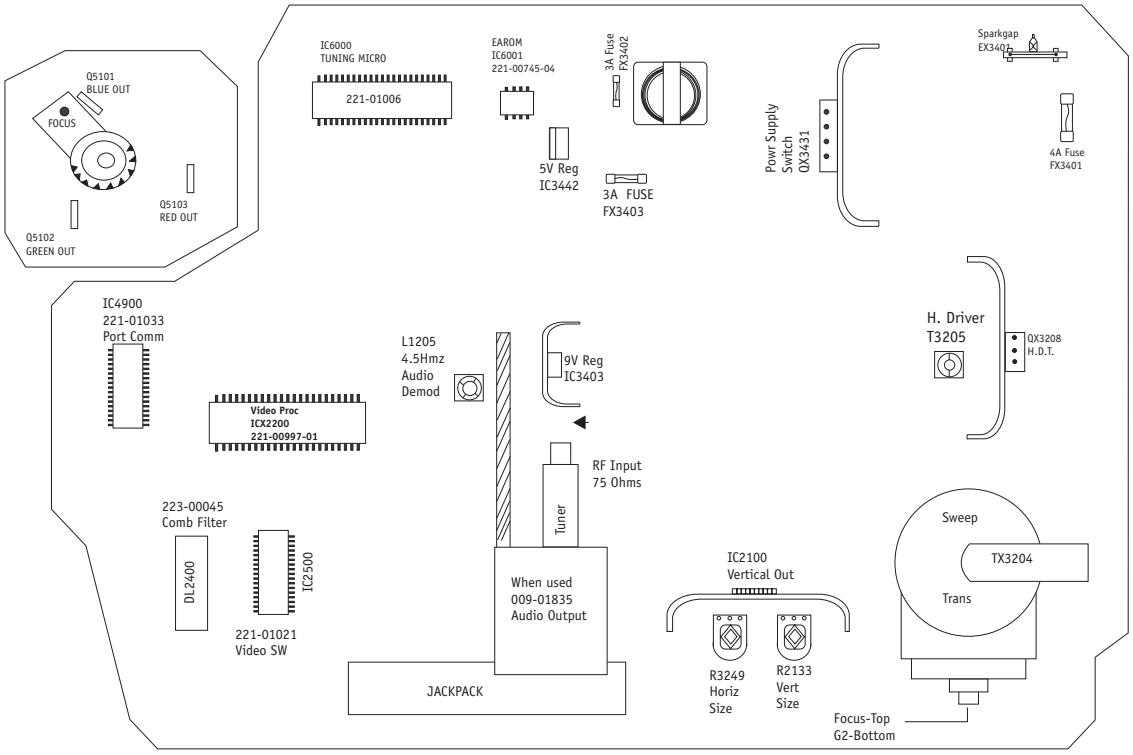
GENERAL

The Commercial Products Receivers have some important differences that make them unique in comparison to consumer receivers. This publication will cover all of the information necessary to connect, setup and service these receivers.

The models numbers for the GX chassis commercial products and the corresponding instruction book part number are listed below.

INSTRUCTION BOOK PART NUMBER	MODEL
206-3053	H2771DT, H2777DT
206-3055	H2059DT3
206-3113	H2070Y, H2570Y
206-3237	H2032Y, H2037Y, H2532Y
206-3238	H2033Y, H2533Y, H2708DT, H2733DT
206-3236	H2059DT
206-3239	H2542DT, H2742DT, H3242DT, H3642DT
206-3240	H2543DT, H2743DT, H3243DT, H3642DT
206-3355	H2573DT, H3273DT, H3673DT



INTRODUCTION

The GX series chassis will be used on the "Z" and early warrior line Commercial Products. This covers the 19, 20, 25, 27, 32 and 36 inch screen sizes. The concept of these chassis is to make one board for all models in a particular screen size. During the manufacturing process, the microprocessor will be programmed for the added features. Additional plug in boards with jack packs will be added to the chassis to accommodate the different features; PCZTV Scan Converter, Stereo, Mono, FM radio etc..

The GX series chassis features four IC's for all signal, sync and sweep processing. ICX2200 handles all of the audio/video, sync and sweep drive processing. IC6000 is the microprocessor and IC6001 is the memory. The keyboard and IR detector are tied directly to IC6000. IC2100 handles the vertical sweep.

ICX3431 is in the power supply. This is a switching type supply powered by the bridge rectifier circuit. At turn on, voltages for the vertical and video output circuit are derived from the sweep circuit.

The Concierge Series consists of the 9-1881 module which is used on the 19"/20" sets. Also the 9-1882 module which is used on the 25" sets and the 9-1884 module which is used on the 27" sets. These sets do not have a comb filter.

The 20" inch Healthview Series sets use the 9-1881 module.

The Presentation Series consists of the 9-1883 which is used on 25" sets and the 9-1885 which is used on 27" sets.

The 32" sets use the 9-1886 module and the 36" inch sets use the 9-1887 module. All of the Presentation Series sets have a comb filter.

The CRT module is attached to the main module the same as found on previous chassis.

The 9-1619 and 9-1620 monophonic audio jack pack assembly will be found on the Concierge Series 19" through 27" models

The 9-1834 MTS Stereo module, with audio video switcher and

9-1835 Stereo audio amplifier is used on Presentation Series 25" through 36" models. This jackpack has video, Y/C and computer input capability.

The 9-1622 jack pack assembly will be found on the Health Care model, and some Concierge Series models. This model also includes the 9-1623 FM radio module.

OUTPUTS

There are two Y/C outputs. S-Video Loop out luminance is on pin 43 and chroma on pin 45 of IC8202. S-Video luminance out on pin 27 and chroma on pin 25 that is coupled to connector 9S4. Video out is on pin 40 and is coupled to pin 1 of connector 9A4. The Left channel switched audio out is on pin 39 and Right channel on pin 38. This switched audio is routed to pins 38 and 37 of IC1401. The left and right channel switched audio is on pins 5 and 6 of IC1401. It is routed to connector 4H9.

CAMPORT

Some models are incorporating at the front of the receiver a video and right/left audio input jacks. These jacks are to be used to view video tapes from a Stereo VCR or Camcorder. When the video cable is plugged into the jack, the shorting jack J1 opens placing a high at pin 47 of IC6000, the micro. This switches the TV into the auxiliary mode. As long as the cables are attached, the TV set will be locked in the auxiliary mode. Use of the remote hand control or buttons on the front of the set will not permit switching into the tuner mode, until the video cable is disconnected.

SUPER PORT-MPI

The Zenith Commercial Product receivers are now being adapted to interact with other equipment. Prime examples of this can be found in Lodging and health care situations where the set is controlled at the main office.

All this is made possible by the New technology that is being built into these receivers. The Super Port or Multiple Protocol, Interface (MPI) jack and associated circuitry allows this control of the set.

MULTIPLE PROTOCOL INTERFACE

In MPI sets, the tuner is setting on the BUS line. The BUS line has been extended by placing another micro in the circuit (IC4900), which is a serial to BUS converter. In this manner, other companies have access to the micro in the set.

CONNECTION CENTER ON BACK OF TV

The connection center on the rear of the TV allows for connection of the viewing source. The diagram below lists the use of each jack on the connection center.

1. ANTENNA/CABLE

Use jack for 75-ohm antenna-type signal connections to the TV. Attach antenna, cable-TV line, or other video equipment to jack. The input cable may come from an outdoor or master antenna, cable-TV line, cable decoder box or the RF output from a VCR.

2. SUPERPORT

Provides for easy installation of local service provider accessory module without removing the cabinet back. Module is housed inside the TV cabinet and receives operating power and all necessary interface signals through internal connections. Eliminates the need for a separate wall mounted power supply and makes guest tampering virtually impossible. Contact marketing or engineering at Zenith for interface requirements.

3. MPI (Multiple Protocol Interface)

Standard RJ11 jack to provide interface with in-room entertainment and video services. Also used with installer's remote control for programming other TV's in the system with the same features as the master TV.

4. VIDEO IN, RIGHT IN, LEFT IN

Use these jacks for baseband video and stereo audio signals from a stereo VCR or other signal source. To view the signal that is input on these jacks, select the AUX channel on the TV.

5. S-VIDEO

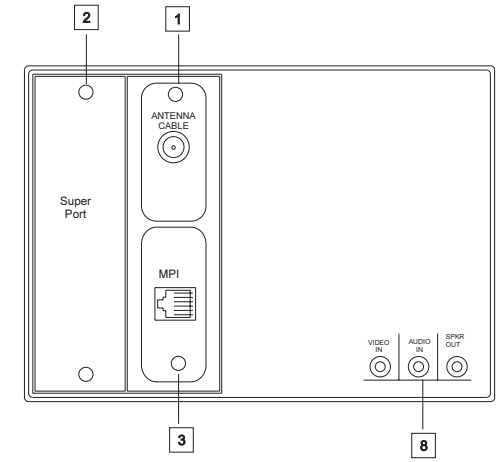
Jacks for input and output connections to SUPER-VHS video equipment. Use input jack for viewing S-Video on this TV. Use output jack to loop the S-Video signal to an additional TV or monitor. Right and left jacks are for the stereo audio input.

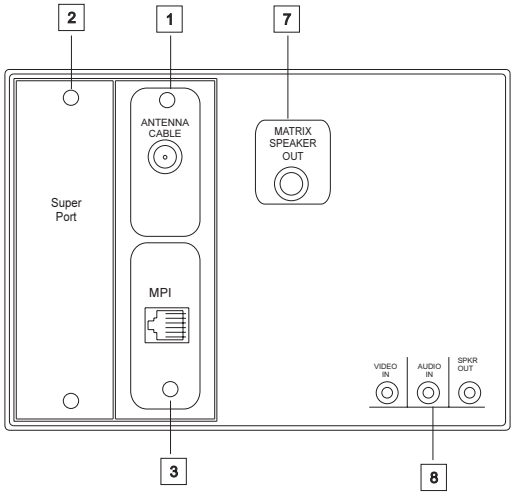
6. COMPUTER AUDIO IN RIGHT & LEFT

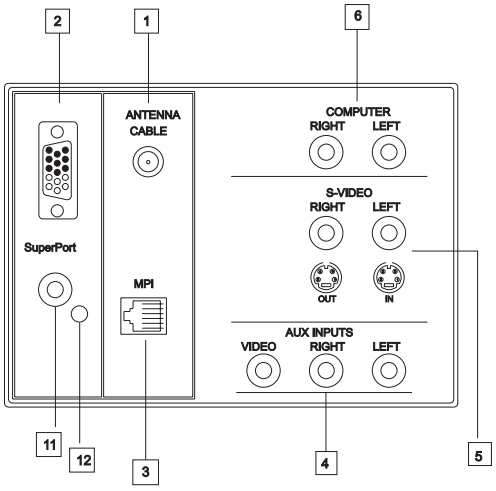
This jack provides L/R audio input paired with computer data input. The computer must provide audio out that can be connected to these input jacks.

7. MATRIX SPEAKER OUT

Use this jack for connection of an 8-ohm extension speaker to get television sound at a remote location. The speaker in the TV remains active, while a synthesized monaural audio output is heard from the remote speaker.







8. VIDEO IN, AUDIO IN, SPKR OUT

Use the Video and Audio in jacks for baseband video and audio input signals from a VCR or other signal source. The SPKR Out is for connection to an 8-ohm external speaker. The speaker in the TV remains active, while a monaural audio output is heard from the remote speaker.

9. PILLOW SPEAKER

Use the 6-pin jack for connection of an optional pillow speaker or wired remote control unit. Recommended pillow speaker is Curbell Model A-6050-001 or equivalent. Pillow speaker/control unit is not provided with the TV.

10. PILLOW SPKR/TV SPKR SWITCH

In the PILLOW SPKR Position - The pillow speaker is ON.

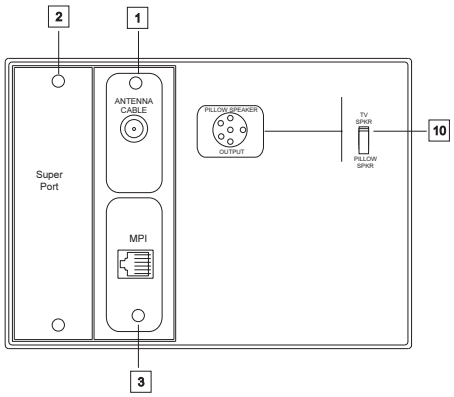
In the TV SPKR position - The built-in TV speaker is On.

11 VIDEO OUT (Some Models)

Composite video signal for output to an optional VCR (or other A/V appliance) having a video input jack. When connected to the VCR the computer images can be recorded on a video tape for future reference. Alternatively, connect this jack to the video input of another monitor.

12. POWER INDICATOR

This is the SuperPort power indicator LED.

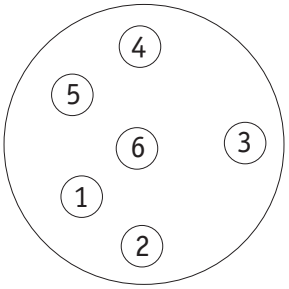


PILLOW SPEAKER INTERFACE

Description

The pillow speaker interface within the TV provides three remote control lines and an audio output. It is intended for connection to a patient-pendant remote control, or entertainment audio and nurse call system

All lines are isolated from the AC power line and earth ground. Isolation of the control lines is provided by optoisolators. There are no relays or inductive components in the control lines. Isolation of the audio output is provided by a transformer.



1 TV On/Off
2 Open
3 Chan Up/Data In
4 Common
5 Audio Out
6 Chan Down

Purpose of Interface Pins

Pin #1 External TV ON/OFF closure.

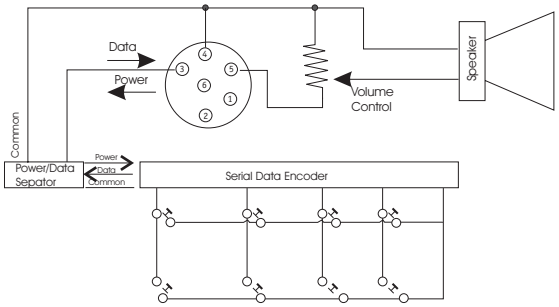
Pin #2 Open (not used).

Pin #3 External Channel Up Closure or Data In.

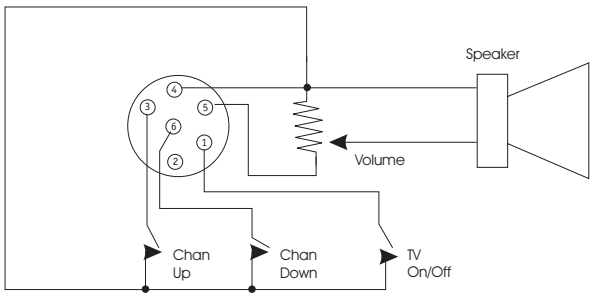
Pin #4 Common for External Control, Data and Audio Output. The impedance from this pin to earth ground is a nominal 10 Megohm static leakage resistor in parallel with an 1100 picofarad capacitor.

Pin #5 Isolated audio output. Nominal 14 ohm source impedance with short circuit protection. Designed to drive a pillow speaker with an integral low-impedance pad-type volume control.

Pin #6 External Channel Down closure.



Schematic Of Multiplexed Data Mode



Schematic of Simple Switch Mode

PILLOW SPEAKER INTERFACE (continued)

Theory of Multiplexed Data Mode

Pins 3 and 4 support a built-in interface which allows multiple functions on a single wire by means of serial digital coding. Pin 3 will source up to 2 mA during the digital "0" interval to supply operating power for the digital encoder located in the pillow speaker. The coder must sink a minimum of 5 mA to pin 4 during the digital "1" interval and provide the correct serial data stream. Pillow speakers meeting this specification are available from independent manufacturers such as Curbell, Inc. (Manufacturers wishing to produce compatible pillow speakers or other products should contact Zenith Commercial Products for detailed specifications). An isolated audio output is at pins 4 and 5.

Theory of Simple Switch Mode

Mode pins 1, 3 and 6 are connected to pin 4 by way of momentary-action switches to activate indicated control function. These pins are 13 Vdc positive with respect to pin 14 when the switches are open. Loop current 8 mA with switch closed. Isolated audio output is at pins 4 and 5. Mode of operation is identical to previous Zenith models using the 5-Wire Interface with the exception of higher open circuit voltage (was 7 Vdc) and higher loop current (was 2.5 mA).

Setting Minimum/Maximum Volume Levels

Use the following procedure to adjust minimum volume and maximum volume for pillow speaker. This procedure not only sets the maximum volume level that the pillow speaker can produce, but also prevents the TVs volume from accidentally being adjusted to a level which is too low to be heard from the pillow speaker.

1. Connect pillow speaker. Place INT/EXT speaker switch on back of TV in EXT position.
2. Set VOLUME control on pillow speaker to maximum volume position.
3. Access Service Menu by following the instructions given in the "Service Menu" section of this book, page 1-23.

Select the MAX volume. Use the **ADJUST** key to set highest desired volume level within the range of 0 to 63. This will be the highest desired volume level, as heard at the pillow speaker.

4. Select the MIN volume. Use the **ADJUST** key to set the lowest desired volume level within the range of 0 to 63. This will be the lowest desired volume level, as heard at the pillow speaker.
5. Make no further adjustments. Exit the Service Menu.

TV is now adjusted for minimum and maximum volume settings. All further adjustments of the TVs volume should be made by using the VOLUME control on the pillow speaker.

CONNECTIONS FOR RECEIVER/MONITOR WITH VGA INPUT

CONNECTION CENTER ON BACK OF RECEIVER/MONITOR

The connection center on the rear of the receiver/monitor allows for connection of the viewing source. The diagram below lists the use of each jack on the connection center.

1. ANTENNA CABLE

Use this jack for 75 ohm, antenna-type signal connections. Attach the antenna, cable-TV line, or other video equipment to this jack. The input cable may come from an outdoor or master antenna, cable TV line, cable decoder box, or the output from a VCR.

2. HD15 VIDEO INPUT

Standard DB15 receptacle for VGA input video signal from either PC or Macintosh format personal computers. This provides a high quality, “flicker-free” view of your computer images on the receiver/monitor’s AUX channel.

3. VIDEO OUT (Some Models)

Composite video signal for output to an optional VCR (or other A/V appliance) having a video input jack. When connected to the VCR the computer images can be recorded on a video tape for future reference. Alternatively, connect this jack to the video input of another monitor.

4. COMPUTER AUDIO IN RIGHT & LEFT

This jack provides L/R audio input paired with computer data input. The computer must provide audio out that can be connected to these input jacks. This will also allow recording of audio along with the computer images.

5. MPI (Multiple Protocol Interface)

Standard RJ11 jack to provide interface with in-room entertainment and video services. Also used with installer"s remote control for programming other receiver/monitors in the system with the same features as the master receiver/monitor.

6. VIDEO IN, RIGHT IN, LEFT IN

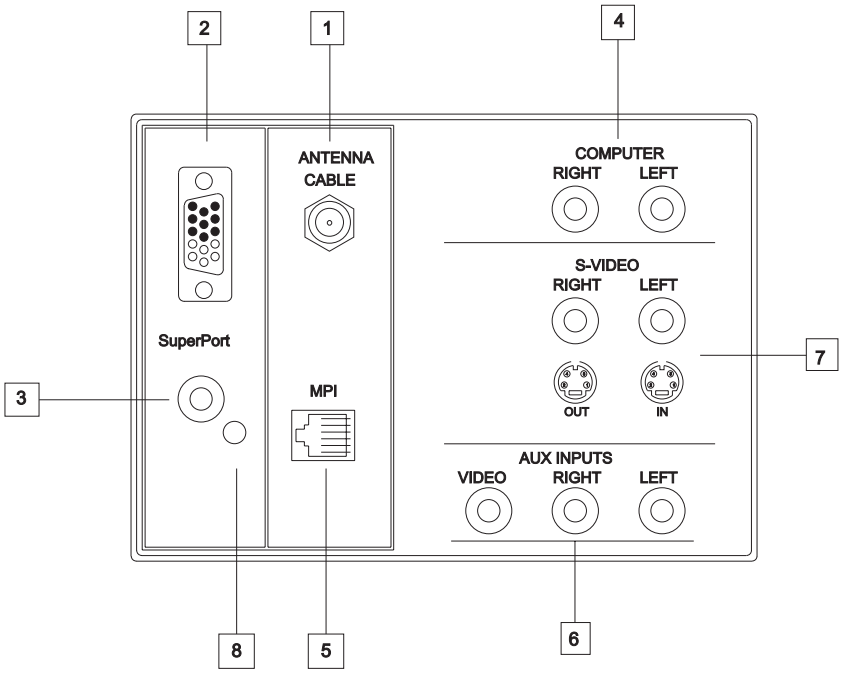
Use these jacks for baseband video and stereo audio signals from a stereo VCR or other signal source. To view the s signal that is input on these jacks, select the AUX channel of the receiver/monitor.

7. S-VIDEO

Jacks for input and output connections to SUPER-VHS video equipment. . Use the input jack for viewing S-Video on this receiver/monitor. Use the output jack to loop the S-Video signal to an additional TV or monitor. The right and left jacks are for the stereo audio input.

8. POWER INDICATOR

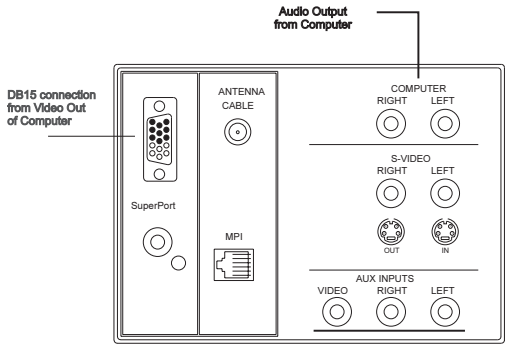
SuperPort power indicator.



CONNECTING TO A COMPUTER

INTRODUCTION

Preinstalled in the receiver/monitor is the PCZTV internal scan converter, provided by FOCUS Enhancements, Inc. This allows the receiver/monitor to be used as a large screen device to view VGA video output of a PC or Macintosh format computer. See chart below. In order to view these computer images, simply connect the computer to the Super Port input, turn on the receiver/monitor, tune it to the AUX channel and activate your computer. In addition, the computer images may also be recorded onto video tape if a VCR is connected in one of the two methods shown in the illustration.



FORMATS

640 x 480	60 Hz
640 x 480	72Mz
800 x 600	60 Hz
800 x 600	67 Hz
1024 x 767	60 Hz
DOS TEXT	70 Hz
APPLE	
640 x 480	67 Hz
832 x 768	67 Hz

CONNECTIONS

CABLE AND ACCESSORIES KIT

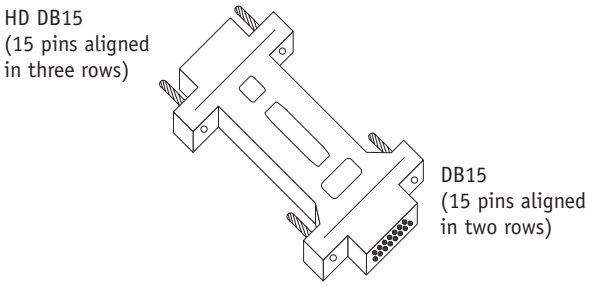
Included with this new receiver/monitor is an accessories kit which provides the necessary items for connecting a computer to the Super Port jack. The kit includes the following:

Quantity	Accessory Item
1	15 foot VGA interconnect cable HD DB15 Male to HD DB15 Male
1	10 inch comp. Video interconnect cable Male phone to Male phono (Cable C) *
1	HD DB15 Female to DB15 Male adapter *
1	3½ floppy disk: Accessory Video driver software. (Instructions included separately) *

*= Not on Hxx43 Series Models

CONNECTIONS

The illustration indicates the connection of the computer to the back of the receiver/monitor. If the computer provides video out via a DB15 jack (15 pins aligned in two rows), the HD DB 15 to DB15 adapter will have to be used. Simply plug the DB15 side of the adapter into the DB15 video out of the computer. Then connect the 15-foot video cable, between the HD DB15 side of the adapter and the HD DB15 jack of the Super Port.



HD DB15 Femal to DB15 Male Adapter

Pin No	Connection	Pin No	Connection
1	Red Video Input	9	No Connection
2	Green video Input	10	Digital/Sync (mode
3	Blue Video Input	11	Reserved (mode)
4	Reserved	12	No Connection
5	Reserved (test)	13	Horizontal Sync
6	Red Video Ground	14	Vertical Sync
7	Green Video Ground	15	No Connection
8	Blue Video Ground		

USING THE PCZTV TO VIEW THE COMPUTER IMAGE

Once the connections to the receiver monitor have been completed, the receiver/monitor can be used to view images from the computer.

1. Turn on the receiver/monitor
2. Tune the receiver/monitor to the AUX channel.
3. Turn on the computer.
4. The computer images should be visible on the screen.

VIDEO ADJUSTMENT

Adjustments to the computer video image are provided through the multibrand remote control. The 2 and 8 numeric buttons shift the display vertically. The 4 and 6 buttons shift the display horizontally. 1 is Zoom, 0 is freeze and 5 is Reset.

To further adjust the picture, an optional video driver is provided on floppy disk. The instructions for the video driver are provided separately. Note that it is not necessary to use the video driver in order for the PCZTV to operate. Also, the Contrast, Brightness, Color, Tint and Sharpness controls of the Video Menu can be used to adjust the picture quality.

RECORDING THE COMPUTER IMAGE

If your VCR has an input video jack, the computer images can be recorded to video tape for future reference. Connect the VCR as shown in the illustration at the beginning of this chapter. View the desired computer images and record per the instructions for the VCR being used.

The New jack pack provides L/R audio input paired with computer data input which will allow recording of audio along with the video images. Your computer must provide audio out that can be connect to the jack pack input on the receiver/monitor.

CHOOSING A DESKTOP PATTERN

Because of a television's low resolution (as compared to that of a computer monitor), avoid using computer desktop patterns that consist of elaborate designs or colors. These can tend to vibrate or distort on the screen.
The recommended desktop pattern is either Black, a limited gray design, or some other solid dark color.

VIDEO DISTRIBUTION AMPLIFIER

If your receiver/monitor will be part of a closed circuit network using a cable that is longer then 25 feet, or if several sets will be used together using the loop out jack, than a video distribution amplifier will probably be necessary to ensure adequate signal strength is provided. These type of amplifiers can be purchased separately in many consumer audio/video stores.

PCZTV TECHNICAL SUPPORT (Hxx73 Series only)

The FOCUS Enhancements, Inc. Technical Support Department is available for technical assistance. They will answer questions regarding the PCZTV. Please be prepared to give a detailed description of the problem, if possible, call from in front of the computer, as the Technical Support Representative may ask the user to perform additional test to determine the cause of the problem.

Contact Technical Support at:

FOCUS Enhancements, Inc.

142 N. Road

Sudbury, MA 01776

Phone (800) 775-8300

8:00 a.m. - 8:00 p.m. Monday - Friday (EST)

Internet Address:

http://www.focusinfo.com

E-Mail Address:

Info@Focusinfo.com

PATIENTS' REMOTE CONTROL - MODEL SC637

HEALTHVIEW SERIES

This remote control is intended for use by the guest and others, while providing access to only the basic operations of the TV.

POWER
Press to turn TV ON or OFF

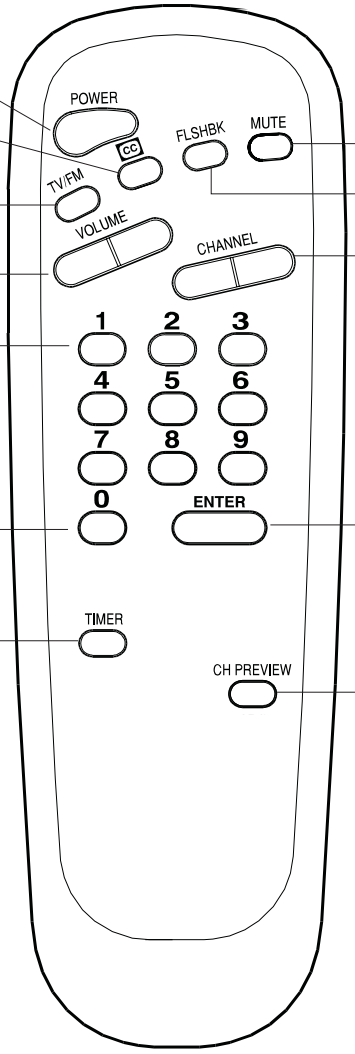
CC
Press to access closed captions.

TV/FM
Press to alternate between TV or FM operating mode

VOLUME
Press left to reduce or right to increase volume level of TV.

NUMBERED BUTTONS
Press repeatedly to select desired menu.

TIMER
Press to activate SLEEP TIMER.



MUTE
Press to turn off sound while picture remains. Press again to restore sound.

FLSHBK
Press to return to last TV channel you were watching.

CHANNEL Up/Down
Press to select a TV channel by going up/down through channels programmed in the TV memory.

ENTER
Press to view Channel/Time Display or to remove any on-scree menu or display in TV mode. Press to view the Music menu (active station) listing in FM mode.

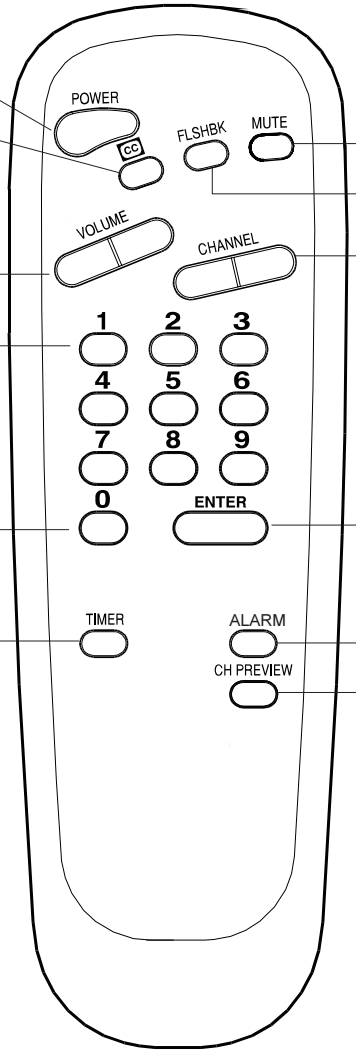
CH PREV
Displays on-screen, preprogrammed directory of station and network affiliations when in TV mode.

SC637 124-213-05

GUEST REMOTE CONTROL - MODEL SC652

CONCIERGE SERIES

This remote control is intended for use by the guest and other, while providing access to only the basic operations of the TV.



POWER
Press to turn TV ON or OFF

CC
Press to access closed captions.

VOLUME
Press left to reduce or right to increase volume level of TV.

NUMBERED BUTTONS
Press repeatedly to select desired menu.

TIMER
Press to activate SLEEP TIMER.

MUTE
Press to turn off sound while picture remains. Press again to restore sound.

FLSHBK
Press to return to last TV channel you were watching.

CHANNEL Up/Down
Press to select a TV channel by going up/down through channels programmed in the TV memory.

ENTER
Press to view Channel/Time Display or to remove any on-screer menu or display in TV mode. Press to view the Music menu (active station) listing in FM mode.

ALARM
Press to turn wake-up alarm ON or OFF.

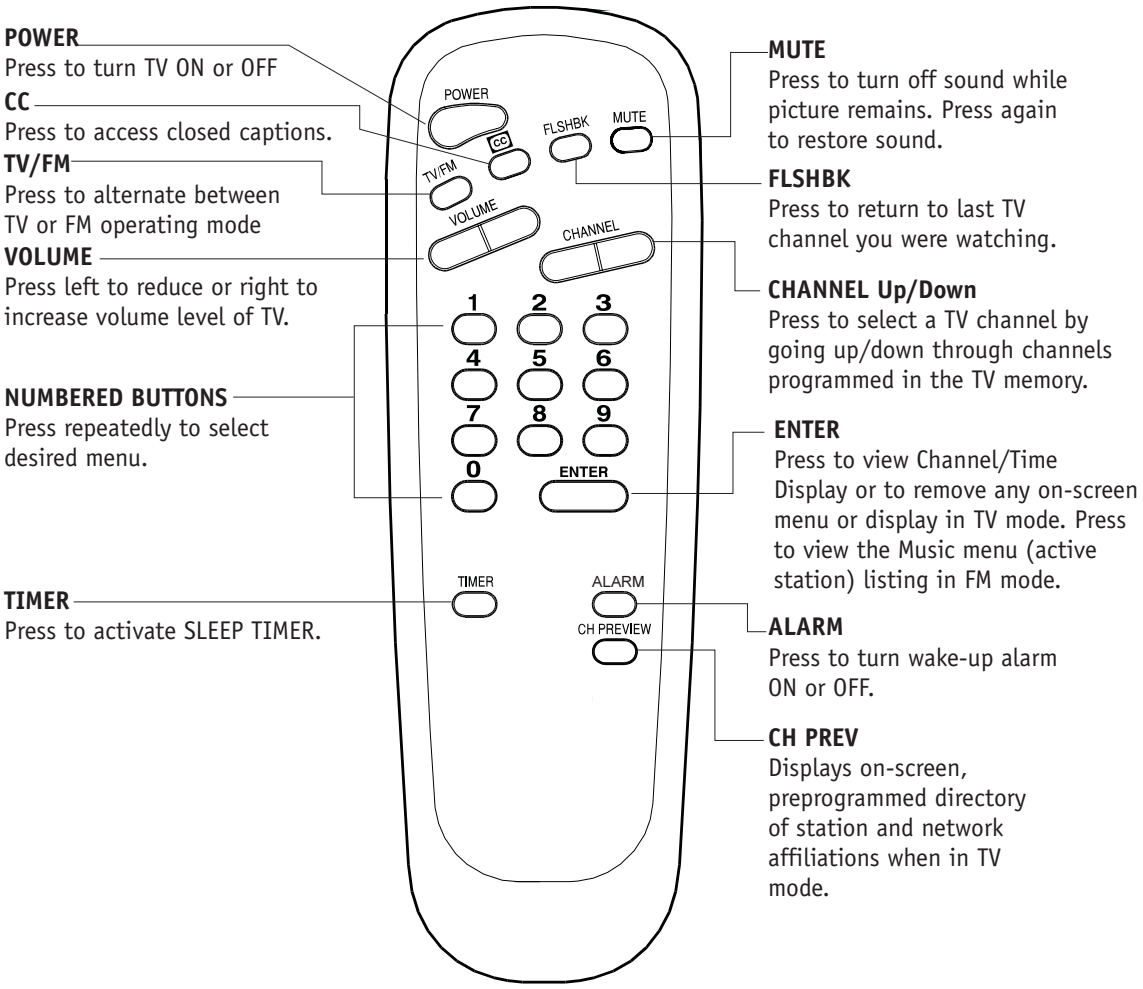
CH PREV
Displays on-screen, preprogrammed directory of station and network affiliations when in TV mode.

SC652 124-213-02

GUEST REMOTE CONTROL - MODEL SC692

CONCIERGE SERIES

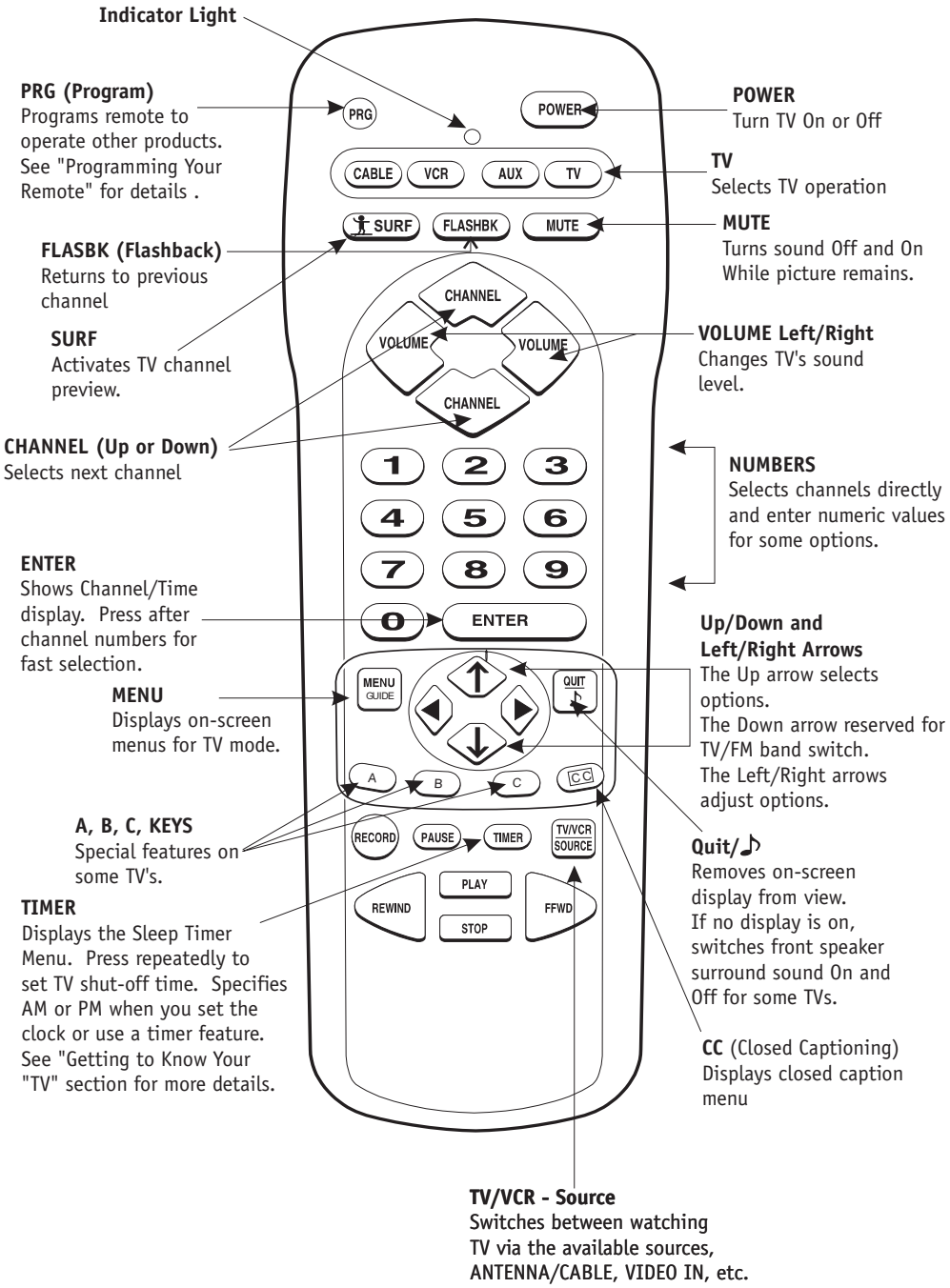
This remote control is intended for use by the guest and other, while providing access to only the basic operations of the TV.



SC692 124-213-03

USER REMOTE CONTROL - MODEL MBR3447

In order to use the TV functions defined below, make sure the remote is set to operate the TV. Press TV on the remote control to select TV.



Note: Keys dedicated to VCR functions will still operate your VCR while the remote is in TV mode.

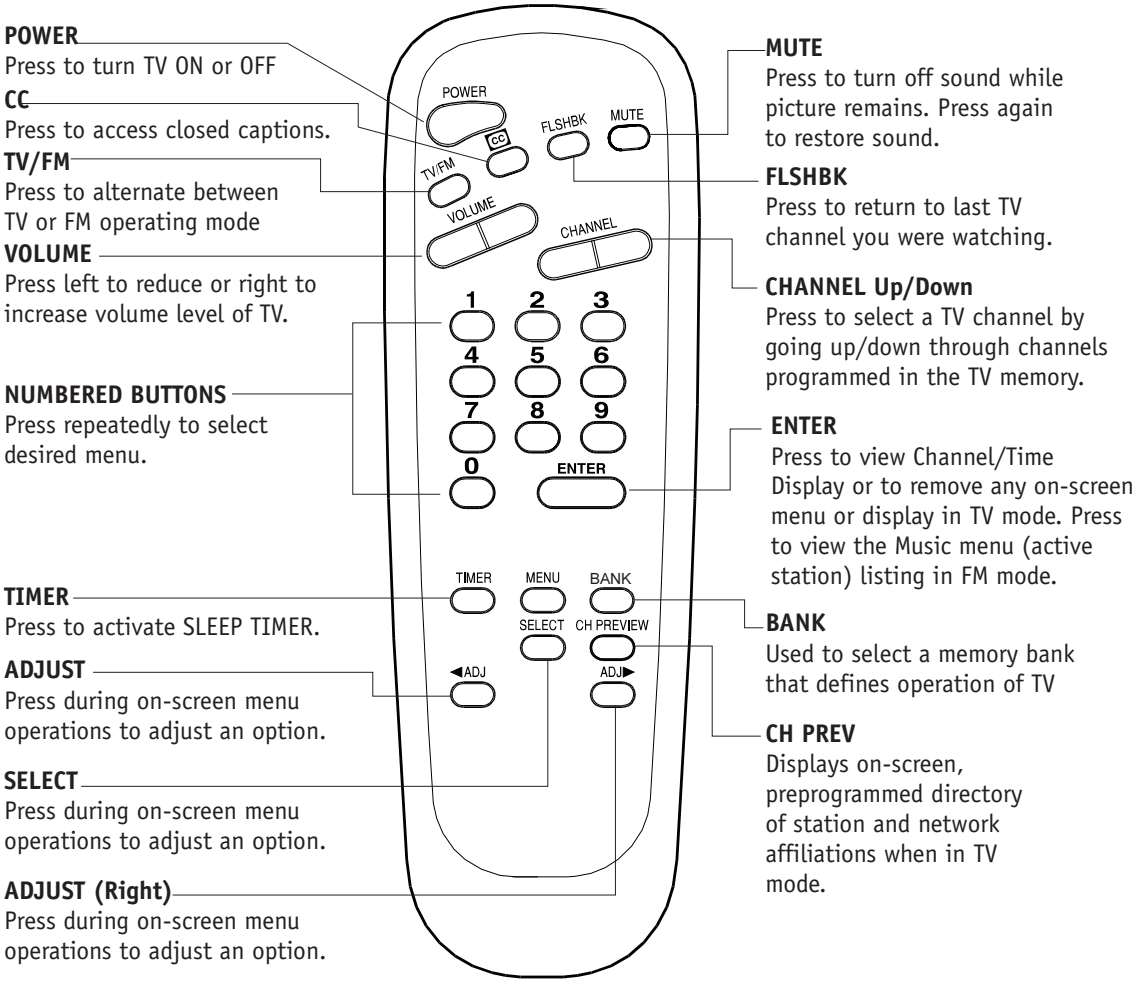
INSTALLERS' REMOTE CONTROL - MODEL HP602

OPERATION

This remote control is available as an optional item for the equipment installer. It provides access to all on-screen menus and special features that cannot be accessed by using the control panel on the TV.

PURPOSE

This installer's remote is designed with two purposes in mind. First it is used to program and setup televisions for use in lodging facilities. Second, it is designed to aid the installer with the setup procedure.



HP602 124-213-06

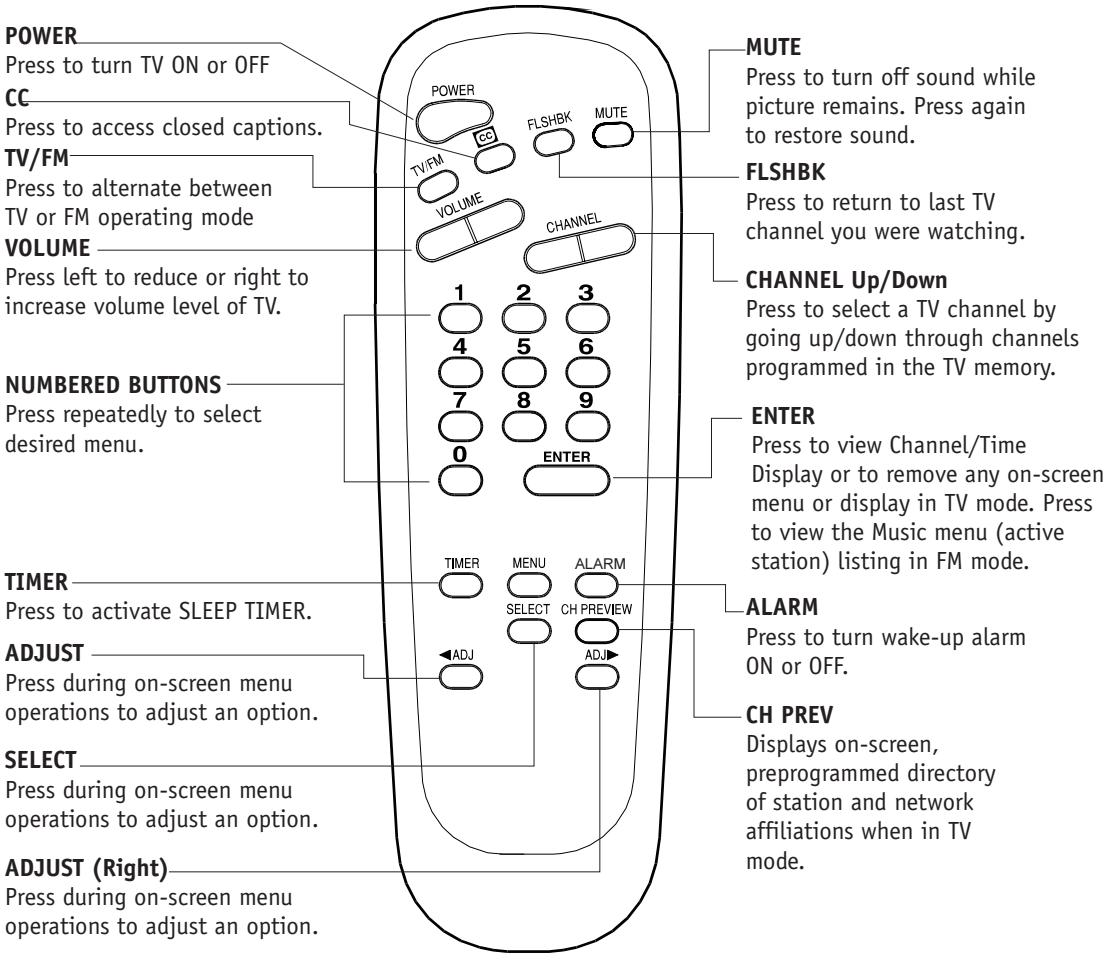
INSTALLERS' REMOTE CONTROL - MODEL LP702

OPERATION

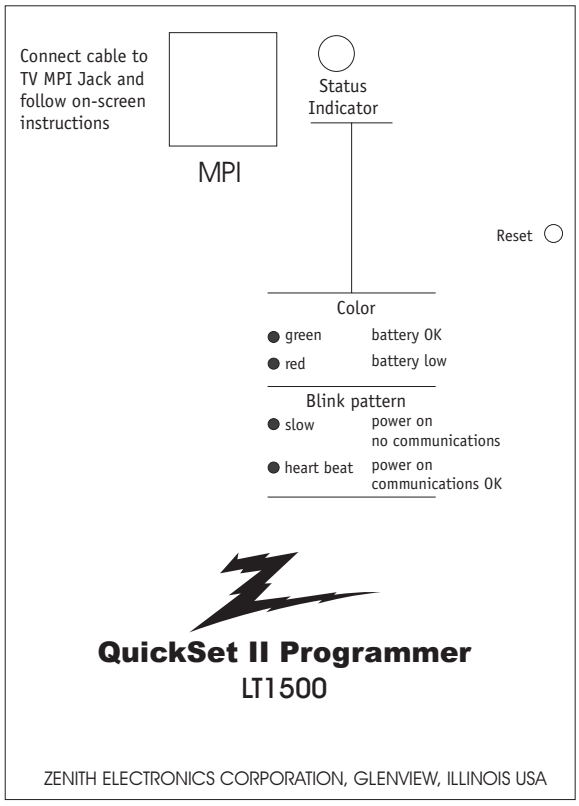
This remote control is available as an optional item for the equipment installer. It provides access to all on-screen menus and special features that cannot be accessed by using the control panel on the TV.

PURPOSE

This installer's remote is designed with two purposes in mind. First it is used to program and setup televisions for use in lodging facilities. Second, it is designed to aid the installer with the setup procedure.



LP702 124-213-04



The QuickSet II programmer (LT1500) allows custom setup and programming information to be quickly copied from a master TV into multiple television sets. Once learned from the master, setup data is retained in the LT1500 for future use and recall.

When using the LT1500, operation will be easier if the TV set is connected to a good quality signal and operating with a stable picture displayed. To operate the LT1500 use the indicated keys on an HP602, LP702 installers remote or MBR3447 users remote, or the front panel keys on the TV receiver.

Begin the programming process by setting up a master TV set using one of the installers remotes or MBR remote mentioned above. Follow the instructions in the operating guide for the specific model TV. Remember to set all features that will be customized including the channel scan list, channel labels and service menu setups.

Next, connect the LT1500 to the master TV set using the cable provided with the programmer. Connect the cable between the MPI jacks on the TV and the programmer. Connecting the programmer to the TV set automatically activates the programmer power switching circuits.

Once connected, check the "Status Indicator" LED on the programmer. If the indicator is green and flashing a double-blink "heartbeat" pattern, proceed to the next step.

NOTE: A slow flashing green light indicates there is a problem with the communications between the TV and the programmer. In this case, check for a damaged cable, poor contacts, or other connection troubles. If the status indicator is red, the programmer batteries are low and should be replaced. Use 4 good quality alkaline AA batteries.

If communications are good, the sign-on screen will be displayed on the TV screen as shown on the quick setup instructions which accompany the LT1500. If the intention is to set the TV or programmer real time clocks, not the clone clock and TV clock time settings, then press a key to proceed to the main clone menu.

If a previously stored TV setup is in a particular clone memory, it may be changed if desired by over writing it with a new setup. There is no need for a separate memory clear operation.

Setups stored in programmer memory are non-volatile and will be retained even after a battery change.

CLONE SELECTION MENU CHOICES

LEARN FROM TV

Press "Learn From TV" then OFF, POWER, or ENTER to begin the learning process. Alternatively use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to activate.

The next screen will allow the choice of which of the four available memories will be used to store this TV setup. With four memories available, four different TV setups can be stored in the LT1500.

Using the On screen menu, choose a memory or choose to return to the main selection menu, then press ON/OFF, POWER or ENTER to activate the selection.

The next screen allows one last opportunity to check the versions of TV and clone setups. Press ON/OFF, or POWER to activate the learning cycle or any other key to return to the selection menu to make other choices.

Once the process has begun, the TV screen will display the "LEARNING IN PROGRESS" ,message. Please wait for the process to complete. When the TV screen displays "LEARNING COMPLETED", press any key to end the learning process and return to the clone selection menu.

TEACH TO TV

Press "TEACH TO TV" then ON/OFF, POWER or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice, then press ON/OFF, POWER, or ENTER to activate.
The next screen will allow the choice of which of the four available memories will be copied to the TV. Press the desired memory number, then ON/OFF, POWER or ENTER to begin the teaching process. Alternatively use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to begin.
Using the on screen menu, choose a memory or choose to return to the main selection menu. Then press ON/OFF, POWER, or ENTER to activate the selection.
The next screen allows for one last opportunity to check the versions of TV and clone setups. Press ON/OFF, or POWER to activate the teaching cycle or any other key to return to the selection menu to make other choices.
Once the process has begun, the TV screen will display the "TEACHING IN PROGRESS" message. Please wait for the process to complete. When the TV screen displays "TEACHING COMPLETED", press any key to end the teaching process and return to the clone selection menu.

SET CLONE CLOCK FROM TV

To initially set the real time clock, in the LT1500 or update the time, press "SET CLONE FROM TV" then press ON/OFF, POWER or ENTER to copy the current TV time to the clone clock. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to activate.
This process will return the LT1500 to the sign-on screen to display the clone and TV clock settings. Press a key to go to the clone selection menu and perform other functions, or simply disconnect if time setting was the last task.

DISPLAY TV SETUP

Press "DISPLAY TV SETUP", then ON/OFF, POWER, or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to activate.
The TV screen will display the items in the service menu setups. Use this function to quickly check a TV for the correct setup.
Press any key to clear the display and return to the clone selection menu.

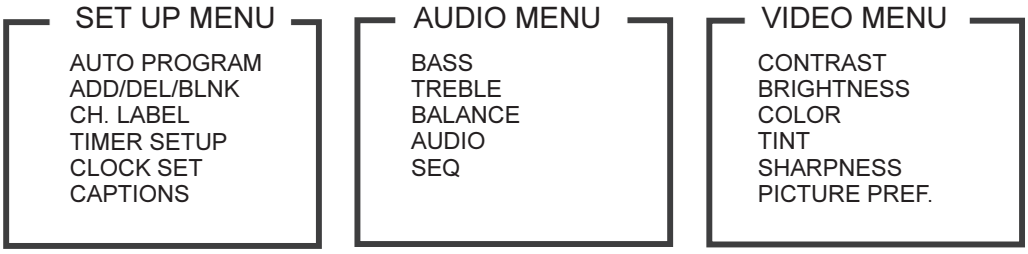
DISPLAY CLONE SETUP

Press "DISPLAY CLONE SETUP" then ON/OFF, POWER or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice, then press ON/OFF, POWER or ENTER to activate.
The TV screen will display the memory selection menu.
Press the desired memory number, then ON/OFF, POWER, or ENTER to display the contents of the selected memory. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice, then press ON/OFF, POWER or ENTER to begin.
The TV screen will display the items in the service menu setups. Use this function to quickly check the contents of a particular clone memory for the correct setup.
Press any key to clear the display and return to the clone selection menu.

OPERATION NOTES

Disconnect the LT1500 from the TV set when the desired task has been completed. Disconnecting the clone automatically switches it off. The real time clock continues to run when the main circuits are switched off.
After replacing exhausted batteries, or if the programmer behaves strangely after a static shock, use a paper clip or similar instrument inserted through the small hole marked "RESET" to activate the internal reset switch and restore normal operation. After reset, check the real time clock setting. It may be necessary to reset the clock from a TV containing the correct time.
The LT1500 programmer is designed to be used with TV sets containing the 221-1006 and later microprocessors. Use with earlier TV sets may give unpredictable results. The specific microprocessor used in any TV set may be determined by activating the service menu. The microprocessor part number appears at the top of the screen when the service menu is activated. Processors before the 221-1006-04 have a limited screen display capability. They cannot display entire screens as shown in the quick setup instructions accompanying the LT1500 programmer. Use the printed menu illustrations on the quick setup sheet as an aid to making programming choices.

USER MENU



The user menus are displayed over video. Each press of the MENU key will toggle between the setup menu, video menu and on some models an audio menu.

Operation of the menus is simple. Press MENU to call up a menu. Then with the SELECT key, bring up the item to be adjusted. The adjustment range of the item will be highlighted in white.

Lastly, use the ADJUST key to make a change to the current setting. Always follow the "On Screen" instructions.

Press ENTER or QUIT to exit the menu. If no key is pressed within 15 seconds, the on screen display will time out.

A detailed explanation of the user menus is covered in the following text. Some items may not be available on specific models.

SET UP MENU

AUTO PROGRAM When this item is activated, the set finds the available channels and stores them in memory for access by using the channel (UP/DOWN) keys. If Channel Override in the service menu is "Off" the AUTO PROGRAM will display "Locked".

CH. ADD/DEL/BLNK The Add/Delete feature allows tailoring the channel scan, to eliminate unwanted channels and add desired channels not stored, when Auto Programming has finished. If the Channel Override in the Service menu is "Off", the ADD/DELETE feature will not operate.

The Add/Delete feature can also be used to ADD or DELETE the Auxiliary input or the FM RADIO from the channel scan. This feature is also used in conjunction with the BANK key so each and every bank can be individually tailored.

A third item "BLNK" (Blank) is used by hospitals and institutions to feed music or informational messages to an unused channel. When BLNK is selected, the screen will be black while audio continues. Blanking a channel in any bank Blanks that channel in all banks.

CH.LABEL This item allows the user to attach a channel name each time the channel display appears. The labels are alphabetical. Use the Select key to toggle in either direction through the choices available.

TIMER SETUP Press the ADJUST key to bring up the Sleep timer. Once the sleep timer is on, each press of the ADJUST key will add 30 minutes of sleep time up to a maximum of 4 hours before turning the set off.

CLOCK SET sets the clock in the receiver to the correct time. Use the numeric button to set the time or the ADJUST button to advance the clock to the correct time. The timer key changes AM/PM or use 24 hour clock notation for input.

CAPTIONS When the Adjust key is pressed, one of nine different displays is shown: OFF, CAPTION 1, CAPTION 2, CAPTION 3, CAPTION 4, TEXT 1, TEXT 2, TEXT 3 or TEXT 4.
Text is only available on the user menu when TEXT is turned on in the Service menu.

The CAPTIONS menu can also be accessed directly by using the CAPTION or CC button on the remote. If CAPTIONS or TEXT is selected, it will appear in about 15 seconds. Text cannot be selected using the CC button. If no captions or text signal is received, no captions or text will appear, but the TV will remain in the selected mode.

Caption or Text appear when a proper signal is received. The captions/text mode will remain in effect until it is changed. Even if the channel is changed or if a channel is selected that is not broadcasting the captions/text signal. If the set is turned off, the captions/text mode will be in effect when it is turned on again. Sometimes captions are not seen when expected, because the captions are not being sent, such as during a commercial break. Captions reappear when the captions signal is received again. If the channel is changed to another station that provides closed captions, the captions will appear in about 15 seconds, A black box will

appear in the TEXT MODE if Text is selected and No Text is being received, but captioning is being received. A message at the top of the Text Box will instruct the user to Press Caption (CC) key to remove.

AUDIO MENU (Some Models)

Bass Adjusts the amount of Bass (low frequency level) in the sound.

Treble Adjusts the amount of Treble (High frequency Level) in the sound.

Balance Adjusts the balance of sound between the left and right speakers.

Audio Mode Selects between stereo, Mono or Sap.

VIDEO MENU

Contrast Adjusts the contrast of the picture.

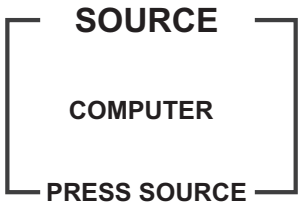
Brightness Adjusts the brightness of the picture.

Color Adjusts the intensity of the color.

Tint Adjusts the tint of the color picture.

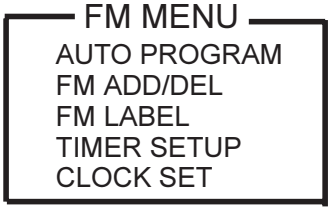
Sharpness Adjusts the sharpness of the picture.

Picture Pref. has two settings; Preset and Custom. In the Custom mode the brightness, contrast, color and tint can be set to a users particular liking. The preset setting brings up the factory setting for these controls. Preset is selected automatically after an AC power interrupt



SOURCE MENU

Press the SOURCE key to select Antenna/Cable, Video, S- Video or Computer.



FM MENU

Press the TV/FM button to access the FM radio. Press the MENU button to bring up the FM radio menu. Use the SELECT button to toggle through the selections. Use the ADJUST button to make a change. Press ENTER to leave FM menu and return to the Station ID menu or press TV/FM to resume a TV operations. The following is a detailed description of the FM radio menu items.

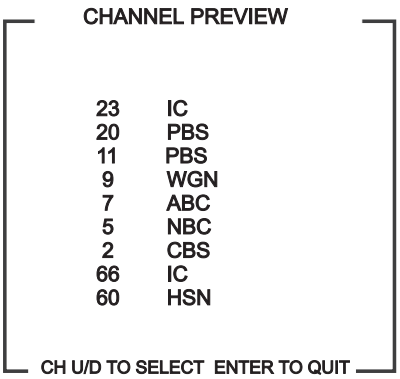
AUTO PROGRAM Press the ADJUST button to activate the auto program search. The radio will find all available FM stations and store them in the memory. Stations will be selected using the channel up/down keys.

FM ADD/DEL The add/delete feature allows tailoring the station scan, to eliminate weak and unwanted stations.

FM LABEL This item allows the user to attach a label to each stations saved in the memory. The labels are in alphabetical order starting with CLAS, for classical. There are ten selections covering Jazz, Country, Rock, News etc....

TIMER SETUP Press the ADJUST key to bring up the sleep timer for the FM radio. The first press of the ADJUST key will bring up 15 minutes of sleep time. Each additional press of the adjust key will add 30 minutes of sleep time up to a maximum of four hours before the set turns off.

CLOCK SET This item sets the clock in the receiver to the correct time. Note: If the clock has been set in the TV menu, then it doesn't need to be set in the radio menu.

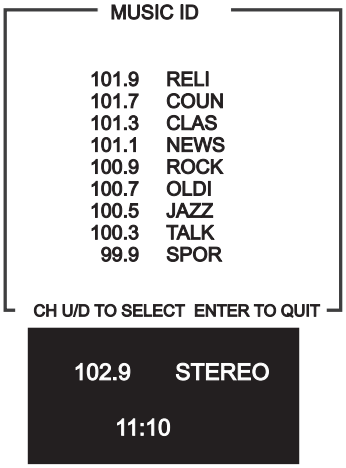


DIRECTLY ACCESSED OPTIONS

The following items will be available only on selected models, accessible from the remote control.

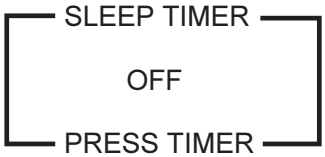
FLASHBACK Press this button to return to the previous TV channel selected for viewing.

CHANNEL PREVIEW When the CH. Preview button is pressed, a menu showing all of the channels stored in the memory appears. Use the Channel UP/DOWN button to access the highlighted channel.



MUTE Press this button to mute the audio.

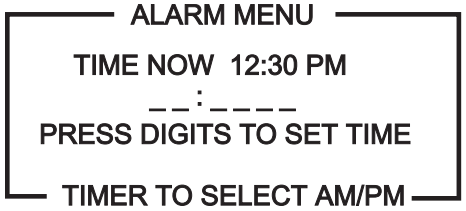
TV/FM Press the TV/FM button to access the FM radio. When this button is pressed, the MUSIC ID menu will appear. This menu shows the FM radio stations in a descending order, that are stored in the memory of the tuner. Use the channel up/down keys to select a station. If no action is taken, this menu will time out in 10 seconds. The ON screen display will show the station frequency, current time and audio mode on a black background.



TIMER When the TIMER button is pressed, the sleep timer will appear. Repeatedly pressing the TIMER button will increase the sleep time from 15 minutes to a maximum of 4 hours.

CAPTIONS The captions or text mode may be directly accessed by pressing the CAPTIONS buttons. Press the CAPTIONS button repeatedly to toggle through the available selections.

ALARM Press this button to access the ALARM menu. Use the digit keys to set the wake up time. Press



TIMER to select AM or PM. Lastly, press ENTER to activate the alarm clock and exit the menu. The Alarm setting includes the device (FM or TV)

and the volume level as well as the station currently tuned. All these will be recalled at the Alarm time.

CONCIERGE AND HEALTHVIEW SERIES INTRODUCTION

The memory bank feature is available on the Concierge and Health View series models. The GX chassis has four memory banks. The programmable memory banks store channels, that can be selected by the end user when operating the CHANNEL up/down scan.
When the set is configured for the HOSPITAL mode, bank 4, cannot be programmed and is used to place the TV in an inoperable condition. It is not assigned to a patient. The on screen message shown below will be displayed and the set will shut off.

EXAMPLE OF SERVICE TIERS

The allocation of channels to memory banks 1, 2, and 3 depends on the specific needs of the application. One example for a facility having both broadcast and cable service follows. Channels are allocated in the example for three service tiers (or pricing structures) to use all the memory banks.

MEMORY BANK	Service Tier Description
1	Broadcast Only
2	Broadcast and Basic Cable
3	Broadcast and All Cable Channels

PLANNING CONTENT OF MEMORY BANKS

The installer determines the content of the memory banks. A memory map should be used to plan the allocation of channels for the particular system. Any channel may have its video blanked to provide audio only programmed distribution. This is useful for allocation of FM radio stations,or an announcement/paging channel for in-house personnel. In some applications, only one or two of the memory banks will be programmed. The unused memory banks can be kept “as is” with the channels found during AUTO PROGRAM, or they can be programmed for no channels, becoming empty banks. It is a good practice to program at least one active channel in each unused memory bank. When an unused memory bank is selected, there will be at least one channel for viewing so it is easy to see that the TV is operating property.

NOTE: Some channels may have been programmed in the memory banks by the factory for test purposes. The memory banks may include channels not present in your area or exclude channels that are available. Use AUTO PROGRAM before programming the memory banks.

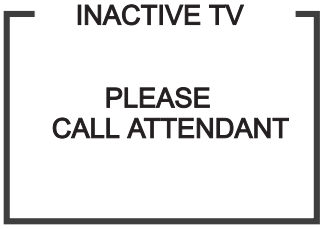
PROGRAMMING MEMORY BANKS

1. Use the **AUTO PROGRAM** feature, if not used previously. It will determine the BAND, set the AFC and find channels available in that tuning band. Channels found during the search are placed in all programmable memory banks simultaneously and all channels are unblanked. If previously blanked using the BLNK option.
   If some channels are not found that are known to be active, they may have to be manually set by using the BAND and AFC options in the Service Menu.

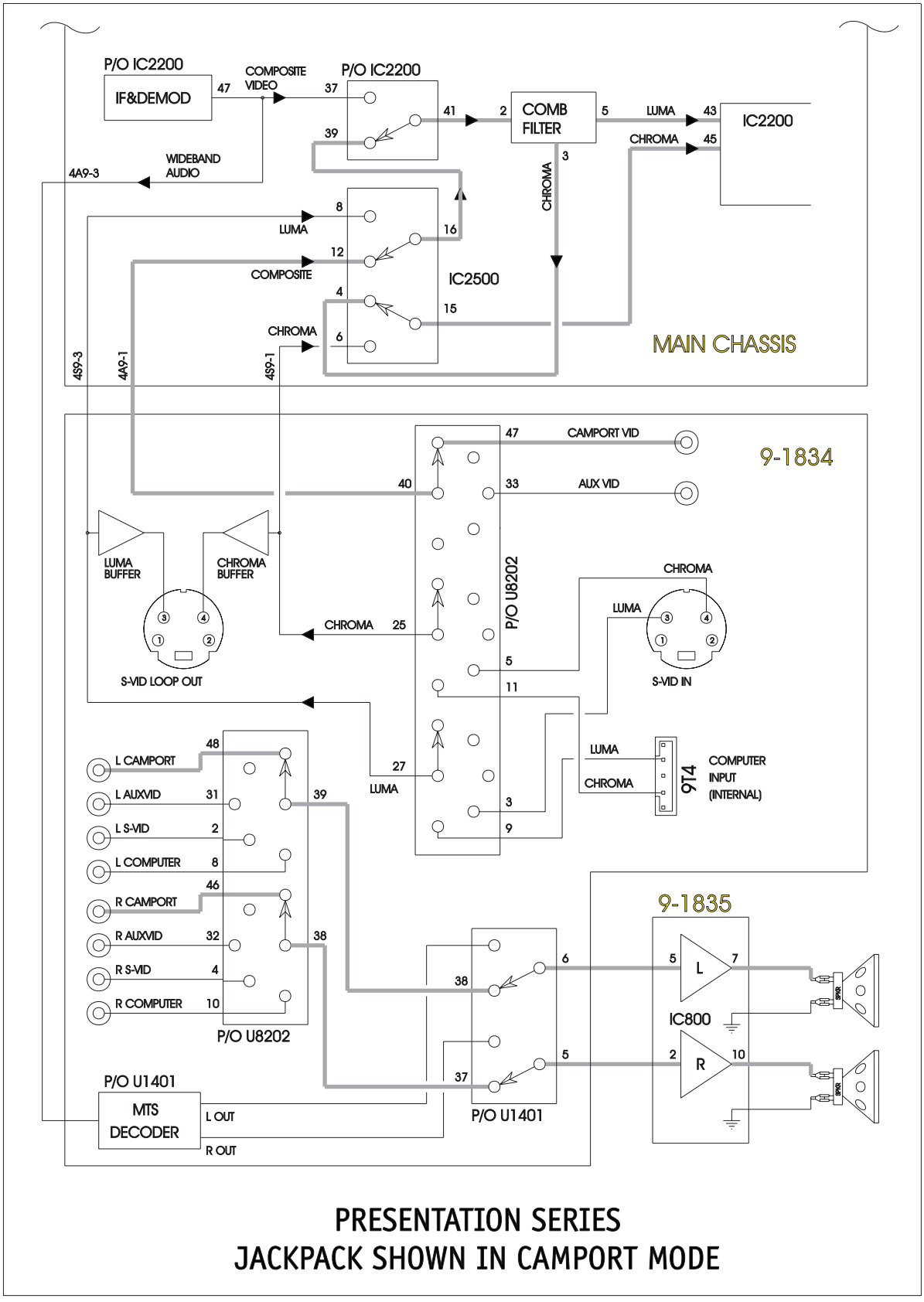


Bank Selected Display

2. Select the memory bank by pressing **BANK** on the installer’s Remote Control.
3. Use the CH. ADD/DEL option to customize the channels allocated to the currently selected bank. Changes affect only the selected bank.
4. Use the BLNK option to select those channels that will have their video blanked to become audio only channels. Blanking will be in effect on all of the banks.
5. Select the next memory bank that needs to be programmed. Repeat steps 2 - 5 to program that memory bank. Remember that banks 1, 2, and 3 are the only programmable banks when the set is in the hospital mode.

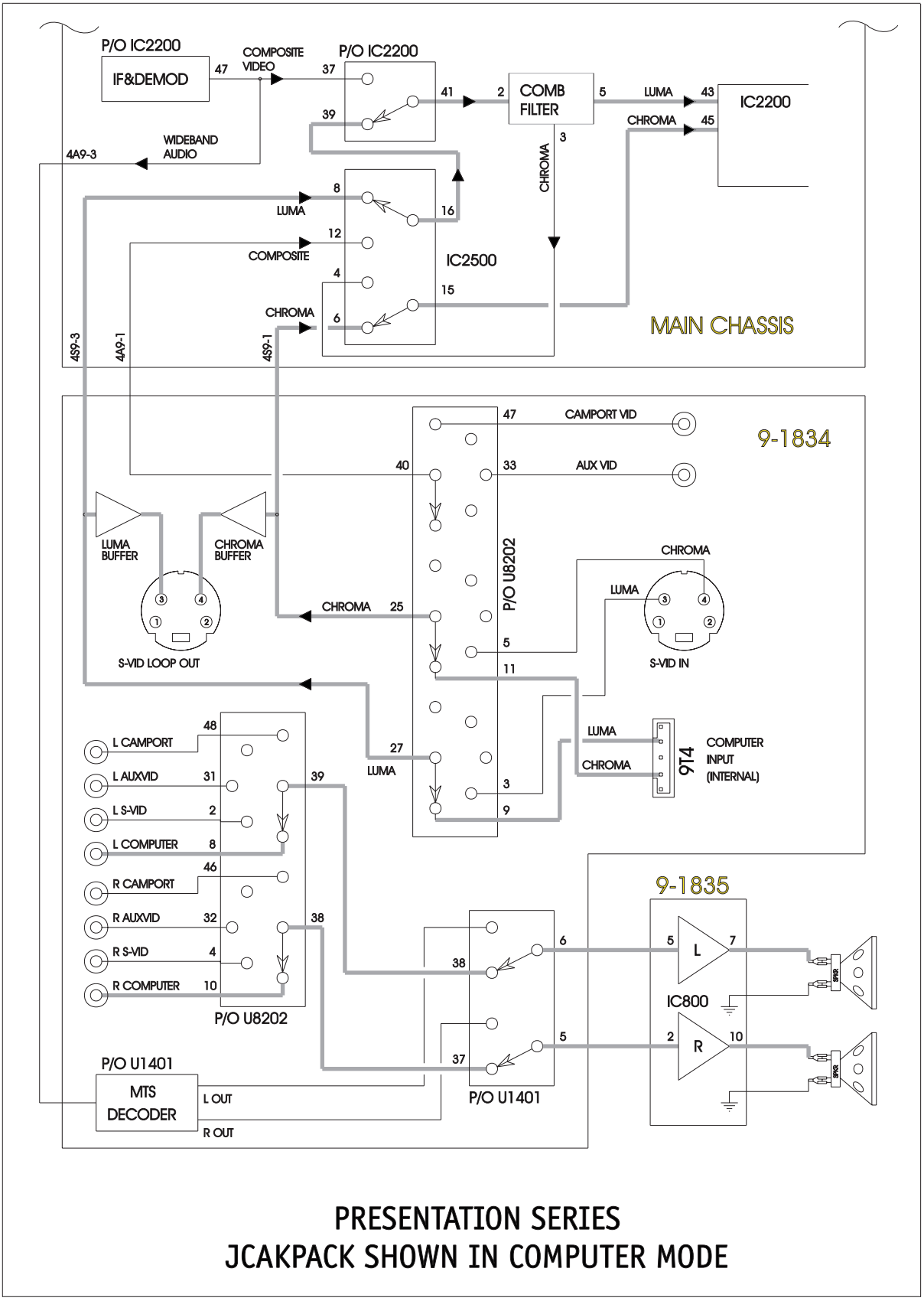


Display when TV is Turned on while Bank 4 is selected and Hospital Mode is on.



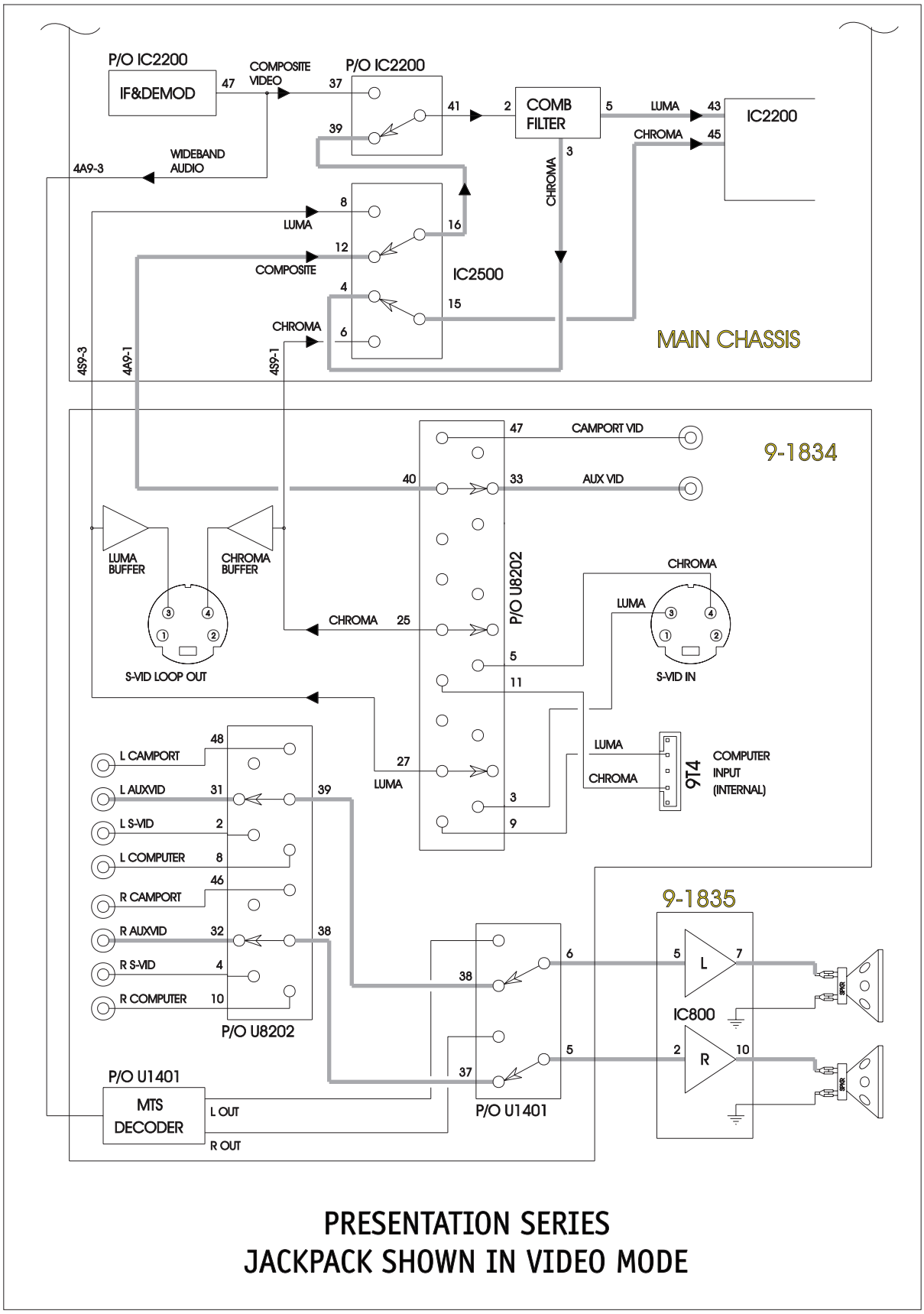
PRESENTATION SERIES
JACKPACK SHOWN IN CAMPORT MODE

JACKPACK SHOWN IN COMPUTER MODE

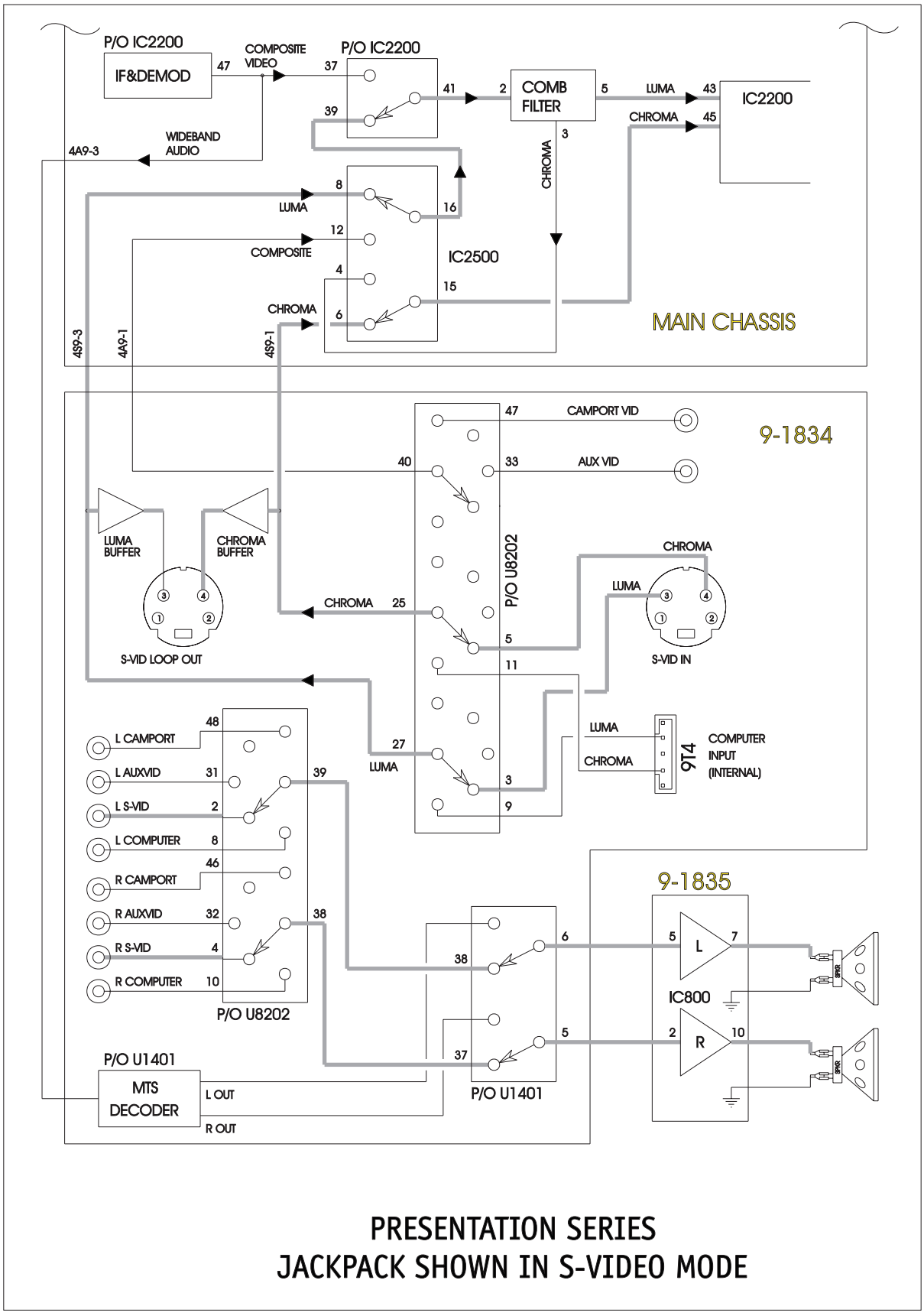


PRESENTATION SERIES
JCAKPACK SHOWN IN COMPUTER MODE

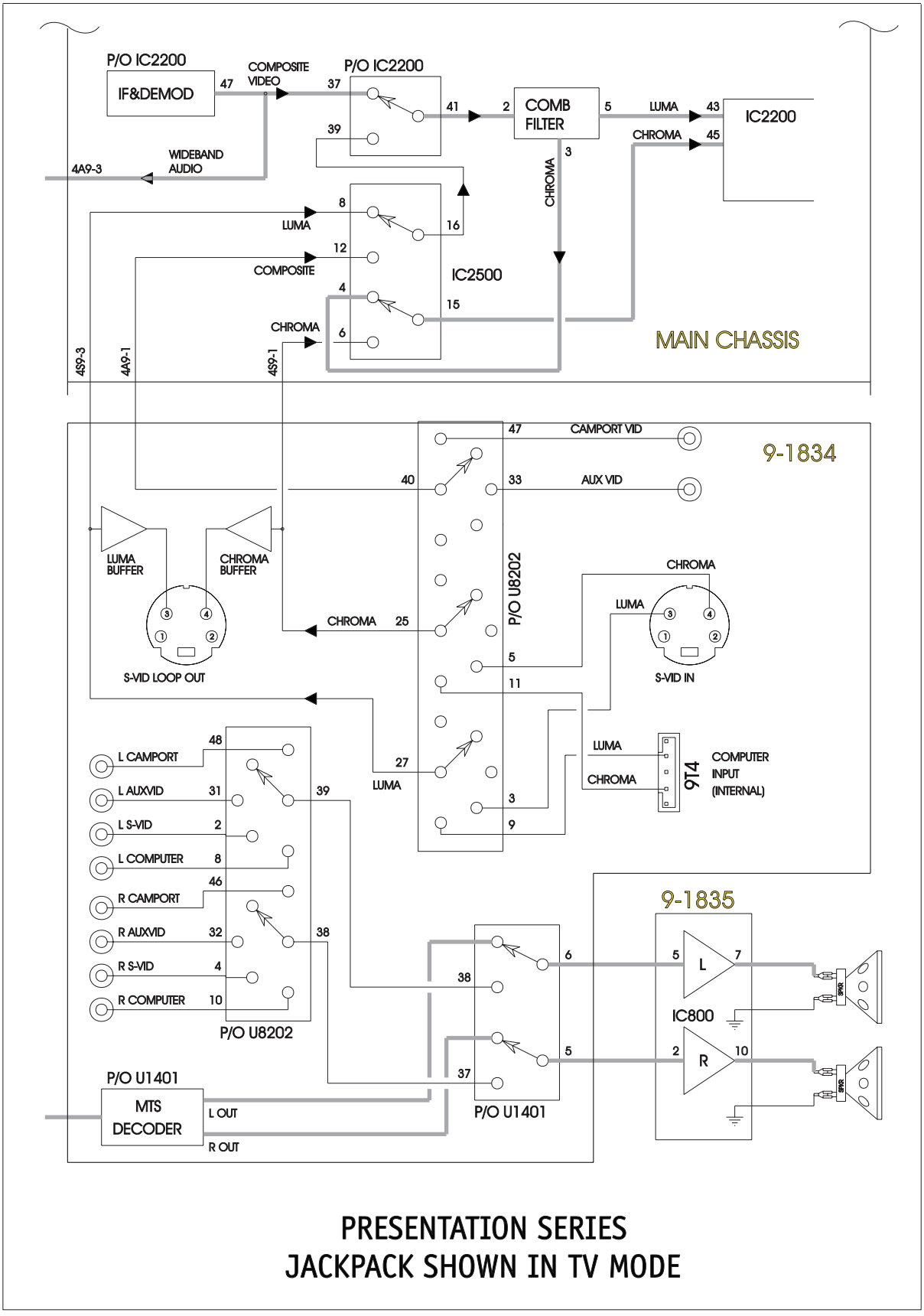
JACKPACK SHOWN IN VIDEO MODE



PRESENTATION SERIES
JACKPACK SHOWN IN VIDEO MODE



PRESENTATION SERIES
JACKPACK SHOWN IN S-VIDEO MODE



PRESENTATION SERIES
JACKPACK SHOWN IN TV MODE

Items 35 through 39 varies with CRT**

35 RED CUT This is a B&W tracking adjustment. Range is 0 to 255. Typical value is 20.

36 GREEN CUT B&W tracking adjustment. Range is 0 - 255. Typical value is 0.

37 BLUE CUT B&W tracking adjustment. Range is 0 - 255. Typical value is 28.

38 GREEN GAIN B&W tracking adjustment. Range is 0 - 255. Typical value is 45.

39 BLUE GAIN B&W tracking adjustment. Range is 0 - 254. Typical value is 70.

40 INPUT LEV (Input Level) Range is 0 - 15. Typical value is set to 9.

41 STEREO VCO* (Stereo Voltage Controlled Oscillator) range is 0 - 63. Typical value range 10 - 39.

42 SAP VCO* (Second Audio Program Voltage Controlled Oscillator) Range is from 0 - 15. Typical value range is 3 - 9.

43 SAP LPF* (Second Audio Program Low Pass Filter) Range is 0 - 15. Typical value range is 7 - 9.

44 STEREO LPF* (Stereo Low Pass Filter) Range is 0 - 63. Typical value range is 18 - 35.

45 SPECTRL* High frequency separation. Range is 0 -63. Typical value range is 38 - 63.

46 WIDE BAND* Low frequency separation. Range is 0 - 63. Typical value range is 28 - 36.

47 SEQ PERMT SEQ on-off. Zero if off, 1 is on.

48 FIELD TWO Affects captioning. Range is 0 - 1. Zero is off 1 is On. Set to 1.

49 ZEN/PL Selects Zenith or Private label. Range is 0 - 1. Set to 0 for Zenith. Private label mode is IR code 21 or 121. Zenith is IR code 1 or 101.

***** See Bar Code on jackpack for correct factory alignment.

****** Adjust only if the CRT has been changed. The "CUT" adjustments affect the Lowlights and the "GAIN" adjustments affect the Highlights.

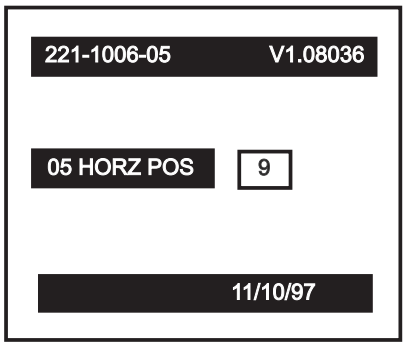
GX COMMERCIAL CHASSIS

FACTORY MENU RECOMMENDED SETTINGS

ITEM	RANGE	19″/20″	25″	27″	32″	36″
01 FACT MODE	0-2	0	0	0	0	0
02 PRESET PX	0-1	0	0	0	0	0
03 POWER MANAGE	0-7	0	0	0	0	0
04 VERT. POS	0-25	5	5	5	5	5
05 HORZ POS	1-15	9	9	9	9	9
06 BAND	0-7	0*	1*	0*	0	0
07 MIN VOLUME	0-63	63	0	0	0	0
08 MAX VOLUME	0-63	0	63	63	63	63
09 AC ON	0-1	0	0	0	0	0
10 KEY DEFEAT	0-1	255	0	0	0	0
11 STRT CH/VOL	0-255	0	255	255	255	255
12 HOSPITAL MODE	0-1	0	0	0	0	0
13 CHAN LOCK	0-1	0	0	0	0	0
14 BED ONE	0-1	0	0	0	0	0
14 S-VIDEO	0-1	0	0	0	0	0
14 S-VIDEO	0-1	0	0	0	0	0
15 GHOST CH	0-1	0	0	0	0	0
16 SCAN MODE	0-3	0	0	0	0	0
17 TEXT MODE	0-1	0	0	0	0	0
18 SLEEP TIMER	0-1	1	1	1	1	1
19 ALARM	0-1	1	1	1	1	1
20 CH. OVER RIDE	0-1	1	1	1	1	1
TECHNICAL SETTINGS (Black) Factory Mode 1						
21 TRAP 3.58	0-1	1	1	1	1	1
22 RF BANDPASS	0-1	1	1	1	1	1
23 RF BRT	0-63	30	30	30	30	30
24 AUX BRT	0-63	30	30	30	30	30
25 VERT PHASE	0-7	0	0	00	0	0
26 HORX PHASE	0-31	18	18	18	18	18
27 SOUND ATT	0-63	46	46	46	40	40
28 SOUND BAL	0-63	63	63	63	63	63
29 RF AGC	0-63	48	48	48	48	48
30 HORZ AFC	0-1	0	0	0	0	0
31 WHITE PK LEV	0-1	0	0	0	0	0
32 MAX CONTRAST	0-63	63	63	63	63	63
33 60HZ SW	0-1	0	0	0	0	0
34 PIF CUT	0-127	49	49	49	49	49
35 RED CUT	0-255	16	16	16	16	16
36 GREEN CUT	0-255	5	5	5	5	5
37 BLUE CUT	0-255	21	21	21	21	21
38 GREEN GAIN	0-255	90	90	90	90	90
39 BLUE GAIN	0-255	81	81	81	81	81
40 INPUT LEVEL	0-15	15	15	15	15	15
41 STEREO VCO	0-63	24	24	24	24	24
42 SAP VCO	0-15	6	6	6	60	6
43 SAP LPF	0-15	8	8	8	8	8
44 STEREO LPF	0-63	24	24	24	24	24
45 SPECTRL	0-63	42	42	42	42	42
46 WIDE BAND	0-63	30	30	30	30	30
TECHNICAL SETTINGS (Black) Factory Mode 2						
47 SEQ PERMT	0-1	1	1	1	1	1
48 FIELD TWO	0-1	1	1	1	1	1
49 ZEN/PL	0-1	0	0	0	0	0

* There are eight selections.

SERVICE MENU (221-1006-05)



Accessing the Service Menu can only be accomplished using the remote. Press and hold the **Menu** until the User Menu display disappears, then press **9876** then **ENTER** to access Service Menu.
The black bar at the top indicates the part number of the software in the set. The date on the left of the black bar at the bottom indicates the date the module went through the factory, and at the right is a number indicating that the module has been tested.
When the Service menu appears, it will always appear on the fifth item **HORIZ POS**. Use the **SELECT UP/DOW**N keys to toggle through all of the adjustments. Use **ADJUST** to make a change to the selected item.

1 FACT MODE (Factory Mode) Use **SELEC T UP** and **DOWN** Keys to select item #01, which is the first item in the Service Menu, the Factory Mode. This item is used by the Factory when the module is being tested. It has three positions, 0, 1 and 2. In the field, this item should always be left "Off". Zero is "Off". When the factory mode is off, only the first twenty items in the Service Menu can be brought up. When the Factory Mode is set to 1, 52 menu items will be available. In the factory mode 2 position, all 52 menu items will be available. They will appear on the screen one at a time at the top left of the screen.
When the factory mode is "on", the AC power on feature is always enabled regardless of the setting of "AC ON" in the Service Menu. The set will automatically come on when AC is applied.
Used the remote to re-enter the Service Menu to turn Factory Mode off. The factory mode can also be turned off by setting the clock, or running the Auto Program feature in the customer Set Up menu.

02 PRESET PX Stores customer menu adjustments in the non-volatile memory of the EAROM. Selections are Custom/Preset-Store. Settings for Contrast, Brightness, Color and tint are stored in this manner. 0 is custom and 1 is Pre-set stored.

03 POWER MANAGE Range is 0 - 7. When set to 0 set works normally. One - seven is length of time (in hours) set will operate if not attended. When set nears turn off time an on screen message appears telling you to press any key to resume normal viewing.

04 VERT POS Moves On Screen Displays vertically. Range is 0 - 25. Generally set at 5.

05 HORZ POS Moves On Screen Displays horizontally. Range is 1 - 15. Generally set at 9.

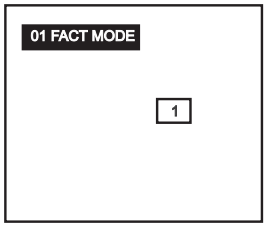
06 BAND/AFC There are eight positions. 0 is Broadcast fixed, 1 is CATV afc, 2 is HRC afc, 3 is ICC afc, 4 is Broadcast afc, 5 is CATV fixed, 6 is HRC fixed, 7 is ICC fixed. Band is automatically set when AUTO PROGRAM is used.

07 MIN VOLUME Sets minimum volume level provided to the speaker. Range is 0 - 63. When item is set to 0, user has full adjustment capability. Allows adjustment to minimum volume level possible. Set to 0 or the desired minimum volume level.

08 MAX VOLUME Sets maximum volume level provided to the speaker. Range is 0 - 63. When item is set to 63, user has full adjustment capability. Allows adjustment to maximum volume level possible. Set to 63 or the desired maximum volume level.

09 AC On Two positions; 0 is off and 1 is AC On. In ON position set will turn on and off when AC power is applied. Set will not respond to ON/OFF commands from either remote of control panel and Sleep Timer will not function.

10 KEY DEFEAT Disables unmarked menu buttons on TVs control panel. Range is 0 - 1. 0 is off 1 is on. Set to 1 which is on, to turn the keys off.



11 STRT CH/VOL Determines channel that is selected automatically each time TV is turned on and volume level when set comes on. Range is 0- 255. 0 is Aux position and 255 is Off. Use **ADJUST** to change channel number. Start volume is to be set before setting the start channel. Use volume control to set volume level.

12 HOSPITAL MODE Not used in Concierge Series TV's. Leave set to 0, which is off.

13 CHAN LOCK Used in conjunction with #11 Start Channel/volume. Range is 0 - 1. 0 is off and 1 is on. Use Start channel to lock on a particular channel. When item is active, AUTO PROGRAM and CHANNEL ADD DEFEAT are not active.

14 (Not Used)

Scan Mode	Characteristics
0	Channel up/down keys change channels only.
1	Channel down below lowest channel (or up higher than highest) and TV turns off. No FM radio.
2	Channel down below the lowest channel (or up higher than highest) and TV goes to FM Radio. Press channel down below lowest FM station (or Channel up higher than highest) and TV channels return.
3	Channel down below the lowest channel or Channel up higher than highest) and TV goes to FM radio. Press Channel down below lowest FM station (or Channel up higher than highest) and TV goes off.

15 GHOST CH. Range is 0 - 1. Zero is off 1 is on. In On mode, channel number will stay on screen at all times, unless captions are present. The number moves slightly to prevent damage to screen. When captions are on, the "Ghost Channel" is not present.

16 SCAN MODE Range is 0 - 3. Sets turn-off when channel scan buttons are being used. In 0 mode, scan Off is inoperative. In position 1 set will turn off between auxiliary and lowest channel. In position 2, set will turn off between Aux and FM. In position 3 set will turn off after FM station scan.

17 TEXT MODE Turns Text mode on or off in the users menu. Range is 0 - 1. Zero is off, 1 is on. In On mode, user can call up text mode. Set to 0, unless text is being used.

18 SLEEP TIMER Enable sleep timer feature. Range is 0 - 1. Zero is off, 1 is on. Set to 1.

19 ALARM Enables Alarm feature. Range is 0 - 1. Zero is off, 1 is on. In Off mode, alarm feature is not available. Set to 1.

20 CH. OVERRIDE Range is 0 - 1 . Zero is off, 1 is on. In On mode, TV will work normally. Generally set to Off so it can be controlled by entertainment unit. In Off mode, Auto Program, Channel Add/Delete and Channel Lock do not function.

21 OLD OCV (On command Video) Range is 0 - 1. Zero is off, 1 is on. Set to 1 for operation with "Spectramate" systems from On Command Corporation.

22 CAPTION LOCK (Caption Lock) Two settings, 0 and 1. Zero is off, and 1 is on. Set to 1 to restore previous On/Off state after TV is initially turned on.

23 FUNCTION PREV (Function Preview) Range is 0 - 1. Zero is off and 1 is on. Set to 1 to suppress channel prev screen and enable user function menu with some pay per view systems.

24 TRAP 3.58 3.58 Mhz trap. Zero is off, 1 is on. Set to zero. For normal TV operation set to 1, if Y/C is used or the chassis has a comb filter.

25 RF BANDPASS (RF Bandpass) Sets adjustment range of customer control for brightness in therefore mode. Range is 0 - 63. Typical value is 30.

26 RF BRT (RF brightness) Sets adjustment range of the customer control for brightness in AUX mode. Range is 0 - 63. Typical value is 30.

27 AUX BRT (Auxiliary Brightness) Sets adjustment range of the customer control for brightness in AUX mode. Range is 0 - 63. Typical value is 30.

28 VERT PHASE (Vertical Phase) Range is 0 - 7. Set to 0.

29 HORZ PHASE (Horizontal Phase) Range is 0- 31. Set to 18.

30 SOUND ATT Range is 0 - 63. Set to 46.

31 SOUND BAL Range is 0 - 63. Set to 63.

32 RF AGC Range is from 0 - 63. 48 is a general setting. Tune in weakest channel and adjust for a snow free picture.

33 HORZ AFC Range is 0 - 1. Set to 0.

34 WHITE PK LEV Range is 0 - 1. Set to 0.

35 MAX CONTRAST (Max Contrast) Sets adjustment range of customer control for contrast. Range is 0 - 63. Set to 63.

36 60HZ SW Range is 0 - 1. Sync stability item. Zero is off. Set to 0.

37 PIF VCO Range is 0 - 127.

Items 38 through 52 varies with CRT**

38 RED CUT B&W tracking adjustment. Range is 0 - 255. Typical value is 20.

39 GREEN CUT B&W tracking adjustment. Range is 0 -255. Typical value is 0.

40 BLUE CUT B&W tracking adjustment. Range is 0 - 255. Typical value is 28.

41 GREEN GAIN B&W tracking adjustment. Range is 0 - 255. Typical value is 45.

42 BLUE GAIN B&W tracking adjustment. Range is 0- 254. Typical value is 70.

43 INPUT LEV (Input Level) Range is 0 - 15. Typical value is set to 9.

44 STEREO VCO* (Stereo Voltage Controlled Oscillator) Range is 0 - 63. Typical value range 10 - 39.

45 SAP VCO* (Second Audio Program Voltage Controlled Oscillator) Range is from 0 - 15. Typical value range is 3 to 9.

46 SAP LPF* (Second Audio Program Low Pass Filter) Range is 0 - 15. Typical value range is 7 - 9.

47 STEREO LPF* (Stereo Low Pass Filter) Range is 0 - 63. Typical value range is 18 - 35.

48 SPECTRL* High frequency separation. Range is 0 - 63. Typical value range is 38 - 63.

49 WIDE BAND* Frequency separation. Range is 0 - 63. Typical value range is 28 - 36.

50 SEQ PERMT SEQ on-off. Zero if off, 1 is on.

51 FIELD TWO Effects captioning. Range is 0 - 1. Zero is off 1 is On. Set to 1.

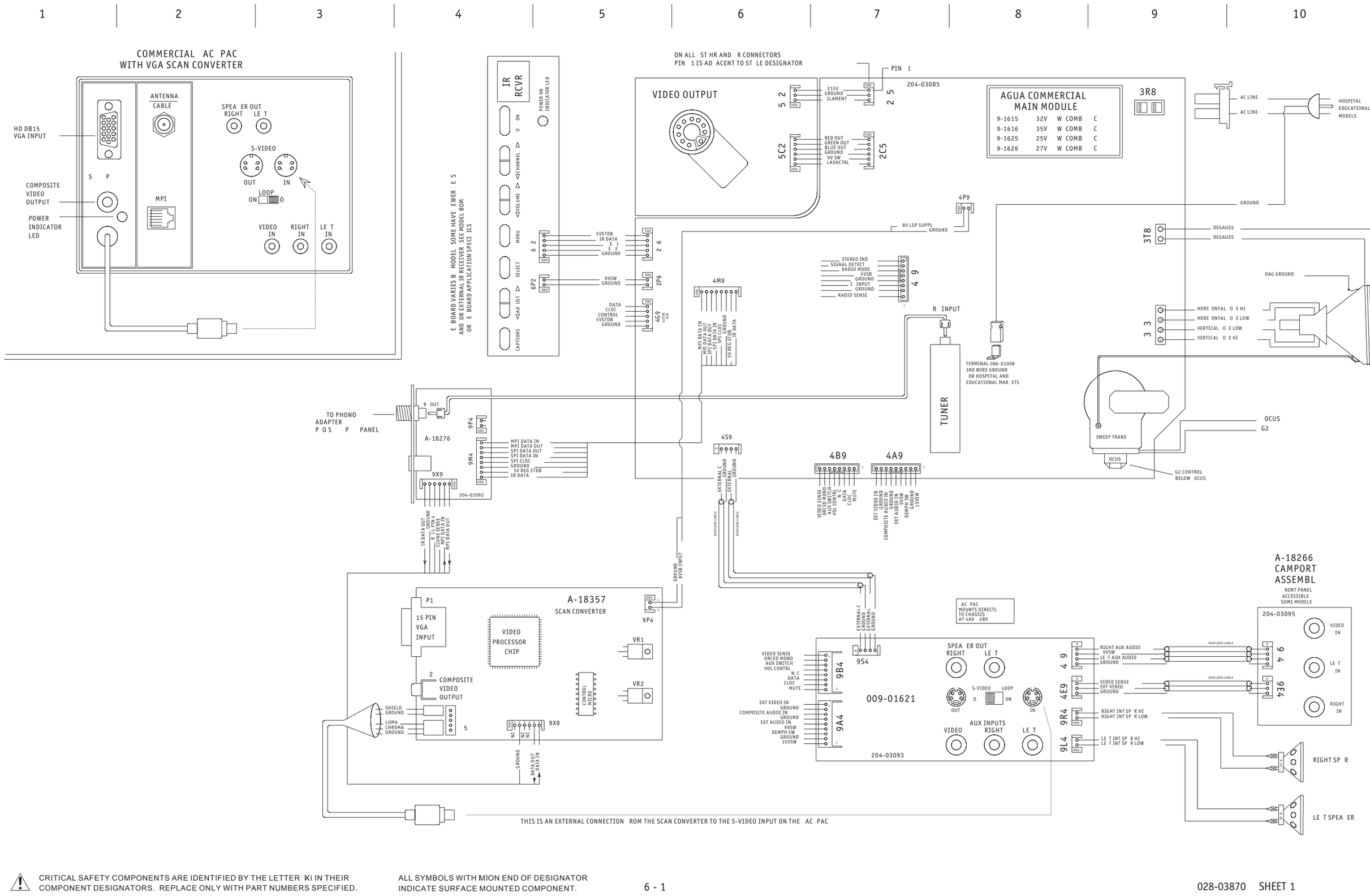
52 ZEN/PL Select Zenith or Private label. Range is 0 -1. Set to 0 for Zenith. Private label mode is 21 or 121. Zenith is IR codes 1 or 101.

GX COMMERCIAL CHASSIS

FACTORY MENU RECOMMENDED SETTINGS

ITEM	RANGE	19″/20″	25″	27″	32″	36″
01 FACT MODE	0-1	0	0	0	0	0
02 PRESET PX	0-1	0	0	0	0	0
03 POWER MANAGE	0-7	0	0	0	0	0
04 VERT. POS	0-25	5	5	5	5	5
05 HORZ POS	1-15	9	9	9	9	9
06 BAND	0-7	0*	1*	0*	0	0
07 MIN VOLUME	0-63	63	0	0	0	0
08 MAX VOLUME	0-63	0	63	63	63	63
09 AC ON	0-1	0	0	0	0	0
10 KEY DEFEAT	0-1	255	0	0	0	0
11 STRT CH/VOL	0-255	0	255	255	255	255
12 HOSPITAL MODE	0-1	0	0	0	0	0
13 CHAN LOCK	0-1	0	0	0	0	0
14 NOT USED	0-1	0	0	0	0	0
15 GHOST CH	0-1	0	0	0	0	0
16 SCAN MODE	0-3	0	0	0	0	0
17 TEXT MODE	0-1	0	0	0	0	0
18 SLEEP TIMER	0-1	1	1	1	1	1
19 ALARM	0-1	1	1	1	1	1
20 CH. OVER RIDE	0-1	1	1	1	1	1
21 OLD OCV	0-1	1	1	1	1	1
22 CAPTION LOCK	0-1	1	1	1	1	1
23 FUNCTION PREV	0-1	0	0	0	0	0
TECHNICAL SETTINGS (Black) Factory Mode 1						
24 TRAP 3.58	0-1	1	1	1	1	1
25 RF BANDPASS	0-1	1	1	1	1	1
26 RF BRT	0-63	30	30	30	30	30
27 AUX BRT	0-63	30	30	30	30	30
28 VERT PHASE	0-7	0	0	00	0	0
29 HORX PHASE	0-31	18	18	18	18	18
30 SOUND ATT	0-63	46	46	46	40	40
31 SOUND BAL	0-63	63	63	63	63	63
32 RF AGC	0-63	48	48	48	48	48
33 HORZ AFC	0-1	0	0	0	0	0
34 WHITE PK LEV	0-1	0	0	0	0	0
35 MAX CONTRAST	0-63	63	63	63	63	63
36 60HZ SW	0-1	0	0	0	0	0
37 PIF CUT	0-127	49	49	49	49	49
38 RED CUT	0-255	16	16	16	16	16
39 GREEN CUT	0-255	5	5	5	5	5
40 BLUE CUT	0-255	21	21	21	21	21
41 GREEN GAIN	0-255	90	90	90	90	90
42 BLUE GAIN	0-255	81	81	81	81	81
43 INPUT LEVEL	0-15	15	15	15	15	15
44 STEREO VCO	0-63	24	24	24	24	24
45 SAP VCO	0-15	6	6	6	60	6
46 SAP LPF	0-15	8	8	8	8	8
47 STEREO LPF	0-63	24	24	24	24	24
48 SPECTRL	0-63	42	42	42	42	42
49 WIDE BAND	0-63	30	30	30	30	30
TECHNICAL SETTINGS (Black) Factory Mode 2						
50 SEQ PERMT	0-1	1	1	1	1	1
51 FIELD TWO	0-1	1	1	1	1	1
52 ZEN/PL	0-1	0	0	0	0	0

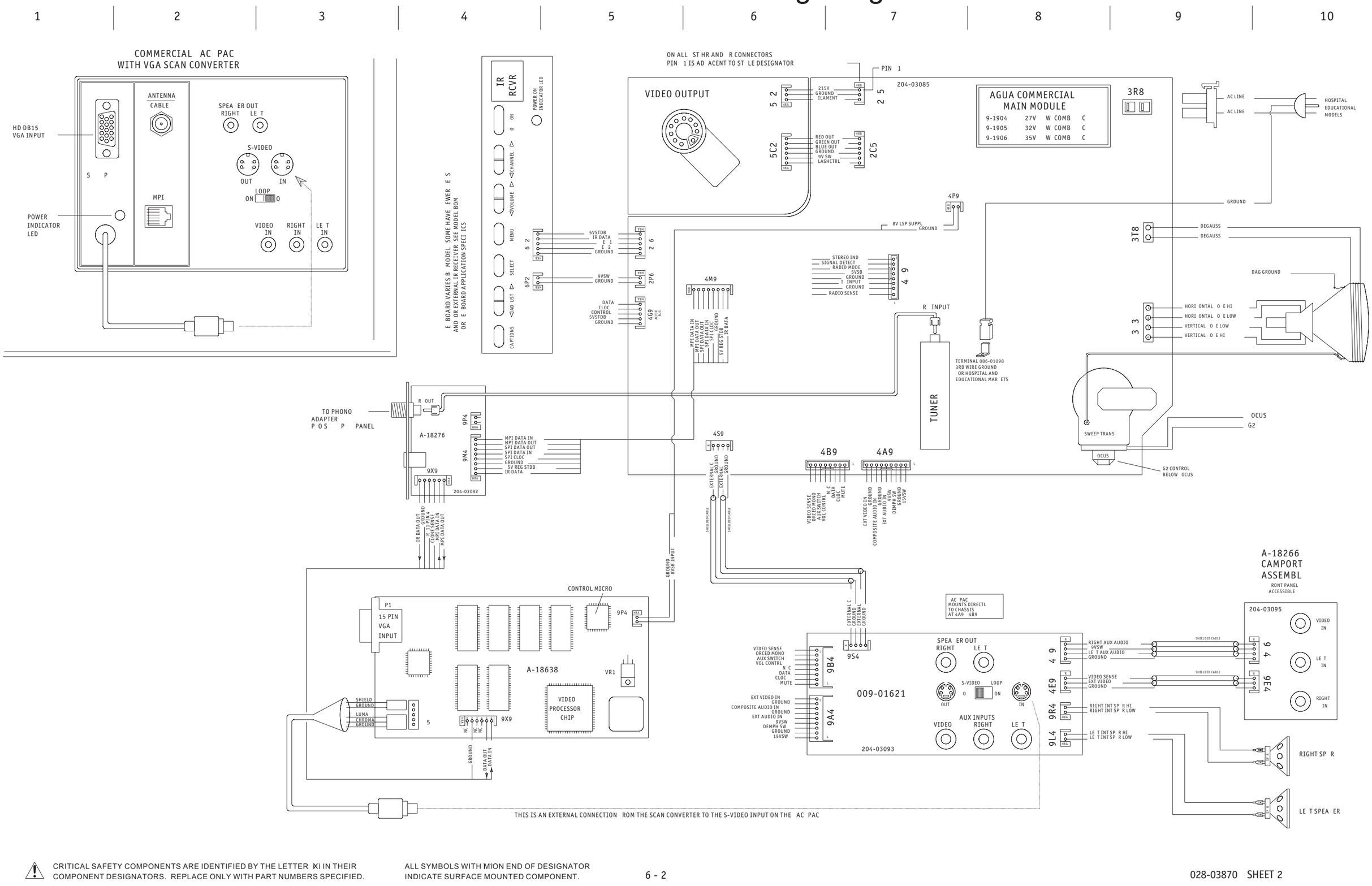
GX Commercial Wiring Diagram



CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER Xi IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH MiON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

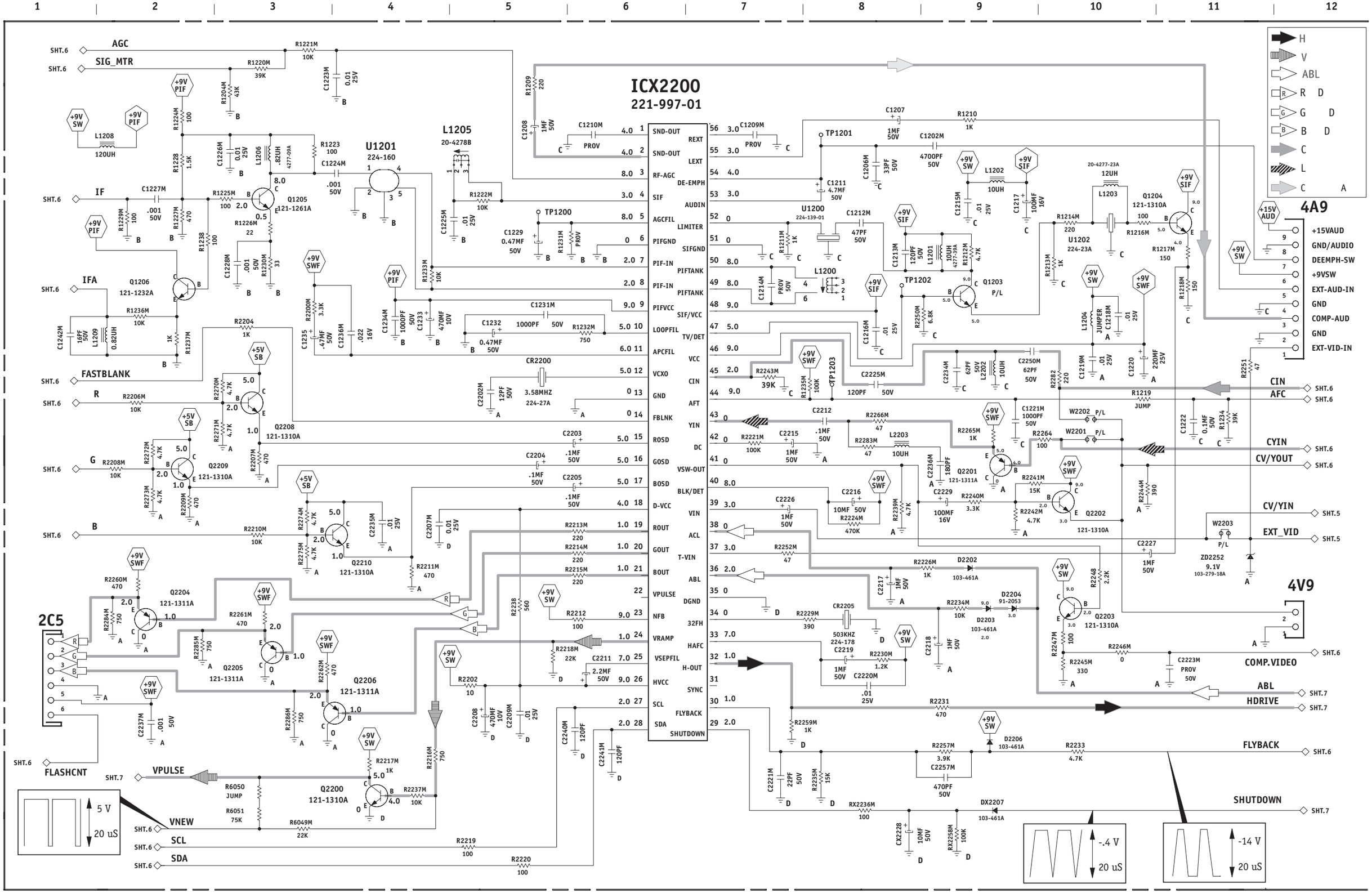
GX Commercial Wiring Diagram



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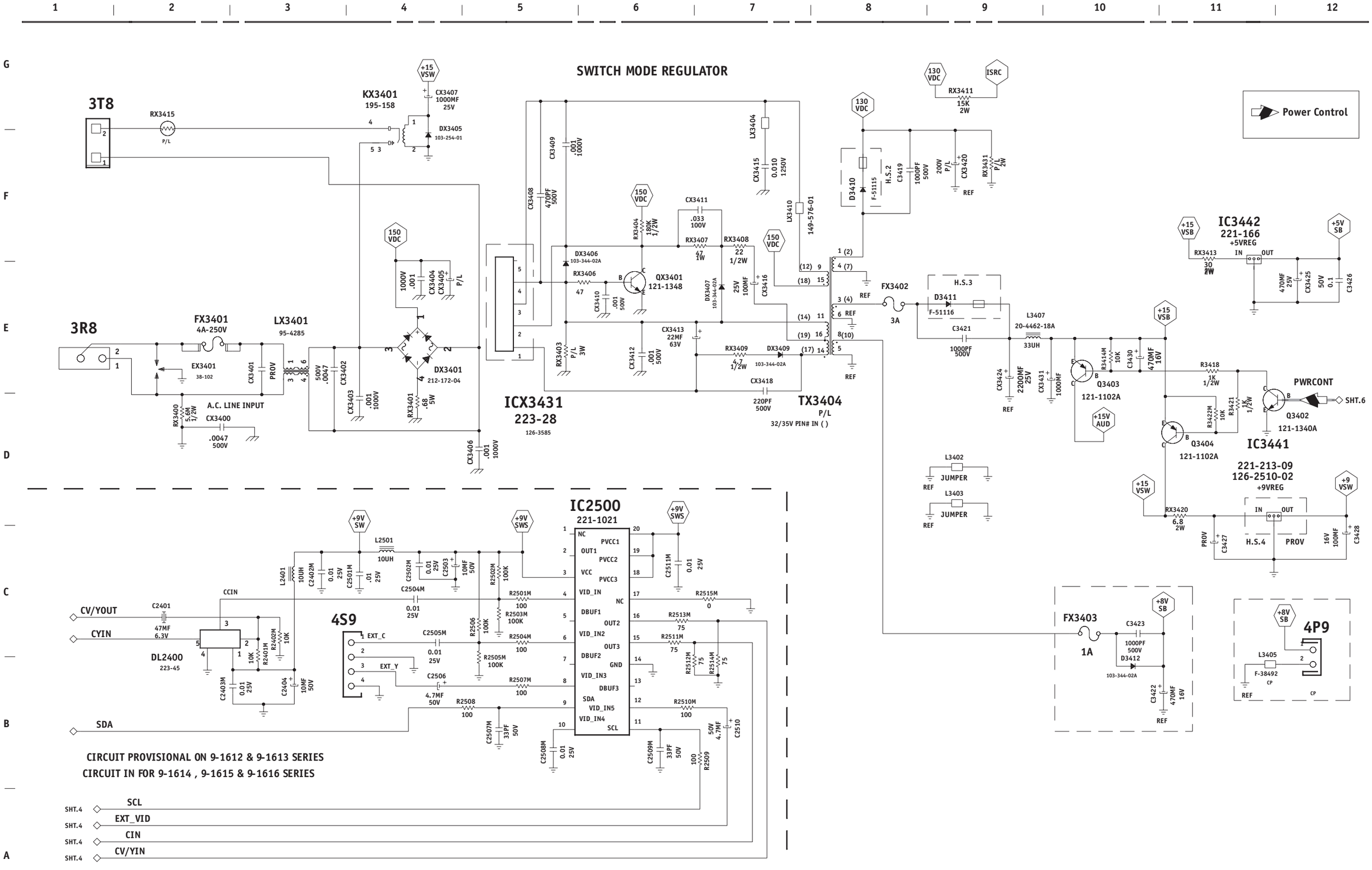
GX Commercial Video Processor (9-1612/9-1616)



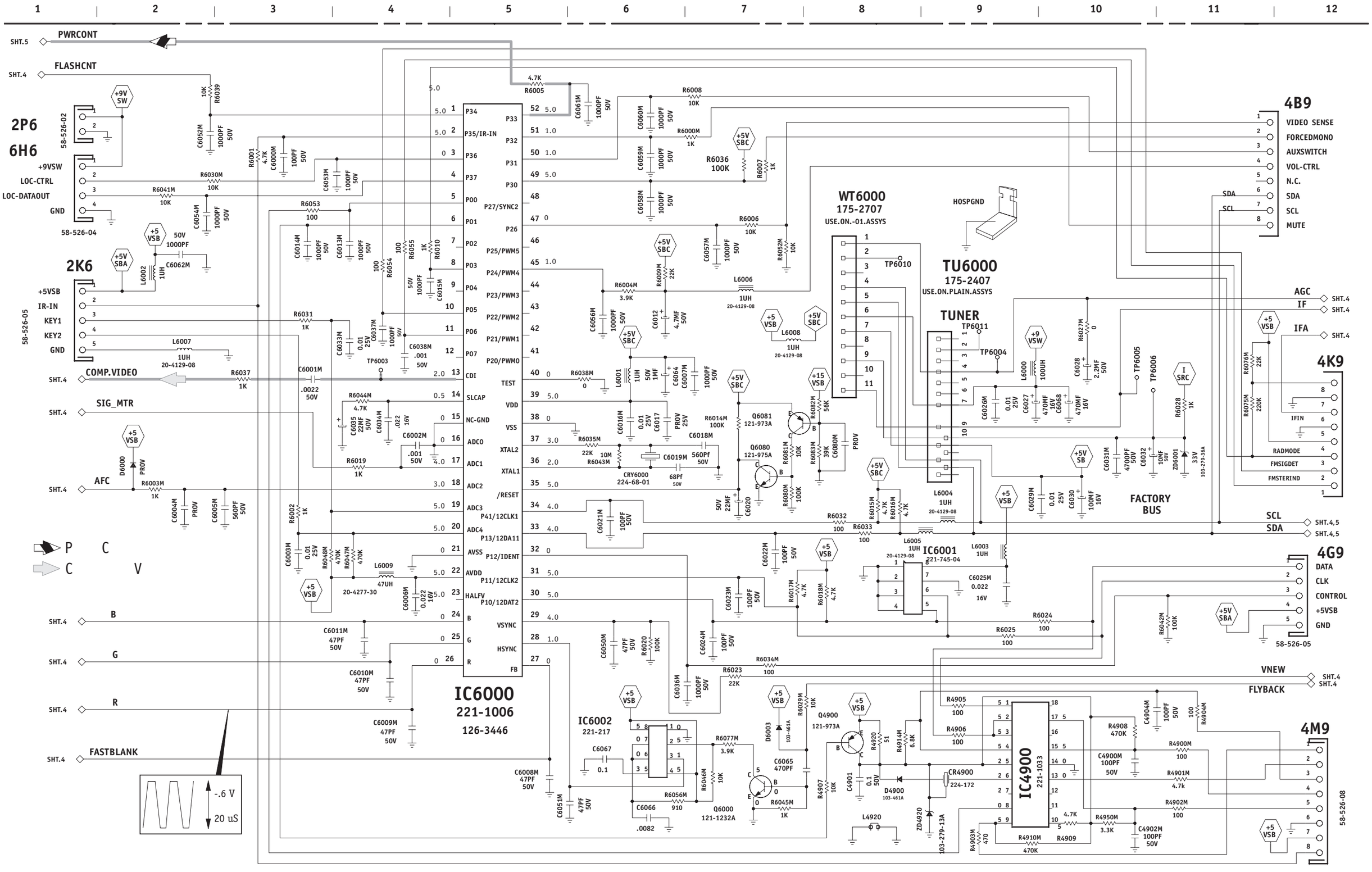
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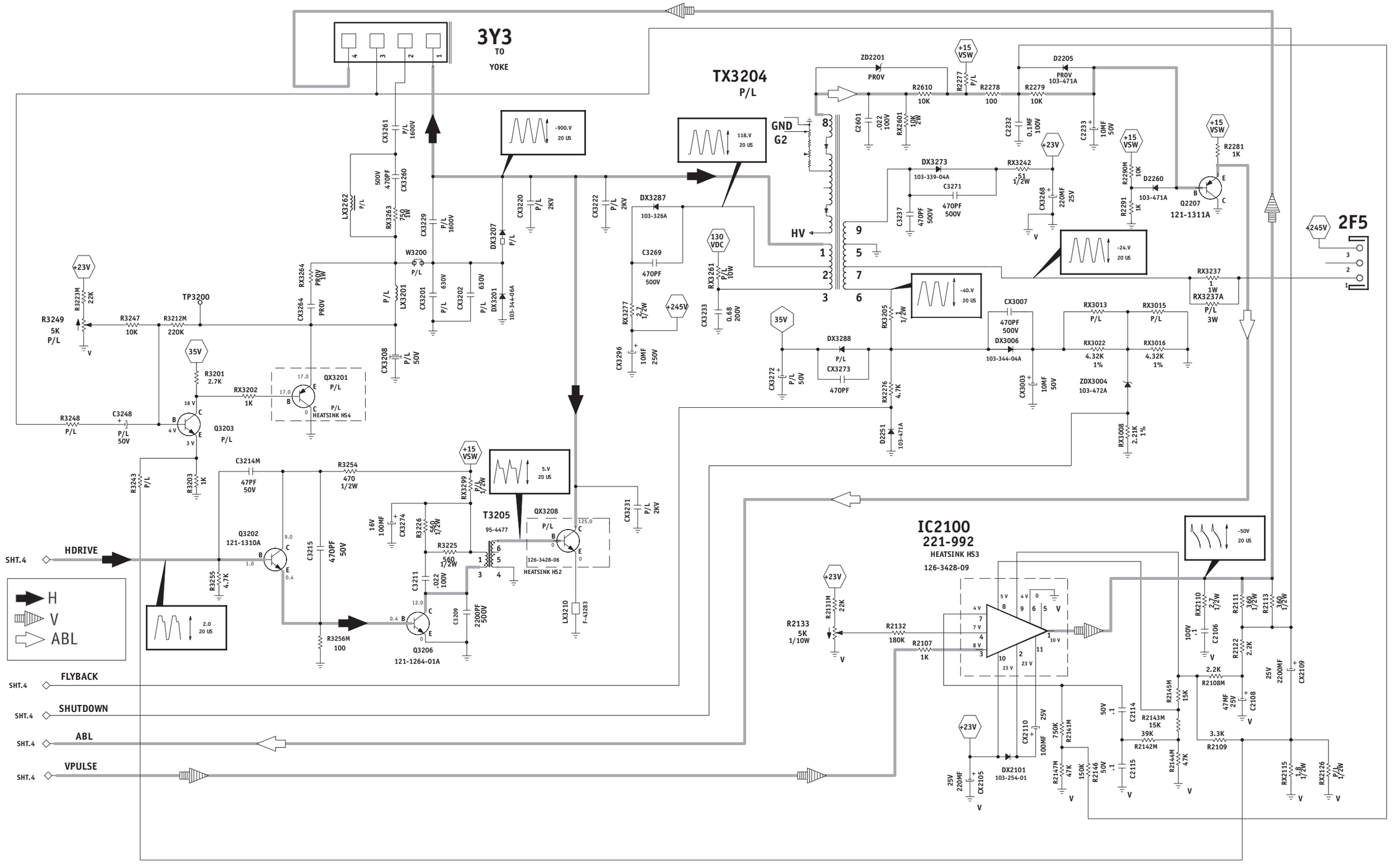
GX Commercial Switch Mode Regulator (9-1612/1616)



GX Commercial MicroController/Tuner (9-1612/1616)



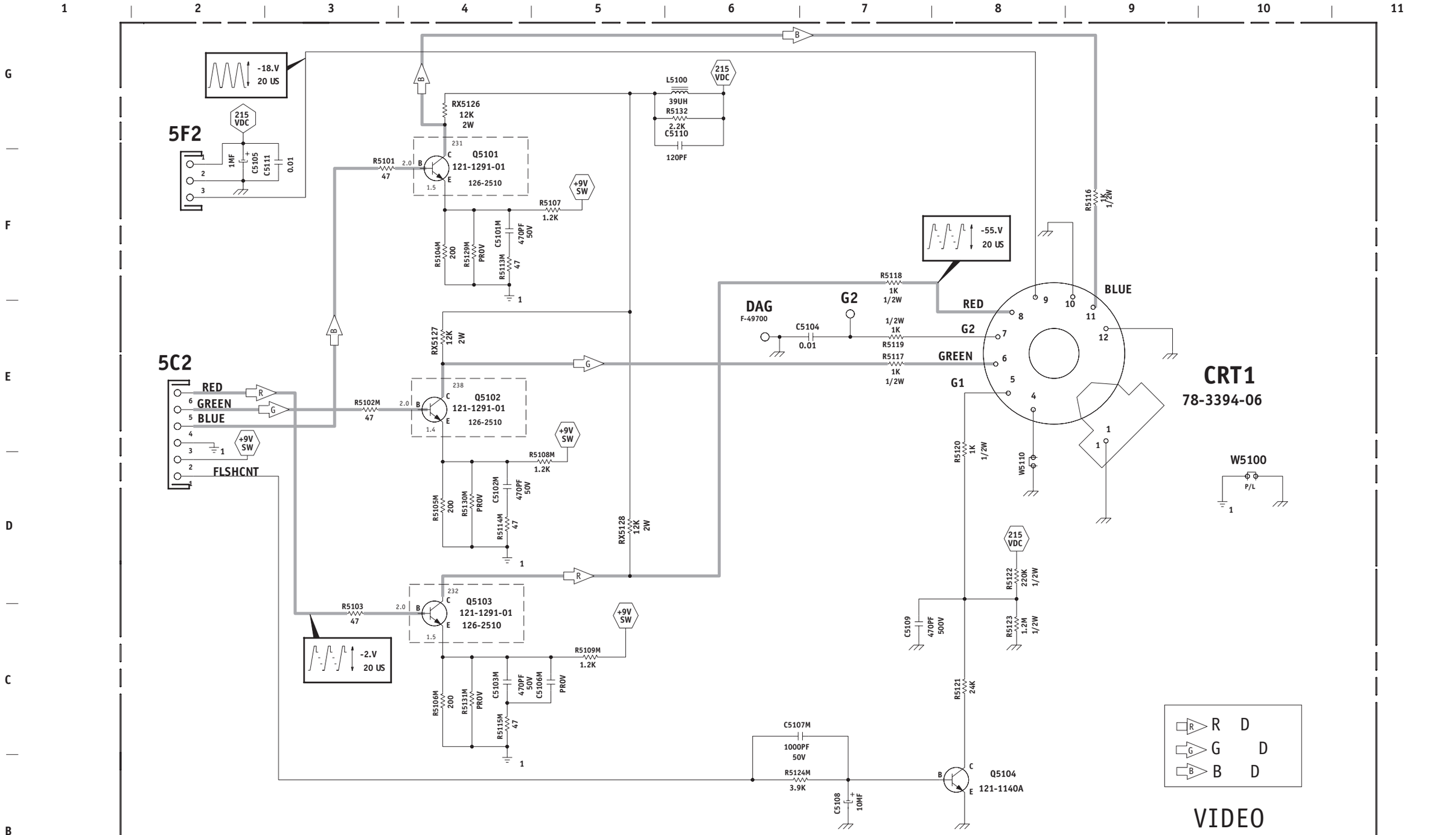
GX Commercial Horizontal / Vertical Deflection (9-1612/1616)



CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER ⚠ IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH M ON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

GX Commercial Video Output (9-1612/9-1616)

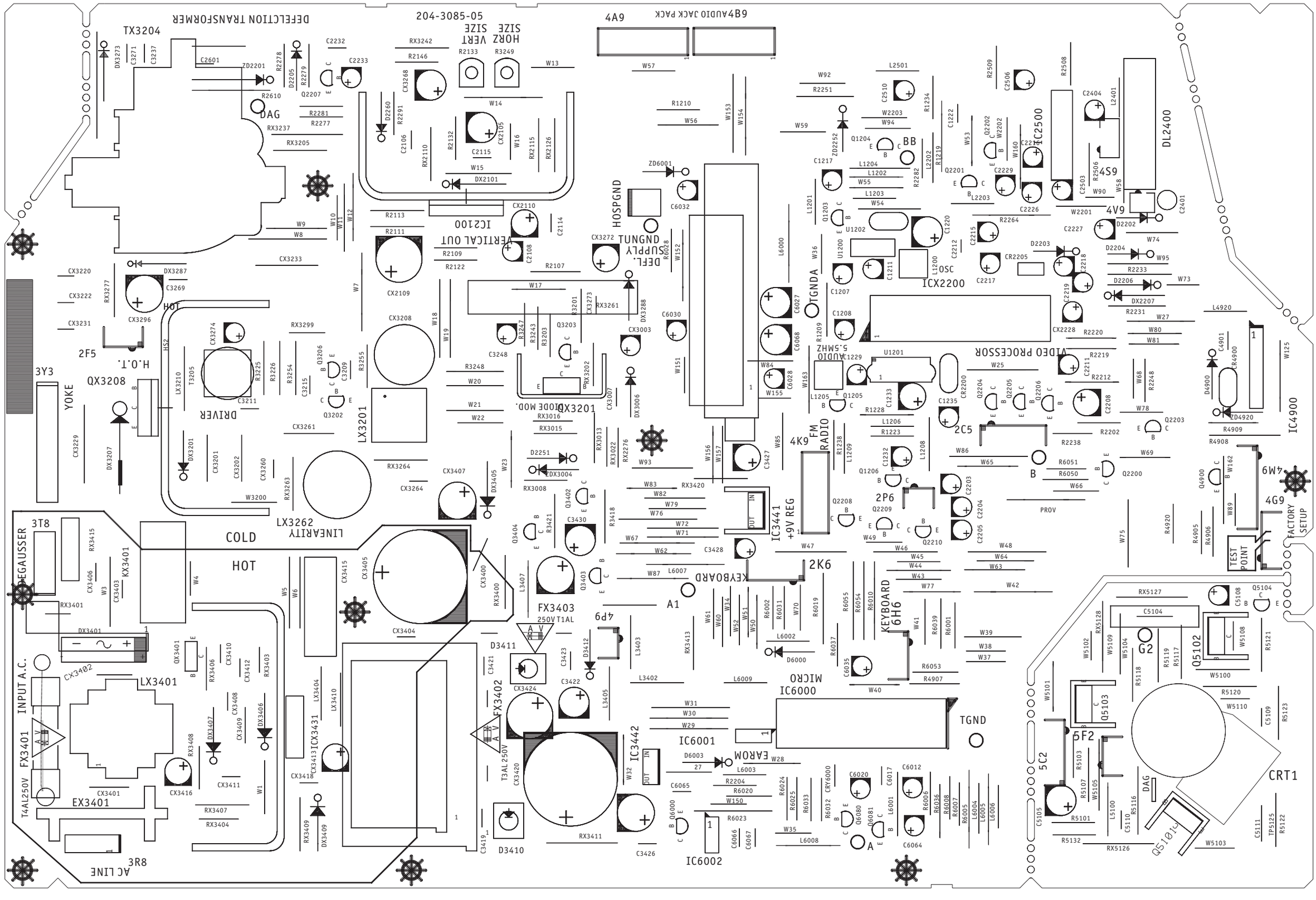


VIDEO OUTPUT SECTION BREAKAWAY

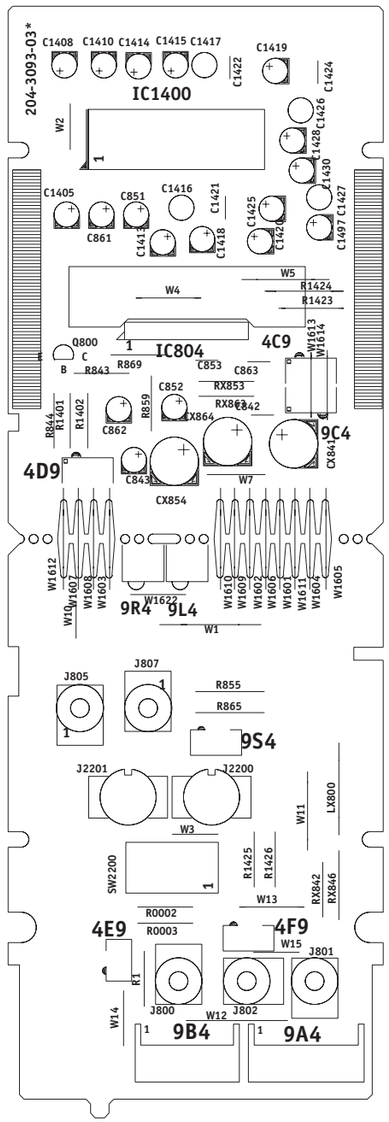
ALL SYMBOLS WITH M ON END OF DESIGNATOR INDICATE MELF SURFACE MOUNTED COMPONENT.

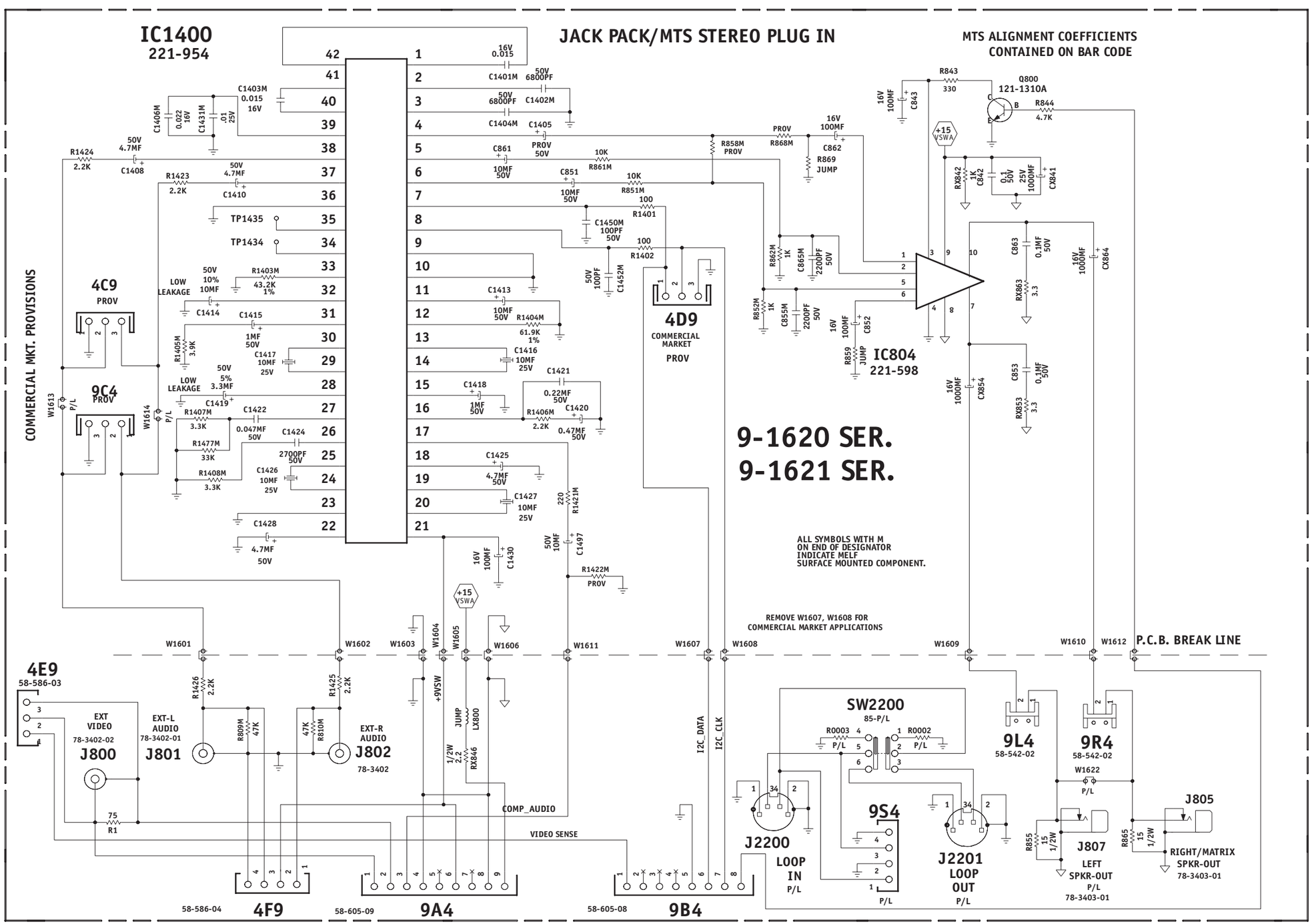
MAIN CHASSIS SHEET 4 THRU SHEET 7

GX Commercial Main Chassis PCB Layout (9-1612-02/1614-02)

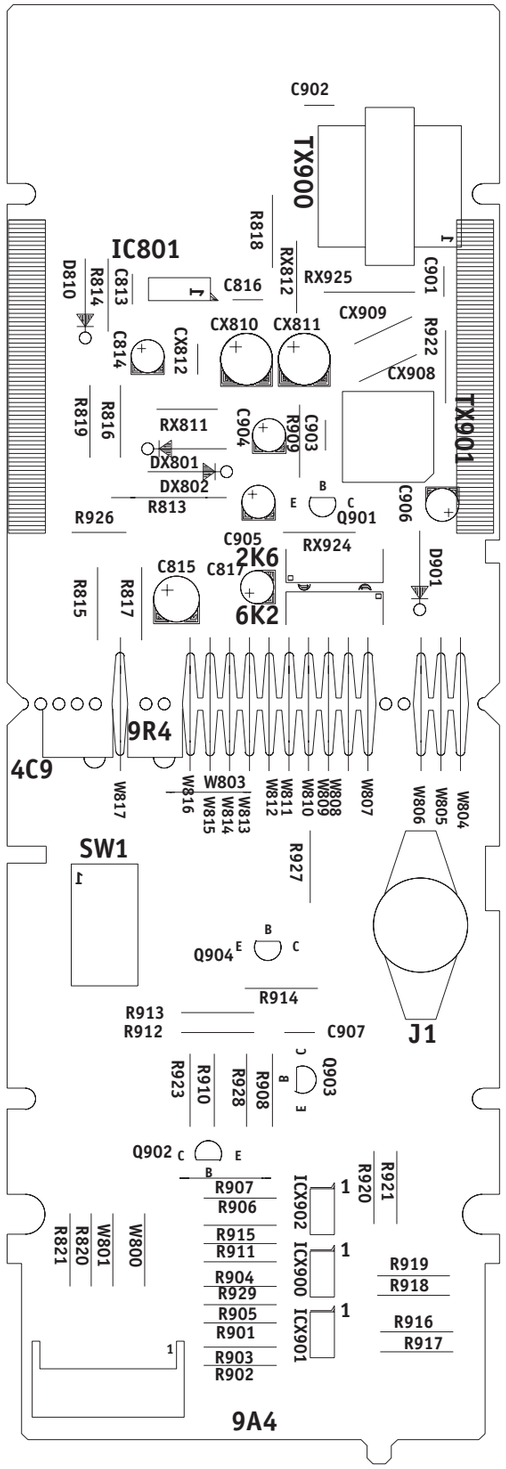


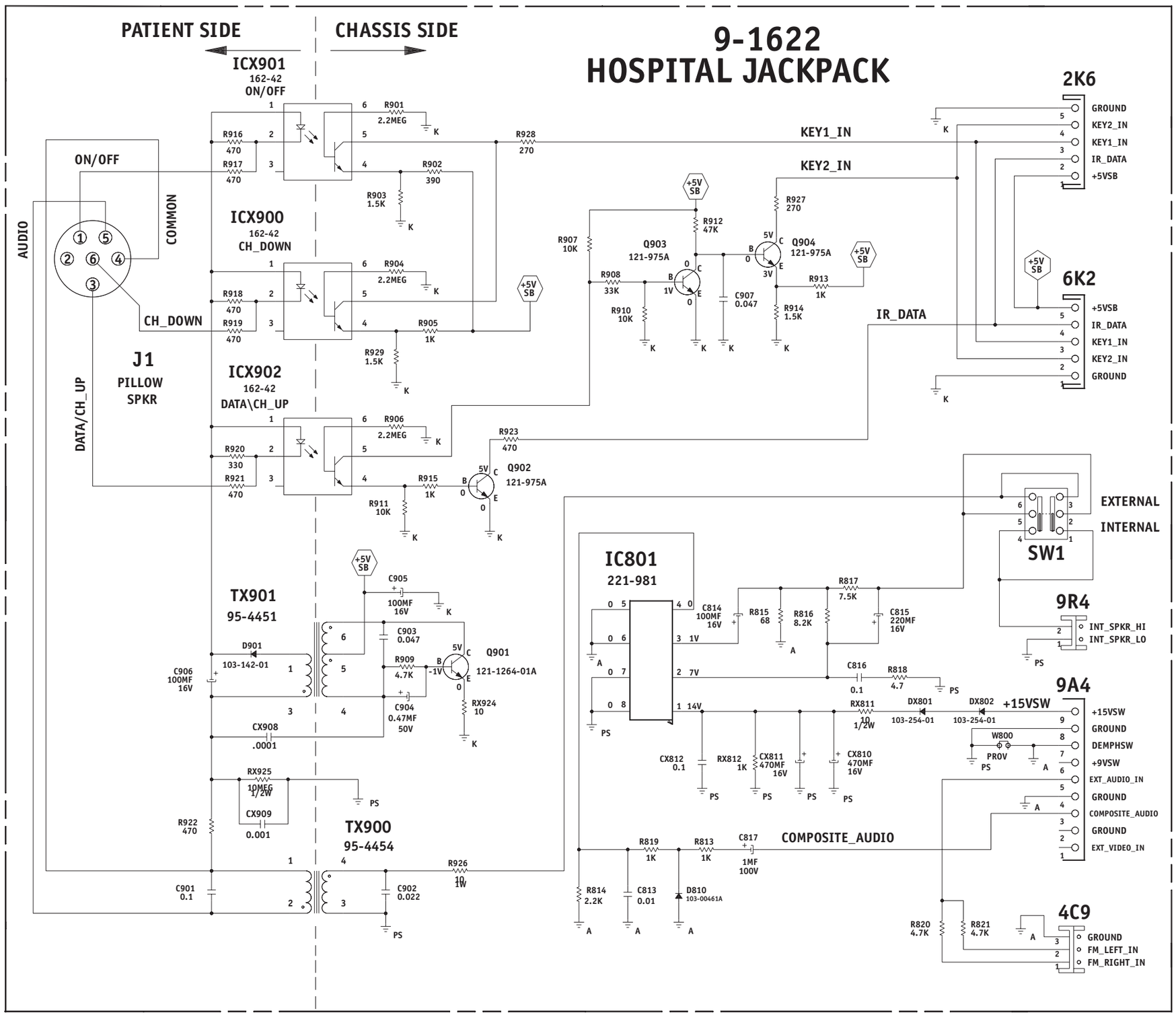
GX Commercial Jackpack MTS Stereo (9-1620/1621)





GX Commercial Hospital Jackpack (9-1622)



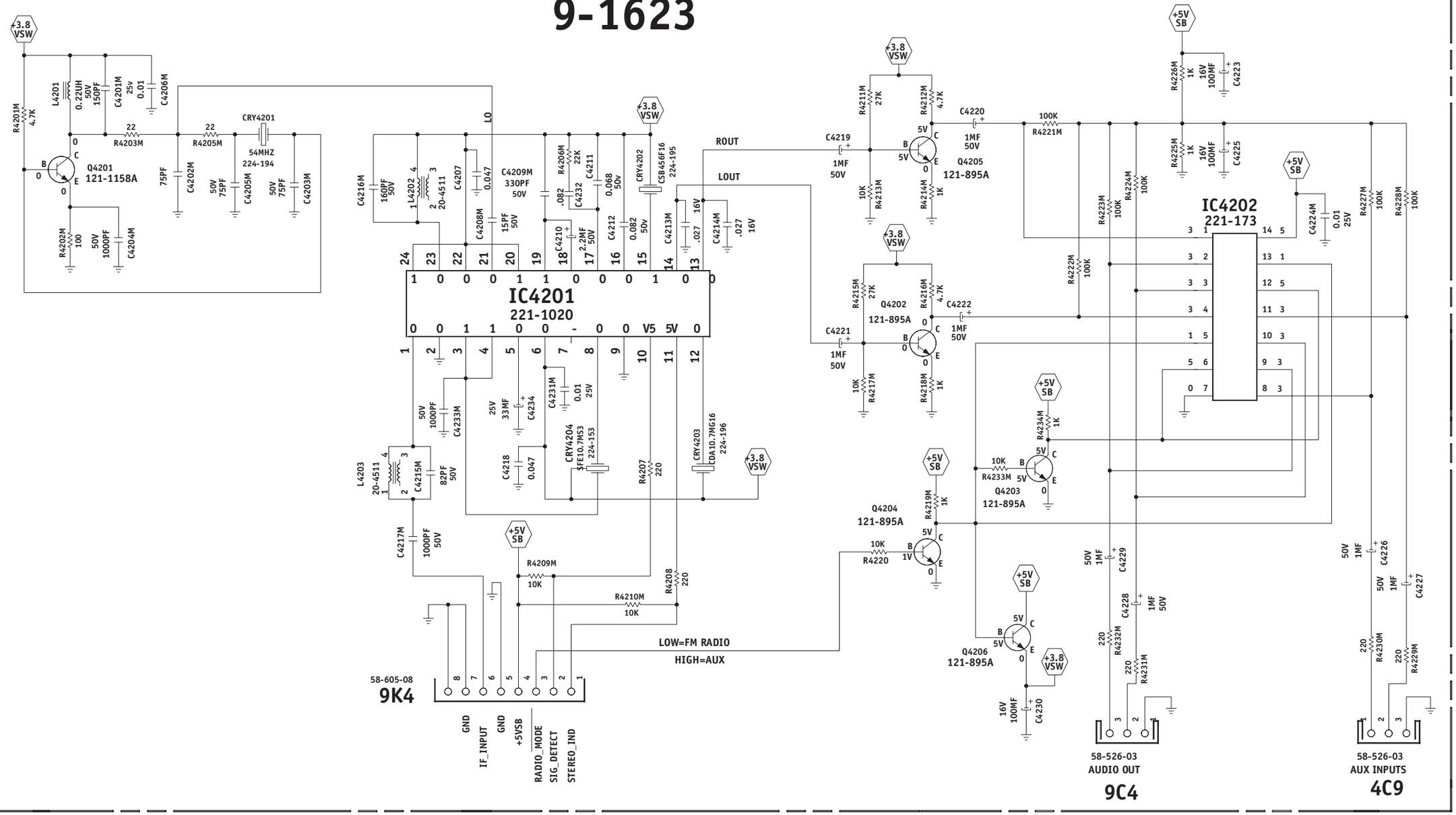


CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER Xi IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH MiON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

GX Commercial IF, FM, & Stereo Demodulator (9-1623)

9-1623

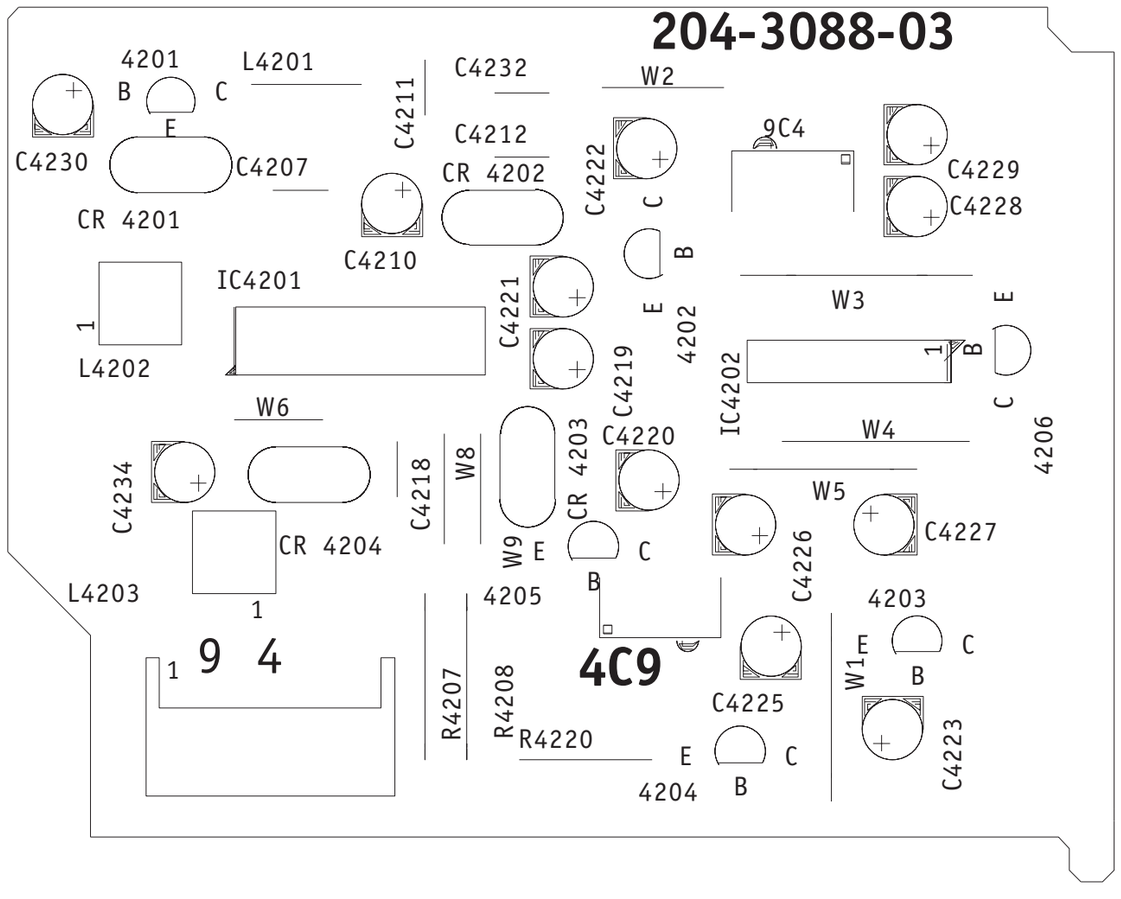


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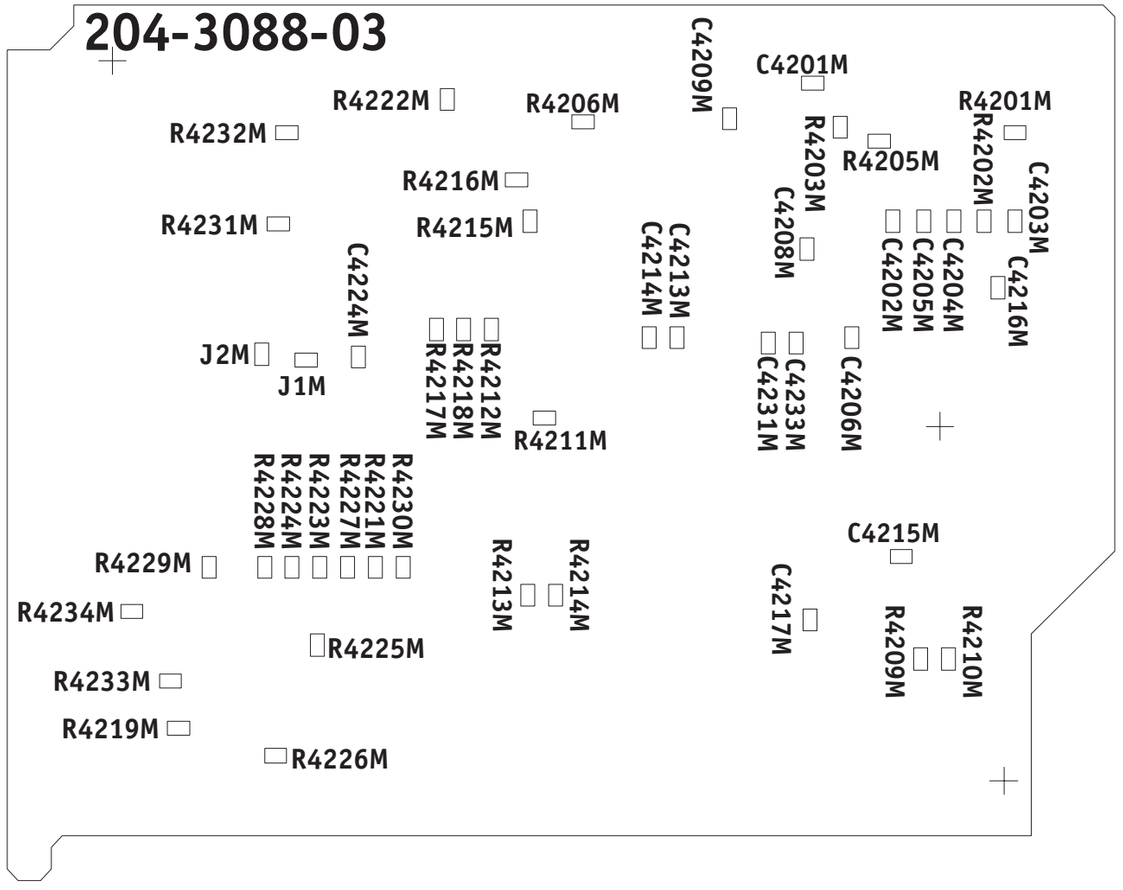
ALL SYMBOLS WITH MiON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

GX Commercial IF, FM, & Stereo Demodulator PCB Layout (9-1623)

PCB Component Side



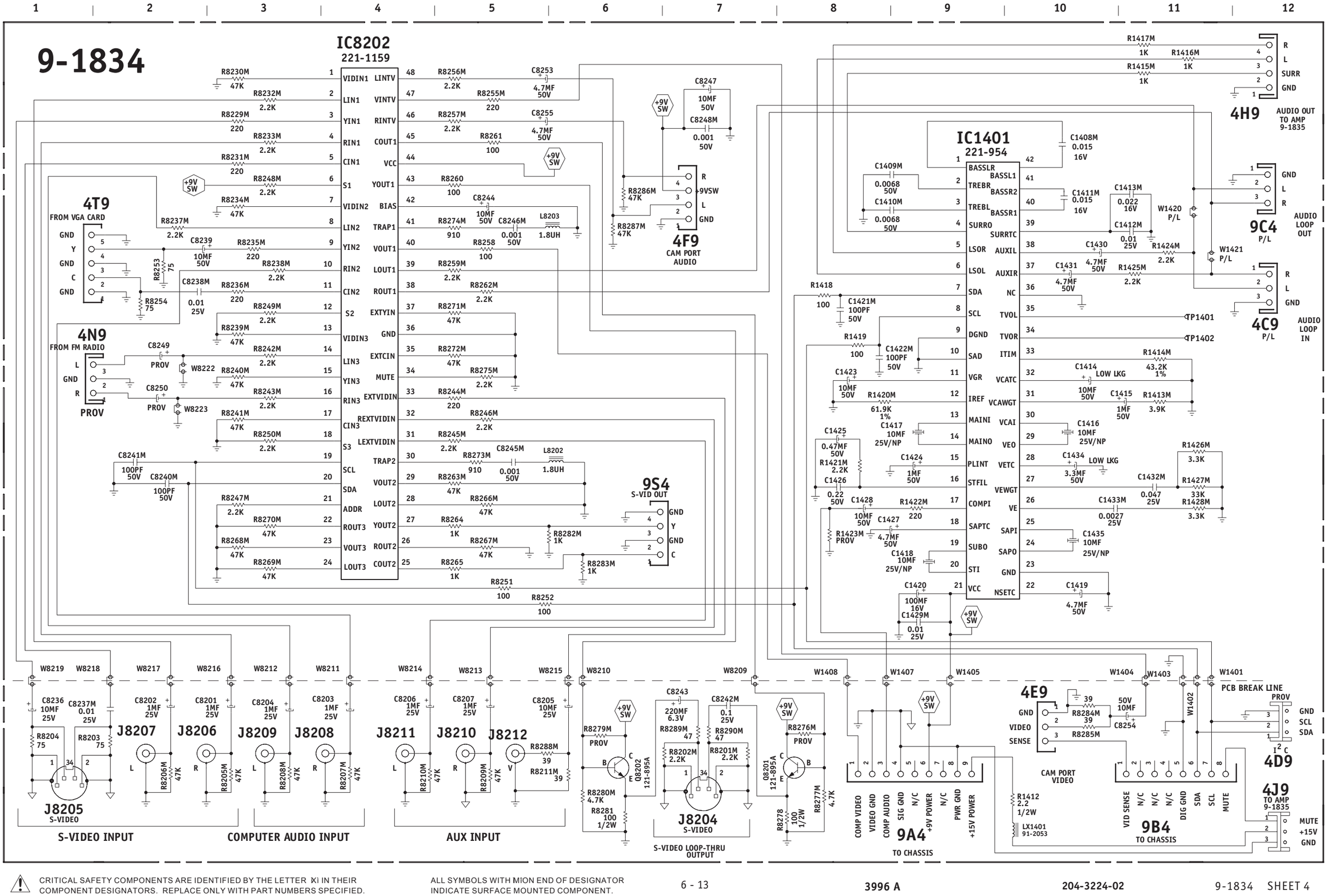
PCB SMD (Foil Side)



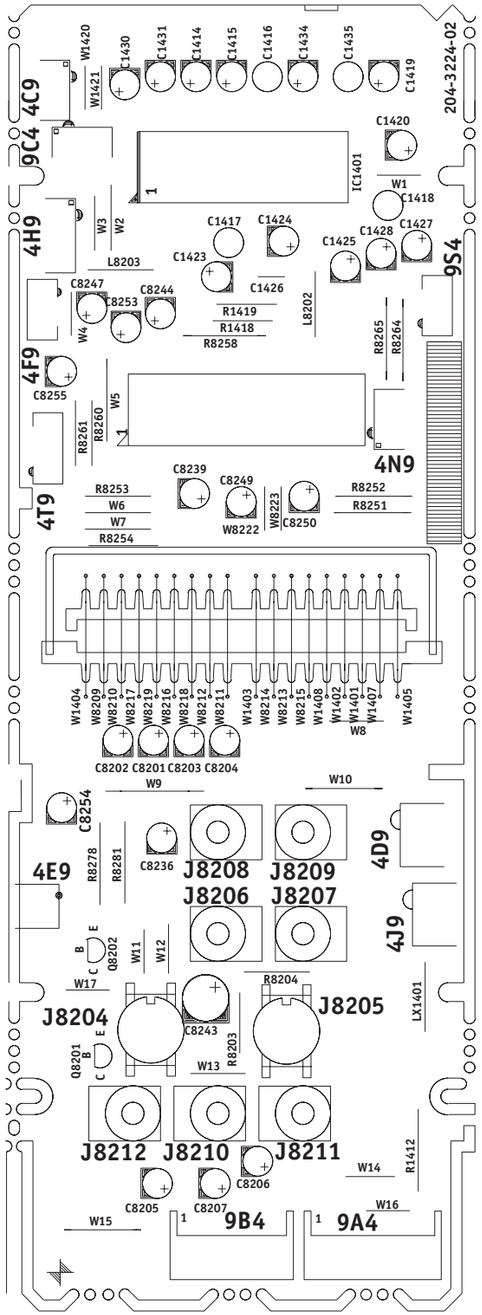
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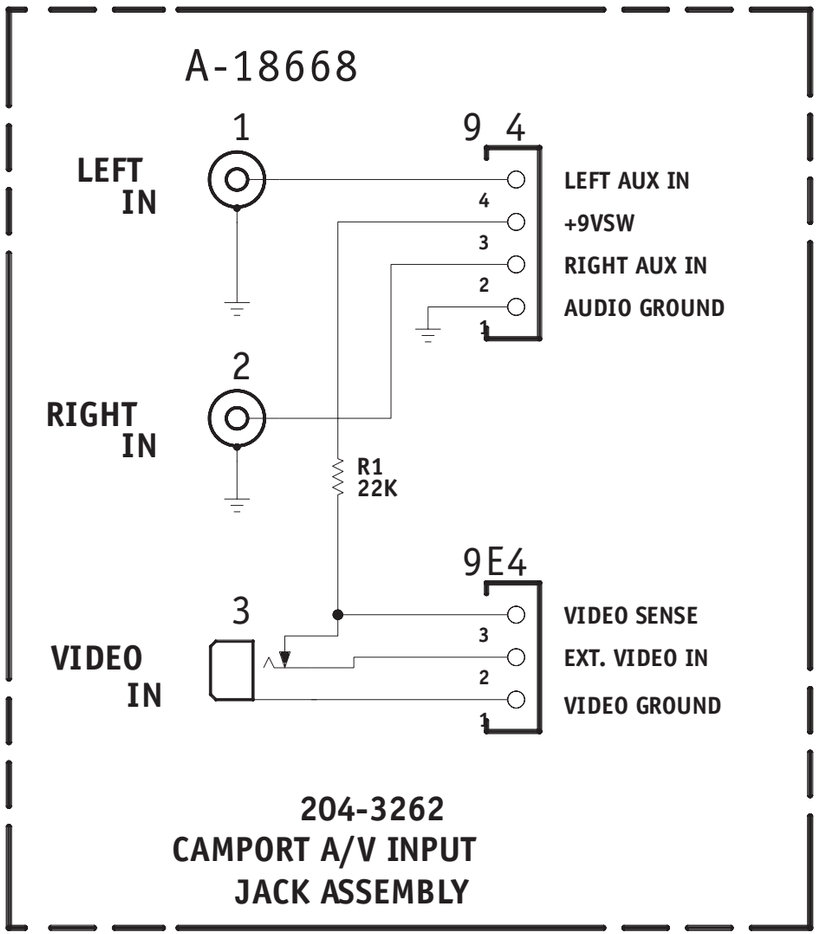
GX Commercial Multi-Input Jackpack (9-1834)



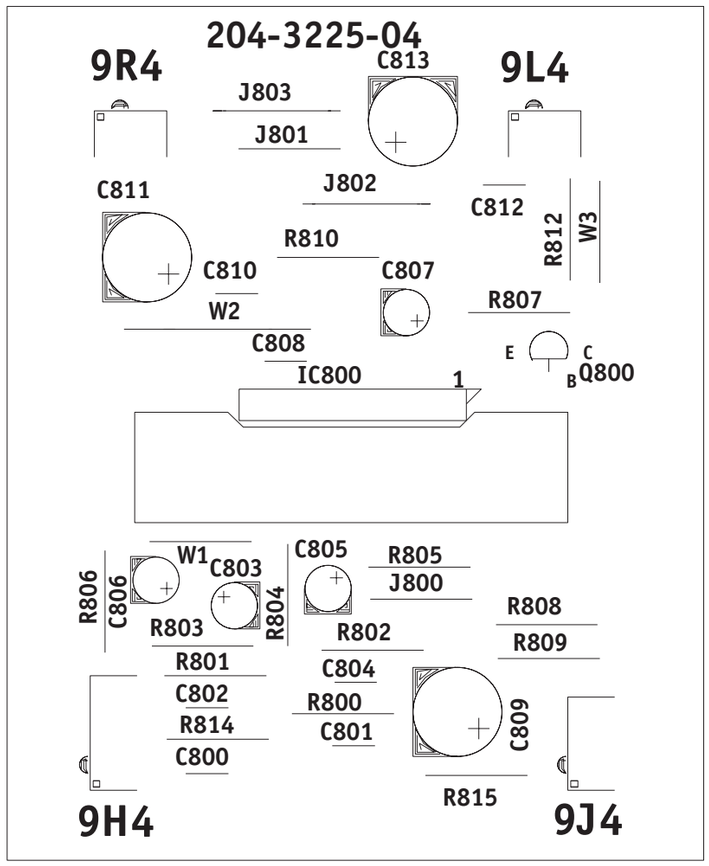
GX Commercial Multi-Input Jackpack (9-1834)

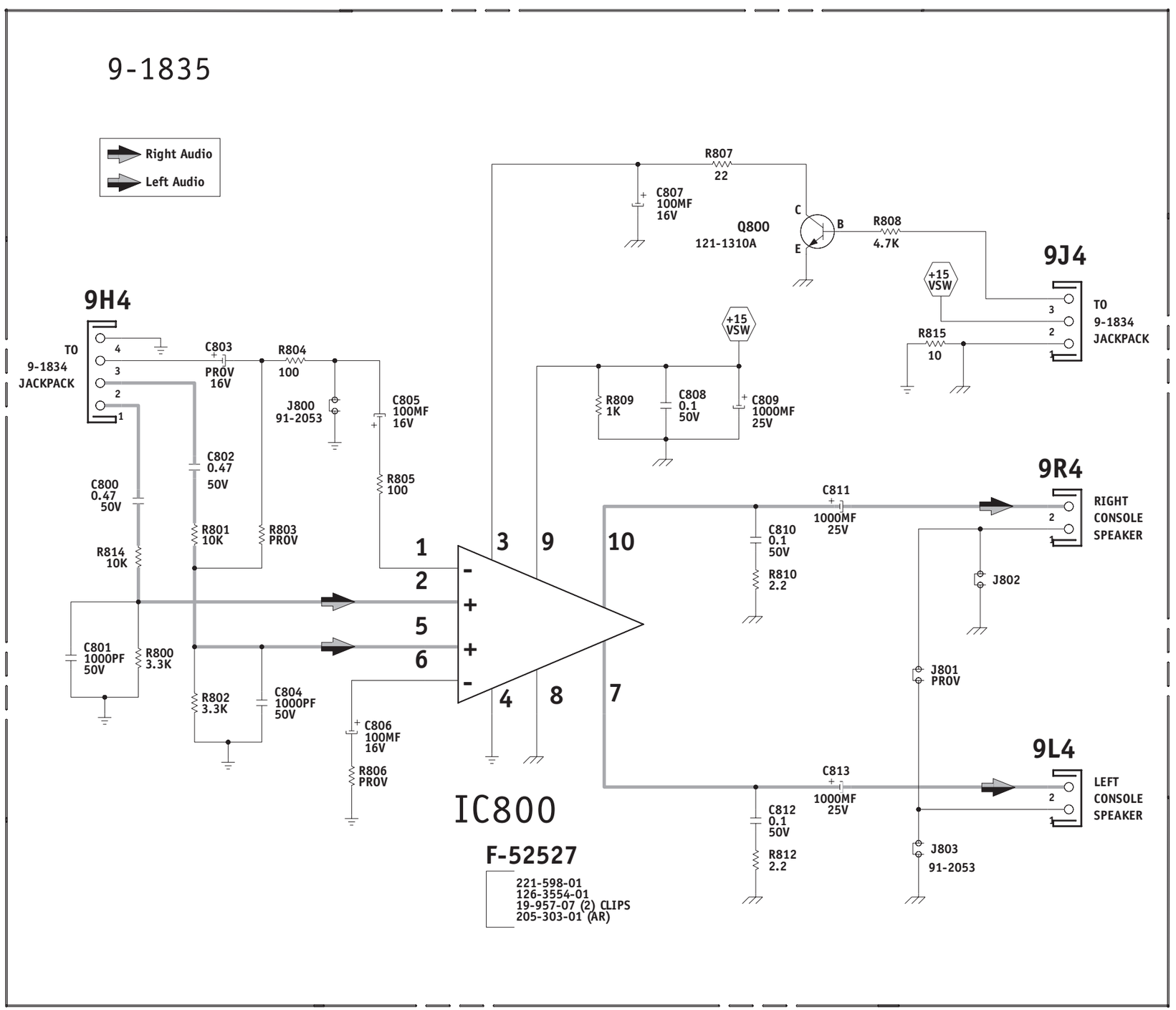


GX Camport A/V Input Jack Assembly (A-18668)

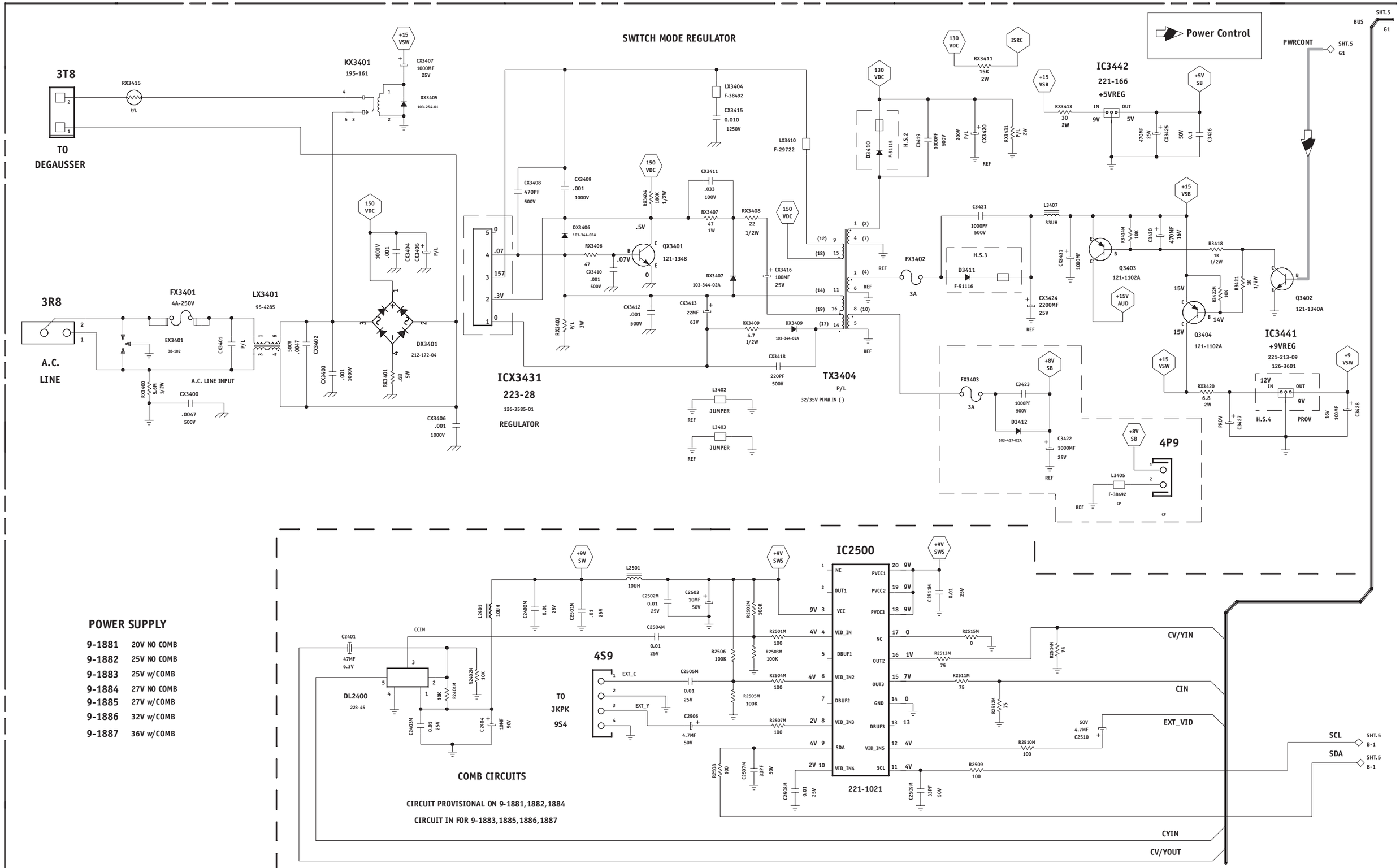


GX Commercial Stereo Audio Power Amplifier (9-1835)





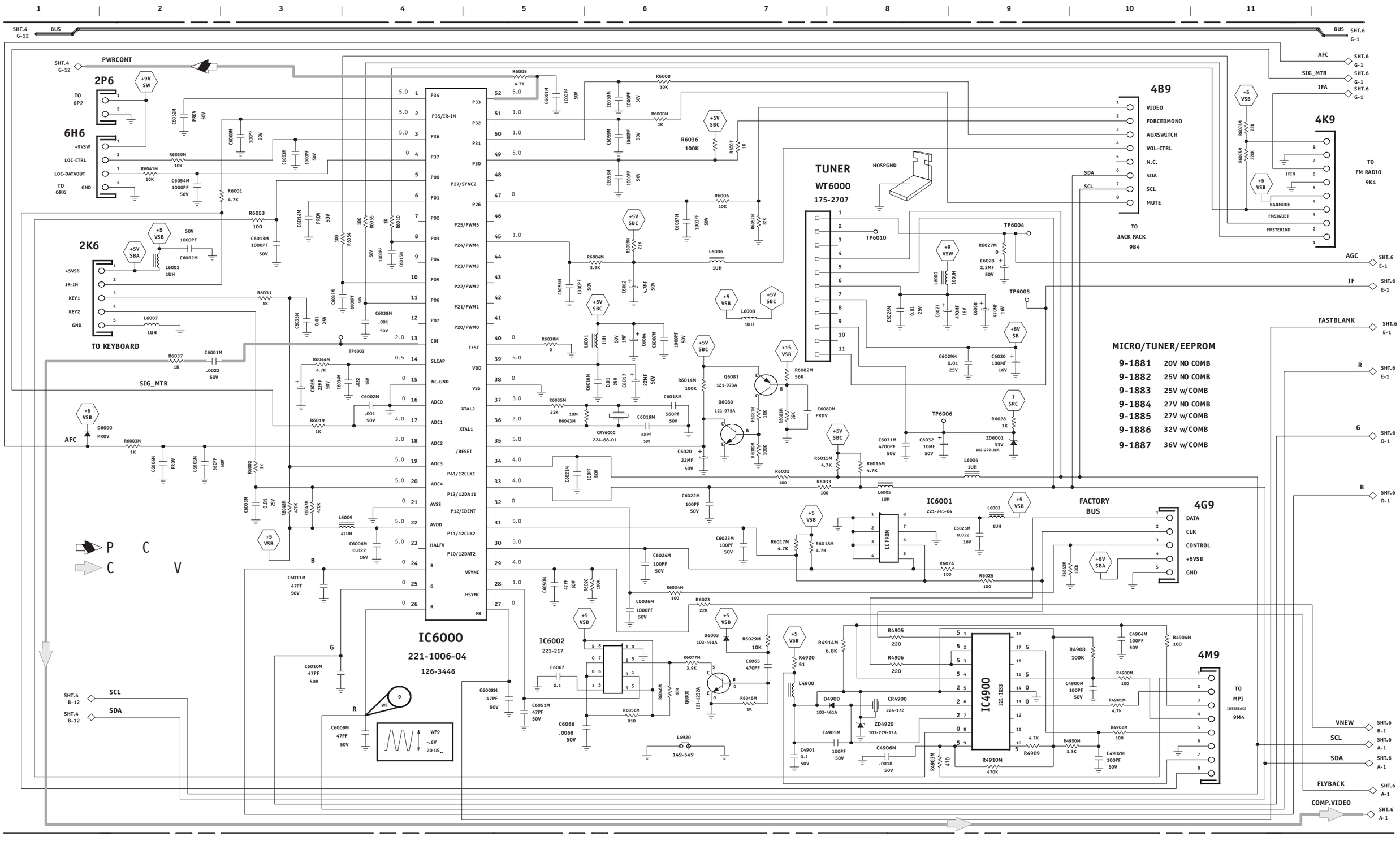
GX Commercial Power Supply/Comb Filter (9-1881/1887)



CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER Xi IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH MiON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

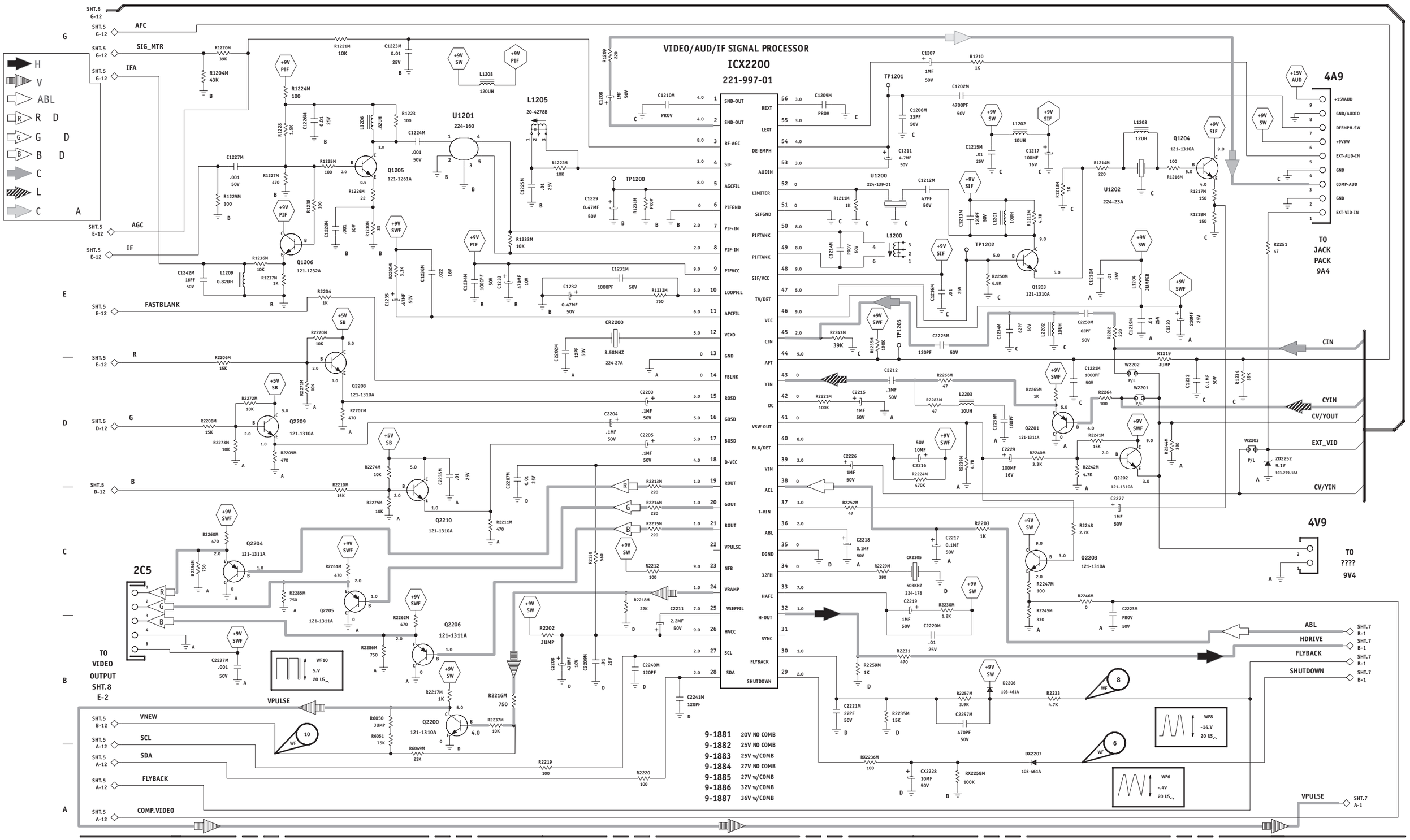
GX Commercial MicroController/Tuner (9-1881/1887)



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GX Commercial Audio/Video Processor (9-1881/1887)



CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER "i" IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH "ION END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

GX Commercial Horizontal / Vertical Deflection (9-1881/1887)

DEFLECTION CIRCUITS

9-1881	20V NO COMB
9-1882	25V NO COMB
9-1883	25V w/COMB
9-1884	27V NO COMB
9-1885	27V w/COMB
9-1886	32V w/COMB
9-1887	36V w/COMB

3Y3 TO YOKE

TX3204 P/L

2F5 TO VIDEO OUTPUT SHT.8 G-2

IC2100 221-992 HEATSINK HS3 126-3428-09 VERTICAL OUTPUT

T3205 95-4477

Q3202 121-1310A

Q3203 P/L

Q3206 121-1264-01A

Q2207 121-1311A

Q2211 121-1310A

QX3201 P/L

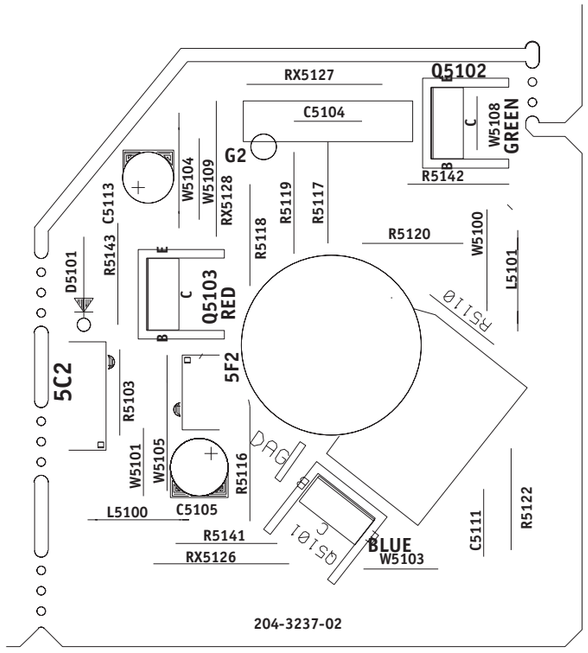
QX3208 P/L 126-3428-06

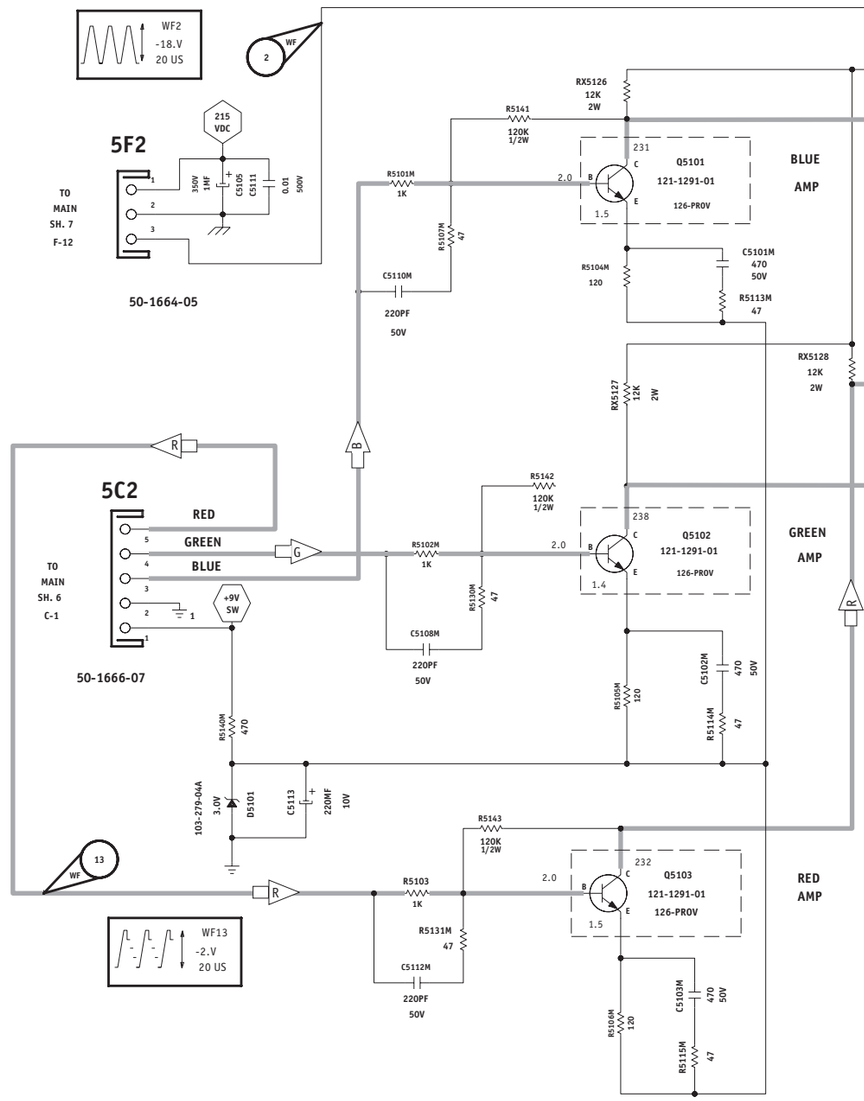
H.O.T.

H
V
ABL

SHT.6 B-12 ABL
SHT.6 B-12 HDRIVE
SHT.6 B-12 FLYBACK
SHT.6 B-12 SHUTDOWN
SHT.6 A-12 VPULSE

GX Commercial Video Output (9-1881/1887)





9-1881 20V NO COMB
9-1882 25V NO COMB
9-1883 25V w/COMB
9-1884 27V NO COMB
9-1885 27V w/COMB
9-1886 32V w/COMB
9-1887 36V w/COMB

VIDEO OUTPUT

IMPORTANT NOTE:

R5110
27"----------OPEN
32"-------JUMPER WIRE
36"----15MEG RESISTOR 63-11272

THE COMPONENT IN LOCATION R5110 IS A FUNCTION OF PICTURE TUBE SCREEN SIZE AND THE ABOVE TABLE MUST BE FOLLOWED. OR DAMAGE TO THE PICTURE TUBE WILL OCCUR.

W5100 — F-47318

R D
G D
B D

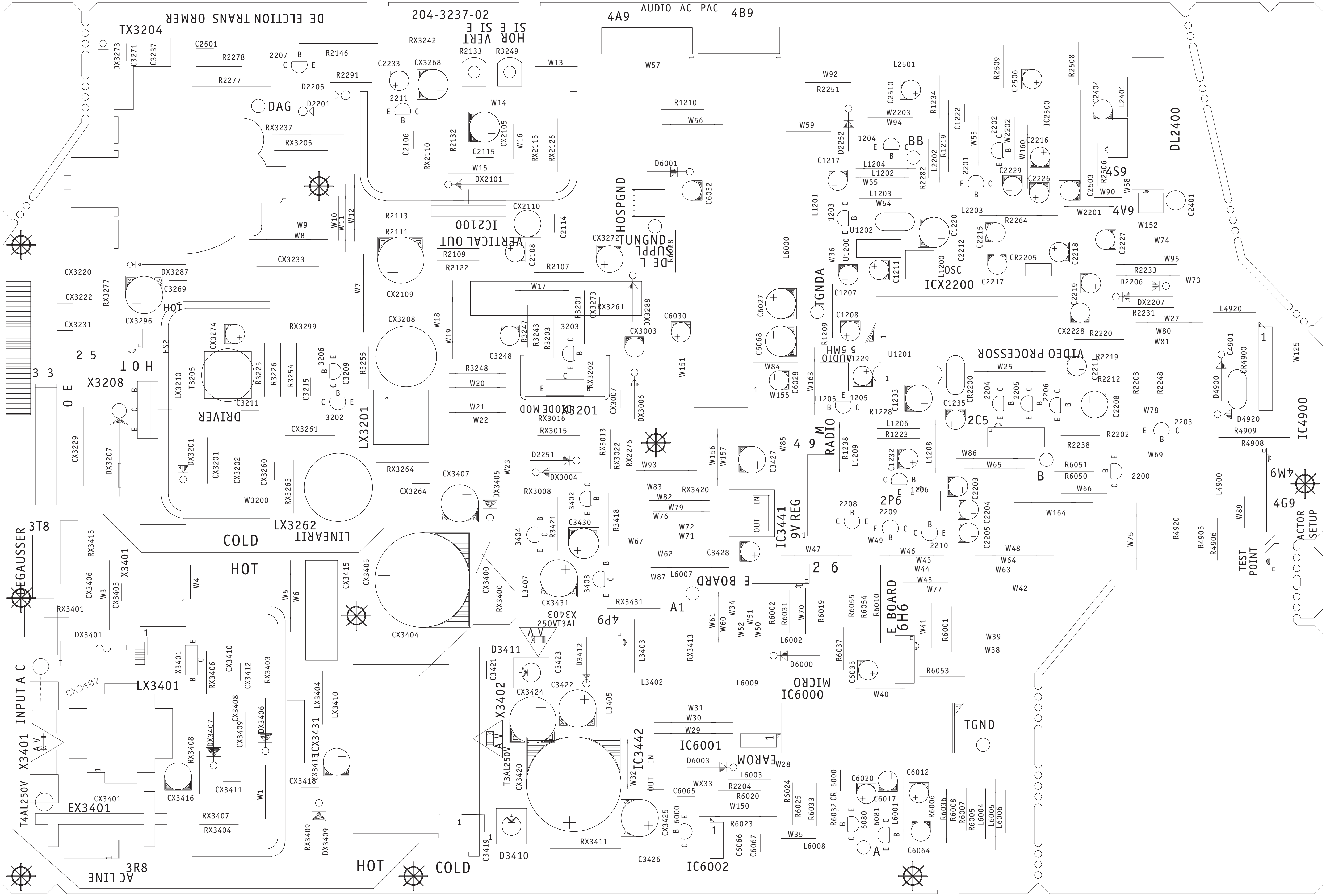
VIDEO OUTPUT SECTION BREAKAWAY

MAIN CHASSIS SHEET 4 THRU SHEET 7

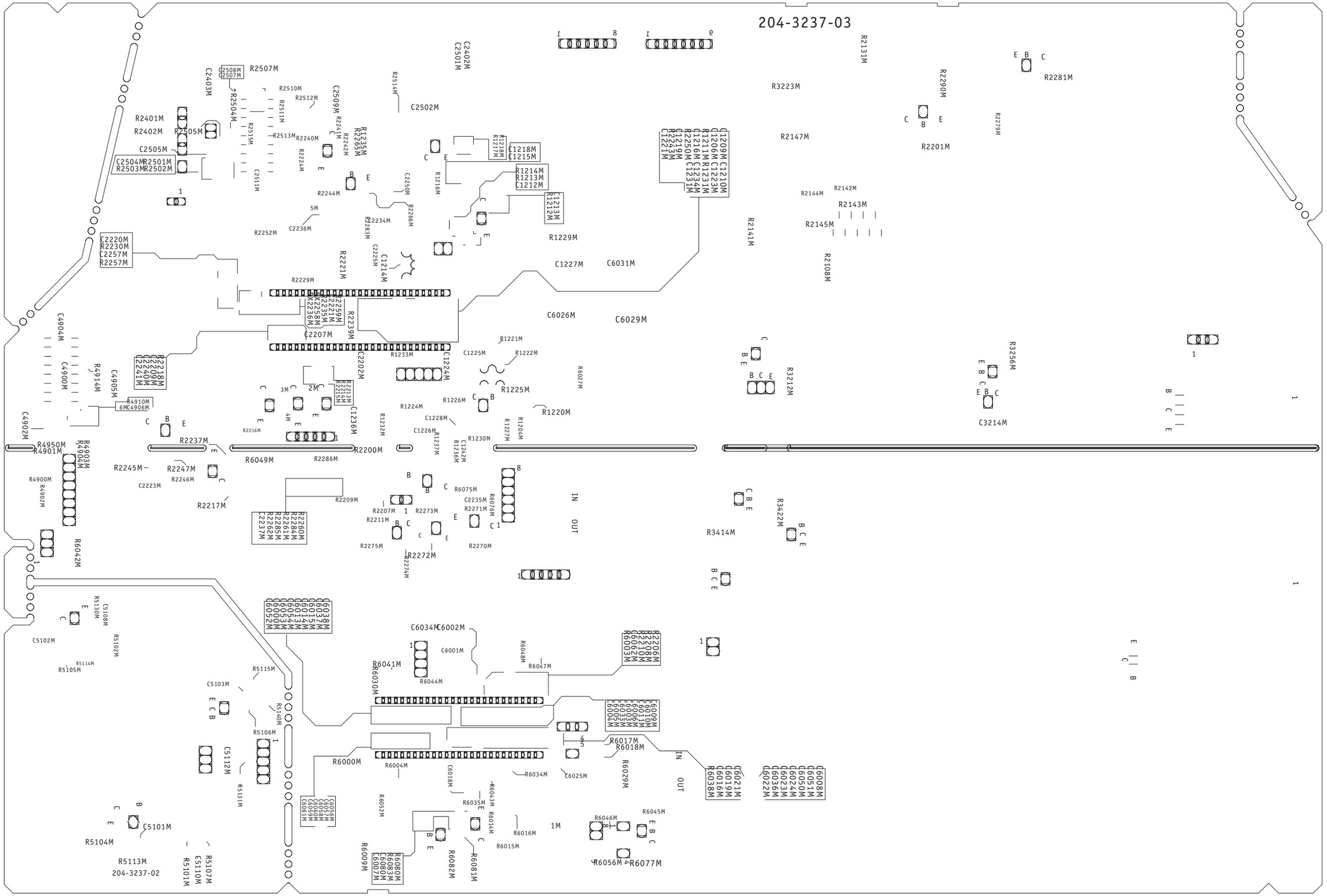
CRITICAL SAFETY COMPONENTS ARE IDENTIFIED BY THE LETTER Xi IN THEIR COMPONENT DESIGNATORS. REPLACE ONLY WITH PART NUMBERS SPECIFIED.

ALL SYMBOLS WITH MiON END OF DESIGNATOR INDICATE SURFACE MOUNTED COMPONENT.

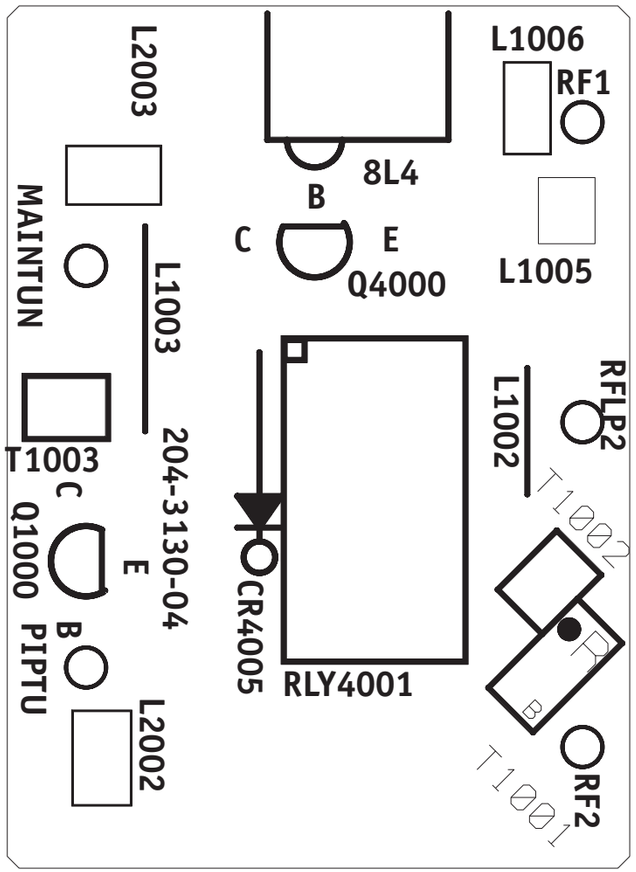
GX Commercial Main Chassis PCB Layout (9-1881/1887)

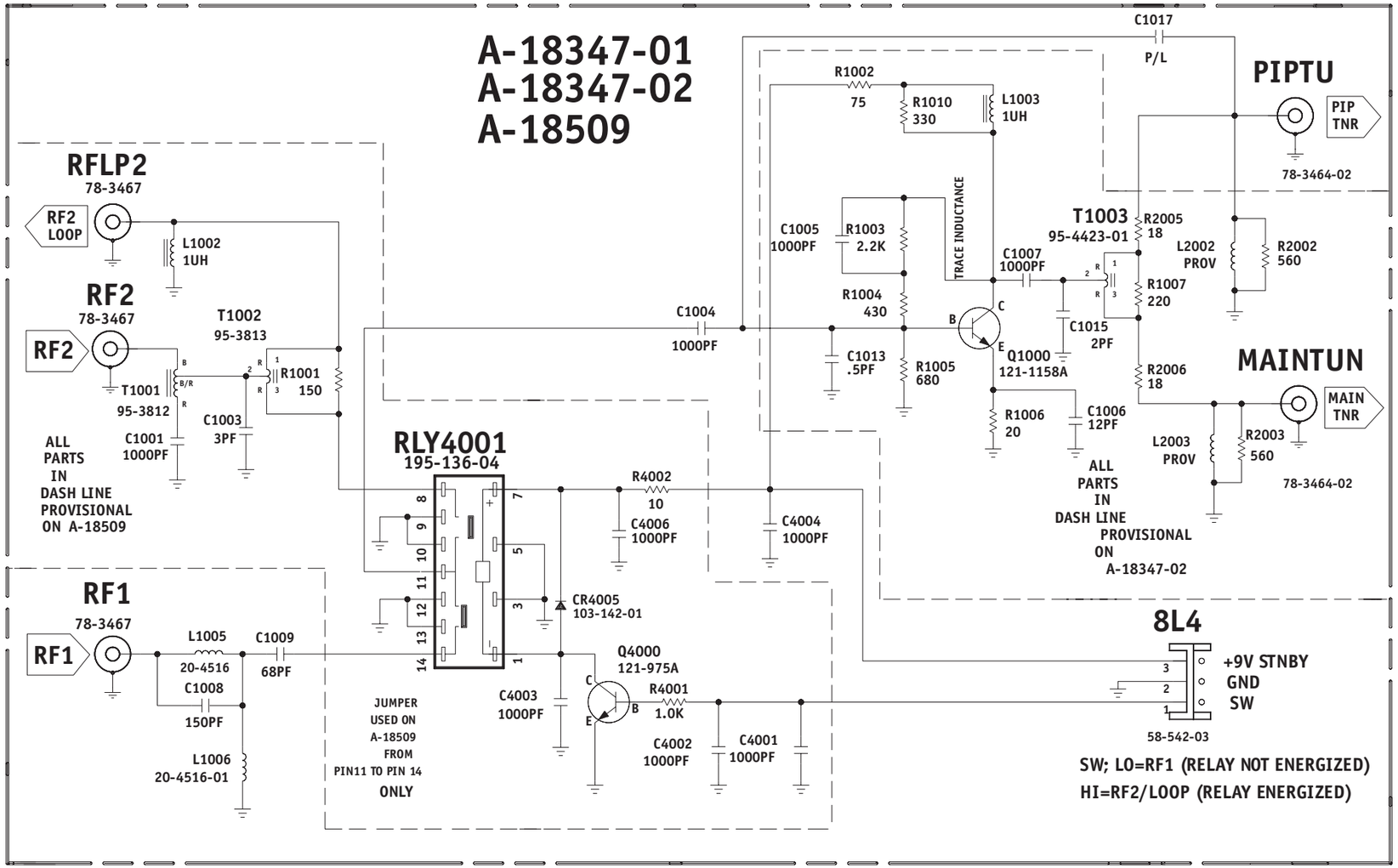


GX Commercial Main Chassis PCB SMD Layout (9-1881/1887)



GX Commercial Two Tuner Antenna Switch (A-18347)





FOR 2 TUNER SETS