TELEFUNKEN
SERVICE MANUAL



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This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

CAUTION:
Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.



CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN.



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lighting flash with arrowhead symbol, with an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Read all of these instructions. Save these instructions for later use. Follow all Warnings and Instructions marked on the audio equipment.

1. Read Instructions- All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions- The safety and operating instructions should be retained for future reference.
3. Heed Warnings- All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions- All operating and use instructions should be followed.

FOR YOUR PERSONAL SAFETY

1. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
2. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
3. Do not allow anything to rest on or roll over the power cord, and do not place the TV where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
4. Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
5. Never push objects of any kind into this television set through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
6. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
7. If liquid has been spilled into the television set, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
8. Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.
9. Unplug this television set from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

10.1. Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

10.2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



PROTECTION AND LOCATION OF YOUR SET

11. • Do not use this television set near water ... for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
    • Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall outlet and refer servicing to qualified service personnel.

12. Choose a place where light (artificial or sunlight) does not shine directly on the screen.

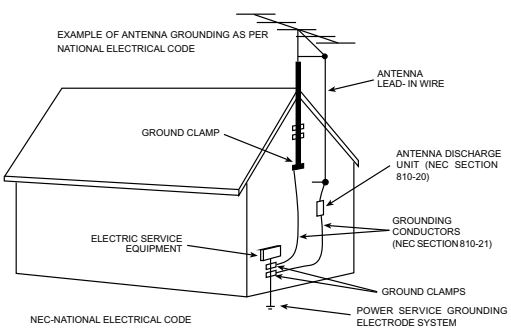
13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.

14. The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, to protect it from overheating. These openings must not be blocked or covered.
    • Never cover the slots or openings with cloth or other material.
    • Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.
    • Never place the set near or over a radiator or heat register.
    • Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

15.1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



15.2. Note to CATV system installer : (Only for the television set with CATV reception)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

16. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17. For added protection for this television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

18. This television set should be operated only from the type of power source indicated on the marking label.If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.
19. If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
20. When going on a holiday : If your television set is to remain unused for a period of time, for instance, when you go on a holiday, turn the television set "off " and unplug the television set from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

21. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.
22. Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.
23. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICE AND MODIFICATION

24. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.
25. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
26. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

PFS2 FORMAT-1 Report	
Date: 2004-9-29 13:36 **ProductView.....:** **Report by.....:**	Product:@ TKP2929STX
Specs / Products	
SRF NO./ODF NO.	ON44031507
MasterData	
Customer Id	BGH S.A.
Version	0.1
Status	WG Archived
Brand	TELEFUNKEN
EAN	\
UPC	\
Reception	
+Tuning - presets/channels	181
+Tuning - technology	PLL
+Tuning - Indication	---
+Freq Bands	FS TUNER
+Channels	VHF:2-13, UHF:14-69, CATV: 1-13, A-W.W+1---W+84,A-5---A-1,5A
+IF Freq	PICTURE 45.75MHz
+TV Systems Off Air	PAL M/N NTSC M (3.58 - 4.433)
+Add Systems Ext In	---
+TV Systems Multi	PAL NTSC
+Sound Systems	AV STEREO, BTSC
Picture - Processing	
+Scan	Standard
+Scan Modes	4:3
+Wide Screen Switching	
+Combfilter	x
+Picture Control	4 Picture Modes, Brightness, Color, Contrast, Tint, Sharpness Cont Var
+Pict Enhancement	Black Stretch
+Pict Noise Reduction	---
Picture - Display	
+Display Type	DV - CRT - FSQ
+Screen Format	4:3
+Size(Visual)" - size/vis. cm	29"
+Deflection System (CRT only)	
+Tube Technology (CRT only)	Black Matrix, Iron
+CRT Defl	
+CRT Gun	Stand Gun
+CRT Magn field	Normal
+Resolution	
+Coating (only for D.V. sets)	
+White Point	
Sound	
+Leaflet Power	
+RMS Power Intern	
+RMS Power Extern	
+Surround Sound	
+Sound Features	Mute, BTSC
+Sound Control	Volume, AVL,
Sound - Speakers	
+Speaker configuration	2 speakers
+Speakers used	Normal Range
+Speaker Size	
User Interface	
+Interface Name	29276
+Voice Control	
+Menu	Cursor Control
+Menu Colours	
+Menu Languages	Spanish, English, Portuguese, French
+Special Features	V-Chip, CCD, Channel lock, Child Lock, Note Book,Calendar, Favorite Channel
+Operational Features	
+PP Features	

Date: 2004-9-29 13:36 ProductView.....: Report by.....:	Product:@ TKP2929STX
Specs / Products	
+Tuning/Install Features	Auto Store, Factory Mode, Language Selection, Service Mode
+Clock/Timer Functions	Sleep timer
+Local Controls Front	
+Local Controls Top	
+Indicators - screen	
+Indicators - front	
+Numb of Loc Cont (incl Mains)	7
+Number of Ind. (incl Mains)	
+Local Controls (Old)	Channel +-, Tact Switch, Vol +-, TV/AV, MENU
Remote Control	
+Remote Control - scope	TV
+Remote Control - type	Standard
+Remote Control - typenr	
+Remote Control - features	
Connectors Rear	
+Scart RGB+Y/C+CVBS	
+Scart RGB+CVBS	
+Scart CVBS+Y/C	
+Component In (Y/U/V) Cinch	X
+In Y/C+Cinch(CVBS+St)	
+In Y/C+Cinch(CVBS+Mo)	
+In Y/C+Cinch(St)	
+In BNC (CVBS)	
+In Cinch(CVBS+St)	X
+In Cinch(CVBS+Mo)	---
+Out Cinch(CVBS+St)	X
+Out Cinch(CVBS+Mo)	
+Out Cinch Audio Stereo	
+Out Cinch Audio Mono	
+Out Cinch Dolby Surround	
+Dig Audio Out	
+Loudspeakers	
+Control Busses	
+Feature Slot	
+ITV Smart Port	
+Terr. Antenna in	75 Ohms (F type)
Guide + IR Blaster Jack	
Connectors Front	
+In Cinch (CVBS + St)	
+In Cinch (CVBS+Mo)	
+Headphone Out	
Connectors Side	
+In Y/C + Cinch(CVBS+St)	x
+In Y/C + Cinch Stereo	
+In Cinch (CVBS + St)	
+IN Cinch (CVBS + Mo)	
+Headphone Out	
Connectors Top	
Connectors Mechanical	
Styling	
+Cabinet Name	29276
+Configuration	Symm
+Graphics/Logo's	TELEFUNKEN
+Cabinet Colour and Finish	
+Mechanics	
+Speaker Visibility	Standard
General	
+Segment	Standard 4:3
+Chassis	M134
+Software Delivery Mode	
+Software Version	
+Mains Voltage	110-240V
+Mains Frequency	50/60Hz
+Type Mains Cord	Argentina
Power Consumption (P)TV in On	
Power Consumption SB in Watts	Less than 6
Power Consumption Semi SB in W	

Date: 2004-9-29 13:36 ProductView.....: Report by.....:	Product:@ TKP2929STX
Specs / Products	
+Power in "ON" for	
+Power in Standby for	
+Power in "OFF" for	
Weight (P)TV (incl. Packaging)	
Weight (P)TV (excl. Package)	
Weight AVUnit excl Packaging	
+INDICATION on BACKCOVER	
+Channel	
Final Equipment	
+Packaging - methods	
+Documents and manuals	
+Languages DFU	
+Cables Supplied	
+Antenna Supplied	
+Stand Supplied	
+Aux Equipm Supplied	Batteries for RC (2 x AA)
Packaging - width cm	
Packaging - height cm	
Packaging - depth cm	
Miscellaneous	
+EAN Indication	
+Approbation	CB
+Tests	
+Local Integration	
Various Perf. Param.	
+Service Call-Rate	
PIP/POP	
+Type	No PIP/POP
+Features	n/a
Digital Reception	
+Transmission	
Built-in Data System	
+Text Standard	
+(Tele)text Features	
+Nbr bckgrnd page / Mem Size	
+Text Technology	
+Digital Data handling	
+Program Guide	
Built-in Clock/Timer	
+Type	
+Features	
Built-in Radio	
+Type	
Built-in PC display	
+PC Synch	
+PC Control	
Built-in DVD drive	
+Type of Medium	
+Type of Deck	
Phased Out Items	
+Tuner/Frontend	
+Sensitivity	
+CRT EHT	
+Lightning Protection	NO
+Account	
+XX(Radio Antenna in)	
+Non Volatile Memory	
+In Y/C + Cinch(CVBS+Mo)	
Version of deck	

M134 Alignment Procedures

A. Enter Factory Mode:

Simply press the "SERVICE" key on the factory remote handset.

Press"1，2，3，4，5，6，7，8，9，0，NOTEBOOK,CAPS, DISPLAY ,SLEEP, CALENDAR ,COLOR/INS，FAVORITE,RECALL"，you can switch in the sub-menus of "FAC01～FAC18" in turns.

Press "P+" " P-" to choose the items.

Press "V+" " V-" to adjust the data.

Press "OK" and "P+" " P-" to switch in the sub-menus of "FAC19～FAC23".

Exit Factory Mode:

Press the "SERVICE" key on the factory remote handset. All changes in factory data will be saved in EEPROM automatically.

Some special modes:

Aging Mode	— Be used for aging before adjustment in Factory Mode.
Vertical doesn't Work	— Be used for Screen & Focus voltage adjustment. In Factory Mode, press "TV/AV" to enter and exit.
White balance adjustment Mode	— Be used for White balance adjustment. In Factory Mode, press "BUS OFF" to enter and exit.
Default Value OK mode	— Be used for default value setting before TV leaves Factory. In Factory Mode, press "S. EFFECT" to enter default value. "Wait" will be displayed in screen, when it is finished, "OK" will be displayed. It will exit factory mode automatically.

Note: Now press "SERVICE" cannot enter factory mode, you have to take the following steps to enter:

1. Setting Volume to Zero.
2. Press "V-" in cabinet and Press "Display" in RC simultaneously.

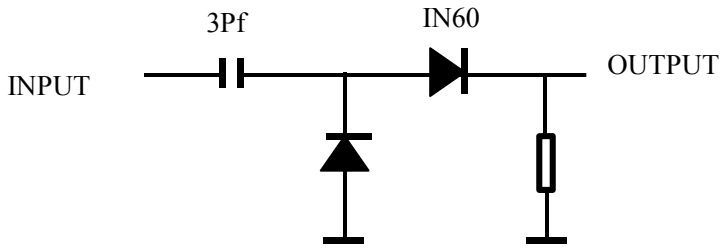
B. Adjustment Way

1. B＋Adjustment：

Apply Philips Test pattern signal in normal status, adjusting VR821 to make B＋＝130V±0.5V.

2. RF AGC adjustment:

Observe monitor the collector waveform of Q101 with the probe of Oscilloscope as illustration below. Select channel 2 (>70dB) from the antenna input. Enter D-mode, select menu6 to adjust RFAGC item until the monitor peak value to 0.8Vp-p.



3. Sound Amplifier Adjustment:

1) Apply 45.75 IF signal which is >60dB from P1101

2) Adjusting T1101 to make the voltage of Pin 15 in IC1101 is 2.5±0.05V.

4. Screen & Focus voltage adjustment:

1) Apply pattern signal in normal status, enter D-mode, press "TV/AV" button to turn off the vertical output. (Note: The default value of RC/GC/BC is 80, and GD/BD is 40)
2) Adjust the SCRREEN switch on the flyback transformer to make a horizontal shining line just visible on the screen.
3) Turn on the vertical output, adjust the "FOCUS" on the flyback transformer to obtain the optimum focus.

5. White balance adjustment (NORMAL)

1) Apply Black and White Signal in normal status, enter into Factory Mode and select Menu 1.
2) Using analyzer to test the black signal part, adjust RCUT, GCUT, BCUT to make X=284, Y=299.
3) Using analyzer to test the white signal part, adjust BDRV, GDRV to make X=284, Y=299.
4) Adjusting Brightness and Contrast from Min to Max, repeat step 2)~3) to make X=284, Y=299.

Note: M134 chassis can adjust white balance automatically. In factory mode, press "I2C BUS" to enter in.

The white balance in the other two colors temperature is Warm (296, 296), Cool (279, 265).

6. Adjustment of Sub-brightness:

1) Apply the Grey-scale/Color bar (NTSC signal) to the AV input, in normal status.
2) Enter into Factory Mode and select Menu 5, select BRTC to adjust the sub-brightness, until that the 2nd dark bar of 8 level Grey scale just can be seen.

7. Picture geometric adjustment:

1) Apply the Philips standard testing pattern in normal status, then enter menu 3, adjusting the following data to get the min-distortion.
   HPOS5/6（Horizontal Center） PARA5/6 （Level） TRAP5/6 （Trapezia）
   HSIZE5/6（Horizontal Size） CNRT5/6 （Top） CNRB5/6 （Bottom）
2) Apply the Philips standard testing pattern in normal status, then enter menu 3, adjusting the following data to get the min-distortion.
   HIGH5/6 (Height) VP50/60（Vertical Center）
   VLIN5/6（Linearity） VSC5/6（Vertical-S Correction）

8. BTSC/SAP Function checking:

It needn't to adjust the BTSC/SAP, but you have to check where it does work.

9. CCD and V-CHIP function checking:

Please see the User's Manual to check V-CHIP.

FAC 01		FAC 02		FAC 02		FAC 03	
Item	Data	Item	Data	Item	Data	Item	Data
RC *	80	HIGH5 *	0C	HIGH6 *	0E	HPOS5 *	0E
GC *	80	VP50 *	03	VP60 *	03	PARA5 *	14
BC *	80	VLIN5 *	0B	VLIN6 *	0A	TRAP5 *	2C
GD *	40	VSC5 *	09	VSC6 *	09	HSIZE5*	2D
BD *	40	VBLK5	00	VBLK6	00	CNRT5 *	0C
		VCEN5	0E	VCEN6	2E	CNRB5 *	0E
						VEHT5	03
						HEHT5	03

FAC 03		FAC 04		FAC 05		FAC 06	
Item	Data	Item	Data	Item	Data	Item	Data
HPOS6 *	12	CNTX	7F	BRTC	40	ST3	20
PARA6 *	16	CNTN	08	COLC	2C	SV3	20
TRAP6 *	2B	BRTX	20	COLP	00	SV4	19
HSIZE6*	2C	BRTN	20	SCOL	07	SVD	19
CNRT6 *	0B	COLX	35	SCNT	0C	ASSH	07
CNRB6 *	0D	COLN	00	CNTC	4C	SHPN	10
VEHT6	03	TNTX	28	TNTCT	40	SHPN	2A
HEHT6	03	TNTN	28	TNTCV	40		

FAC 07		FAC 08		FAC 09		FAC 10	
Item	Data	Item	Data	Item	Data	Item	Data
MOD1	60	RFAGC *	25	V01	46	MODE4	FF
MOD2	B0	BRTS	00	V25	6B	MODE5	3F
MOD3	F0	OSD	21	V50	75	MODE6	1F
OPT	37	OSDF	53	V100	7F	MODE7	57
OPTM1	61	CCD OSD	4A	VOLMAX	32	MODE8	24
OPTM2	C6	CCD OSDF	65	CURTCEN	A5	MODE9	FF
HDCNT	00	TXCN	1F	GATE	2A		
HSTOP	FF	RGCN	16	VOL-OUT	73		

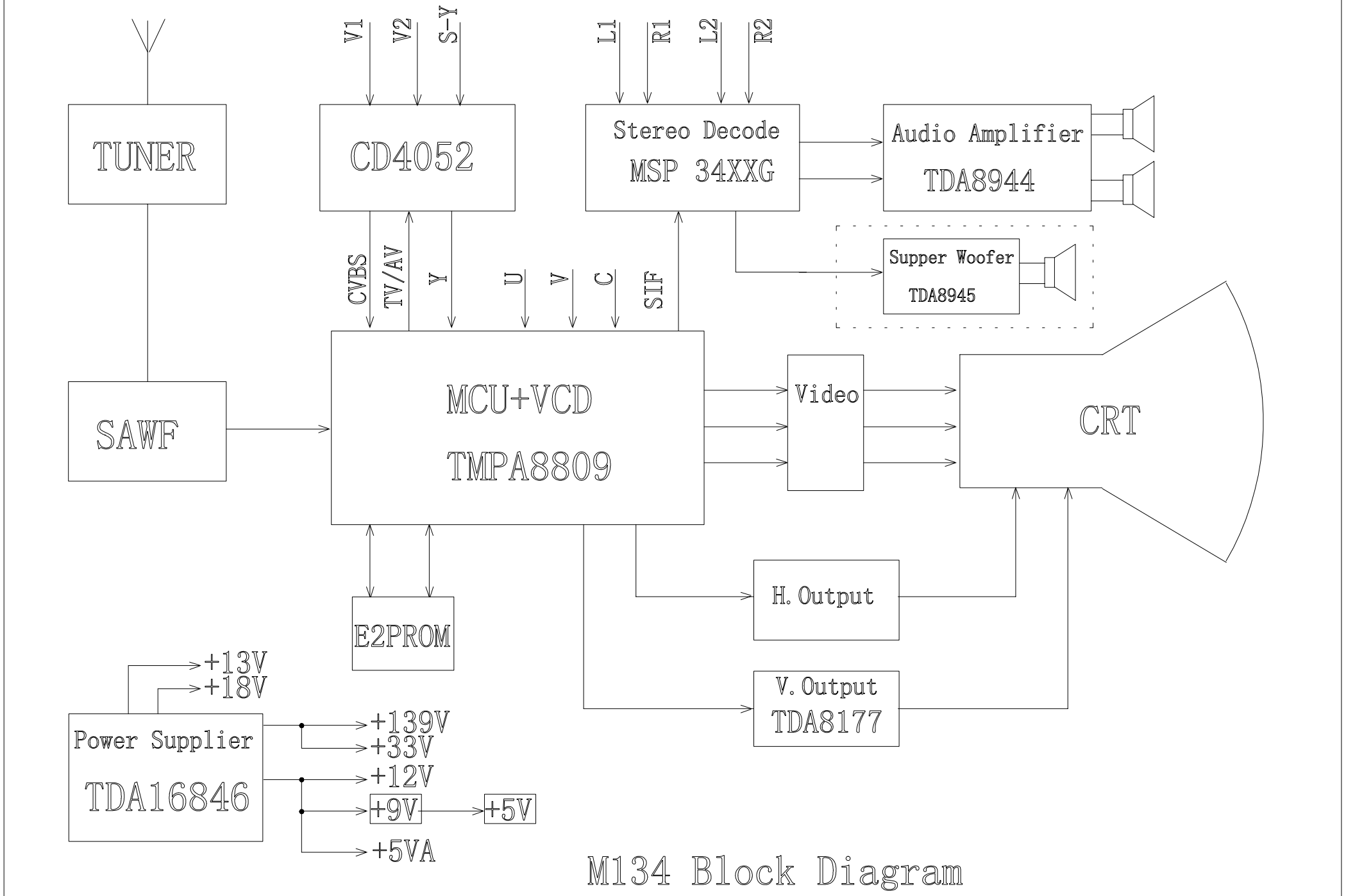
FAC 11		FAC 12		FAC 13		FAC 14	
Item	Data	Item	Data	Item	Data	Item	Data
MPB-STR	43	SVM	05	CLTM	44	HAFC	09
MPB-HMC	0D	SVM1	05	CLVO	43	AGCC	1C
MPB-HP	07	OSD2	20	CLVS	43	NOIS	01
MPB-LP	11	OSDF2	64	ABL	27	ONTM	08
MPB-LIM	00	PYNX	28	DCBS	14	NSHP	1A
SUB-FRE	28	PYNN	18	FLG0	82	PVLVL	80
SUB-HP	02	PYXS	22	FLG1	0C/0D	PLMT	80
VOL-MAI	00	PYNS	10				

FAC 15		FAC 16		FAC 17		FAC 18	
Item	Data	Item	Data	Item	Data	Item	Data
RC-C **	80	RC-W **	80	D-COL	32	S-COL	32
GC-C **	80	GC-W **	80	D-BRI	32	S-BRI	32
BC-C **	80	BC-W **	80	D-CON	5A	S-CON	32
GD-C **	40	GD-W **	40	D-SHP	32	S-SHP	32
BD-C **	40	BD-W **	40				
		YUVGC	03				
		YUVBC	03				

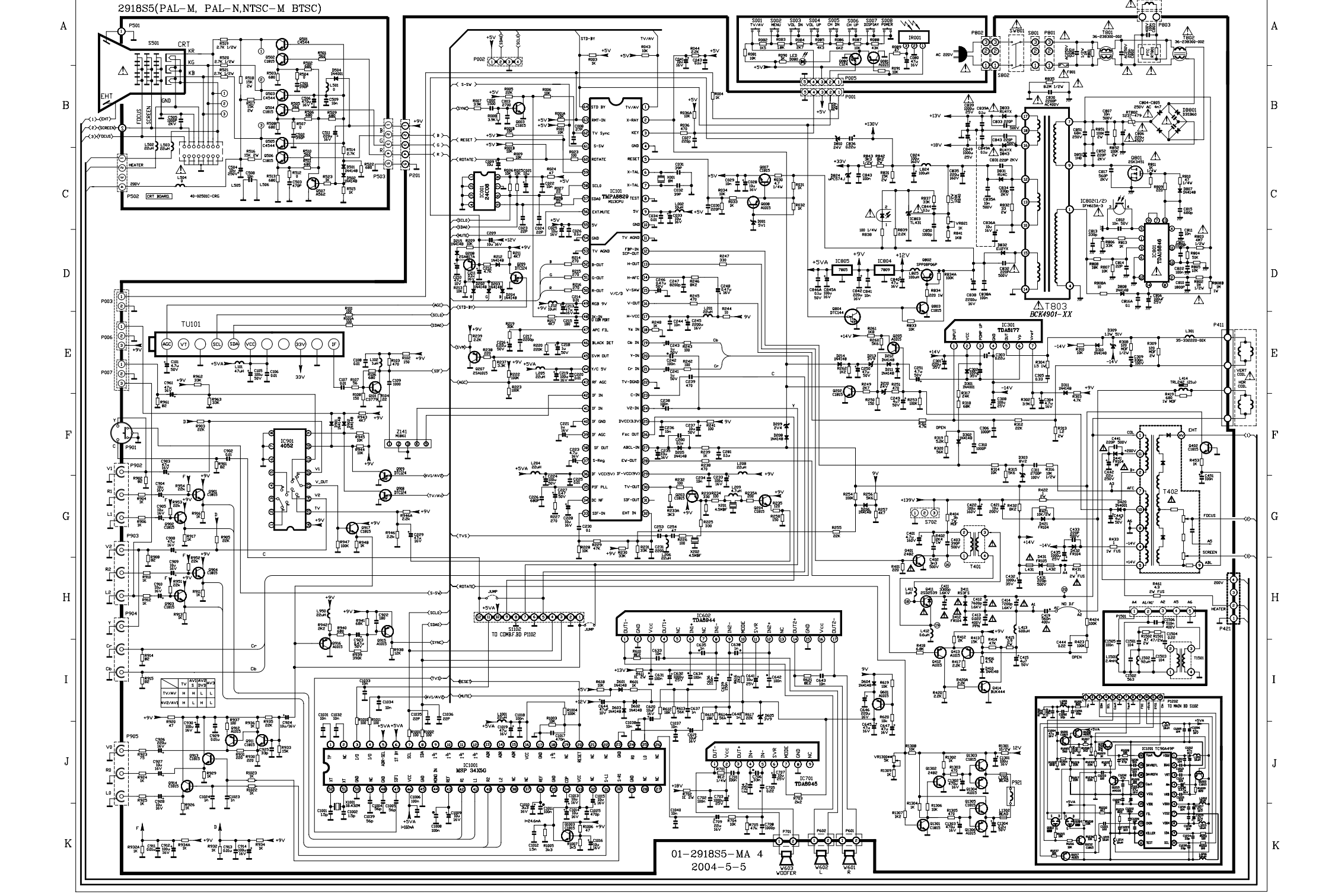
FAC 19		FAC 20		FAC 21		FAC 22	
Item	Data	Item	Data	Item	Data	Item	Data
S-COL	32	T-Hz120-BAS	5A	C-Hz120-BAS	32	B-Hz120-BAS	14
S-BRI	32	T-Hz500-TRE	5A	C-Hz500-TRE	32	B-Hz500-TRE	14
S-CON	1E	T-Hz1K5	0C	C-Hz1K5	0C	B-Hz1K5	0C
S-SHP	32	T-Hz5K	0C	C-Hz5K	0C	B-Hz5K	0C
		T-Hz10K	0C	C-Hz10K	0C	B-Hz10K	0C

FAC 23	
Item	Data
COMB1	00
COMB2	05
COMB3	00
AV GAIN	19

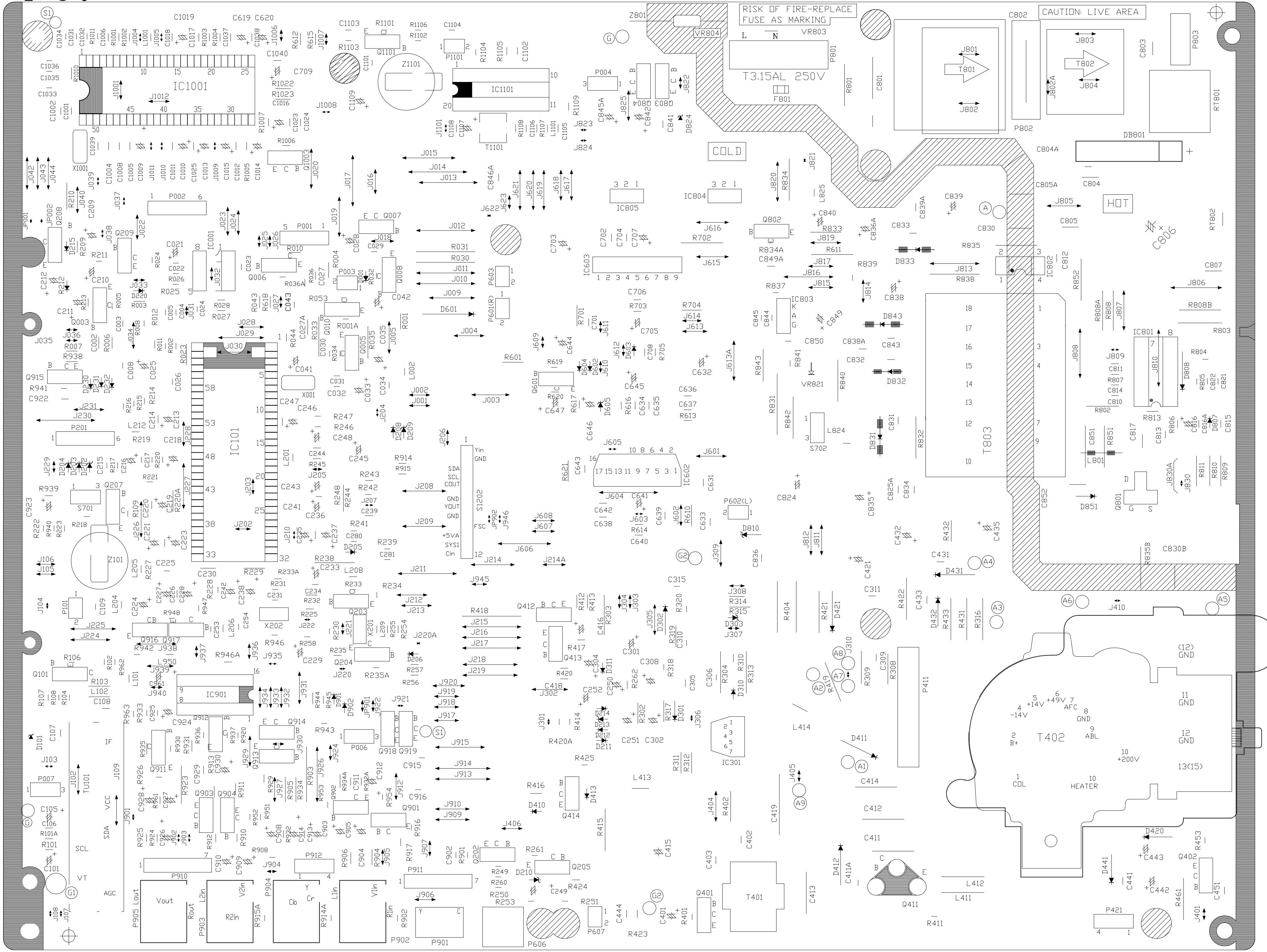
* It means the data are stable.



M134 Block Diagram


2918S5(PAL-M, PAL-N,NTSC-M BTSC)
TU101
IC1001 MSP 3435G
IC301 4052
IC602 TDA8944
IC701 TDA8945
IC801 TDA8177
IC1101 TC90A49F
T803 BCK4901-XX
T402
T401
T1501
01-2918S5-MA 4
2004-5-5

40-2918S5-MAG1X


RISK OF FIRE-REPLACE
FUSE AS MARKING
T3.15AL 250V
CAUTION: LIVE AREA
COLD
HOT
IC1001
IC1101
IC101
IC901
T803
T402
Yin
GND
SDA
SCL
COUT
GND
YOUT
GND
FSC
+5VA
SYS1
Cin
IF
VCC
SDA
SCL
VT
AGC
Vout
Lout
Rout
L2in
V2in
R2in
Cb
Y
Cr
L1in
V1in
R1in
4 -14V
5 +14V
6 +49V
7 AFC
8 GND
9 ABL
2 B+
10 +200V
1 COL
10 HEATER
(12) GND
11 GND
12 GND
13(15)

