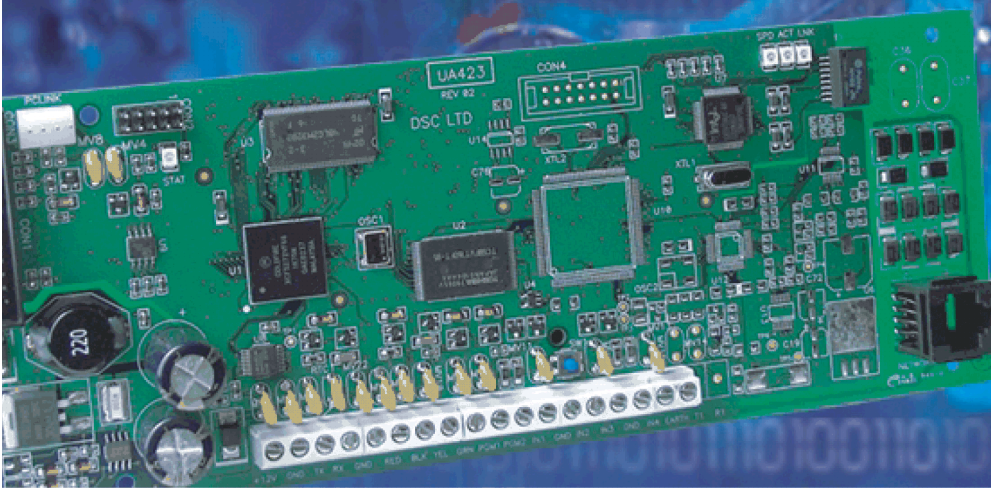


**DSC**<sup>®</sup>



# Operating Manual and Help File

**T-Link Console Software**



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# 1 Introduction

T-Link Console Software is a stand-alone application that provides remote and local support for the configuration of T-Link TL3xx, T-Link TL2xx devices and IP Receiver line cards. T-Link Console generates and deploys unique encryption keys and protocols for communication between T-Link Console, T-Link TL3xx and T-Link TL2xx. T-Link Console software functions in three operational modes; Operator Mode, Unattended Mode and Database Absent Mode.

A summary of T-Link Console Software features are listed below:

- Stand-alone application
- High level encryption
- User Management
- Software upgrades via network
- Advanced T-Link accounts search and management
- Local and remote programming of the T-Link TL2xx options
- Integration with DRL3-IP
- Management of the IP Receiver's T-Link Tables
- Different operational modes including Unattended Mode
- Database backup/restore
- Database repair/compact
- Windows NT/2000/XP/2003 compatible
- Multiple database support

## 1.1 System Requirements

The minimum and recommended system requirements are indicated below.

### Minimum System Requirements

- IBM-compatible PC
- CD-ROM drive
- T-Link Console Installation CD
- \*Windows® XP, Windows® 2000 or Windows® NT v4.0 with Service Pack 4
- \*350 MHz Intel® Pentium II Processor with 64 MB of RAM, minimum of 5 MB of free disk space (excluding database)
- SVGA monitor, mouse, keyboard
- Windows-compatible sound card
- A video card and monitor configured to display 800 x 600 pixels in 16 Bit High Color.

### Recommended System Requirements

- IBM-compatible PC
- CD-ROM drive
- T-Link Console Installation CD
- \*Windows® NT v4.0 with Service Pack 6, Windows® XP, Windows® 2000
- \*500 MHz Intel® Pentium III Processor with 128 MB of RAM and a minimum of 5 GB of free disk space
- SVGA monitor, mouse, keyboard
- Windows-compatible sound card
- A video card and monitor configured to display 1024 x 768 pixels in 16 Bit True Color. This will provide more viewing space for the message windows.

### New to Version 1.20

- Choice of creating accounts for V1.0X, V1.1x and V1.2x T-Link accounts.
- T-Link TL300 Options supported
- Ability to save open account in Remote Programming as a template.
- Only Administrator users can view the DRL3-IP Receiver Table

**NOTE: The T-Link Console v1.20 is required to configure T-Link TL300 V1.20 and higher.**

**NOTE: T-Link accounts can not be downgraded in the T-Link database, the account must be deleted and re-added if this is required.**

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## 1.2 Initial Login

The Operator mode is subdivided into three access levels including; *Supervisor*, *Administrator* and *User* modes. The initial login after software installation must be performed in *Supervisor or Administrator* mode. This allows the Supervisor or Administrator to assign initial passwords and access levels to users.

*Note: Only the Supervisor can create additional Administrators.*

To login initially as a *Supervisor*, enter "**supervisor**" in the *Login Name* field and "**password**" in the *Password* field. The default password is "**password**". DSC recommends that you change Supervisor password immediately after the first login.

*Note: Login name and password fields are case-sensitive.*

*Note: There is only one supervisor login and password. Ensure that you do not lose this password.*

Refer to [Section 2.2 for Login/Logout](#), Refer to [Section 5.2 for Change Passwords](#) and Refer to [Section 1.3 for details on User Levels](#).

## 1.3 Operating Modes

T-Link Console software functions in three operational modes; *Operator Mode*, *Unattended Mode* and *Database Absent Mode*.

**Operator Mode** - Operator mode comprises 3 modes including *Supervisor*, *Administrator* and *User*. Each Operator mode has different access to the 5 applications as indicated below:

T-Link Console Functions		Supervisor	Administrator	User
<b>T-Link Accounts</b>	Add Accounts	✘	✔	✔
	Edit Accounts	✘	✔	✔
	Delete Accounts	✘	✔	✔
	T-Link Template	✘	✔	✔
	Local Programming	✘	✔	✔
	Remote Programming	✘	✔	✔
	Update Receivers	✘	✔	✔
	Import Accounts	✘	✔	✔
	Export Accounts	✘	✔	✔
	<b>IP Receivers</b>	Add Receivers	✘	✔
Edit Receivers		✘	✔	✔
Delete Receivers		✘	✔	✔
Receiver T-Link Table		✘	✔	✔
<b>User Management</b>	Add User	✔	✔	✘
	Edit User	✔	✔	✘
	Delete User	✔	✔	✘
	Change Password	✔	✔	✔
	View Encryption Keys	✘	✔	✘
<b>Logs</b>	Delete Log Entry	View	✔	View
	Delete All Logs	Logs	✔	Logs
	Export To Excel	Only	✔	Only
<b>Configuration</b>	Access Settings	✘	✔	✘

**Unattended Mode** - Unattended Mode allows all users to view current logs only. This mode automatically occurs after a programmed auto-logout time occurs. This mode prevents accidental closing of the T-Link Console.

**Database Absent Mode** - This mode allows any user to restore a previously saved backup database if the database is absent. This mode also provides access to *Compact and Repair* functions.

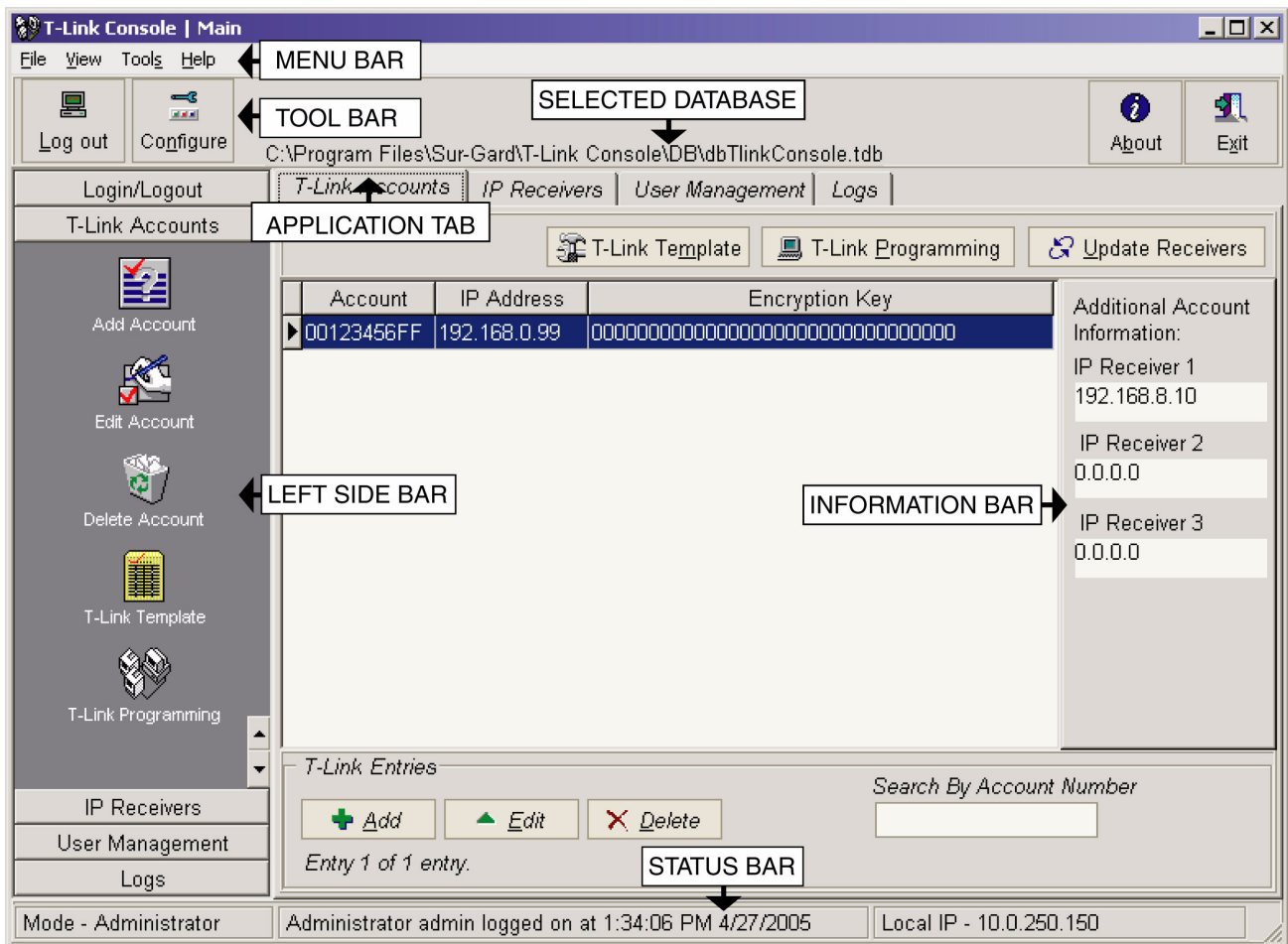
## 2 General Features

### 2.1 Navigating T-Link Console Software.

The main form is divided up into several functional areas. Multiple ways are available for accessing most features. All features can be accessed by selection from the Menu Bar, Tool Bar, Application Tab or from the Left Side Bar.

The Information Bar located on the right side of the screen provides additional information regarding an account depending on which application is being accessed.

The Status Bar located at the bottom of the screen indicates the current operating mode, Logon ID and time, and the local IP address.



There are 5 main sections of the application the user may have access to, depending on their user type.

- T-Link Accounts
- IP Receivers
- User Management
- Logs
- Configuration

## 2.2 Login/Logout

The Login screen is automatically displayed when the system first boots up.

If you are not logged into the T-Link Console use this function to login as an authorized user. Use this function to log out of the T-Link Console.



Login/Logout can be accessed by:

Clicking on the **Log out/ Login in** Icon on the tool bar (left) or...

Selecting **File > Log in** or **File > Log out** from the menu bar.

When logged out, you will not be able to make any in changes T-Link Console.

T-Link Console software supports three user levels: *Supervisor*, *Administrator* and *User*.

### Supervisor Login

The supervisor access level is restricted to the editing of *Administrator* level users and *User* level users. The supervisor is the only user who can add an Administrator level user. There is only one supervisor login and password. Care must be taken not to lose this password. After logging in as supervisor, reduced version of T-Link console will be displayed. The supervisor has no access to T-Link accounts, or logs, but only user data. The supervisor will not be requested to load a T-Link Database on login.

### Admin Login

The administrator access level has access to all features of the software, except for the editing of the supervisor login, or other administrator logins. The administrator has full access to T-Link accounts. The administrator can add other *User* level users, change their own password, but cannot modify other *Administrator* level users. The administrator is the only user that can configure the T-Link console.

### User Login

The *User* access level has access to all T-Link software. Users can create, modify and delete T-Link accounts. The user access level can only change their own password, and cannot modify any other users.

*Note: You must log in as Admin or Supervisor for first time login after installation.*

To login in as a *Supervisor*, type in "**supervisor**" in the **Login Name** field and your password in the **Password** field. The default password is "**password**".

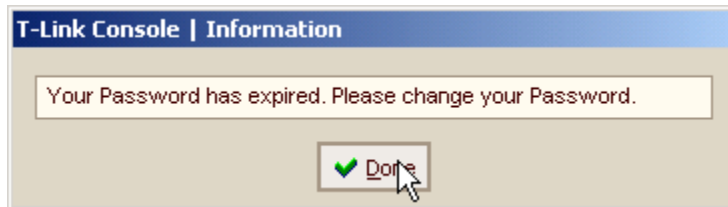
To login in as an *Administrator*, enter "**admin**" in the **Login Name** field and your password in the **Password** field. The default password is "**password**".

To log in as a *User*, enter your login name in the **Login Name** field and the password provided to you in **Password** field in the following screen. Click **OK**.

*Note: Login name and password fields are case-sensitive.*

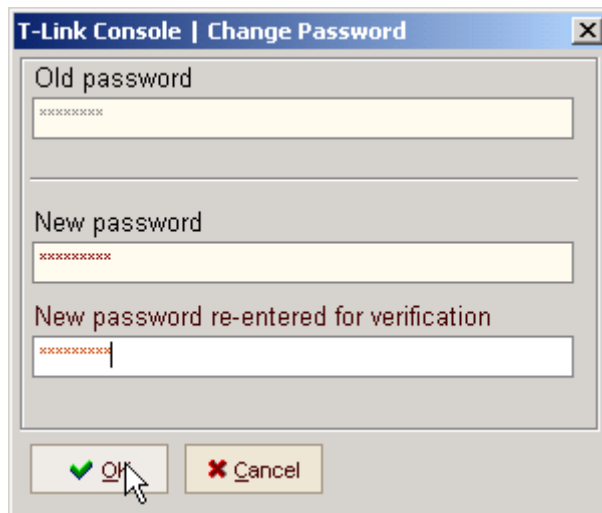


*Note: You may be notified that you need to change your password on this screen.*

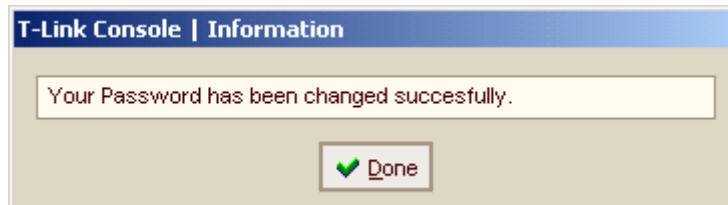


Enter your new password and then re-enter the password to confirm it as indicated below. Click **OK** to approve the new password.

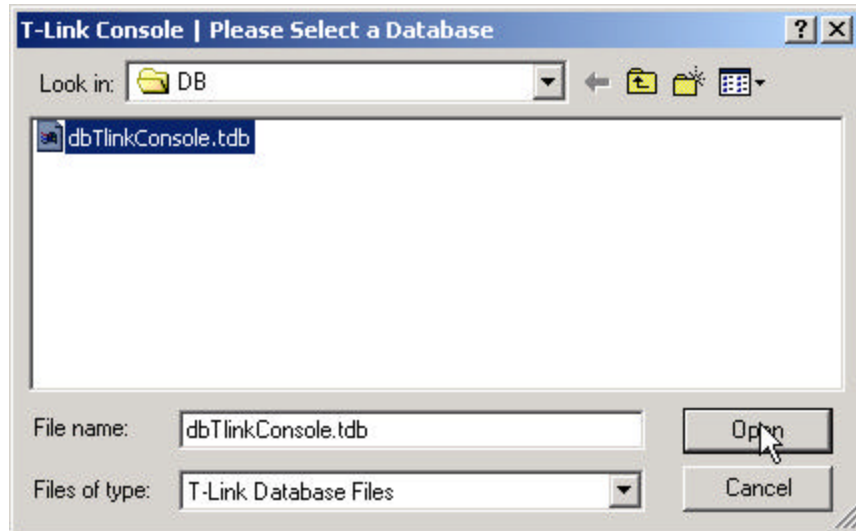
*Note: The password must be at least 8 characters long.*



If the password entered is valid the following screen will be displayed:



After entering your login name and password you will be prompted to enter a T-Link Database if you logged in as an Admin or User access level. Select the T-Link account you require and click on **Open**.



The T-Link Console main screen will be displayed.

### 2.3 Configure T-Link Console

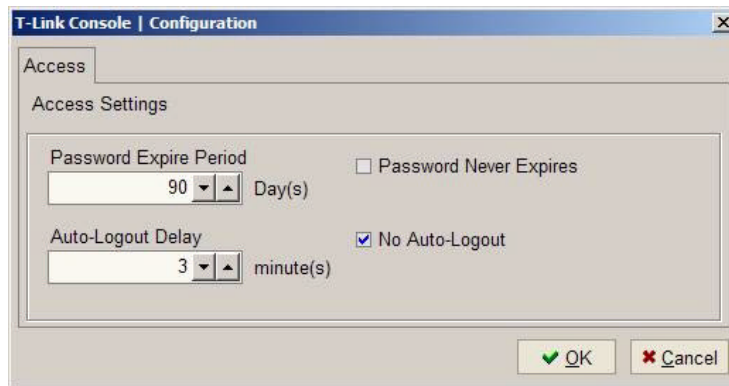
Configure T-Link Console is only available to the Administrator. To access the configuration screen:



Configure T-Link Console can be accessed by:  
 Clicking on the **Configure** Icon on the tool bar (left) or...  
 Selecting *Tools > Configure* from the menu bar.

#### Access Settings

Selecting the **access** tab allows the user to enable, disable and edit (days before expiry) password expiry; and enable, disable and edit the Auto-logout timer (inactivity in minutes).





## 2.4 About

The About menu provides version identification and contact information for Sur-Gard products.



*T-Link Console About* can be accessed by:  
Clicking on the *About* Icon on the tool bar (left) or...  
Selecting *Help > About* from the menu bar.

This screen displays the following information:

- Version number
- Company information
- Phone and Fax numbers
- Technical Support email address
- Web site address



Clicking on the web site address opens the DSC web site in the default Internet browser installed on the computer. Similarly, clicking on the e-mail address opens a blank e-mail, using the default email program installed. When finished with this screen, click the *Done* button to return to the previous screen.

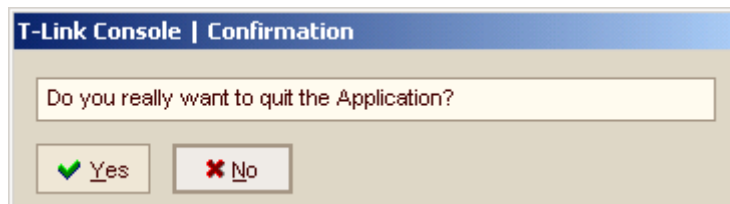
## 2.5 Exit

The *Exit* icon allows a logged on user to exit from the T-Link Console. Selecting *Exit* terminates **ALL** active connections.



*Exit* can be accessed by:  
Clicking on the *Exit* Icon on the tool bar or...  
Selecting *File > Exit* from the menu bar.

When the user exits from T-Link Console software, the following dialog will be displayed:

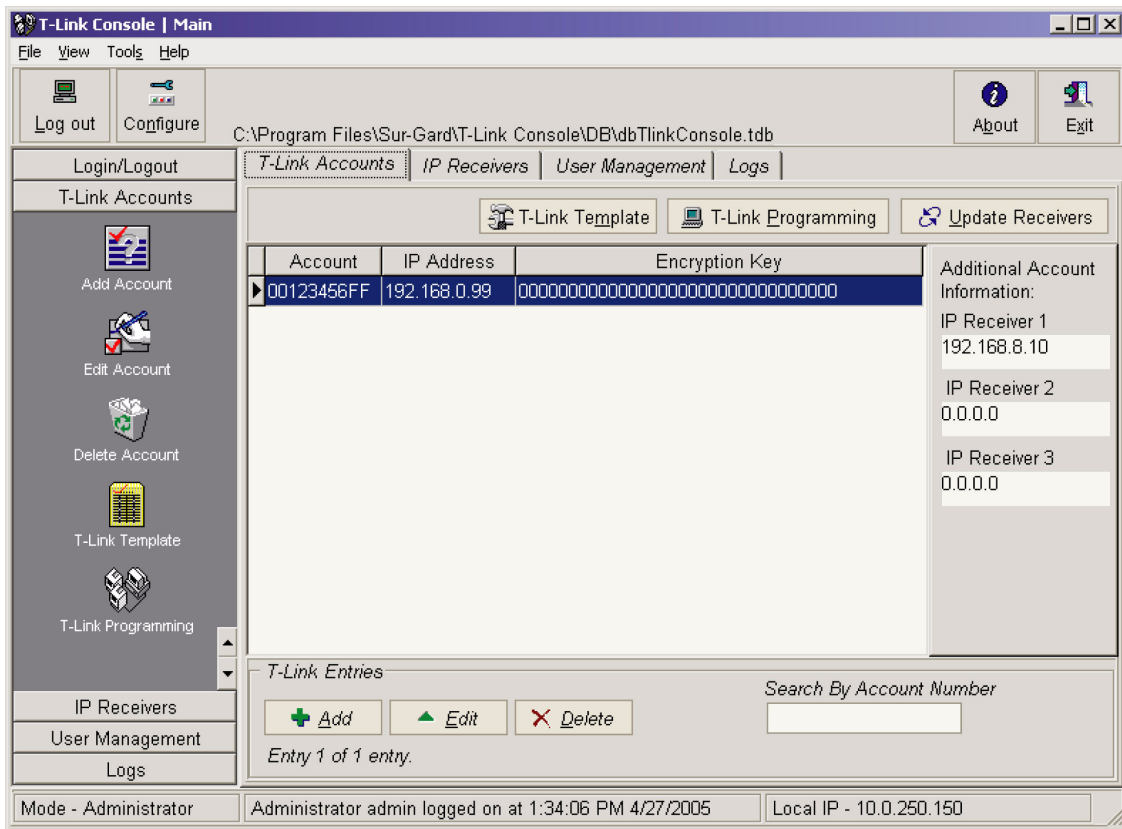


### 3 T-Link Accounts

#### 3.1 General

T-Link Accounts are available to *User*, and *Administrator* access types. It can be accessed by:

- Clicking on the *T-Link Accounts* application tab at the top of the screen
- Clicking on the *T-Link Accounts* bar on the left side bar,
- Selecting *View > T-Link Accounts* from the menu bar.



There are 5 sub sections accessible from here, and they are

- Template programming
- Programming
- Update receivers
- Export T-Link Account
- Import T-Link Account

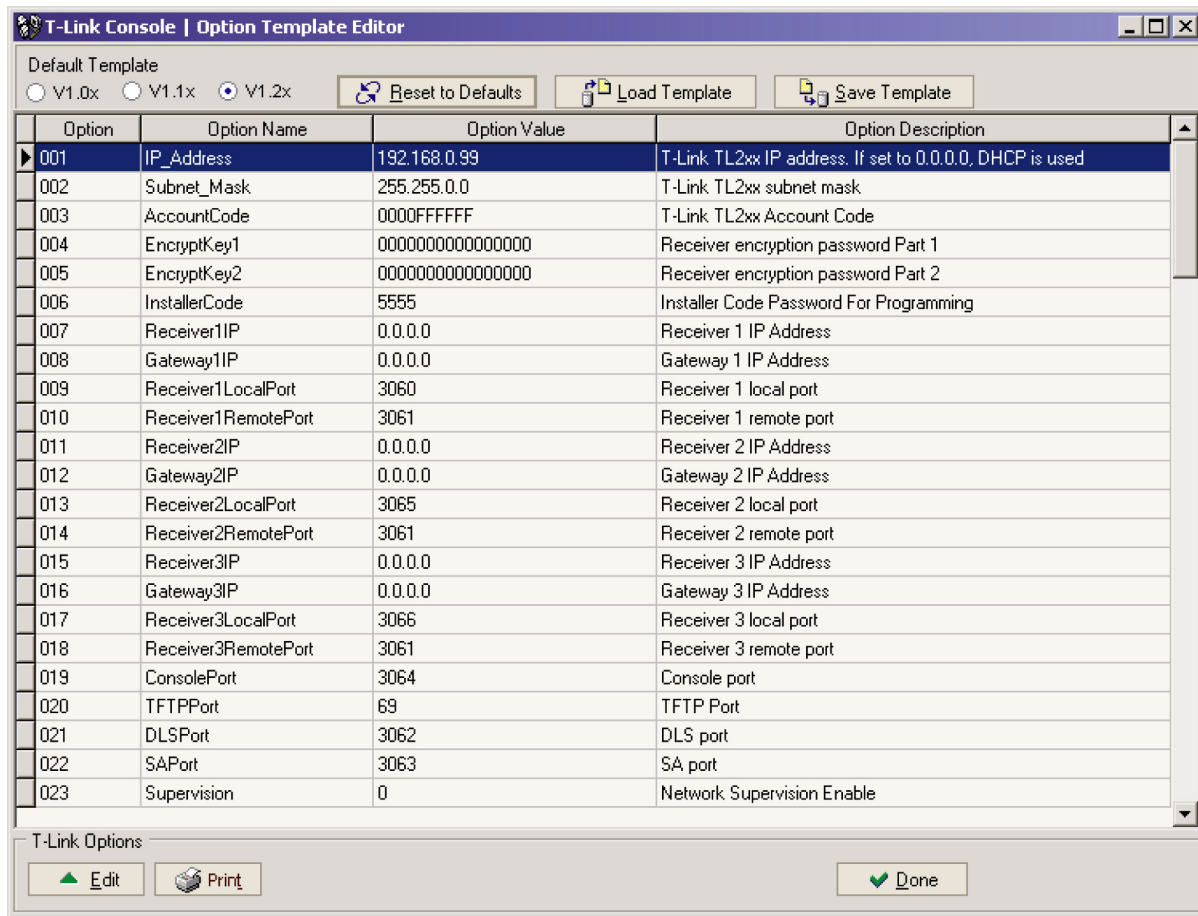
Current T-Links accounts that are programmed into the console are displayed in a table. The table shows the T-Link Account code, IP Address, and Encryption key for each T-Link in this database.

The user can *Add, Edit, Delete T-Links* by either clicking on the corresponding button on the bar at the left, clicking on the button at the bottom of the screen, or right-clicking on the actual account.

The user can access the sub functions by either right clicking on the account, clicking on the corresponding button in the side bar, or a button on the top of this screen.

**Template Programming**

Template programming allows the user to create a set of options that can be used to create accounts of similar types. Template programming is accessible from the T-Link Accounts screen by either clicking on the T-Link Template button on the left, the T-Link Template button on the top, or right clicking on the Account table.



The T-Link Template editor opens with all options set to their default values. The user can edit these options as required. All other options from the template will be copied into the T-Link account.

The user can print the current template or save it to a file for creating and programming T-Link accounts at a later date.

**Programming**

The user can perform actual programming of the T-Link options here. The user can enter Programming by selecting a T-Link account, and clicking on the respective button on the top, left, or right click on the account.

Upon entering Programming, a table containing all T-Links options and the locally stored values in the T-Link Console are displayed under the heading *Option Value*.

The user can select an option and retrieve its value from the T-Link into **Current Value** by clicking on **Get Option**. The user can also retrieve the entire option set into **Current Value** by clicking on **Get All Options**. Any entries in this table where the **Current Value** does not equal the **Option Value** will be shown as purple. Any options that are current (the same as in the T-Link, **Current Value** equals **Option Value**) will be shown as green.

Option	Name	Current Value	Option Value	Description
001	IP_Address		192.168.0.99	T-Link TL2xx IP address. If set to
002	Subnet_Mask		255.255.255.0	T-Link TL2xx subnet mask
003	AccountCode		00123456FF	T-Link TL2xx Account Code
004	EncryptKey1		0000000000000000	Receiver encryption password Pa
005	EncryptKey2		0000000000000000	Receiver encryption password Pa
006	InstallerCode		CAFE	Installer Code Password For Prog
007	Receiver1IP		192.168.8.10	Receiver 1 IP Address
008	Gateway1IP		0.0.0.0	Gateway 1 IP Address
009	Receiver1LocalPort		3060	Receiver 1 local port
010	Receiver1RemotePo		3061	Receiver 1 remote port
011	Receiver2IP		0.0.0.0	Receiver 2 IP Address
012	Gateway2IP		0.0.0.0	Gateway 2 IP Address
013	Receiver2LocalPort		3065	Receiver 2 local port
014	Receiver2RemotePo		3061	Receiver 2 remote port
015	Receiver3IP		0.0.0.0	Receiver 3 IP Address
016	Gateway3IP		0.0.0.0	Gateway 3 IP Address
017	Receiver3LocalPort		3066	Receiver 3 local port
018	Receiver3RemotePo		3061	Receiver 3 remote port
019	ConsolePort		3064	Console port

When the Console initially communicates to the T-Link for either a Remote or Local programming session, a **Lead In** is performed to request the T-Link to perform programming, and if it accepts, it will not accept programming from any other T-Link Console until Programming is complete. When programming is complete, the T-Link Console software will perform a **Lead Out** to allow other T-Link Consoles to connect to it. If the user has changed an option that will require a reset of the T-Link, the user will be presented with the option to do so.

The Console also provides functionality to update the current option set stored in the Console **Option Value** with what is stored in the T-Link **Current Value** by importing that option. This may done by selecting the option and clicking on **Import Value** to import just one option, or clicking on **Import All Values** to copy every options **Current Value** into **Option Value**.

To change an option value, the user selects the option to be changed by double clicking on it, clicking on Edit, or right clicking on the option. The option editor will be displayed allowing the user to edit the option or set it to the default value.

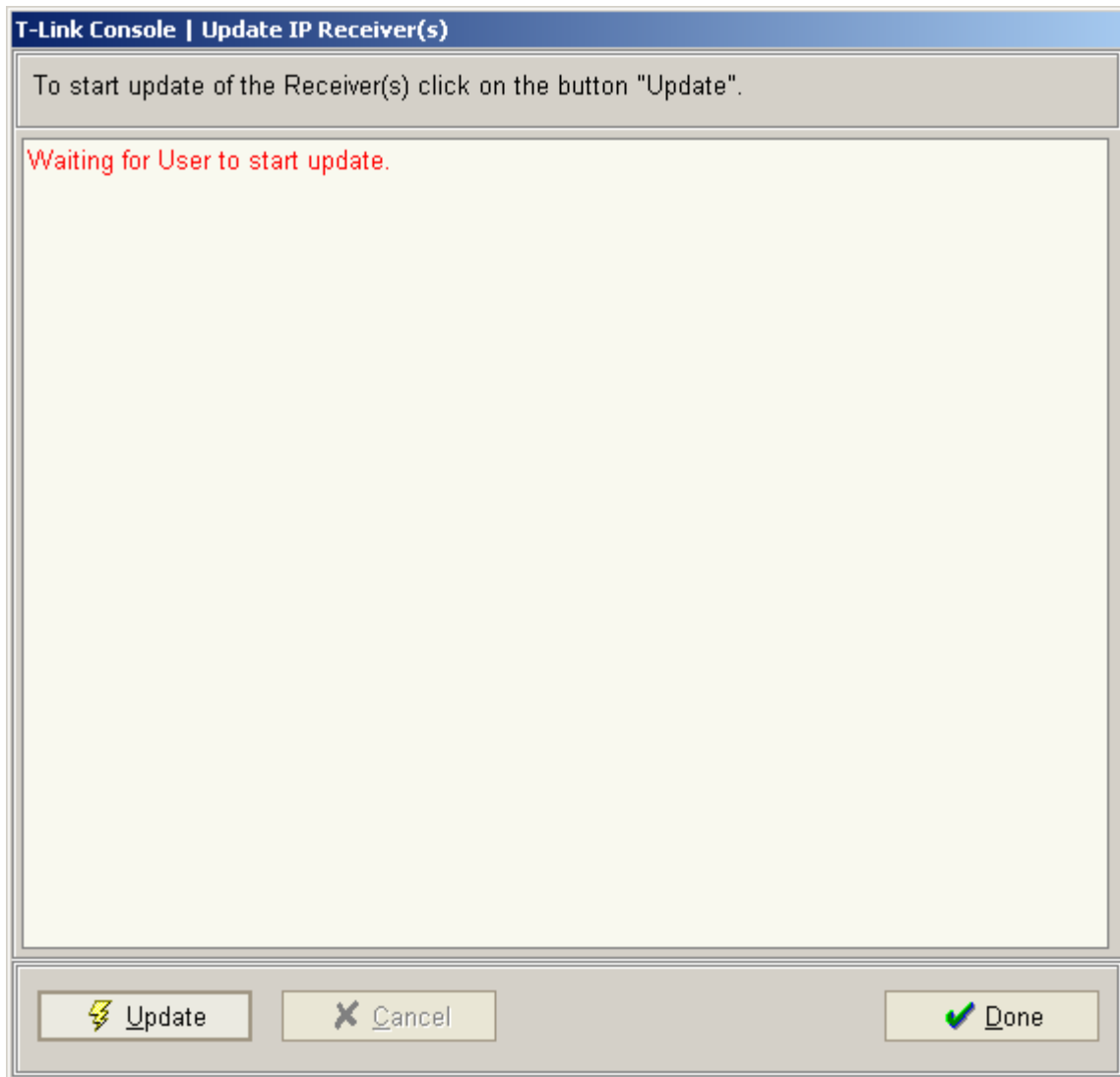
The user can print the current option set by clicking on Print, or by right-clicking on the option table and selecting **Print Options**. The printout displays the T-Link account code, the database file in where it is stored, and the option set containing the **Option Number**, **Option Name**, and **Option Value**. This is the value stored in the T-Link Console's **Option Value**.

## Update Receivers

The Update Receiver function allows the user to connect to the receivers programmed in the T-Link Account, and update them with the T-Links current IP, Account Number and Encryption Key. This can only be performed on IP Receivers that are programmed in the T-Link and in the IP Receiver list. The user can access *Update Receivers* by selecting the required T-Link and then by:

- Clicking on *Update Receivers* tab at the top of the screen or
- Right clicking on the Account or
- Clicking on *Update Receivers* on the left side bar.

User will then click the *Update* button on the following screen.

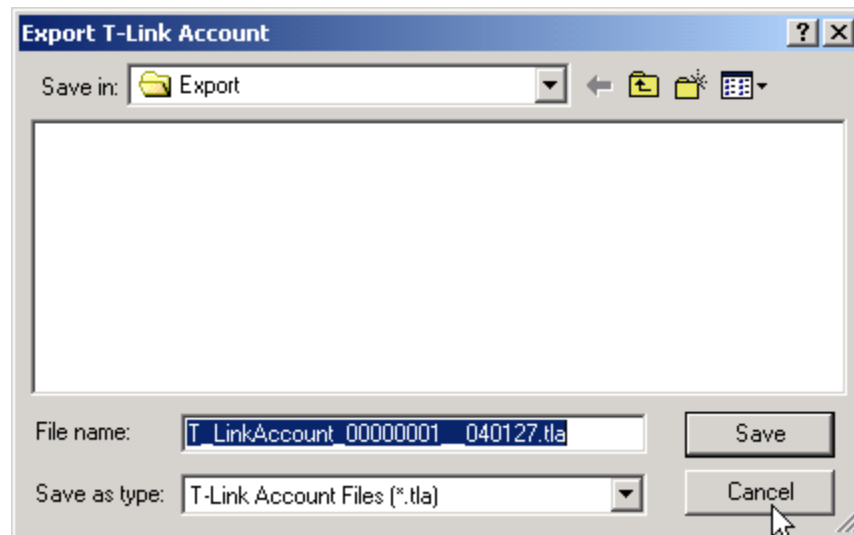


## Export and Import T-Link Account

The Console provides the user with the ability to export and import T-Link account files to transfer them to another database, or to another T-Link Console software installation. This is done from the main *T-Link Account* table. The user selects *Import* or *Export* by:

Right clicking on the desired account and selecting *Import* or *Export* or,  
Selecting *Tools >Export (or Import) T-Link Account* on the menu bar.

An exported T-Link account contains the entire option set as well as the public IP of the T-Link. This is the IP that appears in the T-Link account window and is the IP used to connect to the T-Link.



## 3.2 T-Link Programming

### T-Link Account

To connect to a T-Link, you must add an account to the T-Link Console. The Account information contains the information required to connect to the T-Link from the Console. This includes:

- Account Code
- IP Address
- Encryption Key
- Installer's Code
- Console Port

The T-Link version also includes the information required to connect the T-Link to the DRL3-IP Receiver

- Receiver Remote Port
- Receiver 1 IP Address
- Receiver 1 Gateway
- Receiver 2 IP Address
- Receiver 2 Gateway
- Receiver 3 IP Address
- Receiver 3 Gateway

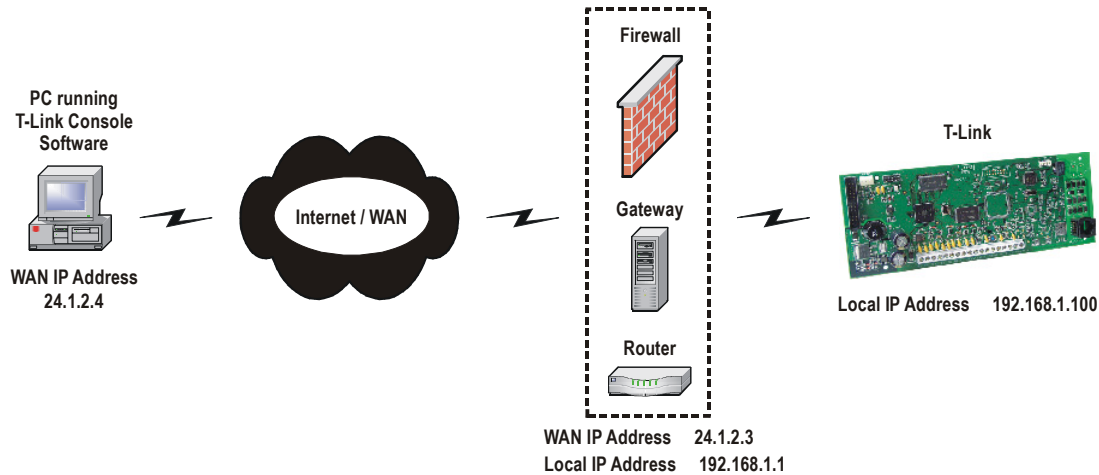
### To add a T-Link account :

- Click on the *T-Link Accounts* tab or
- Click on *Add* at the bottom of the screen or
- Click on *Add* on the left side bar or Right click on the table.

The user must enter a unique Account code for the current Database, an IP Address of the T-Link they wish to connect to, and its Encryption Key, if necessary.

**Note: The IP address entered here is used to connect to the T-Link.**

If this address is to be used through a gateway or on the internet, then the public IP address of the T-Link must be entered here, and the correct port forwarding must be enabled on the gateway that the T-Link is behind. See the following example.



In this example, the user would enter the address of **24.1.2.3** in to establish a connection to the T-Link. The user may have to enter a static port route on the router to connect to the T-Link.

After clicking **Save**, the user is prompted with the option to load a Template set of options. If the user selects T-Link Template file, the Template options will be applied to the T-Link Account when programming. If the user selects template options, the following options must be entered.

- T-Link IP Address
- T-Link Encryption Key
- T-Link Account Code
- Console Port
- Receiver Remote Port

## Programming

Programming is done via TCP-IP. The Console connects to the T-Link IP programmed for the T-Link Account. This can be used to connect either remotely or locally through a reversed cable.

This method also allows programming an encryption key if required by the user. An encryption key of all zeroes (0's), disables encryption. The T-Link and the T-Link Console must have the same encryption key for valid communications.

The Remote/Local programming table displays the current programmed set of Options for the selected T-Link, and the current set of options stored in this database. There are 5 headings in this table as follows:

- **Option Number** - This is the same as the *section number* of the particular option.
- **Name** - The option's name
- **Current Value** - This is the value that is currently programmed in the T-Link. You must perform a **Get All Options** or a **Get Option** in order to obtain this. (see below)
- **Option Value** - This is the value currently stored in the Console database for this particular option
- **Description** - A brief text description of what the option is.

The color of each line will either be Purple, or Green. A purple line indicates that the stored database value (*Option Value*) does not match what is programmed in the T-Link (*Current Value*), or is **NOT** current (has not been received from the T-Link yet). Green indicates that the stored value is current and matches the value in the T-Link.

The following functions exist for Programming

- Get All Options
- Get Option
- Set All Options
- Set Option
- Import Value
- Import All Values
- Edit (current option)
- Print (Option Set)
- Save as Template

These functions are available by either clicking on their corresponding button on the bottom of the screen, or right-clicking on the table.

*Note: Double-clicking on an option in the table will open up the editor.*

### Get All Options

Selecting *Get All Options* retrieves the entire option set from the T-Link. The *Current Value* is updated and the color of each line of the selected option is changed.

### Get Option

Selecting *Get Option* retrieves the selected option from the T-Link. The *Current Value* is updated for the selected option.

### Set All Options

Selecting *Set All Options* programs the T-link with all of the option values stored in *Option Value*. Options affecting communications such as Encryption Key, Installers Code are NOT changed. See *Changing Encryption Key or Installers Code* below.

### Set Option

Selecting *Set Option* programs the current option selected from the T-Link. The T-Link is updated with the value stored in *Option Value*.

### Import Value

Selecting *Import Value* copies the value retrieved from the T-Link (*Current Value*) to the database for this Account (*Option Value*). This option updates the database with the value currently programmed in the T-Link.

### Import All Values

Selecting *Import All Values* copies all retrieved values from the T-Link (*Current Value*) to the database for this Account (*Option Value*). This option updates the entire account with all current values from the T-link. Typically, selecting *Get All Options*, followed by selecting *Import All Values*, is used to update the database with the current T-Link.

### Edit Option

Selecting *Edit Option* opens the Option Editor for the selected option. This allows the user to change the values stored in the database for that particular account.



### Changing the Encryption Key

**Note: Changing the Encryption Key or changing the Installer's code value immediately affects the way the T-Link Console communicates with the T-Link. Successful communication between the T-Link and the T-Link console software requires that the Encryption Key and the Installer's code in the T-Link matches that in the T-Link Console software.**

To change the encryption key, click on either **Edit** or **Set Option** when the T-Link Console or T-Link encryption key option is selected. This opens the Encryption Key editor.

The user may edit the new encryption key, and then click on **Set the New Key** to program it to the T-Link. This updates the T-Link and the T-Link Console with the new encryption key. The new key will be used for all subsequent communications.

**Note: If the user clicks on Save, only the T-Link Console will be updated with the encryption key. This is the same as editing the encryption key from the Account editor. The T-Link and the T-Link Console must have matching encryption keys for successful communication.**

### Changing Installers Code

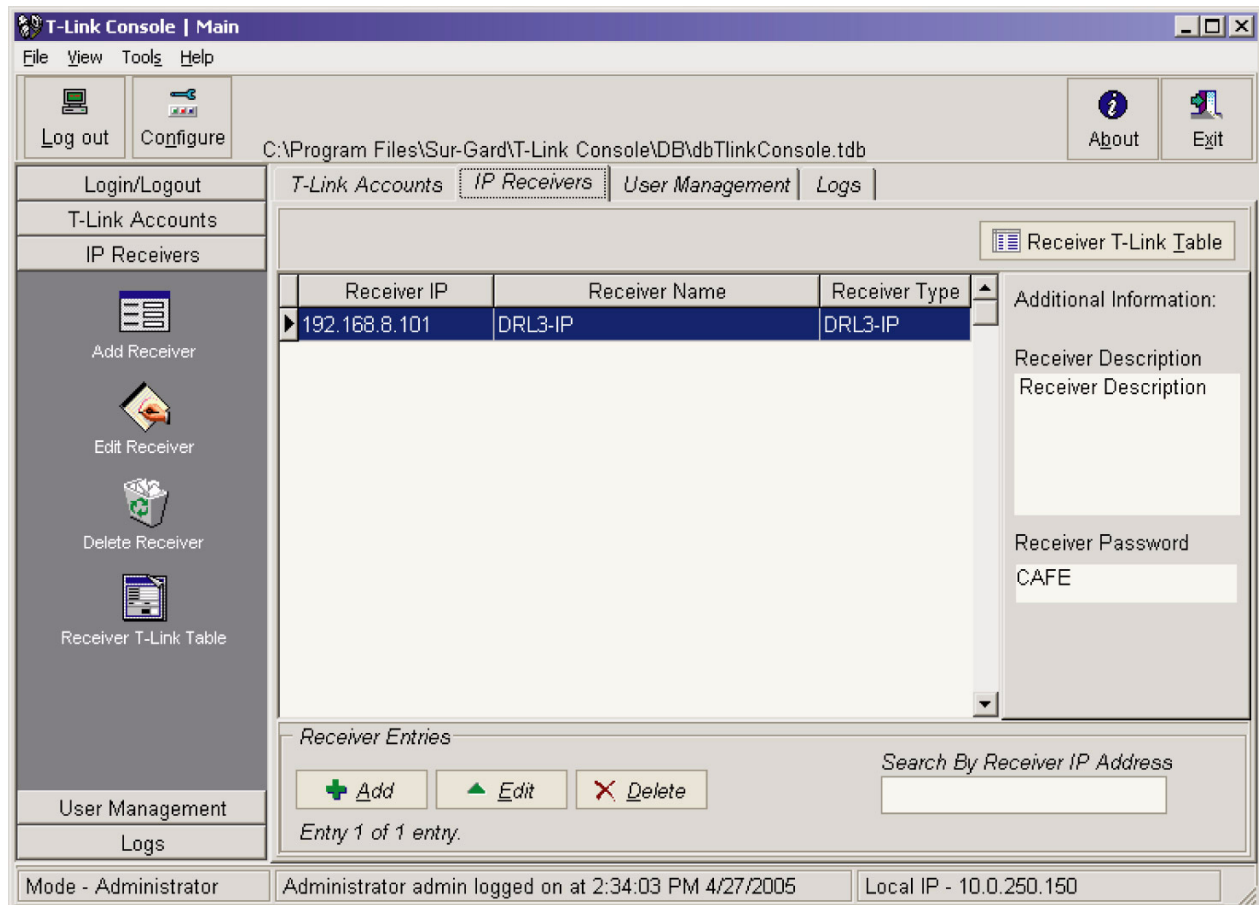
After the user changes the Installers code, the user is prompted to change the option immediately. All subsequent communication will use the new Installers code. This must be done to ensure that the T-Link and the T-Link Console have matching values and to allow programming. If the user decides not to change the option only the Installers code in the Account form will change and communications between the T-Link Console, and the T-Link will be disabled.

**Note: Changing the Installer's code without programming the T-Link will only change it in the T-Link Console software. To change the Installer's code in the T-Link it must be programmed.**

## 4 IP Receivers

This section is available to *User*, and *Administrator* access types. It can be accessed by:

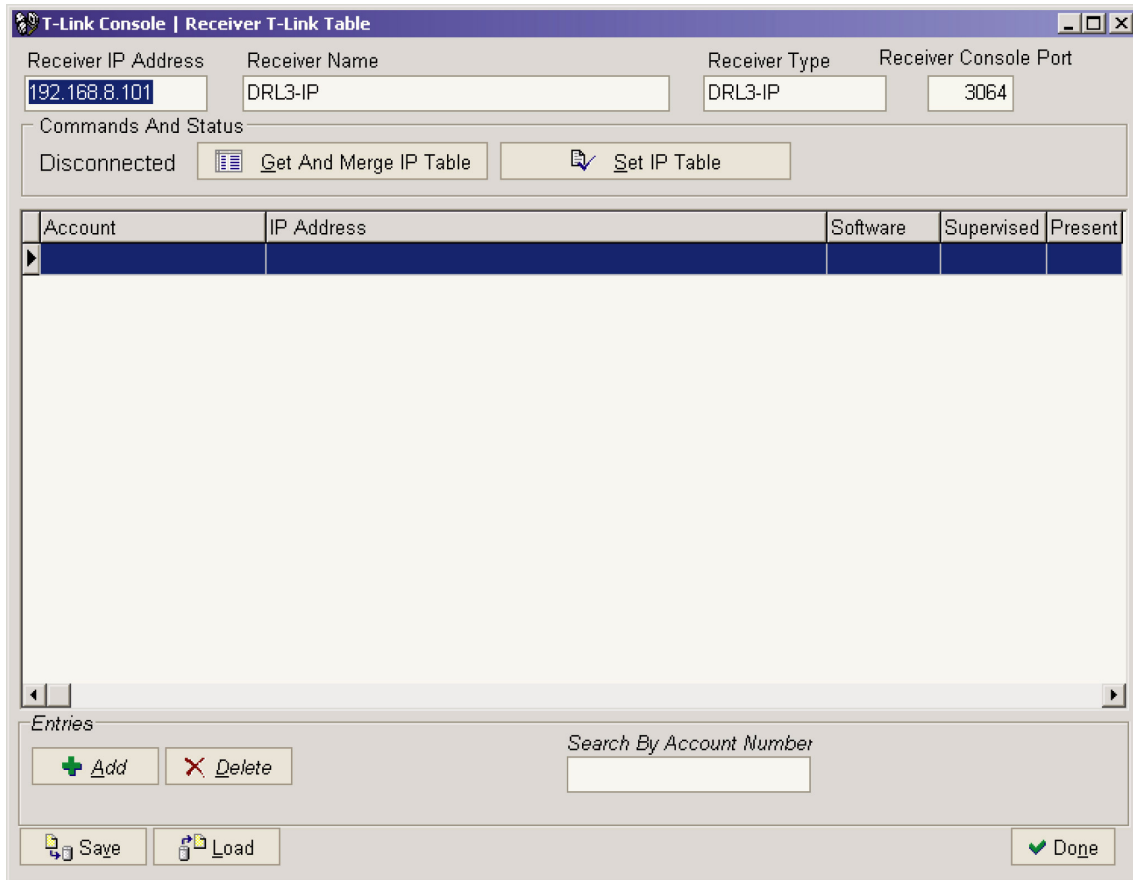
- Clicking on the **IP Receivers** application tab at the top of the screen.
- Clicking on the **IP Receivers** bar on the left side bar,
- Selecting **View > IP Receivers** on the menu bar.



The IP Receivers currently programmed into the T-Link console are displayed in a table here. The table contains the Receiver's IP address, Receiver Name, and Receiver Type. The User entered Receiver Description and the Receiver Password is displayed in the right information bar. The user can Add, Edit, and Delete IP Receivers by either clicking on the corresponding button on the bar at the left, clicking on the button at the bottom of the screen, or right-clicking on the Receiver table. The Receiver T-Link Table can be accessed from here.

## Receiver T-Link Table

The Receiver T-Link Table allows the user to access the IP Receivers currently stored in the table. The user can retrieve the T-Links that are currently communicating to the receiver, into a table by clicking on the **Get and Merge IP Table** button. After retrieving the table from the receiver, existing T-Links in the current database are updated with the current Encryption key.



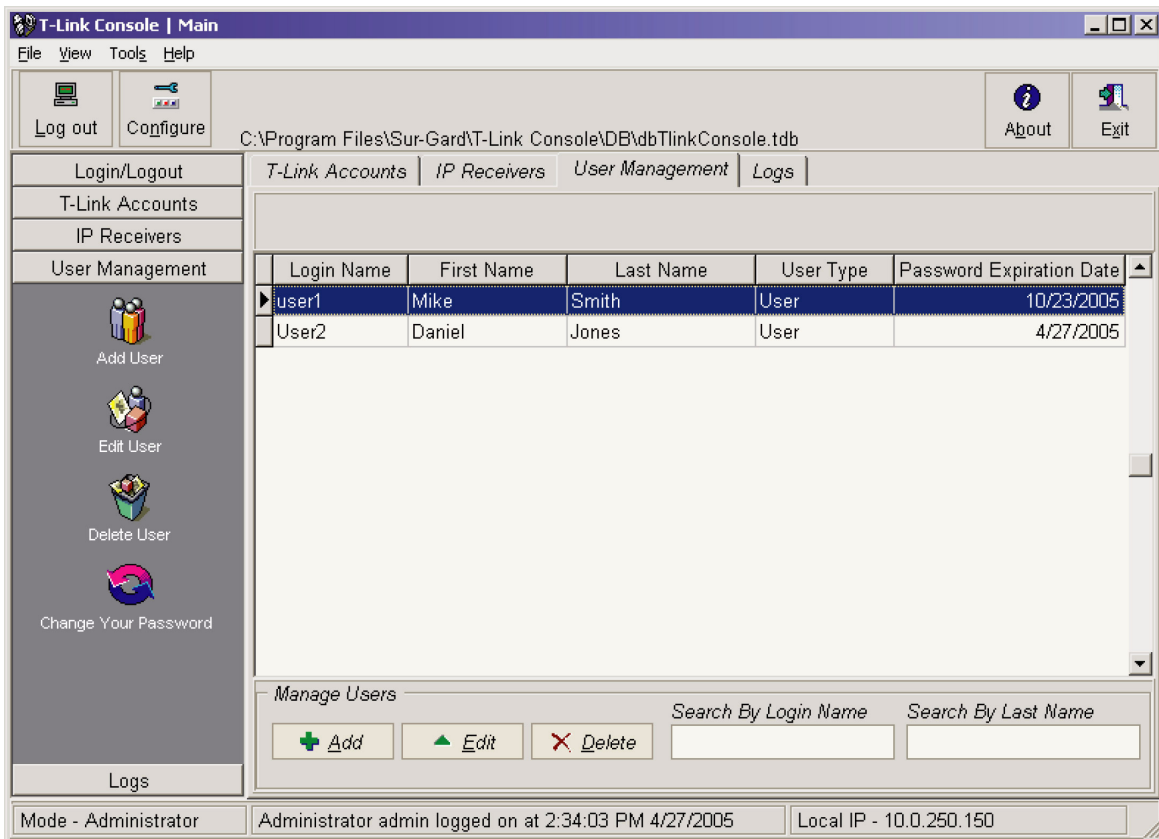
To update changes to the receiver, click on **Set IP Table**. The user can add or delete T-Links from this table by clicking on the corresponding button at the bottom of the screen. The user can Save and Load T-Link Tables from clicking on the **Save** or **Load** button at the bottom of the screen.

## 5 User Management

### 5.1 General

This is accessible to Supervisor, and Administrator access types. The User access type can only change their own password from here. It is available by:

- Clicking on the *User Management* tab at the top of the screen,
- Clicking on the *User Management* bar on the left of the screen,
- Clicking on the *View* menu bar at the top of the screen, and then selecting *User Management*.



The User Management table lists users that the user has access to view. You can add new users, delete users, or edit users by clicking on the corresponding button on the left, bottom, or right clicking on the table.

Selecting *Edit* or *Add* a user displays the *User Management* form. Here you can enter the users Login Name, First and Last Name, user type, password and login expiry date.

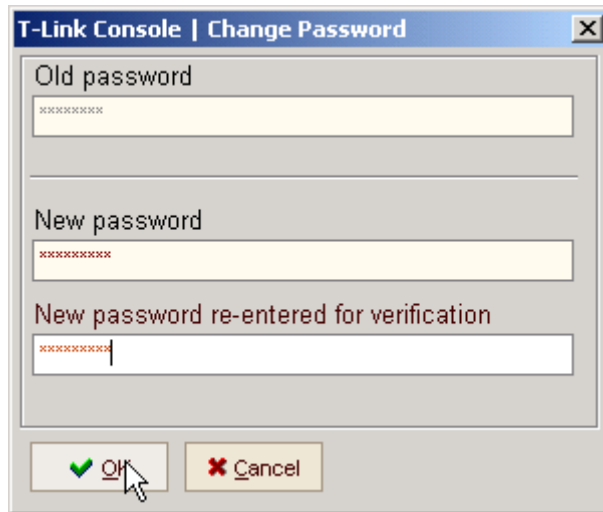
**Note:** Supervisors can only create and edit Administrators and Users

**Note:** Administrators can only create and edit Users

When you edit an account, you will not be able to edit the login name. Administrators must create a new user to do so.

## 5.2 Changing Passwords

DSC recommends that users change their password periodically to ensure security. To change your login password, go to **Change password** in the **File** menu bar or select the **Change Your Password** icon from the left side bar. The following screen will be displayed



The screenshot shows a dialog box titled "T-Link Console | Change Password". It contains three text input fields, each with a yellow background and a red "XXXXXXXXXX" placeholder. The first field is labeled "Old password", the second "New password", and the third "New password re-entered for verification". At the bottom of the dialog, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon. A mouse cursor is pointing at the "OK" button.

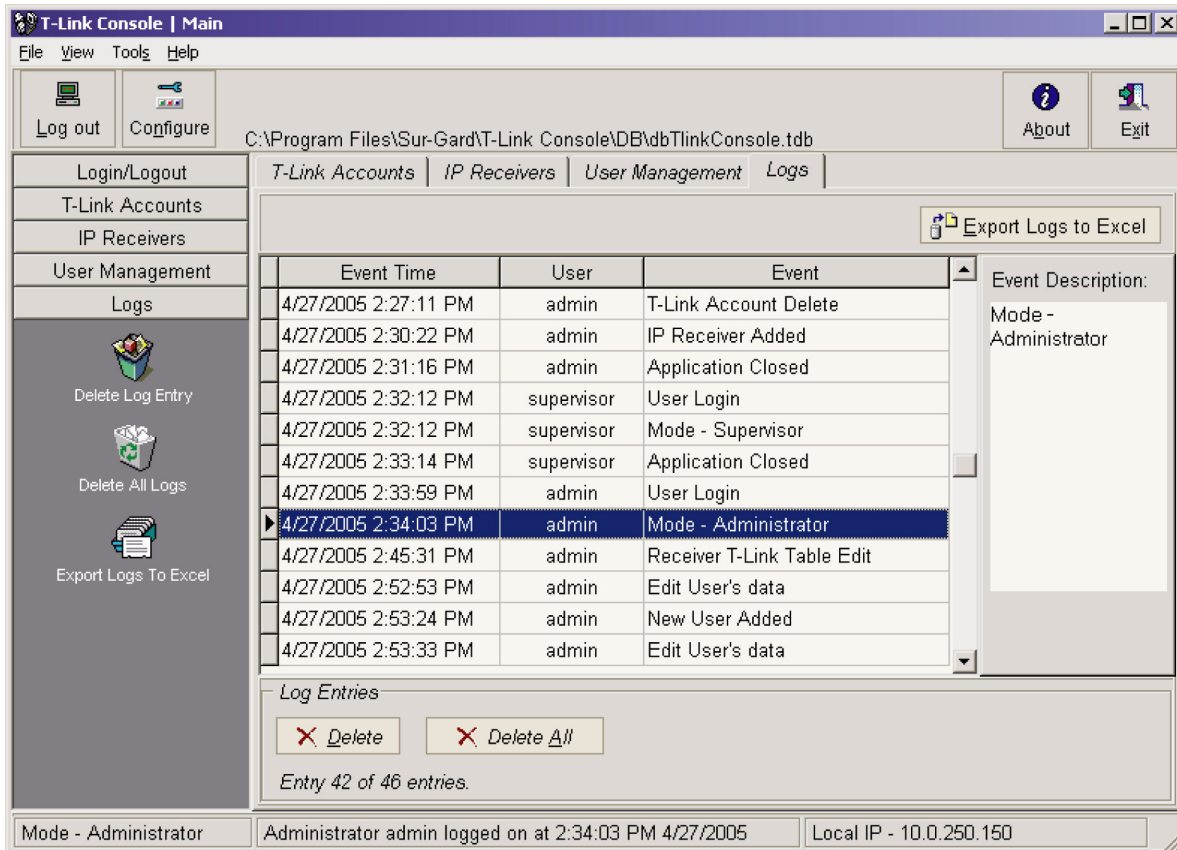
Enter your new password and then re-enter the password to confirm it as indicated below. Click **OK** to approve the new password.

*Note: The password must be at least 8 characters long.*

## 6 Logs

Logs are accessible to *User*, *Administrator* and *Supervisor* access levels. Only the Administrator level can edit, delete or export logs. Users can access **Logs** by:

- Clicking on the **Logs** tab at the top of the screen,
- Clicking on the **Logs** bar on the left of the screen,
- Selecting **View > Logs** from the menu bar



Logs list T-Link Console events including *Event Time*, *User*, and *Event* . The Event Description box located in right Information bar contains additional information including; IP addresses and Account Name. This field can be edited by the *Administrator*. The Administrator level user can **Delete** one log, **Delete All Logs**, or **Export** all logs to an Excel spreadsheet.

**Note: A maximum of 65,535 logs can be exported to Excel®.**

**Export logs periodically to avoid exceeding this limit.**

These options are available by clicking on the corresponding button on the left side bar, clicking on the button at the bottom of the screen, or right-clicking on the Logs table.

## 7 T-Link Console Databases & Maintenance

All information required and used by the T-Link Console is stored in two databases, one for the user information and one containing the T-Link accounts information.

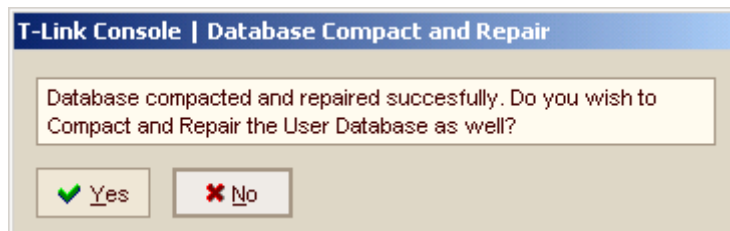
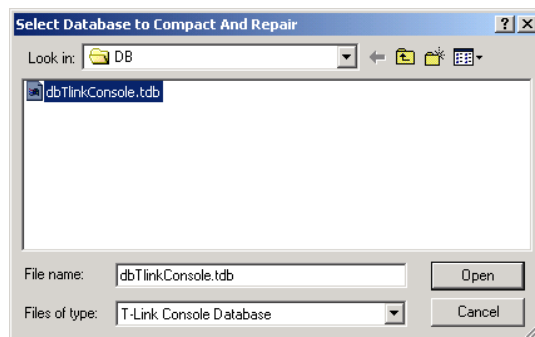
The T-Link Console stores information about the T-Link Accounts in a database file. The user has the ability to create new database files to simplify management of a large number of accounts. Multiple database support also allows you to have duplicate account numbers, with different IP's.

User information is stored in a separate database. Passwords are encrypted using a dynamically generated key. The user type is not specifically encrypted, however a corresponding field is encrypted and checked against the user type to prevent tampering or changing the user type.

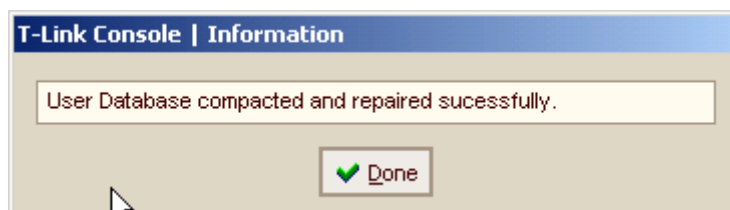
If the database becomes corrupted, the user can **Compact and Repair** the database. If the repair fails and the user has previously backed up the database, it can be restored.

### 7.1 Maintenance

DSC recommends that Database maintenance be performed on a regular basis and when accounts are added and/or deleted. Database maintenance can be accessed by selecting **Tool > Database Tools > Database Compact and Repair** from the menu bar. The following screen will be displayed. Select the database you wish to compact and/or repair.



Selecting **Yes** will perform the maintenance of the user database as well. If you did not add or delete any new users, this will not be necessary. If **Yes** is selected, the following confirmation will be displayed.



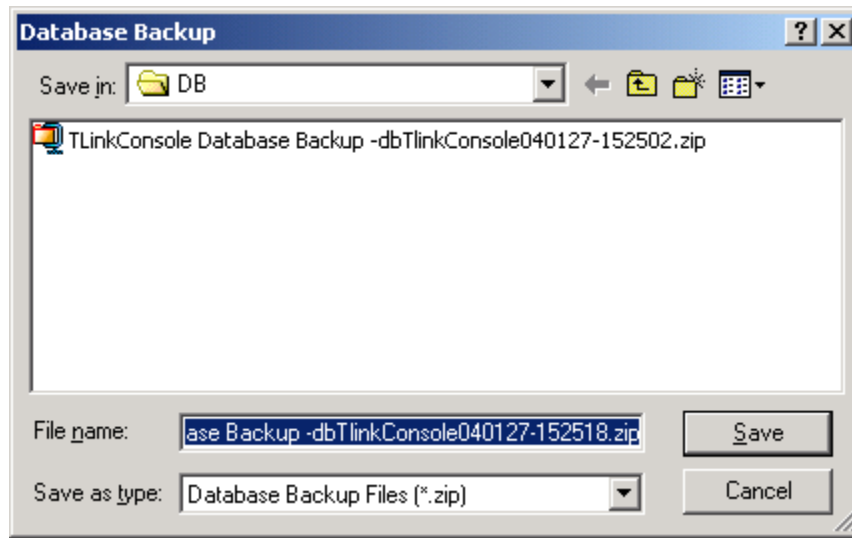
*Note: All messages displayed by the T-Link Console close after 5 seconds.*

## 7.2 Backup

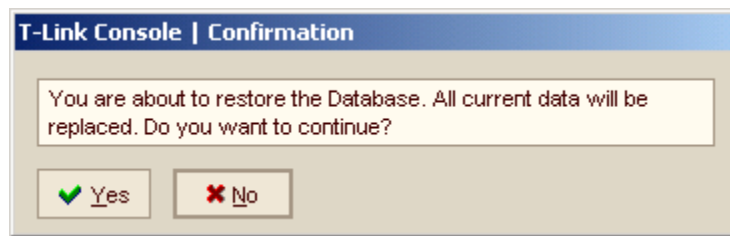
The backup feature allows the user to retrieve accounts information in the event of a database failure caused by any reasons such as power failure, hard drive failure etc. All events/activities that have occurred since the last back up are lost when a restore is performed.

*Note: Backups should be done on a regular basis, and restore should be performed only when all other alternatives have been exhausted.*

The backup function zips (compresses) the accounts database for retrieval at a later time. The backup can be accessed by selecting **Tools > Database Tools** on menu menu bar.

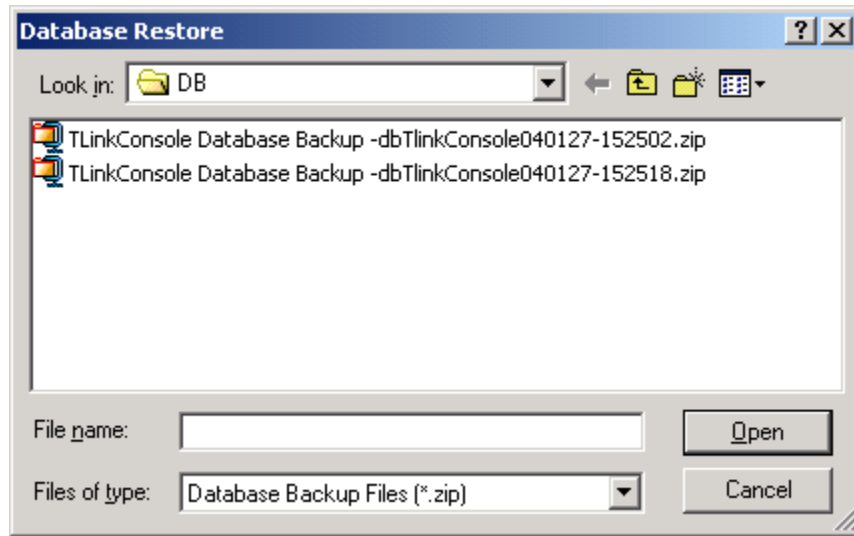


You can save the file with the current name provided by the Console (recommended), or change the file name to a name of your choice. The **Restore** function is available through the same menu. When selected, a confirmation message will be displayed:



By selecting **Yes**, all activities that occurred since the last back up will be deleted.

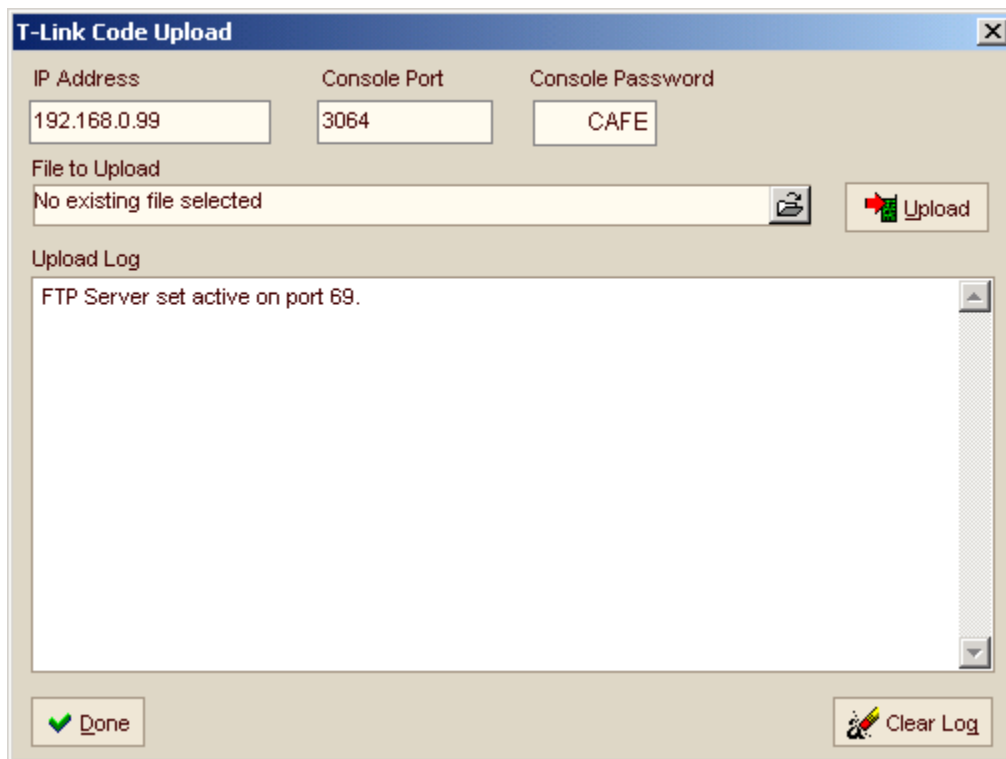




Select the database you wish to restore.

### 7.3 T-Link Software Updates

*Code Upload* is performed in the Remote Programming section. When *Code Upload* is selected, the following screen will be displayed:



**Note:** The IP address entered here is used to connect to the T-Link. Refer to the T-Link Account section for more details.

The Default port used for code upload is 69. Ensure that this port is not blocked by any Ethernet devices such as routers, fire walls or gateways. When you have selected a file to upload, click on the **Upload** button. On completion of the upload, the T-Link Console Software will automatically disconnect from the T-Link.

## Glossary

<b>10Base2</b>	An older type of network Ethernet connection. This is based on a loop of coaxial cable between all the computers that are connected together.
<b>10Base5</b>	The original IEEE 10 Mbps Ethernet standard which uses a thick coaxial cable. Network nodes are attached via transceivers that tap into the cable and provide a line to a 15-pin plug in the adapter card known as the AUI interface. Also called <b>Thick Ethernet</b> , <b>ThickWire</b> and <b>ThickNet</b> , 10Base5 has a distance limit of 1,640 feet without repeaters.
<b>10BaseT</b>	A current type of network Ethernet connection that operates over twisted pair cable. This is more reliable and robust than the older 10Base2 connections. This is usually arranged in a Star topology.
<b>100BaseT</b>	A newer version of 10BaseT connection that is yet again more robust and can handle even higher transfer speeds.
<b>Account</b>	The portion of a signal which contains the information identifying the location or the owner of the alarm panel. Also referred to as Account Number, Account Code or Account Digits.
<b>Acknowledgement (ACK)</b>	A signal sent from the Receiver to the Panel indicating that data has been received. A positive acknowledgement (ACK) means data was received without any detected errors. (see kiss-off). A negative acknowledgement (NAK) means data was received, but there were detected errors. An acknowledgement may be sent per packet or per alarm.
<b>AHS</b>	Automatic Handshake Selection. See ANI.
<b>Alarm</b>	A message transmitted from the panel to the receiver containing account, event, zone, user or other information. There may be one or more per call. An alarm may be repeated in the same call (if not successfully delivered in a previous attempt). An alarm will contain one or more packets. Packets can contain rounds or different information. Alarm transmission is initiated with a handshake and, if received correctly, acknowledged with a kiss-off.
<b>ANI</b>	ANIAutomatic Number Identification. Refers to the receiver feature whereby the line card may request the handshake to be used with a particular panel from the CPM3. The CPM3 maintains a database of most recently used handshakes for all accounts connected to the receiver. Handshakes are stored along with the phone number of the associated alarm panel.
<b>ARP</b>	Address Resolution Protocol. A TCP/IP core protocol used to determine a host MAC address given only its corresponding IP address. ARP is a required protocol in order for TCP/IP to function over Ethernet. Defined in RFC 826.
<b>ASCII</b>	America Standard Code for Informational Interchange. A seven-bit alphanumeric code used extensively in data communications. Parity is often added to the seven-bit code for error detection.
<b>Automation</b>	The combination of software package and PC, which connects to the receiver to receive alarm events. The automation can be connected either by direct serial connection (RS-232) or TCP/IP.
<b>Automation Message</b>	The alarm information delivered by a receiver in a specified protocol to a central station computer or network. Also referred to as a Computer Message.
<b>Backplane</b>	See BP3.
<b>Bandwidth</b>	The amount of data that can be passed along a communications channel in a given period of time.
<b>BC3</b>	Battery Charger 3. The PCB that is responsible for charging the battery on the System III receiver.
<b>Bell 103</b>	A standard for 110/300 bps communication.
<b>Bell 212A</b>	A standard for 1200 bps communication.
<b>Block</b>	A group of data that specifically makes up one of the elements of an alarm. For example: Account block, event block, or alarm block. One packet could contain multiple blocks.

<b>BP3</b>	A motherboard style PCB which acts as the backbone for a single shelf of a System III receiver. The BP3 contains sockets to which up to 12 DRL3's, 1 CPM3, 1 PSC3 and 2 DC/DC3's can be connected. Furthermore, 2 BP3's may be connected together to form a 2 shelf configuration for the System III receiver. The BP3 also contains connections for a parallel printer, a serial printer, and a serial automation COM port, as well as an Ethernet connection. Also referred to as a Backplane.
<b>Busy Out</b>	A state of a line card. Under predefined criteria the line card will go off-hook so as to not process any new alarms.
<b>Call</b>	The process of a receiver going off-hook, receiving one or more alarms and returning on-hook.
<b>CAT5</b>	Refers to a classification of Ethernet twisted pair cable (either shielded (STP) or unshielded (UTP)). Classes CAT1, CAT2, CAT3, CAT4 and CAT6 also exist. CAT5 is currently the most common variety, since it supports speeds of 100 Mbps, and therefore can be used in 10BaseT and 100BaseT installations. The higher the number, the higher the transmission speed which is supported.
<b>CE</b>	European approvals agency.
<b>Centronics</b>	A parallel printer interface standard. Also known as standard IEEE1284. A Centronics interface is implemented on the CPM3 (through the backplane) to interface to the local parallel printer.
<b>Checksum</b>	Additional data added to an Alarm indicating whether the contents have been received correctly. This is generally done by summing all the digits in the message (mod 256) and reporting this as the checksum. Different methods of calculating a checksum may be specified in particular Formats or Protocols.
<b>Console</b>	A PC application program which can connect to the receiver and provide diagnostic/programming abilities to the user. For the System III, the console connects to the CPM3 via TCP/IP.
<b>CPM3</b>	Central Processing Module 3. The CPM3 controls the overall operation of the System III receiver, which includes multiplexing alarm signals from the line cards and sending them to the appropriate outputs.
<b>DC/DC3</b>	The DC power supply of the System III receiver. Can optionally be installed in a redundant configuration on each shelf (slots are available for DC/DC3 A and DC/DC3 B).
<b>DEOL</b>	Double end of line resistor.
<b>DHCP</b>	Dynamic Host Configuration Protocol. A protocol that provides a means to dynamically allocate IP addresses to computers on a local area network. The system administrator assigns a range of IP addresses to DHCP and each client computer on the LAN has its TCP/IP software configured to request an IP address from the DHCP server. The request and grant process uses a lease concept with a controllable time period. Dynamic Host Configuration Protocol (DHCP) offers dynamic configuration of IP addresses and related information. DHCP provides safe, reliable, and simple TCP/IP network configuration; prevents address conflicts; and helps conserve the use of IP addresses through a centralized address collection.
<b>Dialer</b>	Another name for a panel.
<b>DLS</b>	Downloading Software. A DSC PC application used to configure panels.
<b>DNIS</b>	Dialed Number Identification Service. This is an arbitrary number assigned to represent the number that was dialed to reach the destination party.
<b>DNS</b>	Domain Name System. Name resolution software that lets users locate computers on a network or the Internet by domain name. The DNS server maintains a database of domain names (host names) and their corresponding IP addresses.
<b>DRL-IP</b>	A TCP/IP capable line card, which operates in conjunction with the DRL2E in order to provide TCP communications from the panel to the DRL2E/automation software.
<b>DRL3-IP</b>	An Internet capable line card, which operates in conjunction with the System III in order to provide IP communications from the panel to the CPM3/automation software.
<b>DRL3</b>	Digital Receiver Line Card 3.
<b>DSL</b>	Digital Subscriber Line (DSL, or Digital Subscriber Loop, xDSL - see below). A family of digital telecommunications protocols designed to allow high speed data communication over the existing copper telephone lines between end-users and telephone companies.
<b>DSP</b>	Digital Signal Processor. A very powerful, calculus algorithm-based processor that can analyze and decode many different types of audio data.

<b>DTMF</b>	Dual Tone Multiple Frequency. A method of dialing which utilizes 2 sets of 4 tones (frequencies) each. Selecting one tone from each set will produce 16 distinct pairs. These pairs are used to dial digits when dialing a telephone number. Otherwise known as Touch Tone dialing.
<b>Dynamic IP Address</b>	The server assigns the IP address to the computer when it connects to the network. The IP address is variable (see DHCP).
<b>EOL</b>	End of line resistor.
<b>Equivalent Line Number</b>	An option in the receiver. By default printer and computer messages will contain the line card number. Sometimes it is necessary to make the printer and computer messages outputted with a different line card number, in this case this option can be used to overwrite the line card number in the printer and computer outputs of the receiver.
<b>Ethernet</b>	A network protocol which encompasses the lowest logical layer of the network stack, immediately above the physical layer. This protocol is governed by the IEEE and is outlined in the IEEE802.3 specification. Ethernet consists of several variations, including 10Base2, 10Base5, 10BaseT, 100BaseT, and others. 10BaseT and 100BaseT are the most prevalent.
<b>Event</b>	The specific type of Alarm being reported by the Panel.
<b>Event Code</b>	A term used to describe a character or group of characters in an automation output. This character(s) is used to represent the Event that was reported by the panel.  <b>Example 1:</b> SG automation reports an Alarm Event using an Event Code of "A", Restore as "R", or Trouble as "T".  <b>Example 2:</b> Sur-Gard automation reports using a SIA output for a Burglary Alarm an Event Code of "BA".
<b>Extranet</b>	An extension of an institution's intranet, especially over the World Wide Web, enabling communication between the institution and people it deals with, often by providing limited access to its intranet.
<b>FCC</b>	Federal Communications Commission.
<b>Firewall</b>	Any of a number of security schemes that prevent unauthorized users from gaining access to a computer network or that monitor transfers of information to and from the network.
<b>Format</b>	The pre-established order of events and meanings of the various characters in an Alarm transmitted from a Panel to a Receiver.
<b>FTP</b>	File Transfer Protocol. A protocol used to transfer files over a TCP/IP network.
<b>Full-Duplex</b>	A mode of data transmission in which the data traffic can occur simultaneously in both directions.
<b>G.726</b>	An ITU standard for speech codecs that uses the ADPCM method to compress 64 Kbps PCM into 40, 32, 24 or 16 Kbps depending on available channel bandwidth. G.726 generally replaces G.721 and G.723.
<b>Gateway</b>	A device used to connect two different local subnets into one larger logical network. A gateway has 2 IP addresses; one for each subnet it is connected to. Essentially a gateway will decide where to send a packet so that it gets to its ultimate destination. In addition, a gateway will often implement higher-level security functions, such as firewall protection, network address translation, etc. This latter functionality is what distinguishes a gateway from a router.
<b>Half-Duplex</b>	A mode of data transmission in which the data traffic can not occur simultaneously in both directions.
<b>Handshake</b>	A signal sent by the Receiver to a Panel indicating that a connection has been established. These are either tones or modem data.
<b>Heartbeat</b>	A periodic signal sent from the automation outputter tasks to the automation software to verify the presence of that output. The period of this heartbeat is controlled via an option in the CPM3. Alternatively, the heartbeat refers to the signal sent between CPM3's to verify the presence/absence of each other.
<b>Hook Flash</b>	The process of the receiver going temporarily off-hook, usually in an attempt to transfer the phone call.
<b>Hot-Swappable</b>	Refers to the ability to add or remove particular cards to or from the system without removing power. In the System III, the CPM3, DRL3, DC/DC3 and PSC3 are all fully hot-swappable.

<b>HTML</b>	Hypertext Markup Language. The document format used on the World Wide Web. Web pages are built with HTML tags (codes) embedded in the text. HTML defines the page layout, fonts and graphic elements as well as the hypertext links to other documents on the Web.
<b>HTTP</b>	Hypertext Transfer Protocol. A higher level protocol within the TCP/IP suit of protocols which is responsible for implementing web browsers. This is the protocol implemented by the CPM3 to enable the web interface to function.
<b>HUB</b>	A hub is used to connect several computers together. In a message handling service, a number of local computers might exchange messages solely with a hub computer. The hub would be responsible for exchanging messages with other hubs and non-local computers.
<b>IC</b>	Industry Canada.
<b>ICMP</b>	Internet Control Messaging Protocol. A protocol that is integrated at the IP level which essentially is designed to provide network diagnostic and error messages. For the Scenix TCP/IP stack, a subset of the ICMP message set, namely the Echo Request and Echo Reply messages, are implemented. Other ICMP messages cannot be handled by the T-Link II. These 2 messages are the same 2 messages used by the ping utility. For more information on ICMP, refer to RFC 792.
<b>IEEE</b>	Institute for Electrical and Electronics Engineers.
<b>IEEE 1284</b>	See Centronics.
<b>IEEE 802.3</b>	See Ethernet.
<b>Internal Trouble</b>	A trouble condition which is generated inside a receiver, as opposed to being sent as an alarm from the panel. Internal troubles are also sent to the printer and automation outputs.
<b>Internet</b>	The biggest internet in the world. This worldwide information highway comprises thousands of interconnected computer networks, and reaches millions of people in many different countries. The Internet was originally developed for the United States military, and then became used for government, academic and commercial research and communications. The Internet is made up of large backbone networks (such as MILNET, NSFNET, and CREN), and smaller networks that link to them. The U.S. National Science Foundation maintains a major part of the backbone (NSFNET). The Internet functions as a gateway for electronic mail between various networks and online services. The World Wide Web facility on the Internet makes possible almost instantaneous exchange of information by linking documents around the world. Internet computers use the TCP/IP (Transmission Control Protocol/Internet Protocol). There are over six million hosts on the Internet: mainframes, minicomputers or workstations that support the Internet Protocol. The Internet is connected to computer networks worldwide that use various message formats and protocols; gateways convert these formats between networks so that the Internet functions as one big network. UNIX utilities such as FTP, Archie, Telnet, Gopher and Veronica have been widely used to access the Internet. The Internet sometimes appears to be amorphous and unregulated, but there are several administrative bodies: the Internet Architecture Board, which oversees technology and standards; the Internet Assigned Numbers Authority, which assigns numbers for ports and sockets, etc.; InterNIC, which assigns Internet addresses; the Internet Engineering and Planning Group, Internet Engineering Steering Group, and the Internet Society. Considered public (open access).
<b>Intranet</b>	A network based on TCP/IP protocols (an internet) belonging to an organization, usually a corporation, accessible only by the organization's members, employees, or others with authorization. A privately maintained computer network that can be accessed only by authorized persons, especially members or employees of the organization that owns it. Considered private (limited access).
<b>IP</b>	Internet Protocol. Pronounced as two separate letters. IP specifies the format of packets, and the addressing scheme. Most networks combine IP with a higher-level protocol called Transmission Control Protocol (TCP), which establishes a virtual connection between a destination and a source. IP by itself is something like the postal system. It allows you to address a package and drop it in the system, but there's no direct link between you and the recipient. TCP/IP, on the other hand, establishes a connection between two devices so that they can send messages back and forth for a period of time. Internet Protocol (IP) is the central, unifying protocol in the TCP/IP suite. It provides the basic delivery mechanism for packets of data sent between all systems on an internet, regardless of whether the systems are in the same room or on opposite sides of the world. All other protocols in the TCP/IP suite depend on IP to carry out the fundamental function of moving packets across the internet.

<b>IP Address</b>	An identifier for a computer or device on a TCP/IP network. Networks using the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address is a 32-bit numeric address written as four numbers separated by periods. Each number can be zero to 255.
<b>LAN</b>	Local Area Network. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telephone lines and radio waves. A system of LANs connected in this way is called a wide-area network (WAN).
<b>Latency</b>	<ol style="list-style-type: none"><li>1. The time it takes for a packet to cross a network connection, from sender to receiver.</li><li>2. The period of time that a frame is held by a network device before it is forwarded. Two of the most important parameters of a communications channel are its latency, which should be low, and its bandwidth, which should be high.</li></ol>
<b>Line</b>	An individual channel on a line card. Equivalent to 1 telephone line.
<b>Line Card</b>	A removable, hot-swappable card which contains a POTS line interface which controls 1 or more POTS lines. For System III, each line card (DRL3) will interface to 1 line.
<b>MAC Address</b>	A globally unique device address which is 6 bytes long, that identifies a device attached to an Ethernet network. MAC stands for Media Access Control. Assignment of MAC addresses are governed by the IEEE; any OEM company which manufactures Ethernet devices must apply for and purchase an OUI (organizationally unique identifier) which consists of a block of 16,777,216 MAC addresses, all of which have the same first 3 bytes. Subsequent allocation of addresses within that block are at the discretion of the purchaser. Each Ethernet device produced must be programmed with a different MAC address in order to guarantee that each device will function correctly on the network. For the System III, the MAC address is stored in serial EEPROM on the CPM3 board. It is only programmable during manufacturing.
<b>MLRF3</b>	The metal rack which is used to enclose all other modules within a single shelf of the System III receiver.
<b>MTU</b>	Maximum Transmission Unit. The largest frame size that can be transmitted over a network. Messages longer than the MTU must be divided into smaller frames. The MTU of Ethernet is 1500 bytes (not including Ethernet frame bytes).
<b>Multidrop</b>	A communication link in which a single channel is shared by several stations or nodes (DVAC is a Multidrop network). Only one station may transmit at a time. Multidrop is also referred to as multi-point.
<b>NAT</b>	Network Address Translation. A process often used in gateways to allow a local or wide area network to connect to the internet. Generally, it is a method of substituting reserved local IP addresses (which are not routable on the internet) with the address of the gateway, so that the packets can then be sent onto the internet. In the opposite direction, the gateway would switch back the address to the local address so that the packet could then be received by the proper local network host.
<b>Negative Acknowledgement (NAK)</b>	See Acknowledgement.
<b>Network</b>	Two or more computer systems connected together.
<b>N.C.</b>	Normally Closed. The state of a zone input whereby the input is closed when there is no alarm condition present.
<b>NIST</b>	National Institute of Standards & Technology. The standards defining agency of the U.S. government, formerly the National Bureau of Standards.
<b>N.O.</b>	Normally Open. The state of a zone input whereby the input is open when there is no alarm condition present.
<b>Off-Hook</b>	The process of connecting to the telephone line to answer an incoming Call or dial a remote device (Answering).
<b>On-Hook</b>	The process of releasing the telephone line after completion of a call (Hanging-up).
<b>Options</b>	A set of user-configurable parameters which controls the operation of a device. In the System III, both the DRL3 and the CPM3 contain sets of options. ADD STATIC / DYNAMIC OPTIONS description here
<b>Packet</b>	A group of digits or characters of information in an Alarm.

<b>Packet Switching</b>	A type of network in which messages are divided up into discrete units called packets and routed independently of each other to their final destination.
<b>Panel</b>	A device (the alarm system) at the protected premises used to transmit Alarms to the Receiver.
<b>PBX/PABX</b>	Private Branch Exchange or Private Automatic Branch Exchange. Terms used to describe privately owned or leased Telephone Switching Equipment.
<b>PC-Link</b>	A serial connection present on many DSC panels which allows other devices such as the DLS or T-Link II to communicate with the panel.
<b>Ping</b>	<p>A standard network command which can be used to verify the presence of a device on a network, using the device IP address. Ping is implemented as part of the ICMP Protocol and consists of the Echo Request and Echo Reply commands (poll and response respectively).</p> <p>Ping of DeathA type of DoS attack. The Internet Protocol (IP) defines the maximum size for a Ping packet. However, some Ping programs can send packets that are larger than this size which can cause some systems to crash.</p>
<b>POTS</b>	Plain Old Telephone System. An acronym used to describe a standard analog telephone network, or alternatively a standard analog telephone line.
<b>PPP</b>	Point To Point Protocol. The communications protocol used to dial up the Internet over a serial link, such as a POTS or ISDN line. Developed by the Internet Engineering Task Force in 1994, it superseded the SLIP protocol. PPP establishes the session between the user's computer and the ISP using the Link Control Protocol (LCP), which also handles authentication (PAP, CHAP, etc.), compression and encryption.
<b>PPPoE</b>	Point To Point Protocol over Ethernet.
<b>Printer Message</b>	The alarm information delivered by a receiver to a central station printer. This information is generally encapsulated in a descriptive English text message.
<b>Protocol</b>	The pre-established order of events and meanings of the various characters in the information transmitted from a receiver to a monitoring computer.
<b>PSC3</b>	Power Supply Controller 3.
<b>PSTN</b>	Public Switched Telephone Network. Analogous to POTS.
<b>PSU3</b>	Power Supply Unit 3.
<b>RAM</b>	Random Access Memory.
<b>RBUS</b>	The name given to the RS-485 bus which exists between the CPM3(s) and the line cards.
<b>Receiver</b>	The equipment used to receive alarms sent from Panels. Sur-Gard's receivers are the SLR and the MLR. Receiver is sometimes used interchangeably with Line card as it is the line card that actually receives the alarm in the MLR.
<b>Reporter IP</b>	A PC-based TCP/IP capable application developed by Sur-Gard intended to be used as a standalone receiver, with similar functionality to the embedded receiver/automation software. This is one of the receiver types that the T-Link can connect to.
<b>RFC</b>	Request For Comments. A collection of freely available standards which define the protocols used in TCP/IP networking.
<b>Ring</b>	One of the wires used on a phone line. By convention this is red (See Tip).
<b>ROM</b>	Read Only Memory.
<b>Rounds</b>	Two or more packets of alarm information used for error checking. If two packets (rounds) are identical the packet contains valid data.
<b>Router</b>	<p>A device in a network that handles message transfer between computers.</p> <p>RRLLLThe part of the automation message which stores the receiver number and line card number. The length of this field is variable and is controlled via options in both the line card and the CPM3.</p>
<b>RS-232</b>	An asynchronous, point to point serial communications protocol. Used to communicate between the DRL3 and a PC for the DRL3's debug output. Also used to communicate between the CPM3 and the automation computer, and the CPM3 and a PC for the CPM3's debug output.
<b>RS-485</b>	Multi-drop differential serial interface. Used to communicate over the backplane between the CPM3's and the line cards.
<b>RTC</b>	Real Time Clock.

<b>SA</b>	System Administrator. A DSC PC application used to configure panels that is a pared down version of the DLS software.
<b>Server</b>	One side of a two-sided TCP/IP socket connection. The server is the one responsible for receiving the socket connection with the remote host (the client). In general, a host which acts as a server can receive multiple client socket connection requests simultaneously. The CPM3 acts as a server to both the console and the web interface.
<b>SG</b>	Sur-Gard. Also used to describe a particular type of automation output.
<b>SIA</b>	Security Industry Association. Sometimes referred to as the SIA format which is an example of FSK modulation.
<b>SLIP</b>	Serial Line Interface Protocol. A communications protocol for dial-up access to TCP/IP networks. It was commonly used to gain access to the Internet as well as to provide dial-up access between LANs. SLIP transmits IP packets over any serial link (dial up or private lines). SLIP has been mostly superseded by the Point-to-Point Protocol (PPP).
<b>SMTP</b>	Simple Mail Transfer Protocol. A standard TCP/IP protocol used to transfer email.
<b>Socket Connection</b>	A logical connection made between 2 hosts on a TCP/IP network. A socket is uniquely defined by the combination of (IP address, port number) at both ends of the logical connection.
<b>SRAM</b>	Static Random Access Memory.
<b>STP</b>	Shielded Twisted Pair cable. Refers to a type of Ethernet cable which is electromagnetically shielded to reduce interference effects. See also UTP.
<b>Subnet</b>	A portion of a network that shares a common address component. On TCP/IP networks, subnets are defined as all devices whose IP addresses have the same prefix. Dividing a network into subnets is useful for both security and performance reasons. Subnet masks are 32-bit values that allow the recipient of IP packets to distinguish the network ID and host ID portions of the IP address. Typically, subnet masks use the format 255.x.x.x.
<b>System III</b>	Name given to a single entire receiver configuration, including rack, CPM3(s), line card(s), power supply, etc.
<b>T-1</b>	An AT&T term for a digital carrier facility used to transmit a DS1 formatted digital signal at 1.544 megabits per second. A T1 circuit requires two twisted pair lines, one for each direction. Some newer equipment uses the two lines at half the T1 rate and in full-duplex mode; the sent and received signals are separated at each end by components collectively called a <b>hybrid</b> . Although this technique requires more sophisticated equipment and lowers the line length, an advantage is that half the sent and half the received information is mixed on any one line, making low-tech wiretaps less of a threat.
<b>TBD</b>	To Be Determined.
<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol. A standard network communications protocol. On the System III, TCP/IP is used to communicate between the console and the CPM3. It is also used to connect the CPM3 to a TCP/IP Printer (resident on the console) and TCP/IP automation software (runs independent of the console).
<b>TFTP</b>	Trivial File Transfer Protocol. A version of the FTP protocol that has no directory or password capability.
<b>Tip</b>	One of the wires used on a phone line. By convention this is green (see Ring).
<b>Trap</b>	To keep the panel on-line for programming purposes.
<b>TTL</b>	Time To Live. A set maximum amount of time a packet is allowed to propagate through the network before it is discarded.
<b>UDP</b>	User Datagram Protocol. A TCP/IP protocol which allows for connectionless communications between two network hosts. Retries are not handled and packet delivery is not guaranteed. Packets may also arrive out of sequence.
<b>UL</b>	Underwriters Laboratories. An independent, not-for-profit product safety testing and certification organization in the U.S.
<b>ULC</b>	Underwriters Laboratories Canada. See UL.
<b>UTC</b>	Stands for "Universal Time Coordinated", and is the standard time common to all places in the world. It is also commonly referred to as GMT or World time.



<b>UTP</b>	Unshielded Twisted Pair cable. Refers to a type of Ethernet cable which is not electromagnetically shielded. This type of cable is generally acceptable in most installations and is the more prevalent of the two cable classes, due to its lower cost. See also STP.
<b>VPN</b>	Virtual Private Network. The use of encryption in the lower protocol layers to provide a secure connection through an otherwise unsecure network, typically the Internet. VPNs are generally cheaper than real private networks using private lines but rely on having the same encryption system at both ends. The encryption may be performed by firewall software or possibly by routers.
<b>WAN</b>	Wide Area Network. A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs). Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites.
<b>Zone</b>	The portion of an alarm which contains the information identifying the specific zone of the panel that has been violated.

