

Introduction

The iPort IW Balanced Audio, Balanced Video, and RS-232 Upgrade Kits add functionality and capability to iPort IW-21 and IW-22 models.

Balanced Audio Upgrade Kit

- For use with iPort IW-21 models.
- Delivers long-distance balanced audio from the iPort (up to 500 feet from the audio system).
- Includes a balanced audio plug-in circuit card (*WHITE*) and a balanced audio wall plate.

RS-232 Control Upgrade Kit

- For use with iPort IW-21 models. (Note: Requires the Balanced Audio Upgrade Kit.)
- Allows integrated long-distance RS-232 control of the iPod®/iPhone™ with two-way communication via compatible control systems. (Please visit iportmusic.com for a complete list of compatible control systems.)
- Includes an RS-232 control plug-in circuit card (*BLUE*) and an RJ11-to-DB9 RS-232 cable.

Balanced Video Upgrade Kit

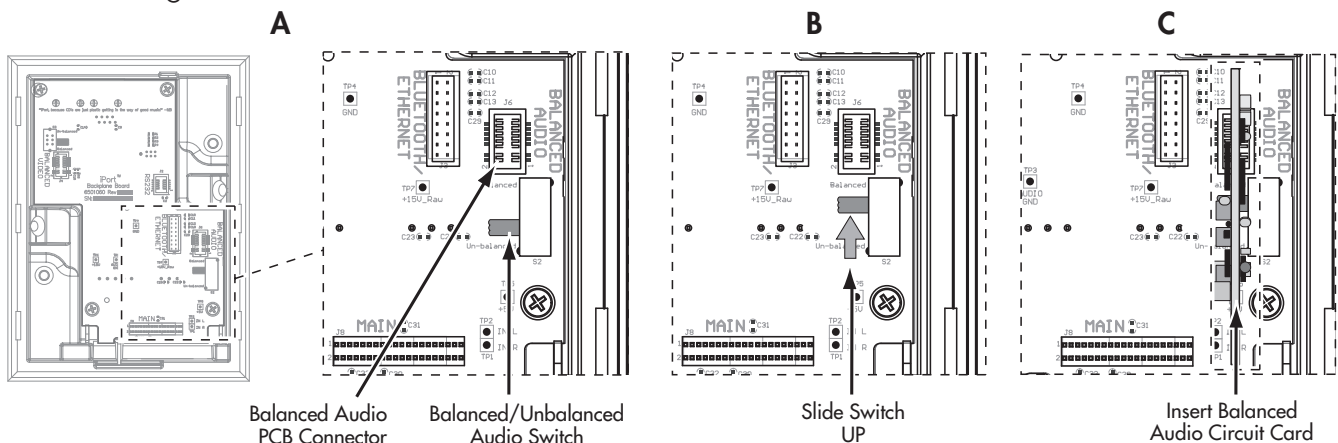
- For use with iPort IW-21 and IW-22 models.
- Delivers long-distance balanced video (iPod video content only, *not* program metadata) from the iPort (up to 500 feet from the video system).
- Includes a balanced video plug-in circuit card (*GOLD*) and a balanced video wall plate.

This manual covers the installation of all three upgrade kits.

IMPORTANT: Use care when handling the circuit cards:

- Avoid squeezing or bending any of the electronic components mounted on the cards.
- Be sure to insert the cards all the way into their connectors.

Figure 2: Installing the Balanced Audio Circuit Card

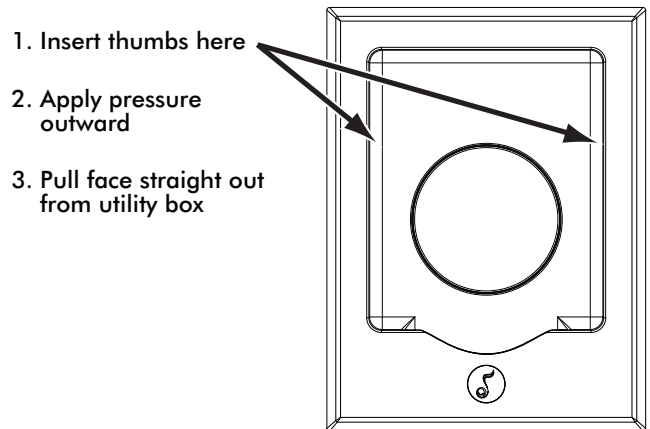


- Do not force the cards into their connectors. They will only fit into the connectors one way. Although the circuit cards fit a bit loosely, when the iPort face is installed in the utility box it holds the cards in place.

Balanced Audio Upgrade Installation (iPort IW-21)

1. If the iPort is already installed, unplug the power supply from the audio/IR wall plate and separate the iPort front face from the utility box, as shown in *Figure 1*.

Figure 1: Separating the iPort Face from the Utility Box



2. Locate the balanced audio PCB Connector and balanced/unbalanced audio switch on the iPort main circuit board (see *Figure 2A*). The main circuit board is red, and it is located at the back of the iPort chassis utility box.
3. Slide the balanced/unbalanced audio switch up to the *Balanced* position (see *Figure 2B*).

Note: The balanced audio circuit card cannot be installed unless the switch is in the BALANCED position.

4. Carefully insert the balanced audio circuit card all the way into the balanced audio PCB connector (see *Figure 2C*, page 1).

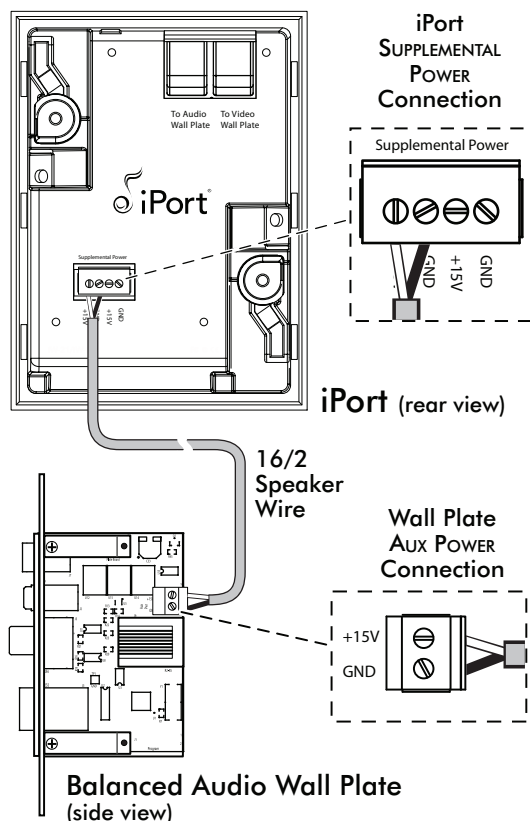
Note: The circuit card will only fit into the connector one way.

5. Replace the IW-21's audio wall plate with the balanced audio wall plate included with the upgrade kit.

6. Follow the instructions in the *iPort Instruction Manual — IW-20, IW-21, IW-22* for the remainder of the installation. (Refer to the sections *Installation Preparation* and *iPort IW-22 Connections and Installation*.) You can install the balanced audio wall plate up to 500 feet away from the iPort.

7. **For installations where the balanced audio wall plate is located more than 250 feet from the iPort:** Run a length of 16/2 speaker wire through the wall from the wall plate's Aux Power connector to the iPort's Supplemental Power connector as shown in *Figure 3*. (The Supplemental Power connector has two parallel sets of terminals — you can use either set.) This will avoid performance degradation caused by a loss of DC voltage over Cat5 wire runs longer than 250 feet.

Figure 3: Supplemental Power Connection



RS-232 Upgrade Installation (iPort IW-21)

Note: The RS-232 Upgrade Kit requires that the iPort IW-21 have the Balanced Audio Upgrade Kit installed.

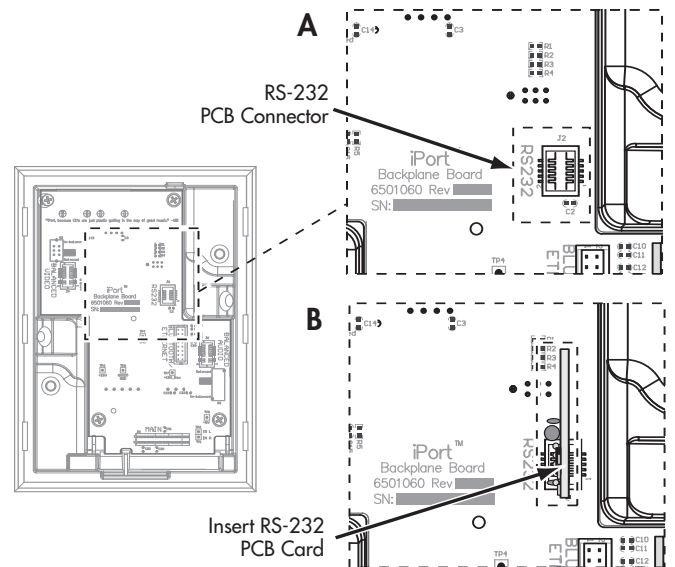
1. If the iPort is already installed, unplug the power supply from the audio/IR wall plate and separate the iPort front face from the utility box, as shown in *Figure 1*, page 1.

2. Locate the RS-232 PCB connector on the iPort main circuit board (see *Figure 4A*). The main circuit board is red, and it is located at the back of the iPort chassis utility box.

3. Carefully insert the RS-232 circuit card all the way into the balanced audio PCB connector (see *Figure 4B*).

Note: The circuit card will only fit into the connector one way.

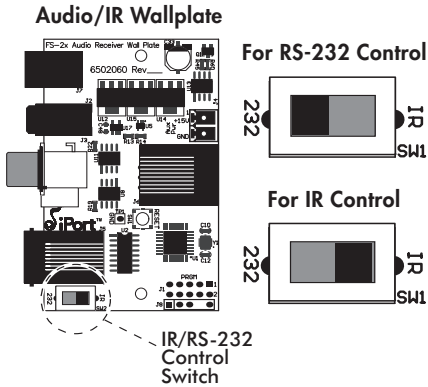
Figure 4: Installing the RS-232 Circuit Card



4. Follow the instructions in the *iPort Instruction Manual — IW-20, IW-21, IW-22* for the remainder of the installation. (Refer to the sections *Installation Preparation* and *iPort IW-21 Connections and Installation*.) Use the included RS-232 cable to connect the audio/IR wall plate to the RS-232 control system.

*Note: Before mounting the audio/IR wall plate into its electrical box make sure that its IR/RS-232 control switch is set in the RS-232 control position (see *Figure 5*, page 3).*

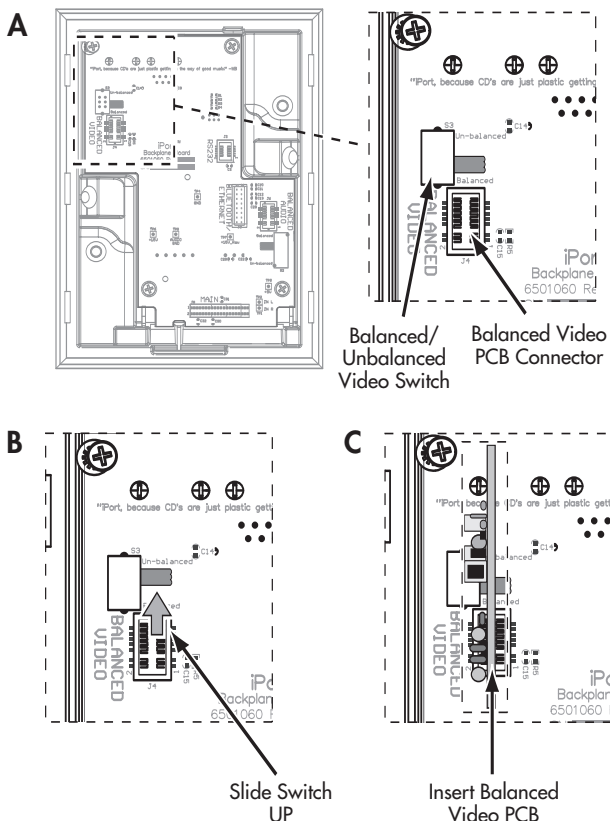
Figure 5: IR/RS-232 Control Switch



Balanced Video Upgrade Installation (iPort IW-21/IW-22)

1. If the iPort is already installed, unplug the power supply from the audio/IR wall plate and separate the iPort front face from the utility box, as shown in *Figure 1*, page 1.
2. Locate the balanced video PCB connector and balanced/unbalanced video switch on the iPort main circuit board (see *Figure 6A*). The main circuit board is

Figure 6: Installing the Balanced Video Circuit Card



red, and it is located at the back of the iPort chassis utility box.

3. Slide the balanced/unbalanced video switch up to the *Balanced* position (see *Figure 6B*).

Note: The balanced video circuit card cannot be installed unless the switch is in the BALANCED position.

4. Carefully insert the balanced video circuit card all the way into the balanced video PCB connector (see *Figure 6C*).

Note: The circuit card will only fit into the connector one way.

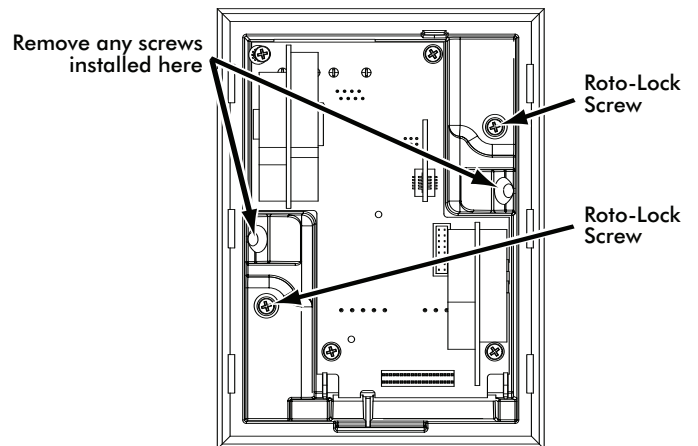
5. Determine the location for the balanced video wall plate (near the video equipment). The wall plate can be up to 500 feet from the iPort.
6. Mount a J-box or P-ring in the wall at the selected location.

IMPORTANT: Do not install the balanced video wall plate in the same electrical box as AC house wiring, a light switch, or any other high-voltage device or control. The wall plate can share gang boxes with an iPort audio wall plate or other controls such as A/B speaker switches, infrared receivers, and volume controls, if these other devices are rated as Class 2 devices according to the National Electrical Code.

7. Loosen the iPort Roto-Lock® clamps, as shown in *Figure 7* and remove the iPort utility box from the wall by rotating the bottom edge out of the opening first, then pulling the top of the iPort down and out of the opening.

- If the iPort has been secured to a stud, remove the screw that secures it (see *Figure 7*).

Figure 7: Removing the Utility Box from the Wall





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8. If there is a Cat5/RJ-45 cable plugged-into the iPort's VIDEO connection, unplug it and, if possible, remove it from the wall.

9. Run a length of Cat5 cable through the wall from the iPort location to the balanced video wall plate location.

Note: Always consult local building codes before running wires through walls.

10. Install RJ-45 connectors to both ends of the Cat5 cable as explained in the *Cat5/RJ-45 Cable Wiring* sidebar on page 5.

11. The balanced video RJ-45 pin configuration is:

| | |
|-----------------------------|-----------------------------|
| Pin 1: Composite/Blue (Pb) | Pin 5: S-Video Y+/Green (Y) |
| Pin 2: Video Ground | Pin 6: Video Ground |
| Pin 3: S-Video C +/Red (Pr) | Pin 7: 12 – 15V Ground |
| Pin 4: Video Ground | Pin 8: 12 – 15V + |

12. Plug the new Cat5/RJ-45 cable into the iPort utility box VIDEO connector, as shown in *Figure 8*.

13. Plug the new Cat5/RJ-45 cable into the rear of the balanced video wall plate, as shown in *Figure 8*.

14. If the combined total length of Cat5 wire running between the iPort and the balanced audio and balanced video wall plates is **less than 250 feet**, they can share a single power supply that is plugged-into either wall plate.

IMPORTANT: Do not plug the power supply into a wall plate or wall outlet at this time.

15. **If the combined total length of Cat5 cable running between the iPort and the balanced audio and balanced video wall plates is longer than 250 feet:** Run a length of 16/2 speaker wire through the wall from the Aux Power connector **on the wall plate located closer to the iPort** to the iPort's Supplemental Power connector as shown in *Figure 3*, page 2. (The SUPPLEMENTAL POWER connector has two parallel sets of terminals — you can use either set.) This will avoid performance degradation caused by a loss of DC voltage over Cat5 wire runs longer than 250 feet.

IMPORTANT: Do not plug the power supply into a wall plate or wall outlet at this time.

16. Before mounting the balanced video wall plate into its electrical box you must first set its IR/RS-232 control switch (see *Figure 4*, page 2). For IR control, set the switch to the *IR* position; for RS-232 control set the switch to the *RS-232* position.

NOTE: The switch setting on the balanced video wall plate must match the switch setting on the balanced audio wall plate.

17. Connect the balanced video wall plate's Video jacks to the video system, as shown in *Figure 8*. The balanced video wall plate can be connected via component video, S-Video, or composite video (see *Figure 9*, page 5).

Figure 8: Balanced Video System Connections

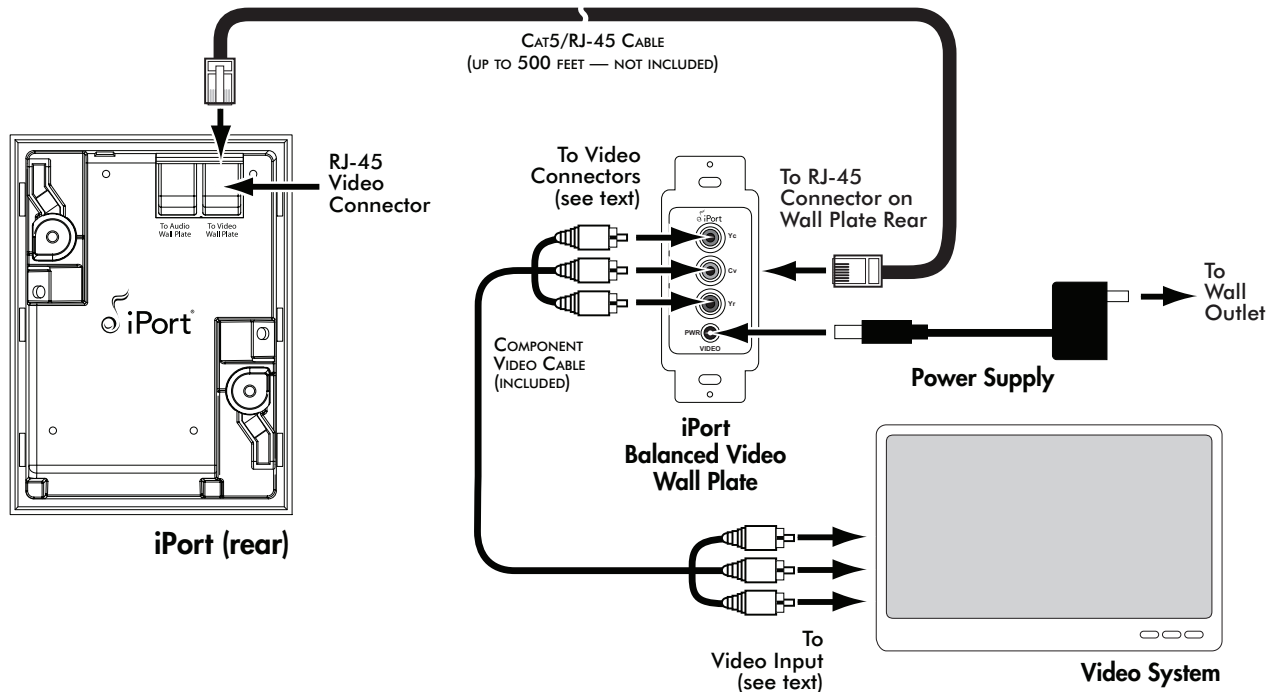
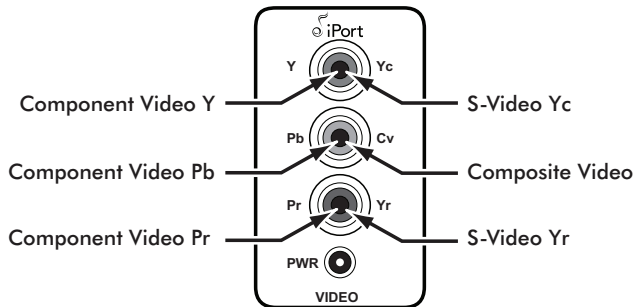


Figure 9: Balanced Video Wall Plate Video Connections



18. Insert the iPort utility box into the wall opening. First insert the box's top edge into the opening, then rotate its bottom edge into the opening.
19. Hand-tighten the two Roto-Lock screws on the iPort utility box (see *Figure 7*, page 3). The Roto-Lock clamps will automatically rotate into position behind the wall and begin clamping the iPort.
 - When you notice resistance on the two screws the iPort has been clamped successfully.

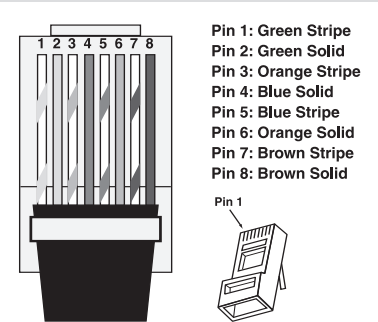
IMPORTANT: NEVER over-tighten the Roto-Lock screws.
20. If there is a wall stud up against either side of the utility box that prevents the Roto-Lock clamps from operating, secure the box by hand-driving a 1½" #6 drywall screw (not provided) through the angled hole on the side of the chassis and into the wall stud (see *Figure 7*, page 3).
21. Attach the iPort face to the utility box. Slide the face into the chassis until it fits snugly into place.
22. Follow the instructions in the *iPort Instruction Manual — IW-20, IW-21, IW-22* for the remainder of the installation. (Refer to the sections *Installation Preparation* and *iPort IW-21 or IW-22 Connections and Installation*.)
23. Once you have confirmed that all the connections have been made properly, plug the power supply into the wall outlet.

IMPORTANT: If you ran a length of 16/2 speaker wire between one wall plate and the iPort's SUPPLEMENTAL POWER connector in Step 15, you must connect the power supply to that wall plate

Cat5/RJ-45 Cable Wiring

1. Use a stripper or knife to strip about 1" of the cable jacket off each end of the wire.
 - Be careful not to nick any of the individual wires.
2. Untwist the wire pairs and spread them flat. Arrange them as shown in the diagram.

3. Trim the ends of the individual wires to ½" in length, making sure that they are even with each other. Flatten the wires against each other, leaving no space between them.



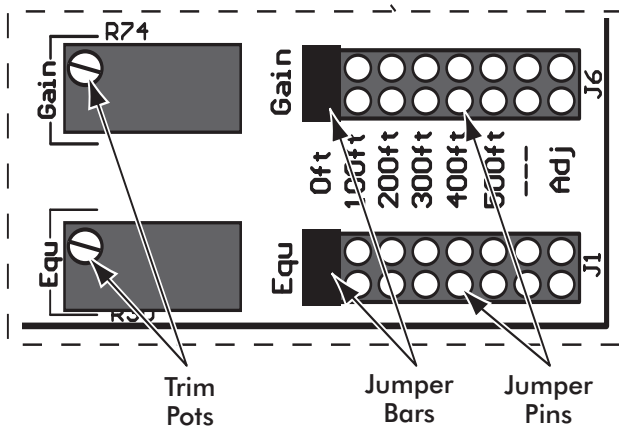
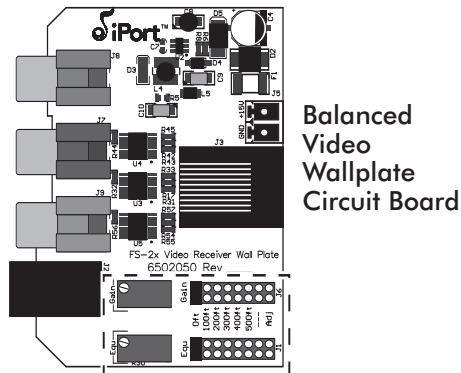
4. Hold the RJ-45 connector clip-side down and insert the Cat5 wire ends firmly into the connector. Make sure that all the wires are flat all the way to the very front of the connector.
5. Re-confirm that the color orientation matches the diagram and that cable jacket fits against the connector stop.
6. Firmly crimp the RJ-45 connector with the crimp tool. Confirm that the connector is crimped firmly and that all the wires are flat right up against the front of the connector. If even one of these wires is incorrect, cut the connector off the cable and repeat steps 2 – 7 with a new RJ-45 connector.

Optimizing Video Quality After Installation

The balanced video wall plate circuit board has two sets of jumpers and trim pots that can be used to optimize video performance for the length of Cat5 cable between the iPort and the balanced video wall plate.

1. The balanced video wall plate circuit board has two sets of jumper pins (EQU and GAIN) that are labeled 0 FT, 100 FT, 200 FT, 300 FT, 400 FT, 500 FT, and ADJ. See *Figure 10*.

Figure 10: Video Quality Adjustments



The circuit board is shipped from the factory with the jumper bars set on the 0 FT pins.

2. Remove the jumper bars from the 0 FT pins and insert them on the sets of pins labeled closest to the actual Cat5 cable length between the iPort and the balanced video wall plate.

For example, if the Cat5 cable length is 325 feet, set the jumper bars on the pins labeled 300 FT. If the Cat5 cable length is 375 feet, set the jumper bars on the pins labeled 400 FT.

3. If you wish to manually fine-tune the video quality, set the jumper bars on the pins labeled ADJ (adjust), which activates the trim pots (see *Figure 10*).

Use a small screwdriver to turn the screws on the pots to adjust the video picture:

- Turning the EQU pot adjusts the picture's sharpness.
- Turning the GAIN pot adjusts the picture's contrast.

Note: Manual fine-tuning is rarely needed if the jumper bars are set to the proper jumper pins in Step 2.



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iPort IW-21/IW-22 Upgrade Kits

LIMITED ONE (1) YEAR WARRANTY

iPort warrants to the first end-user purchaser that this iPort-brand product ("Product"), when purchased from and installed by an authorized iPort Dealer/Distributor, will be free from defective workmanship and materials in the initial installation for the period stated below. iPort will at its option and expense during the warranty period, either repair the defect or replace the Product with a new or remanufactured Product or a reasonable equivalent at no charge for parts, labor and return shipping.

EXCLUSIONS

TO THE EXTENT PERMITTED BY LAW, THE WARRANTY SET FORTH ABOVE IS IN LIEU OF, AND EXCLUSIVE OF, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY IPORT. ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY OF FITNESS FOR USE, AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED. No one is authorized to make or modify any warranties on behalf of iPort.

The warranty stated above is the sole and exclusive remedy and iPort's performance shall constitute full and final satisfaction of all obligations, liabilities and claims with respect to the Product. IN ANY EVENT, IPORT SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, ECONOMIC, PROPERTY, BODILY INJURY, OR PERSONAL INJURY DAMAGES ARISING FROM THE PRODUCT, ANY BREACH OF THIS WARRANTY OR OTHERWISE.

This warranty statement gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion of implied warranties or limitations of remedies, so the above exclusions and limitations may not apply. If your state does not allow disclaimer of implied warranties, the duration of such implied warranties is limited to the period of iPort's express warranty.

Your Product Model and Description: iPort Balanced Audio Upgrade Kit, iPort RS-232 Control Upgrade Kit, iPort Balanced Video Upgrade kit

Warranty Period for this Product: One (1) year from the date on the original sales receipt, invoice or other satisfactory proof of purchase.

Additional limitations and Exclusions From Warranty Coverage: The warranty described above is non-transferrable, and does not include damage to allied or associated equipment which may result for any reason from use with this Product, and does not include Product failure caused by accident, disaster, negligence, improper installation, misuse (e.g. over-driving the amplifier or speaker, excessive heat or cold or humidity, outdoor installation), or from service or repair which has not been authorized by iPort.

Obtaining Authorized Service: If you purchased your iPort from an iPort Dealer, you (1) must contact your authorized iPort Dealer/Installer or call iPort Customer Service at (800) 582-0772 within the warranty period, (2) must obtain a return merchandise number (RMA), and (3) deliver the Product to iPort shipping prepaid during the warranty period, together with the original sales receipt, invoice or other satisfactory proof of purchase from your iPort Dealer. If you did not purchase from an iPort dealer, you must contact your authorized seller within the warranty period and obtain instructions for obtaining authorized service.



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