

Advanced Flex Control Builder Guide: Training Manual

Table of Contents

New Features with the Flex Control Builder	
DEFINITIONS Definition of terms used in this Tutorial.	5
Project Defines how the Flex Panel will look as well as how it will behave	6
TRAINING REQUIREMENTS	7
Flex Control Builder Installation	
Checklist of Things to do after FCB Installation for first time User	
Finding the IPv4 Address of a Flex IP	
Update & About	14
Flex Connect	15
Options	15
Action editing	15
Walk Through for Creating a New Project	17
THE SYSTEM	18
Project Properties	22
Notes	22
POWER UP	22
AUTO PRESS BEEP	22
AUTO ALTERNATE GRAPHIC	23
LCD BRIGHTNESS	23
LCD DIM	23
SPLASH SCREEN SET UP	23
ADDING DEVICES	24

Serial Device	25
Com Port	27
IR DEVICE	
Add New Ethernet Device	
Serial Ports	
DEFINE SCREENS	
Save Project	
GLOBAL BANNER SET UP	51
Assign Actions to Global Banner	
Volume	
Assigning Actions	60
Groups	
Button touch types	64
BEEP	80
Virtual Button Press	
Virtual Button State	
Wait	
Counters	
MESSAGE BOX SET UP	
Keep Open:	
Close After Press	
Close After Time	
SEND	
Pass-Through Command	
Wait for response and Flags	
Send Inline IP Command	
Log Command	
SET/Clear GPIO	
Adding a GPIO command to a button:	
LCD Brightness/ Contrast Control	
Touch lockout	

Open Date/Time Window	
Flex Connect	
Enable/ Disable Sync	
Log Command	
Events	
Using the scheduler	
Using Power up actions	
Deleting Devices	
RECENT PROJECTS	
CONTROL Libraries	
Input Windows	
Output Windows	
IR Repeater	
Timer	
COMMENT	
ERROR CHECKING	
Alias	
INDEX	

New Features with the Flex Control Builder

- Fully downward compatible with Flex Configurator Projects.
- Custom graphics for screens as well as buttons.
- Resize button graphics.
- Move or resize buttons on a window or screen and not lose commands underneath.
- Custom alternate button graphics feature.
- Option to place buttons and text outside of templates.
- Drag and drop Tree View configuration.
- End user: Time / Date setting capability.
- Input window (Dialers supported).
- Easier synchronization of Flex panels.
- Built in diagnostic to help prevent ADF errors.
- Multiple Bar Graph placement and device assignment.
- ADF file viewer built in.
- Reload up to 4 previously loaded projects.
- Load multiple projects into Flex Control Builder and click between the projects.
- Save projects to any location.
- Retrieve projects from anywhere they are stored.
- Simplified library building.
- Single click link to FSR website for updates to Flex Control Builder, Library files, and Firmware.
- Single page Flex panel status.
- Faster uploads and downloads of projects.
- Full functionality of all 4 serial ports.
- IR Pass Thru. IR signal received at the front Flex panel will be repeated out of all 4 IR ports. This feature can be turned on or off through command line actions.
- Computer font magnification level does not interfere with pixel coordinates of project.
- Log file action commands on Flex connection screen.
- Action markers added to reveal buttons where commands have been assigned.
- Copy and Paste screens from one project to another.
- Count up or count down timers and real time clocks can be added to any screen.
- Easily add "Comments" to any command line within a project.

DEFINITIONS

Definition of terms used in this Tutorial.

Flex Panel

A FLEX-LT Self Contained Control System. Depending on the model, it may have:

- A Touchscreen
- 2 or 4 IR ports (output only)
- 2 or 4 Serial ports
- 4 GPIO ports
- An Ethernet port

Flex Elements

The graphic elements that can appear on the Flex's touch screen. Possible Flex Elements are: Screens, Windows, Message Boxes, Buttons, Bar Graphs, Labels, Input Windows, Clocks, and Timers.

Device

An Audio / Video unit. A Flex can potentially communicate with a Device over IR, Serial, or Ethernet depending on what method(s) that Device supports.

Control Library

A collection of Commands that control a Device. Created by the User. Sample Commands are: Power On, Power Off, Volume Up, Volume Down, Mute On, and Mute Off.

Control Library from FSR

A collection of Commands that control a Device. Created by FSR, found in the Update and About section of the FCB.

Sample Commands are: Power On, Power Off, Volume Up, Volume Down, Mute On, and Mute Off.

Firmware

An FSR supplied file that enhances the raw capabilities of a Flex Panel.

A Flex without Firmware can only communicate via a Serial connection. (A Flex with Firmware can communicate via a Serial or Ethernet connection.)

When a Flex boots, the Firmware loads, parses, and runs the current ADF file loaded.

Project

Defines how the Flex Panel will look as well as how it will behave. A collection of files (Images, concatenated Control Libraries, and ADF) that allow a Flex to perform:

- customized Device commands
- customized Menu and Screen layouts
- customized Actions

RMC

Abbreviation for "Right Mouse Click".

TRAINING REQUIREMENTS

This is a hands-on exercise to familiarize a Technician with the entire FLEX system.

The following equipment is required:

- FLEX LT-200 Control Panel
- Laptop or Desktop PC
 - o running Windows XP, Vista, Windows 7, Windows 8, Windows 8.1, or Windows 10
 - that has connectivity to the Flex by one of the following methods:
 - Serial cable. (Requires either a Serial Port on the Laptop or Desktop PC or a USB to Serial Adapter.)
 - Ethernet cable. (Requires the Laptop or Desktop PC to have an Ethernet Port on a network in the same domain as the Flex.)
- Flex Control Builder Software

IMPORTANT NOTE: Prior to the exercise be sure the Flex Control Builder Software is properly installed and communication between the Windows based computer and the FLEX panel is tested and fully functioning.

Flex Control Builder Installation

Run the installer program as System administrator and use the default settings.

Note: The Flex Control Builder Installer program will not overwrite or uninstall any previously created Projects or Control Libraries.

Checklist of Things to do after FCB Installation for first time User

- Open the FCB and on the "Update & About..." dialog, perform "Get Library Files". This will download the current FSR supplied Library Files to your Laptop or Desktop PC provided you are connected to the Internet and our website is running.
- Open the "Sample Project".
 Click open the branches of the Screens to explore each Screen in the Project.
 Feel free to resize Buttons and move them around.
 Do not Save the Project.
- Click on the "Flex Connect..." dialog and perform a "Connect" by either "Ethernet" or "Serial"Depends which way you have your Flex connected to the Laptop or Desktop PC. Doing this will allow you to see what version of Firmware the Flex Panel is running.

Finding the IPv4 Address of a Flex IP

There are 3 ways to get the IP Address of the Flex.

- Press the Touch Screen of the Flex in an empty section of a Screen for 10 seconds until a "Sys Admin – Network" dialog appears
- Press the Touch Screen while a reboot is in progress. A "Debug Output Window" will be displayed.
- Run the FCB, press the "Flex Connect..." button, and connect to the Flex serially.

Note: The default IP address of the Flex is 192.168.005.070

Starting the Flex Control Builder

This is the Splash screen for the Flex Control Builder (or FCB) program.



After Splash screen has loaded, FCB main screen will appear as shown below:

Plex Control Builder ver	rsion 1.17.0.106. For	r use with Firm	ware version 2.70) or higher. .NET	Memory: 2,423,384;	User Obj: 50 / 100,	000; GDI Obj: 61 / 1	100,000	
New O	pen Error	Check	Save	Save As	Options	Control Libraries	Flex Connect	Update & About	
Library Tree ETHERNET DE IR DEVICES Screens Windows Message Box Library Tree Screens Alias	Project Tree								
۰									

The main screen has the following features:

 Title Bar includes : current FCB Version, the version of the Firmware this FCB was tested with, and various Window's memory usage statistics (.NET Memory, User Objects, and GDI Objects). NOTE: If either User Objects or GDI Objects exceed 100K, Windows will close the Program. For this reason, do not open more than 40 Projects simultaneously in the same FCB.

Buttons to perform:

New – Create a new Project. The first step will be to create a name for the New Project.

Open... – Click Open to select and Open an existing Project from the list of Projects available.

Error Check – Check the current selected Project for Errors.

Save – Save the current selected Project under its current Name.

Page | 10

Save As... – Perform a "Save As" for the current selected Project and give it a new Name. **Options...** Various default settings can be made here

Control Libraries... – allows for the creation and editing of a Control Library. A Control Library from FSR has to have a "Sys Copy" operation performed on it before it can be edited.

Flex Connect... –attach to a Flex panel via Serial or Ethernet connection, Download a Project, Upload a Project, Update Firmware, perform Log operations, or open dialog to perform "Group Sync Master".

Update & About... –Download Control Libraries from FSR, Download Firmware from FSR, or Check for an FCB Program Upgrade and Perform one if available (requires all Open Projects be closed).

Elex Control Builder ver	🜇 Flex Control Builder version 1.17.0.102. For use with Firmware version 2.69 or higher. .NET Memory: 2,021,864; User Obj: 52 / 100,000; GDI Obj: 79 / 100,000 📃 💷 💌									
New O	pen Error Check S	ave Save As	Options	Control Libraries	Flex Connect	Update & About				
Library Tree	Project Tree New Ctrl+N Open Ctrl+O View Original ADF View Modified ADF View Modified ADF View Adf Differences Save Ctrl+S Save As Close Close Copy Ctrl+V Delete Item Flex Connect Recent Projects About Image: About About About Abbout Ab									
۰ III >										

 Menu operations (Right Mouse Click in the "Project Tree" area) to perform: New – (same as the "New" button)

Open... - (same as the "Open..." button)

View Original ADF... - shows ADF file in original state or since last Save.

View Modified ADF... - shows ADF file in current state.

View ADF Differences... - shows differences between original ADF and current ADF.

Save - (same as the "Save" button)

Save As... - (same as the "Save As..." button)

Close... - Close the current selected Project. FCB will ask for verification before closing if any changes have been made to the Project.

Copy – Copy current selected Screen or Window to clipboard.

Paste – Paste Screen or Window to current selected Window from clipboard.

Delete Item – Delete selected Flex Element from Project.

Flex Connect... - (same as the "Flex Connect..." button)

Recent Projects – show the 4 most recently Opened Projects.

About – (same as the "Update & About..." button)

- In the "Library Tree" area, open the branches for Devices, Screens, and Windows by clicking the branches with '+' signs as pictured below.
- Drag the horizontal bar found between the "Library Tree" and "Project Tree" to resize the areas.
- Click the "Library Tree" button to resize the "Library Tree" area so all open branches are visible.

• Click the "Project Tree" button to resize the "Project Tree" area so all open branches are visible.

Elex Control Builder version 1.17.0.10	02. For use with Firmware version 2.	69 or higher. .NET	Memory: 2,021,864;	; User Obj: 52 / 100,	000; GDI Obj: 79 / 1	.00,000	- 0 X
New Open	Error Check Save	Save As	Options	Control Libraries	Flex Connect	Update About	8.
Library Tree	Project Tree						

Update & About

Perform various Update functions from this dialog. This dialog also shows the FCB and Firmware version string for our current FBC.

About	
FLF) CONTRO BUILDEP	Control of the PLEX-LT - FCB © 2017 FSR Inc. All rights reserved. This application can configure both the GUI and controls for the FLEX-LT. It was designed to run on Windows XP, Vista, Windows 7, 8, 81, and 10. It was developed on Windows 7. It can modify existing projects and recall projects from the FLEX-LT.
Check for Program Update (not checked	1)
Get Library Files	
Get Firmware File	
Warning: This program is supplied to our custom Any other uses of this application is forb	ers as a method to configure the FLEX-LT. idden and FSR will not take any responsibility for any unsanctioned use.
	Flex Control Builder version 1.17.0.102. Close For use with Firmware version 2.69 or higher.

"Check for Program Update" - (Button is disabled if any Projects are open.) Check for the availability of a newer FCB Program. If an upgrade is available a "Perform Upgrade" button will appear.

"Get Library Files" – Download the latest Control Libraries from FSR. Button will only update FSR supplied Control Libraries.

"Get Firmware File" - Download a Firmware File from FSR. This operation downloads the Firmware to your Laptop or PC. (This operation does not download the Firmware to the Flex Panel. That control has to be done in "Flex Connect...")

Flex Connect

Open dialog box to connect to a Flex panel via Serial or Ethernet connection, Download a Project, Upload a Project, Update Firmware, perform Log operations, and/or open dialog box to perform "Group Sync Master".

Options

Select various options for how the Flex Control Builder will handle your project locations.

Select between the Application dialog and Windows Folder Browser styles.

Additionally, default folder Locations and Action Editing can be specified.

Action editing

Action editing is merely an editing tool which allows for the positioning of new command functions based on where the curser is positioned when the command is added. This will make more sense later and in more advanced project creation.

Options Contraction of the second sec
Project Open / Save As
Default Change Location: Folder C:\Users\Public\Documents\FSR\Flex Control Builder\Projects
Selection Style:
Application dialog
Window's Folder Browser
Image Properties
Custom Change Backgrounds: Folder C:\Users\kheinis\Pictures\Infocomm2014 Graphics
Custom Change Buttons: Folder I:\Public\JPM\Huddle View Buttons
Size: 7 80
Action Editing
If an Action Command is added in the middle of a line, is the Action Command to be added:
⊘ before the current line
In after the current line
Create Library
✓ Play Sounds for IR Learner (Connect, Press, Disconnect)
Close

Walk Through for Creating a New Project

In this module of the Flex training program we will follow a step by step process to create a Project and download it to a Flex control system. A Project defines how the Flex panel will look as well as how it will behave.

The first step to creating a Project is to define what devices are being used, how they will be connected, and determine what components of the device we want the Flex panel to control.

THE SYSTEM

Below is a diagram of the AV system that we want to control. As you can see, it is a simple system with a projector, DVD/VCR player, and Laptop PC.



The next step in creating a Flex Project is to make some decisions on which devices we want to control. We have created a simple checklist which will allow you to visually see all the screens that you will need for each device you want to control.

In this system we will use the Flex to control the projector as our switcher and volume control. We will also add screens to control the DVD/VCR Player.



Okay let's get started.

The first step is to open the Flex Control Builder. The steps we are going to follow to build this project are as follows:

- 1. Configure the FLEX
- 2. Load the Device Libraries
- 3. Create our screens
- 4. Add buttons to our screens
- 5. Assign commands to the buttons
- 6. Download our project to the Flex.

Click on the "New Project" button.

S	ave As			-		-					
	Change Parent Folder	Parent Folder: C:\Users\Public\Documents\FSR\Flex Control Builder\Projects									
	Project Name	Date Created Date Last Saved ADF IRL SRL FIF Count Image Count									
									New OK Cancel		

Here the Parent folder for your projects may be changed. Otherwise, you may keep the new default folder.

Click the NEW button and type in a name for the Project.

Let's give our project a name. For this example, I'm going to use Flex Exercise 2.0. Enter the name in the project name window and click set new project.

New Project Name	
New Project Name:	Flex Exercise 3.0
	Flex Exercise 3.0
	Unique name.
	OK Cancel

Click OK. Note: a new folder has been created named Flex Exercise 2.0.

Now click OK again.

Project saved to: C:\Users\Public\Documents\FSR\Flex Control Builder\Projects\Flex Exercise 3.0 Lines read = 154
Action Objects used 31 / 1910 Global Objects used 5 / 947 Touch Objects used 5 / 474 Calendar Objects used 0 / 256 Lexical Tokens used 3064 / 163840 Memory List Items used 209 / 4096
ADF File Size used 2,907 / 131,072 SRL File Size used 0 / 131,072 IRL File Size used 0 / 262,144
ок

Project Properties

New	Open	Error Che	ck Save	Save As	Options	Control Libraries	Flex Connect	Update & About	Action Objects - 31 / 1310 Global Objects - 5 / 947 Touch Objects - 5 / 947 Calentar Objects - 0 / 255
	Library Tree Project Tree				Flex Exer	cise 3.0			Memory List items = 209 / 4,050 Images, Fonts, Aliases, Device Commands = 56 / 2,304
-ETHERNE	T DEVICES		Flex Exercise 3	.0	Project	Properties			
IR DEVICE	S		Project Prop	erties	Notes				
- SERIAL DE	VICES		 Serial Ports 						*
- Screens	empty 0		General Purp Global Bann	pose IO er					
Screen	Template 0 8_28_1	13	Screens						
- Screen	Template 1 8_23_1 Template 2 8_23_1	13	- Windows - Message Bo	xes					
Screen	Template 38_23_1	13	Events						
Screen	Template 5 8_23_1	13	Anasta						
-Screen	Template 6 8_23_1 Template 7 8 23 1	13 13							
Screen	Template 8 8_23_1	13							
- Message E	lox								
Event									
🗈 Alias									
									*
					Splash S	Screen	until nannanda 🗊	Alterna	e Graphic
						Display	unu presseu. 💌	Auto D	Display with Duton press.
				6	Dis	play for: 1	seconds	Auto P B	ess beep ep on any valid button press: 📝
					Power C	ycle or Reset			
						Assign Actio	ins		
					Standby	Mode			
					Use: [Ente	er Standby Mode:	m	nutes after last button press
					Enter:	Assign Actio	ons		
					Exit	Assign Actio	ons		
					Liquid C	rystal Display			
					Brig	htness at Start Up	o: 60 🔹		
						Auto Dim to hal Brightness	if 🖂 after last bu	ton press	1 minutes
						Wake Up	: 🗹 (checked)	On Touch)	

As with most Window's applications, standard full screen and resizing of screens and column widths apply here as well. You may want to make the CU full screen and widen the columns for easier display. Additionally, to widen the Library Tree or the Project Tree, click on either of those tabs on the top of the column, and they will expand so all the contents can be read in full. Clicking again will return the column to its original size.

Notes

The large notes area is used to enter information about the project we are working on. From here we can also set up a few global Characteristics of the Flex and define how the Flex will operate under certain conditions.

POWER UP

With this feature set to Yes, the Flex will perform a series of actions when power is applied to the panel. This is commonly used to reset the system to a predetermined state after a power failure. This will be discussed in more detail later as well.

AUTO PRESS BEEP

This sets the Flex to provide audio feedback when any button is pressed.

AUTO ALTERNATE GRAPHIC

This sets the FLEX to show an alternate color button with a button press.

LCD BRIGHTNESS

This sets the level of brightness for the LCD panel in a range from 60% down to 1%. The full brightness was determined when the Flex was developed as 60%, It was considered washout at any brightness level above that. Earlier versions of the program had 100% listed on the configuration page. In reality, that was setting the Flex panel to 60% brightness. This version of the FCB will give the programmer and end user much more control over the brightness, so it was decided to show the actual brightness levels.

LCD DIM

The LCD can be set to dim when the panel has not been used for a predetermined period of time after the last button press. It will dim to 50% of the LCD BRIGHTNESS setting.

SPLASH SCREEN SET UP

The Splash screen is a full screen graphic image. It can be a school/corporate logo or any other graphic. Splash screens can be displayed at power-up as well as standby mode. In this area, there are two options. The first simply asks if the Project will have a splash screen. The second asks if you want the Splash screen displayed until it is pressed (Yes) or displayed for a predetermined period of time (No).

ADDING DEVICES



From the Library tree, select SERIAL DEVICES and then Projector. Now click on the Hitachi _CP-X306 (the projector we are using for our demonstration) and while holding the left mouse button down, drag the device to the Project tree and drop the device anywhere within the Project tree.

Libraries: **⊞** • ETHERNET DEVICES **IR DEVICES** SERIAL DEVICES 🖶 Audio Mixer - Amp AV Receiver 🗄 Camera & Doc Cam - DVD DVD & VCR FSR IntelliTools Matrix Switcher • Other • Projector Scaler · Switcher • TV - Monitor i TV Tuner-DVR -VCR

Library Tree	Project Tree
EIKI_LC-XB28_FSR	Flex Exxercise 2.0
- Eiki-LC-HDT1000_FSR	Project Propert
Eiki-LC-WB42na_FSR	Devices
- Eiki-LC-WGC500_FSR	Serial Ports
- Eiki-LC-X85_FSR	General Purpos
EIKI-LC-XL100_FSR	Global Banner
EIKI-LC-XL200_FSR	Screens
Eiki-LC-XNB4000N_FSR	Windows
EPSON_1925w_FSR	Message Boxe
EPSON_435w_FSR	Events
EPSON_82_FSR	
EPSON_835P_FSR	
EPSON_G5450WU_FSR	
EPSON_P93p_FSR	
- EPSON_PL1945W_FSR	
- EPSON_PL-G5950_FSR	
EPSON_POWERLITE 1850W_F:	
EPSON_Powerlite 460_FSR	
EXTRON_MVC121_FSR	
- Hitachi CP-X1200_FSR	
Hitachi CP-X1230_FSR	
Hitachi CP-X3014_FSR	
- Hitachi CP-X809_FSR	
HITACHI_CP-WU8440_FSR	
HITACHI_CPWX625_FSR	
HITACHI_CP-X260_FSR	
HITACHI_CP-X3030WN_FSR	
HITACHI_CP-X306	
- Hitachi_CP-X306_FSR	

Serial Device

Rename Device		3
Original Device Name:	Hitachi_CP-X306_1	
New Device Name:	Hitachi_CP-X306_1	
	Hitachi_CP-X306_1	
	Unique name.	
Port	1 •	
	OK	

Rename the device if you like to be more generic to the project.

Rename Device		x
Original Device Name:	Hitachi_CP-X306_FSR_1	
New Device Name:	Projector	
Port	Projector Unique name. Changing the selected Port of this Device will not change the Serial settings of that Port. Any changes to a Serial Port settings have to be performed on the Serial Port.	
	OK Cancel	

Com Port

Select Port from drop down list.

	Change Name and Port
- Recommended Serial Set	ings by Library
Baud: 19200	
Parity: NONE	Update To
Data: 8	Recommended
Stop: 1	
	EditCommands
	Edit Commands
er connection between p	ins 7 & 8 (RTS, CTS) as well as pins 2 & 3.
	Recommended Serial Sett Baud: 19200 Parity: NONE Data: 8 Stop: 1

Device 1 Proper	ties			
Name: Serial Port Current Serial Set Baud: 1920 Parity: NON	Projector 1 tings 00 IE	Recommended Serial S Baud: 19200 Parity: NONE	Change Name and Port Settings by Library	
Data: 8		Data: 8	Recommended	
Device Type your notes a	Project Notes: bout the device here			
4				
Device Family: Device Type: Manufacturer: Model:	SERIAL DEVICES Projector Hitachi CP-X306		Edit Commands	
Library File:	Hitachi_CP-X306_FSR.TPL Device Type: Device Type:			
Hitachi docume	ntation shows a crossov	er connection between	n pins 7 & 8 (RTS, CTS)	as well as pins 2 & 3.

To change the name of the device or any port settings, click on the Change Name and Port box.

If there were any device library notes entered by the library creator, they will be displayed in the Device Library Notes box as pictured above.

IR DEVICE

From the Library tree, select IR DEVICES and then Media Player. Now click on the Panasonic DVD-VCR (media player used in our demonstration) and while holding the left mouse button down, drag the device to the Project tree and drop the device anywhere within the Project tree.



Pick Panasonic DVD-VCR from list and drag it to the Project Tree.

Rename Device		×
Original Device Name:	PANASONIC_DVD-VCR_2	
New Device Name:	PANASONIC_DVD-VCR_2	
	PANASONIC_DVD-VCR_2	
	Unique name.	
Port	1 •	
	OK	

Rename Device	Taxe over takes about the device here.	x
Original Device Name:	PANASONIC_DVD-VCR_2	
New Device Name:	DVD/VCR	
	DVD/VCR	
	Unique name.	
Port	1 •	
	OK	

Rename to DVD/VCR if desired.

Select Port from drop down list.

Device 2 Prope	rties	
Name: IR Port	DVD/VCR 1	Change Name and Port
Device	Project Notes:	
I ype any device	or project notes here	
A Device Femily		
Device Family.	Media Plaver	
Manufacturer:	PANASONIC	Edit Commands
Model:	DVD-VCR COMBO	
Library File:	PANASONIC_DVD-VCR_FSR.TPL	
	Device Type:	
Device Library N	Device Type:	
Device Library N		

To change the name of the device or any port settings, click on the Change Name and Port box.

If there were any device library notes entered by the library creator, they will be displayed in the Device Library Notes box as pictured above.

Add New Ethernet Device

The process is similar to adding an IR or Serial device.

The difference is while this project will not utilize an Ethernet type device, we will enter one to show a typical setup.

From the Library tree, select ETHERNET DEVICES and then matrix Switcher. Now click on the FSR_PATHFINDER (device used for our demonstration) and while holding the left mouse button down, drag the device to the Project tree and drop the device anywhere within the Project tree.



Rename Device		×
Original Device Name:	FSR_PATHFINDER_FSR_3	
New Device Name:	FSR_PATHFINDER_FSR_3	
	FSR_PATHFINDER_FSR_3	
	Unique name.	
IP Address:	· · · · ·	
IP Port:	23	
	OK	

Rename Device		x
Original Device Name:	FSR_PATHFINDER_FSR_3	
New Device Name:	Matrix	
	Matrix	
	Unique name.	
IP Address:	192 - 168 - 005 - 070	
IP Port	23	
	OK	

To change the name of the device or any port settings, click on the Change Name and Port box.

If there were any device library notes entered by the library creator, they will be displayed in the Device Library Notes box.

An IP address and port number must be added. Additionally, the Persistent or the UDP protocol for the device may be set.

Persistent, if selected, has a timeout set to 1 minute. This is here to allow the user to set the connection timeout of any misbehaving Ethernet devices. The default setting should remain as is unless instructed to change it by FSR Customer support or the manufacturer of the device you are trying to control.

TCP or Transmission Control Protocol and UDP or User Datagram Protocol: TCP is the default protocol; however, UDP may be selected for devices requiring such connectivity. When UDP is selected, the persistent setting is automatically turned off.

Device 3 Prope	rties				
Name:	Matrix				
Address Name:	Matrix_Addr			Change Name	
Ethernet					
IP Address:	192 . 168	- 005 - 070	UDP:		
IP Port	23		Persistent:	Timeout min	
Device	Project Notes:				
Type any device	or project notes l	here			
•					
Device Family:	ETHERNET D	EVICES			
Device Type:	Matrix Switcher				
Manufacturer:	FSR			Edit Commands	6
Model:	PATHFINDER				
Library File:	FSR_PATHFIN	IDER_FSR.TPL			
	Device Type:				
Device Library N	Device Type:				
The default ID A	oles.	100 0 042			
The default IP P	adress is. 192	2.100.0.245			
If you change th	e ip address y	you have to wait 3	30 seconds befo	re that address is av	vailable to accept commands.

Serial Ports

Project Tree	Flex Exercise 3.0*					
Flex Exercise 3.0*	Serial Ports					
Project Properties Devices	# Baud Data Parity Stop Type					Туре
Projector	1	19200	8	None	1	
DVD/VCR		115200	8	None	1	
Matrix	3	115200	8	None	1	
Serial Ports		57600	8	None	1	
Serial Port 2						
Serial Port 3						
Serial Port 4						

Click on Serial ports on the Project tree.

Select individual Serial ports to change any of the port's parameters.

Project Tree	Flex Exercise 3.0*						
- Flex Exercise 3.0*	Serial Port 1 Properties						
Project Properties ⊟- Devices	Baud:	19200		•			
Projector DVD/VCR	Data:	8		•			
Matrix Serial Ports	Stop:	1		•			
<mark>Serial Port 1</mark> Serial Port 2	Parity:	None		•			
Serial Port 3 Serial Port 4		Num	Name	Baud	Data	Stop	Parity
General Purpose IO	Recommended Serial Settings for Device(s) by Library:	1	Projector	19200	8	1	NONE
Global Banner							

Serial port 4 is restricted to a MAX baud rate of 57600. None of the other ports are restricted.

We have now completed our device setup.

DEFINE SCREENS

Now we are going to build the screens that we require for this Project.



From the Library tree, select a Screen Template to be used as the splash screen. Screen empty 0 and Screen template 0 are typical templates for the splash screen. Keep in mind that Screen Template 0 will not allow buttons to be added. Therefore, use of this template should be restricted to Splash screens or screens that do not require button commands.

Select the screen by left clicking on the template and dragging and dropping it over the Project tree.
New Screen Name		×
Default Screen Name:	Screen 1	
New Screen Name:	Screen 1	
	OK	

I selected Screen template 0 8_28_13. Once dropped onto the Project tree the above screen appears, allowing you to rename the screen if you like. Renaming is not mandatory, and the screen name can be changed at any time later while building the project.

New Screen Name		×
Default Screen Name:	Screen 1	
New Screen Name:	Splash	
	Splash	
	OK	

This screen has been renamed Splash.

Splash, Screen 1 Properties	
	Name: Splash Change Name and Number Template: Screen empty 0 Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Templates - new\Screen empty 0.bmp Item: Item: Item:
Background Label Clock & Timer	Multiple Select Final

Typically, a splash screen will consist of a background and possibly some text.

Backgrounds can be selected from the FSR stock folder, a Custom folder, or a Solid Color.

Note: The Project folder will be empty until the project has been saved for the first time.



The Solid color option will present the following screen to choose from.

Name: Splash Template: Screen Template 0 8_28_13 Filename: C:\Program Files\FSR\Flex Control E
Item: Item: Item: Item: Item: Background Label Final Solid Color Select Color Standard Custom Project Define Custom Colors >> OK Cancel

Selecting custom folder will show a Change Folder button to press. You will then be able to select a folder where you have custom graphics. These graphics need to be BMP, JPG, or GIF formatted graphics. The FCB will automatically resize the graphic for the background.

Screen 1, Screen 1 Properties				
	Name: Screen 1 Change Name and Number Template: Screen Template 0 8_28_13 Filename: C\Program Files (x86) FSR\Flex Control Builder\Templates - new\Screen Template 0 8_28_13.bu Move: X = 4, Y = 149	np		
Background Label Clock & Timer Multiple Selv	Show Grid ect Final			
New label:	A	Font Arial Times Roman Font Color Select	Font Style Normal Bold Italic Italic Bold	Size 8 10 12 16 20
	-	Justify Text Text Text	Text Text	Text Text Text

Once a background has been selected, you may add a label to the screen. Notice the small vertical boxes. They are standard text place holders. These place holders are used throughout the FCB. However, this version of the FCB does not limit you to only using the place holders. Text can be put anywhere on the screen. The template is provided for ease of use.

To add a label, click on the yellow New Label box and drag and drop it either on a place holder or anywhere else you desire. If you are not using the template, you may find clicking on the Show Grid box helpful for aligning text. Again, this feature is available throughout the FCB for text and button placement.

Screen 1. Screen 1 Properties					
Splash Screen Red Hatte State 16 point Background Label Clock & Timer Multiple Sel	Name: Screen 1 Change Name and Number Template: Screen 1 Filename: C/Program Files (x06)(FSR)(Flex Control Builder\Templates - new\Screen Template 0.8_28_13) Screen: 1. Label: Location: X = 185, Y = 158 (W = 12, H = 24) Move: X = 213, Y = 237 Show Grid	3.bmp	,		
New label:			Font Arial	Font Style Normal	Size © 8
F	Red Italic text 16 point	*	 Times Roman Font Color Select 	 Bold Italic Italic Bo 	 ○ 10 ○ 12 ● 16 ○ 20
			Justify Text	Text	Text
		Ŧ	Text	Text Text	Text

Above shows two text boxes added to the Splash screen. When a yellow box is selected, you can change the Color, Font, Style, and Font size within the box. Once completed, select the other text box and select preferences and text. Note: Multiple lines of text may be added to a label. Justification of text with relation to the text box can be adjusted as well as utilizing the justification boxes. Caution,

Page | 40

before doing so, it is a good idea to save your project first. The only way to undo the justification is to move the boxes manually or closing the project without saving and opening it up again from the last save. This is a good practice no matter where you are in a project development. Frequently save or save as while you are still deciding on the look of the project development.

Screen 1, Screen 1 Properties					
Splash Screen Red Italia is is 16 point	Name: Screen 1 Change Name and Number Template: Screen Template 0 8_28_13 Filename: C.Program Files (x96)(FSRV)Flex Control Builder\Templates - new\Screen Temp Screen: 1, Labet Label 2 Location: X = 185, Y = 158 (W = 12, H = 24) Move: X = 213, Y = 237 Show Grid et	olate 0.8_28_13.bm	qı		
New label:			Font Arial	Font Style O Normal	Size © 8
F	Red Italic text 16 point	•	Times Roman Font Color Select Justify Tex Tex Tex Tex	Bold Italic Italic Bold Text Text Text	10 12 16 20 Text Text Text

Click on the Final tab and see how the final screen looks.

Screen 1, Screen 1 Properties	
Splash Screen Red Italic text 16 point	Name: Screen 1 Change Name and Number Template: Screen Template 0.8_28_13 Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Templates - new\Screen Template 0.8_28_13.bmp Screen: 1, Label: Label 2 Location: X = 185, Y = 158 (W = 12, H = 24) Move: X = 213, Y = 237
Background Label Clock & Timer	Multiple Select Final
	<i>\</i> ₹

Next select screen template 4. This will be used for our HOME screen. Note: below it appears as Screen 2.

Screen Name Default Screen Name:	Screen 2	
New Screen Name:	Screen 2 Screen 2	
	OK	

Let's rename it HOME

New Screen Name	
Default Screen Name:	Screen 2
New Screen Name:	Home Home
	OK

Now click OK

We can add all the screens we will be using in our project now or start populating the screens as we go. I prefer to define all the screens ahead of time, so I have a good reference. As such, I will now add my DVD screen. Select Screen template 7 for this, and drag and drop it to the Project Tree.

creen Name			
Default Screen Name:	Screen 3		
New Screen Name:	Screen 3 Screen 3		
	ок	Cancel	

Now rename the screen DVD

New Screen Name		×
Default Screen Name:	Screen 3	
New Screen Name:	DVD	
	DVD	
	OK	

Now select another Screen template 7, and drag and drop it to the Project tree and rename it VCR

New Screen Name		x
Default Screen Name:	Screen 4	
New Screen Name:	VCR	
	VCR	
	OK Cancel	

Now select Screen template 3, and drag and drop it to the Project Tree and rename it Laptops

New Screen Name		×
Default Screen Name:	Screen 5	
New Screen Name:	Laptops Laptops	
	OK	

Now add a test screen that can be populated with buttons to further define action items. These will not necessarily be part of the basic project being built here.

Select Screen template 1, and drag and drop it to the Project Tree. Rename it Test.

Save Project

This is a good time to do a project save. Click the Save button to save the contents of the current project. Save As will prompt to create a new project folder like when this project was first named.



Click OK to overwrite the contents of the folder with the additional information added since the project was started.

A confirmation screen will follow shortly.

All the screens are now added, and we will go back to each one to add backgrounds, buttons, banners, and text as applicable.

Since the splash screen has already been designed, pick the home screen from the Project Tree list.



Click on the Banner tab and select the type of banner you wish to use. Since this is the HOME screen, pick the "Use Banner Graphics No Home" option.



Now click the Background tab and select a background as we did in the Splash Screen.

Again, choose from a Standard, Solid Color, or Custom background.

Banner	Background	Button	Label	Bar Graph	Bar Graph 2	Input Window
	Solid Color					
	Custom			Show Cont	rols	
Standard	I 🔘 Project					
	•					

Click on the Button Tab and then select Small. This will show the standard Small button library. Again, you can pick Solid Color or Custom buttons. Custom will allow you to select graphics from a

Page | 46

different folder and place a custom graphic into any position on the screen. Additionally, these buttons can be re-sized following conventional window graphic techniques.



Procedurally, Custom and solid color buttons are selected in a similar manner as custom backgrounds. The difference is the ability to re-size the button graphic once it has been dropped onto the screen.



SYSTEM

Additionally, notice to the right of the template screen there are 3 boxes that can be checked: Show Grid, Show Alternative, and Show Action Markers. Show grid will present a grid pattern which is very helpful in aligning buttons outside of the template. Show Alternate is used to reveal the alternate graphic of a button. Notice this exercise is using the Blue Square as the primary color and red Square as the alternate. To change either primary or alternate color, select your desired graphic from the drop-down menu and drag and drop the new graphic accordingly. Should a custom graphic been used, this will also reveal the custom graphic used as the alternate.

Click on Large for the large button selections and fill in the remainder of the screen by dragging and dropping the graphics as shown below. Note the Blank button.



Now click on the Label Tab.

	Name: Home							
	Change N	Name and Number						
	Template: Screen Templ	late 4 8_23_13.bmp						
	Filename: C:\Program Fil	es (x86)\FSR\Flex Con	rol Builder\Templates - n	ew\Screen Templa	ate 4 8_23_13.br	np		
	Location: X = 120. Y = 196	5 5 (W = 80, H = 40)						
	Move: X = 0, Y = 220	(
	Show Grid							
	Show Alternate (or C	Clicked or State 1)						
Banner Background Button Label	Bar Graph Ba	ar Graph 2 Input W	ndow Output Window	Clock & Timer	Multiple Sele	t Final		
Newlet at a						Font	Font Style	Size
New label.						Arial	 Normal 	0 8
					*	Times Roman	Bold	0 10
						Font Color	Italic	@ 16
						Select	O Italic B	old 0 20
						Justify		
						Text	Text	Text
						Text	Text	Text
					Ŧ	Text	Text	Text

Notice the small verticle rectangular place holders. The labeling process is the same as Splash screen.



Drag a new label to the blank button, Pick a color (White) and label it TEST. Then Label the screen as shown below (HOME)

The Bar Graph and Input Window tabs will be discussed later in this exercise. Select the Final tab to show exactly how the screen will appear on the Flex.

Home, Screen 2 Properties	
SYSTEM MUTE ()	Name: Home Change Name and Number
НОМЕ	Template: Screen Template 4 8_23_13.bmp Filename: C:\Program Files (x86)/FSR\Flex Control Builder\Templates - new\Screen Template 4 8_23_13.bmp
	Screen: 5, Label: Label 2 Location: X = 154, Y = 61 (W = 12, H = 24)
TEST	Move: X = 319, Y = 220
Banner Background Button	Label Bar Graph Bar Graph 2 Input Window Output Window Clock & Timer Multiple Select Final

Complete the DVD, VCR, Laptops, and TEST screens in a similar manner using the following screen shots as a guide.

Note, for the following screens the Use Full Banner Graphics option will be chosen.



VCR, Screen 4 Properties	
VCR	
	▶



Note: On the test screen below, the numberd buttons were selected directly from the available standard buttons and the large ABCD buttons were the large blank buttons and a label was added to each.



GLOBAL BANNER SET UP

Global banners are designed to eliminate repetitive steps when configuring audio controls. When used, the Flex Control Builder designates the 5 buttons across the top of the screen as Home, Mute,

Volume down, a volume ramp, and Volume up. The global banner set-up is configured to work from the left to right tabs as the banner is configured. Select the second tab BAR GRAPH STYLES.

We already chose the banner type we want to use on our screens; now we can define the graphic options and function assignments to the banner.



Click on the Bar Graph tab and select the color and shape options as desired.

Then pick the style of Bar Graph. These include Vertical, Horizontal, Multi horizontal, and Ramped.

Numerical values can be added to the Bar Graph as well. Click the Show Text check box to the right of the color options. Doing so will show the numerical value on the graph itself. The text can also be adjusted to fit the desired format.

Select the bar and background colors.



Next, click on Bar Graph 2 tab. Once in this tab, double click on the grey boxes next to the Volume Down, Volume Up, and Mute to define which buttons would correspond to each command.

Global Banner Properties		
		Name: Global Banner
		Template: Banner.bmp
		Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Banner - new\Banner.bmp
		Item:
		item:
		Show Grid
		Show Alternate (or Clicked or State 1)
	\searrow	Show Action Markers
Banner Button Label	Bar Graph	Bar Graph 2 Multiple Select Final
Volume Down:		
Global Button 3 🗸	Top value:	10 -10 to 32767
Volume Up:	ottom value:	-10 -32767 to 10
Global Button 4 🗾 🗾	Initial value:	0 -10 to 10
Mute: Global Button 2	Step size:	1 1 to 100
	Auto Update	Manual Update

Select the style of banner, Interior color of the Bar Graph, and the Primary and Alternate Color schemes.

Depending on the device properties, the Top value, Bottom value, Initial value, and Step size can be changed.

Clicking on the Final tab or the Show Controls will show how the banner will look on all screens where banner has been selected for use. By also checking off the Show Alternate box, the alternate color for each button will be displayed.

Global Banner Properties	
	Name: Global Banner
	Template: Banner.bmp Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Banner - new\Banner.bmp Global Banner, BarGraph: Location: X = 199, Y = 5 (W = 50, H = 40) Move: X = 54, Y = 0
Banner Button Label	Bar Graph Bar Graph 2 Multiple Select Final
Global Banner Properties	
	Name: Global Banner
	Template: Banner.bmp Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Banner - new\Banner.bmp Global Banner, BarGraph: Location: X = 199, Y = 5 (W = 50, H = 40) Move: X = 54, Y = 0
	Show Alternate (or Clicked or State 1)
Banner Button Label	Bar Graph Bar Graph 2 Multiple Select Final

Labels can be setup in the same manner as shown earlier for buttons.

Input windows will be discussed in more detail later.

Assign Actions to Global Banner

To assign or review default actions for buttons, Click on the + next to the Global banner in the Project Tree. This will reveal the banner buttons and numbers.



Now let's complete the **BANNER FUNCTIONS.**

Select the Home button and then click on the Go To Action radio button.

Global Banner Pro	operties		
			Name: Global Banner
			Template: Banner.bmp
			Filename: C:\Program Files (x86)\FSR\Flex Control Builder\Banner - new\Banner.bmp Global Banner, Button: Global Button 1 Location: X = 7, Y = 5 (W = 50, H = 40)
			Move: X = 41, Y = 49
			Show Grid
			Show Alternate (or Clicked or State 1)
			Show Action Markers
Banner	Button	Label Bar Graph	Bar Graph 2 Multiple Select Final
Iarge O S	olid Color	Primary: 📕Blue Squa	are 🔻 🗹 Template Holes
◯ Small ◯ C	ustom	Alternate: Red Squar	are 🗸 Go To
◯ Common ◯ P	roject 📃	Keep Aspect Ratio	Action

By default the Go To 2 screen, which is the Home screen, has already been entered. This can be changed by deleting the command line and then selecting the Go to Screen option in the command list and selecting a different screen.

Global Button	1 Properties							
	··· 🚺 🚺	()		Fo	rmat			
			[Norm	al	Toggle	•
				Press	1 2	GOTO	2 /* HOME	*/
Global Button 1								
Go To Parent	Flag:							
Group	Send Command GoTo Screen	^		풍	1			1
© 1	Wait Beep			ā				
◎ 2	Virtual Button Press Set Button State							
◎ 3	Assign Flags							
© 4	Counters Conditional							
	Open/Close Window Open/Close MsgBox							
	Send Inline Serial Message Send Inline IP Command							
	Log Command Set/Clear GPIO							
	LCD Brightness/Contrast Touch Lockout			Rele	1			
	Open Date/Time Window Send To Input Window			ase				
	Send To Output Window IR Repeater							
	Timer Comment							

Now select the **Mute Actions** Button.

Select Send command, choose the projector and then 'AUDIO MUTE ON' and press OK.

Now select the lower box and repeat the above steps for 'AUDIO MUTE \mathbf{OFF} '

Note: These are Toggle commands.

Global Button	2 Properties			
	•	Fo	ormat	
			Norma	al Toggle
		Low To High	1 2 3 4	SER 1 'Projector' 'AUDIO MUTE ON' FLAG 8 = 1 SER 1 'Projector' 'AUDIO MUTE ON'
Global Button 2 Go To Parent Group None 1 2 3	Flag: 8 Send Command Go To Screen Wait Beep Virtual Button Press Set Button State Assign			I
<u></u>	Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment	High to Low	1 2 3 4	/* 'AUDIO MUTE OFF' */ FLAG 8 = 0 SER 1 'Projector' 'AUDIO MUTE OFF'

Volume

Volume controls are versitle. They offer the capability of independently controlling volume press actions and hold actions. As well, the Flex has a separate Volume release action set of commands should a particular device require it.

To differentiate, the Volume up press command will require the user to repeatedly touch the volume up button in order to increase the volume. However if the same volume up command is repeated in the Volume Up Hold Actions, the user can press and hold the volume up button in order to increase volume. Likewise the volume down command window works the same way.

First click in the volume up press actions box, and then click on Send Command from available actions.

Global Button	4 Properties					
	m 🚺 📶 🚺	》		Fo	rmat	
			ſ		Norma	al Toggle
				Press	1 2 3 4 5 6	IF (COUNTER 8 < 10) THEN COUNTER 8 +1 /* 'VOLUME UP' */ ENDIF SER 1 'Projector' 'VOLUME UP'
Global Button 4 Go To Parent	Flag: NO •	ß				
Group ● None ○ 1 ○ 2 ○ 3 ○ 4	Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assign Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO	*		Hold	1 2 3 4 5 6	IF (COUNTER 8 < 10) THEN COUNTER 8 +1 /* 'VOLUME UP' */ ENDIF SER 1 'Projector' 'VOLUME UP'
	LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment			Release	1	

Completed screen will look like this.

Note: Some devices require a release action for volume control. If required, enter the command in the Volume Up release actions.

Now click on the Volume down tab and enter the volume down actions as you did for the volume up.

Assigning Actions

Now we must go back and assign actions to the graphic buttons.

Note: Assigning actions can be done at any previous point where the graphic screen was laid out. We are following this order for clarity sake and to keep like actions together.

Since the Splash screen does not allow any buttons, the first screen where we may add actions is the Home screen. Notice the screens in the Project Tree now have the + symbol in front of them. Click the + in front of the Home screen.



All the buttons added to the Home screen are now revealed in the tree. Select Button 1



Notice the System power button is selected and outlined on the screen.

Before we begin assigning actions, the options on the screen need to be defined:

Groups:

When a Normal button is part of a group and it is pressed, the alternate graphic is shown until another button within the group is pressed. This is used with source select buttons. On a transport control screen we want only one button pressed at a time. When any of the buttons are pressed, its alternate graphic is displayed until any other button in the group is pressed at which point, the first button will go back to its main graphic and the 2nd button pressed will show the alternate graphic. In this exercise, the DVD, VCR and PC screens will be in group 1.



Attaching a Flag will be discussed in detail later on in this exercise as it is a more advanced feature not used in this basic project being worked on.

The Format button will simply re-format the actions entered for reviewing purposes.

Button touch types:

There are four different **Button Touch Types**. The first type is a **Normal** button. When the button is pressed, the actions that are listed in the window on the right are executed. Also, when the button is pressed, the alternate graphic is shown briefly to visually acknowledge the press. The exception to this is when Normal buttons are part of a group.

The next type is **Press**. When the button is pressed, the actions in the Press Action window are executed. When you remove your finger from the button, the actions in the Release Actions window are executed. You do not have to populate a Press / Release button with Press and Release actions. When a Press / Release button is pressed, the alternate graphic is shown until the button is released.

The third type of button is a **Hold button**. In this case, the Press actions occur when you press the button. If you hold the button for more than ½ second, the Hold actions occur repeatidly until you remove your finger from that button. At that point, the Release actions occur. It is not necessary to populate the Press, Hold, and Release areas. They can be used in any combination to achieve the desired effect. When a Press / Hold / Release button is pressed, the alternate graphic is shown until the button is released.

The final button type is a **Toggle Button**. A Toggle Button is one that you press once to do something and press again to do something else. In this case, the First Press Actions occur the first time that the button is pressed. When the button is pressed again, the Second Press Actions occur. Click the Toggle Button Tab to see this type.

Note: Whichever style is selected, Toggle or Press / Hold / Release, the style last selected will be the style saved to the project. That is to say that if you selected a press action, filled in some actions, and then decided to make it a Toggle style button and fill in actions there, the Toggle will be the one saved to the project. There is no need to delete the actions in the press window as long as the toggle was last selected.

Normal		Toggle	
Press			
		•	
Hold			
		•	
Release			

Above: **Press** Hold and Release action boxes

Below: **Toggle** Low to High and High to Low action boxes.

Normal		Toggle
Low To High		
		<u> </u>
High To- Low		

Now we will start to add real actions.

Select button 1 again (System Power). Since we want one set of actions to "Turn the System On" and another set to "Turn the System Off", we will setup the System Power button as a toggle button.

Select the Toggle button type.

This button operates by itself, so select No under Button Group Number.

Notice the 2 Action windows, Low to High and High to Low.

Click within the Low to High box first.



Click on Send Command.

Click on Projector.

Select 'Projector' 'Power On'. This will tell the projector to switch on.

Action = Send Command	200 C	2		
Selected button issuing Action:	1) Select a device:	2) Select a command:		
	Projector	Command	Details	🔲 Wait
	Matrix	'POWER ON' 'POWER OFF' 'AUDIO MUTE ON' 'AUDIO MUTE OFF' 'VOLUME UP' 'VOLUME DOWN' 'PC1 INPUT' 'PC2 INPUT' 'COMPONENT INPUT' 'S-VIDEO INPUT' 'VIDEO INPUT' 'VIDEO BLANK ON' 'VIDEO BLANK OFF'	CMD 'POWER ON'' <be 0<br="" ef="">CMD 'POWER OFF' '<be 0<br="" ef="">CMD 'AUDIO MUTE ON' '<be CMD 'AUDIO MUTE OFF' '<be CMD 'VOLUME UP' '<be 0<br="" ef="">CMD 'VOLUME DOWN' '<be i<br="">CMD 'PC1 INPUT' '<be 03<br="" ef="">CMD 'PC2 INPUT' '<be 03<br="" ef="">CMD 'PC2 INPUT' '<be 03<br="" ef="">CMD 'S-VIDEO INPUT' '<be ef<br="">CMD 'VIDEO INPUT' '<be ef<br="">CMD 'VIDEO BLANK ON' '<be CMD 'VIDEO BLANK OFF' '<b< th=""><th>FLAG 1 ~ FLAG 2 FLAG 3 FLAG 3 FLAG 4 FLAG 5 FLAG 5 FLAG 6 FLAG 7 FLAG 7 FLAG 8 FLAG 10 FLAG 10 FLAG 11 E FLAG 13 FLAG 13 FLAG 14 FLAG 15 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 20 FLAG 21 FLAG 23 T</th></b<></be </be></be></be></be></be></be></be></be </be </be></be>	FLAG 1 ~ FLAG 2 FLAG 3 FLAG 3 FLAG 4 FLAG 5 FLAG 5 FLAG 6 FLAG 7 FLAG 7 FLAG 8 FLAG 10 FLAG 10 FLAG 11 E FLAG 13 FLAG 13 FLAG 14 FLAG 15 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 20 FLAG 21 FLAG 23 T
		4	•	milliseconds 0.001 seconds
	ок	Cancel		BUF 2 BUF 3 BUF 4

Click on the 'OK' button.

Click on Send Command.

Click on DVD VCR

Select 'DVD VCR' 'POWER'

Click the 'OK' button.

In the Second Press Actions window reverse the process selecting the "Power Off" command. Following the same steps used above, click on the High to Low Window and do the following: Send a command to the projector to power off. Send a command to the DVD VCR to power off.

When completed the window will look like this.



Click on the DVD button.

Select a Normal Button Type.



Select Group 1; then click on the Send Command.

Click Send Command; then select DVD/VCR Device.

Select 'MODE DVD'. This command will tell the DVD VCR to switch to the DVD Mode.

Note: Enter the Repeat IR Code Times. Some IR devices require the code to be sent out multiple times. Should this arise, set the number of repeats here. This is also an editable item which you can go back to at a later time if necessary.



Click on Send Command.

Select Projector

Select the command 'COMPONENT INPUT'.

Click the 'OK' button.
Action = Send Command	-			
Selected button issuing Action:	1) Select a device:	2) Select a command:		
Selected button issuing Action:	1) Select a device:	2) Select a command: Command 'POWER ON' 'POWER OFF' 'AUDIO MUTE ON' 'AUDIO MUTE OFF' 'VOLUME UP' 'VOLUME DOWN' 'PC1 INPUT' 'PC2 INPUT' 'COMPONENT INPUT' 'S-VIDEO INPUT' 'VIDEO BLANK OFF'	Details CMD 'POWER ON' ' <be 0;<="" ef="" td=""> CMD 'POWER OFF' '<be 0;<="" ef="" td=""> CMD 'AUDIO MUTE OFF' '<be< td=""> CMD 'AUDIO MUTE OFF' '<be< td=""> CMD 'VOLUME UP' '<be 0;<="" ef="" td=""> CMD 'POLIME DOWN' '<be 0;<="" ef="" td=""> CMD 'POLIME DOWN' '<be 0;<="" ef="" td=""> CMD 'POLIMPUT' '<be 0;<="" ef="" td=""> CMD 'POLIMPUT' '<be 0;<="" ef="" td=""> CMD 'POLINPUT' '<be 0;<="" ef="" td=""> CMD 'S-VIDEO INPUT' '<be ef<="" td=""> CMD 'VIDEO INPUT' '<be ef<="" td=""> CMD 'VIDEO BLANK OFF' '<b< td=""> CMD 'VIDEO BLANK OFF' '<b< td=""></b<></b<></be></be></be></be></be></be></be></be></be<></be<></be></be>	▶ Wait FLAG1 ▲ FLAG2 ↓ FLAG3 ↓ FLAG4 ↓ FLAG5 ↓ FLAG6 ↓ FLAG6 ↓ FLAG10 ↓ FLAG11 ↓ FLAG12 ↓ FLAG13 ↓ FLAG14 ↓ FLAG15 ↓ FLAG16 ↓ FLAG17 ↓ FLAG18 ↓ FLAG20 ↓ FLAG21 ↓ FLAG23 ▼
	ок	Cancel	• •	milliseconds 0.001 seconds Buffer BUF 1 BUF 2 BUF 3 BUF 4

Click the 'OK' button.

Click on Go To Screen.

Select DVD.

Click the 'SAVE' button.

The completed DVD button should look like the following.

The input screen will look like this.

Home, Scree	n 2, Button 2 Properties			
SYSTEM POWER MI		Fo	rmat	t
Screen 2, Buttor	VCR PC TEST	Press	Norm:	mal Toggle IR 1,1 'DVD/VCR' 'MODE DVD' SER 1 'Projector' 'COMPONENT INPUT' GOTO 3 /* DVD */
Go To Parent	Flag: NO			
 Group None 1 2 3 4 	Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assign Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO	Hold	1	Ι
	LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment	Release	1	

Now select the VCR button and perform similar actions to the DVD, including the selection of a Group. This time select the S-VIDEO INPUT, DVD/VCR Mode, then VCR. The GO TO Screen will be VCR.



The PC screen will only be placed into Group 1 and have a command to GOTO the laptop screen as shown below.



The TEST button will only use the GO TO screen command. Choose the TEST screen from the GO TO Screen list.

The home screen is now complete and we can move on to the DVD button commands.

Click on the + to the left of the DVD in the Project Tree and select Button 1.



The button types and command options are the same as the previous screen.

Starting with the Play button, we will then click the Send Command, select the DVD/VCR, and 'Play'.

1) Select a device: Projector DVD/VCR Matrix	2) Select a c Command 'PWR' 'MENU'	command: Details CMD 'PWR' '0000 0073 0000 0032 006 CMD 'MENU' '0000 0073 0000 0032 0
Projector DVD/VCR Matrix	Command 'PWR' 'MENU'	Details CMD 'PWR' '0000 0073 0000 0032 000 CMD 'MENU' '0000 0073 0000 0032 000
- DVD/VCR Matrix	'PWR' 'MENU'	CMD 'PWR' '0000 0073 0000 0032 008 CMD 'MENU' '0000 0073 0000 0032 00
···· Matrix	'MENU'	CMD 'MENU' '0000 0073 0000 0032 0(
	UP'	CMD 'UP' '0000 0073 0000 0032 0080
	'DN'	CMD 'DN' '0000 0073 0000 0032 0080
	'LFT'	CMD 'LFT' '0000 0073 0000 0032 0080
	'RT'	CMD 'RT' '0000 0073 0000 0032 0080
	'ENTER'	CMD 'ENTER' '0000 0073 0000 0032 (
	'PLAY'	CMD 'PLAY' '0000 0073 0000 0032 00
	'STOP'	CMD 'STOP' '0000 0073 0000 0032 00
	'PAUSE'	CMD 'PAUSE' '0000 0073 0000 0032 (
	'REW'	CMD 'REW' '0000 0073 0000 0032 008
	'FF'	CMD 'FF' '0000 0073 0000 0032 0080 (
	'CH-'	CMD 'CH-' '0000 0073 0000 0032 0080
	'CH+'	CMD 'CH+' '0000 0073 0000 0032 008(
	'RECORD'	CMD 'RECORD' '0000 0073 0000 003:
	'CHAN+'	CMD 'CHAN+' '0000 0073 0000 0032 C
	'CHAN-'	CMD 'CHAN-' '0000 0073 0000 0032 0
	11	CMD '1' '0000 0073 0000 0032 0080 00
	'2'	CMD '2' '0000 0073 0000 0032 0080 0C
	'3'	CMD '3' '0000 0073 0000 0032 0080 00
	'4'	CMD '4' '0000 0073 0000 0032 0080 00
	'5'	CMD '5' '0000 0073 0000 0032 0080 00
	'6'	CMD '6' '0000 0073 0000 0032 0080 00
	'7'	CMD '7' '0000 0073 0000 0032 0080 0C 🚽
	•	•
		Repeat. 1
	r	
ок	Cancel	
	OK	'LFT' 'RT' 'ENTER' 'PLAY' 'STOP' 'PAUSE' 'REW' 'FF' 'CH-' 'CH+' 'RECORD' 'CHAN+' 'CHAN+' 'CHAN-' 'T' 'E' 'S' 'S' 'S' 'S' 'S' 'G' 'T' ''T' ''T'

Complete actions to associate all other commands to their respectivebuttons on the page.

Note: You have the option to put any or all of the buttons into groups if you want to display the last option selected, such as a stop or pause. Again since this is an IR command, there is also the Repeat Option function if the device requires it.

Click on the +VCR and select Button.Next select VCR Input from the projector commands; then repeat the other commands in a similar manner as was done for the DVD screen.

Once completed, click the +PC screen.

This one will be a little different since we have two PC inputs to select from.

Click Button 1

This will be a normal button press action. Select group 1, click on Send Command, select Projector, and then select PC1 INPUT.



No	mal	Toggle	
Press	1	SER 1 'Projector' 'PC	C1 INPUT'

Now select PC 2, group 1 again, Send Command, and then PC2 INPUT.

Page | 79

This completes the basic screens for a project. Next, we will select the TEST screen and define all of the other command actions available.

BEEP

A beep command can be added to any buton press or event. To demonstrate this, click the +TEST on the Project Tree and then button 1. This is the A button on the screen. This will be a press only action. On the command list, click the BEEP command. This can be used at anytime to provide audible feedback. For example, if you turn Auto Press Beep off but you want certain buttons to beep to provide feedback, you can add the beep command to those buttons.



Virtual Button Press

Virtual Button Press gives the user the ability to invoke actions without an actual button press. For example, when you pressed the mute button on one screen, you want the mute button to appear selected on all other screens and vice versa.

For ease of explanation, we will setup a Virtual Button Press and Virtual Button State to power our system on and off from the TEST screen.

Select the B button. This will be a toggle button type, so click on the toggle tab to enter actions.

Now select virtual button press from the actions list.

Select the Home screen from the list, and then click on the System Power button on the HOME screen displayed on the right.

Action = Virtual Button Press			
Selected button issuing Action:	1) Select a screen		2) Select a button
	Screen 1 Home DVD		SYSTEM MUTE (), III ()
A TEST B	VCR Laptops	\searrow	НОМЕ
1 2 3 4 5	TEST		
C			VCR
6 7 8 9 0			TEST
	Screen: Home		(nothing selected)
	ок	Cancel	

Click OK

Now click into the actions box labeled High to Low and repeat the commands above to perform a Power Off command.

Virtual Button State

Now that the virtual button has been set, we want to show the state of the virtual button that has been pressed.

Click back into the Low to High box, and then click on Virtual button state command.

Now click on the HOME screen.

Click on the System Power button. By default, the Set State has been set to 1 as shown below.

Action = Virtual Button State	TEST - Barlinson	
Selected button issuing Action:	1) Select a screen	2) Select a button
	Splash <mark>Home</mark> DVD	SYSTEM MUTE ()
A TEST B	VCR Laptops	НОМЕ
1 2 3 4 5		
		VCR PC
6 7 8 9 0		TEST
	Screen: Home	Button: Button 1
	Last select a state	
	Set state to 1	
	Set state to 0	
	OK	

Click OK.

Now click into the Second Press Actions (High to Low) box, and select the Virtual Button State again.

Select home and the System Power Button again.

This time set the Set State to 0 and press the OK button.

The screen will now look like the screen below.

TEST, Screen	n 6, Button 2 Properties				
	TEST B		Fo	rmat	
		•••••		Norma	al Toggle
6			Low To High	1 2 3	VPRESS DESKTOP 2 BUTTON 1 SET STATE 1 DESKTOP 2 BUTTON 1
Screen 6, Buttor	12				
Go To Parent	Flag:				
Group None 1 2 3 4	Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assign Flags Counters	*			
	Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment		High to Low	1 2 3	VPRESS DESKTOP 2 BUTTON 1 SET STATE 0 DESKTOP 2 BUTTON 1

Wait

The FLEX can be told to wait for a predetermined period of time. This delays the execution of the list of actions in a button. You can delay the next action from 1 millisecond to 100 seconds. This can be added between any commands and is commonly used between commands to allow the device time to process the prior command before sending a new one.

Action = Wait
Wait for 10000 milliseconds
10.000 seconds
OK Cancel

Counters

First let's look at how counters are used. In this example, we will be doing a very simple command set. A counter will be set to increment by 1 each time the button is pressed, and once the counter equals 5, we will have the flex panel beep once, go to the splash screen, wait there for 2 seconds, and then return to the Home screen and zero out the counter.

Start by selecting Button 3 on the TEST screen.



Now click on the Counters action command.

Select counter

Select COUNTER 1, and then select increment. The increment can be any value you want, but for the sake of the example set the increment value to 1.

Click OK.

Next select Conditional

Select Counter again. Then select COUNTER 1 and select >= and set the value to 5.



Click on the Next> button.

Now we will add an action. Under "Add Actions to perform", select Beep.

Next we will go to the splash screen. Click on "Go To Screen" and select "Splash Screen".

We will also add a wait state. Click on wait and enter 2 seconds.

Page | 87

Now select "Go To Screen" and select "TEST".

Select "Counters" and set Counter 1 to 0 to clear the counter.

COUNTER 5 COUNTER 7 COUNTER 7 COUNTER 8 COUNTER 10 COUNTER 11 COUNTER 12 COUNTER 13 COUNTER 13 COUNTER 15 COUNTER 15 COUNTER 16 COUNTER 17 COUNTER 19 COUNTER 20 COUNTER 21 COUNTER 21 COUNTER 23
--

Click OK.

This is what the final screen should look like.

TEST, Scree	n 6, Button 3 Properties			
	TEST B	Fo	rmat	
1 6 Screen 6, Buttor Go To Parent	2 3 4 5 7 8 9 0 n 3 Flag: NO •	Press	Norma 1 2 3 4 5 6 7 8 9 10 11 12 12	COUNTER 1 +1 IF (COUNTER 1 >= 5) THEN BEEP GOTO 1 /* Splash */ WAIT 2000 GOTO 6 /* TEST */ COUNTER 1 =0 ENDIF
Group None 1 2 3 4	Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assign Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO	Hold	1	
	LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment	Release	1	

Before we can go onto defining the next set of commands for Open/Close Window and Open/ Close MsgBox, we must add Windows and Message Boxes to our project.

On the Library tree you will see +Windows. Clicking on the + will reveal the 5 different types of windows or Global windows as they were called in previous versions of the Flex Control Builder Utility. (Flex Configuration Utility)

🖨 Windows
Window empty 0
Window empty 3
- Window Template 1
- Window Template 2
Window Template 3
Message Box

Window styles empty 0 and 3 do not have a template associated with them and vary only by overall window size. Window Templates 1, 2, and 3 have various preset templates to choose from. Note that Template 3 was designed for Input Window use. For this example we will use Template 2.

As with screen template selection, merely drag and drop the window template to the Project Tree panel.

Creating a window is the same as creating a Screen, therefore windows can be renamed if desired.

Select a background, add buttons, and some label text similar to the window below.



First select any button from the Window 1 list or click the button tab under the window screen. Select a button and click the Go to action button.

Window 1, Window 1 Properties		
		Name: Window 1
		Change Name
1 2 3		Template: Window Template 2
	1	Filename: C:\Program Files (x8
		Window: 4, Button: Button 3
		Location: X = 160, Y = 48 (W = 5
Sample Text		Move: X = 230, Y = 120
		Show Grid
		Show Alternate (or Clicked
		Show Action Markers
Background Button	Label	Bar Graph Bar Graph 2 Input Win
◎ Large ◎ Solid Color	Primary:	Blue Square 🔹 🔽 Template Holes
Small O Custom	Alternate:	Red Square - Go To
Common Project	🔲 Keep Aspe	ect Ratio

Assign an action to one or all of the buttons. Add a beep command for example. Then from the action list select Open/Close Window. Select Window 1 and the close option, then OK.

Window 1, Wi	indow 1. Button 3 Properties						
1	2 3		Fo	ormat		Toggle	
Sam	ple Text		Press	1 2 3	BEEP CLOSE	GLOBAL WIND	ow 1
Window 1, Butto	on 3						
Go To Parent	Flag: NO • Send Command	*					
None	GoTo Screen Wait		Hold	1			
© 1	Beep Virtual Button Press						
◎ 2	Set Button State						
◎ 3	© 3 Assign Flags						
4 Counters Conditional							
	Open/Close Window						
	Open/Close MsgBox Send Inline Serial Message						
	Send Inline IP Command						
	Log Command				T .		

Action = Open or Close Window	-	
Selected button issuing Action:	First select a Window	2) Select an operation
1 2 3 Sample Text	Window 1	OpenClose
	OK Cancel	

The above is the process of creating and assigning actions to a Window. Now to use or bring up a window in your project you just have to chose the button you want to open the window, click on Open/Close Window from the action list, select the window, choose to open or close the window with this action, and then click OK as pictured below.

Action = Open or Close Window	the second se	
Selected button issuing Action:	First select a Window	2) Select an operation
	Window 1	
A TEST B		Open
		○ Close
6 7 8 9 0		
	OK Cancel	

TEST, Scree	en 6. Button 5 Properties	
	TEST	Format
	2 3 4 5 D 7 8 9 0	Normal Toggle
Screen 6, Butto Go To Parent Group O None O 1 O 2 O 3	In 5 Flag: NO Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assign	Tog 1
© 4	Flags Counters Conditional Open/Close Window Open/Close MsgBox	

MESSAGE BOX SET UP

Creating a message box is similar to setting up a Window.

From the Library Tree, drag and drop Message Box to the Project Tree.



Message Boxes are a simple way to convey information to the end user. The background will always be blue, and the text will always be white.

Simply type a message in the blue message box area, and then choose one of the options:

Keep Open: This will keep the message box open until another command or event closes the message box from within the project.

Close After Press: This method will display an OK button on the Flex screen when this window is opened. Touching the OK button will close the mesaage box.

Close After Time: This method will keep the message box open for a chosen period of 1 – 100 seconds.

Additionally, no matter which option is selected, you can add other actions just as you would for a Window or Screen button. Simply click on an option from the command list. For now just click on Beep.

Message Box 1 Properties	
	⊙ Keep Open = WAIT 100
	Close After Press = CLOSE GLOBAL N
This is a message box test Ok	Close After Time = CLOSE GLOBAL M 1
This is a message box test	1 2 CLOSE GLOBAL MSGBOX 1
Change Number Format	I
Send Command GoTo Screen Wait Beep Virtual Button Press	

Just as with windows, you can add a message box to any button or event simply by selecting Open/CloseMsgBox from the command list, selecting the message box, and then the open or close option.

Project Tree	Flex Exercise 3.0*	
Flex Exercise 3.0*	TEST, Screen 6, Button 6 Properties	
Project Properties		
Devices Serial Ports		
General Purpose IO	Format	
Global Banner	A TEST B	
Screens		Toggle
Splash		roggie
E TEST		
Button 1	6 7 8 9 0	
Button 2	Server 6 Butten 6	
Button 3	Screen 6, Bullon 6	
Button 5	Go To Flag:	
Button 6	Parent NO 🔻	
Button 7		
Button 8	Group Send Command	
Button 9	● None Golo Screen 点 1	
Button 10	© 1 Beep	
Button 11	Virtual Button Press	
Button 12	Set Button State	
Button 14	© 3 Assign Flags	
l abel 1	© 4 Counters	
Label 2	Conditional	
- Label 3	Open/Close Window	
Label 4	Send Inline Serial Message	
Label 5	Send Inline IP Command	
₩indows	Log Command	
Message Boxes Message Box 1	Set/Clear GPI0	
Events	Touch Lockout	
Aliases	Open Date/Time Window	
	Send To Input Window Send To Output Window	
	IR Repeater	
	Timer	
	Comment	

Action = Open or Close Message Box		
Selected button issuing Action:	First select a Message Box	2) Select an operation
MUTE I A TEST 1 2 3 4 5	<mark>Message Box 1</mark>	OpenClose
6 7 8 9 0		
	OK	

SEND INLINE SERIAL MESSAGE

Click on Send Inline Serial Message from the command window.

The Send Inline Serial Message command is used to send a command to a device "On the Fly" in two ways. First, it allows a command to be sent that is not found in the library of serial commands. Second, it allows a command that is in a Library to be edited and sent.

First select a serial port for the device.

This is very handy when controlling matrix switchers. It is impractical to have a command for every switch combination for a matrix switcher in a library. (Consider all of the possible ways to connect 8 inputs to 8 outputs, let alone 32 inputs to 32 outputs.) Instead, the library contains a single sample switch command that can be edited for the desired parameters.

It is also useful with mixers and volume controls that have discrete level commands. Again, it is impractical to place a command for every possible level in the library. Instead a sample command is in the library that can be edited with the desired parameters.

For this example we will send a command to an FSR Intelli-Tools VCM. This is a serially controlled volume control.

To Send an Inline Serial Message, follow these steps:

First select serial control Libraries and then choose the IT-VCM from theFSR Intelli Tools folder.

Now use the drop-down menu to select the serial port that the IT-VCM is connected to.

The Flex CU can automatically add a carriage return <CR> or a carriage return and line feed <CRLF> to the end of the command that you enter. You should consult the device's manual to know if a <CR> or <CRLF> are needed.

Note: If you are going to edit a command from an existing serial library, the carriage return or carriage return and line feed will already be in place and you should select No carriage return unless otherwise needed.

Make the appropriate selection under Carriage Return Handling.

Action = Send Inline Serial Me	ssage			
 None Project Serial Device Serial Control Librarie Audio Mixer - Amp AV Receiver Camera - Doc Cam Display DSP - Codec 	es Command VERSION' VOL UP' 'VOL DOWN' 'MI ITE'	Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 9 FLAG 9 FLAG 10	Serial Port 1 Pass Thru (Intelitools) Device Command Device from Flex. Pass-Thru Header.	 Carriage Return Handling None CR <0D> LF <0A> CR+LF <0D 0A>
FSR IntelliTools FSR_IT-R4S FSR_IT-R4S_FS FSR-IT_VCM_FS FSR-IT_AS411_F Lighting - Shade - Si Matrix Switcher Media Player Other Projector Scaler Scaler Set Top Box - DVR Switcher	MUTE' 'UNMUTE' 'BAUD 2400' 'BAUD 9600' 'BAUD 9200' 'BAUD 38400' 'BAUD 57600' 'VOL 0' 'VOL 0' 'VOL 10' 'VOL 20' 'VOL 20' 'VOL 30' 'VOL 40' 'VOL 50' 'VOL 63'	FLAG 10 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 20 FLAG 20 FLAG 21 FLAG 22 FLAG 23 1 milliseconds 0.001 seconds 0.001 seconds Buffer BUF 1 BUF 2 BUF 3 BUF 4	FSR-IT_VCM_FSR 'VOL UP' VOL +30<0D>	

Pass-Through Command

This is a feature on all FSR Intelli-Tools modules as well as the PathFinder matrix switchers. These devices have an inbound serial port, like any other serial device, but they also contain a second pass-through port that can be connected to another device. This allows 1 serial port on the Flex control system to control multiple devices.

If you are going to use a device with serial pass-through capabilities and you intend to pass commands through to an additional device, check the Pass Thru box. If you are only going to talk to the device itself and not pass anything through, do not check this box.



If you check this box, you will need to know the order in which the devices are connected. You will also need to know the pass-through header. If you are using FSR devices, the header is supplied for you.

Action = Send Inline Serial Message	
Action = Send Inline Serial Message None Project Serial Devices Serial Control Libraries Command Command Kalon FLAG 3 FLAG 4 FLAG 7 FLAG 8 FLAG 7 FLAG 10 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 9 FLAG 24 I milliseconds 0.001 seconds 0.001 secon	Serial Port Pass Thru (Intelitools) Device Command Device from Flex: 3rd ss-Thru Header: {\S\S} CR+LF < 0D 0A> CR+LF < 0D 0A> Image: Carriage Return Handling Image: None Image: CR < 0D> Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D Image: CR < 0D

Action = Send Inline Serial Me	ssage	_		
 None Project Serial Device Serial Control Librarie Audio Mixer - Amp AV Receiver Camera & Doc Cam 	rs Ps Command 'VERSION'	Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 6 FLAG 7	Serial Port 2 Pass Thru (Intelitools) Device Command Device from Flex: 3rd • Pass-Thru Header: {\S\S}	Carriage Return Handling None CR <0D> LF <0A> CR+LF <0D 0A>
DVD DVD & VCR FSR IntelliTools FSR-IT-AS4111 FSR-IT-AS4111 FSR-IT-AS411 FSR-IT-AS411 FSR-IT-AS411 FSR-IT-AS411 FSR-IT-AS4 Matrix Switcher Other Projector Scaler Switcher Scaler Switcher TV - Monitor TV - Monitor TV Tuner-DVR VCR	'VOL UP' 'VOL DOWN' 'MUTE' 'BAUD 2400' 'BAUD 4800' 'BAUD 9600' 'BAUD 9600' 'BAUD 38400' 'BAUD 57600' 'VOL 0' 'VOL 0' 'VOL 0' 'VOL 20' 'VOL 30' 'VOL 30' 'VOL 40' 'VOL 63'	FLAG 8 FLAG 9 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 17 FLAG 18 FLAG 20 FLAG 21 FLAG 22 FLAG 21 FLAG 22 FLAG 22 FLAG 24 1 milliseconds 0.001 seconds 0.001 seconds	FSR-IT_VCM VOL UP' VOL +30\c0D>	ancel

To the right, you will see the list of commands contained in the library. Select the Volume Up command.

In the box under Enter Serial Message Here... you will see the command VOL+<0D>. This command increments the volume by 1 dB. Insteadwe want to set the volume level to a known comfortable level of +30. Place your cursor in the box and change the command to read VOL +30<0D> as shown above.

When you click OK, this new command will be added to the list of actions under a button.

Wait for response and Flags

When a response is received it will be noted in a FLAG specified by the user. There is also an option to specify an amount of time to wait for a response. The FLAG will allow the user to subsequently act on the response.

Action = Send Inline Serial Mes	sage	
Action = Send Inline Serial Mes	s s s s command 'VERSION' 'VOL UP' 'VOL DOWN' 'WUTE' 'UNMUTE' 'UNMUTE' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2400' 'BAUD 2600' 'BAUD 57600' 'VOL 0' 'VOL 10'	 ✓ Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 9 FLAG 10 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 20 FLAG 21
TV Tuner-DVR	'VOL 20' 'VOL 30' 'VOL 40' 'VOL 50'	FLAG 22 FLAG 23 FLAG 24 1 milliseconds
	VOL 05	0.001 seconds

Send Inline IP Command

Send Command GoTo Screen Wait Beep Virtual Button Press Set Button State Assian Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Comment

IP Commands are similar in principle to the Inline Serial commands except for the addition of the IP address and port.

Inline commands for an existing Ethernet Device provide the capability to send a command directly to an Ethernet device currently defined within the project.

Action = Send Inline IP Command		
Project IP Devices Ethernet Device Libraries Inline Flex Command Actio Close Device Close Address	m FLAG 2 FLAG 2 FLAG 3 FLAG 4 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 7 FLAG 8	Carriage Return Handling
INTERNAL CON FR PR VIC VIC VIC VIC VIC VIC VIC VIC VIC VIC	IIII IIII FLAG 9 IONT PANEL LOCK FLAG 10 IONT PANEL UNLOK FLAG 11 IESET RECALL' FLAG 12 IEGO CONNECT' FLAG 13 IDIO CONNECT' FLAG 14 IDIO DISCONNECT' FLAG 15 IDIO DISCONNECT' FLAG 18 ILUME UP' FLAG 18 ILUME DOWN' FLAG 21 JTE OFF' FLAG 23 FLAG 24 1 IIII BISECONDES BUF 2 BUF 3 BUF 3 BUF 4 BUF 4 BUF 5 BUF 6	OK Cancel

Inline commands for another Ethernet Device provide the capability to send a command directly to an Ethernet device which is not currently within the project but has a known IP address and port. Here you can also select the protocol used for the Ethernet Device as well as the wait for response.

Action = Send Inline IP Comma	and	_	_	×
 Project IP Devices Ethernet Device Libra Inline Flex Command Close Device Close Address 	aries Action	Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 6 FLAG 7	IP Address: 192 - 168 - 005 - 070 IP Port 23 UDP:	Carriage Return Handling None CR <0D> LF <0A> CR+LF <0D 0A>
B- Audio Mixer - Amp AV Receiver Camera & Doc Cam DVD DVD & VCR FSR IntelliTools Matrix Switcher Other Projector Svitcher TV - Monitor TV - Monitor VCR VCR VCR	Command	FLAG 8 FLAG 9 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 16 FLAG 17 FLAG 18 FLAG 20 FLAG 21 FLAG 21 FLAG 22 FLAG 23 FLAG 24 1 milliseconds 0.001 seconds 0.001 seconds BUF 1 BUF 2 BUF 3 BUF 4 BUF 5 BUF 6	OK Ca	Incel

Inline Flex Command Action provides the ability to address any other Ethernet connected Flex panel and perform actions directly associated with that Flex panel's button commands. Use of the virtual button press and state commands only require knowledge of the screen and button numbers on the other Flex panel's project as shown below.

Action = Send Inline IP Command		×
Action = Send Inline IP Command Project IP Devices Ethernet Device Libraries Inline Flex Command Action Close Device Close Address GoTo Screen Wait Beep Vintual Button Press Vintual Button State Flags Counters Send Inline Serial Message Send Email Alert Message Log Command Set/Clear GPI0 LCD Brightness/Contrast	Wait FLAG 2 FLAG 3 FLAG 4 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 9 FLAG 10 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 18 FLAG 18 FLAG 19 FLAG 20	X
	FLAG 20 FLAG 21 FLAG 22 FLAG 23 FLAG 24 1 milliseconds 0.001 seconds Buffer BUF 2 BUF 3 BUF 4 BUF 5 BUF 6	*

Action = Virtual Button Press		
Selected button issuing Action:	1) Select a screen 1 2 3 4 5 6 7 8 9 10 11 12	2) Select a button INCLUDE 1 INCLUDE 2 INCLUDE 3 INCLUDE 4 INCLUDE 5 BUTTON 1 BUTTON 2 BUTTON 3 BUTTON 4 BUTTON 5 BUTTON 6 BUTTON 7 BUTTON 8 BUTTON 8 BUTTON 9
	Screen: 2	BUTTON 1
	OK	

Close Device IP Connection (Project devices) allows for the closing of the TCP-IP connection should it require an actual close command. (TCP-IP Persistent connections only).

Action = Send Inline IP Command		×
 Project IP Devices Ethemet Device Libraries Inline Flex Command Action Close Device Close Address 	Wait IP Address: 192 • 168 • 005 • 070 FLAG 2 FLAG 3 IP Port 23 FLAG 6 FLAG 7 ILAG 8 IP Port 23 FLAG 10 FLAG 10 IP Port 23 IP Port 23 FLAG 10 FLAG 11 FLAG 12 IP Port 23 IP Port 23 FLAG 16 FLAG 17 FLAG 18 FLAG 13 FLAG 18 IP Port 23 FLAG 18 FLAG 18 FLAG 18 FLAG 19 IP Port 23 FLAG 18 FLAG 18 FLAG 19 IP Port IP	*


Log Command

Log Commands can be added for debugging and programming purposes. These log commands can be revealed when you use the CONNECT command within the Flex Control Builder. This will be discussed later.



Action = Log C	Command	
Field 1:	Button 4	(8)
Field 2:	Was pressed at:	(15)
	OK Cancel	

SET/Clear GPIO

The Flex LT-200 and LT-300 have four General Purpose I/O ports. Each port can be set as Open, Close, or Pulsed. These are TTL level low current ports and should only be used with compatable devices. If higher voltage and / or current switching is required, the GPIO ports should be used to control compatible relays such as FSR K10-D relays. When this action is selected the following window appears:

By default, all ports are set to Output. To change port settings, click the **+General Purpose** in the Project Tree and select a port to change.

Project Tree	Flex Exercise 2.0					
- Flex Exercise 2.0 Project Properties	General Purpose IO 1 Properties					
Project Properues Devices Serial Ports General Purpose GP IO 1 GP IO 2	Note:					
GP IO 3	Direction					
Global Banner Global Banner Screens Windows Message Boxes Events Aliases Email Aliases	Input Polled Input goes from low to high:					
	Interrupt Assign Actions Input goes from high to low:					
	◯ Output					

The port can be set as an input in either Polled or Interrupt. To set actions for an interrupt, select Interrupt, and then click on Assign Actions.

Actions = GPIO 1	100 C	A COLORED IN COLORED INCOLORED IN COLORED INCOLORED IN COLORED INCOLORED IN	
Send Command GoTo Screen Wait Beep Virtual Button Press Virtual Button State Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Messae Send Inline IP Command	Low To High		
Send Email Alert Messag Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window	High To Low	< >>	
		<u>ب</u>	
	Format	OK Cancel	

Actions can be set in the Low to High and the High to Low action blocks.

Note: Best practice is to use a relay such as FSR's K10-D to interface the contactors. Check the hardware manual and white paper on the FSR Web Page for further details.

Adding a GPIO command to a button:

Generally speaking these will be a toggle button style so for this exercise select the toggle tab.

Select a button and then Set/Clear GPIO from the actions list.



Click on the appropriate GPIO; select either open, close, or pulse. Then click OK.







LCD Brightness/ Contrast Control

From the drop down boxes, select brightness levels from 60 (full brightness) to 0 (black screen) and LCD Contrast from 25 to 1. Additionally, the "Fade to new setting" may be checked to allow a gradual transition to the new setting.

Action = LCD Brightness / Contrast
Set LCD Brightness to 60 Fade to new setting 60 is the default setting, optimum brightness
Set LCD Contrast to 25 25 is the default setting, optimum contrast
OK Cancel

Caution: It is not recommended that you set the brightness to 0 unless it is a timed event, or another event will trigger a visible brightness level.

In this project, we will set the brightness demonstration on a button. However, a more practical use of brightness control would be to utilize a Window and set each button there to different brightness levels.

Now select a button to add the brightness control.



Here select 05 from the drop down box and check the fade to new setting box.

Action = LCD Brightness / Con	trast	
Set LCD Brightness to 60 is the default	05 ▼ setting, optimum brightness	Fade to new setting
Set LCD Contrast to 25 is the default	25 ▼ setting, optimum contrast	
	OK	

Add a wait of 1 second and then change the Brightness back to 60.

The final command set will look like this:

Press	1 2 3 4 5 6 7	LCD BRIGHTNESS = 60% FADE LCD CONTRAST = 25% WAIT 1000 LCD BRIGHTNESS = 05% FADE LCD CONTRAST = 25%
	7	

Touch lockout

The touch lockout command disables the touchscreen for a predetermined length of time. Commands will continue to execute during the lockout period. This is useful when you don't want the control system to process any button presses while waiting for something else to happen such as waiting for the projector to warm up.

Select the desired function. **On, Off,** or **Timed** and then enter the length of time. Click on OK. The set time is displayed in the action window. You may further refine the length of time by editing the number of milliseconds if you wish.

Action = Touch Lockout									
 On = Turns on Touch Lockout (Stays locked until OFF received) 									
Off = Turns off Touch Lockout (Unlocks)									
Timed = Turns off Touch Lockout after requested time has passed									
Requested Time									
500 milliseconds									
0.500 seconds									
0.00833 minutes									

Norm	al	Toggle					
Press	1 2	TOUCH LOCKOUT 500					

Open Date/Time Window

The Date / Time Window is usefull in projects that have timed events. This command allows the end user to set the date and time on their Flex Panel. This can be used foraccuratly resetting the time during Dalight Savings Time for example. The user will simply press a button on the Flex Panel, and a window will open allowing the user to set



Flex Connect

Connecting to the Flex unit and utility functions including cloning are performed through the Flex Connect button found in the tool bar as shown below.

New	Open	Error Check	Save	Save As	Options	Control Libraries	Flex Connect	Update & About
-----	------	-------------	------	---------	---------	----------------------	-----------------	-------------------

Flex Connect		×						
Serial Port Ethermet 2 192 168 005 076	Flex-LT VER Application = 02.70 H/W Rev. C	Close Log						
Ping Machine Remote	•	 Status 						
Connect	3	© On © Off						
Status Disconnect Group, Syn Master	10	Clear						
9	4 Refresh 06:39:32a Update from Fields Update from Picture from Fields Update from Fields	e Update from Time Server						
IDs	IP Address Related							
Id1: Building 1 Id2: Engineering	IP Addr. 192 168 5 76 Ids 5 MAC Addr. 0x00 0x05 0x0C 0x0D 0x0E 0x0F 0x00	Update IP Fields						
Id3: 3rd Floor	Subnet 255 . 255 . 240 . 0	Class C						
Id4: Conference Room A	Gateway: 192 . 168 . 5 . 50 Class B	Custom						
Project Transfer Update Firmware								
Download Project 7 Upload F	oject Select Firmware 8 Download Firmwa	re						
C:\Users\Public\Documents\FSR\Flex Control Builder 3.0	rojects\Flex Exercise (not selected)							

The numbered areas above are as follows:

- 1: Serial com port selection
- 2: Ethernet connect. Type the IP address of Flex Panel.
- 3: Once connected, this area shows the Firmware and hardware version of the Flex panel.

4: Date and Time can be updated. The refresh button will show current date and time of the panel. If fields are blank then the flex panel does not have a date and time set. Either click on Update from PC, manually type it into the fields, and click on Update from fields or update from the time server if one has been designated in the options.

5: Shows current IP address of the flex panel. Type the new address, subnet, and Gateway and click Update to change the IP address of flex panel.

6: Shows the current Identification fields which can be populated for each Flex panel. Identification fields are not mandatory; however, they can be useful to track Flex panels where multiple panels are installed. Fill in the fields and click Update.

7: To download or upload a project to or from a Flex Panel, select the Flex Connect.. button on the tool bar at the top of the project screen. Connect to the desired Flex either through manually inputting the IP address or through a serial port.

Next under the Project Transfer section select either Download, to download current project to the Flex, or Upload, if you are loading a project directly from a Flex panel to the Flex Control Builder.

Download Project	
	C:\Users\Public\Documents\FSR\Flex Control Builder\Projects\Flex Exercise 3.0
	Select Project Start Download Cancel

8: Updating Firmware. New firmware should be copied into the Firmware folder. Click Select Firmware, choose the version from the listing, click OK, and then click download Firmware.

9: Flex Panel Syncronization process. Click the Group Sync Master button.

10: Send Action will execute the option checked off above for the LOG commands.

Page | 121

11: Checking off View log, followed by a Send Action button press will reveal any log commands that have been entered into the flex unit since it was booted. Note: rebooting will automatically clear the log file.

Enable/ Disable Sync.

A word about synchronization. Syncing panels allows a single project to be loaded into more than one flex panel and have actions on all synced panels work and display uniformly. As a dual light switch works in a large room, so may a set of Flex panels. Room control can be driven from any of the panels within the same synchronized group. Please note: The same project must be loaded into each of the synchronized panels to perform properly. Subtle differences such as background and button colors may be different, but the underlying commands must be the same.

You are given the option to connect via Serial Port or Ethernet. You might be synchronizing several Flex LT panels; therefore, it is faster to connect via Ethernet since all the panels should be networked already.

To enable or disable Sync, select Group, Sync, Master from the connect page.



The Flex panel which you connected to will automatically fill in the IP address and ID fields.

Click into the Group field. You must now enter a Group number of your choosing from 1-100 that each Flex-LT panel will share. Then click on Update Group. Note your group number since you will repeat this set of actions for each Flex-LT panel you synchronize within the same Group.

Click the Add button, and enter the IP address of the next Flex-LT panel you want to have in the synchronized group. Click Update Group again.

Repeat this for all Flex panels to be added.

F	ex Gro	up, Syn	c, Mast	er										
	IP 192	IP 2 168	IP 3 5	IP 4 76	Group 95	State Connected	Sync	Master	ID 1 Building 1	ID 2 Engineering	ID 3 3rd Floor	ID 4 Conference	e Room A	Add
														Delete
														Refresh
														Update Group
														Reset
														Sync
														Cancel Sync
														Master
											L,	;		Group Reset
														Cancel Master
	Ok											*	Refresh All	ОК

FI	ex Grou	ıp, Syn	c, Mast	ter										×
	IP	IP 2	IP 3	IP 4	Group	State	Sync	Master	ID 1	ID 2	ID 3	ID 4		
	192	168	5	76	95	Connected	Cync	Master	Building 1	Engineering	3rd Floor	Conferenc	e Room A	Add
	192	168	5	74	95	Connected			Building 1	Marketing	3rd Floor	Conferenc	e Room B	Delete
														Refresh
														Update Group
														Reset
														Sync
														Cancel Sync
										A				Master
														Group Reset
														Cancel Master
	Ok											* *	Refresh All	ОК

Click to highlight one of the Flex panels; then click on the Sync button. The Flex panel will automatically reboot after 10 seconds. Click onto each of the other panels, and click the Sync button for each of them. Again, they too will reboot after 10 seconds.

Once all have booted up again, select any of the Flex panels you wish to be designated as the Master, and click the Master button.

At this point, all Flex panels are synchronized. To undo synchronization, get back into the Group Sync Master. Add each Flex panel IP, then click the Refresh all Button.

Start by clicking on the Flex panel that was designated as Master, and click the Cancel Master Button.

Now select one panel at a time, and click the Cancel Sync for each.

You may clear out the Group and click Group Update; however, leaving the group number will not have any impact on the independent function of a Flex panel, so deleting it is not necessary.

Note: Each time a project is sent to a Flex-LT panel or is reset by any means, all the panels in the synchronized group will reset in succession. All projects must be the same for each panel in the synchronized group.

The Refresh All button will update the synchronization status of all Flex Panels in your listing.

The Reset button will reboot the Flex panel.

Group Reset will reboot all Flex panels within the same group.

Log Command while connected through the Connect Window of Flex Control Builder:

Once a connection has been established, the Log file can be viewed.

Should a log command be given to a button action as was discussed earlier in this exercise, it can be viewed using the Flex Control Builder. Select the View option, then click on Send Action.

Events

Using the scheduler

New	Open	Error Check	Save	Save As	Options	Control Libraries	Flex Connect	Update About.	8						
ОК	ibrary Tree		Project	Tree	Flex Exe	ercise 3.0*									
ETHERNE IR DEVICE SERIAL DE	T DEVICES S VICES	-	Flex Exercise 3. Project Prop Devices Serial Ports	.0* erties	Event P Na	Event Properties Name: Event 1 Assign Actions									
Screens Windows Message E Event	lox		 General Purp Global Banne Screens Windows Message Box 	oose IO er xes	• No	ne	\ \	1							
Alias	■ Alias ■ Alias ■ Alias					1 hour 0	min 0 se	c							
					On	e Shot 10 seco	onds								
					© On 11:	ce 18 AM 👻	3/ 1/2018 🔲								
					© Pe	riodic 1 hour 0	min								
					© - Da	ily 18 AM 👘	Sun 🗌 Mo	n 🗌 Tu	ie 🗌 Wed 🗌	Thu 🗌 F	ri 🗌 Sat				
					© We	ekly 18 AM 👻 🖲	Sun O Mor	n O Tu	e OWed O	Thu 🔿 Fri	⊖ Sat				

The FLEX has a real-time clock and event timers built into the system. The event timers can be used to perform any actions that a button can perform.

Drag and drop an Event from the Library Tree to the Project Tree. Select the event (Event1) from the project tree. From here we can set one of the many timed events types; after which, actions can be assigned to the event as you would assign an action to a button command.

Select scheduler Event 1, and click on the event type you wish to schedule.

You have several options for when an event can occur. They are: Timed After last Press, One Shot, Once, Periodic, Daily, and Weekly. You also have the option of deleting an event by selecting the None option.

For this example let's set up a daily event. The event is to power down the projector at 5:30 PM every weekday.

Create an event by dragging Event from the Library Tree to the Project Tree. Now select the event on the Project Tree. Select the daily option, and complete the selection for time and

days of the week.

New	Open	Error Check	Save	Save As	Options	C	Control praries	Flex Connect	Upda Abor	ite & ut							
ОК					_						-						
	Library Tree		Project	Tree	Flex	Flex Exercise 3.0*											
	T DEVICES	E	Flex Exercise 3.	O*	Ever	nt Properti	es										
SERIAL DEVICES Foreial Ports Serial Ports						Name: Ev	ent 1			4	Assign Action	IS					
Screens General Purpose IO Windows Global Banner Screens Screens Windows						None			1								
- Event ⊕ Alias	0	Timed (afte	er last press) Ir 0 r	nin 0	sec												
					0	One Shot 10	secon	ds									
					0	Once 11:18 AM	× 3/	1/2018									
					©	Periodic 1 hou	ır <mark>0</mark> r	nin									
					۲	Daily 5:30 PM	.	Sun 🗹 N	1on 🔽	Tue	☑ Wed	🔽 Thu	🗷 Fri	Sat			
						Weekly 11:18 AM	<u>*</u> @ 5	un ⊖ M	on O T	Tue	◯ Wed	⊙ Thu	⊖ Fri () Sat			

Click on Assign Actions then 'Send Command'.

Select Projector, and then the Power Off Command from the list.

Selected button issuing Action:	1) Select a device:	2) Select a command:		
Event 1	Projector DVD/VCR Matrix	Command 'POWER ON' 'AUDIO MUTE OFF' 'AUDIO MUTE OFF' 'VOLUME UP' 'VOLUME DOWN' 'PC1 INPUT' 'PC2 INPUT' 'COMPONENT INPUT' 'S-VIDEO INPUT' 'VIDEO INPUT' 'VIDEO BLANK ON' 'VIDEO BLANK OFF'	Details CMD 'POWER ON' ' <be 0:<br="" ef="">CMD 'POWER OFF '<be 0:<br="" ef="">CMD 'AUDIO MUTE OFF '<be CMD 'AUDIO MUTE OFF '<be CMD 'VOLUME UP' '<be 0:<br="" ef="">CMD 'PC1 INPUT' '<be 0:<br="" ef="">CMD 'PC1 INPUT' '<be 0:<br="" ef="">CMD 'S-VIDEO INPUT' '<be ef<br="">CMD 'VIDEO INPUT' '<be ef<br="">CMD 'VIDEO BLANK ON' '<be CMD 'VIDEO BLANK OFF' '<b< th=""><th>■ Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 10 FLAG 11 FLAG 12 FLAG 12 FLAG 13 FLAG 16 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 21 FLAG 21 FLAG 22 FLAG 23</th></b<></be </be></be></be></be></be></be </be </be></be>	■ Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 10 FLAG 11 FLAG 12 FLAG 12 FLAG 13 FLAG 16 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 21 FLAG 21 FLAG 22 FLAG 23
	ОК	Cancel		BUF 1 BUF 2 BUF 3 BUF 4

Actions = Event 1		
	Format	*
Send Command Go To Screen Wait Beep Virtual Button Press Set Button State Assign Flags Counters Conditional Open/Close Window Open/Close MsgBox Send Inline Serial Message Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Output Window IR Repeater Timer Timer	SER 1 'Projector' 'POWER OFF'	
	OK 🞝 Cancel	

**** Note: You should only use this type of function when there are discreet Power On and Power Off commands. Typically, serial controlled devices have these commands, but IR controlled devices may not. In this particular project had we selected a DVD/VCR which does not have a discreet power off command, itmight just end up turning the unit on at 5:30PM.

Using Power up actions

The Flex has the option of executing actions when power is applied to the panel. In the event of a power outage, the Flex can perform a series of actions to put the components in sync with the control system.

In this example when power is applied to the Flex, we want to make sure that the Projector is off. This will ensure that the projector is turned on only when the System Power button is pressed.

Click on Project Properties in the Project Tree.



Click the **Assign Actions** button.

Selected button issuing Action:	1) Select a device:	2) Select a command:		
Selected button issuing Action: Project Power Cycle or Re	1) Select a device: Projector DVD/VCR Matrix	2) Select a command: Command 'POWER OFF' 'AUDIO MUTE ON' 'AUDIO MUTE OFF' 'VOLUME UP' 'VOLUME UP' 'VOLUME UP' 'VOLUME UP' 'PC1 INPUT' 'COMPONENT INPUT' 'COMPONENT INPUT' 'VIDEO INPUT' 'VIDEO BLANK ON' 'VIDEO BLANK OFF'	Details CMD 'POWER ON' ' <be 0<br="" ef="">CMD 'POWER OFF' '<be 0<br="" ef="">CMD 'AUDIO MUTE ON' '<be CMD 'AUDIO MUTE OFF' '<be CMD 'VOLUME UP' '<be 03<br="" ef="">CMD 'VOLUME DOWN' '<be CMD 'PC1 INPUT' '<be 03<br="" ef="">CMD 'PC2 INPUT' '<be 03<br="" ef="">CMD 'COMPONENT INPUT'' CMD 'S-VIDEO INPUT' '<be ef<br="">CMD 'VIDEO INPUT''<be ef<br="">CMD 'VIDEO INPUT''<be ef<br="">CMD 'VIDEO BLANK ON''<be CMD 'VIDEO BLANK OFF' '<b< td=""><td>Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 20 FLAG 21 FLAG 23</td></b<></be </be></be></be></be></be></be </be></be </be </be></be>	Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 14 FLAG 15 FLAG 16 FLAG 17 FLAG 18 FLAG 19 FLAG 20 FLAG 21 FLAG 23
		(milliseconds 0.001 seconds Buffer BUF 1 BUF 2 BUF 3

Note: Since we have defined our volume setting, counter 8 is set to 0.

From here, you can assign any set of actions just like any other button.

Actions = Project Cycle or Reset	and the second	
Forma	t	*
Send Command * 1 GoTo Screen Wait Beep Wait Beep Virtual Button Press Set Button State Assign Flags Counters Conditional Open/Close MsgBox Send Inline Serial Message Send Inline Serial Message Send Inline IP Command Log Command Set/Clear GPIO LCD Brightness/Contrast Touch Lockout Open Date/Time Window Send To Input Window Send To Output Window IR Repeater Timer Timer Comment * *	SER 1 'Projector' 'POWER OFF'	
	OK Cancel	łł.

Deleting Devices

To delete a device from a project is a simple task and will give you the option to delete all associated commands that are associated with that device.

Right click on the DVD/VCR device to delete, and select Delete Item. A confirmation window will appear as below.



Click OK and the following will appear.

Click 'OK' to delete all the following lines from	n the va	rious Actions in this project that use this Device	
Item	Line	Action]
Screen: Home, Button 2, Press	1	IR 1,1 'DVD/VCR' 'MODE DVD'	
Screen: Home, Button 3, Press	1	IR 1,1 'DVD/VCR' 'MODE VCR'	Delete
Screen: DVD, Button 1, Press	1	IR 1,1 'DVD/VCR' 'PLAY'	Action Lines
Screen: DVD, Button 2, Press	1	IR 1,1 'DVD/VCR' 'STOP'	
Screen: DVD, Button 3, Press	1	IR 1,1 'DVD/VCR' 'PAUSE'	
Screen: DVD, Button 4, Press	1	IR 1,1 'DVD/VCR' 'REW'	
Screen: DVD, Button 5, Press	1	IR 1,1 'DVD/VCR' 'FF'	
Screen: DVD, Button 6, Press	1	IR 1,1 'DVD/VCR' 'CH+'	
Screen: DVD, Button 7, Press	1	IR 1,1 'DVD/VCR' 'CH-'	Delete
Screen: VCR, Button 1, Press	1	IR 1,1 'DVD/VCR' 'PLAY'	Device but
Screen: VCR, Button 2, Press	1	IR 1,1 'DVD/VCR' 'PAUSE'	Ignore
Screen: VCR, Button 3, Press	1	IR 1,1 'DVD/VCR' 'STOP'	
Screen: VCR, Button 4, Press	1	IR 1,1 'DVD/VCR' 'FF'	
Screen: VCR, Button 5, Press	1	IR 1,1 'DVD/VCR' 'REW'	
			Cancel
		<u> </u>	
		N	

Note the listing of all the places where this device is used within the project and the options to dDelete Device and All Actions or Delete Device but Ignore Actions. We will not actually delete the device in this exercise so click cancel.

RECENT PROJECTS

Right clicking anywhere within a project under the Project Tree will reveal another set of menu options. ADF options are used to look at the details within a project and are usually left alone unless calling Customer Support and identifying specific command problems. However a very useful option is the Recent Projects command. Clicking it will reveal the last 4 projects you have worked on and saved. A simple click on one of them will open that project.

New Ope	New Open Error Check Save Save As		O	otio	1S	Control Libraries	Flex Connect	Update & About				
OK Library Tr ETHERNET DEVICE IR DEVICES SERIAL DEVICES Windows Message Box Event Alias	e SS		Pri Flex Exercise - Project P - Devices - Serial Pc - General I - Global B - Sci - Wir - Me - Ev - Vir - Alia	oject Tree se 3.0* Properties Purpose IO anner New Open View Original View Modifiec View Adf Diffe Save Save As Close Copy Paste Delete Item Flex Connect Recent Project	Ctrl+N Ctrl+O ADF i ADF rences Ctrl+S Ctrl+S Ctrl+V Del		Fle Sci # 1 2 3 4 5 6	x Exercise eens Name Splash Home DVD VCR Laptops TEST 1 = CAU 2 = CAU 3 = CAU 4 = CAU	3.0* Banner Typ None Full Full Full Full Full Full Full Sers\Public\Dc Sers\Publi	e pocuments\FSR\Fley pocuments\FSR\Fley pocuments\FSR\Fley pocuments\FSR\Fley pocuments\FSR\Fley	< Control Builder\ < Control Builder\ < Control Builder\ < Control Builder\	Projects\Fle Projects\We Projects\Lar

CONTROL Libraries

Control libraries can be updated from FSR through the ABOUT screen. All library files created by FSR will have the suffix FSR in the library file. In order to modify any of these libraries, you must first do a Sys Copy from the Library Create screen. New Libraries may be created by clicking the new button. Also Libraries you have created maybe edited by clicking the Existing button. For this exercise we will add to an existing FSR library file.

For IR commands to be learned, a learner must be attached to the computer prior to launching the Flex Control Builder.

Library Create
Connection
New Existing Sys Copy
Port: COM9 Connect
label1
label2
label1
New
Device type:
▼
Manufacturer:
Model:
Filename:
Create

Here I copied the Panasonic library used in this demonstration project. All of the commands within this library are shown on the right. To changeor delete any commands, simply move your curser over the command, copy, or delete it. To copy and modify, move your curser over the command, copy, then paste it into the command window and give the new command a name. Here I copied one of the commands and pasted into the window.

Utilizing a learner along with the device IR remote, you can simply create a new library file and add as many of the remote commands as you find necessary for the project. Simply type a command into the NAME box, then aim the remote at the learner, press the desired command button, and the code will appear in the window. Once satasfied, click on the Append button. Add additional

commands if necessary and once complete, click on the save or save as button and the library will be available in the control devices list.

ny Creste		
Connection		- 1 51
8 IR C Serial Port C Ethernet	Name: New command	File
New Existing Sys Copy	CMD 'VCR TV' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0000F 000F 0	 ICMD 'PWR' 0000 0073 0000 0032 0080 003E 0010 000F 0010 002E 0010 000F 0010 000F CMD 'WRNU' '0000 0073 0000 0032 0080 003F 0010 000E 0010 002E 0010 000E 0010 000E CMD 'WRNU' '0000 0073 0000 0032 0080 003F 0010 000E 0010 002E 0010 000E 0010 000E
Port COM9 - Connect	000F 0010 000F 0010 000F 0010 000F 0010 002E 0010 000F 0010 000F 0010 002E 0010 000F 0	4 CMD 'DN' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F 001
label1	002E 0010 000F 0010 000F 0010 000F 0010 002E 0010 002E 0010 000F 0010 000F 0010 002E 0010 000F 0010 002E 0010 002E	6 CMD 'RT' '0000 0073 0000 0032 0080 0035 0010 000F 0010 002E 0010 000F 0010 000F 0010
label2		7 CMD 'ENTER' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F CMD IN AVERAGE 0000 0073 0000 0032 0080 003F 0010 000F 0010 000F 0010 000F 0010 000F
label1		9 CMD 'STOP' '0000 0073 0000 0032 0080 003E 0010 000F 0010 002F 0010 000F 0010 000F
Open Existing		10 CMD 'PAUSE' 10000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F
Device type:		12 CMD 'FF' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F 0010
Media Player		13 CMD 'CH-' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002F 0010 000F 0010 000F 00
Filename:		15 CMD 'RECORD' '0000 0073 0000 0032 0080 003E 0010 000F 0010 002F 0010 000F
PANASONIC_DVD-VCR		16 CMD 'CHAN*' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002F 0010 000F 0010 000F
Manufacturer.		18 CMD '1' '0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F 0010
PANASONIC		19 CMD '2' '0000 0073 0000 0032 0080 003E 0010 000F 0010 002F 0010 000F 0010 000F 0010
Model		21 CMD '4' '0000 0073 0000 0032 0080 003E 0010 000F 0010 002F 0010 000F 0010 000F 0010
DVD-VCR COMBO		22 CMD '5' '0000 0073 0000 0032 0080 003F 0010 000E 0010 002E 0010 000E 0010 000E 0010
Edit Cancel		24 CMD 7* 0000 0073 0000 0032 0080 003E 0010 000F 0010 002E 0010 000F 0010 25 CMD 7* 0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F 0010 25 CMD 78* 0000 0073 0000 0032 0080 003F 0010 000F 0010 002E 0010 000F 0010 000F 0010
Attributes		26 CMD '9' '0000 0073 0000 0032 0080 003E 0010 000F 0010 002E 0010 000F 0010 000F 0010 27 CMD '0' '0000 0073 0000 0032 0080 003E 0010 000E 0010 002E 0010 000E 0010
Notes:		28 CMD 'MODE DVD' '0000 0073 0000 0032 0080 003D 0010 000E 0010 002F 0010 000E 0010
		Append Standard Cub C Atty 1000 0073 0000 0032 0000 0035 0010 000F 0010 002E 0010 000F 0010 000 Standard Cub C Atty Panding Standard Sta

IP and Serial libraries can be modified in the same manner as IR by using copy and pasting or typing the commands in directly.

Input Windows

Input windows can be created for various control input functions such as dialers, pin security, or lighting control.

Add a new device to the project. Add the **Polycom-HDX Button Emulation_FSR** to the available devices for this project, and rename it Dialer.

For this example, select Window Template 3, drag it to the Project Tree, and then rename it Input Device.

New	Open	Error Check	Save	Save A	s Options	Control Libraries	Flex Connect	Update & About									A
OK																	Memo
	Lit	orary Tree			Project Tree		Flex Exercise 3.0	r								Images, Font	ts, Aliases, Device
(i) ETHERNE (i) Audio M (i) Audi	T DEVICES Storr - Anp ever - Doc Cam dode: - Shade - Screen witcher f r gayer or - Box - DVR f - Campia - Campione - Camp				Fix Exercies 3.0" Project Properti Projector Projecor Projector Projector Projector Projector Projecto	e 10	Input Device. \ Background	Window 2 Prop	erties	bel	N Fi	ame: Input Device Ch emplate: Window lename: C.\Progr Move: X = 237, ' Show Alternat Bar Graph 2	o ang Name and N Template 3 ann Files (x89)(FSF Y - 113 a (or Clicked or Stu Input Window	umber NFlex Control Build ate 1) Output Window	lef(Windows - new	Window Template	3.bmp Final

Select a background and add buttons.

1	ABC 2	3
GHI 4	JKL 5	6 Clear Last
Pors 7	ти у 8	9 Clear All
*	0	# Send

Then select the Input Window tab and drag and drop an input window in place. Refer to screen below for options and layout of buttons.

Input Device, Window	2 Properties								
	5 Clear Last Clear All F Send		Na Te Fik W Lo	me: Input Device Cha mplate: Windows name: C: (Progra ndow: 15, InputW cation: X = 28, Y + Move: X = 200, Y Move: X = 200, Y	e inge Name and Nu Template 3 am Files (x86)/FSR indow: Input/Windo = 9 (W = 180, H = 2 = 237	umber AFlex Control Build w_1_Win_15 8)	er(Windows - new	Window Template :	3.bmp
Background Bi	utton Lab	el	Bar Graph	Bar Graph 2	Input Window	Output Window	Clock & Timer	Multiple Select	Final
New input window:]		Templa	ect				
Name: Inputwindo	0W_1_VVIn_15		© 001	Col	or				
Rename	e BUF 1	•	U Sia						
Justify			© Cus	tom					
Left	Middle	Right	O Pro	ject					
Font	Font Style	Size							
Arial	O Normal	8 ©							
Times Roman	Bold	© 10							
Font Color	○ Italic	12 1							
Select	Italic Bold	0 16							
	0.000	© 20							
				1	、 、				

Now click on a button to add command actions.

Click on button 1 and send command. Select the Dialer and then the command shown below (CMD '1' button 1<0D 0A>)

Action = Send Command				
Selected button issuing Action:	1) Select a device:	2) Select a c	command:	
Selected button issuing Action:	1) Select a device: Projector DVD/VCR Matrix Dialer	2) Select a c Command '' '' '2' '2' '3' '4' '5' '6' '7' '8' '9' 'Auto' 'Back' 'Call' 'Camera' 'Delete' 'Directory' 'Down' 'Far' 'Graphics' 'Hangup' 'Help' <	CMD '' 'button .<0D 0A>' CMD '' 'button #<0D 0A>' CMD '# 'button #<0D 0A>' CMD ''' 'button *<0D 0A>' CMD '0' 'button 0<0D 0A>' CMD '0' 'button 0<0D 0A>' CMD '2' 'button 1<0D 0A>' CMD '2' 'button 3<0D 0A>' CMD '2' 'button 3<0D 0A>' CMD '3' 'button 5<0D 0A>' CMD '3' 'button 5<0D 0A>' CMD '6' 'button 6<0D 0A>' CMD '6' 'button 6<0D 0A>' CMD '8' 'button 9<0D 0A>' CMD '8' 'button 9<0D 0A>' CMD '8' 'button 9<0D 0A>' CMD '2' 'button 1<0D 0A>' CMD '8' 'button 1<0D 0A>' CMD '8' 'button 1<0D 0A>' CMD '8' 'button 1<0D 0A>' CMD '8' 'button 1<0D 0A>' CMD 'Call 'button call<0D 0A>' CMD 'Call 'button dilete<0D 0A>' CMD 'Delete' 'button dilete<0D 0A>' CMD 'Far' 'button far<0D 0A>' CMD 'Far' 'button far<0D 0A>' CMD 'Far' 'button far<0D 0A>' CMD 'Hangup' 'button hangup<0D 0A CMD 'Help' 'button help<0D 0A>'	□ Wait FLAG 1 FLAG 2 FLAG 3 FLAG 4 FLAG 5 FLAG 6 FLAG 7 FLAG 8 FLAG 10 FLAG 11 FLAG 12 FLAG 13 FLAG 16 FLAG 17 FLAG 16 FLAG 17 FLAG 18 FLAG 20 FLAG 21 FLAG 22 FLAG 23 T milliseconds 0.001 seconds 0.001 seconds □ BUF 1 BUF 2 BUF 3
	ОК	Cancel		BUF 4

Repeat, adding commands to buttons 2-9 and 0.

For demonstration purposes the # and * Buttons will not be assigned commands.

Select the number 1 button now, and select the Send To Input Window command.



Action = Send To Input Window	
Selected button issuing Action:	1) Select Output Window Name: InputWindow_1_Win_15 2) Select character Action type Single character Remove last single character Clear all characters 3) Select Destination Both Display Only Buffer Only
ок	Cancel

This selection will send the character to the input window display shown above as well as the buffer.

Next select the Clear All button and Clear all characters.

Clear Last will be set to remove last single character.

To add this input window to the project, select a button from the TEST screen and click on Open/ Close Window to select the Input Device.

Action = Open or Close Window	0 Dial		
Selected button issuing Action:	First select a Window	2) Select an operation	
MUTE Image:	Window 1	OpenClose	
	OK Cancel		4

Output Windows

Output Windows are set up in a very similar manner as Input Windows. Just add a window using window template 3, set a background, add buttons, and assign actions via Send to Output Window.

IR Repeater

This command can be added at startup or as a button command and can be found in your command list. The purpose of this command is to allow the use of real IR remotes. When the IR Repeater is set to on and the project contains an IR type device, aiming the remote at the Flex panel and clicking any function on the remote will be received and re-broadcast out of all Flex IR ports. This is useful when the end user does not want to go to the Flex Panel to select a command and has the remote for the device.

By default, this function is set to off.

Timer

A Realtime digital clock or time can be set on any screen.

For demonstration purposes I will add a clock to the splash screen.

Click on the Splash screen under the Project tree.

Page | 139



Drag and drop the 12:02pm on the clock & Timer tab. The number will automatically fill in as number 1 in this exercise. You can resize the clock window anytime you wish by returning to this page.

The Offset can be changed, if you want to display a time other than your local time. It is offset based on "Universal Time Coordination" (UTC) Formally called "Greenwich Mean Time".

Clicking into the 24-hour box will display time in a 24-hour Military format.

Splash, Screen	1 Properties				
				Name: Splas	h
	12:02pm				Change Nam
				Template: Sc	reen Template
Spl R	lash Scre	en 16 point		Filename: C:\f Screen: 1, Tir Location: X = Move: X = Show Gr Show Alt	Program Files (: ner/Clock: Cloc 105, Y = 23 (W 98, Y = 239 id ternate (or Click
Background	Label	Clock & Timer	Multiple Selec	t Final	
Clock	Timer	Large	Font	V T	emplate Holes
12:02pm		Font Arial	s Roman	Font Style — Normal Bold	Size © 8 © 10
Number:	~	Font Col	or	○ Italic	12
Display:	HH:MM ▼	Sele	ect	Italic Bol	Ø 16 ⊙ 20
Offset +	HH:MM:SS ∙0 ▼	 Solid C Standa 	ard Co	elect plor	
	24 hour	 Custor Projec 	n t		

As you can see on the page, there is also a timer tab. Selecting this will allow you to set a timer to be count down or count up.

Splash, Screen 1 Properties			
		Name: Sp	lash
12:02pm			Change Nam
		Template:	Screen Template (
		Filename:	C:\Program Files (x
Splash Screen		Screen: 1,	Timer/Clock: Clock
		Move:	X = 145. Y = 237
Red Italic text 16 p	point	Show	/ Grid
01-00		Show	Alternate (or Clicke
Background Label Clock	& Timer Multiple Sel	ect Fi	inal
Clock Timer	Large Font		Template Holes
01:00	Font	Font Style	Size
Rename	Arial	Normal	I © 8
Clock 2	Times Roman	Bold	○ 10
Hour: Min: Sec:	Font Color	Italic	© 12 © 16
0 1 0	Select	Italic L	Bold © 20
Direction: Down	Solid Color	Select	
Assign Actions	Standard	Color	
	○ Custom		
	Project		

Actions can be assigned when the time reaches its goal. Initiating the timer is usually done through assigning the action on a button as shown below.

Action = Timer Start, Stop, or Reset Selected button issuing Action: A TEST B 1 2 3 4 5 6 7 8 9 0	1) Select Timer Name: Timer_2_Scr_1 2) Select Action Type © Start Stop Reset
ОК	Cancel

COMMENT

The comment action item is merely a way to add notes to a command line without having any effect on the project.



ERROR CHECKING

New	Open	Error Check	Save	Save As	Options	Control Libraries	Flex Connect	Update & About
-----	------	-------------	------	---------	---------	----------------------	-----------------	-------------------

At any time during the building of a project you can click on the ERROR CHECK button. Should there be a potential error, the error will be listed. To view the ADF file, right click in the Project Tree column, and select View Current ADF.

There you will see the entire ADF file, where you can scroll down to the line number where the error was reported and view possible clues as to where the error was created. Additionally, as you exit a command box you may press on the Format button. This will reveal any errors as you proceed to create the project.

1	BEGIN
2	SYS ADMIN BEGIN
3	PID = 16:06 5/6/2014 Flex Control Builder.adf
5	POWERUP ACTION = COUNTER $\delta = 0$
6	AUTOACK ENABLED
7	
8	IO 1 OUTPUT
9	_
10	IO 2 OUTPUT
12	
13	10 5 001101
14	IO 4 OUTPUT
15	
16	SERIALPORT 1
1/	BAUDRATE = 19200
10	DATABITS = 0
20	PARTTY = None
20	
LIT1368G Flex Training Manual

Alias

The Aliases command was initially included to support a product which is no longer supported. As such, no commands entered in the Alias will have any effect on a project and should be ignored.

For additional information on programming and actions of the buttons, devices, screens, and so on please feel free to call: (973)-785-4347, email us at <u>techsupport@fsrinc.com</u>, or visit our website at <u>www.fsrinc.com</u>.

LIT1368G Flex Training Manual

INDEX

32	LCD BRIGHTNESS	23
24	LCD Brightness Control	114
144	Libraries	131
60	Log Command	108, 123
58	MESSAGE BOX SET UP	95
22	Mute Actions	57
56	Normal Button Type	70
80	Output Windows	138
64	POWER UP	22
64	POWER-UP-ACTIONS	127
95	Press / Hold / Release button	64
95	Press / Release	64
27	RECENT PROJECTS	131
142	RECENT PROJECTS.	132
87	Save Project	44
35	Select counter	86
129	Serial Device	25
121	SET/Clear GPIO	110
143	Sync	121
124	THE SYSTEM	18
84	Time Date Window	118
119	Timer	138
8	Toggle Button	64
51	Touch lockout	117
62	UPDATES	14, 15
104	Using POWER-UP-ACTIONS	127
98	VIRTUAL BUTTON PRESS	81
133, 138	Virtual Button State	81
28	Wait	84
138	Wait for response	103
95		
	$\begin{array}{c} 32\\ 24\\ 144\\ 60\\ 58\\ 22\\ 56\\ 80\\ 64\\ 64\\ 95\\ 95\\ 27\\ 142\\ 87\\ 35\\ 129\\ 121\\ 143\\ 124\\ 84\\ 119\\ 8\\ 51\\ 62\\ 104\\ 98\\ 133, 138\\ 28\\ 138\\ 95\end{array}$	32LCD BRIGHTNESS24LCD Brightness Control144Libraries60Log Command58MESSAGE BOX SET UP22Mute Actions56Normal Button Type80Output Windows64POWER UP64POWER-UP-ACTIONS95Press / Hold / Release button95Press / Release27RECENT PROJECTS142RECENT PROJECTS142RECENT PROJECTS.87Save Project35Select counter129Serial Device121SET/Clear GPIO143Sync124THE SYSTEM84Time Date Window119Timer8Toggle Button51Touch lockout62UPDATES104Using POWER-UP-ACTIONS98VIRTUAL BUTTON PRESS133, 138Virtual Button State28Wait138Wait for response95Set State State