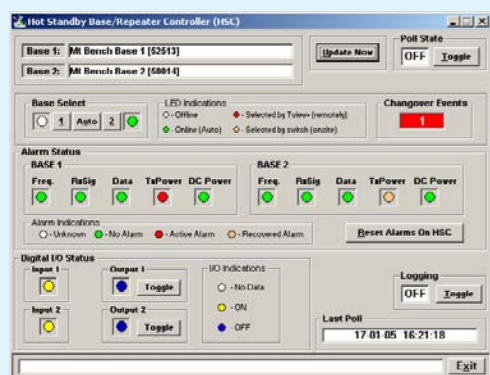


## Hot Standby Base/Repeater Controller (HSC)

The E Series range of Hot Standby Repeater controllers and base stations implement a specific set of features and controls that can be accessed via TView+ diagnostics.

When this option is selected (via Tools -> Hot Standby Base/Repeater Controller)



Select the Hot Standby Controller you wish to access using the drop down selection box.

### Update Now

Pressing this button will immediately initiate a status poll sequence and on successful receipt of a status poll the display will update.

### Poll State Toggle Button

- Switches automatic status polling ON or OFF. The poll rate is set via the Setup -> Poll Settings menu item.
- The poll rate is dependent on the number of HSC windows that are actively polling.

### Base Select

This indicates the online status of each unit.

LED colour	Switch Select State
<b>Off</b>	Channel not selected (Offline)
<b>Green</b>	Online (Automatic). Automatic changeovers will be actioned by the HSC in response to alarm conditions.
<b>Green Blinking</b>	Change Over Pending. Waiting for one minute time-out period before switching to offline base.
<b>Red</b>	Selected by TView (Remotely). Auto changeovers will not occur.
<b>Amber</b>	Selected by Switch on HSC (On Site). Auto changeovers will not occur.

Providing either of the bases is not forced online by the switch, the user can force either of the bases online remotely by pressing Base Select button 1 or 2. The user can revert back to Automatic mode by clicking on the Base Select Auto button.

If the user attempts to switch bases within one minute of a base changeover event, the change pending indication will appear (i.e. Online Unit LED Blinking Green). The user should then wait until the change over event occurs.

### Change Over Events

This is a counter which indicates the number of automatic change over events initiated by the HSC due to alarm conditions.

### Alarm Status

The current alarm status (since the last alarm status poll) for the attached Base units is displayed below.

LED colour	Error Status
Off	Unknown. The test hasn't been performed.
Green	No Alarm. Tests passed.
Red	Active Alarm. Test failed
Amber	Recovered Alarm. Test failed previously but has since recovered.

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# Quick Start Guide TView+ Diagnostics

## Introduction

Welcome to the Quick Start Guide for the TView+ Diagnostics software. This guide provides step-by-step instructions, with simple explanations to get you up-and-running. For more detailed information, please refer to the **TView+ Diagnostics User Manual**.

TView+ Diagnostics is for use in conjunction with the D, E, M, K & J Series Data Radio Modems. The diagnostic facilities allow retrieval of critical radio parameters from each radio modem.

## Overview

The TView+ Diagnostics software is a Windows® based program, that can be run on a standard desktop or lap top PC.

The TView+ Diagnostics software can be installed as part of the TView+ software suite (which includes the E, M & K series programmers) or from the stand alone package (zip file) which can be downloaded from the support section of the Trio Datacom website.

## Installation (TView+ Suite)

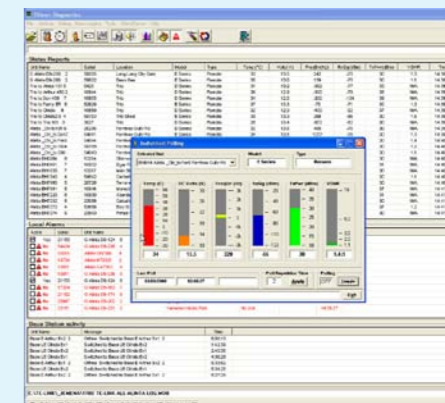
*Note: If a previous version of the TVIEW+ Management Suite has been installed on your PC, you must uninstall it via Control Panel "Add/Remove Programs".*

- Close down all other programs currently running.
- Place the CD-ROM in the drive on the PC.
- Using Windows Explorer locate the files on the CD-ROM.
- In Windows Explorer double click on the file called TView+ManagementSuite\_Rxxx\_Installer.exe
- After the installer starts follow the directions.

Note : For stand alone installation details consult the TView Diagnostics User Manual.

## TView+ Management Suite

When started the TView+ management suite will be presented (as shown below). TView+ Diagnostics is started by clicking on the Diagnostics button.



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## Support Options

### E-mail Technical Support

When e-mailing questions to our support staff, make sure you tell us the exact model number (and serial number if possible) of the TRIO Datacom equipment you are working with. Include as much detail as possible about the situation, and any tests that you have done which may help us to better understand the issue. If possible, please include your telephone contact information should we wish to further clarify any issues.

### Contact Details

www.triodatacom.com  
The TRIO Datacom web site has links to e-mail and telephone support, technical notes, manuals, software updates.

Service Department  
The Service department may be contacted by e-mail to support@triodatacom.com

Head Office  
41 Aster Avenue, Carrum Downs  
Victoria, 3201, Australia.  
Tel: +61 3 8773 0100  
Fax +61 3 9775 0606  
support@triodatacom.com

North America  
48 Steacie Drive, Kanata,  
ON Canada K2K 2A9  
Tel: (613) 287-0786  
Fax: (613) 591-1022  
Toll Free within North America: (866) 844-8746  
support-na@triodatacom.com

Europe  
Delftse Jaagpad 1B, 2324AA  
Leiden, The Netherlands  
Tel: +31 71 579 1650  
Fax: +31 71 532 4539  
support-eu@triodatacom.com



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## Introduction (Polled Diagnostics)

This diagnostics process is based on a series of polls being transmitted to the remote radio modem with each having its own unique assigned address (based on the serial number, which is factory preset).

When a diagnostic poll is received by a radio modem it checks to see if the poll is addressed to itself and, if so, it responds with its diagnostic data (addressed to the TView + diagnostics software controller address).

## Introduction (Automatic Diagnostics) E, M & K Series Only

Automatic diagnostics is a feature of the E, M & K Series radio modem products. It allows the monitoring of radios in a network without the need to generate a poll.

The data returned in automatic diagnostics is fixed and includes 5 standard radio parameters.

Automatic diagnostics is useful in situations where polled diagnostics could interfere with user data transfer and cause collisions. For more details consult Technical Note TN-67 or the E, M & K Series user manuals (all these documents can be downloaded from the Support section of our website).

## Step 1 - Create/Open a Database

To utilise the diagnostics facilities, a database must be created which includes the individual serial numbers, alarm thresholds and various other parameters of each radio modem (this applies to both polled and automatic diagnostics).

*Note: Some options are specific to various models only.*

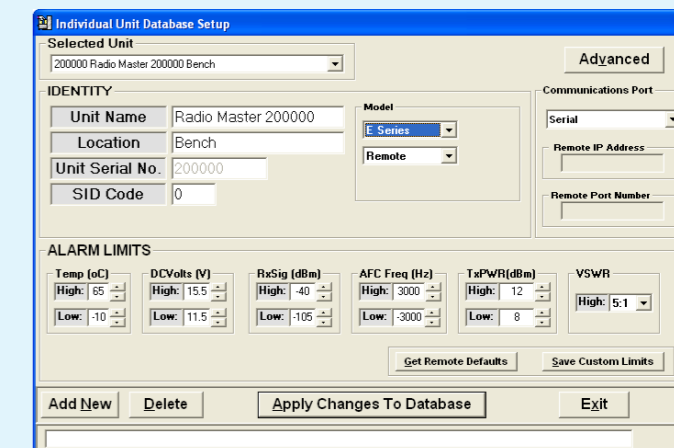
Create a a database using the menu option **File -> New** or open an existing database using **File->Open**.

## Step 2 - Add radio to Database

Add any radios you wish to monitor with TView+ diagnostics software to the database using the **File -> Add/Edit/Delete** option. To add a new radio click on **Add New** button.

Enter the appropriate :

- Unit Name & Location
- Unit Serial Number



Select the appropriate :

- radio **Model** and **Type**
- **Communications Port** mode (serial or eDiags)

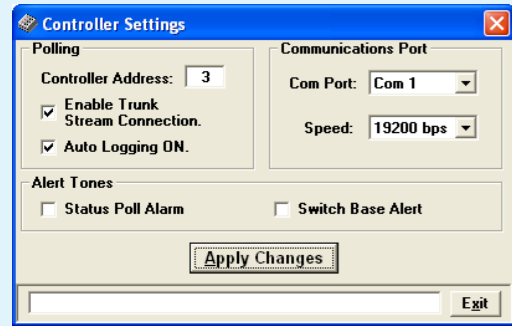
Adjust the alarm limits to suit the individual settings for each radio. All other default settings should be suitable for most applications. For a detailed explanation of configuration items please refer to the TView+ Diagnostics User Manual.

*Note : For Hot Standby Systems, both Base Stations that are used as part of the Hot Standby must be "paired" together. A drop down box will be displayed for Hot Standby Base pairing when more than one Base Station is entered into the database. Only the two EB Base Stations that go together to make an EH are entered into the database*

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### Step 3 - Check Controller settings.

The TView+ diagnostics controller has several settings which must be configured to be compatible with the radio which is connected to the computer running diagnostics.



**Controller Address:** This is the unique address of the TView+ Diagnostics controller on the network. If you are running multiple copies of the TView+ Diagnostics controller you must ensure each installation has a unique Controller Address. This address is important when using Automatic Diagnostics. Allowed range is 1-255.

**Enable Trunk Stream Connection:** This option is ticked only if a "trunked" port on the radio modem has been configured or Tview+ diagnostics is connected via a "System Port" on E, M or K series units.

**Com Port:** This drop down box shows the available COM ports. Select the port you have connected to the radio.

#### Typical Diagnostics Port Settings:

The following products are shipped from the factory with these default settings for diagnostics access :

D Series Radio :

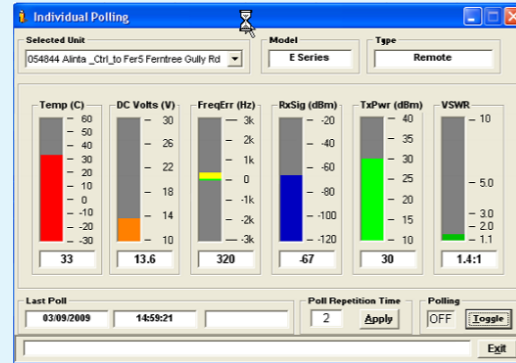
Port B : 9600 bps - Enable Trunk Stream OFF

E, M & K Series Radio :

Systems Port : 19,200 bps - Enable Trunk Stream ON

### Step 4 - Individual Polling

Connect the PC (running TView+ Diagnostics) to the appropriate port on the radio (consult the E,M or K Series Quick Start Guide for details on radio connections).



To view the diagnostics parameters of a specific radio, open the Individual Polling screen by selecting "Polling->Individual Polling".

Select the unit you wish to view by using the drop down "Select Unit" entry.

After the unit has been selected, turn on polling by clicking on the "Polling" button. The Polling indicator should show "ON" as the status. The status bars should update as shown in the example above.

This completes the basic setup and configuration required for TView+ diagnostics. Refer to page 4 for details on how to use some of the advanced features.

### Viewing Trends

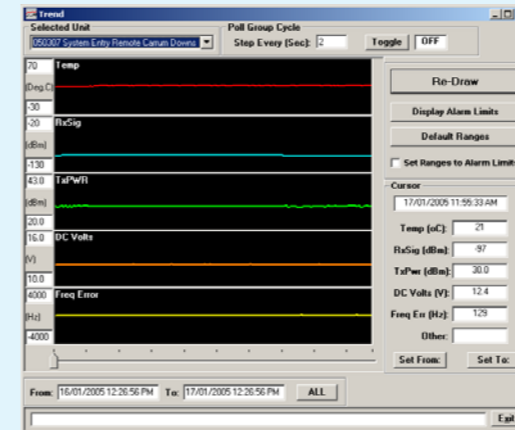
The logged status poll data can be viewed in graph format, which allows viewing of status trends over selectable time spans. This provides a very effective method of analysing a units' operating parameters over time.

Select "View Trend" under the Data Logging menu item or click the associated tool bar button.

Features available include:

- Scaling of graph(s).
- View individual poll results using the cursor.
- Automatically scroll through the group poll database, unit by unit at a selectable time interval.
- No Acknowledge messages are displayed by a gap in the graphed data and a "NoAck" in other on the Time Line.

The line above Status Polls is a "Processing Status Bar". It will display messages about errors, warnings and poll processing.



### Vertical Scale Setting

- Manually set the vertical scales by typing in the new level(s), then either press "Enter" or click on the "Re Draw" button, or select a new unit.
- Click the "Default Ranges" button to set all the vertical scales back to the default levels.
- Click the "Set Ranges to Alarm Limits" button to set the vertical scale limits to the selected unit alarm limits.

#### From: & To: Fields

These fields determine the time span you wish to view. For example, if you have collected several months of data, and only wish to view a 24 hour period, then adjust the From: and To: fields accordingly.

When the Trending window first appears, the From: and To: fields will contain the last 24 hours of data.

If "ALL" is selected it will display the start and end dates of the database.

*Note: The smaller the time span you select, the faster the database search and draw. This will also depend on the poll rate that was used during that time span.*

Use the ALL button to set the From: and To: fields to the maximum and minimum dates found in the data in the database.

#### Poll Group Cycle

When toggled ON, this will step through each radio in the poll group and display the trend graph. Set the step interval in the "Step Every (Sec)" field. Default = 2 seconds

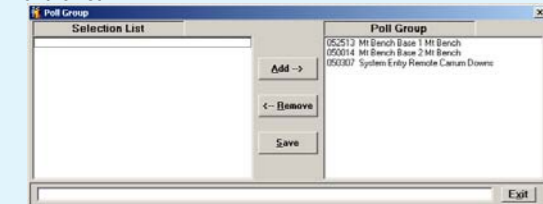
**Cursor:** Use the slider control, found at the bottom of the display to move the cursor. The cursor box displays the parameter data of the status poll at the current cursor position.

Use the "Set From" button to set the From: field to the current cursor position.

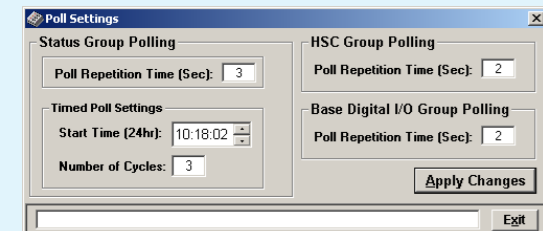
Use the "Set To" button to set the To: field to the current cursor position.

### Group Polling

In Group Polling mode, all radios that are part of the Poll Group (See Settings -> Poll Group select) are polled in succession. When diagnostics reaches the last radio in the poll group it returns to the top of the list.



Results are displayed in the "Status Polls" window along with the Unit Name and time of the poll. Group Polling is started by selecting the "Polling -> Group Polling" option. This menu allows the configuration of items related to polling.



#### Poll Repetition Time

Is the time in seconds (2 to 3600 secs) between each status poll of the group poll cycle. Each unit in the poll group will be polled in turn, at this time interval.

#### Timed Polling

Allows the user to schedule a period when the group poll will commence.

This is a useful feature for systems that have times of minimal traffic loading such as the early hours of the morning.

#### Start Time

The time at which the Timed poll cycle will commence. The time format will be as per the regional settings of the operating system.

#### Number of Cycles

This is the number of times the controller will cycle through the poll group when the Timed Group poll commences. Each unit in the poll group will be polled this number of times.

#### HSC Group Polling (HSC Only)

This is the time in seconds (2-3600) between consecutive polls for each Hot Standby Controller status display. Diagnostics allows for up to 50 instances of the HSC status window. The poll repetition time is the time waited between each window. (i.e.: 3 HSC status windows with a time of 2 secs would take 6 seconds to complete an update on all three windows).

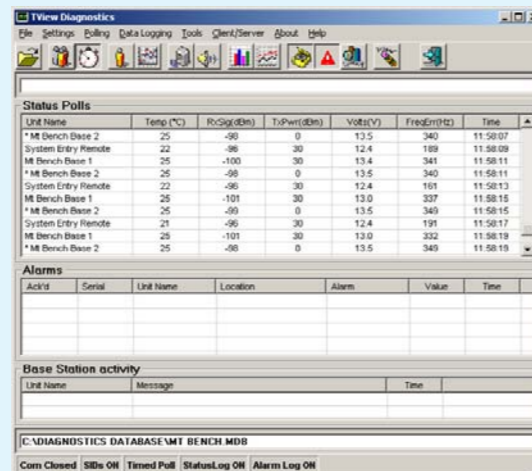
#### Base Digital I/O Polling (Base Only)

Is the time in seconds (2-3600) between consecutive polls for each base station digital I/O display. The timer behaves in the same way as the HSC group polling time.

#### Apply Changes

Applies and saves the changes made to configuration items in this menu.

For more detailed information consult the TView+ Diagnostics User Manual.



### Tools

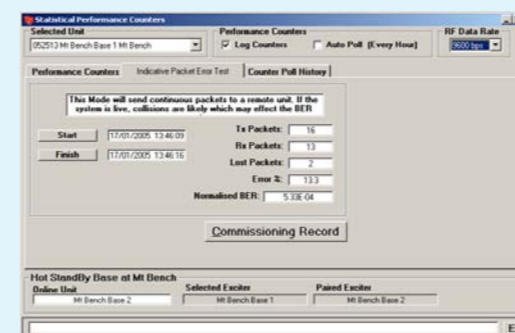
The tools menu provides useful system tools for trouble shooting and maintaining a radio network using TView diagnostics.

#### Statistical Performance

Under the statistical performance menu, three separate tools are provide.

#### Indicative Packet Error Testing

This tool provides a useful way to commission a radio modem communications link.



Indicative packet error testing works by sending a known packet of information to the selected unit and looking for a response. Each time a response is not heard the facility counts this as a lost packet. As soon as a response is heard from the remote unit, TView diagnostics sends another packet.

It is recommended that this test is done for at least 1000 packets in order to get a meaningful result that is statistically valid. Ensure no other data (such as SCADA) is being transmitted on the radio network during the test.

To use the indicative packet error test facility, choose the unit you wish to test by using the "Selected Unit" drop down box.

Click on the start button and the test will commence.

### Tx Packets

This indicates the number of packets TView+ diagnostics has transmitted to the remote unit.

### Rx Packets

This indicates the number of packets TView+ diagnostics has received from the remote unit.

### Lost Packets

This indicates the number of packets TView+ diagnostics has declared as lost.

### Error

This indicates the calculated Packet Error Rate in %. It is calculated from the ratio of Tx Packets to Rx Packets.

This indicates the normalised BER (Bit Error Rate) based on the number of bits per packet assuming only one bit was corrupted. It is only an estimate since two errored bits in one packet will only be counted as one errored bit.



### Commissioning Record

For system commissioning and future records it is recommended to print a commissioning record.

Before you print a record you are required to poll the radio for it's diagnostics parameters and preferably perform an indicative packet error test.

This print out should be kept in a safe place and will be useful for monitoring the performance of a site over time.