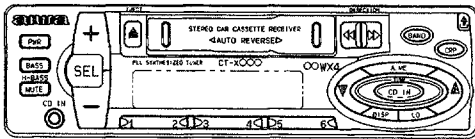


# aiwa



## CT-X408 CT-X418



STEREO CAR CASSETTE RECEIVER

• BASIC TAPE MECHANISM: CDS-36SCH-94

• TYPE: YU

SERVICES MANUAL

# SPECIFICATIONS

## RADIO SECTION

### (FM)

Frequency Range: 87.5 MHz–108 MHz  
(100-kHz steps)  
87.5 MHz–108 MHz  
(50-kHz steps)

Usable Sensitivity: 12.7 dBf

50 dB Quieting Sensitivity: 17.2 dBf

IF Rejection: 80 dB

Frequency Response: 30 Hz-15,000 Hz

S/N Ratio: 63 dB

Stereo Separation: 35 dB at 1 kHz

Alternate Channel Selectivity: 70 dB

Capture Ratio: 3 dB

### (AM)

Frequency Range: 530 kHz–1,710 kHz  
(10-kHz steps)  
522 kHz–1,620 kHz  
(9-kHz steps)

Usable Sensitivity: 30  $\mu$ V (30 dB)

## TAPE SECTION

Wow/Flutter: 0.1% (WRMS)

Tape Speed: 4.8 cm/sec. (1 $\frac{7}{8}$  ips)

S/N Ratio: 50 dB

Frequency Response: 40 Hz–14,000 Hz

Stereo Separation: 40 dB

FF/REW Time: 190 sec. (C-60)

## AUDIO SECTION

Max. Power Output: 35 W  $\times$  4 channels (CT-X408)  
40 W  $\times$  4 channels (CT-X418)

### CD IN input

Input sensitivity (load impedance)  
CD IN: 500mV (10 k  $\Omega$ )

### GENERAL

Power-Supply Voltage: 14.4 V (11 to 16 V allowable),  
DC, negative ground

Load Impedance: 4  $\Omega$

Tone Control: Bass  $\pm$  10 dB at 100 Hz  
Treble  $\pm$  10 dB at 10 kHz

Preamp Output Voltage (load impedance):  
2.2 V (10 k  $\Omega$ )

Installation size: 182(W)  $\times$  53(H)  $\times$  155(D) mm  
(7 $\frac{1}{4}$ (W)  $\times$  2 $\frac{1}{8}$ (H)  $\times$  6 $\frac{1}{8}$ (D) inches)

• Design and specifications are subject to change without notice.

## ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S7-0X8-134-101	IB<418>	
1	S7-0X8-136-301	IB<408>	
2	S2-050-654-091	NUT M5	
3	S3-410-005-003	PLATE WASHER 10-5-0.5	
4	S0-650-651-014	SCREW, 10-M5-10	
5	S1-850-031-520	SCREW, 5-15	
6	S3-309-005-203	SPRING WASHER M5	
7	S2-2X8-KT2-000	KEY, RELEASE	
8	S2-2X5-KT4-000	REAR MOUNTING BRACKET	
9	S0-9X6-KT1-000	PANEL CASE P.P	

# ELECTRICAL MAIN PARTS LIST

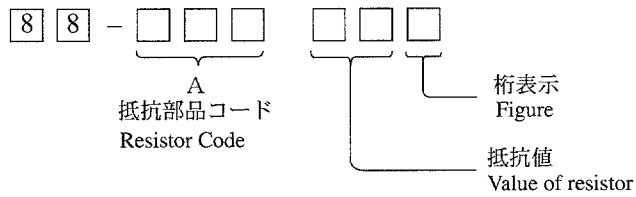
DESCRIPTIONで判断できない物は"REFERENCE NAME LIST"を参照してください。  
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C503	87-010-053-080		CAP,E 1-50V
	S3-320-622-564	IC,KIA6225S		C504	87-010-053-080		CAP,E 1-50V
	S3-375-373-E16	IC,LC75373E		C509	87-010-866-010		CAP,E 10UF-63V
	87-A20-876-010	IC,HA13158		C510	87-010-377-010		CAP,E 3300UF-16V
	S3-350-994-D84	IC,PST994D		C602	87-015-682-040		CAP,E 22-16V
	S3-32B-A09-T18	IC,BA09T		C603	87-010-248-040		CAP,E 220-10V
	87-A20-877-010	IC,TC9321F-015		C604	87-010-112-040		CAP,E 100-16V
	S3-339-297-F14	IC,TC9297F		C605	87-010-553-080		CAP,E 47-16V
				C606	87-010-555-010		CAP,E 100-10V
				C633	87-010-553-080		CAP,E 47-16V
TRANSISTOR				C702	87-010-555-010		CAP,E 100-10V
	87-026-464-080	TR,DTC114TS		C751	87-010-553-080		CAP,E 47-16V
	87-026-610-080	TR,KTC3198-Y		C752	87-015-698-080		CAP,E 4.7-50V
	S1-71H-003-E00	TR,KTA1267Y		C753	87-010-053-080		CAP,E 1-50V
	87-026-311-080	TR,DTB123YS		C831	87-010-053-080		CAP,E 1-50V
	S3-147-320-325	TR,KTC3203Y		C832	87-010-053-080		CAP,E 1-50V
	S3-1KT-A16-58Y	TR,KTA1658Y		CON231	S6-040-825-5NT		CONN,8P 2.5 PITCH WAFER
	S3-1KT-C43-69Y	TR,KTC4369Y		CON831	S6-051-5B6-8M1		CONN,15P DET
	87-026-572-080	TR,DTA114TS		D701	S3-051-012-400		LED,LAMP 3MM(RED)
	S3-1DT-C36-3TS	TR,DTC363TS		J101	S8-48K-T67-900		ANT, SOCKET
DIODE				J451	S6-1DA-E24-2V5		JACK,RCA 2P<418>
	87-020-465-080	DIODE,1SS133VR=35V		J451	S6-1DA-E44-2V5		JACK,RCA 4P<408>
	87-001-783-080	DIODE,1N4002		L101	87-003-143-080		COIL,4.7UH 2X4MM
	87-070-334-010	ZENER,MTZ10B		L701	87-003-149-080		COIL,47UH
	87-070-136-080	ZENER,5.1V		L702	87-003-383-010		COIL,1UH
	87-017-932-080	ZENER,MTZJ6.2B		L731	87-003-149-080		COIL,47UH
	S3-040-806-2UD	C-ZENER,DIODE (SMD TYPE)		SW901	S4-1SK-Y12-002		SW,SLIDE MINI 1P2T
	87-017-779-080	DIODE,1SS355		TUN101	S0-3FA-E34-001		TUNER PACK FAE340-A02
				X701	S3-772-000-013		X'TAL,7.2 MHZ
MAIN C.B				FRONT C.B			
C105	87-010-553-080	CAP,E 47-16V		CON801	S6-051-5B6-7M1		CONN,15P DET
C107	87-010-495-040	CAP,E 2.2-50V		LCD801	S3-580-08K-TKA		LCD,DISPLAY
C108	87-010-553-080	CAP,E 47-16V		PL801	S3-6X8-KT1-006		LAMP CAP BLUE
C109	87-010-053-080	CAP,E 1-50V		PL801	S8-790-653-602		PILOT LAMP 9V 60MA
C110	87-010-053-080	CAP,E 1-50V		PL802	S3-6X8-KT1-006		LAMP CAP BLUE
C115	87-010-053-080	CAP,E 1-50V		PL802	S8-790-653-602		PILOT LAMP 9V 60MA
C116	87-010-053-080	CAP,E 1-50V		PL803	S3-6X6-KT1-000		LAMP CAP GREEN
C118	87-010-553-080	CAP,E 47-16V		PL803	S8-790-653-602		PILOT LAMP 9V 60MA
C203	87-010-378-040	CAP,E 10-16V		PL804	S3-6X6-KT1-000		LAMP CAP GREEN
C204	87-010-378-040	CAP,E 10-16V		PL804	S8-790-653-602		PILOT LAMP 9V 60MA
C205	87-010-555-010	CAP,E 100-10V		PL806	S3-6X6-KT1-000		LAMP CAP GREEN
C206	87-010-555-010	CAP,E 100-10V		PL806	S8-790-653-602		PILOT LAMP 9V 60MA
C209	87-010-053-080	CAP,E 1-50V		PL807	S3-6X6-KT1-000		LAMP CAP GREEN
C210	87-010-053-080	CAP,E 1-50V		PL807	S8-790-653-602		PILOT LAMP 9V 60MA
C211	87-010-555-010	CAP,E 100-10V		PL808	S3-6X6-KT1-000		LAMP CAP GREEN
C231	87-010-553-080	CAP,E 47-16V		PL808	S8-790-653-602		PILOT LAMP 9V 60MA
C301	87-010-553-080	CAP,E 47-16V		SW801	S4-711-015-0K1		SW,TACT 2PINS
C303	87-010-053-080	CAP,E 1-50V		SW802	S4-711-015-0K1		SW,TACT 2PINS
C304	87-010-053-080	CAP,E 1-50V		SW803	S4-711-015-0K1		SW,TACT 2PINS
C305	87-010-378-040	CAP,E 10-16V		SW804	S4-711-015-0K1		SW,TACT 2PINS
C306	87-010-378-040	CAP,E 10-16V		SW805	S4-711-015-0K1		SW,TACT 2PINS
C311	87-010-378-040	CAP,E 10-16V		SW806	S4-711-015-0K1		SW,TACT 2PINS
C312	87-010-378-040	CAP,E 10-16V		SW807	S4-711-015-0K1		SW,TACT 2PINS
C317	87-010-378-040	CAP,E 10-16V		SW808	S4-711-015-0K1		SW,TACT 2PINS
C318	87-010-378-040	CAP,E 10-16V		SW809	S4-711-015-0K1		SW,TACT 2PINS
C319	87-010-053-080	CAP,E 1-50V		SW810	S4-711-0S5-0K1		SW,SMD TACT 2PIN
C320	87-010-053-080	CAP,E 1-50V		SW811	S4-711-0S5-0K1		SW,SMD TACT 2PIN
C321	87-010-053-080	CAP,E 1-50V		SW812	S4-711-015-0K1		SW,TACT 2PINS
C322	87-010-053-080	CAP,E 1-50V		SW813	S4-711-0S5-0K1		SW,SMD TACT 2PIN
C324	87-010-553-080	CAP,E 47-16V		SW814	S4-711-015-0K1		SW,TACT 2PINS
C455	87-010-053-080	CAP,E 1-50V<408>		SW815	S4-711-015-0K1		SW,TACT 2PINS
C456	87-010-053-080	CAP,E 1-50V<408>		SW816	S4-711-015-0K1		SW,TACT 2PINS
C457	87-010-053-080	CAP,E 1-50V		SW817	S4-711-015-0K1		SW,TACT 2PINS
C458	87-010-053-080	CAP,E 1-50V		SW818	S4-711-015-0K1		SW,TACT 2PINS
C501	87-010-053-080	CAP,E 1-50V		SW819	S4-711-015-0K1		SW,TACT 2PINS
C502	87-010-053-080	CAP,E 1-50V		SW820	S4-711-015-0K1		SW,TACT 2PINS

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
JACK C.B			
J801	S6-1MO-JB3-2B0	JACK,AUX	
HEAD C.B			
SW C.B			

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち  
Chip Resistor Part Coding



チップ抵抗  
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形 / Form	L	W		t
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



ECB

KTC3198  
KTC3203



ECB

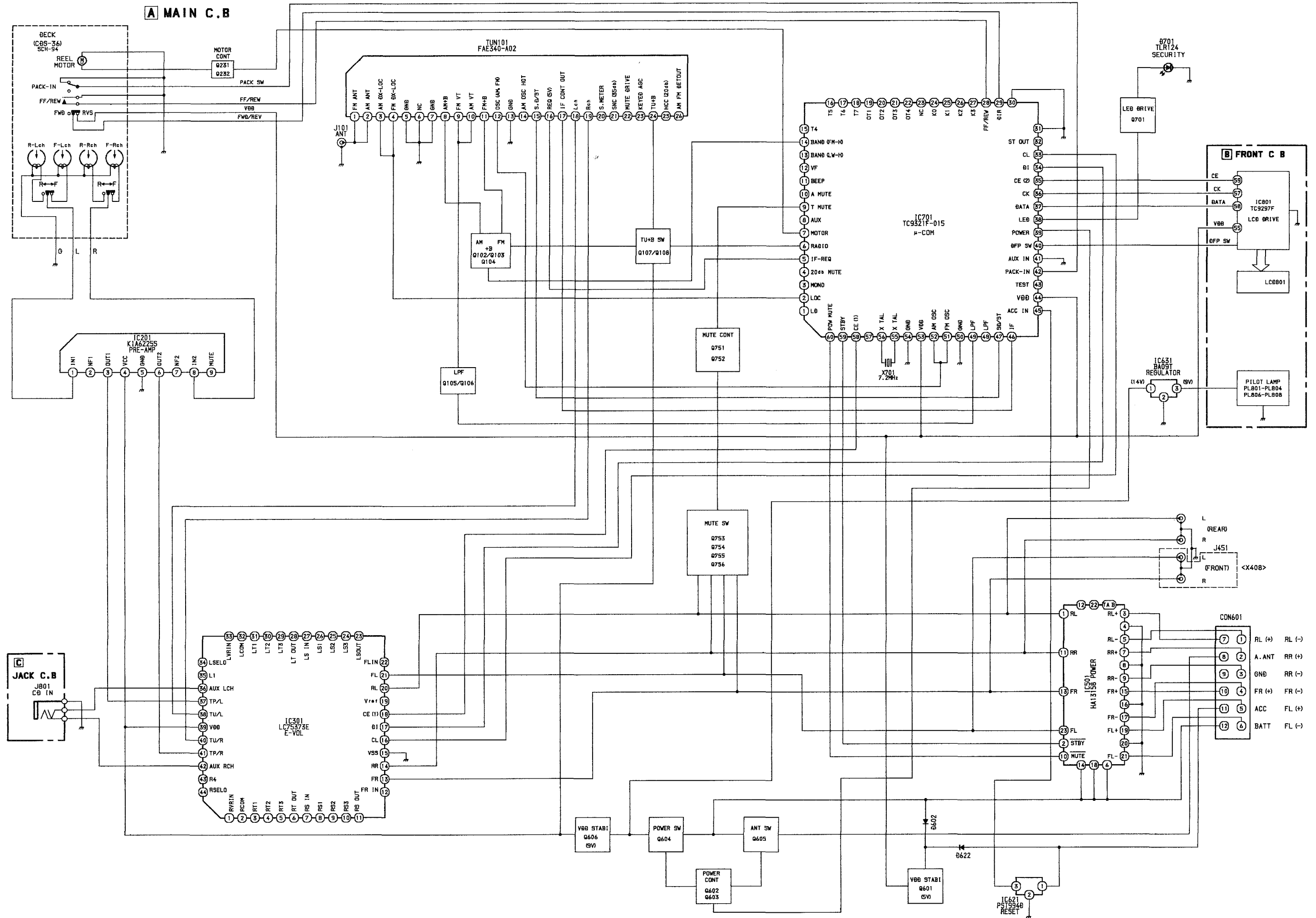
DTA114TS  
DTB123YS  
DTC114TS  
DTC363TS  
KTA1267



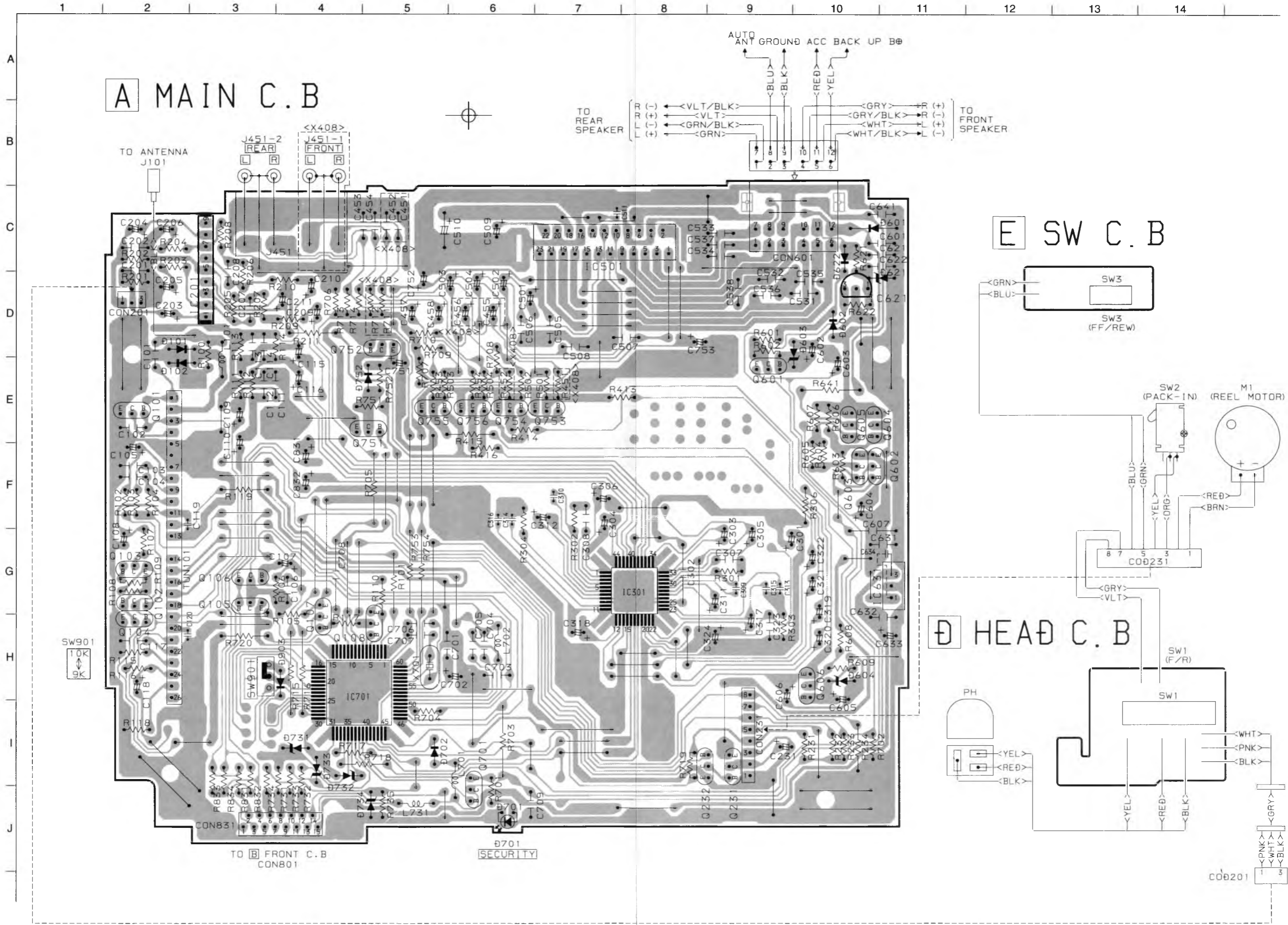
BCE

KTA1658  
KTC4369

BLOCK DIAGRAM



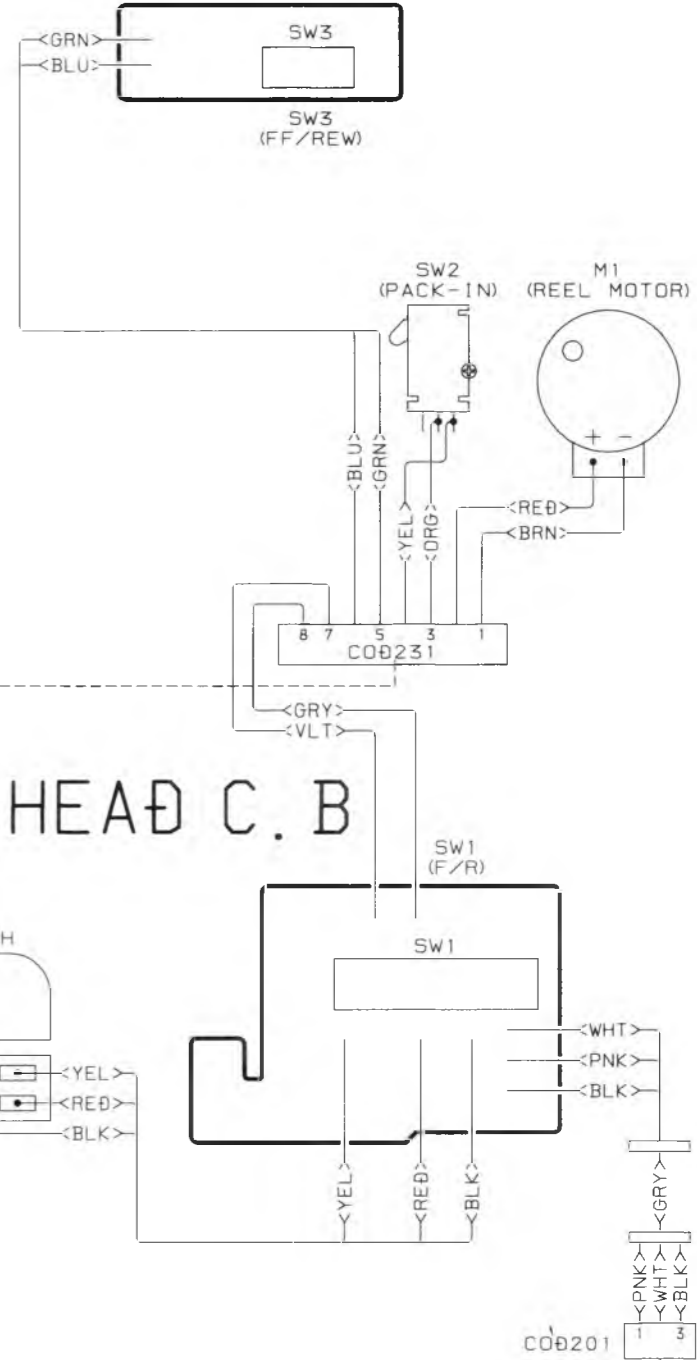
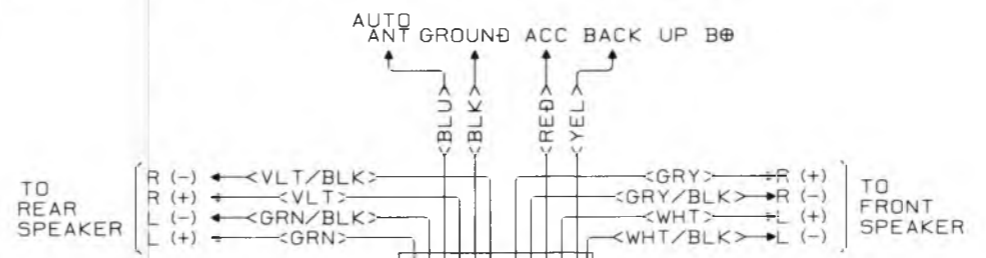
WIRING-1 (MAIN SECTION)



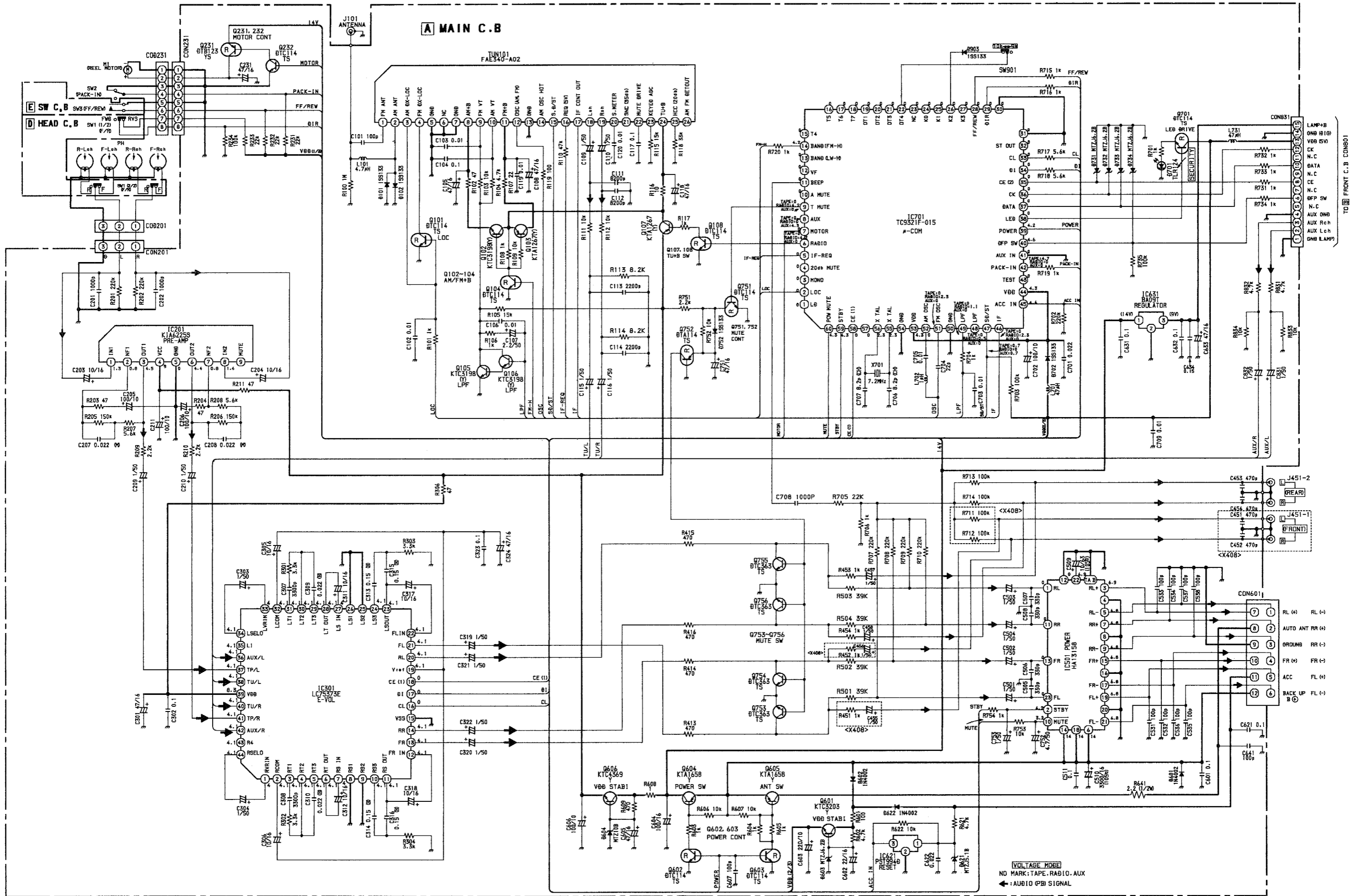
A MAIN C.B

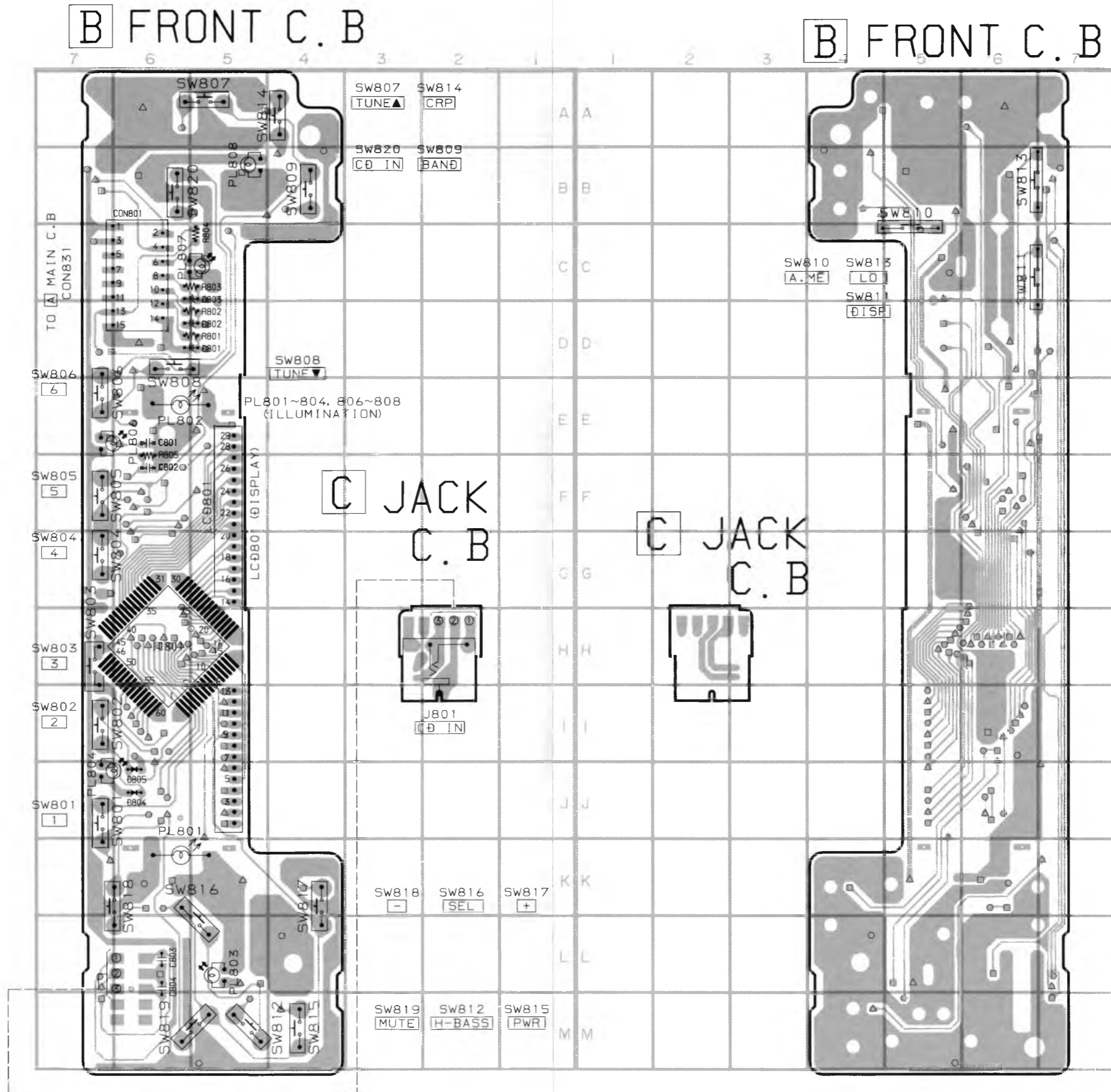
E SW C.B

D HEAD C.B

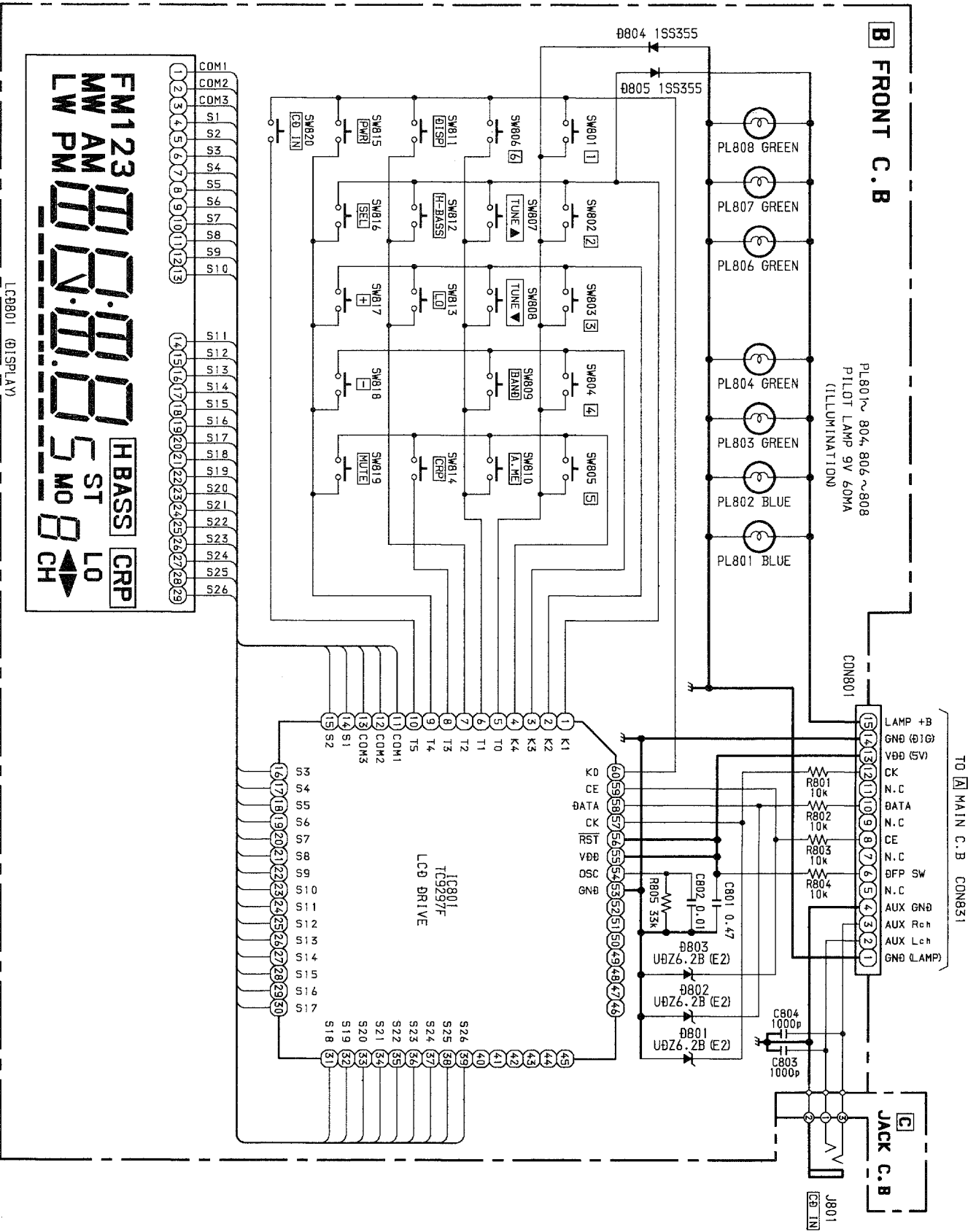


# SCHEMATIC DIAGRAM-1 (MAIN SECTION)









# IC DESCRIPTION

## IC, TC9297F

Pin No.	Pin Name	I/O	Description
1 ~ 4	K1 ~ K4	I	Key scan inputs. A maximum of 6x5=30 key data can be input with a matrix of key scan outputs T0 ~ T5. When "H" is applied to this pin, scanning of keys will start. These pins incorporate pull-down resistors.
5 ~ 10	T0 ~ T5	O	Key scan timing outputs. Since a load resistor R <sub>ON</sub> is built into the N-ch to form a key matrix, a diode is not necessary. In normal operation, these pins output "H", and when "H" is applied to key scan inputs K0 ~ K4, key scanning will start.
11	COM1	O	LCD common signal outputs. When 1/2 duty is set, matrixing of COM1, 2 and S0 ~ S39 allows the display of up to 80 segments. When 1/3 duty is set, matrixing of COM1-3 and S1 ~ S39 allows display of up to 117 segments. In the 1/3 duty mode, the S0 pin is used as a COM3 pin.
12	COM2	O	
13	S0/COM3	O	
14 ~ 48	SI ~ S35	O	LCD segment signal outputs. When 1/2 duty is set, matrixing of COM1, 2 and S0 ~ S39 allows display of up to 80 segments. When 1/3 duty is set, matrixing of COM1-3 and SI ~ S39 allows display of up to 117 segments. S36 ~ S39 are commonly used for LED drivers. The LED driver outputs become N-ch open drain outputs, and the LEDs can be directly indicated since they are driven by high current.
49 ~ 52	S36/OT3 ~ S39/OT0	O	
53	GND	—	GND
54	OSC	—	C and R which are attached externally form an oscillator. The oscillation frequency is shown by the following formula: $f_{osc} \doteq 1.5/(C \cdot R)[\text{Hz}]$ For example, when C = 0.01 $\mu$ F and R = 30 k $\Omega$ , $f_{osc} \doteq 5 \text{ kHz}$ .
55	VDD	—	Power supply input. Normally, a voltage VRST ~ 5.5 V is applied. This pin is provided with a power-on reset function: the system reset will function when power is turned on or VDD is less than 3 V (standard).
56	$\overline{\text{RST}}$	I	Device system reset signal input. When $\overline{\text{RST}}$ input is "L", the oscillator will stop, all internal data will be reset and the LCD output pins and key scan output pins will be fixed at "H". For normal operation, connect this pin to VDD, since the device incorporates a power-on reset circuit.
57	CK	I	Serial interface pins. The device communicates the display data, key input data and the data which controls these with the controller. When the CE pin is "L", data will not be communicated. When it goes "H", data will be communicated between the DATA pin and controller, synchronized with the clock signal input to the CK input pin. All these pins have Schmitt input circuits.
58	DATA	I/O	
59	CE	I	
60	K0	I	Key scan input. A maximum of 6x5=30 key data can be input with a matrix of key scan outputs T0 ~ T5. When "H" is applied to this pin, scanning of keys will start. This pin incorporates a pull-down resistor.

## IC, TC9321F

Pin No.	Pin Name	I/O	Description
1 ~ 4	P6-1 ~ P6-4	I/O	4-bit x 2 (P6-1 ~ P7-4) and 2-bit (P8-1 ~ P8-2) I/O ports. These ports can designate inputs and outputs for every bit: the designation is executed by the contents of the internal ports called PORT-6 - PORT-8 I/O CONTROL. (See notes 1-3)
5 ~ 8	P7-1 ~ P7-4	I/O	
9 ~ 10	P8-1 ~ P8-2	I/O	
11 ~ 18	T0 ~ T7	O	4-bit (T0 ~ T3) and 4-bit (T4 ~ T7) output port. These pins are usually used as the key return timing output signals of key matrix. (See notes 2 and 3)
19 ~ 22	OT1 ~ OT4	O	4-bit output port. (See notes 2 and 3)
23	N. C	—	Since this pin is not connected to any internal chip, it can be open or connected to GND or VDD. With TC93P21F OTP product, this pin is a Vp-p terminal. Therefore, if it is connected to VDD, TC93P21F can be used as it is.
24 ~ 27	K0 ~ K3	I	4-bit input port for key matrix input. When a key command which designates this port is executed for the operand, the data of these pins will be written to the RAM. All pins have pull-down resistors. The T0 ~ T7 output port is usually used for the key return timing signal outputs
28 ~ 31	P4-4 ~ P4-1	I/O	4-bit (P4-1 ~ P4-4) I/O port. This port can designate inputs and outputs for every bit: the designation is executed by the contents of the internal port called PORT-4 I/O CONTROL. (See notes 1 ~ 3)
32	P3-3/ADIN2/DAOUT	I/O	3-bit I/O port. This port can designate inputs and outputs for every bit: the designation is executed by the contents of the internal port called PORT-3 I/O CONTROL. These pins are also used as the analog inputs of the built-in 6-bit, 2-channel A/D converter as well as the analog output of the 1-channel D/A converter. Switching between A/D and D/A converter inputs/output is controlled by the contents of the ADON, DAON and ADSEL bits. The built-in A/D converter uses a sequential comparison method with program: P3-1 is a reference voltage input, P3-2 is an analog comparison voltage input, and P3-3 is an analog comparison voltage input or analog voltage output. Note: The ladder resistor which generates an internal D/A reference voltage is commonly used for A/D and D/A converters. When the A/D and D/A converters are used simultaneously, the DAON bit is set to "0" and the D/A output is set to high impedance during A/D conversion. Therefore, the voltage must be maintained by a capacitor, etc. (See notes 1 ~ 3)
33	P3-2/ADIN1	I	
34	P3-1/DC-REF	I	
35	P2-4/STB	O	4-bit I/O port. This port can designate inputs and outputs for every bit: the designation is executed by the contents of the internal port called PORT-2 I/O CONTROL. This port is commonly used with serial interface (SIO). Switching of SIO is controlled by the content of the SIO ON bit. If this serial interface is used, the peripheral optional ICs can be firmly controlled when the SIO command is executed. The serial transfer format can be selected by program from two modes: $\overline{\text{NCD}}/\text{NCD}$ . When the NCD mode is selected, the P2-4/STB and P2-1/S1 pins can be used as the P2-4 and P2-1 I/O ports. (See notes 1 ~ 3)
36	P2-3/CK	O	
37	P2-2/SO	O	
38	P2-1/S1	I	
39 ~ 42	P1-4 ~ P1-1	I/O	4-bit (P1-1 ~ P1-4) I/O port. This port can designate inputs and outputs for every bit: the designation is executed by the contents of the internal port called PORT-1 I/O CONTROL. (See notes 1 ~ 3)

Pin No.	Pin Name	I/O	Description
43	TEST	I	Test mode control input. The test mode is entered with "H" input and normal operation is entered with "L" input or no-connection status. (A pull-down resistor is built in.)
44	$\overline{\text{INI}}$	I	Device system reset signal input. The reset signal is supplied while $\overline{\text{INI}}$ is "L". When it goes "H", the program will start from address 0. Since the system is usually reset when 0 → 3.5V is supplied to VDD (power on reset), this pin is fixed at "H". Note: After the system is reset, the I/O port is set to the input mode, but the output port is uncertain, so it must be initialized by program as required.
45	$\overline{\text{INH}}$	I	$\overline{\text{INH}}$ port input. Normally, this is used as the radio mode select signal input or battery detection input signal. When the CKSTP command is used during programming, and executed while the $\overline{\text{INH}}$ pin is "L", the internal clock generator and CPU will stop, and the device can be set to the memory backup status with low consumption current (10 $\mu$ A or less). In this status, all output pins are automatically set to "L". Note: The CKSTP command is valid when the $\overline{\text{INH}}$ pin is "L". If it is executed when $\overline{\text{INH}}$ is "H", it will operate the same as the NOOP command. Note: In the radio off mode or backup mode, all the reference internal port (4 bits) must be set to "1" (PLL off mode).
46	IFIN2/IN2	I	IF signal inputs of IF counter, which counts the IF signals in the FM and AM bands and detects auto-stop. The input frequency range is 0.1-20 MHz (0.3Vp-p min.). There is a built-in input amp that operates with C coupling and small amplitude. These pins can be used as the input ports, and this selection is executed by the content of the IN CONTROL port. Note: When the IF counter is used, the inputs for which all reference internal ports (4 bits) are set to "1", or not selected by the IFIN1 bit (input select bit), are pulled down. (See note 1)
47	IFIN1/IN1	I	
48, 49	DO2, DO1	O	PLL phase comparison tri-state outputs. "H" is output when the division output of the programmable counter is higher than the reference frequency, "L" is output when it is lower, and high impedance is set when they coincide. DO1 and DO2 are connected in parallel.
50	GND2	—	Ground of analog circuits of PLL, IF counter and AD/DA converters
51	FMIN	I	Programmable counter input in the FM band. The PLL command switches between the 1/2 + pulse swallow method (FMH mode) and pulse swallow method (FML mode). With the pulse swallow method, the 30-185MHz (0.5Vp-p min.) local oscillation output (VCO output) is input when the 30-140MHz (0.3Vp-p min.), 1/2 prescaler input is given. An input amp is built in, and C-coupling, small-amplitude operation is performed. Note: If the all the reference internal ports (4 bits) are set to "1", or LF mode or HF mode is set, the input is pulled down.

Pin No.	Pin Name	I/O	Description
52	AMIN	I	<p>Programmable counter input in the AM band. The PLL command switches between the direct division method (LF mode) and pulse swallow method (HF mode). With the direct division method, the 0.5-20MHz (0.3Vp-p min.) local oscillation output (VCO output) is input; with the pulse swallow method, the 1-40MHz (0.3Vp-p min.) local oscillation output (VCO output) is input. An input amp is built in, and C-coupling, small-amplitude operation is performed.</p> <p>Note: If the all the reference internal ports (4 bits) are set to "1", or FMH mode or FML mode is set, the input is pulled down.</p>
53	VDD	—	<p>Power input. When PLL is operating, <math>5\text{ V} \pm 10\%</math> is applied. The voltage can be dropped to 2 V in the backup status (when the CKSTP command is being executed). If the voltage drops below 3.5 V when the CPU is operating, the CPU will stop to prevent malfunctions. When the voltage rises to more than 3.5 V, the CPU will restart. This status (Wait mode) can be detected by the Wait F/F bit, so the CPU should be initialized and the clock corrected by program as required.</p> <p>When the voltage <math>0 \rightarrow 3.5\text{ V}</math> is applied to this pin, the system reset signal will be supplied to the device, and the program will start from address 0.</p> <p>Note: Set the rise time of the device supply voltage between 10-100 ms because of the power on reset operation. (See note 1)</p>
54	GND1	—	Ground of the CPU and logic block
55, 56	XT, $\overline{\text{XT}}$		For the connection of a 7.2MHz crystal oscillator. Adjust the oscillation frequency (7.2MHz), observing the LCD segment waveforms. The oscillator stops automatically when the CKSTP command is executed.
57 ~ 60	P5-1 ~ P5-4	I/O	4-bit (P5-1 ~ P5-4) I/O port. This port can designate inputs and outputs for every bit: the designation is executed by the contents of the internal port called PORT-5 I/O CONTROL. (See notes 1-3)

Note 1: When a reset signal ( $\text{VDD} = 0 \rightarrow 3.5\text{V}$  and  $\overline{\text{INI}} = \text{"L"} \rightarrow \text{"H"}$ ) is input to the device, the I/O ports will be set to inputs, the common pins of I/O ports and AD/DA converters will be set to inputs of I/O ports, the common pins of I/O ports and serial I/O ports will be set to inputs of I/O ports, and the common pins of IF counter inputs and I/O ports will be set to IF counter inputs.

Note 2: When the CKSTP command is executed, all outputs of the output ports and I/O ports will be set to "L".

Note 3: When the device is reset, the contents of output ports and internal ports are uncertain, so the device should be initialized by program as required.

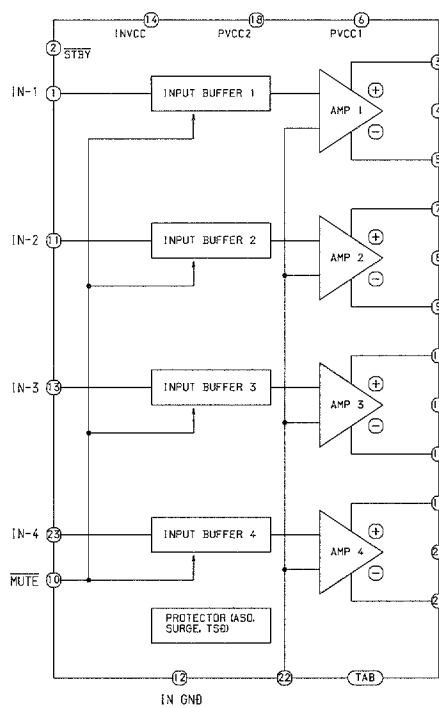
**IC, LC75383E**

Pin No.	Pin Name	I/O	Description
1	RVRIN	I	4dB VR input. Must be driven with low impedance.
2	RCOM	—	1dB VR common pin
3~5	RT1~RT3	—	For the connection of capacitors that compensate for bass and treble in the tone control circuits. A high-frequency compensation capacitor must be connected between T1 and T2. A low-frequency compensation capacitor must be connected between T2 and T3.
6	RT OUT	O	Tone control output
7	RS IN	I	Super bass input. Must be driven with low impedance.
8~10	RS1~RS3	—	For the connection of super bass compensation capacitors
11	RS OUT	O	Super bass output
12	FR IN	I	Fader input. Must be driven with low impedance.
13	FR	O	Fader outputs. The front and rear sides can be faded independently.
14	RR	O	
15	VSS	—	Ground
16	CL	I	Serial data and clock inputs for control
17	DI	I	
18	CE	—	Chip enable. Data is written to the internal latch when the chip enable signal goes "L" from "H", and each analog switch is activated. Data transfer is enabled at "H".
19	Vref	—	Generates a 1/2VDD power source. A capacitor must be connected between Vref and VSS as a troubleshooting against power ripples.
20	RL	O	Fader outputs. The front and rear sides can be faded independently.
21	FL	O	
22	FLIN	I	Fader input. Must be driven with low impedance.
23	LSOUT	O	Super bass output
24~26	LS3~LS1	—	For the connection of super bass compensation capacitors
27	LS IN	I	Super bass input. Must be driven with low impedance.
28	LT OUT	O	Tone control output
29~31	LT3~LT1	—	For the connection of capacitors that compensate for bass and treble in the tone control circuit. A high-frequency compensation capacitor must be connected between T1 and T2. A low-frequency compensation capacitor must be connected between T2 and T3.
32	LCOM	—	1dB VR common pin
33	LVRIN	I	4dB VR input. Must be driven with low impedance.
34	LSELO	O	Input selector output
35	L1	I	Signal inputs
36	AUX/L	I	
37	TP/L	I	
38	TU/L	I	
39	VDD	—	Power supply
40	TU/R	I	Signal inputs
41	TP/R	I	
42	AUX/R	I	

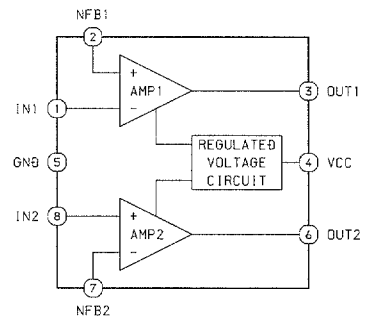
Pin No.	Pin Name	I/O	Description
43	R4	I	Signal input
44	RSELO	O	Input selector outputs

## IC BLOCK DIAGRAMS

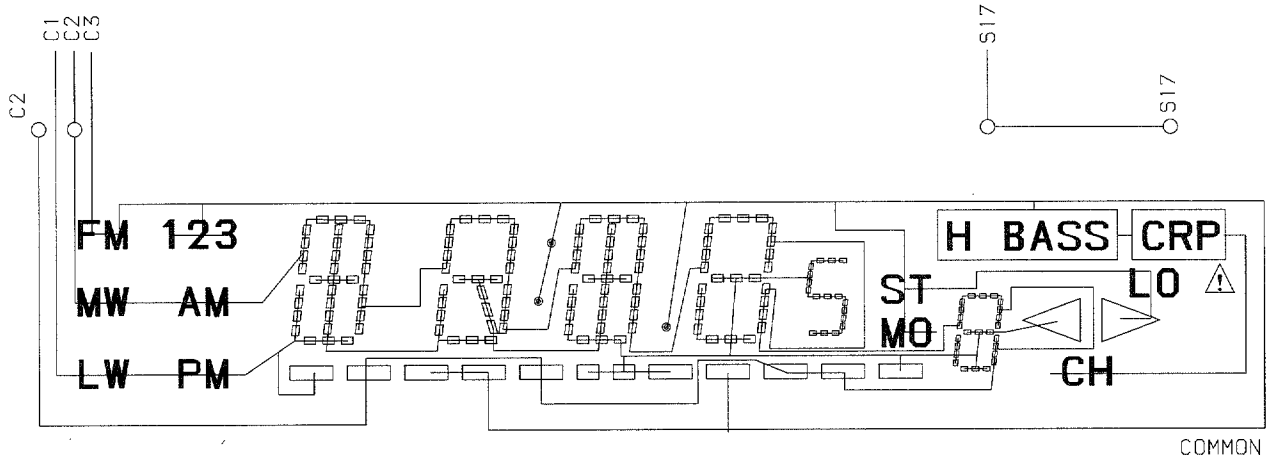
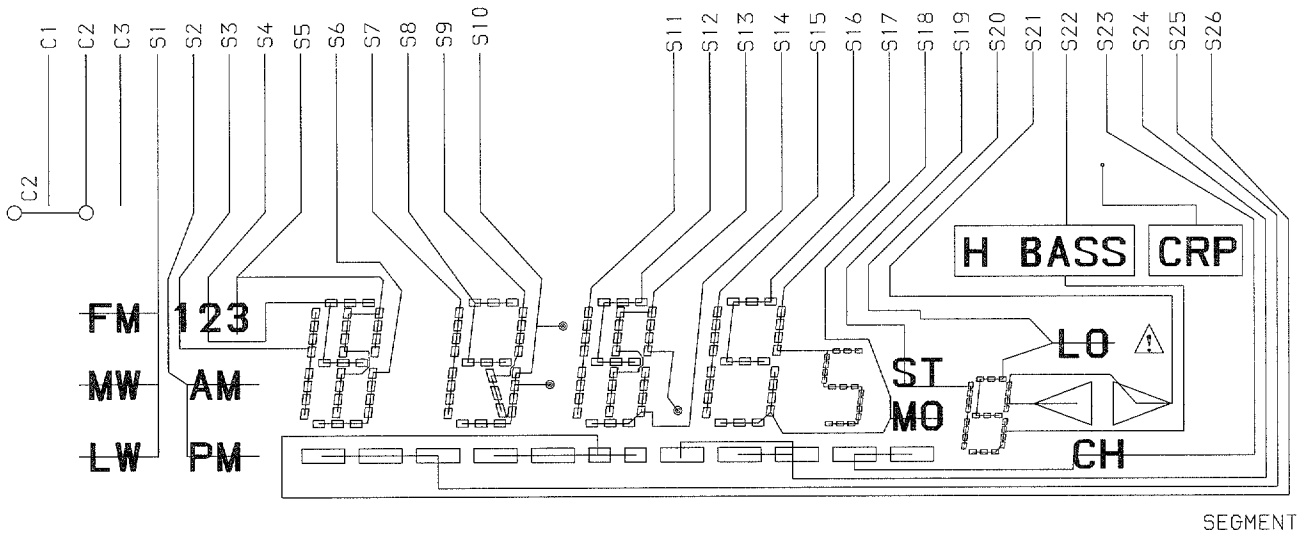
IC, HA13158



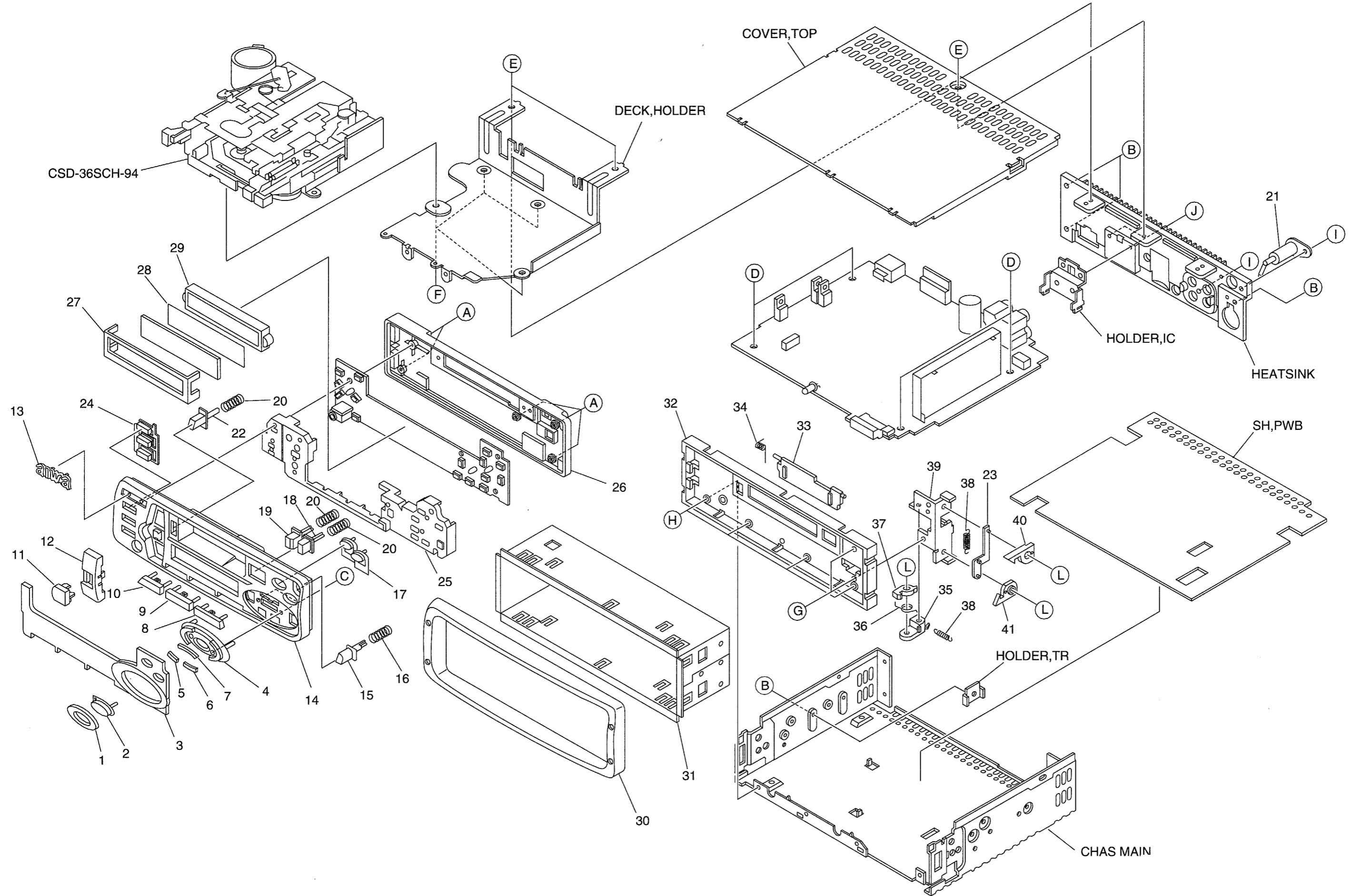
IC, KIA6225S



# LCD DISPLAY





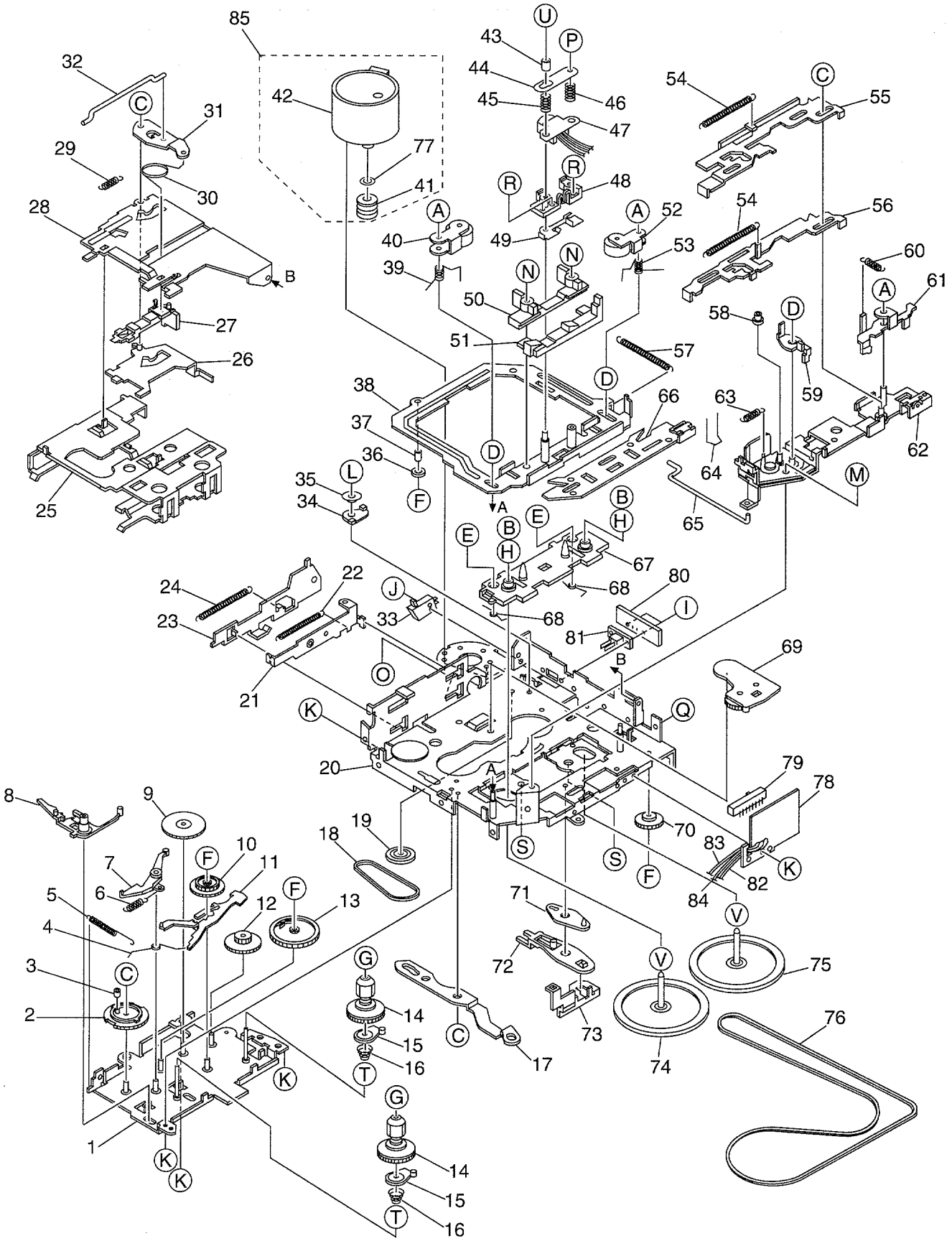


# MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S2-9X8-KT5-001		RING, TUNE HRABS	26	S0-2X8-KT1-000		REAR PANEL HRABS
2	S5-8X8-KT7-001		BTN-HRABS OVAL CD	27	S5-8X8-KT1-001		CASE LCD
3	S6-0X8-KT1-001		LCD WIN-PC CLEAR SPY	28	S9-0X8-KT2-000		LENS, LCD
4	88-KTA-012-010		BTN-HRABS U/D	29	S6-8X8-KT1-000		LENS, HOLDER
5	88-KTD-006-010		BTN-HRABS DISP	30	S1-9X8-KT1-001		TRIM HRABS DARK
6	88-KT3-004-010		BTN-HRABS LO	31	S2-2X8-KT1-000		HOLDER HALF
7	88-KTA-013-010		BTN-HRABS CAP, AME	32	S3-0X8-KT1-000		BASE HRABS
8	S5-8X8-KT6-001		BTN-HRABS PRESET 5/6	33	S1-1X8-KT1-003		DOOR, TAPE
9	S5-8X8-KT5-001		BTN-HRABS PRESET 3/4	34	S7-1C8-181-000		SPR, DOOR
10	S5-8X8-KT4-001		BTN-HRABS PRESET 1/2	35	S2-9X8-KT2-000		STOPPER DFP A
11	S5-8X8-KT3-001		BTN-HRABS SEL	36	S7-1X8-KT1-000		SPR-T, P-UP
12	S5-8X8-KT2-001		BTN-HRABS +/-	37	S2-9X8-KT1-000		STOPPER DFP
13	87-054-089-010		BADGE (AIWA LOGO)	38	S7-7X6-KT3-000		SPR, E P-UP SWPB
14	S0-0X8-KT1-001		F. PANEL-HRABS	39	S2-8X8-KT4-000		BASE LOCK
15	S5-8X8-KTD-001		BTN-HRABS DETA	40	S2-9X8-KT3-000		JOINT DFP L
16	S7-7X6-KT1-000		SPR, DETACHABLE SUS 304 WPB	41	S2-9X8-KT4-000		JOINT DFP R
17	S5-8X8-KTC-001		BTN-HRABS BAND/CR	A	87-067-643-010		SCREW, 2-10 B/T
18	S5-8X8-KTF-001		BTN, FF	B	87-255-073-410		SCREW, M2.6-6 B/M
19	S5-8X8-KTE-001		BTN-HRABS REW	C	87-353-034-210		SCREW, 2-5 P/T
20	S7-1X5-KT5-100		SPR, BUTTON	D	87-253-072-410		SCREW, M2.6-5 PH
21	S8-48K-T67-900		ANT, SOCKET	E	87-745-094-410		SCREW, 3-6 B/T/B
22	S5-8X7-KTF-002		BTN-EJECT (LONG)	F	87-265-071-410		SPECIAL SCREW FH M2.6-4
23	S5-9X8-KT1-000		JOINT LOCK	G	87-253-034-410		SCREW, M2-5 B/M
24	S9-58X-8KT-100		BTN-PWR/BAS	H	S2-8X8-KT3-000		SCREW, 2.6M-4 THIN
25	S9-0X8-KT1-000		LENS, MAIN	I	87-741-096-410		SCREW, 3-10 B/T
				J	87-251-096-410		SCREW, 3-10 B/M

# TAPE MECHANISM EXPLODED VIEW 1/1



# TAPE MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	SX-003-610-090		REEL BASE ASSY	56	S1-003-610-530		LEVER REW(AT)
2	S0-036-201-000		GEAR SELECTOR	57	S1-003-640-060		HEAD PLATE SPG
3	S1-003-630-180		COLLAR(SELECTOR GEAR)	58	S1-003-830-120		ROLLER PROGRAM
4	S1-003-640-150		DASH SPG	59	S1-003-610-230		LEVER,CHANGE(B)
5	S1-003-840-140		RATCHET SPG	60	S1-003-640-020		LEVER SPG LOCK
6	S1-003-640-030		ARM SPG GEAR LOCK	61	S1-003-610-290		LOCK ARM(A)
7	S1-003-820-140		ARM GEAR LOCK	62	SX-003-660-770		LEVER BRACKET ASSY(D)
8	S1-003-620-070		RATCHET	63	S1-003-640-080		PROGRAM ARM SPG
9	S1-003-620-030		GEAR REDUCTION(B)	64	S1-003-640-170		CHANGING ARM SPG
10	S1-003-620-010		GEAR, IDLE	65	S1-003-850-010		SELECTOR LINK(B)
11	S1-003-620-090		ARM SENSOR	66	SX-003-610-100		FR CHANGING ARM ASSY
12	S1-003-620-040		GEAR REDUCTION(A)	67	SX-013-820-060		CM BRACKET ASSY(X)
13	S1-003-620-140		GEAR DETECTOR	68	S1-003-640-180		EARTH SPG(R)
14	SX-003-660-810		REEL SPINDLE ASSY(D)	69	SX-003-620-150		TU GEAR ARM ASSY
15	SX-013-620-010		DETECTOR CAM ASSY	70	S1-005-820-215		PULLEY IDLE(A)
16	S1-013-840-010		BACK TENSION SPG	71	SX-003-610-250		FR ARM(A) ASSY
17	S1-003-610-160		LEVER CONVERSION	72	S1-003-620-080		ARM, FF
18	S1-003-650-180		BELT SUB(C)	73	S1-003-610-260		ARM,FR(B)
19	S1-003-620-050		GEAR PULLEY	74	S1-003-660-101		FLYWHEEL ASSY(BR)
20	SX-003-610-010		MAIN CHASSIS ASSY	75	S0-036-601-000		FLYWHEEL ASSY(BF)
21	S1-003-610-060		CAM,EJECT	76	S1-003-650-040		BELT MAIN
22	S1-003-640-050		EJECT CAM SPG	77	S1-001-250-170		MYLAR WASHER
23	S1-003-610-070		LEVER EJECT	78	S1-003-670-010		SW, PWB
24	S1-003-640-040		EJECT LEVER SPG	79	S1-003-670-070		SW, SLIDE
25	S1-013-810-100		HOLDER, CASS(X)	80	S1-013-870-020		MUTE PWB
26	SX-003-610-190		EJECT CAM LOCK ASSY	81	S1-013-870-870		SW,MUTE
27	S1-005-820-040		TAPE HOOKER	82	S1-003-670-020		WIRE A 60MM(BLK)
28	S1-013-810-020		HANGER CASS(X)	83	S1-003-670-040		WIRE C 55MM(YEL)
29	S1-003-640-070		EJECT CAM LOCK SPG	84	S1-003-670-030		WIRE B 60MM(RED)
30	S1-003-640-230		CENTER PLATE SPG(B)	85	SX-003-660-750		MOTOR ASSY
31	S1-003-610-180		PLATE CENTER	A	S2-171-150-401		E-RING 1.5
32	S1-003-650-060		LINK RETURN	B	S2-171-160-329		E-RING 1.6-3.2
33	S1-003-670-340		SW, POWER	C	S2-171-200-501		E-RING 2.0
34	S1-003-820-340		ARM MUTE(N)	D	S2-171-250-601		E-RING 2.5
35	S1-003-830-150		COLLAR ARM MUTE	E	S2-133-170-30C		SCREW, M1.7-3
36	S1-003-630-020		ROLLER HP(A)	F	S2-181-200-30D		PSW-S 1.2-3.0-0.25
37	S1-003-630-240		ROLLER HP(B)	G	S1-003-650-230		PSW-S(REEL) 1.5-3.2-0.2
38	SX-003-660-820		HEAD PLATE ASSY(S)	H	S2-182-100-32D		PSW 2.1-3.2-0.25
39	S1-003-640-130		PINCH ARM SPG(R)	I	S2-133-170-40C		SCREW, M1.7-4
40	S1-013-860-020		PINCH ARM(R) ASSY	J	S2-133-170-60C		SCREW, M1.7-6
41	S1-003-630-420		MOTOR PULLEY(MBC)	K	S2-138-200-30C		SCREW, M2-3
42	S1-003-670-570		MOTOR	L	S2-136-200-40F		SCREW, FLAT M2-4
43	S1-003-630-040		ROLLER FF	M	S2-133-200-40C		SCREW, PLAIN M2-4
44	S1-003-610-150		SPG SUPPORT PLATE	N	S2-103-200-70C		SCREW, PLAIN M2-7
45	S1-003-640-110		ADJUSTER ARM SPG(B)	O	S2-103-200-25C		SCREW, PLAIN M2-2.5
46	S0-036-401-000		ADJUSTER ARM SPG(A)	P	S2-101-200-40C		SCREW, PLAIN M2-4
47	S1-003-670-840		HEAD	Q	S2-101-200-30F		SCREW, FLAT M2-3
48	S1-013-820-053		ARM ADJUSTER(B)	R	S1-013-850-020		SCREW, AZIMUTH PLAIN M2-5
49	S1-013-810-060		ADJUSTER SHIM(X)	S	S1-003-650-050		SCREW, HOOK EJECT M2-5
50	S1-003-820-180		GUIDE TAPE	T	S1-013-650-010		LMW(REW) 2.1-3.5-0.05
51	S1-013-820-040		LINK ADJUSTER(X)	U	S1-003-650-240		PSW B(REEL) 1.5-3.2-0.25
52	S1-013-860-030		PINCH ARM(L) ASSY	V	S1-003-650-280		LMW(PLY) 2.1-5.5-0.05
53	S1-003-640-120		PINCH ARM SPG(F)				
54	S1-003-640-010		LEVER SPG FF/REW				
55	S1-003-610-510		LEVER FF(AT)				

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