

Guardian II Integrated Server Package

Reverse Band Monitoring Software

- Powerful Analysis and Report Tools for Managing Return Path Data
- Real-Time Diagnosis and Problem Resolution
- All Server Software is Pre-Installed on a High Performance Server, Ensuring Reliability and Minimizing System Activation Time



The Guardian II™ Integrated Server Package is a pre-configured server, integrating powerful software applications and hardware to provide a tailored, comprehensive solution for monitoring reverse path spectrum. SNMP trap handlers capture SNMP traps sent by the 9581 SST™ R4s, log them to Viewer II™ v2.6, and send notification as designated. The package includes extensive reporting tools for management and analysis. In addition to Microsoft® 2003 Server and SQL Server, the server hardware comes preconfigured with Viewer II v2.6 server software, and one onboard Viewer II v2.6 client and SST Configure™ software. Six additional Viewer II v2.6 clients are provided standard.

Viewer II viewing and management software for the Guardian System II is designed to make optimum use of the broad feature sets of Trilithic monitoring equipment (9581 SST™ release 4 return path analyzer), and is used for spectrum management and troubleshooting.

Viewer II displays and manages SNMP traps, with extensive reporting capability. In addition, it serves as a

live-view spectrum display for selected nodes. With Viewer II an operator controls 9581 SST R4s in hubs or head-ends, permitting selection of resolution bandwidths, displayed frequency span, detector modes, and other characteristics.

Ingress Alarm Management

Viewer II receives SNMP alarms from 9581 SST R4s located throughout the network. Viewer II displays the incoming 9581 SST alarms with color-coded severity in a tabular list. Alarms are also shown in a similarly color coded “tree” graph.

Tabular View

The tabular display presents a running list of alarms, itemized with the alarm time, type, origin (extended node name), and alarm severity.

For his/her convenience, the operator can sort the alarms by any of these criteria. Viewer II includes a full set of tools for managing alarm traffic. The alarm list is automatically updated, with new listings added whenever the status of nodes is upgraded or downgraded by new traps sent by 9581 SSTs. Viewer II also allows the user to manage “alarm storms” by temporarily adjusting the

display severity thresholds. Individual or groups of alarms can be manually cleared (or the source of the alarms temporarily disconnected).

Alarms can be color tagged to indicate that they have been acknowledged but not cleared. The operator can attach timers to individual alarms that will call for his attention if an alarm persists for more than a specified length of time. As an aid in determining the cause of the ingress outbreak, the operator can view recent alarm history of the selected node.

Tree View

The tree view presents alarms in a manner that makes it easy to determine the location of an alarm or node in the network topology. As with the tabular display, alarming nodes are color coded by severity.

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The tree view also simplifies navigation, allowing an operator to display a selected node, live, by clicking its symbol on the tree. Tree view can be expanded or collapsed as desired, with the alarm color codes following. Right clicking on either a list item or tree branch/leaf presents the operator with additional display and navigation options. The operator can reconfigure the relationships in the tree to show associations by topology, such as all nodes connected to the same CMTS blade or served by the same 9581 SST, or associated with a particular service area within the region served by the NOC.

Live View Function

The operator can bring up spectrum live views of one or more nodes by right clicking on a node in the tabular alarm list or in a tree view. Each live view node spectrum is updated every few hundred milliseconds, and the running maximum, minimum, and average spectra from the moment the selected spectrum was first displayed. Markers simplify accurate measurement of ingress frequencies and amplitudes. Each live view includes the node name, so several live views can be open at a time, either tiled or cascaded, without confusion. Tiled or cascaded views can be parked at convenient spots on the status monitoring screen and expanded to full live view size as needed. Any live view can be saved with all of its settings, markers values, extended node name, and a user-entered comment.

The operator can adjust the settings of a live view spectrum to fit his needs, selecting frequency spans by entering

either start/stop frequencies or center frequency and span, or resolution bandwidths of 30 kHz, 100kHz, 300 kHz, 1 MHz, or a special 375 KHz RBW fast transient capture mode.

The operator may select from several detector modes, including peak, average (with control over how many spectra are averaged), minimum hold, and maximum hold. A special detector function, TrafficControl™, is available in resolution bandwidths of 375 kHz. TrafficControl removes all TDMA traffic from the return spectrum, making it easier to detect ingress normally obscured by return services. Note that TrafficControl must be configured in each 9581 SST using SST Configure software.

All live views can be printed. The printout includes report type, extended node ID, time and/or time frame, and values of markers (there are two) where applicable. The operator can add a comment to the printout.

Recent History View Function

As an aid to troubleshooting, the operator can bring up summaries of recent spectra for any selected node. This function provides 15 records, each representing one minute, altogether spanning the most recent 15 minutes.

Reports

Viewer II v2.6 has enhanced reporting capability that enables a system health overview and the ability to drill down for more detailed information.

Organization trees can be used to group nodes as desired (reporting area). These trees may be the same

used in the monitoring mode, but the user can change the organization. This enables users with different areas of responsibility to see data that pertains specifically to them.

For more detailed investigation, the user can select any subset of the tree using a drill-down feature for analysis or troubleshooting.

To determine if ingress is time/date specific, the user can set a time or time interval of interest to further enhance troubleshooting ability.

The user can select a desired alarm threshold(s) to determine which nodes have the highest number of alarm incidents, or select a percentage of node unavailability to include the duration of the incidents in the analysis.

The database allows user definable attribute fields to be attached to a node and later used in reports. A report can be sorted by these attributes. The number of VoIP subscribers for each node can be added, for instance.

To concentrate troubleshooting efforts on worst cases, or those affecting the highest number of subscribers, the user can restrict the report to a certain number of nodes at each level (top 10, for example).

The user can view report data in tabular form, and in some cases the data can be graphed to make analysis easier.

User defined reports can be saved. Reports can be scheduled to run at night, or at low traffic times to manage computer resources.

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Bringing It All Together

The Guardian System II is a powerful, flexible system of field and central office products supporting all aspects of return path management, including installation, distribution system alignment and ingress control, ingress monitoring, and real-time troubleshooting. The 9581 SST, the hub of the Guardian System II, supports field technicians using Trilithic RSVP²™ and 860 DSP™ field units and network-connected engineers using Trilithic Viewer II and ADIA™ software. All elements of the return maintenance process are closely linked for maximum efficiency, flexibility and optimum cost effectiveness.



INTEGRATED SOFTWARE SPECIFICATIONS

Microsoft Windows® 2003 Server	A comprehensive, integrated, and dependable server platform designed to reduce costs and increase the efficiency and effectiveness of computing operations.
Microsoft SQL® Server	More than a relational database management system; it is a complete database and analysis product that meets the scalability and reliability requirements of the most demanding enterprises.
Viewer II Server/Client	Viewing and management software designed to make optimum use of the broad feature sets of Trilithic's monitoring equipment (9581 SST return path analyzer), and is used for spectrum management and troubleshooting.
SST Configure software	Configures 9581 SST for network access, monitoring and field unit support.

HARDWARE SPECIFICATIONS

Specialty-Configured Dell PowerEdge® 2U Rack Mount Server

Storage	Supports 1 year of data for 3,000 nodes
Warranty	Next business day, parts and labor with on-site response – 3 years (from Dell)

A second power supply is available from Dell to provide redundancy and extra reliability. A backup storage system is recommended for prevention of data loss.



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ORDERING INFORMATION

Guardian II Integrated Server Package

Part Number	2011009100
Description	Preconfigured server including Viewer II, one onboard Viewer II client plus six additional Viewer II clients, and SST Configure software

OPTIONAL ACCESSORIES

One Additional Viewer II Client License	P/N 0930098100
Six Additional Viewer II Client Licenses	P/N 0930098106