

VeSion™ RFTS User Manual



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1.0 General Information

This user manual is suitable for novice, intermediate, and experienced users and is intended to help use the features and capabilities of VeEX products successfully. It is assumed that the user has basic computer experience and skills, and is familiar with telecommunication and other concepts related to VeEX product usage, terminology, and safety.

Every effort was made to ensure that the information contained in this user manual is accurate. Information is subject to change without notice and we accept no responsibility for any errors or omissions. In case of discrepancy, the web version takes precedence over any printed literature. The content in this manual may vary from the software version installed in the unit. For condition of use and permission to use these materials for publication in other than the English language, contact VeEX, Inc.

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1.1 Customer Support

For more technical resources, visit www.veexinc.com.

For assistance or questions related to the use of this product, call or e-mail our customer care department for customer support. Before contacting our customer care department, have the product model, serial number, and software version ready. Please locate the serial number on the back of the chassis. Please provide this number when contacting VeEX, Inc. customer care.

Support hours may vary depending on the product.

Product Technical Support

Support is generally available 8:00 AM to 8:00 PM, Eastern Standard Time, Monday to Friday.

Phone: +1 510 651 0500

E-mail: customercare@veexinc.com

MPA Product Technical Support

Support is generally available 8:30 AM to 5:30 PM, Eastern Standard Time, Monday to Friday.

Phone: +1 877 929 4357

International: +1 727 475 1206

E-mail: serviceandsupport@veexinc.com

1.2 Warranty

For warranty information on VeEX products, go to <https://www.veexinc.com/Support/Warranty>.

To activate the warranty, please register your product at <https://www.veexinc.com/Support/ProductRegistration>.

1.3 Patent Information

VeEX product hardware and software may be protected by one or more patents on file with the United States Patent Office.

1.4 Documentation Conventions

Icons used in this manual:

	Marks a helpful tip (action or method), which can save time and improve usability of the product.
	Provides important information needed to use this product and avoid missteps.
	Cautions against an action or inactivity, which can hinder productivity.
	Strongly warns against a condition, an action, or inactivity which can lead to a health hazard, injury, equipment damage, data loss, and/or financial losses.
	Stop and read before continuing.

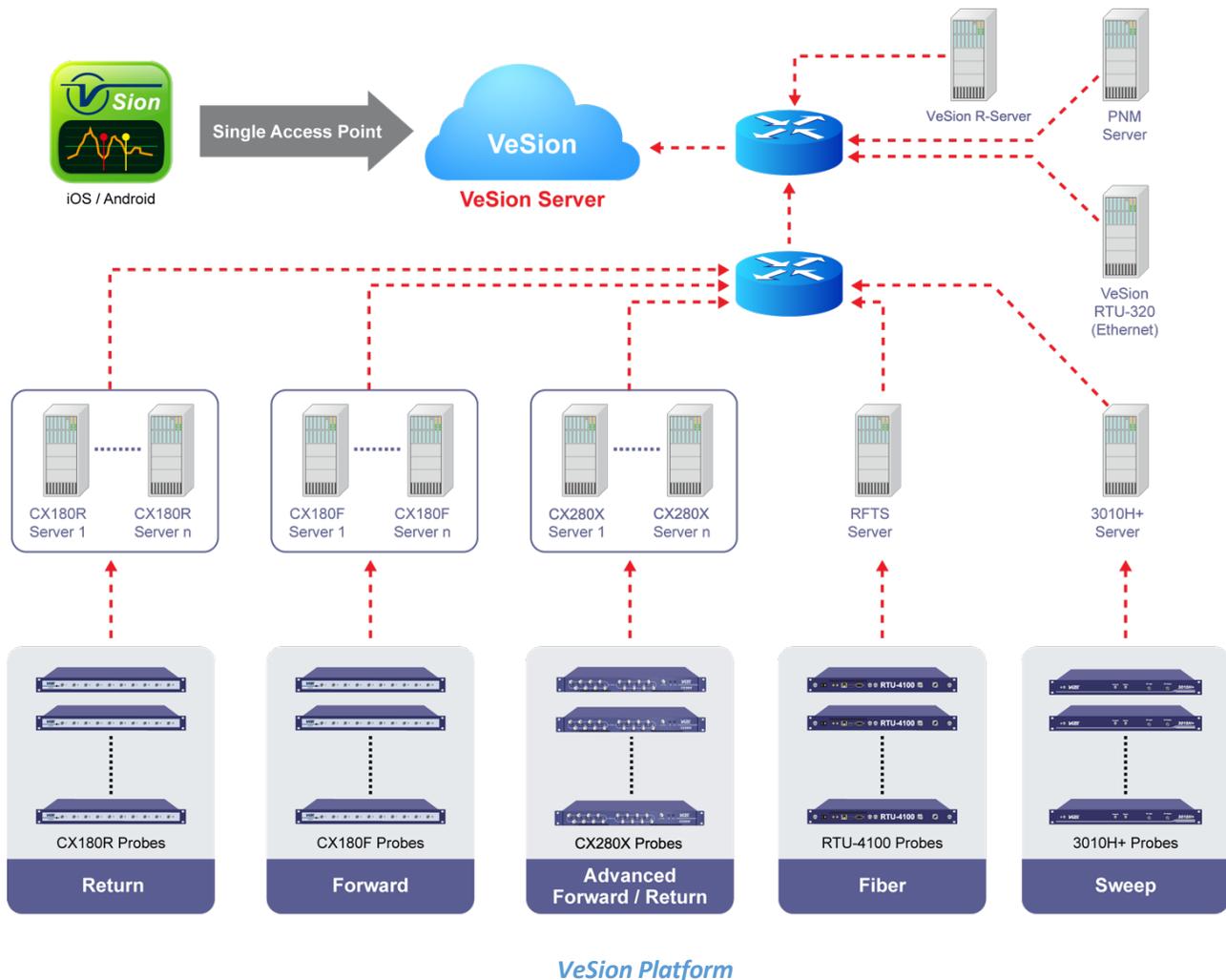
2.0 VeSion Interface

The RTU/RFTS-400 is typically installed at the Central Office, Headend or Sub-Hub, or Co-location sites to support centralized fiber monitoring and analysis, as well as data collection. Optical switches (OXA4000/OXC4000) can be used to expand the number of fibers that can be monitored by a single RTU/RFTS-400 probe.

2.1 About VeSion

VeEX's VeSion cloud-based one system platform integrates VeEX's Preventive RF monitoring (Return and Forward), Fiber, MPEG, Fiber monitoring (RFTS), Ethernet, Advanced DOCSIS Monitoring, DOCSIS Burst Demodulation, Sweep, PNM (Return and Forward), Workflow and Asset Management (R-Server) all in one modular architecture. This provides MSO's complete network visibility (VeSion) and reduces unnecessary Truck Rolls by alerting key personnel via SMS and/or emails to alarm conditions and location. In addition, VeSion links directly with an MSO's billing system, allowing them to pin-point the exact location of the DOCSIS cable modem problem.

Using the Internet, or mobile applications to VeSion, access to results can be made anywhere, anytime and at any location.



Using VeSion with the RXT-4100 optical test probe, you can:

- Configure probes, including:
 - Alarm profiles
 - Monitoring profiles
 - System defaults
- Map geographical locations
- View probe data logs
- View probe alarms in real-time

2.1.1 Platform Highlights

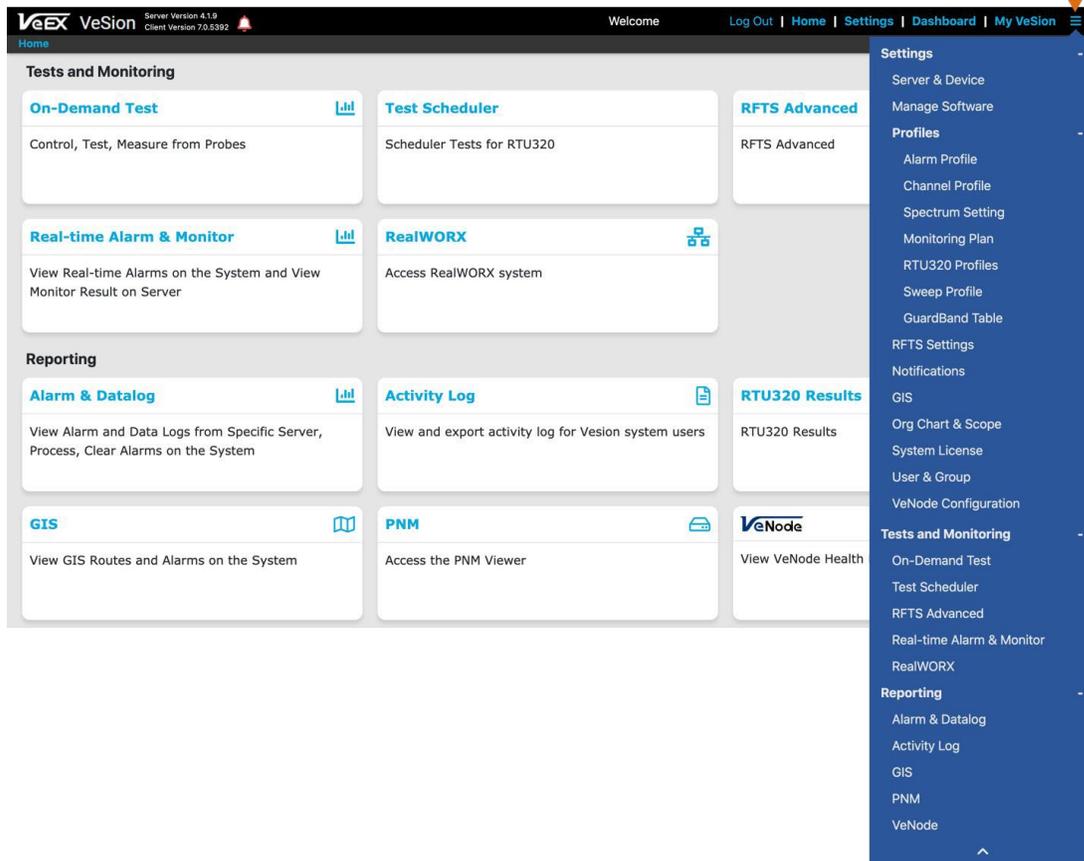
- Complete web-based solution compatible with any web browser
- Flexible distributed architecture
- Email, SMS, SNMP, Syslog notifications
- Secured IP connection for access from any location with Internet connection via Android and iOS mobile devices, web access
- Options include:
 - Workflow, configuration, Asset and Test Data Management, Dispatch and Data enrichment system using R-Server
 - GIS support to capture, store, manipulate, analyze, and manage geographic data
 - PNM (Return and Forward)

2.1.2 General Settings

The VeSion System IP address and login information can be provided by the System Administrator.

After logging in, the **Home** page appears. A description for each function item is provided on the screen. Use the shortcut **Navigate** button  on the top right menu bar to select screens options.

Click the Navigation shortcut button to access menu items quickly.



VeSion: Screen Navigation

2.1.3 User Permissions and Groups

User permissions are determined by their Group. User Groups are preconfigured by VeEX. Each group is assigned specific permissions depending on their role (e.g. District Supervisor, Region Manager, NOC Operator). The maximum number of users that can be assigned to each group can be updated, as needed.

To view the groups and permissions or update the maximum number of users allowed for a group, go to **Settings > User & Group > Group**.



Contact [Customer Care](#) if additional updating of User Groups is needed.

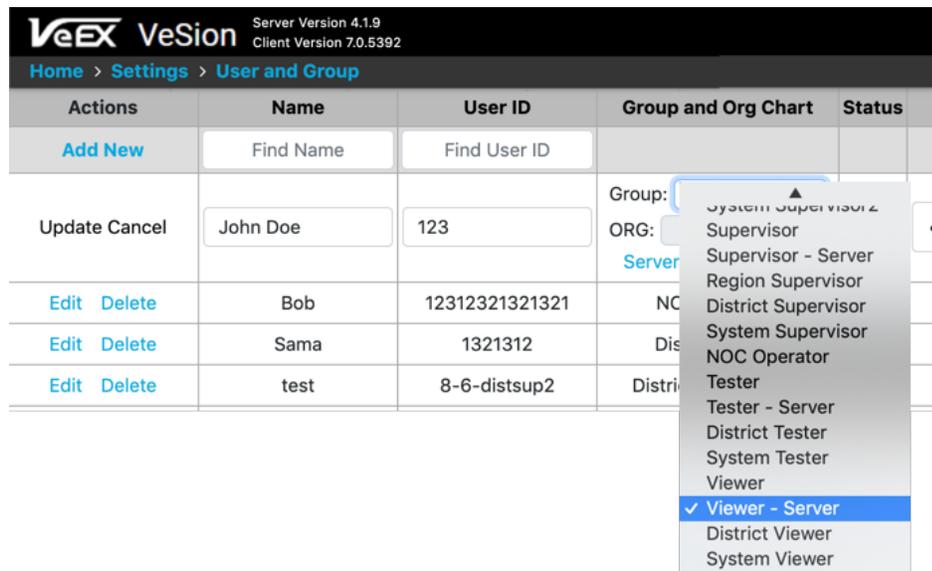
To set up or edit users:

1. Go to **Settings > User & Group > User**. A table displaying all users appears.
2. Select **Add New** on the top blank row of the user table. Enter the following information.
 - **Name:** Employee name of user
 - **User ID:** ID used to log into VeSion

- **Group and Org Chart:** Assigns permissions by adding the user to a Group. Depending on the Group, an Org (Organization) and Server may also be assigned.
 - **Status:** Checkbox to indicate if the user is active and allowed to access VeSion.
 - **Password:** Password used to log into VeSion.
 - **Email:** User's email. Notifications will be sent to this email address if enabled.
 - **Employee ID:** Employee ID of user.
 - **Phone Number:** User's phone number. If enabled, text notifications will be sent via the SMS Provider to this number.
 - **SMS Provider:** User's SMS provider.
3. Select **Create**. The new user is created and can now log into VeSion (if marked as active during setup). To cancel the creation of the new user, select **Cancel**.

To assign a user to a specific probe:

1. Go to **Settings > User & Group > User**. A table displaying all users appears.
2. Select **Edit** next to the user to assign to the probe.
3. In the **Group and Org Chart** column, select a group that has “-Server” appended to the name. This activates the **Server Assignment** link.



VeSion: Assigning Users

4. Select the **Server Assignment** link. The **Server Assignment** box appears.
5. Select the checkbox to place a checkmark next to the probe to assign to the user and close the box.



VeSion: Server Assignment

6. Select **Update**. The user is assigned to the designated probe.

2.1.4 User Reports

System administrators configured with “Manager” permissions can see who is logged onto the VeSion system.

Name	User ID	Group	Time Logged In	IP Address	Client Type	Actions
Find Name	Find User ID	Find Group	Find Time Logged In	Find IP Address	Find Client Type	
John Doe	jdoe	Manager	9/23/2020 10:06:28	192.168.112.247-88880	WEB	Log Out

Logged User screen

Managers can also view usage reports to see access history.

Click the calendar icons to select the date range, then click Search.

Name	User ID	Group	Time Logged In	Time Logged Out	IP Address	Client Type
John Doe	jdoe	Manager	9/23/2020 16:25:02		127.0.0.1-43080	Web
John Doe	jdoe	Manager	9/23/2020 15:33:03	9/23/2020 16:11:24	127.0.0.1-42037	Web
Jane Too	jtoo	Supervisor	9/23/2020 15:31:36		127.0.0.1-41000	Web
Jane Too	jtoo	Supervisor	9/23/2020 15:31:33	9/23/2020 15:31:35	127.0.0.1-41004	Web
John Doe	jdoe	Manager	9/23/2020 15:24:06	9/23/2020 16:11:24	127.0.0.1-41000	Web
Mike Smith	msmith	Supervisor2	9/23/2020 15:13:35		127.0.0.1-41017	Web
Mike Smith	msmith	Supervisor2	9/23/2020 15:01:03	9/23/2020 15:09:51	192.168.114.225-58368	Web
Mike Smith	msmith	Manager	9/23/2020 15:01:00	9/23/2020 15:09:51	192.168.114.225-58334	Web
Mike Smith	msmith	Manager	9/23/2020 14:56:54	9/23/2020 15:00:49	192.168.114.225-57299	Web

Usage Report

2.1.5 Activity Logs

While the User Usage Report shows only when the user logs in and out of the system, the Activity Log gives more specific information about what the user performs in the system. It can also show information about all users in one report.

To access the log, go to **Home > Activity Log**. Select the server, profile, activity type, user, and date range, and then select **Search**.

Time	User	Activity Type	Operation Type	Server	Cycle	Device	Port	Name
9/27/2019 08:29:08	tjones	User	Add	All	All	All	All	2272octe2019
9/27/2019 08:30:17	tjones	User	Update	All	All	All	All	2272octe2019 -> octe2019
9/27/2019 12:54:31	tjones	Channel Table Profile	Update	All	All	All	All	ATL280xOFDM.csv
9/27/2019 13:00:21	tjones	Channel Table Profile	Update	All	All	All	All	ATL280xOFDM.csv
9/27/2019 13:03:00	tjones	Channel Table Profile	Add	All	All	All	All	clone-ATL280xOFDM-bkup.csv
9/27/2019 13:04:34	tjones	Channel Table Profile	Update	All	All	All	All	ATL280xOFDM.csv

User Activity Log

2.1.6 SMS Providers

SMS Provider information must be configured in VeSion for users to receive SMS text notifications.

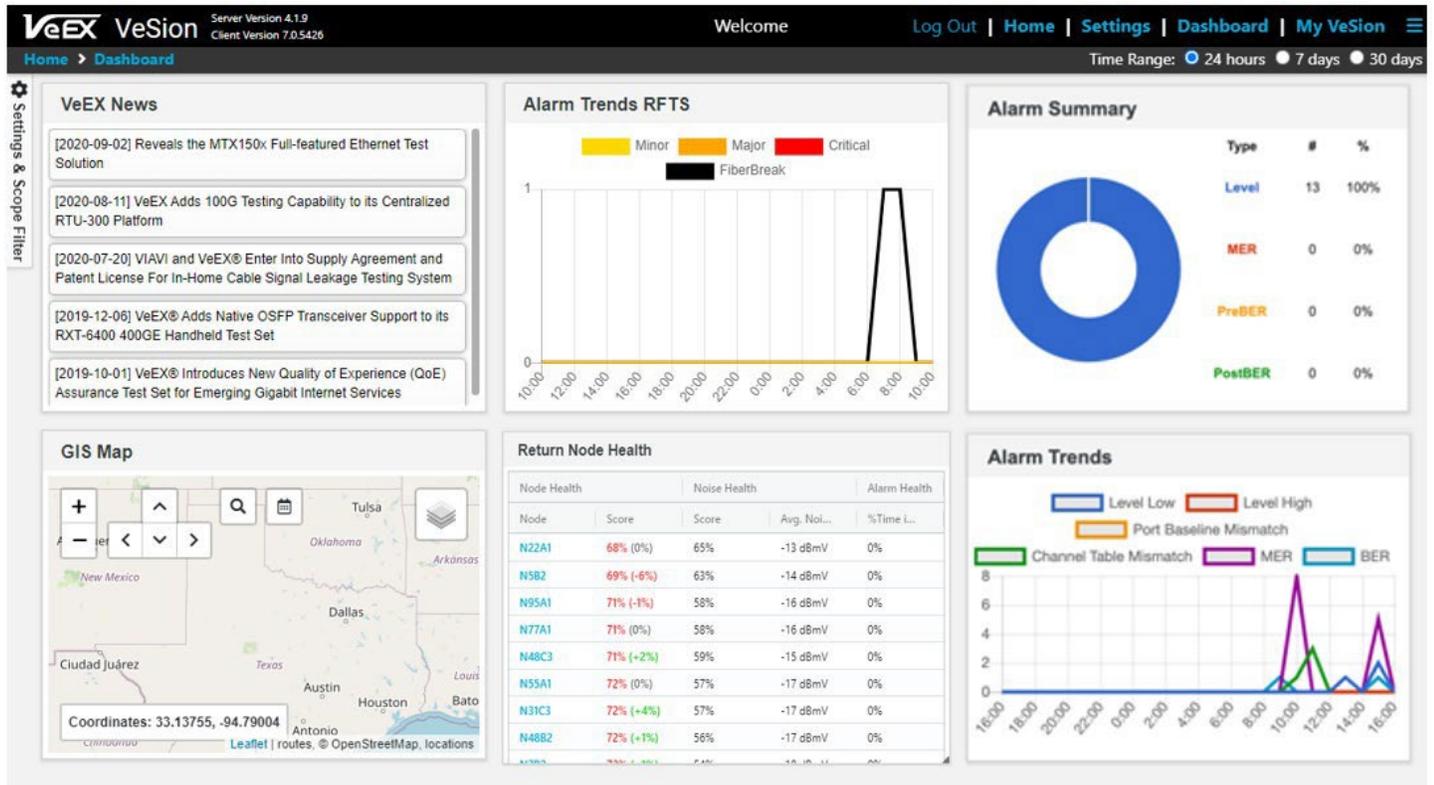
Actions	Name	Email Root
Add New	Find Name	Find Email Root
Edit Delete	Sam	12abc
Edit Delete	Test	apple
Edit Delete	Docomoe	docomo.ne.jp
	US Cellular	email.uscc.net
	Alltel	message.alltel.com
	CenturyTel	messaging.centurytel.net
	Sprint	messaging.sprintpcs.com
	Cellular One	mobile.celloneusa.com

SMS Providers

2.1.7 VeSion Dashboard

The Dashboard captures data at a glance. It displays each category as a data block that can be moved around the screen (if not anchored).

Access the Dashboard by clicking the **Dashboard** link on the top menu bar.



VeSion Dashboard

It can be configured also by selecting **Settings & Scope Filter** on the far left.

To customize the Dashboard:

1. On the top menu bar, click the **Dashboard** link.
2. On the left edge of the screen, click **Settings & Scope Filter**. The **Settings/Scope Filter** left panel displays.
3. Select the configuration options, click the red X to close the left panel.

Scope Filter

Select the Region and District for which to show data.

Settings

- **Small/Medium/Large:** Select the size of the data block for the dashboard. The size can also be adjusted by clicking an edge of a data block and dragging it.
- **Widgets Unlocked/Locked:** Click the padlock icon to lock or unlock the widgets. When locked, they cannot be resized.

2.2 System Notifications

Use the **Notifications** page to configure global notification settings applicable to ALL probes (even those other than the RFTS) for SNMP and Email. These settings apply when a Probe Server goes online/offline. Access the **Notifications** page by clicking **Settings** on the top menu bar, then selecting **Notifications**.

Before setting up notifications, assign each mobile carrier in the **SMS Provider List** tab by clicking **Settings>User and Group>SMS Provider List**. See [2.1.6 SMS Providers](#) for more information.



To configure notifications for only RFTS probe servers and all RFTS probes at once, go to **Settings>Notifications | RFTS**. For more information, see [10.0 RFTS Notifications](#).

To configure notifications for a specific RFTS Probe Server and RFTS probes associated with that server, go to the **RFTS Probe Server Settings** page. For more information, see [3.2 SNMP Configuration](#) and [3.3 Email Configuration](#).

VeSion System Notifications screen.

SNMP Configuration

- **SNMP Enable:** Turns on to enable SNMP alarms.
- **Enterprise:** Select the OID used to report the alarm.
- **Community:** Enter the community string/password for the SNMP. The default is public.
- **HOST (IP:Port; IP:Port):** Enter the host IP address and port for each SNMP trap receiver. Separate multiple addresses by semi-colons.

Email Configuration

- **Email Enable:** To enable email alarm notifications from probe server if option was selected in My VeSion and email provided.
- **SMS Enable:** To enable mobile device alarm notifications if option was selected in My VeSion and phone number/mobile provider selected.
- **Smtp Server:** Enter server that VeSion accesses to send email notifications.
- **Smtp Server Port:** Enter server SMTP port that VeSion accesses to send email notifications.
- **Email Address:** Email address from which notifications are received.
- **Username:** Username VeSion uses to connect to the SMTP Server.
- **Password:** Password VeSion uses to connect to the SMTP Server
- **BCC:** Email addresses to which blind copies of notifications are sent.
- **SSL/TLS:** Security protocol used to connect to the SMTP Server.
- **Check:** Runs a test with the current configuration settings to validate they are correct.

Use the **Check** button to run a test and validate the current configuration settings are correct.



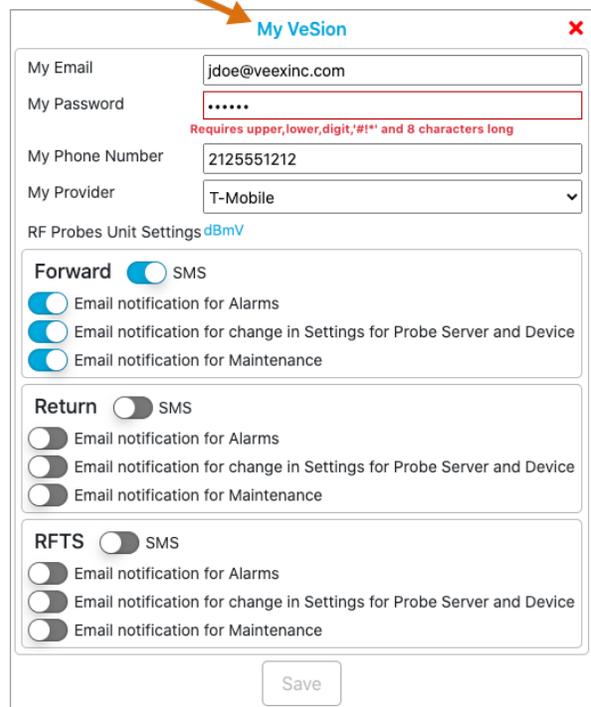
Global SysLog configurations are not needed, as the VeSion Server maintains a usage System Log automatically. To access this log, a third party tool compatible with the OS is needed. For more information, contact [VeEX Customer Care](#).

2.3 Alarm Notifications (My VeSion)

Assign user permissions to receive alarm email notifications in the My VeSion window. To access My VeSion, select **My VeSion** in the top right menu bar.



Click **My VeSion** on the top right of the menu bar to quickly access configuration options for the user login and password, as well as alarm email notifications.



My VeSion: menu and screen

In addition to configuring user permissions for alarm notifications, user information can also be quickly set without going to **Settings > User & Group > User**.

- **My Email:** View or change the email address for notifications.
- **My Password:** Change the login password.
- **My Phone Number:** View or change the telephone number for SMS text notifications.
- **My Provider:** View or select the mobile provider for SMS text notifications.
- **RF Probes Unit Settings:** View or change the measurement units by selecting the link, dBmV or dBuV.

Forward/Return/RFTS notification settings

For each section (Forward/Return/RFTS), select the radio button to turn ON/OFF alarm notifications for the user.

After making changes, select **Save** at the bottom of the screen to save changes.

3.0 Probe Servers

Probes are uniquely identified by static IP addresses, as is the probe server.

To access probes in VeSion:

1. From the **VeSion top menu bar**, click **Settings**, and then select **Server & Device**. The **Server & Device** page appears showing tabs for each probe installed. The **RFTS** tab appears at the top, indicating a successful installation and connection to the probe.
2. Select the **RFTS** tab. On the left panel, click the probe server icon  to view all probes associated with that probe server. Probes appearing in red indicate they are currently offline.



*The probe server names contain the model name by default. Probe numbers are designated when the probes are installed and cannot be changed. Change probe and probe server names using the **Name** field in the right panel.*

3. Click the probe icon  to view details about that probe.



Click the Refresh icon  to update measurement data for all probes associated with the probe server.

On the **Probe Server** details page, view details for the probe installed, assign default profiles, enable messaging, and configure the log.

3.1 RFTS Server Settings

The screenshot shows the VeSion RFTS Probe Server settings page. The top navigation bar includes 'Log Out', 'Home', 'Settings', 'Dashboard', and 'My VeSion'. The breadcrumb trail is 'Home > Settings > Server & Device'. The left sidebar shows a search bar and a list of servers, with 'RFTS-SERV-FRE01' selected. The main content area displays the configuration for this server. The fields are: Name (RFTS-SERV-FRE01), Location (Fremont Lab), IP Address (192.168.1.100), Software Version (4.0.5.23818), Monitoring Plan (kolk445), Alarm (PT-PT Alarms), System Alarm (RTU-4100 Fail), and Org Chart. Below these are sliders for Data Archive Days (30 Days), Proactive Monitoring (13154 records, 388 MB), Server Log Archive (30 Days), and Server Log File Size (1 MB). There are also buttons for 'Apply to All Devices' and 'Edit' for each of the Monitoring Plan, Alarm, and System Alarm settings.

RFTS Probe Server details

- **Name:** Enter the name of the server (up to 99 characters).



It is recommended the probes names correspond to the Hub/Headend that it resides in.

- **Location:** Enter the physical location of the server (up to 199 characters).
- **IP Address:** Enter the IP address of the server.
- **Software Version:** Displays software version installed on probe.
- **Monitoring Plan:** Assigns default Monitoring Plan to probe. To apply this Monitoring Plan to all probes associated with the Probe Server, click **Apply to All Devices**. To edit the plan, click **Edit**.
- **Alarm:** Assigns default Alarm Profile to probe. To apply this Alarm Profile to all probes associated with the Probe Server, click **Apply to All Devices**. To edit the profile, click **Edit**.
- **System Alarm:** Assigns default System Alarm Profile to probe (probe, server, and/or network failure). To apply this System Alarm Profile to all probes associated with the Probe Server, click **Apply to All Devices**. To edit the profile, click **Edit**.
- **Org Chart:** Assigns the organization (e.g. hub, district) to which the probe server belongs. To apply this Org Chart to all probes associated with the Probe Server, click

Apply to All Devices. To set up and configure Org Charts, go to **Settings>Org Chart & Scope**.

- **Data Archive Days:** Designates the number of days (5 – 200) to keep historical measurement data.
- **Server Log Archive:** Designates the number of days (5 – 200) to keep a historical log record of system events, such probes going on or offline.
- **Server Log File Size Alert Threshold:** Designates the amount of data (1 – 99 MB) kept in the log before an alert is triggered. If no alert is needed, toggle the radio button to the left.



The Log File Alert is useful because the log file may increase in size quickly and send alerts unnecessarily. Incorporating the standard operating procedure of Resolving/Deleting Alarms, thus emptying the data log, at certain intervals should be considered.

- **Apply to All Devices:** Applies the selected measurements and on-demand testing to all probes associated with the probe server.

3.2 SNMP Configuration

SNMP Configuration

- **SNMP Enable:** Turn ON to enable SNMP alarms.
- **SNMP Resolved:** Turn ON to enable resolved SNMP alarms.
- **SNMP Version:** Select the version of SNMP to use; v1 is selected by default.
- **Enterprise:** Select the OID used to report the alarm.
- **Community:** Enter the community string/password for the SNMP. The default is public.
- **HOST (IP:Port; IP:Port):** Enter the host IP address and port for each SNMP trap receiver. Separate multiple addresses by semi-colons.

To configure notifications for only RFTS probe servers and all RFTS probes at once, go to **Settings>Notifications | RFTS**. For more information, see [12.0 RFTS Notifications](#).

Global notifications for ALL probe servers and probes (not only RFTS probes) can be configured in **Settings>Notification | VeSion**. For more information, see [2.3 Alarm Notifications \(My VeSion\)](#).

3.3 Email Configuration

Use this section to configure settings for email alarms. This applies to ALL probes associated with the RFTS Probe Server.

The emails will be sent to the email provided in **My VeSion**. To access the **My VeSion** screen, click the **My VeSion** icon on the menu bar at the top right. For more details on My VeSion, see [Section 2.3 Alarm Notifications \(My VeSion\)](#).

Email Configuration

Email Enable Email Resolved Notification SMS Enable SMS Resolved Notification

SMTP Server: smtp.office365.com

SmtP Server Port: [Redacted]

POP3 Server: [Redacted]

POP3 Server Port: 110

Email Address: vesion2@veexinc.com

Username: vesion2@veexinc.com

Password: [Redacted]

BCC SSL/TLS Check

Email Configuration

- **Email Enable:** To enable email alarm notifications from probe server if option was selected in My VeSion and email provided.
- **Email Resolved Notification:** To enable email alarm resolved notifications if option was selected in My VeSion and email provided.
- **SMS Enable:** To enable mobile device alarm notifications if option was selected in My VeSion and phone number/mobile provider selected.
- **SMS Resolved Notification:** Sends mobile device alarm resolved notifications if option was selected in My VeSion and phone number/mobile provider selected.
- **SMTP Server:** Enter server that VeSion accesses to send email notifications.
- **SMTP Server Port:** Enter server SMTP port that VeSion accesses to send email notifications.
- **Email Address:** Email address from which notifications are received.
- **Username:** Username VeSion uses to connect to the SMTP Server.
- **Password:** Password VeSion uses to connect to the SMTP Server

- **BCC:** Email addresses to which blind copies of notifications are sent.
- **SSL/TLS:** Security protocol used to connect to the SMTP Server.
- **Check:** Runs a test with the current configuration settings to validate they are correct.

3.4 System Log Configuration

Use this section to configure how alarms are sent to the system server's log.

SysLog Configuration

- **SysLog Enable:** Turn on to write alarm messages to the SysLog.
- **SysLog Resolved Notification:** Turn on to write resolved alarm messages to the SysLog.
- **Enterprise:** Select the SysLog software: VeEX or Custom.
- **Version:** Select the version of the SysLog protocol.
- **Transport:** Select the type of data packet sent to the SysLog.
- **HOST (IP:Port; IP:Port):** Enter the host IP address and port for each SysLog server. Separate multiple addresses by semi-colons.

3.5 Save Settings/Clear Alarms

Saving/Clearing Alarms

- **Clear all Active Alarms:** Click to clear active alarms on ALL probes associated with the probe server.

- **Delete all Resolved/Cleared Alarms:** Click to resolve/delete alarms on ALL probes associated with the probe server.
- **Save:** Click to save all configuration settings on this page.
- **Download Logs:** Click to download all monitoring and error logs for ALL probes associated with the probe server for a selected time range.

4.0 RFTS Probe Settings

Probes are uniquely identified by static IP addresses. One or more Probes can be assigned to a Probe Server.

On the **Probe** details page, view details for the probe installed, assign default monitoring plans, enable messaging, and configure the log. Access a probe's settings by selecting the probe under the probe server in the left panel.

Create Monitoring Plans and Alarm Profiles in **Settings**.

The screenshot shows the VeSion RFTS Optical Probe Settings page. The top navigation bar includes 'Log Out', 'Home', 'Settings', 'Dashboard', and 'My VeSion'. The breadcrumb trail is 'Home > Settings > Server & Device'. The left sidebar shows a tree view of servers and devices, with 'TRLA00SO9110180' selected. The main content area displays the configuration for this probe (Device Number 27). The configuration fields include Name (TRLA00SO9110180), Site Location (1623 Farnam), Rack (RTU-180), Shelf (42-B), System Alarm (default), and Org Chart (my region - my district - my system). Below the configuration fields is a table of monitoring plans:

Port #	Node ID	Route	Port On/Off	Network Type	Monitoring Plan	Baseline	Alarm	Maintenance On/Off	Associated CX180R Port
1	75km port	1623 Farnam to Y...	On	Point_to_Point	kolki445	Q	PT-PT Alarms	Off	
2	10km High Loss	1623 Farnam to Y...	On	Point_to_Point	kolki445	Q	PT-PT Alarms	Off	
3	20km port	Fremont to War...	On	Point_to_Point	kolki445	Q	PT-PT Alarms	Off	
4	25km port		On	Point_to_Point	break detectic	Q	PT-PT Alarms	Off	
5	45km port switch	1623 Farnam to Y...	On	Point_to_Point	Bre...-ProMoi	Q	PT-PT Alarms	Off	
6	50km port	Fremont to Nor...	On	Point_to_Point	break detectic	Q	PT-PT Alarms	Off	
7	3.7km port	Fremont Lab to Y...	On	Point_to_Point	break detectic	Q	PT-PT Alarms	Off	
8	5km port	Fremont to Kirby	On	Point_to_Point	...l445	Q	PT-PT Alarms	Off	CX180R-DOT22-1 (0)192...

At the bottom of the page, there are buttons for 'Clear all Active Alarms', 'Delete all Resolved/Cleared Alarms', 'Save', 'Reboot', and 'Download Logs'. The 'Server' radio button is selected in the bottom left corner.

RFTS Optical Probe Settings

Device Number	27	
Name	TRLA00SO910180	
Site Location	123 Main	
Rack	RTU-180	
Shelf	42-B	
System Alarm	default	
Org Chart	my region - my district - my system	

RFTS Optical Probe: General/Alarm Information

- **Device Number:** Displays device number; configured in probe configuration tool. Click the drop-down arrow to view technical configuration information for the probe. Click the **Copy** icon to copy the information.

Device Number	27	
IP Address	192.168.1.27	
MAC Address	00-18-88-02-79-81	
Platform name	RTU4000	
Platform serial	TRLA00SO910180	
Platform firmware	01.00.0005	
Module Name	RTU4100	
Module Firmware	01.02.0029	
Software Version	1.67.1+r6351.b135	
OTDR Version	5.97.9174.135	
RTU protocol	1.16	
Type	RTU4100 SM1625	
Optical Switch	OXA-4000 - 8 Ports SCAPC	

RFTS Optical Probe: Device Information

- **Name:** Enter name for probe.
- **Site Location:** Enter the physical location of the probe or click the plus icon to add a new location with geographical coordinates and information.
- **Rack:** Enter the name of the rack on which the probe is located.
- **Shelf:** Enter the name of shelf on which the probe is located.
- **System Alarm:** Assigns the default system alarm profile to probe.
- **Org Chart:** Assigns the organization (e.g. hub, district) to which the probe belongs. To set up and configure Org Charts, go to **Settings>Org Chart & Scope**.

4.1 RFTS Port Table

Each CX280X has 16 ports and can be associated with a node.

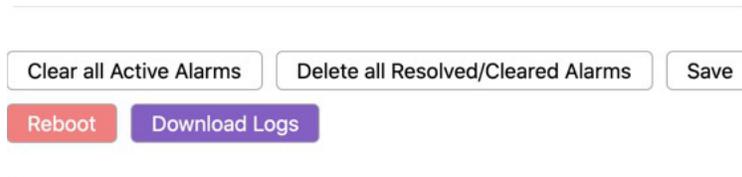
Port #	Node ID	Route	Port On/Off	Network Type	Monitoring Plan	Baseline	Alarm	Maintenance On/Off	Associated CX180R Port
1	75km port	1623 Far to Y	<input checked="" type="checkbox"/>	Point_to_Point	kol-45		PT-PT Alarms	<input type="checkbox"/>	
2	10km High Loss	1623 Far to Y	<input checked="" type="checkbox"/>	Point_to_Point	kol-45		PT-PT Alarms	<input type="checkbox"/>	
3	20km port	Fremont to War	<input checked="" type="checkbox"/>	Point_to_Point	kol-45		PT-PT Alarms	<input type="checkbox"/>	
4	25km port		<input checked="" type="checkbox"/>	Point_to_Point	break detectic		PT-PT Alarms	<input type="checkbox"/>	
5	45km port switc	1623 Far to Y	<input checked="" type="checkbox"/>	Point_to_Point	Bre -ProMo		PT-PT Alarms	<input type="checkbox"/>	
6	50km port	Fremont to Nor	<input checked="" type="checkbox"/>	Point_to_Point	break detectic		PT-PT Alarms	<input type="checkbox"/>	
7	3.7km port	Fremont Lab to	<input checked="" type="checkbox"/>	Point_to_Point	break detectic		PT-PT Alarms	<input type="checkbox"/>	
8	5km port	Fremont to Kirby	<input checked="" type="checkbox"/>	Point_to_Point	kol-45		PT-PT Alarms	<input type="checkbox"/>	CX180R-DOT22-1 (0)192...

Probe Port Table

- **Node ID:** Type the node to associate with the port.
- **Route:** Associate other data test ports through routing. If using the VeSion GIS Mapping option, select a node from the drop-down box. Click the icon to view the node information or to create a new node. Click the icon to view the **Landmark Location** screen.
- **Port On/Off:** Turns ON/OFF port measurements. After alarm threshold configuration is defined and baseline reference trace has been established, turn the setting to On to start the monitoring cycle for the port.
- **Network Type:** Select the network type (PON, xWDM MUX) to assign to the port.
 - **Point_to_Point**
 - **ManualPON:** Point-to-MultiPoint (includes RFoG)
 - **AutoPON:** Point-to-MultiPoint. Uses single pulse per wavelength and assigns splitter types based on event loss.
 - **xWDM:** CWDM, DWDM
 - **AutoPonToOnt:** Ideal for fiber monitoring when connected at OLT site. Recommend 50dB dynamic range.
- **Monitoring Plan:** Select the monitoring plan to assign to the port. Configure monitoring plans in **Settings>Monitoring Plans**.
- **Baseline:** Click the icon to perform a baseline trace. For more information on how to take a baseline, see [8.0 Reference Baselines](#).
- **Alarm:** Select the alarm profile to assign to the port. Configure alarm profiles in **Settings>Alarm Profiles**.

- **Maintenance:** Turn ON to stop measurements temporarily. If maintenance is required or a new reference trace is needed, the monitored port can be put into maintenance mode so no additional alarms will be dispatched. When the fiber is fixed and a new reference trace is acquired, then the port can be put back into active monitoring state.
- **Associated CX180R Port:** (*optional*) Displays the CX180R RF upstream test port that is associated with the optical probe port. The optical probe can be associated in the CX180R probe settings.

4.1.1 Save Settings/Clear Alarms



Saving/Clearing Alarms and All Ports Setting

- **Clear all Active Alarms:** Click to clear active alarms on ALL ports associated with the probe.
- **Delete all Resolved/Cleared Alarms:** Click to resolve/delete alarms on ALL ports associated with the probe.
- **Save:** Click to save all configuration settings on this page.
- **Reboot:** Click to reboot the probe.
- **Download Logs:** Click to download probe monitoring and error logs for this probe.

4.2 System Devices

The information of the system including the VeSion probe servers and probes can be viewed in **Home>Settings>Server&Device | System Devices**.

The System Services tab displays a list of the installed probe servers and their details. Select the RTU4100/RFTS400 from the server type drop down list to view the details of the installed RTU4100/RFTS400 server(s).

VeSion System Servers Information

Server Number		Server Name	Device Number	Device Name	Device IP	Status	Location	Software Version
Find Server Nt	Find Server Nt	Find Device Nt	Find Device Name	Find Device IP	Find Status	Find Location	Find Software Version	
0	RFTS-SERV-FRE01	27	TRLA00SO910180	192.168.1.27	Online	1623 Farmam	1.67.2+r6367.b136;(RTU4100)01.02.0030; (RTU4000)01.00.0005	
0	RFTS-SERV-FRE01	34	TRLB00TA810209	192.168.1.34	Online		1.67.1+r6351.b135;(RTU4100)01.02.0029; (RTU4000)01.00.0005	
0	RFTS-SERV-FRE01	66		192.168.0.22	Offline for 5 days 19 hours		1.48.101+r5750.b91;(RTU4100)01.02.0011-101;(RTU4000)01.00.0002-LTE2	

VeSion System Devices

5.0 Org Chart and Scope

Use Org Charts to segment and organize the cable network into geographical locations in a hierarchal “tree” structure, named Regions/Areas, Districts, and Systems. This organizational chart can be used to segment a traditional network structure and other types of network structures, such as named geographical locations, e.g. Cities, Districts, Neighborhoods.

After setting up the chart, Users, Devices/Probes, and Profiles (Channel and Alarm) can be assigned to each “tree branch” (Region/Area, District, System).

Users, probes, and profiles assigned to a specific Region/Area, District, and System can be viewed when clicked in the left panel.

Regions/Areas are segmented into Districts, then further into Systems. This allows users and probes to be tied to specific geographical locations.

Server Name	Server Number	Device Num...	Device Name	Device IP	Location	Software Ver...
RFTS-SERV-#...	0	2	V-RTU	192.168.0.1		1.48.101+r5750.b...
RFTS-SERV-#...	0	12	Feedback Device	106.209.17.100		1.65.1+r6224.b127
RFTS-SERV-#...	0	27	TRLA00SO910180	192.168.0.1	16 Mainam	1.67.2+r6367.b136
RFTS-SERV-#...	0	34	TRLB00TA810209	192.168.0.1		1.67.1+r6351.b135
RFTS-SERV-#...	0	101		192.168.0.1		1.66.0+r6275.b132
RFTS-SERV-#...	0	110	Feedback Device, Ai...	106.198.0.100	1660 1660 1660	1.62.0+r6194.b118
RFTS-SERV-#...	0	156	Feedback Lab	123.252.0.1		1.62.3+r6206.b123
RFTS-SERV-#...	0	238		192.168.0.1		1.65.1+r6224.b127
RFTS-SERV-#...	0	666		192.168.0.1		1.48.101+r5750.b...
RFTS-SERV-#...	0	4321	Test 4321	192.168.0.1		1.7.0-devel+r4376

VeSion: Org Chart

To assign users to an Org Chart, go to **Settings > User & Group > User**. In the **Group and Org Chart** column, select the Org Chart to apply, in the **Org** field.

To assign probes to an Org Chart, select it in the **Org Chart** field on the **Probe Server** details page. Click **Apply to All Devices** to apply the Org Chart to all probes under the Probe Server.

Profiles configured and assigned to the device, will appear in the Org Chart when assigned to the same device.

6.0 System License

To view which probes are enabled in VeSion, go to **Settings > System License**.

VeEX VeSion Server Version 4.1.9 Client Version 7.0.5392

Welcome Log Out | Home | Settings | Dashboard | My VeSion

Home > Settings > System License

Mac address	54:9F:35:25:32:08	Upload New License File <input type="button" value="Choose File"/> No file chosen
License Expiration	1638216711 (29 Nov 2021)	VeEX Contact Information 2827 Lakeview Court Fremont, CA 94538, USA Customer Service: +1-510-651-0500 Email: sales@veexinc.com
DSM (CX180F Server)	enabled	
RPM (CX180R Server)	enabled	
Sweep (3010H+ Server)	enabled	
RFTS (RTU410/4100 Server)	enabled	
Ethernet (RTU320 Server)	enabled	
CX380X (CX380X Server)	enabled	
CX280X (CX280X Server)	enabled	
ROME (ROME Server)	enabled	
PNM (PNM Server)	enabled	
GIS (Mapping)	enabled	
RealWORX Server Count	3	
VeSion WEB	enabled	
VeSion Controller	enabled	
Data Forwarder	enabled	
Maintenance Package	enabled	
Support Services	Tier III	
License Note	ATL VeSion Dev	
Service Tag		

Probe Licensing

Before the probes are active, click **Choose File** to upload the License File received from [VeEX Customer Care](#).

7.0 Monitoring Plans

To see the list of monitoring plans, click **System Configuration>Monitoring Plan**, and then click the **RFTS** tab at the top of the page. From this page, you can create, edit, or delete monitoring plans.

VeSion Monitoring Profiles

Actions	Name	Break Detection	Proactive Monitoring
Add	Find Name		
Create Cancel	Test Monitoring Plan	<input type="radio"/> Continuously <input checked="" type="radio"/> Custom every 1 hour	<input checked="" type="radio"/> Every Day <input type="radio"/> Every Week <input type="radio"/> Hourly at 12:00 AM
Edit	default	OFF	Every 1 hour
Edit Delete	3-min cycle+Maintenance	OFF	Every Day (at 4:00 AM)
Edit Delete	BreDe-ProMon	Continuously	Every 1 hour
Edit Delete	Hourly	Continuously	Every 1 hour
Edit Delete	PONBreak	Continuously	OFF
Edit Delete	Test1	Continuously	OFF
Edit Delete	break detection and Degradation detect	Continuously	Every Day (at 12:00 AM)
Edit Delete	kolkl445	Continuously	Every 1 hour

Monitoring Plans

To change the view of the monitoring plan list, click the heading to filter in ascending or descending order of that field (**Name**, **Break Detection**, **Proactive Monitoring**, **Custom**).

To create a new monitoring plan:

- Click **Add** then enter the settings for the alarm in the corresponding fields.
 - Name:** Enter a name for the plan.
 - Break Detection**
 - Continuously:** Select to continuously monitor for full break events.
 - Custom:** Select to periodically monitor for full break events, then select the time interval from the drop-down list.
 - Proactive Monitoring:** Select for a deeper analysis to detect fiber degradation that may or may not be affecting service.
- Click **Create**. The new plan is added to the list.

8.0 Reference Baselines

Each active monitoring port requires a unique signal reference baseline to be captured and saved. This saved baseline will allow the break detection alarms to report the condition properly.

If a reference trace has been previously established, the magnifier will be highlighted in green on the **Probe Settings** screen.

Prior to acquiring a new baseline, put the port in maintenance mode and click **Save** at the bottom of the screen.



Configure the distance units for the RFTS network in **Home>System Configuration>RFTS Units**.

8.1 Establishing Baselines

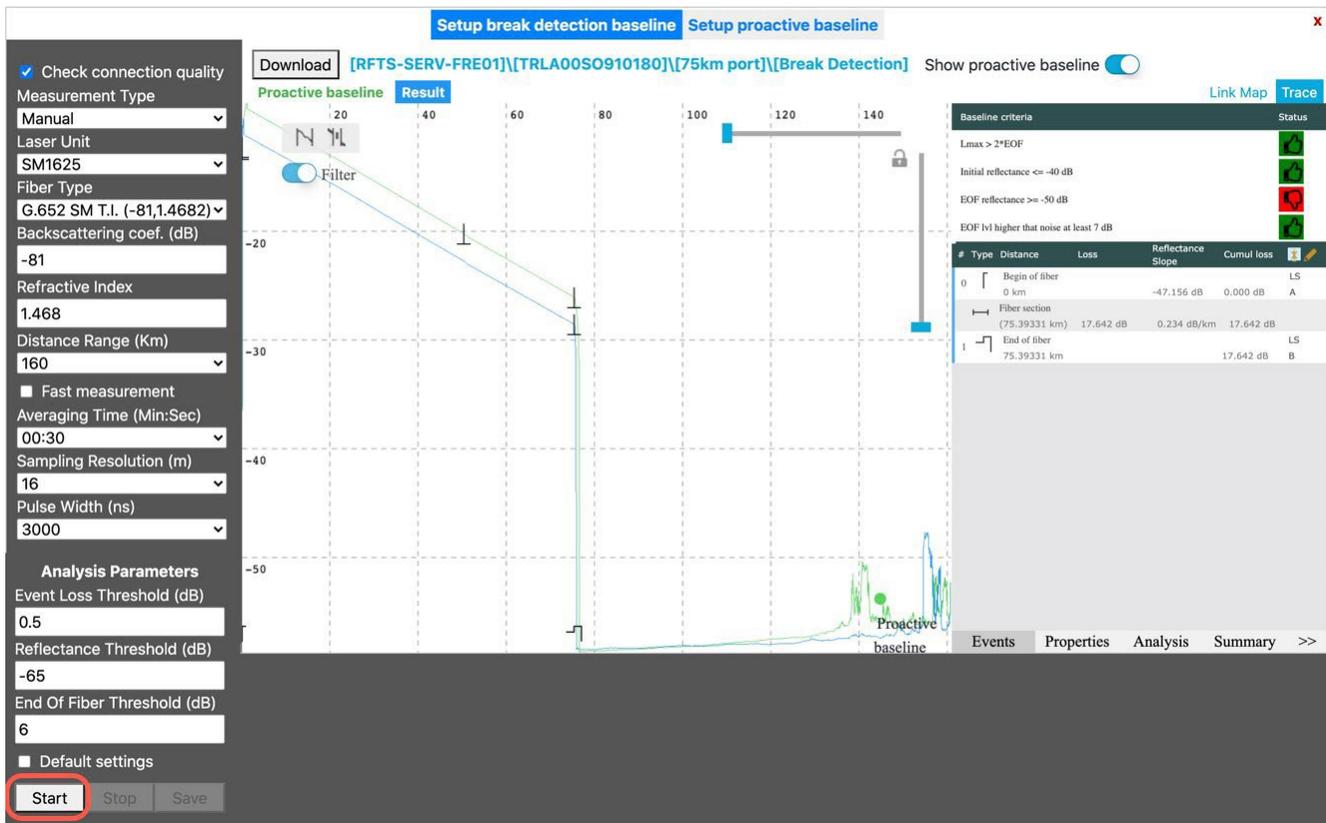
To establish a baseline for break detections:

1. On the **Probe Settings** Port table, click the magnifying glass in the **Baseline** column for the port to establish a baseline.

Port #	Node ID	Route	Port On/Off	Network Type	Monitoring Plan	Baseline	Alarm	Maintenance On/Off	Associated CX180R Port
1	75km port	16: Farna	<input checked="" type="checkbox"/>	Point_to_Po	ko 45		PT-PT Alarr	<input checked="" type="checkbox"/>	
2	10km High Log	16: Farna	<input type="checkbox"/>	Point_to_Po	ko 45		PT-PT Alarr	<input type="checkbox"/>	
3	20km port	Fremont to	<input type="checkbox"/>	Point_to_Po	ko 145		PT-PT Alarr	<input type="checkbox"/>	
4	25km port		<input type="checkbox"/>	Point_to_Po	break detec		PT-PT Alarr	<input type="checkbox"/>	
5	45km port swi	16: Farna	<input type="checkbox"/>	Point_to_Po	BreDe-ProN		PT-PT Alarr	<input type="checkbox"/>	
6	50km port	Fremont to	<input type="checkbox"/>	Point_to_Po	break detec		PT-PT Alarr	<input type="checkbox"/>	

Probe Settings Port Table: Baseline

The **Trace On-Demand** screen appears.



Trace On Demand Screen: Baseline



To download the reference trace .SOR file for further analysis, click the **Download** button and type a name for the file.

- In the left panel, choose **Auto** for the Measurement Type and click **Start** at the bottom. A “Successfully started” appears when the trace is in progress. Once the reference trace is complete, the message disappears.



Important note about manually editing a Reference Trace

While an incorrect reference trace will not damage your equipment or optical fiber, it will produce incorrect monitoring results. *It is recommended that you receive adequate training in making TDR measurements and editing event tables before manually editing a Reference Trace.*

- View the trace and event table to ensure the trace results meet expectations.
- In the bottom left panel, Click **Save**. A “Save Succeeded” message is displayed. Click **OK**.
- On the **Probe Settings** Port Table, set **Maintenance** to **OFF** and the **Port** to **ON**.
- At the bottom, click **Save**.



Don't Forget to Click Save

*If you do not click **Save**, all changes and the new reference trace will not be applied, and the system will revert to previous settings.*

8.2 Redo Baselines

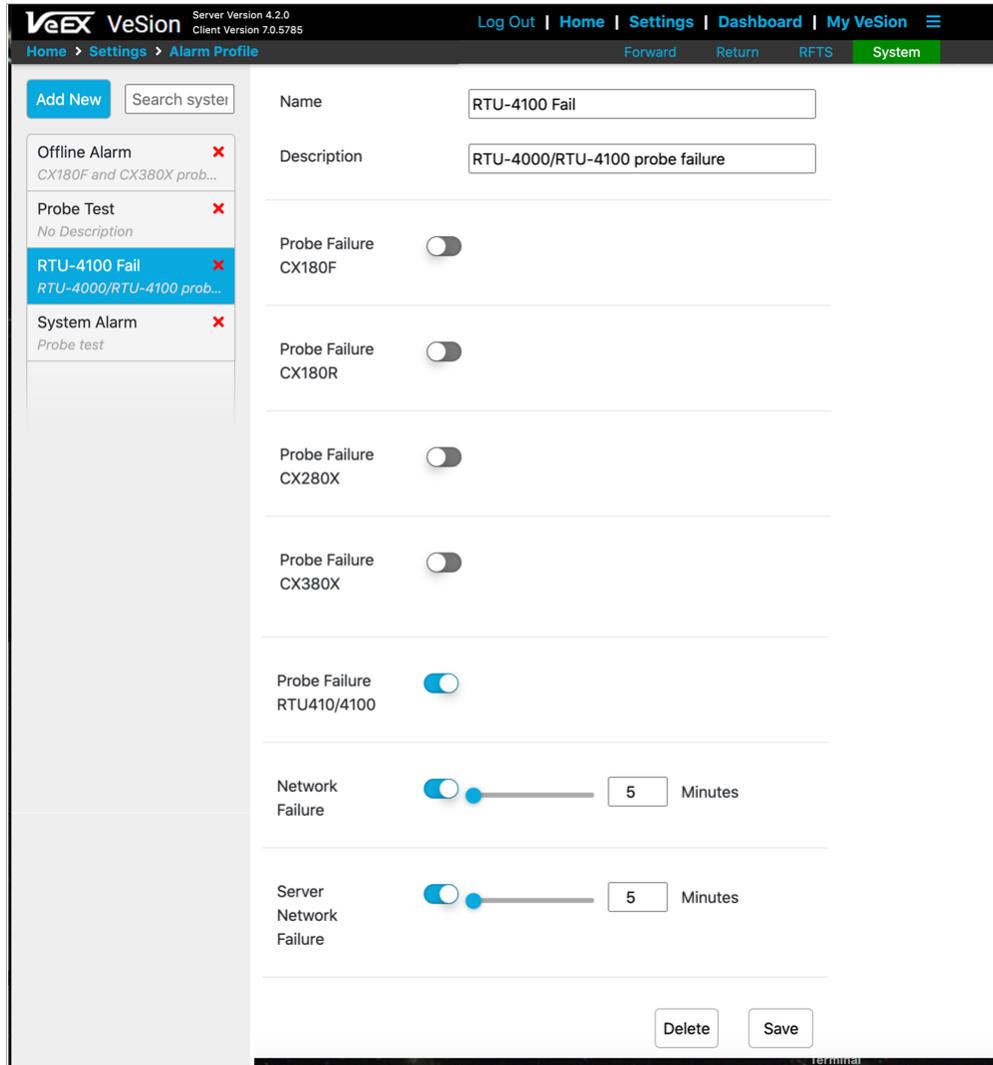
The Reference Baselines should be redone in the following circumstances.

- When a new Monitoring Plan is assigned to a port.
- When changes are made to a Monitoring Plan.
- After equipment maintenance, redo to ensure the reference trace is correct even if the equipment is not supposed to have been impacted by the maintenance.

9.0 Alarm Profiles

9.1 System Alarm Profiles

Configure System Alarms (**Settings > Alarm Profiles | System**) to be notified when a probe goes offline or the network goes down.



System Alarm Profile screen

To configure a new system alarm profile:

1. Go to **Settings > Alarm Profiles | System**.
2. Click **Add New**.
3. Type a name and description for the alarm, and then select which events that need to be monitored.
 - **Probe Failure** – select to trigger an alarm when the probe goes offline.
 - **Network Failure** – select to trigger an alarm if the entire network goes down. Use the slider or type the number of minutes the network is down before triggering the alarm.
 - **Server Network Failure** – select to trigger an alarm if the server goes down. Use the slider or type the number of minutes the server is down before triggering the alarm.
4. Click **Save** to save the new profile. The new alarm appears in the left panel.



Delete a system profile in two ways:

- *Clicking the profile on the left panel and then clicking the **Delete** button at the bottom.*
- *Clicking  next to the profile on the left panel.*

9.2 RFTS Alarms

To create a new RFTS Alarm Profile, click **Add** then enter the settings for the alarm in the corresponding fields.

Actions	Name	Description	Enable	Simple	Loss in event (dB) (Minor Major Critical)	Reflectance in event (dB) (Minor Major Critical)	Fiber attenuation (dB/km) (Minor Major Critical)	PON to ONT event max level (dB) (Minor Major Critical)	Reflective event position (m)	Non-reflective event position (m)
Add	<input type="text" value="Find Name"/>									
Edit	default		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.00	20.00	0.50	0.00	default	default
Edit Delete	123		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.00 0.00	default	default
Edit Delete	12wqeqw		<input type="checkbox"/>	<input type="checkbox"/>	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	default	default
Edit Delete	1x32 PON	PONtoONT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.10 0.25 0.50	2.00 3.00 4.00	0.05 0.10 0.15	1.00 2.00 2.50	default	default
Edit Delete	234	34223	<input type="checkbox"/>	<input type="checkbox"/>	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	default	default
Edit Delete	Fastech E2E	Break & Pro-active	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.00	20.00	1.00	0.00	default	default
Edit Delete	PT-PT (Enal)	Break	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.00	35.00	0.50	0.00	default	default
Edit Delete	PT-PT Alarm	Monitoring - 1550	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.50 2.00 3.00	5.00 10.00 20.00	0.10 0.20 0.50	0.00 2.00 5.00	default	default
Edit Delete	PT-PT Test		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	0.00 0.01 0.02	default	default

RFTS Alarm Profile screen

To create a new RFTS alarm profile:

1. Select **Settings > Alarm Profiles | RFTS**.
2. Select **Add New**.
3. Enter the monitoring information needed as described below, and then select **Create** to save the new profile.

- **Name:** Type a name for the alarm profile.
- **Description:** Type a description for the alarm profile.
- **Enable:** Turn ON to enable alarm threshold fields.
- **Simple:** Turn ON to enable simple threshold entry (one threshold versus three).
- Enter thresholds (one or Minor, Major, Critical) for:

Loss in event (dB)

Fiber attenuation (dB/km)

PON to ONT event max level (dB)

- **Reflective event position (m):** Turn OFF to manually enter the location of the reflective event.
- **Non-reflective event position (m):** Turn OFF to manually enter the location of the non-reflective event.

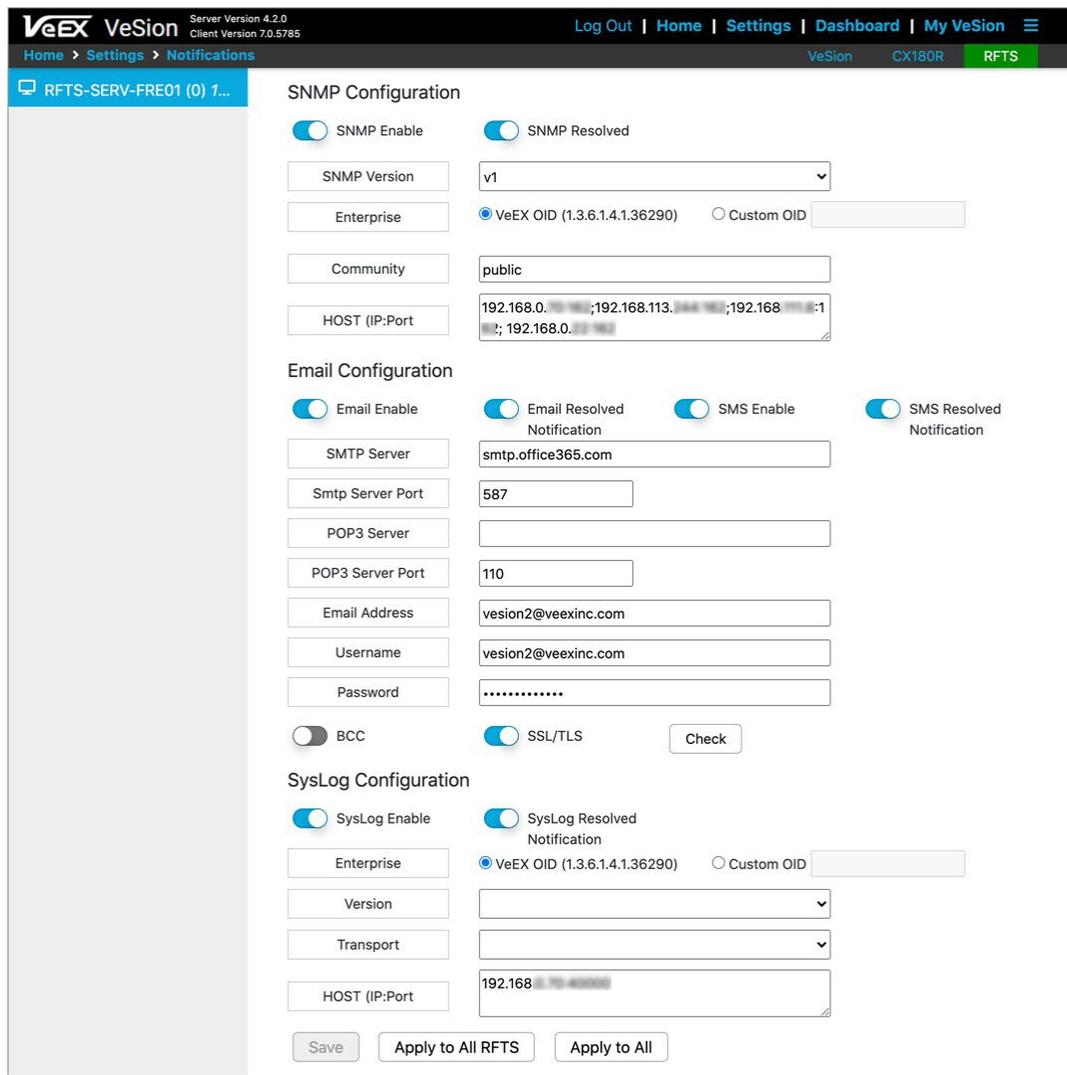
To delete a forward alarm, click **Delete** next to the profile on the left panel.

10.0 RFTS Notifications

Use **Setting>Notifications | RFTS** to configure SNMP and email settings for all RFTS Probe Servers and RFTS probes. Before setting up notifications, assign each mobile carrier in the **SMS Provider List** tab by clicking **Home>System Configuration>User and Group**.

Global notifications for ALL probe servers and probes (not only RFTS probes) can be configured in **Settings>Notification | VeSion**. For more information, see [2.3 Alarm Notifications \(My VeSion\)](#).

To configure notifications for a specific RFTS Probe Server and RFTS probes associated with that server, go to the **RFTS Probe Server Settings** page. For more information, see [3.2 SNMP Configuration](#) and [3.3 Email Configuration](#).



RFTS Notifications Configuration settings

11.0 RFTS Settings

Configure the settings for Proactive Monitoring and the unit of measurement for fiber in VeSion.

VeEX VeSion Server Version 4.2.0 Client Version 7.0.5785 Log Out | Home | Settings | Dashboard | My VeSion

Home > Settings > RFTS Settings

Forecast API endpoint

Distance Units

- Kilofeet (kft)
- Feet (ft)
- Mile (mi)
- Kilometer (km)

RFTS settings

12.0 RFTS Advanced

12.1 PON Test Results

Use the **RFTS Advanced>PON Test Results** option to view network test results and details for each event.

User	Server-RTU-Port	Time	Comment	Event #	GPS	Status
Find User	Find Server-RTU-Port	Find Time	Find Comment	Find Event #	Find GPS	Find Status
bla	0-27-1	10/27/2020 13:54:12	1	0	37.4708004908424, -1 	PASS 
bla	0-27-1	10/27/2020 12:07:17	hhfbfb		37.4708055466742, -1 	FAIL 
bla	0-34-2	10/06/2020 12:57:51	correct	0	37.4708135295657, -1 	PASS 
bla	0-2-5	10/06/2020 11:53:37			0, 0 	FAIL 
bla	0-27-5	10/06/2020 11:50:48		1	0, 0 	PASS 
bla	0-27-4	10/06/2020 11:48:27		1.1	0, 0 	PASS 
bla	0-27-4	10/06/2020 11:45:15			0, 0 	FAIL 
sm	0-27-3	10/06/2020 08:27:20	test	1	53.8652842425934, 2 	PASS 

PON Test Results

In the **GPS** column, click the **Globe** icon  to view a map with the location of the event marked.

In the **Status** column, click the **Trace** icon  to view the trace details for the event.

12.2 Proactive Monitoring Analysis

Use the **RFTS Advanced>Proactive Monitoring Analysis** option to view attenuation history and total loss from each port that has been switched on for proactive monitoring.

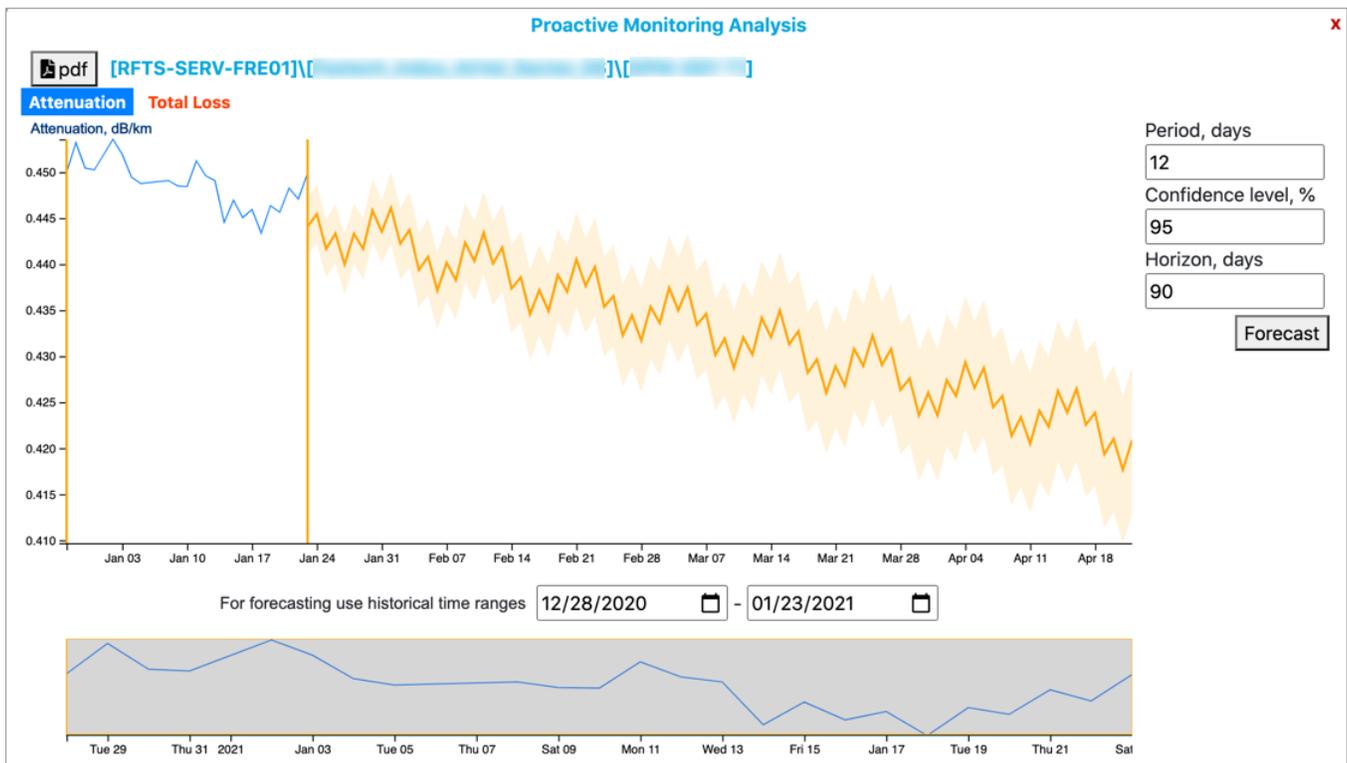


Proactive Monitoring Analysis

12.2.1 Forecasting

Enter the following, then click **Forecast** to see a predictive model analysis of the attenuation or total loss based on the recent history.

- **Period, days:** Enter the number of days (maximum 12) history to use for the forecast.
- **Confidence level, %:** Enter the confidence percentage for the forecast. Generally, increasing the confidence level means accepting a larger variance in signal loss.
- **Horizon, days:** Enter the number of days to forecast.



Proactive Monitoring Analysis: Forecast (Predictive Analysis)

13.0 Geographic Information System (GIS)

Use the GIS option to map routes, categorize nodes, and pinpoint OTDR events.

13.1 Requirements

The VeSion GIS server uses one of the following:

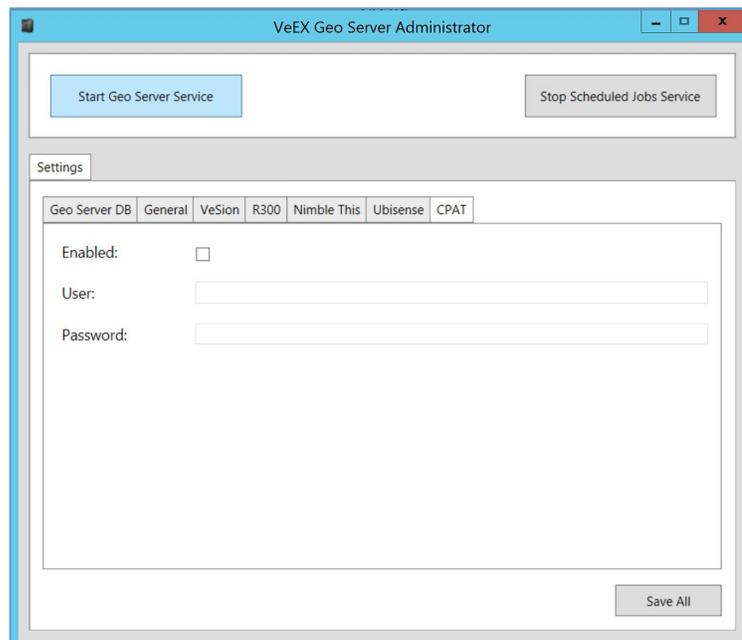
- Windows Server™ 2008 R2
- Windows Server™ 2012
- Windows Server™ 2016

Additional software required include:

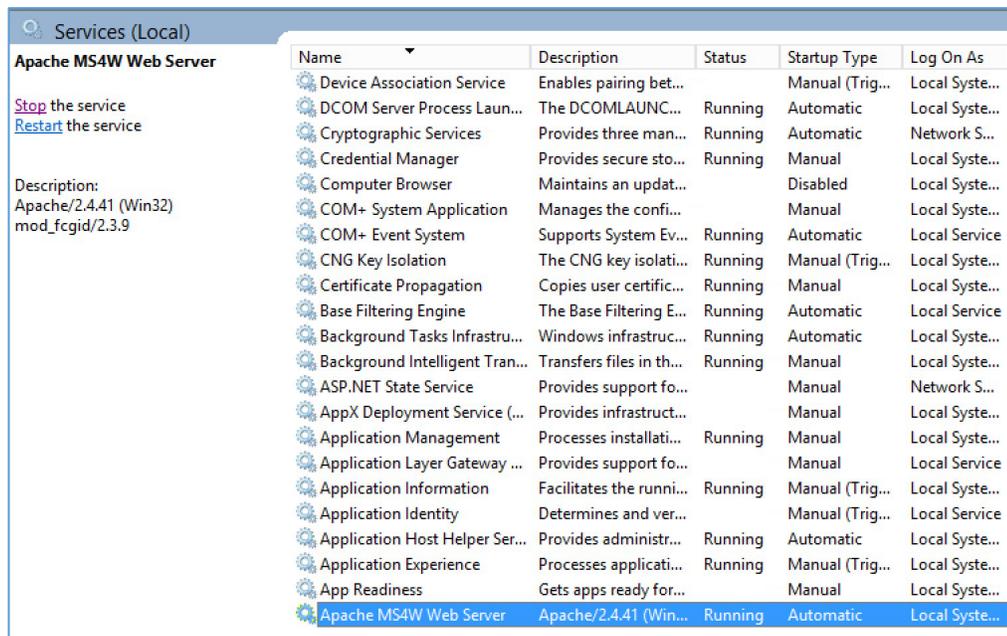
- .NET Framework 4.7+
- PostgreSQL® 10 with PostGIS 2.5 Spatial Extension
- Geo Server Software Installation Package

13.2 Geo Server Service/Apache MS4W Webserver Service

After installing the Geo Server software, start the Geo Server Service. Then, run the Apache MS4W Webserver Service.



Geo Server Service Settings



Apache MS4W Web Server Service

13.3 Getting Started with GIS

Perform the following steps to begin using VeSion GIS:

1. Enable/Configure Geo Server.
2. Add Layers to map.
3. Add Locations on map.
4. Create/Configure Routes on map.
5. Add Landmarks along routes.

13.4 Configure Geo Server

Configure the Geo Server in **Settings>GIS | Settings**. The Geo Server pulls the map data which can then be used for locating fault lines.

The screenshot shows the 'VeEX Geo Server Settings' page in the VeSion application. The page is titled 'VeEX Geo Server Settings:' and contains several sections of configuration options:

- Enabled:** A checkbox that is checked, indicating the Geo Server is active.
- Host IP:** A text input field containing 'http://192.168.115.' followed by a blurred IP address.
- Version:** A text input field containing '1.0.0.227'.
- World Range:** Two rows of input fields for 'Top Left Lat/Lng*' and 'Bottom Right Lat/Lng*', each with '0' in the first field and '0' in the second field, separated by a slash.
- Ubisense myWorld Settings:** An 'Enabled*' checkbox that is unchecked.
- Google Geocoding Configuration:** An 'API Key*' text input field that is empty.

At the bottom of the settings area, there is a note: '* Read-only. Can only be changed from the Geo Server Administrator'. Below the settings is a 'Save Settings' button.

GIS Geo Server Settings

- **Enabled:** Activates the Geo Server.
- **Host IP:** IP address of GIS map. *Must enter http:// or https:// before the IP or domain name.
- **Version:** read only field that shows the Geo Server version.
- **World Range:** Locks the map view to rectangular coordinates entered.
- **IQGeo myWorld Settings:** Leave blank if IQGeo account not used.
- **Google Geocoding Configuration:** If you have a google account with geocoding services, enter the API key here.

Click **Save Settings** to save changes.

13.5 Layers

The GIS map consists of layers. The “base layer” is the base map that is always visible. Usually, this is a street map or satellite photo map. Only one base layer can be visible at a time and it fills the full screen.

Once the base layer/map is established, other “secondary” layers can be created for routes, locations, landmarks, and alarm/faults (default secondary layer). Other examples of secondary layers that can be used if the data is available are weather, google maps, street maps, satellite view maps, utility maps, etc.

For RFTS, one base layer and at least two secondary layers are required.

Access Layer Settings by going to **Settings>GIS | Layers**.

The screenshot displays the 'Layer Settings' page in the VeSion application. The header includes the VeSion logo, version information (Server Version 4.2.0, Client Version 7.0.5873), and navigation links (Log Out, Home, Settings, Dashboard, My VeSion). The breadcrumb trail is 'Home > Settings > GIS'. The main content area is titled 'Layer Settings:' and contains a table of layers. Each layer row includes a checked checkbox, the layer name, type, source, and 'Edit' and 'Delete' buttons. An 'Add Layer' button is located in the top right corner of the table area. A 'Save Settings' button is positioned at the bottom left of the page.

Layer Name	Type	Source	Actions
locations	Secondary	WMS	Edit Delete
Google	Base	Google (Street)	Edit Delete
osm	Base	OpenStreetMap	Edit Delete
routes	Secondary	WMS	Edit Delete
headends	Secondary	WMS	Edit Delete

GIS Layer Settings

To add a layer, click **Add Layer**.

Base Layer Settings

Secondary Layer Settings

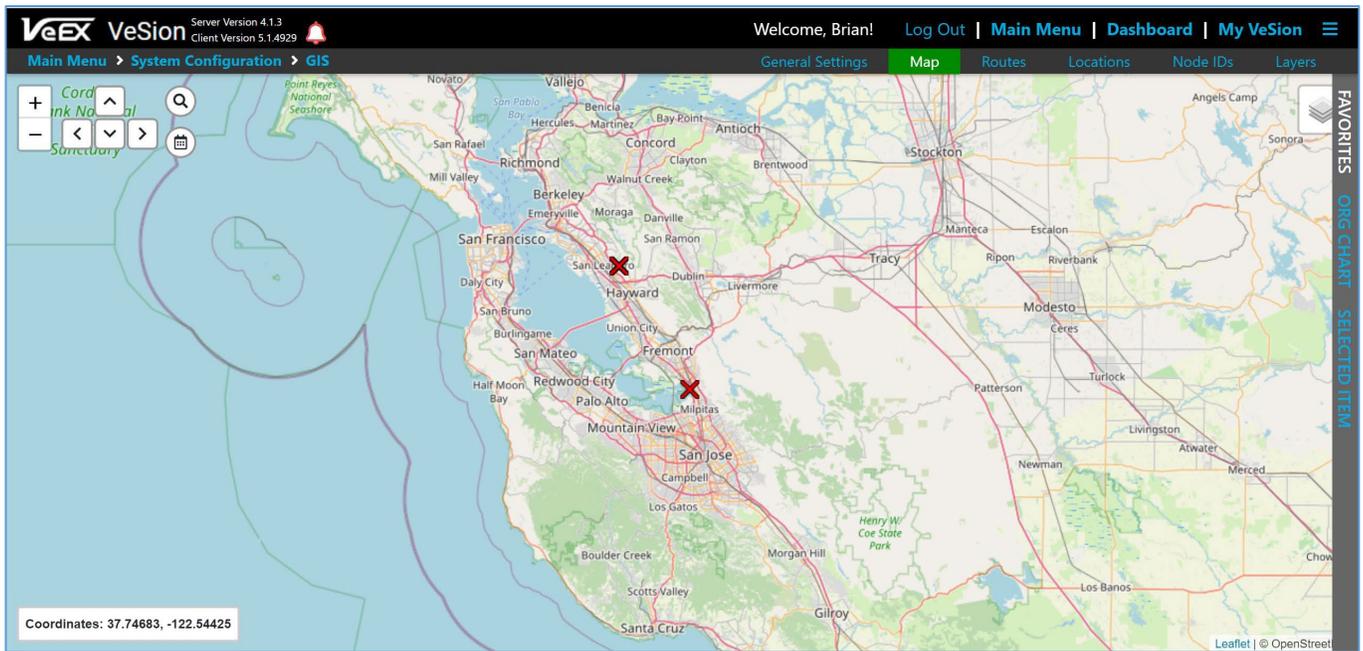
Base/Secondary Layers:

- **Enabled:** Activates layer.
- **Name:** Name for base/secondary layer. *Required.
- **TYPE:** If based layer, select Base. If secondary level, select Secondary.
- **Source:** Select the source for the map data. Available third party data is loaded to the Geo Server e.g. Web Mapping Service (WMS).

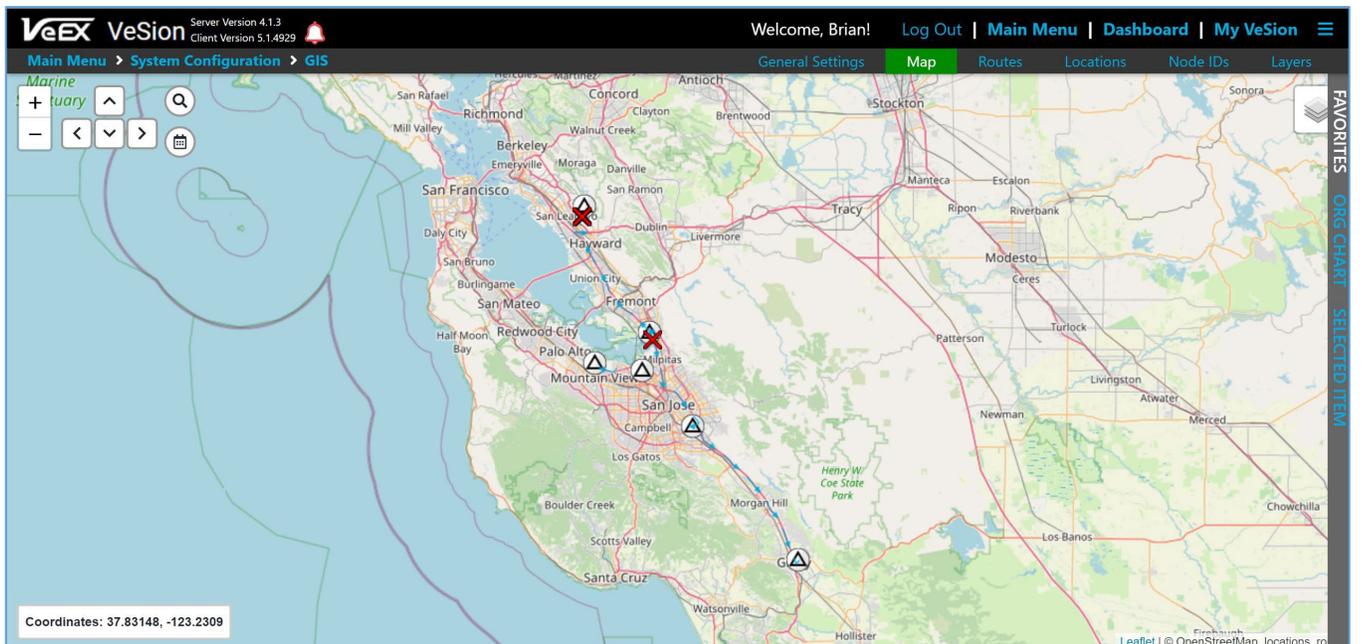
Secondary Layer only

- **URI:** Uniform Resource Identifier. Server address and port for map data. This is normally the same server and port on which Apache Server is running.
- **Get Layers from URI:** Click to access data from that location.
- **Layer:** Select the type of data to display on the layer e.g. routes, locations, landmarks, faults. The **URI** must be entered and **Get Layers from URI** clicked first.

Click **Add**. Then, click **Save Settings**. A “*Layer settings saved successfully*” message is displayed. Click **OK**.



GIS Map – Base Layer only



GIS Map – Base Layer with Secondary Layers overlaid

13.6 Locations

After creating Base and Secondary Layers, add Locations at **Settings>GIS | Locations**.

Name	Type	Tags
<input checked="" type="checkbox"/> B...	Home	subscriber
<input type="checkbox"/> ...	Home	subscriber,tier 4 plan
<input type="checkbox"/> ...	Home	subscriber,home office,tier 3 plan

The coordinates of a map can be set by entry, dragging the green pin or using the current mobile device location by clicking the pin of the form (when https is configured).

13.6.1 Filters

Search by tags by clicking on the **Tags** icon  in the column header and then selecting the Tag in the displayed drop-down list box.

Name	Type	Tags
<input type="checkbox"/> B...	Home	subscriber
<input type="checkbox"/> ...	Home	subscriber,tier 4 plan
<input type="checkbox"/> ...	Home	subscriber,home office,tier 3 plan

Names and Types can also be searched by clicking the column header.

13.6.2 Adding Locations

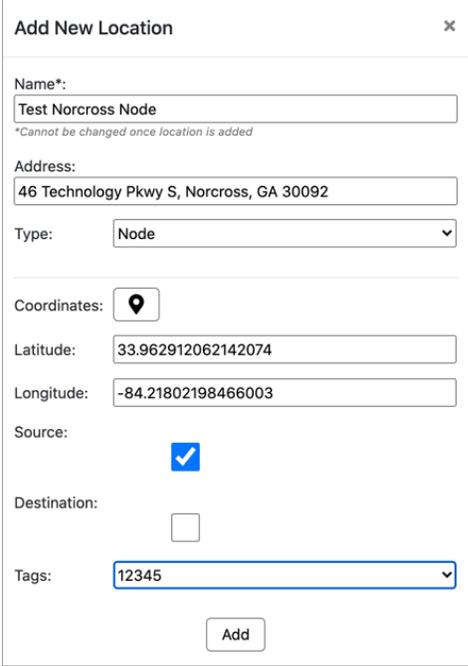
There are two options to add locations.

- Import a CSV file.
- Add each Location manually

Import Locations

To import locations, click **Import CSV**. Click **Choose File**, select the csv file to import, and click **Open**.

Add Location manually



The screenshot shows a dialog box titled "Add New Location" with a close button (x) in the top right corner. The form contains the following fields and options:

- Name*:** A text input field containing "Test Norcross Node". Below the field is a small note: **Cannot be changed once location is added*.
- Address:** A text input field containing "46 Technology Pkwy S, Norcross, GA 30092".
- Type:** A dropdown menu with "Node" selected.
- Coordinates:** A location pin icon.
- Latitude:** A text input field containing "33.962912062142074".
- Longitude:** A text input field containing "-84.21802198466003".
- Source:** A checkbox that is checked with a blue checkmark.
- Destination:** An unchecked checkbox.
- Tags:** A dropdown menu with "12345" selected.
- Add:** A button at the bottom center of the dialog.

GIS Map – Add Location

After clicking **Add**, the new Location added appears on the map.

Server Version 4.2.0
Client Version 7.0.5886

Log Out | Home | Settings | Dashboard | My VeSion

Settings | Map | Layers | Routes | **Locations** | Zones | Node IDs | PNM

Locations | Location Types

Add Location | Delete Location | Import CSV

Name	Type	Tags
<input checked="" type="checkbox"/> Test Norcross Node	Node	test
<input type="checkbox"/> j2	Node	
<input type="checkbox"/> j1	Home	
<input type="checkbox"/> 5555555	Building	444
<input type="checkbox"/> kylertest8	Home	
<input type="checkbox"/> 3456789	Building	
<input type="checkbox"/> 7889	Building	
<input type="checkbox"/> 132r	Building	
<input type="checkbox"/> sa2345	Building	2345

Location Properties

Name: Test Norcross Node

Type: Node

Address: 46 Technology Pkwy S, Norcross, GA 30092

Coordinates:

Latitude: 33.9629120621421

Longitude: -84.21802198466

Source:

Destination:

Tags: test >>

Save

Coordinates: 33.95935, -84.22044

GIS Map –Location Added

13.6.3 Location Types

Locations can be segmented into types. Common types may include Headend, Node, Splitter, Home, Fiber Vault, Manhole, etc. Assign a Location Type to a Location so the Type icon appears on the map.

Server Version 4.2.0
Client Version 7.0.5886

Log Out | Home | Settings | Dashboard | My VeSion

Settings | Map | Layers | Routes | **Locations** | Zones | Node IDs | PNM

Locations | **Location Types**

Add Type

<input type="checkbox"/> Name: Building	Edit	Delete
<input type="checkbox"/> Name: Home	Edit	Delete
<input type="checkbox"/> Name: Headend	Edit	Delete
<input type="checkbox"/> Name: Node	Edit	Delete
<input type="checkbox"/> Name: Fiber Vault	Edit	Delete
<input type="checkbox"/> Name: Manhole	Edit	Delete
<input type="checkbox"/> Name: Splitter	Edit	Delete
<input type="checkbox"/> Name: OLT	Edit	Delete
<input type="checkbox"/> Name: ONT	Edit	Delete
<input type="checkbox"/> Name: RTU320	Edit	Delete
<input type="checkbox"/> Name: HOME	Edit	Delete
<input type="checkbox"/> Name: Reflector	Edit	Delete
<input type="checkbox"/> Name: Vault	Edit	Delete

Coordinates: 33.95941, -84.21473

GIS Map –Location Types

Location Type Setup
✕

Name:

Icon:

Icon Preview:

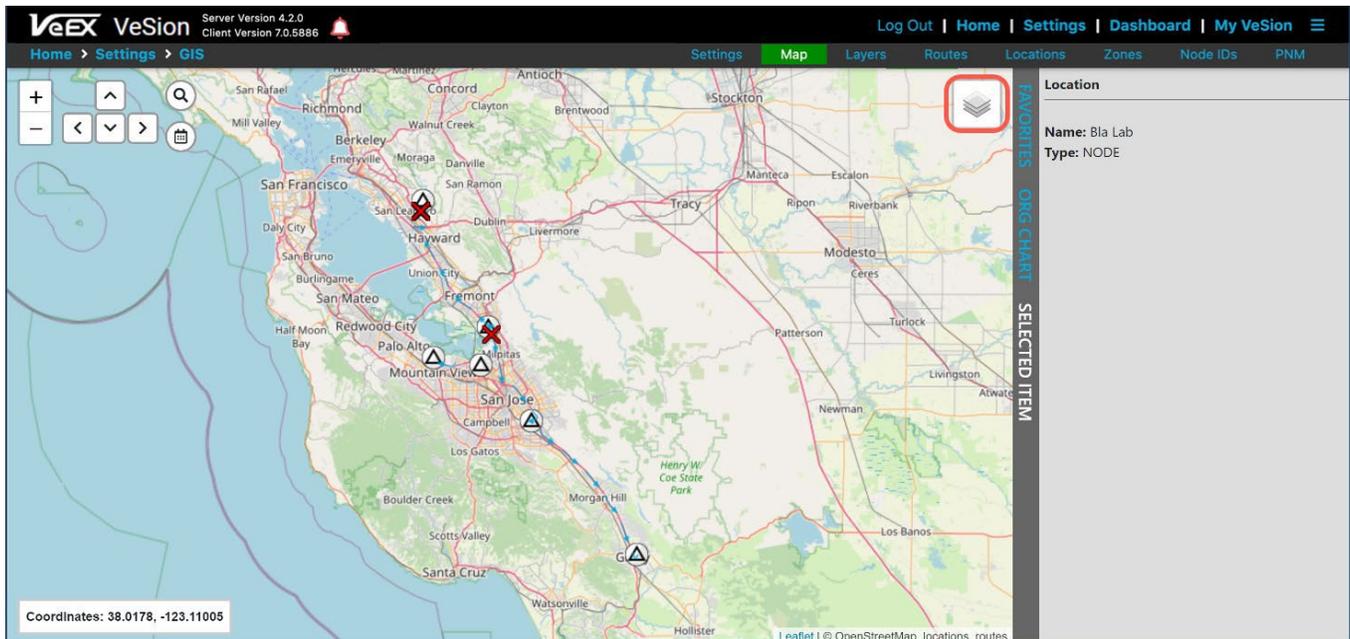
Priority:

GIS Map –Location Type Setup



Important note about Priority

To avoid overlapping icons on the map, the Priority number sets the order in which icons are overlaid. If two icons overlap but are a different priority, the icon with the higher priority will be displayed. For example, if Priority 10 appears to conflict with Priority 5 at a given location, then Priority 10 will be displayed and not Priority 5.



GIS – Example of Fiber Mapping



Customized Location icons can be added. *For more information, contact [VeEX Customer Care](#).*

13.7 Routes

After creating Layers and Locations, add Routes at **Settings>GIS | Locations**.

The screenshot shows the VeSion GIS interface. The top navigation bar includes 'Settings', 'Map', 'Layers', 'Routes', 'Locations', 'Zones', 'Node IDs', and 'PNM'. The 'Routes' tab is active, displaying a table of routes and a 'Route Properties' form. The table lists routes with columns for Name, Type, Source, Destination, and Length (km). The 'Route Properties' form shows the name 'c-d', type 'OTDR', source 'Norcross Headend', and destination 'B'. A map on the right shows a green route line connecting a source location (marked with a blue dot) to a destination location (marked with a red dot) across the Atlantic Ocean. The map includes various geographical features and labels for countries and regions.

Name	Type	Source	Destination	Length (km)
testz-testb	OTDR	testz	testb	0
testsdgsdggfg	FORWARD	Norcross Headend	B	8335.363
R1	OTDR	L1	L2	2.265
Louisville	OTDR	Louisville	coln	68.732
eff	OTDR	Norcross Headend	B	8425.493
c-d	OTDR	Norcross Headend	B	8326.339
bacon	OTDR	Louisville	Daniel	0
a b	OTDR	Norcross Headend	B	8223.149
1412260_14	OTDR	FLV01-C	FLV01-A	0.336
1412259_14	OTDR	FLV01-A	FLV01-A	0.088
1412259_14	OTDR	FLV01-A	FLV01-A	0.140
1412258_14	OTDR	FLV01 P	FVL01-C	0.202
1412257_14	OTDR	FLV01-A	FLV01-A	0.495
1412257_14	OTDR	FLV01-A	FLV01-A	0.167
1412256_14	OTDR	FLV01-A	FLV01-A	3.191

Route Properties

Name: c-d

Type: OTDR

Source: Norcross Headend

Destination: B

Save

GIS Map –Routes

13.7.1 Create Routes

There are two options to add routes.

- Import a KMZ/KML file.
- Add each Route manually

Import Routes

1. On the map, click the **Edit Layers** icon .
2. Click the **Upload Route KMZ/KML** icon .
3. Click **Choose File**, select the file to import and then click **Import**.

Build Route Via KMZ/KML

Upload file: No file chosen

Import Route

The new route appears on the map automatically.

4. Click **Save**.



You must click **Save** after importing or creating the route.

Add Route manually

1. In the left panel, click the **Add Route** button. The **Create New Route** box is displayed.

The screenshot shows a 'Create New Route' dialog box with the following fields and values:

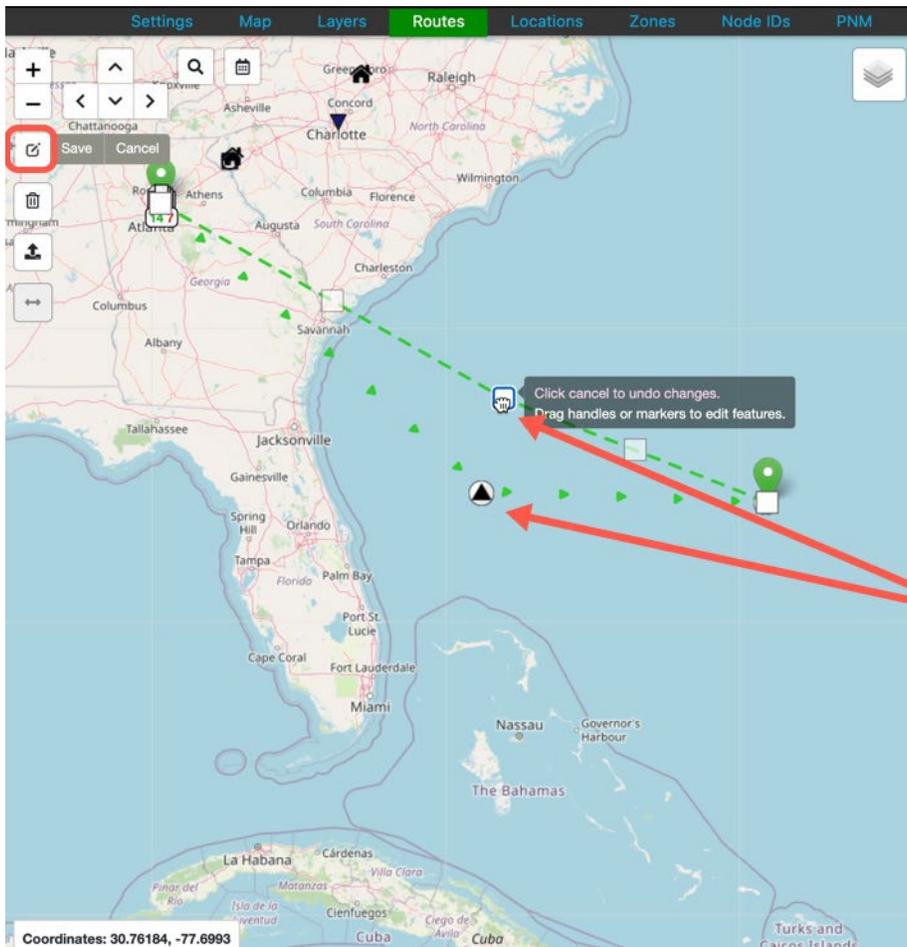
- Name: TestRoute
- Type: OTDR (dropdown)
- Source: Test Norcross Node (dropdown)
- Destination: B (dropdown)

An 'Add Route' button is located at the bottom center of the dialog.

GIS Map –Creating Routes

- **Name:** Name of new route.
- **Type:** Type of route (OTDR, Forward, Return).
- **Source:** Start point of route.
- **Destination:** End point of route.

2. Click **Add Route**. The new route appears on the map automatically.
3. Click the **Edit Layers** icon . The green route line changes from solid to a dash line.
4. Drag and define the route line to the desired location.
5. Click **Save**.



Click the **Edit Layers** icon, then drag and define the route to desired location.

As you drag the route, the old route and new route both appear.

To save changes, click **Save**.

GIS Map –Drag and Define Routes

13.8 Landmarks

Landmarks are used to create a transformation function from Optical Distance to Geo Distance. This will improve the accuracy of fiber break alarms.



Baselines should be established before assigning routes.

To access the **Landmarks** page, go to **Settings>Server & Device | RFTS** and select the probe in the left panel.

In the **Route** column, select a route to assign to the port and then click the **Flag** icon .

Configure Landmarks by selecting a **Route** and then clicking the **Flag** icon.

Port #	Node ID	Route	Port On/Off	Network Type	Monitoring Plan	Baseline	Alarm	Maintenance On/Off	Associated CX180R Port	
1	75km port 	1623 Far  to 	 	<input checked="" type="checkbox"/>	Point_to_Point	kol  45	 	PT-PT Alarms 	<input type="checkbox"/>	
2	10km High Loss 	1623 Far  to 	 	<input checked="" type="checkbox"/>	Point_to_Point	kol  45	 	PT-PT Alarms 	<input type="checkbox"/>	
3	20km port 	Fremont to War 	 	<input checked="" type="checkbox"/>	Point_to_Point	kol  45	 	PT-PT Alarms 	<input type="checkbox"/>	
4	25km port 		 	<input checked="" type="checkbox"/>	Point_to_Point	break detectic 	 	PT-PT Alarms 	<input type="checkbox"/>	
5	45km port switc 	1623 Far  to 	 	<input checked="" type="checkbox"/>	Point_to_Point	Bre  -ProMor	 	PT-PT Alarms 	<input type="checkbox"/>	
6	50km port 	Fremont to Nort 	 	<input checked="" type="checkbox"/>	Point_to_Point	break detectic 	 	PT-PT Alarms 	<input type="checkbox"/>	
7	3.7km port 	Fremont Lab to 	 	<input checked="" type="checkbox"/>	Point_to_Point	break detectic 	 	PT-PT Alarms 	<input type="checkbox"/>	
8	5km port 	Fremont to Kirby 	 	<input checked="" type="checkbox"/>	Point_to_Point	kol  45	 	PT-PT Alarms 	<input type="checkbox"/>	CX180R-DOT22-1 (0)192...

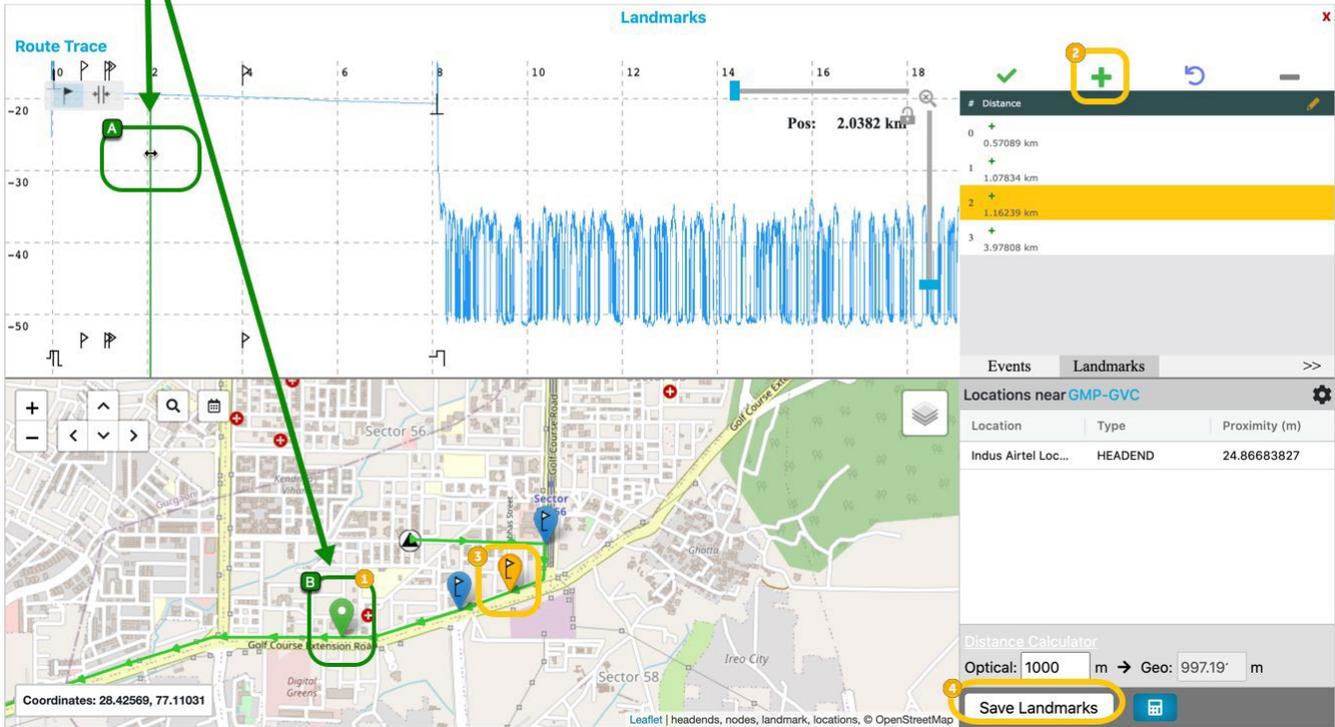
Port Settings –Assign Routes and Configure Landmarks

The **Landmark** page is displayed.

- A** Click and drag the green marker along the Route Trace at the top.
- B** As you move along the trace, the green pin on the map moves along the green route.

To add a **Landmark** along a route:

- 1 Using the marker at the top, drag the **green pin** close to the desired location along the route.
- 2 Click the **plus** icon. A **yellow Landmark pin** appears on the map.
- 3 Click the exact location along the route to which to move the yellow pin.
- 4 Click **Save Landmarks** at the bottom. The Landmark pin turns from yellow to blue.



Configure Landmarks

Click and drag the green pin along the trace at the top. As you move along the trace, the green pin on the map moves along the green route.

To add a Landmark:

1. Using the green marker at the top (**A**), drag the **green pin** close to the desired location along the route (**B**).
2. Click the **plus** icon **+**. A **yellow Landmark pin** appears on the map.
3. Click the exact location along the route to which to move the yellow pin.
4. Click **Save Landmarks** at the bottom. The Landmark pin turns from yellow (📍) to blue (📍).



Landmarks cannot be placed on the route after the end of the trace.

To change a Landmark location:

1. Select the landmark in the top right pane. The Landmark pin on the map turns from blue to yellow.
2. Using the green marker at the top (A), drag the **green pin** to the new location along the route (B).
3. Click the **checkmark** icon ✓. The Landmark moves to the new location.
4. Click **Save Landmarks** at the bottom. The Landmark pin turns from yellow (📍) to blue (📍).

To delete a landmark, select it in the top right pane and then click the **minus sign** —. Click **Save Landmarks** at the bottom to save changes.

13.8.1 Distance Calculator

Use the Distance Calculator to show what affect landmarks has on

Click the **calendar icon** 📅 at the bottom to access the **Distance Calculator**.

The screenshot displays the 'Landmarks' application interface. At the top, a graph shows a blue trace with a vertical line indicating a position of 1.89468 km. Below the graph is a map showing a route with landmarks A and B. A 'Distance Calculator' overlay is visible, showing 'Optical: 189.46 m' and 'Geo: 183.42 m'. A table of 'Locations near GMP-GVC' is also present, listing 'Indus Airtel Loc...' with a proximity of 24.86683827. A red box highlights the calculator fields, and an orange arrow points to the calculator icon in the bottom right corner. A text box on the right explains: 'To estimate geographical distance of two points along the route, click the calculator icon and enter the trace measurement in the Optical field.'

Location	Type	Proximity (m)
Indus Airtel Loc...	HEADEND	24.86683827

Distance Calculator
Optical: 189.46 m → Geo: 183.42 m

Save Landmarks 📅

Geographical Distance

In the example above, the calculator is used to estimate the distance between Point A (origin) and Point B along the route. The trace distance is provided in the top right pane. Enter the trace distance in the Optical field (in meters) and the geographical distance will be estimated automatically.

14.0 On-Demand Testing

Use the **Home>On-Demand Test** option to take control of the device to perform traces. These tests are performed without waiting on the monitoring to cycle to the desired port.

Select test parameters and result thresholds, then click **Start**.

The screenshot displays the VeSion RFTS interface. On the left, a sidebar contains configuration options for the RFTS probe (Server: RFTS-SERV-FRE01 (0), Device: TRLA00SO910180 (27), Port: 1 (75km port)), measurement type (Auto), laser unit (SM1625), network type (Point-to-Point), and analysis parameters (Event Loss Threshold: 0.5 dB, Reflectance Threshold: -65 dB, End Of Fiber Threshold: 30). A 'Start' button is highlighted. The main area shows an OTDR trace with a 'Show reference trace' radio button. A table on the right lists events: 'Unspliced fiber' at 0 km, 'Filter section' at 17.266 km, and 'Undetermined end' at 75.39925 km. The bottom navigation bar includes 'Events', 'Properties', 'Analysis', and 'Summary' tabs.

Select the **Show reference trace** radio button to overlay the reference trace.

Click **Save** to save the trace as a SOR file.

The available setup fields vary depending on the type of **Measurement Mode** selected (Auto Manual, V-Scout).



Important note about Manual mode

*Improper setting of the above parameters can result in erroneous test results. It is recommended that you receive adequate training in making OTDR measurements before using the **Manual** mode.*

After clicking **Start**, the measuring process can take up to 3 minutes, depending on the settings. After the test is complete, an OTDR trace will appear.

Click the **LinkMap** tab to view a link map of the events. Use the tabs on the bottom right of the screen to view the additional details, such as analysis and splitter thresholds, and span information. Click **Download** to download the results.

15.0 Real-time Alarm & Monitoring

Using VeSion, optical probes and switches can be viewed in real-time.

15.1 Monitoring Dashboard

To view the probe dashboard and monitor the sweep tables being downloaded, go to **Home > Real-time Alarm & Monitor | RFTS**.

In the left pane, click the RFTS probe server to view probes/switches assigned to that server and their details. The status of each port is indicated by color:

-  Non-active port.
-  Active port. NO ALARM.
-  Active port. MINOR/MAJOR ALARM.
-  Active port. CRITICAL ALARM.



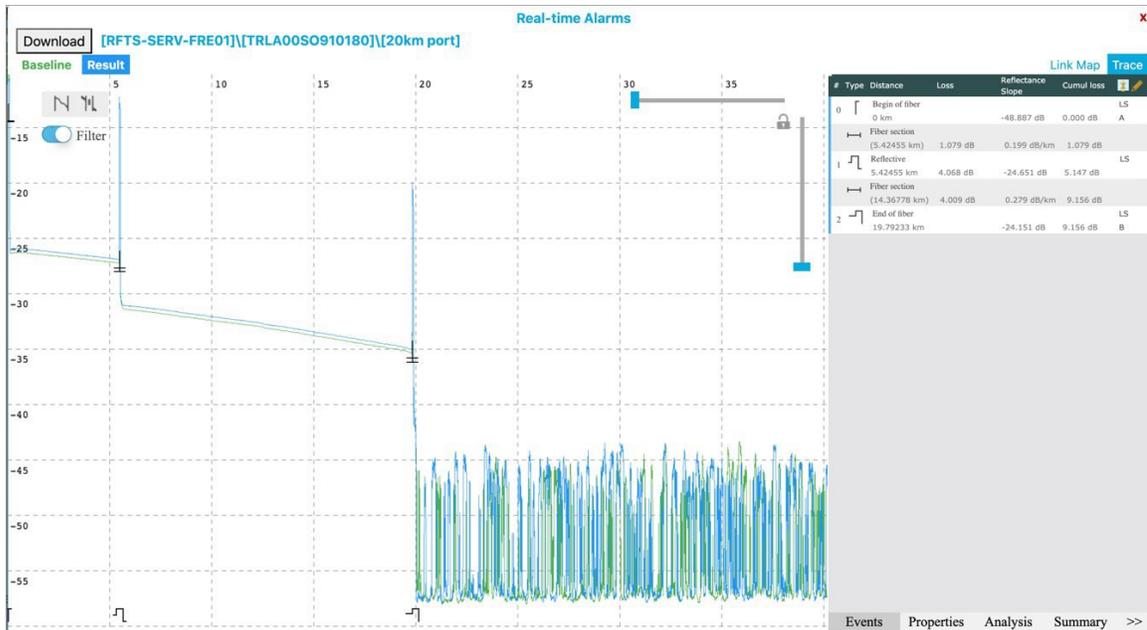
RFTS Monitoring Dashboard

15.2 Probe Monitoring

To monitor a probe:

1. On the **Real-time Alarm & Monitor** page, select the Probe Server tab on the left to view probes for that server.
2. Select the box for the probe you want to monitor in the right panel. The Monitoring page appears.

To view the reference trace, click **Baseline**.



VeSion-RTU4100/RFTS400 Optical Switch Port Monitoring

Mouse over the trace and click **Result** or **Baseline** to drag the trace.

To export Reference and Result trace files for offline review, click **Download**.

15.2.1 Alarms and Data Logs

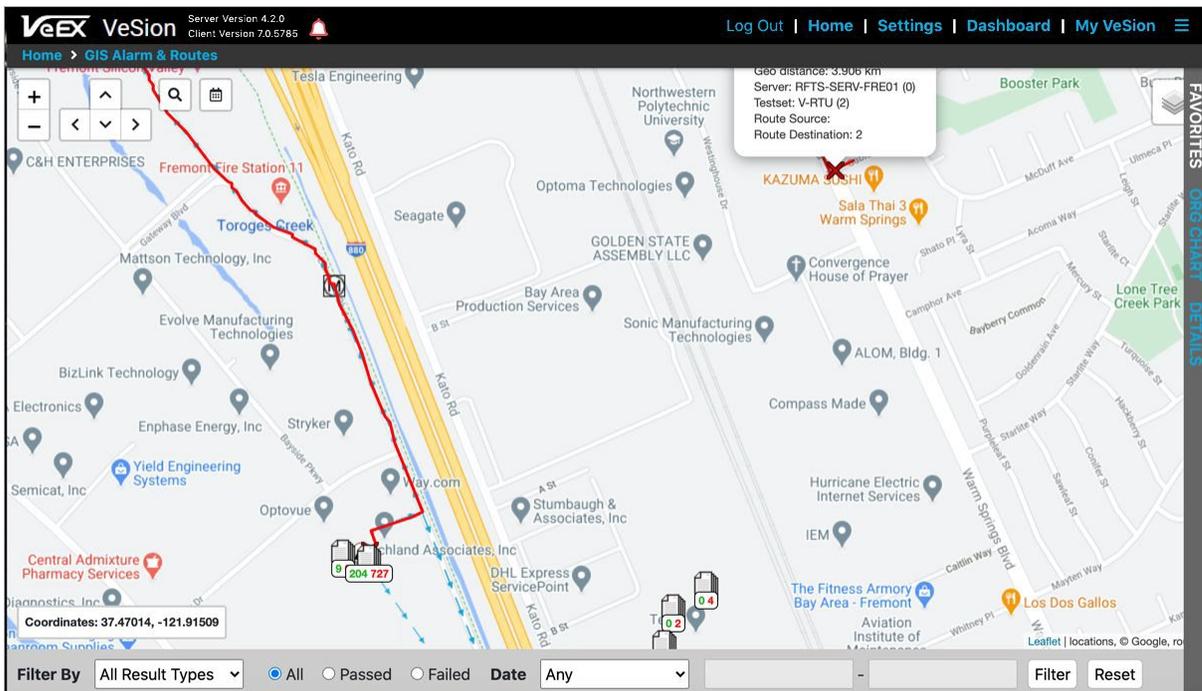
To view a data log of alarms, go to **Home>Alarm & Datalog** and click the **RFTS** tab.

Select the time period and then click **Search**. Narrow the date range as needed to decrease the time it takes to generate the log.

Alarm Time	Changed Time	Device	Port	Type	Location	Baseline distance	Status
01/13/2021 16:19:13	01/13/2021 16:19:13	V-RTU (2)	1 (1)	Fiber Break	25.00000 km	30.40000 km	Active
01/13/2021 16:20:48	01/13/2021 16:20:48	V-RTU (2)	2 (2)	Fiber Break	24.00000 km	30.40000 km	Active
01/01/2021 00:00:49	01/01/2021 21:40:16		4 (GPM-GD1 T4)	Minor Reflectance	0.00000 km	8.41833 km	Resolved
01/04/2021 08:57:12	01/04/2021 09:13:21	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved
01/05/2021 09:17:43	01/05/2021 09:21:26	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved
01/05/2021 22:35:19	01/05/2021 22:37:33	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved
01/05/2021 22:44:06	01/05/2021 22:46:54	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved
01/05/2021 22:51:15	01/05/2021 22:53:29	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved
01/05/2021 23:16:19	01/05/2021 23:19:06	TRLA00SO910180 (27)	2 (10km High Loss port)	Fiber Break	10.57476 km	10.58191 km	Resolved

RFTS Alarms log

Click the map icon  to view the alarm location on a geographical map.



RFTS Alarm map

16.0 Certifications and Declarations



Declaration of Conformity

What is CE?

The CE marking is a mandatory European marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European Directives. To permit the use of a CE mark on a product, proof that the item meets the relevant requirements must be documented.

Use of this logo implies that the unit conforms to requirements of European Union and European Free Trade Association (EFTA). EN61010-1

For a copy of the CE Declaration of Conformity relating to VeEX products, please contact [VeEX customer service](#).



ROHS Statement

RoHS Compliance

VeEX QUALITY AND ENVIRONMENTAL POLICY

Our quality and environmental policy is to limit and progressively eliminate the use of hazardous substances and chemicals in the design and manufacture of our products.

VeEX products are classified as Monitoring and Control Instruments under Article 2, Section (1), Category 9 of the WEEE 2002/96/EC Directive.

RoHS and WEEE Position Statement

The Council of the European Union and the European Parliament adopted Directive 2002/95/EC (January 27, 2003), to Reduce the use of certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment, and Directive 2002/96/EC on Waste Electrical and Electronics Equipment (WEEE), with the purpose of reducing the environmental impact of waste electrical and electronic equipment. Both were later recast by Directives 2011/65/EU and 2012/19/EU respectively. All VeEX products being placed on the EU market conform with these directives.

Additional RoHS substance restrictions for the Monitoring and Control Instruments were adopted by EU Directive 2015/863 (March 31, 2015). These new restrictions will take effect from July 22, 2021. VeEX has established a program to ensure that from July 22, 2021, all its products to be sold and shipped into the EU market will conform with (EU) 2015/863.

VeEX Inc. is committed to comply with RoHS and WEEE Directives to minimize the environmental impact of our products.

For more information about RoHS as it relates to VeEX Inc, go to the VeEX web site at <http://www.veexinc.com/company/rohscompliance>.

17.0 About VeEX

VeEX Inc., a customer-oriented communications test and measurement company, develops innovative test and monitoring solutions for next generation telecommunication networks and services. With a blend of advanced technologies and vast technical expertise, VeEX products address all stages of network deployment, maintenance, field service turn-up, and integrate service verification features across copper, fiber optics, CATV/DOCSIS, mobile 4G/5G backhaul and fronthaul, next generation transport network, Fibre Channel, carrier & metro Ethernet technologies, WLAN and synchronization.

Visit us online at www.veexinc.com for the latest updates and additional documentation.

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