7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data(OSD will be back to MAIN-MENU.).

3.7. Ver. size adjustment

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.
2) After pressing DOWN KEY, press POWER KEY. Then OSD for factory mode will be shown.
3) Position OSD bar at V-SIZE of FACTORY MODE by pressing UP or DOWN KEY.
4) After pressing ENTER KEY, adjust V-SIZE to be 225 ± 3mm by using UP or DOWN KEY.
5) Adjust V-SIZE for the other modes.
6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE by using UP or DOWN KEY.
7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data (OSD will be back to MAIN-MENU.).

3.8. Ver. position adjustment

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.
2) After pressing DOWN KEY, press POWER KEY. Then OSD for factory mode will be shown.
3) Position OSD bar at V-POSITION of FACTORY MODE by pressing UP or DOWN KEY.
4) After pressing ENTER KEY, adjust V-POSITION to be $|T-B| \leq 3$mm by using UP or DOWN KEY.
5) Adjust V-POSITION for the other modes.
6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE by using UP or DOWN KEY.
7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data(OSD will be back to MAIN-MENU.).

3.9. Side-Pin Adjustment.

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.
2) After pressing DOWN KEY press POWER KEY. Then OSD for factory mode will be shown.
3) Position OSD bar at SIDE-PIN of FACTORY MODE by pressing UP or DOWN KEY.
4) After pressing ENTER KEY, adjust SIDE-PIN to be $\leq$ 2.0mm by using UP or DOWN KEY.
5) Adjust SIDE-PIN for the other modes.
6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE by using UP or DOWN KEY.
7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data(OSD will be back to MAIN-MENU.).

3.10. Pin Balance

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.
2) After pressing DOWN KEY press POWER KEY. Then OSD for factory mode will be shown.
3) Position OSD bar at PIN BALANCE of FACTORY MODE by pressing UP or DOWN KEY.
4) After pressing ENTER KEY, adjust PIN BALANCE to be $\leq$ 2.0mm by using UP or DOWN KEY.
5) Adjust PIN BALANCE for the other modes.
6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE By using UP or DOWN KEY
7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data(OSD will be back to MAIN-MENU.).

3.11. Trapezoid adjustment.

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.
2) After pressing DOWN KEY press POWER KEY. Then OSD for factory mode will be shown.

Adjustment Specification

1. Adjustment Condition

Allow a minimum warm-up time of 15 minute before proceeding with a adjustment.

2. Adjustment Procedure

B+ Voltage → FBT B+ Voltage → G2 Voltage → Hor. Center → Hor. Size → Hor. position → Ver. Size → Ver. Position → Side-Pin → Pin Balance, Trapezoid → Parallelogram → Rotation → Focus → White Balance → Convergence

3. Adjustment Procedure

3.1. B+ voltage adjustment

1) Display a cross-hatch pattern of the 31.469KHz @ 59.940Hz, 640 X 480 mode.

2) After connecting a digital voltage meter betwen the cathode of D809 and GND, adjust the B+ voltage to 6.35 V ± 0.05V by varying VR801.

3.2. FBT B+ voltage adjustment

1) Display a cross-hatch pattern of the 31.469KHz @ 59.940Hz, 640 X 480 mode. After connecting a digital voltage meter between the cathode of D401 and GND, adjust FBT B+ voltage to 59.2 V±0.5V by varying VR401.

3.3. G2 Voltage check

Display a closs-hatch pattern of the 31.469KHz @59.940Hz, 640 X 480 mode. After connecting a DC high voltage meter betwen the G2 of the CRT socket and GND, check G2 voltage whether 580V±30V.

3.4. Hor. center adjustment

Display a closs-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.

2) Adjust SW401 mechanical center position.

3) Adjust the difference of the right and left distance between the raster and the front mask to be less than 3 ㎜ by varying SW401.

3.5. Hor. size adjustment

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.

2) After pressing DOWN KEY, press POWER KEY. Then OSD for factory mode will be shown.

3) Position OSD bar at H-SIZE of FACTORY MODE by pressing UP or DOWN KEY.

4) After pressing ENTER KEY, adjust H-SIZE to be 300±3㎜ by using UP or DOWN KEY.

5) Adjust H-SIZE for the other modes.

6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE by using UP or DOWN KEY.

7) Keep pressing ENTER KEY until OSD bar of RECALL comes to be MAX. to save the data(OSD will be back to MAIN-MENU).

3.6. Hor. position adjustment

1) Display cross-hatch pattern of the 60.023KHz @ 75.029Hz, 1024 X 768 mode.

2) After pressing DOWN KEY, press POWER KEY. Then OSD for factory mode will be shown.

3) Position OSD bar at H-POSITION of FACTORY MODE by pressing UP or DOWN KEY.

4) After pressing ENTER KEY, adjust H-POSITION to be | L-R | ≤ 3㎜ by using UP or DOWN KEY.

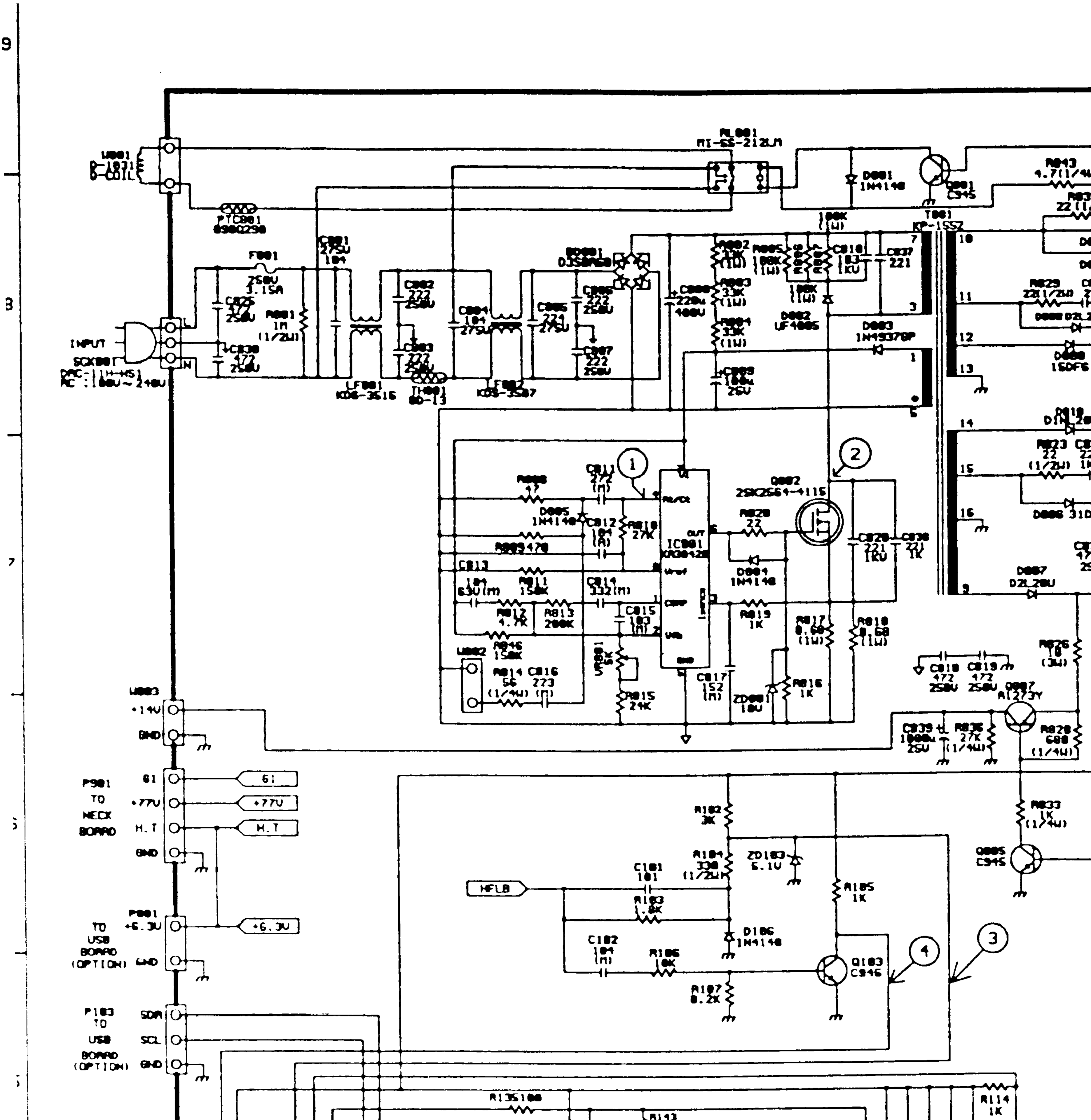
5) Adjust H-POSITION for the other modes.

6) When adjustment is finished, press EXIT KEY and position OSD bar at RECALL of FACTORY MODE by using UP or DOWN KEY.

KDS-1731

AMEND	REV NO.	DATE	APPROVAL NO.	REMARK	REV NO.	DATE	APPROVAL NO.	REMARK
	01	01/19	ECO-9-006		06			
	02				07			
	03				08			
	04				09			
	05				10			

DRAWING	DESIGN	CHECK	APPROVAL	MODEL NAME	KD-1731M,ULTRA74	STEP	MP
				DESCRIPTION	MAIN,NECK,POWER	UNIT	mm
				DRAWING NO.	K-98019	SCALE	/
				ADD NO.		DATE	99/01/1
				KOREA DATA SYSTEMS CO.,LTD.			SCH



RL801
MI-SS-212LM
W801
D-COIL
PTC801
D801
1N4148
Q801
C945
R843
T801
KP-1552
F801
250V 3.15A
C801
275V
104
BD801
D3SBA60
C825
472
250V
R801
1M
(1/2W)
C830
472
250V
C802
222
250V
C803
222
250V
C804
104
275V
C806
224
275V
C806
222
250V
C807
222
250V
C808
220u
400V
R802
R803
33K
(1W)
R804
33K
(1W)
R805
100K
(1W)
C810
103
1KV
C837
221
D802
UF4005
D803
1N4937GP
C809
100u
25V
INPUT
SCK801
AC : 100V~240V
LF801
KDS-3516
TH801
LF802
KDS-3507
R829
D808
15DF6
D807
D2L20U
R808
47
C811
272
(M)
D805
1N4148
C812
104
(M)
R810
27K
R809 470
IC801
C813
104
63V (M)
R811
150K
R812
4.7K
R813
200K
C814
332 (M)
C815
103
(M)
R846
150K
W802
R814
56
(1/4W)
C816
223
(M)
R815
24K
Q802
2SK2564-4115
R820
22
D804
1N4148
R819
1K
C817
152
(M)
ZD801
18V
R817
0.68
(1W)
R818
0.68
(1W)
R816
1K
C820
221
1KV
C830
221
1K
R826
10
(3W)
C818
472
250V
C819
472
250V
Q807
A1273Y
C839
1000u
25V
R836
27K
(1/4W)
R828
680
(1/4W)
R833
1K
(1/4W)
Q805
C945
W803
+14V
GND
P901
TO
NECK
BOARD
61
+77V
H.T
GND
P801
TO
USB
BOARD
(OPTION)
+6.3V
GND
P103
TO
USB
BOARD
(OPTION)
SDA
SCL
GND
R102
3K
R104
330
(1/2W)
ZD103
6.1V
C101
101
R103
1.8K
HFLB
D106
1N4148
C102
104
(M)
R106
10K
R107
8.2K
R105
1K
Q103
C946
R135 100
R114
1K
R113
1
2
3
4
9
8
7
6
5

KDS-175

AMEND	REV NO.	DATE	APPROVAL NO.	REMARK	REV NO.	DATE	APPROVAL NO.	REMARK
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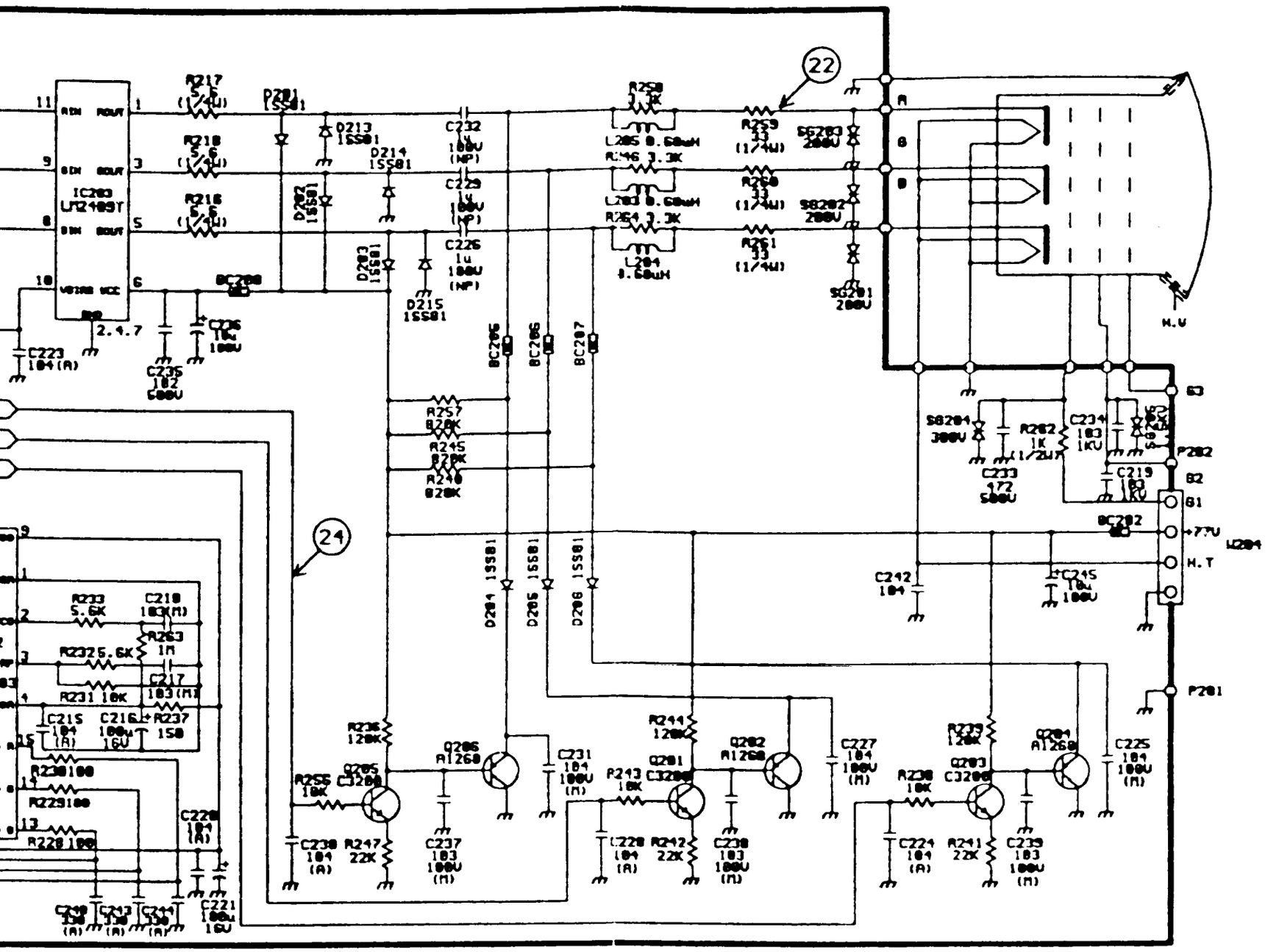

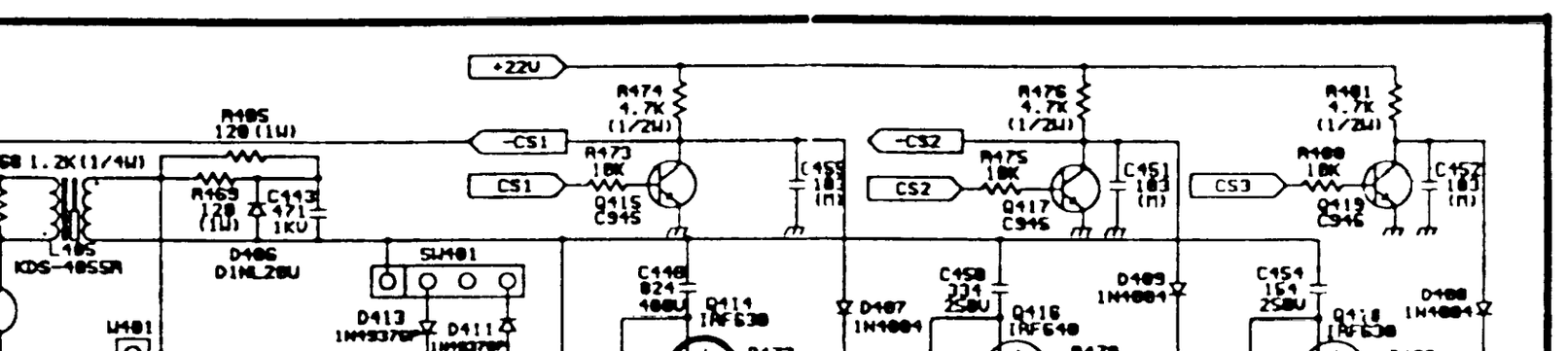

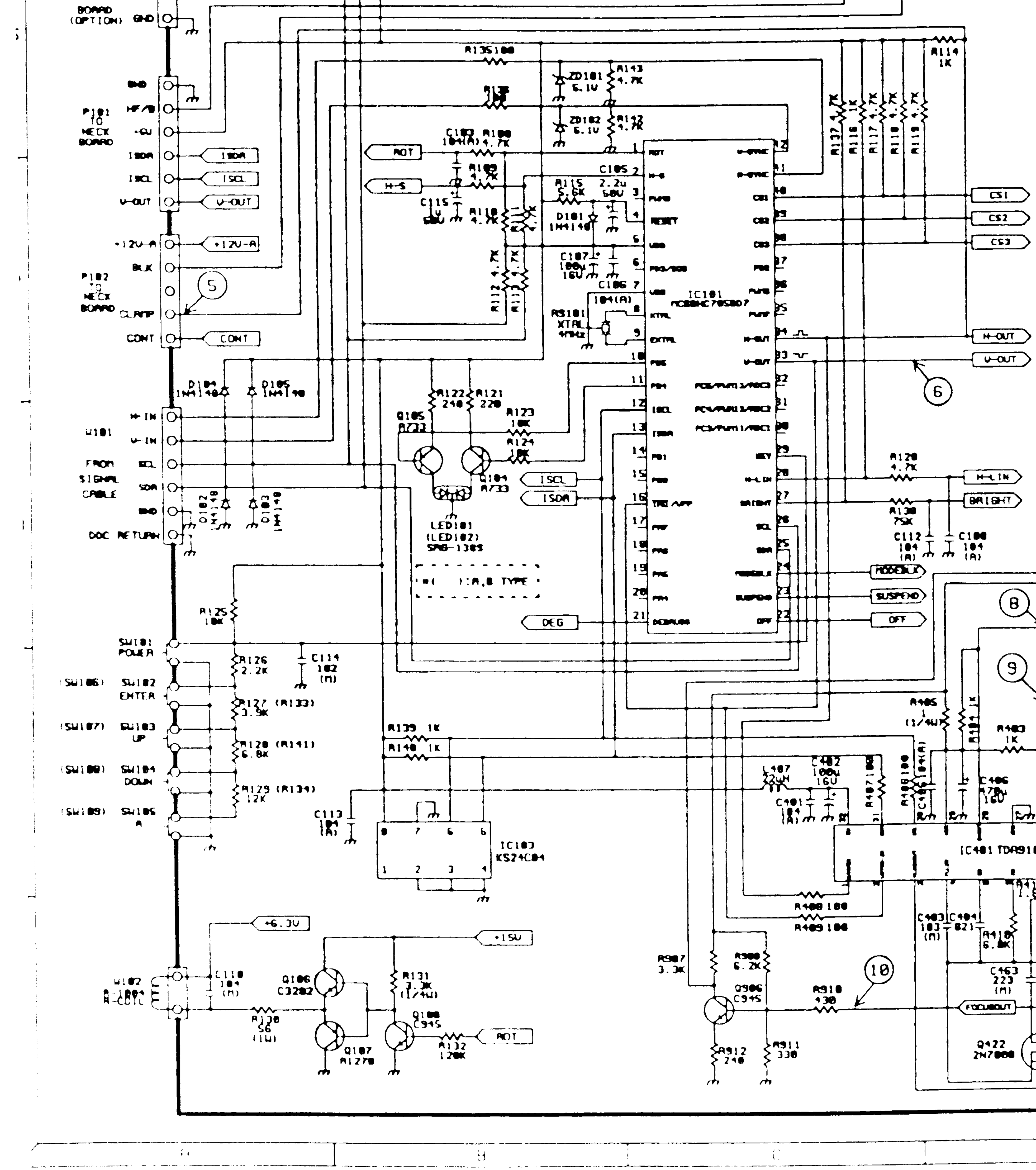

BOARD (OPTION)
GND
P101 TO NECK BOARD
P102 TO NECK BOARD
W101 FROM SIGNAL CABLE
H-IN
V-IN
SCL
SDA
DOC RETURN
CLAMP
CONT
ROT
H-S
ISDA
ISCL
V-OUT
+12V-A
BLK
D104 1N4148
D105 1N4148
D102
D103
ZD101 5.1V
ZD102 5.1V
R143 4.7K
R142 4.7K
R135 100
R114 1K
R137 4.7K
R116 1K
R117 4.7K
R118 4.7K
R119 4.7K
C103
R108 4.7K
R109 4.7K
C115 1u 50V
R110 4.7K
R112 4.7K
R113 4.7K
R115 5.6K
C105 2.2u 50V
D101 1N4148
C107 100u 16V
C106 104(A)
RS101 XTAL 4MHz
IC101
RESET
CS1
CS2
CS3
H-OUT
V-OUT
H-LIN
BRIGHT
MODEBLK
SUSPEND
OFF
DEG
R122 240
R121 220
R123 10K
R124 10K
Q105 A733
Q104 A733
LED101 (LED102) SPB-1305
*( ):A,B TYPE
R120 4.7K
R130 75K
C112 104 (A)
C108 104 (A)
R125 10K
SW101 POWER
SW102 ENTER
SW103 UP
SW104 DOWN
SW105 A
(SW106)
(SW107)
(SW108)
(SW109)
R126 2.2K
C114 102 (M)
R127 (R133) 3.9K
R128 (R141) 6.8K
R129 (R134) 12K
R139 1K
R140 1K
C113 104 (A)
IC103 KS24C04
R405 1 (1/4W)
R404 1K
R403 1K
L407 22uH
C402 100u 16V
C401 104 (A)
R407 100
R406 100
C406 470u 16V
IC401 TDA910
R408 100
R409 100
C403 103 (M)
C404 821
R418 6.8K
C463 223 (M)
FOCUSOUT
Q422 2N7000
+6.3V
+15V
W102 R-COIL
C110 104 (M)
R138 56 (1W)
Q106 C3202
Q107 A1270
R131 3.3K (1/4W)
Q108 C945
R132 120K
R907 3.3K
R908 6.2K
Q906 C945
R910 430
R912 240
R911 330
5
6
8
9
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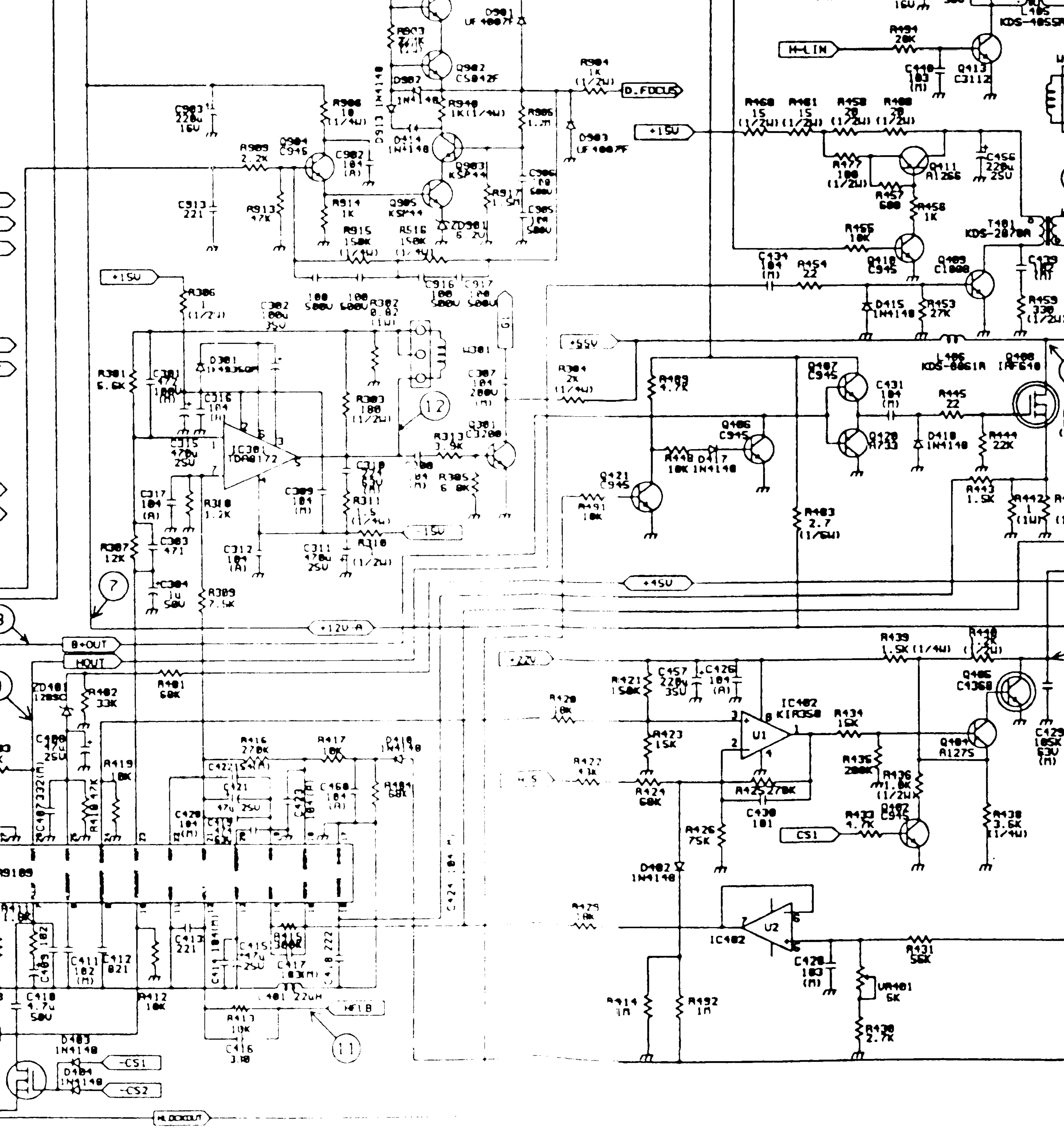
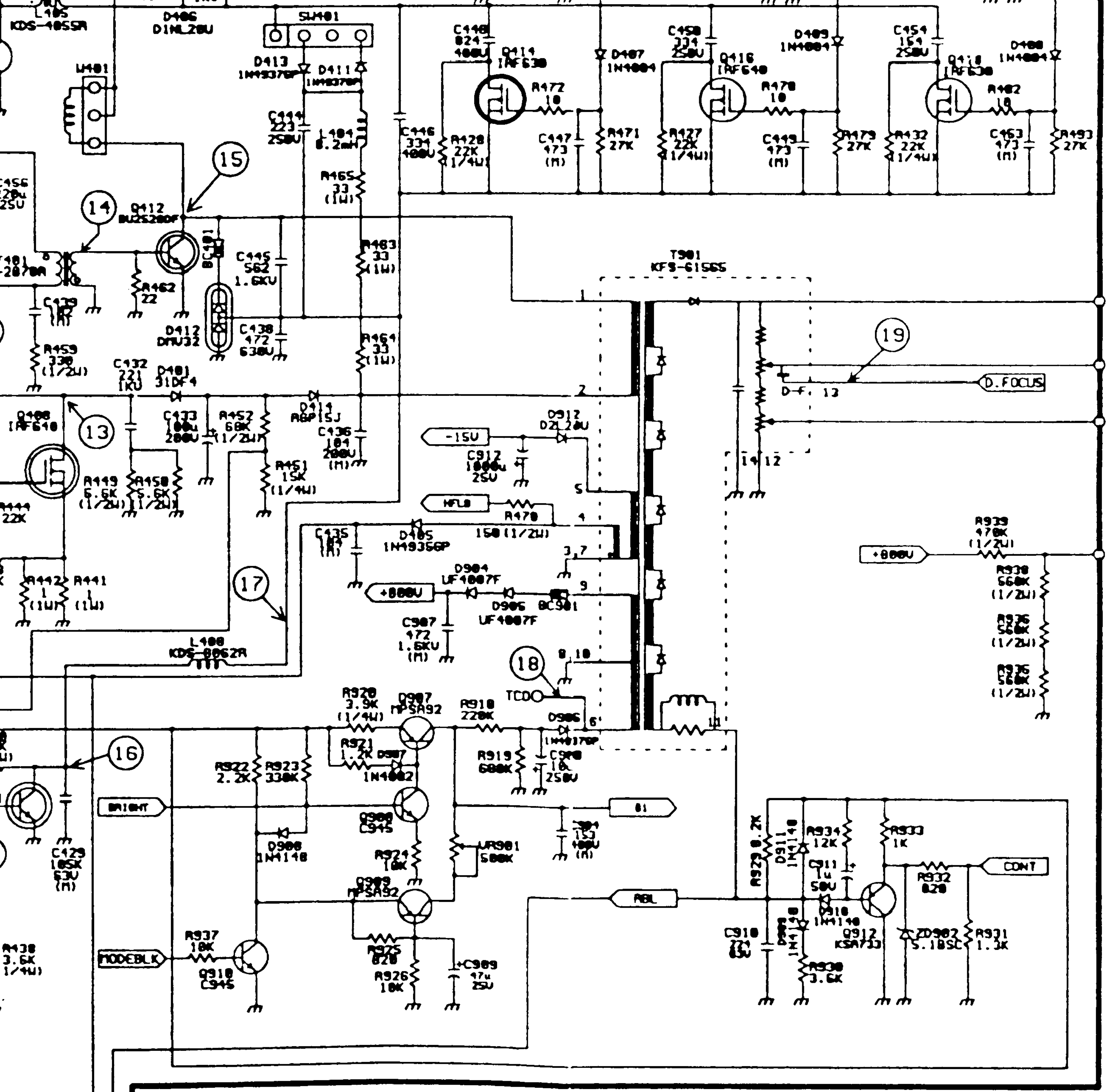

D.FOCUS
H-LIN
+15V
+55V
+45V
+12V-A
B+OUT
HOUT
+22V
CS1
-CS1
-CS2
HFLB
HLOCKOUT
-15V
IC301
TDA8172
IC402
KIA358
U1
U2
Q902 C5042F
Q904 C945
Q903 KSP44
Q905 KSP44
Q413 C3112
Q411 A1266
Q410 C945
Q409 C1000
Q407 C945
Q408 IRF640
Q406 C945
Q420 A733
Q421 C945
Q405 C4368
Q404 A1275
Q402 C945
Q301 C3200
T401 KDS-2070A
L405 KDS-405SR
L406 KDS-0061A
L401 22uH
D901 UF4007F
D903 UF4007F
D902 1N4148
D913 1N4148
D414 1N4148
D301 1N4936GP
D415 1N4148
D418 1N4148
D417 1N4148
D419 1N4148
D402 1N4148
D403 1N4148
D404 1N4148
ZD901 6.2V
ZD401 12BSC
VR401 5K

D

F

G



DRAWING	DESIGN	CHECK	APPF:OVAL	MODEL NAME	KD-1731M,ULTRA74	STEP	MP
				DESCRIPTION	MAIN,NECK,POWER	UNIT	mm
				DRAWING NO.	K-98019	SCALE	/
				ADD NO.		DATE	99/01/1
				KOREA DATA SYSTEMS CO.,LTD.			SCH

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