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MOBILE DATA TERMINAL

KDS-100

SERVICE MANUAL

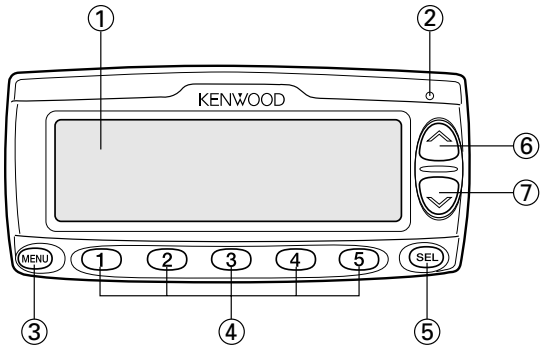
KENWOOD

B51-8591-00 (N) 1411

CONTENTS

OPERATING FEATURES / INSTALLATION

Front panel



① Display
Messages appear on this 240 x 64 dot LCD.

② LED Indicator (default settings)
Lights red while "talking" to the mobile unit. Lights green while "listening" to the mobile unit. Flashes orange when a message is waiting.

③ MENU key
Press to enter the Menu mode, in order to select your desired menu.

④ Keys 1 ~ 5
Press these function keys to perform the functions described in the status bar on the display, directly above the keys.

⑤ SEL (Select) key
Press to select the displayed item.

⑥ ▲ key
Press to scroll up the display.

⑦ ▼ key
Press to scroll down the display.

TK-780/880/980/981 Series (TK-∗80 Series)

■ Installing the KCT-34 in the Transceiver

1. Remove the upper cover from the transceiver.
2. Lift the DC cord bushing (❶) from the chassis.
3. Remove the pad as shown in the Figure 1 (❷).
4. Insert the KCT-34 cable (❸) into the chassis (❹). The wire harness band (❺) must be inside the chassis.
5. Replace the DC cord bushing (❻).
6. Connect the KCT-34 to the TX-RX unit (A/2) as shown in Figure 2 (❼).

Connector	Wire Color	Pin No.
A-1	Brown	4
A-2	NC	–
A-3	NC	–
A-4	Orange	5
A-5	Gray	10
A-6	NC	–
A-7	Yellow	6
A-8	Blue	8

Connector	Wire Color	Pin No.
B-1	NC	–
B-2	White	11
B-3	Green	7
C-1	Purple	9
C-2	Light blue	14
C-3	Light green	15
D-1	NC	–
D-2	Black	3
D-3	Red	1

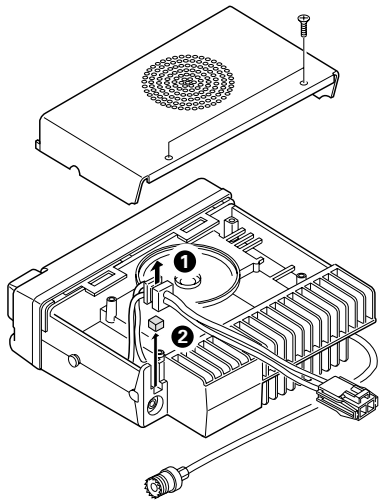


Fig. 1

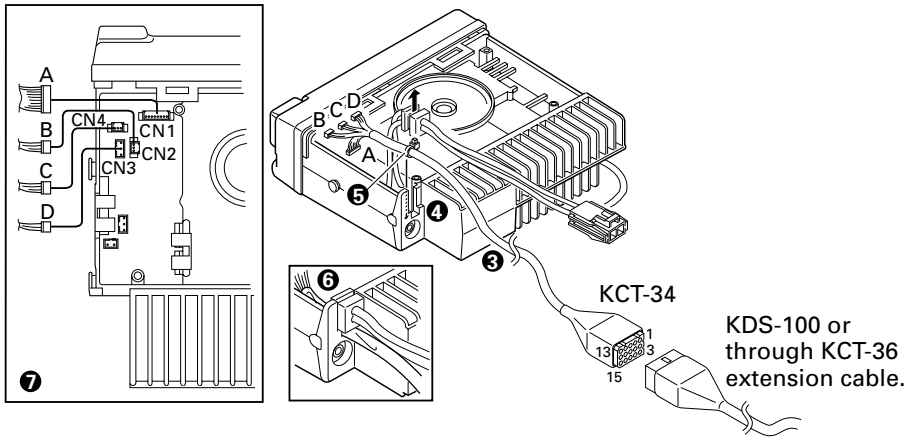


Fig. 2

INSTALLATION / REALIGNMENT

TK-760G/762G/860G/862G/768G/868G Series (TK-∗60G Series)

■ Installing the KCT-35 in the Transceiver

1. Remove the upper cover from the transceiver.
2. Lift the DC cord bushing (❶) from the chassis.
3. Remove the pad as shown in the Figure 3 (❷).
4. Insert the KCT-35 cable (❸) into the chassis (❹). The wire harness band (❺) must be inside the chassis.
5. Replace the DC cord bushing (❻).
6. Connect the KCT-35 to the TX-RX unit (A/2) as shown in Figure 4 (❼).

Connector	Wire Color	Pin No.
A-1	Brown	4
A-2	Green	7
A-3	NC	–
A-4	Orange	5
A-5	NC	–
A-6	NC	–
A-7	Yellow	6
A-8	Blue	8

Connector	Wire Color	Pin No.
B-1	Gray	10
B-2	White	11
B-3	Purple	9
C-1	NC	–
C-2	Black	3
C-3	Red	1

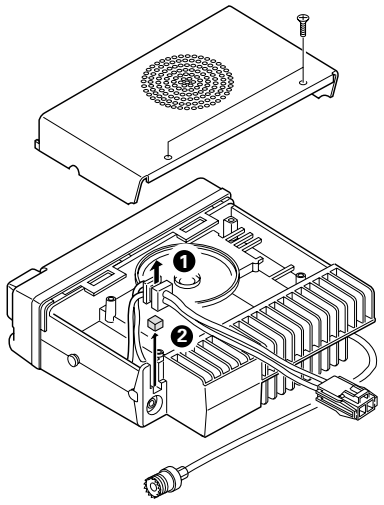


Fig. 3

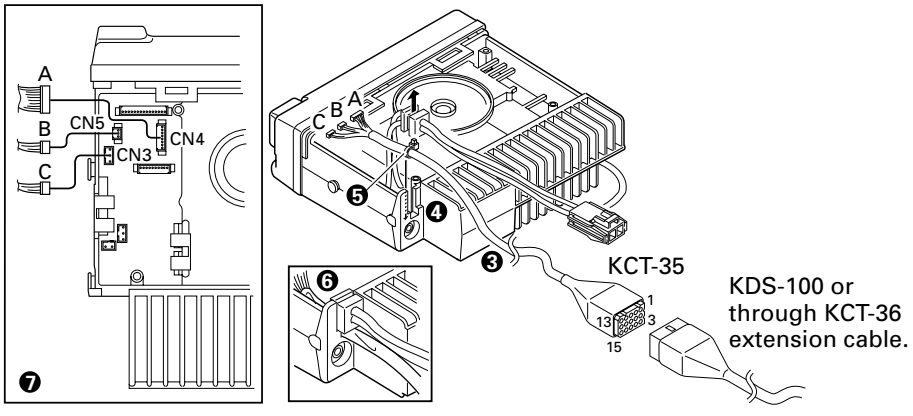


Fig. 4

Transceiver Setting

When the KDS-100 (Mobile Data Terminal) is connected to a transceiver, the transceiver functions must be set. The transceiver FPU is used to make this setting.

For a connection method, see Figure 1.

■ TK-∗80 Series Setting Method

1. Setting with KPG-49D (K and M markets FPU)

1) Select "Optional Features" from the "Edit" menu and set COM1 (Internal Port) "[None]" to "[Data]".
2) Select "FleetSync" from "Edit" and set functions to "Yes/No" as follows:
   Status Message Stack ..... [No]
   Short Message Stack ..... [No]
   Caller ID Stack ..... [No]
   Status Message Serial Output ..... [Yes]
   Short Message Serial Output ..... [Yes]
3) Enter an ID.
   Fleet (Own): A three-digit number between 100 and 300 can be entered in [ ].
   ID (Own): A four-digit number between 1000 and 4999 can be entered in [ ].

2. Setting with KPG-60D (E markets FPU)

1) Select "Extended Function" from the "Edit" menu and set COM1 "None" to "Data".
2) Select "Digital Message System" from "Edit" and set the checkboxes as follows:
   • Uncheck items.
   ☐ Status Message Stack
   ☐ Short Message Stack
   ☐ Selcall ID Stack
   • Check items (✓).
   ☑ Status Message Serial Output
   ☑ Short Message Serial Output
3) Enter an ID.
   Fleet (Own): A three-digit number between 100 and 300 can be entered in ☐.
   ID (Own): A four-digit number between 1000 and 4999 can be entered in ☐.

REALIGNMENT

■ TK-∗60G Series Setting Method

Use the KPG-56D as the FPU.

1) Select "Key assignment" from "Edit" on the menu bar, and set "FootSwitch" to "[None]".
2) Select "Optional Features" from "Edit" and change "ACC Hook/DTC" from "[ACC Hook]" to "[DTC]".
3) Enter an ID with the FPU (KPG-71D) by connecting a transceiver with the KDS-100.
   For a connection method, see Figure 1.

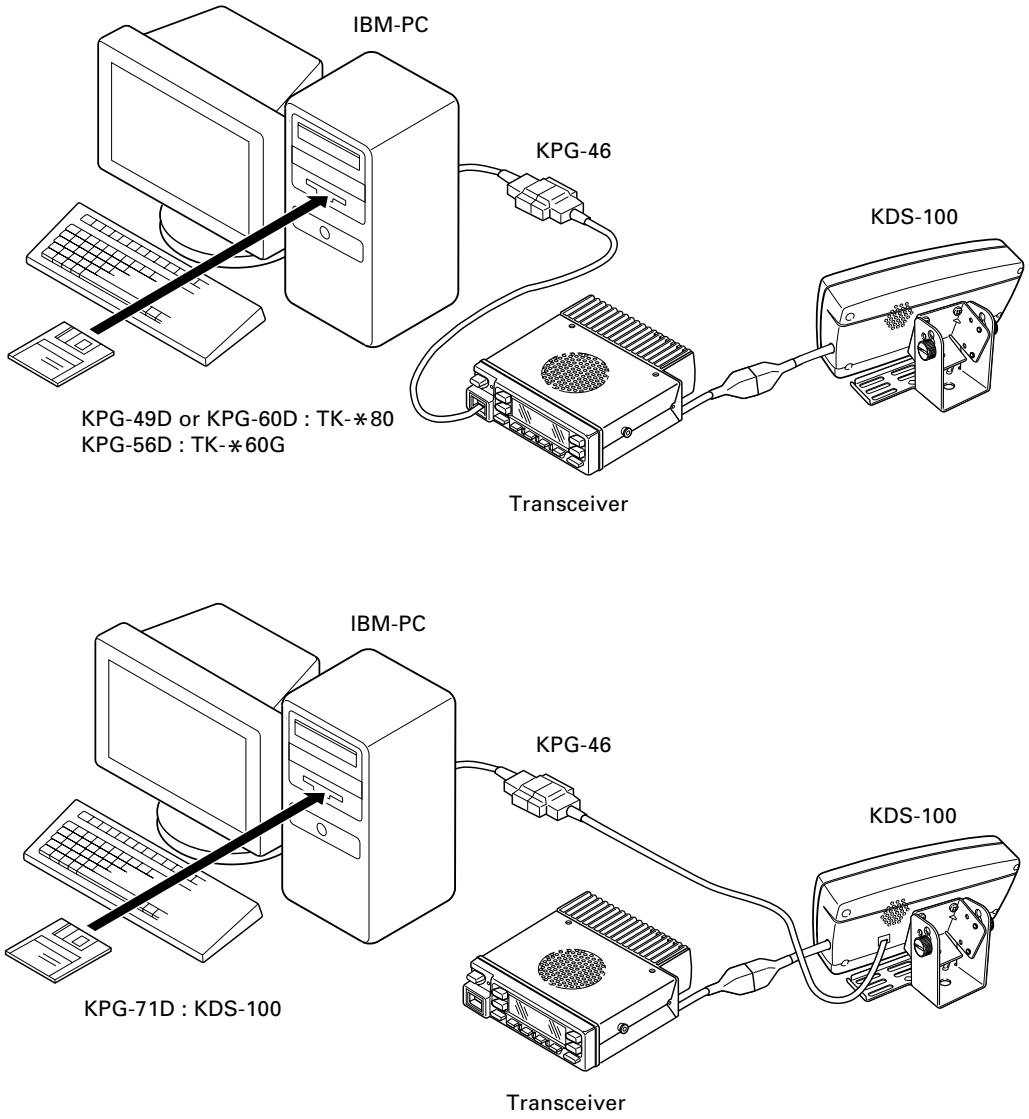


Fig. 1

ADJUSTMENT

KDS-100 "Test Mode" Setting Method

Connect the KDS-100 to a PC and enable KDS-100 "Test Mode" with the FPU (KPG-71D).

1) Select "Optional Features" from the KPD-71D "Edit" menu.
2) Check the "☑ Test" box for "COM/Mode".
   When this state is written into the KDS-100, the Test Mode operation is enabled.

MSK Modulation Adjustment

Adjust deviation as follows: Wide: 3kHz and Narrow: 1.5kHz.

■ TK-∗80 series

For information on the adjustment method, see the Service Manual for the TK-∗80 series.

■ TK-∗60G series

1) Connect a transceiver and a PC to the KDS-100, and select "Test Mode" from "Program" on the FPU (KPG-71D) menu.
2) Adjust the "Output Level" DIGIT value on the "MSK" screen.
3) When you click on "OK" on the PC screen, the adjustment value is written into the KDS-100 memory.

MSK Detection Input Level Adjustment

(Same as for the TK-∗80 series and TK-∗60G series)

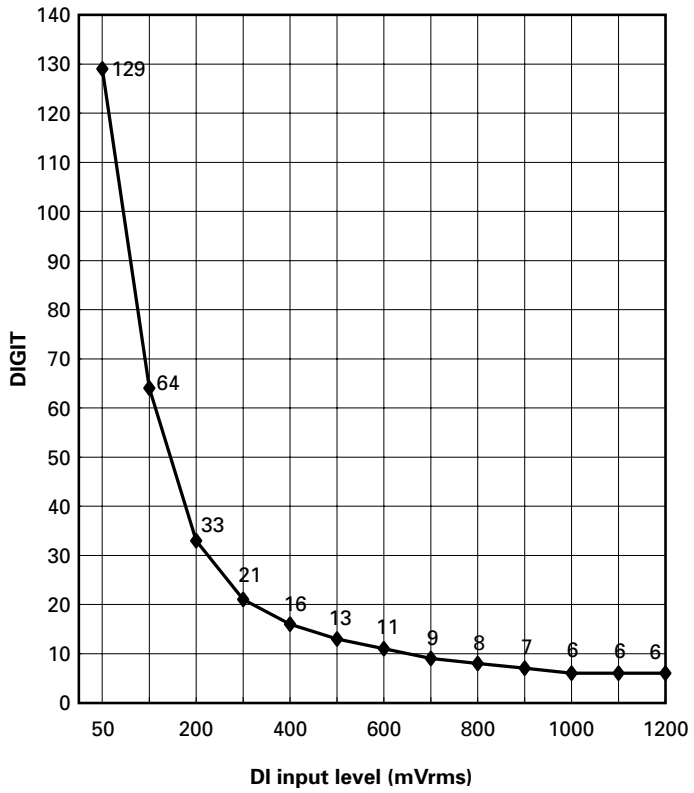
Set the input voltage at pin 2 of the CODEC IC (IC20) of the KDS-100 to 1000mVp-p.

1) Modulate SSG with a modulation frequency 1200Hz (or 1000Hz) (Wide: 3kHz, Narrow: 1.5kHz) and input it to the transceiver.
2) Measure the KDS-100 DI voltage (DI: CN5 pin 3, transceiver detection output voltage) with a VTVM.
3) Set the "Input Level" DIGIT value according to the following conversion table on the "MSK" screen in "Test Mode" so that the measured voltage (mVrms) is the CODEC IC input voltage (1000mV).
4) When you click on "OK" on the PC screen, the adjustment value is written into the KDS-100 memory.

DI input level (mVrms)	Adjustment digit	Codec IC (IC20) input level (mVp-p)
50	129	1000
100	64	
200	33	
300	21	
400	16	
500	13	
600	11	
700	9	
800	8	
900	7	
1000	6	
1100	6	
1200	6	

Conversion table

DI input VS DIGIT



CIRCUIT DESCRIPTION

1. Power Supply Circuit

The KDS-100 power supply circuit uses a dedicated regulator IC for each circuit application so that the circuits do not interfere with each other. (Figure 1)

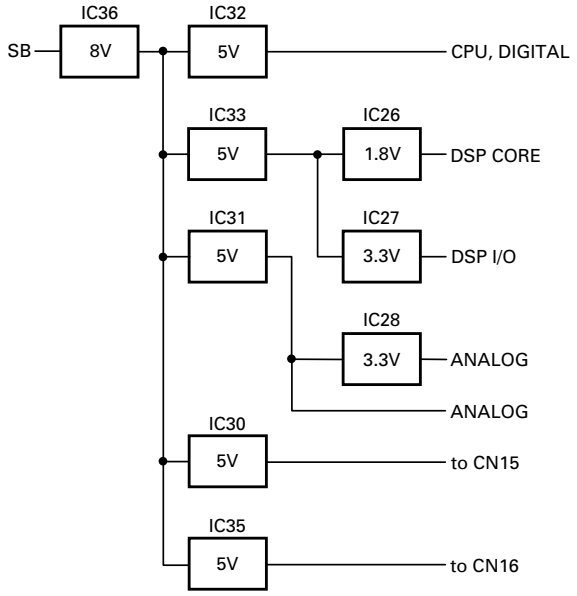


Fig. 1

2. LCD Backlight Intensity Adjustment Circuit

The intensity of the backlight of the KDS-100 LCD assembly is adjusted by controlling the Q7 base voltage with the D/A converter (IC17) and changing the Q8 collector voltage. (Figure 2)

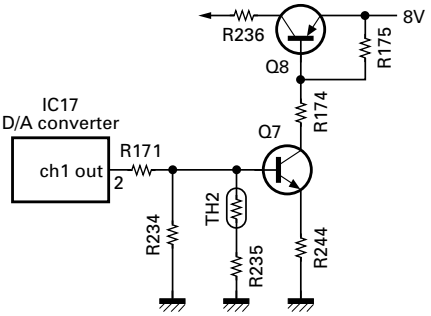


Fig. 2

3. Audio Amplifier Circuit

The KDS-100 audio amplifier (IC34) amplifies the beep signal generated by the microcomputer to the level for outputting to a speaker.

The audio amplifier power supply is turned ON or OFF according to the timing that sounds a beep with a shift register (IC24) controlled by the CPU (IC6). The volume is controlled according to the DC voltage of the D/A converter (IC17) controlled by the CPU. (Figure 3)

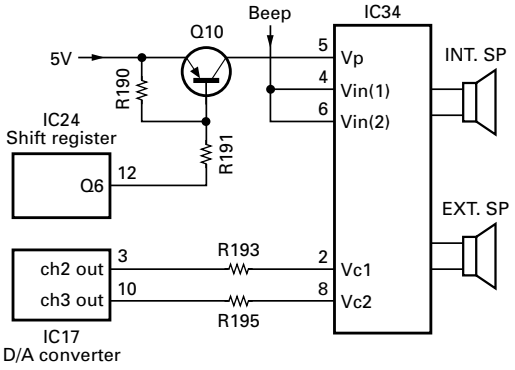


Fig. 3

4. Key Backlight, TX/RX LED Control Circuit

The KDS-100 front operation key backlight and TX/RX status indicator LED is turned ON or OFF with the shift register (IC24) controlled by the CPU (IC6). (Figure 4)

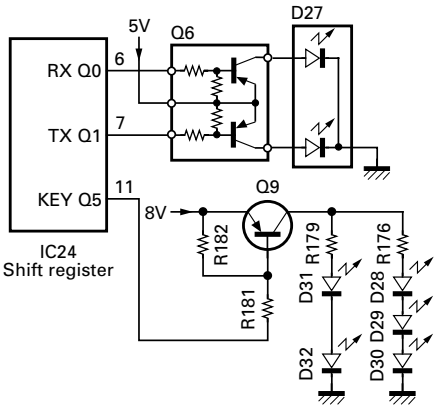


Fig. 4

5. Digital Control Circuit

■ Overview

The KDS-100 control circuit consists of a CPU (IC6) and a DSP (IC23).

The DSP functions as a MSK modem.

Figure 5 is a block diagram of a digital control circuit.

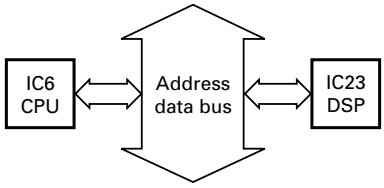


Fig. 5

CIRCUIT DESCRIPTION

■ Address control circuit

The CPU operates in the single-chip mode using an internal ROM and RAM.

It communicates with the DSP through an external data bus.

Since the CPU operates on 5V and the DSP and flash ROM (IC13) operate on 3V, the address data bus is connected through a 5V-3V level conversion IC (IC11, 11, 36, 37). (Figure 6)

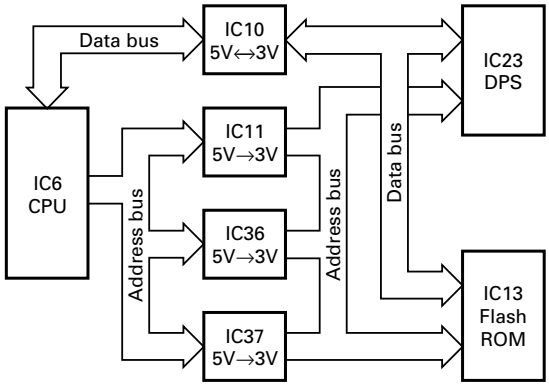


Fig. 6

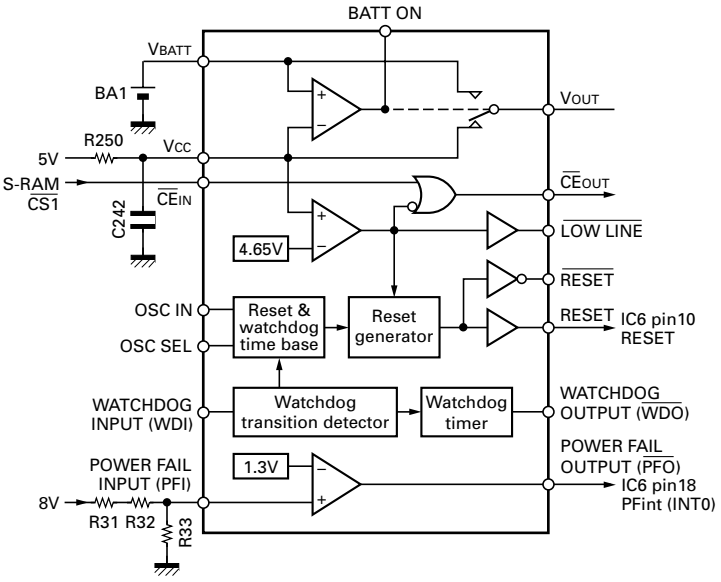


Fig. 7

■ Real-time clock

The message transmission/reception time is controlled by the dedicated real-time clock IC (IC2).

When the power supply is OFF, it is backed up by an internal secondary lithium battery (BA1).

■ System reset, RAM, real-time clock backup

The power supply voltage monitor IC (IC1) monitors power supply voltage (8V). If the voltage falls, the PFO port goes "LOW" level, the CPU PFint (INT0) port also goes "LOW" level, and the CPU stops. If the 5V power supply voltage (for the CPU, S-RAM, and real-time clock IC) drops, the backup power supply for the S-RAM (IC12) and real-time clock IC (IC2) is switched to the secondary lithium battery (BA1).

When the power supply restores to its normal voltage, the IC1 PF0 port goes "H" level and the CPU PFint (INT0) port also goes "H" level. In addition, the RESET signal from IC1 is sent to the CPU RESET port to initialize and start the CPU.

CEOUT is obtained by gating CEIN (S-RAM CE) with CEIN (S-RAM CE) output. When the VCC is equal to or higher than the threshold, CEOUT tracks CEIN (S-RAM CS1). If the VCC is lower than the threshold, CEOUT goes "High". (Figure 7)

Note:

The backup lithium battery (BA1) is fully charged from the empty state when the KDS-100 is turned on for about 150 hours.

■ Serial ports

The KDS-100 CPU has three serial ports. Two RS232C level lines with two-channel RS232C driver (IC3) and two 5V logic level serial control lines with two types of analog switches (IC40, IC5) are controlled, selected and used.

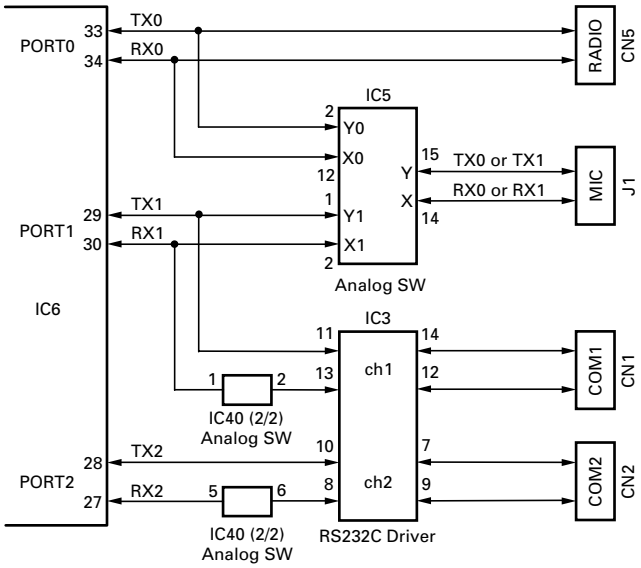


Fig. 8

CIRCUIT DESCRIPTION

6. Transmit/Receive Signal Flow

■ Receive data signal

The transceiver detection output passes through CN5 No. 3 pin and amplifier (IC15), and its level is adjusted by the D/A converter (IC17). The resulting signal is amplified by the amplifier (IC22), goes to the CODEC (IC20), and is converted to digital data.

This data is transferred serially from the CODEC to the DSP (IC23) and operated by the DSP.

■ Transmit data signal

The digital data processed by the DSP is transferred serially from the DSP to the CODEC, and converted to an analog signal. It is amplified by the amplifier (IC14), its level is adjusted by the D/A converter (IC17), the signal passes through the buffer amplifier (IC21), passes through CN5 No.5 pin, and is output to the transceiver as a transmit data signal.

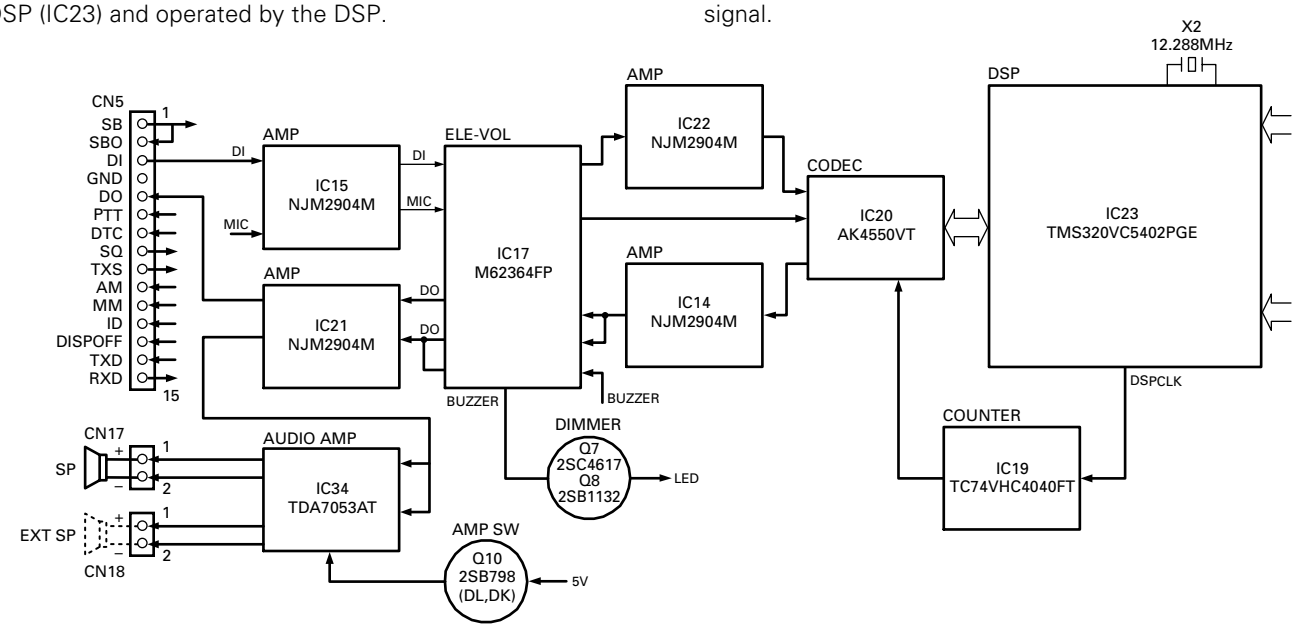


Fig. 9

DESCRIPTION OF COMPONENTS

Display Unit (X54-3350-20)

Ref. No.	Use/Function	Operation/Condition
Q1,2	Switching	Logic Inverter
Q3	Switching	Level converter RS232C→TTL
Q4	Switching	Level converter
Q5	Switching	Logic Inverter
Q6	Switching	LED switch
Q7,8	DC amp	LCD backlight adjustment
Q9	Switching	LED switch, Keyboard backlight
Q10	Switching	AF amp power supply SW
Q11,12	Switching	
Q13~16	Switching	Level converter 3V→5V
IC1	Reset IC	Reset backup
IC2	Real time clock	Time management
IC3	Level shift	Level converter RS232C→TTL
IC4	Extended I/O	Serial/parallel conversion
IC5	Multiplexer	Serial port SW
IC6	CPU	16 bit
IC7	Analog SW	Serial/parallel conversion
IC8,9	Buffer	Extended I/O
IC10	Level converter	5V←→3V
IC11	Level converter	5V→3V
IC12	Memory	5V S-RAM
IC13	Memory	3.3V Flash ROM
IC14	Amplifier	Output data
IC15	Amplifier	Input data
IC16	Gate IC	Logic inverter
IC17	D/A converter	
IC19	Clock demultiplier	For DSP
IC20	A/D,D/A	CODEC
IC21,22	Amplifier	Output data
IC23	DSP IC	

Ref. No.	Use/Function	Operation/Condition
IC24	Shift register	LED, Audio amp SW
IC25	Shift register	KEY Scan
IC26	Regulator	1.8V
IC27,28	Regulator	3.3V
IC30	Regulator	5V (1A)
IC31	Regulator	5V (150mA)
IC32,33	Regulator	5V (15mA)
IC34	AF amp	
IC35	Regulator	5V (1A)
IC36	Regulator	8V (1A)
IC37,38	Level converter	5V→3V
IC39	Gate IC	IC10 direction
IC40	Analog SW	Serial/parallel conversion
IC41	Buffer	Reset signal
D1	Over current protection	0.75A
D2	Zener diode	Connection detector
D3	Backward voltage protection	
D4,5	Reverse current protection	
D6~17	Surge absorption	
D18	Level converter	
D19~24	Surge absorption	
D27	LED	TX/RX
D28~32	LED	KEY backlight
D34~39	Surge absorption	
D40	Reverse current protection	

SEMICONDUCTOR DATA

CPU : 30620M8A-2M6GP (IC6)

Pin No.	Pin Name	I/O	Function
1	IOA1	I/O	Common I/O 1 (A1)
2	VRLD	O	Electrolic VR LD
3	KBCLKO	O	PC/AT keyboard clock
4	KBDATI	I	PC/AT keyboard data
5	KBDATO	O	PC/AT keyboard data
6	BYTE	I	5V (5C)
7	CNVSS	I	GND
8	ACCDET	I	Accessory power detect
9	FRBSY	I	Flash ROM busy detect
10	RESET	I	Reset
11	XOUT	O	System clock
12	VSS	-	GND
13	XIN	I	System clock
14	VCC	-	5V Power supply
15	NMI	I	NC
16	SRCLK1	I	Swipe reader clock 1
17	SRCLK2	I	Swipe reader clock 2
18	PFINT	I	Low voltage detect
19	KEYSTB	O	Serial-parallel IC3 STB
20	BUZZER	O	Buzzer output
21	IOB4	I/O	Common I/O 8 (B4)
22	IOB3	I/O	Common I/O 7 (B3)
23	IOA4	I/O	Common I/O 6 (A4)
24	IOA3	I/O	Common I/O 5 (A3)
25	RADOE	O	Serial-parallel IC2 OE
26	RADST	O	Serial-parallel IC2 ST
27	RXD2	I	Common serial input 2
28	TXD2	O	Common serial output 2
29	TXD1	O	Common serial output 1 or GPS receiver
30	RXD1	I	Common serial input 1 + L34 or GPS receiver
31	CLK	O	Common CLOCK
32	DATA	O	Common DATA
33	TXD0	O	Radio data output
34	RXD0	I	Radio data input
35	RADSQ	I	Radio squelch input
36	RADTXS	I	Radio TXS input

Pin No.	Pin Name	I/O	Function
37	RDY	I	Not used
38	ALE	O	Not used
39	HOLD	I	Not used
40	HLDA	O	Not used
41	BLCK	O	Not used
42	RD	O	Read signal
43	BHE	O	Not used
44	WR	O	Write signal
45	DSPCS	O	DSP chip select
46	SRAMCE	O	S-RAM CE1
47	LCDCS	O	LCD ASSY CS
48	FROMCE	-	Flash ROM CE
49~59	A19~A9	-	Address bus 19~9
60	VCC	-	Power supply
61	A8	-	Address bus 8
62	VSS	-	GND
63~70	A7~A0	-	Address bus 7~0
71	KBCLK	I	PC/AT keyboard CLOCK
72	DSPRINT	I	DSP TX interrupt
73	DSPTINT	I	DSP RX interrupt
74	DSPRST	O	DSP reset output
75	SRSEL	I	Swipe reader select
76	SRDAT1	I	Swipe reader data 1
77	SRDAT2	I	Swipe reader data 2
78	LEDLCK	O	Serial-parallel IC1 LCK
79~86	D7~D0	-	Data bus 7~0
87~90	KEY3~KEY0	I	Key input 3~0
91	LCDRST	O	LCD ASSY reset
92	TEMP	I	Temperature detect
93	RTCCE	O	RTC CE0
94	AVSS	-	Analog power supply (GND)
95	MICCM	I	MIC CM terminal input
96	VREF	-	Reference voltage
97	AVCC	-	Analog power supply (5C)
98	IOB2	I/O	Common I/O 4 (B2)
99	IOB1	I/O	Common I/O 3 (B1)
100	IOA2	I/O	Common I/O 2 (A2)

PARTS LIST

✻ New Parts. ⚠ indicates safety critical components.
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

L : Scandinavia **K**: USA **P** : Canada
Y : PX (Far East, Hawaii) **T** : England **E** : Europe
Y : AAFES (Europe) **X**: Australia **M**: Other Areas

KDS-100
DISPLAY UNIT (X54-3350-20)

Ref. No.	Address	New parts	Parts No.	Description	Destination
KDS-100					
1	1A	✻	A62-0979-03	PANEL ASSY	
2	1C	✻	A82-0047-01	REAR PANEL	
4	1C	✻	B09-0624-13	CAP	
5	2B	✻	B38-0856-05	LCD ASSY	
6	3E	✻	B62-1480-10	INSTRUCTION MANUAL	
8	2C	✻	E37-0980-15	CONNECTING CABLE (TO RADIO)	
9	1B	✻	E37-0981-05	SPEAKER CORD	
11	1C,2C	✻	F07-1853-03	MOLDING COVER	
13	1B	✻	G10-1287-04	FIBROUS SHEET	
14	1C	✻	G13-1906-04	CUSHION	
16	2E	✻	H12-3115-02	PACKING FIXTURE	
17	2D	✻	H12-3116-12	PACKING FIXTURE	
18	1E	✻	H12-3117-03	PACKING FIXTURE	
19	2E	✻	H12-3118-03	PACKING FIXTURE	
20	2D	✻	H13-1177-14	CARTON BOARD	
21	3E		H25-0337-04	PROTECTION BAG (180/300/0.03)	
22	1E	✻	H25-2342-04	PROTECTION BAG	
23	2D	✻	H25-2343-04	PROTECTION BAG	
24	3D	✻	H52-1846-02	ITEM CARTON CASE	
26	1B	✻	J21-8425-04	HARDWARE FIXTURE (SP)	
27	1D	✻	J29-0689-03	BRACKET (BASE) ACCESSORY	
28	2D	✻	J29-0690-14	BRACKET (REAR) ACCESSORY	
30	2A	✻	K29-9135-02	KEY TOP	
A	1D	✻	N08-0546-04	ADJUSTMENT SCREW ACCESSORY	
B	1C		N80-2608-45	PAN HEAD TAPTITE SCREW	
C	1C,2C		N82-2606-45	BINDING HEAD TAPTITE SCREW	
D	1B		N87-2606-46	BRAZIER HEAD TAPTITE SCREW	
32	1D	✻	N99-2025-05	SCREW SET ACCESSORY	
34	1B		T07-0266-05	SPEAKER	
DISPLAY UNIT (X54-3350-20)					
D27			B30-2151-05	LED (RED/GREEN)	
D28-32		✻	B30-2254-05	LED	
C1			CK73GB1H102K	CHIP C 1000PF K	
C2-24			CC73GCH1H101J	CHIP C 100PF J	
C27-33			CC73GCH1H101J	CHIP C 100PF J	
C34			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C35,36			CC73GCH1H101J	CHIP C 100PF J	
C37,38			CK73GB1C104K	CHIP C 0.10UF K	
C39-42			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C43			C92-0628-05	CHIP-TAN 10UF 10WV	
C44			CK73GB1C104K	CHIP C 0.10UF K	
C45			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C46-49			CK73GB1E103K	CHIP C 0.010UF K	
C50-53			C92-0628-05	CHIP-TAN 10UF 10WV	
C54			CK73GB1H471K	CHIP C 470PF K	
C55			C92-0628-05	CHIP-TAN 10UF 10WV	
C56			CK73GB1H471K	CHIP C 470PF K	

Ref. No.	Address	New parts	Parts No.	Description	Destination
C75			C92-0003-05	CHIP-TAN 0.47UF 25WV	
C79			C92-0628-05	CHIP-TAN 10UF 10WV	
C84,85			C92-0628-05	CHIP-TAN 10UF 10WV	
C89			C92-0546-05	CHIP-TAN 68UF 6.3WV	
C98			CC73GCH1H101J	CHIP C 100PF J	
C103			CK73GB1E103K	CHIP C 0.010UF K	
C104			CC73GCH1H101J	CHIP C 100PF J	
C113			CK73GB1E103K	CHIP C 0.010UF K	
C124-126			CK73GB1E103K	CHIP C 0.010UF K	
C127			C92-0628-05	CHIP-TAN 10UF 10WV	
C128			CK73GB1E103K	CHIP C 0.010UF K	
C129			CC73GCH1H101J	CHIP C 100PF J	
C130,131			C92-0628-05	CHIP-TAN 10UF 10WV	
C132			CK73GB1E103K	CHIP C 0.010UF K	
C133,134			CK73GB1H471K	CHIP C 470PF K	
C135-137			C92-0628-05	CHIP-TAN 10UF 10WV	
C138			CK73GB1E103K	CHIP C 0.010UF K	
C139-141			CK73GB1C104K	CHIP C 0.10UF K	
C142-144			CK73GB1E103K	CHIP C 0.010UF K	
C145,146			C92-0628-05	CHIP-TAN 10UF 10WV	
C147			CK73GB1H471K	CHIP C 470PF K	
C148			CK73GB1E103K	CHIP C 0.010UF K	
C149-152			C92-0628-05	CHIP-TAN 10UF 10WV	
C153			CK73GB1H471K	CHIP C 470PF K	
C154			C92-0519-05	CHIP-TAN 1.0UF 25WV	
C155			CK73GB1C104K	CHIP C 0.10UF K	
C156			CK73GB1H471K	CHIP C 470PF K	
C157			C92-0628-05	CHIP-TAN 10UF 10WV	
C158,159			CK73GB1E103K	CHIP C 0.010UF K	
C160			CC73GCH1H101J	CHIP C 100PF J	
C161			CK73GB1E103K	CHIP C 0.010UF K	
C163			C92-0628-05	CHIP-TAN 10UF 10WV	
C165			CC73GCH1H101J	CHIP C 100PF J	
C166			CK73GB1E103K	CHIP C 0.010UF K	
C168			CK73GB1E103K	CHIP C 0.010UF K	
C169			CK73GB1H471K	CHIP C 470PF K	
C170			C92-0628-05	CHIP-TAN 10UF 10WV	
C171			CC73GCH1H270J	CHIP C 27PF J	
C172			CK73GB1H102K	CHIP C 1000PF K	
C173			CC73GCH1H270J	CHIP C 27PF J	
C174			CK73GB1E103K	CHIP C 0.010UF K	
C175			CK73GB1H471K	CHIP C 470PF K	
C176			C92-0628-05	CHIP-TAN 10UF 10WV	
C177,178			CK73GB1E103K	CHIP C 0.010UF K	
C179			CK73GB1H471K	CHIP C 470PF K	
C180,181			CK73GB1E103K	CHIP C 0.010UF K	
C182			CK73GB1H471K	CHIP C 470PF K	
C183,184			C92-0628-05	CHIP-TAN 10UF 10WV	
C185			CK73GB1H471K	CHIP C 470PF K	
C186,187			C92-0628-05	CHIP-TAN 10UF 10WV	
C188			CK73GB1H471K	CHIP C 470PF K	
C189-191			CC73GCH1H101J	CHIP C 100PF J	
C192			CK73GB1C104K	CHIP C 0.10UF K	
C193-195			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C196			CK73GB1E153K	CHIP C 0.015UF K	

PARTS LIST

DISPLAY UNIT (X54-3350-20)

Ref. No.	Address	New parts	Parts No.	Description	Destination
C197-199			CK73FB1C105K	CHIP C 1.0UF K	
C201			CC73GCH1H470J	CHIP C 47PF J	
C202			CK73GB1C104K	CHIP C 0.10UF K	
C203			CC73GCH1H101J	CHIP C 100PF J	
C204			C92-0721-05	ELECTRO 330UF 25WV	
C205			C92-0560-05	CHIP-TAN 10UF 6.3WV	
C206,207			CK73GB1C104K	CHIP C 0.10UF K	
C208-210			C92-0719-05	ELECTRO 47UF 25WV	
C211,212			CK73GB1C104K	CHIP C 0.10UF K	
C213			C92-0721-05	ELECTRO 330OF 25WV	
C214-216			CC73GCH1H101J	CHIP C 100PF J	
C217			CC73GCH1H470J	CHIP C 47PF J	
C218,219			CC73GCH1H101J	CHIP C 100PF J	
C221,222			CC73GCH1H101J	CHIP C 100PF J	
C223			CC73GCH1H470J	CHIP C 47PF J	
C224			CC73GCH1H101J	CHIP C 100PF J	
C225			CK73GB1C104K	CHIP C 0.10UF K	
C226,227			CK73GB1E103K	CHIP C 0.010UF K	
C229			CK73GB1E103K	CHIP C 0.010UF K	
C231			CK73GB1E103K	CHIP C 0.010UF K	
C233,234			CK73GB1E103K	CHIP C 0.010UF K	
C239			CK73GB1E103K	CHIP C 0.010UF K	
C240-242			CK73GB1C104K	CHIP C 0.10UF K	
C245-248			CK73GB1C104K	CHIP C 0.10UF K	
C249-254			CK73GB1H102K	CHIP C 1000PF K	
C255			CK73GB1C104K	CHIP C 0.10UF K	
CN1,2			E40-5887-05	PIN ASSY	
CN3			E40-5737-05	PIN ASSY	
CN5			E40-6047-05	PIN ASSY	
CN6			E40-5702-05	PIN ASSY	
CN15			E40-5751-05	PIN ASSY	
CN16			E40-5752-05	PIN ASSY	
CN17,18			E40-9449-05	PIN ASSY	
CN31			E40-6169-05	FLAT CABLE CONNECTOR	
CN33			E40-5738-05	PIN ASSY	
J1			E08-0877-05	MODULAR JACK	
101	2C	✻	F20-3332-04	INSULATING SHEET (LITHIUM CELL)	
-			J31-0543-05	COLLAR	
L1-10			L92-0140-05	FERRITE CHIP	
X1		✻	L78-1401-05	RESONATOR (7.373MHZ)	
X2			L77-1679-05	CRYSTAL RESONATOR (12.288MHZ)	
CP1		✻	RK75GA1J102J	CHIP-COM 1.0K J 1/16W	
CP2			RK75GB1J102J	CHIP-COM 1.0K J 1/16W	
CP3		✻	RK75GA1J102J	CHIP-COM 1.0K J 1/16W	
CP4			R90-1019-05	MULTI-COMP 100 X2	
CP5		✻	RK75GA1J102J	CHIP-COM 1.0K J 1/16W	
CP6,7			R90-1019-05	MULTI-COMP 100 X2	
CP8		✻	RK75GA1J102J	CHIP-COM 1.0K J 1/16W	
CP9,10			RK75GB1J101J	CHIP-COM 100 J 1/16W	
CP11,12		✻	RK75GA1J102J	CHIP-COM 1.0K J 1/16W	
CP13-17			RK75GB1J101J	CHIP-COM 100 J 1/16W	
CP18			R90-1019-05	MULTI-COMP 100 X2	
R1			R92-1252-05	CHIP R 0 OHM J 1/16W	
R2			RK73GB1J220J	CHIP R 22 J 1/16W	
R3			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R4			RK73GB1J473J	CHIP R 47K J 1/16W	
R6			RK73GB1J102J	CHIP R 1.0K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R7			RK73GB1J221J	CHIP R 220 J 1/16W	
R8,9			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R10			RK73GB1J473J	CHIP R 47K J 1/16W	
R11-14			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R15			RK73GB1J101J	CHIP R 100 J 1/16W	
R16-21			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R22			R92-1252-05	CHIP R 0 OHM J 1/16W	
R23-26			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R27			RK73GB1J223J	CHIP R 22K J 1/16W	
R28,29			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R30			RK73GB1J223J	CHIP R 22K J 1/16W	
R31			RK73GB1J183J	CHIP R 18K J 1/16W	
R32			RK73GB1J683J	CHIP R 68K J 1/16W	
R33			RK73GB1J223J	CHIP R 22K J 1/16W	
R34			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R35			R92-1252-05	CHIP R 0 OHM J 1/16W	
R36			RK73GB1J272J	CHIP R 2.7K J 1/16W	
R37-39			RK73GB1J101J	CHIP R 100 J 1/16W	
R40			RK73GB1J473J	CHIP R 47K J 1/16W	
R41			RK73GB1J101J	CHIP R 100 J 1/16W	
R42			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R43			RK73GB1J473J	CHIP R 47K J 1/16W	
R44,45			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R46,47			R92-1252-05	CHIP R 0 OHM J 1/16W	
R48			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R49			RK73GB1J101J	CHIP R 100 J 1/16W	
R50			R92-1252-05	CHIP R 0 OHM J 1/16W	
R51			RK73GB1J103J	CHIP R 10K J 1/16W	
R52			RK73GB1J101J	CHIP R 100 J 1/16W	
R54			RK73GB1J101J	CHIP R 100 J 1/16W	
R56			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R57			RK73GB1J101J	CHIP R 100 J 1/16W	
R60			RK73GB1J473J	CHIP R 47K J 1/16W	
R62			RK73GB1J223J	CHIP R 22K J 1/16W	
R63			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R64,65			RK73GB1J473J	CHIP R 47K J 1/16W	
R68,69			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R70			R92-1252-05	CHIP R 0 OHM J 1/16W	
R71-73			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R74,75			RK73GB1J473J	CHIP R 47K J 1/16W	
R78			RK73GB1J104J	CHIP R 100K J 1/16W	
R79			RK73GB1J473J	CHIP R 47K J 1/16W	
R81			RK73GB1J104J	CHIP R 100K J 1/16W	
R82			R92-1252-05	CHIP R 0 OHM J 1/16W	
R84,85			RK73GB1J104J	CHIP R 100K J 1/16W	
R86			R92-1252-05	CHIP R 0 OHM J 1/16W	
R87,88			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R89			R92-1252-05	CHIP R 0 OHM J 1/16W	
R90-94			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R95,96			RK73GB1J473J	CHIP R 47K J 1/16W	
R97,98			RK73GB1J104J	CHIP R 100K J 1/16W	
R99-102			RK73GB1J122J	CHIP R 1.2K J 1/16W	
R103			R92-1252-05	CHIP R 0 OHM J 1/16W	
R104			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R106			RK73GB1J223J	CHIP R 22K J 1/16W	
R107			RK73GB1J103J	CHIP R 10K J 1/16W	
R108,109			R92-1252-05	CHIP R 0 OHM J 1/16W	
R110			RK73GB1J123J	CHIP R 12K J 1/16W	
R111			RK73GB1J183J	CHIP R 18K J 1/16W	
R112			RK73GB1J473J	CHIP R 47K J 1/16W	

PARTS LIST

DISPLAY UNIT (X54-3350-20)

Ref. No.	Address	New parts	Parts No.	Description	Destination
R113			RK73GB1J223J	CHIP R 22K J 1/16W	
R114,115			RK73GB1J473J	CHIP R 47K J 1/16W	
R116			RK73GB1J823J	CHIP R 82K J 1/16W	
R117			RK73GB1J223J	CHIP R 22K J 1/16W	
R118			RK73GB1J561J	CHIP R 560 J 1/16W	
R119			RK73GB1J104J	CHIP R 100K J 1/16W	
R120			RK73GB1J334J	CHIP R 330K J 1/16W	
R121			RK73GB1J103J	CHIP R 10K J 1/16W	
R123,124			RK73GB1J473J	CHIP R 47K J 1/16W	
R125			R92-1252-05	CHIP R 0 OHM J 1/16W	
R126			RK73GB1J273J	CHIP R 27K J 1/16W	
R127			RK73GB1J683J	CHIP R 68K J 1/16W	
R128			RK73GB1J333J	CHIP R 33K J 1/16W	
R129-132			R92-1252-05	CHIP R 0 OHM J 1/16W	
R133,134			RK73GB1J470J	CHIP R 47 J 1/16W	
R135			RK73GB1J101J	CHIP R 100 J 1/16W	
R136			RK73GB1J470J	CHIP R 47 J 1/16W	
R137			RK73GB1J101J	CHIP R 100 J 1/16W	
R138			RK73GB1J563J	CHIP R 56K J 1/16W	
R139			RK73GB1J473J	CHIP R 47K J 1/16W	
R140			RK73GB1J223J	CHIP R 22K J 1/16W	
R141			RK73GB1J104J	CHIP R 100K J 1/16W	
R142			RK73GB1J334J	CHIP R 330K J 1/16W	
R143			R92-1252-05	CHIP R 0 OHM J 1/16W	
R144			RK73GB1J101J	CHIP R 100 J 1/16W	
R145			R92-1252-05	CHIP R 0 OHM J 1/16W	
R146			RK73GB1J104J	CHIP R 100K J 1/16W	
R147			RK73GB1J470J	CHIP R 47 J 1/16W	
R148			R92-1252-05	CHIP R 0 OHM J 1/16W	
R149-151			RK73GB1J473J	CHIP R 47K J 1/16W	
R152			RK73GB1J223J	CHIP R 22K J 1/16W	
R156			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R157			RK73GB1J473J	CHIP R 47K J 1/16W	
R158			RK73GB1J470J	CHIP R 47 J 1/16W	
R159			R92-1252-05	CHIP R 0 OHM J 1/16W	
R161			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R163			RK73GB1J470J	CHIP R 47 J 1/16W	
R164			R92-1252-05	CHIP R 0 OHM J 1/16W	
R165			RK73GB1J223J	CHIP R 22K J 1/16W	
R166			R92-1252-05	CHIP R 0 OHM J 1/16W	
R167			RK73GB1J473J	CHIP R 47K J 1/16W	
R168,169			RK73GB1J181J	CHIP R 180 J 1/16W	
R170			RK73GB1J473J	CHIP R 47K J 1/16W	
R171			RK73GB1J393J	CHIP R 39K J 1/16W	
R172,173			RK73GB1J473J	CHIP R 47K J 1/16W	
R174			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R175			RK73GB1J103J	CHIP R 10K J 1/16W	
R176			RK73GB1J101J	CHIP R 100 J 1/16W	
R177,178			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R179			RK73GB1J221J	CHIP R 220 J 1/16W	
R180			RK73GB1J473J	CHIP R 47K J 1/16W	
R181			RK73GB1J392J	CHIP R 3.9K J 1/16W	
R182,183			RK73GB1J103J	CHIP R 10K J 1/16W	
R185			RK73GB1J224J	CHIP R 220K J 1/16W	
R186			RK73GB1J473J	CHIP R 47K J 1/16W	
R187			RK73GB1J224J	CHIP R 220K J 1/16W	
R189			R92-1252-05	CHIP R 0 OHM J 1/16W	
R190			RK73GB1J273J	CHIP R 27K J 1/16W	
R191			RK73GB1J182J	CHIP R 1.8K J 1/16W	
R193			RK73GB1J104J	CHIP R 100K J 1/16W	

Ref. No.	Address	New parts	Parts No.	Description	Destination
R194			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R195			RK73GB1J104J	CHIP R 100K J 1/16W	
R196-198			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R199			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R200			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R201			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R202,203			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R204			R92-1252-05	CHIP R 0 OHM J 1/16W	
R206			RK73GB1J101J	CHIP R 100 J 1/16W	
R207-209			RK73GB1J473J	CHIP R 47K J 1/16W	
R214,215			RK73GB1J473J	CHIP R 47K J 1/16W	
R216			R92-1252-05	CHIP R 0 OHM J 1/16W	
R219,220			RK73GB1J104J	CHIP R 100K J 1/16W	
R224			RK73GB1J473J	CHIP R 47K J 1/16W	
R226			RK73GB1J104J	CHIP R 100K J 1/16W	
R227-230			RK73GB1J473J	CHIP R 47K J 1/16W	
R231			RK73GB1J560J	CHIP R 56 J 1/16W	
R232			RK73GB1J470J	CHIP R 47 J 1/16W	
R233			RK73GB1J473J	CHIP R 47K J 1/16W	
R234			RK73GB1J393J	CHIP R 39K J 1/16W	
R235			RK73GB1J223J	CHIP R 22K J 1/16W	
R236			RK73FB2A4R7J	CHIP R 4.7 J 1/10W	
R237			R92-1252-05	CHIP R 0 OHM J 1/16W	
R238-243			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R244			RK73GB1J471J	CHIP R 470 J 1/16W	
R245			R92-1252-05	CHIP R 0 OHM J 1/16W	
R247			R92-1252-05	CHIP R 0 OHM J 1/16W	
R249,250			R92-1252-05	CHIP R 0 OHM J 1/16W	
D1			1812L075PR	VARISTOR	
D2			UDZS10B	ZENER DIODE	
D3			DSM3MA1	DIODE	
D4			MA2S111	DIODE	
D5			1SS373	DIODE	
D6-8			DA204U	DIODE	
D9			NNCD6.8G	ZENER DIODE	
D10-17			DA204U	DIODE	
D18			MA2S111	DIODE	
D19-21			NNCD6.8G	ZENER DIODE	
D22-24			DA204U	DIODE	
D34-38			DA204U	DIODE	
D39			NNCD6.8G	ZENER DIODE	
D40			1SS373	DIODE	
IC1		✻	ADM691AR	MOS IC	
IC2		✻	RTC-4574SA	MOS IC	
IC3			ADM202EARU	MOS IC	
IC3			ADM3202ARU	MOS IC	
IC4			TC74HC4094AF	MOS IC	
IC5			BU4053BCFV	MOS IC	
IC6		✻	30620M8A-2M6GP	MPU	
IC7			TC7W04F	MOS IC	
IC8,9		✻	TC74HCT244AF	MOS IC	
IC10			TC74LVX4245FS	MOS IC	
IC11			TC74LVX244FT	MOS IC	
IC12		✻	W24100S-70LE	SRAM IC	
IC13		✻	MBM29LV800B90	SRAM IC	
IC14,15			NJM2904M	MOS IC	
IC16			TC7S04FU	MOS IC	
IC17			M62364FP	MOS IC	
IC19			TC74VHC4040FT	MOS IC	

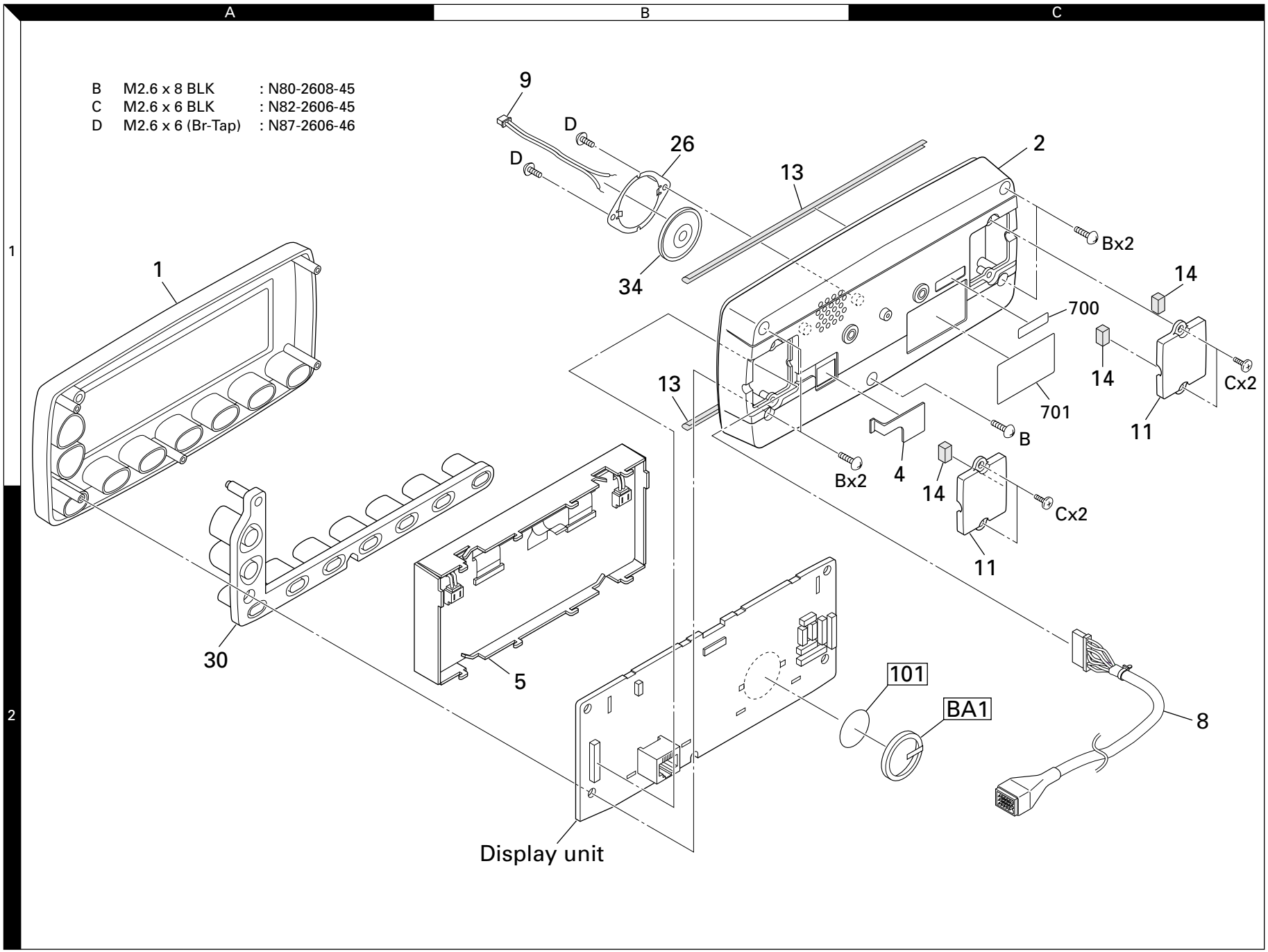
PARTS LIST

DISPLAY UNIT (X54-3350-20)

Ref. No.	Address	New parts	Parts No.	Description	Desti-nation
IC20			AK4550VT	MOS IC	
IC21,22			NJM2904M	MOS IC	
IC23			320VC5402PGE	MPU	
IC24			BU2099FV	MOS IC	
IC25			BU4094BCFV	MOS IC	
IC26			XC62FP1802P	MOS IC	
IC27,28			XC62FP3302P	MOS IC	
IC30			TA7805F	MOS IC	
IC31-33			TA78L05F	MOS IC	
IC34			TDA7053AT	BI-POLAR IC	
IC35			TA7805F	MOS IC	
IC36			TA7808F	ANALOG IC	
IC37,38			TC74LVX244FT	MOS IC	
IC39			TC7S08FU	MOS IC	
IC40			TC7W66FU	MOS IC	
IC41			TC7S08FU	MOS IC	
Q1			DTC114YE	DIGITAL TRANSISTOR	
Q2			DTC144EE	DIGITAL TRANSISTOR	
Q3		✻	RN47A4	TRANSISTOR	
Q4			DTC144EE	DIGITAL TRANSISTOR	
Q5			DTC114EUA	DIGITAL TRANSISTOR	
Q6		✻	FMA5A	TRANSISTOR	
Q7			2SC4617(R)	TRANSISTOR	
Q8,9			2SB1132(Q,R)	TRANSISTOR	
Q10			2SB798(DL,DK)	TRANSISTOR	
Q11,12			2SK1830	FET	
Q13-15		✻	RN47A4	TRANSISTOR	
Q16			DTC114YE	DIGITAL TRANSISTOR	
TH1,2			157-104-53001	THERMISTOR	
BA1	2C		W09-0985-05	LITHIUM CELL	

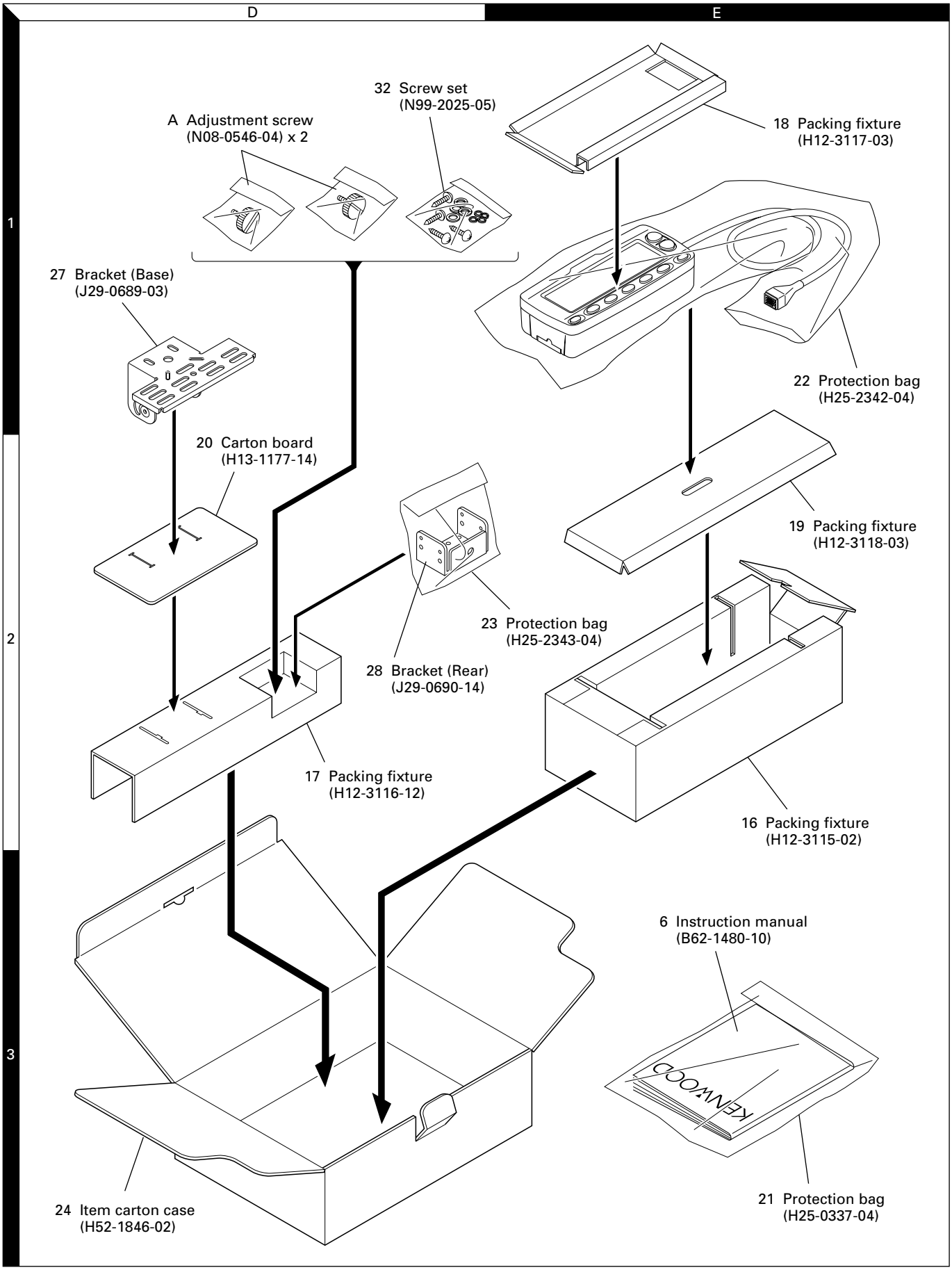
Ref. No.	Address	New parts	Parts No.	Description	Desti-nation

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

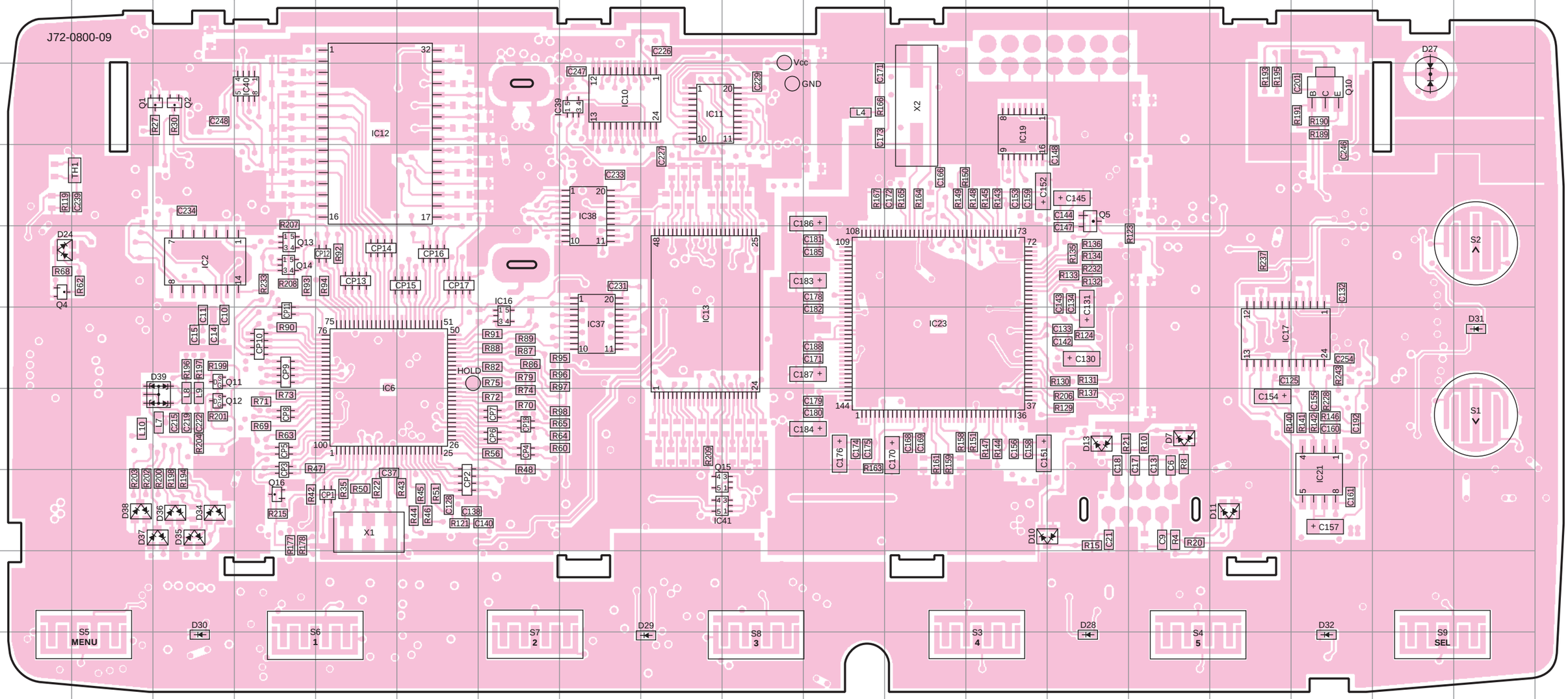
PACKING



Parts with the exploded numbers larger than 700 are not supplied.

KDS-100 PC BOARD VIEW

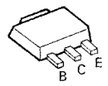
DISPLAY UNIT (X54-3350-20) Component side view



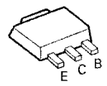
Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address
IC2	5C	IC23	6L	Q10	3Q	D13	7N	D36	8C
IC6	6E	IC37	6H	Q11	6C	D24	5A	D37	8C
IC10	3H	IC38	4H	Q12	7C	D27	3R	D38	8B
IC11	3I	IC39	3H	Q13	5D	D28	10N	D39	7C
IC12	3E	IC40	3D	Q14	5D	D29	10I		
IC13	6I	IC41	8J	Q15	8J	D30	10C		
IC16	6G	Q1	3C	Q16	8D	D31	6S		
IC17	6P	Q2	3C	D7	7O	D32	10Q		
IC19	3M	Q4	5A	D10	8M	D34	8C		
IC21	8Q	Q5	4N	D11	8P	D35	8C		

DTC114YE
DTC144EE
2SC4617

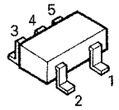
2SB1132



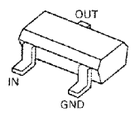
2SB798



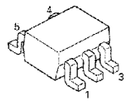
FMA5A



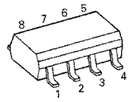
DTC114EUA



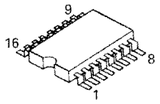
RN47A4



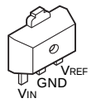
NJM2904M
TC7W04F



TC74HC4094AF



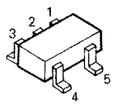
TA78L05F



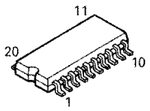
DA204U

2SK1830

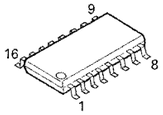
TC7S04FU
TC7S08FU



TC74HCT244AF

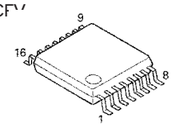


ADM691AR



ADM202EARU
AK4550VT
BU4053BCFV

BU4094BCFV
TC74VHC4040FT



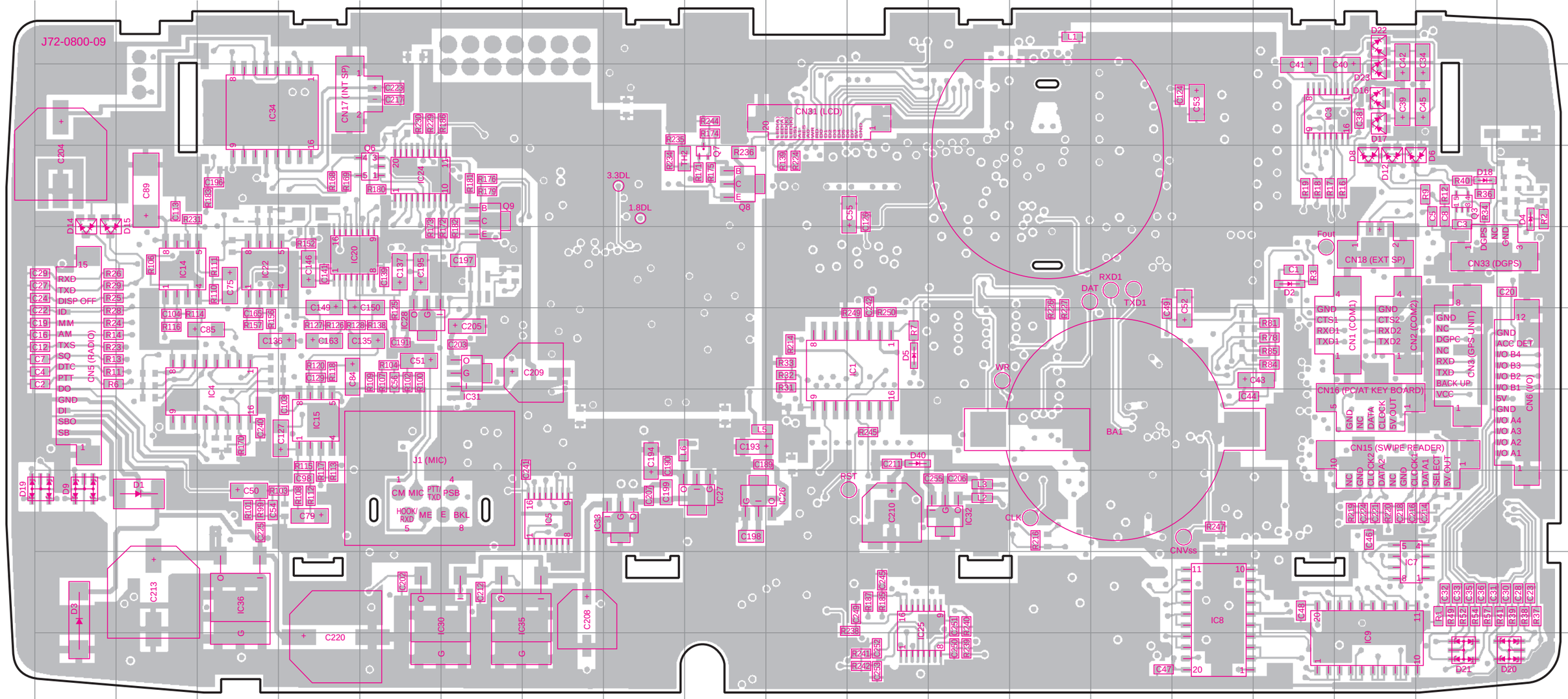
Component side

Pattern 1	
Pattern 2	
Pattern 3	
Pattern 4	

Foil side

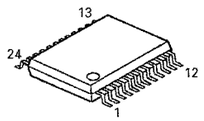
PC BOARD VIEW KDS-100

DISPLAY UNIT (X54-3350-20) Foil side view

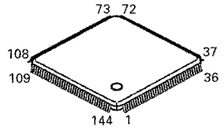


Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address
IC1	6K	IC22	5C	IC34	3C	D3	9A	D17	3Q
IC3	3P	IC24	4E	IC35	9F	D4	4S	D18	4R
IC4	7C	IC25	9K	IC36	9C	D5	6K	D19	8A
IC5	8G	IC26	8I	Q3	4R	D6	4R	D20	10S
IC7	9Q	IC27	8I	Q6	4E	D8	4Q	D21	10R
IC8	9O	IC28	6E	Q7	4I	D9	8A	D22	2Q
IC9	10Q	IC30	9F	Q8	4I	D12	4Q	D23	3Q
IC14	5B	IC31	6F	Q9	4F	D14	4A	D40	7K
IC15	7D	IC32	8L	D1	8B	D15	4A		
IC20	5D	IC33	8H	D2	5P	D16	3Q		

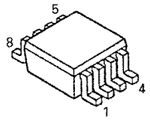
M62364FP
TC74LVX4245FS



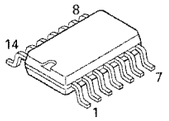
320VC5402PGE



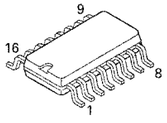
TC7W66FU



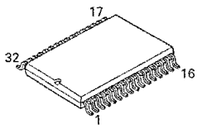
RTC-4574SA



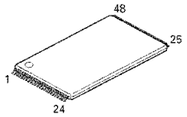
TDA7053AT



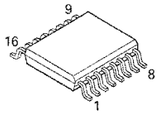
W24100S-70LE



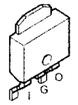
MBM29LV800B90



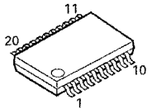
ADM3202ARU



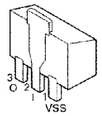
TA7805F
TA7808F



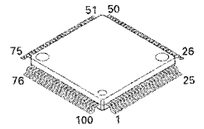
BU2099FV
TC74LVX244FT



XC62FP1802P



30620M8A-2M6GP



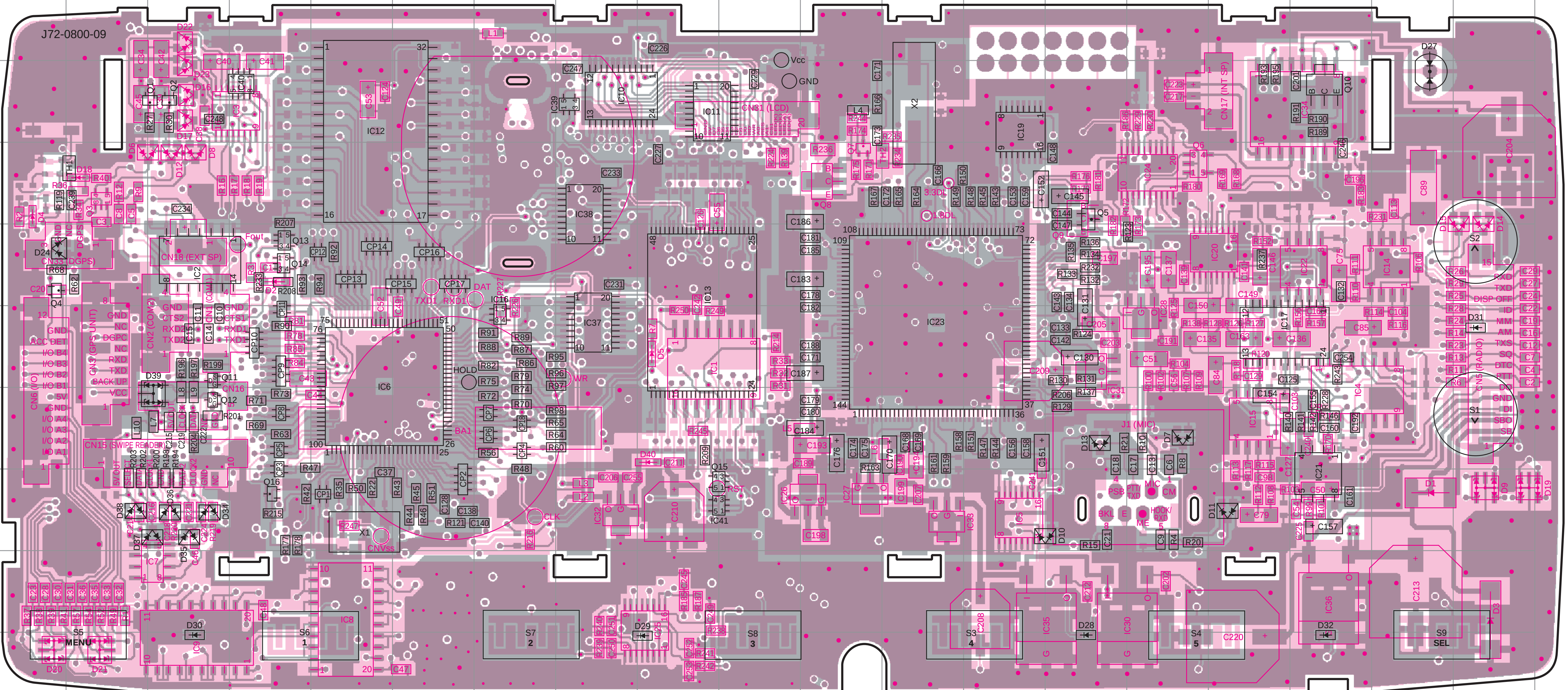
Component side

Pattern 1	
Pattern 2	
Pattern 3	
Pattern 4	

Foil side

KDS-100 PC BOARD VIEW

DISPLAY UNIT (X54-3350-20) Component side view + Foil side



Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address	Ref No.	Address
IC1	6I	IC11	3I	IC22	5Q	IC33	8L	Q2	3C	Q12	7C	D6	4B	D16	3C	D28	10N	D39	7C
IC2	5C	IC12	3E	IC23	6L	IC34	3Q	Q3	4B	Q13	5D	D7	7O	D17	3C	D29	10I	D40	7I
IC3	3D	IC13	6I	IC24	4O	IC35	9N	Q4	5A	Q14	5D	D8	4C	D18	4B	D30	10C		
IC4	7Q	IC14	5R	IC25	9I	IC36	9Q	Q5	4N	Q15	8J	D9	8S	D19	8S	D31	6S		
IC5	8M	IC15	7P	IC26	8K	IC37	6H	Q6	4O	Q16	8D	D10	8M	D20	10A	D32	10Q		
IC6	6E	IC16	6G	IC27	8K	IC38	4H	Q7	4K	D1	8R	D11	8P	D21	10B	D34	8C		
IC7	9C	IC17	6P	IC28	6O	IC39	3H	Q8	4K	D2	5D	D12	4C	D22	2C	D35	8C		
IC8	9E	IC19	3M	IC30	9O	IC40	3D	Q9	4N	D3	9S	D13	7N	D23	3C	D36	8C		
IC9	10C	IC20	5P	IC31	6N	IC41	8J	Q10	3Q	D4	4A	D14	4S	D24	5A	D37	8C		
IC10	3H	IC21	8Q	IC32	8H	Q1	3C	Q11	6C	D5	6I	D15	4S	D27	3R	D38	8B		

Component side
Pattern 1
Pattern 2
Pattern 3
Pattern 4
Foil side

● Connect 1 and 4

Note : Components marked with a dot (·) are parts of pattern 1.

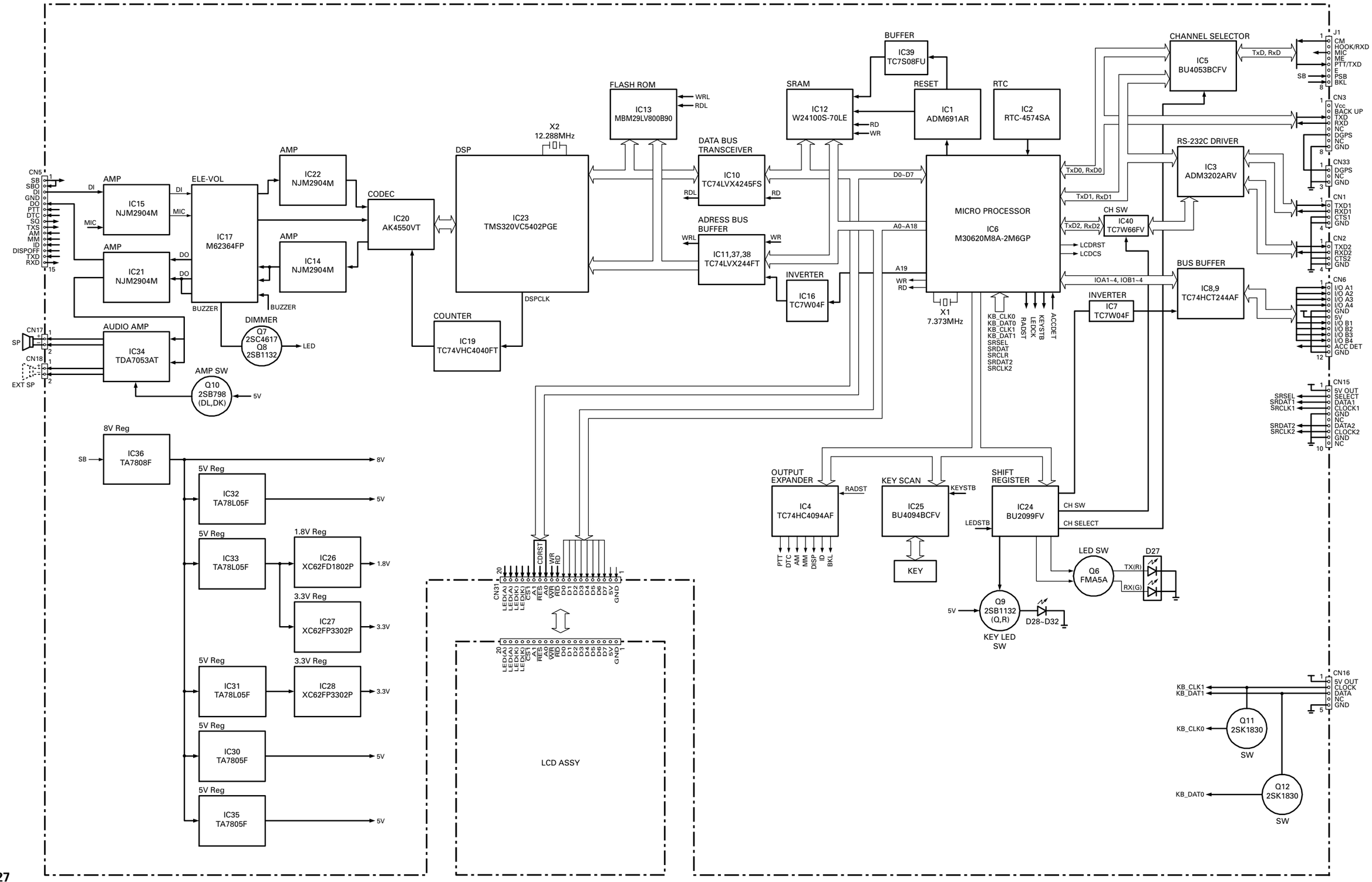
DISPLAY UNIT (X54-3350-20)

D1	:1812L075PR	D5,40	:1SS373	D27	:B30-2151-05	Q1,16	:DTC114YE	Q6	:FMA5A
D2	:UDZS10B	D6-8,10-17, 22-24,34-38	:DA204U	D28-32	:B30-2171-05	Q2,4	:DTC144EE	Q7	:2SC4617(R)
D3	:DSM3MA1					Q3,13-15	:RN47A4	Q8,9	:2SB1132(Q,R)
D4,18	:MA2S111	D9,19-21,39	:NNCD6.8G			Q5	:DTC114EUA	Q10	:2SB798(DL,DK)

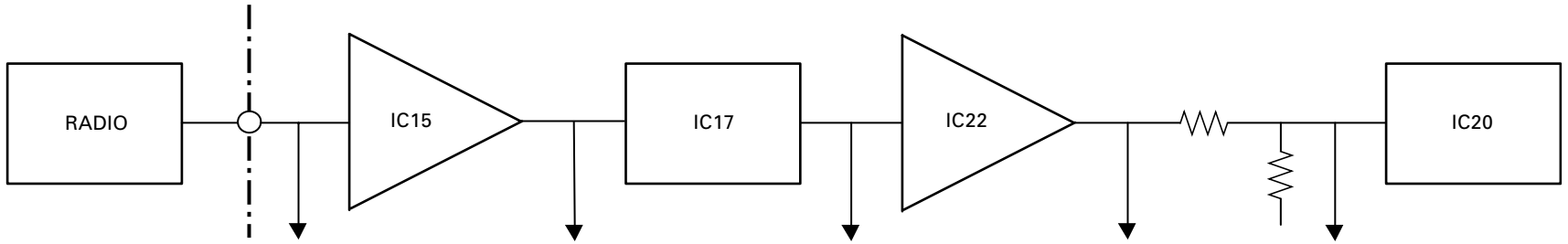
Q11,12	:2SK1830	IC1	:ADM691AR	IC5	:BU4053BCFV	IC10	:TC74LVX4245FS
		IC2	:RTC-4574SA	IC6	:30620M8A-2M6GP	IC11,37,38	:TC74LVX244FT
		IC3	:ADM202EARU or ADM3202ARU	IC7	:TC7W04F	IC12	:W24100S-70LE
		IC4	:TC74HC4094AF	IC8,9	:TC74HCT244AF	IC13	:MBM29LV800B90

IC14,15	:NJM2904M	IC20	:AK4550VT	IC25	:BU4094BCFV	IC31-33	:TA78L05F	IC40	:TC7W66FU
IC16	:TC7S04FU	IC21,22	:NJM2904M	IC26	:XC62FP1802P	IC34	:TDA7053AT		
IC17	:M62364FP	IC23	:320VC5402PGE	IC27,28	:XC62FP3302P	IC36	:TA7808F		
IC19	:TC74VHC4040FT	IC24	:BU2099FV	IC30,35	:TA7805F	IC39,41	:TC7S08FU		

BLOCK DIAGRAM



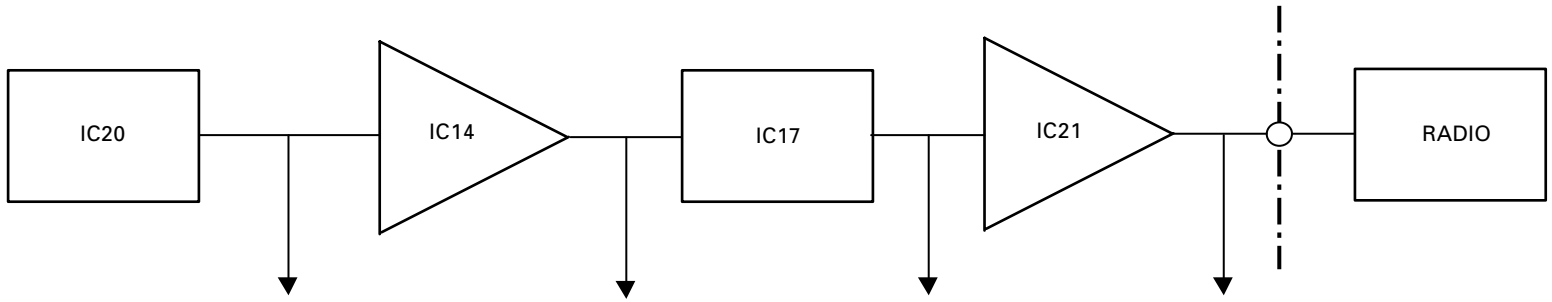
Rceiver Section



TK-∗80 series	Wide : 155mVrms Narrow : 155mVrms	Wide : 155mVrms Narrow : 155mVrms	Wide : 22mVrms Narrow : 22mVrms	Wide : 0.47Vrms Narrow : 0.47Vrms	Wide : 0.35Vrms Narrow : 0.35Vrms (1.0Vp-p)
TK-∗60G series	Wide : 240mVrms Narrow : 240mVrms	Wide : 240mVrms Narrow : 240mVrms	Wide : 23mVrms Narrow : 23mVrms	Wide : 0.48Vrms Narrow : 0.48Vrms	Wide : 0.35Vrms Narrow : 0.35Vrms (1.0Vp-p)

Note :
WIDE indicates 3.0kHz deviation, and NARROW indicates an AF level when the RF signal modulated by 1.5kHz is received.

Transmitter Section



TK-∗80 series	Wide : 0.7Vrms Narrow : 0.7Vrms (2.0Vp-p)	Wide : 1.24Vrms Narrow : 1.24Vrms	Wide : 0.59Vrms Narrow : 0.30Vrms	Wide : 0.59Vrms Narrow : 0.30Vrms
TK-∗60G series	Wide : 0.7Vrms Narrow : 0.7Vrms (2.0Vp-p)	Wide : 1.24Vrms Narrow : 1.24Vrms	Wide : 0.85Vrms Narrow : 0.42Vrms	Wide : 0.59Vrms Narrow : 0.42Vrms

Note :
WIDE indicates 3.0kHz deviation, and NARROW indicates an AF level when the RF signal modulated by 1.5kHz is transmitted.

TERMINAL FUNCTION

Connector Name	Pin No.	Pin Name	I/O	Description
J1	1	BKL	O	Controls keypad backlight of the microphone.
PROG/	2	PSB	O	DC output (13.6V)
MIC	3	E	-	Earth
	4	TXD	O	Serial output
	5	ME	-	Not applicable
	6	MIC	I	Not applicable
	7	RXD	I	Serial input
	8	CM	I	Not applicable
CN1	1	TXD1	O	Not applicable
	2	RXD1	I	Not applicable
	3	CTS1	O	Not applicable
	4	GND	-	Ground
CN2	1	TXD2	O	Not applicable
	2	RXD2	I	Not applicable
	3	CTS2	O	Not applicable
	4	GND	-	Ground
CN3	1	Vcc	I	DC input (3.3V)
	2	BACK UP	I	BACK UP DC input
	3	TXD	O	Not applicable
	4	RXD	I	Not applicable
	5	NC	-	-
	6	DGPS	I	Not applicable
	7	NC	-	-
	8	GND	-	Ground
CN5	1	SB	I	Main power supply input (13.6V)
	2	SBO	O	DC output (13.6V)
RADIO	3	DI	I	Modem input from radio DEO (detector output)
	4	GND	-	Ground
	5	DO	O	Modem output to radio DI (modulation input)
	6	PTT	O	PTT output
	7	DTC	O	Data TX control output
	8	SQ	I	Squelch input
	9	TXS	I	Radio TX detect input
	10	AM	O	Audio mute
	11	MM	O	Microphone mute
	12	ID	O	ID detect output (KGP protocol)
	13	DISP OFF	O	Controls radio LCD on/off
	14	TXD	O	Serial output (CMOS level)
	15	RXD	I	Serial input (CMOS level)

Connector Name	Pin No.	Pin Name	I/O	Description
CN6	1	I/O A1	I/O	Multipurpose I/O port, Group A (programmable)
I/O	2	I/O A2	I/O	Multipurpose I/O port, Group A (programmable)
	3	I/O A3	I/O	Multipurpose I/O port, Group B (programmable)
	4	I/O A4	I/O	Multipurpose I/O port, Group B (programmable)
	5	GND	-	Ground
	6	5V OUT	-	DC output (5V)
	7	I/O B1	I/O	Multipurpose I/O port, Group A (programmable)
	8	I/O B2	I/O	Multipurpose I/O port, Group A (programmable)
	9	I/O B3	I/O	Multipurpose I/O port, Group B (programmable)
	10	I/O B4	I/O	Multipurpose I/O port, Group B (programmable)
	11	ACC DETECT	I	Accessory detect
	12	GND	-	Ground
CN15	1	5V OUT	O	DC output (5V)
	2	SELECT	-	Not applicable
	3	DATA1	-	Not applicable
	4	CLOCK1	-	Not applicable
	5	GND	-	Ground
	6	NC	-	-
	7	DATA2	-	Not applicable
	8	CLOCK2	-	Not applicable
	9	GND	-	Ground
	10	NC	-	-
CN16	1	5V OUT	O	DC output (5V)
	2	CLOCK	I/O	Not applicable
	3	DATA	I/O	Not applicable
	4	NC	-	-
	5	GND	-	Ground
CN17	1	+	O	Internal speaker (BTL)
	2	–	O	Internal speaker (BTL)
CN18	1	+	O	External speaker (BTL)
	2	–	O	External speaker (BTL)
CN33	1	DGPS	O	Not applicable
	2	NC	-	-
	3	GND	-	Ground

SPECIFICATIONS

Modem Encode Level Range	100~1000mVrms
Modem Decode Level Range	100~1000mVrms
Received Log Backup Period	More than 2 months (at full charged)
Current Drain	Less than 700mA

KDS-100

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