

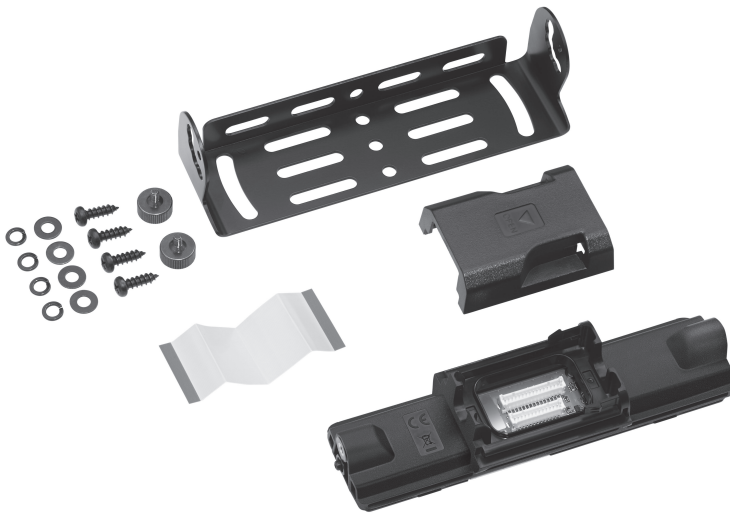
KENWOOD

SERVICE MANUAL

CONTROL HEAD INTERFACE KIT, CONTROL HEAD REMOTE KIT

KRK-18H, KRK-19B

KRK-18H



KRK-19B



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This product complies with the **RoHS** directive for the European market.



This product uses Lead Free solder.

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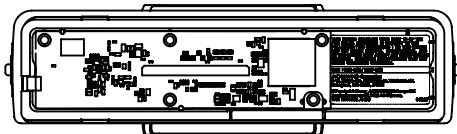
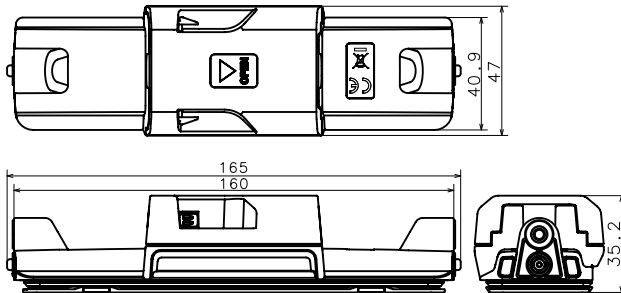
SECTION 1 PRECAUTION

This service manual does not describe PRECAUTION.

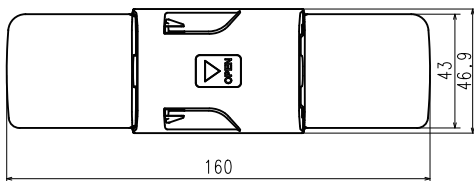
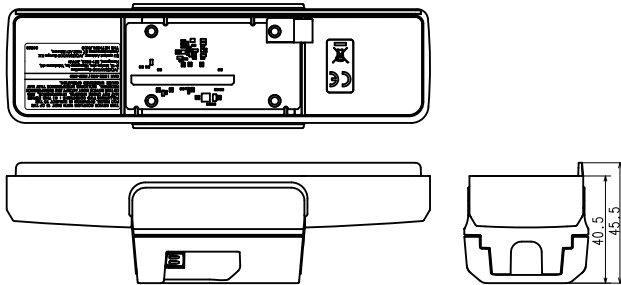
SECTION 2 SPECIFIC SERVICE INSTRUCTIONS

2.1 INSTALLATION

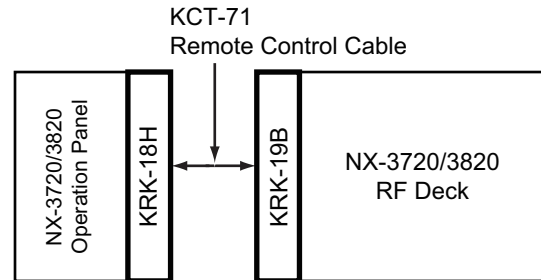
KRK-18H External View



KRK-19B External View



2.1.2 Connection image



2.1.3 Remove the Operation panel from the transceiver (NX-3720, NX-3820 only)

- (1) Lift the two dents of the chassis on the bottom of the transceiver with a flat-head screwdriver and remove the panel from the chassis. (Fig.1)

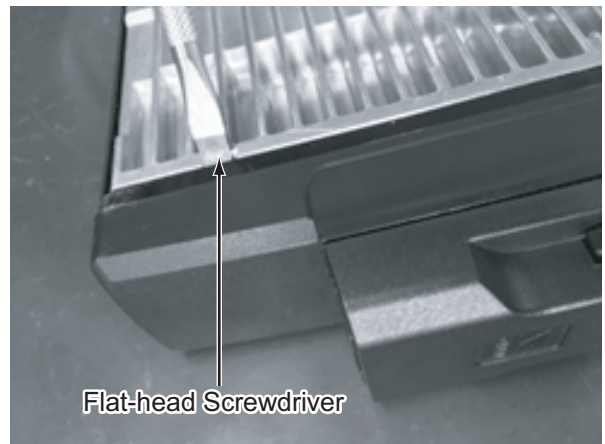


Fig.1

- (2) Remove the flat cable from the display unit connector of the panel.

2.1.1 Installing the Remote Kit (KRK-18H, KRK-19B)

The KRK-18H and KRK-19B remote kit is used to remotely operate the NX-3720/3820 series transceiver.

The KRK-18H is connected to the NX-3720/3820 operation panel with the KCT-71 remote control cable.

The KRK-19B is connected to the NX-3720/3820 RF Deck with the KCT-71.

Note:

The KRK-18H has the common firmware of the NX-3720/3820.

When turning the transceiver power ON in the state from which the firmware version of the NX-3720/3820 RF Deck and KRK-18H is different, the firmware programming mode will start up automatically, and "FIRM MISMATCH" is displayed on the LCD. In this case, rewrite the newer version firmware.

The firmware is written into the NX-3720/3820 RF Deck and KRK-18H at the same time.

2.1.4 Install the KRK-19B onto the NX-3720, NX-3820 RF Deck

- (1) Insert the flat cable into the interface unit (XC3-064M-00) connector of the KRK-19B. (Fig.2)

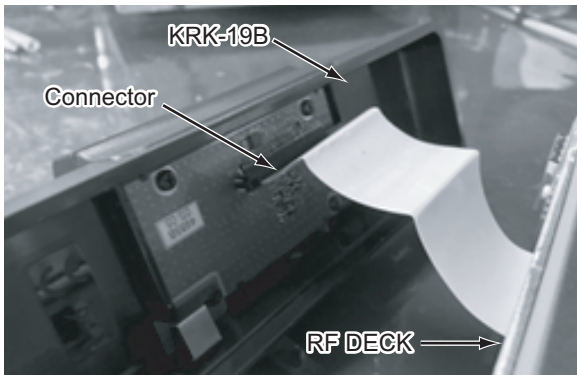


Fig.2

Note:

The blue line of the flat cable and the flap of connector are as same side.

After inserting, the flat cable should be locked with the connector (flap) surely.

- (2) Fit the KRK-19B with four tabs onto the front of the chassis. (Fig.3)



Fig.3

Note:

When installing the KRK-19B onto the front of the chassis, hold down the flat cable with your fingers to prevent it from being caught.

2.1.5 Install the KRK-18H onto the NX-3720 or NX-3820 operation panel

- (1) Insert the flat cable attached to the interface unit (XC3-063M-00) of the KRK-18H into the display unit connector of the panel. (Fig.4)
(The cable has been pre-inserted in the connector of the KRK-18H.)

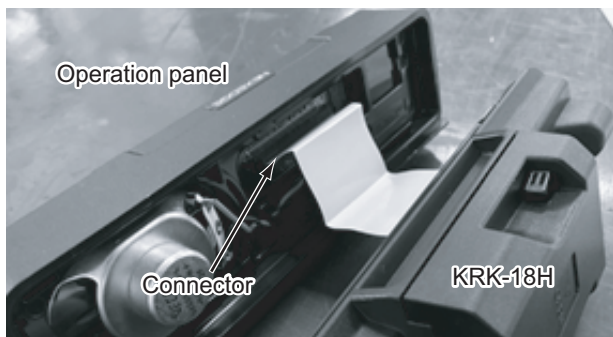


Fig.4

Note:

The blue line of the flat cable and the flap of connector are as same side.

After inserting, the flat cable should be locked with the connector (flap) surely.

2.1.6 Connect the KRK-19B and KRK-18H with the KCT-71

- (1) Insert one lead wire with connector of the KCT-71 into the connector of the KRK-19B. (Fig.5)

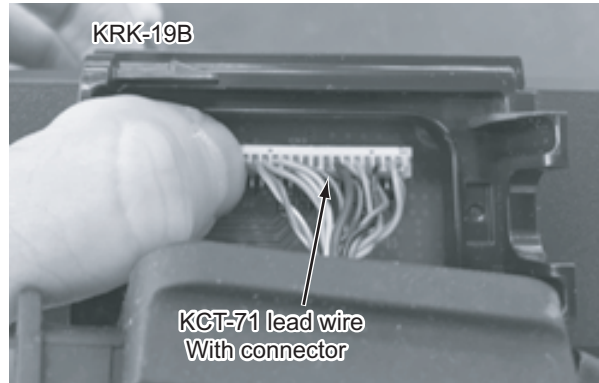


Fig.5

- (2) Secure the cable bush as shown in the figure 6 and attach the waterproof packing.

Note:

There is a direction to the installing of the cable bush.

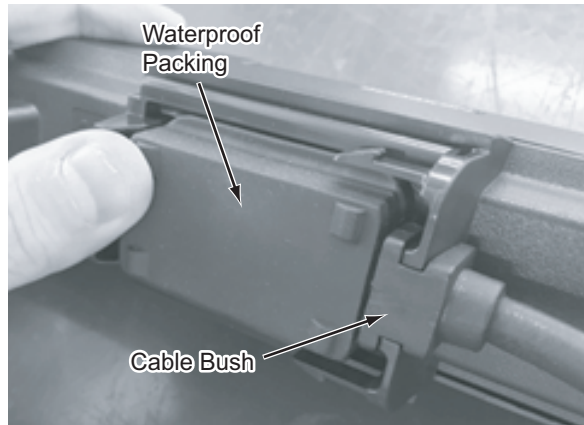


Fig.6

- (3) Slide the molding cover so as not to float the waterproof packing and attach so that it is locked. (Fig.7)

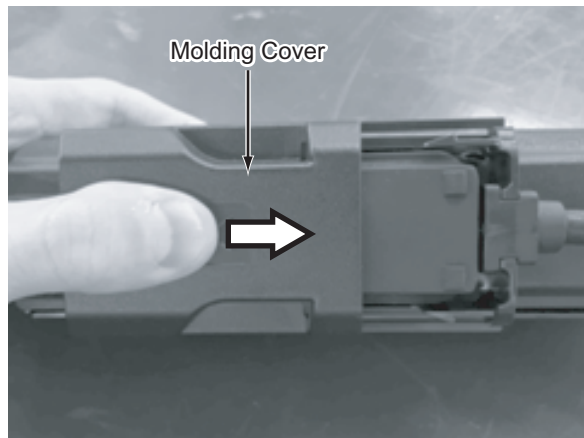


Fig.7

- (4) Insert the other lead wire with connector of the KCT-71 into the connector of the KRK-18H.
- (5) Attach the waterproof packing and molding cover in the same way of step 2 and 3.

2.2 CIRCUIT DESCRIPTION

2.2.1 Overview

The KRK-18H and KRK-19B are optional units for the NX-3720/3820 designed to separate the Mobile transceiver and Control Head using the Remote control cable (KCT-71).

The KRK-18H is a back panel for the Control Head and controls the Control Head and it consists of power supply circuit, audio circuit, control circuit, and external I/O circuit.

The KRK-19B is a front panel for the Mobile transceiver and it consists of power supply circuit, audio circuit, and control circuit. These two units (KRK-18H, KRK-19B) communicate by CAN (Controller Area Network).

2.2.2 Power supply circuit

2.2.2.1 KRK-18H

SB (Switched +B Power) is provided from the Mobile transceiver when the transceiver power is on. SB is supplied to the step-down DC/DC converter ICs (IC1, IC2), the ACC interface connector (CN2) and the Control Head interface connector (CN48).

IC1 regulates SB voltage to 5.36V (53DC) and IC2 regulates SB voltage to 3.9V (39DC). Both ICs work during SB is supplied.

53DC is the power supply for the CAN transceiver, IC6 (50D) and LEDs which are in the Control Head.

39DC is the power source of IC30, IC3, IC4, and IC5.

IC30 regulates 39DC to 1.2V (12D) and 12D supplies the power to the MPU core.

IC4 outputs 1.8V (18D) while 12D is working. 18D supplies the power to the MPU, Mobile DDR, and enables regulator ICs (IC5, IC6).

IC5 is the power supply for the MPU I/O section, the Flash memory, and the CAN transceiver. It outputs 3.3V (33D). IC5 works during 18D is operating.

IC3 is the power supply for the analog circuit. IC3 outputs 3.3V (33A). 33A works during 39DC is supplied.

18D_Flash is the power supply for the Flash memory I/O section.

After 33D ramps up, IC7 turns on, and supplies 18D_Flash from 18D.

IC6 regulates 5.36V (53DC) to 5.0V (50D) and supplies the power to the Level shift circuit.

50D is enabled while 18D is operating.

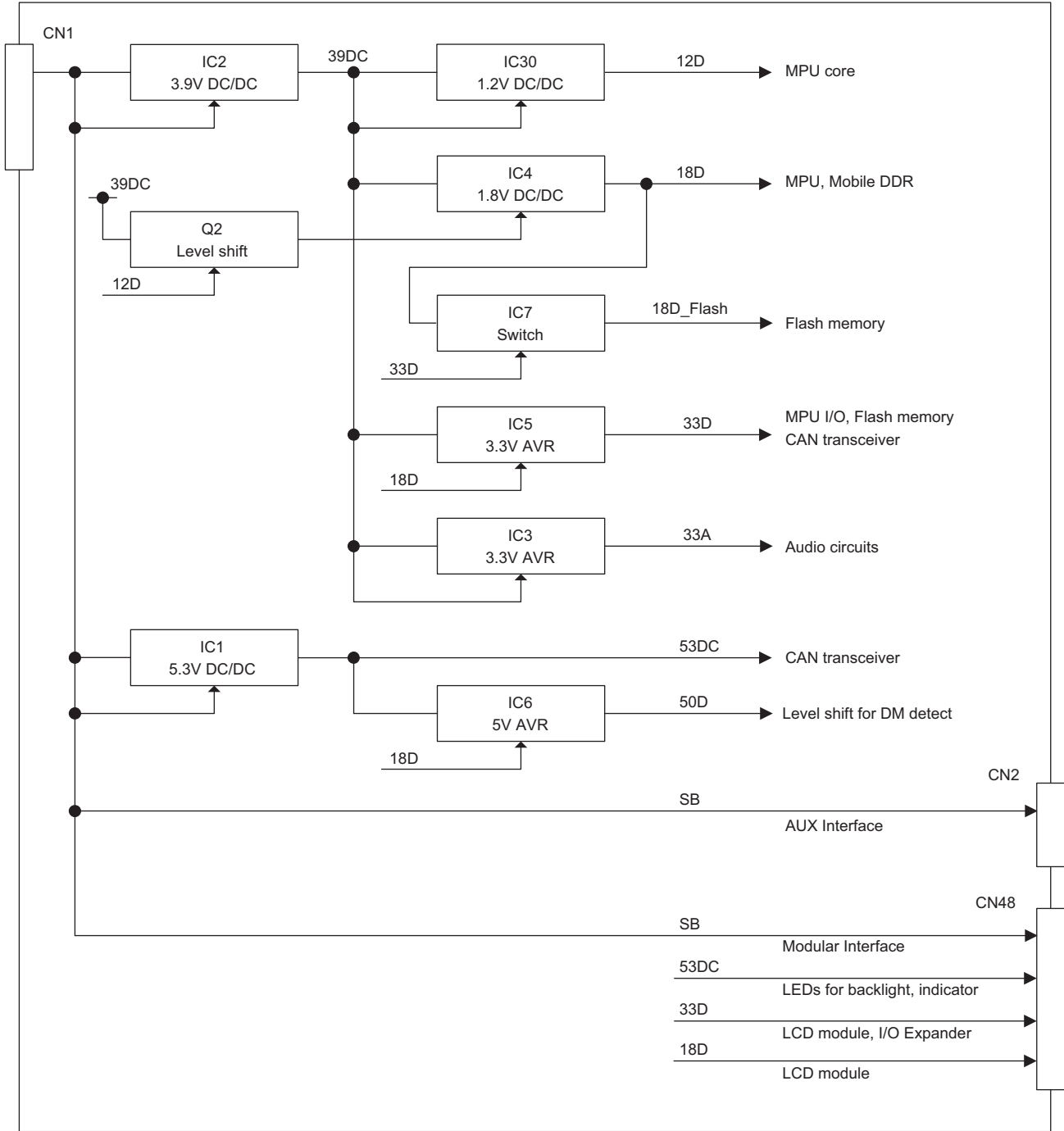


Fig.1 Power supply diagram

2.2.2.2 KRK-19B

54M (5.4V DC Power) is supplied from the Mobile transceiver via CN1. 54M is the power source of IC2 (CAN Transceiver) and IC3 (33A, 3.3V regulator). 33A (3.3V DC Power) is the power source of the Audio circuits.

32M (3.3V DC Power) is supplied from the Mobile transceiver via CN1. 32M is used for I/O control of IC2.

SB (Switched +B Power) is supplied from the Mobile transceiver via CN1. SB is the power source of the KRK-18H.

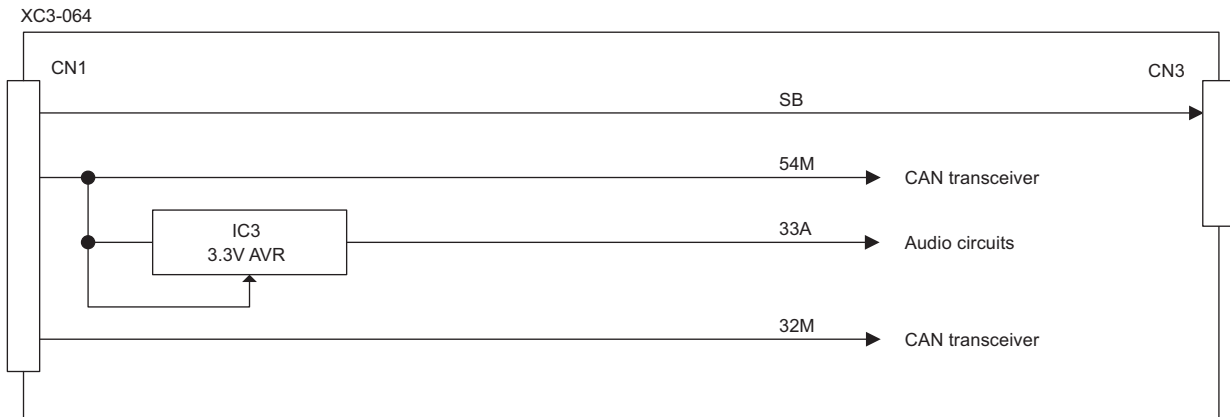


Fig.2 Power supply diagram

2.2.3 Audio circuit

2.2.3.1 RX Audio

The RX audio signal is controlled of the amplitude according to the volume setting and amplified by the AF power amplifier in the Mobile transceiver. The amplified signal is going through the KRK-19B and the KRK-18H, and is connected to the speaker at the Control Head.

2.2.3.2 TX Audio

The KRK-18H has two microphone input channels. One is connected to the Control Head (modular jack), and the other is connected to the AUX interface connector (CN2).

These microphone signals are selected by the analog multiplexer IC (IC20), and are amplified by the microphone amplifier (IC18).

The microphone amplifier consists of the operational amplifier and AGC (Automatic Gain Control). The output signal of the microphone amplifier is converted to the balanced microphone signal by the operational amplifier (IC13) and is supplied to the KRK-19B. The balanced microphone signals (MIC+/-) are converted to single-end signal by IC1 on the KRK-19B. The converted signal is supplied to the Mobile transceiver.

2.2.4 Control circuit

The control circuit consists of the MPU (IC16) and its peripheral circuits in the KRK-18H. IC16 mainly performs the followings;

- (1) Serial communication with the Mobile transceiver.
- (2) Controlling the microphone input path.
- (3) Controlling the Control Head.

The KRK-18H has the serial communication circuit between the Mobile transceiver via the Control Head Remote unit (KRK-19B) and the Control Head. This circuit consists of the CAN transceiver IC. This IC converts the UART signal to the CAN signal or the CAN signal to the UART signal. To communicate between the KRK-18H and the KRK-19B, the CAN BUS is used.

2.2.4.1 MPU

The MPU is 32bit RISC processor, equipped with peripheral functions. The maximum operating clock of the MPU is 288MHz, and power source are 3.3V/1.8V/1.2V DC. The MPU controls the Flash memory, the Mobile DDR, the Audio circuits, the Key detection IC which is on the Control Head, the External I/O circuit, and the LCD Display.

2.2.4.2 Memory Circuit

Memory circuit consists of the MPU, the Flash memory (IC29), and the Mobile DDR (IC23).

The Flash memory is the nonvolatile memory and has capacity of 256Mbit that contains the program for the MPU and stores the data. The program can be updated easily from PC through the Control Head. The Mobile DDR has capacity of 512Mbit. The MPU copies the program from the Flash memory to the Mobile DDR and uses the Mobile DDR as a work area.

2.2.4.3 LCD control interface

The MPU controls the LCD which is in the Control Head through the Control Head interface connector (CN48). The LCD is controlled by parallel bus with 8bit data width.

2.2.4.4 Key detection

The MPU can detect the keys on the Control Head. The keys are connected to the I/O expander IC in this unit which has the key matrix function. When the key is pushed, I/O expander IC scans which key is pushed. The interrupt occurs for the MPU from the I/O expander IC, and then the MPU reads the registers of the I/O expander IC and confirms which key is pushed.

2.2.4.5 External I/O

The KRK-18H has an external interface connector (CN2). The interface has two outputs and two inputs terminals. The output terminals are the open drain type. The input terminals have the level shift circuit; these terminals can input the 5V signal.

2.3 COMPONENTS DESCRIPTION

2.3.1 Interface unit (XC3-063M-00) (KRK-18H)

Ref. No.	Part Name	Use / Function
IC1	IC	DC/DC step-down converter (53DC)
IC2	IC	DC/DC step-down converter (39DC)
IC3	IC	Voltage regulator (33A)
IC4	IC	DC/DC step-down converter (18D)
IC5	IC	Voltage regulator (33D)
IC6	IC	Voltage regulator (50D)
IC7	IC	DC switch (18D_Flash)
IC8	IC	CAN transceiver
IC13	IC	AF amplifier (MIC+/MIC-)
IC16	IC	MPU
IC18	IC	AF/DC amplifier (MIC/Vref)
IC20	IC	Analog switch (MIC/ACC_MIC)
IC21, 22	IC	Logic control
IC23	IC	Mobile DDR SDRAM
IC29	IC	NOR Flash memory
IC30	IC	DC/DC step-down converter (12D)
Q1	FET	DC switch (Open drain: AUXO1 output)
Q2	FET	DC switch (Control for 18D)
Q3	FET	DC switch (Open drain: AUXO2 output)
Q6	Transistor	MIC AGC
Q7	FET	DC switch (USB detection)
Q8	FET	DC switch (AUXI1 input)
Q9	FET	DC switch (AUXI2 input)
Q10	FET	DC switch (Panel reset output)
D1	Diode	Over current prevention
D4,5	Diode	Over voltage protection
D6	Diode	Catch diode (53DC)
D7	Diode	Catch diode (39DC)
D8,9	Zener diode	ESD protection
D10	Diode	Over voltage protection
D11,12	Diode	Rectifier Diode for MIC AGC
D13	Diode	Over voltage protection
D15	Diode	Reverse voltage protection
D16,17	Diode	ESD protection

2.3.2 Interface unit (XC3-064M-00) (KRK-19B)

Ref. No.	Part Name	Use / Function
IC1	IC	AF amplifier (MIC)
IC2	IC	CAN transceiver
IC3	IC	Voltage regulator (33A)
IC4	IC	DC amplifier (Vref)

2.4 TERMINAL FUNCTION

2.4.1 Interface unit (XC3-063M-00) (KRK-18H)

Pin No.	Name	I/O	Function
CN1			
1	/PRST	I	Reset signal
2	/PSW	O	Detection signal output of power switch
3	MIC+	O	MIC signal hot
4	MIC-	O	MIC signal cold
5	GND	-	Ground
6	GND	-	Ground
7	GND	-	Ground
8	NC	-	No connection
9	SB	I	Switched +B power
10	IGN	O	Ignition sense
11	SP+	I	Speaker signal
12	SPG	-	Speaker ground
13	GND	-	Ground
14	GND	-	Ground
15	CAN+	I/O	High-level CAN bus line
16	CAN-	I/O	Low-level CAN bus line
CN2			
1	GND	-	Ground
2	NC	-	No connection
3	NC	-	No connection
4	Ao2	O	AUX output2
5	Ao1	O	AUX output1
6	Ai2	I	AUX input2
7	Ai1	I	AUX input1
8	AUX_ME	-	AUX MIC ground
9	AUXMIC	I	AUX MIC signal
10	GND	-	Ground
11	SB	O	Switched +B power
12	IGN	I	Ignition sense
13	GND	-	Ground
CN48			
1	SPG	-	Speaker ground
2	SPG	-	Speaker ground
3	SPG	-	Speaker ground
4	NC	-	No connection
5	SP+	O	Speaker signal
6	SP+	O	Speaker signal
7	SP+	O	Speaker signal
8	NC	-	No connection
9	GND	-	Ground
10	GND	-	Ground
11	GND	-	Ground
12	GND	-	Ground

Pin No.	Name	I/O	Function
13	IGN	-	No connection
14	SB	O	Switched +B power
15	SB	O	Switched +B power
16	SB	O	Switched +B power
17	SB	O	Switched +B power
18	NC	-	No connection
19	54M	O	5.3V output
20	NC	-	No connection
21	32M	O	3.3V output
22	NC	-	No connection
23	18M	O	1.8V output
24	NC	-	No connection
25	GND	-	Ground
26	USB_D+	I/O	USB D+
27	GND	-	Ground
28	USB_D-	I/O	USB D-
29	GND	-	Ground
30	NC	-	No connection
31	Mic/VBUS	I	MIC signal/ USB VBUS detection
32	ME	-	MIC ground
33	/PTT	I	PTT input
34	DM/KVL	I/O	DTMF MIC detection/KVL detection
35	/PSW	I	Detection signal input of power switch
36	TXD	O	UART transmit data
37	RXD	I	UART receive data
38	GND	-	Ground
39	I2CDT	I/O	I2C serial data
40	I2CCK	O	I2C serial clock
41	/KEYINT	I	Key interrupt
42	P_TEMP	-	No connection
43	/CS	O	LCD driver chip-select signal
44	/LCDRST	O	LCD driver reset signal
45	/RD	O	LCD driver RD signal
46	D[7]	I/O	LCD driver data
47	D[6]	I/O	LCD driver data
48	D[5]	I/O	LCD driver data
49	D[4]	I/O	LCD driver data
50	D[3]	I/O	LCD driver data
51	D[2]	I/O	LCD driver data
52	D[1]	I/O	LCD driver data
53	D[0]	I/O	LCD driver data
54	/WR	O	LCD driver WR signal
55	A[23]	O	LCD driver data/command switch signal
56	GND	-	Ground
57	R_SET2	-	No connection
58	R_SET1	-	No connection

Pin No.	Name	I/O	Function
59	R_SET0	-	No connection
60	GND	-	Ground

2.4.2 Interface unit (XC3-064M-00) (KRK-19B)

Pin No.	Name	I/O	Function
CN1			
1	GND	-	Ground
2	R_SET0	-	No connection
3	R_SET1	O	Head type discern signal1
4	R_SET2	O	Head type discern signal2
5	GND	-	Ground
6	A[23]	-	No connection
7	/WR	-	No connection
8	D[0]	-	No connection
9	D[1]	-	No connection
10	D[2]	-	No connection
11	D[3]	-	No connection
12	D[4]	-	No connection
13	D[5]	-	No connection
14	D[6]	-	No connection
15	D[7]	-	No connection
16	/RD	-	No connection
17	/PRST	I	Reset signal
18	/CS	-	No connection
19	P_TEMP	-	No connection
20	/KEYINT	-	No connection
21	I2CCK	-	No connection
22	I2CDT	-	No connection
23	GND	-	Ground
24	RXD	O	UART receive data
25	TXD	I	UART transmit data
26	/PSW	O	Detection signal output of power switch
27	DM/KVL	-	No connection
28	/PTT	-	No connection
29	ME	-	MIC ground
30	MIC	O	MIC signal
31	NC	-	No connection
32	GND	-	Ground
33	USB_D-	-	No connection
34	GND	-	Ground
35	USB_D+	-	No connection
36	GND	-	Ground
37	NC	-	No connection
38	18M	-	No connection
39	NC	-	No connection
40	32M	I	3.3V input
41	NC	-	No connection

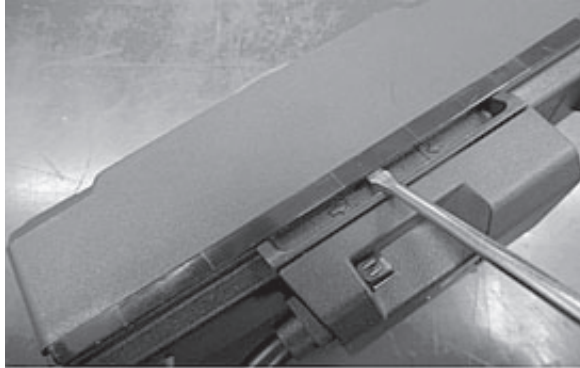
Pin No.	Name	I/O	Function
42	54M	I	5.3V input
43	NC	-	No connection
44	SB	I	Switched +B power
45	SB	I	Switched +B power
46	SB	I	Switched +B power
47	SB	I	Switched +B power
48	IGN	O	Ignition sense
49	GND	-	Ground
50	GND	-	Ground
51	GND	-	Ground
52	GND	-	Ground
53	NC	-	No connection
54	SP+	I	Speaker signal
55	SP+	I	Speaker signal
56	SP+	I	Speaker signal
57	NC	-	No connection
58	SPG	-	Speaker ground
59	SPG	-	Speaker ground
60	SPG	-	Speaker ground
CN3			
1	/PRST	O	Reset signal
2	/PSW	I	Detection signal input of power switch
3	MIC+	I	MIC signal hot
4	MIC-	I	MIC signal cold
5	GND	-	Ground
6	GND	-	Ground
7	GND	-	Ground
8	SB	O	Switched +B power
9	NC	-	No connection
10	IGN	-	Ignition sense
11	SP+	O	Speaker signal
12	SPG	-	Speaker ground
13	GND	-	Ground
14	GND	-	Ground
15	CAN+	I/O	High-level CAN bus line
16	CAN-	I/O	Low-level CAN bus line

SECTION 3 DISASSEMBLY

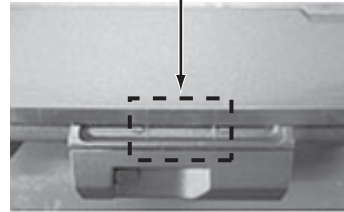
3.1 Precautions for Disassembly

3.1.1 How to remove the KRK-18H rear panel

Insert and remove the flat-head screwdriver as shown in the figure.

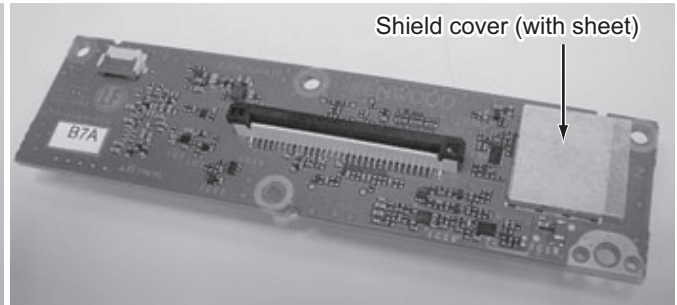
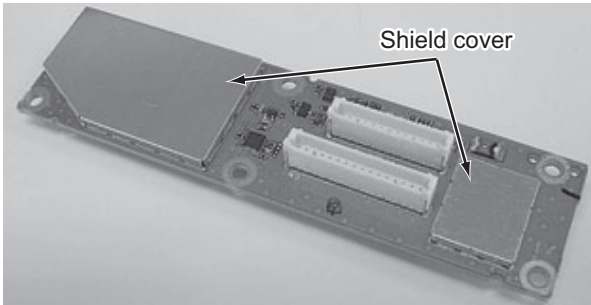


Insert the screwdriver within this range.

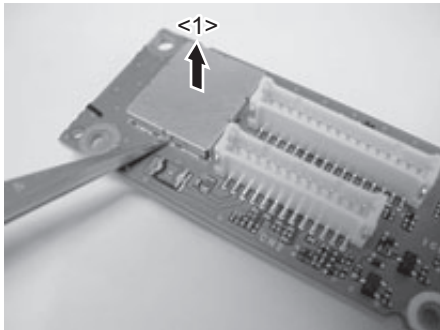


3.1.2 Remove the top cover from the shield cover (KRK-18H only)

(1) There are three shield covers on the interface unit, the top covers can be removed.

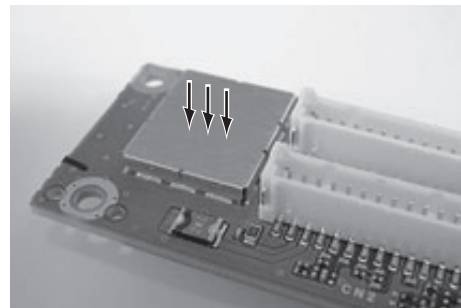


(2) Use tweezers to slightly lift the edge of the top cover. <1>



Note:

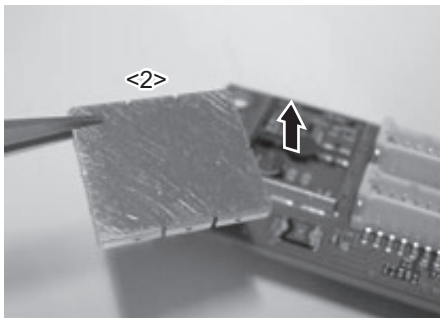
Push evenly on the top cover and be careful that you do not bend it as you install it on the shield cover.



(3) As you do step 2 above, vary the position you hold the top cover as you lift it, and remove the top cover <2>.

Note:

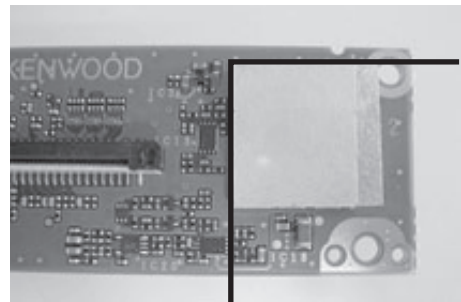
Once the top cover is removed, it cannot be used again.



Note:

How to stick the sheet on the shield cover.

Stick the sheet according to the line as shown in the figure.



3.1.3 Assembled Parts Information

When "Main Parts" is changed (ordered), "Assembled Parts" should also be changed (ordered) together. The Shielding Cover is non-reusable parts. It requires the new one to get the radio's performance after repairs.

KRK-18H

Main Parts		Assembled Parts	
Part Name	Part Number	Part Name	Part Number
REAR PANEL	A2D-0026-00	STANDARD LABEL	B4C-0632-00
INTERFACE UNIT	XC3-063M-01	SHIELDING COVER	F10-3225-05
		SHIELDING COVER	F1B-0027-00
		SHEET	G1B-0343-00

KRK-19B

Main Parts		Assembled Parts	
Part Name	Part Number	Part Name	Part Number
MAIN PANEL	A6C-0089-00	STANDARD LABEL	B4C-0632-00

SECTION 4 ADJUSTMENT

This service manual does not describe ADJUSTMENT.

(There is no adjustment item on KRK-18H and KRK-19B.)

SECTION 5 TROUBLESHOOTING

5.1 KRK-18H Fault Diagnosis of the BGA (Ball Grid Array) IC

■Overview

A flowchart for determining whether or not the transceiver can be powered on (the LCD does not function even if the power switch is turned on) due to broken BGA parts. Connect to the Control Head and RF Deck of the NX-3720/3820 using the KRK-18H, KCT-71 and KRK-19B.

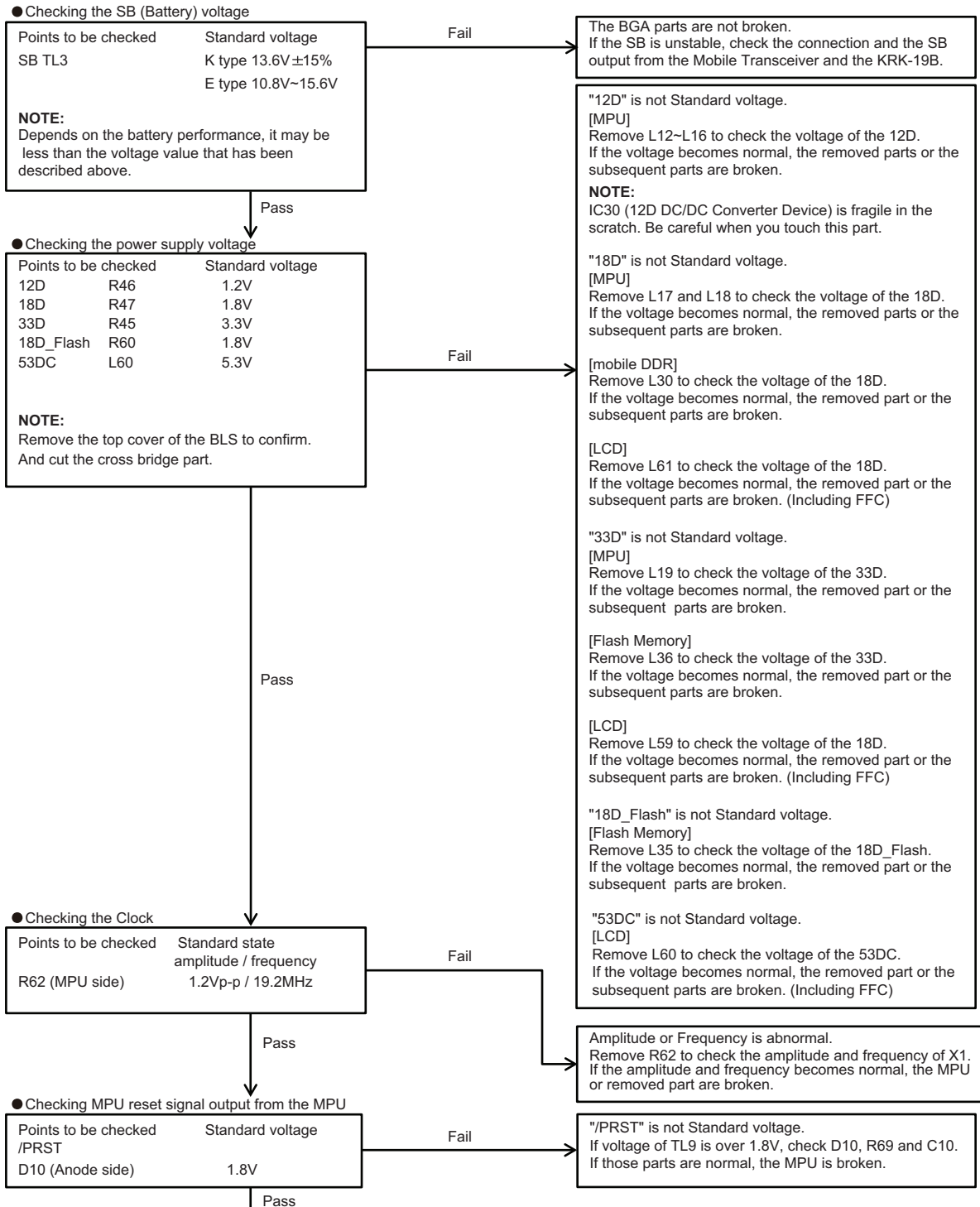
Confirm whether there is a defect in the KRK-18H.

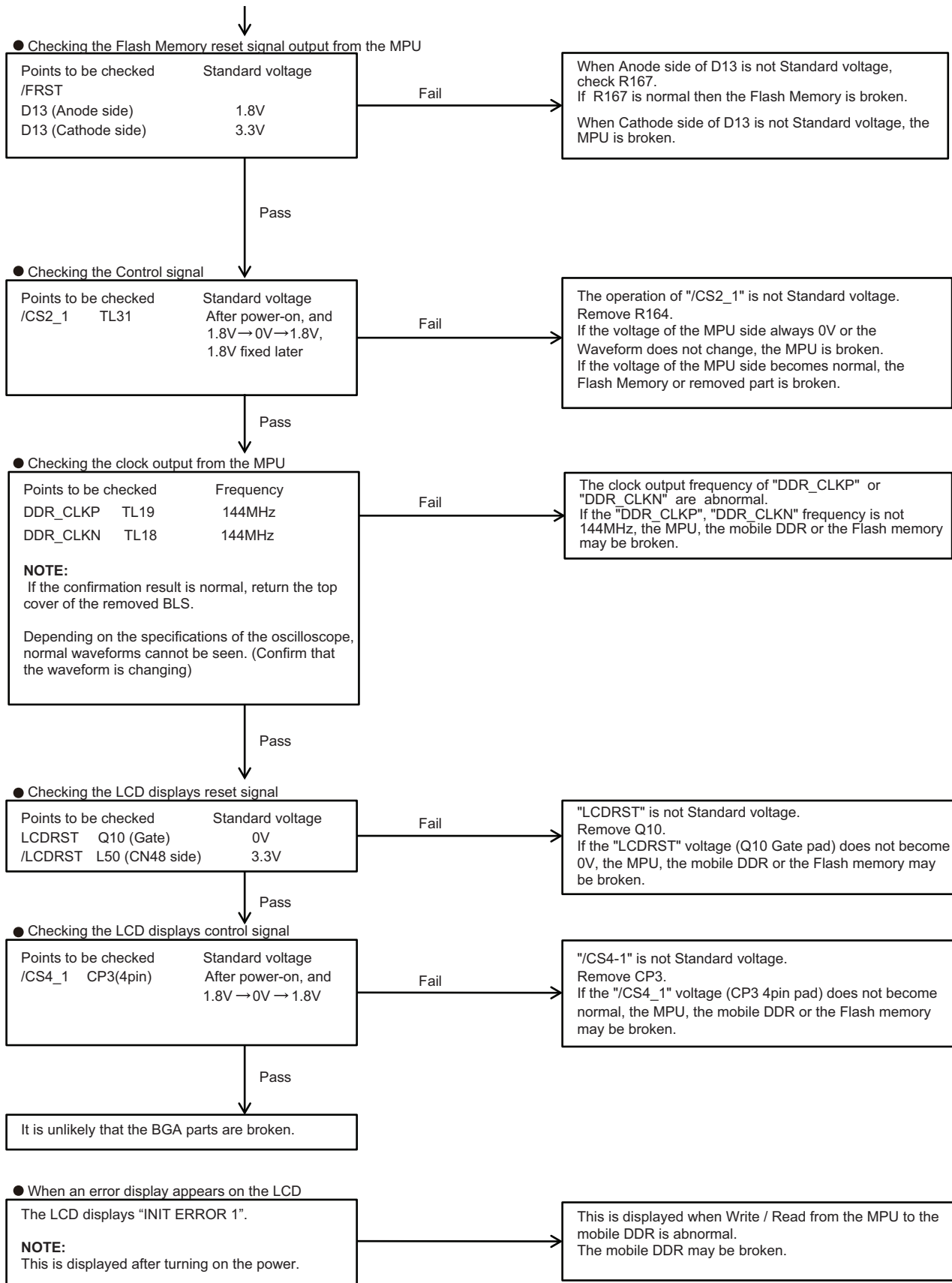
Note:

The firmware of the NX-3720/3820 RF Deck and KRK-18H must be the same version.

■BGA parts

MPU (IC16), mobile DDR (IC23), Flash memory (IC29)





■ Descriptions of signal names

- | | |
|------------|-------------------------------------|
| 1) /PRST | : MPU reset signal |
| 2) /FRST | : Flash Memory reset signal |
| 3) /CS2_1 | : Flash Memory chip select signal |
| 4) /LCDRST | : LCD reset signal |
| 5) /CS4_1 | : LCD controller chip select signal |

- | |
|-----------------|
| "LOW"→ "Reset" |
| "LOW"→ "Reset" |
| "LOW"→ "Active" |
| "LOW"→ "Reset" |
| "LOW"→ "Active" |

5.2 Replacing Interface Unit

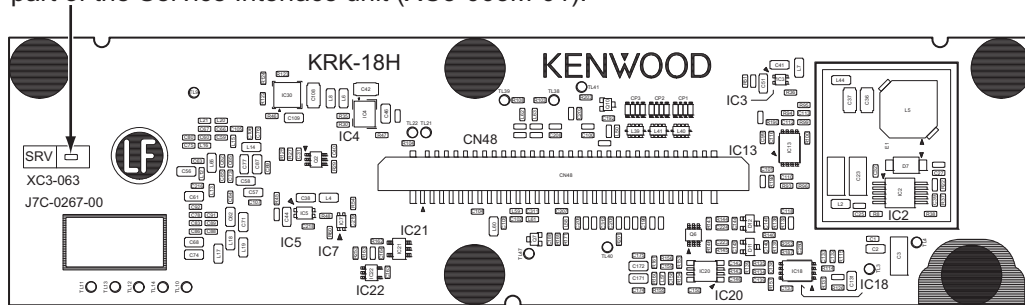
■Interface Unit Information

Model Name	Original Interface Unit Number	For Service Interface Unit Number
KRK-18H	XC3-063M-00	XC3-063M-01

* The KRK-19B doesn't have a service interface unit. Please order normal interface unit (XC3-064M-00) listed in parts list.

■Method of confirming "Original Interface Unit" and "Service Interface Unit"

The 0 ohm resistor (R501) is mounted on the "SRV" silk print part of the Service Interface unit (XC3-063M-01).



■Supplied Accessories of "Service Interface Unit"

Item (Including Parts Number)	Quantity
Interface Unit (XC3-063)	1

■"Service Interface Unit" Data

The following data is written on the service unit.

Data Type	Description
Firmware	NX-3720/3820 Firmware

■After Changing the PCB

After changing the printed circuit board, update Firmware following the instructions.

(1) Connection procedure

Connect the transceiver to the personal computer using the interface cable (KPG-46U/46X).

Note:

You can only program firmware from the 8-pin microphone connector on the SUB (Display) unit of the NX-3720/3820.

(2) Programming

- a) Start up the KENWOOD Firmware loader (KFL).
- b) Set the firmware to the KENWOOD Firmware loader (KFL).
- c) Turn the transceiver power ON.
- d) Check the connection between the transceiver and the personal computer.
- e) Press write button in the window.
 - When the transceiver starts to receive data, the [LOADING] display on the LCD.
 - The Firmware is written to the RF Deck (NX-3720/3820) and the KRK-18H at the same time.
- f) If writing ends successfully, the checksum is calculated and a result is displayed.

5.3 KRK-18H Operating Method of Enforced Firmware Overwriting Mode

Enforced firmware overwriting mode is a mode to forcibly overwrite the transceiver firmware when the transceiver key operation does not allow the transceiver to enter the firmware programming mode, for instance, when the transceiver fails to start up due to the transceiver failure.

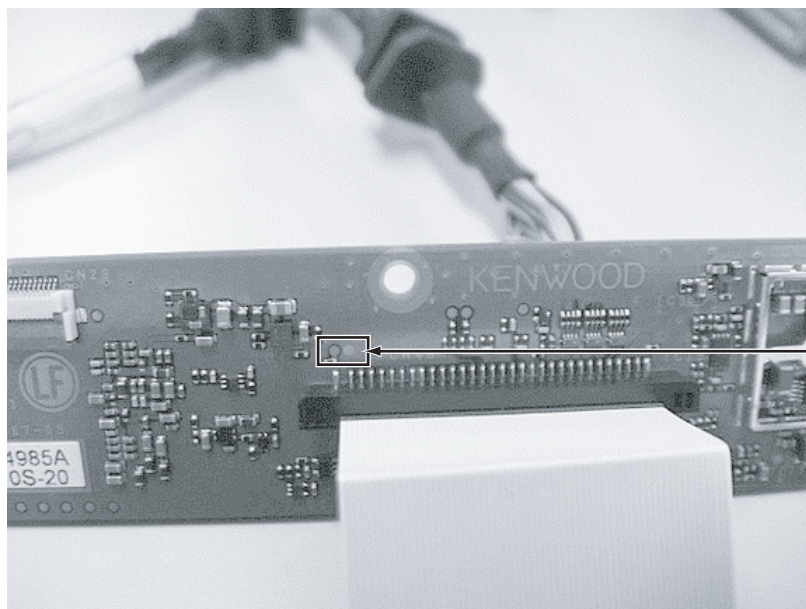
(1) Prepare the followings:

- RF Deck of the Mobile transceiver (NX-3720 or NX-3820)
- Control Head of the Mobile transceiver (NX-3720 or NX-3820)
- Control Head interface kit (KRK-18H)
- Control Head remote kit (KRK-19B)
- Remote control cable (KCT-71)
- Regulated DC power supply
- Programming interface cable (KPG-46U or KPG-46X)
- Power cable

(2) Remove the operation panel from the Mobile transceiver. As illustrated, connect properly a RF Deck and Control Head of the Mobile transceiver, KRK-18H, KRK-19B, KCT-71, regulated DC power supply, programming interface cable (KPG-46U or KPG-46X) and power cable.



(3) While FLDM terminal has a short-circuit with GND terminal on the KRK-18H PCB, turn its power ON.



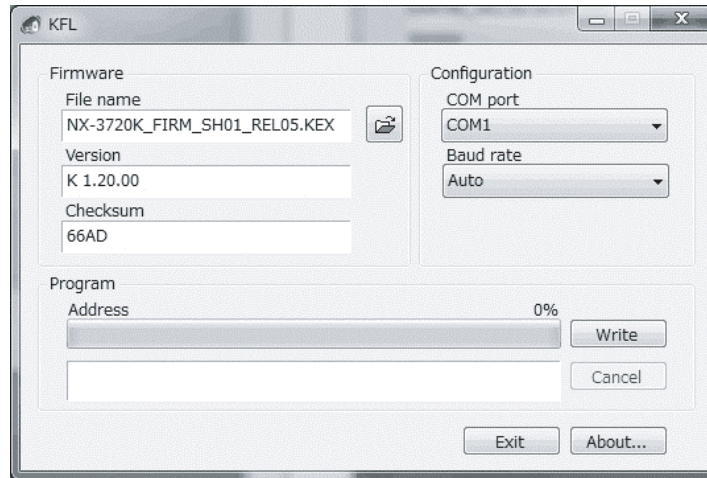
Left: FLDM terminal
Right: GND terminal

- (4) Upon startup of FLDM loader, "FIRMWARE PROG" appears on an LCD screen.
- (5) Start KFL up, select the desired firmware you wish to overwrite, select the COM port number and baud rate, and then click the "Write" button.

Note:

Configuring "Auto" for baud rate automatically apply the maximal speed of baud rate allowed for a programming cable connected to the selected COM port number.

Upon start of overwriting on the transceiver, "LOADING" appears on an LCD screen.



- (6) Upon completion of the firmware overwriting, "CHECKSUM xxxx" appears on an LCD screen.

MEMO

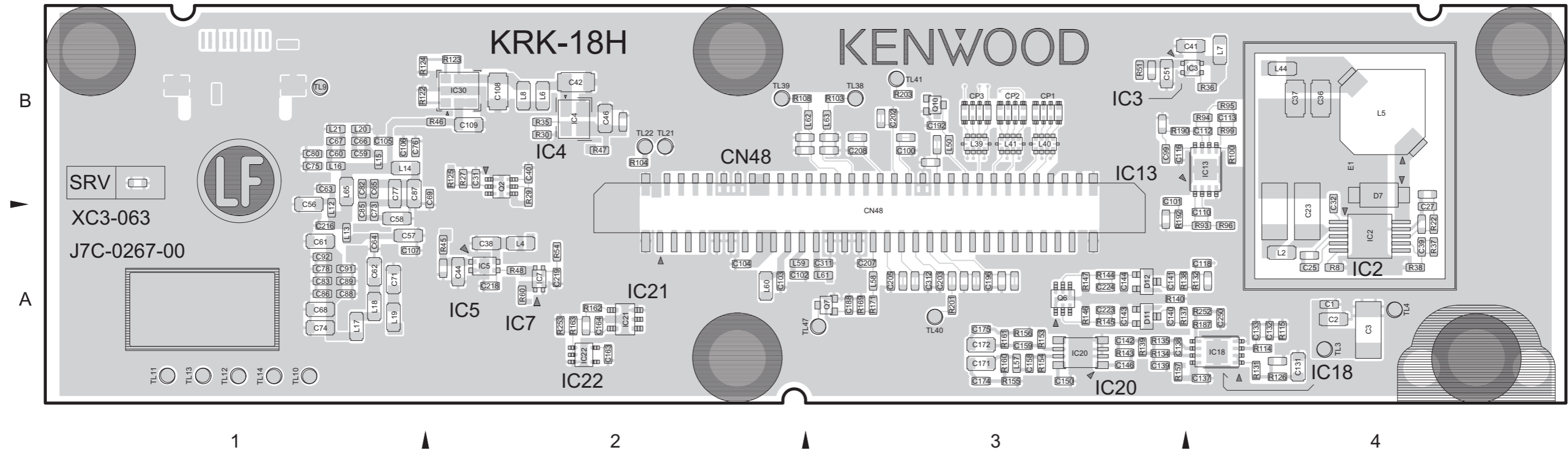
PRECAUTIONS ON SCHEMATIC DIAGRAMS

- * Due to the improvement in performance, some part numbers shown in the circuit diagrams may not agree with those indicated in the Parts List.
- * The parts numbers, values and rated voltage etc. in the Schematic Diagrams are for reference only.
- * Since the circuit diagrams are standard ones, the circuits and circuit constants may be subject to change for improvement without any notice.
- * The parts of the symbol with " * " may vary depending on model. Refer to the parts list for details.
- * The parts of the symbol with " \$ " are unmounted parts.

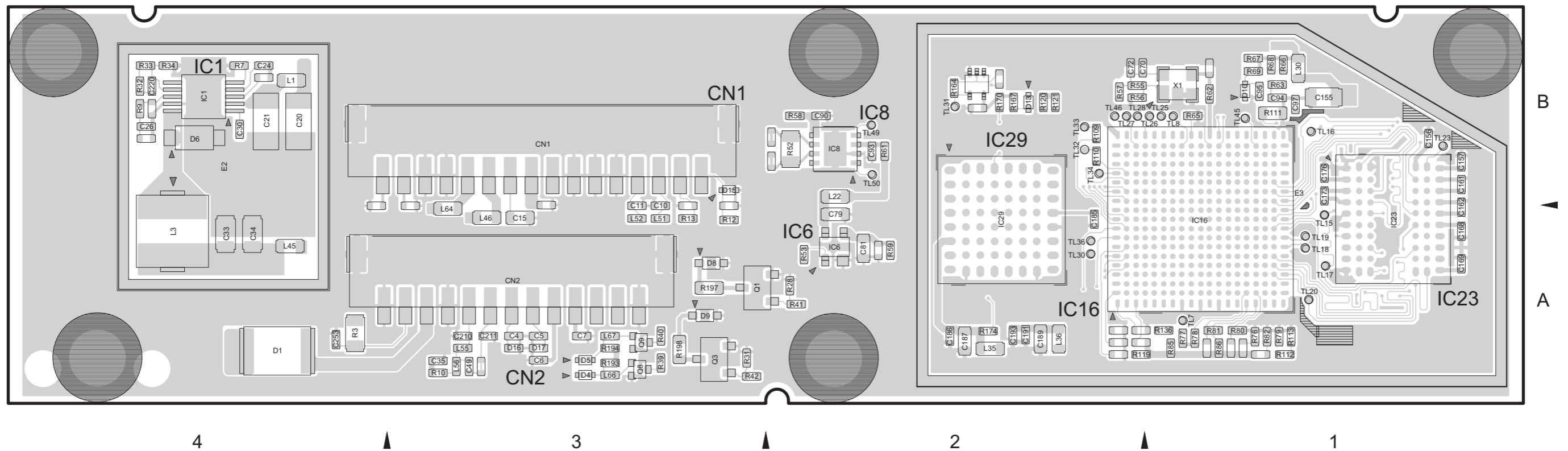
PRINTED CIRCUIT BOARD

■ INTERFACE UNIT (XC3-063M-00 (KRK-18H_M)

--- Component side view/Side A (J7C-0267-00) ---



--- Foil side view/Side B (J7C-0267-00) ---



● ADDRESS TABLE OF BOARD PARTS

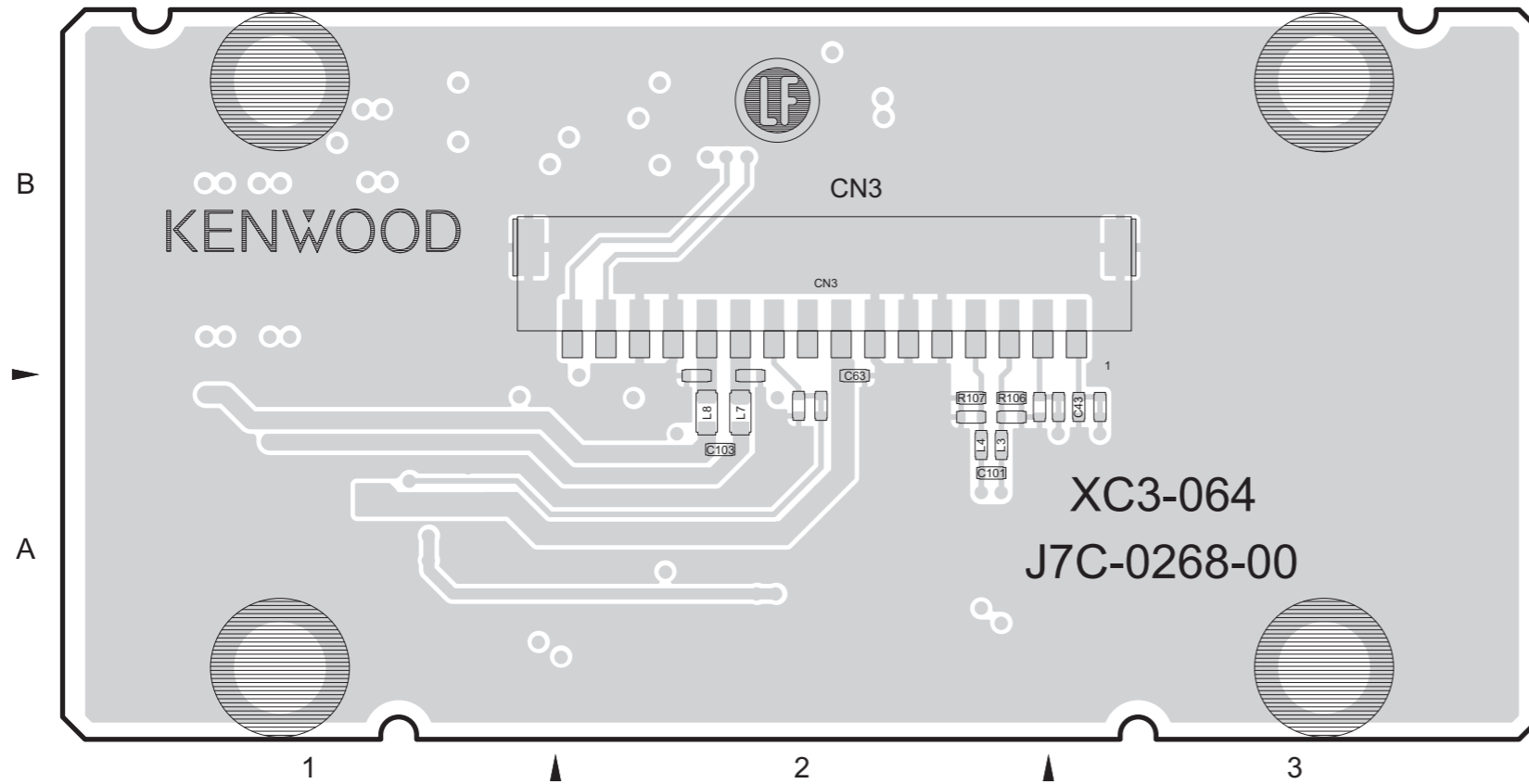
Each address may have an address error by one interval.



REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
IC		R63	B-1B	C5	B-3A	C131	A-4A	L18	A-1A
IC1	B-4B	R65	B-1B	C6	B-3A	C132	A-4A	L19	A-1A
IC2	A-4A	R66	B-1B	C7	B-3A	C133	A-4A	L20	A-1B
IC3	A-4B	R67	B-1B	C10	B-3A	C137	A-4A	L21	A-1B
IC4	A-2B	R68	B-1B	C11	B-3A	C138	A-3A	L22	B-2B
IC5	A-2A	R69	B-1B	C15	B-3A	C139	A-3A	L30	B-1B
IC6	B-2A	R76	B-1A	C20	B-4B	C140	A-3A	L35	B-2A
IC7	A-2A	R77	B-1A	C21	B-4B	C141	A-3A	L36	B-2A
IC8	B-2B	R78	B-1A	C23	A-4A	C142	A-3A	L39	A-3B
IC13	A-4B	R79	B-1A	C24	B-4B	C143	A-3A	L40	A-3B
IC16	B-1A	R80	B-1A	C25	A-4A	C144	A-3A	L41	A-3B
IC18	A-4A	R81	B-1A	C26	B-4B	C146	A-3A	L44	A-4B
IC20	A-3A	R82	B-1A	C27	A-4A	C150	A-3A	L45	B-4A
IC21	A-2A	R85	B-1A	C30	B-4B	C155	B-1B	L46	B-3A
IC22	A-2A	R86	B-1A	C31	A-2B	C156	B-1B	L50	A-3B
IC23	B-1A	R93	A-4A	C32	A-4B	C157	B-1B	L51	B-3A
IC29	B-2A	R94	A-4B	C33	B-4A	C158	A-3A	L52	B-3A
IC30	A-2B	R95	A-4B	C34	B-4A	C159	A-3A	L55	B-3A
		R96	A-4A	C35	B-3A	C161	B-1B	L56	B-3A
		R99	A-4B	C36	A-4B	C162	B-1A	L57	A-3A
TRANSISTOR		R100	A-4B	C37	A-4B	C163	A-2A	L58	A-3A
Q1	B-3A	R103	A-3B	C38	A-2A	C164	A-2A	L59	A-2A
Q2	A-2B	R104	A-2B	C39	A-4A	C168	B-1A	L60	A-2A
Q3	B-3A	R108	A-2B	C40	A-2B	C169	B-1A	L61	A-3A
Q6	A-3A	R109	B-2B	C41	A-4B	C171	A-3A	L62	A-3B
Q7	A-3A	R110	B-2B	C42	A-2B	C172	A-3A	L63	A-3B
Q8	B-3A	R111	B-1B	C44	A-2A	C173	B-1B	L64	B-3A
Q9	B-3A	R112	B-1A	C46	A-2B	C174	A-3A	L65	A-1B
Q10	A-3B	R113	B-1A	C49	B-3A	C175	A-3A	L66	B-3A
		R114	A-4A	C51	A-3B	C176	B-1B	L67	B-3A
DIODE		R115	A-4A	C56	A-1B	C185	B-2A		
D1	B-4A	R119	B-2A	C57	A-1A	C186	B-2A	TL3	A-4A
D4	B-3A	R120	B-2B	C58	A-1A	C187	B-2A	TL4	A-4A
D5	B-3A	R121	B-2B	C59	A-1B	C188	A-3A	TL7	B-1A
D6	B-4B	R122	A-1B	C60	A-1B	C189	B-2A	TL8	B-1B
D7	A-4B	R123	A-2B	C61	A-1A	C191	B-2A	TL9	A-1B
D8	B-3A	R124	A-1B	C62	A-1A	C192	A-3B	TL10	A-1A
D9	B-3A	R125	A-2B	C63	A-1B	C193	B-2A	TL11	A-1A
D10	B-1B	R126	A-4A	C64	A-1A	C196	A-3A	TL12	A-1A
D11	A-3A	R131	A-4A	C65	A-1B	C202	A-3B	TL13	A-1A
D12	A-3A	R132	A-4A	C66	A-1B	C203	A-3A	TL14	A-1A
D13	B-2B	R134	A-3A	C67	A-1B	C205	A-3A	TL15	B-1A
D15	B-3B	R135	A-3A	C68	A-1A	C207	A-3A	TL16	B-1B
D16	B-3A	R136	B-1A	C69	A-2B	C208	A-3B	TL17	B-1A
D17	B-3A	R137	A-3A	C70	B-2B	C210	B-3A	TL18	B-1A
		R138	A-3A	C71	A-1A	C211	B-3A	TL19	B-1A
RESISTOR		R139	A-3A	C72	B-2B	C216	A-1A	TL20	B-1A
R3	B-4A	R140	A-3A	C73	A-1A	C218	A-2A	TL21	A-2B
R7	B-4B	R143	A-3A	C74	A-1A	C219	A-2A	TL22	A-2B
R8	A-4A	R144	A-3A	C75	A-1B	C220	B-4B	TL23	B-1B
R9	B-4B	R145	A-3A	C76	A-1B	C223	A-3A	TL25	B-1B
R10	B-3A	R146	A-3A	C77	A-1B	C224	A-3A	TL26	B-1B
R12	B-3A	R147	A-3A	C78	A-1A	C250	A-4A	TL27	B-2B
R13	B-3A	R153	A-3A	C79	B-2A	C253	B-4A	TL28	B-2B
R22	A-4A	R154	A-3A	C80	A-1B	C311	A-3A	TL30	B-2A
R27	A-2B	R155	A-3A	C81	B-2A	C312	A-3A	TL31	B-2B
R28	B-2A	R156	A-3A	C82	A-1B			TL33	B-2B
R29	A-2B	R157	A-3A	C83	A-1A	OTHER		TL34	B-2B
R30	A-2B	R160	A-3A	C85	A-1A	X1	B-1B	TL36	B-2A
R31	B-3A	R161	A-3A	C86	A-1A			TL38	A-3B
R32	B-4B	R162	A-2A	C87	A-1B	CN1	B-3B	TL39	A-2B
R33	B-4B	R163	A-2A	C88	A-1A	CN2	B-3A	TL40	A-3A
R34	B-4B	R164	B-2B	C89	A-1A	CN48	A-3A	TL41	A-3B
R35	A-2B	R167	B-2B	C90	B-2B			TL45	B-1B
R36	A-4B	R169	A-3A	C91	A-1A	CP1	A-3B	TL46	B-2B
R37	A-4A	R170	B-2B	C92	A-1A	CP2	A-3B	TL47	A-3A
R38	A-4A	R171	A-3A	C93	B-2B	CP3	A-3B	TL49	B-2B
R39	B-3A	R174	B-2A	C94	B-1B			TL50	B-2B
R40	B-3A	R187	A-4A	C95	B-1B	E1	A-4B		
R41	B-2A	R190	A-3B	C97	B-1B	E2	B-4B		
R42	B-3A	R192	A-3A	C99	A-3B	E3	B-1B		
R45	A-2A	R193	B-3A	C100	A-3B				
R46	A-2B	R194	B-3A	C101	A-3B	L1	B-4B		
R47	A-2B	R197	B-3A	C102	A-2A	L2	A-4A		
R48	A-2A	R198	B-3A	C103	A-2A	L3	B-4A		
R51	A-3B	R201	A-3A	C104	A-2A	L4	A-2A		
R52	B-2B	R203	A-3B	C105	A-1B	L5	A-4B		
R53	B-2A	R252	A-4A	C106	A-1B	L6	A-2B		
R54	A-2A	R253	A-2A	C107	A-1A	L7	A-4B		
R55	B-2B	R501	A-1B	C108	A-2B	L8	A-2B		
R56	B-2B			C109	A-2B	L12	A-1A		
R57	B-2B			C110	A-4A	L13	A-1A		
R58	B-2B	CAPACITOR		C112	A-4B	L14	A-1B		
R59	B-2A	C1	A-4A	C113	A-4B	L15	A-1B		
R60	A-2A	C2	A-4A	C116	A-3B	L16	A-1B		
R61	B-2B	C3	A-4A	C118	A-4A	L17	A-1A		
R62	B-1B	C4	B-3A						

■ INTERFACE UNIT (XC3-064M-00 (KRK-19B_M)

--- Component side view/Side A (J7C-0268-00) ---



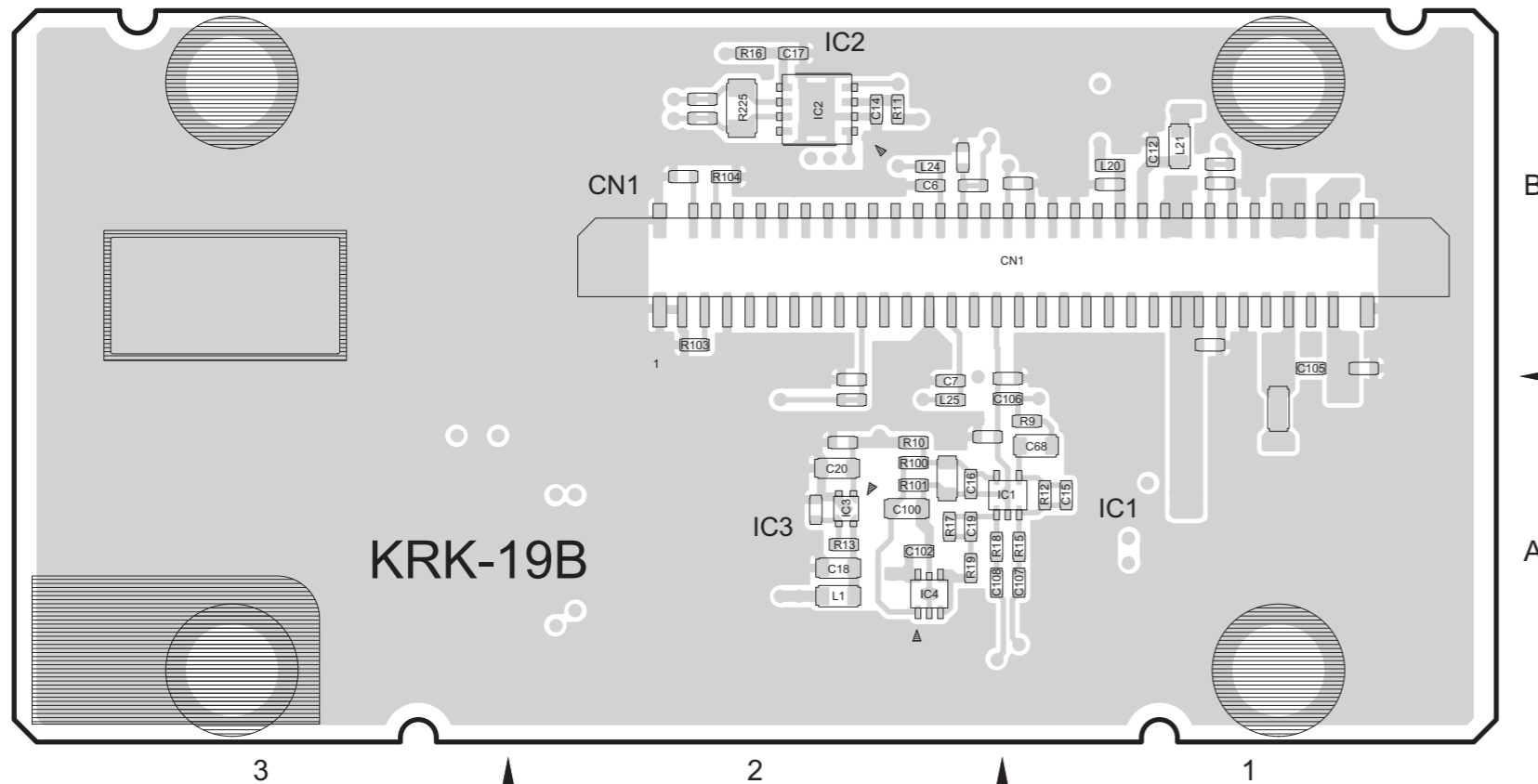
● ADDRESS TABLE OF BOARD PARTS

Each address may have an address error by one interval.



REF.NO.	LOCATION	REF.NO.	LOCATION	REF.NO.	LOCATION
IC		R107	A-2A	C106	B-1A
IC1	B-1A	R225	B-2B	C107	B-1A
IC2	B-2B			C108	B-2A
IC3	B-2A	CAPACITOR			
IC4	B-2A	C6	B-2B	OTHER	
		C7	B-2A	CN1	B-1B
RESISTOR		C12	B-1B	CN3	A-2B
R9	B-1A	C14	B-2B	L1	B-2A
R10	B-2A	C15	B-1A	L3	A-2A
R11	B-2B	C16	B-2A	L4	A-2A
R12	B-1A	C17	B-2B	L7	A-2A
R13	B-2A	C18	B-2A	L8	A-2A
R15	B-1A	C19	B-2A	L20	B-1B
R16	B-2B	C20	B-2A	L21	B-1B
R17	B-2A	C43	A-3A	L24	B-2B
R18	B-2A	C63	A-2A	L25	B-2A
R19	B-2A	C68	B-1A		
R100	B-2A	C100	B-2A		
R101	B-2A	C101	A-2A		
R103	B-2B	C102	B-2A		
R104	B-2B	C103	A-2A		
R106	A-2A	C105	B-1B		

--- Foil side view/Side B (J7C-0268-00) ---



SCHEMATIC DIAGRAM

INTERFACE UNIT (XC3-063M-00 (KRK-18H_M))

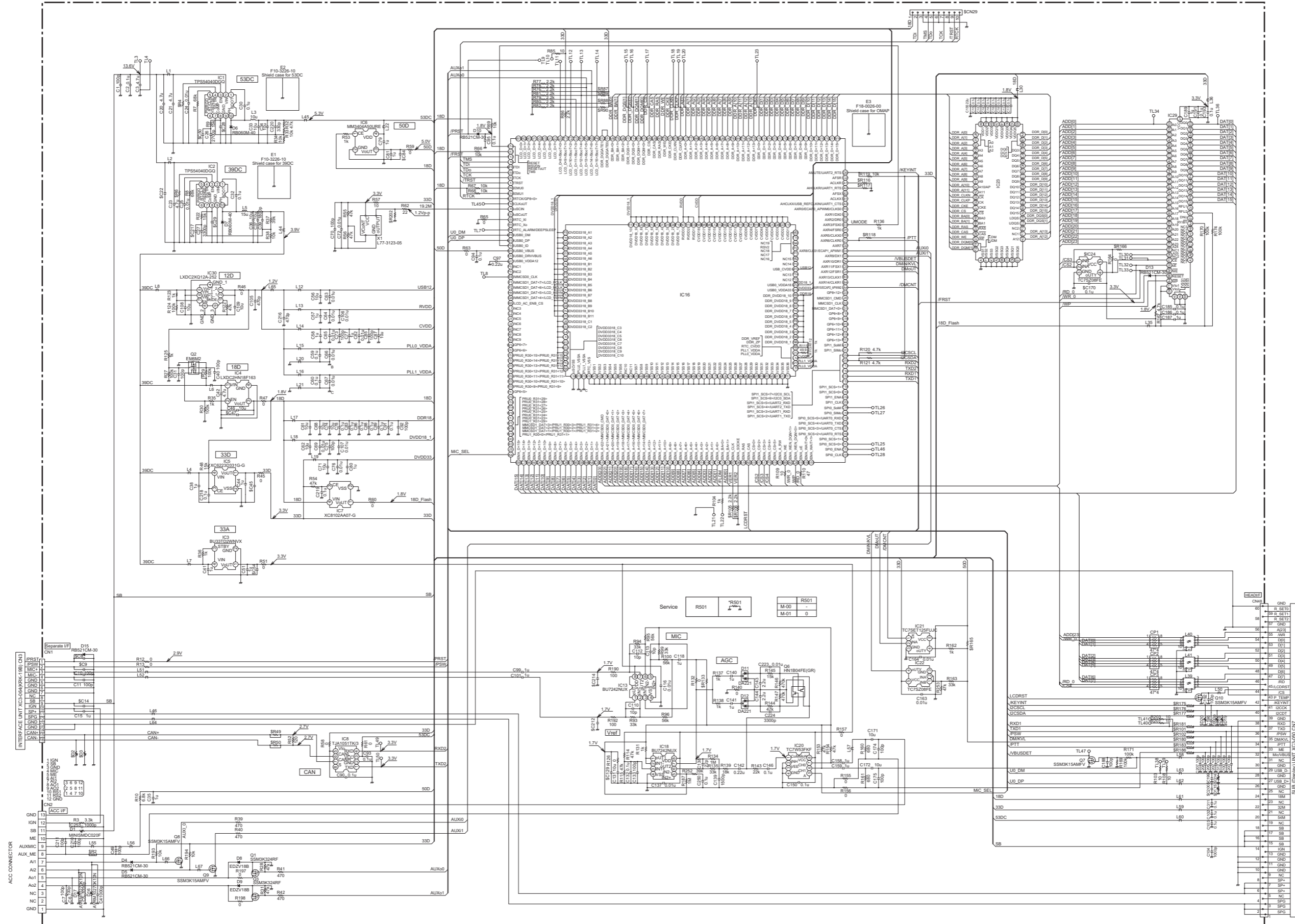
5

4

3

2

1



INTERFACE UNIT (XC3-064M-00 (KRK-19B_M))

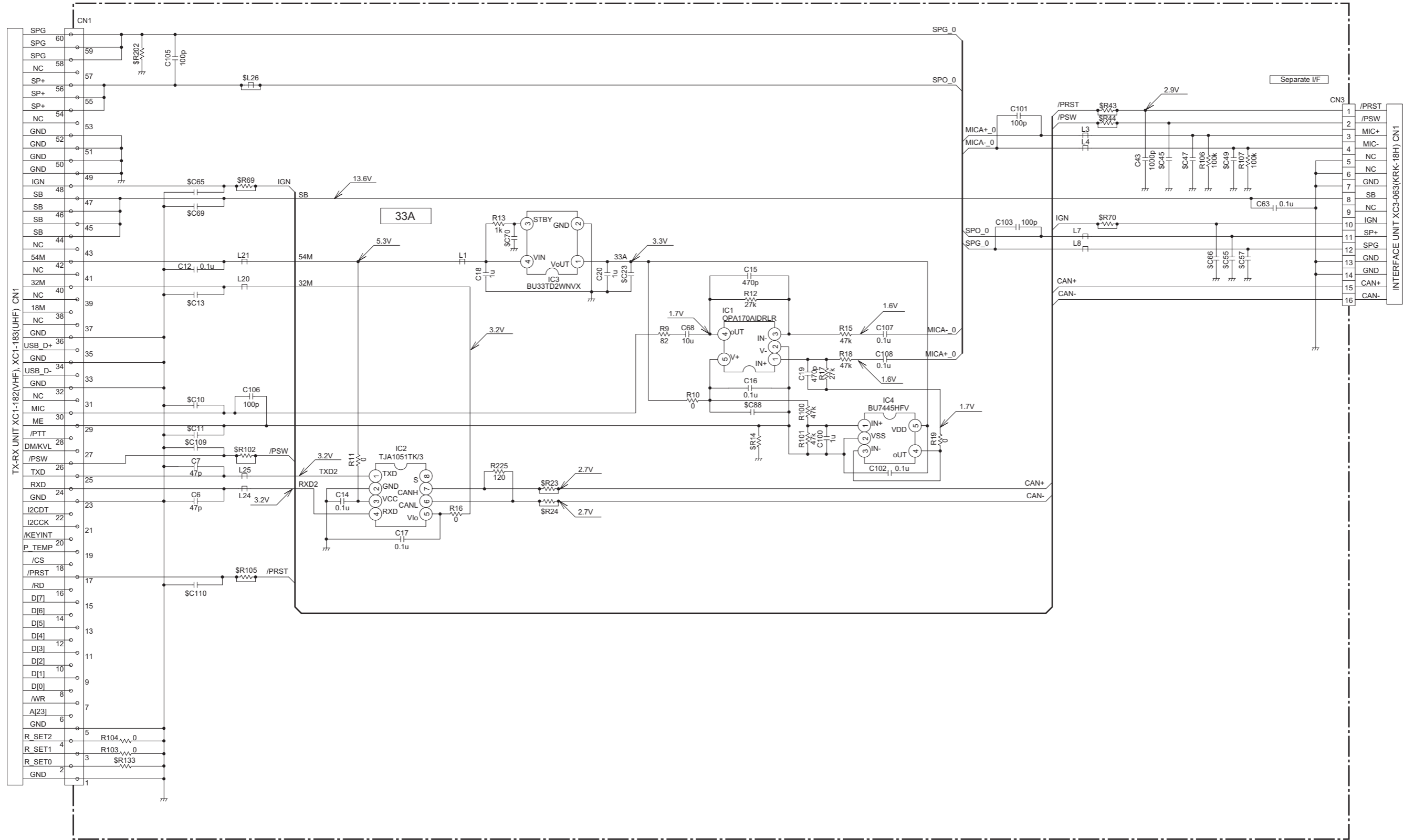
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4

3

2

1



A

B

C

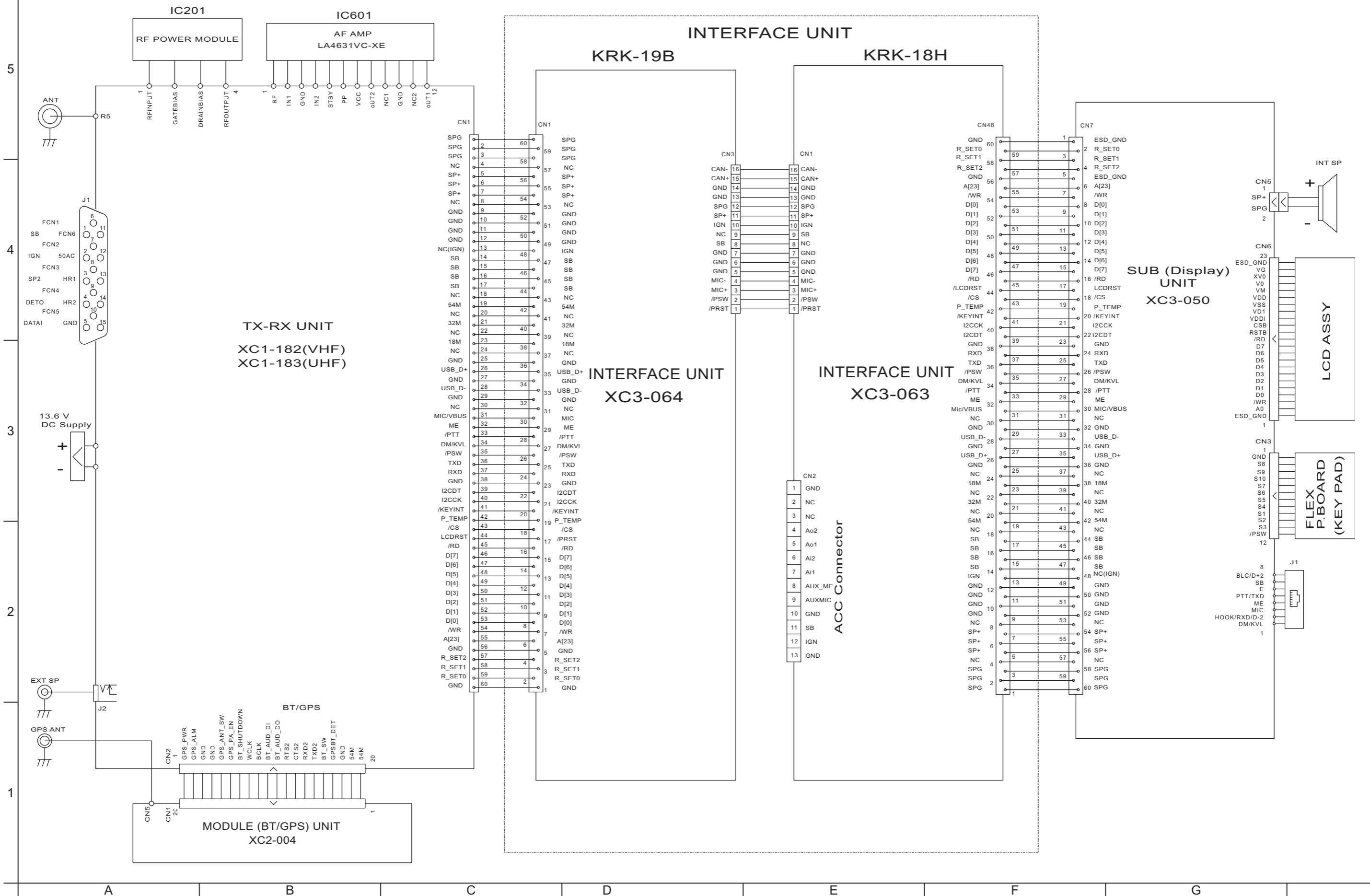
D

E

F

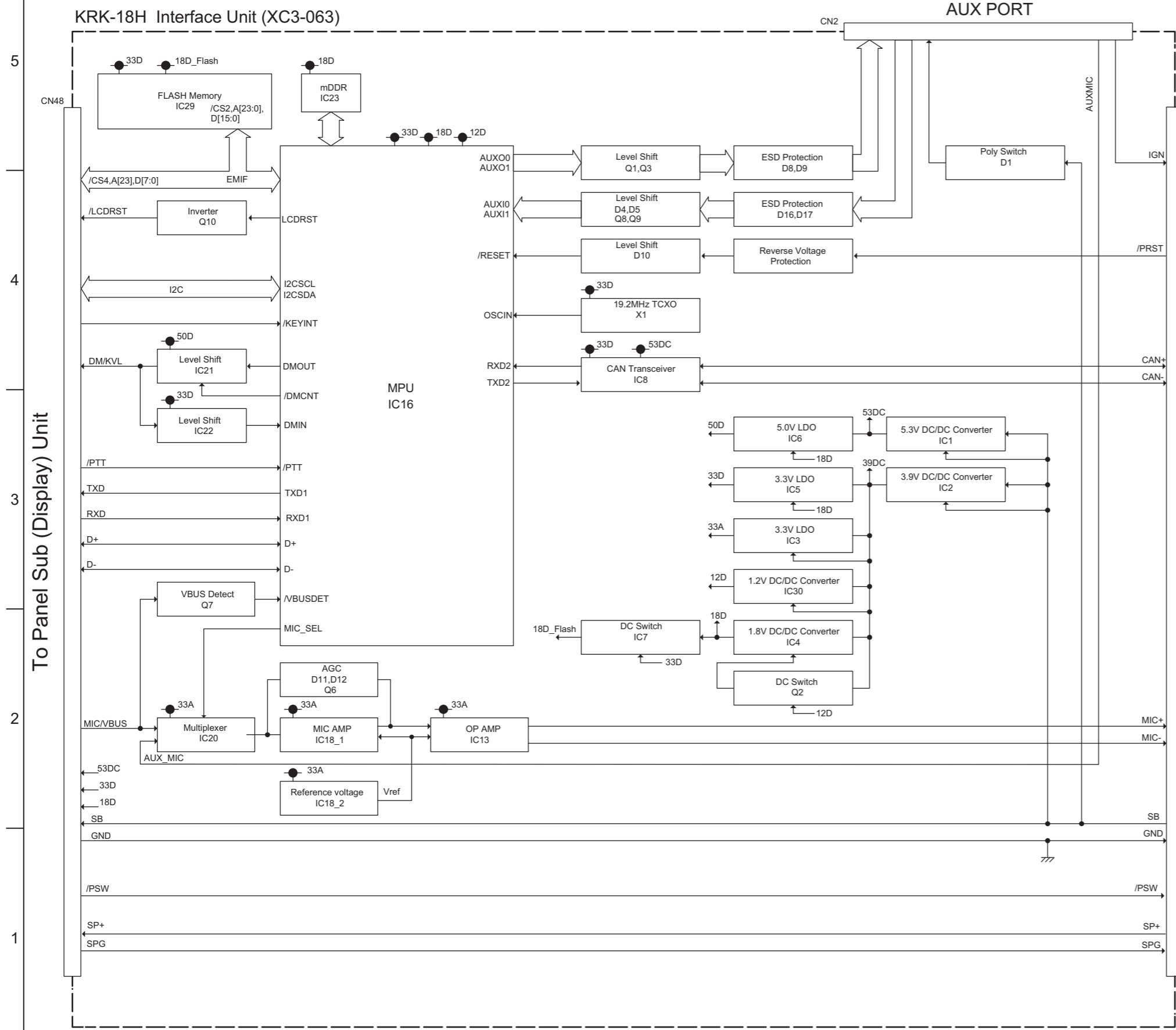
G

INTERCONNECTION DIAGRAM

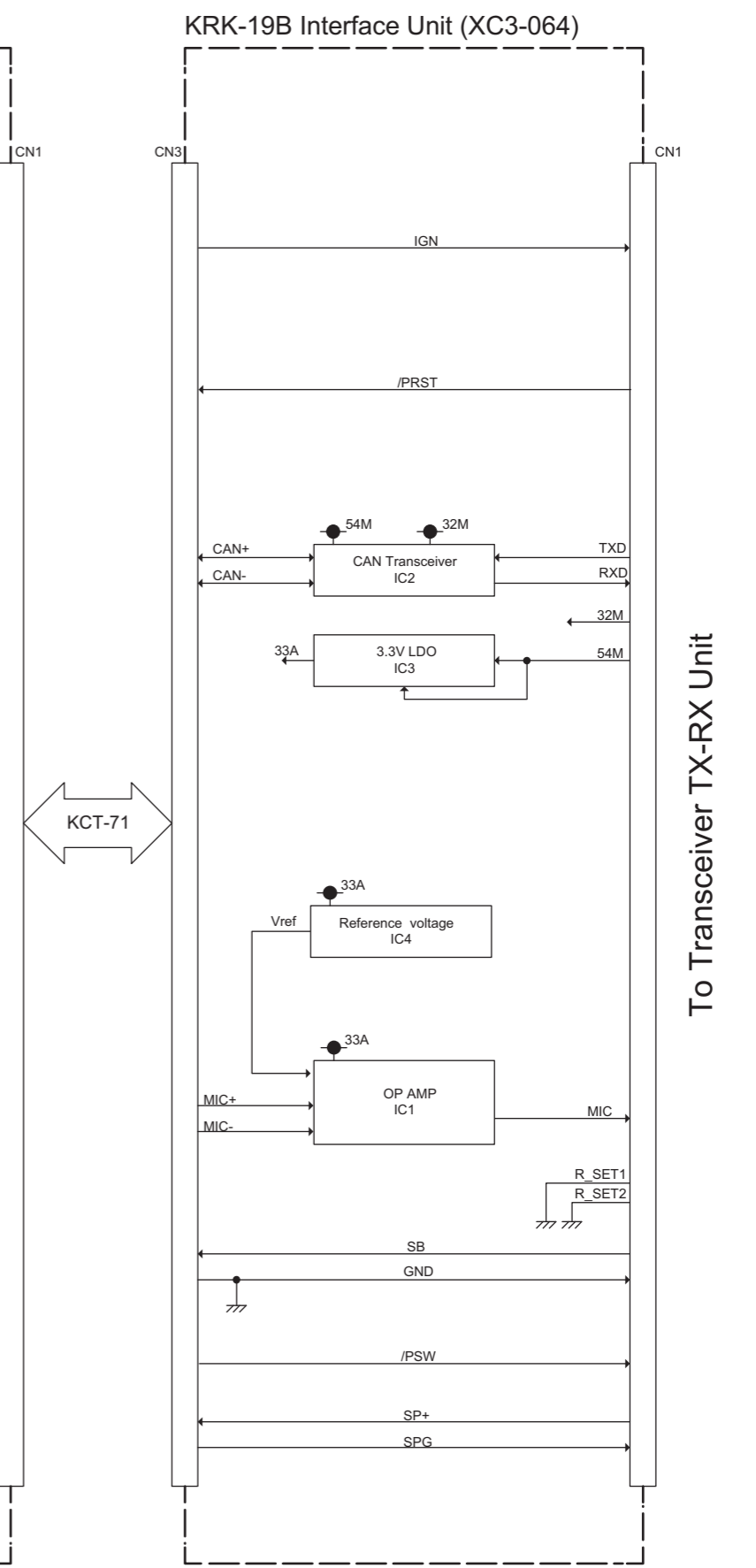


BLOCK DIAGRAM

■ KRK-18H



■ KRK-19B



PARTS LIST

[KRK-18H, KRK-19B]

*** SAFETY PRECAUTION**

Parts identified by the \triangle symbol are critical for safety. Replace only with specified part numbers.

*** BEWARE OF BOGUS PARTS**

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine parts be used.

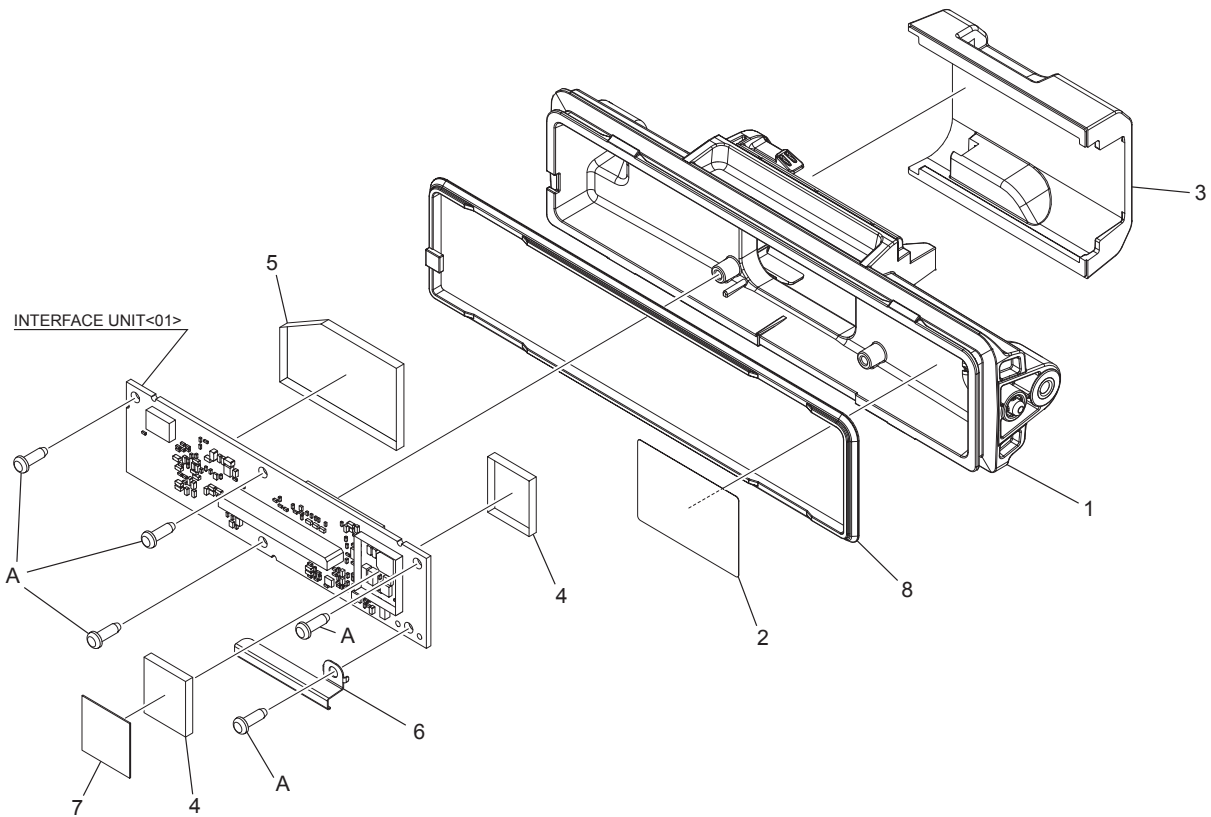
* (x_) in a description column shows the number of the used part.

- Contents -

Exploded view of general assembly and parts list	3-2
Electrical parts list	3-4
Packing materials and accessories parts list	3-7

Exploded view of general assembly and parts list (KRK-18H)

Block No.M1MM



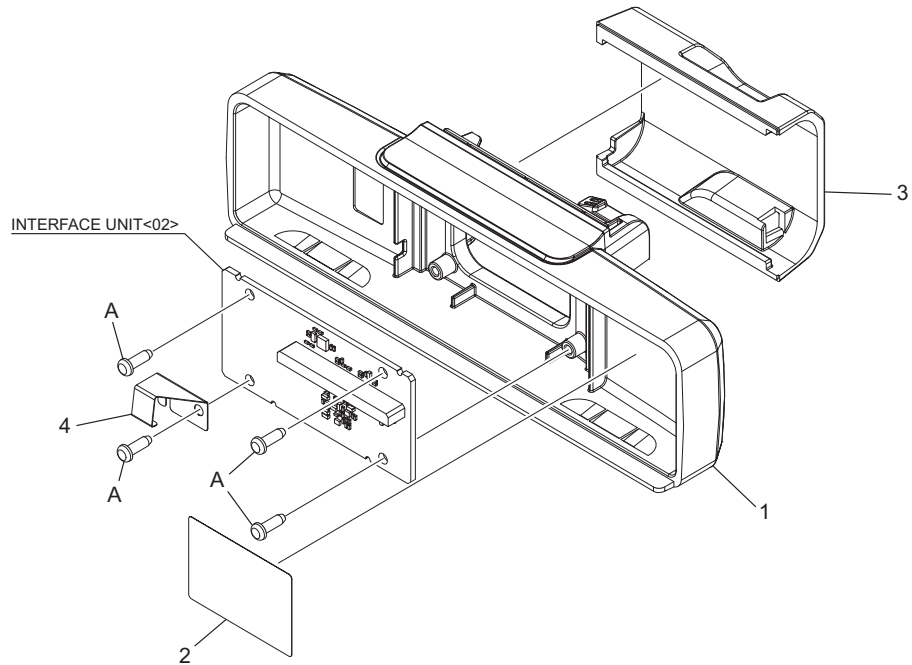
General assembly

Block No. [M][1][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	A2D-0026-00	REAR PANEL		
2	B4C-0632-00	STANDARD LABEL	FCC/CANADA/ADDRESS	
3	F0G-0002-00	MOLDING COVER		
4	F10-3225-05	SHIELDING COVER	DC/DC(x2)	
5	F1B-0027-00	SHIELDING COVER	OMAP	
6	G0B-0114-00	EARTH SPRING		
7	G1B-0343-00	SHEET	DC/DC	
8	G5D-0179-00	PACKING	FRONT	
A	N80-2608-48	P.HEAD T.SCREW	(x5)	
-	XC3-063M-01	INTERFACE UNIT	SERVICE UNIT	

Exploded view of general assembly and parts list (KRK-19B)

Block No.M2MM



General assembly

Block No. [M][2][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	A6C-0089-00	MAIN PANEL		
2	B4C-0632-00	STANDARD LABEL	FCC/CANADA/ADDRESS	
3	F0G-0002-00	MOLDING COVER		
4	G0B-0118-00	EARTH SPRING		
A	N80-2608-48	P.HEAD T.SCREW	(x4)	
-	XC3-064M-00	INTERFACE UNIT		

Electrical parts list

INTERFACE UNIT

XC3-063M-00(KRK-18H)

***Note : This part cannot be replaced. Therefore, this part is not supplied as a service part.**

Block No. [0][1]

Symbol No.	Part No.	Part Name	Description	Local
IC1	TPS54040DGQ	IC		
IC2	TPS54040DGQ	IC		
IC3	BU33TD2WNVX	IC		
IC4	LXDC2HN18F163	IC		
IC5	XC6223D331G-G	IC		
IC6	MM3404A50URE	IC		
IC7	XC8102AA07-G	IC		
IC8	TJA1051TK/3	IC		
IC13	BU7242NUX	IC		
IC16	-----	IC	*Note	
IC18	BU7242NUX	IC		
IC20	TC7W53FKF	IC		
IC21	TC7SET125FUJC	IC		
IC22	TC7SZ08FE	IC		
IC23	-----	IC	*Note	
IC29	-----	IC	*Note	
IC30	LXDC2XQ12A-252	IC		
Q1	SSM3K324RF	FET		
Q2	EM6M2	FET		
Q3	SSM3K324RF	FET		
Q6	HN1B04FE(GR)	TRANSISTOR		
Q7	SSM3K15AMFV	FET		
Q8	SSM3K15AMFV	FET		
Q9	SSM3K15AMFV	FET		
Q10	SSM3K15AMFV	FET		
D1	MINISMDC020F	VARISTOR		
D4	RB521CM-30	DIODE		
D5	RB521CM-30	DIODE		
D6	RB060M-40	DIODE		
D7	RB060M-40	DIODE		
D8	EDZV18B	ZENER DIODE		
D9	EDZV18B	ZENER DIODE		
D10	RB521CM-30	DIODE		
D11	DA221	DIODE ARRAY		
D12	DA221	DIODE ARRAY		
D13	RB521CM-30	DIODE		
D15	RB521CM-30	DIODE		
D16	AVRM10270K10N	VARISTOR		
D17	AVRM10270K10N	VARISTOR		
C1	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C2	CK73GBB1H104K	C CAPACITOR	0.1uF 50V K	
C3	C93-1810-05	C CAPACITOR	4.7uF 50V	
C4	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C5	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C6	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C7	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C10	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C11	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C15	CK73GB1E105K	C CAPACITOR	1uF 50V K	
C20	C93-1810-05	C CAPACITOR	4.7uF 50V	
C21	C93-1810-05	C CAPACITOR	4.7uF 50V	
C23	C93-1810-05	C CAPACITOR	4.7uF 50V	
C24	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C25	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C26	CK73HB1H272K	C CAPACITOR	2700pF 50V K	
C27	CK73HBB1H332K	C CAPACITOR	3300pF 50V K	
C30	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C31	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C32	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C33	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C34	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C35	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C36	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C37	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C38	CK73GB1E105K	C CAPACITOR	1uF 25V K	

Symbol No.	Part No.	Part Name	Description	Local
C39	CK73HB1H182K	C CAPACITOR	1800pF 50V K	
C40	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C41	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C42	CK73FXR1E475K	C CAPACITOR	4.7uF 25V K	
C44	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C46	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C49	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C51	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C56	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C57	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C58	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C59	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C60	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C61	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C62	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C63	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C64	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C65	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C66	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C67	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C68	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C69	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C70	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C71	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C72	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C73	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C74	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C75	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C76	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C77	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C78	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C79	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C80	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C81	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C82	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C83	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C85	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C86	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C87	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C88	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C89	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C90	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C91	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C92	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C93	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C94	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C95	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C97	CK73HB1A224K	C CAPACITOR	0.22uF 10V K	
C99	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C100	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C101	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C102	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C103	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C104	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C105	CC73HCH1H471J	C CAPACITOR	470pF 50V J	
C106	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C107	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C108	CK73FB1C106K	C CAPACITOR	10uF 16V K	
C109	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C110	CC73HCH1H100D	C CAPACITOR	10pF 50V D	
C112	CC73HCH1H100D	C CAPACITOR	10pF 50V D	
C113	CC73HCH1H100D	C CAPACITOR	10pF 50V D	
C116	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C118	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C131	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C132	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C133	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C137	CK73HB1H103K	C CAPACITOR	10000pF 50V K	
C138	CC73HCH1H220G	C CAPACITOR	22pF 50V G	
C139	CK73HBB1H152K	C CAPACITOR	1500pF 50V K	
C140	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C141	CK73HB1C105K	C CAPACITOR	1.0uF 16V K	
C142	CK73HB1A224K	C CAPACITOR	0.22uF 10V K	
C143	CK73HB0J225K	C CAPACITOR	2.2uF 6.3V K	
C144	CK73HB0J225K	C CAPACITOR	2.2uF 6.3V K	
C146	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	

△ Symbol No.	Part No.	Part Name	Description	Local	△ Symbol No.	Part No.	Part Name	Description	Local
C150	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R56	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
C155	CK73FXR0J226M	C CAPACITOR	22uF 6.3V M		R57	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
C156	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R58	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C157	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R59	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C158	CK73HB1C105K	C CAPACITOR	1.0uF 16V K		R60	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C159	CK73HB1C105K	C CAPACITOR	1.0uF 16V K		R61	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C161	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R62	RK73HB1J220J	MG RESISTOR	22Ω 1/16W J	
C162	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R63	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C163	CK73HB1H103K	C CAPACITOR	10000pF 50V K		R65	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
C164	CK73HB1H103K	C CAPACITOR	10000pF 50V K		R66	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
C168	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R67	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
C169	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R68	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
C171	CK73GB0J106K	C CAPACITOR	10uF 6.3V K		R69	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
C172	CK73GB0J106K	C CAPACITOR	10uF 6.3V K		R76	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C173	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R77	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C174	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R78	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C175	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R79	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C176	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R80	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C185	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R81	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C186	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R82	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C187	CK73GB1E105K	C CAPACITOR	1uF 25V K		R85	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
C188	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R86	RK73HB1J222J	MG RESISTOR	2.2kΩ 1/16W J	
C189	CK73GB1E105K	C CAPACITOR	1uF 25V K		R93	RK73HH1J333D	MG RESISTOR	33kΩ 1/16W D	
C191	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R94	RK73HH1J333D	MG RESISTOR	33kΩ 1/16W D	
C192	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R95	RK73HH1J563D	MG RESISTOR	56kΩ 1/16W D	
C193	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R96	RK73HH1J563D	MG RESISTOR	56kΩ 1/16W D	
C196	CK73HBB1H102K	C CAPACITOR	1000pF 50V K		R99	RK73HH1J333D	MG RESISTOR	33kΩ 1/16W D	
C202	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R100	RK73HH1J563D	MG RESISTOR	56kΩ 1/16W D	
C203	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R103	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
C205	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R104	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
C207	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R108	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
C208	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R109	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
C210	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R110	RK73HB1J470J	MG RESISTOR	47Ω 1/16W J	
C211	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R111	RK73GH2A49R9D	MG RESISTOR	49.9Ω 1/10W D	
C216	CC73HCH1H471J	C CAPACITOR	470pF 50V J		R112	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
C218	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R113	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
C219	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R114	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
C220	CC73HCH1H331J	C CAPACITOR	330pF 50V J		R115	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
C223	CK73HB1H103K	C CAPACITOR	10000pF 50V K		R119	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
C224	CK73HBB1H332K	C CAPACITOR	3300pF 50V K		R120	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
C250	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R121	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
C253	CK73HBB1H102K	C CAPACITOR	1000pF 50V K		R122	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
C311	CK73HB1E104K	C CAPACITOR	0.10uF 25V K		R123	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
C312	CC73HCH1H101J	C CAPACITOR	100pF 50V J		R124	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R3	RK73FB2B332J	MG RESISTOR	3.3kΩ 1/8W J		R125	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R7	RK73HH1J683D	MG RESISTOR	68kΩ 1/16W D		R126	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R8	RK73HH1J683D	MG RESISTOR	68kΩ 1/16W D		R131	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R9	RK73HH1J153D	MG RESISTOR	15kΩ 1/16W D		R132	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R10	RK73HB1J682J	MG RESISTOR	6.8kΩ 1/16W J		R134	RK73HB1J105J	MG RESISTOR	1MΩ 1/16W J	
R12	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R135	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R13	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R136	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R22	RK73HH1J153D	MG RESISTOR	15kΩ 1/16W D		R137	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R27	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J		R138	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R28	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D		R139	RK73HB1J183J	MG RESISTOR	18kΩ 1/16W J	
R29	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J		R140	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R30	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J		R143	RK73HB1J223J	MG RESISTOR	22kΩ 1/16W J	
R31	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D		R144	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R32	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D		R145	RK73HB1J153J	MG RESISTOR	15kΩ 1/16W J	
R33	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D		R146	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R34	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D		R147	RK73HB1J474J	MG RESISTOR	470kΩ 1/16W J	
R35	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J		R153	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R36	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J		R154	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R37	RK73HH1J393D	MG RESISTOR	39kΩ 1/16W D		R155	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R38	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D		R156	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R39	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J		R157	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R40	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J		R160	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R41	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J		R161	RK73HB1J681J	MG RESISTOR	680Ω 1/16W J	
R42	RK73HB1J471J	MG RESISTOR	470Ω 1/16W J		R162	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R45	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R163	RK73HB1J333J	MG RESISTOR	33kΩ 1/16W J	
R46	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R164	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R47	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R167	RK73HB1J472J	MG RESISTOR	4.7kΩ 1/16W J	
R48	RK73HH1J153D	MG RESISTOR	15kΩ 1/16W D		R169	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R51	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J		R170	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R52	RK73FB2B121J	MG RESISTOR	120Ω 1/8W J		R171	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R53	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J		R174	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R54	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D		R187	RK73HB1J105J	MG RESISTOR	1MΩ 1/16W J	
R55	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D		R190	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	
					R192	RK73HB1J101J	MG RESISTOR	100Ω 1/16W J	

Symbol No.	Part No.	Part Name	Description	Local
R193	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R194	RK73HH1J103D	MG RESISTOR	10kΩ 1/16W D	
R197	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R198	RK73GB2A000J	MG RESISTOR	0Ω 1/10W J	
R201	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R203	RK73HB1J100J	MG RESISTOR	10Ω 1/16W J	
R252	RK73HB1J393J	MG RESISTOR	39kΩ 1/16W J	
R253	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
L1	LB73G0AM-004	CHIP FERRITE		
L2	LB73G0AM-004	CHIP FERRITE		
L3	LR79Z0FQ100M	CHIP INDUCTOR		
L4	LB73G0AM-004	CHIP FERRITE		
L5	LR79Z0EZ150M	CHIP INDUCTOR		
L6	LB73G0AM-004	CHIP FERRITE		
L7	LB73G0AM-004	CHIP FERRITE		
L8	LB73G0AM-004	CHIP FERRITE		
L12	LB73H0AV-003	CHIP FERRITE		
L13	LB73H0AV-003	CHIP FERRITE		
L14	LB73G0AM-004	CHIP FERRITE		
L15	L92-1101-05	CHIP FERRITE		
L16	L92-1101-05	CHIP FERRITE		
L17	LB73G0AM-004	CHIP FERRITE		
L18	LB73G0AM-004	CHIP FERRITE		
L19	LB73G0AM-004	CHIP FERRITE		
L20	L92-1101-05	CHIP FERRITE		
L21	L92-1101-05	CHIP FERRITE		
L22	LB73G0AM-004	CHIP FERRITE		
L30	LB73G0AM-004	CHIP FERRITE		
L35	LB73G0AM-004	CHIP FERRITE		
L36	LB73G0AM-004	CHIP FERRITE		
L39	L79-1984-05	FILTER		
L40	L79-1984-05	FILTER		
L41	L79-1984-05	FILTER		
L44	LB73G0AM-004	CHIP FERRITE		
L45	LB73G0AM-004	CHIP FERRITE		
L46	LB73G0AM-004	CHIP FERRITE		
L50	LB73H0AV-003	CHIP FERRITE		
L51	LB73H0AV-003	CHIP FERRITE		
L52	LB73H0AV-003	CHIP FERRITE		
L55	LB73H0AV-003	CHIP FERRITE		
L56	LB73H0AV-003	CHIP FERRITE		
L57	LB73H0AV-003	CHIP FERRITE		
L58	LB73H0AV-003	CHIP FERRITE		
L59	LB73H0AV-003	CHIP FERRITE		
L60	LB73G0AM-004	CHIP FERRITE		
L61	LB73H0AV-003	CHIP FERRITE		
L62	LB73H0AY-002	CHIP FERRITE		
L63	LB73H0AY-002	CHIP FERRITE		
L64	LB73G0AM-004	CHIP FERRITE		
L65	LB73G0AM-004	CHIP FERRITE		
L66	LB73H0AV-003	CHIP FERRITE		
L67	LB73H0AV-003	CHIP FERRITE		
CN1	EA710AC-1516B	W TO B CONNE		
CN2	EA710AC-1513B	W TO B CONNE		
CN48	EC710AM-0560A	FFC FPC CONNE		
CP1	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP2	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
CP3	RK74HB1J470J	NET RESISTOR	47Ω 1/16W J	
E1	F10-3226-05	SHIELDING CASE		
E2	F10-3226-05	SHIELDING CASE		
E3	F1B-0026-00	SHIELDING CASE		
X1	L77-3123-05	TCXO		

INTERFACE UNIT

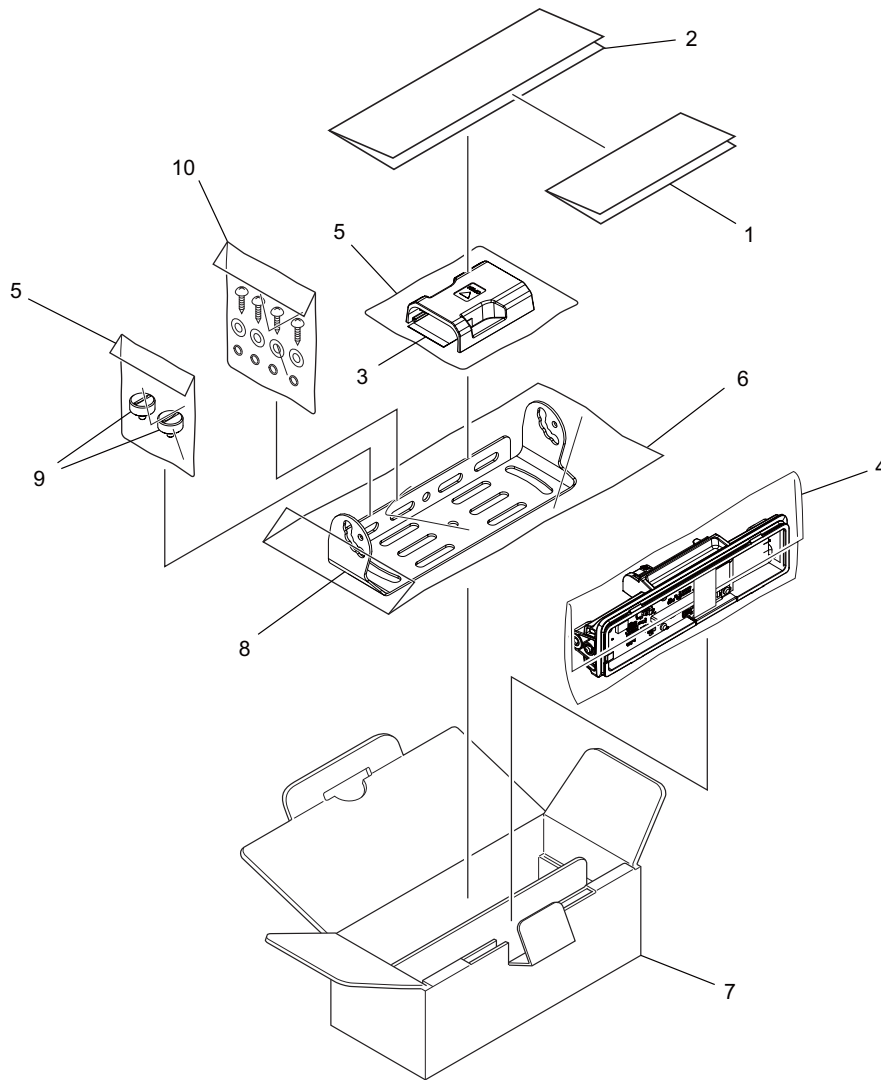
XC3-064M-00(KRK-19B)

Block No. [0][2]

Symbol No.	Part No.	Part Name	Description	Local
IC1	OPA170AIDRLR	IC		
IC2	TJA1051TK/3	IC		
IC3	BU33TD2WNVX	IC		
IC4	BU7445HFV	IC		
C6	CC73HCH1H470J	C CAPACITOR	47pF 50V J	
C7	CC73HCH1H470J	C CAPACITOR	47pF 50V J	
C12	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C14	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C15	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C16	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C17	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C18	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C19	CK73HBB1H471K	C CAPACITOR	470pF 50V K	
C20	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C43	CK73HBB1H102K	C CAPACITOR	1000pF 50V K	
C63	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C68	CK73GB0J106K	C CAPACITOR	10uF 6.3V K	
C100	CK73GB1E105K	C CAPACITOR	1uF 25V K	
C101	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C102	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C103	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C105	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C106	CC73HCH1H101J	C CAPACITOR	100pF 50V J	
C107	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
C108	CK73HB1E104K	C CAPACITOR	0.10uF 25V K	
R9	RK73HB1J820J	MG RESISTOR	82Ω 1/16W J	
R10	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R11	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R12	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R13	RK73HB1J102J	MG RESISTOR	1kΩ 1/16W J	
R15	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R16	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R17	RK73HH1J273D	MG RESISTOR	27kΩ 1/16W D	
R18	RK73HH1J473D	MG RESISTOR	47kΩ 1/16W D	
R19	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R100	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R101	RK73HB1J473J	MG RESISTOR	47kΩ 1/16W J	
R103	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R104	RK73HB1J000J	MG RESISTOR	0Ω 1/16W J	
R106	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R107	RK73HB1J104J	MG RESISTOR	100kΩ 1/16W J	
R225	RK73FB2B121J	MG RESISTOR	120Ω 1/8W J	
L1	LB73G0AM-004	CHIP FERRITE		
L3	LB73H0AV-003	CHIP FERRITE		
L4	LB73H0AV-003	CHIP FERRITE		
L7	LB73G0AM-004	CHIP FERRITE		
L8	LB73G0AM-004	CHIP FERRITE		
L20	LB73H0AV-003	CHIP FERRITE		
L21	LB73G0AM-004	CHIP FERRITE		
L24	LB73H0AV-003	CHIP FERRITE		
L25	LB73H0AV-003	CHIP FERRITE		
CN1	EC710AM-0560A	FFC FPC CONNE		
CN3	EA710AC-1516B	W TO B CONNE		

Packing materials and accessories parts list (KRK-18H)

Block No.M3MM



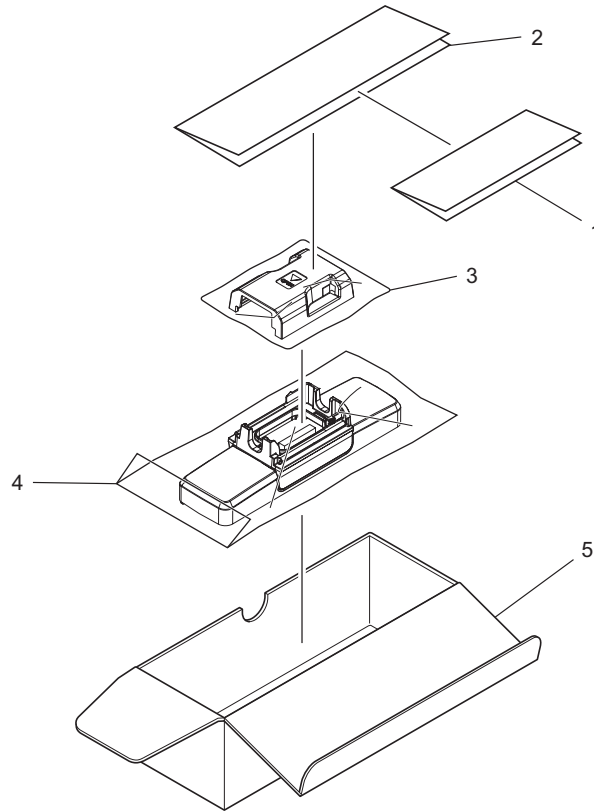
Packing and accessories

Block No. [M][3][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	-----	PAMPHLET	Manual	
2	-----	PAMPHLET	WEEE/FCC	
3	E3G-0065-00	FFC WIRE	60pin	
4	-----	ANTI-STATIC BAG	REAR PANEL	
5	-----	PROTECTION BAG(80/120/0.07)	DRESS SCREW/MOLDING COVER(x2)	
6	-----	PROTECTION BAG(125/250/0.07)	BRACKET	
7	H5A-1365-10	ITEM CARTON		
8	J29-0698-13	BRACKET	COMMON KRK-10	
9	N08-0550-14	DRESSED SCREW	(x2)	
10	N9X-0009-00	SCREW SET		

Packing materials and accessories parts list (KRK-19B)

Block No.M4MM



Packing and accessories

Block No. [M][4][M][M]
Local

△ Symbol No.	Part No.	Part Name	Description
1	-----	PAMPHLET	Manual
2	-----	PAMPHLET	WEEE/FCC/Dealer/ADDRESS
3	-----	PROTECTION BAG	MOLDING COVER
4	-----	PROTECTION BAG(125/250/0.07)	MAIN PANEL
5	H5A-1366-10	ITEM CARTON	

MEMO



KENWOOD

JVC KENWOOD Corporation
Communications Systems Division

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