

SERVICE MANUAL

SAT-W60 RM-Y804

U.S. Model



SAT-W60



RM-Y804

SPECIFICATIONS

Terminals:

Video In (2)
Video Out (2)
Audio (R/L) In (2)
Audio (R/L) Out (2)
S-Video In (1) /Out (1)
Tel Line (1)
Microphone In (1)
Printer Port (DB25) (1)
VCR Control (1)
Digital Audio Out (1)
USB Port (2)
Satellite In (2)
CH3-CH4 Switch (1)
VHF/UHF In/Out (1)
AC In (1)

Dimensions: (w/h/d)

430 x 70 x 290 mm (w/h/d)
(17 x 2^{3/4} x 11^{1/2} inches)

Weight:

Approx. 4.3 kg (9.4 lbs.)

Power Requirements:

AC 120V

Power Consumption:

90 W Max

Supplied Accessories:

Remote Control RM-Y804 (1)
Size AA Batteries (2)
AC Power Cord (1)
A/V (Audio/Video) Cable (1)
Telephone Cable (1)
S-Video Cable (1)
T Splitter (1)
Coaxial Cable (1)
IR Blaster (1)
Wireless Keyboard KI-W250 (1)
Access Card (1)

Optional Accessories:

Local Antenna ANJ-AA1
Installation Kit ANJ-DS2
Amplifier EAC-DA1
Diplexer EAC-DD1
Voltage Switch EAC-DV2
Satellite Dish Antenna: SAN-24MD1
SAN-18D3

Design and specifications are subject to change without notice.



INTERNET TERMINAL
SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampere). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63Trd are examples of passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Figure A)

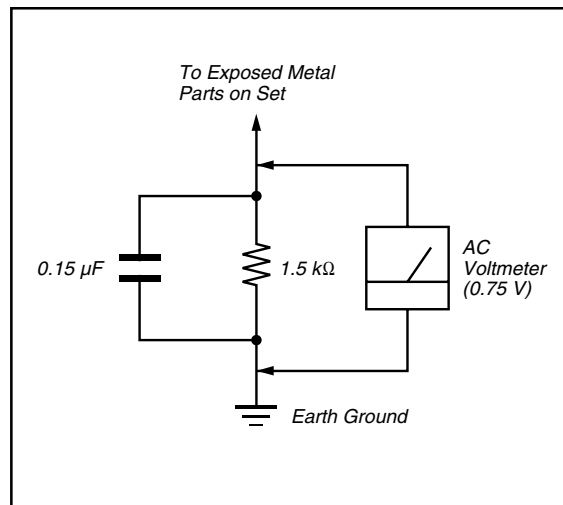


Figure A

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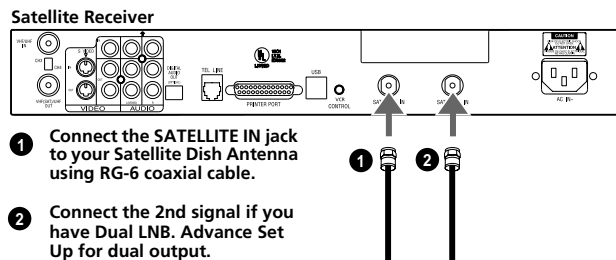
<i>Section</i>	<i>Title</i>	<i>Page</i>
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SECTION 1 GENERAL

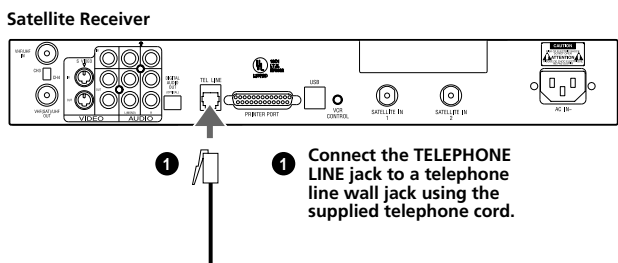
The instructions mentioned here are partial abstracts from the Operating Instruction Manual.
The page numbers shown reflect those of the Operating Instruction Manual.

Satellite Receiver

Step 1: Connecting the Antenna



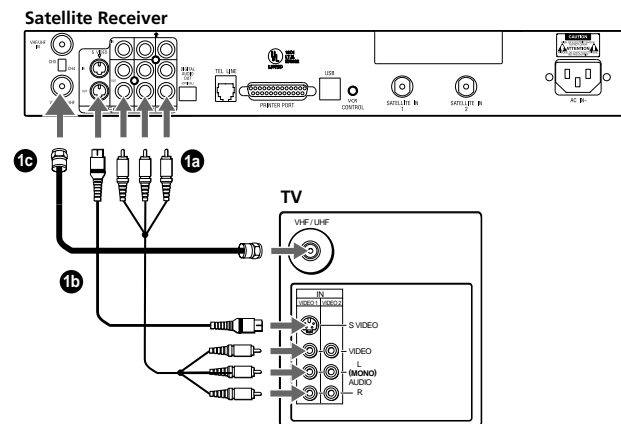
Step 2: Connecting Your Phone Line



10

Connecting Your Satellite Receiver

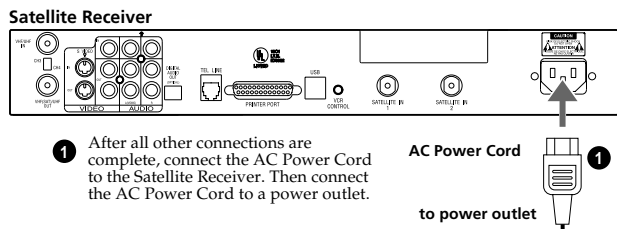
Step 3: Connecting Your TV Set



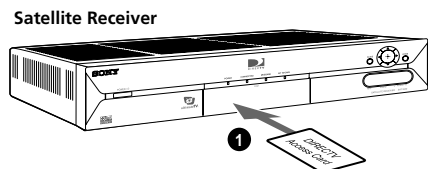
- Note**
With this connection, your input source is channel 3 or channel 4 depending on how you set the CH3/CH4 switch on the Satellite Receiver.

11

Step 4: Connecting the AC Power



Step 5: Checking the Access Card



- 1 Open the access door by applying gentle pressure to the latch and releasing. Make sure the DIRECTV Access Card is firmly inserted into the front left hand slot of the Satellite Receiver. After the DIRECTV Access Card is inserted (correctly), **DO NOT** remove it unless instructed to do so by your service provider.

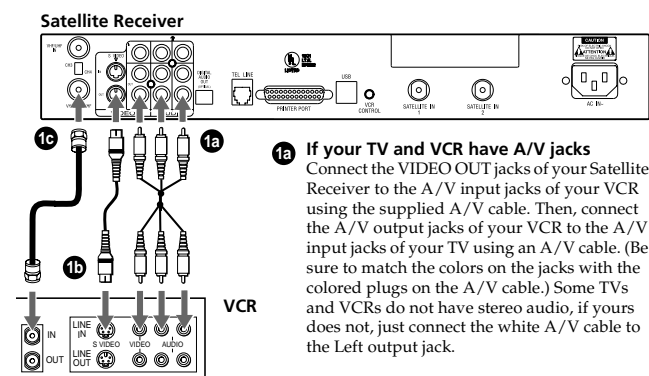
Step 6: Activating Your Service

After checking the DIRECTV Access Card and your Satellite Dish Antenna is installed, you are ready to begin enjoying service.

Call DIRECTV at 1-800-DIRECTV (347-3288) to begin digital satellite programming.

For DIRECTV and UltimateTV operational instructions, please refer to the User Guide.

Advanced Connection: Connecting Your VCR



- 1b If your TV and VCR have S-Video jacks
Use an S-Video cable instead of the yellow video connection. S-Video cable is supplied.

Tip
To allow your Satellite Receiver to control the recording functions of your VCR, see page 14.

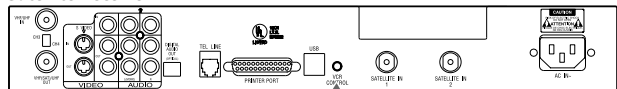
- 1c If your TV and VCR do not have A/V jacks
Connect the VHF(SAT)/UHF OUT jack on the Satellite Receiver to the VHF/UHF input jack on your VCR using coaxial cable. Then, connect the VHF/UHF output jack on your VCR to the VHF/UHF input jack on your TV using a second coaxial cable. Set the CH3/CH4 switch to the channel that does not carry off-air broadcasts in your area.

Note
With this connection, your input source is channel 3 or channel 4 depending on how you set the CH3/CH4 switch on

Satellite Receiver

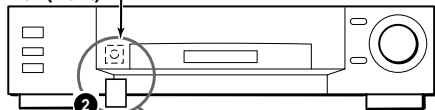
Advanced Connection: Connecting Your IR Blaster

Satellite Receiver



- 1** To allow the Satellite Receiver to control your VCR
Connect the IR Blaster to the VCR CONTROL jack on the Satellite Receiver.

VCR (front) IR Sensor



- 2** In front of the VCR
Place the IR Blaster under and in front of the VCR. The IR Blaster must extend just in front of the infrared sensor of the VCR.

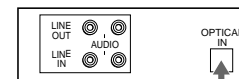
Tip

If the infrared sensor is not marked on your VCR, shine a flashlight into the front panel of the VCR to locate the sensor.

Connecting Your Satellite Receiver

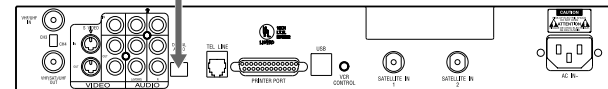
Advanced Connection: Connecting an Audio System

Audio Receiver



- 1** If you have a digital or Dolby Digital audio system
Connect the DIGITAL OUT (OPTICAL) of the Satellite Receiver to the optical digital input of your audio system.

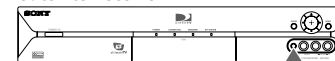
Satellite Receiver

**Tip**

If you connect your Satellite Receiver to a Dolby Digital receiver, set the Dolby Digital option of the Audio display to Auto Select.

Advanced Connection: Connecting a Microphone

Satellite Receiver



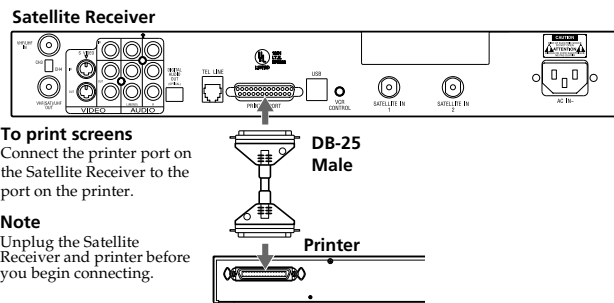
- 1** If you have a Microphone
First, remove the cover from the microphone jack, then connect the microphone plug to the Satellite Receiver's Microphone IN jack.

Tip

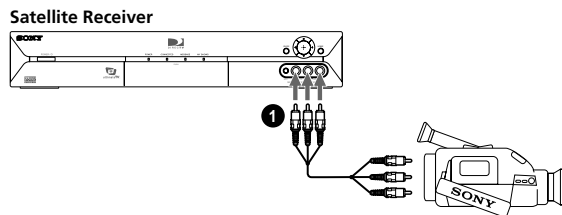
Check "Help" screen for a list of compatible microphones.

Advanced Connection: Connecting a Printer

Connecting a printer to your Satellite Receiver enables you to print Web pages and e-mail messages. The Satellite Receiver is not compatible with all printers. Check the on-line instructions for a list of the latest compatible printers.

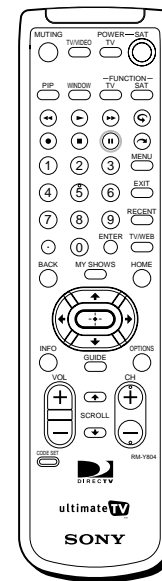


Advanced Connection: Connecting a Camcorder



1 If you have a Camcorder
First, remove the cover from the A/V jacks, then, using A/V cables, connect the camcorder's A/V OUT jacks to the Satellite Receiver's A/V IN jacks.

Note
If you have a mono camcorder, connect its left audio output to the Satellite Receiver's AUDIO L (white) jack.



Muting	Press to mute the sound. Press again, or press VOL +, to restore the sound. (For the TV only)
TV/VIDEO	Cycles through the video inputs of your TV.
TV POWER	Turns your TV on and off.
SAT POWER	Turns your Satellite Receiver on and off.
PIP	Turns the Picture-in-Picture features of the Satellite Receiver on and off.
WINDOW	Selects the active window while in PIP mode, allowing you to change the Main or PIP window. (For the Satellite Receiver only)
TV FUNCTION	Selects TV feature control.
SAT FUNCTION	Selects Satellite Receiver feature control.
↶ Button	Review button.
▶ Button	Play button.
⏩ Button	Forward scan button.
⏸ Button	Record button.
⏹ Button	Stop button.
⏸ Button	Pause button.
⏮ Button	Replay button.
⏭ Button	Jump ahead button.
0 - 9 Buttons	Select channels or enter numbers in text boxes.
○	Adds period to separate major/minor channel numbers.
MENU	Opens the TV Main Menu.
EXIT	Closes all on-screen displays, including program guides and menus.
ENTER	Activates the selected channel on your TV.

Satellite Receiver

OPTIONS	Displays the OPTIONS panel.
RECENT	Displays and allows you to access the most recently viewed Web pages and TV channels.
SCROLL ▲/▼ Buttons	Moves the page up or down when the page is too long to be displayed on the screen.
HOME	Displays the Web Home or TV Home screen.
BACK	Displays the last screen viewed, or hides the on-screen keyboard.
TV/WEB	Press the button to switch between TV and WebTV modes.
Arrow Buttons	Move the yellow highlight box to a different command or activity on the screen; select different keys when the on-screen keyboard is displayed.
MY SHOWS	Displays a list of programs that you have recorded with your Satellite Receiver.
INFO	Displays information on the program you are viewing.
GUIDE	Displays information on available programs, including channel, time and date.
◆ Button	Activates a highlighted link or command; displays the on-screen keyboard.
VOL +/-	Increases and decreases the volume.
CH +/-	Moves to the next or previous channel.
CODE SET	Used for programming the remote control to operate your TV. See page 21 for details.

Satellite Receiver

Troubleshooting

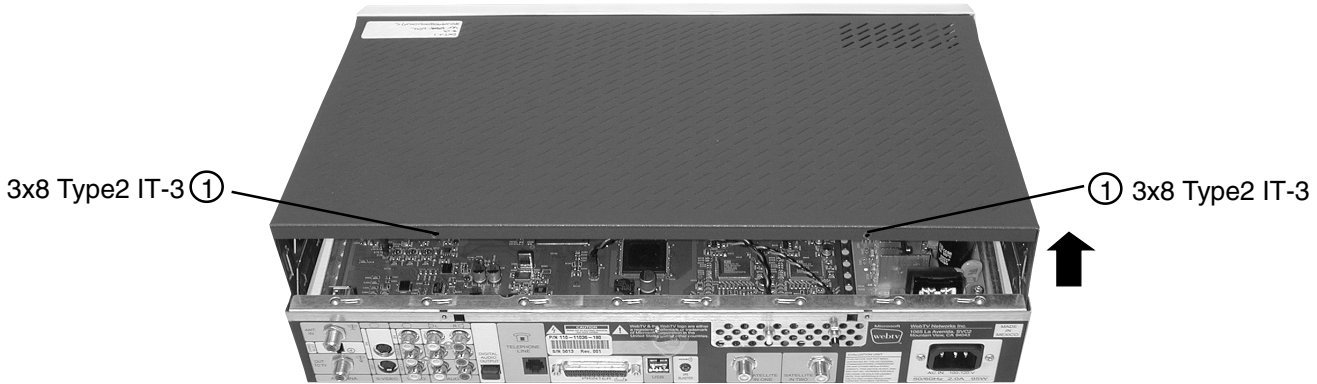
Symptom	Possible Cause and remedies
TV POWER button doesn't turn on TV.	The remote control has not been properly programmed. See "Setting up the Remote Control" on page 21. The batteries in the remote control or wireless keyboard could be weak. Check the batteries and replace them if necessary.
No picture, no sound.	Make sure the AC Power Cord is connected. Check that the TV/VIDEO switch is set correctly. Make sure the Satellite Receiver is properly connected. If you connected using a S-Video or A/V cables, make sure they are properly connected. If your TV must be set to a certain channel to view other devices to which it is connected, make sure this channel is selected. Check that the correct video input is selected by pressing the TV/VIDEO button. If your TV is not connected using the S-Video or A/V cables, set the CH3-CH4 switch on the back of the Satellite Receiver to the opposite channel to which it is currently set.
No sound.	If you connected the Satellite Receiver using A/V cables, make sure the cables are properly connected.
Can't change TV channels while using WebTV service.	Make sure you select the TV FUNCTION button.
The WebTV service screens disappear after pressing the CHANNEL +/- buttons.	Press the TV/VIDEO button on the remote control until the WebTV screen appears.
VCR Control doesn't seem to be working correctly.	Check that the IR Blaster is positioned directly in front of the infrared sensor area of your cable box and/or VCR. Follow the on-line instructions in the "Settings" link, accessible from the TV Home page of the WebTV service.

Other Information

Symptom	Possible Cause and remedies
The Satellite Receiver gets extremely hot.	Check the placement of the Satellite Receiver. Place the Satellite Receiver in a location with adequate ventilation. Do not place the Satellite Receiver in a cabinet or on a TV. If the heat is excessive, contact your Sony dealer.
The Satellite Receiver turns off and on by itself.	This is often caused by static build up. Turn off the Satellite Receiver and disconnect the AC Power Cord from the power outlet. Then reconnect the AC Power Cord to the power outlet and turn on the Satellite Receiver. If this does not solve the problem, contact your Sony dealer.
The Satellite Receiver will not turn on.	Make sure the AC Power Cord is securely connected to the Satellite Receiver and a power outlet.
The Satellite Receiver will not connect to the WebTV Network after receiving an upgrade from the WebTV service.	Turn off the Satellite Receiver and disconnect the AC Power Cord from the power outlet. Then reconnect the AC Power Cord to the power outlet and turn on the Satellite Receiver. You may need to repeat this procedure three or four times to solve the problem.
The Message Indicator light is not working.	You can set your Satellite Receiver to check for messages automatically. However, if you check for messages yourself before the Satellite Receiver is set to do so automatically, the Message Indicator may not light until the Satellite Receiver checks again. You may want to consider setting the Satellite Receiver to check for mail when you usually are not connected.
Remote control or keyboard is no longer working.	Replace the batteries. Try pressing the SAT FUNCTION button.
No channels are viewable.	Activate your service by contacting DIRECTV at 1-800-DIRECTV (347-3288) Check the status of your service with UltimateTV at 1-877-ULTIMATE (858-4628)

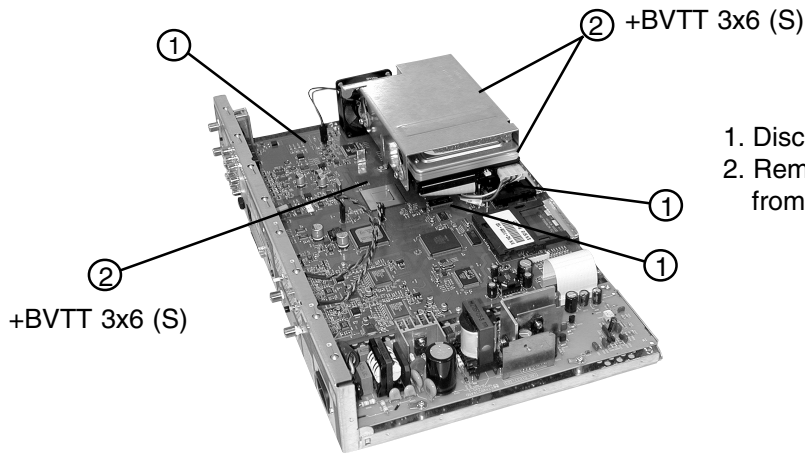
SECTION 2 DISASSEMBLY

2-1. UPPER COVER REMOVAL

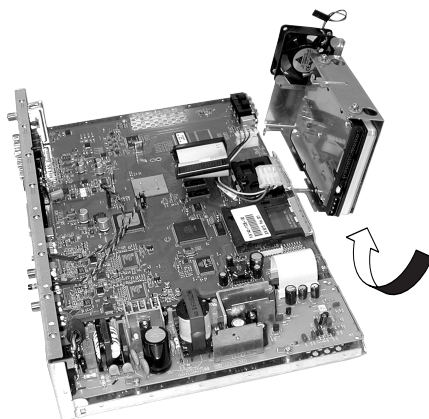


1. Remove Two (2) Screws
2. Pull Upper Cover up approximately 3 inches.
3. Slide forward making sure to slide the tabs out of the lower case front.

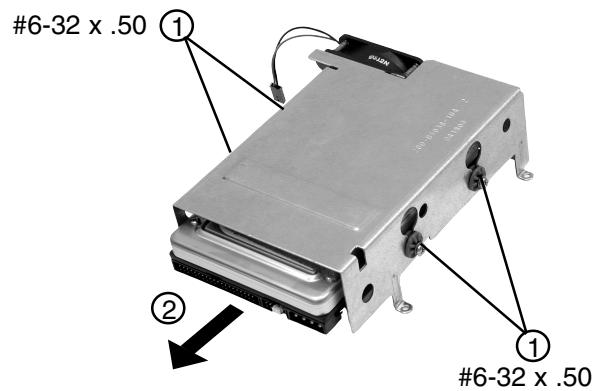
2-2. HARD DRIVE REMOVAL



1. Disconnect three (3) cables
2. Remove the three (3) screws from the Hard Drive Bracket



1. Remove Hard Drive



NOTE:

1. Remove the four (4) screws to remove Hard Drive from Bracket
2. Slide Hard Drive from Bracket

SECTION 3 SYSTEM SELF TEST

SELF TEST:

1. From home page go to [settings].
2. Go to [system test].
 - a. Connect a phone line to the phone jack on the back of the unit.
 - b. Connect both tuners to a SAT signal.
 - c. Make sure that the CAM card is in.
3. Press [Run Test].

This test checks both tuner's signal and that the modem detects a dial tone. Also, it checks that the CAM card is inserted and valid. Test will show the serial number on the card.
4. Go to [Receiver Info] from the same system test menu.

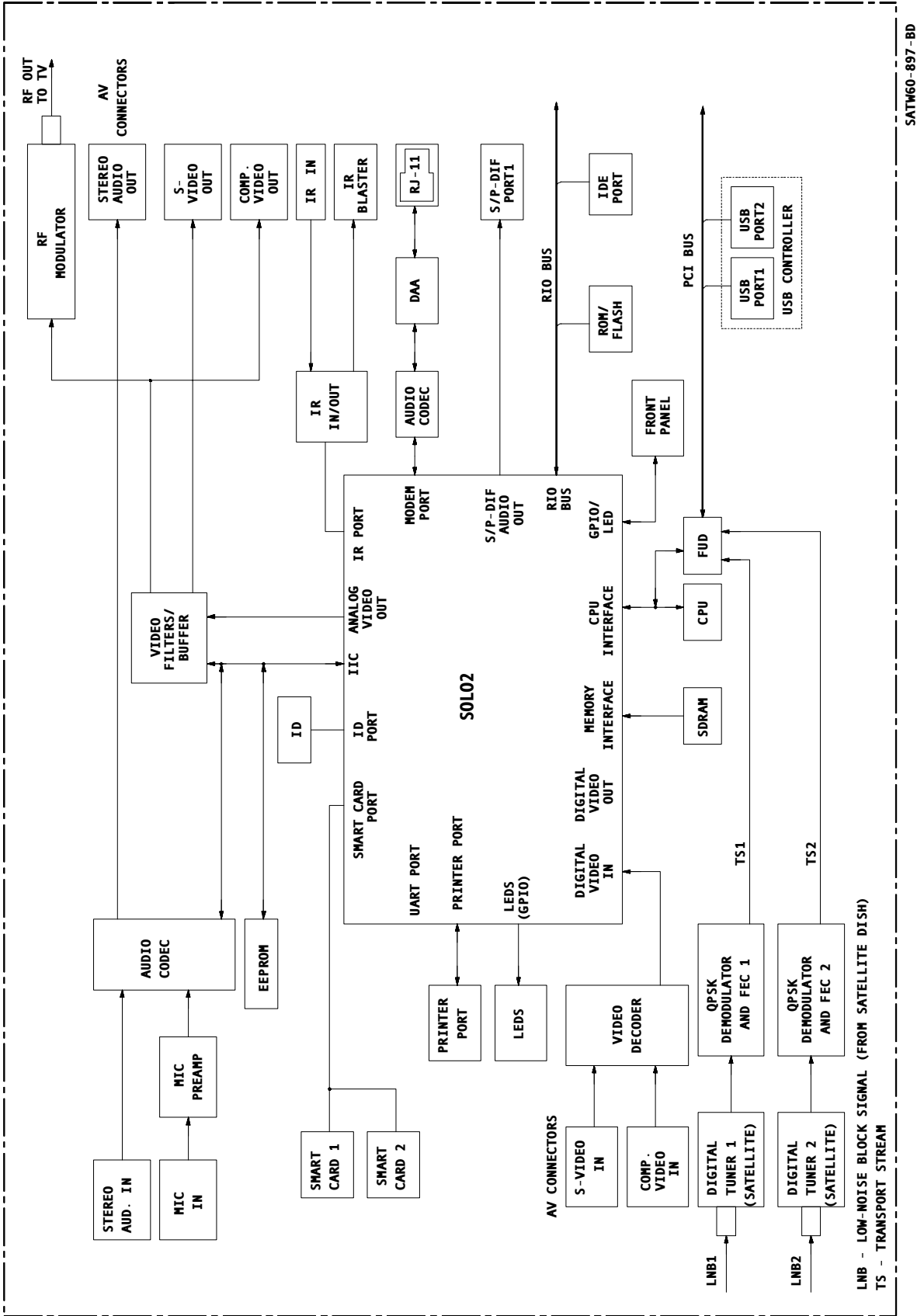
This provides the following information on the box:

 - Manufacturer: Sony Model number:
 - Serial number:
 - Client software:
 - Boot rom version:
 - SSID:
5. To show the date the box was last upgraded along with the version, select [Upgrades] from the SAT receiver information menu.
6. Go to the settings menu and select [Hooking Up]
7. Go to [Signal Strength]

This will show the signal strength for each tuner. It is also possible to change transponder numbers to verify both even and odd transponders.

SECTION 4
DIAGRAMS

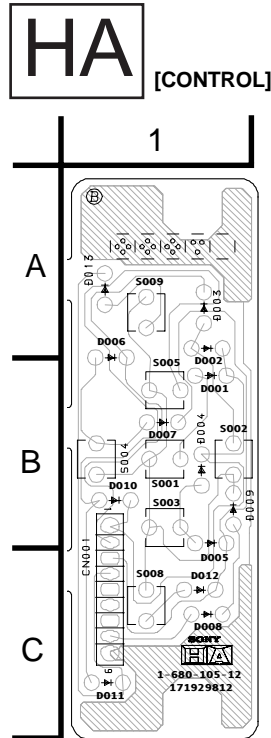
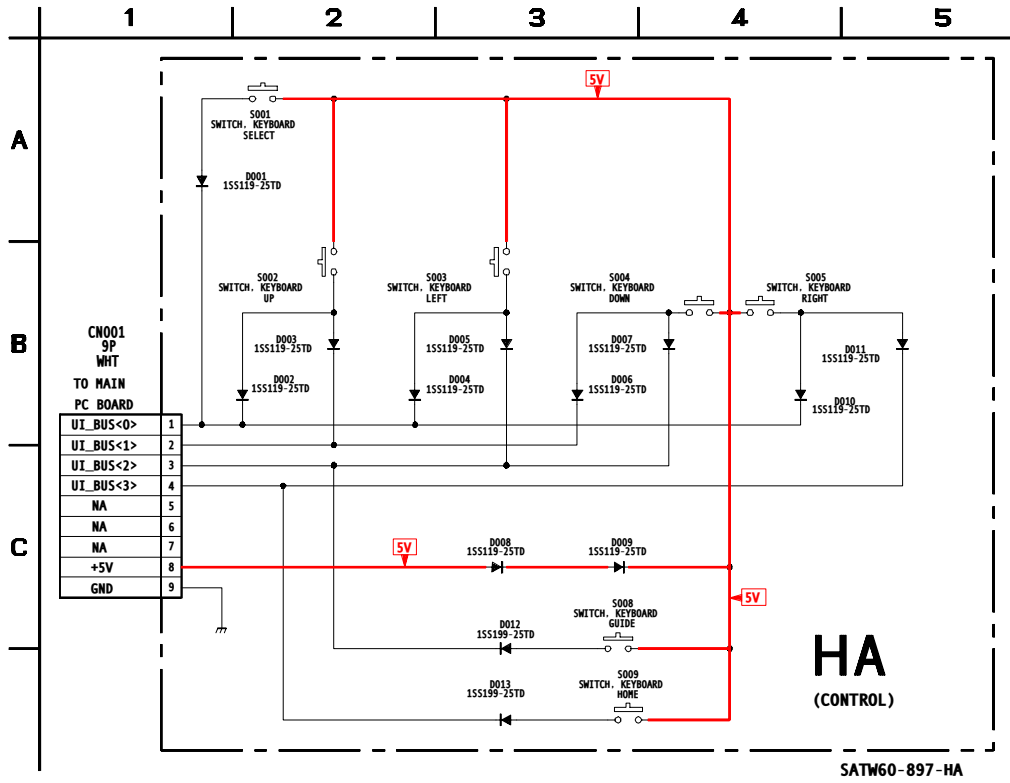
4-1. BLOCK DIAGRAM



SATW60-897-BD

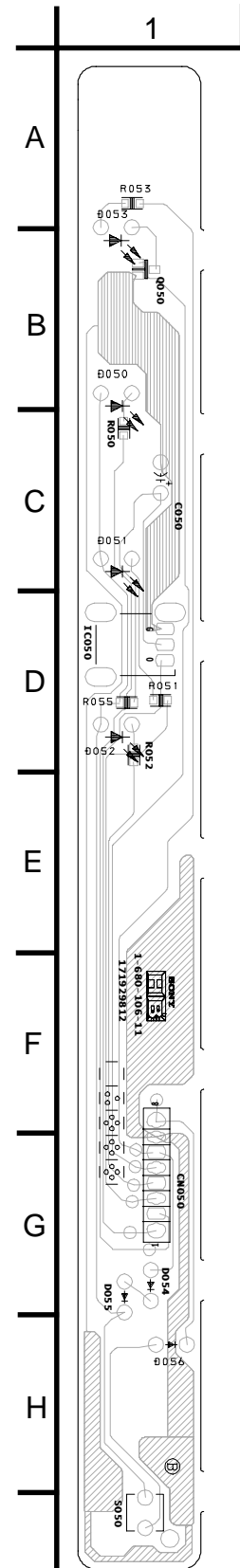
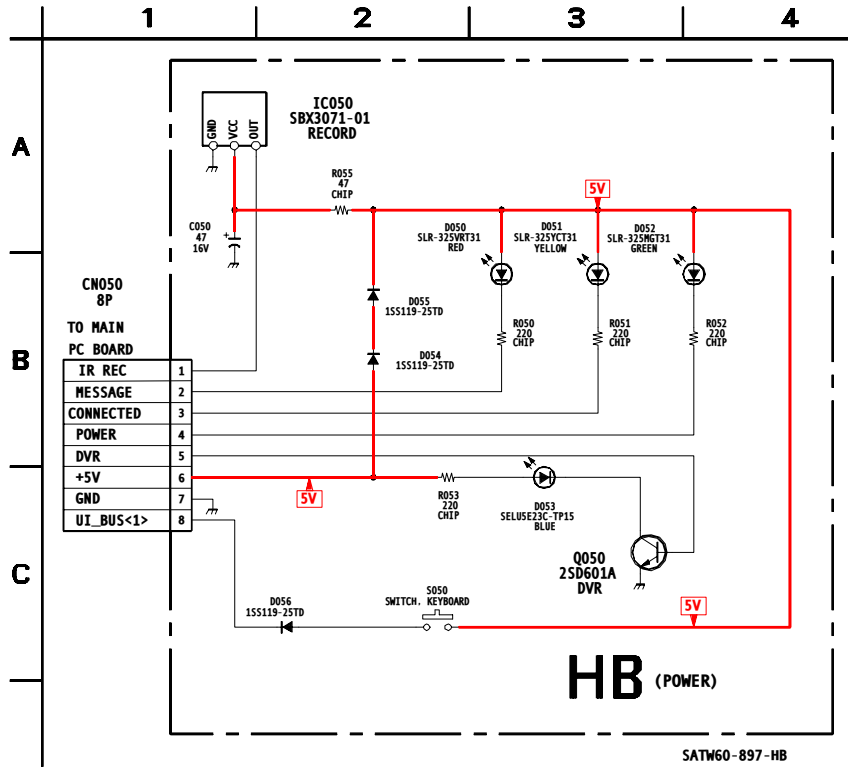
4-2. SCHEMATIC DIAGRAMS

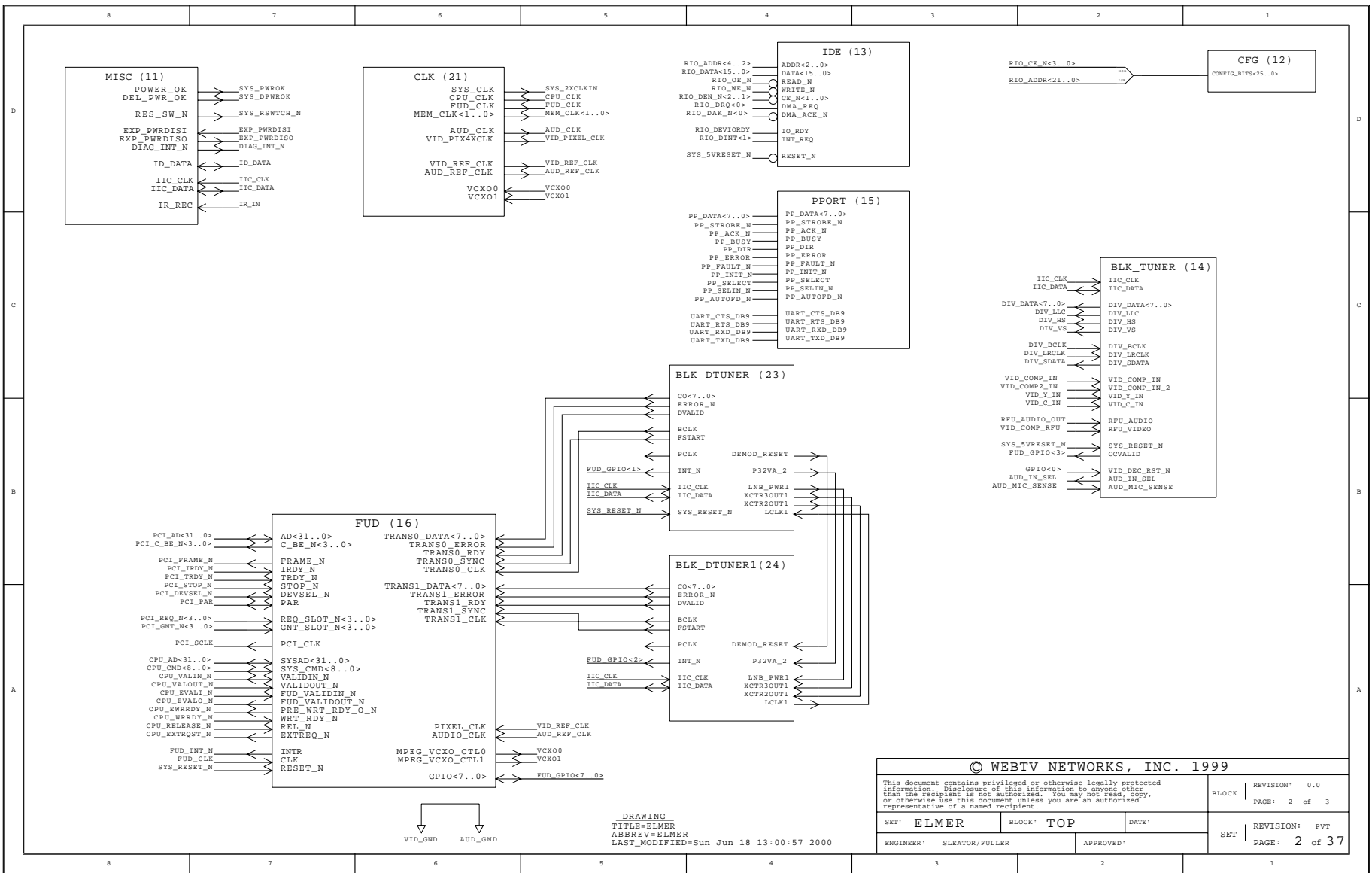
HA Board Schematic Diagram



HB [POWER]

HB Board Schematic Diagram





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ENGINEER: SLEATOR/PULLER	APPROVED:		

CPU INTERRUPTS

CPU_INT<0>: CPU INTERRUPT FROM SOLO2
 CPU_INT<2>: FUD2 INTERRUPT
 CPU_INT<4>: DIAG INTERRUPT

RIO ENABLES

0 FREE
 1 HARD DISK REGISTER SET 1
 2 HARD DISK REGISTER SET 2
 3 FREE
 4 FREE
 5 FREE
 6 FREE
 7 FREE

RIO_DINT<7..0> MAPPING

0 FREE
 1 DISK
 2 FREE
 3 FREE
 4 FREE
 5 FREE
 6 FREE
 7 FREE

SOLO2 GPIO MAP

GPIO<0> BT835 RESET
 GPIO<1> SYS_AUD_MUTE
 GPIO<2> SVIDEO_IN_SENSE
 GPIO<3> AUD_MIC_SEL
 * GPIO<4> DAA_LSTAT
 * GPIO<5> DAA_SNOOP_N
 * GPIO<6> DAA_RING_DET
 GPIO<7> FREE
 GPIO<8> FREE
 GPIO<9> SVIDEO_SENSE
 GPIO<10> SYS_AUD_CS_N
 GPIO<11> FREE
 GPIO<12> SYS_AUD_CLK
 GPIO<13> SYS_AUD_CDATA
 * GPIO<14> DAA_HOOKSW_N
 GPIO<15> IR_BLAISTER_LED_SENSE
 GPIO<16> UI_BUS<0>
 GPIO<17> UI_BUS<1>
 GPIO<18> UI_BUS<2>
 GPIO<19> UI_BUS<3>

* GPIO'S NEEDED ONLY FOR SOFT MODEM.

IIC DEV ADDRESS MAP

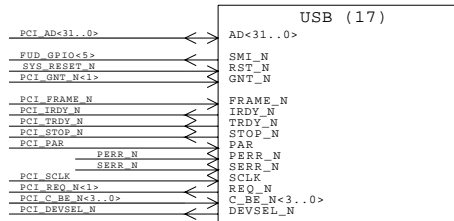
ADDR	DEVICE
0X18	DIGITAL TUNER
0X1A	DIGITAL TUNER 1
0X88	BT835 VIDEO DECODER
0XA0	AT24C01A EEPROM

FUD2 GPIO MAP

GPIO<0> FREE
 GPIO<1> DTUNER INT
 GPIO<2> DTUNER1 INT
 GPIO<3> BT835 "CLOSED CAPTION" INTERRUPT
 GPIO<4> LED_BLUE (RECORD INDICATOR)
 GPIO<5> USB INTERRUPT
 GPIO<6> SC_CLKDIV<0>
 GPIO<7> SC_CLKDIV<1>

BT835 GPIO MAP

GPIO<0> MIC SENSE (ACT HI IF AUD_MIC_SEL ACTIVE; ACT LO IF AUD_MIC_SEL INACTIVE)
 GPIO<1> FREE
 GPIO<2> FREE
 GPIO<3> RFU_BYPASS
 GPIO<4> FREE
 GPIO<5> AUDIO_EXTIN_SELECT
 GPIO<6> FREE
 GPIO<7> FREE



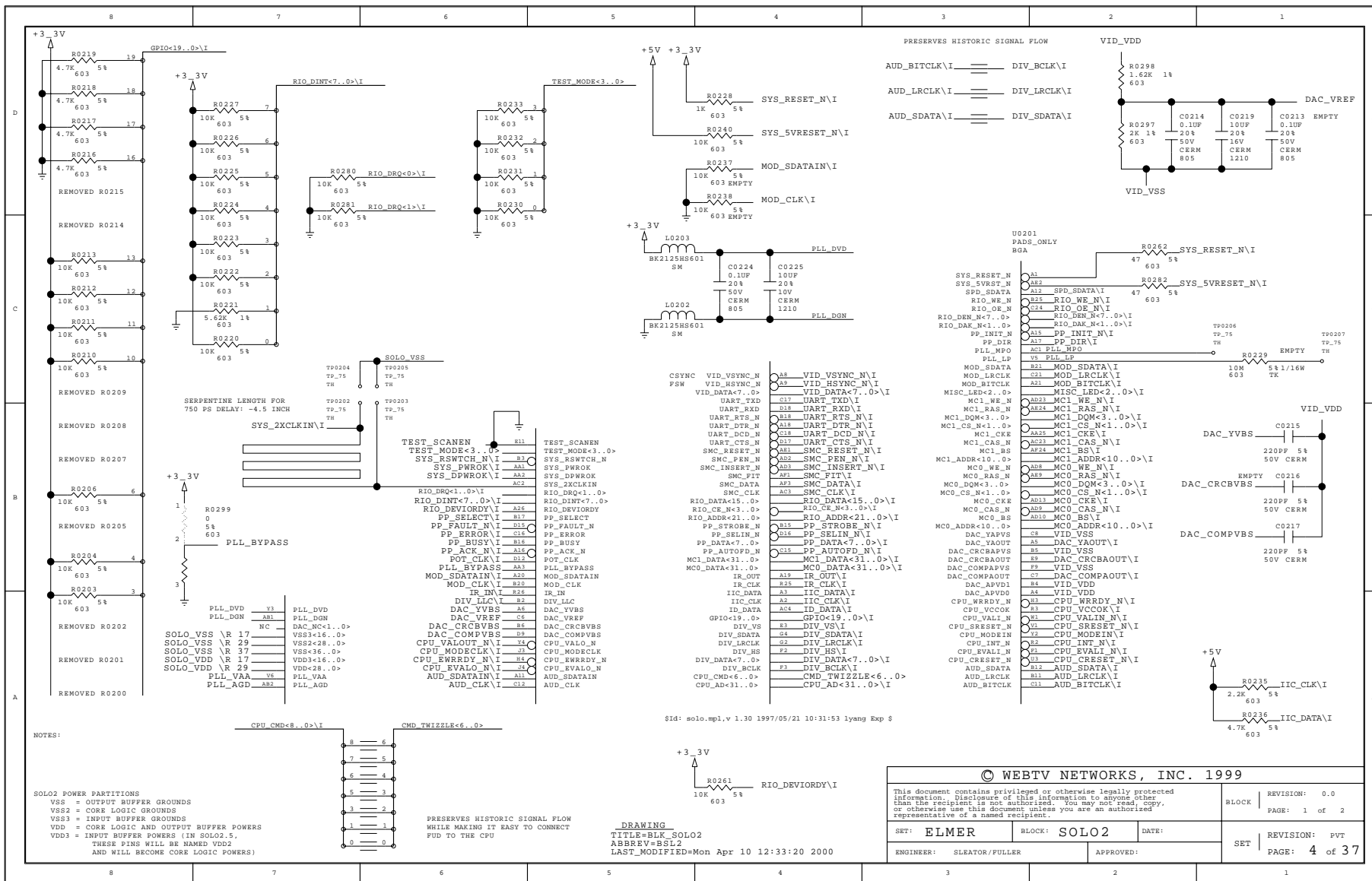
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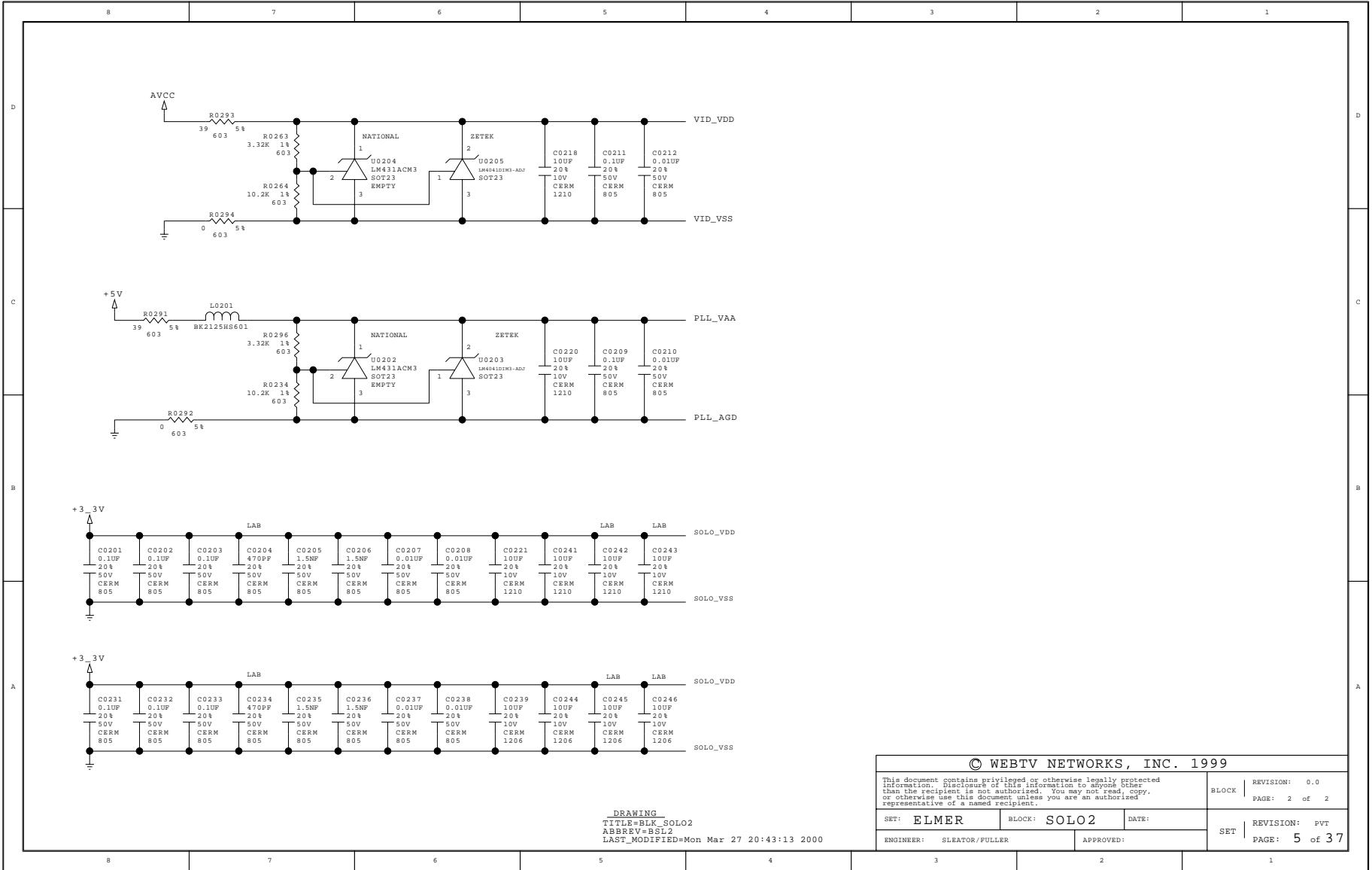
SERIAL/MODEM	SMARTCARD	GPIO
UART_RXD (I)	SMC_DATA (IO)	GPIO[0] (IO)
UART_TXD (O)	SMC_CLK (IO)	GPIO[1] (IO)
UART_DTR_N (O)	SMC_PEN_N (O)	GPIO[2] (IO)
UART_RTS_N (O)	SMC_RESET_N (O)	GPIO[3] (IO)
UART_CTS_N (I)	SMC_INSERT_N (I)	GPIO[4] (IO)
UART_DCD_N (I)	SMC_PIT (I)	GPIO[5] (IO)

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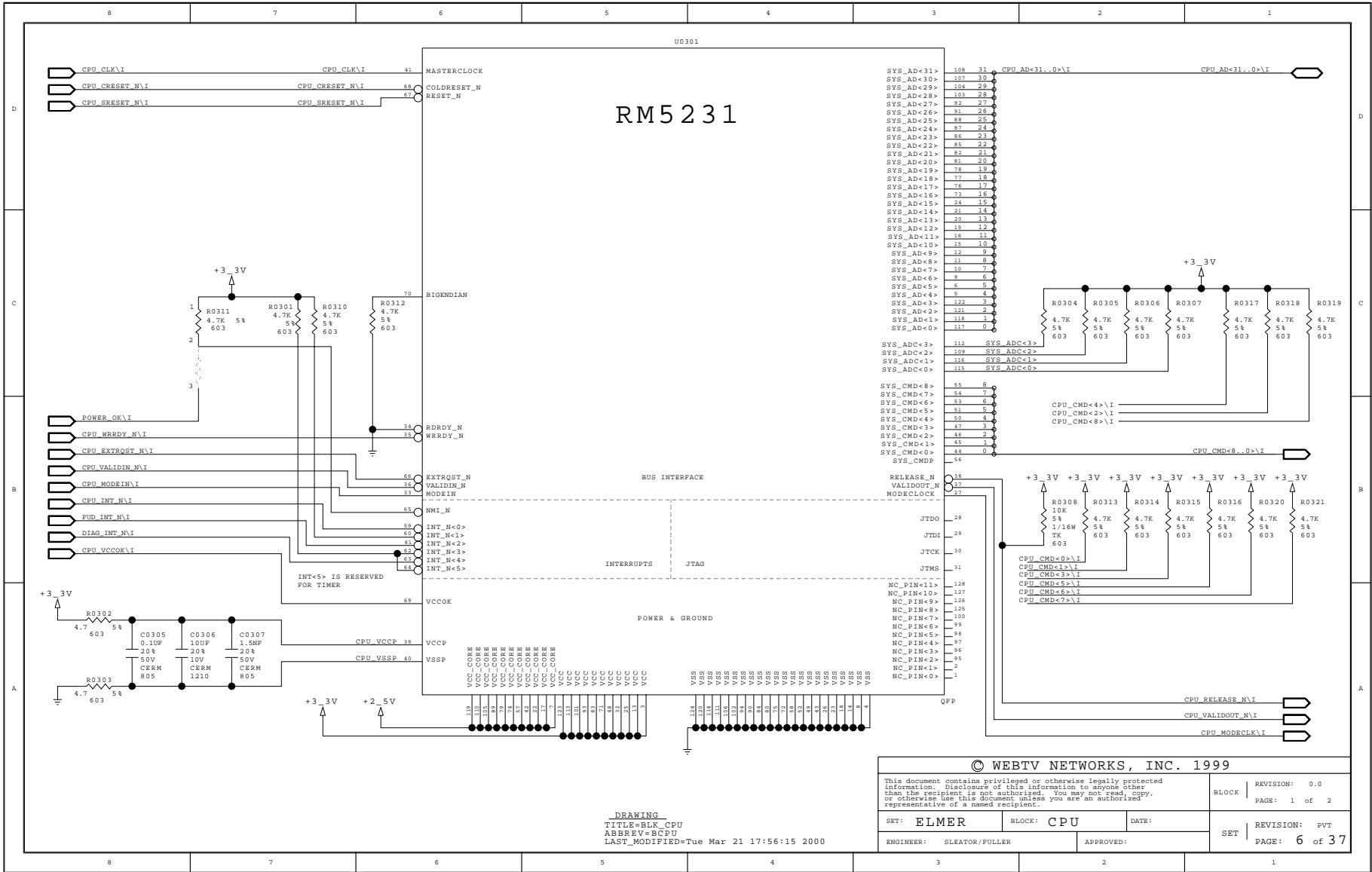
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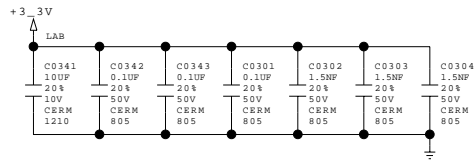
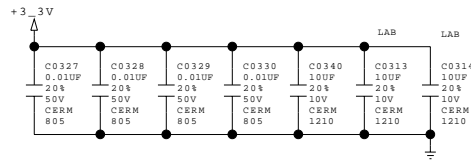
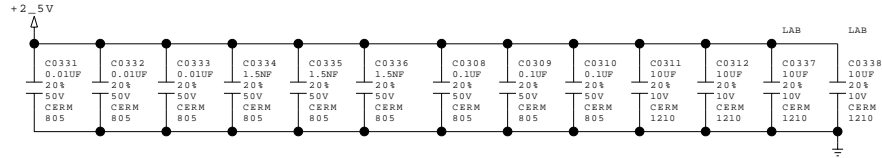
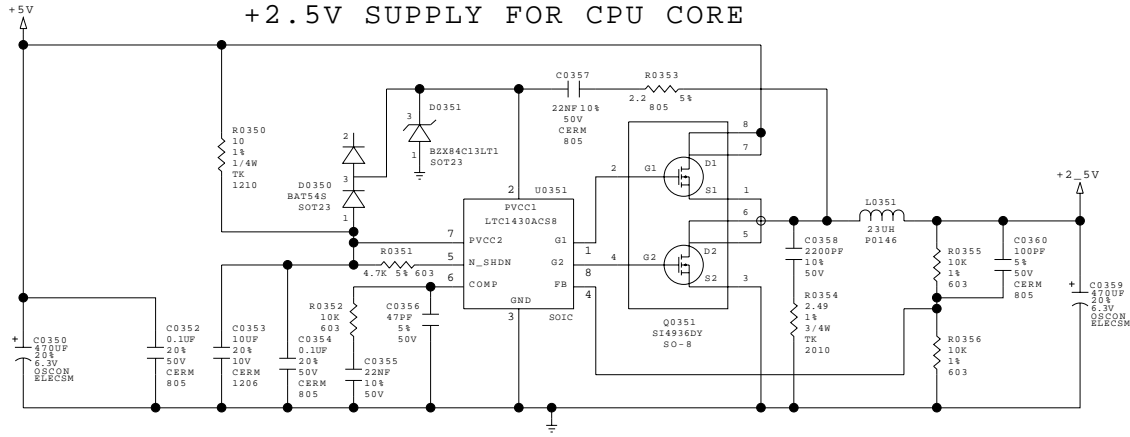
© WEBTV NETWORKS, INC. 1999			
<small>This document contains privileged or otherwise legally protected information. Disclosure of this information to anyone other than the recipient is not authorized. You may not read, copy, or otherwise use this document, unless you are an authorized representative of a named recipient.</small>			BLOCK REVISION: 0.0 PAGE: 2 of 2
SET: ELMER	BLOCK: SOLO2	DATE:	SET REVISION: PVT
ENGINEER: SLEATOR/FULLER	APPROVED:		PAGE: 5 of 37



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				PAGE: 1 of 2
SET: ELMER	BLOCK: CPU	DATE:	SET:	REVISION: PVT
ENGINEER: SLEATOR/FULLER	APPROVED:		SET:	PAGE: 6 of 37

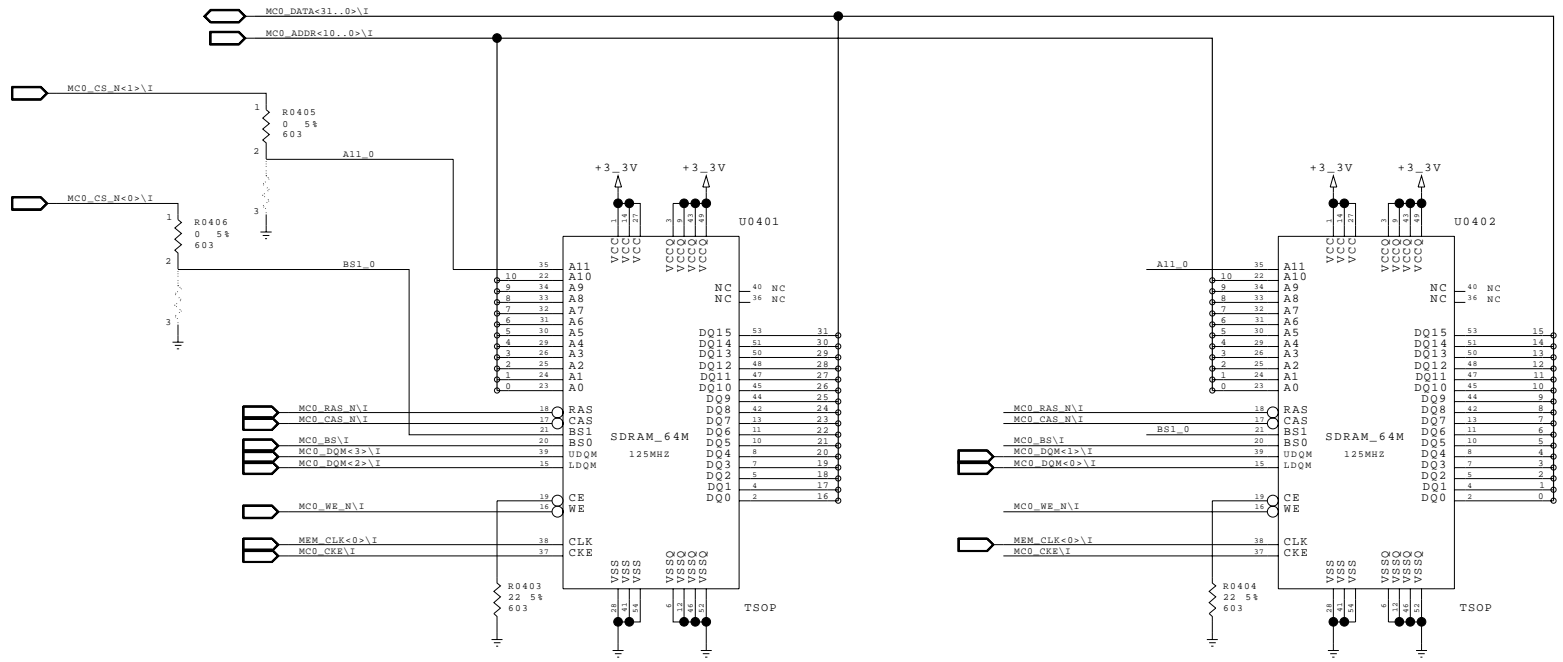
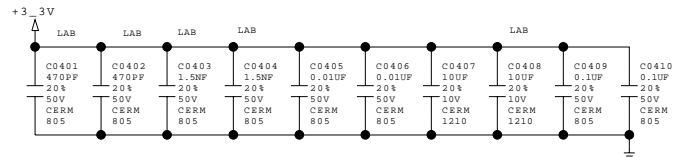
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 LAST_MODIFIED=Tue Mar 21 17:56:15 2000

+2.5V SUPPLY FOR CPU CORE



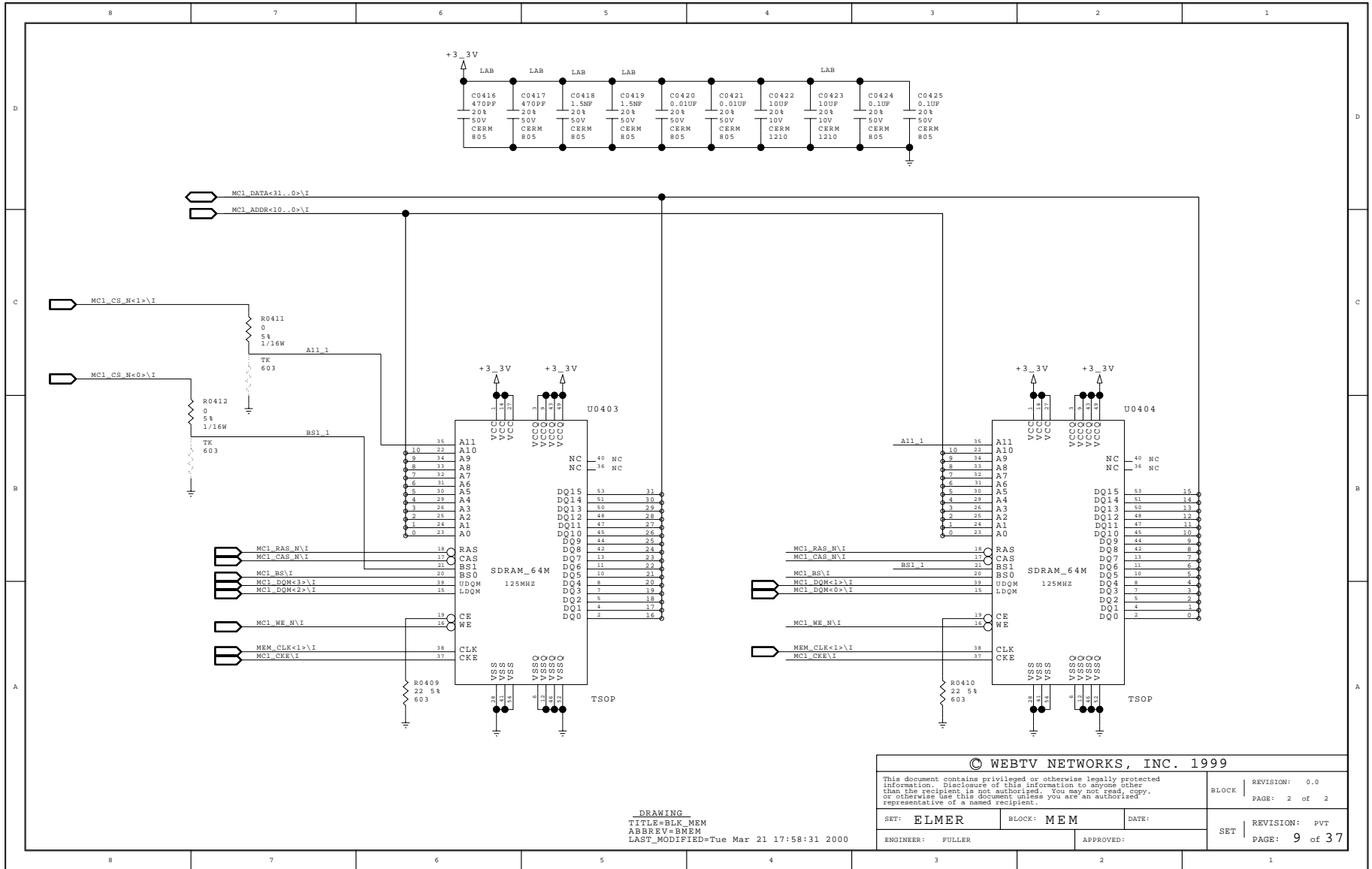
© WEBTV NETWORKS, INC. 1999			
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SET: ELMER	BLOCK: CPU	DATE:	REVISION: PVT PAGE: 7 of 37
ENGINEER: EGNER	APPROVED:		

DRAWING
 TITLE=BLK_CPU
 ABBREV=BCPU
 LAST_MODIFIED=Thu May 25 00:43:36 2000



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SET: ELMER	BLOCK: MEM	DATE:	REVISION: PVT
ENGINEER: FULLER	APPROVED:		PAGE: 8 of 37

DRAWING
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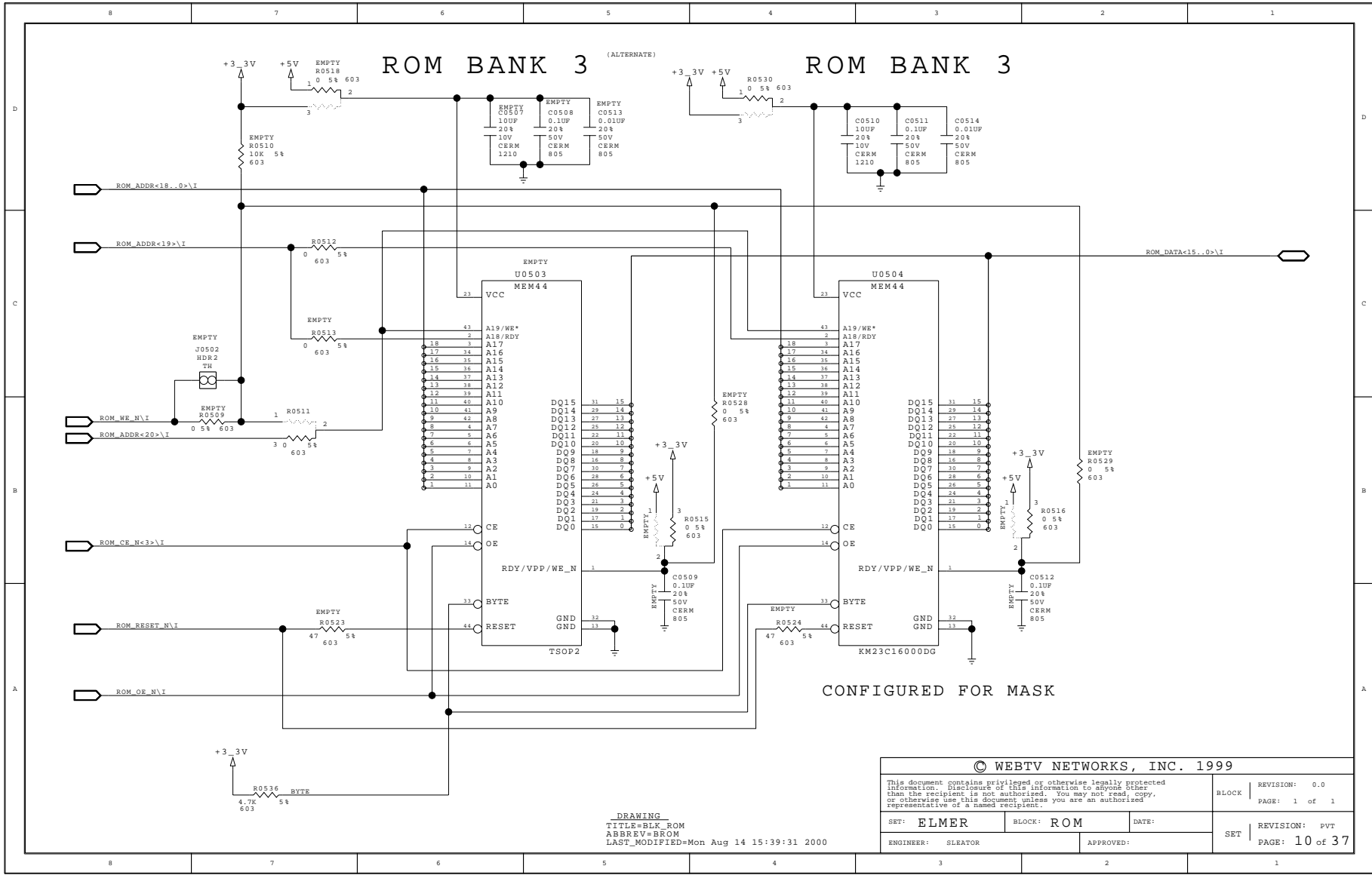


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	BLOCK	REVISION: 0.0
		PAGE: 2 of 2
SET: ELMER	BLOCK: MEM	DATE:
ENGINEER: FULLER	APPROVED:	SET
		REVISION: PVT
		PAGE: 9 of 37

DRAWING
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 ABBREV=BMEM
 LAST_MODIFIED=Tue Mar 21 17:58:31 2000

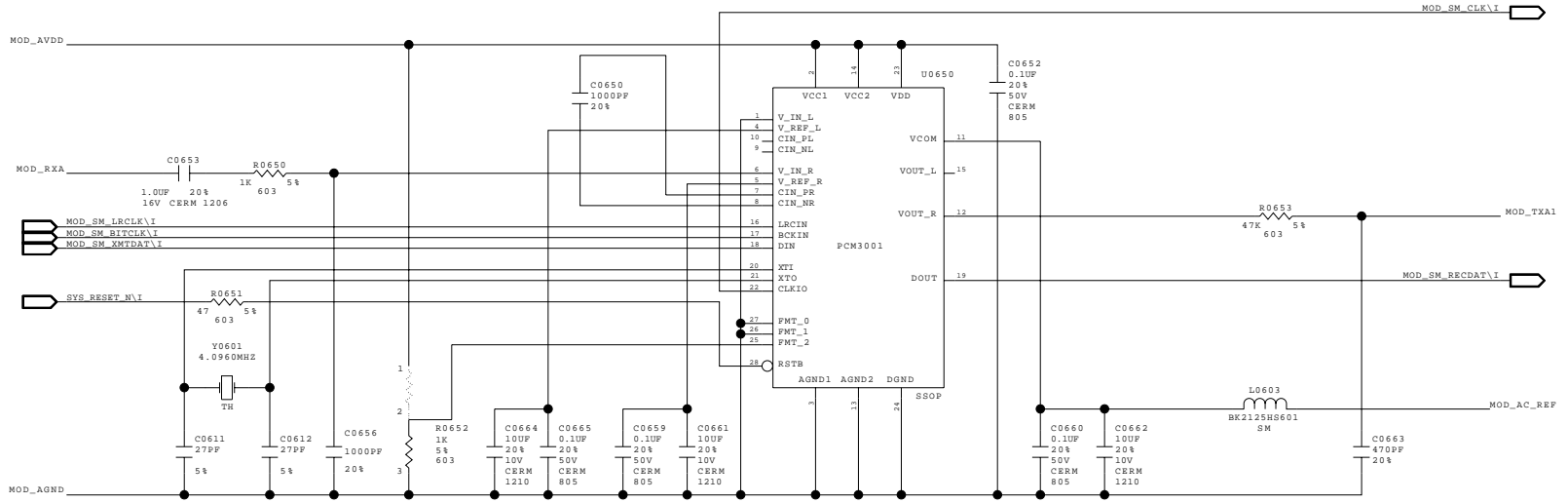


— 24 —

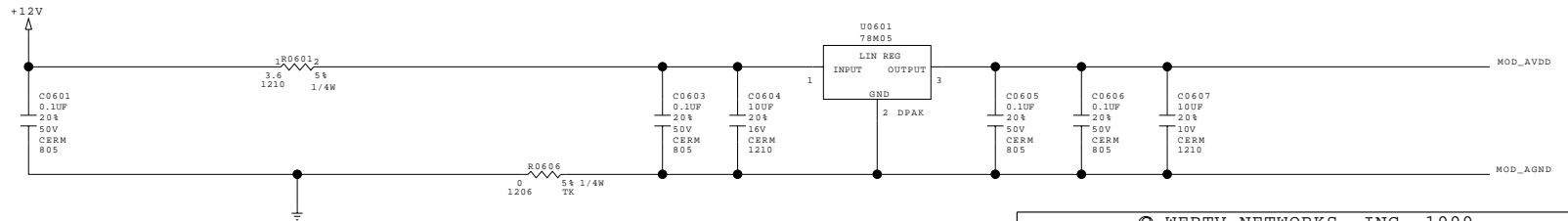
© WEBTV NETWORKS, INC. 1999			
<small>This document contains privileged or otherwise legally protected information. Disclosure of this information to anyone other than the recipient is not authorized. You may not read, copy, or otherwise use this document unless you are an authorized representative of a named recipient.</small>		BLOCK	REVISION: 0.0 PAGE: 1 of 1
SET: ELMER	BLOCK: ROM	DATE:	REVISION: PVT
ENGINEER: SLEATOR	APPROVED:	PAGE: 10 of 37	

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 LAST_MODIFIED=Mon Aug 14 15:39:31 2000

SOFT MODEM CODEC



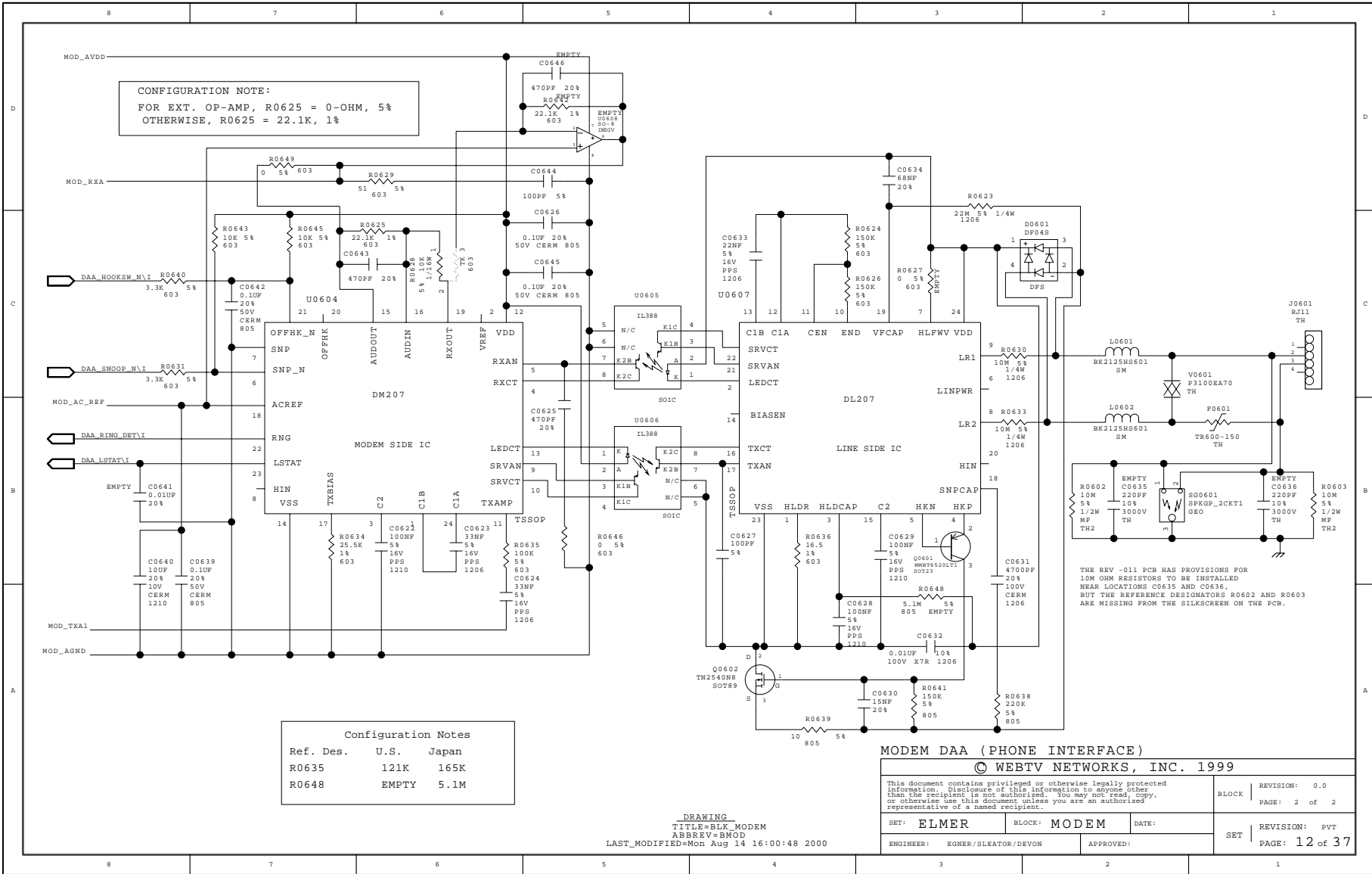
CODEC POWER SUPPLY

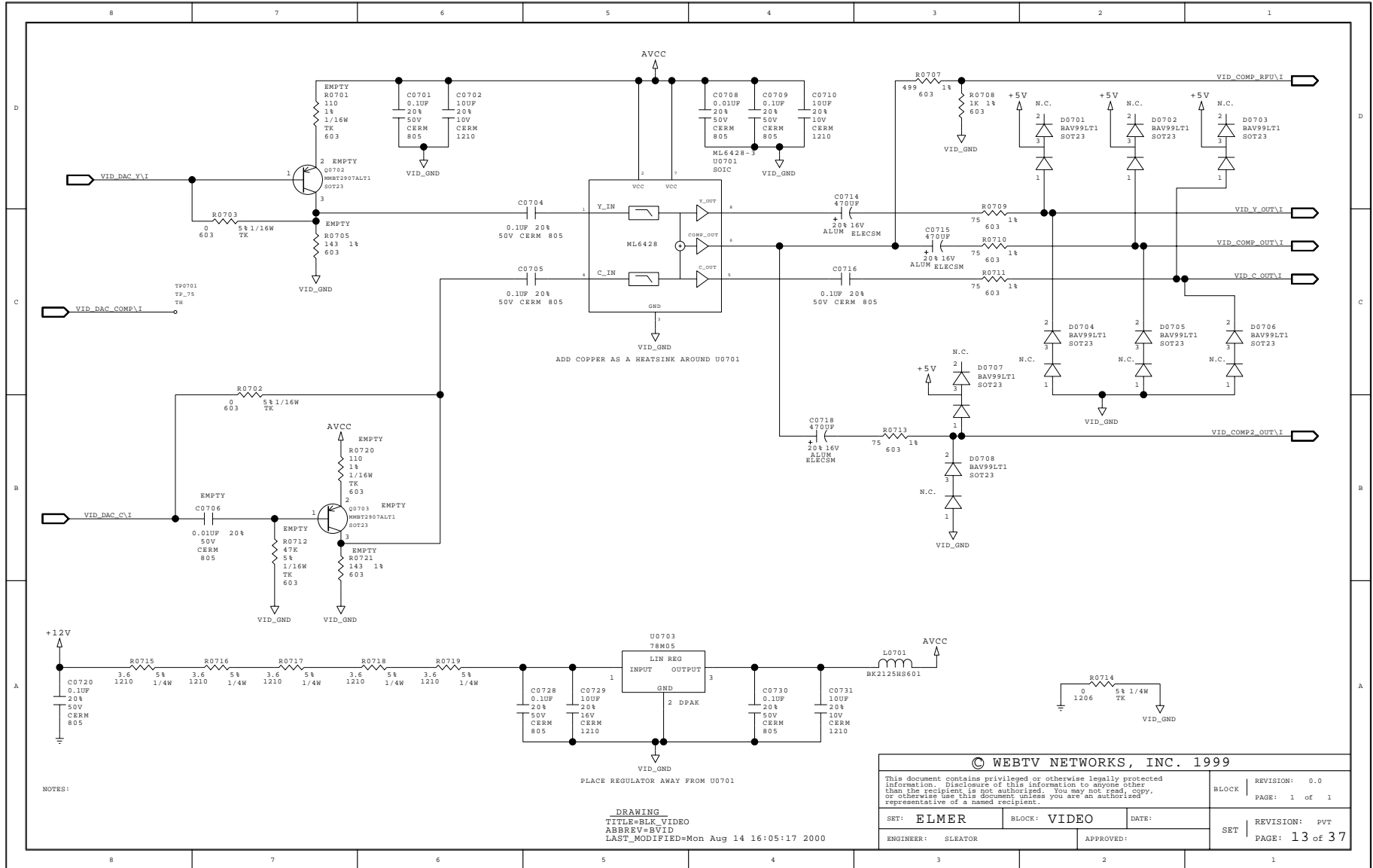


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SET: ELMER	BLOCK: MODEM	DATE:	REVISION: PVT PAGE: 11 of 37
ENGINEER: EGMER/SLEATOR	APPROVED:		

DRAWING
 TITLE=BLK_MODEM
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 LAST_MODIFIED=Mon Aug 14 16:04:21 2000

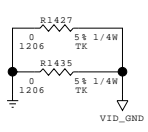
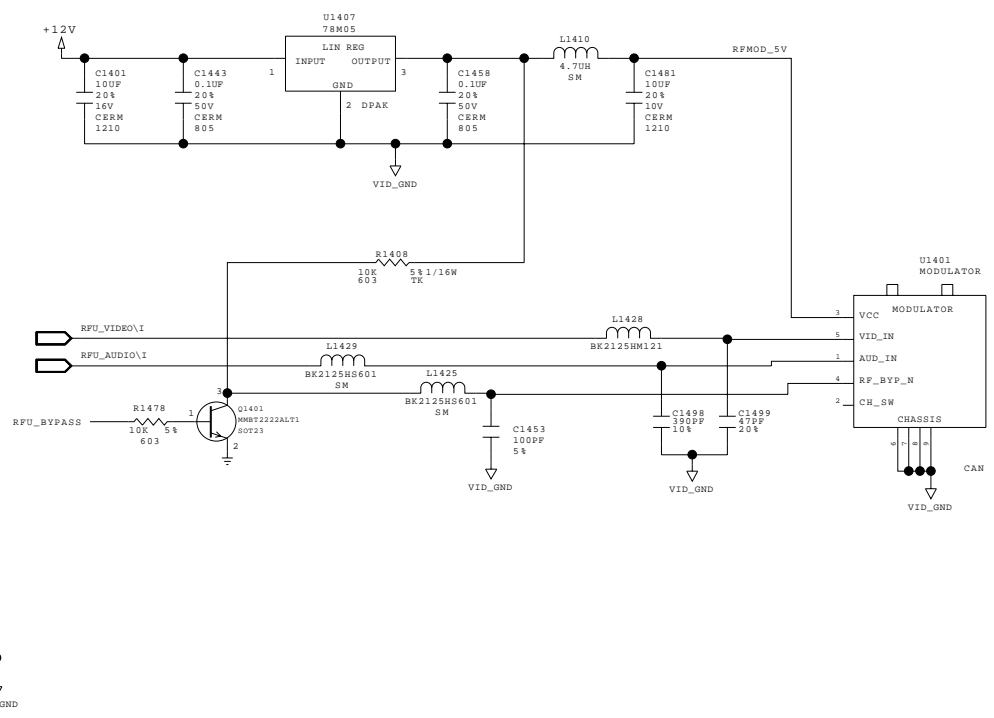




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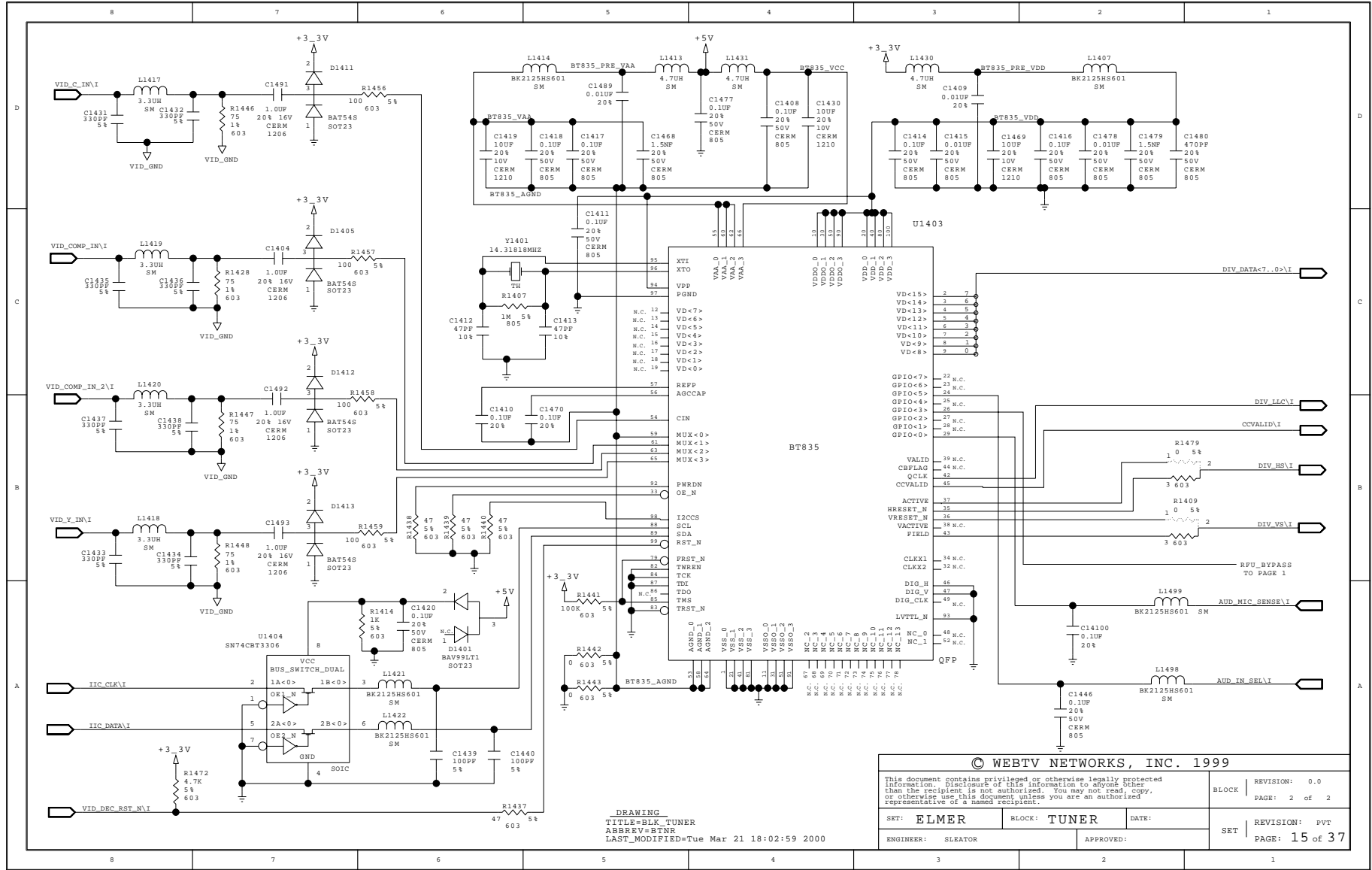
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SET: ELMER	BLOCK: VIDEO	DATE:	REVISION: 0.0
ENGINEER: SLEATOR	APPROVED:	REVISION: PWT	PAGE: 1 of 1
			PAGE: 13 of 37



DRAWING
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 LAST_MODIFIED=Tue Mar 21 18:02:48 2000

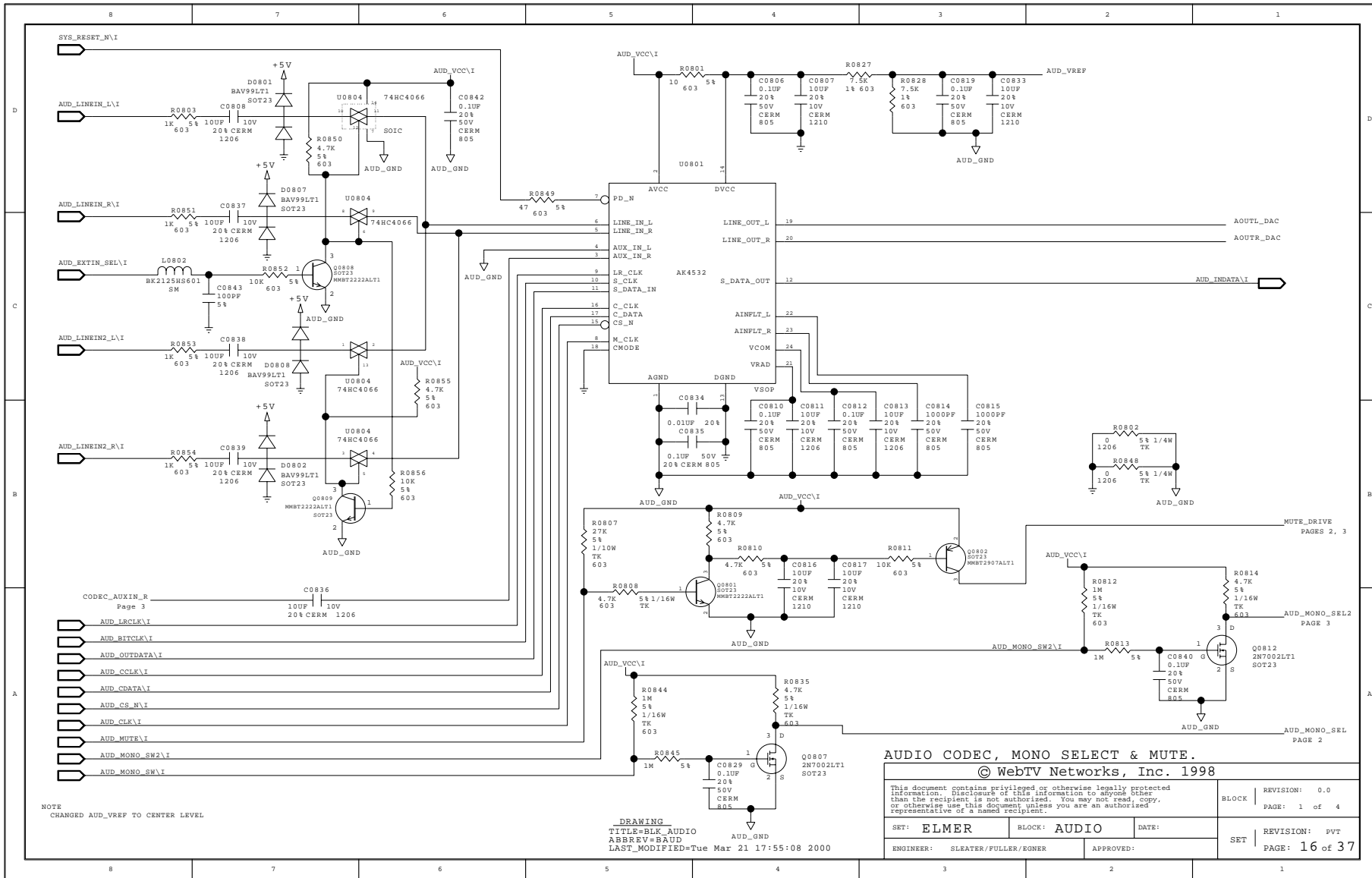
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SET: ELMER	BLOCK: TUNER	DATE:	REVISION: PVT PAGE: 14 of 37
ENGINEER: SLEATOR/SUZUKI	APPROVED:		



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SET: ELMER	BLOCK: TUNER	DATE: PAGE: 2 of 2
ENGINEER: SLEATOR	APPROVED:	SET REVISION: PVT
		DATE: PAGE: 15 of 37

DRAWING
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 LAST_MODIFIED= Tue Mar 21 18:02:59 2000

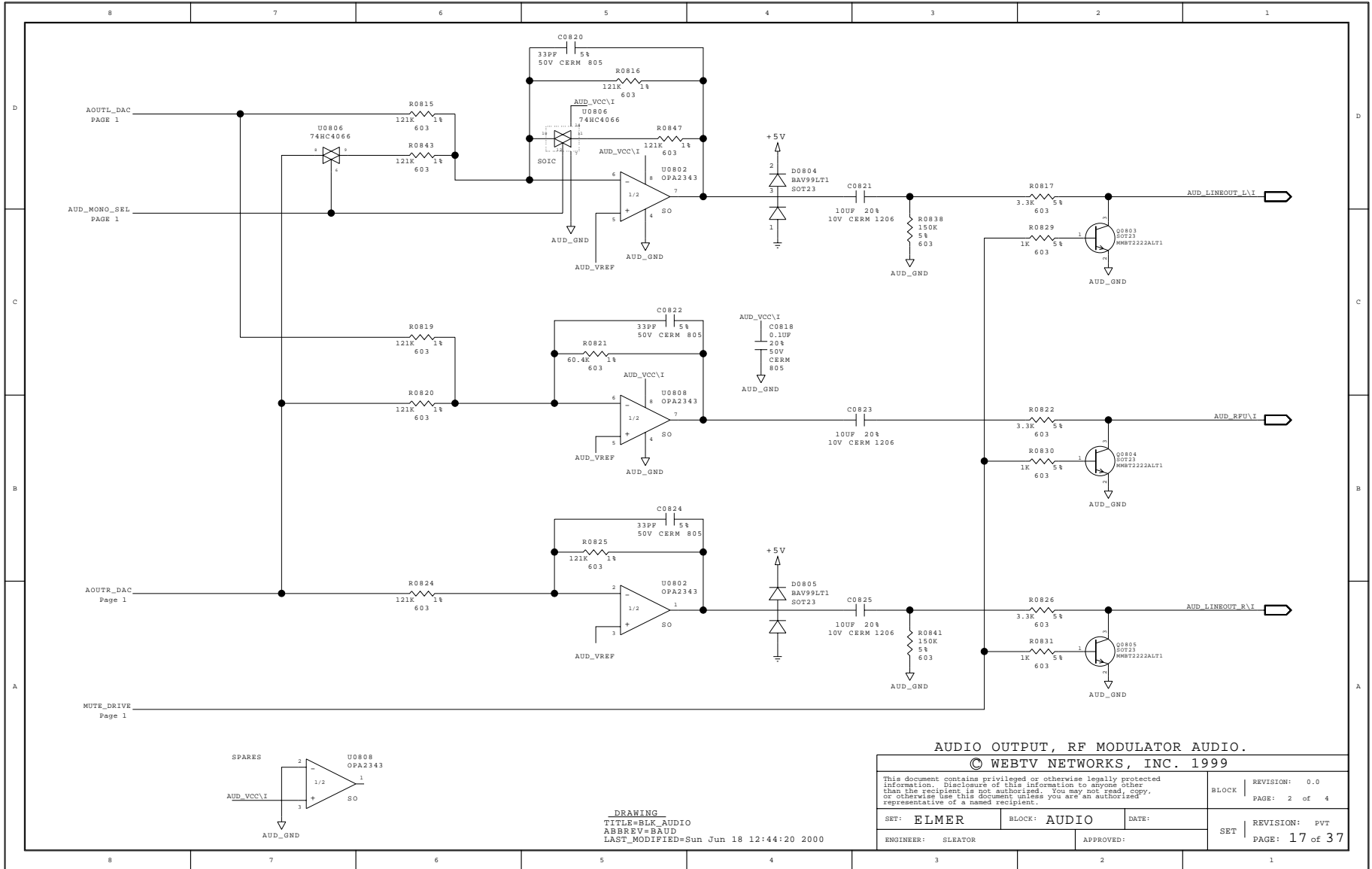


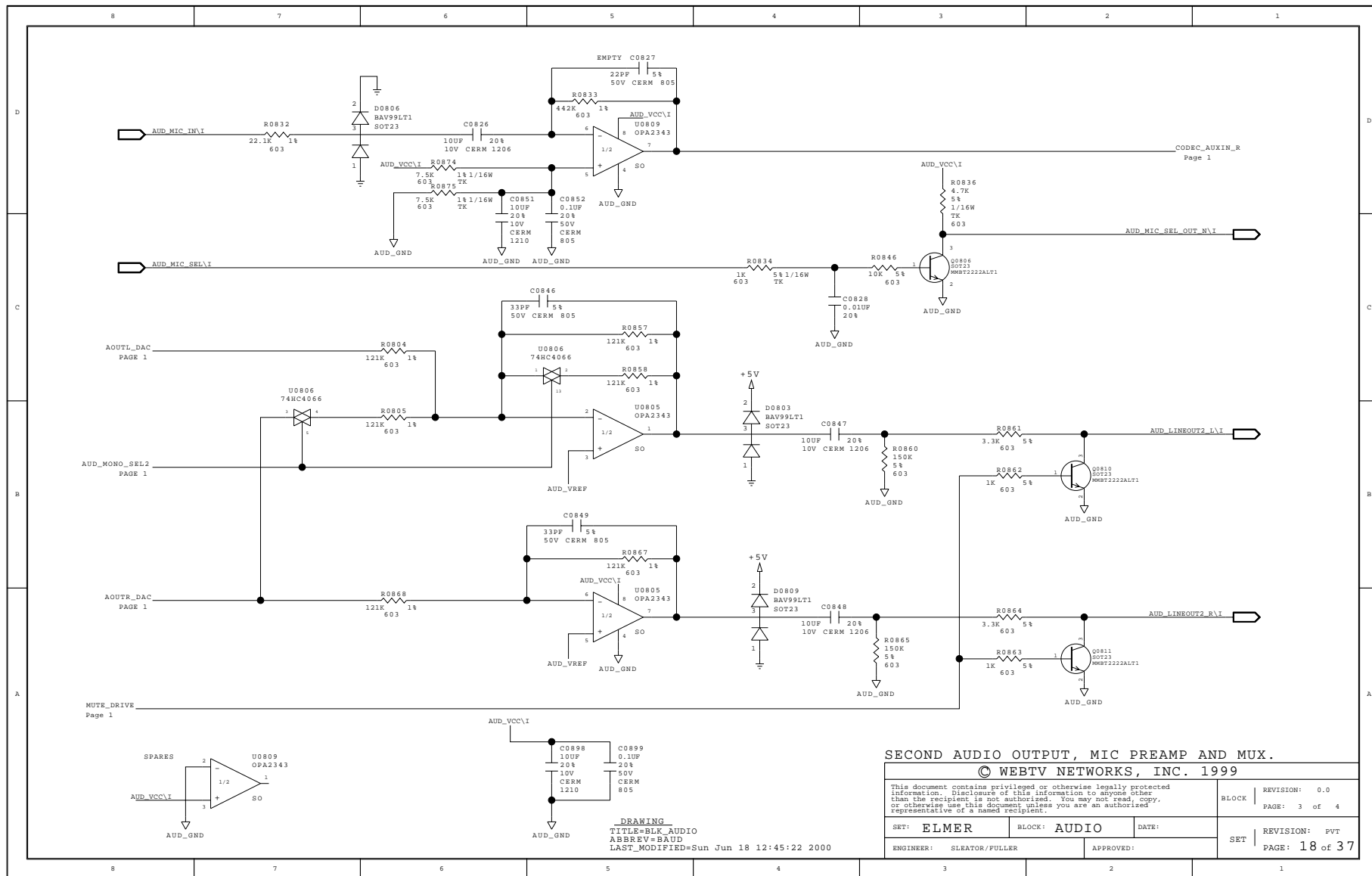
NOTE
CHANGED AUD_VREF TO CENTER LEVEL

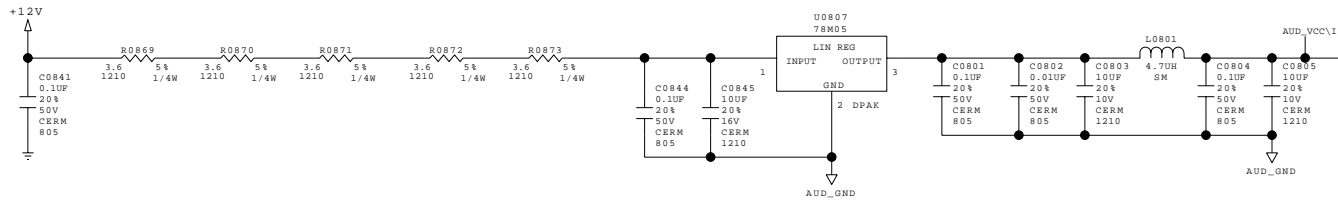
DRAWING
TITLE=BLK AUDIO
ABBREV=BAUD
LAST_MODIFIED=Tue Mar 21 17:55:08 2000

AUDIO CODEC, MONO SELECT & MUTE.
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SET: ELMER	BLOCK: AUDIO	DATE:
ENGINEER: SLEATER/FULLER/EGNER	APPROVED:	REVISION: PVT
		PAGE: 16 of 37





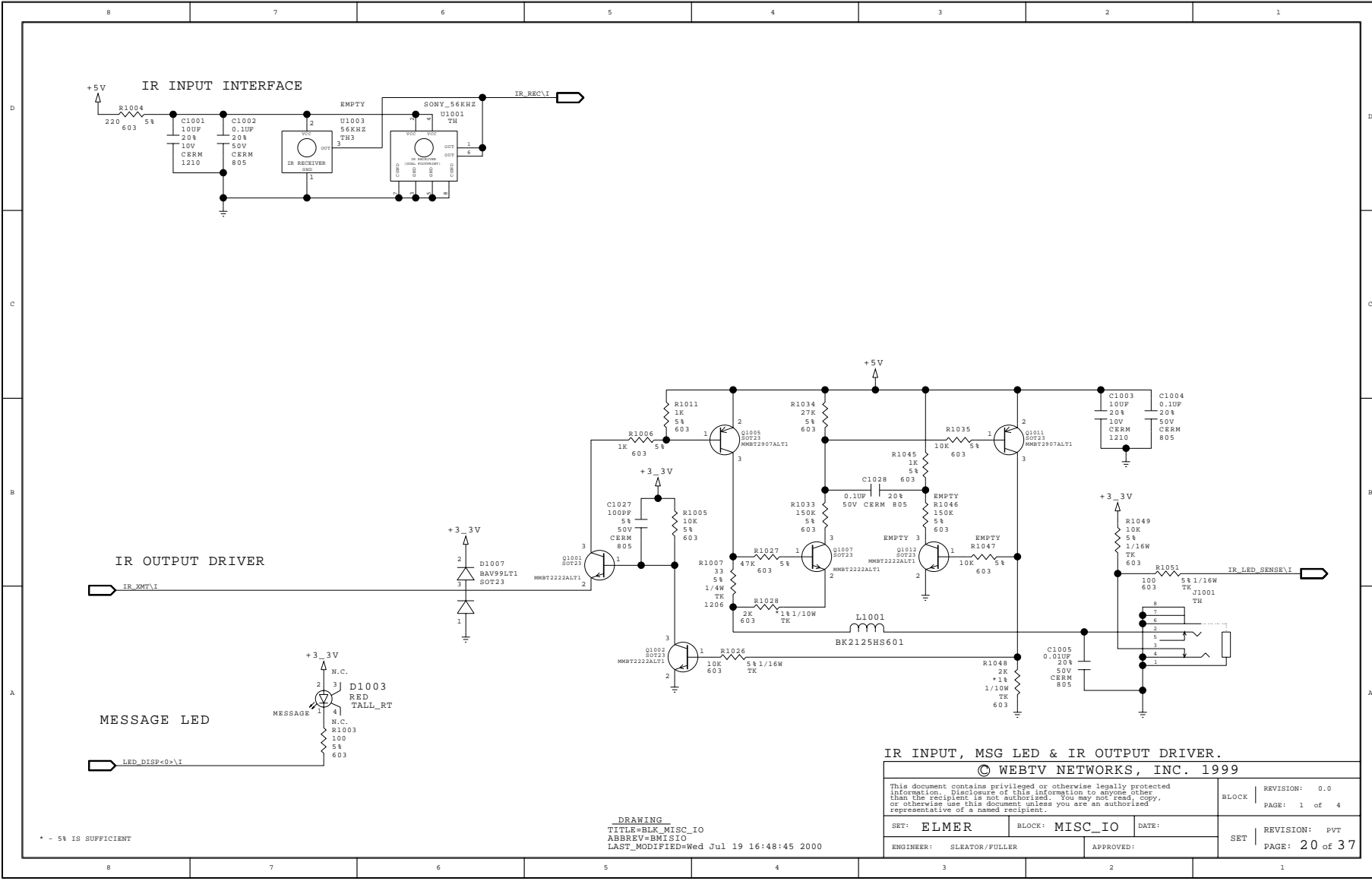


AUDIO OUTPUT, RF MODULATOR AUDIO.

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SET: ELMER	BLOCK: AUDIO	DATE:
ENGINEER: SLEATOR	APPROVED:	SET REVISION: PVT PAGE: 19 of 37

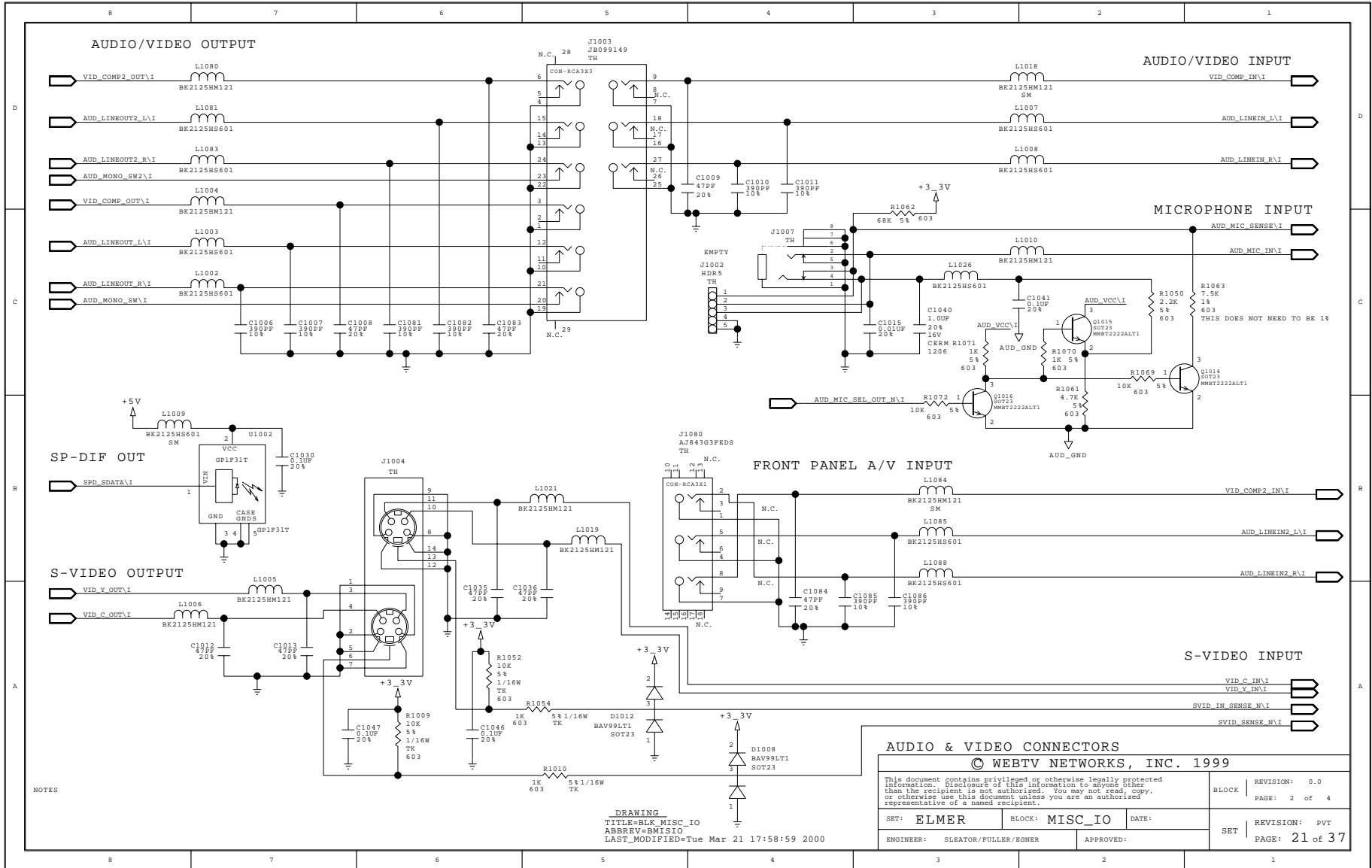
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 LAST_MODIFIED=Mon Aug 14 16:06:17 2000



* - 5% IS SUFFICIENT

DRAWING
 TITLE=BLK_MISC_IO
 ABBREV=BMSISIO
 LAST_MODIFIED=Wed Jul 19 16:48:45 2000

IR INPUT, MSG LED & IR OUTPUT DRIVER.			© WEBTV NETWORKS, INC. 1999	
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SET: ELMER	BLOCK: MISC_IO	DATE:	SET	REVISION: PVT
ENGINEER: SLEATOR/FULLER	APPROVED:			PAGE: 1 of 4
				PAGE: 20 of 37

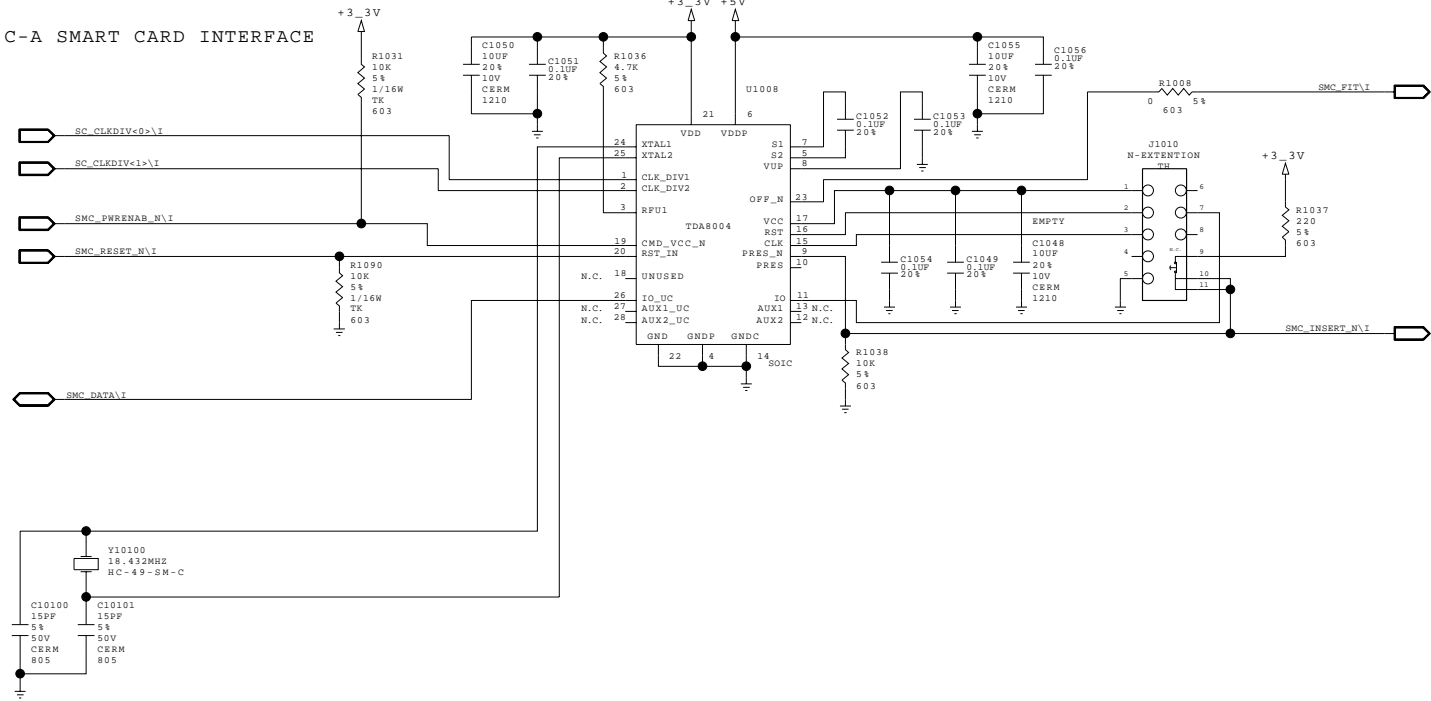


AUDIO & VIDEO CONNECTORS			
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SET: ELMER	BLOCK: MISC_IO	DATE:	REVISION: 0.0
ENGINEER: SLEATOR/PULLER/EGNER	APPROVED:		PAGE: 2 of 4
			REVISION: PVT
			PAGE: 21 of 37

NOTES

DRAWING
 TITLE=BLK_MISC_IO
 ABBREV=BMSIO
 LAST_MODIFIED=Tue Mar 21 17:58:59 2000

C-A SMART CARD INTERFACE



C-A SMART CARD INTERFACE

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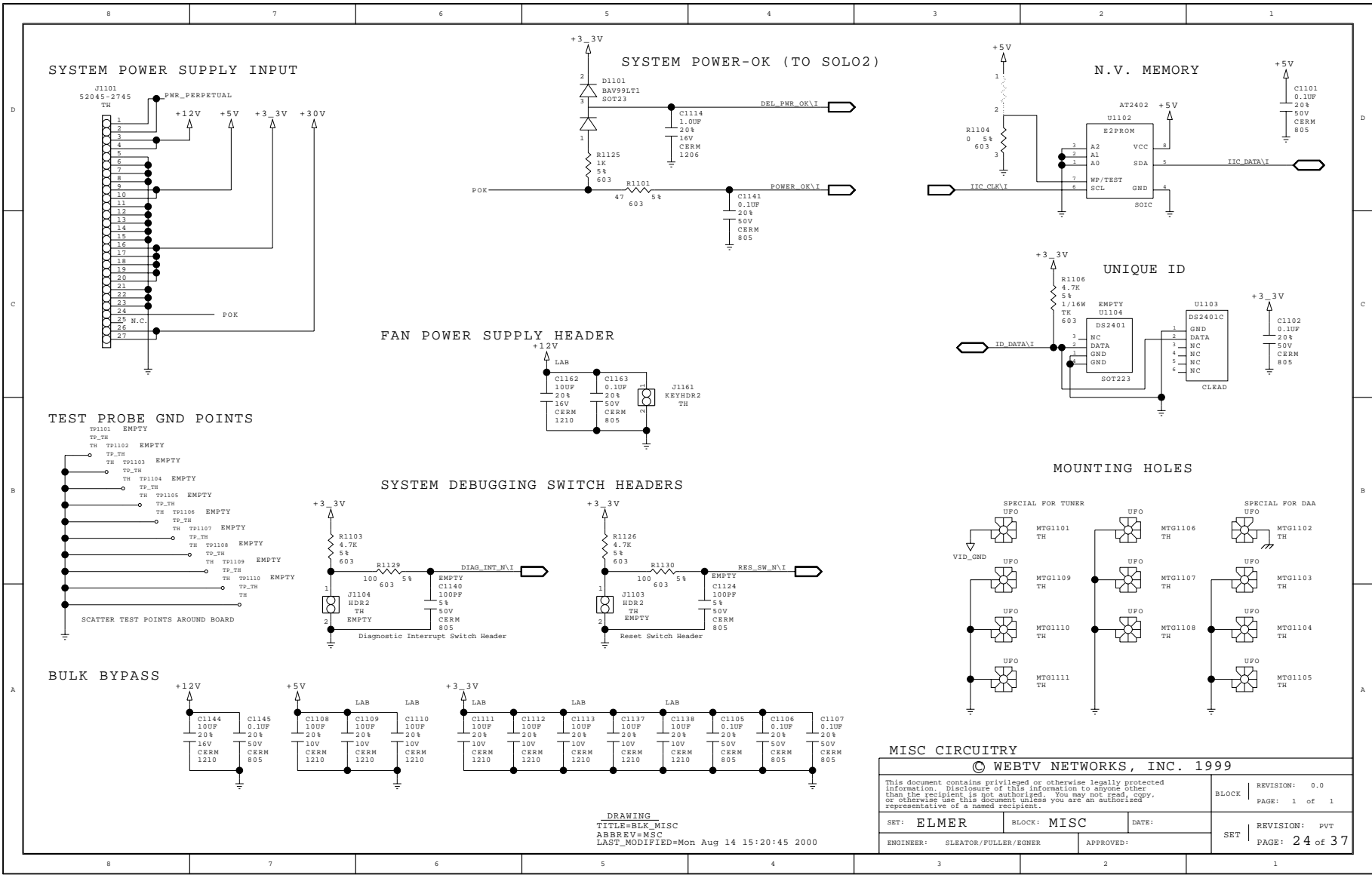
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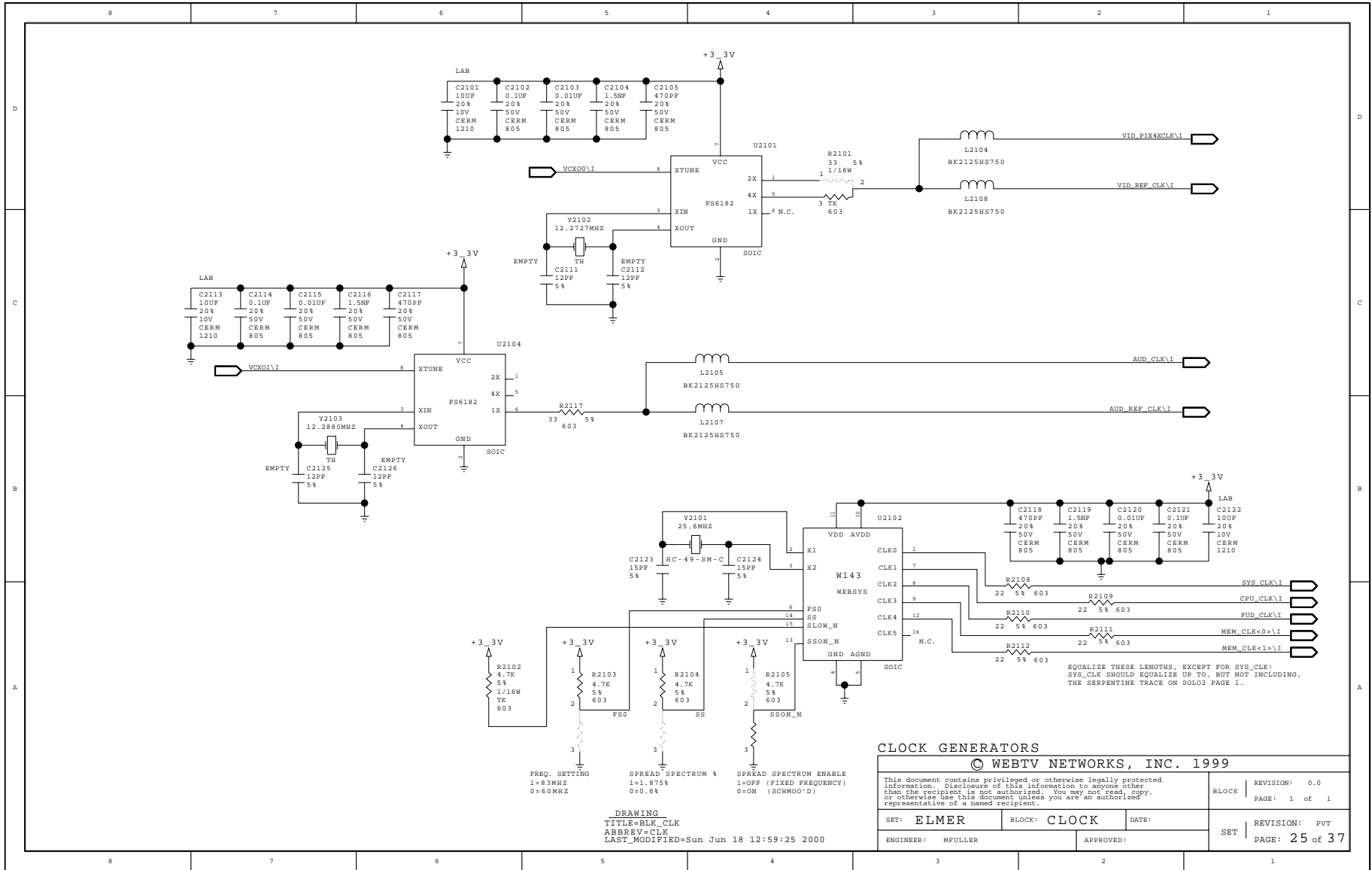
BLOCK REVISION: 0.0
PAGE: 4 of 4

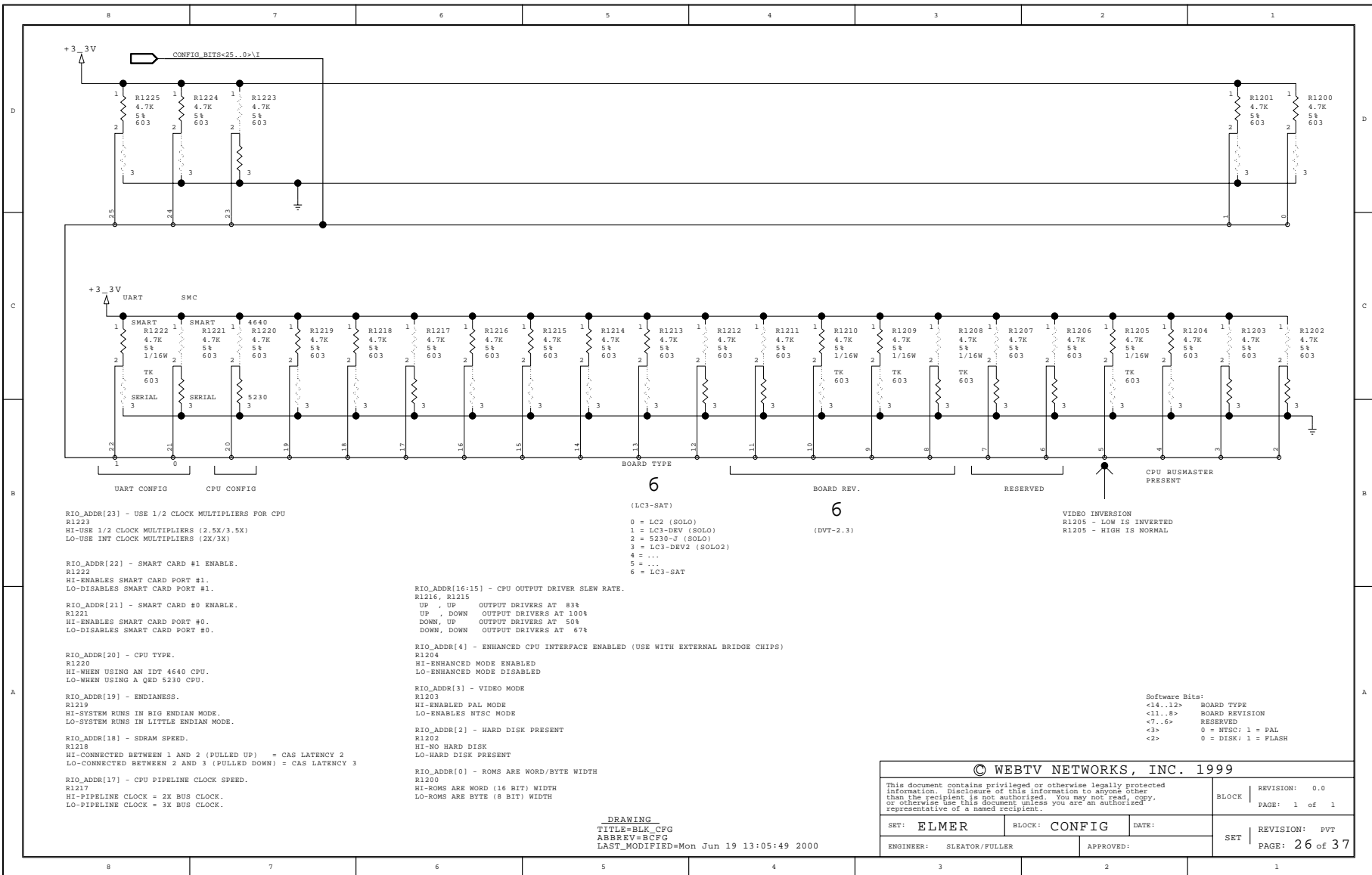
SET: ELMER BLOCK: MISC_IO DATE:
ENGINEER: SLEATOR APPROVED:

SET REVISION: PVT
PAGE: 23 of 37

DRAWING
TITLE=BLK_MISC_IO
ABBREV=BMISIO
LAST_MODIFIED=Thu May 25 01:00:28 2000







RIO_ADDR[23] - USE 1/2 CLOCK MULTIPLIERS FOR CPU
 R1223
 HI-USE 1/2 CLOCK MULTIPLIERS (2.5X/3.5X)
 LO-USE INT CLOCK MULTIPLIERS (2X/3X)

RIO_ADDR[22] - SMART CARD #1 ENABLE.
 R1222
 HI-ENABLES SMART CARD PORT #1.
 LO-DISABLES SMART CARD PORT #1.

RIO_ADDR[21] - SMART CARD #0 ENABLE.
 R1221
 HI-ENABLES SMART CARD PORT #0.
 LO-DISABLES SMART CARD PORT #0.

RIO_ADDR[20] - CPU TYPE.
 R1220
 HI-WHEN USING AN IDT 4640 CPU.
 LO-WHEN USING A QED 5230 CPU.

RIO_ADDR[19] - ENDIANNESS.
 R1219
 HI-SYSTEM RUNS IN BIG ENDIAN MODE.
 LO-SYSTEM RUNS IN LITTLE ENDIAN MODE.

RIO_ADDR[18] - SDRAM SPEED.
 R1218
 HI-CONNECTED BETWEEN 1 AND 2 (PULLED UP) = CAS LATENCY 2
 LO-CONNECTED BETWEEN 2 AND 3 (PULLED DOWN) = CAS LATENCY 3

RIO_ADDR[17] - CPU PIPELINE CLOCK SPEED.
 R1217
 HI-PIPELINE CLOCK = 2X BUS CLOCK.
 LO-PIPELINE CLOCK = 3X BUS CLOCK.

RIO_ADDR[16:15] - CPU OUTPUT DRIVER SLEW RATE.
 R1216, R1215
 UP, UP OUTPUT DRIVERS AT 83%
 UP, DOWN OUTPUT DRIVERS AT 100%
 DOWN, UP OUTPUT DRIVERS AT 50%
 DOWN, DOWN OUTPUT DRIVERS AT 67%

RIO_ADDR[4] - ENHANCED CPU INTERFACE ENABLED (USE WITH EXTERNAL BRIDGE CHIPS)
 R1204
 HI-ENHANCED MODE ENABLED
 LO-ENHANCED MODE DISABLED

RIO_ADDR[3] - VIDEO MODE
 R1203
 HI-ENABLED PAL MODE
 LO-ENABLES NTSC MODE

RIO_ADDR[2] - HARD DISK PRESENT
 R1202
 HI-NO HARD DISK
 LO-HARD DISK PRESENT

RIO_ADDR[0] - ROMS ARE WORD/BYTE WIDTH
 R1200
 HI-ROMS ARE WORD (16 BIT) WIDTH
 LO-ROMS ARE BYTE (8 BIT) WIDTH

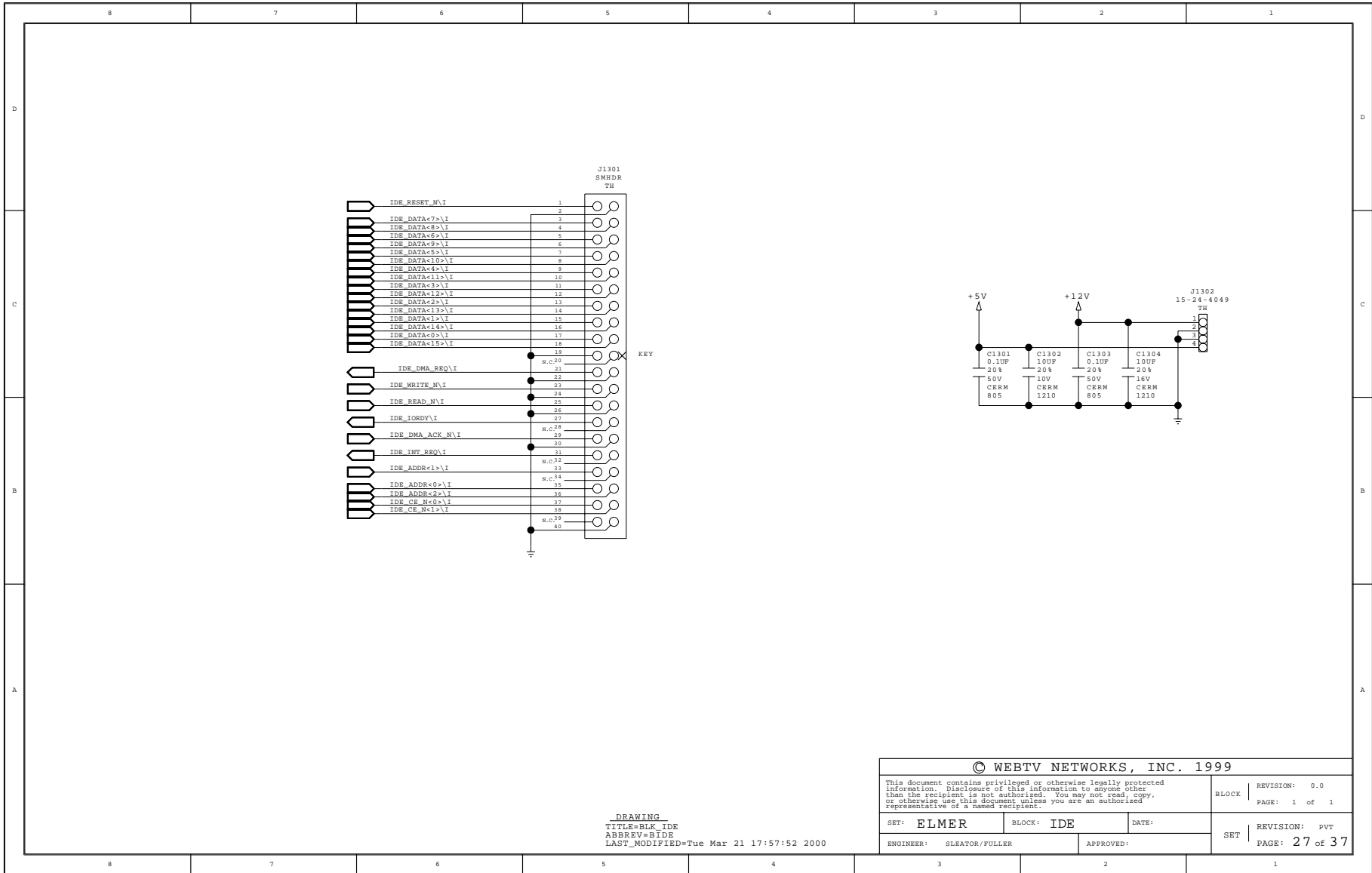
BOARD TYPE
 6 (LC3-SAT)
 0 = LC2 (SOLO)
 1 = LC3-DEV (SOLO)
 2 = 5230-J (SOLO)
 3 = LC3-DEV2 (SOLO2)
 4 = ...
 5 = ...
 6 = LC3-SAT

BOARD REV.
 6 (DVT-2.3)

VIDEO INVERSION
 R1205 - LOW IS INVERTED
 R1205 - HIGH IS NORMAL

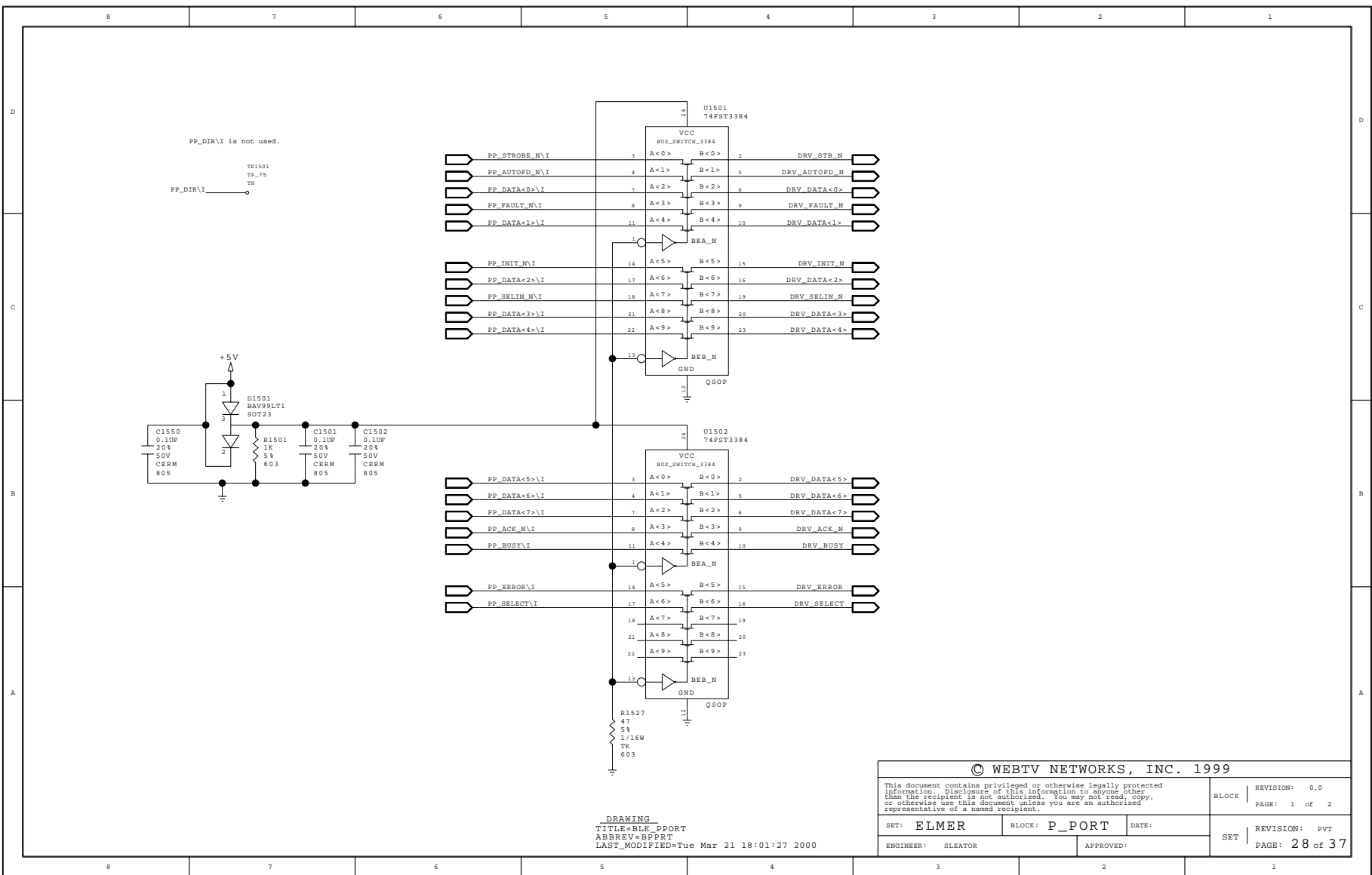
Software Bits:
 <14..12> BOARD TYPE
 <11..8> BOARD REVISION
 <7..6> RESERVED
 <3> 0 = NTSC; 1 = PAL
 <2> 0 = DISK; 1 = FLASH

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SET: ELMER	BLOCK: CONFIG	DATE:	REVISION: 0.0
ENGINEER: SLEATOR/FULLER	APPROVED:		PAGE: 1 of 1
			REVISION: PVT
			PAGE: 26 of 37



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ABBREV=BIDE
LAST_MODIFIED=Tue Mar 21 17:57:52 2000

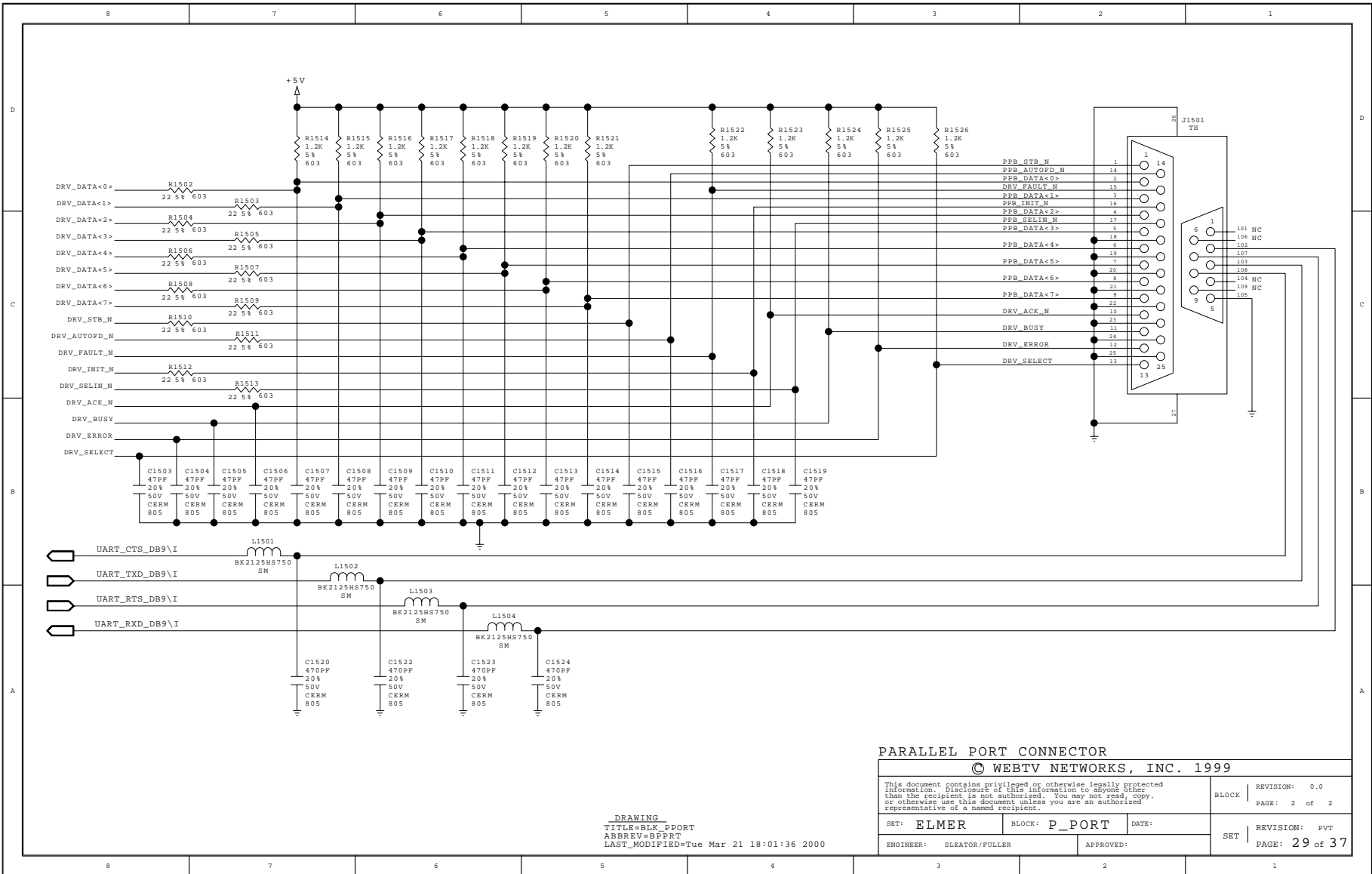
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SET: ELMER	BLOCK: IDE	DATE:	REVISION: 0.0
ENGINEER: SLEATOR/FULLER	APPROVED:	SET	PAGE: 1 of 1
			REVISION: PVT
			PAGE: 27 of 37



PP_DIR\I is not used.
 TP1501
 TP_75
 TH
 PP_DIR\I

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BLOCK	REVISION: 0.0 PAGE: 1 of 2
SET: ELMER	BLOCK: P_PORT
ENGINEER: SLEATOR	DATE:
APPROVED:	REVISION: PVT PAGE: 28 of 37

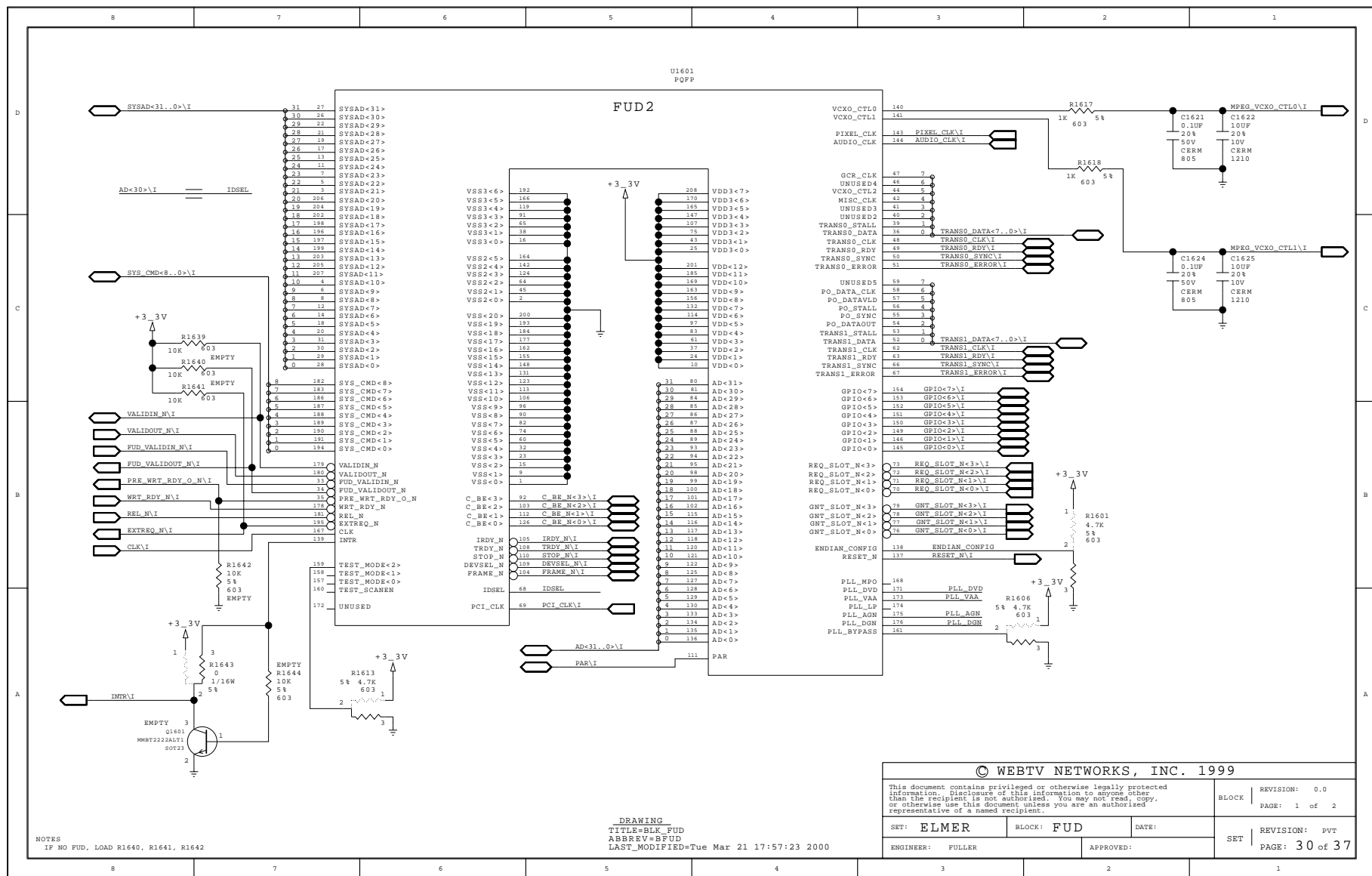
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 LAST_MODIFIED=Tue Mar 21 18:01:27 2000



PARALLEL PORT CONNECTOR
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SET: ELMER	BLOCK: P_PORT	DATE:
ENGINEER: SLEATOR/FULLER	APPROVED:	SET: PVT REVISION: PVT PAGE: 29 of 37

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 ABBREV=BDPC
 LAST_MODIFIED=Tue Mar 21 18:01:36 2000



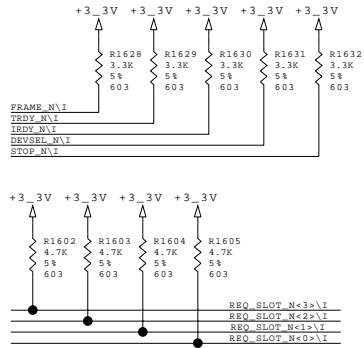
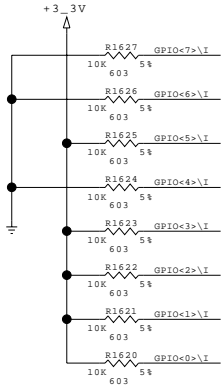
— 44 —

NOTES
IF NO PUD, LOAD R1640, R1641, R1642

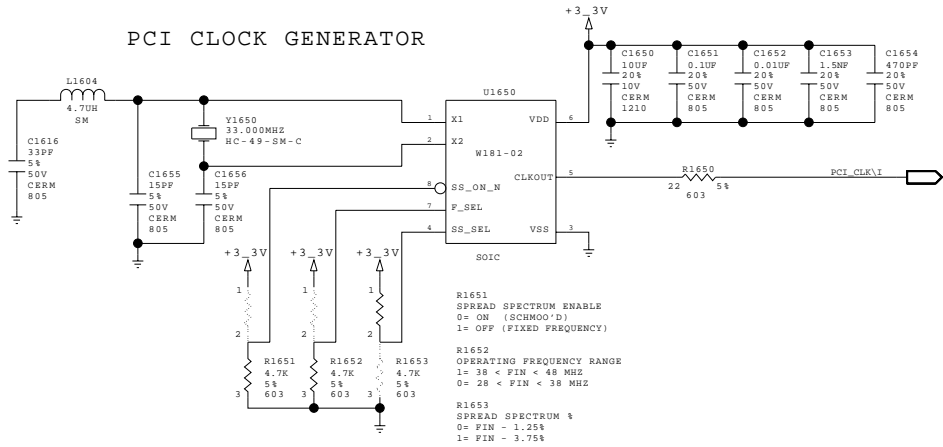
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ABBRV=B_FUD
LAST_MODIFIED=Tue Mar 21 17:57:23 2000

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SET: ELMER	BLOCK: FUD	DATE:
ENGINEER: FULLER	APPROVED:	SET REVISION: PVT PAGE: 30 of 37

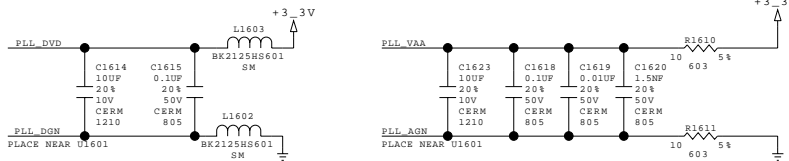
PULL RESISTORS



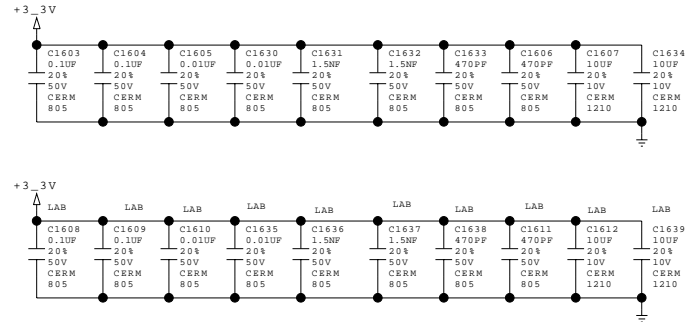
PCI CLOCK GENERATOR



VOLTAGE REFERENCE AND PLL SUPPLIES



BYPASS CAPS



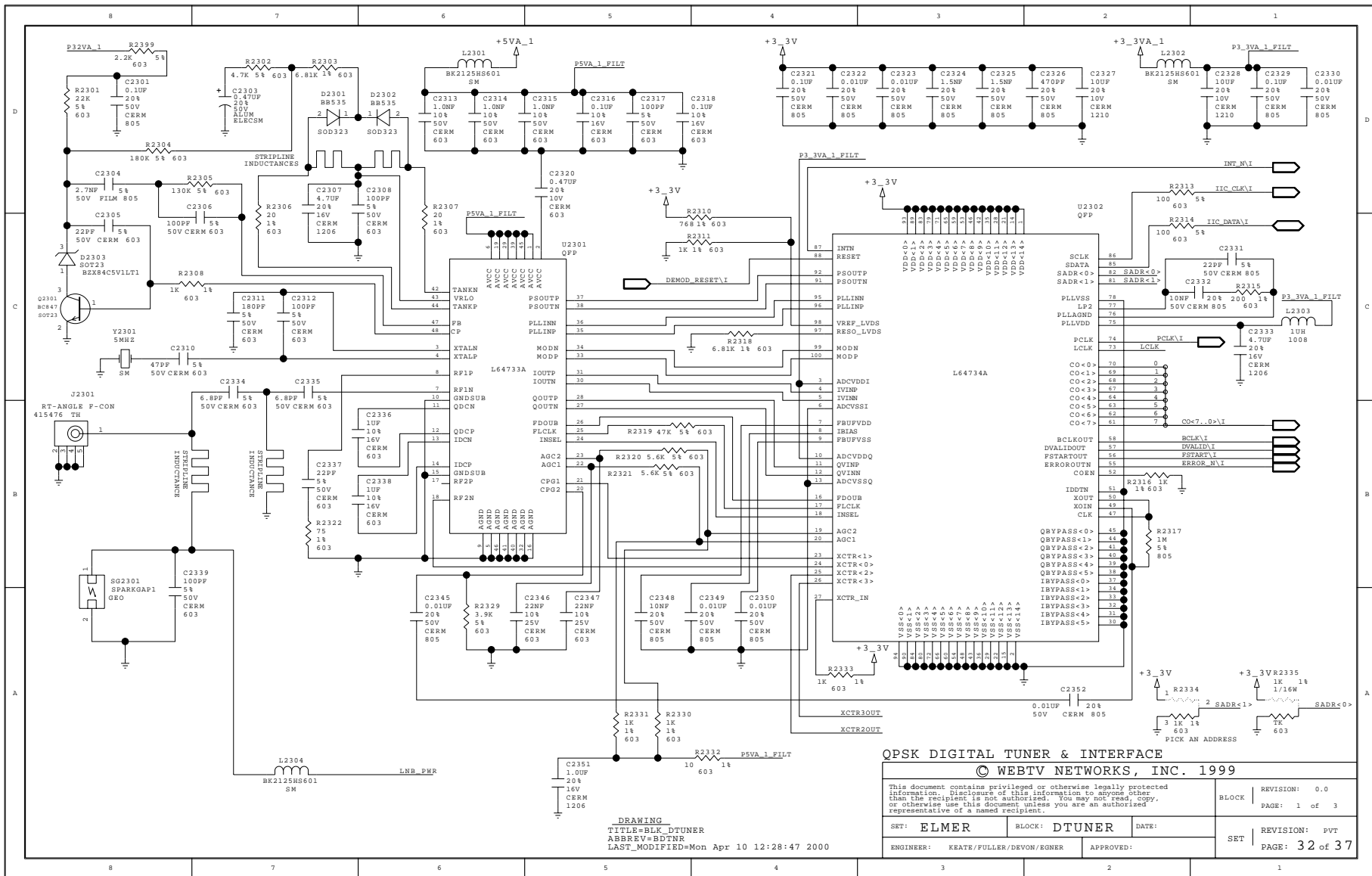
FUD'S FLUFF

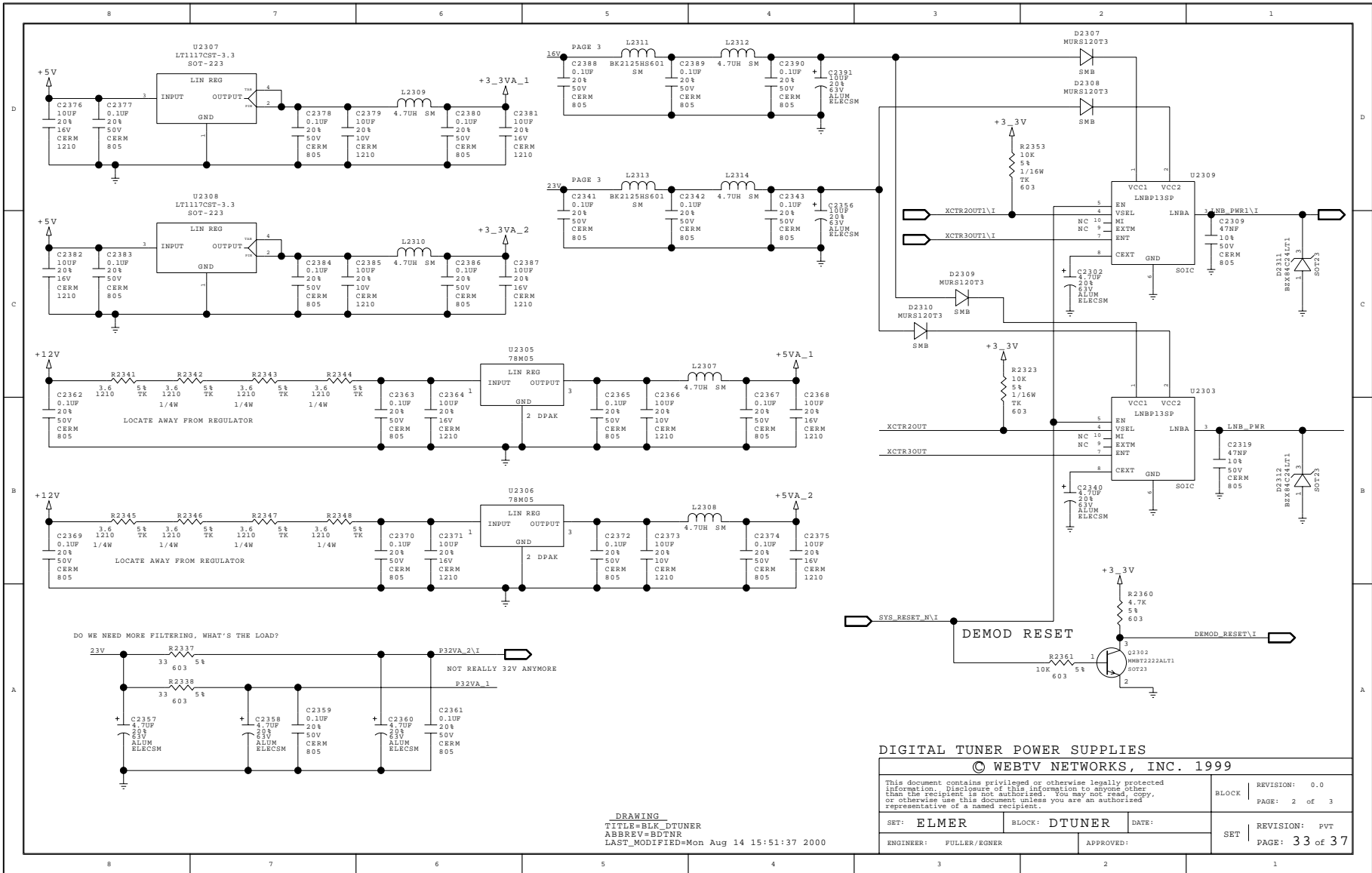
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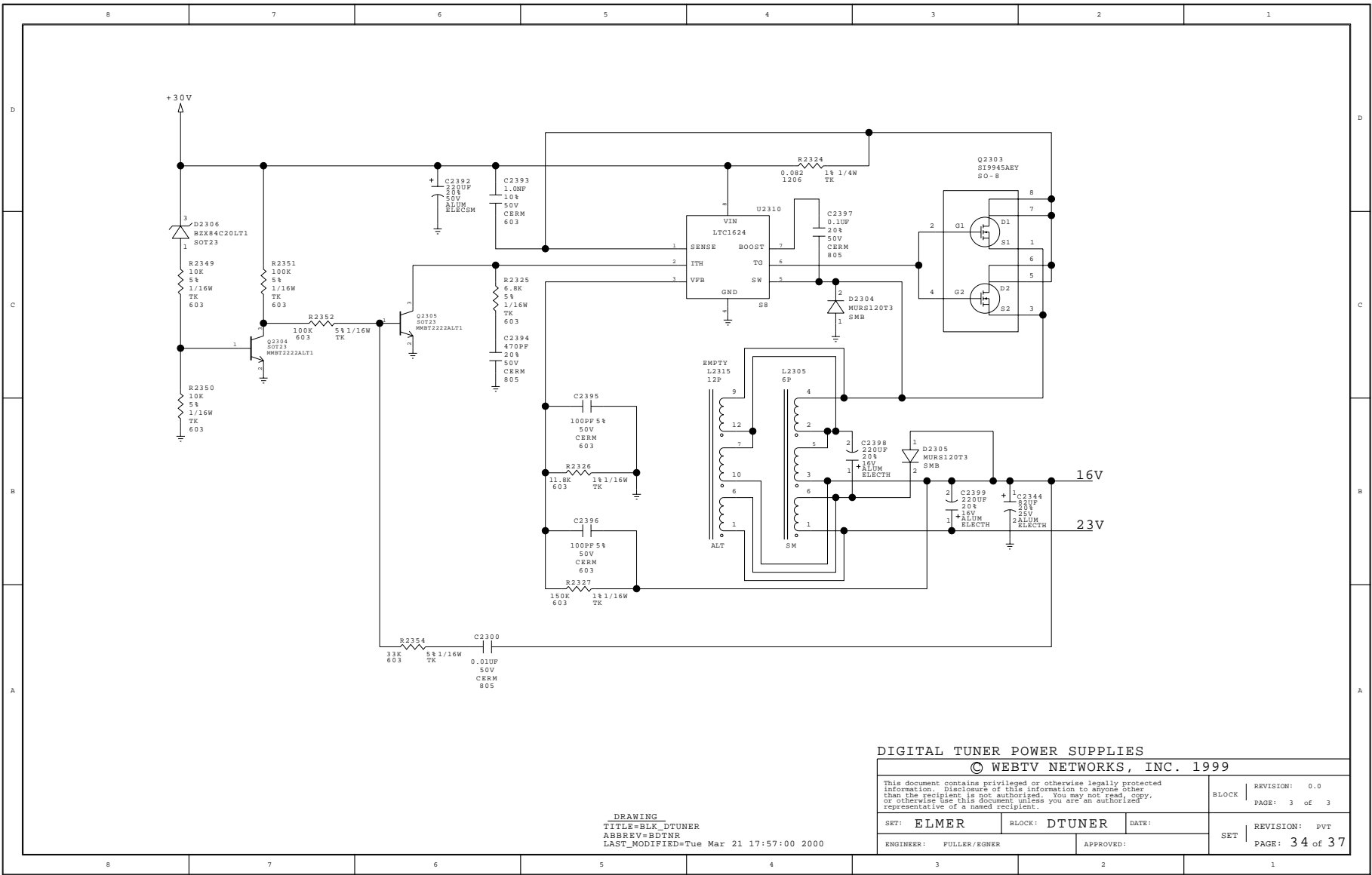
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SET: ELMER	BLOCK: FUD	DATE:	REVISION: PWT PAGE: 31 of 37
ENGINEER: FULLER	APPROVED:		

NOTES:
 GPIO<4> PULLED LOW TO DISABLE BLUE LED ON RESET

DRAWING
 TITLE=BLK_FUD
 ABBREV=FUD
 LAST_MODIFIED=Sun Jun 18 13:08:39 2000





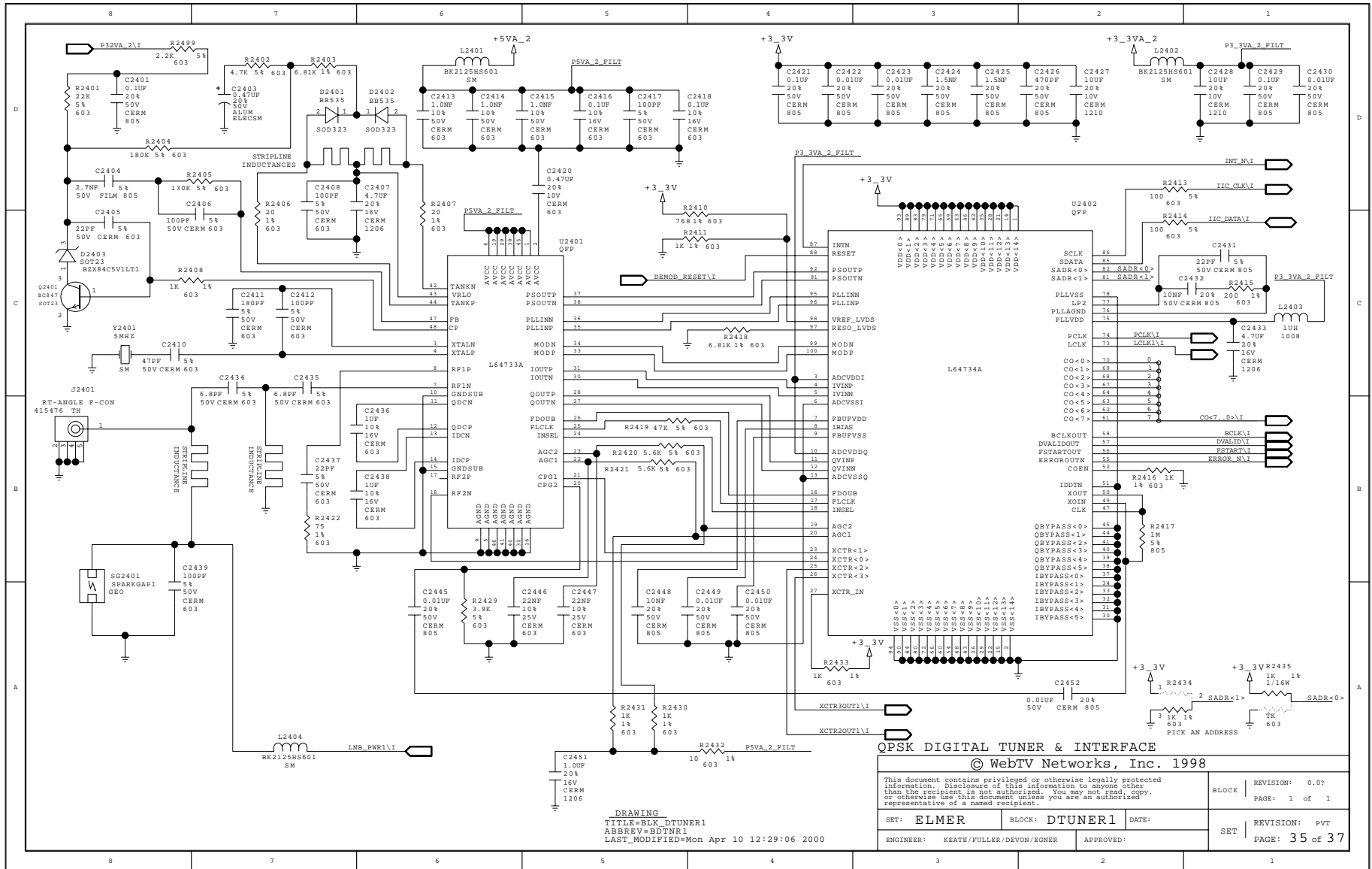


DIGITAL TUNER POWER SUPPLIES
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SET: ELMER	BLOCK: DTUNER	DATE:	REVISION: 0.0
ENGINEER: FULLER/EGNER	APPROVED:		PAGE: 3 of 3
			REVISION: PVT
			PAGE: 34 of 37

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 ABBREV=BDTNR
 LAST_MODIFIED= Tue Mar 21 17:57:00 2000

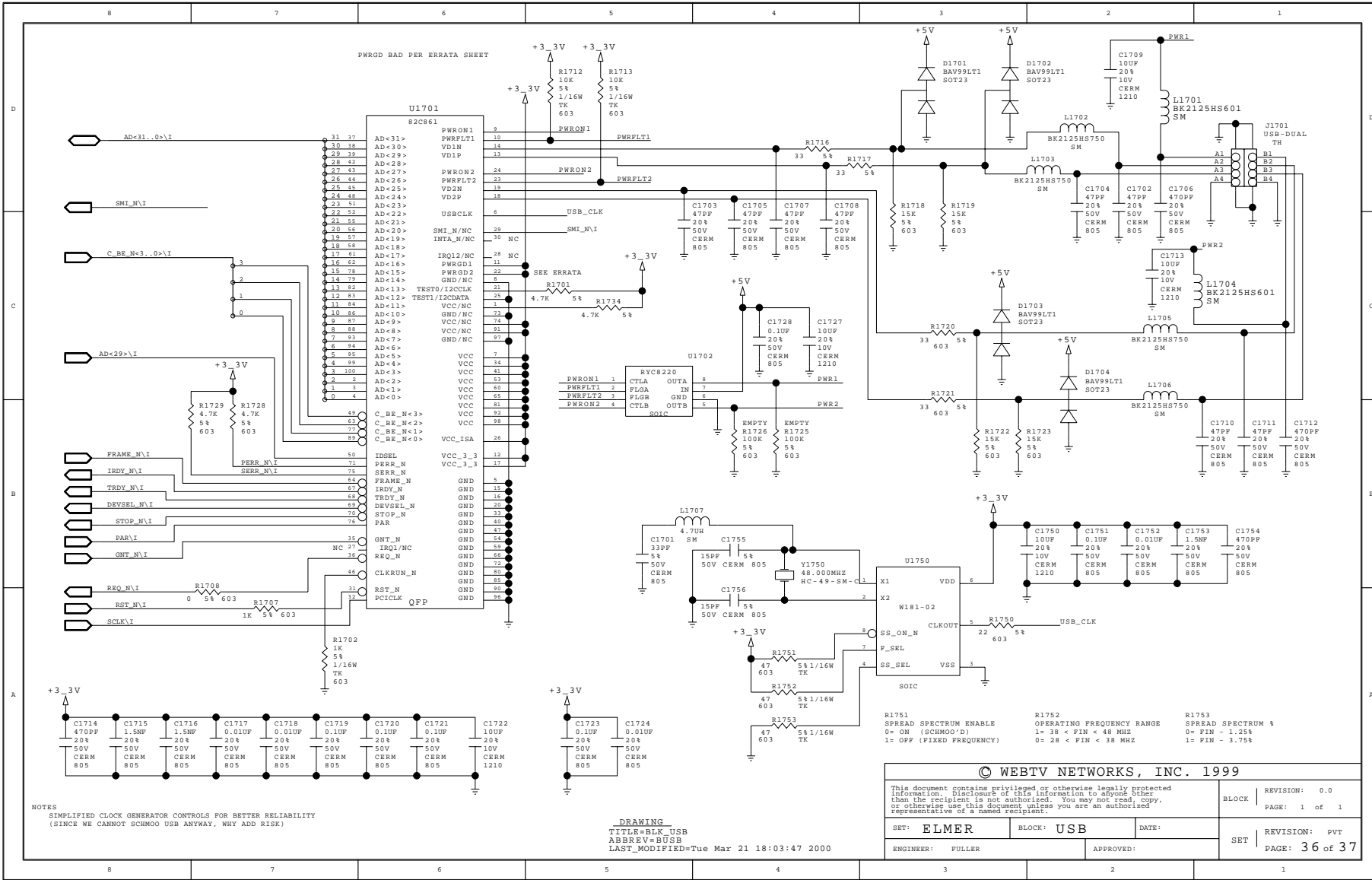


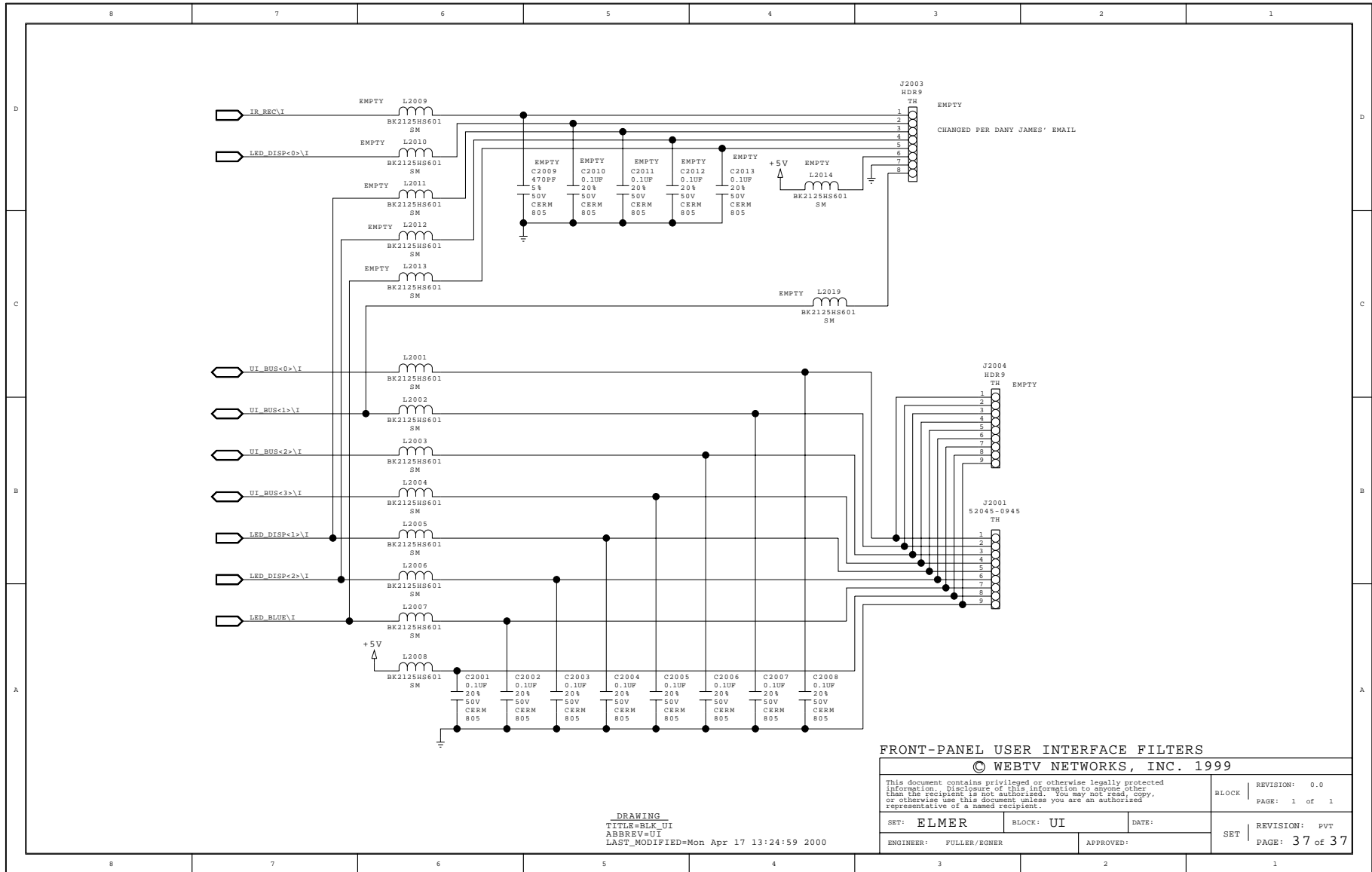
QPSK DIGITAL TUNER & INTERFACE
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SET: ELMER	BLOCK: DTUNER1	DATE:	REVISION: 0.0?
ENGINEER: KEATE/FULLER/DEVON/EGNER	APPROVED:	PAGE: 1 of 1	REVISION: PVT
		PAGE: 35 of 37	

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 ABBREV=BDFNR1
 LAST_MODIFIED=Mon Apr 10 12:29:06 2000



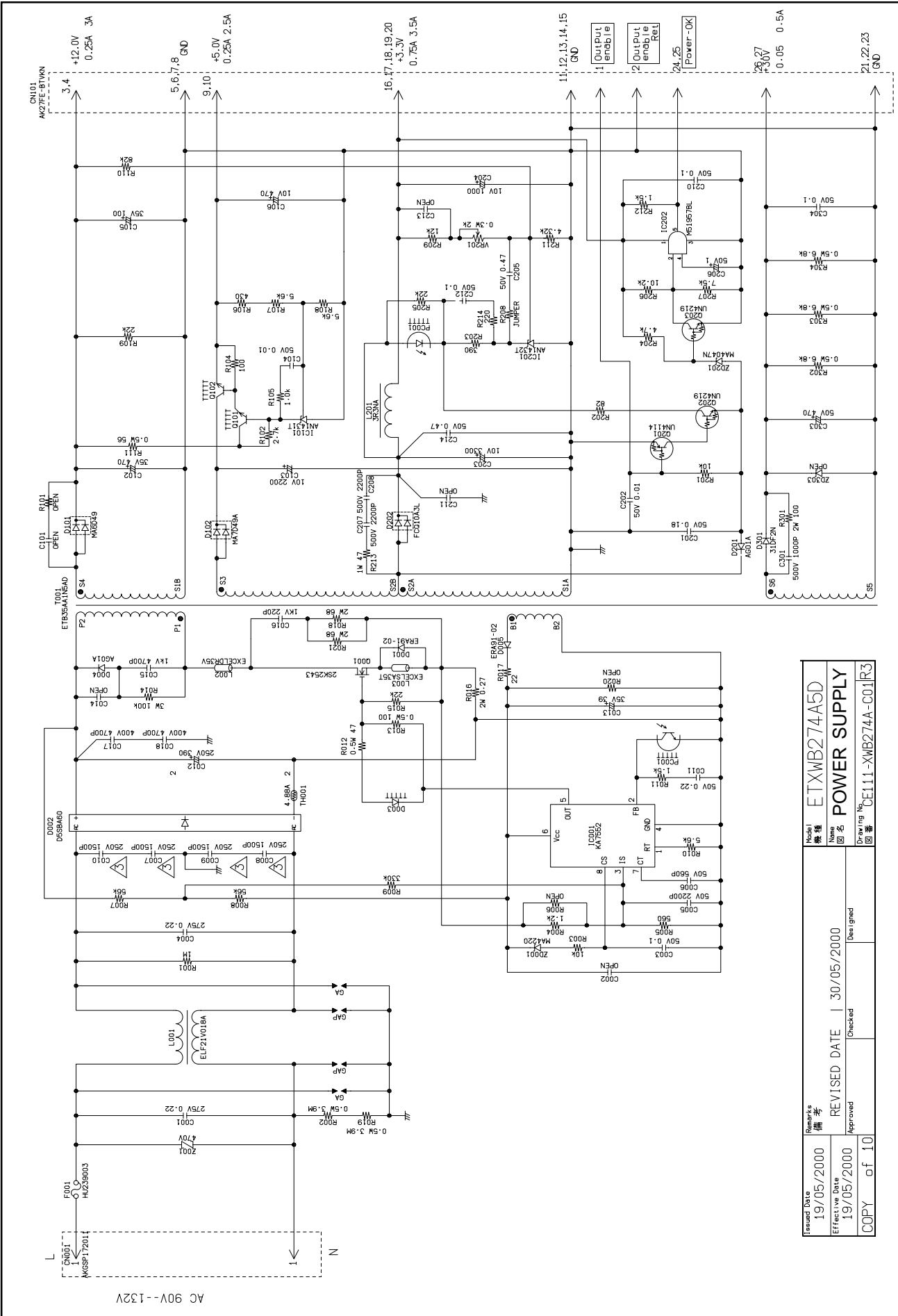


FRONT-PANEL USER INTERFACE FILTERS

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SET: ELMER	BLOCK: UI	DATE:	REVISION: PVT
ENGINEER: FULLER/EGNER	APPROVED:	SET	PAGE: 37 of 37

DRAWING
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 ABBREV=UI
 LAST_MODIFIED=Mon Apr 17 13:24:59 2000





Model 機種	ETXWB274A5D	
Name 圖名	POWER SUPPLY	
Revised Date 備考	19/05/2000	REVISED DATE 30/05/2000
Effective Date 備考	19/05/2000	Approved
Checked	Designed	
Drawing No. 圖番	CE111-XWB274A-C01R3	
COPY	of	10

SECTION 5 EXPLODED VIEW

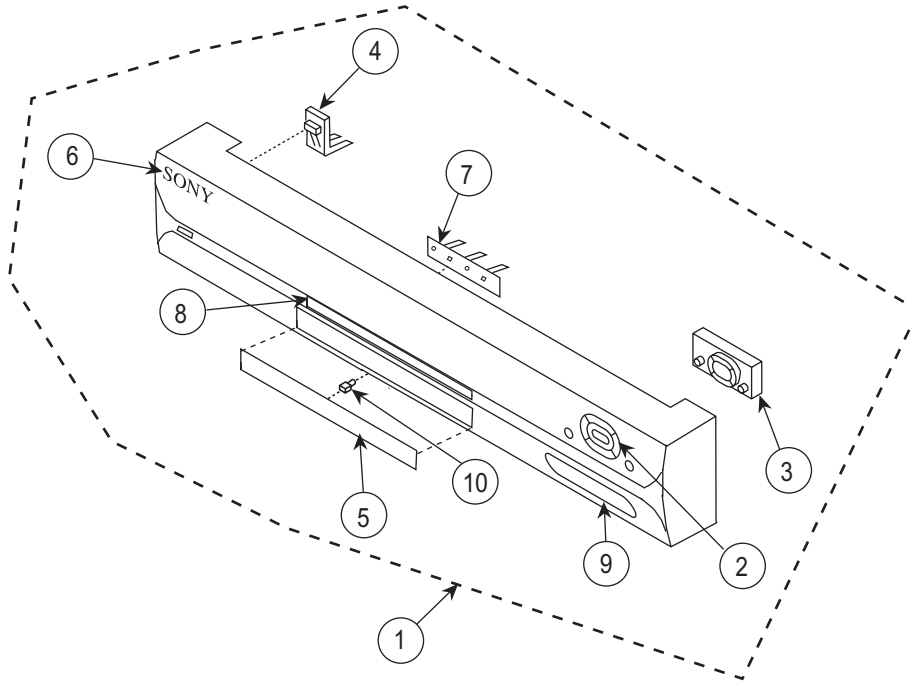
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The component parts of an assembly are indicated by the reference numbers in the remarks column.
- Items marked * are not stocked since they are seldom

required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque  sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

5-1. FRONT PANEL VIEW



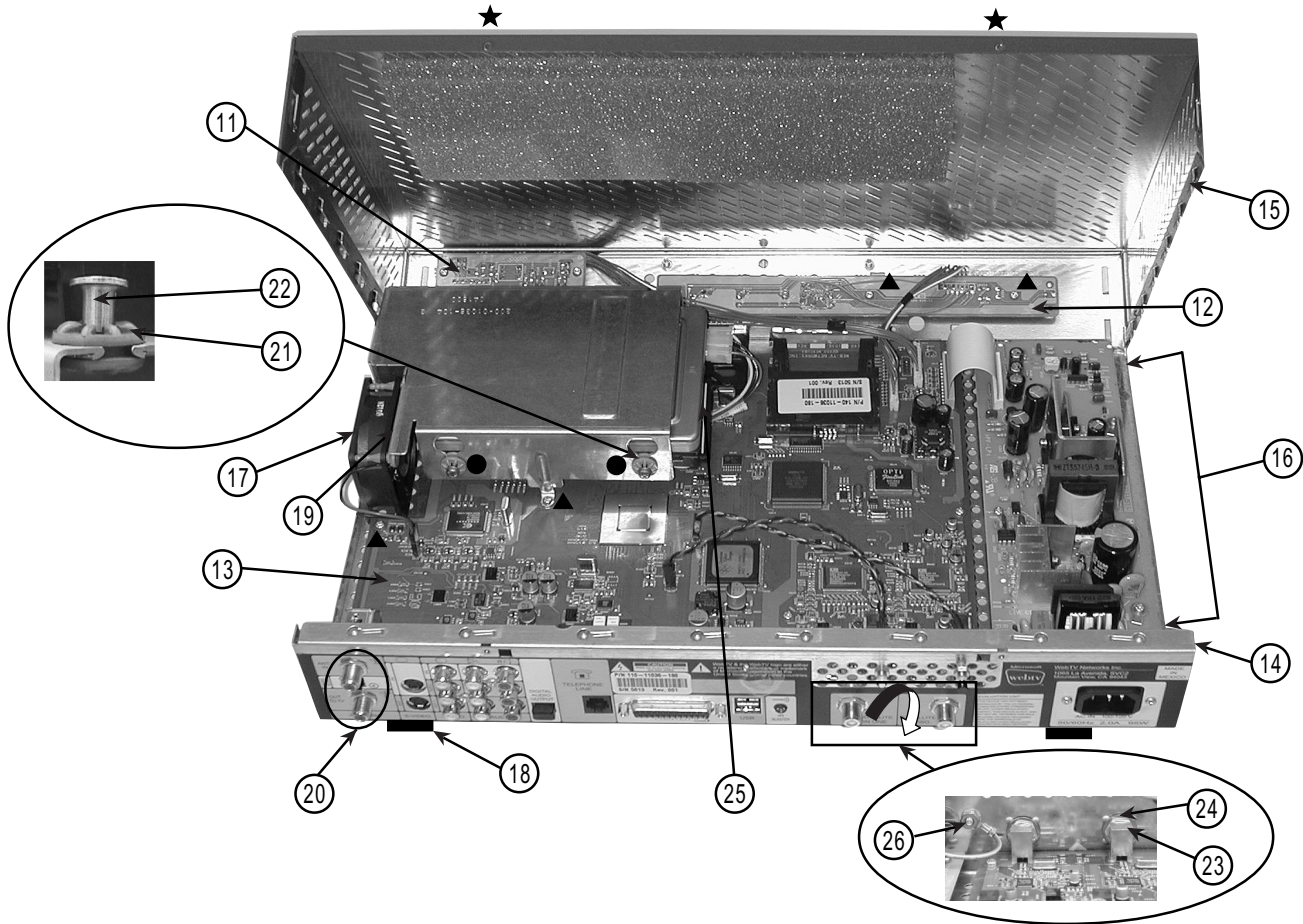
REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4038-163-1	PANEL ASSY, FRONT	(2-10)
2	4-078-516-01	BUTTON, CURSOR	
3	4-078-515-01	BUTTON, MULTI	
4	4-078-514-01	BUTTON, POWER	
5	4-079-951-01	DOOR	
6	4-942-568-61	EMBLEM (NO.5), SONY	
7	4-079-952-01	GUIDE, LED	
8	4-078-517-01	PANEL, INDICATOR	
9	4-079-948-01	CAP, A/V JACK	
10	4-047-464-01	CATCHER, PUSH	

Note: The components identified by shading and mark \triangle are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un triangle et une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-2. REAR VIEW

- ★ 7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3
- ▲ 7-685-871-01 SCREW +BVTT 3X6 (S)
- 4-080-137-01 SCREW (#6-32 X .50)



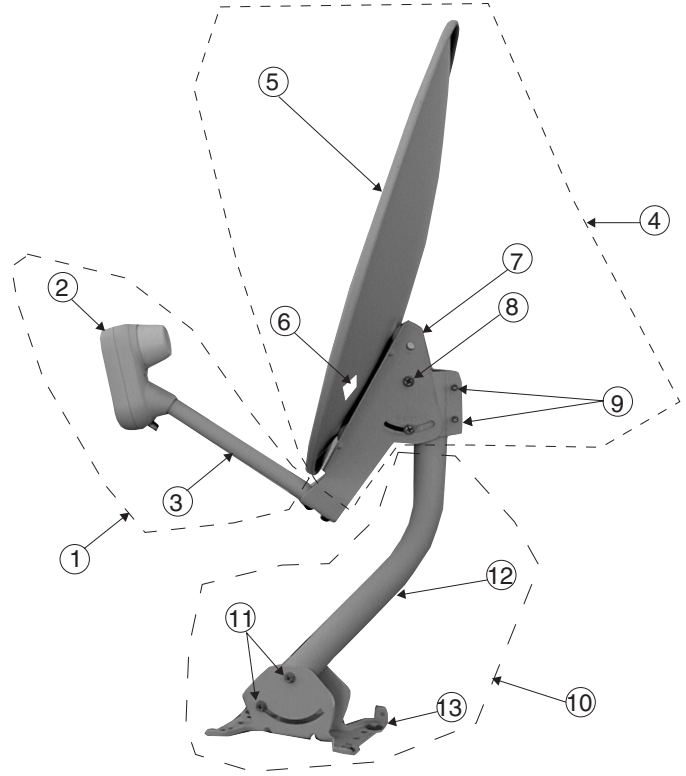
REF. NO.	PART NO.	DESCRIPTION	REMARK
11	A-1372-908-A	HA MOUNTED PC BOARD	
12	A-1372-909-A	HB MOUNTED PC BOARD	
13	1-680-107-11	MAIN PC BOARD	
14	4-079-593-01	CASE, LOWER	
15	4-079-592-01	CASE, UPPER	
16	\triangle 1-468-574-11	POWER SUPPLY	
17	4-079-599-01	FAN	
18	* 4-064-828-01	FOOT	
19	4-079-949-01	RUBBER, FAN MOUNT	
20	3-682-691-00	NUT, WASHER HEXAGON	
21	4-079-950-01	GROMMET DAMPENING	
22	4-080-139-01	GROMMET, METAL FERRULE	
23	4-080-474-01	NUT (3/8) PANEL	
24	4-080-475-01	WASHER (3/8 DIA), PANEL	
25	1-900-803-33	CABLE, RIBBON 40P	
26	4-080-138-01	NUT (6/32), HEX	

5-3. SAN-18D3

REF.NO.	PART.NO.	DESCRIPTION	REMARK
1 *	X-4035-040-2	ARM ASSY, LNB11-13	(2,3)
2	8-598-326-02	CONVERTER, BS SAC-DA201	
3 *	4-061-590-01	ARM, LNB SUPPORT	
5	4-061-583-01	REFLECTOR	
4	X-4035-039-2	REFLECTOR MOUNT ASSY	(5-9)
6 *	4-061-576-11	MODEL NUMBER LABEL	
7	4-061-584-01	MOUNTING BASE REFLECTOR	
8	4-061-581-01	BOLT, 1/4- 20 UNC x 1/2 FORMING	
9	4-061-587-01	BOLT, 1/4-20 UNC X 7/8	
10	X-4035-030-1	MOUNT ASSY, UNIVERSAL	(8-9)
11	4-061-591-01	BOLT, 1/4-20 UNC x 1/2	
12 *	4-061-588-01	UNIVERSAL MOUNT MAST	
13 *	4-061-589-01	UNIVERSAL MOUNT FOOT	

PACKAGING / ACCESSORY ITEMS NOT SHOWN:

- 4-049-203-01 WATERPROOF COVER
- 4-049-478-01 CLIP (2)
- 1-251-841-11 SIGNAL SEEKER
- 3-867-456-21 INSTRUCTION MANUAL
- 4-061-577-11 CARTON

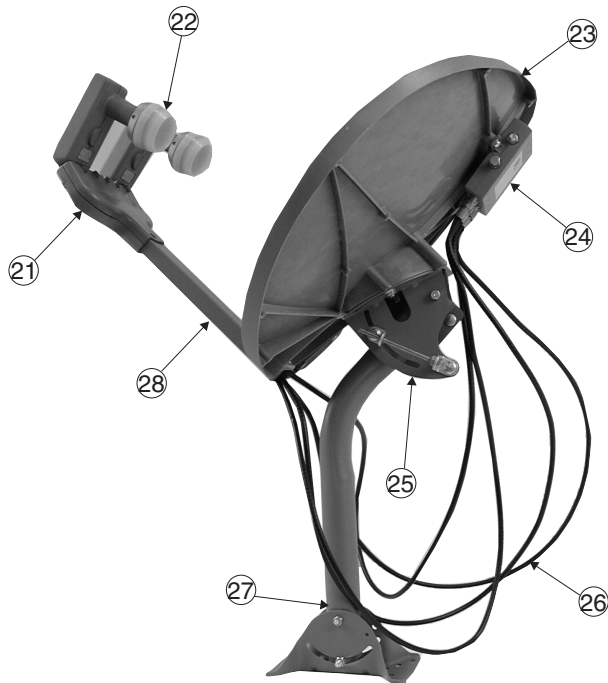


5-4. SAN-24MD1

REF.NO.	PART.NO.	DESCRIPTION	REMARK
21	* 9-885-008-31	LNB HOUSING	
22	* 9-885-008-26	LNB DUAL OUTPUT (2)	
23	9-885-008-21	REFLECTOR	
24	9-885-008-27	OUTDOOR MULTI-SWITCH 4X4	
25	* 9-885-008-23	TILT AZ-EI ASSEMBLY	
26	9-885-008-28	CABLE SET	
27	9-885-008-24	UNIVERSAL MOUNT ASSY	
28	* 9-885-008-25	LNB SUPPORT ARM	

ACCESSORY ITEMS NOT SHOWN:

- * 9-885-008-29 HARDWARE BAG
- 9-885-008-30 HARDWARE BAG FINE TUNE ADJ.





SECTION 6 ELECTRICAL PARTS LIST

Note:

The components identified by shading and mark are critical for safety. Replace only with part number specified.

The components identified by in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

Note:

Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
----------	----------	-------------	--------	----------	----------	-------------	--------



* A-1372-908-A HA MOUNTED PC BOARD

CONNECTOR

CN001 * 1-564-524-11 PLUG, CONNECTOR 9P

DIODE

D001 8-719-911-19 DIODE 1SS119-25TD
 D002 8-719-911-19 DIODE 1SS119-25TD
 D003 8-719-911-19 DIODE 1SS119-25TD

D004 8-719-911-19 DIODE 1SS119-25TD
 D005 8-719-911-19 DIODE 1SS119-25TD
 D006 8-719-911-19 DIODE 1SS119-25TD
 D007 8-719-911-19 DIODE 1SS119-25TD
 D008 8-719-911-19 DIODE 1SS119-25TD

D009 8-719-911-19 DIODE 1SS119-25TD
 D010 8-719-911-19 DIODE 1SS119-25TD
 D011 8-719-911-19 DIODE 1SS119-25TD
 D012 8-719-911-19 DIODE 1SS119-25TD
 D013 8-719-911-19 DIODE 1SS119-25TD

SWITCH

S001 1-572-198-11 SWITCH, KEYBOARD
 S002 1-572-198-11 SWITCH, KEYBOARD
 S003 1-572-198-11 SWITCH, KEYBOARD
 S004 1-572-198-11 SWITCH, KEYBOARD
 S005 1-572-198-11 SWITCH, KEYBOARD
 S008 1-572-198-11 SWITCH, KEYBOARD
 S009 1-572-198-11 SWITCH, KEYBOARD

* A-1372-909-A HB MOUNTED PC BOARD

CAPACITOR

C050 1-124-589-11 ELECT 47µF 20% 16V

CONNECTOR

CN050 * 1-564-523-11 PLUG, CONNECTOR 8P

DIODE

D050 8-719-050-05 DIODE SLR-325VRT31
 D051 8-719-060-26 DIODE SLR-325YCT31
 D052 8-719-050-06 DIODE SLR-325MGT31
 D053 8-719-069-45 DIODE SELU5E23C-TP15
 D054 8-719-911-19 DIODE 1SS119-25TD
 D055 8-719-911-19 DIODE 1SS119-25TD
 D056 8-719-911-19 DIODE 1SS119-25TD

IC

IC050 8-742-207-20 HYB IC SBX3071-01

TRANSISTOR

Q050 8-729-422-27 TRANSISTOR 2SD601A-QRS-TX

RESISTOR

R050 1-216-033-00 RES-CHIP 220 5% 1/10W
 R051 1-216-033-00 RES-CHIP 220 5% 1/10W
 R052 1-216-033-00 RES-CHIP 220 5% 1/10W
 R053 1-216-033-00 RES-CHIP 220 5% 1/10W
 R055 1-216-017-91 RES-CHIP 47 5% 1/10W

SWITCH

S050 1-572-198-11 SWITCH, KEYBOARD

* 1-680-107-11 MAIN PC BOARD PARTS LIST

Reference Number	Sony Part Number	Part Description
C0204, C0234, C0401, C0402, C0416, C0417, C0625, C0643, C0663, C1480, C1520, C1522-C1524, C1606, C1611, C1633, C1638, C1654, C1706, C1712, C1714, C1754, C2009, C2105, C2117, C2118, C2326, C2394, C2426	9-885-012-20	CAP-CER, 470PF
C0356, C1008, C1009, C1012, C1013, C1025, C1035, C1036, C1083, C1084, C1499, C1503-C1519, C1702-C1705, C1707, C1708, C1710, C1711	9-885-012-19	CAP-CER, 47PF
D0601	9-885-011-71	DIODE-BRDGERECT
D0701-D0708, D0801-D0809, D1007-D1012, D1101, D1401, D1501, D1701-D1704	9-885-011-75	DIODE-ARRAY
D1003	9-885-011-73	DIODE-LED
D2301, D2302, D2401, D2402	9-885-011-77	DIODE-VARACTOR
D2303, D2403	9-885-011-78	DIODE-ZEN, 5.1V
D2304, D2305, D2307-D2310	9-885-011-70	DIODE-RECT, SI, 200V, 2A
D2306	9-885-011-79	DIODE-ZEN, 20V3
D2311, D2312	9-885-011-76	DIODE-ZEN
F0601	9-885-012-22	PROT, POLYSW, TR600-150, 3A, 600V
J0601	9-885-011-24	CONN-TEL, RJ-11, 2
J1004	9-885-011-27	CONN-AV, S-VID, DUAL STACK
J1005	9-885-011-29	CONN-SMART, 8
J1301		CONN-HDR
J1501	9-885-011-26	CONN-DSUB, SNGL, 25P
J1701	9-885-011-25	CONN-USB, DUAL STACK
J2301, J2401	9-885-011-28	CONN-COAX, F
L0201-L0203, L0601-L0603, L0701, L0802, L1001-L1003, L1007-L1009, L1026, L1081, L1083, L1085, L1088, L1407, L1414, L1421, L1422, L1425, L1429, L1498, L1499, L1602, L1603, L1701, L1704, L2001-L2014, L2019, L2301, L2302, L2304, L2311, L2313, L2401, L2402, L2404	9-885-012-24	FER, 600, 100MHZ, 200MA
Q0351	9-885-011-82	IC-MOSFET
Q0601	9-885-011-68	XSTR-PNP
Q0602	9-885-011-69	XSTR-FET
Q0801, Q0803-Q0806, Q0808-Q0811, Q1001, Q1002, Q1007, Q1008, Q1010, Q1014-Q1016, Q1401, Q2302, Q2304, Q2305	9-885-011-81	XSTR-NPN
Q0802, Q1003-Q1005, Q1009, Q1011	9-885-011-80	XSTR-PNP
Q0807, Q0812	9-885-011-72	XSTR-FET, N-CH, 2N7002
Q2301, Q2401	9-885-011-83	XSTR-NPN
Q2303	9-885-011-74	XSTR-FET
R0354	9-885-012-23	RES-PWR, 1%, 1/2W, 2010
U0203, U0205	9-885-011-84	IC-VREG, 2.5V
U0301	9-885-011-89	IC-CPU, 64BIT-RISC
U0351	9-885-012-04	IC-SWREG
U0401-U0404	9-885-011-67	MEM-SDRAM
U0601, U0703, U0807, U1407, U2305, U2306	9-885-011-85	IC-VREG, +5V, 78M05ACDT, 500MA
U0604	9-885-011-94	IC-DAA, MODEM-SIDE, DM207, 5V, 10MA
U0605, U0606	9-885-011-95	IC-DAA, LINEOPTCPLR, IL388, 5V, 450MW
U0607	9-885-011-93	IC-DAA
U0650	9-885-011-96	IC-CODEC, STEREO
U0701	9-885-011-98	IC-FILT
U0801	9-885-011-97	IC-CODEC, 2-CH AUDIO
U0802, U0805, U0808, U0809	9-885-011-88	IC-OPAMP, SINGLE SUP
U0804, U0806	9-885-012-02	IC-SW, QUAD BILATERAL
U1	9-885-011-30	IC-ASIC
U1008	9-885-012-07	IC-SMART
U1103	9-885-011-66	MEM-SSID
U1401	9-885-011-23	SUBASSMBLY-MODULATOR
U1403	9-885-011-99	IC-DCDR, VIDEO
U1404	9-885-012-00	IC-SW, DUAL FET BUS
U1501, U1502	9-885-012-01	IC-SW, 10BIT BUS
U1601	9-885-011-65	IC-ASIC
U1650, U1750	9-885-011-91	IC-CLKGEN
U1701	9-885-012-03	IC-INTFC
U1702	9-885-012-09	IC-USB
U2101, U2104	9-885-011-92	IC-CLKGEN, VXCO
U2102	9-885-011-90	IC-CLKGEN
U2301, U2401	9-885-012-05	IC-TUNER
U2302, U2402	9-885-012-06	IC-TUNER
U2303, U2309	9-885-011-87	IC-VREG, 15-25V, LNBP13SP, 900MA
U2307, U2308	9-885-011-86	IC-VREG, +3.3V, 1117CST, 800MA
U2310	9-885-012-08	IC-SWREG
V0601	9-885-012-21	PROT, SID, P3100EA-70, 1A, 350V
Y0601	9-885-012-13	XTAL, 4.096MHZ
Y10100	9-885-012-14	XTAL, 18.432MHZ
Y1401	9-885-012-12	XTAL, 14.31818MHZ
Y1650	9-885-012-16	XTAL, 33.000MHZ
Y1750	9-885-012-17	XTAL, 48.000MHZ
Y2101	9-885-012-15	XTAL, 25.600MHZ
Y2102	9-885-012-10	XTAL, 12.2727MHZ
Y2103	9-885-012-11	XTAL, 12.288MHZ
Y2301, Y2401	9-885-012-18	XTAL, 5.000MHZ

REFNO.	PART NO.	DESCRIPTION	REMARK	REFNO.	PART NO.	DESCRIPTION	REMARK
<u>ACCESSORIES AND PACKAGING</u>							
1-769-758-11		CABLE, MODULAR (WITH PLUG)					
4-079-602-01		CARTON, INDIVIDUAL					
1-575-335-21		CORD, CONNECTION (S VIDEO)					
1-751-271-12		CORD, CONNECTION (AV)					
1-558-226-11		CORD, CONNECTION (COAXIAL)					
4-079-600-01		CUSHION, RIGHT					
4-079-943-21		MANUAL, INSTRUCTION					
1-779-110-11		PLUG, ADAPTOR					
1-782-913-21		IR BLASTER					
1-783-722-11		CORD SET, POWER					
<u>REMOTE COMMANDER</u>							
1-476-337-11		REMOTE COMMANDER (RM-Y804)					
4-978-977-01		BATTERY COVER (RM-Y804)					

