

Overview

Cat5 S-Video+Stereo TX (Transmitter) and RX (Receiver) are designed to distribute video and audio over Cat5 (5e, or 6). The TX and RX are available as modules or as AF-10 boards, which can be mixed or work in conjunction with S-Video+Stereo Cat5 boards on an AMX AutoPatch Distribution Matrix. This guide contains complete information for use as a standalone end-to-end solution. For use with a distribution matrix, see the distribution matrix's instruction manual on the *AMX AutoPatch CD* or at www.amx.com.

Because these modules are available with a wide variety of connector options, the illustrations in this guide may differ from the model you ordered. Connector options include BNC, RCA, or S-Video for video and 3-position terminal block (balanced or unbalanced) or RCA (unbalanced) for audio. For module and board model numbers, see the next page.

Specifications

General Specifications	
Approvals	CE, UL, cUL
Signal Types	S-Video (or composite on one BNC or RCA) & stereo audio
Supported Cable Types	Cat5, Cat5e, Cat6
Power Consumption (max.)	+12 VDC to +24 VDC @ 1.3 A +24 VDC @ 1.3 A only for models with high headroom
Power Connector*	2.1 mm DC power jack
Power – AF-10	120 VAC / 240 VAC
Humidity	0 to 90% non-condensing
Operational Temperature	32° F to 110° F (0° C to 43° C)
Dimensions – Module	5.15 in. (13.08 cm) depth 5.80 in. (14.73 cm) width 1.66 in. (4.22 cm) height
Weight – Module	Approximately 1.5 lb. (0.68 kg)

* Cat5 S-Video+Stereo modules use power supplies that are provided with the unit.

Video Specifications		
Video Bandwidth	All distances up to 1000 ft.(305 m) (±3 dB)	10 MHz (min.)
Video Crosstalk	f = 5 MHz	<-70 dB
TX Level (max.)		±2 V
TX Impedance		75 ohms
RX Level (max.)		±2 V
RX Impedance		75 ohms

Audio Specifications		
THD + Noise, Unbalanced	f = 20 Hz to 20 kHz, Vin = -10 to +8 dBu	<0.01%
THD + Noise, Balanced	f = 20 Hz to 20 kHz, Vin = +4 to +22 dBu f = 20 Hz to 20 kHz, Vin = -10 to +22 dBu	<0.01% <0.04%
Crosstalk, Unbalanced	f = 1 kHz, Vin = +2 dBu	<-90 dB
Crosstalk, Balanced	f = 1 kHz, Vin = +20 dBu	<-90 dB
TX Level (max.) Balanced (High Headroom) Unbalanced (Standard)		+8 dBu +22 dBu
TX Impedance		18 kohms
RX Level (max.) Balanced (High Headroom) Unbalanced (Standard)		+8 dBu +22 dBu
RX Impedance		50 ohms

Module and/or AF-10 Board Installation

Module Mounting Options (Rack Trays & Mounting Brackets)

For details on the four versatile mounting kit options for V Style modules (rack tray, rack tray and fill plates, surface mount, and pole mount), see www.amx.com.

System Setup

The example in FIG. 1 illustrates an AF-10 TX board used in conjunction with an RX Module. Modules are also used with modules and AF-10 boards with AF-10 boards.

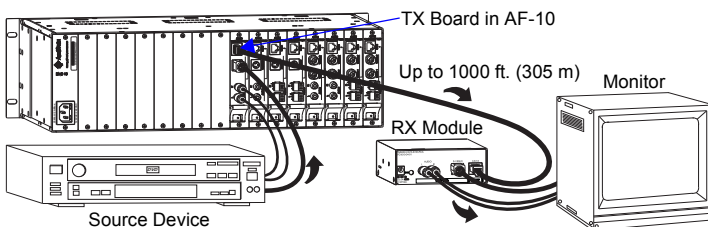


FIG. 1 Typical system setup

Adjusting for Cable Length

If the length of the Cat5e cable between the RX and TX does not match the length specified for the factory default setting of <175 ft. (53 m), an adjustment is required and must be done before the connectors are attached. Use the DIP switch settings from the table below when making the adjustment.

Line Length Adjustments	
Cat5e Cable Length	DIP Switch Setting for Toggles 1-2-3-4
<175 ft. (53 m)	0-0-0-0
176 to 400 ft. (54 to 121 m)	1-0-0-0
401 to 450 ft. (122 to 137 m)	0-1-0-0
451 to 550 ft. (138 to 167 m)	1-1-0-0
551 to 650 ft. (168 to 198 m)	1-0-1-0
651 to 699 ft. (199 to 213 m)	0-1-1-0
700 to 800 ft. (214 to 243 m)	1-1-1-0
801 to 900 ft. (244 to 274 m)	0-0-0-1
901 to 950 ft. (275 to 289 m)	1-0-0-1
951 to 1000 ft. (290 to 305 m)	1-0-1-1

Tip: Gain adjustments can be made on the RV1 and RV2 potentiometers while the lid is lifted off the RX Module or while the RX board is out of the AF-10.

ESD Warning: Avoid ESD (Electrostatic Discharge) damage to sensitive components; be sure you and the equipment are properly grounded before touching any internal materials.

To adjust an RX module for cable length:

1. Remove the screws on each side of the RX (four screws total).
2. Free the leading edge of module's lid from the tabs on the front of the module and lift the front edge up.
3. Open the lid on its hinge far enough to access the DIP switches.

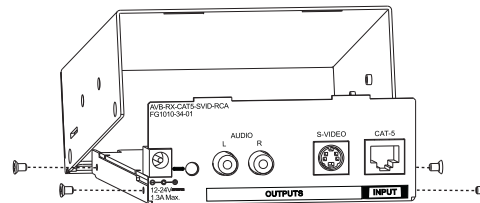


FIG. 2 Remove screws indicated & lift top plate on hinge

4. Set toggles (1-2-3-4) on both DIP switches (a small screwdriver or paper clip works well) to the correct position according to the table above. Both DIP switches *must* be set to the same value.

The example shows a setting of "0-1-0-0" for a cable length of 425 ft. (130 m).

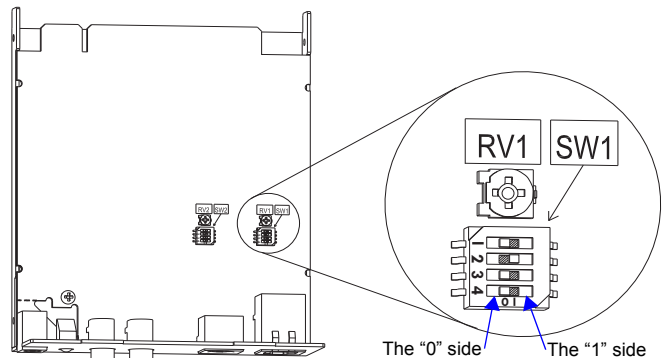


FIG. 3 Set toggles on both DIP switches to the same value

5. Close the lid, inserting the tabs on the module's back plate into the slots on the top cover. Insert screws and tighten until snug.

To adjust an AF-10 RX board for cable length:

1. Remove the screws at the top and bottom of the board's faceplate.
2. Push down on the board extractor handle and pull the board out.
3. Set toggles (1-2-3-4) on both DIP switches (a small screwdriver or paper clip works well) to the correct position according to the table on the previous page. Both DIP switches *must* be set to the same value.
4. Push the board back into position (handle will snap into place); replace screws.

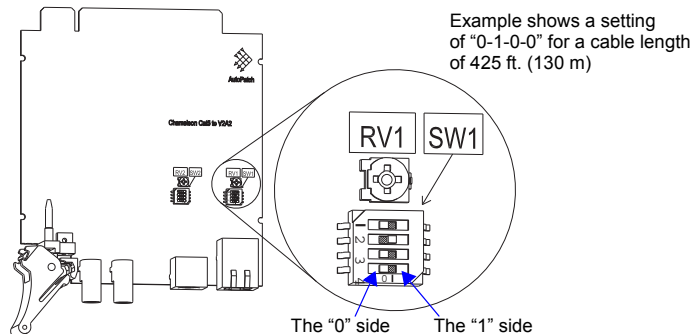


FIG. 4 Set toggles on both DIP switches to the same value

Installation

Important: Always use a UL approved power source. Check the power source's documentation for information specific to that power source.

To attach connectors & power to the TX and RX:

1. Adjust the RX for line length if necessary (see previous procedure for RX cable length adjustment).
2. Insert, attach, or wire connectors to the TX and RX as shown in FIG. 5, 6, or 7.
3. Insert the RJ-45 connector into the Cat5 receptacle (see FIG. 5).
4. **Module** – Plug the desktop power supply into the power jack on the module and into an external AC power source.
If you are providing the power supply – Plug the power cord from a UL (or equivalent) listed power supply into the power jack on the module. The electrical ratings must meet those indicated in the specifications table.
AF-10 – Plug power cord into the power receptacle and into a power source.

Video Connectors

Video connectors are available in BNC, RCA (video not shown), or S-Video.

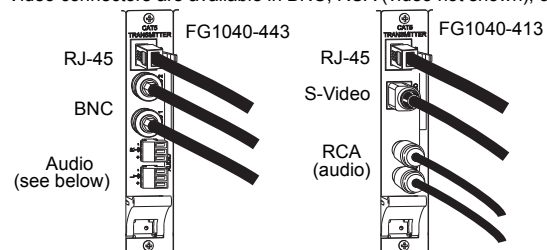


FIG. 5 Insert or attach video connectors as shown in sample boards

Note: AMX AutoPatch S-Video cables lock onto S-Video connectors. Standard S-Video cables may be used, but will not lock. Hold the connector at a slight angle to the right while pushing in or pull back on the connector housing while pushing in.

Audio Connectors

Audio connectors are either 3-position terminal block (balanced/unbalanced – FIG. 6; unbalanced – FIG. 7) or RCA (unbalanced – FIG. 5).

Important: To determine the correct wiring to use for the audio connectors, check the type of connection specified in the column to the right. If the model is listed for balanced audio, it may also be wired for unbalanced audio (FIG. 6). If the model is listed for unbalanced, it can only be wired for unbalanced (FIG. 7).

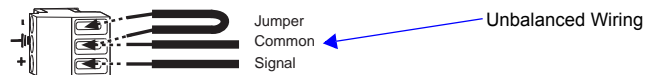
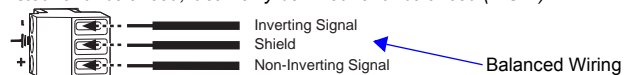


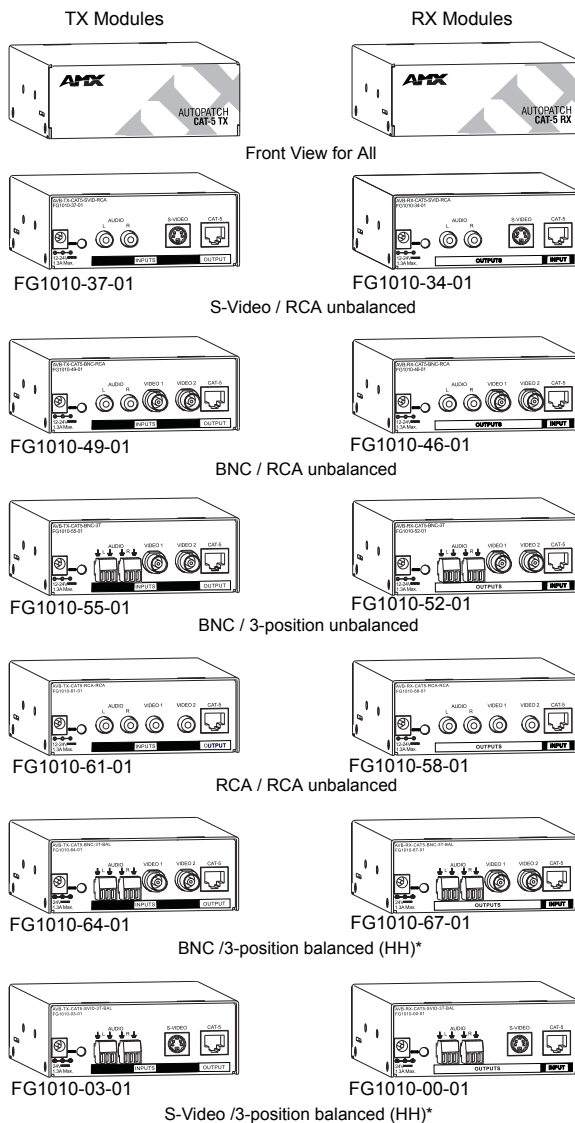
FIG. 6 Wiring for 3-position balanced audio connectors (see models in column right)

Note: When using twisted-pair wire, connect the shield (ground) at one end only (recommend receiving end) to minimize low frequency noise.



FIG. 7 Wiring for 3-position unbalanced audio connectors (see models in column right)

TX & RX Model Numbers



* High headroom – up to a +22 dBu signal. These require a 24 volt power supply.

FIG. 8 Cat5 S-Video+Stereo TX & RX Modules

Cat5 S-Video+Stereo TX & RX AF-10 Boards	
FG1040-410	TX, RCA / RCA unbalanced
FG1040-413	TX, S-Video / RCA unbalanced
FG1040-416	TX, S-Video / 3-position unbalanced
FG1040-419	TX, BNC / 3-position unbalanced
FG1040-422	TX, BNC / RCA unbalanced
FG1040-440	TX, S-Video / 3-position balanced (HH)*
FG1040-443	TX, BNC / 3-position balanced (HH)*
FG1040-425	RX, RCA / RCA unbalanced
FG1040-428	RX, S-Video / RCA unbalanced
FG1040-431	RX, S-Video / 3-position unbalanced
FG1040-434	RX, BNC / 3-position unbalanced
FG1040-437	RX, BNC / RCA unbalanced
FG1040-446	RX, S-Video / 3-position balanced (HH)*
FG1040-449	RX, BNC / 3-position balanced (HH)*

* High headroom – up to a +22 dBu signal.

For full warranty information, refer to www.amx.com.

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