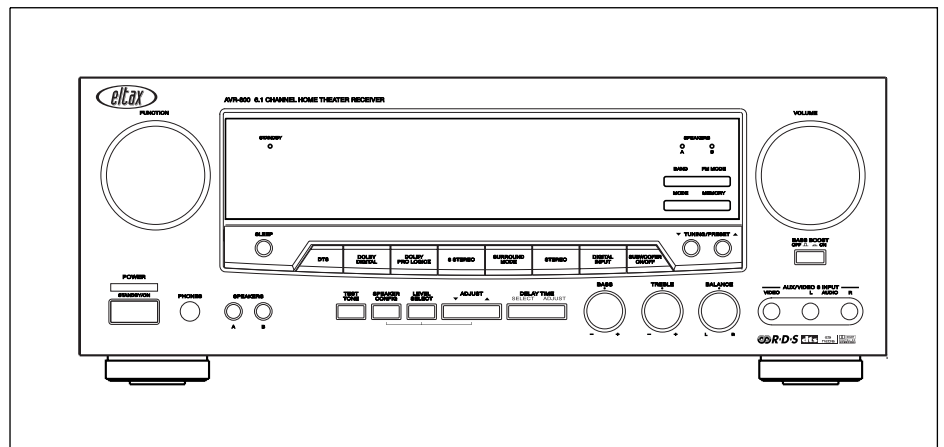




AVR-800

6.1 Channel Home Theatre Receiver



SERVICE MANUAL

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SPECIFICATIONS

Amplifier Section

Output Power

Stereo Mode : 120W/CH
(1% THD 1KHz 8ohm DIN)
Surround Mode : 92W/CH
(1% THD 1KHz 8ohm DIN)

THD : 0.01%

DOLBY DIGITAL Mode:

Surround : 0 ~ 15 ms
Center : 0 ~ 5 ms
Back surround : 0 ~ 20 ms

DOLBY PRO LOGIC Mode (Surround):

Music : 0~5 ms
Movie : 10~25 ms
Emulation : 10~25 ms

Frequency Response:

*LINE: 10 Hz – 70 kHz, +1/ –3 dB

Signal-to-Noise Ratio:

*LINE: 100dB (IHF-A)

Tone Control:

BASS: ± 10 dB at 100 Hz
TREBLE: ± 10 dB at 10 kHz

Digital Audio Section

Sampling Frequency: 32 kHz, 44.1 kHz, 48 kHz, 96 kHz

DIGITAL Input Level/Impedance:

DIGITAL 1, 2 (OPTICAL): –15 dBm — –21 dBm
DIGITAL 3 (COAXIAL): 0.5 Vp-p / 75 ohms

FM Tuner Section

(Without notes 100.1 MHz, 65 dBf)

Tuning Range:

87.5 MHz – 108.0 MHz (50 kHz steps)

Usable Sensitivity (IHF):

Mono: 11.2 dBf

50 dB Quieting Sensitivity:

Mono: 15.3 dBf
Stereo: 38.5 dBf

Capture Ratio: 2.0 dB

Image Rejection Ratio: 45 dB

AM Suppression Ratio: 55 dB

Total Harmonic Distortion (1 kHz):

Mono: 0.2%
Stereo: 0.3%

Frequency Response: 30 Hz – 15 kHz, +1/ –1.5 dB

Stereo Separation (1 kHz): 40 dB

Signal-to-Noise Ratio:

Mono: 70 dB
Stereo: 65 dB

AM Tuner Section

Tuning Range:

522 kHz – 1,620 kHz (9 kHz steps)

Usable Sensitivity: 55 dB/m

Total Harmonic Distortion: 0.8% at 85 dB/m

Signal-to-Noise Ratio: 45 dB at 85 dB/m

Video Section

Input Sensitivity/Impedance: 1.0 Vp-p/75 ohms

Output Level/Impedance: 1.0 Vp-p/75 ohms

General

Power Requirements:

230 V AC, 50 Hz

Power Consumption:

320W

AC Outlets:

Switched x 1, 100 W max.

Dimensions (W x H x D)

435 x 165 x 350 mm (17-1/8" x 6-1/2" x 13-3/4")

Weight (net):12Kg

* LINE means CD, TAPE, VCR/VID 1, TV/VID 2, AUX/VID 3 and DVD/CD.

- Improvements may result in specifications and features changing without notice.
- Illustrations may differ slightly from production models.

MEASUREMENTS AND ADJUSTMENTS

ALIGNMENT INSTRUCTIONS

EQUIPMENT NEEDED

- AM Signal Generator
- FM Signal Generator
- Oscilloscope
- VTVM(AC,DC)
- Test loop antenna(AM Adjustment)
- Dummy antenna(FM Adjustment)

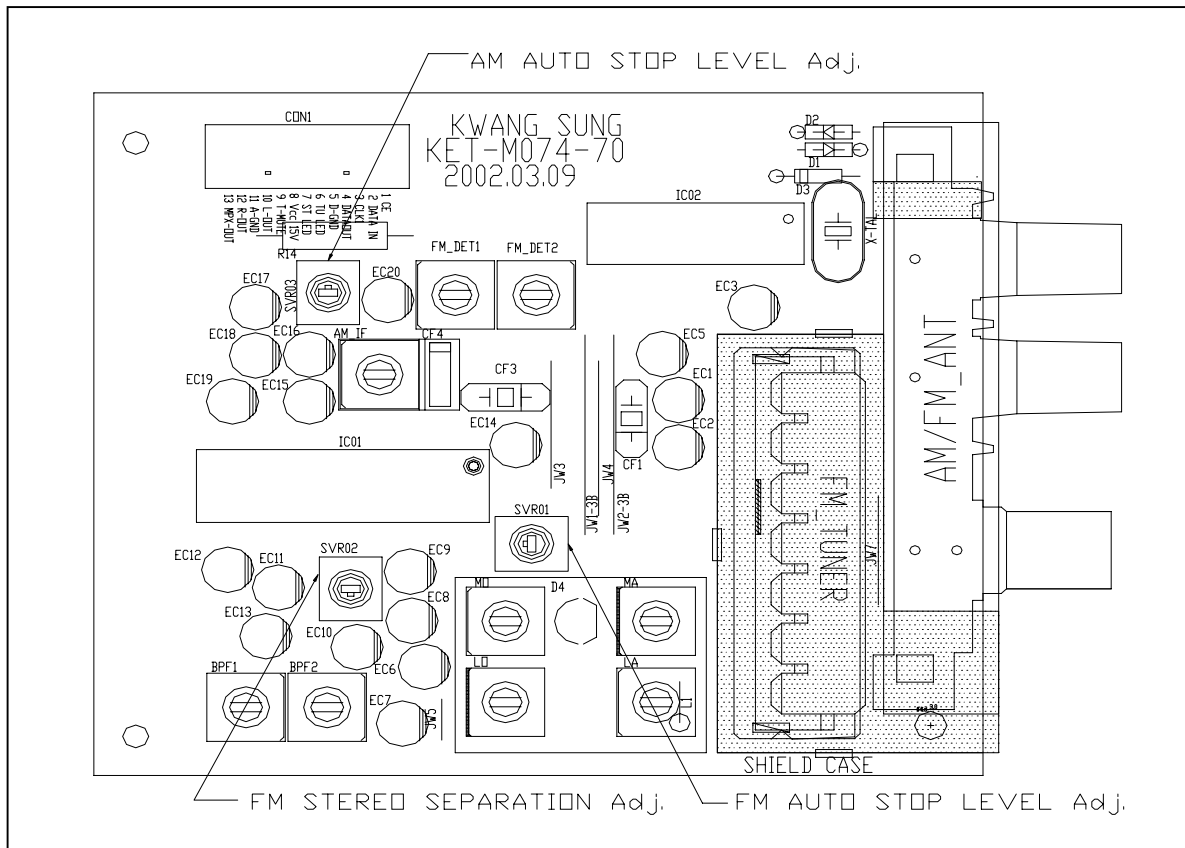
IMPORTANT

1. Check power-source voltage.
2. Set the function switch to band aligned.
3. Keep the signal input as low as possible to adjust accurately.
4. Modulation and modulation frequency.

Band	Item	Modulation	Modulation frequency
AM		30%	400Hz
FM		100%(40KHz Dev.)	400Hz

TUNER MODULE

ADJUSTMENT POINT

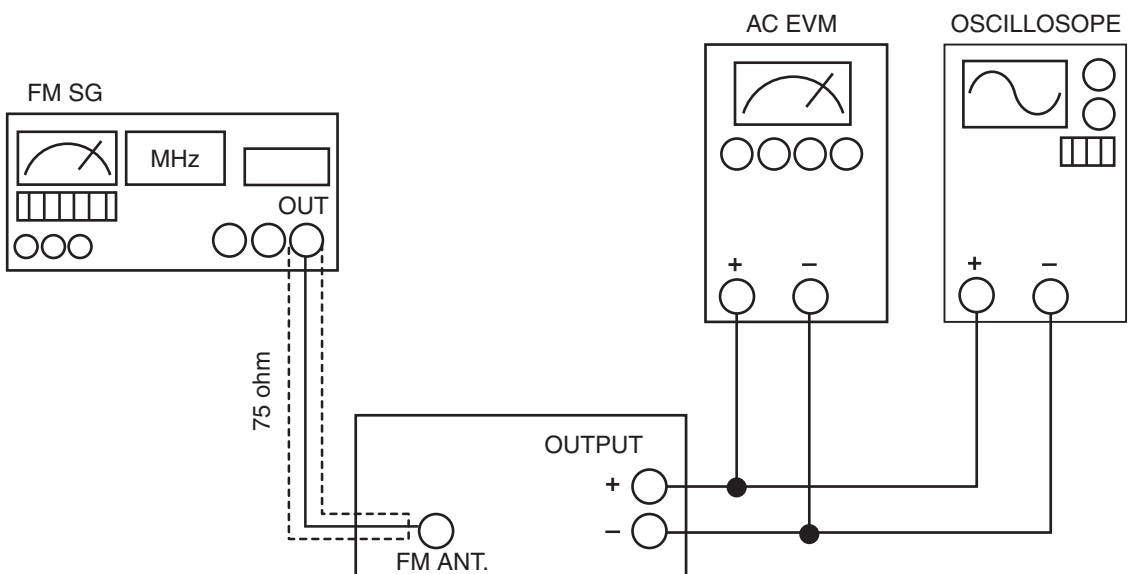
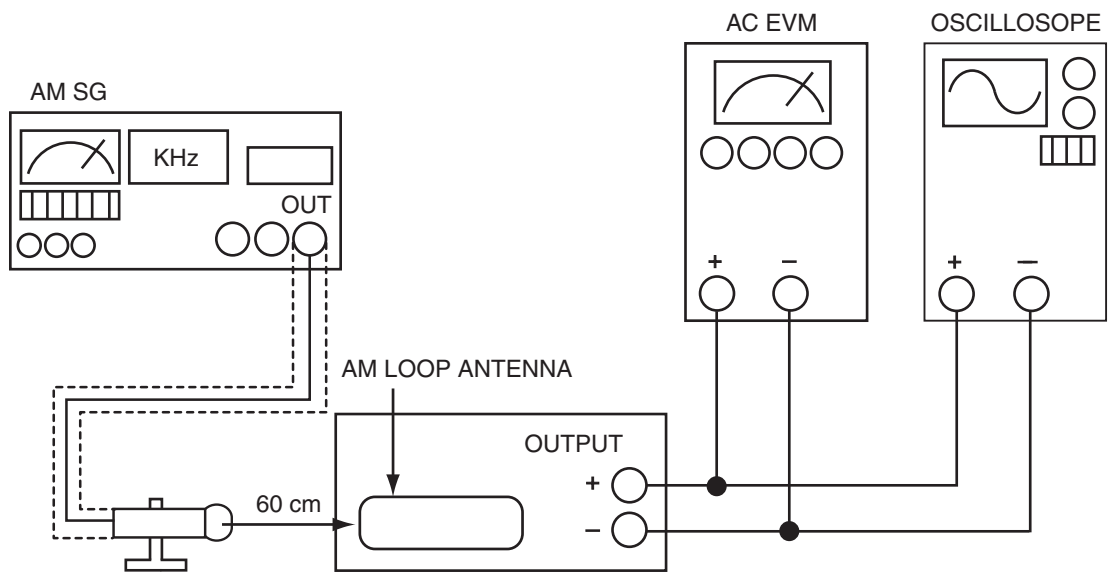


KST-M9014MS1(0)-70

FM/AM AUTO STOP LEVEL ADJUSTMENT

FM Signal Generator Connect to FM ANT Jack (FM IN) through the dummy. na.
 AM Signal Generator Connect to AM ANT. Coil the through the Loop anten na.

BAND	Step	Signal Generator	Adjust for	Adjustment
AM	1	999.5 82dB	TUNED Display ON	SVR03
	2	999.5 81dB	TUNED Display OFF	SVR03
FM	1	100.1 25dB	TUNED Display ON	SVR01
	2	100.1 24dB	TUNED Display OFF	SVR01



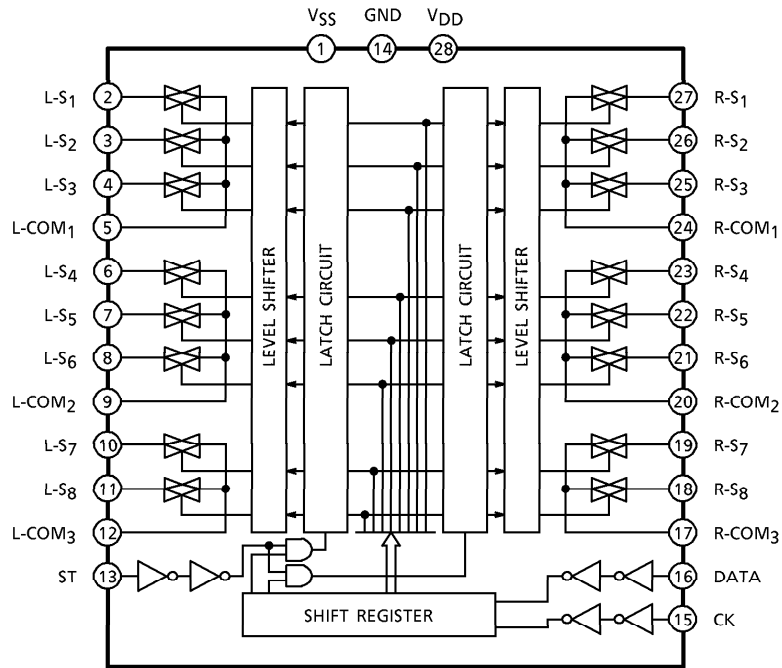
TROUBLESHOOTING

Problem	Probable Cause	Remedy
When listening to the music in stereo, left/right speakers sounds reversed.	Speakers are connected wrong.	After checking, if needed, reconnect.
Low hum or buzzer sound.	Power line of a fluorescent light is installed near this product.	Place this product as far away as possible from electric devices with interference.
Sound is only heard from one channel.	One of the input cords is disconnected.	Connect the input cords securely.
	The BALANCE control is set to one side.	Adjust the BALANCE control.
Sound cuts off during listening to the music or no sound even though power is ON.	Speaker impedance is less than prescribed for this unit.	After turning off the power and then turning it on again, reduce the volume or change to the correct 8 ohm speakers.
No sound.	A/B Speaker selectors are turned off.	Press the A or B speaker selector as applicable.
Low bass response.	Speaker polarity (+/-) is reversed.	Check all speakers for correct polarity.
Tuner		
An unusual hissing noise is heard when listening to the broadcast in stereo, but not heard when listening monaurally.	A slight noise may be heard because the method used for modulation of FM stereo broadcasts is different than that used for monaural broadcasts.	<ul style="list-style-type: none"> • Try reducing the treble sound by turning the treble controls. • Try changing the location, height and/or direction of the antenna. • Set the FM mode to monaural by pressing the STEREO/MONO button. (Note that the broadcast will then be heard as monaural sound). • If an indoor antenna is being used, change to an outdoor antenna. • Try using an antenna with more elements.
Noise is excessive in both stereo and monaural broadcasts.	Poor location and/or direction of the antenna.	
	Transmitting station is too far away.	
Sound is distorted and/or the volume level becomes low.	Broadcast signals are being disturbed.	
Excessive distortion in the sound of stereo broadcasts.	Speaker system connections are not correct.	
Surround Effects <Important -> The center and rear speakers only operate when the unit is set on a Surround Sound mode and the source material being played is recorded or broadcast in Dolby Digital EX, DTS/ES, Dolby Pro LogicII surround sound. Stereo broadcasts or recordings will produce some rear channel effects when played in a surround mode. However, mono sources will not produce any sound from the rear speakers.		
No sound from the Surround speakers.	SURROUND ON/OFF button is set to OFF.	Set the button to the desired surround mode position.
	Source being played is not recorded or broadcast in surround sound or stereo.	Use surround or stereo source.
	One or more rear speaker wires is not making good contact.	Check all rear speaker wires for good connection.
No sound from the center speaker.	SURROUND mode button is not set to DOLBY DIGITAL, DTS, DOLBY PRO LOGICII or 3 STEREO.	Set the button to Dolby Digital EX, DTS/ES, Dolby Pro LogicII or 3 STEREO.
No sound from the surround back speaker	The surround back speaker cable connection is incomplete Surround mode is not EX/ES mode. Surround back = NONE has been selected in SPEAKERS Configuration.	Connect the cable correctly. Set surround mode EX/ES Make the correct setting.
No sound from the front speaker.	'Short pin's not insert EQ jack When speaker A and B is selected Simultaneously, but speaker B is Not connection.	Insert the 'short pin' Connect the speaker both A and B. Select speaker A only
Remote Control Unit		
Remote control not working.	The batteries are exhausted.	Replace with new batteries.
	The remote control unit is too far from the receiver or out of the effective range.	Operate the remote control unit within the effective range.

IC INTERNAL DIAGRAMS

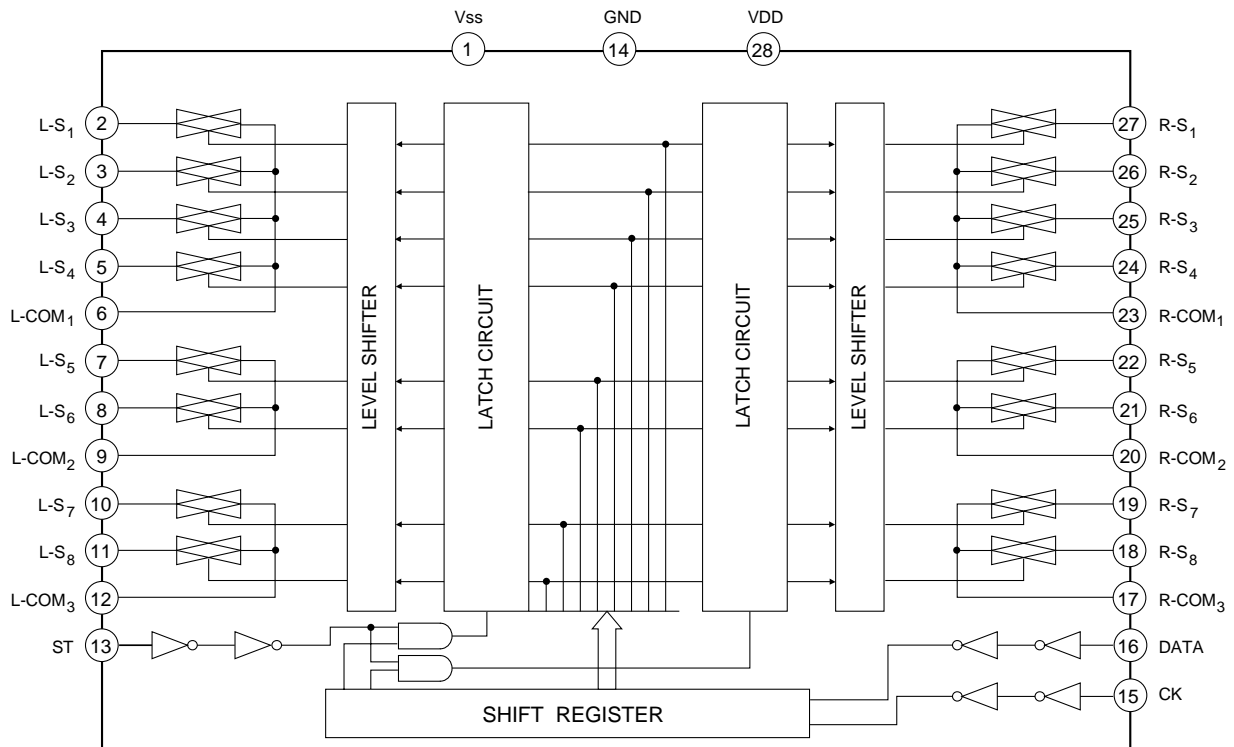
TC9163AF (FUNCTION/INPUT) : IC51

■ BLOCK DIAGRAM



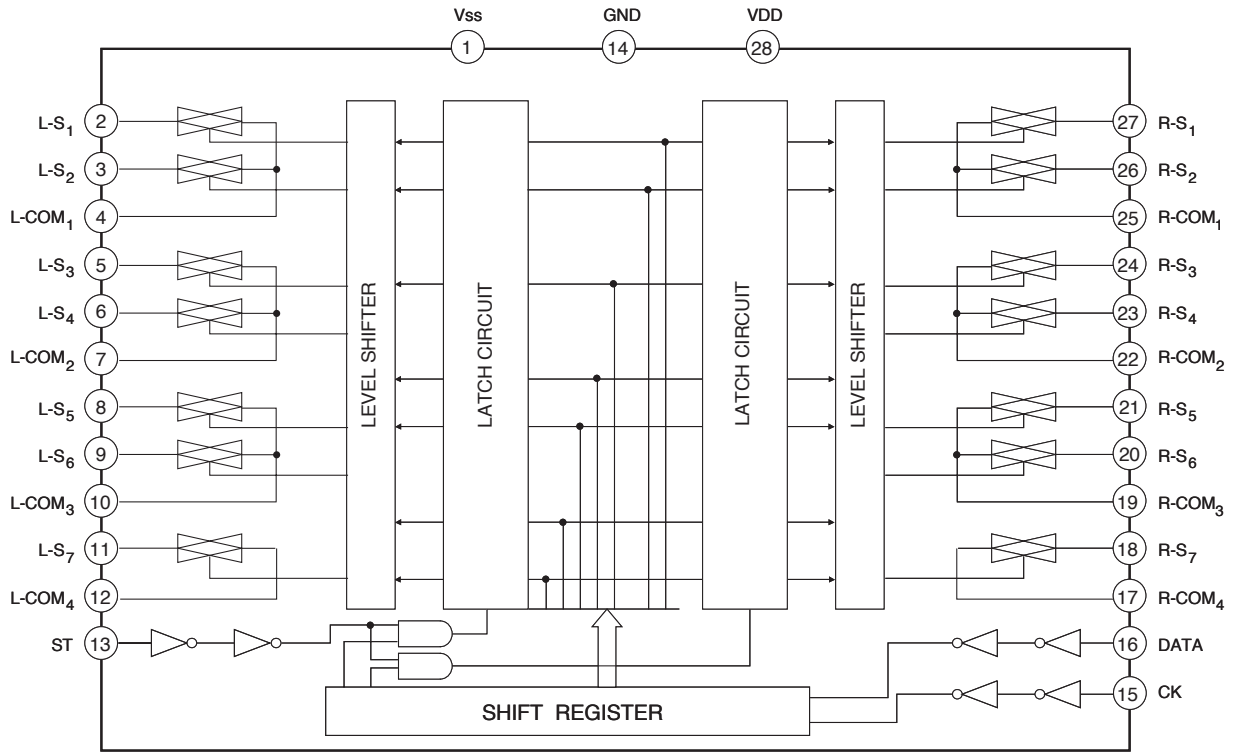
TC9164AF (FUNCTION/INPUT) : IC53

■ BLOCK DIAGRAM



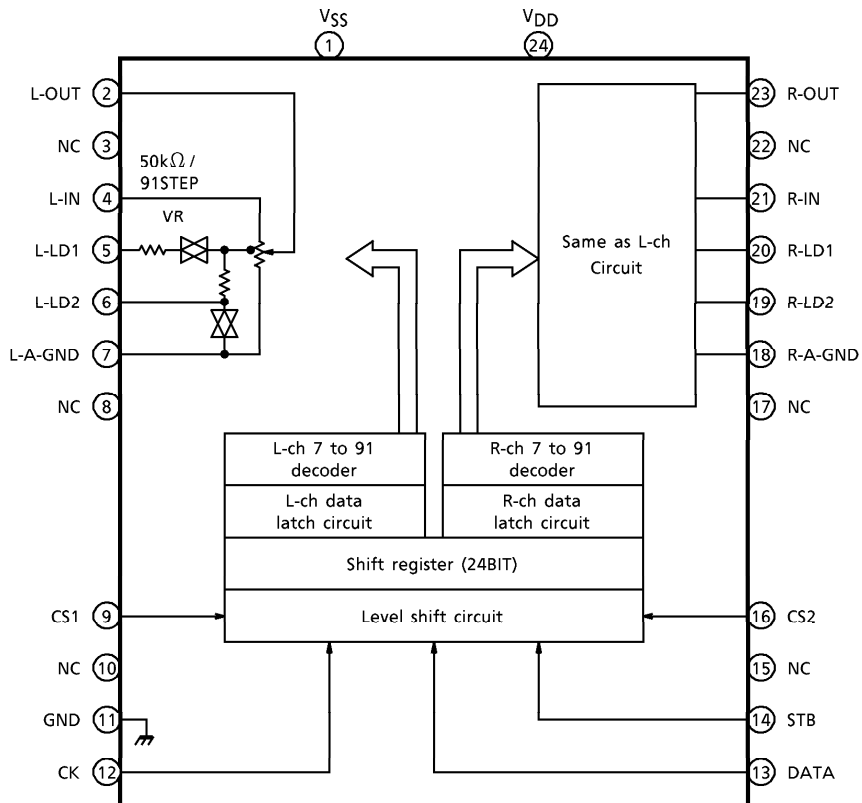
TC9162AF (FUNCTION/INPUT) : IC54

■ BLOCK DIAGRAM



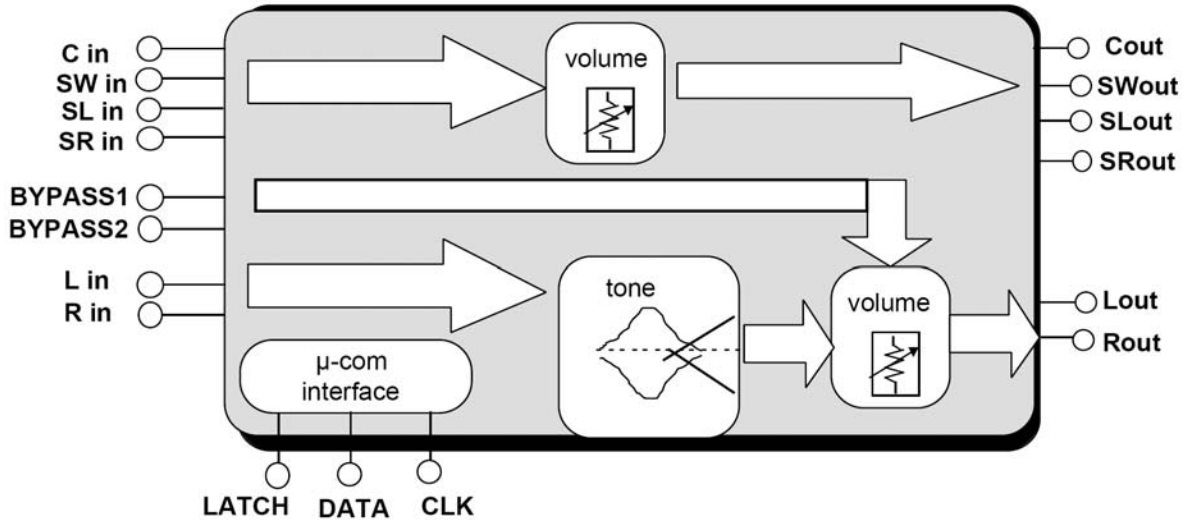
TC9459F(VOLUME) : IC55

■ BLOCK DIAGRAM

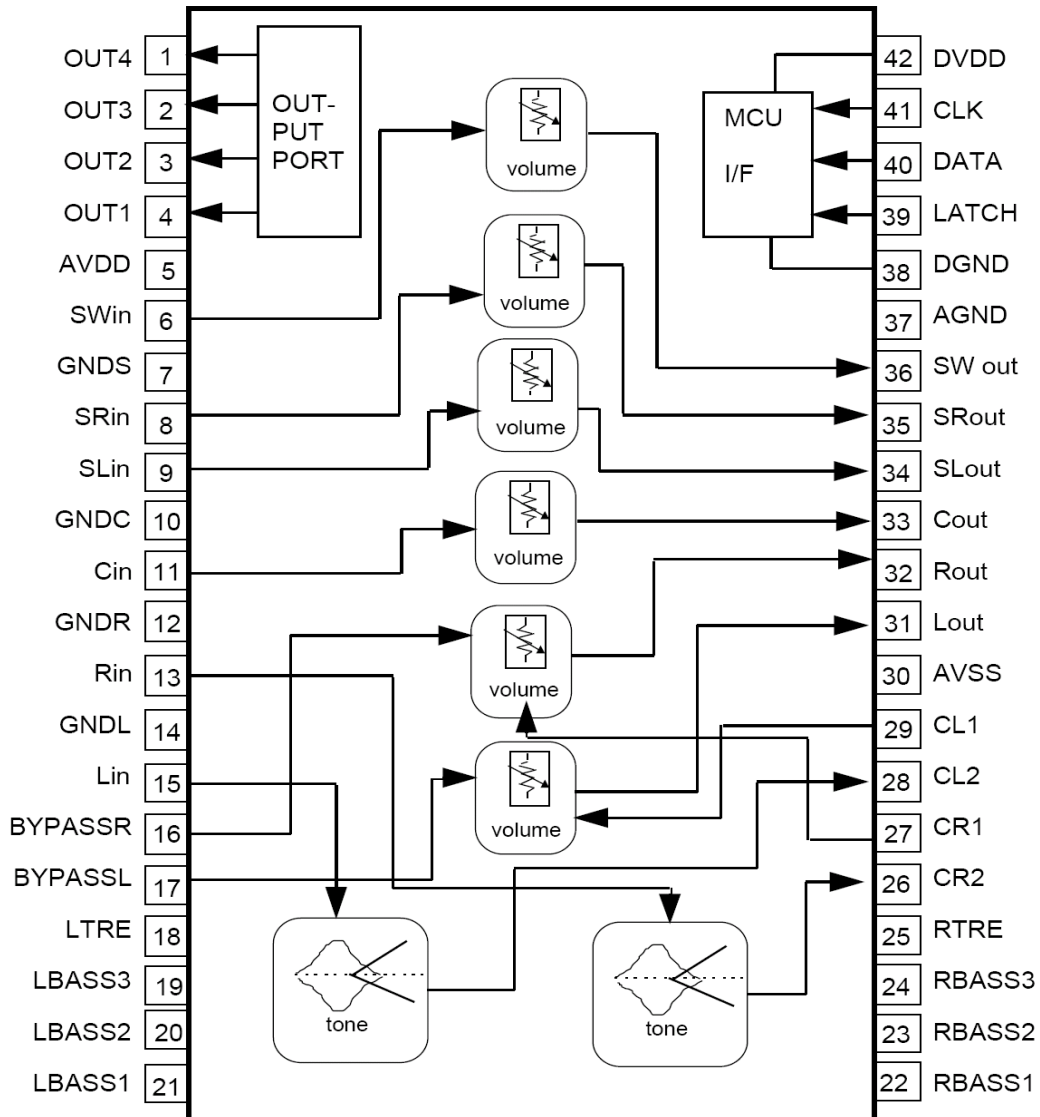


M62446FP(VOLUME) : IC56

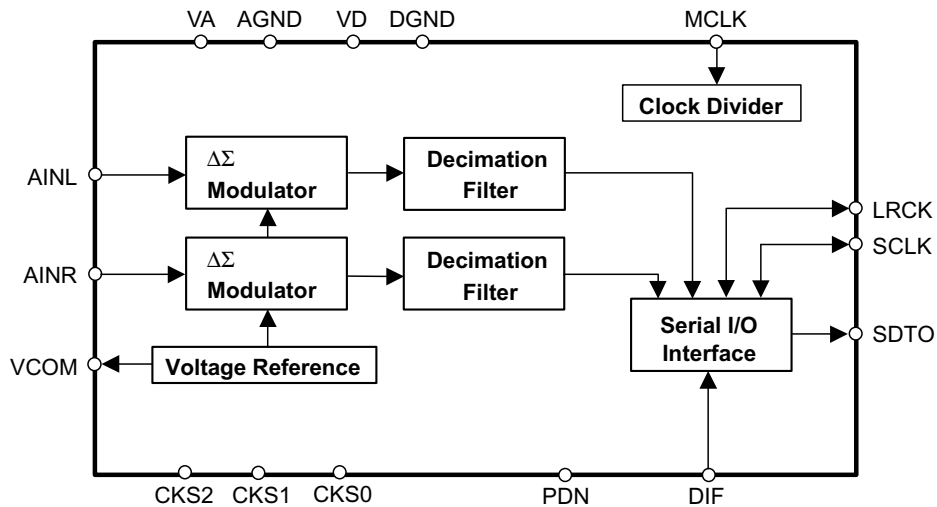
■ BLOCK DIAGRAM



■ PIN CONFIGURATION



AK5381 (A/D CONVERTER) : IC57

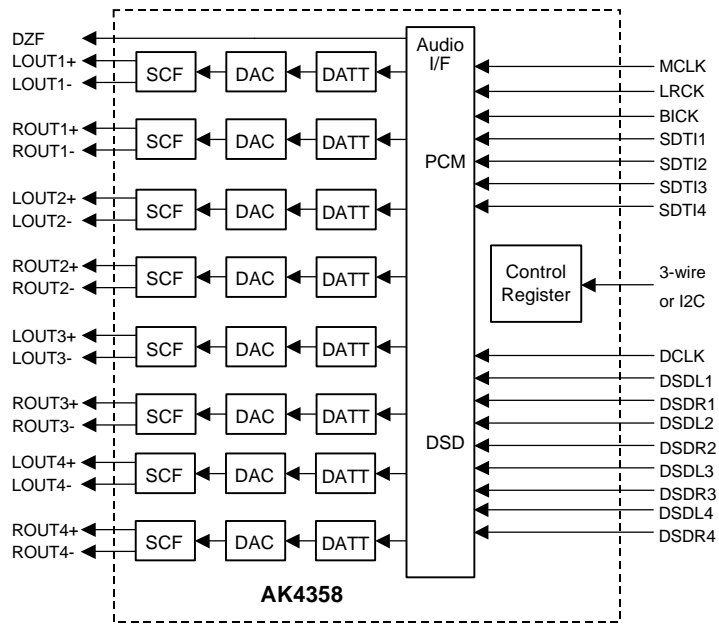


PIN / FUNCTION

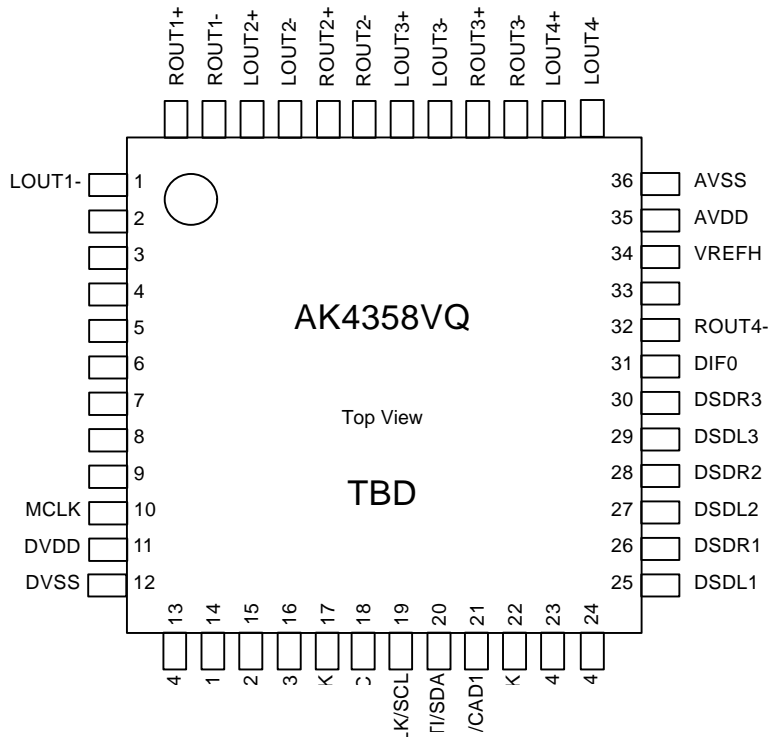
No.	Pin Name	I/O	Function
1	AINR	I	Rch Analog Input Pin
2	AINL	I	Lch Analog Input Pin
3	CKS1	I	Mode Select 1 Pin
4	VCOM	O	Common Voltage Output Pin, VA/2 Bias voltage of ADC input.
5	AGND	-	Analog Ground Pin
6	VA	-	Analog Power Supply Pin, 4.5 ~ 5.5V
7	VD	-	Digital Power Supply Pin, 2.7 ~ 5.5V(fs=4k ~ 48kHz), 3.0 ~ 5.5V(fs=48k ~ 96kHz)
8	DGND	-	Digital Ground Pin
9	SDTO	O	Audio Serial Data Output Pin “L” Output at Power-down mode.
10	LRCK	I/O	Output Channel Clock Pin “L” Output in Master Mode at Power-down mode.
11	MCLK	I	Master Clock Input Pin
12	SCLK	I/O	Audio Serial Data Clock Pin “L” Output in Master Mode at Power-down mode.
13	PDN	I	Power Down Mode Pin “H”: Power up, “L”: Power down
14	DIF	I	Audio Interface Format Pin “H” : 24bit I ² S Compatible, “L” : 24bit MSB justified
15	CKS2	I	Mode Select 2 Pin
16	CKS0	I	Mode Select 0 Pin

Note: All digital input pins should not be left floating.

AK4358 (D/A CONVERTER) : IC58



■ PIN LAYOUT (To be determined)

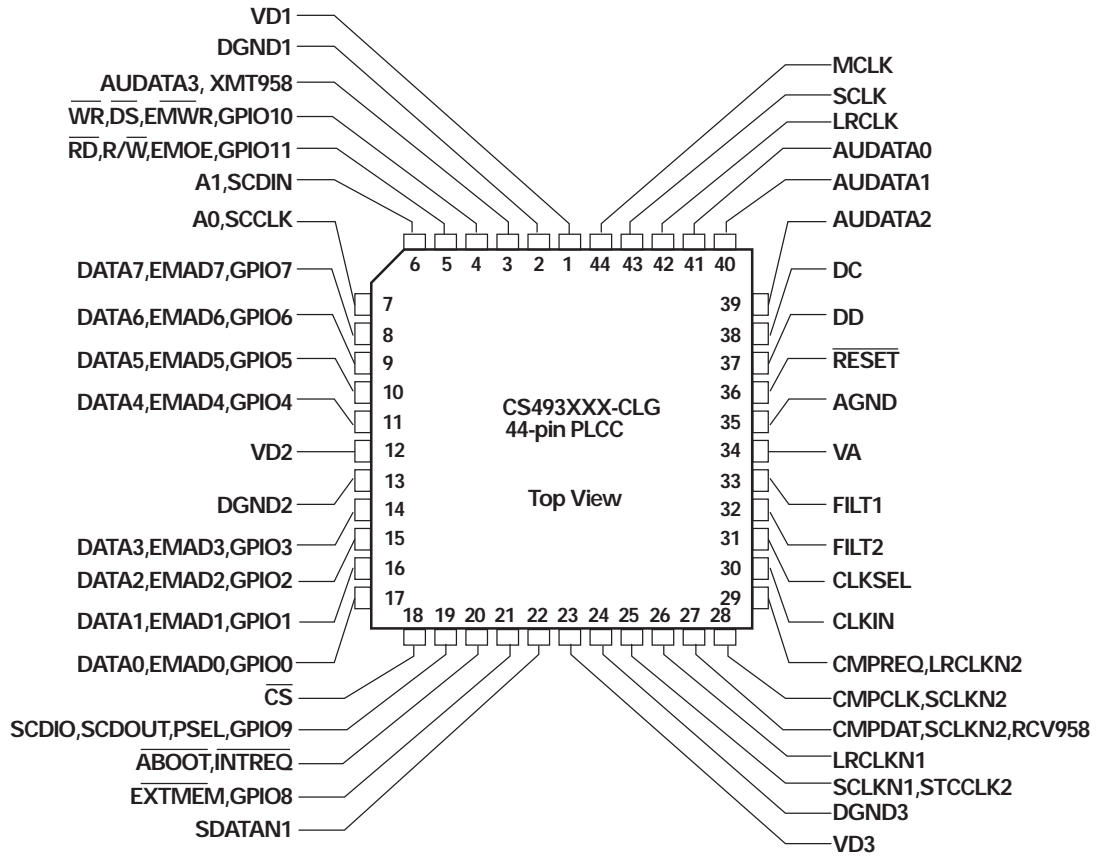


■ PIN DESCRIPTION

No.	Pin Name	I/O	Function
1	LOUT1-	O	DAC 1 Lch Negative Analog Output Pin
2	LOUT1+	O	DAC 1 Lch Positive Analog Output Pin
3	DZF3	O	Zero Input Detect 3 Pin
4	DZF2	O	Zero Input Detect 2 Pin
5	DZF1	O	Zero Input Detect 1 Pin
6	CAD0	I	Chip Address 0 Pin
7	ACKSN	I	Auto Setting Mode Disable Pin(Pull-down Pin) "L":Auto Setting Mode, "H":Manual Setting Mode
8	PDN	I	Power-Down Mode Pin When at"L",the AK4358 is in the power-down mode and is held in reset.
9	BICK	I	Audio Serial Data Clock Pin
10	MCLK	I	Master Clock Input Pin An external TTL clock should be input on this pin.
11	DVDD	-	Digital Power Supply Pin. +4.75~+5.25V
12	DVSS	-	Digital Ground Pin
13	SDTI4	I	DAC4 Audio Serial Data Input Pin
14	SDTI1	I	DAC1 Audio Serial Data Input Pin
15	SDTI2	I	DAC2 Audio Serial Data Input Pin
16	SDTI3	I	DAC3 Audio Serial Data Input Pin
17	LRCK	I	L/R Clock Pin
18	I2C	I	Control Mode Select Pin "L":3-wire Serial, "H":I ² C Bus
19	CCLK/SCL	I	Control Data Clock Pin I2C="L":CCLK(3-wire Serial),I2C="H":SCL(I ² C Bus)
20	CDTI/SDA	I/O	Control Data Input Pin I2C="L":CDTI(3-wire Serial),I2C="H":SDA(I ² C Bus)
21	CSN/CAD1	I	Chip Select Pin I2C="L":Csn(3-wire Serial),I2C="H":CAD1(I ² C Bus)
22	DCLK	I	DSD Clock Pin
23	DSDL4	I	DAC4 DSD Lch Data Input Pin
24	DSDR4	I	DAC4 DSD Rch Data Input Pin
25	DSDL1	I	DAC1 DSD Lch Data Input Pin
26	DSDR1	I	DAC1 DSD Rch Data Input Pin
27	DSDL2	I	DAC2 DSD Lch Data Input Pin
28	DSDR2	I	DAC2 DSD Rch Data Input Pin
29	DSDL3	I	DAC3 DSD Lch Data Input Pin
30	DSDR3	I	DAC3 DSD Rch Data Input Pin
31	DIF0	I	Audio Data Interface Format 0 Pin
32	ROUT4-	O	DAC4 Rch Negative Analog Output Pin
33	ROUT4+	O	DAC5 Rch Positive Analog Output Pin
34	VREFH	I	Positive Voltage Reference Input Pin
35	A VDD	-	Analog Power Supply Pin. +4.75~+5.25V
36	A VSS	-	Analog Ground Pin
37	LOUT4-	O	DAC4 Lch Negative Analog Output Pin
38	LOUT4+	O	DAC4 Lch Positive Analog Output Pin
39	ROUT3-	O	DAC3 Rch Negative Analog Output Pin
40	ROUT3+	O	DAC3 Rch Positive Analog Output Pin
41	LOUT3-	O	DAC3 Lch Negative Analog Output Pin
42	LOUT3+	O	DAC3 Lch Positive Analog Output Pin
43	ROUT2-	O	DAC2 Rch Negative Analog Output Pin
44	ROUT2+	O	DAC2 Rch Positive Analog Output Pin
45	LOUT2-	O	DAC2 Lch Negative Analog Output Pin
46	LOUT2+	O	DAC2 Lch Positive Analog Output Pin
47	ROUT1-	O	DAC1 Rch Negative Analog Output Pin
48	ROUT1+	O	DAC1 Rch Positive Analog Output Pin

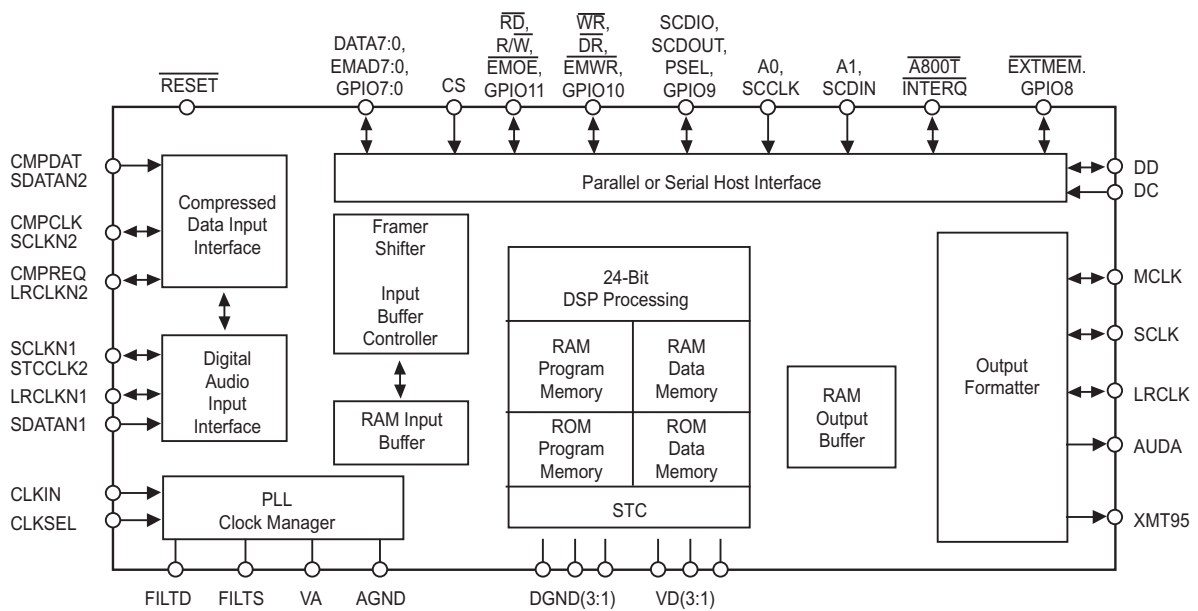
AUDIO DSP (CS493264 - CLG) : IC59

PIN ASSIGNMENT.(CS493264)



(TOP VIEW)

BLOCK DIAGRAM(CS493264)



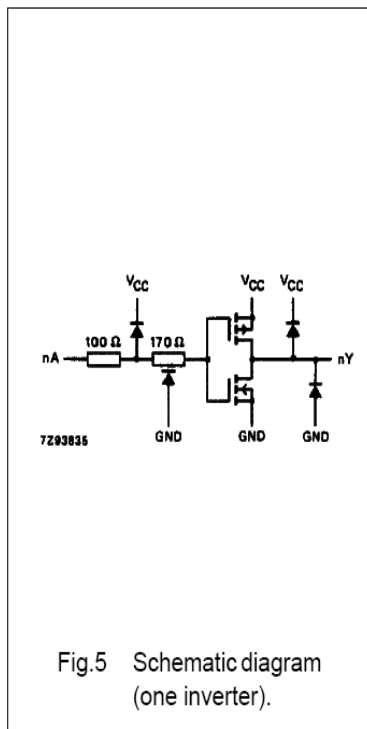
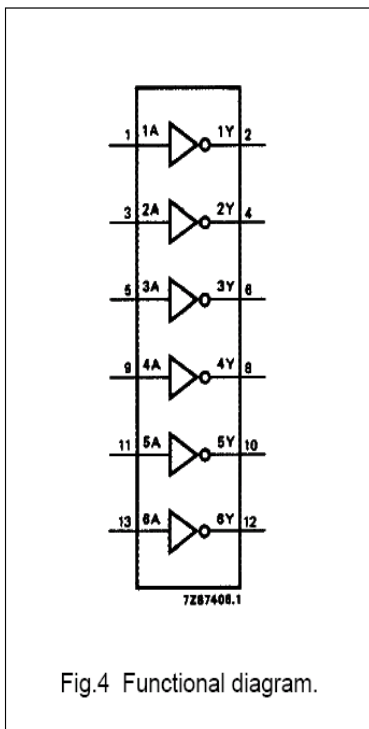
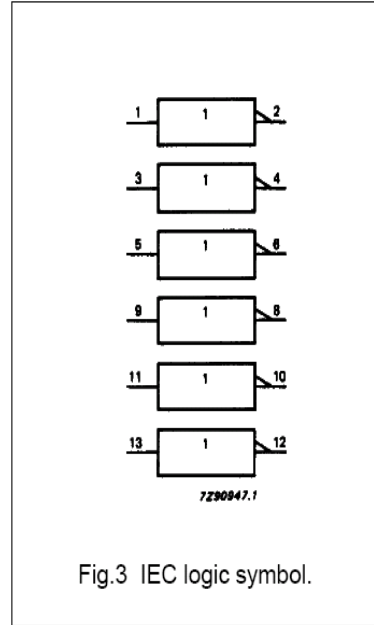
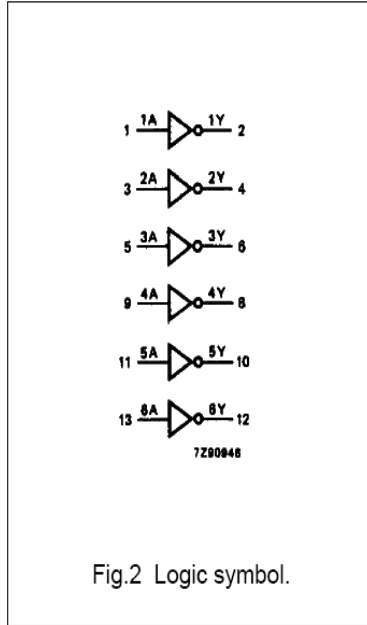
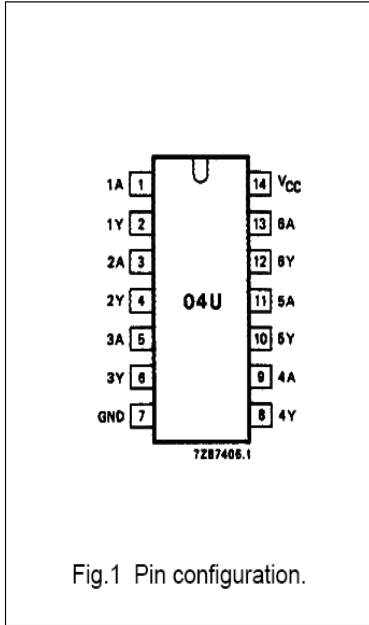
■ PIN DESCRIPTION.(CS493264)

PIN No.	Pin Name	I/O	Function
1,12,23	+VD1	-	Digital Power supply. Normally +2.5v
2,13,24	DGND	-	Digital Ground
3	AUD3	O	SPDIF transmitter output/Digital audio output(N.C)
4	WR	I	Host write strobe pin(connected to GND with an external resistor)
5	RD	I	Host parallel output enable pin(pulled up with an external resistor)
6	CS_DA	I	SPI Serial data input pin
7	CS_CK	I	Serial control clock input pin
8	EMAD7	I/O	Serial data IN/OUTPUT pins(pulled up with an external resistor)
9	EMAD6	I/O	
10	EMAD5	I/O	
11	EMAD4	I/O	
14	EMAD3	I/O	
15	EMAD2	I/O	
16	EMAD1	I/O	
17	EMAD0	I/O	
18	CS_CE	I	
19	SCDIO(AK_DOUT)	O	Serial control port data output pin
20	INTREQ	O	Control port interrupt request output pin
21	EXTMEM	I/O	External Memory Chip Selector(pulled up with an external resistor)
22	SDATAN1(SDI)	I	PCM audio data input number 1 pin
25	SCLKN1(BICK)	I	PCM audio input bit clock pin
26	LRCLKN1(LRCK)	I	PCM audio input sample rate clock pin
27	CMPDAT(SDI)	I	PCM audio data input number 2 pin
28	CMPCLK(BICK)	I	PCM audio input bit clock pin
29	CREQ(LRCK)	I	PCM audio input sample rate clock pin
30	CLKIN(XIN)	I	Master clock input(used external clock)
31	CLKSEL(GND)	I	DSP clock mode select pin: connect the GND
32	FILT1		Connects to an external filter for the on-chip phase-locked loop
33	FILT1		Connects to an external filter for the on-chip phase-locked loop
34	+2.5V	-	Analog Power supply for clock generator . Normally +2.5V
35	AGND	-	Analog ground supply for clock generator PLL.
36	RESET(CS_RST)	I	Master reset input pin
37	DBDATA	-	Reserved pin and should be pulled up with an external resistor.
38	DBCLK	-	Reserved pin and should be pulled up with an external resistor.
39	AUD2(SDO2)	O	PCM multi-format digital-audio data output2 pin
40	AUD1(SDO1)	O	PCM multi-format digital-audio data output1 pin
41	AUD0(SDO0)	O	PCM multi-format digital-audio data output0 pin
42	LRCLK	I	Audio output sample rate clock pin
43	SCLK(BICK)	I	Audio output bit clock pin
44	MCLK	I	Audio master clock output pin

TC74HCU04(INVERTER) : IC60

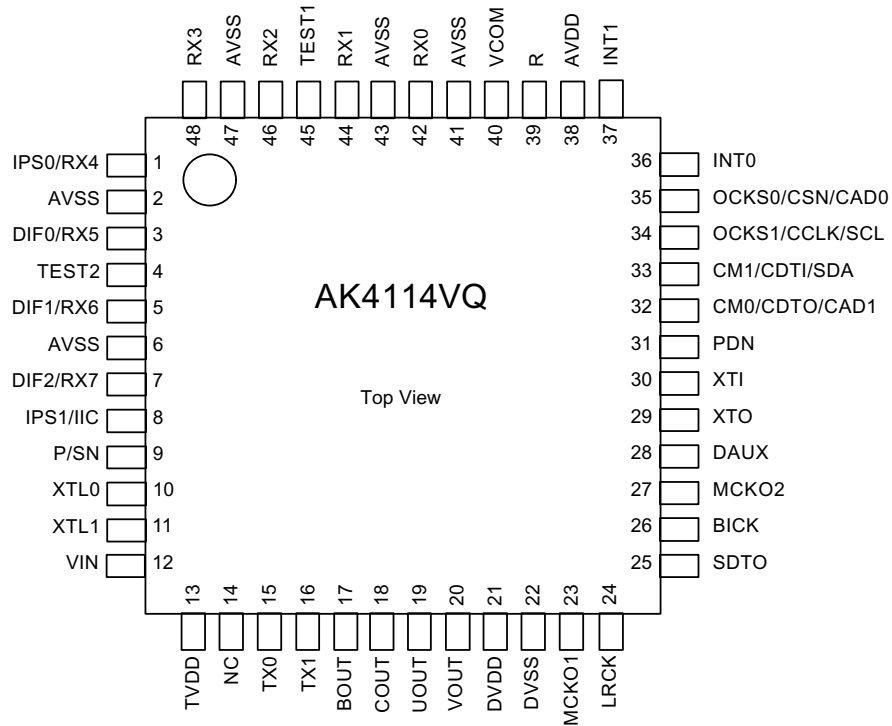
PIN DESCRIPTION

PIN NO.	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	1A to 6A	data inputs
2, 4, 6, 8, 10, 12	1Y to 6Y	data outputs
7	GND	ground (0 V)
14	V _{CC}	positive supply voltage

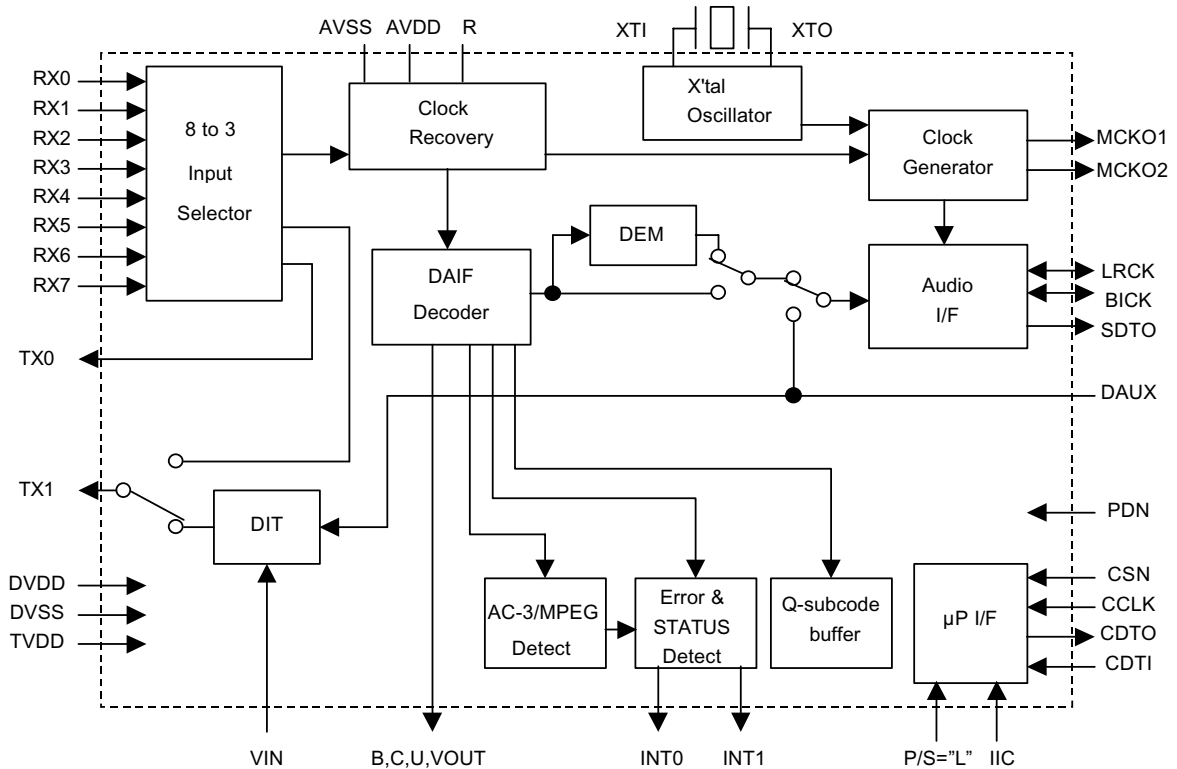


AK4114VQ(DIR) : IC66

■ TOP VIEW



■ BLOCK DIAGRAM



■ DIR IC PIN FUNCTION

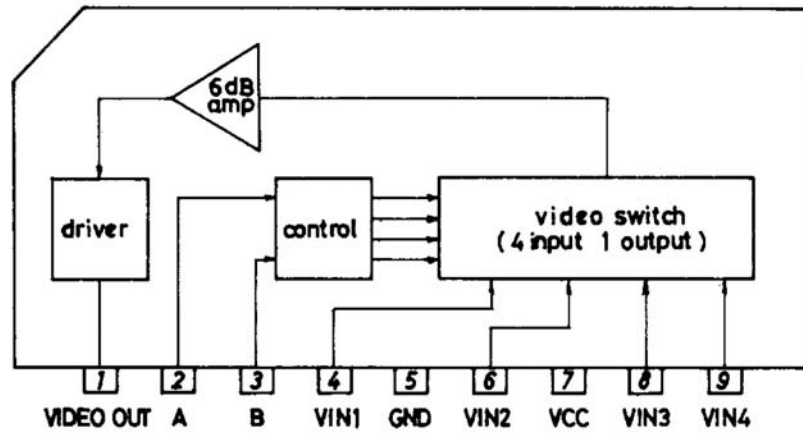
PIN/FUNCTION			
No.	Pin Name	I/O	Function
1	IPS0	I	Input Channel Select 0 Pin in Parallel Mode
	RX4	I	Receiver Channel 4 Pin in Serial Mode (Internal biased pin)
2	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
3	DIF0	I	Audio Data Interface Format 0 Pin in Parallel Mode
	RX5	I	Receiver Channel 5 Pin in Serial Mode (Internal biased pin)
4	TEST2	I	TEST 2 pin This pin should be connect to AVSS.
5	DIF1	I	Audio Data Interface Format 1 Pin in Parallel Mode
	RX6	I	Receiver Channel 6 Pin in Serial Mode (Internal biased pin)
6	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
7	DIF2	I	Audio Data Interface Format 2 Pin in Parallel Mode
	RX7	I	Receiver Channel 7 Pin in Serial Mode (Internal biased pin)
8	IPS1	I	Input Channel Select 1 Pin in Parallel Mode
	IIC	I	IIC Select Pin in Serial Mode. “L”: 4-wire Serial, “H”: IIC
9	P/SN	I	Parallel/Serial Select Pin “L”: Serial Mode, “H”: Parallel Mode
10	XTL0	I	X'tal Frequency Select 0 Pin
11	XTL1	I	X'tal Frequency Select 1 Pin
12	VIN	I	V-bit Input Pin for Transmitter Output
13	TVDD	I	Input Buffer Power Supply Pin, 3.3V or 5V
14	NC	I	No Connect No internal bonding. This pin should be open or connected to DVSS.
15	TX0	O	Transmit Channel (Through Data) Output 0 Pin
16	TX1	O	When TX bit = “0”, Transmit Channel (Through Data) Output 1 Pin. When TX bit = “1”, Transmit Channel (DAUX Data) Output Pin (Default).
17	BOUT	O	Block-Start Output Pin for Receiver Input “H” during first 40 frames.
18	COUT	O	C-bit Output Pin for Receiver Input
19	UOUT	O	U-bit Output Pin for Receiver Input
20	VOUT	O	V-bit Output Pin for Receiver Input
21	DVDD	I	Digital Power Supply Pin, 3.3V
22	DVSS	I	Digital Ground Pin
23	MCKO1	O	Master Clock Output 1 Pin
24	LRCK	I/O	Channel Clock Pin
25	SDTO	O	Audio Serial Data Output Pin
26	BICK	I/O	Audio Serial Data Clock Pin
27	MCKO2	O	Master Clock Output 2 Pin
28	DAUX	I	Auxiliary Audio Data Input Pin
29	XTO	O	X'tal Output Pin
30	XTI	I	X'tal Input Pin

PIN/FUNCTION (Continued)

No.	Pin Name	I/O	Function
31	PDN	I	Power-Down Mode Pin When “L”, the AK4114 is powered-down and reset.
32	CM0	I	Master Clock Operation Mode 0 Pin in Parallel Mode
	CDTO	O	Control Data Output Pin in Serial Mode, IIC= “L”.
	CAD1	I	Chip Address 1 Pin in Serial Mode, IIC= “H”.
33	CM1	I	Master Clock Operation Mode 1 Pin in Parallel Mode
	CDTI	I	Control Data Input Pin in Serial Mode, IIC= “L”.
	SDA	I/O	Control Data Pin in Serial Mode, IIC= “H”.
34	OCKS1	I	Output Clock Select 1 Pin in Parallel Mode
	CCLK	I	Control Data Clock Pin in Serial Mode, IIC= “L”
	SCL	I	Control Data Clock Pin in Serial Mode, IIC= “H”
35	OCKS0	I	Output Clock Select 0 Pin in Parallel Mode
	CSN	I	Chip Select Pin in Serial Mode, IIC= “L”.
	CAD0	I	Chip Address 0 Pin in Serial Mode, IIC= “H”.
36	INT0	O	Interrupt 0 Pin
37	INT1	O	Interrupt 1 Pin
38	AVDD	I	Analog Power Supply Pin, 3.3V
39	R	-	External Resistor Pin 18k Ω +/-1% resistor should be connected to AVSS externally.
40	VCOM	-	Common Voltage Output Pin 0.47 μ F capacitor should be connected to AVSS externally.
41	AVSS	I	Analog Ground Pin
42	RX0	I	Receiver Channel 0 Pin (Internal biased pin) This channel is default in serial mode.
43	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
44	RX1	I	Receiver Channel 1 Pin (Internal biased pin)
45	TEST1	I	TEST 1 pin. This pin should be connected to AVSS.
46	RX2	I	Receiver Channel 2 Pin (Internal biased pin)
47	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
48	RX3	I	Receiver Channel 3 Pin (Internal biased pin)

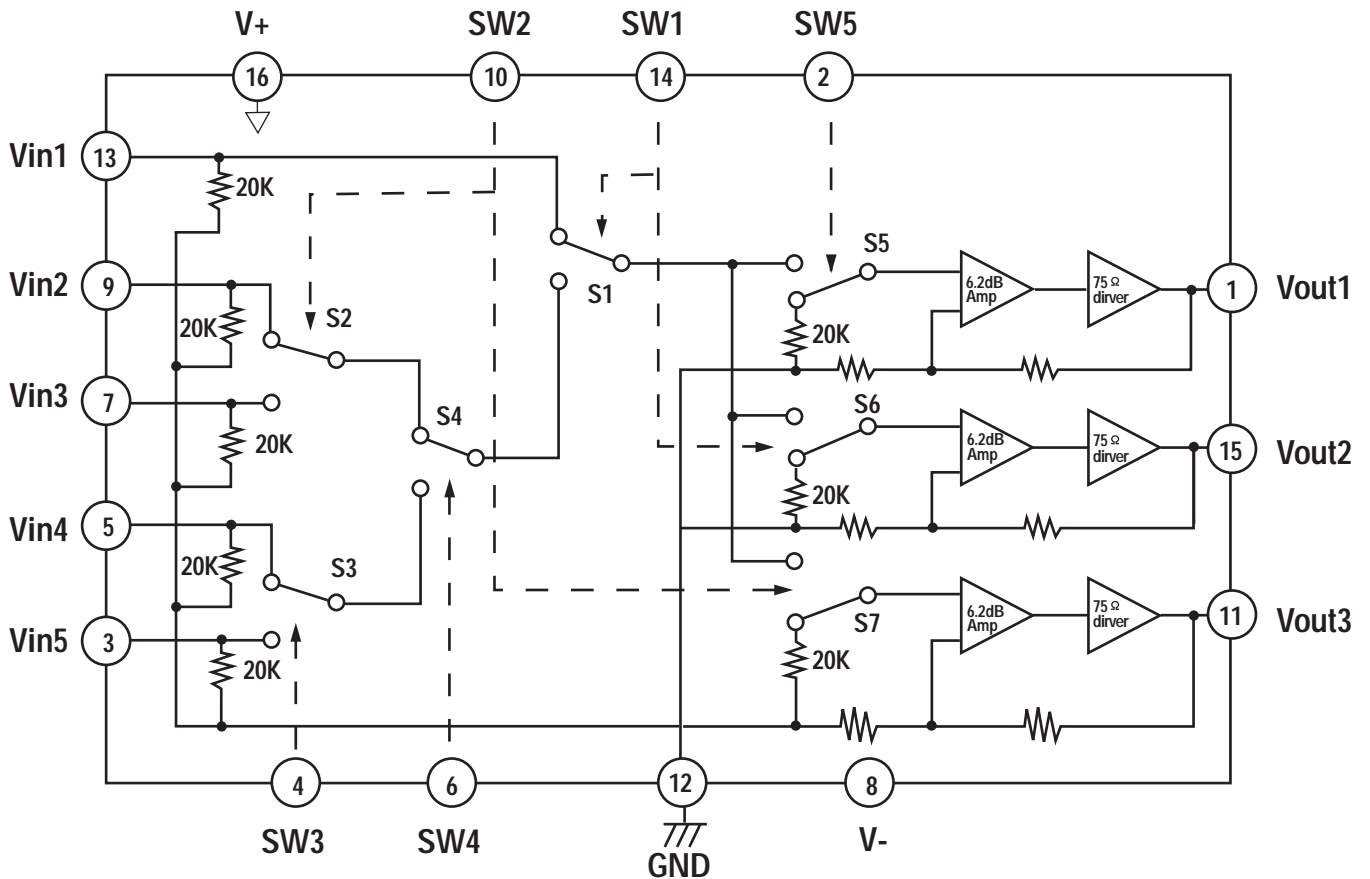
Note 1. All input pins except internal biased pins should not be left floating.

LA7952 (VIDEO SWITCH) : IC77,78



NJM2296M (VIDEO SWITCH) : IC79

■ BLOCK DIAGAM



*** Normally mute**
Above circuits show that the switches are set at low.

MB90F476AFPG(FLASH U-COM) : IC91

■ BLOCK DIAGAM

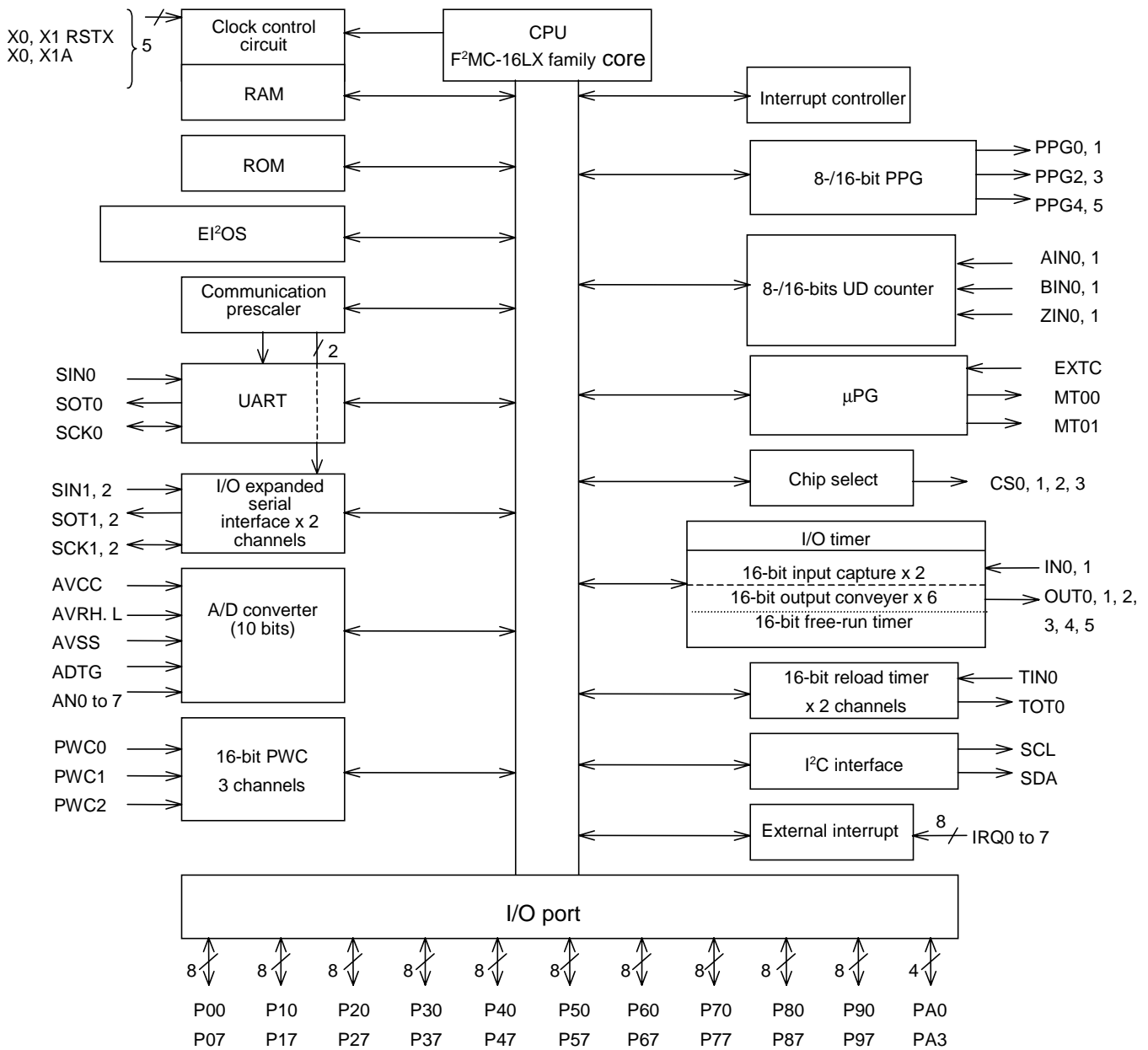


Fig. 1.1 Block Diagram (MB90470)

P00 to P07 (8): Provided with input pull-up resistor setting register

P10 to P17 (8): Provided with input pull-up resistor setting register

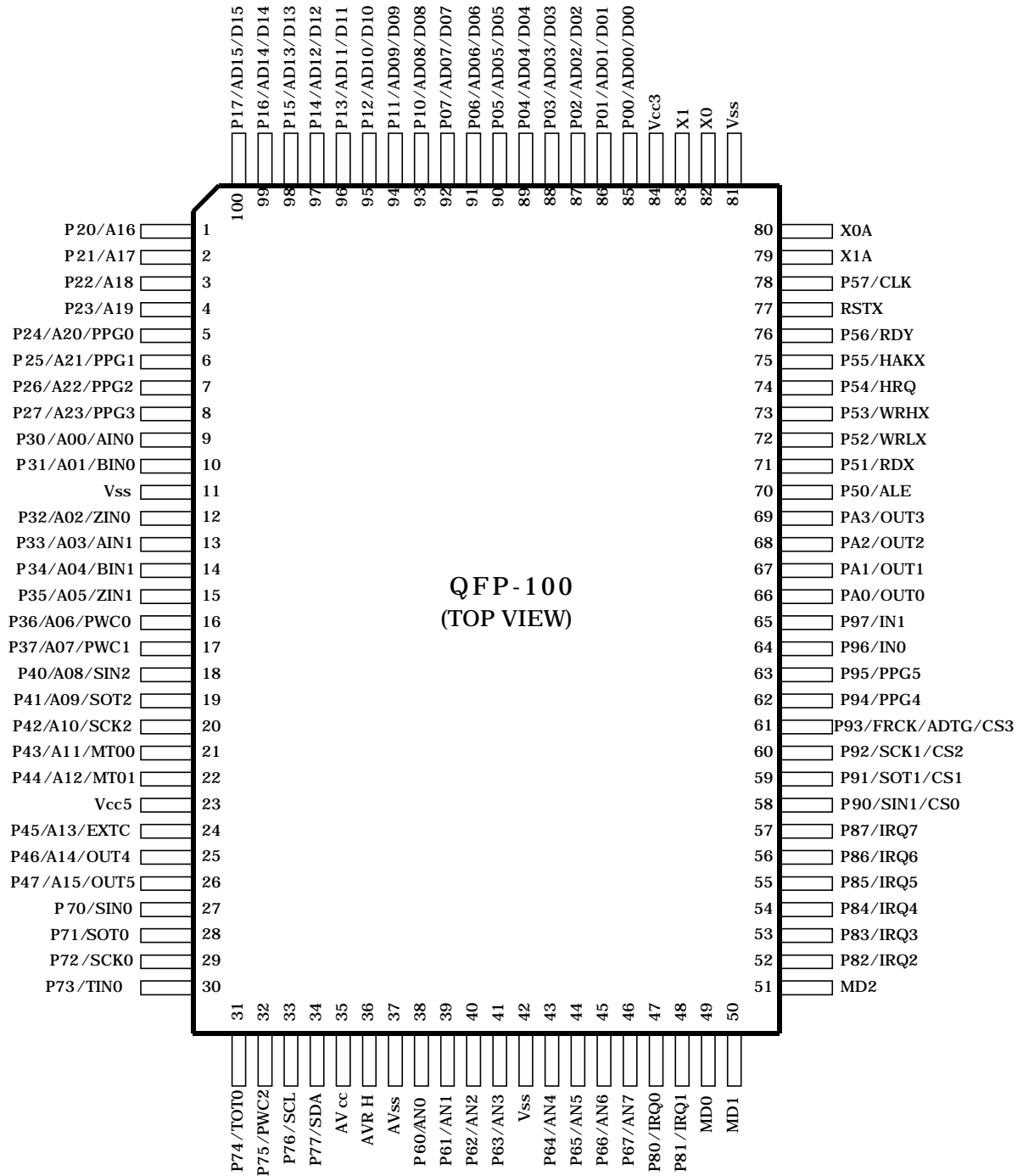
P40 to P47 (8): Provided with open-drain setting register

P70 to P75 (6): Provided with open-drain setting register

P76 to P77 (2): Open-drain

Note: In the figure above, the I/O port shares the pins with each internal functional block. When the pins are used as internal module pins, they cannot be used as I/O port pins.

■ TOP VIEW



PIN FUNCTIONS

PIN No.	SYMBOL	I/O	DESCRIPTION
1	F-STB	O	Function IC(TC9163/TC9164) STB Output Port
2	F-DATA	O	Function IC(TC9163/TC9164) DATA Output Port
3	PLL-CE	O	PLL IC(LC72131, on the Tuner Module) Chip Enable Control Port
4	F-CLK	O	Function IC(TC9163/TC9164) CLOCK Output Port
5	PLL D/I	I	PLL IC(LC72131, on the Tuner Module) Data Input Port
6	TUNE	I	Tuned Display Control Port(Active "L")
7	STEREO	I	Stereo Display Control Port(Active "L")
9,10,12	VIDEO S/W	O	VIDEO SW IC(NJM2296M) Switch for select signal Control Port
11,37,42,48,81	VSS		GND
16	S-RESET	O	DAC IC(AK4358VQ) RESET Output Port
17	CS-RESET	O	DSP IC(CS493264-CL) RESET Output Port
18	D-OUT	O	IC(CS493264-CL,AK4114VQ) Data Out Port
19	S-DATA	O	DAC IC(AK4358VQ) DATA Output Port
20	S-CLK	O	DAC IC(AK4358VQ) CLK Output Port
21	INTREQ	I	Interrupt Reguest Input Port
22	S-CE	O	DAC IC(AK4358VQ) Chip Enable Control Port
23,84	VCC	I	Power Supply Port(+5V)
24	AK-CE	O	DIR IC(AK4114VQ) Enable Control Port
25	CS-CE	O	DSP IC(CS493264-CL) Enable Control Port
26	MIX-ON	O	MIX ON Control Port
27	SINO	I	UART Data Input Port
28	SOTO	O	UART Data Output Port
30	AK-RESET	O	IC(AK4114VQ/AK5381VT) RESET Output Port
31	SP C	O	Speaker Relay and LED Control Port("H")
32	SP B	O	
33	SP A	O	
35,36	VCC	I	Power Supply Port(+5V)
38,39,40,41	KEY	I	Key Control Input Port
49	MD0	I	u-COM Operation Mode Control Port
50	MD1	I	
51	MD2	I	
52	RDS-CLK	I	RDS IC(SAA6579TV1) CLK/DATA Port
53	RDS-DATA	I	
54	BACK-UP	I	Back Up Mode Control Port(Active"L")
55	HP-IN	I	Heaephone Detective Input Port(Active"H")
56	REMOTE-IN	I	Remote Control Data Input Port
58	ST 5V	O	Standby LED Control Port
59	VFD-DATA	O	VFD Data Out Port
60	VFD-CLK	O	VFD CLK Out Port

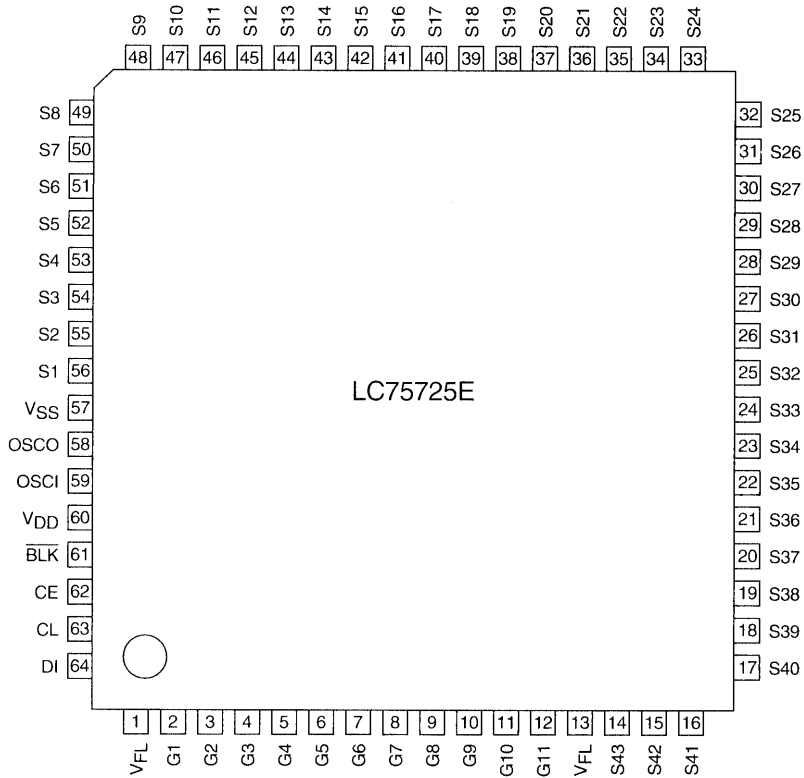
PIN No.	SYMBOL	I/O	DESCRIPTION
61	VFD-CS	O	VFD Chip Selector Out Port
62	VFD-BLK	O	VFD BLK Out Port
66	REMOTE-OUT	O	Remote Control Data Output Port
67	POWER-H	O	Power ON/OFF Control Port(Active"H")
68	SURR-H	O	Surround ON/OFF Control Port(Active"H")
65,69,70,71,72	OPTION	I	Option Control Port
73	VOL-DOWN	O	Master Volume Up/Down Control Port
74	VOL-UP	O	
75	FUNC-DOWN	O	Function UP/DOWN Control Port
76	FUNC-UP	O	
77	RESET	I	Reset Input Port(Active "L")
82	XO	O	10MHz Cystal Connection Port
83	XI	I	
93	PROTECT-IN	I	Protect Input Port(Active "H")
94	F-MUTE	O	Function Mute Control Port(Active"L")
96	P-MUTE	O	Power Mute Control Port(Active"L")
97	T-STB	O	Volume IC(TC9459F) STB Output Port
98	E-STB	O	Electronic Vol.IC(M62446AFP) Data/CLK/STB Port
99	E-CLK	O	
100	E-DATA	O	

■ OPTION PIN DESCRIPTION

PIN	LOW	HIGH
65(JAPAN)	R973(OFF)	R974(ON)
69(FM)	R935(100KHz STEP)	R940(50KHz STEP)
70(AM)	R934(10KHz STEP)	R941(9KHz STEP)
71(RDS)	R933(OFF)	R942(ON)
72(CH)	R932(6.1CH)	R943(7.1CH)

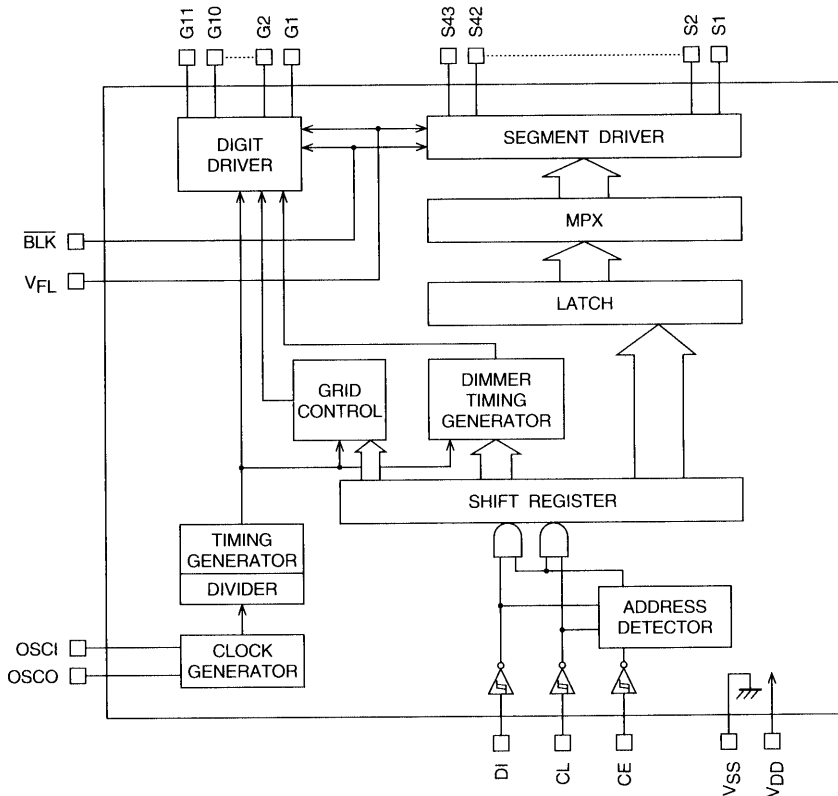
LC75725E (VFD DRIVER) : IC92

TOP VIEW



A06732

BLOCK DIAGRAM

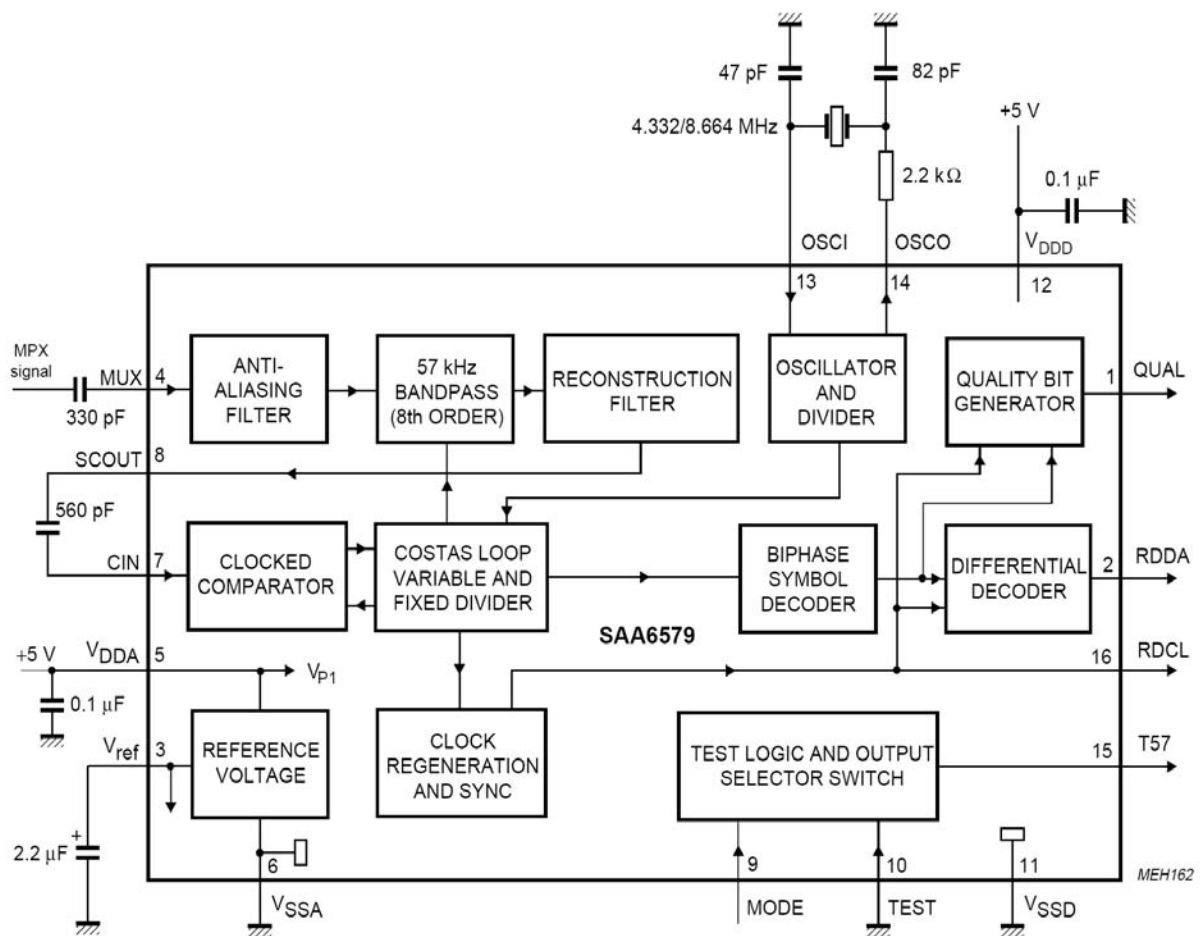


A06735

PIN FUNCTIONS

Pin	Pin No.	Function	I/O	Handling when unused
V _{FL}	1, 13	Driver block power supply connection. (Both pins must be connected.)	—	—
V _{DD}	60	Logic block power supply connection. Provide a voltage between 4.5 and 5.5 V.	—	—
V _{SS}	57	Power supply connection. Connect to the ground.	—	—
OSCI	59	Oscillator connection. An oscillator circuit is formed by connecting an external resistor and capacitor to these pins.	I	GND
OSCO	58		O	OPEN
$\overline{\text{BLK}}$	61	Display off control input. BLK = Low (V _{SS}) ... Display off. (S1 to S43 and G1 to G11 at V _{FL} level.) BLK = High (V _{DD}) ... Display on. Note that serial data can be transferred while the display is turned off.	I	GND
CL	63	Serial data transfer inputs. These pins must be connected to the system microcontroller. CL: Synchronization clock DI: Transfer data CE: Chip enable	I	GND
DI	64			
CE	62			
G1 to G11	2 to 12	Digit outputs. These pins are P-channel open drain outputs with pull-down resistors.	O	OPEN
S1 to S43	56 to 14	Segment outputs for displaying the display data transferred by serial data input. These pins are P-channel open drain outputs with pull-down resistors.	O	OPEN

SAA6579 (RDS) : IC93



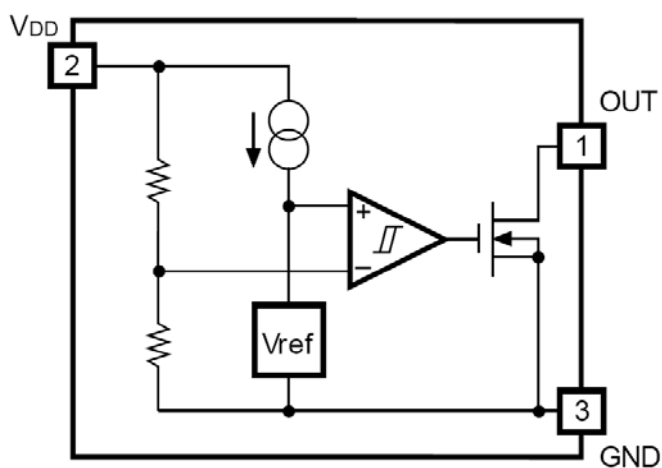
PINNING

SYMBOL	PIN	DESCRIPTION
QUAL	1	quality indication output
RDDA	2	RDS data output
V _{ref}	3	reference voltage output (0.5V _{DDA})
MUX	4	multiplex signal input
V _{DDA}	5	+5 V supply voltage for analog part
V _{SSA}	6	ground for analog part (0 V)
CIN	7	subcarrier input to comparator
SCOUT	8	subcarrier output of reconstruction filter
MODE	9	oscillator mode/test control input
TEST	10	test enable input
V _{SSD}	11	ground for digital part (0 V)
V _{DDD}	12	+5 V supply voltage for digital part
OSCI	13	oscillator input
OSCO	14	oscillator output
T57	15	57 kHz clock signal output
RDCL	16	RDS clock output

RE5VT15CATZ(RESET) : IC96

■ BLOCK DIAGAMS

• Nch Open Drain Output (R×5VT×A)



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics.

These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a \triangle on the schematics and on the parts list in this Service Manual.

The use of substitute replacement component which does not have the same safety characteristics as the recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards. Product Safety is continuously under review and new instructions are issued from time to time.

RESISTORS AND CAPACITORS

Notes

- Part numbers are indicated for most mechanical parts.
please use this part number for parts order.
- IMPROTANT SAFETY NOTICE.
Components identified by \triangle mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.
- The unit of resistance is ohm (Ω)
K=1000 (Ω), M=1000 (K Ω)
- The unit of capacitance is MICROFARAD (μ F)
p=10⁻⁶ μ F

Numbering System of Resistor Example

CRD **25** **F** **J** **101**
Type **Wattage** **Shape** **Tolerance** **Value**

Resistor Type	Wattage	Tolerance
CRD: Carbon	20: 1/5W	F:= $\pm 1\%$
CRG: Metal Oxide	25:1/4W	J:= $\pm 5\%$
	50:1/2W	K:= $\pm 10\%$
	1:1W	
CRF: Metal Cement	2:2W	
	3:3W	

Numbering System of Capacitor

CCKT **1H** **101** **K** **B**
Type **Voltage** **Value** **Tolerance** **Peculiarity**

Capacitor Type	Voltage		Tolerance
	CCEA Type	Other	
HCB: Ceramic	0J: 6.3V	1H: 50V DC	C: $\pm 0.25 \mu$ F
CCC: Ceramic	1A:10V	1: 125V DC	G: $\pm 2\%$
CCK: Ceramic	1C:16V	KC: 400V AC	J: $\pm 5\%$
HCQI: Polyester	1H:50V		K: $\pm 10\%$
CCEA: Elect	1V:35V		Z: +10%, -20%

ELECTRICAL PARTS LIST

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
FORONT PCB ASS'Y			
	COP11598B	PCB , FRONT ASS'Y	
	CIP11598B	PCB , FRONT AUTO ASS'Y	
	CUP11598Y	PCB , FRONT	
D901-905	HVD1SS133MT	DIODE	1SS133T-77
D906	HVDMTZJ5.1BT	DIODE , ZENER	5.1V 1/2W
D907-909	HVD342VCTB7T089	L.E.D , RED	SLR342VCTB7T089
D910	HVDMTZJ4.7BT	DIODE , ZENER	4.7V 1/2W
IC96	HVIRE5VT15CATZ	IC , RESET	RE5VT15CATZ
L901	HLQ02C100KT	COIL , AXAIL	10UH
Q801-804	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q805	HVTKSB811YT	T.R	KSB811Y
Q901	HVTKSC2316YT	T.R	KSC2316Y
Q902,903	HVTKRA107MT	T.R	KRA107M
Q904,905	HVTKRC107MT	T.R	KRC107M
Q906	HVTKRA107MT	T.R	KRA107M
Q907,908	HVTKRC107MT	T.R	KRC107M
Q909	HVTKSA1175YT	T.R	KSA1175Y
Q910	HVTKRC107MT	T.R	KRC107M
S901-925	CST1A012ZT	SW , TACT	SKHV10910G
BK91,92	CMD1A374	BRACKET , FLT	
BK93,94	CMD1A387	BRACKET , PCB	
BN71	CWZDDR97BN71	WIRE ASS'Y (SHIELD)	
BN72	CWB2B903100EN	WIRE ASS'Y	
BN73	CWB2B903150EN	WIRE ASS'Y	
BN77	CWB2B908350EN	WIRE ASS'Y	
BN81	CWB2B902130EN	WIRE ASS'Y	
BN85	CWB2B902480EN	WIRE ASS'Y	
BN94	CWZDDR97BN94	WIRE ASS'Y (SHIELD)	
BN97,98	KJP11HA37ZM	WAFER	MOLEX42140-2211
CN72,73	KJP03GA19ZM	WAFER	MOLEX53014-0310
CN78	KJP17GA117ZG	WAFER , CARD CABLE	GF102-17S-TS
CN79	KJP23GA117ZG	WAFER , CARD CABLE	GF102-23S-TS
CN80	KJP06GB46ZM	WAFER	
CN81	KJP02GA19ZM	WAFER	MOLEX53014-0210
CN83	KJP02GA89ZM	WAFER	MOLEX35328-02
CN84	KJP03GA01ZM	WAFER	MOLEX 5267-03A
CN97,98	KJP11TT158ZY	PIN , HEADER (2.54MM)	
C913	BCES0HD104	CAP , GOLD	EECS0HD104V
FIP1	HFL11BT205GNK	F.I.P	ADR1000
HP81	HJJ2E020Z	JACK , HEADPHONE	HTJ-064-05NG
IC81	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC91	BVIANAM1372AT	IC , MICOM	
	BVIMB90F476APFG	IC , FLASH U-COM	MB90F476APFG
IC92	HVILC75725E	IC , VFL DRIVER	LC75725E
IC93	BVISAA6579TV1	I.C , RDS FILTER	SAA6579T/V1
IC94,95	HVI74ACT04MTR	I.C , HEX	74ACT04MTR
JK81	CJJ4M021Z	JACK , VCR	JC010077RG
JK82	CJJ4M020Z	JACK , VCR	JC010077WG
JK83	CJJ4M022Z	JACK , VCR	JC010077YG
JW82	CWE8202140AR	WIRE ASS'Y (1P)	140MM
JW83	CWE8202090AR	WIRE ASS'Y	90MM
JW85	CWE8202100AR	WIRE , ASS'Y(1P)	100MM
RS91	KRVHIM602H32	SENSOR , REMOCON	
R893,894	CRG1ANJ471H	RES , METAL OXIDE FILM	470 OHM 1W
SW81	KSH1A001ZV	SW , PUSH (MOMS)	JPP1197CSA64

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
SW82	KSH2B003Z	SW , PUSH(VERTICAL)	
VE81	HSR2A004Z	VR , ENCODER	EC16B243040HB
VE91	HSR2A006Z	VR , ENCODER	EC16B1220408A
VR91	CVV2W03M104Z	RES , VARIABLE(100KMN)	RK14K1260102
VR92,93	CVV2W04C104Z	RES , VARIABLE(100KCX2)	RK14K1260102
X901	HOX04194E120TF	CRYSTAL , OSC	HC-49/S(ATS)
X902	HOX04332E200C	CRYSTAL	
	CNVKSTM9014MS17	TUNER MODULE(EUR)	
AMP PCB ASS'Y			
	COP11599B	PCB , AMP ASS'Y	
	CIP11599B	PCB , AMP AUTO ASS'Y	
	CUP11599Z	PCB , AMP	
D101-112	HVD1SS133MT	DIODE	1SS133T-77
D371	HVD1SS133MT	DIODE	1SS133T-77
D383-385	HVD1SS133MT	DIODE	1SS133T-77
D864	HVD1SS133MT	DIODE	1SS133T-77
Q101	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q102-106	HVTKTA1268GRT	T.R	KTA1268GR
Q107,108	HVTKTC3200GRT	T.R	KTC3200GR
Q116	HVTKSC2785YT	T.R	KSC2785Y
Q117	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q118-122	HVTKTA1268GRT	T.R	KTA1268GR
Q123,124	HVTKTC3200GRT	T.R	KTC3200GR
Q132	HVTKSC2785YT	T.R	KSC2785Y
Q133	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q134-138	HVTKTA1268GRT	T.R	KTA1268GR
Q139,140	HVTKTC3200GRT	T.R	KTC3200GR
Q148	HVTKSC2785YT	T.R	KSC2785Y
Q149	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q150-154	HVTKTA1268GRT	T.R	KTA1268GR
Q155,156	HVTKTC3200GRT	T.R	KTC3200GR
Q164	HVTKSC2785YT	T.R	KSC2785Y
Q165	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q166-170	HVTKTA1268GRT	T.R	KTA1268GR
Q171,172	HVTKTC3200GRT	T.R	KTC3200GR
Q180	HVTKSC2785YT	T.R	KSC2785Y
Q181	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q182-186	HVTKTA1268GRT	T.R	KTA1268GR
Q187,188	HVTKTC3200GRT	T.R	KTC3200GR
Q196	HVTKSC2785YT	T.R	KSC2785Y
Q371	HVTKRA107MT	T.R	KRA107M
Q372-374	HVTKSC2785YT	T.R	KSC2785Y
Q375	HVTKRA107MT	T.R	KRA107M
Q383	HVTKRC107MT	T.R	KRC107M
Q385	HVTKRC107MT	T.R	KRC107M
Q387	HVTKRC107MT	T.R	KRC107M
Q392,393	HVTKRC102MT	T.R	KRC102M
Q394	HVTKRA107MT	T.R	KRA107M
Q395	HVTKRC107MT	T.R	KRC107M
Q863	HVTKRC107MT	T.R	KRC107M
R392	C3A206	WIRE , COPPER	SN95/PB5 , 0.6
Q110	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q114	HVT2SC3856	T.R , POWER	2SC3856
Q115	HVT2SA1492	T.R , POWER	2SA1492

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
Q126	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q130	HVT2SC3856	T.R , POWER	2SC3856
Q131	HVT2SA1492	T.R , POWER	2SA1492
Q142	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q146	HVT2SC4468	T.R , POWER	2SC4466
Q147	HVT2SA1695	T.R , POWER	2SA1695
Q158	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q162	HVT2SC4468	T.R , POWER	2SC4466
Q163	HVT2SA1695	T.R , POWER	2SA1695
Q174	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q178	HVT2SC4468	T.R , POWER	2SC4466
Q179	HVT2SA1695	T.R , POWER	2SA1695
Q190	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q194	HVT2SC4468	T.R , POWER	2SC4466
Q195	HVT2SA1695	T.R , POWER	2SA1695
BK71,72	CMD1A387	BRACKET , PCB	
BN84	CWB1C903350BM	WIRE ASS'Y	
BN86	CWB2B902200EN	WIRE ASS'Y	
BN95	CWZDDR97BN95	WIRE ASS'Y (SHIELD)	
BN96	CWB2B909200EN	WIRE ASS'Y	
CN85	KJP05GA100ZY	WAFER	3.96MM(YUNHO)
C111,112	HCEA2AH101E	CAP , ELECT	100UF 100V
C125,126	HCEA2AH101E	CAP , ELECT	100UF 100V
C139,140	HCEA2AH101E	CAP , ELECT	100UF 100V
C153,154	HCEA2AH101E	CAP , ELECT	100UF 100V
C167,168	HCEA2AH101E	CAP , ELECT	100UF 100V
C181,182	HCEA2AH101E	CAP , ELECT	100UF 100V
C397,398	HCET80VFHS103N	CAP , ELECT	10000UF 80V
D861	HVDGBJ1504	DIODE , BRIDGE	GBJ1504
JK11	CJJ5Q010W	TERMINAL , SPEAKER	
JK12	CJJ5Q001Z-C	TERMINAL , SPEAKER 8P	
JW01,02	CWE8202190VV	WIRE, ASS'Y (BLACK)	
L101-106	CLEY0R5KAK	COIL , SPEAKER	0.5UH
Q109	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q111	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q112	HVTKTD2061Y	T.R , DRIVE	KTD2061Y
Q113	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
Q125	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q127	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q128	HVTKTD2061Y	T.R , DRIVE	KTD2061Y
Q129	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
Q141	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q143	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q144	HVTKTD2061Y	T.R , DRIVE	KTD2061Y
Q145	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
Q157	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q159	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q160	HVTKTD2061Y	T.R , DRIVE	KTD2061Y
Q161	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
Q173	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q175	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q176	HVTKTD2061Y	T.R , DRIVE	KTD2061Y
Q177	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
Q189	HVTKTA1360Y	T.R , PRE DRIVE	KTA1360Y
Q191	HVTKTC3423Y	T.R , PRE DRIVE	KTC3423Y
Q192	HVTKTD2061Y	T.R , DRIVE	KTD2061Y

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
Q193	HVTKTB1369Y	T.R , DRIVE	KTB1369Y
RY11-13	HSL4A004ZU	RELAY	OSA-SS-212DM3
RY81	HSL4A011ZE	RELAY	OMI-SS-212L
R137	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R142	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
R181	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R186	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
R225	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R230	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
R269	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R274	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
R313	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R318	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
R357	CRF5EKR22HX2	RES , CEMENT	0.22OHM(*2), 5W
R362	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W
TH11	KRTP42T7D330B	THERMAL SENSOR	P42T7D330BW20

INPUT PCB ASS'Y

	COP11600B	PCB , INPUT ASS'Y	
	CIP11600B	PCB , INPUT AUTO ASS'Y	
	CUP11600Y	PCB , INPUT	
D758	HVDMTZJ6.8BT	DIODE , ZENER	6.8V 1/2W
D759	HVDMTZJ5.1BT	DIODE , ZENER	5.1V 1/2W
D760	HVDMTZJ6.8BT	DIODE , ZENER	6.8V 1/2W
D761	HVDMTZJ4.7BT	DIODE , ZENER	4.7V 1/2W
D762	HVDMTZJ3.3BT	DIODE , ZENER	3.3V 1/2W
L703	HLQ02C100KT	COIL , AXAIL	10UH
Q401,402	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q405	HVTKTD1302T	T.R	KTD1302
Q406,407	HVTKSC2316YT	T.R	KSC2316Y
Q408	HVTKTD1302T	T.R	KTD1302
Q409	HVTKRA107MT	T.R	KRA107M
Q410,411	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q412	HVTKRA107MT	T.R	KRA107M
Q413	HVTKRC107MT	T.R	KRC107M
BK32,33	CMC1A111	PLATE , EARTH	
BN93	CWB2B909130EN	WIRE ASS'Y	
CN71	KJP04GA19ZM	WAFER	MOLEX53014-0410
CN76	KJP05GA01ZM	WAFER	MOLEX 5267-05A
CN94	KJP08GA19ZM	WAFER	MOLEX53014-0810
CN95	KJP12GA19ZM	WAFER	MOLEX53014-1210
CN99	KJP09GA19ZM	WAFER	MOLEX53014-0910
IC51	HVITC9163AF	I.C , FUNCTION	TC9163AF
IC52	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC53	HVITC9164AF	I.C , FUNCTION	TC9164AF
IC54	HVITC9162AF	I.C , FUNCTION	TC9162AF
IC55	HVITC9459F	I.C , VOLUME	TC9459F
IC56	HVIM62446AFP	IC , VOLUME	M62446AFP
IC57	HVIAK5381VT	I.C , ADC	AK5381VT
IC58	HVIAK4358VQ	I.C , DAC(8CH)	AK4358VQ
IC59	HVICS493264-CL	I.C , DSP	CS493264-CL
IC60	HVITC74HCU04AFN	IC , INVERTER	TC74HCU04AFN
IC61-65	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC66	HVIAK4114VQ	IC , DIR	AK4114VQ
IC67-73	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
JK19	CJJ4M046Z	JACK , BOARD	

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
JK41-43	CJJ4P014W	JACK , IN/OUT	
JK44	CJJ4R019W	TERMINAL , IN/OUT	
JK45	CJJ4N068Z	JACK , BOARD	
JK46	HJS9L001Z	MODULE, OPTICAL	TOTX178
JK47,48	HJSTORX179	MODULE , OPTICAL	TORX179
JK49	CJJ4R038Z	JACK , BOARD	
L701,702	KLZ9H001Z	BEAD , CORE	
L704,705	KLZ9H001Z	BEAD , CORE	
WF78	KJP17GA117ZG	WAFER , CARD CABLE	GF102-17S-TS
WF79	KJP23GA117ZG	WAFER , CARD CABLE	GF102-23S-TS
WF80	KJP13GA115ZG	WAFER, CARD CABLE	GF120-13S-TS
X701	HOX12288E220TF	CRYSTAL(HC-49/S,ATS)	12.288MHZ 22PF

POWER PCB ASS'Y

	COP11601B	PCB , POWER ASS'Y	
	CIP11601B	PCB , POWER AUTO ASS'Y	
	CUP11601Z	PCB , POWER	
D860	KVD1N4003ST	DIODE	1N4003
D862	HVDMTZJ27BT	DIODE , ZENER	27V 1/2W
D863	HVDMTZJ9.1BT	DIODE , ZENER	9.1V 1/2W
D881-888	KVD1N4003ST	DIODE	1N4003
Q861	HVTKTA1271YT	T.R	KTA1271Y
Q862	HVTKRA107MT	T.R	KRA107M
IC74	HVINJM7805FA	I.C	NJM7805FA
IC75	HVINJM7815FA	I.C , REGULATOR	NJM7815FA
IC76	HVINJM7915FA	I,C , REGULATOR	NJM7915FA
BN75	CWB2B904230EN	WIRE ASS'Y	
BN76	CWB1C905180BM	WIRE ASS'Y	
CN74	KJP02GA19ZM	WAFER	MOLEX53014-0210
CN77	KJP08GA19ZM	WAFER	MOLEX53014-0810
C881	HCEA1CH102E	CAP , ELECT	1000UF 16V
C882,883	HCEA1VH222E	CAP , ELECT	2200UF 35V
JW81	CWE8202120RV	WIRE ASS'Y	
R891,892	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R895,896	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J

VIDEO PCB ASS'Y

	COP11616B	PCB , VIDEO ASS'Y	
	CIP11616B	PCB , VIDEO AUTO ASS'Y	
	CUP11616Z	PCB , VIDEO	
D750-752	HVD1SS133MT	DIODE	1SS133T-77
D753	HVDMTZJ6.8BT	DIODE , ZENER	6.8V 1/2W
D754-757	KVD1N4003ST	DIODE	1N4003
D763,764	HVDMTZJ6.8BT	DIODE , ZENER	6.8V 1/2W
F751,752	KJCF5S	HOLDER , FUSE	
Q403	HVTKRC107MT	T.R	KRC107M
Q404	HVTKSC2316YT	T.R	KSC2316Y
R752	C3A206	WIRE , COPPER	SN95/PB5 , 0.6
BK81	CMD1A387	BRACKET , PCB	
BN83	CWB4FA32500UP	WIRE ASS'Y	
CN75	KJP04GA19ZM	WAFER	MOLEX53014-0410
CN91	KJP02KA060ZY	WAFER	7.92MM(YUNHO)
CN92	KJP02GA89ZM	WAFER	MOLEX35328-02
CN93	KJP09GA19ZM	WAFER	MOLEX53014-0910
CN96	KJP02GA19ZM	WAFER	MOLEX53014-0210

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
C771	HCEA1EH331T	CAP , ELECT	330UF 25V
C774	HCEA1EH471E	CAP , ELECT	470UF 25V
C776	KCKDKS472ME	CAP , CERAMIC	0.0047UF/2.5KV
IC77	BVILA7952	I.C , VCR FUNC	LA7952
IC78	BVILA7952	I.C , VCR FUNC	LA7952
IC79	HVINJM2296M	I.C , VIDEO SW	NJM2296M
JK51	CJJ9S001Z	JACK , S-VIDEO (3P/H)	
JK53	CJJ4S010Z	JACK , BOARD	
JK54	CJJ4N043Z	JACK , BOARD	
OL71	KJJ7A021Z	AC OUT LET 230V 1P	A302D0060P(1P)
RY71	HSL1A008ZE	RELAY	SDT-S-112DMR
S702	KST1A010Z	SW , TACT	
T701	CLT5I003ZE	TRANS , SUB	
F751	KBA2C4000TLEZ	FUSE	
F752	KBA2C1000TLEZ	FUSE	
WF78	CWC1B2A17A260B	CARD, CABLE	
WF79	CWC1B2A23A260B	CARD , CABLE	
WF80	CWC1C4A13B080B	CABLE , CARD	