



VIEWER

**OPERATION
MANUAL**



TRILITHIC

The Best Thing on Cable



TRILITHIC

TRILITHIC, Inc., one of the fastest growing privately held companies in the U.S. (Inc. 500, #10), is a leading supplier of test equipment to the CATV industry. Through the years, we have introduced a range of products to make CATV maintenance simpler, faster and more precise. Our contributions include the first PRACTICAL CATV sweep system (1976), the first CATV return adjustment system (1981), the SEARCHER PLUS for leakage measurement (1989) and the SUPER PLUS for overbuilt leakage and ingress measurement (1994).

Among our most popular products is the TRICORDER series of CATV analyzers (led by the new TRICORDER III, the most versatile member of the popular TRICORDER family).

TRILITHIC is especially well known for its leakage products. More than 15,000 SEARCHER PLUSES are in daily use as well as the SUPER PLUS and SUPER CT measurement devices (which take leakage measurement into the new era of overbuilds and digital services).

In addition to developing instrumentation for the CATV industry, TRILITHIC produces RF and microwave components and equipment for aerospace and wireless communications, as well as computer controlled assemblies for automated test systems, headend automation and communications signal routing.

TRILITHIC products are designed and manufactured at our facility in Indianapolis, Indiana. These products are distributed by sales agents in over 40 countries.

Should you have any questions or need our service, please contact us at the address or telephone numbers below:

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INDEX

General Information

Introduction	3
System Requirements	3
Installation	4

Installation Procedures

Install Software	5
Troubleshoot the Installation	5
Download File Location	6
Administrative Password	6

Quick Overview

Introduction	7
Quick Setup	7
Features	9

Operation

Introduction	11
Setup Identification File	11
Local Selection	11
Identifier Tab	12
Communication Tab	15
Ethernet Interface Information	17
Alarm Level Tab	20
External Selection	25
Connect to Hub	25
Hub Data Specifics	25
Print Data	27
Message Display	28
Disconnect from Hub	28



GENERAL INFORMATION



Introduction

VieweR permits you to view sweep and ingress data from your 9580/9581 as it occurs. This enables you to select specific Hub and Node information which you may wish to view. You can then print a trace as it happens.

REMINDER: You can use VieweR to test the communications setup for each SST.

VieweR also utilizes alarm settings so that you can print the alarm traces once they have been triggered.

CAUTION: When you are using VieweR to scan an SST, **DO NOT** use the SST's front panel controls. This can cause inaccurate data gathering. If you wish to use your SST front panel, stop VieweR, use your SST and then cycle the power on your SST when you're finished to reset the unit. Once the SST is reset, you can re-start VieweR.

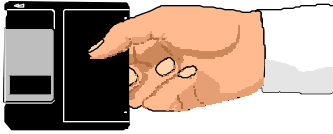
System Requirements

In order to run VieweR, you need an IBM®-compatible computer with the following options:

- Pentium II or III, 500 MHz
- 64 Meg of RAM
- 10 Meg of Hard Drive space for installation
- A Windows compatible mouse
- CD-ROM Drive

- Color VGA Monitor with a resolution of 800 x 600 (or greater) and 256 Colors (or greater), using small or large font size (small font only with 800 x 600). The Windows System color map determines the color of the message boxes which appear.
- Windows 98, Windows Millenium Edition, Windows NT 4 (service pack 3 or higher), or Windows 2000 (recommended)
- COMM MANAGER (ACM-8, or NCM-4) option for the 9580 SST or 9581 SST
- For NCM-4, EI-1 or SNMP support, Windows compatible Ethernet adapter with TCP/IP protocol installed
- For ACM-8, pager support, or direct connection, one or more available COM ports (maximum 8)
- External 56K modem (ACM-8 or pager) or ethernet interface or dark fiber interface for each ACM-8
- Programs needed to support ApplinkR
Microsoft Office '97
Excel '97
Access '97

VieweR is designed to work with the same setup you use for Windows 98. If your Windows setup works smoothly, you should have no difficulty running the software.



INSTALLATION PROCEDURES



Install Software

Now that you've checked the system requirements, you can install VieweR. VieweR is designed for PCs with Windows 98, Windows Millennium Edition, Windows NT 4 (service pack 3 or higher), or Windows 2000.

To install the software, use the following procedure:

1. Turn ON your PC and let Windows load.
2. Insert the disk into the CD-ROM drive. If autorun is enabled, Windows will detect and launch the VieweR setup wizard.

If autorun is not enabled, go to **START**, select **RUN...**, type in the CD-ROM drive designation (i.e. **d:**), *click* **BROWSE** and locate the file **Setup.exe** on the CD. You may also go to Windows Explorer and *click* on the VieweR **Setup.exe** file from the CD.
3. Windows displays a prompt indicating that you are about to install VieweR. *Click* **OK** to continue.
4. Depending on how your system is configured, it may be necessary to install additional Windows components. If such components are needed, *click* **OK** when the setup wizard prompts you. It may be necessary to reboot your PC during the components' installation. If so, the setup wizard will continue automatically after the computer restarts.
5. Once the necessary Windows components have been verified and/or installed, the setup wizard displays the WELCOME TO VIEWER WIZARD window.

6. *Click* the **NEXT** button to continue installing VieweR.

NOTE: You may cancel the installation at any time by *clicking* on the **CANCEL** button.

7. By default, the software is installed in the folder:
C:\Program Files\Ingress ManagR 3.X\VieweR

If you wish to change the installation folder, enter the new location in the FOLDER box or *click* on the **BROWSE** button to navigate to a new folder.

When the desired folder is identified in the FOLDER box, *click* **NEXT**.

8. A progress bar displays the installation as files are copied, components are registered, etc.

9. Once the setup wizard is finished, it displays a popup window that indicates that VieweR was installed successfully.

10. *Click* **CLOSE** to complete the installation.

NOTE: If you are prompted to reboot your computer, do so before you start VieweR to ensure that all of the components finished installation.

11. When you are ready to use VieweR, go to **START**, *click* **PROGRAMS** and then select **VIEWER**.

Troubleshoot the Installation

If you have difficulties installing VieweR, you will need to call Trilithic at (1-800-344-2412).



QUICK OVERVIEW



Introduction

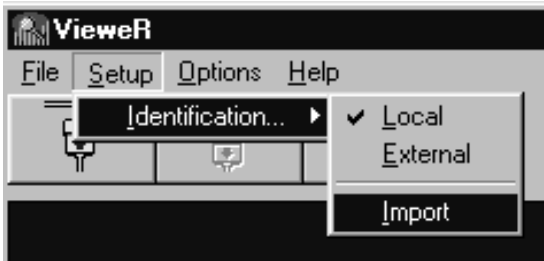
This section provides information regarding setting up VieweR and an overview of the program's features.

Quick Setup

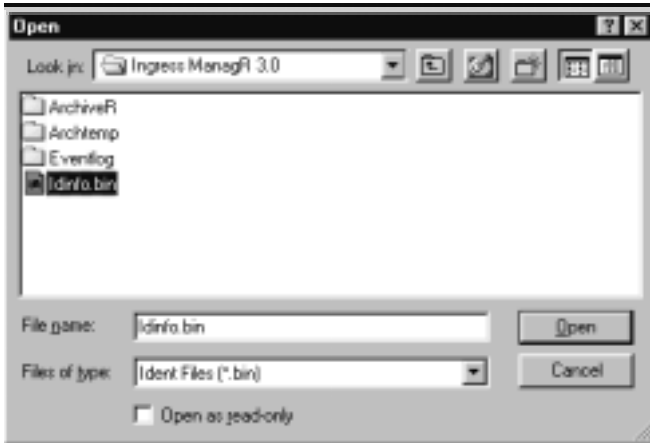
To start VieweR, go to the folder in which it is installed (i.e. TRILITHIC PROGRAM GROUP) and *click* on VieweR. Once the program's window opens, you will need to set up the identification file so that you can connect to the desired SST unit. The easiest way is to import an existing Identification file from Ingress ManagR. The IMPORT command brings in an identification file from Ingress ManagR which overwrites VieweR's local (see page 11) identification file. This file can then be edited as needed.

NOTE: If you are not using Ingress ManagR or, if you prefer to create different connection settings, you can build an identification file within VieweR (see *SETUP NEW IDENTIFICATION FILE*, page 11).

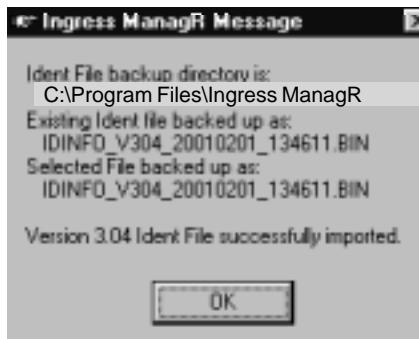
Go to the SETUP Menu and select IDENTIFICATION and then IMPORT.



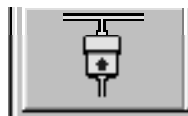
When the import window opens, LOOK IN the Ingress ManagR 3.X folder for the file, **Idinfo.bin**. Select the file so that it appears in the FILE NAME box and then *click* the **OPEN** button.



VieweR displays the IDENT FILE SUCCESSFULLY IMPORTED message. *Click* the **OK** button.

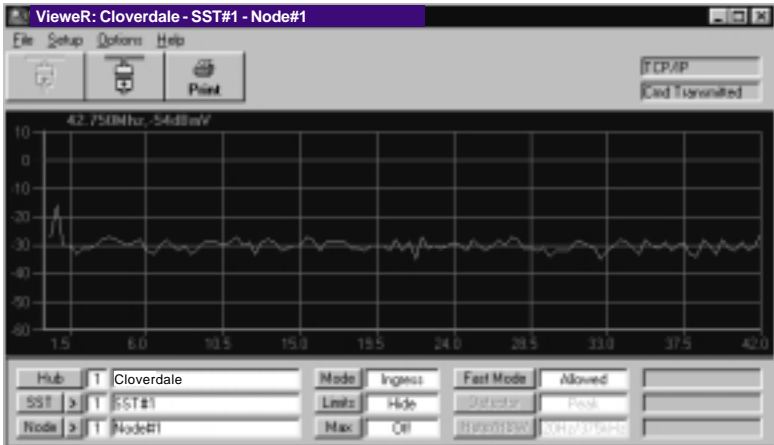


Once the IDENTIFICATION file has been imported, *click* on the **CONNECT TO HUB** icon to start VieweR.



Features

VieweR consists of several icons and windows.



In the center of the screen is the TRACE VIEW window. As you gather information, it appears in graphic format within this viewing area.

NOTE: If you wish to expand the size of the TRACE VIEW, *double-click* anywhere on the graph. To restore the graph to the original size, *double-click* on it again.

A floating cursor in the TRACE VIEW window displays the measurement for the current location of the cursor. Use this feature to identify the frequency and amplitude of a point on the trace.

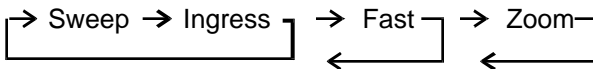
Below the TRACE VIEW window are the buttons which comprise the Hub Data Specifics. You can use these to select: the active Hub, SST and Node; Mode (ingress, sweep, fast, zoom); Limits; Maximum (peak hold); *toggle* between FAST MODE allowed or not allowed; Detector (traffic, peak, average); and the Rate/RBW.

NOTE: When you first connect to VieweR, the program will interrogate the 9580/9581 SST in order to match the Mode, Detector and Rate/RBW selections to the unit's capabilities and current operating mode.

When in VieweR, if one mode excludes another, the excluded mode's settings are grayed out to ensure that you don't select them by mistake.

REMINDER: Activating the fast mode takes the system off-line so that field technicians will be unable to use the selected SST for sweep (this is also true of ZOOM Mode). To prevent inadvertent interruption of the sweep function, you can disallow the FAST and ZOOM Modes (via the **FAST MODE** button) so they do not appear when using the **MODE** button.

NOTE: "Allowing" a mode does not activate the mode. You need to press the **MODE** key:



REMINDER: If your system is using the NCM-4 and you are not the designated MASTER user, you cannot select modes.

At the top of the VieweR screen are several icons. These include the Hub Command icons for connecting and disconnecting the communications link as well as the **PRINT** button.

You can customize your Ingress Scanning (for SSTs equipped with FAST or AVERAGING Mode) by changing the FAST Mode detector method and node sample rate/resolution bandwidth. In FAST Mode, the detector method can be either PEAK, TRAFFIC or AVERAGE. The node sample rate/resolution bandwidth can be either 20Hz/375kHz or 80Hz/525kHz.



4

OPERATION

Introduction

VieweR supports several actions.

REMINDER: You can use VieweR to test the communications setup for each SST.

VieweR also utilizes alarm settings so that you can print the alarm traces once they have been triggered.

CAUTION: In order to prevent VieweR from changing an SST's mode and possibly interfering with an Ingress ManagR Scan Strategy, you should use a non-Master password when accessing data via VieweR.

WARNING: When opening multiple copies of VieweR, you are limited in number to the available ports (NCM-4 provides for a maximum of six) left by Ingress ManagR usage. For example, if you are running a Scan Strategy and are already using LIVE MONITOR Mode, you can only open four windows of VieweR.

Setup Identification File

If you do not have an identification file already established via Ingress ManagerR to import (see *QUICK SETUP* page 7), or you prefer a new setup for VieweR, you will need to create an identification file before you can use the program.

LOCAL SELECTION

You may use VieweR's LOCAL setup selection to build a new identification file if you do not wish to use any parameters from an Ingress ManagR identification file.

When you select this command, VieweR displays an IDENTIFICATION form which includes:

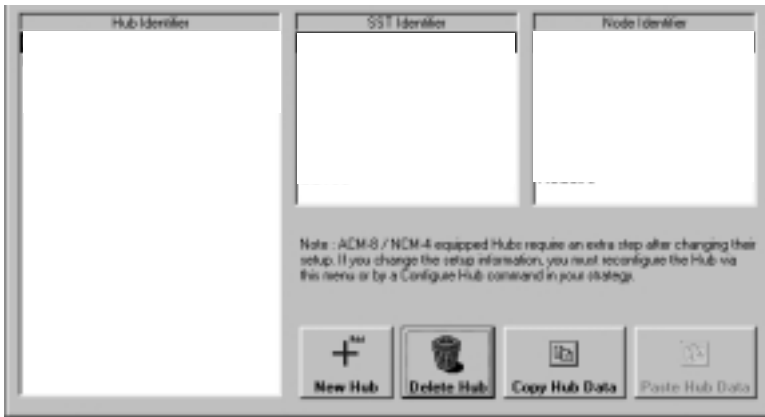
- IDENTIFIER Tab (page 12)
- COMMUNICATION Tab (page 15)
- ALARM LEVEL Tab (page 20)

To setup the LOCAL identification, go to the SETUP Menu, select IDENTIFICATION and then LOCAL.



Identifier Tab

Use the IDENTIFIER tab to create and/or delete the identification for a Hub or location where the 9580 SST or 9581 SST with the COMM MGR option is located, each SST connected to that COMM MGR, and the Nodes connected to each SST.

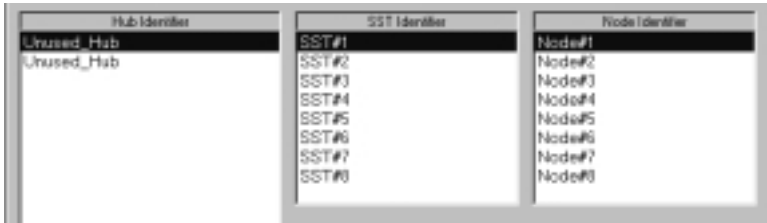


When you first open VieweR, the IDENTIFIER tab will not have any hubs listed.

To create a Hub identifier, *click* on the PLUS icon.



Any time you add a Hub it will be listed as “UNUSED_HUB”.



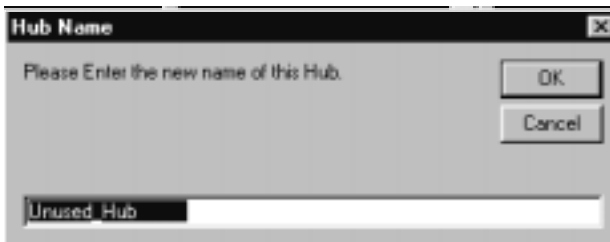
Each hub has eight SSTs assigned to it and eight nodes assigned to each SST. You can either delete the Hub or rename and configure it for your own system.

NOTE: Deleted hubs are relabeled “UNUSED_HUB”.

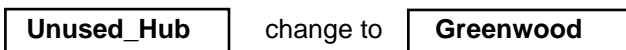
If you wish ViewR to recognize a Hub, you must rename the “UNUSED_HUB” files.

REMINDER: If you are using an NCM-4 with an SST, only SSTs #1 – #4 are valid. If you are using an NCM-4 with a TPX, you may use all of the SSTs.

To rename a Hub, *double click* on the existing name (i.e. “UNUSED_HUB”). This brings up the RENAME window.



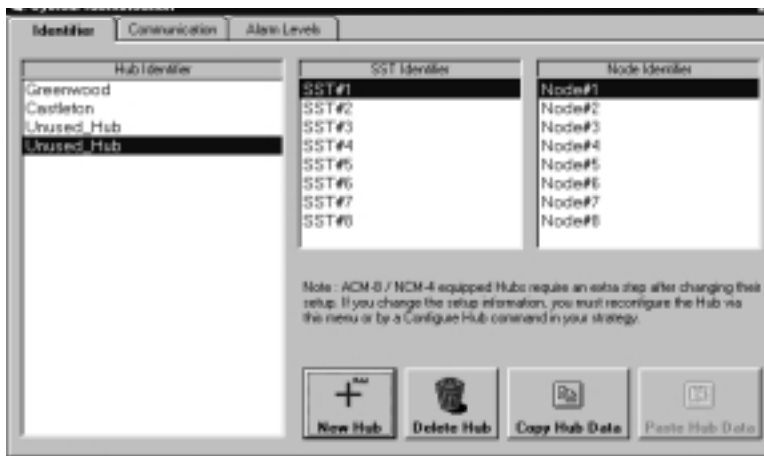
Assign a new name to the Hub (such as Greenwood Hub).



NOTE: All Hub names can be up to 20 characters.

Click **OK** and you will return to the IDENTIFIER window.

If you wish to add more Hubs, simply click on the PLUS icon for each additional Hub and repeat the assigning process for SSTs and Nodes.



The Hub information boxes in the left bottom corner of the IDENTIFIER window, indicate which Hub, SST and Node is selected.

To delete Hub information, *click* on the name of the Hub you wish to delete and then *click* on the TRASH CAN/DELETE icon.

NOTE: Usually, you will not need to change any SST or Node identifiers. However, you may wish to change the SST and Node designations to identifiers that you use in your system. The main thing to remember is that the "UNUSED_HUB" designation needs to be changed to suit your own system. For example, if you are controlling four SSTs with an NCM-4, you should rename SSTs #5 - #8 as "UNUSED" since they don't exist in your system. If you are using an NCM-4 with a TPX, you can support all eight. If you do need to change the SST and/or Node identifiers, *double click* on the desired SST or Node. A pop up window will appear. Type in the new designation.

You can NOT delete unused SSTs or Nodes. You should rename them as "UNUSED" since Viewer may give errors if you try to access data for SSTs which aren't there.

For example, if you do not have an SST #2 in the Greenwood Hub, you should rename it as Unused.

NOTE: The terms **UNUSED** or **INACTIVE** are keywords to VieweR. The program will not “poll” or “ping” an SST or Node which is designated **UNUSED** or **INACTIVE**.

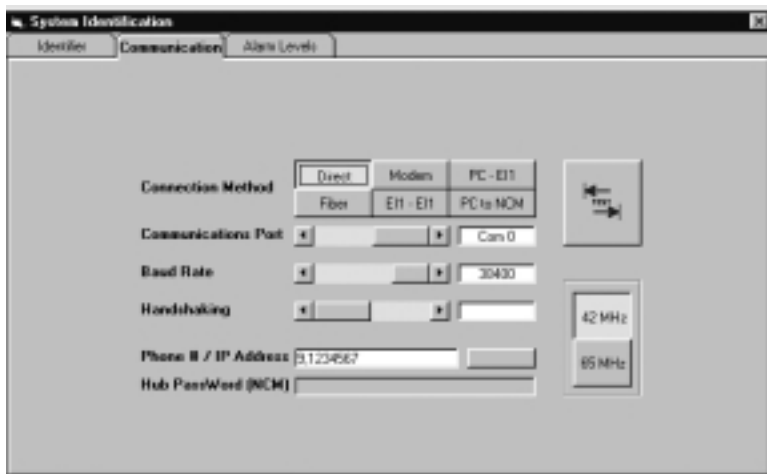
Once you have finished updating the Hub, SST and Node information, you should continue your set up procedure by *clicking* one of the other tabs.

NOTE: If you were just editing an existing Hub and don't wish to make additional changes, *click* on the **OK** button to exit the IDENTIFIER screen.

Communication Tab

Communication parameters which need to be set up include: the COM Port, Baud Rate, Handshaking, Connection Method, Phone Number or IP Address and 42 MHz or 65 MHz.

In the LOCAL SELECTION window, *click* on the COMMUNICATION tab.



NOTE: If you are using a modem or network interface, you must assign a phone number or IP Address for each Hub listed in the IDENTIFIER tab. If you are using the NCM-4, you must also assign a Hub Password.

Select the desired COM Port (1 - 8).

REMINDER: If your mouse is connected to COM Port 1, you need to select a different COM Port for the communications link.

Next, select the desired Baud Rate.

NOTE: The default Baud Rate for the 9580 SST or 9581 SST systems is 38,400 which is used for all types of connection. Use of the 19,200 Baud Rate may be necessary for certain equipment setups. Please contact Trilithic before you change to this setting.

Then, choose the desired handshaking method. Usually, you should use "HW".

With version 1.40 or higher of Ingress ManagR, you can choose to connect directly to your PC, via fiber optic interface FI-1, modem or network interface EI-1. Simply *click* on the desired CONNECTION METHOD.

In the example below, the user selected the DIRECT connect to a PC.



If you are using a MODEM, you must also enter a phone number in the **PHONE #/IP ADDRESS** box.

NOTE: If you are using the EI-1 Ethernet Interface, you will need to enter an IP address. See *ETHERNET INTERFACE INFORMATION* page 17.

You may test the communication set up by *clicking* the **TEST** button.



ETHERNET INTERFACE INFORMATION

The EI-1 Ethernet Interface unit enables your 9580/9581 system to make use of your existing network (10 Base-T Ethernet) which connects hubs, headends and offices. By using the interface unit to connect to the network, you will no longer need phone lines to connect each location.

The EI-1 Ethernet and FI-1 Fiber Interfaces are easy to use.

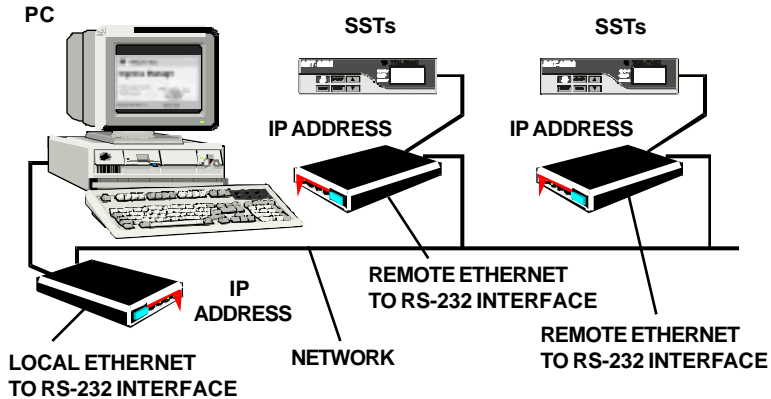
For the EI-1 Ethernet Interface, you must first set the IP Addresses on the units and then connect the host interface unit to your PC and the remote interface(s) to your 9580/9581 SST unit(s). Refer to the *CONNECTION TEMPLATES* on pages 18 and 19 for guidelines for connecting the devices together.

NOTE: When you select NETWORK for the communication method, the button next to the **PHONE #/IP ADDRESS** box indicates the port to which the interface is connected.

Phone # / IP Address	9,1234567	PORT1
Hub PassWord (NCM)		

For more information on configuring and installing the interface units, refer to the *EI-1 ETHERNET INTERFACE/FI-1 FIBER INTERFACE INSTALLATION GUIDE* which came with the interface unit.

PC to SST w/TWO EI-1'S (Ethernet)



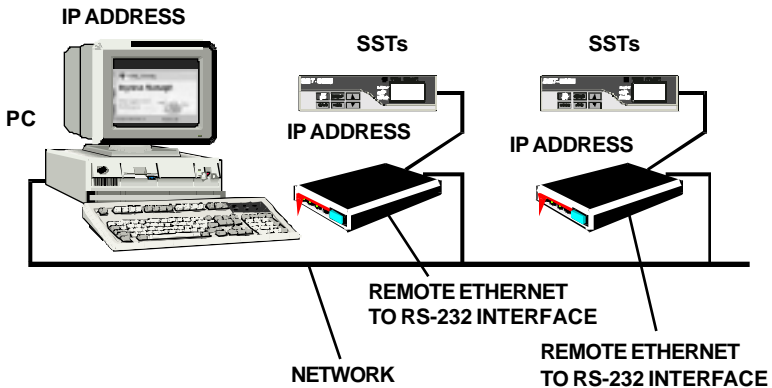
STEPS:

1. Install VieweR software on the PC at your work station.
2. Install 9580/9581 SST at Headend or Hub with the Communications Manager option installed.
3. Connect satellite SSTs to the primary SST via a standard 9-pin male to 9-pin female RS-232 cable.

NOTE: When using the 9580 SST, you can connect up to 7 satellite 9580 SSTs. When using the 9581 SST, you can connect up to 3 satellite 9581 SSTs.

4. Using Trilithic cable (P/N 2071049002) or custom built cable (see page 20 for pin outs), connect an available PC COM Port to the Ethernet Interface.
5. Using Trilithic cable (P/N 2071049001), connect the SSTs' COMM MGR outputs to the Ethernet Interfaces.
6. Connect the network to the Ethernet Interface units.

PC to SST w/EI-1 (Ethernet)



STEPS:

1. Install ViewR software on the PC at your work station.
2. Install 9580/9581 SST at Headend or Hub with the Communications Manager option installed.
3. Connect satellite SSTs to the primary SST via a standard 9-pin male to 9-pin female RS-232 cable.

NOTE: When using the 9580 SST, you can connect up to 7 satellite 9580 SSTs. When using the 9581 SST, you can connect up to 3 satellite 9581 SSTs.

4. Connect and setup your PC's ethernet card to your LAN.
5. Using Trilithic cable (P/N 2071049001), connect the SSTs' COMM MGR outputs to the Ethernet Interfaces.
6. Connect the network to the Ethernet Interface units.

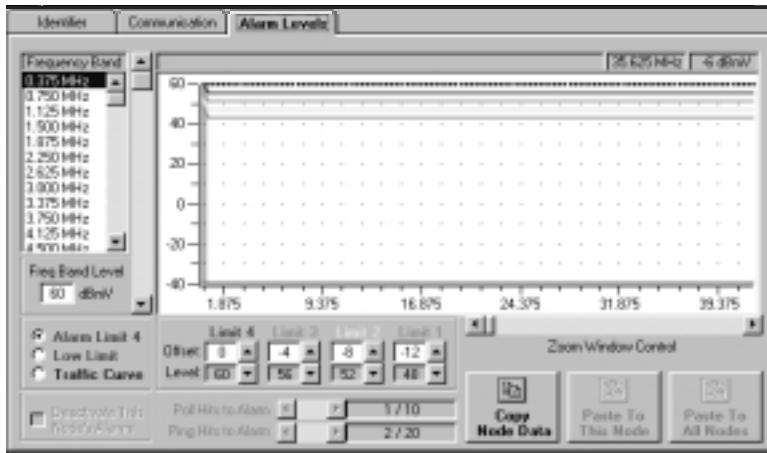
Alarm Level Tab

Once you have created a Hub, you should set the Ingress threshold for each Node. This enables VieweR to monitor the Hubs in the system and to notify you when ingress exceeds the desired levels.

VieweR enables you to set three offsets to the ingress alarm limit.

To assign the level, *click* first on the desired Hub (i.e. Castleton). Then, *click* on the desired SST (i.e. SST #1) and Node (Node #1). All three items will be highlighted and will also appear in the Hub information boxes in the lower left corner of the IDENTIFICATION window.

Click on the ALARM LEVEL tab to bring up the level screen for the designated Hub, SST and Node.

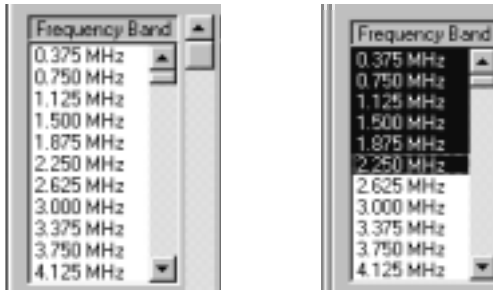


The four limit thresholds are indicated by colored lines in the graph which correspond to the color of the limits' labels. For example, Limit Four appears as a red line, Limit Three as orange, Limit Two as yellow and Limit One as green. The LOW LIMIT appears as brown while the Traffic Curve is blue. If a single ingress frequency data point goes over the designated thresholds, VieweR considers that a hit.

You will assign the thresholds one at a time. To assign Limit Four, *click* on **ALARM LIMIT FOUR**.



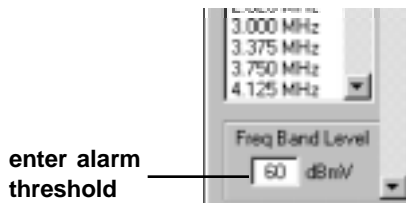
Go to the **FREQUENCY BAND** list and select one or more values.



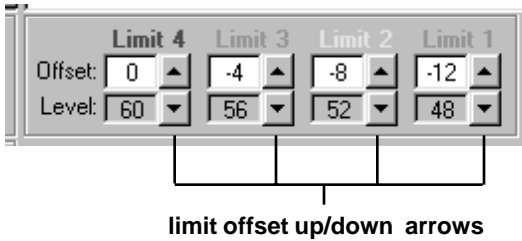
Alternately, you may also *click and drag* on the graph to select a frequency band. You can select more than one frequency (to be set at the same level). Hold down the **CTRL** key while you highlight additional bands.

Hold down the **ALT** key and highlight a band to deselect a frequency. To deselect ALL frequencies, *click* the **RIGHT** mouse button on the graph or frequency list.

Once the value(s) are highlighted, enter the desired alarm threshold in the dBmV box below the list. You may also use the scroll bar to set the frequency band level.



The entire Limit Four curve may be adjusted up or down using the LIMIT 4 OFFSET up/down arrows.

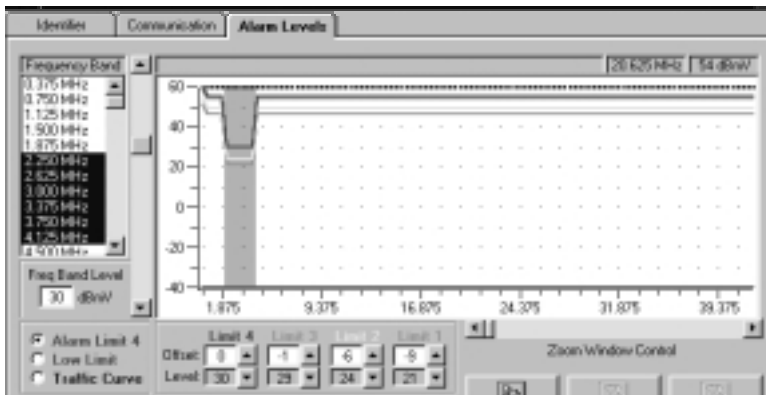


You assign the lower limits as offsets to Limit Four. Simply *click* on the **UP/DOWN** arrows beside the limits and these will offset from Limit Four.

NOTE: The multiple alarm limit curve support in the Guardian Return Path Alignment system requires that:

Limit 4 > = Limit 3 > = Limit 2 > = Limit 1

For this reason, VieweR will adjust the limit offsets automatically (in addition to the one you are adjusting directly) to enforce this requirement.

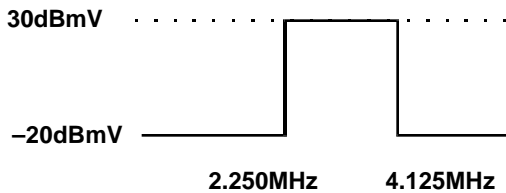


The LOW LIMIT appears as brown. At least one ingress frequency data point must go over the designated thresholds or VieweR considers that the node is dead.

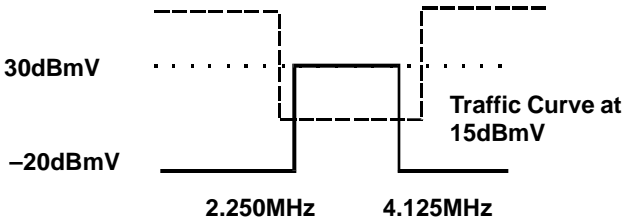
When the LOW LIMIT is set, all the frequencies are selected automatically. Set the Frequency Band Level by entering it in the dBmV window or via the scroll bar.

Traffic curve enables you to mask out the data signals and view just the ingress spectrum. The traffic curve is indicated by a series of medium and dark blue lines which extend from the top of the graph to distinguish it from the limit curves.

For example, the SST indicates that the average power of a data signal is around 30dBmV between 2.250MHz and 4.125MHz.

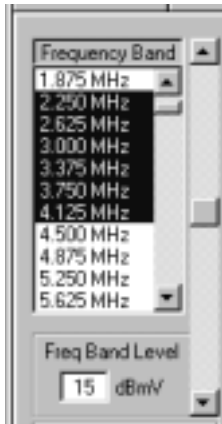


To mask out the data signal, you need to set the traffic curve below 30dBmV (i.e. at 15dBmV).



Use the FREQUENCY BAND list (or *click and drag* on the graph) to select the values that will include 2.250MHz and 4.125MHz.

Once the value(s) are highlighted, enter an alarm threshold value of 15dBmV in the **FREQUENCY BAND LEVEL** box.



The ALARM LEVEL tab's graph will indicate the selected traffic curve in medium or dark blue. Adjacent traffic curve frequency bands alternate in color. This visually represents that they are maintained separately even when they are set to the same level.

If you would like to use similar limits for another Node, *click* on the **COPY NODE DATA** button. VieweR memorizes the settings. Now, pick another Node and *click* **PASTE**. This enables you to copy the settings from one Node to another quickly when you wish similar settings for each. You can then edit the limits on the new Node for any minor differences. You may also copy the settings to all of the Nodes on the selected Hub by *clicking* the **PASTE ALL** button.

NOTE: You may deactivate the alarm for a selected Node at any time by *clicking* on the Node and then on the **DEACTIVATE THIS NODES ALARM** box.

Once the Ingress threshold has been set for each Node, you may return to the IDENTIFIER window to select the next SST at that location or *click* **CLOSE** to exit the IDENTIFICATION Menu.

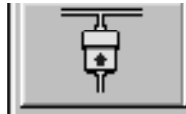
EXTERNAL SELECTION

If you wish to use an existing identification file, you may either import the file (see *QUICK SETUP* page 7) or select the EXTERNAL command. The main difference is that if you use the EXTERNAL selection, it does not overwrite the LOCAL identification file. This means that you will not be able to edit or update the identification information in the file.

Connect to Hub

Once you have imported an identification file (see *QUICK SETUP* page 7) or set up a new one (*LOCAL SELECTION* page 11), you may begin operation.

Once the hardware is set up, *click* on the CONNECT TO HUB icon.



The HUB ID window pops up. Select the desired Hub, SST and Node and then *click* on the **OK** button. This enables Viewer to establish the communications link between your PC and 9580/9581 system.

NOTE: You can confirm the activity by observing the progress messages in the STATUS BAR at the bottom of the screen. The CONNECTION METHOD and COMMAND/RESPONSE boxes always appear in the upper RIGHT corner of the Viewer window.

Hub Data Specifics

Once you have connected to the Hub, you can select the specific data you wish to collect using the buttons at the bottom of the screen.



The buttons include:

- Hub – Selects the active Hub from list.
- SST – Selects the active SST from list. Use the > button to go to the next SST in the current Hub.
- Node – Selects the active Node from list. Use the > button to go to the next Node in the current SST.

NOTE: When cycling through the available hubs, SSTs and nodes, VieweR will attempt to maintain it's connection. This can be a problem if it encounters a hub, SST or node that is not being used but is not labelled as such. Encountering these non-existent components will cause error messages and will cause the VieweR to be disconnected. To make sure that VieweR cycles through the available components correctly, make sure to rename such components as "UN-USED". This way, VieweR will simply pass on to the next component.

- Mode – Selects the desired mode: sweep, ingress (normal), fast, or zoom (if fast and zoom are allowed under the **FAST MODE** button).

NOTE: If you're connected to an NCM-4 but are not the Master, you will NOT be able to change the mode.

- Limits – Use to hide or display the current limits for the selected Node. Use the "draw first" and "draw last" setting to bring the desired trace forward.
- Max – Displays the peak value of ingress. This is useful for capturing and holding the peak value of infrequent/intermittent signals (FAST MODE ingress data already supplies peak values unless the detector method is AVERAGE).
- Fast Mode – Disables the FAST MODE feature. When it displays "NOT ALLOWED", FAST MODE and ZOOM Mode will not show as a setting under the MODE button.

Detector – Changes the detector method (Traffic, Peak, Average).

Rate/RBW – Changes the FAST Mode node sample/resolution bandwidth (20Hz/375kHz, 80Hz/525kHz).

To select a button, simply *click* on it. There is a delay before the action is taken. This allows multiple mode changes or selections to be made; thus avoiding unnecessary mode switching and undesired data gathering.

NOTE: While viewing the data, you may print it any time during the scan by *clicking* on the PRINT icon.

You may also change mode, SST, Node and unit at any time while you are monitoring the data.

NOTE: The information box displays the data for the Hub, SST and Node which are being viewed.

Print Data

While you are monitoring the data, you can print any trace that you see as it happens. *Click* on the PRINT icon.



Your print out depends on what parameters you selected for the scan.

If you selected the MAX icon, the print out will contain the START and STOP times which were used to accumulate the peak readings of the trace.

NOTE: The STOP time is always the moment that you *click* on the PRINT icon.

Message Display

The right corner has a display area where messages may be displayed during the scan.

The possible messages are:

- **Connecting** – This message is displayed while VieweR is establishing a connection and interrogating the SST about its features and setup.
- **Sweep Off-Line** – When the SST is selected to be in FAST Mode, field pieces (SSR, RSVP, RSVPII) cannot sweep.
- **TPX In Use (NCM-4)** – When a Master User locks a TPX on a bank, ALL other banks are frozen to the old data until the Master User logs off the NCM-4.

Disconnect the Hub

When you have finished scanning or printing, you need to close the link. *Click* on the DISCONNECT FROM HUB icon.



The STATUS BAR should indicate that VieweR has disconnected successfully and shut down.



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