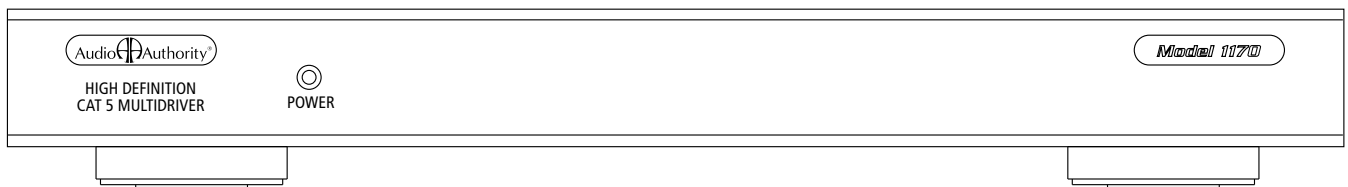# Installation and Operation

Model 1170
High Definition Cat 5 MultiDriver™ Expander

Audio⊕Authority®

Installation and Operation Manual

Model 1170
High Definition Cat 5 MultiDriver™ Expander

Audio Authority Corporation
Lexington, Kentucky

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Warnings

To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

! The exclamation point symbol alerts users to important operating and maintenance instructions in this manual.

- Read these instructions before installing or using this product.
- This product must be installed by qualified personnel.
- Do not open the cover—there are no user-serviceable parts inside.
- Do not expose this unit to excessive heat.
- Install only in dry, indoor locations.
- Clean the unit only with a dry or slightly dampened soft cloth.

Getting Started

- Read these instructions.
- Unpack the product and power supply.
- Connect associated equipment (detailed instructions are found in the Installation Section).
- Connect the product to a suitable power outlet using only the power supply furnished.

General Information

The Model 1170 High Definition Cat 5 MultiDriver™ Expander is a dual-use product. As a companion product to Models 1166 or 1156, it provides six outputs to Model 9878 Cat 5 HDTV Connection Plates (Wallplates), with all outputs following the main output of the Model 1166 or 1156. The Model 1170 is mechanically stackable with its host 1166 or 1156, with up to 6 Model 1170s able to be stacked together for a total of 36 Wallplate outputs.

In its role as a capacity expander for the Model 1171 High Definition Cat 5 MultiDriver™, Model 1170 adds 6 Wallplate outputs. Up to 6 Model 1170s may be stacked with one Model 1171 in this manner, supporting a total of up to 42 Wallplates.

In conjunction with Model 9878 Wallplates, the Model 1170 provides distribution of audio, video and IR control signals on Cat 5 cable runs of up to 1,000 feet. The buffered Cat 5 outputs on the Model 1171 drive from one to six 9878 Wallplates. DC power for each Wallplate is supplied by the Model 1171 through the Cat 5 cable.

The similar Model 1176 may be used with Model 1166 or 1156, if individual source selection of a Wallplate output is desired. These products are especially well suited for residential use, but professional venues, such as clubs and restaurants, can also benefit by using them to send selectable video and/or audio to remote locations. Models 1170 and 1176 may be mixed in one system hosted by a Model 1166 or 1156 when some Wallplates are to have individually selectable video and some are to have common content as described above.

Carton Contents

- Model 1170 High Definition Cat 5 MultiDriver™ Expander
- 18-volt Power Supply

Suggested Accessories
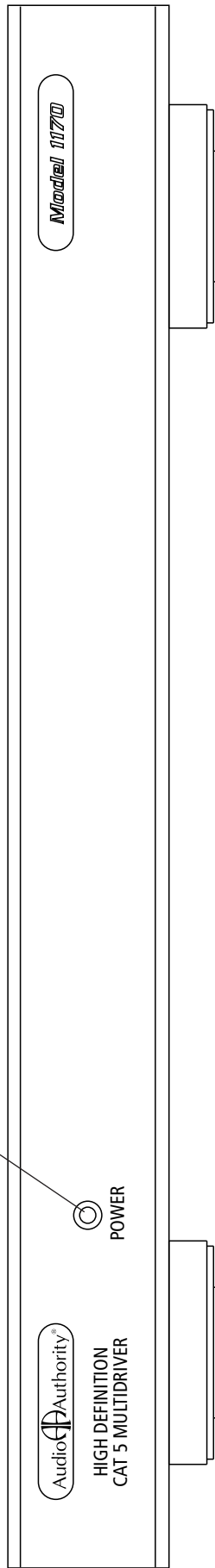
- Model 9878 Cat 5 HDTV Connection Plates
- Model 1191 Rack Mounting Adapters secure this model in 19-inch racks
- Model 802-567 4-port bus cable—for up to 3 expanders
- Model 802-568 7-port bus cable—for up to 6 expanders
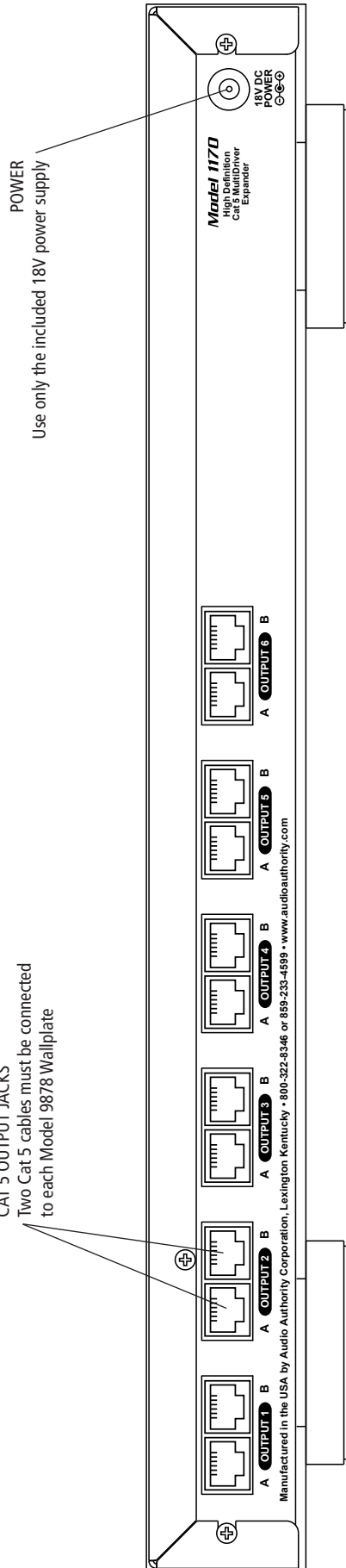
Other Materials You May Need

- Infrared receivers for Model 9878 such as Xantech® 291-00
- Universal infrared remote controls
- Category 5e or 6 cable and plugs

Panel Descriptions

HIGH DEFINITION CAT 5 MULTIDRIVER

Audio Authority®

Model 1170

POWER

POWER INDICATOR
A green LED indicates the presence of power.

Model 1170
High Definition
Cat 5 MultiDriver
Expander

A OUTPUT 1 B
A OUTPUT 2 B
A OUTPUT 3 B
A OUTPUT 4 B
A OUTPUT 5 B
A OUTPUT 6 B

Manufactured in the USA by Audio Authority Corporation, Lexington Kentucky • 800-322-8346 or 859-233-4599 • www.audioauthority.com

18V DC
POWER

POWER
Use only the included 18V power supply

CAT 5 OUTPUT JACKS
Two Cat 5 cables must be connected to each Model 9878 Wallplate

Installation

This product should be installed by a qualified custom electronics installer.

These instructions address the Model 1170, which is always used with a Model 1166, 1156 or 1171. Refer to the Model 1166/56 or Model 1171 instruction manual for complete directions for installing this product.

1. **Stacking.**
   a. Lay the Model 1171 or 1156/66 upside down on a protective surface, such as a terrycloth towel (see expanded view on facing page).
   b. Remove the four feet and the bus port cover and save them and their attaching screws for later use.
   c. Plug one end of the bus cable (purchased separately) into the connector visible through the bus port—apply enough pressure with a plastic or wooden tool to assure that the plug is completely seated. A center polarizing key is located on the top of each bus plug. Note that there is a right end and a wrong end to the bus cable.
   d. Turn the Model 1170 to be stacked upside down, thread the bus cable through its bus ports, and engage its four threaded studs with the four threaded holes in the Model 1171 or 1156/66 formerly occupied by the feet.
   e. Tighten the hex head screws in the bottom of the stacking product in sequence a few turns each, until they are all lightly snug.
   f. Plug the next plug of the bus cable into the connector as in 1.c.
   g. Continue this stacking procedure until all units have been stacked. Always plug the last connector of the bus into the bottom unit, pushing any excess cable into the empty space inside the unit. View the bus through the bus port to be sure all plugs are fully seated.
   h. Install the bus port cover and feet you removed from Model 1171 or 1156/66 on the bottom Model 1170 and turn the stack right side up.
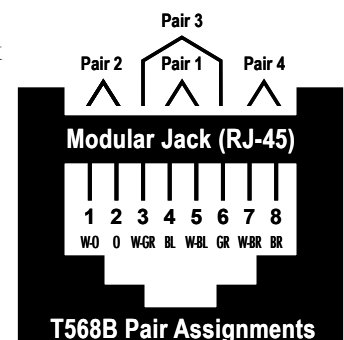
2. **Rack Mount Adapters.** Do these steps if you are installing this product or a stack of products in a 19-inch equipment rack.
   a. Remove the cover screws adjacent to the front panel of each product and use them to mount Model 1191 rack adapters. Be sure to place a cylindrical metal spacer under the adapters at every screw location.
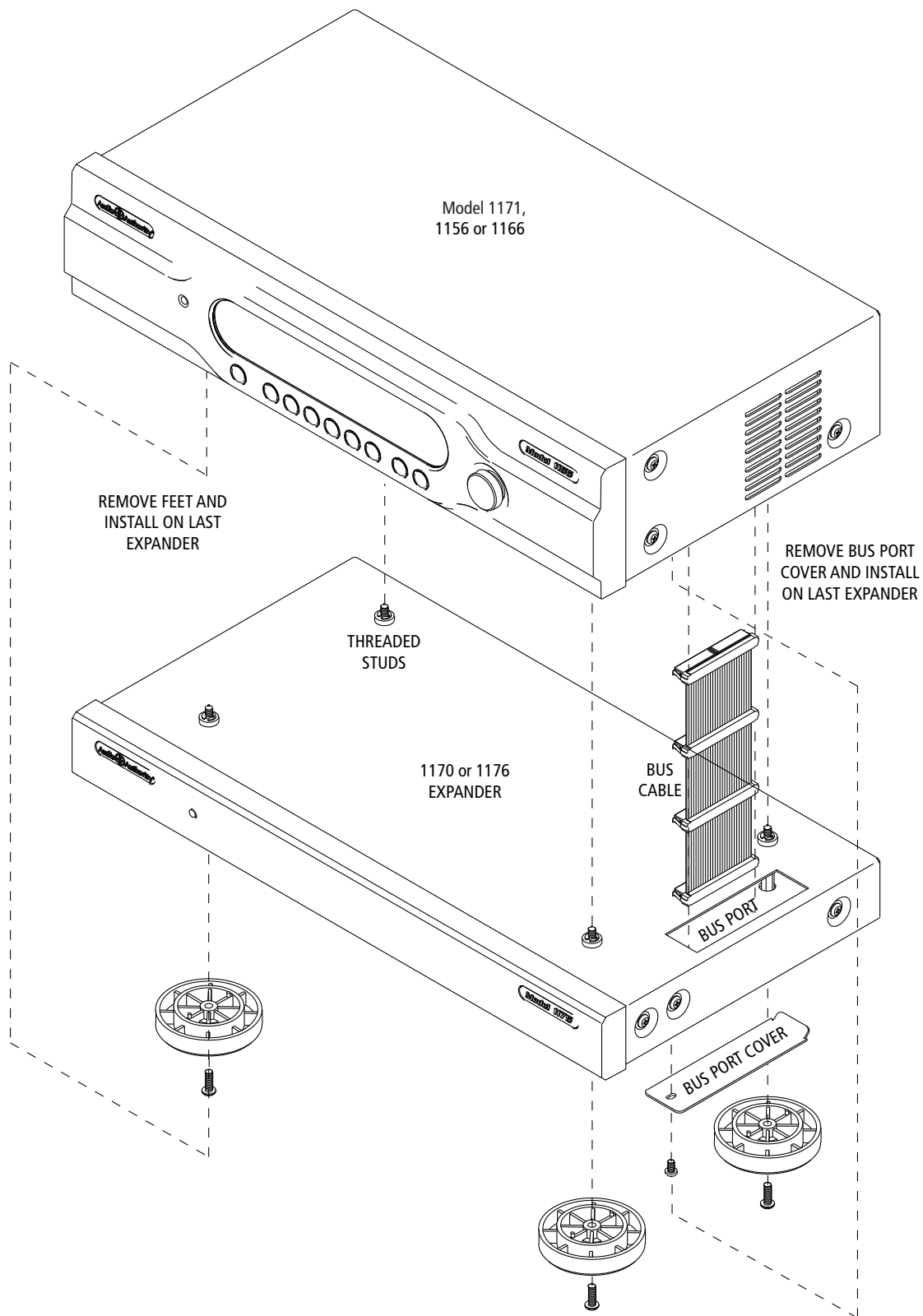   b. Use a straightedge to line up rack adapters on a stack of product.

   ! CAUTION! This product will be damaged if spacers are not used on every screw.
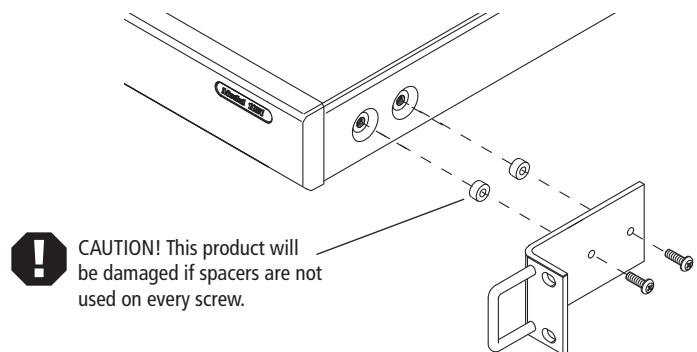
3. **Wallplate Hookup.** *Caution! Do not connect A and B cables incorrectly.* Do not apply system power until cables are tested and A and B connections are verified.
   a. Pull two lengths of good quality Category 5e or 6 UTP cable from the main system to each Wallplate location. Carefully mark cables of each pair A and B; if they are connected incorrectly, damage to the Wallplate may result. It is best to use a different cable jacket color or labels for A and B to insure proper connection.
   b. Install an RJ-45 plug on each end, using EIA-568B pairing (pins 1-2, 3-6, 4-5, 7-8). Check each cable with a professional network cable tester before plugging it into the 1100 Series system. *Continuity testing is not adequate!* The twisted pairs

   Pair 3
   Pair 2   Pair 1   Pair 4

   Modular Jack (RJ-45)

   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
   | W-O | O | W-GR | BL | W-BL | GR | W-BR | BR |

   T568B Pair Assignments

Stacking Components

This diagram shows the parts and locations for stacking components. The procedure must be performed with the units upside down.

Model 1171, 1156 or 1166

REMOVE FEET AND
INSTALL ON LAST
EXPANDER

REMOVE BUS PORT
COVER AND INSTALL
ON LAST EXPANDER

THREADED
STUDS

1170 or 1176
EXPANDER

BUS
CABLE

BUS PORT

BUS PORT COVER

must be properly matched for balanced line transmission.

    c. Plug the pairs of cables into the output jacks on the Model Model 1170s. Be sure to plug cables A and B into their respective jacks A and B.

    d. Plug a pair of cables into each Model 9878 Wallplate. Be sure to plug cable A into jack A and cable B into jack B. Do not mount the Wallplates permanently yet.

    e. Adjust the Cable Length Compensation control on each Wallplate according to the distance of that unit from the head end. Set the dial to the nearest number of hundreds of feet of cable distance. After system power up (see 6, below) use an HD source and display to fine tune each cable length compensation setting.

    f. Mount Wallplates after initial testing.

4. **Initial Testing.** Plug the power supply furnished with each 1100 Series product into its respective unit, and plug the power supplies into a wall outlet or plug strip.

    a. Check that the power indicators on the Model 1171, all Model 1170s and all Wallplates are illuminated. When 1170s are present, allow up to 1 minute on initial power-up for the 1171 system to finish self-addressing before starting any tests. The Model 1171 power lamp blinks slowly while addressing is taking place.

    b. Apply power to the source equipment.

    c. Check for clear video and audio at each Wallplate using an HD display. Mount the Wallplates.

Using the Cat 5 Infrared Signal Pathway

To enable infrared remote control of head end sources, a Model 9878 Wallplate must have an infrared receiver (not supplied) plugged into its IR Remote jack. IR remote signals received through a Model 9878 Wallplate with an IR receiver are repeated through the Model 1166 or 1171 IR Output port. For example, by acquiring Model 1166 control codes, a learning remote can be used to select sources and control the selected source. For this feature to work, the Model 1166 IR Output port must be connected to a compatible infrared emitter or distribution system. See "Using Compatible Infrared Equipment" at the end of this manual.

Model 1170 infrared operation with a Model 1171 is similar, but sources cannot be selected, since there is only one.

Troubleshooting Guide

Symptom	Possible Cause(s)
Picture has artifacts or appears sparkly	Excessive cable length compensation
Digital audio inoperative	Neither or both optical and coaxial cables connected to source
Does not repeat an IR command	Some remotes cannot be processed by this sytem; IR Output not connected to IR system
One Wallplate inoperative	Cables swapped or plugs incorrectly pinned out
Wallplates inoperative on one Model 1171 or 1170	Bus cable loose or power supply unplugged

Operation

The Model 1170 is the distribution center for Model 9878 Wallplates. At each Wallplate equipped with an infrared receiver and a properly programmed universal infrared remote control, you can control the functions of video sources located at the main home theater. The same IR remote can also control components in the room where the Wallplate is located, such as a television, satellite or DVD player. Ask your installer for specific instructions.

Model 1170 Specifications

Subject to change without notice.

Video Parameters

Signal Type	Component (YPbPr)
Video Formats	480i/p, 576i/p 720p, 1080i/p*
Input Impedance	75 ohms
Input Ground Isolation	No
Gain	1
Gain Accuracy	2%
3dB Bandwidth	100MHz
Input Coupling	AC
S/N Ratio	60dB
Max Gain/Equalization	1

Audio Parameters

| Format	Digital/Analog
Digital Audio Input Type	Coaxial/Optical
Input Impedance	75 ohms/50K ohms
Min Load Impedance	75 ohms/10K ohms
Multi-channel Digital	Yes
Frequency Response	10-50KHz
S/N Ratio	75dB
THD+Noise	.07%
Crosstalk	75dB
DC Input Connector	5.5 X 2.1mm Center +
DC Input	18 volts, 1.2 amps

* Model 1170 is compatible with most any video format (including most types of computer video) as long as the video format does not exceed the maximum bandwidth of the 1170.

Using the Model 1170 to Expand 1171 Outputs

Model 1171 Cat 5 MultiDriver provides input connections for an HDTV source such as a satellite box or DVD player, and up to six Wallplate outputs. To expand the number of outputs, up to six 1170 MultiDriver Expanders can be added for a maximum of 42 outputs. See "Using Compatible IR Products" on the next page for infrared control pathway functionality.

Using the Model 1170 to Expand 1156/66 Outputs

The Model 1170 may be used to expand Model 1156 or 1166 AutoSelector outputs, and even used in combination with Model 1176 Matrix Router Expanders. The Model 1170 does not offer matrix functionality, but rather delivers six Cat 5 outputs with the same audio and video content as the AutoSelector's main output.
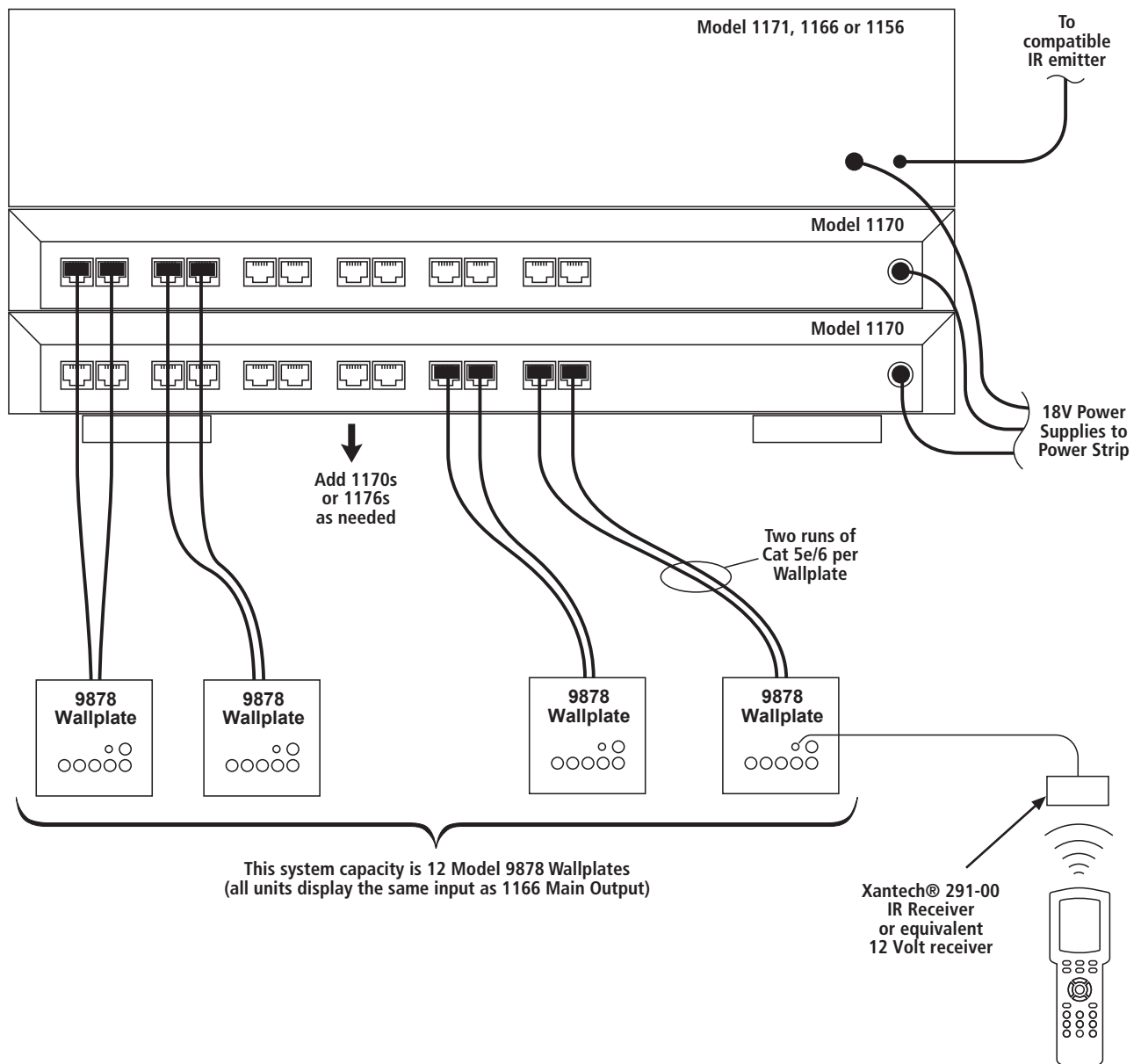
Using Compatible IR Products

Infrared signals may be transmitted from any Wallplate location back to the 1171 IR output by connecting a compatible IR receiver to the Wallplate's IR jack. The Wallplate provides 12V power to the IR receiver; *do not use IR receivers that provide their own power or damage could result.*

Connect a compatible emitter to the 1171's IR output. Use only passive emitters or damage could result.
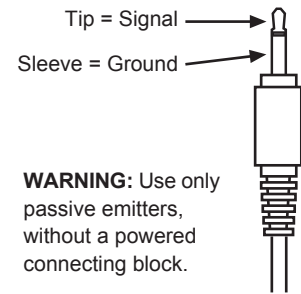
Receiver Pinout
Receivers are powered by 12 volts on the sleeve contact of the 9878 Wallplate IR jack.

Tip = Signal
Ring = Ground
Sleeve = +12 Volts
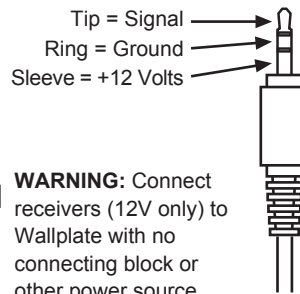
WARNING: Connect receivers (12V only) to Wallplate with no connecting block or other power source.

Emitter Pinout
A passive emitter usually has a two-conductor plug.

Tip = Signal
Sleeve = Ground

WARNING: Use only passive emitters, without a powered connecting block.

Limited Warranty

Should any consumer use product manufactured by Audio Authority fail due to defects in materials or workmanship within one year from the date of the original sale to the end-user, Audio Authority guarantees that we will replace the defective product at no cost. Freight charges for the replacement unit will be paid by Audio Authority (Ground service only). A copy of the invoice from an Authorized Reseller showing the item number and date of purchase (proof-of-purchase) must be submitted with the defective unit to constitute a valid in-warranty claim.

Units that fail after the warranty period has expired may be returned to the factory for repair at a nominal charge, if not damaged beyond the point of repair. All freight charges for out-of-warranty returns for repair are the responsibility of the customer. Units returned for repair must have a Return Authorization Number assigned by the factory.

This is a limited warranty and is not applicable for products which, in our opinion, have been damaged, altered, abused, misused, or improperly installed. Audio Authority makes no other warranties either expressed or implied, including limitation warranties as to merchantability or fitness for a particular purpose. Additionally, there are no allowances or credits available for service work or installation performed in the field by the end user.

Audio⊕Authority®

Custom Installer _____

Telephone Number _____