

SERVICE MANUAL

Color Television Receiver

Model: K2073UM K1373UM K1306UM

IMPORTANT SERVICE SAFETY INFORMATION

Operating the receiver outside of its cabinet or with its back removed involves a shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage RF terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnecting ground lead connections between chassis, escutcheon, picture tube dag and tuner when operating chassis.

These receivers have a "polarized" AC line cord. The AC plug is designed to fit into standard AC outlets in one direction only. The wide blade connects to the "ground side" and the narrow blade connects to the hot "side" of the AC line. This assures that the TV receiver is properly grounded to the house wiring. If an extension cord must be used, make sure it is of the "polarized" type.

Since the chassis of this receive is connected to one side of the AC supply during operation, service should not be attempted by anyone not familiar with the precautions necessary when working on these types of equipment.

When it is necessary to make measurements or tests with AC power applied to the receiver chassis, an Isolation Transformer must be used as a safety precaution and to prevent possible damage to transistors. The Isolation Transformer should be connected between the TV line cord plug and the AC power outlet.

Certain High voltage (HV) maybe cause X-ray radiation. Receivers should not be operated with HV levels exceeding the specified rating for their chassis type. Higher voltage may also increase the possibility of failure in the HV supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the receive that could cause a rise in high voltage, or operating supply voltages. No changes should be made the original design of the receiver.

Components shown in the shaded areas on the schematic diagram and/or identified by in the replacement parts list should be replaced only with exact factory recommended replacement parts. The use of unauthorized substitute parts man creats may create shock, fire, X-ray radiation, or other hazards.

To determine the presence of high voltage, use an accurate high impedance HV meter connected between the second anode lead and he CRT dag grounding device. When servicing the High Voltage System remove static charges from it by connecting a 10K Ohm resistor in series Wan insulated wire(such as test probe) between the picture tube dag and 2nd anode lead(Have AC line cord disconnected from AC supply).

The picture tube use in this receiver employ integral implosion protection. Replace with a tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely, Keep others without shatter proof goggles away.

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.
2. Replace all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers of shiedls, isolation resistor-capacitor networks, mechanical insulators etc.
3. To be sure that not shock hazard exists, a check for the presence of leakage current should be made at each exposed metal part having a return path to the chassis (antenna, cabinet metal, screw heads knobs and/or shafts, escutcheon, etc.) in the following manner.

Plug the AC line cord directly into a 120V, AC receptacle. (Do not use an Isolation Transformer during these checks.) All checks must be repeated with the AC line cord plug connection reversed. (If necessary, a nonpolarized

adapter plug must be used only for the purpose of completing these checks.)

If available, measure current using an accurate leakage current tester. Any reading of 0.35mA or more is excessive and indicates a potential shock hazard which must be corrected before returning the receiver to owner.

If a reliable leakage current tester is not available, this alternate method of measurement should be used. Using two clip leads, connect a 1500 Ohm, 10 watt resistor paralleled by a 0.15MF capacitor in series with a known earth ground, such as a water pipe or conduit and the metal part to be checked. Use a VTVM or VOM with 1000 Ohms per Volt, or higher, sensitivity to measure this AC voltage drop across the resistor,. Any reading of 0.35 volt RMS or more is excessive and indicates potential shock hazard which must be corrected before returning the receiver to the owner.

ALIGNMENT PROCEDURES

PLEASE READ BEFORE ATTEMPTING SERVICE

1. Use an Isolation Transformer when performing any service on this chassis.
2. Never disconnect any leads while receiver is in operation.
3. Disconnect all power before attempting an repairs.
4. Do not short any position of the circuit while the power is on.
5. For safety reasons, replacing any components should be according with identical replacement parts (SEE PARTS LIST).
6. Before testing, warm up the TV for at least 30 minutes and demagnetize the CRT with an external degaussing coil.
7. When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
8. Inferior silicon grease can damage IC's and transistors. When replacing IC's and transistors, use only specified silicon grease,. Remove all old silicon when applying new silicon.
9. Before removing the anode cap, discharge eiecticity because it contains high voltage.

TEST EQUIPMENT

1. Oscilloscope
2. Multi-meter (Internal resistance: $DC \geq 20k \Omega / V$ $AC \geq 5k \Omega / V$)
3. High voltmeter 35kV
4. Ammeter (0.5 rating, at DC 3mA position)
5. Degaussing coil
6. PT5820 signal generator

Factory menu

1. Press MUTE, TIMER, PICTURE buttons continuously in two seconds to enter into factory menu.
 2. Press P+, P- buttons to select the item to adjust.
 3. Press VOL+, VOL- buttons to adjust the selected item or enter into the submenu.
 4. Press MENU button to return the super menu.
 5. Under main menu mode, press MENU button to exit factory menu.
- Factory menu settings please see the following: (* marked before the item presents adjustable item, and the value in the bracket is default value)

AC power supply check and +B DC adjustment

1. Check AC power supply is normal or not (120V, 60Hz and Sine Wave are normal)
2. Receive Television broadcast signal, set PICTURE to standard mode
3. Adjust RP950 so that voltages at two ends of C960 are +B, the voltage of +B please see BOM

High voltage check and bulb voltage check

1. Make sure AC power supply and +B are within pointed range before calibrating high voltage.
2. Connect high voltmeter to anode (G4) of CRT.
3. Turn on the receiver, set the BRIGHTNESS and CONTRAST to the minimum (zero beam current).
4. High voltage must be measured below 27.5kV.
5. Bulb voltage must be measured within the range of 6.3 ± 0.2 Vrms by virtual value meter

Picture IF setting

Receive any signal, enter into VCJ VCO ADJ → VIF VCO AUTO ADJ menu under factory mode, then press VOL+/- button, when "END" displays on the screen, that means intermediate frequency has been adjusted to 45.75M in IC automatically.

RFAGC adjustment

1. Receive VH signal (Channel 7 or channel 10), apply 60dB μ V gray scale signal
2. Enter VDJ ADJ → RF DELAY ADJ and press VOL+/- button to adjust it until picture noise is just disappeared

FOCUS adjustment

1. Receive five circles pattern, adjust the pattern to standard mode
2. Adjust focus potentiometer (horizontal output transformer) so that the center and four corners of pattern are the best focus.

Horizontal scanning, vertical scanning and geometry correction adjustment

1. Receive five circles pattern signal, enter RASTER ADJ menu to adjust the following parameters:
 1. V POSITION Vertical Position
 2. V SIZE Vertical Size
 3. H POSITION Horizontal Position

Grid voltage adjustment and White Balance adjustment

1. Enter factory menu firstly and set PICTURE to STANDARD.
2. Enter into factory mode to set the following parameters:

PICTURE ADJ menu:

SUB BRIGHTNESS	160
SUB CONTRAST	80

CRT ADJ menu:

CUT OFF-R	127
CUT OFF-G	127
CUT OFF-B	127
DRIVE R	63
DRIVE B	63

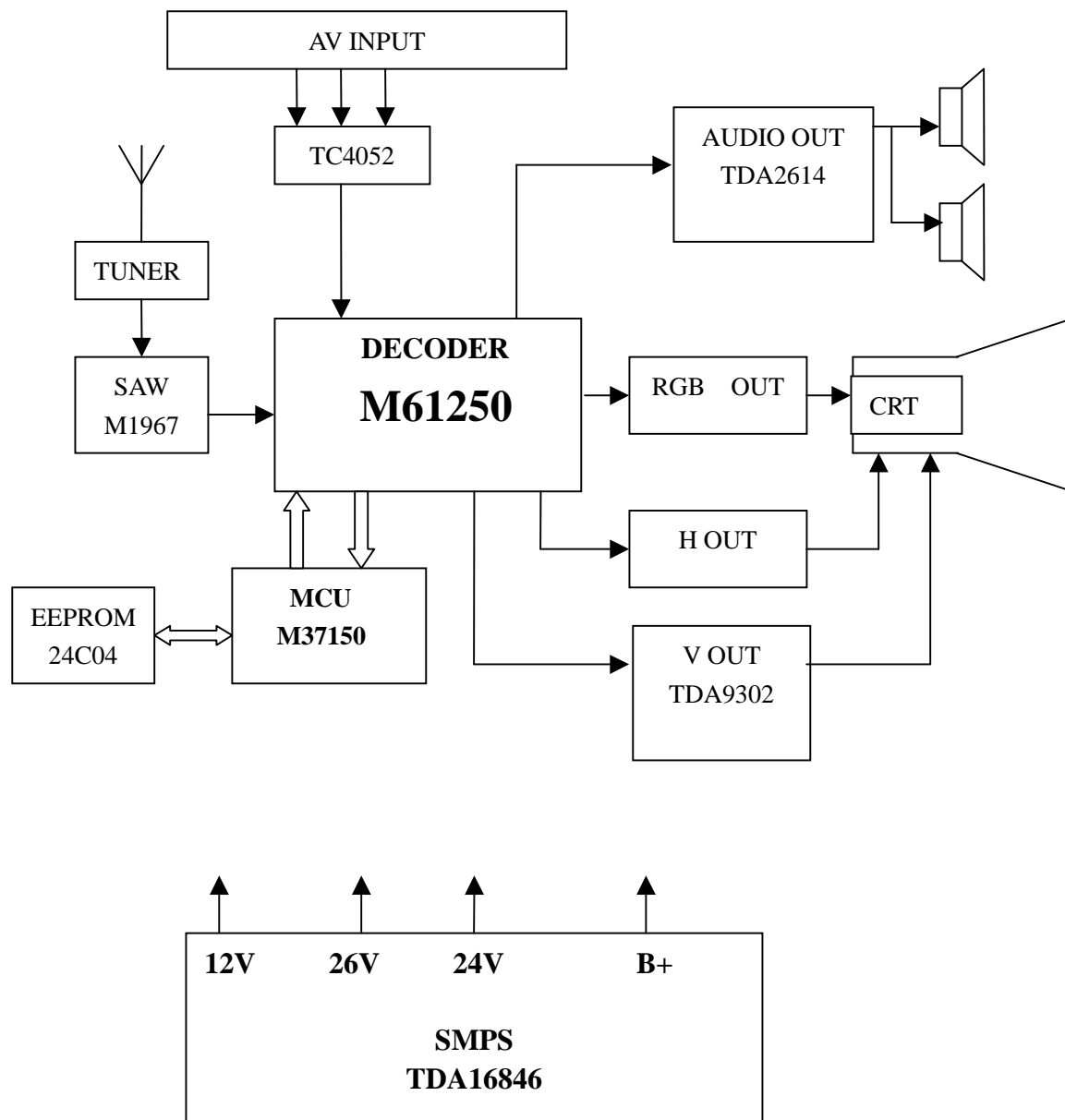
Enter into CRT ADJ menu, press 0 button to display one horizontal light line on the screen, adjust grid potentiometer until this light line is just appeared. Press 0 button again to exit the horizontal light line status.

Insert the plug for automatic adjustment, running white balance test program (WB37150.EXE)

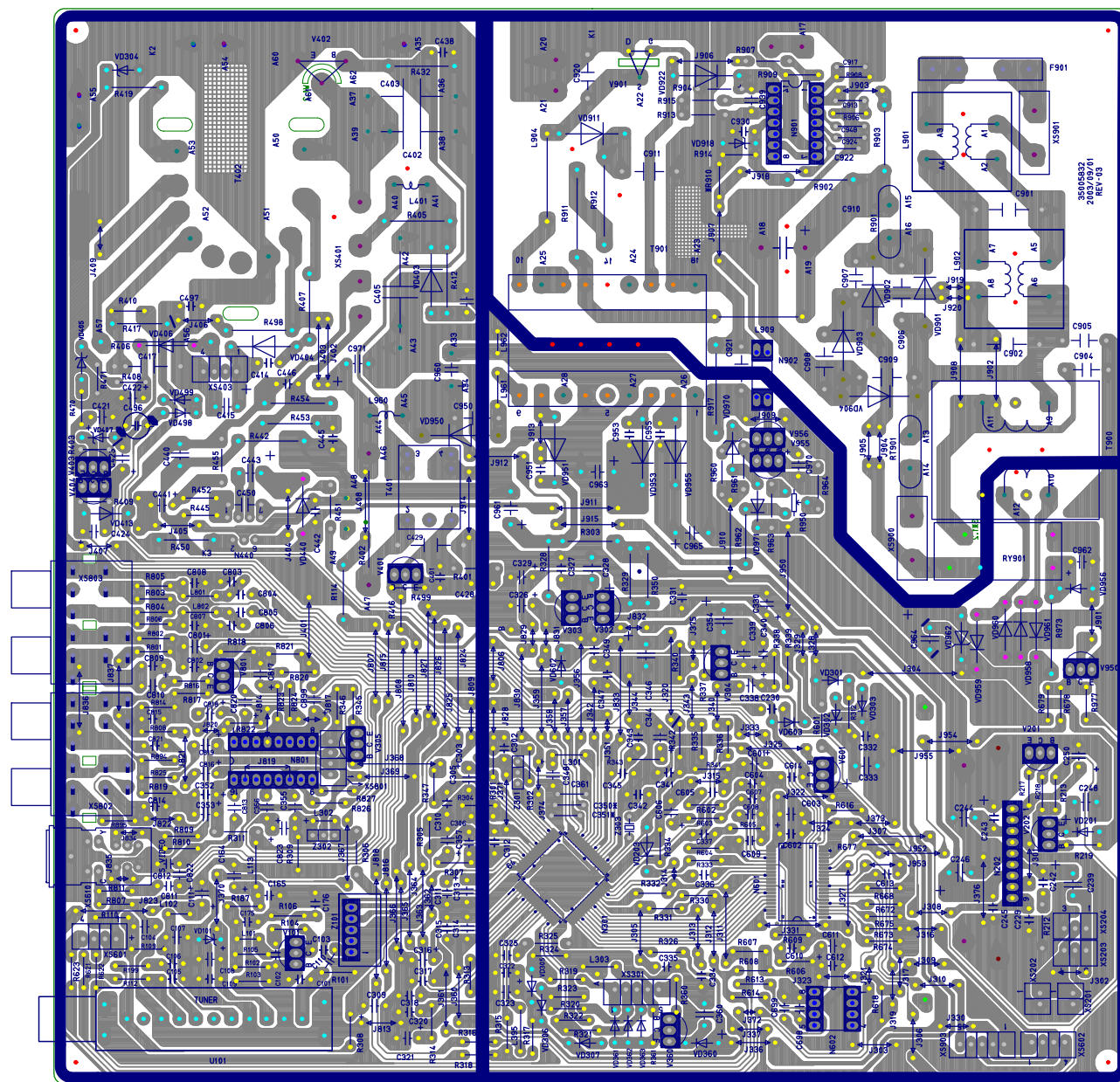
Receive A69 signal when you finish above steps, if gray scale could not reach seven and half cases, just adjust PICTURE ADJ—SUB BRIGHTNESS item to meet this requirement.

Set USER MENU RESET OFF to initialize user menu after all test steps finishing, so that all menu settings coincide with each other before the production leaving the factory.

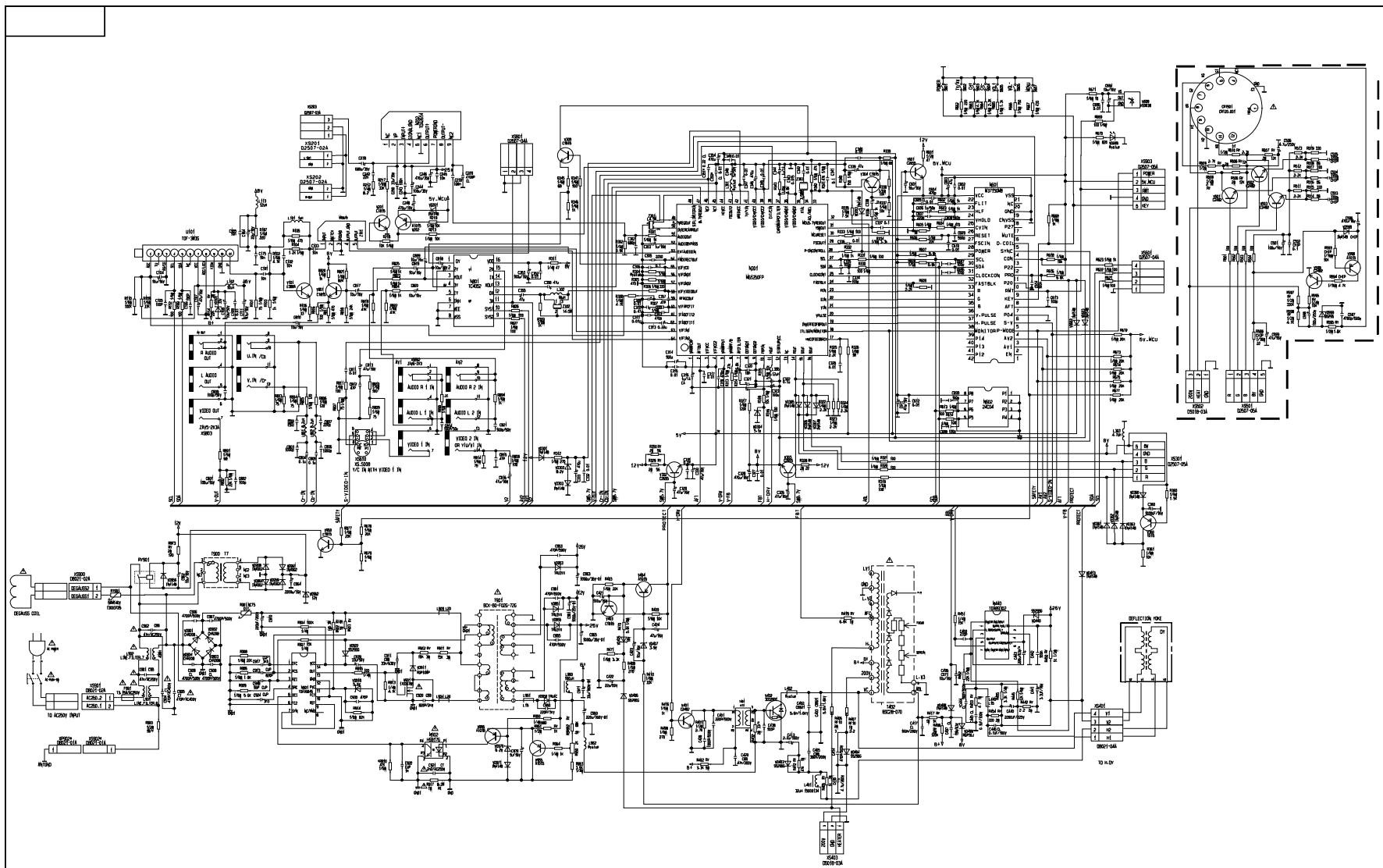
(If you have set password in P. LOCK submenu, user menu initialization must be operated following the above steps after you exiting P.LOCK menu to clear the password in P.LOCK submenu.)



Note: K1373UM and K1306UM havn't TC4052.



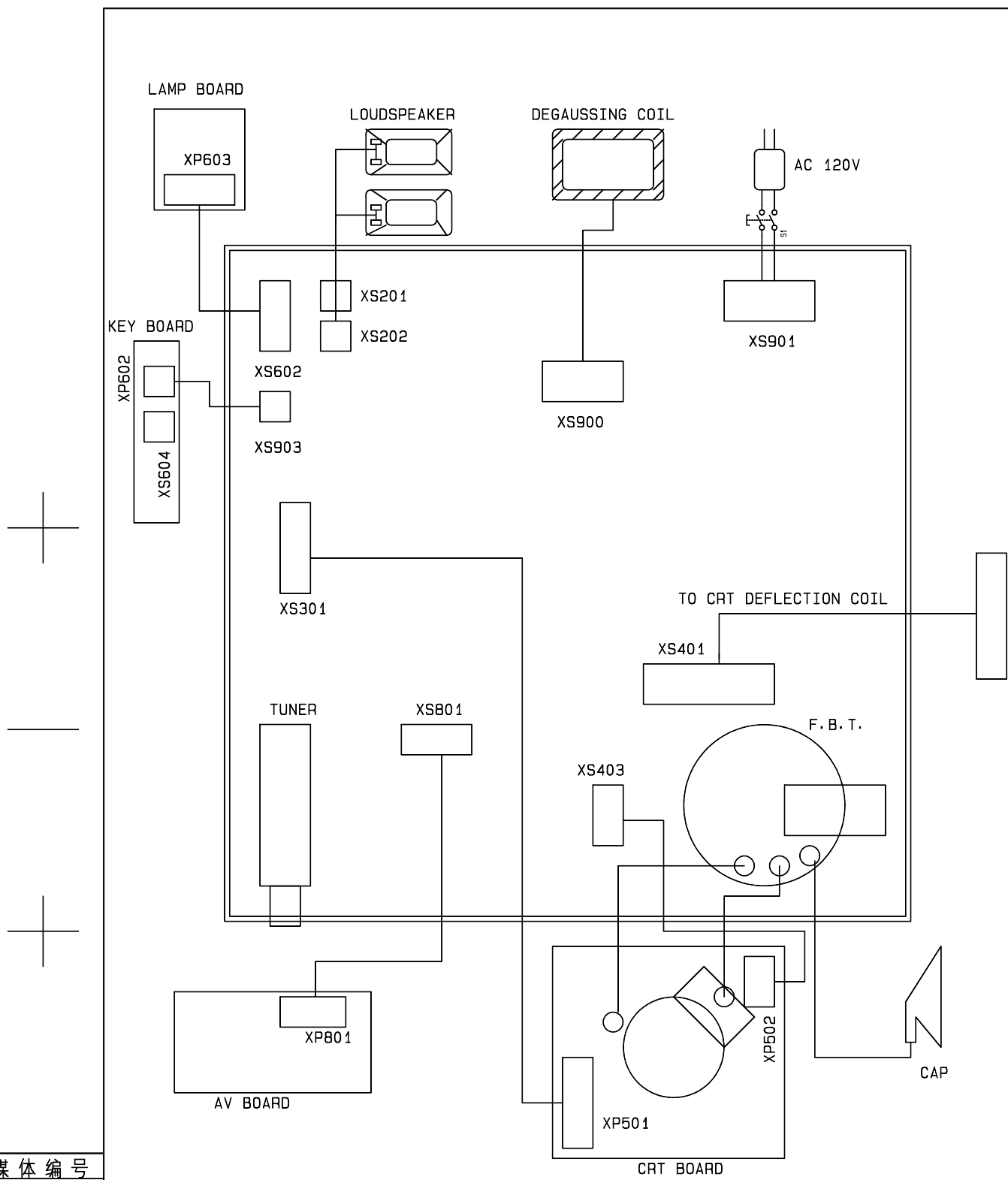
A B C D E F G H I J K L M N O



媒体编号
图底图号
图号
日期 签名
格式(3)

等保 标记			
标记数量	分	更改数量	签名 日期
设计			
工艺			
标准化			
审查			
第 张 共 张			

附 图 幅 面 82



媒体编号		CRT BOARD															
														等级 标记			
旧底图总号																	
		标 记	数 量	分 区	更改单号	签 名	日 期	标 记	数 量	分 区	更改单号	签 名	日 期				
底图总号		拟	制														
		审	核														
		工	艺														
日期	签名													第	张	共	张