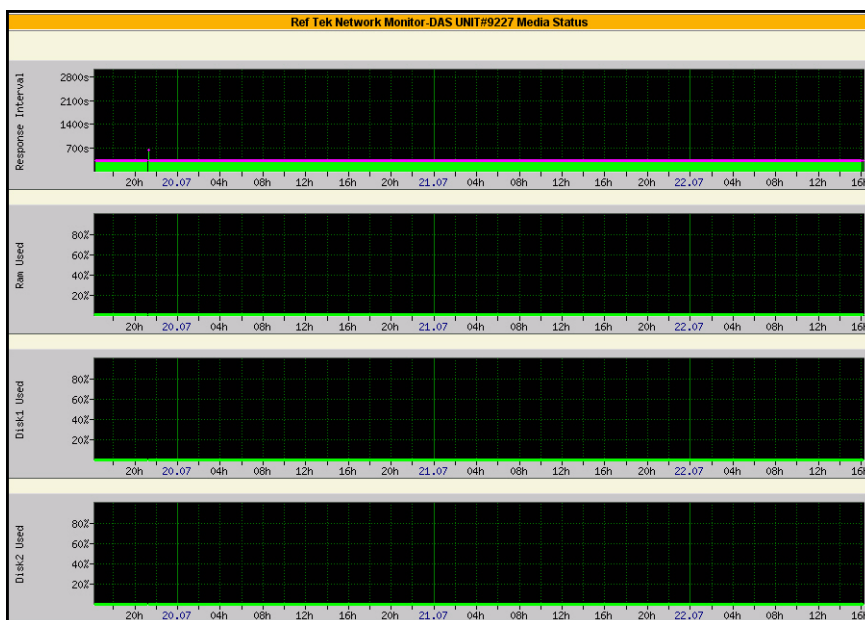


Figure 4 - 6 Media status

### 4.1.5 GPS Status displays

The GPS status displays GPS parameters over a time period. The first figure (Figure 4 - 7) shows the Altitude, Longitude and Latitude of the GPS Unit for the individual DAS over a number of hours.

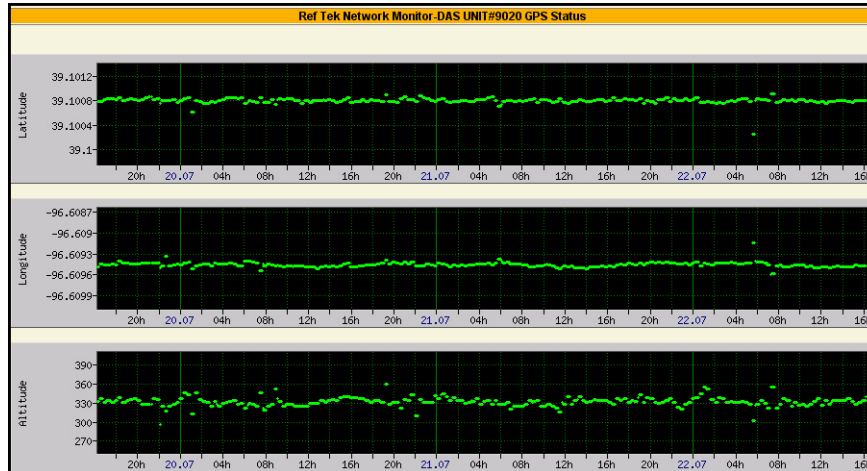


Figure 4 - 7 GPS display part #1

The second figure (Figure 4 - 8) shows Last Lock, number of tracked satellites and phase errors for the same GPS unit of the DAS during the same period of time.

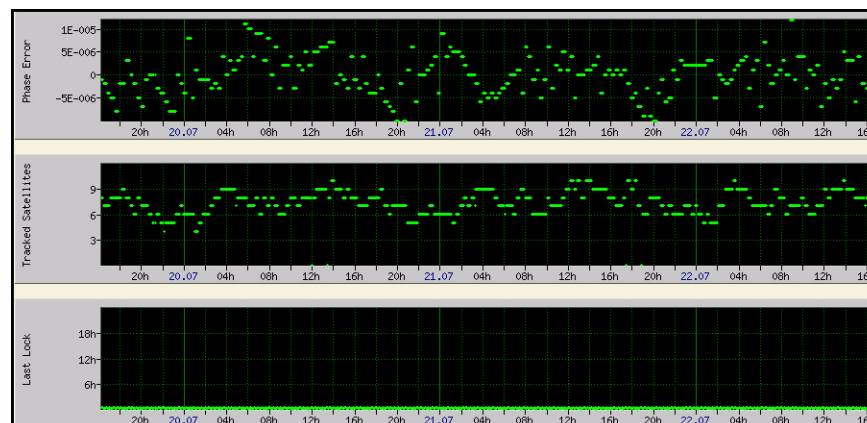


Figure 4 - 8 GPS display part #2

## 4.1.6 Settings Screen of RTPMonitor

The **Settings Screen** allows the user to set the Green, Yellow, and Red limits to use. Also provided are map image parameters settings to adjust the RTPMonitor Map View display.

### Setting the Alarms from the Map View, List View, or Unit displays

1. Click on the **Settings** button in the upper-left hand corner of the web browser window.

The top section of the settings screen is known as the Alarm settings section. These settings control at which point RTPMonitor will switch each DAS units status indicator between Green, Yellow, and Red.

**Parameter type**

Parameters	Yellow Value	Red Value	Units
Input Voltage	11	10	Volts (0.0-20.0)
Backup Voltage	2.8	2.3	Volts (0.0-3.3)
Delay (N)	2	4	N*RQ_interval(0.0-10.0)
RAM used	60	80	% (0-100)
DISK1 used	60	80	% (0-100)
DISK2 used	60	80	% (0-100)
GPS LastLock	0.5	1	Hours (0.0-24.0)
Location Error	100	200	Meters (0-1000)

Submit Alarm Settings **Submit Alarm Settings Button**

Figure 4 - 9 Alarms settings section

Key	Field	Alarm Settings Description
1	Yellow	The point at which RTPMonitor will change its color indicator from Green to Yellow. Note the column on the far right is the units column which also provides the acceptable value ranges for each parameter.
2	Red	The point at which RTPMonitor will change it's color indicator from Yellow to Red.
3	Input Voltage	When the DAS value falls below these values the status indicator color is changed.
4	Backup Voltage	When the DAS value falls below these values the status indicator color is changed.
5	Delay (N)	When the DAS does not respond for N times the request interval (seconds) the status indicator color is changed.
6	RAM Used	When the DAS value rises above these values (0-100% integer) the status indicator color is changed.
7	Disk 1 Used	When the DAS value rises above these values (0-100% integer) the status indicator color is changed.
8	Disk 2 Used	When the DAS value rises above these values (0-100% integer) the status indicator color is changed.
9	GPS Last-Lock	When the DAS time since last GPS lock rises above these values the status indicator color is changed (Specified in hours, with 1 decimal place of resolution).
10	Location Error	When the DAS units reported GPS position error rises above these values the status indicator color is changed (0-1000 Meters). As compared to the value stored in the Station Locations list below.

**Note:** These values will only be saved to the .ini file if the computer you are using is listed in the .ini as having permission to change these values. See the example ini file in each installation section.

### 4.1.7 To enter limits

1. Set a **Yellow** limit value for each DAS parameter field, as shown below. When this value is exceeded that field will change to **Yellow** on the Map View display.
2. Set the **Red** limit value for each DAS parameter field, as shown below. When this value is exceeded that field will change to **Red** on the main monitor display.
3. Select the **Submit Alarm Settings** to saved the limits
4. Enter the GPS latitude, longitude and altitude for each DAS Unit GPS and select the submit button to load the STA location. This value is the baseline for comparison to the GPS clock.

Yellow Limit value      Red Limit Value

Ref Tek Network Monitor - Settings

Parameters	Yellow Value	Red Value	Units
Input Voltage	11	10	Volts (0.0-20.0)
Backup Voltage	2.8	2.3	Volts (0.0-3.3)
Delay (N)	2	4	NTRQ_interval(0.0-10.0)
RAM used	60	80	% (0-100)
DISK1 used	60	80	% (0-100)
DISK2 used	60	80	% (0-100)
GPS LastLock	0.5	1	Hours (0.0-24.0)
Location Error	100	200	Meters (0-1000)

**Stations Location**

DAS UNIT	Error (m)	GPS Latitude	GPS Longitude	GPS Altitude	Submit	STA Location
9149	459684.7	32.866137	-96.887913	111.666666	->	37.000000 -97.000000 113.888889
9181	21.4	32.866123	-96.887907	118.225806	->	32.866120 -96.887878 97.000000
9996	9521344.6	0.000000	0.000000	0.000000	->	33.000000 -98.000000 130.000000
9FE0	296123.3	32.866135	-96.887908	115.935896	->	34.000000 -94.000000 115.818180

Map Image Parameters

Map Image Horizontal size in pixels

800

Map Image Vertical size in pixels

500

Central Latitude of Image in degrees

30

Central Longitude of Image in degrees

-97

Map Scale (kilometers in one pixel)

5

Map view rotation angle in degrees

0

Draw map mode

Fine

StartUp Page

Map View

Figure 4 - 10 Settings display

## 4.1.8 To set Station Location

RTPMonitor uses the station location values submitted by the user to calculate the location error. The location error is the difference in location that the GPS is reporting to the DAS. The user stored Station Location is used by RTPMonitor for plotting the DAS location in the Map View.



**Note:** If the user does not submit locations for a particular DAS, then that DAS will report a location error and be in the "Red" warning condition.

**Note:** Station locations are stored in the station location file that is specified in the rtpmonitor.ini file in the following line:

```
RtpMonitor.StationFile= C:\reftek\rtpmonitor\stations.dat
```

1. Enter a value for each field of a DAS location.
2. Select the **Submit** arrow after each complete line is entered.

DAS UNIT	Error (m)	GPS Latitude	GPS Longitude	GPS Altitude	Submit	STA Location
9020	6371330.7	39.100778	-96.609454	330.722198	->	0.000000 0.000000 0.000000
9227	6362713.4	41.909954	-71.574006	-8286.622338	->	0.000000 0.000000 0.000000
9229	6371000.0	0.000000	0.000000	0.000000	->	0.000000 0.000000 0.000000
922E	6371044.5	42.384798	-71.321730	44.541827	->	0.000000 0.000000 0.000000
922F	6371139.0	43.704769	-72.284538	138.981115	->	0.000000 0.000000 0.000000
9230	6373001.4	43.622532	-110.628146	2001.383564	->	0.000000 0.000000 0.000000
9231	6372689.5	43.538652	-110.743451	1689.516775	->	0.000000 0.000000 0.000000
9233	5609258.4	37.456813	-55.558172	-761741.6300	->	0.000000 0.000000 0.000000
928B	6373031.7	43.360970	-110.852324	2031.669308	->	0.000000 0.000000 0.000000

Figure 4 - 11 Stations Location

Key	Field	Station Field Description
1	DAS UNIT	DAS ID
2	Error (m)	Currently calculated error
3	GPS Latitude	Per GPS status - User editable
4	GPS Longitude	Per GPS status - User editable
5	GPS Altitude	Per GPS status - User editable
6	Submit	Stores values from Lat, Long, and Alt fields for each DAS to the Station Location file.
7	STA Location	Currently stored location values.



**Note:** If not sighted, use the GPS position from the station submit, and monitor over time.

4.1.9 To enter Map Image parameters

The parameters from this section of the Settings display control the Map image size, level of zoom, and the default startup page display.

- 1. Enter map value to set the screen display for the RTPMonitor Map View screen.
- 2. Select the Submit Map Parameters button to confirm the settings.

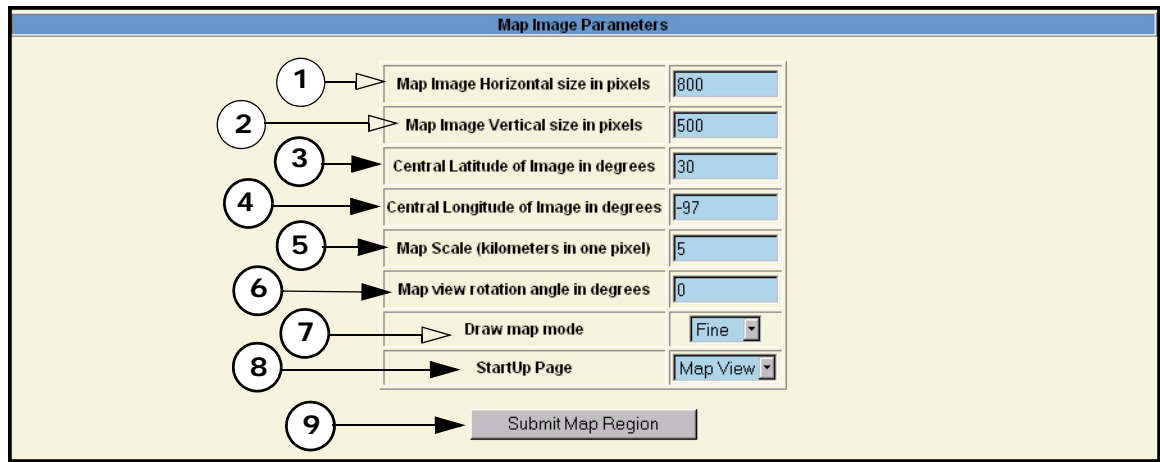


Figure 4 - 12 Map Image parameters

Key	Map Image Parameter	Map Image Description
1	Map image horizontal size in pixels	Horizontal size for the map.png image file
2	Map image vertical size in pixels	Vertical size for the map.png image file
3	Central latitude of image in degrees	Controls the center point of the map region
4	Central longitude of image in degrees	Controls the center point of the map region
5	Map scale - kilometers in one pixel	Controls the size of the region that the map displays.
6	Map view rotation angle in degrees	Rotation angle of the map image
7	Draw map mode	Options are Fine, Good, and Draft. These affect quality and size of the map.png file.
8	Startup page	Options are List View or Map View. This controls the default page that the user will see when first connecting their Web browser to the RTPMonitor server.
9	Submit Map Region	Button stores the parameters for the Map Image to the rtppmonitor.ini file.