



Instructions for WiFi Setup of T3-V and T4 Handheld Controllers

The T3-V and T4 handheld controllers come supplied with a built-in 802.11g WiFi card. This enables the user of the T3-V/T4 to browse the Internet through built-in Internet Explorer*, monitor and control MJPEG network cameras, interface with IP controllable devices, and allow for future support of two-way communication. *(Please note that while most website content is compatible with the remote control browser, plugins such as JAVA, Active X, steaming video, and persistent cookies are not supported).

Important Notes:

- The T3-V/T4 will not automatically connect to an available wireless network out of the box. You must program the remotes using Integration Designer before WiFi connectivity will be possible.
- You can see the current connection status in the control panel of the remote, however, you cannot configure the wireless settings from the remote control directly.
- After setting up the wireless network settings, to view the internet or an IP camera, you must program either a web browser or MJpeg viewer object on to a page on the remote using Integration Designer .

Step 1: Define wireless network

The Wireless network settings dialog in the remote properties is used to configure the device to communicate with 802.11 wireless networks. The remote can be configured to connect to several different wireless networks, and will connect to the first configured network that it finds.

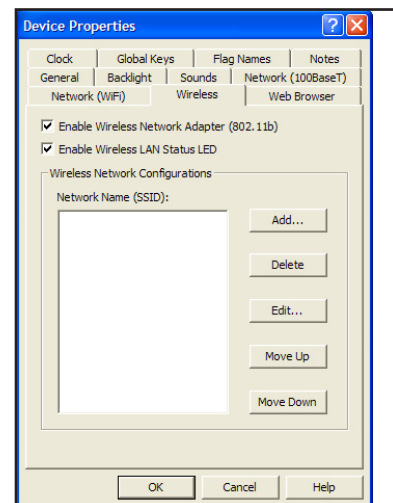
In general, there are three ways to configure your wireless network. They are, in increasing levels of security: Open (no encryption), WEP encryption, and WiFi Protected Access-Personal (WPA-PSK). If your wireless access point supports WPA-PSK, it is recommended that you use it, as it is the most secure option available.

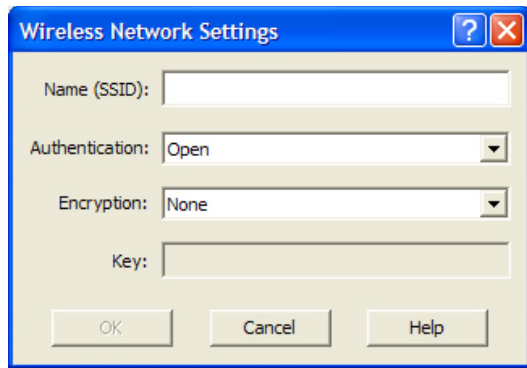
NOTE: Authentication modes using a pre-defined key are supported. 802.1x, WPA2 and WPA-Enterprise are not supported at this time.

Four parameters must be specified for each wireless network configuration. Each parameter must be configured the same as the wireless access point or the device will not connect to the network.

- Right click on the icon of the T3-V/T4 in the system workspace of Integration Designer, then select "Properties".
- Select the "Wireless" Tab.
- Check the box to "Enable Wireless Network Adapter"
- Click on "Add" in the Wireless Network Configurations area
- Fill in the Wireless Network Settings as described below:

Use the wireless tab of the T3-V/T4 properties menu to establish the wireless network(s) the remote can connect to.





Use the wireless network settings to enter the SSID, authentication, encryption, and, if necessary, the key to connect to the preferred wireless network.

Parameter

Name (SSID)

The SSID is the name of the wireless network. This setting is case-sensitive and must exactly match the SSID that is programmed into the wireless access point.

Authentication

Authentication controls how devices are allowed to access the wireless network. If this setting is set to Open, any device is allowed to connect to the network. If it is set to Shared Key, the key specified in the Key field is used to connect to the network. If the setting is set to WPA-PSK, the key specified in the Key field is used to connect to the network using the WiFi Protected Access – Pre-Shared Key protocol. You should set this field to the same setting as the wireless access point.

Encryption

Encryption is used to protect data on the wireless network from unauthorized access. If you are using Open or Shared Key authentication, you can choose between no encryption and WEP (Wired Equivalent Privacy) encryption. The device supports both 64 bit and 128 bit WEP encryption. If you are using WPA-PSK authentication, you must use TKIP (Temporal Key Integrity Protocol) encryption. With WEP and TKIP encryption, the encryption key must be entered in the Key field.

Key

The key is used for authentication and encryption. When using Shared Key authentication and/or WEP encryption, the key can be entered as either ASCII characters or hexadecimal digits. 64 bit WEP keys must be entered as either 5 characters or 10 hex digits; 128 bit WEP keys must be entered as either 13 characters or 26 hex digits. The number of characters entered will automatically determine the type and size of the key. For WPA-PSK authentication, the key can be 8-63 ASCII characters long. In addition to these settings, be sure to configure the TCP/IP settings on the “Network (WiFi)” tab of the Device Properties.

Step 2: Configure TCP/IP settings

The “Network (WiFi)” tab of the T3-V/T4 device properties allows you to select the method for assigning an IP address. There are two options available:

Option 1) “Use DHCP to configure networking”.

DHCP is short for Dynamic Host Configuration Protocol, a protocol for assigning dynamic IP addresses to devices on a network. With dynamic addressing, a device can have a different IP address every time it connects to the network. Dynamic addressing simplifies network administration because the router keeps track of IP addresses rather than requiring an administrator to manage the task, and usually means easier setup, however connection speeds may be slower and less reliable than using a static IP address (option 2).

Option 2) “Use the following network settings”

This option will allow you to assign a static IP address, Netmask, Gateway and DNS server. If you do not have this information readily available, you may be able to connect to the wireless network using DHCP (option 1), then go into the control panel of the remote to see the current settings that are being used. Type this information into the static IP address fields. NOTE: Make sure to change the actual IP address by increasing the last number by 25-50. This is to prevent you from using the same IP address that is being used by another device on the network. This connection type usually faster and is required for a reliable wireless connection on the T3-V.

Connection Status

After completing the network properties you have finished the configuration needed to allow the T3-V/T4 to connect to the desired wireless network. After downloading the program to the remote the connection status can be seen from the device control panel or a green light should appear within 10-15 seconds in the upper right hand portion of the T4, indicating the the T4 has connected to the network.

Troubleshooting/ Frequently Asked Questions

Connection Status in the T3-V/T4 control panel or the wireless network link indicator (green light in upper right portion of T4) is on, but the remote won't load any web pages.

- Try rebooting your router (unplug it for 30 seconds, then plug it back in), and your T3-V/T4 (turn off power switch, then turn back on.)
- Verify your DNS settings are correct. NOTE: when using multiple wireless access points/extenders, it's possible that the DNS information given out by the DHCP server will be the IP address of the wireless router or gateway. Using a static IP address and defining the actual DNS Server IP address may be necessary.
- Verify that you have programmed a web browser object on to the page you are viewing on the remote.

I have configured the wireless network settings and updated the T3-V/T4, but it is still not connected.

- Verify you have correctly entered the wireless properties for the T3-V/T4. Note that the SSID is case sensitive. Incorrect entry of the SSID, authentication, encryption, and/or key are the most common reasons for connection problems.
- Try moving closer to your wireless router (5-10 feet). Typically you can expect reliable WiFi connection within 25-30 feet of your wireless router. This, can vary depending on several factors. Note: looking at the connection strength of a laptop may not be an accurate judge of the connection strength of a remote control.

How do I extend the WiFi coverage area for the T3-V/T4?

Depending on the model, brand, and location of the wireless router, the range in which the T3-V/T4 will connect to the wireless access point will vary. There are a few options you can take advantage of if you wish to expand the WiFi range of your network.

- Use a high quality/commercial-grade router:

Some manufacturers wireless routers give much better coverage and provide more reliable connections. Some recommended manufacturers are:

Cisco
Pakedge
Hawking

- Use multiple access points

If the main area of T3-V/T4 operation will be located remotely from the wireless router, installing an additional access point will allow you to ensure good WiFi performance for the T3-V/T4. Note: Apparently there can be too much of a good thing and adding too many access points may actually degrade wireless performance.

- Use a directional antenna

A directional antenna can significantly increase signal coverage in a specific direction, allowing for improved throughput at further distances. Two major manufacturers for these devices are Linksys (linksys.com), and D-Link (dlink.com)