ORION

Mod. color 4288

ALIGNMENT INSTRUCTIONS

SHUT DOWN CIRCUIT

When the high voltage rises, a simultaneous voltage increase will develop at terminal 9 of the Horizontal Output Transformer(FB401), and be applied to pin 52 of IC401. If excessive high voltage is produced, the increased voltage developed exceeds the rating of zener diode D405 causing the Horizontal Oscillator to stop functioning and the high voltage system to shut down.

HORIZONTAL AND VERTICAL SIZE ADJUSTMENT

Adjust the control (VR501) and (VR401) so that the picture fills the picture from top to bottom and is proportionate to the width.

RF AGC ADJUSTMENT

The RF AGC control is adjusted at the factory and rarely requires re-adjustment unless the received picture exhibits too much snow or the receiver lacks sensitivity. Home adjustment can be made by tuning in a weak snowy station and adjusting RF AGC for the least amount of snow. For a more accurate adjustment, use the following procedure.

1. Receive the test pattern signal (80dB).
2. Adjust AGC pin of TV tuner (TP011) to 4.75V with VR201 control.

SUB BRIGHT ADJUSTMENT

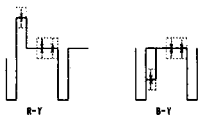
1. Receive the signal of Monochrome pattern.
2. Set the Bright (VR505-1) control to minimum position and Contrast (VR505-2) control to maximum position.
3. Adjust the Sub Bright (VR104) control to obtain a dim white pattern on 75% of gray scale.

FOCUS ADJUSTMENT

Adjust focus control on the flyback transformer for a defined picture.

HUE DELAY ADJUSTMENT

1. Receive the signal of DEM pattern.
2. Connect dual oscilloscope to TP501 and TP502.
4. Adjust waveform to straight line with VR601 and L609.



AFT ADJUSTMENT

1. Connect the output of the oscillator to the tuner pack IF.
2. Adjust L209 to keep constant DC voltage at TP006 with AFT ON and AFT OFF.

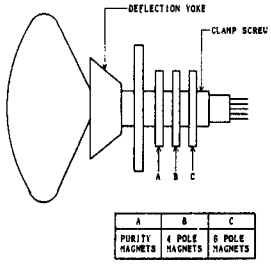
HORIZONTAL POSITION ADJUSTMENT

1. Receive the test pattern signal. (PAL Philips)
2. Adjust horizontal picture position to center with VR402.

COLOR PURITY ADJUSTMENT

The receiver must be operated 10 minutes prior to this procedure and the face plate of the CRT must be at room temperature. The following procedure is ecommended while using a Dot/Bar Generator.

1. Check for correct location of all neck components. (Refer to Fig. 1)
2. Rough-in the static convergance at the center of the CRT, as explained in the static convergence.
3. Rotate the contrast control to maximum CCW position and rotate brightness control as far CW as possible without causing the picture to "bloom".
4. Rotate the Red (VR801) and Blue (VR804) Cut off controls to maximum CCW position. Rotate the Green (VR803) Cut off control sufficiently in a CW direction
5. Loosen the deflection yoke clamp screw and pull the deflection yoke toward the rear of the CRT.
6. Begin the following adjustment with the tabs on the round purity magnet rings set together, slowly separate the two tabs while at the same time rotating them to adjust for a uniform green stripe at the center of the CRT screen.
7. Carefully slide the deflection yoke forward to achieve green (uniform green screen).
   NOTE: Center purity is obtained by adjusting the tabs on the round purity magnet rings, outer edge purity is obtained by sliding the deflection yoke forward.
8. Check for red and blue field purity by reducing the output of the Green (VR803) Cut off control and alternately increasing output of Red (VR801) and Blue (VR804) Cut off controls and touch-up adjustments, if required.
9. Tighten deflection yoke clamp screw.



A	B	C
PURITY MAGNETS	4 POLE MAGNETS	6 POLE MAGNETS

Fig. 1 Picture Tube Neck Component Location

BLACK AND WHITE TRACKING

The purpose of this procedure is to adjust the bias applied to the picture tube to obtain good black and white picture production at all brightness levels while, at the same time achieving maximum useable brightness. Proper RF AGC control adjustment should have been verified prior to performing this procedure.

1. With antenna connected to the receiver, go to a channel with strong reception. Adjust the fine tuning control so that the receiver will not produce a color picture while the following adjustment are being performed.
2. Rotate the Red (VR802) and Blue (VR805) Drive control fulley CW and then back CCW to the center of their rotation ranges.
3. Rotate the Green (VR803), Red (VR801) and Blue (VR804) Cut off controls to the fully CCW end of their rotation ranges.
4. Set normal-service switch to service position. Adjust the voltage of test point (collector of green output transistor on CRT PCB) to DC130V with brightness control. Voltage measurement should be measured with an oscilloscope.
5. Rotate the screen control to the fully CCW and of its rotation range. Then, rotate it CW until a dim line of one pronounced color (green, red or blue) is obtained.
6. The other two color Cut off controls must be rotated CW until a dim white line is obtained.
7. Set normal-service switch to normal position.
8. If required, perform touch-up adjustment of the Red (VR802) and Blue (VR805) Drive controls to produce a uniform monochrome picture.
9. Rotate the brightness and contrast controls fully CCW.
10. Rotate the brightness control CW until a dim raster is obtained.
11. If the screen does not display with uniformity, steps 2 through 10 of this procedure must be repeated.

STATIC CONVERGENCE ADJUSTMENT

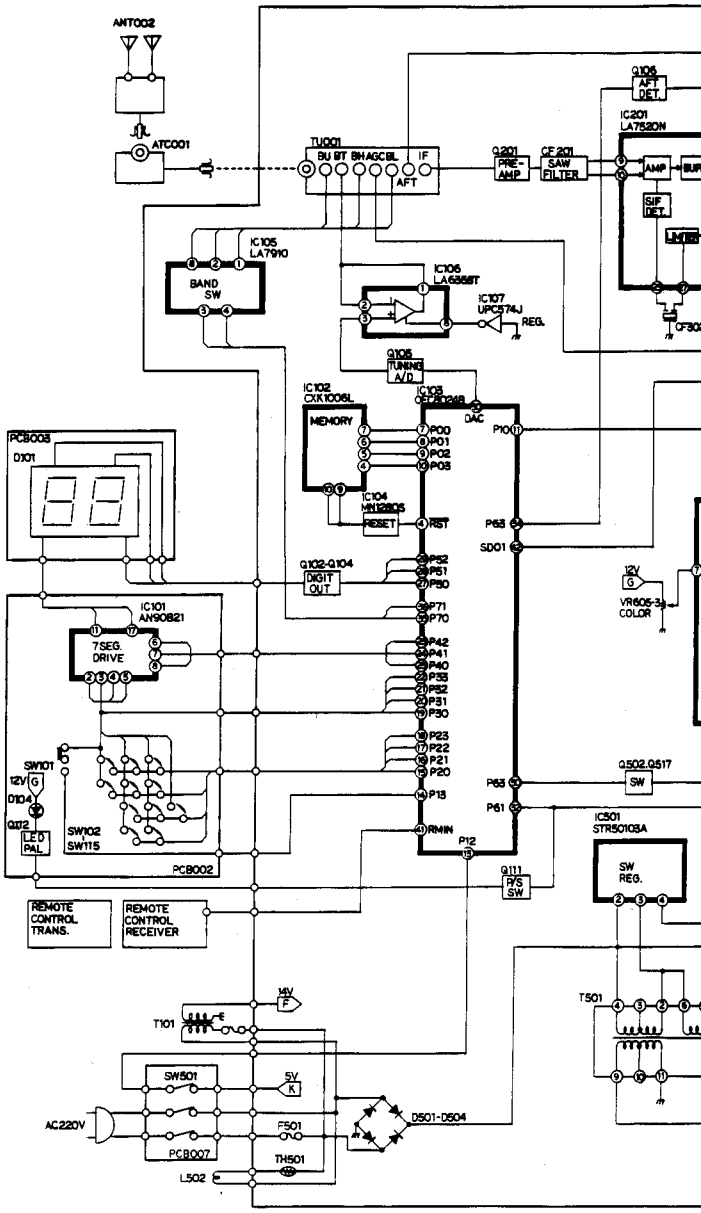
1. Switch the Receiver ON and allow it to warm up for 15 minutes.
2. Connect the output of a Crosshatch Generator to the receiver and concentrating on the center of the CRT screen, proceed as follows:

a. Locate a pair of 4 pole magnet rings. Rotate individual rings (change spacing between tabs) to converge the vertical red and blue lines. Rotate a pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue lines.
b. After completing red and blue center convergence, locate a pair of 6 pole magnet rings. Rotate individual rings (change spacing between tabs) to converge the vertical red and blue (magenta) and green lines. Rotate a pair of rings (maintaining spacing between tabs) to converge the horizontal red and blue (magenta) and green lines.

DYNAMIC CONVERGENCE ADJUSTMENT

Dynamic convergence (convergence of the three color fields at the edges of the CRT screen) is accomplished by proper insertion and positioning of three rubber wedges between the edge of the deflection yoke and the tunnal of the CRT. This is accomplished in the following manner.

1. Switch the Receiver ON and allow it to warm up for 15 minutes.
2. Apply crosshatch pattern from Dot/Bar Generator to receiver. Observe spacing between lines around edges of CRT screen.
3. Tilt the deflection yoke up or down, and insert tilt adjustment wedges (1) and (2) between the deflection yoke and the CRT until the improper convergence illustrated in Fig. 2 (A) has been corrected.
4. Tilt the deflection yoke right and left, and insert tilt adjustment wedge (3) between the deflection yoke and the CRT until the improper convergence illustrated in Fig. 2 (B) has been corrected.
5. Alternately change spacing between, and depth of insertion of the three wedges proper dynamic convergence is obtained.
6. Use a strong adhesive tape to firmly secure each of the three wedges to the funnel of the CRT.
7. Check purity and adjust, if necessary.



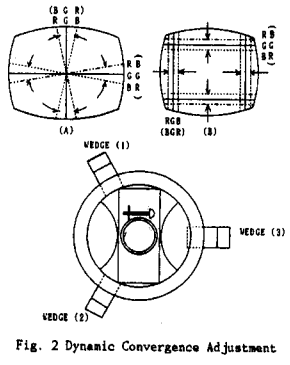
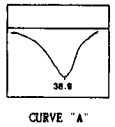


Fig. 2 Dynamic Convergence Adjustment

VIDEO IF AND TRAP ALIGNMENT

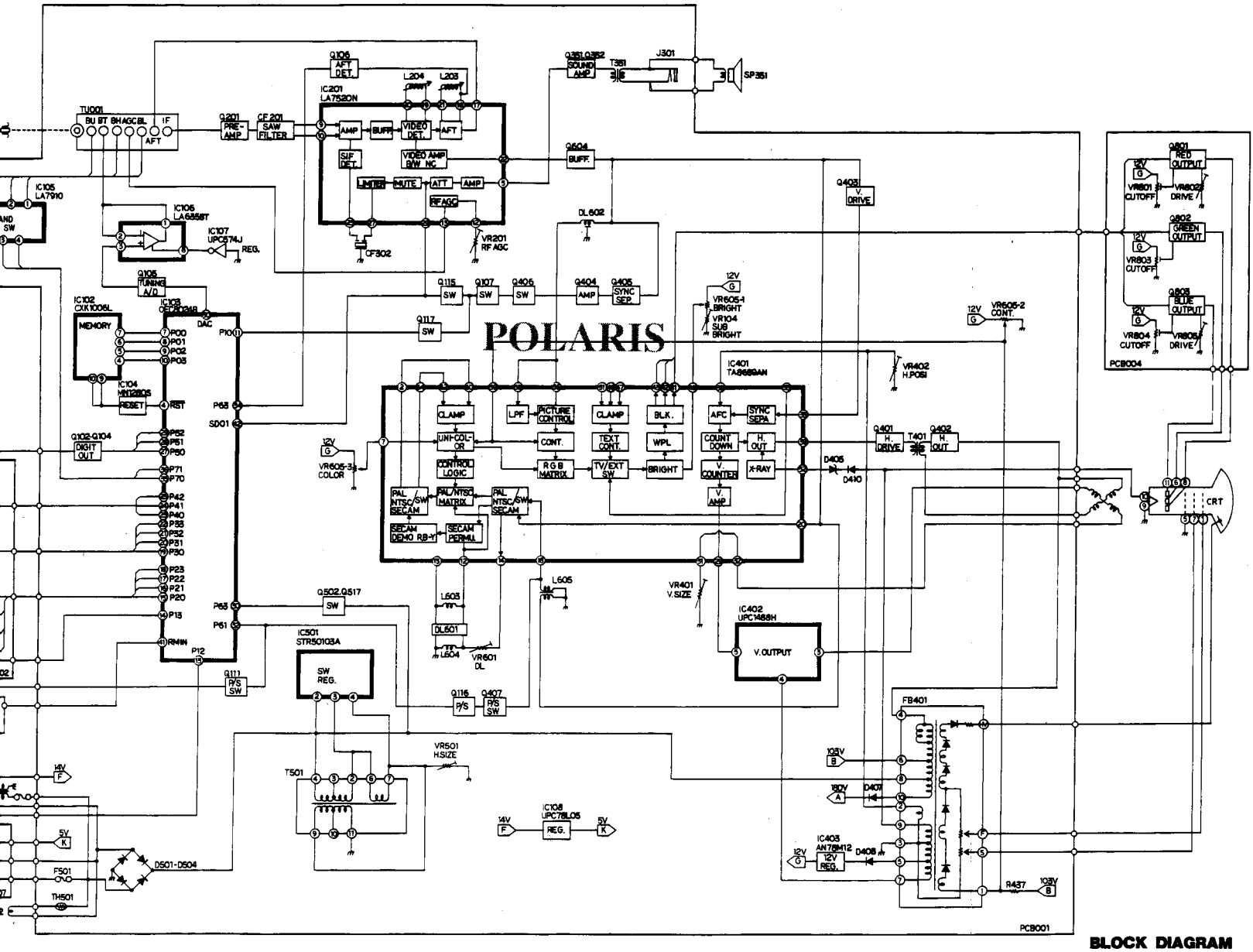
TEST EQUIPMENT CONNECTION
OSCILLOSCOPE .... Set AC-DC switch to AC position.
SWEEP-MARKER GENERATOR .... Connect H SCOPE and V SCOPE output cable from SWEEP-MARKER GENERATOR to H and V input connectors on the OSCILLOSCOPE, connect hot lead of SWEEP-MARKER OUTPUT cable to test point TP001 on PCB001; connect ground lead to chassis ground. Connect pick up SWEEP-MARKER INPUT cable to TP007; ground lead to chassis ground. (PROBE B)

1. Connect 10K ohm variable [12V] to ground. Install AGC VR to prevent adjust AGC VR for proper hand, in case IF AGC volt adjust for proper size of AGC voltage is within 10V
2. Adjust L204 to obtain ma curve at 38.9 MHz. (Refer to Response Curve "
3. Re-connect hot lead of SW cable from TP001 to TV tu
4. Re-Connect SWEEP-MARKER G to TP012. (PROBE A)
5. Adjust L207 to obtain ma curve at 32.4 MHz. (Refer
6. Connect a 100 ohm resisto Re-Connect SWEEP-MARKER G to TP007. (PROBE B)
7. Adjust L204 obtain maxim (Refer to Response Curve "
8. Disconnect the 10K ohm va resistor from the circuit Disconnect C006, C217 and
9. Re-Connect SWEEP-MARKER G to TP006. (PROBE B)
10. Set the AFT SW to ON posi
11. Adjust L203 to place 38.9 on response curve. (Refer to Response Curve "
12. Re-connect C006, C217 and



CURVE "A"

BLOCK DIAGRAM



BLOCK DIAGRAM

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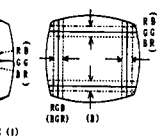
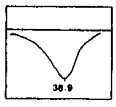


Convergence Adjustment

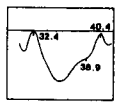
NMENT

-DC switch to AC position.
... Connect H SCOPE and V SCOPE output cable from SWEEP-MARKER GENERATOR to H and V input connectors on the OSCILLOSCOPE, connect hot lead of SWEEP-MARKER OUTPUT cable to test point TP001 on PCB001; connect ground lead to chassis ground. Connect pick up SWEEP-MARKER INPUT cable to TP007; ground lead to chassis ground. (PROBE B)

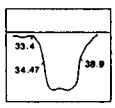
1. Connect 10K ohm variable resistor between TP004, B+ (12V) to ground.
   Install AGC VR to prevent saturation in waveform, then adjust AGC VR for proper size of waveform. On the other hand, in case IF AGC voltage is supplied externally, adjust for proper size of waveform on condition that IF AGC voltage is within 10V and is gradually decreased.
2. Adjust L204 to obtain maximum amplitude of response curve at 38.9 MHz.
   (Refer to Response Curve "A")
3. Re-connect hot lead of SWEEP-MARKER GENERATOR OUTPUT cable from TP001 to TV tuner IF (With 2.7K ohm resistor)
4. Re-Connect SWEEP-MARKER GENERATOR INPUT cable from TP007 to TP012. (PROBE A)
5. Adjust L207 to obtain maximum amplitude of response curve at 32.4 MHz. (Refer to Response Curve "B")
6. Connect a 100 ohm resistor between TP009 and TP010. Re-Connect SWEEP-MARKER GENERATOR INPUT cable from TP012 to TP007. (PROBE B)
7. Adjust L206 obtain maximum amplitude of response curve. (Refer to Response Curve "C")
8. Disconnect the 10K ohm variable resistor and 100 ohm resistor from the circuit.
   Disconnect C006, C217 and C218. (solder bridge)
9. Re-Connect SWEEP-MARKER GENERATOR INPUT cable from TP007 to TP006. (PROBE B)
10. Set the AFT SW to ON position
11. Adjust L203 to place 38.9 MHz marker at reference line on response curve.
    (Refer to Response Curve "D")
12. Re-connect C006, C217 and C218. (solder bridge)



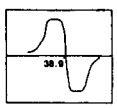
CURVE "A"



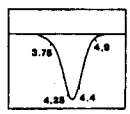
CURVE "B"



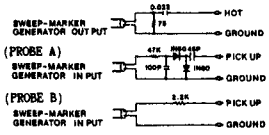
CURVE "C"

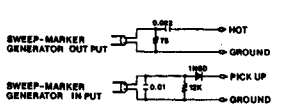


CURVE "D"



CURVE "E"





SECAM CHROMA BANDPASS ALIGNMENT

TEST EQUIPMENT CONNECTION
GENERAL ..... PAL-SECAM switch to SECAM position.
SWEEP-MARKER GENERATOR ... Connect H. SCOPE and V. SCOPE output cable from SWEEP-MARKER GENERATOR to H. and V. input connectors on the OSCILLOSCOPE, connect hot lead of SWEEP-MARKER OUTPUT cable to IP on TV tuner; connect ground lead to chassis ground. Connect pick up lead SWEEP-MARKER INPUT cable to TP604; ground lead to chassis ground.

1. Adjust L605 to obtain best overall response curve.
   (Refer to Response Curve "E")

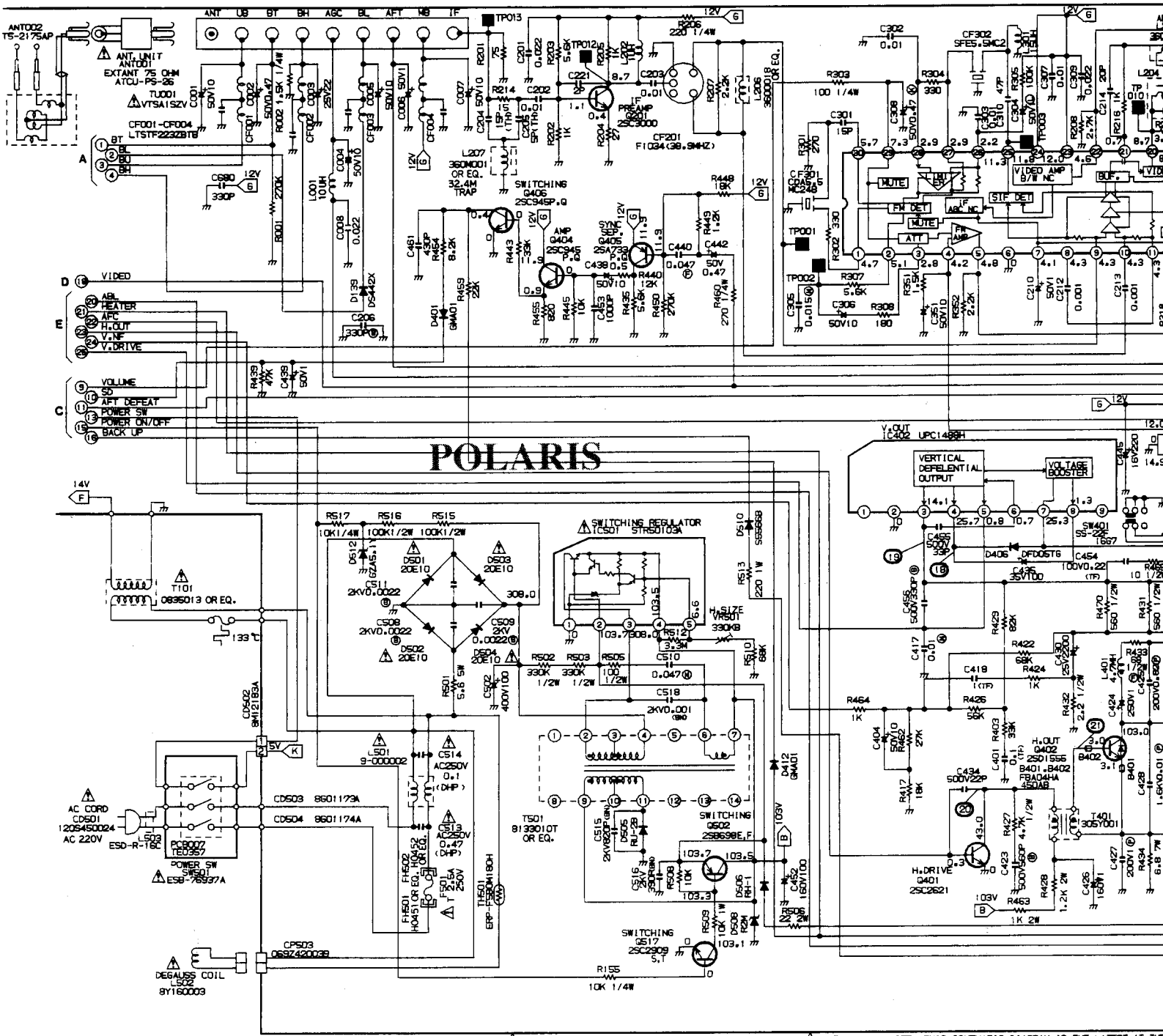
SECAM IDENT ADJUSTMENT

1. Receive the signal of secam color pattern.
2. Connect the DC voltmeter to TP603 and ground.
3. Adjust the voltage to maximum with L606.

SECAM PHASE ADJUSTMENT

1. Receive the signal of secam color pattern.
2. Adjust L601 and L602 not to change the color of the pattern while tuning the Color control from minimum to maximum position.

CHASSIS SCHEMATIC DIAGRAM



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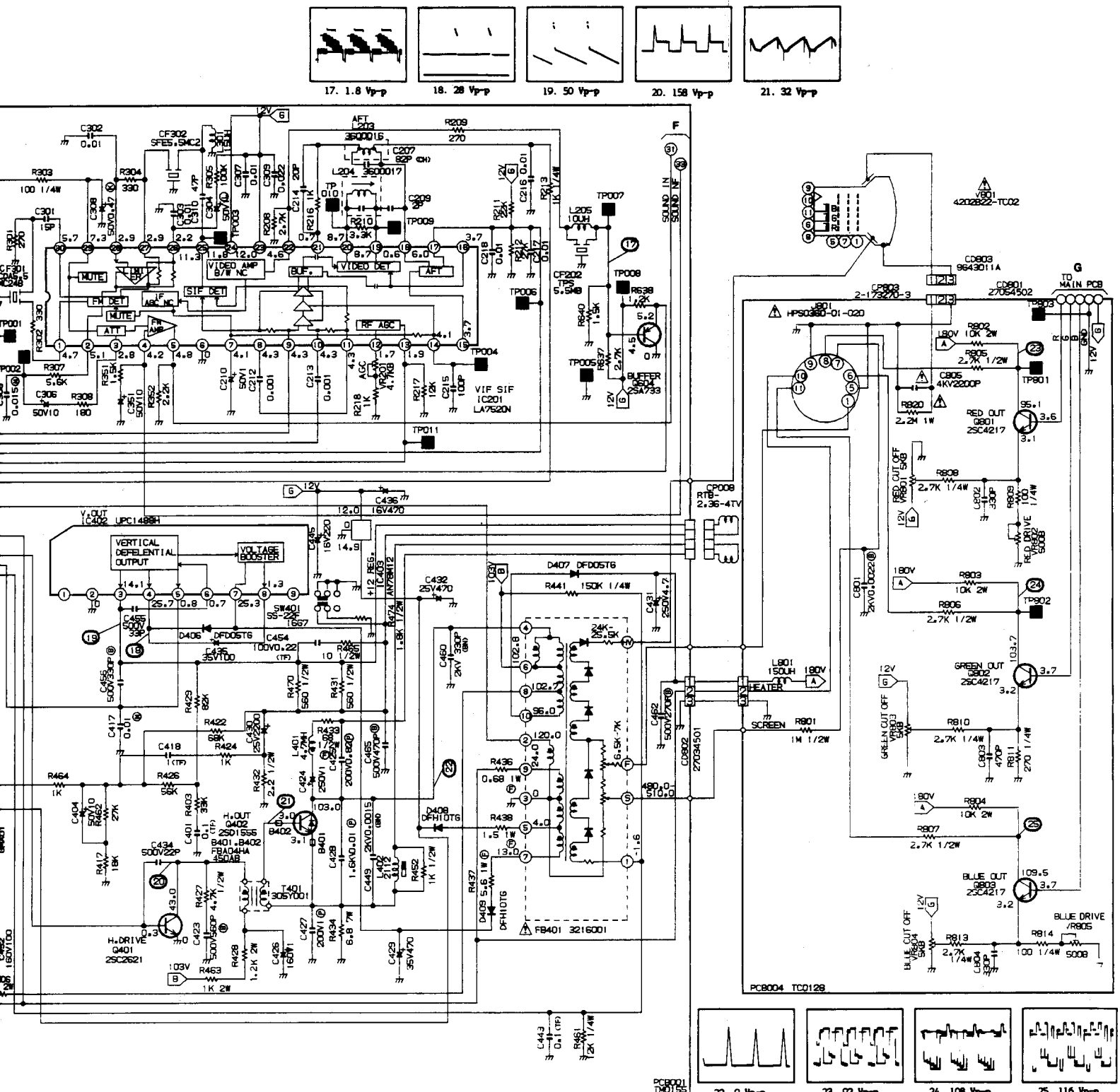

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CHASSIS SCHEMATIC DIAGRAM

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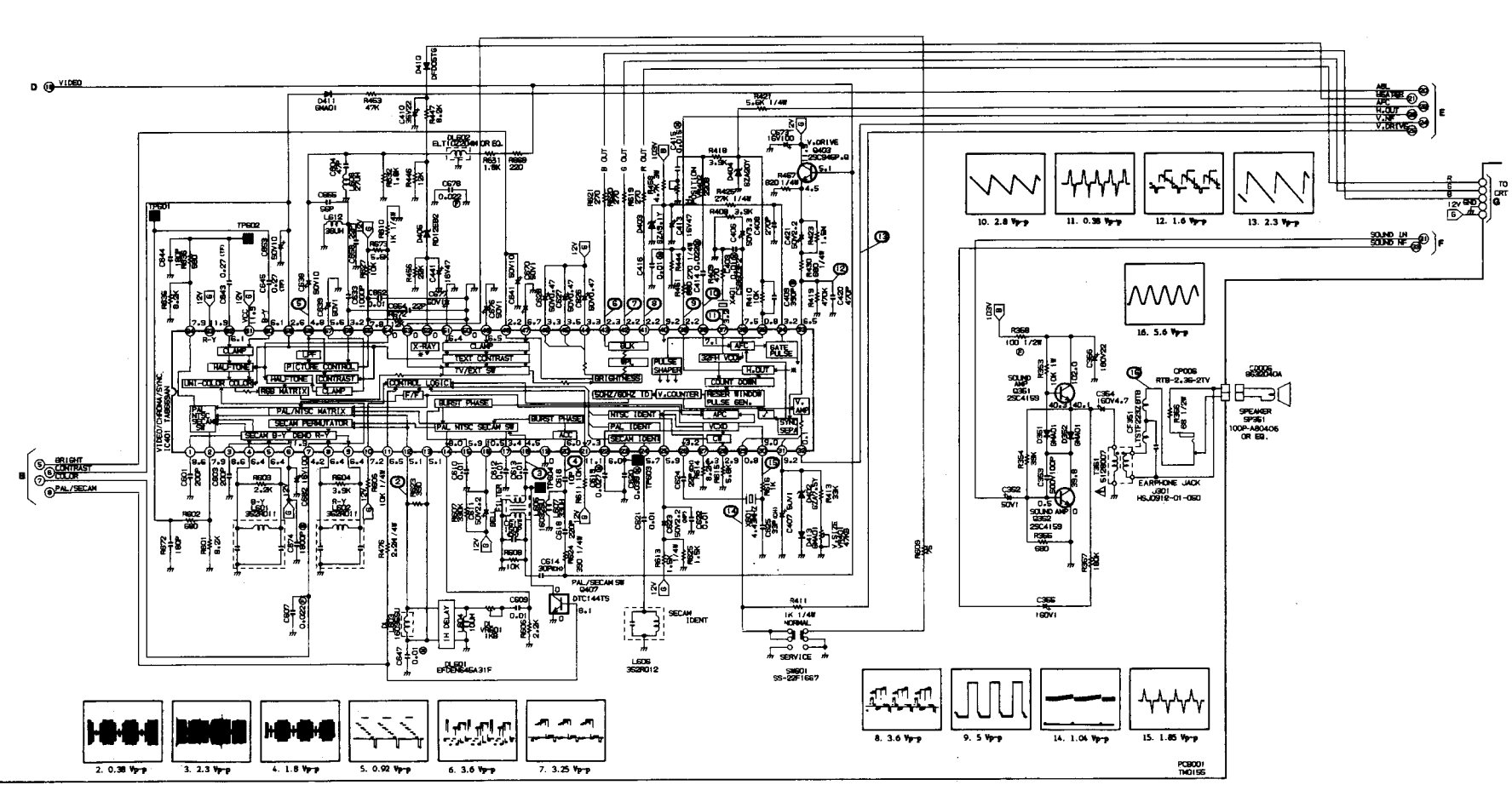
CHASSIS SCHEMATIC DIAGRAM



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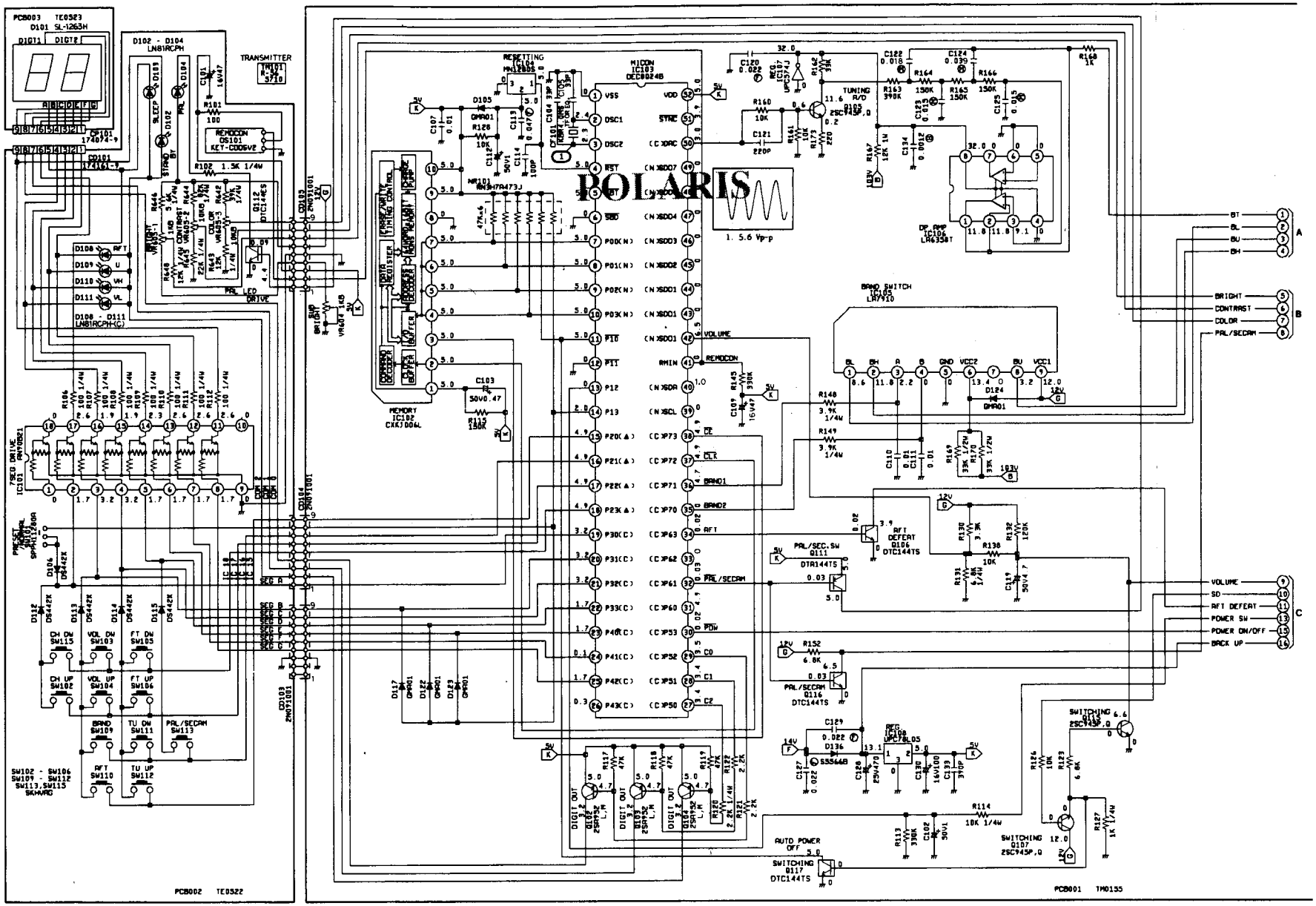

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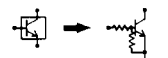

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