CONTENTS

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. It is advised to insert an isolation transformer in the AC supply before servicing a hot chassis.

2. Potentials as high as 33KV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by any one who is not competent with the precautions necessary when working on the high voltage equipment. Always discharge the anode of the tube.

3. When servicing observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all the parts which have been overheated or damaged by the short circuit.

4. Always use the manufacturer's replacement safety components. The critical safety components marted with ∇ on the schematics diagrams should not te replaced by substitutes. Substitution my create electrical shock, fire or other hazard. Take attention to replace the spacers with the originals.
   Furthermore where a short circuit has occurred, replace those componenets that indicate evidence of overheating.

5. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.

6. When the receiver is not being used for a period of time, unplug the power cord from the AC outlet.

7. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazard.

LEAKAGE CURRENT COLD CHECK

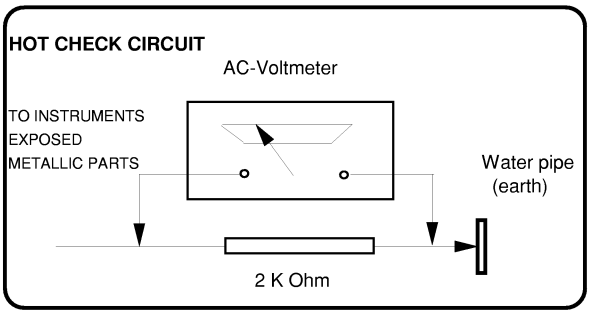
1. Unplug the AC plug and connect a jumper between the live and neutral pins.

2. Push the receiver's power switch.

3. Measure the resistance value with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts etc. When the exposed metallic part has a return path to the chassis the reading should be between aMohm and the 20Mohm. When the exposed metal does not have a return path to the chassis, the reading must be infinite.

LEAKAGE CURRENT HOT CHECK

1. Plug the AC plug directly in to the AC outlet. Do not use an isolation transformer for this check.
2. Connuct a 2Kohm 10W resistor in series with an exposed metallic part on the receiver and an earth, such as water pipe.
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed metallic part and check the voltage at the each point.
5. The potential at the any point should not exceed 1.4 Vrms. In case a measurement is outside the limits specified, there is the possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.



X-RAY RADIATION WARNING

The primary source of X-ray radiation in this receiver is the picture tube. The chassis is specially constructed to limit X-ray radiation. For continnued X-ray radiation protection, replace the tube with the same type of the original one.

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

TECHNICAL SPECIFICATIONS AND THE FEATURES

Power source:	220-240V AC, 50-60Hz
Power consumption:	65W 14” 85W 20” 85W 21”
Aerial impedance :	75Ohm, Coaxial type
Receiving system*:	PAL BG PAL SECAM BG PAL SECAM BG DK PAL SECAM BG LL’ PAL I
Receiving channels:	VHF BAND I, CH2-4 VHF BAND III, CH5-12 CATV CHANNELS S1-S41 UHF BAND CH21-69
Audio outputs :	2.5W RMS at %10 THD 16 OHM SPEAKER
High Voltage :	23KV ±0.5KV 25.5KV ±0.5KV
Focus voltage :	%25.6±%38 of EHT
Grid 2 voltage :	0-1400V
Heater voltage :	6.3±0.2Vrms
Video/Audio Terminals :	
AV1 IN	Video 1 Vpp, 75Ohm Audio 0.5Vrms, >10Kohm RGB
AV1 OUT	Video 1Vpp,75Ohm Audio 0.5Vrms,>1Kohm
AV2 IN (RCA-OPTIONAL)	Video 1Vpp,75Ohm Audio 0.5Vrms,>10Kohm

Operating temperature	:	0-45 Degrees
Safety	:	IEC 65/BS P2N
X-Ray radiation	:	ACC. IEC 65/BS P2N

• : TV set is produced to receive “one” of these colour and sound systems.

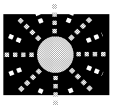
FEATURES

- 100 Program memory
- On-Screen-Display
- Programmable Off Timer
- Auto switch off at no signal condition (5 min.)
- Scart socket (AV in/out, RGB)
- Demo mode
- NTSC playback with tint control (NTSC44.3, NTSC3.58 via scart)
- Infrared remote control
- CATV channels
- Front AV input via cinch (optional)
- Normalization system to recall the setting in memory after analog settings have been changed
- Teletxt program, national and international text programs
- 16:9 picture format selections
- Menu with 17 languages
- Swapping between two programs with single key stroke (SWAP)

INSTRUCTION MANUAL

CONTROL UNIT:
Front panels:

Power ON/OFF switch



Stand-by indicator

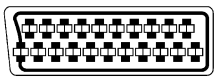
Programme / Volume decrease button.

Programme / Volume increase button.

Programme / Volume selection button.

Rear panel:

Aerial Input



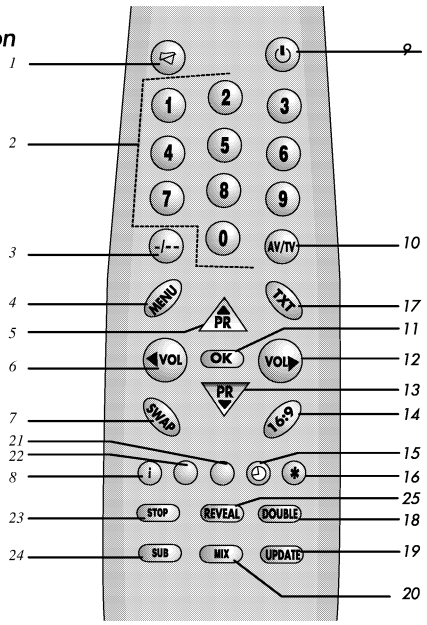
Scart socket

REMOTE CONTROL:

1. *MUTE button*
2. *Ten Key Programme button*
3. *Two digit programme button (-/--)*
4. *Menu button*
5. *Programme Up button*
6. *Volume decrease button*
7. *Previous Programme selection button (SWAP)*
8. *Information button (i)*
9. *STAND-BY button*
10. *AV-TV Selection button*
11. *OK button*
12. *Volume Increase button*
13. *Programme down button*
14. *16:9 picture format button*
15. *Sleeptimer button*
16. *Normalization button*
24. *Clock button*

For Teletext Functions

15. *Yellow fastext button*
16. *Blue fastext button*
17. *Teletext/TV select button*
18. *Enlarge button*
19. *UPDATE button*
20. *MIX button*
21. *Green fastext button*
22. *Red fastext button*
23. *STOP button*
24. *SUB-PAGE button*
25. *REVEAL button*



3. PREPARATIONS and CONNECTIONS

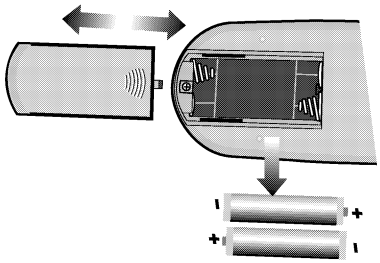
Connect the TV mains plug into your domestic mains socket outlet (230V 50Hz AC.)
To switch on press the TV on/off switch then any numbered button or ***PR▲/PR▼*** *button on the remote handset or* ***P*** *button on the control panel.*

AERIAL CONNECTION

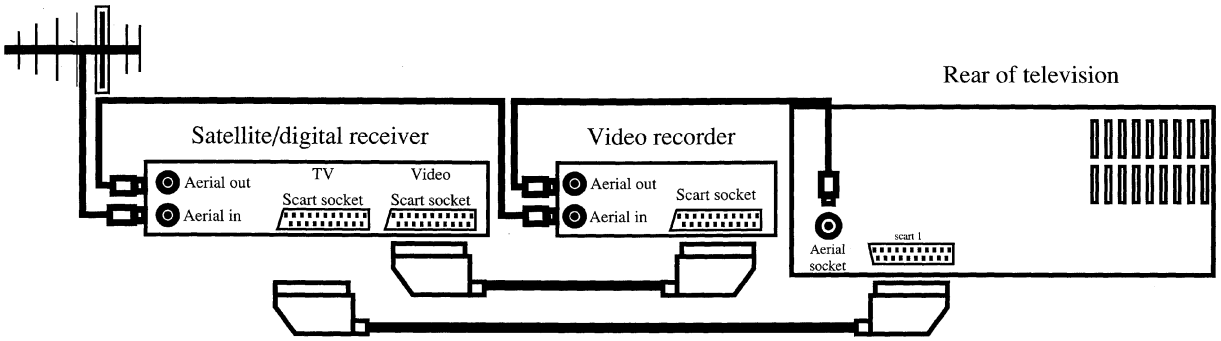
Using a 75Ω aerial lead connect your TV to the aerial outlet in your home.

BATTERY FITTING

Remove the slide cover by pulling down from the lines. Install the two AAA size batteries observing the correct polarity and refit the cover.

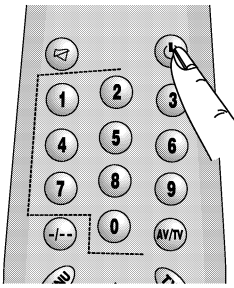


TV, video, satellite and digital receiver connections



4. OPERATING YOUR TV

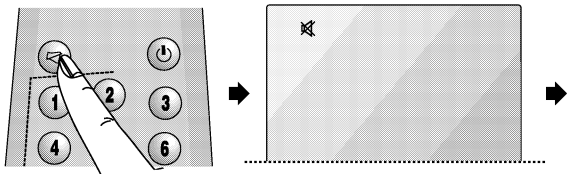
STANDBY



By pushing the red ***STANDBY*** *button on the upper right hand side of your remote control, the television will switch into standby. To turn your TV on again you can press any of the programme buttons on the remote control.*

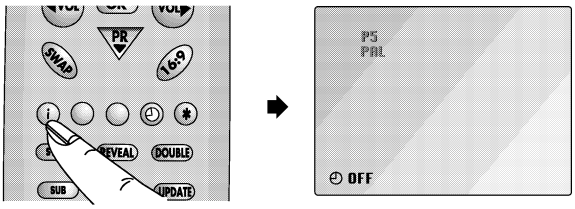
ATTENTION!
Always switch the television off by the TV ON/OFF switch when leaving the TV unattended.

MUTE



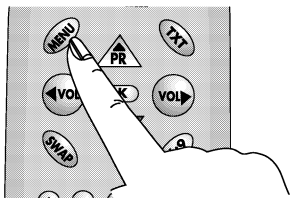
If you want to mute the sound of your TV press the "🔇" button. A red symbol "🔇" will appear on the screen. Pressing the "🔇" again will restore the sound.
When your TV is in MUTE mode if you press the ***◄VOL*** *button the volume will decrease without restoring the sound.*
But if you press the ***VOL►*** *button the sound will be restored and the volume will increase.*

INFO BUTTON



By pressing the ***"WHITE (i)"*** *button the programme number, colour system and sleeptimer will appear on the screen. This will disappear automatically after a few seconds.*

MAIN MENU

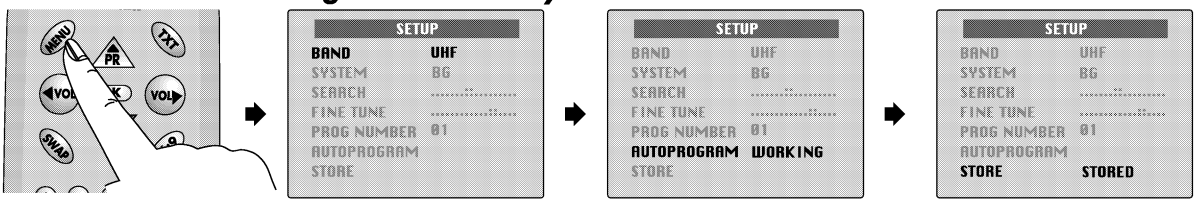


Press menu button the Main adjustments will appear. By pressing the menu button for the first time, PICTURE menu will appear.
If you press the button a second time SETUP menu will apear. Pressing a third time FEATURES menu will appear.

TUNING and MEMORY

You can tune the TV either automatically or manually.

a. Automatic tuning and memory :



- *Press the **"MENU"** button twice, SETUP menu will appear on the screen.*
- *Select the AUTOPROGRAM by pressing **PR▼** button.*
- *Press the **"OK"** button. Your TV will start to search for and store programmes. Meanwhile AUTOPROGRAM WORKING sign will flash on and off on the AUTOPROGRAM row.*
- *You can follow the tuning progress on the band and search row.*
- *After this process has been completed, SETUP menu will disappear and the first stored programme will appear on the screen.*

To optimise reception fine tuning may be required. If so, please refer to the MANUAL FINE TUNE section.
***NOTE:** To exit this mode press the **"MENU"** button on the remote control.*

b. Manual tuning and memory:

- *Press the **"MENU"** button twice, SETUP menu will appear on the screen.*
- *Select the band (VHFI, VHFIII, UHF) by pressing **◄VOL** or **VOL►** button.*
- *Select the **"SEARCH"** row by pressing **PR▼** button.*
- *Start the searching function by pressing **VOL►** or **◄VOL** button.*

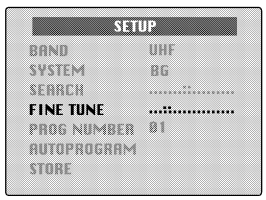
The searching will stop when a programme has been found.
*If the quality of the display or the channel is not the one required continue to search by pressing **VOL►** button.*

- *If you want to store this programme, select the PROG NUMBER row by pressing **PR▼** button.*
- *Enter the desired programme number by using the TEN key programme buttons or ;*
- *You can select the programme number by using the **VOL►** or **◄VOL** buttons.*
- *Select STORE using the **PR▼** button.*
- *Press OK to store. "STORED" will appear on the screen.*
- *The channel will be stored with the programme number you desired.*
- *Repeat the above steps until all programmes are stored.*

To optimise reception fine tuning may be required. If so, please refer to the MANUAL FINE TUNE section.
***NOTE:** To exit this mode press the **"MENU"** button on the remote control.*

FOR 12.5 MODELS: "Channel" and "(channel number)" is displayed instead of "Band" and "(band name)" item to select channels directly.

Manual Fine Tune:



It may now be necessary to fine tune your TV to optimise reception if so proceed as follows

- *In the SETUP menu select FINE TUNE using **PR▼** button.*
- *Use the **◄VOL/VOL►** buttons to obtain the best optimum setting.*
- *Select STORE using the **PR▼** button.*
- *Press OK to store. "STORED" will appear on the screen.*

Programme Recall:

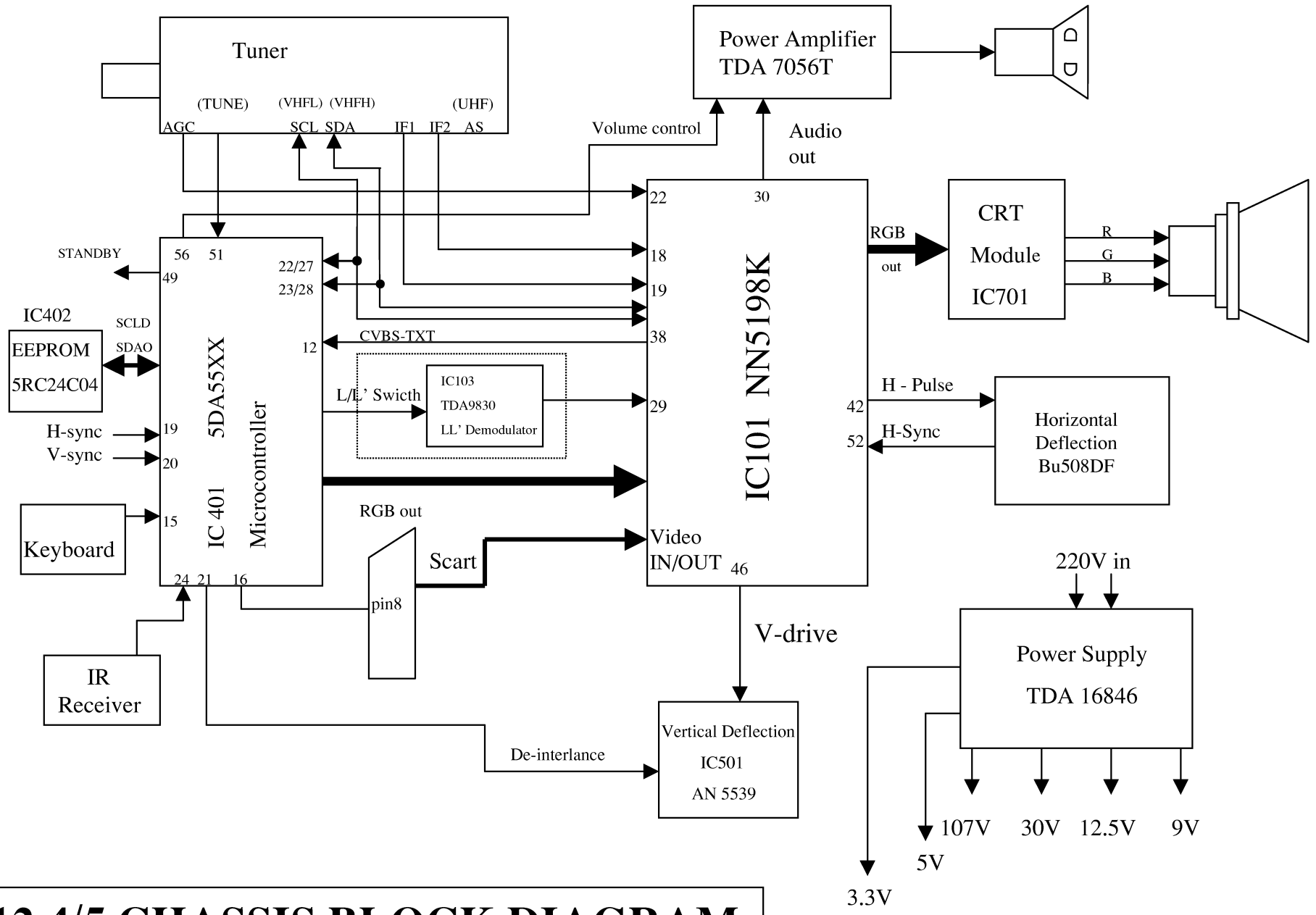
*You can recall any programme by pressing the **PR▲/PR▼** buttons or numeric key pad. When the desired programme has two digits first press -/-- button and then the two digits of the programme number required.*

SWAP Function:

You can swap between two programmes with a single key stroke by using the "SWAP" button on the remote control.

This function enables you to select the previous programme number viewed.

PR 01 ➡ SWAP PR 11 ➡ SWAP PR 01



12.4/5 CHASSIS BLOCK DIAGRAM

12.4/12.5 CTV CHASSIS

A99.820-04

IC401	
TX	SDA5552
NTX	SDA5521

	IC101´	F101	R134	R146	R176	R177	R207	R209	R180	R181	C103	C106	F104	D102	R116	R182
SEC LL´	NN5198K	K3958M	270R	1k	680R	390R	220R	220R	-	0R	47u	4,7n	40,4 MHz	BA682	150R	-
BG	NN5099K	G1985M	560R	100R	-	0R	330R	330R	0R	-	10u	-	-	-	-	-
I	NN5099K	J1952M	560R	100R	-	0R	330R	330R	0R	-	10u	-	-	-	-	-
DK	NN5198K	K2955	560R	100R	-	0R	330R	330R	0R	-	10u	22n	40,4 MHz	0R	150R	68p

	C518	C526	R133	R504	R532	R533	R530
14"	6,8n	-	4,7R	470R	18k	4,7R	0,68R 0,5W
20"	9,1n	-	2,2R	470R	12k	short	0,47R 0,5W
21"	7,5n	330p	2,2R	220R	12k	short	0,68R 0,5W

	C403	C412	KABLO 5	KABLO 6	R107	R109
VS	47n	47n	–	–	0R	0R
FS	47p	47p			220R	220R

Components designated by the safety symbol should only be replaced by original parts produced and proofed by the manufacturer.
Sicherheitsbauteile im sinn der sicherheitsbestimmung. Diese teile dürfen nur durch originalteile ersetzt werden.
Contrassegno di sicurezza. I componenti devono, corrispondere a ricambi originali e devono essere montati a regola d'arte.

Subject to change without notice

ELECTRICAL ADJUSTMENTS

ENTERING THE SERVICE MODE: You need the special remote control to enter and exit the service menu of the TV (you can order it from manufacturer). All buttons of service RC are same with user remote control, only service in/out key was added to the service remote control.

For multimedia models : you have to enter 7,5,9 and 2 while the picture menu is displayed to enter service menu. Press "0" to exit from service menu.

1-POWER SUPPLY VOLTAGE

Connect a digital voltmeter to the cathode of D610 diode at the AV1 mode of the TV and set the screen voltge to the minumum. Adjust the main supply voltage +B with P601 potentiometer to the following voltage value.

14 inch	A33LPE02X01	106V DC
20 inch	A4ECR143X51	118V DC
21 inch	A51EER 133X41	118V DC

Adjust the screen potentiometer to the level where a picture is just visible.

2- INTERMEDIATE FREQUENCY ADJUSTMENTS

Before starting this adjustment follow this procedure:

Enter service mode, change "VIDEO" header to "NEW". Then exit from service mode.

ATTENTION!!! : Above procedure must be done after replacing the Video IC (IC101) or EEPROM IC. IF adjustment must be repeated after "VIDEO" header displays "NEW".

For BG, DK, I standard: Adjust the frequency of pattern generator to the 38.9Mhz and switch it to colour bar pattern. Connect the RF output of pattern generator to the pin 1 of F101. Enter service mode. Adjust the "AFT38" item of service menu to read the voltage value 1.45VDC +-100mV DC at the pin#23 of IC101. Exit from service mode.

For SECAM LL' Standart : Adjust the frequency of pattern generator to the 33.9 MHz and switch it to colour bar pattern. Connect the RF output of pattern generator to the pin 1 of F101. Enter service mode. Adjust the "AFT33"item of service menu to read the voltage value 1.45VDC ± 100mV DC at the pin#23 of IC101. Exit from service mode.

3-AGC ADJUSTMENTS

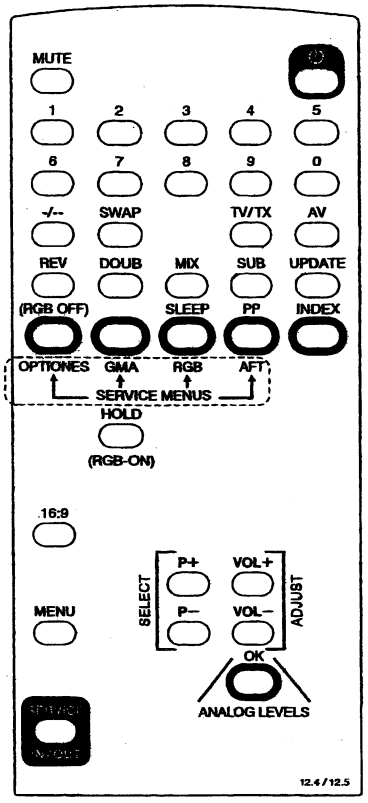
Apply a signal at the channel 32 with 32 with 60±1dBuV level to the antenna input (switch sound carrier Off and switch "Video Ext" On).

Connect an oscilloscope to the pin#11 (IF2) of Tuner and ground.

Enter service mode and go "AGC" header.

Adjust the amplitude to the value given below (which is monitored on oscilloscope) using the Volume+/Volume- key of remote control.

12.5 chassis for BG,DK,I	**Standards:**	630mVpp±20mVpp
12.5 chassis for LL'	**Standards:**	450mVpp±20mVpp
12.4 chassis for BG,DK,	**Standards:**	630mVpp±20mVpp
12.4 chassis for LL'	**Standards:**	450mVpp±20mVpp
12.4 chassis for I'	**Standards:**	500mVpp±20mVpp



Service Remote Control

4- SERVICE MODE SETUP

ITEM	SELECTION
TUNER	SHARP&ALPS PHILLIPS P.SONIC TEMIC FULL BAND UHF ONLY
FULL BAND and UHF ONLY	items are valid only for 12.4 (voltage synthezirs) chassis.
AV2	NO: Single scart YES: Single scart+front AV
CLR.S	PAL PAL/NTSC : SECAM is iden tified automatically.
SND.S	BG I BG+DK BG+LL'
TEXT	DEFAULT : Teletext FASTEXT : Fastext

4- GEOMETRY ADJUSTMENTS

Enter service mode. Select Green Button in Service Menu. "H.POS" is for horizontal position, "V.HEI" is for vertical size, "LNRTY" is for vertical linearity, "S.COR" is for S-correction adjustment.

5- SCREEN ADJUSTMENT

Enter service mode. Select Yellow Button in Service Menu. Select "SCRN" item. Press Vol + or - button. You will see white horizontal line at center of the screen. Adjust the screen potentiometer to the just visiable level of horizontal line. Return to PICTURE MODE by pressing VOL+

6- WHITE BALANCE ADJUSTMENT

Enter the service mode. Select Yellow Button in Service Menu. Select and adjust "G.CUT" to the 128. Adjust "R.CUt" and "B.CUT" for cut off adjustment. Select and adjust "R.DRV" and "B.DRV" for white balace. Exit from service mode.

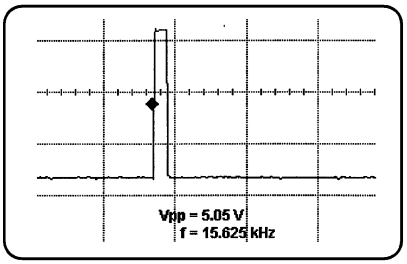
7- PRESET VALUES OF SERVICE MENU ITEMS

Below given values are average values and can vary according to the CRT type and chassis type.

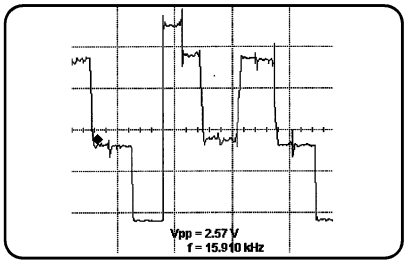
	RED Menu Button			GREEN Menu Button						YELLOW Menu Button							BLUE Menu Button	
SIZE	AGC	ST.BY	VIDEO	H.POS	V.POS	V.HEI	LNRTY	S.COR	Y.DLY	G.CUT	R.CUT	B.CUT	R.DRV	B.DRV	SCRN	SECBL	AFT38	AFT33
14"	19	NO	OLD	14	4	64	46	0	1	128	127	124	59	53	0	48	40	61
20"	19	NO	OLD	13	4	80	47	0	1	128	128	119	58	59	0	48	40	61
21"	19	NO	OLD	14	4	81	47	0	1	128	128	121	55	56	0	48	40	61

WAVE FORMS

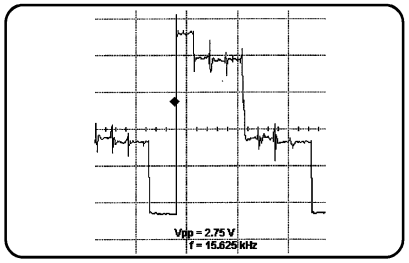
1. IC 101 (NN 5198K)



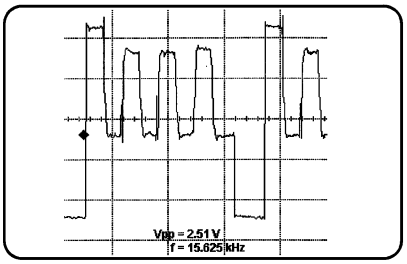
Pin no: 5 (OSD ON)



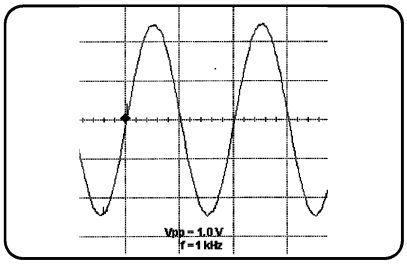
Pin no: 10



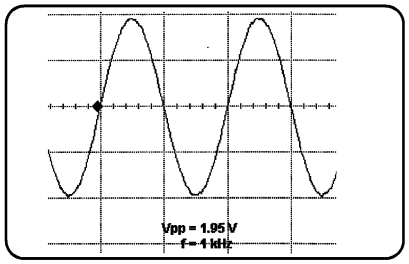
Pin no: 11



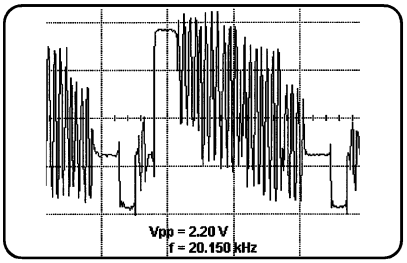
Pin no: 12



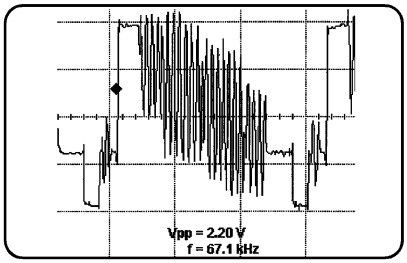
Pin no: 30



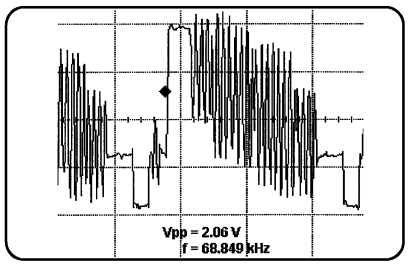
Pin no: 32



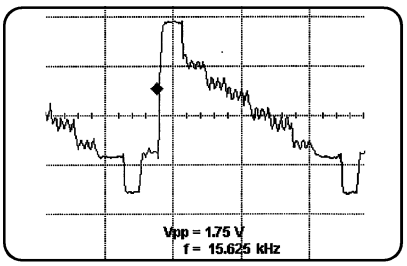
Pin no: 34



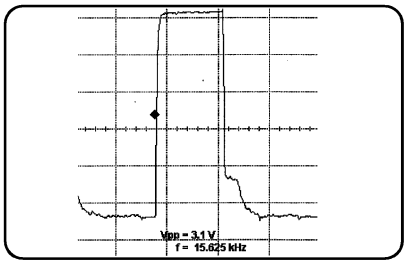
Pin no: 36



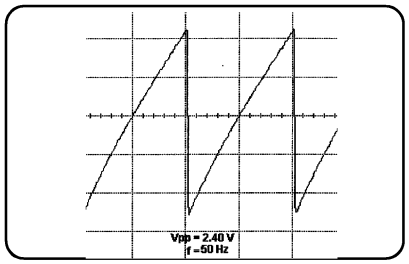
Pin no: 38



Pin no: 39

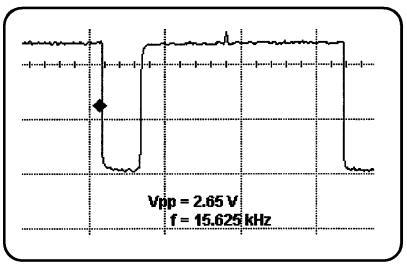


Pin no: 42

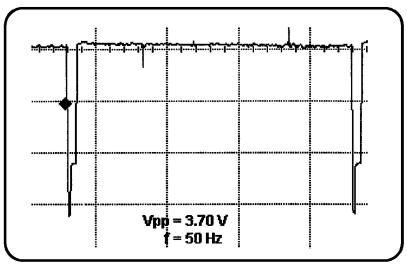


Pin no: 46

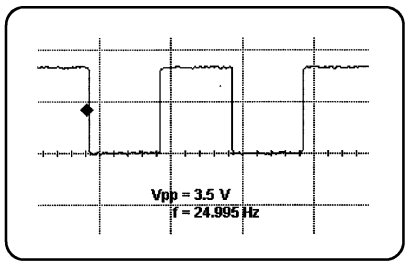
2. IC 401 (SDA 555XL)



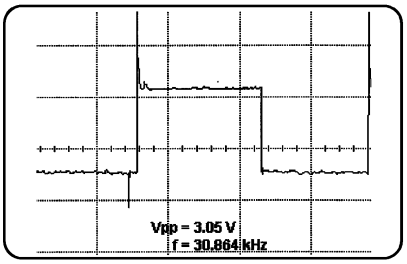
Pin no: 19



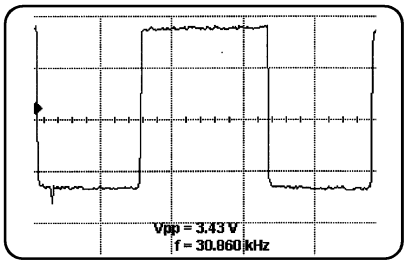
Pin no: 20



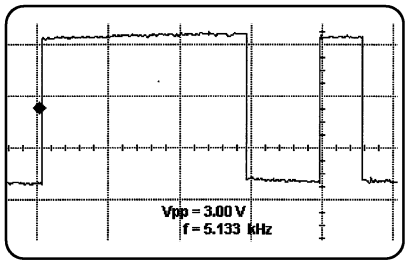
Pin no: 21



Pin no: 22



Pin no: 23



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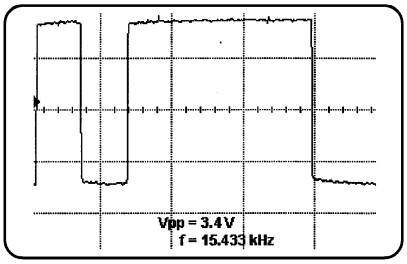

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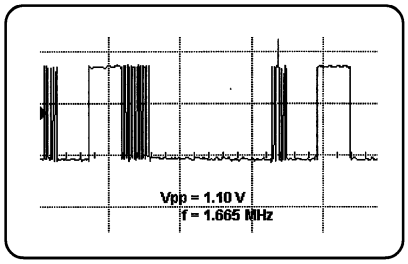
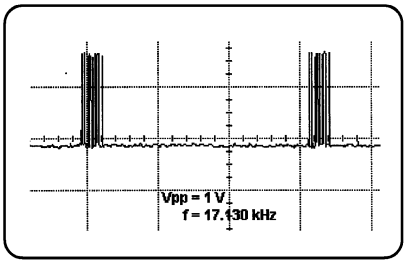
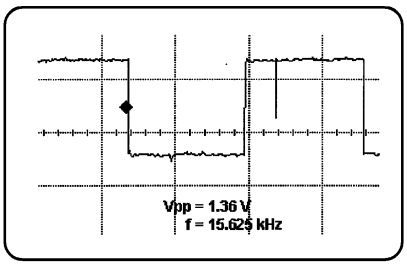


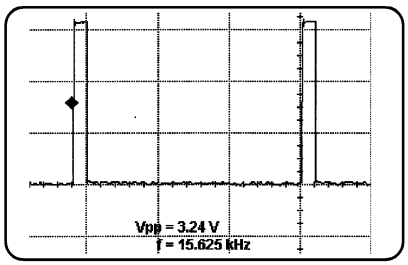
Pin no: 38



Pin no: 39

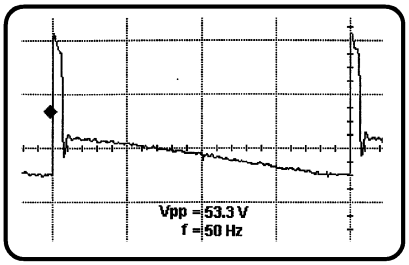


Pin no: 40

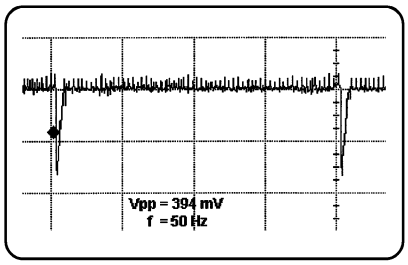


Pin no: 41

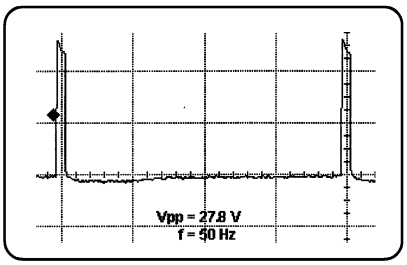
3. IC 501 (AN 5539)



Pin no: 2

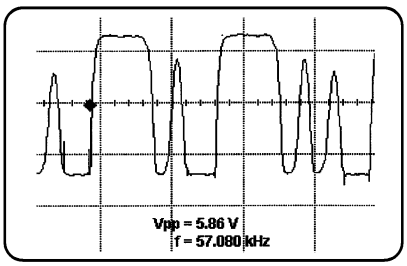


Pin no: 5

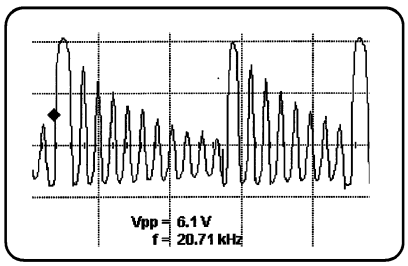


Pin no: 7

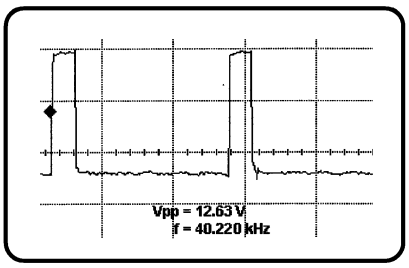
4. IC 601 (TDA 16846)



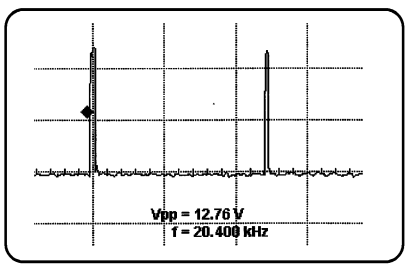
Pin no: 3 (TV ON)



Pin no: 3 (TV Stand-By)

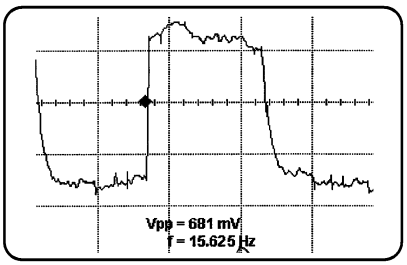


Pin no: 13 (TV ON)



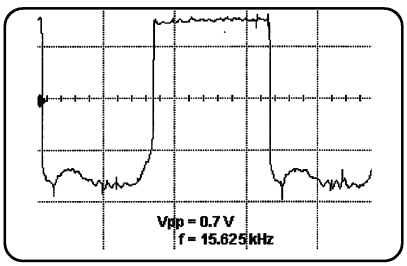
Pin no: 13 (TV Stand-By)

5. T 503 (BC 848 NPN)



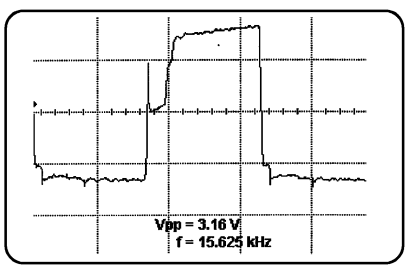
Base

6. T 504 (BC 848 NPN)



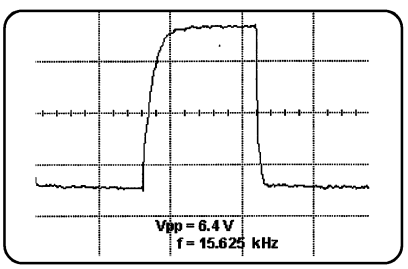
Base

7. T 505 (2 SK3065)



Drain

T 505 (2 SK3065)



Gate

CONVERGENCE ADJUSTMENTS

Note: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

• Centre Convergence Adjustment

1. Receive crosshatch pattern with a colour bar signal generator.
2. Adjust the BRIGHTNESS and CONTRAST Controls for well defined pattern.
3. Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 16) and superimpose red and blue vertical lines in the centrel area of the picture screen. (See figure).
4. Turn the both tabs at the same time keeping the constant angle to superimpose red and blue horizontal lines at the centre of the screen. (See figure)
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line and green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3,4,5 to ensure best convergence, the adjustment must be undertaken with great care because of the interaction between 4 and 6 pole magnets.

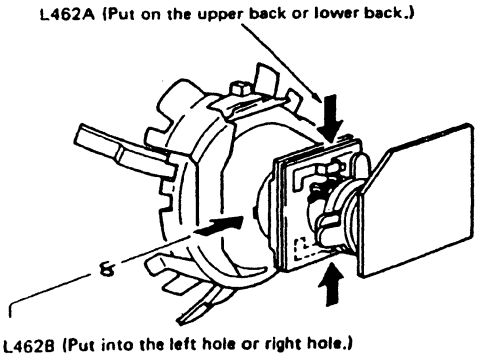
• Circumference Convergence Adjustment

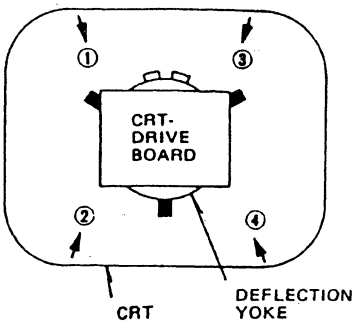
1. Loosen the clamping screw of deflection yoke to allow the yoke to tilt.
2. Put a wedge as shown in figure 15 temporarily. (Do not remove cover paper on adhesive part of the wedge.)
3. Tilt front of the deflection yoke up or down to obtain better convergence in circumference. (See figure) Push the mounted wedge into the space between picture tube and the yoke to fix the yoke temporarily.
4. Put other wedge into bottom space and remove the cover paper to stick.
5. Tilt front of the yoke right or left to obtain better convergence in circumference. (See figure)
6. Keep the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to fix the yoke.
7. Detach the temporarily mounted wedge and put it in another upper space. Stick it on picture tube to fix the yoke.
8. After fixing three wedges, recheck overall convergence. Tighten the screw firmly to fix the yoke and check the yoke is firm.
9. Stick 3 adhesive tapes on wedges.

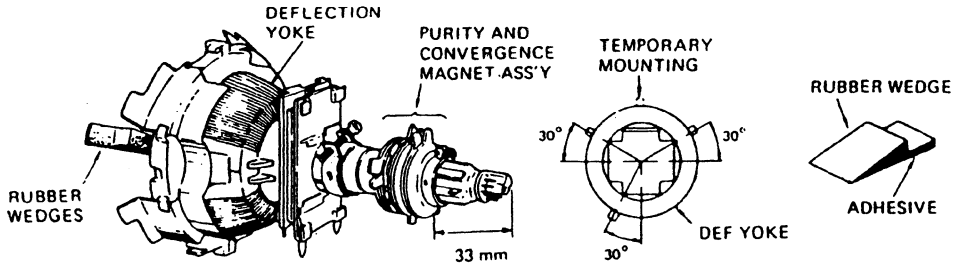
CONVERGENCE COMPENSATOR

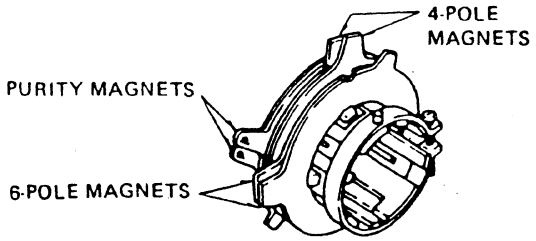
Compensators L462A and L462B are used to correct misconvergence (Red-Green) at the top center or bottom center on screen, when the misconvergence is still evident even though the yoke adjustment is tried. Compensator L462C is also used to correct misconvergence (Vertical shift of Red or Blue) at four corners on screen.

1. To correct horizontal misconvergence (Red-Green), put compensator L462A on the yoke back (see figure right) to find a position for minimizing misconvergence. Mark the position and remove protective paper on the rear of L462A to stick it in place. Apply adhesives on buth yoke and L462A.
2. To correct vertical misconvergence (Red-Green), put the tips of compensator L462B into either of the holes on the yoke core and apply adhesives.
3. To correct up or down shift of Red at top right or bottom right corner, put compensator L462C at point 1 ve 2 or the pisture tube (see figure right.) to find a position for minimizing misconvergence. Mark the position and remove protective paper on the rear of L462C to stick it in place.

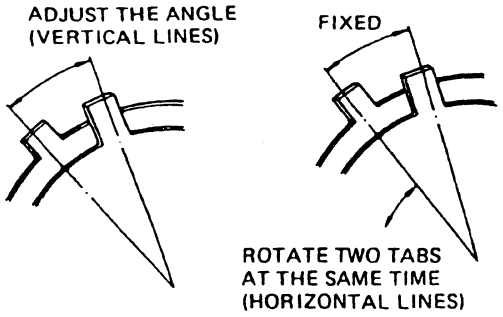




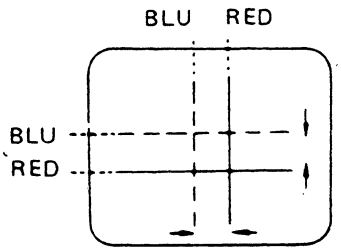




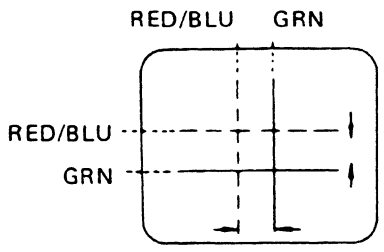
CONVERGENCE MAGNET ASSEMBLY



ADJUSTMENT OF MAGNETS

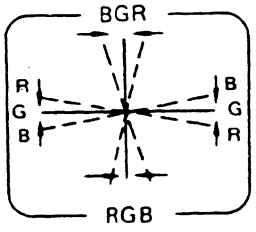


4-POLE MAGNETS MOVEMENT

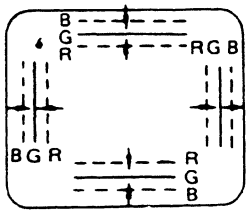


6-POLE MAGNETS MOVEMENT

Centre Convergence by Convergence Magnets



INCLINE THE YOKE UP (OR DOWN)



INCLINE THE YOKE RIGHT (OR LEFT)

Circumference Convergence by DEF Yoke

Dot Movement Pattern

CHANNEL FRQENCY TABLE (BG,I,DK,LL')

CHANNEL NO	BG	I	DK	L/L'			
CH1		49.75	49.75	47.75			
CH2	48.25	59.25	59.25	55.75			
CH3	55.25	77.25	77.25	60.50			
CH4	62.25	85.25	85.25	63.75			
CH5	175.25	93.25	93.25	176.00			
CH6	182.25	175.25	175.25	184.00			
CH7	189.25	183.25	183.25	192.00			
CH8	196.25	191.25	191.25	200.00			
CH9	203.25	199.25	199.25	208.00			
CH10	210.25	207.25	207.25	216.00			
CH11	217.25	215.25	215.25	189.25			
CH12	224.25	223.25	223.25	182.25			
CH13	53.75	45.75		196.25			
CH14	62.25	53.75		210.25			
CH15	82.25	61.75					
CH16	175.25	69.75					
CH17	183.25	95.25					
CH18	192.25						
CH19	201.25						
CH20	210.25						
CH21	471.25	471.25	471.25	471.25			
CH22	479.25	479.25	479.25	479.25			
CH23	487.25	487.25	487.25	487.25			
CH24	495.25	495.25	495.25	495.25			
CH25	503.25	503.25	503.25	503.25			
CH26	511.25	511.25	511.25	511.25			
CH27	519.25	519.25	519.25	519.25			
CH28	527.25	527.25	527.25	527.25			
CH29	535.25	535.25	535.25	535.25			
CH30	543.25	543.25	543.25	543.25			
CH31	551.25	551.25	551.25	551.25			
CH32	559.25	559.25	559.25	559.25			
CH33	567.25	567.25	567.25	567.25			
CH34	575.25	575.25	575.25	575.25			
CH35	583.25	583.25	583.25	583.25			
CH36	591.25	591.25	591.25	591.25			
CH37	599.25	599.25	599.25	599.25			
CH38	607.25	607.25	607.25	607.25			
CH39	615.25	615.25	615.25	615.25			
CH40	623.25	623.25	623.25	623.25			
CH41	631.25	631.25	631.25	631.25			
CH42	639.25	639.25	639.25	639.25			
CH43	647.25	647.25	647.25	647.25			
CH44	655.25	655.25	655.25	655.25			
CH45	663.25	663.25	663.25	663.25			
CH46	671.25	671.25	671.25	671.25			
CH47	679.25	679.25	679.25	679.25			
CH48	687.25	687.25	687.25	687.25			
CH49	695.25	695.25	695.25	695.25			
CH50	703.25	703.25	703.25	703.25			
CH51	711.25	711.25	711.25	711.25			
CH52	719.25	719.25	719.25	719.25			
CH53	727.25	727.25	727.25	727.25			
CH54	735.25	735.25	735.25	735.25			
CH55	743.25	743.25	743.25	743.25			
CH56	751.25	751.25	751.25	751.25			
CH57	759.25	759.25	759.25	759.25			
CH58	767.25	767.25	767.25	767.25			
CH59	775.25	775.25	775.25	775.25			

CH60	783.25	783.25	783.25	783.25			
CH61	791.25	791.25	791.25	791.25			
CH62	799.25	799.25	799.25	799.25			
CH63	807.25	807.25	807.25	807.25			
CH64	815.25	815.25	815.25	815.25			
CH65	823.25	823.25	823.25	823.25			
CH66	831.25	831.25	831.25	831.25			
CH67	839.25	839.25	839.25	839.25			
CH68	847.25	847.25	847.25	847.25			
CH69	855.25	855.25	855.25	855.25			
CH70				863.25			
CH71							
CH72							
CH73							
CH74	69.25						
CH75	76.25						
CH76	83.25						
CH77	90.25						
CH78	97.25						
CH79	59.25						
CH80	93.25						
S1	105.25	103.25	103.25	116.75			
S2	112.25	111.25	111.25	128.75			
S3	119.25	119.25	119.25	140.75			
S4	126.25	127.25	127.25	152.75			
S5	133.25	135.25	135.25	164.75			
S6	140.25	143.25	143.25	176.75			
S7	147.25	151.25	151.25	188.75			
S8	154.25	159.25	159.25	200.75			
S9	161.25	167.25	167.25	212.75			
S10	168.25	231.25	231.25	224.75			
S11	231.25	239.25	239.25	236.75			
S12	238.25	247.25	247.25	248.75			
S13	245.25	255.25	255.25	260.75			
S14	252.25	263.25	263.25	272.75			
S15	259.25	271.25	271.25	284.75			
S16	266.25	279.25	279.25	296.75			
S17	273.25	287.25	287.25	55.75			
S18	280.25	295.25	295.25	60.50			
S19	287.25	303.25	303.25	63.75			
S20	294.25						
S21	303.25			303.25			
S22	311.25	311.25	311.25	311.25			
S23	319.25	319.25	319.25	319.25			
S24	327.25	327.25	327.25	327.25			
S25	335.25	335.25	335.25	335.25			
S26	343.25	343.25	343.25	343.25			
S27	351.25	351.25	351.25	351.25			
S28	359.25	359.25	359.25	359.25			
S29	367.25	367.25	367.25	367.25			
S30	375.25	375.25	375.25	375.25			
S31	383.25	383.25	383.25	383.25			
S32	391.25	391.25	391.25	391.25			
S33	399.25	399.25	399.25	399.25			
S34	407.25	407.25	407.25	407.25			
S35	415.25	415.25	415.25	415.25			
S36	423.25	423.25	423.25	423.25			
S37	431.25	431.25	431.25	431.25			
S38	439.25	439.25	439.25	439.25			
S39	447.25	447.25	447.25	447.25			
S40	455.25	455.25	455.25	455.25			
S41	463.25	463.25	463.25	463.25			

PART LIST

PART NO	DESCRIPTION		POSIT	ION	N MBERS		
A99136-PH1	TUNER PH ASIMETRIK UV1316/A	VOLTAGE	TU101				
7RZ136-PH3	TUNER PH ASIMETRIK UV1316/ALG-3	FREQUENCY	TU102				
010860	TACT SW LONG STEN		SW401	SW402	SW403		
010861	ON/OFF SWITCH BK98		SW601				
031166	CONN.CINCH 12.1 FRONT-AV WH		X0003				
031176	CONN.CINCH 12.1 FRONT-AV YE		X0002				
031180	CONN.HEADPHONE 12.1 FRONT-A		X0004				
031206	CONN.HOUS.5P 2317-5S JST B		X251				
031229	SCART SOCKET 11.1		SK101				
031370	CON.HOUSING X2.5TMK 2904 B		X251				
031532	CRT SOCKET NARROW INCHANG		X703				
031675	CON.HOUSING 2P MALE		X602				
031777	CON.HOUSING LOCKED 5/4		X502				
031780	CONN.HOUSING 2'LI GREY		X501				
031856	CONN.HOUSING X2003 BLACK		X102				
051585	COIL H-LIN 70UH		L501				
051687-02	LINE FILTER 27MH E-TYPE OPE		L601				
053331	COIL 10UH LAL02		L101				
053352	COIL- CHOKE 10UH R0814 14.1		L701				
053500	COIL 10UH K AXIAL LAL04		L401	L402	L403		
053711	COIL 10UH K (TAIYO) LAL03		L0003				
053719	COIL CHIP 1UH		L106				
053735	COIL-CHIP 18UH K /12		L010				
053739	COIL CHOKE 50UH		L603				
053759	COIL 100UH LAL03		L604				
053781	COIL 2.2UH LAL04		L502				
053782	COIL 47UH K LAL04		L104	L105			
054261	FUSE 2.5AT (215 SER.)		F601				
055139	CHOKE COIL 50MHZ 600R PH-WB		L0001	L0002			
056210	CER.RESONATOR GSB455E						
056314-EK2	CPT EK A33LPE 02X01	14"					
056520-SB1	CPT SEB A48ECR43X51	20"					
056321-SB7	CPT SEB A51ERR 131X41	21"					
056660	CRYSTAL 3.579545 90OHM BULK		Q102				
056723	CRYSTAL 4.433619MHZ		Q101				
056760	SAW FILTER OFW J1956M		F101				
056961	CRYSTAL 6.00MHZ		Q401				
058413	FBT 14" 12.1	14"					
058013	FBT 20/21" 12.1	20"-21"	TR501				
059413	SMPS 14" 12.1	14"					
059013	SMPS 20/21" 12.1	20"-21"	TR601				
100220	CFR 22R J 1/2W 52MM		R611				
101106	CFR 100R J 1/4W 52MM		R146	R143	R148		
101221	CFR 220R J 1/2W 52MM		R0001	R0003			
101223	CFR 220R J 1/4W 52MM		R147				
101274	CFR 270R J 1/4W /6 52MM		R156				
101471	CFR 470R J 1/2W /9 52MM		R504	R0005	R528		
102141	CFR 1K J 1/4W /6 26MM		R205	R208	R210	R0002	R0004
102159	CFR 1.5K J 1/2W /9 52MM		R711	R713	R715	R716	
102338	CFR 3.3K J 1/4W /6 52MM		R492				
103116	CFR 10K J 1/4W /6 52MM		R137				
103136	CFR 10K J 1/4W /6 26MM		R622	R531	R466		
103475	CFR 47K J 1/4W /6 52MM		R705				
110823	RMO 82R J 3W R:20		R526				
113180	RMO 18K J 1W		R620				
113225	RM 22K J 1/2W 52MM		R522				
113683	RMO 68K J 1.5W 73MM		R612				
115103	RM 1M J 1W 52MM		R602				
115391	RM 3.9M J 1W 52MM		R601				

115470	RM 4.7M J 1/2W 52MM		R615				
119109	RNF 0.1R J .4W (UFLB) 52MM		R623				
119227-01	RMF 2.2R J 1W		R133				
119271	RM 2.7R J 1/2W		R509	R512			
119337	RMO 3.3R J 2W R:27.5 TAPE		R521				
119478	RMF .47R J 1W		R530				
120234	RMF 22R J 1/2W		R640				
132209	R-VAR 2.2K (V) 5*3		P601				
154216	NTC 5.1R M (S234R)		R608				
170102	RC-CHIP 10R J 1/8W /1206		R019				
170683	RC-CHIP 68R J 1/10W /0805		R206				
170750	RC-CHIP 75R J 1/10W /0805		R010				
170752	CFR-CHIP 75R J 1/8W /1206		R203	R204	R216	R218	R202
171102	RC-CHIP 100R J 1/10W /0805		R145	R173	R437	R438	R440
171150	RC-CHIP 150R J 1/10W /0805		R021	R401	R416		
171240	RC-CHIP 240R %1 1/10W /0805		R618	R619			
171270	RC-CHIP 270R J 1/10W /0805		R419				
171332	RC-CHIP 330R J 1/10W /0805		R168	R462			
171394	RC-CHIP 390R %1 1/10W /0805		R616				
171471	RC-CHIP 470R J 1/10W /0805		R167	R175	R433	R442	R450
171560	RC-CHIP 560R J 1/10W /0805		R209	R207			
171685	RC-CHIP 680R J 1/10W 0805		R524	R410	R463		
172101	RC-CHIP 1K J 1/10W /0805		R415	R425	R426	R496	R136
172105	RC-CHIP 1K J 1/8W /1206		R020	R022			
172150	RC-CHIP 1.5K %1 1/10W /0805		R617				
172152	RC-CHIP 1.5K J 1/10W /0805		R163	R403	R420	R460	R461
172225	RC-CHIP 2.2K J 1/10W /0805		R445	R138	R239		
172273	RC-CHIP 2.7K J 1/10W /0805		R501	R484			
172335	RC-ClHP 3.3K J 1/10W /0805		R429	R436	R456	R469	R490
172394	RC-CHIP 3.9K J 1/10W /0805		R503	R217			
172474	RC-CHIP 4.7K J 1/8W /1206		R030	R031			
172475	RC-CHIP 4.7K J 1/10W /0805		R455	R129	R405	R164	R418
172561	RC-CHIP 5.6K J 1/10W /0805		R407	R520			
172566	RC-CHIP 5.6K J 1/8W /1206		R011				
172683	RC-CHIP 6.8K J 1/10W /0805		R155				
172823	RC-CHIP 8.2K J 1/10W /0805		R444				
173101	RC-CHIP 10K J 1/10W /0805		R404	R413	R430	R434	R447
173151	RC-CHIP 15K J 1/8W /1206		R013				
173154	RC-CHIP 15K J 1/10W /0805		R219	R213	R220	R408	R159
173221	RC-CHIP 22K J 1/10W /0805		R458	R493	R414	R467	R468
173273	CFR-CHIP 27K J 1/10W /0805		R497				
173333	RC-CHIP 33K J 1/10W /0805		R402	R446	R101	R102	R135
173393	RC-CHIP 39K J 1/10W /0805		R603				
173562	RC-CHIP 56K J 1/10W /0805		R507	R508			
173682	CFR-CHIP 68K J 1/8W /1206		R023	R024	R025	R026	
174104	RC-CHIP 100K J 1/10W /0805		R535	R104			
174181	RC-CHIP 180K J 1/8W /1206		R141				
175102	RC-CHIP 1M J 1/10W /0805		R406				
175470	RC-CHIP 4.7M J 1/10W /0805		R179				
179001	RC-CHIP 0R /0805 2*1.25		R107	R109	R172	R103	R131
179002	RC-CHIP 0R /1206		C027				
201124	CC 120PF K 50V NPO R:5		C150				
201222	CC 220PF K 50V NPO R:5		C0003	C0004			
201226	CC 220PF K 2KV Y5P R:5		C622				
201481	CC 470PF K 2KV +15%, -30% 1		C618				
201560	CC 560PF K 50V R:5		C516				
202105	CC 1NF K 1KV Y5P R:5		C611	C612			
202220	CC 2.2NF M 250VAC Y5U R:10		C619				
202221	C-CE 2.2NF K 2KV Y5P R:7.5		C705				
202225	C-CE 2.2NF K 100V Y5P R:5		C506				
202229	CC 2.2NF K 500V Y5P R:5		C506				

203330	C-PPM 33NF J 630V R:15		C615				
250227	EC 2.2UF 16V 11*5 R:5		C029	C030			
250470	EC 4.7UF 16V 11*5 R:5		C018	C019	C127	C406	
251107	EC 10UF M 16V 11*5 R:5		C023	C025	C103	C214	C401
251109	EC 10UF 250V 16*10 R:5		C523	C702	C703		
251478	EC 47UF 16V 11*5 R:5		C502	C633	C634	C427	C429
252112	EC 100UF 16V 11*6 R:5		C142				
252229	EC 220UF 16V 11*8 R:5		C104	C631	C123	C513	
253101	EC 1000UF 35V 25*13 R:5		C522				
253106	EC 1000UF 25V 20*13 R:5		C511	C621			
271390	C-PPM 390NF J 250V R:15		C515				
272911	C-PPM 9.1NF %3.5 1.5/1.6KV		C518				
273105	C-PEM 10NF K 100V R:5		C503				
273112	C-PEM 10NF K 250 VAC R:10		C606				
273225	C-PEM 22NF J 63V R:5		C704				
273333	C-PEM 33NF K 100V R:5		C525				
273471	C-PEM 47NF K 63V R:5		C0001	C0002			
274102	C-PEM 100NF J 63V R:5		C101	C102	C405	C524	
274103	C-PEM 100NF K 275V-AC R:15		C607				
274105	C-PEM 100NF J 250V R:10		C701				
274107	C-PEM 100NF J 100V R:5		C521				
274224	C-PEM 220NF K 275V-AC R22.		C605				
274230	C-PEM 220NF J 100V R:5		C527				
274332	C-PEM 330NF K 63V R:5		C501				
290100	CC-CHIP 10PF D 50V /0805 NP		C130				
290222	CC-CHIP 22PF J 50V /0805 NP		C133				
290274	CC-CHIP 27PF J 50V NPO 0805		C504				
290334	CC-CHIP 33PF J 50V /0805 NP		C408	C409	C410		
290561	CC-CHIP 56PF J 50V NPO 0805		C138	C610			
291103	CC-CHIP 100PF J 50V /0805 N		C419	C437	C438		
291224	CC-CHIP 220PF J 50V /1206 N		C164				
291225	CC-CHIP 220PF K 50V /0805 X		C145	C414	C415	C203	C122
291477	CC-CHIP 470PF J 50V /0805 N		C206	C205			
291560	CC-CHIP 560PF J 50V /0805 N		C603				
291822	CC-CHIP 820PF J 50V /0805 N		C402				
292110	CC-CHIP 1NF K 50V /0805 X7R		C201	C202	C215	C602	C507
292151	CC-CHIP 1.5NF K 50V /0805 X		C601	C139			
292223	CC-CHIP 2.2NF K 50V /0805 X		C424	C166	C609		
293108	CC-CHIP 10NF K 50V /0805 X7		C608	C430	C028	C512	C416
293230	CC-CHIP 22NF K 50V /0805 X7		C417				
293474	CC-CHIP 47NF K 50V /0805 X7		C407	C413	C420	C421	C422
294109	CC-CHIP 100NF K 50V /0805 X		C017	C021	C024	C026	
294111	CC-CHIP 100NF K 25V /0805 X		C120	C125	C152	C432	C433
294222	CC-CHIP 220NF K 25V /1206 X		C021				
294231	CC-CHIP 220NF K 16V /0805 X		C124	C141			
294476	CC-CHIP 470NF K 16V /0805 X		C151				
300193	DIODE Z. MTZJ9.1B		ZD503				
300305	DIODE BA157		D502	D504			
302289	DIODE 1N4148 52MM		D406	D104			
302296	DIODE 1N4148 26MM		D401	D402	D403	D405	D505
302786	DIODE Z. MTZJ6.2B		ZD101				
302948	DIODE 1N4007		D701				
303148	DIODE-CHIP RB411D T146		D105				
303195	DIODE 4148 MELF		D404	D602			
303206	DIODE RGP30MS		D610				
303209	DIODE BAV21		D702	D703	D704		
303217	DIODE RGP10J		D607				
303227	DIODE RGP15J		D503				
303308	DIODE RF2007		D501	D601	D603	D604	D606
303771	DIODE Z. UZT33V		ZD601				
303813	DIODE RGP15D		D609				

303814	DIODE Z.MTZJ39B		ZD501	ZD502			
303850	LED LTL 4263 RED L=25.4		LED				
303991	LED IR SIR563SB3F 23/940						
401141	TRN-CHIP BC848B SOT23		T011	T503	T504	T412	T602
401142	TRN-CHIP BC858B SOT23		T401	T402	T407	T408	T409
401193	TRN-CHIP BC818-215 SOT23						
401219	TRN STP3NB60FP		T601				
401245	TRN PH2369		T405				
401331	TRN-CHIP 2SK3065		T505				
401332	TRN BU808DFI		T506				
451517	IC TDB7805CT T0220CASE		IC604				
451518	IC KA317TU T0220CASE		IC602	IC603			
452272	IC-CHIP 74HCT4053		IC010				
452382	IC-CHIP S3C1840DA9/SMB1						
452510	IC 4053B CMOS 16SOIC						
452521	IR RECEIVER TSOP 1838		IC403				
452597	IC-CHIP TDA7056AT		IC102				
452746	IC TDA6107Q		IC701				
452795	IC TDA16846		IC601				
452807	IC SDA555XFL		IC401				
452808	IC NN5099K	PAL	IC101				
452810	IC AN5539-LF		IC501				
452811	IC NN5198K	PAL/SECAM					
452837	IC-CHIP BR24C04 (SOP8)		IC402				
458320-01	IC SDA5521 (NTX) M.V1	NON-TX	IC401				
458640	IC SDA5552 (TX) M.V1	TX	IC401				
6BZ107-AS	SPEAKER SM 16R/3W						
577167-AS	DEGAUSSING COIL 14"	14"					
620167-AS	DEGAUSSING COIL ASSY 20" BA	20"					
54C500	CORD POWER						
H19187	REMOTE CONTROL 12.4/12.5 BLACK						
C41187	REMOTE CONTROL 12.4/12.5 GRAY						
B25187	REMOTE CONTROL 12.4/12.5 SILVER						
A84187B8918	REMOTE CONTROL 12.4/12.5 BLUE						
C45187	REMOTE CONTROL 12.4/12.5 RED						
B37187	REMOTE CONTROL 12.4/12.5 GREEN						
C89187	REMOTE CONTROL 12.4/12.5 BEIGE						
B07187	REMOTE CONTROL 12.4/12.5YELLOW						

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