SERVICE MANUAL



MODEL: 14N23

CHASSIS: M123SP

1、 Caution……2
2、 Specification……6
3、 Alignment Procedure……10
4、 Schematic Diagram……20
5、 Main IC Introduction……21
6、 PCB Layout……37
7、 Explode View Diagram……38
8、 BOM list ……39

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

1、CAUTION:

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







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.

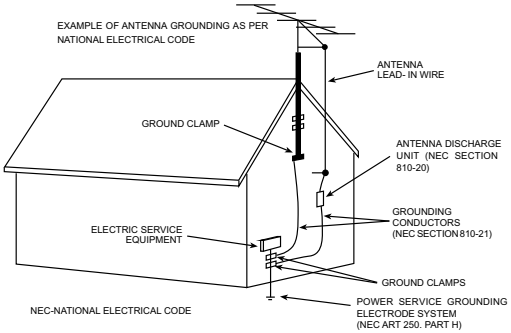
13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.

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.

2、 Specification

Model / Item	机型 / 内容	
Master Data	**主要数据**	
-Customer ID	-顾客ID	
-Destination	-目的地	南美 SOUTH AMERICA
-Brand	-牌子	
-BOM NO.	-BOM号	
-Assembling Way	-走货方式	Unit
-Chassis	-机芯号	M123SP
Reception	**接收**	
-Tuning [Channels Amt.]	-频道数量	181
-Tuning [Technology]	-调谐技术	PLL
-Tuning [Indication]	-搜台指示	---------
-Frequency Bands	-频率波段	Full-Cable
-IF Frequency	-中频频率	45.75MHZ
-TV Systems (Color+ Sound)	-TV制式 (彩色+声音)	PAL-M,PAL-N,NTSC-M(3.58+4.5)
-AV Systems	-AV制式	PAL,NTSC
Picture-Processing	**图像处理**	
-SCAN	-扫描方式	Standard
-Wide Screen Switching	-宽屏幕转换	
-Comb filter	-梳状滤波器	X
-Picture Enhancement	-图像提升	
LTI / CTI	亮度/色度提升电路	
Black Stretch	黑电平延伸	X
Blue Stretch	蓝电平延伸	
Dynamic Skin	动态肤色	
Others	其他	Blue mute
-Picture Control [General]	-图像控制 [普通的]	
Brightness	亮度	X
Sharpness	清晰度	X
Contrast	对比度	X
Tint	色调	X
Color	色度	X
-Picture Control [Special]	-图像控制 [特殊的]	
Smart Pictures * modes	几种图像美化模式	4
VM	速率调制	
Color Temperature	色温	X
Others	其他	
-Picture Noise Reduction	-图像降噪	
Picture – Display	**图像显示**	
-CRT Type	-CRT类型	
Normal Flat	普平	
Pure Flat	纯平	X
Super Flat	超平	
-Deflection system	-偏转系统	
1Fh	1Fh	X
2Fh	2Fh	
-Tube Technology	-显象管技术(具体看CRT规格书而定)	
Iron	铁（材料）	
AK	AK钢	
Inver	锢瓦钢	
Black Matrix	黑色聚阵(关机后CRT屏幕颜色)	X
Others	其他	
-CRT Deflection (* Deg.)	-CRT偏转度（90，110...）	90 degr
-CRT Magnetic Field	-CRT磁场区域	
-Screen Ratio	-屏幕比率	4:3
-Screen Size / Vis. Size	-屏幕尺寸/ 视觉尺寸	21"
Sound	**声音**	
-Audio Power Consumption	-伴音功耗	5W+5W
-Surround Sound	-环绕立体声	Stereo wide
-Mono (TV)	-单声道(TV)	
-Mono (AV)	-单声道(AV)	
-Nicam	-丽音	
-America Stereo (MTS,BTSC,MPS)	-美国立体声	X

Model / Item	机型 / 内容	
-America SAP	-美国SAP	X
-Korea Stereo	-韩国立体声	
-Thai Bilingual	-泰国双语	
-Super Woofer	-超重低音	
-AVL	-自动音量平衡	
-Sound Control [General]	-声音控制（普通的）	
Volume	音量	X
Mute	静音	X
-Sound Control [Special]	-声音控制（特殊的）	
Treble	高音	X
Bass	低音	X
Balance	平衡	X
Equalizer	均衡	
Smart Sound * modes	几种声音美化模式	4
Others	其他	
-Speakers Quantity	-喇叭数量	2
-Speakers Size	-喇叭尺寸	
User Interface	**用户界面**	
-Menu Language	-菜单语言	English, Portuguese, Spanish，french
-Features [General]	-特点（普通的）	
AT	音响电视	
Auto Sleep	自动睡眠(是指X小时不操作电视,电视自动休眠)	
AV Lock	AV锁	
Biological clock	生物钟	
Calendar	日历	X
Clock	时钟	X
Channel Skip	频道跳跃	
Channel Swap	频道互换(两个频道互换位置)	
Channel Adjustment	频道互换(1个频道取代另一个)	
Channel Naming	频道命名	
Channel Lock	频道锁	
Child Lock	童锁	X
Favorite Channel	喜爱频道	X
Game	游戏	X
Hotel Mode	宾馆模式	
High Sensitive	超强接收	
Notebook	记事簿	X
On/Off Timer	定时开/关机	X
Panel Lock	按键锁	X
Parent Guide	父母指导	X
Preset	频道预置(宾馆模式中，用户不可调)	
Programe prearrange	节目预置（用户可调）	
Recall	回看	X
Rotation	地磁校正(旋转)	
Others	其他	
-Features [Special]	-特点(特殊的）	
V-chip / CCD	V-chip / CCD	X
Teletext *Pages	图文	
FM Radio	FM收音机	
Others	其他	
Tuning Features	**调谐特点**	
-Auto Channel Program	-自动频道编排	X
-Auto/Manual Tuning	-自动 / 手动搜台	X
-Auto/Manual Store	-自动 / 手动存储	X
-Fine Tuning	-微调	X
-Factory Mode	-工厂模式	X
-Service Mode	-维修模式	X
Cabinet	**外壳**	
-Cabinet Name	-外壳名称	21A71
-Front Cabinet Color	-前壳颜色	
-Middle Cabinet Color	-中壳颜色	
-Rear Cabinet Color	-后壳颜色	

Model / Item	机型 / 内容	
-Number of Local Control(incl.Mains)	-本机控制按键孔数量(包括主开关)	7
-Number of Indicator Control(incl.Mains)	-本机指示灯数量(包括主开关上的灯)	1
Local Controls Front	-正面的控制孔数量	
-Mains Switch	电源开关	X
-CH+ CH- VOL+ VOL-	频道+-，音量+-	
-TV/AV	TV / AV	
-Menu	菜单	
-Auto Search	自动搜台	
Local Controls Top	-顶部的控制孔数量	
-CH+ CH- VOL+ VOL-	频道+-，音量+-	X
-TV/AV	TV / AV	X
-Menu	菜单	X
-Auto Search	自动搜台	
Local Controls Side	-侧面的控制孔数量	
-CH+ CH- VOL+ VOL-	频道+-，音量+-	
-TV/AV	TV / AV	
-Menu	菜单	
-Auto Search	自动搜台	
Indicator	-指示灯	
-RC Received LED	遥控接收灯	
-Color of RC Received LED	遥控接收灯颜色	
-Standby LED	待机灯	X
-Color of Standby LED	待机灯颜色	RED
Remote Controller	**遥控器**	
-Type	-类型	R
-Batteries Type	-电池	2XAA
Connectors Rear	**后壳端子接口**	
-SCART Full (RGB) w/o Y/C	不含Y/C的SCART	
-SCART Full with Y/C	含Y/C的SCART	
-SCART Single (CVBS)	-单SCART接口(CVBS)	
-Component In (YCbCr) Cinch	YUV	X
-In Y/C+Cinch(CVBS+ Stereo)	-In Y/C+Cinch(CVBS+ Stereo)	X
-In Y/C+Cinch (CVBS+ Mono)	-In Y/C+Cinch (CVBS+ Mono)	
-In Cinch(CVBS+ Stereo)	-In Cinch(CVBS+ Stereo)	X
-In Cinch (CVBS+ Mono)	-In Cinch (CVBS+ Mono)	
-Out Cinch(CVBS+ Stereo)	-Out Cinch(CVBS+ Stereo)	X
-Out Cinch(CVBS+ Mono)	-Out Cinch(CVBS+ Mono)	
-Super Woofer	-超重低音接口	
-Digital Audio Out	-数字音频输出	
-Loudspeakers	-外接喇叭口	
-Control Busses	-控制总线	
-After Service Slot	-售后维修口	
-ITV Smart Port	-ITV 通信端口	
- Antenna in	-天线输入端口	
75 Ohms (IEC Type)	75 ohms (IEC类型)	X
Connectors Front	**正面端子接口**	
-In Y/C+Cinch(CVBS+ Stereo)	-In Y/C+Cinch(CVBS+ Stereo)	
-In Y/C+Cinch (CVBS+ Mono)	-In Y/C+Cinch (CVBS+ Mono)	
-In Cinch(CVBS+ Stereo)	-In Cinch(CVBS+ Stereo)	
-In Cinch (CVBS+ Mono)	-In Cinch (CVBS+ Mono)	
-Out Headphone	-耳机输出端口	
Mini-Jack 3.5mm	袖珍插孔 3.5mm	
Connectors Side	**侧面端子接口**	
-In Y/C+Cinch(CVBS+ Stereo)	-In Y/C+Cinch(CVBS+ Stereo)	
-In Y/C+Cinch (CVBS+ Mono)	-In Y/C+Cinch (CVBS+ Mono)	
-In Cinch(CVBS+ Stereo)	-In Cinch(CVBS+ Stereo)	X
-In Cinch (CVBS+ Mono)	-In Cinch (CVBS+ Mono)	
-Out Headphone	-耳机输出端口	
Mini-Jack 3.5mm	袖珍插孔 3.5mm	
Final Equipment	**出厂资料**	
-Packing –Methods	-包装方法	
* Colors Printing	几种颜色彩印	

Model / Item	机型 / 内容	
Carton Color	纸箱颜色	
-Documents and Manuals	-文件和手册	
Instruction Book	说明书	X
Screen Sticker	屏幕贴纸	
Plastic Bag	塑料袋	
Warranty Card	保修卡	
Guarantee Doc.	保证书	
Warning Label	警告标签	X
Approbation Label	认证标签	
Others	其他	
-Languages Instruction Book	-说明书语言	English
-Indication on BACKOVER	-后壳的标示	
Made-in in family sheet	制造产地标签	X
FCC/Elect Shock Caution Label	FCC/ Elect 小心警告标签	
CE/Elect Shock Caution Label	CE/ Elect 小心警告标签	
Warning Label	警告标签	
Others	其他	
Approbation	**认证**	
FCC	FCC	
FDA	FDA	
UL/CUL	UL/CUL	
CB	CB	X
VDE	VDE	
Others	Others	
Miscellaneous	**其他的**	
-Mains Voltage	-电源电压	100v-240v
-Mains Frequency	-电源频率	50/60Hz
-Type Mains Cord	-电源线类型	
-Type Mains plug	-电源插头类型	
-Power Consumption TV in ON	-开机功耗	Less than 80W
-Power Consumption TV in Standby	-待机功耗	Less than 3W

Table of Content

Ⅰ. SUMMARIZE.....5

Ⅱ. ALIGNMENT CONTENTS： 6

1. ADJUSTMENT OF B+ VOLTAGE..... 6
2. RF AGC ADJUSTMENT..... 6
3. SCREEN & FOCUS VOLTAGE ADJUSTMENT..... 7
4. 1 ADJUSTMENT OF SUB-CONTRAST, SUB-TINT AND SUB-COLOR FOR NSTC AND PAL SIGNAL
4. 2 WHITE BALANCE ADJUSTMENT (NORMAL)..... 8
5. ADJUSTMENT OF SUB-BRIGHTNESS 8
6. PICTURE GEOMETRIC ADJUSTMENT 8
7.X RAYS OVER VOLTAGE PROTECTING CIRCUIT TEST : 8
8. PS LINE POLARTITIES TEST : 9
9.PS POWER TEST (RANDOM TEST) :..... 9
10. HIGH VOLTAGE AND IB VALUE LIMIT TEST(RANDOM TEST) 10
11.HEATER VOLTAGE TEST (RANDOM TEST)..... 10
12. CCD AND VOL-CHIP FUNCTION TEST..... 10
13. INITIALIZATION 10
14.EEPROM DATA： 10

M123SP Alignment Procedure

Ⅰ. Summarize

M123SP，is NTSC-PAL system model developed for TCL market specially. In trial run, burn the software to TMPA8873PSNG IC by OTP method. After the trial run, make the mask，please take care in production. To solve the probable problems in production, for the workers participate in alignment, please be familiar with the Alignment Procedure, and be master of the features.

There are 2 operation modes：user mode and factory mode. You can use the Remote control or buttons on the panel to operate in user mode, but only Remote control works in factory mode.

The way to enter factory mode：Press "D-MODE" button on RC， press "OK" and "CH+" " CH-" to select the parameter you want to adjust.， Press "VOL+" " VOL-" to change the parameters. To quit factory mode，press "D-MODE" button（on the right of SURR button），the factory data changed will be memorized.

A few special modes：

Aging mode — used before the aging before alignment. The aging could start in factory mode.

Vertical stop mode—used to confirm the screen voltage. Press "INPUT" button in factory mode to enter Vertical stop mode. Then press "INPUT" button again to exit.

White balance alignment mode—used for white balance auto alignment. Press "BUS OFF" button near the left of MTS button to enter White balance alignment mode.

Factory mode—. Press "SOUND" button in factory mode to initialize the set. The screen displays "WAIT"， after the initialization，the screen displays "OK"，and exit the Factory mode automatically.

Then press "D-MODE"button again，it will not enable you to enter Factory mode if you want to enter again，you need operate as follows：turn down the volume to 0 press "Volume down" button on the panel，press "INFO" button on the RC meantime.

Ⅱ. Alignment contents：

1. Adjustment of B+ voltage

Receive Philips standard testing pattern to RF input.

If the VR800 exists in the board, adjust it in STANDARD mode until voltage at following value：

Model	B+ (v)
M123SP	110±2.0
21E10	110±2.0

2. RF AGC adjustment

AGC Alignment Procedures:

1) Apply 8-scale gray signal (80dB), then adjust AGC data in D-mode to get the noise picture (snow picture) disappear exactly. Test Pin 1 of TU101 (IF output) and record the voltage value as $V1_{P\text{-}P}$.
<Illustrate as Picture A>

2) Apply 8-scale gray signal (80dB), and then adjust AGC data in D-mode until the synchronization signal distortion appear exactly. Test Pin 1 of TU101 (IF output) and record the voltage value as $V2_{P\text{-}P}$. <Illustrate as Picture A>

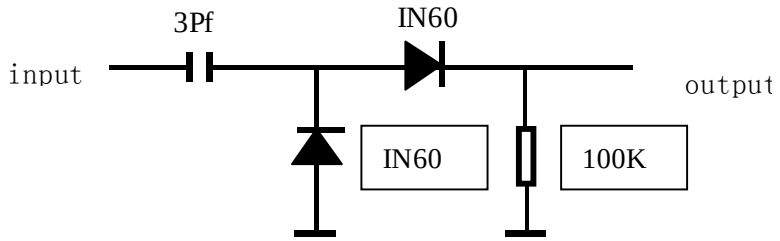
3) Calculate the value of $V_{P\text{-}P}$ with the formula: $V_{P\text{-}P}=(V2_{P\text{-}P}\times V1_{P\text{-}P})^{1/2}$
Apply 8-scale gray signal (80dB), test Pin 1 of TU101 (IF output), adjust AGC data until the voltage of Pin 1 of TU101 $V_{P\text{-}P}=(V2_{P\text{-}P}\times V1_{P\text{-}P})^{1/2}$。

4) Test three units according to 1)，2)，3) steps, and record the values of AGC in three units. Take the average value as benchmark.

Remarks:

Comparing test is necessary due to different probe of Oscilloscope and different Test Circuit (Picture A).

1) AGC voltage value should be tested afresh, due to the type/supplier of Tuner or Saw filter changed, or other related components changed.



(Picture A)

3. Screen & Focus voltage adjustment

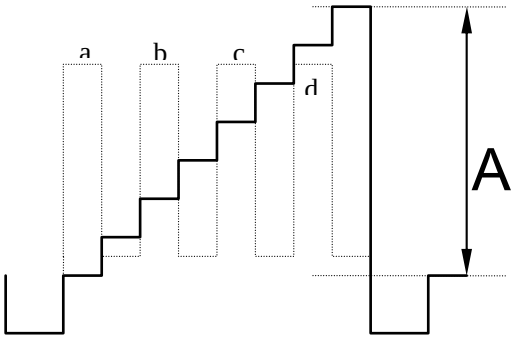
① Apply pattern signal in normal status, enter Factory mode，press "INPUT" button to stop vertical scan. **Note**：(the RC/GC/BC is preset to be 40，GD/BD is 40）

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.

4. 1 Adjustment of Sub-contrast, Sub-tint and Sub-color for NSTC and PAL signal (NORMAL)(Press KEY 5 in D-Mode)

1. connect the probe of Oscilloscope to the conjunction between R201 and P201 (B-out).
2. Apply the Grey-scale/Color-bar (NTSC signal) to the AV\TV input, in STANDARD status.
3. Select CNTC to adjust the contrast, until that the amplitude "A" is 2.0V $_{P-P}$ as shown below.
4. Select COLC to adjust the color by tuning the amplitude of "a" and "d" to the same.
5. Select TNTCV\T to adjust the tint by tuning the amplitude of "b" and "c" to the same.
6. Apply the Grey-scale/Color-bar (PAL signal) to the AV input, in STANDARD status.
7. Select COLP to adjust the sub-color by tuning the amplitude of "a", "b", "c" and "d" to the same.



4.2 White balance adjustment (NORMAL)

1) Apply the black and white pattern in normal status;

2) Alignment of normal color temperature

① Change Color Temperature to normal status

② Use a color analyzer to measure the black side of the screen. By changing the value of RC, GC and BC, set the reading of the color analyzer to standard, **x=285±8, y=294±8.**

③ Use a color analyzer to measure the white side of the screen. By changing the value of GD, BD, set the reading of the color analyzer to standard, **x=285±8, y=294±8.**

④ Separately set the brightness and contrast from min. to max., repeat the step 2 and 3 until the reading of the color analyzer is correct.

Note: Provided the production line is equipped with the self- White balance adjusting

equipment, white balance can be adjusted automatically as following: Press "BUS OFF" button under factory mode, the TV set will adjust automatically.

standard：

Warm X=310±8, Y=314±8

Cool X=278±8, Y=282±8

Remark:

1) Provided the production line is equipped with the self- White balance adjusting equipment, white balance of M123SP chassis can be adjusted automatically as following: Press "I2C BUS" button under factory mode, the TV set will adjust automatically.

2) Free-alignment of warm and cool temperature by presetting the value of RC-W, GC-W, BC-W, GD-W, BD-W (for warm temperature) / RC-C,GC-C,BC-C,GD-C,BD-C(for cool temperature) into memory

5. Adjustment of Sub-brightness

Apply the Grey-scale/Color bar (NTSC signal) to the AV input, in normal status. Enter factory alignment menu 8, Select BRTS to adjust the sub-brightness, until that the 2nd dark bar of 8 level Grey scale just can be seen.

6. picture geometric adjustment

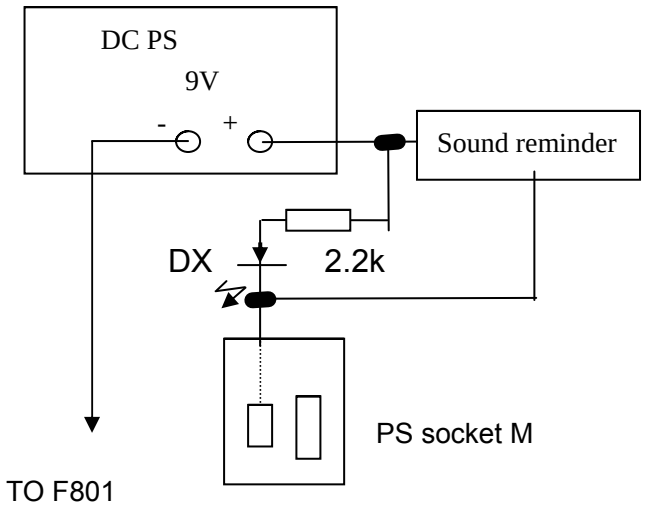
1. Apply the Philips standard testing pattern NTSC (PAL-N) in normal status, then enter menu 3, adjusting the following data to get the min-distortion.
   HPOS6(HPOS5)（Horizontal Center）
2. Apply the Philips standard testing pattern in normal status, then enter menu 2, adjusting the following data to get the min-distortion.
   HIGH6 (HIGH5) (Height)
   VLIN6（VLIN5）(Linearity）
   VSC6（VSC5）(Vertical-S Correction）
   VCEN6（VCEN5）(Vertical Center）

7.X rays over voltage protecting circuit test :

TV enter working mode，apply more than 26V DC voltage between two ends of C431，the set should enter protecting mode，or check **X rays protecting circuit.**

8. PS line polartities test :

Connect follow the graphic below：



Plug the PS line onto the PS socket M, then touch any pin of F801 with the probe, the LED DX will shine at the moment, with sound reminder, or it is disqualification.

9.PS power test (Random test) :

Instruments： Power meter.

Input signal pattern： Color bar，Sound 1KHZ ， 100% modulation.

Input signal intensity： ≥60dBuv (1 Mv rms)

Test points： find the graphic below

Test means： Set the Brightness, CR to the highest, adjust the volume to make the sound output to be 0.5W. Connect the power meter to test the power consumption. Transfer the set to be standby, and test the power consumption at the moment, which should meet the requirements below：

Model	Power	Standby power (110V～220V)
M123SP	≤80W	<3W
M123SP	≤80W	<3W

10. High voltage and Ib value limit test(random test)

Instruments： High voltage meter， Ib meter.

Input signal pattern： White vertical

Input signal intensity： 60dBuv (1 Mv rms)

Test means：Connect High voltage meter and Ib meter. Test voltage of different Ib separately, It should meet the requirements below：

Model	Ib, Ib scope	Anode high voltage (Kv)	
		21"	
		Value	Diff.
	Ib=50μA Scope: 50μA&1200μA	28.0±2.5	<2

11.Heater voltage test (random test)

Instruments ：RMS voltage meter

Input signal pattern ： Philips test graphic

Input signal intensity ：1 mVrms（60dBuV）to 50 mVrms

Connect the RMS voltage meter to the 2 ends of CRT glowers，test the heater voltage of highest CR and Brightness, It should meet：6.3±0.3Vrms

12. CCD and VOL-CHIP function test

VOL-CHIP and CCD **function test**，please find the service manual in detail.

13. Initialization

Under the factory mode，press "SOUND" button，the screen displays "WAIT"，when the screen displays "OK"，the initialization finished. You can enter the next working procedure.

14.EEPROM DATA：

Note：the items with * are adjustable，the items with BLUE COLOR are work in CRT parameter， other items are not， pls do not adjust them；

Use TMPA8873*SANG(13-PA8873-PSP),D-Mode\ G2_FLAG04 posit 00

Use TMPA8873*SBNG(13-PA8873-PSPB),D-Mode\ G2_FLAG04 posit 40

Data / Model	FAC 01				
	RC*	GC*	BC*	GD*	BD*
南美 M123SP	40	40	40	40	40
20E10	40	40	40	40	40

Data / Model	FAC 02					
	HIGH6*	VP60	VLIN6*	VSC6*	VBLK6	VCEN6*
南美 M123SP	26	00	0E	19	00	2A
20E10	26	00	10	17	00	21
	HIGH5*	VP50	VLIN5*	VSC5*	VBLK5	VCEN5*
南美 M123SP	26	06	0B	17	00	2D
20E10	24	06	0B	16	00	24

Data / Model	FAC 03							
	HPOS6*	HPOS5*	U BLACK*	V BLACK*	STRAP F0	SIF FREQ	STRAP HL QG	PIF FREQ
南美 M123SP	11	0D	08	08	08	06	00	02
20E10	11	0D	08	08	08	06	00	02

Data / Model	FAC 04							
	CNTX	CNTN	BRTX	BRTN	COLX	COLN	TNTX	TNTN
南美 M123SP	7F	10	20	1B	7F	0E	2C	30
20E10	7F	10	20	1B	7F	0E	2C	30

Data / Model	FAC 05							
	BRTC	COLC	COLP	SCOL	SCNT	CNTC	TNTCT	TNTCV
南美 M123SP	48	37	00	07	0F	36	45	3D
20E10	48	37	00	07	0F	45	45	3D

Data / Model	FAC 06						
	ST3	SV3	SV4	SVD	ASSH	SHPX	SHPN
南美 M123SP	1B	1B	1B	1B	07	1A	1A
20E10	1B	1B	1B	1B	07	1A	1A

Data / Model	FAC 07							
	MOD1	MOD2	MOD3	OPT	OPTM1	OPTM2	HDCNT	HSTOP
南美 M123SP	60	F3	88	37	C2	83	09	FF
20E10	60	F1	88	37	C2	83	09	FF

Data / Model	FAC 08							
	RFAGC*	BRTS*	OSD	OSDF	CCD OSD	CCD OSDF	TXCN	RGCN
南美 M123SP	25	00	21	53	4A	65	10	09
20E10	25	00	21	53	4A	65	10	09

Data / Model	FAC 09								
	V01	V05	V10	V25	V50	V75	V90	V100	VOLMAX
南美 M123SP	38	41	48	59	65	6A	6D	70	32
20E10	38	41	4B	63	6D	D73	75	78	32

Data / Model	FAC 10								
	CURTCEN	VOLX	PWTM	MODE4	MODE5	MODE6	MODE7	MODE8	MODE9
南美 M123SP	A5	7F	08	FF	7F	61	D7	2D	CA
20E10	A5	7F	08	FF	7F	61	D7	2D	CA

Data / Model	FAC 11						
	CON1	CON2	CON3	STSADJ	ALI 1	ALI 2	ALI3
南美 M123SP	06	06	02	00	0A	0A	03
20E10	06	06	02	00	0A	0A	03

Data / Model	FAC 12							
	SVM	SVM1	OSD2	OSDF2	PYNX	PYNN	PYXS	PYNS
南美 M123SP	10	10	20	64	28	18	22	10
20E10	10	10	20	64	28	18	22	10

Data / Model	FAC 13						
	CLTM	CLVO	CLVS	ABL	DCBS	FLG0	FLG1
南美 M123SP	04	03	03	27	14	82	0C
20E10	04	03	03	27	14	82	0C

Data / Model	FAC 14						
	HAFC	AGCC	NOIS	ONTM	NSHP	PVLVL	PLMT
南美 M123SP	09	1C	01	08	1A	80	80
20E10	09	1C	01	08	1A	80	80

Data / Model	FAC 15							
	RC-C	GC-C	BC-C	GD-C	BD-C	YUV-RC	YUV-RC	YUV-RC
南美 M123SP	10	0D	06	01	10	00	00	00
20E10	--	--	--	--	--	--	--	--

Data / Model	FAC 16						
	RC-W	GC-W	BC-W	GD-W	BD-W	YUV-RC	YUV-RC
南美 M123SP	10	08	0D	F3	E3	00	00
20E10	--	--	--	--	--	--	--

Data / Model	FAC 17			
	D-COL	D-BRI	D-CON	D-SHP
南美 M123SP	32	32	5A	32
20E10	32	32	5A	32

Data / Model	FAC 18				FAC 19			
	S-COL	S-BRI	S-CON	S-SHP	M-COL	M-BRI	M-CON	M-SHP
南美 M123SP	32	32	32	32	32	32	1E	32
20E10	32	32	32	32	32	32	1E	32

Data / Model	FAC 20								
	SEG-POINT1	SEG-POINT2	DATA-VL	DATA-VH	DATA-UF	SPE-POS1	SPE-DATA1	SENSI-ON	SENSI-OFF
南美 M123SP	173	407	01	02	08	06	05	00	00
20E10	173	407	01	02	08	06	05	00	00

Data / Model	FAC 21					
	THEATER-BAS	THEATER-TRE	CONCERT-BAS	CONCERT-TRE	BROCAST-BAS	BROCAST-TRE
南美 M123SP	2D	4A	38	3E	19	2C
20E10	2D	4A	38	3E	19	2C

Data / Model	FAC 22				
	VOL_MAI	GATE	VOL-OUT	AV GAIN	OPTM3
南美 M123SP	03	2A	75	2D	40
20E10	03	2A	75	2D	40

Data / Model	FAC 25					
	G2_FLAG00	G2_FLAG01	G2_FLAG02	G2_FLAG03	G2_FLAG04	G2_FLAG05
南美 M123SP	30	06	00	02	40	00
20E10	30	06	00	02	40	00

⚠ key component for safty
▲ key component for x-ray protection

TCL-THOMSON Electronics R&D Center (Shen Zhen Lab)

CHASSIS NAME	M123SP	SERIAL NO.	01-0M123SP-MAI
PREPARED BY		ISSUED ON	2005-10-14
COUNTERSIGNED BY		UPDATED ON	
REVIEWED BY		VERSION	1.0

TOSHIBA Integrated Circuit

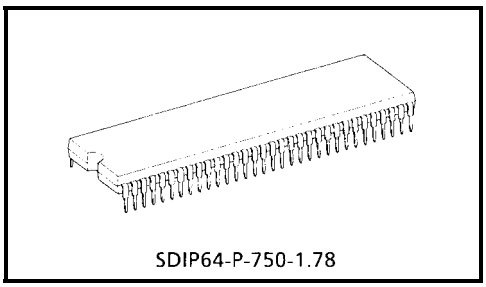
TMPA8873PSNG
TMPA8873CMNG /CPNG /CRNG /CSNG

Tentative

MCU and Signal Processor for a PAL/NTSC TV

The TMPA8873CPNG is an integrated circuit for a PAL/NTSC TV. A MCU and a TV signal processor are integrated in a 64-pin shrink DIP package. The MCU contains 8-bit CPU, ROM, RAM, I/O ports, timer/counters, A/D converters, an on-screen display controller, remote control interfaces, IIC bus interfaces and the Closed Caption decoder. The TV signal processor contains PIF, SIF, Video, multi-standard chroma, Sync, RGB processors.

Mask ROM: TMPA8873CMNG (ROM size: 32k)
Mask ROM: TMPA8873CPNG (ROM size: 48k)
Mask ROM: TMPA8873CRNG (ROM size: 56k)
Mask ROM: TMPA8873CSNG (ROM size: 64k)
OTP ROM: TMPA8873PSNG (ROM size: 64k)



Weight: 8.85 g (typ.)

Features

MCU

- High speed 8-bit CPU (TLCS-870/X series)
- Instruction execution time: 0.5 μs (at 8 MHz)
- (TMPA8873CPNG)
  48-Kbytes ROM, 2-Kbytes RAM
- ROM correction
- 12 I/O ports
- 14-bit PWM output 1 ch for a voltage synthesizer
- 7-bit PWM output 1 channel
- 8-bit A/D converter 3 ch for a touch-key input with key ON wake-up CIRCUIT
- Remote control signal preprocessor
- Two 16-bit internal timer/counter 2 ch
- Two 8-bit internal timer/counter 2 ch
- Time base timer, watchdog timer
- 16 interrupt sources: external 5, internal 11
- IIC bus interface (multi-master)
- STOP and IDLE power saving modes

TV Processor

IF

- Integrated PIF VCO aligned automatically
- Negative demodulation PIF
- Multi-frequency SIF demodulator without external Tank-coil
- SIF BPF built-in
- SIF Trap filter built in

Video

- Integrated chroma traps
- Black stretch
- Y-gamma

Chroma

- Integrated chroma BPFs
- PAL/NTSC demodulation

CCD Decoder

- Digital data slicer for NTSC

OSD

- Clock generation for OSD display
- Font ROM characters: 384 characters
- Characters display: 32 columns × 12 lines
- Composition: 16 × 18 dots
- Size of character: 3 (line by line)
- Color of character: 8 (character by character)
- Display position: H 256/V 512 steps
- BOX function
- Fringing, smoothing, Italic, underline function
- Conform to CCD REGULATION
- Jitter elimination

Tentative

RGB/Base-Band

- Integrated 1 H base-band delay line
- Base-band TINT control
- Internal OSD interface
- Half-tone and transparent for OSD
- External YCbCr interface for DVD
- RGB cut-off/drive controls by bus
- ABCL (ABL and ACL combined)

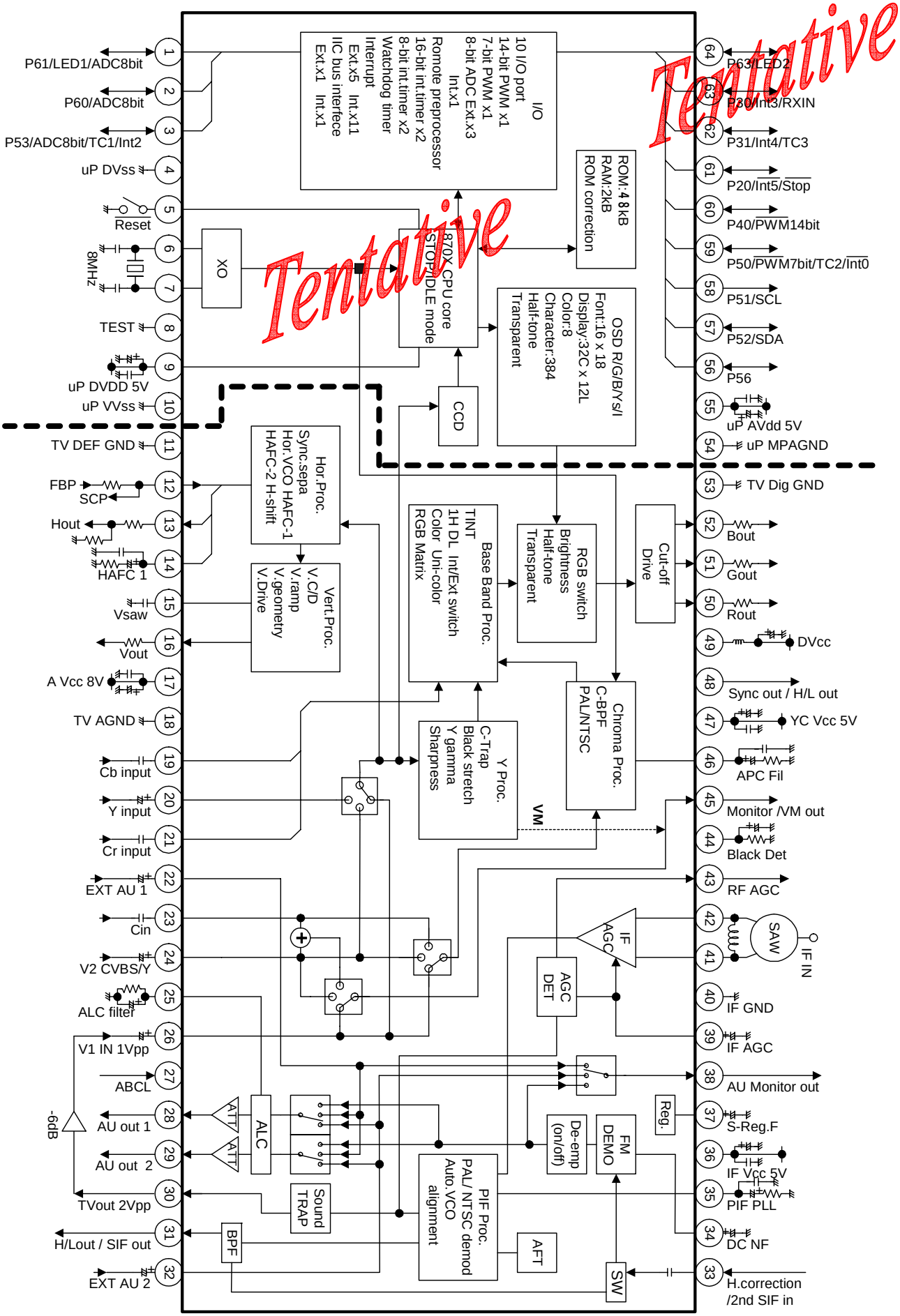
Sync.

- Integrated $f_H \times 640$ VCO
- DC coupled vertical ramp output (single)
- Sync output

AV Switch

- 2 for video
- 2 for audio(mono)
  or 1 for audio (Stereo, 2ch ATT), controlled by IIC bus
- ALC (Auto-Audio Level Control)

Block Diagram



Basic Structure

1. Internal Connections

Tentative

TMPA8873 has two pieces of IC chip in one package, using Multi-Chip-Package (MCP) technology. One is a micro controller (MCU) and the other one is a signal processor (SP) for a color TV. There are some internal connections between these two ICs for handling below signals.

	Signal Name	Direction	Description
1	SCL	M to S	Internal IIC bus SCL
2	SDA	Bi-direction	Internal IIC bus SDA
3	OSD R	M to S	OSD signal connection
4	OSD G	M to S	OSD signal connection
5	OSD B	M to S	OSD signal connection
6	OSD Y/BL	M to S	OSD display control
7	OSD I, CS OUT	M to S	OSD half-tone control/Test pattern signal
8	C-Video	S to M	Composite video signal from internal video switch, for CCD
9	C-Sync	S to M	Composite sync. signal from sync. Separator, for CCD
10	HD	S to M	Horizontal timing pulse regenerated from FBP, for OSD
11	VD	S to M	Vertical timing pulse from sync. Separator, for OSD
12	CLK	M to S	8 MHz clock
13	AV_{DD}	M to S	Reference voltage for C-Video interface
14	ADC	S to M	A/D converter monitoring RF-AGC, R-Y and B-Y

Functions of SP from MCU are controllable through the IIC bus of the internal connections.

2. Power Supply

TMPA8873 has some power supplies and GND pins. Power supplies related MCU must be applied at the first. Power supplies for H.V_{CC} and TV D.V_{CC} are the second with at least 100 ms delay after MCU power ON. The other power supplies are the last, which are recommended to be supplied from a regulator circuit using FBP.

3. Crystal Resonator

TMPA8873 requires only one crystal resonator, in stead that a conventional two-chip solution requires two resonators at least, one for MCU and the other one for SP. An oscillation clock with the crystal resonator of TMPA8873 is supplied for MCU operation, PIF VCO automatic alignment, alignment free AFT, chroma demodulation and horizontal oscillation. The oscillation frequency is very important so that those of functions work properly, so that designing the oscillation frequency accurately is required. The spec of crystal is recommended to be within

f_{osc}: 8 MHz +/–20 ppm

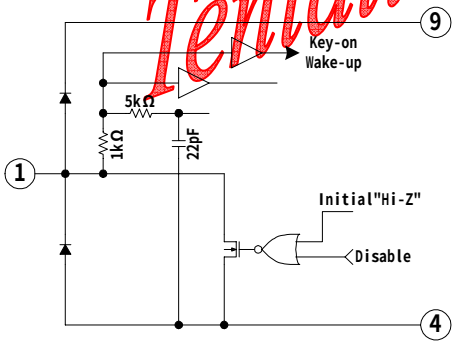
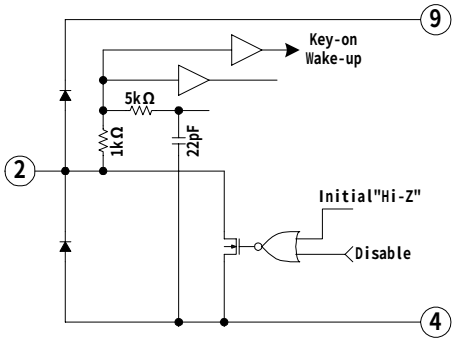
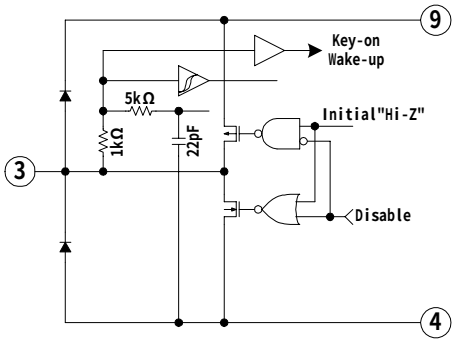
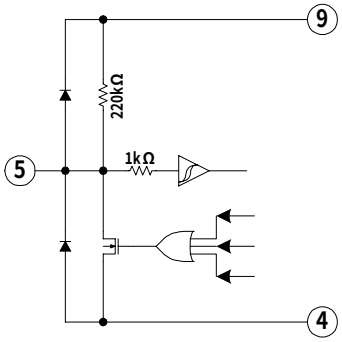
ftemp: 8 MHz +/–40 ppm (–20°C to +65°C)

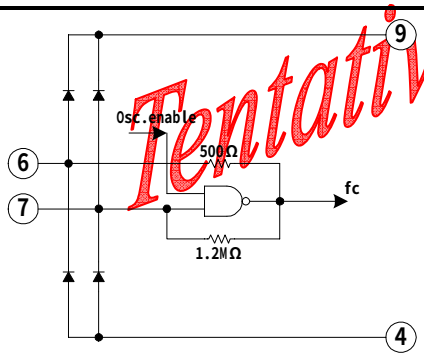
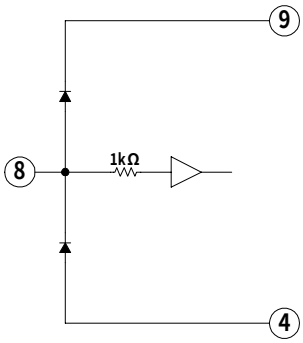
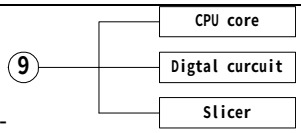
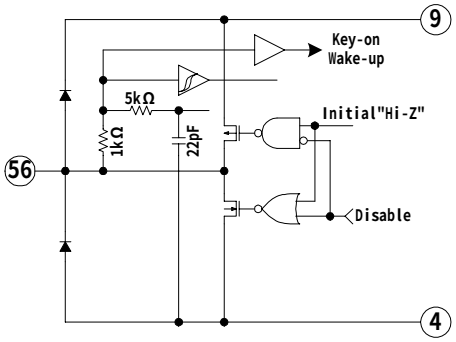
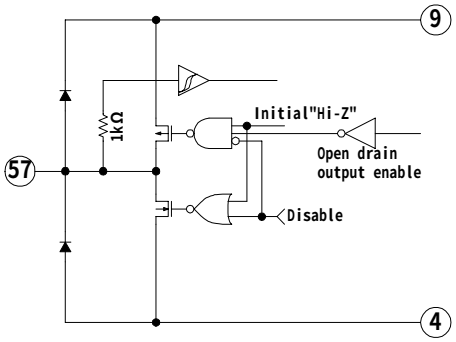
While RESET of MCU is active, the MCU function stops. Hardware and software initialization sequence including power supplies control is required, because status of any hardware after the RESET period is unknown especially horizontal oscillator which is a very basic timing generator of SP operation.

TERMINAL INTERFACE

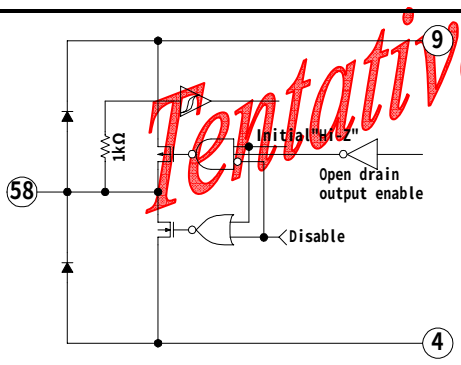
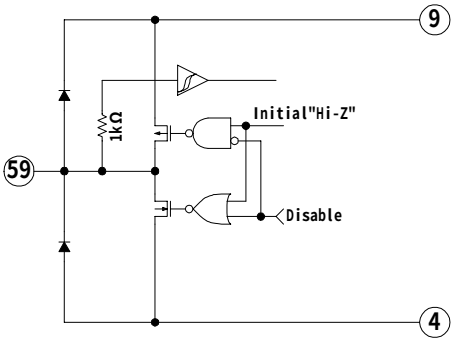
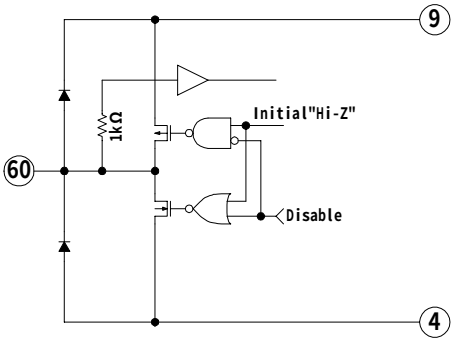
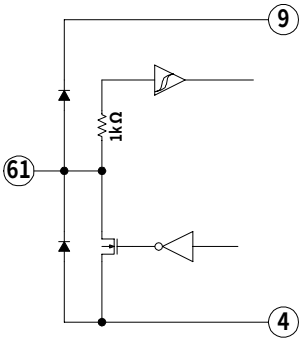
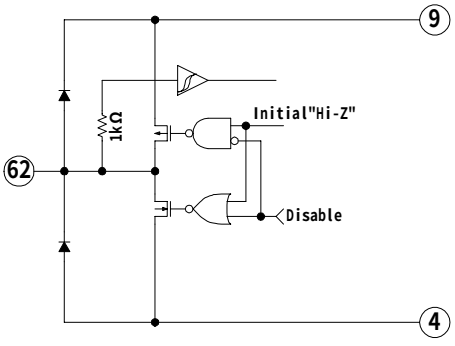
MCU BLOCK

Tentative

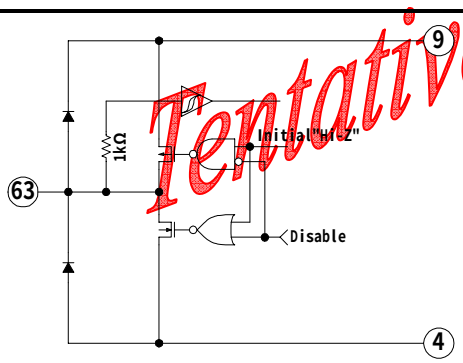
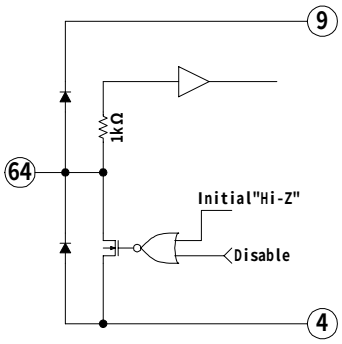
Pin No.	Pin Name	I/O	Function	Interface Circuit
1	P61 (/KWU5) (AIN5) (LED1)	I/O (Input) (Input) (Output)	Key on wake up input A/D converter analog input LED output	
2	P60 (/KWU4) (AIN4)	I/O (Input) (Input)	Key on wake up input A/D converter analog input	
3	P53 (/KWU0) (AIN0) (TC1) (INT2) (SCK1)	I/O (Input) (Input) (Input) (Input) (I/O)	Key on wake up input A/D converter analog input Timer/counter input External interrupt input SIO serial clock input / output	
4	up DVss	Power Supply	GND	—
5	Reset	I/O	Reset signal input or watchdog timer output Address trap reset output System clock reset output	

Pin No.	Pin Name	I/O	Function	Interface Circuit
6 7	Xout Xin	Output Input	X'tal connecting pins	
8	TEST	Input	Test pin for out-going test	
9	up DVdd	Power Supply	Vdd Supply 5V	
10	up VVss	Power Supply	GND for Slicer circuit	—
54	up AGND	Power Supply	GND for Oscillator circuit	—
55	up AVdd	Power Supply	Vdd for Oscillator circuit Supply 5V	—
56	P56	I/O		
57	P52 (SDA) (SO1)	I/O (I/O) (Output)	IIC bus serial data input / output SIO serial data output	

Tentative

Pin No.	Pin Name	I/O	Function	Interface Circuit
58	P51 (SCL) (SI1)	I/O (I/O) (Input)	IIC bus serial clock input / output SIO serial data input	
59	P50 (/PWM8) (TC2) (INT0)	I/O (Output) (Input) (Input)	7-bit D/A conversion (PWM) output Timer/Counter input External interrupt input	
60	P40 (/PWM0)	I/O (Output)	14/12-bit D/A conversion (PWM) output	
61	P20 (/INT5) (/STOP)	I/O (Input) (Input)	External interrupt input STOP mode release signal input	
62	P31 (INT4) (TC3)	I/O (Input) (Input)	External interrupt input Timer/Counter input	

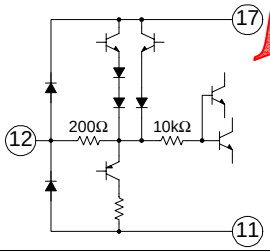
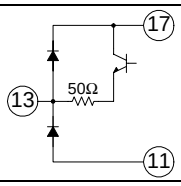
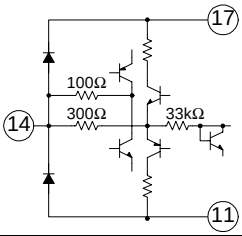
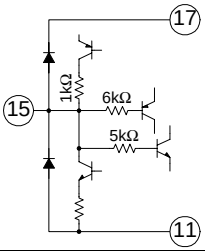
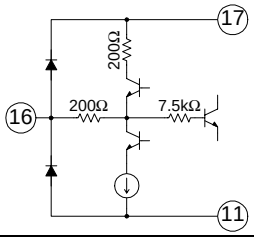
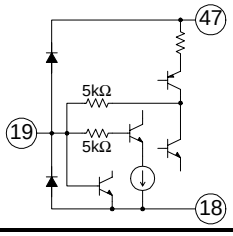
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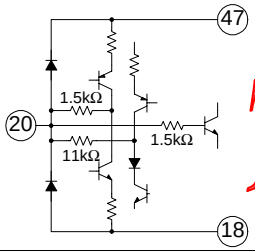
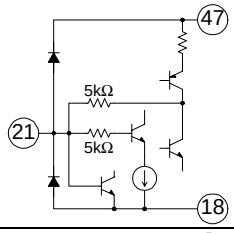
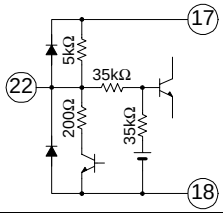
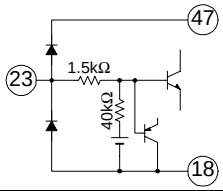
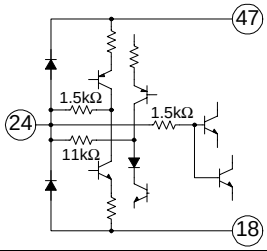
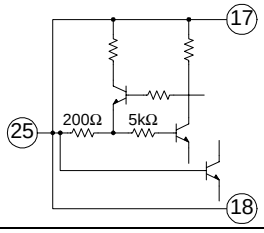
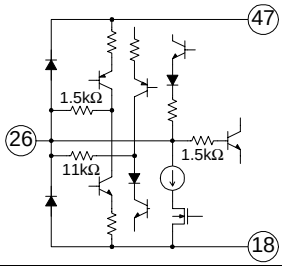
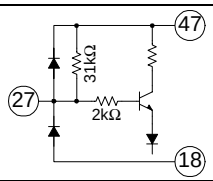
Pin No.	Pin Name	I/O	Function	Interface Circuit
63	P30 (INT3) (RXIN)	I/O (Input) (Input)	External interrupt input Remote control signal preprocessor input	
64	P63 (LED2)	I/O (Output)	LED output	

Tentative

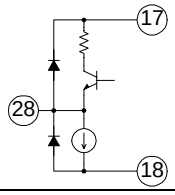
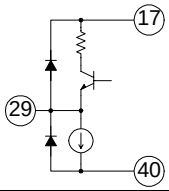
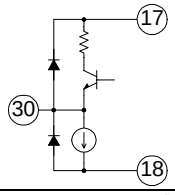
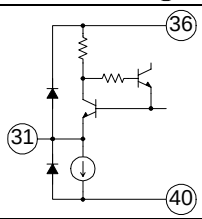
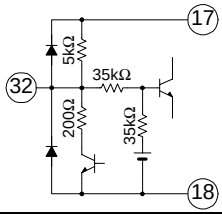
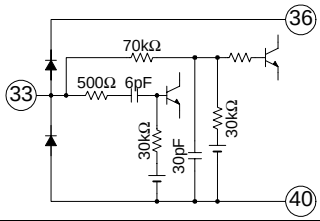
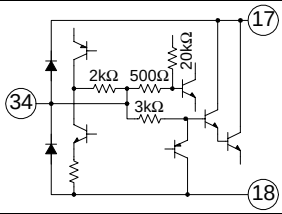
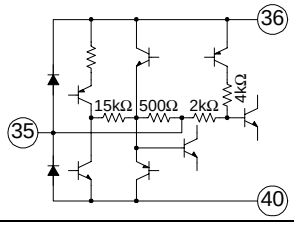
SIGNAL PROCESSOR BLOCK

Tentative

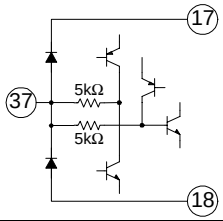
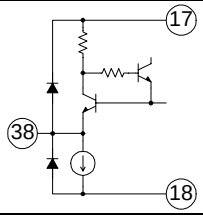
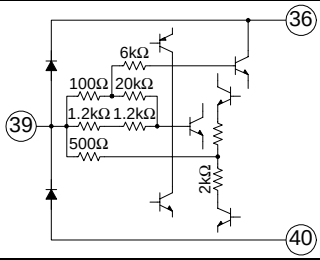
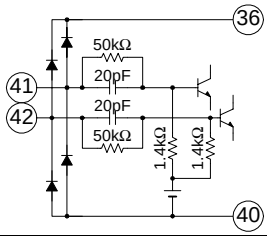
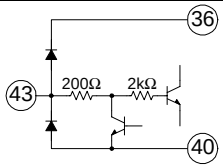
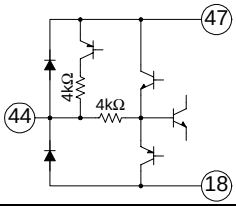
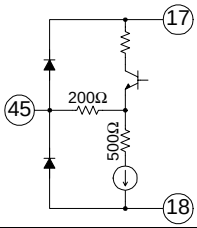
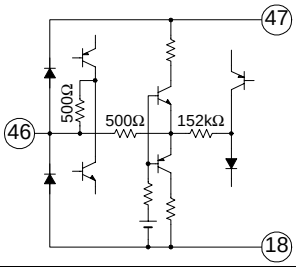
Pin No.	Pin Name	Function	Interface Circuit	I/O Signal
11	TV DEF AGND	GND terminal for TV DEF block.	—	—
12	FBP in	Input terminal for FBP.		
13	H out	Output terminal for Horizontal driving pulse.		
14	HAFC 1	Terminal to be connected capacitor for H AFC filter. This terminal voltage controls H VCO frequency.		
15	V saw	Terminal to be connected capacitor to generate V saw signal. V saw amplitude is kept constant by V AGC function.		
16	V out	Output terminal for Vertical driving pulse.		
17	AVcc 8V	Vcc terminal for DEF, RGB, Audio out and PIF out circuit. Supply 8V.	—	—
18	TV A GND	GND terminal for TV block.	—	—
19	Cb in	Input terminal for Cb signal.		

Pin No.	Pin Name	Function	Interface Circuit	I/O Signal
20	Y in	Input terminal for Y signal.		
21	Cr in	Input terminal for Cr signal.		
22	Ext Au1	Input terminal for Audio signal 1.		
23	C in	Input terminal for Chroma signal.		
24	V2 in	Input terminal for Video signal.		
25	ALC filter	Terminal to be connected capacitor for ALC (Audio Level Control).		
26	V1 in	Input terminal for Video signal. (Input level = 1 Vp-p)		
27	ABCL	Input terminal for ABL/ACL control.		

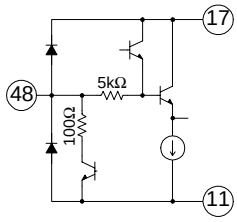
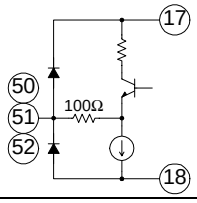
Tentative

Pin No.	Pin Name	Function	Interface Circuit	I/O Signal
28	Au out 1	Output terminal 1 for Audio signal.		
29	Au out 2	Output terminal 2 for Audio signal.		
30	TV out	Output terminal for detected PIF signal.		
31	1bit DAC /SIF out	Output terminal for 1bit DAC or detected SIF signal.		
32	Ext Au2 in	Input terminal for Audio signal 1.		
33	H correc / SIF in	Input terminal for H correction and 2nd SIF.		
34	DC NF	Terminal to be connected capacitor for DC Negative Feedback from SIF Det output.		
35	PIF PLL	Terminal to be connected with loop filter for PIF PLL. This terminal voltage is controlled PIF VCO frequency.		
36	IF Vcc 5V	Vcc terminal for IF circuit. Supply 5V.		—

Tentative

Pin No.	Pin Name	Function	Interface Circuit	I/O Signal
37	Reg Fil	Terminal to be connected capacitor for stabilizing internal bias.		
38	AUDIO Monitor out	Output terminal for External audio signal or TV audio signal selected by BUS (Audio SW).		
39	IF AGC	Terminal to be connected with IF AGC filter.		
40	IF GND	GND terminal for IF circuit.		—
41 42	IF in	Input terminals for IF signals. Pin41 and Pin42 are both input poles of differential amplifier.		
43	RF AGC	Output terminal for RF AGC control level.		
44	Black Det	Terminal to be connected with Black Det filter for black stretch.		
45	SVM / Monitor	Output terminal for monitor function. Also output terminal for SVM signal. Selectable through IIC bus		
46	APC filter	Terminal to be connected with APC filter for Chroma demodulation. This terminal voltage controls frequency of VCXO.		

Tentative

Pin No.	Pin Name	Function	Interface Circuit	I/O Signal
47	YC Vcc 5V	Vcc terminal for Y/C circuit. Supply 5V.	—	
48	Sync out	Output terminal for Sync pulse. A pull up resister is required because of its open collector output. (Pull up resister: minimum 4.7kohm)		
49	DVCC	Vcc terminal for Digital block. This terminal voltage is clipped about 3.3V by regulator circuit. Supply DVCC voltage from A VCC 8V(#17) voltage via 270Ω.	—	—
50	R out	Output terminal for R signal.		
51	G out	Output terminal for G signal.		
52	B out	Output terminal for B signal.		
53	TV DGND	GND terminal for digital block.	—	—

Tentative

Signal Processor Descriptions

1. Tank-Coil-Less PIF VCO

TMPA8873 adopts a tank-coil-less PIF VCO circuit, which has advantages of cost, performance of weak IF input and easy to design PCB layout. The PIF PLL system has self-alignment circuit, so that the micro controller needs only to order the PIF PLL system to start self-alignment through the IIC bus. The self-alignment finishes within 50 ms.

Tentative

2. Built-In Sound Band Pass Filter

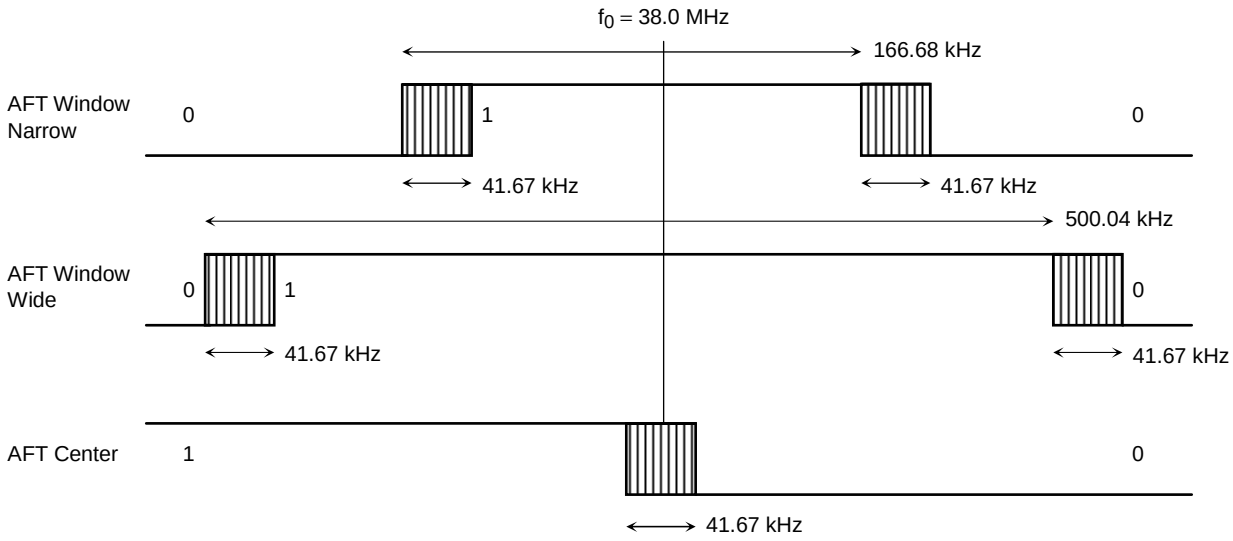
A sound band pass filter is integrated on the chip for multi frequency SIF systems. The 1st SIF demodulator multiplies PIF input signal and regenerated PIF carrier from VCO with 90° angle, and gets multi-frequency SIF signal as 6.5 MHz, 6.0 MHz, 5.5 MHz and 4.5 MHz according to the SIF system.

3. Built-In Sound Trap Filter

A sound trap filter is integrated on the chip for multi frequency SIF systems. The sound trap filter characteristics are changed by WRITE BUS register setting. It is better that the setting data is had for each SIF frequency.

4. AFT

A recent IF system adopts a digital AFT circuit. But analog DC voltage is used as interface between an IF system and a micro controller in the AFT control loop. TMPA8873 adopts a digital interface through IIC bus shown as below.



5. Non-Standard IF Signals

TMPA8873 prepares ways for non-standard IF inputs. The OVER MOD switch is available for over-modulated PIF signals in the condition of more than 87.5% modulation at 100 IRE, which is the maximum modulation Standard of PAL and NTSC. In addition, TMPA8873 has capability to modulate more than 400% over-modulated SIF signal without undesired voltage turning over also.

6. AV Switch

The audio switch has two inputs for an external audio, and one for internal demodulated audio signal. The two external audio inputs can use as audio stereo input. The switched audio signal goes into the audio attenuator, which has controllability of audio gain from 0dB to –80dB or less with near log curve characteristic.

The video switch has one input for an external CVBS or S-VHS signal, the other for the demodulated TV video signal and the last for an external YCbCr signal, mainly coming form a DVD player. The CIN terminal for the external S-VHS signal has capability to detect DC level of the input signal, and the micro controller can read the result as 'CIN DC' through the IIC bus. This function may prepare a way for automatic switching, when inserting S-VHS connection, by means of software control.

A monitor output is available with the selected video signal. In the case of selecting S-VHS input, Y and C signals are mixed for the monitor output. This output is useful for signal detecting by the TC3 counting of the micro controller through an external LPF circuit for strict signal detecting performance.

Tentative

7. Asymmetric Sharpness

External analog circuits are likely to generate 'over-shoot' signal. The asymmetric sharpness circuit is provided to compensate this undesired signal. It is possible to get more gain of pre-shoot than over-shoot by using the asymmetric sharpness, instead of that a conventional sharpness function generates both pre-shoot and over-shoot symmetrically.

8. Scan Velocity Modulation (SVM)

The SVM output is available for a large screen size TV. The SVM or the monitor output is selectable at pin 45 through the IIC bus. The SVM gain and timing is also selectable to match an external SVM drive circuit.

9. Chroma Demodulator

The PAL/NTSC chroma demodulator is integrated with the automatic color system detection. The 1 H-delay line is integrated on the chip for PAL chroma demodulation. The 1 H-delay line can acts as a chroma comb filter on NTSC chroma system.

10. Base Band Color System

TMPA8873 features a base band color system for a YCbCr inputs capability for a DVD and a SDTV signals. Those signals are demodulated out side of TMPA8873, so that color signals (Cb, Cr) has different color level, different demodulation angle and different relative amplitude from the color signals demodulated by the internal chroma demodulator of TMPA8873. The base band color system is required to have control functions of color saturation, TINT and relative amplitude, and TMPA8873 has all of these functions in it. Because of base band TINT function, TMPA8873 has capability to control PAL TINT, which is basically hard to control on a conventional signal processor IC. Of course the control software can inhibit the PAL TINT function.

11. Transparent OSD Interface

TMPA8873 provides a transparent OSD capability. A conventional OSD system provides a half-tone function for OSD interface, by reducing the gain of a main picture signal during high period of 'Ym' signal from the micro controller. TMPA8873 has one more control line as 'I' for OSD from the micro controller, which enables to put a color on the same area of half-tone, so that software can achieve a see-through color menu by using the transparent OSD.

12. Noise Level Detection

The Noise detector is integrated. The noise detection level is set by WRITE BUS register. The result can be read through the IIC bus. According to the result, the micro controller can adjust level of some controls in the signal processor. For example,

(1) When a noisy signal comes in, horizontal synchronization is influenced and the picture on the screen looks bad. Selecting less H-AFC gain makes the picture looks better.

(2) When a very noisy signal comes in, the vertical frequency detector sometimes makes miss-detection, and causes vertical jittering. Selecting the auto-50 Hz mode or auto-60 Hz mode, according to the vertical frequency information just before, may solves the vertical jittering.

13. Signal Detection Flags

There are some flags on the READ BUS registers. They indicate that a certain signal is detected at the moment. But reliability of a detection result is not so accurate if checking only one flag, so that confirming several flags, which means similar result by each other, at the same time is recommended.

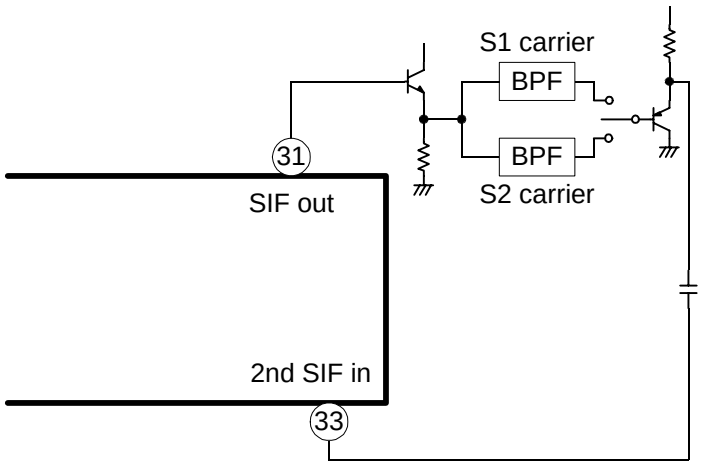
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14. Control the Signal Processor

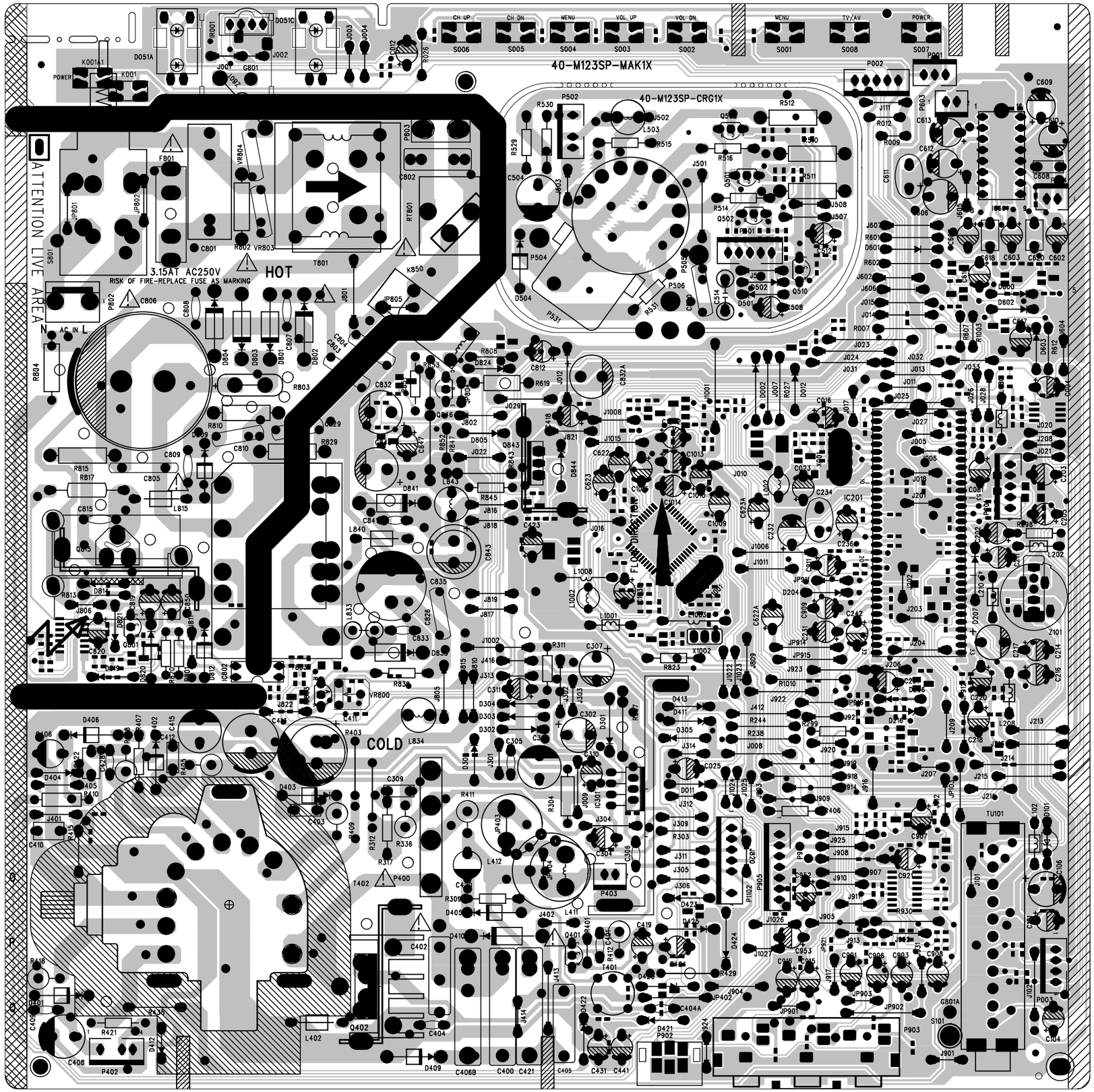
The signal processor is connected with the micro controller by means of internal wiring. All functions of the signal processor can be controlled through IIC bus, which is a part of the internal connections.

15. Thai mono-bilingual system

Thai mono-bilingual system requires two external sound BPFs(for S1/ S2 carriers) and SW.
Refer to following block diagram. Because two SIF frequencies are very near to each other.



6、 PCB Layout



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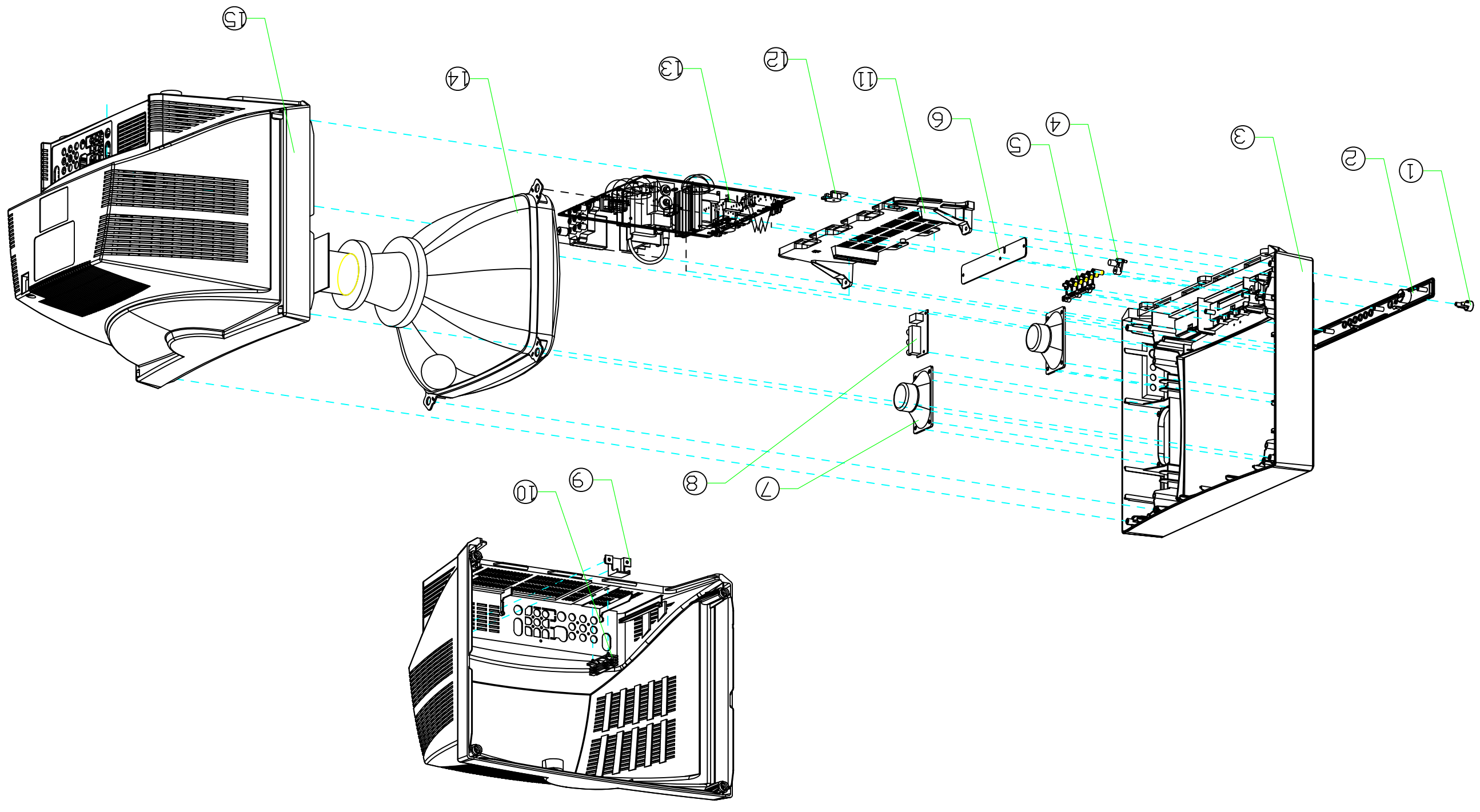
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2	DECORATING BOARD	55-450090-0HN	1	
3	14N23C	55-EN23C-0HN	1	
4	POWER LIGHT	56-450360-0HC	1	
5	FRONT BUTTON SUPPORT	56-B2116B-0HA	1	
6	FRONT BUTTON PCB	40-EN23GB-KEB	1	
7	SPEAKER	62-451150-0HN	1	
8	SIDE AV PCB	T8-EN23MH-SIY	1	
9	SUPPORT FOR HIGH-V UNIT	62-314340-0UN	1	
10	SUPPORT FOR MAIN PCB	62-345700-0UN	1	
11	STOCK	62-450080-0HN	1	
12	CLIP FOR POWER CORD	62-216340-0UN	1	
13	MAIN PCB	T8-140FLN-MSZ	1	
14	CRT	44-140FLN-IR2A	1	
15	REAR CABNIET	55-1475RC-0CN	1	

DRAW		MODEL NO.	14N23
CHECK			
SIGN			
APPROVE			

TTE Mechanical development

EXPLODE DRAWING

MEDIA NO.



REV NO.	NOTES	DATE	SIGNATURE

03-EN23SGP-B023		B - PAL M/N NTSC-M AV.ST/RCA-2/S.AV IN M	
ASS	PART NO.	SEPC	LOCATION
T8-HS36R3-M123	11-0BC337-0BX	TRANSISTOR (NPN) BC337-40	Q1501
T8-HS36R3-M123	13-C73C03-02B	IC SC73C0302	IC1501
T8-HS36R3-M123	14-IRE05B-XX0	IR EMITTING DIODE TSAL6200	D1501
T8-HS36R3-M123	18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	R1502
T8-HS36R3-M123	18-CB0229-JNX	RES. C.F. 2.2 OHM 1/6W +/-5%	R1501
T8-HS36R3-M123	25-HBB479-M1X	CAP. ELEC 4.7 UF 10V +/-20%	C1504
T8-HS36R3-M123	26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	C1501
T8-HS36R3-M123	26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	C1502
T8-HS36R3-M123	26-EBP104-ZFS	CAP. CER 0.1UF 50V +80%/-20%	C1503
T8-HS36R3-M123	40-U0CASR-RMB1XG	P.C.B. REMOTE HANDSET BD	
T8-HS36R3-M123	41-WJ0120-B00	WIREBAREJUMPER12MM	J1501
T8-HS36R3-M123	45-C0S455-KY1	CERAMIC RESONATOR 455KHZ	X1501
T8-HS36R3-M123	49-HS36R1-00X9A	RUBBER PAD KEYS	
T8-HS36R3-M123	55-HS36RB-1HA5F	LOWER CASE - REMOTE HANDSET	
T8-HS36R3-M123	55-HS36RD-0HA5F	BATT. DOOR - REMOTE HANDSET	
T8-HS36R3-M123	55-HS36RT-1HAGF	TV DEC AW UPPER CASE R=N	
T8-HS36R3-M123	58-HS36R3-1UI9C	INLAY REMOTE HANDSET	
T8-HS36R3-M123	67-X38064-0E2	BATTERY SPRING (+/-)	
T8-HS36R3-M123	67-X38065-0E2	BATTERY SPRING (+)	
T8-HS36R3-M123	67-X38066-0E2	BATTERY SPRING (-)	
T8-HS36R3-M123	74-007026-60C	POLYBAG (70MMX260MMX0.06MM)	
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D405
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D403
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D402
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D401
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D301
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D406
T8-0014SGP-MAY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D404
T8-0014SGP-MAY	10-1N4002-EBX	DIODE 1N4002 (RECTIFIER)	D425
T8-0014SGP-MAY	10-1N4002-EBX	DIODE 1N4002 (RECTIFIER)	D424
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D303
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D601
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D602
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D302
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D603
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D413
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D600
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D012
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D002
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D305
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D307
T8-0014SGP-MAY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D206
T8-0014SGP-MAY	10-79C33V-DBX	DIODE ZENER 33V 1/2W 5%	D101
T8-0014SGP-MAY	10-79C3V9-DBX	DIODE ZENER 3V9 1/2W 5%	D304
T8-0014SGP-MAY	10-79C3V9-DBX	DIODE ZENER 3V9 1/2W 5%	D411
T8-0014SGP-MAY	10-79C6V2-DBX	DIODE ZENER 6V2 1/2W 5%	D207
T8-0014SGP-MAY	10-HS5V1B-DBX	DIODE 500MW 5.1HSB	D216
T8-0014SGP-MAY	11-SC2235-YBX	TRANSISTOR 2SC2235Y	Q401
T8-0014SGP-MAY	18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	R009

T8-0014SGP-MAY	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R415
T8-0014SGP-MAY	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R007
T8-0014SGP-MAY	18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	R406
T8-0014SGP-MAY	18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	R012
T8-0014SGP-MAY	18-CB0121-JNX	RES. C.F. 120 OHM 1/6W +/-5%	R401
T8-0014SGP-MAY	18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	J921
T8-0014SGP-MAY	18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	R607
T8-0014SGP-MAY	18-CB0333-JNX	RES. C.F. 33K OHM 1/6W +/-5%	R612
T8-0014SGP-MAY	18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	R602
T8-0014SGP-MAY	18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	R601
T8-0014SGP-MAY	18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	R930
T8-0014SGP-MAY	18-CB0561-JNX	RES. C.F. 560 OHM 1/6W +/-5%	R238
T8-0014SGP-MAY	18-CB0569-JNX	RES.C.F 5.6 OHM 1/6W +/-5%	R317
T8-0014SGP-MAY	18-CD0100-JNX	RES. C.F. 10 OHM 1/4W +/-5%	R407
T8-0014SGP-MAY	18-CD0122-JNX	RES. C.F. 1.2K OHM 1/4W +/-5%	R311
T8-0014SGP-MAY	18-CD0820-JNX	RES. C.F. 82 OHM 1/4W +/-5%	R298
T8-0014SGP-MAY	18-CE0682-JNX	RES. C.F. 6.8K OHM 1/2W +/-5%	R410
T8-0014SGP-MAY	18-DB0243-FNX	RES. M.F. 24K OHM 1/6W +/-1%	R303
T8-0014SGP-MAY	18-DB0682-FNX	RES. M.F. 1/6W 6.8K OHM +/-1%	R244
T8-0014SGP-MAY	18-EE0109-JS2	RES. FUS. 1 OHM 1/2W +/-5%	R405
T8-0014SGP-MAY	18-EE0109-JS2	RES. FUS. 1 OHM 1/2W +/-5%	R409
T8-0014SGP-MAY	18-EE0109-JS2	RES. FUS. 1 OHM 1/2W +/-5%	R418
T8-0014SGP-MAY	18-FF0221-JSX	RES.M.O.F 1.0W 1.0W 220 OHM +/-5%	R412
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C901
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C907
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C016
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C952
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C908
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C953
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C023
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C004
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C025
T8-0014SGP-MAY	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C242
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C211
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C311
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C921
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C612
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C101
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C906
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C602
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C603
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C607
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C609
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C903
T8-0014SGP-MAY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C617
T8-0014SGP-MAY	25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	C613
T8-0014SGP-MAY	25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	C232
T8-0014SGP-MAY	25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	C610

T8-0014SGP-MAY	25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	C202
T8-0014SGP-MAY	25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	C081
T8-0014SGP-MAY	25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	C606
T8-0014SGP-MAY	25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	C307
T8-0014SGP-MAY	25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	C217
T8-0014SGP-MAY	25-BDB470-M1X	CAP. ELEC 47 UF 25V +/-20%	C419
T8-0014SGP-MAY	25-BDB471-M1X	CAP. ELEC 470 UF 25V +/-20%	C415
T8-0014SGP-MAY	25-BDB471-M1X	CAP. ELEC 470 UF 25V +/-20%	C308
T8-0014SGP-MAY	25-BEB101-M1X	CAP. ELEC 100 UF 35V +/-20%	C302
T8-0014SGP-MAY	25-BFB101-M1X	CAP. ELEC 100 UF 50V +/-20%	C106
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C915
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C203
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C616
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C909
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C911
T8-0014SGP-MAY	25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	C214
T8-0014SGP-MAY	25-BHB100-M1X	CAP. ELEC 10 UF 100V +/-20%	C406
T8-0014SGP-MAY	25-BHB100-M1X	CAP. ELEC 10 UF 100V +/-20%	C420
T8-0014SGP-MAY	25-MFB228-K1X	CAP.ELEC 0.22UF 50V +/-10%	C205
T8-0014SGP-MAY	25-MFB478-K1X	CAP.ELEC 50V 0.47UF +/-10%	C218
T8-0014SGP-MAY	25-MFB478-K1X	CAP.ELEC 50V 0.47UF +/-10%	C236
T8-0014SGP-MAY	25-RCB100-M1X	TCL25-RCB100-M1X= CAP.ELEC 10 UF 16V +/-	C220
T8-0014SGP-MAY	25-RCB100-M1X	TCL25-RCB100-M1X= CAP.ELEC 10 UF 16V +/-	C227
T8-0014SGP-MAY	25-RFB479-M1X	CAP.ELEC 4.7 UF 50V +/-20%	C216
T8-0014SGP-MAY	25-RFB479-M1X	CAP.ELEC 4.7 UF 50V +/-20%	C104
T8-0014SGP-MAY	25-RFB479-M1X	CAP.ELEC 4.7 UF 50V +/-20%	C310
T8-0014SGP-MAY	25-RFB479-M1X	CAP.ELEC 4.7 UF 50V +/-20%	C304
T8-0014SGP-MAY	26-AIC560-JZX	TCL26-AIC560-JZX= CAP. CER 56 PF 500V +/	C426
T8-0014SGP-MAY	27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	C305
T8-0014SGP-MAY	27-MBC223-J0X	CAP. M.P.E 0.022UF 63V +/-5%	C401
T8-0014SGP-MAY	27-MBC224-J0X	CAP. M.P.E 0.22UF 63V +/-5%	C620
T8-0014SGP-MAY	27-MBC224-J0X	CAP. M.P.E 0.22UF 63V +/-5%	C608
T8-0014SGP-MAY	27-MBC224-J0X	CAP. M.P.E 0.22UF 63V +/-5%	C611
T8-0014SGP-MAY	27-MBC224-J0X	CAP. M.P.E 0.22UF 63V +/-5%	C618
T8-0014SGP-MAY	27-MBC473-K0X	CAP. M.PE 47NF 63V +/-10% 13076040	C309
T8-0014SGP-MAY	27-MCC104-J0X	CPM 100N0F +5% 100.0V R=N	C410
T8-0014SGP-MAY	27-MCC562-J0X	CAP. M.P.E 0.0056UF 100V+/-20%	C422
T8-0014SGP-MAY	27-PBC222-J0X	CAP. P.E 0.0022UF 63V +/-5%	C306
T8-0014SGP-MAY	34-A220K0-1IX	COIL PL - 22UH +/-10% LGA0305-220K	L208
T8-0014SGP-MAY	34-A220K0-1IX	COIL PL - 22UH +/-10% LGA0305-220K	L080
T8-0014SGP-MAY	34-A330K0-1IX	COIL CHOKE 33UH +/-10%	L202
T8-0014SGP-MAY	34-A330K0-1IX	COIL CHOKE 33UH +/-10%	L102
T8-0014SGP-MAY	34-R100J2-0EX	COIL PL - 10 UH +/-5%	L002
T8-0014SGP-MAY	40-EV13SP-MAG1XG	TV PCB MA BD R=Y	
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J021

T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J203
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J208
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J301
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J303
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J312
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J924
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J206
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J911
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J020
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J018
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J903
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J207
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J202
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J604
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J416
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J314
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J313
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J403
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J901
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J101
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J201
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J017
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J006
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J913
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J005
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J920
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J311
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	R027
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J309
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J211
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J603
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J011
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J016
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J022
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J026
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	R299
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J902
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J029
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J401
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J916
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J912
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J402
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J606
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J907
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J909
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J027
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J305
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J028
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J602
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	JP912
T8-0014SGP-MAY	41-WJ0100-B00	WIREBAREJUMPER10MM	J601

T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	JP103
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J923
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J607
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J413
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J304
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J914
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J302
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J204
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J015
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J014
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J012
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J010
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J213
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J216
T8-0014SGP-MAY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J009
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J215
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J008
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J007
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J102
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J1002
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J412
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	J908
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	JP402
T8-0014SGP-MAY	41-WJ0150-B00	WIREBAREJUMPER15MM	L402
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J025
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J619
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J024
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J013
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J922
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J919
T8-0014SGP-MAY	41-WJ0175-B00	WIREBAREJUMPER17.5MM	J918
T8-0014SGP-MAY	41-WJ0200-B00	WIREBAREJUMPER20MM	J023
T8-0014SGP-MAY	41-WJ0200-B00	WIREBAREJUMPER20MM	J214
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR FBT
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR C421
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR C406B
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR Q402
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR L412
T8-0014SGP-MAY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR L411
T8-0014SGP-PWY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D812
T8-0014SGP-PWY	10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	D820
T8-0014SGP-PWY	10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER)	D804
T8-0014SGP-PWY	10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER)	D803
T8-0014SGP-PWY	10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER)	D802
T8-0014SGP-PWY	10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER)	D801
T8-0014SGP-PWY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D805
T8-0014SGP-PWY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D819

T8-0014SGP-PWY	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D814
T8-0014SGP-PWY	10-79C18V-DBX	DIODE ZENER 18V 1/2W 5%	D821
T8-0014SGP-PWY	10-79C7V5-DBX	TCL10-79C7V5-DBX= DIODE ZENER 7V5 1/2W 5	D844
T8-0014SGP-PWY	11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	Q801
T8-0014SGP-PWY	13-000TL4-31T	IC-REGSPECKT TL431ACLP R=N	IC803
T8-0014SGP-PWY	18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	R853
T8-0014SGP-PWY	18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	R847
T8-0014SGP-PWY	18-CD0102-JNX	RES. C.F. 1K OHM 1/4W +/-5%	R845
T8-0014SGP-PWY	18-CD0222-JNX	RES. C.F. 2.2K OHM 1/4W +/-5%	R817
T8-0014SGP-PWY	18-CD0479-JNX	RES. C.F. 4.7 OHM 1/4W +/-5%	R820
T8-0014SGP-PWY	18-CD0560-JNX	RES. C.F. 56 OHM 1/4W +/-5%	R801
T8-0014SGP-PWY	18-CE0479-JNX	RES. C.F. 4.7 OHM 1/2W +/-5%	R823
T8-0014SGP-PWY	18-CE0561-JNX	RES. C.F. 560 OHM 1/2W +/-5%	R851
T8-0014SGP-PWY	18-DE0823-FNX	RES. M.F. 82K OHM 1/2W +/-1%	R839
T8-0014SGP-PWY	18-KE0105-JN3	RES. H.VOLT. CC 1M OHM 1/2W +/-5%	R802
T8-0014SGP-PWY	18-KE0334-JNX	RES. VOLTAGE C.C 330K OHM 1/2W	R804
T8-0014SGP-PWY	25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	C423
T8-0014SGP-PWY	25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	C418
T8-0014SGP-PWY	25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	C832
T8-0014SGP-PWY	25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	C845
T8-0014SGP-PWY	25-BDB220-M1X	CAP. ELEC 22 UF 25V +/-20%	C819
T8-0014SGP-PWY	25-BDB220-M1X	CAP. ELEC 22 UF 25V +/-20%	C850
T8-0014SGP-PWY	25-BDB470-M1X	CAP. ELEC 47 UF 25V +/-20%	C820
T8-0014SGP-PWY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C847
T8-0014SGP-PWY	35-LB1005-0IX	FERR BEAD H75 (3.5X1X5)	L840
T8-0014SGP-PWY	35-LB1005-0IX	FERR BEAD H75 (3.5X1X5)	L815
T8-0014SGP-PWY	41-WJ0050-B00	TCL41-WJ0050-B00= WIRE BARE JUMPER 5MM R	J824
T8-0014SGP-PWY	41-WJ0050-B00	TCL41-WJ0050-B00= WIRE BARE JUMPER 5MM R	J823
T8-0014SGP-PWY	41-WJ0050-B00	TCL41-WJ0050-B00= WIRE BARE JUMPER 5MM R	JP804
T8-0014SGP-PWY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J806
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J816
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J822
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J810
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J815
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J809
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J819
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J820
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J802
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J818
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J821
T8-0014SGP-PWY	41-WJ0100-B00	WIREBAREJUMPER10MM	J812
T8-0014SGP-PWY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	R810
T8-0014SGP-PWY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J805
T8-0014SGP-PWY	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J811
T8-0014SGP-PWY	41-WJ0150-B00	WIREBAREJUMPER15MM	J801

T8-0014SGP-PWY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR T803(1,13,15)
T8-0014SGP-PWY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR RT801
T8-0014SGP-PWY	66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	FOR Q815
T8-0014SGP-PWY	66-343740-0B0	HOLLOW RIVET (2.3MMX4.0MMX3.5MM)	FOR P803
T8-0014SGP-PWY	66-343740-0B0	HOLLOW RIVET (2.3MMX4.0MMX3.5MM)	FOR C806
T8-0EN23GP-KE1	18-CB0124-JNX	RES. C.F. 120K OHM 1/6W +/-5%	R008
T8-0EN23GP-KE1	18-CB0152-JNX	RES. C.F. 1.5K OHM 1/6W +/-5%	R005
T8-0EN23GP-KE1	18-CB0182-JNX	RES. C.F. 1.8K OHM 1/6W +/-5%	R004
T8-0EN23GP-KE1	18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	R010
T8-0EN23GP-KE1	18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	R003
T8-0EN23GP-KE1	18-CB0432-JNX	RES. C.F. 4.3K OHM 1/6W +/-5%	R002
T8-0EN23GP-KE1	18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	R006
T8-0EN23GP-KE1	18-CB0682-JNX	RES. C.F. 6.8K OHM 1/6W +/-5%	R001
T8-0EN23GP-KE1	40-EN23SP-KEA1XG	TV PCB KE BD R=Y	
T8-0EN23GP-KE1	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J001
T8-0EN23GP-KE1	41-WJ0075-B00	WIREBAREJUMPER7.5MM	R007
T8-0EN23GP-KE1	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J003
T8-0EN23GP-KE1	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J002
T8-DE10SGP-CRN	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D501
T8-DE10SGP-CRN	10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	D502
T8-DE10SGP-CRN	11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	Q510
T8-DE10SGP-CRN	11-TC3207-0BX	TRANSISTOR KTC3207	Q502
T8-DE10SGP-CRN	11-TC3207-0BX	TRANSISTOR KTC3207	Q503
T8-DE10SGP-CRN	11-TC3207-0BX	TRANSISTOR KTC3207	Q501
T8-DE10SGP-CRN	18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	R501
T8-DE10SGP-CRN	18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	R504
T8-DE10SGP-CRN	18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	R507
T8-DE10SGP-CRN	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R509
T8-DE10SGP-CRN	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R506
T8-DE10SGP-CRN	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R503
T8-DE10SGP-CRN	18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	R522
T8-DE10SGP-CRN	18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	R524
T8-DE10SGP-CRN	18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	R505
T8-DE10SGP-CRN	18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	R508
T8-DE10SGP-CRN	18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	R502
T8-DE10SGP-CRN	18-CB0561-JNX	RES. C.F. 560 OHM 1/6W +/-5%	R523
T8-DE10SGP-CRN	18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	R527
T8-DE10SGP-CRN	18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	R525
T8-DE10SGP-CRN	18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	R526
T8-DE10SGP-CRN	18-CE0100-JNX	RES. C.F. 10 OHM 1/2W +/-10%	R530
T8-DE10SGP-CRN	18-CE0105-JNX	RES. C.F. 1M OHM 1/2W +/-5%	R529
T8-DE10SGP-CRN	18-CE0152-JNX	RES. C.F. 1.5K OHM 1/2W +/-5%	R531
T8-DE10SGP-CRN	18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	R516
T8-DE10SGP-CRN	18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	R515
T8-DE10SGP-CRN	18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	R514
T8-DE10SGP-CRN	25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	C512
T8-DE10SGP-CRN	25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	C508

T8-DE10SGP-CRN	26-EBP103-ZFS	CAP.CER 10NF 50V +80% -20%	C507
T8-DE10SGP-CRN	26-EBP471-JCS	CAP. CER 470 PF 50V +/-5%	C501
T8-DE10SGP-CRN	26-EBP471-JCS	CAP. CER 470 PF 50V +/-5%	C503
T8-DE10SGP-CRN	26-EBP471-JCS	CAP. CER 470 PF 50V +/-5%	C502
T8-DE10SGP-CRN	40-M123GF-CRF1XG	TV PCB CR BD R=Y	
T8-DE10SGP-CRN	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J509
T8-DE10SGP-CRN	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J507
T8-DE10SGP-CRN	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J501
T8-DE10SGP-CRN	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J505
T8-DE10SGP-CRN	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J502
T8-EN23SGP-0T4	18-CB0471-JNX	RES. C.F. 470 OHM 1/6W +/-5%	R433
T8-EN23SGP-0T4	18-CB0683-JNX	RES. C.F. 68K OHM 1/6W +/-5%	R026
T8-EN23SGP-0T4	25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	C622A
T8-EN23SGP-0T4	25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	C623A
T8-EN23SGP-0T4	41-WJ0075-B00	WIREBAREJUMPER7.5MM	JP911
T8-EN23SGP-0T4	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J111
T8-EN23SGP-0T4	41-WJ0075-B00	WIREBAREJUMPER7.5MM	JP901
T8-EN23SGP-0T4	41-WJ0080-B00	WIREBAREJUMPER8MM	JP801
T8-EN23SGP-0T4	41-WJ0080-B00	WIREBAREJUMPER8MM	JP802
T8-EN23SGP-0T4	41-WJ0100-B00	WIREBAREJUMPER10MM	D204
T8-EN23SGP-0T4	41-WJ0100-B00	WIREBAREJUMPER10MM	J1008
T8-EN23SGP-0T4	41-WJ0100-B00	WIREBAREJUMPER10MM	J910
T8-EN23SGP-0T4	41-WJ0100-B00	WIREBAREJUMPER10MM	JP916
T8-EN23SGP-0T4	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J905
T8-EN23SGP-0T4	41-WJ0125-B00	WIREBAREJUMPER12.5MM	J002
T8-EN23SGP-0T4	41-WJ0150-B00	WIREBAREJUMPER15MM	JP914
T8-EN23SGP-0T4	41-WJ0150-B00	WIREBAREJUMPER15MM	JP915
03-EN23SGP-B023	T8-HS36R3-M123	ASS'Y-REMOTE	
T8-0014SGP-MAY	62-227680-0UA	TV RAW SUPPORT CABLE CHASSIS -- 00 00 00	
T8-0014SGP-MAY	62-227680-1UA	TV RAW SUPPORT CABLE FBT -- 01 00 00 R=N	
T8-0EN23GP-FC2	36-DEG140-XX2	DEGAUSSING COIL 1080MM	
T8-0EN23GP-FC2	41-GND014-LX0	CRT GROUND BRAIDS	
T8-0EN23GP-FC2	42-50908D-XX0G	LS-TV 5W 8OHM R=Y	
T8-0EN23GP-FC2	44-140FLE-IR8A	14" CRT 37SX110Y22-DC05	
T8-0EN23GP-FC2	46-13902H-02XG	HS 2P 2468#22 360 S11-2Y/7MM	P601H FOR M. BD P607
T8-0EN23GP-FC2	46-20600H-04XG	HS 4P A/B 360/13 RBGW TJC1-4Y	P400 FOR D.Y COIL
T8-0EN23GP-FC2	46-27250H-02XG	HS 2P24 450/5 F/W TJC3-02H	P602H FOR M. BD P604
T8-0EN23GP-FC2	54-205140-000	SPACER CRT MOUNTING T=2MM	MTG CRT TO FC
T8-0EN23GP-FC2	54-314740-0X0	CRT FIBRE SHEET (22MMX22MMX0.8MM)	MTG CRT TO FC
T8-0EN23GP-FC2	55-450090-0HN9L	PAI FRONTPANEL 14N23 A1527&A6819 9L 00	
T8-0EN23GP-FC2	55-EN23FC-1CN9U	DEC FRONTPANEL -- A6819&A1527 00 9A 00	
T8-0EN23GP-FC2	56-B211FB-0HA6M	TV PAI KEY CLUSTER NH21 BK 00 6M 00 R=N	

T8-0EN23GP-FC2	56-DA41PK-1HA6M	TV PAI KEY 14N23 A1527 R=N	
T8-0EN23GP-FC2	56-EN23LE-0HC5Z	LENS	
T8-0EN23GP-FC2	57-10654X-00F	TWIST TIE NY66	
T8-0EN23GP-FC2	58-D106SI-3UI8E	TV PRI OVERLAY 29E23 黑在银色 877C上 R=N	
T8-0EN23GP-FC2	59-130460-00X	RUBBER PAD (25MMX7MM)	MTG F.CAB FOOTING
T8-0EN23GP-FC2	62-216340-0UN	TCL62-216340-0UN= BLOCK R=N	
T8-0EN23GP-FC2	62-450080-0HN	SALVER	
T8-0EN23GP-FC2	63-B30100-AB4G	SCREW-ST 3MM 10MM JIS B 1122 53 0 0 R=Y	MTG FC&FC PCB
T8-0EN23GP-FC2	63-B40100-AB4G	SCREW-ST 4MM 10MM 53 R=Y	MTG FC-STOCK
T8-0EN23GP-FC2	63-B40200-AB4G	SCREW-ST 4MM 20MM ISO R=Y	MTG FC*STOCK
T8-0EN23GP-FC2	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG FC&SPK
T8-0EN23GP-FC2	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG FC&PLATE
T8-0EN23GP-FC2	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG FC&LENS
T8-0EN23GP-FC2	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG FC*SIDE AV
T8-0EN23GP-FC2	63-W30180-AB4G	S/T SCREW W3X18 AB	MTG FC&FB
T8-0EN23GP-FC2	63-Z50300-AB4G	S/T SCREW Z 5 X 30 AB	MTG FC&CRT
T8-0EN23GP-FC2	67-L45918-0A09A	DEC INLET -- SILVER 01 00 00 R=N	
T8-0EN23GP-FC2	67-X12668-0E0	SPRING CRT 6MMX40MMX0.5MM	
T8-0EN23GP-FC2	67-X24283-0E0	SPING POWER KNOB	
T8-0EN23GP-PA2	36-141390-000	CONVERTER 300/75 OHM(FOR NTSC)	
T8-0EN23GP-PA2	47-137000-00X	TCL47-137000-00X= TWO ROD ANTENNA 62CM T	
T8-0EN23GP-PA2	49-382380-BAT	BATTERY 7# (R03P AAA SUM-4)	
T8-0EN23GP-PA2	71-ECD800-041A3	TV PRI LABEL LABEL OF SERIAL NO. WHITE&B	ECD800041A-0001起
T8-0EN23GP-PA2	71-LQBOLI-BAR9B	TV PRI LABEL LABEL OF BARCODE R=N	
T8-0EN23GP-PA2	72-EN23GP-X239H	TV IB INSTRUCTION BOOK TCL CHS R=Y	
T8-0EN23GP-PA2	74-022032-6WE1A	DEC BAG PE 220X320X0.06MM -- 00 00 R=N	
T8-0EN23GP-PA2	74-081081-80H1A	POLYBAG	
T8-0EN23GP-PA2	75-450980-EC0	POLYFOAM	
T8-0EN23GP-PA2	75-450990-EC0	POLYFOAM	
T8-0EN23GP-PA2	75-451000-EC0	POLYFOAM	
T8-0EN23GP-PA2	75-451010-EC0	POLYFOAM	
T8-0EN23GP-PA2	76-451020-0AT8L	TV DEC CARTON-BOX -- 00 8G 00 R=Y	
T8-0EN23GP-RCY	55-1475RC-5CN5F	TV DEC BACKCOVER 1475 -- 02 01 00 R=N	
T8-0EN23GP-RCY	58-2106RI-XUI9D	TV PRI OVERLAY REAR AV BLACK&WHITE 00 00	
T8-0EN23GP-RCY	58-EN23MP-JKC9E	TV DEC OVERLAY -- WHITE 01 00 00 R=N	
T8-0EN23GP-RCY	62-314340-0UN	TV RAW SPACER FBT BK 00 00 R=N	
T8-0EN23GP-RCY	62-345700-0UN	TV RAW GUIDE CHASSIS BK 02 00 00 R=Y	

T8-0EN23GP-RCY	63-B40200-AB3G	SCREW-ST 4MM 20MM JIS B 1122 12 R=Y	MTG FC&RC
T8-0EN23GP-RCY	63-F30100-BT3G	SCREW-ST 3MM 10MM ISO 65 0 0 R=Y	MTG RCA JACK & REAR CAB.
T8-0EN23GP-RCY	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG REAR TRACKING
T8-0EN23GP-RCY	63-W30100-AB4G	S/T SCREW W 3 X 10 AB	MTG SUPPORTER BKT & R.CAB.
T8-EN23SGP-0T4	51-DC0180-0CN04G	POWER CORD TCL-CB-192-A00	
T8-0014SGP-MAY	09-38B3V9-DTX	SMD. DIODE BZX384B3V9	D001
T8-0014SGP-MAY	09-55C8V2-DTX	SMD.DIODE BZV55-C8V2	D217
T8-0014SGP-MAY	09-55C8V2-DTX	SMD.DIODE BZV55-C8V2	D218
T8-0014SGP-MAY	09-55C8V2-DTX	SMD.DIODE BZV55-C8V2	D408
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q907
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q605
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q602
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q208
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q601
T8-0014SGP-MAY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q006
T8-0014SGP-MAY	12-BC857A-0BX	SMD TRANSISTOR BC857A (PNP)	Q207
T8-0014SGP-MAY	12-BC857A-0BX	SMD TRANSISTOR BC857A (PNP)	Q210
T8-0014SGP-MAY	12-BC857A-0BX	SMD TRANSISTOR BC857A (PNP)	Q003
T8-0014SGP-MAY	12-BC857A-0BX	SMD TRANSISTOR BC857A (PNP)	Q604
T8-0014SGP-MAY	12-BC857A-0BX	SMD TRANSISTOR BC857A (PNP)	Q603
T8-0014SGP-MAY	13-00M24C-08B	IC EEPROM 8K M24C08(WRITE)	IC001
T8-0014SGP-MAY	13-EF4053-BTB	IC HEF4053BT(D)	IC901
T8-0014SGP-MAY	13-LD1117-50B	IC-REGPOSFXD LD1117S50C NORMAL R=Y	IC002
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	JP401
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	R227
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	J324
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	J019
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	J906
T8-0014SGP-MAY	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	R917
T8-0014SGP-MAY	19-AB0100-JTX	RES SMD 10 OHM 1/10W +/-5%	R231
T8-0014SGP-MAY	19-AB0100-JTX	RES SMD 10 OHM 1/10W +/-5%	R005
T8-0014SGP-MAY	19-AB0100-JTX	RES SMD 10 OHM 1/10W +/-5%	R001
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R047
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R103
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R604
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R102
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R208
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R249
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R207
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R603
T8-0014SGP-MAY	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R028
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R606
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R609
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R922
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R920
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R902

T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R953
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R954
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R013
T8-0014SGP-MAY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R901
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R052
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R315
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R1018
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R051
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R010
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R912
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R008
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R006
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R030
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R011
T8-0014SGP-MAY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R913
T8-0014SGP-MAY	19-AB0104-JTX	SMD. RES 100K OHM 1/10W 0603	R031
T8-0014SGP-MAY	19-AB0104-JTX	SMD. RES 100K OHM 1/10W 0603	R232
T8-0014SGP-MAY	19-AB0105-JTX	RES SMD 1M OHM 1/10W 0603	R221
T8-0014SGP-MAY	19-AB0152-JTX	SMD. RES 1.5K OHM 1/10W +/-5% 0603	R218
T8-0014SGP-MAY	19-AB0152-JTX	SMD. RES 1.5K OHM 1/10W +/-5% 0603	R222
T8-0014SGP-MAY	19-AB0154-JTX	SMD. RES 150K 1/10W +/-5% 0603	R245
T8-0014SGP-MAY	19-AB0183-JTX	SMD. RES 18K OHM 1/10W +/-5% 0603	R302
T8-0014SGP-MAY	19-AB0221-JTX	RES SMD 220 OHM 1/10W 0603	R201
T8-0014SGP-MAY	19-AB0221-JTX	RES SMD 220 OHM 1/10W 0603	R202
T8-0014SGP-MAY	19-AB0221-JTX	RES SMD 220 OHM 1/10W 0603	R203
T8-0014SGP-MAY	19-AB0221-JTX	RES SMD 220 OHM 1/10W 0603	R228
T8-0014SGP-MAY	19-AB0222-JTX	RES SMD 2.2K OHM 1/10W 0603	R015
T8-0014SGP-MAY	19-AB0223-JTX	SMD. RES 22K OHM 1/10W +/-5% 0603	R215
T8-0014SGP-MAY	19-AB0224-JTX	SMD RES 220K OHM 1/10W 0603	R206
T8-0014SGP-MAY	19-AB0271-JTX	SMD. RES 270 OHM 1/10W +/-5% 0603	R217
T8-0014SGP-MAY	19-AB0272-JTX	RES SMD 2.7K OHM 1/10W 0603	R610
T8-0014SGP-MAY	19-AB0272-JTX	RES SMD 2.7K OHM 1/10W 0603	R608
T8-0014SGP-MAY	19-AB0273-JTX	SMD. RES 27K OHM 1/10W +/-5%	R216
T8-0014SGP-MAY	19-AB0332-JTX	SMD RES 3.3K OHM 1/10W 0603	R616
T8-0014SGP-MAY	19-AB0332-JTX	SMD RES 3.3K OHM 1/10W 0603	R209
T8-0014SGP-MAY	19-AB0332-JTX	SMD RES 3.3K OHM 1/10W 0603	R617
T8-0014SGP-MAY	19-AB0333-JTX	RES. SMD 33K OHM 1/10W 0603	R205
T8-0014SGP-MAY	19-AB0470-JTX	RES SMD 47 OHM 1/10W +/-5%0603	R002
T8-0014SGP-MAY	19-AB0471-JTX	SMD. RES 470 OHM 1/10W +/-5%	R924
T8-0014SGP-MAY	19-AB0472-JTX	RES SMD 4.7K OHM 1/10W 0603	R029
T8-0014SGP-MAY	19-AB0472-JTX	RES SMD 4.7K OHM 1/10W 0603	R004
T8-0014SGP-MAY	19-AB0472-JTX	RES SMD 4.7K OHM 1/10W 0603	R003
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R937
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R936
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R932
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R931

T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R928
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R927
T8-0014SGP-MAY	19-AB0473-JTX	SMD. RES 47K OHM 1/10W 0603	R926
T8-0014SGP-MAY	19-AB0510-JTX	RES SMD 51 OHM 1/10W 0603	R923
T8-0014SGP-MAY	19-AB0512-JTX	RES. SMD 5.1K OHM 1/10W J 0603	R306
T8-0014SGP-MAY	19-AB0820-JTX	SMD. RES 82 OHM 1/10W +/-5% 0603	R929
T8-0014SGP-MAY	19-AB0820-JTX	SMD. RES 82 OHM 1/10W +/-5% 0603	R903
T8-0014SGP-MAY	19-AB0822-JTX	SMD. RES 8.2K OHM 1/10W +/-5% 0603	R237
T8-0014SGP-MAY	28-AB0101-JCX	SMD. CAP 100 PF 50VDC +/-5%	C002
T8-0014SGP-MAY	28-AB0101-JCX	SMD. CAP 100 PF 50VDC +/-5%	C103
T8-0014SGP-MAY	28-AB0101-JCX	SMD. CAP 100 PF 50VDC +/-5%	C001
T8-0014SGP-MAY	28-AB0101-JCX	SMD. CAP 100 PF 50VDC +/-5%	C107
T8-0014SGP-MAY	28-AB0102-KBX	SMD. CAP 1000 PF 50V +/-10% B	C219
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C224
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C105
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C201
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C212
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C020
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C024
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C082
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C102
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C221
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C917
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C239
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C233
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C228
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C019
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C017
T8-0014SGP-MAY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C005
T8-0014SGP-MAY	28-AB0104-ZFX	CAP. SMD 0.1UF 50V +80%~-20% F	C285
T8-0014SGP-MAY	28-AB0104-ZFX	CAP. SMD 0.1UF 50V +80%~-20% F	C451
T8-0014SGP-MAY	28-AB0222-KBX	CAP.SMD 2200PF 50V +/-10% 0603	C407
T8-0014SGP-MAY	28-AB0222-KBX	CAP.SMD 2200PF 50V +/-10% 0603	C213
T8-0014SGP-MAY	28-AB0222-KBX	CAP.SMD 2200PF 50V +/-10% 0603	C014
T8-0014SGP-MAY	28-AB0224-ZFX	CAP.SMD 0.22UF 50V +80-20%0603	C614
T8-0014SGP-MAY	28-AB0270-JCX	SMD. CAP 27 PF 50V +/-5% 0603	C011
T8-0014SGP-MAY	28-AB0300-JCX	SMD CAP. 30 PF 50V +/-5% 0603	C021
T8-0014SGP-MAY	28-AB0300-JCX	SMD CAP. 30 PF 50V +/-5% 0603	C022
T8-0014SGP-MAY	28-AB0472-KBX	CAP.SMD 4700PF 50V +/-10% 0603	C621
T8-0014SGP-MAY	28-AB0472-KBX	CAP.SMD 4700PF 50V +/-10% 0603	C619
T8-0014SGP-MAY	28-AB0821-JCX	CAP.SMD 820PF 50V +/-5% 0603	C204
T8-0014SGP-MAY	28-AB0822-KBX	SDM. CAP 8200 PF 50V +/-10% 0603	C235
T8-0014SGP-PWY	09-BAS316-ATX	SMD.DIODE BAS316 115	D840
T8-0014SGP-PWY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q841
T8-0014SGP-PWY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q847
T8-0014SGP-PWY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q844
T8-0014SGP-PWY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q845
T8-0014SGP-PWY	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q802
T8-0014SGP-PWY	13-LD1117-50B	IC-REGPOSFXD LD1117S50C NORMAL R=Y	IC402

T8-0014SGP-PWY	13-TEA150-6TB	IC TEA1506T/N1 118	IC801
T8-0014SGP-PWY	19-AB0100-JTX	RES SMD 10 OHM 1/10W +/-5%	R814
T8-0014SGP-PWY	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R844
T8-0014SGP-PWY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R841
T8-0014SGP-PWY	19-AB0103-JTX	RES SMD 10K OHM 1/10W 0603	R825
T8-0014SGP-PWY	19-AB0122-JTX	SMD. RES 1.2K OHM 1/10 J 0603	R811
T8-0014SGP-PWY	19-AB0202-FTX	SMD. RES 2K OHM 1/10W +/-1% 0603	R838
T8-0014SGP-PWY	19-AB0222-JTX	RES SMD 2.2K OHM 1/10W 0603	R824C
T8-0014SGP-PWY	19-AB0222-JTX	RES SMD 2.2K OHM 1/10W 0603	R848
T8-0014SGP-PWY	19-AB0223-JTX	SMD. RES 22K OHM 1/10W +/-5% 0603	R831
T8-0014SGP-PWY	19-AB0223-JTX	SMD. RES 22K OHM 1/10W +/-5% 0603	R846
T8-0014SGP-PWY	19-AB0223-JTX	SMD. RES 22K OHM 1/10W +/-5% 0603	R832
T8-0014SGP-PWY	19-AB0272-JTX	RES SMD 2.7K OHM 1/10W 0603	R835
T8-0014SGP-PWY	19-AB0274-JTX	SMD. RES 270K OHM 1/10W +/-5% 0603	R819
T8-0014SGP-PWY	19-AB0332-JTX	SMD RES 3.3K OHM 1/10W 0603	R812
T8-0014SGP-PWY	19-AB0333-JTX	RES. SMD 33K OHM 1/10W 0603	R837
T8-0014SGP-PWY	19-AB0333-JTX	RES. SMD 33K OHM 1/10W 0603	R818
T8-0014SGP-PWY	19-AB0394-JTX	SMD. RES 390K OHM 1/10W +/-5%	R822
T8-0014SGP-PWY	19-AB0470-JTX	RES SMD 47 OHM 1/10W +/-5%0603	R824B
T8-0014SGP-PWY	19-AB0471-JTX	SMD. RES 470 OHM 1/10W +/-5%	R821
T8-0014SGP-PWY	19-AB0472-JTX	RES SMD 4.7K OHM 1/10W 0603	R836
T8-0014SGP-PWY	19-AB0683-JTX	RES SMD 68K OHM 1/10W 0603	R826
T8-0014SGP-PWY	28-AB0102-KBX	SMD. CAP 1000 PF 50V +/-10% B	C839
T8-0014SGP-PWY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C842
T8-0014SGP-PWY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C425
T8-0014SGP-PWY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C831
T8-0014SGP-PWY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C844
T8-0014SGP-PWY	28-AB0103-KBX	SMD. CAP 0.01 UF 50V +/-10% 0603	C417
T8-0014SGP-PWY	28-AB0104-KBX	SMD. CAP 50VDC 0.1UF +/-10% 06	C837
T8-0014SGP-PWY	28-AB0104-KBX	SMD. CAP 50VDC 0.1UF +/-10% 06	C814
T8-0014SGP-PWY	28-AB0221-JCX	CAP.SMD 220PF 50V C 0603 +/-5%	C821
T8-0014SGP-PWY	28-AB0224-ZFX	CAP.SMD 0.22UF 50V +80-20%0603	C818
T8-0014SGP-PWY	28-AB0471-KBX	SMD.CAP. 470PF 50V +/-10%	C816
T8-0014SGP-PWY	28-AB0471-KBX	SMD.CAP. 470PF 50V +/-10%	C813
T8-0014SGP-PWY	28-AB0473-KBX	SMD CAP 0.047UF 50V +/-10%0603	C811
T8-140FSN-MCH3GP2	19-AB0153-JTX	RES SMD 15K OHM 1/10W 0603	R414
T8-140FSN-MCH3GP2	19-AB0393-JTX	SMD. RES 39K OHM 1/10W +/-5%	R842
T8-EN23SGP-0T4	12-BC847A-0BX	SMD TRANSISTOR BC847A (NPN)	Q1007
T8-EN23SGP-0T4	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	J1014
T8-EN23SGP-0T4	19-AB0000-JTX	RES SMD 0 OHM 1/10W +/-5% 0603	J1013
T8-EN23SGP-0T4	19-AB0101-JTX	RES SMD 100 OHM 1/10W 0603	R436
T8-EN23SGP-0T4	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R1008
T8-EN23SGP-0T4	19-AB0102-JTX	RES SMD 1K OHM 1/10W 0603	R1005
T8-EN23SGP-0T4	28-AB0102-KBX	SMD. CAP 1000 PF 50V +/-10% B	C1046

03-EN23SGP-B023	V8-TSM123-06E06	SOFTWARE CODE	FOR IC001
T8-0014SGP-MAY	11-DD5023-0CX	TRANSISTOR 3DD5023	Q402
T8-0014SGP-MAY	13-TDA486-4AS	IC TDA4864AJ	IC301
T8-0014SGP-MAY	13-TEA202-5BP	IC TEA2025B2X2W	IC601
T8-0014SGP-MAY	18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	C404
T8-0014SGP-MAY	18-EF0478-JGX	RES. FUS. 0.47 OHM 1W +/-5%	R403
T8-0014SGP-MAY	18-EG0109-JHX	RES. FUS. 1 OHM 2W +/-5%	R421
T8-0014SGP-MAY	18-FF0102-JSX	RMOF 1W +-5% 1KΩ	R408
T8-0014SGP-MAY	18-FF0103-JGX	RES. M.O. 10K OHM 1W +/-5%	R309
T8-0014SGP-MAY	18-FF0123-JGX	RES. M.O. 12K OHM 1W +/-5%	R413
T8-0014SGP-MAY	18-FF0220-JGX	RES. M.O. 22 OHM 1W +/-5%	R429
T8-0014SGP-MAY	18-FF0391-JSX	MOF RESISTORS 1W 390Ω +/-5%	R336
T8-0014SGP-MAY	18-FF0569-JGX	RES. M.O.F 5.6 OHM 1W +/-5%	R304
T8-0014SGP-MAY	18-FG0221-JHX	RES. M.O. 220 OHM 2W +/-5%	R307
T8-0014SGP-MAY	18-FG0222-JAX	RES. M.O. 2.2K OHM 2W +/-5%	R411
T8-0014SGP-MAY	18-RF0159-JGX	RES. WIRE ROUND 1.5 OHM 1W +/-5%	R312
T8-0014SGP-MAY	25-BDA102-M1X	CAP. ELEC 1000 UF 25V +/-20%	C413
T8-0014SGP-MAY	25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	C916
T8-0014SGP-MAY	25-BLA100-M1X	CAP. ELEC 10 UF 250V +/-20%	C408
T8-0014SGP-MAY	25-PJG101-M1X	CAP.CELE 100UF/160V/+/-20%	C411
T8-0014SGP-MAY	25-RCB100-M1X	TCL25-RCB100-M1X= CAP.ELEC 10 UF 16V +/-	C231
T8-0014SGP-MAY	26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	C403
T8-0014SGP-MAY	26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	C409
T8-0014SGP-MAY	26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	C412
T8-0014SGP-MAY	26-AMM471-JZX	CAP.CER 470PF 2KV +/-5%	C402
T8-0014SGP-MAY	27-AGQ434-JSX	CAP. M.PP 0.43UF 250V +/-5%	C421
T8-0014SGP-MAY	27-ALR113-J0X	CAP. M.PP 0.011 UF 1.6KV +/-5%	C406B
T8-0014SGP-MAY	27-LCA104-J0X	CAP. P.E. 0.1UF 100V +/-5%	C234
T8-0014SGP-MAY	36-HDR029-XX0	TRANSFORMER HOR. DRIVE BCT-1012A	T401
T8-0014SGP-MAY	36-LIN500-XX1	COIL LINEARITY 50 UH	L412
T8-0014SGP-MAY	41-WJ0075-B00	WIREBAREJUMPER7.5MM	J411
T8-0014SGP-MAY	45-0SC8M0-0Y0B	CRYSTAL 8.0MHZ CCL=30PF	X001
T8-0014SGP-MAY	45-SAWF18-590	SAW FILTER F1859	Z101
T8-0014SGP-MAY	46-12866W-02XG	PIN BASE *2 S11-02Y	P607(2-3)
T8-0014SGP-MAY	46-20598W-04XG	PIN BASE *4 TJC1-4A	P400 FOR DY COMMECTOR
T8-0014SGP-MAY	46-28816H-05XG	HS 5P24 500 TJC3-5Y/SCN-5Y	P201 TO P501
T8-0014SGP-MAY	46-30615H-04XG	HS 4P24 460 F/W TJC3-4Y/SCN-4	P402 TO P502
T8-0014SGP-MAY	46-33079W-02XG	PIN BASE *2 TJC3-2A	P604
T8-0014SGP-MAY	46-33079W-04XG	PIN BASE *4 TJC3-4A	P003
T8-0014SGP-MAY	57-10654X-00F	TWIST TIE NY66	
T8-0014SGP-MAY	64-B30080-304G	TRIANGLE M/C SCREW B 3 X 8	FOR IC301
T8-0014SGP-MAY	64-B30080-304G	TRIANGLE M/C SCREW B 3 X 8	FOR Q402
T8-0014SGP-MAY	65-Z30050-23MG	NUT M 3	FOR IC301
T8-0014SGP-MAY	67-384260-0E7	HEAT SINK	FOR Q402
T8-0014SGP-MAY	67-387190-1A0	HEAT SINK	FOR IC601
T8-0014SGP-MAY	67-H30752-3A0	RAW HEATSINK -- 03 00 R=Y	FOR IC301
T8-0014SGP-PWY	10-0RU3AM-FBX	HIGH EFFICIENCY RECTIFIER RU3AM	D833
T8-0014SGP-PWY	10-0RU4YX-F0X	DIODE GRU4YX (FAST RECOVERY)	D841
T8-0014SGP-PWY	11-SD2012-0CX	TRANSISTOR 2SD2012	Q843

T8-0014SGP-PWY	11-SK2645-0AX	TRANSISTOR 2SK2645-01MR (POWER	Q815
T8-0014SGP-PWY	13-0HPC92-2CP	TCL13-0HPC92-2CP= PHOTO COUPLER HPC922-C	IC802
T8-0014SGP-PWY	18-CD0101-JNX	RES. C.F. 100 OHM 1/4W +/-5%	R813
T8-0014SGP-PWY	18-EF0229-JGX	RES. FUS. 2.2 OHM 1W +/-5%	R843
T8-0014SGP-PWY	18-FG0229-JHX	RES. M.O. 2.2 OHM 2W +/-5%	R852
T8-0014SGP-PWY	18-KF0825-JHX	RES. GLASS GLAZE 8.2M OHM 1W	R829
T8-0014SGP-PWY	18-RG0108-JHX	RES. WIRE ROUND 0.1 OHM 2W +/-5%	R815
T8-0014SGP-PWY	22-NTC479-XX0	NTC 4.7D2-14	R803
T8-0014SGP-PWY	22-PTC200-XX1	PTC 20 OHM +/-20% MZ73BH	RT801
T8-0014SGP-PWY	25-BDA102-M1X	CAP. ELEC 1000 UF 25V +/-20%	C843
T8-0014SGP-PWY	25-BMJ151-M1X	CAP. ELEC 150 UF 400V +/-20%	C806
T8-0014SGP-PWY	25-PJG101-M1X	CAP.CELE 100UF/160V/+/-20%	C835
T8-0014SGP-PWY	26-AIC221-KBX	CAP. CER 220 PF 500V +/-10% B	C841
T8-0014SGP-PWY	26-AIL103-MEX	CAP.CER 10NF 500V +/-20%	C805
T8-0014SGP-PWY	26-AIL103-MEX	CAP.CER 10NF 500V +/-20%	C826
T8-0014SGP-PWY	26-AKA221-KRX	CAP. CER 220 PF 1KV +/-10%	C833
T8-0014SGP-PWY	26-AKM221-KRX	CAP. CER 220 PF 1KV +/-10%	C809
T8-0014SGP-PWY	26-AMM331-KRX	CAP. CER 330 PF 2KV +/-10%	C815
T8-0014SGP-PWY	26-APK102-MEX	CAP. CER 1000PF 400VAC +/-20%E	C829
T8-0014SGP-PWY	26-APK102-MEX	CAP. CER 1000PF 400VAC +/-20%E	C803
T8-0014SGP-PWY	26-APK102-MEX	CAP. CER 1000PF 400VAC +/-20%E	C804
T8-0014SGP-PWY	26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80%-20% F	C808
T8-0014SGP-PWY	26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80%-20% F	C807
T8-0014SGP-PWY	27-AQT474-MV3	CAP.M.PP0.47UF275VAC+/-20%	C801
T8-0014SGP-PWY	27-MHM104-K0X	CAP. M.P.E 0.1 UF 400V +/-10%	C802
T8-0014SGP-PWY	34-R101K2-1BX	COIL CHOKE 100 UH +/-10%	L834
T8-0014SGP-PWY	34-R220K2-1BX	COIL CHOKE 22 UH +/-10%	L843
T8-0014SGP-PWY	35-392170-00X	FERR.COIL BF-I35050C-683	L833
T8-0014SGP-PWY	36-LIF004-AX0	TCL36-LIF004-AX0= LINE FILTER R=N	T801
T8-0014SGP-PWY	36-TRF231-AX0	TRANSFORMER CONV. BCK-2890	T803
T8-0014SGP-PWY	46-10962W-02XG	PIN BASE *2 TJC2-2A	P803
T8-0014SGP-PWY	50-02000D-1GS1G	FUSE 2.0AT 250VAC 5MMX20MM	F801
T8-0014SGP-PWY	63-B30100-AB4G	SCREW-ST 3MM 10MM JIS B 1122 53 0 0 R=Y	FOR Q815
T8-0014SGP-PWY	64-B30080-304G	TRIANGLE M/C SCREW B 3 X 8	FOR Q843
T8-0014SGP-PWY	66-20516X-0B0	FUSE HOLDER	FOR F801
T8-0014SGP-PWY	67-H10918-4M2	HEAT SINK	FOR Q843
T8-0014SGP-PWY	67-H41341-2A0	HEAT SINK	FOR Q815
T8-0014SGP-PWY	67-M40068-1E4	TV RAW BRACKET TCL CRT -- 00 00 R=N	FOR Q815
T8-0014SGP-PWY	71-DYP000-WX2	LABEL	STICK ON HEAT SINK
T8-EN23SGP-0T4	07-457FF5-NA9G	TUNER F07GP-4ND-E	TU101
T8-EN23SGP-0T4	13-TSM123-06M01	MCU TMPA8873CSBNG	IC201
T8-EN23SGP-0T4	37-FAAT02-BAA1A	14"FBT BSC25-0214S	T402
T8-EN23SGP-0T4	46-33079W-04XG	PIN BASE *4 TJC3-4A	P905
T8-EN23SGP-0T4	46-33079W-05XG	PIN BASE *5 TJC3-5A	P002

T8-EN23SGP-OT4	46-35063W-03XG	PIN BASE *3 VH-3A	P802 FOR POWER CORD
T8-EN23SGP-OT4	47-RCA035-XX0G	RCA JACK AV-3.2-6W-K	P903
T8-EN23SGP-OT4	70-271510-00A	SERVICE CARD	FOR PRODUCTION USE
T8-EN23SGP-OT4	71-270870-0A9	LABEL	
T8-0EN23GP-KE1	02-IRR001-XX1	IR RECEIVER MODULE HRM380017	IR081
T8-0EN23GP-KE1	14-LED03R-XX1	LED RED Φ3MM FO203	D081
T8-0EN23GP-KE1	25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	C081
T8-0EN23GP-KE1	46-37033H-05XG	HS 5P 2468#24 320 TJC3-5Y/SCN	P002 TO M.BD P002
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K002
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K005
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K001
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K003
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K004
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K006
T8-0EN23GP-KE1	48-TAC001-DX0	TACT SWITCH KQS-902	K007
T8-0EN23GP-SIY	40-EN23G8-SIB1XG	TV PCB SI BD R=Y	
T8-0EN23GP-SIY	46-30780H-04XG	HS 4P 2468#24 390 TJC3-4Y/SCN-4Y	S904A P4-P7 FOR M. BD P905
T8-0EN23GP-SIY	47-RCA041-XX0G	JACK RCA 3PH H=8MM YL WH RD/SW	P1101
T8-DE10SGP-CRN	10-1N4004-EBX	DIODE IN4004 (RECTIFIER)	D504
T8-DE10SGP-CRN	18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	R510
T8-DE10SGP-CRN	18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	R511
T8-DE10SGP-CRN	18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	R512
T8-DE10SGP-CRN	25-BLA100-M1X	CAP. ELEC 10 UF 250V +/-20%	C504
T8-DE10SGP-CRN	26-AMM102-KBX	CAP. CER 1000 PF 2KV +/-10% B	C500
T8-DE10SGP-CRN	26-EBP103-ZF1	CAP CER 50V 2.5MM 10nF -20%+80%	C514
T8-DE10SGP-CRN	35-139730-00X	FERR. BEAD BF60	FOR C514 (L505 & L506)
T8-DE10SGP-CRN	46-10967W-01XG	PIN BASE *1 TJC1-1A	P503
T8-DE10SGP-CRN	46-33079W-05XG	PIN BASE *5 TJC3-5A	P501 FOR M.BD P201
T8-DE10SGP-CRN	46-35179W-04XG	PIN BASE TJC3-4A	P502 FOR M. BD P402
T8-DE10SGP-CRN	47-CRT022-NX0G	CRT SOCKET GZS10-2-DD2 (DQ5)	S501A
T8-0EN23GP-RCY	54-114000-00X	TV RAW FELT PAPER 150MMX19MMX0.3MM BK 01	
T8-0EN23GP-RCY	59-130460-00X	RUBBER PAD (25MMX7MM)	