DuoDrive™

Model 9870
(9871, 9878)

Residential Category 5
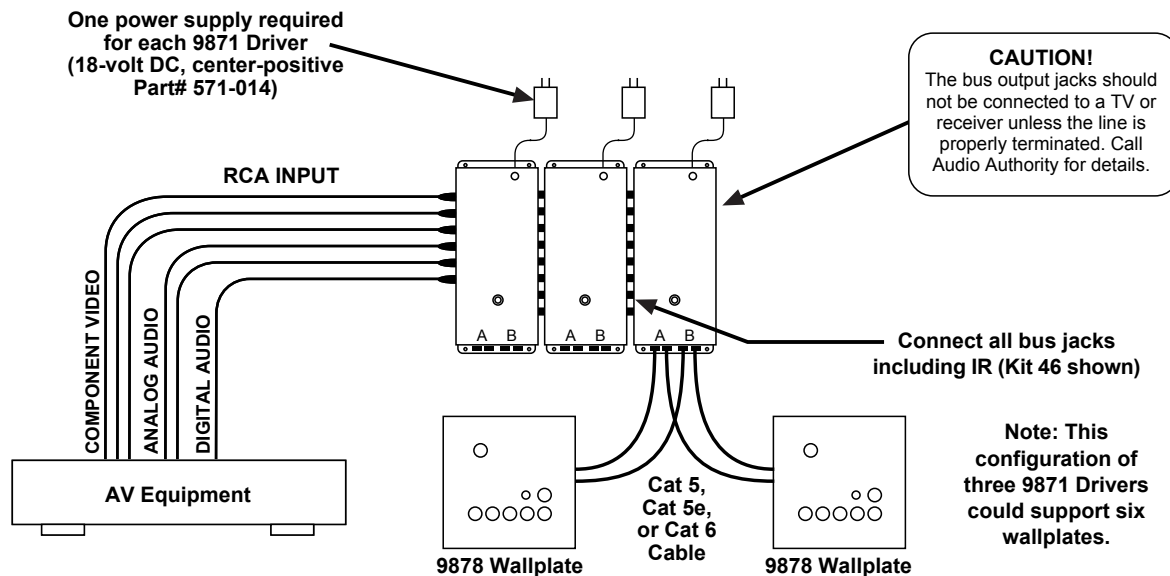## HDTV Distribution System

DuoDrive™ Residential Category 5 HDTV Distribution System

Overview
The DuoDrive (Model 9870) allows HDTV signals to be distributed throughout the home from a single source. Component video (YPbPr), analog stereo audio, and digital audio (coaxial) signals are included in each two-cable Cat 5 pathway. By connecting IR remote control systems to the DuoDrive system, users can easily control the source equipment from other rooms in the house. IR receiver and emitter products are not included with the DuoDrive.

System Design
The DuoDrive is comprised of one Model 9871 RCA-to-Category 5 Driver and two Model 9878 wallplate/receivers. (Two other Cat 5 receiver styles are also available, Models 9879 and 9880.) These products enable distribution of audio, video and IR control signals on Cat 5 cable runs of up to 1,000 feet. The buffered Cat 5 bus outputs on each 9871 drive one or two wallplate/receivers. To expand output capacity of the system, connect together an unlimited number of 9871 Drivers using Kit 46, included with each Driver. High quality RCA patch cables can also be used for expansion.
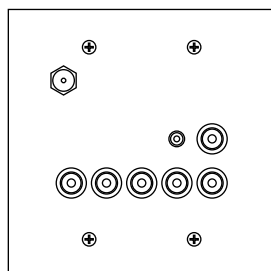
One power supply required for each 9871 Driver (18-volt DC, center-positive Part# 571-014)

RCA INPUT

COMPONENT VIDEO
ANALOG AUDIO
DIGITAL AUDIO

AV Equipment

A B   A B   A B

CAUTION!
The bus output jacks should not be connected to a TV or receiver unless the line is properly terminated. Call Audio Authority for details.

Connect all bus jacks including IR (Kit 46 shown)

Note: This configuration of three 9871 Drivers could support six wallplates.

9878 Wallplate   **Cat 5, Cat 5e, or Cat 6 Cable**   **9878 Wallplate**

for each wallplate is supplied through the Cat 5 cable from the 9871's power supply.
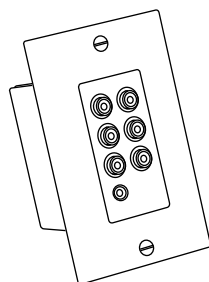
Rough-In
Wallplate/receivers are normally placed on the wall behind the television sets or entertainment centers remoted off the main home entertainment system. Set a plaster ring at each wallplate location. Pull two runs of good quality Category 5, 5e or 6 UTP cable from the head-end location to each wallplate/receiver location. Be careful not to pinch, kink, or tightly staple the cable. Mark both ends of the cables in each set A and B, or use two different jacket colors of UTP cable for A and B. It will be helpful to mark the cable length of each run at the wallplate/receiver end because you will have to adjust the cable length compensation when installing each wallplate/receiver.
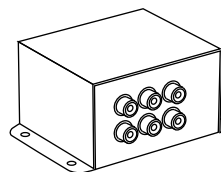
Cat 5 Wallplate/Receivers
All three wallplate/receiver styles deliver component video, digital and analog audio, and IR signals. The 9878 offers a wallplate format to fit a standard two-gang electrical box, and includes an RF pass through jack.
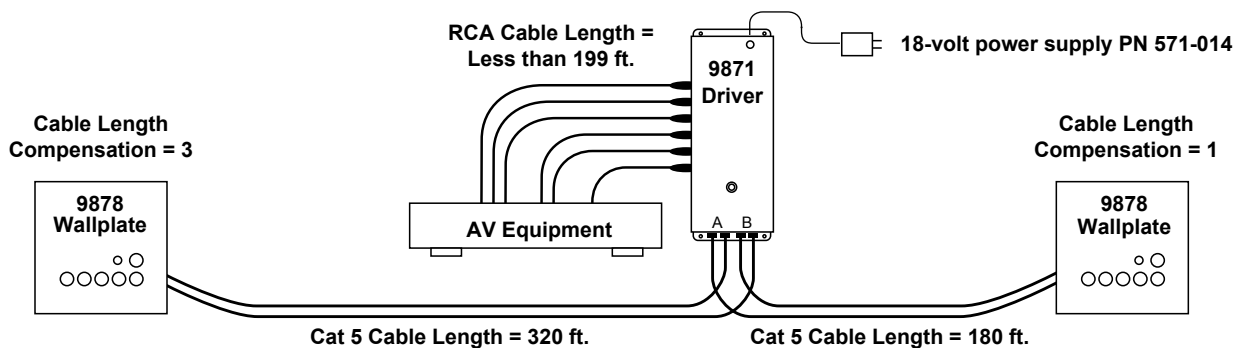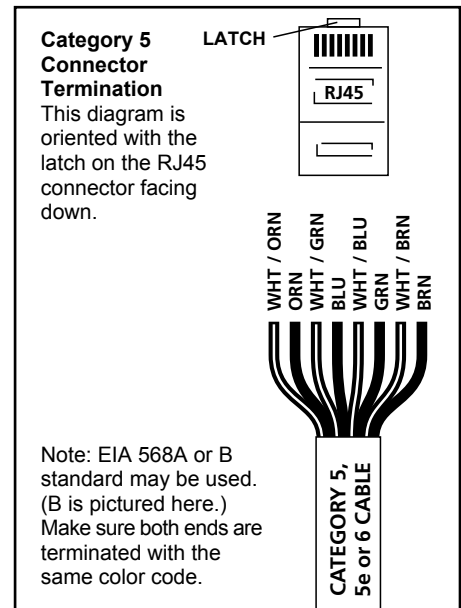The 9879 is a single gang Decora style wallplate with two different IR connection options. The 9880 is an enclosed version ideal for locations where a wallplate style receiver is not practical. DC power

Model 9878   **Model 9879**   **Model 9880**

Installing the 9871 Driver

Mount the (first) 9871 Driver to any flat vertical or horizontal surface using the screws provided. You may wish to leave space to add 9871 Drivers to expand output capacity. Connect component video and all audio connections desired from the source equipment to the inputs of the 9871. Use high quality, matched sets of component video cables, and high quality RCA cables for audio. The IR bus jacks are only used to connect 9871 modules together.

If installing more than one 9871 Driver, connect all the bus outputs of the first Driver to the inputs of the next Driver using high quality patch cables or Kit 46 (sold separately), which provides convenient male to male connectors for a more compact installation. Connect bus jacks for all channels whether or not they will be used.

Pull two cables to each wallplate location, preferably using a different colored cable jacket for A and B cables. Install an RJ-45 termination on each end of every Cat 5 cable, using EIA-568B pairing (pins 1-2, 3-6, 4-5, 7-8). If possible, use EZ RJ-45 connectors. Check each cable with a network cable tester – CONTINUITY TESTING IS NOT ADEQUATE – the pairs must match the EIA-568B color code.

Category 5 Connector Termination
This diagram is oriented with the latch on the RJ45 connector facing down.

LATCH

RJ45

WHT / ORN
ORN
WHT / GRN
BLU
WHT / BLU
GRN
WHT / BRN
BRN

Note: EIA 568A or B standard may be used. (B is pictured here.) Make sure both ends are terminated with the same color code.

CATEGORY 5, 5e or 6 CABLE

RCA Cable Length = Less than 199 ft.

9871 Driver

18-volt power supply PN 571-014

Cable Length Compensation = 3

Cable Length Compensation = 1

9878 Wallplate

AV Equipment

A B

9878 Wallplate

Cat 5 Cable Length = 320 ft.
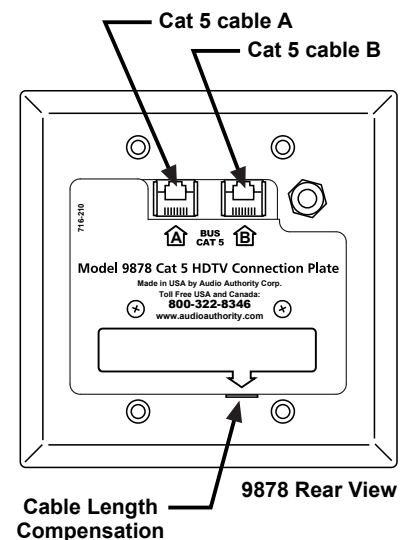
Cat 5 Cable Length = 180 ft.
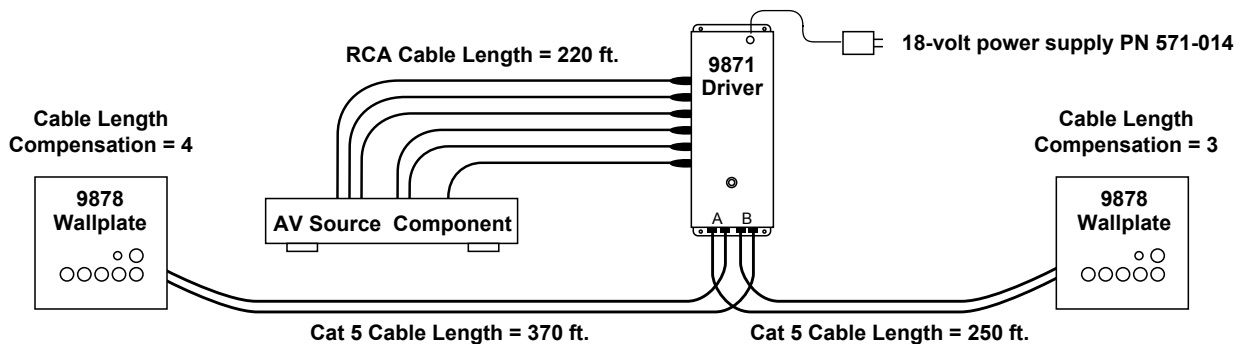
Installing 9878 Wallplates

BE CERTAIN to connect the A cable to the A jack and the B cable to the B jack or damage to the wallplate/receiver may occur. Adjust the cable length compensation if the cable between the Driver and the wallplate/receiver is over 100 feet long. Set the compensation at 1 for cables 100-199 ft. long, and 2 for 200-299 ft. cables, etc. Do not permanently mount the wallplate/receivers until after system testing.

Carefully connect the A and B cables to the Driver(s), power the source components, TVs and AV receivers, and plug in 9871 power supplies to test the system. Connect a TV to each wallplate/receiver location to refine cable length compensation settings. Use the MINIMUM compensation setting that still provides the best picture.

Ideally, Drivers should be located near the main home theater system, but if they must be placed far away, compensate for losses of the long

Cat 5 cable A

Cat 5 cable B

716-210

A BUS B
CAT 5

Model 9878 Cat 5 HDTV Connection Plate
Made in USA by Audio Authority Corp.
Toll Free USA and Canada:
800-322-8346
www.audioauthority.com

9878 Rear View

Cable Length Compensation

coaxial cable by increasing the cable compensation setting by one click for each 200 feet of coaxial cable length (see diagram below). For example, if the coaxial cable length from main system to Driver is 220 feet (1 click) and the Cat 5 cable length to a certain wallplate is 250 feet (2 clicks), the correct Cable Length Compensation for that wallplate is 1 + 2 = 3 clicks. Conditions vary, so it is best to verify settings using the video display that

RCA Cable Length = 220 ft.

18-volt power supply PN 571-014

9871 Driver

Cable Length Compensation = 4

9878 Wallplate

AV Source Component

A   B

Cable Length Compensation = 3

9878 Wallplate

Cat 5 Cable Length = 370 ft.
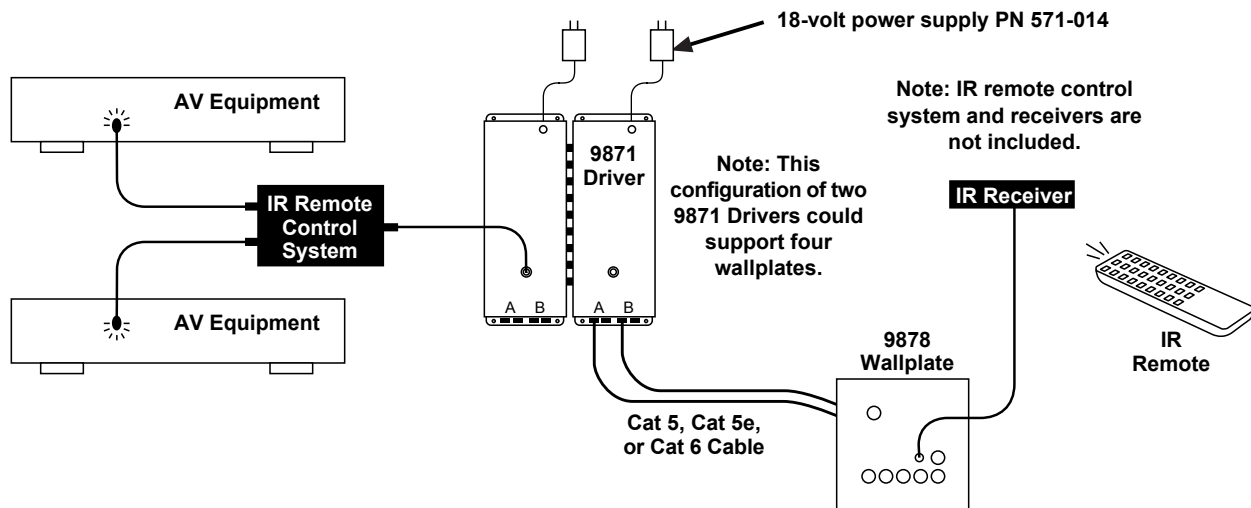
Cat 5 Cable Length = 250 ft.

will be installed in each location.

A pass-through F-connector is provided in case antenna connection is desired. (A separate coaxial cable must be pulled; antenna signals are not carried on the Cat 5 cable).

Connecting to an IR network

The DuoDrive does not have an IR remote control system; it provides a discrete three-strand Cat 5 pathway for a third party system. Connect an IR remote control system input to the Driver IR output stereo 3.5mm jack (see example diagram below). Connect an IR receiver to each wallplate/receiver and position them appropriately in the rooms. Do not connect any equipment to the vacant white RCA jacks marked "IR".

18-volt power supply PN 571-014

AV Equipment

IR Remote Control System

9871 Driver

Note: This configuration of two 9871 Drivers could support four wallplates.

Note: IR remote control system and receivers are not included.

IR Receiver

AV Equipment

A   B   A   B

Cat 5, Cat 5e, or Cat 6 Cable

9878 Wallplate

IR Remote

In Case of Difficulty

If any problems arise that are not covered in this manual, call Audio Authority Technical Support at 800-322-8346, or outside the US and Canada, call 859-233-4599.

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