TOSHIBA

6934

FILE NO. 020-9504

SERVICE MANUAL

COLOR TELEVISION

N5ES Chassis

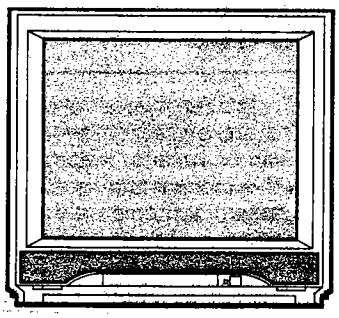
CF27E55, CF30E50

(TAC9510) *(TAC9513)*

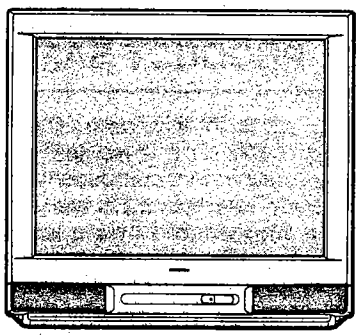
CF32E50

(TAC9516)

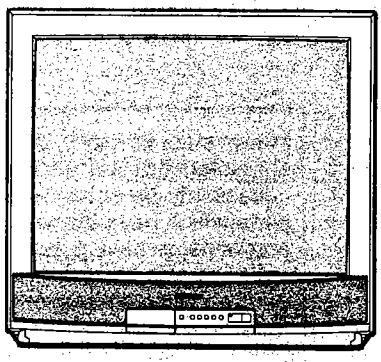
CF27E55



CF30E50



CF32E50



PRINTED IN JAPAN, Apr., 1995 (So)

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is Ⓐ kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed Ⓑ kV.

	CF27E55	CF30E50	CF32E50
Ⓐ	28.1 kV	29.7 kV	31.0 kV
Ⓑ	29.5 kV	31.1 kV	32.4 kV

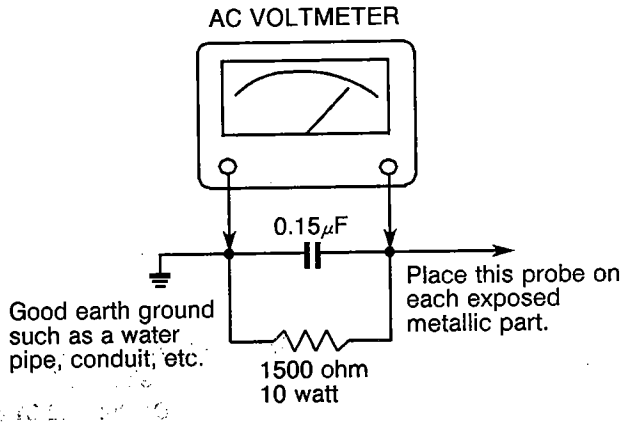
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

   Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μF, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts rms. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

SPECIFICATIONS

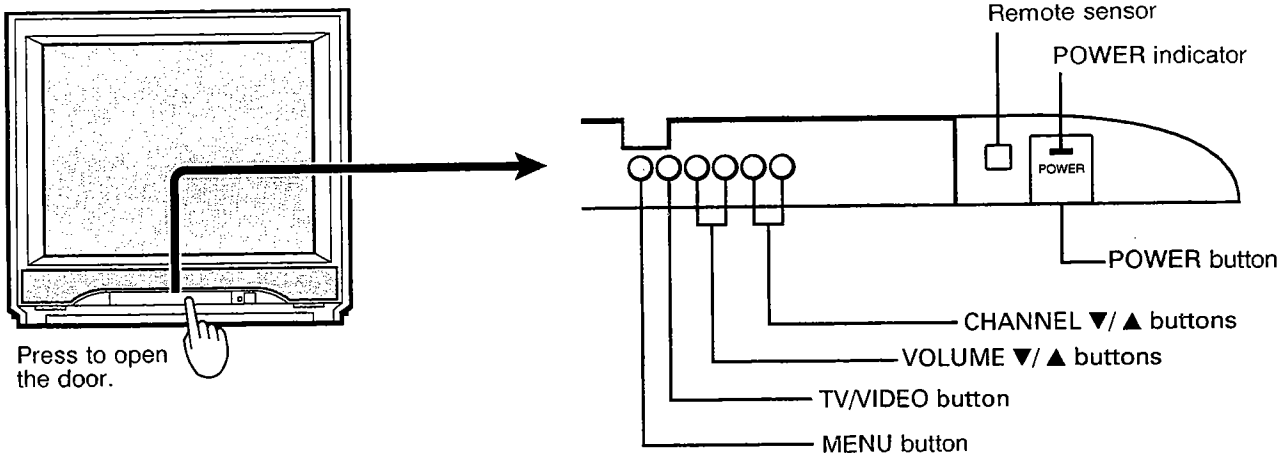
TELEVISION SYSTEM	NTSC standard
CHANNEL COVERAGE	VHF: 2 through 13 UHF: 14 through 69 Cable TV: mid band (A-8 through A-1, A through I) super band (J through W) hyper band (AA through ZZ, AAA, BBB) ultra band (65 through 94, 100 through 125)
POWER SOURCE	120V AC, 60 Hz
POWER CONSUMPTION	CF27E55: 95 W (average), 1.1 W (standby) CF30E50: 101 W (average), 1.1 W (standby) CF32E50: 103 W (average), 1.1 W (standby)
AUDIO POWER	5W + 5W
PICTURE TUBE	CF27E55: 27 inches, A68AEG25×13, 421 sq. inches of viewable area, 110° deflection, D/T CF30E50: 30 inches, A76JTS50×02, 432 sq. inches of viewable area, 110° deflection, D/T CF32E50: 32 inches, A80JZH50×01, 481 sq. inches of viewable area, 110° deflection, D/T
SPEAKER TYPE	CF27E55: 2-3/8×4-3/4 inches (60×120 mm) oval CF30E50: 2-3/8×4-3/4 inches (60×120 mm) oval CF32E50: 2-3/4×5-1/8 inches (170×130 mm) oval
VIDEO/AUDIO TERMINALS	S-VIDEO INPUT Y-INPUT: 1 V(p-p), 75 ohm, negative sync. C-INPUT: 0.286 V(p-p) (burst signal), 75 ohm VIDEO/AUDIO INPUT VIDEO: 1 V(p-p), 75 ohm, negative sync. AUDIO: 150 mV(rms) (30% modulation, 47k ohm) VARIABLE AUDIO OUTPUT 0–350 mV(rms) (30% modulation, 4.7k ohm)
DIMENSIONS	CF27E55: Width: 26-3/4 inches (679 mm) Height: 23-13/16 inches (603 mm) Depth: 19-1/2 inches (495 mm) CF30E50: Width: 29-41/64 inches (750 mm) Height: 27-11/64 inches (690 mm) Depth: 22-41/64 inches (563 mm) CF32E50: Width: 30-7/16 inches (773 mm) Height: 28-5/64 inches (713 mm) Depth: 22-31/64 inches (571 mm)
MASS	CF27E55: 88.8 lbs (40.3 kg) CF30E50: 115.3 lbs (52.3 kg) CF32E50: 128.9 lbs (58.0 kg)
SUPPLIED ACCESSORIES	Remote Control with 2 size "AAA" batteries Antenna adapter
OPTIONAL TV STAND	CF27E55: ST2702 CF30E50: ST3002 CF32E50: ST3212

Design and specifications are subject to change without notice.

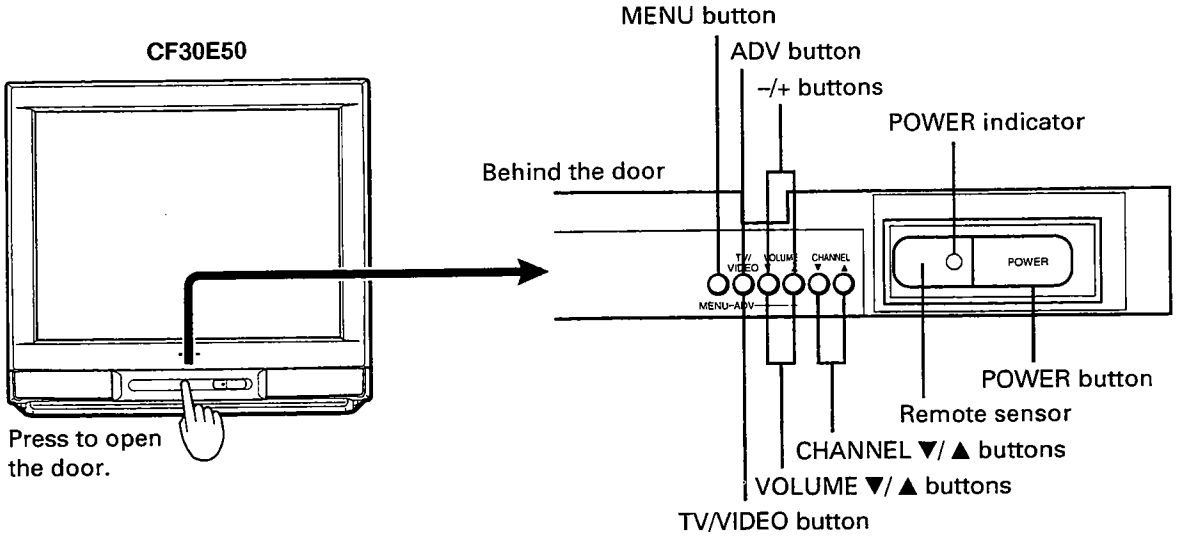
LOCATION OF CONTROLS (TV Set)

For specific use of each control, consult the corresponding page numbers in brackets.

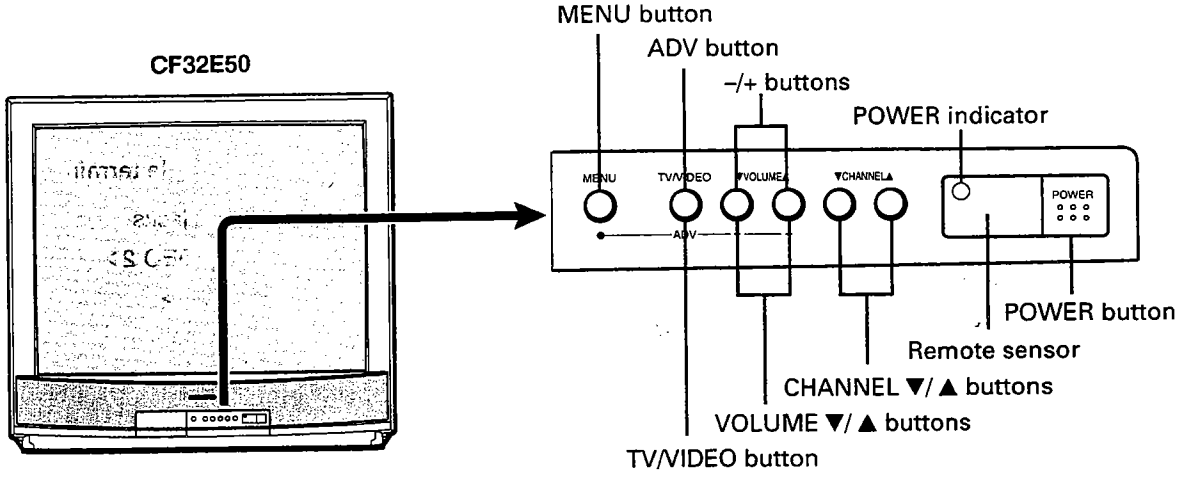
CF27E55



CF30E50

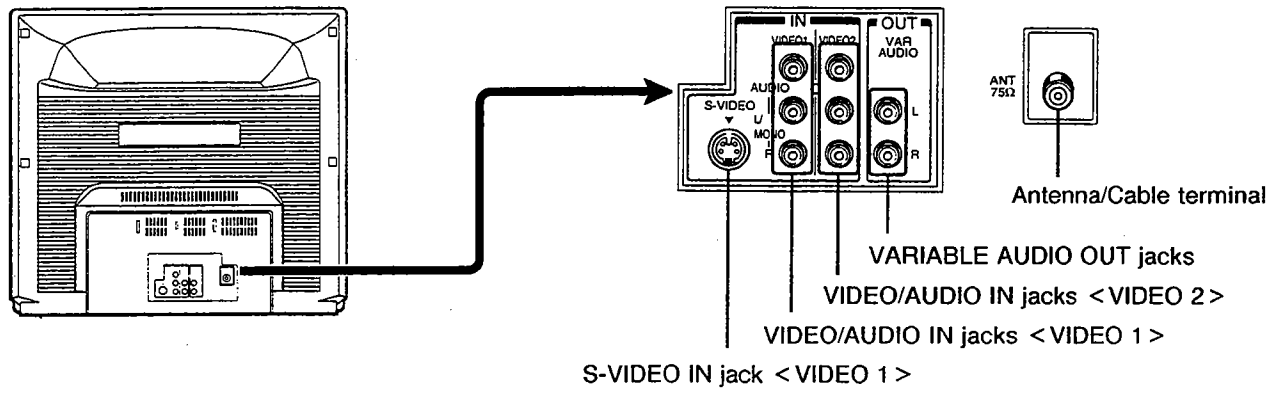


CF32E50

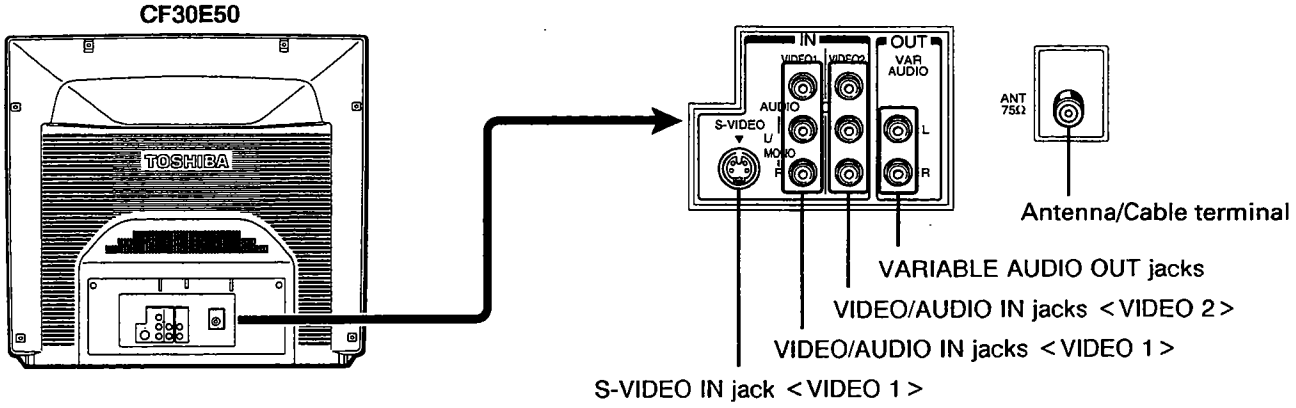


LOCATION OF CONTROLS (TV Set) (CONTINUED)

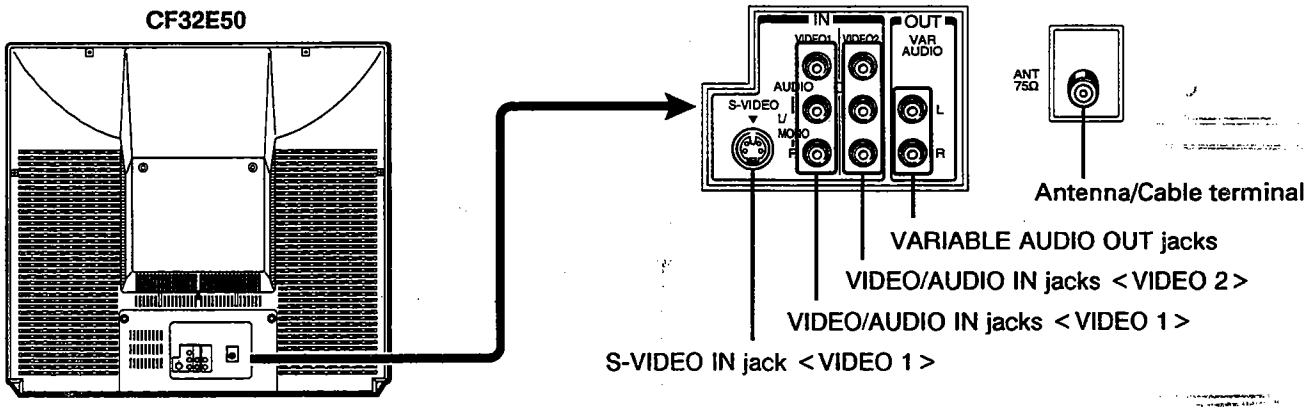
CF27E55



CF30E50



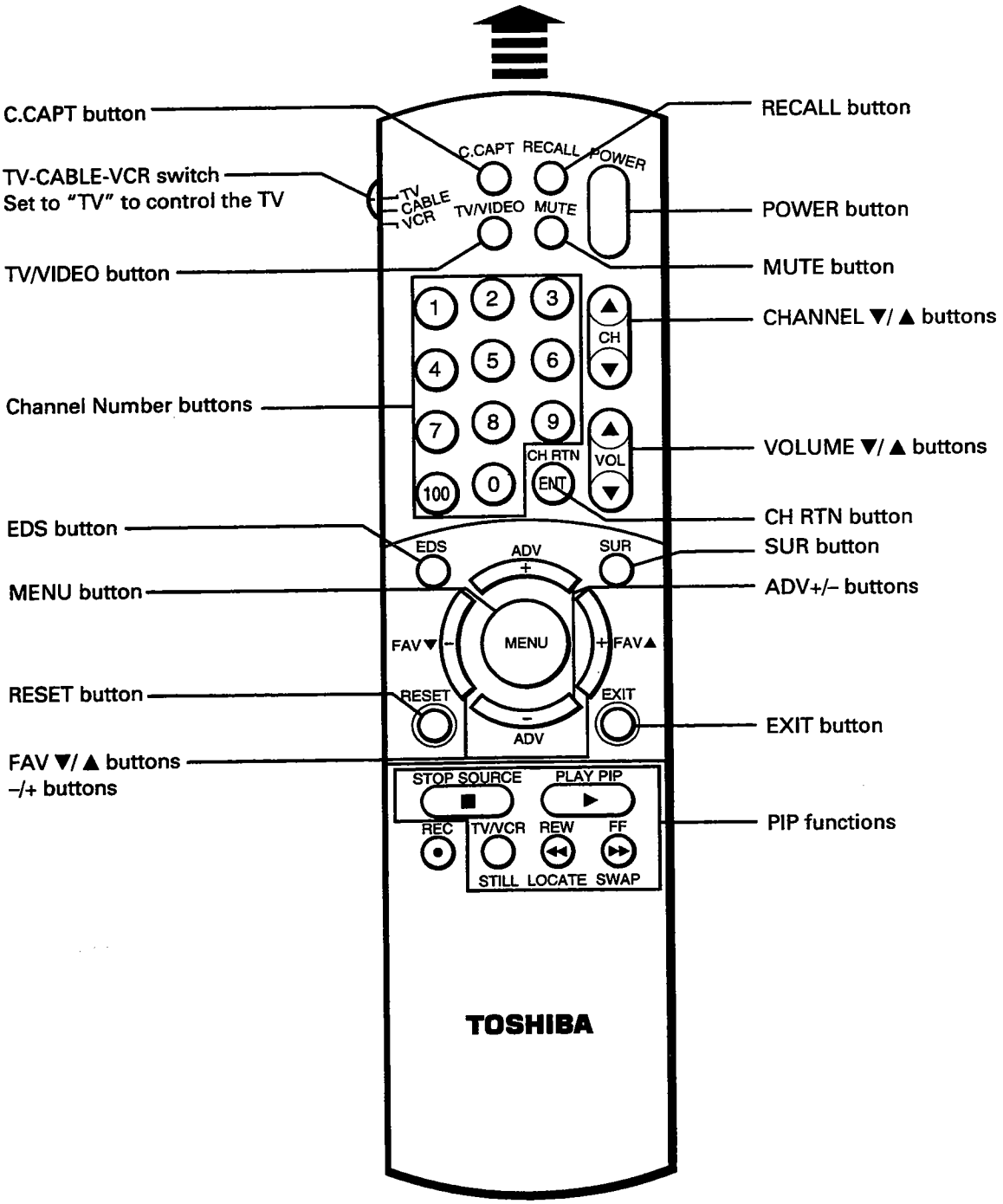
CF32E50



LOCATION OF CONTROLS (Remote Control)

Only the buttons that are used to operate the TV set are described here.

Aim at the remote sensor on the TV



BEFORE USING THE REMOTE CONTROL

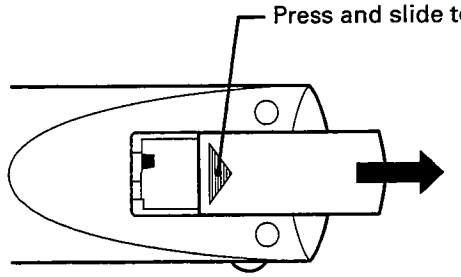
INTRODUCTIONS

With this Remote Control, you can operate your TV and most models of remote-controlled VCR's and Cable TV Converters even if they are different brands.
However, this Remote Control must be programmed to control other brands of VCR's and/or Converters. If you will be using your TV set with a TOSHIBA VCR, your remote has already been preprogrammed for you.

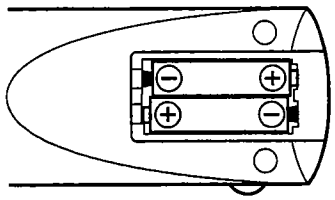
- Before attempting to operate your Remote Control, install the batteries according to the section "Installing and replacing batteries" shown below.
- For more detailed instructions, see the section "Programming the Remote Control" on page 9.

INSTALLING AND REPLACING BATTERIES

1. Place the Remote Control with the face down. Press down on the ridged area of the battery cover and slide it off.



2. Place two "AAA" size batteries, matching the + and – signs on each battery to the + and – signs of the battery compartment.



3. Replace the battery cover until the lock snaps.

Notes:

- After installing new batteries, the Remote Control will set itself to the codes for TOSHIBA's TV and VCR. If you are using the Remote Control to operate equipment that uses different codes, it will have to be reprogrammed for those codes.
- This Remote Control may have functions not available on the original remote control.
- These functions may or may not operate your VCR or Cable TV Converter. Refer to the owner's manuals supplied with the equipment to see which functions are available.
- The remote control supplied with your VCR or Cable TV Converter may have keys not duplicated on this Remote Control. If these functions are desired, the original remote will have to be used.

CAUTIONS:

- Do not throw your batteries into a fire. Dispose of your batteries in a designated disposal area.
- Do not combine used old batteries with new ones.
- Do not mix battery types.

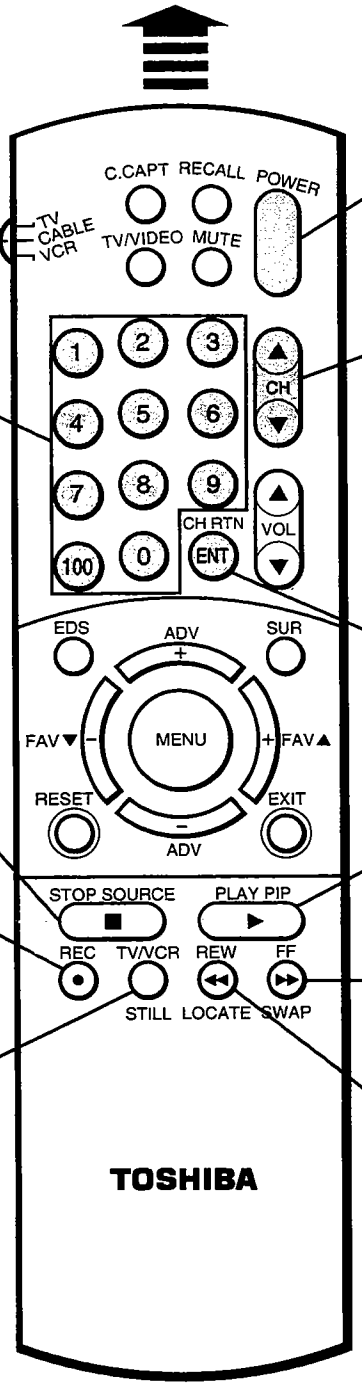
TIPS FOR BEST OPERATION

- For optimum performance, aim the Remote Control directly at the TV from a distance of no more than 23 ft (7m) and be sure there is no obstruction between the Remote Control and the TV.
- If your Remote Control does not always adjust the TV as you wish, you probably need to replace the batteries.
- Remove dead batteries immediately to prevent battery acid from leaking into the battery compartment.
- If you do not intend to use the Remote Control for a long period, remove the batteries.

USING THE REMOTE WITH VCR OR CABLE TV CONVERTER

- To control TOSHIBA VCR, first set the TV-CABLE-VCR switch to "VCR" position. The buttons shown below will then control the VCR. The rest of the buttons operate the TV as usual.
  If you have another brand of VCR, you can probably program your Remote to control it.
- To control a cable TV converter, this Remote Control must be programmed to recognize the brand of your converter.
  Set the TV-CABLE-VCR switch to "CABLE" position whenever you control the cable TV converter.

Aim at the VCR or cable TV converter



TV-CABLE-VCR switch
"VCR" : To control VCR
"CABLE" : To control cable TV converter

Channel number buttons
Press the numbers desired for direct access.

STOP button
Press to stop the tape.

REC button
Press to start recording.

TV/VCR button
Press to the TV mode to view one program while recording another program.

POWER button
Press the button to turn the VCR (or converter) on.
Press again to turn off.

CHANNEL ▼ / ▲ buttons
Press ▲ button to select next higher channel.
Press ▼ button to select next lower channel.

CH RTN button

PLAY button
Press to begin tape playback.

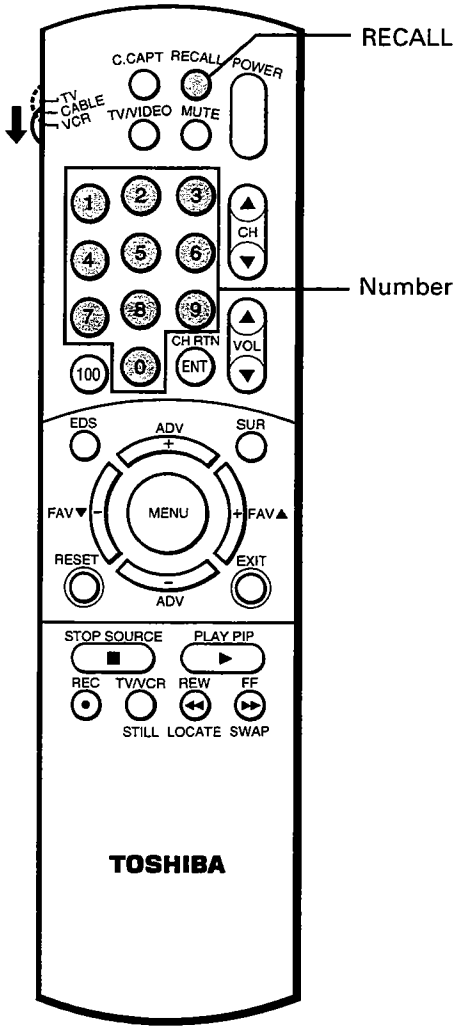
FF button
Press to rapidly advance the tape. In playback mode, press to view the picture moving rapidly in forward direction.

REW button
Press to rewind the tape.
In playback mode, press to view picture moving rapidly in reverse.

The buttons marked with ○ are usable to control the cable TV converter.

PROGRAMMING THE REMOTE CONTROL

- This Remote Control is preprogrammed to operate TOSHIBA VCR's.
- To use VCR's other than Toshiba models (or Cable converters), perform the following procedures before operating.



TO CONTROL OTHER BRANDS OF VCR'S AND CABLE TV CONVERTERS

1 Refer to the **"VCR CODE TABLE"** (or **"CABLE TV CONVERTER CODE TABLE"**) on pages 10 to 13 to find the code number that corresponds to the brand name of your VCR (or your converter).

If more than one number is listed, try each one separately until you find the one that works.

2 Set the TV-CABLE-VCR switch to VCR (or CABLE).

3 Hold down **RECALL** while pressing the **Number buttons** for the three digit code number for your brand of VCR (or converter).

4 Point the Remote Control at the VCR (or at the converter) and press POWER to test the code number.
- **If the right number was entered**, the VCR (or the converter) should turn on.
- **If the VCR (or the converter) does not respond to the Remote Control**, repeat steps 1 to 4 with another code number.

Notes:
- You have to reprogram the Remote Control when you change its batteries.
- Some newer VCR's are capable of working on either of two remote codes. These VCR's have a switch labeled "VCR1/VCR2".
  If your VCR has this kind of switch, and does not respond to all the code numbers for your VCR brand name, set the switch to another position ("VCR1" or "VCR2") and reprogram the Remote Control.

For future reference, write the code you used.

VCR CODE: _____

CABLE CODE: _____

- In some rare cases, you may not be able to operate your non-Toshiba equipment with the supplied Remote Control. This is because your equipment may use a code that is not provided with this Remote Control. In this case, please use the equipment's own remote control.

VCR CODE TABLE

BRAND NAME	CODE NUMBER
Adventura	019
Aiko	297
Aiwa	019
Akai	060, 068, 080, 125, 261
Akiba	091
Alba	039, 228, 297, 314
American High	054
Amstrad	019
Anam	181
Anitech	091
ASA	056, 100
Asha	259
Asuka	056
Audiovox	056
Baird	123
Basic Line	039, 091, 297
Beaumark	259
Bell & Howell	123
Blaupunkt	053, 181
Brandt	206
Broksonic	140, 203, 230, 380
Bush	091, 228, 297
Calix	056
Canon	054
Capehart	039
Carver	100
CCE	091, 297
CGE	019
Cimline	091
Citizen	056, 297
Clatronic	039
Colt	091
Condor	039
Craig	066, 259
Crown	297
Curtis Mathes	054
Cybernex	259
Daewoo	039, 064, 065, 297
Dansai	091
Daytron	039
De Graff	061
Decca	019, 100
Dual	060
Dumont	019, 100, 123, 124
Dynatech	019
Elcatech	091
Electrohome	056
Electronic	019
Electrophonic	056
Emerex	051
Emerson	019, 021, 056, 062, 080, 087, 140, 203, 227, 228, 230, 231, 313, 314, 380
ESC	297
Ferguson	060
Fidelity	019
Finlandia	100, 123, 129
Finlux	019, 061, 100, 123, 124
First Line	056, 062, 064, 091, 228
Fisher	065, 066, 073, 085, 123
Frontech	039
Fuji	052, 054
Funai	019
Garrard	019
GE	054, 079, 084, 221
GEC	100
General	071
Go Video	251, 298
Goldstar	037, 056, 057
Goodmans	019, 039, 056, 081, 091, 297
Gradient	019
Graetz	060, 123
Granada	065, 100, 123
Grundig	100
Harley Davidson	019
Harman/Kardon	057, 094
Harwood	087, 091
Hcm	091
Headquarter	065
HI-O	066
Hinari	091, 227
Hitachi	019, 060, 061, 084, 124, 254
Hypson	091
Imperial	019
Interfunk	100
ITT	060, 065, 123, 125
ITV	056, 297
JCL	054
Jensen	060
JVC	027, 060, 086
Kendo	125, 228
Kenwood	057, 060, 065, 086
KLH	091

VCR CODE TABLE

BRAND NAME	CODE NUMBER
Kodak	054, 056
Korpel	091
Leyco	091
Lloyd	019
Loewe	056
Loewe Opta	100
Logik	019, 259
Luxor	062, 065, 123, 125
LXI	056
M-Electronic	019
Magnavox	019, 054, 100, 129, 168
Magnin	259
Manesth	064, 091
Marantz	054, 057, 081, 100
Marta	056
Matsui	227, 228, 314
Matsushita	054
MEI	054
Memorex	019, 054, 056, 058, 065, 066, 067, 123, 259
Memphis	091
Metz	181
MGA	062, 080
MGN Technology	259
Minolta	061, 124
Mitsubishi	062, 080, 086, 094, 100, 192, 233, 261
Motorola	054, 067
MTC	019, 259
Multitech	019, 091
Murphy	019
NEC	057, 059, 060, 069, 086
Neckermann	100
Nesco	091
Nikko	056
Noblex	259
Nokia	060, 065, 123, 125, 259
Nordmende	060
Oceanic	019
Olympus	054
Optimus	056, 067
Optonica	067, 081
Orion	140, 227, 228, 314
Osaki	019, 056, 091
Otto Versand	100
Pallidium	056, 091
Panasonic	054, 096, 115, 181, 244
Penney	054, 056, 057, 059, 061, 073, 259
Pentax	061, 084, 124
Perdio	019
Philco	054
Philips	054, 081, 100, 129
Phonola	100
Pilot	056
Pioneer	086, 100
Portland	039
Profitronic	259
Proline	019
Protec	091
Pulsar	058
Pye	100
Quarter	065
Quartz	065
Quasar	054, 096, 115
Quelle	100
Radio Shack	019, 056
Radiola	100
Radix	056
Randex	056
RCA	054, 061, 079, 084, 096, 115, 124, 125, 168, 221
RCA Unified	079
Realistic	019, 054, 056, 065, 066, 067, 081, 085, 123, 259
Rex	060
Ricoh	053
Roadstar	056, 091, 259, 297
Runco	058
Saba	060
Saisho	227, 228
Salora	062, 065, 125
Samsung	064, 259
Sanky	058, 067
Sansui	060, 086
Sanyo	065, 066, 123, 259
SBR	100
Schaub Lorenz	019, 060
Schneider	019, 091, 100, 129
Scott	062, 064, 140, 203, 229, 230, 231
Sears	054, 056, 061, 065, 066, 073, 085, 123, 124
SEG	259
SEI	100
Seleco	060
Sentra	039
Sharp	067, 081
Shintom	091
Shogun	259

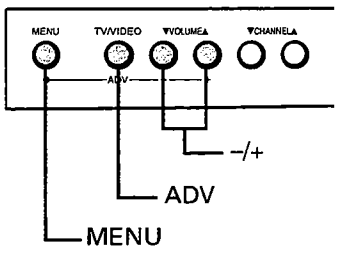
VCR CODE TABLE			
BRAND NAME	**CODE NUMBER**	**BRAND NAME**	**CODE NUMBER**
Siemens	056, 123	TMK	227, 259
Silva	056	Toshiba	060, 062, 064, 085, 229, 231, 385
Singer	091	Totevision	056, 259
Sinudyne	100	Triumph	227
Sontec	056	Unitech	259
Sony	051, 052, 053, 054	Universum	019, 056, 068, 100, 125
STS	061	Vector	064
Sunstar	019	Vector Research	057, 059
Sylvania	019, 054, 062, 100, 129	Victor	027, 060, 086
Symphonic	019	Video Concepts	059, 064, 080
Tandy	019, 123	Videosonic	259
Tashiko	019	Wards	019, 054, 061, 066, 067, 081, 091, 168, 231, 259
Tatung	019, 060, 100	XR-1000	019, 054, 091
Teac	019, 060	Yamaha	057, 060
Technics	054, 181	Yamishi	091
Teknika	019, 054, 056, 071	Yokan	091
Teleavia	060	Yoko	039, 259
Telefunken	060, 206	Zenith	052, 053, 058
Tenosal	091		
Tensai	019		
Thomson	060		
Thorn	060, 123		

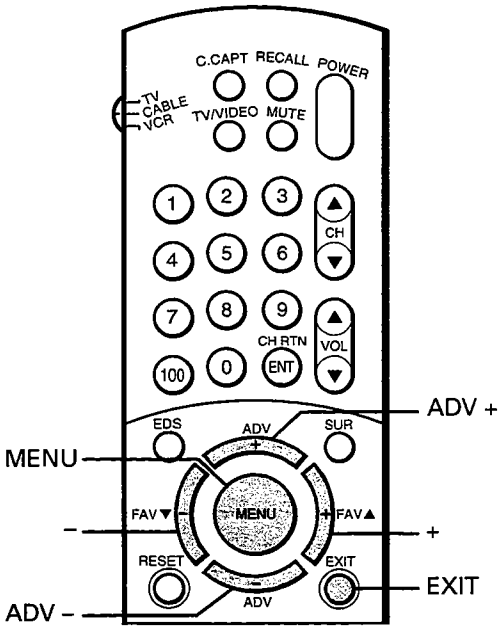
CABLE TV CONVERTER CODE TABLE

BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER
ABC	020, 022, 026, 030, 032, 033, 036, 066	Pioneer	042, 163
Antronix	041	Popular Mechanics	419
Archer	041, 058, 172	Pulsar	019
Belcor	075	PVP Stereo Visual Matrix	022
Cable Star	075	RCA	040
Cabletenna	041	Regal	039, 278, 292
Cableview	041	Regency	021
Century	172	Rembrandt	030, 089
Citizen	172	Runco	019
Colour Voice	044, 050	Samsung	059, 163
Comtronics	059, 079	Scientific Atlanta	025, 027, 036, 296, 346
Contec	038	Signal	034, 059
Eastern	021	Signature	030
Garrard	172	SL Marx	059
GC Electronics	035, 075	Sprucer	040
Gemini	034, 089	Standard Components	174
General Instrument	030	Starcom	022, 034, 066
Hamlin	028, 039, 053, 278, 292	Stargate	034, 059
Hitachi	030	Starquest	034
Hytex	026	STS	175
Jasco	172	Sylvania	020
Jerrold	022, 030, 031, 033, 034, 043, 045, 066, 295	Teleview	059
Macom	052	Texscan	020
Magnavox	046	Tocom	031, 032, 078
Memorex	019	Toshiba	019
Movie Time	175	Tusa	034
NSC	089, 175	Unika	041, 172
Oak	026, 038, 267	United Artists	026
Panasonic	040, 126	United Cable	022
Paragon	019	Universal	041, 058, 075, 096, 172, 210
Philips	044, 046, 047, 048, 049, 050, 079, 172	Viewstar	046, 079, 230
		Zenith	019

MENU FUNCTION (General Instructions)

We suggest you familiarize yourself with the procedure before using the Menu function.
To adjust any TV feature, the use of the Menu function is required. The adjustment that can be made to the TV appear on the screen.

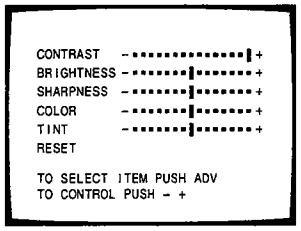




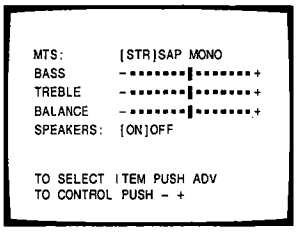
MENU BUTTON (on TV and on Remote)

Each time you press **MENU**, the Picture, Audio, Setup or Option menu on-screen display is selected in order, then press **ADV**.

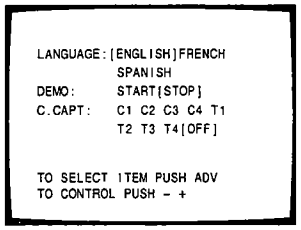
Picture menu



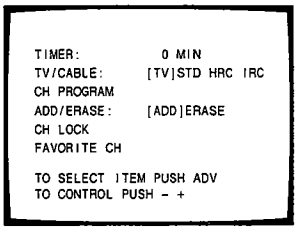
Audio menu



Option menu



Setup menu



ADV BUTTON (on TV and on Remote)

Use **ADV** after you have selected the on-screen menu you want to adjust with the MENU button.
Each time you press **ADV**, the function to be adjusted will be selected in order.

ADV + button ..... from bottom to top
ADV, ADV – button ... from top to bottom

The selected function will be displayed in magenta.

– / + BUTTONS (on TV and on Remote)

Use **– / +** to adjust the function you have selected with the **ADV** button.

EXIT BUTTON (on Remote)

The above four menu displays will automatically disappear from the screen if no control has been operated for about 15 seconds.
If you want to clear the screen of all on-screen displays instantly, press **EXIT**.

Notes:

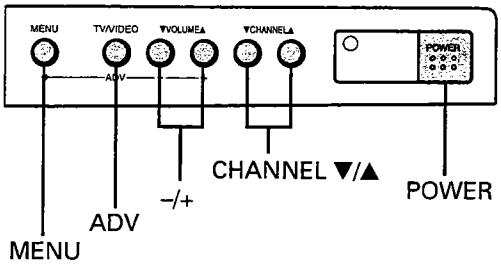
- The ADV button on the TV will function as the TV/VIDEO button when no menu display is on the screen.
- The –/+ buttons on the TV will function as the VOLUME ▼/▲ buttons when no menu display is on the screen.
- The –/+ buttons on the Remote Control will function as the FAV ▼/▲ buttons when no menu display is on the screen.

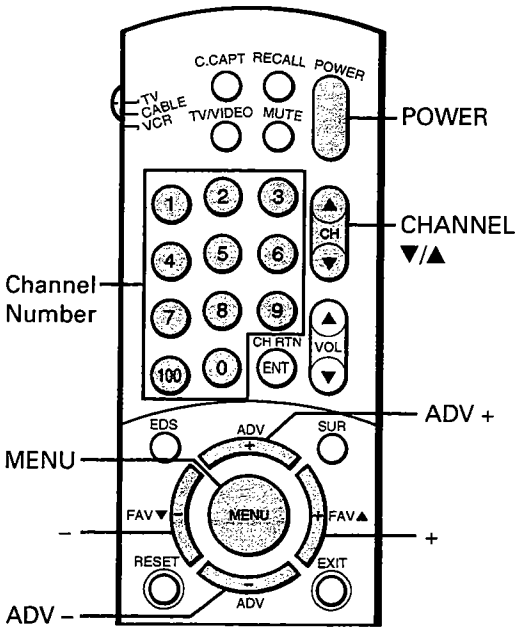
PROGRAMMING CHANNEL MEMORY

The channel memory is the list of TV channel numbers your TV will stop on when you press the CHANNEL ▲ or ▼ button.

First, use the TV/CABLE and CH PROGRAM functions to preset all active channels your area.

If necessary, arrange the preset channels with the ADD/ERASE functions so that you can tune into only desired channels.





* This TV receives the following TV signals:

1. **TV:** TV broadcasts signals. (VHF channels 2 through 13 and UHF channels 14 through 69)
2. **STD** CABLE: Standard cable TV signals.
3. **HRC** CABLE: Harmonic Related Carrier cable TV signals.
4. **IRC** CABLE: Incremental Related Carrier cable TV signals.

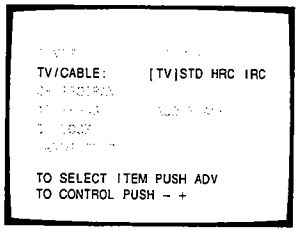
If you are not sure what CABLE system they are using, consult your local cable company.

TV/CABLE FUNCTION

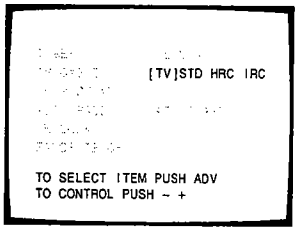
1 Press **POWER** to turn on the TV.

2 Press **MENU** repeatedly until the Setup menu is displayed on the screen.

3 Press **ADV** repeatedly until "TV/CABLE" is displayed in magenta.



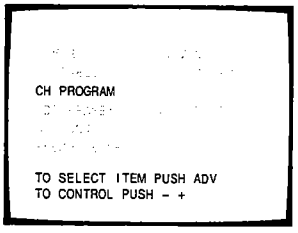
4 Press – or + until the mode that corresponds to your TV signal system is displayed in magenta.
Each time you press the button, the TV*, STD CABLE*, HRC CABLE* or IRC CABLE* mode will be selected in order.



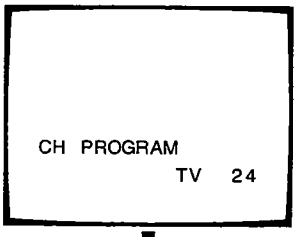
CH PROGRAM FUNCTION

1 Press **MENU** repeatedly until the Setup menu is displayed on the screen.

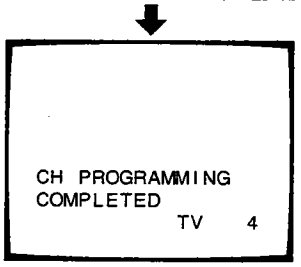
2 Press **ADV** repeatedly until "CH PROGRAM" is displayed in magenta.



3 Press – or + to start channel programming.
The TV will automatically cycle through all the TV or CABLE channels depending on the mode selected, and store active channels in the channel memory.

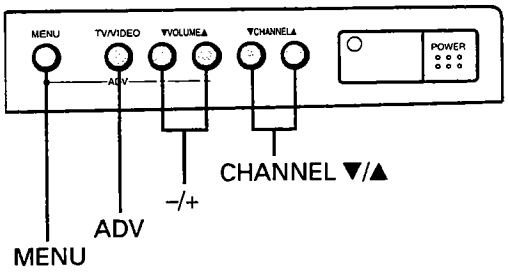


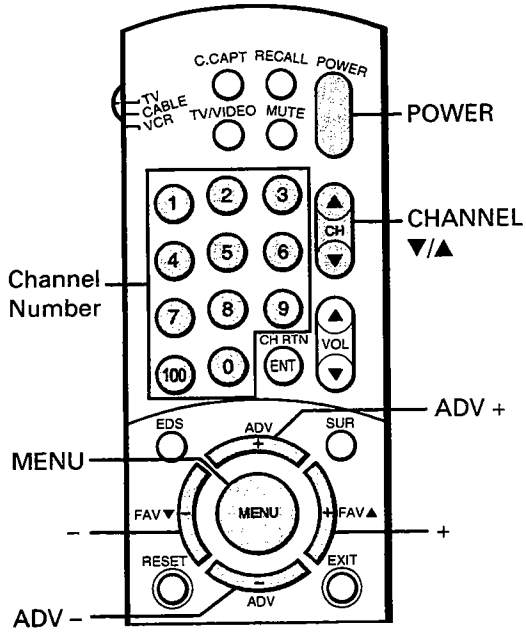
4 When channel programming is complete, you will see the message at the right.



5 Press **CHANNEL** ▲ or ▼ to make sure the channel programming has been done properly.

PROGRAMMING CHANNEL MEMORY (Continued)





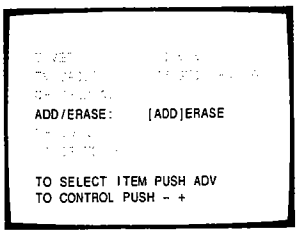
ADD/ERASE FUNCTION

After performing the CH PROGRAM function, you can add or erase specific channels.

1 Select the channel you want to erase using the **CHANNEL ▲** or **▼** button, or select the channel you want to add using the **Channel Number** buttons.

2 Press **MENU** repeatedly until the Setup menu is displayed on the screen.

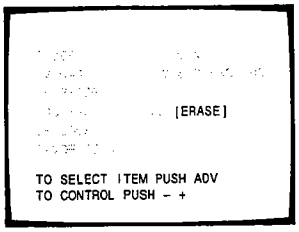
3 Press **ADV** repeatedly until "ADD/ERASE" is displayed in magenta.



4 Press **–** or **+** :

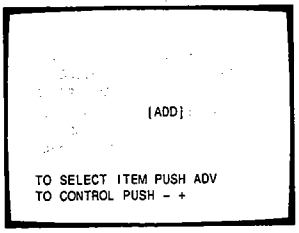
To erase the channel

Press the button until "ERASE" is displayed in magenta indicating that the channel has been erased from the memory.



To add the channel

Press the button until "ADD" is displayed in magenta indicating that the channel has been memorized.



5 Repeat steps 1 to 4 for other channels.

You have now completed the channel programming.

CABLE channel reference chart

Number on this TV	1	5	6	14	15	16	. . .	34	35	36	37	38	. . .	60	61	62	63	64	65	66
Corresponding CABLE channel	A-8	5(A-7)	6(A-6)	A	B	C	. . . . .	U	V	W	AA	BB	. . . .	XX	YY	ZZ	AAA	BBB	65	66
Number on this TV	67	68	69	. . .	92	93	94	95	96	97	98	99	100	101	102	. . .	123	124	125	
Corresponding CABLE channel	67	68	69	. . .	92	93	94	A-5	A-4	A-3	A-2	A-1	100	101	102	. . .	123	124	125	

The above chart is typical of many cable system channel allocations. If in doubt, consult your cable company.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

SET-UP ADJUSTMENT
(For model CF32E50 only)

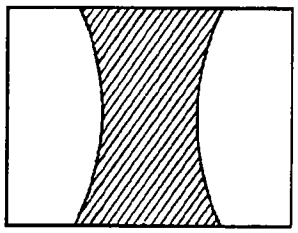
- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
  Perform the adjustments in order as follows :
  1. Color Purity
  2. Convergence
  3. White balance

  Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 1.

COLOR PURITY ADJUSTMENT

NOTE : Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

1. Evenly degauss the entire screen.
2. Set the CONTRAST and BRIGHTNESS controls to the maximum.
3. Use a green raster from among the built-in test signals. See page 22.
4. Loosen the clamp screw holding the deflection yoke (and remove the rubber wedges).
5. Slide the yoke forward or backward to provide vertical green belt (zone) in the picture screen.
6. Rotate and spread the tabs of the purity magnet (See figure 3.) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, center the raster vertically by adjusting the magnet as shown below.



Green Belt

7. Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check the purity of the red and blue raster.
9. Put four wedges into the space between the picture tube and the yoke to hold the yoke in the adjusted position. (See figure 2.)
   Do not tilt the yoke by excessive insertion of the wedge.
10. Remove cover paper of wedge and stick wedges on the tube to fix the yoke in the adjusted position. Fix the wedges with glass cloth tapes.

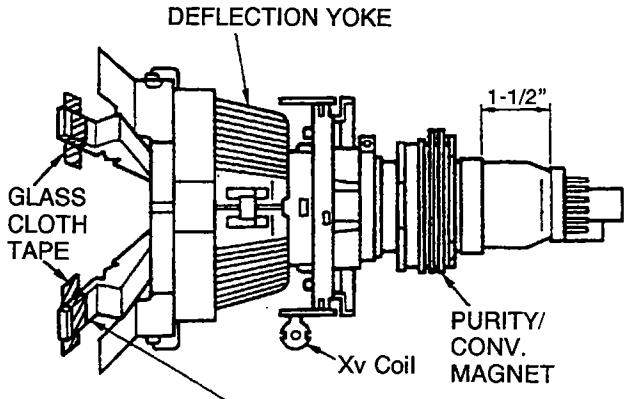


Figure. 1

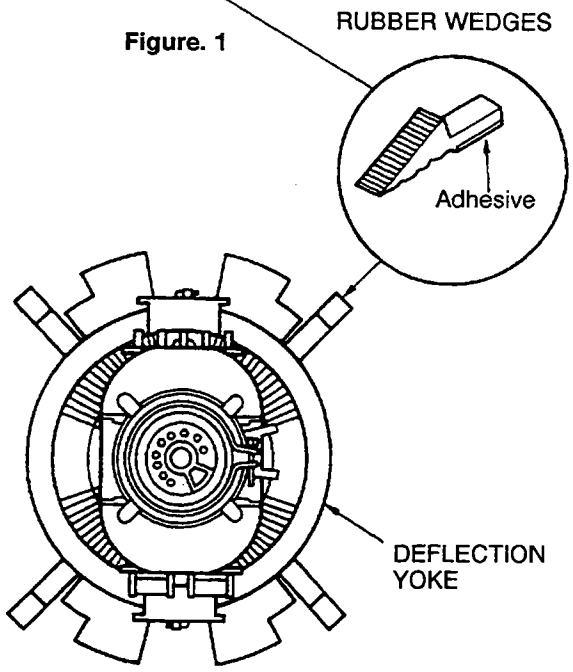


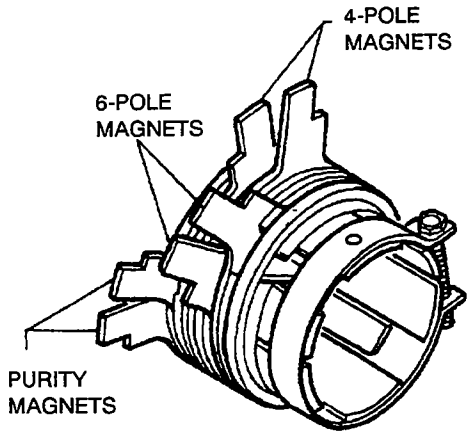
Figure. 2

CONVERGENCE ADJUSTMENTS

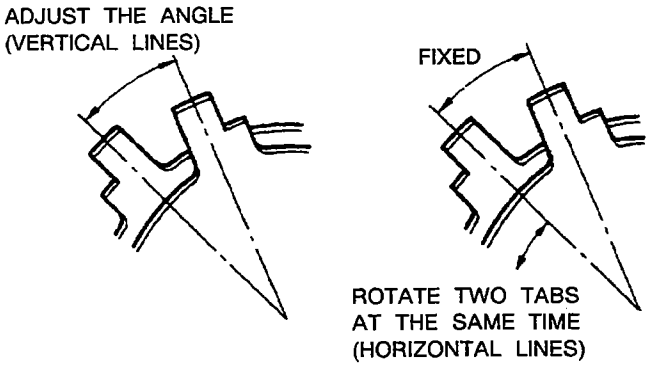
NOTE: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ CENTER CONVERGENCE ADJUSTMENT

1. Use the cross-dot pattern from among the built-in test signals. See page 22.
2. Adjust the BRIGHTNESS and CONTRAST Controls for well defined pattern.
3. Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 3.) and superimpose red and blue vertical lines in the center area of the picture screen. (See figure 4.)
4. Turn the both tabs at the same time keeping the constant angle to superimpose red and blue horizontal lines at the centre of the screen. (See figure 4.)
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line with green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole magnets interact and make dot movement complex.

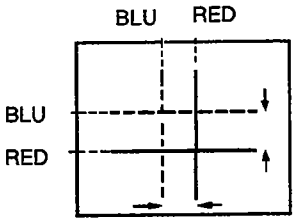


PURITY/CONVERGENCE
MAGNETS

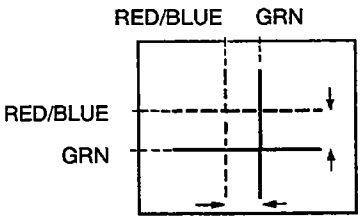


ADJUSTMENT OF MAGNETS

Figure 3.



4-POLE MAGNETS
MOVEMENT



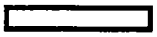
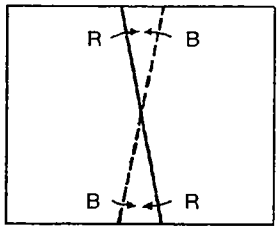
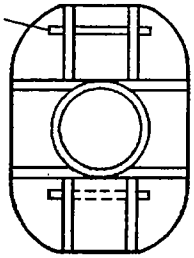
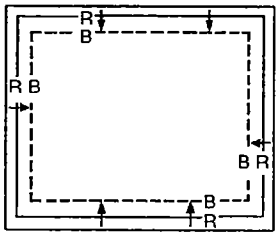
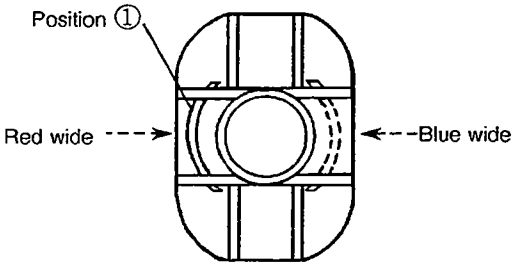
6-POLE MAGNETS
MOVEMENT

Center Convergence by Convergence Magnets

Figure 4.

■ CIRCUMFERENCE CONVERGENCE ADJUSTMENT

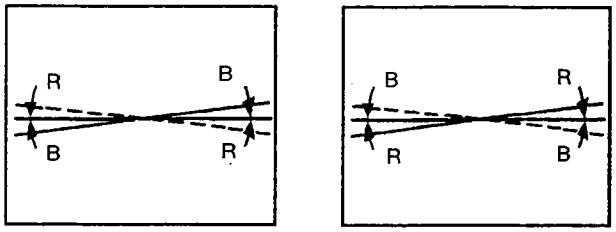
After completing the "CENTER CONVERGENCE ADJUSTMENT", if the misconvergence is still evident in circumference, compensate a misconvergence with compensators and Xv coil of the yoke.

COMPENSATOR	CONVERGENCE PATTERN	ATTACHING PLACE ON YOKE BACK
 Part No. 23199308	Y_H (cross) ① pattern 	Position ① 
 Part No. 23199745	Y_V & X_H ① pattern 	Position ① 

■ **Xv COIL ADJUSTMENT**

Adjust the Xv coil (on the deflection yoke) to correct misconvergence at both sides on screen. (See the right figure.)
Use a hexagonal tip stick (plastic) to adjust the core of coil.

Clockwise Adjustment **Counterclockwise Adjustment**

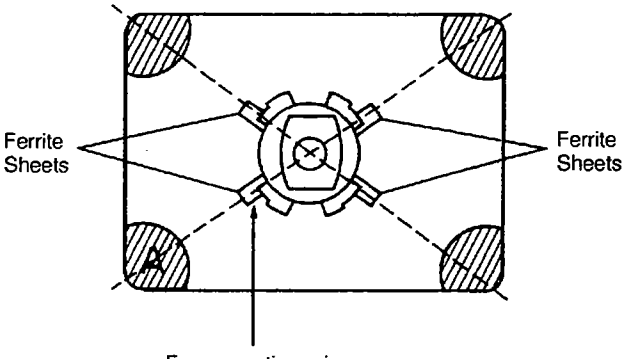


X_V Cross Pattern View

■ **SCREEN-CORNER CONVERGENCE**

When the misconvergence is still evident on corners even though the above adjustment is done, use the ferrite sheet (Part No. 23993622) to correct misconvergence.

1. Put ferrite sheets into the space under the yoke. Decide such position that misconvergence becomes minimum, watching picture screen. (See the right figure.)
2. Remove cover paper of ferrite sheet to stick it in the place on the tube. Put adhesive tapes on ferrite sheets to fix.



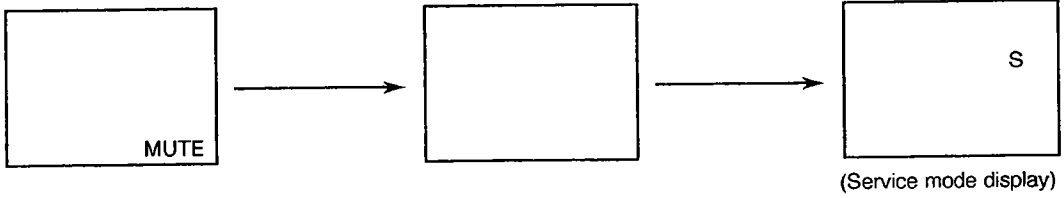
SERVICE MODE GENERAL INSTRUCTIONS

1. ENTERING TO SERVICE MODE

1) Press MUTE button once on Remote Control.

2) Press MUTE button again to keep pressing.

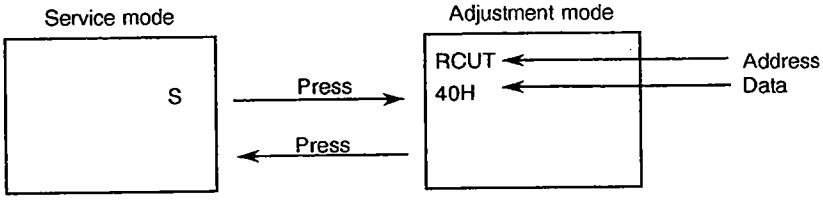
3) Keep pressing the MUTE button, press MENU button on TV set.



(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button changes the adjustment items in the following order. (▼ button for reverse order.)

	Address	Name of adjustment	Data			Direct keys
			CF27E55	CF30E50	CF32E50	
☆	RCUT	R CUTOFF	40H	40H	40H	1
☆	GCUT	G CUTOFF	40H	40H	40H	2
☆	BCUT	B CUTOFF	40H	40H	40H	3
☆	GDRV	G DRIVE	80H	80H	80H	
☆	BDRV	B DRIVE	80H	80H	80H	
	CNTX	SUB-CONTRAST	58H	58H	58H	4
☆	BRTC	SUB-BRIGHT	40H	40H	40H	
☆	COLC	SUB-COLOR	2CH	2CH	2CH	5
☆	TNTC	SUB-TINT	42H	42H	42H	6
☆	SAVC	SAP VCO	88H	88H	88H	
☆	ATT	ATTENUATOR	08H	08H	08H	
☆	STVC	STEREO VCO	1CH	1CH	1CH	
☆	SAPF	SAP FILTER	88H	88H	88H	
☆	STRF	STEREO FILTER	16H	16H	16H	
☆	SPEC	SPECTRAL	30H	30H	30H	
☆	WBAN	STEREO SEPARATION	22H	22H	22H	
☆	HPOS	HORIZ. POSITION	16H	16H	16H	
☆	VPOS	VERT. POSITION	02H	03H	02H	
☆	HIT	HEIGHT	49H	58H	38H	
	LIN	V-LINEARITY	0AH	0AH	0BH	
	VSC	V-S CORRECTION	08H	02H	08H	
	VPS	V-SHIFT	0DH	19H	0DH	
	VCP	V-COMPENSATION	04H	01H	03H	
☆	WID	PICTURE WIDTH	25H	1FH	1FH	
☆	DPC	E-W PARABOLA (DPC)	13H	10H	10H	
	CNR	E-W CORNER	08H	00H	00H	
	TRAP	TRAPEZIUM	10H	14H	14H	
	HCP	H-COMPENSATION	03H	03H	03H	
	VFC	V-F CORRECTION	0BH	0BH	0FH	
	PCOL	PIP COLOR	20H	20H	20H	
	PHUE	PIP TINT	40H	39H	39H	

☆ These adjustments may be required when replacing QA02 and Q501.

4. ADJUSTING THE DATA

1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

5. EXIT FROM SERVICE MODE

1) Press POWER button to turn off the TV once.

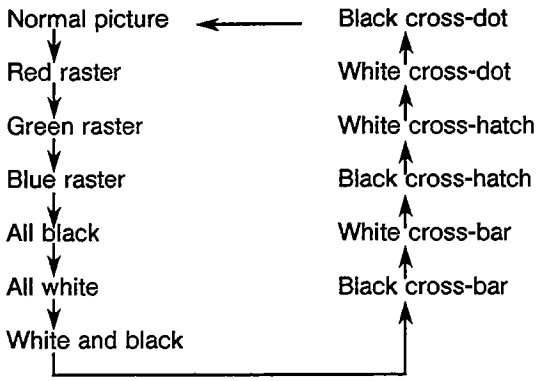
6. OTHER SERVICE FUNCTIONS

The following key entry during display of adjustment menu provides special functions.

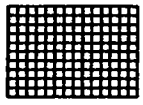
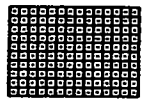
1) TV/VIDEO button (on TV) : A single horizontal line ON/OFF
2) TV/VIDEO button (on Remote): Test signal selection
3) 8 button : Test sound signal ON/OFF (1 kHz)
4) 9 button : Self diagnostic display ON/OFF
5) RECALL button + CHANNEL ▲ button (on TV) : Initialization of the MEMORY (QA02)

TEST SIGNAL SELECTION

1) Every pressing of TV/VIDEO button on the Remote Control changes the built-in test patterns on screen in the following order.

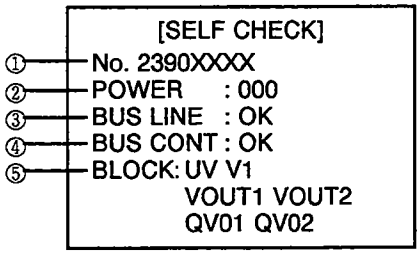


Note: If the video cable is connected to the VIDEO INPUT jack, the built-in pattern signals are not displayed.

Signals	Picture
• Red raster • Green raster • Blue raster • All Black • All White	
• Black & White	
• Black cross-bar • White cross-bar	
• Black cross-hatch • White cross-hatch	
• Black cross-dot • White cross-dot	

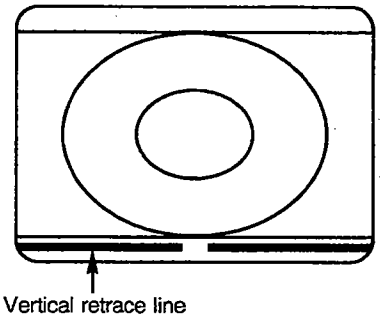
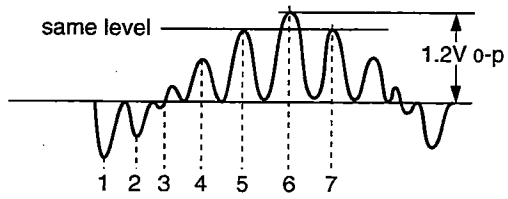
SELF DIAGNOSTIC FUNCTION

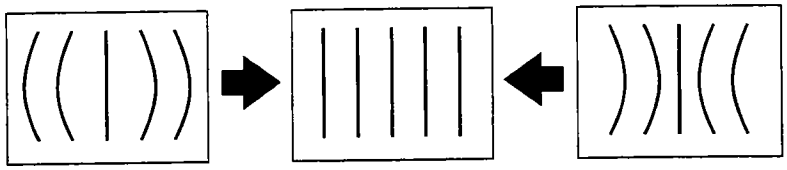
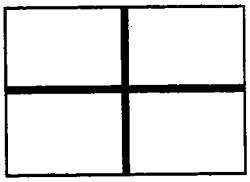
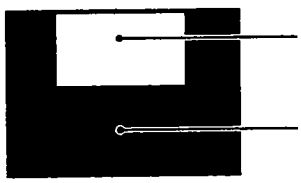
1) Press "9" button on Remote Control during display of adjustment menu.
   The diagnosis will begin to check if interface among IC's are executed properly.
2) During diagnosis, the following displays are shown.



① Part number of microprocessor (QA01)
② Operation number of operating circuit (current limiter)
③ BUS line check— "OK" ..... Normal
"NG" ..... SCL-GND short circuit
SDA-GND short circuit
SCL-SDA short circuit
④ BUS line ACK (acknowledge) check
"OK" ... Normal
Display of Location Number (Ex. QA02) ... NG
⑤ Sync. signal check— Green display ... Normal
Cyan display ... No check
Red display .... NG

SERVICE MODE ADJUSTMENT

ITEM	ADJUSTMENT PROCEDURE
INITIALIZATION OF QA02 (MEMORY)	After replacing QA02, the following initialization is required. 1. Call up the adjustment mode display following the steps 1 and 2 on page 20. 2. Press the RECALL button on Remote and CHANNEL ▲ button on TV simultaneously. The initialization of QA02 has been completed. 3. Check the picture carefully. If necessary, adjust any adjustment item. Perform "PROGRAMMING CHANNEL MEMORY" on page 9.
SUB-BRIGHTNESS (Address : BRTC) Note: Construct the picture height until the vertical retrace line appears adjusting the address HIT (HEIGHT).	1. Adjust the CONTRAST control to the minimum. 2. Call up the adjustment mode display, then select the address **BRTC**. 3. Press the VOLUME ▲ or ▼ button so the belt of vertical retrace line just disappear. 4. Adjust the CONTRAST control for the desired contrast. 5. Perform the HEIGHT adjustment. 
SUB-COLOR (Address : COLC) SUB-TINT (Address : TNTC)	1. Receive rainbow color-bar signal from color-bar generator. 2. Press the RESET button. 3. Connect oscilloscope to Base of Q903 on CRT DRIVE board. 4. Call up the adjustment mode display, then press the direct key "6" . (Select the address **TNTC**.) 5. Adjust the SUB-TINT by pressing the VOLUME ▲ or ▼ button to obtain the 5th bar to 7th bar ratio of 1:1 as shown.  6. Press the direct key "5". (Select the address **COLC**.) 7. Adjust the SUB-COLOR by pressing the VOLUME ▲ or ▼ button to achieve 1.2Vo-p of 6th bar on scope. 8. Check the picture with off-air signal.
WIDTH (Address : WID)	1. Call up the adjustment mode display, then select the address **WID**. 2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack. 3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps. Note : Check the horizontal picture position is correct.

ITEM	ADJUSTMENT PROCEDURE
E-W PARABOLA (DPC) (Address : DPC)	1. Call up the adjustment mode display, then select the address **DPC**. 2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen. 3. Press the VOLUME ▲ or ▼ button to make vertical lines straight as shown below. 
HORIZONTAL POSITION (Address : HPOS) VERTICAL POSITION (Address : VPOS)	1. Call up the adjustment mode display, then select the address **HPOS** or **VPOS**. 2. Press the TV/VIDEO button on Remote until the white cross-bar or black cross-bar pattern appears on the screen. 3. Adjust the HORIZONTAL and VERTICAL position alternately by pressing the VOLUME ▲ or ▼ button for proper picture position. 4. Check the picture with off-air signal. 
HEIGHT (Address : HIT)	1. Call up the adjustment mode display, then select the address **HIT**. 2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 9 steps. Note : Check the vertical picture position is correct.
WHITE BALANCE Address : RCUT Address : GCUT Address : BCUT Address : GDRV Address : BDRV	1. Adjust the CONTRAST control to the center, and BRIGHTNESS control to the maximum. 2. Call up the adjustment mode display, and press the TV/VIDEO button on Remote until the white and black pattern appears on the screen. 3. Adjust the following address with the CHANNEL ▲/▼ and VOLUME ▲/▼ buttons. Address : RCUT ⟶ Data : 40H Address : GDRV ⟶ Data : 80H Address : GCUT ⟶ Data : 40H Address : BDRV ⟶ Data : 80H Address : BCUT ⟶ Data : 40H 4. Press the TV/VIDEO button on TV to display a single horizontal line on the screen. 5. Turn the SCREEN control (FBT) fully counterclockwise and gradually rotate clockwise until the first horizontal line appears slightly on the screen. 6. Press the TV/VIDEO button to display the normal picture. 7. Adjust the remaining two "?CUT" addresses (CHANNEL ▲/▼ → TV/VIDEO → VOLUME ▲/▼ in order) to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors. The line should be white if the adjustments are proper.  Bright area Adjust "GDRV" or "BDRV" to be white. Dark area Fine adjust "RCUT", "GCUT" or "BCUT" to be black.

MTS ADJUSTMENT

No.	ITEM	INPUT SIGNAL	ADJUSTMENT PROCEDURE
1	ATTENUATOR (Address: ATT)	• 1kHz 30% mod. → ANT terminal	1. Connect rms meter to pin 12 of H002. 2. Display address **ATT** on screen. 3. Change data by Volume ▲/ ▼ buttons so that output at pin 12 of H002 becomes value as close as 142mVrms.
2	STEREO VCO (Address: STVC)	• No signal	1. Display address **STVC**, and connect pin 9 of H002 to ground. 2. Connect frequency counter to pin 12 of H002. 3. Change data by Volume ▲/ ▼ buttons so that the reading of counter becomes value as close as $4f_H$ (62.936kHz).
3	SAP VCO (Address: SAVC)	• 78.670kHz 147mVrms → pin 9 of H002 • Monaural signal → ANT	1. Display address **SAVC.** 2. Change data by Volume ▲/ ▼ buttons so that the data becomes in the center of range for STA7 = 0 and STA8 = 1. SAVC 98H STA7:0 STA8:1
4	STEREO FILTER (Address: STRF)	• 9.4kHz 600mVrm → pin 9 of H002 • Monaural signal → ANT	1. Display address **STRF** on screen. 2. Change data by Volume ▲/ ▼ buttons so that the data becomes in the center of range for STA3 = 1. STRF 16H STA3:1
5	SAP FILTER (Address: SAPF)	• 88kHz 120mVrms → pin 9 of H002 • Monaural signal → ANT	1. Display address **SAPF.** 2. Change data by Volume ▲/ ▼ buttons so that the data becomes in the center of range for STA4 = 1. SAPF 98H STA4:0

No.	ITEM	INPUT SIGNAL	ADJUSTMENT PROCEDURE
6	STEREO SEPARATION (Address: WBAN)	• STEREO 300Hz R-channel only → ANT	1. Display address **WBAN** on screen. 2. Connect oscilloscope to pin 14 of H002. 3. Change data by Volume ▲/ ▼ buttons so that 300Hz element on scope becomes minimum.
	(Address: SPEC)	• STEREO 3kHz R-channel only → ANT	4. Display **SPEC** on screen. 5. Change data by Volume ▲/ ▼ buttons so that 3kHz element on scope becomes minimum.

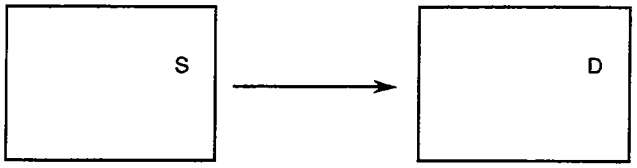
DESIGN MODE ADJUSTMENT

The following adjustments including service mode items are possible.

1. ENTERING TO DESIGN MODE

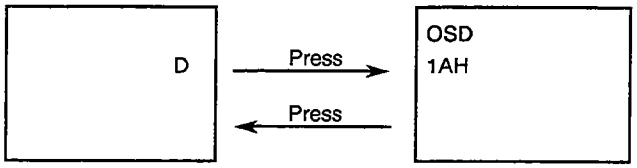
1) Select the Service mode.

2) Keep pressing RECALL button on Remote and press MENU button on TV.



2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



Address	Name of adjustment	Reference data		
		CF27E55	CF30E50	CF32E50
OSD	OSD H-POS	1AH	1AH	1AH
RCUT	R CUTOFF	40H	40H	40H
GCUT	G CUTOFF	40H	40H	40H
BCUT	B CUTOFF	40H	40H	40H
GDRV	G DRIVE	80H	80H	80H
BDRV	B DRIVE	80H	80H	80H
CNTX	CONTRAST MAX	58H	58H	58H
BRTC	BRIGHT CENTER	40H	40H	40H
COLC	COLOR CENTER	2CH	2CH	2CH
TNTC	TINT CENTER	42H	42H	42H
CNTC	CONTRAST CENTER	2EH	2EH	2EH
CNTN	CONTRAST MIN	05H	05H	05H
BRTX	BRIGHT MAX	15H	1AH	1AH
BRTN	BRIGHT MIN	10H	1AH	1AH
COLX	COLOR MAX	47H	47H	47H
COLN	COLOR MIN	05H	05H	05H
TNTX	TINT MAX	15H	15H	15H
TNTN	TINT MIN	15H	15H	15H
SHPT	SHARP CENTER (RF)	2BH	27H	27H
SHPV	SHARP CENTER (VIDEO)	2BH	27H	27H
VM0	VCD BIT DATA	6BH	6BH	6BH

Address	Name of adjustment	Reference data		
		CF27E55	CF30E50	CF32E50
SAVC	SAP VCO	88H	88H	88H
ATT	ATTENUATOR	08H	08H	08H
STVC	STEREO VCO	1CH	1CH	1CH
SAPF	SAP FILTER	88H	88H	88H
STRF	STEREO FILTER	16H	16H	16H
SPEC	SPECTRAL	30H	30H	30H
WBAN	WIDE BAND	22H	22H	22H
HPOS	H-POS	16H	16H	16H
VPOS	V-POS	02H	03H	02H
HIT	HIT	49H	58H	38H
LIN	V-LINEARITY	0AH	0AH	0BH
VSC	V-S CORRECTION	08H	02H	08H
VPS	V-SHIFT	0DH	19H	0DH
VCP	V-COMPENSATION	04H	01H	03H
WID	PICTURE WIDTH	25H	1FH	1FH
DPC	E-W PARABOLA (DPC)	13H	10H	10H
CNR	E-W CORNER	08H	00H	00H
TRAP	TRAPEZIUM	10H	14H	14H
HCP	H-COMPENSATION	03H	03H	03H
VFC	V-F CORRECTION	0BH	0BH	0FH
PCOL	COLOR SATURATION ADJUSTMENT	20H	20H	20H
PHUE	TINT ADJUSTMENT	40H	39H	39H
OFFW	SETTING OF MEMORY-WRITING IN OFF	56H	56H	56H
PYD16	SETTING OF Y-DELAY IN 1/16	70H	72H	72H
PYD9	SETTING OF Y-DELAY IN 1/9	76H	73H	73H
WHP16	HOR POSITION ADJ. OF WRITING SYSTEM IN 1/16	6CH	6CH	6CH
WHP9	HOR POSITION ADJ. OF WRITING SYSTEM IN 1/9	53H	4EH	4EH
PNO	SETTING OF DISPLAY PIP NUMBER	01H	01H	01H
PRD	SETTING OF PIP READ-OUT MEMORY AREA	01H	01H	01H
PSYNC	PIP SYNC SEPARATION THRESHOLD	03H	02H	02H
WKY	SETTING OF FRAME BACKGROUND BRIGHTNESS (USUAL)	06H	05H	05H
WKYS	SETTING OF FRAME BACKGROUND BRIGHTNESS (STILL)	0CH	08H	08H
WKR	BACKGROUND TINT R-Y (USUAL)	04H	04H	04H
WKRS	BACKGROUND TINT R-Y (STILL)	04H	04H	04H
WKB	BACKGROUND TINT B-Y (USUAL)	E4H	E4H	E4H
WKBS	BACKGROUND TINT B-Y (STILL)	E4H	E4H	E4H
PBST	BURST ADJ. IN DISPLAYING BACKGROUND	20H	20H	20H
PVU9	PIP VERTICAL POSITION 1/9 TOP	EAH	EAH	EAH
PVD9	PIP VERTICAL POSITION 1/9 BOTTOM	68H	68H	68H
PVU16	PIP VERTICAL POSITION 1/16 TOP	EAH	EAH	EAH
PVD16	PIP VERTICAL POSITION 1/6 BOTTOM	57H	57H	57H
PVW9	PIP VERTICAL WIDTH 1/9	BDH	BDH	BDH

Address	Name of adjustment	Reference data		
		CF27E55	CF30E50	CF32E50
PVW16	PIP VERTICAL WIDTH 1/16	CEH	CEH	CEH
PHL9	PIP HORIZONTAL POSITION 1/9 LEFT	1CH	1AH	1AH
PHR9	PIP HORIZONTAL POSITION 1/9 RIGHT	83H	7DH	7DH
PHL16	PIP HORIZONTAL POSITION 1/16 LEFT	1CH	1AH	1AH
PHR16	PIP HORIZONTAL POSITION 1/16 RIGHT	92H	8CH	8CH
PHW9	PIP HORIZONTAL WIDTH 1/9	3CH	3CH	3CH
PHW16	PIP HORIZONTAL WIDTH 1/16	2DH	2DH	2DH
RHD	TIMING OF READ-OUT OPERATION START	01H	01H	01H
WKD	SETTING OF DELAY BETWEEN PIP AND FRAME	25H	25H	25H
PDAT	PIP BIT DATA	17H	17H	17H
PVPC	PIP VERTICAL POSITION CENTER	AAH	AAH	AAH
PHPC	PIP HORIZONTAL POSITION CENTER	50H	50H	50H
PWR	DETECTION NUMBER OF OVERCURRENT AND OVERVOLTAGE LIMITERS	00H	00H	00H
BUS	CHECK RESULT OF BUS LINE	00H	00H	00H
MEM	TEST PATTERN NUMBER	00H	00H	00H
OPT0	OPTION SETTING 0	00H	00H	00H
OPT1	OPTION SETTING 1	1EH	1EH	1EH

CIRCUIT ADJUSTMENT

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

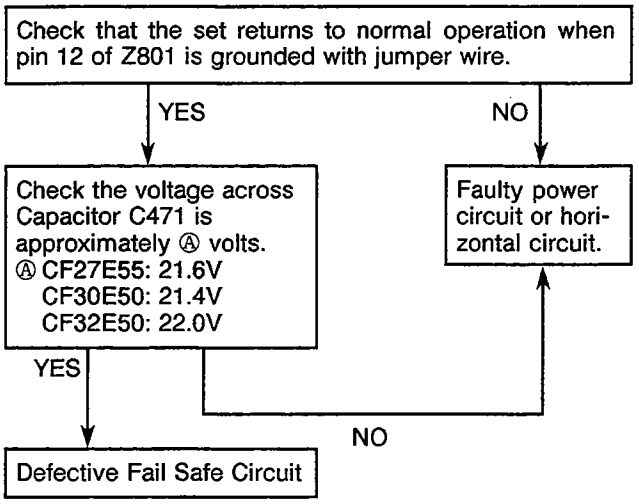
1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below Ⓑ kV shown on page 2.
4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on and press the RESET button.
2. Temporarily short TP- Ⓡ and TP- Ⓧ with a jumper wire.
   Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the power switch on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit

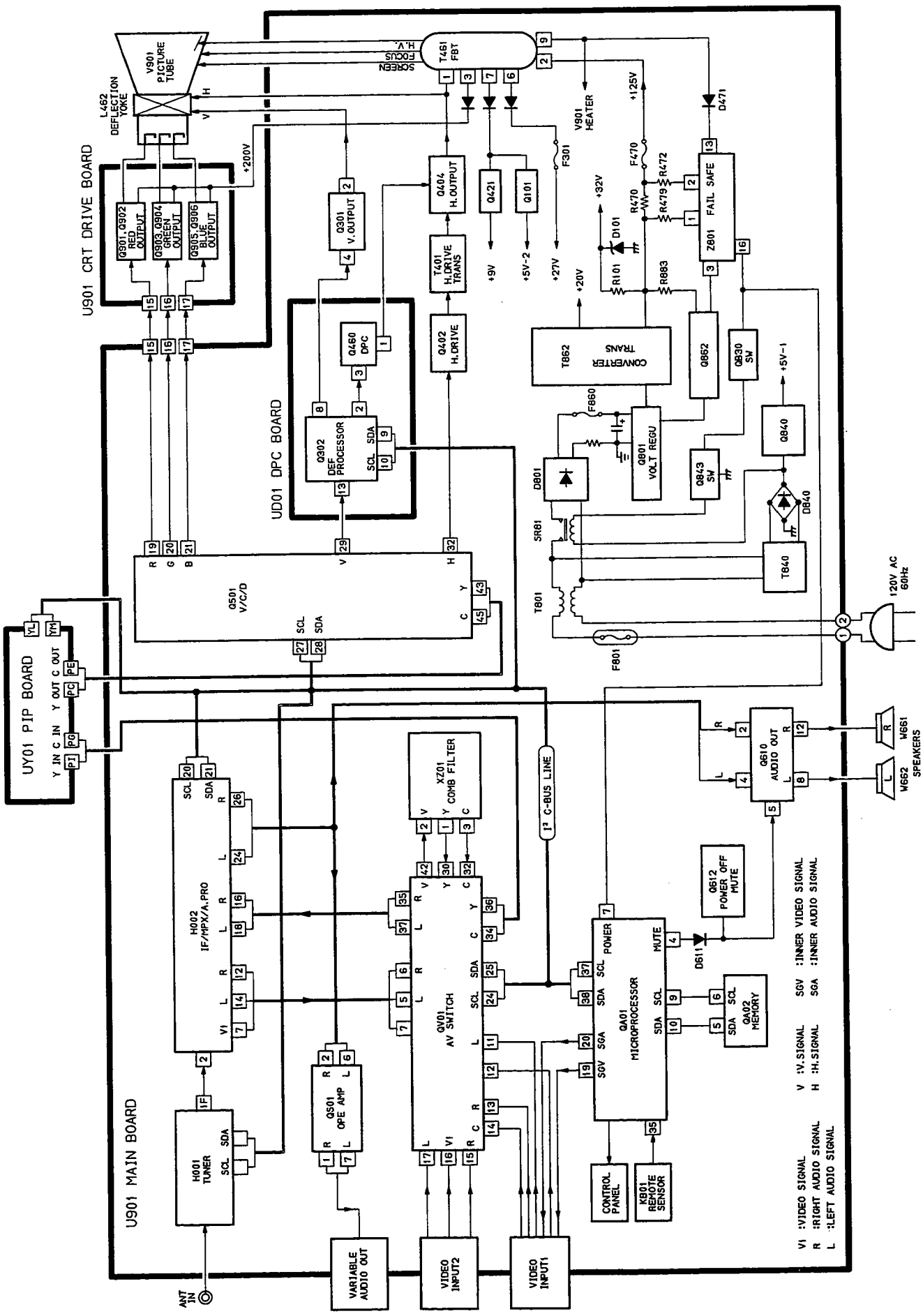


FOCUS ADJUSTMENT

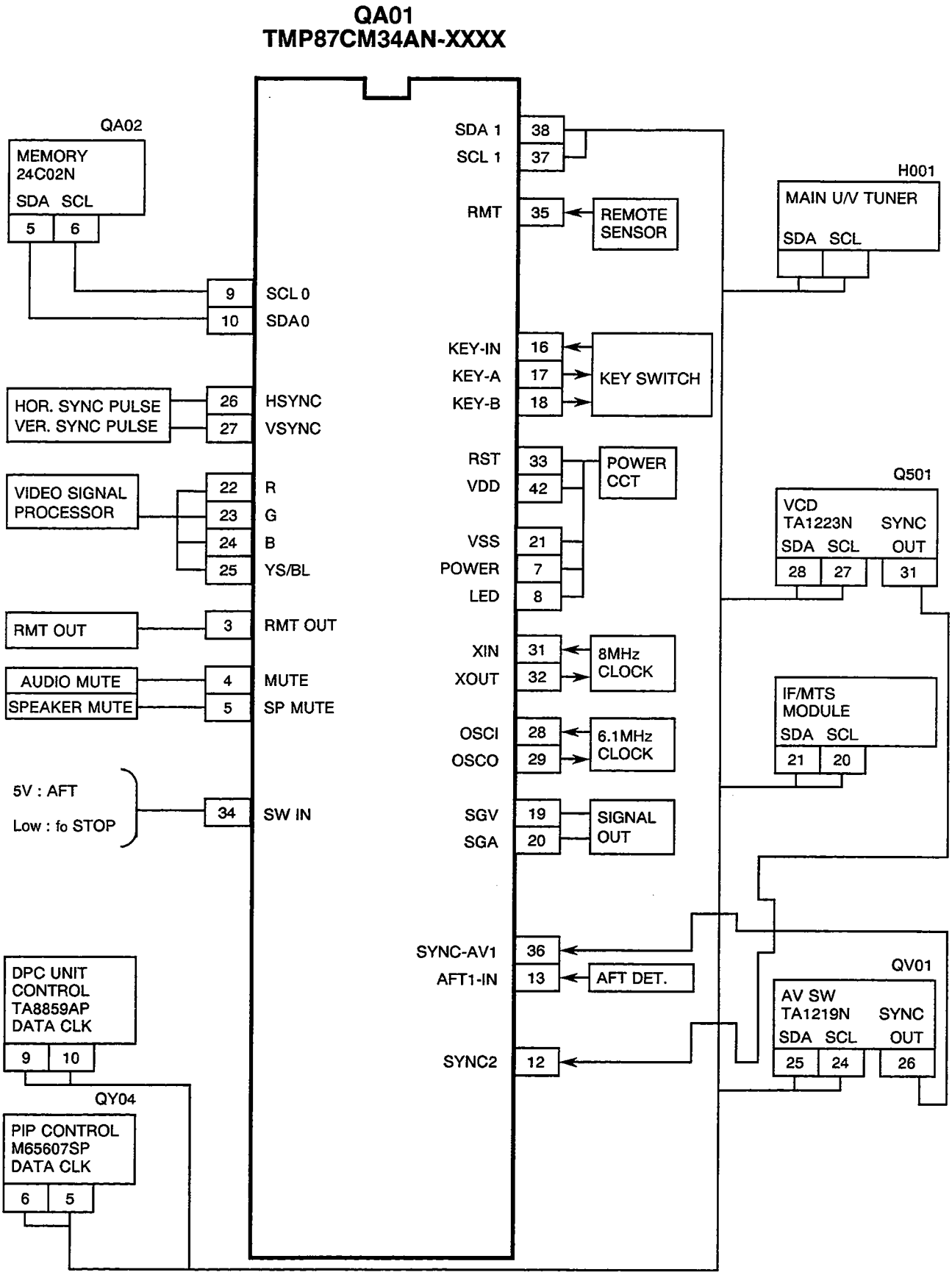
Adjust the FOCUS Control (T461) for well defined scanning lines on the picture screen.

THIS PAGE IS
INTENTIONALLY LEFT
BLANK.

CHASSIS BLOCK DIAGRAM

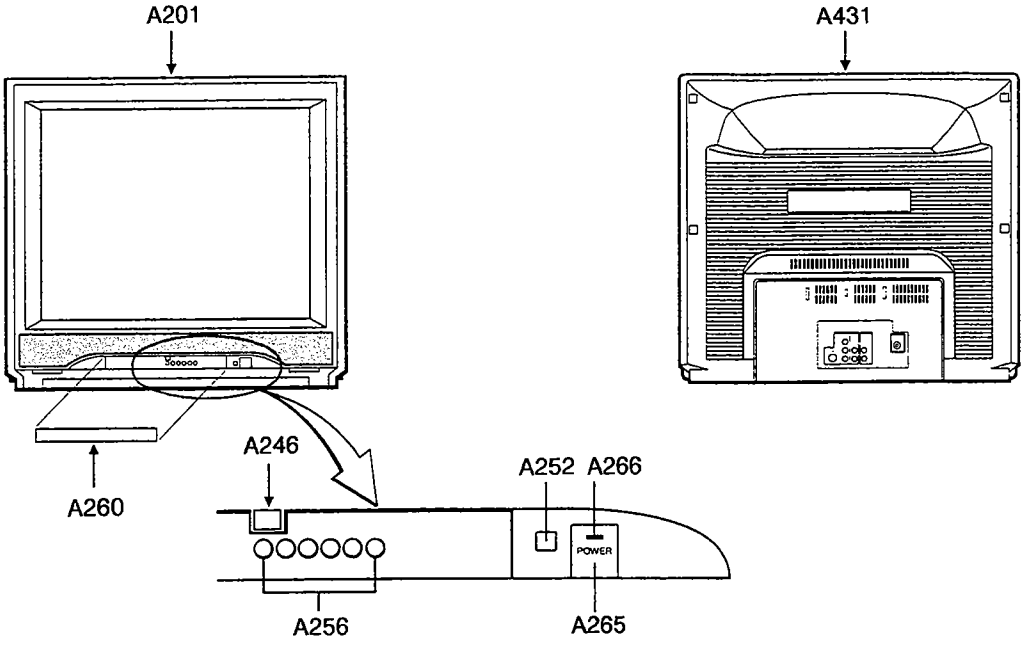


MICROPROCESSOR SYSTEM BLOCK DIAGRAM

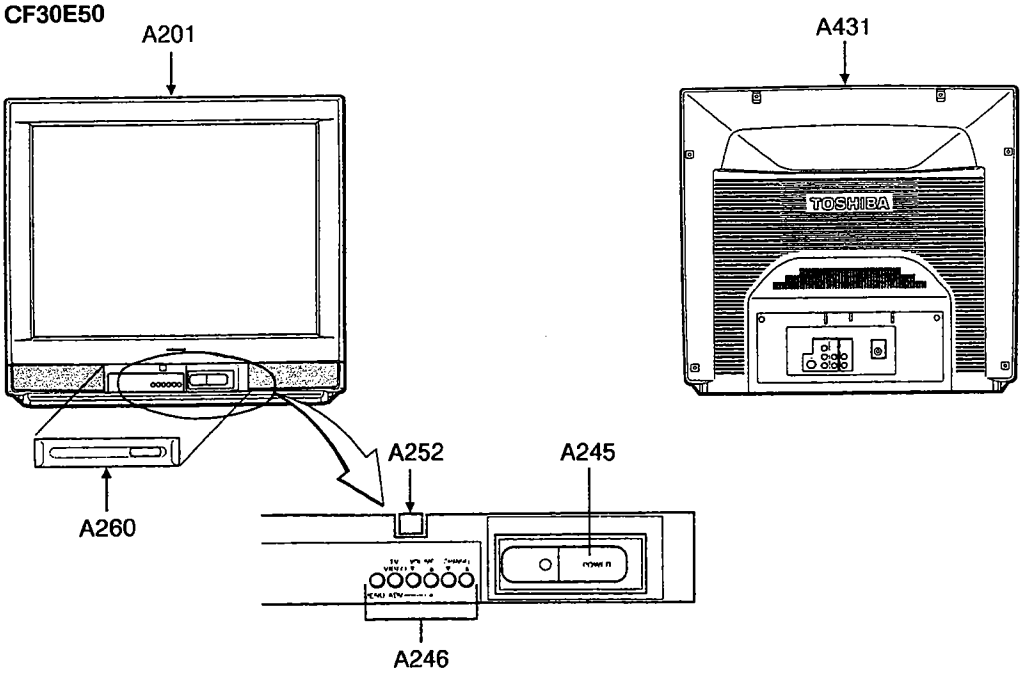


CABINET REPLACEMENT PARTS LIST

CF27E55

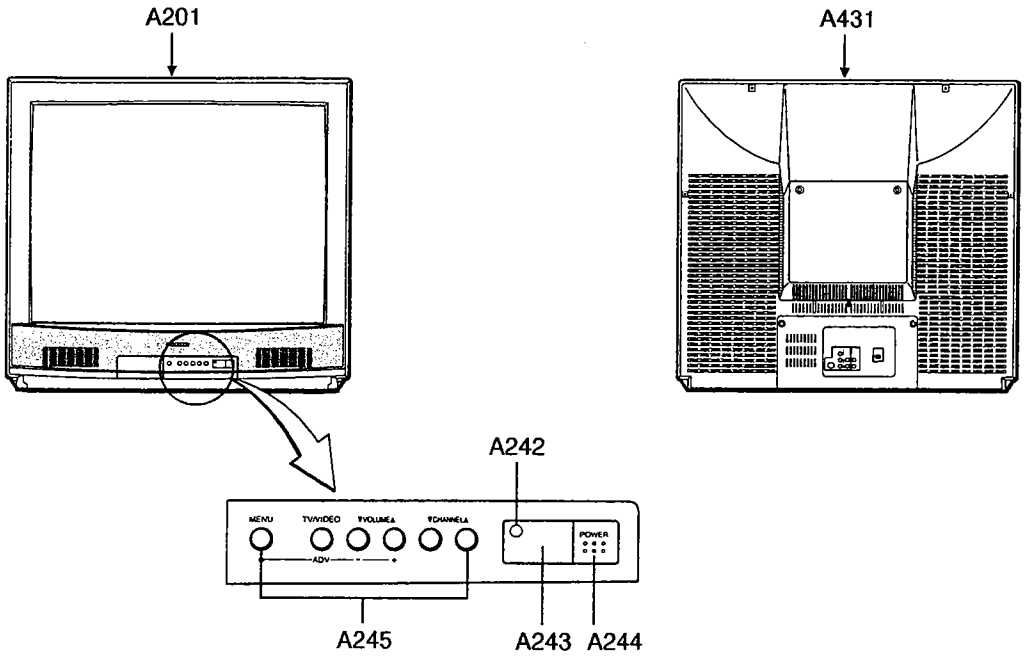


CF30E50



CABINET REPLACEMENT PARTS LIST

CF32E50



– Toshiba "Logo" 23431111

CF27E55

Location No.	Part No.	Description
A201	23410558	Front Cover
A246	23451204	Push Catch
A252	23430105	Lens, Remote
A256	23443735	Button, Control
A260	23426365	Door
A265	23443744	Button, POWER
A266	23430104	Lens, LED
A431	23426367	Back Cover

CF30E50

Location No.	Part No.	Description
A201	23519272	Front Cover
A245	23443733	Button, POWER
A246	23443735	Button, Control
A252	23451204	Push Catch
A260	23426452	Door
A431	23426435	Back Cover

CF32E50

Location No.	Part No.	Description
A201	23410591	Front Cover
A242	23430226	Lens, Power Ind.
A243	23430225	Filter, Remote Sensor
A244	23443951	Button, POWER
A245	23443952	Button, Control
A431	23426481	Back Cover

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols " ⚠ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE:
- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with * mark is no longer available after the end of the production.*

Models : CF27E55/CF30E50/CF32E50

ABBREVIATIONS:

Capacitors.....	CD	: Ceramic Disk	PF	: Plastic Film	EL	: Electrolytic
Resistors.....	CF	: Carbon Film	CC	: Carbon Composition	MF	: Metal Film
	OMF	: Oxide Metal Film	VR	: Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C101	24796479	EL, 4.7μF, ±20%, 35V
C102	24763221	EL, 220μF, ±20%, 16V
C105	24474102	CD, 1000pF, ±10%
C106	24797479	EL, 4.7μF, ±20%, 50V
C107	24763221	EL, 220μF, ±20%, 16V
C108	24085981	EL, 10μF, ±20%, 16V, Non-Polar
C109	24085981	EL, 10μF, ±20%, 16V, Non-Polar
C111	24669229	EL, 2.2μF, ±20%, 50V
C112	24669229	EL, 2.2μF, ±20%, 50V
C113	24539474	PF, 0.47μF
C114	24539474	PF, 0.47μF
C200	24794101	EL, 100μF, ±20%, 16V
C201	24092398	CD, 0.1μF, +80%,–20%
C202	24794220	EL, 22μF, ±20%, 16V
C205	24794220	EL, 22μF, ±20%, 16V
C207	24794100	EL, 10μF, ±20%, 16V
C208	24797010	EL, 1μF, ±20%, 50V
C209	24085944	EL, 2.2μF, ±20%, 50V, Non-Polar
C210	24794470	EL, 47μF, ±20%, 16V
C211	24232103	CD, 0.01μF, +80%, –20%
C230	24794470	EL, 47μF, ±20%, 16V
C231	24232103	CD, 0.01μF, +80%, –20%
C232	24092398	CD, 0.1μF, +80%,–20%
C233	24794100	EL, 10μF, ±20%, 16V
C305	24617915	EL, 1μF, ±10%, 50V (CF27E55/CF32E50)
C305	24617912	EL, 2.2μF, ±10%, 50V(CF30E50)
C306	24630798	EL, 3300μF, 25V (CF27E55/CF32E50)
C306	24630736	EL, 1000μF, 25V (CF30E50)
C307	24693473	PF, 0.047μF, 100V
C308	24668221	EL, 220μF, ±20%, 35V
C309	24591102	PF, 1000pF
C310	24796102	EL, 1000μF, ±20%, 35V
C311	24214102	CD, 1000pF, ±10%, 500V
C313	24082057	PF, 0.22μF, 100V
C314	24539104	PF, 0.1μF

Location No.	Part No.	Description
C315	24797229	EL, 2.2μF, ±20%, 50V
C316	24539104	PF, 0.1μF (CF30E50/CF32E50)
C317	24214471	CD, 470pF, ±10%, 500V
C318	24666101	EL, 100μF, ±20%, 16V
C319	24212102	CD, 1000pF, ±10%
C320	24668101	EL, 100μF, ±20%, 35V
C322	24617912	EL, 2.2μF, ±10%, 50V
C323	24539224	PF, 0.22μF
C324	24591683	PF, 0.068μF
C325	24591183	PF, 0.018μF
C326	24539104	PF, 0.1μF
C327	24617787	EL, 470μF, ±20%, 16V
C328	24212392	CD, 3900pF, ±10% (CF27E55)
C338	24591102	PF, 1000pF
C340	24212391	CD, 390pF, ±10% (CF27E55)
C340	24591681	CD, 680pF (CF30E50)
C340	24212821	CD, 820pF (CF32E50)
C341	24539104	PF, 0.1μF
C403	24591203	PF, 0.02μF
C404	24797229	EL, 2.2μF, ±20%, 50V
C413	24214821	CD, 820pF, ±10%, 500V
C416	24678010	EL, 1μF, ±20%, 200V
C417	24214391	CD, 390pF, ±10%, 500V
C421	24539474	PF, 0.47μF (CF27E55/CF30E55)
C421	24539104	PF, 0.1μF (CF32E50)
C422	24539474	PF, 0.47μF
C430	24232103	CD, 0.01μF, +80%, –20%
C431	24794101	EL, 100μF, ±20%, 16V
C439	24095801	PF, 0.075μF, 400V (CF27E55)
C439	24829433	PF, 0.043μF, 400V (CF30E50/CF32E50)
⚠C440	24082580	PF, 6800pF, ±3%, 1500V (CF27E55)
⚠C440	24082355	PF, 8700pF, ±3%, 1500V (CF30E50)
⚠C440	24082508	PF, 7800pF, ±3%, 1500V (CF32E50)
C441	24082648	PF, 0.3μF, 400V (CF32E50)
⚠C442	24082648	PF, 0.3μF, 400V (CF27E55)
⚠C442	24082649	PF, 0.33μF, 400V (CF30E50/CF32E50)

Location No.	Part No.	Description
⚠C444	24082609	PF, 5100pF, ±3%, 1800V (CF27E55)
⚠C444	24082288	PF, 5600pF, ±3%, 1800V (CF30E50/CF32E50)
C445	24828563	PF, 0.056μF, 200V
C446	24679100	EL, 10μF, ±20%, 250V
C448	24640908	EL, 33μF, ±20%, 160V
C449	24667102	EL, 1000μF, ±20%, 25V
C461	24668101	EL, 100μF, ±20%, 35V
C463	24212152	CD, 1500pF, ±10%
C464	24640872	EL, 10μF, ±20%, 100V
C465	24591332	PF, 3300pF
C466	24797478	EL, 0.47μF, ±20%, 50V
⚠C467	24095881	PF, 0.018μF, ±3%, 630V (CF27E55/CF32E50)
⚠C467	24095879	PF, 0.022μF, ±3%, 630V (CF30E50)
C468	24591392	PF, 3900pF
C469	24232223	CD, 0.022μF, +80%,–20%
C470	24797220	EL, 22μF, ±20%, 50V
C471	24797479	EL, 4.7μF, ±20%, 50V
C472	24539474	PF, 0.47μF
C474	24794100	EL, 10μF, ±20%, 16V
C475	24539474	PF, 0.47μF
C504	24353090	CD, 9pF, ±0.25pF
C510	24797229	EL, 2.2μF, ±20%, 50V
C514	24591223	PF, 0.022μF
C612	24085981	EL, 10μF, ±20%, 16V, Non-Polar
C618	24794470	EL, 47μF, ±20%, 16V
C661	24474102	CD, 1000pF, ±10%
C662	24474102	CD, 1000pF, ±10%
C672	24669479	EL, 4.7μF, ±20%, 50V
C673	24669229	EL, 2.2μF, ±20%, 50V
C676	24539124	PF, 0.12μF
C677	24539124	PF, 0.12μF
C678	24669229	EL, 2.2μF, ±20%, 50V
C679	24667470	EL, 47μF, ±20%, 25V
C681	24667102	EL, 1000μF, ±20%, 25V
C682	24668101	EL, 100μF, ±20%, 35V
C683	24667102	EL, 1000μF, ±20%, 25V
⚠C801	24095670	PF, 0.22μF, ±20%, AC125V
⚠C802	24095852	PF, 0.082μF, ±20%, AC125V
⚠C805	24092300	CD, 0.01μF, +80%, –20%, AC250V
⚠C806	24092300	CD, 0.01μF, +80%, –20%, AC250V
C810	24086859	EL, 470μF, ±20%, 200V
⚠C811	24092270	CD, 4700pF, ±20%, AC400V
⚠C812	24092270	CD, 4700pF, ±20%, AC400V
⚠C813	24092270	CD, 4700pF, ±20%, AC400V
C840	24795221	EL, 220μF, ±20%, 25V
C842	24792101	EL, 100μF, ±20%, 6.3V
C843	24539104	PF, 0.1μF
C860	24214103	CD, 0.01μF, ±10%, 500V
C861	24214471	CD, 470pF, ±10%, 500V
C862	24591102	PF, 1000pF
C863	24539104	PF, 0.1μF
C865	24092347	CD, 1500pF, ±10%, 2kV
C866	24669220	EL, 22μF, ±20%, 50V
C867	24212682	CD, 6800pF, ±10%
C868	24667101	EL, 100μF, ±20%, 25V
C869	24678229	EL, 2.2μF, ±20%, 200V
C870	24082869	PF, 0.18μF, 400V

Location No.	Part No.	Description
C871	24092347	CD, 1500pF, ±10%, 2kV
C872	24212102	CD, 1000pF, ±10%
C873	24212102	CD, 1000pF, ±10%
C874	24435221	CD, 220pF, 500V
C876	24539104	PF, 0.1μF
C884	24086863	EL, 330μF, ±20%, 160V
C885	24214471	CD, 470pF, ±10%, 500V
C886	24214471	CD, 470pF, ±10%, 500V
C889	24796222	EL, 2200μF, ±20%, 35V
C891	24082229	PF, 0.1μF, ±10%, 250V
C893	24092338	CD, 270pF, ±10%, 2kV
C894	24092338	CD, 270pF, ±10%, 2kV
C898	24212102	CD, 1000pF, ±10%
C902	24092353	CD, 4700pF, ±10%, 2kV
C904	24436391	CD, 390pF
C905	24436391	CD, 390pF
C907	24436391	CD, 390pF
C909	24679220	EL, 22μF, ±20%, 250V
C910	24797478	EL, 0.47μF, ±20%, 50V
C911	24794100	EL, 10μF, ±20%, 16V
C912	24763471	EL, 470μF, ±20%, 16V
C913	24794100	EL, 10μF, ±20%, 16V
C914	24232103	CD, 0.01μF, +80%, –20%
C920	24214101	CD, 100pF, ±10%, 500V
CA12	24474101	CD, 100pF, ±10%
CA25	24436151	CD, 150pF
CA33	24232103	CD, 0.01μF, +80%, –20%
CA36	24474101	CD, 100pF, ±10%
CA37	24474101	CD, 100pF, ±10%
CA38	24474101	CD, 100pF, ±10%
CA42	24794100	EL, 10μF, ±20%, 16V
CA43	24232103	CD, 0.01μF, +80%, –20%
CA44	24232103	CD, 0.01μF, +80%, –20%
CA68	24794100	EL, 10μF, ±20%, 16V
CA69	24232103	CD, 0.01μF, +80%, –20%
CB01	24797470	EL, 47μF, ±20%, 50V
CB20	24474101	CD, 100pF, ±10%
CM01	24539104	PF, 0.1μF
CM05	24474331	CD, 330pF, ±10%
CM08	24539104	PF, 0.1μF
CR01	24092398	CD, 0.1μF, +80%,–20%
CR02	24092398	CD, 0.1μF, +80%,–20%
CR03	24092398	CD, 0.1μF, +80%,–20%
CS02	24797010	EL, 1μF, ±20%, 50V
CS03	24797010	EL, 1μF, ±20%, 50V
CS06	24797010	EL, 1μF, ±20%, 50V
CS07	24797010	EL, 1μF, ±20%, 50V
CS08	24797010	EL, 1μF, ±20%, 50V
CS09	24797010	EL, 1μF, ±20%, 50V
CS15	24797010	EL, 1μF, ±20%, 50V
CS16	24797010	EL, 1μF, ±20%, 50V
CS17	24797478	EL, 0.47μF, ±20%, 50V
CS18	24793470	EL, 47μF, ±20%, 10V
CS19	24794100	EL, 10μF, ±20%, 16V
CS20	24232103	CD, 0.01μF, +80%, –20%
CS21	24794100	EL, 10μF, ±20%, 16V
CS30	24474221	CD, 220pF, ±10%
CS31	24474221	CD, 220pF, ±10%
CS32	24474221	CD, 220pF, ±10%
CS33	24474221	CD, 220pF, ±10%
CS34	24474221	CD, 220pF, ±10%
CS35	24474221	CD, 220pF, ±10%
CV01	24794101	EL, 100μF, ±20%, 16V
CV02	24591103	PF, 0.01μF

Location No.	Part No.	Description
CV07	24794100	EL, 10μF, ±20%, 16V
CV22	24794100	EL, 10μF, ±20%, 16V
CV24	24232103	CD, 0.01μF, +80%, –20%
CV26	24794100	EL, 10μF, ±20%, 16V
CV30	24794100	EL, 10μF, ±20%, 16V
CV32	24232103	CD, 0.01μF, +80%, –20%
CV33	24232103	CD, 0.01μF, +80%, –20%
CV35	24232103	CD, 0.01μF, +80%, –20%
CY10	24436680	CD, 68pF
CY12	24232103	CD, 0.01μF, +80%, –20%
CY13	24092398	CD, 0.1μF, +80%,–20%, 25V
CY14	24232103	CD, 0.01μF, +80%, –20%
CY15	24092398	CD, 0.1μF, +80%,–20%, 25V
CY16	24797330	EL, 33μF, ±20%, 50V
CY17	24797339	EL, 3.3μF, ±20%, 50V
CY18	24797339	EL, 3.3μF, ±20%, 50V
CY19	24212681	CD, 680pF, ±10%
CY20	24797478	EL, 0.47μF, ±20%, 50V
CY21	24232103	CD, 0.01μF, +80%, –20%
CY22	24472150	EL, 0.47μF, ±20%, 50V
CY23	24797470	EL, 47μF, ±20%, 50V
CY24	24797339	EL, 3.3μF, ±20%, 50V
CY25	24797229	EL, 2.2μF, ±20%, 50V
CY26	24232103	CD, 0.01μF, +80%, –20%
CY27	24092398	CD, 0.1μF, +80%,–20%
CY28	24206100	EL, 10μF, 50V
CY29	24092398	CD, 0.1μF, +80%,–20%, 25V
CY30	24538104	PF, 0.1μF
CY31	24232103	CD, 0.01μF, +80%, –20%
CY32	24092398	CD, 0.1μF, +80%,–20%, 25V
CY33	24797010	EL, 1μF, ±20%, 50V
CY34	24092398	CD, 0.1μF, +80%,–20%
CY35	24793101	EL, 100μF, ±20%, 10V
CY36	24092398	CD, 0.1μF, +80%,–20%, 25V
CY37	24092398	CD, 0.1μF, +80%,–20%
CY38	24797100	EL, 10μF, ±20%, 50V
CY39	24206100	EL, 10μF, 50V
CY40	24092398	CD, 0.1μF, +80%,–20%
CY41	24793101	EL, 100μF, ±20%, 10V
CY42	24092398	CD, 0.1μF, +80%,–20%
CY43	24793221	EL, 220μF, ±20%, 10V
CY44	24232103	CD, 0.01μF, +80%, –20%
CY45	24436101	CD, 100pF
CY46	24436101	CD, 100pF
CY47	24436330	CD, 33pF
CY48	24436330	CD, 33pF
CY60	24436330	CD, 33pF
CY61	24436330	CD, 33pF
CY62	24436101	CD, 100pF
CY63	24436101	CD, 100pF
CY64	24232103	CD, 0.01μF, +80%, –20%
CY66	24797470	EL, 47μF, 50V
CZ01	24794101	EL, 100μF, ±20%, 16V
CZ03	24085981	EL, 10μF, ±20%, 16V, Non-Polar

RESISTORS

R101	24382273	OMF, 27k ohm, 1W
R201	24381391	OMF, 390 ohm, 1/2W
R208	24366124	CF, 120k ohm
R209	24366273	CF, 27k ohm
R210	24366103	CF, 10k ohm
R228	24366123	CF, 12k ohm (CF27E55)
R228	24366103	CF, 10k ohm (CF30E50/CF32E50)
R230	24366223	CF, 22k ohm (CF27E55)
R230	24366103	CF, 10k ohm (CF30E50/CF32E50)
R231	24366103	CF, 10k ohm
R235	24366224	CF, 220k ohm
R236	24366101	CF, 100 ohm
R237	24366101	CF, 100 ohm
R238	24366222	CF, 2200 ohm (CF27E55)
R238	24366102	CF, 1k ohm (CF30E50/CF32E50)
R241	24366433	CF, 43k ohm
R242	24366473	CF, 47k ohm
R245	24366184	CF, 180k ohm (CF30E50/CF32E50)
R246	24366475	CF, 4.7M ohm (CF27E55)
R246	24366275	CF, 2.7M ohm (CF30E50/CF32E50)
R301	24366102	CF, 1k ohm
R302	24366103	CF, 10k ohm (CF30E50)
R303	24321109	MF, 1 ohm, 1/2W
R304	24366333	CF, 33k ohm (CF27E55/CF30E50)
R304	24366303	CF, 30k ohm (CF32E50)
R305	24322828	OMF, 0.82 ohm, 1W (CF27E55/CF30E50)
R305	24322628	OMF, 0.62 ohm, 1W (CF32E50)
R306	24366823	CF, 82k ohm (CF27E55)
R306	24366473	CF, 47k ohm (CF30E50/CF32E50)
R307	24366474	CF, 470k ohm (CF27E55/CF30E50)
R307	24366434	CF, 430k ohm (CF32E50)
⚠R308	24383751	OMF, 750 ohm, 2W (CF27E55)
⚠R308	24383561	OMF, 560 ohm, 2W (CF30E50)
R309	24553221	OMF, 220 ohm, 1W
R313	24366563	CF, 56k ohm (CF27E55)
R313	24366273	CF, 27k ohm (CF30E50/CF32E50)
R314	24366105	CF, 1M ohm (CF32E50)
R315	24366273	CF, 27k ohm (CF27E55)
R315	24366824	CF, 820k ohm (CF30E50/CF32E50)
R316	24366204	CF, 200k ohm
R318	24366471	CF, 470 ohm
R319	24366471	CF, 470 ohm
R320	24366472	CF, 4700 ohm
R321	24366101	CF, 100 ohm
R322	24366183	CF, 18k ohm
R323	24366562	CF, 5600 ohm
R324	24366101	CF, 100 ohm
R325	24366183	CF, 18k ohm
R326	24366103	CF, 10k ohm
⚠R327	24339569	MF, 5.6 ohm, 2W
R329	24366203	CF, 20k ohm
R330	24366102	CF, 1k ohm
R331	24366104	CF, 100k ohm
⚠R336	24383181	OMF, 180 ohm, 2W (CF27E55)
⚠R336	24383221	OMF, 220 ohm, 2W (CF30E50)
⚠R336	24383271	OMF, 270 ohm, 2W (CF32E50)
R337	24366273	CF, 27k ohm
R340	24366563	CF, 56k ohm

Location No.	Part No.	Description
R341	24366153	CF, 15k ohm
R342	24366392	CF, 3900 ohm
R343	24366103	CF, 10k ohm (CF27E55/CF32E50)
R343	24366153	CF, 15k ohm (CF30E50)
R344	24366392	CF, 3900 ohm
R345	24366105	CF, 1M ohm (CF27E55)
R345	24366684	CF, 680K ohm (CF30E50)
R345	24366824	CF, 820K ohm (CF32E50)
R346	24366222	CF, 2200 ohm
R347	24366104	CF, 100k ohm (CF27E55)
R347	24366105	CF, 1M ohm (CF30E50/CF32E50)
R400	24366163	CF, 16k ohm
R401	24366391	CF, 390 ohm
R402	24366103	CF, 10k ohm
R403	24366332	CF, 3300 ohm
R404	24366332	CF, 3300 ohm
R405	24382682	OMF, 6800 ohm, 1W
R406	24366333	CF, 33k ohm
R407	24366223	CF, 22k ohm
R408	24366472	CF, 4700 ohm
R410	24366271	CF, 270 ohm
R411	24366331	CF, 330 ohm
R415	24553242	OMF, 2400 ohm, 1W
⚠R416	24510562	Cement, 5600 ohm, 5W
⚠R418	24383181	OMF, 180 ohm, 2W
⚠R421	24383270	OMF, 27 ohm, 2W
R430	24366102	CF, 1k ohm
⚠R441	24532102	FR, 1k ohm, 1W
R442	24553513	OMF, 51k ohm, 1W (CF32E50)
⚠R448	24338478	MF, 0.47 ohm, 1W
R460	24366303	CF, 30k ohm (CF27E55/CF32E50)
R460	24366433	CF, 43k ohm (CF30E50)
R461	24366624	CF, 620k ohm
⚠R462	24000465	FR, 9.1 ohm, 1W
⚠R463	24323479	OMF, 4.7 ohm, 2W (CF27E55)
⚠R463	24324479	OMF, 4.7 ohm, 3W (CF30E50/CF32E50)
R464	24366823	CF, 82k ohm
R465	24382152	OMF, 1500 ohm, 1W
R466	24366393	CF, 39k ohm
R467	24366822	CF, 8200 ohm (CF27E55/CF32E50)
R467	24366362	CF, 3600 ohm (CF30E50)
R468	24366102	CF, 1k ohm
R469	24382682	OMF, 6800 ohm, 1W
R470	24338568	MF, 0.56 ohm, 1W
R472	24552131	OMF, 130 ohm, 1/2W
R473	24552270	OMF, 27 ohm, 1/2W
R479	24552820	OMF, 82 ohm, 1/2W
R480	24366123	CF, 12k ohm
R497	24552182	OMF, 1800 ohm, 1/2W (CF27E55)
R497	24382681	OMF, 680 ohm, 1/2W (CF30E50/CF32E50)
R503	24366334	CF, 330k ohm
R504	24366332	CF, 3300 ohm
R506	24366101	CF, 100 ohm
R507	24366101	CF, 100 ohm
R508	24366101	CF, 100 ohm
R512	24366475	CF, 4.7M ohm
R661	24366182	CF, 1800 ohm

Location No.	Part No.	Description
R662	24366182	CF, 1800 ohm
R663	24366562	CF, 5600 ohm
R664	24366562	CF, 5600 ohm
R668	24366103	CF, 10k ohm
R669	24366103	CF, 10k ohm
R676	24366229	CF, 2.2 ohm
R677	24366229	CF, 2.2 ohm
R681	24366104	CF, 100k ohm
R682	24366104	CF, 100k ohm
⚠R808	24019002	PTC Thermistor, 7 ohm, 140V
⚠R810	24007873	Cement, 1.1 ohm, 15W
R861	24382103	OMF, 10k ohm, 1W
R862	24381220	OMF, 22 ohm, 1/2W
R863	24552362	OMF, 3600 ohm, 1/2W
R864	24552392	OMF, 3900 ohm, 1/2W
R866	24552470	OMF, 47 ohm, 1/2W
R867	24366433	CF, 43k ohm
R870	24381120	OMF, 12 ohm, 1/2W
R871	24381101	OMF, 100 ohm, 1/2W
R872	24382104	OMF, 100k ohm, 1W
R883	24381153	OMF, 15k ohm, 1/2W
R884	24366102	CF, 1k ohm
⚠R889	24546398	FR, 0.39 ohm, 1/2W
R890	24382333	OMF, 33k ohm, 1W
R891	24366102	CF, 1k ohm
⚠R898	24002994	CC, 3.9M ohm
⚠R899	24002994	CC, 3.9M ohm
R901	24552561	OMF, 560 ohm, 1/2W
R902	24552561	OMF, 560 ohm, 1/2W
R903	24552561	OMF, 560 ohm, 1/2W
R904	24366103	CF, 10k ohm
R905	24366101	CF, 100 ohm
R911	24366150	CF, 15 ohm
R912	24366391	CF, 390 ohm
R914	24366561	CF, 560 ohm
R915	24366680	CF, 68 ohm (CF27E55)
R915	24366820	CF, 82 ohm (CF30E50CF32E50)
R917	24366391	CF, 390 ohm
R918	24366820	CF, 82 ohm
R919	24366391	CF, 390 ohm
⚠R920	24000940	FR, 2 ohm, 2W (CF27E55)
⚠R920	24000568	FR, 4.7 ohm, 1W (CF30E50)
⚠R920	24000880	FR, 5.1 ohm, 1W (CF32E50)
R921	24366561	CF, 560 ohm
R922	24366680	CF, 68 ohm (CF27E55)
R922	24366820	CF, 82 ohm (CF30E50/CF32E50)
R924	24366820	CF, 82 ohm
R925	24366391	CF, 390 ohm
R926	24366391	CF, 390 ohm
R928	24366561	CF, 560 ohm
R929	24366680	CF, 68 ohm (CF27E55)
R929	24366820	CF, 82 ohm (CF30E50/CF32E50)
R930	24366820	CF, 82 ohm
R932	24366102	CF, 1k ohm
R934	24366331	CF, 330 ohm (CF27E55/CF32E50)
R934	24366271	CF, 270 ohm (CF30E50)
R935	24366681	CF, 680 ohm
R936	24366750	CF, 75 ohm (CF27E55)
R937	24366391	CF, 390 ohm
R942	24366392	CF, 3900 ohm

Location No.	Part No.	Description
R943	24366392	CF, 3900 ohm
R944	24366392	CF, 3900 ohm
⚠R960	24383153	OMF, 15k ohm, 2W
⚠R961	24383153	OMF, 15k ohm, 2W
⚠R962	24383153	OMF, 15k ohm, 2W
⚠R963	24383153	OMF, 15k ohm, 2W
⚠R964	24383153	OMF, 15k ohm, 2W
⚠R965	24383153	OMF, 15k ohm, 2W
R977	24366122	CF, 1200 ohm
RA03	24366102	CF, 1k ohm
RA04	24366102	CF, 1k ohm
RA05	24366102	CF, 1k ohm
RA07	24366102	CF, 1k ohm
RA08	24366102	CF, 1k ohm
RA12	24366103	CF, 10k ohm
RA13	24366102	CF, 1k ohm
RA16	24366102	CF, 1k ohm
RA17	24366102	CF, 1k ohm
RA18	24366102	CF, 1k ohm
RA19	24366221	CF, 220 ohm
RA22	24366472	CF, 4700 ohm
RA23	24366472	CF, 4700 ohm
RA24	24366472	CF, 4700 ohm
RA25	24366822	CF, 8200 ohm
RA26	24366102	CF, 1k ohm
RA27	24366102	CF, 1k ohm
RA33	24366103	CF, 10k ohm
RA34	24366102	CF, 1k ohm
RA35	24366102	CF, 1k ohm
RA36	24366103	CF, 10k ohm
RA37	24366331	CF, 330 ohm
RA38	24366331	CF, 330 ohm
RA61	24366103	CF, 10k ohm
RA62	24366103	CF, 10k ohm
RA67	24366472	CF, 4700 ohm
RA68	24366472	CF, 4700 ohm
RA70	24366333	CF, 33k ohm
RA71	24366683	CF, 68k ohm
RA72	24366223	CF, 22k ohm
RA73	24366103	CF, 10k ohm
RA76	24366101	CF, 100 ohm
RA77	24366101	CF, 100 ohm
RB01	24366271	CF, 270 ohm
RB03	24366101	CF, 100 ohm
RB09	24366470	CF, 47 ohm
RB11	24366103	CF, 10k ohm
RB22	24366103	CF, 10k ohm
RB26	24366103	CF, 10k ohm
RB27	24366103	CF, 10k ohm
RB28	24366104	CF, 100k ohm
RB30	24366103	CF, 10k ohm
RB40	24366103	CF, 10k ohm
RB41	24366182	CF, 1800 ohm
RB42	24366102	CF, 1k ohm
RB43	24366103	CF, 10k ohm
RB44	24366103	CF, 10k ohm
RB45	24366181	CF, 180 ohm
RM02	24366102	CF, 1k ohm
RM06	24366222	CF, 2200 ohm
RR90	24366122	CF, 1200 ohm
RR91	24366122	CF, 1200 ohm
RR92	24366122	CF, 1200 ohm
RR93	24366472	CF, 4700 ohm
RS01	24366102	CF, 1k ohm

Location No.	Part No.	Description
RS02	24366102	CF, 1k ohm
RS03	24366103	CF, 10k ohm
RS04	24366473	CF, 47k ohm
RS05	24366682	CF, 6800 ohm
RS06	24366822	CF, 8200 ohm
RS07	24366103	CF, 10k ohm
RS08	24366103	CF, 10k ohm
RS09	24366682	CF, 6800 ohm
RS10	24366102	CF, 1k ohm
RS12	24366103	CF, 10k ohm
RS13	24366682	CF, 6800 ohm
RS14	24366102	CF, 1k ohm
RS16	24366103	CF, 10k ohm
RS19	24366183	CF, 18k ohm
RS20	24366183	CF, 18k ohm
RS21	24366183	CF, 18k ohm
RS22	24366183	CF, 18k ohm
RS23	24366183	CF, 18k ohm
RS24	24366183	CF, 18k ohm
RS30	24366123	CF, 12k ohm
RS31	24366123	CF, 12k ohm
RS32	24366123	CF, 12k ohm
RS33	24366123	CF, 12k ohm
RS40	24366123	CF, 12k ohm
RS41	24366123	CF, 12k ohm
RV01	24366750	CF, 75 ohm
RV11	24366103	CF, 10k ohm
RV12	24366103	CF, 10k ohm
RV18	24366100	CF, 10 ohm
RV19	24366100	CF, 10 ohm
RV22	24366101	CF, 100 ohm
RV23	24366102	CF, 1k ohm
RV30	24366750	CF, 75 ohm
RV31	24366750	CF, 75 ohm
RV92	24366103	CF, 10k ohm
RV93	24366123	CF, 12k ohm
RY11	24366271	CF, 270 ohm
RY13	24366102	CF, 1k ohm
RY14	24366102	CF, 1k ohm
RY15	24366273	CF, 27k ohm
RY16	24366102	CF, 1k ohm
RY17	24366102	CF, 1k ohm
RY18	24366471	CF, 470 ohm
RY19	24366102	CF, 1k ohm
RY20	24366102	CF, 1k ohm
RY21	24366471	CF, 470 ohm
RY22	24366154	CF, 150k ohm
RY23	24366105	CF, 1M ohm
RY24	24366331	CF, 330 ohm
RY25	24366510	CF, 51 ohm
RY26	24366152	CF, 1500 ohm
RY27	24366201	CF, 200 ohm
RY28	24366101	CF, 100 ohm
RY29	24366202	CF, 2k ohm
RY30	24366103	CF, 10k ohm
RY31	24366203	CF, 20k ohm
RY32	24366203	CF, 20k ohm
RY33	24366203	CF, 20k ohm
RY34	24366203	CF, 20k ohm
RY35	24366561	CF, 560 ohm
RY39	24366271	CF, 270 ohm
RY40	24366271	CF, 270 ohm
RY41	24366222	CF, 2200 ohm
RY42	24366154	CF, 150k ohm

Location No.	Part No.	Description
RY43	24366331	CF, 330 ohm
RY44	24366331	CF, 330 ohm
RY45	24366101	CF, 100 ohm
RY48	24366102	CF, 1k ohm
G060	24366470	CF, 47 ohm
G217	24367123	CF, 12k ohm (CF27E55)
G217	24367822	CF, 8200 ohm (CF30E50/CF32E50)
G933	24366750	CF, 75 ohm (CF27E55)

COILS & TRANSFORMERS

L101	23289101	Coil, Peaking, TRF4101AF
L201	23238714	Coil, Peaking, TRF4100AJ
L202	23238562	Coil, Peaking, TRF4109AJ
L204	23289100	Coil, Peaking, TRF4100AF
L301	23103859	Coil (Ferrite Bead), TEM2011
L302	23237975	Coil, Peaking, TRF4101AC
L400	23289100	Coil, Peaking, TRF4100AF
⚠L441	23233072	Coil, Linearity, TLN2115G (CF27E55)
⚠L441	23233947	Coil, Linearity, TLN2144G (CF30E50)
⚠L441	23233941	Coil, Linearity, TLN2157G (CF32E50)
L442	23248121	Coil, Choke, TLN3383D (CF27E55)
L442	23248122	Coil, Choke, TLN3384D (CF30E50/CF32E50)
L460	23248112	Coil, Choke, TLN3350D (CF27E55)
L460	23248111	Coil, Choke, TLN3349D (CF30E50/CF32E50)
⚠L461	23248115	Coil, Choke, TLN3367D
⚠L462	----------	DY, Supplied with V901 (CF27E55/CF30E50)
⚠L462	23231017	Deflection Yoke, YS-59636 (CF32E50)
L463	23103859	Coil (Ferrite Bead), TEM2011
L805	23261959	Coil, Choke, TRF9240
L806	23261959	Coil, Choke, TRF9240
L861	23103859	Coil (Ferrite Bead), TEM2011
L862	23103775	Coil (Ferrite Bead), TEM2014
L883	23103859	Coil (Ferrite Bead), TEM2011
L884	23103859	Coil (Ferrite Bead), TEM2011
L885	23248073	Coil, Choke, TLN3299D
L886	23103859	Coil (Ferrite Bead), TEM2011
L888	23103859	Coil (Ferrite Bead), TEM2011
⚠L901	23200664	Coil, Degaussing, TSB2271 (CF27E55)
⚠L901	23200273	Coil, Degaussing, TSB2288CT (CF30E50)
⚠L901	23200631	Coil, Degaussing, TSB2304AT (CF32E50)
L902	23289101	Coil, Peaking, TRF4101AF
L903	23289101	Coil, Peaking, TRF4101AF
L904	23289101	Coil, Peaking, TRF4101AF
LA01	23289100	Coil, Peaking, TRF4100AF
LB01	23262682	Coil, IF, TRF1147T
LY10	23289560	Coil,
LY11	23289229	Coil, Peaking, TRF42R2AF
LY12	23289229	Coil, Peaking, TRF42R2AF
LY13	23289229	Coil, Peaking, TRF42R2AF
LY14	23289229	Coil, Peaking, TRF42R2AF
LY15	23289229	Coil, Peaking, TRF42R2AF
LY18	23103880	Coil (Ferrite Bead), TEM2011Y
G905	23289390	Coil, Peaking, TRF4390AF
G906	23289390	Coil, Peaking, TRF4390AF
G907	23289390	Coil, Peaking, TRF4390AF
T401	23224360	Transformer, Horiz. Drive, TLN1096
⚠T461	23236483	Transformer, Flyback, TFB4129AD (CF27E55)
⚠T461	23236485	Transformer, Flyback, TFB4130AD (CF30E50/CF32E50)
⚠T801	23211669	Line Filter, TRF3202
⚠T840	23213513	Transformer, Power, TPW1459AZ
⚠T862	23217273	Transformer, Converter, TPW3321AS
G908	23289100	Coil, Peaking, TRF4100AF
G910	23237975	Coil, Peaking, TRF4101AC

SEMICONDUCTORS

Q301	B0378560	IC, TA8427K
Q840	23318299	IC, L78MR05
QS01	23319808	IC, M5218AP
QY03	70128714	IC, HM53461ZP-12
Q101	23904841	IC, MCT7805BT
Q302	B0384683	IC, TA8859AP
Q321	A6342206	Transistor, 2SC2878-A(TE
Q322	A6342206	Transistor, 2SC2878-A(TE
Q340	23114528	Transistor, 2SC1740S-Q
Q402	A678971D	Transistor, 2SC1569 FA-5
Q403	23314444	Transistor, 2SC4721, P
⚠Q404	A6872801	Transistor, 2SD2253(FA)
Q421	23904844	IC, MCT7809BT
Q460	23904976	IC, STA701M
Q501	B0385423	IC, TA1223N
Q610	B0377324	IC, TA8246H
Q611	A6342206	Transistor, 2SC2878-A(TE
Q612	A6012040	Transistor, RN2204
Q613	A6342206	Transistor, 2SC2878-A(TE
⚠Q801	23904984	IC, STR-Z2151, L
Q843	A6002050	Transistor, RN1205
⚠Q862	A8643112	Photo Coupler, TLP621(GRL-L
Q901	A6368700	Transistor, 2SC4544
Q902	23114528	Transistor, 2SC1740S-Q
Q903	A6368700	Transistor, 2SC4544
Q904	23114528	Transistor, 2SC1740S-Q
Q905	A6368700	Transistor, 2SC4544
Q906	23114528	Transistor, 2SC1740S-Q
Q907	A6509154	Transistor, 2SA562TM-Y(T
Q908	A6321265	Transistor, 2SC2120-Y(TE)
QA01	23905077	IC, TMP87CM34AN3126
QA02	23904941	IC, 24LC02BI/P
QB01	23114528	Transistor, 2SC1740S-Q
QB03	A6002050	Transistor, RN1205
QB21	23114528	Transistor, 2SC1740S-Q
QB30	23114528	Transistor, 2SC1740S-Q
QB40	23114528	Transistor, 2SC1740S-Q
QM03	23114528	Transistor, 2SC1740S-Q
QS02	A6012040	Transistor, RN2204
QS03	A6342206	Transistor, 2SC2878-A(TE
QS04	A6342206	Transistor, 2SC2878-A(TE
QV01	B0385650	IC, TA1218N
QV13	23114528	Transistor, 2SC1740S-Q
QV14	23114528	Transistor, 2SC1740S-Q
QY01	23904986	IC, M52694P

D876 23316747
MTZJ27C

Location No.	Part No.	Description
QY02	23904985	IC, M65607SP
QY11	23114528	Transistor, 2SC1740S-Q
QY13	23114528	Transistor, 2SC1740S-Q
QY14	23114528	Transistor, 2SC1740S-Q
QY15	23114530	Transistor, 2SA933S-Q
QY16	A6002010	Transistor, RN1201
D101	23316694	Diode, Zener, UZT33
D201	23316292	Diode, Zener, UZ3.3BSA
D205	23115537	Diode, 1SS131
D210	23115537	Diode, 1SS131
D212	23115537	Diode, 1SS131
D213	23115537	Diode, 1SS131
D301	23118094	Diode, EU2A
D302	A7978850	Diode, S5295G
D306	23115537	Diode, 1SS131 (CF30E50/CF32E50)
D307	23316304	Diode, Zener, UZ4.7BSC
D308	23118822	Diode, ERB12-02
D309	23118822	Diode, ERB12-02
D321	23316287	Diode, Zener, UZ2.4BSB
D404	23115537	Diode, 1SS131
D406	A7978850	Diode, S5295G
D407	23115537	Diode, 1SS131
D408	A7580658	Diode, 3JH41
D409	23316329	Diode, Zener, UZ11BSA
D441	23316687	Diode, Zener, MTZJ9.1B
D442	23115999	Diode, 1S1832 (CF32E50)
D460	A7568460	Diode, TVR-1B
D461	23316582	Diode, ERC20-06
D462	23316347	Diode, Zener, UZ20BSA
D463	23115537	Diode, 1SS131
D464	23118094	Diode, EU2A
D465	23316300	Diode, Zener, UZ4.3BSC
D466	23316345	Diode, Zener, UZ18BSB
D467	A7568719	Diode, 1S1887
D468	23316332	Diode, Zener, UZ12BSA
D471	A7568460	Diode, TVR-1B
D475	23316300	Diode, Zener, UZ4.3BSC
D476	23316299	Diode, Zener, UZ4.3BSB
D477	23115537	Diode, 1SS131
D478	23316297	Diode, Zener, UZ3.9BSB
D506	23316323	Diode, Zener, UZ9.1BSA
D507	23316323	Diode, Zener, UZ9.1BSA
D508	23316323	Diode, Zener, UZ9.1BSA
D611	23115537	Diode, 1SS131
D613	23115537	Diode, 1SS131
D614	23115537	Diode, 1SS131
D615	23115537	Diode, 1SS131
D623	23115537	Diode, 1SS131
⚠D801	23316391	Diode, D3SB60, 4109
D840	23316713	Diode, S1WBA10 4101
D845	23115537	Diode, 1SS131
D862	23118094	Diode, EU2A
D864	23118094	Diode, EU2A
D875	23316348	Diode, UZ20BSB
D881	23115537	Diode, 1SS131
D883	23115530	Diode, RG2
D884	23115530	Diode, RG2
D885	23118094	Diode, EU2A
D886	23118094	Diode, EU2A
⚠D899	24000902	Varistor, TNR15G271K
D901	23115537	Diode, 1SS131
D902	23115537	Diode, 1SS131
D903	23115537	Diode, 1SS131

Location No.	Part No.	Description
D904	23115537	Diode, 1SS131
D905	23115537	Diode, 1SS131
D906	23115537	Diode, 1SS131
D910	23115537	Diode, 1SS131
D911	A7568250	Diode, 1S1834
DB03	23358522	LED, SIR-56SB3F (CF27E55)
DB30	23115537	Diode, 1SS131
DB45	23115537	Diode, 1SS131
DE50	23358504	LED, Red, SCL003URC3FX (CF27E55/CF30E50)
DE50	23358501	LED, Red, SCL003URC5F (CF32E50)
DM01	23115537	Diode, 1SS131
DV01	23316323	Diode, Zener, UZ9.1BSA
DV02	23316323	Diode, Zener, UZ9.1BSA
DV03	23316323	Diode, Zener, UZ9.1BSA
DY11	23118859	Diode, 1SS133

MISCELLANEOUS

⚠F301	23144728	Fuse, 0.5A, 125V
F301A	23165433	Holder, Fuse
⚠F470	23144785	Fuse, 1.25A, 125V (CF27E55)
⚠F470	23144731	Fuse, 1.6A, 125V (CF30E50/CF32E50)
F470A	23165433	Holder, Fuse
⚠F801	23144888	Fuse, 5.0A, 125V
F801A	23165433	Holder, Fuse
⚠F860	23144773	Fuse, 4.0A, 125V
H002	23148222	Module, US IF/MTS/A.PRO
KB01	23904946	Remote Sensor, RPM-676CBR-S
P301A	23902655	Socket, B-B, 15P
P301B	23367724	Connector, B-B, 15P
⚠P801	23176005	Power Cord (CF27E55/CF30E50
⚠P801	23176006	Power Cord (CF32E50)
P910	23164725	Plug, 2P
PV03	23365840	Jack, 8P
SA01	23145227	Switch, Push, 1C1P
SA02	23145227	Switch, Push, 1C1P
SA03	23145227	Switch, Push, 1C1P
SA04	23145227	Switch, Push, 1C1P
SA05	23145227	Switch, Push, 1C1P
SA06	23145227	Switch, Push, 1C1P
SA07	23145226	Switch, Push, 1C1P
SA07	23145227	Switch, Push, 1C1P (CF32E50)
⚠SR81	23146916	Relay, Power, DG1U-12
⚠V901A	23902068	Soket, CRT
W661	23351088	Speaker, SPK-1360
W661	23351258	Speaker, SPK-1258 (CF32E50)
W662	23351088	Speaker, SPK-1360
W662	23351258	Speaker, SPK-1258 (CF32E50)
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153961	Crystal, 3.58MHz
XA01	23153325	Ceramic Resonater, TCR1056
XY01	23153899	Crystal, 14.31818MHz
XZ01	23303145	Glass Delay, Comb, UGL330KNT
⚠Z801	23905010	IC, Hybrid, HIC1019 (CF32E50)
⚠Z801	23905011	IC, Hybrid, HIC1020 (CF30E50)

CF27E55

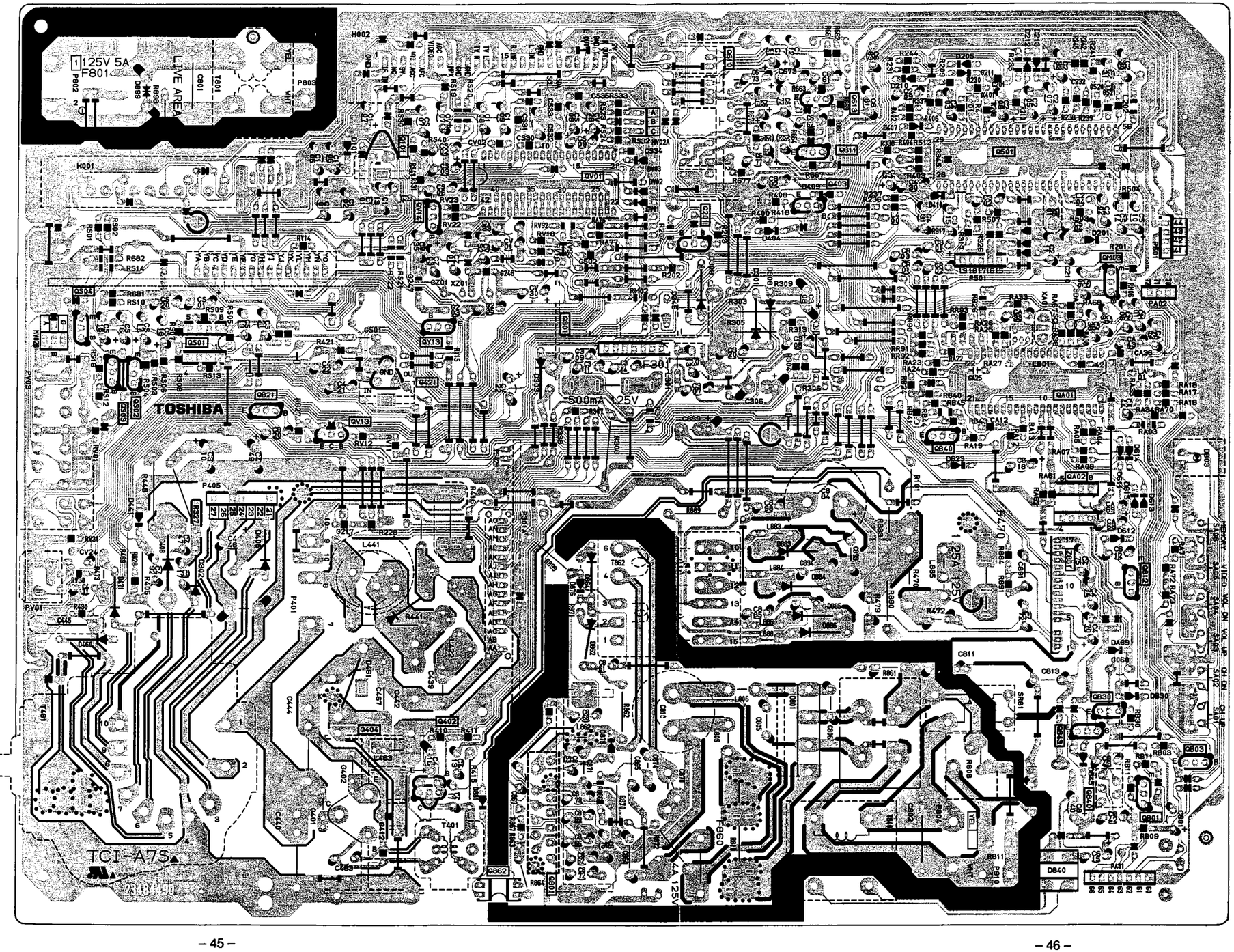
Location No.	Part No.	Description
PC BOARD ASSEMBLIES		
✻U901	23703768	CRT Drive Board, PB5193 (CF27E55)
✻U901	23704070	CRT Drive Board, PB5424 (CF30E50)
✻U901	23704032	CRT Drive Board, PB5394 (CF32E50)
✻U902	23703599	Main Board, PB5191(CF27E55)
✻U902	23704069	Main Board, PB5423(CF30E50)
✻U902	23704030	Main Board, PB5392(CF32E50)
✻UA01	23703909	Control, PB5291 (CF27E55)
✻UA01	23704044	Control, PB5403 (CF30E50)
✻UD01	23703811	DPC Board, PB5192 (CF27E55)
✻UD01	23704048	DPC Board, PB5407 (CF30E50)
✻UD01	23704179	DPC Board, PB5506 (CF32E50)
✻UY01	23703769	PIP Board, PB5194
PICTURE TUBE		
⚠V901	23312617	Picture Tube, A68AEG25X13 (CF27E55)
⚠V901	23312624	Picture Tube, A76JTS50X02 (CF30E50)
⚠V901	23312543	Picture Tube, A80JZH50X01 (CF32E50)
	23102395	Magnet, C/P, TP-11900BX (CF32E50 only)
TUNER		
⚠H001	23321163	Tuner, EL465L (CF27E55)
⚠H001	23321157	Tuner, ELA11L (CF30E50/CF32E50)
ACCESSORIES		
K912	23306090	Remote Control CT-9792
Y101	23562401	Owner's Manual, English, CF27E55
Y101	23562402	Owner's Manual, English, CF30E50/CF32E50
Y101F	23562317	Owner's Manual, French, CF27E55
Y101F	23562343	Owner's Manual, French, CF30E50/CF32E50
Y107	23293951	Adapter, Antenna, AD903F

Location No.	Part No.	Description

THIS PAGE IS
INTENTIONALLY LEFT
BLANK.

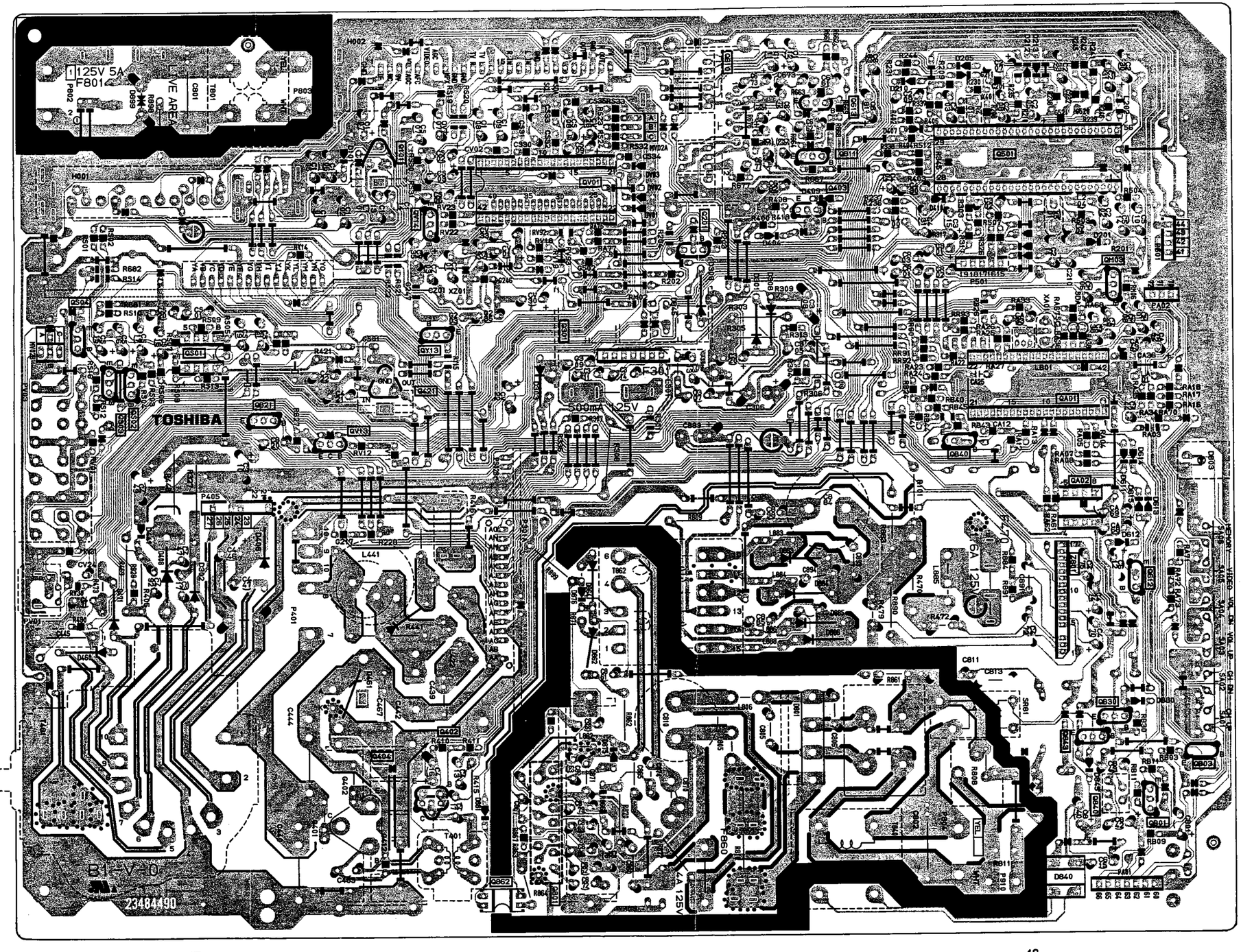
MAIN BOARD PB5191 (27")

BOTTOM (FOIL) SIDE



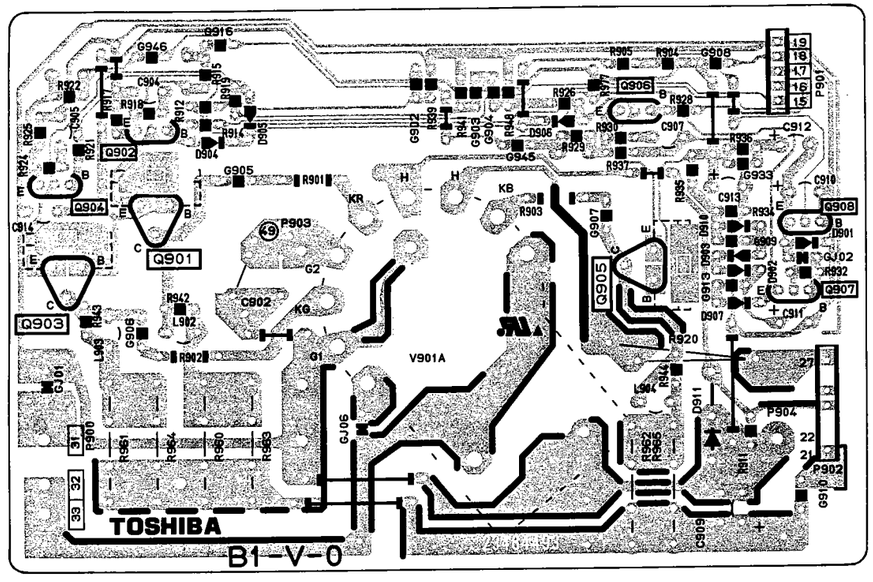
MAIN BOARD PB5423 (30") (32")

BOTTOM (FOIL) SIDE



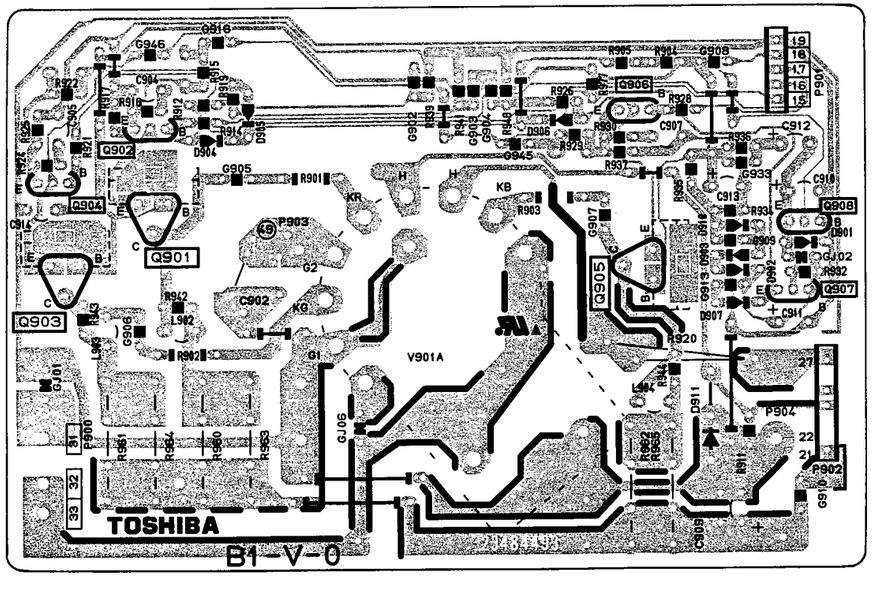
CRT DRIVE BOARD PB5193 (27")

BOTTOM (FOIL) SIDE



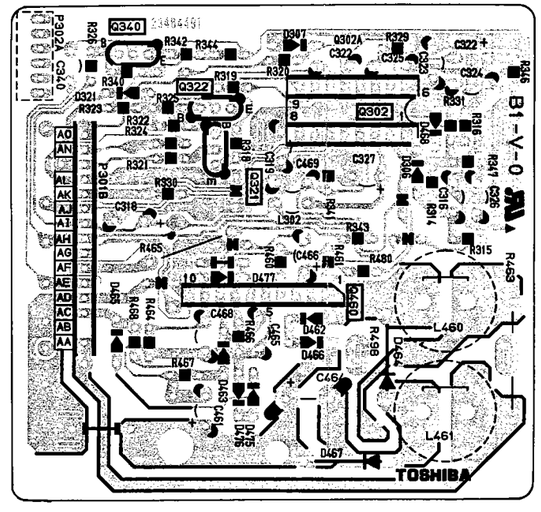
CRT DRIVE BOARD PB5424 (30") (32")

BOTTOM (FOIL) SIDE



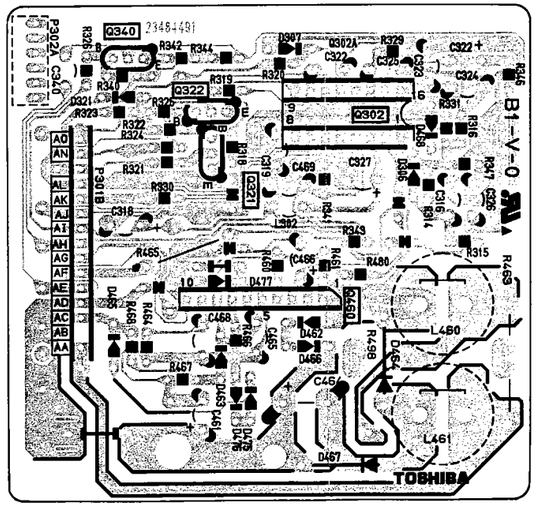
DPC BOARD PB5192 (27")

BOTTOM (FOIL) SIDE



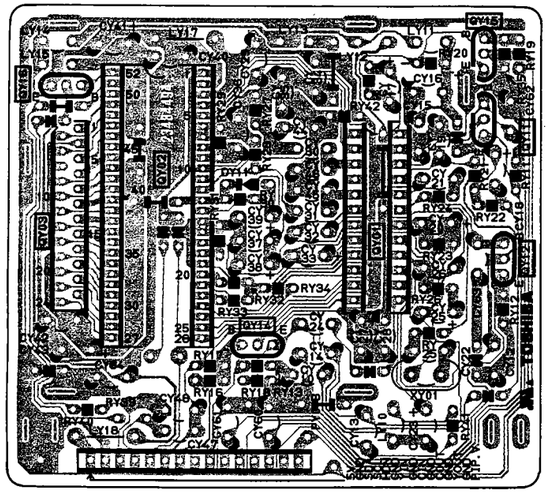
DPC BOARD PB5407 (30") (32")

BOTTOM (FOIL) SIDE



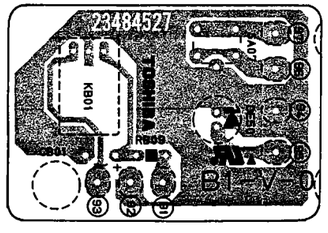
PIP BOARD PB5194

BOTTOM (FOIL) SIDE



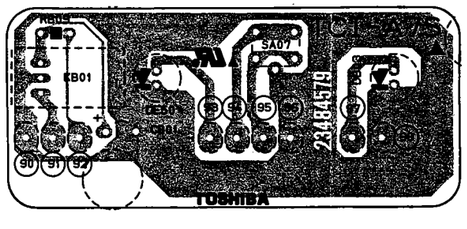
CONTROL BOARD PB5291 (27")

BOTTOM (FOIL) SIDE



CONTROL BOARD PB5403 (30")

BOTTOM (FOIL) SIDE

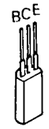


TERMINAL VIEW OF TRANSISTORS

① 2SA562TM
2SA1015
2SC1815
2SC1959
2SC2878
2SC388ATM
2SA949

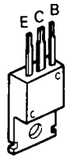
② 2SA1026

③ 2SA1020
2SA1321
2SC752GTM
2SC2230A
2SC2229
2SC2482
2SC2655

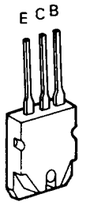


④ RN1001
RN1003
RN1004
RN2005
RN1201
RN1202
RN1203
RN1204
RN2204

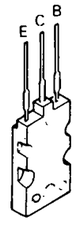
⑤ 2SD1052A
2SC1569
2SC2383
2SC2553
2SD880



⑥ 2SD1092
2SD1294



⑦ 2SD1427
2SD1428



⑧ 2SC2068
2SD2023

MEMO

MEMO

SCHEMATIC DIAGRAM MODEL: CF27E55 Chassis No. TAC9510 CF32E50 Chassis No. TAC9516 (1/2)

CF30E50 Chassis No. TAC9513

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   ⊣⊢ Electolytic capacitor ⊣(⊢ Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

U902 MAIN BOARD

CF27E55 PB5291
CF30E50 PB5403
CONT BOARD

DIFFERENCE LIST

	CF27E55 PB5191	CF30E50 PB5423	CF32E50 PB5392
C305	50V1μ	50V2.2μ	50V1μ
C306	3300μ	1000μ	3300μ
C316	——	0.1μ	0.1μ
C329	3900μ	——	——
C421	0.47μ	0.47μ	0.1μ
C439	0.075μ	0.043μ	0.043μ
C440	6800μ	8700μ	7800μ
C441	——	——	0.1μ
C442	0.1μ	0.33μ	0.33μ
C444	5100μ	5600μ	5600μ
C457	0.018μ	0.022μ	0.018μ
R239	12K	10K	10K
R290	22K	10K	10K
R298	2.2K	1K	1K
R243	——	180K	180K
R246	4.7M	2.7M	2.7M
R304	33K	33K	39K
R305	1W0.82	1W0.82	1W0.62
R306	82K	47K	47K
R307	470K	470K	430K
R308	2W750	2W560	——
R313	56K	27K	27K
R314	——	1M	1M
R315	27K	820K	820K
R336	2W100	2W220	2W270
R345	1M	680K	820K
R442	——	——	51K
L441	TLN21150	TLN21440	TLN21570
L442	TLN33630	TLN3904D	TLN3904D
L961	T3622T1	T3622S6CT	T3622S4AT
D442	——	——	1SI032
D906	——	1SI013I	1SI013I
F470	1.25A	1.6A	1.6A
Q217	12K	8.2K	6.2K
H001	EL46SL	ELA11L	ELA11L
T481	TFB4129AD	TFB4130AD	TFB4130AD

SCHEMATIC DIAGRAM MODEL: CF27E55 Chassis No. TAC9510 CF32E50 Chassis No. TAC9516 (2/2)

CF30E50 Chassis No. TAC9513

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

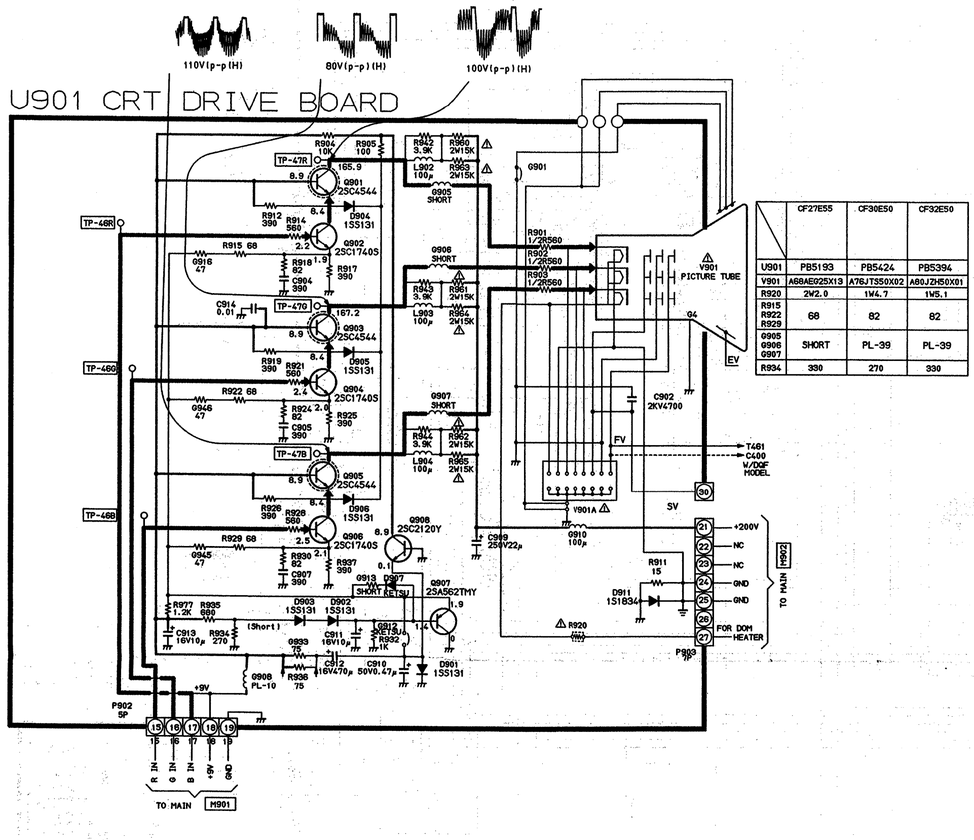
CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt 1W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

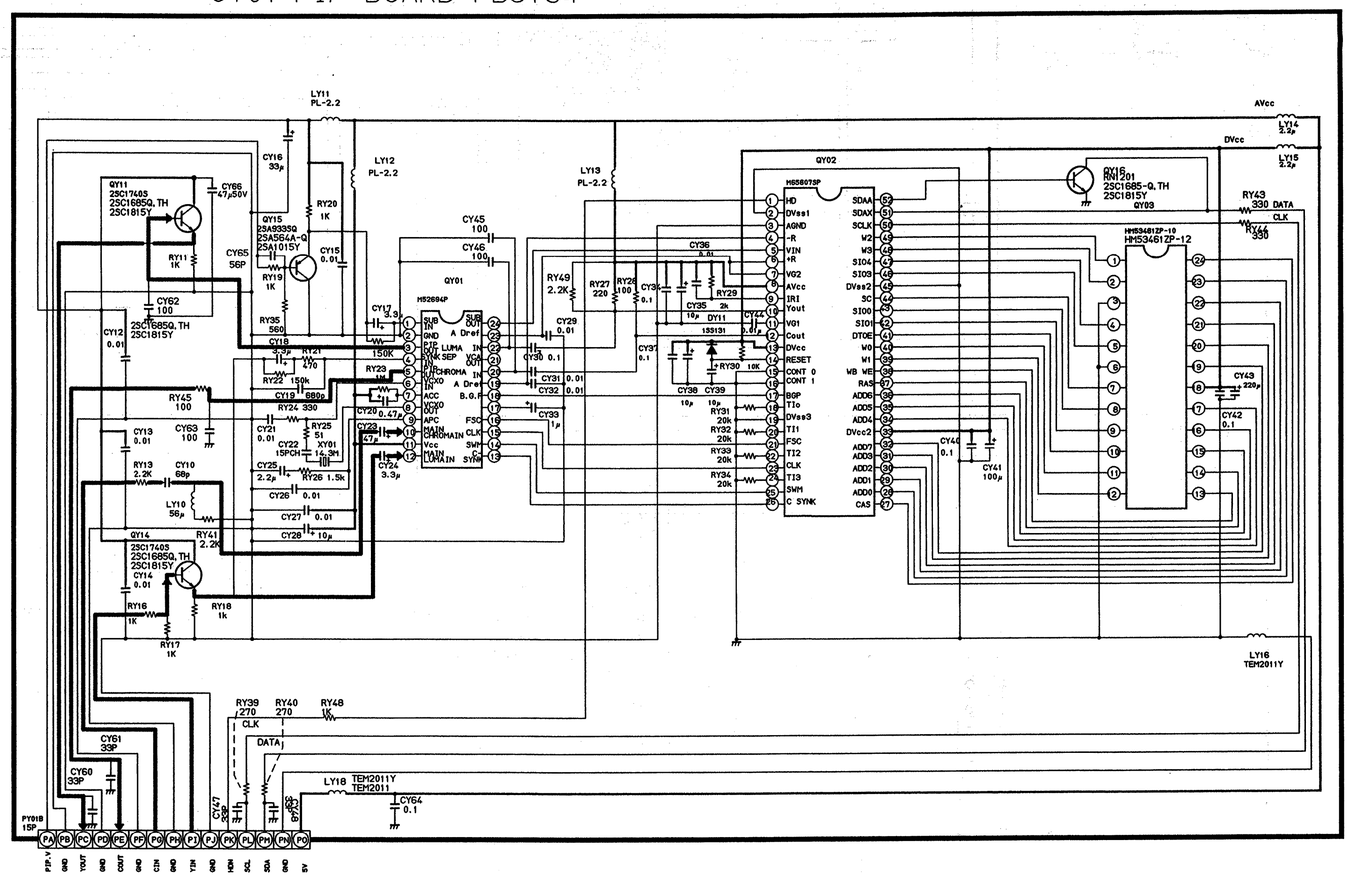
ALL VOLTAGES AND WAVEFORMS ARE MEASURED ON CF32E50.

U901 CRT DRIVE BOARD



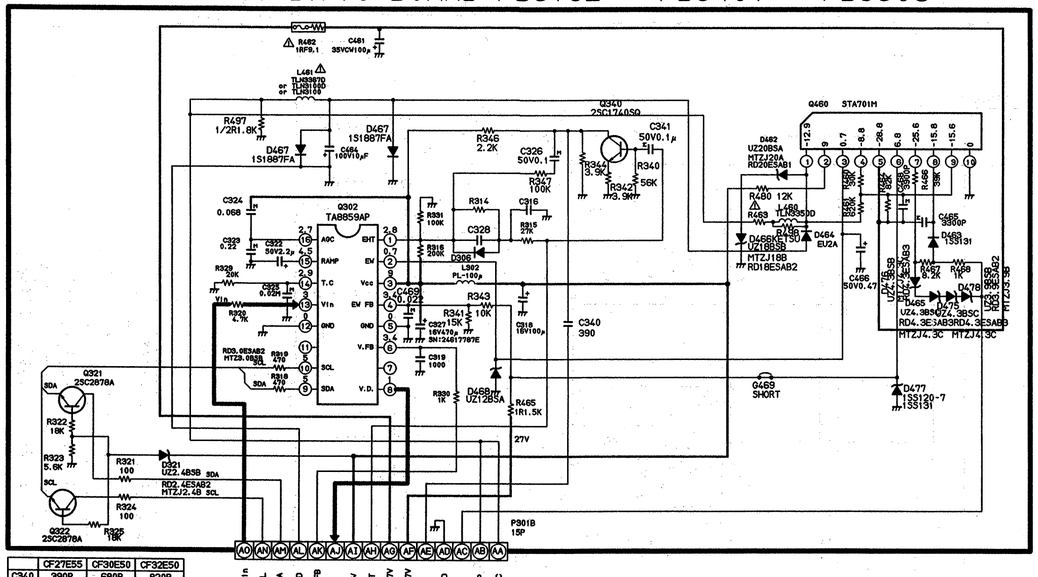
	CF27E55	CF30E50	CF32E50
U901	PB5193	PB5424	PB5394
V901	A68AE025X13	A76JTS50X02	A80JZH50X01
R920	2W2.0	1W4.7	1W5.1
R915 R922 R929	68	82	82
Q905 Q906 Q907	SHORT	PL-39	PL-39
R934	330	270	330

UY01 PIP BOARD PB5194



UD01 D.P.C BOARD PB5192 PB5407 PB5506

CF27E55 CF30E50 CF32E50



	CF27E55	CF30E50	CF32E50
C340	390P	680P	820P
R497	1/2R1.8K	1/2R680	1/2R680
R343	10K	15K	10K
R347	100K	1M	27K
R460	39K	43K	39K
R483	2R4.7	3R4.7	3R4.7
R467	8.2K	3.6K	8.2K