S/M No. : CP385P-010

Service Manual

51/55/63/71 Cm STEREO Color Television

MODEL	CHASSIS
DTA-20 T1/T2/T3/T8	CP-385
DTA-21 T1/T2/T5/T9/Y1	CP-385
DTE-25 G6/G7	CP-785
DTE-28 G2/G6/G7/96/98/ A6/A7/G8/B1	CP-785



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http : //svc.dwe.co.kr

DEC. 1999

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1-1 Specifications

TV standard	PAL - SECAM B/G D/K, PAL I/I, SECAM L/L'
Sound system	NICAM B/G, I, D/K, L, FM 2Carrier B/G, D/K
Power consumption	21" : 49 W approx. 28" : 75 W approx.
Sound Output Power	21" : 4.5W x 2 (at 60% mod, 10%THD) 28" : 7W x 2 (at 60% mod, 10%THD)
Speaker	20", 21" : 7W 8 ohm x2 25", 28" : 12W 8 ohm x2
Teletext system	10 pages memory FASTEXT (FLOF or TOP)
Aerial input	75 ohm unbalanced
Channel coverage	Off-air channels, S-cable channels and hyperband
Tuning system	frequency synthesiser tuning system
Visual screen size	20" : 48 cm 21" : 51 cm 25" : 59 cm 28" : 66cm
Channel indication	On Screen Display
Program Selection	100 programmes
Aux. terminal	EURO-SCART 1 : Audio / Video In and Out, R/G/B In, Slow and Fast switching. EURO-SCART 2 : Audio / Video In, SVHS In. Audio-Video Jack on front of cabinet in common connection with EURO-SCART 2. Headphone jack (3.5 mm) on front of cabinet
Remote Control Unit	R-40A01

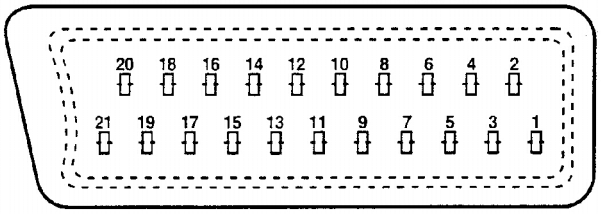
21 Pin EURO-SCART 1 :

Pin	Signal Description	Matching value
1	Audio Output Right	0.5 Vrms, Impedance < 1 kΩ, (RF 54% Mod)
2	Audio Input Right	0.5 Vrms, Impedance > 10 kΩ
3	Audio Output Left	0.5 Vrms, Impedance < 1 kΩ, (RF 54% Mod)
4	Audio Earth	
5	Blue Earth	
6	Audio Input Left	0.5 Vrms, Impedance > 10 kΩ
7	Blue Input	0.7 Vpp ±0.1V, Impedance 75Ω
8	Slow Switching	TV : 0 to 2V, AV 16/9 : 4.5 to 7V, AV 4/3 : 9.5 to 12V , Impedance > 10 kΩ
9	Green Earth	
10	N.C.	

Pin	Signal Description	Matching value
11	Green Input	0.7 Vpp ± 0.1V, Impedance 75
12	N.C.	
13	Red Earth	
14	Blanking Earth	
15	Red Input	0.7 Vpp ± 0.1V, Impedance 75
16	Fast Switching	0 to 0.4V : Logic “0”, 1 to 3V : Logic “1”, Impedance 75
17	Video Out Earth	
18	Video In Earth	
19	Video Output	1 Vpp ± 3dB, Impedance 75
20	Video Input	1 Vpp ± 3dB, Impedance 75
21	Common Earth	

21 Pin EURO-SCART 2 :

Pin	Signal Description	Matching value
1	N.C.	
2	Audio Input Right	0.5 Vrms, Impedance > 10 k
3	N.C.	
4	Audio Earth	
5	Earth	
6	Audio Input Left	0.5 Vrms, Impedance > 10 k
7	N.C.	
8	N.C.	
9	N.C.	
10	N.C.	
11	N.C.	
12	N.C.	
13	Earth	
14	Earth	
15	Chroma Input	± 3dB for a luminance signal of 1 Vpp
16	N.C.	
17	Earth	
18	Video In Earth	
19	N.C.	
20	Video Input, Y In.	1 Vpp ± 3dB, Impedance 75
21	Common Earth	



1-2 Channel table

FREQUENCY TABLE CP385/CP785

CH	EUROPE CCIR	FRANCE	GB(IRELAND)	EAST OIRT
C01	46.25	47.75 (L')	45.75	49.75
C02	48.25	55.75 (L')	53.75	59.25
C03	55.25	60.5 (L')	61.75	77.25
C04	62.25	63.75 (L')	175.25	85.25
C05	175.25	176.00	183.25	93.25
C06	182.25	184.00	191.25	175.25
C07	189.25	192.00	199.25	183.25
C08	196.25	200.00	207.25	191.25
C09	203.25	208.00	215.25	199.25
C10	210.25	216.00	223.25	207.25
C11	217.25	189.25 (LUX)	231.25	215.25
C12	224.25	69.25 (L')	239.25	223.25
C13	53.75	76.25 (L')	247.25	-
C14	-	83.25 (L')	49.75	-
C15	82.25	90.25	57.75	-
C16	-	97.25	65.75	-
C17	183.75	-	77.75	-
C18	192.25	-	85.75	-
C19	201.25	-	-	-
C20	-	-	-	-
C21	471.25	471.25	471.25	471.25
C22	479.25	479.25	479.25	479.25
C23	487.25	487.25	487.25	487.25
C24	495.25	495.25	495.25	495.25
C25	503.25	503.25	503.25	503.25
C26	511.25	511.25	511.25	511.25
C27	519.25	519.25	519.25	519.25
C28	527.25	527.25	527.25	527.25
C29	535.25	535.25	535.25	535.25
C30	543.25	543.25	543.25	543.25
C31	551.25	551.25	551.25	551.25
C32	559.25	559.25	559.25	559.25
C33	567.25	567.25	567.25	567.25
C34	575.25	575.25	575.25	575.25
C35	583.25	583.25	583.25	583.25
C36	591.25	591.25	591.25	591.25
C37	599.25	599.25	599.25	599.25
C38	607.25	607.25	607.25	607.25
C39	615.25	615.25	615.25	615.25
C40	623.25	623.25	623.25	623.25
C41	631.25	631.25	631.25	631.25

CH	EUROPE CCIR	FRANCE	GB(IRELAND)	EAST OIRT
C42	639.25	639.25	639.25	639.25
C43	647.25	647.25	647.25	647.25
C44	655.25	655.25	655.25	655.25
C45	663.25	663.25	663.25	663.25
C46	671.25	671.25	671.25	671.25
C47	679.25	679.25	679.25	679.25
C48	687.25	687.25	687.25	687.25
C49	695.25	695.25	695.25	695.25
C50	703.25	703.25	703.25	703.25
C51	711.25	711.25	711.25	711.25
C52	719.25	719.25	719.25	719.25
C53	727.25	727.25	727.25	727.25
C54	735.25	735.25	735.25	735.25
C55	743.25	743.25	743.25	743.25
C56	751.25	751.25	751.25	751.25
C57	759.25	759.25	759.25	759.25
C58	767.25	767.25	767.25	767.25
C59	775.25	775.25	775.25	775.25
C60	783.25	783.25	783.25	783.25
C61	791.25	791.25	791.25	791.25
C62	799.25	799.25	799.25	799.25
C63	807.25	807.25	807.25	807.25
C64	815.25	815.25	815.25	815.25
C65	823.25	823.25	823.25	823.25
C66	831.25	831.25	831.25	831.25
C67	839.25	839.25	839.25	839.25
C68	847.25	847.25	847.25	847.25
C69	855.25	855.25	855.25	855.25
C70	863.25	863.25	863.25	863.25
C71	69.25	-	-	-
C72	76.25	-	-	-
C73	83.25	-	-	-
C74	90.25	-	-	-
C75	97.25	-	-	-
C76	59.25	-	-	-
C77	93.25	-	-	-
S01	105.25	104.75	103.25	105.25
S02	112.25	116.75	111.25	112.25
S03	119.25	128.75	119.25	119.25
S04	126.25	140.75	127.25	126.25
S05	133.25	152.75	135.25	133.25
S06	140.25	164.75	143.25	140.25
S07	147.25	176.75	151.25	147.25
S08	154.25	188.75	159.25	154.25
S09	161.25	200.75	167.25	161.25

CH	EUROPE CCIR	FRANCE	GB(IRELAND)	EAST OIRT
S10	168.25	212.75	-	168.25
S11	231.25	224.75	-	231.25
S12	238.25	236.75	-	238.25
S13	245.25	248.75	255.25	245.25
S14	252.25	260.75	263.25	252.25
S15	259.25	272.75	271.25	259.25
S16	266.25	284.75	279.25	266.25
S17	273.25	296.75	287.25	273.25
S18	280.25	136.00	295.25	280.25
S19	287.25	160.00	303.25	287.25
S20	294.25	-	-	294.25
S21	303.25	303.25	-	303.25
S22	311.25	311.25	311.25	311.25
S23	319.25	319.25	319.25	319.25
S24	327.25	327.25	327.25	327.25
S25	335.25	335.25	335.25	335.25
S26	343.25	343.25	343.25	343.25
S27	351.25	351.25	351.25	351.25
S28	359.25	359.25	359.25	359.25
S29	367.25	367.25	367.25	367.25
S30	375.25	375.25	375.25	375.25
S31	383.25	383.25	383.25	383.25
S32	391.25	391.25	391.25	391.25
S33	399.25	399.25	399.25	399.25
S34	407.25	407.25	407.25	407.25
S35	415.25	415.25	415.25	415.25
S36	423.25	423.25	423.25	423.25
S37	431.25	431.25	431.25	431.25
S38	439.25	439.25	439.25	439.25
S39	447.25	447.25	447.25	447.25
S40	455.25	455.25	455.25	455.25
S41	463.25	463.25	463.25	463.25

1-3 ATSS sorting method

The TV set sweeps all the TV bands from beginning of VHF to end of UHF. The TV controlling software for each program checks if a VPS CNI code is transmitted. If no VPS CNI code is found, the system check if a CNI code is transmitted in the teletext lines (Packet 8/30 format 1). If such a code (VPS or teletext) is found and if this code is in the ATSS list, the program is automatically named. The programs found are then sorted in 4 groups :

Group I : It contains all the programs from the selected country and named by the TV controlling software. Within this group the sorting order is fixed by the ATSS list.
Group II : It contains all the programs with a strong signal strength which are not listed in group I.
Group III : It contains all the programs with a weak signal strength which are not listed in group I.
Group IV : If two or more programs with the same code are found, only the strongest (or if they have the same level the one with the lowest frequency) is listed in group I, II or III. The others are listed in group IV.

Note : If two programs with the same name but a different code are found these two programs are listed in group I, II or III (e.g. Regional program SW3 in Germany).

The sorting order within group II, III, and IV is based on the channel frequency. The program with the lowest frequency is allocated the first rank in its group, and so forth until the last program of the group which has the highest frequency.

Program number	Group	Skip
1	Group I	
2		
...		
n		
n+1	Group II	
...		
m		
m+1	Group III	
...		
p		
p+1	Group IV	
...		
q		
q+1	not used	✓
...		
99		
0		

Program number	Group	Skip
1	Group II	
...		
m		
m+1	Group III	
...		
p		
p+1	Group IV	
...		
q		
q+1	not used	✓
...		
99		
0		

Special case : **Country selection = Others**

Special case : **France**
If France is selected the TV controlling software sweeps the whole TV bands firstly with France system selected (positive video modulation) and secondly with Europe system selected (negative video modulation).

Special case : **Switzerland**
If Switzerland is selected the TV controlling software sweeps the whole TV bands firstly with Europe system selected (negative video modulation) and secondly with France system selected (positive video modulation).

Special case : **GB**
Note for satellite receiver users : Before starting ATSS turn On your satellite receiver and tune " SKY NEWS ".
If GB is selected the TV controlling software seeks for programs only in UHF (C21 to C70). The sorting order is :
1 - BBC1
2 - BBC2
3 - ITV
4 - CH4
5 - CH5
6 - NEWS

If two or more " identical "programs (same name but different code e.g. BBC1 and BBC1 Scotland) are found the following programs in the list will be shifted up. (1 - BBC1, 2 - BBC1, 3 - BBC2, 4 - ITV, 5 - CH4, 6 - CH5, 7 - NEWS, ..)

If one of the program above is not found, the associated program number remains empty (freq.=467.25 Mhz - Skip selected - no name - system=GB).
example A : 1 - BBC1, 2 - BBC2, 3 - ITV, 4 - -----, 5 - CH5, 6 - NEWS, ...
example B (if 2 BBC1 found) : 1 - BBC1, 2 - BBC1, 3 - BBC2, 4 - ITV, 5 - -----, 6 - CH5, 7 - NEWS, ...

2 - Safety instruction

WARNING: Only competent service personnel may carry out work involving the testing or repair of this equipment.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 25-26 KV (20”-21”) or 26 KV (25” - 28”) at max beam current. The high voltage must not, under any circumstances, exceed 27.5 KV (20”), 29KV (21”), 29.5 KV (25") or 30 KV (28"). Each time a receiver requires servicing, the high voltage should be checked. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.
   1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
   2) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10 mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate under AC 230 volts, 5O Hz. NEVER connect to DC supply or any other power or frequency.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this equipment have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitutes replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY Radiation.

3 - Alignment instructions

3-1 Microcontroller configuration : Service mode
To switch the TV set into service mode please see instruction below.

1 - Select pr. number 91
2 - Adjust sharpness to minimum and exit all menu.
3 - Quickly press the key sequence : **RED - GREEN - menu**

To exit SERVICE menu press **menu** key or **Std By** key.

In Service Mode press "**OK**" to stop the microcontroller i.e. the I2C bus is free and the set can be controlled by external equipment. Press "**OK**" again to allow the microcontroller to control the set again

3-2 Microcontroller configuration : Option

Option	Tuner maker	Remark
0	DAEWOO / SAMSUNG	
1	DAEWOO / SAMSUNG	
2	SIEL	
3	PHILIPS	Option 3 is available from software version 3 only

3-3 TV set Alignment
3-3-1 - G2 alignement
- TV in AV mode without video signal ⇒ Black screen.
- TV preset with WP Red, WP Green and WP Blue equal to 32.
- TV preset with Black R, Black G equal to 8.
- Set TV in NORMAL I mode
- Adjust screen volume (on FBT) such that the highest cathod cut-off voltage measured on CRT board, is Vcut off ± 5V.

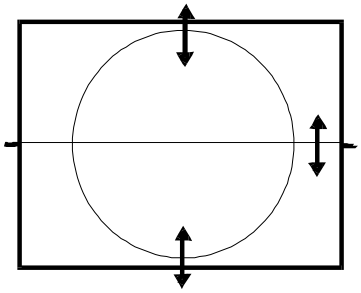
Screen size	Vcut-off
20" & 21"	125 V
25" & 28"	140 V

3-3-2 - White balance
- Select a dark picture and adjust Black G and Black R to the desired colour temperature.
- Select a bright picture and adjust WP Red, WP Green, WP Blue to the desired colour temperature.

3-3-3 - Focus
- Adjust the Focus volume (on FBT) to have the best resolution on screen.

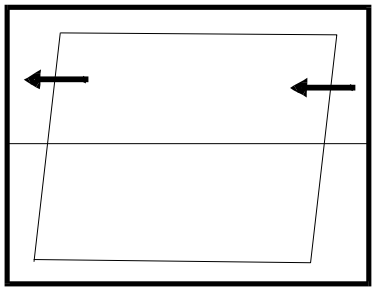
3-3-4 - Vertical geometry

- Adjust the Vertical Amplitude, Shift, S-Correction and Slope to compensate for vertical distortion.

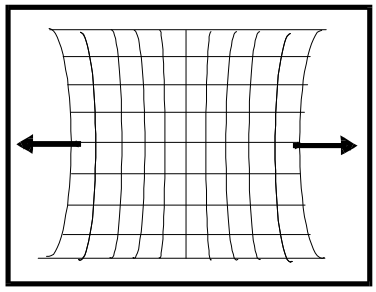


3-3-5 - Horizontal picture centering
- Adjust H Shift to have the picture in the center of the screen.

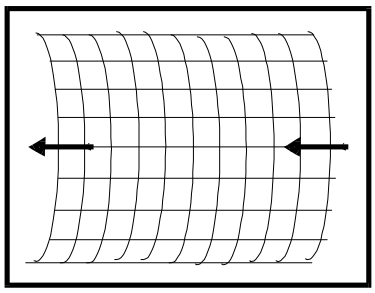
3-3-6 - East / West correction (Chassis CP785 only)
- Adjust the H Parall, H Bow, H Width, EW Parabo, Up Corner, Dw Corner, EW trapez to compensate for geometrical distortion.



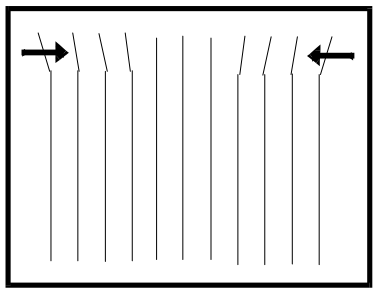
H. Parall



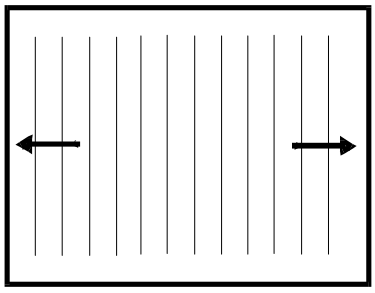
EW.Parabo



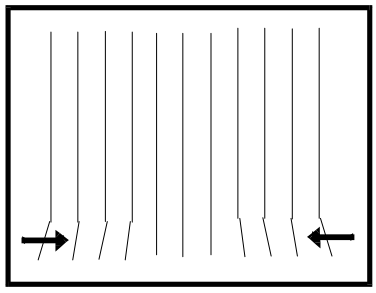
H. Bow



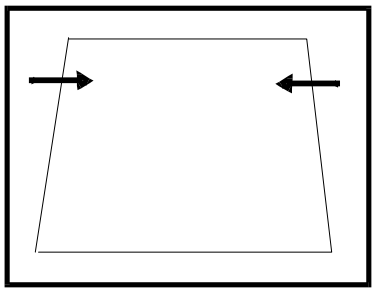
Up Corner



H.Width



Dw Corner



EW Trapez

3-3-7 - AGC

- Adjust the antenna signal level at 68 dBµV± 2 (UHF - CH25)
- Set RF AGC to 0.
- Increase RF AGC level and stop when the level on pin 6 of TDA936x goes below 2.5 Vdc

4 - IC description

4-1 TDA936x TV signal processor - Teletext decoder with embedded µ-Controller.

TV-signal Processor

- Multi-standard vision IF circuit with alignment-free PLL demodulator
- Internal (switchable) time-constant for the IF-AGC circuit
- Source selection between 'Internal' CVBS and external CVBS or Y/C signals
- Integrated chrominance trap circuit
- Integrated luminance delay line with adjustable delay time
- Asymmetrical ‘delay line type’ peaking in the luminance channel
- Black stretching for non-standard luminance signals
- lntegrated chroma band-pass filter with switchable centre frequency
- Only one reference (12 MHz) crystal required for the µ-Controller, Teletext and the colour decoder
- PAL / NTSC or multistandard colour decoder with automatic search system
- Internal base-band delay line
- RGB control circuit with 'Continuous Cathode Calibration', white point and black level off set adjustment so that the colour temperature of the dark and the bright parts of the screen can be chosen independently.
- Linear RGB or YUV input with fast blanking for external RGB/YUV sources. The Text/OSD signals are internally supplied from the µ-Controller/Teletext decoder
- Contrast reduction possibility during mixed-mode of OSD and Text signals
- Horizontal synchronisation with two control loops and alignment-free horizontal oscillator
- Vertical count-down circuit
- Vertical driver optimised for DC-coupled vertical output stages
- Horizontal and vertical geometry processing
- Horizontal and vertical zoom function for 16 : 9 applications
- Horizontal parallelogram and bow correction for large screen picture tubes

µ-Controller

- 80C51 µ-controller core standard instruction set and timing
- 1µs machine cycle
- 32 - 128Kx8-bit late programmed ROM
- 3 - 12Kx8-bit Auxiliary RAM (shared with Display and Acquisition)
- Interrupt controller for individual enable/disable with two level priority
- Two 16-bit Timer/Counter registers
- WatchDog timer
- Auxiliary RAM page pointer
- 16-bit Data pointer
- IDLE and Power Down (PD) mode
- 14 bits PWM for Voltage Synthesis Tuning
- 8-bit A/D converter
- 4 pins which can be programmed as general I/0 pin, ADC input or PWM (6-bit) output

Data Capture

- Text memory 10 pages

- Inventory of transmitted Teletext pages stored in the Transmitted Page Table (TPT) and Subtitle Page Table (SPT)
- Data Capture for US Closed Caption
- Data Capture for 525/625 line WST, VPS (PDC system A) and Wide Screen Signalling (WSS) bit decoding Automatic selection between 525 WST/625 WST
- Automatic selection between 625 WST/VPS on line 16 of VBI
- Real-time capture and decoding for WST Teletext in Hardware, to enable optimised µ-processor throughput
- Automatic detection of FASTEXT transmission
- Real-time packet 26 engine in Hardware for processing accented, G2 and G3 characters
- Signal quality detector for video and WST/VPS data types
- Comprehensive teletext language coverage
- Full Field and Vertical Blanking lnterval (VBI) data capture of WST data

Display

- Teletext and Enhanced OSD modes
- Features of lever 1.5 WST and US Close Caption
- Serial and Parallel Display Attributes
- Single/Double/Quadruple Width and Height for characters
- Scrolling of display region
- Variable flash rate controlled by software
- Enhanced display features including overlining, underlining and italics
- Soft colours using CLUT with 4096 colour palette
- Globally selectable scan lines per row (9/10/13/16) and character matrix [12x10, 12xl3, 12x16 (VxH)]
- Fringing (Shadow) selectable from N-S-E-W direction
- Fringe colour selectable
- Meshing of defined area
- Contrast reduction of defined area
- Cursor
- Special Graphics Characters with two planes, allowing four colours per character
- 32 software redefinable On-Screen display characters
- 4 WST Character sets (GO/G2) in single device (e.g. Latin, Cyrillic, Greek, Arabic)
- G1 Mosaic graphics, Limited G3 Line drawing characters
- WST Character sets and Closed Caption Character set in single device

Data Capture

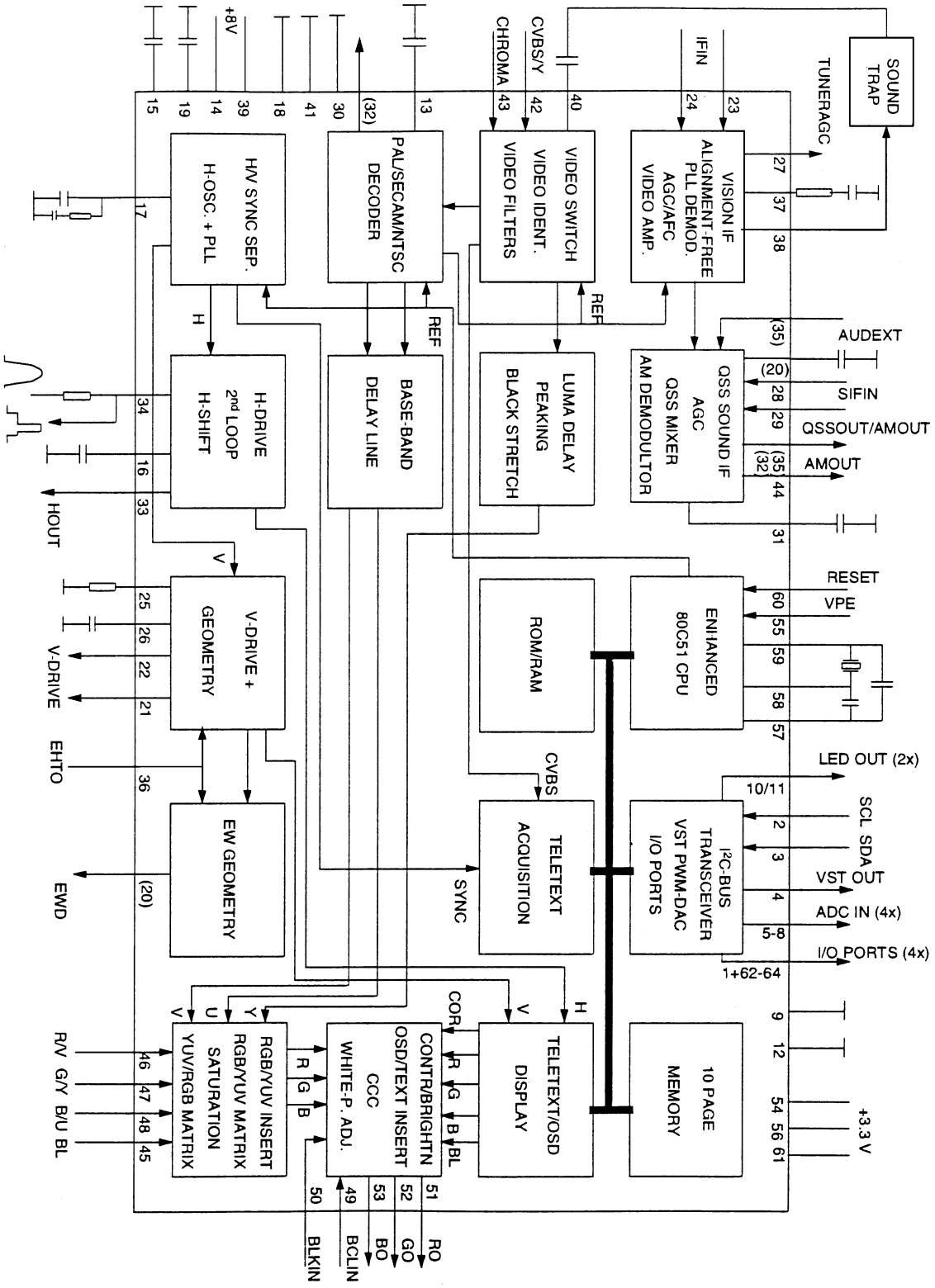
The Data Capture section takes in the analogue Composite Vidéo and Blanking Signal (CVBS), and from this extracts the required data, which is then decoded and stored in memory.

The extraction of the data is performed in the digital domain. The first stage is to convert the analogue CVBS signal into a digital form. This is done using an ADC sampling at 12MHz. The data and clock recovery is then performed by a Multi-Rate Video Input Processor (MuIVIP). From the recovered data and clock the following data types are extracted WST Teletext (625/525), Closed Caption, VPS, WSS. The extracted data is stored in either memory (DRAM) via the Memory Interface or in SFR locations.

Data Capture Features

- Video Signal Quality detector

- Data Capture for 625 line WST
- Data Capture for 525 line WST
- Data Capture for US Closed Caption
- Data Capture for VPS data (PDC system A)
- Data Capture for Wide Screen Signalling (WSS) bit decoding
- Automatic selection between 525 WST/625WST
- Automatic selection between 625WST/VPS on line 16 of VBI
- Real-time capture and decoding for WST Teletext in Hardware, to enable optimised microprocessor throughput
- 10 pages stored On-Chip
- lnventory of transmitted Teletext pages stored in the Transmitted Page Table (TPT) and Subtitle Page Table (SPT)
- Automatic detection of FASTEXT transmission
- Real-time packet 26 engine in Hardware for processing accented, G2 and G3 characters
- Signal quality detector for WST/VPS data types
- Comprehensive Teletext language coverage
- Full Field and Vertical Blanking Interval (VBI) data capture of WST data


SOUND TRAP
TUNERAGC
VISION IF ALIGNMENT-FREE PLL DEMOD. AGC/AFC VIDEO AMP.
VIDEO SWITCH VIDEO IDENT. VIDEO FILTERS
PAL/SECAM/NTSC DECODER
H/V SYNC SEP. H-OSC. + PLL
IFIN
CVBS/Y
CHROMA
+8V
REF
H
V
AUDEXT
SIFIN
QSSOUT/AMOUT
AMOUT
QSS SOUND IF AGC QSS MIXER AM DEMODULTOR
LUMA DELAY PEAKING BLACK STRETCH
BASE-BAND DELAY LINE
H-DRIVE 2nd LOOP H-SHIFT
HOUT
RESET
VPE
ENHANCED 80C51 CPU
ROM/RAM
LED OUT (2x)
SCL SDA
VST OUT
ADC IN (4x)
I/O PORTS (4x)
I²C-BUS TRANSCEIVER VST PWM-DAC I/O PORTS
V-DRIVE + GEOMETRY
V-DRIVE
EHTO
EW GEOMETRY
EWD
CVBS
SYNC
TELETEXT ACQUISITION
TELETEXT/OSD DISPLAY
10 PAGE MEMORY
+3.3 V
RGB/YUV INSERT RGB/YUV MATRIX SATURATION YUV/RGB MATRIX
CONTR/BRIGHTN OSD/TEXT INSERT CCC WHITE-P. ADJ.
R/V G/Y B/U BL
RO
GO
BO
BCLIN
BLKIN

TV processor version and m-Controller capacity

IC version	TDA9365 Nx / 3	TDA9367 Nx /3
TV range	110°	90°
QSS sound IF amplifier with separated input and AGC circuit	✓	✓
PAL decoder	✓	✓
SECAM decoder	✓	✓
NTSC decoder	✓	✓
Horizontal geometry (E-W)	✓	
Horizontal and vertical zoom	✓	
ROM size	64 k	64 k
RAM size	2 k	2 k
Teletext	10 pages	10 pages

IC marking and version

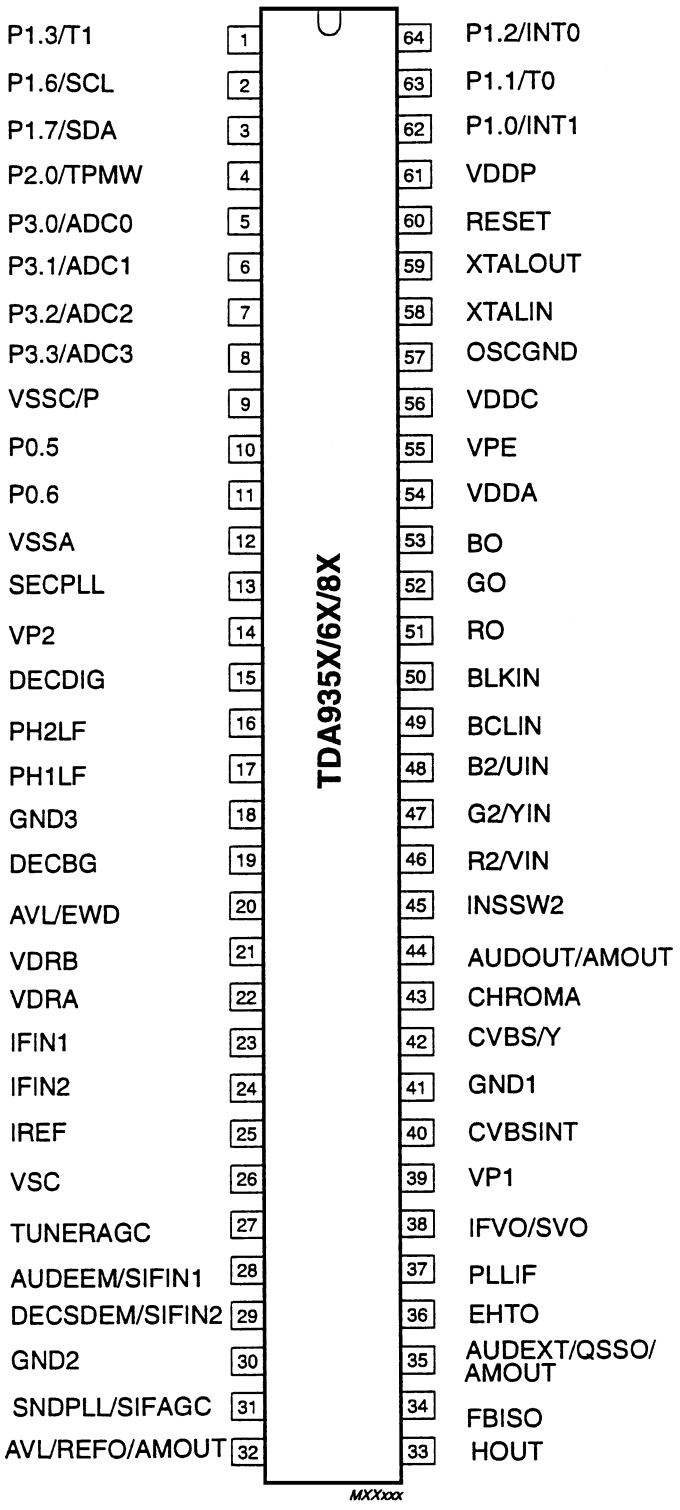
Chassis	IC marking (line 3)	OSD languages	ATSS country	Text
CP 385	DW9367/N1/3-AEx (note : x is the software version)	English, French, German, Italian, Spanish, Dutch, Danish, Finnish, Norwegian, Swedish	GB, France, Germany, Belgium, Spain, Italy, Switzerland, Austria, Denmark, Finland, Netherlands, Norway, Sweden, Ireland, Others	Pan-European (West)
CP 385	DW9367/N1/3-ADx (note : x is the software version)	English, Polish, Russian, Hungarian, Czech, Slovakian, Romanian, Greek	Poland, Hungary, Czech rep., Others	Pan-European, East, Cyrillic, Greek.
CP 785	DW9365/N1/3-BE x (note : x is the software version)	English, French, German, Italian, Spanish, Dutch, Danish, Finnish, Norwegian, Swedish	GB, France, Germany, Belgium, Spain, Italy, Switzerland, Austria, Denmark, Finland, Netherlands, Norway, Sweden, Ireland, Others	Pan-European (West)

Chassis	IC marking (line 3)	OSD languages	ATSS country	Text
CP 785	DW9365/N1/3-BDx (note : x is the software version)	English, Polish, Russian, Hungarian, Czech, Slovakian, Romanian, Greek	Poland, Hungary, Czech rep., Others	Pan-European, East, Cyrillic, Greek.

PINNING

SYMBOL	PIN	DESCRIPTION
n.u.	1	Port 1.3 Not used.
SCL	2	I2C bus clock line
SDA	3	I2C Data line
SECAM L' out	4	Port 2.0 : High when L' selected (PushPull)
OCP	5	Port 3.0 : Over Current Protection
RF AGC in	6	ADC 1 : For factory use only (High impedance)
Key-in	7	ADC 2 : local key input (High impedance)
S/SW	8	ADC 3 : Scart Slow switching input
VssC/P	9	digital ground for µ-controller core and peripheral
LED 1	10	port 0.5 (8mA current sinking capability)
LED 2	11	port 0.6 (8mA current sinking capability)
VSSA	12	analog ground of teletext decoder and digital ground of TV processor
SEC PLL	13	SECAM PLL decoupling
VP2	14	2nd supply voltage TV-processor
DECDIG	15	decoupling digital supply of TV-processor
PH2LF	16	phase-2 filter
PH1LF	17	phase-1 filter
GND3	18	ground 3 for TV-processor
DECBG	19	bandgap decoupling
AVL/EWD	20	East / West drive output
VDRB	21	vertical drive B output
VDRA	22	vertical drive A output
IFIN1	23	IF input 1
IFIN2	24	IF input 2
IREF	25	reference current input
VSC	26	vertical sawtooth capacitor
TUNERAGC	27	tuner AGC output
SIFIN1	28	SIF input 1
SIFIN2	29	SIF input 2
GND2	30	ground 2 for TV processor
SIF AGC	31	AGC sound IF
REF0	32	n.u.
HOUT	33	horizontal output
FBISO	34	flyback input / sandcastle output

SYMBOL	PIN	DESCRIPTION
QSS out	35	QSS intercarrier output
EHT0	36	EHT/Overvoltage protection
PLLIF	37	IF PLL loop filter
IFVO	38	IF video output
VP1	39	main supply voltage TV-processor
CVBSINT	40	internal CVBS input
GND1	41	ground 1 for TV-processor
CVBS/Y	42	external CVBS/Y input
CHROMA	43	chrominance input (SVHS)
AMOUT	44	n.u.
INSSW2	45	2nd RGB insertion input
R2IN	46	2nd R input
G2IN	47	2nd G input
B2IN	48	2nd B input
BCLIN	49	beam current limiter input
BLKIN	50	black current input
R0	51	RED Output
G0	52	GREEN Output
B0	53	BLUE Output
VDDA	54	analog supply of Teletext decoder and digital supply of TV-Processor (3.3V)
VPE	55	OTP programming supply
VDDC	56	digital supply to core (3.3V)
OSCGND	57	oscillator ground supply
XTALIN	58	crystal oscillator input
XTALOUT	59	crystal oscillator output
RESET	60	reset
VDDP	61	digital supply to periphery (3.3V)
Audio Mute	62	Port 1.0 : Audio mute output (PushPull)
Power	63	Port 1.1 : Power output (PushPull)
IR in	64	Interrupt input 0 : R/C Infrared input


TDA935X/6X/8X
MXXxxx
1 P1.3/T1
2 P1.6/SCL
3 P1.7/SDA
4 P2.0/TPMW
5 P3.0/ADC0
6 P3.1/ADC1
7 P3.2/ADC2
8 P3.3/ADC3
9 VSSC/P
10 P0.5
11 P0.6
12 VSSA
13 SECPLL
14 VP2
15 DECDIG
16 PH2LF
17 PH1LF
18 GND3
19 DECBG
20 AVL/EWD
21 VDRB
22 VDRA
23 IFIN1
24 IFIN2
25 IREF
26 VSC
27 TUNERAGC
28 AUDEEM/SIFIN1
29 DECSDEM/SIFIN2
30 GND2
31 SNDPLL/SIFAGC
32 AVL/REFO/AMOUT
64 P1.2/INT0
63 P1.1/T0
62 P1.0/INT1
61 VDDP
60 RESET
59 XTALOUT
58 XTALIN
57 OSCGND
56 VDDC
55 VPE
54 VDDA
53 BO
52 GO
51 RO
50 BLKIN
49 BCLIN
48 B2/UIN
47 G2/YIN
46 R2/VIN
45 INSSW2
44 AUDOUT/AMOUT
43 CHROMA
42 CVBS/Y
41 GND1
40 CVBSINT
39 VP1
38 IFVO/SVO
37 PLLIF
36 EHTO
35 AUDEXT/QSSO/ AMOUT
34 FBISO
33 HOUT

4-2 MSP3415D Multistandard Sound Processor
The MSP 3415D is designed as a single-chip Multistandard Sound Processor for applications in analogue and digital TV sets, video recorders, and PC cards.

MSP 3415D features
- sound IF input
- No external filters required
- Stereo baseband input via integrated AD converters
- Two pairs of DA converters
- Two carrier FM or NICAM processing
- AVC : Automatic Volume Correction
- Bass, treble, volume processing
- Full SCART in/out matrix without restrictions
- Improved FM-identification
- Demodulator short programming
- Autodetection for terrestrial TV - sound standards
- Precise bit-error rate indication
- Automatic switching from NICAM to FM/AM or vice versa
- Improved NICAM synchronisation algorithm
- Improved carrier mute algorithm
- Improved AM-demodulation
- Reduction of necessary controlling
- Less external components

Basic Features of the MSP 3415D

Demodulator and NICAM Decoder Section

The MSP 3415D is designed to simultaneously perform digital demodulation and decoding of NICAM-coded TV stereo sound, as well as demodulation of FM or AM mono TV sound. Alternatively, two carrier FM systems according to the German terrestrial specs can be processed with the MSP 3415D.

The MSP 3415D facilitates profitable multistandard capability, offering the following advantages:
- Automatic Gain Control (AGC) for analogue input: input range: 0.10 - 3 Vpp
- integrated A/D converter for sound-IF input
- all demodulation and filtering is performed on chip and is individually programmable
- easy realisation of all digital NICAM standards (B/G, I, L and D/K)
- FM-demodulation of all terrestrial standards (include identification decoding)
- no external filter hardware is required
- only one crystal clock (18.432 MHz) is necessary
- high deviation FM-mono mode (max. deviation: approx. ±360 kHz)

DSP-Section (Audio Baseband Processing)
- flexible selection of audio sources to be processed
- performance of terrestrial de-emphasise systems (FM, NICAM)
- digitally performed FM-identification decoding and de-matrixing
- digital baseband processing: volume, bass, treble
- simple controlling of volume, bass, treble

Analogue Section

- two selectable analogue pairs of audio baseband input (= two SCART inputs) input level: <2 V RMS, input impedance: >25 kΩ
- one selectable analogue mono input (i.e. AM sound): Not used in this chassis
- two high-quality A/D converters, S/N-Ratio: >85 dB
- 20 Hz to 20 kHz bandwidth for SCART-to-SCART copy facilities
- loudspeaker: one pair of four-fold oversampled D/A converters
output level per channel: max. 1.4 VRMS output resistance: max. 5 kΩ
S/N-ratio: >85 dB at maximum volume max. noise voltage in mute mode: < 10 µV (BW: 20 Hz... 16 kHz)
- one pair of four-fold oversampled D/A converters supplying a pair of SCART-outputs.
output level per channel: max. 2 V RMS, output resistance: max. 0.5 kΩ,
S/N-Ratio: >85 dB (20 Hz... 16 kHz)

Application Fields of the MSP 3415D

In the following sections, a brief overview about the two main TV sound standards, NICAM 728 and German FM Stereo, demonstrates the complex requirements of a multistandard audio IC.

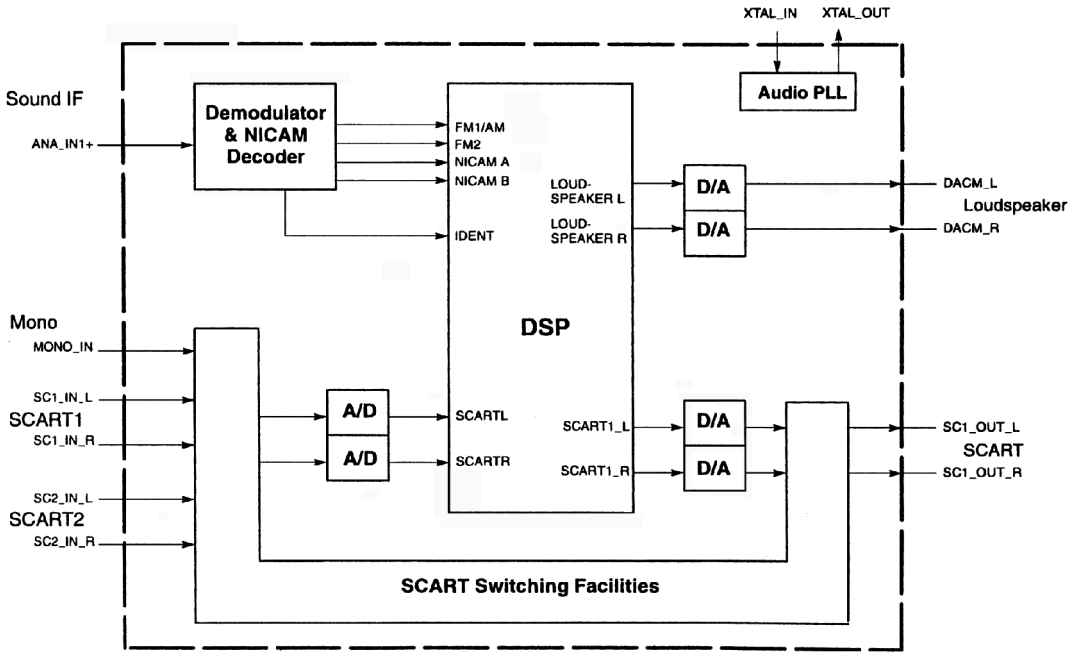
NICAM plus FM/AM-Mono

According to the British, Scandinavian, Spanish, and French TV-standards, high-quality stereo sound is transmitted digitally. The systems allow two high-quality digital sound channels to be added to the already existing FM/AM-channel. The sound coding follows the format of the so-called Near Instantaneous Companding System (NICAM 728). Transmission is performed using Differential Quadrature Phase Shift Keying (DQPSK. Table below offers an overview of the modulation parameters.
In the case of NICAM/FM (AM) mode, there are three different audio channels available: NICAM A, NICAM B, and FM/AM-mono. NICAM A and B may belong either to a stereo or to a dual language transmission. Information about operation mode and about the quality of the NICAM signal can be read by the controlling software via the control bus. In the case of low quality (high bit error rate), the controlling software may decide to switch to the analogue FM/AM-mono sound. Alternatively, an automatic NICAM-FM/AM switching may be applied.

German 2-Carrier System (DUAL FM System)
Since September 1981, stereo and dual sound programs have been transmitted in Germany using the 2-carrier system. Sound transmission consists of the already existing first sound carrier and a second sound carrier additionally containing an identification signal. More details of this standard are given in Tables below. For D/K very similar system is used.

TV standards

TV system	Position of sound carrier (MHz)	Sound modulation	Color system	Country
B/G	5.5 / 5.7421875	FM Stereo	PAL	Germany
B/G	5.5 / 5.85	FM-Mono / NICAM	PAL	Scandinavia, Spain
L	6.5 / 5.85	AM - Mono / NICAM	SECAM-L	France
I	6.0 / 6.552	FM-Mono / NICAM	PAL	UK
D/K	6.5 / 6.2578125 D/K1 6.5 / 6.7421875 D/K2 6.5 / 5.85 D/K-NICAM	FM Stereo FM-Mono / NICAM	SECAM-East	USSR Hungary



Architecture of MSP3415D

Pin connections and short description

Pin No.	Pin Name	Type	Short description
1	TP	Out	Test pin
2	NC		Not Connected
3	NC		Not Connected
4	TP	Out	Test pin
5	TP	Out	Test pin
6	ADR_SEL	In	I2C bus Address select
7	STANDBYQ	In	Standby (Low-active)
8	NC		Not Connected
9	I2C_CL	In / Out	I2C Clock
10	I2C_DA	In / Out	I2C data

Pin No.	Pin Name	Type	Short description
11	TP	In / Out	Test pin
12	TP	In / Out	Test pin
13	TP	Out	Test pin
14	NC		Not Connected
15	TP	Out	Test pin
16	TP	Out	Test pin
17	TP	Out	Test pin
18	DVSUP		Digital power supply +5V
19	DVSS		Digital Ground
20	NC		Not Connected
21	NC		Not Connected
22	NC		Not Connected
23	NC		Not Connected
24	RESETQ	In	Power-On-reset
25	NC		Not Connected
26	NC		Not Connected
27	VREF2		Reference ground 2 high voltage part
28	DACM_R	Out	Loudspeaker out Right
29	DACM_L	Out	Loudspeaker out Left
30	NC		Not Connected
31	TP	Out	Test pin
32	NC		Not Connected
33	NC		Not Connected
34	NC		Not Connected
35	VREF1		Reference ground 1 high voltage part
36	SC1_OUT_R	Out	Scart output 1, right
37	SC1_OUT_L	Out	Scart output 1, left
38	NC		Not Connected
39	AHVSUP		Analog power supply 8.0V
40	CAPL_M		Volume capacitor MAIN
41	AHVSS		Analog ground
42	AGNDC		Analog reference voltage high voltage part
43	NC		Not Connected
44	NC		Not Connected
45	NC		Not Connected
46	NC		Not Connected
47	NC		Not Connected
48	ASG2		Analog Shield Ground 2
49	SC2_IN_L	In	Scart input 2 in, left
50	SC2_IN_R	In	Scart input 2 in, right
51	ASG1		Analog Shield Ground 1
52	SC1_IN_L	In	Scart input 1 in, left
53	SC1_IN_R	In	Scart input 1 in, right
54	VREFTOP		Reference voltage IF A/D converter
55	MONO_IN	In	Mono input

Pin No.	Pin Name	Type	Short description
56	AVSS		Analog ground
57	AVSUP		Analog power supply
58	ANA_IN1+	In	IF input 1
59	ANA_IN1-	In	IF common
60	NC		Not Connected
61	TESTEN	In	Test pin
62	XTAL_IN	In	Crystal oscillator
63	XTAL_OUT	Out	Crystal oscillator
64	NC		Test pin

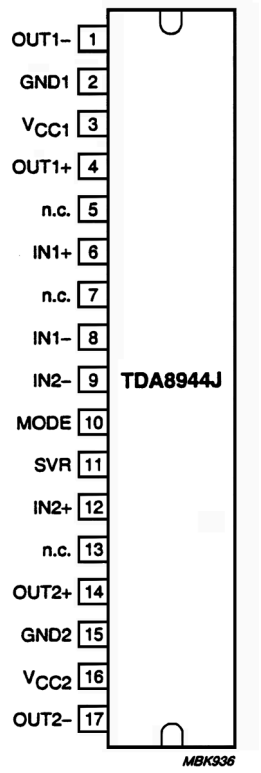
4-3 TDA894xJ Stereo Audio Amplifier

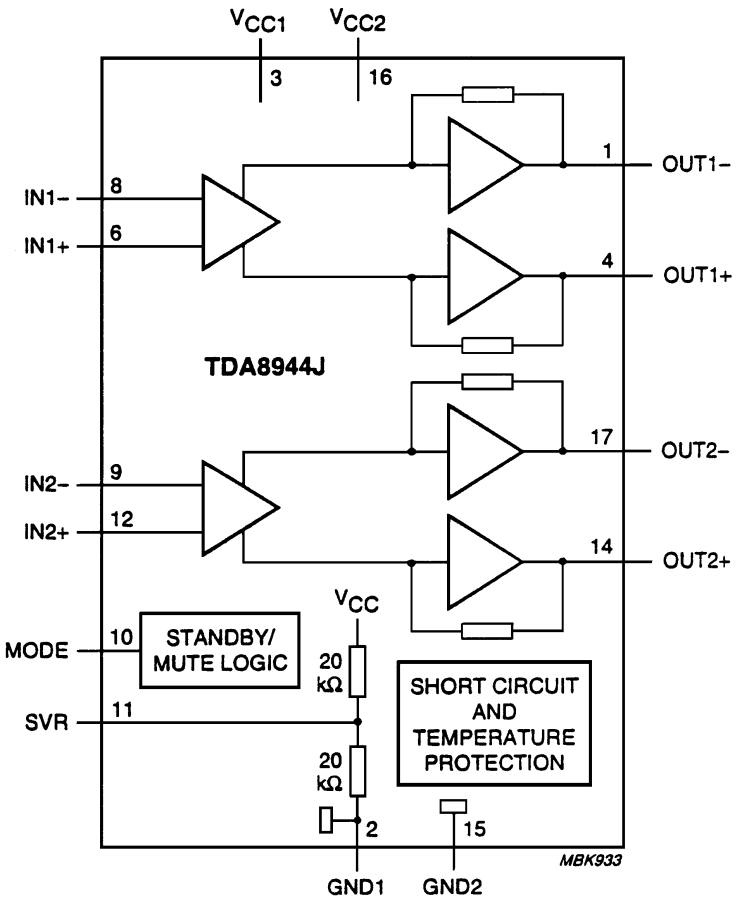
The TDA 8944J (TDA 8946J) is a dual-channel audio power amplifier with an output power of 2 x 7 W (2 x 15 W) at an 8 load and a 12 V supply. The circuit contains two Bridges Tied Load (BTL) amplifiers with an all-NPN output stage and standby/mute logic. The TDA8944J comes in a 17-pin DIL power package.

Features
Few external components
Fixed gain
Standby and mute mode
No on/off switching plops
low standby current
High supply voltage ripple rejection
Outputs short-circuit protected to ground, supply and across the load
Thermally protected

Pin description

Pin	Symbol	Description
1	OUT1-	negative loudspeaker terminal 1
2	GND1	ground channel 1
3	Vcc1	supply voltage channel 1
4	OUT1+	positive loudspeaker terminal 1
5	n.c.	not connected
6	IN1+	positive input1
7	n.c.	not connected
8	IN1-	negative input1
9	IN2-	negative input2
10	MODE	mode selection input
11	SVR	half supply voltage decoupling (ripple rejection)
12	IN2+	positive input2





Block diagram TDA8944J

4-4 TDA835xJ Vertical Amplifier

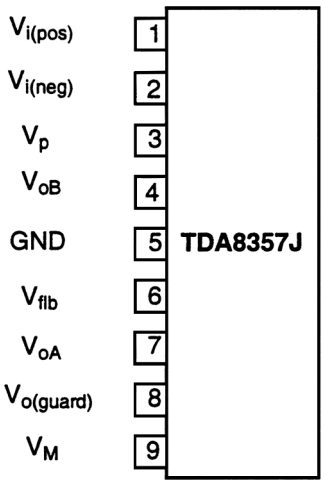
The TDA835xJ are power circuit for use in 90° and 110° colour deflection systems for field frequencies of 25 to 200Hz and 16/9 picture tubes. The circuit provides a DC driven vertical deflection output circuit, operating as a highly efficient class G system. Due to the full bridge output circuit the deflection coils can be DC coupled.
The IC is constructed in a Low Voltage DMOS process that combines Bipolar, CMOS and DMOS devices. MOS transistors are used in the output stage because of the absence of second breakdown.

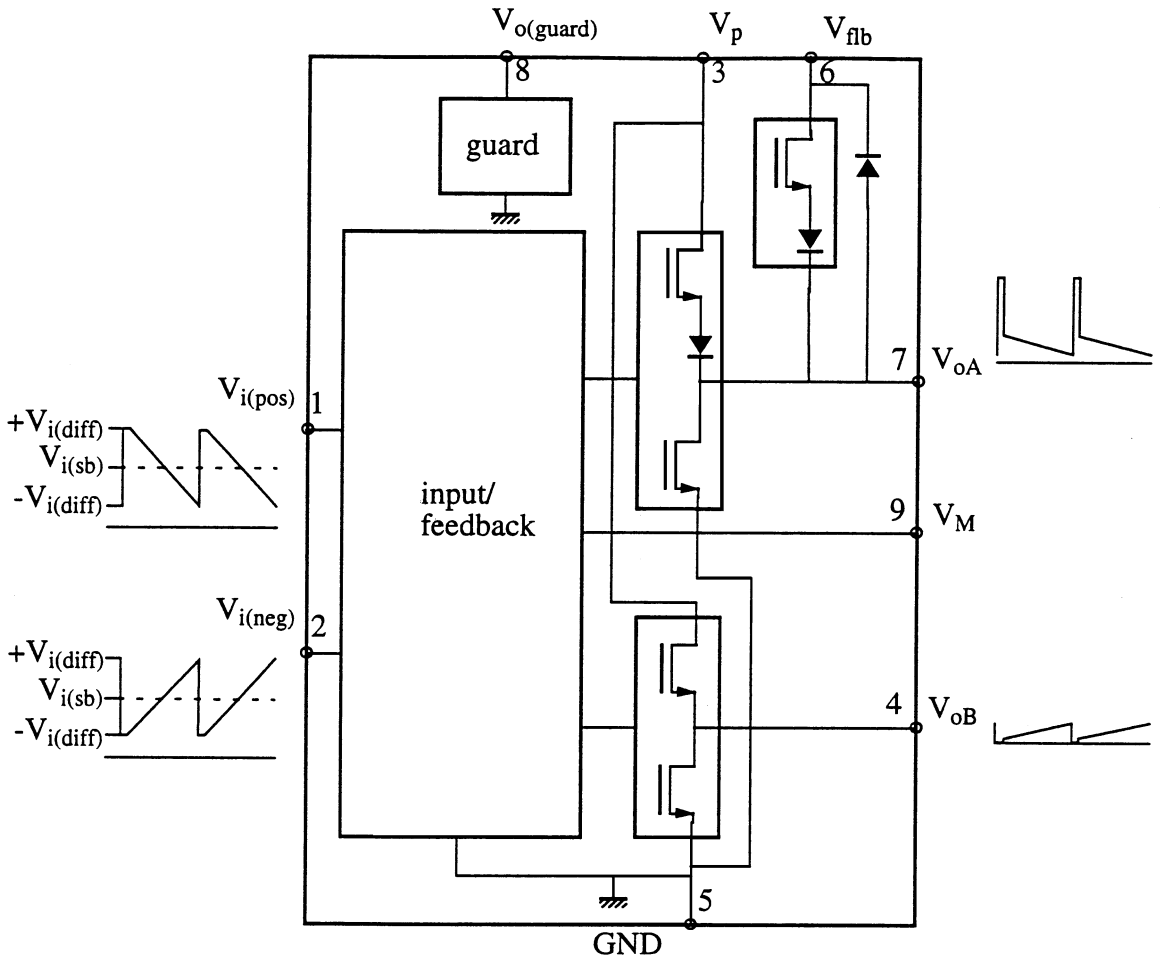
4-4-1 TDA8357J

Features :
- Few external components
- Highly efficient fully DC-coupled vertical output bridge circuit
- Short rise and fall time of the vertical flyback switch
- Guard circuit
- Temperature (thermal) protection
- High EMC because of common mode inputs

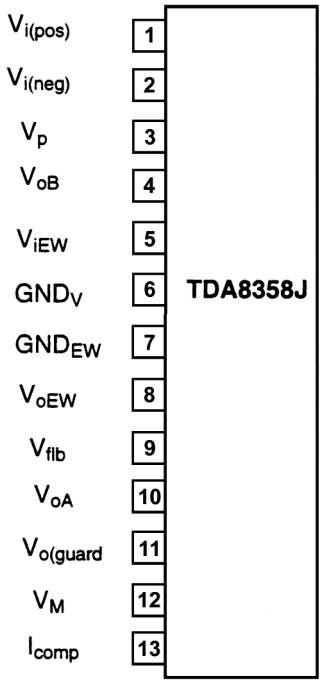
Pinning

Pin	Symbol	Description
1	Vi(pos)	input voltage (positive)
2	Vi(neg)	input voltage (negative)
3	Vp	supply voltage
4	V_{OB}	output voltage B
5	GND	ground
6	Vflb	flyback supply voltage
7	V_{OA}	output voltage A
8	$V_{O(guard)}$	guard output voltage
9	V_M	input measuring resistor



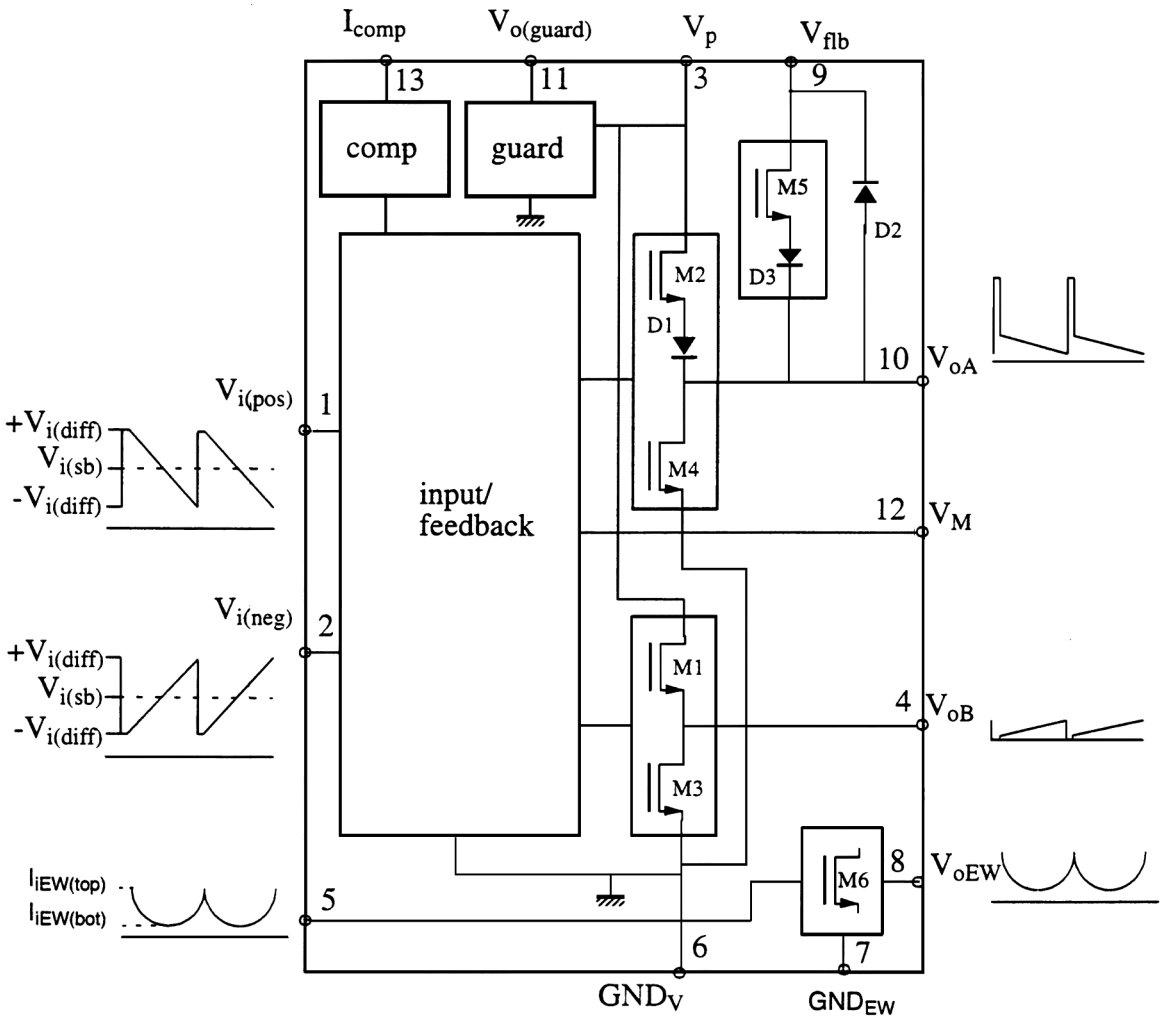


4-4-1 TDA8358J



An East-West output stage is provided that is able to sink current from the diode modulator circuit.

Features :
- Few external components
- Highly efficient fully DC-coupled vertical output bridge circuit
- Short rise and fall time of the vertical flyback switch
- Guard circuit
- Temperature (thermal) protection
- High EMC because of common mode inputs
- East-West output stage



4-5 TDA6107Q

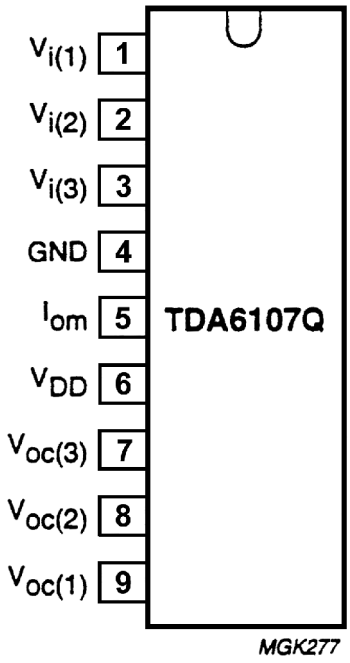
The TDA6107Q includes three video output amplifiers in one plastic DIL-Bent-SIL 9-pin medium power package, using high voltage DMOS technology, and is intended to drive the three cathodes of a colour CRT directly. To obtain maximum performance, the amplifier should be used with black-current control.

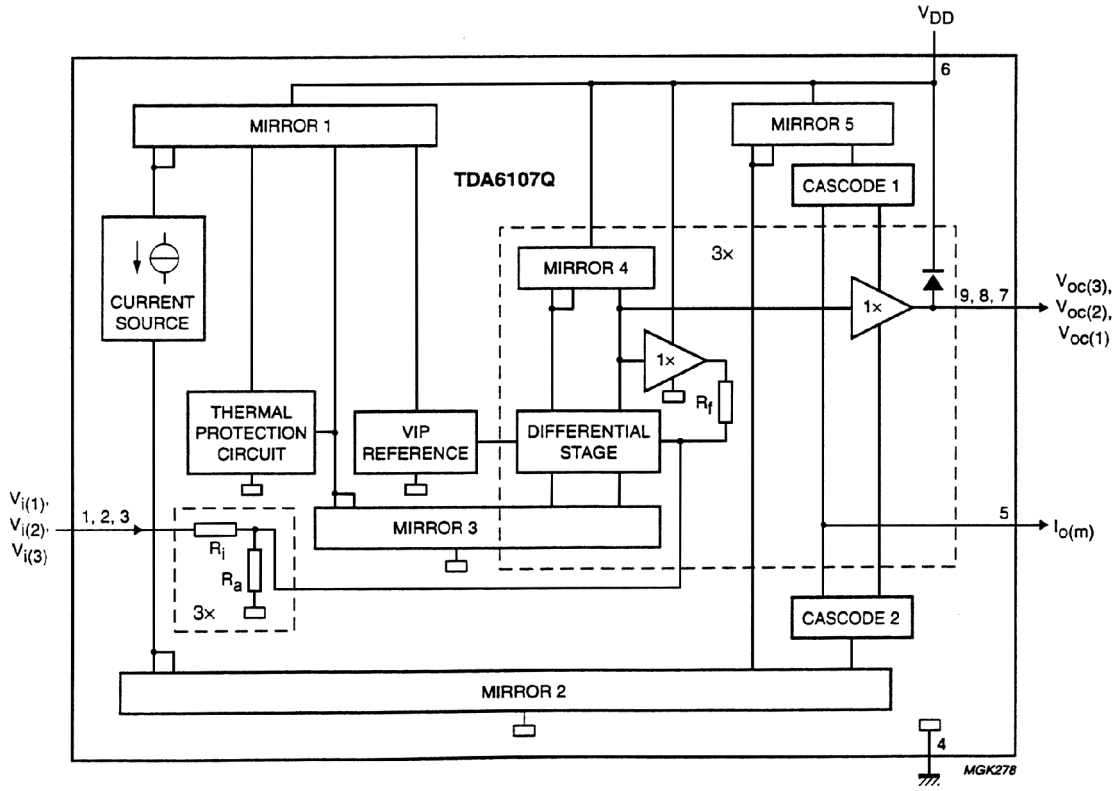
Features

- Typical bandwidth of 5.5 MHz for an output signal of 60 Vpp
- High slew rate of 900V/ s
- No external components required
- Very simple application
- Single supply voltage of 200V
- Internal reference voltage of 2.5 V
- Fixed gain of 50.
- Black-current stabilisation (BCS) circuit
- Thermal protection

Pin description

Pin	Symbol	Description
1	$V_{i(1)}$	inverting input 1
2	$V_{i(2)}$	inverting input 2
3	$V_{i(3)}$	inverting input 3
4	GND	ground (fin)
5	I_{om}	black current measurement output
6	V_{DD}	supply voltage
7	$V_{OC(3)}$	cathode output 3
8	$V_{OC(2)}$	cathode output 2
9	$V_{OC(1)}$	cathode output 1





Block diagram TDA6107Q

4-6 24C08 8 Kbit EEPROM
features :
- 8 Kbit serial I2C bus EEPROM
- Single supply voltage : 4.5 V to 5.5 V
- 1 Million Erase/Write cycles (minimum)
- 40 year data retention (minimum)

Pin description

Pin No.	Name	Description
1, 2, 3	E0, E1, E2	Device address
5	SDA	Serial Data/Address Input/Output
6	SCL	Serial clock
7	WC	Write control
8	Vcc	Supply voltage
4	Vss	Ground

The memory device is compatible with the I2C memory standard. This is a two wire serial interface that uses a bi-directionnal data bus and serial clock. The memory carries a built-in 4-bit unique device type identifier code (1010) in accordance with the I2C bus definition.

Serial Clock (SCL)
The SCL input is used to strobe all data in and out of the memory.
Serial Data (SDA)
The SDA pin is bi-directionnal, and is used to transfer data in or out of the memory

4-7 STR - F6653

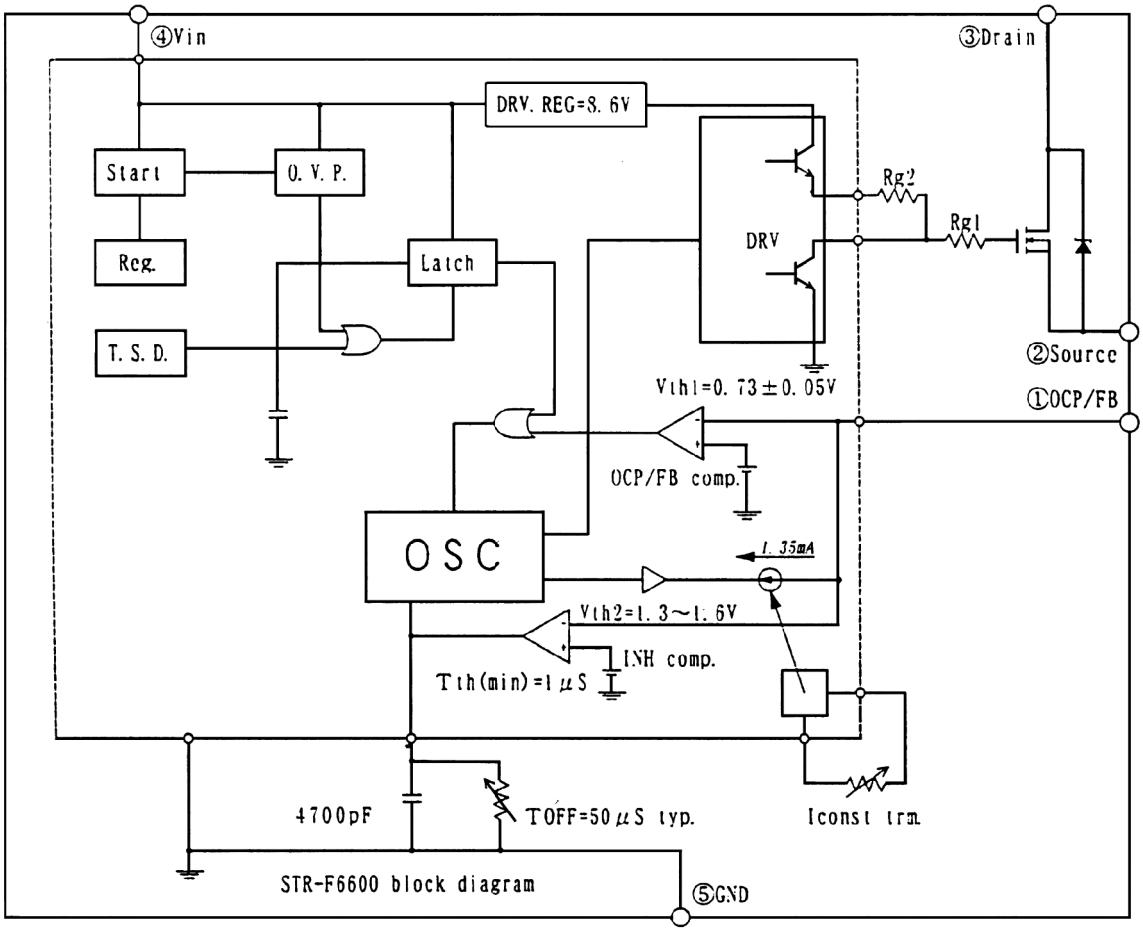
4-7-1 General description

The STR-F6653 is an hybrid IC with a build-in MOSFET and control IC, designed for flyback converter type switch mode power supply applications.

4-7-2 Features

- Small SIP fully isolated molded 5 pins package
- Many protection functions :
  - * Pulse-by-pulse overcurrent protection (OCP)
  - * Overvoltage protection with latch mode (OVP)
  - * Thermal protection with latch mode (TSD)

4-7-3 Block diagram



4-7-4 Pins description

pin	name	symbol	description
1	Overcurrent / feedback	O.C.P./ F.B.	Input of overcurrent detection signal and feedback signal
2	Source	S	MOSFET source
3	Drain	D	MOSFET drain
4	Supply	V_{IN}	Input of power supply for control circuit
5	Ground	GND	Ground

4-7-5 Control part electrical characteristics

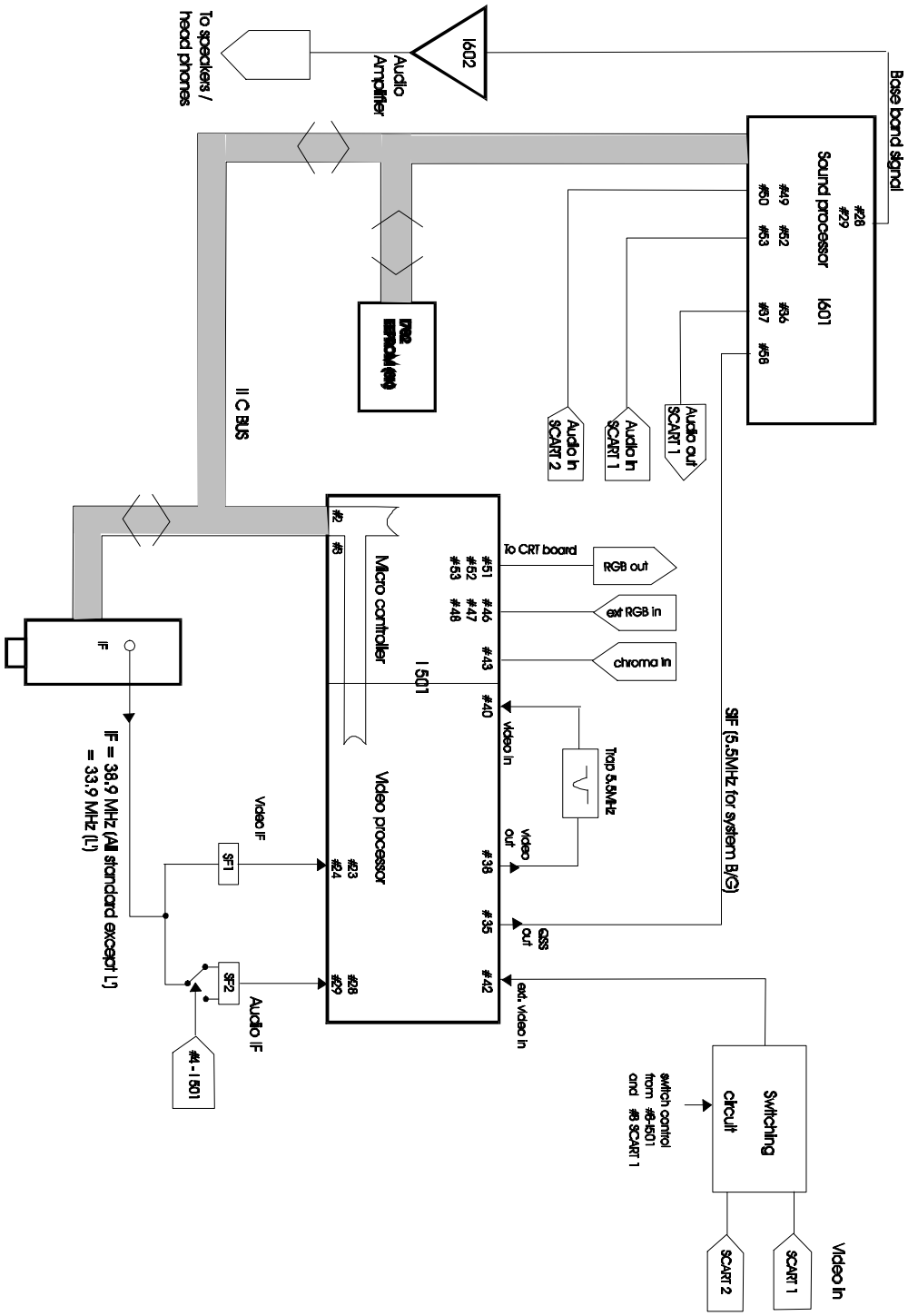
description	IC pins number	symbol	rating			unit
			min.	typ.	max.	
Operation start voltage	4-5	V_{IN} (on)	14.4	16	17.6	V
Operation stop voltage	4-5	V_{IN} (off)	9	10	11	V
Circuit current in operation	4-5	I_{IN} (on)	-	-	30	mA
Circuit current in non-operation	4-5	I_{IN} (off)	-	-	100	µA
Maximum OFF time	-	T_{OFF} (max)	45	-	55	µsec
Minimum time for input of quaxi resonant signals	1-5	T_{TH} (2)	-	-	1.0	µsec
Minimum off time	-	T_{OFF} (min)	-	-	1.5	µsec
O.C.P./F.B. terminal threshold voltage 1	1-5	V_{TH} (1)	0.68	0.73	0.78	V
O.C.P./F.B. terminal threshold voltage 2	1-5	V_{TH} (2)	1.3	1.45	1.6	V
O.C.P./F.B. terminal extraction current	1-2	$I_{OCP/FB}$	1.2	1.35	1.5	mA
O.V.P. operation voltage	4-5	V_{IN} (OVP)	20.5	22.5	24.5	V
Latch circuit sustaining voltage	4-5	I_{IN} (H)	-	-	400	µA
Latch circuit release voltage	4-5	V_{IN} (La.off)	6.6	-	8.4	V
Thermal shutdown operating temperature	-	T_J (TSD)	140	-	-	^{0}C

4-7-6 MOSFET electrical characteristics

description	IC pins number	symbol	rating			unit
			min.	typ.	max.	
Drain-to-source breakdown voltage	3-2	V_{DSS}	650	-	-	V
Drain leakage current	3-2	I_{DSS}	-	-	300	µA
On-resistance	3-2	R_{DS} (on)	-	-	1.95	Ω
Switching time	3-2	tf	-	-	250	nsec
Thermal resistance	-	θ_{CH-F}	-	-	1.25	^{0}C/W

5 - Circuit description

5-1 Block diagram



FUNCTIONAL DESCRIPTION OF VIDEO PROCESSOR Vision IF amplifier

The vision IF amplifier can demodulate signals with positive and negative modulation. The PLL demodulator is completely alignment-free.

The VCO of the PLL circuit is internal and the frequency is fixed to the required value by using the clock frequency of the µ-Controller/Teletext decoder as a reference. The setting of the various frequencies is made by the controlling software in subaddress 27H (38.9 Mhz for all system except L' or 33.9 MHz for system L'). Because of the internal VCO the IF circuit has a high immunity to EMC interferences.

QSS Sound circuit

The sound IF amplifier is similar to the vision IF amplifier
and has an external AGC decoupling capacitor.

The single reference QSS mixer is realised by a multiplier. In this multiplier the SIF signal is converted to the intercarrier frequency by mixing it with the regenerated picture carrier from the VCO. The mixer output signal is supplied to the output via a high-pass filter for attenuation of the residual video signals. With this system a high performance hi-fi stereo sound processing can be achieved.

Video switches

The video switch has one input for an external CVBS or Y/C signal. The selected CVBS signal can be supplied to pin 38, the IF video output. The selection between both signals is realised by the controlling software in subaddress 22H.

The video ident circuit is connected to the selected signal. This ident circuit is independent of the synchronisation.

Synchronisation circuit

The IC contains separator circuits for the horizontal and vertical sync pulses and a data-slicing circuit which extracts the digital teletext data from the analogue signal.

The horizontal drive signal is obtained from an internal VCO which is running at a frequency of 25 MHz. This oscillator is stabilised to this frequency by using a 12 MHz signal coming from the reference oscillator of the µ-Controller/Teletext decoder.

The horizontal drive is switched on and off via the soft start/stop procedure. This function is realised by means of variation of the TON of the horizontal drive pulses.

The vertical synchronisation is realised by means of a divider circuit. The vertical ramp generator needs an external resistor and capacitor. For the vertical drive a differential output current is available. The outputs are DC coupled to the vertical output stage.

In the type TDA9367, intended for 90° picture tubes the following geometry parameters can be adjusted:
- Horizontal shift
- Vertical amplitude
- Vertical slope
- S-correction
- Vertical shift

The types which are intended to be used in combination with 110° picture tubes have an East-West control circuit. The additional controls for these types are:
- EW width
- EW parabola width
- EW upper and lower corner parabola correction
- EW trapezium correction
- Vertical zoom, horizontal parallelogram and bow correction.

Chroma and luminance processing

The chroma band-pass and trap circuits (including the SECAM cloche filter) are realised by means of gyrators and are tuned to the right frequency by comparing the tuning frequency with the reference frequency of the colour decoder. The luminance delay line and the delay cells for the peaking circuit are also realised with gyrators. The circuit contains a black stretcher function which corrects the black level for incoming signals which have a difference between the black level and the blanking level.

Colour decoder

The ICs can decode PAL, NTSC and SECAM signals. The PAL/NTSC decoder does not need external reference crystals but has an internal clock generator which is stabilised to the required frequency by using the 12 MHz clock signal from the reference oscillator of the µ-Controller/Teletext decoder.

The Automatic Colour Limiting (ACL) circuit (switchable via the ACL bit in subaddress 2OH) prevents that oversaturation occurs when signals with a high chroma-to-burst ratio are received. The ACL circuit is designed such that it only reduces the chroma signal and not the burst signal. This has the advantage that the colour sensitivity is not affected by this function.

SOFTWARE CONTROL

The CPU communicates with the peripheral fonctions using Special function Registers (SFRS) which are addressed as RAM locations. The registers for the Teletext decoder appear as normal SFRs in the µ-Controller memory map and are written to these functions by using a serial bus. This bus is controlled by dedicated hardware which uses a simple handshake system for software synchronisation.

For compatibility reasons and possible re-use of software blocks, the TV processor is controlled by I2C bus. The TV processor control registers cannot be read. Only the status registers can be read (Read address 8A).

The SECAM decoder contains an auto-calibrating PLL demodulator which has two references, via the divided 12 MHz reference frequency (obtained from the µ-Controller) which is used to tune the PLL to

the desired free-running frequency and the bandgap reference to obtain the correct absolute value of the output signal. The VCO of the PLL is calibrated during each vertical blanking period, when the IC is in search or SECAM mode.

The base-band delay line (TDA 4665 function) is integrated. This delay line is also active during NTSC to obtain a good suppression of cross colour effects. The demodulated colour difference signals are internally supplied to the delay line.

RGB output circuit and black-current stabilisation

In the RGB control circuit the signal is controlled on contrast, brightness and saturation. The ICs have a linear input for external RGB signals. The signals for OSD and text are internally supplied to the control circuit. The output signal has an amplitude of about 2 Volts black-to-white at nominal input signals and nominal settings of the various controls.

To obtain an accurate biasing of the picture tube the 'Continuous Cathode Calibration' system has been included in these ICs. A black level off set can be made with respect to the level which is generated by the black current stabilisation system. In this way different colour temperatures can be obtained for the bright and the dark part of the picture.
The black current stabilisation system checks the output level of the 3 channels and indicates whether the black level of the highest output is in a certain window or below or above this window. This indication is read from the status byte 01 and is used for automatic adjustment of the Vg2 voltage during the production of the TV receiver.

During switch-off of the TV receiver a fixed beam current is generated by the black current control circuit. This current ensures that the picture tube capacitance is discharged. During the switch-off period the vertical deflection is placed in an overscan position so that the discharge is not visible on the screen.

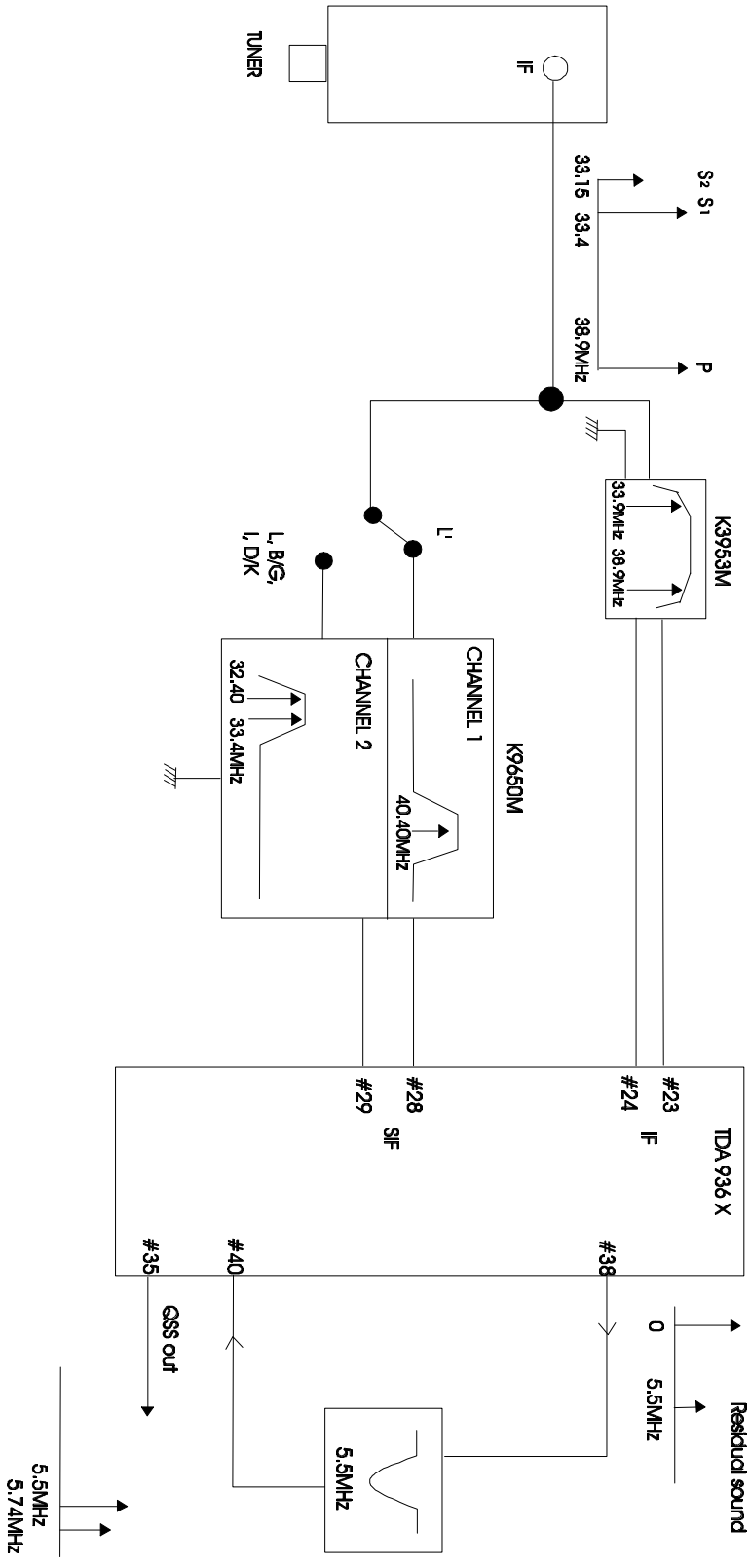
5-2 IF

The TDA936x has an alignment free IF PLL demodulator. The fully integrated oscillator is automatically calibrated, using the 12 Mhz crystal as a frequency reference. The IF frequency is simply set in TV-Processor by I2C bus.
The AFC information is available via I2C bus from the TV-Processor status bytes. The controlling software uses this information for tuner frequency tracking (automatic following). The AFC windows is typically 125Khz wide. The minimum frequency step of the tuner is 62.5 Khz.
This AFC function is disabled when a program is tuned using the direct frequency entry or after fine tuning adjustment. Therefore it is recommended to tune channel with the TV search function (manual or ATSS) or using the direct channel entry to enable the Automatic Frequency Control.

SAW filters

Ref.	Standard	Features
K3953M	B/G - D/K - I - L/L'	- IF filter for video application - TV IF filter with Nyquist slopes at 33.9 MHz and 38.9 MHz - Constant group delay
K9650M	B/G - D/K - I - L/L'	- IF filter for audio application - TV IF audio filter with two channels - Channel 1 (L') with one pass band for sound carrier at 40.40 MHz - Channel 2 (L, D/K, I, B/G) with one pass band for sound carriers between 32.40 MHz and 33.40 MHz

For SECAM L and L' the TDA936x is switched to positive modulation via I2C bus. SECAM L' only occur in VHF band I and have their picture and sound carrier interchanged, compared to SECAM L and PAL B/G channels. For SECAM L' the picture carrier is situated at 33.9 MHz and the AM sound carrier at 40.40 MHz. The IF PLL reference is tuned from 38.9 to 33.9 Mhz, this is done via I2C Bus and the SIF filter is switched from channel 2 to channel 1 ; this is done by pin 4 of TDA 936x. The tuner AGC time constant is slower than for negative modulation, because the TDA936x reduces its AGC current. To even slower the AGC time constant an extra series resistor R103 is added. To prevent IF overload when jumping from a very strong transmitter to a weak transmitter a diode D101 has been added
The SAW filter (SF1) has a double Nyquist slope at 38.9 MHz and 33.9 MHz needed for this multistandard application. The disadvantage of this choice is that a 5.5 MHz trap filter (Z501) is needed to suppress the residual sound carrier in the video for B/G signals.



Chassis block diagram : IF

5-3 Source switching

The TDA936x has only one external video input, the external video switching circuit made with Q504, Q505, Q507, Q508 and Q509 allows 2 external video signal inputs. The switching command can be either the SCART1 slow switching pin 8 or the µ-Controller pin 8 when the software takes control of the video source. The µ-Controller pin 8 is automatically configured by the controlling software (See table below). This pin is also capable of detecting the 3 Status (0, 1A, 1B) described in SCART specifications for automatic format switching (chassis CP785 only).

TV mode	µ-Controller pin 8 Status	Level
RF auto	Input - High Impedance	< 1V
RF Forced	Input - High Impedance	not defined
AV 1 Auto 4:3	Input - High Impedance	> 2.0 V
AV 1 Auto 16:9	Input - High Impedance	1 V < x < 2.0 V
AV 1 forced	Output - Push Pull	Max. 3.3V
AV 2	Output - Push Pull	< 0.2 V
SVHS	Output - Push Pull	< 0.2 V

The controlling software via I2C bus selects the signal source :
- Video signal from tuner (Pin 40).
- External video (SCART 1 or 2) depending on Q508 base level.
- External SVHS from SCART 2.

The sound source switching is done in the MSP3415D (I601), by the µ-Controller via I2C bus.

Fast R, G, B insertion : The external R, G, B insertion needs a fast switching and cannot be controlled by the software (instruction cycle of 1µ sec). The fast switching pin 16 of SCART 1 is directly connected to the TV processor pin 45 (Fast blanking input). The display is synchronised with the selected video source, i.e. to get stable R, G, B inserted signal they must be synchronised with the selected video source. The controlling software only enable or disable (AV2, SVHS, or Forced RF source selected) fast blanking.

5-4 µ-Controller I/O pin configuration and function

The I/O pins of the µ-Controller can be configured in many way. All port functions can be individually programmed by use of the SFR registers.
Each I/O port pin can be individually programmed in these configurations :

Open drain
In this mode, the port can function as in and output. It requires an external pull-up resistor. The maximum allowable supply voltage for this pull up resistor is +5V.
So in this mode it is possible to interface a 5 Volt environment like I2C while the µ-Controller has a 3.3 Volt supply.

Push-Pull
The push pull mode can be used for output only. Both sinking and sourcing is active, which leads to sleep slopes. The levels are 0 and Vddp, the supply voltage 3.3Volts.

High impedance
This mode can be used for input only operation of the port.

Special port for LED
Pin 10 and 11 have the same functionality as the general I/O pins but in addition, their current source and sink capacity is 8 mA instead of 4 mA. These pins are used for driving LED's via a series current limiting resistor.

µ-Controller I/O pin configuration and function table

pin	name	configuration		description
		Stand by	TV ON	
1	n.u.	High impedance	High impedance	not used
2	SCL	Open Drain	Open Drain	Serial clock line
3	SDA	Open Drain	Open Drain	Serial data line
4	SECAM L'	High impedance	Push Pull	SIF filter swiching
5	OCP	High impedance	High impedance	Over Current Protection (Switch the set OFF if the voltage on this pin is <2.33V)
6	-	High impedance	High impedance	For factory use only
7	Key in	High impedance	High impedance	Local keyboard input
8	S/SW	High impedance	See table above	external video switch
10	Red LED	High impedance	Open Drain	
11	Green LED	Open Drain	High impedance	
62	Audio mute	Push Pull	Push Pull	High in stand by mode

5-5 Sound processing

Analogue sound IF - input section
The input pins ANA_IN1+ and ANA_IN- offer the possibility to connect sound IF sources to the MSP 3415D. The analogue-to-digital conversion of the preselected sound IF signal is done by an A/D converter, whose output is used to control an analogue automatic gain circuit (AGC), providing an optimal level for a wide range of input levels.

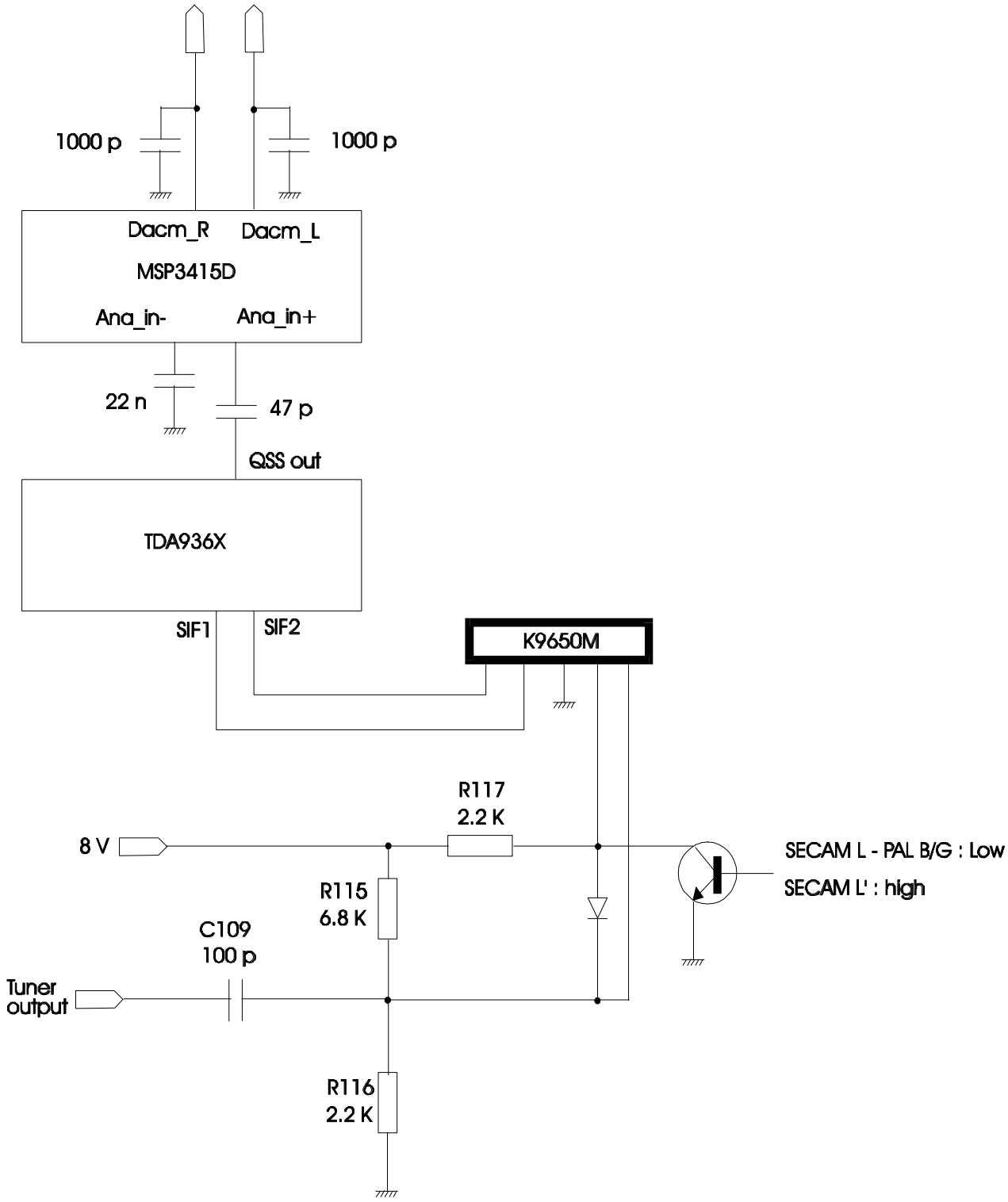
Quadrature Mixers
The digital input coming from the integrated A/D converter may contain audio information at a frequency range of theoretically 0 to 9 MHz corresponding to the selected standards. By means of two programmable quadrature mixers, two different audio sources ; for example, NICAM and FM-mono, may be shifted into baseband position.

Phase and AM discrimination
The filtered sound IF signals are demodulated by means of the phase and amplitude discriminator block. On the output, the phase and amplitude is available for further processing. AM signals are derived from the amplitude information, whereas the phase information serves for FM and NICAM demodulation.

In case of NICAM - mode, the phase samples are decoded according the DQPSK - coding scheme. The output of this block contains the original NICAM bitstream.

DSP section
All audio baseband functions are performed by digital signal processing (DSP). The DSP section controls the source and output selection, and the signals processing.

Sound Mode switching
In case of NICAM transmission, the controlling software read the bit error rate and the operation mode from the NICAM Decoder. When the set is in “Auto detection” mode (default mode after ATSS) the controlling software set automatically the sound mode (NICAM mono, NICAM Dual 1 or NICAM Dual 2) depending on the transmitted mode.
In case of 2 Carrier FM transmission, the controlling software read the transmission mode and the signal quality level from the Stereo Detection Register. When the set is in “Auto detection” mode the controlling software set automatically the sound mode (mono, Stereo, Dual 1, Dual 2) depending on the transmitted mode.
In “Auto detection” mode the controlling software evaluate the signal quality and automatically switch to the analogy sound carrier 1, if the transmission quality is too poor. To avoid unwanted automatic switching the threshold levels mono to stereo and stereo to mono is different.
In “forced mono “ mode (Red OSD in recall section), the controlling software configure the MSP3415D to demodulate only the analogue (FM or AM) sound carrier 1, no matter the signal quality.
The sound mode “ forced “ or “ Autodetect” is stored for each programme.



Sound signal flow diagram

5-6 Sound amplification

The TDA8944J (TDA8946J) is a stereo BTL audio amplifier capable of delivering 2 x 7 W (2 x 15 W) output power to an 8 Ω load at THD = 10%, using a 12 V power supply and an external heatsink. The voltage gain is fixed at 32dB.

With the three-level MODE input the device can be switched from 'standby' to 'mute' and to 'operating' mode.
The TDA 8944J outputs are protected by an internal thermal shutdown protection mechanism and short-circuit protection.

Power amplifier

The power amplifier is a Bridge Tied Load (BTL) amplifier with an all-NPN output stage, capable of delivering a peak output current of 1.5 A.
The BTL principle offers the following advantages :
- Lower peak value of the supply current.
- The ripple frequency on the supply voltage is twice the signal frequency.
- No DC-blocking capacitor
- Good low frequency performance

Mode selection

The TDA894xJ has several functional modes, which can be selected by applying the proper DC voltage to pin MODE.

Mute : In this mode the amplifier is DC biased but not operational (no audio output). This allows the input coupling capacitors to be charged to avoid pop-noise. The devices is in mute mode when 2.5 V < V_{MODE} < (Vcc-1.5 V).

Operating : In this mode the amplifier is operating normally. The operating mode is activated at V_{MODE} < 0.5 V.

5-7 Vertical deflection

The vertical driver circuit is a bridge configuration. The deflection coil is connected between the output amplifiers, which are driven in phase opposition. The differential input circuit is voltage driven. The input circuit is especially intended for direct connection to driver circuits which deliver symmetrical current signals, but is also suitable for asymmetrical currents. The output current of these devices is converted to voltages at the input pins via resistors R350 and R351. The differential input voltage is compared with the output current through the deflection coils measured as voltage across R302, which provides internal feedback information. The voltage across R302 is proportional to the output current.
Flyback voltage
The flyback voltage is determined by an additional supply voltage V_{flb}. The principle of operation with two supply voltages (class G) makes it possible to fix the supply voltage Vp optimum for the scan voltage and the second supply voltage V_{flb} optimum for the flyback voltage. Using this method, very high efficiency is achieved. The supply voltage V_{flb} is almost totally available as flyback voltage across the coil, this being possible due to the absence of a coupling capacitor.
Protection
The output circuit has protection circuits for :
- Too high die temperature
- overvoltage of output stage A

Guard circuit

The guard signal is not used by the TDA936x to blank the screen in case of fault condition.

Damping resistor

For HF loop stability a damping resistor (R305) is connected across the deflection coil.

EAST-WEST Amplifier (TDA8358J only)
The East-West amplifier is current driven. It can only sink currents of the diode modulator circuit. A feedback resistor R397 is connected between the input and output of this inverting amplifier in order to convert the East-West correction input into an output voltage.

5-8 Power supply (STR-F6653)

5-8 -1 STR-F6653 general description

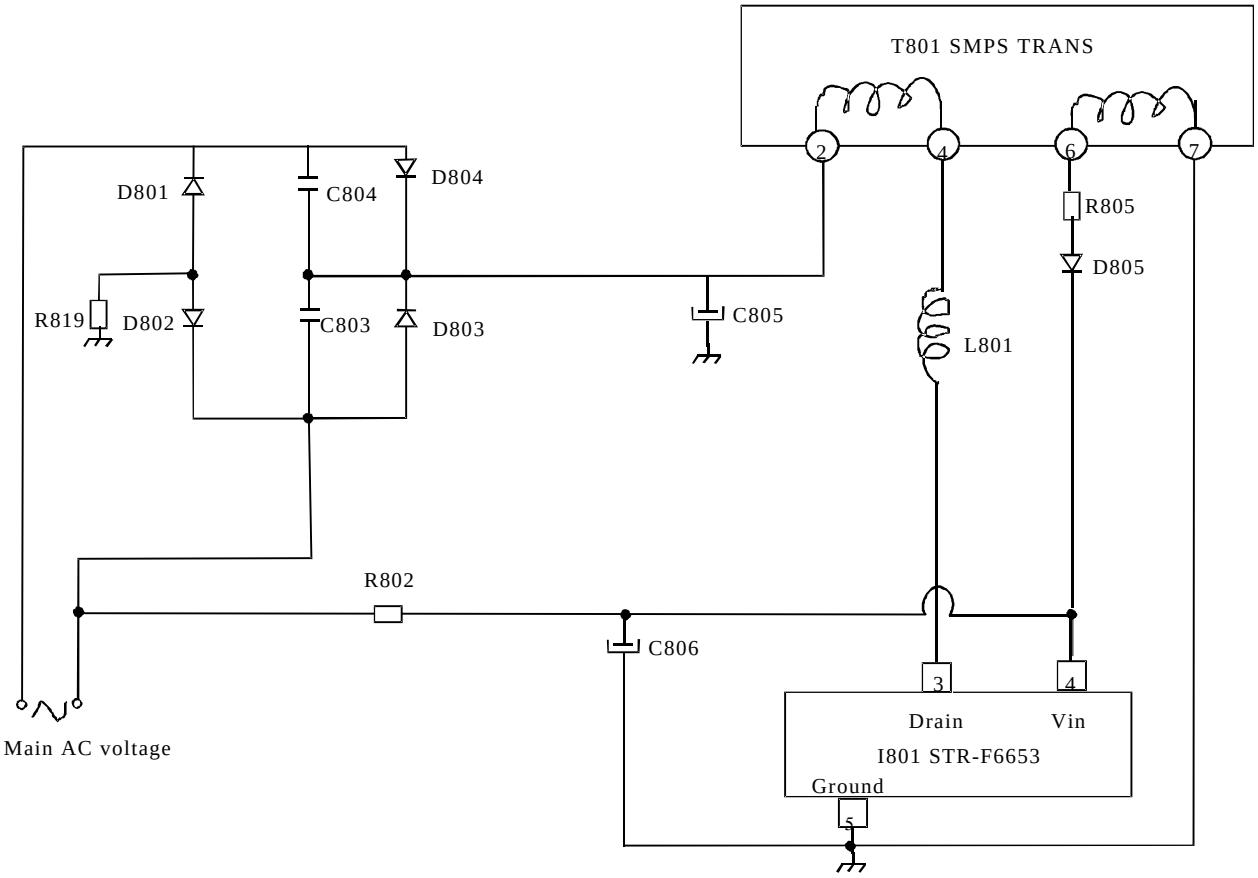
The STR-F6653 is an hybrid IC with a build-in MOSFET and control IC, designed for flyback converter type switch mode power supply applications.

5-8 -2 Power supply primary part operations

An oscillator generates pulses signals which turn on and off a MOSFET transistor.

* Start -up circuit: V_{IN}

The start-up circuit is used to start and stop the operation of the control IC, by detecting a voltage appearing at V_{IN} pin (pin 4).



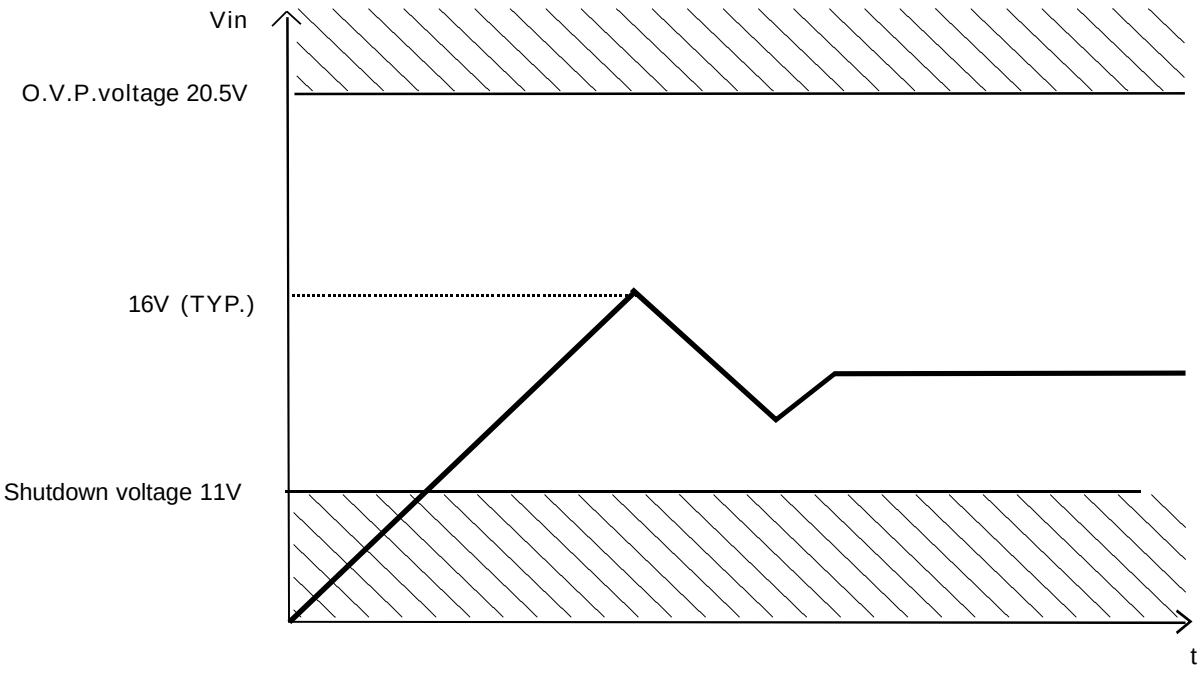
Power supply start-up circuit

When the power switch is pushed on, V_{IN} increases slowly. During this time, C806 is charged through R802.

As soon as V_{IN} reaches 16V, the STR-F6653 control circuit starts operating. Then, V_{IN} is obtained by smoothing the winding voltage which appears between pin6 and pin7 of the SMPS transformer.

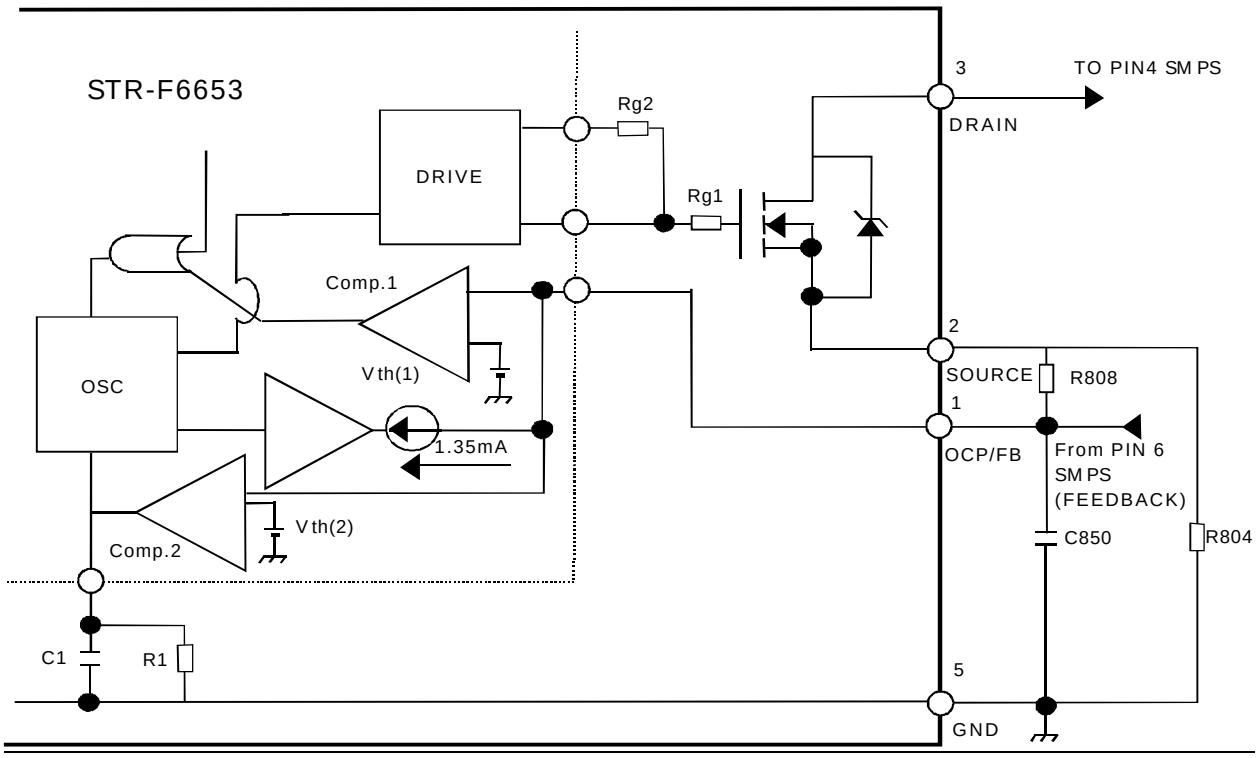
As this winding voltage does not increase to the set voltage immediately after the control circuit starts operating, V_{IN} starts dropping. However, as this winding voltage reaches the set value before V_{IN} voltage drops to the shutdown voltage (at 11V), the control circuit continues operating (see below V_{IN} voltage at start-up). R805 resistor prevents that V_{IN} pin voltage varies according to the secondary side output current.

V_{IN} must be set higher than the shutdown voltage (V_{IN} (off) = $11V_{max}$) and lower than the O.V.P. (overvoltage protection) operating voltage
(V_{OVP} = $20.5V_{min}$)

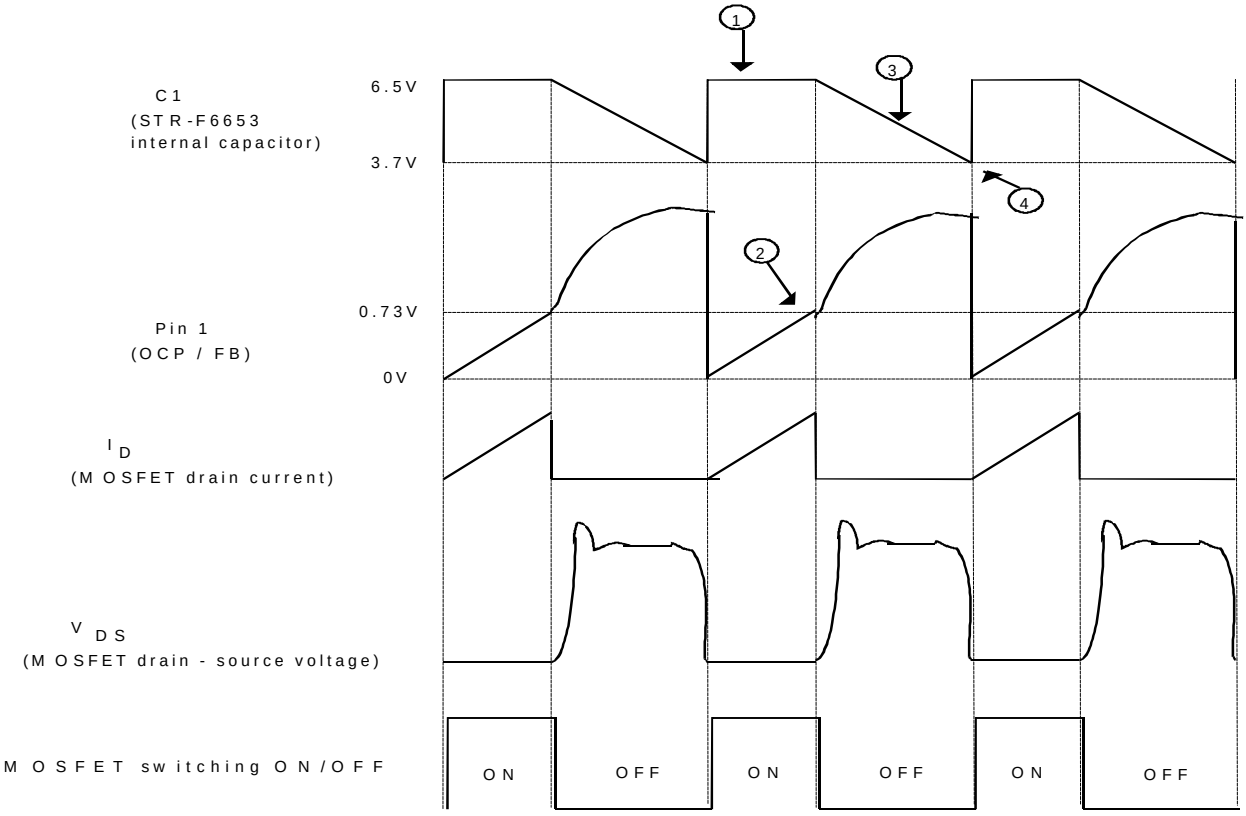


Waveform of Vin pin voltage at start-up

* STR-F6653 oscillating operation



Oscillating operation



Waveforms during oscillating operation

① When the MOSFET is ON, the STR-F6653 internal capacitor C1 is charged at the constant voltage 6.5V.
At the same time, the voltage at pin 1 (OCP / FB) increases with the same waveform as the MOSFET drain current.

② When the pin 1 voltage reaches the threshold voltage V_{TH1} = 0.73V, the STR-F6653 internal comparator 1 starts operating. The STR-F6653 internal oscillator is inverted and the MOSFET turns OFF.

③ When the MOSFET turns OFF, charging of STR-F6653 internal capacitor C1 is released and C1 starts discharging by the STR-F6653 internal resistance R1. So, C1 voltage starts falling in accordance with the gradient regulated by the constant discharging time of C1 and R1. So, this means that the fixed time determined by C1 and R1 is the OFF-time of the MOSFET.

④ When C1 voltage falls to around 3.7V, the STR-F6653 internal oscillator is reversed again and the MOSFET turns ON. C1 is quickly charged to around 6.5V

The MOSFET continues to oscillate by repeating the above procedure.

* STR-F6653 protection circuits

- **overcurrent protection function (OCP)**

Overcurrent protection is performed pulse by pulse detecting at STR-F6653 pin 1 (OCP) the peak of the MOSFET drain current in every pulse.

- **latch circuit**

This circuit sustains an output low from the STR-F6653 internal oscillator and stops operation of the power supply when overvoltage protection (OVP) and thermal shutdown (TSD) circuit are under operation

- **thermal shutdown circuit (TSD)**

This circuit triggers the latch circuit when the frame temperature of STR-F6653 IC exceeds 140°C

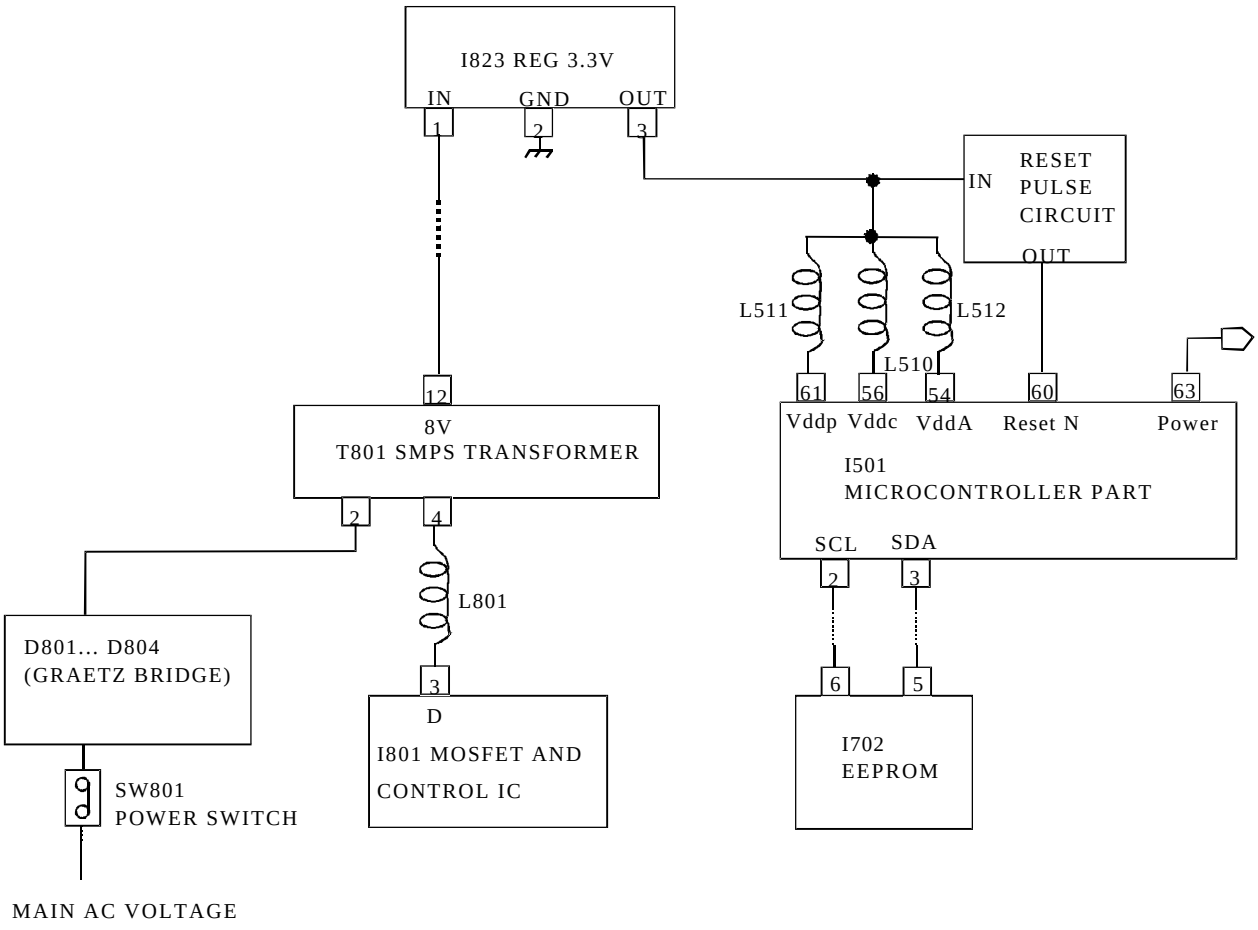
- **overvoltage protection circuit (OVP)**

This circuit triggers the latch circuit when the V_{in} voltage exceeds 22V (typ.)

5-9 TV start-up, TV normal run and stand-by mode operations

5-9-1 TV start-up operations

* Schematic diagram for start-up operations



Start-up operations

* TV start-up and microcontroller initialization

- When SW801 power switch is pushed, main AC voltage is applied to T801 transformer (after rectification by D801...D804 diodes). Then, T801 SMPS transformer starts operating and supplies DC voltage to I823 (3.3V regulator).

- This regulator provides 3.3V DC voltage to I501 microcontroller power supply pins (pins 54, 56, 61) and to the reset pulse circuit which provides reset pulse to I501 microcontroller reset pin (pin 60).

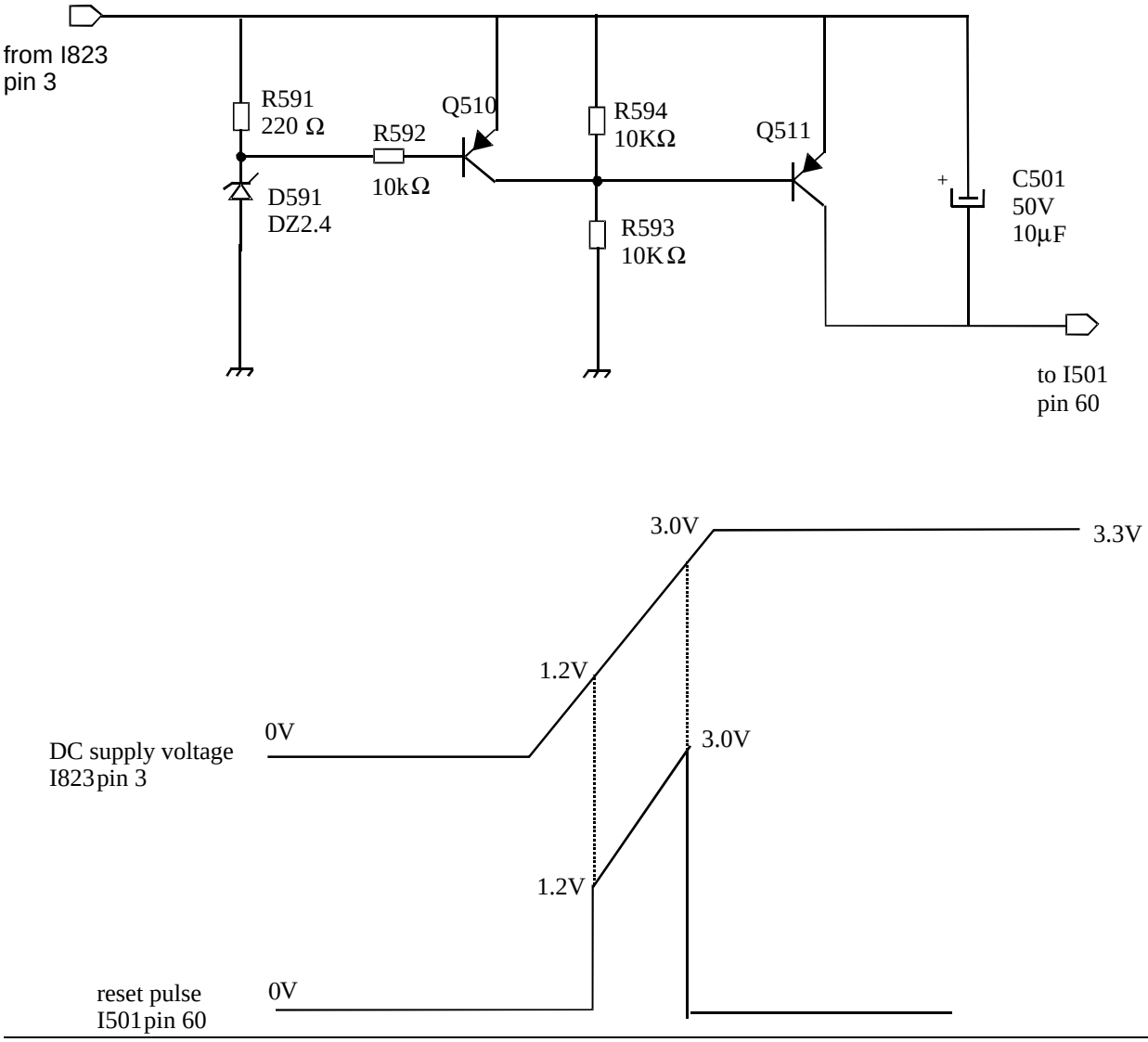
- Then, the microcontroller starts its initialization. Its power pin (pin 63) is set to high which allows delivery of power supply voltages (123V, 8V, 5V...). At this step, all IC's start working but no picture appears on screen: I501 IC doesn't provide horizontal drive voltage.

- Then, the microcontroller consults I702 EEPROM via I2C bus to know the last TV set mode (normal run mode or stand-by mode) before switching off.

. If the TV set was on normal run mode before switching off, the microcontroller delivers horizontal drive voltage at pin 33 and picture appears on screen.

. If the TV set was on stand-by mode before switching off, the microcontroller switches TV set to stand-by mode, decreasing power pin voltage (pin 63). This matter will be explained on paragraph 5-9-2-b.

* Reset pulse circuit



Reset pulse circuit and corresponding waveforms

* Reset pulse circuit operations description

- When DC supply voltage from I823 regulator starts rising (from 0V to 1.2V), no current flows through D591 zener diode. So, Q510 is in off mode.
  Also $V_{be\ Q511}$ =Vcc/2 -Vcc = -Vcc/2 > -0.6V. So, Q511 is in off mode.
  Then, no voltage reaches I501 pin 60.
- When this voltage reaches 1.2 V, Q510 stays in off mode
  but $V_{be\ Q511}$ = -0.6V. So, Q511 is switched on and starts driving DC supply voltage to I501 pin 60.
- When the DC supply voltage reaches (2.4V +0.6V) =3.0V, Q510 starts conducting but as the Q511 base-emitter voltage is the same as the collector-emitter voltage of the saturated Q510, Q511 switches off and no voltage reaches I501 pin 60.
- If the DC supply voltage decreases below 3 V, Q510 switches off immediately. Q511 starts conducting, pulling I501 pin 60 high.
  At the same time, it discharges the reset capacitor C501. Discharging this capacitor is necessary to garantee a defined reset pulse duration.

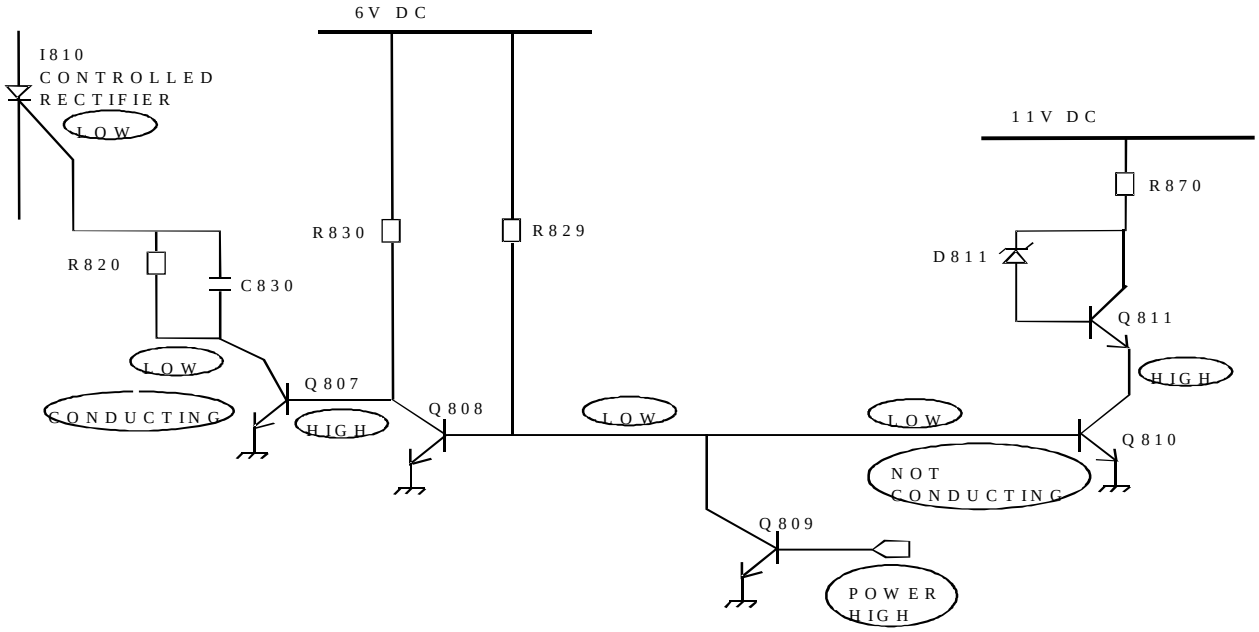
5-9-2 TV normal run and stand-by mode operations

Depending on remote control commands, I501 microcontroller part pin 63 (power) is set to:
- high for normal run mode
- low for stand-by mode

a) TV on normal run mode

* I501 microcontroller part pin 63 (power) effect

I501 microcontroller part pin 63 (power) is connected to the following circuit:



I501 microcontroller part pin 63 (POWER) effect

On normal run mode, I501 microcontroller pin 63 (power) is set to high

- So, I810 controlled rectifier is not conducting

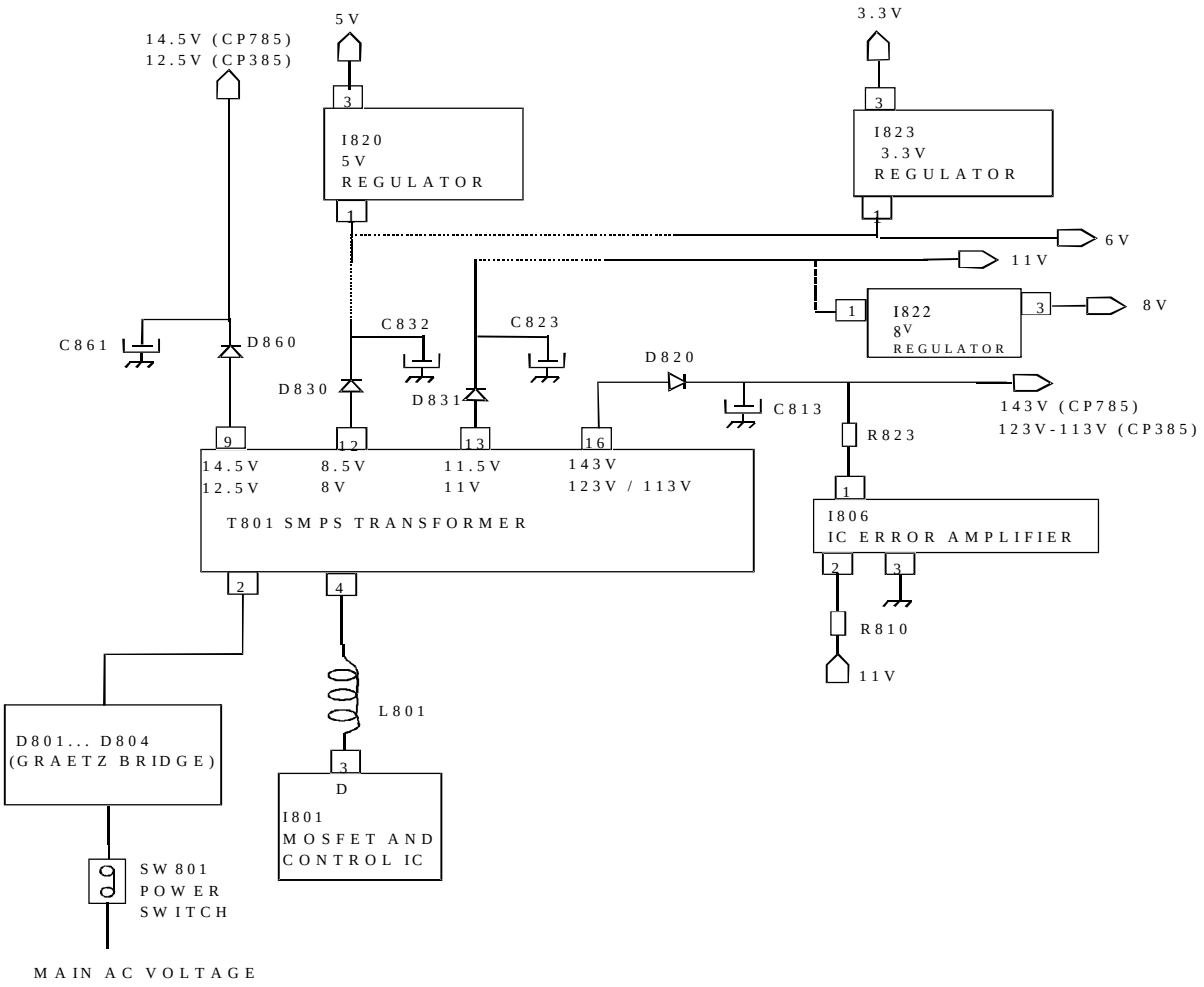
  - Q809 is conducting. So, Q808 is not conducting and Q807 is conducting
  - So, Q807 collector is connected to the ground and I810 controlled rectifier gate pin is set to low (no conducting)

- So, current from 11V DC voltage (from T801 SMPS transformer pin 13) does not flow through Q811 and Q810 transistors but flows through I806 IC error amplifier

  - Q809 is conducting. So, Q810 is not conducting and no current flows from Q810 collector to the ground

Therefore, the power supply circuit diagram is the one shown on the next paragraph

* power supply circuit diagram during TV set normal run



Power supply operation during TV set normal run

* power supply functioning during TV set normal run mode

- I801 transmits controlled pulses to T801 which generates DC voltages after rectifications by secondary part diodes and electro capacitors (by example by D820 and C813 on 143V (CP785) / 123V -113V (CP385) supply voltage line).

- 8V, 5V, 3.3V supply voltage lines have stabilized voltages obtained by I820, I822, I823 voltage regulators.

- On 143V (CP785) / 123V-113V (CP385) supply voltage line, R823 resistor has been chosen to reach exact DC voltage required on this line.

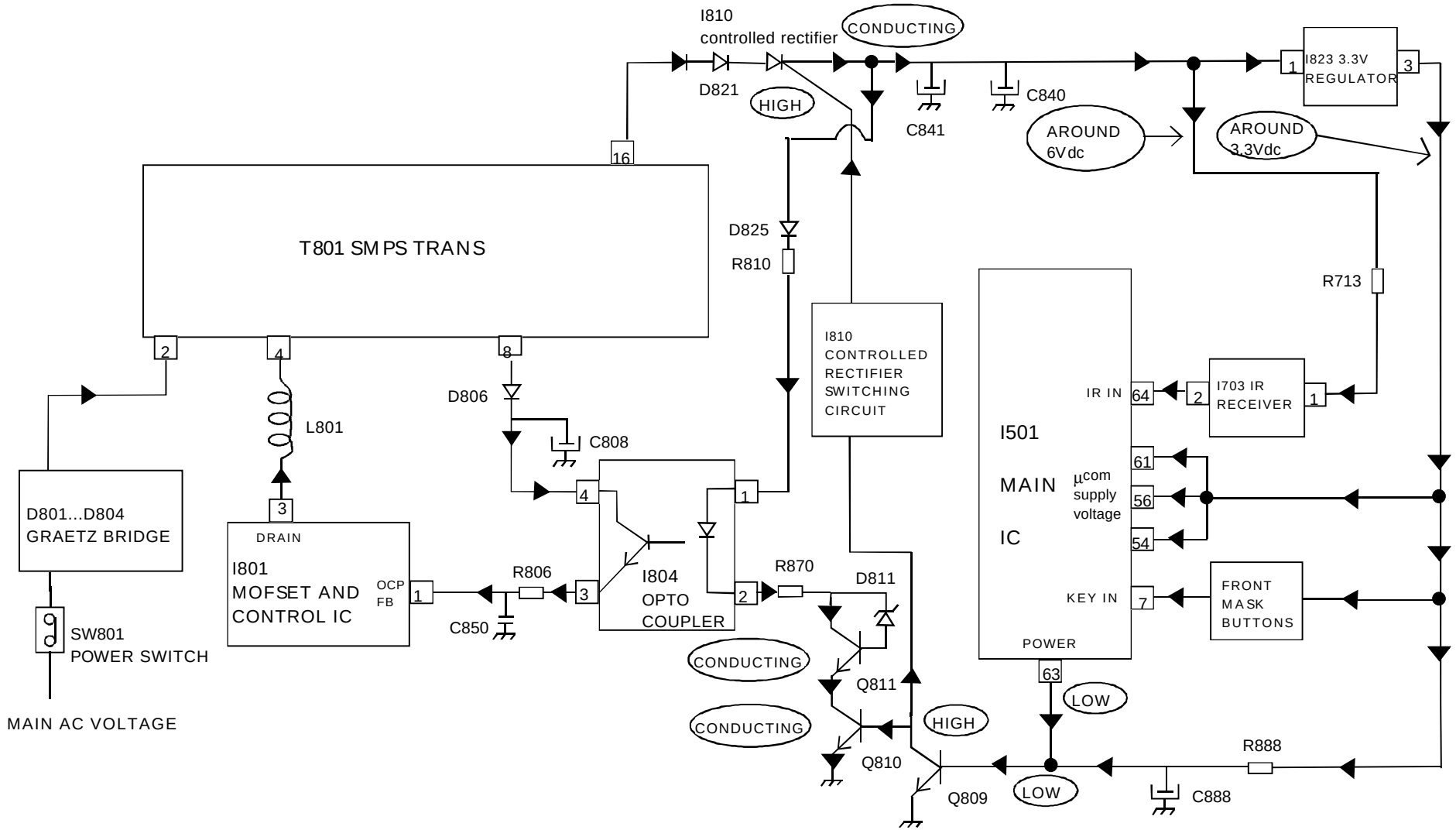
- 143V (CP785) / 123V-113V (CP385) supply voltage line includes an IC error amplifier (I806) which corrects unexpected DC voltage variations on this line.

* power supply IC delivery during TV set normal run

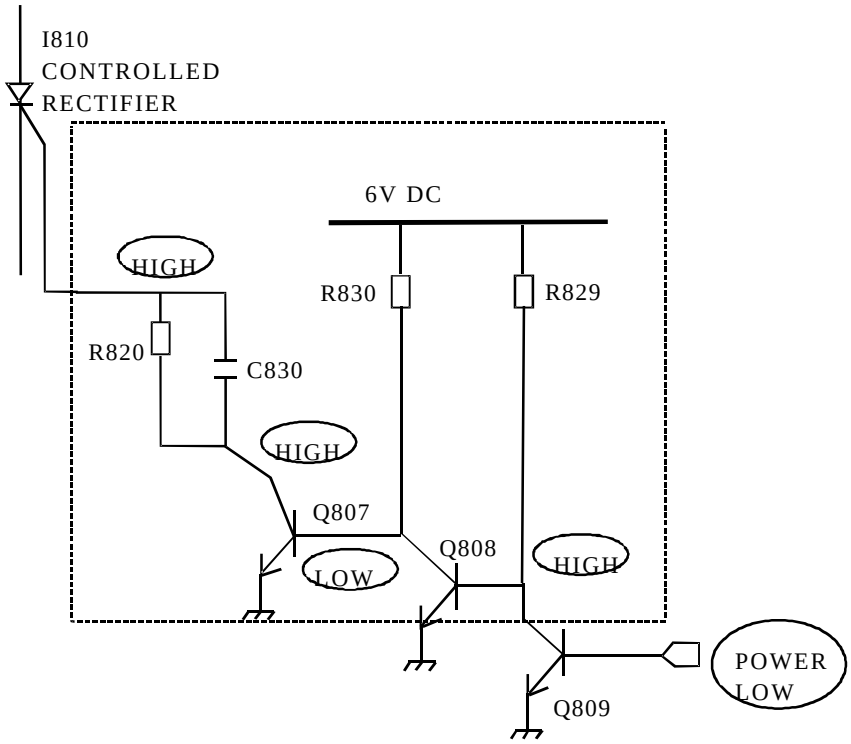
power supply line	IC power supply delivery	Remarks
143V (CP785) 123V-113V (CP385)	FBT	FBT supplies 45V to I301 vertical IC FBT supplies 45V to T401 H- drive for CP785 FBT supplies 14V to I301 vertical IC FBT supplies 33V to the tuner FBT supplies 185V to I901 video amplifier pin 6
14.5V (CP785) 12.5V (CP385)	I602 sound amplifier pins 3-16	
11V	T401 H- drive	
8V	I501 Main IC pins 14-39	
	I601 Sound Demod pins 38-39-40	
6V	I703 IR receiver pin 1	
5V	I601 Sound Demod pins 7-18-57	
	I702 EEPROM pin 8	
	tuner	
3.3V	Main IC µcom part pins 54-56-61	

b) TV set on stand-by mode

* TV set circuit diagram on stand-by mode



Power supply operation in stand - by mode



I810 controlled rectifier switching circuit

* TV set stand-by mode operations

-On stand-by mode, I501 microcontroller pin 63 (power) is set to low.
- So, Q809 collector is set to high.
-Then, I810 controlled rectifier gate pin is set to high and I810 is conducting.
- So, current flows from pin 16 SMPS transformer to the ground via I804 optocoupler and Q810 and Q811 transistors (which are conducting).
- In these conditions, I801 delivers pulses on light mode and T801 produces voltages with reduced power.
- As I810 is conducting, current flows also from pin 16 SMPS transformer to I823 (3.3V regulator) for I501 µcom, IR receiver and front mask buttons supply voltage (then, remote control or front mask buttons can be activated to leave stand-by mode).

6. Service Parts List

6-1 DTA-21Y1L (CP-385)

" Ⓡ" Parts recommended for stock.
" ⚠" Safety critical component, Replace only with genuine Daewoo safety part.

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
ZZ110	PTACPWD267	ACCESSORY AS	DTA-21Y1L	
00030	4850Q00910	BATTERY	R03/NN	
M821	4858213801	BAG INSTRUCTION	L. D. P. E. T0. 05X250X40	
ZZ100	48B3740A01	TRANSMITTER REMO-CON	R-40A01	Ⓡ
ZZ120	PTBCSHD267	COVER BACK AS	DTA-21Y1L	
M211	4852156101	COVER BACK	21Y1 HIPS BK	
M541	4855415800	S/PLATE	150ART P/E FILM (C/TV)	
M781	4857817612	CLOTH BLACK	FELT T0.7 L=250	
ZZ140	PTPKCPD267	PACKING AS	DTA-21Y1L	
M641	6520010100	STAPLE PIN	18M/M J D O	
M801	GPBBW3Y1112	BOX	DTA 21Y1 (NEW)	
M811	4858193600	PAD	EPS 21Y1	
M821	4858211801	BAG P.E.	PE FILM T0.05X1300X1000	
ZZ130	PTCACAD267	CABINET AS	DTA-21Y1L	
20	2193011101	SOLDER WIRE	RS 60-1.2 1.6A	
30	2224050001	BOND	TB-2507	
40	4856812001	TIE CABLE	NYLON66 DA100	
M191	4851939401	BUTTON CTRL AS	21Y1 4945701+5541101	
M201A	4856013301	SCREW CRT FIXING AS	L-140	
M201B	4856215402	WASHER RUBBER	20"	
M201C	4856013303	SCREW CRT FIXING AS	L-240	
M211A	7122401412	SCREW TAPPING	T2S TRS 4X14	
M211B	7128301011	SCREW TAPPING	T2S WAS 3X10	
M481	4854856501	BUTTON POWER	21Y1 ABS	
M481A	4856716000	SPRING	14Q1/M3 SWPA PIE0.5	
M561	48556175SD	MARK BRAND	DAEWOO 21T5 (SILVER)	
PWC1	4859906210	CORD POWER	FTZ (LOMAX NEW TYPE)	
V901	4859628560	"CRT (LG 21"") "	A51QAE320X97	Ⓡ⚠
ZZ131	58G0000123	COIL DEGAUSSING	DC-2072F	⚠
ZZ132	48519A5210	CRT GROUND AS	21A5	
ZZ200	PTFMSJD267	MASK FRONT AS	DTA-21Y1L	
M201	4852074101	MASK FRONT	21Y1 HIPS BK	
ZZ210	PTSPPWD267	SPEAKER AS	DTA-21Y1L	Ⓡ
SP01	4858310910	SPEAKER	7.5W 8 OHM 95BF03LC	
SP01A	4850704S28	CONN AS	YH025-04+35089+ULW=600	
SP02	4858310910	SPEAKER	7.5W 8 OHM 95BF03LC	
ZZ290	PTMPMSD267	PCB MAIN MANUAL AS	DTA-21Y1L	Ⓡ
C101	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C102	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3*11) TP	
C103	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C104	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C106	CEXF1H221V	C ELECTRO	50V RSS 220MF (10X16) TP	
C108	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C110	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C120	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C121	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C305	CEXF1E221V	C ELECTRO	25V RSS 220MF (8X11.5) TP	
C313	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C315	CEXF2C470C	C ELECTRO	160V RUS 47MF (13X25) TP	
C320	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C350	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C351	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C370	CMXM2A473J	C MYLAR	100V 0.047MF J TP	
C390	CMXM2A473J	C MYLAR	100V 0.047MF J TP	
C401	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C404	CMYH3C822J	C MYLAR	1.6KV 8200PF J (BUP)	
C408	CMYT2D274J	C MYLAR	250V 0.27MF MKP	
C412	CEXF2C339V	C ELECTRO	160V RSS 3.3MF (8X16) TP	
C414	CMXM2A104J	C MYLAR	100V 0.1MF J TP	
C415	CEXF2E479V	C ELECTRO	250V RSS 4.7MF (10X16)TP	
C417	CMXL2E104K	C MYLAR	250V 0.1MF K MEU TP	
C418	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C420	CCXB2H222K	C CERA	500V B 2200PF K (TAPPING)	
C500	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
C501	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C509	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C511	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C512	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C513	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C514	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C515	CBZR1C222M	C CERA	Y5R 16V 2200PF M AXIAL	
C516	CBZR1C472M	C CERA	Y5R 16V 4700PF M AXIAL	
C517	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C518	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C519	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C520	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C521	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C522	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C523	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C524	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C525	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C526	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)	
C527	CMXM2A473J	C MYLAR	100V 0.047MF J TP	
C528	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C529	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C530	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C531	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C532	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C533	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C534	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C535	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C536	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C537	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C540	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C541	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C542	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C543	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C550	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C555	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C560	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C561	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C564	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C565	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C577	CCZB1H561K	C CERA	50V B 560PF K (AXIAL)	
C585	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C587	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C588	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C589	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C590	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C591	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C592	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C593	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C601	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C602	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C603	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C604	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C605	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C608	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C610	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C611	CEXF1H339V	C ELECTRO	50V RSS 3.3MF (5X11) TP	
C612	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C613	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C614	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C615	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C616	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C617	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C620	CXCH1H509D	C CERA	50V CH 5PF D (TAPPING)	
C621	CXCH1H509D	C CERA	50V CH 5PF D (TAPPING)	
C622	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C625	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C626	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C629	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C630	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C631	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C635	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C636	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C650	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C660	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C661	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C662	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C665	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C666	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C667	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C668	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C669	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C690	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C691	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C695	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C696	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C770	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C771	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C801	CL1SC3474M	C LINE ACROSS	275V 0.47MF	⚠
C803	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)	
C804	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)	
C805	CEYN2G121P	C ELECTRO	400V LHS 120MF	
C806	CEXF1H330V	C ELECTRO	50V RSS 33MF (6.3X11) TP	
C807	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C808	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C809	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C810	CBXB3D102K	C CERA SEMI	2KV BL(N) 1000PF K (T)	
C812	CH1AFE472M	C CERA AC	4KV 4700PF M KX DE1610	⚠
C813	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP	
C814	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25) TP	
C820	CCYR3A471K	C CERA	1KV 470PF K 125C	
C821	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C823	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C824	CCYR3A471K	C CERA	1KV 470PF K 125C	
C830	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C831	CCYR3A471K	C CERA	1KV 470PF K 125C	
C832	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C835	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3*11) TP	
C840	CEXF1C222V	C ELECTRO	16V RSS 2200MF(13X25)TP	
C841	CEXF1C222V	C ELECTRO	16V RSS 2200MF(13X25)TP	
C844	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C850	CCZB1H821K	C CERA	50V B 820PF K (AXIAL)	
C861	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C863	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C866	CCYR3A471K	C CERA	1KV 470PF K 125C	
C888	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C905	CEXF2E479V	C ELECTRO	250V RSS 4.7MF (10X16)TP	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C910	CCXB1H152K	C CERA	50V B 1500PF K (TAPPING)	
C965	CBXB3D102K	C CERA SEMI	2KV BL(N) 1000PF K (T)	
C968	CMXL2E104K	C MYLAR	250V 0.1MF K MEU TP	
CA01	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA02	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA03	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA10	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
D100	DSML1216W-	LED	SML1216W	
D101	DBAT85----	DIODE	BAT85 (TAPPING)	
D102	D1SS85TA--	DIODE	1SS85TA	
D313	DBYW36----	DIODE	BYW36(TAPPING)	
D350	DTZX12C---	DIODE ZENER	TZX12C (TAPPING)	
D360	DTZX22C---	DIODE ZENER	TZX22C (TAPPING)	
D361	DUZ33B----	DIODE ZENER	UZ-33B	
D403	DBY228----	DIODE	BY228	
D405	DRGP15J---	DIODE	RGP15J	
D407	DRGP15J---	DIODE	RGP15J	
D408	DRGP15J---	DIODE	RGP15J	
D450	DRGP15J---	DIODE	RGP15J	
D520	D1N4148---	DIODE	1N4148 (TAPPING)	
D521	D1N4148---	DIODE	1N4148 (TAPPING)	
D591	DUZ2R4B---	DIODE ZENER	UZ-2.4B	
D710	DTZX5V1B--	DIODE ZENER	TZX5V1B (TAPPING)	
D801	DBYT51J---	DIODE	BYT51J (TAPPING)	
D802	DBYT51J---	DIODE	BYT51J (TAPPING)	
D803	DBYT51J---	DIODE	BYT51J (TAPPING)	
D804	DBYT51J---	DIODE	BYT51J (TAPPING)	
D805	DRGP15J---	DIODE	RGP15J	
D806	DRGP15J---	DIODE	RGP15J	
D808	DRGP15J---	DIODE	RGP15J	
D809	DRGP15J---	DIODE	RGP15J	
D810	DRGP15J---	DIODE	RGP15J	
D811	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
D820	DBYW76----	DIODE	BYW76	
D821	DRGP15J---	DIODE	RGP15J	
D822	DTZX9V1B--	DIODE ZENER	TZX9V1B (TAPPING)	
D824	D1N4148---	DIODE	1N4148 (TAPPING)	
D825	D1N4148---	DIODE	1N4148 (TAPPING)	
D830	DRGP15J---	DIODE	RGP15J	
D831	DRGP15J---	DIODE	RGP15J	
D840	D1N4148---	DIODE	1N4148 (TAPPING)	
D841	D1N4148---	DIODE	1N4148 (TAPPING)	
D860	DBYW76----	DIODE	BYW76	
D904	DBAV21----	DIODE	BAV21 (TAPPING)	
D905	DBAV21----	DIODE	BAV21 (TAPPING)	
D906	DBAV21----	DIODE	BAV21 (TAPPING)	
DA01	D1N4148---	DIODE	1N4148 (TAPPING)	
DA02	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA03	DTZX5V1B--	DIODE ZENER	TZX5V1B (TAPPING)	
DA04	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
DA06	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA08	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA09	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA10	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA11	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA13	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA14	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA15	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA16	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA20	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA23	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA24	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA27	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V MF51	⚠
F801A	4857415001	CLIP FUSE	PFC5000-0702	
F801B	4857415001	CLIP FUSE	PFC5000-0702	
G900	4SG0D00103	SPARK GAP	S-23 900V-1.5KV	
HP1	4859102130	JACK EARPHONE	YSC-1537	Ⓡ
I301	1TDA8357J-	IC VERTICAL	TDA8357J	Ⓡ
I301A	4857024421	HEAT SINK	I301A (CP-385)	
I301B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I501	1TDA9367--	IC MAIN	TDA9367	Ⓡ
I601	1MSP3415D-	IC RF	MSP-3415D	Ⓡ
I602	1TDA8944J-	IC VERTICAL	TDA8944J	
I602A	4857024421	HEAT SINK	I301A (CP-385)	
I602B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I702	1AT24C08PC	IC MEMORY	AT24C08-10PC	Ⓡ
I703	1TSOP1238W	IC PREAMP	TSOP1238WI1	Ⓡ
I801	1STRF6653-	IC SMPS	STR-F6653	Ⓡ
I801A	4857024610	HEAT SINK	I801A (CP-385)	
I801B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I804	1LTV817C--	IC PHOTO COUPLER	LTV-817C	⚠
I805	1UPC574J--	IC	UPC574J	
I806	1SE110N---	IC	SE110N	Ⓡ
I810	TX0202DA--	THYRISTOR	X0202DA	
I820	1KA7805---	IC REGULATOR	KA7805	
I822	1KA7808---	IC REGULATOR	KA7808	
I823	1LE33CZ---	IC REGULATOR	LE33CZ	
I901	1TDA6107Q-	IC VIDEO	TDA6107Q	Ⓡ
I901A	4857031100	HEAT SINK	A1050P-H24 T2.0	
I901B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
J001~5	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J006~9	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
J011 ~71	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J080	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J090	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J095	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J096	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J098	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J099	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
J100	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J101	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J816	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J827	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JPA1	4859200401	SOCKET RGB	SR-21A1 (ANGLE TYPE)	
JPA2	4859200401	SOCKET RGB	SR-21A1 (ANGLE TYPE)	
JPA3	4859108450	JACK PIN BOARD	YSC03P-4120-14A	
L101	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L350	5CPZ109M04	COIL PEAKING	1UH 10.5MM M (LAL04TB)	
L401	58H0000020	COIL H-LINEARITY	L-76(76.5UH)	
L500	5CPZ120K02	COIL PEAKING	12UH 3.5MM K (LAL02TB)	
L501	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L502	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L510	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L511	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L512	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L601	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L602	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L603	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L650	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L801	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L802	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
L803	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
LF801	5PLF24A1--	FILTER LINE	LF-24A1	
M351	4853533600	HOLDER LED	P.P BK	
P401	4850705N14	CONNECTOR	BIC-05T-25T+ULW=400	
P402	4859240120	CONN WAFER	YFW500-06	
P501	4850705N14	CONNECTOR	BIC-05T-25T+ULW=400	
P601	4859231720	CONN WAFER	YW025-04	
P801	4859287320	CONN WAFER	MKS2822 (LOMAX NEW TYPE)	
P802	4859242220	CONN WAFER	YFW800-02	
P903	4859262120	CONN WAFER	YFW 800-01 A5MODELS	
Q101	TSTC1740Y-	TR	STC1740-Y	
Q103	TKTC3202Y-	TR	KTC3202Y	
Q401	T2SD2499--	TR	2SD2499	®
Q402	T2SD1207T-	TR	2SD1207-T (TAPPING)	
Q501	TSTA933Y--	TR	STA933-Y	
Q502	TSTC1740Y-	TR	STC1740-Y	
Q503	TSTC1740Y-	TR	STC1740-Y	
Q504	TSTC1740Y-	TR	STC1740-Y	
Q505	TSTC1740Y-	TR	STC1740-Y	
Q507	TSTA933Y--	TR	STA933-Y	
Q508	TSTC1740Y-	TR	STC1740-Y	
Q509	TSTA933Y--	TR	STA933-Y	
Q510	TSTA933Y--	TR	STA933-Y	
Q511	TSTA933Y--	TR	STA933-Y	
Q807	TSTC1740Y-	TR	STC1740-Y	
Q808	TSTC1740Y-	TR	STC1740-Y	
Q809	TSTC1740Y-	TR	STC1740-Y	
Q810	TSTC1740Y-	TR	STC1740-Y	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
Q811	TSTC1740Y-	TR	STC1740-Y	
R101	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R102	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R103	RD-AZ123J-	R CARBON FILM	1/6 12K OHM J	
R104	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R105	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R106	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R107	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R113	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R114	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R115	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R116	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R117	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R120	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R302	RD-2Z159J-	R CARBON FILM	1/2 1.5 OHM J	
R305	RS02Y331JS	R M-OXIDE FILM	2W 330 OHM J SMALL	
R310	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R311	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R340	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	
R350	RN-4Z2001F	R METAL FILM	1/4 2.0K OHM F	
R351	RN-4Z2001F	R METAL FILM	1/4 2.0K OHM F	
R355	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R356	RD-4Z562J-	R CARBON FILM	1/4 5.6K OHM J	
R360	RD-4Z564J-	R CARBON FILM	1/4 560K OHM J	
R370	RD-4Z159J-	R CARBON FILM	1/4 1.5 OHM J	
R380	5CPZ109M04	COIL PEAKING	1UH 10.5MM M (LAL04TB)	
R390	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R401	RD-4Z272J-	R CARBON FILM	1/4 2.7K OHM J	
R404	RD-4Z399J-	R CARBON FILM	1/4 3.9 OHM J	
R415	RS02Y561JS	R M-OXIDE FILM	2W 560 OHM J SMALL	
R420	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R450	RS02Y103JS	R M-OXIDE FILM	2W 10K OHM J SMALL	
R501	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R502	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R503	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R504	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R505	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R506	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R507	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R508	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R509	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R512	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R513	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R514	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R515	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R516	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
R517	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R518	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
R520	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R521	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R522	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R523	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R524	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R525	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R526	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R527	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R528	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R530	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R531	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R533	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R534	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R537	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R538	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R539	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R540	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R541	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R542	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R543	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R544	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R545	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R546	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R547	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R548	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R549	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	
R550	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R551	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R555	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R556	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R567	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R570	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R580	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R585	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
R586	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R587	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R588	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R589	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R591	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R592	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R593	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R594	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R595	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R597	RN-4Z1502F	R METAL FILM	1/4 15K OHM F	
R598	RN-4Z1502F	R METAL FILM	1/4 15K OHM F	
R605	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R606	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R608	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	
R609	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	
R610	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R614	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R615	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R620	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R621	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R622	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R650	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R660	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R661	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R662	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R700	RD-2Z332J-	R CARBON FILM	1/2 3.3K OHM J	
R710	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R711	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R713	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R720	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R721	RD-AZ181J-	R CARBON FILM	1/6 180 OHM J	
R722	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R723	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R724	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R801	DT120B8010	POSISTOR	T120-B80-A110	
R802	RS02Y753JS	R M-OXIDE FILM	2W 75K OHM J SMALL	
R803	RS02Y473JS	R M-OXIDE FILM	2W 47K OHM J SMALL	
R804	RF02Y338K-	R FUSIBLE	2W 0.33 OHM K	
R805	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
R806	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	
R807	RD-2Z332J-	R CARBON FILM	1/2 3.3K OHM J	
R808	RS02Y821JS	R M-OXIDE FILM	2W 820 OHM J SMALL	
R810	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R811	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K	⚠
R817	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R819	RX10B339JN	R CEMENT	10W 3.3 OHM J BENCH 4P	Ⓡ
R820	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R821	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R823	RD-4Z622J-	R CARBON FILM	1/4 6.2K OHM J	
R829	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R830	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R840	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	
R841	RD-2Z479J-	R CARBON FILM	1/2 4.7 OHM J	
R850	RD-2Z479J-	R CARBON FILM	1/2 4.7 OHM J	
R870	RD-2Z222J-	R CARBON FILM	1/2 2.2K OHM J	
R888	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R910	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R911	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R912	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R913	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R914	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R915	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R920	RF01Y109JA	R FUSIBLE	1W 1 OHM J A CURVE	
R921	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R922	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R923	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RA01	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA02	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RA03	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA04	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA05	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA06	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA08	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA09	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA10	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA11	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA12	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA16	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA19	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA20	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA21	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA40	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA41	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA44	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
SCT1	4859303530	SOCKET CRT	PCS629-03C	⚠
SF1	5PK3953M--	FILTER SAW	K3953M	
SF2	5PK9650M--	FILTER SAW	K9650M	
SW700	5S50101090	SW TACT	SKHV17910A	
SW701	5S50101090	SW TACT	SKHV17910A	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
SW702	5S50101090	SW TACT	SKHV17910A	
SW703	5S50101090	SW TACT	SKHV17910A	
SW704	5S50101090	SW TACT	SKHV17910A	
SW801	5S40101143	SW PUSH	PS3-22SP (P.C.B)	
T401	50D10A2---	TRANS DRIVE	TD-10A2	
T402	50H0000204	FBT	1142.5106	Ⓡ⚠
T801	50M3934A2-	TRANS SMPS	2084.0046	⚠
U100	4859719430	TUNER VARACTOR	EL2782-105-B	Ⓡ
X502	5XE12R000E	CRYSTAL QUARTZ	HC-49/U 12.00000MHZ 30PPM	
X601	5XE18R432E	CRYSTAL QUARTZ	HC-49/U 18.43200MHZ 30PPM	
Z501	5PXPS5R5MB	FILTER CERA	TPS5.5MB-TF21 TAPING	
Z601	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z602	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z603	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z604	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z605	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z606	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z607	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z608	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z609	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z610	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	

6. Service Parts List

6-2 DTE-28G2F(CP-785)

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
ZZ100	48D3740A01	TRANSMITTER REMOCON	R-40A01	®
ZZ110	PTACPWD267	ACCESSORY AS	DTA-21Y1L	
00010	486A716200	BATTERY	AAA 1.5V	
10000	48586054K1	MANUAL INSTRUCTION	DTM-2082CW	
M821	4858213800	BAG INSTRUCTION	L.D.P.E T0.05X250X400	
ZZ120	PTBCSHD234	COVER BACK AS	DTL-28G7F	
M211	4852151911	COVER BACK	HIPS BK	
M211D	4857817611	CLOTH BLACK	FELT 200X20X0.7	
M541	4855415800	SPEC PLATE	150ART P/E FILM (C/TV)	
ZZ130	PTPKCPD234	PACKING AS	DTL-28G7F	
M641	6520010100	STAPLE PIN	18M/M J D O	
M681	4856812400	BAND	18MM X 3M	
M801	4858054400	BOX CARTON	DW-3	
M811	4858187200	PAD	EPS 28G7	
M822	4858215600	BAG P.E	PE FOAM T0.5X1600X1270	
ZZ131	48519A5510	CRT GROUND NET	2801H-1015-2P	
ZZ132	58G0000103	COIL DEGAUSSING	DC-2701	
ZZ140	PTCACAD234	CABINET AS	DTL-28G7F	
M201A	4857818701	CLOTH BLACK	FELT T0.7 L=250 W=15	
M201B	4857818702	CLOTH BLACK	FELT T0.7 L=350 W=15	
M211A	7122401612	SCREW TAPPING	T2S TRS 4X16 MFZN BK	
M211B	7128301412	SCREW TAPPING	T2S WAS 3X14 BK	
M281	4852821701	DOOR	PC SMOG	
M352	97P4602700	CLAMP CORD	NYLON 66 BLK 5280N	
M391	4853951200	BRKT	EGI T1.0 + CLOTH BLACK	
M391A	7122401612	SCREW TAPPING	T2S TRS 4X16 MFZN BK	
M481	4854854101	BUTTON POWER	ABS BK	
M481A	4856716000	SPRING	SWPA PIE0.5	
M491	4854939901	BUTTON CTRL	ABS BK	
M491A	7128301212	SCREW TAPPING	T2S WAS 3X12 MFZN BK	
M501	4855059001	DECO CTRL	PVC T0.25	
M561	4855617401	MARK BRAND	AL (SILVER)	
M681	4856812001	TIE CABLE	NYLON66 DA100	
M683	4856816300	CLAMP WIRE	NYLON 6 (V0)	
M791	4857923300	DOOR LOCK	LA701(KIFCO)	
P405	4850706S21	CONNECTOR	35135-0620+YLT502+ULW=500	
SP01A	7122401212	SCREW TAPPING	T2S TRS 4X12 MFZN BLACK	
SP02A	7122401212	SCREW TAPPING	T2S TRS 4X12 MFZN BLACK	
V901	4859622160	CRT	A66EAK071X11	⚠®
V901A	4856215403	WASHER RUBBER	CR T3.0	
V901B	4856015800	SCREW CRT FIX	L=27	
ZZ133	48519B6110	CRT GROUND NET	DS-DW450T/A	
ZZ200	PTFMSJD234	MASK FRONT AS	DTL-28G7F	
M201	4852068011	MASK FRONT	HIPS BK	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
ZZ202	PTSPPWD165	SPEAKER AS	DTL-28G2F	®
P601A	4850704S30	CONNECTOR	YH025-04+35098+ULW=700	
SP01	4858311110	SPEAKER	12W 8 OHM SP-58126F	
SP02	4858311110	SPEAKER	12W 8 OHM SP-58126F	
ZZ290	PTMPMS0001	PCB MAIN MANUAL AS	DTE-28G2F	®
C101	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C102	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3*11) TP	
C103	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C104	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C106	CEXF1H221V	C ELECTRO	50V RSS 220MF (10X16) TP	
C108	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C110	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C120	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C121	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C305	CEXF1E221V	C ELECTRO	25V RSS 220MF (8X11.5) TP	
C313	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C315	CEXF2C470C	C ELECTRO	160V RUS 47MF (13X25) TP	
C320	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C350	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C351	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C370	CMXM2A473J	C MYLAR	100V 0.047MF J TP	
C401	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C402	CMYH3C562J	C MYLAR	1.6KV 5600PF J (BUP)	
C404	CMYT3C472J	C MYLAR	1.6KV 4700PF MKP	
C408	CMYT2G274J	C MYLAR	400V 0.27MF MKP	
C412	CEXF2C339V	C ELECTRO	160V RSS 3.3MF (8X16) TP	
C414	CMXM2A104J	C MYLAR	100V 0.1MF J TP	
C415	CEXF2E479V	C ELECTRO	250V RSS 4.7MF (10X16)TP	
C418	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C420	CCXB2H222K	C CERA	500V B 2200PF K (TAPPING)	
C430	CCYR3D681K	C CERA	2KV R 680PF K 125C	
C431	CMXB2G472J	C MYLAR	400V 4700PF J TP	
C440	CMXE2G273J	C MYLAR	400V PU 0.027MF J (T	
C499	CEYD1H689W	C ELECTRO	50V RHD 6.8MF (16X35.5)	
C500	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
C501	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C509	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C511	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C512	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C513	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C514	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C515	CBZR1C222M	C CERA	Y5R 16V 2200PF M AXIAL	
C516	CBZR1C472M	C CERA	Y5R 16V 4700PF M AXIAL	
C517	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C518	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C519	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C520	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C521	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C523	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C524	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)	
C525	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C526	CMXB1H104J	C MYLAR	50V EU 0.1MF J (TP)	
C527	CMXM2A473J	C MYLAR	100V 0.047MF J TP	
C528	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C529	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C530	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C531	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C532	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C533	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C534	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C535	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C536	CCZF1H223Z	C CERA	50V F 0.022MF Z	
C537	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C540	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C541	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C542	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C543	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C550	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C555	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C560	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C561	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C564	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C565	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C577	CCZB1H561K	C CERA	50V B 560PF K (AXIAL)	
C585	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C587	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C588	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C589	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C590	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C591	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C592	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C593	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C601	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C602	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C603	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C604	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C605	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C608	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C610	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C611	CEXF1H339V	C ELECTRO	50V RSS 3.3MF (5X11) TP	
C612	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C613	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C614	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C615	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C616	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C617	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C620	CXCH1H509D	C CERA	50V CH 5PF D (TAPPING)	
C621	CXCH1H509D	C CERA	50V CH 5PF D (TAPPING)	
C622	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C625	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C626	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C629	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C630	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C631	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C635	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C636	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C650	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C660	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C661	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C662	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C665	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C666	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z (TAPPING)	
C667	CCXB1H472K	C CERA	50V B 4700PF K (TAPPING)	
C668	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C669	CMXB1H224J	C MYLAR	50V EU 0.22MF J(TP)	
C690	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C691	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C695	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C696	CXCH1H470J	C CERA	50V CH 47PF J (TAPPING)	
C770	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C771	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C801	CL1SC3474M	C LINE ACROSS	275V 0.47MF	⚠
C803	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)	
C804	CCXB3A472K	C CERA	1KV B 4700PF K (TAPPING)	
C805	CEYN2G181P	C ELECTRO	400V LHS 180MF (25X35)	
C806	CEXF1H330V	C ELECTRO	50V RSS 33MF (6.3X11) TP	
C807	CCXF1H473Z	C CERA	50V F 0.047MF Z (TAPPING)	
C808	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5*11) TP	
C809	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C810	CBXB3D102K	C CERA SEMI	2KV BL(N) 1000PF K (T)	
C812	CH1AFE472M	C CERA AC	4KV 4700PF M KX DE1610	⚠
C813	CEYF2E470V	C ELECTRO	250V RSS 47MF (16X25	
C814	CEYF2E470V	C ELECTRO	250V RSS 47MF (16X25	
C820	CCYR3A471K	C CERA	1KV 470PF K 125C	
C821	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C823	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C824	CCYR3A471K	C CERA	1KV 470PF K 125C	
C830	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C831	CCYR3A471K	C CERA	1KV 470PF K 125C	
C832	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C835	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3*11) TP	
C840	CEXF1C222V	C ELECTRO	16V RSS 2200MF(13X25)TP	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C841	CEXF1C222V	C ELECTRO	16V RSS 2200MF(13X25)TP	
C844	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C850	CCZB1H821K	C CERA	50V B 820PF K (AXIAL)	
C861	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C863	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C866	CCYR3A471K	C CERA	1KV 470PF K 125C	
C888	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C905	CEXF2E479V	C ELECTRO	250V RSS 4.7MF (10X16)TP	
C910	CCXB1H152K	C CERA	50V B 1500PF K (TAPPING)	
C950	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C965	CBXB3D102K	C CERA SEMI	2KV BL(N) 1000PF K (T)	
C968	CMXL2E104K	C MYLAR	250V 0.1MF K MEU TP	
CA01	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA02	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA03	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
CA10	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
D100	DSML1216W-	LED	SML1216W	
D101	DBAT85----	DIODE	BAT85 (TAPPING)	
D102	D1SS85TA--	DIODE	1SS85TA	
D313	DBYW36----	DIODE	BYW36 (TAPPING)	
D360	DTZX22C---	DIODE ZENER	TZX22C (TAPPING)	
D361	DUZ33B----	DIODE ZENER	UZ-33B	
D403	DBY228----	DIODE	BY228	
D404	DBYW76----	DIODE	BYW76	
D405	DBYW36----	DIODE	BYW36 (TAPPING)	
D407	DBYW36----	DIODE	BYW36 (TAPPING)	
D408	DBYW36----	DIODE	BYW36 (TAPPING)	
D410	D1N4003---	DIODE	1N4003 (TAPPING)	
D411	D1N4003---	DIODE	1N4003 (TAPPING)	
D450	DBYW36----	DIODE	BYW36 (TAPPING)	
D520	D1N4148---	DIODE	1N4148 (TAPPING)	
D521	D1N4148---	DIODE	1N4148 (TAPPING)	
D591	DTZX2V4A--	DIODE ZENER	TZX2V4A	
D710	DTZX5V1B--	DIODE ZENER	TZX5V1B (TAPPING)	
D801	DBYT51J---	DIODE	BYT51J (TAPPING)	
D802	DBYT51J---	DIODE	BYT51J (TAPPING)	
D803	DBYT51J---	DIODE	BYT51J (TAPPING)	
D804	DBYT51J---	DIODE	BYT51J (TAPPING)	
D805	DBYW36----	DIODE	BYW36 (TAPPING)	
D806	DBYW36----	DIODE	BYW36 (TAPPING)	
D808	DBYW36----	DIODE	BYW36 (TAPPING)	
D809	DBYW36----	DIODE	BYW36 (TAPPING)	
D810	DBYW36----	DIODE	BYW36 (TAPPING)	
D811	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
D820	DBYW76----	DIODE	BYW76	
D821	DBYW36----	DIODE	BYW36 (TAPPING)	
D822	DTZX9V1B--	DIODE ZENER	TZX9V1B (TAPPING)	
D824	D1N4148---	DIODE	1N4148 (TAPPING)	
D825	D1N4148---	DIODE	1N4148 (TAPPING)	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
D830	DBYW36----	DIODE	BYW36 (TAPPING)	
D831	DBYW36----	DIODE	BYW36 (TAPPING)	
D840	D1N4148---	DIODE	1N4148 (TAPPING)	
D841	D1N4148---	DIODE	1N4148 (TAPPING)	
D860	DBYW76----	DIODE	BYW76	
D904	DBAV21----	DIODE	BAV21 (TAPPING)	
D905	DBAV21----	DIODE	BAV21 (TAPPING)	
D906	DBAV21----	DIODE	BAV21 (TAPPING)	
D951	D1N4148---	DIODE	1N4148 (TAPPING)	
D952	D1N4148---	DIODE	1N4148 (TAPPING)	
D953	D1N4148---	DIODE	1N4148 (TAPPING)	
D954	D1N4148---	DIODE	1N4148 (TAPPING)	
DA01	D1N4148---	DIODE	1N4148 (TAPPING)	
DA02	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA03	DTZX5V1B--	DIODE ZENER	TZX5V1B (TAPPING)	
DA04	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA06	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA08	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA09	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA10	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA11	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA13	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA14	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA15	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA16	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA20	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA23	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA24	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
DA27	DTZX5V6B--	DIODE ZENER	TZX5V6B (TAPPING)	
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V MF51	⚠
F801A	4857415001	CLIP FUSE	PFC5000-0702	
F801B	4857415001	CLIP FUSE	PFC5000-0702	
G900	4SG0D00103	SPARK GAP	S-23 900V-1.5KV	
HP1	4859102130	JACK EARPHONE	YSC-1537	®
I301	1TDA8358J-	IC VERTICAL	TDA8358J	®
I301A	4857024422	HEAT SINK	"I301A, I602A (CP-785) "	
I301B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I501	1DW3653BE1	IC MAIN	DW9365/N1/3-BE1	®
I501A	4859302810	IC SOCKET	LSC-764-T051-00	
I601	1MSP3415D-	IC RF	MSP-3415D	®
I602	1TDA8946J-	IC AUDIO	TDA8946J	
I602A	4857024422	HEAT SINK	"I301A, I602A (CP-785) "	
I602B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I702	1AT24C08PC	IC MEMORY	AT24C08-10PC	®
I703	1TSOP1238W	IC PREAMP	TSOP1238WI1	®
I801	1STRF6653-	IC SMPS	STR-F6653	®
I801A	4857024600	HEAT SINK	AL EX B/K	
I801B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I804	1LTV817C--	IC PHOTO COUPLER	LTV-817C	⚠

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
I805	1UPC574J--	IC	UPC574J	
I806	1SE130N---	IC	SE130N	®
I810	TX0202DA--	THYRISTOR	X0202DA	
I820	1KA7805---	IC REGULATOR	KA7805	
I822	1KA7808---	IC REGULATOR	KA7808	
I823	1LE33CZ---	IC REGULATOR	LE33CZ	
I901	1TDA6107Q-	IC VIDEO	TDA6107Q	®
I901A	4857031100	HEAT SINK	A1050P-H24 T2.0	
I901B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
JPA1	4859200401	SOCKET RGB	SR-21A1 (ANGLE TYPE)	
JPA2	4859200401	SOCKET RGB	SR-21A1 (ANGLE TYPE)	
JPA3	4859108450	JACK PIN BOARD	YSC03P-4120-14A	
L101	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L350	5CPZ109M04	COIL PEAKING	1UH 10.5MM M (LAL04TB)	
L401	58H0000025	COIL H-LINEARITY	TRL-330	
L402	58C7070085	COIL CHOKE	TLN-3062A	
L500	5CPZ120K02	COIL PEAKING	12UH 3.5MM K (LAL02TB)	
L501	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L502	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L510	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L511	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L512	5CPZ100K02	COIL PEAKING	10UH 3.5MM K (LAL02TB)	
L601	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L602	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L603	5CPZ479K02	COIL PEAKING	4.7UH 3.5MM K (LAL02TB)	
L650	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L801	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L802	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
L803	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
LF801	5PLF24A1--	FILTER LINE	LF-24A1	
M351	4853533600	HOLDER LED	P.P BK	
M601	4856813600	HOLDER WIRE	NYLON 66 DAWH-13NA	
P401	4850705N14	CONNECTOR	BIC-05T-25T+ULW=400	
P402	4859240120	CONN WAFER	YFW500-06	
P501	4850705N14	CONNECTOR	BIC-05T-25T+ULW=400	
P601	4859231720	CONN WAFER	YW025-04	
P801	4859287320	CONN WAFER	MKS2822 (LOMAX NEW TYPE)	
P802	4859242220	CONN WAFER	YFW800-02	
P903	4859238620	CONN WAFER	YPW500-02	
Q101	TSTC1740Y-	TR	STC1740-Y	
Q103	TKTC3202Y-	TR	KTC3202Y	
Q401	T2SD1880--	TR	2SD1880	®
Q401A	4857024500	HEAT SINK	AL EX	
Q401B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
Q402	T2SD1207T-	TR	2SD1207-T (TAPPING)	®
Q501	TSTA933Y--	TR	STA933-Y	
Q502	TSTC1740Y-	TR	STC1740-Y	
Q503	TSTC1740Y-	TR	STC1740-Y	
Q504	TSTC1740Y-	TR	STC1740-Y	
Q505	TSTC1740Y-	TR	STC1740-Y	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
Q507	TSTA933Y--	TR	STA933-Y	
Q508	TSTC1740Y-	TR	STC1740-Y	
Q509	TSTA933Y--	TR	STA933-Y	
Q510	TSTA933Y--	TR	STA933-Y	
Q511	TSTA933Y--	TR	STA933-Y	
Q807	TSTC1740Y-	TR	STC1740-Y	
Q808	TSTC1740Y-	TR	STC1740-Y	
Q809	TSTC1740Y-	TR	STC1740-Y	
Q810	TSTC1740Y-	TR	STC1740-Y	
Q811	TSTC1740Y-	TR	STC1740-Y	
Q950	TSTC1740Y-	TR	STC1740-Y	
R101	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R102	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R103	RD-AZ123J-	R CARBON FILM	1/6 12K OHM J	
R104	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R105	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R106	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R107	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R113	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R114	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R115	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R116	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R117	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R120	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R310	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R311	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R330	RD-2Z101J-	R CARBON FILM	1/2 100 OHM J	
R331	RD-2Z101J-	R CARBON FILM	1/2 100 OHM J	
R340	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	
R350	RN-4Z2001F	R METAL FILM	1/4 2.0K OHM F	
R351	RN-4Z2001F	R METAL FILM	1/4 2.0K OHM F	
R370	RD-4Z159J-	R CARBON FILM	1/4 1.5 OHM J	
R394	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R395	RD-4Z394J-	R CARBON FILM	1/4 390K OHM J	
R396	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R397	RD-AZ823J-	R CARBON FILM	1/6 82K OHM J	
R398	RD-2Z828J-	R CARBON FILM	1/2 0.82 OHM J	
R399	RS02Y120JS	R M-OXIDE FILM	2W 12 OHM J SMALL	
R401	RD-4Z272J-	R CARBON FILM	1/4 2.7K OHM J	
R402	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	
R404	RD-4Z399J-	R CARBON FILM	1/4 3.9 OHM J	
R406	RS02Y471JS	R M-OXIDE FILM	2W 470 OHM J SMALL	
R415	RS02Y102JS	R M-OXIDE FILM	2W 1K OHM J SMALL	
R420	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R450	RS02Y223JS	R M-OXIDE FILM	2W 22K OHM J SMALL	
R501	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R502	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R503	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R504	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R505	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R506	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R507	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R508	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R509	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R512	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R513	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R514	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R515	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R516	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
R517	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R518	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
R520	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R521	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R522	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R523	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R524	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R525	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R526	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R527	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R528	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R530	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R531	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R533	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R534	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R537	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R538	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R539	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R540	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R541	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R542	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R543	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R544	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R545	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R546	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R547	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R548	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R549	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R550	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R551	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R555	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R556	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R567	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R570	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R580	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R585	RD-AZ224J-	R CARBON FILM	1/6 220K OHM J	
R586	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R587	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R588	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R589	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R591	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R592	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R593	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R594	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R595	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R597	RN-4Z1502F	R METAL FILM	1/4 15K OHM F	
R598	RN-4Z1502F	R METAL FILM	1/4 15K OHM F	
R599	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R605	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R606	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R608	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	
R609	RD-2Z151J-	R CARBON FILM	1/2 150 OHM J	
R610	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R614	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R615	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R620	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R621	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R622	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R650	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R660	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R661	RD-AZ822J-	R CARBON FILM	1/6 8.2K OHM J	
R662	RD-AZ822J-	R CARBON FILM	1/6 8.2K OHM J	
R700	RD-2Z332J-	R CARBON FILM	1/2 3.3K OHM J	
R710	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R711	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R713	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R720	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R721	RD-AZ181J-	R CARBON FILM	1/6 180 OHM J	
R722	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R723	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R724	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R801	DT120B8010	POSISTOR	T120-B80-A110	
R802	RS02Y753JS	R M-OXIDE FILM	2W 75K OHM J SMALL	
R803	RS02Y473JS	R M-OXIDE FILM	2W 47K OHM J SMALL	
R804	RF02Y228K-	R FUSIBLE	2W 0.22 OHM K	
R805	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
R806	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	
R807	RD-2Z272J-	R CARBON FILM	1/2 2.7K OHM J	
R808	RS02Y821JS	R M-OXIDE FILM	2W 820 OHM J SMALL	
R810	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R811	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K	⚠
R817	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R819	RX10B339JN	R CEMENT	10W 3.3 OHM J BENCH 4P	Ⓡ
R820	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R821	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R823	RD-2Z512J-	R CARBON FILM	1/2 5.1K OHM J	
R829	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R830	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R840	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R841	RD-2Z479J-	R CARBON FILM	1/2 4.7 OHM J	
R850	RD-2Z479J-	R CARBON FILM	1/2 4.7 OHM J	
R855	RD-4Z185J-	R CARBON FILM	1/4 1.8M OHM J	
R870	RD-2Z222J-	R CARBON FILM	1/2 2.2K OHM J	
R888	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R910	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R911	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R912	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R913	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R914	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R915	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R920	RF01Y109JA	R FUSIBLE	1W 1 OHM J A CURVE	
R921	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R922	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R923	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R951	RD-4Z244J-	R CARBON FILM	1/4 240K OHM J	
R952	RD-4Z123J-	R CARBON FILM	1/4 12K OHM J	
R953	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R954	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R955	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RA01	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA02	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA03	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA04	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA05	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA06	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA08	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA09	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA10	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA11	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA12	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA16	RD-AZ680J-	R CARBON FILM	1/6 68 OHM J	
RA19	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
RA20	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA21	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
RA40	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA41	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA44	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
SCT1	4859303530	SOCKET CRT	PCS629-03C	
SF1	5PK3953M--	FILTER SAW	K3953M	
SF2	5PK9650M--	FILTER SAW	K9650M	
SW700	5S50101090	SW TACT	SKHV17910A	
SW701	5S50101090	SW TACT	SKHV17910A	
SW702	5S50101090	SW TACT	SKHV17910A	
SW703	5S50101090	SW TACT	SKHV17910A	
SW704	5S50101090	SW TACT	SKHV17910A	
SW801	5S40101143	SW PUSH	PS3-22SP (P.C.B)	
T401	50D19A1---	TRANS DRIVE	TD-19A1	
T402	50H0000205	FBT	1342.0026	® ⚠
T801	50M4936B1-	TRANS SMPS	2094.0041	⚠
U100	4859719930	TUNER VARACTOR	DT5-BF18D	®
X502	5XE12R000E	CRYSTAL QUARTZ	HC-49/U 12.00000MHZ 30PPM	
X601	5XE18R432E	CRYSTAL QUARTZ	HC-49/U 18.43200MHZ 30PPM	
Z501	5PXPS5R5MB	FILTER CERA	TPS5.5MB-TF21 TAPING	
Z601	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z602	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z603	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z604	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z605	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z606	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z607	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z608	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z609	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
Z610	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	

The Different Parts For CRT (CP-785 : 25" , 28")

NO.	LOC.	NAME	PHILIPS	VIDCEO COLOR	TESLA
1	C408	C.MALAR	400V 0.27u (M)	400V 0.3u (M)	400V 0.3u (M)
			CMYT2D274J	CMYT2D304J	CMYT2D274J
2	L401	COIL H-LINEARITY	TRL-330	TRL-330	TRL-400D
			58H0000025	58H0000025	58H0000041
3	R350	R METAL FILM	1/4 2.0K OHM F	1/4 2.0K OHM F	1/4 2.0K OHM F
			RN-4Z2001F	RN-4Z201F	RN-4Z2001F
4	R351	R METAL FILM	1/4 2.0K OHM F	1/4 1.2K OHM F	1/4 2.0K OHM F
			RN-4Z2001F	RN-4Z201F	RN-4Z2001F
5	R920	R FUSIBLE	1W 3.9 OHM J A	1W 2.4 OHM J A	1W 3.9 OHM J A
			RF01Y399JA	RF01Y249JA	RF01Y399JA

The Different Parts For CRT (CP-385)

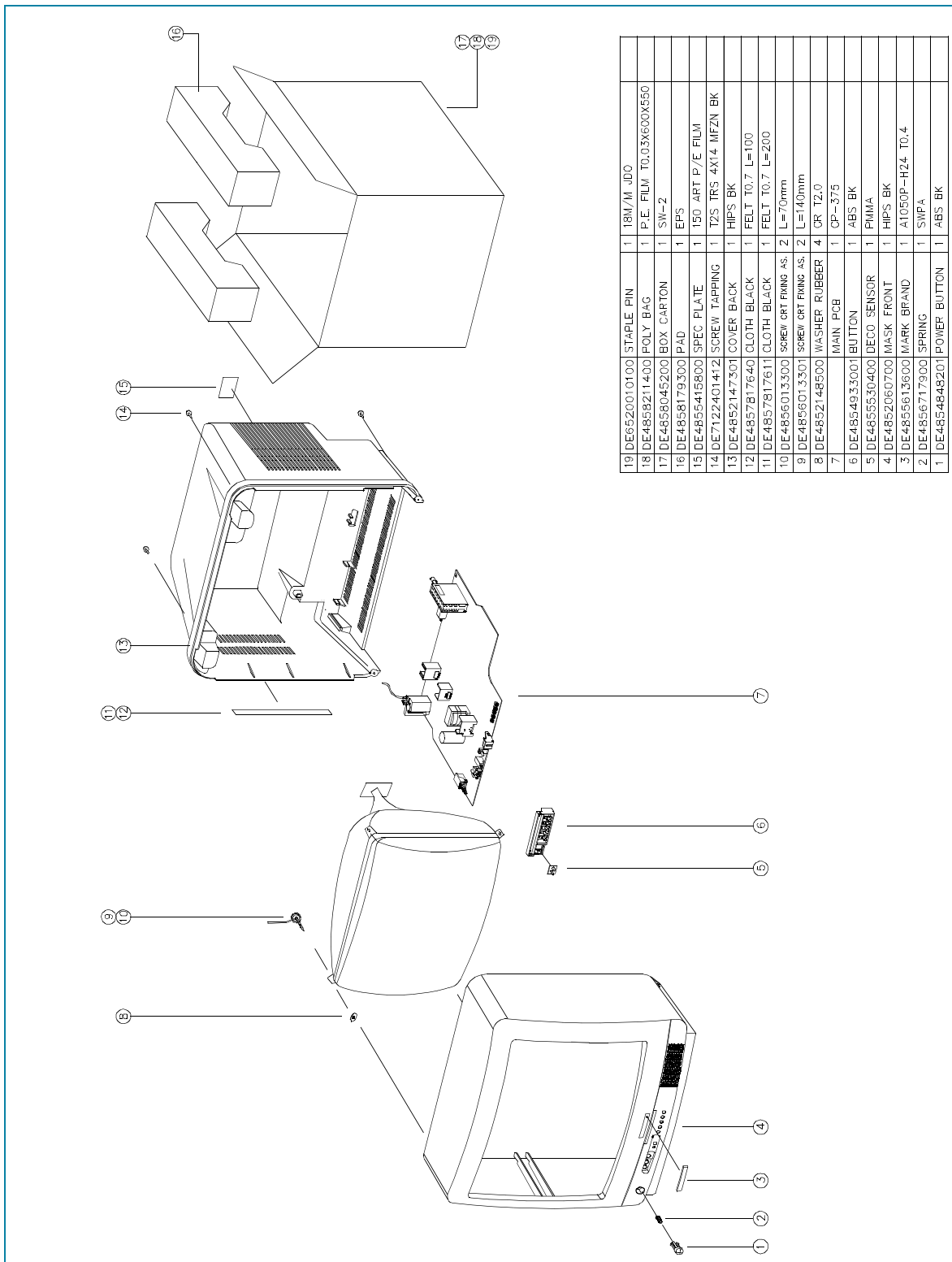
NO.	LOC.	NAME	21" LG	21" PHILIPS	21" POL COLOR	20" POL COLOR	20" ORION
1	V901	CRT	A51QAE320X97	A51EAL155X01	A51EVB13X09	A48EAX33X01	A48JLL90X02
			4859628560	4859607660	4859621760		48A96420P1
2	SCT1	SOCKET CRT	PCS629-03C	PCS629-03C	PCS629-03C	PCS629-03C	PCS633A
			4859303530	4859303530	4859303530	4859303530	4859303430
3	C404	C.MALAR	1.6KV 8200pF	1.6KV 8200pF	1.6KV 7500pF	1.6KV 7500pF	1.6KV 8200pF
			CMYT2D274J	CMYH3C822J	CMYT2D304J	CMYT2D304J	CMYH3C822J
4	C408	C.MALAR	250V 0.27MF MKP	250V 0.36MF MKP	250V 0.27MF MKP	250V 0.36MF MKP	250V 0.36MF MKP
			CMYT2D274J	CMYT2D364J	CMYT2D274J	CMYT2D364J	CMYT2D364J
5	L401	COIL H-LINEARITY	L76	L102	TRL341G	L76	L76
			58H0000020	58H0000016	58H0000040	58H0000020	58H0000020
6	R350	R METAL FILM	1/4 2.0K OHM F	1/4 2.0K OHM F	1/4 1.5K OHM F	1/4 1.5K OHM F	1/4 1.5K OHM F
			RN-4Z2001F	RN-4Z2001F	RN-4Z1501F	RN-4Z1501F	RN-4Z1501F
7	R351	R METAL FILM	1/4 2.0K OHM F	1/4 2.0K OHM F	1/4 1.5K OHM F	1/4 1.5K OHM F	1/4 1.5K OHM F
			RN-4Z2001F	RN-4Z2001F	RN-4Z1501F	RN-4Z1501F	RN-4Z1501F
8	R556	R CARBON	1/6 6.8K OHM J	1/6 6.8K OHM J	1/6 6.8K OHM J	1/6 7.5K OHM J	1/6 7.5K OHM J
			RD-AZ682J-	RD-AZ682J-	RD-AZ682J-	RD-AZ752J-	RD-AZ752J-
9	R351	R CARBON	1/4 6.2K OHM J	1/4 3K OHM J	1/4 5.1K OHM J	WIRE COPPER	1/4 3K OHM J
			RD-4Z622J-	RD-4Z302J-	RD-4Z512J-	85801065GY	RD-4Z302J-
10	R920	R FUSIBLE	1W 1 OHM J A	1W 2 OHM J A	1W 1 OHM J A	1W 0.18 OHM J A	1W 2 OHM J A
			RF01Y109JA	RF01Y209JA	RF01Y109JA	RF01Y188JA	RF01Y209JA

The Different Parts For CRT (CP-785 , 785)

NO.	LOC.	NAME	PAL-BG, PAL-1/1'	with SECAM L/L'
1	V901	CRT	X	A51EAL155X01
				4859607660

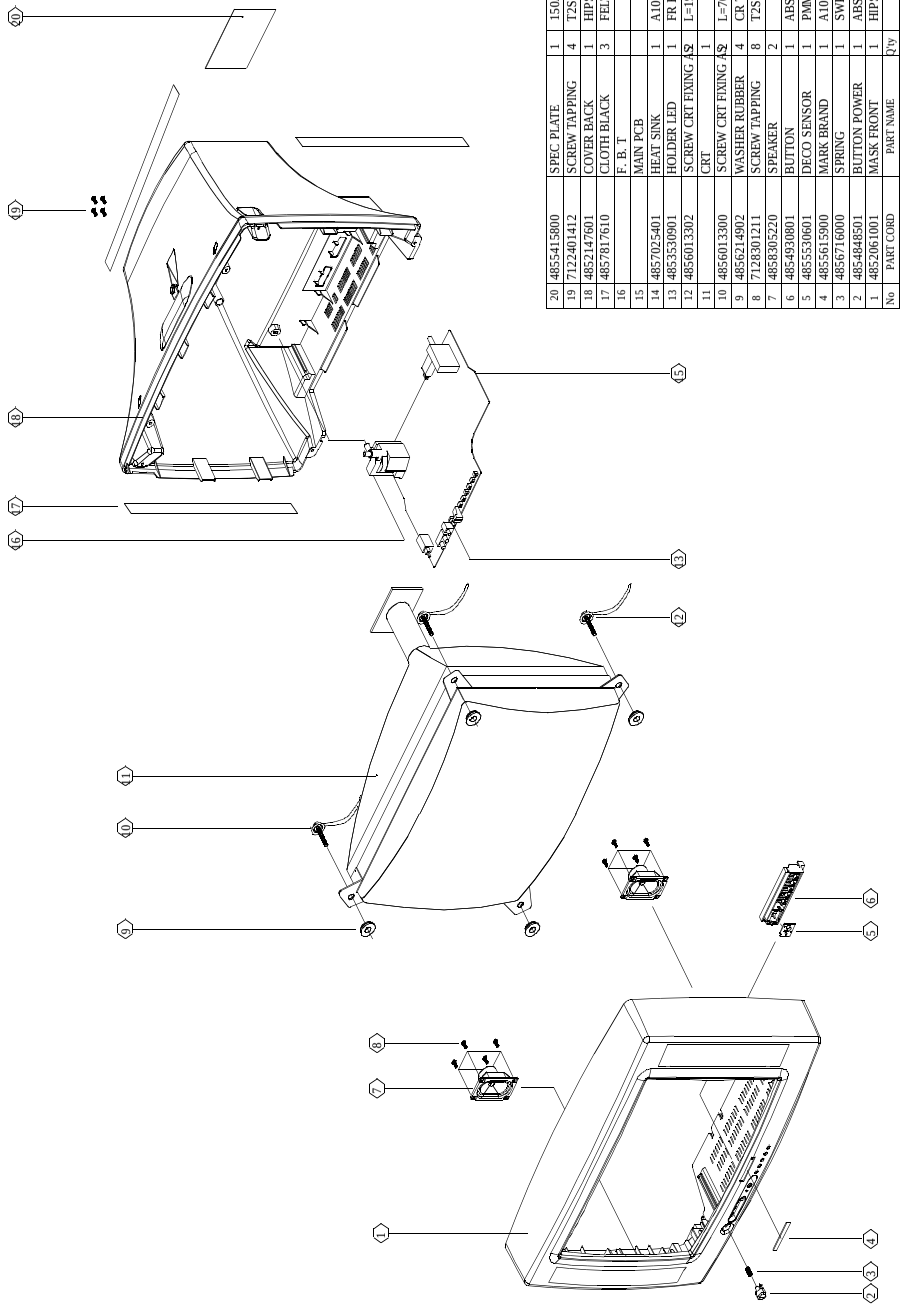
7. Exploded View

7-1. DTA-20T1



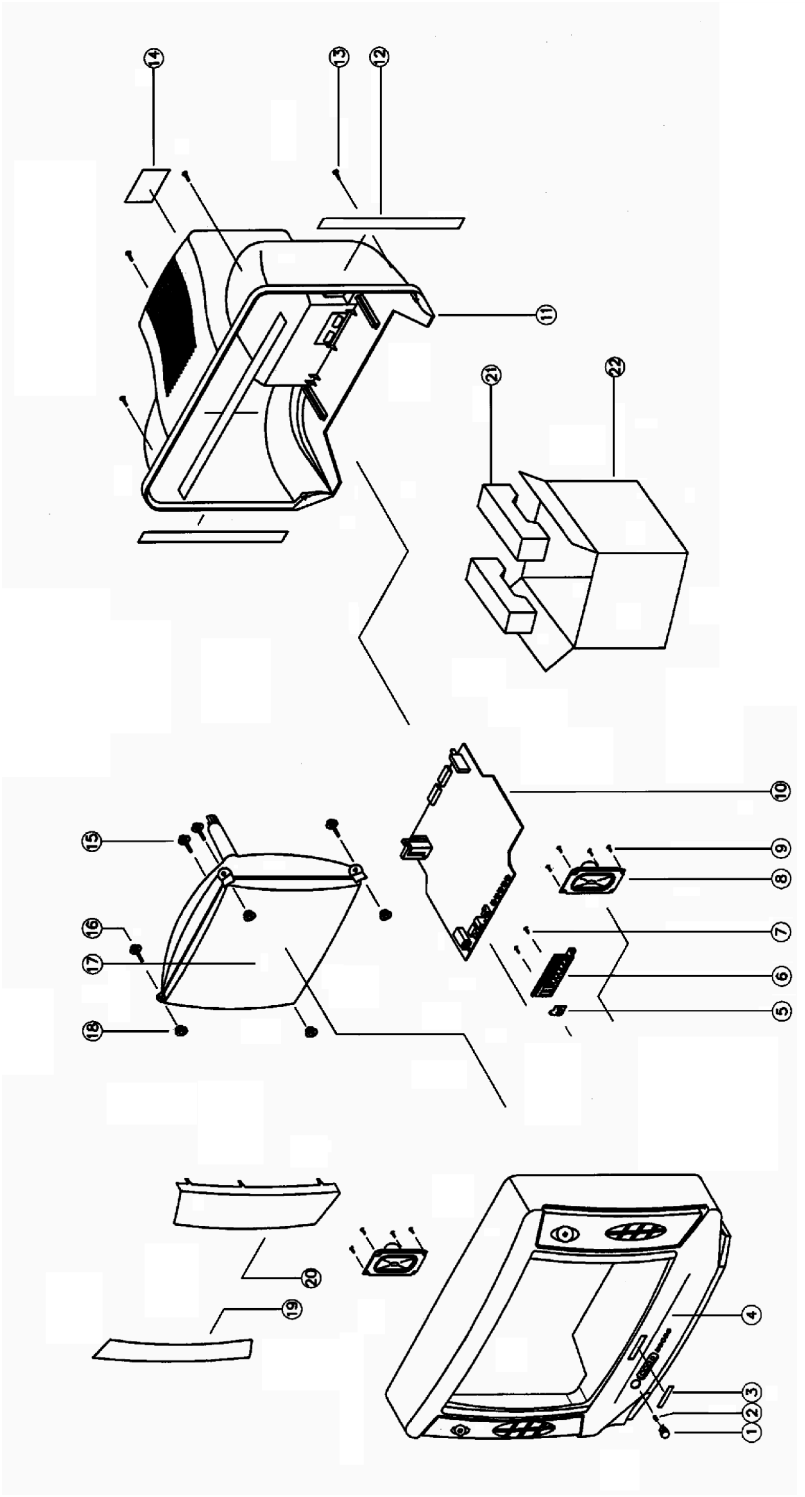
19	DE652001010	STAPLE PIN	1	18M/M JDO	
18	DE485821140	POLY BAG	1	P.E. FILM T0.03X600X550	
17	DE485804520	BOX CARTON	1	SW-2	
16	DE485817930	PAD	1	EPS	
15	DE485541580	SPEC PLATE	1	150 ART P/E FILM	
14	DE712240412	SCREW TAPPING	1	T2S TRS 4X14 MFZN BK	
13	DE485214730	COVER BACK	1	HIPS BK	
12	DE485781764	CLOTH BLACK	1	FELT T0.7 L=100	
11	DE485781761	CLOTH BLACK	1	FELT T0.7 L=200	
10	DE485601330	SCREW CRT FIXING AS.	2	L=70mm	
9	DE485601330	SCREW CRT FIXING AS.	2	L=140mm	
8	DE485214850	WASHER RUBBER	4	CR T2.0	
7		MAIN PCB	1	CP-375	
6	DE485493300	BUTTON	1	ABS BK	
5	DE485553040	DECO SENSOR	1	PMMA	
4	DE485206070	MASK FRONT	1	HIPS BK	
3	DE485561360	MARK BRAND	1	A1050P-H24 T0.4	
2	DE485671790	SPRING	1	SWPA	
1	DE485484820	POWER BUTTON	1	ABS BK	

7-2. DTA-20T2



No	PART NAME	Q'ty	MATERIAL	REMARKS
20	4855415800	1	150ART P/E FILM(C/TV)	
19	7122401412	4	T2S TRS 4X14 MFZN BK	
18	4852147601	1	HIPS BK	
17	4857817610	3	FELT T0.7 L=300	
16			F. B. T	CP-375
15			MAIN PCB	
14	4857025401	1	A1050P-H24 T2	
13	4853530901	1	FR HIPS BK	
12	4856013302	AS	L=190MM	
		1	CRT	
11	4856013300	AS	L=70MM	
10	4856214902	4	CR T2.0	
9	7128301211	8	T2S WAS 3X12 MFZN	
8	4858305220	2	SPEAKER	
7	4854930801	1	ABS BK	
6	4855530601	1	PMMA C.L	
5	4855615900	1	A1050P-H24 T0.4	
4	4856716000	1	SWPA PIE0.5	
3	4854848501	1	ABS BK	
2	4852061001	1	HIPS BK	
1	PART CORD			

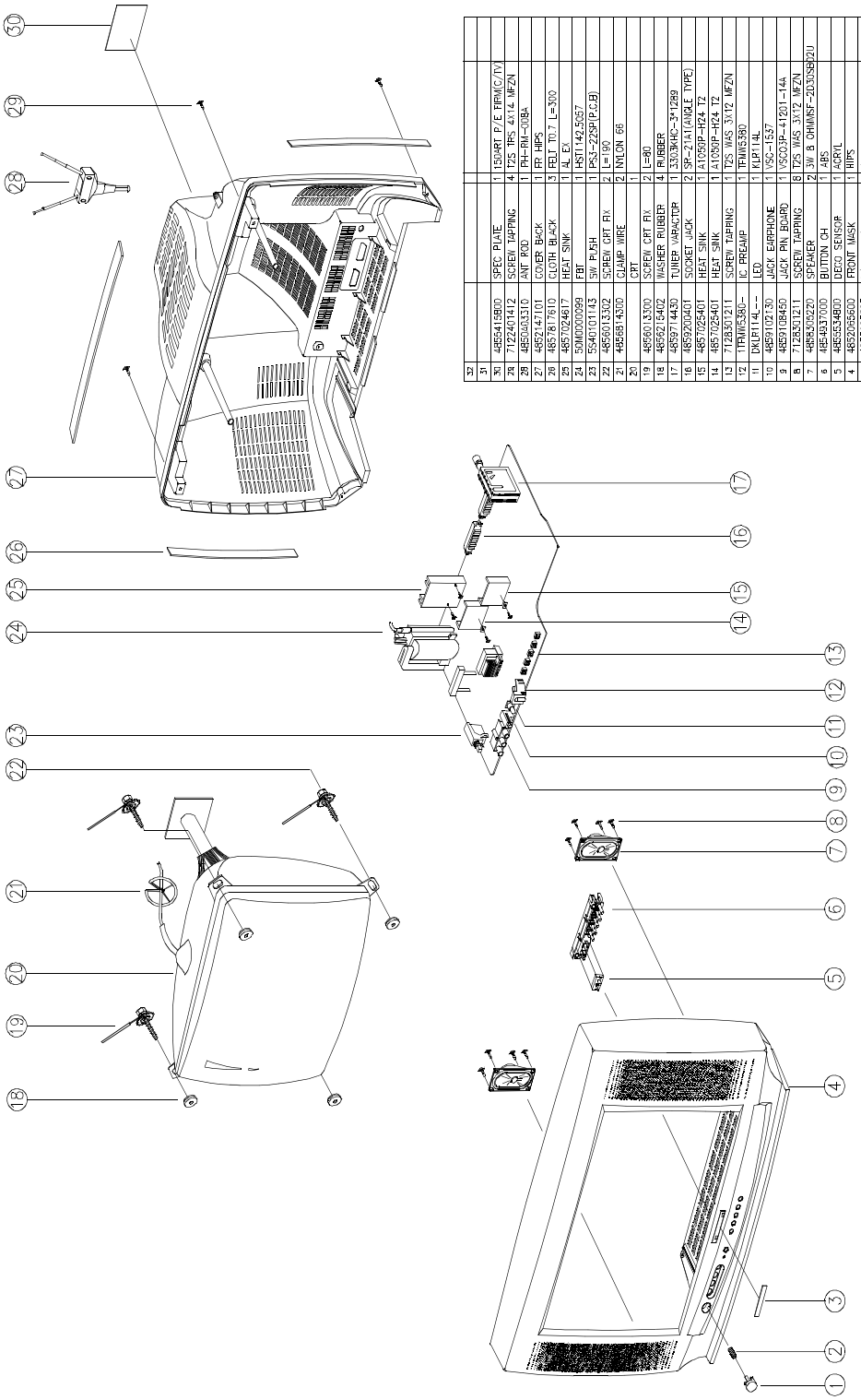
7-3. DTA-20T3



NO.	PART CODE	PART NAME	Qty	MATERIAL	REMARKS
22	4868050700	BOX CAR TON	1	DW-2	
21	4868182001	PAD	1	EPS	
20	4852535500	GRILL SPKR R	1	EGI T0.5	
19	4852535400	GRILL SPKR L	1	EGI T0.5	
18	4856214002	WASHER RUBBER	4	CR T2.0	
17		CR T	1	TUBE ASSY	
16	4856013300	SEREW CR T FIXING AS.	2	L=70mm	
15	4856013303	SEREW CR T FIXING AS.	2	L=240mm	
14	4855415800	SPEC PLA TE	1	150AR T PIE FILM	
13	7122401411	SCREW TAPPING	5	T2S TRS 4X14 MFZN	
12	4857821101	CLOTH BLACK	3	CLOTH L=300	
11	4862147100	COVER BACK	1	HIPS BK	
NO.	PART CODE	PART NAME	Qty	MATERIAL	REMARKS

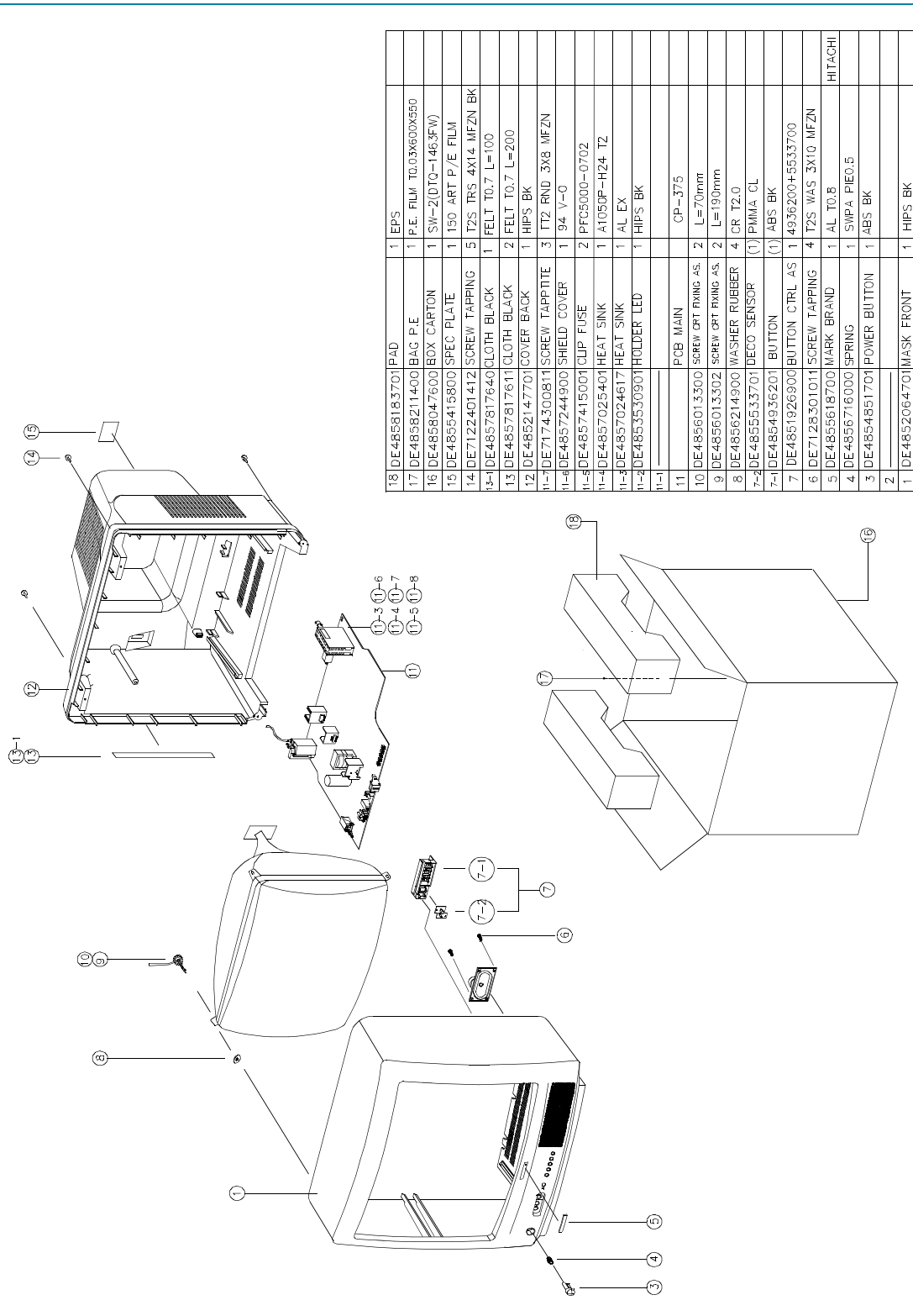
NO.	PART CODE	PART NAME	Qty	MATERIAL	REMARKS
10		MAIN PCB ASSY	1	MAIN PCB ASSY	
9	7128301011	SCREW TAPPING	8	T2S W AS 3X10 MFZN	
8		SPEAKER	2		
7	7128301011	SCREW TAPPING	2	T2S W AS 3X10 MFZN	
6	4854854901	BUTT ON	1	ABS BK	
5	4856332501	DECO SENSOR	1	PMMA CL	
4	4852063500	MASK FRONT	1	FR HIPS BK	
3	4856615900	MARK BRAND	1	ALC609-H24	
2	4856716000	SPRING	1	SWP A	
1	4854860301	BUTT ON POWER	1	ABS BK	
NO.	PART CODE	PART NAME	Qty	MATERIAL	REMARKS

7-4. DTA-20T8



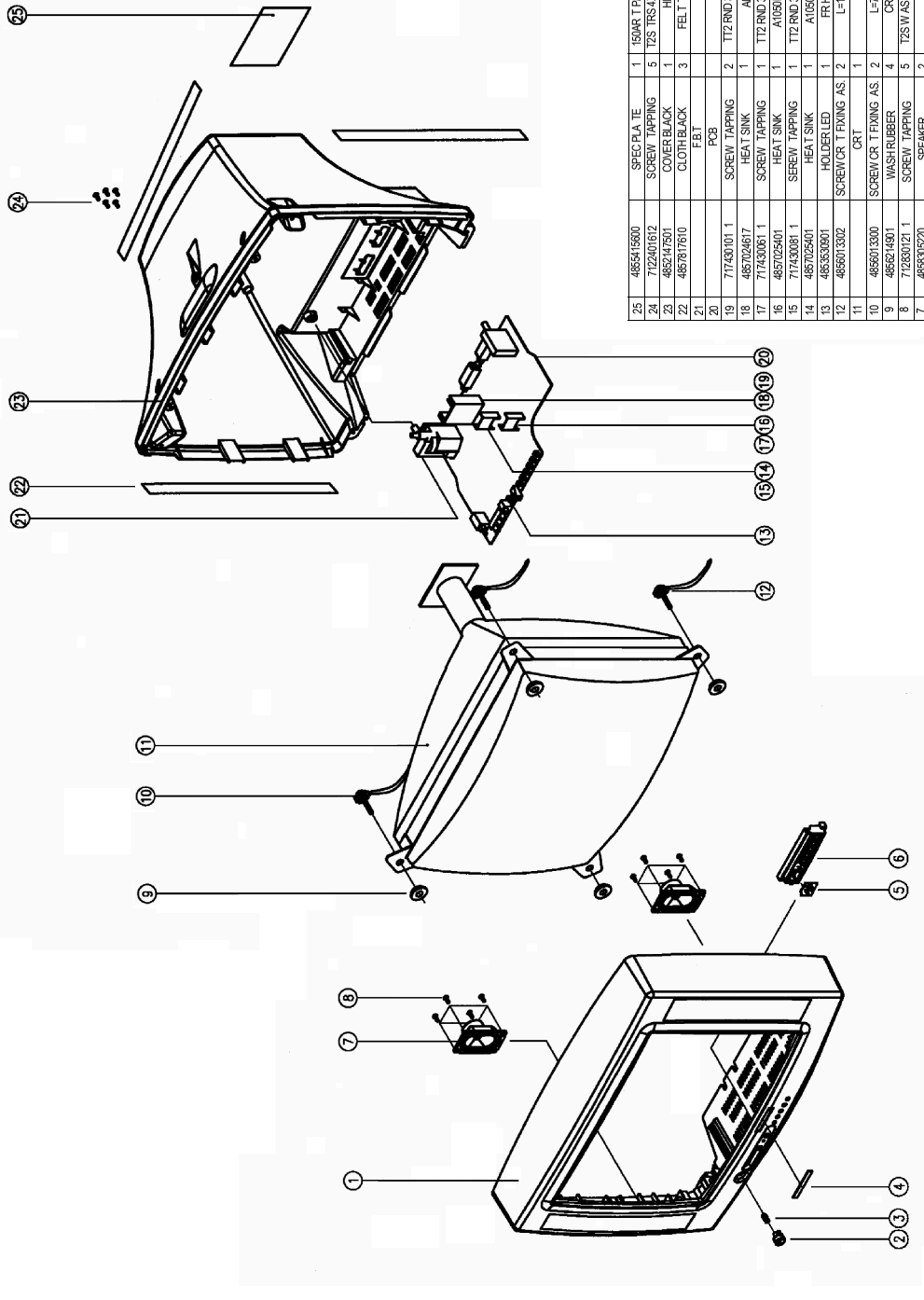
32						
31						
30	4854415B0D	SPEC PLATE	1	150ART P/E FRM(C/TV)		
29	7122401412	SCREW TAPPING	4	T2S TPS 4X14 MFZN		
28	4856003310	ANT ROD	1	PH-RH-40BA		
27	4857147101	COVER BACK	1	FR HIPS		
26	4857R17610	COVER BACK	3	FELT T0.7 L=300		
25	4857024617	HEAT SINK	1	AL EX		
24	53M0000089	FBT	1	HST1142-5057		
23	3540101143	SW PUSH	1	PS3-225P(P.C.B)		
22	4856013502	SCREW CRT FIX	2	L=190		
21	4856814300	CLAMP WIRE	2	NYLON 66		
20		CRT	1			
19	4856013500	SCREW CRT FIX	2	L=80		
18	4856215402	WASHER RUBBER	4	RUBBER		
17	4859714430	TUNER VARACTOR	1	330JH4C-3*1289		
16	4859200401	SOCKET JACK	2	SP-21A1(ANGLE TYPE)		
15	4857025401	HEAT SINK	1	A1050P-H24 T2		
14	4857025401	HEAT SINK	1	A1050P-H24 T2		
13	7128301211	SCREW TAPPING	1	T2S WAS 3X12 MFZN		
12	1PMMF5360--	IC PREAMP	1	TPMMF5360		
11	DKLP114L--	LED	1	KLP114L		
10	4859102130	JACK EARPHONE	1	YSC-1537		
9	4859108430	JACK PHL BOARD	1	YSCQ3P-412G1-144		
8	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN		
7	4854350220	SPEAKER	2	3W 8 OHMMS-2D030SB02U		
6	4854437000	BUTTON CH	1	ABS		
5	4855534B0D	DECO SENSOR	1	ACRYL		
4	4852065600	FRONT MASK	1	HIPS		
3	4857023323	MARK BRAND	1	AL		
2	4856716000	COIL SPRING	1	SWPA ø0.6		
1	4854852800	BUTTON POWER	1	ABS		

7-5. DTA-21T1



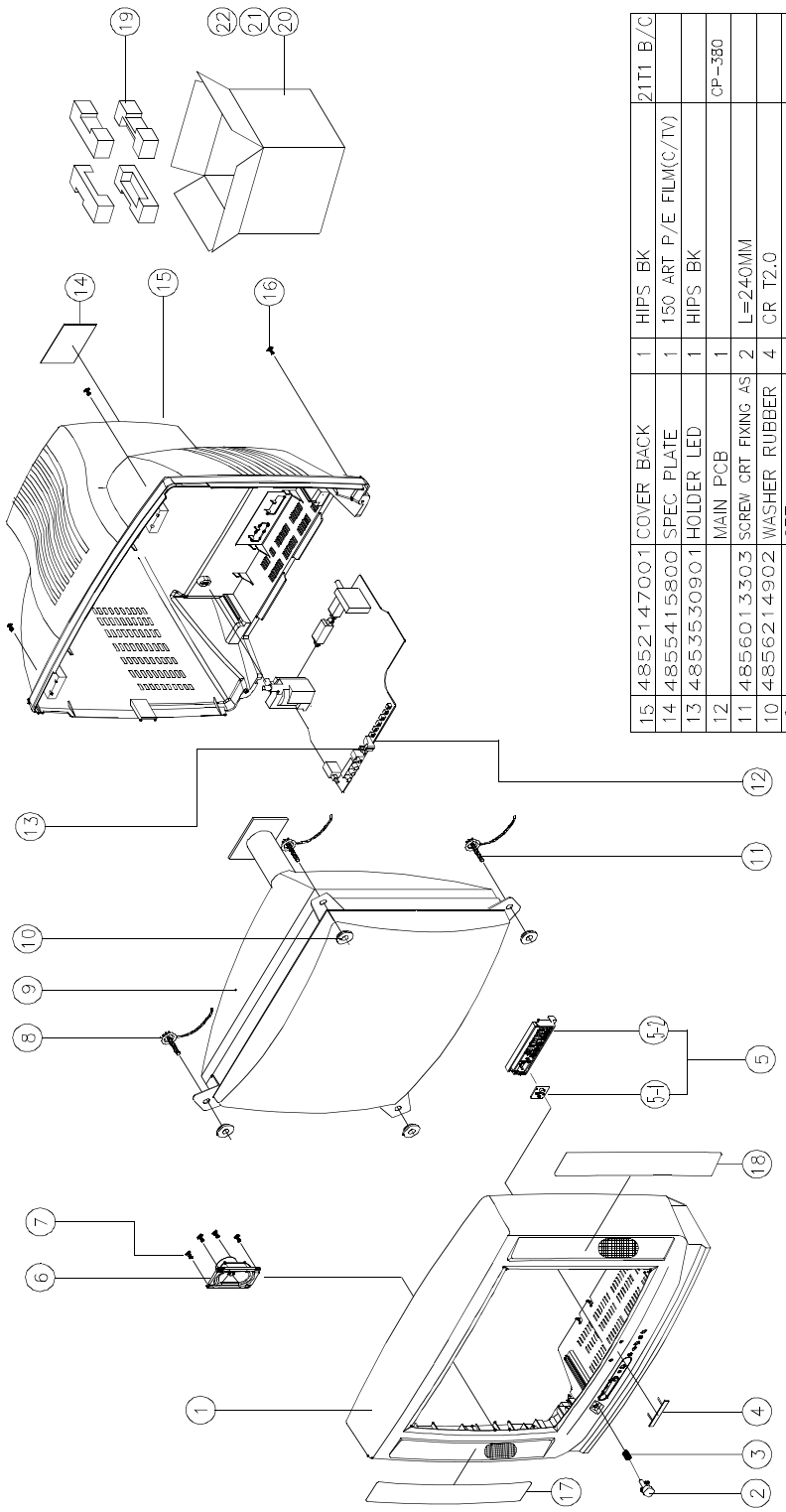
18	DE4858183701	PAD	1	EPS	
17	DE4858211400	BAG P.E	1	P.E. FILM T0.03X600X550	
16	DE4858047600	BOX CARTON	1	SW-2(DTQ-1463FW)	
15	DE4855415800	SPEC PLATE	1	150 ART P/E FILM	
14	DE7122401412	SCREW TAPPING	5	T2S TRS 4X14 MFZN BK	
13-1	DE4857817640	CLOTH BLACK	1	FELT T0.7 L=100	
13	DE4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
12	DE4852147701	COVER BACK	1	HIPS BK	
11-7	DE7174300811	SCREW TAPPITE	3	TT2 RND 3X8 MFZN	
11-6	DE4857244900	SHIELD COVER	1	94 V-0	
11-5	DE4857415001	CLIP FUSE	2	PFC5000-0702	
11-4	DE4857025401	HEAT SINK	1	A1050P-H24 T2	
11-3	DE4857024617	HEAT SINK	1	AL EX	
11-2	DE4853530901	HOLDER LED	1	HIPS BK	
11-1	————	————			
11	————	PCB MAIN		CP-J75	
10	DE4856013300	SCREW CRT FIXING AS.	2	L=70mm	
9	DE4856013302	SCREW CRT FIXING AS.	2	L=190mm	
8	DE4856214900	WASHER RUBBER	4	CR T2.0	
7-2	DE4855533701	DECO SENSOR	(1)	PMMA CL	
7-1	DE4854936201	BUTTON	(1)	ABS BK	
7	DE4851926900	BUTTON CTRL AS	1	4936200+5533700	
6	DE7128301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN	
5	DE4855618700	MARK BRAND	1	AL T0.8	HITACHI
4	DE4856716000	SPRING	1	SWPA PIE0.5	
3	DE4854851701	POWER BUTTON	1	ABS BK	
2	————	————			
1	DE4852064701	MASK FRONT	1	HIPS BK	

7-6. DTA-21T2



NO	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
25	4855415600	SPEC PLA TE	1	150AR T P/E FILM(C/TV)	
24	7122401612	SCREW TAPPING	5	T2S TRS 4X16 MFZN BK	
23	4852147501	COVER BLACK	1	HIPS BK	
22	4857817610	CLOTH BLACK	3	FEL T T0.7 L=300	
21		F.B.T			CP-380
20		PCB			
19	7174301101 1	SCREW TAPPING	2	TT2 RND 3X10 MFZN	
18	4857024617	HEAT SINK	1	AL EX	
17	7174300611	SCREW TAPPING	1	TT2 RND 3X10 MFZN	
16	4857025401	HEAT SINK	1	A1050P-H24 T2	
15	7174300081 1	SEREW TAPPING	1	TT2 RND 3X10 MFZN	
14	4857025401	HEAT SINK	1	A1050P-H24 T2	
13	4853530801	HOLDER LED	1	FR HIPS BK	
12	4856013302	SCREW CR T FIXING AS.	2	L=190mm	
11		CRT	1		
10	4856013300	SCREW CR T FIXING AS.	2	L=70mm	
9	4856214901	WASH RUBBER	4	CR T1.0	
8	7122830121 1	SCREW TAPPING	5	T2S W AS 3X12 MFZN	
7	4858305220	SPEAKER	2		
6	4858305220	BUTT ON	1	ABS BK	
5	4855530701	DECO SENSOR	1	PMMA CL	
4	4856615600	MASK FRONT	1	A1050P-H24 T0.4	
3	4856716000	SPRING	1	SWP A C.L	
2	4854848401	BUTT ON POWER	1	ABS BK	
1	4852060901	MASK FRONT	1	HIPS BK	

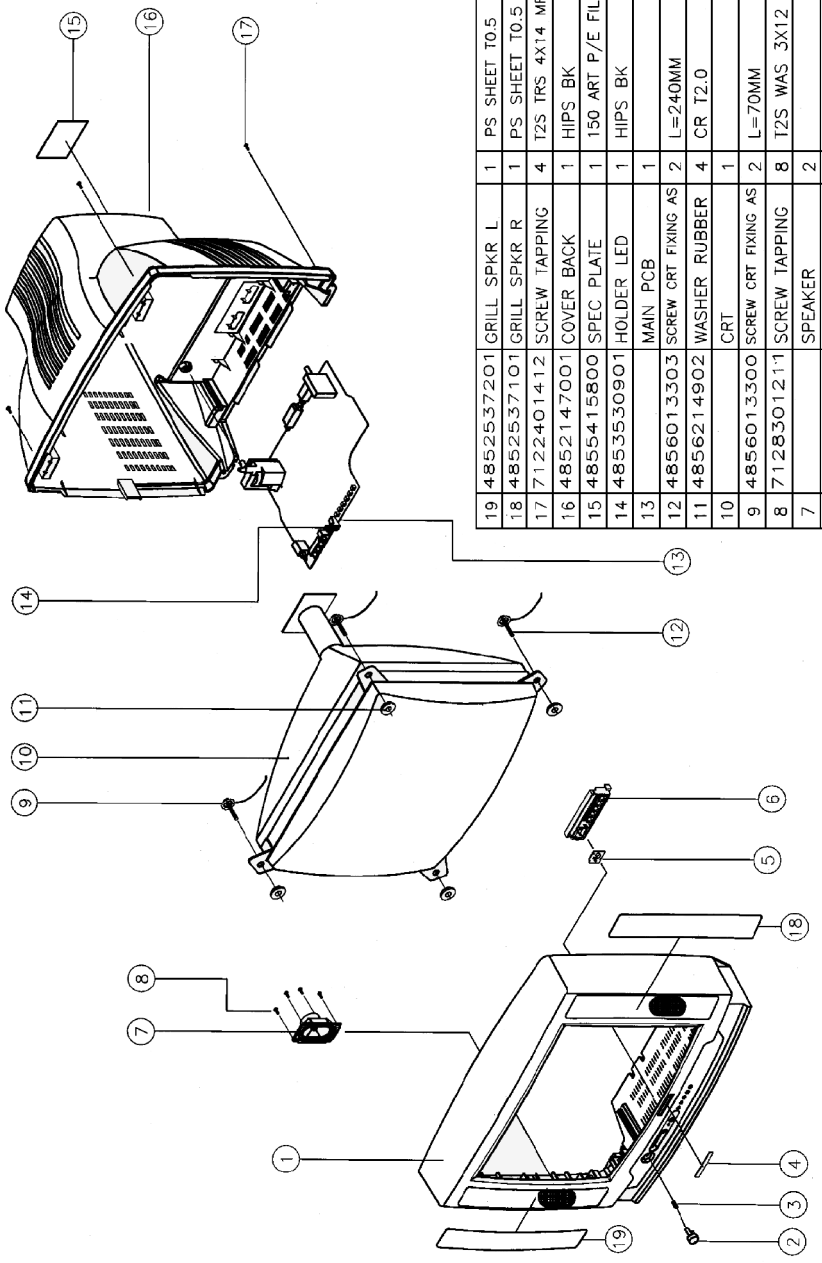
7-7. DTA-21T5



15	4852147001	COVER BACK	1	HIPS BK	21T1 B/C
14	4855415800	SPEC PLATE	1	150 ART P/E FILM(C/TV)	
13	4853530901	HOLDER LED	1	HIPS BK	
12		MAIN PCB	1		CP-380
11	4856013303	SCREW CRT FIXING AS	2	L=240MM	
10	4856214902	WASHER RUBBER	4	CR T2.0	
9		CRT	1		
8	4856013300	SCREW CRT FIXING AS	2	L=70MM	
7	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	
6		SPEAKER	2		
5-2	4854936701	BUTTON	1	ABS BK	
5-1	4855534301	DECO SENSOR	1	PMMA CL	
5	4851929401	BUTTON CTRL AS	1	4936701 + 5534301	
4	4855617SSD	MARK BRAND	1	SILVER DIA-CUTTING	
3	4856716000	SPRING	1	SWPA PIE T0.5	
2	4854852301	BUTTON POWER	1	ABS BK	
1	4852065201	MASK FRONT	1	HIPS BK	

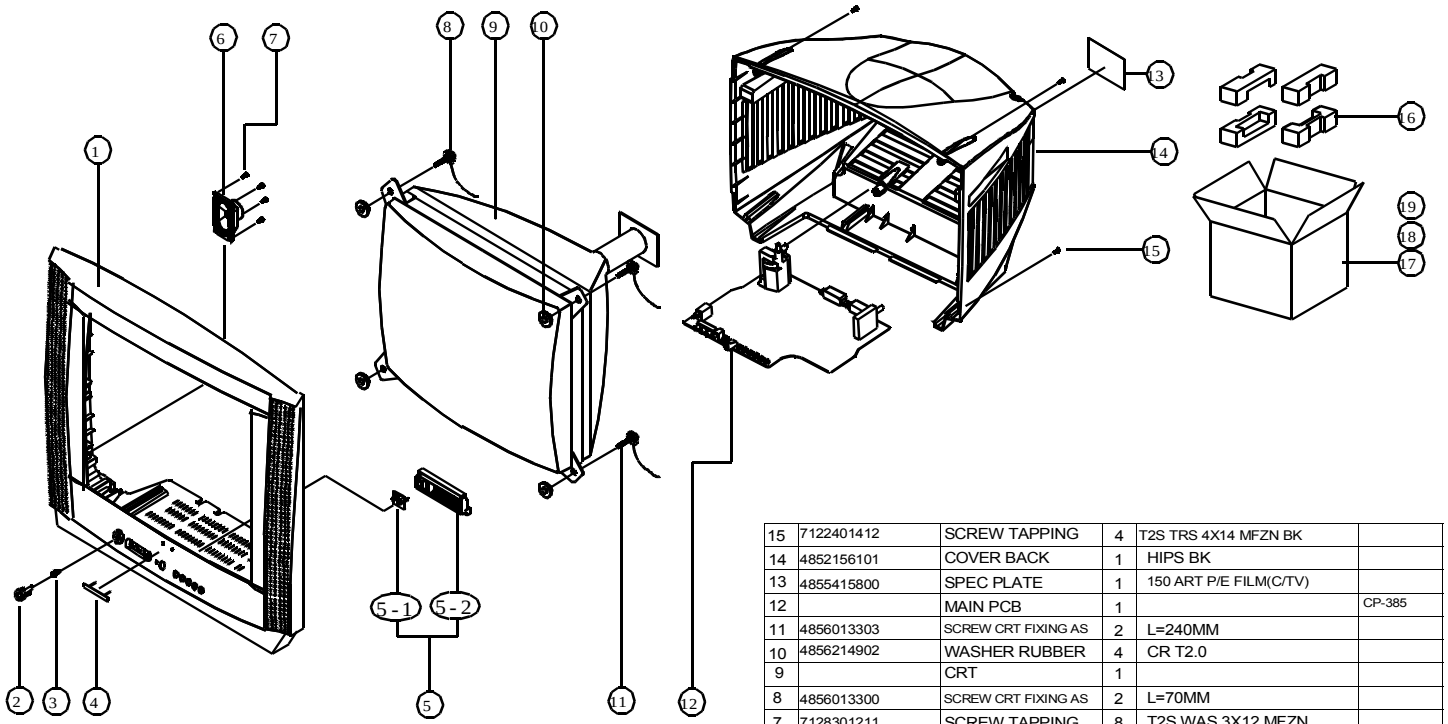
22	6520010200	STAPLE PIN	12	18M/M JADONG
21	4858261300	BAG PE	1	LDPE T0.02X1300X1000
20	4858047601	BOX CARTON	1	DW-3 21T1
19	4858184200	PAD	1	EPS
18	4852537400	GRILL SPKR R	1	PS T0.5
17	4852537300	GRILL SPKR L	1	PS T0.5
16	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK

7-8. DTA-21T9



No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
19	4852537201	GRILL SPKR L	1	PS SHEET T0.5	
18	4852537101	GRILL SPKR R	1	PS SHEET T0.5	
17	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
16	4852147001	COVER BACK	1	HIPS BK	
15	4855415800	SPEC PLATE	1	150 ART P/E FILM(C/TV)	
14	4853530901	HOLDER LED	1	HIPS BK	
13		MAIN PCB	1		CP-380
12	4856013303	SCREW CRT FIXING AS	2	L=240MM	
11	4856214902	WASHER RUBBER	4	CR T2.0	
10		CRT	1		
9	4856013300	SCREW CRT FIXING AS	2	L=70MM	
8	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	
7		SPEAKER	2		
6	4854936601	BUTTON	1	ABS BK	
5	4855534201	DECO SENSOR	1	PMMA CL	
4	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
3	4856716000	SPRING	1	SWPA PIE T0.5	
2	4854852101	BUTTON POWER	1	ABS BK	
1	4852065101	MASK FRONT	1	HIPS BK	

7-9. DTA-21Y1



No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
15	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
14	4852156101	COVER BACK	1	HIPS BK	
13	4855415800	SPEC PLATE	1	150 ART P/E FILM(C/TV)	
12		MAIN PCB	1		CP-385
11	4856013303	SCREW CRT FIXING AS	2	L=240MM	
10	4856214902	WASHER RUBBER	4	CR T2.0	
9		CRT	1		
8	4856013300	SCREW CRT FIXING AS	2	L=70MM	
7	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	
6		SPEAKER	2		
5-2	4854945701	BUTTON	1	ABS BK	
5-1	4855541101	DECO SENSOR	1	PMMA MILKY	
5	4851939401	BUTTON CTRL AS	1	4945701 + 5541101	
4	48556175SD	MARK BRAND	1	SILVER DIA-CUTTING	
3	4856716000	SPRING	1	SWPA PIE T0.5	
2	4854856501	BUTTON POWER	1	ABS BK	
1	4852074101	MASK FRONT	1	HIPS BK	

20					
19	6520010200	STAPLE PIN	12	18M/M JADONG	
18	4858261300	BAG PE	1	LDPE T0.02X1300X1000	
17	4858056600	BOX CARTON	1	DW-2	
16	4858193601	PAD	1	EPS 21Y1	

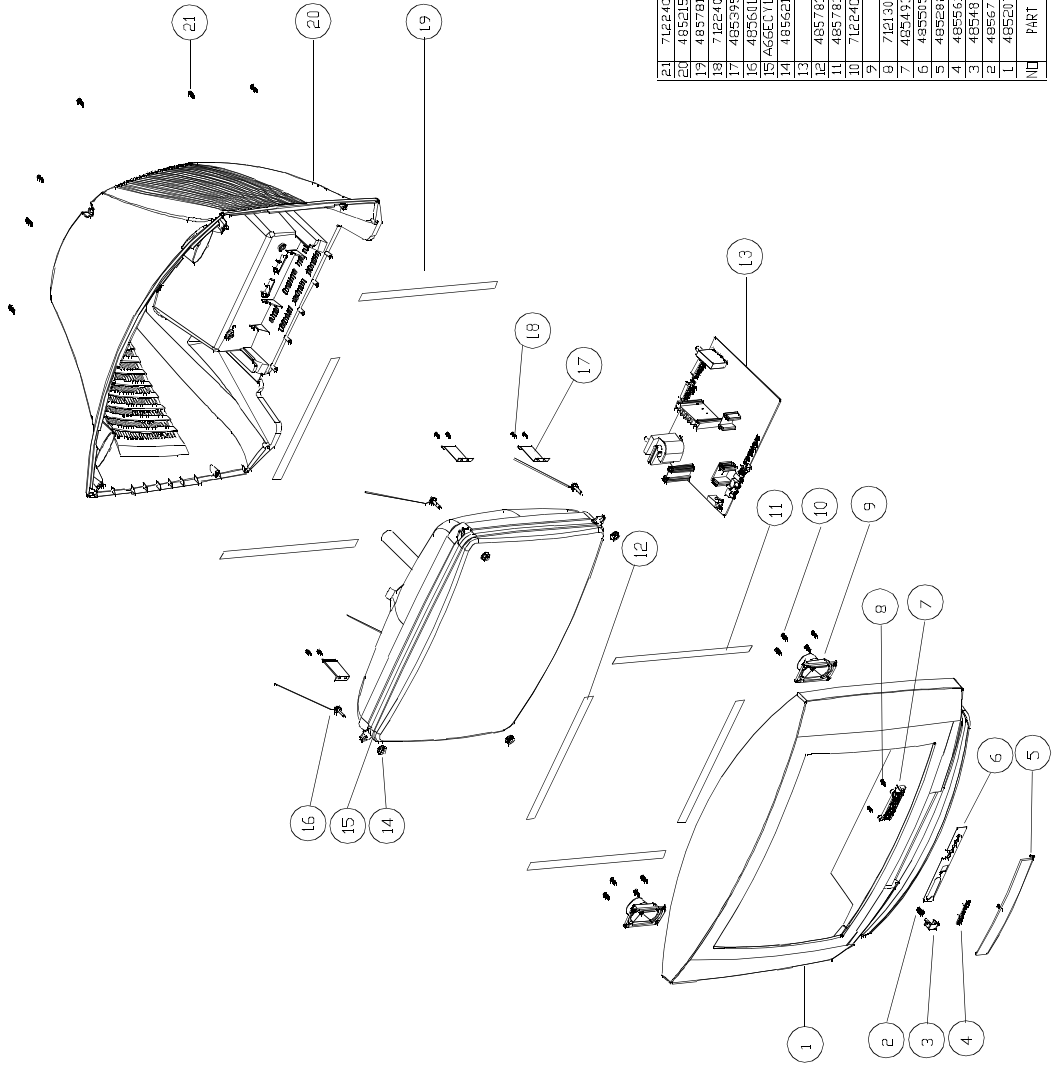
UNITS	m/m	Designed by	Checked by	Inspected by	Approved by
SCALE	N/S			99.06.09	

Daewoo Electronics CO.,LTD.
Mechanical Design Team, TV Research Center

MODEL	DTA-21Y1	D/N	485009FC
REFERENCE			

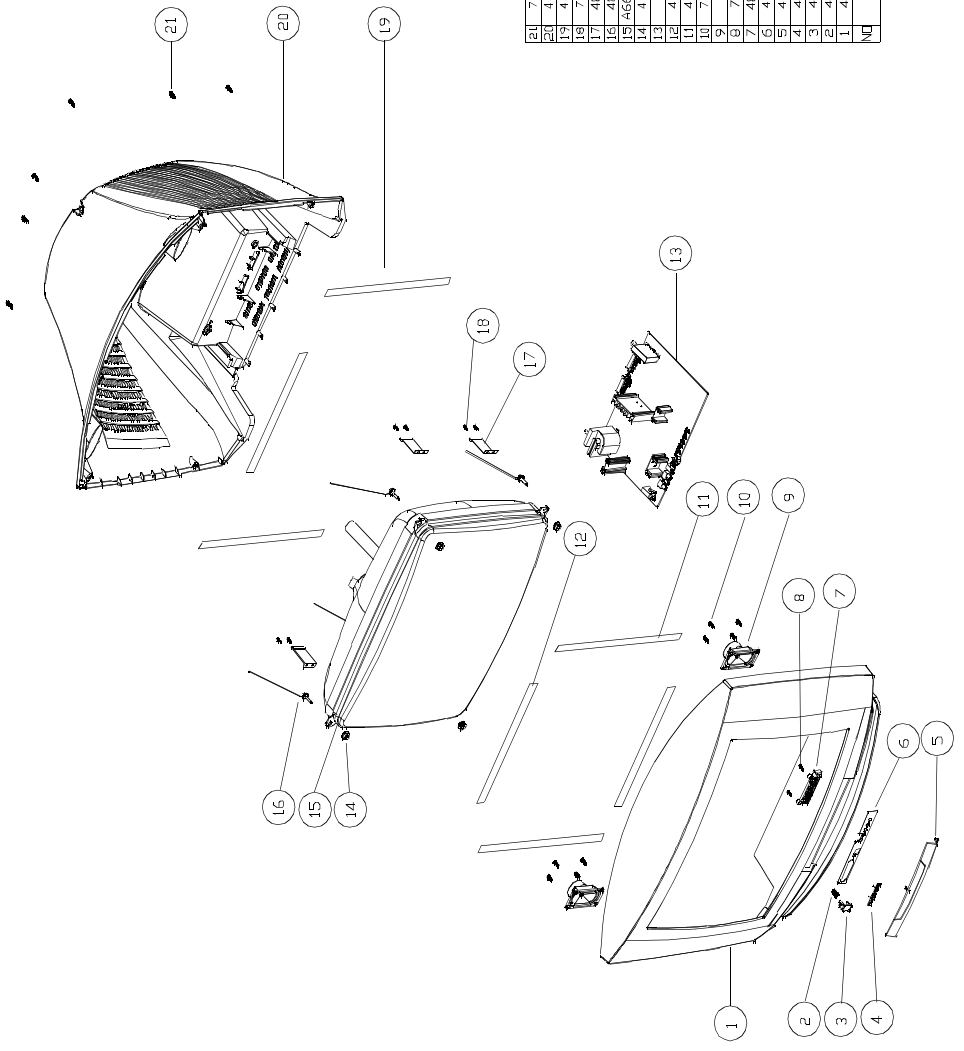
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DEVELOPMENT DWG

7-10. DTE-25G6



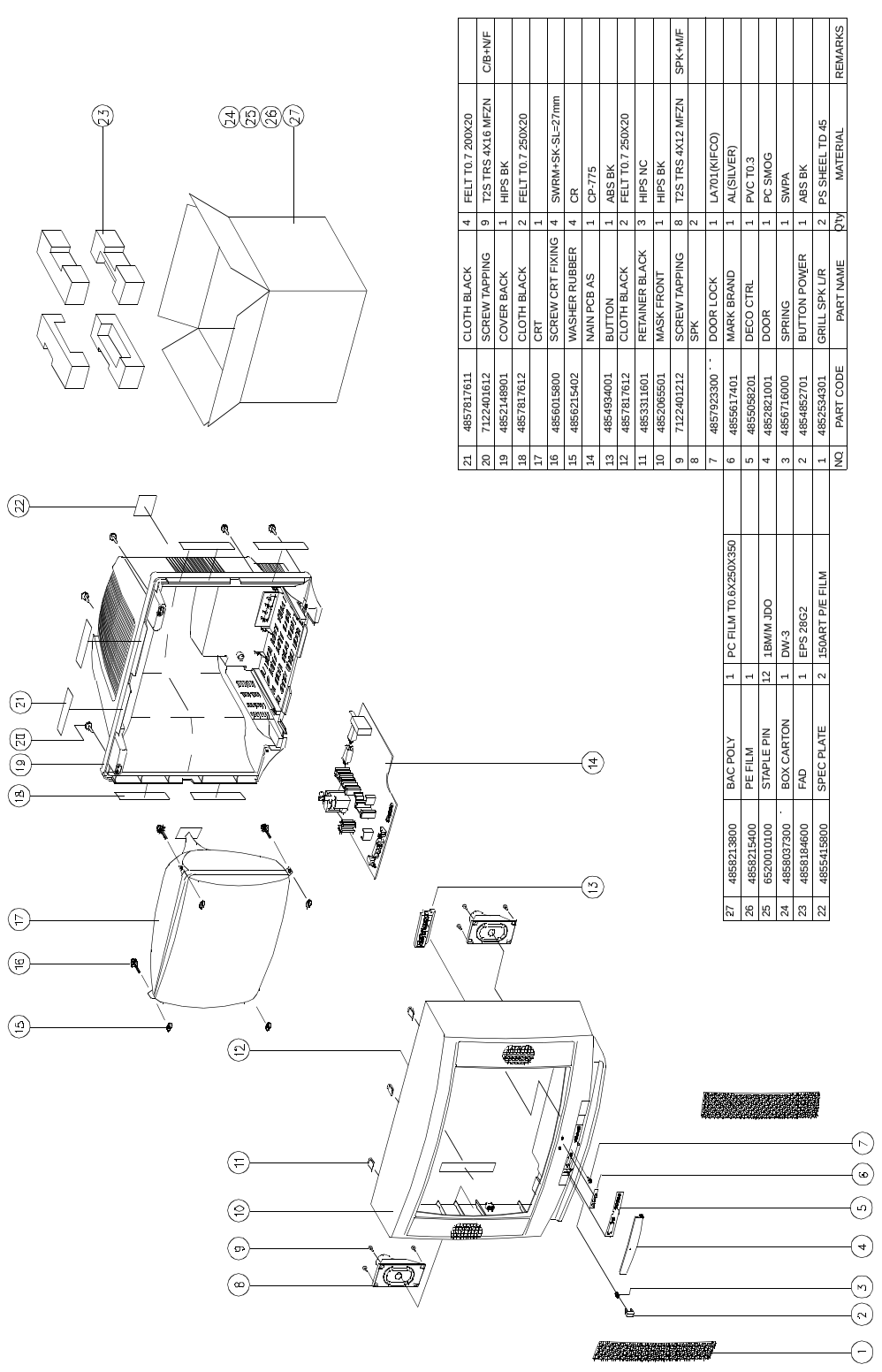
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
21	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
20	4852153211	COVER BACK	1	HIPS BK	
19	4857817610	CLOTH BLACK	3	FELT 300X200X0.7	
18	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
17	4853951200	BKRT	4	EGI T1.0+CLOTH BLACK	
16	4856015800	SCREW CRT FIX	4	L=27mm	
15	A66EDY13X.26V	CRT Assy	1	GLASS	
14	4856215404	WASHER RUBBER	4	CR T4.0	
13		PCB Assy	1	cp-776	
12	4857818701	CLOTH BLACK	2	FELT T0.7 L=350 W=15	
11	4857818702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	7122401412	SCREW TAPPING	8	T2S TRS 4X14 MFZN BK	
9		SPEAKER	2		
8	7121301212	SCREW TAPPING	2	T2S WAS 3X12 MFZN BK	
7	4854939901	BUTTON CTRL	1	ABS BK	
6	4855059001	DECO CRTL	1	PVC T0.25	
5	4852821601	DOOR	1	PC SMDG	
4	4855616150	MARK BRAND	1	SILVER DIA-CUTTING	
3	4854354301	BUTTON POWER	1	HIPS BK	
2	4856716000	SPRING	1	SWPA PIE0.5	
1	4852070411	MASK FRONT	1	HIPS BK	

7-11. DTE-25G7



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
21	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
20	4852815211	COVER BACK	1	HIPS BK	
19	4857817610	CLOTH BLACK	3	FELT 300X200X0.7	
18	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
17	4853991200	BKRT	4	EGI TL0+CLOTH BLACK	
16	4855015800	SCREW CRT FIX	4	L=27mm	
15	A66EC1Y13X-26V	CRT Assy	1	GLASS	
14	4854215404	WASHER RUBBER	4	CR T4.0	
13		PCB Assy	1	CP-776	
12	4857818701	CLOTH BLACK	2	FELT T0.7 L=350 W=15	
11	4857818702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	7122401412	SCREW TAPPING	8	T2S TRS 4X14 MFZN BK	
9		SPEAKER	2		
8	7121301212	SCREW TAPPING	2	T2S VAS 3X12 MFZN BK	
7	4854939901	BUTTON CTRL	1	ABS BK	
6	4855059001	DECO CRTL	1	PVC T0.25	
5	4852819801	DOOR	1	PC SMOG	
4	4855616150	MARK BRAND	1	SILVER DIA-CUTTING	
3	4854854301	BUTTON POWER	1	HOPS BK	
2	4856716000	SPRING	1	SWPA PIE0.5	
1	4852070511	MASK FRONT	1	HIPS BK	

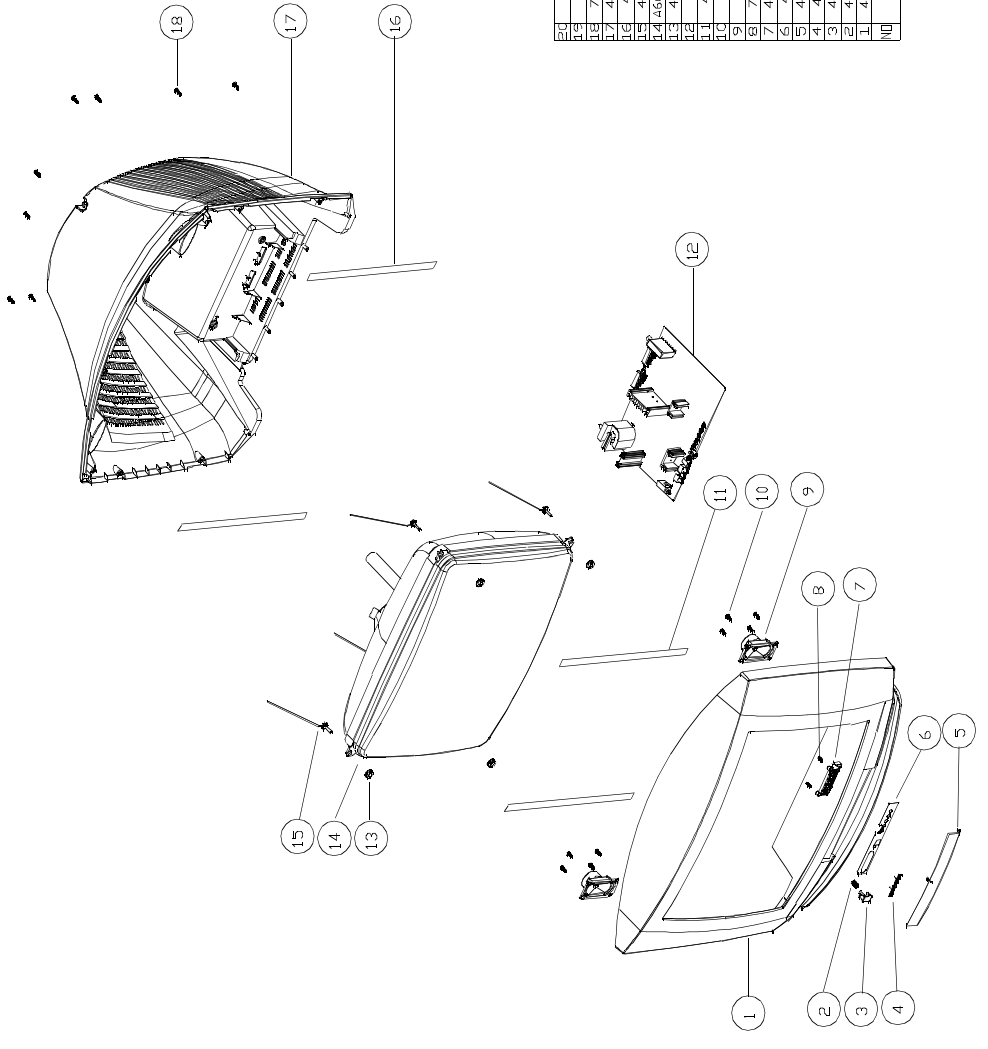
7-12. DTE-28G2



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
21	4857817611	CLOTH BLACK	4	FELT T0.7 200X20	
20	7122401612	SCREW TAPPING	9	T2S TRS 4X16 MFZN	C/B+N/F
19	4852148901	COVER BACK	1	HIPS BK	
18	4857817612	CLOTH BLACK	2	FELT T0.7 250X20	
17		CRT	1		
16	4856015800	SCREW CRT FIXING	4	SWRM+SK-SL=27mm	
15	4856215402	WASHER RUBBER	4	CR	
14		NAIN PCB AS	1	CP-775	
13	4854934001	BUTTON	1	ABS BK	
12	4857817612	CLOTH BLACK	2	FELT T0.7 250X20	
11	4853311601	RETAINER BLACK	3	HIPS NC	
10	4852065501	MASK FRONT	1	HIPS BK	
9	7122401212	SCREW TAPPING	8	T2S TRS 4X12 MFZN	SPK+M/F
8		SPK	2		
7	4857923300	DOOR LOCK	1	LA701(KIFCO)	
6	4855617401	MARK BRAND	1	AL(SILVER)	
5	4855058201	DECO CTRL	1	PVC T0.3	
4	4852821001	DOOR	1	PC SMOG	
3	4856716000	SPRING	1	SWPA	
2	4854852701	BUTTON POWER	1	ABS BK	
1	4852534301	GRILL SPK L/R	2	PS SHEEL TD 45	

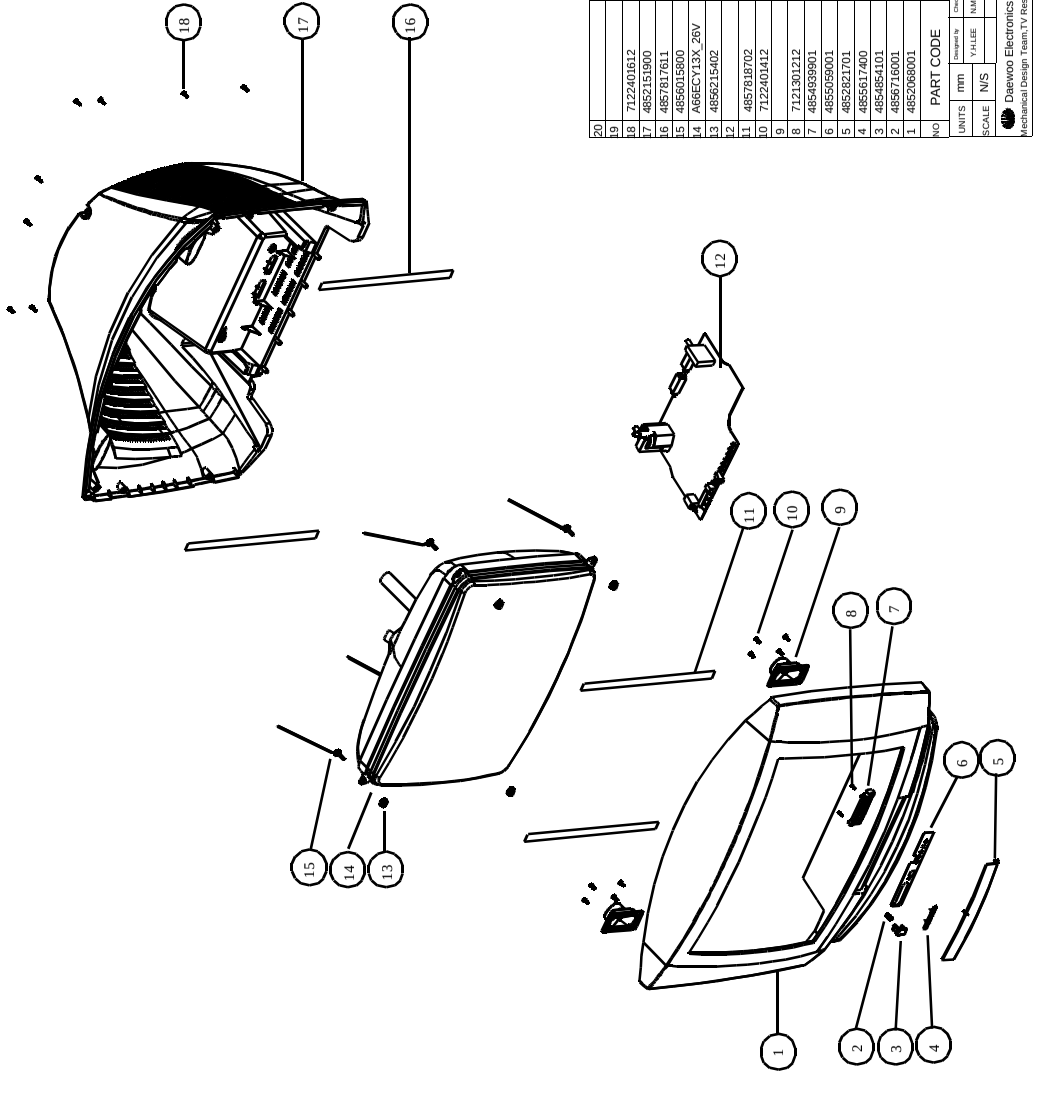
27	4858213800	BAC POLY	1	PC FILM T0.6X250X350	
26	4858215400	PE FILM	1		
25	6520010100	STAPLE PIN	12	1BM/M JDO	
24	4858037300	BOX CARTON	1	DW-3	
23	4858184600	FAD	1	EPS 28G2	
22	4855415800	SPEC PLATE	2	150ART P/E FILM	

7-13. DTE-28G6



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
1	4852067901	MASK FRONT	1	HIPS BK	
2	4857416001	SPRING	1	SWPA	
3	4854854001	BUTTON POWER	1	ABS	
4	4855617400	MARK BRAND	1	410510P-H24	
5	4852821501	DOOR	1	PC	
6	4855059001	DECO_CRTL	1	PS	
7	4954939901	BUTTON CTRL	1	ABS BK	
8	7121301212	SCREW TAPPING	2	SWRM BK	
9		SPEAKER	2		
10	7122401412	SCREW TAPPING	8	SWRM BK	
11	4857818702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
12		PCB Assy	1	cp-775	
13	4856215402	WASHER RUBBER	4	CR	
14	466ECY13X-26V	CRT Assy	1	GLASS	
15	4956015800	SCREW_CRT_FIX	4	SWRM4SK-S BK	
16	4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
17	4852151900	COVER BACK	1	HIPS BK	
18	7122401612	SCREW TAPPING	10	SWRM BK	
19					
20					

7-14. DTE-28G7



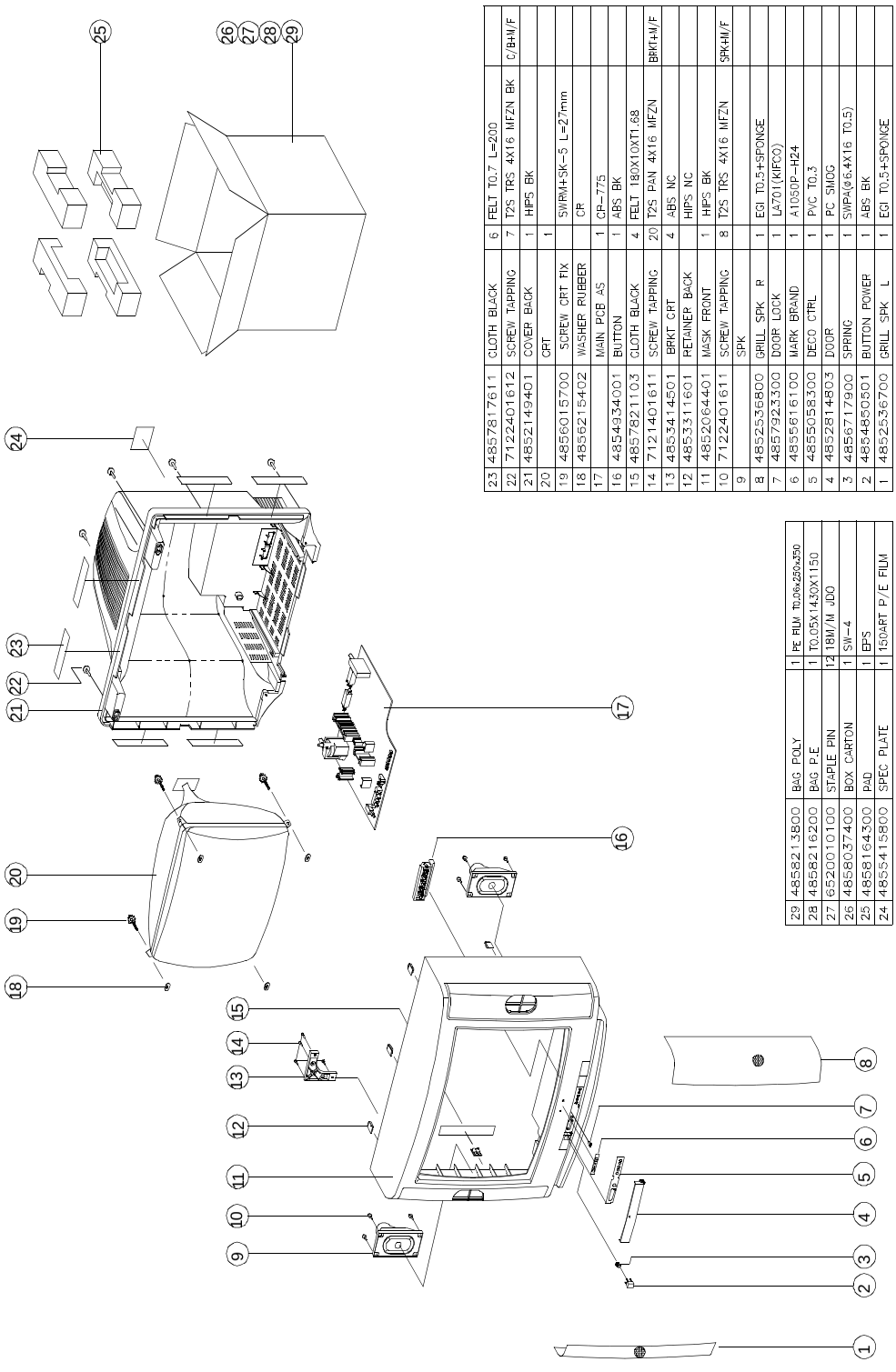
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
20					
19					
18	7122401612	SCREW TAPPING	10	SWRM BK	
17	4852151900	COVER BACK	1	HIPS BK	
16	4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
15	4856015800	SCREW_CRT_FIX	4	SWRM+SK-5 BK	
14	A66ECY13X_26V	CRT Assy	1	GLASS	
13	4856215402	WASHER RUBBER	4	CR	
12		PCB Assy	1	cp-785	
11	4857818702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	7122401412	SCREW TAPPING	8	SWRM BK	
9		SPEAKER	2		
8	7121301212	SCREW TAPPING	2	SWRM BK	
7	4854939901	BUTTON CTRL	1	ABS BK	
6	4855059001	DECO_CRTL	1	PS	
5	4852821701	DOOR	1	PC	
4	4855617400	MARK BRAND	1	A1050P-H24	
3	4854854101	BUTTON_POWER	1	ABS	
2	4856716001	SPRING	1	SWPA	
1	4852068001	MASK FRONT	1	HIPS BK	

UNITS	mm	Designed by	Checked by	Approved by
		Y.H.LEE	NAM JONG	S.H.KIM
SCALE	N/S		K.C.OH	

Daewoo Electronics CO.,LTD.
Mechanical Design Team,TV Research Center

PART NAME
OUTLINE DRAWING (1/1)
MODEL: DTE-28G7
REFERENCE:
DWG NO: 485009D3

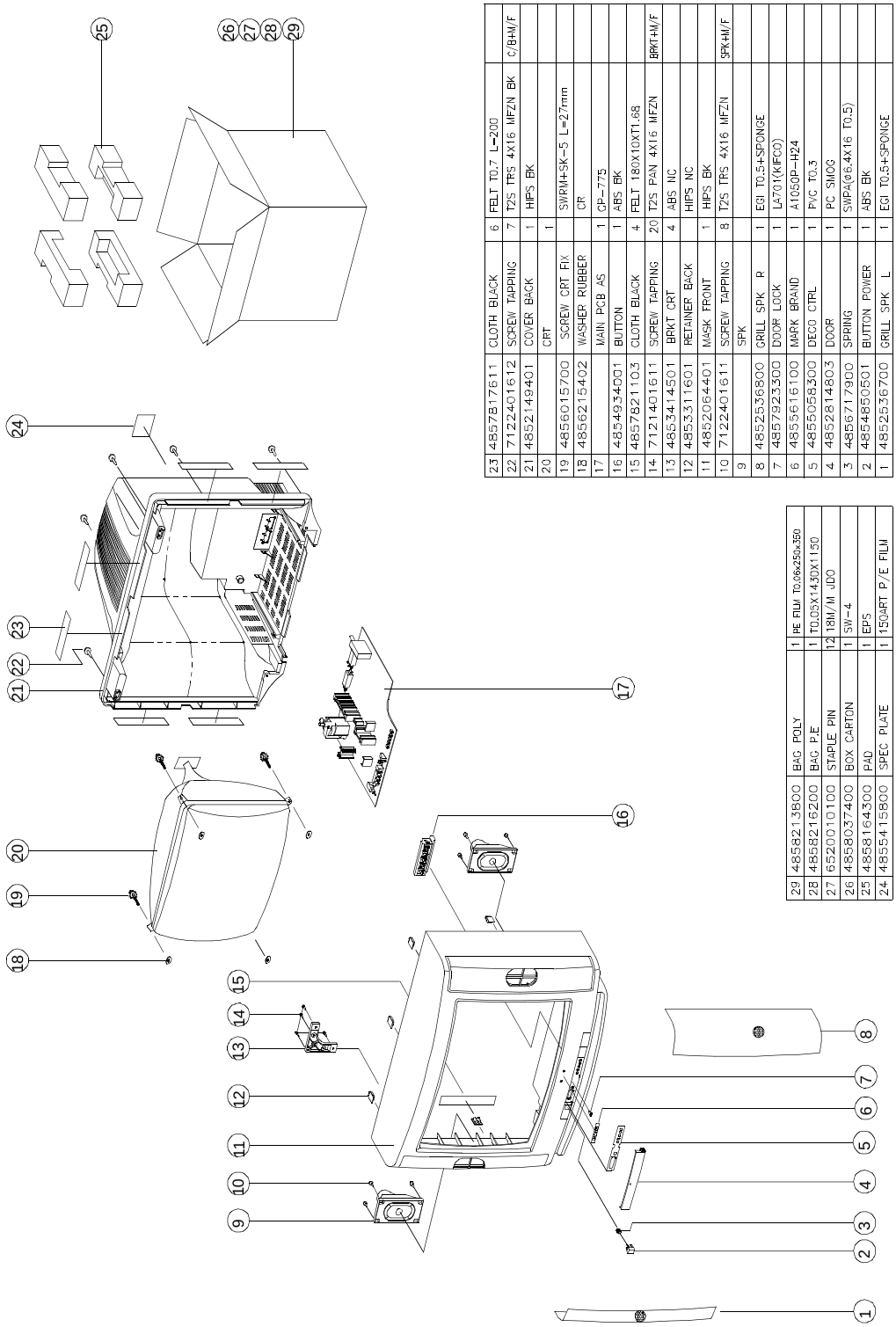
7-15. DTE-2896



29	4858213800	BAG POLY	1	PE FILM T0.06*250*250	
28	4858216200	BAG P.E	1	T0.05X1430X1150	
27	6520010100	STAPLE PIN	12	18M/M JDO	
26	4858037400	BOX CARTON	1	SW-4	
25	4858164300	PAD	1	EPS	
24	4855415800	SPEC PLATE	1	150ART P/E FILM	

23	4857817611	CLOTH BLACK	6	FELT T0.7 L=200	
22	7122401612	SCREW TAPPING	7	T2S TRS 4X16 MFZN BK	C/B+M/F
21	4852149401	COVER BACK	1	HIPS BK	
20		CRT	1		
19	4856015700	SCREW CRT FIX		SWRM+SK-5 L=27mm	
18	4856215402	WASHER RUBBER		CR	
17		MAIN PCB AS	1	CP-775	
16	4854934001	BUTTON	1	ABS BK	
15	4857821103	CLOTH BLACK	4	FELT 180X10XT1.68	
14	7121401611	SCREW TAPPING	20	T2S PAN 4X16 MFZN	BRKT+M/F
13	4853414501	BRKT CRT	4	ABS NC	
12	4853311601	RETAINER BACK		HIPS NC	
11	4852064401	MASK FRONT	1	HIPS BK	
10	7122401611	SCREW TAPPING	8	T2S TRS 4X16 MFZN	SPK+M/F
9		SPK			
8	4852536800	GRILL SPK R	1	EGI T0.5+SPONGE	
7	4857923300	DOOR LOCK	1	LA701(KIFCO)	
6	4855616100	MARK BRAND	1	A1050P-H24	
5	4855058300	DECO CTRL	1	PVC T0.3	
4	4852814803	DOOR	1	PC SMOG	
3	4856717900	SPRING	1	SWPA(Φ6.4X16 T0.5)	
2	4854850501	BUTTON POWER	1	ABS BK	
1	4852536700	GRILL SPK L	1	EGI T0.5+SPONGE	

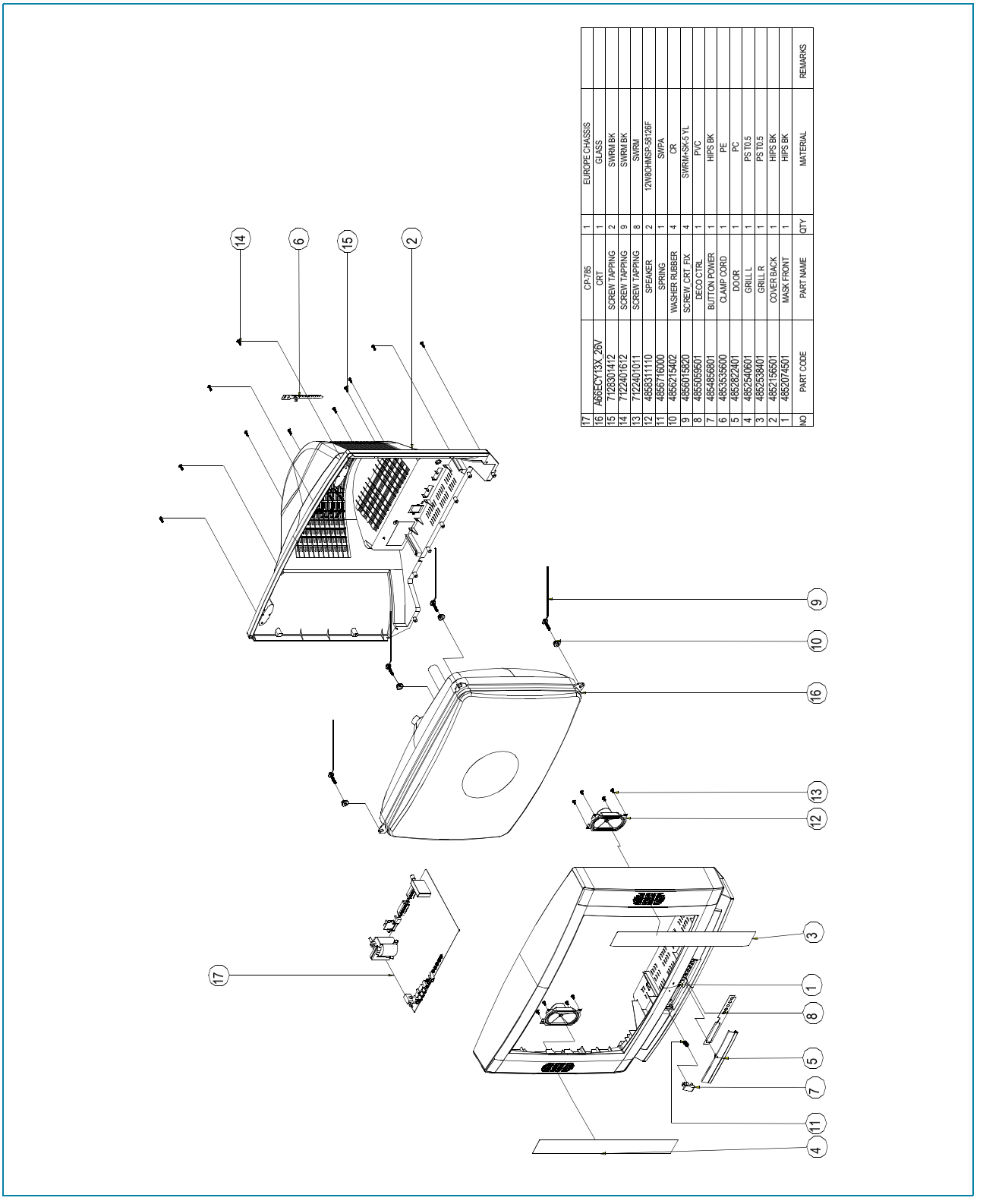
7-16. DTE-2898



23	48578176 11	CLOTH BLACK	6	FELT T0.7 L=200	
22	71224016 12	SCREW TAPPING	7	T2S TRS 4X16 MFZN BK	C/BHM/F
21	48521494 01	COVER BACK	1	HIPS BK	
20		CRT	1		
19	48560157 00	SCREW CRT FIX		SWRM14-SK-5 L=27mm	
18	48562154 02	WASHER RUBBER		CR	
17		MAIN PCB AS	1	CP-775	
16	48549340 01	BUTTON	1	ABS BK	
15	48578211 03	CLOTH BLACK	4	FELT 180X10XT1.68	
14	71214016 11	SCREW TAPPING	20	T2S PAN 4X16 MFZN	BRKT+M/F
13	48534145 01	BRKT CRT	4	ABS NC	
12	48533116 01	RETAINER BACK		HIPS NC	
11	48520644 01	MASK FRONT	1	HIPS BK	
10	71224016 11	SCREW TAPPING	8	T2S TRS 4X16 MFZN	SPK+M/F
9		SPK			
8	48525368 00	GRILL SPK R	1	EGI T0.5+SPONGE	
7	48579233 00	DOOR LOCK	1	LA701(KFCO)	
6	48556161 00	MARK BRAND	1	A1050P-H24	
5	48550583 00	DECO CTRL	1	PVC T0.3	
4	48528148 03	DOOR	1	PC SMOG	
3	48566179 00	SPRING	1	SWPA(Φ6.4X16 T0.5)	
2	48548505 01	BUTTON POWER	1	ABS BK	
1	48525367 00	GRILL SPK L	1	EGI T0.5+SPONGE	

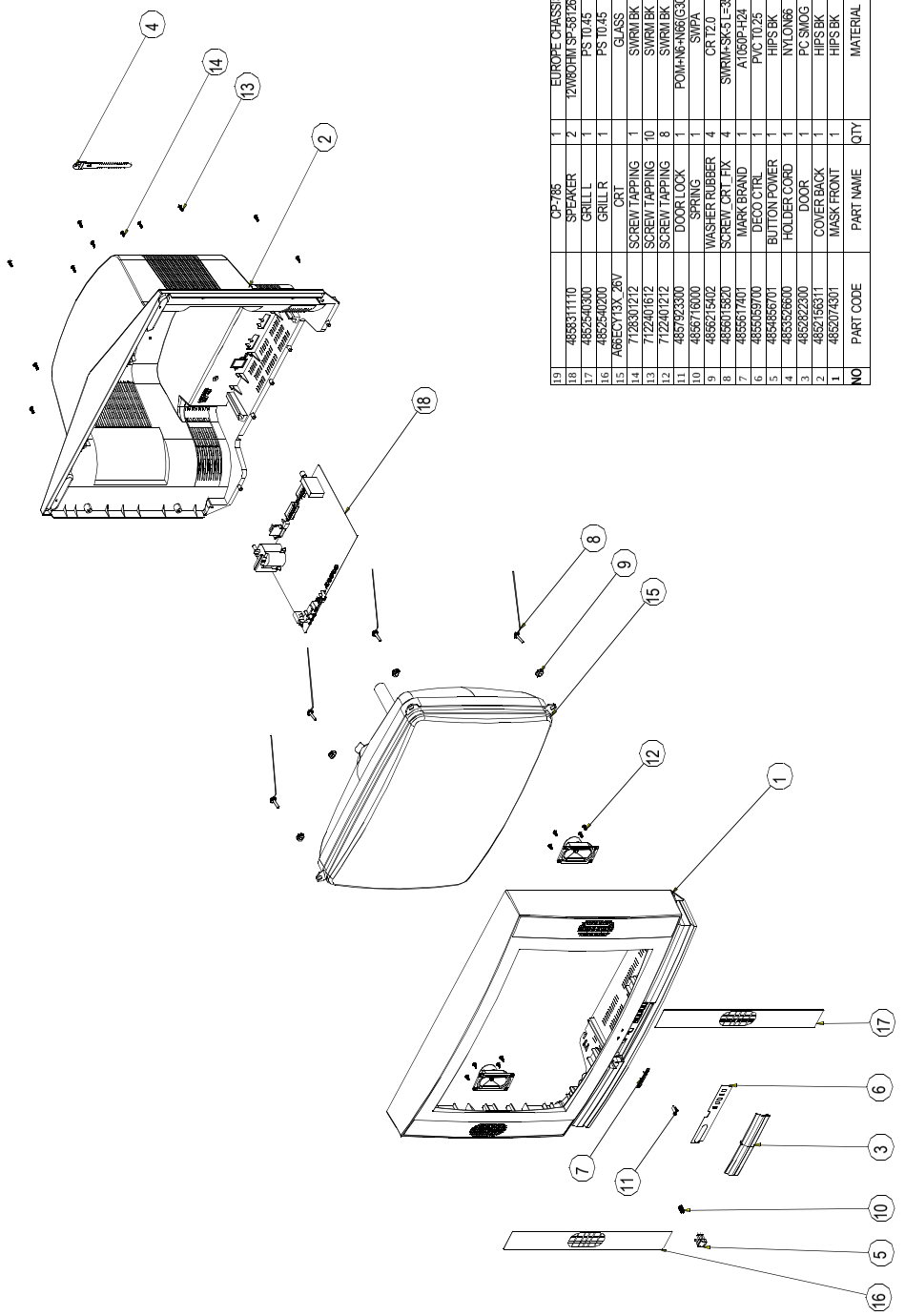
29	48582138 00	BAG POLY	1 PE FILM T0.06x250x350
28	48582162 00	BAG PE	1 T0.03X1430X1150
27	65200101 00	STAPLE PIN	12 18M/M JDO
26	48580374 00	BOX CARTON	1 SW-4
25	48581643 00	PAD	1 EPS
24	48554158 00	SPEC PLATE	1 150APT P/E FILM

7-17. DTE-28A6



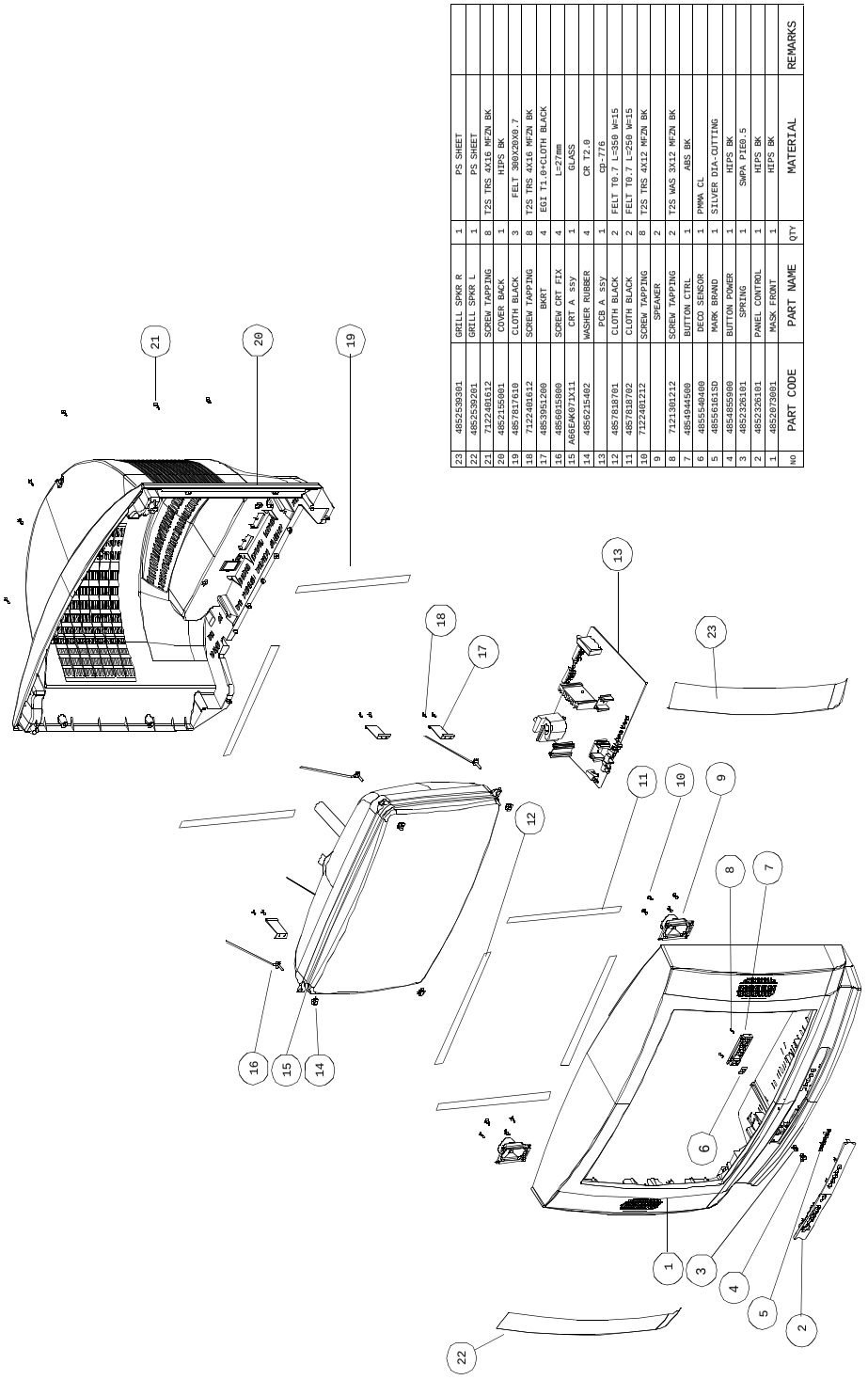
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
17		CP-785	1	EUROPE CHASSIS	
16	A66ECY13X_26V	CRT	1	GLASS	
15	7128301412	SCREW TAPPING	2	SWRM BK	
14	7122401612	SCREW TAPPING	9	SWRM BK	
13	7122401011	SCREW TAPPING	8	SWRM	
12	4858311110	SPEAKER	2	12W8OHMSP-58126F	
11	4856716000	SPRING	1	SWPA	
10	4856215402	WASHER RUBBER	4	CR	
9	4856015820	SCREW CRT FIX	4	SWRM-SK-5 YL	
8	4855059501	DECO CTRL	1	PVC	
7	4854856801	BUTTON POWER	1	HIPS BK	
6	4853536600	CLAMP CORD	1	PE	
5	4852822401	DOOR	1	PC	
4	4852540601	GRILL L	1	PS T0.5	
3	4852538401	GRILL R	1	PS T0.5	
2	4852156501	COVER BACK	1	HIPS BK	
1	4852074501	MASK FRONT	1	HIPS BK	

7-18. DTE-28A7



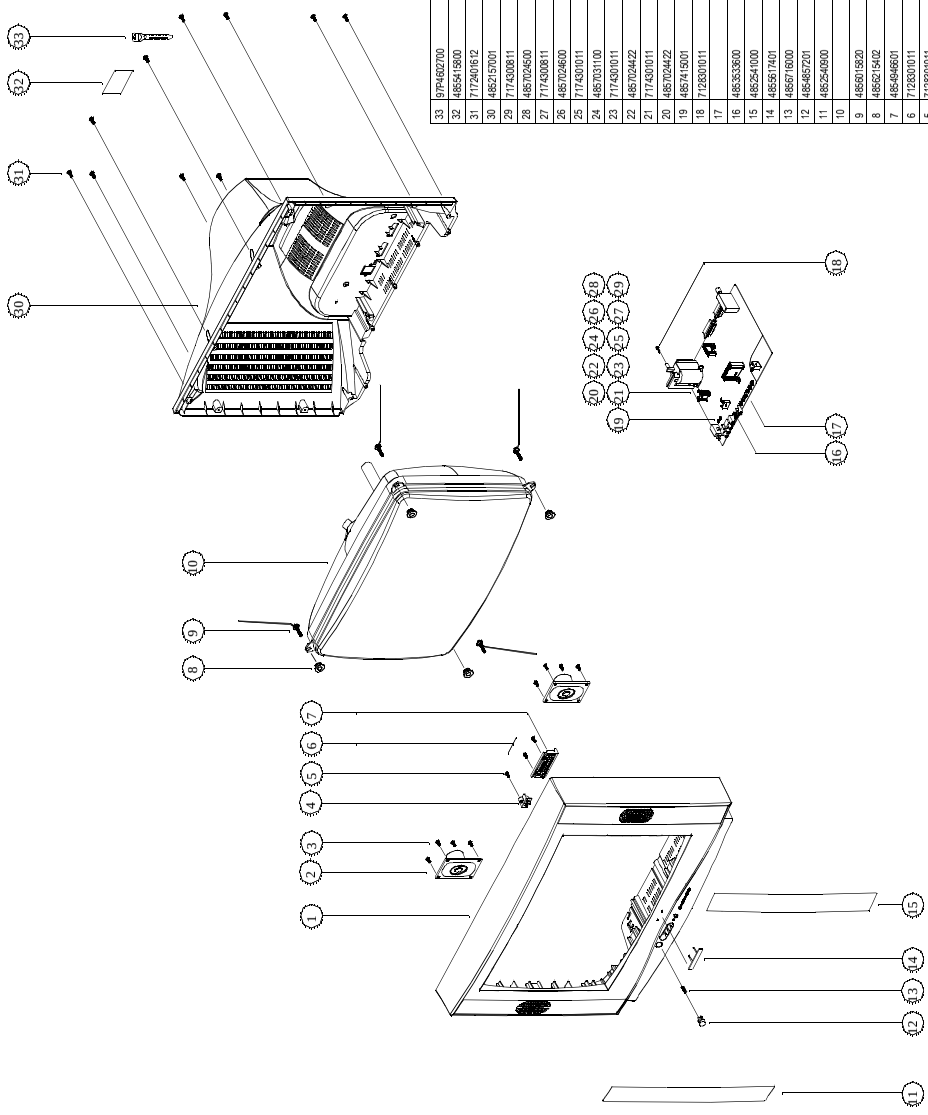
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
		CP-785	1	EUROPE CHASSIS	
18	4858311110	SPEAKER	2	12W8OHM SP-58126F	
17	4852540300	GRILL L	1	PS T0.45	
16	4852540200	GRILL R	1	PS T0.45	
15	A66ECY13X 26V	CRT		GLASS	
14	7128301212	SCREW TAPPING	1	SWRM BK	
13	7122401612	SCREW TAPPING	10	SWRM BK	
12	7122401212	SCREW TAPPING	8	SWRM BK	
11	4857923300	DOOR LOCK	1	POM+N6+N66(G30)	
10	4856716000	SPRING	1	SWPA	
9	4856215402	WASHER RUBBER	4	CR T2.0	
8	4856018820	SCREW,CRT_FIX	4	SWRM+SK-5 L=35	
7	4855617401	MARK BRAND	1	A1050P-H24	
6	4855039700	DECO CTRL	1	PVC T0.25	
5	4854856701	BUTTON POWER	1	HIPS BK	
4	4853526600	HOLDER CORD	1	NYLON66	
3	4852822300	DOOR	1	PC SMOG	
2	4852156311	COVER BACK	1	HIPS BK	
1	4852074301	MASK FRONT	1	HIPS BK	

7-19. DTE-28G8



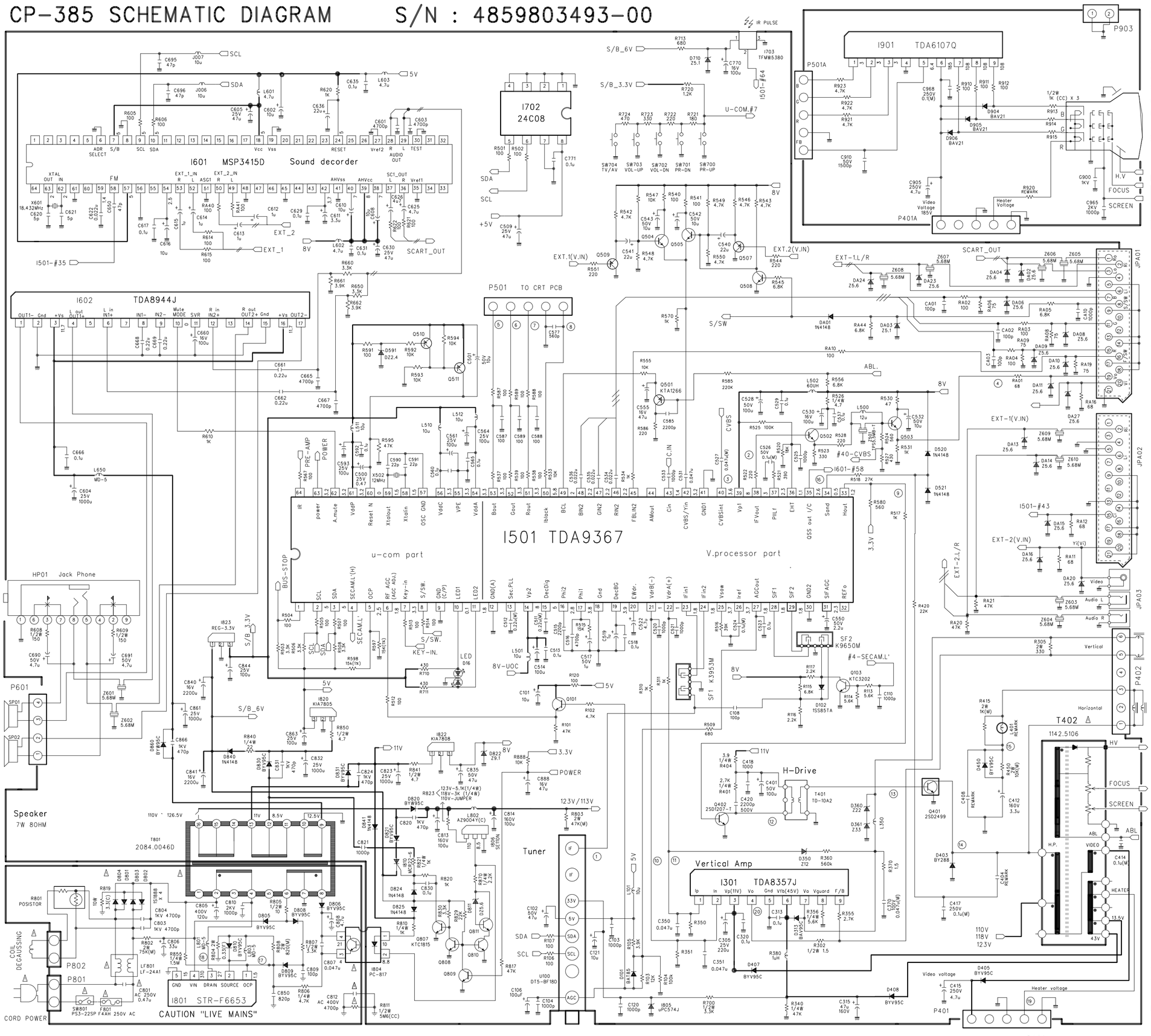
NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
23	4852539301	GRILL SPKR R	1	PS SHEET	
22	4852539201	GRILL SPKR L	1	PS SHEET	
21	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
20	4852156001	COVER BACK	1	HIPS BK	
19	4857817610	CLOTH BLACK	3	FELT 380X20X0.7	
18	7122401612	SCREW TAPPING	8	T2S TRS 4X16 MFZN BK	
17	4853951200	BKRT	4	EG1 T1.0+CLOTH BLACK	
16	4856015800	SCREW CRT FIX	4	L=27mm	
15	A66EAK071X11	CRT A ssy	1	GLASS	
14	4856215402	WASHER RUBBER	4	CR T2.0	
13		PCB A ssy	1	cp-776	
12	4857810701	CLOTH BLACK	2	FELT T0.7 L=350 W=15	
11	4857810702	CLOTH BLACK	2	FELT T0.7 L=250 W=15	
10	7122401212	SCREW TAPPING	8	T2S TRS 4X12 MFZN BK	
9		SPEAKER	2		
8	7121301212	SCREW TAPPING	2	T2S WAS 3X12 MFZN BK	
7	4854944500	BUTTON CTRL	1	ABS BK	
6	4855540400	DECO SENSOR	1	PMMA CL	
5	4855616150	MARK BRAND	1	SILVER DIA-CUTTING	
4	4854955900	BUTTON POWER	1	HIPS BK	
3	4852326101	SPRING	1	SWPA P1E0.5	
2	4852326101	PANEL CONTROL	1	HIPS BK	
1	4852073001	MASK FRONT	1	HIPS BK	

7-20. DTE-28B1



No	PART CODE	PART NAME	Q'ty	MATERIAL	REMARKS
33	9774602700	CLAMP CORD	1	NYLON 66 BLK 5280N	
32	4885415800	SPEC PLATE	1	150ART P/E FILM(CITY)	
31	7172401612	SCREW TAPPTITE	10	TT2 TRS 4X16 MFZN BK	1~30
30	4852157001	COVER BACK	1	HIPS GY	
29	7174308011	SCREW TAPPTITE	1	TT2 RND 3X8 MFZN	
28	4857024500	HEAT SINK	1	AL EX BK	
27	7174308811	SCREW TAPPTITE	1	TT2 RND 3X8 MFZN	
26	4857024600	HEAT SINK	1	AL EX BK	
25	7174301011	SCREW TAPPTITE	1	TT2 RND 3X10 MFZN	
24	4857031100	HEAT SINK	1	A1050P-H24 T2.0	
23	7174301011	SCREW TAPPTITE	2	TT2 RND 3X10 MFZN	
22	4857024422	HEAT SINK	1	AL EX	
21	7174301011	SCREW TAPPTITE	2	TT2 RND 3X10 MFZN	
20	4857024422	HEAT SINK	1	AL EX	
19	4857415001	CLIP FUSE	2	PFC5000-0702	
18	7128301011	SCREW TAPPING	1	T2S WAS 3X10 MFZN	17~30
17		CHASSIS	1	CP-785	
16	4853533600	HOLDER LED	1	P.P BK	
15	4852541000	GRILL SPKR R	1	PS	
14	4855617401	MARK BRAND	1	AL(SIL VER)	
13	4855716300	SPRING	1	SWPA P/E 0.5	
12	4854857201	BUTTON POWER	1	ABS GY	
11	4852540900	GRILL SPKR L	1	PS	
10		CRT	1	PHILIPS 28"	
9	4856018020	SCREW CRT FIX	4	SWRM-SK5 L-35	1~10
8	4856215402	WASHER RUBBER	4	CR T2.0	
7	4854946601	BUTTON CH	1	ABS GY	
6	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN	1~7
5	7128301011	SCREW TAPPING	1	T2S WAS 3X10 MFZN	1~4
4	4855541700	DECO SENSOR	1	PMMA	
3	7172401212	SCREW TAPPTITE	8	TT2 TRS 4X12 MFZNCK	1~2
2	4853811110	SPEAKER	2	12W 8 OHM SP-581 26F	
1	4853075001	MASK FRONT	1	HIPS GY	

CP-385 SCHEMATIC DIAGRAM S/N : 4859803493-00



NOTE:

1. RESISTANCE IS SHOWN IN OHM. K=1000, M=1000000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES ARE EXPRESSED IN uF
3. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE 230V AC VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V
4. THIS CIRCUIT DIAGRAM IS A STANDARD ONE CIRCUIT PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE

WARNING:

BEFORE SERVICING THE CHASSIS, READ "X-RAY RADIATION", "SAFETY PRECAUTION", AND "PRODUCT SAFETY NOTICE" IN SERVICE MANUAL

CAUTION TO SERVICE TECHNICIANS:

BEFORE RETURNING THE RECEIVER TO CUSTOMER, LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS SHOULD BE PERFORMED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

RESISTOR

CARBON FILM	
R M-OXIDE	(M)
CARBON COMP	(CC)
FUSIBLE	(F)
CEMENT	(C)

CAPACITOR

ELECTRO	
CERAMIC	
CERAMIC CH	(CH)
ELECTRO NONPOLAR	(NP)
MYLAR	(M)

COIL

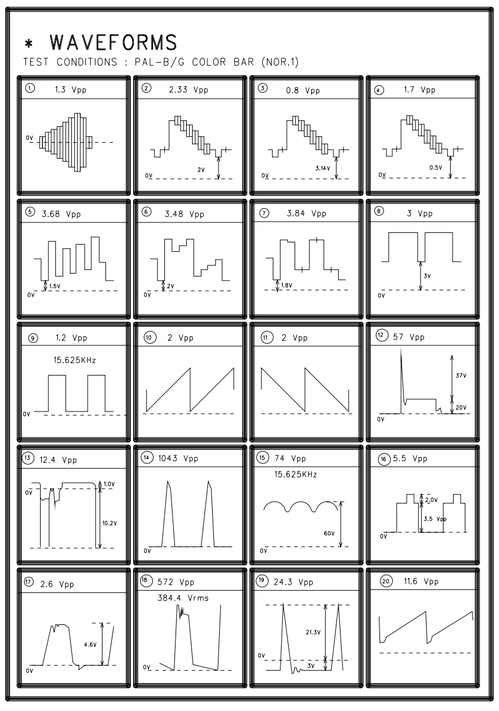
PEAKING	
CHOKE	(C)
BEAD	(B)

THE DIFFERENT PARTS FOR CRT

LOC.	21 INCH LG	21 INCH PHILIPS	21 INCH T/P	20 INCH T/P	20 INCH OEC
V901	A51QAE320X97	A51EAL155X01	A51EVB13X09	A48EAX33X01	A48JLL90X02
SC11	PCS629-03C	⟵	⟵	⟵	PCS633A
C404	1.6KV 8200pF	1.6KV 8200pF	1.6KV 7500pF	1.6KV 7500pF	1.6KV 8200pF
C408	200V 0.27 (M)	200V 0.36 (M)	200V 0.27 (M)	200V 0.36 (M)	⟵
L401	L76	L102	TRL341G	L76	⟵
R350	2K	2K(1%)	1.5K (1%)	1.5K (1%)	⟵
R351	2K	2K(1%)	1.5K (1%)	1.5K (1%)	⟵
R556	6.8K	⟵	⟵	7.5K	⟵
R823	6.2K	3K	5.1K	JUMPER	3K
R920	1W 1 JA (F)	1W 2 JA (F)	1W 1 JA (F)	1W 0.18 JA (F)	1W 2 JA (F)

* WAVEFORMS

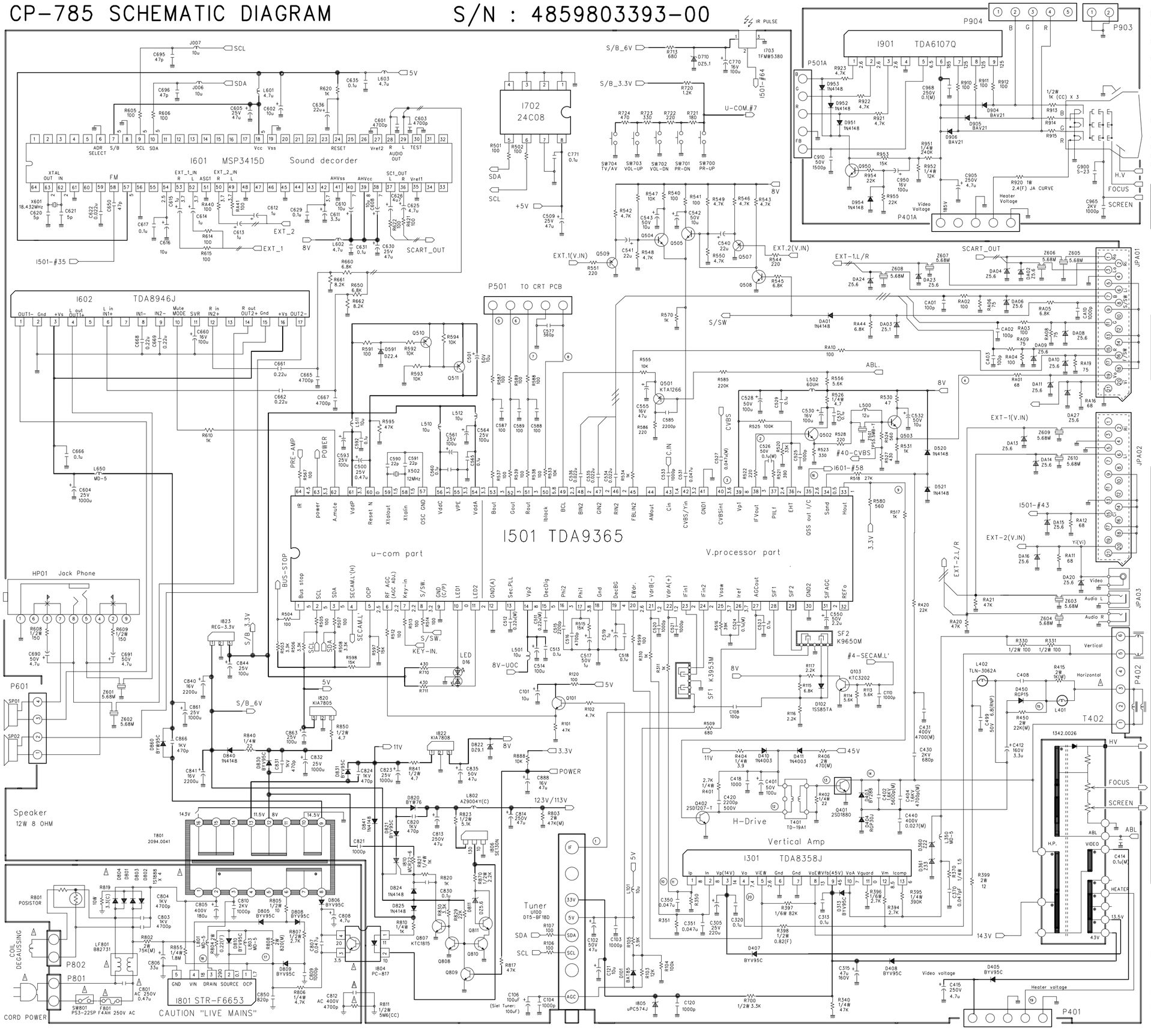
TEST CONDITIONS : PAL-B/G COLOR BAR (NOR.1)



PRODUCT SAFETY NOTE :

THE COMPONENTS MARKED WITH ⚠ ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PART LIST. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

CP-785 SCHEMATIC DIAGRAM S/N : 4859803393-00



NOTE:

1. RESISTANCE IS SHOWN IN OHM. K=1000, M=1000000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES ARE EXPRESSED IN uF
3. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE 230V AC VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V
4. THIS CIRCUIT DIAGRAM IS A STANDARD ONE CIRCUIT PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE

WARNING:

BEFORE SERVICING THE CHASSIS, READ "X-RAY RADIATION", "SAFETY PRECAUTION", AND "PRODUCT SAFETY NOTICE" IN SERVICE MANUAL

CAUTION TO SERVICE TECHNICIANS:

BEFORE RETURNING THE RECEIVER TO CUSTOMER, LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS SHOULD BE PERFORMED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

RESISTOR

CARBON FILM	
R M-OXIDE	(M)
CARBON COMP	(CC)
FUSIBLE	(F)
CEMENT	(C)

CAPACITOR

ELECTRO	
CERAMIC	
CERAMIC CH	(CH)
ELECTRO NONPOLAR	(NP)
MYLAR	(M)

COIL

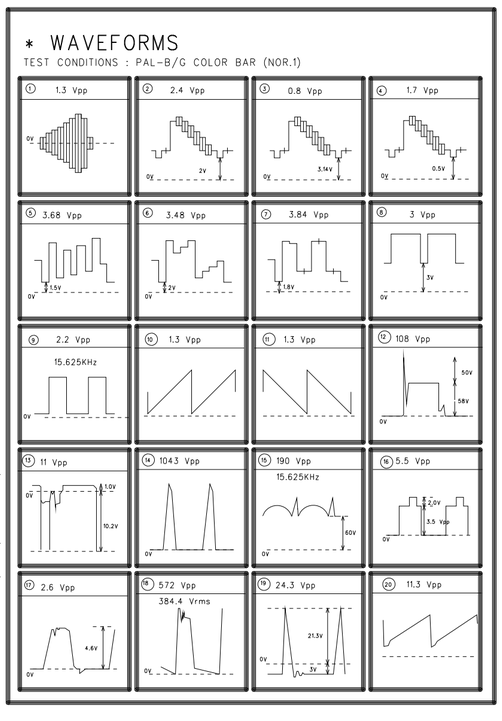
PEAKING	
CHOKE	(C)
BEAD	(B)

THE DIFFERENT PARTS FOR CRT

LOC.	28"/25" PHILIPS	28"/25" VIDEO COLOR	28"/25" TESLA
C408	400V 0.27u (M)	400V 0.3u (M)	⟵
L401	TRL-330	⟵	TRL-400D
R350	2K (1%)	1.2K (1%)	2K (1%)
R351	2K (1%)	1.2K (1%)	2K (1%)
R920	1W 2.4 JA (F)	1W 1 JA (F)	1W 2.4 JA (F)
V901	A66EAK071X11	A66ECY13X611	A66EMZ43X07

* WAVEFORMS

TEST CONDITIONS : PAL-B/G COLOR BAR (NOR.1)



PRODUCT SAFETY NOTE :

THE COMPONENTS MARKED WITH ⚠ ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PART LIST. DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

DAEWOO ELECTRONICS CO., LTD

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