

# ADJUSTMENT INSTRUCTIONS

## 1. Safety Precautions

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances.
5. Unless otherwise noted, set the line voltage to  $220\text{Vac} \pm 10\%$ , 50Hz.
5. The adjustment of TV should be performed after warming up for 15 minutes.

## 2. Test Equipment required

1. RF signal generator (with pattern generator)
2. DC Power Supply
3. Multimeter (volt meter)
4. Oscilloscope
5. Color analyzer

## 3. DVCO Adjustment

- 1) This is for adjustment of VPC9407, crystal oscillator frequency after receiving a company Digital pattern. (PAL: EU05CH, NTSC: 13CH)
- 2) When entering adjustment mode by pressing IN-START button, DVCO adjustment is operating automatically. (T/X doesn't operating occasionally during DVCO adjustment.)

## 4. Focus Adjustment

### 4-1. Preparation for Adjustment

Tune the TV set to receive a digital pattern.

### 4-2. Adjustment Method

- 1) Adjust the lower Focus volume of FBT for the best focus of vertical line B.
- 2) Adjust the upper Focus volume of FBT for the best focus of area A.

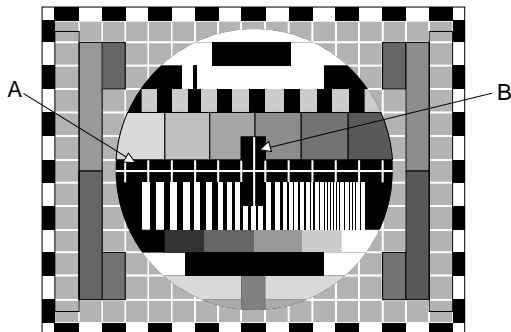


Fig. 1

- 3) Repeat above step 1) and 2) for the best overall focus.

## 5. Purity & convergence Adjustment

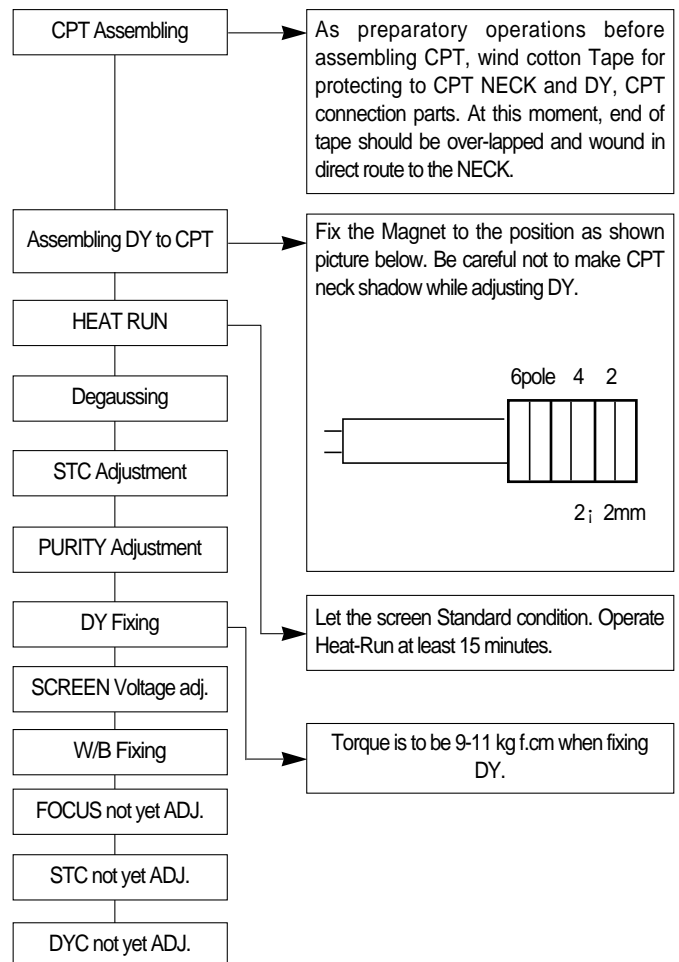
### 5-1. Preparation for Adjustment

Adjustment should be operated when using the CPT (without ITC from CPT manufacturing place)

\*This adjustment must follow the sequence as shown picture below.

### 5-2. Purity Adjustment

- 1) Degauss the CPT and CABINET enough.



- 2) Receive red RASTER signal. (PG50ch)
- 3) Remove fixing screw of DY and stick DY to opening part (CPT FUNNEL part)
- 4) Make crossing adjustment to the Magnet of CPT and make the R-land is placed on center correctly. At this moment, 4 pole and 6 pole magnet should be at the position of no magnetic field.

- 5) Move DY and make whole screen to be equal red, and fix the DY with fixing SCREW after checking color pollution in each single color and white RASTER of green/blue/red.(At this time, be careful about inclination and DY should be fixed keeping horizontality.)
- 6) Check the receiver in direction of East, West, South, North. Adjust with supporting MAGNET when adjustment is not operated.

### 5-3. Convergence Adjustment

This adjustment should be operated at the best condition of FOCUS after finishing the PURITY adjustment.

- 1) BACK RASTER receives black CROSS HATCH signal.
- 2) Adjust Brightness so that there are 9-12 dots.
- 3) Widen two tabs of 4pole Magnet with equal angles and accord red, blue vertical lines at the center of screen.
- 4) With keeping angle of "c. clause", rotate tab and accord red/blue, green vertical lines at the center of screen.
- 5) Widen two tabs of 6pole Magnet with equal angles and accord red, blue vertical lines at the center of screen.
- 6) With keeping angle of "e. clause", repeat the adjustment from c to e keeping in mind the movement of red, blue, green when the horizontal lines are twisted.
- 7) Move DY up, down, left, right and make the convergence to be optimal condition and stick rubber wedge to CPT so that the DY not to move.

## 6. Screen voltage Adjustment

### 6-1. Preparation for Adjustment

- 1) Connect power to TV Set and let POWER ON condition.
- 2) Operate screen more than 15 minutes before adjustment.

### 6-2. Adjustment Method

- 1) Adjust in no RF signal condition.
- 2) Press ADJ KEY on the R/C for adjustment and make horizontal line.  
Turn the Screen Volume so that horizontal line not to be shown and then change oppositely to finish the adjustment at the showing place.

## 7. White balance Adjustment

### 7-1. Preparation for Adjustment

- 1) This adjustment should be performed after screen voltage adjustment.
- 2) Tune the TV set to receive an 100% white pattern.

### 7-2. Adjustment Method

- 1) Enter the adjust mode by pressing the IN-START button.
- 2) Press Channel UP/DOWN button for desirous function Adjustment.
- 3) Press Volume UP/DOWN button to adjust the data.
- 4) Adjustment Sequence
  - a- Change the "CONTRAST", "BRIGHT" and adjust to be 3.5 Ft\_L.
  - b- Adjust "Y" value of High Light with GD(G-Drive) and adjust "X" value with BD(B-Drive) and make color coordinates of High Light which is specified in "\_\_\_clause".
  - c- Change the "CONTRAST", "BRIGHT" and adjust to be 4.5 Ft\_L.
  - d- Adjust "Y" value of Low Light with GC(G-Cutoff) and adjust "X" value with BC(B-Cutoff) and make color

- coordinates of Low Light which is specified in "\_\_\_clause".
- e- Repeat the adjustment from 'a' to 'd' until the High, Low color coordinates of "\_\_\_clause" is satisfied.
  - f- Check the adjusted color coordinates with white balance meter.

Color Tem.	X	Y	Memo
13000K	266±8	273±8	NON EU
9000K	288±8	295±8	EU

Menu	LG 29" FLAT		MENO
RC	001F		Low Light Adj
GC	0019		Low Light Adj
BC	001F		Low Light Adj
RD	001F		High Light Adj
GD	0019		High Light Adj
BD	001F		High Light Adj

## 8. Deflection Data Adjustment

### 8-1. Preparation for Adjustment

- 1) Deflection Data Adjustment should be performed with the remote controller for handset.
- 2) Enter the Adjustment mode by pressing the INSTART button.
- 3) Select the DEFLECT to deflection Data Adjustment.
- 4) Press the Channel UP/DOWN button to select adjustment items.
- 5) Press the Volume UP/DOWN button to adjust the data.
- 6) The TV set receives PAL-B/G Digital pattern.

**NOTE :** If production line doesn't the production line of LG TV, receive available deflection adjustment pattern.

#### VL (Vertical Linearity)

Adjust so that the boundary line between upper and lower half is in accord with geometric horizontal center of the CPT.

#### VA (Vertical Amplitude)

Adjust so that the circle of a digital circle pattern may be located within the effective screen of the CPT.

#### SC (Vertical "S" Correction)

Adjust so that all distance between each horizontal lines are to be the same.

#### VS--(Vertical Shift)

Adjust so that the horizontal center line of a digital circle pattern is in accord with geometric horizontal center of the CPT.

#### HS (Horizontal Shift)

Adjust so that the vertical center line of a digital circle pattern is in accord with geometric vertical center of the CPT.

#### EW (Horizontal Width)

Adjust to that a digital circle pattern looks like exact circle.

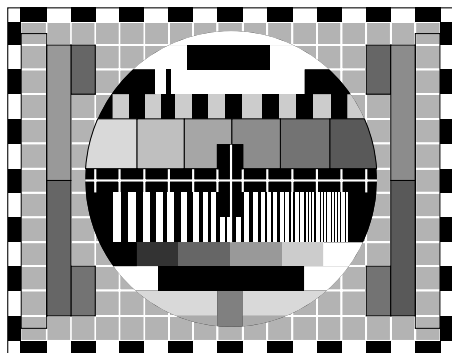


Fig. 2 <50HZ>

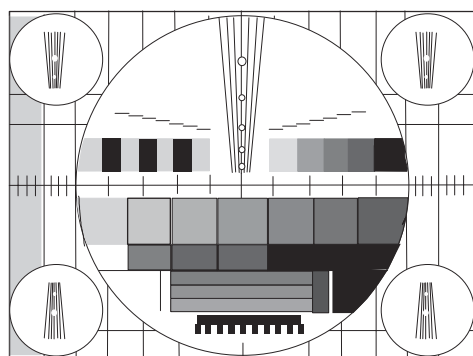


Fig. 2<60HZ>

#### EPP(East-West Pin Phase)

Adjust so that horizontal width of the uppermost part and horizontal width of the lowermost part of received screen are to be the same.

#### UC(Upper Coner Correction)

Adjust so that coner vertical line of upper-left and upper-right to be straight line after finishing EP adjustment.

#### LC(Lower Coner Correction)

Adjust so that coner vertical line of lower-left and lower-right to be straight line after finishing EP adjustment.

#### A-BOW(AFC Bow)

In line adjustment, not to change default value is basic.

#### A-ANG(AFC Angle)

In angle adjustment, adjust until inclination of left and right screen should be precise.

#### V-SCR(V-Scroll)

Only adjust when V SHIFT is impossible.

Menu	Range	PAL 100HZ	NTSC 60HZ	480P	1080I	VGA
VS	0 ~ 3F	1E	18	17	11	1D
VA	0 ~ 3F	1E	1F	1E	23	2B
HS	0 ~ 3F	1C	29	14	25	10
EW	0 ~ 3F	1D	1D	1F	2A	1C
EP	0 ~ 3F	A	C	B	E	7
EPP	0 ~ 3F	1E	1D	1B	14	22
A-ANG	0 ~ 3F	1F	1F	1D	1D	21
A-BOW	0 ~ 3F	1E	20	1E	1E	1E
UC	0 ~ 3F	1F	21	20	20	1C
LC	0 ~ 3F	1F	22	20	1F	15
U-VL	0 ~ 0F	02	2	2	2	2
L-VL	0 ~ 0F	06	7	7	7	6
VL	0 ~ 0F	05	5	5	5	5
SC	0 ~ 0F	05	4	4	4	4
V-SCR	0 ~ 3F	21	21	21	21	21

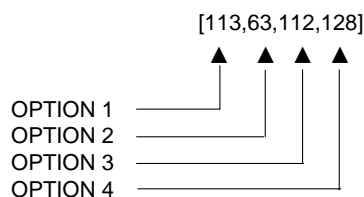
\* Adjust in PAL100Hz and PAL50Hz, NTSC60Hz, 480P, 1080I, VGA Mode don't need to be adjusted because they are changed into correction about adjustment value of PAL 100Hz.

\* But, If the inclination adjustment is not correct when checking NTSC60Hz, 480P, 1080I, VGA Mode after finishing adjustment in PAL100Hz, adjust each Mode again.

## 9. OPTION Adjustment

### 9-1. Preparation for Adjustment

- 1) This decides funtion in accordance with model.  
Press the SVC TX adjustment button(IN-START button) at SVC mode,then adjust the option at OPTION 1,2,3,4 mode.
- 2) Mark the option adjustment data like [111,11,111,11] in BOM.



#### ● Mark of BOM

LEVEL PART NO. SPECIFICATION DESCRIPTION JOB EXP.

1. 3141VMN382A MAIN[MC-022A] CHASSIS ASSY OP[113,63,112,128]

The OPTION 1 data is 113,OPTION 2 data is 63,the oOPTION 3 data is 112,the OPTION 4 data is 128 in this model.

## 9-2. Adjustment Method

- 1) Input data directly by the buttons corresponded with OPTION1 ??(0~255), OPTION2 ??(0~255), OPTION3 ???(0~250).
- 2) Option4??? (0~116) controls corresponding lines directly relate with OSD and TXT LANG.
- 3) Select each OPTION function by the CH Up/Down button and then set up each OPTION by the VOL Up/Down button.

**Table 1. OPTION 1 Function**

Option	Code	Function	Remark
200 PR	0	100 PROGRAM SAVE	
	1	200 PROGRAM SAVENICAM	
TSEAR	0	Without Turbo Search function	WL/CL
	1	With Turbo Search function	CT/CE/WT/WE
I/II SV	0	NO SAVE DUAL/SOUND Condition	EU(WE/WL/CE/CL
	1	SAVE DUAL SOUND Condition	NON-EU(WT/CT)
TOP	0	FLOP TEXT	Without TOP TEXT
	1	TOP TEXT	
EYE	0	Without EYE	
	1	With EYE	
A2 ST	0	NICAM	
	1	NICAM&FM STEREO/DUAL	
SYS	0	B/G,I.D/K	
	1	B/G	
	2	B/G,I.D/K,M	
	3	RESERVED	

**Table 2. OPTION 2 CODE Data**

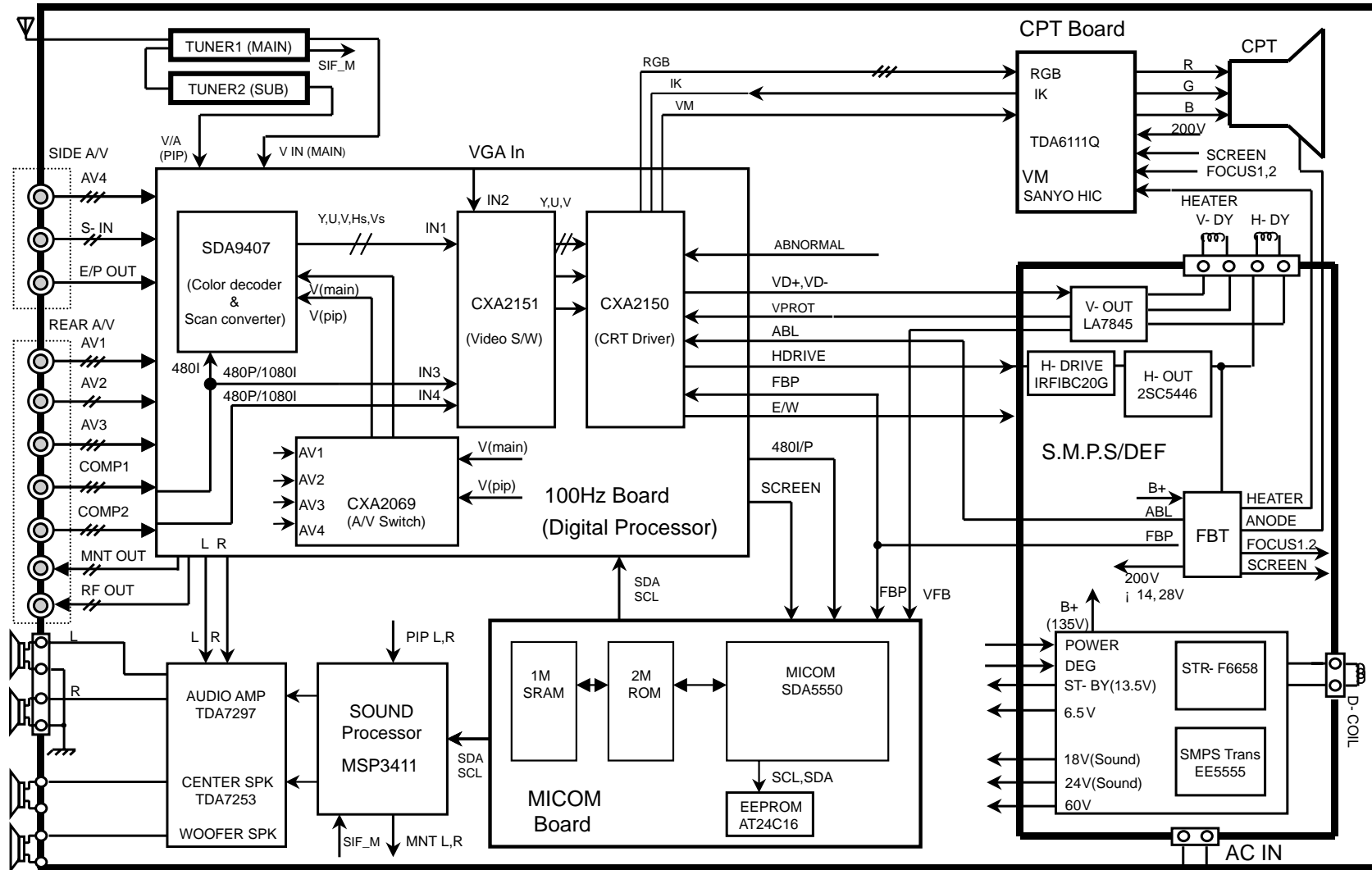
Option	Code	Function	Remark
ACMS	0	Without ACMS function	
	1	With ACMS function	
VOL	0	NORMAL VOLUME CURVE	
	1	RUSHED VOLUME CURVE	
H-PHON	0	Without HEADPHONE	
	1	With HEADPHONE	
DVD	0	Without DVD INPUT	
	1	With DVD INPUT	
SAV3	0		
	1	AV3 Y&C	
WOOF	0	Without WOOFER	
	1	With WOOFER	
VGA	0	Without VGA	
	1	With VGA	
AV SV	0		
	1		

**Table 3. OPTION 3 Function**

Option	Code	Function	Remark
WIDE	0	4 : 3 TV	
	1	16 : 9 TV	
CH+AU	0	Without D/K CHINA or BB sys.	
	1	With D/K CHINA or BB sys.	
HDEV	0	NO SAVE DUAL/SOUND Condition	HIGH DEVIATION
	1	SAVE DUAL SOUND Condition	

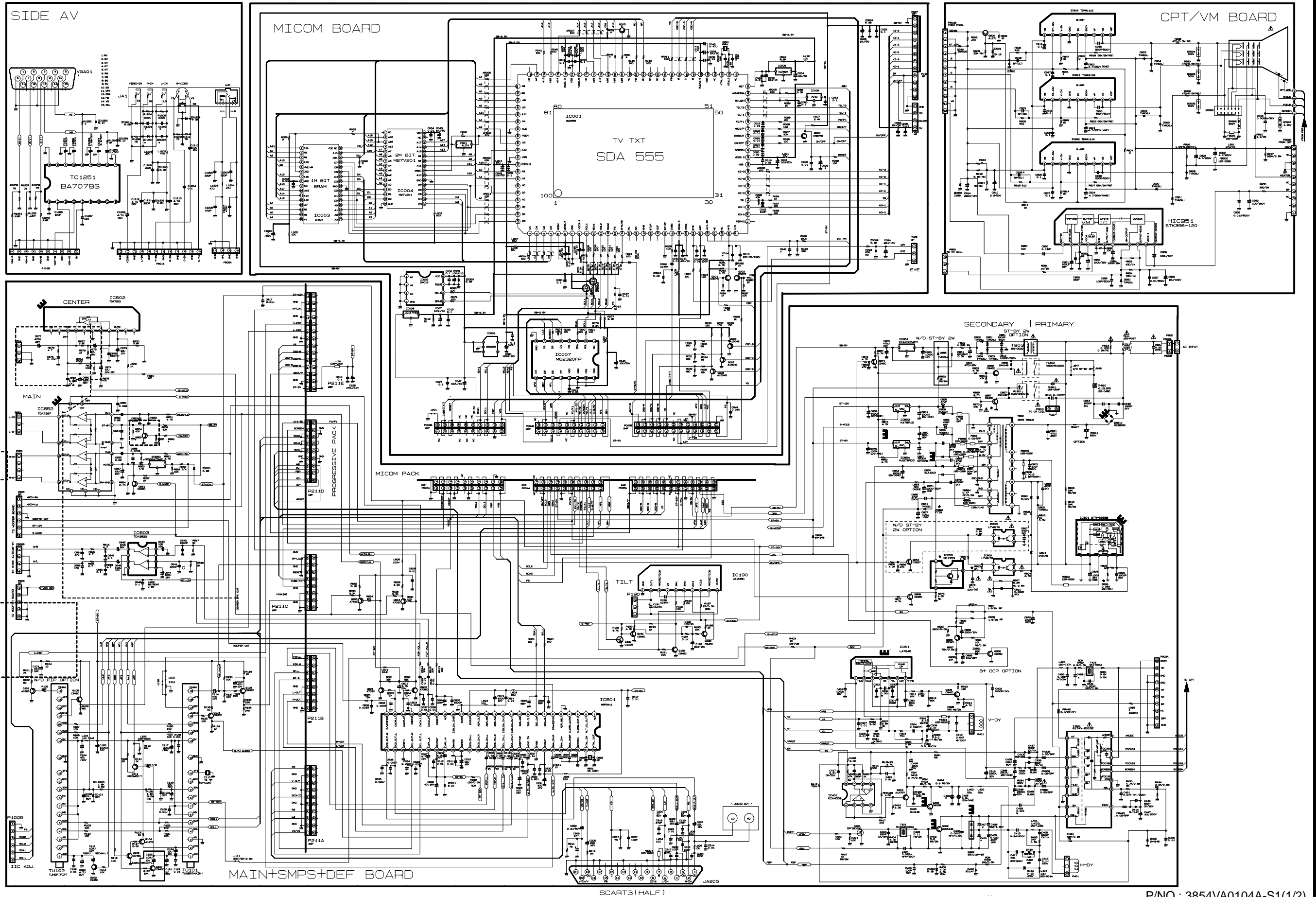
**Table 4. OPTION 4 Funtion**

OPTION	CODE	Language	Funciton
LANG	0	E Only	
	1	English+EU 5	
	2	English+Other EU	
	3	FARSI	
	4	ARAB URDU	
	5	E + HINDI	
	6	E + I + M + V	
	7	E + THAI	
	8	E + CHINA	
T LAN	0	West Europe	
	1	East Europe	
	2	Turkey EU1	
	3	EAST EU2	
	4	Cyrillic 1	
	5	Cyrillic 2	
	6	Cyrillic 3	
	7	Turkey/Greek 1	
	8	Turkey/Greek 2	
	9	Turkey/Greek 3	
	10	Arab/France	
	11	Arab/English	
	12	Arab/Hebrew 1	
	13	Arab/Hebrew 2	
	14	Farsi/English	
	15	Farsi/France	
	16	Farsi all	



BLOCK DIAGRAM

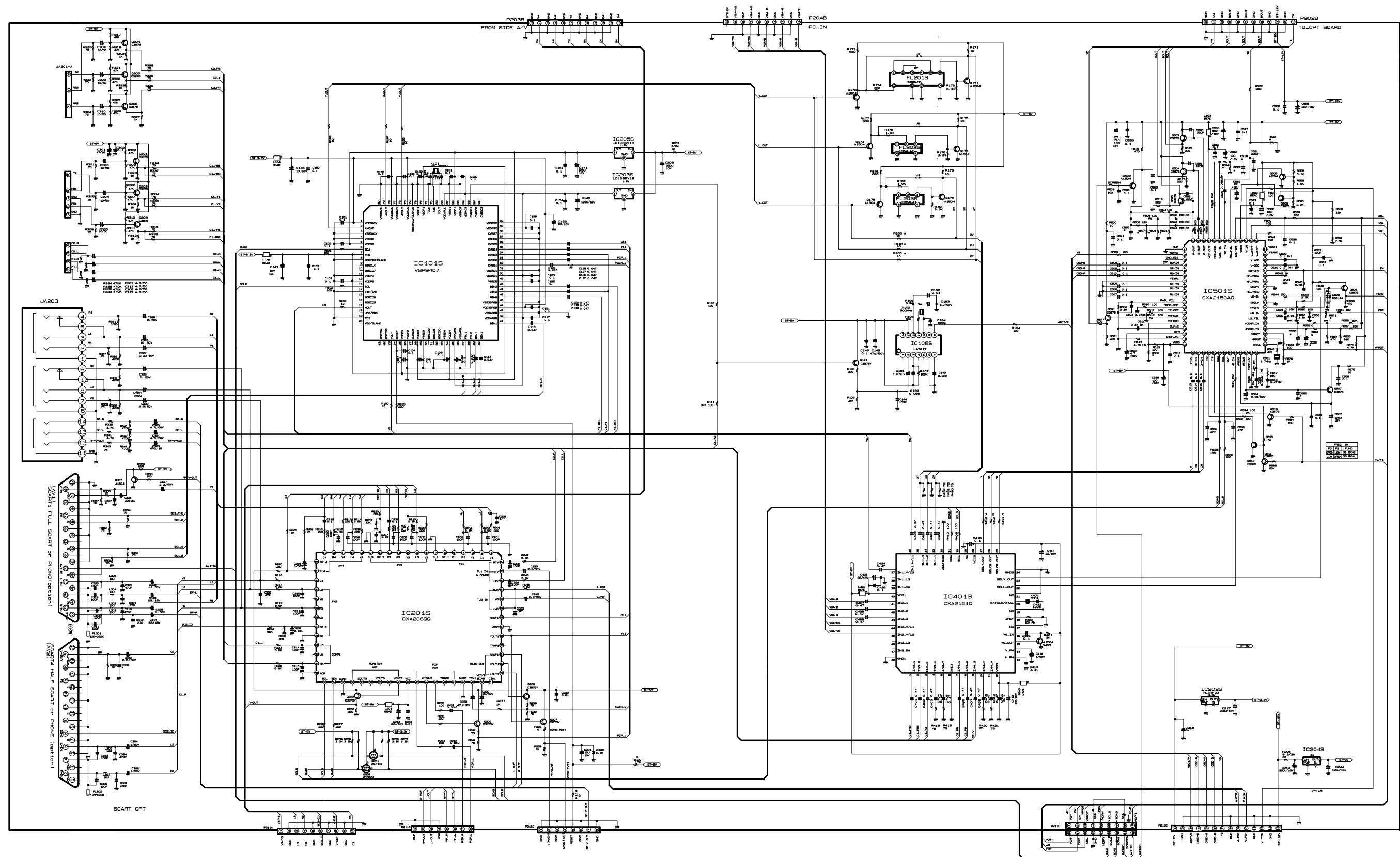
# CIRCUIT DIAGRAM FOR MC021A CHASSIS



WITH PLATE

P/NO : 3854VA0104A-S1(1/2)  
DATE : 2002.07.25

# CIRCUIT DIAGRAM FOR MC021A CHASSIS



P/NO : 3854VA0104A-S2(1/2)  
DATE : 2002.07.25