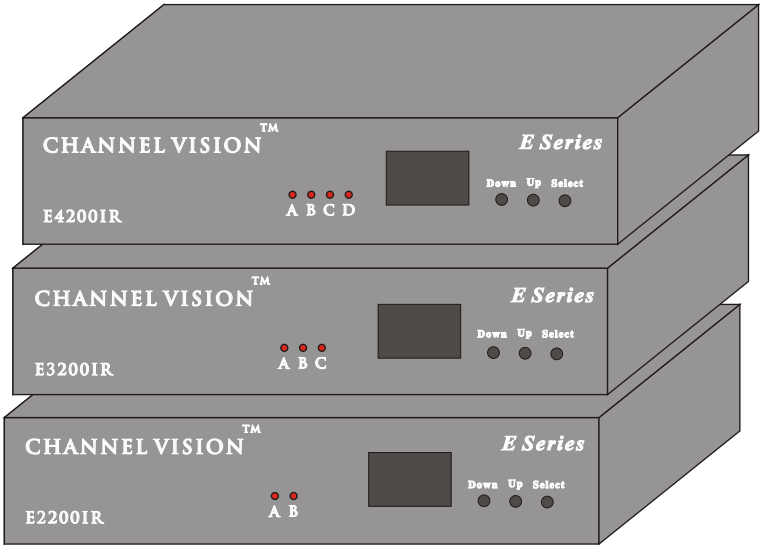
# INSTRUCTIONS




# E2200IR
# E3200IR
# E4200IR

## E Series Modulators With IR Repeating

CHANNEL VISION™

The **E2200IR**, **E3200IR**, & **E4200IR** are 2, 3, & 4-input RF modulators that create user selectable TV channels from standard composite video signals. In addition to creating a whole-house audio video system, these units also provide an integrated IR repeating system that runs over the same coax that delivers video to your TV set.

**Features:**

- LED display for easy setup
- 25dBmV output
- Integrated IR engine creates a coax-based IR system
- IR emitter outputs
- Simple installation and setup

**LED Display...**
Shows the channel number of the selected input.

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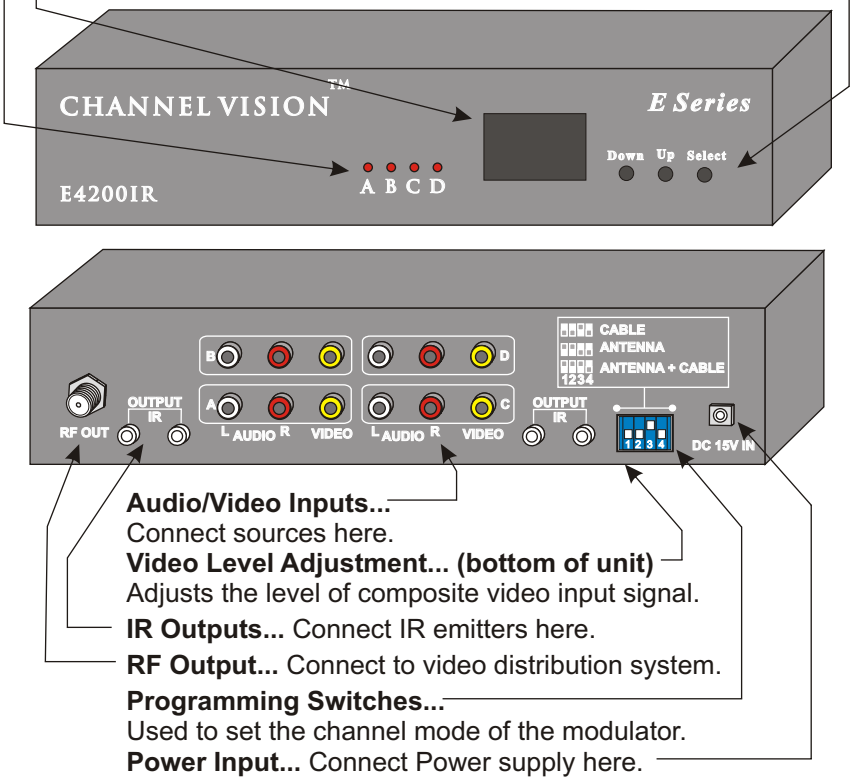
**Programming Buttons...**
Used to set the desired input to a specific channel..




**Audio/Video Inputs...**
Connect sources here.

**Video Level Adjustment... (bottom of unit)**
Adjusts the level of composite video input signal.

**IR Outputs...** Connect IR emitters here.

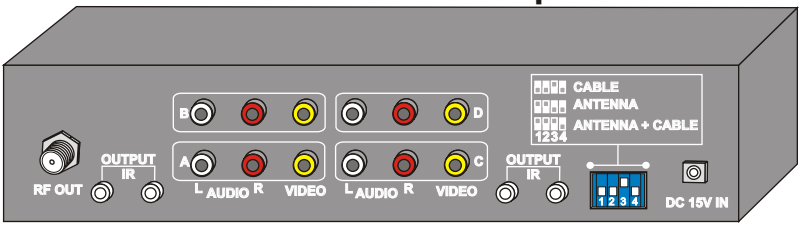
**RF Output...** Connect to video distribution system.

**Programming Switches...**
Used to set the channel mode of the modulator.

**Power Input...** Connect Power supply here.

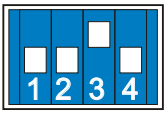
Note: E4200 shown for reference only, E2200 & E3200 are similar.

# Basic Setup

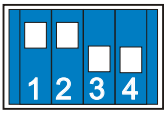



**Dip Switch Settings**

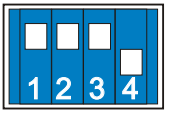
Remove power before changing switch settings.




**Cable settings... channels 65-135**
Switches 1, 2, & 4 are down, switch 3 is up.
Use this setting if the modulator will be installed on a system that is distributing cable TV.



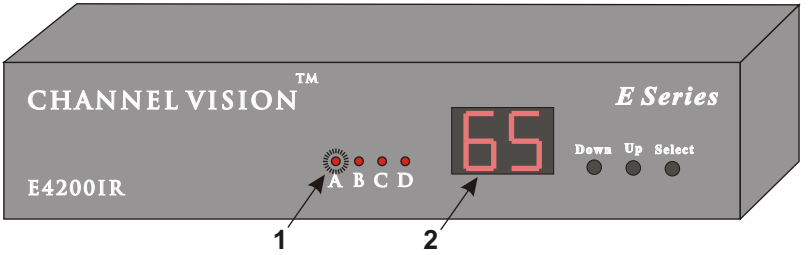

**Antenna settings... channels 14-78**
Switches 1 and 2 are up, switches 3 and 4 are down.
Use this setting if the modulator will be installed on a system that is distributing signals from an antenna.




**Antenna + Cable settings...**
Switches 1,2, and 3 are up, switch 4 is down.
This is rarely used, but it allows the modulator to be programmed to antenna channels 14-39 and cable channels 91-135 simultaneously.

Note: Cable channels 95-99 are excluded from all programming modes

**Setting The Channel Number**

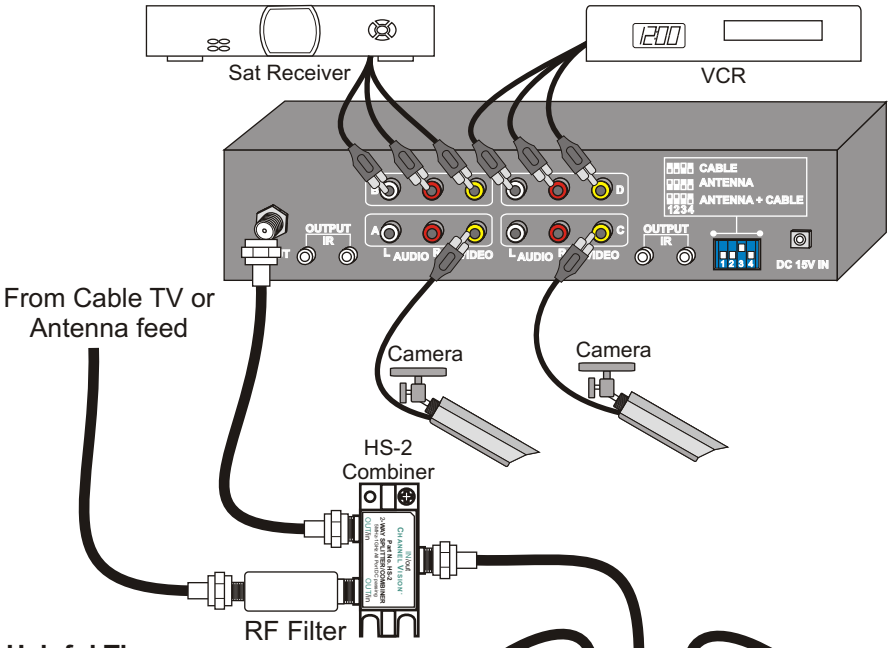



1. Press the ***Select*** button until the LED indicator is illuminated for the input you wish to set. The LED display will show the current channel setting.

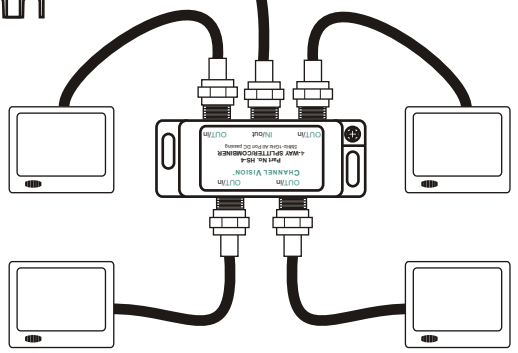
2. Press and hold the ***Select*** button until the LED indicator begins to blink. While it is blinking press the ***Up*** or ***Down*** button until the desired channel is shown in the LED display. Press the ***Select*** button again to set then next input to a new channel. If no button is pressed for 2 seconds, the modulator will exit the programming mode.

Note: Do not program the modulator to consecutive channels, this will cause poor picture quality. Skip at least one channel between your selections. For example: 65, 67, 69, 71 would be OK.

# Basic Application



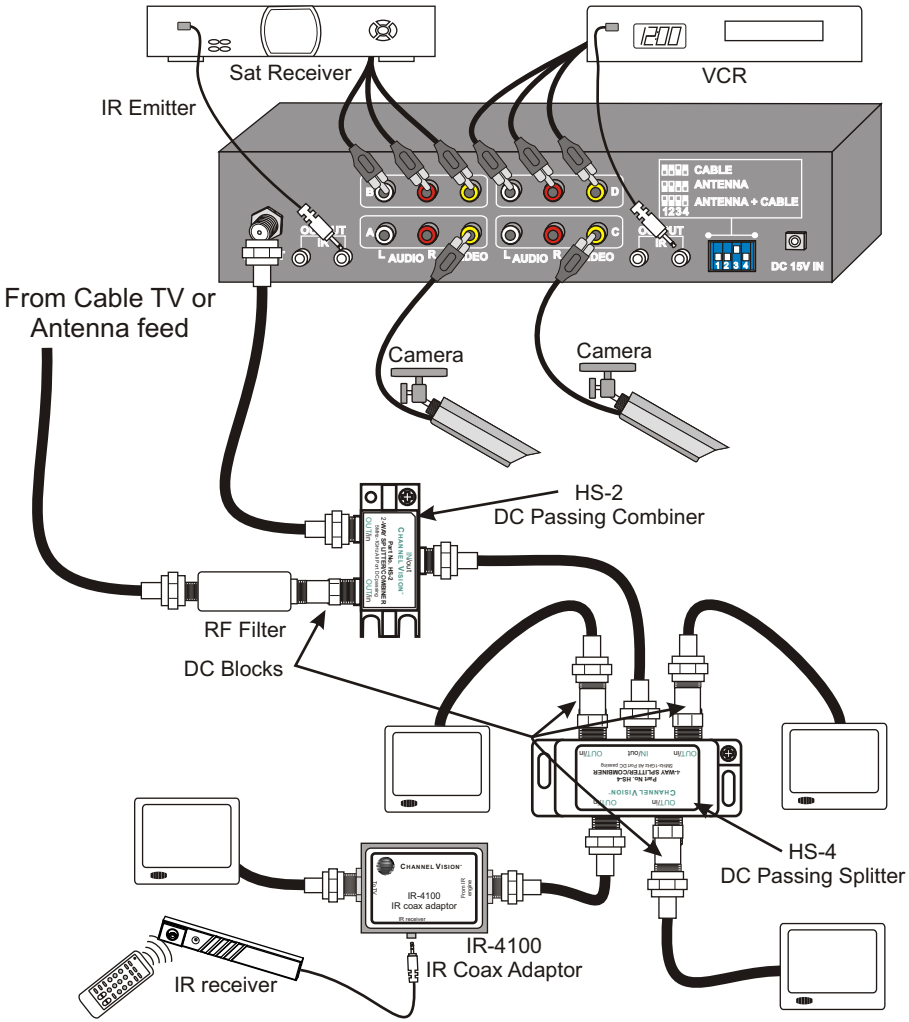

**Helpful Tips:**
The use of an RF filter is recommended for this kind of setup. It will help remove unwanted signals from the cable or antenna feed, allowing the modulator to perform without interference. It also helps provide the isolation needed to prevent your system from interfering with your neighbors TV reception.



Check the signal from your video sources to make sure you have a good picture before connecting to the modulator. Connect the RF output from the modulator as shown in the diagram above.

It is important to balance the RF signal levels before joining them together in the combiner. It may be necessary to amplify the cable/antenna signal to match it with the high output of the modulator. If the cable/antenna signal is too low in relation to the modulator, you will notice that the cable/antenna signal is degraded when the modulator is connected. Simply amplify the cable/antenna signal to resolve the problem.

# Using IR repeating




The modulator supports Channel Vision's IR over coax technology allowing up to 8 IR-4100 IR coax adaptors to be installed in the system. Standard IR receivers can be connected so that IR signals are transmitted back to the modulator where the IR emitters will flash the signals into the source devices. This enables you to control your source devices even though they are in a different room.

This IR system places 12Volts DC on the coax. DC passing splitters and DC blocks must be used as shown in the diagram. DC voltage should only be allowed to flow to locations that have an IR-4100 installed. If the system detects a short (or improper connection) it will shut off the IR voltage until the problem is corrected.

# Troubleshooting Video

If your modulated signal looks 'snowy' or if you don't see it at all, follow these steps to correct the problem.

1. If you are combining the modulator with the an antenna or CATV signal (as shown on pages 4 & 5) disconnect the antenna or CATV signal so that the modulator is the only signal in the system.
   a. If this solves the problem, you will either have to change the channel you are modulating on to a truly empty channel or you will have to filter out the signals that are interfering with the modulator.
   b. If disconnecting the antenna or cable feed does not solve the problem, continue to step 2.

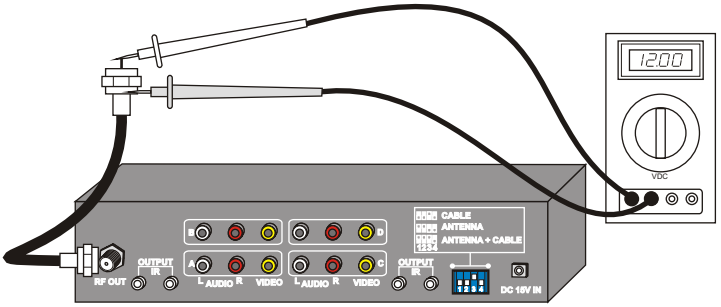
2. Connect the RF output of the modulator directly to the RF input of a TV (make sure the signal is not feeding through any unnecessary devices such as VCRs or cable boxes).
   a. If this solves the problem, there is something wrong with your distribution system. Reconnect your distribution system one component at a time until you identify which piece is causing the problem.
   b. If connecting directly to a single TV did not solve the problem, continue to step 3.

3. With the modulator still connected directly to the TV, make sure the TV tuner is set to the same mode as the modulator. TVs have can either be setup to receive antenna signals or CATV signals. If the TV is setup to receive antenna signals and the modulator is set for CATV signals, you will not see the modulated signal on the desired channel. You may need to perform an auto-program search with the TV. This is typically an option in the TV's setup menu. Before the channel search begins, the TV will usually prompt you to choose the type of input signal: either CATV or Antenna/Off-air.
   a. If auto-programming finds the modulated channel, then reconnect the system. If you have further problems repeat steps 1 & 2.
   b. If auto-programming does not find the channel or if it finds the channel and there is only a empty black screen, continue to step 4.

4. An empty black screen is usually an indication that there is no signal getting into the modulator. Verify that an active composite video signal is connected to the yellow RCA input jack on the modulator. An easy way to verify the composite video signal is to connect it directly to the yellow RCA input of a TV set.
   a. If you do not have an active video signal, try another source. When you have verified that the composite video signal is active, reconnect it to the modulator and repeat step 3.
   b. If there was no problem with composite video signal when you connected it directly to the TV, then call tech support for further assistance: 1-800-840-0288.

# Troubleshooting IR

If your IR system is not working, check to see if the modulator's IR engine is feeding approximately 12 Volts DC onto the coax between the shield and center pin. (Any voltage between 8-12VDC is OK). If there is no voltage between the center pin and shield, check the connectors on each end of the coax.




If you are trouble shooting a whole-house IR system and you measure approximately 8-12 Volts DC on the output of the Modulator, but 0 Volts DC on the output of your RF splitter, check the following items:

1. Make sure you are using a DC passing splitter. Traditional splitters will short out DC voltage traveling on the coax and prevent your IR system from working.

2. Make sure that there are DC blocks (model 3109) on any output from the RF splitter that will not be connected to an IR-4100. If outputs from the splitter are connected directly to TV sets without going through a IR-4100 or DC block, the system voltage will be shorted out by the input of the TV set.

3. Double check the fittings at the end of your coax cables. If a little bit of shielding is touching the center pin, the voltage will be shorted out and the system will not work.

Don't worry. The IR-4000 engine has a current limiting circuit. If the engine is shorted (due to a bad connection or a non-DC passing splitter) nothing will be harmed.

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# Specifications

| | |
|---|---|
| **RF Modulator** | PLL Synthesized Oscillator |
| Video | NTSC |
| Audio | L&R summed Monaural |
| **RF Carriers** | |
| Freq. Stability | ±50kHz |
| Freq. Range | UHF 471.25-855.25MHz |
| | Ultraband 469.25-859.25MHz |
| Channels | UHF 14-78, Ultraband 65-135 |
| | (Excluding 95-99) |
| Channel Width | 6.0MHz |
| Audio Offset | 4.5MHz ± 5kHz(NTSC) |
| | 5.5MHz ± 5kHz(PAL-G) |
| Sidebands | Double |
| **RF Output** | |
| RF Carrier | 25dBmV |
| Video Output | 1Vpp |
| Audio Output | 1V RMS |
| Video Performance | |
| Differential Gain | Less than 2% (0.2dB) |
| Operating Temps | 0-50 degrees C |
| Signal/Noise Ratio | >52dB |

| | |
|---|---|
| **Spurious Output Rejection** | |
| Outside Carrier | +12MHz >70dBC |
| Inside Carrier | +12MHz >55dBC |
| Isolation | Greater than 70dB |
| **Inputs** | |
| Video | 0.4V-2.7Vpp adjustable |
| Audio | 1V RMS |
| **Connectors** | |
| Video Inputs | RCA Female |
| Audio Inputs | RCA Female |
| RF Output | F type Female |
| IR Outputs | 3.5mm |
| **Transformer Input** | |
| Input Voltage | 120VAC, 60Hz |
| Power | 8 Watts |
| Output Voltage | 15VDC, 450mA |
| **Exterior** | Metal case |
| **Display** | 2 digit channel display |
| **Dimensions** | |
| Width: | 7.88” |
| Depth: | 4.75” (excl. connectors) |
| Height: | 1.63” (excl. rubber feet) |

# 2 Year Limited Warranty

Channel Vision Technology will repair or replace any defect in material or workmanship which occurs during normal use of this product with new or rebuilt parts, free of charge in the USA, for two years from the date of original purchase. This is a no hassle warranty with no mail in warranty card needed. This warranty does not cover damages in shipment, failures caused by other products not supplied by Channel Vision Technology, or failures due to accident, misuse, abuse, or alteration of the equipment. This warranty is extended only to the original purchaser, and a purchase receipt, invoice, or other proof of original purchase date will be required before warranty repairs are provided.

Mail in service can be obtained during the warranty period by calling (800) 840-0288 toll free. A Return Authorization number must be obtained in advance and can be marked on the outside of the shipping carton.

This warranty gives you specific legal rights and you may have other rights (which vary from state to state). If a problem with this product develops during or after the warranty period, please contact Channel Vision Technology, your dealer or any factory-authorized service center.

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