



Operator Reference Guide

TVGI NDI User Manual

Session setup, live graphics operation, hotkeys, and reference screenshots

Use: This manual is written for graphic operators preparing or running a TVGI NDI session. Follow the sections in order for setup, then use the hotkey and screenshot references during show preparation.

Version note: Confirm that the workstation is running the current TVGI NDI build before starting a show or creating a new session.

Contents

- Chapter 1: Setup And Launch
- Chapter 2: Tools Menu
- Chapter 3: Live Text/Artist Bump
- Chapter 4: Crawl Dialog
- Chapter 5: Preferences Dialog
- Chapter 6: Hotkeys

Source note: Make sure you are using the current version of TVGI NDI. If there are multiple versions in the program on the computer.

CHAPTER 1 SETUP AND LAUNCH

At a Glance

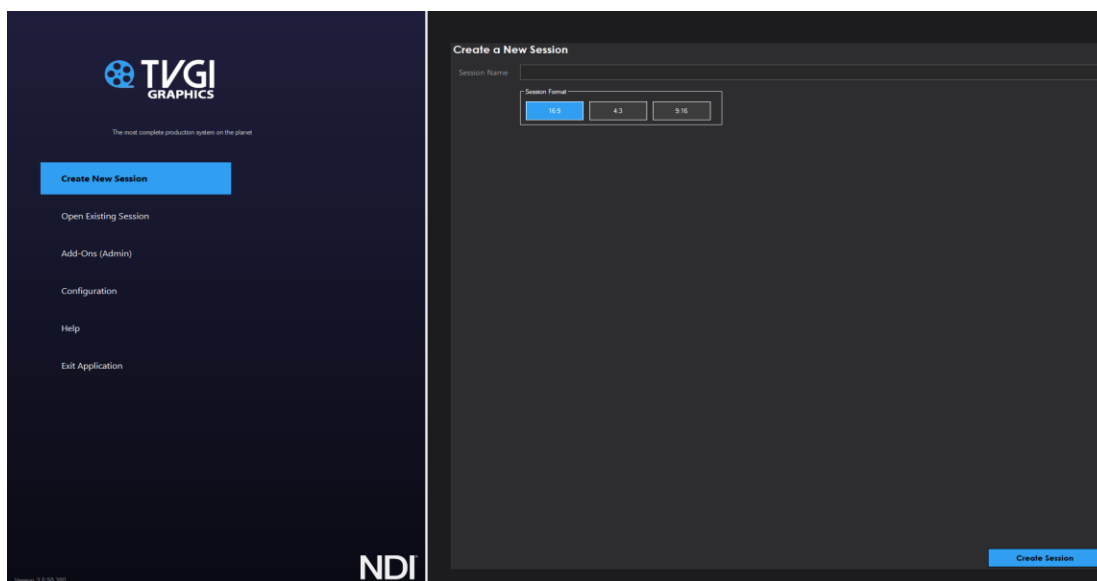
Topic	Purpose / Notes
Create New Session	Select this only when creating a new session
Open Existing Session	Select this if you already have existing sessions. All the graphics, images, and other such details will be saved (only if you indicated “yes” to saving the session when properly exiting the program)
Add-Ons (Admin)	Administrative tools live here. Manage sessions, inspect session storage, and review how the launcher handles logs.
Configuration	Defines how the launcher behaves before the production opens. Think machine-level, startup-level, and storage-level settings.
Help	Gives a brief overview of what TVGI was created for, what it does, how it is suggested to be used (or not used), and recommendations on improvements to consider.
Exit Application	Closed the application.

Launch the program. The loading screen gives you several options.

1.1 Create New Session

Select this only when creating a new session. Figure 1

FIGURE 1



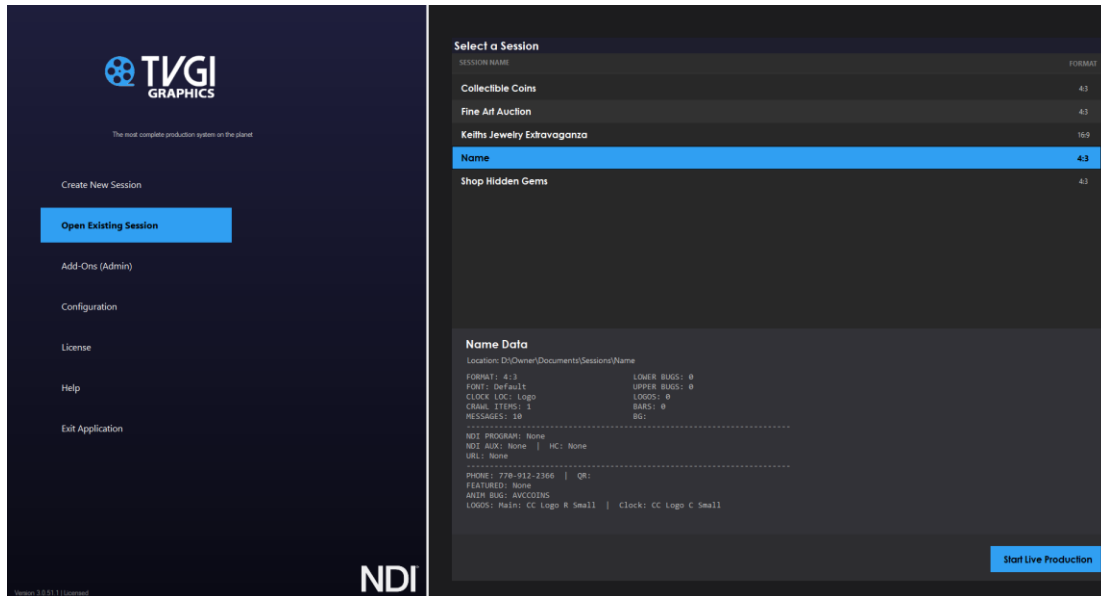
1. Notice on the right side of the screen you will see options: “Session Format.”

2. Know the screen format for the program the broadcast will aired as to make sure the graphics will not be cut off.
3. Two formats: 16:9 and 4:3

1.2 Open Existing Session

Select this if you already have existing sessions. All the graphics, images, and other such details will be saved (only if you indicated “yes” to saving the session when properly exiting the program). Figure 1a

FIGURE 1A



1.3 Add-Ons (Admin)

Administrative tools live here. Manage sessions, inspect session storage, and review how the launcher handles logs.

1.4 Configuration

Defines how the launcher behaves before the production opens. Think machine-level, startup-level, and storage-level settings.

1. Most graphic operators will not need to utilize this.

1.5 Help

Gives a brief overview of what TVGI was created for, what it does, how it is suggested to be used (or not used), and recommendations on improvements to consider.

1.6 Exit Application

Closed the application.

Note: Setting up a new session. When “Create a New Session” you must input a name to the session and select the format size of the session. This can be changed, so do not worry if the incorrect format was selected.

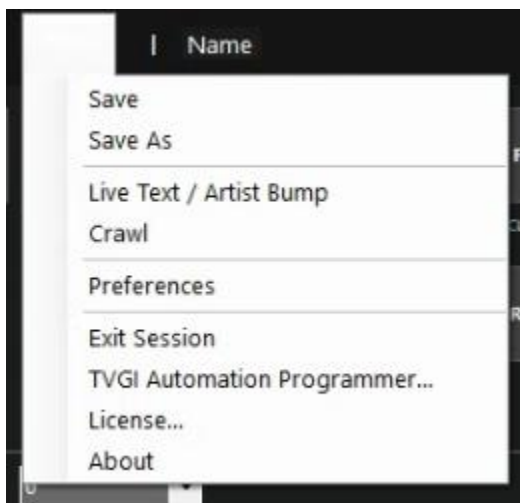
CHAPTER 2 TOOLS MENU

At a Glance

Topic	Purpose / Notes
Save	Saves the session in the default sessions folder. It will tell you exactly the file location of the session. However, this is automatic and doesn't give you a choice in changing the file name or location unless you select the "Save As" tab
Save As	allows you to save the session under a different name.
Live Text/ Artist Bump	Opens the dialog. Once opened it automatically starts its NDI output feed. When closed it stops the NDI output feed
The "Crawl"	opens the main crawl control screen.
Preferences	Opens the preferences dialog box and allows for configuration of many elements of the program output.
Exit Application	Allows you to exit the session and brings you back to the first page that shows up when you launch the program. From there you should be able to click into a different session or create a new one if desired.
TVGI Automation Programmer	Opens the program that allows you to build controller-ready FIFINE & Elgato commands for TVGI applications.
License	Opens the licensing dialog so you can see your current licensing mode, Demo/Licensed.
About	Opens a dialog with details about which version of the program you have as well as the other basic details about the program you are using.

Note: The majority of customization uses the "Tools" tab that is located on the upper left corner. These changes are saved and will not change even if you end the session (assuming you agreed to save the session when prompted). The name of the session is located right beside it. Figure 3a

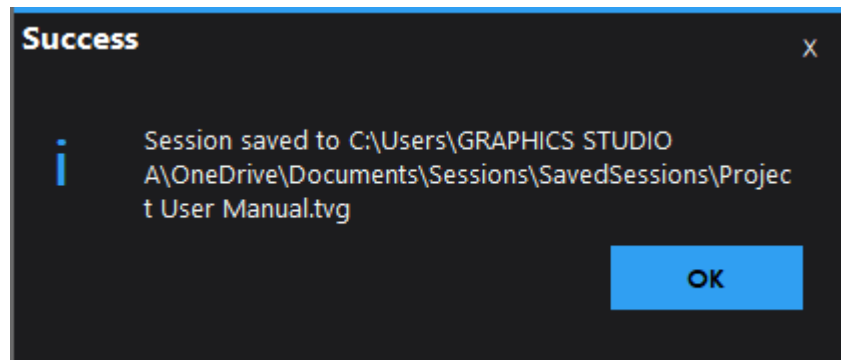
FIGURE 3A



2.1 Save

Saves the session in the default sessions folder. It will tell you exactly the file location of the session. However, this is automatic and doesn't give you a choice in changing the file name or location unless you select the "Save As" tab. Figure 3

FIGURE 3



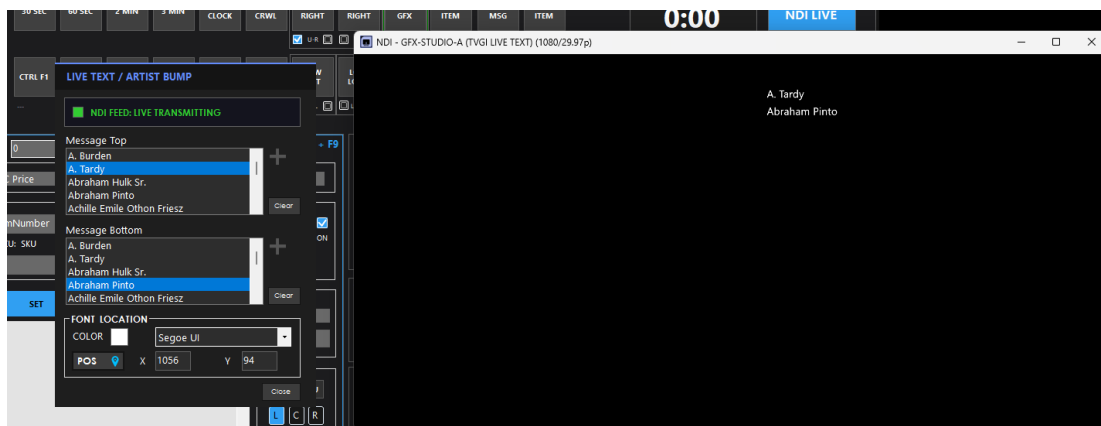
2.2 Save As

allows you to save the session under a different name.

2.3 Live Text/ Artist Bump

Opens the dialog. Once opened it automatically starts its NDI output feed. When closed it stops the NDI output feed. Figure 4

FIGURE 4



2.4 The "Crawl"

opens the main crawl control screen.

2.5 Preferences

Opens the preferences dialog box and allows for configuration of many elements of the program output.

2.6 Exit Application

Allows you to exit the session and brings you back to the first page that shows up when you launch the program. From there you should be able to click into a different session or create a new one if desired.

2.7 TVGI Automation Programmer

Opens the program that allows you to build controller-ready FIFINE & Elgato commands for TVGI applications.

2.8 License

Opens the licensing dialog so you can see your current licensing mode, Demo/Licensed.

2.9 About

Opens a dialog with details about which version of the program you have as well as the other basic details about the program you are using.

Note: Live Text/ Artist Bump allows you to put two separate lines of text on the screen.

3.1 The “Message Top” and “Message Bottom”

explain which phrase will be on the top and which is on the bottom.

1. You can download an entire text file saved on the computer.
2. Each separate line entries can be selected as the text that shows up.
3. You can't select more than one entry for each message.
4. On the bottom section of the box, there is “Font Location.” This area allows you to customize the font color, style, and location of the text.
5. You can either input the X and Y coordinates, or you can use the “POS” to drag the text where you want it to be.

Note: using POS requires you to hold down the mouse selection button to prompt the program to move the text.

6. Move it only around the “POS” button and watch the NDI output to see where the text is going.
7. Both “Message Top” and “Bottom” move together and not separately.
8. Make sure the NDI output is set to the “TVGI LIVE TEXT” to see the result. This output will only show up when the “Live Text/Artist Bump” tab is being used.

Note: the messages will remain until they are cleared.

CHAPTER 4 CRAWL DIALOG

Note: The “Crawl” tab allows you to download a word text file that will flow as a banner across

4.1 The “Crawl” tab

Allows you to download a word text file that will flow as a banner across the bottom of the screen.

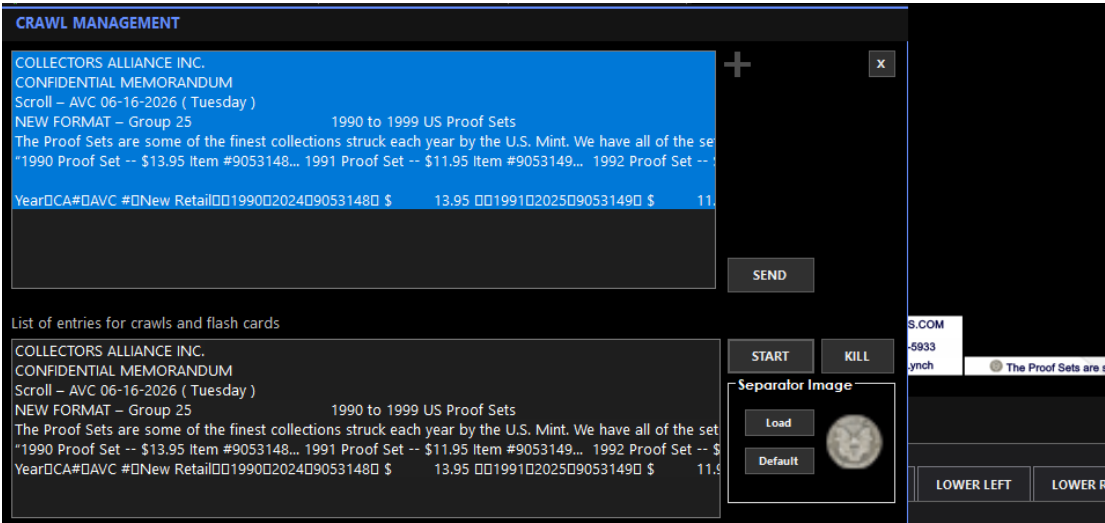
4.2 Unlike the “Live Text/Artist bump” messages, you can multi-select entries

4.3 Once you have your selected text, you send it off and the entry appears on the bottom box. You select “Start” to make the crawl begin and “Kill” to eliminate the entire crawl banner

4.4 There is a spot on the lower right corner of the box that allows you to download an image that will break up sections of the text if the words, phrases, or sentences have separate lines entries

Figure 5 shows the crawl box and the result of its use on the right side of the image.

FIGURE 5



CHAPTER 5 PREFERENCES DIALOG

At a Glance

Topic	Purpose / Notes
The “Preferences” hub	Where the bulk of the customization options and inputs reside.
The “Backgrounds” tab	This is main place to access to change the look of the graphics colors, sizes, shapes, alignments, background images, and even QR codes.

Topic	Purpose / Notes
The “CTA” tab	The Call to Action section. This is the text that will pop up on the lower left-hand side.
Logo”	The area where you put the logo of the show as well as the graphic that shows up behind the clock when it is activated.
Database”	The area where you input where the program is getting the item numbers and descriptions from.
Network”	Where you put the port numbers and UDPs information. You will be able to see and enter in all the “Direct Endpoints” in this tab, too.
Hotkeys	This is where you change the visual button names of all F Keys and CTRL + F Keys

Note: The “Preferences” hub is where the bulk of the customization options and inputs reside.

5.1 The “Preferences” hub

Where the bulk of the customization options and inputs reside.

- Under the “General” tab, the “System font” allows you to change the text font of the entire session. The “Aspect Ratio” allows you to change the size of the format. Once satisfied with the changes you want to implement, you can “Apply General Settings without having to exit “Preferences.”

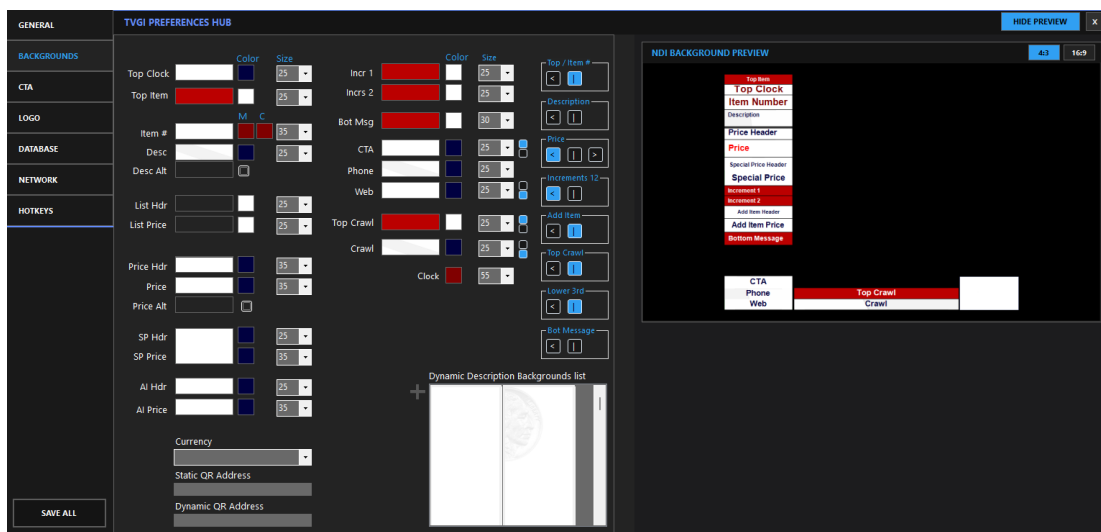
5.2 The “Backgrounds” tab

This is main place to access to change the look of the graphics colors, sizes, shapes, alignments, background images, and even QR codes.

Note: You have the creative freedom to make the graphics look as simple or as complex as you can make it.

- Double click the horizontal boxes next to the section you are changing (e.g. “Top Clock,” “Top Item,” or “Item #.”). A file finder will pop up. You can choose whatever image file you have to change the color and shape of the graphic you are adjusting. Figure 6

FIGURE 6



Note: An example would be to have sharp or round edges for whatever section you are working on. The background color could be red or white or speckled. The square box next to the rectangle is the area where the color of the text can be changed.

2. The “Size” section on the right of the square is where the text size can be adjusted.
3. There is a column on the right side of the box that allows you to adjust the alignment of the text of each listed section.
4. There is a “Preview” button on the upper right side of the box that will show you what your changes and input create. As long as you neither save all changes nor save the session in the end, none of the changes will be remembered.
5. On the bottom left side, there are 2 rectangular boxes called “Static and Dynamic QR Address.” These will help generate a QR code for whichever website you want it to take people to. This is what will pop up when using the CTRL F10 hotkey. Ref to hotkeys section.
6. On the bottom right section, there is a thing called “Dynamic Description Backgrounds list.” Based on the folder this information is being pulled from, the program will recognize key words and change the background image to match the description that was pulled up.

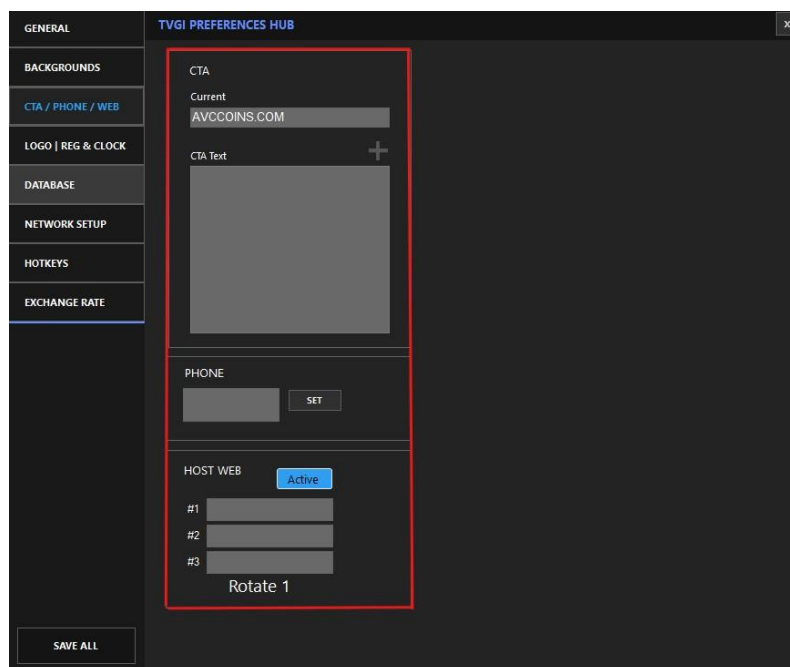
5.3 The “CTA” tab

The Call to Action section. This is the text that will pop up on the lower left-hand side.

1. The first box is the current CTA that is being displayed.
2. The “CTA Text” box below that one allows you to download a text file of the possible entries you want showing. You highlight the text you want to currently change, and it will be reflected on graphics.
3. Below that box is the spot where you can input the phone number you want people to contact.
4. “Host Web” is the area where you input at maximum 3 host names. If you select the “Active” tab, graphics will automatically shuffle through the hosts that were inputted. If you deselect the “Active” tab while in the middle of cycling through the host names, the current host it was on will remain until the tab is selected again.

Figure 7

FIGURE 7

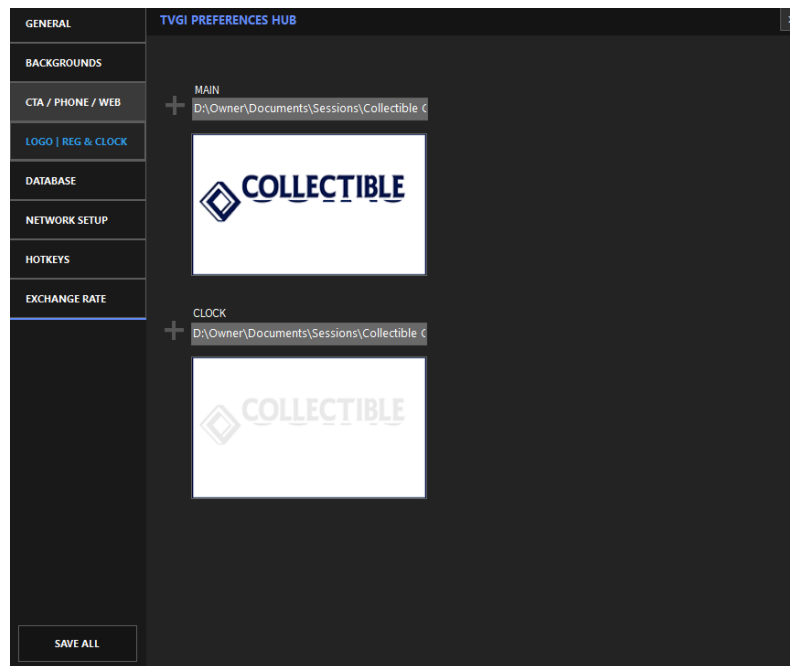


5.4 Logo”

The area where you put the logo of the show as well as the graphic that shows up behind the clock when it is activated.

1. The logo consists of two different components Figure 8

FIGURE 8



2. The primary logo (Full color)
3. The dimmed logo so the clock can be seen under it (usually black and white and at 20% opacity) Figure 8a

FIGURE 8A



4. The logo can be animated on both sections.

5.5 Database”

The area where you input where the program is getting the item numbers and descriptions from.

1. You also select the type of database system (e.g. CSV/XLS, MySQL, MSSQL, Local SQLite) the information is being pulled from.

5.6 Network”

Where you put the port numbers and UDPs information. You will be able to see and enter in all the “Direct Endpoints” in this tab, too.

1. There are checkboxes that can adjust what could and could not be seen by a remote location.

5.7 Hotkeys

This is where you change the visual button names of all F Keys and CTRL + F Keys Figure 9

FIGURE 9

GENERAL

BACKGROUNDS

CTA / PHONE / WEB

LOGO | REG & CLOCK

DATABASE

NETWORK SETUP

HOTKEYS

EXCHANGE RATE

SAVE ALL

TVGI PREFERENCES HUB

F1 Name: F1

F2 Name: F2

F3 Name: F3

F4 Name: F4

F5 Name: F5

F6 Name: F6

F7 Name: F7

F8 Name: F8

F9 Name: F9

F10 Name: F10

F11 Name: F11

F12 Name: F12

CTRL F1: CTRL F1

CTRL F2: CTRL F2

CTRL F3: CTRL F3

CTRL F4: CTRL F4

CTRL F5: CTRL F5

CTRL F6: CTRL F6

CTRL F7: CTRL F7

CTRL F8: CTRL F8

CTRL F9: CTRL F9

CTRL F10: CTRL F10

CTRL F11: CTRL F11

CTRL F12: CTRL F12

APPLY SHORTCUT NAMES

RESET TO DEFAULTS

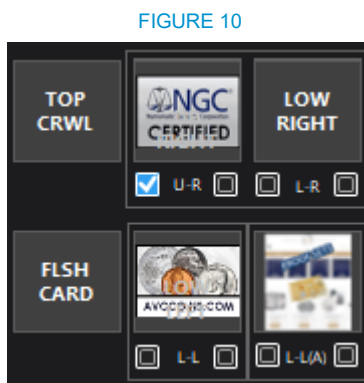
CHAPTER 6 HOTKEYS

At a Glance

Topic	Purpose / Notes
Hotkey Layout	If you don't have a separate controller (FIFINE or Elgado for example), the program does have the hotkeys laid out on the upper left section of the form. When a hotkey is being used, it will be highlighted in blue.
Countdown Controls	On the right side of the hotkeys there is where you can watch the countdown the audience are currently seeing. Right below the countdown, there is a section that allows you to stop the clock early or even adjust the time of the countdown manually.
TOI Manual Control	Below the countdown clock, you can manually change the TOI in case it was not set off in the beginning or if something was shut down.
NDI Output and Format	On the right side of the countdown clock, there are two rectangular boxes. One says, "NDI OFF" and the other has the current format ratio.
F9 / CTRL F9 Main Graphics	F9/CTRL F9 takes up the entire left side of program.
F10 Add Item	F10's box is at the top to the right of F9/ATL F9. This is where you add an additional description and a price right below the main GFX.
F12 Top Item	Below F10's box is the box for F12 hotkey. This is the place where a top item name can be placed. This will show up above the main GFX.
CTRL F12 Item Size	The next box below is where CTL F12 hotkey can be customized.

Note: Knowing what the hotkeys do before an active show or recording session can make all the difference in a successful show.

Figure 10



6.1 Hotkey Layout

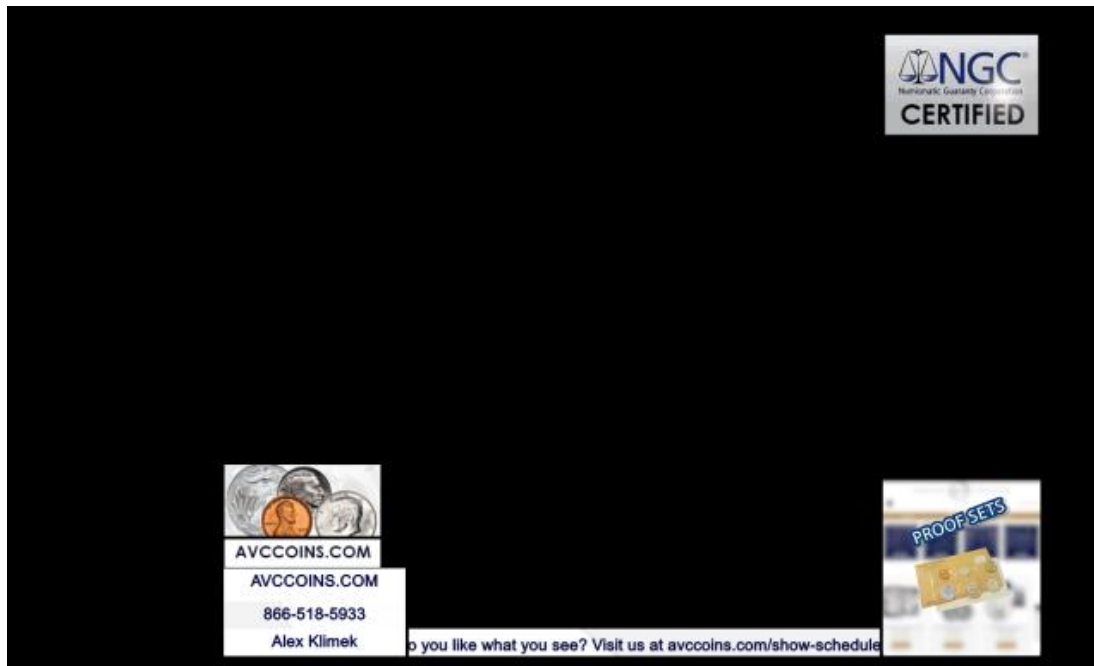
If you don't have a separate controller (FIFINE or Elgado for example), the program does have the hotkeys laid out on the upper left section of the form. When a hotkey is being used, it will be highlighted in blue.

- Here is a pre-programmed list of the hotkeys and what they do:

- a. Esc is the reset button that will stop all clocks and erase main graphics.
 - b. F1 is the 30 sec countdown clock
 - c. F2 is the 60 sec countdown clock
 - d. F3 is the 2 min countdown clock
 - e. F4 is the 3 min countdown clock
 - f. F5 is the time on item clock (TOI) which is meant for the host to see.
 - g. F6 is the top crawl (it is a static crawl) that sits on top of the main crawl.
 - h. F7 is the upper right GFX
 - i. F8 is the lower right GFX right above the logo
 - j. F9 is the Main GFX
 - k. F10 pops up the “Add Item” information live under the main graphic (usually includes a price or can be only the price with no extra description.)
 - l. F11 pops up the “Bottom Message” right below F10
 - m. F12 pops up the “Top Item” banner right above the main GFX.
 - n. CTRL F6 replaces F6 and is used when trying to cycle through different dialogue (like the “Host Web” section found under “Preferences”)
 - o. CTRL F7 pops up a lower left graphic on top of the CTA
 - p. CTRL F8 pops up a GFX over the logo section
 - q. CTRL F9 is the ALT GFX that shrinks the main GFX (usually used if there is a large item going on the screen, and you want to maintain bare minimum info on screen)
 - r. CTRL F10 pops up the QR code that was generated from the website that was inputted under the “Preferences” section under the “Backgrounds” tab.
 - s. CTRL F12 pops up the Item size.
2. All clocks will show how much time is left in 2 locations. On the button and on the middle of the screen. This is only for the 30 s, 1 min, 2 min, or 3 min clocks in this section. The Time on Item (TOI Clock) shows how much time has been spent on an the current presentation and only shows on the button itself.
 - a. Note: TOI can be referred to the host clock and can only been seen if the Host Companion program is active with the NDI Feed started.
 3. F7, F8, CTRL F7, and CTRL F8 allow you to see graphics selected to be put up if needed. If any of the items are animated, the animation will play on a sped-up loop so you can confirm what you have picked.

Figure 10a shows what the audience will be seeing when they are selected.

FIGURE 10A



4. F9 and CTL F9 are the main graphic and alternate graphic boxes that hold details about the items on the show.
 - a. The main graphic allows a lot of details to be inputted.
 - b. The alternate graphic shrinks down the main graphic into a smaller size if needed.
 - c. When the Main and ATL GFXs are outlined in green, it means that they aren't live on air. If the boxes are red, that means the GFXs are live on air and can be seen.
5. Select hotkeys have 2 checkboxes underneath them.
 - a. The checkbox on the left tells the system to loop any animated images. Otherwise, once the animation finishes, the image will go away. This isn't something to worry about for static images.
 - b. The checkbox on the right tells the program to not get rid of the image even if the ESC or reset key is hit.

6.2 Countdown Controls

On the right side of the hotkeys there is where you can watch the countdown the audience are currently seeing. Right below the countdown, there is a section that allows you to stop the clock early or even adjust the time of the countdown manually.

6.3 TOI Manual Control

Below the countdown clock, you can manually change the TOI in case it was not set off in the beginning or if something was shut down.

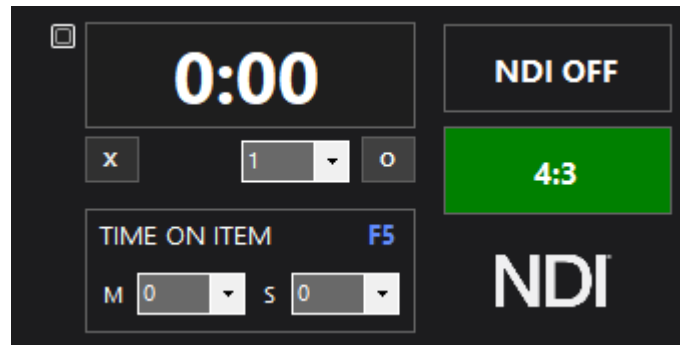
6.4 NDI Output and Format

On the right side of the countdown clock, there are two rectangular boxes. One says, "NDI OFF" and the other has the current format ratio.

1. You must select the "NDI OFF" to turn it "NDI LIVE," so the graphics are visible.
2. The format ratio can be changed without having to go through the "Preferences" tab.

Figure 11 shows where these two buttons are.

FIGURE 11



Preparing the info that the hotkeys will showcase. The bulk of the program space has sections that correspond to a hotkey. The upper right-hand corner of each box will inform you which hotkey you are adjusting.

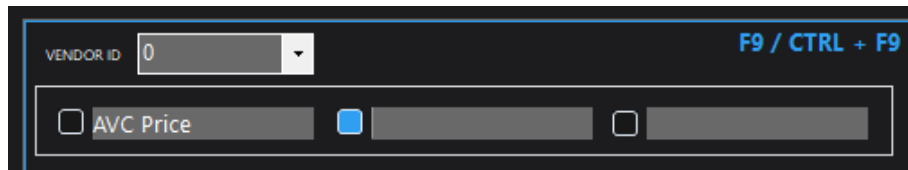
6.5 F9 / CTRL F9 Main Graphics

F9/CTRL F9 takes up the entire left side of program.

1. There is a drop-down box at the top labeled “Vendor ID.” This feature can be useful if you have multiple shows with multiple item numbers with repeating SKU numbers. It helps the program know which data to pull the description from, especially if you only have the SKU number.
2. Below the drop-box, there are 3 blank rectangular boxes with checkboxes next to them. You can input names or labels that will appear below the graphic. Clicking on the checkbox lets the program know which input you want to show up.
 - a. Note: the only way to clear it is to click the box with a blank input.

Figure 12 shows what that looks like with the GFX in sequence.

FIGURE 12



3. The next section below is where you pull the data that the audience will see.
 - a. The first box on the left side is where you input the item number or SKU number. Whatever information was inputted in the database will be generated in the larger box on the right as well as the main body of the section below.
 - Even if you used a SKU number to locate the item, if it has an item number linked to it, the system will show the item number in the main body.
 - There are two buttons beside the input box which is “UPD” and “CHK.”
 - UPD is to prompt the system to generate the input data. You can generate multiple item numbers this way, too. This button is most useful if you aren’t using a keyboard and only have a mouse.
 - CHK allows you to check the database about the item without wiping out the main text. This can be useful when checking the next item during a live show. The information will be generated in the “Scratch Pad” tab that is located on the right side of the program. More details about the “Scratch Pad” will be addressed in a different section.
 - b. Below the first box is a spot called “VSKU:” This generates the SKU number associated with the item number.
 - Beside VSKU are 3 boxes labeled: A, P, L.
 - Once highlighted, they do specific things:
 - A ASK ROMAN

- P ASK ROMAN
 - L ASK ROMAN
- c. Below the VSKU is a blank box that allows you to add a header on top of the description.
- Next to this box is “UPD” and “CLR”
 - UPD updates the description in the blank box. This is useful if you need to change the wording without taking out the header.
 - CLR is like the reset button except it mainly focuses on clearing out F9/ATL F9 from the live show. Any other active hotkey will remain active.
 - Note: the description within the main body will remain, too.
- d. There are checkboxes on the left of each box that allow you to put a header on top of the description. The only exception is the “VSKU” section. It will show whatever is in the main body below with no extra top.

Figure 13 shows the rea and the results of selecting the checkboxes.

FIGURE 13

VENDOR ID

0

F9 / CTRL + F9

☐ AVC Price
 ☐
☒

☒ 90512223

☐ VSKU: 063586

☐ Test

2025 Silver Eagle

San Francisco Proof

NGC 70 Eagle Core

☐ \$199.95
 ☒ ON

☐ Desc Only
 ☒ Use Dyn
 ☐ Extact Dates

SET

CLEAR

90512223

2025 Silver Eagle

San Francisco Proof

NGC 70 Eagle Core

\$199.95

Special Price

Special

B

I

U

L

C

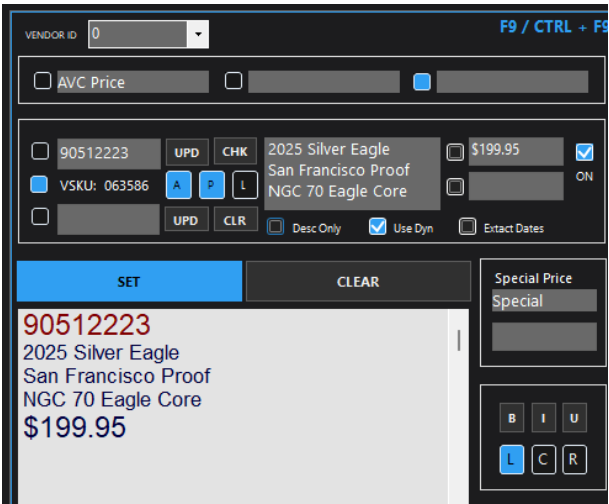
R

Size

- e. To the right of the Item Number, VSKU, and blank boxes, there is a larger box where the main description will be generated. The item number will not be listed in this spot.
 - The reason for this is because right below this box are a few checkboxes. One of the checkboxes have an option to have “Desc Only.” Neither the item number nor the price show up within the main body.
 - There are two other checkboxes next to the “Desc Only”: “Use Dyn” and “Extract Dates.”
 - Use Dyn is to turn on the “Dynamic Description Background list: function that is in the “Preferences” page.
 - Extract Dates is more useful for historically based shows. The system will extract a date from the description. Have Roman look into this.

Figure 14 shows the difference between not selecting “Desc Only” and selecting it.

FIGURE 14



- f. Next to the description box, there are two checkboxes and two blank boxes. This is where the listed price is generated.
 - If the top checkbox isn't selected, if you select the "Desc Only" checkbox, the pricing will not appear.
 - If you don't select "Desc Only," the price will still appear if the checkbox next to "VSKU" is selected.
 - However, if the top checkbox is selected, the price will generate but only on the Main GFX.

Figure 14a shows what happens when you do or don't select the checkbox next to the price box in consecutive order. The last section of this figure will show what they all look like on the Main GFX

FIGURE 14A

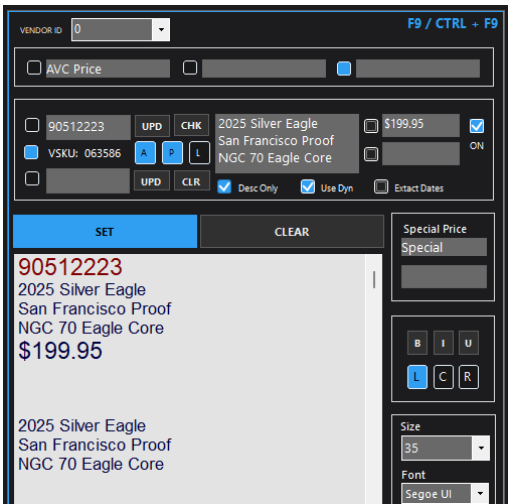


Figure 14a, view 1

The screenshot shows the TVGI NDI User Manual interface. At the top, there is a 'VENDOR ID' dropdown set to '0' and a 'F9 / CTRL + F9' label. Below this is a section with checkboxes for 'AVC Price' and a blue button. The main description box contains the following text: '90512223', '2025 Silver Eagle', 'San Francisco Proof', 'NGC 70 Eagle Core', and '\$199.95'. To the right of the main description box are buttons for 'SET' and 'CLEAR'. Further right is a 'Special Price' section with a 'Special' label and a text input field. At the bottom right are buttons for 'B', 'I', 'U', 'L', 'C', 'R', and a 'Size' dropdown set to '25'.

Figure 14a, view 2

4. The next section has two large buttons: “Set” and “Clear”
 - a. Set updates the main GFX to whatever changes you made in the main description box.
 - b. Clear only clears out the main description box.
5. Right below the two buttons is a large black box. This is where the text that goes live can be seen and edited. Beside this section on the right, there are several features to help customize the font, alignment, size, spacing, and colors of the words.
6. There are two smaller boxes called “Special Price” and “For Web”
 - a. Special Price is used when there is a sale or promotion going on and you want to show the initial price then the new discounted price. It allows you to label the section in the first box while the second box below is the change in price.
 - b. For Web – ASK ROMAN

Figure 15 shows what “Special Price” looks like while in use.

FIGURE 15

The screenshot shows the TVGI NDI User Manual interface with the 'Special Price' section active. The main description box contains the following text: '90512223', '2025 Silver Eagle', 'San Francisco Proof', 'NGC 70 Eagle Core', '\$199.95', 'Special', and '\$100'. To the right of the main description box are buttons for 'SET' and 'CLEAR'. Further right is a 'Special Price' section with a 'Special' label and a text input field containing '100'. At the bottom right are buttons for 'B', 'I', 'U', 'L', 'C', 'R', and a 'Size' dropdown set to '25'.

7. At the bottom of the F9/ATL F9 label is a Zoom function that will shrink the description to a smaller size. This can be useful when trying to look at the structure of the description when it has multiple entries, or if the description is long.

6.6 F10 Add Item

F10's box is at the top to the right of F9/ATL F9. This is where you add an additional description and a price right below the main GFX.

Figure 16 shows what the main GFX looks like with the Add Item function.

FIGURE 16

The screenshot shows the TVGI NDI main GFX interface. At the top, there is a 'VENDOR ID' field with the value '0'. Below this, there are several input fields and buttons. The main display area shows the item '90512223' with a description '2025 Silver Eagle San Francisco Proof NGC 70 Eagle Core' and a price of '\$199.95'. To the right, there is a panel with two sections: 'ADD ITEM F10' and 'TOP ITEM F12'. The 'ADD ITEM F10' section is highlighted with a red box and contains the text '99.99% Silver Bullion' and a price of '\$149.95/ea'. The 'TOP ITEM F12' section contains the text 'HALF DOLLARS'. Below these sections, there is a 'CTA ALT' section with a checkbox and the text 'Frame Size'.

6.7 F12 Top Item

Below F10's box is the box for F12 hotkey. This is the place where a top item name can be placed. This will show up above the main GFX.

Figure 17 shows what the main GFX will look like with the "Top Item" name activated.

FIGURE 17

The screenshot shows the TVGI NDI main GFX interface. At the top, there is a 'VENDOR ID' field with the value '0'. Below this, there are several input fields and buttons. The main display area shows the item '90512223' with a description '2025 Silver Eagle San Francisco Proof NGC 70 Eagle Core' and a price of '\$199.95'. To the right, there is a panel with two sections: 'ADD ITEM F10' and 'TOP ITEM F12'. The 'TOP ITEM F12' section is highlighted with a blue box and contains the text 'HALF DOLLARS'. Below these sections, there is a 'CTA ALT' section with a checkbox and the text 'Frame Size'.

6.8 CTRL F12 Item Size

The next box below is where CTL F12 hotkey can be customized.

Figure 18 shows what this section looks like customized (Refer to Figure 2 to see what it looks like without change).

FIGURE 18

