

3 ALIGNMENT INSTRUCTIONS

3.1 MICROCONTROLLER CONFIGURATION : SERVICE MODE

To switch the TV set into service mode please see instruction below.

- 1 - Select PR. number 91
- 2 - Adjust sharpness to minimum and exit all menus.
- 3 – Within 2 seconds press the key sequence : **RED - GREEN - menu**

The software version is displayed beside the word Service, e.g. “SERVICE VER 00.05”.

To exit SERVICE menu press **menu** key or **Std By** key.

3.2 SERVICE MODE NAVIGATION

- Pr Up/Down remote keys : cycle through the service items available.
 Vol -/+ remote keys : Dec./Increment the values within range – Cycle through option bits.
 OK key : Toggle bits in option byte

Order	Item	Default setting
1	HOR CEN	
2	RED GAIN	
3	GRN GAIN	
4	BLUE GAIN	
5	RED BIAS	
6	GRN BIAS	
7	AGC LEVEL	
8	G2 – SCREEN	
9	OPTION1	
10	OPTION2	
11	AVL	
12	PARABOLA	
13	HOR WIDTH	
14	CORNER T	
15	CORNER B	
16	HOR. PARAL	
17	V. LINEAR	
18	V. SLOPE	
19	EW TRAPEZ	
20	S CORRECT	
21	VERT CENT	
22	VERT SIZE	

3.3 MICROCONTROLLER CONFIGURATION : OPTION BITS

There are two option bytes available (16 bits in all). These option bits are available from Service mode. First find the OPTION1 or OPTION2 control, and then use the Volume PLUS/MINUS buttons on the remote control keypad to locate the bits, and OK key to toggle them. The table below shows the two option bytes available;

3.4 OPTION 1

	B7	B6	B5	B4	B3	B2	B1	B0
1	TOP Teletext OFF	FASTEXT (FLOF) OFF	TUBE 4:3	VAI bit set to 1 in SECAM L	Dolby Virtual OFF	SVHS3 disable	TUNER OPTIONS 00 = Philips 01 = Not used 10 = Alps 11 = Parstnic (DW)	
0	TOP Teletext ON	FASTEXT (FLOF) ON	TUBE 16:9	VAI bit set to 0 in SECAM L	Dolby Virtual ON	SVHS3 enable		

3.5 OPTION 2

	B7	B6	B5	B4	B3	B2	B1	B0
1	Fixed to '0'	JVC remote control	AVL control OFF	PICTURE TILT ON	5 keys local keyboard	Full ATSS	Double Window Enabled	n.u. Must be set to 1 for future compatibility
0		Daewoo Remote control	AVL control ON	PICTURE TILT OFF	7 keys local keyboard	Basic ATSS	Double Window Disabled	

OPTION SETTING BY MODEL

CHASSIS	MODEL	OPTION BIT[b7..b0]			DW[hex]	REMARKS
		I	II	III		
CP-520	DTY-28A6/A7/A8	I	0011	1100	3C	OPTION1 "b1,b0" - depends on Tuner
		II	0000	1001	09	
	DTY-28W5/80	I	0001	1100	1C	OPTION2 "b1" - From ver. 9.3B Change to "1" - *1
		II	0000	1001	09	
	DTY-21U7	I	0011	1100	3C	
		II	0000	1001	09	
CP-520A	DTC-20T2 DTC-21Y1/Y2	I	0011	1100	3C	
		II	0000	1001	09	
CP-520F	DTZ-2881/W8 DTZ-2481	I	0001	1000	18	If Sales Team Request TILT function Change to OP 2 - "b4" to "1" & *1
		II	0000	1001	09	
	DTZ-29U7/B3	I	0011	1000	38	
		II	0000	1001	09	

3.6 NVM default setting

The purpose of this message, when you change a virgin EEPROM, is to allow to modify the NVM DATA to desired values.

1 - Introduction :

The NVM default values are fixed for the user, but for flexibility in service, these data are stored in NVM and can be changed when the TV set is in a special mode called "NVM EDITOR". This mode can only be accessed from "FACTORY" mode.

2 - Entering into "FACTORY" mode.

To switch the TV set into FACTORY mode, use the factory remote control, and press on "SVC" key. The factory menu will appear on the screen, showing "FACTORY", plus other relevant information like software version and date.

WARNING : When in "FACTORY" mode you should not press any key other than the keys described in the procedure below. Unwanted key stroke could misadjust the TV set.

3 - Entering into "NVM EDITOR" mode.

To switch the TV set into NVM EDITOR mode, use the user remote control, and press on "PICTURE/OK" key. The NVM EDITOR window will appear on the screen. This mode allows you to access all data stored in NVM. The current NVM address is given in column "ADDR." in both DECimal and HEXadecimal format. The column DATA gives the value contained at selected address in both DECimal and HEXadecimal format.

4 - Navigation in "NVM EDITOR" mode.

Use Program Up/Dwn keys to select the desired address. Use Volume Up/Dwn keys to change the data at selected address. You must press "PICTURE/OK" key to store value after modification.

The data can be adjusted between 0 and 63.

5 - Exit "NVM EDITOR" mode.

To switch the TV set back into FACTORY mode, use the user remote control, and press on "MENU" key.

The factory menu will appear on the screen, showing "FACTORY".

6 - Exit "FACTORY" mode.

To exit "FACTORY" mode, use the factory remote control, and press on "SVC" key. The factory menu will disappear from the screen.

NVM DATA CHANGE LIST				CP-520			CP-520F		CP-520A	
No	Register Name	Address	Default (hex)	28A8	2880	21U7	2881	29U7	21Y1	20T2
1	OCP_THRESHOLD	0x58F	0x91	<-	<-	<-	<-	<-	<-	<-
2	DCXO	0x590	0x4E	<-	<-	<-	<-	<-	<-	<-
3	AGC_PHILIPS	0x5C1	0xAB	<-	<-	<-	<-	<-	<-	<-
4	AGC_NC	0x5C2	0xAB	<-	<-	<-	<-	<-	<-	<-
5	AGC_ALPS	0x5C3	0xB6	<-	<-	<-	<-	<-	<-	<-
6	AGC_PARTSNIC	0x5C4	0xB6	<-	<-	<-	<-	<-	<-	<-
7	AGC_PHILIPS_START	0x5C5	0x16	<-	<-	<-	<-	<-	<-	<-
8	AGC_NC_START	0x5C6	0x16	<-	<-	<-	<-	<-	<-	<-
9	AGC_ALPS_START	0x5C7	0x16	<-	<-	<-	<-	<-	<-	<-
10	AGC_PARTSNIC_START	0x5C8	0x16	<-	<-	<-	<-	<-	<-	<-
11	AVLLEV	0x621	0x5	<-	<-	<-	<-	<-	<-	<-
12	Nor1_Bright	0x64A	0x23	<-	<-	<-	<-	<-	<-	<-
13	Nor1_contrast	0x64B	0x2E	<-	<-	<-	<-	<-	<-	<-
14	Nor1_Colour	0x64C	0x1C	<-	<-	<-	<-	<-	<-	<-
15	Nor1_Sharpness	0x64D	0x23	<-	<-	<-	<-	<-	<-	<-
16	Nor1_Tint	0x64E	0x20	<-	<-	<-	<-	<-	<-	<-
17	Nor1_JVC_Bri	0x64F	0x2D	<-	<-	<-	<-	<-	0x22	<-
18	Nor1_JVC_Cont	0x650	0x2A	<-	<-	<-	<-	<-	0x2E	<-
19	Nor1_JVC_Colour	0x651	0x1B	<-	<-	<-	<-	<-	0x20	<-
20	Nor1_JVC_Sharp	0x652	0x23	<-	<-	<-	<-	<-	<-	<-
21	Nor2_Bright	0x653	0x28	0x23	<-	<-	<-	<-	0x22	<-
22	Nor2_Contrast	0x654	0x13	0x1A	<-	<-	<-	<-	<-	<-
23	Nor2_Colour	0x655	0x19	0x16	<-	<-	<-	<-	<-	<-
24	Nor2_Sharpness	0x656	0x1B	<-	<-	<-	<-	<-	<-	<-
25	Nor2_Tint	0x657	0x20	<-	<-	<-	<-	<-	<-	<-
26	PresetGainRGB	0x673	0x2A	<-	<-	<-	<-	<-	0x22	<-
27	PresetGainRGB	0x674	0x2A	<-	<-	<-	<-	<-	0x22	<-
28	PresetGainRGB	0x675	0x2A	<-	<-	<-	<-	<-	0x22	<-
29	Cathode_Drive	0x67B	0x1	<-	<-	<-	<-	<-	<-	<-
30	Y_delay_PAL_BG	0x686	0x5	<-	<-	<-	<-	<-	0x1	<-
31	Y_delay_SECAM_BG	0x687	0x8	<-	<-	<-	<-	<-	0x6	<-
32	Y_delay_PAL_DK	0x688	0x5	<-	<-	<-	<-	<-	0x0	<-
33	Y_delay_SCM_DK	0x689	0x5	<-	<-	<-	<-	<-	0x2	<-
34	Y_delay_PAL_I	0x68A	0x7	<-	<-	<-	<-	<-	0x1	<-
35	Y_delay_SECAM	0x68B	0x5	<-	<-	<-	<-	<-	<-	<-
36	Y_delay_SECAM-L	0x68C	0x8	<-	<-	<-	<-	<-	0x6	<-
37	Y_delay_AV	0x68D	0xA	<-	<-	<-	<-	<-	0x2	<-
38	G2_Bright	0x68E	0x1A	<-	<-	0x28	0x10	0x1A	0x32	<-
39	G2_Contrast	0x68F	0x42	<-	<-	0x42	0x42	0x42	0x42	<-

3.7 TV SET ALIGNMENT

3.7.1 G2 ALIGNMENT

- Tune a colour bar pattern.
- Find the "G2 – SCREEN" item in service mode.
- Adjust screen volume (on FBT) to bring the cursor to central position(Green).

3.7.2 WHITE BALANCE

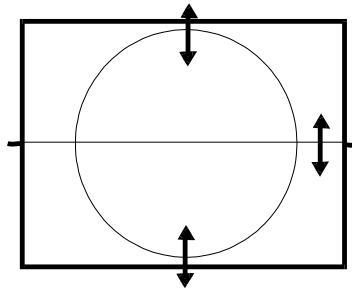
- Select a dark picture and adjust RED BIAS and GRN BIAS to the desired colour temperature.
- Select a bright picture and adjust RED, GRN and BLUE GAIN to the desired colour temperature.

3.7.3 FOCUS

Adjust the Focus volume (on FBT) to have the best resolution on screen.

3.7.4 VERTICAL GEOMETRY

Adjust V. LINEAR (linearity), S CORRECT (S. Correction), VERT SIZE (Vertical amplitude), VERT CENT (vertical centring) to compensate for vertical distortion.

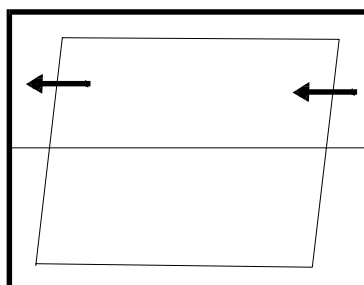


3.7.5 HORIZONTAL PICTURE CENTRING

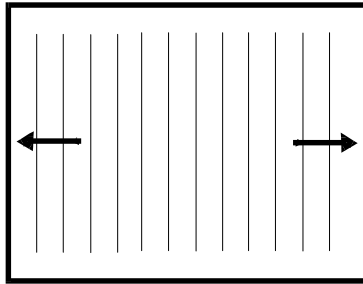
Adjust HOR CEN (Horizontal centre) to have the picture in the centre of the screen.

3.7.6 EAST / WEST CORRECTION

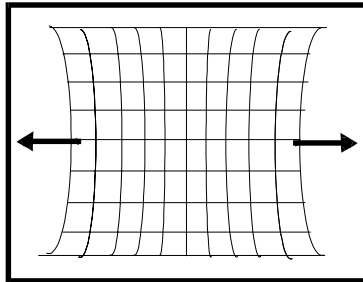
Adjust the PARABOLA, HOR WIDTH, CORNER, HOR PARAL, EW TRAPEZ, to compensate for geometrical distortion.



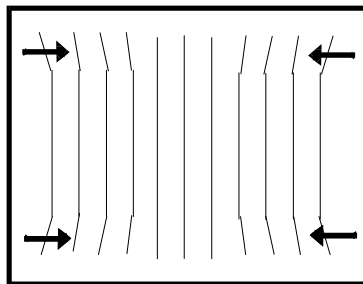
HOR PARAL



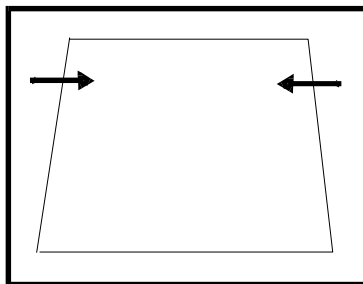
HOR WIDTH
adjust for 93% overscan.



PARABOLA



CORNER B & CORNER T



EW TRAPEZ

3.7.7 AGC

- Make sure option bits are correct for the tuner fitted on the chassis (See above how to change option bits).
- Adjust the antenna signal level at 62 dB μ V
- Tune a colour bar pattern.
- Find the "AGC" item in service mode.
- Press the key "OK" on the remote keypad and wait until AGC level stabilise to the optimum value.
- Alternatively, use "Vol Up/Dwn" keys to adjust manually to the desired Tuner Take Over Point (TOP).

4 IC DESCRIPTION

4.1 UOC^{III} Series

The UOC^{III} series combines the functions of a Video Signal Processor (VSP) together with a FLASH embedded TEXT/Control/Graphics μ -Controller (TCG μ -Controller) and US Closed Caption decoder. In addition the following functions can be added:

- Adaptive digital (4H/2H) PAL/NTSC combfilter
- Teletext decoder with 10 page text memory
- Multi-standard stereo decoder
- BTSC stereo decoder
- Digital sound processing circuit
- Digital video processing circuit

4.1.1 IC MARKING AND VERSION

Chassis	IC marking	OSD languages	ATSS countries	Text
CP-520A CP-520 CP-520F		BULGARIAN, CZECH, GERMAN, DANISH, SPANISH, FRENCH, FINNISH, ENGLISH, GREEK, HUNGARIAN, ITALIAN, NORWEGIAN, DUTCH, POLISH, ROMANIAN, RUSSIAN, SWEDISH, SLOVAKIAN.	Austria, Belgium, Switzerland, Czech Republic, Germany, Denmark, Spain, France, Finland, GB, Greece, Hungary, Italy, Ireland, Norway, Netherlands, Portugal, Poland, Sweden, Slovak Republic, Others	PAN-EUROPEAN LATIN, CYRILLIC, GREEK.