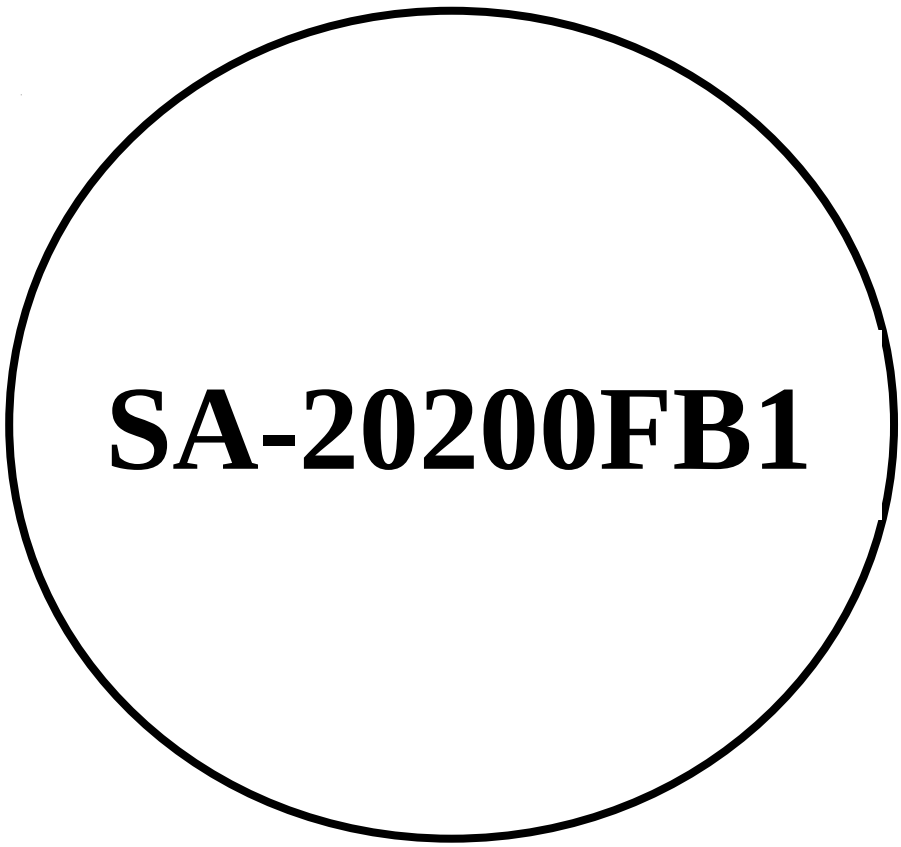
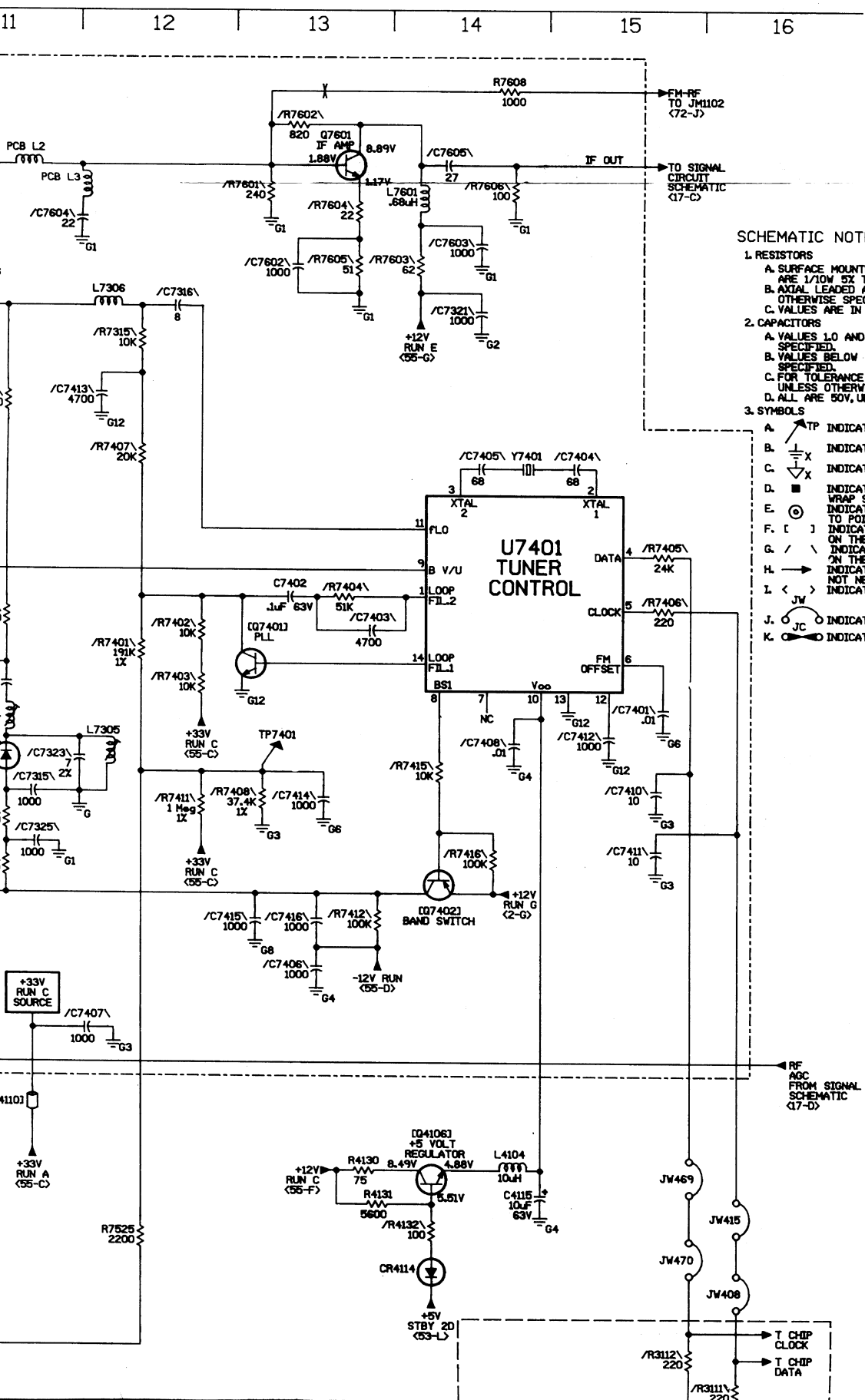
DIAGRAMA DE CIRCUITO

TELEVISOR EM CORES



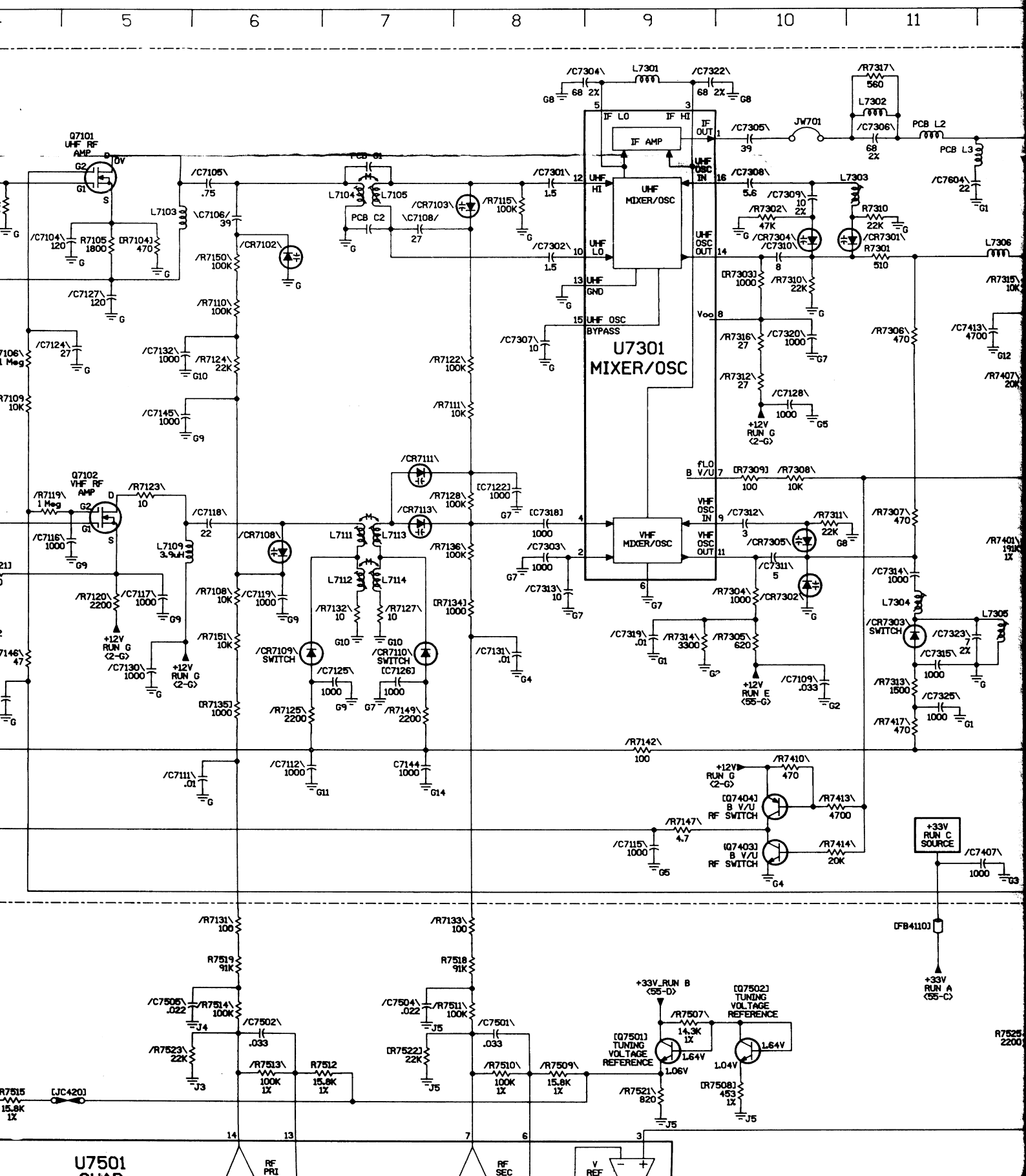
RCA/GE

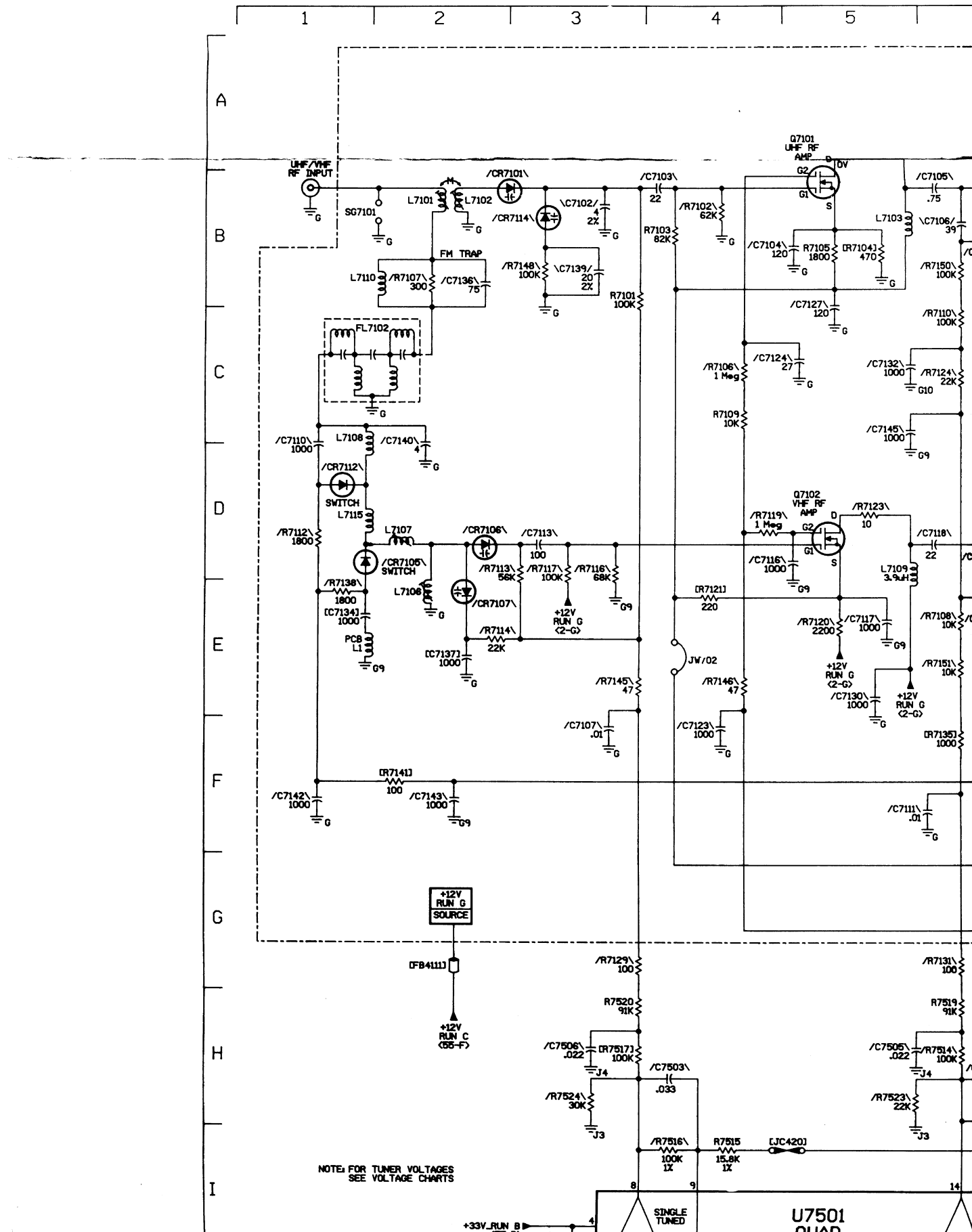
DIAGRAMA ESQUEMÁTICO DO TUNER

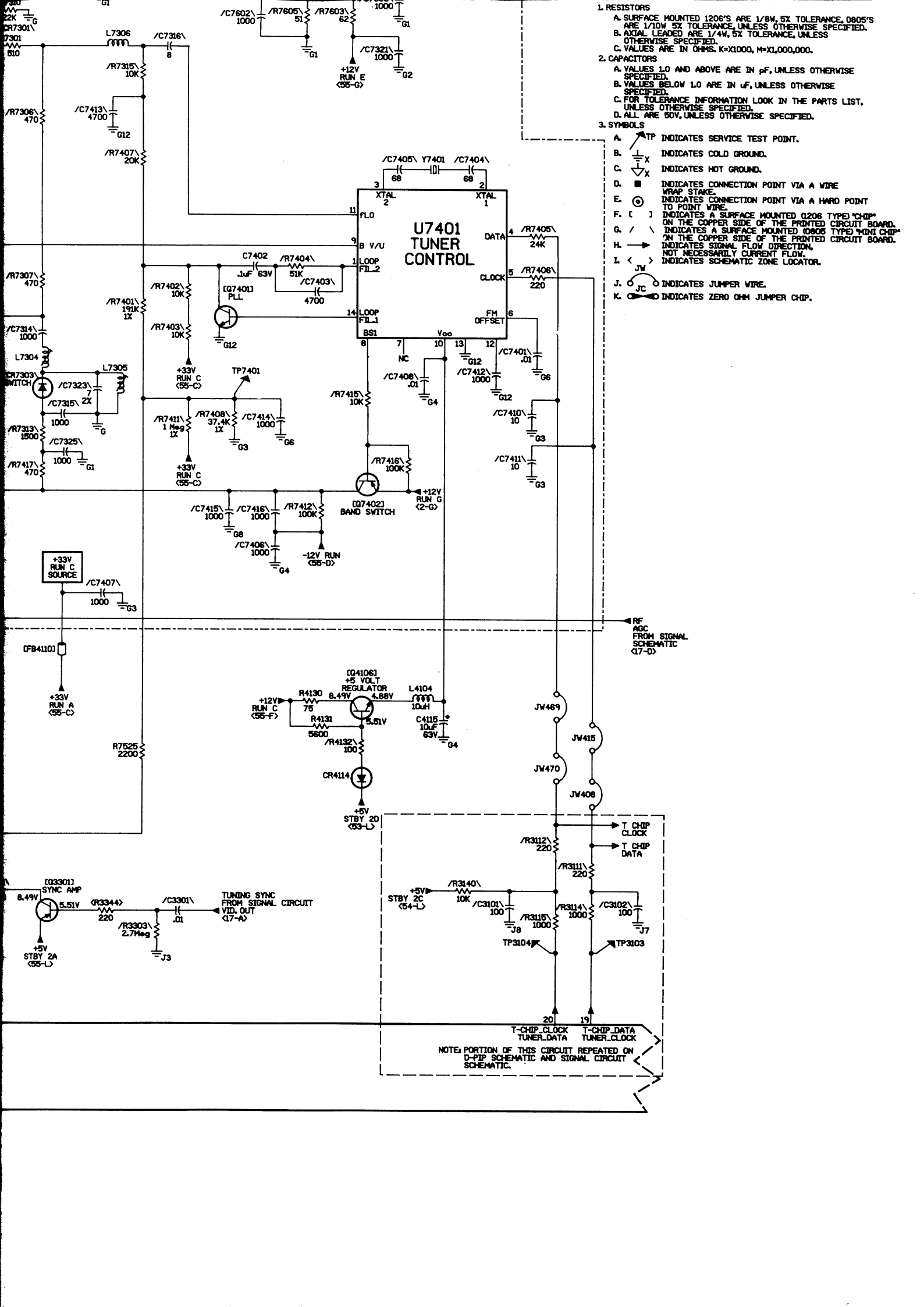


SCHEMATIC NOTES

1. RESISTORS
   - A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   - A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
   - B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
   - C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
   - D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
   - A. TP — INDICATES SERVICE TEST POINT.
   - B. X — INDICATES COLD GROUND.
   - C. X — INDICATES HOT GROUND.
   - D. ■ — INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
   - E. ⊙ — INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
   - F. [ ] — INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - G. / \ — INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. → — INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > — INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW — INDICATES JUMPER WIRE.
   - K. JC — INDICATES ZERO OHM JUMPER CHIP.


5
6
7
8
9
10
11
U7301
MIXER/OSC
U7501
QUAD


1
2
3
4
5
A
B
C
D
E
F
G
H
I
UHF/VHF RF INPUT
SG7101
L7101
L7102
/CR7101\
/CR7114\
\C7102/ 4 2X
/C7103\ 22
/R7102\ 62K
R7103 82K
Q7101 UHF RF AMP
D
G2
G1
S
0V
/C7105\ .75
L7103
\C7106/ 39
/C7104\ 120
R7105 1800
[R7104] 470
/R7150\ 100K
/C7127\ 120
/R7110\ 100K
FM TRAP
L7110
/R7107\ 300
/C7136\ 75
/R7148\ 100K
\C7139/ 20 2X
R7101 100K
FL7102
/R7106\ 1 Meg
/C7124\ 27
/C7132\ 1000
/R7124\ 22K
R7109 10K
/C7145\ 1000
/C7110\ 1000
L7108
/C7140\ 4
/CR7112\
SWITCH
L7115
/R7112\ 1800
L7107
/CR7106\
/C7113\ 100
/CR7105\ SWITCH
/R7113\ 56K
/R7117\ 100K
/R7116\ 68K
Q7102 VHF RF AMP
/R7119\ 1 Meg
/R7123\ 10
/C7118\ 22
/C7116\ 1000
L7109 3.9uH
/R7138\ 1800
L7106
/CR7107\
[C7134] 1000
PCB LI
[C7137] 1000
/R7114\ 22K
+12V RUN G <2-G>
[R7121] 220
/R7120\ 2200
/C7117\ 1000
/R7108\ 10K
JW/02
/R7145\ 47
/R7146\ 47
/C7107\ .01
/C7123\ 1000
/C7130\ 1000
/R7151\ 10K
[R7135] 1000
[R7141] 100
/C7142\ 1000
/C7143\ 1000
/C7111\ .01
+12V RUN G SOURCE
[FB4111]
+12V RUN C <5S-F>
/R7129\ 100
/R7131\ 100
R7520 91K
R7519 91K
/C7506\ .022
[R7517] 100K
/C7503\ .033
/C7505\ .022
/R7514\ 100K
/R7524\ 30K
/R7523\ 22K
/R7516\ 100K 1%
R7515 15.8K 1%
[JC420]
NOTE: FOR TUNER VOLTAGES SEE VOLTAGE CHARTS
+33V_RUN_B
SINGLE TUNED
U7501
QUAD


1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
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D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
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B. INDICATES COLD GROUND.
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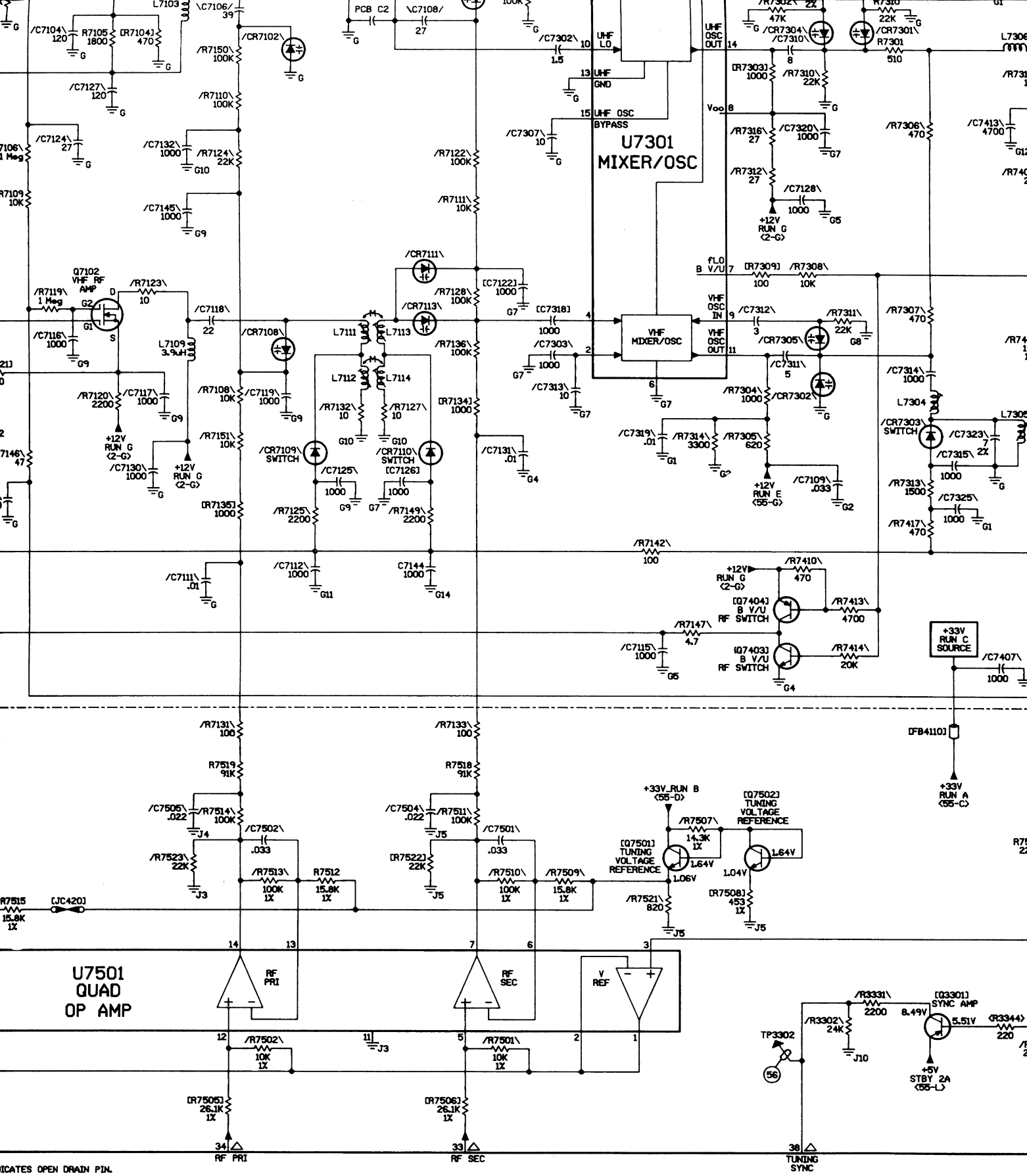
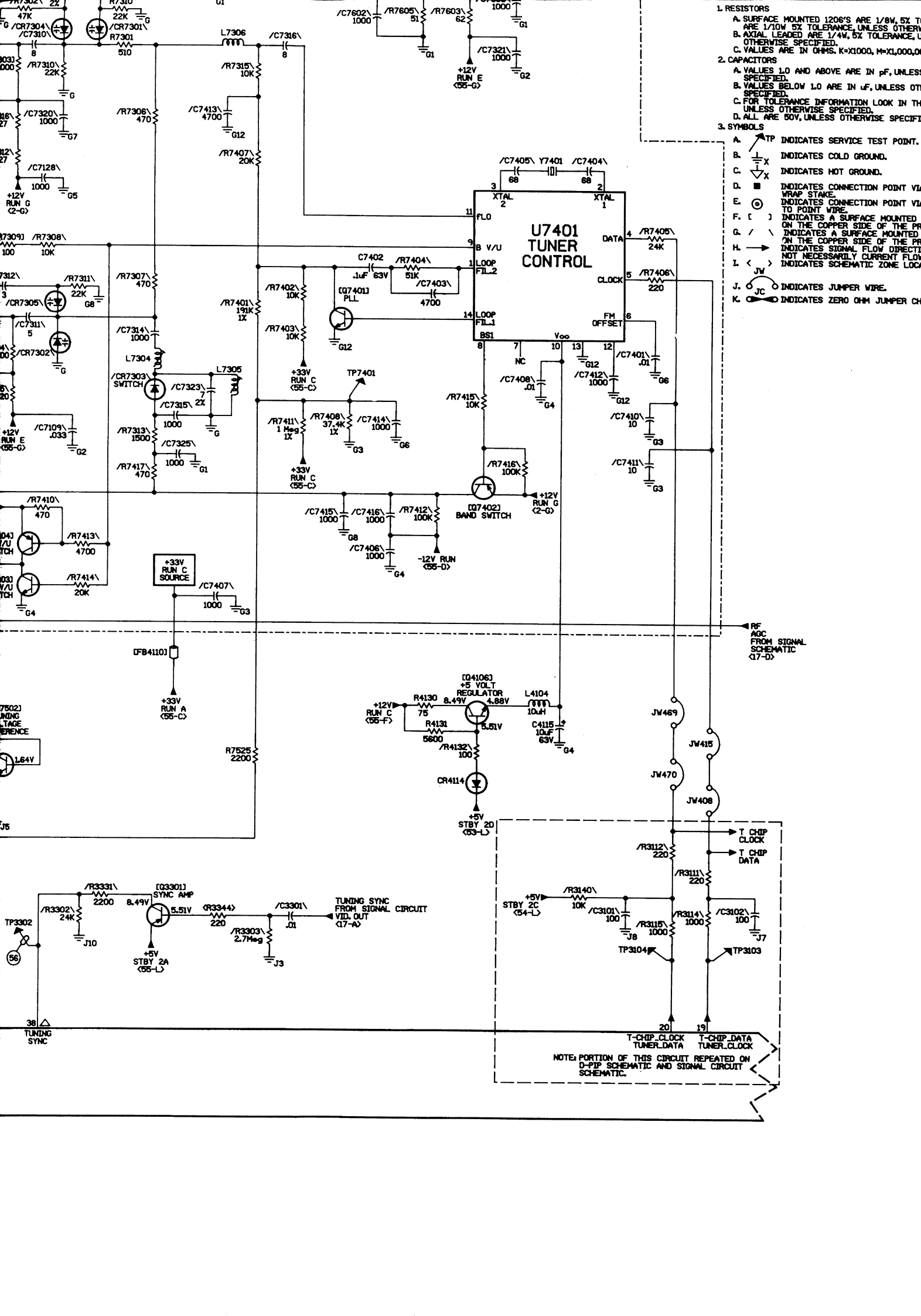
E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. INDICATES SCHEMATIC ZONE LOCATOR.
J. JW INDICATES JUMPER WIRE.
K. JC INDICATES ZERO OHM JUMPER CHIP.
U7401 TUNER CONTROL
XTAL 2
XTAL 1
FLO
B V/U
LOOP FIL_2
LOOP FIL_1
BS1
Voo
NC
DATA
CLOCK
FM OFFSET
/C7405\ Y7401 /C7404\
68
68
/R7405\ 24K
/R7406\ 220
C7402 .1uF 63V
/R7404\ 51K
/C7403\ 4700
[Q7401] PLL
/R7401\ 191K 1%
/R7402\ 10K
/R7403\ 10K
/C7401\ .01
/C7408\ .01
/C7412\ 1000
/C7410\ 10
/C7411\ 10
/R7415\ 10K
/R7416\ 100K
[Q7402] BAND SWITCH
/C7314\ 1000
L7304
L7305
CR7303 SWITCH
/C7323\ 7
/C7315\ 1000
/R7313\ 1500
/C7325\ 1000
/R7417\ 470
/R7411\ 1 Meg 1%
/R7408\ 37.4K 1%
/C7414\ 1000
TP7401
/C7415\ 1000
/C7416\ 1000
/R7412\ 100K
/C7406\ 1000
/C7407\ 1000
+33V RUN C SOURCE
+33V RUN C <55-C>
+12V RUN G <2-G>
-12V RUN <55-D>
RF AGC FROM SIGNAL SCHEMATIC <17-D>
[FB4110]
+33V RUN A <55-C>
[Q4106] +5 VOLT REGULATOR
+12V RUN C <55-F>
R4130 75
8.49V
4.88V
L4104 10uH
R4131 5600
5.51V
C4115 10uF 63V
/R4132\ 100
CR4114
+5V STBY 2D <53-L>
R7525 2200
JW469
JW415
JW470
JW408
T CHIP CLOCK
T CHIP DATA
/R3112\ 220
/R3111\ 220
/R3140\ 10K
+5V STBY 2C <54-L>
/C3101\ 100
/R3114\ 1000
/C3102\ 100
/R3115\ 1000
TP3104
TP3103
[Q3301] SYNC AMP
8.49V
5.51V
<R3344> 220
/C3301\ .01
/R3303\ 2.7Meg
TUNING SYNC FROM SIGNAL CIRCUIT VID. OUT <17-A>
+5V STBY 2A <55-L>
20
19
T-CHIP_CLOCK TUNER_DATA
T-CHIP_DATA TUNER_CLOCK
NOTE: PORTION OF THIS CIRCUIT REPEATED ON D-PIP SCHEMATIC AND SIGNAL CIRCUIT SCHEMATIC.



DICATES OPEN DRAIN PIN.
AXIMUM ON OPEN DRAIN PINS.

PART OF CONTROL uP
U3101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SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OT
SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN TH
UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFI
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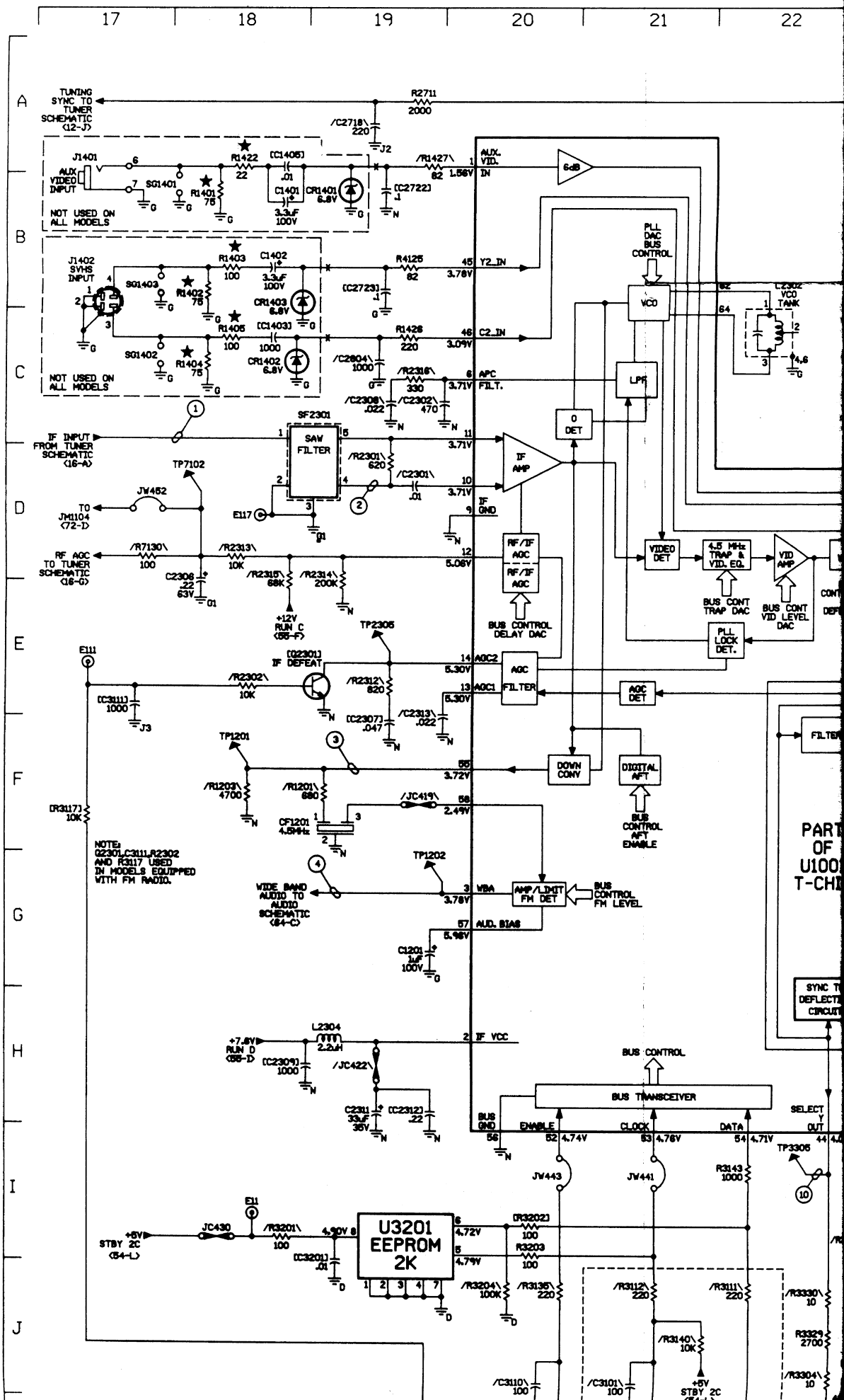
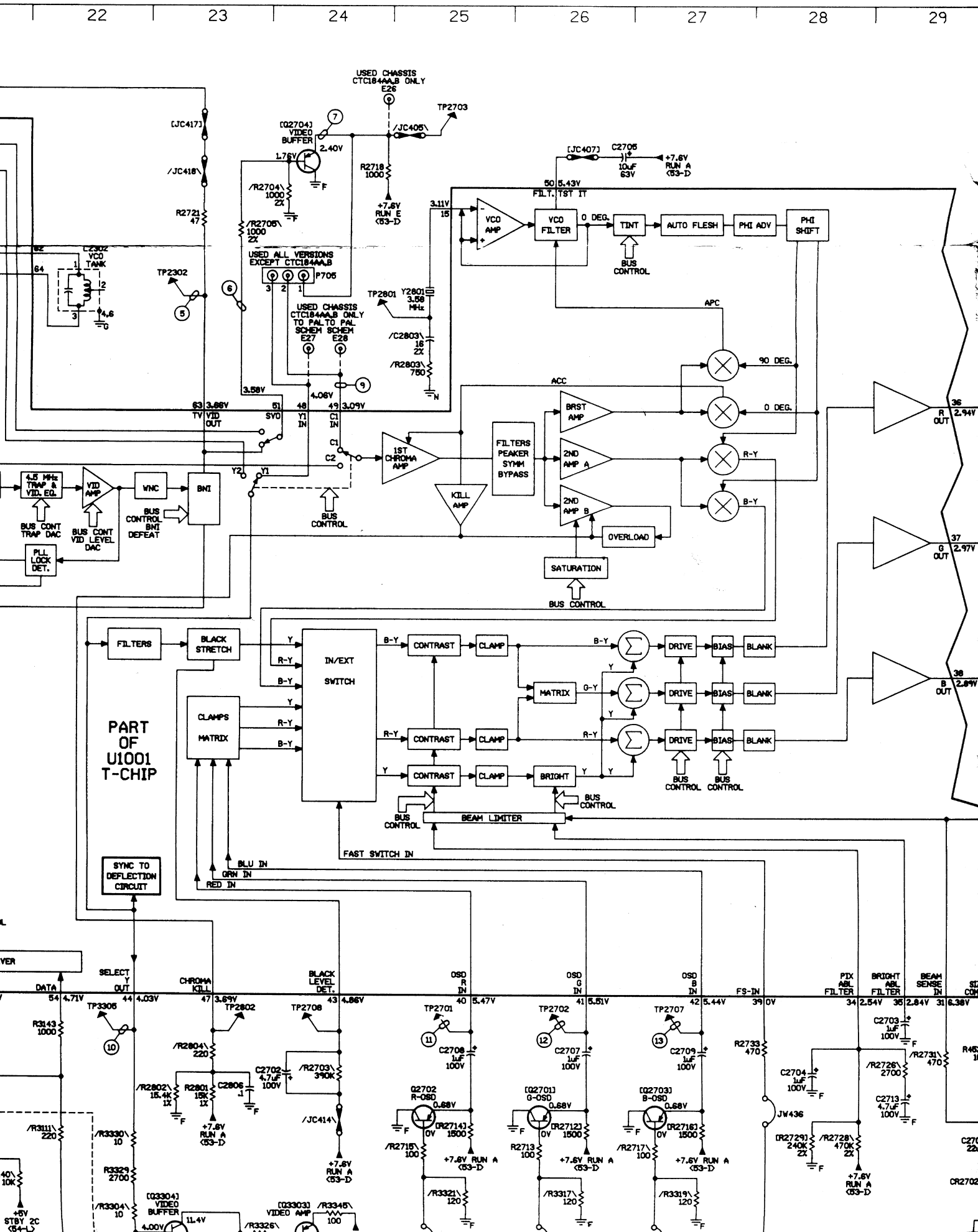
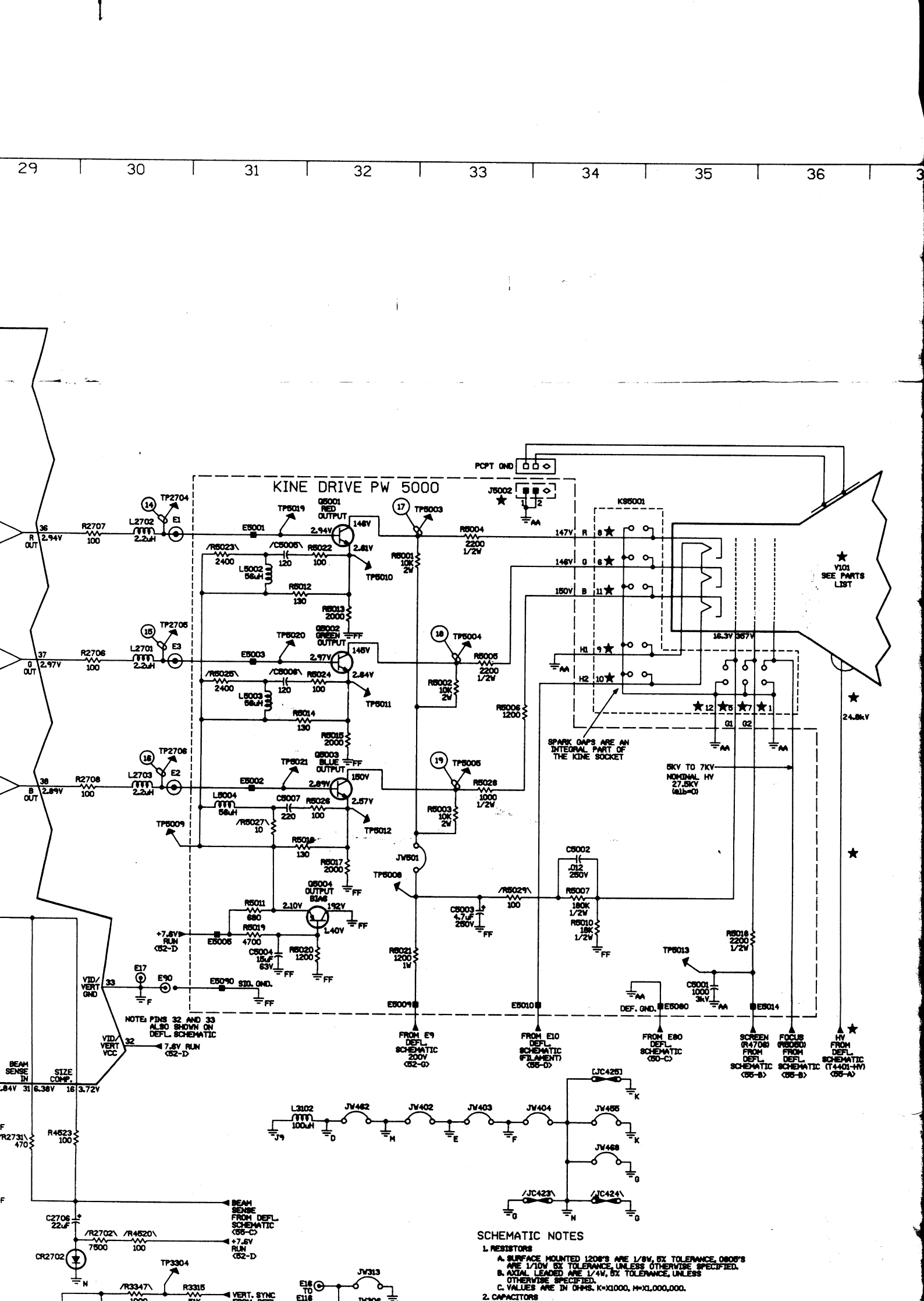
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION POINT VI
WRAP STAKE.
E. INDICATES CONNECTION POINT VI
TO POINT WIRE.
F. INDICATES A SURFACE MOUNTED
ON THE COPPER SIDE OF THE PR
G. INDICATES A SURFACE MOUNTED
ON THE COPPER SIDE OF THE PR
H. INDICATES SIGNAL FLOW DIRECTI
NOT NECESSARILY CURRENT FLOW
I. INDICATES SCHEMATIC ZONE LOCA
J. INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CH
U7401
TUNER
CONTROL
XTAL 2
XTAL 1
fLO
B V/U
LOOP FIL.2
LOOP FIL.1
BS1
Vcc
NC
DATA
CLOCK
FM OFFSET
[Q7401] PLL
[Q7402] BAND SWITCH
[Q4106] +5 VOLT REGULATOR
[Q3301] SYNC AMP
TP7401
TP3102
TP3103
TP3104
+33V RUN C SOURCE
+33V RUN A
+33V RUN C
+12V RUN G
+12V RUN E
+12V RUN C
+5V STBY 2D
+5V STBY 2C
+5V STBY 2A
-12V RUN
RF AGC FROM SIGNAL SCHEMATIC
TUNING SYNC FROM SIGNAL CIRCUIT VID. OUT
TUNING SYNC
T CHIP CLOCK
T CHIP DATA
T-CHIP_CLOCK TUNER_DATA
T-CHIP_DATA TUNER_CLOCK
NOTE: PORTION OF THIS CIRCUIT REPEATED ON D-PIP SCHEMATIC AND SIGNAL CIRCUIT SCHEMATIC.

DIAGRAMA ESQUEMÁTICO DO SINAL




22
23
24
25
26
27
28
29
USED CHASSIS CTC184AA,B ONLY E26
TP2703
[JC417]
[Q2704] VIDEO BUFFER
/JC405\
2.40V
1.76V
/JC418\
R2718 1000
/R2704\ 1000 2%
R2721 47
/R2705\ 1000 2%
+7.6V RUN E <53-D
[JC407]
C2705 10uF 63V
+7.6V RUN A <53-D
50 5.43V FILT. TST IT
3.11V 15
VCO AMP
VCO FILTER
0 DEG.
TINT
AUTO FLESH
PHI ADV
PHI SHIFT
BUS CONTROL
[C2302] VCO TANK
TP2302
USED ALL VERSIONS EXCEPT CTC184AA,B
P705
TP2801 Y2801 3.58 MHz
USED CHASSIS CTC184AA,B ONLY TO PAL SCHEM E27
TO PAL SCHEM E28
/C2803\ 16 2%
/R2803\ 750
APC
90 DEG.
ACC
0 DEG.
3.58V
4.06V
63 3.66V TV VID OUT
61 SVO
48 Y1 IN
49 3.09V C1 IN
BRST AMP
2ND AMP A
2ND AMP B
R-Y
B-Y
1ST CHROMA AMP
FILTERS PEAKER SYMM BYPASS
KILL AMP
OVERLOAD
SATURATION
BUS CONTROL
4.5 MHz TRAP & VID. EQ.
VID AMP
WNC
BNI
BUS CONT TRAP DAC
BUS CONT VID LEVEL DAC
BUS CONTROL BNI DEFEAT
PLL LOCK DET.
R OUT 36 2.94V
G OUT 37 2.97V
B OUT 38 2.89V
FILTERS
BLACK STRETCH
IN/EXT SWITCH
CONTRAST
CLAMP
MATRIX
DRIVE
BIAS
BLANK
BRIGHT
CLAMPS MATRIX
PART OF U1001 T-CHIP
BEAM LIMITER
FAST SWITCH IN
BLU IN
GRN IN
RED IN
SYNC TO DEFLECTION CIRCUIT
SELECT Y OUT
CHROMA KILL
BLACK LEVEL DET.
OSD R IN
OSD G IN
OSD B IN
FS-IN
PIX ABL FILTER
BRIGHT ABL FILTER
BEAM SENSE IN
54 4.71V
44 4.03V
47 3.69V
43 4.86V
40 5.47V
41 5.51V
42 5.44V
39 0V
34 2.54V
35 2.84V
31 6.38V
TP3306
TP2802
TP2708
TP2701
TP2702
TP2707
C2708 1uF 100V
C2707 1uF 100V
C2709 1uF 100V
C2703 1uF 100V
C2704 1uF 100V
C2713 4.7uF 100V
C2702 4.7uF 100V
/R2804\ 220
/R2802\ 15.4K 1%
R2801 15K 1%
C2806 .1
/R2703\ 390K
/JC414\
+7.6V RUN A <53-D
Q2702 R-OSD
[Q2701] G-OSD
[Q2703] B-OSD
0.68V
[R2714] 1500
[R2712] 1500
[R2716] 1500
/R2715\ 100
R2713 100
/R2717\ 100
/R3321\ 120
/R3317\ 120
/R3319\ 120
R2733 470
/R2731\ 470
/R2726\ 2700
[R2729] 240K 2%
/R2728\ 470K 2%
JW436
R3143 1000
/R3111\ 220
/R3330\ 10
R3329 2700
/R3304\ 10
[Q3304] VIDEO BUFFER
[Q3303] VIDEO AMP
/R3345\ 100
/R3326\
11.4V
4.00V
+8V ST8V 2C <54-L>
CR2702


KINE DRIVE PW 5000
PCPT GND
J5002
K85001
V101
SEE PARTS
LIST
SPARK GAPS ARE AN
INTEGRAL PART OF
THE KINE SOCKET
5KV TO 7KV
NOMINAL HV
27.5KV
(adj=0)
24.8kV
16.3V 367V
TP2704
TP2705
TP2706
E1
E3
E2
R2707
100
R2706
100
R2708
100
L2702
2.2uH
L2701
2.2uH
L2703
2.2uH
36
2.94V
R OUT
37
2.97V
G OUT
38
2.89V
B OUT
E5001
E5003
E5002
TP5019
TP5020
TP5021
Q5001
RED
OUTPUT
Q5002
GREEN
OUTPUT
Q5003
BLUE
OUTPUT
146V
145V
150V
2.94V
2.97V
2.89V
2.61V
2.84V
2.57V
TP5010
TP5011
TP5012
/R5023\
2400
/R5025\
2400
/R5027\
10
L5002
56uH
L5003
56uH
L5004
56uH
/C5005\
120
/C5006\
120
C5007
220
R5022
100
R5024
100
R5026
100
R5012
130
R5014
130
R5016
130
R5013
2000
R5015
2000
R5017
2000
TP5009
TP5008
TP5003
TP5004
TP5005
R5001
10K
2W
R5002
10K
2W
R5003
10K
2W
R5004
2200
1/2W
R5005
2200
1/2W
R5006
1200
R5028
1000
1/2W
147V R
146V G
150V B
H1
H2
8
6
11
9
10
12
5
7
1
G1
G2
JW501
Q5004
OUTPUT
BIAS
2.10V
1.92V
1.40V
R5011
680
R5019
4700
R5020
1200
C5004
15uF
63V
+7.6V
RUN
(52-D)
E5005
E17
E90
E5090
SIG. GND.
VID/
VERT
GND
VID/
VERT
VCC
33
32
7.6V RUN
(52-D)
NOTE: PINS 32 AND 33
ALSO SHOWN ON
DEFL. SCHEMATIC
C5002
.012
250V
R5007
180K
1/2W
R5010
18K
1/2W
C5003
4.7uF
250V
/R5029\
100
R5021
1200
1W
R5018
2200
1/2W
TP5013
C5001
1000
3kV
DEF. GND.
E5080
E5009
E5010
E5014
FROM E9
DEFL.
SCHEMATIC
200V
(52-G)
FROM E10
DEFL.
SCHEMATIC
(FILAMENT)
(55-D)
FROM E80
DEFL.
SCHEMATIC
(50-C)
SCREEN
(R4706)
FROM
DEFL.
SCHEMATIC
(55-B)
FOCUS
(R5050)
FROM
DEFL.
SCHEMATIC
(55-B)
HV
FROM
DEFL.
SCHEMATIC
(T4401-HV)
(55-A)
BEAM
SENSE
IN
SIZE
COMP.
.84V 31
6.38V 16
3.72V
R4523
100
R2731\
470
L3102
100uH
J9
JW462
JW402
JW403
JW404
JW455
JW468
/JC425\
/JC423\
/JC424\
BEAM
SENSE
FROM DEFL.
SCHEMATIC
(55-C)
C2706
22uF
/R2702\
7500
/R4520\
100
+7.6V
RUN
(52-D)
CR2702
TP3304
/R3347\
R3315
VERT. SYNC
JW313
E16
TO
E116
SCHEMATIC NOTES
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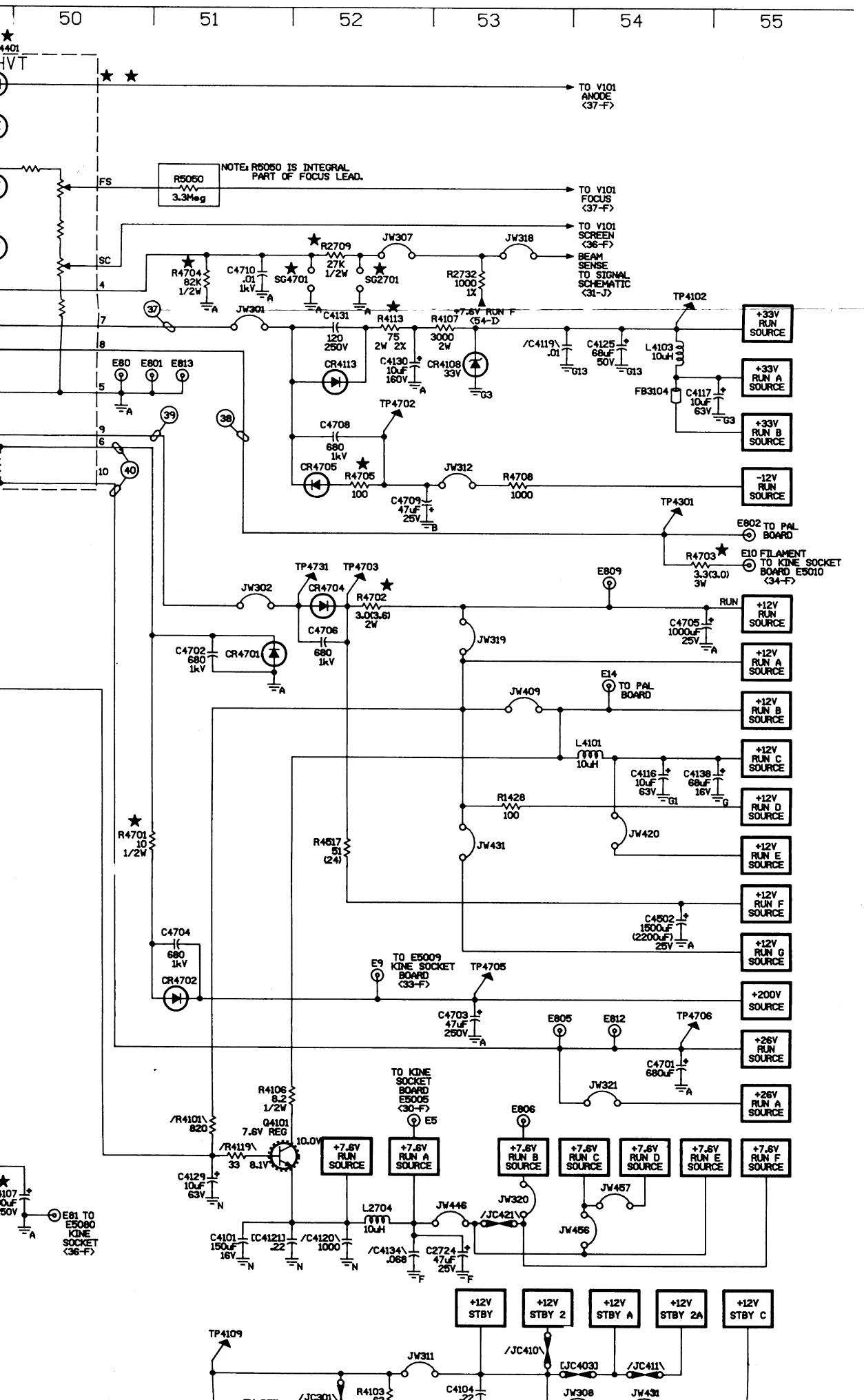
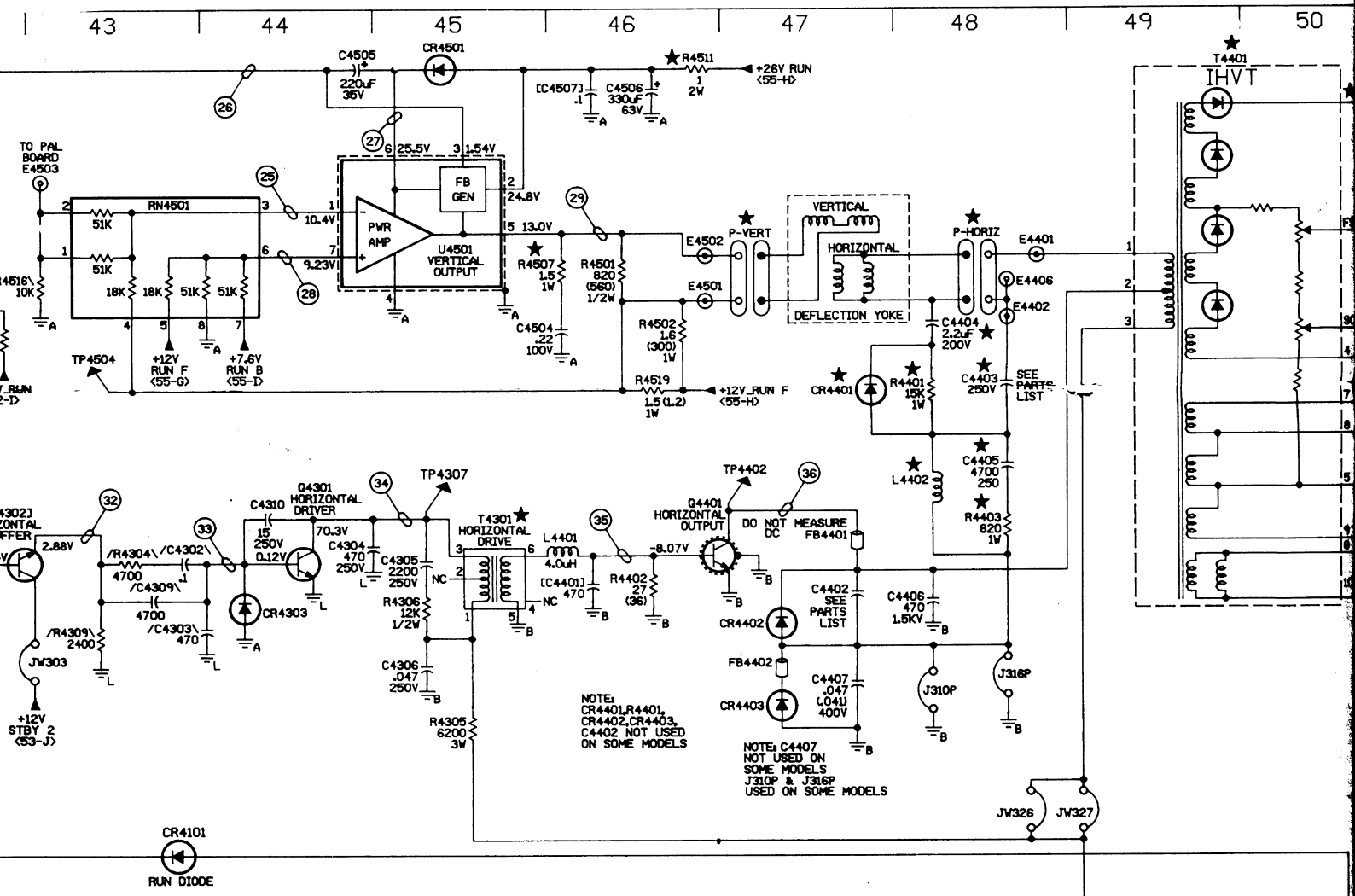
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS

DIAGRAMA ESQUEMÁTICO DE DEFLEXÃO/FORÇA





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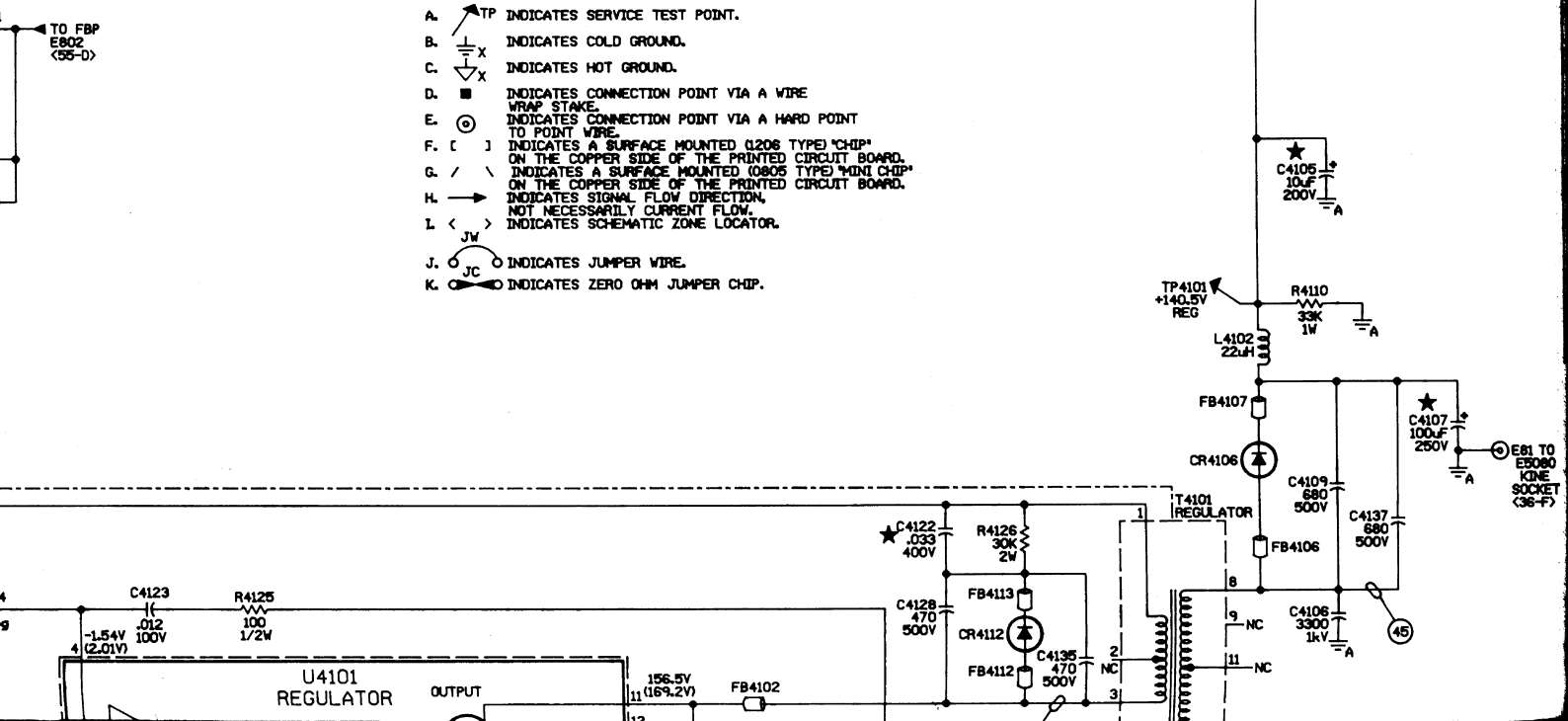
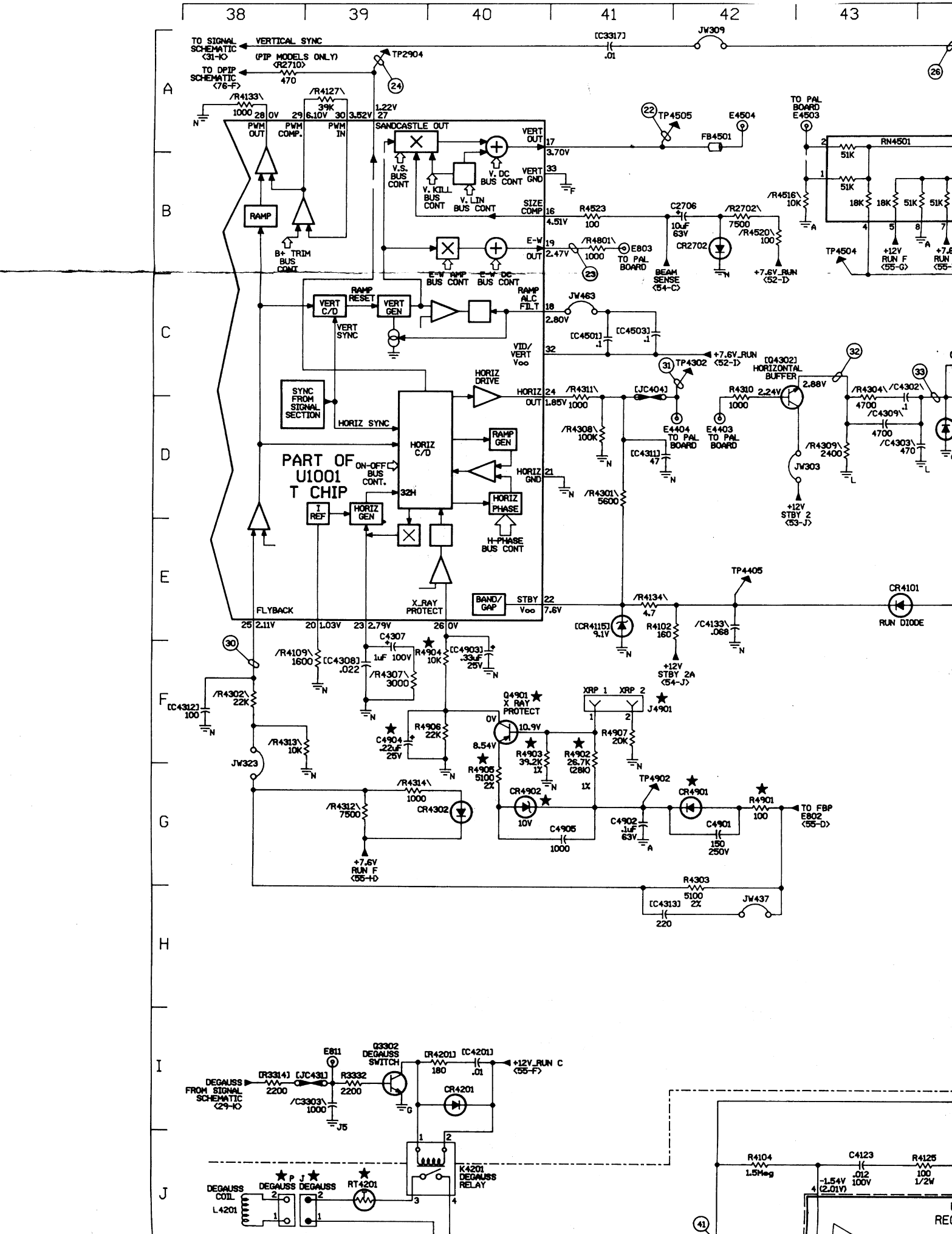
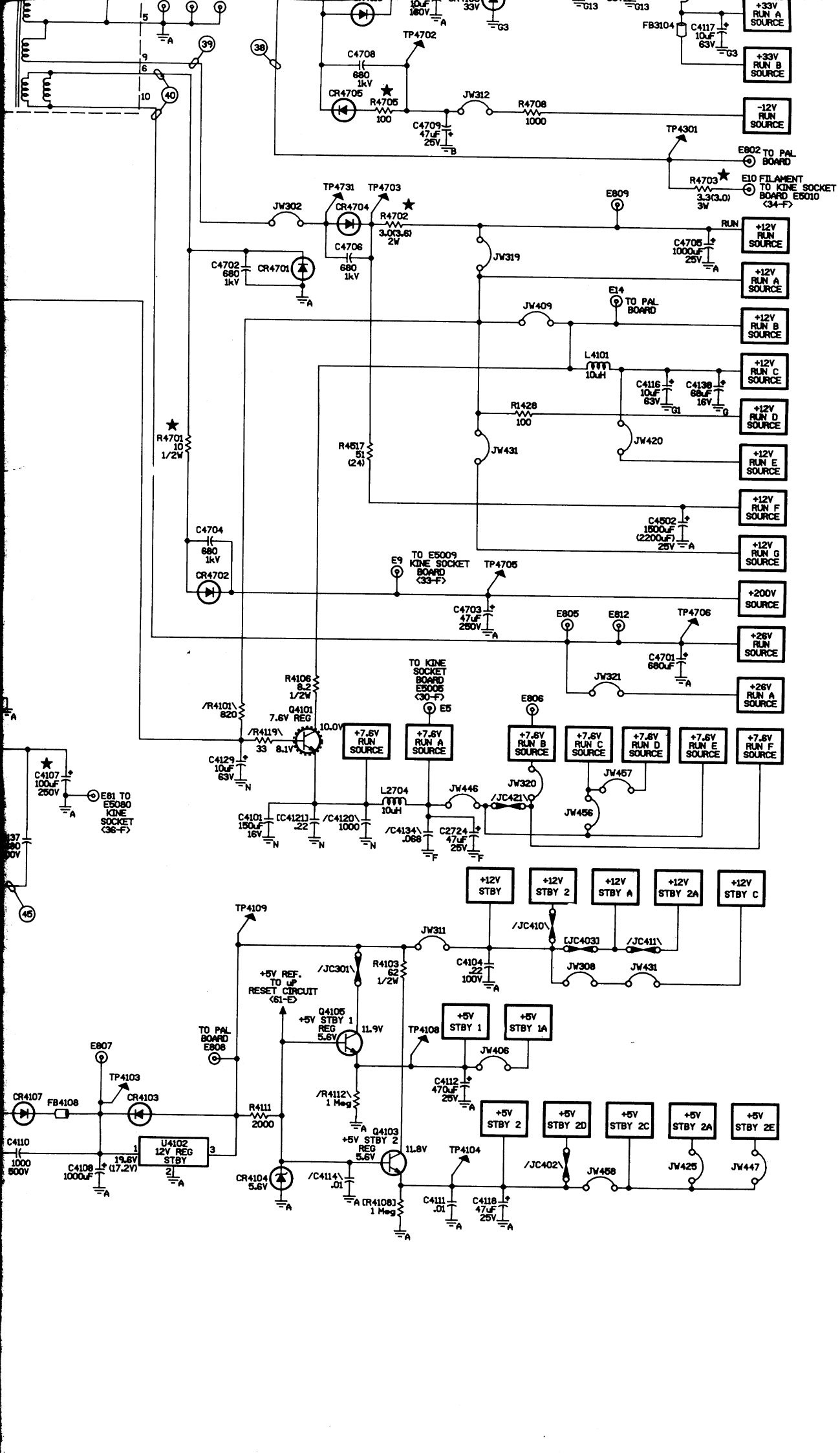
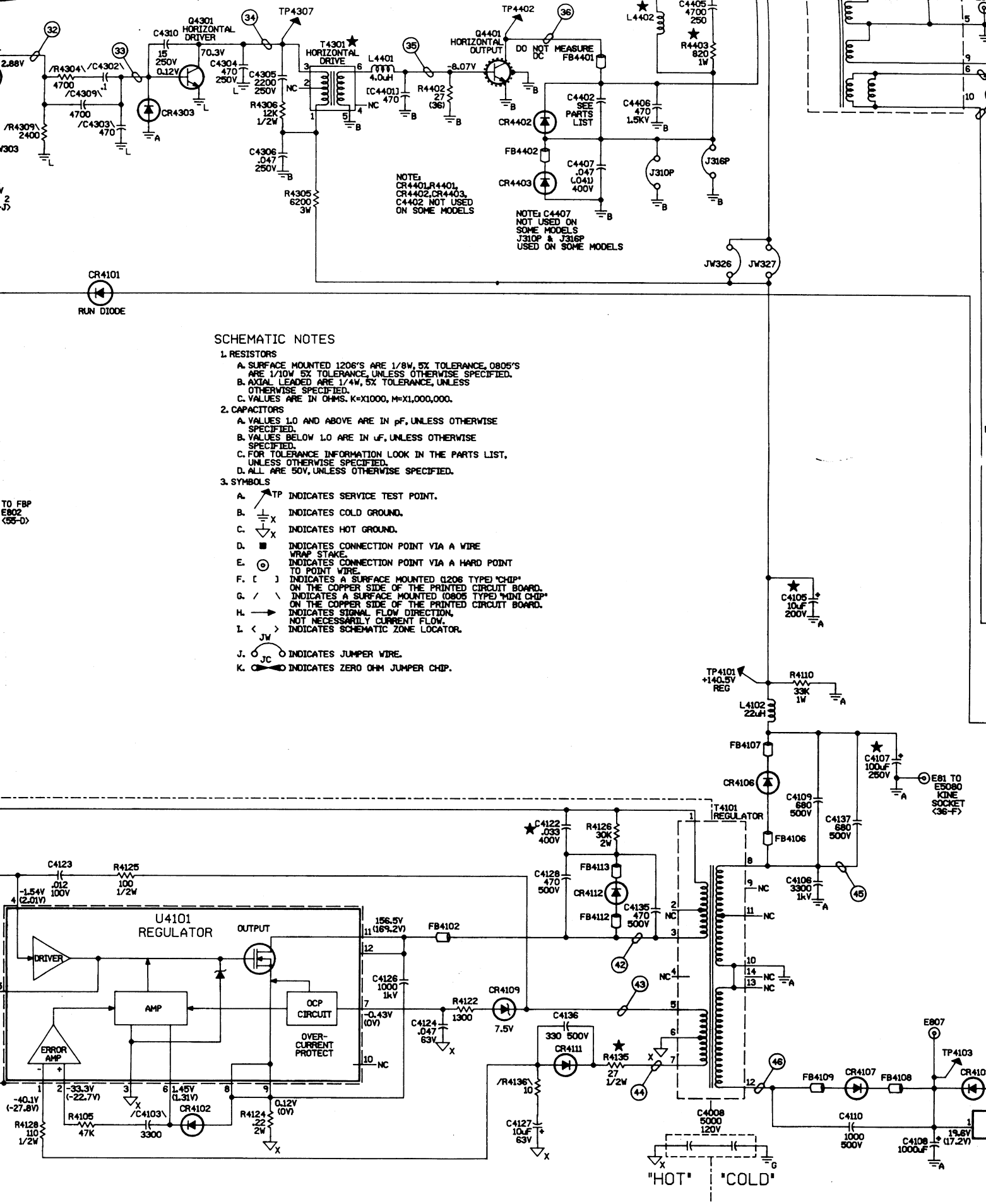
   - C. INDICATES HOT GROUND.
   - D. ■ INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
   - E. ⊙ INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
   - F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. → INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW JC INDICATES JUMPER WIRE.
   - K. INDICATES ZERO OHM JUMPER CHIP.



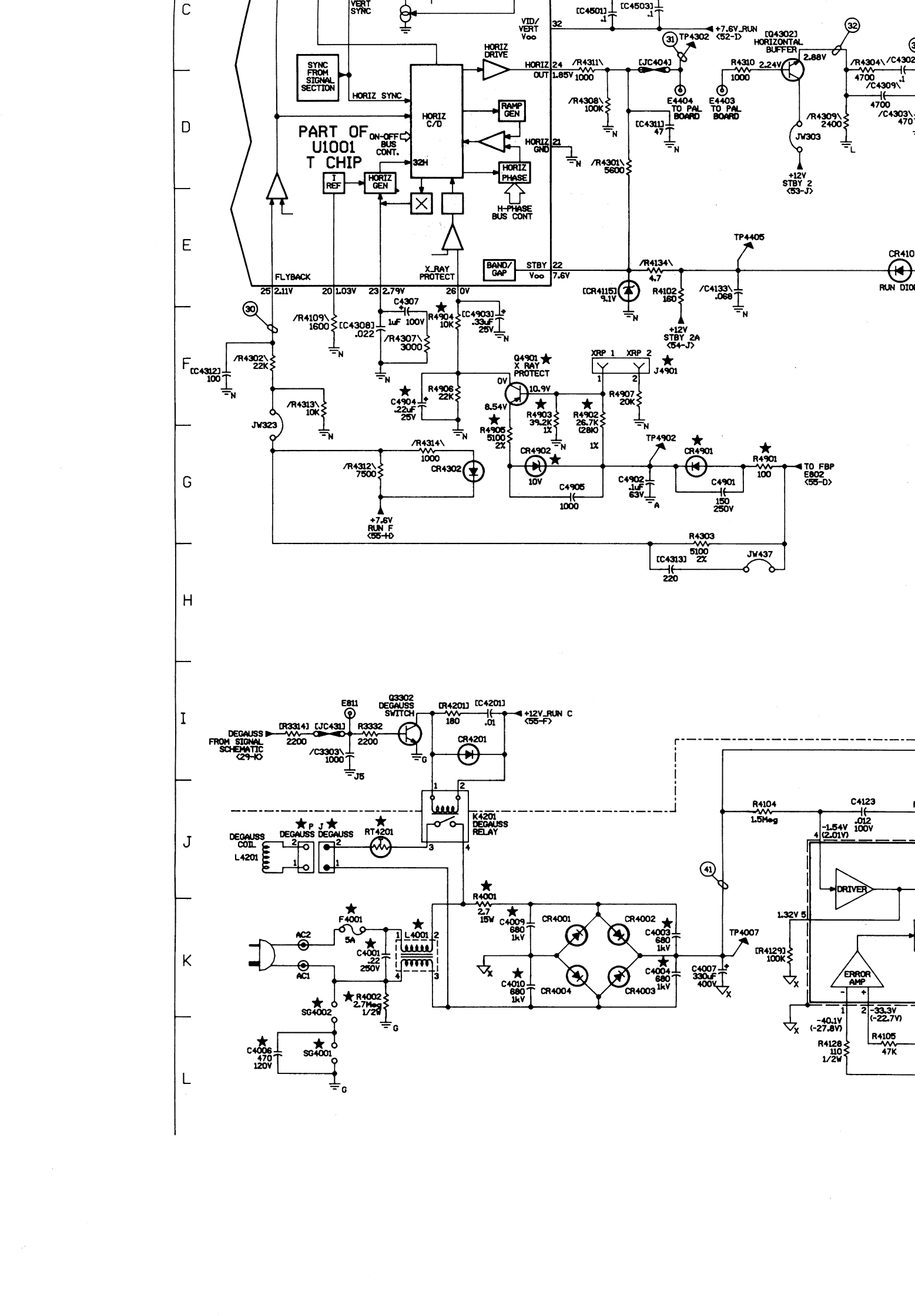

38
39
40
41
42
43
A
B
C
D
E
F
G
H
I
J
TO SIGNAL SCHEMATIC <31-K>
VERTICAL SYNC
TO DPIP SCHEMATIC <76-F>
(PIP MODELS ONLY) <R2710>
470
TP2904
/R4133\ 1000
/R4127\ 39K
PWM OUT
PWM COMP.
PWM IN
SANDCASTLE OUT
VERT OUT
3.70V
VERT GND
SIZE COMP
4.51V
R4523 100
E-W OUT
2.47V
/R4801\ 1000
E803 TO PAL BOARD
V.S. BUS CONT
V. DC BUS CONT
V. KILL BUS CONT
V. LIN BUS CONT
E-W AMP BUS CONT
E-W DC BUS CONT
B+ TRIM BUS CONT
RAMP
RAMP RESET
VERT C/D
VERT GEN
VERT SYNC
RAMP ALC FILT
2.80V
JW463
[C4501] .1
[C4503] .1
VID/ VERT Voo
+7.6V_RUN <52-I>
TP4302
SYNC FROM SIGNAL SECTION
HORIZ SYNC
HORIZ DRIVE
HORIZ OUT
1.85V
/R4311\ 1000
[JC404]
HORIZ C/D
32H
ON-OFF BUS CONT.
RAMP GEN
HORIZ GEN
HORIZ GND
HORIZ PHASE
H-PHASE BUS CONT
I REF
PART OF U1001 T CHIP
FLYBACK
X_RAY PROTECT
BAND/ GAP
STBY Voo
7.6V
/R4301\ 5600
/R4134\ 4.7
TP4405
CR4101
RUN DIODE
[CR4115] 9.1V
R4102 160
/C4133\ .068
+12V STBY 2A <54-J>
C4307 1uF 100V
/R4109\ 1600
[C4308] .022
/R4307\ 3000
R4904 10K
[C4903] .33uF 25V
/R4302\ 22K
[C4312] 100
/R4313\ 10K
JW323
C4904 .22uF 25V
R4906 22K
Q4901 X RAY PROTECT
XRP 1
XRP 2
J4901
R4907 20K
R4903 39.2K 1%
R4902 26.7K (28K) 1%
R4905 5100 2%
8.54V
10.9V
CR4902
10V
/R4314\ 1000
/R4312\ 7500
CR4302
+7.6V RUN F <55-H>
TP4902
CR4901
R4901 100
TO FBP E802 <55-D>
C4902 .1uF 63V
C4905 1000
C4901 150 250V
R4303 5100 2%
[C4313] 220
JW437
E811
Q3302 DEGAUSS SWITCH
[R4201] 180
[C4201] .01
+12V_RUN C <55-F>
DEGAUSS FROM SIGNAL SCHEMATIC <29-K>
[R3314] 2200
[JC431]
R3332 2200
/C3303\ 1000
J5
CR4201
K4201 DEGAUSS RELAY
DEGAUSS COIL L4201
DEGAUSS
RT4201
TO PAL BOARD E4503
RN4501
51K
18K
/R4516\ 10K
TP4505
E4504
FB4501
C2706 10uF 63V
/R2702\ 7500
/R4520\ 100
CR2702
BEAM SENSE <54-C>
+7.6V_RUN <52-D>
TP4504
+12V RUN F <55-G>
[Q4302] HORIZONTAL BUFFER
2.88V
R4310 1000
2.24V
E4404 TO PAL BOARD
E4403 TO PAL BOARD
/R4304\ 4700
/C4302\ .1
/C4309\ 4700
/C4303\ 470
/R4309\ 2400
JW303
+12V STBY 2 <53-J>
R4104 1.5Meg
C4123 .012 100V
R4125 100 1/2W
-1.54V (2.01V)

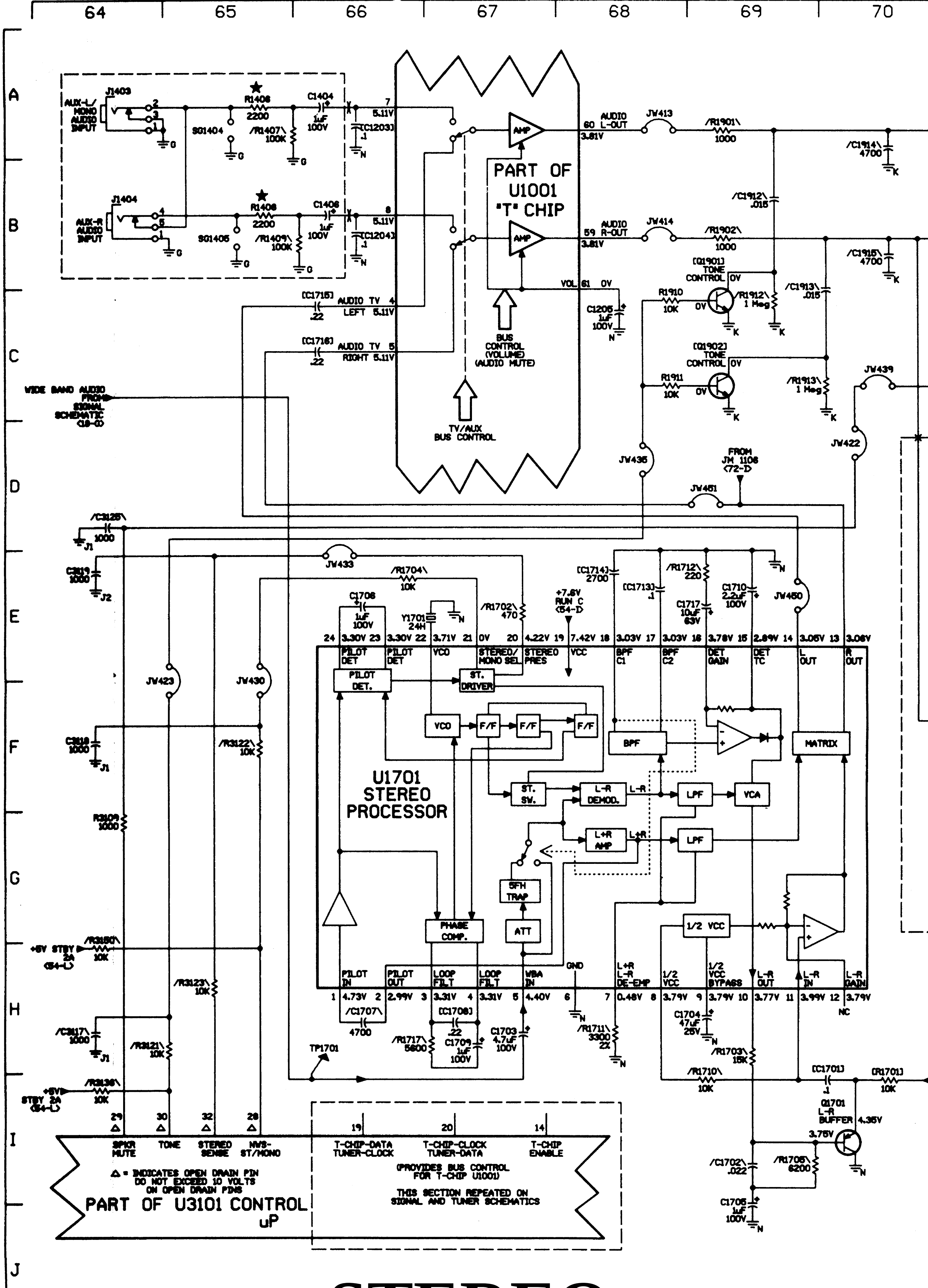

+33V RUN A SOURCE
+33V RUN B SOURCE
-12V RUN SOURCE
TO PAL BOARD
TO KINE SOCKET BOARD E5010 <34-F>
+12V RUN SOURCE
+12V RUN A SOURCE
+12V RUN B SOURCE
+12V RUN C SOURCE
+12V RUN D SOURCE
+12V RUN E SOURCE
+12V RUN F SOURCE
+12V RUN G SOURCE
+200V SOURCE
+26V RUN SOURCE
+26V RUN A SOURCE
TO KINE SOCKET BOARD E5005 <30-F>
+7.6V RUN SOURCE
+7.6V RUN A SOURCE
+7.6V RUN B SOURCE
+7.6V RUN C SOURCE
+7.6V RUN D SOURCE
+7.6V RUN E SOURCE
+7.6V RUN F SOURCE
TO KINE SOCKET BOARD <33-F>
TO KINE SOCKET <36-F>
+12V STBY
+12V STBY 2
+12V STBY A
+12V STBY 2A
+12V STBY C
+5V REF. TO uP RESET CIRCUIT <61-E>
TO PAL BOARD E808
+5V STBY 1
+5V STBY 1A
+5V STBY 2
+5V STBY 2D
+5V STBY 2C
+5V STBY 2A
+5V STBY 2E



SCHEMATIC NOTES

1. RESISTORS
   - A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   - A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
   - B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
   - C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
   - D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
   - A. TP INDICATES SERVICE TEST POINT.
   - B. INDICATES COLD GROUND.
   - C. INDICATES HOT GROUND.
   - D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
   - E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
   - F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW JC INDICATES JUMPER WIRE.
   - K. INDICATES ZERO OHM JUMPER CHIP.


VERT SYNC
VID/ VERT Voo
32
[C4501] .1
[C4503] .1
+7.6V_RUN <52-I>
31
TP4302
[Q4302] HORIZONTAL BUFFER
2.88V
R4310 1000
2.24V
/R4304\ 4700
/C4309\ .1
/C4303\ 470
/R4309\ 2400
JW303
+12V STBY 2 <53-J>
SYNC FROM SIGNAL SECTION
HORIZ SYNC
HORIZ C/D
HORIZ DRIVE
HORIZ OUT 24 1.85V
/R4311\ 1000
[JC404]
/R4308\ 100K
[C4311] 47
E4404 TO PAL BOARD
E4403 TO PAL BOARD
RAMP GEN
HORIZ GND 21
/R4301\ 5600
PART OF U1001 T CHIP
ON-OFF BUS CONT.
32H
I REF
HORIZ GEN
HORIZ PHASE
H-PHASE BUS CONT
X_RAY PROTECT
BAND/ GAP
STBY Voo 22 7.6V
TP4405
/R4134\ 4.7
[CR4115] 9.1V
R4102 160
/C4133\ .068
+12V STBY 2A <54-J>
CR410
RUN DIO
FLYBACK
25 2.11V
20 1.03V
23 2.79V
26 0V
C4307 1uF 100V
/R4109\ 1600
[C4308] .022
/R4307\ 3000
R4904 10K
[C4903] .33uF 25V
/R4302\ 22K
[C4312] 100
/R4313\ 10K
JW323
R4908 22K
C4904 .22uF 25V
Q4901 X RAY PROTECT
0V
10.9V
8.54V
R4903 39.2K 1%
R4905 5100 2%
R4902 26.7K (28K) 1%
XRP 1
XRP 2
J4901
R4907 20K
/R4314\ 1000
/R4312\ 7500
CR4302
CR4902
10V
C4905 1000
TP4902
C4902 .1uF 63V
CR4901
C4901 150 250V
R4901 100
TO FBP E802 <55-D>
+7.6V RUN F <55-H>
R4303 5100 2%
[C4313] 220
JW437
E811
Q3302 DEGAUSS SWITCH
[R4201] 180
[C4201] .01
+12V_RUN C <55-F>
DEGAUSS FROM SIGNAL SCHEMATIC <29-K>
[R3314] 2200
[JC431]
R3332 2200
/C3303\ 1000
J5
CR4201
K4201 DEGAUSS RELAY
DEGAUSS COIL
L4201
DEGAUSS
RT4201
F4001 5A
AC2
AC1
L4001
C4001 .22 250V
R4002 2.7Meg 1/2W
SG4002
SG4001
C4006 470 120V
R4001 2.7 15W
C4009 680 1kV
C4010 680 1kV
CR4001
CR4004
CR4002
CR4003
C4003 680 1kV
C4004 680 1kV
C4007 330uF 400V
TP4007
R4104 1.5Meg
C4123 .012 100V
-1.54V (2.01V)
DRIVER
1.32V 5
[R4129] 100K
ERROR AMP
-40.1V (-27.8V)
-33.3V (-22.7V)
R4128 110 1/2W
R4105 47K



64
65
66
67
68
69
70
A
B
C
D
E
F
G
H
I
J
J1403
AUX-L/ MONO AUDIO INPUT
R1406 2200
C1404 1uF 100V
/R1407\ 100K
SG1404
C1203 .1
J1404
AUX-R AUDIO INPUT
R1408 2200
C1406 1uF 100V
/R1409\ 100K
SG1406
C1204 .1
5.11V
PART OF U1001 "T" CHIP
AMP
60 AUDIO L-OUT 3.81V
59 AUDIO R-OUT 3.81V
JW413
/R1901\ 1000
/C1914\ 4700
/C1912\ .015
JW414
/R1902\ 1000
/C1915\ 4700
VOL 61 0V
C1205 1uF 100V
Q1901 TONE CONTROL
R1910 10K
/R1912\ 1 Meg
/C1913\ .015
Q1902 TONE CONTROL
R1911 10K
/R1913\ 1 Meg
JW439
C1715 .22
AUDIO TV LEFT 4 5.11V
C1716 .22
AUDIO TV RIGHT 5 5.11V
BUS CONTROL (VOLUME) (AUDIO MUTE)
TV/AUX BUS CONTROL
WIDE BAND AUDIO FROM SIGNAL SCHEMATIC (18-C)
JW435
FROM JM 1106 (72-D)
JW451
JW422
/C3125\ 1000
C3119 1000
JW433
/R1704\ 10K
C1714 2700
C1713 .1
/R1712\ 220
C1710 2.2uF 100V
C1717 10uF 63V
JW450
C1706 1uF 100V
Y1701 24H
/R1702\ 470
+7.6V RUN C (54-D)
24 3.30V 23 3.30V 22 3.71V 21 0V 20 4.22V 19 7.42V 18 3.03V 17 3.03V 16 3.78V 15 2.89V 14 3.06V 13 3.06V
PILOT DET
PILOT DET
VCO
STEREO/ MONO SEL
STEREO PRES
VCC
BPF C1
BPF C2
DET GAIN
DET TC
L OUT
R OUT
PILOT DET.
ST. DRIVER
VCO
F/F
F/F
F/F
BPF
MATRIX
U1701 STEREO PROCESSOR
ST. SW.
L-R DEMOD.
L-R
LPF
VCA
L+R AMP
L+R
LPF
5FH TRAP
ATT
PHASE COMP.
1/2 VCC
JW423
JW430
C3118 1000
/R3122\ 10K
R3109 1000
+5V STBY 2A (54-L)
/R3150\ 10K
/R3123\ 10K
/C3117\ 1000
/R3121\ 10K
+5V STBY 2A (54-L)
/R3136\ 10K
PILOT IN
PILOT OUT
LOOP FILT
LOOP FILT
WBA IN
GND
L+R L-R DE-EMP
1/2 VCC
1/2 VCC BYPASS
L-R OUT
L-R IN
L-R GAIN
1 4.73V 2 2.99V 3 3.31V 4 3.31V 5 4.40V 6 7 0.48V 8 3.79V 9 3.79V 10 3.77V 11 3.99V 12 3.79V
NC
/C1707\ 4700
C1708 .22
/R1717\ 5600
C1709 1uF 100V
C1703 4.7uF 100V
/R1711\ 3300 2%
C1704 47uF 25V
/R1703\ 15K
TP1701
/R1710\ 10K
C1701 .1
R1701 10K
Q1701 L-R BUFFER 4.36V
3.75V
/C1702\ .022
/R1705\ 6200
C1705 1uF 100V
29 30 32 28
SPKR MUTE
TONE
STEREO SENSE
NVS-ST/MONO
△ = INDICATES OPEN DRAIN PIN DO NOT EXCEED 10 VOLTS ON OPEN DRAIN PINS
PART OF U3101 CONTROL uP
19 20 14
T-CHIP-DATA TUNER-CLOCK
T-CHIP-CLOCK TUNER-DATA
T-CHIP ENABLE
(PROVIDES BUS CONTROL FOR T-CHIP U1001)
THIS SECTION REPEATED ON SIGNAL AND TUNER SCHEMATICS

STEREO

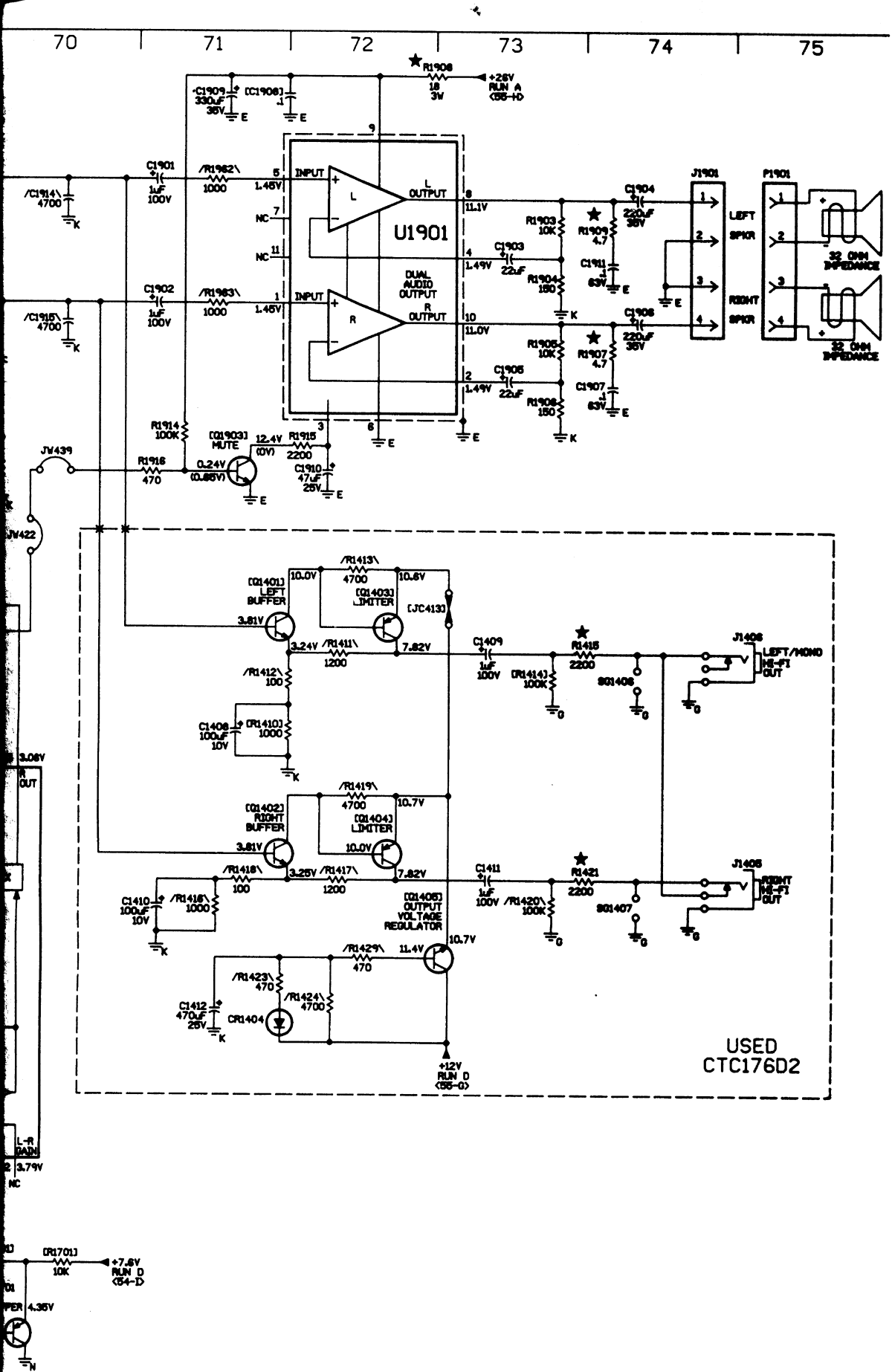
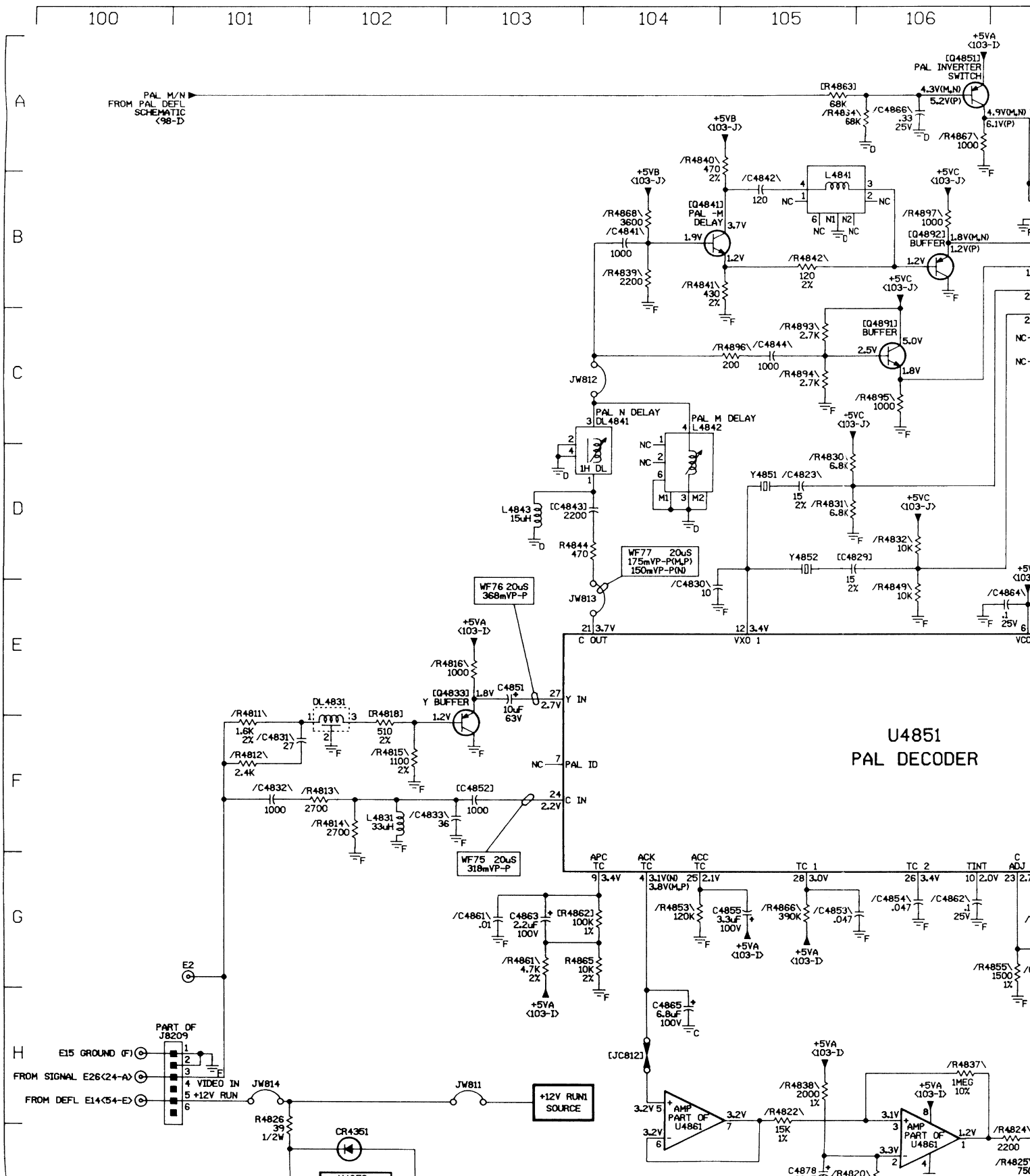
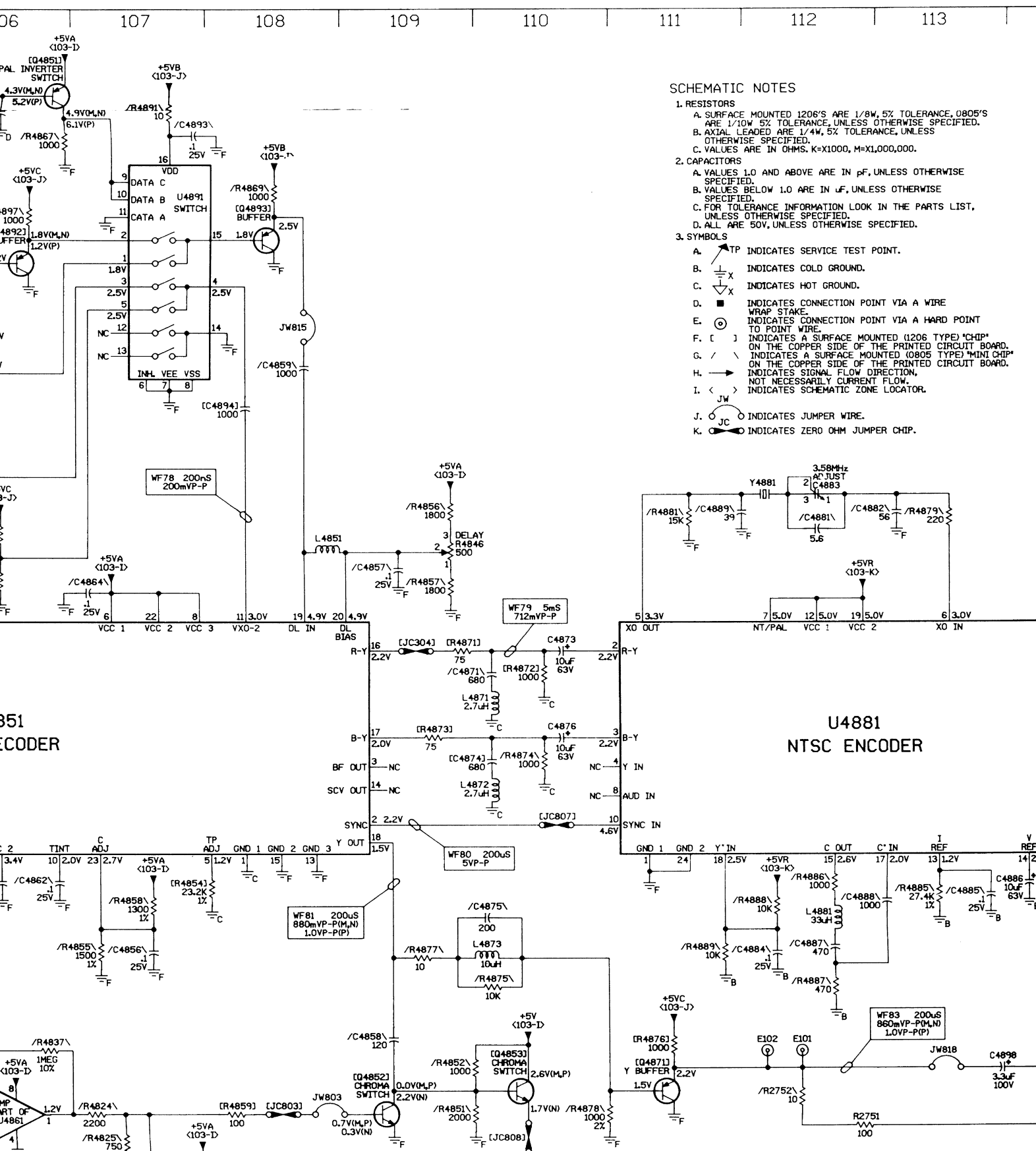

70
71
72
73
74
75
R1908
18
3W
+26V
RUN A
<55-H>
C1909
330uF
35V
[C1906]
C1901
1uF
100V
/R1902\
1000
/C1914\
4700
C1902
1uF
100V
/R1903\
1000
/C1915\
4700
U1901
DUAL
AUDIO
OUTPUT
INPUT
L
OUTPUT
R
OUTPUT
NC
1.45V
11.1V
11.0V
1.49V
C1903
22uF
C1905
22uF
R1903
10K
R1904
150
R1905
10K
R1906
150
R1909
4.7
R1907
4.7
C1904
220uF
35V
C1906
220uF
35V
C1911
63V
C1907
63V
J1901
P1901
LEFT
SPKR
RIGHT
SPKR
32 OHM
IMPEDANCE
R1914
100K
[Q1903]
MUTE
12.4V
(0V)
R1915
2200
C1910
47uF
25V
JW439
R1916
470
0.24V
(0.66V)
JW422
[Q1401]
LEFT
BUFFER
[Q1403]
LIMITER
[JC413]
/R1413\
4700
10.0V
10.6V
3.81V
3.24V
/R1411\
1200
7.82V
/R1412\
100
C1408
100uF
10V
[R1410]
1000
C1409
1uF
100V
[R1414]
100K
R1415
2200
S01406
J1406
LEFT/MONO
HI-FI
OUT
[Q1402]
RIGHT
BUFFER
[Q1404]
LIMITER
/R1419\
4700
10.7V
10.0V
3.81V
3.25V
/R1417\
1200
7.82V
/R1418\
100
C1410
100uF
10V
/R1416\
1000
C1411
1uF
100V
/R1420\
100K
R1421
2200
S01407
J1405
RIGHT
HI-FI
OUT
[Q1405]
OUTPUT
VOLTAGE
REGULATOR
10.7V
/R1429\
470
11.4V
/R1423\
470
/R1424\
4700
C1412
470uF
25V
CR1404
+12V
RUN D
<55-G>
USED
CTC176D2
3.06V
R
OUT
L-R
GAIN
3.79V
NC
[R1701]
10K
+7.6V
RUN D
<54-D>
4.36V

DIAGRAMA ESQUEMÁTICO DO SINAL DE PAL




106
107
108
109
110
111
112
113
SCHEMATIC NOTES
1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. < > INDICATES SCHEMATIC ZONE LOCATOR.
J. JW JC INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.
U4881
NTSC ENCODER
U4891 SWITCH
VDD
DATA C
DATA B
CATA A
INH. VEE VSS
[Q4851] PAL INVERTER SWITCH
[Q4893] BUFFER
[Q4852] CHROMA SWITCH
[Q4853] CHROMA SWITCH
[Q4871] Y BUFFER
Y4881
3.58MHz ADJUST C4883
WF78 200nS 200mVP-P
WF79 5mS 712mVP-P
WF80 200uS 5VP-P
WF81 200uS 880mVP-P(M,N) 1.0VP-P(P)
WF83 200uS 860mVP-P(M,N) 1.0VP-P(P)
VCC 1
VCC 2
VCC 3
VXO-2
DL IN
DL BIAS
XO OUT
NT/PAL
XO IN
R-Y
B-Y
BF OUT
SCV OUT
SYNC
Y OUT
TINT
C ADJ
TP ADJ
GND 1
GND 2
GND 3
Y IN
C OUT
C IN
I REF
V REF
SYNC IN
AUD IN
JW803
JW815
JW818
E102
E101

113	114	115	116	117

OLERANCE, 0805'S
IISE SPECIFIED.
NLESS

00.

S OTHERWISE

HERWISE

E PARTS LIST,

ED.

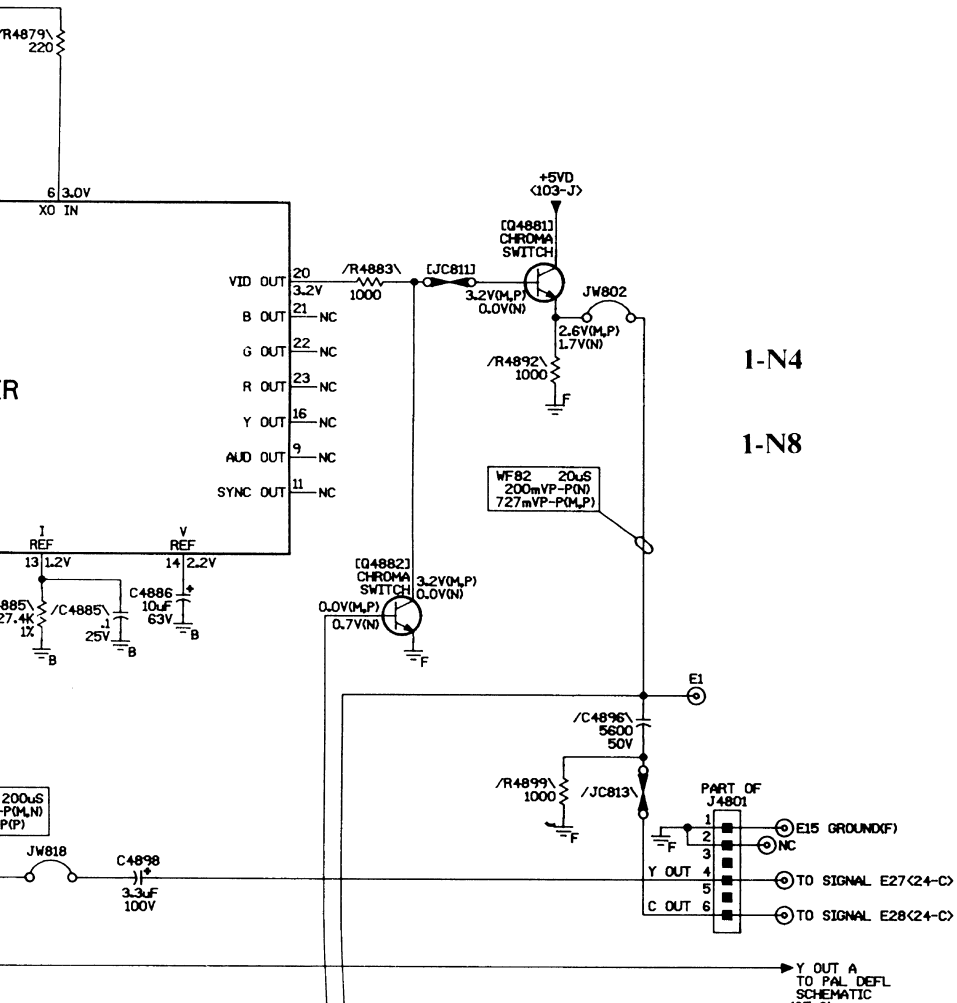
A WIRE

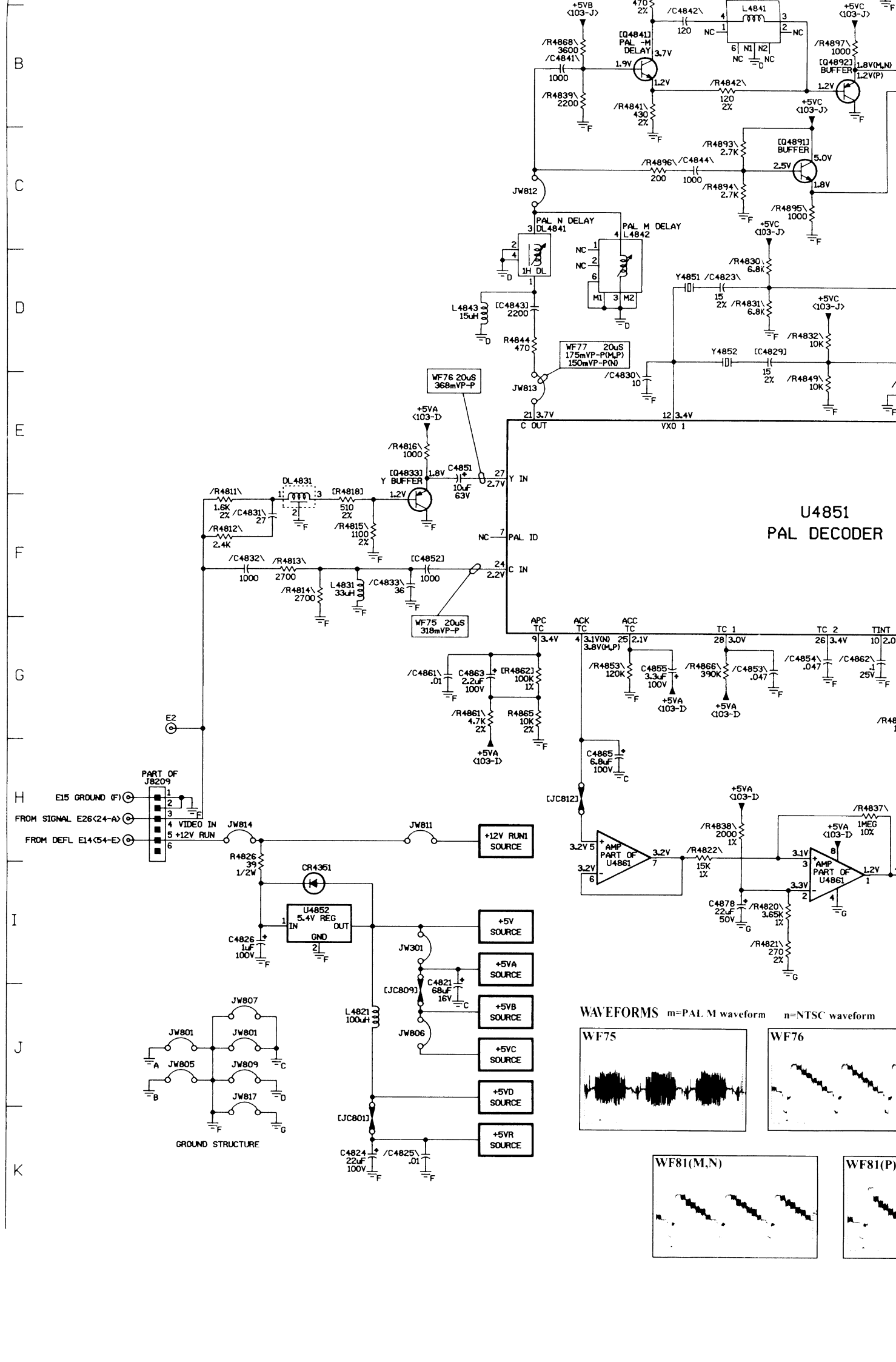
A HARD POINT

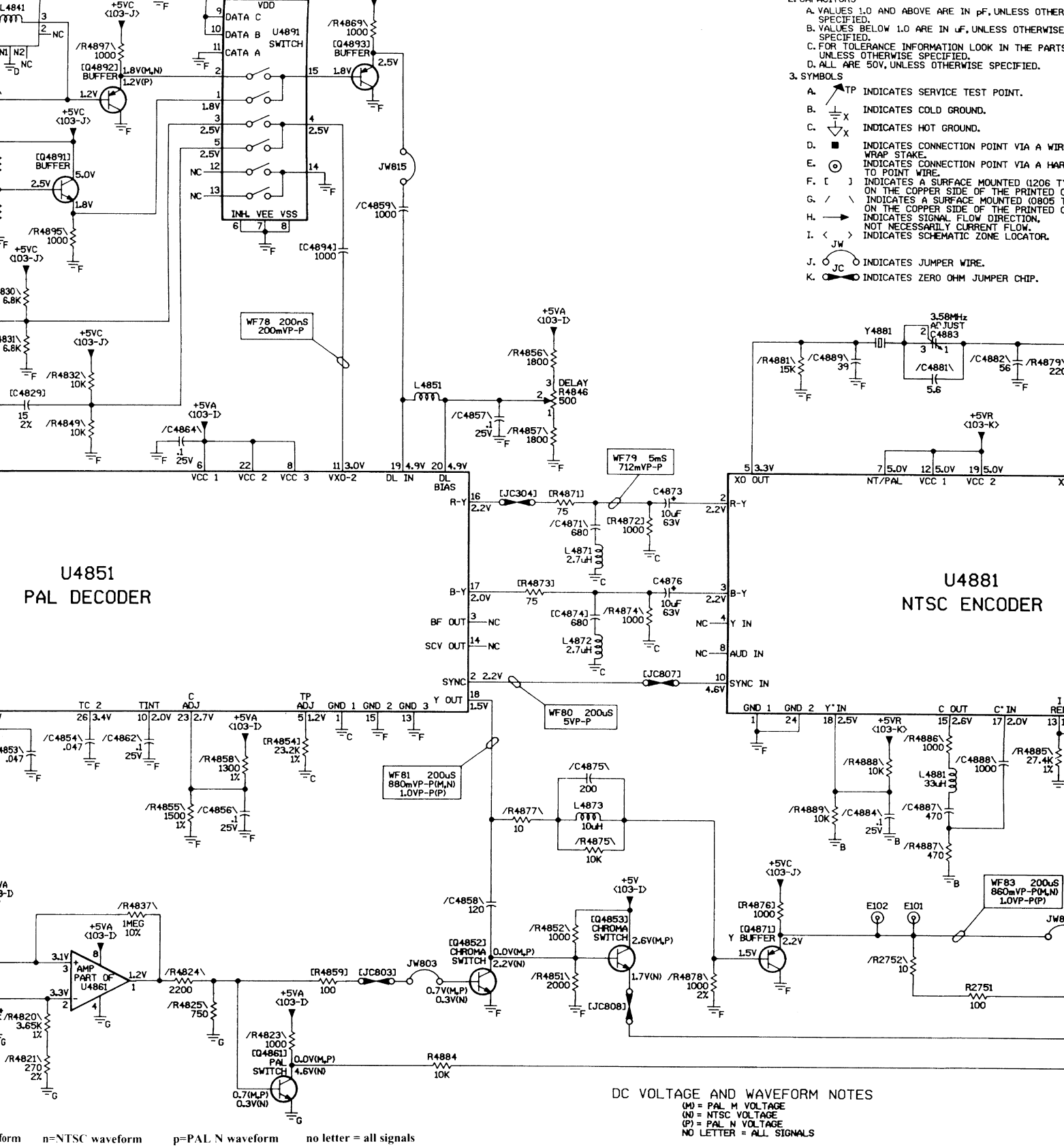
1206 TYPE) "CHIP"
INTED CIRCUIT BOARD.
(0805 TYPE) "MINI CHIP"
INTED CIRCUIT BOARD.
ON,

TOR.

P.




U4851
PAL DECODER
WAVEFORMS m=PAL M waveform n=NTSC waveform
WF75
WF76
WF81(M,N)
WF81(P)
GROUND STRUCTURE
+12V RUN1 SOURCE
+5V SOURCE
+5VA SOURCE
+5VB SOURCE
+5VC SOURCE
+5VD SOURCE
+5VR SOURCE
PAL N DELAY
PAL M DELAY
Y BUFFER
C OUT
Y IN
PAL ID
C IN
VXO 1
APC TC
ACK TC
ACC TC
TC 1
TC 2
TINT
U4852 5.4V REG
AMP PART OF U4861
PART OF J8209
E15 GROUND (F)
FROM SIGNAL E26<24-A>
FROM DEFL E14<54-E>
4 VIDEO IN
5 +12V RUN
WF76 20uS 368mVP-P
WF77 20uS 175mVP-P(M,P) 150mVP-P(N)
WF75 20uS 318mVP-P

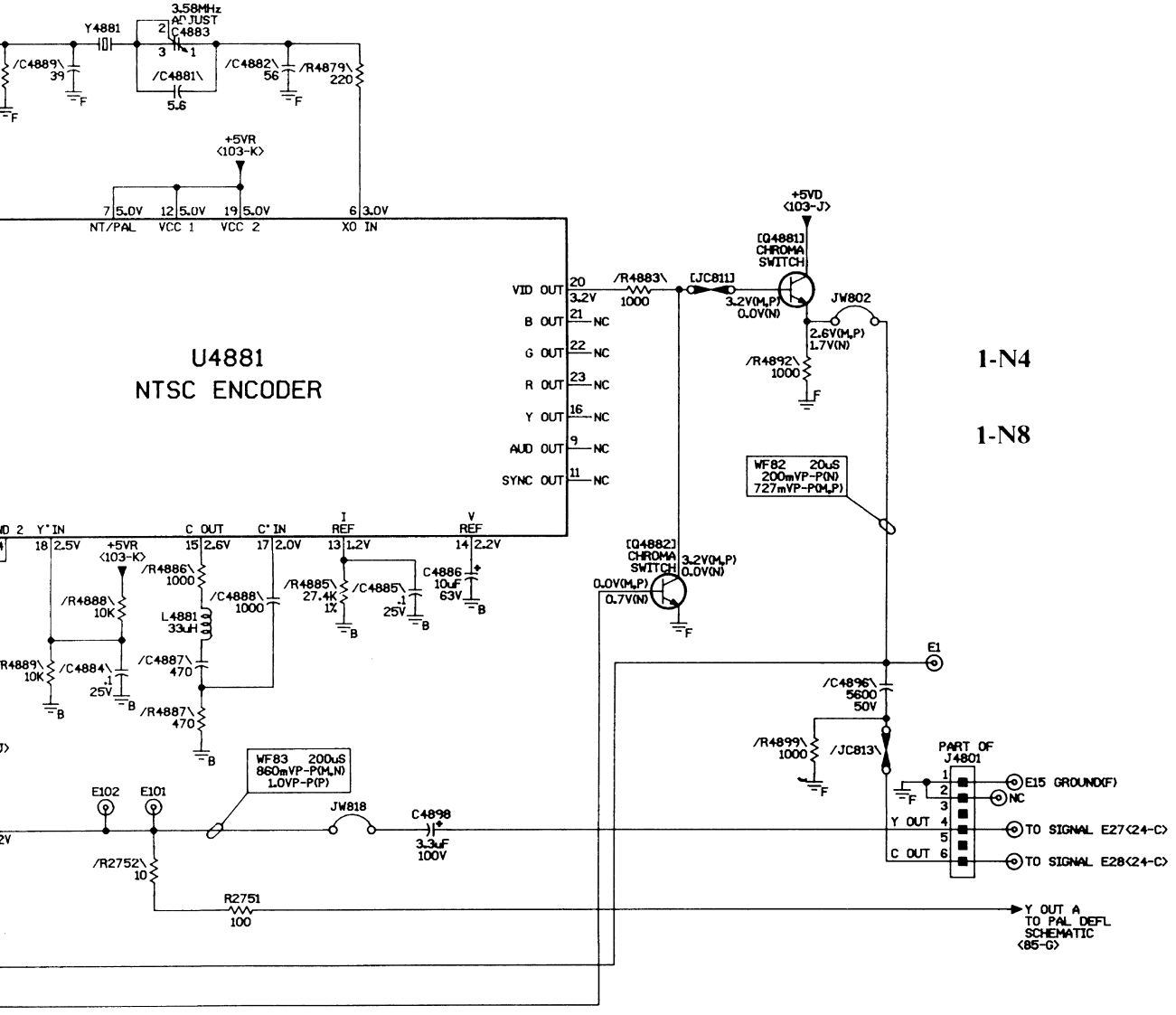

U4851
PAL DECODER
U4881
NTSC ENCODER
U4891 SWITCH
INH VEE VSS
U4861 AMP PART OF
WF78 200nS 200mVP-P
WF79 5mS 712mVP-P
WF80 200uS 5VP-P
WF81 200uS 880mVP-P(M,N) 1.0VP-P(P)
WF83 200uS 860mVP-P(M,N) 1.0VP-P(P)
DC VOLTAGE AND WAVEFORM NOTES
(M) = PAL M VOLTAGE
(N) = NTSC VOLTAGE
(P) = PAL N VOLTAGE
NO LETTER = ALL SIGNALS
n=NTSC waveform
p=PAL N waveform
no letter = all signals
WF76
WF77(n)
WF77(m,p)
WF78
WF79
WF81(P)
WF82(n)
WF82(m,p)
WF83(m,n)
WF83(p)

CAPACITORS

A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.

SYMBOLS

A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. < > INDICATES SCHEMATIC ZONE LOCATOR.
J. JW JC INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.



ORM NOTES

NALS

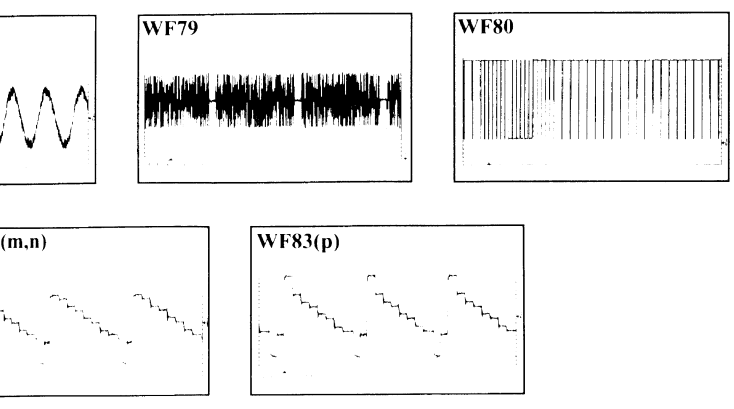
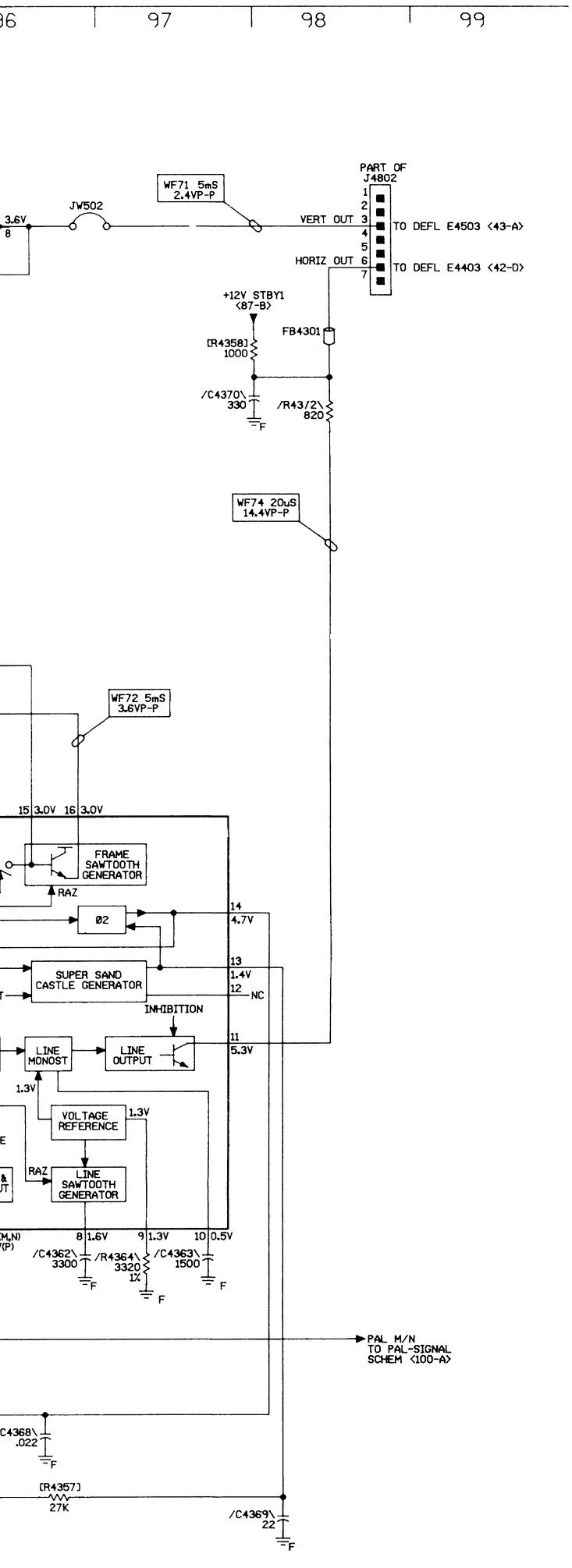


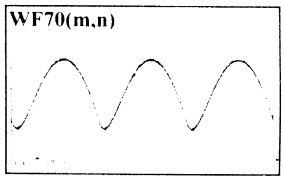
DIAGRAMA ESQUEMÁTICO DE DEFLEXÃO DE PAL



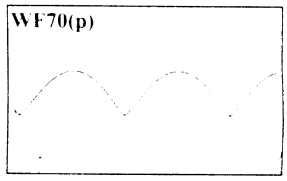
WAVEFORMS

m=PAL M waveform n=NTSC waveform p=PAL N waveform

WF70(m,n)

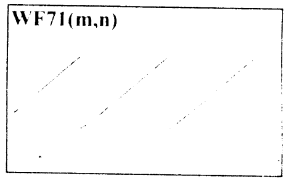


WF70(p)

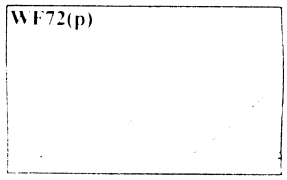


no letter = all signals

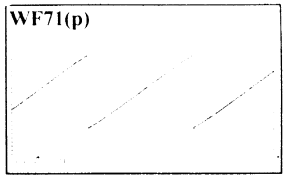
WF71(m,n)



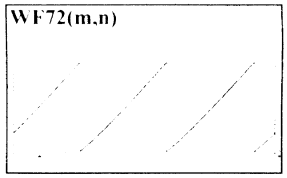
WF72(p)



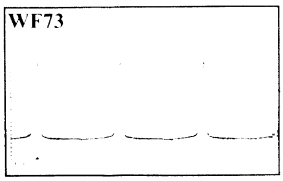
WF71(p)



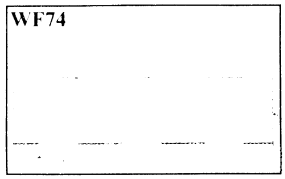
WF72(m,n)

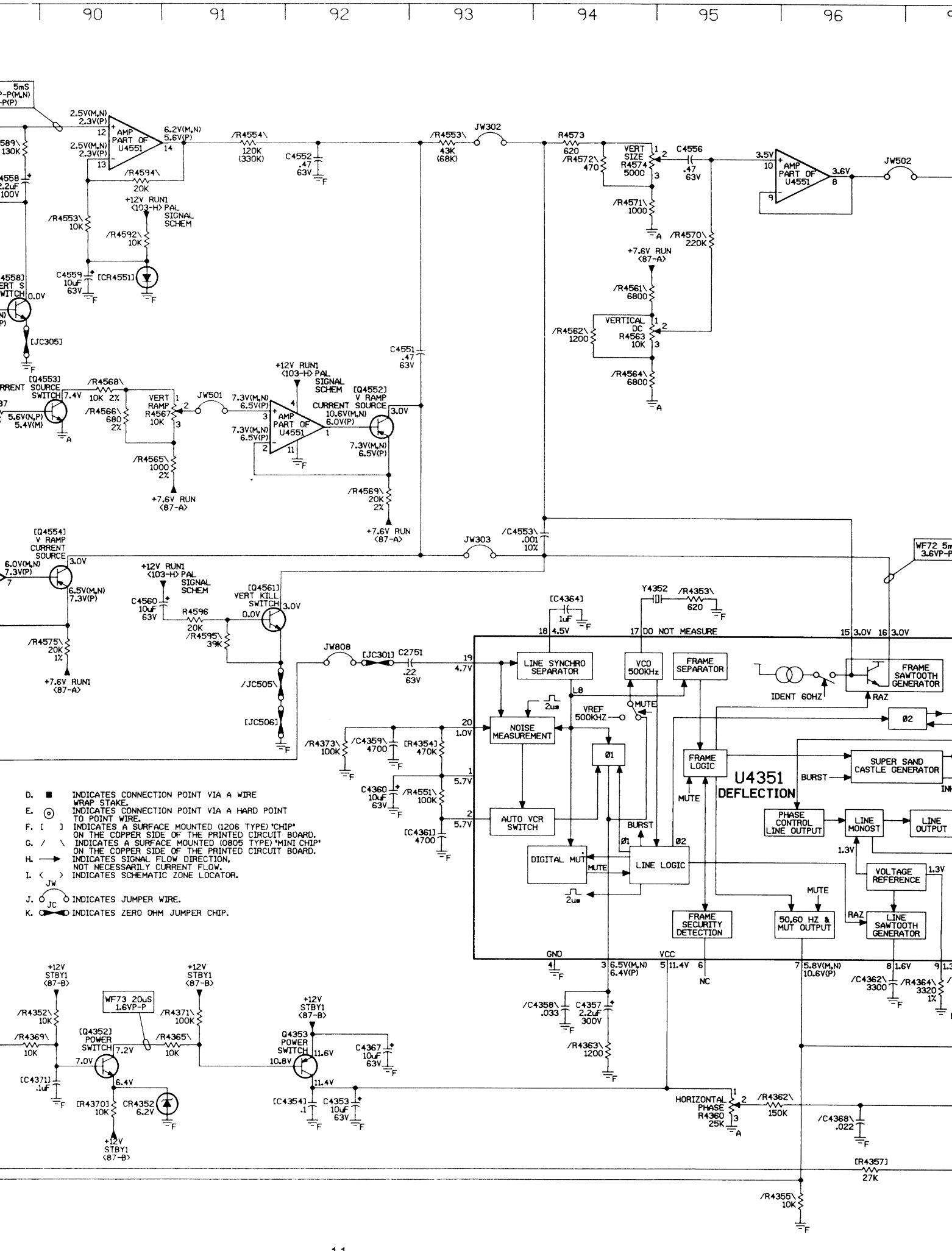


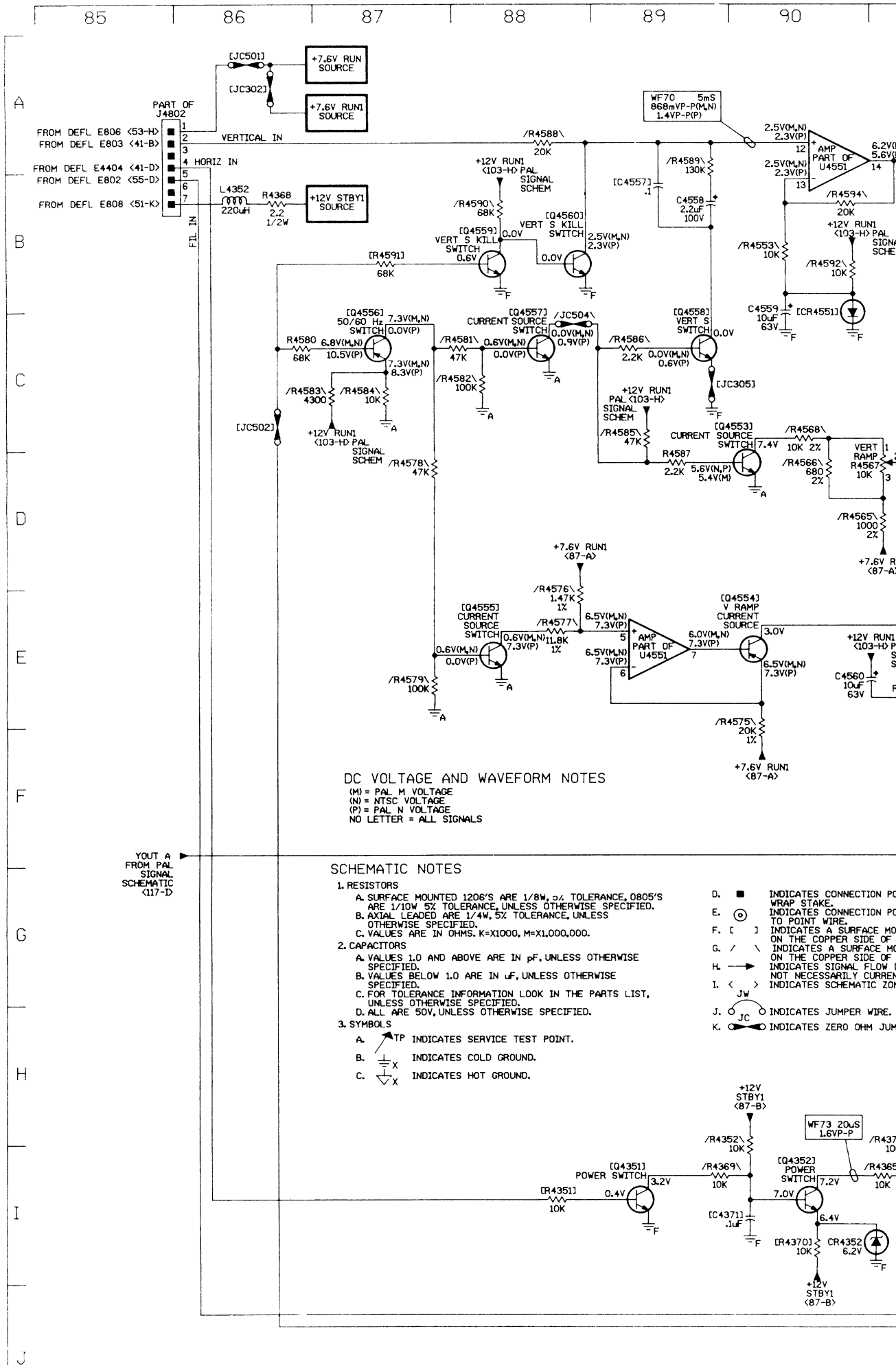
WF73



WF74




90
91
92
93
94
95
96
U4351
DEFLECTION
LINE SYNCHRO SEPARATOR
VCO 500KHz
FRAME SEPARATOR
FRAME SAWTOOTH GENERATOR
NOISE MEASUREMENT
AUTO VCR SWITCH
DIGITAL MUT
LINE LOGIC
FRAME LOGIC
FRAME SECURITY DETECTION
SUPER SAND CASTLE GENERATOR
PHASE CONTROL LINE OUTPUT
LINE MONOST
LINE OUTPUT
VOLTAGE REFERENCE
LINE SAWTOOTH GENERATOR
50,60 HZ & MUT OUTPUT
IDENT 60HZ
BURST
MUTE
RAZ
VREF 500KHZ
DO NOT MEASURE
NC
AMP PART OF U4551
VERT SIZE R4574 5000
VERTICAL DC R4563 10K
VERT RAMP R4567 10K
HORIZONTAL PHASE R4360 25K
+12V RUN1 (103-H) PAL SIGNAL SCHEM
+7.6V RUN (87-A)
+12V STBY1 (87-B)
WF73 20uS 1.6VP-P
WF72 5m 3.6VP-P
D. ■ INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. ⊙ INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) 'CHIP' ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) 'MINI CHIP' ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. → INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. < > INDICATES SCHEMATIC ZONE LOCATOR.
J. JW JC INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.


85
86
87
88
89
90
A
B
C
D
E
F
G
H
I
J
[JC501]
[JC302]
+7.6V RUN SOURCE
+7.6V RUN1 SOURCE
PART OF J4802
FROM DEFL E806 <53-H>
FROM DEFL E803 <41-B>
FROM DEFL E4404 <41-D>
FROM DEFL E802 <55-D>
FROM DEFL E808 <51-K>
VERTICAL IN
HORIZ IN
L4352
220uH
R4368
2.2
1/2W
+12V STBY1 SOURCE
FIL IN
/R4588\
20K
WF70 5mS
868mVP-P(M,N)
1.4VP-P(P)
2.5V(M,N)
2.3V(P)
AMP
PART OF
U4551
/R4589\
130K
[C4557]
.1
C4558
2.2uF
100V
/R4594\
20K
+12V RUN1
<103-H> PAL
SIGNAL
SCHEM
/R4590\
68K
[Q4560]
VERT S KILL
SWITCH
[Q4559]
VERT S KILL
SWITCH
0.6V
0.0V
2.5V(M,N)
2.3V(P)
[R4591]
68K
/R4553\
10K
/R4592\
10K
C4559
10uF
63V
[CR4551]
[Q4556]
50/60 Hz
SWITCH
7.3V(M,N)
0.0V(P)
R4580
68K
6.8V(M,N)
10.5V(P)
7.3V(M,N)
8.3V(P)
/R4581\
47K
0.6V(M,N)
0.0V(P)
[Q4557]
CURRENT SOURCE
SWITCH
/JC504\
0.0V(M,N)
0.9V(P)
/R4586\
2.2K
0.0V(M,N)
0.6V(P)
[Q4558]
VERT S
SWITCH
0.0V
[JC305]
/R4582\
100K
/R4583\
4300
/R4584\
10K
[JC502]
+12V RUN1
<103-H> PAL
SIGNAL
SCHEM
/R4578\
47K
+12V RUN1
PAL <103-H>
SIGNAL
SCHEM
/R4585\
47K
[Q4553]
CURRENT SOURCE
SWITCH
7.4V
R4587
2.2K
5.6V(M,P)
5.4V(M)
/R4568\
10K 2%
/R4566\
680
2%
VERT
RAMP
R4567
10K
/R4565\
1000
2%
+7.6V RUN1
<87-A>
/R4576\
1.47K
1%
/R4577\
11.8K
1%
[Q4555]
CURRENT SOURCE
SWITCH
0.6V(M,N)
7.3V(P)
0.6V(M,N)
0.0V(P)
6.5V(M,N)
7.3V(P)
AMP
PART OF
U4551
6.0V(M,N)
7.3V(P)
[Q4554]
V RAMP
CURRENT SOURCE
3.0V
6.5V(M,N)
7.3V(P)
/R4579\
100K
/R4575\
20K
1%
+7.6V RUN1
<87-A>
C4560
10uF
63V
DC VOLTAGE AND WAVEFORM NOTES
(M) = PAL M VOLTAGE
(N) = NTSC VOLTAGE
(P) = PAL N VOLTAGE
NO LETTER = ALL SIGNALS
YOUT A
FROM PAL
SIGNAL
SCHEMATIC
<117-D>
SCHEMATIC NOTES
1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION PO WRAP STAKE.
E. INDICATES CONNECTION PO TO POINT WIRE.
F. [ ] INDICATES A SURFACE MO ON THE COPPER SIDE OF
G. / \ INDICATES A SURFACE MO ON THE COPPER SIDE OF
H. INDICATES SIGNAL FLOW NOT NECESSARILY CURREN
I. < > INDICATES SCHEMATIC ZO
J. JW JC INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUM
+12V STBY1
<87-B>
/R4352\
10K
[Q4351]
POWER SWITCH
3.2V
0.4V
[R4351]
10K
/R4369\
10K
[Q4352]
POWER SWITCH
7.2V
7.0V
6.4V
[C4371]
.1uF
[R4370]
10K
CR4352
6.2V
WF73 20uS
1.6VP-P
+12V STBY1
<87-B>

Placa de Pal

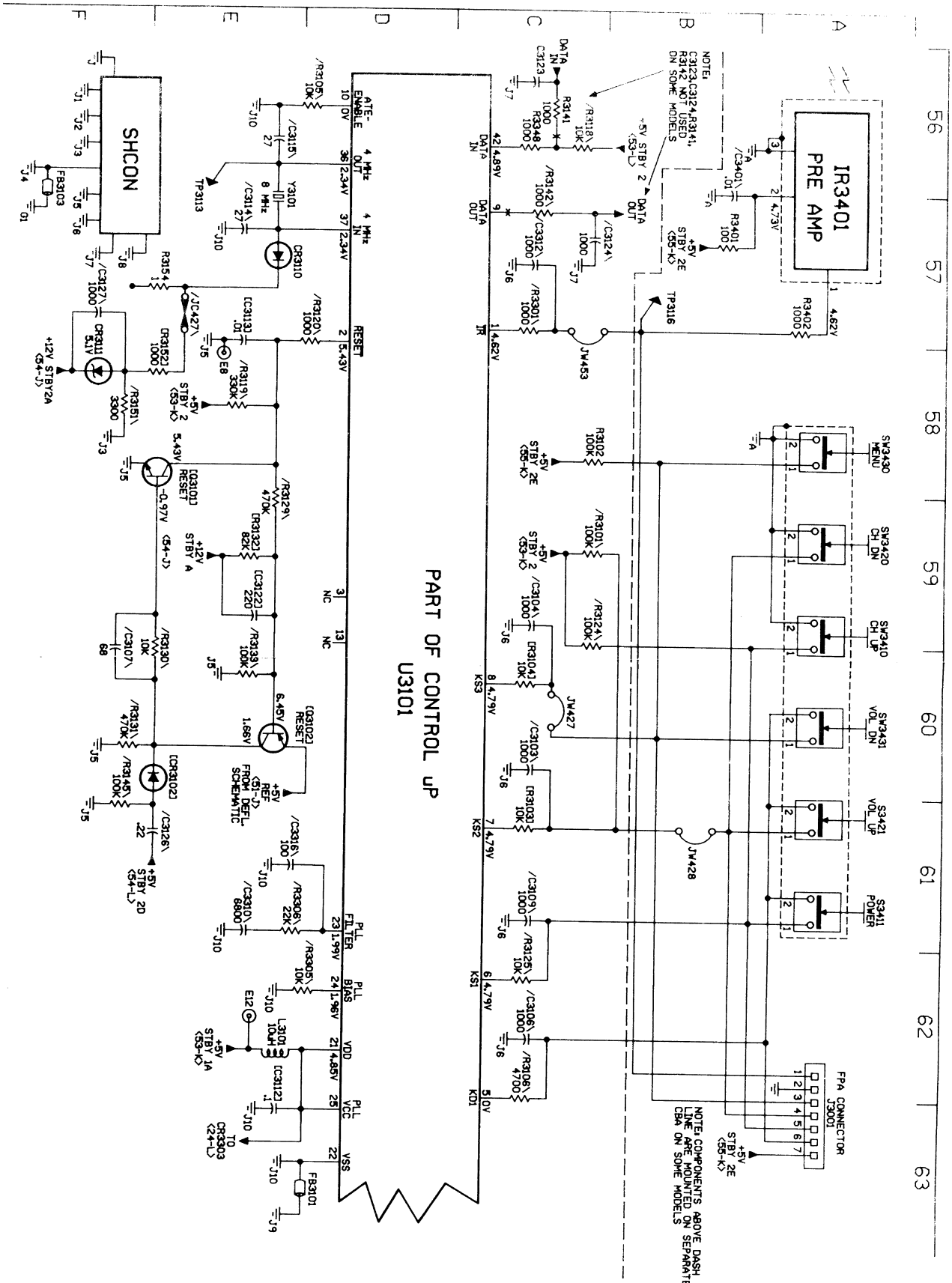
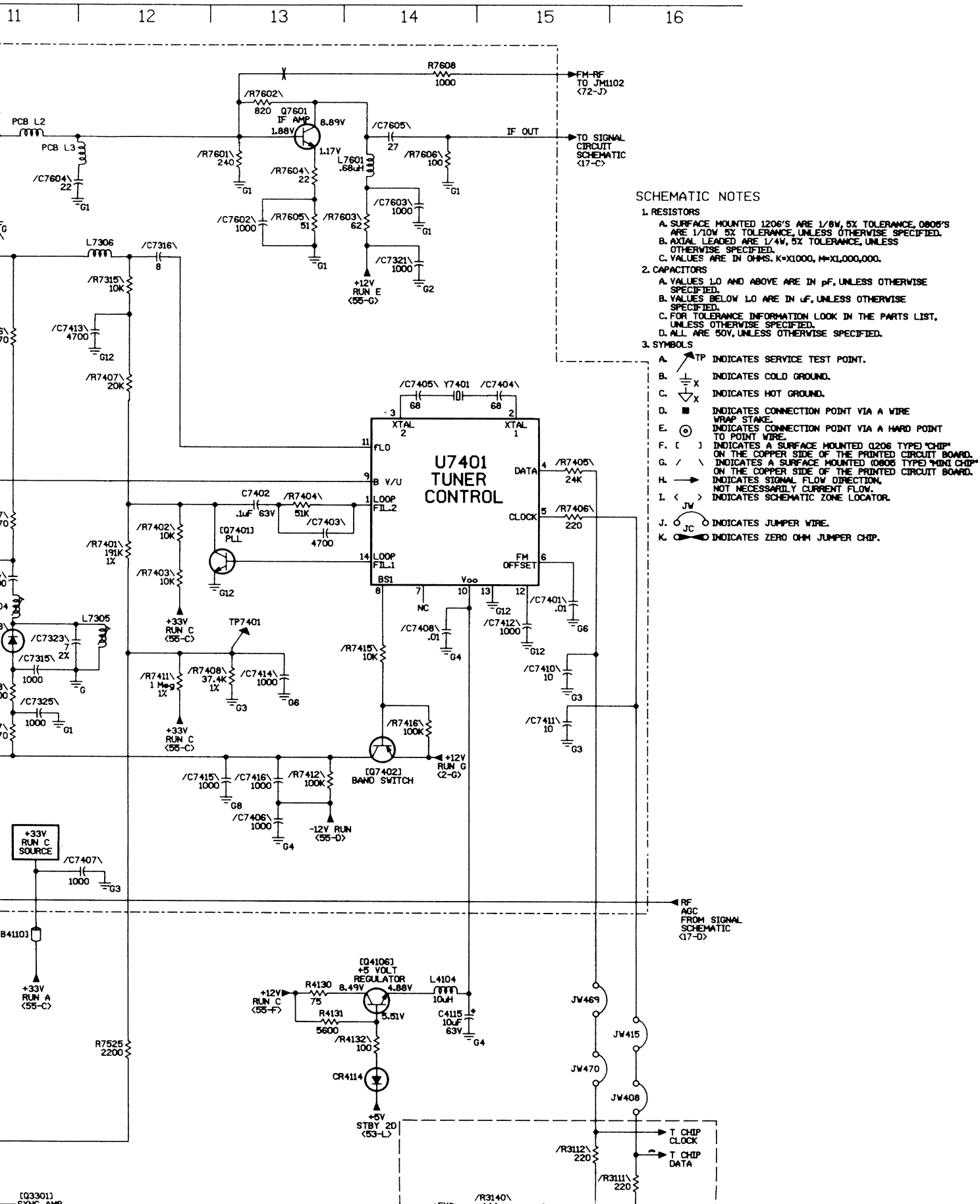

FPA CONTROL SCHEMATIC
IR3401
PRE AMP
SHCON
PART OF CONTROL uP
U3101
FPA CONNECTOR
J3001
SW3430
MENU
SW3420
CH_DN
SW3410
CH_UP
SW3431
VOL_DN
S3421
VOL_UP
S3411
POWER
JW453
JW427
JW428
TP3116
TP3113
NOTE: COMPONENTS ABOVE DASH LINE ARE MOUNTED ON SEPARATE CBA ON SOME MODELS
NOTE: C3123,C312,R3141, R3142 NOT USED ON SOME MODELS
DATA IN
DATA OUT
RESET
PLL FILTER
PLL BIAS
VDD
PLL VCC
VSS
+5V STBY 2E <55-K>
+5V STBY 2 <53-K>
+5V STBY 2A <54-J>
+5V STBY 2D <54-L>
+5V STBY 1A <53-K>
+12V STBY A
+12V STBY2A <54-J>
+5V REF <5-J> FROM DEFL SCHEMATIC
TO CR3303 <24-L>

DIAGRAMA ESQUEMÁTICO DO TUNER



SCHEMATIC NOTES

1. RESISTORS
   - A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
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   - C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   - A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
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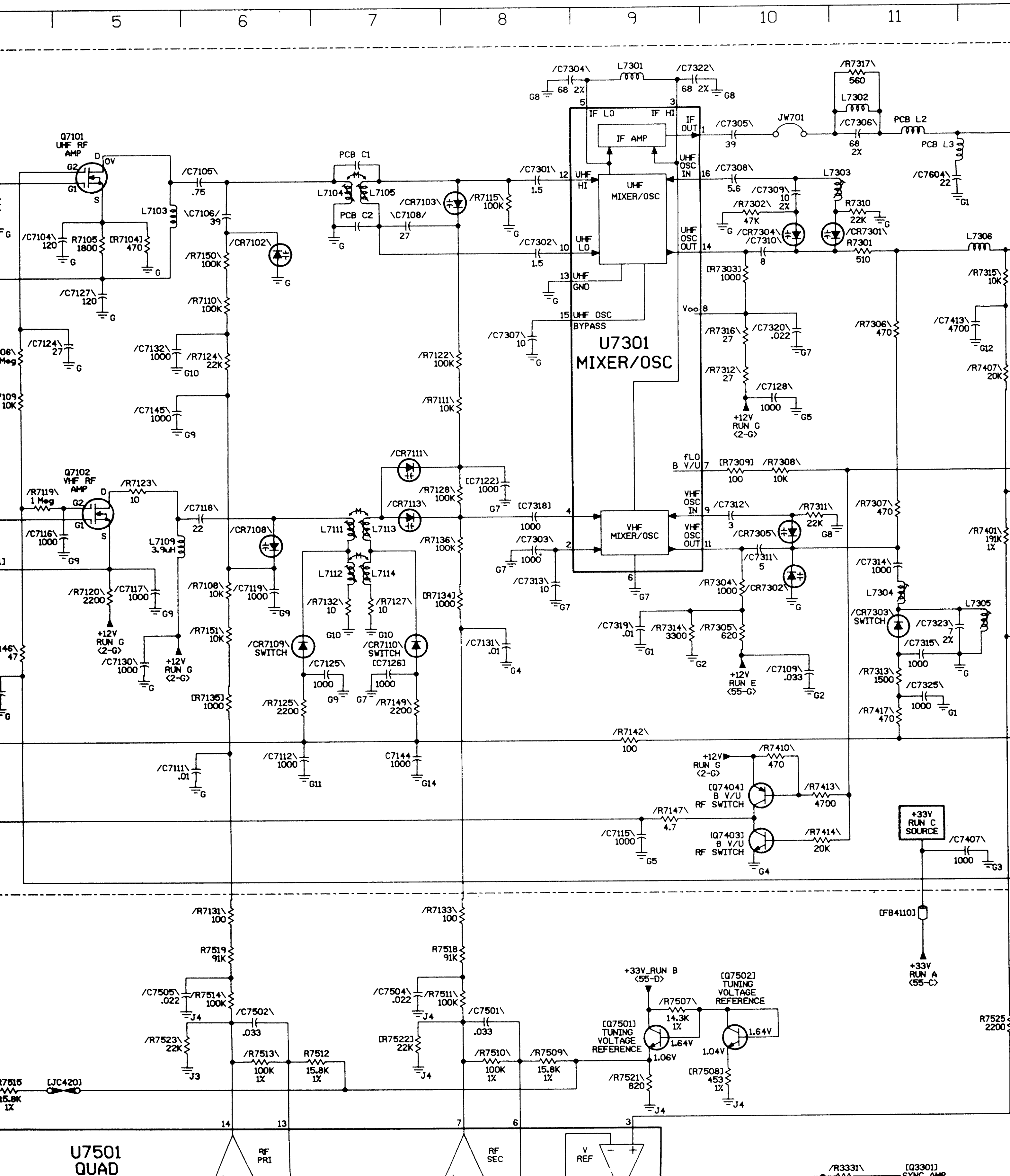
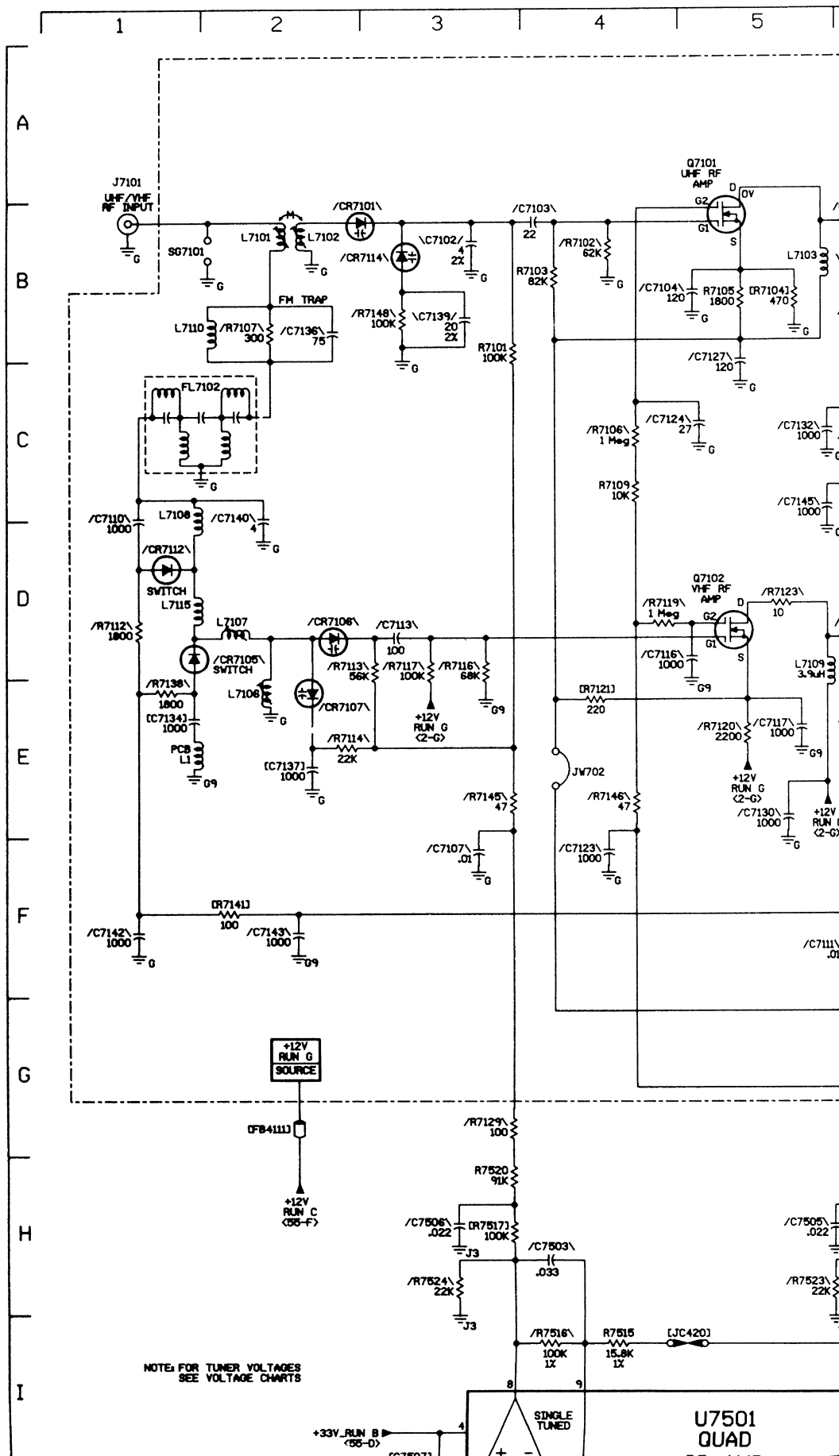
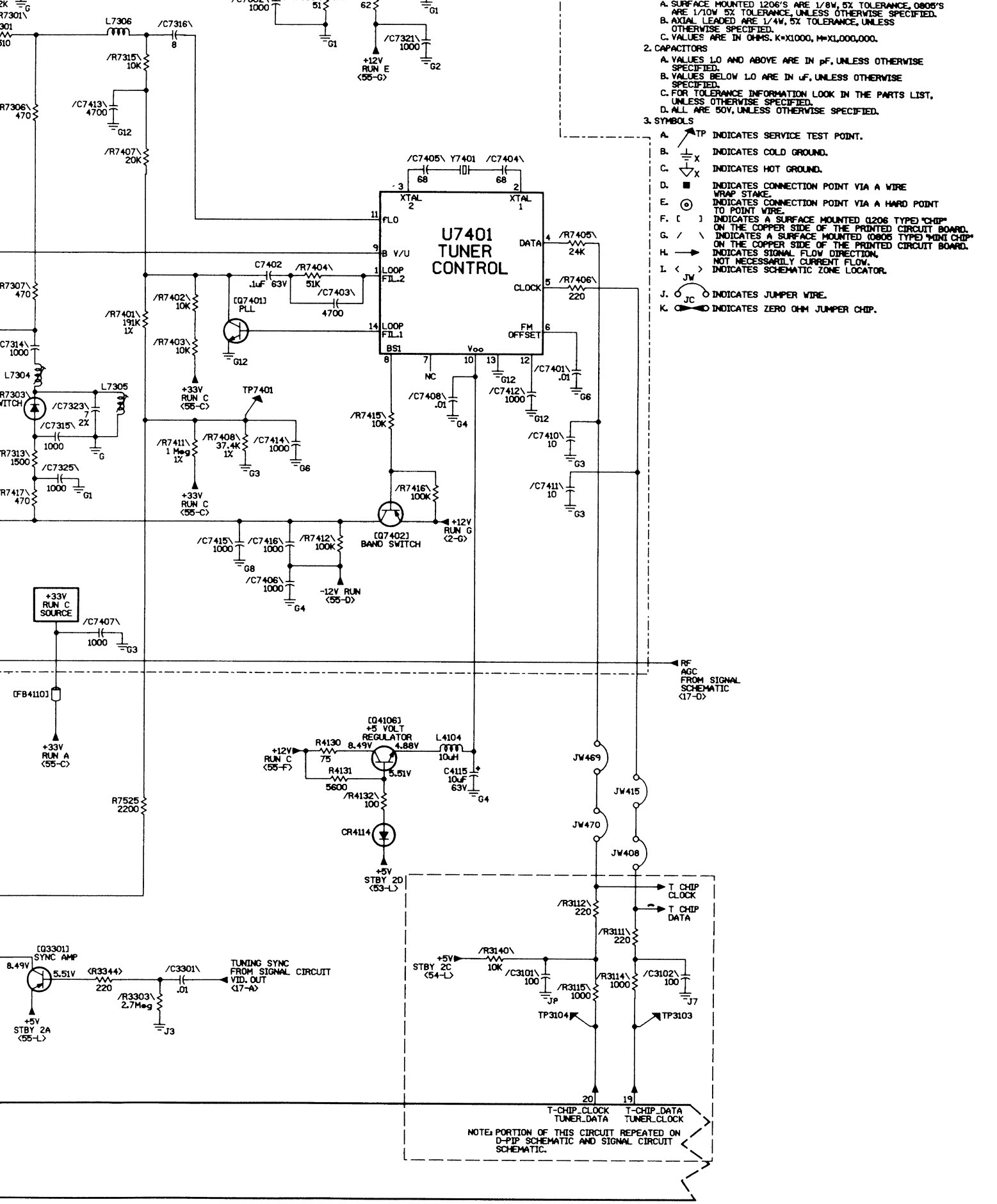
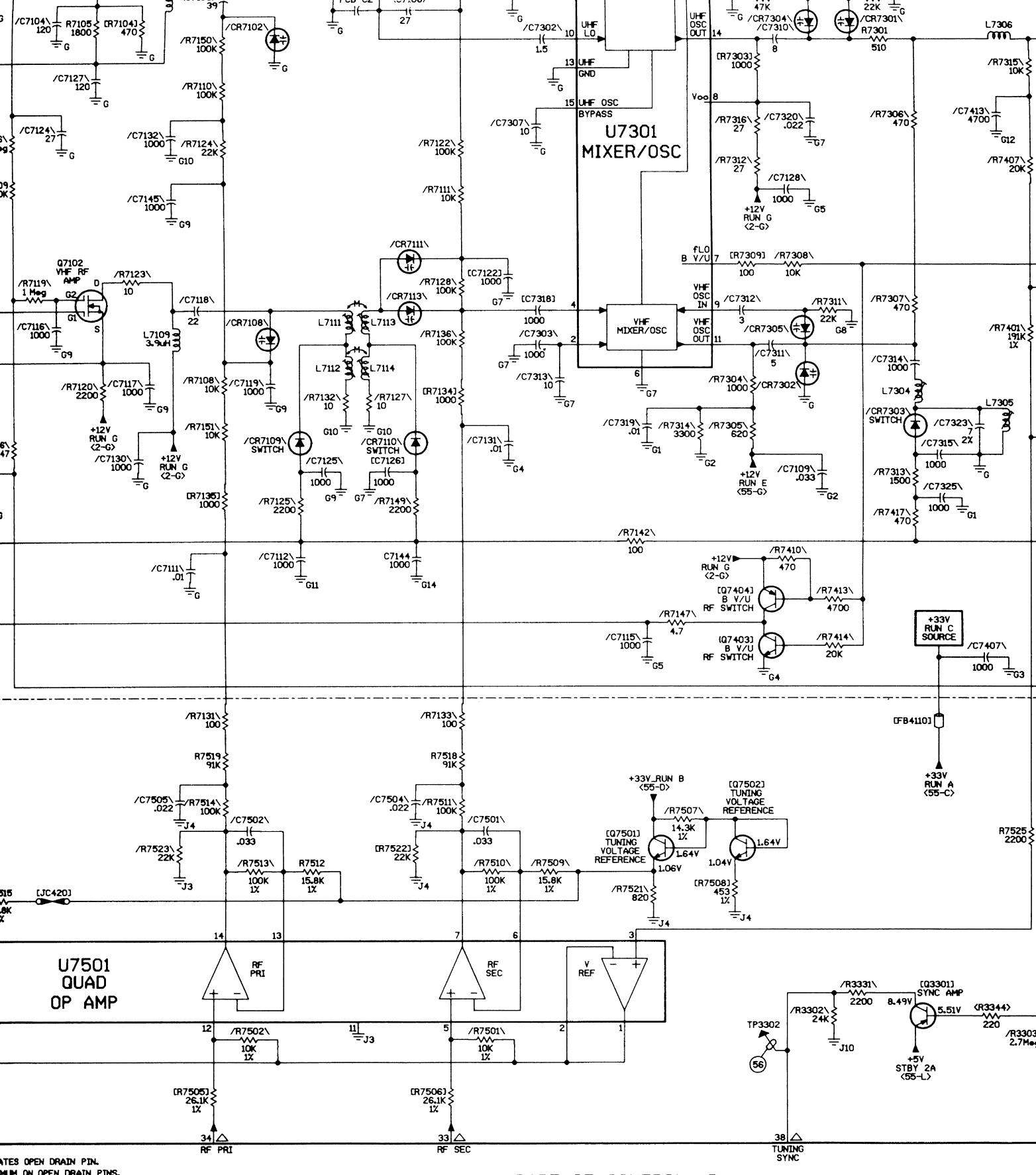
   - G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW INDICATES JUMPER WIRE.
   - K. JC INDICATES ZERO OHM JUMPER CHIP.



5
6
7
8
9
10
11
Q7101
UHF RF
AMP
D
0V
G2
G1
S
/C7105\
.75
L7103
\C7106/
39
/C7104\
120
R7105
1800
[R7104]
470
/C7127\
120
/CR7102\
/R7150\
100K
/R7110\
100K
/C7124\
27
/C7132\
1000
/R7124\
22K
/C7145\
1000
PCB C1
L7104
L7105
PCB C2
\C7108/
27
/CR7103\
/R7115\
100K
/C7304\
68 2%
L7301
/C7322\
68 2%
5
3
IF LO
IF HI
IF AMP
IF
OUT
1
/C7305\
39
JW701
/R7317\
560
L7302
/C7306\
68
2%
PCB L2
PCB L3
/C7604\
22
/C7301\
1.5
12
UHF
HI
UHF
MIXER/OSC
UHF
OSC
IN
16
/C7308\
5.6
L7303
/C7309\
10
2%
/R7302\
47K
R7310
22K
/CR7304\
/C7310\
8
/CR7301\
R7301
510
L7306
/C7302\
1.5
10
UHF
LO
UHF
OSC
OUT
14
[R7303]
1000
/R7315\
10K
13
UHF
GND
15
UHF OSC
BYPASS
/C7307\
10
Voo
8
U7301
MIXER/OSC
/R7316\
27
/C7320\
.022
/C7413\
4700
/R7306\
470
/R7312\
27
/C7128\
1000
/R7407\
20K
+12V
RUN G
(2-G)
/R7122\
100K
/R7111\
10K
fLO
B V/U
7
[R7309]
100
/R7308\
10K
Q7102
VHF RF
AMP
/R7119\
1 Meg
/R7123\
10
/C7116\
1000
/C7118\
22
L7109
3.9uH
/CR7111\
/CR7113\
[C7122]
1000
/R7128\
100K
[C7318]
1000
4
VHF
MIXER/OSC
VHF
OSC
IN
9
/C7312\
3
/R7311\
22K
/R7307\
470
/CR7108\
L7111
L7113
/R7136\
100K
/C7303\
1000
2
VHF
OSC
OUT
11
/CR7305\
/R7401\
191K
1%
/C7311\
5
/C7314\
1000
L7112
L7114
/C7313\
10
6
/R7304\
1000
/CR7302\
L7304
/R7120\
2200
/C7117\
1000
/R7108\
10K
/C7119\
1000
/R7132\
10
/R7127\
10
[R7134]
1000
/C7319\
.01
/R7314\
3300
/R7305\
620
/CR7303\
SWITCH
L7305
/C7323\
7
2%
/C7315\
1000
+12V
RUN G
(2-G)
/C7130\
1000
/R7151\
10K
/CR7109\
SWITCH
/CR7110\
SWITCH
/C7131\
.01
+12V
RUN E
(55-G)
/C7109\
.033
/R7313\
1500
/C7125\
1000
[C7126]
1000
/C7325\
1000
[R7135]
1000
/R7125\
2200
/R7149\
2200
/R7417\
470
/R7142\
100
/C7111\
.01
/C7112\
1000
C7144
1000
+12V
RUN G
(2-G)
/R7410\
470
[Q7404]
B V/U
RF SWITCH
/R7413\
4700
/R7147\
4.7
/C7115\
1000
[Q7403]
B V/U
RF SWITCH
/R7414\
20K
+33V
RUN C
SOURCE
/C7407\
1000
[FB4110]
+33V
RUN A
(55-C)
/R7131\
100
R7519
91K
/C7505\
.022
/R7514\
100K
/C7502\
.033
/R7523\
22K
/R7513\
100K
1%
R7512
15.8K
1%
R7515
15.8K
1%
[JC420]
/R7133\
100
R7518
91K
/C7504\
.022
/R7511\
100K
/C7501\
.033
[R7522]
22K
/R7510\
100K
1%
/R7509\
15.8K
1%
+33V_RUN B
(55-D)
/R7507\
14.3K
1%
[Q7502]
TUNING
VOLTAGE
REFERENCE
[Q7501]
TUNING
VOLTAGE
REFERENCE
1.64V
1.06V
1.04V
/R7521\
820
[R7508]
453
1%
R7525
2200
14
13
7
6
3
U7501
QUAD
RF
PRI
RF
SEC
V
REF
/R3331\
[Q3301]


J7101
UHF/VHF
RF INPUT
SG7101
L7101
L7102
/CR7101\
/CR7114\
\C7102/
4
2%
/C7103\
22
Q7101
UHF RF
AMP
D
G2
G1
S
0V
/R7102\
62K
R7103
82K
L7103
/C7104\
120
R7105
1800
[R7104]
470
FM TRAP
L7110
/R7107\
300
/C7136\
75
/R7148\
100K
\C7139/
20
2%
R7101
100K
/C7127\
120
FL7102
/R7106\
1 Meg
/C7124\
27
/C7132\
1000
R7109
10K
/C7145\
1000
/C7110\
1000
L7108
/C7140\
4
/CR7112\
SWITCH
L7115
/R7112\
1800
L7107
/CR7106\
/C7113\
100
Q7102
VHF RF
AMP
/R7123\
10
/R7119\
1 Meg
/CR7105\
SWITCH
/R7113\
56K
/R7117\
100K
/R7116\
68K
/C7116\
1000
L7109
3.9uH
/R7138\
1800
L7106
/CR7107\
[R7121]
220
/R7120\
2200
/C7117\
1000
[C7134]
1000
PCB
L1
+12V
RUN G
(2-G)
/R7114\
22K
[C7137]
1000
JW702
/R7145\
47
/R7146\
47
/C7130\
1000
/C7107\
.01
/C7123\
1000
[R7141]
100
/C7142\
1000
/C7143\
1000
/C7111\
.01
+12V
RUN G
SOURCE
[FB4111]
/R7129\
100
R7520
91K
+12V
RUN C
(55-F)
/C7506\
.022
[R7517]
100K
/C7503\
.033
/C7505\
.022
/R7524\
22K
/R7523\
22K
/R7516\
100K
1%
R7515
15.8K
1%
[JC420]
NOTE: FOR TUNER VOLTAGES
SEE VOLTAGE CHARTS
+33V_RUN_B
(55-D)
SINGLE
TUNED
U7501
QUAD


1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. INDICATES SCHEMATIC ZONE LOCATOR.
J. INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.
U7401 TUNER CONTROL
XTAL 2
XTAL 1
FLO
B V/U
LOOP FIL_2
LOOP FIL_1
BS1
NC
DATA
CLOCK
FM OFFSET
Vcc
[Q7401] PLL
[Q7402] BAND SWITCH
[Q4106] +5 VOLT REGULATOR
[Q3301] SYNC AMP
[FB4110]
CR4114
TP7401
TP3104
TP3103
+33V RUN C SOURCE
+33V RUN C
+33V RUN A
+12V RUN E
+12V RUN G
+12V RUN C
-12V RUN
+5V STBY 2D
+5V STBY 2C
+5V STBY 2A
RF AGC FROM SIGNAL SCHEMATIC
TUNING SYNC FROM SIGNAL CIRCUIT
T CHIP CLOCK
T CHIP DATA
T-CHIP_CLOCK TUNER_DATA
T-CHIP_DATA TUNER_CLOCK
NOTE: PORTION OF THIS CIRCUIT REPEATED ON D-PIP SCHEMATIC AND SIGNAL CIRCUIT SCHEMATIC.


U7301
MIXER/OSC
VHF MIXER/OSC
U7501
QUAD
OP AMP
RF PRI
RF SEC
V REF
PART OF CONTROL uP
U3101

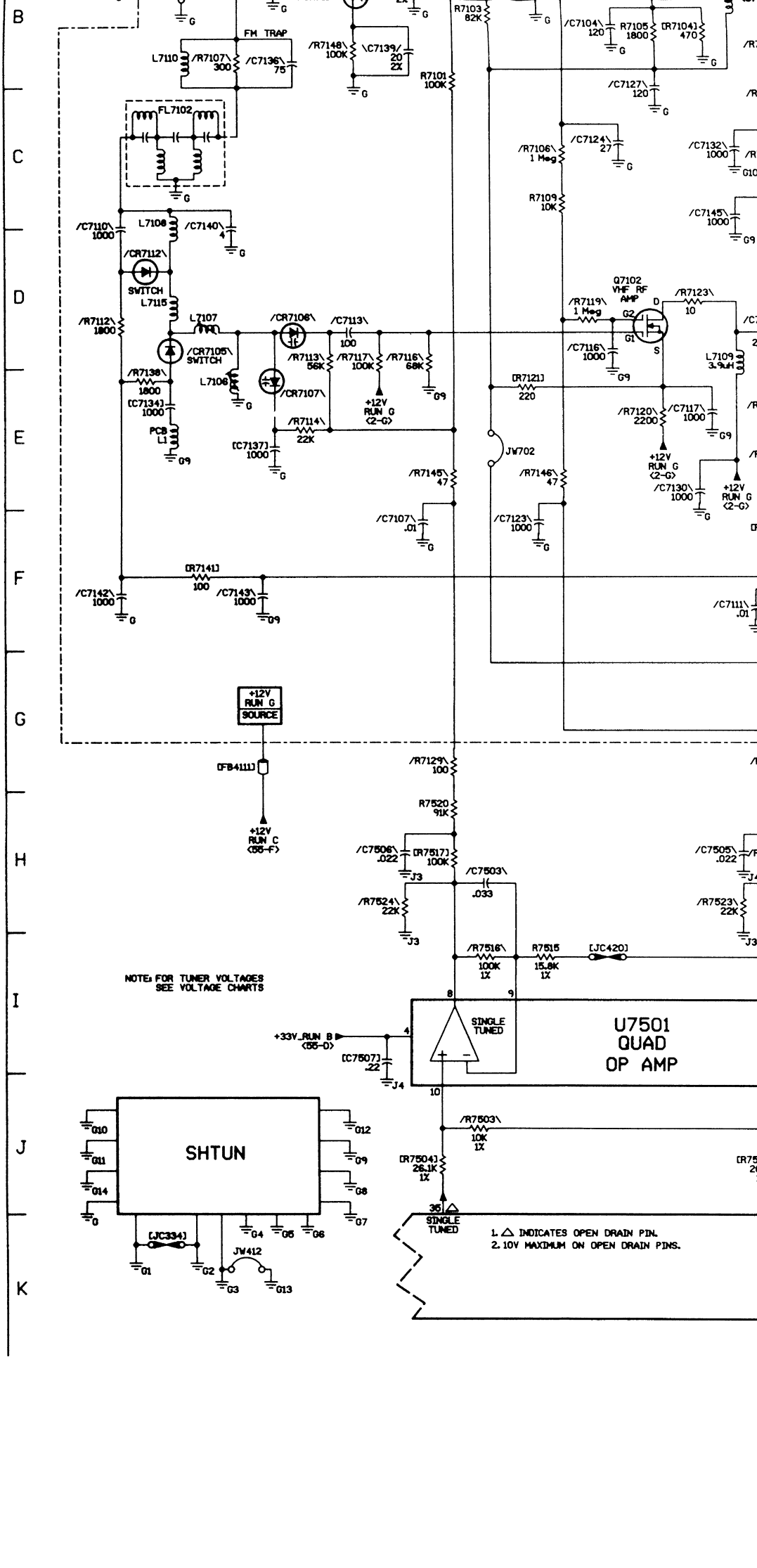
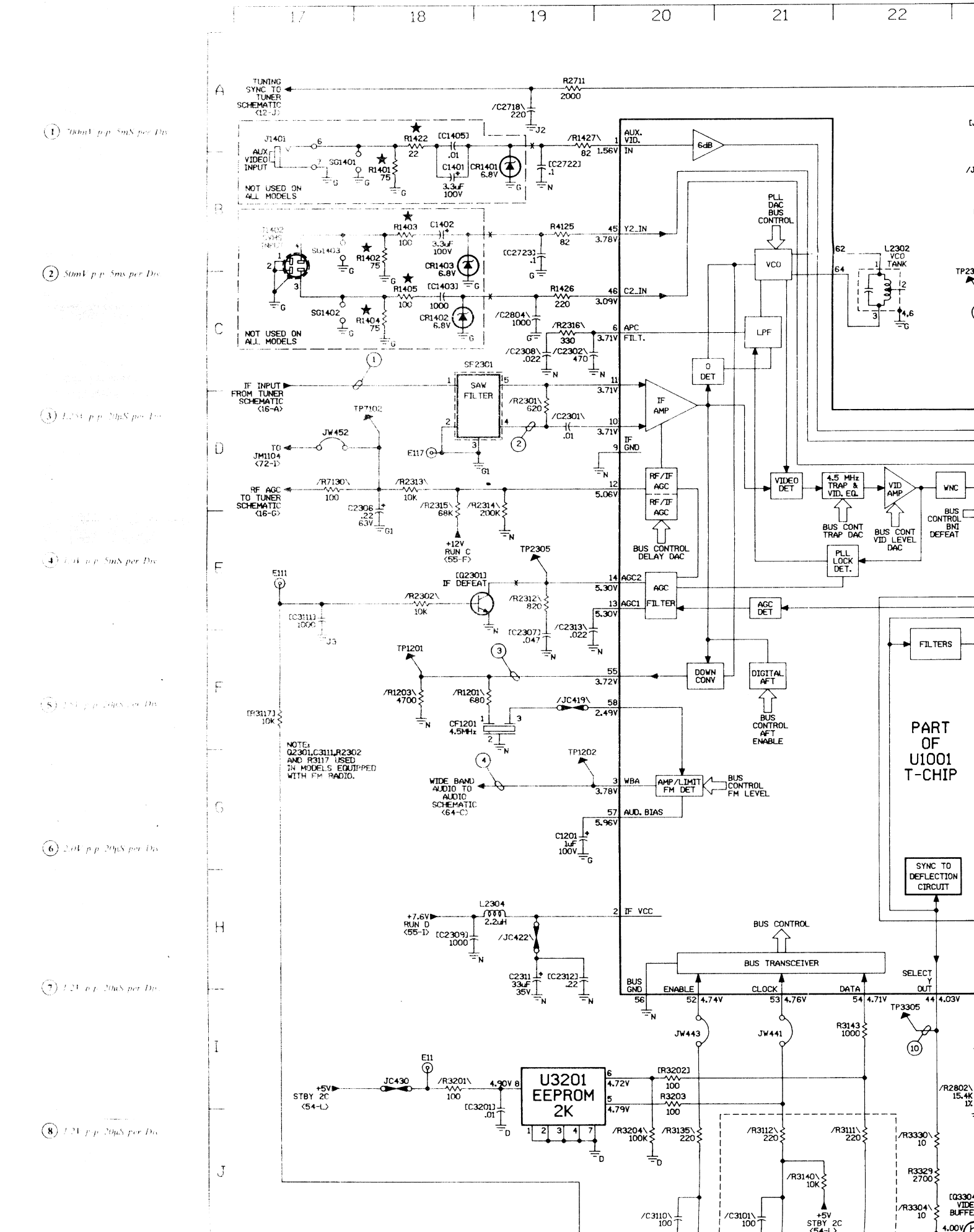
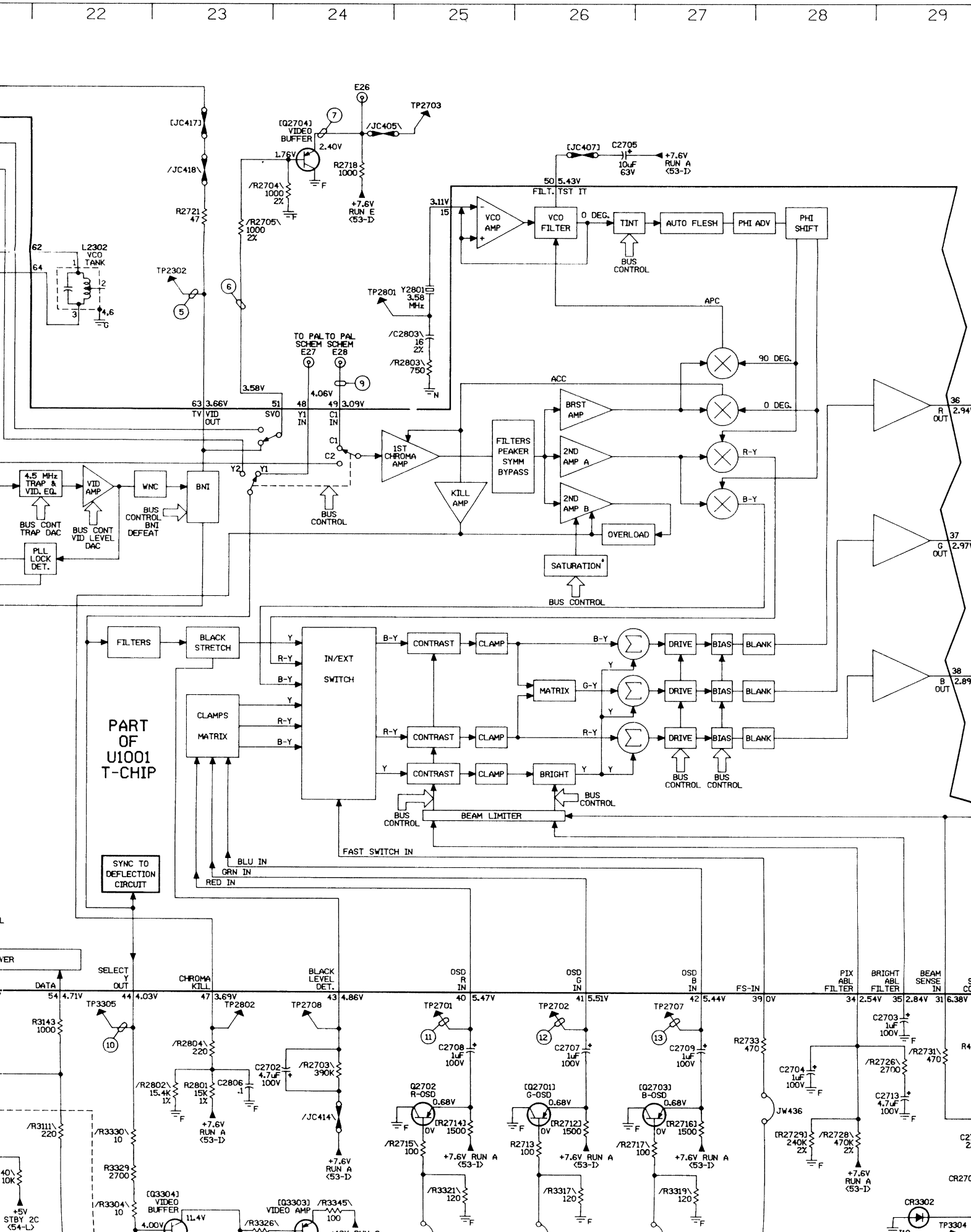
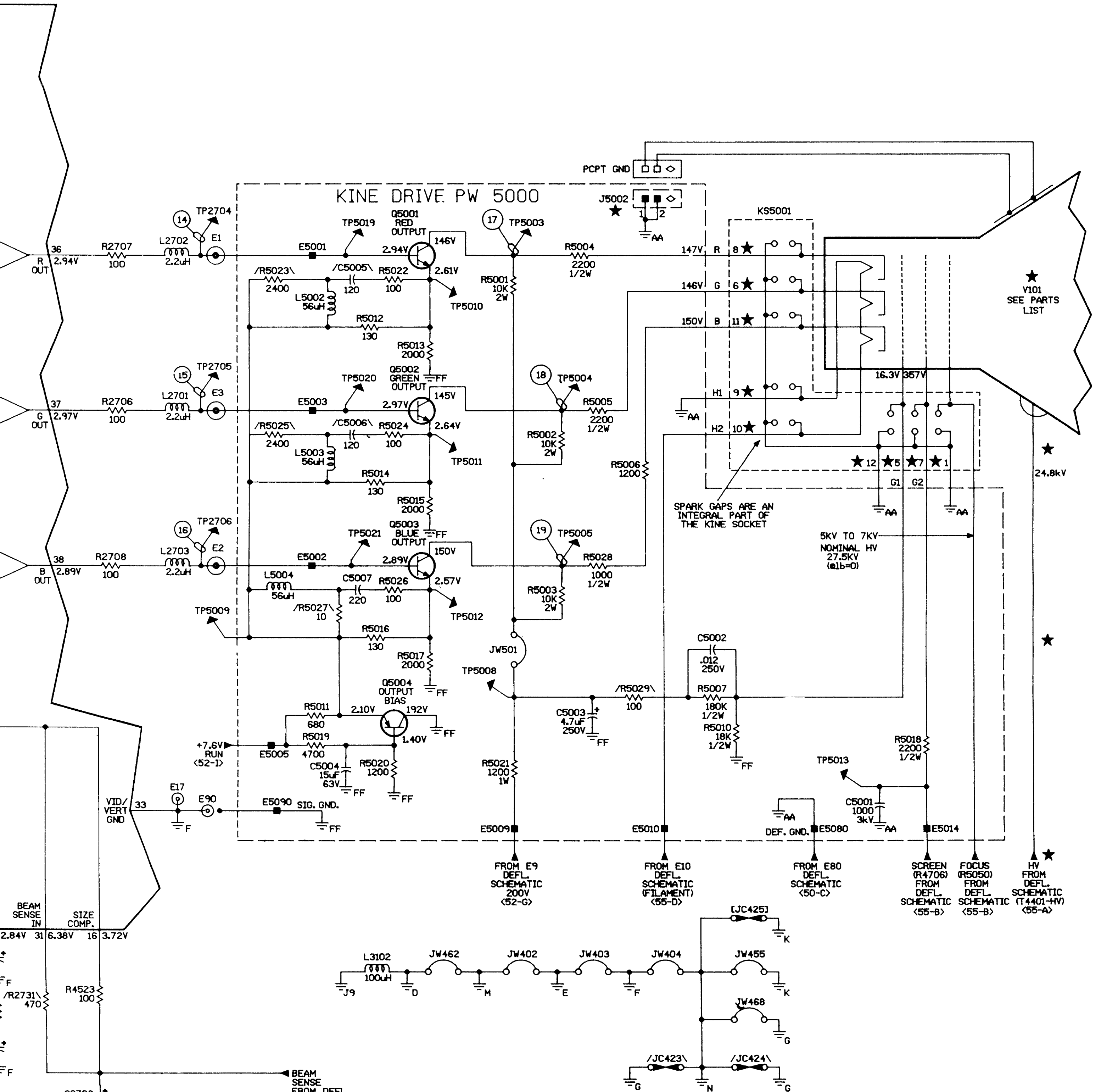

FM TRAP
L7110
/R7107\ 300
/C7136\ 75
FL7102
/R7148\ 100K
\C7139/ 20 2X
R7101 100K
R7103 82K
/C7104\ 120
R7105 1800
[R7104] 470
/C7127\ 120
/R7106\ 1 Meg
/C7124\ 27
/C7132\ 1000
R7109 10K
/C7145\ 1000
/C7110\ 1000
L7108
/C7140\ 4
/CR7112\
SWITCH
L7115
/R7112\ 1800
L7107
/CR7106\
/C7113\ 100
/CR7105\
SWITCH
/R7113\ 56K
/R7117\ 100K
/R7116\ 68K
/R7138\ 1800
[C7134] 1000
PCB
L1
L7106
/CR7107\
+12V RUN G (2-G)
/R7114\ 22K
[C7137] 1000
Q7102 VHF RF AMP
/R7119\ 1 Meg
/R7123\ 10
/C7116\ 1000
L7109 3.9uH
[R7121] 220
/R7120\ 2200
/C7117\ 1000
JW702
/R7145\ 47
/R7146\ 47
/C7130\ 1000
/C7107\ .01
/C7123\ 1000
[R7141] 100
/C7142\ 1000
/C7143\ 1000
/C7111\ .01
+12V RUN G SOURCE
[FB4111]
+12V RUN C (55-F)
/R7129\ 100
R7520 91K
/C7506\ .022
[R7517] 100K
/C7503\ .033
/C7505\ .022
/R7524\ 22K
/R7523\ 22K
/R7516\ 100K 1%
R7515 15.8K 1%
[JC420]
NOTE: FOR TUNER VOLTAGES SEE VOLTAGE CHARTS
+33V_RUN_B (55-D)
[C7507] .22
SINGLE TUNED
U7501 QUAD OP AMP
/R7503\ 10K 1%
[R7504] 26.1K 1%
SINGLE TUNED
SHTUN
[JC334]
JW412
1. △ INDICATES OPEN DRAIN PIN.
2. 10V MAXIMUM ON OPEN DRAIN PINS.

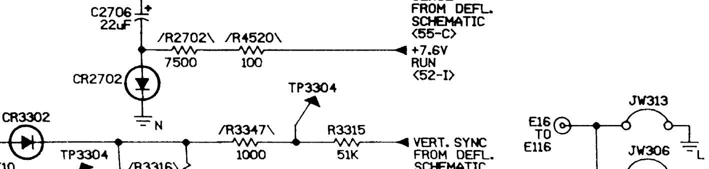
DIAGRAMA ESQUEMÁTICO DO SINAL




22
23
24
25
26
27
28
29
PART OF U1001 T-CHIP
VCO AMP
VCO FILTER
TINT
AUTO FLESH
PHI ADV
PHI SHIFT
BUS CONTROL
APC
90 DEG.
0 DEG.
R-Y
B-Y
ACC
BRST AMP
1ST CHROMA AMP
2ND AMP A
2ND AMP B
KILL AMP
FILTERS PEAKER SYMM BYPASS
OVERLOAD
SATURATION
4.5 MHz TRAP & VID. EQ.
VID AMP
WNC
BNI
BUS CONT TRAP DAC
BUS CONT VID LEVEL DAC
BUS CONTROL BNI DEFEAT
PLL LOCK DET.
FILTERS
BLACK STRETCH
IN/EXT SWITCH
CLAMPS MATRIX
CONTRAST
CLAMP
MATRIX
DRIVE
BIAS
BLANK
BRIGHT
BEAM LIMITER
FAST SWITCH IN
BLU IN
GRN IN
RED IN
SYNC TO DEFLECTION CIRCUIT
L2302 VCO TANK
TP2302
TP2703
TP2801
Y2801 3.58 MHz
TO PAL SCHEM E27
TO PAL SCHEM E28
E26
[Q2704] VIDEO BUFFER
[JC417]
[JC418]
[JC405]
[JC407]
C2705 10uF 63V
+7.6V RUN A <53-I>
+7.6V RUN E <53-I>
FILT. TST IT
TV VID OUT
SVO
Y1 IN
C1 IN
R OUT
G OUT
B OUT
DATA
SELECT Y OUT
CHROMA KILL
BLACK LEVEL DET.
OSD R IN
OSD G IN
OSD B IN
FS-IN
PIX ABL FILTER
BRIGHT ABL FILTER
BEAM SENSE IN
TP3305
TP2802
TP2708
TP2701
TP2702
TP2707
Q2702 R-OSD
[Q2701] G-OSD
[Q2703] B-OSD
[Q3304] VIDEO BUFFER
[Q3303] VIDEO AMP
JW436
CR3302
TP3304

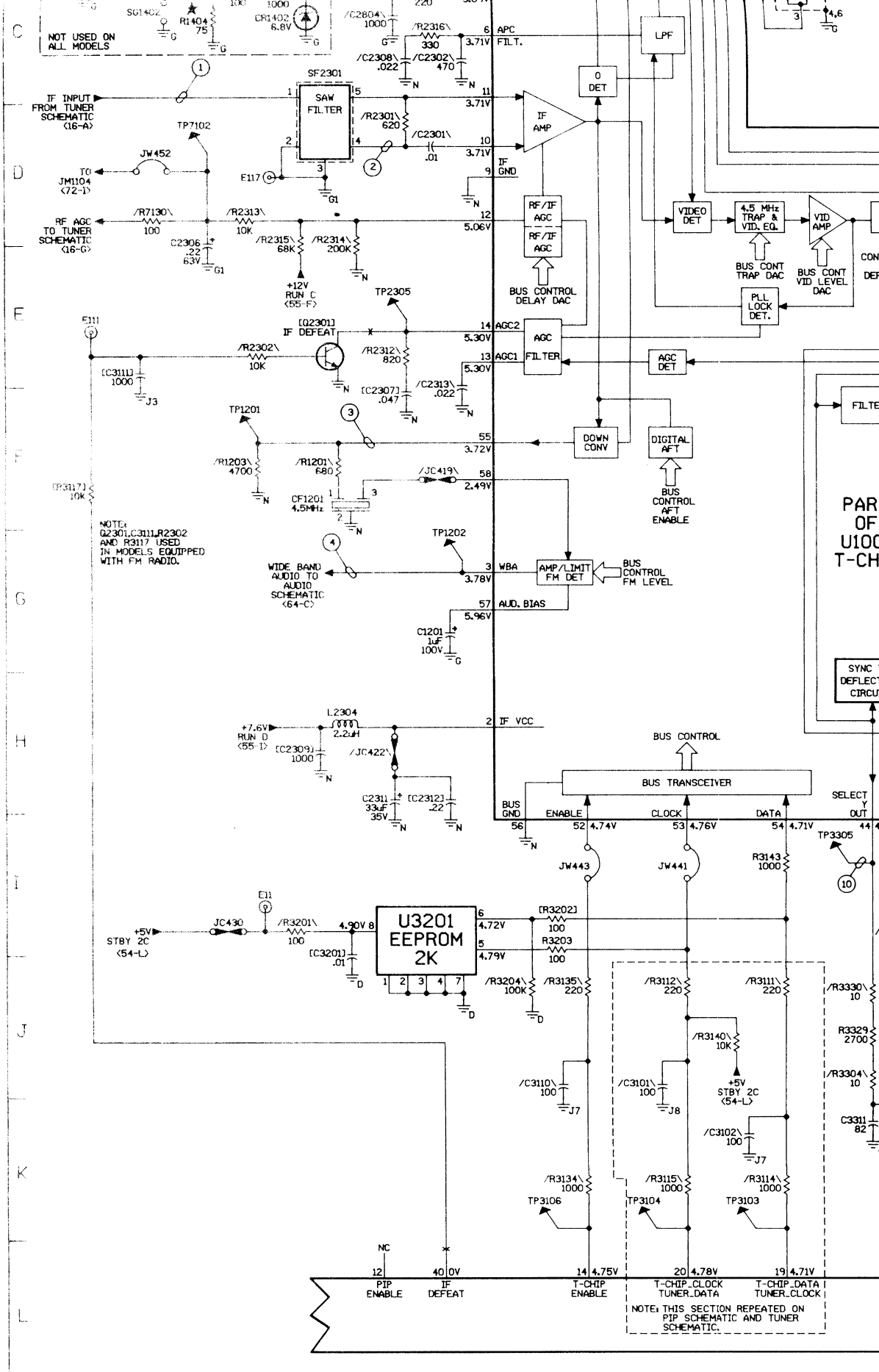
29 | 30 | 31 | 32 | 33 | 34 | 35 | 36


KINE DRIVE PW 5000
PCPT GND
J5002
KS5001
R OUT
G OUT
B OUT
36
37
38
2.94V
2.97V
2.89V
R2707 100
R2706 100
R2708 100
L2702 2.2uH
L2701 2.2uH
L2703 2.2uH
TP2704
TP2705
TP2706
E1
E3
E2
E5001
E5003
E5002
TP5019
TP5020
TP5021
Q5001 RED OUTPUT
Q5002 GREEN OUTPUT
Q5003 BLUE OUTPUT
Q5004 OUTPUT BIAS
146V
145V
150V
2.61V
2.64V
2.57V
/R5023\ 2400
/R5025\ 2400
/C5005\ 120
/C5006\ 120
R5022 100
R5024 100
R5026 100
L5002 56uH
L5003 56uH
L5004 56uH
C5007 220
/R5027\ 10
R5012 130
R5014 130
R5016 130
R5013 2000
R5015 2000
R5017 2000
TP5009
TP5010
TP5011
TP5012
TP5003
TP5004
TP5005
R5001 10K 2W
R5002 10K 2W
R5003 10K 2W
R5004 2200 1/2W
R5005 2200 1/2W
R5028 1000 1/2W
R5006 1200
147V R 8
146V G 6
150V B 11
H1 9
H2 10
12 5 7 1
G1 G2
16.3V 357V
V101 SEE PARTS LIST
24.8kV
SPARK GAPS ARE AN INTEGRAL PART OF THE KINE SOCKET
5KV TO 7KV
NOMINAL HV 27.5KV (@Ib=0)
JW501
TP5008
C5002 .012 250V
/R5029\ 100
R5007 180K 1/2W
R5010 18K 1/2W
C5003 4.7uF 250V
R5011 680
R5019 4700
2.10V
192V
1.40V
+7.6V RUN <52-I>
E5005
C5004 15uF 63V
R5020 1200
R5021 1200 1W
R5018 2200 1/2W
TP5013
C5001 1000 3kV
VID/ VERT GND
33
E17
E90
E5090
SIG. GND.
E5009
E5010
DEF. GND.
E5080
E5014
FROM E9 DEFL. SCHEMATIC 200V <52-G>
FROM E10 DEFL. SCHEMATIC (FILAMENT) <55-D>
FROM E80 DEFL. SCHEMATIC <50-C>
SCREEN (R4706) FROM DEFL. SCHEMATIC <55-B>
FOCUS (R5050) FROM DEFL. SCHEMATIC <55-B>
HV FROM DEFL. SCHEMATIC (T4401-HV) <55-A>
BEAM SENSE IN
SIZE COMP.
2.84V
31
6.38V
16
3.72V
/R2731\ 470
R4523 100
L3102 100uH
JW462
JW402
JW403
JW404
JW455
JW468
[JC425]
/JC423\
/JC424\
J9



SCHEMATIC NOTES

1. RESISTORS
   A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE



(3) 1.55V p-p 20µS per Div.

(4) 1.0V p-p 5mS per Div.

(5) 1.5V p-p 20µS per Div.

(6) 1.0V p-p 20µS per Div.

(7) 1.2V p-p 20µS per Div.

(8) 1.2V p-p 20µS per Div.

(9) 2000mV p-p 20µS per Div.

(10) 1.2V p-p 20µS per Div.

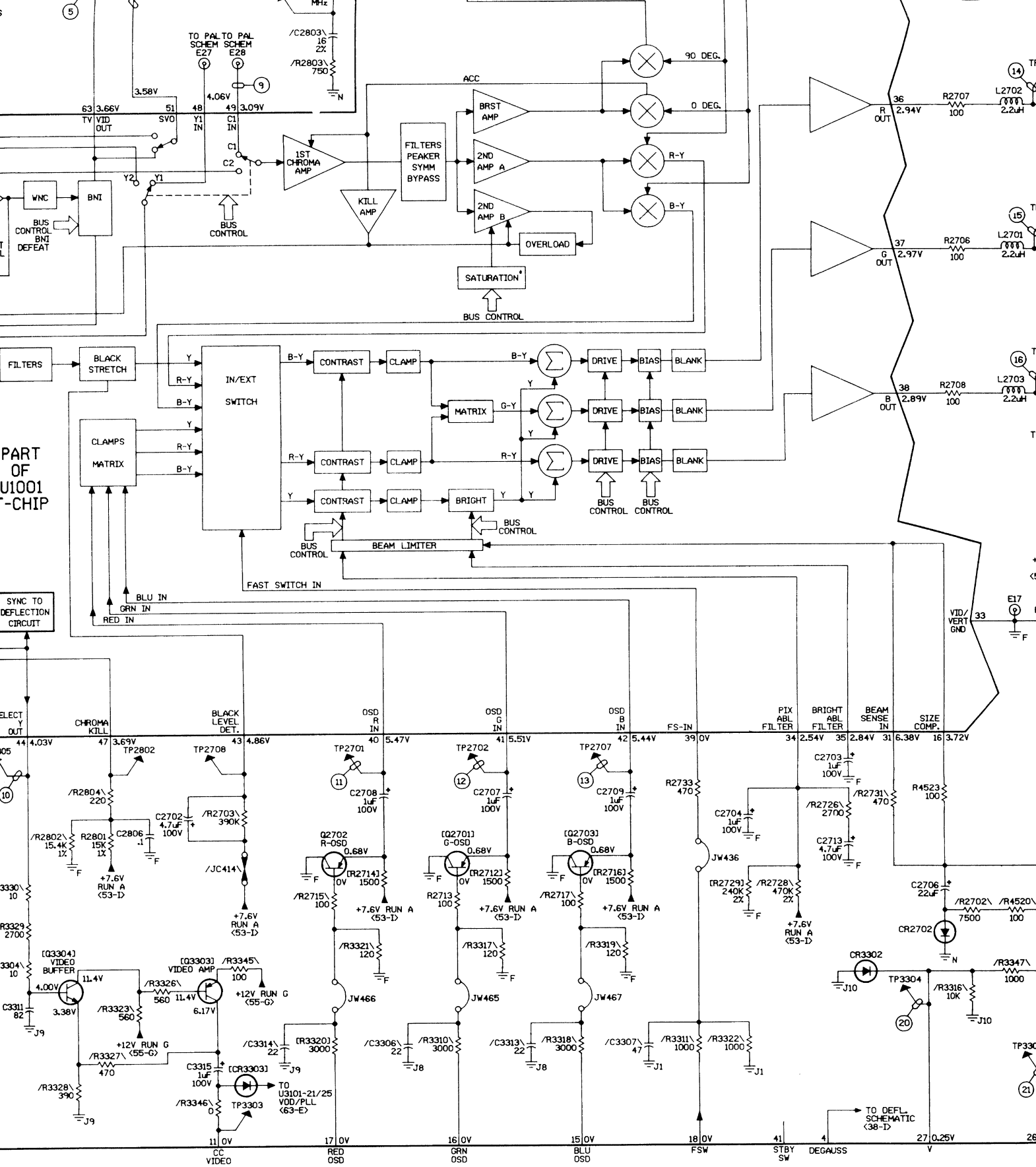
(11) 500mV p-p 5mS per Div. With Menu Activated.

(12) 500mV p-p 5mS per Div. With Menu Activated.

(13) 500mV p-p 5mS per Div. With Menu Activated.

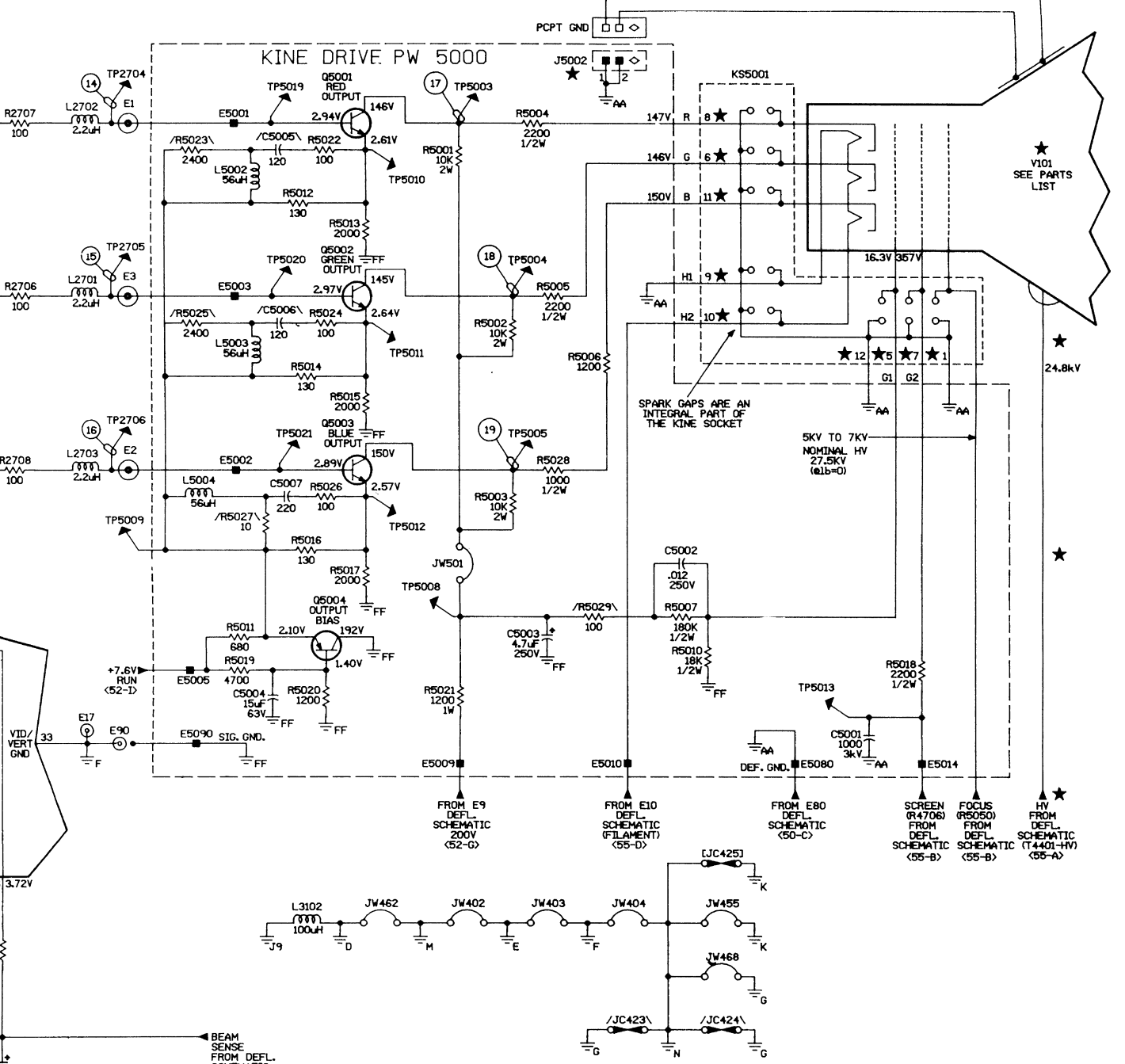
(14) 3.0V p-p 10µS per Div.

(15) 3.0V p-p 10µS per Div.



PART OF U3101 CONTROL MICROPROCESSOR

(16) 3.0V p-p 10μS per Div. (17) 125V p-p 20μS per Div. (18) 125V p-p 20μS per Div. (19) 120V p-p 20μS per Div. (20) 5.0V p-p 5mS per Div. (21)

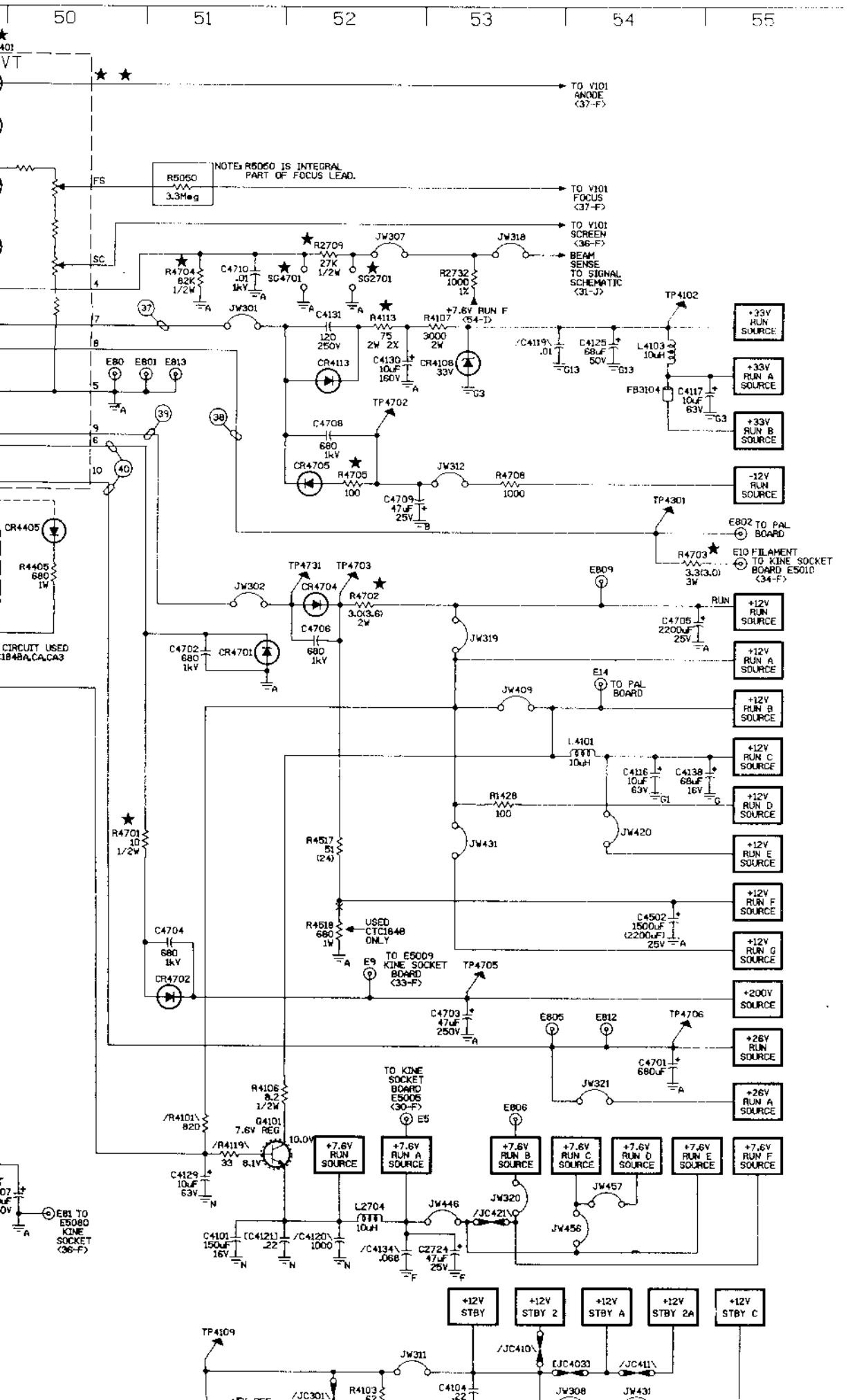


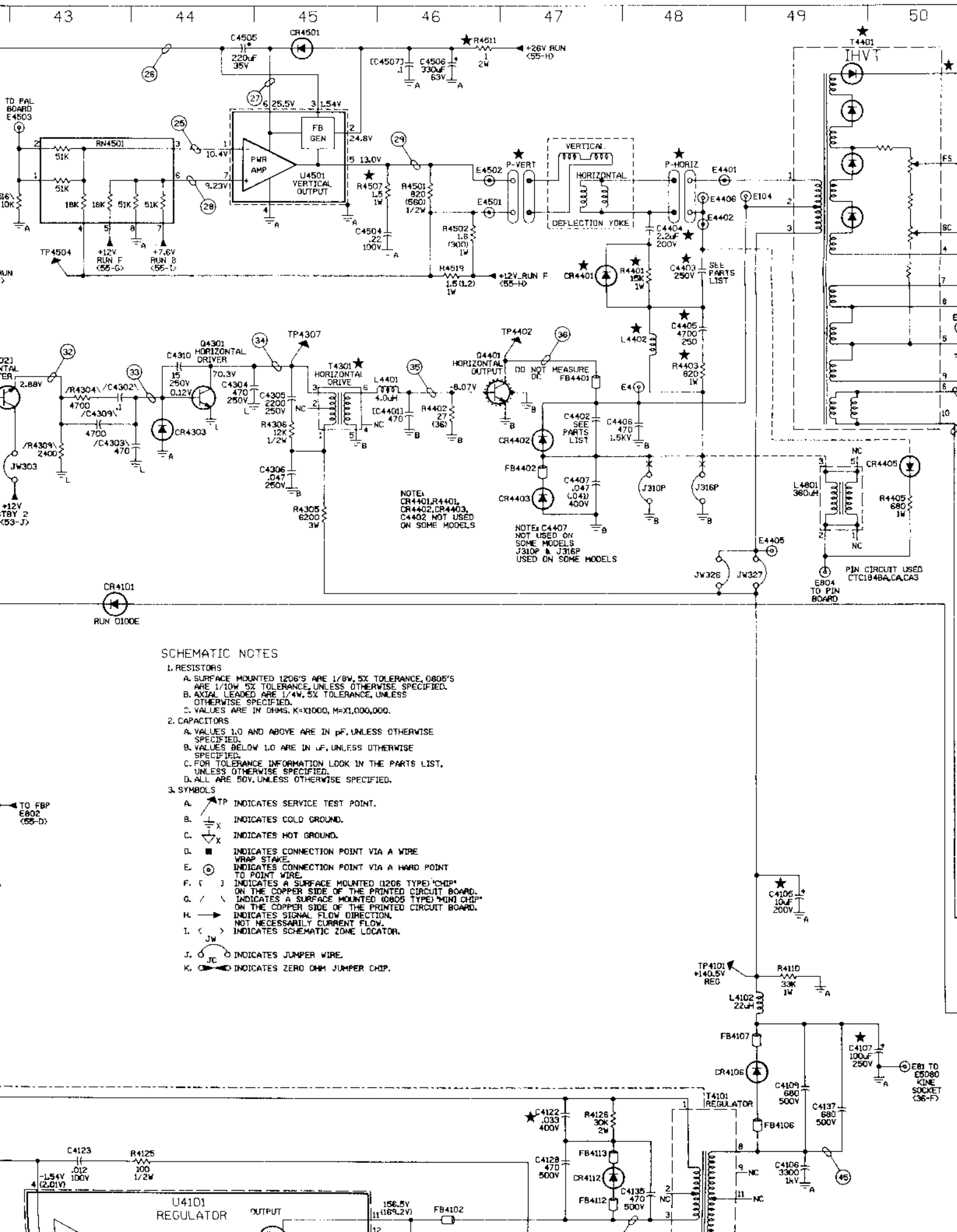
SCHEMATIC NOTES

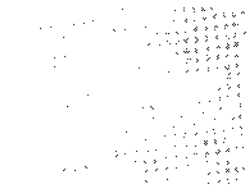
1. RESISTORS
   - A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   - A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
   - B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
   - C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
   - D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
   - A. TP INDICATES SERVICE TEST POINT.
   - B. INDICATES COLD GROUND.
   - C. INDICATES HOT GROUND.
   - D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
   - E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
   - F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW INDICATES JUMPER WIRE.
   - K. JC INDICATES ZERO OHM JUMPER CHIP.

(21) 4.25V p-p 20µS per Div.

DIAGRAMA ESQUEMÁTICO DE DEFLEXÃO/FORÇA

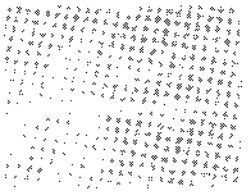



43
44
45
46
47
48
49
50
C4505 220uF 35V
CR4501
R4511 1 2W
+26V RUN <55-H>
TO PAL BOARD E4503
RN4501
51K
18K
FB GEN
PWR AMP
U4501 VERTICAL OUTPUT
25.5V
1.54V
24.8V
10.4V
13.0V
9.23V
R4507 1.5 1W
R4501 820 (560) 1/2W
C4504 .22 100V
R4502 1.8 (900) 1W
R4519 1.5 (1.2) 1W
+12V RUN F <55-H>
TP4504
+12V RUN F <55-G>
+7.6V RUN B <55-L>
E4502
P-VERT
E4501
VERTICAL
HORIZONTAL
DEFLECTION YOKE
P-HORIZ
E4401
E4406
E104
E4402
C4404 2.2uF 200V
T4401 IHVT
CR4401
R4401 15K 1W
C4403 250V SEE PARTS LIST
C4405 4700 250
L4402
R4403 820 1W
Q4301 HORIZONTAL DRIVER
C4310 15 250V 0.12V
70.3V
C4304 470 250V
C4305 2200 250V
R4306 12K 1/2W
C4306 .047 250V
R4305 6200 3W
T4301 HORIZONTAL DRIVE
L4401 4.0uH
C4401 470
R4402 27 (36)
8.07V
TP4307
TP4402
Q4401 HORIZONTAL OUTPUT
DO NOT MEASURE DC
FB4401
E4
C4402 SEE PARTS LIST
C4406 470 1.5KV
CR4402
FB4402
CR4403
C4407 .047 (.041) 400V
J310P
J316P
NOTE: CR4401,R4401, CR4402,CR4403, C4402 NOT USED ON SOME MODELS
NOTE: C4407 NOT USED ON SOME MODELS J310P & J316P USED ON SOME MODELS
L4801 360uH
CR4405
R4405 680 1W
E4405
JW326
JW327
E804 TO PIN BOARD
PIN CIRCUIT USED CTC184BA,CA,CA3
2.88V
/R4304\ 4700 /C4309\
/C4302\
/R4309\ 2400
JW303
/C4303\ 470
CR4303
+12V STBY 2 <53-J>
CR4101
RUN DIODE
TO FBP E802 <55-D>
SCHEMATIC NOTES
1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS, K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. INDICATES SCHEMATIC ZONE LOCATOR.
J. INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.
C4105 10uF 200V
TP4101 +140.5V REG
R4110 33K 1W
L4102 22uH
FB4107
CR4106
C4107 100uF 250V
E81 TO E5080 KINE SOCKET <36-F>
C4109 680 500V
C4137 680 500V
T4101 REGULATOR
FB4106
C4122 .033 400V
R4126 30K 2W
C4128 470 500V
FB4113
CR4112
FB4112
C4135 470 500V
C4106 3300 1kV
C4123 .012 100V
R4125 100 1/2W
-1.54V (2.01V)
U4101 REGULATOR
OUTPUT
156.5V (169.2V)
FB4102

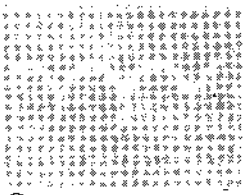


(22) 2.5V p-p 5mS per Div.

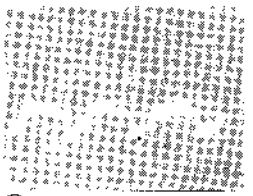
(23) 1.5V p-p 5mS per Div.



(24) 6.8V p-p 20uS per Div.

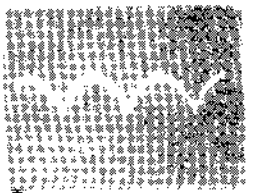


(25) 1.5V p-p 5mS per Div.

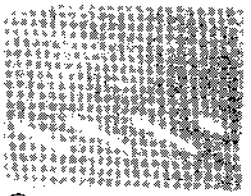


(26) 2.0V p-p 5mS per Div.

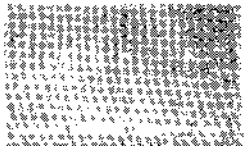
(27) 2.0V p-p 5mS per Div.

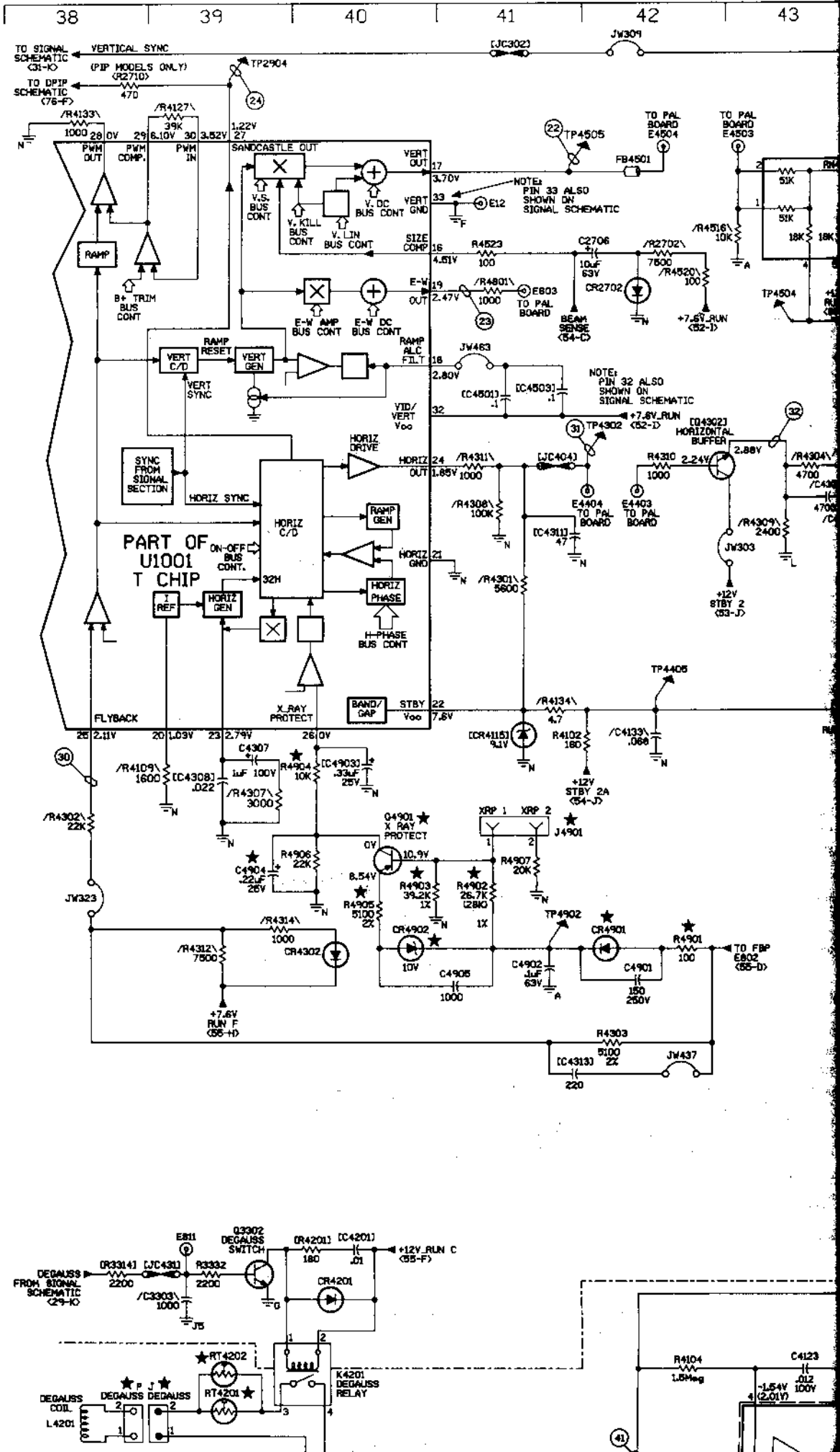


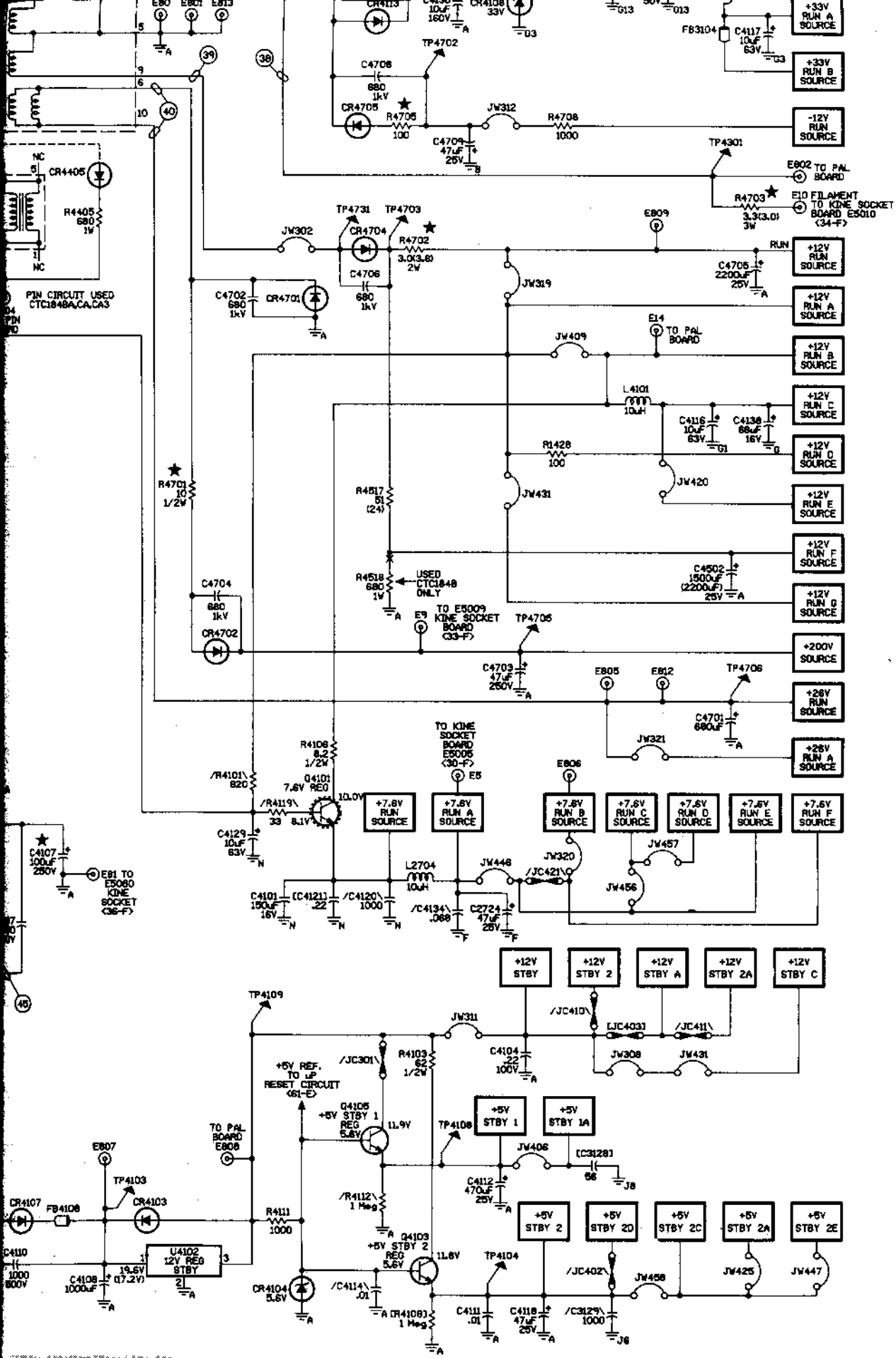
(28) 1.0V p-p 5mS per Div.

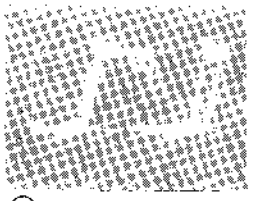


(29) 55V p-p 5mS per Div.

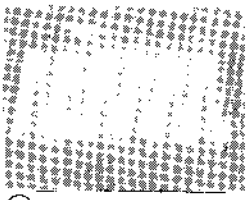




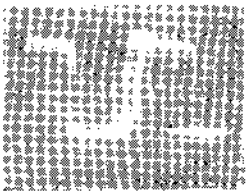




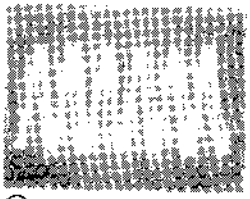
(43) 22.5V p-p 5µS per Div. Run Mode



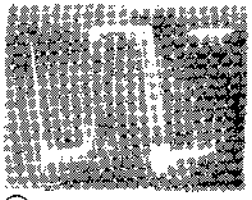
(43) 22.5V p-p 10µS per Div. Off Mode



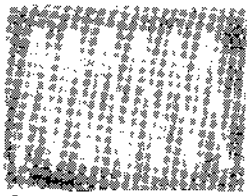
(44) 100V p-p 5µS per Div. Run Mode



(44) 100V p-p 10µS per Div. Off Mode

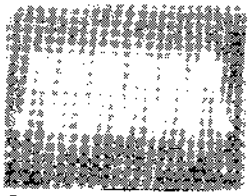


(45) 350V p-p 5µS per Div. Run Mode

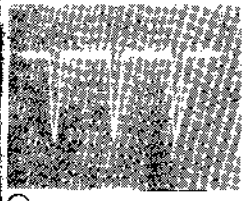


(45) 350V p-p 10µS per Div. Off Mode

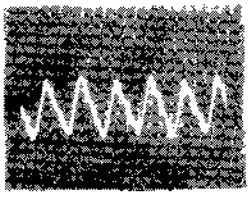
(46) 50V p-p 5µS per Div. Run Mode



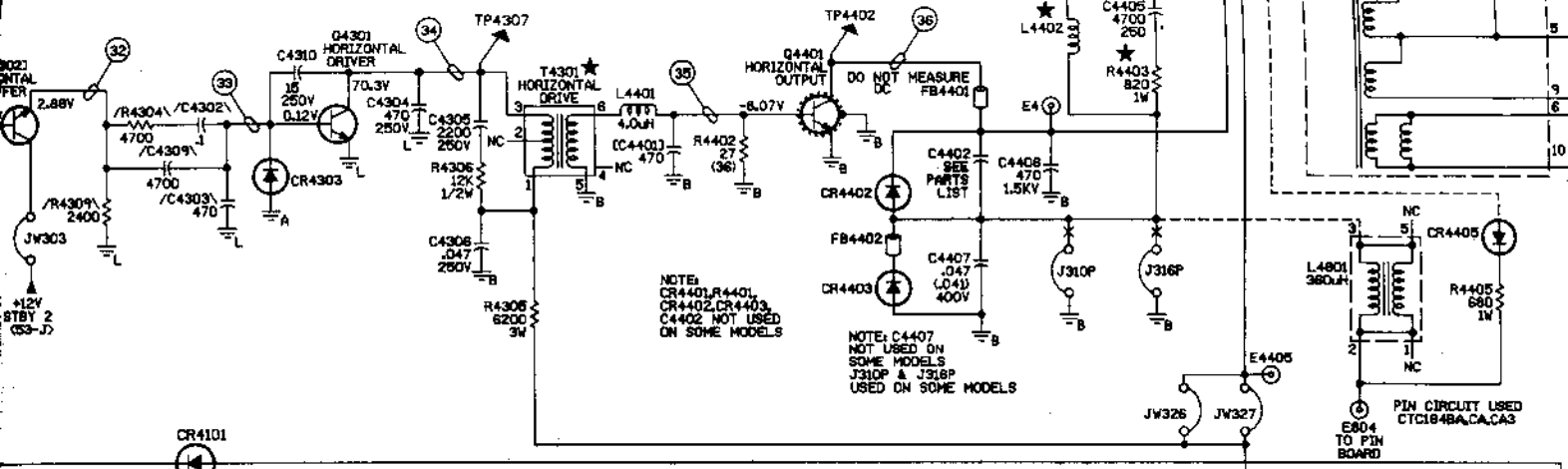
(46) 50V p-p 10µs per Div. Off Mode



(40) 200V p-p 20µS per Div.

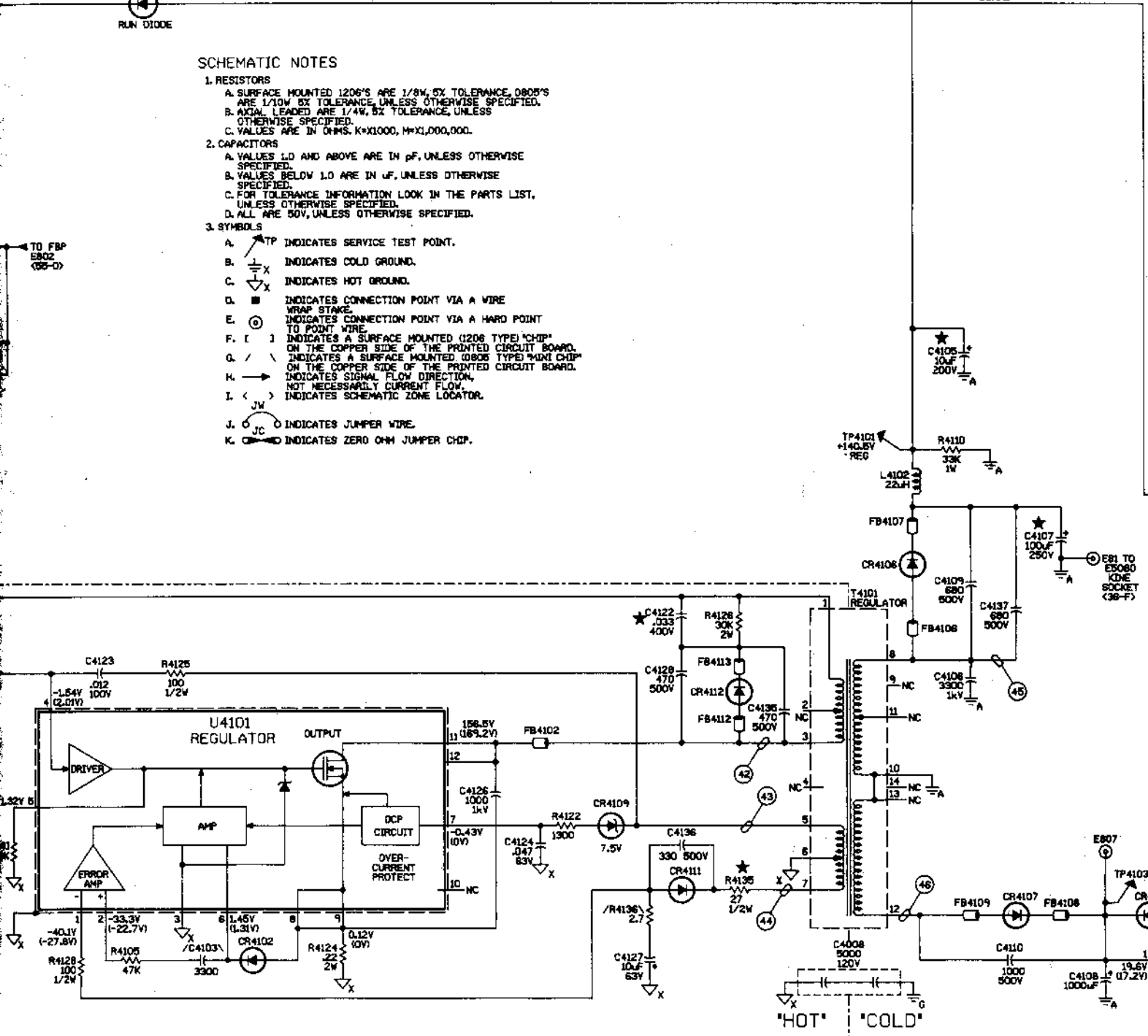


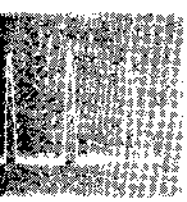
(41) 4.5V p-p 5mS per Div.



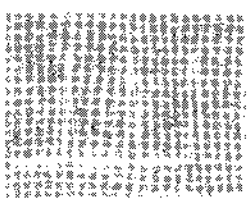
SCHEMATIC NOTES

1. RESISTORS
   - A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
   - C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
   - A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
   - B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
   - C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
   - D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
   - A. TP INDICATES SERVICE TEST POINT.
   - B. INDICATES COLD GROUND.
   - C. INDICATES HOT GROUND.
   - D. INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
   - E. INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
   - F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
   - H. INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
   - I. < > INDICATES SCHEMATIC ZONE LOCATOR.
   - J. JW JC INDICATES JUMPER WIRE.
   - K. INDICATES ZERO OHM JUMPER CHIP.

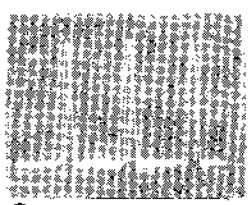




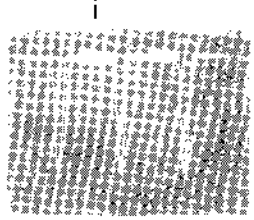
(37) *110V p-p 20µS per Div.*



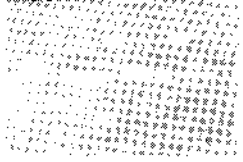
(38) *30V p-p 20µS per Div.*



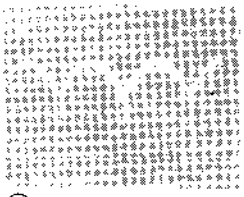
(39) *110V p-p 20µS per Div*



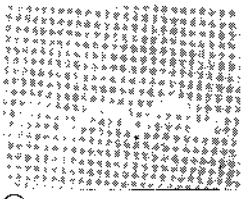
(40) *200V p-p 20µS per Div.*



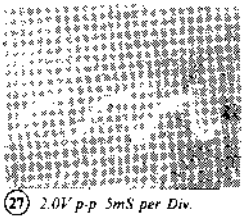
(24) *6.6V p-p 20μS per Div.*



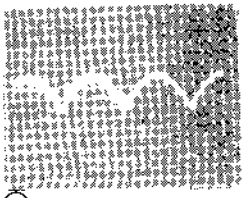
(25) *1.5V p-p 5mS per Div.*



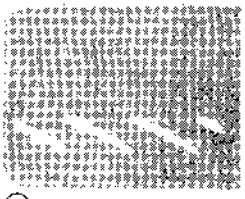
(26) *2.0V p-p 5mS per Div.*



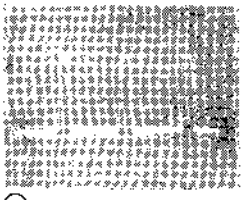
(27) *2.0V p-p 5mS per Div.*



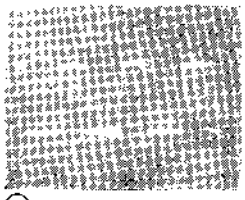
(28) *1.0V p-p 5mS per Div.*



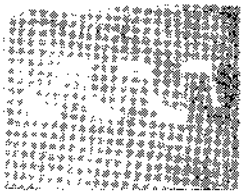
(29) *55V p-p 5mS per Div.*



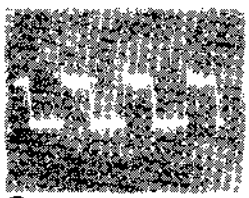
(30) *8.0V p-p 20μS per Div.*



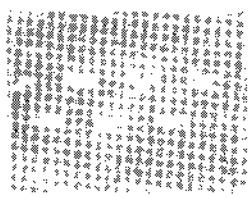
(31) *7.0V p-p 20μS per Div.*



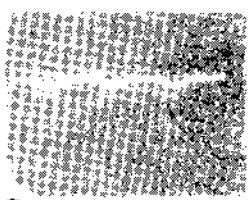
(32) *5.0V p-p 20μS per Div.*



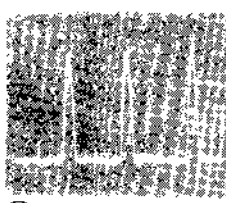
(33) *1.5V p-p 20μS per Div.*



(34) *125V p-p 20μS per div.*

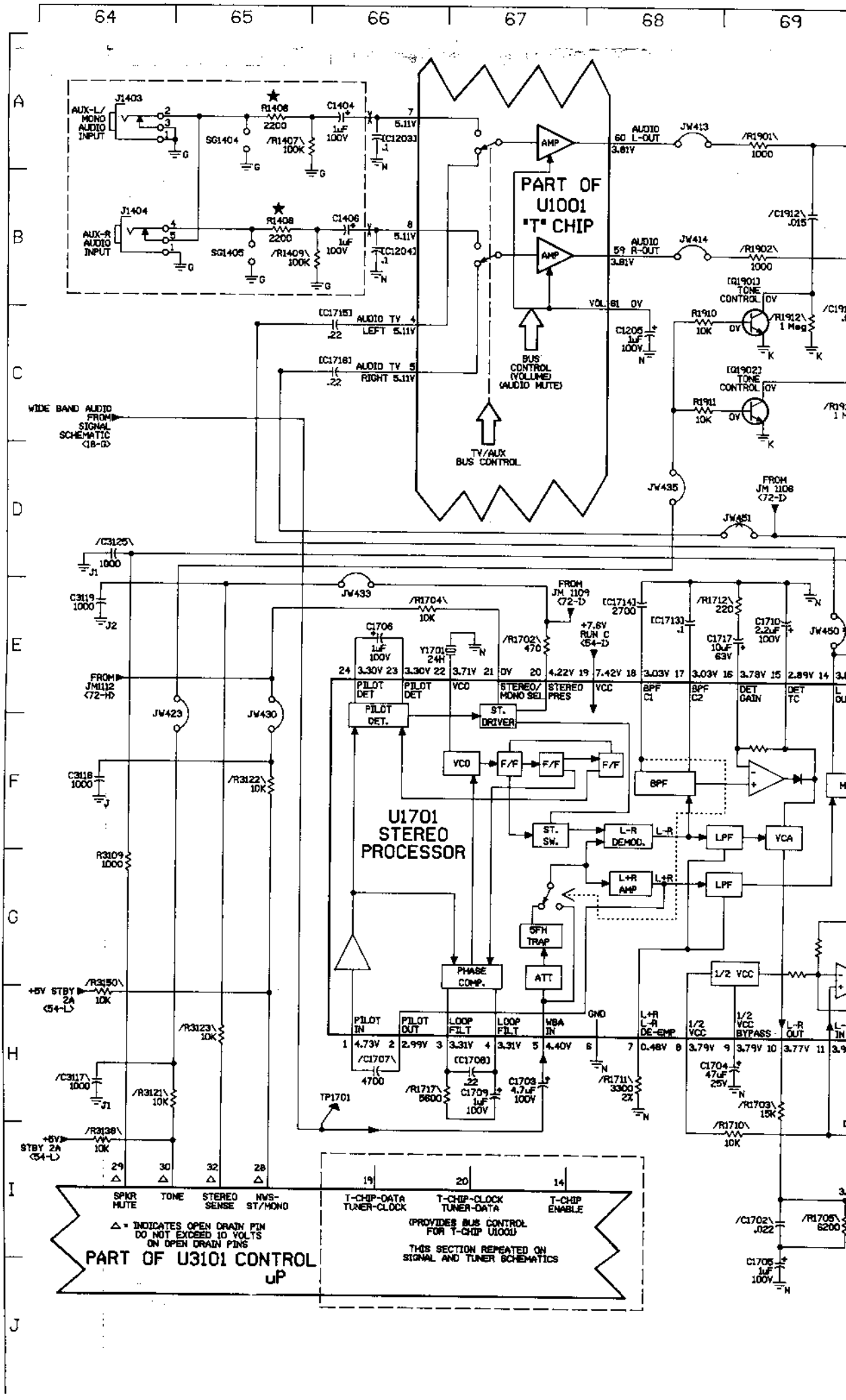


(35) *12V p-p 20μS per Div.*



(36) *1000V p-p 20μS per Div.*

DIAGRAMA STEREO



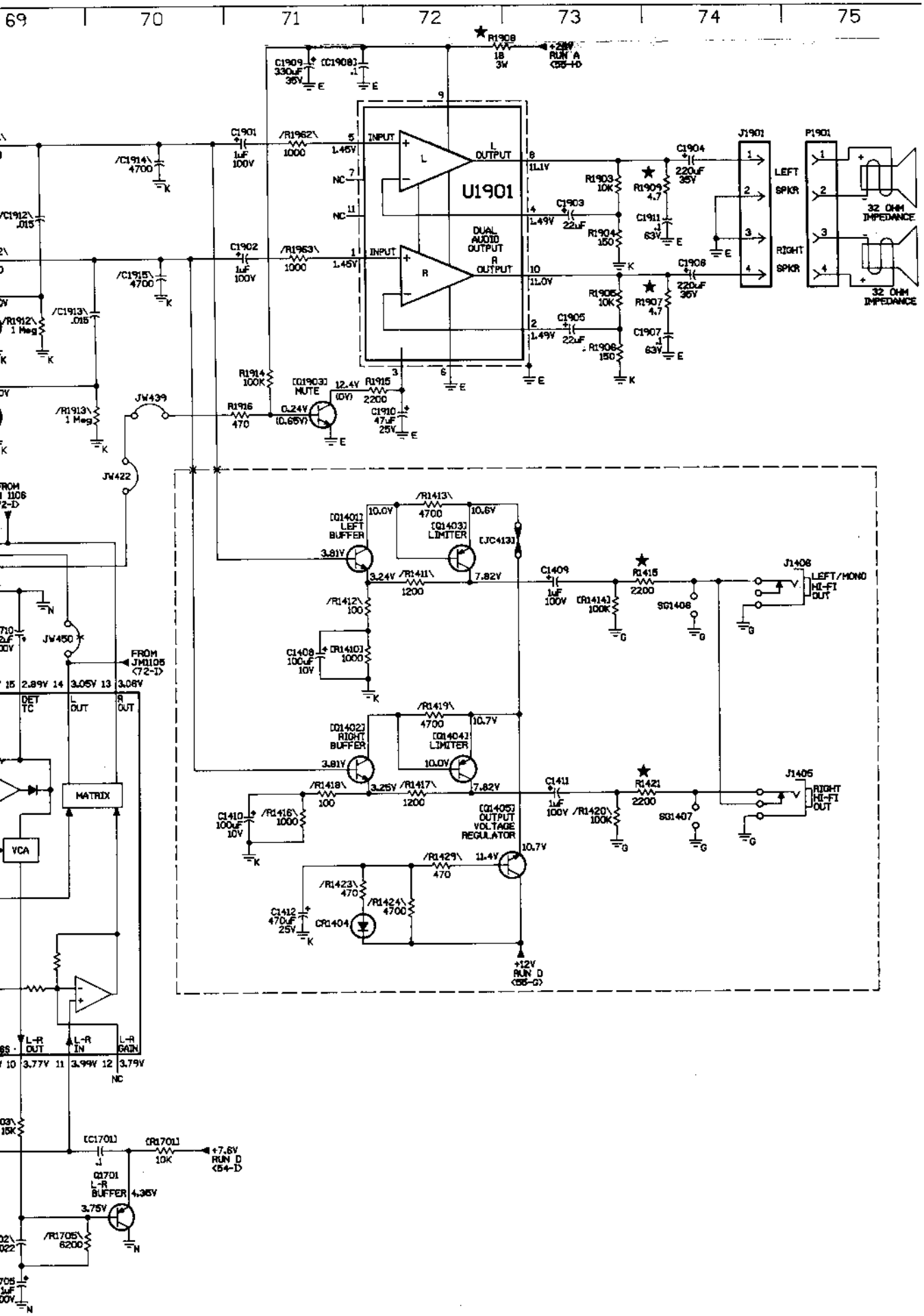
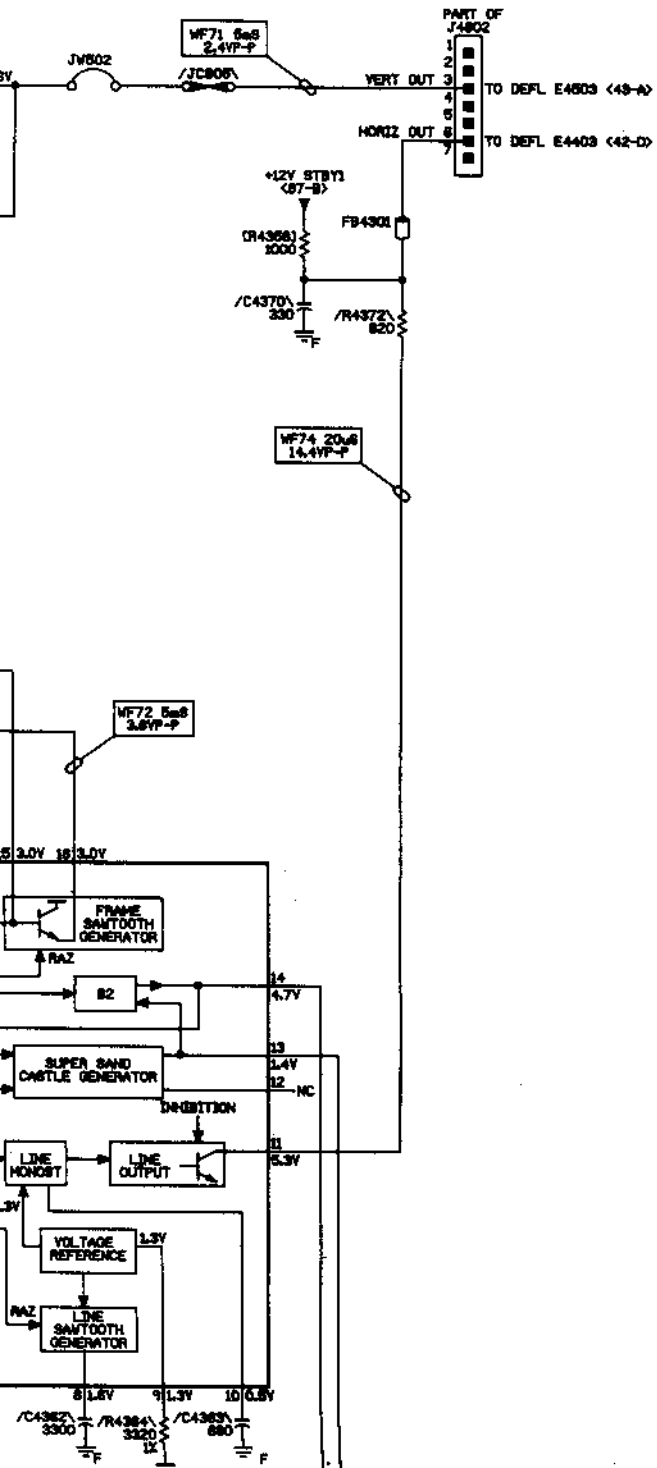
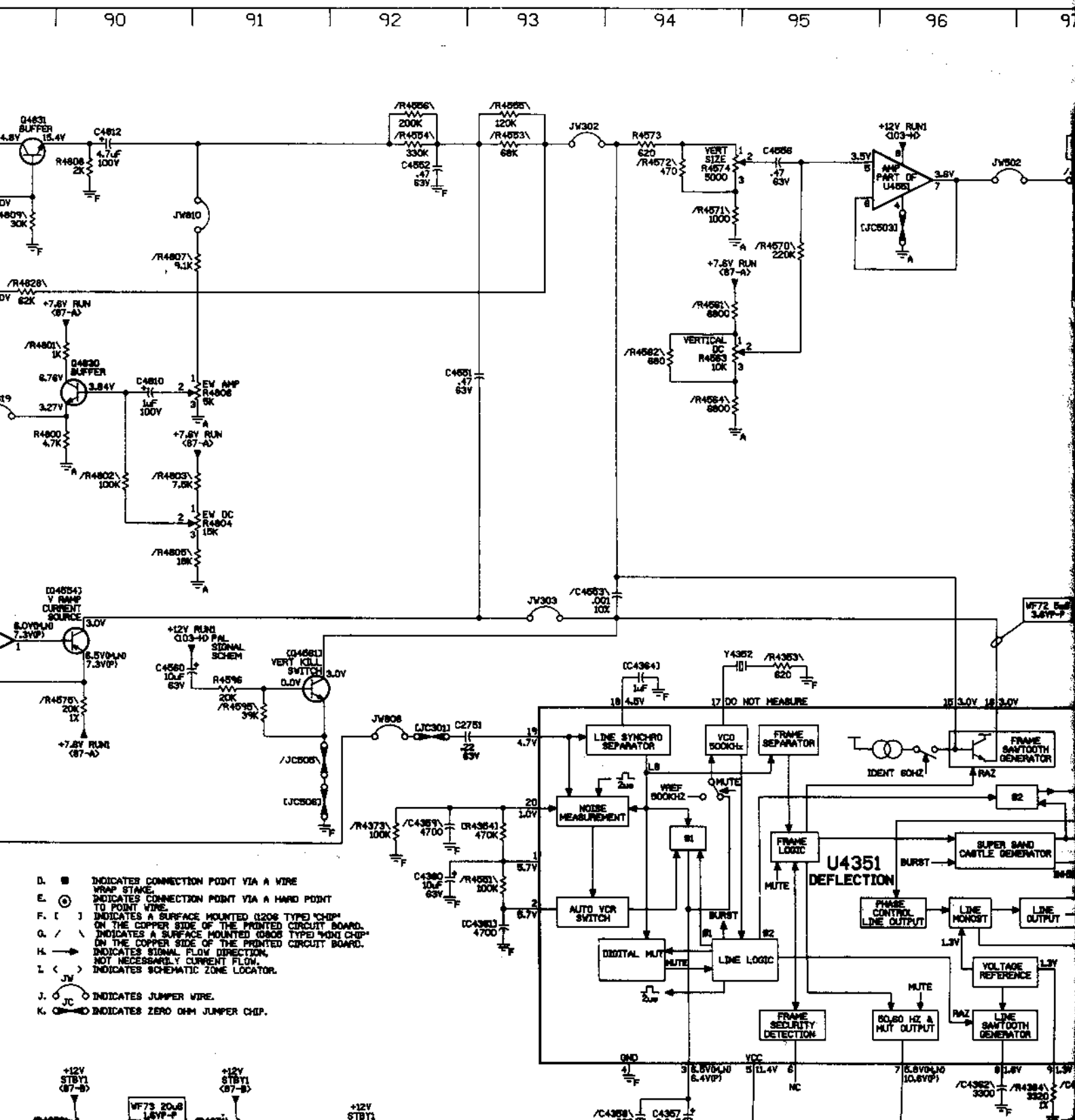
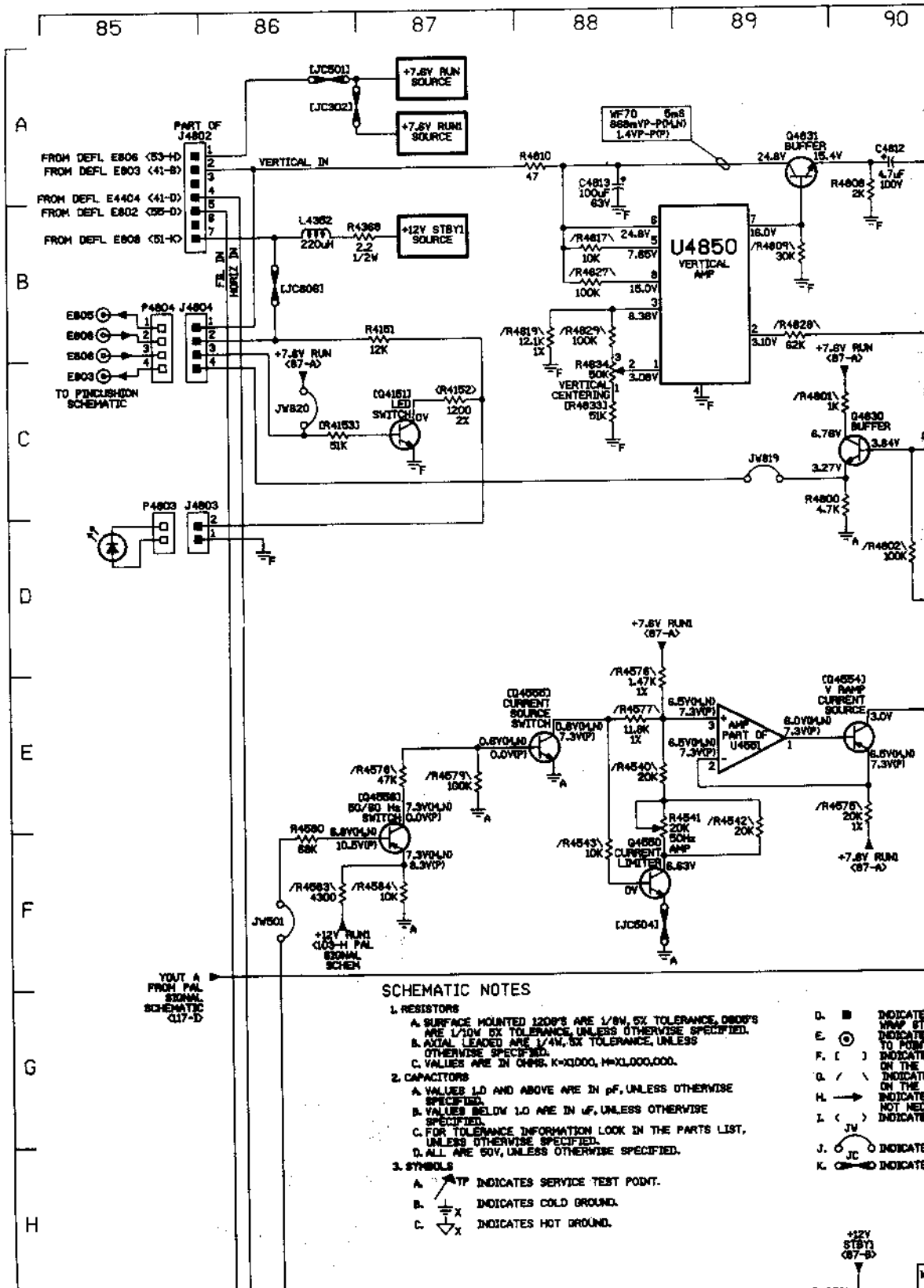
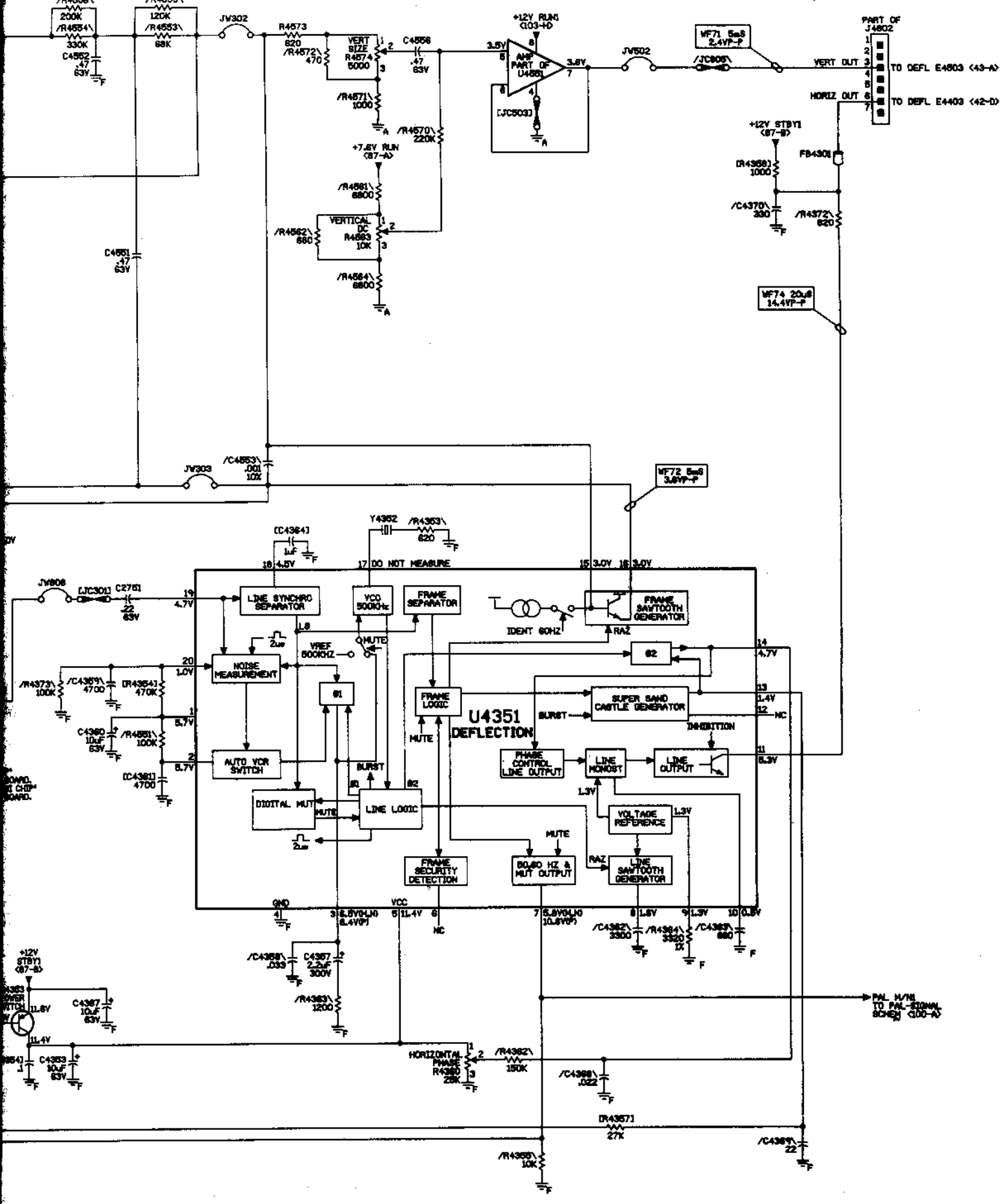

69
70
71
72
73
74
75
U1901
DUAL AUDIO OUTPUT
INPUT
L OUTPUT
R OUTPUT
NC
R1908 1Ω 3W
+12V RUN A <55-H>
C1909 330uF 35V
[C1908] .1
C1901 1uF 100V
/R1902\ 1000
1.45V
C1902 1uF 100V
/R1903\ 1000
/C1914\ 4700
/C1915\ 4700
/C1912\ .015
/C1913\ .015
/R1912\ 1 Meg
/R1913\ 1 Meg
R1903 10K
R1904 150
C1903 22uF
C1904 220uF 35V
R1905 10K
R1906 150
C1905 22uF
C1906 220uF 35V
R1909 4.7
C1911 .1 63V
R1907 4.7
C1907 .1 63V
J1901
P1901
LEFT SPKR
RIGHT SPKR
32 OHM IMPEDANCE
R1914 100K
R1916 470
[Q1903] MUTE
12.4V (DV)
R1915 2200
C1910 47uF 25V
0.24V (0.65V)
JW439
JW422
JW450
FROM JM1105 <72-I>
/R1413\ 4700
[Q1401] LEFT BUFFER
[Q1403] LIMITER
[JC413]
10.0V
10.6V
3.81V
3.24V
/R1411\ 1200
7.82V
/R1412\ 100
C1408 100uF 10V
[R1410] 1000
C1409 1uF 100V
R1415 2200
[R1414] 100K
SG1408
J1408
LEFT/MONO HI-FI OUT
/R1419\ 4700
[Q1402] RIGHT BUFFER
[Q1404] LIMITER
10.7V
10.0V
3.81V
/R1418\ 100
3.25V
/R1417\ 1200
7.82V
C1410 100uF 10V
/R1416\ 1000
[Q1405] OUTPUT VOLTAGE REGULATOR
C1411 1uF 100V
R1421 2200
/R1420\ 100K
SG1407
J1406
RIGHT HI-FI OUT
/R1429\ 470
11.4V
10.7V
/R1423\ 470
/R1424\ 4700
C1412 470uF 25V
CR1404
+12V RUN D <55-G>
DET
TC
L OUT
R OUT
MATRIX
VCA
L-R OUT
L-R IN
L-R GAIN
2.89V 14
3.05V 13
3.08V
3.77V 11
3.99V 12
3.79V
NC
[C1701]
[R1701] 10K
+7.6V RUN D <54-D>
Q1701 L-R BUFFER 4.36V
3.75V
/R1705\ 6200

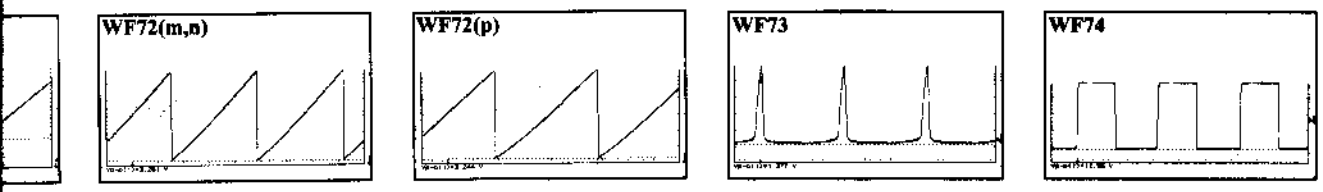
DIAGRAMA ESQUEMÁTICO DO SINAL DE PAL II

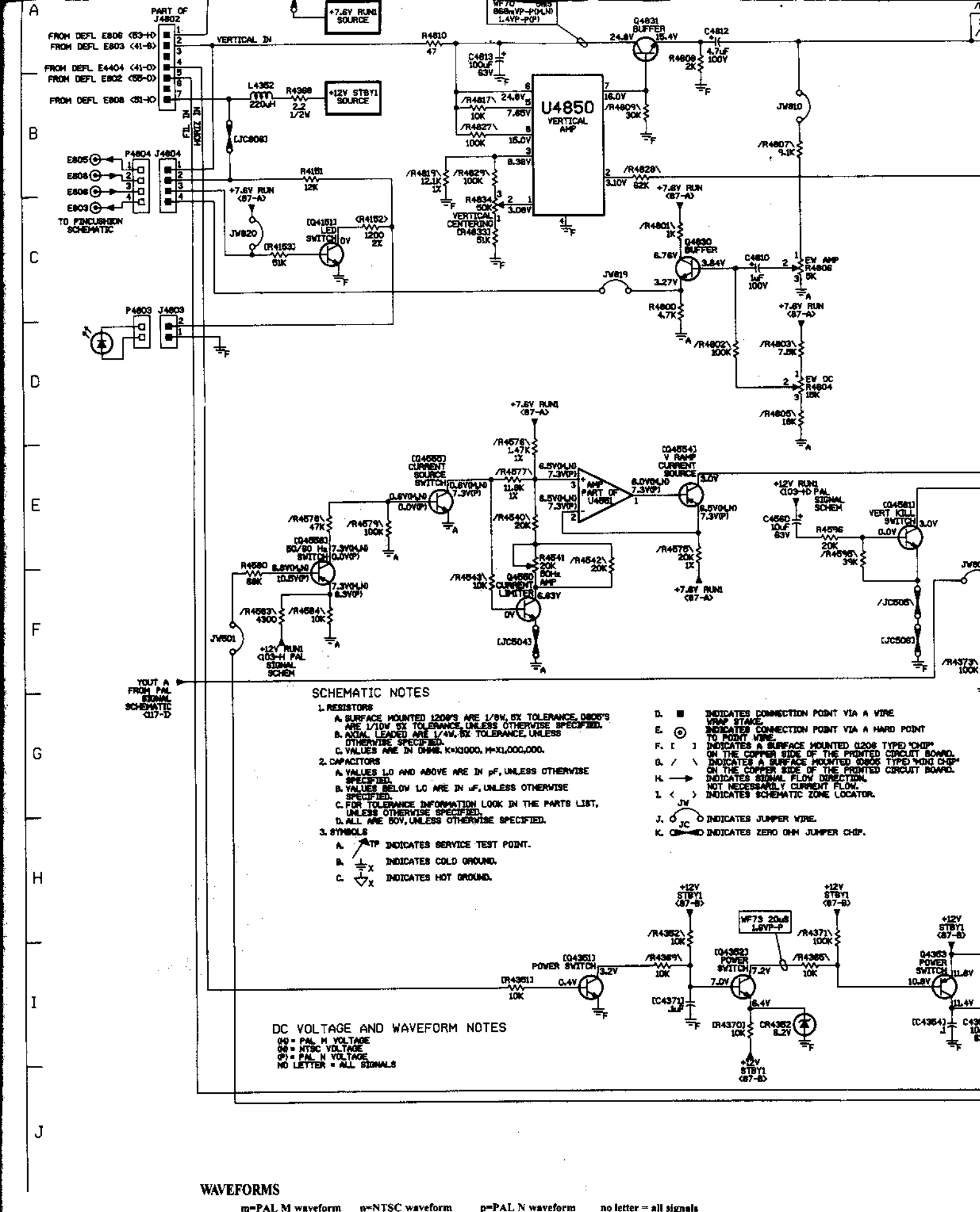



90
91
92
93
94
95
96
U4351
DEFLECTION
LINE SYNCHRO SEPARATOR
VCO 500KHz
FRAME SEPARATOR
FRAME SAWTOOTH GENERATOR
NOISE MEASUREMENT
AUTO VCR SWITCH
DIGITAL MUT
LINE LOGIC
FRAME LOGIC
SUPER SAND CASTLE GENERATOR
PHASE CONTROL LINE OUTPUT
LINE MONOST
LINE OUTPUT
VOLTAGE REFERENCE
FRAME SECURITY DETECTION
50,60 HZ & MUT OUTPUT
LINE SAWTOOTH GENERATOR
IDENT 60HZ
WREF 500KHZ
DO NOT MEASURE
+12V RUN (103-H)
+7.6V RUN (87-A)
+12V STBY1 (87-B)
D. ■ INDICATES CONNECTION POINT VIA A WIRE WRAP STAKE.
E. ⊙ INDICATES CONNECTION POINT VIA A HARD POINT TO POINT WIRE.
F. [ ] INDICATES A SURFACE MOUNTED (1206 TYPE) "CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
G. / \ INDICATES A SURFACE MOUNTED (0805 TYPE) "MINI CHIP" ON THE COPPER SIDE OF THE PRINTED CIRCUIT BOARD.
H. → INDICATES SIGNAL FLOW DIRECTION, NOT NECESSARILY CURRENT FLOW.
I. < > INDICATES SCHEMATIC ZONE LOCATOR.
J. JW JC INDICATES JUMPER WIRE.
K. INDICATES ZERO OHM JUMPER CHIP.


85
86
87
88
89
90
A
B
C
D
E
F
G
H
[JC501]
[JC502]
+7.6V RUN SOURCE
+7.6V RUN1 SOURCE
+12V STBY1 SOURCE
PART OF J4802
FROM DEFL E806 <53-H>
FROM DEFL E803 <41-B>
FROM DEFL E4404 <41-D>
FROM DEFL E802 <55-D>
FROM DEFL E808 <51-K>
VERTICAL IN
L4362 220uH
R4368 2.2 1/2W
FBK IN
HORIZ IN
[JC8061]
E805
E806
E806
E803
P4804 J4804
TO PINCUSHION SCHEMATIC
R4161 12K
+7.6V RUN <87-A>
JV820
[Q4161] LED SWITCH
<R4152> 1200 2%
[R4153] 51K
P4803 J4803
R4610 47
WF70 5mS 868mVP-P(LN) 1.4VP-P(P)
C4813 100uF 63V
/R4617\ 10K
/R4627\ 100K
U4850 VERTICAL AMP
/R4819\ 12.1K 1%
/R4829\ 100K
R4634 50K VERTICAL CENTERING [R4633] 51K
Q4631 BUFFER
C4812 4.7uF 100V
R4808 2K
/R4809\ 30K
/R4828\ 62K
/R4801\ 1K
Q4630 BUFFER
JV819
R4800 4.7K
/R4802\ 100K
[Q4555] CURRENT SOURCE SWITCH
/R4576\ 1.47K 1%
/R4577\ 11.8K 1%
AMP PART OF U4551
[Q4554] V RAMP CURRENT SOURCE
/R4578\ 47K
/R4579\ 100K
[Q4556] 50/60 Hz SWITCH
R4580 68K
/R4583\ 4300
/R4584\ 10K
JW501
+12V RUN1 <103-H PAL SIGNAL SCHEM>
/R4540\ 20K
R4541 20K 50Hz AMP
/R4542\ 20K
/R4543\ 10K
Q4550 CURRENT LIMITER
/R4676\ 20K 1%
YOUT A FROM PAL SIGNAL SCHEMATIC <117-D>
SCHEMATIC NOTES
1. RESISTORS
A. SURFACE MOUNTED 1206'S ARE 1/8W, 5% TOLERANCE, 0805'S ARE 1/10W 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
B. AXIAL LEADED ARE 1/4W, 5% TOLERANCE, UNLESS OTHERWISE SPECIFIED.
C. VALUES ARE IN OHMS. K=X1000, M=X1,000,000.
2. CAPACITORS
A. VALUES 1.0 AND ABOVE ARE IN pF, UNLESS OTHERWISE SPECIFIED.
B. VALUES BELOW 1.0 ARE IN uF, UNLESS OTHERWISE SPECIFIED.
C. FOR TOLERANCE INFORMATION LOOK IN THE PARTS LIST, UNLESS OTHERWISE SPECIFIED.
D. ALL ARE 50V, UNLESS OTHERWISE SPECIFIED.
3. SYMBOLS
A. TP INDICATES SERVICE TEST POINT.
B. INDICATES COLD GROUND.
C. INDICATES HOT GROUND.
D. INDICATE
E. INDICATE
F. INDICATE
G. INDICATE
H. INDICATE
I. INDICATE
J. INDICATE
K. INDICATE
+12V STBY1 <87-B>


U4351
DEFLECTION
LINE SYNCHRO SEPARATOR
VCO 500KHz
FRAME SEPARATOR
FRAME SAWTOOTH GENERATOR
NOISE MEASUREMENT
AUTO VCR SWITCH
DIGITAL MUT
LINE LOGIC
FRAME LOGIC
SUPER SAND CASTLE GENERATOR
PHASE CONTROL LINE OUTPUT
LINE MONOST
LINE OUTPUT
VOLTAGE REFERENCE
LINE SAWTOOTH GENERATOR
50-60 HZ & MUT OUTPUT
FRAME SECURITY DETECTION
DO NOT MEASURE
IDENT 60HZ
BURST
INHIBITION
MUTE
RAZ
VERT OUT
HORIZ OUT
TO DEFL E4603 (43-A)
TO DEFL E4403 (42-D)
+12V RUN (103-HD)
+12V STBY1 (87-B)
+7.8V RUN (87-A)
PART OF J4802
WF71 5mS 2.4VP-P
WF72 5mS 3.8VP-P
WF74 20µS 14.4VP-P
PAL H/V TO PAL-SIGNAL SCREEN (100-A)


WF72(m,n)
WF72(p)
WF73
WF74



WAVEFORMS

m=PAL M waveform n=NTSC waveform p=PAL N waveform no letter = all signals