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INSTALLATION AND OPERATION INSTRUCTIONS

EVOLUTION VIDEO DISTRIBUTION SYSTEM

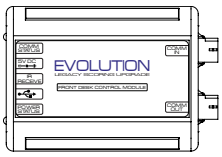
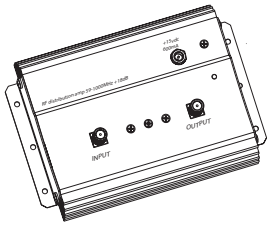
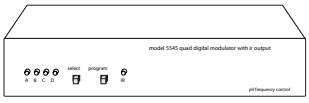
ATTENTION: READ THE ENTIRE INSTRUCTION SHEET BEFORE STARTING THE INSTALLATION PROCESS.

WARNING!

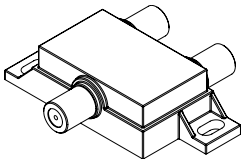
- Do not begin to install your Evolution Video Distribution System until you have completely read and understand these instructions.
- This system should only be installed by someone who has good mechanical and electrical knowledge.
- Never mount components near water or where they could come into contact with water.
- Under no circumstances should any component be tampered with. All warranties stated or implied are void if the component has been opened by anyone other than an approved repair facility.

The following is a list of component which may be included with the system. Because each installation is custom designed for the customer, this list is a reference only to help identify the components shown on the schematic.

PART IDENTIFICATION LIST

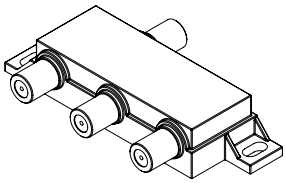
PART	HARDWARE	PART NAME	QUANTITY
A		Front Desk Interface	☐
B		Auxiliary Control Module	☐
C		Amplifier	☐
D		Modulator	☐

E



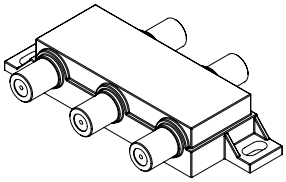
2-Way Splitter

F



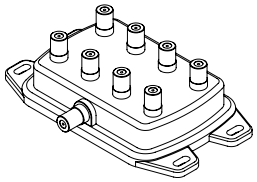
3-Way Splitter

G



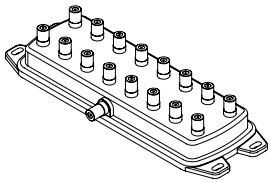
4-Way Splitter

H



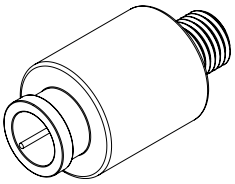
8-Way Splitter

I



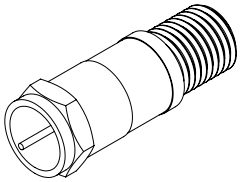
16-Way Splitter

J



Coax Surge Protector

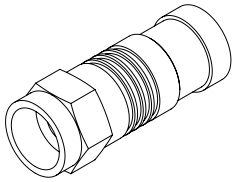
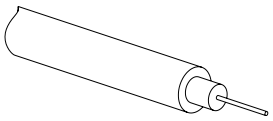
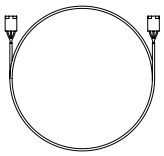
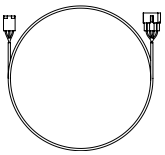
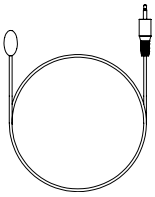
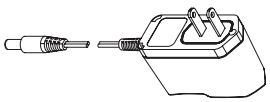
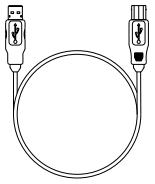
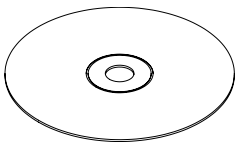
K



Attenuator

3db

6db

L		RG-6 Cable End	☐
M		RG-6 Cable	☐
N		COMM Cable(25ft)	☐
O		COMM Cable(_____ft)	☐
P		IR Emitter	☐
Q		Wall Transformer	☐
R		USB Cable	☐
S		Installation Software	1

Tools required for installation:

- Coaxial Cable Fitting Crimper (Included)
- Coaxial Cable Stripper (Included)

Step 1:

The first step when installing the video distribution system is to carefully review the included schematic and ensure that all parts specified have been in included with the kit.

Next, note any special instructions on the schematic. Specifically, where certain components are to be placed or if cables need to be made to a specific length. The video distribution system has been custom made for the customer and these instructions are critical to ensure proper performance and an adequate supply of RG-6U cable has been included with the kit.

Review the instructions included with the crimping and stripping tools. Many connections must be made and proper installation of the cable ends is important for proper system performance.

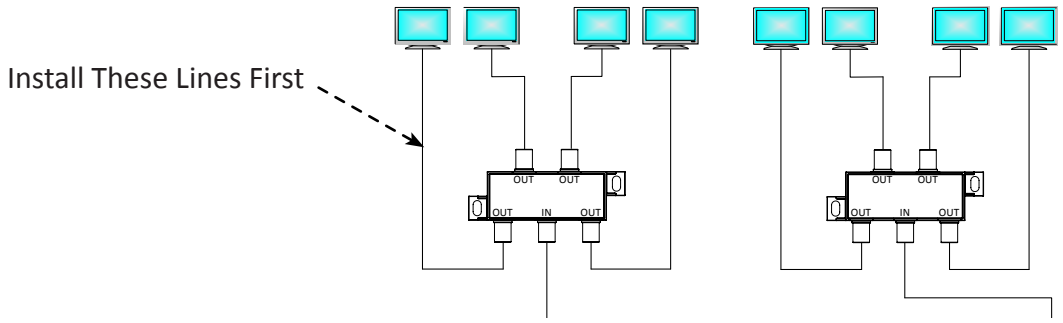
Notes:

- Never mount components where they may come into contact with water or direct sources of heat.
- Be careful when pulling cable through ceilings or walls that it does not become frayed or cut.
- During installation it is generally easiest to start at the video destination (overhead monitors) and work back toward the source (typically the front desk).
- It is best to secure all splitters to the building structure.
- If more RG-6U cable ends are required, any readily available weatherproof COMPRESSION fitting that is similar to the ones included can be used. Be sure to NOT buy ends for “Quad Shield” cable and that they are designed for RG-6U cable and not RG-59 or another variant. Additional ends can also be purchased from D&J Marketing.

Step 2:

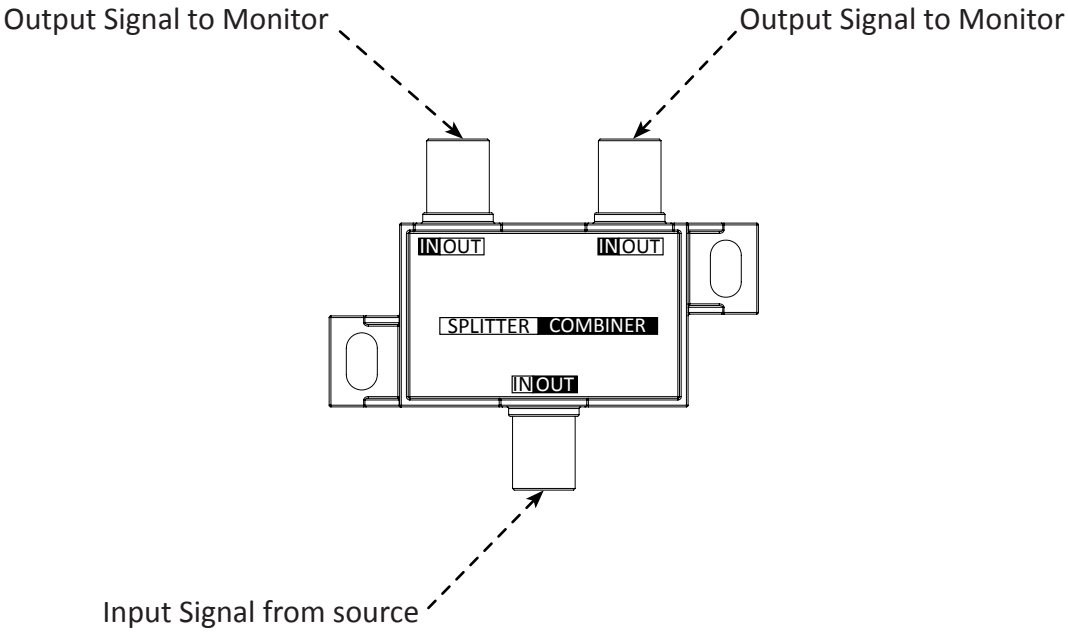
If a specific length of RG-6U was specified on the schematic begin by building these cables. Building all the cables at once will make the process go faster. These are generally limited to 12ft cables between the monitors and splitter as shown below.

Begin installation by running the RG-6U cable from the monitors to the first splitter from the monitor. The splitter should be located in the center between the four (4) monitors that it connects to.



Important Note:
Many of the signal splitters provided can also be used as a signal combiner. It is important that the inputs and outputs from these units not be mixed up. Note on the top of the splitter/combiner that each connector is label with the words “IN” and “OUT”. One is placed in a white box and the other will be placed in a black box. You will also notice the words “SPLITTER” and “COMBINER” also in white and black boxes. If the word “SPLITTER” is in the white box, then the input is the connector with the word “IN” also in a white box. The outputs are therefore the connectors with the word “OUT” in a white box. See the example below.

If the splitter/combiner is being used as a splitter then the connections would be made as shown.



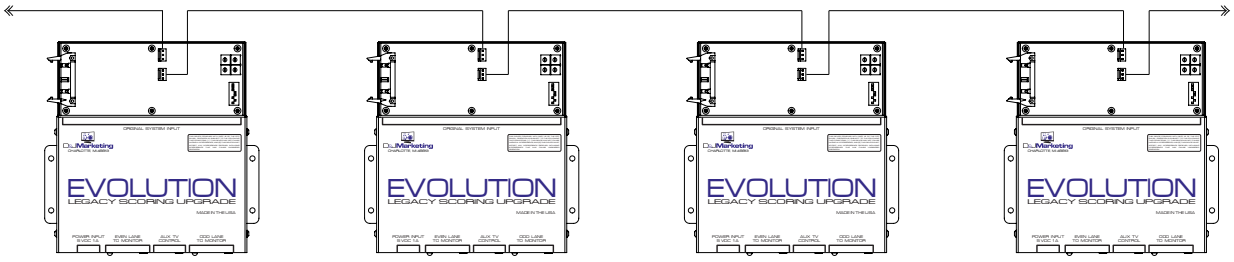
If these connections are made incorrectly poor picture quality or no signal at all will result.

Step 3:

Parts Required:

- Part M

While work is taking place close to the monitors the COMM cables should be installed and lane number assignment set at the same time. The 25ft COMM cables are used to connect the EVOLUTION converter boxes (or auxiliary modules) together in series. See examples below.

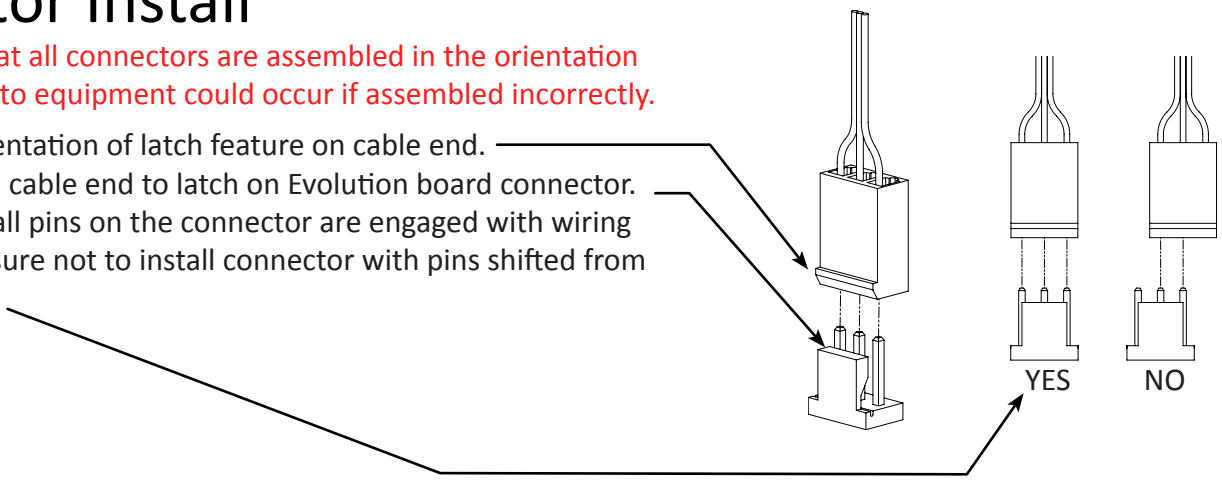


Accuscore converters shown. Process is identical for all systems with EVOLUTION converter box. Customers with Brunswick AS-80/90 can use the existing COMM line.

Connector Install

Note: Be sure that all connectors are assembled in the orientation shown. Damage to equipment could occur if assembled incorrectly.

- Note the orientation of latch feature on cable end.
- Align latch on cable end to latch on Evolution board connector.
- Also be sure all pins on the connector are engaged with wiring harness. Be sure not to install connector with pins shifted from side to side.



Set the lane assignment using the switches. Set this assignment to the ODD lane of the two lanes controlled by the Evolution board. (See lane assignment table on next page) Important: The lane assignment switches must be changed when power is off to the Evolution box.

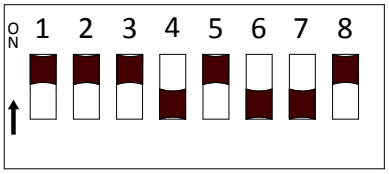
Lane Assignment Example

- The Evolution board is being used to upgrade lanes 23 and 24. You would set the lane assignment DIP switch to lane 23.
- If you wanted to set a Evolution board to lane 23, you would set the DIP switch as shown.

Lane No.	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7
23	ON	ON	ON	OFF	ON	OFF	OFF

Note: Always set switch 8 to ON when using the Video Distribution System.

Note: Switch 1 may change depending on CPU board frequency on AS-80/90 systems.



Lane Assignment Tables

Lane No.	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7
1	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF
47	ON	ON	ON	ON	OFF	ON	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF
55	ON	ON	ON	OFF	ON	ON	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF
59	ON	ON	OFF	ON	ON	ON	OFF
61	ON	OFF	ON	ON	ON	ON	OFF
63	ON	ON	ON	ON	ON	ON	OFF

Lane No.	SW 1	SW 2	SW 3	SW 4	SW 5	SW 6	SW 7
65	ON	OFF	OFF	OFF	OFF	OFF	ON
67	ON	ON	OFF	OFF	OFF	OFF	ON
69	ON	OFF	ON	OFF	OFF	OFF	ON
71	ON	ON	ON	OFF	OFF	OFF	ON
73	ON	OFF	OFF	ON	OFF	OFF	ON
75	ON	ON	OFF	ON	OFF	OFF	ON
77	ON	OFF	ON	ON	OFF	OFF	ON
79	ON	ON	ON	ON	OFF	OFF	ON
81	ON	OFF	OFF	OFF	ON	OFF	ON
83	ON	ON	OFF	OFF	ON	OFF	ON
85	ON	OFF	ON	OFF	ON	OFF	ON
87	ON	ON	ON	OFF	ON	OFF	ON
89	ON	OFF	OFF	ON	ON	OFF	ON
91	ON	ON	OFF	ON	ON	OFF	ON
93	ON	OFF	ON	ON	ON	OFF	ON
95	ON	ON	ON	ON	ON	OFF	ON
97	ON	OFF	OFF	OFF	OFF	ON	ON
99	ON	ON	OFF	OFF	OFF	ON	ON
101	ON	OFF	ON	OFF	OFF	ON	ON
103	ON	ON	ON	OFF	OFF	ON	ON
105	ON	OFF	OFF	ON	OFF	ON	ON
107	ON	ON	OFF	ON	OFF	ON	ON
109	ON	OFF	ON	ON	OFF	ON	ON
111	ON	ON	ON	ON	OFF	ON	ON
113	ON	OFF	OFF	OFF	ON	ON	ON
115	ON	ON	OFF	OFF	ON	ON	ON
117	ON	OFF	ON	OFF	ON	ON	ON
119	ON	ON	ON	OFF	ON	ON	ON
121	ON	OFF	OFF	ON	ON	ON	ON
123	ON	ON	OFF	ON	ON	ON	ON
125	ON	OFF	ON	ON	ON	ON	ON
127	ON	ON	ON	ON	ON	ON	ON

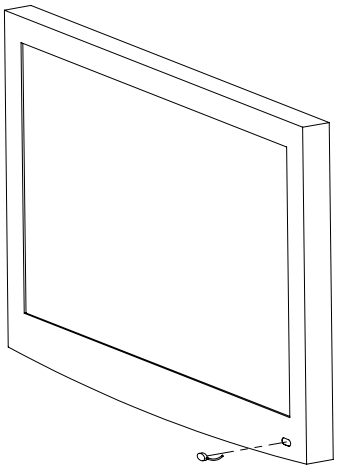
Step 4:

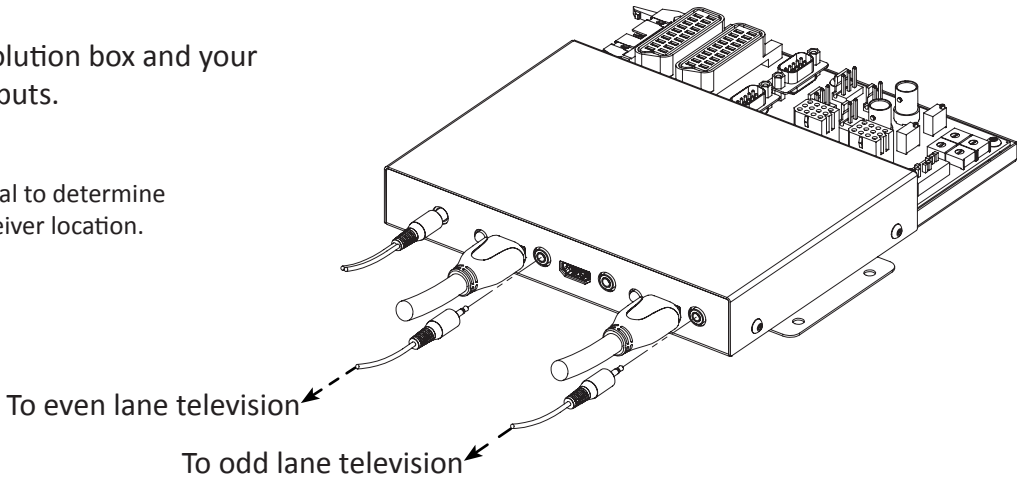
Parts Required:

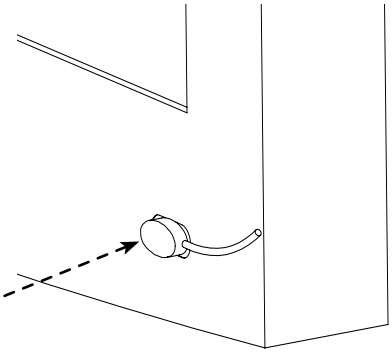
- Part O

- Connect IR Emitter to the Evolution box and your televisions remote control inputs.

Refer to your televisions owners manual to determine the location of the remote control receiver location.



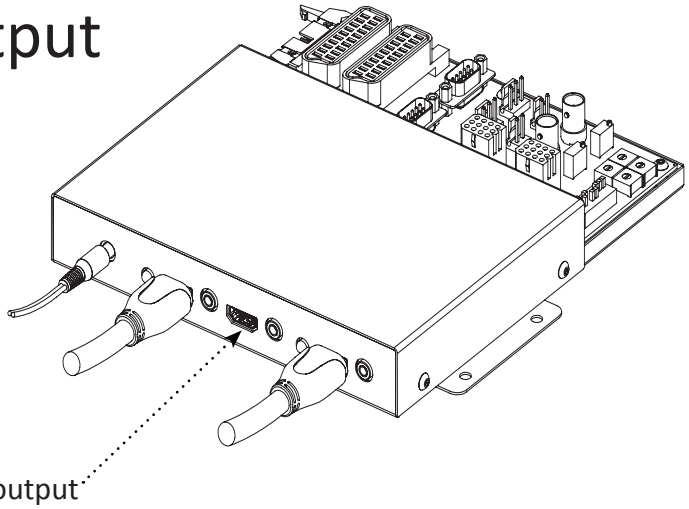




- Clean the area where the IR Emitter is to be attached with the provided alcohol swab to ensure good adhesion.
- Attach the self-adhesive IR Emitter over the remote control receiver location on the television. (Location varies by model)

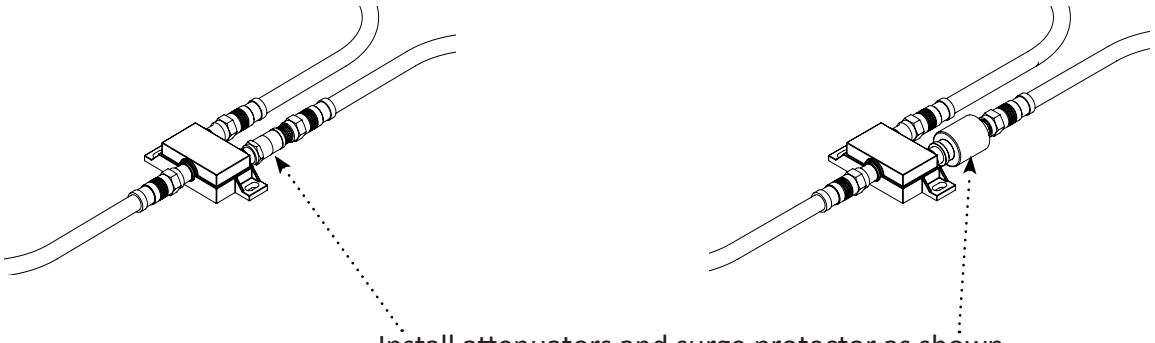
Note: Auxiliary Control Output

- This output is only used with a third monitor dedicated to displaying non-scoring system content.
- If only two (2) monitors are present this output is not used.



Step 5:

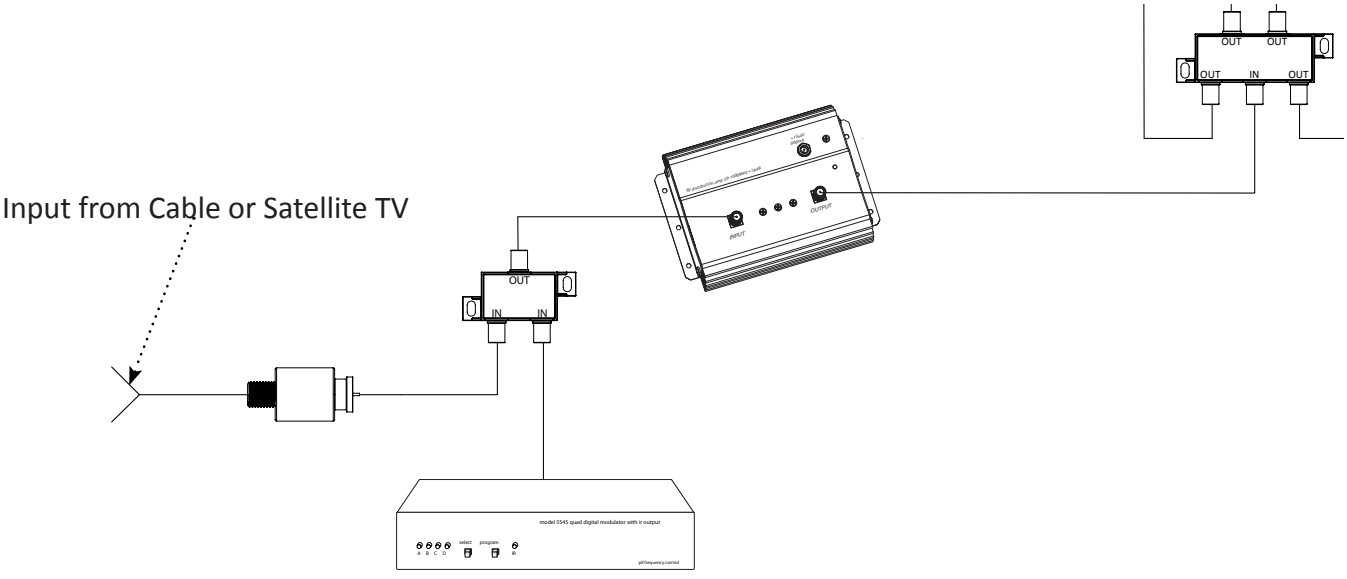
Continue to run the RG-6U cable and connect the splitters as shown on the schematic. Note any specific location for splitters that are called out on the drawing. If attenuators are required per the drawing they are installed directly on to the splitter they are shown next to. The same is true for the surge protector. See example below.



Install attenuators and surge protector as shown

Step 6:

Determine where you plan to locate the amplifier and modulator units. (Suggestion: Locate these at or near the front desk. Both units require 120VAC power so they need to be located near an available outlet. The cable or Satellite TV will also need to be run to the same location.) Once the location of the units has been determined run the RG-6U cable from the last splitter to the amplifier location. Complete the RG-6U installation by wiring the amplifier(s), modulator, and video source(s). You can hook up 2 addition sources to the modulator for display on the overhead monitors. Refer to the manuals for the amplifier and modulator for specific instructions on their installation.

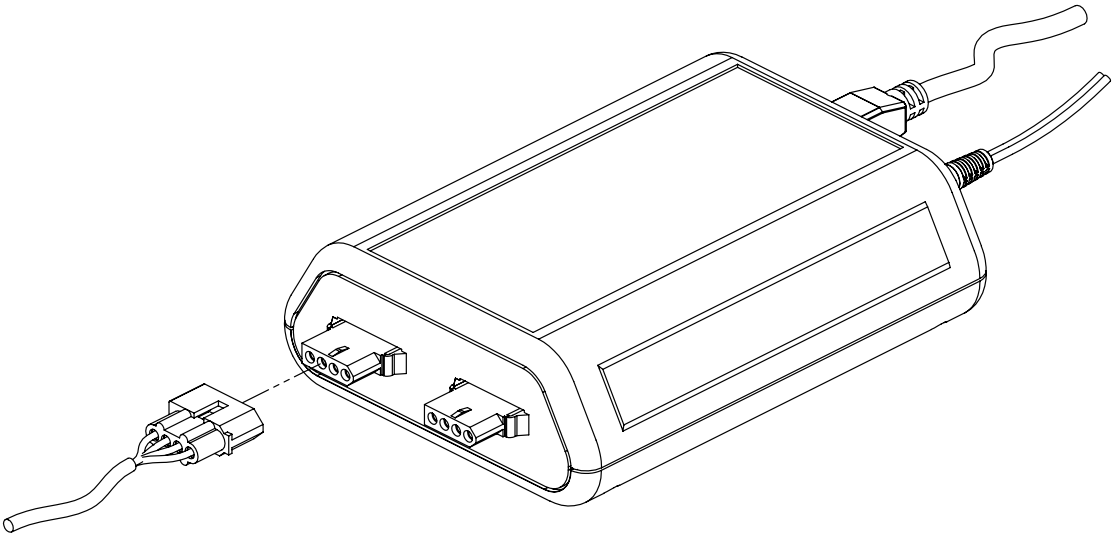


Note: When choosing the stations to modulate your own video sources on to, be sure to pick stations that do not currently have content broadcast from the cable provider. Poor video quality will result if a channel that already has information present on it is chosen.

Step 7:

NOTE: Do not plug in the USB cable between the Front Desk Control module and the computer till instructed to do so after he software is installed.

Run the long COMM cable from either the first or last lane pair in the center. Route the cable to were the Front Desk Interface will be located. Plug the COMM cable into the Front Desk Interface as shown below.

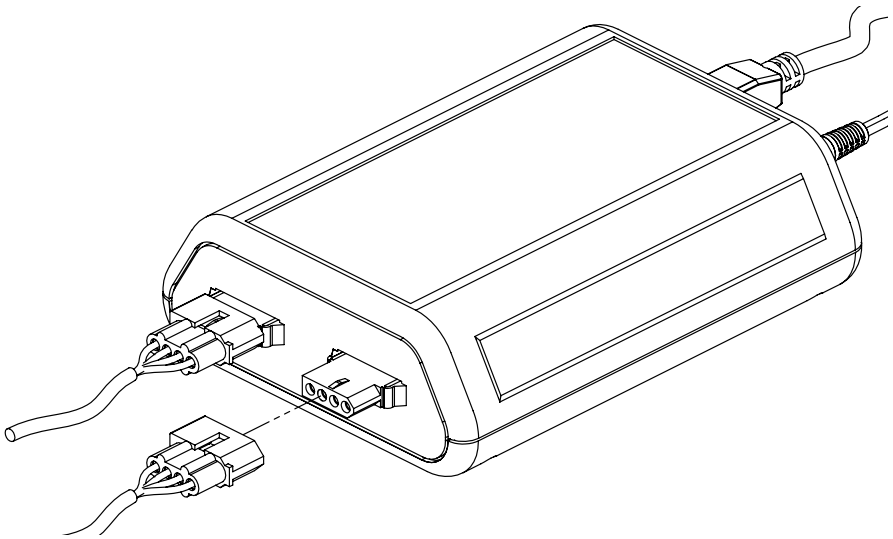


Note: There are two (2) COMM line connectors on the side of the Front Desk Control. Make sure the long COMM cable from the lanes is connected to the “COMM OUT” connector. The “COMM IN” connector is only used with Brunswick AS-80/90 systems.

Step 7b:

This step is only required if the Video Distribution System is being used with the Brunswick AS-80/90 system.

Connect the included front desk COMM Cable between the Command Network interface box and the Front Desk Control Module.

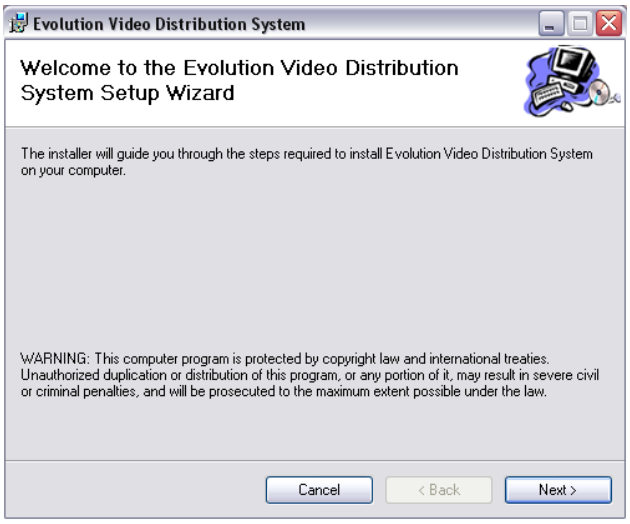


Hardware Install Notes:

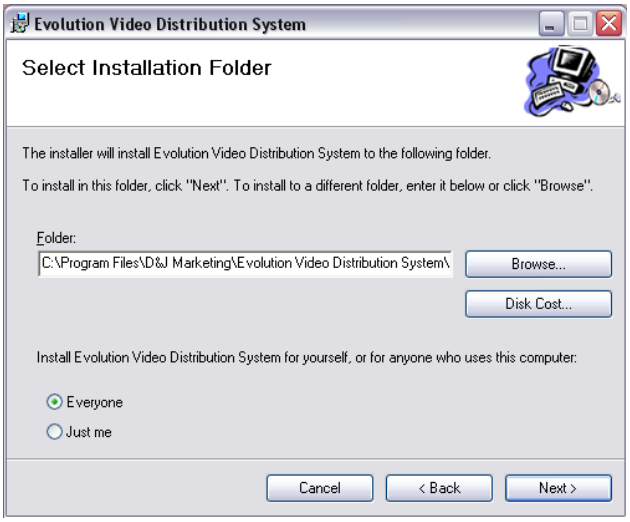
At this point all of the video distribution hardware should be installed. If desired you may want to install any auxiliary input equipment (DVD, VCR, etc) on any lane monitors that is desired. Doing so now will allow these devices to be configured in the software during setup. These devices can also be configured later.

Software Installation:

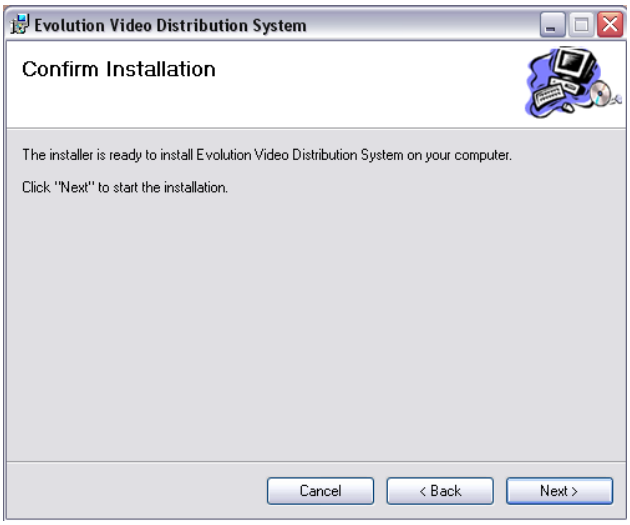
Place the supplied CD-ROM in the disc drive of the computer that will run the video distribution software. The instillation process should start automatically. Follow the prompt on the screen to install the software.



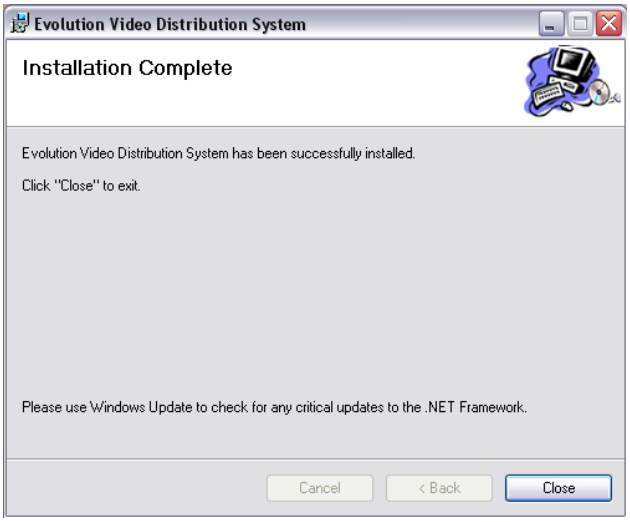
Install the software in the folder location shown by the software. Installing to a different location will cause the software to not run properly.



When prompted, click next to allow the software to install on the computer.

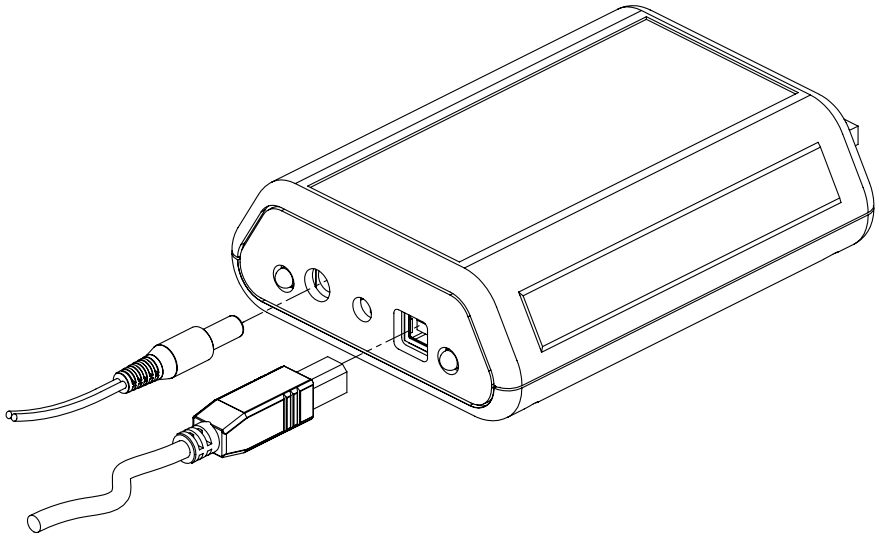


Once the screen below appears the software installation is complete and the front desk module can be connected.



Step 8:

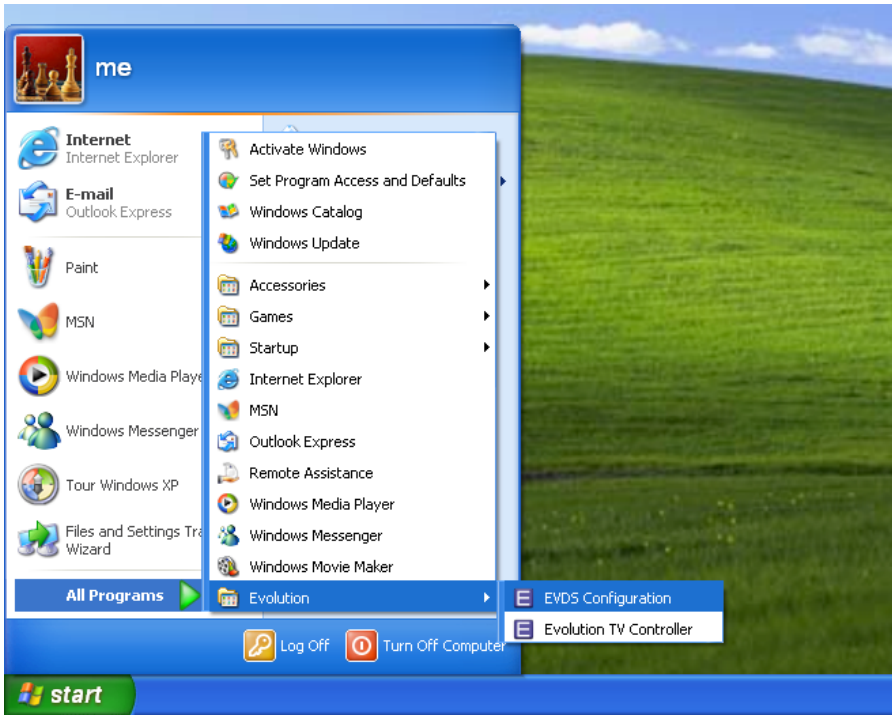
Install the supplied power transformer between the Front Desk Control Module and an available 120VAC wall outlet. Next, install the supplied USB cable between the Front Desk Control Module and any available USB port on the computer which will be used for the Video Distribution Control software.



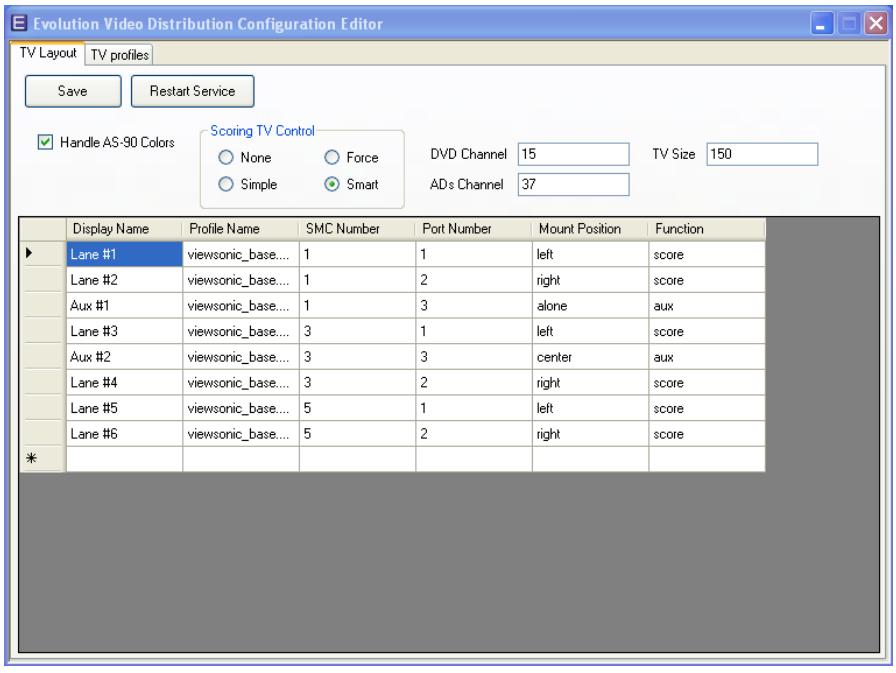
Note: Once the Front Desk Control Module has been plugged in to power the red Power Status light should turn on.

Configure the Software For the Center:

The first step after the software is installed is to configure the software for the particular center. Begin by opening the EVDS Configuration utility as shown below.



When the configuration utility runs the first screen will look like what is shown below. An explanation of what the fields on the screen mean are shown below.



- **Save:** Saves the current configuration shown in the display window
- **Restart Service:** This restarts the windows service and allows any configuration changes to take effect.
- **Handle AS-90 Colors:** This allows the EVOLUTION Video Distribution system to communicate the AS-90 color information to the lane converters. Only select this if using with Brunswick AS-90.
- **Scoring TV Control**
    - **None:** There will be no automatic control of the lane monitors. All control will have to be done manually from the Video Distribution desktop application.
    - **Simple:** Lanes Monitors will turn on and off automatically with the scoring for a particular lane.
    - **Forced:** Lane monitors are forced to scoring mode any time scoring is turned on to a lane. When scoring is turned off on that lane the monitor will turn off regardless of what state it was in before scoring was turned on
    - **Smart:** Lane monitors are forced to scoring mode any time scoring is turned on to a lane. When scoring is turned off on that lane the monitor will return to whatever state it was on before scoring was turned on.
- **DVD Channel:** This is the channel that the DVD player is modulated on to through the video modulator set up during the hardware instillation.
- **ADS Channel:** This is the channel that the ads source is modulated on to through the video modulator set up during the hardware instillation.
- **TV Size:** The display size of the television icons on the Video Distribution desktop application. 150 is a good place to start. If larger icons are desired increase the number in this field. If smaller icons are desired make this value smaller.
- **Display Name:** The name that will be displayed for a particular monitor in the Video Distribution desktop application
- **Profile Name:** The name of the television profile that is used to control the monitor on that particular lane.
- **SMC Number:** The lane number assigned to the EVOLUTION lane converter or Auxiliary Control Module on that particular lane pair. Note: Remember that one EVOLUTION converter controls a lane pair and possibly the Auxiliary TV so all monitors controlled by a single converter will have the same SMC number.
- **Port Number:** The number of the output the monitor is attached to on the EVOLUTION converter or Auxiliary Control Unit.
    - **1:** Labeled as Odd Lane on the EVOLUTION converter unit
    - **2:** Labeled as Even Lane on the EVOLUTION converter unit
    - **3:** Labeled as Aux on the EVOLUTION converter unit
- **Mount Position:** This is the position that the monitor is place on the mount as you look down the lane. If a triple mount is being used the center monitor must be listed as center, labeling it alone will cause the control software to malfunction. An ‘alone’ monitor is for stand alone televisions only.
- **Function:** If the monitor is used for bowling scoring then this field must be listed as ‘score’. If no scoring is used on a monitor then this field must be listed as ‘aux’

Step 1:

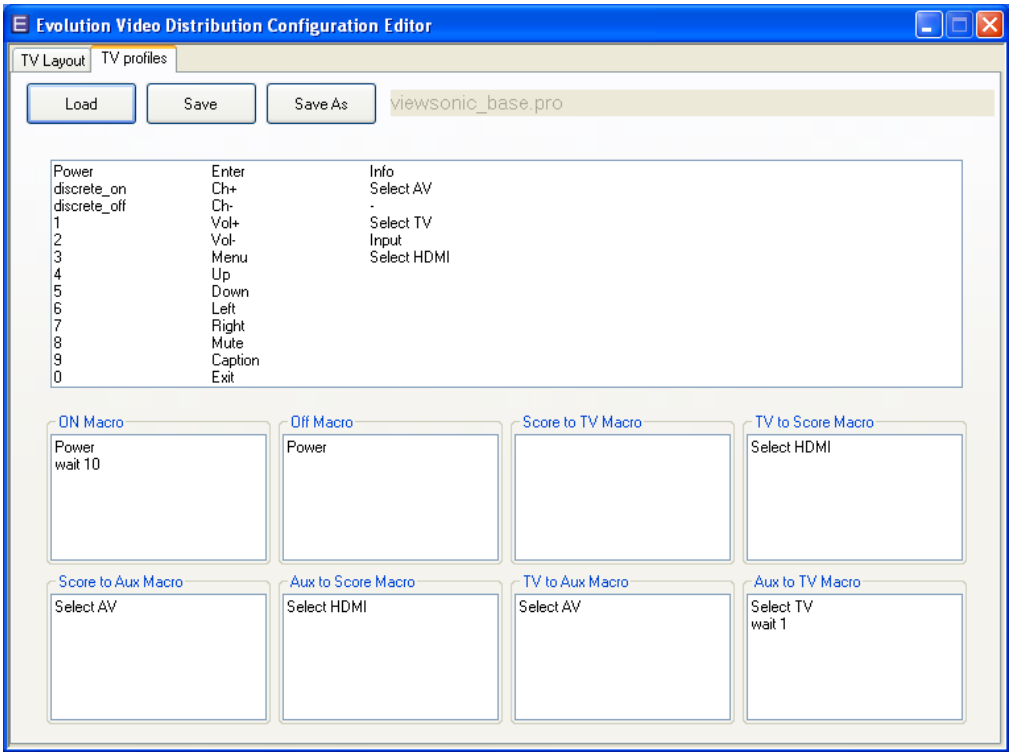
The first step is to set the option along the top of the configuration screen.

- If the Video Distribution System is being used with Brunswick AS-90 make sure the check box for handling AS-90 colors is checked, otherwise leave it unchecked.
- Based on the explanations given previously, select the desired TV control level from the options given.
- Input the channels which any auxiliary video equipment are modulated on to in the provided fields. Even though they are listed as DVD and Ads any video source which is modulated on to the cable signal can be used. Remember when configuring the modulator not to use any channels which already have video information on them or poor performance will result.
- Input the desired size of the TV icons in the Video Distribution desktop application. Start with the default value shown and adjust as desired.

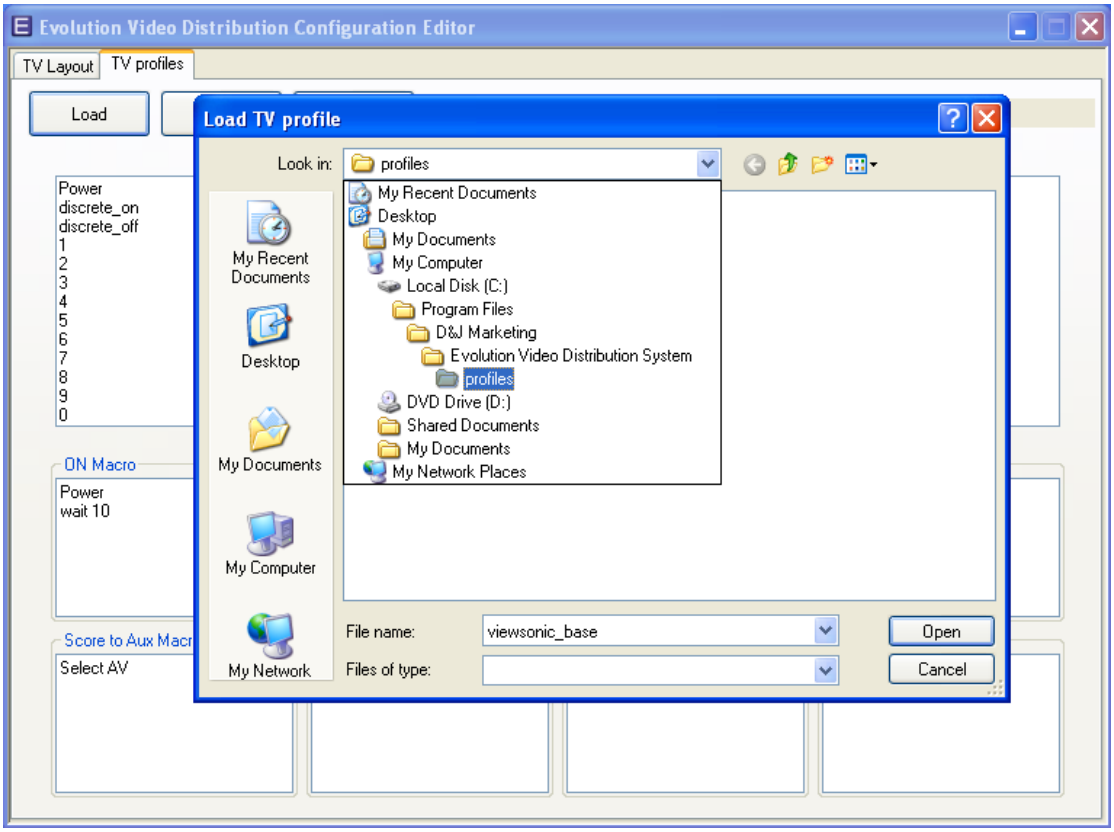
Note: All configuration values can be modified at any time through the EVDS Configuration utility.

Step 2:

Next the television profiles need to be set up. Profiles have been included for the most common televisions with the software. It may be necessary to modify a profile however depending on the specific model of television being used.



To view the profiles included try loading one of the profiles as shown below by selecting the ‘Load’ button on the TV profiles screen.



In this directory are all of the included TV profiles. This is also where all custom profiles should be saved when they are created.
If the brand of television being used has a profile already created then you may not need to do anything with the profiles. Note the profile name because it will be needed to finish setting up the center configuration shortly.
If you do not see the brand of television being used then it will be necessary to create the profile. It is also possible that a particular manufacturer may have different profiles depending on television model. If more than one profile for the television being used is present then it may be necessary to try each one till the proper profile is found.
It may also be necessary to modify an existing profile or to create one from scratch if the television being used is not shown in the list. This process is explained in Appendix A.

Step 3:

The final step in the configuration process is to set up the center layout. The list created must read exactly as the center is laid out. When setting the lane assignments on the EVOLUTION converter units or Auxiliary Control Modules keep in mind that they are assigned to the ODD lane which is controlled by the converter. The SMC Numbers in the configuration window must be listed in order from lowest to highest and numbered by the odd number assigned. It is also important that all fields be typed in as shown in the example screen. The program is CASE SENSITIVE so if the text is shown in lower case letters then it will only except lower case letters. The only field that this is not true for is ‘Display Name’, this can be typed however it is desired to be displayed on the Video Distribution desktop application main screen. If an invalid value is entered in to a particular field that field will turn red and saving will not be possible.

	Display Name	Profile Name	SMC Number	Port Number	Mount Position	Function
▶	Lane #1	viewsonic_base....	1	1	left	score
	Lane #2	viewsonic_base....	1	2	right	score
	Aux #1	viewsonic_base....	1	3	alone	aux
	Lane #3	viewsonic_base....	3	1	left	score
	Aux #2	viewsonic_base....	3	3	center	aux
	Lane #4	viewsonic_base....	3	2	right	score
	Lane #5	viewsonic_base....	5	1	left	score
	Lane #6	viewsonic_base....	5	2	right	score
*						

- Enter the Display Name desired for a particular monitor.
- Enter the TV Profile Name noted earlier exactly as it is displayed in the profile folder. NOTE: The profile name is only used for the particular television on the line it appears. If two televisions are different they will have different TV profile names shown.
- Enter the SMC Number assigned for the EVOLUTION converter or Auxiliary Control unit for that television.
- Enter the Port Number that the television is plugged in to as explained earlier.
- Enter the mount position for the particular television. Note: It is important that this value be correct in order for the desktop application to display correctly.
- Enter the Function for the television. Note: If the television will have scoring displayed then this field should say 'score' otherwise it should be set to 'aux'.

Continue to fill in the form for every television in the center. Remember that this form must read exactly as the center appears from Lane 1 to the other end of the center regardless of which end of the center the long COMM cable is plugged in to.

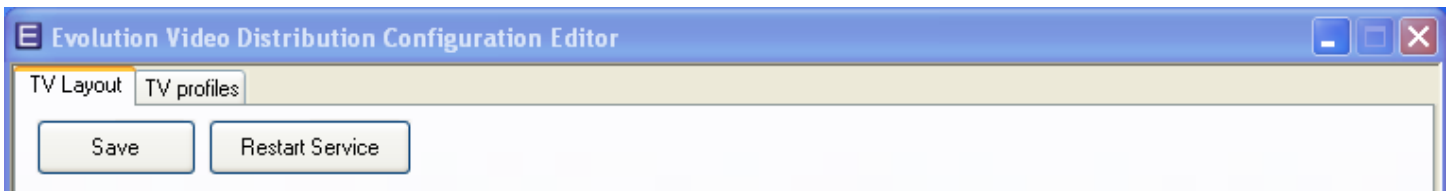
Notes:

- The SMC Numbers must read from lowest to highest by the odd number assigned. This includes any control for non-scoring TV's mounted anywhere in the center.
- If a field turns red then an invalid value has been entered and must be corrected before the configuration can be saved.
- The fields are case sensitive.
- Any TV not displaying scoring information should have its Function set as 'aux'.

Step 4:

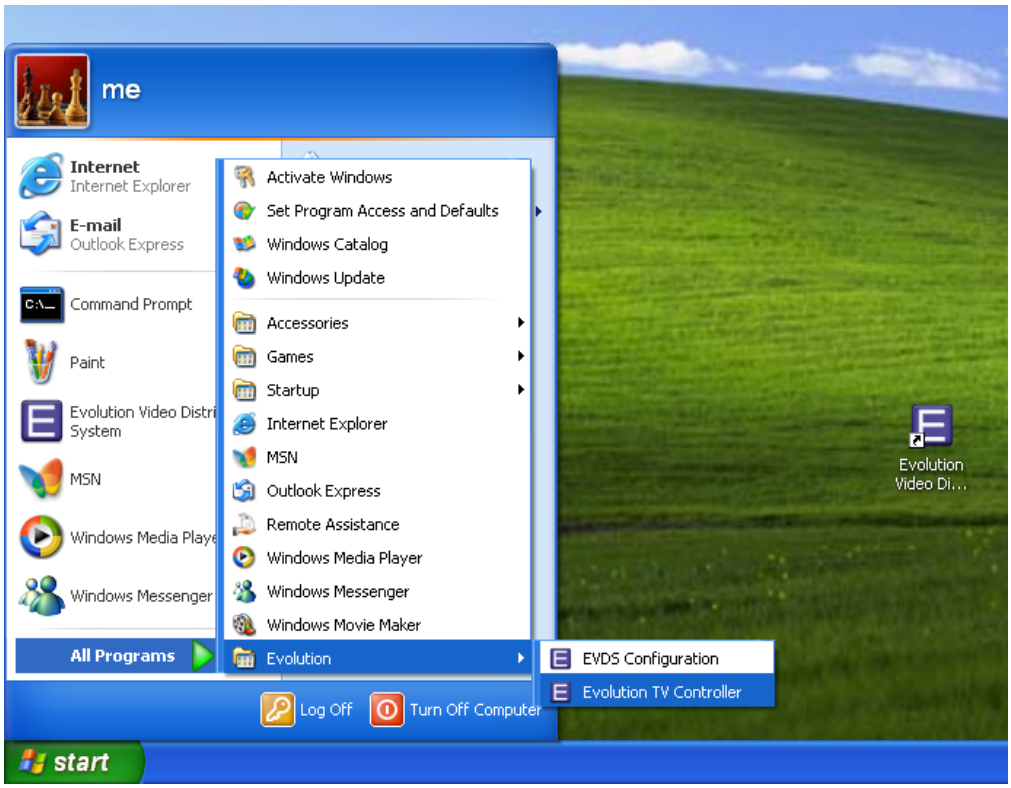
Once the center layout has been completed save the configuration. Once the configuration has been saved the service must be restarted in order for the setting changes to take effect. Restart the service by pressing the Restart Service button on the configuration screen.

Once the service is restarted the configuration utility can be closed by clicking the  in the upper right hand corner.

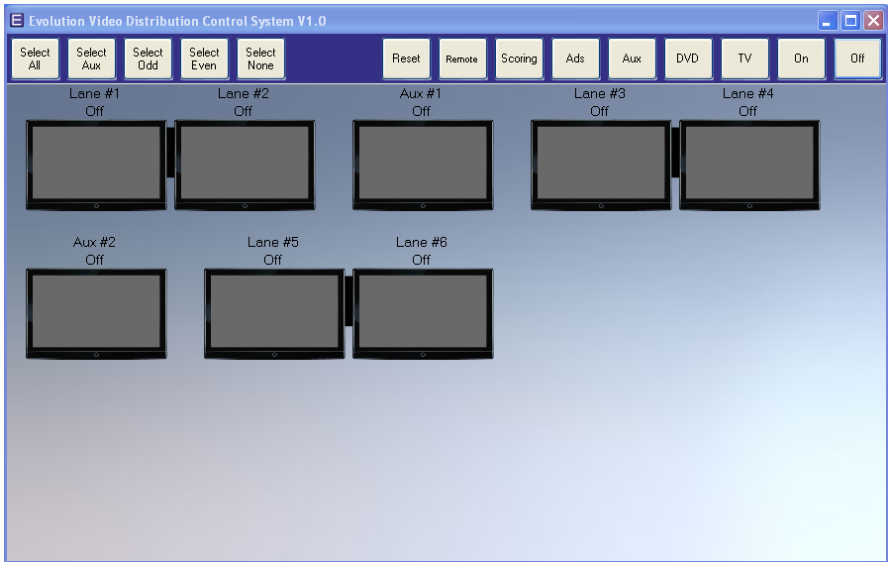


Operating the Video Distribution System

Begin by starting the EVOLUTION Video Distribution System from either the start menu of the desktop icon as shown below.



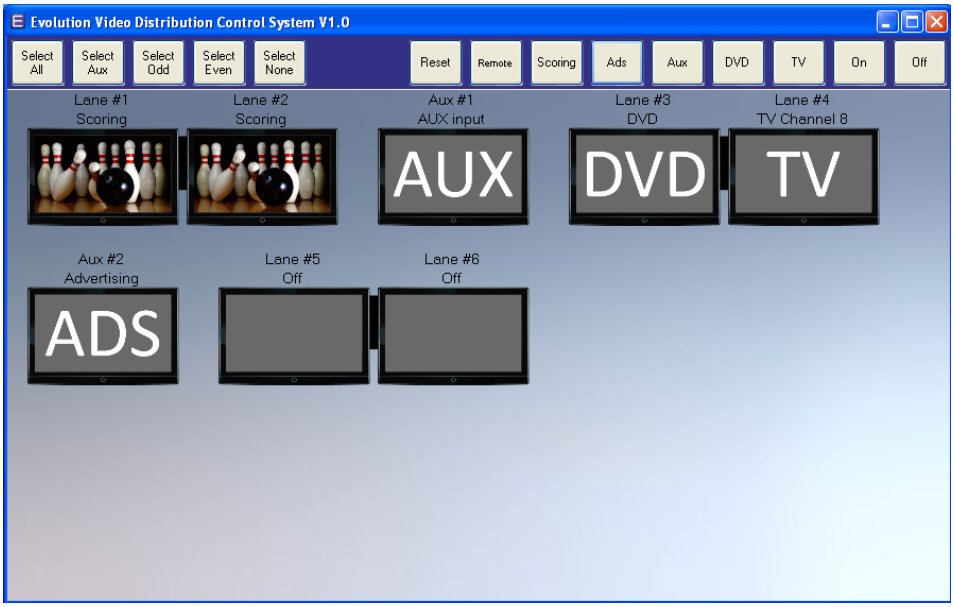
Once the software has been started the screen should look similar to what is shown below. This will vary depending on the configuration of the particular center set up previously using the EVDS Configuration utility.



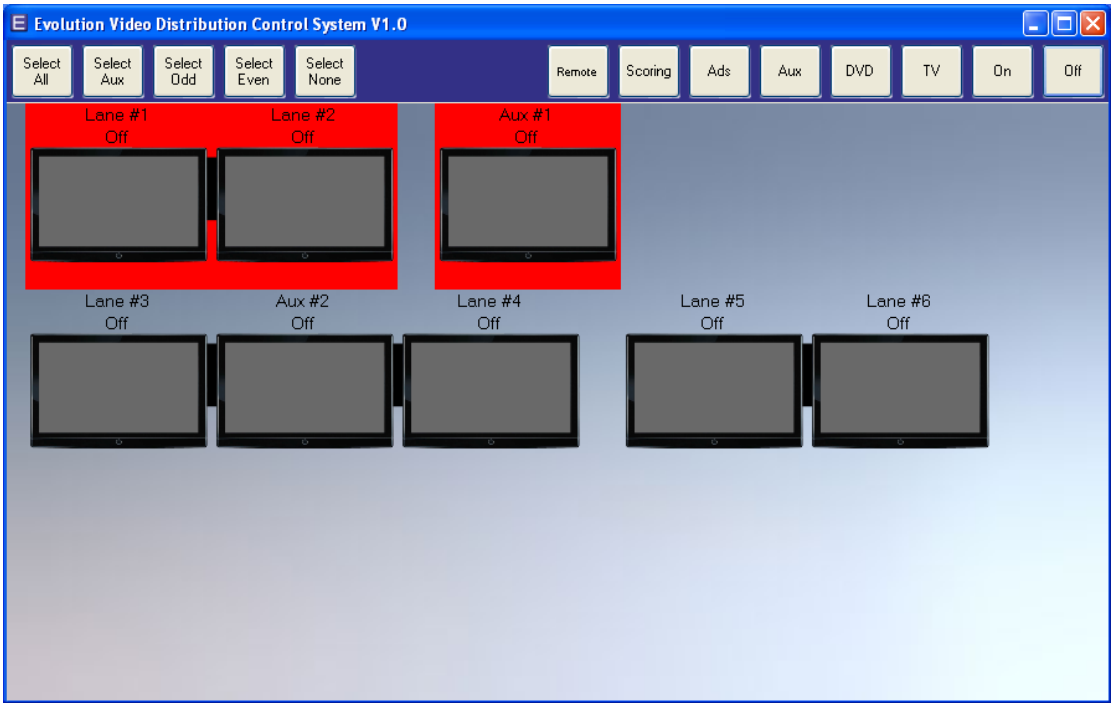
An explanation of the button functions is given on the next page.

- **Select All:** Selects all televisions in the center.
- **Select Aux:** Selects all auxiliary televisions in the center.
- **Select Odd:** Selects all odd numbered televisions in the center.
- **Select Even:** Selects all even numbered televisions in the center.
- **Select None:** De-selects all televisions currently highlighted.
- **Reset:** Resets the EVOLUTION converter or Auxiliary control module associated with any selected lane. Note: This resets only the EVOLUTION box, not the scoring system. No scoring data is lost upon reset with this button.
- **Remote:** Brings up the virtual remote control so that the highlighted lane(s) can be controlled manually. Note: The main program does not monitor the commands sent from the virtual remote, therefore it will not remember changes made with the virtual remote. This is used primarily to fix a television which has become out of sync with the Video Distribution desktop application.
- **Scoring:** Changes the selected lane(s) to scoring mode.
- **Ads:** Changes the selected lane(s) to the Ads channel selected in the EVDS Configuration utility.
- **Aux:** Changes the selected lane(s) to the auxiliary input set up in the EVDS Configuration utility. See Appendix A for setting up this feature.
- **DVD:** Changes the selected lane(s) to the DVD channel selected in the EVDS Configuration utility.
- **TV:** Changes the selected lane(s) to the TV channel input in the TV channel prompt.
- **On:** Turns all selected televisions on.
- **Off:** Turns all selected televisions off.

If scoring is turned on when the Video Distribution service is started then the lanes which are ON will show a bowling ball and pins screen on the television. All other televisions should be in the OFF state. To change the state that a particular lane or auxiliary television is in simply click the television on the screen corresponding to the desired lane and select the desired state of the television from the list of buttons explained above. The pictures for all states can be seen in the image below.



If at any time one or more lane pair turns red (shown below) a communication problem with that lane pair has been detected. Be sure that the lane assignment switches are properly set for that lane pair. If all lanes after or before a certain pair turn red check to see that the COMM line has not become disconnected or damaged. The disconnection can occur at either the first lane pair showing in red or at the first pair not effected by the communication error.



Notes:

- It is recommended that all televisions be turned off using the desktop application at the end of the day.
- If the computer running the Video Distribution software is restarted for any reason the software will not remember what state any television was in previously. Unless a scoring signal is present when the software starts it will assume all televisions are OFF.
- If a television becomes out of Sync (aka. is ON when the software thinks it's OFF) use the virtual remote to correct the problem.

Using the Virtual Remote

The virtual remote is generally used to correct out of sync problems between the televisions and the control software. It may also be used to check that a new remote command from the EVDS Configuration utility is working as expected.

- Select the television(s) that need to be controlled by the virtual remote.
- Select 'Remote' from the buttons at the top of the desktop application.
- The virtual remote control should act just as the factory remote for that particular TV.