![AMX by HARMAN logo]

INSTRUCTION MANUAL

FILETRANSFER 2

NETLINX SYSTEM COMMUNICATIONS

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
WARNING: No naked flame sources - such as lighted candles - should be placed on the product.
WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
WARNING: To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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Overview

FileTransfer 2

The FileTransfer 2 application gives you the ability to queue a list of files to transfer to various NetLinx and Axcess devices, without launching NetLinx Studio.

FileTransfer 2 supports the following capabilities for file transfers:

- Ability to select the Platform type (NetLinx or Axcess).
- Ability to set the username and password for NetLinx masters that have security enabled.
- Ability to send/receive via USB (for USB enabled) devices via a Virtual NetLinx Master (VNM) connection.
- Ability to send/receive files via TCP/IP and RS232 protocols.

FileTransfer 2 recognizes the following file types for transfer:

- APW (NetLinx Studio Workspace)
- AXW (NetLinx Studio Export-to-Go)
- FTL (File Transfer List)

System Requirements / Supported Files

Supported File Types

The following are the types of files this application can send to and receive from, various NetLinx and Axcess devices:

- TOK Files
- TKN Files (including compiled Duet TKN Files)
- TP4 Files
- TPD Files
- KPB Files (except for Mio DMS/DMS Pinnacle)
- KPD Files
- IRL/IRV Files
- SRC Files

Notes on supported file types:

- The selection of available file types depends on the selected platform, Send/Receive selection and communication settings
- All files must mapped to devices before they can be selected for transfer.
- Source Code files cannot be sent until they have been successfully compiled.
- While Touch Panel UI files are sent to the panels themselves, KPD files are sent to the master and not directly to the keypad. Before sending a KPD (KPDesign) file to the target keypad(s), be sure that you have successfully compiled the Source Code file that contains the keypad module, and sent it to the Master (see Configuring NetLinx Source Code for KPD Files).

Supported Operating Systems

- Windows XP®
- Windows 2000®

  NOTE: *You must have Administrator rights to install and run all required System files.*

PC Requirements/Recommendations

- Pentium 233 MHZ processor (minimum requirement); 300 MHZ or faster recommended.
- Windows-compatible CD-ROM drive.
- Windows-compatible mouse (or other pointing device).

Tested Modems List

The following is a list of internal and external modems that have been tested with the program.

INTERNAL MODEMS		--- Windows Operating System ---					
Manufacturer	Model - Internal	95	98	ME	NT	2000	XP
Diamond	Supra 336i SP ASVD	?	C	?	?	?	?
Diamond	Supra 56i SP	?	C	?	?	?	?
Lucent	56K LU PCI	?	C	?	C	?	?
US Robotics	56k Fax PCI #3CP5610A	?	C	?	C	?	?
US Robotics	Sportster WinModem - #0467	?	X	?	?	?	?
Zoom	Fax 28.8 v.341 #275	?	C	?	?	?	?
Note: Internal modes were tested only for calling capabilities.							

EXTERNAL MODEMS		--- Windows Operating System ---					
Manufacturer	Model - External	95	98	ME	NT	2000	XP
Boca	14.4 V.32b #MV.34xx	X	X	X	X	X	X
Hayes	Accura 56k #03328-A	?	C	C	C	C	?
Hayes	Accura 144+Fax 144 #5300AM	X	X	X	C	X	X
MultiTech	MultiModem 19.2k Data/Fax	?	X	?	A	A	?
Practical Peripherals	PM288MT II v.34 - 28K	?	C<	?	?	X	?
US Robotics	56k Fax v.90 #USR5686D	?	CA	?	CA	CA	?
US Robotics	Sportster56k Fax #USR5686-03	CA	CA	CA	CA	CA	?
US Robotics	Sportster 33.6 - #0413	?	?	?	CA	?	?
US Robotics	Sportster 14.4 Fax CJE-0235	?	?	?	?	?	?
Zoom	Fax 56kx Dualmode #2949L	?	CA	C	CA	C	?

- C = Call - means that the FileTransfer 2 program can get the modem to call another modem and establish communications.
- A = Answer - means that the FileTransfer 2 program can get the modem to answer inbound calls and establish communications with the master controller.
- X = Not supported.
- < = Less 100% reliable.

Using FileTransfer 2

Overview

The basic steps for using transferring files to and from system devices are:

Sending Files To System Devices:

- Adding Files To The Files To Send Queue (see below)
- Configuring Communications Settings for Transfers - see the *Communication Settings* section on page 12
- Device Mapping - see the *Device Mapping* section on page 15
- Transferring the Files - see the *File Transfer Operations* section on page 16

Receiving Files From System Devices:

- Adding Files To The Files To Receive Queue (see below)
- Configuring Communications Settings for Transfers - see the *Communication Settings* section on page 12
- Device Mapping - see the *Device Mapping* section on page 15
- Transferring the Files - see the *File Transfer Operations* section on page 16

Adding Files To The Transfer Queue

Before files can be sent to or received from system devices, they must first be added to the Transfer Queue in either the Send or Receive tab

Adding Files To The Files To Send Queue

There are several possible approaches to adding files to the Files To Send List (Send tab).

1. Add some or all of the files contained in a Workspace file or a Workspace-To-Go file.
2. Add a set of files, defined in a File Transfer List file.
3. Add individual systems (see Supported File Types list).

Notes:

The file types that are available for selection depend on the selected Platform (Axcess or NetLinx), Send/Receive selection and Communication settings.

All files must mapped to devices before they can be selected for transfer. You can edit the file's mapping information via the Edit menu (Device Mapping option), but without any mapping information associated with the file, it cannot be selected.

Source Code files cannot be sent until they have been successfully compiled.

While Touch Panel UI files are sent to the panels themselves, KPD files are sent to the master and not directly to the keypad. Before sending a KPD (KPDesign) file to the target keypad(s), be sure that you have successfully compiled the Source Code file that contains the keypad module, and sent it to the Master.

Adding All Files Contained In an APW or AXW File

In the Send tab:

1. Select **File > Open Workspace/AXW/FTL File** or click the **Load Workspace** command button to open the *Open File* dialog.
2. Select either *NetLinx Studio Files (*.apw)* or *Export-To-Go Files (*axw)* from the **File of Type** drop-down menu (depending on which type of file contains the system files that you want to transfer).

   This dialog contains two tabs: *Existing* and *Recent*.
   - Use the **Existing** tab to locate and select the desired file, with the ability to navigate through all available local and network drives.
   - The **Recent** tab contains a listing of the most recently used files (of all types).
3. Locate and select the Workspace file that you want to add, and click **Open**. This opens the *Quick Load* dialog.
4. In the *Selection Options* section, select **Entire Workspace**.
5. Click **Select All** to add every file type in the Workspace, and enable the **Remove Duplicates when Loading** option.
6. Click **OK** to close the *Quick Load* dialog and add the files to the *Files To Send* queue.

Adding Files From a Specific Project/System

In the Send tab:

1. Select **File > Load Workspace/AXW/FTL File** or click the **Load Workspace** command button to open the *Open File* dialog.
2. Set the *File of Type* drop-down to **NetLinx Studio Files (*.apw)**.

   This dialog contains two tabs: *Existing* and *Recent*.
   - Use the **Existing** tab to locate and select the desired file, with the ability to navigate through all available local and network drives.
   - The **Recent** tab contains a listing of the most recently used files (of all types).

3. Locate and select the Workspace file that contains the Project/System with the file(s) you want to add, and click **Open**. This opens the *Quick Load* dialog.

4. In the *Selection Options* section:
    - Select **Active System** to add files from the active System in the open Workspace.
    - Select a **Project-System** to add files from a specific Project/System in the open Workspace.

5. Click in the checkboxes to specify which file types in the selected System to add.

6. Click **OK** to close the *Quick Load* dialog and add the files to the *Files To Send* queue.

Adding Individual System Files From the Open Workspace file

With a Workspace (or Workspace To-Go) file open, use the Add command button (in the Send tab) to select individual System files to add to the Files To Send queue:

1. Click the **Add** command button to open the *Select Files For File Transfer* dialog.

2. Open the *Current Workspace* tab.
    - This tab consists of a display of the (compiled) Source Code (.AXS), Token (.TKN), User-Interface (.TPD/.TP4) and IR (.IRL) files contained in the currently open Workspace.
    - Use the options in the Current Workspace tab to locate and select file(s) for transfer to the Master or System devices on the bus. Use this tab if the file(s) you want to transfer are included in the open Workspace.

3. Click **OK** to add the selected file(s).

Adding Orphan Files

In the Send tab:

1. Click the Add command button to open the Select Files For File Transfer dialog.

2. Open the Other tab. Use this tab if the file(s) you want to transfer are not included in the open Workspace. This tab consists of a display of the different types of files that can be transferred to the Master or System devices on the bus:
    - IR Codes (*.IRL/*.IRV)
    - NetLinx Source Code (*.SRC)
    - Compiled NetLinx Source Code (*.TKN)
    - Compiled Axcess Source Code (*.TOK)
    - Touch Panel Design File (*.TPD)
    - TP4 Touch Panel (*.TP4)
    - KPD Keypad Touch File (*.KPD)

3. Select the type of file that you want to add to the Transfer List.

4. Click the **Add** button. This invokes the *Open* dialog, with the *Files of Type* selection already set to the selected file type.

5. In the *Open* dialog, locate and select the file that you want to add.

6. Click **Open** to add the selected file to the *Files To Send* queue.

Adding Files To The Files To Receive Queue

To add files to the Files To Receive queue:

1. Open the *Receive* tab.

2. Click the **Add** command button to open the *Select Files For Transfer* dialog.

3. Select the type of file you want to receive from the system device (IRL/IRV, TPD, SRC, AXS or TP4), and click **Add** (opens the *Save As* dialog).

    NOTE: *The file types that are available for selection depend on the selected Platform (Axcess or NetLinx), Send/Receive selection and Communication settings.*

4. In the *Save As* dialog, specify a name and target directory for the retrieved file. Click **Save** to close this dialog and open the *Enter Device Mapping Information* dialog.

5. Enter the Device, Port and System numbers for the source device, and click **OK** to close the dialog and add the to the File list at the bottom of the *Select Files To Transfer* dialog.

6. Click **Settings** in the *Communication Settings* section at the bottom of the dialog to open the *Communication Settings* dialog and specify the communication settings for the source device.

    Note that in the *Select Files For File Transfer* dialog, communication settings apply to every file in the File list (since in this case the communication settings are relating to a system device that is the source for files you are receiving, not to individual files that may be sent to any of several devices in the system).

7. Click **OK** to close the *Select Files For File Transfer* dialog. The files you added should now appear in the Files To Receive queue of the *Receive* tab.

8. Repeat steps 2 - 7 to add files to retrieve from different system devices to the *Files To Receive* queue.

File Transfer List (*.FTL) Files

File Transfer List (FTL) files are created in FileTransfer 2, and allow you to save a list of files as they appear in either the Files To Send or Files To Receive queues (with communications settings and device mapping information).

Once saved as an FTL file, the file transfer list can be quickly reloaded without having to open and configure each file.

Creating an File Transfer List (FTL) File

To create a FTL file:

1. Add a list of files to the *Files To Send* or *Files To Receive* queues (in either the *Send* or *Receive* tab).
2. Click the **Save List** command button. This opens the *Save As* dialog, with **File Transfer List Files (*.ftl)** pre-selected as the *Save as type* selection.
3. Click **Save** to save the FTL file.

Opening File Transfer List (FTL) Files

To open a FTL file:

1. Click the **Load List** command button (in either the *Send* or *Receive* tab) to open the *Open* dialog, with **File Transfer List Files (*.ftl)** pre-selected as the *Files of type* selection.
2. Locate and select the desired FTL file, and click **Open** to add the files defined in the FTL list to the *Files to Send* or *Receive* queue.

Workspace Files (*.APW)

Workspace Files (*.APW) are created in NetLinx Studio 2, and allow you to work with multiple projects/files simultaneously. While the FileTransfer 2 application supports reading NetLinx Studio Workspace Files, Workspace Files can only be created, edited (and optionally exported as (*.AXW) "To Go" files) using NetLinx Studio 2.

Refer to the NetLinx Studio on-line help for details on creating, editing and saving Workspace Files and Workspace To Go files.

A Workspace File represents at least one Project (containing at least one System), however a Workspace can contain multiple Projects. Each Project in turn can contain multiple Systems. At any time, you can create a Workspace file (via the File > Save Workspace option in NetLinx Studio). Once created, you can re-open that Workspace file to recall the NetLinx Studio workspace, exactly as it was when the Workspace file was created.

All Workspace information is saved in an XML-formatted file with the .APW file extension.

NOTE: *The File > Save Workspace command only saves the Workspace (APW) file itself, and does not save changes made to the System files contained in the Workspace. Use the File > Save All command to save the Workspace file and all of the System files it contains.*

One advantage of the Workspace file is that it serves as a time-saver: Once you have saved a Workspace file in NetLinx Studio, (containing a particular set of Projects, Systems and System Files), the next time you open the application, you can simply open the single Workspace file (File > Open Workspace) to load the Projects/Systems it contains. This way you bypass the need to open each Project, System and System File individually.

All Projects and associated Systems and System files are linked to the Workspace, so that you can add and remove Projects and Systems without having to make copies of the files. NetLinx Studio also allows you to copy and paste Projects within the Workspace; in the case that you need to create several similar Projects you can quickly generate multiple Projects and modify each one as necessary.

Since all System files are linked to the Workspace, when you open a file for editing, you are opening and editing the actual file, not a local copy. It is important to understand that in the event that the file is linked to multiple Systems, any changes made to the file will be reflected in every instance that the file is used (not just the System that you were in when the changes were made). Even if you don't have multiple links to the same file, you should still be careful about altering the file. If you are linking to a file that other people might use, they will be affected by the changes you make to the file. So, if you intend to make changes to a System file, and you want those changes to be specific to only one System in the Workspace, you should make a copy of the original file (under a different name), make your changes, then remove the original file from the System and link the new file to the System.

Workspace files also allow you to build (compile) multiple Projects/Systems. The Build Workspace command (in NetLinx Studio) compiles every file contained in the Workspace.

It is important to note that in NetLinx Studio (v2.0 and later), there is no concept of Projects outside the context of a Workspace. A Project can only be opened by adding it to a Workspace. This is to support the file linking aspect of the program.

Other features of the Workspace file include:

- You can import other Project or Systems folders from previously saved Workspace files.
- You can copy and paste existing Projects and Systems within a Workspace.
- You can edit the identifier that is used to display the workspace name in the tree display along with the description for the Workspace file via the Workspace Properties dialog.
- You can export all the files associated with the Workspace (including the Workspace file) into a .ZIP file.

Workspace-To-Go Files (*.AXW)

The *Export Workspace Files To Go* option (in NetLinx Studio 2's Project menu) allows you to export the currently open Workspace for distribution as a Workspace-To-Go (*.AXW) file.

AXW files preserve all relative file path information for the Projects, Systems and System files contained in the Workspace, making them ideal for distribution to remote sites.

As is indicated in the Export Workspace Files To Go dialog (in NetLinx Studio 2), there are three major points to understand when exporting your Workspace files:

- All files will reside in the same directory as the APW file upon extraction of the AXW file.
- No directory/path information is required for the "To Go" APW File Name.
- You may enter non-existing folders - NetLinx Studio will create them for you.

NetLinx Master Security

NetLinx Studio supports secure communication with NetLinx Masters, via the Authentication Required option in the Communication Settings dialog.

Before you can enable/disable NetLinx security on a Master through NetLinx Studio, you must verify the following:

- The target Master has been loaded with firmware that supports security. This means that the Master must have Master Firmware version 304 (or higher) to support this functionality. If your master does not have firmware loaded that supports security, the Master will not be secured (although it might appear to be in NetLinx Studio).
- Security has been enabled on the target Master (via options in the Security tab of the Master's built-in interface). Refer to the Master's documentation for details on enabling/disabling security.

With security enabled, users will be required to provide the correct User Name and Password in order to establish communication with the Master.

The User Name and Password are case-sensitive.

If the correct User Name and Password are not entered, NetLinx Studio will display an "Authentication Failure" message, and the connection to the Master will be denied.

NOTE: *This security option is not available for Axcess masters, or for NetLinx Virtual Master connections.*

Enabling Security on NetLinx Masters

Security for NetLinx Master is controlled via options in the NetLinx Studio application.

Before you can enable/disable security on a NetLinx Master through NetLinx Studio, you must:

Have loaded firmware in the target Master that supports security. This means that the Master must have NetLinx Master Firmware version 304 or higher to support this functionality. If your master does not have firmware loaded that supports security, the Master will not be secured (although it might appear to be in NetLinx Studio).

Have security enabled on the target Master (via options in the Security tab of the Master's built-in interface). Refer to the NetLinx Master's documentation for details on enabling/disabling security.

You must first establish communication with the NetLinx Master in order to apply security (see Connecting to a NetLinx Master).

1. Once you are connected to the Master that you want to apply security to, select **Settings > Master Communication Settings** to access the *Master Communication Settings* dialog.

   NOTE: *You can apply a default User Name and Password to the No active System - Default Settings option, so that as you create new NetLinx systems they will always require that User Name/Password combination.*

2. Verify that you have connected to the desired Master by checking the information in displayed in the *Configuration* window.

3. Click the **Communication Settings** command button to access the *Communication Settings* dialog.

4. Click to select the **Authentication Required** option. This enables the *User Name* and *Password* command button.

5. Click the **User Name and Password** button to access the *Master Controller User Name and Password* dialog.

6. Enter the User Name and Password that will be required to establish communication with this Master (as long as the Authentication Required option is selected).

   The User Name and Password must each be between 4 and 20 characters long.

7. Click **OK** to save your changes and return to the *Communication Settings* dialog.

8. Click **OK** to save your changes and return to the *Master Communication Settings* dialog.

Now that security has been applied to the Master, note that the Master Security Status icon in the Status Bar changes to indicate that the Master is "locked".

Connecting to a Secured NetLinx Master

When connecting to a NetLinx Master that has security enabled, you will be required to enter a User Name and Password before you can connect.

To establish a connection to a secured master,

1. Select **Communication Settings** from the *Edit* menu (or the File Transfer context menu) to open the *Communication Settings* dialog and select **NetLinx** as the platform, and select a **Transport Connection** type.

2. Click **Edit Settings** to configure the selected transport type.

3. Click **OK** to save the TCP/IP, Serial or Modem settings (depending on the transport type selected).

4. Click the **Authentication Required** checkbox. This enables the *User Name and Password* button.

5. Click on **User Name and Password** to enter the User Name and Password that are set for this NetLinx Master (in the *Master Controller User Name and Password* dialog). These are case sensitive.

6. Click **OK** to close the *Master Controller User Name and Password* dialog.

7. Click **OK** to close the *Communication Settings* dialog.

At this point you should be able to connect to the secured Master.

If you don't connect:
- Verify that the master is set for ICSP Connectivity, with Require Encryption enabled (via the Master's built-in interface).
- Refer to the Master's documentation for details on enabling/disabling security.

Applying Security To Individual File Transfers

In addition to the security for NetLinx Masters that can be enabled per system, NetLinx Studio (v 2.3 or higher) also allows you to apply security to individual file transfers via options in the Communication Settings dialog.

With security enabled on a file transfer operation, users will be required to provide the correct User Name and Password in order to transfer the file to/from the Master.

NOTE: *When you apply security to an individual file transfer operation (as described below), the individual file's security settings will be overridden by the security set for the target Master. For example, if the target Master already has security enabled (via the Authentication Required option in the Communication Settings for that Master), the user will have to provide the correct User Name and Password set for that Master, even if the File also requires a User Name and Password to successfully transfer to/from the Master.*

Before you can enable/disable NetLinx security on a File Transfer operation, you must verify the following:
- The target Master has been loaded with firmware that supports security. This means that the Master must have Master Firmware version 304 (or higher) to support this functionality. If your master does not have firmware loaded that supports security, the Master will not be secured (although it might appear to be in NetLinx Studio).
- Security has been enabled on the target Master (via options in the Security tab of the Master's built-in interface). Refer to the Master's documentation for details on enabling/disabling security.

To Apply Security To an Individual File Transfer Operation:

1. In the *File Transfer* dialog, click to select a file transfer from the list of files in the *File Transfer List.*
2. Click the **Edit** button and select **Communication Settings** from the *Edit* menu to open the *Communication Settings* dialog. The settings you specify here are applied only to the selected File Transfer operation.
3. Click to select the **Authentication Required** option.
4. Click the **User Name and Password** button to open the *Master Controller User Name and Password* dialog, and enter the User Name and Password combination that the program will require in order to start this file transfer.

Once security is applied, if the correct User Name and Password are not entered when prompted, NetLinx Studio will display an "*Authentication Failure*" message in the Error column of the Transfer Status window, and the transfer will not complete.

NOTE: *This security option is not available for Axcess masters, or for NetLinx Virtual Master connections.*

Communication Settings

Overview

Communication settings for each file is established and saved with the files when they are created in NetLinx Studio, but can be overwritten in FileTransfer 2, via options in the Communication Settings dialog (accessible via the Edit menu).

- Files can be transferred to/from a NetLinx master via TCP/IP, Serial-RS232, Modem or Virtual NetLinx Master connection.
- Files can be transferred to/from a Axcess master via Serial-RS232 or Modem connection.

Listening for NetLinx Masters

Click the Listen button in either the TCP/IP Settings dialog to listen for "blink" (UDP) messages from NetLinx Masters on the subnet, in the Listen For Masters dialog.

As NetLinx Masters are detected on the subnet, they are displayed in the Listen For Master dialog, with the option of adding them to the List of Addresses in the TCP/IP Settings dialog:

1. Select a file in either the Send or Receive tab.
2. Select **Communication Settings** from either the File Transfer context menu or the Edit menu to open the *Communication Settings* dialog.
3. Select **TCP/IP** as the *Transport Connection Option*.
4. Click **Edit Settings** to open the *TCP/IP Settings* dialog.
5. Click **Listen** to open the *Listen For Masters* dialog.
6. Click **Start Listening** to begin "listening" for UDP messages from active NetLinx Masters on the subnet.
7. Click **Stop Listening** to stop listening for UDP packets.

All Masters that were detected on the subnet are listed by TCP.IP URL address in this dialog.

To Add NetLinx Masters to the List of Addresses in the TCP/IP Settings dialog

1. Select one or more (Ctrl + click to multi-select) of the Masters in the List of Active NetLinx Master Controllers (Listen For Masters dialog) that you want to add to the List of Address in the TCP/IP Settings dialog.
2. Click Select To Add to open the New TCP/IP Setting dialog, where you can add a description (optional) and specify whether to automatically ping the Master Controller to ensure availability.
3. Click OK to save the new TCP/IP settings, close the dialog and add the new connection to the List of Addresses. Note that if you selected multiple Masters (in the Listen for Masters dialog), the New TCP/IP Settings dialog opens for each file individually to allow you to configure (or verify) every Master connection.

Virtual NetLinx Master

FileTransfer 2 supports direct connection to G4 panels via TCP/IP and USB, for situations where the target panel is not connected to a NetLinx Master. In this situation, you can use your PC's Ethernet or USB connectors to connect directly to the panel, using your PC as a Virtual NetLinx Master.

- Virtual NetLinx Master connections support both TCP/IP and USB.
- Virtual NetLinx Master connections can be used to transfer TPDesign4 panel (.TP4) file, NetLinx Firmware (.KIT) files, or IR Files directly to G4 touch panels.
- USB direct transfers require that you configure the Master Connection setting on the panel itself to USB prior to attempting the transfer.
- TCP/IP direct transfers require that you configure the Master Connection setting on the panel itself to TCP/IP prior to attempting the transfer.

Configuring Communications Settings

FileTransfer 2 allows you to specify and maintain separate communications settings for each file in the Files To Send and Files To Receive queues:

1. Select a file (*Send* or *Receive* tabs).
2. Click the **Edit** command button and select **Communication Settings** from the Edit menu to open the *Communication Settings* dialog.
   - Select a **Platform** for this transfer (*Axcess* or *NetLinx*).
   - Select a **Transport Connection Option** (TCP/IP, Serial, Modem or Virtual NetLinx Master).

   NOTE: *The TCP/IP and Virtual NetLinx Master options are only available if NetLinx is selected as the platform.*
3. Click **Edit Settings** to specify the communication settings for the selected connection option (see list of topics below).
4. Click **OK** to close the *Communication Settings* dialog.

Configuring TCP/IP Communication Settings (NetLinx only)

With a Transfer selected in the Transfer List:

1. Click the **Edit** command button, and select **Communication Settings** to open the *Communication Settings* dialog.
2. Select **NetLinx Master** as the *Platform Selection*.
3. Select **TCP/IP** as the *Transport Connection Option*.
4. Click **Edit Settings** to open the *TCP/IP Settings* dialog.
5. Enter the TCP/IP Address of the master:
   a. Click **New** to open the *New TCP/IP Setting* dialog.
   b. Enter the new TCP/IP Address and (optional) Description in the text fields provided.
   c. By default, the program is set to automatically ping the master controller to ensure availability. De-select this option if desired.

   NOTE: *The Port should always be set to 1319 (default setting). Do not change the Port assignment.*

   d. Click **OK** to return to the *Communication Settings* dialog.
6. Click **OK** to save the new TCP/IP communication settings with the selected file.

Configuring Serial Communication Settings

With a Transfer selected in the Transfer List:

1. Click the **Edit** command button, and select **Communication Settings** to open the *Communication Settings* dialog.
2. Specify the **Platform Selection** (*NetLinx Master* or *Axcess Master*).
3. Select **Serial** as the *Transport Connection Option*.
4. Click **Edit Settings** to open the *Serial Settings* dialog.
5. Select a COM port and specify the communication settings for serial port communications. The default settings are:
   - Comm Port — COM1
   - Baud Rate — 38400
   - Data Bits — 8
   - Parity — None
   - Stop Bits — 1
   - Flow Control — None
6. Click **OK** to return to the *Communication Settings* dialog.
7. Click **OK** to save the new Serial communication settings with the selected file.

Configuring Modem Communication Settings

With a Transfer selected in the Transfer List:

1. Click the **Edit** command button, and select **Communication Settings** to open the *Communication Settings* dialog.
2. Specify the **Platform Selection** (*NetLinx Master* or *Axcess Master*).
3. Select **Modem** as the *Transport Connection Option*.
4. Click **Edit Settings** to open the *Modem Settings* dialog.
5. Select a COM port and specify the communication settings for modem communications. The default settings are:
   - Comm Port — COM1
   - Baud Rate — 38400
   - Data Bits — 8
   - Parity — None
   - Stop Bits — 1
   - Flow Control — None
   - Phone Number — Enter the telephone number of the master.
6. Click **OK** to return to the *Communication Settings* dialog.
7. Click **OK** to save the new Modem communication settings with the selected file.

Configuring Virtual NetLinx Master Communication Settings (NetLinx only)

1. Click the Edit command button, and select Communication Settings to open the Communication Settings dialog.
2. Select NetLinx Master as the Platform Selection.
3. Select Virtual NetLinx Master as the Transport Connection Option.
4. Click Edit Settings to access the Virtual NetLinx Master Settings dialog, which displays the System number (and IP address) of the Virtual NetLinx Master (default = 1) .

   Assuming that the actual NetLinx Master is set to 0 (via the System Properties dialog - System ID field), this default setting will work. However, if you have designated any other number as the System ID, be sure to set this System Number to a different number than the System ID, to avoid a conflict with the actual NetLinx Master (range = 1-65535).

NOTE: *As indicated in the Virtual NetLinx Master dialog, changes made to the system number field will not take effect until all communications are stopped and restarted.*

5. Click **OK** to return to the *Communication Settings* dialog.

6. Click **OK** to save the new VNM communication settings with the selected file.

Configuring the Touch Panel for Virtual NetLinx Master USB Transfers

If it is not already powered up and connected, apply power to the G4 panel and verify that it is connected to the PC running NetLinx Studio via the USB connector on the rear (or side) of the panel.

Connecting the Panel to your PC via USB:

1. Apply power to the panel by plugging in the power supply.

2. Wait for the splash screen to disappear, then use a (Type A) USB cable to connect the panel to an available USB port on your PC. Plug the USB cable into the panel first, then connect to the PC.

Configuring the Panel For Virtual NetLinx Master Transfers Via USB

1. Press and hold the gray Front Setup Access button (below the touch screen) for 3 seconds to access the *Setup* page.

2. Press the **Protected Setup** button to access the *Protected Setup* page.

3. Use the on-screen keyboard to enter the password (the default password is **1988**).

4. Press the **System Connection** button to access the *System Connection Setup* page.

5. Select **USB** as the *Master Connection*.

6. Press the **Back** button to return to the *Protected Setup* page and press the **Reboot** button to reboot the panel.

Configuring the Touch Panel for Virtual NetLinx Master TCP/IP Transfers

If it is not already powered up and connected, apply power to the G4 panel and verify that it is connected to the LAN via the TCP/IP connector on the rear (or side) of the panel.

1. Press and hold the gray Front Setup Access button (below the touch screen) for 3 seconds to access the *Setup* page.

2. Press the **Protected Setup** button to access the *Protected Setup* page.

3. Use the on-screen keyboard to enter the password (the default password is **1988**).

4. Press the **System Connection** button to access the *System Connection Setup* page.

5. Select **Ethernet** as the *Master Connection*.

6. Set the *System Number* to **0** (zero).

7. Select the **Master URL / IP** input box and enter the IP address of your PC.

   NOTE: *To get your PC's IP address, select Start > Run and type cmd to open a DOS window. Then, enter ipconfig to display the IP address of your PC.*

8. Press the **Back** button to return to the *Protected Setup* page and press the **Reboot** button to reboot the panel.

Changing Communication Settings for Multiple Files

FileTransfer2 v1.4 or higher supports changing communication settings for multiple selected files in the Send and Receive tabs.

1. Ctrl + click any number of files in the *Files To Send (Send tab)* or *Files To Receive (Receive tab)* queues to select multiple files.

2. Click the **Edit** button to access the *Edit* menu.

3. Select **Communication Settings** to invoke the *Communication Settings* dialog. Use the options in this dialog to specify communication settings. These settings will be applied to all selected files.

Device Mapping

Setting Device-File Mapping Information

Every time you select a file (to send or receive) via the *Select Files For File Transfer* dialog (*Other* tab), the program prompts you to enter (or verify) its device mapping information, in the *Enter Device Mapping Information* dialog.

Use this dialog to define the Device:Port:System (D:P:S) address assignment for a target device.

Editing Device Mapping Information

Device-file mapping information for each file (which associates a device address with each file) is established and saved with the files when they are created in NetLinx Studio, but can be overwritten in FileTransfer 2, via the Device Mapping options (accessible via the Edit menu):

1. Select a file in the *Transfer List* (*Send* or *Receive* tab).
2. Click **Edit** to open the *Edit* menu, and select **Device Mapping**. This opens the *Enter DPS* dialog.
3. Enter the **Device:Port:System (D:P:S)** information for the selected file.
4. Click **OK** to save the D:P:S assignment and close the dialog.

Device:Port:System (D:P:S)

A device is any hardware component that can be connected to the NetLinx bus. Each device must be assigned a unique number to locate that device on the bus. The Axcess language allows physical device numbers in the range 0-255. The NetLinx language allows numbers in the range 0-32767. Device 0 refers to the master; numbers above 32767 are reserved for internal use.

NetLinx requires a Device:Port:System (D:P:S) specification where Axcess expected only a device number. This D:P:S triplet can be expressed as series of constants, variables separated by colons, or as a DEV structure, to explicitly represent a device number, port and system.

Here's the syntax:

```
DEVICE:PORT:SYSTEM
```

where:

- **Device**: 16-bit integer representing the device number
- **Port**: 16-bit integer representing the port number (in the range 1 through the number of ports on the device)
- **System**: 16-bit integer representing the system number (0 = this system) that the device belongs to.

  For example, 128:1:0 represents the first port on device 128 on this system.

DEV structure example:

```
STRUCTURE DEV
{
    INTEGER Number      // device number
    INTEGER Port        // port on device
    INTEGER System      // system device belongs to
}
```

NOTE: *In Axcess, Master Source Code files are always mapped to the Master Controller (device = 0), and cannot be mapped to any other device. This does not apply to NetLinx Master Source Code files.*

File Transfer Operations

Overview

FileTransfer 2 supports asynchronous communications, which allows you send and receive to and from the bus on all available communications ports. You can send and receive both Axcess and NetLinx Source Code files to and from the appropriate Master Controller or bus device.

- Axcess or NetLinx Source Code files (.AXS) can be sent to the Master Controller, or other control devices on the bus. Source code files must be successfully compiled before they can be sent.
- Touch Panel UI files created in TPDesign3 (.TPD) are sent directly to wired Touch Panels on the bus via an AxLink/serial connection where the Device ID = 0.
- Touch Panel UI files created in TPDesign4 (.TP4) are sent to the Master, either serially or over TCP/IP. G4 panels are connected to the Masters via TCP/IP and cannot be sent over AxLink. You can choose to include buttons and pages only, or include fonts, bitmaps and/or icons in the transfer.
- KeyPad UI files (.KPD) are sent to a NetLinx Master.
- IR library files (.IRL/.IRV) are sent to IR-controlled devices on the bus, or directly to a System device (i.e. Touch Panels).
- The Virtual NetLinx Master option allows you to transfer files directly to G4 devices, without the need for an intermediate NetLinx Master.

File Transfer Status Information

Once you have started a file transfer operation, the status of each transfer item in the Files to Send or Receive queue is indicated in the Transfer Status Window.

Transfer Errors and Definitions

The following table describe the most common error messages that might be displayed in the Error column of the Transfer Status Window.

Transfer Errors and Definitions	
Error String	**Meaning**
Failure	generic/unclassified failure.
Success	generic success.
File does not exist	the file supplied on the cmdline doesn't exist.
Failed to create temporary file	couldn't create a required temporary file.
Failed to connect with FileTransfer application	console app couldn't connect to running instance of FileTransfer 2 application.
Invalid phone number	supplied console parameter is invalid.
Invalid flow control	supplied console parameter is invalid.
Invalid stopbits	supplied console parameter is invalid.
Invalid parity	supplied console parameter is invalid.
Invalid databits	supplied console parameter is invalid.
Invalid baudrate	supplied console parameter is invalid.
Invalid communications port	supplied console parameter is invalid.
Invalid VNM settings	supplied console parameter is invalid.
Invalid TCP/IP settings	supplied console parameter is invalid.
Invalid file type	the file supplied on the cmdline is an unknown file type.
Unknown Error	generic/unknown error.
Not enough arguments	not enough console parameters supplied to do anything.
Unable to install handler!	Ctrl+C, Break console handler couldn't be installed.
Invalid Option! Expected -U=<user>:<password>	console security option is incorrect.
<option> is an invalid option!	invalid/unknown option passed to console.
<option> is not a valid device mapping or option!	console expected a device mapping or an option but found something else.
File: <filename> does not exist and cannot be transferred!	file does not exist at location specified.

Transfer Errors and Definitions (Cont.)	
Error String	**Meaning**
File: <filename> is currently opened by another application and cannot be transferred!	this can happen if another application has an exclusive lock on a file.
Nothing to transfer! [Project Identifier invalid?] [System Identifier invalid?]	After processing all supplied parameters and options, there was nothing to transfer. That is, no files could be found or nothing was specified for transfer. Additionally, if you specified a project identifier and/or a system identifier, you may have inadvertently requested an empty or nonexistent set of files.
Failed to open workspace!	Failed to open workspace!
No APW file	AXW file does not contain an APW.

Sending Files To System Devices

Once you have:

- Added the desired file(s) to the File To Send Queue,
- Configured the communication settings for the files in the list, and
- Specified the device-file mapping information for the files in the list,

you are ready to begin transferring the file(s) to devices in the system:

1. Click the **Send** command button. This initiates the transfer of every file listed in the *Transfer (Send) List*, in the order in which they are listed (top to bottom).
2. The progress and status of each file transfer is indicated in the *Transfer Status Window*.

Receiving Files From System Devices

Once you have:

- Added the desired file(s) to the File To Receive Queue,
- Configured the communication settings for the files in the list, and
- Specified the device-file mapping information for the files in the list,

you are ready to begin receiving the file(s) from devices in the system:

1. Click the **Receive** command button. This initiates the transfer of every file listed in the *Files To Send List*, in the order in which they are listed (top to bottom).
2. The progress and status of each file transfer is indicated in the *Transfer Status Window*.

Virtual NetLinx Master Transfers

File Transfer2 supports direct connection to G4 panels via TCP/IP and USB, for situations where the target panel is not connected to a NetLinx Master. In this situation, you can use your PC's Ethernet or USB connectors to connect directly to the panel, using your PC as a Virtual NetLinx Master.

- Virtual NetLinx Master supports both TCP/IP and USB connections.
- Virtual NetLinx Master can be used to transfer TPDesign4 panel (.TP4) file, NetLinx Firmware (.KIT) files, or IR Files directly to G4 touch panels.
- G4 touch panels that support USB connection include the MVP-8400i, MVP-8400, MVP-7500, NXD-700Vi and NXD/T-CV7.
- USB direct transfers require that you configure the Master Connection setting on the panel itself to USB prior to attempting the transfer.
- TCP/IP direct transfers require that you configure the Master Connection setting on the panel itself to TCP/IP prior to attempting the transfer.

AMX USB Driver Information for USB Enabled G4 Panels

The AMX USB driver (required to connect to USB-enabled G4 panels via USB) is included with the NetLinx Studio (as well as TPDesign4) installation programs. Once you have installed the latest version of either NetLinx Studio (v2.4 or higher) or TPD4 (v2.4 or higher), you should have the required USB driver.

After having installed NetLinx Studio 2 (or TPDesign4), follow the steps below to ensure a valid USB connection to the G4 panels:

1. Power up the Panel without the USB cable connected to the panel.
2. Plug in the USB cable into the G4 panel.
3. You should see an USB icon show up in the System Tray.
4. Double click on the icon to bring up the list of USB devices (you should see the "**AMX USB LAN LINK**"" device in the list).
5. If the "Install Driver" dialog doesn't appear automatically, select the **Properties** button and then the **Update Driver** button.
6. When the *Install Driver* dialog does appear, click on the **Next** buttons, accepting all the default prompts.
7. The OS will complain about the fact that the driver you are installing/updating does not have a digital signature. This is acceptable, so select to continue the installation.
8. After installation is complete, you are ready to connect to the USB port of the G4 panel.

a. Open the *Communication Settings* dialog (select a file in the Transfer List and select Edit > Communication Settings).
b. Select **Virtual NetLinx Master** as the *Transport Connection Option*.
c. Click **OK** to close this dialog.

Virtual NetLinx Master Transfers via USB or TCP/IP Connection

To use Virtual NetLinx Master to transfer TPDesign4 panel (.TP4) files, NetLinx Firmware (.KIT) files or IR files directly to a MVP-8400i, MVP-8400, MVP-7500, NXD-700Vi and NXD/T-CV7 panel:

1. In the *Send* tab, click the **Add** button to open the *Select Files for File Transfer* dialog.

2. Click the *Other* tab, and select the type of file you want to transfer (only IRL/IRV, TP4 or IRN files can be transferred via USB connection).

3. Click the **Add** button. This invokes the *Open* dialog, where you can locate and select the file you want to transfer.

4. Select the desired file and click **OK** to close this dialog and invoke the *Enter Device Mapping Information* dialog.

5. Review the mapping information, and click **OK** to return to the *Select Files for File Transfer* dialog.

6. Click **OK** to return to the *Send* tab, where the new file should appear in the *Files to Send* queue.

7. Click inside the checkbox to the left of the file you just added.
   - Keep in mind that any files with a checkmark will be included in this transfer.
   - Note that the Connection column indicates that the file you just added is using Virtual NetLinx Master.

8. Click the **Send** button to begin the transfer.

   NOTE: *The procedure for Virtual NetLinx Master transfers via TCP/IP connection is identical.*

Virtual NetLinx Master TCP/IP Transfers

FileTransfer 2 supports direct connection to G4 panels via TCP/IP (and USB), for situations where the target panel is not connected to a NetLinx Master. In this situation, you can use your PC's Ethernet connection to connect directly to the panel, using your PC as a Virtual NetLinx Master. There are three basic steps to Virtual NetLinx Master TCP/IP file transfers (see page 14):

1. Configuring the Touch Panel for Virtual NetLinx Master TCP/IP Transfers
2. Configuring FileTransfer 2 for Virtual NetLinx Master TCP/IP Transfers
3. Transferring Files Using a Virtual NetLinx Master TCP/IP Connection

Configuring FileTransfer 2 for Virtual NetLinx Master TCP/IP Transfers

1. Click **Edit** and select **Communication Settings** to open the *Communication Settings* dialog.

2. Select V**irtual NetLinx Master** as the *Transport Connection Option*.

3. Click the **Edit Settings** button to access the *Virtual NetLinx Master Settings* dialog, which displays the System number of the Virtual NetLinx Master (default = 1).

   Assuming that the actual NetLinx Master is set to 0 (via the *System Properties* dialog - System ID field), this default setting will work. However, if you have designated any other number as the System ID, be sure to set this System Number to a different number than the System ID, to avoid a conflict with the actual NetLinx Master (range = 1-65535).

   NOTE: *As indicated in the Virtual NetLinx Master dialog, changes made to the system number field will not take effect until all communications are stopped and restarted.*

4. Click **OK** to close the *Virtual NetLinx Master Settings* dialog.

5. Click **OK** to close the *Communication Settings* dialog.

Transferring Files Using a Virtual NetLinx Master TCP/IP Connection

NOTE: *Verify that Virtual NetLinx Master is selected as the Transport Connection Option in the Communication Settings dialog.*

To use Virtual NetLinx Master to transfer TPDesign4 panel (.TP4) files or IR files directly to a MVP-series, V-Series Modero, VG-Series Modero, NXD-CV5, or NXD/T-CV7/10 panel via TCP/IP:

1. Click the **Add** button to open the *Select Files for File Transfer* dialog.

2. Click the *Other* tab, and select the type of file you want to transfer (only IRL/IRV, TP4 or IRN files can be transferred via a Virtual NetLinx Master connection).

3. Click the **Add** button. This invokes the *Open* dialog, where you can locate and select the file you want to transfer.

4. Select the desired file and click **OK** to close this dialog and invoke the *Enter Device Mapping Information* dialog.

5. Review the mapping information, and click **OK** to return to the *Select Files for File Transfer* dialog.

6. Click **OK** to return to the Send tab, where the new file should appear in the *Files to Send* queue.

7. Click inside the checkbox to the left of the file you just added. Keep in mind that any files with a checkmark will be included in this transfer.

   Note that the *Connection* column indicates that the file you just added is using **Virtual NetLinx Master.**

8. Click the **Send** button to begin the transfer.

Virtual NetLinx Master USB Transfers

FileTransfer 2 supports direct connection to G4 panels via USB (and TCP/IP), for situations where the target panel is not connected to a NetLinx Master. In this situation, you can use your PC's USB connection to connect directly to the panel, using your PC as a Virtual NetLinx Master.

There are three basic steps to Virtual NetLinx Master USB file transfers:

1. Configuring the Touch Panel for Virtual NetLinx Master USB Transfers (see page 14)
2. Configuring FileTransfer 2 for Virtual NetLinx Master USB Transfers
3. Transferring Files Using a Virtual NetLinx Master USB Connection

Configuring FileTransfer 2 for Virtual NetLinx Master USB Transfers

1. Click **Edit** and select **Communication Settings** to open the *Communication Settings* dialog.
2. Select **Virtual NetLinx Master** as the *Transport Connection Option.*
3. Click the **Edit Settings** button to access the *Virtual NetLinx Master Settings* dialog, which displays the System number of the Virtual NetLinx Master (default = 1).

    Assuming that the actual NetLinx Master is set to 0 (via the System Properties dialog - System ID field), this default setting will work. However, if you have designated any other number as the System ID, be sure to set this System Number to a different number than the System ID, to avoid a conflict with the actual NetLinx Master (range = 1-65535).

    NOTE: *As indicated in the Virtual NetLinx Master Settings dialog, changes made to the system number field will not take effect until all communications are stopped and restarted.*
4. Click **OK** to close the *Virtual NetLinx Master Settings* dialog.
5. Click **OK** to close the *Communication Settings* dialog.

Transferring Files Using a Virtual NetLinx Master USB Connection

NOTE: *Verify that Virtual NetLinx Master is selected as the Transport Connection Option in the Communication Settings dialog.*

To use Virtual NetLinx Master to transfer TPDesign4 panel (.TP4) files or IR files directly to an MVP-7500, MVP-8400,V-Series Modero, VG-Series Modero, NXD-CV5, or NXD/T-CV7/10 panel via USB:

1. Click the **Add** button to open the *Select Files for File Transfer* dialog.
2. Click the *Other* tab, and select the type of file you want to transfer (only IRL/IRV, TP4 or IRN files can be transferred via a Virtual NetLinx Master connection).
3. Click the **Add** button. This invokes the *Open* dialog, where you can locate and select the file you want to transfer.
4. Select the desired file and click **OK** to close this dialog and invoke the *Enter Device Mapping Information* dialog.
5. Review the mapping information, and click **OK** to return to the *Select Files for File Transfer* dialog.
6. Click **OK** to return to the Send tab, where the new file should appear in the *Files to Send* queue.
7. Click inside the checkbox to the left of the file you just added. Keep in mind that any files with a checkmark will be included in this transfer.

    Note that the *Connection* column indicates that the file you just added is using Virtual NetLinx Master.
8. Click the **Send** button to begin the transfer.

Using the FTCon Console Program

The FTCon.exe ("FTCon") program is provided with FileTransfer 2 so that transfers may be made from a normal windows console (DOS box). Command line arguments supplied to FTCon.exe are passed along to the FileTransfer 2 program which then runs from the system tray.

NOTE: *FTCon is intended for use only by advanced programmers.*

FTCon Command-line Arguments:

- APW File Transfer Arguments - see page 20
- AXW File Transfer Arguments - see page 20
- FTL File Transfer Arguments - see page 20
- Single File Transfer Arguments - see page 20

How to read the command line argument descriptions:

"text"	Quoted text indicates a double quoted argument.
[ ]	Brackets indicate the item is optional.
-option, --option	Options start with a dash or double-dash (GNU style).
	• The emboldened letter is the acceptable abbreviated form.
	• Case is not relevant.
	• Options are always optional so they are not bracketed (see above).
	• If the option takes an argument, then the keyword is immediately followed by an equals sign (`=') and the argument's value.
	• A pipe (|)between two or more options indicates a boolean OR relationship.

APW File Transfer Arguments

The following arguments specify how to launch the FTCon program with an APW file:

```
"FileName" ["Project Id"] ["System Id"]
```

- "FileName" - Fully qualified file name of the APW within quotes.
- "Project Id" – If not supplied, all files in the workspace are transferred. Otherwise, this must be the identifier of a project. The first matching project is transferred.
- "System Id" - If not supplied, all systems in the project are transferred. Otherwise, this must be the identifier of a system. The first matching system is transferred.

Examples:

```
ftcon.exe "test.apw"    Send the entire workspace contained in test.apw.
ftcon.exe "test.apw" "proj1"    Sends the project named "proj1" contained in test.apw.
ftcon.exe "test.apw" "proj1" "sys1"   Sends the system named "sys1" within "proj1"
```

AXW File Transfer Arguments

The following arguments specify how to launch the FTCon program with an AXW file:

```
"FileName" ["Project Id"] ["System Id"]
```

- "Project Id" – If not supplied, all files in the workspace are transferred. Otherwise, this must be the identifier of a project. The first matching project is transferred.
- "System Id" - If not supplied, all systems in the project are transferred. Otherwise, this must be the identifier of a system. The first matching system is transferred.

FTL File Transfer Arguments

The following arguments specify how to launch the FTCon program with an FTL file:

```
"FileName" –Send | -Receive
```

- "FileName" - Fully qualified file name of the FTL within quotes.
- -Send |-Receive Indicates whether to load the specified FTL into the send or receive queue. Send is assumed by default.

Single File Transfer Arguments

The following arguments specify how to launch the FTCon program with a single file. All arguments must be present on the command line, except where noted, for the specified file or the file will not transfer. The order of the arguments is important and will need to follow the order listed below.

```
"FileName" CommSettings [DeviceMapping] –Send|Receive -Boot
            -Axcess -Optimize -Direct –Tpd=BIF –User="username:password"
```

- "FileName" - Fully qualified file name of the file to transfer within quotes.
- CommSettings - Specifies the communication protocol and settings used for transferring the file.

  For a TCP/IP transfer, the command would be:
  ```
  ip/url:[port]:[ping-before-connect]
  ```
  The IP/URL address can be either the IP address or an URL and the port specifies the port on the master.

  An example for a TCP/IP transfer would be:
  ```
  192.168.221.3:1319:1
  ```
  -or-
  ```
  amx.boardroom.net:1319:0
  ```
  The port is optional and defaults to 1319. Ping-before-connect is optional and the default is 1(enabled).

  For serial transfer, the command would be:
  ```
  commport,baud,[databits],[parity],[stopbits],[flow]
  ```
  - commport = specifies the comm. port for transfer (i.e. COM2).
  - baud = specifies baud rate (i.e. 9600 or 57600).
  - databits = specifies the number of data bits. This should be set to 8.
  - parity = specifies the parity. This should be set to N for no. Other values are O for odd, E for even, M for mark and S for space.
  - stopbits = specifies stop bit value. This should be set to 1.
  - flow = specifies flow control. This should be set to N for none. Other values are D for DTR-DSR, X for XON-XOFF, and R for RTS-CTS.

  An example of a serial transfer over COM3 port would be:
  ```
  COM3,57600,8,N,1,N
  ```
  For VNM/USB transfers, the command would be:
  ```
  VNM=systemNumber
  ```
  where V specifies the VNM and the systemNumber is the system number of the master that the device is connected to.

  An example for a VNM transfer would be:
  ```
  VNM=1
  ```
  For modem transfers, the command would be:
  ```
  COM3,57600,8,N,1,N,555-123-4567
  ```

DeviceMapping - For NetLinx masters, the device mapping will be in the D:P:S form:

```
128:1:3455
```

For Axcess masters, the device mapping argument will contain a single device value:

```
128
```

NOTE: *For NetLinx masters, the default DPS is 0:1:0. For Axcess masters there is no default and a device number (even zero) must be specified. This is because a single device number is used to differentiate an Axcess transfer from a NetLinx transfer.*

- Send - This flag indicates that the specified file is to be sent to the device.
- Receive - This flag indicates that the specified file is to be received from the device.
- Axcess - This flag indicates that the specified transfer is an Axcess transfer
- Boot - This flag indicates that the master should be rebooted after all transfers on the connection are finished.
- User - For NetLinx masters that have security enabled, the argument will need to contain the username and password separated by a colon:

```
–User="fieldtech:mypassword"
```

- Optimize - For TP4 transfers, this enables Smart Transfer. Smart Transfer automatically optimizes the download by identifying the various components (fonts, bitmaps, sound files, even pages and popup pages) of the panel file you have specified for download, and comparing them to the elements already present on the target panel. Any shared components are not downloaded, resulting in a much faster transfer (assuming that there are shared components).
- Direct - Indicates a "Direct To Device" connection. Any device mapping is ignored, and this method is only valid for single-file transfers.
- Tpd - For TPD transfers, this indicates whether to send bitmaps, icons, and fonts.

To not send bitmaps, icons, or fonts, do not specify the equal "=" sign.

```
–t=B|I|F
```

- B = Send bitmaps within the TPD file.
- I = Send icons within the TPD file.
- F = Send fonts within the TPD file.

You many use any combination. For example:

- -t do not send bitmaps, fonts, or icons.
- -t=B send bitmaps only.
- -t=BI send bitmaps and icons only.
- -t=BF send bitmaps and fonts only.
- -t=BIF send bitmaps, icons, and fonts.

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