SKYWORTH

ALIGNMENT PROCEDURE FOR 3Y01 CHASSIS

ALIGNMENT INSTRUCTION (3Y01)   31-1-2000

1. Please notice the following before alignment and equipment:

    1-1   Don't short any two soldering points, which should not be shorted and don't touch any components, which should not be touched.

    1-2   Please pull out plug before equipment.

    1-3   For safety reasons, all components equipped or replaced should be identical with BOM.

    1-4   Must be warm up for 30 minutes or more and degauss CRT thoroughly with demagnetizer before alignment.

    1-5   The data of EEPROM must be stored before the adjustment for main chassis.

2. Tools and equipment for adjustment

    2-1   small "-" screwdriver

    2-2   screwdriver without inductance

    2-3   Pattern Generator

    2-4   DC Regulated power supply

    2-5   Digital Voltmeter

    2-6   Sweep Signal Generator

    2-7   20MHz 2-channel Oscilloscope

3. Signal condition

ITEMS	LOGO	PICTURE CARRIER	PATTERN	SYSTEM	SOUND MODE	REMARK
1	CHN-1CH	49.75MHz	PHILIPS PATTERN	PAL-I	1KHz	
2	WE-6CH	182.25MHz	RED PATTERN	PAL-B/G	L: -------- R:400Hz	STEREO/ TELETEXT
3	CHN-12CH	216.25MHz	GREY SCALE /COLOR BAR	SECAM-D/K	SWEEP SOUND	
4	CHN-13CH	471.25MHz	CROSS HATCH PATTERN	PAL-D/K	1KHz	
5	USA-33CH	585.25MHz	COLOR BAR	NTSC-M	--------	WITHOUT SOUND CARRIER
6	--------	751.25MHz	MONOSCOPE PATTERN	PAL-I	SWEEP SOUND	
7	--------	85.25MHz	GREY SCALE /COLOR BAR	SECAM-L'	1KHz	SYS-2
8	WE-S20CH	294.25MHz	Semi-COLOR BAR	PAL-B/G	A:400Hz B:1KHz	DOUBLE SOUND CARRIER

4. Adjust for main chassis

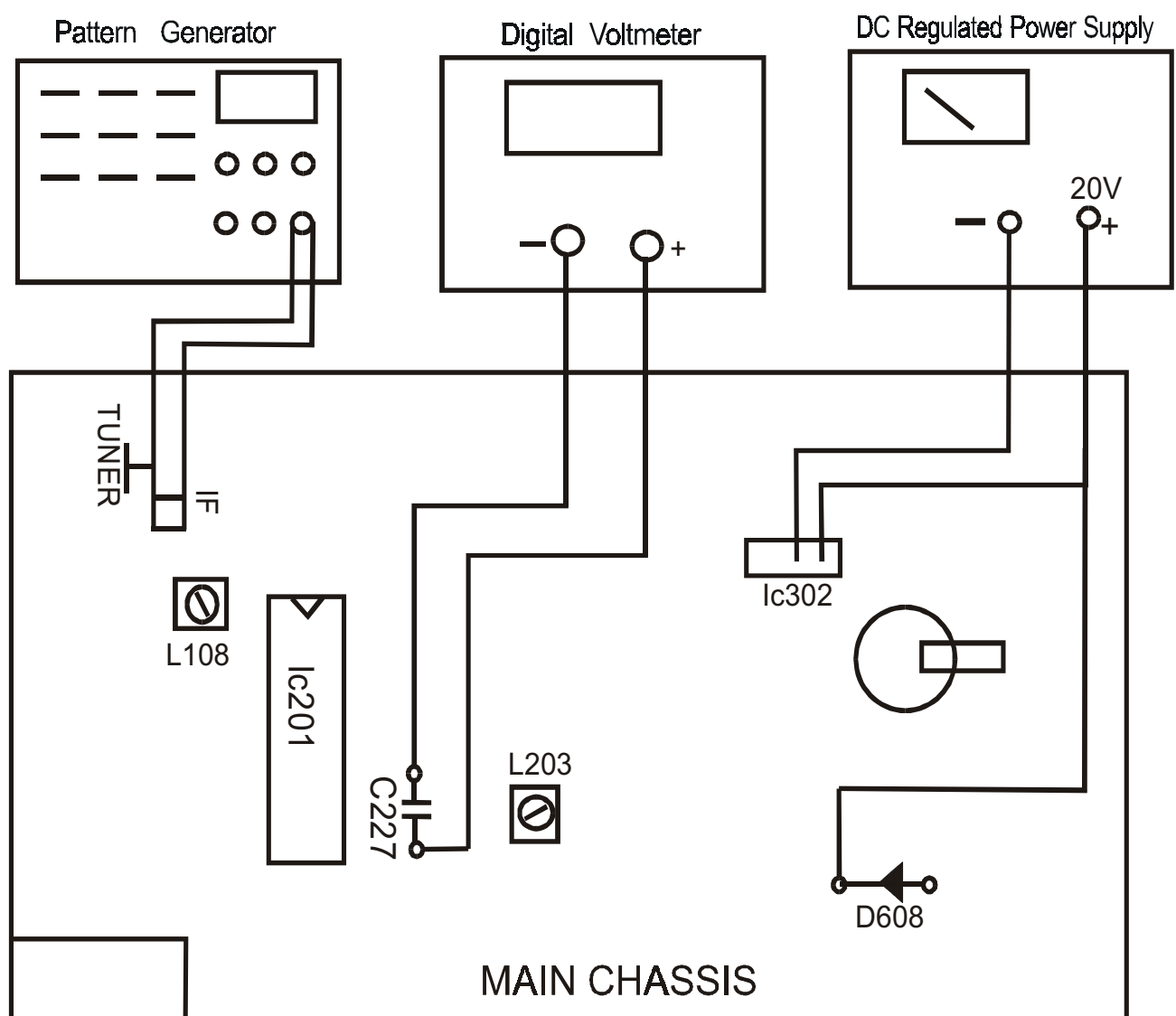   4-1   PIF Adjustment (38.9MHz)

Fig.1

    4-1-1   Tuner AGC connects to GND.   Pattern Generator outputs 38.9MHz R.F. signal and connects to tuner IF output terminal or pin5 of saw filter.

    4-1-2   Connect Digital voltmeter across C227. DC Regulated power supply positive terminal output +20V to pin1of IC302 and negative terminal of D608. DC Regulated power supply negative terminal connects to pin2 of IC302.

    4-1-3   Adjust L203 coil to obtain 3.6V Digital voltage meter reading.

  4-2   System NTSC Adjust(L108)

    4-2-1   Tuner AGC connects to GND. Connect Sweep Signal Generator to tuner IF output terminal. Sweep oscilloscope V-IN terminal connects to C109. And connect Q102 'b' pole to the power terminal of R104 through a resistor.(shown in FIG.2)

Sweep SignaL Generator

Sweep Oscilloscope

DC Regulated Power Supply

+20V

TUNER IF
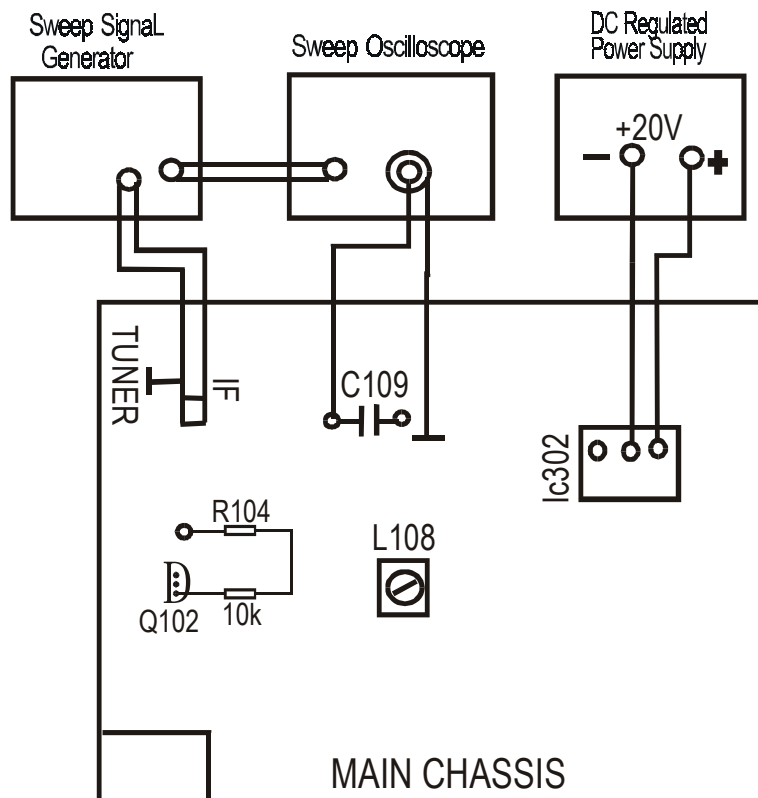
C109

Ic302

R104

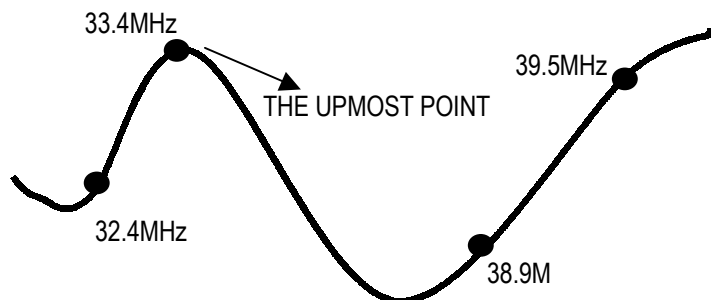Q102 10k

L108

MAIN CHASSIS

FIG.2

4-2-2   Apply +20V DC across IC302 as shown in FIG.2.

4-2-3   Adjust L108 to obtain waveform as following. There will be no alignment to it without NTSC system.

33.4MHz

39.5MHz

THE UPMOST POINT

32.4MHz

38.9M

4-3   B+ adjustment

4-3-1   Disconnect horizontal load. Connect a light bulb (100 W) AC 250V across C321.

4-3-2   Connect 220V AC 50Hz to CN601 and switch on power switch.

4-3-3   Test the voltage with digital voltage meter between C321 two terminals.

4-3-4   Adjust VR601 to obtain +110V +/- 0.5V.

4-4   AGC alignment

4-4-1   Receive 60dB +/- 2dB RF signal. Connect Digital voltmeter positive terminal to AGC terminal of TUNER and negative terminal to GND.

4-4-2   Press "MENU" key twin, till the PICTURE MENU appears, then press "Q.VIEW" or "RETURN" key, "MUTE" key to turn on CPU. TV SET will go to factory mode. Press "TIMER" key to go to the next factory menu. Go to "MENU 3" status by this means.

4-4-3   Select RF.AGC by pressing "CH+" or "PROG+" and "CH-" or "PROG-" keys.   Adjust "VOL+" and "VOL-" keys to obtain 4V Digital voltage meter reading.

4-4-4   Press "MENU" key to exit factory mode.

5. COMPLETE MACHINE GENERAL ADJUSTMENT

5-1   Go to factory mode according to 4-4-2 before warm up line.

5-2   Focus Adjustment.

5-1-1   Receive monoscope pattern.

5-1-2   Set TV to work in dynamic status.

5-1-3   Adjust the focus knob of FBT to get the clearest picture.

5-3   Screen Voltage Adjustment.

5-3-1   Go to factory mode "MENU 2" status according to 4-4-2.

5-3-2   Select "V-KILL" by pressing "CH+" or "PROG+" and "CH-" or "PROG-" keys..

5-3-3   Press and hold on the "VOL+" key all the time, Adjust the screen knob of FBT to get a horizontal faintness beam line. Then release "VOL+" key.

5-4   White Balance Adjustment (Applied in factory only)

5-4-1   Set the TV set to AV mode. Receive black white pattern (Color Temperature test pattern).

5-4-2   Insert 6 Pin Service flat cable into CN002. Press adjustment keys, and then go to automatic white balance adjustment.

5-4-3   After adjusting well, remove the 6 Pin Service flat cable.

5-4(1)   White Balance adjustment (Applied when servicing)

5-4(1)-1 Set the TV set to AV mode. Receive black white pattern (Color Temperature test pattern).

5-4(1)-2 Put the test probe 1 of CRT color analyzer (CA-100) on the Low Bright area and the test probe 2 on the High Bright area. Adjust bright and contrast to get 5nit of low bright area and 80 nit of high bright area.

5-4(1)-3 Go to factory mode "MENU2" according to 4-4-2. Obtain Low Bright area to x=281and y=311 by adjusting R.bias and B.bias. Obtain High Bright area to x=281and y=311 by adjusting R.drive and B.drive. Obtain both area to x=281 and y=311 by adjusting the two status repeatedly.

5-5   Sub-bright adjustment

5-5-1   Receive GREY SCALE signal. (PHILIPS PM54200, 11 STEP)

5-5-2   Set TV at normal mode.

5-5-3   Get into factory mode, adjust sub-bright option to make the picture same as below.

Totally dark ◄————————► Can be seen the brightness

5-6   Vertical Size and PinCushion Adjustment

5-6-1 Receive monoscope pattern. Set TV standard status. Adjust V.size to obtain picture's vertical redisplay ratio more than 90% in factory mode "MENU1".

5-6-2 Receive cross hatch pattern. Set TV standard status. Adjust V.LINE and V.SC to obtain picture's vertical pin cushion a good status in factory mode "MENU1".

5-6-3 Receive cross hatch pattern. Set TV standard status. In factory mode "MENU1" adjust V.POSITION to obtain picture's vertical center at the center of CRT screen.

5-7   Horizontal Center Adjustment

Receive PHILIPS PATTERN. Set TV standard status. Adjust H.PHASE to obtain horizontal center at the center of CRT screen.

5-8   Secam color decoder alignment.

Receive the GREY SCALE /COLOR BAR signals.   Enter into the factory mode. Adjust the values of Secam R-Y DC and Secam B-Y DC to make the gray scale to the normal color.

5-9   COLOR PURITY ADJUSTMENT
5-9-1   Before color purity adjustment, Warm up the TV set over 15 minutes and fully degauss.
5-9-2   Receive pure white signal in AV status and set the TV receiver dynamic.
5-9-3   Go to factory mode "MENU2". After write down the values of R-BIAS and B-BIAS, set the values of R-BIAS and B-BIAS zero.
5-9-4   Loosen the clamp screw of the deflection yoke and pull the deflection yoke towards color purity magnetic loop.
5-9-5   Adjust color purity magnetic loop to make the green area at the center of CRT screen.
5-9-6   Slowly push the deflection yoke toward the front of CRT and set it where a uniform green field is obtained. Tighten the clamp screw of the deflection yoke.
5-9-7   Restore the values of R-BIAS, G-BIAS and B-BIAS.

5-10   CONVERGENCE ADJUSTMENT
5-10-1   Receive a dotted pattern. Set the TV receiver dynamic.
5-10-2   Loose the convergence magnet clamper and align red with blue dots at the center of the screen by rotating (R, B) static convergence magnets.
5-10-3   Align Red/Blue with green dots at the center of the screen by rotating (RB-G) static convergence magnet.
5-10-4   Remove the DY wedges and slightly tilt the deflection yoke horizontally and vertically to obtain the good overall convergence. Fix them after the good overall convergence got.
5-10-5   Fix the convergence magnets by turning the clamper.
5-10-6   If purity error is found, follow "PURITY ADJUSTMENT" instructions.
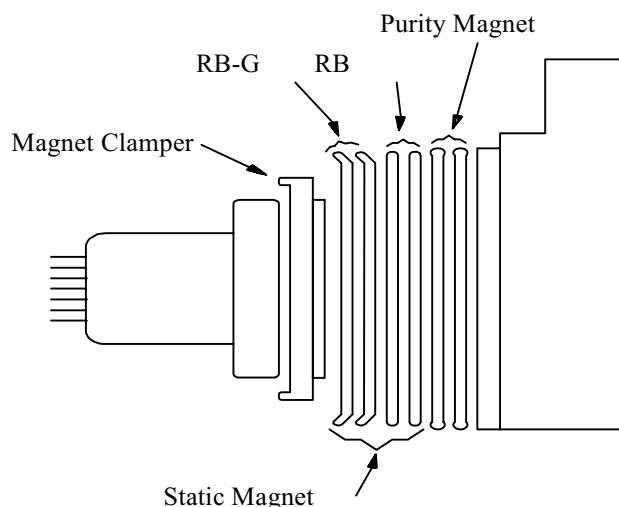
Appendix: If customer logo is needed, please set LOGO ON 1 and CUS.LOGO (or CUSTOM LOGO) 1 at the SERVICE MODE. Change the data of E^2prom to get the custom logo with special implement (I2C converter Board and Computer). Please see the details as following.

Method to Write Data for Custom Logo

The are total 12 characters that can be input into E^2prom and display on the TV. The address range of E^2prom (24C04) is from 170H-17BH. The following table shows the code input character.

Character	Data Code	Character	Data Code
'0'	30H	'K'	4BH
'1'	31H	'L'	4CH
'2'	32H	'M'	4DH
'3'	33H	'N'	4EH
'4'	34H	'O'	4FH
'5'	35H	'P'	50H
'6'	36H	'Q'	51H
'7'	37H	'R'	52H
'8'	38H	'S'	53H
'9'	39H	'T'	54H
'A'	41H	'U'	55H
'B'	42H	'V'	56H
'C'	43H	'W'	57H
'D'	44H	'X'	58H
'E'	45H	'Y'	59H
'F'	46H	'Z'	5AH
'G'	47H	'/'	2FH
'H'	48H	'.'	2EH
'I'	49H	'*'	40H
'J'	4AH	' '	09H