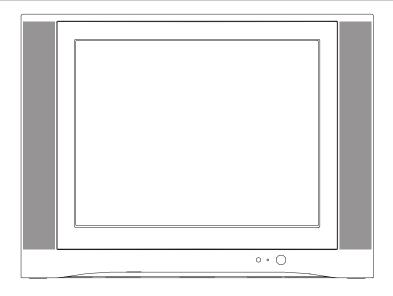
TCL SERVICE MANUAL



M28L(G2)

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

CAUTION:

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







CAUTION: 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

- 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.
- 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.
- 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.
- 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.
- 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.



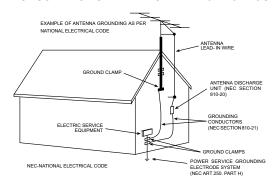
PROTECTION AND LOCATION OF YOUR SET

- 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.

PFS (Product Functional Specification)		
Date:		
ProductView:	M201 (C2)	
Report by: Linda Wen	M28L G 2)	
Specs / Products	, ,	
MasterData Customer Id	TEDELEY TRADING (BTV) LTD	
Version	TEDELEX TRADING (PTY) LTD.	
BOM No	04-D276BH-SA60	
Brand	SANSUI	
Reception		
-Tuning - presets/channels		
100	Х	
125		
200		
-Tuning - technology		
PLL VST	X X	
-Tuning - Indication	^	
	X	
-Freq Bands	^	
UVSH		
Full-Cable	х	
-IF Freq		
38MHz		
38.9MHz	X	
45.75MHz		
-TV Systems Off Air/Cable NTSC M (3.58 - 4.5)		
NTSC M (3.56 - 4.5) NTSC (4.43 - 5.5)		
NTSC (4.43 - 5.5)		
NTSC 3.58	X	
NTSC 4.43	X	
PAL B/G	x	
PAL D/K		
PAL I		
SECAM B/G		
SECAM D/K		
-Add Systems Ext In		
NTSC 3.58		
NTSC 4.43 NTSC Play Back		
PAL 60	X X	
-TV Systems Multi	^	
NTSC		
PAL	X	
-Sound Systems		
AV Stereo	Х	
NICAM		
German Stereo		
American Stereo		
Korean Stereo		
Picture - Processing -Scan		
-Scan Standard	x	
-Scan Modes	^	
4:3	X	
4:3 Expand		
-Wide Screen Switching		
-Combfilter		
-Picture Control		
Brightness	Х	
Colour/Hue/ tint	X	
Contrast Color Temperature	X	
Sharpness		
scan velocity modulation	X	
LTI / CTI		
Smart Pict. 4 Modes		
Smart Pict. 5 Modes		
Multiplicate picture scan mode		
-Pict Enhancement		
Active Control (without LNA)		
Black Stretch	х	
dynamic skin		
-Pict Noise Reduction		
NR NR	X	

PFS (Product Functional Specification)

Date:	
ProductView:	
Report by: Linda Wen	M28L(G2)
Specs / Products	
Picture - Display	
-Display Type	
DV - CRT - Normal Flat	Х
DV-CRT-Pure Flat	
DV - CRT - Super Flat	
-Screen Format	
4:3	Х
Expand 4:3	
16:9	
-Size(Visual)" - size/vis. cm	
14(13V) - 37/34 cm	X
21(20V) - 55/51cm	
25(00v) - 00/00cm	
29(27v) - 72/68cm	
34(00v) - 00/00cm	
-Deflection System (CRT only)	
1 Fh	X
2 Fh	
-Tube Technology (CRT only)	
Iron	X
Black Matrix	X
Real Flat	
-CRT Defl	<u> </u>
090 degr 100 degr	X
110 degr	
500 degr -CRT Gun	
Stand Gun	V
-CRT Magn field	X
Neutral	
S Hemisphere	x
North-Neutral	^
-Resolution	
-Coating (only for D.V. sets)	
-White Point	
Sound	
-Leaflet Power	
01W	
02W	
04W	х
06W	
10W	
12W	
20W	
-RMS Power Intern	
-RMS Power Intern 1x1W	
1x1W 2x1W	
1x1W 2x1W 2x2W	21"
1x1W 2x1W	21"
1x1W 2x1W 2x2W 2x3W 2x4W	21"
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W	21"
1x1W 2x1W 2x2W 2x3W 2x3W 2x4W 2x5W 2x5W	21"
1x1W 2x1W 2x2W 2x3W 2x3W 2x4W 2x5W 2x5W 2X6W	21"
1x1W 2x1W 2x2W 2x3W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern	21"
1x1W 2x1W 2x2W 2x3W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound	21"
1x1W 2x1W 2x2W 2x3W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features	21"
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL	21"
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute	21"
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes)	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes Treble	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes Treble Treble Boost	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes Treble Treble Boost Volume	
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes Treble Treble Boost Volume Sound - Speakers	X
1x1W 2x1W 2x2W 2x3W 2x4W 2x5W 2x5W 2X6W 2X10W -RMS Power Extern -Surround Sound -Sound Features AVL Mute Smart Sound (4 modes) -Sound Control Balance Bass Bass Boost Smart Sound 4 Modes Smart Sound 5 Modes Treble Treble Boost Volume	X

PFS (Product Functional Specification)	
Date:	
ProductView:	
Report by: Linda Wen Specs / Products	M28L(G2)
-Speakers used	
Normal Range	X
Full Range	
User Interface	
-Interface Name	
Full interface	X
-Voice Control	
-Menu Cursor Control	X
-Menu Colours	^
-Menu Languages	
Arabic	
Chinese - Simplified	
Chinese - Traditional	
English	X
Russian	
Malay	
Thai	
-Record Select - sources:	
-Special Features On/Off Timer	x
Sleep timer	×
Game	* x
Notebook	X
Calendar	X
Auto Standby	х
Channel Copying	Х
Channel Naming	
Channel Lock	
Favorite Channel	X
Manual Skip	
channel navigation	
Personal Zapping Signal Strength Indicator	+
V-chip with Smart Lock	
Hotel Mode	x
Recall	The state of the s
AT	
High Sensitive	
-Operational Features	
Alternate Channel	
Surf	
-PP Features	
One PP for all channels	X
-Tuning / Install Features Aut Cable/Ant. Select	· · · · · · · · · · · · · · · · · · ·
Auto Channel Prog	X X
Auto Store	x
Factory Mode	X
Fine Tuning	X
Language Selection	х
Manual Search/Store	х
Service Mode	х
-Clock/Timer Functions	
Sleep timer	X
Alarm Timer	
Crystal Clock	
Real Clock Biological Clock	x
-Local Controls Front	^
Channel +-	
Mains Switch (Flush)	
Volume +-	
TV/AV	
Auto search	
menu	
-Local Controls Top	
Channel +-	Х
Volume +-	X
TV/AV	X
menu -Indicators - screen	X
-muicators - screen	

PFS (Product Functional Specification)	
Date:	
ProductView:	
Report by: Linda Wen Specs / Products	M28L(G2)
-Indicators - front	
RC Recvd LED	X
SB LED	х
-Numb of Loc Cont (incl Mains)	
5	
Number of lad (incl Mains)	X
-Number of Ind. (incl Mains)	
-Local Controls (Old)	
Remote Control	
-Remote Control - scope	
TV	Х
-Remote Control - type Standard	
-Remote Control - typenr	X
E	
F	х
Q	
RC115	
-Remote Control - features	
Connectors Rear -Scart RGB+Y/C+CVBS	
-Scart RGB+Y/C+CVBS -Scart RGB+CVBS	
-Scart CVBS+Y/C	
-Component In (Y/U/V) Cinch	
Ext(1)	х
-Component In (YPbPr) Cinch	
-In Y/C+Cinch(CVBS+St)	
1x -In Y/C+Cinch(CVBS+Mo)	X
-In Y/C+Cinch(St)	
-In BNC (CVBS)	
-In Cinch(CVBS+Mo)	
Ext(1)	
-In Cinch(CVBS+St)	
Ext2	
-In VGA -Out Y/C+Cinch(CVBS+St)	
-Out Cinch(CVBS+St)	
1x	Х
-Out Cinch(CVBS+Mo)	
1x	
-Out Cinch Audio Stereo	
-Out Cinch Audio Mono	
-Out Cinch Dolby Surround -Out Cinch Subwoofer	
-Dig Audio Out	
-Loudspeakers	
-Control Busses	
-Feature Slot	
-ITV Smart Port	
-Terr. Antenna in	
75 Ohms (IEC type) Guide + IR Blaster Jack	X
Connectors Front	
-In Y/C + Cinch(CVBS+St)	
-In Y/C + Cinch(CVBS+Mo)	
-In Y/C + Cinch Stereo	
-In Cinch (CVBS + St)	
-In Cinch (CVBS+Mo)	
Yes -Headphone Out	
Mini-Jack 3.5mm	
-Feature Slot	
-Cinch A/V in	
Connectors Side	
-In Y/C + Cinch(CVBS+St)	
-In Y/C + Cinch Stereo	
-In Cinch (CVBS + St) Yes	
-In Cinch (CVBS + Mo)	X
Yes	
	1

PFS (Product Functional Specification)	
Date:	
ProductView:	M28L(G2)
Report by: Linda Wen	WizoE(GZ)
Specs / Products	
-Headphone Out Mini-Jack 3.5mm	
-Cinch A/V in	
-Cinch A/V out	
Connectors Top	
-In Cinch (CVBS + St)	
-Headphone Out	
Connectors Mechanical	
-Headphone	
-Cinch A/V in/out	
-Cinch Component	
-Cinch Y/C	
Styling Cobinet Name	21276
-Cabinet Name -Configuration	21276
DAS	
Symm	x
-Mechanics	^
-Speaker Visibility	
Standard	X
General	
-Segment	
Standard 4:3	X
-Chassis	M28L
-Software Delivery Mode	
-Software Version	
-Mains Voltage	
110V - 270V	
90 - 260V	
90-276 AutoV 160 - 260 V	
230 - 240 V	X
-Mains Frequency	^
50Hz	X
-Type Mains Cord	
FlatPin(Non-Polarised)	
Australia / New Zealand	
Euro	
New Zealand	
VDE	
Power Consumption (P)TV in On	70W
Power Consumption SB in Watts	V
Less than 1	X
Less than 3	
Less than 6 Less than 10	
Power Consumption Semi SB in W	
-Power in "ON" for	
-Power in Standby for	
-Power in "OFF" for	
-INDICATION on BACKCOVER	
Made-in in Family Sheet	X
FCC/Elect Shock caution label	
Serial label	X
Warning label on backcover	X
-Channel	
National OrgNO	X
Final Equipment	
-Packaging - methods	
2 Colour Printing	
Brown Carton White Carton	-
-Documents and manuals	+
Instruction Book (User Manual)	x
Adbertising Brochure	^
Extended Warranty Brochure	
Guarantee Doc	X
Screen Sticker	
Approbation Labels	X
Easy installation Guide	
Plastic Bag	X

PFS (Product Functional Specification)	
Date:	
ProductView: Report by: Linda Wen	M381 (C3)
Specs / Products	M28L(G2)
Warning label	Х
Warranty Card -Languages DFU	
-Languages DF0 Arabic	
English	х
Local Integration	
Malay Thai	
-Cables Supplied	
-Antenna Supplied	
-Stand Supplied	
-Aux Equipm Supplied Batteries for RC (2 x AA)	Y
Miscellaneous	X
-Approbation	
CB	X
EMC -Tests	X
-Local Integration	
PIP/POP	
-Туре	
 -Features	
Digital Reception	
-Transmission	
-Profile/Level	
Digital Software -Services	
Digital Connections	
-Digital Rear	
Built-in Data System	
-Text Standard No Text	
-(Tele)text Features	
1 Page text	
10 Page text	
-Nbr bacgrnd page/Mem Size -Text Technology	
-Digital Data handling	
-Program Guide	
Built-in Clock/Timer	
-Type -Features	
Built-in Radio	
-Туре	
Built-in PC display VGA	
XGA	
SVGA	
SXGA	
UXGA	
-PC Synch	
-PC Control	
Built-in TV display	
50i 60i	
100i	
60P	
75P	
Built-in Media Slots/ DVD driver -Type of Medium	
-Type of Medium -Type of Deck	
-Version of Deck	
-Playback Formats	
-Copy Protection Compliance Phased Out Items	
-Tuner/Frontend	
-Sensitivity	
-CRT EHT	
-Lightning Protection	
-Account	

PFS (Product Functional Specification)

Date:	
ProductView:	M28L(G2)
Report by: Linda Wen	202(<i>02</i>)
Specs / Products	
-XX(Radio Antenna in)	
-Non Volatile Memory	
-In Y/C + Cinch(CVBS+Mo)	
Version of deck	

PART NO.	SEPC	SINGLE QTY	LOCATION
11-0BC337-0BX	TRANSISTOR (NPN) BC337-40	1	Q1501
13-00AS12-13B	IC AS1213B	1	IC1501
14-IRE05B-XX0	IR EMITTING DIODE TSAL6200	1	D1501
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R1503
18-CB0229-JNX	RES. C.F. 2.2 OHM 1/6W +/-5%	1	R1501
25-HBB479-M1X	CAP. ELEC 4.7 UF 10V +/-20%	1	C1504
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C1502
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C1501
26-EBP104-ZFS	CAP. CER 0.1UF 50V +80%/-20%	1	C1503
40-UOCASF-RMA	P.C.B. REMOTE HANDSET BD	1	
45-COS455-KY1	CERAMIC RESONATOR 455KHZ	1	X1501
49-HS46F0-00XAA	RUBBER PAD KEYS	1	
55-HS46FB-0HA5K	FREMOTEHANDSET-BOTTOMCABINET	1	
55-HS46FD-0HA5K	FBATTDOOR-REMOTEHANDSET	1	
55-HS46FT-0HA5B	CASE UPPER - REMOTE HANDSET	1	
58-HS46F4-WUI9D	INLAY REMOTE HANDSET	1	
63-B26060-BT2	S/T SCREW B 2.6 X 6 BT	1	
67-X26968-0E2	BATT. TERMINAL (+/-)	1	
67-X31028-0E2	SPRING - BATTERY (-)	1	
67-X31029-0E2	SPRING - BATTERY (+)	1	
74-009022-60C	POLYBAG HANDSET (9CMX22CM)	1	
76-002091-0AT	CARTON BOX LWH 624X384X556MM	0.004	
76-326350-01A	CARTON SHEET 61X37X0.3CM	0.062	
T8-HS46F0-M28L	ASS'Y-REMOTE CONTROL	1	
18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	1	R510
18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	1	R512
18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%	1	R511
26-AIL103-KBX	CAP. CER 10NF 500V +/-10%	1	C504
26-AMM221-JZX	CAP. CER 220PF 2KV +/-5% SL	1	C505
26-EBP103-ZF1	CAP CER 50V 2.5MM 10KpF -20%+80%	1	C514
35-139730-00X	FERR. BEAD BF60	2	FOR C514 (L505 & L506)
46-10967W-01X	PIN BASE *1 TJC1-1A	1	P503
46-28816H-05X	HS 5P24 500 TJC3-5Y/SCN-5Y	1	P501 (PIN2- PIN6) FOR M. BD P201
46-30615H-04X	HS 4P24 460 F/W TJC3-4Y/SCN-4	1	P502 FOR M. BD P402
47-CRT004-XX0	CRT SOCKET GZS10-2-AC2	1	FOR CRT
11-SD2012-0CX	TRANSISTOR 2SD2012	1	Q843
11-SK3115-0AX	TRANSISTOR 2SK3115 (MOS)	1	Q815
13-000TL4-31T	IC TL431ACLP	1	IC803
13-0HPC92-2CP	PHOTO COUPLER HPC922-C	1	IC802
13-TEA150-6PP	IC TEA1506P	1	IC801
18-FG0683-JHX	RES. M.O. 68K OHM 2W +/-5%	1	R810
18-KF0825-JHX	RES. GLASS GLAZE 8.2M OHM 1W	1	R829

PART NO.	SEPC	SINGLE QTY	LOCATION
18-RG0108-JHX	RES. WIRE ROUND O. 1 OHM 2W +/-5%	1	R815
22-NTC479-XX0	NTC 4.7 OHM +/-18% NTC4.7D2-14	1	R803
22-PTC200-XX0	POSISTOR 20 OHM (25-34)	1	RT801
25-BCA102-M1X	CAP. ELEC 1000 UF 16V +/-20%	1	C843
25-BCA102-M1X	CAP. ELEC 1000 UF 16V +/-20%	1	C845
25-BEA471-M1X	CAP. ELEC 470 UF 35V +/-20%	1	C832
26-AIL103-KBX	CAP. CER 10NF 500V +/-10%	1	C826
26-AIL103-KBX	CAP. CER 10NF 500V +/-10%	1	C805
26-AKA221-KRX	CAP. CER 220 PF 1KV +/-10%	1	C809
26-AKA221-KRX	CAP. CER 220 PF 1KV +/-10%	1	C833
26-AMM561-KDX	CAP. CER 560 pF 2KV +/-10% D	1	C815
26-APK222-ME4	CAP. CER 2200PF 400VAC+/-20% E	1	C829
26-APK471-KBX	CAP. CER 470PF 400VAC +/-10% B	1	C803
26-APK471-KBX	CAP. CER 470PF 400VAC +/-10% B	1	C804
26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80%-20% F	1	C807
26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80%-20% F	1	C808
27-AHP103-J06	CAP. M. PP. 10NF/400V/+/-5%	1	C810
27-AQT224-MVH	CAP. M. PP 0. 22 UF 275VAC 20%	1	C801
27-MHW104-KOX	CAP. M. P. E 0. 1 UF 400V +/-10%	1	C802
34-R101K2-1BX	COIL CHOKE 100 UH +/-10%	1	L834
34-R101K2-1BX	COIL CHOKE 100 UH +/-10%	1	L843
35-392170-00X	FERR. COIL BF-135050C-683	1	L833
46-10962W-02X	PIN BASE *2 TJC2-2A	1	P803
63-W30100-AB4	S/T SCREW W 3 X 10 AB	1	FOR Q815
64-P30080-104	M/C SCREW P 3 X 8	1	FOR Q843
66-20516X-0B0	FUSE HOLDER	2	FOR F801
67-H10918-4M2	HEAT SINK	1	FOR Q843
67-H41341-2A0	HEAT SINK	1	FOR Q815
67-M40068-1E4	CRT BRACKET	1	FOR Q815
71-DYP000-WX1	LABEL	1	STICK ON H.SINK(Q815)
02-GND021-LX2	ASS'Y-CRT GND WIRE&HOUSE	1	
36-DEG210-XX1	DEGAUSSING COIL 2500MM	1	
42-51208D-XX1	SPEAKER 8 OHM 5W (52MMX120MM)	1	W602
42-51208D-XX1	SPEAKER 8 OHM 5W (52MMX120MM)	1	W601
46-35196H-02X	HS 2P22 570/7 TJC3-2Y	1	P602H FOR M. BD P602
46-37144H-02X	HS 2P 2468#22 450MM S11-2Y/7MM	1	P601H FOR M. BD P601
54-113970-0U0	PVC TUBE AWG NO.5	0.32	FOR SPK WIRE
54-114000-00X	FELT TAPE (150MMX19MMX0.3MM)	4	
54-205140-000	SPACER CRT MOUNTING T=2MM	4	MTG CRT & F. CAB

PART NO.	SEPC	SINGLE QTY	LOCATION
54-314740-0X0	CRT FIBRE SHEET (22MMX22MMX0.8MM)	4	MTG CRT & F. CAB
57-10654X-00F	TWIST TIE NY66	12	T CAB
63-B30080-AB4	S/T SCREW B 3 X 8 AB	3	MTG KEY BD & PUSH BUTTON
63-S30100-AB4	S/T SCREW S 3 X 10 AB	1	MTG RECEIVER BD & F. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG M. BD TRACK & F. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	1	MTG LENS & F. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG PUSH BUTTON & F. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	8	MTG SPK & FRONT CAB.
63-Z60300-AB4	S/T SCREW HA 6X30	4	MTG CRT & FRONT CAB.
67-L40354-0A09A	LOG0	1	
67-X12668-0E0	SPRING CRT 6MMX40MMX0.5MM	1	
67-X39732-0E2	POWER SPRING	1	
10-PC574J-DJX	DIODE ZENER UPC 574J	1	D102
11-SC2235-YAX	TRANSISTOR 2SC2235-Y(NPN)	1	Q401
11-ST1803-0DX	TRANSISTOR ST1803DFH	1	Q402
13-000040-53P	IC 4053 (ANALOG SW)	1	IC901
13-CW7805-CSS	IC CW7805CS	1	IC402
13-STV930-2BS	IC STV9302B	1	IC301
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)	1	R405
18-EF0478-JGX	RES. FUS. 0.47 OHM 1W +/-5%	1	R403
18-EG0159-JHX	RES. FUS. 1.5 OHM 2W +/-5%	1	R407
18-FF0122-JGX 18-FF0123-JGX	RES. M. O. 1.2K OHM 1W +/-5% RES. M. O. 12K OHM 1W +/-5%	1	R411 R408
18-FG0153-JHX	RES. M. O. 12K OHM 1W +/ 5%	1	R408
18-FG0159-JHX	RES. M. O. 1.5 OHM 2W +/-5%	1	R313
25-BDA102-M1X	CAP. ELEC 1000 UF 25V +/-20%	1	C308
25-BEA221-M1X	CAP. ELEC 220 UF 35V +/-20%	1	C302
25-BEA471-M1X	CAP. ELEC 470 UF 35V +/-20%	1	C413
25-BLA100-M1X	CAP. ELEC 10 UF 250V +/-20%	1	C408
26-AMM561-JZX	CAP. CER 560 PF 2KV +/-5% SL	1	C406
27-AGQ104-J0X	CAP. M. PP 0.1 UF 250V +/-5%	1	C410
27-AGQ394-JSX	CAP. M. PP 0. 39 UF 250VAC +/-5%	1	C421
27-ALR962-JOX	CAP. M. PP 9600PF 1.6KV +/-5%	1	C402
27-LCA104-JOX	CAP. P. E. 0.1UF 100V +/-5%	1	C234
35-392170-00X	FERR. COIL BF-135050C-683	1	L201A
36-HDR029-XX0	TRANSFORMER HOR. DRIVE BCT-1012A	1	T401

PART NO.	SEPC	SINGLE QTY	LOCATION
36-LIN500-XX1	COIL LINEARITY 50 UH	1	L412
36-WID640-XX1	COIL WIDTH 64 UH	1	L411
37-SC2502-99D0X	FLYBACK TRANS. BSC25-0299D	1	T402
45-FIL10M-7Y0	CER. FILTER LT 10.7 MS3	1	X206
45-0SC8M0-0Y0	CRYSTAL 8. OMHZ	1	X001
4.C. OOFOOW OAV	DIM DAGE 14 MIGI 44	1	P401 FOR DY
46-20598W-04X	PIN BASE *4 TJC1-4A	1	CONNECTOR
46-33079W-05X	PIN BASE *5 TJC3-5A	1	P201 FOR CRT
10 00013# 00A	TIN BASE TO 1900 ON	1	BD P501
46-35179W-04X	PIN BASE TJC3-4A	1	P402 FOR CRT
			BD P502
64-P30060-104	M/C SCREW P 3 X 6	1	FOR IC402
64-P30100-104	M/C SCREW P 3 X 10	2	FOR Q402 &
CE 7000E0 00M	NIJIT M O	1	IC301
65-Z30050-23M	NUT M 3	1	FOR IC301
67-384260-0E7	HEAT SINK	1	FOR Q402
67-H10918-4M2	HEAT SINK	1	FOR IC402
67-H30752-3A0	HEAT SINK	1	FOR IC301
13-TDA749-6AS	IC TDA7496SA	1	IC601
18-RF0228-JGX	RES. WIRE ROUND 0.22 OHM 1 W +/- 5%	1	R619
25-BEA471-M1X	CAP. ELEC 470 UF 35V +/-20%	1	C619
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	FOR IC601
67-H41340-2A0	HEAT SINK	2	FOR IC601
67-M40068-1E4	CRT BRACKET	1	FOR IC601
02-IRR001-XX1S	IR RECEIVER EPS-5038(253)	1	IR011
14-LED05R-XX1	LED RED FB205	1	D051C
46-30966H-04X	HS 2468 #24 160 TJC3-4Y/SCN-4Y	1	P002A (PIN(3) - PIN(6)) TO M. BD P002
40-21166H-KEB	P. C. B. KEY BD	1	
46-38628H-02X	HS 2P 2468#24 850 TJC3-2Y/JC25-2Y	1	P001A FOR M. BD P001
48-TAC001-XX0	TACT SWITCH	1	S003B
48-TAC001-XX0	TACT SWITCH	1	S006A
48-TAC001-XX0	TACT SWITCH	1	S001A
48-TAC001-XX0	TACT SWITCH	1	S005A
48-TAC001-XX0	TACT SWITCH	1	S004A
48-TAC001-XX0	TACT SWITCH	1	S002A
40-21189H-SIB1X	P.C.B. SIDE BD	1	
46-27626W-06X	PIN BASE *6 TJC3-6AW	1	P904A FOR M. BD P904
47-RCA139-XX0	JACK RCA RCA317	1	P1101
07-389FI5-NA3G	TUNER FSBP05P-3-E	1	TU101
10-79C5V1-DBX	DIODE ZENER 5V1 1/2W 5%	1	D204
13-T11M28-05M01	MCU TMPA8873CSANG	1	IC201
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)	1	R843

PART NO.	SEPC	SINGLE QTY	LOCATION
18-FF0334-JGX	RES. M.O. 330K OHM 1W +/-5%	1	R804
25-BMJ101-M1X	CAP. ELEC 100 UF 400V +/-20%	1	C806
25-PJG101-M1X	CAP. CELE 100UF/160V/+/-20%	1	C835
36-LIF004-XX0	LINE FILTER LCL-2821	1	T801
36-TRF198-AX0	TRANSFORMER CONV. BCK3532	1	T803
45-SAW296-6M00G	SAW FILTER K2966M	1	Z101
46-12866W-02X	PIN BASE *2 S11-02Y	1	P601 FOR FRONT CAB. (SPK)
46-28559W-02X	PIN BASE *2 TJC1-2A	1	P802
46-30790H-06X	HS UL #24 400 TJC3-6Y/SCN-6Y	1	P904 TO AV BD P904A
46-33079W-02X	PIN BASE *2 TJC3-2A	1	P001 FOR KEY BD P001A
46-33079W-02X	PIN BASE *2 TJC3-2A	1	P602 FOR FRONT CAB. (SPK)
46-33079W-04X	PIN BASE *4 TJC3-4A	1	P203
46-33079W-04X	PIN BASE *4 TJC3-4A	1	P002 FOR IR BD P002A
47-RCA182-XX0	AV SOCKET AV-3. 2-6W56	1	P901
47-SVI002-XX0	Y/C SOCKET VERTICAL TYPE	1	P902
48-P0W001-AX0	SWITCH POWER	1	SW800
50-02000D-1GS1G	FUSE 2.OAT 250VAC 5MMX20MM	1	F801
51-KC0245-0CH	POWER CORD 3R/P W/HOUSING VDE	1	FOR P802
71-270870-0A9	LABEL	2	
49-382550-BAT	BATTERY RO6P AA 1.5V 5#	2	
72-D276BH-E609A	OPERATION MANUAL	1	
74-010050-40C	POLYBAG FOR POWER (10CMX50CM)	1	
74-022032-6WE	POLYBAG (23CMX34CMX0.06MM)	1	
74-120120-80HAA	POLYBAG W/SUFFOCATION WARNING	1	
76-A21276-1AT6L	CARTON BOX	1	
58-D106SI-3UI9B	INLAY SIDE AV	1	
63-B40200-AB3	S/T SCREW B 4 X 20 AB	6	MTG FRONT & REAR CAB.
63-F30100-BT3	S/T SCREW F 3 X 10 BT	2	MTG RCA JACK & REAR CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG SUPPORTER & REAR CABINET
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG SIDE AV BD & R. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG M. BD TRACK & REAR CABINET
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D502

PART NO.	SEPC	SINGLE QTY	LOCATION
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q510
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q501
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q502
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q503
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R501
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R504
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R507
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R522
18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	1	R524
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R508
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R505
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R502
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R525
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R526
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R527
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R523
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R503
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R509
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R506
18-CD0104-JNX	RES. C.F. 100K OHM 1/4W +/-5%	1	R521
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R514
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R515
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R518
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C508
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C507
26-EBP181-JCS	CAP. CER 180 PF 50V +/-5%	1	C512
26-EBP181-JCS	CAP. CER 180 PF 50V +/-5%	1	C510
26-EBP181-JCS	CAP. CER 180 PF 50V +/-5%	1	C511
26-EBP681-JCX	CAP. CER 680 PF 50V +/-5%	1	C503
26-EBP681-JCX	CAP. CER 680 PF 50V +/-5%	1	C501
26-EBP681-JCX	CAP. CER 680 PF 50V +/-5%	1	C502
10-0001H8-FBX	DIODE 1H8 (FAST RECOVERY)	1	D809
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D841
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D820
10-0RL255-EBX	DIODE RL255 OR RL206 (POWER RECTIFIER)	1	D804
10-0RL255-EBX	DIODE RL255 OR RL206 (POWER RECTIFIER)	1	D803
10-0RL255-EBX	DIODE RL255 OR RL206 (POWER RECTIFIER)	1	D802
10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER)	1	D801
10-ORU3AM-FBX	HIGH EFFICIENCY RECTIFIER RUSAM	1	D833

PART NO.	SEPC	SINGLE QTY	LOCATION
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D814
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D819
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D840
10-79C18V-DBX	DIODE ZENER 18V 1/2W 5%	1	D821
10-79C7V5-DBX	DIODE ZENER 7V5 1/2W 5%	1	D844
10-GRU3ZX-FBX	DIODE GRU3ZX	1	D830
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q801
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q841
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q842
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q802
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q844
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q845
18-CB0100-JNX	RES. C.F. 10 OHM 1/6W +/-5%	1	R814
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R844
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R840
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R851
18-CB0122-JNX	RES. C.F. 1.2K OHM 1/6W +/-5%	1	R811
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	R836
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R847
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R846
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R812
18-CB0333-JNX	RES. C.F. 33K OHM 1/6W +/-5%	1	R818
18-CB0333-JNX	RES. C.F. 33K OHM 1/6W +/-5%	1	R837
18-CB0394-JNX	RES. C.F. 390K OHM 1/6W +/-5%	1	R822
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R821
18-CB0473-JNX	RES. C. F. 47K OHM 1/6W +/-5%	1	R841
18-CB0681-JNX	RES. C. F. 680 OHM 1/6W +/-5%	1	R835
18-CB0683-JNX	RES. C.F. 68K OHM 1/6W +/-5%	1	R853
18-CD0101-JNX	RES. C. F. 100 OHM 1/4W +/-5%	1	R813
18-CD0102-JNX	RES. C.F. 1K OHM 1/4W +/-5%	1	R845
18-CD0220-JNX	RES. C.F. 22 OHM 1/4W +/-5%	1	R820
18-CD0222-JNX	RES. C. F. 2. 2K OHM 1/4W +/-5%	1	R817
18-DB0362-FNX	RES. M. F. 3. 6K OHM 1/6W +/-1%	1	R838
18-DB0392-FNX	RES. M. F 3. 9K 1/6W+/-1%	1	R842
18-DE0823-FNX2	RES. M. F. 82K OHM 1/2W +/-1%	1	R839
25-BDB220-M1X	CAP. ELEC 22 UF 25V +/-20%	1	C820
25-BDB470-M1X	CAP. ELEC 47 UF 25V +/-20%	1	C850
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C847
25-DFB109-M1X	CAP. ELEC 1 UF 50V +/-20% NP	1	C834
26-ABC104-ZFX	CAP. CER 0.1 UF 50V +80-20% F	1	C837
26-AIC221-KBX	CAP. CER 220 PF 500V +/-10% B	1	C841
26-AIC221-KBX	CAP. CER 220 PF 500V +/-10% B	1	C830
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C839
26-EBP103-KBX	CAP. CER 0. 01UF 50V +/-10%	1	C844
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C831
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C842

PART NO.	SEPC	SINGLE QTY	LOCATION
26-EBP104-ZFS	CAP. CER 0.1UF 50V +80%/-20%	1	C814
26-EBP221-JCX	CAP. CER 220PF 50V +/-5% CH	1	C821
26-EBP224-ZFX	CAP. CER 0.22 UF 50V +80/-20%	1	C818
26-EBP471-JCS	CAP. CER 470 PF 50V +/-5%	1	C813
26-EBP473-ZFX	CAP. CER 0.047UF 50V +80/-20% F	1	C811
35-LB1005-01X	FERR BEAD H75 (3.5X1X5)	1	L840
35-LB1005-01X	FERR BEAD H75 (3.5X1X5)	1	L830
35-LB1005-01X	FERR BEAD H75 (3.5X1X5)	1	L815
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D405
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D402
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D401
10-1N4001-EBX	DIODE 1N4001 (RECTIFIER)	1	D301
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D338
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D440
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D206
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D337
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D091
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D007
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D006
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D005
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D002
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D094
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D093
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D093
10-79C24V-DBX	DIODE ZENER 24V 1/2W 5%	1	D442
10-79C3V9-DBX	DIODE ZENER 3V9 1/2W 5%	1	D090
10-79C4V7-DBX	DIODE ZENER 4V7 1/2W 5%	1	D090 D001
10-79C6V2-DBX	DIODE ZENER 4V7 1/2W 5%	1	D207
	·	1	
10-79C6V2-DBX	DIODE ZENER 6V2 1/2W 5%	1	D404
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q210
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q003
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q005
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q095
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q097
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q208
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q904
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q903
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q905
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q002
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q093
11-SC3779-DBX	TRANSISTOR 2SC3779D (RF AMPL)	1	Q101
18-CB0101-JNX	RES. C. F. 100 OHM 1/6W +/-5%	1	J105
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	J103
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R047
18-CB0101-JNX	RES. C. F. 100 OHM 1/6W +/-5%	1	R008

PART NO.	SEPC	SINGLE QTY	LOCATION
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R012
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R029
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R907
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R013
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R905
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R903
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R035
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R415
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R116
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R941
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R961
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R042
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R962
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R933
18-CB0102-JNX	RES. C. F. 1K OHM 1/6W +/-5%	1	R932
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R912
18-CB0102-JNX	RES. C. F. 1K OHM 1/6W +/-5%	1	R908
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R919
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R001
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R918
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R309
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R003
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R004
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R017
18-CB0103-JNX	RES. C. F. 10K OHM 1/6W +/-5%	1	R030
18-CB0103-JNX	RES. C. F. 10K OHM 1/6W +/-5%	1	R095
18-CB0103-JNX	RES. C. F. 10K OHM 1/6W +/-5%	1	R091
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R337
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R232
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R031
18-CB0105-JNX	RES. C.F. 1M OHM 1/6W +/-5%	1	C230
18-CB0122-JNX	RES. C. F. 1. 2K OHM 1/6W +/-5%	1	R016
18-CB0124-JNX	RES. C. F. 120K OHM 1/6W +/-5%	1	R338
18-CB0151-JNX	RES. C. F. 150 OHM 1/6W +/-5%	1	R115
18-CB0151-JNX	RES. C. F. 150 OHM 1/6W +/-5%	1	R117
18-CB0152-JNX	RES. C. F. 1. 5K OHM 1/6W +/-5%	1	R218A
18-CB0152-JNX	RES. C. F. 1. 5K OHM 1/6W +/-5%	1	R311
18-CB0152-JNX	RES. C. F. 1. 5K OHM 1/6W +/-5%	1	R218
18-CB0152-JNX	RES. C. F. 1.5K OHM 1/6W +/-5%	1	R094
18-CB0154-JNX	RES. C. F. 150K OHM 1/6W +/-5%	1	R245
18-CB0183-JNX	RES. C. F. 18K OHM 1/6W +/-5%	1	R307
18-CB0221-JNX	RES. C. F. 220 OHM 1/6W +/-5%	1	R228
18-CB0221-JNX	RES. C. F. 220 OHM 1/6W +/-5%	1	R201
18-CB0221-JNX	RES. C. F. 220 OHM 1/6W +/-5%	1	R217
18-CB0221-JNX	RES. C. F. 220 OHM 1/6W +/-5%	1	R203
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R202

PART NO.	SEPC	SINGLE QTY	LOCATION
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	R440
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	D008
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R099
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R441
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R902
18-CB0224-JNX	RES. C.F. 220K OHM 1/6W +/-5%	1	R206
18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	1	R015
18-CB0273-JNX	RES. C.F. 27K OHM 1/6W +/-5%	1	R922A
18-CB0273-JNX	RES. C.F. 27K OHM 1/6W +/-5%	1	R216
18-CB0303-JNX	RES. C. F. 30K OHM 1/6W +/-5%	1	R046
18-CB0303-JNX	RES. C. F. 30K OHM 1/6W +/-5%	1	R205
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R006
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R251
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R208
18-CB0333-JNX	RES. C. F. 33K OHM 1/6W +/-5%	1	R922
18-CB0392-JNX	RES. C.F. 3.9K OHM 1/6W +/-5%	1	R007
18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	1	R412
18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	1	R002
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R020
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R401
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R923
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R238
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R243
18-CB0471-JNX	RES. C. F. 470 OHM 1/6W +/-5%	1	R119
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R041
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R092
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R406
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R093
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R244
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R308
18-CB0473-JNX	RES. C. F. 47K OHM 1/6W +/-5%	1	R928
18-CB0473-JNX	RES. C. F. 47K OHM 1/6W +/-5%	1	R927
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R926
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R442
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R936
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R929
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R930
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R931
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R935
18-CB0560-JNX	RES. C.F. 56 OHM 1/6W +/-5%	1	R114
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R250

PART NO.	SEPC	SINGLE QTY	LOCATION
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R028
18-CB0683-JNX	RES. C.F. 68K OHM 1/6W +/-5%	1	R097
18-CB0750-JNX	RES. C.F. 75 OHM 1/6W +/-5%	1	R904
18-CB0752-JNX	RES. C.F. 7.5K OHM 1/6W +/-5%	1	R940
18-CB0820-JNX	RES. C.F. 82 OHM 1/6W +/-5%	1	R906
18-CB0820-JNX	RES. C.F. 82 OHM 1/6W +/-5%	1	R914
18-CB0821-JNX	RES. C.F. 820 OHM 1/6W +/-5%	1	R118
18-CB0822-JNX	RES. C.F. 8.2K OHM 1/6W +/-5%	1	R237
18-CD0100-JNX	RES. C.F. 10 OHM 1/4W +/-5%	1	R027
18-CD0229-JNX	RES. C.F. 2.2 OHM 1/4W +/-5%	1	R314
18-CE0221-JNX	RES. C.F. 220 OHM 1/2W +/-5%	1	R409
18-CE0223-JNX	RES. C.F. 22K OHM 1/2W +/-5%	1	R410
18-CE0331-JNX	RES. C.F. 330 OHM 1/2W +/-5%	1	R298
18-CE0560-JNX	RES. C.F. 56 OHM 1/2W +/-5%	1	R317
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C908
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C227
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C231
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C907
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C004
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C904
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C242
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C962
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C961
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C905
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C220
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C023
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C211
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C016
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C009
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C086
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C305
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C903
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C909
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C906
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C232
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C418
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C423
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C081
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C108
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C273
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C202
25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	1	C217
25-BDB101-M1X	CAP. ELEC 100 UF 25V +/-20%	1	C405
25-BEB101-M1X	CAP. ELEC 100 UF 35V +/-20%	1	C303
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C916
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C911

PART NO.	SEPC	SINGLE QTY	LOCATION
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C214
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C203
25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	1	C091
25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	1	C008A
25-BFB478-M1X	CAP. ELEC 0.47 UF 50V +/-20%	1	C337
25-BFB478-M1X	CAP. ELEC 0. 47 UF 50V +/-20%	1	C218
25-BFB478-M1X	CAP. ELEC 0. 47 UF 50V +/-20%	1	C097
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C442
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C441
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C307
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C216
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C103A
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C101
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C030
25-BJB109-M1X	· · · · · · · · · · · · · · · · · · ·		C420
25-BJB109-M1X 25-MFB228-K1X	CAP. ELEC 1 UF 160V +/-20% CAP. ELEC 0. 22UF 50V +/-10%	1	C420 C205
		1	
25-MFB478-K1X	CAP. ELEC 50V 0. 47UF +/-10%	1	C236
26-ABC682-KBX	CAP. CER 6800 PF 50V +/-10% B	1	C407
26-AIC102-KBX	CAP. CER 1000 PF 500V +/-10% B	1	C401
26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	1	C412
26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	1	C409
26-EBP100-JCS	CAP. CER 10 PF 50V +/-5%	1	C304
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C122
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C121
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C002
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C001
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C112
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C219
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C306
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C212
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C109
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C082
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C024
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C020
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C019
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C017
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C005
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C228
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C233
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C239
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C224
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C222
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C215
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C417
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C425
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C931

PART NO.	SEPC	SINGLE QTY	LOCATION
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C201
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C110
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C114
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C135A
26-EBP222-KBX	CAP. CER 2200PF 50V +/-10% B	1	C213
26-EBP270-JCX	CAP. CER 27PF 50V +/-5% CH	1	C011
26-EBP390-JCX	CAP. CER 39PF 50V +/-5% CH	1	C022
26-EBP390-JCX	CAP. CER 39PF 50V +/-5% CH	1	C021
26-EBP471-JCX	CAP. CER 470PF 50V +/-5% CH	1	C008
27-MBC104-J0X	CAP. M. P. E 0. 1 UF 63V +/-5%	1	C309
27-MBC104-J0X	CAP. M. P. E 0. 1 UF 63V +/-5%	1	C301
27-MBC562-J0X	CAP. M. P. E 0. 0056UF 63V +/-5%	1	C422
27-PBC222-J0X	CAP. P. E 0. 0022UF 63V +/-5%	1	C204
27-PBC822-J0X	CAP. P. E 0. 0082UF 63V +/-5%	1	C235
34-A109K0-1IX	COIL CHOKE 1 UH +/-10%	1	L103
34-R100J2-0EX	COIL PL - 10 UH +/-5%	1	L002
34-R220J2-0EX	COIL PL - 22 UH +/-5%	1	L108
34-R220J2-0EX	COIL PL - 22 UH +/-5%	1	L208
34-R330J2-0EX	COIL PL - 33 UH +/-5%	1	L080
34-R330J2-0EX	COIL PL - 33 UH +/-5%	1	L202
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D625
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D626
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q625
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q624
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R603
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R604
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R608
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R607
18-CB0223-JNX	RES. C. F. 22K OHM 1/6W +/-5%	1	R625
18-CB0223-JNX	RES. C. F. 22K OHM 1/6W +/-5%	1	R624
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R601
18-CB0472-JNX	CARBON RES. C. F. 4.7K OHM 1/6W +/-5%	1	R602
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C642
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C641
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C625
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C635
25-BCB471-M1X	CAP. ELEC 470 UF 16V +/-20%	1	C609
25-BDB221-M1X	CAP. ELEC 220UF 25V +/-20%	1	C606
25-BDB221-M1X	CAP. ELEC 220UF 25V +/-20%	1	C605
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C621
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C622
25-BFB229-M1X	CAP. ELEC 2.2 UF 50V +/-20%	1	C624
26-EBP104-ZFX	CAP. CER 0.1UF 50V +80%/-20%	1	C626
26-EBP152-KBX	CAP. CER 1500PF 50V +/-10% B	1	C095

PART NO.	SEPC	SINGLE QTY	LOCATION
26-EBP224-ZFX	CAP. CER 0.22 UF 50V +80/-20%	1	C618
27-MBC224-J0X	CAP. M. P. E 0. 22UF 63V +/-5%	1	C602
27-MBC224-J0X	CAP. M. P. E 0. 22UF 63V +/-5%	1	C601
27-PBC472-J0X	CAP. P.E 0.0047UF 63V +/-5%	1	C604
27-PBC472-J0X	CAP. P.E 0.0047UF 63V +/-5%	1	C603
18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	1	R018A
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C011A
18-CB0152-JNX	RES. C.F. 1.5K OHM 1/6W +/-5%	1	R022A
18-CB0182-JNX	RES. C.F. 1.8K OHM 1/6W +/-5%	1	RO23A
18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	1	R024A
18-CB0432-JNX	RES. C.F. 4.3K OHM 1/6W +/-5%	1	RO25A
18-CB0622-JNX	RES. C.F. 6.2K OHM 1/6W +/-5%	1	R026A
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q906
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R911
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R913
18-CB0123-JNX	RES. C.F. 12K OHM 1/6W +/-5%	1	R310
18-CB0243-JNX	RES. C.F. 24K OHM 1/6W +/-5%	1	R414
18-CB0274-JNX	RES. C.F. 270K OHM 1/6W +/-5%	1	R819
18-CB0513-JNX	RES. C.F. 51K OHM 1/6W +/-5%	1	R312
18-CB0750-JNX	RES. C.F. 75 OHM 1/6W +/-5%	1	R917
18-CE0221-JNX	RES. C.F. 220 OHM 1/2W +/-5%	1	R336
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C915
76-002127-0AP	CARTON BOX "76-29549X-02A"	0.01	
76-002135-0AP	CARTON BOX	0.02	
75-369910-C00	POLYFOAM	1. 04	
76-002113-1AM	CARTON BOX	0.01	
40-02135S-CRF1X	CRT BD	1	
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	FOR Q506 (B – E)
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	FOR Q508 (B – E)
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	FOR Q504 (B – E)
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J502
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J503
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J505
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J504
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J501
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	Ј818
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј810
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	JP840
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј806
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	Ј820
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	Ј803
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	Ј813
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	Ј830

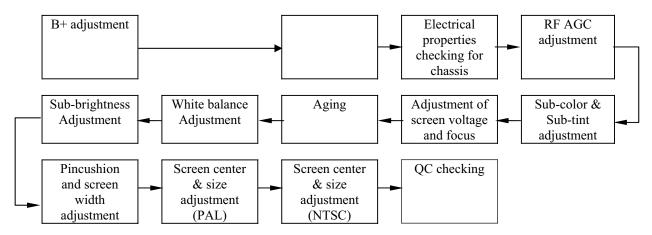
PART NO.	SEPC	SINGLE QTY	LOCATION
41-WJ0120-B00	WIRE BARE JUMPER 12MM	1	Ј807
41-WJ0120-B00	WIRE BARE JUMPER 12MM	1	Ј814
41-WJ0135-B00	WIRE BARE JUMPER 13.5MM	1	Ј801
41-WJ0155-B00	WIRE BARE JUMPER 15.5MM	1	Ј812
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	Ј808
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1	Ј816
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1	Ј815
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1	Ј805
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1	Ј817
41-WJ0185-B00	WIRE BARE JUMPER 18.5MM	1	Ј819
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	2	FOR C835
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	4	FOR T803 (1, 8, 9, 16)
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	3	FOR RT801
66-343740-0B0	HOLLOW RIVET (2.3MMX4.0MMX3.5MM)	4	FOR C806, P803
40-00M28L-MAL1X	P.C.B MAIN BD	1	
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	JP205
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	L204
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J102
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J101
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	C226
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	JP106
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј902
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	JP909
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј302
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J411A
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	R108
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J107
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J305
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	JP102
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	JP203
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J215
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J211
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J201
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J106
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј239
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	JP401
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј403
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	JP005
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	JP003
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј910
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј901
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	J226
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	J217

PART NO.	SEPC	SINGLE QTY	LOCATION
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	J216
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	J207
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	J104
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј006
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј908
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	J219
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј010
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј007
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	J306
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј005
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј229
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J110
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј303
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J210
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј202
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј909
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	R220
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	R227
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	D003
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J412A
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј025
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	Ј309
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	Ј013
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	Ј020
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	J214
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	Ј906
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	Ј016
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	C225
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	J220
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	JP209
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	JP207
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	J208
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	Ј009
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	Ј209
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1	Ј230
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1	Ј905
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J012
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J021
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	R299
41-WJ0110-B00	WIRE BARE JUMPER 11MM	1	J223
41-WJ0115-B00	WIRE BARE JUMPER 11.5MM	1	J212
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1	J308
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1	J404
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1	J011
41-WJ0130-B00	WIRE BARE JUMPER 13MM	1	J307
41-WJ0145-B00	WIRE BARE JUMPER 14.5MM	1	J221

PART NO.	SEPC	SINGLE QTY	LOCATION
41-WJ0145-B00	WIRE BARE JUMPER 14.5MM	1	J228
41-WJ0145-B00	WIRE BARE JUMPER 14.5MM	1	J222
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	Ј018
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	Ј019
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	J225
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	Ј017
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	J402
41-WJ0155-B00	WIRE BARE JUMPER 15.5MM	1	J234
41-WJ0155-B00	WIRE BARE JUMPER 15.5MM	1	Ј233
41-WJ0155-B00	WIRE BARE JUMPER 15.5MM	1	Ј232
41-WJ0155-B00	WIRE BARE JUMPER 15.5MM	1	JP103
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	Ј203
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	J204
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	J231
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	Ј227
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	4	FOR C402, C421"
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	2	FOR L411
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	2	FOR L412
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	3	FOR T402(2, 6, 10)"
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	1	FOR Q402 (C)
71-270870-0A9	LABEL	1	
76-002091-0AT	CARTON BOX LWH 624X384X556MM	0.01	FOR PMC
76-326350-01A	CARTON SHEET 61X37X0.3CM	0. 2	FOR PMC
77-028037-05C	BUBBLE BAG (28cmX37cm)	0. 2	
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј603
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј617
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј602
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј616
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј613
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1	Ј614
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј601
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј604
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	Ј606
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	Ј608
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	J615
40-21276H-IRD1X	P.C.B IR RECEIVE BD	1	
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	R013A
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј013
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	R016A
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	Ј011
13-00M24C-08P	IC EEPROM 8K M24C08 (WRITE)	1	IC001
74-100100-8CD	POLYBAG (100CMX100CM)	1	FOR F. CAB
74-120120-8CD	POLYBAG (120CMX120CM)	1	FOR R. CAB
74-279070-50C	EPE BOARD (580MMX440MMX5MM)	0. 334	FOR R. CAB

PART NO.	SEPC	SINGLE QTY	LOCATION
74-279070-50C	EPE BOARD (580MMX440MMX5MM)	0. 25	FOR FRONT CABINET
74-279080-50C	EPE BOARD (900MMX300MMX5MM)	0. 667	FOR REAR CABINET
76-001497-0AF	CARTON BOX LWH 640X460X360MM	0. 029	FOR OTHER
76-00D189-0AF	CARTON BOX	0. 25	FOR FRONT CABINET
76-00D189-0AR	CARTON BOX	0.334	FOR REAR CABINET
76-346740-01A	CARTON SHEET LWH 440X620X3MM	0.043	FOR OTHER
77-100100-6WC	BUBBLE BAG (100CMX100CM)	0. 5	FOR FRONT CABINET
55-D276FC-2CN8P	FRONT CABINET	1	
56-C276FB-0HA5B	PUSH BUTTON	1	
56-C276LS-0HC5Z	LENS	1	
56-D276PK-0HA5B	POWER KNOB	1	
59-130460-00X	RUBBER PAD (25MMX7MM)	2	FOR FRONT CAB. (FOOTING)
62-312090-0HA	POWER KNOB ABS-LG H121 (HB)	1	
62-345690-1UN	ASSISTANT RAIL HIPS-KINGFA 113 (VO)	1	FOR M.BD TRACK(F.CAB.)
62-227680-0UA	BRACKET ABS-KINGFA 606 (UO)	1	
62-346080-0HA	LED HOLDER	1	
62-377580-0HD	SAFEGUARDING COVER PP-H1500 (HB)	2	
54-114000-00X	FELT TAPE (150MMX19MMX0.3MM)	7	STICK ON REAR CAB.
55-D189RC-8EN5K	REAR CABINET	1	
58-D192RI-HUI9A	INLAY REAR AV	1	
58-D276MP-0UI8L	INLAY MODEL NO.	1	
59-130460-00X	RUBBER PAD (25MMX7MM)	2	STICK ON R. CAB. (FOOTING)
62-314340-0UN	FBT SUPPORTER HIPS-KINGFA 113 (VO)	1	
62-378080-1UN	TRACK	1	FOR M. BD TRACK (R. CAB.)
62-389620-0UD	POWER LINE BLOCK	1	

Flowchart chart of alignment procedure for M28 chassis:



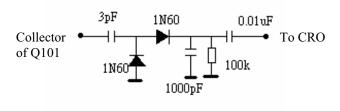
ALIGNMENT PROCEDURE FOR M28 CHASSIS:

I) Adjustment of B+ voltage(for VR840 model only)

- 1. Apply $160\text{-}240(110\text{-}220)VAC(\pm5V)$ to mains power input, and Philips standard testing pattern to RF input.
- 2. Adjust VR840 in STANDARD mode until voltage at TP2 (B+) is $112V \pm 0.5V$.

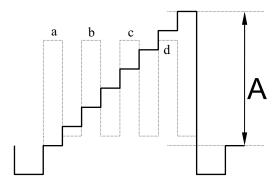
II) The alignment of RFAGC

- 1. Connect the detector shown below to collector of Q101.
- 2. Receive a grey scale signal with 70dB μ V amplitude.
- 3. Adjust RFAGC item until the output of the detector becomes 0.8Vpp



III) Adjustment of Sub-contrast, Sub-tint and Sub-color for NSTC and PAL signal.

- 1. Enter D-mode, and 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 input, in STANDARD status.
- 3. Select CNTC to adjust the sub-contrast, until that the amplitude "A" is 2.5V _{P-P} as shown below.
- 4. Select COLC to adjust the sub-color by tuning the amplitude of "a" and "d" to the same.
- 5. Select TNTC to adjust the sub-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.



IV) Adjustment of Focus, Screen Voltage and Sub-brightness

- 1. Receive a crosshatch pattern.
- 2. Adjust the "FOCUS" VR on the flyback the make the picture clear.
- 3. Enter D-mode and press "MUTE" key and the screen will become a horizontal line. Then adjust the "SCREEN" VR on the flyback transformer to set the intensity of the line to a minimum visible level (the line can just be seen).
- 4. Press "MUTE" key again and the TV will become full raster.
- 5. Select BRTC to adjust the sub-brightness, until that the 2nd dark bar of 8 level grey scales just can be seen.

V) Adjustment of White balance

- 1. Receive a black and white pattern at STANDARD status.
- 2. Use a color analyzer to measure the black side of the screen. By changing the value of BB and GB, set the reading of the color analyzer to x=274, y=280.(11500 K)
- 3. Then measure the white side of the screen. By changing the value of BD and GD, set the reading of the color analyzer to x=274, y=280.
- 4. Repeat step 2&3 until you can get the correct reading for both black and white sides.
- 5. Warm: x=291, y=300; Adjustment Item: WRCUT, WGCUT, WBCUT, WGDRV, WBDRV.
- 6. Cool: x=265, y=265; Adjustment Item: CRCUT, CGCUT, CBCUT, CGDRV, CBDRV.
- 7. DVD White Balance fine adjustment Item: UBK, VBK.

VI) Adjustment of Pincushion and Picture Width (for pure flat model only)

- 1. Receive a crosshatch pattern.
- 2. Adjust VR1124 until the vertical line become straight.
- 3. Adjust VR1123 for horizontal size.

VII) Adjustment of Picture Geometry (PAL)

- 1. Apply the crosshatch pattern (PAL signal) to the RF input, in STANDARD status.
- 2. Select HPOS to adjust the Horizontal center.
- 3. Select VP50 to adjust the Vertical center.
- 4. Select HIT to adjust the Vertical amplitude.
- 5. Select VLIN to adjust the vertical linearity.
- 6. Select VSC to adjust the vertical S-correction.

XIII) Adjustment of Picture Geometry (NTSC)

- 1. Apply the crosshatch pattern (NTSC signal) to the RF input, in STANDARD status.
- 2. Select HPS to adjust the Horizontal center.
- 3. Select VP60 to adjust the Vertical center.
- 4. Select HITS to adjust the Vertical amplitude.
- 5. Select VLIS to adjust the vertical linearity.
- 6. Select VSS to adjust the vertical S-correction.

IX) Adjustment of OSD position

- 1. Enter D-mode and press key "1", then choose OSDH(OSDHS) item and adjust the OSD vertical position 50HZ(60HZ).
- 2. Enter D-mode and press key "NOTE", then choose the OSD1 item and adjust the OSD horizontal position(Volume bar, Picture bar, Half blue panel OSD).
- 3. Enter D-mode and press key "NOTE", then choose the OSD2 item and adjust the OSD horizontal position except OSD1 item.

X) LOGO setting

- 1. Enter D-mode and press key "6", then choose FLG1 item and adjust.
 - → FLG1.2 sets at 1, logo works;
 - → FLG1.1 sets at 0, TCL logo works;

sets at 1, Customer logo /OEM logo works;

2. Customer LOGO setting

Enter D-mode and choose "MODE 2"

- → MODE 2.2 sets at 1, NOTEBOOK works;
- → Enter Customer Logo Font, max. 9 fonts are available in the first line.
- → Press "Save". NOTEBOOK off.
- \rightarrow Choose OEMC item to set the color of customer logo font.
- \rightarrow Choose OEMH OEMV OEMVS items to set the position of customer logo.

XI) D mode:

- 1. Press D-Mode ON/OFF key, and then you can enter the D-mode.
- 2. Press VOLUME DOWN key on the unit until the volume decrease to minimum level, then press the DISPLAY key on the remote handset (don't release the volume key) and you can enter D- mode.

After enter D-mode you can adjust the setting according to the following procedure,

ITEM	Description		Initial	
GROUP1	KEY 0			
RB	R CUT OFF			
GB	G CUT OFF			
BB	B CUT OFF			
GD	G DRIVE			
BD	B DRIVE			
UBK	DVD U level adjustment	0: (-22mV, Input DC) 8: 0mV		
VBK	DVD V level adjustment	F: (19mV, 2.75mV/dev) Bits 4-7 Don't use		
GROUP2	KEY 1			
HPOS/	Horizontal Position 50HZ			
HPS	Horizontal Position 60HZ			
HIT/	Height 50Hz			
HITS	Height 60 Hz			
VP50	Vertical Position 50Hz			
VP60	Vertical Position 60HZ			
VLIN	V Linearity 50Hz			
VLIS	V Linearity 60hz			
VSC	VS Correction 50Hz			
VSS	VS Correction 60HZ			
VBLK	V BLK Start / Stop			
VCENP	V CENTERING 50Hz			
VCENN	V CENTERING 50Hz			
OSDH	OSD vertical position 50HZ			
OSDHS	OSD vertical position 50HZ OSD vertical position 60HZ			
CODITIO	OOD VERTICAL POSITION CONT.			
GROUP 3	KEY 3			
CNTX	CONTRAST MAX.			
CNTN	CONTRAST MIN.			
BRTX	BRIGHT MAX.(difference from	BRIGHT MAX.(difference from center)		
BRTN		BRIGHT MIN.(difference from center)		
COLX	COLOR MAX.(difference from center)			
COLN	COLOR MIN.	,		
TNTX	TINT MAX.(difference from	center)		
TNTN	TINT MIN.(difference from d	•		
	(1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	,		
GROUP 4	KEY 4			
BRTC	BRIGHT CENTER			
COLC	COLOR CENTER NTSC			
COLS	COLOR CENTER SECAM			
COLP				
SCNT	SUB CONTRAST	COLOR CENTER PAL(shift data from COLC)		
CNTC	CONTRAST CENTER			
TNTC	TINT CENTER			
TIVIO	THAT CENTER			
GROUP 5	KEY 5			
ST3	SHARP CENTER 3.58NTS	CTV		
SV3	SHARP CENTER 3.58NTS	SHARP CENTER 3.58NTSC VIDEO		
ST4		SHARP CENTER OTHER TV		
	SHARP CENTER OTHER VIDEO			
SV4	SHARP CENTER OTHER \	/IDEO		

ASSH		ASYMMETRY-SHARPNESS	
SHPX		SHARP MAX.(difference from center)	
SHPN		SHARP MIN.(difference from center)	
GROUP 6		KEY 6	
OPT		OPTION DATA	
	0	D mode key 0: No use 1 :use	
	1	0:normal 1: mute sound when no sync in TV	
	2	0:NORMAL 1: mute video during change channel	
	3	au gain 0:50khz 1: 25khz	
	4	when no sync 1: AFT 0: no AFT	
	5	AV change 1: mute 0: no mute sound	
	6	Korea PAL50 BLINK function 1:enable 0:disable	
	7	standby state 0: high standby 1: low standby	
FLG0			
	0	OVER MOD	
	1	N Buzz Cancel	
	2		
	3	SLO f0 shift	
	4	hotel mode TV mode enter	
	5	hotel mode AV mode enter	
	6	hotel mode	
	7	VCO readjust when position select 0:enable 1:disable	
FLG1			
	0	0: 6 key 1: 7 key	
	1	OEM LOGO 0:Use TCL LOGO 1:Use OEM LOGO	
	2	LOGO 0:disable 1:enable	
	3	TINT por	
	4	PIF SELECT 00:38MHz 01:38.9MHz	
	5	10:45.75MHz 11:Don't Use	
	6	Secam 0:disable 1:enable	
	7	APC 1:AUTO 0:PRESET	
STBY			
	0		
	1		
	2	hd kill timer set *40us	
	3		
	4	when STBY.5=0 ,after AC on 0: standby 1: power on	
	5	after AC power on, 0: ref STBY.4 1: last state	
	6	Biological Clock 0:disable 1:enable	
	7	Child Lock 1:disable 0:enable	
HD DELAY			0C
MODE0			
	0	FS/VS Select 0:VS TUNER 1:FS Tuner	
	1	English language select	
	2	Arabic language select	
	3	Vietnam language select	
	4	mute type 0: y mute 1: RGB mute	
	5	when mode0.7 = 1; preset sound system after ASM	
	6	00: BG 01:I 10:DK 11: M	
	7	preset sound system after ASM 0:Disable 1:Enable	
MODE1			

1 System enable 2 DK system enable 3 M system enable 4 VIDEO2 enable 5 Video3 enable 6 YUV enable 7 Thailand Dual language 0:Disable 1:Enable 8 Thailand Dual language 0:Disable 1:Enable 7 Thailand Dual language 0:Disable 1:Enable 7	0	BG system enable
2 DiK system enable 3 M system enable 4 VIDEO2 enable 5 video3 enable 6 YUV enable 7 Thailand Dual language 0:Disable 1:Enable MUTT standby ->wake time STAT contrast up timer after standby off GROUP 7 KEY 7 RF AGC RF AGC SBY SECAM R-Y BLACK ADJUST SRY SECAM R-Y BLACK ADJUST SRY SECAM R-Y BLACK ADJUST BRTS SUB BRIGHT shift data of BRTC TXCX TEXT RGB CONTRAST MAX. RGCN TEXT RGB CONTRAST MIN. BBCT GROUP 9 KEY 8 V05 VOLUME 05 V10 VOLUME 10 V30 VOLUME 30 V50 VOLUME 30 V50 VOLUME 50 V70 VOLUME 70 V90 VOLUME 100 GROUP 10 KEY 9 SVM SVM PYNX Normal H.SYNC min PYXS Search H.SYNC min GROUP 11 KEY CALENDAR CLTB TV mode & SOUND SYS = BG CLTD TV mode & SOUND SYS = M CLTD CLTM CLVO VIDEO CLYD VID WOLLE OFF 6 P/N ID 5 G GAMMA 4 NTSC-MATRIX ABL ABL SETUP 5 TB1254N RGB ABL		•
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4		
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STAT		
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RGCN TEXT RGB CONTRAST MIN. BBCT BBCT GROUP 9 KEY 8 V05 VOLUME 05 V10 VOLUME 10 V30 VOLUME 50 V70 VOLUME 50 V70 VOLUME 70 V90 VOLUME 100 GROUP 10 KEY 9 SVM SVM PYNX Normal H.SYNC max PYNN Normal H.SYNC min PYXS Search H.SYNC min GROUP 11 KEY CALENDAR CLTB TV mode & SOUND SYS = BG CLTD TV mode & SOUND SYS = M CLTD TV mode & SOUND SYS = M CLVO VIDEO CLVD YUV MODE CLTB CLTD CLTM CLVO CLVD bit setting 7 KILLER OFF 6 P/N ID 5 C GAMMA ABL ABL SETUP ABL ABL SETUP ABL ABL SETUP	TXCX	
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V10		
V30		
V50		
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CLTB CLTD CLTM CLVO CLVD bit setting 7		
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5 C GAMMA 4 NTSC-MATRIX 3 2 1 Y DL 0 ABL ABL SETUP 5 TB1254N RGB ABL		<u> </u>
5 C GAMMA 4 NTSC-MATRIX 3 2 1 Y DL 0 ABL ABL SETUP 5 TB1254N RGB ABL	6	P/N ID
4 NTSC-MATRIX 3 2 1 7 DL 0 ABL ABL SETUP 5 TB1254N RGB ABL	5	C GAMMA
3	4	
2 Y DL		
1 Y DL		
ABL ABL SETUP 5 TB1254N RGB ABL		
ABL ABL SETUP 5 TB1254N RGB ABL		_
5 TB1254N RGB ABL		
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4 TB1254N WPS		
	4	TB1254N WPS

		1
3 2		
1	ABLpoint setup	
	·	
0		
DCBS	VIDEO DATA SETUP	
0~3	Y GAMMA BLACK STRETCH	
4~5		
DEF	V AGC SELECT	
0	V AGC SELECT V AGC reference, 0:depends on YC Vcc	
0	1:Depends on integrated regulator	
	1.Depends on integrated regulator	
GROUP 14	KEY	NOTE- BOOK
OSD1	OSD Horizontal Position(volume bar, Picture bar, Half blue panel OSD)	
OSDF1	OSD PLL DATA(volume bar, Picture bar, Half blue panel OSD)	
OSD2	OSD Horizontal Position except OSD1 items	
OSDF2	OSD PLL DATA except OSDF1 items	
HAFC		
0	when nois.2 = 1 ; TV hafc gain	
1	if nois.2 = 0 TV hafc gain depend on noise(0~1)	
2	in video mode hafc gain	
3		
NOIS	HAFC DATA	
0	noise det	
1		
2	fix the hafc gain	
UCOM	MCU DATA	

Group	KEY SCAN			
Items	Bit	Description		Default
VCD0	0	SY SKEW	0: Off 1: Sync skew detection on	0x00
	1	SHR f0	0: 2.75MHz 1: 4 MHz	
	2	U/V SW	0: Cb/Cr, Cr input(#21) gain up,+3dB 1: U/V	
	3	HT Gain	0: Main OSD = 30% : 70% 1: Main OSD = 50% : 50%	
	4	Chroma Trap	00: Interlocking "Video Switch" 01: Same as "00"	
	5	Mode Select	10: C-Trap Off Not Interlocking 11: C-Trap On Not Interlocking	
	6	Audio Monitor	00: Normal, depending on Audio Switch 01: TV	

	7		10: Mute	
	0		11: Mute Don't use	
			0: Off	_
	1	H SBLK	1: On, 92%(FBP BLK off, then	
			internal BLK ON)	
			00: Internal BPF mode	
	2	FM BPF	01: Not Use	
	3	INDIT	10: Not Use	
VCD1			11: External BPF mode	0x01
	4	PIF Detected	00: 2.10 Vp-p	
		Level	01: 2.20 Vp-p 10: 2.30 Vp-p	
	5	LCVCI	11: 2.40 Vp-p	
			00: ALC off	7
	6	ALC Coin	01: 1.1 Vp-p	
	7	ALC Gain	10: 1.6 Vp-p	
	7		11: 2.3 Vp-p	
			0: Off	
	0	Spot Kill	1: & BB: (1), then RGB out: (110	
			IRE) 0: Off	_
	1	Y Coring Switch	0. 011 1: On	
			00: 0 V	
	2	AOL OL LD CL	01: -0.2 V	
		ACL Start Point	10: -0.3 V	
VCD2	3		11: -1.0 V(ACL Off)	
VCD2	4	Black Stretch	0: Off	
		Switch	1: On	
	5	C Trap Q	0: Low	
			1: High 0: Normal, CVBS signal passes	-
			along BPF	
	6	BPF SW	1: By Pass, CVBS signal doesn't	
			pass along BPF	
	7	Don't use		
	0	Sync slice level for	0: Normal	
		week signal	1: Low	_
0.410 DET	1	Sync separation	0: 40%	0.00
SYNC DET		level select	1: 50%	0x02
	2	Select H Sync judgment	0: BUS(Internal) 1: TC3(External)	
	3 - 7	Don't use	1. TOO(External)	-
SYBBN	0	20		0x00
	1			
		Window pulse for		7
	2	H-Lock detection	0: Normal	
	-	for Searching &	1: Narrow	
		Tuning		4
		H-Lock detection mode for	0: H Lock Detection mode	
	3	Searching &	1: D-Sync Pulse count mode	
		Tuning	1. D-Oyno i dise codin mode	
		Select Sync-Det-1	0: High Level	7
	4	for Sync detection	1: Low Level	
	5	Select Sync-Det-1	0: High Level	
		for Sync detection	1: Low Level	_
		LPF mode for H-	0.0%	
	6	Lock detection for Searching &	0: Off 1: LPF On	
	1	∟ Searching &	PF UN	1
		Tuning	1. 21 1 011	

	7			
	0			
	1			-
	2	Window pulse for H-Lock detection for Searching & Tuning	0: Normal 1: Narrow	
SYBBF	3	H-Lock detection mode for Searching & Tuning	0: H Lock Detection mode 1: D-Sync Pulse count mode	- 0x00
	4	Select Sync-Det-1 for Sync detection	0: High Level 1: Low Level	
	5	Select Sync-Det-1 for Sync detection	0: High Level 1: Low Level	
	6	LPF mode for H- Lock detection for Searching & Tuning	0: Off 1: LPF On	
	7	ranng		-
	0			
	1			-
	2	Window pulse for H-Lock detection for Searching & Tuning	0: Normal 1: Narrow	_
SYSR	3	H-Lock detection mode for Searching & Tuning	0: H Lock Detection mode 1: D-Sync Pulse count mode	0x02
	4	Select Sync-Det-1 for Sync detection	0: High Level 1: Low Level	
	5	Select Sync-Det-1 for Sync detection	0: High Level 1: Low Level	
	6	LPF mode for H- Lock detection for Searching & Tuning	0: Off 1: LPF On	
	7			7
NOIS DET	0 - 3	Noise Detection	0,1,2: Don't use 3: S/N High F: S/N Low	0x0F
	4 - 7	Don't use		
	0 - 6	Don't use		
FM RADIO	7	FM Radio	0: Off 1: On	0x80

Group	KEY AT			
Items	Bits	Description		Default
STBG	0 – 3	S-Trap f0 for BG	0: Sound Trap Off 1: f0 tuning min F: f0 tuning max	0x08
	4 - 7	Don't use		
STI	0 – 3	S-Trap f0 for I	0: Sound Trap Off 1: f0 tuning min F: f0 tuning max	0x08
	4 - 7	Don't use		

STDK	0 – 3	S-Trap f0 for DK	0: Sound Trap Off 1: f0 tuning min F: f0 tuning max	0x08
STM	4 - 7 0 - 3	Don't use S-Trap f0 for I	0: Sound Trap Off 1: f0 tuning min	0x08
O TIVI	4 - 7	Don't use	F: f0 tuning max	
	0	Sound Trap GD for BG	00: Off 01: 60nS 10: 90nS	
	1		11: 120nS	
SSBG	2	Sound Trap Q for BG	00: Q = 3 01: Q = 5 10: Q = 7	0x00
CODO	3		11: Q = 9	
	4	Sound Trap HP/LP for BG	00: Off 01: 1 dB HPF 10: -3 dB LPF	
	5	D "	11: -2 dB LPF	_
	6 - 7	Don't use Sound Trap GD for I	00: Off 01: 60nS 10: 90nS	
	1		11: 120nS	
SSI	2	Sound Trap Q for I	00: Q = 3 01: Q = 5 10: Q = 7	0x00
	3		11: Q = 9	
	4	Sound Trap HP/LP for I	00: Off 01: 1 dB HPF 10: -3 dB LPF	
	5 6 - 7	Don't use	11: -2 dB LPF	-
	0	Sound Trap GD for DK	00: Off 01: 60nS 10: 90nS	
	1	אט וטו עם און אווער אווי	11: 120nS	
SSDK	2	Sound Trap Q for DK	00: Q = 3 01: Q = 5 10: Q = 7	0x00
	3		10. Q = 7 11: Q = 9	
	4	Sound Trap HP/LP for DK	00: Off 01: 1 dB HPF 10: -3 dB LPF	
	5		11: -2 dB LPF	
	6 - 7	Don't use	00: Off	
	0	Sound Trap GD for M	01: 60nS 10: 90nS	
	1		11: 120nS 00: Q = 3	_
SSM	2	Sound Trap Q for M	01: Q = 5 10: Q = 7	0x00
	3		11: Q = 9 00: Off	_
	4	Sound Trap HP/LP for M	01: 1 dB HPF 10: -3 dB LPF	
	5		11: -2 dB LPF	1

Group		Key FM				
Items	Bit	Description		Default		
NDTC	0 - 7	Counter for non-weak signal detection	00 FF	0x05		
NDTCT	0 -7	Counter for weak signal 00 detection FF		0x05		

Items	Bits	Description		Default
Mode2	0 - 1	Tuner Select	00: SHARP 01: TCL/PHILIPS 10: ALPS 11: SHARP	0x02
	2 - 3	Don't use		
	4	Switch for startup notebook in d-mode	1: ON 0: OFF	
	5	X-Ray protection mode	1: > 2.5 V then active 0: < 2.5V then active	
	6			
	7	Hi Senstive	0: Off 1: On	
WRCUT	0 -6	Available offset value for RCUT of Warm	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
WGCUT	0 -6	Available offset value for GCUT of Warm	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
WBCUT	0 - 6	Available offset value for BCUT of Warm	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
WGDRV	0 -7	Available offset value for GDRV of Warm	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
WBDRV	0 -7	Available offset value for BDRV of Warm	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
CRCUT	0 -6	Available offset value for RCUT of Cool	00 7F	
	7	Sign bit	1: "-" subb operation 0: "+" add operation	
CGCUT	0 -6	Available offset value for GCUT of Cool	00 7F	

	7	Sign bit	1: "-" subb operation 0: "+" add operation
CBCUT	0 - 6	Available offset value for BCUT of Cool	00 7F
	7	Sign bit	1: "-" subb operation 0: "+" add operation
CGDRV	0 -7	Available offset value for GDRV of Cool	7F
	7	Sign bit	1: "-" subb operation 0: "+" add operation
CBDRV	0 -7	Available offset value for BDRV of Cool	7F
	7	Sign bit	1: "-" subb operation 0: "+" add operation
OEMC	0 - 2	OEM Logo string color setting	000: Black 001: use Red instead of Blue 010: Green 011: Cyan 100: Red 101: Magenda 110: Yellow 111: White
	3 - 7	Don't use	
ОЕМН	0 - 7	H - offset value for OEM logo	0 - FF
OEMV	0 - 7	V – offset value for OEM logo in 50Hz system	0 - FF
OEMVS	0 - 7	V – offset value for OEM logo in 60Hz system	0-FF

Some items is removed and be changed into:

BSNS → VBK VCEN → VCENP, VCENN

New items

MODE2 STBG STI STDK

STM SSBG SSI SSDK SSM SYNC NOIS DET SYBBN SYBBF SYSR FM RADIO WRCUT

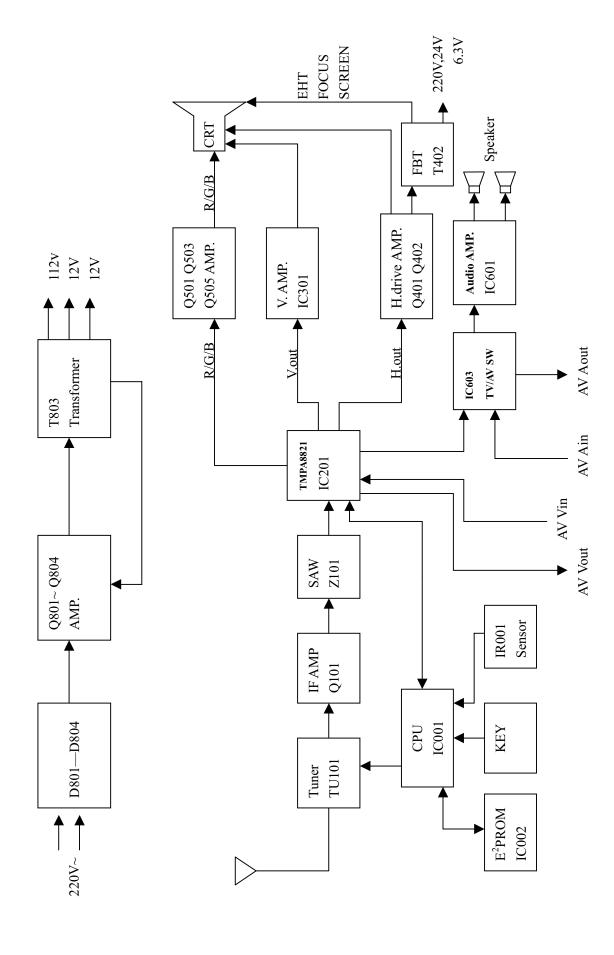
WGCUT WBCUT WGDRV WBDRV

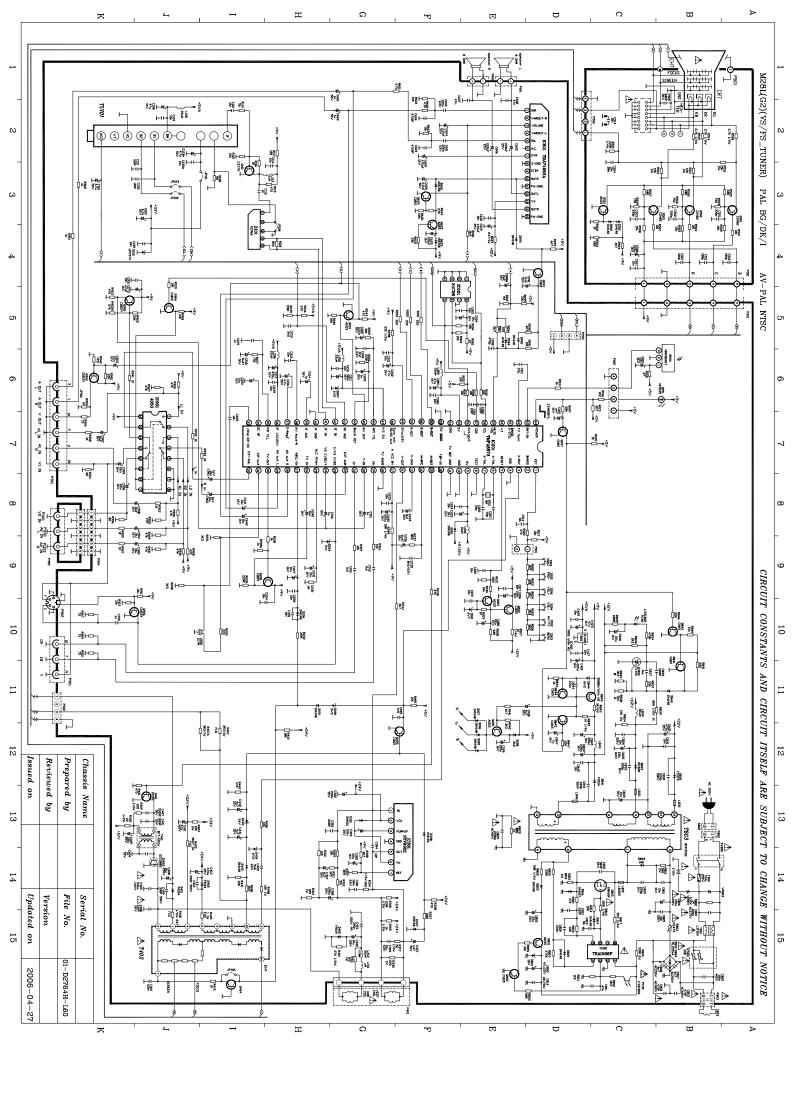
CRCUT CGCUT CBCUT CGDRV

CBDRV OEMC OEMH OEMV

OEMVS

M28B Block Diagram





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