

# KGP-2A/2B

## SERVICE MANUAL

### SUPPLEMENT

# KENWOOD

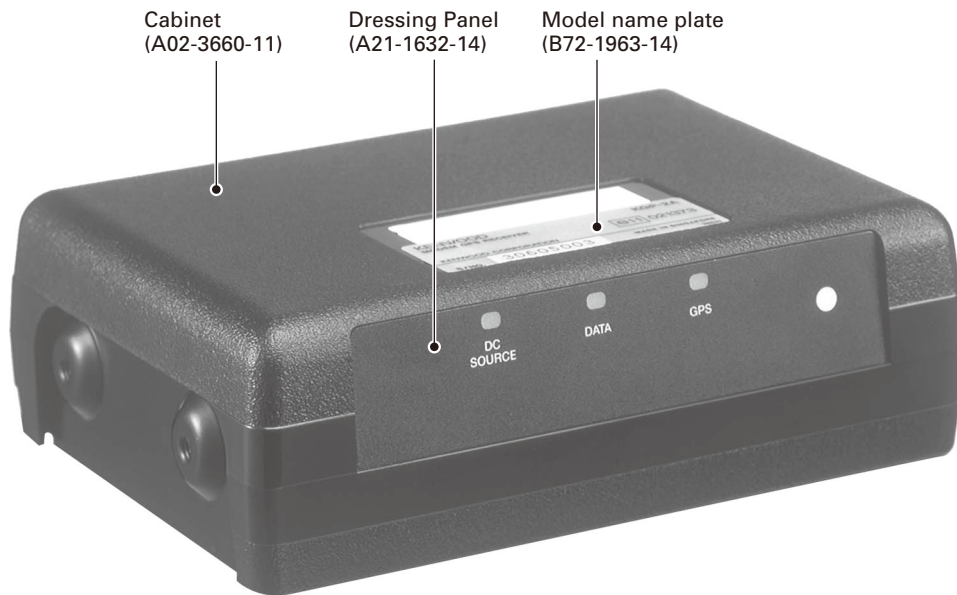
Kenwood Corporation

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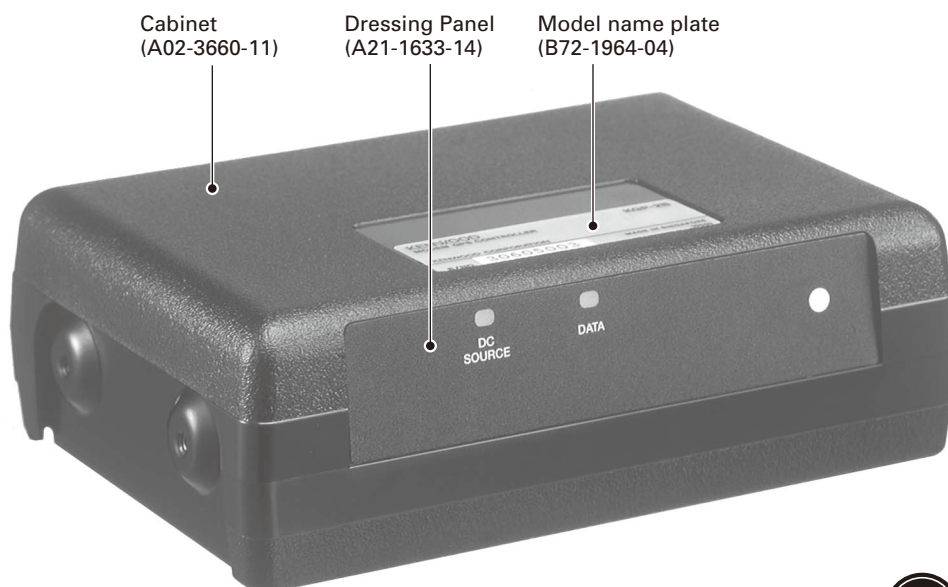
This service manual has been revised due to the modification of the GPS module and PC board and issues it as a supplemental manual. This service manual applies to products with 00200101 or subsequent serial numbers.

Refer to the KGP-2A/2B service manual (B51-8596-00) for any information which has not been covered in this KGP-2A/2B service manual.

### KGP-2A



### KGP-2B



# KGP-2A/2B

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## INSTALLATION

### TK-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 (①) from the chassis.
3. Remove the pad as shown in the Figure 1 (②).
4. Insert the KCT-34 cable (③) into the chassis (④). The wire harness band (⑤) must be inside the chassis.
5. Replace the DC cord bushing (⑥).
6. Connect the KCT-34 to the TX-RX unit (A/2) as shown in Figure 2 (⑦).

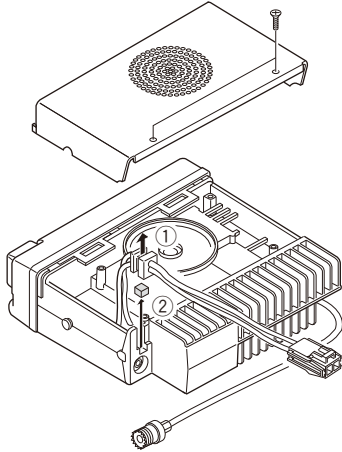


Fig. 1

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
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

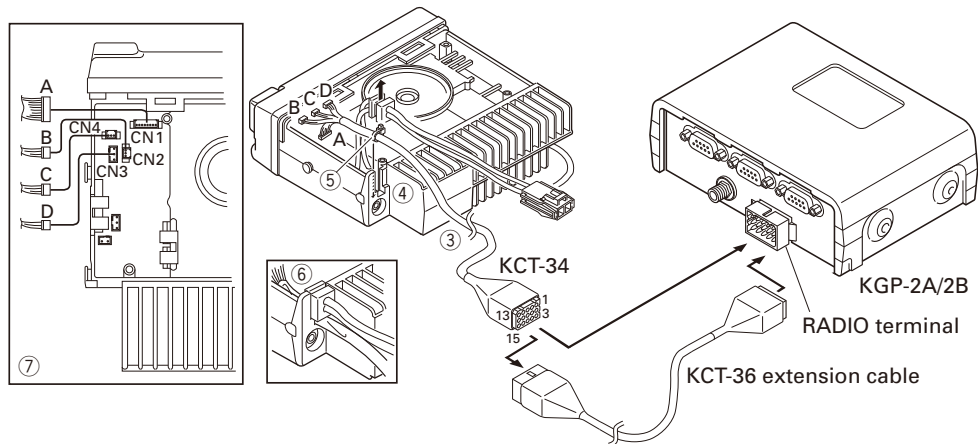


Fig. 2

# KGP-2A/2B

## INSTALLATION

### TK-760G/762G/862G/768G/863G/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 (①) from the chassis.
3. Remove the pad as shown in the Figure 3 (②).
4. Insert the KCT-35 cable (③) into the chassis (④). The wire harness band (⑤) must be inside the chassis.
5. Replace the DC cord bushing (⑥).
6. Connect the KCT-35 to the TX-RX unit (A/2) as shown in Figure 4 (⑦).

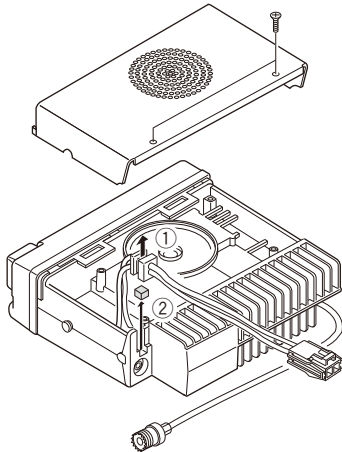


Fig. 3

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
B-1	Gray	10
B-2	White	11
B-3	Purple	9
C-1	NC	-
C-2	Black	3
C-3	Red	1

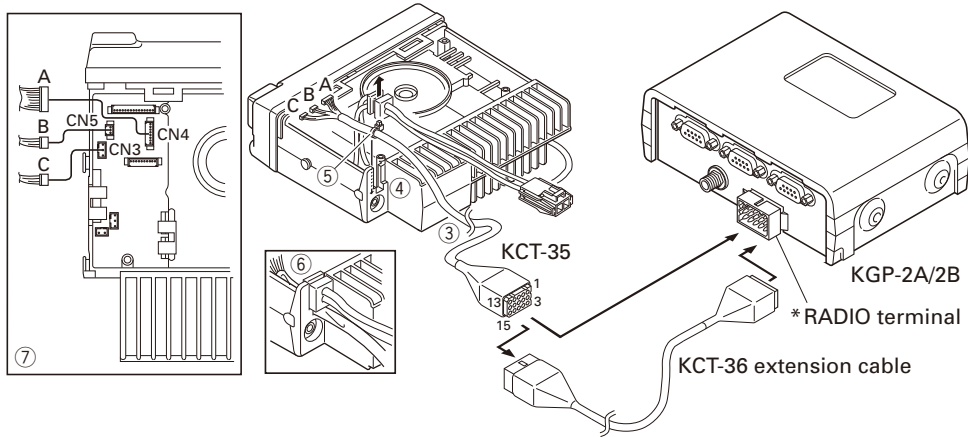
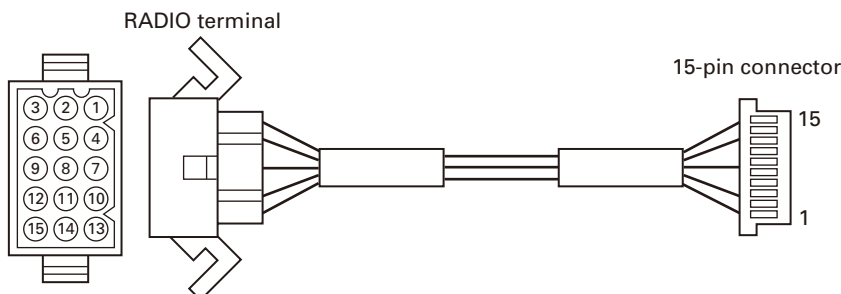


Fig. 4

#### \* Wiring diagram of RADIO terminal (E37-0982-15: Lead wire with connector)



RADIO terminal No.	Wie color	15-pin connector No.
1	Black	1
2	White	2
3	White	4
4	White	3
5~15	White	5~15

## REALIGNMENT

### Transceiver Setting

When the KGP-2A/2B 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 "Edit" on the menu bar and change Com2 (Internal Port) from "[None]" to "[AUX Hook/PTT]".

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

- 1) Select "Extended Function" from "Edit" on the menu bar and change Com2 from "[None]" to "[AUX Hook/PTT]".

#### ■ TK-#60G Series Setting Method

Use the KPG-56D as the FPU.

- 1) Select "Key assignment" from "Edit" on the menu bar, and set "Foot Switch" to "[None]".

- 2) Select "Optional Features" from "Edit" on the menu bar and change "ACC Hook/DTC" from "[ACC Hook]" to "[DTC]".

#### Note :

Applicable only for S/No. 302XXXXX or later.

### KGP-2A/2B Setting

After programming the transceiver, you need to configure the KGP-2A/2B. Using the FPU (KPG-73D), you can configure the KGP-2A/2B.

Using a cross-wired serial cable (KGP-2A/2B side : D-sub 9-pin female) as shown in Figure 2, plug one connector into the RS-232C (COM) port of your PC and the other end to the ACC1 connector on the rear panel of the KGP-2A/2B.

#### ■ KGP-2A/2B Setting Method

- 1) Create a data file using the FPU (KPG-73D).
- 2) After configuring the KGP-2A/2B to the Programming Menu mode, upload the data file to the KGP-2A/2B.

- For detailed instructions, refer to the Help file included in the FPU.
- To set the KGP-2A/2B in the Programming Menu mode, refer to "Start the Programming Menu mode" on page 7.

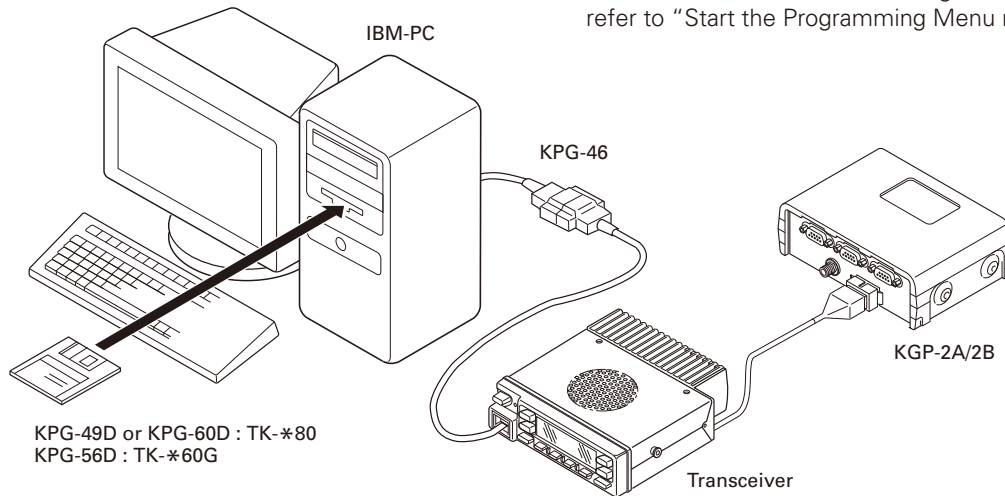


Fig. 1

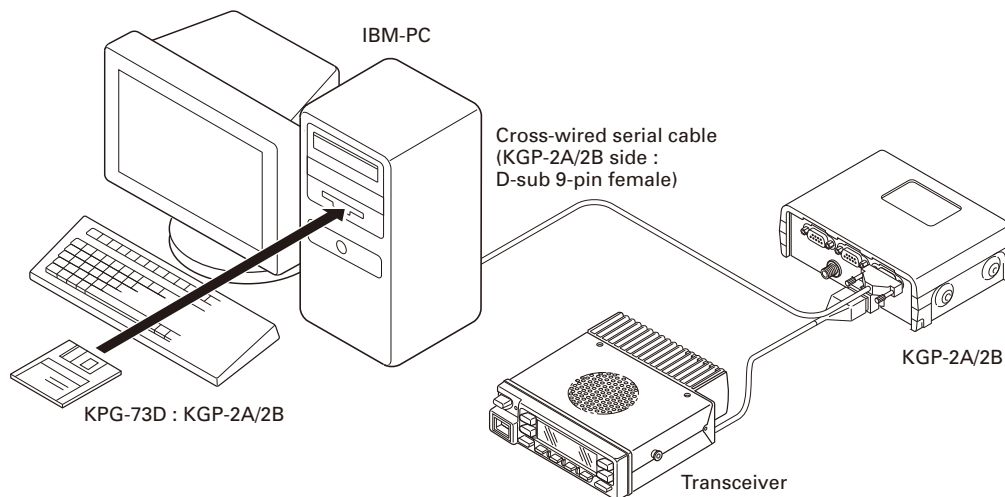


Fig. 2

# KGP-2A/2B

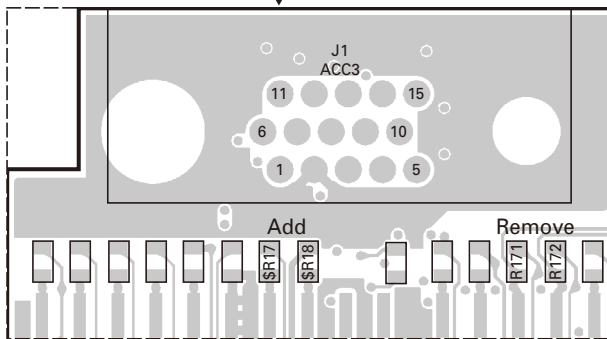
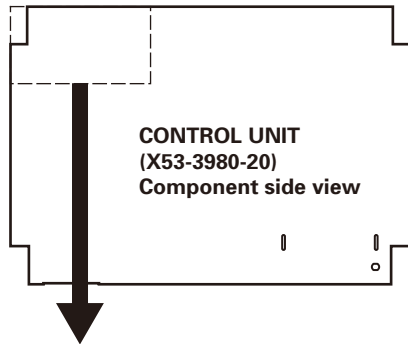
## MODIFICATION

### Connecting a Separate Microphone for Emergency Mode (KGP-2A only)

If you apply the modification as described below, you can connect a separate microphone to the KGP-2A in place of the transceiver's microphone for Emergency mode. The base station application software which can send out a corresponding command is required for the change of a microphone which operates in the time of emergency transmission.

#### ■ Modification

1. Remove R171 (0Ω).
2. Remove R172 (0Ω).
3. Add 0Ω (RK73GB2A000J) to the \$R17 location.
4. Add 0Ω (RK73GB2A000J) to the \$R18 location.



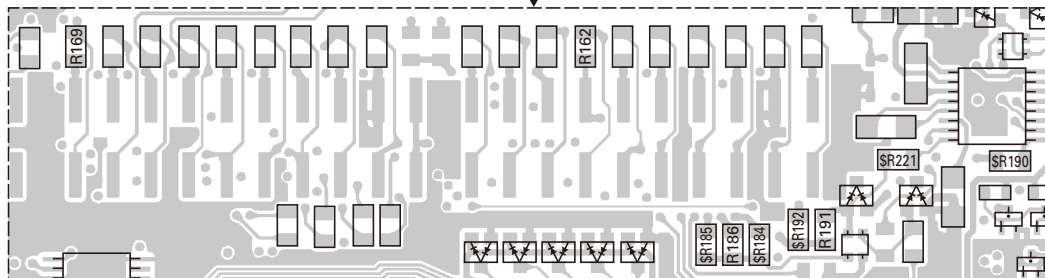
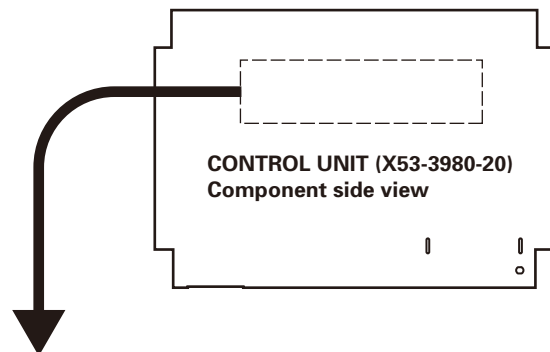
J1 (ACC3) Pin 5 : Microphone input  
 J1 (ACC3) Pin 6 : Microphone ground (GND)

Since 5V DC goes through R55 (56kΩ) and then it is supplied to the microphone input, an electric condenser-type microphone can be connected to this terminal.

You can also adjust the microphone sensitivity by changing the R206 (560Ω) constant between 330Ω and approximately 1kΩ. The microphone pre-emphasis and IDC are carried out by the DSP IC (IC29).

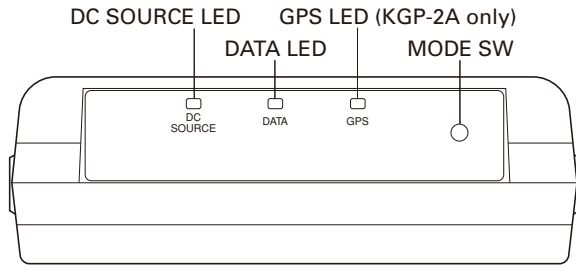
### Modification Setting for DGPS (KGP-2A only)

Input method of DGPS signal	\$R192 (0Ω)	R186 (0Ω)	\$R184 (0Ω)	\$R185 (0Ω)	R191 (0Ω)
5V input from ACC2	Yes	No	Yes	No	No
RS-232C level input from ACC2	Yes	No	Yes	No	Yes
5V input from ACC3	Yes	No	No	Yes	No
RS-232C level input from ACC3	Yes	No	No	Yes	Yes
Input method of DGPS signal	\$R190 (0Ω)	\$R221 (0Ω)	R162 (0Ω)	R169 (0Ω)	
5V input from ACC2	No	No	No	N/A	
RS-232C level input from ACC2	Yes	Yes	No	N/A	
5V input from ACC3	No	No	N/A	No	
RS-232C level input from ACC3	Yes	Yes	N/A	No	



## ADJUSTMENT

### Front Panel




### Start the Programming Menu Mode

Press and hold the MODE SW key for more than 2 seconds. "DC SOURCE" LED blinks and then the KGP-2A/2B enters the programming menu mode.

**Note:** If the KGP-2A/2B does not receive any programming commands from a PC within 30 seconds after the "DC SOURCE" LED starts blinking. It returns normal operation (User mode). If you press MODE SW key while the "DC SOURCE" LED is blinking, the KGP-2A/2B returns to User mode.

### Updating the Firmware

- 1) Connect the transceiver and KGP-2A/2B as shown in Figure 2 on page 5.
- 2) Double-click the "Fpro.exe" file (Ver. 3.01 or later) in the folder where the KPG-73D is installed.
- 3) After the program starts, click the "Open a file" icon , then select the new firmware data file.
- 4) Configure the KGP-2A/2B to enter the Programming menu mode, then, click [Write] on the Fpro screen to start revising the firmware. (The Fpro program first erases the firmware file on the KGP-2A/2B, then writes the new firmware file.)
  - While erasing the firmware, the "DC SOURCE" LED blinks green and the "DATA" LED lights orange.
  - While writing the firmware, the "DC SOURCE" and "DATA" LEDs blink green.
  - When the firmware is successfully revised, only the "DC SOURCE" LED blinks green.
  - When an error occurs, the "DC SOURCE" LED blinks green and the "DATA" LED blinks red. In this case, switch the KGP-2A/2B OFF, then turn it ON again. The "DC SOURCE" LED blinks green and the "DATA" LED lights orange. Click [Write] on the Fpro screen to restart revising the firmware.
- 5) Click "OK" when the confirmation dialog box appears. Select [Exit] to exit the program.
- 6) Turn the KGP-2A/2B OFF and then back ON to return to User mode.

### MSK Modulation Adjustment

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

- 1) Connect a transceiver and a PC to the KGP-2A/2B (Figure 2 on page 5). After configuring the KGP-2A/2B to enter the Programming menu mode, select "Test Mode" from "Program" on the FPU (KPG-73D) menu.

- 2) Measure the KGP-2A/2B DO voltage (DO: CN1 pin 5) with AF-VTVM and adjust the "Output Level" DIGIT value according to the table 1 on the "MSK" adjustment screen.
- 3) When you click on "OK" on the PC screen, the adjustment value is written into the KGP-2A/2B memories.

### MSK Detection Input Level Adjustment

Set the input voltage at pin 2 of the CODEC IC (IC22) of the KGP-2A/2B to 1000mVp-p.

- 1) Adjust the SSG level as shown below. Then connect the output to the transceiver.  
 Frequency : Same frequency that the transceiver is receiving.  
 Modulation Frequency : 1200Hz (or 1000Hz)  
 Frequency Deviation : 3kHz (Wide), 1.5kHz (Narrow)  
 Output Level : -53dBm (60dBμ)
- 2) Measure the KGP-2A/2B DI voltage (DI: CN1 pin 3, transceiver detection output voltage) with a AF-VTVM.
- 3) Set the "Input Level" DIGIT value according to the table 2 on the "MSK" adjustment screen in "Test Mode" so that the measured voltage (mVrms) is the CODEC IC input voltage (1000mVp-p).
- 4) When you click on "OK" on the PC screen, the adjustment value is written into the KGP-2A/2B memories.

Table 1 DO output level vs DIGIT value

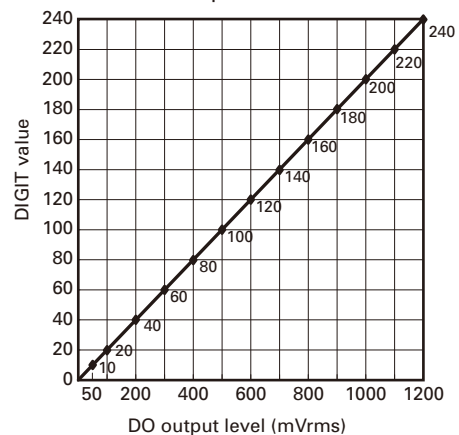
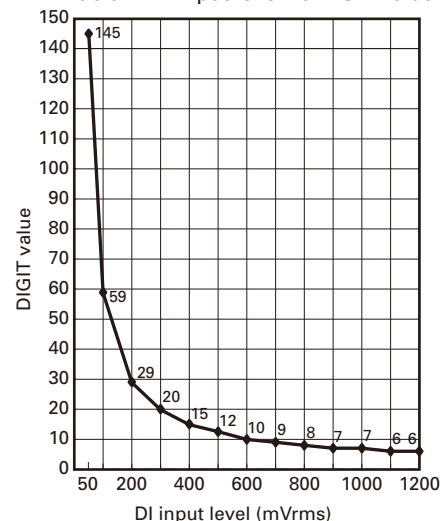


Table 2 DI input level vs DIGIT value



## CIRCUIT DESCRIPTION

### 1. Power Supply Circuit

The KGP-2A/2B power supply circuit uses a dedicated regulator IC for each circuit application so that the circuits do not interfere with each other. (Figure 1)

### 2. Digital Control Circuit

#### ■ GPS module (KGP-2A only)

The location data is measured by the internal GPS module. When the KGP-2A is turned OFF, it enters the backup mode and the power is supplied by the internal rechargeable lithium battery. It takes approximately 40 seconds to calculate the location data when the KGP-2A is "cold" started (full initializing).

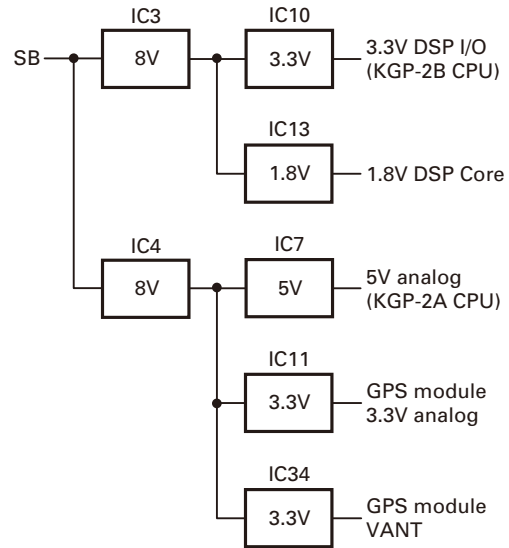


Fig. 1

## COMPONENTS DESCRIPTION

### Control Unit (X53-3980-XX)

Ref. No.	Use / Function	Operation / Condition
IC1	Reset IC	Monitor of SB power supply voltage
IC3,4	Regulator	8V (1A)
IC6	RS-232C driver	Level converter 5V↔RS-232C
IC7	Regulator	5V (500mA)
IC9	Extended I/O	Radio control, Serial/parallel conversion
IC10,11	Regulator	3.3V
IC12	Shift register	LED (D26~28) control, Power switch of GPS module
IC13	Regulator	1.8V
IC14	Reset IC	Monitor of CPU power supply voltage
IC15	EEPROM	Memory backup
IC16	Amplifier	Input data
IC17	CPU	16 Bit
IC18	D/A converter	
IC19	Level converter	5V↔3V
IC20,21	Level converter	5V→3V
IC22	CODEC IC	A/D,D/A conversion
IC23	Gate IC	IC19 direction control
IC24	Gate IC	A19 (IC17) Logic inverter
IC25	Memory IC	3.3V FLASH ROM
IC26	Ampifier	Output data
IC28	Clock demultiplier	for DSP
IC29	DSP IC	
IC31	Level converter	5V→3V

Ref. No.	Use / Function	Operation / Condition
IC32	Amplifier	Microphone input signal
IC34	Regulator	3.3V
Q1,2	Switching	Level converter 3V→5V
Q4	Switching	Power switch of GPS module
Q5,6	Switching	Output terminal open-collector
Q7,8	Switching	Output terminal open-collector
Q10~14	Switching	Level converter 3V→5V
Q15	Switching	Logic inverter
Q16~26	Switching	Level converter 3V→5V
D1	Over current protection	0.75A
D2	Backward voltage protection	
D5	Reverse current protection	
D7~9	Surge absorption	
D12	Surge absorption	
D18	Reverse current protection	
D24	Surge absorption	
D26	LED	DC SOURCE (Power)
D27	LED	GPS
D28	LED	DATA (TX/RX)
D30	Reverse current protection	
D31~48	Surge absorption	
D50~62	Surge absorption	



## SEMICONDUCTOR DATA

## CPU: 30620M8A2M6GPU (Control unit IC17)

Pin No.	Pin Name	I/O	Function
1~5	SEN12~ SEN8	I/O	KGP-2A Sensor 12~8
		I	KGP-2B Not used
6	BYTE	I	Data bus width 8 bit
7	CNVSS	I	Memory extended mode select (GND)
8	MES	I	Microprocessor operation mode
9	FRBSY	I	FLASH ROM busy detect
10	RESET	I	Reset input
11	XOUT	O	Clock output
12	VSS	-	GND
13	XIN	I	Clock input
14	VCC	-	Power supply
15	NMI	I	Not used
16	SRCLK1	I	KGP-2A SWIPE READER CLOCK1 input
		I	KGP-2B Not used
17	SRCLK2	I	KGP-2A SWIPE READER CLOCK2 input
		I	KGP-2B Not used
18	PFINT	I	Power supply voltage monitor input
19	E2PSCL	O	E2PROM SK
20	VRLD	O	Electronic VR LD
21	-	I	Not used
22	SEN_ACC2/1	I	Not used
23	SEN_ACC2/2	I	Not used
24	SEN_ACC3	I	Not used
25	RADOE	O	IC9 OE (for RADIO)
26	RADST	O	IC9 ST (for RADIO)
27	RXD2	I	KGP-2A Radio data input
		I	KGP-2B Not used
28	TXD2	O	KGP-2A Radio data output
		I	KGP-2B Not used
29	TXD1	O	PC data output
30	RXD1	I	PC data input
31	CLK	O	Common CLOCK
32	DATA	O	Common DATA
33	TXD0	O	KGP-2A GPS receiver output (GPSTXD)
		I	KGP-2B Not used
34	RXD0	I	KGP-2A GPS receiver input (GPSRXD)
		I	KGP-2B Not used

Pin No.	Pin Name	I/O	Function
35	RADSQ	I	Radio SQ input
36	RADTXS	I	Radio TXS input
37	RDY	I	Not used
38	ALE	O	Not used
39	HOLD	I	Not used
40	HLDA	O	Not used
41	BCLK	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	E2PSDA	I	E2PROM DI
47	E2PWP	O	E2PROM DO
48	FROMCE	O	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	MODESW	O	Mode SW
72	DSPRINT	I	DSP RX interrupt
73	DSPTINT	I	DSP TX interrupt
74	DPSCCLR	O	DSP reset output
75	SRSEL	I	KGP-2A SWIPE READER SELECT
		I	KGP-2B Not used
76	SRDAT1	I	KGP-2A SWIPE READER DATA1
		I	KGP-2B Not used
77	SRDAT2	I	KGP-2A SWIPE READER DATA2
		I	KGP-2B Not used
78	LEDLCK	O	IC12 LCK (for LED)
79~86	D7~D0	-	Data bus 7~0
87~93	SEN7~ SEN1	I/O	KGP-2A Sensor 7~1
		I	KGP-2B Not used
94	AVSS	-	Analog power supply (GND)
95	SEN0	I/O	KGP-2A Sensor0
		I	KGP-2B Not used
96	VREF	-	Reference voltage
97	AVCC	-	Analog power supply
98~100	SEN13~ SEN15	I/O	KGP-2A Sensor 13~15
		I	KGP-2B Not used

# KGP-2A/2B

## PARTS LIST

\* New Parts. Δ indicates safety critical components.

Parts without **Parts No.** are not supplied.

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

L : Scandinavia

Y : PX (Far East, Hawaii)

Y : AAFES (Europe)

K : USA

T : England

X : Australia

P : Canada

E : Europe

M : Other Areas

### KGP-2A (Y57-3770-20)

#### CONTROL UNIT (X53-3980-20): KGP-2A

Ref. No.	Address	New parts	Parts No.	Description	Destination
<b>KGP-2A</b>					
1	2A		A02-3660-11	PLASTIC CABINET	
2	2B		A21-1632-14	DRESSING PANEL	
4	1A		B09-0355-05	CAP (D-SUB 9P)	
5	1A		B09-0626-05	CAP (D-SUB 15P)	
6	1A		B42-3395-04	STANDARD LABEL	
7	2A		B42-7033-04	STICKER (ID)	
8	2A		B42-7733-04	STICKER (WEEE)	
9	1D		B62-1481-00	INSTRUCTION MANUAL	
10	2A		B72-1963-14	MODEL NAME-PLATE	
12	1A		E37-0982-15	LEAD WIRE WITH CONNECTOR (15P:RADIO)	
13	2A	*	E37-1001-15	LEAD WIRE WITH CONNECTOR (4P:CN19)	
14	1B	*	E37-1414-15	LEAD WIRE WITH CONNECTOR (ANT)	
16	2B		F20-3339-04	INSULATING SHEET	
18	1B		G10-1292-04	FIBROUS SHEET (CHASSIS:REAR-TOP)	
19	1B		G10-1293-04	FIBROUS SHEET (CHASSIS:REAR-R&L)	
20	1B		G10-1294-04	FIBROUS SHEET (CHASSIS:BOTTOM-R&L)	
21	1B		G10-1295-04	FIBROUS SHEET (CHASSIS:BOTTOM-FRONT)	
22	2A		G13-1882-04	CUSHION (15P CONNECTOR)	
23	1A		G13-1888-04	CUSHION (CHASSIS BOTTOM)	
24	2A		G13-1889-14	CUSHION (D-SUB)	
25	1A		G13-1915-04	CUSHION (CHASSIS D-SUB)	
26	1A		G13-2001-04	CUSHION (GPS MODULE)	
27	1B	*	G13-2235-04	CUSHION (PCB)	
28	1B	*	G13-2236-04	CUSHION (ANT CONNECTOR UPPER)	
30	3E		H25-0796-04	PROTECTION BAG	
31	1E		H52-1860-02	ITEM CARTON CASE	
33	2E		J29-0728-03	BRACKET ACCESSORY	
-			J39-0641-04	SPACER (15P:RADIO CONNECTOR)	
36	2B		K29-9176-04	KEY TOP (MODE SW)	
A	1A		N14-0596-15	HEXAGON NUT (ANT)	
B	1A		N15-1060-48	FLAT WASHER (ANT)	
C	1A		N17-1060-48	TOOTHED LOCK WASHER (ANT)	
D	2A,2B		N82-2606-43	BINDING HEAD TAPTITE SCREW (PCB)	
E	2A		N82-2610-48	BINDING HEAD TAPTITE SCREW (D-SUB)	
F	1A,1B		N88-3010-43	FLAT HEAD TAPTITE SCREW (CHASSIS)	
38	2E		N99-2048-05	SCREW SET ACCESSORY	
40	2D	*	T90-1077-05	ANTENNA (GPS) ACCESSORY	
42	2A	*	W02-3705-05	ELECTRIC CIRCUIT MODULE (GPS MODULE)	
<b>CONTROL UNIT (X53-3980-20): KGP-2A</b>					
D26,27			B30-2056-05	LED	
D28			B30-2019-05	LED (RE/GR)	
C1-11			CC73GCH1H101J	CHIP C 100PF J	
C12			CK73GB1E103K	CHIP C 0.010UF K	
C13-17			CC73GCH1H101J	CHIP C 100PF J	
C18			CK73GB1E103K	CHIP C 0.010UF K	

Ref. No.	Address	New parts	Parts No.	Description	Destination
C19-23			CC73GCH1H101J	CHIP C 100PF J	
C24			C92-0895-05	ELECTRO 100UF 25WV	
C25			CK73GB1H471K	CHIP C 470PF K	
C26-28			CC73GCH1H101J	CHIP C 100PF J	
C30-35			CC73GCH1H101J	CHIP C 100PF J	
C37			CC73GCH1H101J	CHIP C 100PF J	
C38			CK73GB1E103K	CHIP C 0.010UF K	
C39,40			CC73GCH1H101J	CHIP C 100PF J	
C42,43			CK73GB1C104K	CHIP C 0.10UF K	
C44,45			CC73GCH1H101J	CHIP C 100PF J	
C47			CK73GB1E103K	CHIP C 0.010UF K	
C48-51			CK73GB1C104K	CHIP C 0.10UF K	
C54			CK73GB1C104K	CHIP C 0.10UF K	
C55,56			CS77AA1E010M	CHIP TNTL 1.0UF 25WV	
C57,58			CK73GB1C104K	CHIP C 0.10UF K	
C59			CS77AA1E010M	CHIP TNTL 1.0UF 25WV	
C61			CS77AA1E010M	CHIP TNTL 1.0UF 25WV	
C62,63			CK73GB1C104K	CHIP C 0.10UF K	
C65			CK73GB1C104K	CHIP C 0.10UF K	
C66			CK73GB1E103K	CHIP C 0.010UF K	
C67			CK73GB1C104K	CHIP C 0.10UF K	
C68			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C69			CK73GB1C104K	CHIP C 0.10UF K	
C70			CK73GB1E103K	CHIP C 0.010UF K	
C72			CK73GB1C104K	CHIP C 0.10UF K	
C74			CK73GB1E103K	CHIP C 0.010UF K	
C75			CK73GB1H471K	CHIP C 470PF K	
C76,77			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C81			CC73GCH1H101J	CHIP C 100PF J	
C82,83			CK73GB1C104K	CHIP C 0.10UF K	
C87,88			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C89			CK73GB1C104K	CHIP C 0.10UF K	
C91			CC73GCH1H101J	CHIP C 100PF J	
C94,95			CK73GB1E103K	CHIP C 0.010UF K	
C96,97			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C98			CK73GB1E103K	CHIP C 0.010UF K	
C99			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C101			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C102,103			CK73GB1C104K	CHIP C 0.10UF K	
C104,105			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C106			CK73GB1E103K	CHIP C 0.010UF K	
C107			CK73GB1C104K	CHIP C 0.10UF K	
C108,109			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C110			CK73GB1E103K	CHIP C 0.010UF K	
C114			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C115			CK73GB1E103K	CHIP C 0.010UF K	
C117			CK73GB1C104K	CHIP C 0.10UF K	
C118			CK73GB1H332K	CHIP C 3300PF K	
C119			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C120			CC73GCH1H271J	CHIP C 270PF J	
C121			CK73GB1C104K	CHIP C 0.10UF K	
C122			CK73FB1A475K	CHIP C 4.7UF K	
C123,124			CK73GB1E103K	CHIP C 0.010UF K	
C125-127			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C128,129			CK73GB1H471K	CHIP C 470PF K	

## PARTS LIST

CONTROL UNIT (X53-3980-20): KGP-2A

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
C130			CS77AA1A100M	CHIP TNTL 10UF 10WV		CP32			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C131-134			CK73GB1E103K	CHIP C 0.010UF K		CP34			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C135,136			CK73GB1H471K	CHIP C 470PF K		CP35			RK75GB1J102J	CHIP-COM 1.0K J 1/16W	
C137,138			CS77AA1A100M	CHIP TNTL 10UF 10WV		CP36			RK74GA1J102J	CHIP-COM 1.0K J 1/16W	
C139,140			CK73GB1H471K	CHIP C 470PF K		CP37			RK75GB1J473J	CHIP-COM 47K J 1/16W	
C141-144			CK73GB1E103K	CHIP C 0.010UF K		CP38			RK75GB1J102J	CHIP-COM 1.0K J 1/16W	
C145			CK73GB1H471K	CHIP C 470PF K		CP39-43			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C146			CS77AA1A100M	CHIP TNTL 10UF 10WV		CP46			RK74GA1J473J	CHIP-COM 47K J 1/16W	
C147			CC73GCH1H270J	CHIP C 27PF J		CP47,48			RK74GA1J101J	CHIP-COM 100 J 1/16W	
C148			CK73GB1H102K	CHIP C 1000PF K		CP51			RK74GA1J101J	CHIP-COM 100 J 1/16W	
C149			CC73GCH1H270J	CHIP C 27PF J		CP60			RK74GA1J473J	CHIP-COM 47K J 1/16W	
C151			CK73GB1E103K	CHIP C 0.010UF K		CP67			RK74GA1J101J	CHIP-COM 100 J 1/16W	
C152			CK73GB1H471K	CHIP C 470PF K		CP70-74			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C153			CS77AA1A100M	CHIP TNTL 10UF 10WV		CP75			RK74GA1J473J	CHIP-COM 47K J 1/16W	
C154,155			CK73GB1E103K	CHIP C 0.010UF K		CP76			RK74GA1J471J	CHIP-COM 470 J 1/16W	
C156			CK73GB1H471K	CHIP C 470PF K		CP79			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C157,158			CK73GB1E103K	CHIP C 0.010UF K		CP81			RK74GA1J101J	CHIP-COM 100 J 1/16W	
C159			CK73GB1H471K	CHIP C 470PF K		CP82			RK75GB1J473J	CHIP-COM 47K J 1/16W	
C160,161			CS77AA1A100M	CHIP TNTL 10UF 10WV		R2			RK73GB2A000J	CHIP R 0.0 J 1/10W	
C162			CK73GB1H471K	CHIP C 470PF K		R4			RK73GB2A273J	CHIP R 27K J 1/10W	
C163			CS77AA1A100M	CHIP TNTL 10UF 10WV		R5			RK73GB2A123J	CHIP R 12K J 1/10W	
C165			CK73GB1H471K	CHIP C 470PF K		R6			RK73FB2B102J	CHIP R 1.0K J 1/8W	
C166			CK73GB1C104K	CHIP C 0.10UF K		R7			RK73GB2A102J	CHIP R 1.0K J 1/10W	
C175,176			CK73GB1E103K	CHIP C 0.010UF K		R8			RK73FB2B000J	CHIP R 0.0 J 1/8W	
C177			C92-0895-05	ELECTRO 100UF 25WV		R10			RK73RB2H150J	CHIP R 15 J 1/2W	
C178-195			CC73GCH1H101J	CHIP C 100PF J		R11-16			RK73FB2B000J	CHIP R 0.0 J 1/8W	
C196			CS77AA1A100M	CHIP TNTL 10UF 10WV		R33			RK73FB2B221J	CHIP R 220 J 1/8W	
C197-201			CC73GCH1H101J	CHIP C 100PF J		R37			RK73FB2B221J	CHIP R 220 J 1/8W	
C202			CS77AA1A100M	CHIP TNTL 10UF 10WV		R51			RK73GB2A820J	CHIP R 82 J 1/10W	
C203			CC73GCH1H101J	CHIP C 100PF J		R52			RK73GB2A681J	CHIP R 680 J 1/10W	
C204,205			CK73GB1E103K	CHIP C 0.010UF K		R55			RK73GB2A563J	CHIP R 56K J 1/10W	
C206			CC73GCH1H101J	CHIP C 100PF J		R56			RK73GB2A000J	CHIP R 0.0 J 1/10W	
C208			CS77AA1A100M	CHIP TNTL 10UF 10WV		R58			RK73GB2A102J	CHIP R 1.0K J 1/10W	
C209			CC73GCH1H101J	CHIP C 100PF J		R59			RK73GB2A000J	CHIP R 0.0 J 1/10W	
C210			C92-0895-05	ELECTRO 100UF 25WV		R62			RK73GB2A122J	CHIP R 1.2K J 1/10W	
C211			CK73FB0J106K	CHIP C 10UF K		R63			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CN1			E40-6047-05	PIN ASSY (15P)		R65-67			RK73GB2A000J	CHIP R 0.0 J 1/10W	
J1		*	E58-0489-15	SUB SOCKET (D) (D-SUB 15P:ACC3)		R71,72			RK73GB2A473J	CHIP R 47K J 1/10W	
J2,3			E59-0413-05	SUB PLUG (D) (D-SUB 9P:ACC1,ACC2)		R73			RK73GB2A000J	CHIP R 0.0 J 1/10W	
-			F20-3332-04	INSULATING SHEET (LITHIUM CELL)		R75			RK73GB2A000J	CHIP R 0.0 J 1/10W	
L1			L92-0140-05	CHIP FERRITE		R77			RK73GB2A000J	CHIP R 0.0 J 1/10W	
L8			L92-0140-05	CHIP FERRITE		R80			RK73GB2A223J	CHIP R 22K J 1/10W	
L10-13			L92-0140-05	CHIP FERRITE		R82			RK73GB2A473J	CHIP R 47K J 1/10W	
L15			L92-0140-05	CHIP FERRITE		R84			RK73GB2A393J	CHIP R 39K J 1/10W	
L17-20			L92-0140-05	CHIP FERRITE		R86			RK73GB2A473J	CHIP R 47K J 1/10W	
L23			L92-0140-05	CHIP FERRITE		R90			RK73GB2A473J	CHIP R 47K J 1/10W	
L24		*	L41-1015-24	SMALL FIXED INDUCTOR (100UH)		R92,93			RK73GB2A473J	CHIP R 47K J 1/10W	
X1			L78-1414-05	RESONATOR (7.37MHZ)		R95			RK73GB2A473J	CHIP R 47K J 1/10W	
X2			L77-1679-05	CRYSTAL RESONATOR (12.288MHZ)		R96			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CP3,4			RK75GB1J101J	CHIP-COM 100 J 1/16W		R98			RK73GB2A223J	CHIP R 22K J 1/10W	
CP5			RK74GA1J471J	CHIP-COM 470 J 1/16W		R99			RK73GB2A393J	CHIP R 39K J 1/10W	
CP22			RK75GB1J101J	CHIP-COM 100 J 1/16W		R100			RK73GB2A102J	CHIP R 1.0K J 1/10W	
CP23			RK74GA1J102J	CHIP-COM 1.0K J 1/16W		R101			RK73GB2A333J	CHIP R 33K J 1/10W	
CP25			RK75GB1J101J	CHIP-COM 100 J 1/16W		R102			RK73GB2A563J	CHIP R 56K J 1/10W	
CP27			RK75GB1J101J	CHIP-COM 100 J 1/16W		R104			RK73GB2A223J	CHIP R 22K J 1/10W	
CP28			RK74GA1J102J	CHIP-COM 1.0K J 1/16W		R105,106			RK73GB2A393J	CHIP R 39K J 1/10W	
CP29,30			RK75GB1J101J	CHIP-COM 100 J 1/16W		R107-109			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CP31			RK75GB1J473J	CHIP-COM 47K J 1/16W		R110			RK73GB2A473J	CHIP R 47K J 1/10W	
						R111			RK73GB2A000J	CHIP R 0.0 J 1/10W	
						R112			RK73GB2A101J	CHIP R 100 J 1/10W	

# KGP-2A/2B

## PARTS LIST

CONTROL UNIT (X53-3980-20): KGP-2A  
KGP-2B (Y57-3780-20)

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
R113			RK73GB2A000J	CHIP R 0.0 J 1/10W		D36-45			DA204U	DIODE	
R114			RK73GB2A470J	CHIP R 47 J 1/10W		D46,47			UMZ8.2T	ZENER DIODE	
R115			RK73GB2A000J	CHIP R 0.0 J 1/10W		D48			DA204U	DIODE	
R116			RK73GB2A473J	CHIP R 47K J 1/10W		D50-58			DA204U	DIODE	
R117-119			RK73GB2A000J	CHIP R 0.0 J 1/10W		D59-61			UMZ8.2T	ZENER DIODE	
R120,121			RK73GB2A102J	CHIP R 1.0K J 1/10W		D62			NNCD6.8G-A	ZENER DIODE	
R122			RK73GB2A223J	CHIP R 22K J 1/10W		IC1	*		R3111N301C-FA	MOS-IC	
R123			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC3,4			TA7808FQ	ANALOGUE IC	
R124			RK73GB2A473J	CHIP R 47K J 1/10W		IC6			ADM202EARUZ	MOS-IC	
R125			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC7			TA78L05FF	MOS-IC	
R129,130			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC9			TC74HC4094AFF	MOS-IC	
R132			RK73GB2A393J	CHIP R 39K J 1/10W		IC10			XC62FP3302PN	MOS-IC	
R133			RK73GB2A563J	CHIP R 56K J 1/10W		IC11			BA033FP	MOS-IC	
R134			RK73GB2A102J	CHIP R 1.0K J 1/10W		IC12			BU2099FV	MOS-IC	
R135			RK73GB2A121J	CHIP R 120 J 1/10W		IC13			XC62FP1802PN	MOS-IC	
R136			RK73GB2A562J	CHIP R 5.6K J 1/10W		IC14			R3111N451C-F	MOS-IC	
R137			RK73GB2A332J	CHIP R 3.3K J 1/10W		IC15			AT24C08BN-SH	ROM IC	
R138			RK73GB2A562J	CHIP R 5.6K J 1/10W		IC16			NJM4558M	MOS-IC	
R139			RK73GB2A332J	CHIP R 3.3K J 1/10W		IC17	*		30620M8A2M6GPU	MICROPROCESSOR IC	
R144-149			RK73GB2A820J	CHIP R 82 J 1/10W		IC18			M62364FP-F	MOS-IC	
R152			RK73GB2A102J	CHIP R 1.0K J 1/10W		IC19			TC7LVX4245FSF	MOS-IC	
R154,155			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC20,21			TC74LVX244FT	MOS-IC	
R157-177			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC22			AK4550VTP	MOS-IC	
R179-183			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC23	*		TC7S08F-F	MOS-IC	
R186			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC24			TC7S04F-F	MOS-IC	
R189			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC25	*		S29AL008D90TF	SRAM IC	
R191			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC26			NJM4558M	MOS-IC	
R194			RK73FB2B000J	CHIP R 0.0 J 1/8W		IC28			TC74VHC4040FT	MOS-IC	
R199			RK73GB2A102J	CHIP R 1.0K J 1/10W		IC29			320VC5402PGE	MICROPROCESSOR IC	
R200,201			RK73GB2A473J	CHIP R 47K J 1/10W		IC31			TC74LVX244FT	MOS-IC	
R202,203			RK73GB2A222J	CHIP R 2.2K J 1/10W		IC32			NJM4558M	MOS-IC	
R205			RK73GB2A184J	CHIP R 180K J 1/10W		IC34			XC6204B332M	MOS-IC	
R206			RK73GB2A561J	CHIP R 560 J 1/10W		Q1,2			DTC114YE	DIGITAL TRANSISTOR	
R208			RK73GB2A000J	CHIP R 0.0 J 1/10W		Q4			2SB1424(Q,R)	TRANSISTOR	
R209			RK73GB2A122J	CHIP R 1.2K J 1/10W		Q5-8			DTC144EE	DIGITAL TRANSISTOR	
R210			RK73GB2A222J	CHIP R 2.2K J 1/10W		Q11			DTC114YE	DIGITAL TRANSISTOR	
R211			RK73GB2A223J	CHIP R 22K J 1/10W		Q12-14			RN47A4-F	TRANSISTOR	
R212			RK73GB2A222J	CHIP R 2.2K J 1/10W		Q15			DTC114EUA	DIGITAL TRANSISTOR	
R213			RK73GB2A393J	CHIP R 39K J 1/10W		BA1			W09-0985-15	LITHIUM CELL	
R214			RK73GB2A122J	CHIP R 1.2K J 1/10W							
R216,217			RK73GB2A122J	CHIP R 1.2K J 1/10W							
R218			RK73GB2A473J	CHIP R 47K J 1/10W							
R219,220			RK73GB2A222J	CHIP R 2.2K J 1/10W							
R222			RK73GB2A393J	CHIP R 39K J 1/10W							
R223			RK73GB2A563J	CHIP R 56K J 1/10W							
R224			RK73GB2A222J	CHIP R 2.2K J 1/10W							
S1			S70-0446-05	TACT SWITCH							
D1			1812L075PR	VARISTOR							
D2			DSM3MA1-RPB	DIODE							
D5			MA2S111-F	DIODE							
D7			UMZ8.2T	ZENER DIODE							
D8			NNCD6.8G-A	ZENER DIODE							
D9			UMZ8.2T	ZENER DIODE							
D12			NNCD6.8G-A	ZENER DIODE							
D18			MA2S111-F	DIODE							
D24			NNCD6.8G-A	ZENER DIODE							
D30			MA2S111-F	DIODE							
D31-35			NNCD6.8G-A	ZENER DIODE							
<b>KGP-2B</b>											
						1	2C		A02-3660-11	PLASTIC CABINET	
						3	2C		A21-1633-14	DRESSING PANEL	
						4	1B		B09-0355-05	CAP (D-SUB 9P)	
						6	1C		B42-3395-04	STANDARD LABEL	
						8	2C		B42-7733-04	STICKER (WEEE)	
						9	1D		B62-1481-00	INSTRUCTION MANUAL	
						11	2C		B72-1964-04	MODEL NAME-PLATE	
						12	1B		E37-0982-15	LEAD WIRE WITH CONNECTOR (15P-RADIO)	
						15	1B		F15-1003-14	SHIELDING PLATE (CHASSIS REAR)	
						18	1C		G10-1292-04	FIBROUS SHEET (CHASSIS:REAR-TOP)	
						19	1C		G10-1293-04	FIBROUS SHEET (CHASSIS:REAR-R&L)	
						20	1C		G10-1294-04	FIBROUS SHEET (CHASSIS:BOTTOM-R&L)	
						21	1C		G10-1295-04	FIBROUS SHEET (CHASSIS:BOTTOM-FRONT)	
						22	2B		G13-1882-04	CUSHION (15P CONNECTOR)	
						29	2B		G13-1883-14	CUSHION (D-SUB)	

## PARTS LIST

KGP-2B (Y57-3780-20)  
CONTROL UNIT (X53-3980-21): KGP-2B

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
30	3E		H25-0796-04	PROTECTION BAG		C108,109			CS77AA1A100M	CHIP TNTL 10UF 10WV	
31	1E		H52-1861-02	ITEM CARTON CASE		C110			CK73GB1E103K	CHIP C 0.010UF K	
-			J39-0641-04	SPACER (15P:RADIO CONNECTOR)		C114			CS77AA1A100M	CHIP TNTL 10UF 10WV	
36	2C		K29-9176-04	KEY TOP (MODE SW)		C117			CK73GB1C104K	CHIP C 0.10UF K	
D	2C		N82-2606-43	BINDING HEAD TAPTITE SCREW (PCB)		C118			CK73GB1H332K	CHIP C 3300PF K	
E	2C		N82-2610-48	BINDING HEAD TAPTITE SCREW (D-SUB)		C119			CS77AA1A100M	CHIP TNTL 10UF 10WV	
F	1B,1C		N88-3010-43	FLAT HEAD TAPTITE SCREW (CHASSIS)		C120			CC73GCH1H271J	CHIP C 270PF J	
<b>CONTROL UNIT (X53-3980-21): KGP-2B</b>						C121			CK73GB1C104K	CHIP C 0.10UF K	
D26			B30-2056-05	LED		C122			CK73FB1A475K	CHIP C 4.7UF K	
D28			B30-2019-05	LED (RE/GR)		C124			CK73GB1E103K	CHIP C 0.010UF K	
C4,5			CC73GCH1H101J	CHIP C 100PF J		C125-127			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C7			CC73GCH1H101J	CHIP C 100PF J		C128,129			CK73GB1H471K	CHIP C 470PF K	
C9			CC73GCH1H101J	CHIP C 100PF J		C130			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C11			CC73GCH1H101J	CHIP C 100PF J		C131-134			CK73GB1E103K	CHIP C 0.010UF K	
C14			CC73GCH1H101J	CHIP C 100PF J		C135,136			CK73GB1H471K	CHIP C 470PF K	
C16,17			CC73GCH1H101J	CHIP C 100PF J		C137,138			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C20			CC73GCH1H101J	CHIP C 100PF J		C139,140			CK73GB1H471K	CHIP C 470PF K	
C23			CC73GCH1H101J	CHIP C 100PF J		C141-144			CK73GB1E103K	CHIP C 0.010UF K	
C24			C92-0895-05	ELECTRO 100UF 25WV		C145			CK73GB1H471K	CHIP C 470PF K	
C25			CK73GB1H471K	CHIP C 470PF K		C146			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C28			CC73GCH1H101J	CHIP C 100PF J		C147			CC73GCH1H270J	CHIP C 27PF J	
C31			CC73GCH1H101J	CHIP C 100PF J		C148			CK73GB1H102K	CHIP C 1000PF K	
C33			CC73GCH1H101J	CHIP C 100PF J		C149			CC73GCH1H270J	CHIP C 27PF J	
C35			CC73GCH1H101J	CHIP C 100PF J		C151			CK73GB1E103K	CHIP C 0.010UF K	
C42,43			CK73GB1C104K	CHIP C 0.10UF K		C152			CK73GB1H471K	CHIP C 470PF K	
C47			CK73GB1E103K	CHIP C 0.010UF K		C153			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C50,51			CK73GB1C104K	CHIP C 0.10UF K		C154,155			CK73GB1E103K	CHIP C 0.010UF K	
C54			CK73GB1C104K	CHIP C 0.10UF K		C156			CK73GB1H471K	CHIP C 470PF K	
C55,56			CS77AA1E010M	CHIP TNTL 1.0UF 25WV		C157,158			CK73GB1E103K	CHIP C 0.010UF K	
C58			CK73GB1C104K	CHIP C 0.10UF K		C159			CK73GB1H471K	CHIP C 470PF K	
C59			CS77AA1E010M	CHIP TNTL 1.0UF 25WV		C160,161			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C61			CS77AA1E010M	CHIP TNTL 1.0UF 25WV		C162			CK73GB1H471K	CHIP C 470PF K	
C62,63			CK73GB1C104K	CHIP C 0.10UF K		C163			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C66			CK73GB1E103K	CHIP C 0.010UF K		C165			CK73GB1H471K	CHIP C 470PF K	
C67			CK73GB1C104K	CHIP C 0.10UF K		C177			C92-0895-05	ELECTRO 100UF 25WV	
C68			CS77AA1A100M	CHIP TNTL 10UF 10WV		C178-187			CC73GCH1H101J	CHIP C 100PF J	
C69			CK73GB1C104K	CHIP C 0.10UF K		C190-192			CC73GCH1H101J	CHIP C 100PF J	
C70			CK73GB1E103K	CHIP C 0.010UF K		C194,195			CC73GCH1H101J	CHIP C 100PF J	
C72			CK73GB1C104K	CHIP C 0.10UF K		C196			CS77AA1A100M	CHIP TNTL 10UF 10WV	
C74			CK73GB1E103K	CHIP C 0.010UF K		C198-200			CC73GCH1H101J	CHIP C 100PF J	
C75			CK73GB1H471K	CHIP C 470PF K		C205			CK73GB1E103K	CHIP C 0.010UF K	
C76,77			CS77AA1A100M	CHIP TNTL 10UF 10WV		C206			CC73GCH1H101J	CHIP C 100PF J	
C81			CC73GCH1H101J	CHIP C 100PF J		C209			CC73GCH1H101J	CHIP C 100PF J	
C82,83			CK73GB1C104K	CHIP C 0.10UF K		CN1			E40-6047-05	PIN ASSY (15P)	
C87,88			CS77AA1A100M	CHIP TNTL 10UF 10WV		J2			E59-0413-05	SUB PLUG (D) (D-SUB 9P:ACC1)	
C89			CK73GB1C104K	CHIP C 0.10UF K		L1			L92-0140-05	CHIP FERRITE	
C91			CC73GCH1H101J	CHIP C 100PF J		L8			L92-0140-05	CHIP FERRITE	
C95			CK73GB1E103K	CHIP C 0.010UF K		L10-13			L92-0140-05	CHIP FERRITE	
C96			CS77AA1A100M	CHIP TNTL 10UF 10WV		L15			L92-0140-05	CHIP FERRITE	
C99			CS77AA1A100M	CHIP TNTL 10UF 10WV		L18-21			L92-0140-05	CHIP FERRITE	
C101			CS77AA1A100M	CHIP TNTL 10UF 10WV		X1			L78-1414-05	RESONATOR (7.37MHZ)	
C102,103			CK73GB1C104K	CHIP C 0.10UF K		X2			L77-1679-05	CRYSTAL RESONATOR (12.288MHZ)	
C104,105			CS77AA1A100M	CHIP TNTL 10UF 10WV		CP3,4			RK75GB1J101J	CHIP-COM 100 J 1/16W	
C106			CK73GB1E103K	CHIP C 0.010UF K		CP5			RK74GA1J471J	CHIP-COM 470 J 1/16W	
C107			CK73GB1C104K	CHIP C 0.10UF K		CP22			RK75GB1J101J	CHIP-COM 100 J 1/16W	
						CP23			RK74GA1J102J	CHIP-COM 1.0K J 1/16W	
						CP25			RK75GB1J101J	CHIP-COM 100 J 1/16W	
						CP27			RK75GB1J101J	CHIP-COM 100 J 1/16W	

# KGP-2A/2B

## PARTS LIST

### CONTROL UNIT (X53-3980-21): KGP-2B

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
CP28			RK74GA1J102J	CHIP-COM 1.0K J 1/16W		R122			RK73GB2A223J	CHIP R 22K J 1/10W	
CP29,30			RK75GB1J101J	CHIP-COM 100 J 1/16W		R123			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CP31			RK75GB1J473J	CHIP-COM 47K J 1/16W		R124			RK73GB2A473J	CHIP R 47K J 1/10W	
CP32			RK75GB1J101J	CHIP-COM 100 J 1/16W		R125-131			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CP34			RK75GB1J101J	CHIP-COM 100 J 1/16W		R132			RK73GB2A393J	CHIP R 39K J 1/10W	
CP35			RK75GB1J102J	CHIP-COM 1.0K J 1/16W		R133			RK73GB2A563J	CHIP R 56K J 1/10W	
CP36			RK74GA1J102J	CHIP-COM 1.0K J 1/16W		R144-146			RK73GB2A820J	CHIP R 82 J 1/10W	
CP37			RK75GB1J473J	CHIP-COM 47K J 1/16W		R148,149			RK73GB2A820J	CHIP R 82 J 1/10W	
CP38			RK75GB1J102J	CHIP-COM 1.0K J 1/16W		R150,151			RK73GB2A474J	CHIP R 470K J 1/10W	
CP39-43			RK75GB1J101J	CHIP-COM 100 J 1/16W		R152			RK73GB2A102J	CHIP R 1.0K J 1/10W	
CP47,48			RK74GA1J101J	CHIP-COM 100 J 1/16W		R154,155			RK73GB2A000J	CHIP R 0.0 J 1/10W	
CP51			RK74GA1J101J	CHIP-COM 100 J 1/16W		R157,158			RK73FB2B000J	CHIP R 0.0 J 1/8W	
CP52-59			RK75GB1J101J	CHIP-COM 100 J 1/16W		R186			RK73FB2B000J	CHIP R 0.0 J 1/8W	
CP67			RK74GA1J101J	CHIP-COM 100 J 1/16W		R189			RK73FB2B000J	CHIP R 0.0 J 1/8W	
CP75			RK74GA1J473J	CHIP-COM 47K J 1/16W		R191			RK73FB2B000J	CHIP R 0.0 J 1/8W	
CP76			RK74GA1J471J	CHIP-COM 470 J 1/16W		R194			RK73FB2B000J	CHIP R 0.0 J 1/8W	
CP77,78			RK75GB1J102J	CHIP-COM 1.0K J 1/16W		R201			RK73GB2A473J	CHIP R 47K J 1/10W	
CP80			RK75GB1J102J	CHIP-COM 1.0K J 1/16W		R202,203			RK73GB2A222J	CHIP R 2.2K J 1/10W	
CP82			RK75GB1J473J	CHIP-COM 47K J 1/16W		R210			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R2			RK73GB2A000J	CHIP R 0.0 J 1/10W		R213			RK73GB2A393J	CHIP R 39K J 1/10W	
R4			RK73GB2A273J	CHIP R 27K J 1/10W		R214			RK73GB2A122J	CHIP R 1.2K J 1/10W	
R5			RK73GB2A123J	CHIP R 12K J 1/10W		R216			RK73GB2A122J	CHIP R 1.2K J 1/10W	
R6			RK73FB2B102J	CHIP R 1.0K J 1/8W		R218			RK73GB2A473J	CHIP R 47K J 1/10W	
R7			RK73GB2A102J	CHIP R 1.0K J 1/10W		R219,220			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R8			RK73FB2B000J	CHIP R 0.0 J 1/8W		R222			RK73GB2A393J	CHIP R 39K J 1/10W	
R10			RK73RB2H150J	CHIP R 15 J 1/2W		R223			RK73GB2A563J	CHIP R 56K J 1/10W	
R52			RK73GB2A681J	CHIP R 680 J 1/10W		R224			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R56			RK73GB2A000J	CHIP R 0.0 J 1/10W		S1		S70-0446-05	TACT SWITCH		
R58			RK73GB2A102J	CHIP R 1.0K J 1/10W		D1		1812L075PR	VARISTOR		
R62			RK73GB2A122J	CHIP R 1.2K J 1/10W		D2		DSM3MA1-RPB	DIODE		
R63			RK73GB2A000J	CHIP R 0.0 J 1/10W		D5		MA2S111-F	DIODE		
R64			RK73GB2A473J	CHIP R 47K J 1/10W		D7		UMZ8.2T	ZENER DIODE		
R65-67			RK73GB2A000J	CHIP R 0.0 J 1/10W		D8		NNCD6.8G-A	ZENER DIODE		
R72			RK73GB2A473J	CHIP R 47K J 1/10W		D9		UMZ8.2T	ZENER DIODE		
R73			RK73GB2A000J	CHIP R 0.0 J 1/10W		D12		NNCD6.8G-A	ZENER DIODE		
R75			RK73GB2A000J	CHIP R 0.0 J 1/10W		D24		NNCD6.8G-A	ZENER DIODE		
R77			RK73GB2A000J	CHIP R 0.0 J 1/10W		D30		MA2S111-F	DIODE		
R80			RK73GB2A223J	CHIP R 22K J 1/10W		D36-42		DA204U	DIODE		
R82			RK73GB2A473J	CHIP R 47K J 1/10W		D44,45		DA204U	DIODE		
R84			RK73GB2A393J	CHIP R 39K J 1/10W		D46,47		UMZ8.2T	ZENER DIODE		
R86			RK73GB2A473J	CHIP R 47K J 1/10W		D59		UMZ8.2T	ZENER DIODE		
R90			RK73GB2A473J	CHIP R 47K J 1/10W		IC1	*	R3111N301C-FA	MOS-IC		
R92,93			RK73GB2A473J	CHIP R 47K J 1/10W		IC3,4		TA7808FQ	ANALOGUE IC		
R95			RK73GB2A473J	CHIP R 47K J 1/10W		IC6		ADM202EARUZ	MOS-IC		
R98			RK73GB2A223J	CHIP R 22K J 1/10W		IC7		TA78L05FF	MOS-IC		
R99			RK73GB2A393J	CHIP R 39K J 1/10W		IC9		TC74HC4094AFF	MOS-IC		
R100			RK73GB2A102J	CHIP R 1.0K J 1/10W		IC10		XC62FP3302PN	MOS-IC		
R102			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC11		BA033FP	MOS-IC		
R104			RK73GB2A223J	CHIP R 22K J 1/10W		IC12		BU2099FV	MOS-IC		
R105,106			RK73GB2A393J	CHIP R 39K J 1/10W		IC13		XC62FP1802PN	MOS-IC		
R107-109			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC14	*	R3111N301C-FA	MOS-IC		
R110			RK73GB2A473J	CHIP R 47K J 1/10W		IC15		AT24C08BN-SH	ROM IC		
R111			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC16		NJM4558M	MOS-IC		
R112			RK73GB2A101J	CHIP R 100 J 1/10W		IC17	*	30620M8A2M6GPU	MICROPROCESSOR IC		
R113			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC18		M62364FP-F	MOS-IC		
R114			RK73GB2A470J	CHIP R 47 J 1/10W		IC22		AK4550VTP	MOS-IC		
R115			RK73GB2A000J	CHIP R 0.0 J 1/10W		IC24		TC7S04F-F	MOS-IC		
R116			RK73GB2A473J	CHIP R 47K J 1/10W		IC25	*	S29AL008D90TF	SRAM IC		
R117-119			RK73GB2A000J	CHIP R 0.0 J 1/10W							
R120,121			RK73GB2A274J	CHIP R 270K J 1/10W							

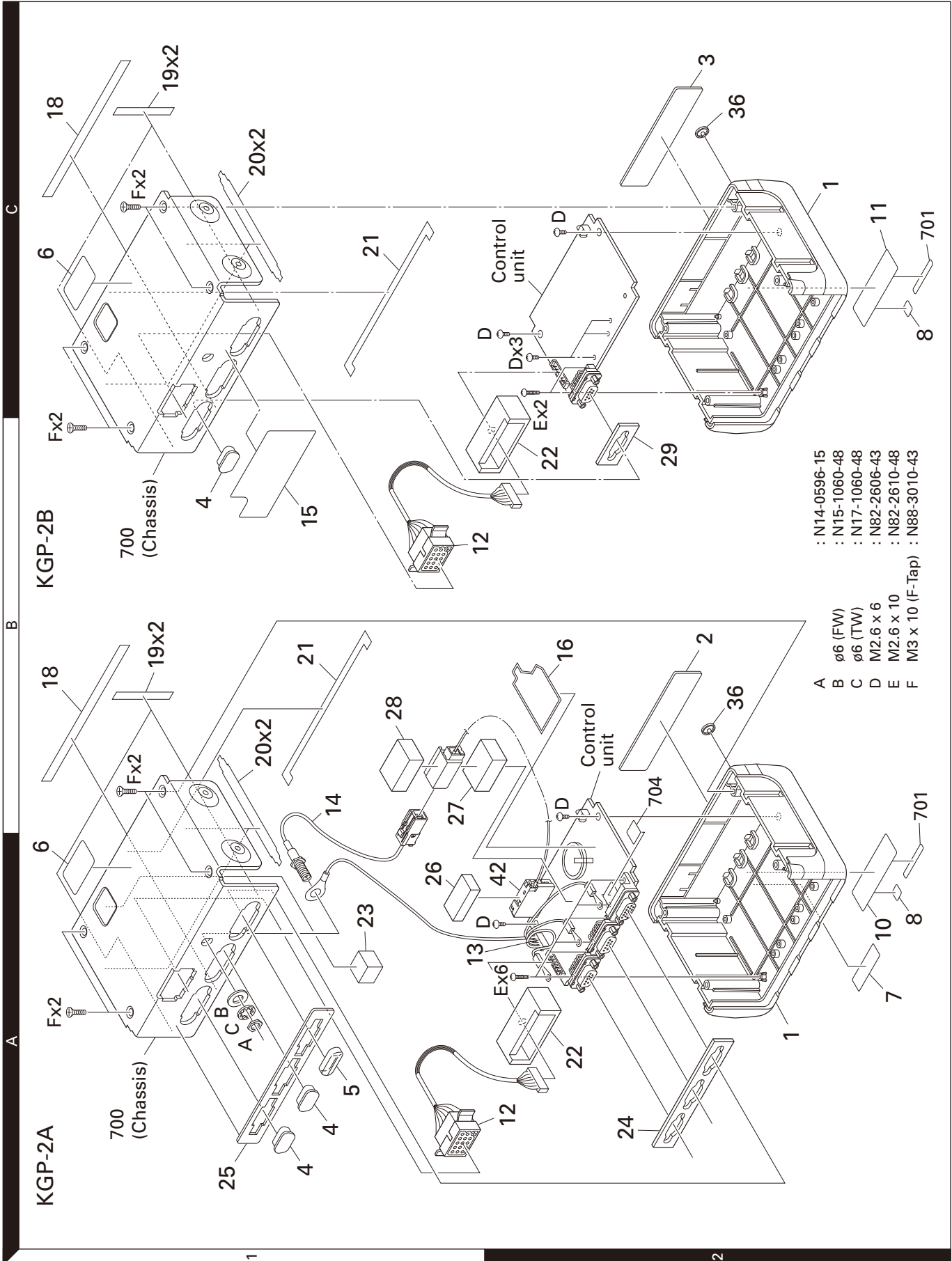
## PARTS LIST

CONTROL UNIT (X53-3980-21): KGP-2B

Ref. No.	Address	New parts	Parts No.	Description	Destination	Ref. No.	Address	New parts	Parts No.	Description	Destination
IC26			NJM4558M	MOS-IC							
IC28			TC74VHC4040FT	MOS-IC							
IC29			320VC5402PGE	MICROPROCESSOR IC							
Q5-8			DTC144EE	DIGITAL TRANSISTOR							
Q10,11			DTC114YE	DIGITAL TRANSISTOR							
Q15			DTC114EUA	DIGITAL TRANSISTOR							
Q16-26			DTC114YE	DIGITAL TRANSISTOR							

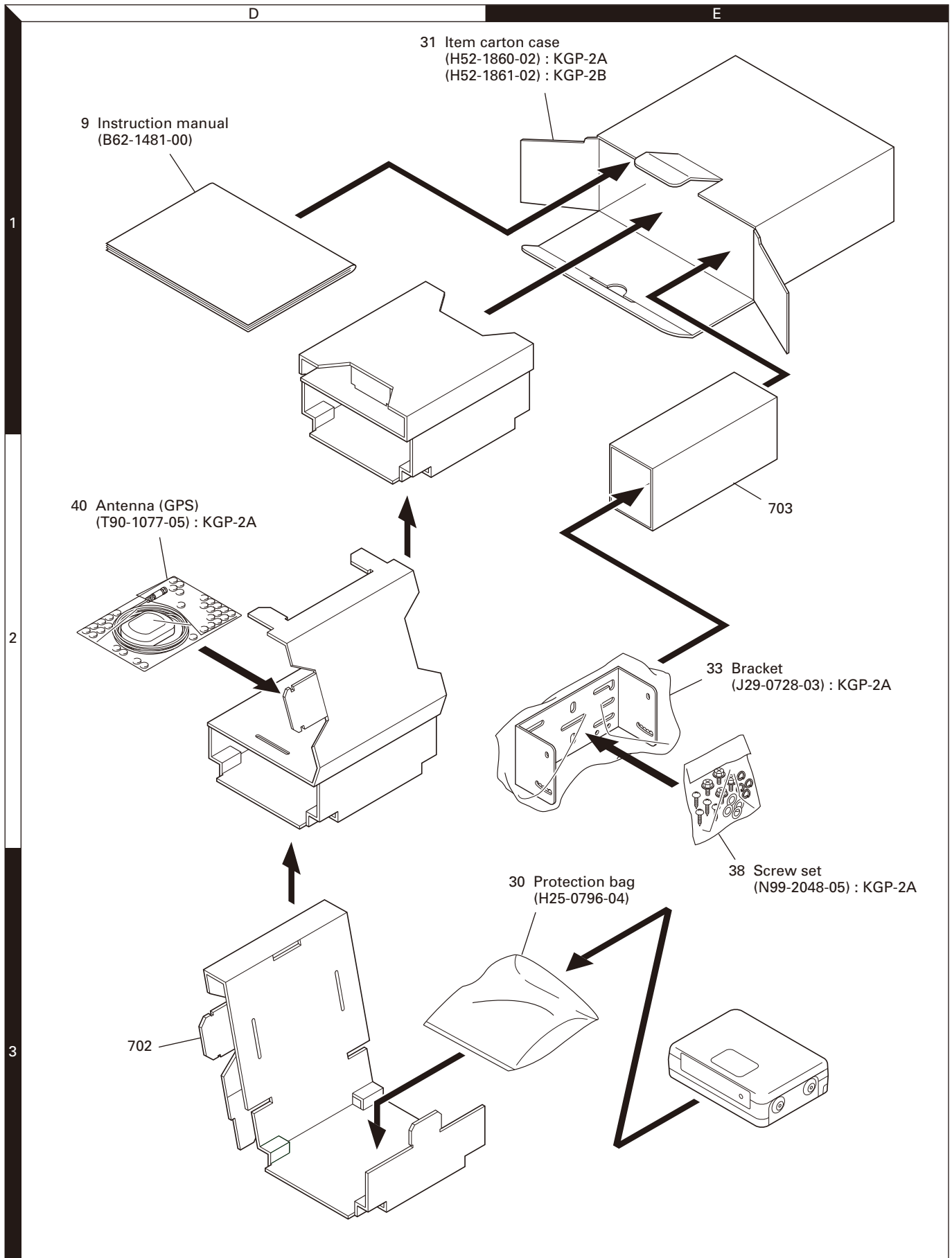
# KGP-2A/2B

## EXPLODED VIEW





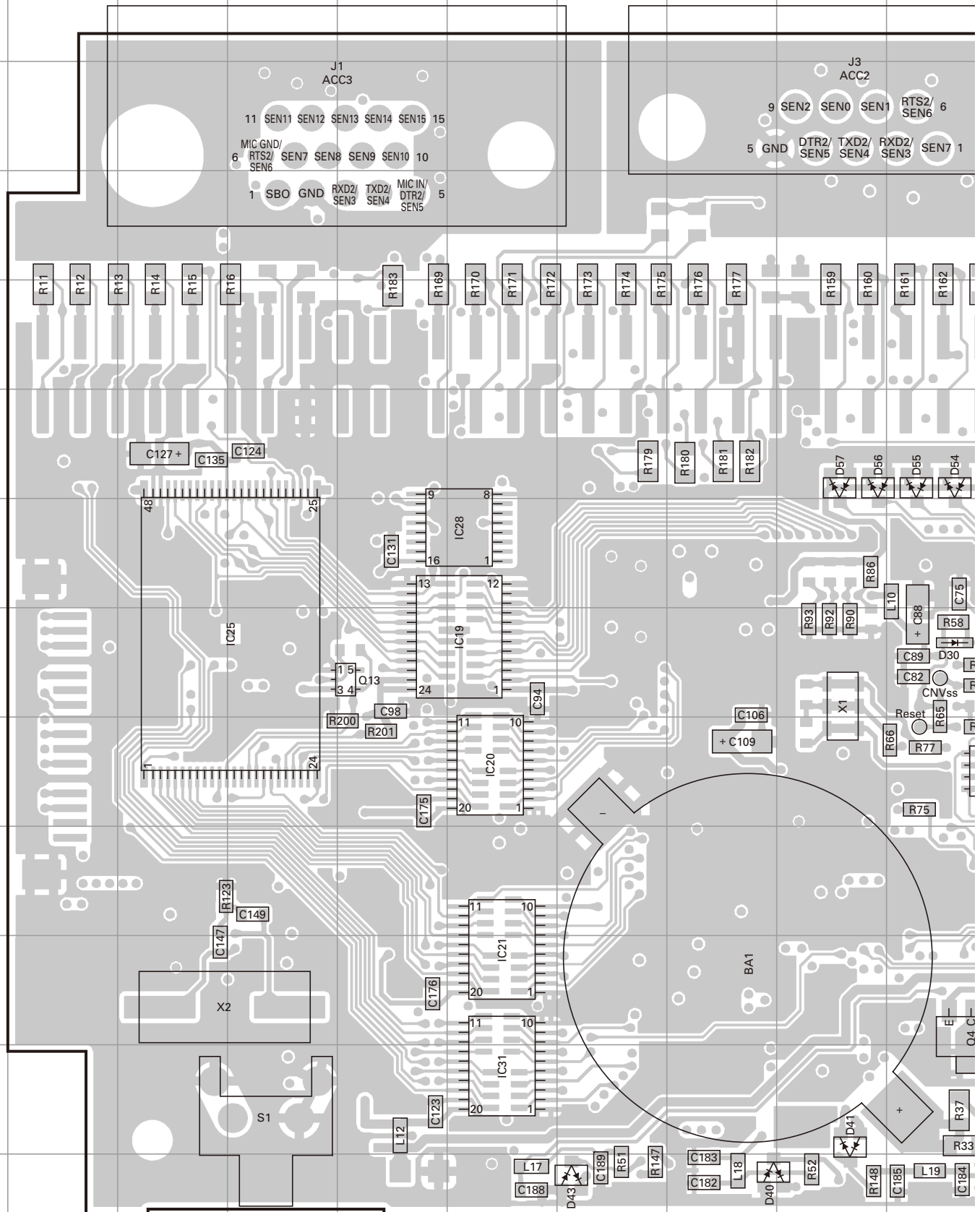
## PACKING



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

# KGP-2A/2B PC BOARD

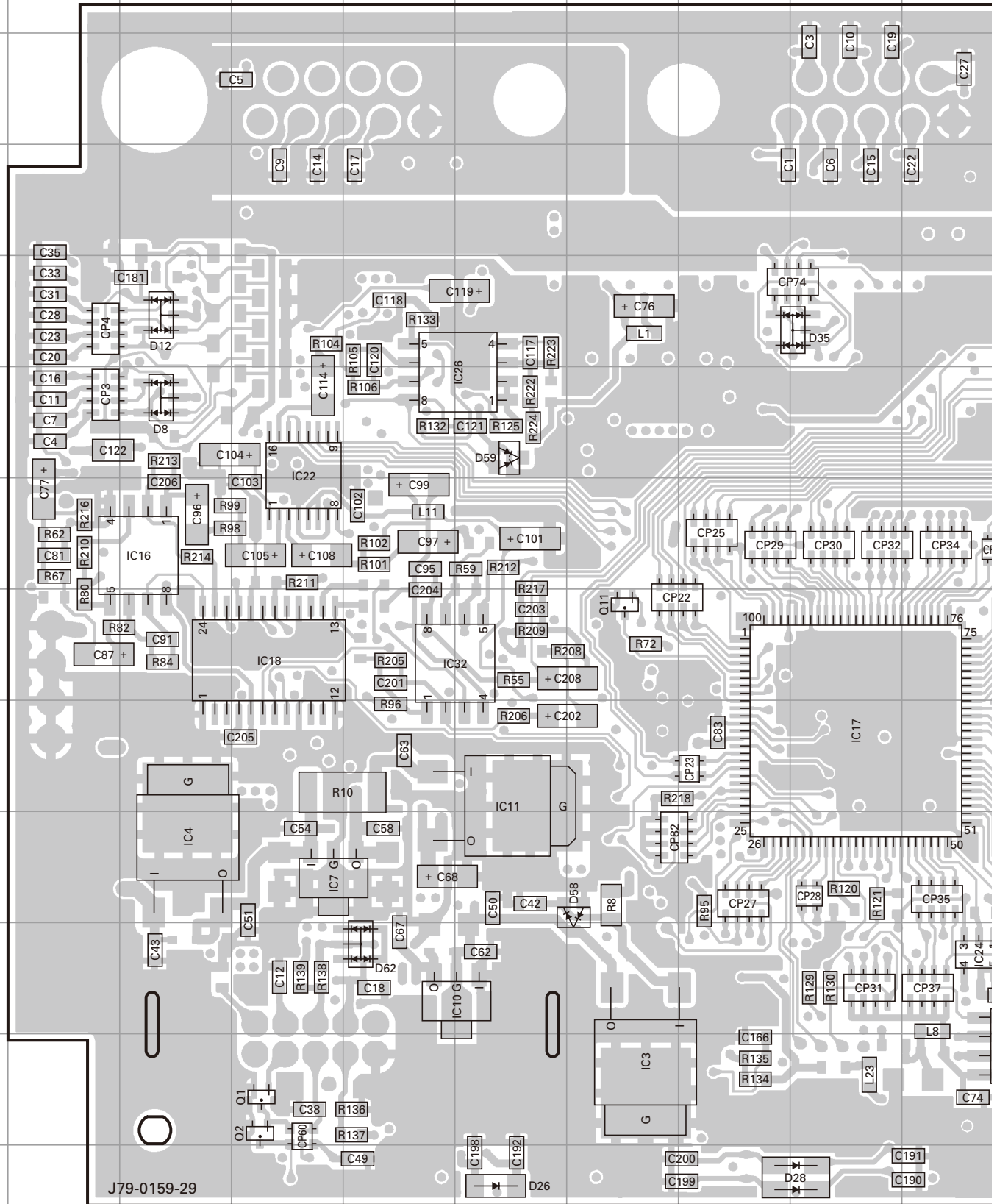
## CONTROL UNIT (X53-3980-20): KGP-2A Component side view (J79-0159-29)





# KGP-2A/2B PC BOARD

## CONTROL UNIT (X53-3980-20): KGP-2A Foil side view (J79-0159-29)



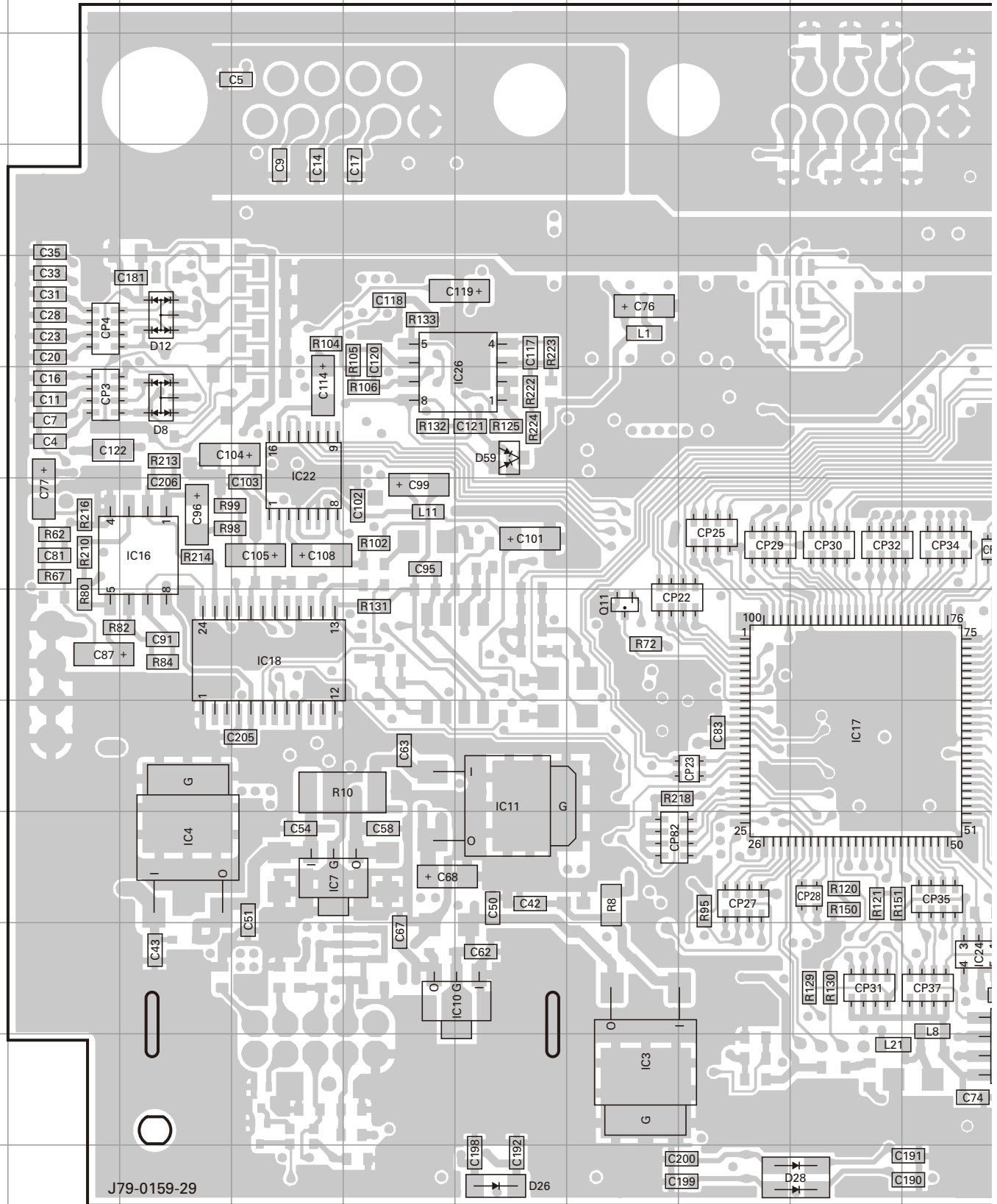






# KGP-2A/2B PC BOARD

## CONTROL UNIT (X53-3980-21): KGP-2B Foil side view (J79-0159-29)

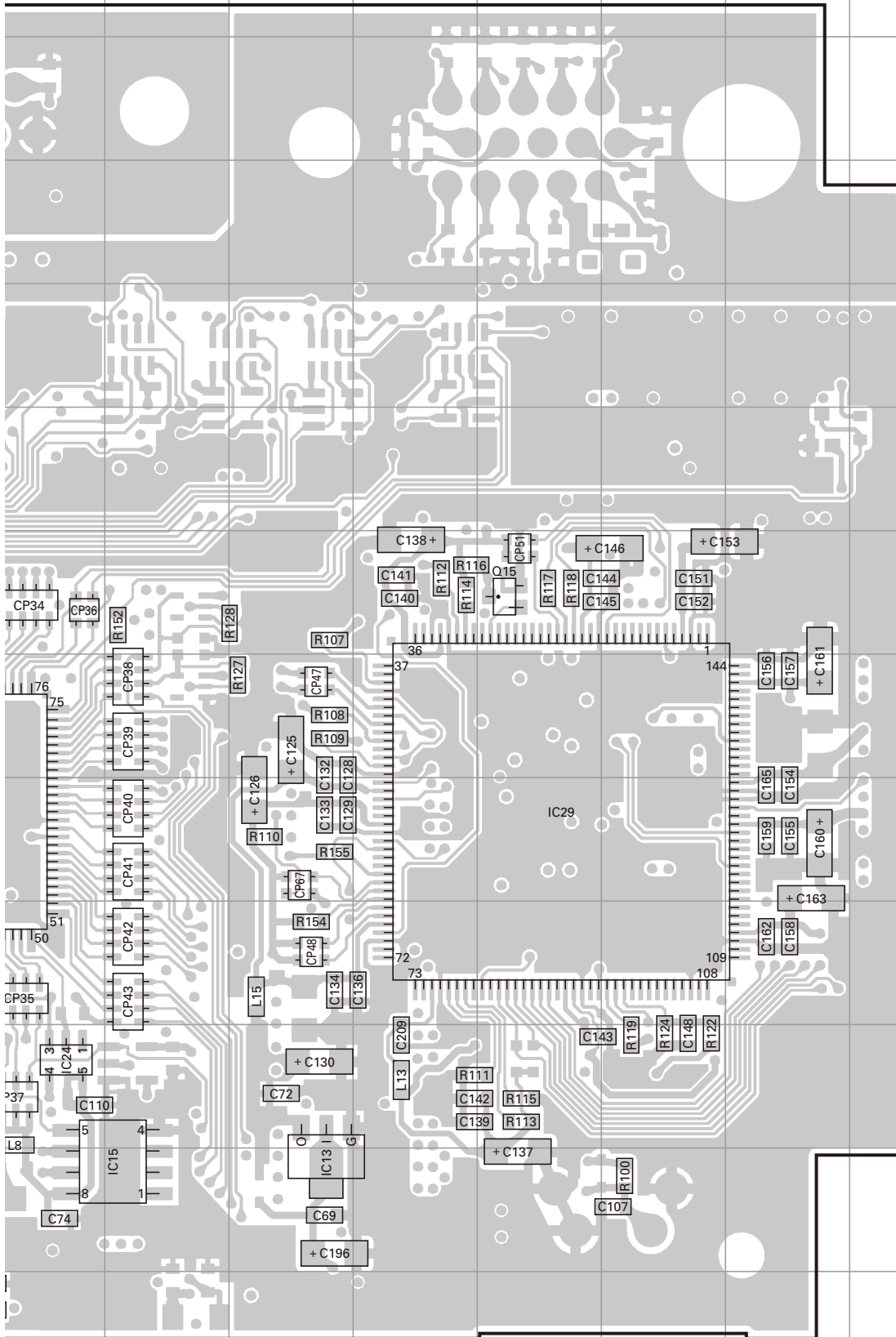


J79-0159-29

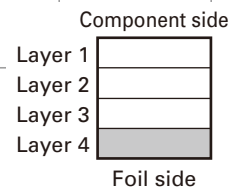


# PC BOARD KGP-2A/2B

## CONTROL UNIT (X53-3980-21): KGP-2B Foil side view (J79-0159-29)



Ref. No.	Address
IC3	12G
IC4	10C
IC7	10D
IC10	11F
IC11	9F
IC13	12L
IC15	12K
IC16	7C
IC17	9I
IC18	8D
IC22	6D
IC24	11J
IC26	6F
IC29	9N
Q11	8G
Q15	7N
D8	6C
D12	5C
D26	13F
D28	13I
D59	6F



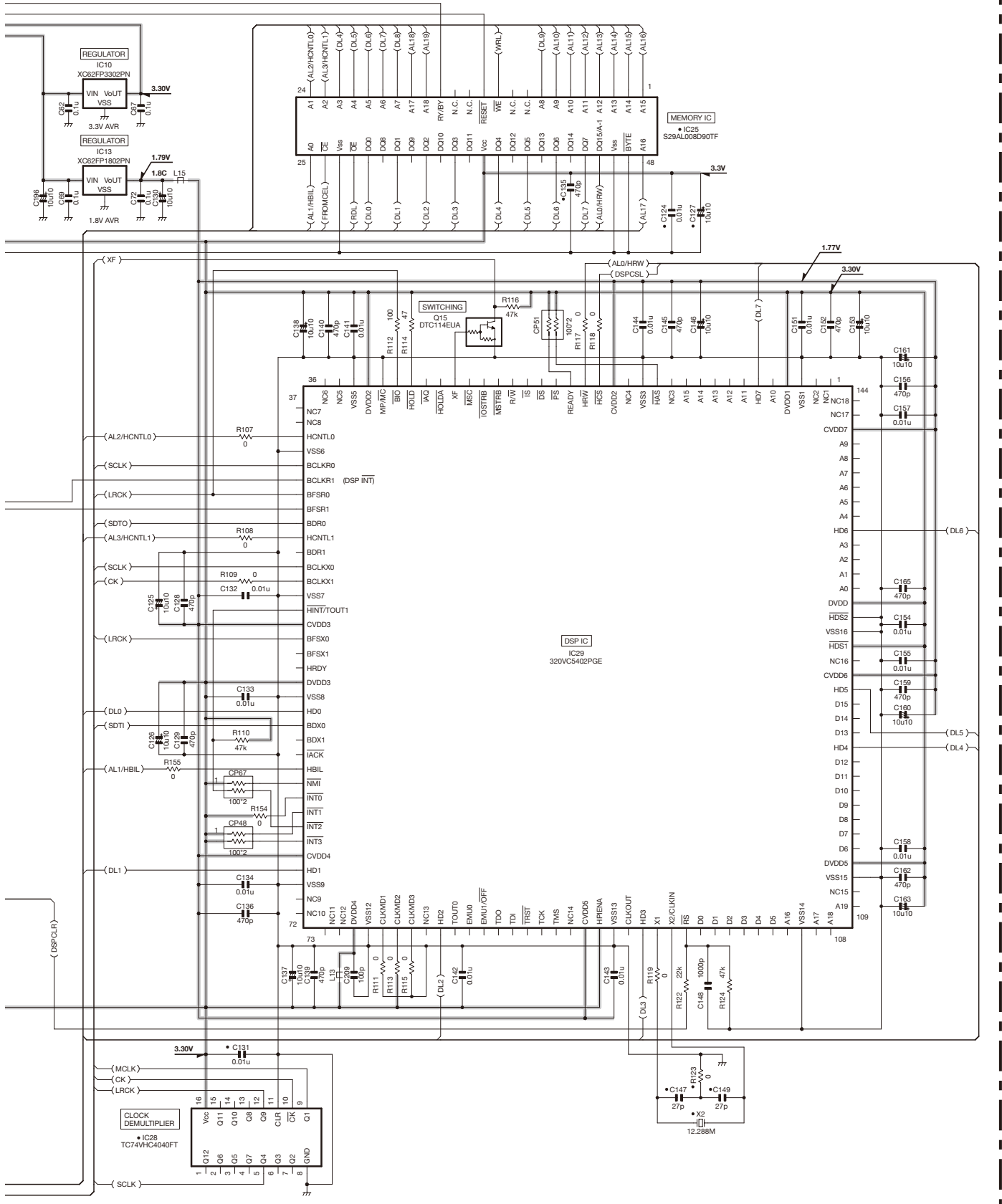






# SCHEMATIC DIAGRAM KGP-2A/2B

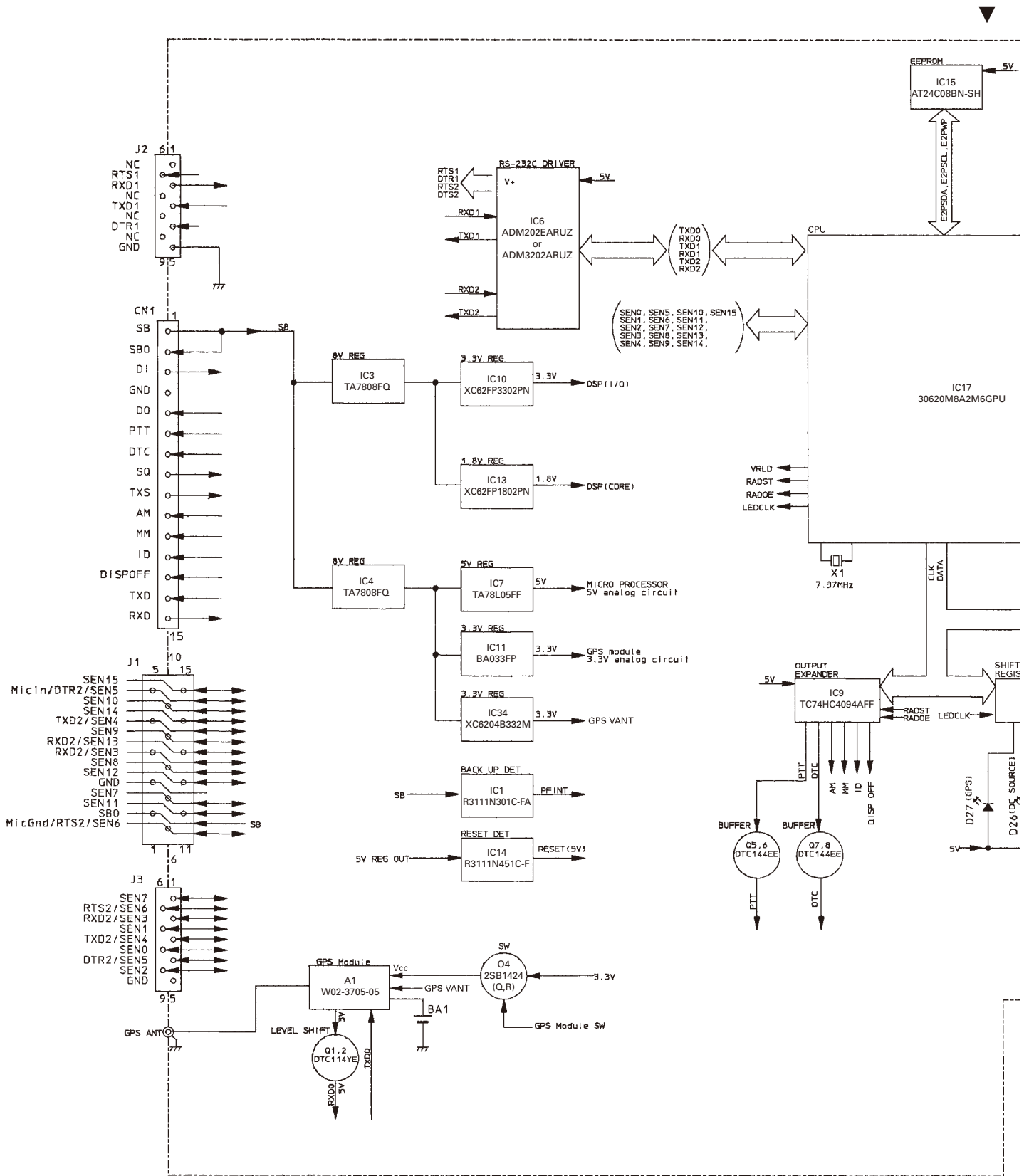
CONTROL UNIT (X53-3980-XX)



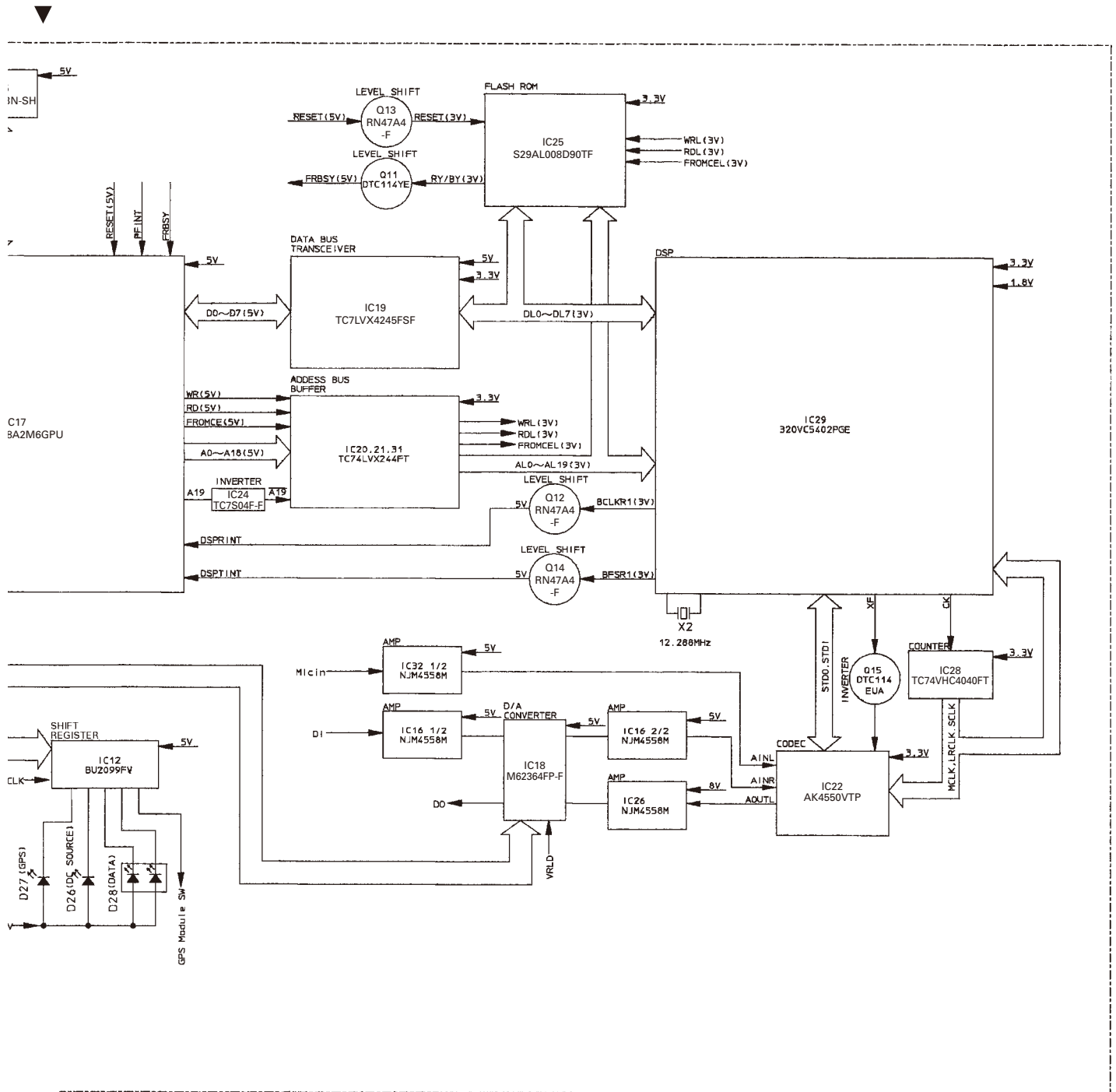
Note : The components marked with a dot (•) are parts of layer 1.

# KGP-2A/2B

## BLOCK DIAGRAM (KGP-2A)



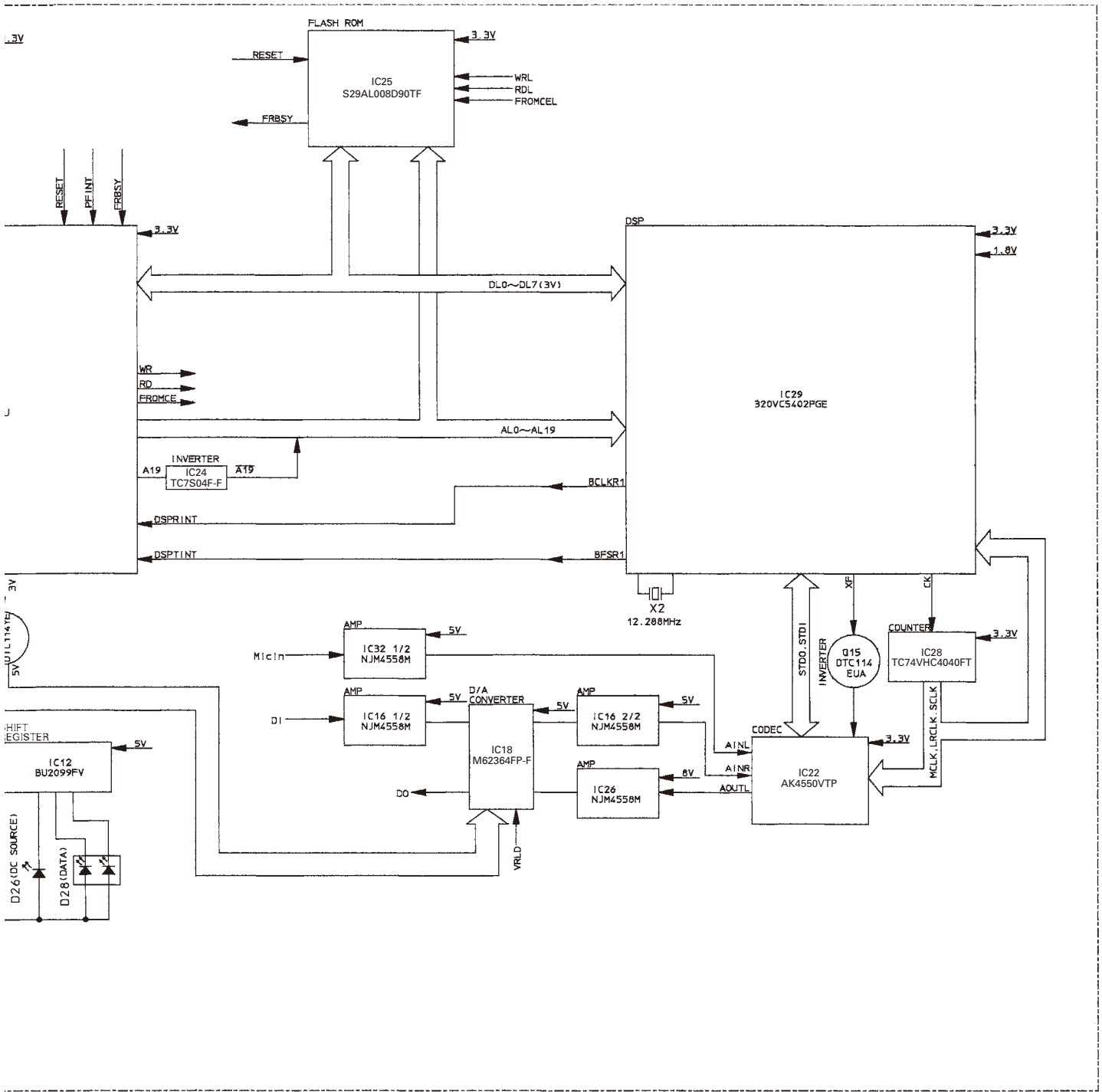
## BLOCK DIAGRAM (KGP-2A)







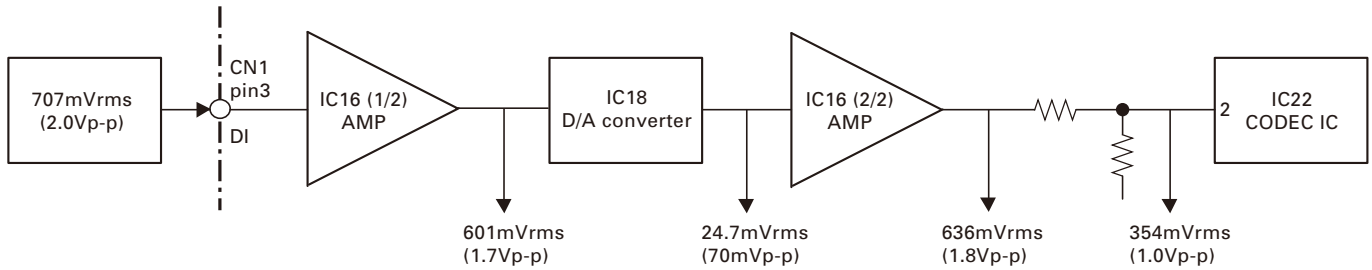
## BLOCK DIAGRAM (KGP-2B)



# KGP-2A/2B

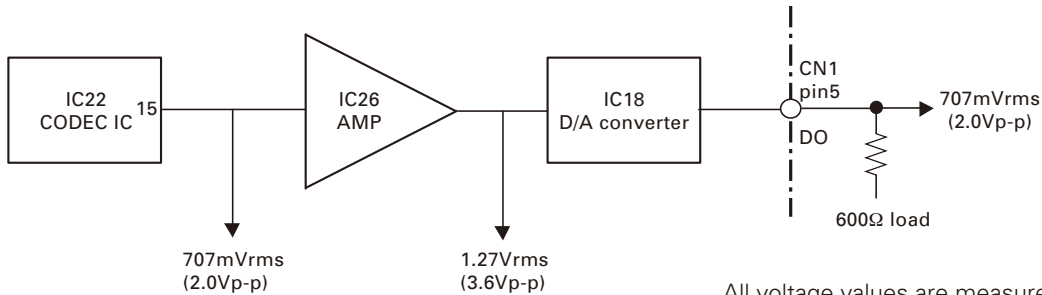
## LEVEL DIAGRAM

### Receiver Section



All voltage values are measured by using either an AF-VTVM or oscilloscope when 707mVrms (2.0Vp-p) is applied to the CN1 terminal pin 3 (DI).

### Transmitter Section



All voltage values are measured by using either an AF-VTVM or oscilloscope when 707mVrms (2.0Vp-p) is applied to the CN1 terminal pin 5 (DO).

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(A.C.N. 001 499 074)

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### Kenwood Electronics (Hong Kong) Ltd.

Unit 3712-3724, Level 37, Tower one Metroplaza, 223 Hing Fong Road, Kwai Fong, N.T., Hong Kong

### Kenwood Electronics Singapore Pte Ltd

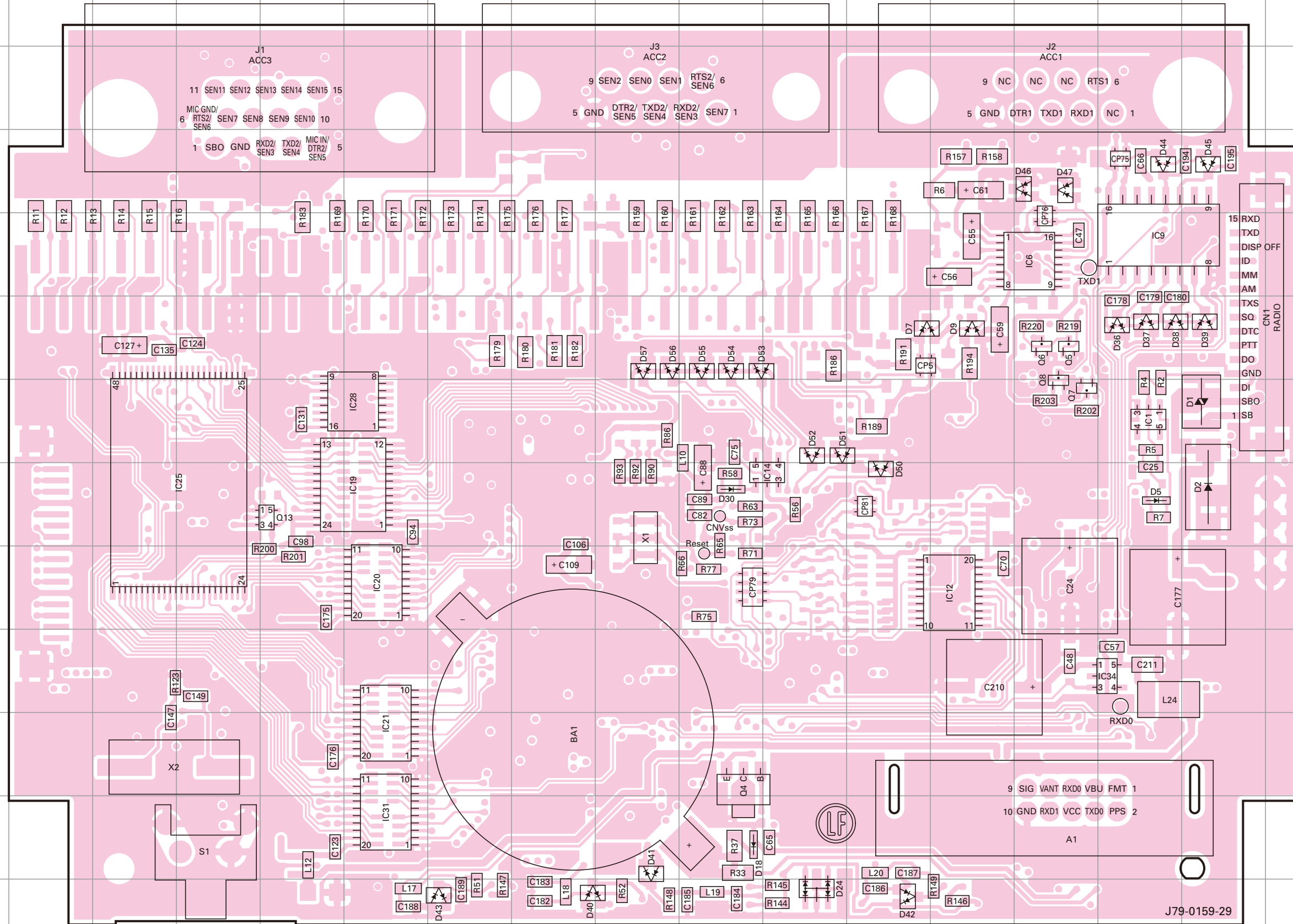
1 Ang Mo Kio Street 63, Singapore 569110

# KGP-2A/2B PC BOARD

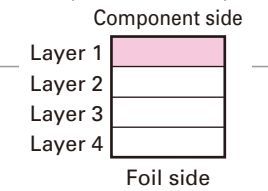
# PC BOARD KGP-2A/2B

CONTROL UNIT (X53-3980-20): KGP-2A Component side view (J79-0159-29)

CONTROL UNIT (X53-3980-20): KGP-2A Component side view (J79-0159-29)



Ref. No.	Address
IC1	70
IC6	5N
IC9	50
IC12	9M
IC14	8K
IC19	8F
IC20	9F
IC21	11F
IC25	8D
IC28	7F
IC31	12F
IC34	100
Q4	11J
Q5	6N
Q6	6N
Q7	7N
Q8	7N
Q13	8E
D1	7P
D2	8P
D5	80
D7	6L
D9	6M
D18	12J
D24	13K
D30	8J
D36	60
D37	60
D38	60
D39	6P
D40	13H
D41	12I
D42	13L
D43	13G
D44	40
D45	4P
D46	4N
D47	4N
D50	8L
D51	7K
D52	7K
D53	6J
D54	6J
D55	6J
D56	6I
D57	6I



J79-0159-29

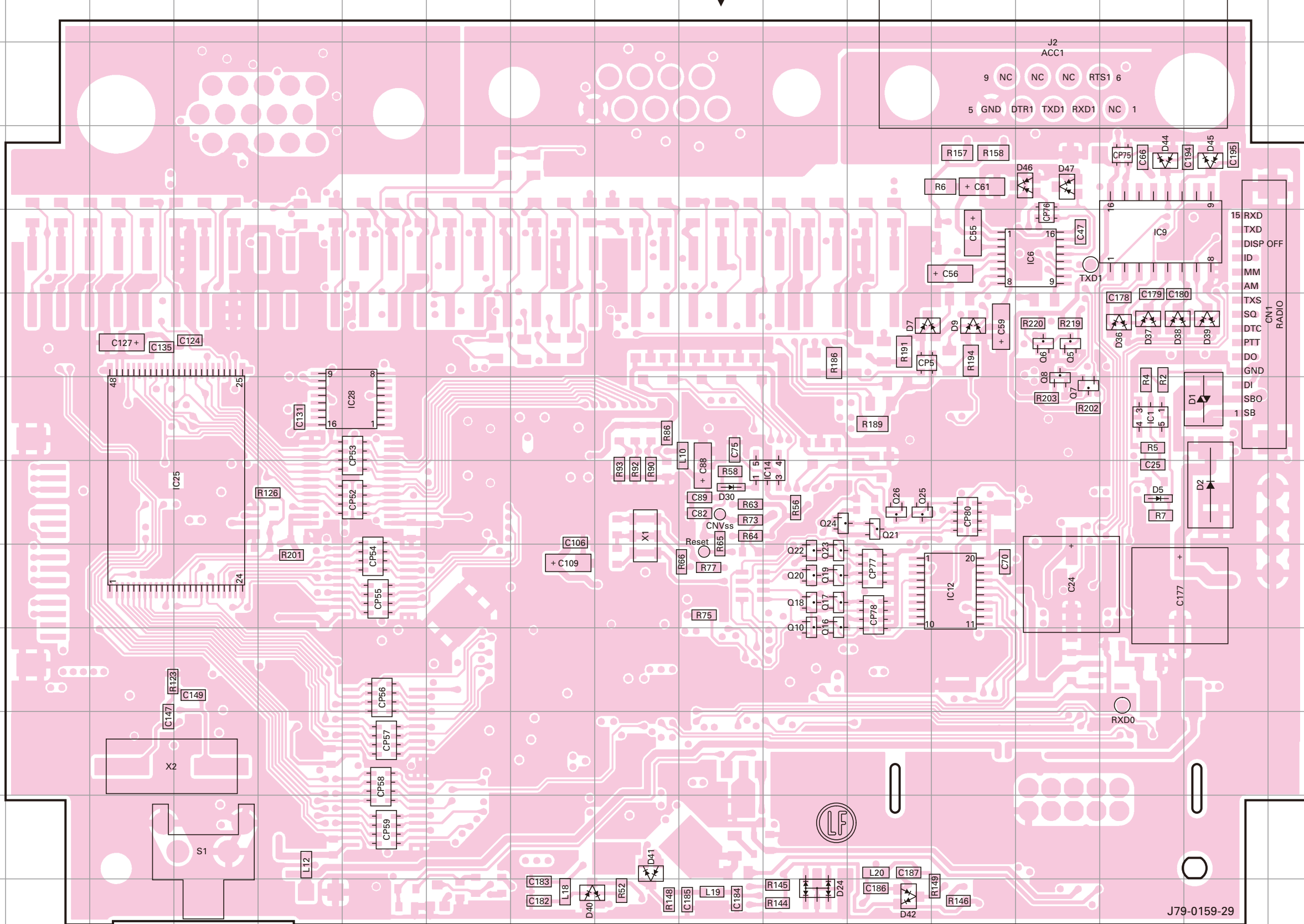


# KGP-2A/2B PC BOARD

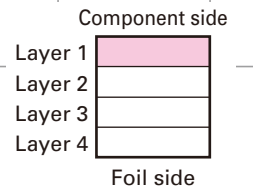
# PC BOARD KGP-2A/2B

CONTROL UNIT (X53-3980-21): KGP-2B Component side view (J79-0159-29)

CONTROL UNIT (X53-3980-21): KGP-2B Component side view (J79-0159-29)



Ref. No.	Address
IC1	7O
IC6	5N
IC9	5O
IC12	9M
IC14	8K
IC25	8D
IC28	7F
Q5	6N
Q6	6N
Q7	7N
Q8	7N
Q10	9K
Q16	9K
Q17	9K
Q18	9K
Q19	9K
Q20	9K
Q21	8L
Q22	9K
Q23	9K
Q24	8K
Q25	8L
Q26	8L
D1	7P
D2	8P
D5	8O
D7	6L
D9	6M
D24	13K
D30	8J
D36	6O
D37	6O
D38	6O
D39	6P
D40	13H
D41	12I
D42	13L
D44	4O
D45	4P
D46	4N
D47	4N



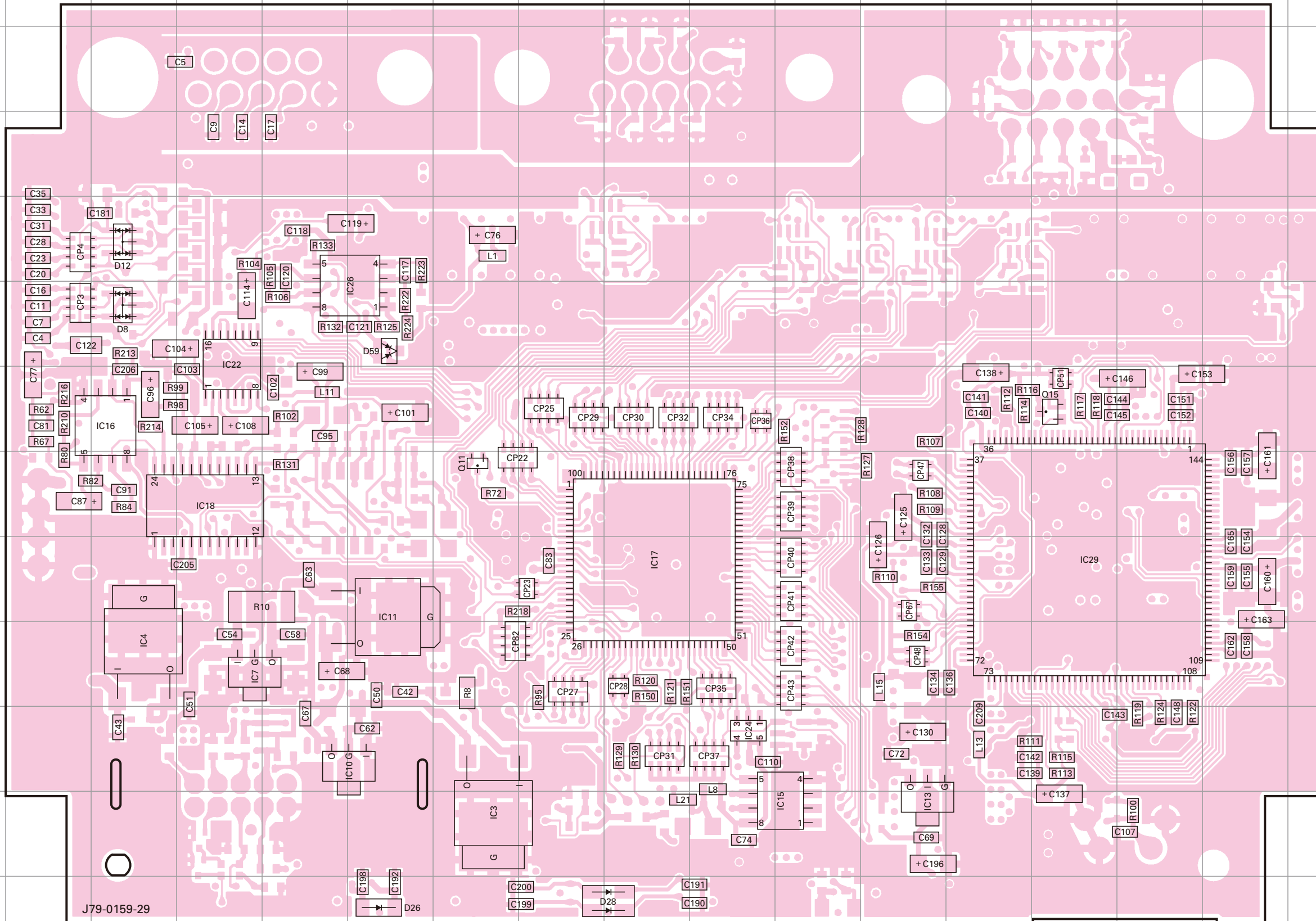
J79-0159-29

# KGP-2A/2B PC BOARD

# PC BOARD KGP-2A/2B

CONTROL UNIT (X53-3980-21): KGP-2B Foil side view (J79-0159-29)

CONTROL UNIT (X53-3980-21): KGP-2B Foil side view (J79-0159-29)



Ref. No.	Address
IC3	12G
IC4	10C
IC7	10D
IC10	11F
IC11	9F
IC13	12L
IC15	12K
IC16	7C
IC17	9I
IC18	8D
IC22	6D
IC24	11J
IC26	6F
IC29	9N
Q11	8G
Q15	7N
D8	6C
D12	5C
D26	13F
D28	13I
D59	6F

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