

General Information

1993

Covers Models:

Samsung CI 5361A

Samsung CI 3351A

Samsung CI 5052AT

CRT's:

CI 5356A - 21"

CI 5052AT - 20"

CI 3351A - 14"

Remote Control:

CI 5361 & CI 3351A

3F14-00034-141 (RM109)

CI 5052AT

3F14-00033-070 (RM109TTX)

Main Power Button:

CI 5361A - 37623-165-510

CI 5052AT - 37623-157-110

CI 3351A - 37623-156-010

Sub Power Button:

CI 5361A - 37624-623-611

CI 5052AT - 37624-623-611

CI 3351A - 37624-623-611

Door (Flap):

CI 5361A - 37642-141-610

CI 5052AT - 37642-138-270

CI 3351A - 37642-123-780

Specifications

Television System

PAL-I Remote Control

Receiving Channel UHF Band

21 - 69

Intermediate Frequencies:

Picture IF

38.90 MHz

Sound IF Carrier

32.90 MHz

Colour Sub-Carrier

34.47 MHz

Picture Tube:

CI 5361A -

21" Local Purchase diagonal measured, Quick-start, In-line gun, Black stripe, 90 degree deflection

CI 3351A -

14" Local Purchase diagonal measured, Quick-start, In-line gun, Black stripe, 90 degree deflection

CI 5052AT -

20" Local Purchase diagonal measured, Quick-start, In-line gun, Black stripe, 90 degree deflection

Power Requirements:

CI 5361A -

AC 240V, 50Hz, 85W

CI 3351A -

AC 240V, 50Hz, 70W

CI 5052AT -

AC 240V, 50Hz, 85W

Antenna Input Impedance

VHF, UHF: 75 ohm unbalanced type

Speaker:

CI 5361A/CI 3351A -

8 ohm, 3W

CI 5052AT -

16 ohm, 3W

Features

Voltage synthesized tuning system, On-screen display, Auto-fine tuning, Dark tube, Auto brightness control, 29 key transmitter (38 key - CI 5052AT)

Recommended Safety Parts - CI 5356A		
Item	Part No.	Description
C411	31519-400-005	CFS 922M 1600V 0.0072-J
C417	31516-400-020	CFS 922M TAPG 400V 434-J
C801	31516-002-140	ECQ-E2A 224M N86(TAPG)
C802	31569-204-190	250V 0.47M/KNB 1530
C807	31519-010-000	CF922M 630V 0.022M-J
DZ824	32119-101-360	KA 33V (TAPG)
F801	34709-084-730	FST 250V 3.15A 20MM
IC402	A4008-0106	KIA7812PI TO-220
IC801	32119-910-017	SDH-209B
IC803	A4008-1092	KA7805A TO-220AB 1A
LD01	32306-101-020	DL-G2RA
P801	32189-609-430	2C14R (D)
PR01	32199-411-002	SR-5CP/RC37V3
Q401, Q803, Q806	32137-301-560	KSC 2331-Y (TAPG)
Q804	32137-301-720	KSC 815-Y (TAPG)
Q805	A4052-0055	KSA 940 25W-1.5A 4MHZ
R209	31048-361-001	RM 1/2T 1K-G
R210	31049-375-194	RM 1/2T 190K-F
R301	31049-276-102	RM 1/4T 1K-G
R302	31049-275-162	RM 1/4T 1.6K-F
R403	31046-567-330	RS 2T 33-J (AUTO)
R412, R418	31057-002-010	RF 1/2T 1-J
R414	31059-427-151	RF 1P 150-J
R415, R823	31046-467-102	RS 1T 1K-J (AUTO)
R802	31039-787-479	RW 10H 4.7-J
R805	31046-567-104	RS 2T 100K-J
R807	31046-567-121	RS 2T 120-J (AUTO)
R811	30146-567-333	RS 2T 33K-J (AUTO)
R813, R818, R820	31046-567-220	RS 2T 22-J (AUTO)
R817	31057-201-025	RF 1T 0.47-K/RF 1S 0.47
R822, R825	31046-567-752	RS 2T 7.5K-J (AUTO)
R824	30146-567-101	RS 2T 100-J (AUTO)
R826	31057-002-130	RF 1/2T 0.47-K
R918, R919, R920	30146-567-183	RS 2T 18K-J (AUTO)
R921, R922, R923	30128-327-182	RC 1/2T 1.8K-J/ERC-12GJ
R924, R925	30157-477-109	RF 1T 1.0-J/RF 1S 1.0-J
T401	32846-070-007	7.3MH/105UH ST
T801	32899-002-481	P: 180-280 S: 125/18V ER35
TU001	34519-700-020	TECC2985VA14B
V999	33359-063-650	DHE-A90-700

Recommended Safety Parts - 3351A		
Item	Part No.	Description
C209	31517-003-020	CFS922M TAPG 400V 104-J
C411	31519-400-005	CFS 922M 1600V 0.0072-J
C417	31519-391-000	CFS 922M 400V 364-J
C801	31569-204-200	250V 0.22M-K/KNB 1530
C802	31569-204-190	250V 0.47M/KNB 1530
C807	31519-010-000	CF922M 630V 0.022M-J
DZ824	32119-101-360	KA 33V (TAPG)
F801	34709-084-730	FST 250V 3.15A 20MM
LD01	32306-101-020	DL-G2RA
P801	32189-609-390	2C18R
PR01	32199-411-002	SR-5CP/RC37V3
Q401, Q803, Q806	32137-301-560	KSC 2331-Y (TAPG)
Q804	32137-301-720	KSC 815-Y (TAPG)
Q805	A4052-0055	KSA 940 25W-1.5A 4MHZ
R209	31048-361-001	RM 1/2T 1K-G
R210	31049-375-194	RM 1/2T 190K-F
R301	31049-276-102	RM 1/4T 1K-G
R302	31049-275-162	RM 1/4T 1.6K-F
R403	31049-316-100	RS 2N 33-J
R412, R418	31057-002-010	RF 1/2T 1-J

Recommended Safety Parts Cont'd. - 3351A		
Item	Part No.	Description
R414	31059-427-151	RF 1P 150-J
R415, R823	31046-467-102	RS 1T 1K-J (AUTO)
R802	31039-787-479	RW 10H 4.7-J
R805	31046-567-104	RS 2T 100K-J
R807	31046-567-121	RS 2T 120-J (AUTO)
R811	30146-567-333	RS 2T 33K-J (AUTO)
R813, R818, R820	31046-567-220	RS 2T 22-J (AUTO)
R817	31057-201-025	RF 1T 0.47-K/RF 1S 0.47
R822, R825	31046-567-752	RS 2T 7.5K-J (AUTO)
R824	30146-567-101	RS 2T 100-J (AUTO)
R826	31057-002-130	RF 1/2T 0.47-K
R828	30146-567-120	RS 2T 12-J (AUTO)
R830, R831	31028-328-475	RC 1/2T 4.7M-K/ERC-12GK
R918, R919, R920	30146-567-183	RS 2T 18K-J (AUTO)
R921, R922, R923	30128-327-182	RC 1/2T 1.8K-J/ERC-12GJ
R924	30157-477-109	RF 1T 1.0-J/RF 1S 1.0-J
R925	31057-201-018	RF 2T 1.8-J/RF 2S 1.8-J
T401	32846-070-007	7.3MH/105UH ST
T801	32899-002-481	P: 180-280 S: 125/18V ER35
TU001	34519-700-020	TECC2985VA14B
V999	33359-063D610	HF-22.5A

Recommended Safety Parts - CI 5052AT		
Item	Part No.	Description
C209	31517-003-020	CFS922M TAPG 400V 104-J
C411	31519-400-005	CFS 922M 1600V 0.0072-J
C417	31516-400-020	CFS 922M TAPG 400V 434-J
DZ824	32119-101-360	KA 33V (TAPG)
F801	34709-084-730	FST 250V 3.15A 20MM SEMK
IC402	32117-901-110	MC7812C (AUTO)
IC801	32119-910-017	SDH-209B
LD01	32306-101-020	DL-G2RA
P801	32189-609-430	2C14R (D)
PR01	32199-411-002	SR-5CP/RC37V3
Q401, Q803, Q806	32137-301-560	KSC 2331-Y (TAPG)
R209	31048-361-001	RM 1/2T 1K-G
R210	31049-375-154	RM 1/2T 150K-F
R301	31049-276-102	RM 1/4T 1K-G
R302	31049-275-162	RM 1/4T 1.6K-F
R412, R418	31057-002-010	RF 1/2T 1-J
R414	31059-427-151	RF 1P 150-J
R415	31046-467-102	RS 1T 1K-J (AUTO)
R805	31046-567-104	RS 2T 100K-J
R807	31046-567-121	RS 2T 120-J (AUTO)
R811	30146-567-183	RS 2T 18K-J (AUTO)
R812, R823	30147-567-471	RS 2T 470-J (AUTO)
R813	31046-567-151	RS 2T 150-J (AUTO)
R817	31057-002-130	RF 1/2T 0.47-K
R818	31046-567-220	RS 2T 22-J (AUTO)
R820, R828	31046-567-120	RS 2T 12-J (AUTO)
R822	31046-567-153	RS 2T 15K-J (AUTO)
R824	30146-567-101	RS 2T 100-J (AUTO)
R826	31057-002-010	RF 1/2T 1-J
R830, R831	31028-328-475	RC 1/2T 4.7M-K/ERC-12GK
R918, R919, R920	30146-567-183	RS 2T 18K-J (AUTO)
R921, R922, R923	30128-327-182	RC 1/2T 1.8K-J/ERC-12GJ
R924, R925	30157-477-109	RF 1T 1.0-J/RF 1S 1.0-J
T401	32846-070-007	7.3MH/105UH ST
T444	32859-200-000	FCM-20A015
T801	32899-002-481	P: 180-280 S: 125/18V ER35
TU001	34519-700-020	TECC2985VA14B
V999	33359-063-650	DHE-A90-700

Service Adjustments

Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed un-noticed by visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage etc. The replacement parts which have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by shading on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute parts which do not have the same safety characteristics in the parts list may create a shock, fire, X-radiation or other hazards.

X- Radiation Precaution

1:

Excessive high voltage can produce potential hazardous X-RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 24.0KV at zero beam current (minimum brightness). The high voltage must not, under any circumstances, exceed 30KV. Each time a receiver requires servicing the high voltage should be checked following the HIGH VOLTAGE CHECK procedures in this manual. It is recommended that the reading of the high voltage should be recorded as part of the service record. It is important to use an accurate and reliable high voltage metre.

2:

This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedures in this manual.

3:

The only source of X-RADIATION is this TV receiver. It is the picture tube. For continued X-RADIATION protection, the replacement tube must be exactly the same type as specified in the parts list.

4:

Some parts in this receiver have special safety-related characteristics for X-RADIATION protection. For continued safety, the parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE.

Safety Precaution

Warning: Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis. Since the chassis of this receiver is directly connected to the AC power line (Hot chassis), an isolation transformer should be used during any dynamic service to avoid possible shock hazards.

1:

Always discharge the picture tube anode to the CRT conductive coating

Service Adjustments Cont'd.

before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body during handling.

- When replacing a chassis in the cabinet, always be certain that all protective devices are put back in place, such as non-metallic control knobs, insulating covers, shields, isolation resistor, capacitor, network, etc.
- Before returning the set to a customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. To be sure the set is safe to operate without danger of an electrical shock. Plug the AC line cord directly to a AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter, having 5000Ω per v or more sensitivity, in the following manner: connect a 1500Ω 10 watt resistor, paralleled by a 0.15uF, AC type capacitor, between a known good earth ground, (water pipe, conduit etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500Ω resistor and 0.15mfd capacitor. Reverse the AC plug at the AC outlet and repeat the AC voltage measurements for each exposed metallic part. The measured voltage must not exceed 0.3 v RMS. This corresponds to 0.5 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

Alignment and Adjustment

1: High Voltage Check

Caution: There is no HIGH VOLTAGE ADJUSTMENT on the chassis. But B+ power must be adjusted in + 125v under the full colour bar pattern and normal picture control level.

- Connect an accurate high voltage metre to the second anode of the picture tube.
- Turn on the receiver. Set the BRIGHTNESS and CONTRAST control to minimum, (Zero beam).
- The high voltage should be measured less.
- Rotate the BRIGHTNESS and CONTRAST control to both extremes to be sure. The high voltage does not exceed the limit under ant conditions.

2: Horizontal Phase Adjustment

If you want to move the centre of the picture, adjust HORIZONTAL phase control (VR401).

3: Vertical Height Adjustment

The SIZE control (VR301) on the main board changes the size of the picture, having an equal effect on the top and the bottom.

4: Screen Adjustment

- Tune in an active channel.
- Make the picture normal condition (no blooming or no flyback line) with the VR screen.

5: Focus Adjustment

Adjust the FOCUS control on FBT for well defined scanning lines in the centre area of the screen.

6: R-F AGC Adjustment

- Tune the set in the strongest station in your area.
- Turn the AGC control (VR101) on the IF board to fully clockwise position.
- Adjust the AGC control until noises (snow) disappear from the screen.

7: Colour Purity Adjustment

Note: Before attempting ant purity adjustments, the receiver should be operated for at least fifteen minutes. Purity adjustment requires Rubber Wedge Kit.

- Demagnetise the picture tube and cabinet using a degaussing coil.
- Turn the CONTRAST and BRIGHTNESS controls to the maximum.
- Receive the green colour pattern.
- Loosen the clamp screw holding the yoke, and slide the yoke backward or forward to provide the vertical green belt (zone) in the picture screen.
- Remove the Rubber Wedges.
- Rotate and spread the tabs of the purity magnet (fig. 3), around the neck of the picture tube until a green belt is obtained in the centre of the screen. At the same time, centre the raster vertically by adjusting the magnet.
- Move the yoke slowly forward or backward until a uniform red screen is obtained. Tighten the clamp screw.
- Check the purity of the red and blue raster.
- Tighten the clamp screw of the yoke temporarily.
- Obtain a white raster, referring to the "CRT WHITE BALANCE ADJUSTMENT".
- Proceed with the convergence adjustment.

8: CRT White Balance Adjustment

Preparation:

- Operate the receiver for at least twenty minutes before attempting the white balance adjustment.
- Receive a black and a white signals, (Lion head pattern is better).
- Set the colour control to the centre position.
- Set the brightness and contrast controls to the maximum position.
- Set the red, blue and green low light controls to the mechanical centre position.
- Set the blue and red drive controls to the mechanical centre position.
- Set the screen VR control on FBT to the minimum position, (fully counter-clockwise).
- Connect 1 to 2 and 3 to 4 in CN402.

Steps:

- Rotate the SCREEN control on FBT, (T444), gradually clockwise until the first horizontal line appears slightly on the screen.
- Adjust the two CUT - OFF controls to obtain the slightly lightened horizontal

line in the same levels of three colours. (red, green, blue).

The line looks like white if the CUT - Off controls are adjusted properly.

- Reset the CN042 on the MAIN board to obtain a raster, ("NORMAL" Position).
- Adjust the blue and red drive controls to obtain a proper white - balanced picture in high light areas.
- Set the contrast control to the minimum position and turn the brightness control slightly counter-clockwise to obtain a dark grey raster. Then check the white balance in low brightness. If the white balance is not good enough repeat steps 1 — 4 for the correct white balance.

9: Convergence Adjustments

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

Centre Convergence Adjustment:

- Receive the crosshatch pattern with a colour bar signal generator.
- Adjust the BRIGHTNESS and CONTRAST controls for a well defined pattern.
- Adjust the two tabs of the 4-pole Magnets to change the angle among them, (fig. 2), and superimpose the red and the blue vertical lines in the centre area of the picture screen, (fig. 2).
- Turn both taps while at the same time keeping the angle constant and superimpose the red and the blue horizontal lines at the centre of the screen, (fig. 3).
- Adjust the two tabs of 6-pole Magnets to superimpose the red/blue line and green one. Adjust the angle to affect the vertical lines and rotate both magnets to affect the horizontal lines.
- Due to the interaction between these adjustments the steps 3, 4 and 5 should be repeated until satisfactory results are obtained.

Circumference Convergence Adjustment

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

10: AFT Adjustment

Equipment:

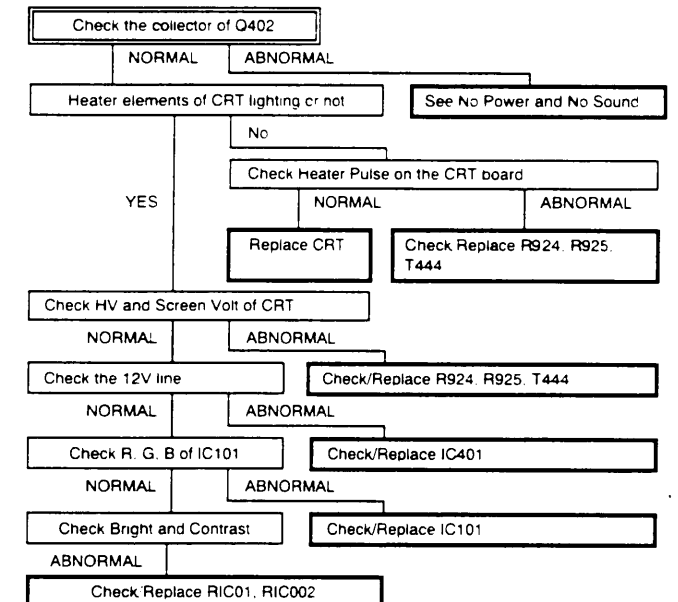
Pattern generator (PM5518)
Digital Voltmeter

Preparation:

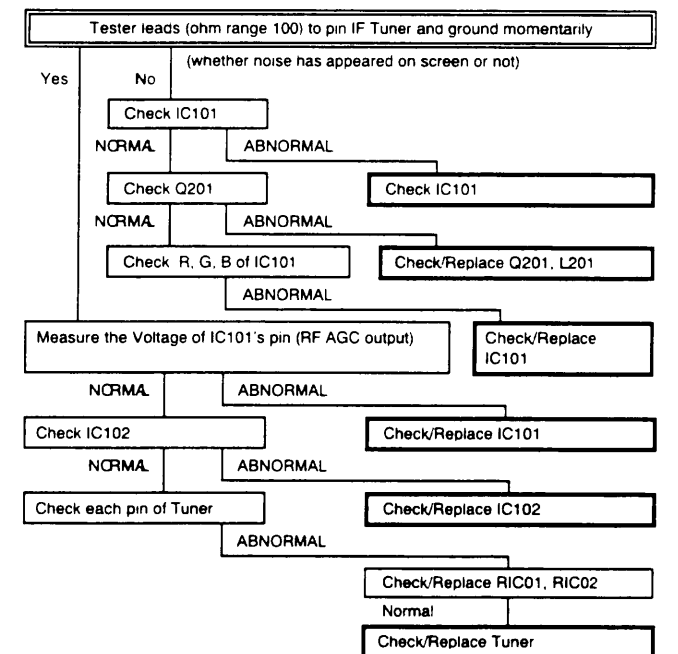
- Set the supply voltage to AC 220v.
- Set the RF output frequency of Gen to 38.9 MHz and then Multi-burst pattern.
- Connect the RF out of PM5518 to Tuner's Pin, (IF).
- Connect the DC voltmeter to J153.
- Adjust the DC voltage of J153 tape 4v by controlling the T104.

Trouble Shooting Guides

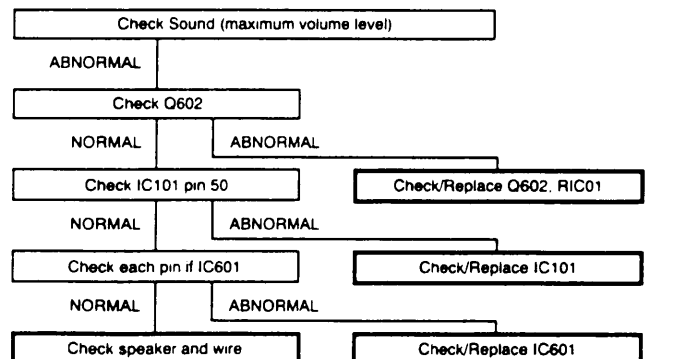
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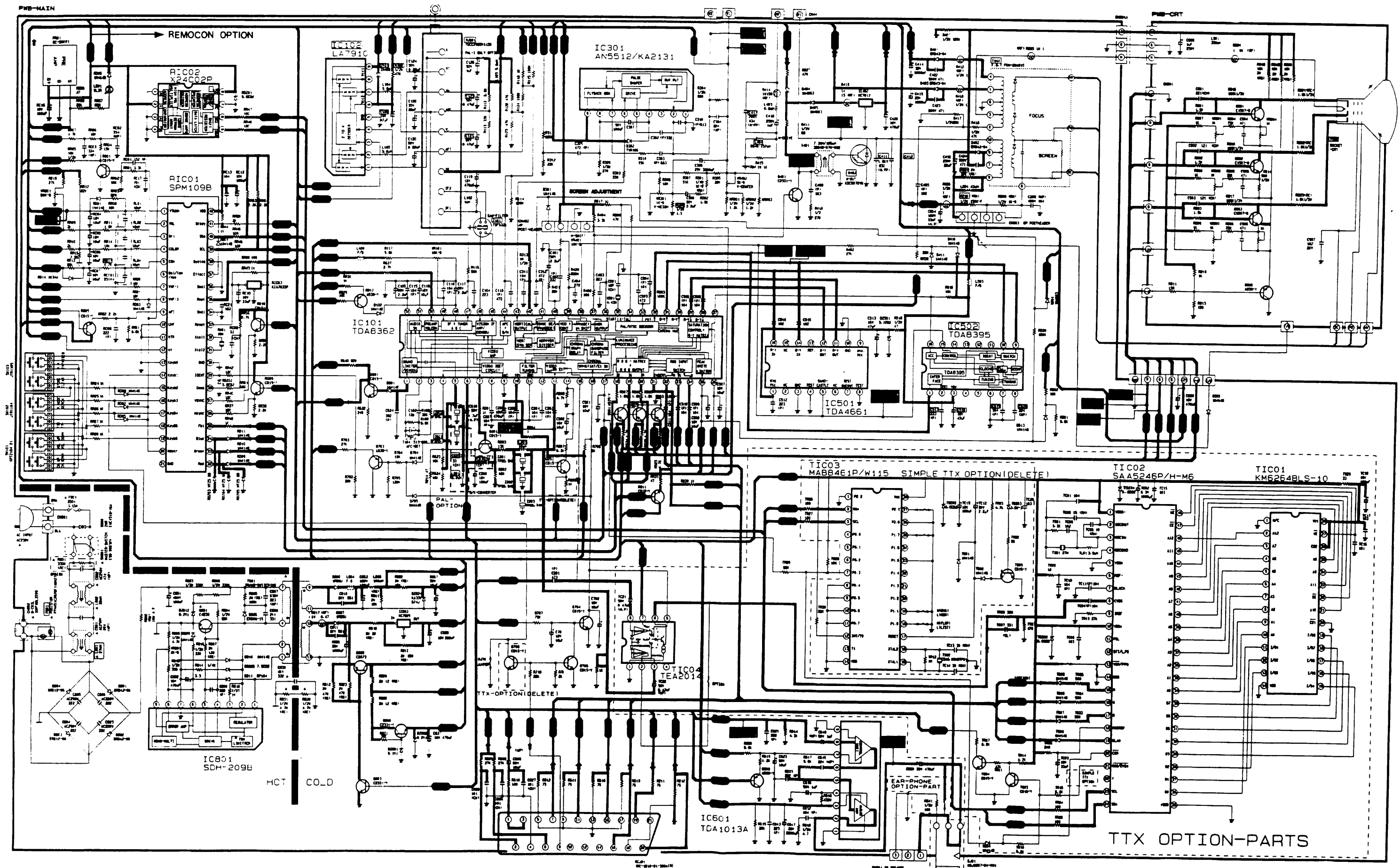
No Picture (Raster OK)



No sound (Picture OK)



Main Diagram



Voltage Charts

LOC NO	PAL B.G	PAL SEC AM-B.G	PAL SECAM-B.G.D.K	PAL-I
IC502	DELETE	TDA8395	TDA8395	DELETE
C517	DELETE	POLY 223	POLY 223	DELETE
C518	DELETE	16V 4.7MF	16V 4.7MF	DELETE
C519	DELETE	POLY 104	POLY 104	DELETE
C520	DELETE	POLY 224	PLOY 224	DELETE
C625	C-C CH47	C-C CH47	D/K CONVER TER	C-C CH47
L601	12MH	12MH	CONVER TER	12MH
Z101	OFWG19 56	OFWG19 56	TSF5321	TSF5321
Z201	TPS5.5M B	TPS5.5M B	TPS5.5M B	DELETE
Z202	DELETE	DELETE	TPS6.5M B	DELETE
Z203	TPS5.74 MB	TPS5.74 MB	TPS5.74 MB	DELETE
Z601	SFSH5.5 MCB	SFSH5.5 MCB	D/K CONVER TER	SFE6.0M B
Z602	DELETE	DELETE	CONVER TER	DELETE
A108	1/2W 470	1/2W 470	1/2W 470	DELETE
D101	1N4003	1N4003	1N4003	DELETE
C106	16V 4.7MF	16V 4.7MF	16V 4.7MF	DELETE
IC102	LA7910	LA7910	LA7910	DELETE
C121	50V 0.47MF	50V 0.47MF	50V 0.47MF	DELETE
C123	50V 0.47MF	50V 0.47MF	50V 0.47MF	DELETE
RR21	1/8 10K	1/8 10K	1/8 10K	DELETE
RR20	1/8 10K	1/8 10K	1/8 10K	DELETE
L104	5 0MH	5 0MH	5 0MH	DELETE
L105	5 0MH	5 0MH	5 0MH	DELETE
TU001 O-B	TECC298 5VA14B	TECC29 85VA14B	TECC298 5VA14B	TECC298 5VA14B
TU001 H-B	TCC2989 VA15B	TCC2989 VA15B	TCC2989 VA15B	TCC2989 VA15B
RD02 O-B	DELETE	DELETE	DELETE	DELETE
RD02 H-B	IN4148	IN4148	IN4148	IN4148
RD05 O-B	DELETE	DELETE	DELETE	DELETE
RD05 H-B	IN4148	IN4148	IN4148	IN4148

LOC NO	14" MINI NECK	20"	21"
RR17	1/8 2K	1/8 4.7K	1/8 4.7K
R210	1/2 190-F	1/2 150K-F	1/2 150K-F
C214	2KV 681	2KV 271	2KV 271
R824	DELETE	2W 100	2W 100
C417	400V 364	200V 434	200V 434
L404	DS48 230MH	DS48 15MH	DS48 15MH
T444	FTK-14004P	FCM20A015	FCM20A015
R911	1/8 100	1/8 150	1/8 150
V999	HF-22 5A	HF-29 1S	HF-29 1S
C901	121 (CH)	221 (RH)	221 (RH)
R306	1/2W 2.2	1/2W 1.5	1/2W 1.5
C309	POLY272	POLY472	POLY472
PCB	33004-118 171	33004-147 481	33004-147 481
P801	2C18R	140M270	140M270
Q402	2SD1650	KSD5072YD	KSD5072YD
V999 A	A34KV42X	51GGB95X A48KAD82X	54HGB99X A51KRE83X 01
R924	1W 0.47	1W1	1W 0.47
R925	2W 1.8	1W1	2W 1.8
L402	DELETE	DELETE	1.7R:32449 412-650 1R: 32449 412-680
R304	1/2W 680	1/2W 680	1/2W 330
CN80 2	32479-029 380	32479-029 330	32479-029 340

	NON-ITC-CAT	ITC-CAT
MR001	DELETE	1/1 1.2K
MR002	DELETE	1/1 1.2K
MR003	1/1 1.2K	DELETE
VR402	DELETE	VR-2K

Resistors	No Mark
Carbon	(RC)
Composition	(RS)
Metal Oxide	(RM)
Metal Film	(RF)
Fusible	(RW)
Cement Wire	(RN)
Network	

LOC	3 GROUP	4 GROUP	5 GROUP	6 GROUP
TIC03	MA88461P W115	PCF84C81P /CTV972	PCF84C81P /CTV972	PCF84C81P /CTB972
TIC02	SAA5246P/ E	SAA5246P/ E	SAA5246P/ E	SAA5246P/ E
TX02	6.0MHZ	9.8304MHZ	9.8304MHZ	9.8304MHZ
TR12	1/8W1M	DELETE	DELETE	DELETE
TC13	RH30	DELETE	DELETE	DELETE
TC14	RH30	DELETE	DELETE	DELETE

Capacitors	No Mark
Ceramic - Si	(RH)
Ceramic - Rh	(CH)
Ceramic - Ch	(P)
Polyester (Induct)	(PMU)
Polyester (Noninduct)	(PP)
Metal Polyester	(MP)
M P Polypropylene	(MPP)
Tantalum	(T)
Non Polar	(NP)

CRT Set up

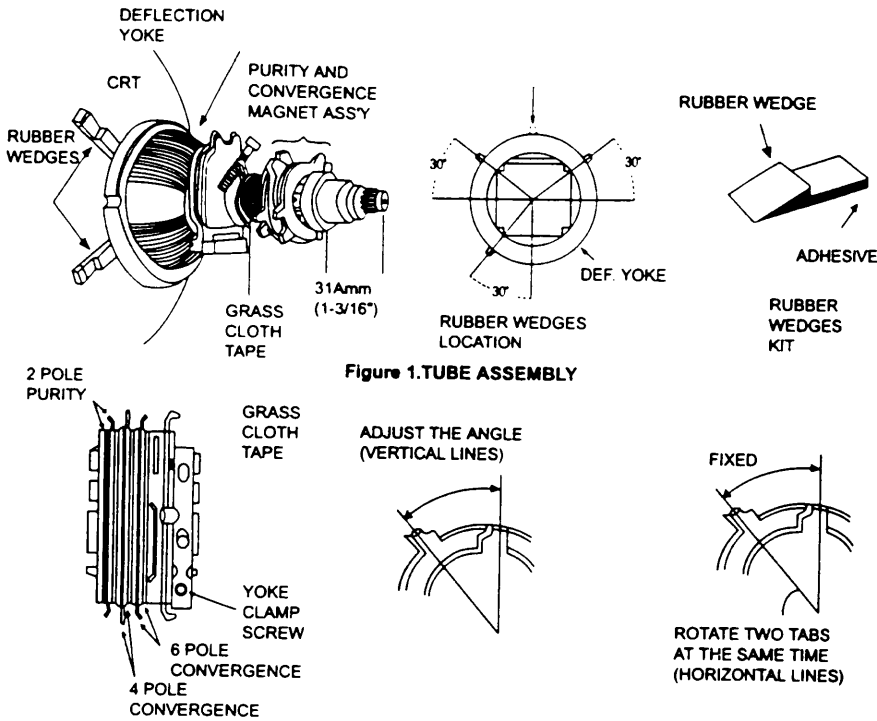


Figure 1.TUBE ASSEMBLY

Figure 2. PURITY AND CONVERGENCE MAGNETS

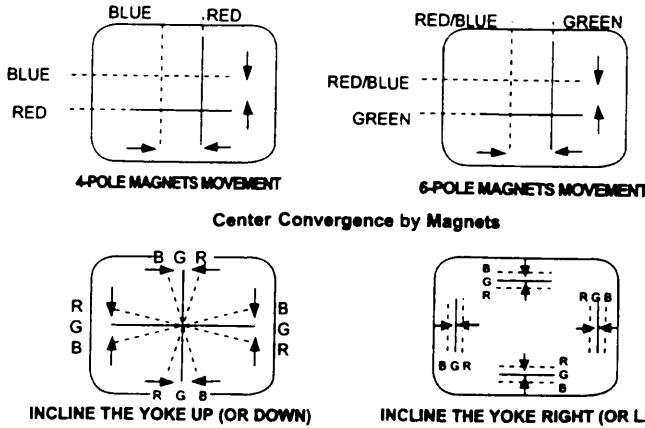
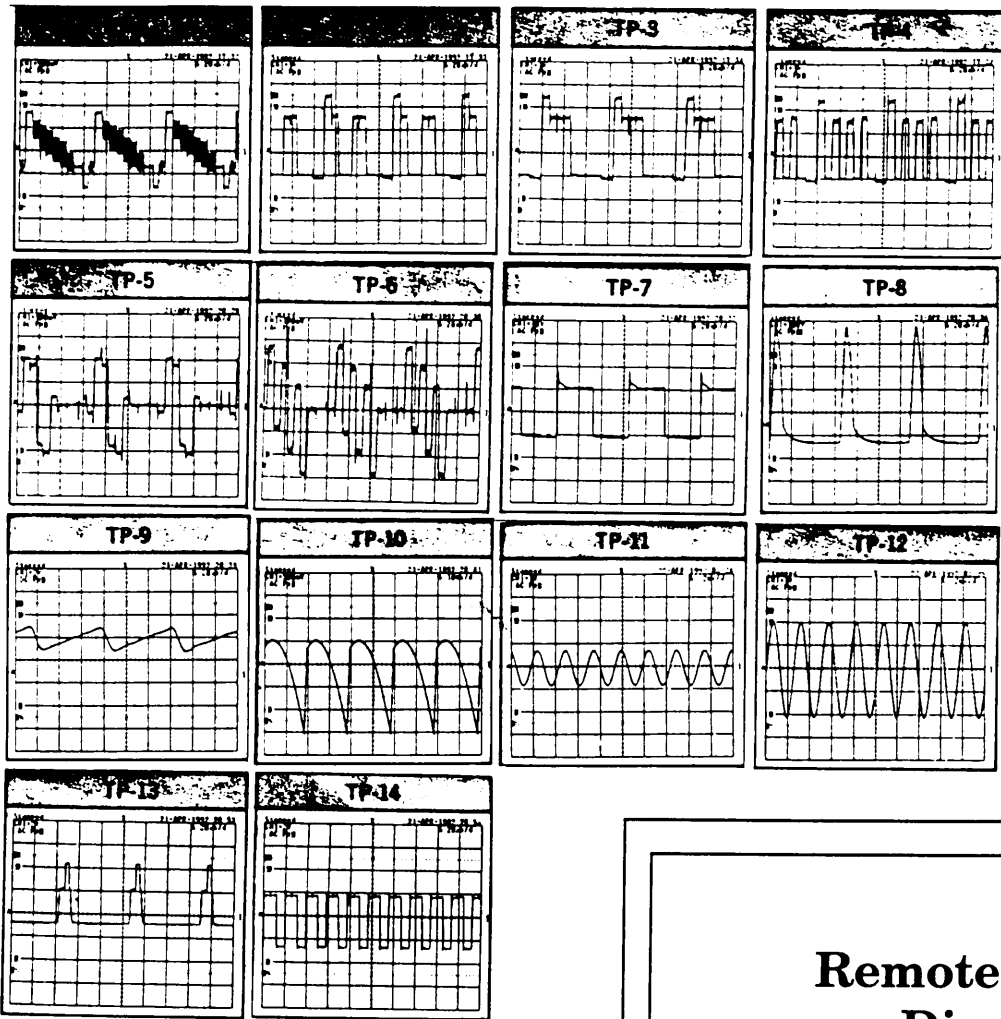
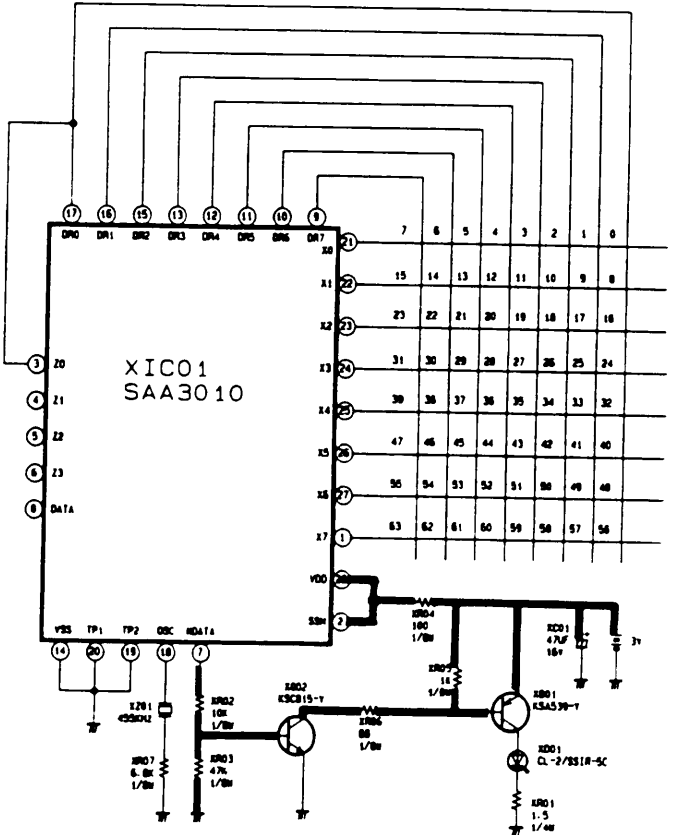


Figure 3. Dot Movement Pattern

Main Diagram Waveforms



Remote Control Diagram



D/K Converter Diagram

