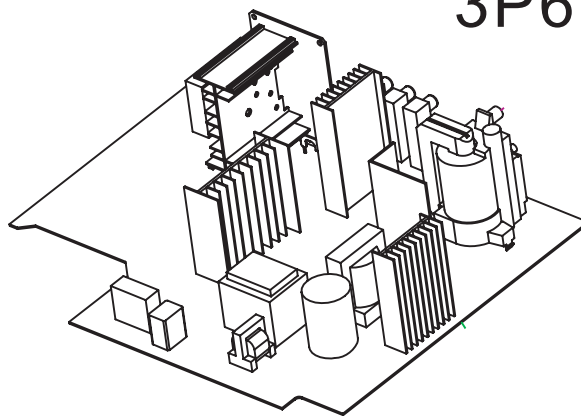


Service
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Service

3P61



Service Manual

Contents	Page
1. Technical Specifications, Connections, and Chassis Overview	1-3
4. Mechanical Instructions	4
5. Circuit Diagrams and PWB Layouts	5-10
6. IC data sheet	11-16



1. Technical Specifications, Connections, and Chassis Overview

Index of this chapter

Technical Specifications

Connection Overview

Chassis Overview

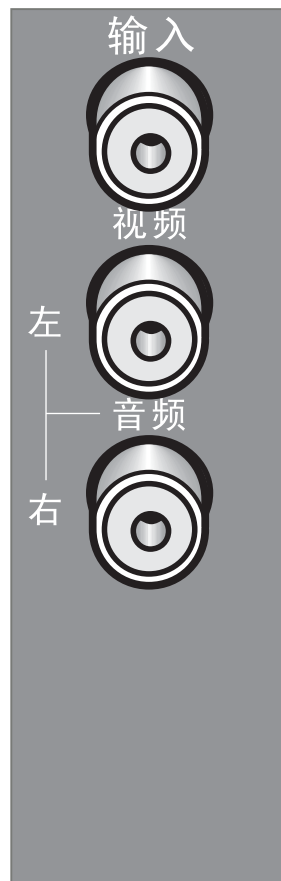
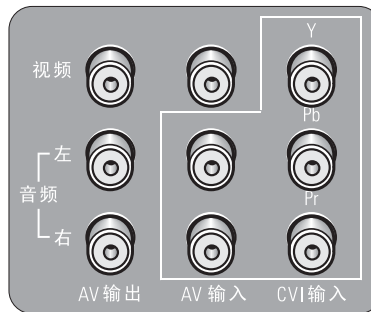
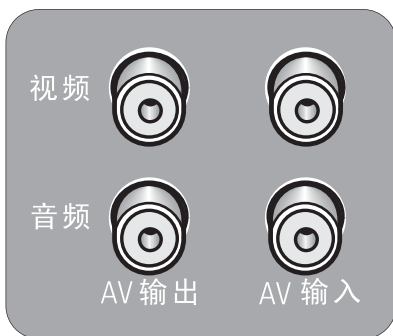
Note: Data below can deviate slightly from the actual situation, due to the different set executions.

1.1. Technical Specifications

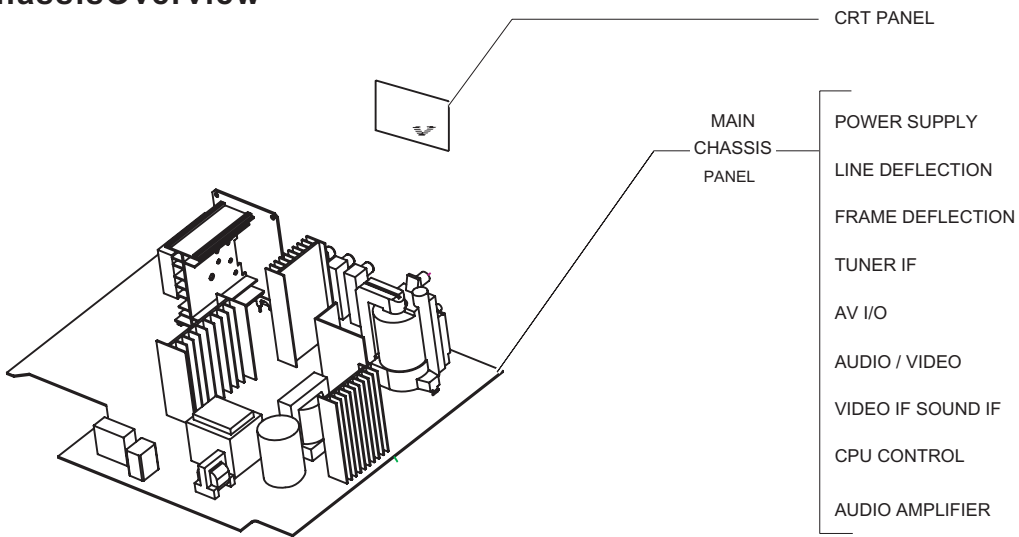
Target		29"		21"	
		Philips Specifications	6P19S Chassis	Philips Specifications	3P61S Chassis
Skyworth Proposed Chassis		Philips Specifications	6P19S Chassis	Philips Specifications	3P61S Chassis
TV Model		29PT8867/93 29PT8857/93		21PT8867/93 21PT8857/93	
2007 Volume		29PT8867/93 - 28K 29PT8857/93 - 33K		21PT8867/93 - 10K 21PT8857/93 - 26K	
Production Centre		Skyworth Gongming	Skyworth Gongming	Skyworth Gongming	Skyworth Gongming
Delivery Configuration		Complete Build Up (CBU)	CBU	Complete Build Up (CBU)	CBU
CR Date		June-07		June-07	
CRT size		29" RF Slim	Yes	21" RF Slim	Yes
Type		HD Ready (1080i/720p), 100Hz	Yes	Analog 50Hz	Yes
Styling (SL7)		2 tone black (speaker black) 2 tone silver (speaker silver)	Yes	2 tone black (speaker black) 2 tone silver (speaker silver)	Yes
TV Systems		PAL multi (NTSC playback)	Yes	PAL multi (NTSC playback)	Yes
Sound Systems		DKI	Yes	DKI	Yes
Language		Simplified Chinese, English	Yes	Simplified Chinese, English	Yes
Power supply		160Vac ~ 260Vac 50Hz	Yes	160Vac ~ 260Vac 50Hz	Yes
Standby Power		<3W	Yes	<3W	Yes
Channel		200 channel	Yes	200 channel (stored)	Yes
Audio Output		2X6W, AV Stereo	Yes	2X3W, AV Stereo	Yes
Tuner		FS tuner	Yes	FS tuner	Yes
CRT		Superslim	China Yes	Ultraslim	Yes
Picture	Black Level Expansion	Yes	Yes	Yes	Yes
	Comb filter	Comb filter for NTSC [Built-in Main IC] Comb filter for PAL/NTSC	Yes	Comb filter for NTSC [Built-in Main IC] Comb filter for PAL/NTSC	No
	Smart Picture	Yes	Yes	Yes	Yes
	Color Temp	Color Temperature: Cool, Warm, Normal	Yes	Color Temperature: Cool, Warm, Normal	Yes
	SVM	Yes	Yes	No	No
	Pic Rotation	Yes	Yes	Yes	No
	Pic Mode	Picture Mode: 4:3 16:9	Yes	Picture Mode: 4:3 16:9	No
	LTI/CTI	Yes	Yes	No	No
	DNR	Yes	Yes	Yes	No
Sharpness ??	Yes	Yes	Yes	Yes	
Sound	AV Stereo	Yes	Yes	Yes	Yes
	Dolby Virtual	No	No	No	No
	Balance	Balance	Yes	Balance	No
	Automatic Vol Control	Automatic Volume Control	Yes	Automatic Volume Control	No
	Smart Sound	Yes	Yes	Yes	No
	Loudness	Loudness	No	Loudness	No
	Nicam/A2	Global Nicam & A2 (German Stereo)	No	Global Nicam & A2 (German Stereo)	No
	Bass/Treble Control	Bass/Treble Control (Build-in)	No	Bass/Treble Control (Build-in)	No
Graphic E.Q	Graphic E.Q. (Build-in)	Yes	Graphic E.Q. (Build-in)	No	
Teletext		N.A	No	N.A	No
Features	Auto Stdbby	In TV mode, No signal auto standby in 15 minutes.	Yes	In TV mode, No signal auto standby in 15 minutes.	Yes
	On/Off Timer	On/Off Timer	Yes	On/Off Timer	Yes
	Sleep Time	Sleep Timer	Yes	Sleep Timer	Yes
	Game	Game	No	Game	No
	Calenda	Calendar	No	Calendar	No
	Notebook	Notebook	No	Notebook	No
	Favorite Channel	Favorite Channel	No	Favorite Channel	No
	Channel Skip	Channel Skip	Yes	Channel Skip	Yes
	Child Lock	ChildLock	Yes (lock via local keysonly)	ChildLock	Yes (lock via local keys only)
	Parental Guide	Parent Guide	No	Parent Guide	No
Channel Swap	Channel Swap	No	Channel Swap	Yes	

Connectivity	Front	Nil	No	Nil	No
	Side	AVin, SVHS	Yes	Avin	Yes
	Rear	AVin, Avout, YPbPr, CVI	Yes	CVI, AVin, Avout, SVHS	Yes
Micro-processor	UOC 3 Hercules	Yes	Yes	UOC 2	Yes
Lead-free status	Yes	Yes	Yes	Yes	Yes
Non-flammable Mains Elcap	Yes	Yes	Yes	Yes	Yes
Plastic Resin	Yes	HB	Yes	HB	HB
ROHS Compliance	Yes	Yes			Yes
BSD Compliance	Yes	Yes			Yes
Safety Compliance	CCC	Yes	CCC		Yes
Menu OSD	New UI	To propose new UI	New UI		To propose new UI
Chassis outline (dimension)	250*330 <Two boards: Signal Board: 250*130; Scan Board: 250*200;>	TBC	250*330 <Two boards: Signal Board: 250*130; Scan Board: 250*200;>	304*246	
Remote control	Racer (Chinese text)	Racer (Chinese text)	Racer (Chinese text)	Racer (Chinese text)	

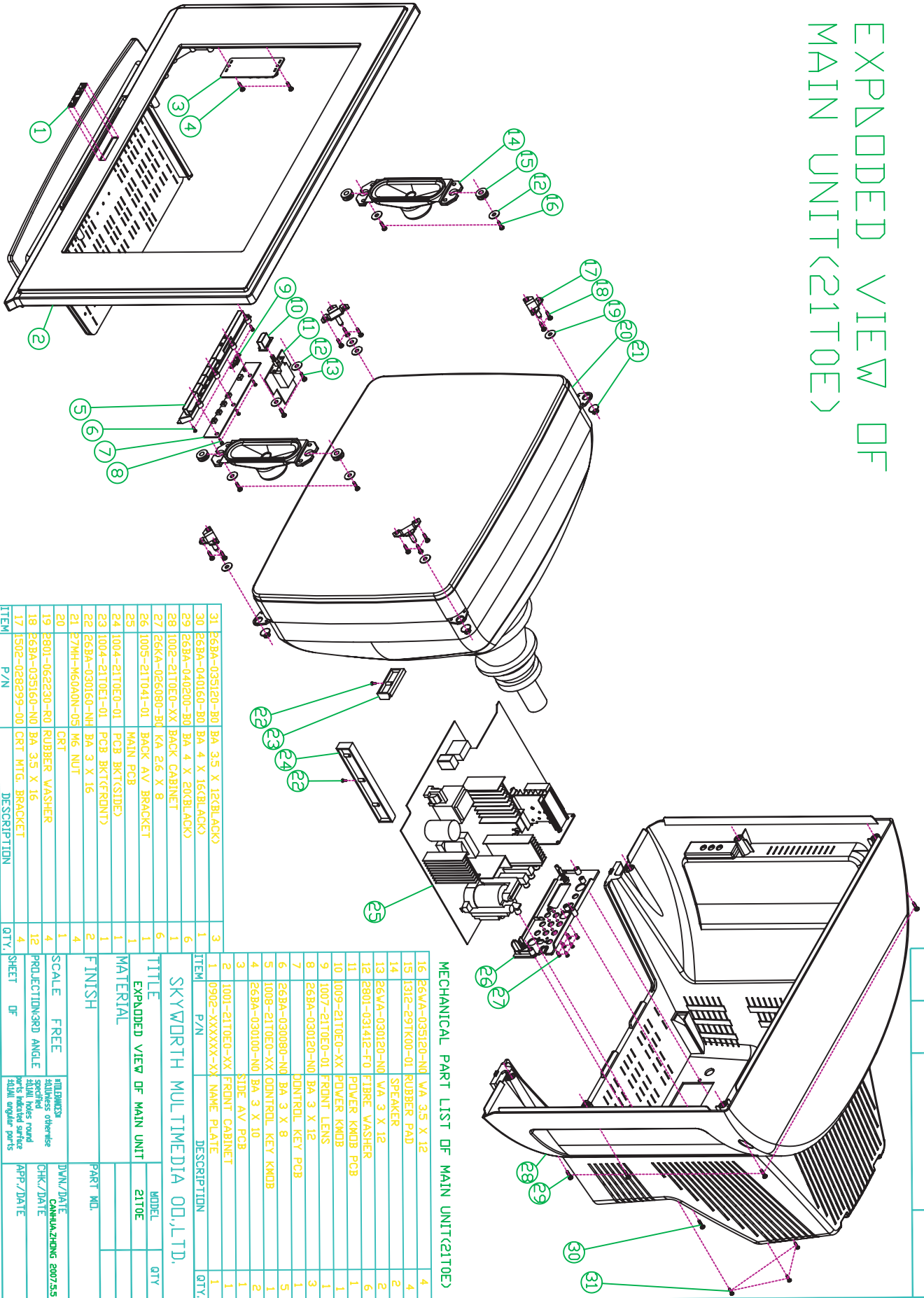
1.2.Connection Overview



1.3. Chassis Overview



EXPLODED VIEW OF MAIN UNIT(21T0E)



ISSUE	ZONE	REVISION	DATE

MECHANICAL PART LIST OF MAIN UNIT(21T0E)

ITEM	P/N	DESCRIPTION	QTY.
16	26VA-035120-N0	VA 3.5 X 12	4
15	131E-291K00-01	RUBBER PAD	4
14	131E-291K00-01	SPEAKER	2
13	26VA-030120-N0	WA 3 X 12	2
12	2801-031412-F0	FIBRE WASHER	6
11	1009-21T0E0-XX	POWER KNOB PCB	1
10	1007-21T0E0-01	FRONT LENS	1
9	1007-21T0E0-01	FRONT LENS	1
8	26BA-030120-N0	BA 3 X 12	3
7	26BA-030080-N0	BA 3 X 8	1
6	26BA-030080-N0	BA 3 X 8	5
5	1008-21T0E0-XX	CONTROL KEY KNOB	1
4	26BA-030100-N0	BA 3 X 10	2
3	1001-21T0E0-XX	FRONT CABINET	1
2	0902-XXXXXX-XX	NAME PLATE	1
1	0902-XXXXXX-XX	NAME PLATE	1

ITEM	P/N	DESCRIPTION	QTY.
31	26BA-035120-B0	BA 3.5 X 12(BLACK)	3
30	26BA-040160-B0	BA 4 X 16(BLACK)	6
29	26BA-040200-B0	BA 4 X 20(BLACK)	6
28	1002-21T0E0-XX	BACK CABINET	1
27	26KA-026080-B0	KA 2.6 X 8	6
26	1005-21T041-01	BACK AV BRACKET	1
25	1004-21T0E0-01	MAIN PCB	1
24	1004-21T0E0-01	PCB BRKT(SIDE)	1
23	1004-21T0E1-01	PCB BRKT(FRONT)	1
22	26BA-030160-NH	BA 3 X 16	2
21	27MH-M60A0N-05	M6 NUT	4
20	2801-062230-R0	CRT	1
19	2801-062230-R0	RUBBER WASHER	4
18	26BA-035160-N0	BA 3.5 X 16	12
17	1502-028299-00	CRT MTG. BRACKET	4

ITEM	P/N	DESCRIPTION	QTY.
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SKYWORTH MULTIMEDIA O.O.,LTD.	MODEL	QTY
EXPLODED VIEW OF MAIN UNIT	21T0E	

TITLE	SCALE	FREE
EXPLODED VIEW OF MAIN UNIT	FREE	

MATERIAL	FINISH	SCALE	FREE

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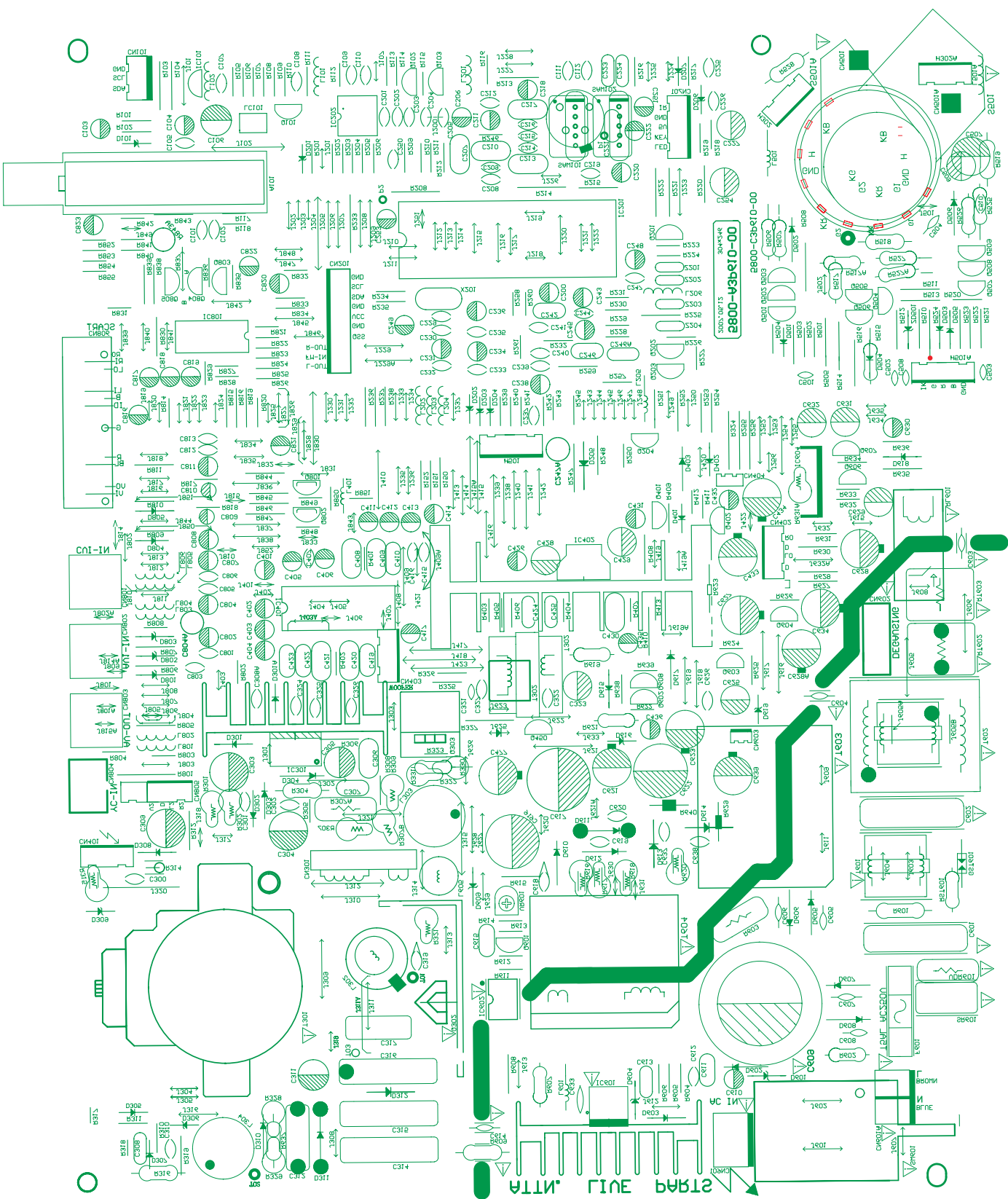
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ITEM	P/N	DESCRIPTION	QTY.
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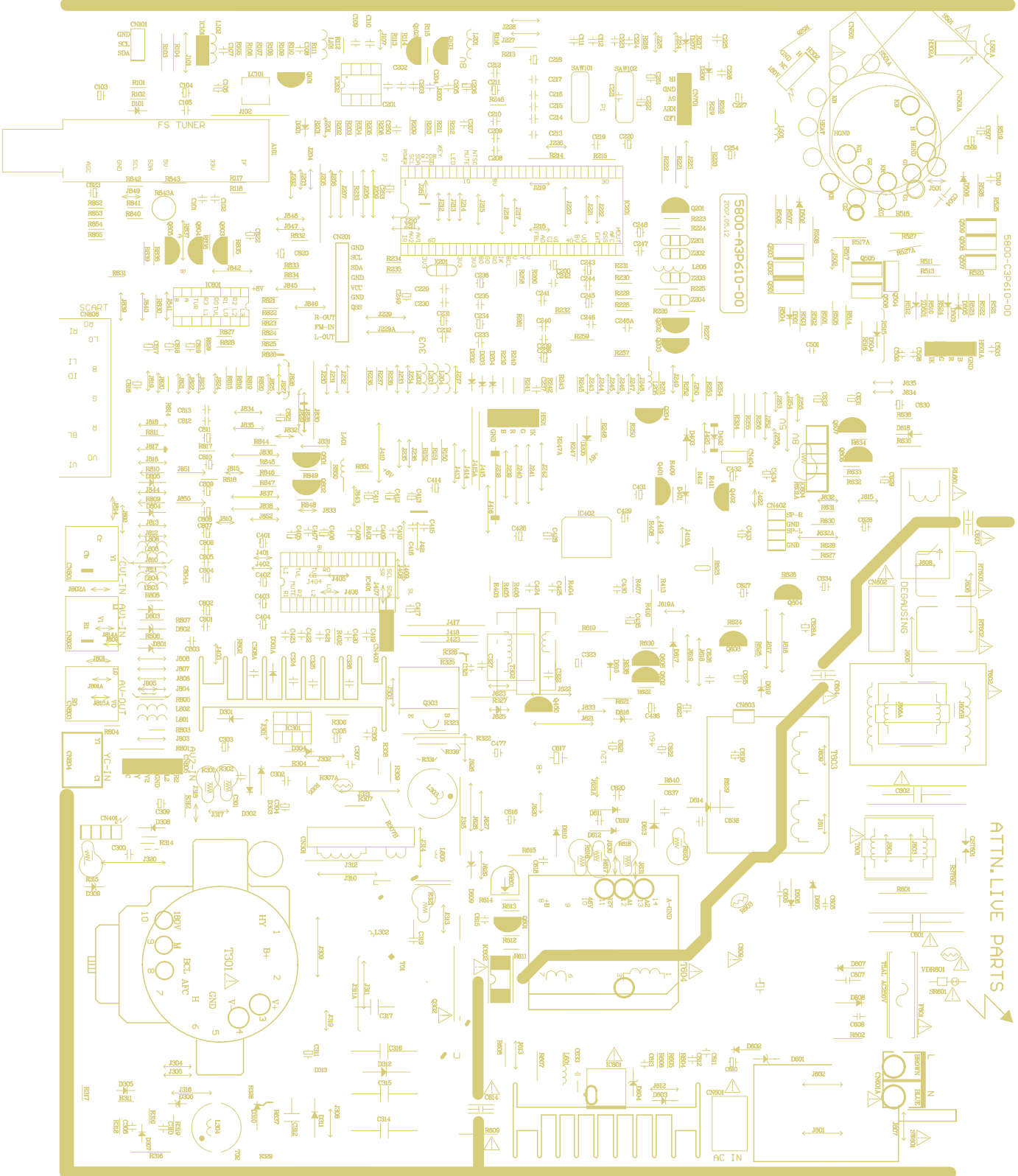
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ITEM	P/N	DESCRIPTION	QTY.
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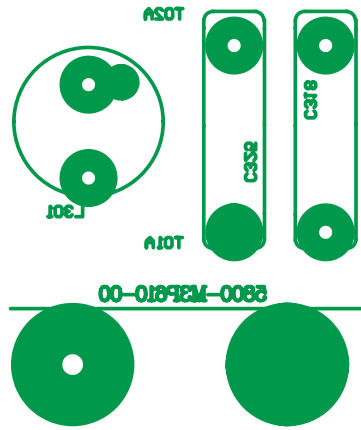
Layout Mono Carrier (Top Side)



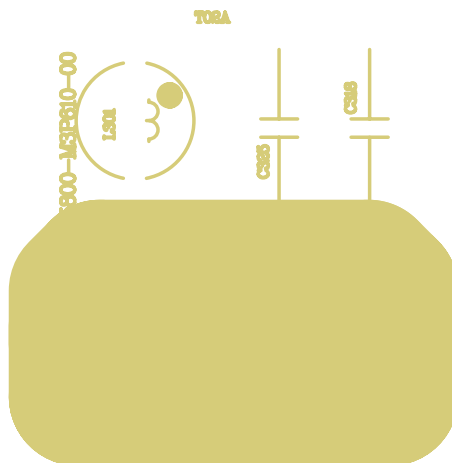
Layout Mono Carrier (Bottom Side)



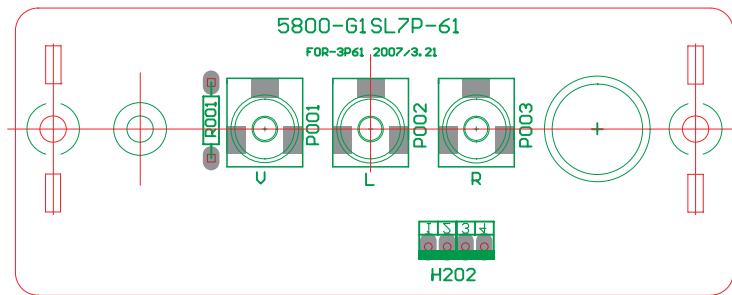
ULTRA-SLIM Top Layer



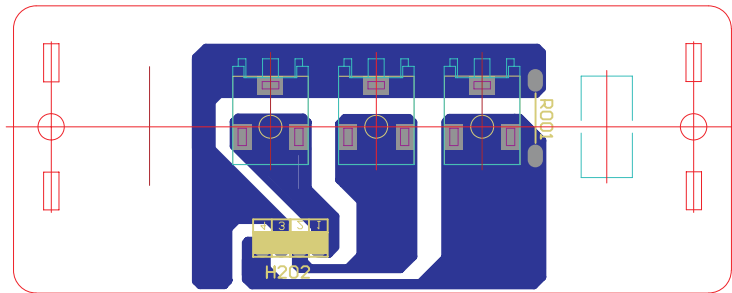
ULTRA-SLIM Bottom Layer



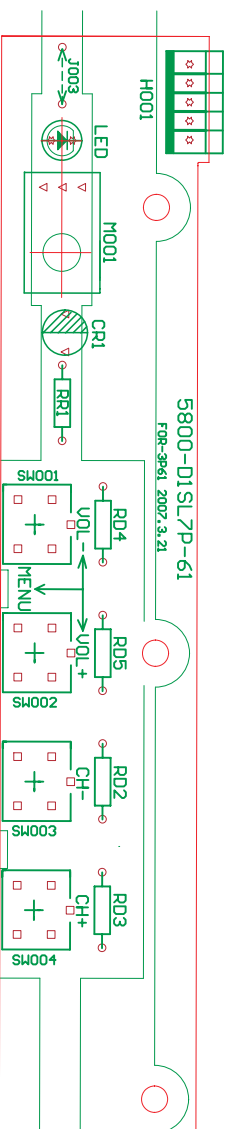
Side AV Top Layer



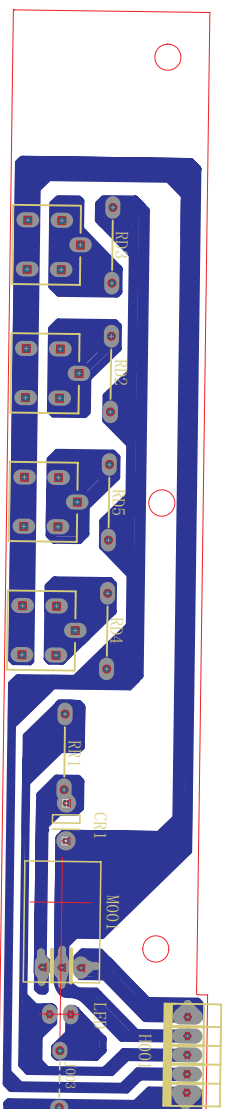
Side AV Bottom Layer



Layout Front Control Panel (Top Side)



Layout Front Control Panel (Bottom Side)



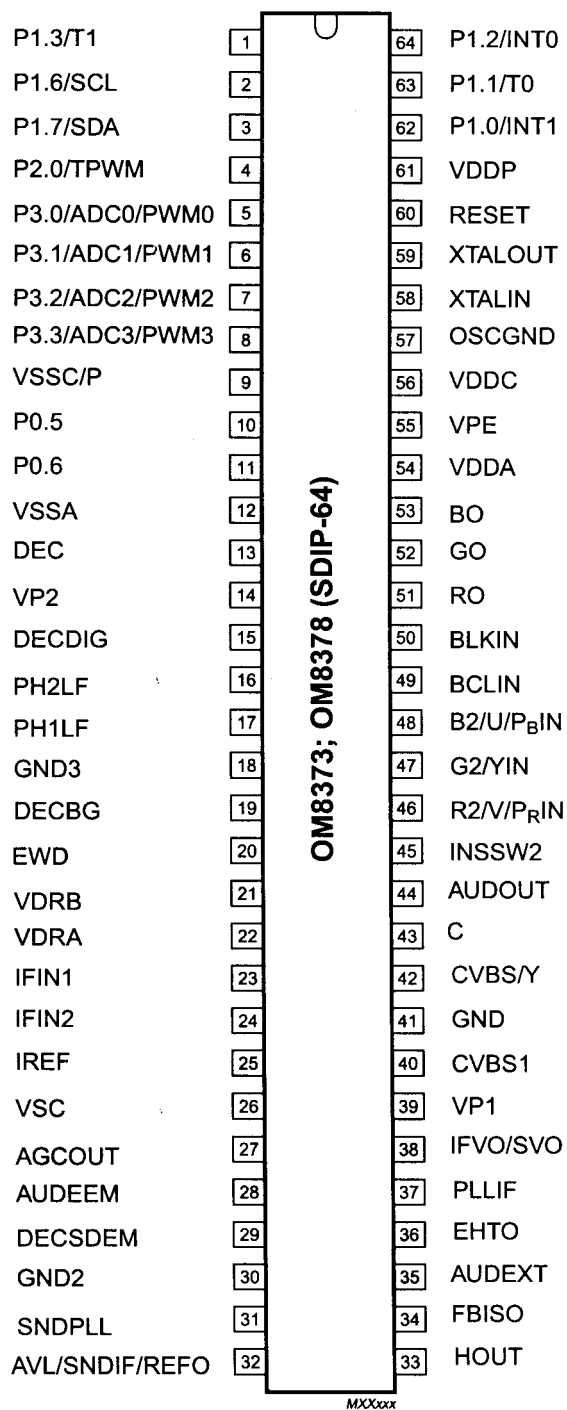


Fig. 2 Pin configuration (SDIP 64)

TV signal processor- Closed Caption decoder with embedded μ -Controller

OM8373; OM8378

BLOCK DIAGRAM

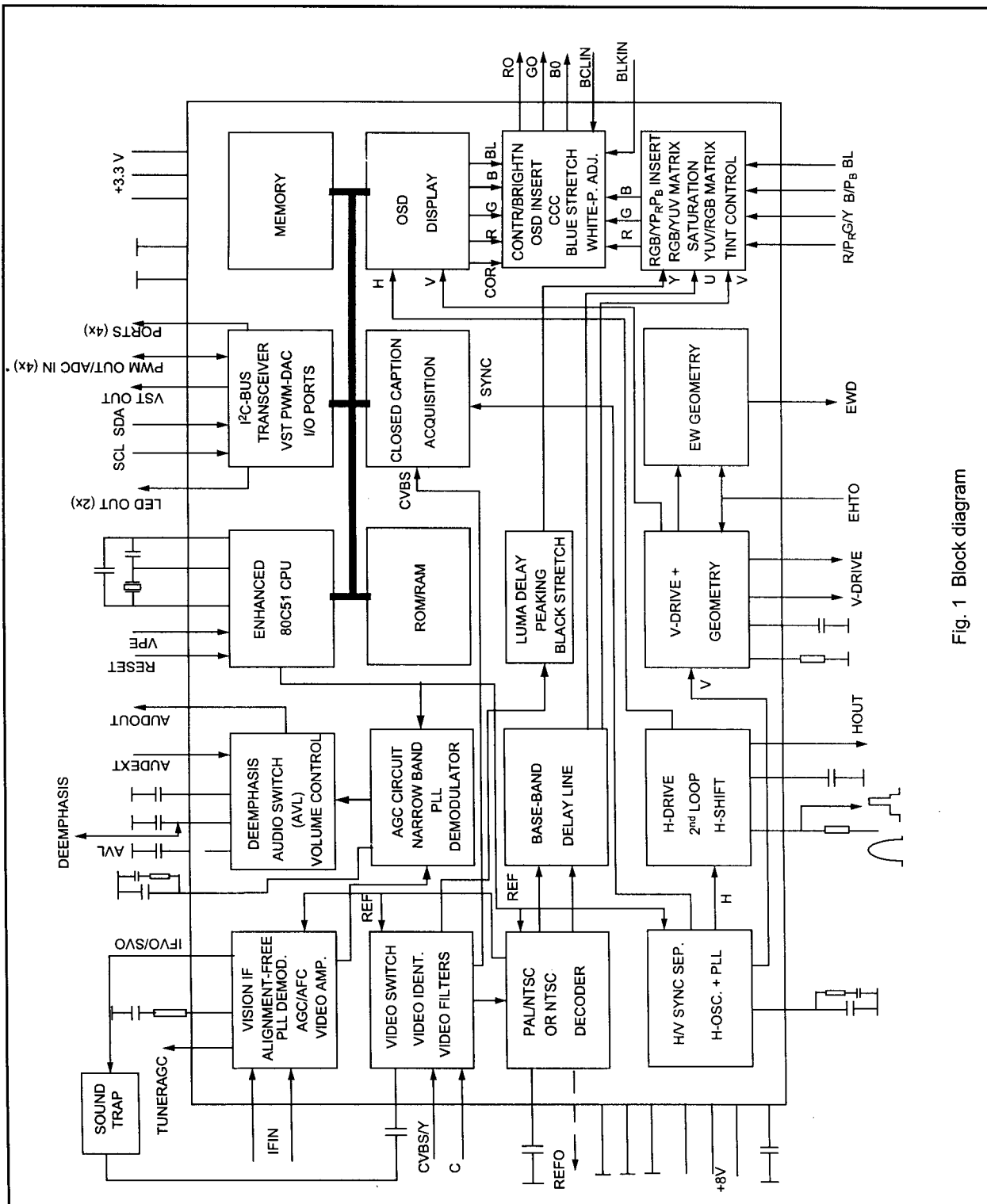


Fig. 1 Block diagram

**TV signal processor- Closed Caption
decoder with embedded μ -Controller**
OM8373; OM8378
PINNING

SYMBOL	PIN	DESCRIPTION
P1.3/T1	1	port 1.3 or Counter/Timer 1 input
P1.6/SCL	2	port 1.6 or I ² C-bus clock line
P1.7/SDA	3	port 1.7 or I ² C-bus data line
P2.0/TPWM	4	port 2.0 or Tuning PWM output
P3.0/ADC0/PWM0	5	port 3.0 or ADC0 input or PWM0 output
P3.1/ADC1/PWM1	6	port 3.1 or ADC1 input or PWM1 output
P3.2/ADC2/PWM2	7	port 3.2 or ADC2 input or PWM2 output
P3.3/ADC3/PWM3	8	port 3.3 or ADC3 input or PWM3 output
VSSC/P	9	digital ground for μ -Controller core and periphery
P0.5	10	port 0.5 (8 mA current sinking capability for direct drive of LEDs)
P0.6	11	port 0.6 (8 mA current sinking capability for direct drive of LEDs)
VSSA	12	digital ground of TV-processor
DEC	13	decoupling
VP2	14	2 nd supply voltage TV-processor (+8V)
DECDIG	15	supply voltage decoupling of digital circuit of TV-processor
PH2LF	16	phase-2 filter
PH1LF	17	phase-1 filter
GND3	18	ground 3 for TV-processor
DECBG	19	bandgap decoupling
EWD	20	E-W 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
AGCOUT	27	tuner AGC output
AUDEEM	28	audio deemphasis
DECSDEM	29	decoupling sound demodulator
GND2	30	ground 2 for TV processor
SNDPLL	31	narrow band PLL filter
AVL/REFO/SNDIF ⁽¹⁾	32	Automatic Volume Levelling / subcarrier reference output / sound IF input
HOUT	33	horizontal output
FBISO	34	flyback input/sandcastle output
AUDEXT	35	external audio input
EHTO	36	EHT/overvoltage protection input
PLLIF	37	IF-PLL loop filter
IFVO/SVO	38	IF video output / selected video output

Philips Semiconductors

Tentative Device Specification

TV signal processor- Closed Caption
decoder with embedded μ -Controller

OM8373; OM8378

SYMBOL	PIN	DESCRIPTION
VP1	39	main supply voltage TV processor
CVBS1	40	internal CVBS input
GND	41	ground for TV processor
CVBS3/Y	42	CVBS3/Y input
C	43	chroma input
AUDOUT	44	audio output
INSSW2	45	2 nd RGB / YUV insertion input
R2V/P _R IN	46	2 nd R input / V (R-Y) input / P _R input
G2/YIN	47	2 nd G input / Y input
B2/U/P _B IN	48	2 nd B input / U (B-Y) input / P _B input
BCLIN	49	beam current limiter input
BLKIN	50	black current input / V-guard input
RO	51	Red output
GO	52	Green output
BO	53	Blue output
VDDA	54	analog supply of Teletext decoder and digital supply of TV-processor (3.3 V)
VPE	55	OTP Programming Voltage
VDDC	56	digital supply to core (3.3 V)
OSCGND	57	oscillator ground supply
XTALIN	58	crystal oscillator input
XTALOUT	59	crystal oscillator output
RESET	60	reset
VDDP	61	digital supply to periphery (+3.3 V)
P1.0/INT1	62	port 1.0 or external interrupt 1 input
P1.1/T0	63	port 1.1 or Counter/Timer 0 input
P1.2/INT0	64	port 1.2 or external interrupt 0 input

Note

1. The function of this pin is controlled by the CMB1/CMB0 bits in subaddress 22H and the SIF bit in subaddress 28H. More details can be found in the tables 65 and 93.

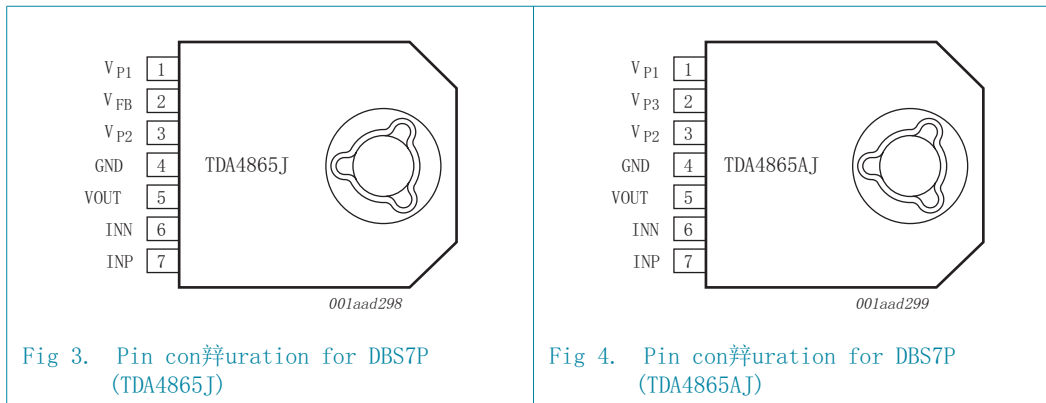


Fig 3. Pin configuration for DBS7P (TDA4865J)

Fig 4. Pin configuration for DBS7P (TDA4865AJ)

Pin description

Symbol	Pin		Description
	TDA4865J	TDA4865AJ	
V _{P1}	1	1	positive supply voltage 1
V _{FB}	2	-	Flyback supply voltage
V _{P3}	-	2	Flyback generator output
V _{P2}	3	3	supply voltage 2 for vertical output
GND	4	4	ground or negative supply voltage
VOUT	5	5	vertical output
INN	6	6	inverted input of differential input stage
INP	7	7	non-inverted input of differential input stage

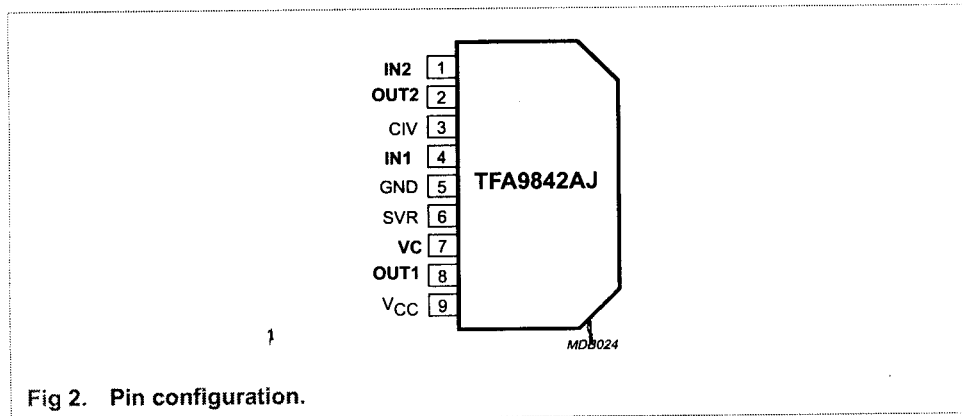


Table 1: Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CC}	supply voltage	operating	9	17	28	V
I_q	quiescent supply current	$V_{CC} = 17\text{ V}; R_L = \infty$	-	60	100	mA
I_{stb}	standby supply current	$V_{CC} = 17\text{ V}; V_C < 0.8\text{ V}$	-	-	150	μA
P_o	output power	THD = 10 %; $R_L = 4\ \Omega; V_{CC} = 17\text{ V}$	7	7.5	-	W
THD	total harmonic distortion	$P_o = 1\text{ W}$	-	0.1	0.5	%
$G_{v(max)}$	maximum voltage gain	$V_C > 5.0\text{ V}$	25	26	27	dB
$G_{v(CR)}$	gain control range	$1.5\text{ V} < V_C < 5.0\text{ V}$	-	80	-	dB
SVRR	supply voltage ripple rejection	$f = 1\text{ kHz}$	-	60	-	dB

Ic601:

Block diagram (Connection diagram)

