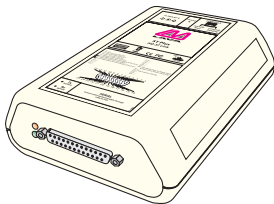


# LAVA HQ-ST Link ST Plus Installation and Configuration Guide

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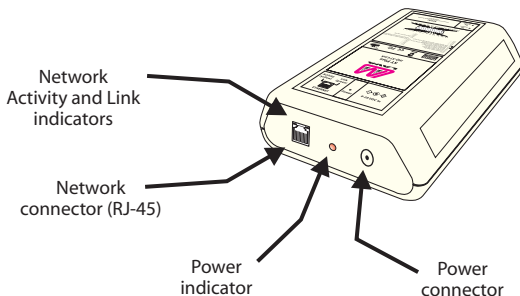
# 1

## Hardware Setup

### Installation requirements:

- Internet access from the store
- DHCP enabled at the store (recommended only)
- Ethernet cable (ST Plus to store LAN)
- modem cable DB-25M to DB-9F (ST Plus to ECR)
- home IP address of HQ Plus
- polling telephone number for store
- identification key to match HQ Plus
- set-up computer with serial port

### Set-up sequence:



1. Connect the power supply to the ST Plus and to AC power.
2. The power (red) LED will light to indicate that the unit is receiving power.

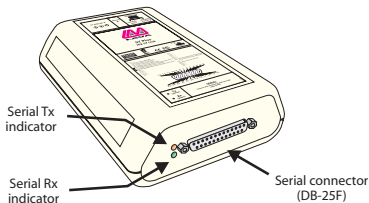
2

3. Connect a network cable to the Ethernet RJ-45 jack of the ST Plus. Attach the other end of the network cable to an Ethernet hub or switch on the store's LAN.

Network status is indicated by two LEDs on the RJ-45 connector. The left (yellow) LED indicates network activity. It is on by default, turning off when network activity occurs at the ST Plus. The right (green) LED indicates a network link. It is off by default, but lights when a network link exists.

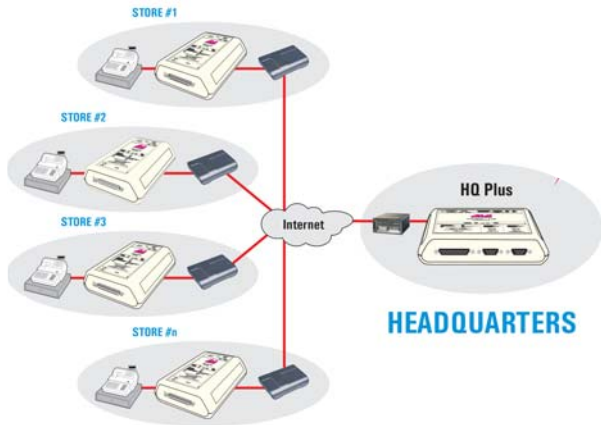
4. Connect the set-up computer to the ST-Plus using the serial cable listed on the previous page.

Serial port activity is indicated by two status LEDs per port. The yellow LED lights when the serial port is transmitting data. The green LED lights when the serial port is receiving data.



**Single Port**

## System Design



The HQ-ST Link consists of ST Plus units installed at each store. These units communicate with an HQ-Plus unit (or units) at the head office. The ST Plus units are attached to the cash register(s) in each store, and to the store's Internet connection. Polling software running on a head office computer can poll each cash register.

The system is optionally supported by the included ST Plus Configuration Console application, which makes configuring ST Plus units simple, and at the head office by the HQ-Basic application, which shows the connection status of ST Plus units in stores (described elsewhere).

The system is also extended by the HQ Plus Remote Console and the HQ Plus Remote Poller, hardware interfaces that enable an installer or owner to perform head office tasks in other locations.

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## Configuration

Configure ST Plus units with any of three basic methods:

1. Using the ST Plus Configuration Console software  
(setup through the ST Plus serial port)  
or
2. Using the ST Plus web configuration screens  
or
3. Using a headquarters-based HQ Plus setup server

This Installation and Configuration Guide covers the first two setup methods. The third method is detailed in the HQ Plus documentation set.

Installation of an ST Plus unit assumes:

- a) that DHCP is running on the network to which the ST Plus is being attached (see the next page if that is not the case)
- b) that Internet access is available from that network
- c) that an operating HQ Plus unit is available on the Internet with a known IP address and an Identification Key that matches that of the ST Plus unit being configured
- d) that the "telephone" number that the ST Plus will use is known to the installer and polling software

**Before Proceeding:** The ST Plus setup assumes that DHCP is configured at the store and that Internet access is available for connection to the HQ Plus unit. ST Plus units are factory configured to take their network settings from a DHCP server.

If DHCP is not used at the store location, the ST units can be manually configured. For this case the unit has been factory preset with an IP address of 192.168.0.35. If this IP address cannot be used on the network (it may already be in use, for instance), do not initially connect the ST Plus to the network.

Instead connect the ST Plus directly to a host PC using the serial cable described in the requirements list, and manually set the IP address to a usable address for the network onto which the ST Plus will be installed.

## 1. Configuration using the ST Plus Configuration Console software

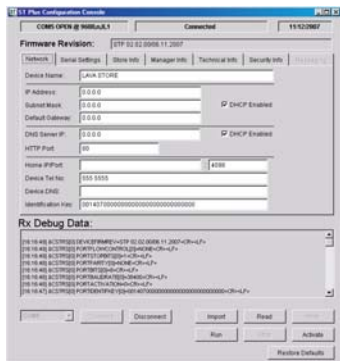
### INSTALL CONFIGURATION CONSOLE SOFTWARE

The installation CD has files to install the ST Plus Configuration Console on your PC (Windows only). To run the installation software, insert the installation CD and run "st\_plus\_setup.exe". The Setup Wizard will ask you to supply basic installation information.

Once the software is installed, run st\_plus.exe from the Start | Programs | LAVA Computer MFG | LAVA ST Plus folder. The ST Configuration Console application will open, showing the "Network" tab.

### CONNECT THE ST PLUS

Remove power from the ST Plus and connect a serial cable from the ST Plus to a serial port on the system running the ST Plus Configuration Console. Choose the serial port number (COMx) used to connect to the ST Plus from the dialog box in the lower left portion of the console screen and click "Connect".



Now power up the ST Plus. The ST Plus Configuration Console will now query the ST Plus for its configuration settings.





## TEST THE CONNECTION ("RUN" and "STOP")

Now you can test the connection between the ST Plus and the HQ Plus.

Click the "Run" button. When the ST Plus connects to the HQ Plus, the Configuration Console will switch to the "Messaging" tab and say "Connected to Unit: [device name]". (Note: The word "Connected" displayed at the top of the ST Plus Configuration Console does not refer to connection to the HQ Plus, but to the serial port connection between the ST Plus and the ST Plus Configuration Console).

You can stop the connection with the "Stop" button, and restart it with the "Run" button.

The messaging screen will allow you to conduct a "chat" session between you and a person at the head office.

## ACTIVATE THE CONNECTION

When you are satisfied that the ST Plus unit is in communication with the HQ Plus, you can activate it. The basic difference between "Run" and "Activate" is that an ST Plus unit that has been activated 1) has its web page configuration screens disabled, and 2) will reconnect automatically to its HQ Plus "home" when re-booted. (An ST Plus in "Run" mode will revert to "Stop" mode when its power is cycled).

Activation essentially "locks down" an ST Plus into operational mode, and its configuration then cannot be accessed or altered except through the Configuration Console while in reset mode (this functionality is explained in the HQ Plus documentation set).

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### **CONNECT THE ST PLUS TO THE CASH REGISTER**

At this point you can disconnect the ST Plus from the computer running the ST Plus Configuration Console and connect it to the cash register. Then connect the ST Plus to your store's LAN or router. Your system should now be ready to poll.

## 2. Configuration using the ST Plus web configuration screens

### CONNECT THE ST PLUS

Connect power to the ST Plus and a network cable from the Ethernet port of the ST Plus unit to your store's LAN or router. Open a web browser to the IP address of the ST Plus. (Note: Ensure that the web browser is running on a system that is on the same subnet as the ST Plus).

#### ***Note on subnet configuration***

If the ST Plus is on a different subnet from the system running a web browser that is attempting to access it, the ST Plus will not be visible to the browser. For example, if the IP address of the ST Plus is 192.168.0.35 and the IP address of the client station is 192.168.1.1, the two devices are on different subnets (as indicated by the difference between the "0" and the "1" in the third portion of the two IP addresses).



Two solutions exist:

- change the subnet of either the ST Plus or the client station so that they are both on the same subnet or,

- change the subnet mask of the ST Plus to encompass both subnets. By default, the ST Plus has its subnet mask set to 255.255.255.0. This setting excludes all but the fourth portion of the IP address when assessing IP addresses. In the example above, a subnet mask of 255.255.0.0 will include the ST Plus in both subnets.

## CONFIGURE THE ST PLUS FOR HQ PLUS CONNECTION

Three pieces of information are necessary and sufficient to connect the ST Plus to the HQ Plus:

- 1) "Home IP/Port" of the HQ Plus that the ST Plus will contact
- 2) "Device Tel No." that the ST Plus will use for the purposes of the polling software being run at the head office
- 3) "Identification Key" for the ST Plus that matches that of the HQ Plus.

This information is entered by clicking on the "Configure Network Settings" button and entering it into the fields on the screen that is presented. Additional screens are available for supplying many items of store and contact information; however, these are not needed for connecting to the headquarters unit or for polling.



## CONFIGURE THE ST PLUS FOR CASH REGISTER CONNECTION

The "Configure Serial Port Settings" tab opens a screen that provides fields for entering settings for the serial port of the ST Plus to connect to the cash register that you will be polling. The simple rule here is that whatever serial port settings the cash register uses should be duplicated here.

### TEST THE CONNECTION ("RUN" and "STOP")

Now you can test the connection between the ST Plus and the HQ Plus.

Click the "Run" button. When the ST Plus connects to the HQ Plus, the "Run" button will change to a "Stop" button and the other buttons will be grayed out.

You can stop the connection with the "Stop" button, and restart it with the "Run" button that then appears.

### ACTIVATE THE CONNECTION

When you are satisfied that the ST Plus unit is in communication with the HQ Plus, you can activate it. The basic difference between "Run" and "Activate" is that an ST Plus unit that has been activated 1) has its web page configuration screens disabled, and 2) will reconnect automatically to its HQ Plus "home" when re-booted. (An



ST Plus in "Run" mode will revert to "Stop" mode when its power is cycled).

Activation essentially "locks down" an ST Plus into operational mode, and its configuration then cannot be accessed or altered through the web interface.

## **CONNECT THE ST PLUS TO THE CASH REGISTER**

At this point you can connect the ST Plus to the cash register. Your system should now be ready to poll.

### **3. Configuration using a headquarters-based HQ Plus setup server**

ST Plus units can be configured by having them access an HQ Plus setup server. This method involves pre-configuring the ST Plus unit with the IP address and port of the setup server, which it then contacts when it goes online. The HQ Plus setup server then re-configures the ST Plus unit's settings, changing such things as the call-home IP address that the ST Plus will use. When it reboots, the ST Plus will contact its new "home" and be ready for polling.

Details on this update procedure are available in the HQ Plus documentation.

## **D. Upgrading Software**

New versions of LAVA ST Plus software and firmware may be found at [www.lavalink.com](http://www.lavalink.com).

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## ST Plus Factory Defaults

### *Network Settings*

Identification Key:	customer specific
IP address:	192.168.0.35 ( DHCP not enabled)
Gateway port mapping as required, set by DHCP.	

### *Serial Port*

Baud Rate:	38400
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	None

### *Connection Control*

DTR Signal:	Always active
RTS Signal:	Always active
Permit connection on Data:	unchecked
Permit connection on DSR	unchecked
Permit connection on CTS	unchecked
Permit connection on RI	unchecked
Permit connection on CD	unchecked
Serial Port TCP Connection STATUS:	[ ] Message (20 HEX chars MAX)
Message required:	unchecked
Serial Port Permission NOT MATCHED[ ]	Message (20 HEX chars MAX)
Message required:	unchecked
Local TCP port:	4098
Identification Key:	[ ] Message (16 HEX chars MAX)
Identification required:	checked

### *TCP reset options*

Enable Reset on Line Status Error:	unchecked
Enable Reset on BREAK:	unchecked



This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

908 Niagara Falls Blvd. #629, North Tonawanda NY 14120-2060

