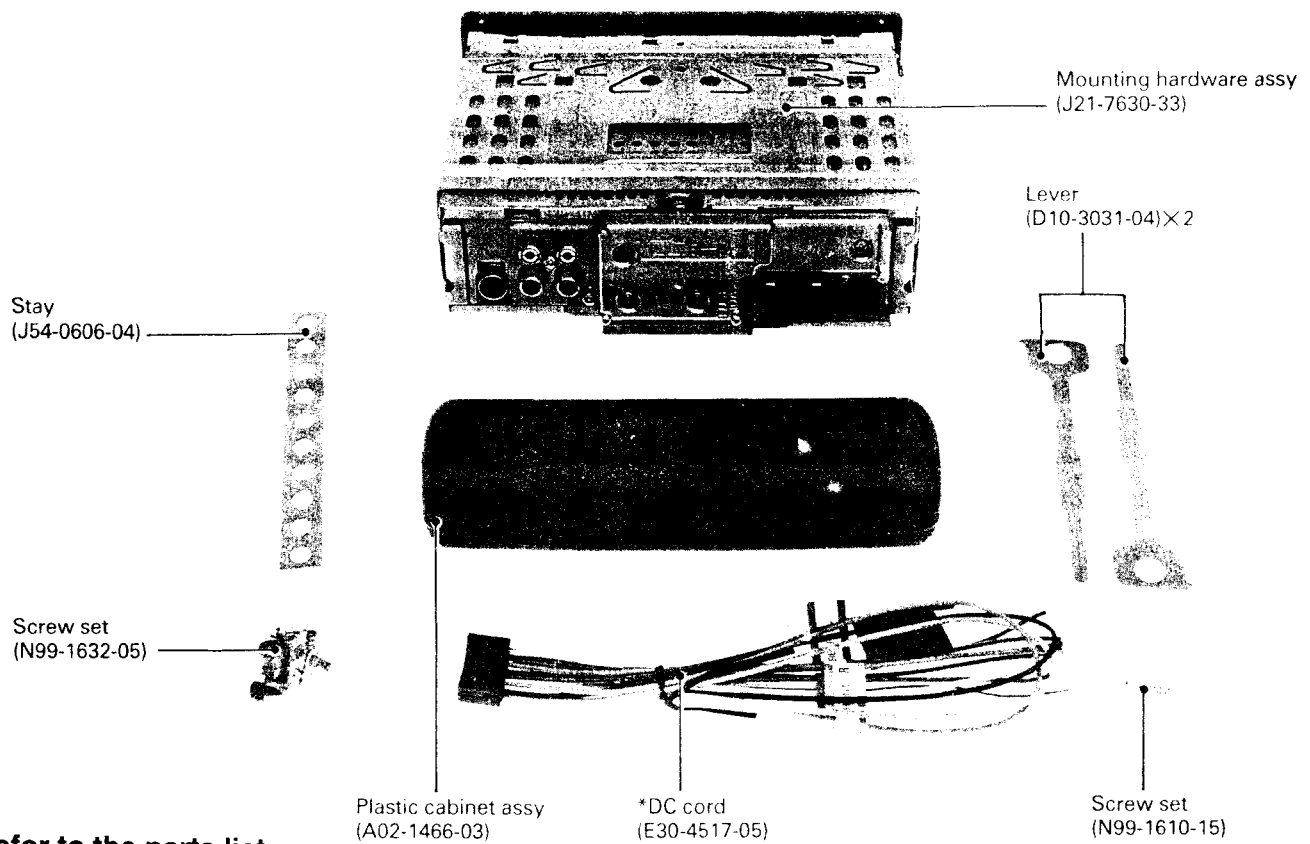
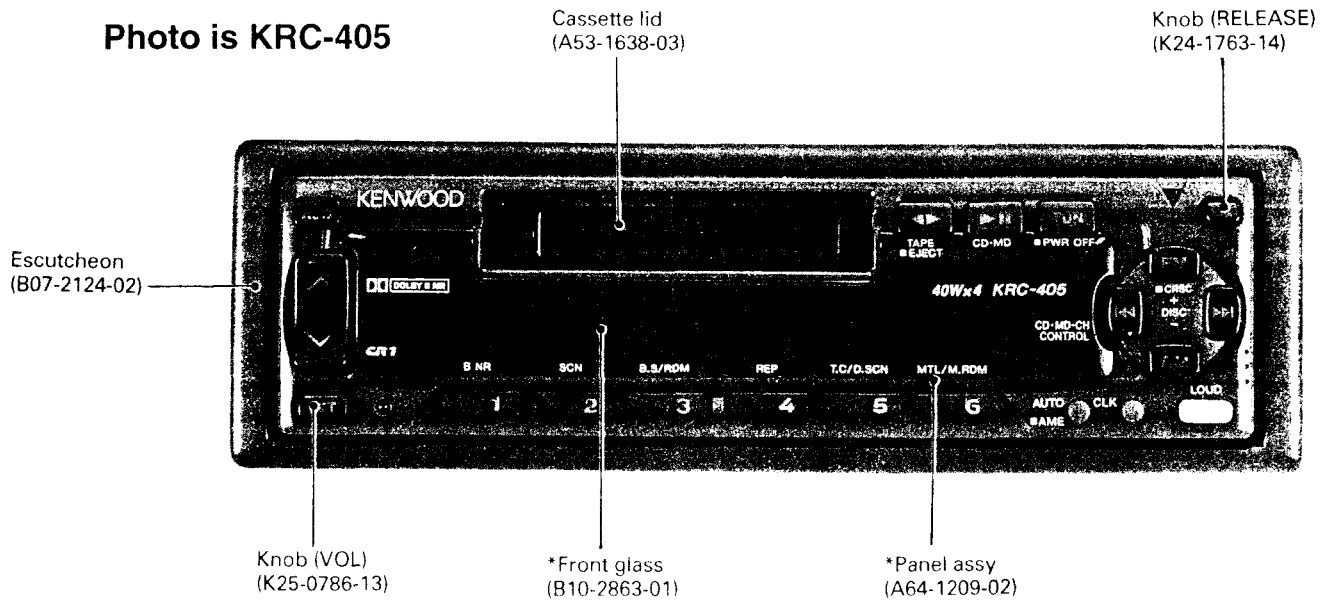


KRC-405/485/S305 385/3590

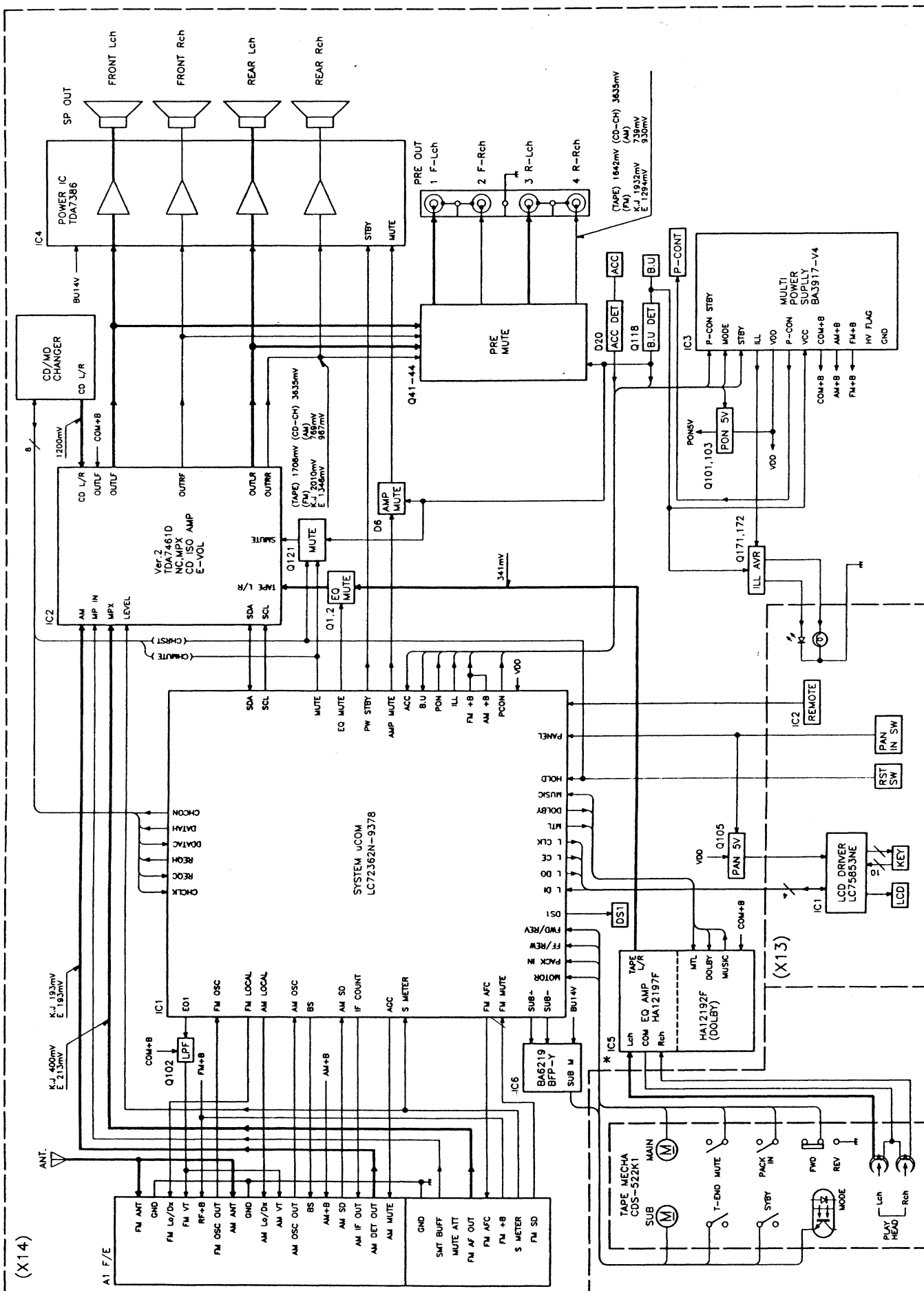
SERVICE MANUAL

Photo is KRC-405



* Refor to the parts list

BLOCK DIAGRAM



(D40-1081-15)

CIRCUIT DESCRIPTION

Microprocessor : LC72632N-9378 (IC1)

• Pin function

Pin No.	Port name	I/O	Function	Description	In HOLD mode
1	XIN	1		Xtal oscillator connection	
2	TEST2	1	TEND	LSI Testing	H
3	SI0/PG3	1	TEND	Tape and detection	
4	SO0/PG2	I/O	SDA	E-Vol data in-out	L
5	SK0/PG1	0	SCL	E-Vol clock output	L
6	PG0	1	STBY	Tape stand by detection	
7	SI1/PG3	1	DATA C	Disc changer data input	L
8	SO1/PG2	0	DATA H	Disc changer data output	L
9	SK1/PG1	1	CHCLK	Disc changer clock input	H
10	PG0	0	REQ H	Communication request output	H
11	SI2/PG3	1	LDI	LCD driver data input	
12	SO2/PG2	0	LDO	LCD driver data output	L
13	SK2/PG1	0	LCLK	LCD driver clock output	L
14	PG0	1	REQC	Communication request input	L
15	PD3	0	CHCON	Disc changer control	L
16	PD2	0	LCE	LCD driver enable output	L
17	PD1	0	(N.C)		L
18	PD0	0	MUTE	MUTE control	H
19	PC3	0	AM+B	AM power supply control	
20	PC2	0	FM+B	FM power supply control	
21	PC1	0	AMP STRBY	Power IC standby control	L
22	PC0	0	SVR	Power IC SVR control	L
23	PB3	0	PCON	Power control	L
24	PB2	0	AT_CON	Power antenna control	L
25	PB1	0	SUB+	Sub-motor control 1	L
26	PB0	0	SUB-	Sub-motor control 2	L
27	PA3	1	ROLL OFF		
28 - 30	PA2 - 0	1	SEL2 - 0	Destination select	
31	VDD		VDD	Power supply	
32	POO	1	NC		L
33	PP3	0	MOTOR	Tape main motor control	L
34 - 36	PP2 - 0	0	NC		L
37	PO3	0	DSI	DSI control	L
38	PO2	0	EO_MUTE	EO mute control	L
39	PO1	0	PON	Power control	L
40	PO0	0	FM AFC	AFC control	L
41	PN3	0	AGC	AGC control	L
42	PN2	0	MS CONT	Tape sens. control	L
43	PN1	0	IF CONT	IF count control	L
44	PM0/BEEP	0	BEEP	Beep output 2kHz	L
45	PM3	1	PANEL	Panel detection	L
46	PM2	0	AMP MUTE	Power IC mute	L
47	PM1	1	CRSC		L
48	PM0	1	PACK IN	Tape insertion detection	
49	PL3	1	FM/DREV	Tape position detection	
50	PL2	0	BAND SEL	MW/LW select	

CIRCUIT DESCRIPTION

Pin No.	Port name	I/O	Function	Description	In HOLD mode
51	PL1	0	AM I/O	AM I/O/DX select	L
52	PL0	0	METAL	Tape EQ select	L
53	PK3	0	DOLBY	DOLBY control	L
54	PK2	1	AM SD		
55	PK1/INT1	0	TEST	AMP Temp. protection	L
56	PK0/INT0	1	REMO	Remote control input	
57, 58	PL3, 2	0	N. C		
59	PL1	0	ILL	Illumination control	
60	PL0	0	LOCAL	FM I/O/DX select	
61	PL1	1	T.MODE	Tape mode pulse detect	
62	PL0	1	FM MUTE		
63	PH3	1	ACC	Acc detect	
64	PH2	1	BU	Bu detect	
65	PH1	1	MUSIC	Tape music detect	
66	PH0	1	S.METER	FM SD detect	
67	HOLD	1	HOLD	HOLD detect	
68	SNS	1	SNS	Power down detect	
69 - 72				No USE	
73	VDD				
74	AM IN	1		AM OSC input	
75	FM IN	1		FM OSC input	
76	VSS		GND		
77	EO2	0			
78	EO1	0		LPF charge pump output	
79	TEST1	1	TEST1		
80	XOUT	0	XOUT	Xtal oscillator connection	

CIRCUIT DESCRIPTION

1. Test mode

"From the power OFF condition, hold the **[FM]** key + **[6]** key and press the **[TUN]** key to turn power ON".

This lights up all indicators and initiates the test mode.

<Initial set-up in test mode>

Indicators All ON
 AUDIO Volume MAX-10 dB
 BASS/TREBLE/BALANCE/FADER at center
 SOURCE TUNER
 TAPE B.S. OFF

2. Canceling the all-ON condition

Press the **[TUN]** key or insert a cassette pack to cancel the all-ON condition of the indicators.

3. Audio adjustment

Volume Normal UP/DOWN operations available.
 BASS/TREBLE .. -4 ↔ 0 ↔ +4 (Jumps by a single press.)
 BALANCE L15 ↔ 0 ↔ R15 (Jumps by a single press.)
 FADER R15 ↔ 0 ↔ F15 (Jumps by a single press.)

4. Stop level indication in TUNER mode

The unit does not have the tuning stop sensitivity adjustment function because it uses a fixed resistor. However, it is provided with the stop level indication function for use as a reference.

AM mode While the **[CLK]** key is held depressed, the AGC port goes "H" so the following checking is available.

When the AMSD input at pin 54 is "H" and a station is detected: "REP" lights up.

When the AMSD input at pin 54 is "L" and no station is detected: "RDM" lights up.

FM mode When the FMMUTE input at pin 62 is "H" and a station is detected: "SCN" is off.

When the FMMUTE input at pin 62 is "L" and no station is detected: "SCN" lights up. (The A/D threshold value at pin 62 is 1.5 V.)

When the SMETER input at pin 66 is "H" and a station is detected: "REP" lights up.

When the SMETER input at pin 66 is "L" and no station is detected: "RDM" lights up. (The A/D threshold value at pin 66 is as shown below.)

Other destination type than the E type :0.77V

E type FM1 :0.60V

E type FM2/3 :0.68 V

5. Canceling the test mode

The test mode can be canceled by detaching the panel or turning power OFF, ACC OFF or B-U OFF.

6. Other note

The unit has been designed to apply muting while the sub-motor of the cassette mechanism is turning. Therefore, if the power is turned ON while the cassette mechanism is removed for servicing, etc, the microcomputer starts the ejection protection operation and attempts to turn the sub-motor, as a result of this, muting is applied for about 30 seconds until the error stopping occurs at the end of the ejection protection operation.

Model and destination type selection

	SEL2	SEL1	SEL0
KRC-405	0	0	0
KRC-485	0	0	1
KRC-S305	0	1	0
KRC-385	1	0	0
KRC-3590	0	1	1
RX-350	1	0	1
	R119	R120	R121

Mode selection

	FM+B	AM+B	BAND SEL	EQ MUTE
TAPE MODE	H	L	L	L
FM MODE	L	L	L	H
AM MW MODE	H	H	H	H
LW MODE	H	H	L	H
CDCHG MODE	H	L	L	H
TAPE FF/REW	H	L	L	H
T-CALL FM	L	L	L	H
T-CALL AM MW	H	H	H	H
T-CALL LW	H	H	L	H
POWER OFF	L	L	L	L

SUB-MOTOR control

	SUB -	SUB +
STOP (Power OFF)	L	L
REV (Eject)	L	H
FOW (Loading)	H	L
STOP (Power ON)	H	H

ADJUSTMENT

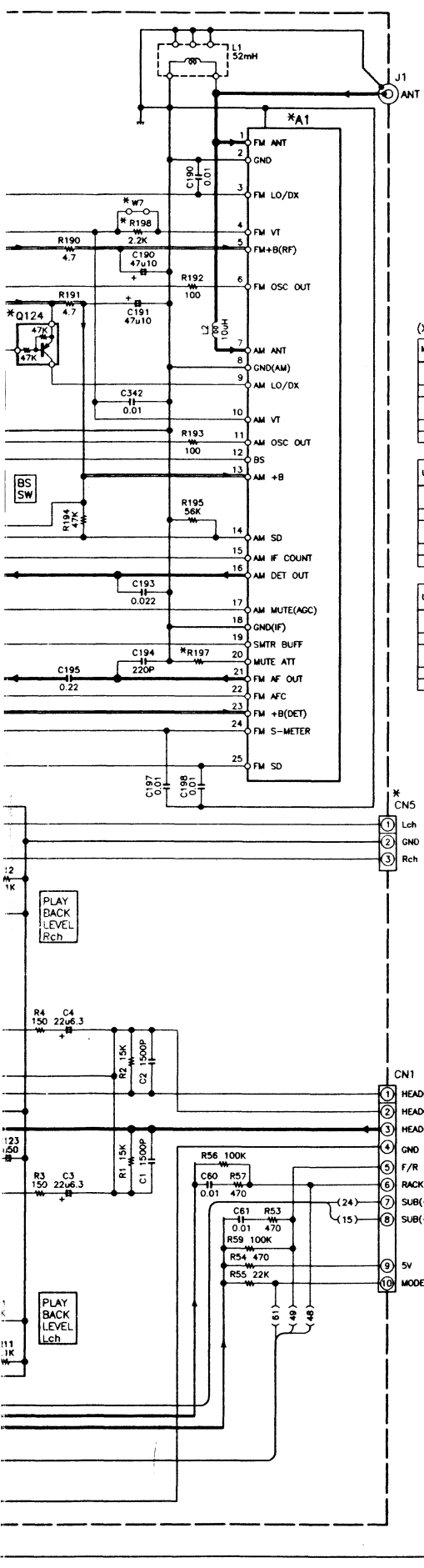
KRC-405,485,S305,385

No	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER (RECEIVER)	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION							
1.	DISCRIMINATOR	(A) 98.1MHz 0 dev 60dB μ (ANT input)	Connect a DC voltmeter to TP (F/E)	FM 98.1MHz	T1 (F/E)	0V	(a)
2.	ANRC	(C) 98.1MHz 1kHz, \pm 67kHz dev Pilot : \pm 7.5kHz dev Selector : L or R 35dB μ (ANT input)	(B)	FM 98.1MHz	VR1 (F/E)	Separation 10dB	
CASSETTE DECK SECTION							
(1)	AZIMUTH	TCC-173A 10kHz	(B)	TAPE PLAY	Head Azimuth Screw	Adjust the azimuth for each Lch/Rch or FWD/REV becomes maximum.	(b)
*(2)	PLAY BACK LEVEL	MTT-150	Connect an AC voltmeter to CN5	TAPE PLAY	VR1 (L) VR2 (R)	300mV	(c)

*: KRC-405,485 only

KRC-3590

No	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER (RECEIVER)	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION							
1.	DISCRIMINATOR	(A) 98.1MHz 0 dev 60dB μ (ANT input)	Connect a DC voltmeter to TP (F/E)	FM 98.1MHz	T1 (F/E)	0V	(a)
2.	ANRC	(C) 98.1MHz 1kHz, \pm 40kHz dev Pilot : \pm 6.0kHz dev Selector : L or R 35dB μ (ANT input)	(B)	FM 98.1MHz	VR1 (F/E)	Separation 10dB	
CASSETTE DECK SECTION							
(1)	AZIMUTH	TCC-173A 10kHz	(B)	TAPE PLAY	Head Azimuth Screw	Adjust the azimuth for each Lch/Rch or FWD/REV becomes maximum.	(b)



(X14-566X-XX)

MODEL NAME	UNIT No.	A	C	IC5	Q122 -124	D10	W7
KRC-405	0-10 0-14	YES	NO	HA12192F		YES	
KRC-485	0-21		YES		NO	NO	YES
KRC-S305	0-13	NO	NO	HA12197F		YES	
KRC-385	0-22	NO	YES			NO	
KRC-3590Y	2-71	NO	NO		YES	YES	NO

UNIT No.	JS	CN5	CS7, 59	R11 -14	R58	R119	R120	R121
0-10								
0-14	NO	YES	YES	NO	YES	NO	NO	NO
0-21						NO		YES
0-13							YES	
0-15	YES	NO	NO	YES	NO			NO
0-22						YES	NO	NO
2-71						NO	YES	YES

UNIT No.	R123,124, 160,163	R133, 134	R197	R198	VR1, 2	A1
0-10						
0-14	YES	YES			YES	
0-21			27K	NO		W02-3116-05
0-13						
0-15	NO	NO			NO	
0-22						
2-71	YES		47K	YES		W02-3115-05

_____ SIGNAL LINE
 _____ GND LINE
 _____ +B LINE

- IC1 : LC72362N-937B
- IC2 : TDA7461D
- IC3 : BA3917-V4
- IC4 : TDA7386
- IC5 : *
- IC6 : BA6219BFP-Y

- Q1,2,41-44 : DTC143TK
- Q51,103,119,121-123 : 201,202,331,401
- Q101,105 : 2SA1037K
- Q102 : 2SK536
- Q104,118,171,333,404 : 2SC2412K
- Q116 : DTC114YK
- Q117 : 2SB1277
- Q120,124,400,402,403 : DTA144EK
- Q172 : 2SB1184
- Q332 : DTA124EK
- Q334,336 : 2SB1443
- Q335 : DTC114EK

- D1,2,12,13,21,26 : 1SS133
- D3,4 : DA204K
- D5,402,403 : MA3062WA
- D6,7,14,401 : DAP202K
- D8 : B30-1511-05
- D10,11,31-38 : MIF60
- D15,17,333 : AM01Z
- D16 : RM10ZLF
- D19 : MA4068(N)-M
- D20 : MA4051-L
- D27 : DAN202K
- D331 : MA4220-L
- D332 : MA4075-L
- D407,408,410,411 : MA4062-L

DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

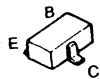
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to, parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

X13-
J1
2/2
A

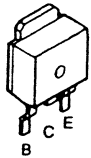
KRC-405/485/S305/385/3590

KENWOOD

DTA114EK
 DTA124EK
 DTA144EK
 DTC114EK
 DTC114YK
 DTC143TK
 DTC144EK
 2SC2412K

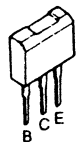


2SB1184

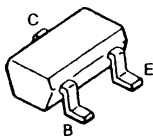


2SB1277

2SB1443



2SA1037K



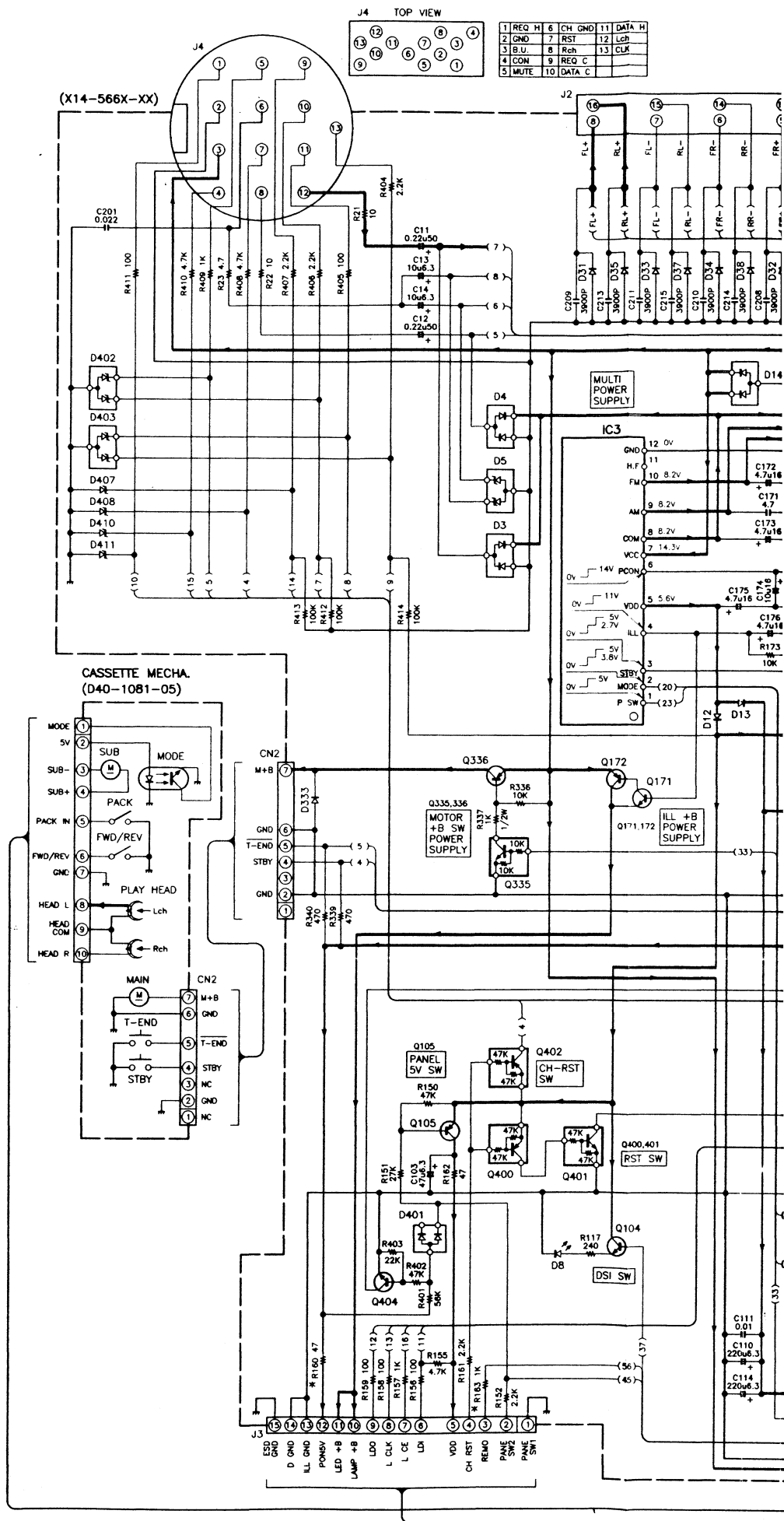
DAN202K



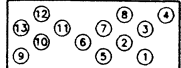
DA204K



2SK536



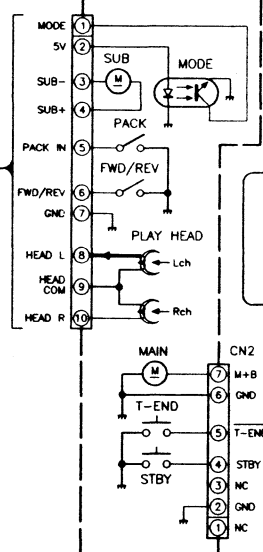
J4 TOP VIEW



1	REQ	H	6	CH	GND	11	DATA	H
2	GND	7	RST	12	LED			
3	ILL	8	Rch	13	CLK			
4	CON	9	REQ	C				
5	MUTE	10	DATA	C				

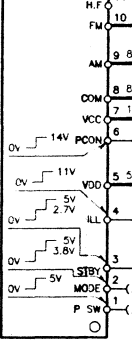
(X14-566X-XX)

CASSETTE MECHA.
(D40-1081-05)

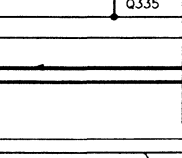


MULTI POWER SUPPLY

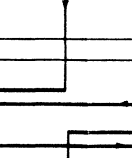
IC3



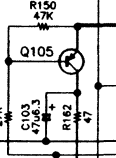
MOTOR +B SW POWER SUPPLY



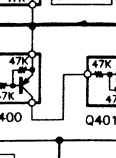
ILL +B POWER SUPPLY



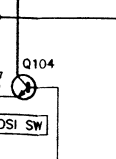
PANEL 5V SW



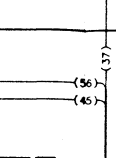
CH-RST SW



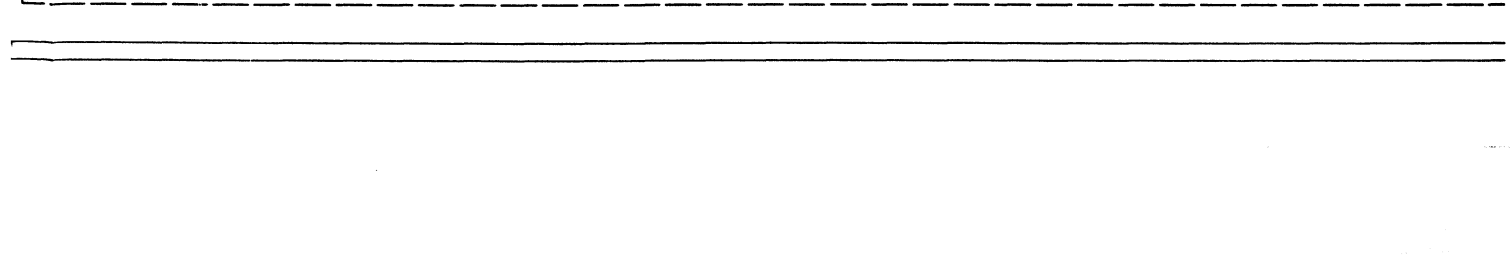
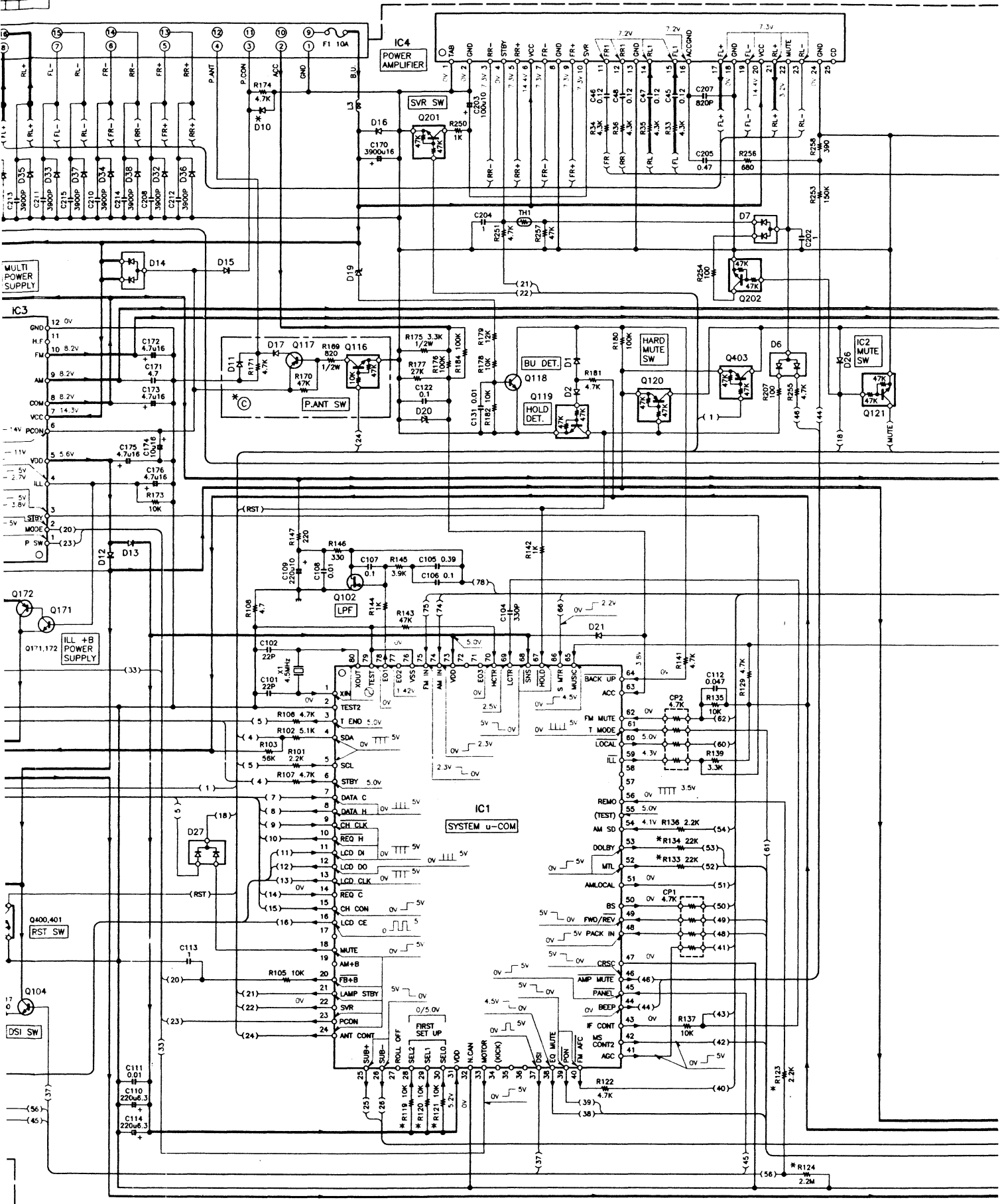
RST SW



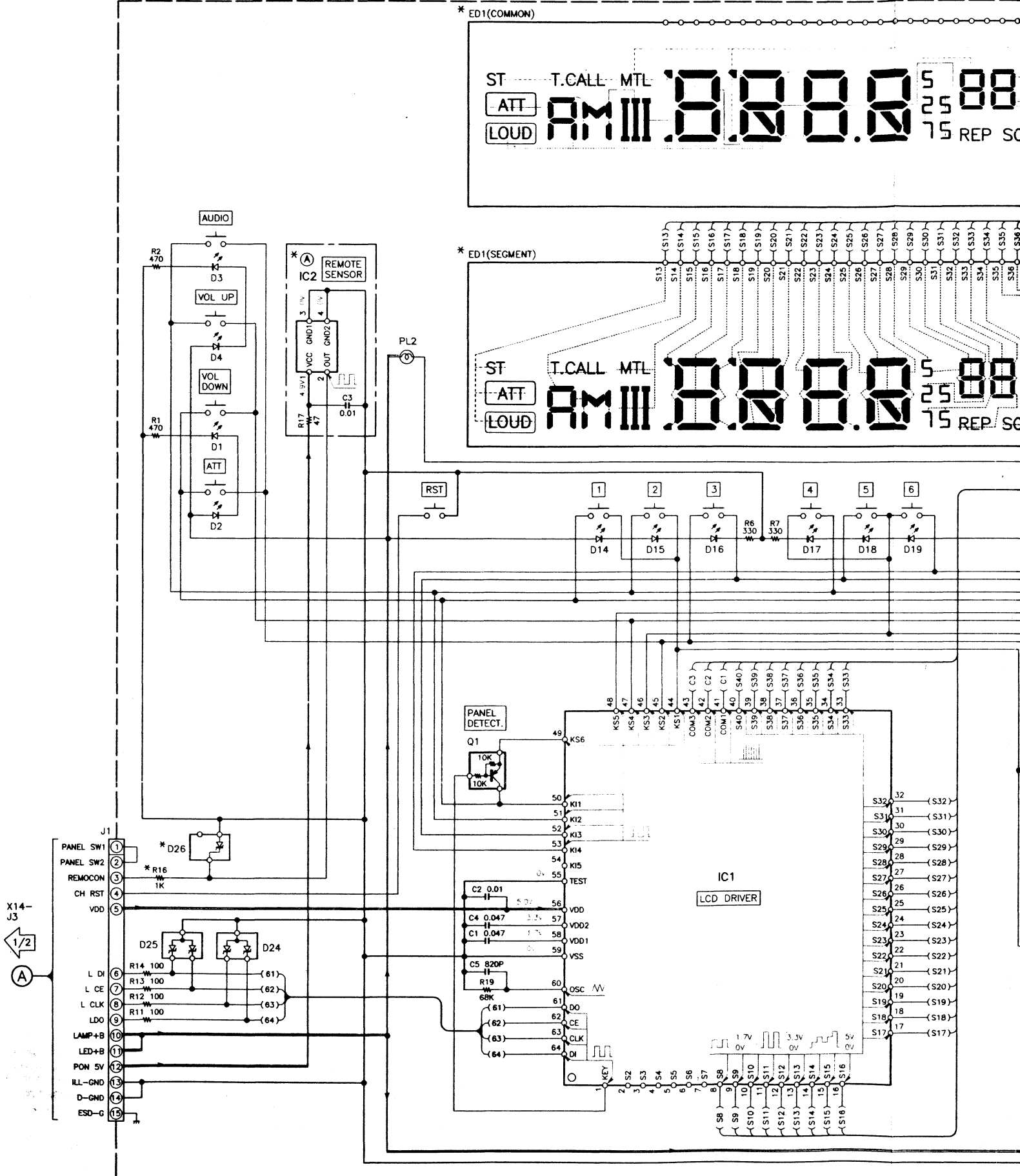
DSI SW



11	DATA H
12	CLR
13	CLR

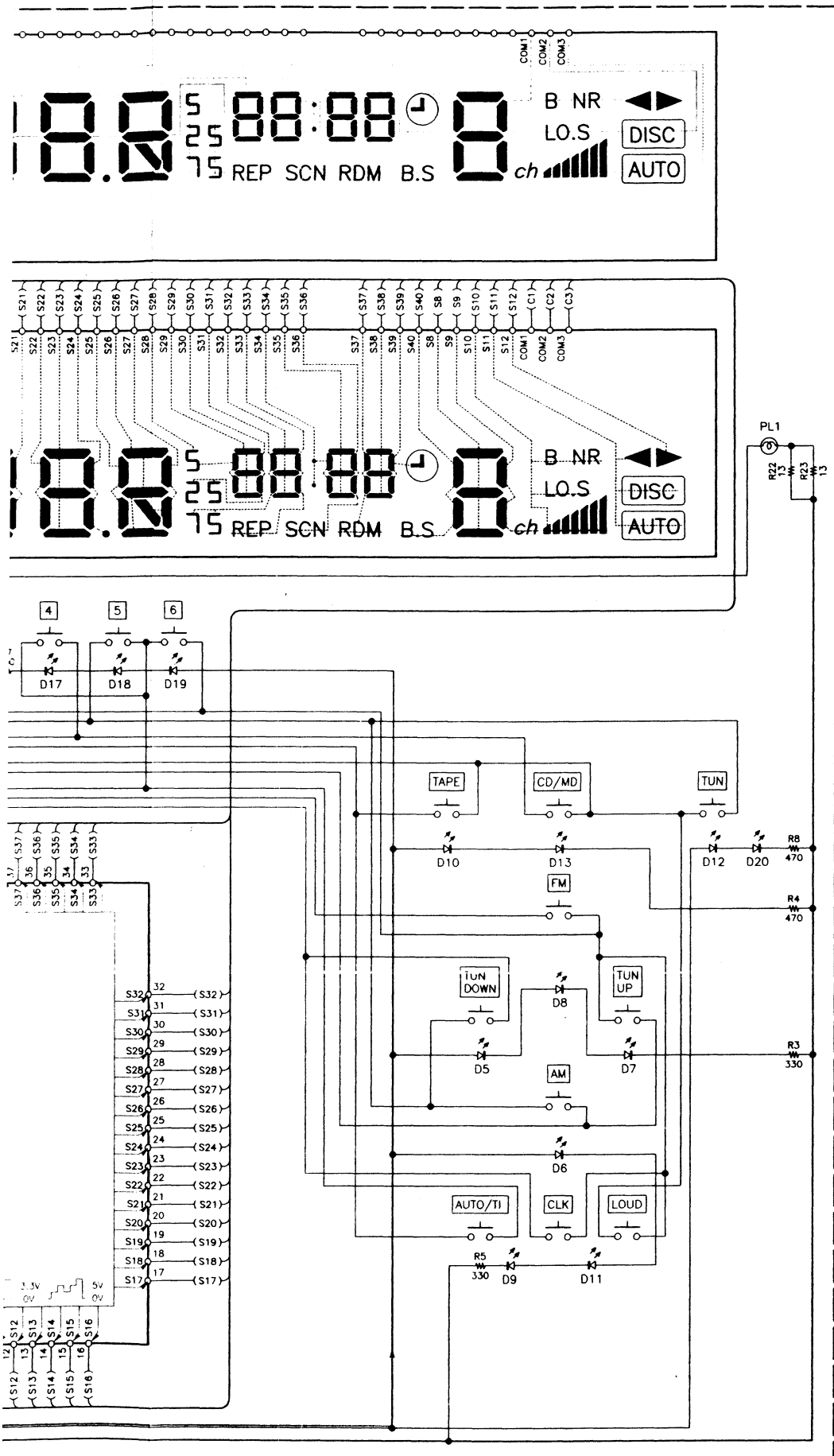


(X13-915X-XX)



DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to, parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



(X13-915X-XX)

MODEL NAME	UNIT No.	Ⓐ	R16	D26	ED1
KRC-405	0-10	YES	YES	YES	B38-0678-05
KRC-485	0-14	YES	YES	YES	B38-0678-05
KRC-385	0-13	NO	NO	NO	B38-0679-05
KRC-S305	0-15	NO	NO	NO	B38-0679-05
KRC-3590Y	2-71	YES	YES	YES	B38-0679-05

IC1 : LC75853NE
 IC2 : RS-141

Q1 : DTA114EK

D1-19 : B30-1509-05(PG)
 D20 : B30-1511-05(R)
 D24,25 : MA3062WA
 D26 : MA3062-M

— GND LINE
 — +B LINE

safety critical
 nmented parts
 al components.
 age-current or
 (exposed parts
 circuit) before the

KRC-405/485/S305/385/3590

KENWOOD