

AKAI





SERVICE MANUAL

Model: CT2016

Safety Instructions
Features & Specifications
Block Diagram
Circuit Diagram
Disassembly
Pin Descriptions
Exploded View Diagram
Spare Part List

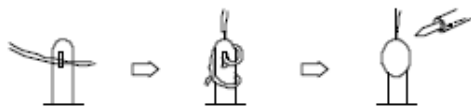
This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

Safety Instructions

	<div style="border: 1px solid black; padding: 5px;"> <p style="margin: 0;">CAUTION</p> <div style="background-color: black; color: white; padding: 2px; text-align: center; font-weight: bold;"> RISK OF ELECTRIC SHOCK DO NOT OPEN </div> </div>	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.</p>		
	<p>The lightning flash with arrowhead symbol, within 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 persons.</p>	
	<p>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.</p>	

PRECAUTIONS DURING SERVICING

1. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, tuner units, antenna selection switches, RF cables, noise-blocking capacitors, noise-blocking filters, etc.
2. Use specified internal Wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
3. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulating Tape
 - 2) PVC tubing
 - 3) Spacers (insulating barriers)
 - 4) Insulating sheets for transistors
 - 5) Plastic screws for fixing micro switches
4. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



5. Make sure that wires do not contact heat generating parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
6. Check if replaced wires do not contact sharply edged or pointed parts.
7. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for

recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can. Please leave them at an appropriate depot.

WARNING:

Before servicing this TV receiver, read the X-RAY RADIATION PRECAUTION, SAFETY INSTRUCTION and PRODUCT SAFETY NOTICE.

X-RAY RADIATION PRECAUTION

1. Excessively high can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The normal value of the high voltage of this TV receiver is 27 KV at zero beam current (minimum brightness). The high voltage must not exceed 30 KV under any circumstances. Each time when a receiver requires servicing, the high voltage should be checked. The reading of the high voltage is recommended to be recorded as a part of the service record, It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type as specified in the parts list.
3. Some parts in this TV receiver have special safety related characteristics for X-RADIATION protection. For continued safety, the parts replacement should be undertaken only after referring the PRODUCT SAFETY NOTICE.

SAFETY INSTRUCTION

The service should not be attempted by anyone unfamiliar with the necessary instructions on this TV receiver. The following

are the necessary instructions to be observed before servicing.

1. An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.

2. Comply with all caution and safety related provided on the back of the cabinet, inside the cabinet, on the chassis or picture tube.

3. To avoid a shock hazard, always discharge the picture tube's anode to the chassis ground before removing the anode cap.

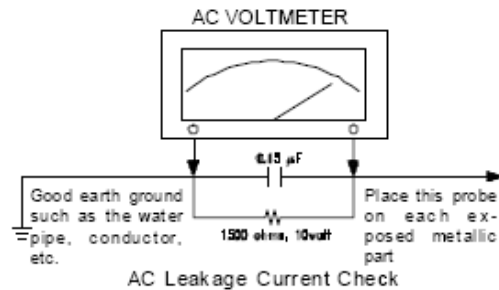
4. Completely discharge the high potential voltage of the picture tube before handling. The picture tube is a vacuum and if broken, the glass will explode.

5. When replacing a MAIN PCB in the cabinet, always be certain that all protective are installed properly such as control knobs, adjustment covers or shields, barriers, isolation resistor networks etc.

6. When servicing is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area.

7. Keep wires away from high voltage or high temperature components.

8. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlay, control shafts, etc., to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly to the AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5K ohms volt sensitivity or more in the following manner. Connect a 1.5K ohm 10 watt resistor paralleled by a 0.15 μ F AC type capacitor, between a good earth ground (water pipe, conductor etc.,) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of the 1.5K ohm resistor and 0.15 μ F 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 0.3V RMS. This corresponds to 0.5mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately. The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch "ON". The resistance should be more than 6M ohms.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this TV receiver have special safety-related characteristics. These characteristics are often passed unnoticed by visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc. The replacement parts which have these special safety characteristics are identified by marks on the schematic diagram and on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY RADIATION or other hazards.

FEATURES

- POWER SUPPLY : AC 120V 50/60Hz

- FULL FUNCTION REMOTE CONTROLLER

- AUTOMATICALLY TURN OFF THE SET WHEN SIGNAL ABSENT LONGER THAN 10 MINUTES

- BLUE SCREEN DISPLAY

- / V-CHIP

- SLEEP

- STANDBY

- CHANNEL SWAP

-POWER CONSUMPTION

80Watt (MAX.)

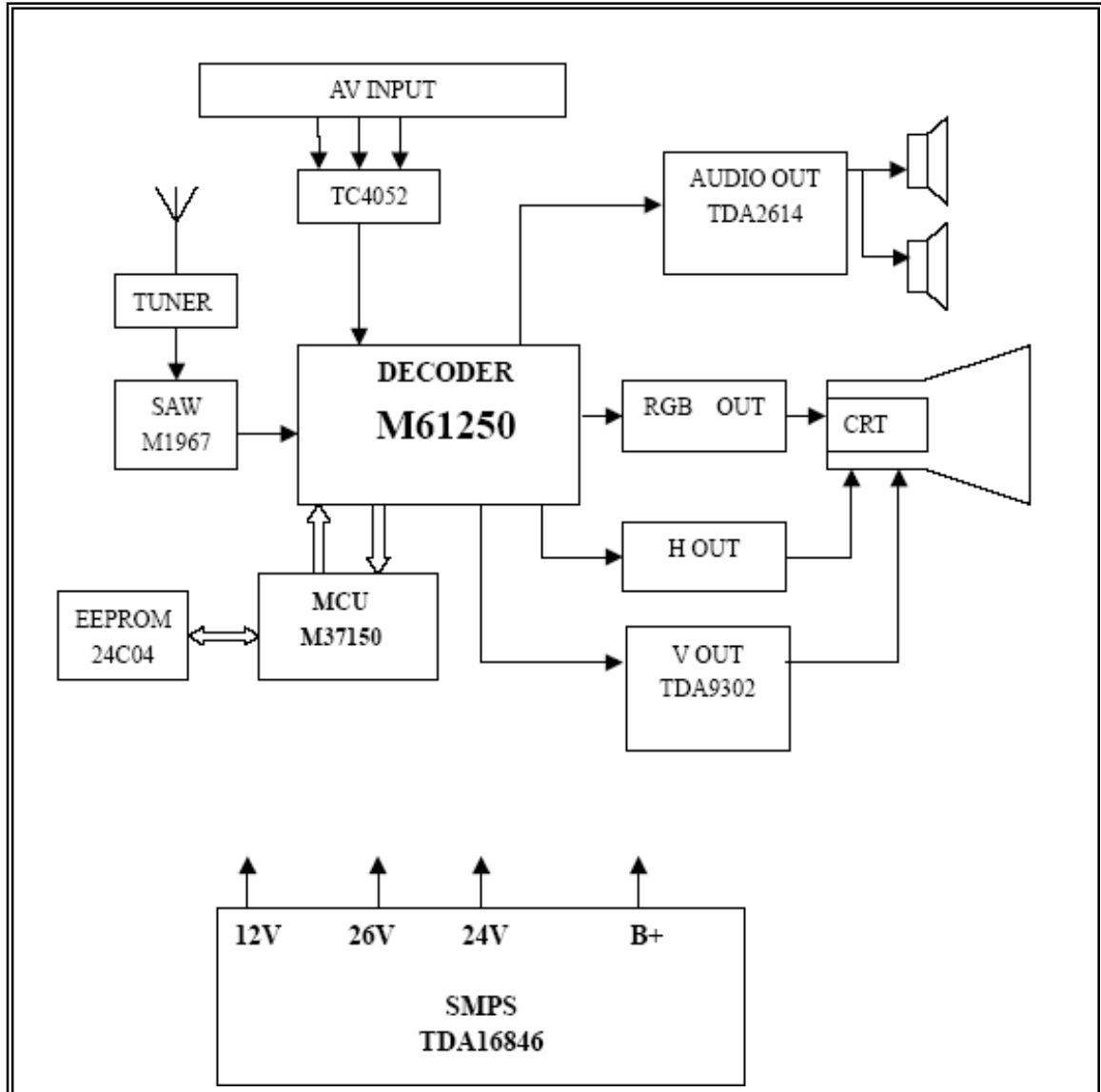
-TV RECEIVE SYSTEM

NTSC M

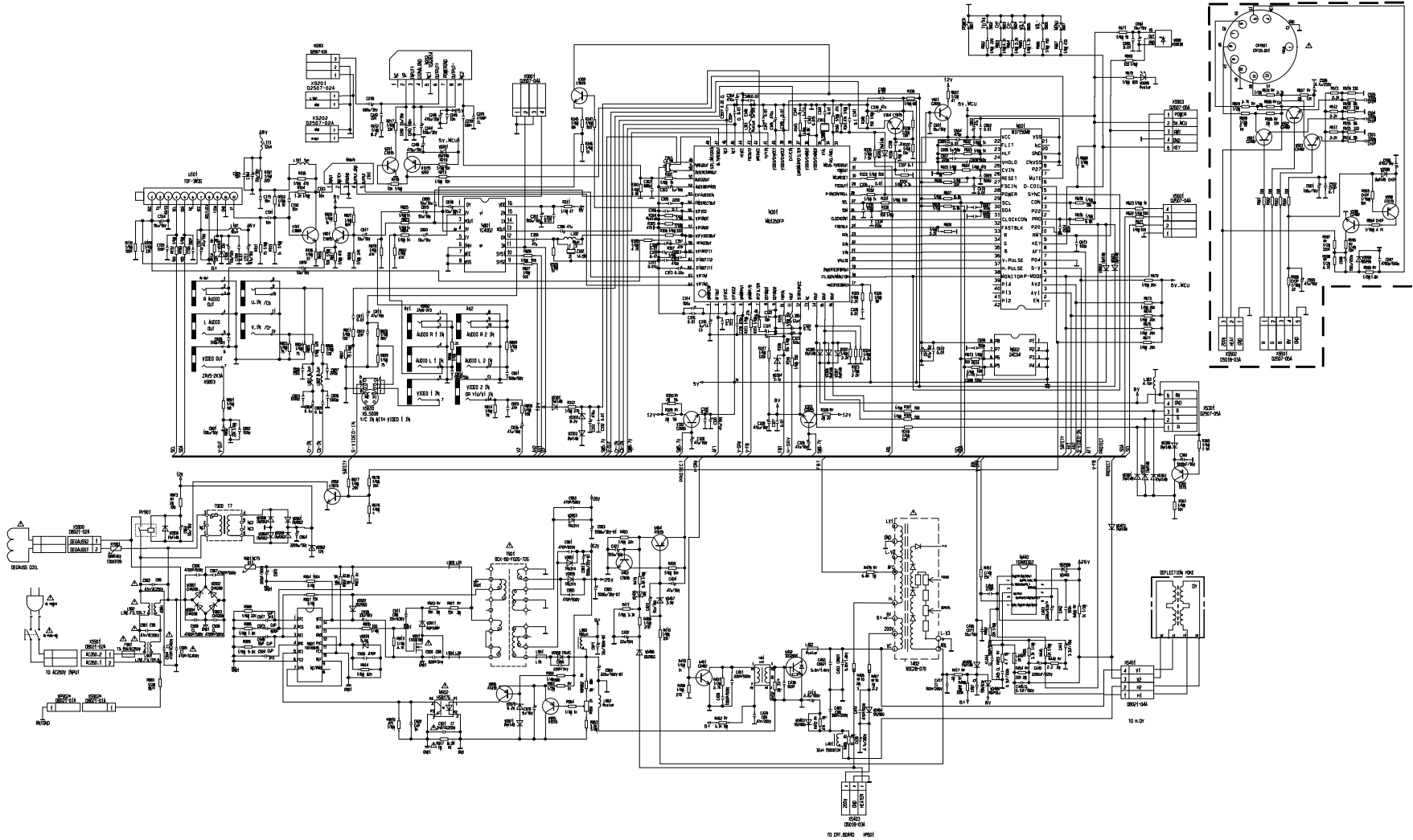
**-VISION INTERMEDIATE
FREQUENCY**

45.75MHz

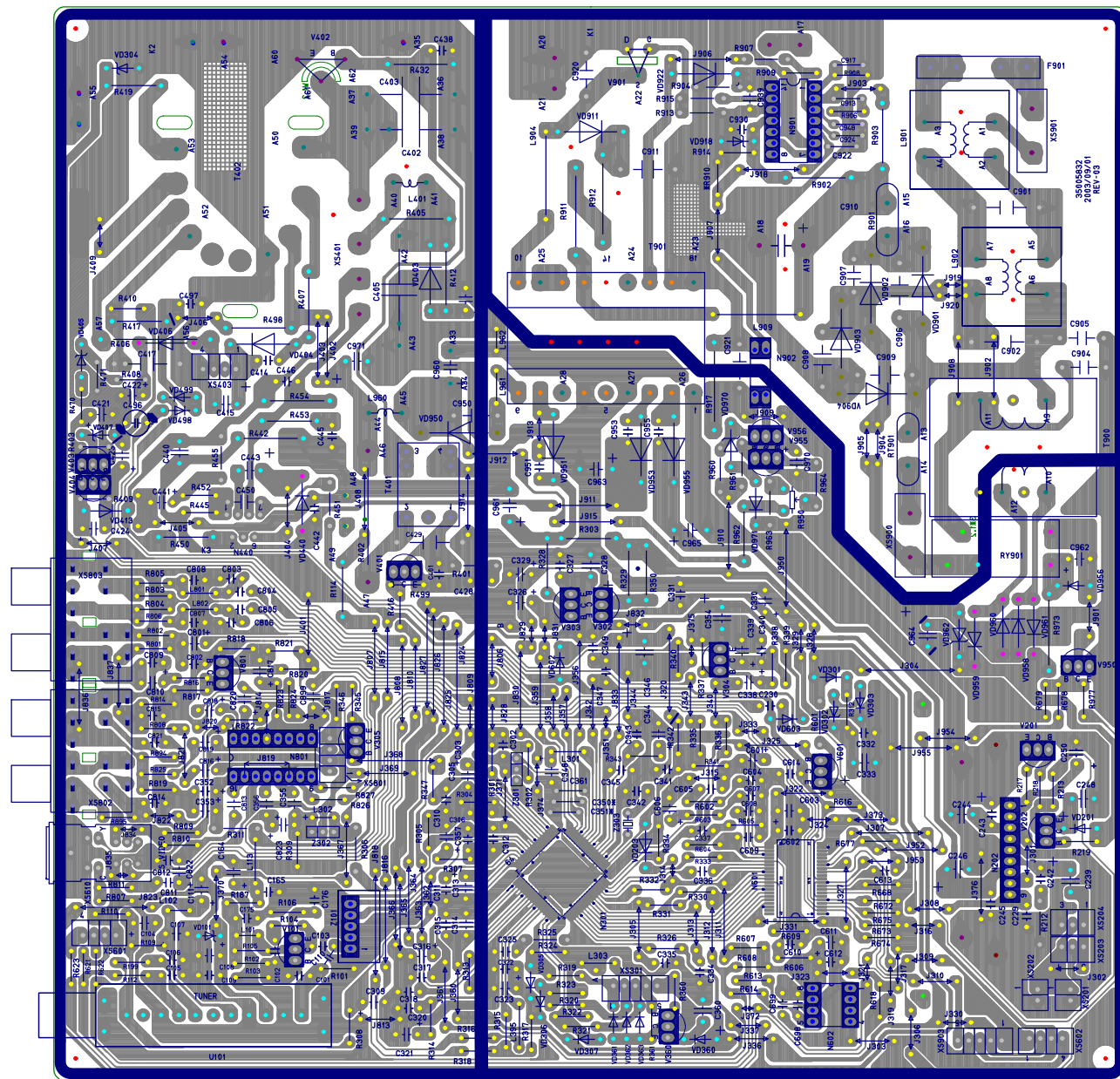
Block Diagram

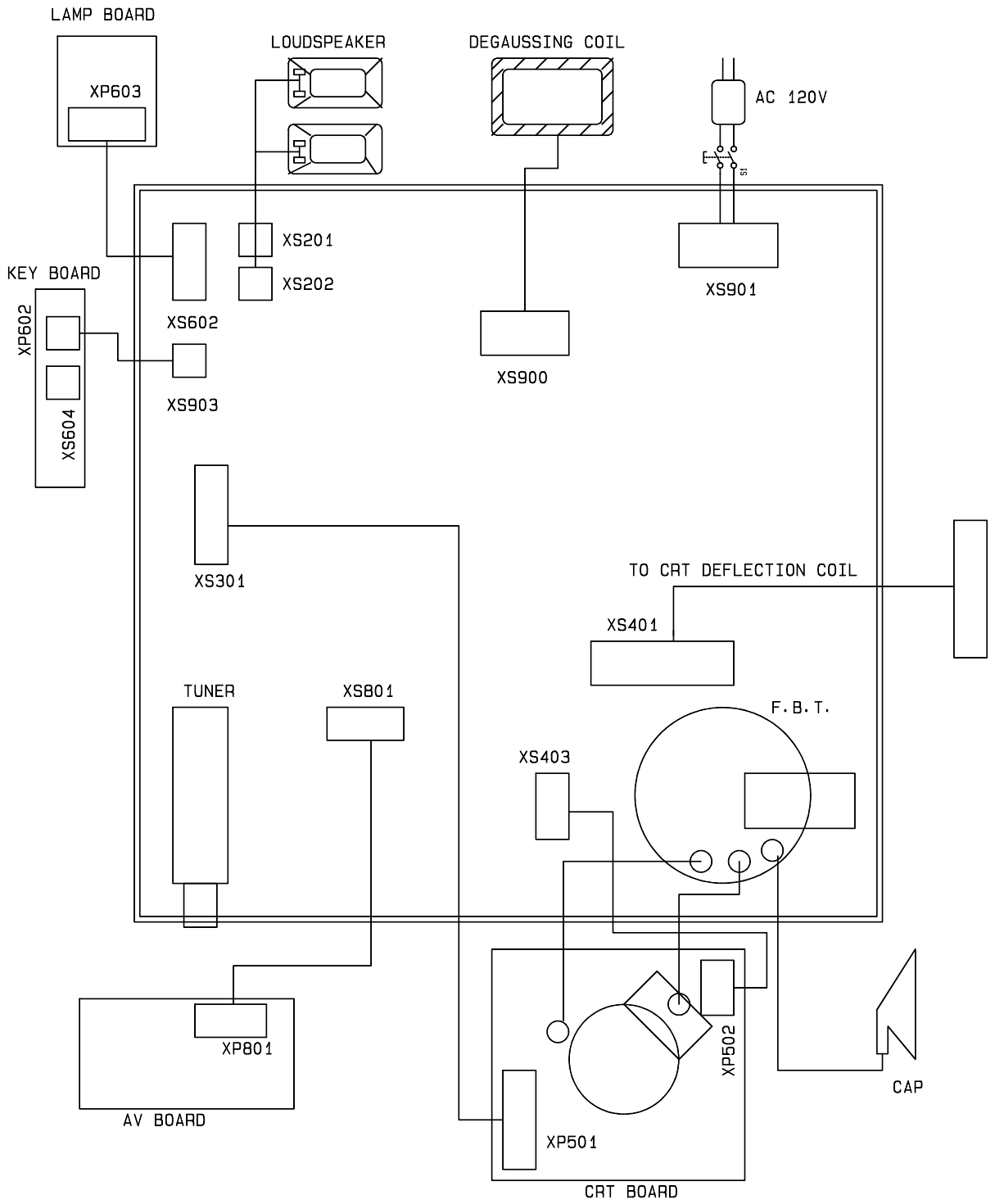


Circuit Diagram



MAIN PCB





Disassembly

In case of trouble, etc., Necessitating disassemble, please disassemble in the order shown in the Exploded View Diagram.
Reassemble in the reverse order.

IC SPECIFICATION

-M61250

-M37150

-TDA9302

-TDA16846

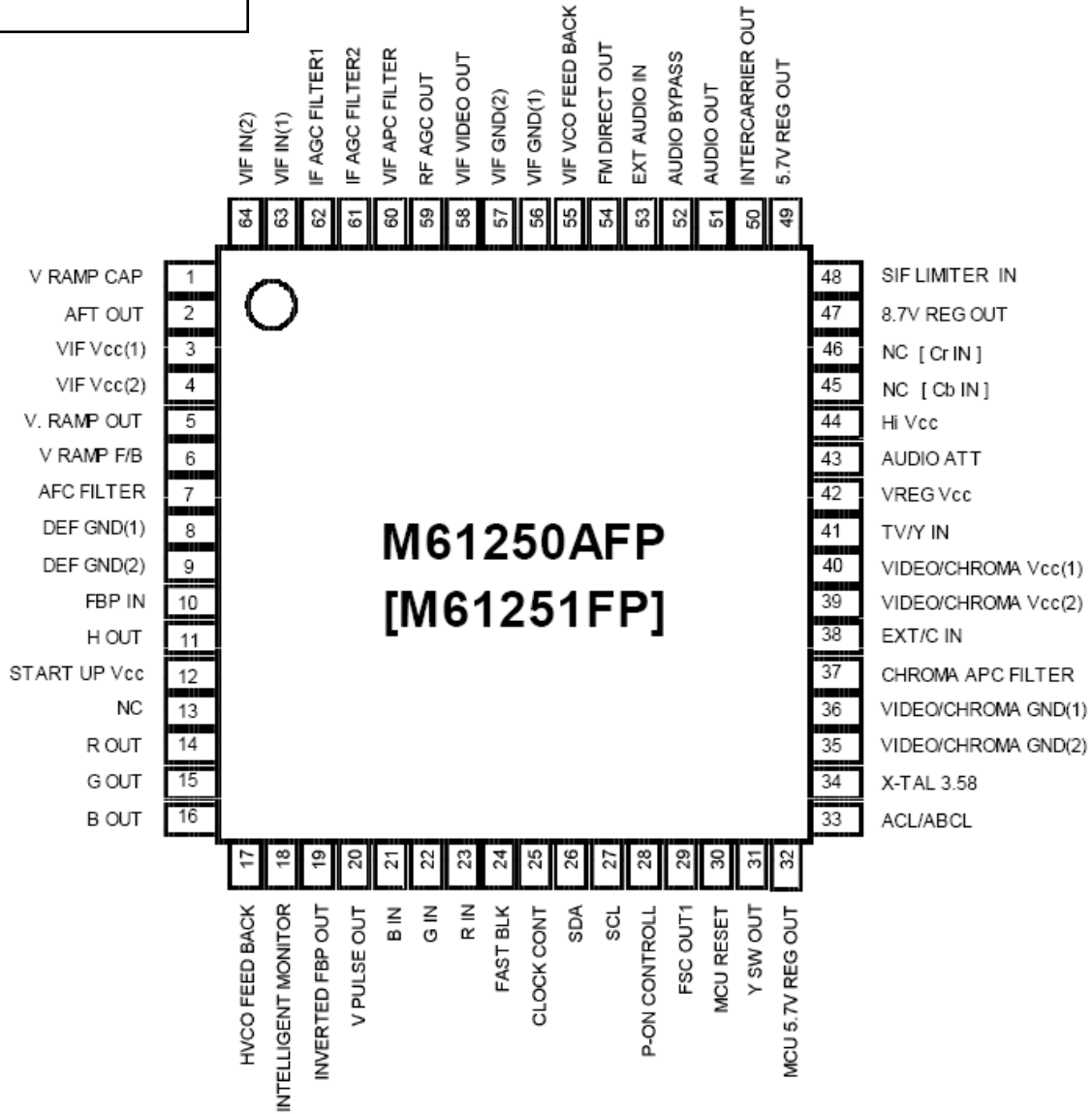
-TDA2614

-24C04

-TC4052

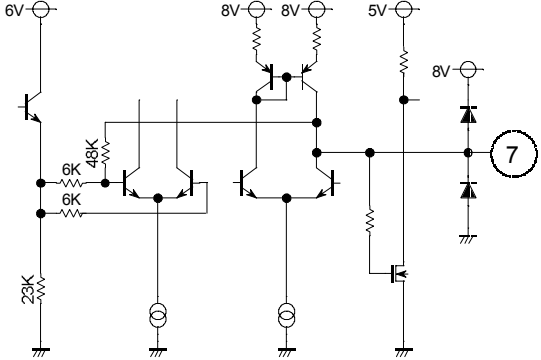


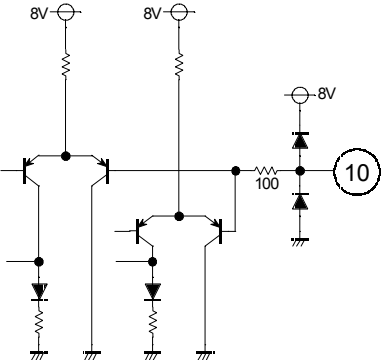
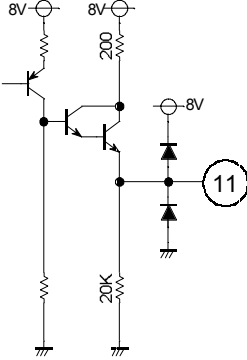

Pin Descriptions


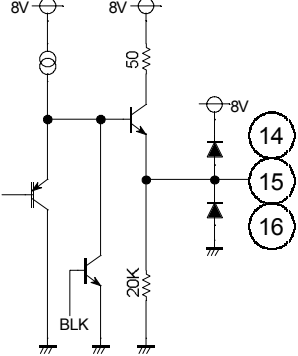
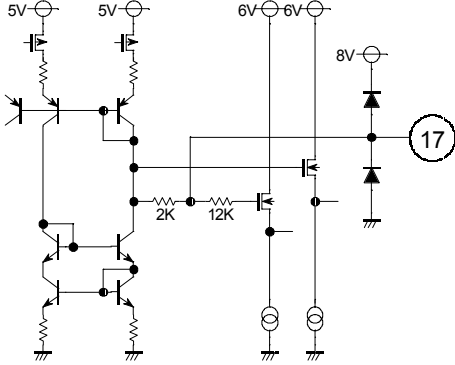
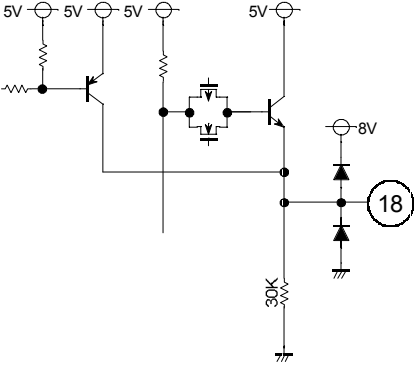
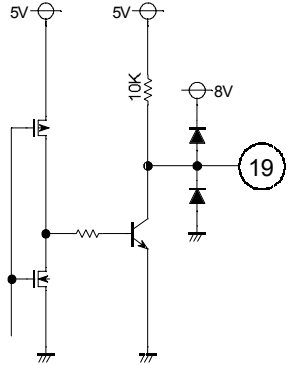
1. M61250

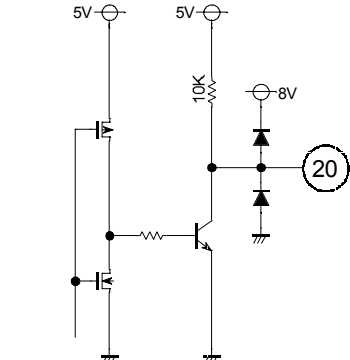
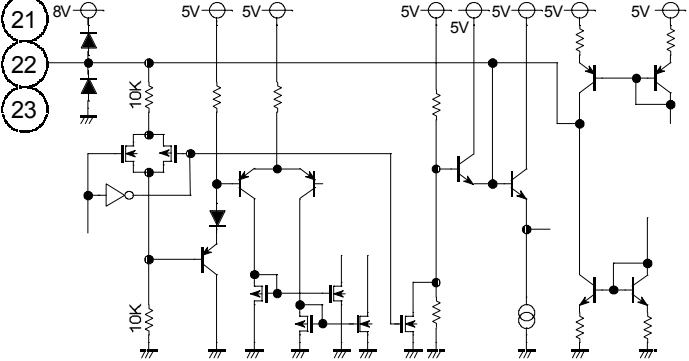
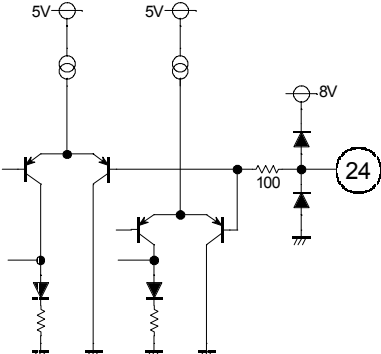
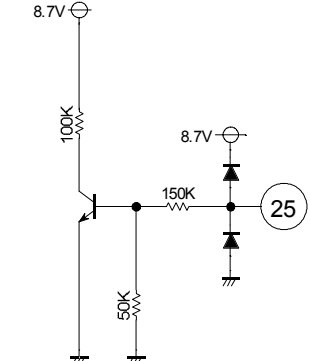
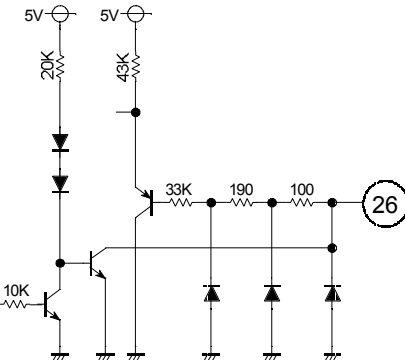


5. Pin Description

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
1	V RAMP CAP		
2	AFT OUT		0.3 ~ 4.7V
3	VIF Vcc		5.0V
4	SIF Vcc		
5	RAMP OUT		4.6V
6	V RAMP FEED BACK		

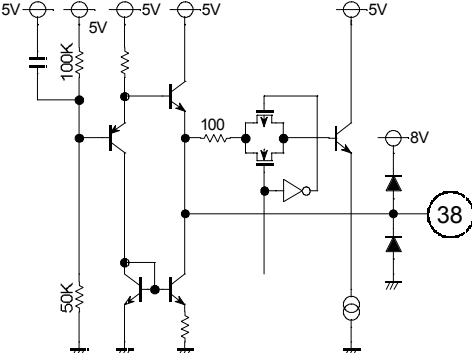


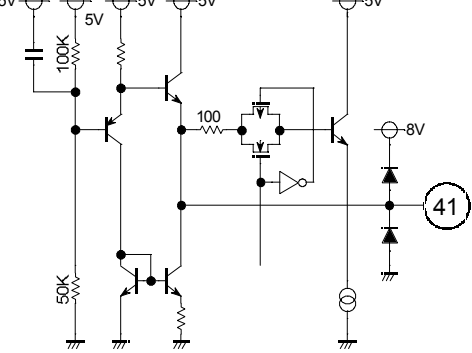

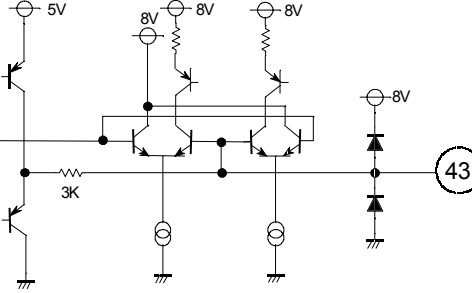
Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
7	AFC FILTER		3.5V
8	DEF GND		
9	LOGIC GND		
10	FBP IN		$V_{TH} : 2.0V$ (FBP Vth L=OFF) $V_{TH} : 1.0V$ (FBP Vth L=ON)
11	H OUT		$V_{OL} : 0.0V$ $V_{OH} : 5.4V$
12	DEF Vcc		



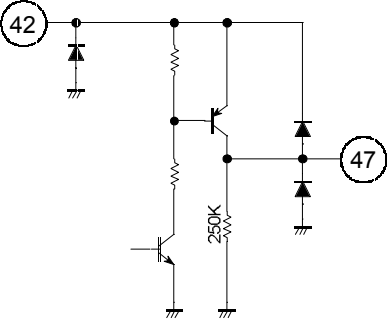
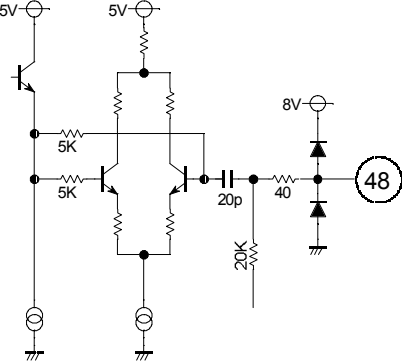
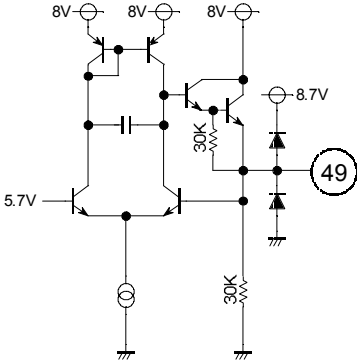
Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
13	NC		
14 15 16	R OUT G OUT B OUT		
17	H VCO FEEDBACK		3.0V
18	INTELLIGENT MONITOR		
19	INV FBP OUT		VOL : 0.0V VOH : 5.0V

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
20	V PULSE OUT		<p>$V_{OL} : 0.0V$ $V_{OH} : 5.0V$</p>
21 22 23	B IN G IN R IN		<p>(1) Digital OSD $V_{IL} : 0.0V$ $V_{IH} : 3.0V$ (2) Analog OSD $0.7V_{pp}$</p>
24	FAST BLK		<p>0.0-0.5V: INT RGB 1.5-3.0V: H TONE 4.0-5.0V: EXT RGB</p>
25	CLK CONTROL		<p>$V_{TH} : 3.0V$</p>
26	SDA		<p>$V_{IL} : 0.75V$ $V_{IH} : 4.25V$</p>

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
27	SCL		$V_{IL} : 0.75V$ $V_{IH} : 4.25V$
28	POWER ON CONTROL		$V_{TH} : 3.0V$
29	fsc OUT 1		$3.0V$
30	MCU RESET		$H : 5.0V$ $L : 0.0V$
31	Y SW OUT		$1.7V$

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
32	MCU 5.7VREG OUT		5.7V
33	ACL/ABCL		
34	X-TAL 3.58		3.3V
35	DRIVEGND		0.0V
36	Video/Chroma GND		0.0V
37	CHROMA APC FILTER		3.2V

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
38	EXT/C IN		1.7V
39	DRIVE Vcc		5.0V
40	Video/Chroma Vcc		5.0V
41	TV/Y IN		1.7V
42	VREG Vcc		8.7V
43	AUDIO ATT FILTER		2.75 ~ 3.25V

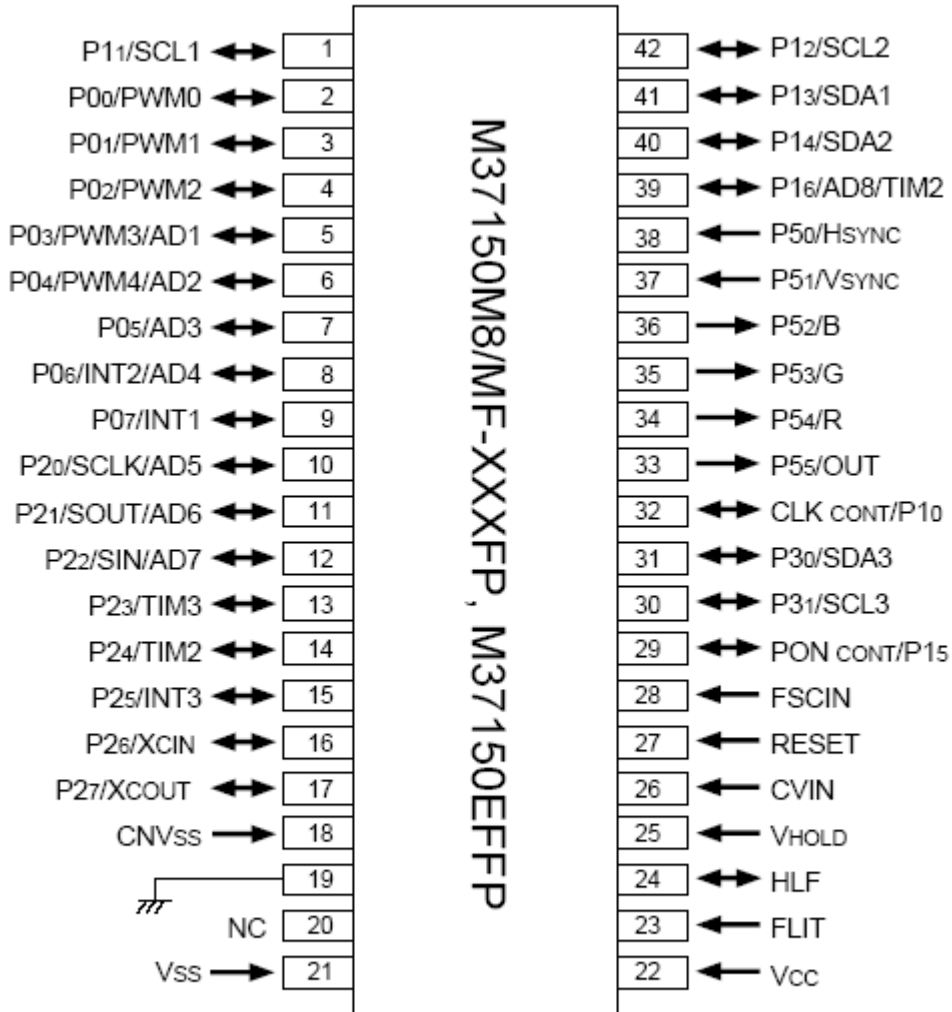
Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
44	Hi Vcc		8V
45 46	NC		
47	8.7 VREG OUT		8.7V
48	LIMITER IN		2.5V
49	5.7 VREG OUT		5.7V

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
50	INTER CARRIER OUT		2.3V
51	AUDIO OUT		2.3V
52	AUDIO BYPASS		2.3V
53	EXT AUDIO IN		2.3V
54	FM DIRECT OUT		3.0V

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
55	VIF VCO FEEDBACK		3.0V
56	SIF GND		
57	VIF GND		
58	VIDEO OUT		2.7V
59	RF AGC OUT		0.3 ~ 4.7V
60	VIF APC FILTER		3.0V

Pin No.	Name	Peripheral circuit of pins	DC Voltage (V)
61	VIF AGC FILTER 2		2.3V
62	VIF AGC FILTER 1		1.6V
63	VIF IN (1)		1.6V
64	VIF IN (2)		

2.M37150



Outline 42P2R

M37150M8/MF-XXXFP, M37150EFP

SINGLE-CHIP 8-BIT CMOS MICROCOMPUTER with CLOSED CAPTION DECODER
and ON-SCREEN DISPLAY CONTROLLER

7. PIN DESCRIPTION

Table 7.1 PIN DESCRIPTION

Pin	Name	Input/ Output	Functions
Vcc, Vss	Power source		Apply voltage of $5\text{ V} \pm 10\%$ to (typical) Vcc, and 0 V to Vss.
CNVss	CNVss		This is connected to Vss.
RESET	Reset input	Input	To enter the reset state, the reset input pin must be kept at a LOW for 2 ms or more (under normal Vcc conditions). If more time is needed for the quartz-crystal oscillator to stabilize, this LOW condition should be maintained for the required time.
FSCIN	Clock input	Input	This chip has an internal clock generating circuit.
P00/PWM0– P02/PWM2, P03/PWM3/AD1, P04/PWM4/AD2, P05/AD3, P06/INT2/AD4, P07/INT1	I/O port P0	I/O	Port P0 is an 8-bit I/O port with direction register allowing each I/O bit to be individually programmed as input or output. At reset, this port is set to input mode. The output structure is N-channel open-drain output. (See note)
	PWM output	Output	Pins P00–P04 are also used as PWM output pins PWM0–PWM4 respectively. The output structure is N-channel open-drain output.
	External interrupt input	Input	Pins P06 and P07 are also used as INT external interrupt input pins INT2 and INT1 respectively.
	Analog input	Input	Pins P03, P04, P05 and P06 are also used as analog input pins AD1, AD2, AD3 and AD4.
P10/CLK CONT, P11/SCL1, P12/SCL2, P13/SDA1, P14/SDA2, P15/PON CONT P16/AD8/TIM2	I/O port P1	I/O	Port P1 is an 7-bit I/O port and has basically the same functions as port P0. The output structure is CMOS output. (See note)
	Multi-master I ² C-BUS interface	I/O	Pins P11–P14 are used as SCL1, SCL2, SDA1 and SDA2 respectively, when multi-master I ² C-BUS interface is used. The output structure is N-channel open-drain output.
	Clock control	Output	P10 pin is also used as Clock control output CLK CONT. The output structure is CMOS output.
	Power on control	Output	P15 pin is also used as Power on control output PON CONT. The output structure is CMOS output.
	External clock input for timer	Input	P16 pin is also used as timer external clock input pin TIM2.
	Analog input	Input	P16 pin is also used as analog input pin AD8.
P20/SCLK/AD5, P21/SOUT/AD6, P22/SIN/AD7, P23/TIM3, P24/TIM2, P25/INT3, P26/XCIN, P27/XCOUT	I/O port P2	I/O	Port P2 is an 8-bit I/O port and has basically the same functions as port P0. The output structure is CMOS output. (See note)
	Serial I/O synchronous clock input/output port	I/O	P20 pin is also used as serial I/O synchronous clock input/output pin SCLK. The output structure is N-channel open-drain output.
	Serial I/O data output	Output	P21 pin is also used as serial I/O data output pin SOUT. The output structure is open-drain output.
	Serial I/O data input	Input	P22 pin is also used as serial I/O data input pin SIN.
	External clock input for timer	Input	Pins P23 and P24 are also used as timer external clock input pins TIM3 and TIM2 respectively.
	Analog input	Input	Pins P20–P22 are also used as analog input pins AD5, AD6 and AD7 respectively.
	Sub-clock input	Input	P26 pin is also used as sub-clock input pin XCIN.
	Sub-clock output	Output	P27 pin is also used as sub-clock output pin XCOUT. The output structure is CMOS output.
	External interrupt input	input	P25 pin is also used as INT external interrupt input pin INT3.
P30/SDA3 P31/SCL3	I/O port P3	I/O	Port P30,P31 is an 2-bit I/O port and has basically the same functions as port P0. The output structure is CMOS output. (note)
	Multi-master I ² C-BUS Interface	I/O	Pins P30,P31 are used as SDA3,SCL3 respectively, when multi-master I ² C-BUS interface is used. The output structure is N-channel open-drain output.

M37150M8/MF-XXXFP, M37150EFP

SINGLE-CHIP 8-BIT CMOS MICROCOMPUTER with CLOSED CAPTION DECODER
and ON-SCREEN DISPLAY CONTROLLER

Table 7.2 PIN DESCRIPTION (continued)

Pin	Name	Input/ Output	Functions
P50/Hsync	Input P5	Input	Port P5 is a 2-bit input port.
P51/Vsync	Horizontal synchronous signal	Input	The P50 pin is also used as a horizontal synchronous signal input Hsync for OSD.
	Vertical synchronous signal	Input	The P51 pin is a vertical synchronous signal input Vsync for OSD.
P52/B, P53/G, P54/R, P55/OUT	Output P5	output	Pins P52–P55 are a 4-bit output port. The output structure is CMOS output.
	OSD output	output	Pins P52–P55 are also used as OSD output pins R, G, B and OUT respectively. The output structure is CMOS output.
CVIN	I/O for data slicer	Input	Input composite video signal through a capacitor.
VHOLD		Input	Connect a capacitor between VHOLD and Vss.
HLF		I/O	Connect a filter using of a capacitor and a resistor between HLF and Vss.
FILT	Clock oscillation filter	Input	Connect a filter using of a capacitor and a resistor between FILT and Vss.

Notes : Port Pi (i = 0 to 3) has the port Pi direction register which can be used to program each bit as an input ("0") or an output ("1"). The pins programmed as "1" in the direction register are output pins. When pins are programmed as "0," they are input pins. When pins are programmed as output pins, the output data are written into the port latch and then output. When data is read from the output pins, the output pin level is not read but the data of the port latch is read. This allows a previously-output value to be read correctly even if the output LOW voltage has risen, for example, because a light emitting diode was directly driven. The input pins are in the floating state, so the values of the pins can be read. When data is written into the input pin, it is written only into the port latch, while the pin remains in the floating state.

* LED drive ports 4 (P24–P27)

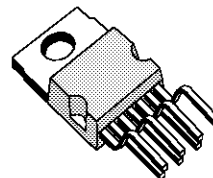
3.TDA9302

VERTICAL DEFLECTION OUTPUT CIRCUIT

- POWER AMPLIFIER
- FLYBACK GENERATOR
- THERMAL PROTECTION

DESCRIPTION

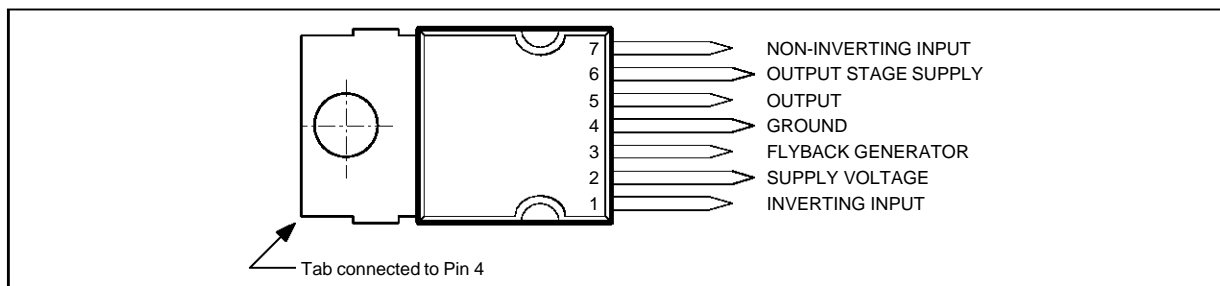
The TDA9302H is a monolithic integrated circuit in HEPTAWATT™ package. It is a high efficiency power booster for direct driving of vertical windings of TV yokes. It is intended for use in Color and B & W television as well as in monitors and displays.



HEPTAWATT
(Plastic Package)

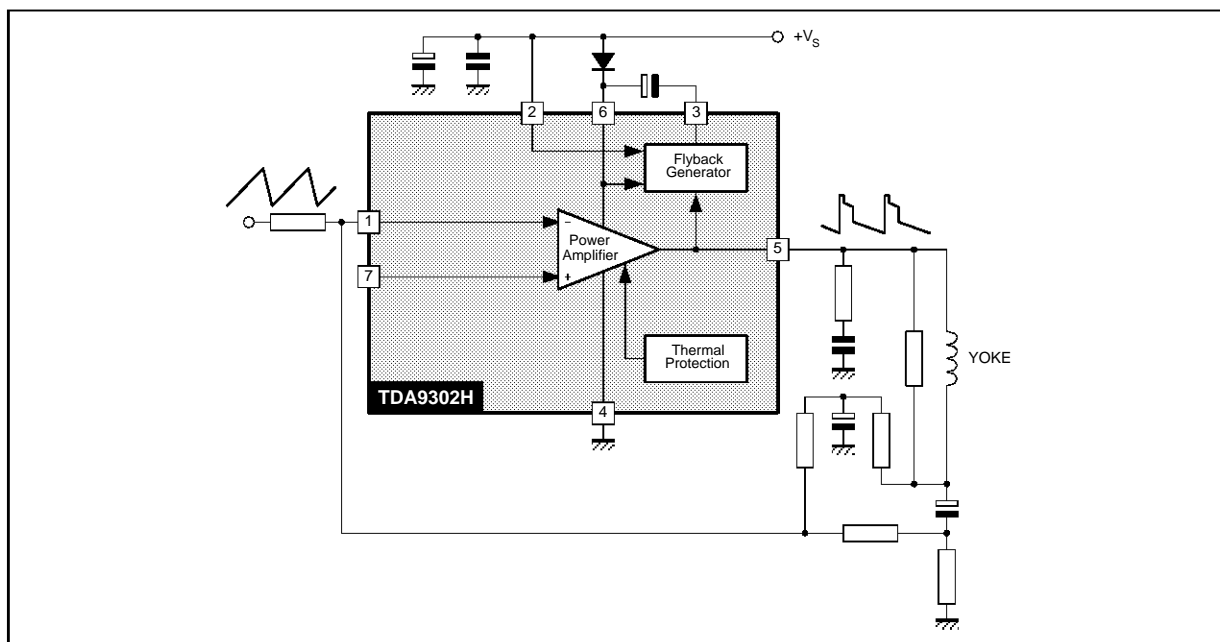
ORDER CODE : TDA9302H

PIN CONNECTIONS (top view)



9302H-01.EPS

BLOCK DIAGRAM



9302H-02.EPS

4.TDA16846

The TDA 16846 is suited for TV-, VCR- sets and SAT receivers. It also can be good used in PC monitors.

The TDA 16847 is identical with TDA 16846 but has an additional power measurement output (pin 8) which can be used for a Temporary High Power Circuit.

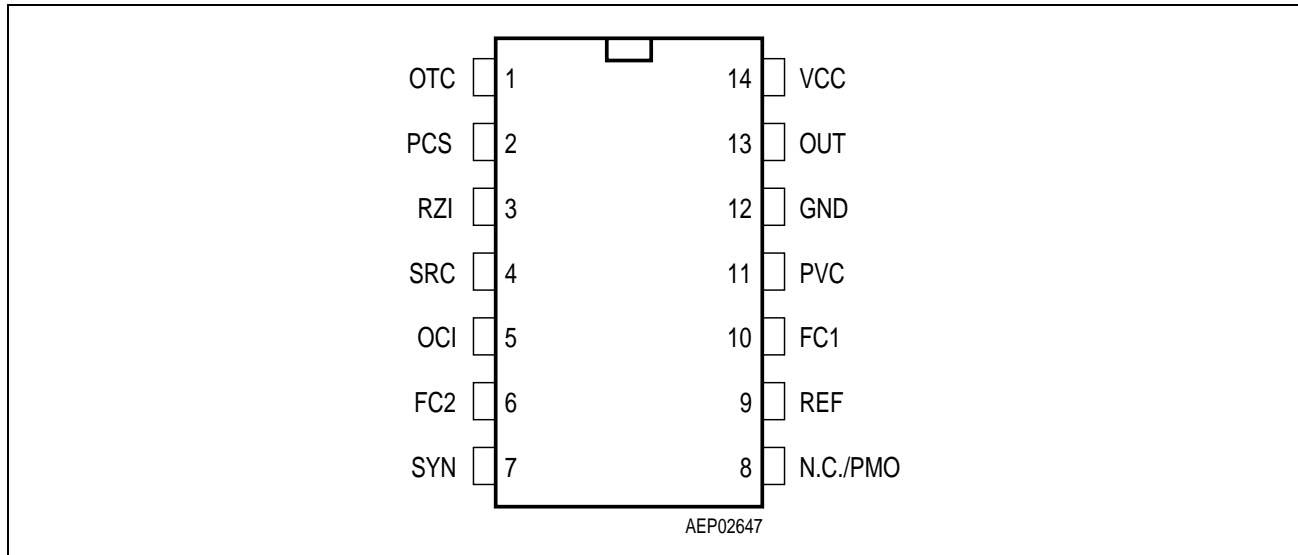


Figure 1 Pin Configuration (top view)

1.3 Pin Definitions and Functions

Pin	Symbol	Function
1	OTC	Off Time Circuit
2	PCS	Primary Current Simulation
3	RZI	Regulation and Zero Crossing Input
4	SRC	Soft-Start and Regulation Capacitor
5	OCI	Opto Coupler Input
6	FC2	Fault Comparator 2
7	SYN	Synchronization Input
8	N.C./PMO	Not Connected (TDA 16846)/PMO (TDA 16847)
9	REF	Reference Voltage and Current
10	FC1	Fault Comparator 1
11	PVC	Primary Voltage Check
12	GND	Ground
13	OUT	Output
14	VCC	Supply Voltage

1.4 Short Description of the Pin Functions

Pin	Function
1	A parallel RC-circuit between this pin and ground determines the ringing suppression time and the standby-frequency.
2	A capacitor between this pin and ground and a resistor between this pin and the positive terminal of the primary elcap quantifies the max. possible output power of the SMPS.
3	This is the input of the error amplifier and the zero crossing input. The output of a voltage divider between the control winding and ground is connected to this input. If the pulses at pin 3 exceed a 5 V threshold, the control voltage at pin 4 is lowered.
4	This is the pin for the control voltage. A capacitor has to be connected between this pin and ground. The value of this capacitor determines the duration of the softstart and the speed of the control.
5	If an opto coupler for the control is used, it's output has to be connected between this pin and ground. The voltage divider at pin 3 has then to be changed, so that the pulses at pin 3 are below 5 V.
6	Fault comparator 2: If a voltage > 1.2 V is applied to this pin, the SMPS stops.
7	If fixed frequency mode is wanted, a parallel RC circuit has to be connected between this pin and ground. The RC-value determines the frequency. If synchronized mode is wanted, sync pulses have to be fed into this pin.
8	Not connected (TDA 16846). / This is the power measurement output of the Temporary High Power Circuit. A capacitor and a RC-circuit has to be connected between this pin and ground (TDA 16847).
9	Output for reference voltage (5 V). With a resistor between this pin and ground the fault comparator 2 (pin 6) is enabled.
10	Fault comparator 1: If a voltage > 1 V is applied to this pin, the SMPS stops.
11	This is the input of the primary voltage check. The voltage at the anode of the primary elcap has to be fed to this pin via a voltage divider. If the voltage of this pin falls below 1 V, the SMPS is switched off. A second function of this pin is the primary voltage dependent fold back point correction (only active in free running mode).
12	Common ground.
13	Output signal. This pin has to be connected across a serial resistor with the gate of the power transistor.
14	Connection for supply voltage and startup capacitor. After startup the supply voltage is produced by the control winding of the transformer and rectified by an external diode.

6 W hi-fi audio power amplifier

TDA2614

PINNING

SYMBOL	PIN	DESCRIPTION
n.c.	1	not connected
MUTE	2	mute input
1/2V _P /GND	3	1/2 supply (or ground at symmetrical power supplies)
n.c.	4	not connected
GND/-V _P	5	ground (or negative supply rail at symmetrical power supplies)
OUT	6	output
V _P	7	supply voltage
INV	8	inverting input
-INV	9	non-inverting input

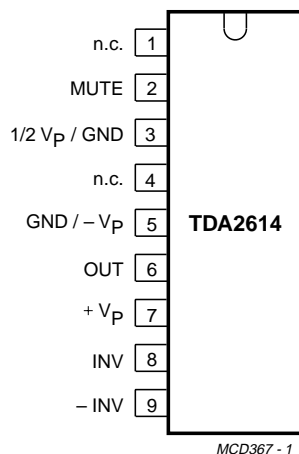


Fig.2 Pin configuration.

FUNCTIONAL DESCRIPTION

The TDA2614 is a hi-fi power amplifier designed for mains fed applications, such as radio and TV. The circuit is optimally designed for asymmetrical power supplies, but is also well-suited to symmetrical power supply systems.

An output power of 6 W (THD = 0.5%) can be delivered into an 8 Ω load with a supply of 24 V. The gain is internally fixed at 30 dB, thus offering a low gain spread.

A special feature is the input mute circuit. This circuit disconnects the non-inverting input when the supply voltage drops below 10 V, while the amplifier still retains its DC operating adjustment. The circuit features suppression of unwanted signals at the input, during switch-on and switch-off.

The mute circuit can also be activated via pin 2. When a current of 300 μA is present at pin 2, the circuit is in the mute condition.

The device is provided with two thermal protection circuits. One circuit measures the average temperature of the crystal and the other measures the momentary temperature of the power transistors. These control circuits attack at temperatures in excess of 150 °C, so a crystal operating temperature of max. 150 °C can be used without extra distortion.

With the derating value of 8 K/W, the heatsink can be calculated as follows:

at $R_L = 8 \Omega$ and $V_S = 24 V$, dissipation is 4.1 W.

With a maximum ambient temperature of 60 °C, the thermal resistance of the heatsink is:

$$R_{th} = \frac{150 - 60}{4.1} - 8 = 14 \text{ K/W.}$$

6.24C04

Figure 2A. DIP Pin Connections

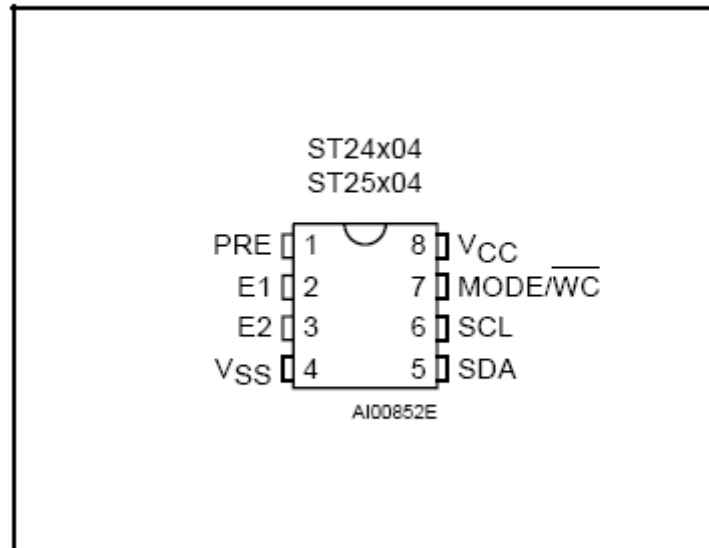
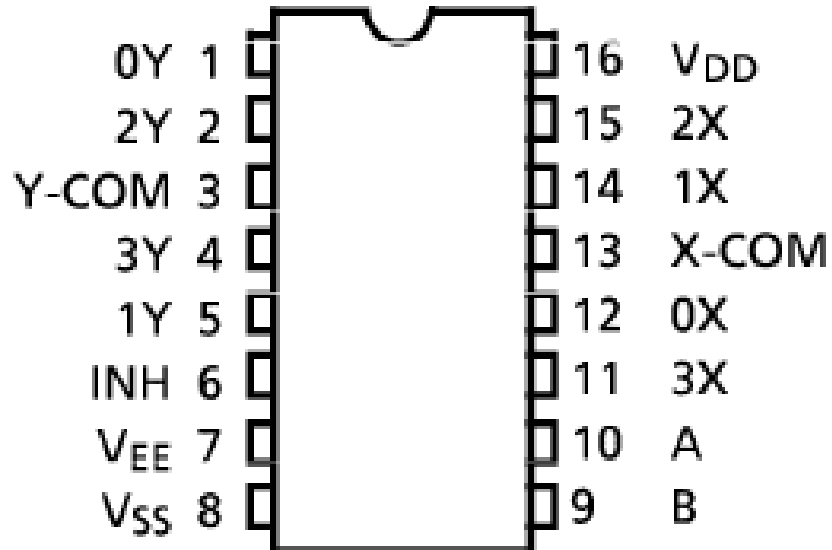


Table 1. Signal Names

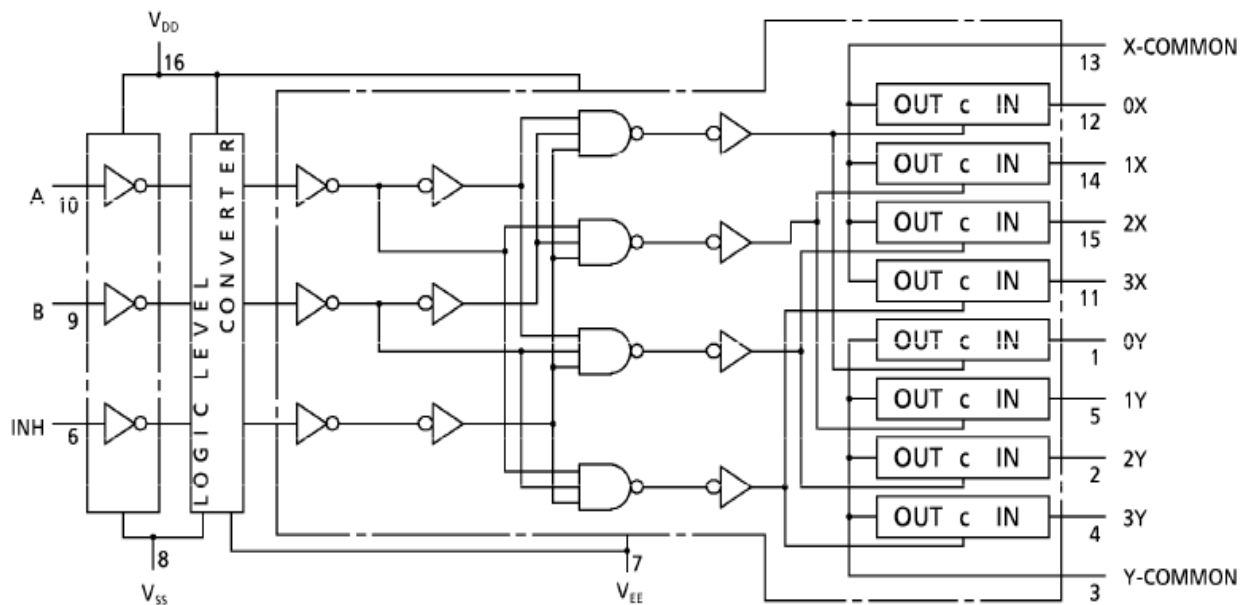
PRE	Write Protect Enable
E1-E2	Chip Enable Inputs
SDA	Serial Data Address Input/Output
SCL	Serial Clock
MODE	Multibyte/Page Write Mode (C version)
$\overline{\text{WC}}$	Write Control (W version)
V _{CC}	Supply Voltage
V _{SS}	Ground

7.TC4052

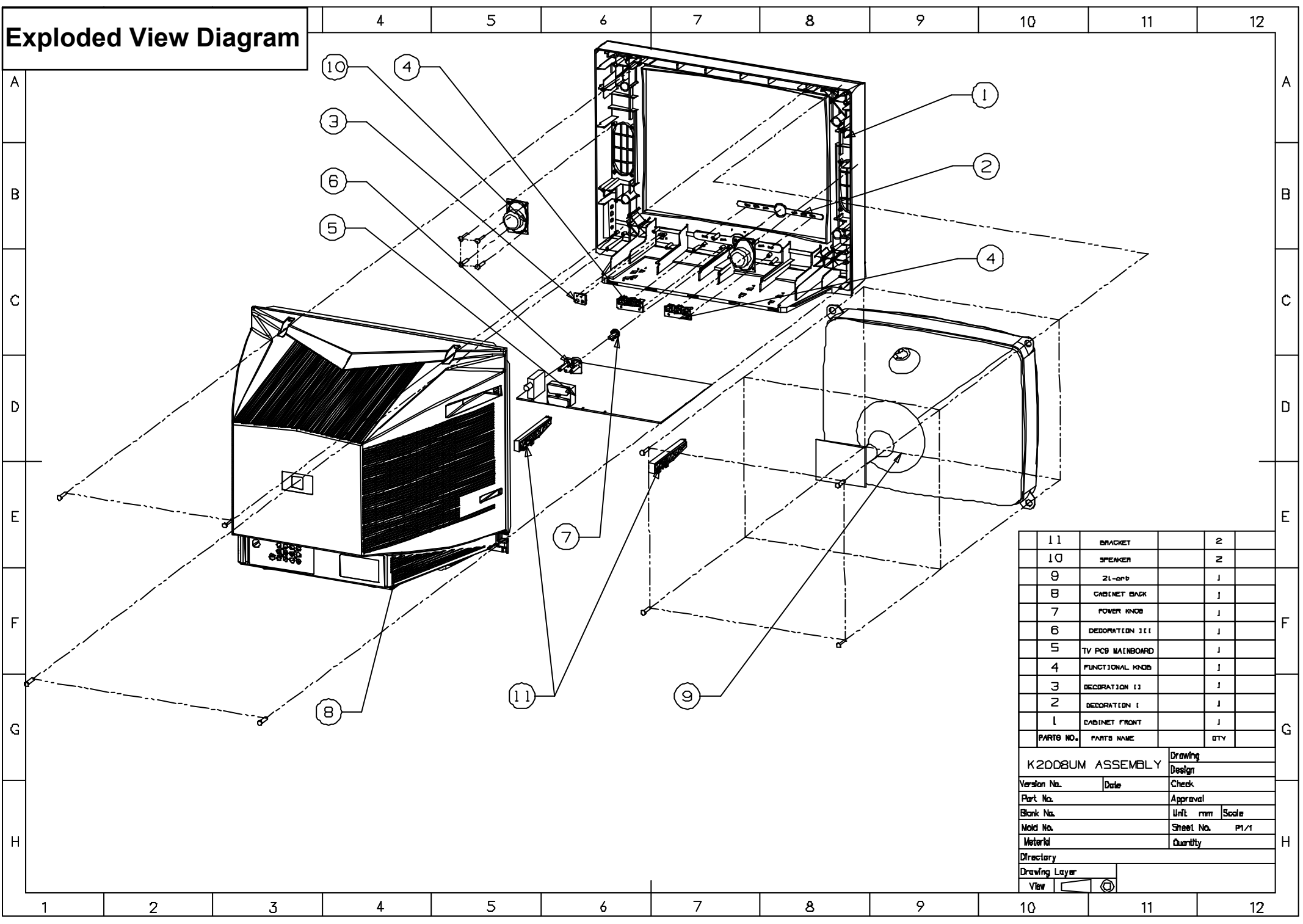
TC4052B



TC4052B



Exploded View Diagram



11	BRACKET	2	
10	SPEAKER	2	
9	ZI-ORB	J	
8	CABINET BACK	J	
7	POWER KNOB	J	
6	DECORATION III	J	
5	TV PCB MAINBOARD	J	
4	FUNCTIONAL KNOB	J	
3	DECORATION II	J	
2	DECORATION I	J	
1	CABINET FRONT	J	
PARTS NO.	PARTS NAME		QTY
K2008UM ASSEMBLY		Drawing	
Version No.	Date	Check	
Part No.		Approval	
Blank No.	Unit	mm	Scale
Mold No.	Sheet No.	P1/1	
Material	Quantity		
Directory			
Drawing Layer			
View	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Spare Part List

CT2016 Spare Part List

Item	Component	Description/Country Origin	Unit	Qty
1. CRT, CRT Socket, D.G coil, DG thermistor, Relay				
1	31000346	CRT-A51JFC82X13(C)-02 SAIGE HITACHI/A.U	PCS	1
2	25000747	CRT SOCKET GZS10-2-AC3-5-14~17KV/A.U	PCS	1
3	12000752	DEGAUSSING COIL KK54H-89T5D0.35-1585/A/M	PCS	1
4	13005053	DEGAUSSING THERMISTOR T705-B60-A110-4R5M 230V-EPCOS/#	PCS	1
5	34002023	RELAY G5PA-1-OMRON	PCS	1
2. All ICs (excluding the voltage regulator)				
1	19000752	*IC TC4052BP-TOSHIBA/#	PCS	1
2	19000775	Opt-elec coupler PC817B-SHARP/#	PCS	1
3	19000839	IC AT24C04-10PC-2.7-ATMEL/#	PCS	1
4	19001329	IC TDA16846-SIEMENS/#	PCS	1
5	19003085	IC TDA2614-PHILIPS/#	PCS	1
6	19003411	IC STV9302A-ST/#	PCS	1
7	19003434	CHIP IC M61250FP -MITSUSHITA/#	PCS	1
8	19004680	IC KP1703S-三/#(M37150M8)	PCS	1
3. All TRs (excluding the general switching TR)				
1	17000056	*TRANSISTOR 2SA1015-Y/V	PCS	5
2	17000058	*TRANSISTOR 2SC388A-20~200/V	PCS	1
3	17000060	*TRANSISTOR 2SC1815-Y/V	PCS	5
4	17000066	*TRANSISTOR 2SC2482/V	PCS	1
5	17000261	TRANSISTOR 2SC2655Y-TOSHIBA/#V	PCS	3
6	17001001	*TRANSISTOR 3DD2102	PCS	1
7	17001391	FET SSP7N60B-FAIRCHILD/S/#	PCS	1
4. Diodes (excluding the general purpose Diode such as 1N4148etc)				
1	16000215	*ZENER DIODE 0.5W3V9-3.7~4.1/H	PCS	1
2	16000221	*ZENER DIODE 0.5W5V1-4.85~5.35/H	PCS	1
3	16000225	*ZENER DIODE 0.5W5V6-5.35~5.85/H	PCS	1
4	16000231	*ZENER DIODE 0.5W6V2-5.95~6.45/H	PCS	1
5	16000246	*ZENER DIODE 0.5W8V2-7.95~8.45/H	PCS	1
6	16000275	*ZENER DIODE 0.5W18V-17.5~18.5/H	PCS	1
7	16000532	*ZENER DIODE INTEGRATED POTENTIostat μ PC574J-NEC/#	PCS	1
8	16000746	*RECTIFIER DIODE CHR208-2A800V/L12.5	PCS	4
9	16001261	*FAST RECOVERY DIODE TRU4C-3A1000V0.18 μ s/L20	PCS	1
10	16001320	*FAST RECOVERY DIODE TRU3YX-2A-200V0.1 μ s	PCS	3
11	16001890	*FAST RECOVERY DIODE	PCS	5
12	16001891	*FAST RECOVERY DIODE	PCS	1
5. Transformer (Switching, Flyback, Line Drive etc)				
1	11001473	SWITCHING TRANSF. BCK35-065/A/U	PCS	1

Spare Part List

2	30001452	FLYBACK TRANSFORMER BSC JF0501-002/A	PCS	1
3	11000242	LINE DRIVE TRANSF. BCT19F-02	PCS	1
6. Power Cord, Fuse				
1	27000987	POWER SUPPLY CORD	PCS	1
2	27000148	FUSE RT1-20-4A-L125V/# K	PCS	1
7. Remote Controller , IR Receiver				
1	KK-Y261G	REMOTE HANDSET KK-Y261G FOR AKAI	SET	1
2	21000292	*IR REMOTE CONTROL RECEIVER	PCS	1
8. Tuner / Saw Filter				
1	32000989	TUNER TEDH9-247A-SHANGHAI ALPS	PCS	1
2	20000762	*SAW FILTER M1967-NIANYAN	PCS	1
9. Speaker				
1	29000059	SPEAKER YDP50×120F-1 16Ω 3W	PCS	2
10. Mechanical part (Front Mask, Back cover etc)				
1	36022812	FRONT CABINET 200*KP210811/102C-121	PCS	1
2	36022875	LENS 263*KP210820/101J	PCS	1
3	36022876	FUNCTION PRESS BUTTON 291*KP210810/101D	PCS	2
4	36022877	POWER BUTTON 292*KP210810/101D	PCS	1
5	36023096	BACK CABINET 202*KP210710/101C-116!	PCS	1
6	36023528	LENS 263*KP210811/101H	PCS	1
11. Packing material (PAD, Box)				
1	36006414	*FELT PAPER 150X15X0.5-GENERAL PURPOSE	PCS	5
2	36019326	PAD 250*T2576S10/100G-G	PCS	1
3	39004416	POLYBAG 310*071104-11R FOR ENVIRONMENT PROTECTION	PCS	2
4	39013663	POLYFOAM (UP) 300*KP2107AXT11/00	PCS	1
5	39013664	POLYFOAM (DOWN) 300*KP2107AXT21/00	PCS	1
6	39015053	POLYBAG 310*110110/034R-1100x1100x0.025	PCS	1
7	39015654	CARTON BOX 510*CT201610/01-AKAI	PCS	1
12. Instruction Manual				
1	39015655	MANUAL 570*CT2016/01-AKAI	PCS	1
13. Other key parts				
1	K2008UMZB-01	K2008UM MAIN BOARD ASS'Y	SET	1
2	K2008UMAJB-00	K2008UM KEY BOARD ASS'Y	SET	1
3	K2008UMCDAVB-00	K2008UM AV BOARD ASS'Y	SET	1
4	K2008UMCRT-01	K2008UM CRT BOARD ASS'Y	SET	1
5	13000181	*FUSED RESIS. RF10-2W0.82Ω J/L25-A	PCS	1
6	13001540	*FUSED RESIS. RF10-1W2.2Ω J/L17.5-A	PCS	1
7	13002634	GLASSGLAZE TRIMMER POTENTIOMETER WI06-2B-A202L	PCS	1
8	13004302	*NTC NTC-5D-11-5Ω -K-270V	PCS	1

Spare Part List

9	13005103	*HIGH VOLTAGE INSULATED RESIS. R182-1W8. 2M Ω J/A	PCS	1
10	14000806	*METALIZED POLYPROPYLENE CAP. CBB81-1600V332J/15	PCS	1
11	14001028	*METALIZED POLYPROPYLENE CAP. CBB81-1600V752J/20	PCS	1
12	14001758	*AC CERAMIC CAP. CT81-250VAC-2E4-222MYA/b12. 5A	PCS	1
13	14001776	*TV CERAMIC CAP. CT81-2KV-Bn222J/b10	PCS	1
14	14001866	*TV CERAMIC CAP. CT81-2KV-Bn221K/b7. 5	PCS	1
15	14001950	*HIGH FREQUENCE ELEC. CAP. CD288-25V108M/1625	PCS	1
16	14001953	*HIGH FREQUENCE ELEC. CAP. CD288-35V108Q/1625	PCS	1
17	14002355	*HIGH FREQUENCE ELEC. CAP. CD288-160V336T/1225	PCS	1
18	14002403	*TV CERAMIC CAP. CT81-2KV-Bn821J/b7. 5	PCS	1
19	14002495	*ELEC. CAP. CD110-250V475M/1012/5	PCS	1
20	14002730	AC CERAMIC CAP. ECKDNA222ME PANASONIC/b10#U	PCS	1
21	14002931	*HIGH FREQUENCE ELEC. CAP.	PCS	1
22	14003359	ANTI-INTERFERENCE FILM. CAP. MKT61-275VAC104M/15U	PCS	2
23	14003365	*LARGE CAN TYPE ALUMINUM ELEC. CAP. CD289-200V227T/2040	PCS	1
24	14005107	*METALIZED POLYPROPYLENE CAP. CBB21B-250V394K/20	PCS	1
25	14005594	*HIGH FREQUENCE ELEC. CAP. CD288-35V477M/1	PCS	1
26	15000086	*INDUCTANCE COIL L161-001-160 μ HK/L7. 5	PCS	1
27	15000134	HORI. LINEARITY COIL HXC-47A/L7. 5	PCS	1
28	16000165	*SWITCHING DIODE IN4148-0. 1A75V4ns/H	PCS	19
29	20000002	*CERAMIC TRAP FILTER XT4. 5MB	PCS	1
30	20000022	*CERAMIC FILTER LT4. 5MB	PCS	1
31	22000017	*QUARTZ CRYSTAL HC49U-3. 579M20-70 Ω -20B	PCS	1
32	23000226	TOUCH SWITCH KFC-A06-L4-4. 5 \times 6. 5-4. 3B	PCS	6
33	23000481	TOUCH SWITCH KFC-A07-10H070	PCS	1
34	25000187	THREE HOLE AV SOCKET WK3-8. 4-13	PCS	1
35	25001292	AV SOCKET AV-8	PCS	1
36	25001375	STEREO JACK ST-035-070-100	PCS	1
37	36014984	AC LINE CORE CLIP 254*000210/00-F	PCS	1
38	36015337	BRACKET 229*ST296810/100C	PCS	2
39	36019002	BRACKET 229*T292610/100C	PCS	2
40	36027884	PLATE384*CT201610/01-AKAI	PCS	1
41	37008162	NAME PLATE 401*CT202610/01-AKAI	PCS	1