Setup Guidelines for LDS Systems Using 884+ Mixers

HE/LE/SG 98 Checkout Procedure Guidelines

See inside this cover for Technical Support information

ver: “Orange-F” - Aug 2011

Welcome to the LDS Orange Setup Guide for LDS Systems Using 884+ Mixers

The LDS system setups (Heritage, Legacy, Sage, Cody, and retrofits) are very specific. A unique FLASH ROM image is provided in the 884+LDS to conform to the logic table specified by the LDS church.

This version of the LDS Setup Guide contains information on the new **884-IF**, which is now specified. The **884-IF** Provides for simplified, trouble-free interface between the system in the rack and the external controls, indicators and sensors, consolidates components which were formerly external to the main system, and allows uniform, user-friendly trouble shooting during installation.

The **884-IF** will save installation time, eliminate at least 80% of the point-to-point wiring that was formerly required, and make trouble-shooting easier and less time consuming, thus allowing faster, smoother, more reliable installations and fewer call backs.

System Support: While the **884-IF** has made installation simpler and less time consuming, there will always arise questions from time to time. Ivie is committed to providing the support necessary to assure that these systems go in smoothly and operate as the LDS Church A&E Department intended.

If you have questions from a jobsite or in the shop, you should contact your own company's designated LDS system support person before contacing Ivie. If your support person can't help or is not available, then to to Step Two below, and contact Ivie directly.

Step two - if you can't reach your company support person then contact Ivie Technologies. We are available from 8:00 AM to 5:00 PM, Monday through Friday.

Ivie Technologies Tech Support: 801-766-7600

Note: The information contained herein is the latest and most correct available. If any information you have on architectural/engineering drawings conflicts with this, we suggest a prudent approach would be to contact the Consultant involved and resolve those inconsistencies before installation.

HE/LE/SG 98 Checkout Procedure

Table of Contents

Setup Suggestions 1-3

Internal Switch Settings Chart 4

Preamplifier Switch Control Settings 5

884-IF Harness Wiring Diagram 6

884-IF Wiring Diagram (color) 7

2-Door / 1-Door Cody Retrofit Diagram 9

Preset 0 Base Config. & Editing 11

Preset 1 Config. & Editing 12-13

Preset 13 Config. & Editing 14-15

Preset 14 Config. & Editing 16-17

CS-884 & CP-884 Wiring Diagrams 18

IR-1 Infrared Door Sensor 19-20

CC-884 Wiring Diagram 21

RJ45 Connector Wiring Standard 22

RJ45 Connector Wiring and Ivie Remote Control Issues 23

Function Out Theory of Operation 24

Troubleshooting LED/Relay/Function Out Problems 25

HE/LE/SG98 Checkout Procedure

16 Apr 2002

1) While monitoring the 884 with a computer check all switches, LEDs, Pots and IR sensors for proper function. *Confirming proper function of these external devices will accomplish 90% of your trouble shooting up front*.

2) Confirm proper programming of Matrix mixer and Parametric EQ.

MIXER:

- Switch types - Edit, Switch types. All set to "A" except Combine 3+4, 4+5, 5+6, and 8+1, which should be set to "M".
- Preset Zero (Base Config.)**
- Preset 1**
- Preset 13 - Satellite**
- Preset 14 - Auto/Manual**
- Software enable ALC on mic inputs 1, 2, 3, 4 (Automix, ALC & VOX Sense)
- Software enable "last on" for auto-mix circuit "W" (Automix, Automix parameters)
- Assure that the appropriate jumper for the desired meetinghouse configuration is in place (see the "884+ Connection" page for jumper placement. Note that the Legacy plan does not use a jumper).

**See following pages for preset programming instructions and external sensor/pot/switch wiring diagram.

EQ:

626 Setup and Compatibility Suggestions

a. If you want to use setup files to upload to the 626 at the start of your job, the filename must have the extension ".626". The file we use at the factory is named "lds.626." All of the information related to the settings of the 626 are contained in one file. We recommend that you create a generic LDS config file to start out with; one that will configure the templates and presets to something near what you will need for an LDS job. This will save a great deal of time on the job site.

A setup file which includes the basic information for an LDS job is available at the Ivie web site. We make no claims as the completeness of the file, or its full compatibility with your needs, but you may download it from: ftp:///www.ivie.com/lds2000.626.

It is not necessary to load a separate "template file" into the 626.

b. If you are starting out from scratch, the first thing you'll need to do is configure the DSP Templates. This is done from the Edit pull-down menu: choose "DSP Configure." Please refer to pp. 5-7 of the 626 manual. Once you have configured a template, you can copy that template to one or all presets with a single command.

c. Input Port Configuration: The 626 must be configured to activate a given preset based upon which combination of Preset Port hardware terminals are activated -- i.e "pulled to ground"-- by the Ivie 884+ mixer.

Two things must be accomplished: 1) The 884+ Mixer must be wired to the 626 DSP AND 2) the 626 must have its input port configuration programmed as shown below.

PRESET PORT TERMINAL CONNECTIONS

Ivie 884+ Mixer Terminal Ivie 626 DSP Terminals

MSTR TAPE OUT "A" ========> PRESET ACTIVATION 1
MSTR TAPE OUT "B" ========> PRESET ACTIVATION 2
MSTR TAPE OUT "C" ========> PRESET ACTIVATION 3
MSTR TAPE OUT "D" ========> PRESET ACTIVATION 4

IVIE 626 DSP UNIVERSAL PRESET PORT CONFIGURATION

	Preset Port Terminals								Assigned Preset
	8	7	6	5	4	3	2	1	
Decimal 0	0	0	0	0	0	0	0	0	No Change
Decimal 1	0	0	0	0	0	0	0	1	Preset 1
Decimal 2	0	0	0	0	0	0	1	0	Preset 2
Decimal 3	0	0	0	0	0	0	1	1	Preset 3
Decimal 4	0	0	0	0	0	1	0	0	Preset 4
Decimal 5	0	0	0	0	0	1	0	1	Preset 5
Decimal 6	0	0	0	0	0	1	1	0	Preset 6
Decimal 7	0	0	0	0	0	1	1	1	Preset 7
Decimal 8	0	0	0	0	1	0	0	0	Preset 8
Decimal 9	0	0	0	0	1	0	0	1	Preset 9
Decimal 10	0	0	0	0	1	0	1	0	Preset 10
Decimal 11	0	0	0	0	1	0	1	1	Preset 11
Decimal 12	0	0	0	0	1	1	0	0	Preset 12
Decimal 13	0	0	0	0	1	1	0	1	Preset 13
Decimal 14	0	0	0	0	1	1	1	0	Preset 14
Decimal 15	0	0	0	0	1	1	1	1	Preset 15
Decimal 16	0	0	0	1	0	0	0	0	No Change
Decimal 17	0	0	0	1	0	0	0	1	Preset 1
Decimal 18	0	0	0	1	0	0	1	0	Preset 1
Decimal 19	0	0	0	1	0	0	1	1	Preset 9
Decimal 20									
Decimal 21									

3) Verify that the 884+ talks to the 626 properly by assuring that each system mode in the 884+ brings up the right preset in the 626. Don't bother programming the channel selects, delays, etc., in the 626 at this time.

4) Do an audio "rough check" by "talking the system out."

5) Equalize the chapel and the cultural center systems. Place the settings in the 626 preset # 10.

6) Load the EQ settings from preset # 10 into each of the 626 presets. This is easily done by right-clicking anywhere in the blue area of the 626 main software control screen and selecting "Copy Entire Preset." Right-click again, and you can choose to "Paste Entire Preset (All 16 Presets)".

7) With the power amps off, set ALC in Chapel. ALC in LDS chapels is an "attenuate only" type of Automatic Level Control. To set ALC, follow this procedure. Use the pulpit microphone.

First, turn off the power amplifier that feeds the chapel. You do not need to listen to the sound system at this point. Listening while you make these adjustments may well affect your ALC setting adversely.

Activate ALC in inputs 1, 2, 3, 4: With the Ivie AudioNet® software running and connected to the 884+, access

the "ALC and Vox Sens" item in the Automix pulldown menu. Make sure that ALC is activated for channels 1, 2, 3, 4. Click on "Close."

Adjust and set ALC: From the Automix pulldown menu, select "ALC Levels." You will see a "virtual chart recorder: pop up on the screen. Make sure that the input number for the mic you are interested in is selected for the red "pen". To do this for the pulpit mic, make sure that channel 1 is selected under the red "Chnl" column. Attack and Release Time settings should be the default settings.

In the ALC "chart recorder" window, access the "Set ALC Target Level" pull down menu, and select -10dBu. This will temporarily set ALC so that gain reduction will begin to occur when a -10dBu level is present at the input to the matrix bus.

Assure that the software input level control is set to 0. Now have someone speak into the pulpit microphone in a "normal" speaking voice. Adjust the input "trim" control for the pulpit microphone until normal speech causes the red chart recorder pen to just begin to slightly "bobble" at the upper levels of normal speech. Note: You will have to click on "Resume ALC Scrolling" after making an input level adjustment; this is normal.

Having set the pulpit microphone input trim to achieve some very slight "pen bobbling" with normal speech and a target level of -10 dBu, now access the "Set ALC Target Level" pull down menu again, and change the setting to -6 dBu. Doing so will allow 4 dB more ALC "dynamic headroom," which gives speech a very natural sound and masks the operation of the ALC.
Note: ***Do not set ALC target levels with the other microphones*.**

8) Set Chapel system levels for appropriate Gain-Before-Feedback in the room at the amplifiers. In order to do this you may wish to consider temporarily turning off the ALC function on the microphones in the chapel. To do this, access the Automix pull down menu, select "ALC and Vox Sense" and un-click the ALC selections on mics 1, 2, 3, and 4. Make your gain adjustments at the amplifier, and then be sure to enable ALC for mics 1, 2, 3, and 4 again.

9) For each of the other microphone inputs in the chapel, use the software "trim" control and adjust for appropriate level in the room by ear.

10) Set "Sticky Level" for Output A on the mixer. See the Sticky Level instructions on the CP-884A page in this booklet.

11) Set Cultural Center power amps for good balance with the Chapel.

12) Set Auto/Man Levels in Cultural Center. For setup of the three Cultural Center mics, we recommend the following (post EQ setup, of course):

a) Set level controls for these three mics to "-6".

b) Now use the "Trim" function with a microphone plugged in and the system active to set the levels for appropriate (just below feedback) "automatic" operation. When the proper level is attained with Trim, save the settings to the Base preset (press "Level Save").

c) When the user presses the "manual" button in the CC884 to go into manual operation, the system will revert control of levels to the manual controls in the CC884, and will allow level to go up to "0". This will allow the system to go marginally higher in level, as is required.

See Following Page for Internal Input Switch Settings

Settings

Rolloff: All inputs set to "Flat"
Mic/Line: Input 5 set to "Line", all others set to "Mic"
Phantom Pwr: Input 5 set to "off", all others set to "on"
+30/+50: Inputs 1 & 5 set to "+30+, all others set to "+50"
Note: See next page for instructions. Mic/Line setting requires TWO switches.

OUTPUTS A, B, C, & D

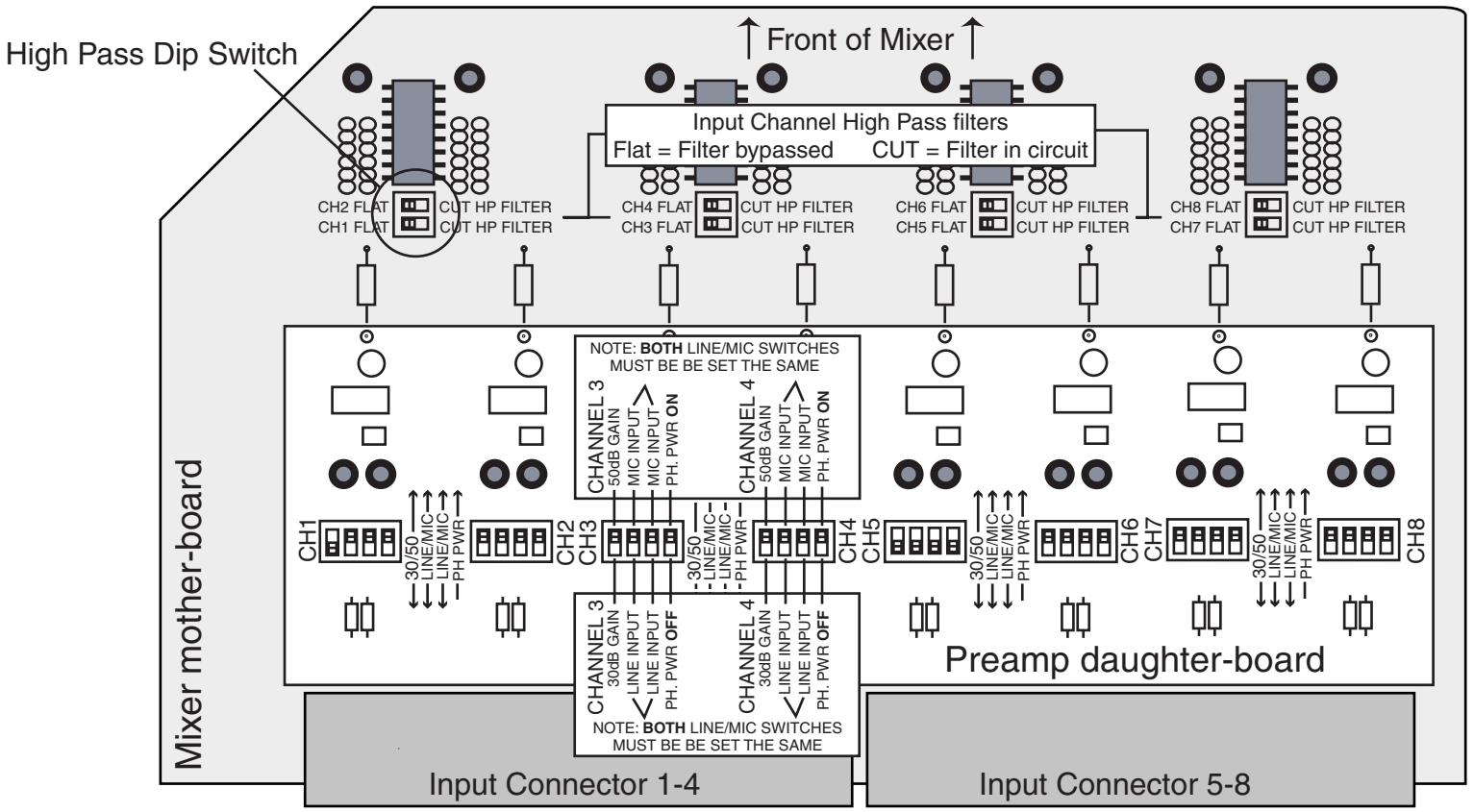
INPUTS 1, 2, 3, & 4

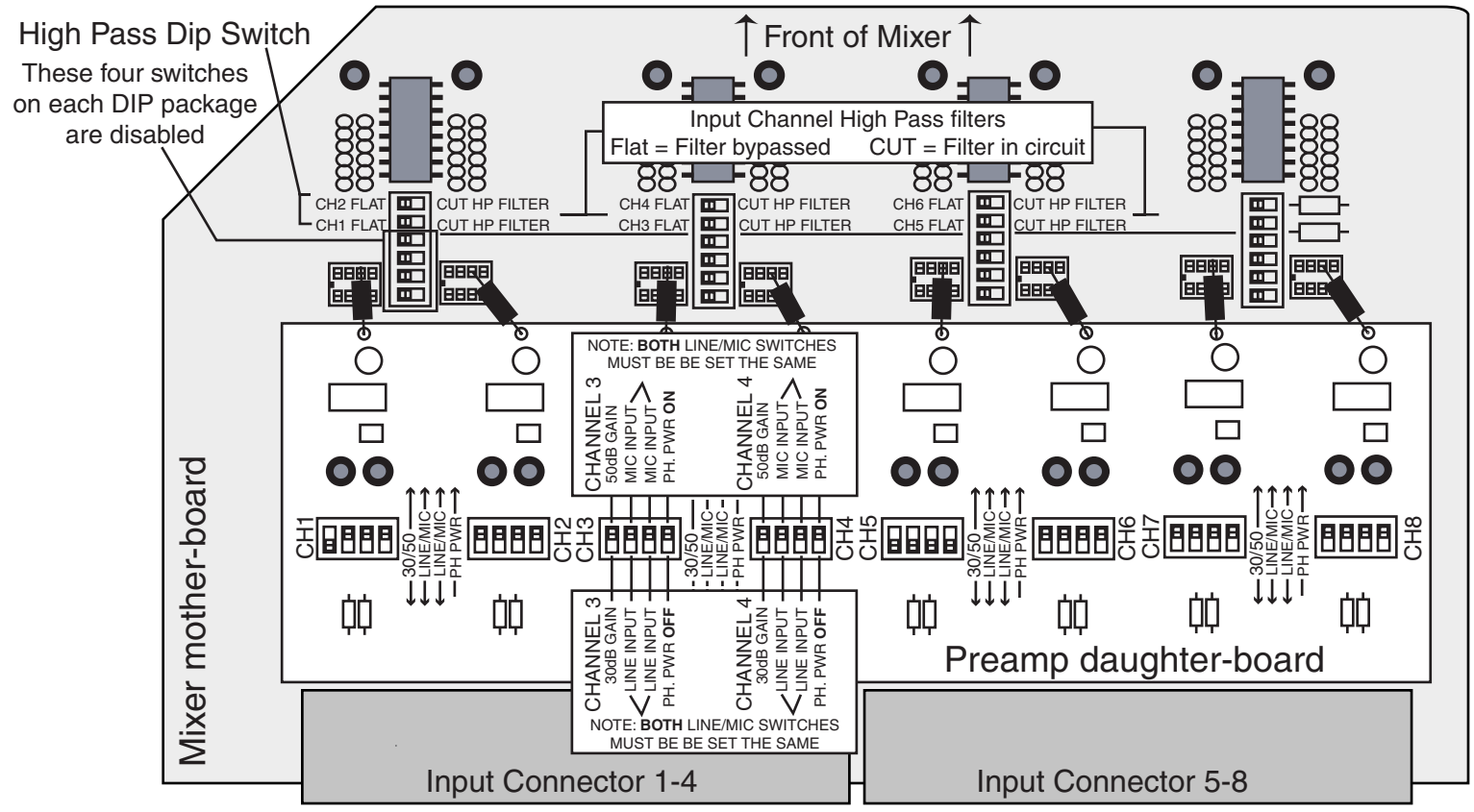
INPUTS 5, 6, 7, & 8

INTERNAL SWITCH SETTINGS FOR LDS MIXERS

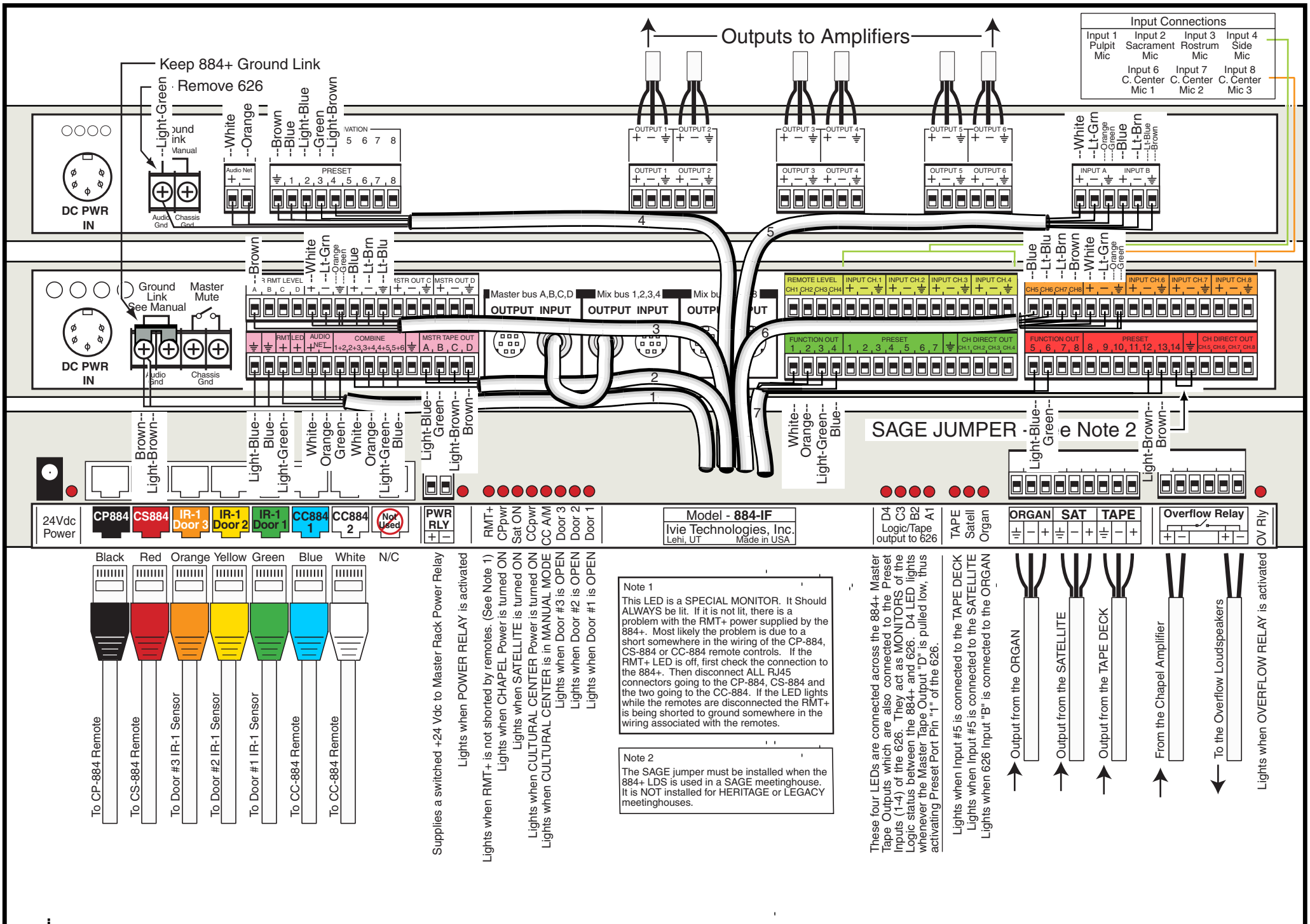
Microphone Preamplifier Controls for 884+ LDS Mixers

There are two different Mother/Daughter-board combinations. The drawing that pertains to your mixer may be determined observing the High Pass DIP switches on the mother-board. Choose the drawing which agrees with the DIP switch configuration on your unit's mother-board.





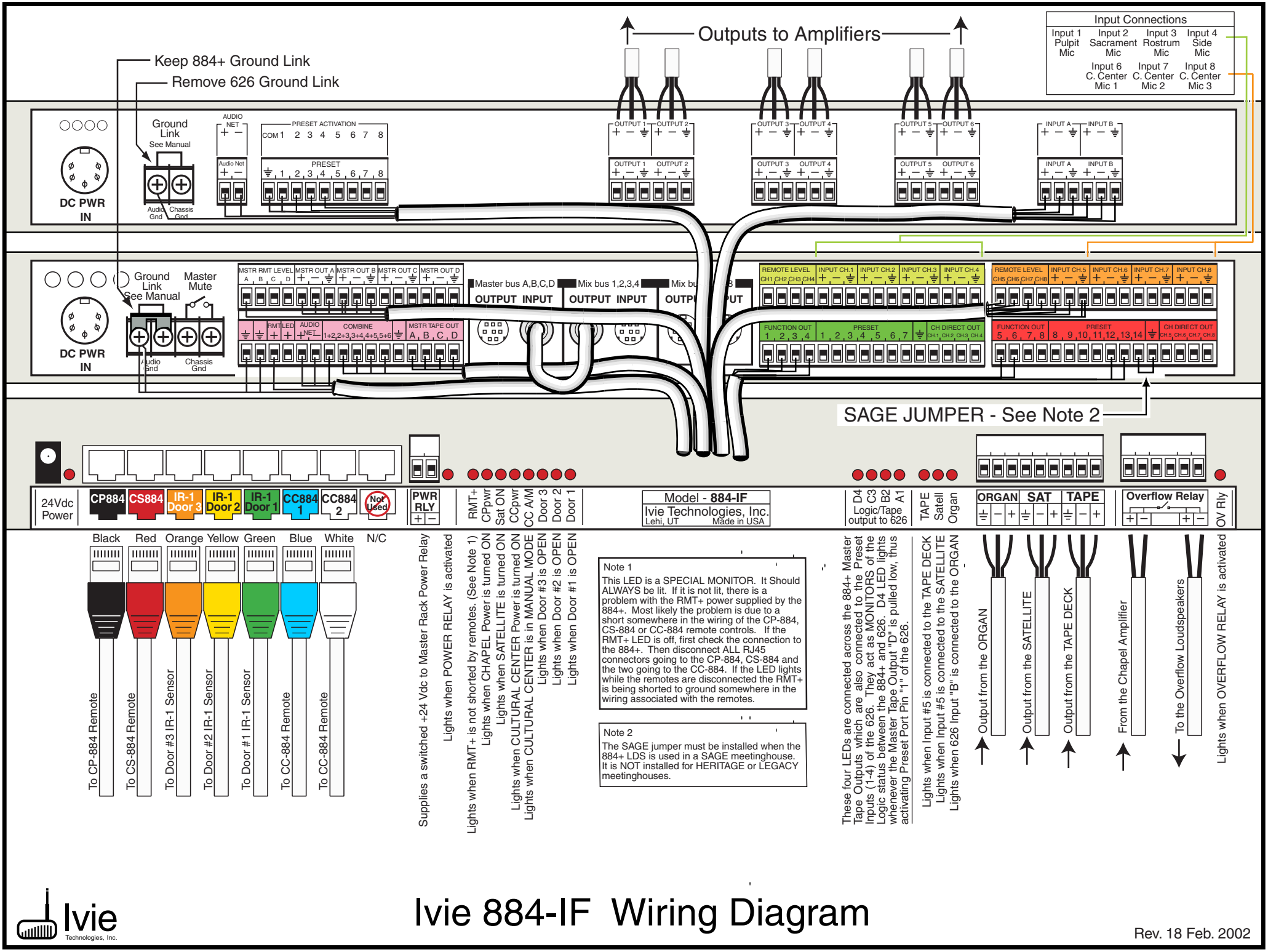
Rev. 5 May 2001



Ivie 884-IF Harness Wiring Diagram

Ivie Technologies, Inc.

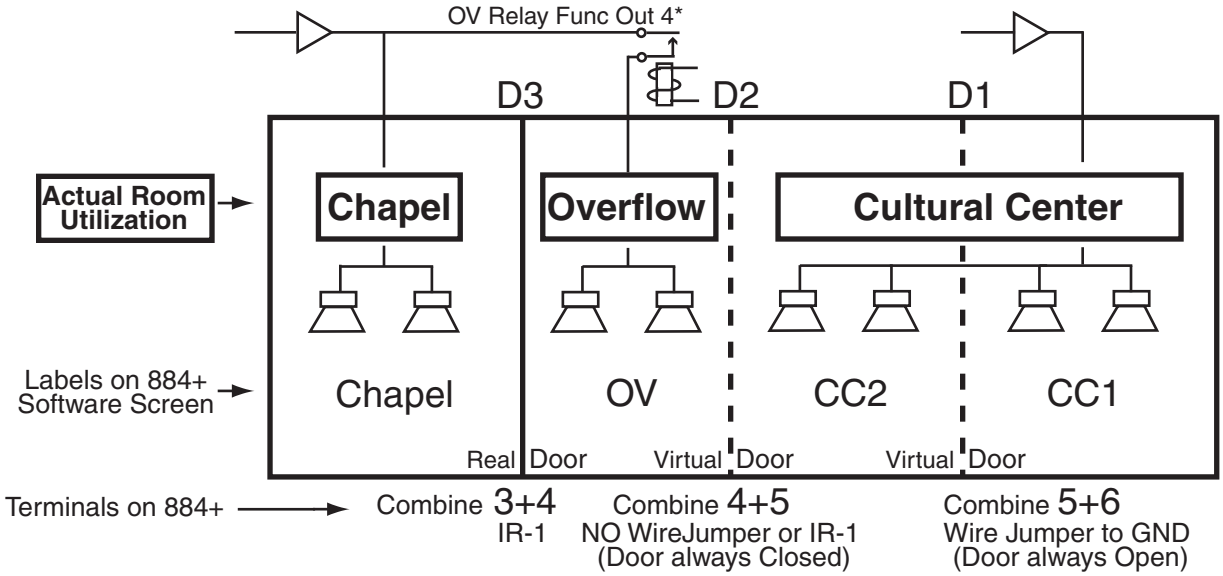
Rev. 18 Feb. 2002



Ivie 884-IF Wiring Diagram

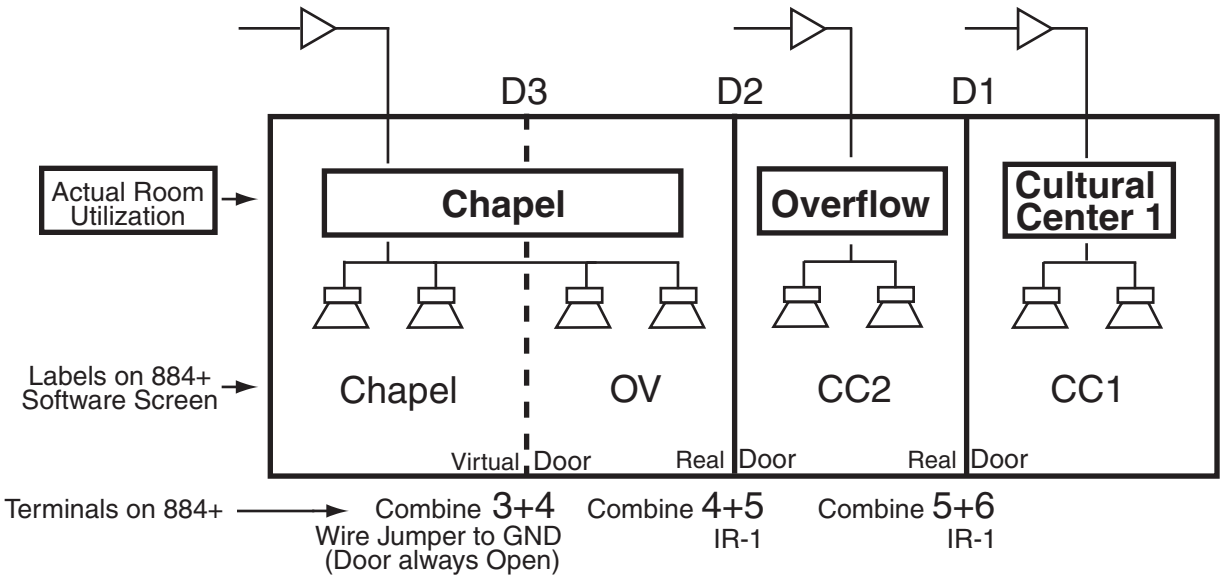
Ivie Technologies, Inc.

Rev. 18 Feb. 2002



CODY 1-DOOR RETROFIT

Notes:
884+ Jumpers = Cmb 5+6 to GND (Always open)
Door 2 is always closed so NO connection is made to Cmb terminals 4+5
*OV Relay is optional; OV function may be activated either by relay or by routing through DSP equalizer and separate amplifier channel.
To bring Chapel sound into the Cultural Center the Overflow door must be open **AND** the sound system in the Cultural Center must be manually turned on.



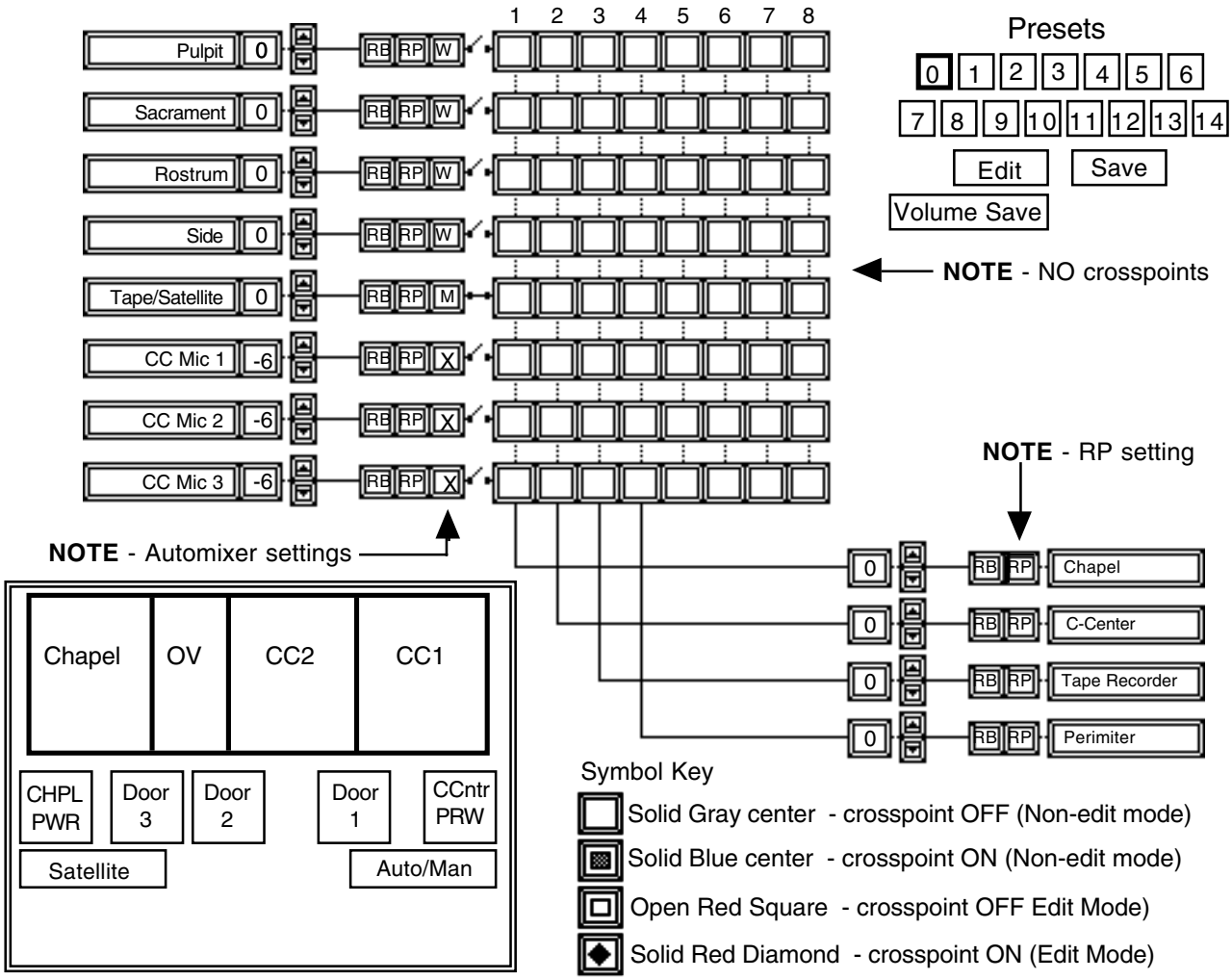
CODY 2-DOOR RETROFIT

Notes:
884+ Jumpers = Combine 3+4 to GND

Ivie 884+ LDS Building Configurations #4

Rev. 2/7/01

PRESET 0 Base Configuration & Edit Instuctions (Chapel and Cultural Center Power are OFF) The entire sound system is OFF.



Edit Peset 0 (Base Configuration)

1 - Make sure that presets 1 - 14 are released. Only the Preset 0 button should be pressed

2 - Set all Matrix crosspoint assignments to OFF (solid gray button, no blue).

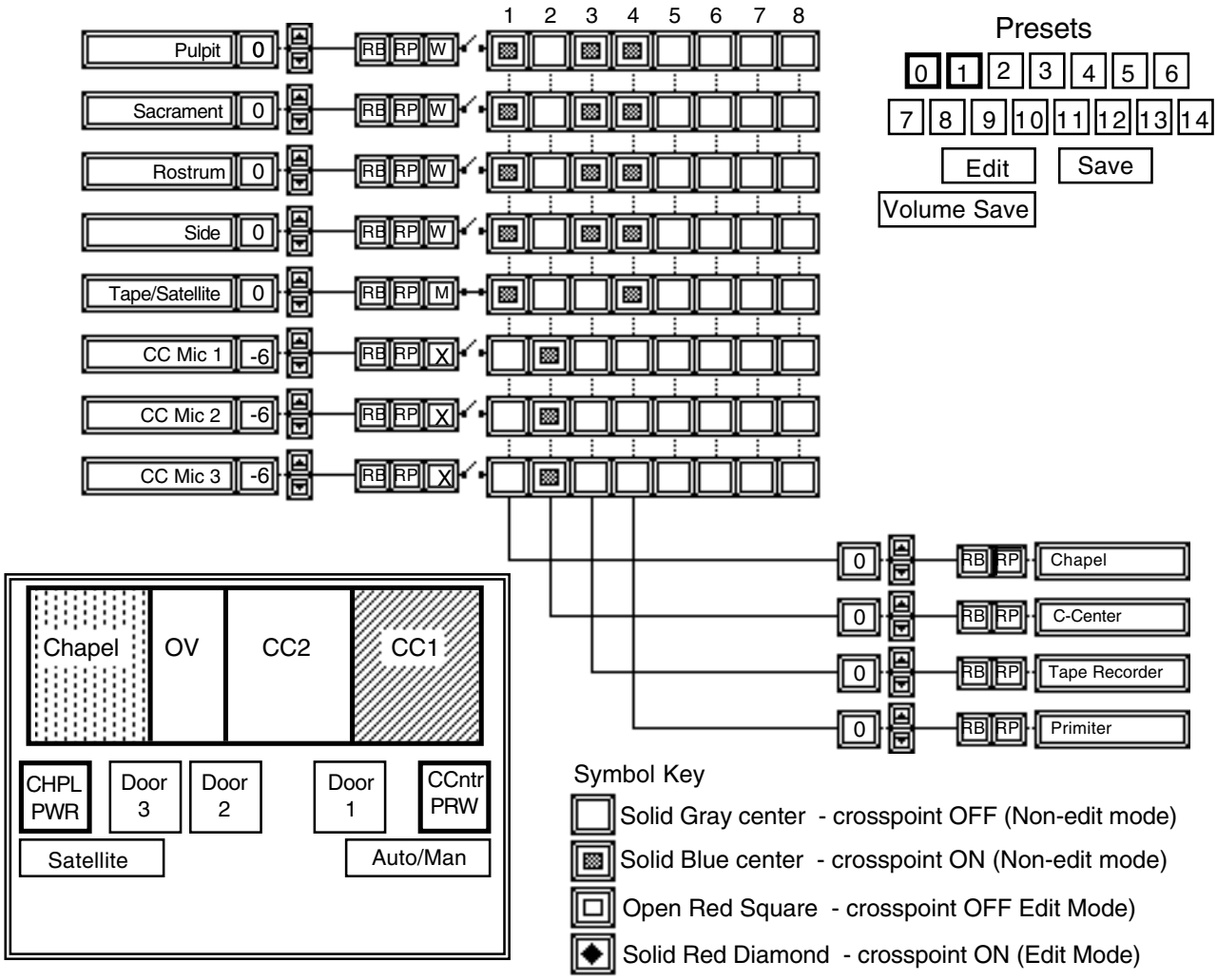
3 - Set Automixer Assignments : Inputs 1 - 4 are assigned to "Automixer W." Inputs 6 - 7 are assigned to "Automixer X." Input 5 (Line level, tape/satellite) is set to "M" , which is manual on. Please note that there are two "M" settings, Manual ON and Manual OFF. The on/off is determined by whether the button is pressed in or out. In, for manual on, and out, for manual off.

4 - The RP button on the Chapel output is pressed-in (activated) to provide remote control to Bishop's pedestal.

5 - Press the "Save" button. At the prompt - "Really Save as Base Configuration?" press "OK" You are now ready to proceed to program Presets 1, 13, & 14.

While in the NON-EDIT mode, presets cannot be activated by pressing the PRESET BUTTON directly. They can only be activated by pressing one or more of the room controls, i.e. CHPL PWR, Door 1, Door 2, Door 3, Auto Man, SAT, or C.Cntr PWR.

PRESET 1 (Chapel and/or Cultural Center Power) Turning the power on in either or both rooms (CP , CC) will activate Preset 1. Preset 1 will be active ANYTIME the sound system is powered up. There are only two other presets that are activated in the 884 matrix mixer. Preset 13 is an overlay for Satellite operation. Preset 14 is an overlay for Automatic/Manual operation of the Cultural Center.



Symbol Key

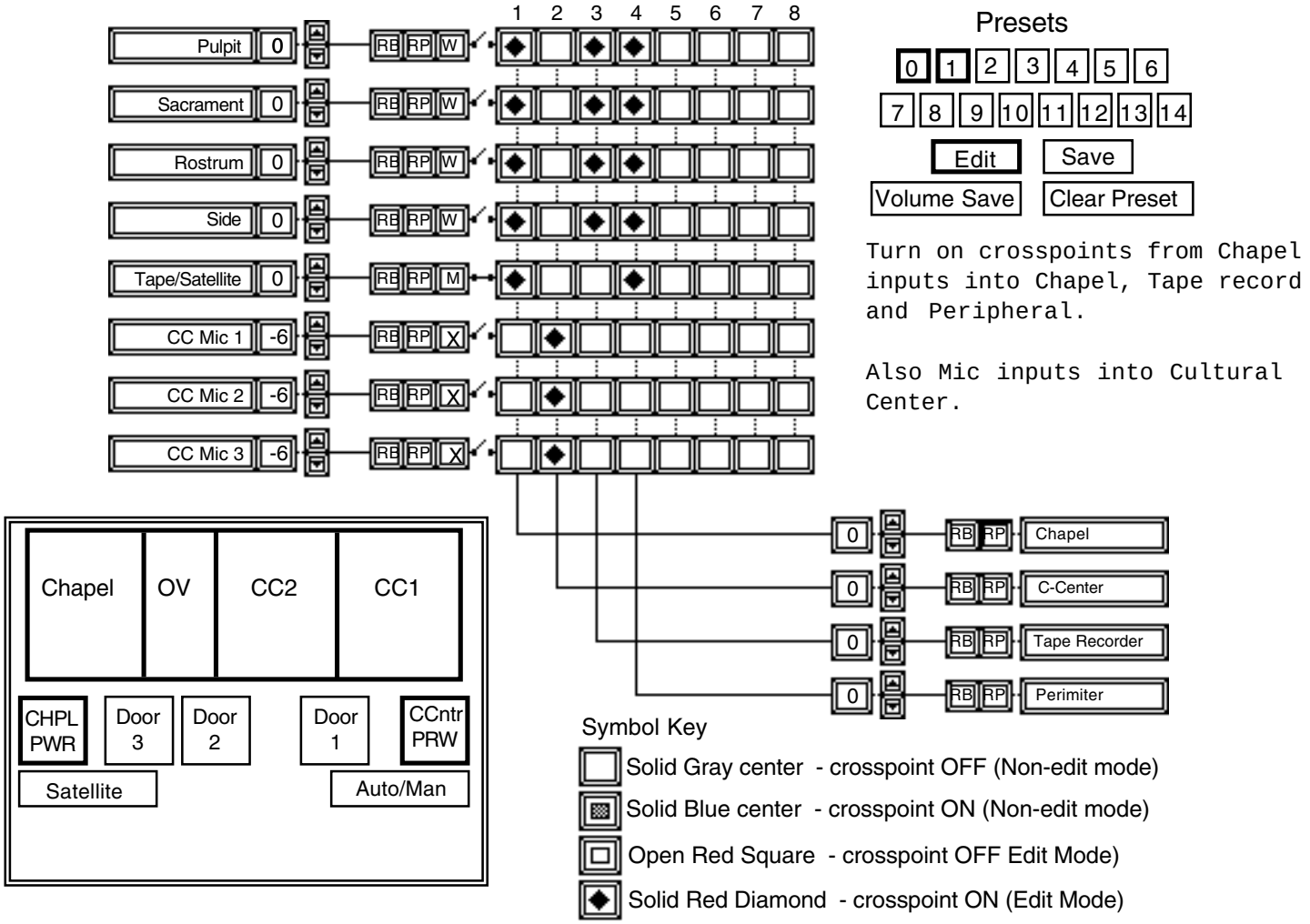
- Solid Gray center - crosspoint OFF (Non-edit mode)
- Solid Blue center - crosspoint ON (Non-edit mode)
- Open Red Square - crosspoint OFF Edit Mode)
- Solid Red Diamond - crosspoint ON (Edit Mode)

PRESET NOTES:

1 - Matrix crosspoint assignments: Inputs 1-4 into the Chapel, tape recorder, and Satellite.
2 -Matrix crosspoint assignments: Input 5 (Line level, tape/satellite) into Chapel, Satellite , but NOT THE TAPE RECORDER.
3 -Matrix crosspoint assignments: Inputs 6, 7, & 8 to mix bus 2 (Cultural Center)

While in the NON-EDIT mode, presets cannot be activated by pressing the PRESET BUTTON directly. They can only be activated by pressing one or more of the room controls, i.e. CHPL PWR, Door 1, Door 2, Door 3, Auto Man, SAT, or C.Cntr PWR.

EDIT PRESET 1 (Chapel and/or Cultural Center Power) Turning the power on in either or both rooms (CP , CC) will activate Preset 1. Preset 1 will be active ANYTIME the sound system is powered up. There are only two other presets that are activated in the 884 matrix mixer. Preset 13 is an overlay for Satellite operation. Preset 14 is an overlay for Automatic/Manual operation of the Cultural Center.



PRESET NOTES:

1 - Matrix crosspoint assignments: Inputs 1-4 into the Chapel, tape recorder, and Satellite.
2 -Matrix crosspoint assignments: Input 5 (Line level, tape/satellite) into Chapel, Satellite , but NOT THE TAPE RECORDER.
3 -Matrix crosspoint assignments: Inputs 6, 7, & 8 to mix bus 2 (Cultural Center)

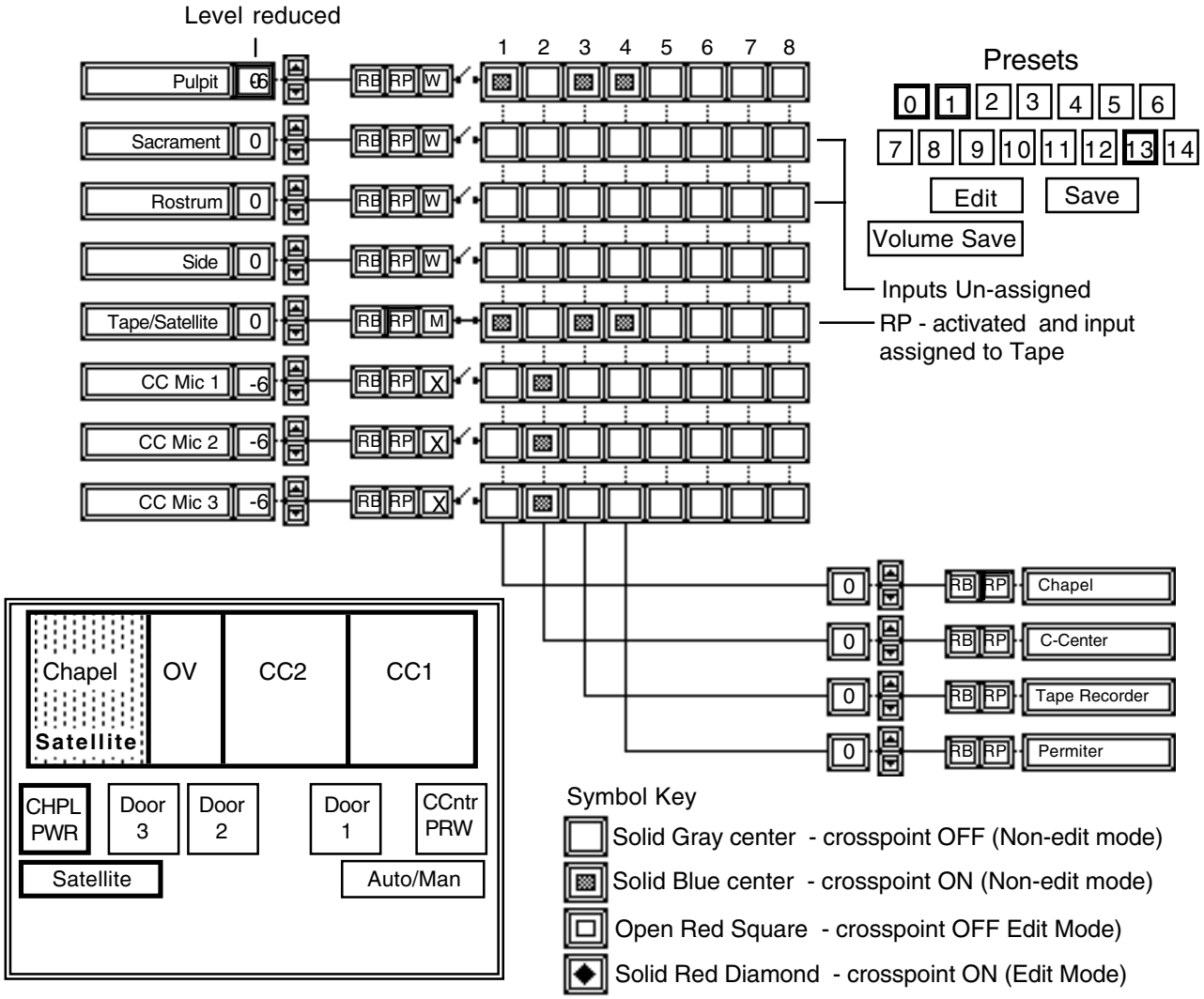
EDIT PROCEDURE:

1- Press the EDIT button
2- Press Preset 1 button (Note that the Preset 0 button remains pressed. This is normal)
3- Press the Clear Preset button

4- Assign crosspoints with a Red Diamond as shown above. Note that Input #5 (tape recorder output) is NOT assigned to the Input of the tape recorder.

5- Press the Save button

PRESET 13 (Satellite) Preset 13 is an overlay for Satellite operation. Preset 13 can be active only if Preset 1 is already active.

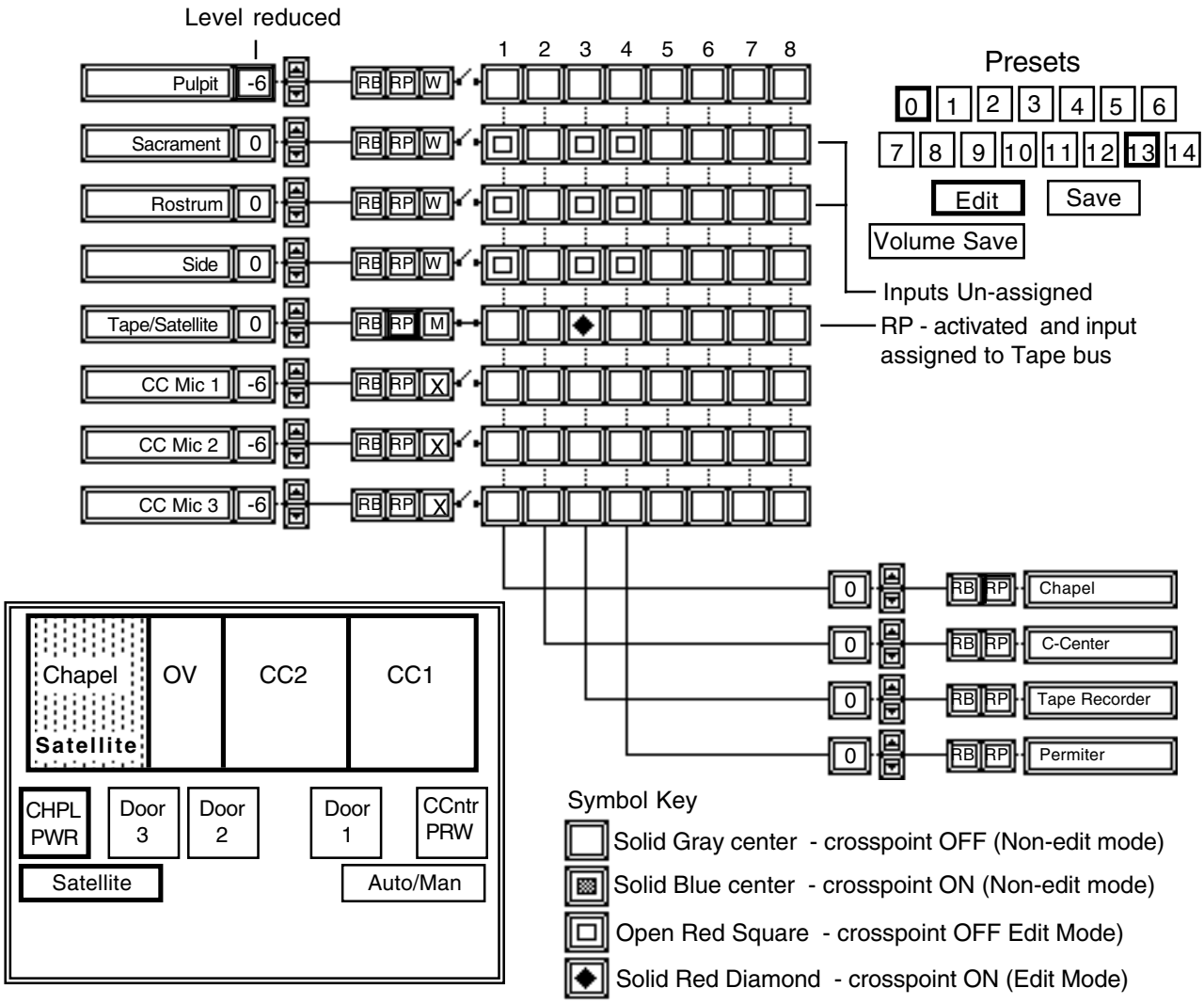


PRESET NOTES:

1 - Input #1 level is reduced.
2 - Inputs 2, 3 & 4 are muted from all buses.
3 - Input #5 relay swicthes the source from Tape recorder to Satellite.
4 - RP button on Input #5 is activated to allow remote control of Satellite level.
5 - Input #5 is now routed to the input of the Tape recorder.

While in the NON-EDIT mode, presets cannot be activated by pressing the PRESET BUTTON directly. They can only be activated by pressing one or more of the room controls, i.e. CHPL PWR, Door 1, Door 2, Door 3, Auto Man, SAT, or C.Cntr PWR.

EDIT PRESET 13 (Satellite) Preset 13 is an overlay for Satellite operation.



PRESET NOTES:

1 - Input #1 level is reduced.
2 - Inputs 2 ,4 & 4 are muted from all buses.
3 - Input #5 relay switches the source from Tape recorder to Satellite.
4 - RP button on Input #5 is activated to allow remote control of Satellite level.
5 - Input #5 is now routed to the input of the Tape recorder.

EDIT PROCEDURE:

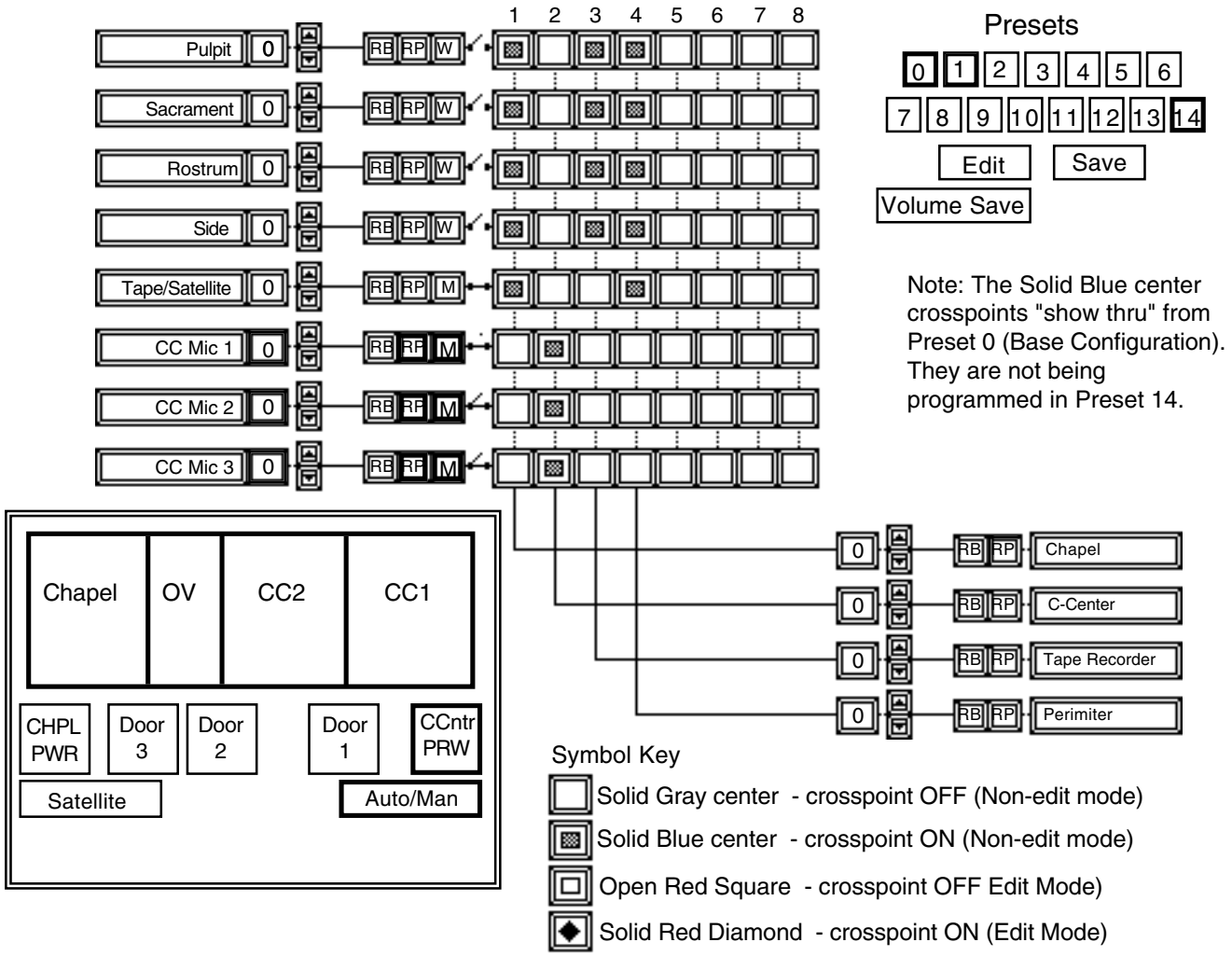
1- Press the EDIT button
2- Press Preset 13 button (Note that the Preset 0 button remains pressed. This is normal)
3- Press the Clear Preset button
4 - Click on the Down Arrow button for input #1. Click this button until the level is reduced by 6 dB. The level box will now be red in color.

5 - On the matrix mute inputs 2, 3, & 4 to all mix buses by clicking until a red open box appears at each matix crosspoint. Assign Input 5 to mix bus 3 by clicking until a red diamond appears at the crosspoint.

6 - Now press the "RP" (Remote Pot) button for input 5. Make sure that the "RP" button is depressed and red in color.

7- Press the Save button

PRESET 14 (Auto Man) - Preset 14 is unique. It is an "overlay" or modifier preset. It is used in conjunction with preset 1. Preset 1 turns on power to the Cultural Center. Once the Cultural Center is "powered up" , preset 14 is then used to switch inputs 6, 7, & 8 from Automatic gating mode to Manual control with remote volume controls activated. Note: there are no matrix assignments in this preset, as it overlays assigments made in presets 1.



PRESET NOTES:

1 - The Auto/Man switch cannot be activated by itself. It can only be activated if the Cultural Center power switch is activated. It is shown here activated in conjunction with preset number 1.

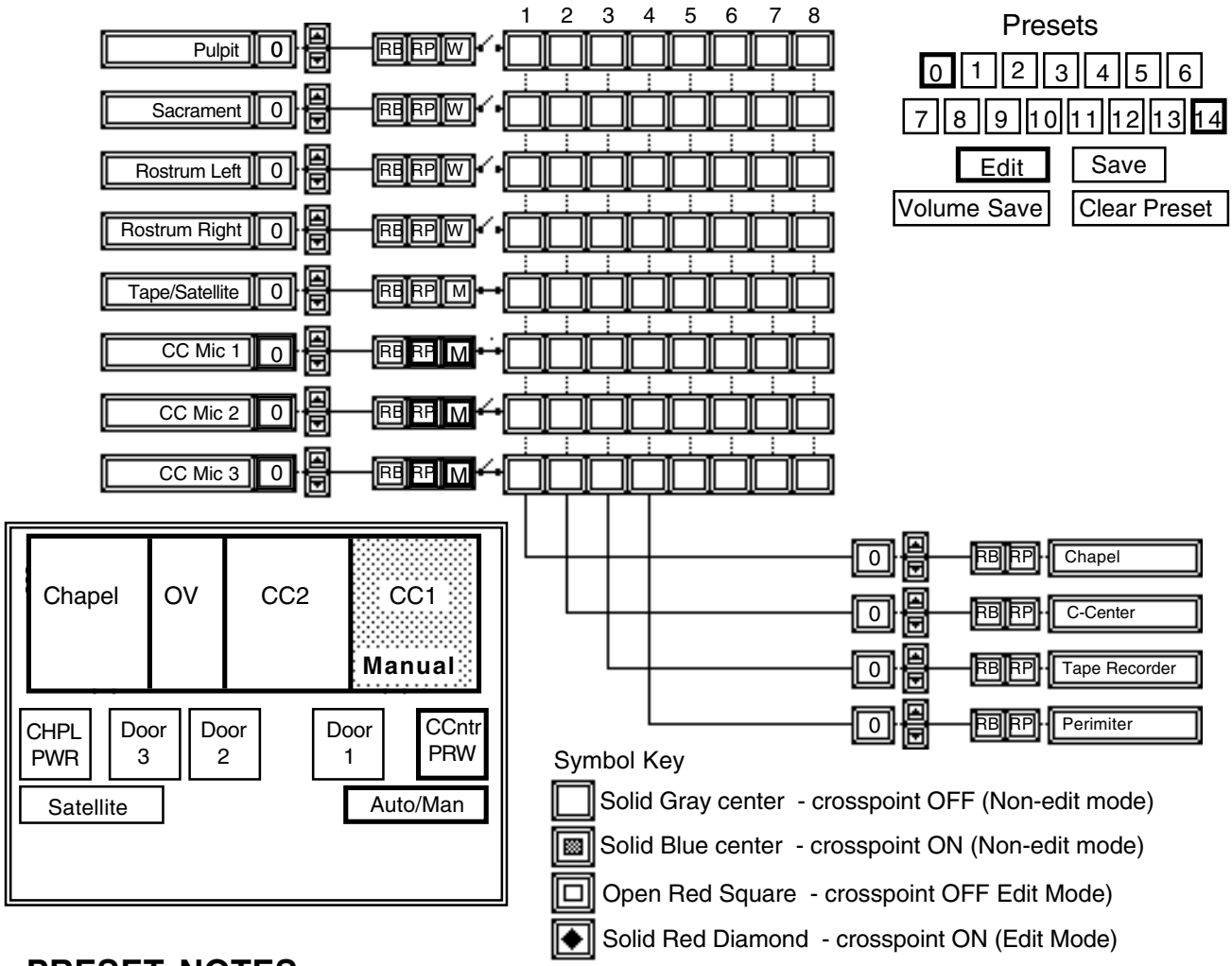
2 - Function Output 7 activates Automatic/Manual LED.

3 - Inputs 6, 7, & 8 are switched from "X" automatic mixer operation to "M" manual on operation. The Remote Pots for these three channels are activated.

4 - Inputs 6,7,& 8 are now under manual Level control.

While in the NON-EDIT mode, presets cannot be activated by pressing the PRESET BUTTON directly. They can only be activated by pressing one or more of the room controls, i.e. CHPL PWR, Door 1, Door 2, Door 3, Auto Man, SAT, or C.Cntr PWR.

EDIT PRESET 14 (Auto Man) - Preset 14 is unique. It is an "overlay" or modifier preset. It is used in conjunction with preset 1. Preset 1 activates audio into the Chapel and Cultural Centers. Once the Cultural Center is "powered up" , preset 14 is used to switch inputs 6, 7, & 8 from Automatic gating mode to Manual control with remote volume controls activated. Note: there are no matrix assignments in this preset, as it overlays assigments made in preset 1.



PRESET NOTES:

1 -The Auto/Man switch cannot be activated by itself. It can only be activated if the Cultural Center power switch is activated. Keep in mind that Preset 14 is used in conjunction with Preset 1. The Blue Maxtrix crosspoints will be visible before during and after Preset 14 is activated.

2 - Inputs 6, 7, & 8 are switched from "X" automatic mixer operation to "M" manual on operation. The Remote Pots for these three channels are activated. Increase input levels by 3 to 6 dB.

EDIT PROCEDURE:

1- Press the EDIT button

2- Press Preset 14 button (Note that the Preset 0 button remains pressed. This is normal)

3- Press the Clear Preset button

4- Do the following on inputs 6,7,& 8: Repeatedly press the Automix assign button (W,X,Y,Z...) until the "M"(for manual) is selected. Be careful because there are two "M" selections. One with the "M" button out(manual OFF) and one with the "M" button in (manual ON). The gate switch indicator will be closed when you have the "M" manual ON button selected.

Now press the "RP" (Remote Pot) button for inputs 6,7, & 8. Make sure that the "RP" button is depressed.

5- Press the Save button

Ivie Technologies, Inc.

CP-884C
Remote Control

Front

Rear

The CP-884C remote control is intended for use in Ivie LDS meetinghouse audio systems. The CP-884C provides the remote control functions for the Chapel portion of the system and replaces the CP-884. Connection to the CP-884C is by means of an RJ45 connector.

A five LED bargraph indicates the current level setting.

The connection to the podium Up/Down controls is via a three pin euro-block connector. The CP-884C provides a switched +24Vdc to the podium.

Specifications

Electrical: LED 24Vdc
All switches - SPST momentary
Podium Up/Down supplies +24Vdc

LED Level indicator

Physical: Color - Brown & Gold
Size - W 2.5 in H 6.0 in
(no escutcheon supplied)

1605 NW State Street Lehi, UT 84043 Tel: 801-766-7600 FAX: 801-766-8282
Internet: www.ivie.com Email ivie@ivie.com

IMPORTANT JUMPER SETTING

CP-884C connection to Ivie IF

The CP-884C provides a **switched +24Vdc** to activate the pulpit relays.

Pulpit UP
COMMON
Pulpit DOWN

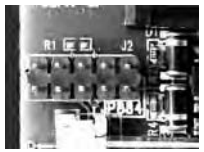
PULPIT DWN
COMMON
PULPIT UP

IMPORTANT Jumper setting

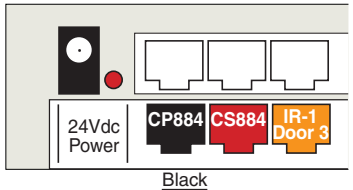
The CP-884C is used with either the 884+ or 1026 Ivie mixers. As shipped from the factory a jumper is installed which allows the CP-884C to be used with the 1026. Remove the jumper if the CP-884C is to be used with the 884+ mixer.

JUMPER INSTALLED for use with 1026

JUMPER REMOVED for use with 884+



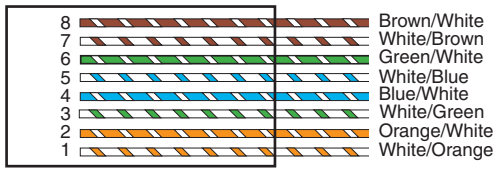
1026-IF or 884-IF



Black

Wiring between the CP-884C and the 884-IF is accomplished using a conventional CAT-5 cable conforming to the EIA 568B standard.

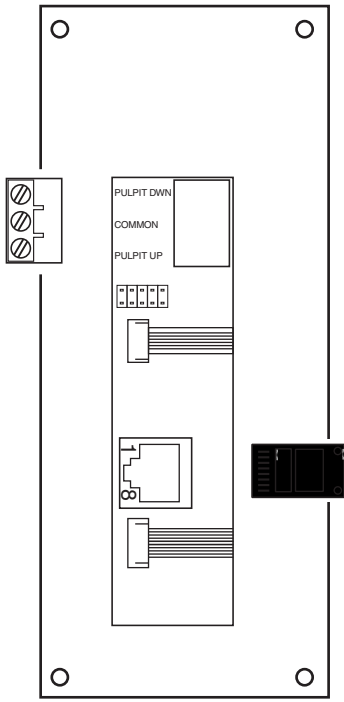
EIA/ 568B Color Code for RJ45



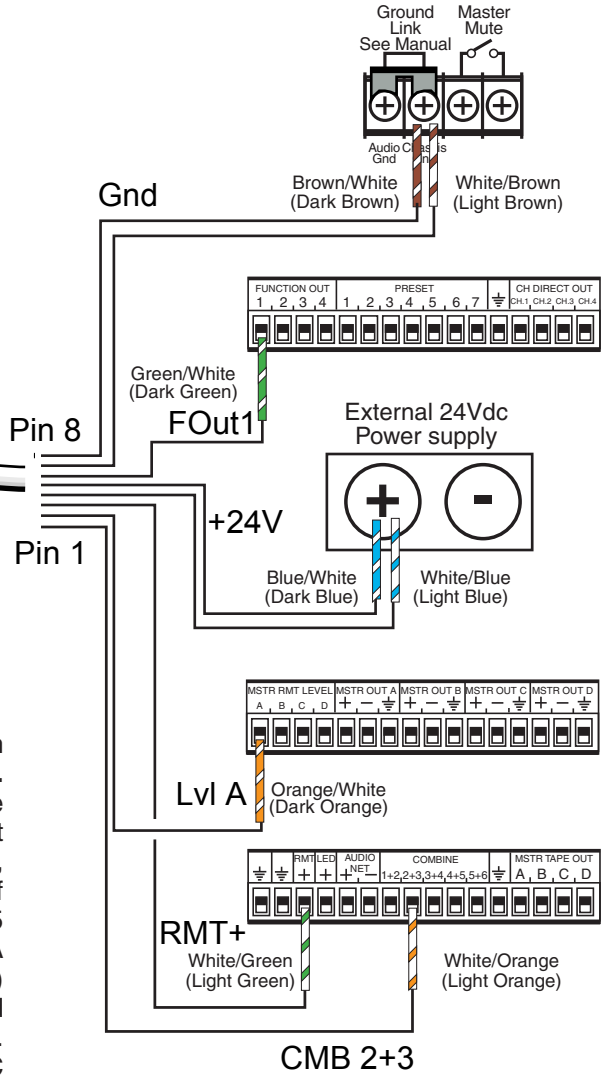
Contact side showing Tab on back

"PIG-TAIL" WIRING INSTRUCTIONS

CP-884C connection to Ivie Mixer



Do not attempt to crimp an RJ45 directly to DC cable. The connection will be unstable and unreliable and is not supported by Ivie. Instead, make a short pig-tail out of CAT-5 cable with an RJ45 crimped to one end (use EIA 568B standard - see below) and the other end stripped back and broken out by color. Connect the pig-tail to the DC cable by means of small wire nuts or other gas-tight, reliable connection.

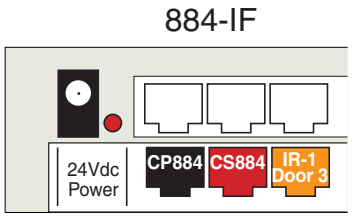


RJ-45 Pin Connections

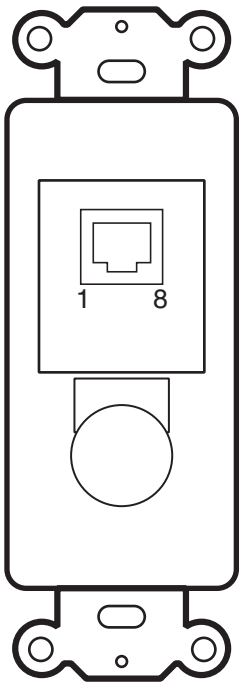
Pin 8 - Gnd
Pin 7 - Gnd
Pin 6 - Function Out 1
Pin 5 - +24V DC
Pin 4 - +24V DC
Pin 3 - RMT +
Pin 2 - Rmt Level A
Pin 1 - Combine 2+3

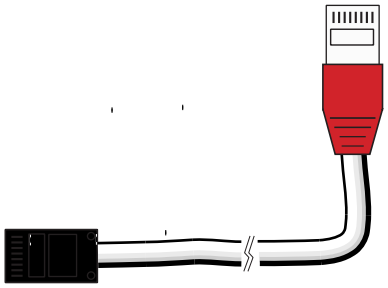
Rev. 1 August 2011

CS-884A connection to Ivie 884-IF



CS-884A

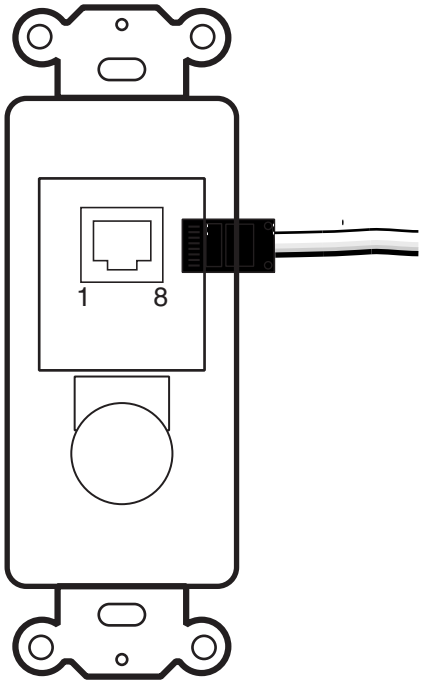


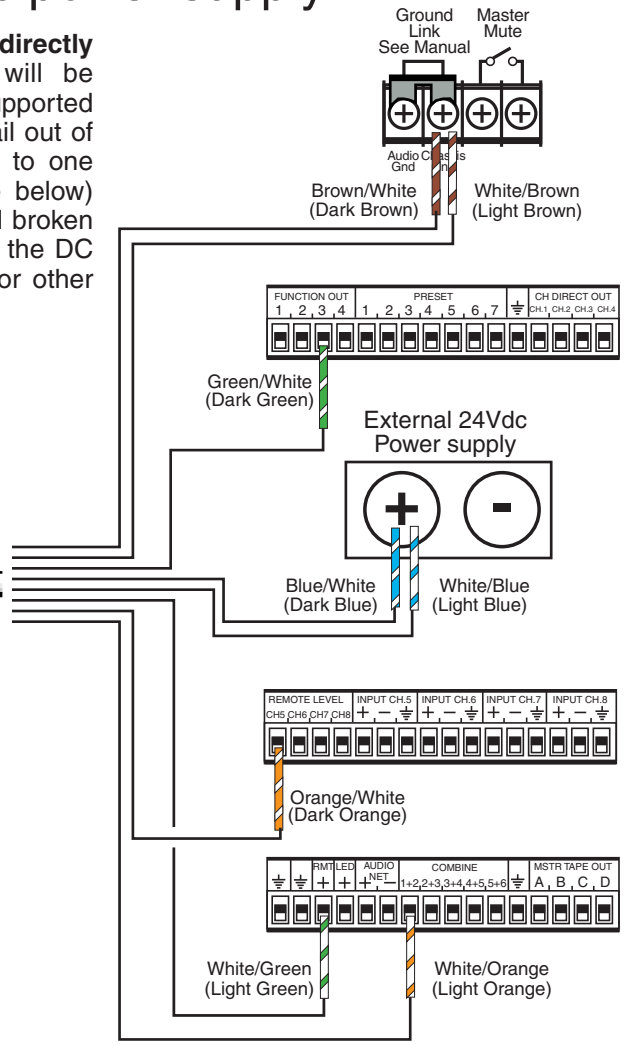


Wiring between the CS-884A is accomplished using a conventional CAT-5 cable assembly conforming to EIA 568B standard.

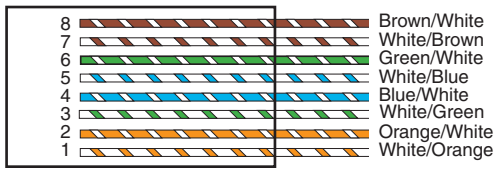
CS-884A connection to Ivie 884+ and external 24Vdc power supply

Do not attempt to crimp an RJ45 directly to DC cable. The connection will be unstable and unreliable and is not supported by Ivie. Instead, make a short pig-tail out of CAT-5 cable with an RJ45 crimped to one end (use EIA 568B standard - see below) and the other end stripped back and broken out by color. Connect the pig-tail to the DC cable by means of small wire nuts or other gas-tight, reliable connection.



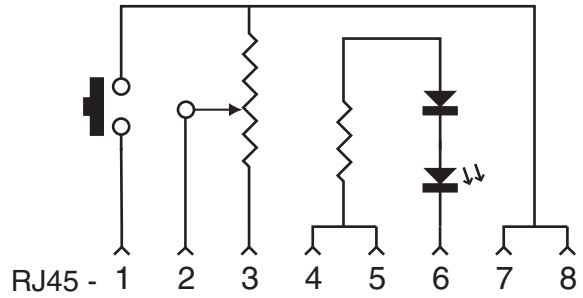


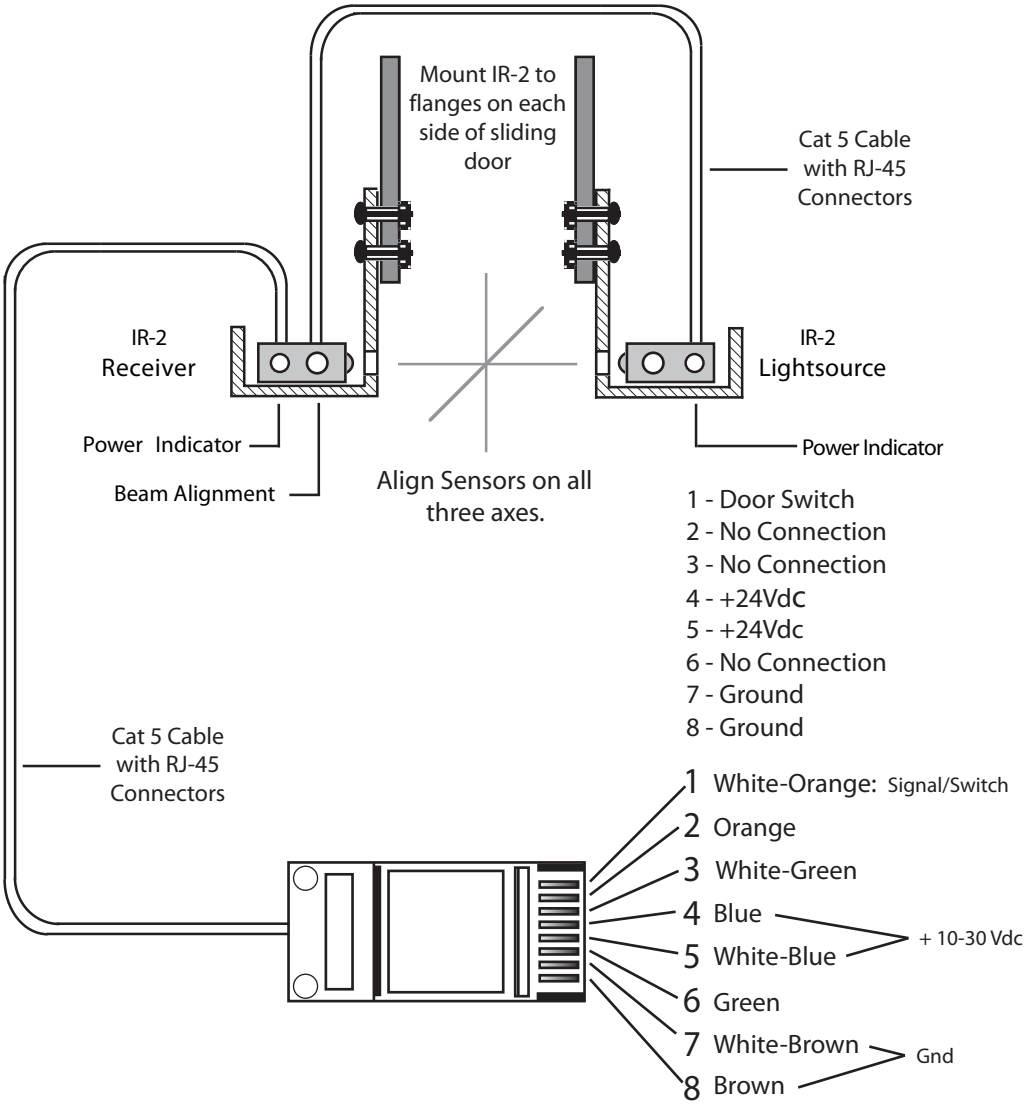
EIA/ 568B Color Code for RJ45



Contact side showing Tab on back

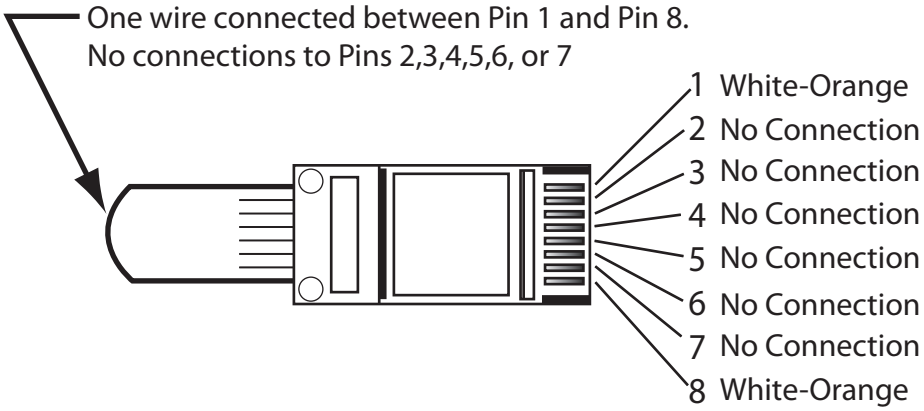
CS-884A Schematic





Ivie IR-2 to Ivie 1026-IF+ Wiring Diagram

The HERITAGE plan has only two sliding doors (1& 2). Door three does not exist so a "Jumper" plug is plugged into the Door #3 RJ45 socket on the 1026-IF to simulate an open door condtion. Other plans and or retrofits may also require one or more "Jumpers."



Ivie IR-2 Door "Jumper" plug

Ivie Technologies, Inc.

Rev. 8 Feb. 2008

Installation Instructions

Physical installation: Mount the Lightsource and Receiver on either side of the sliding door track, directly across from each other. The Lightsource and Receive need to be aligned on three axes (x, y, & z).

Testing alignment: For convience, a 9-volt battery can be temporaily connected to the units to check alignment. CAUTION, do not connect a battery to the sensors while they are connected to the mixer.

a) Connect the blue wire of the Receiver to the white wire of the Lightsource.

b) Connect the battery to the red (+) and black (-) wires of both units. The Power Indicator of the Lightsource should now be lit.

c) If the units are properly aligned, the Beam Alignment Indicator on the Receiver will be lit. If the Beam Alignment Indicator is not lit, then move one unit or the other (Lightsource or Receiver) until they are properly aligned, as indicated by the Beam Alignment Indicator.

d) When testing is completed, remove the 9-volt battery.

Electrical Installation:

a) Connect the red wires from both units (lightsource and receiver) to the RMT+ terminal of the mixer.

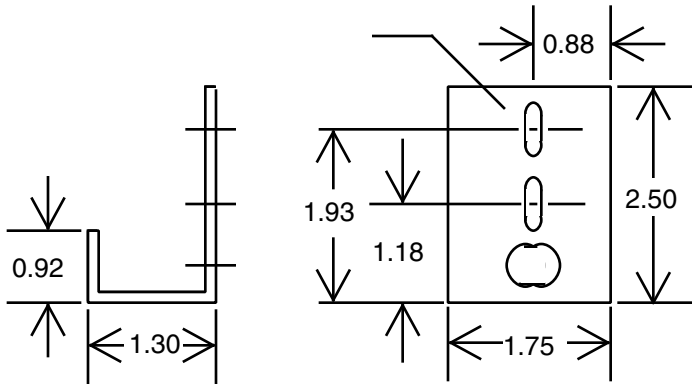
b) Connect the black wires from both units to a Ground terminal of the mixer

c) The **blue** wire of the **receiver** is connected to the **white** wire of the **lightsource** (Note: The white wire must be from the lightsource, NOT the receiver,

d) The white wire of the receiver is connected to the desired Combine or Preset terminal of the mixer. When wired correctly, and whenever the lightsource illuminates the receiver, the Combine or Preset will be activated. The IR-1 is engineered so that when a door is opened, the white wire of the Receiver is "pulled to ground". This activates the Combine or Preset.

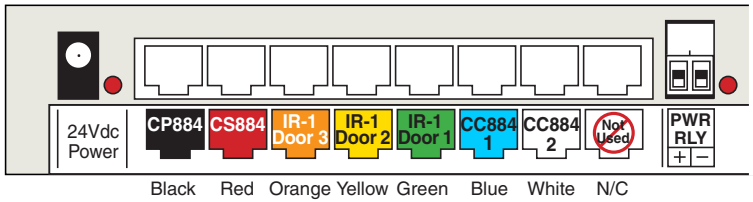
Specifications

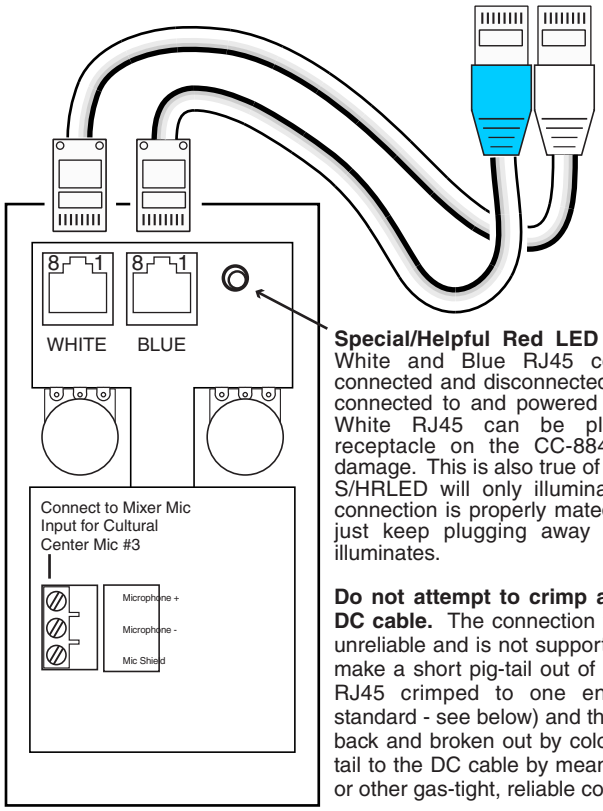
Supply voltage: 10 to 30 VDC



CC-884A connection to Ivie 884-IF

884-IF





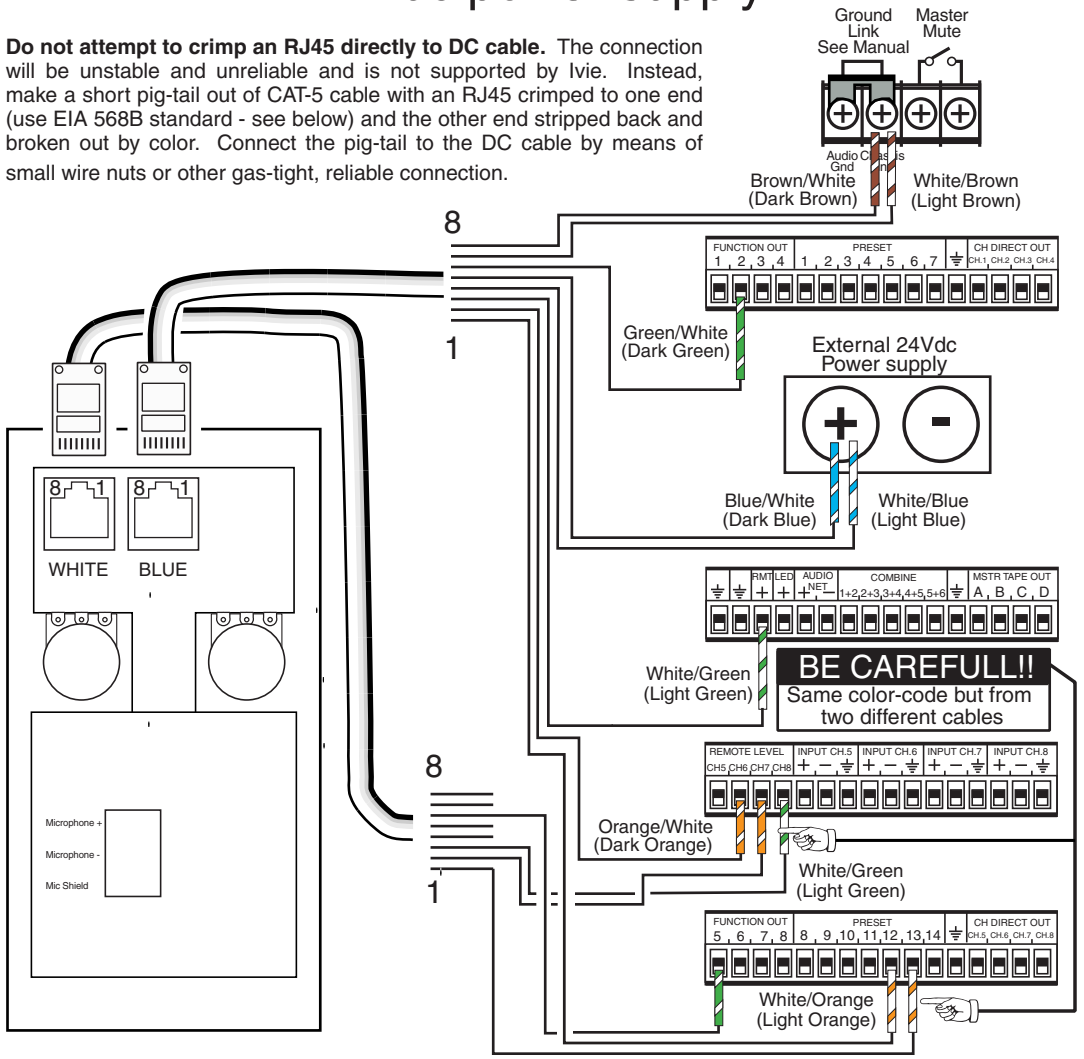
Wiring between the CC-884A and the 884-IF is accomplished using a conventional CAT-5 cable conforming to the EIA 568B standard.

Special/Helpful Red LED (S/HRLED). The White and Blue RJ45 connectors may be connected and disconnected while they are also connected to and powered by the 884-IF. The White RJ45 can be plugged into either receptacle on the CC-884A without causing damage. This is also true of the Blue RJ45. The S/HRLED will only illuminate when the White connection is properly mated. Soooooooo..... just keep plugging away until the S/HRLED illuminates.

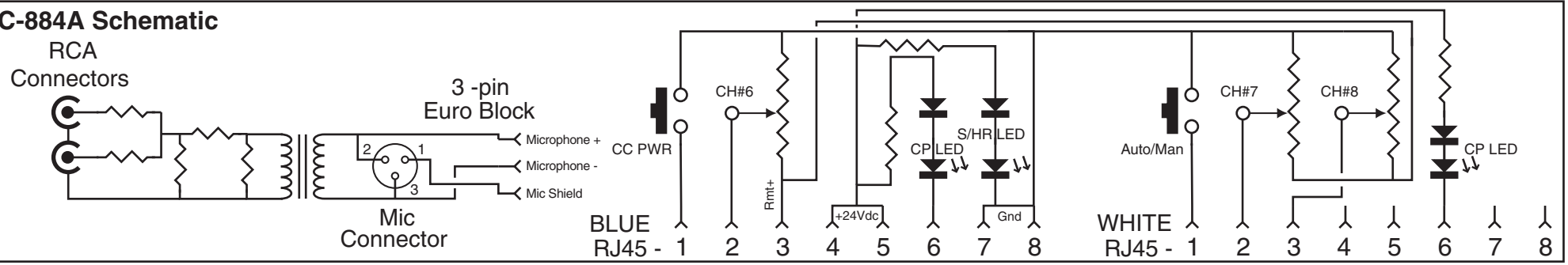
Do not attempt to crimp an RJ45 directly to DC cable. The connection will be unstable and unreliable and is not supported by Ivie. Instead, make a short pig-tail out of CAT-5 cable with an RJ45 crimped to one end (use EIA 568B standard - see below) and the other end stripped back and broken out by color. Connect the pig-tail to the DC cable by means of small wire nuts or other gas-tight, reliable connection.

CC-884A connection to Ivie 884+ and external 24Vdc power supply

Do not attempt to crimp an RJ45 directly to DC cable. The connection will be unstable and unreliable and is not supported by Ivie. Instead, make a short pig-tail out of CAT-5 cable with an RJ45 crimped to one end (use EIA 568B standard - see below) and the other end stripped back and broken out by color. Connect the pig-tail to the DC cable by means of small wire nuts or other gas-tight, reliable connection.



CC-884A Schematic

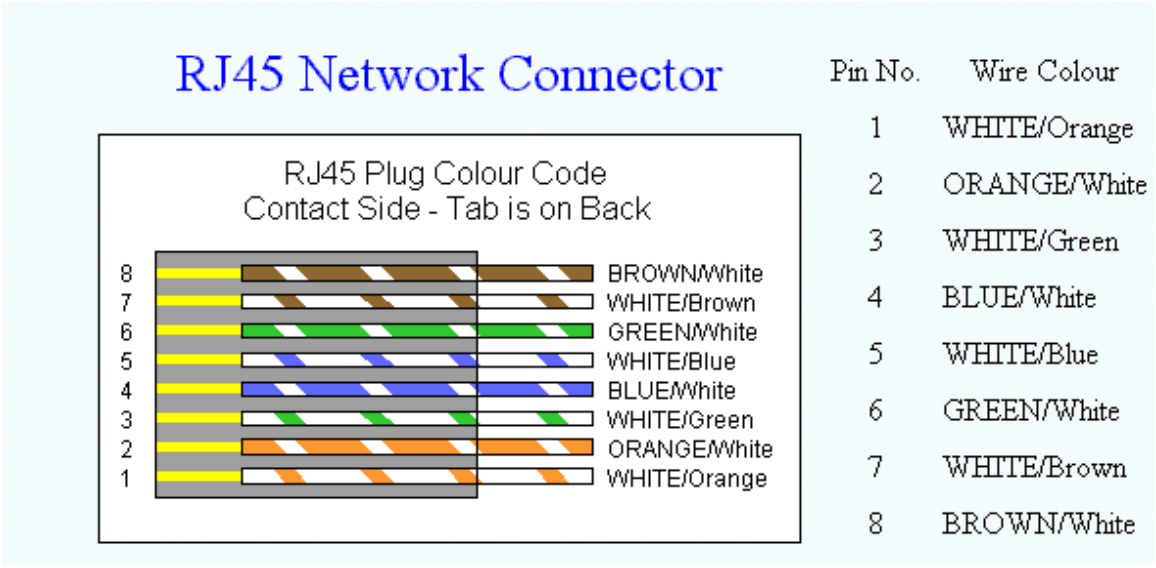


RJ45 Connector Wiring

When using the Ivie model 884-IF interface product, it becomes apparent that stripping CAT-5 cable and crimping RJ45 connectors is an integral part of the installation. While many installers have had experience in making up cables with RJ45's, there are several standards to which these connectors can be made to conform.

The connector standard used with LDS systems employing the 884-IF is EIA/TIA **568B**. The RJ45 cable connectors wired in LDS systems must conform to the 568B standard (see below) in order to achieve proper connectivity with the 884-IF, and through the 884-IF to the appropriate connections on the 884+LDS and 626 DSP.

We strongly recommend that an appropriate crimping tool be used. A ratcheting-type tool will assure that the correct pressure is applied to the crimp. We further recommend that installers carry an appropriate CAT-5 / RJ45 test tool, which can test connections for proper pin-to-pin connectivity, shorts and opens. Two-part versions of these test tools are available which can test an installed cable, in-place.



RJ Connector wiring and Ivie Remote Control Issues

Ivie has adopted the EIA/TIA 568B standard for the wiring of RJ45 connectors (see previous page on RJ45 connector wiring). While this is very clear for the color/pin assignments on RJ45 connectors, it leave some questions regarding connectors, wiring practice, and interface to remote controls and sensors (CP-884, CS-884, CC 884 and IR-1) unanswered.

Connectors and Cable

LDS Engineering has specified solid conductor CAT-5 cable in their installations. The solid conductor cable is totally reliable for fixed installations and costs a little less than the stranded cable. Care should be taken to assure that the correct RJ45 connector is used for the specified cable. There are specific connectors for round cable, and for solid as opposed to stranded cable. (A third, more expensive connector, can be used for both solid and stranded.) **Be sure you use a connector designed for round cable and solid conductors.** (Solid conductor connectors are smoked plastic color, while stranded RJ45's are clear plastic)

Connecting CAT-5 to Ivie Remote Controls

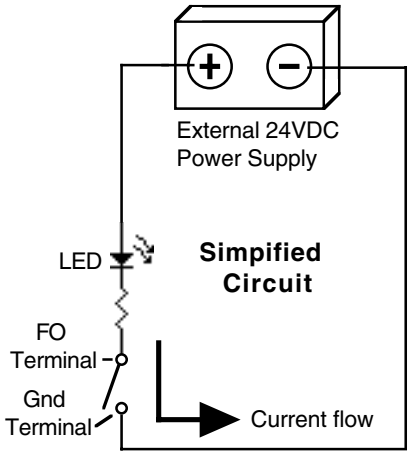
In initial stages of distribution of the 884-IF, the standard (Euro-block connector) remote controls will still be shipping, and will be found in installations. The wiring diagrams on preceding pages show how to strip back and break out the CAT-5 cable to wire to the standard, or pre-RJ45, remote controls.

By the end of March, 2002, new remote controls will replace the CS-884, CP-884 and CC-884. The CS-884A, CP-884A, and CC-884A will have integral Rj45 connectors, replacing the Euro-block connectors.

In new installations, the **"A" version remotes will be connected by means of a contractor crimped RJ45 connector** using the standard EIA/TIA 568B color/pin standard.

Any installation using CAT-5 cable can also be connected to non "A" remotes by means of stripping back and breaking out the cable and following the color code for connections to the Euro-block connectors found on preceding pages.

In an existing installation with the DC type cable installed, a "pig-tail" will be required to connect the DC cable to the "A" type RJ45 remotes. **Do not attempt to crimp an RJ45 directly to DC cable.** The connection will be unstable and unreliable and is not supported by Ivie. **Instead, make a short pig-tail out of CAT-5 cable with an RJ45 crimped to one end and the other end stripped back and broken out by color**. Connect the pig-tail to the DC cable by means of a terminal strip or other gas-tight, reliable connection.

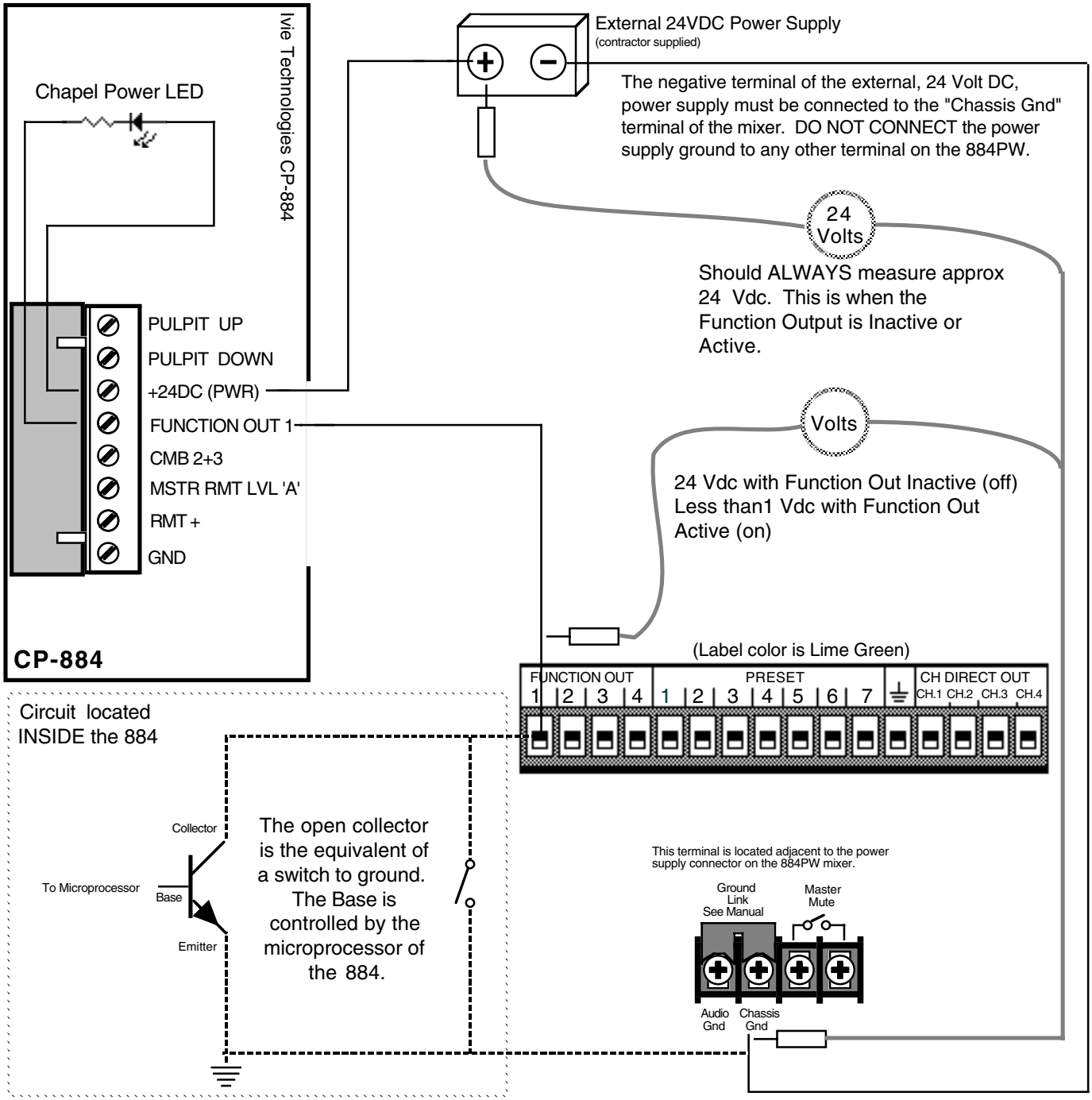


Theory of Operation

The function output is an electronic switch connects the FO terminal to ground whenever it is activated. This simply completes circuit.

There are five components to this circuit: Power supply, LED, Current limiting resistor, interconnecting wires and Function Output switch. They are all connected in series to form a complete circuit.

Current flows out of the power supply via the wiring to the CP884 and through the LED and Current Limiting resistor and back out of the CP884 to the Function Output of the 884 mixer. When the Function Output is activated by the mixer the current flows through the open collector of the transistor and on to the ground terminal of the mixer. It then completes the circuit by returning to the negative terminal of the power supply via the wiring.



Troubleshooting LED/RELAY/FUNCTION OUTPUT PROBLEMS

Problem: The LED doesn't light or the relay doesn't pull-in.

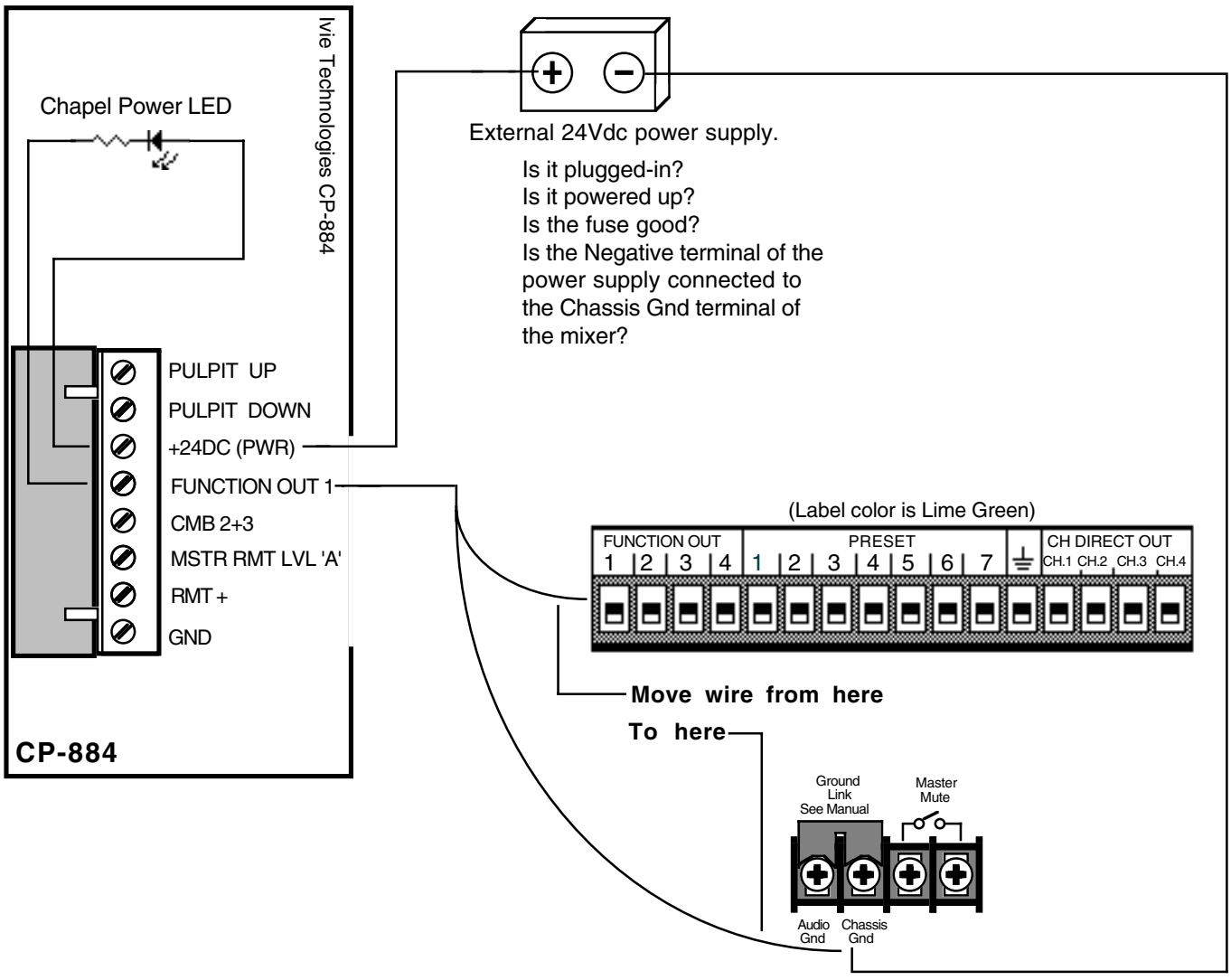
Question: Is the problem with the Mixer OR with the external wiring?

Simple, Quick Test: On the back of the 884 disconnect the wire from the FUNCTION OUTPUT and then connect it to the Chassis Gnd terminal. This bypasses the Function Output and completes the circuit directly to ground. The LED should light or the Relay should activate.

Test Results:

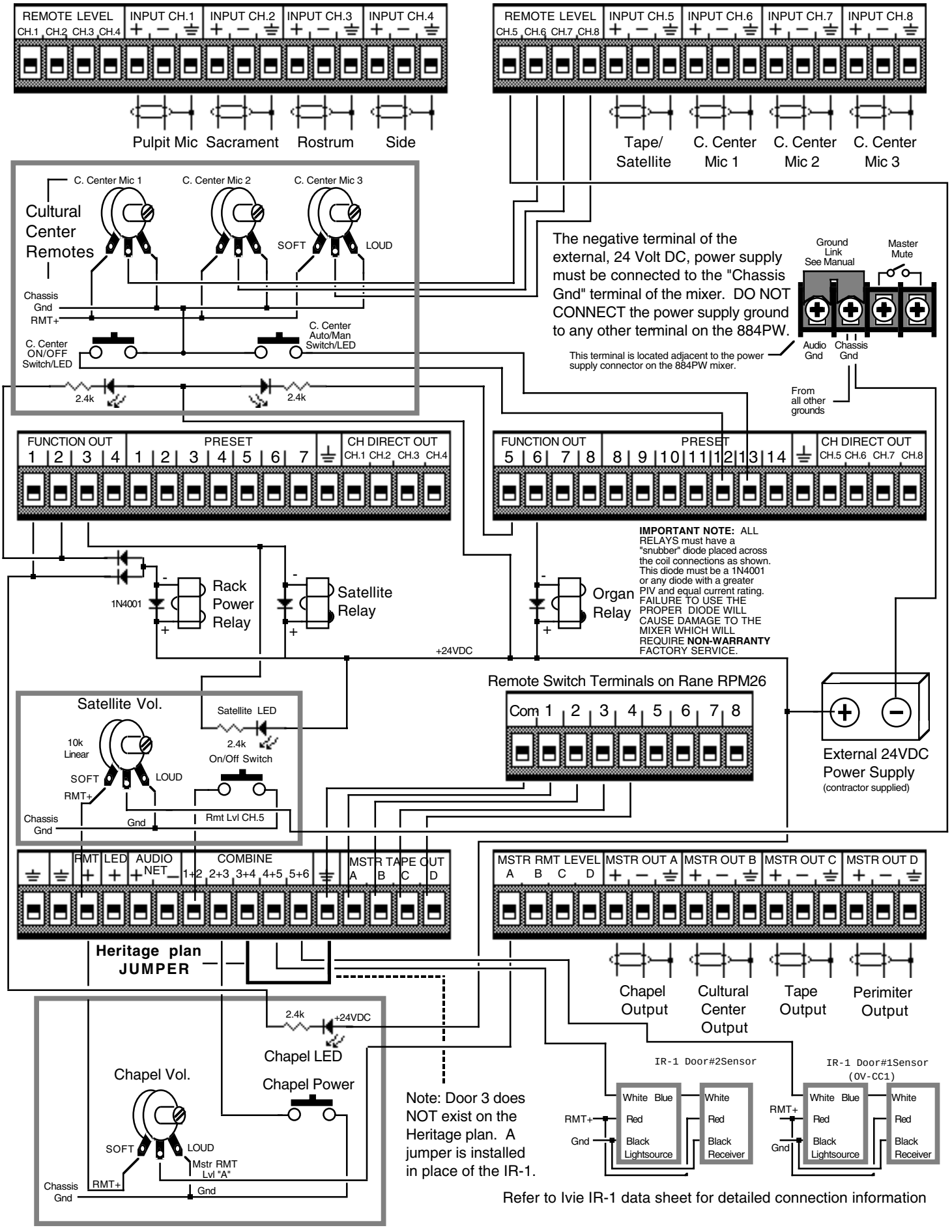
IT WORKED! - The LED lit or the Relay pulled-in. The problem is with the mixer. Now, reconnect the wire to the Function Output terminal. In the current mode of operation, is the Function Output supposed to be activated? Is the mixer powered up? Is the front panel Red PWR LED lit? If not then check the mixer's power supply for a Green LED. Is the Red PWR LED flashing on and off? If so, then the Function Output is indicating a "fault condition." Disconnect the all connections from all Function Outputs. Did the PWR LED quit flashing? If so, then the problem is with the external wiring.

NOTHING HAPPENED - The problem is Not with the mixer. Check the 24Vdc power supply. Is it on? Is the fuse OK? Re-check all wiring connections. Is the suppy's negative terminal connected to the Chassis Gnd terminal on the mixer?



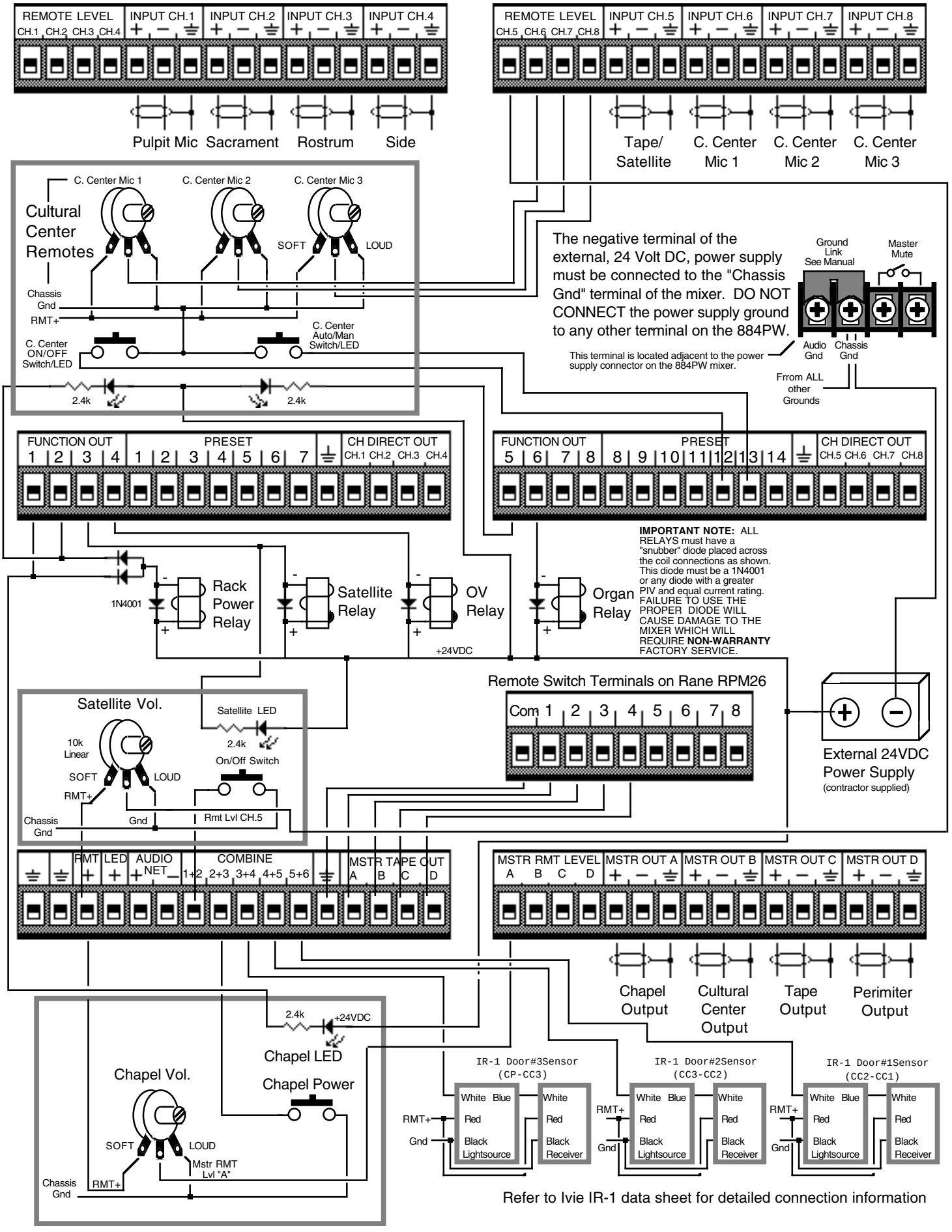
Pages Pertaining to Pre-884-IF Setups

(From LDS Yellow)



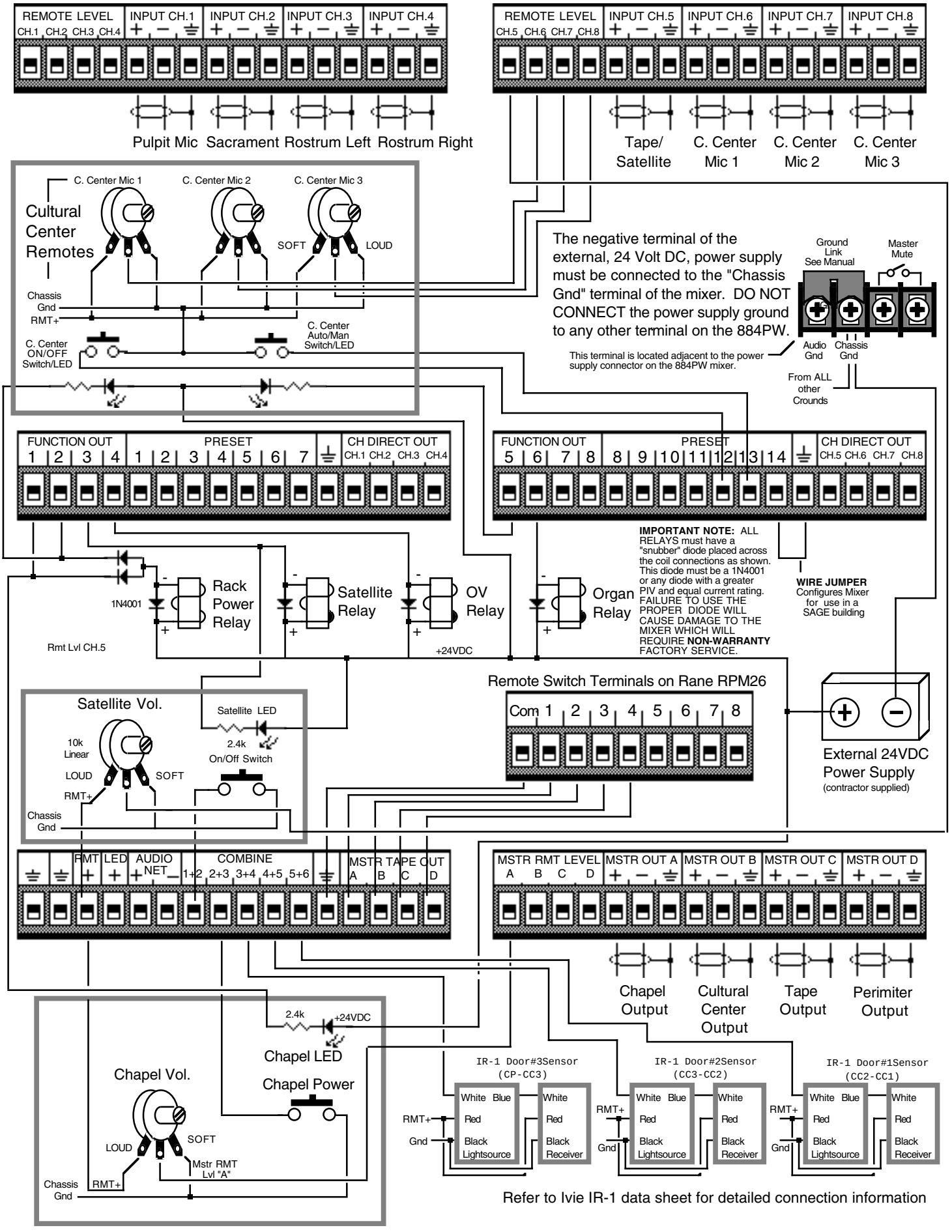
884+ Connections For HERITAGE 98 LDS Meetinghouse

Rev 3 Dec. 99



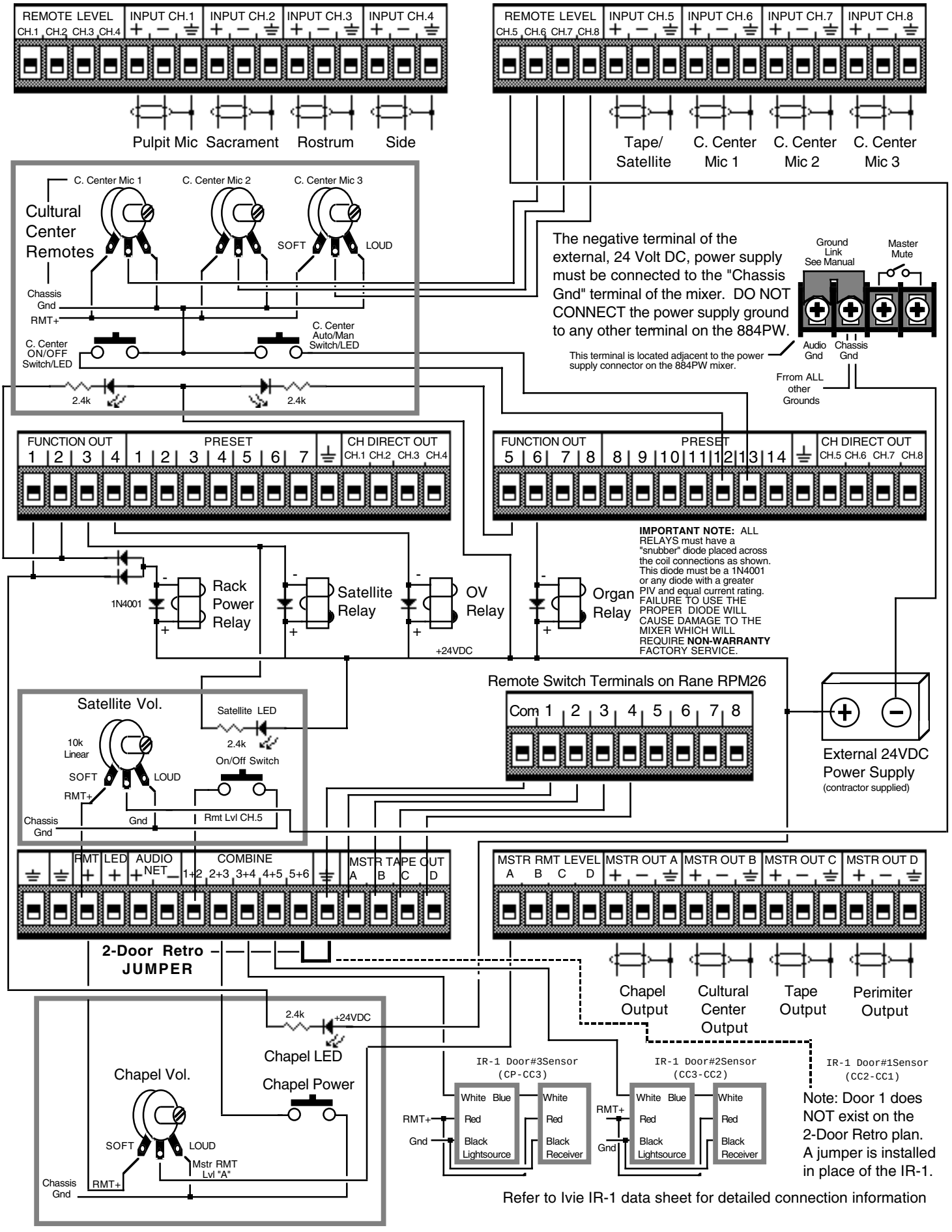
884+ Connections For LEGACY 98 LDS Meetinghouse

Rev 3 Dec. 99



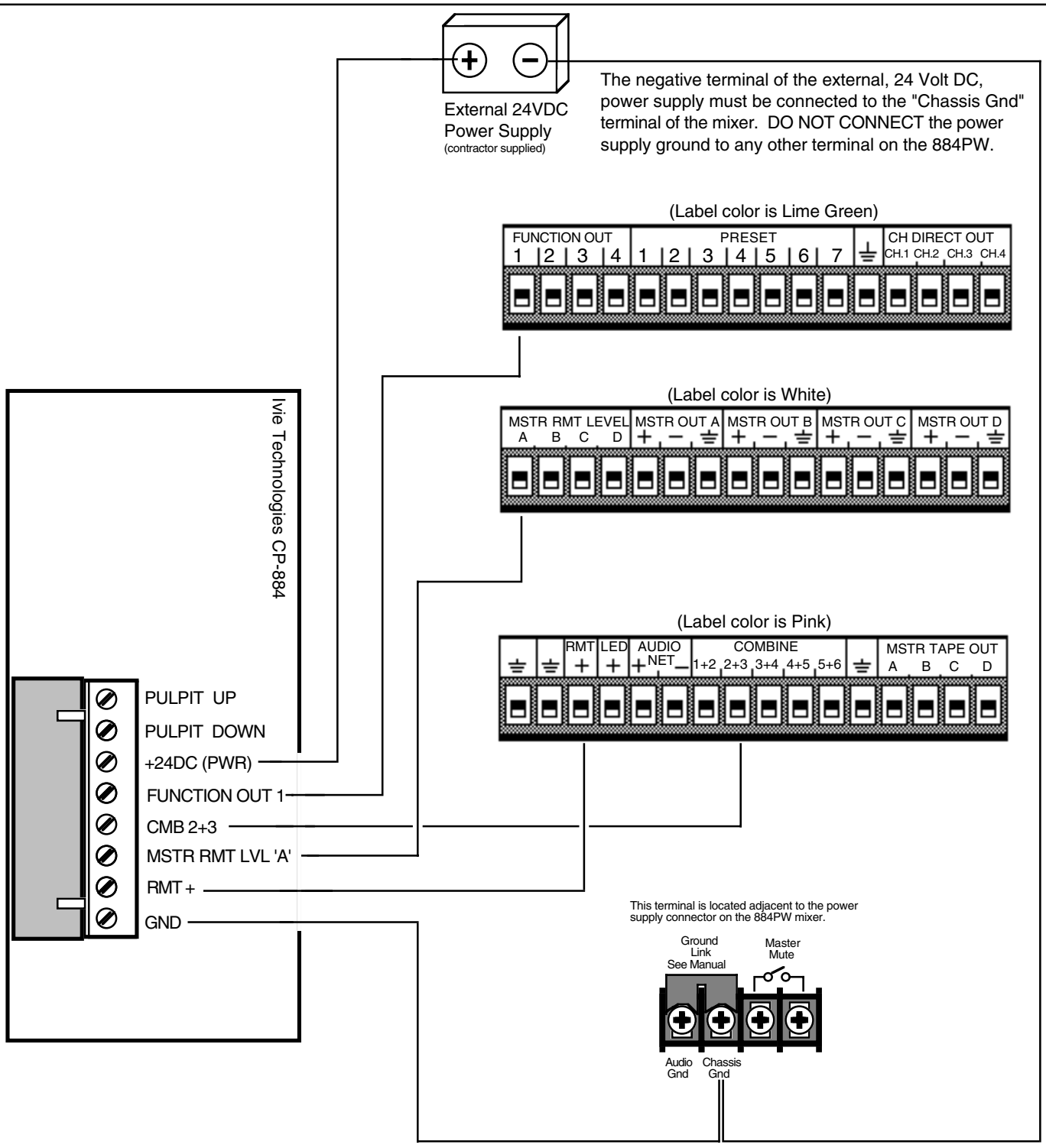
884+ Connections For SAGE 98 LDS Meetinghouse

Rev 3 Dec. 99



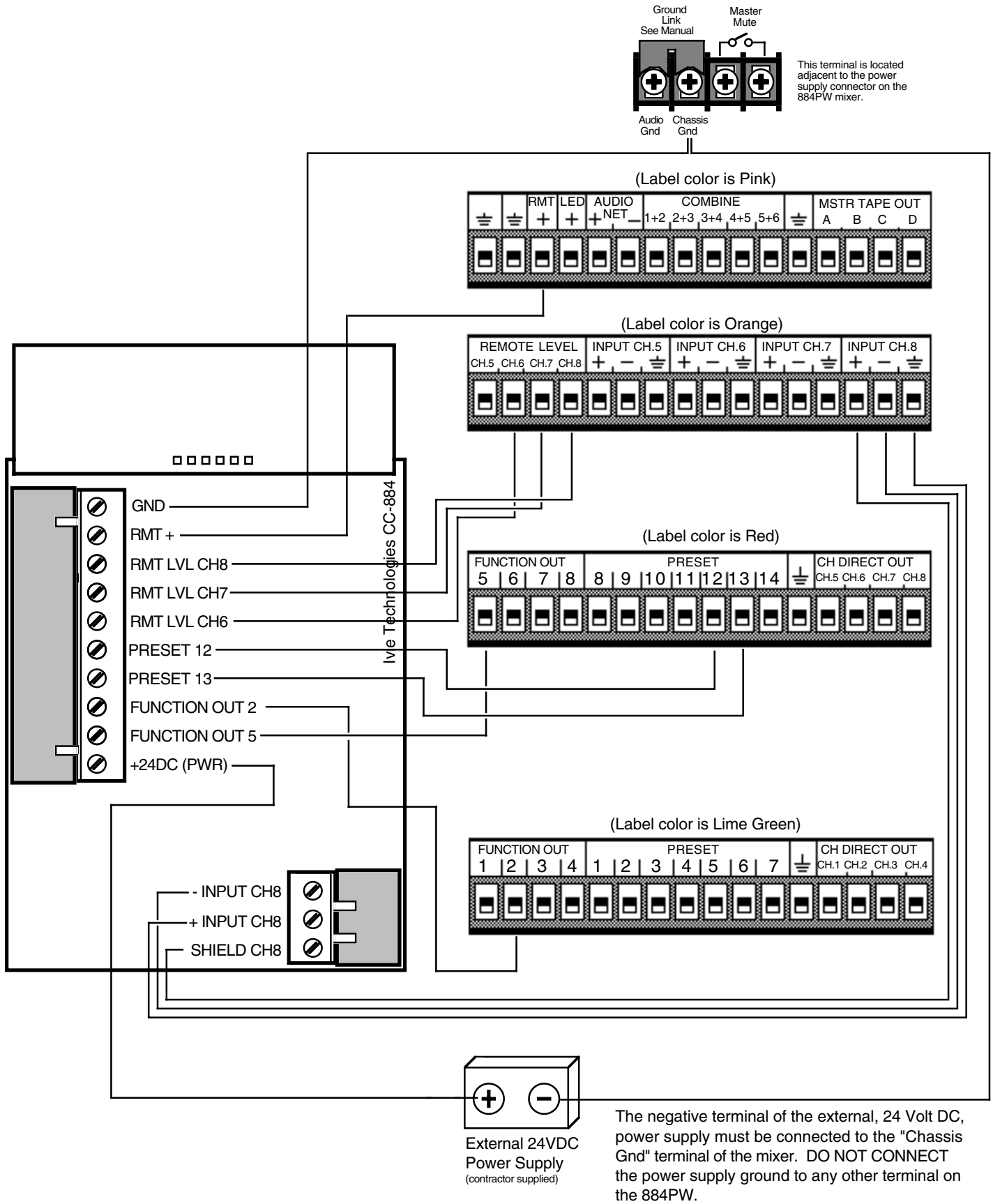
884+ Connections For 2-Door Retrofit (Legacy Style)

Rev 3 Dec. 99



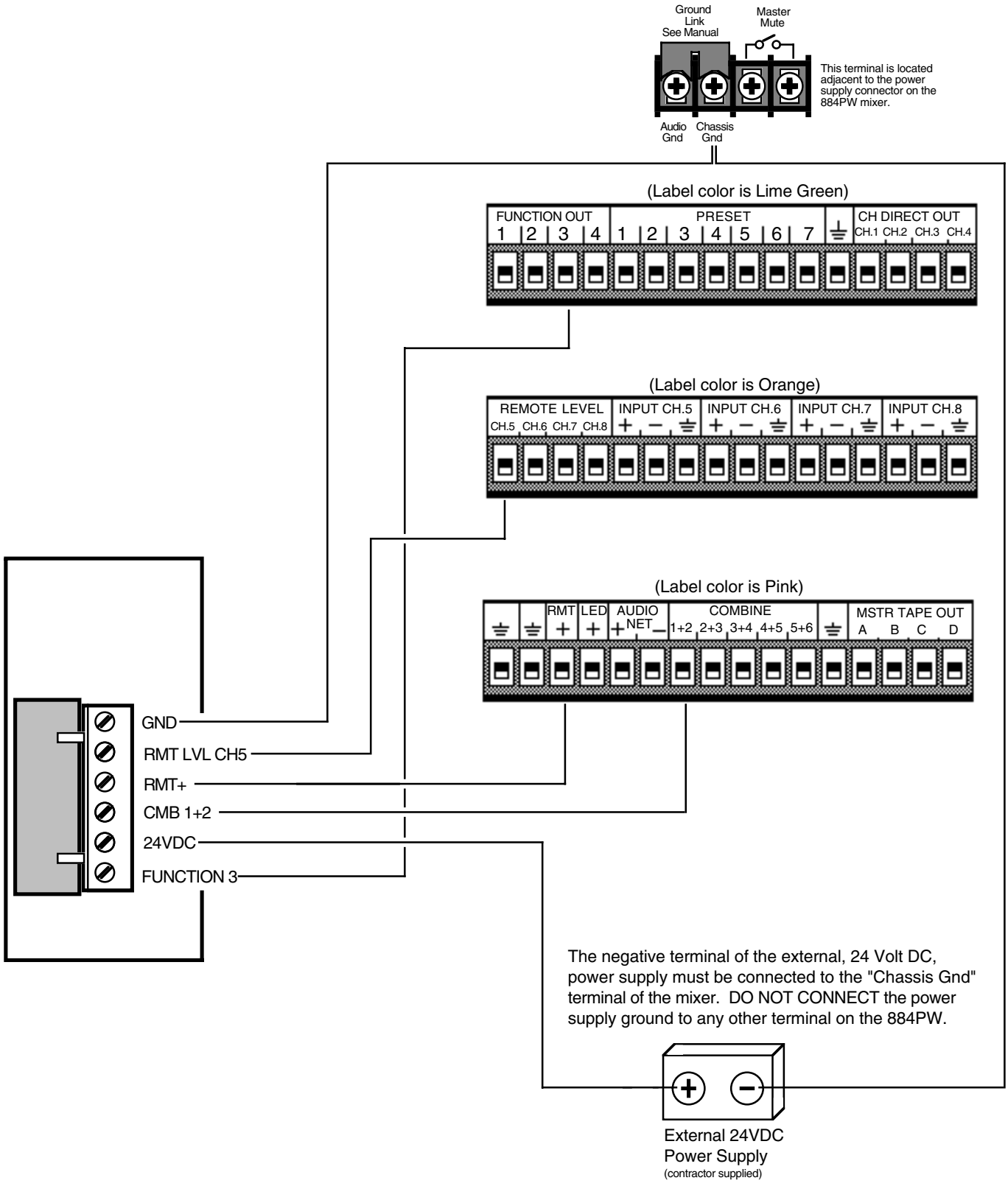
Ivie CP-884 to Ivie 884+ Wiring Diagram

Rev 3 Dec. 99



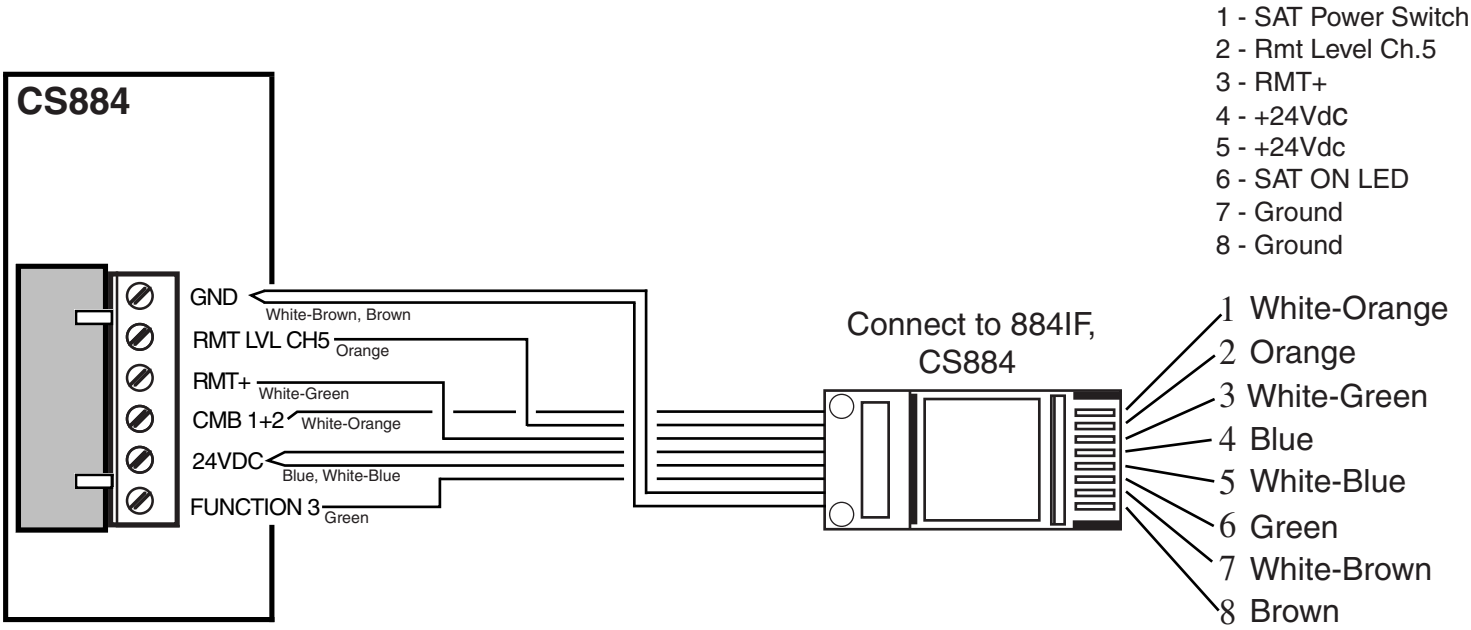
Ivie CC-884 to Ivie 884+ Wiring Diagram

Rev 3 Dec. 99

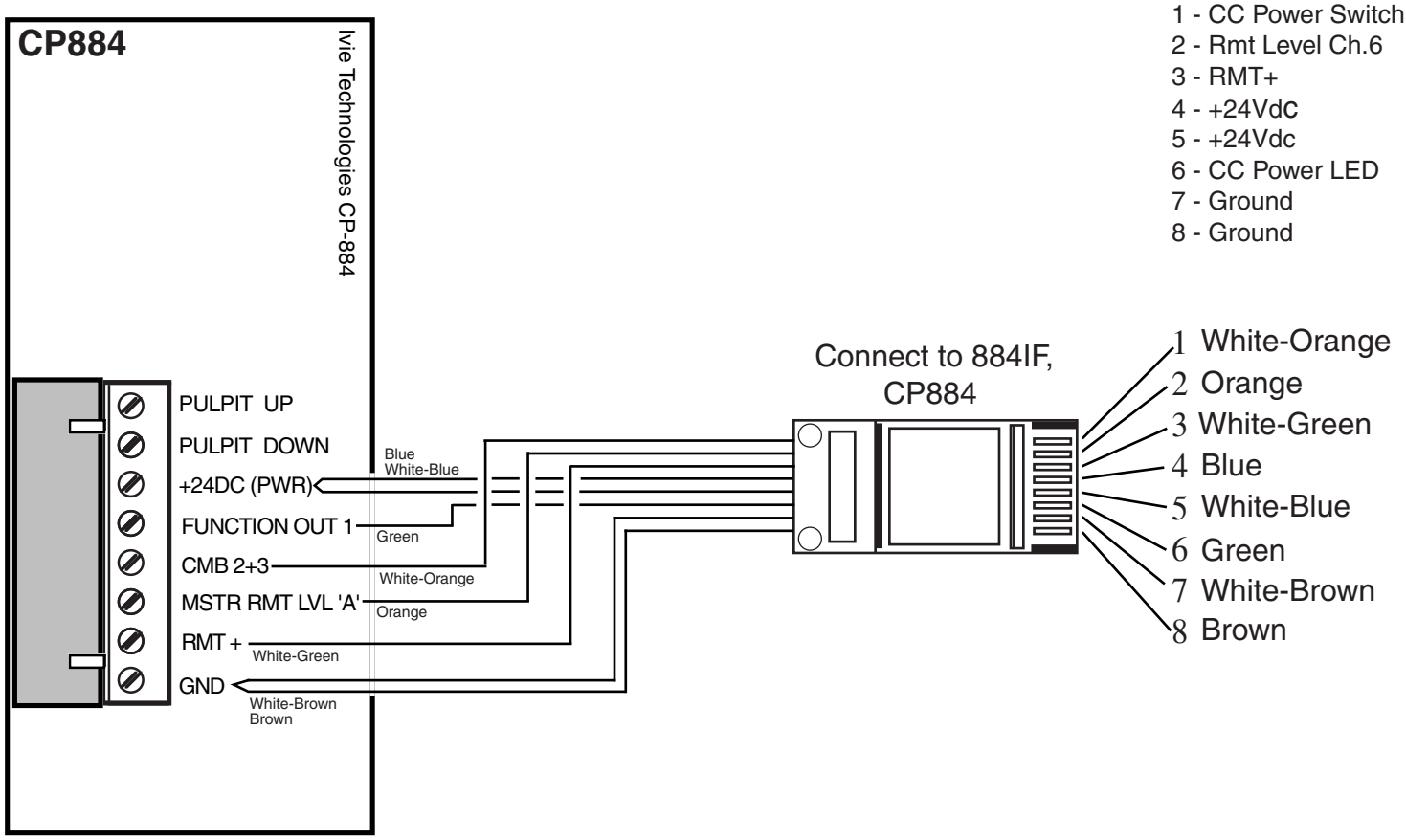


Ivie CS-884 to Ivie 884+ Wiring Diagram

Rev 3 Dec. 99



Ivie CS-884 to Ivie 884IF+ Wiring Diagram

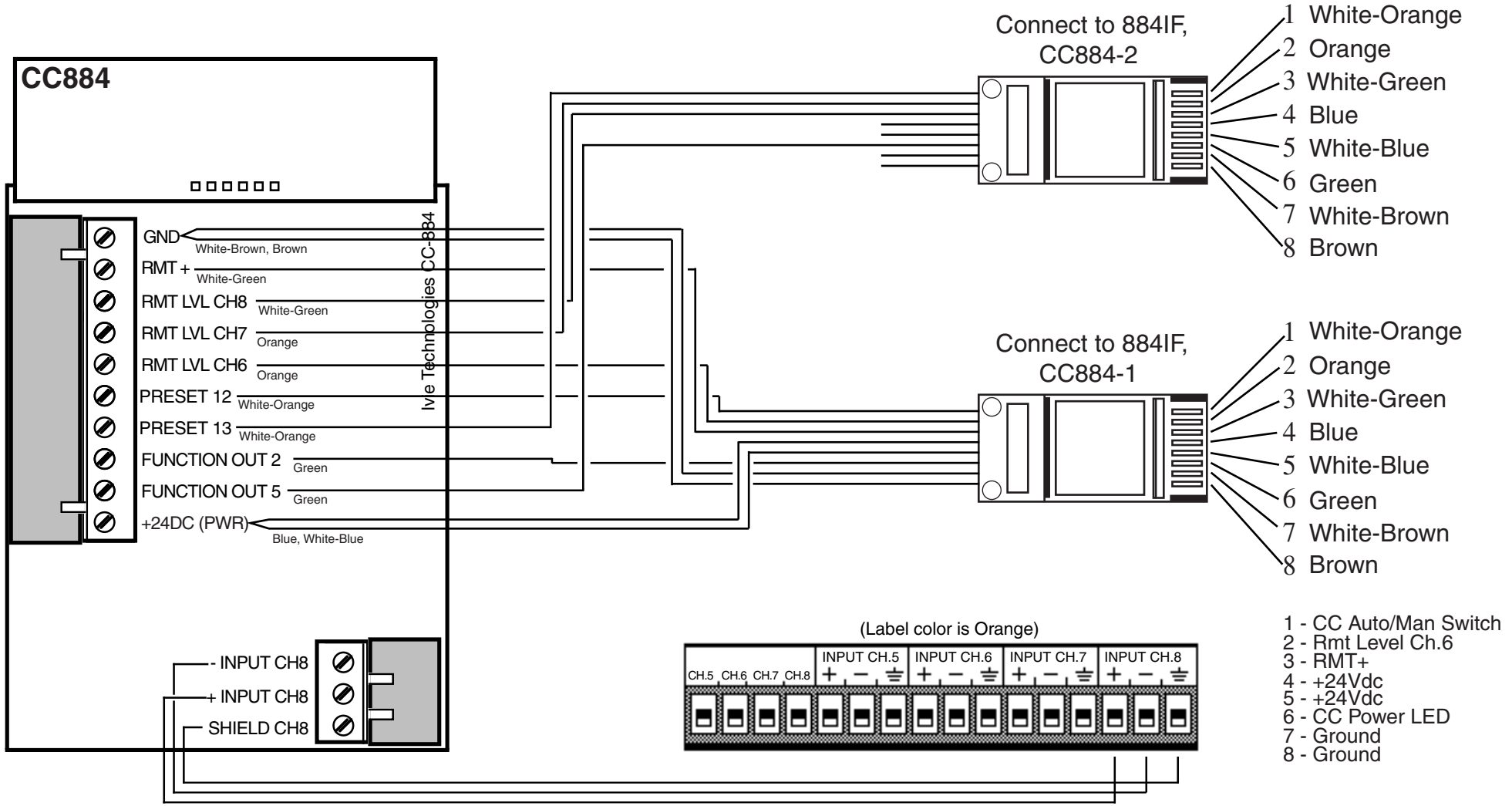


Ivie CP-884 to Ivie 884IF+ Wiring Diagram

Ivie Technologies, Inc.

Rev. 1 Feb. 2002

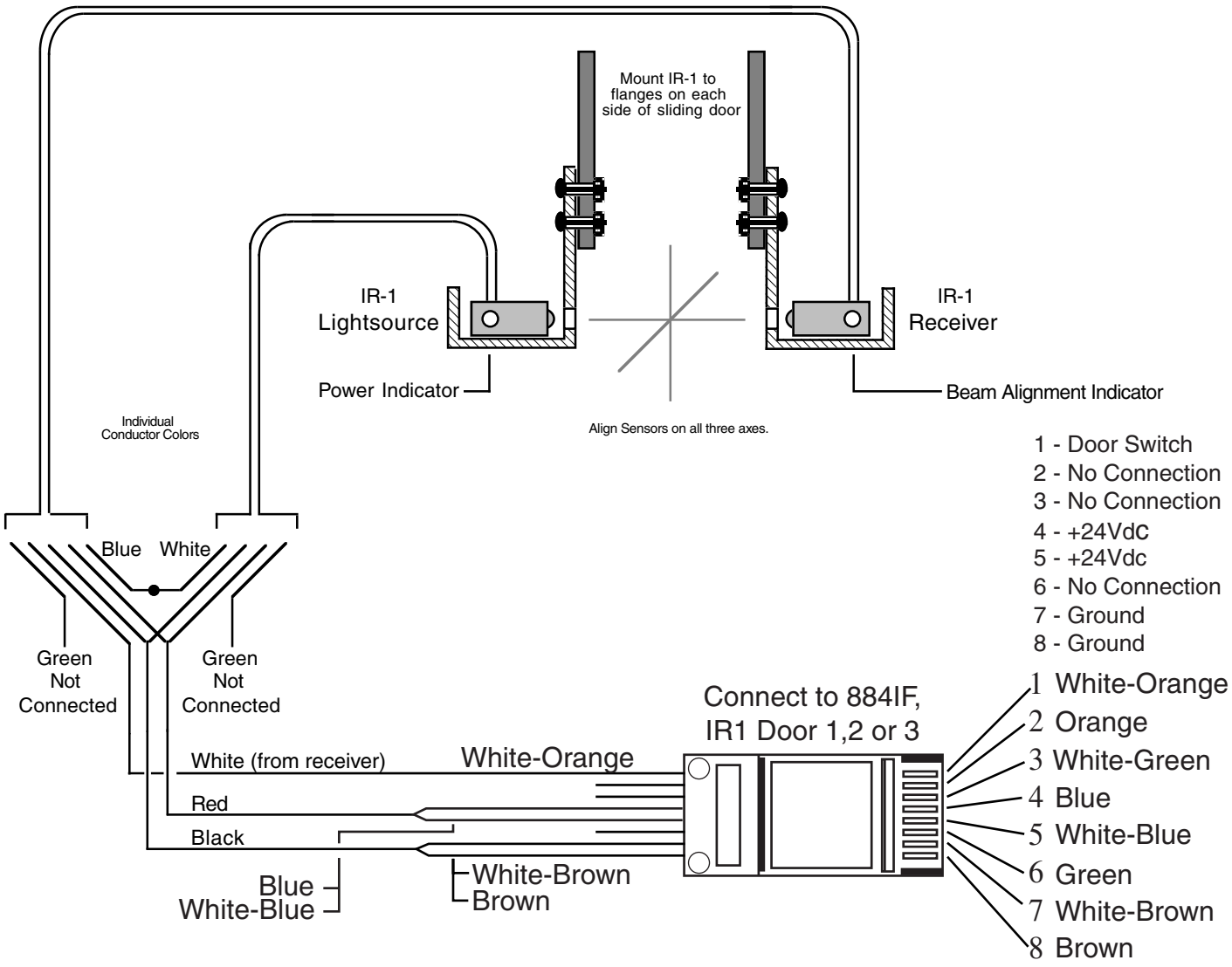
BE CAREFUL! Since there are two 8 conductor cables with IDENTICAL color-coding it is very easy to interchange wires of the same color-code between the two cables.



Ivie CC-884 to Ivie 884IF+ Wiring Diagram

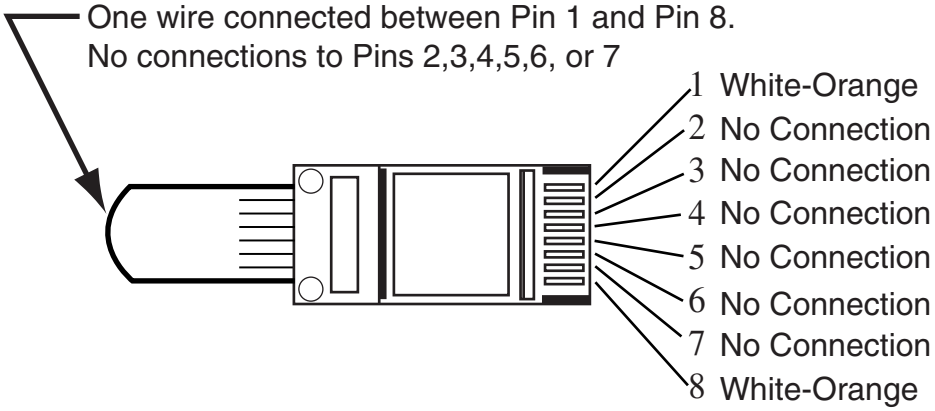
Ivie Technologies, Inc.

Rev. 1 Feb. 2002



Ivie IR-1 to Ivie 884IF+ Wiring Diagram

The HERITAGE plan has only two sliding doors (1& 2). Door three does not exist so a "Jumper" plug is plugged into the Door #3 RJ45 socket on the 884-IF to simulate an open door condtion. Other plans and or retrofits may also require one or more "Jumpers."



Ivie IR-1 Door "Jumper" plug

Ivie Technologies, Inc.

Rev. 18 Feb. 2002