



DIGITAL ADAPTOR KIT DK-520

INSTALLATION MANUAL

Downloaded by ☐
RadioAmateur.EU

The KENWOOD DK-520 Digital Adaptor Kit is designed for adapting the DG-5 digital counter to the TS-520. The DK-520 consists mainly of a power supply with connectors to supply the signals to the DG-5, and a buffer unit for the HET output signals.

PARTS SUPPLIED

1. Power supply unit 1
2. Buffer unit 1
3. Power cable 1
4. Fuse, 2A 1
5. Converter cover 1
6. Mounting stud 1
7. Hardware:
 - a. panhead screw 4x6 mm long 1
 - b. self tapping screws, 3x6 mm long 2
 - c. lock washer 1
 - d. flat washer 1

INSTALLATION

First, remove the top and bottom covers of the TS-520. When removing the top cover, remember to unplug the speaker lead before setting the top aside. Install the DK-520 as follows: (Ref. to fig. 1 thru. 6)

1. Remove the wing nut and washer from the ground lug on the rear panel of the TS-520, and install the mounting stud on the ground lug.
2. Install the DK-520 power supply unit on the mounting stud as shown in fig. 1. Use the panhead screw, lock washer, and flat washer to hold the power supply unit in place.
3. Remove the slotted cover from the DC-DC converter.
4. Install the new slotted cover with the notch at the bottom.
5. Insert the wiring harness through the notch and feed it over the power transformer.
6. Locate the DC-DC converter terminal board (See fig. 2).
7. Solder one of the two white solid wires from the power supply unit to the terminal with the red lead on it.
8. Solder the other white solid wire to the terminal with the orange lead on it.
9. Solder the black solid wire to the chassis ground lug (See fig. 2)
10. Locate the coaxial lead with the red band.
11. Solder the center conductor of this cable to pin 1 of the remote VFO socket. (See fig. 2.)
12. Solder the shield of this cable to pin 2.

13. Locate the cable harness that runs parallel to the front of the RF unit.
14. Gently move this harness aside to reveal the two mounting holes for the buffer unit.
15. Install the buffer unit with the two self tapping screws.
16. Solder the yellow solid wire from the buffer unit to TP-3 on the RF unit.
17. Locate the yellow solid wire with the cap and install it over the case of FET Q8 (3sk22).
18. Solder the black solid wire from the buffer unit to the GND pin on the RF unit.
19. Solder the red solid wire from the buffer unit to the 14 pin of the FIX CH. AVR Unit.
20. Locate the coaxial lead with the blue band.
21. Solder the center conductor of this cable to the OUT terminal of the buffer unit.
22. Solder the shield of this cable to the GND terminal.
23. Feed the remaining coaxial cable, red solid wire, and white/black solid wire through the chassis as shown in Fig. 2.
24. Solder the red solid wire to pin 5 of the power connector as shown in Fig. 3.
25. Solder the white/black solid wire to the chassis ground lug.
26. Solder the center conductor of the coaxial cable to the OUT terminal of the CAR unit.
27. Solder the shield to the GND terminal.
28. Solder a jumper on the WWV/JJY switch as shown in fig. 4. Do not jumper the orange and purple wire.

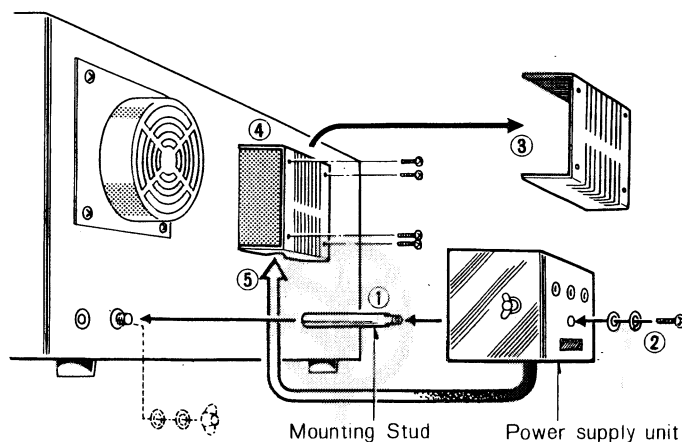


Fig 1

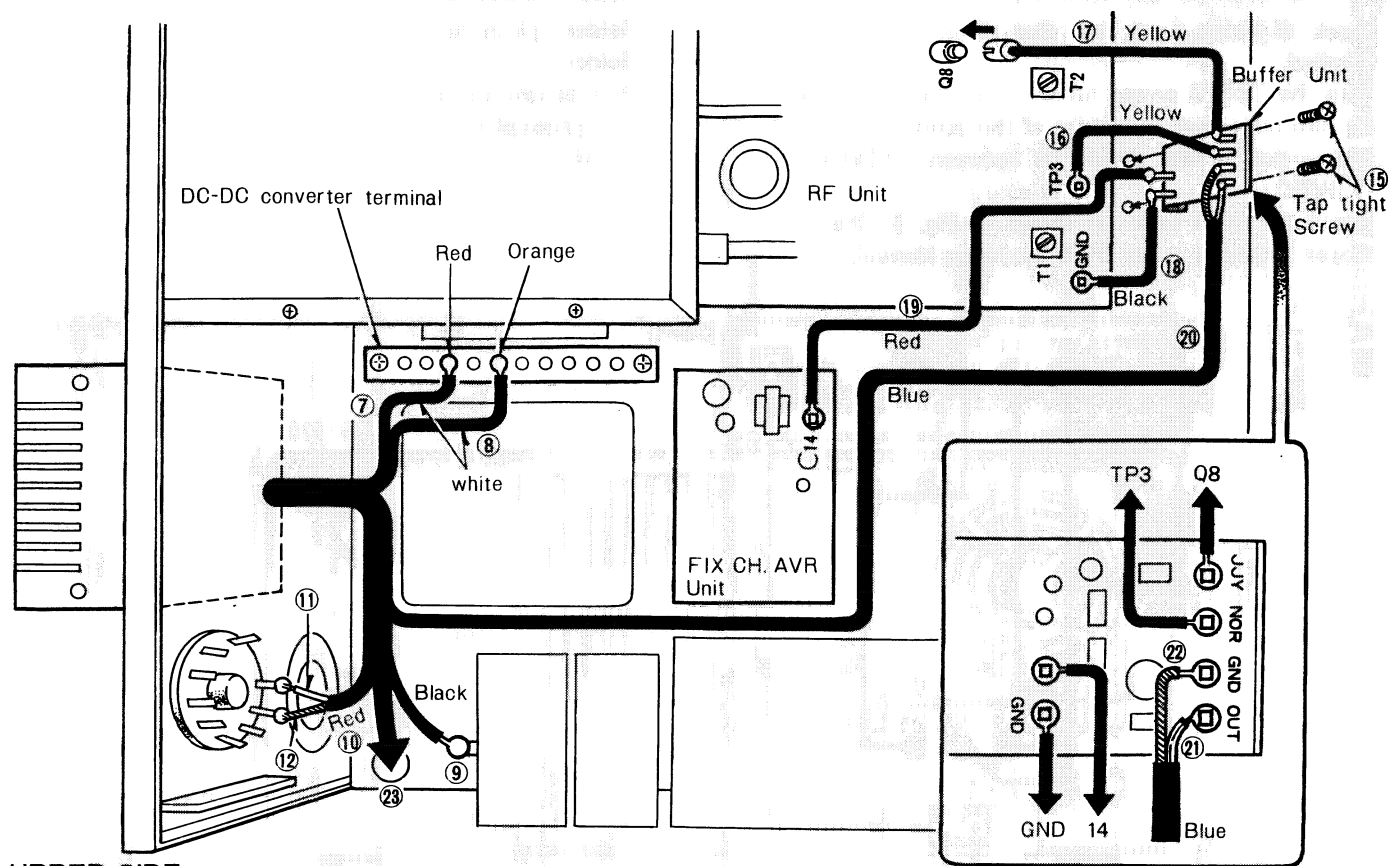


Fig. 2

Downloaded by  **RadioAmateur.EU**

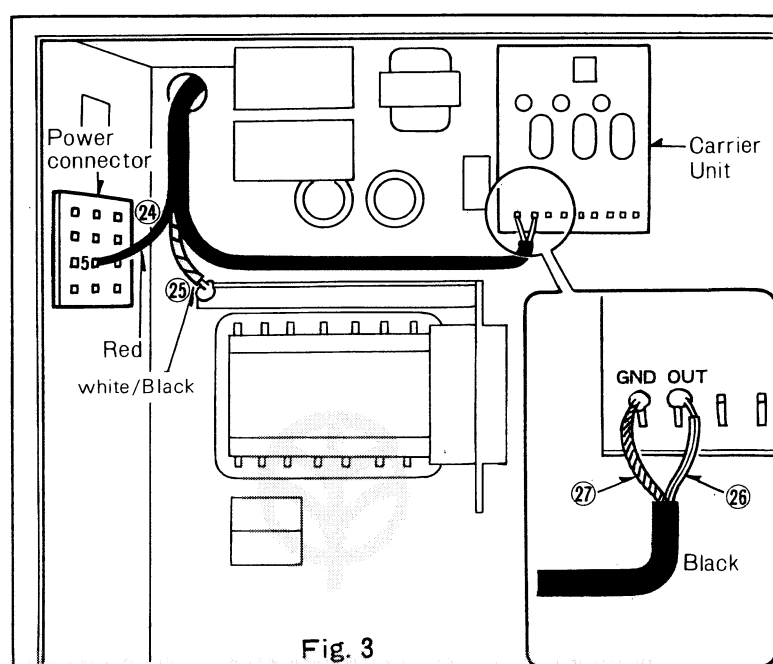


Fig. 3

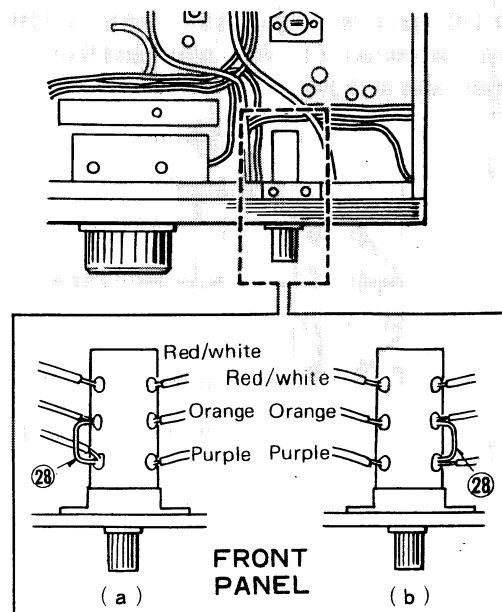


Fig 4 WWV Switch

Circuits and specifications are subject to change for improvement.

Pin 5 of Power

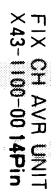
DC-DC Converter

ed Lead

**DC-DC Converter
with Orange Lead**

CAR UNIT
X50-0009-01
OUT Terminal

Remote VFO PIN 1
Socket PIN 2



HOW TO CHECK DK-520 OPERATION

1. Check all wiring to be sure that all leads are correctly installed.
2. Turn the TS-520 power on and measure the voltage at the two pin power connector of the power supply unit. The output voltage should be between 13.0VDC and 17.5VDC.
3. Install the DG-5 cables as shown in Fig. 5. Check for proper frequency as per DG-5 Operating Manual.

TOOLS REQUIRED

1. Soldering iron (not to exceed 45 watts).
2. Solder
3. Phillips screwdriver
4. Long nose pliers
5. VOM

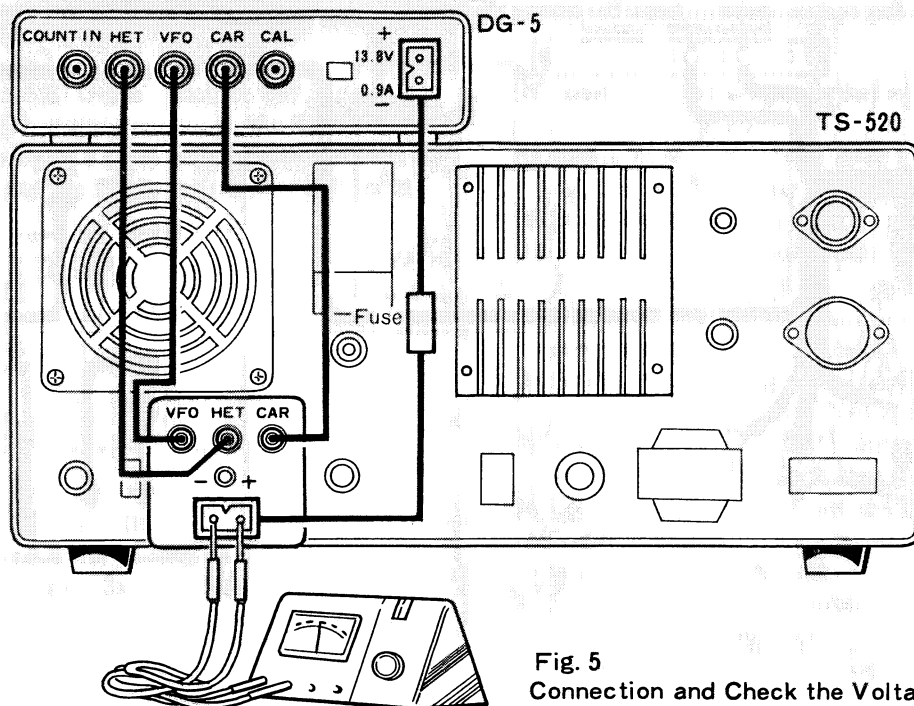
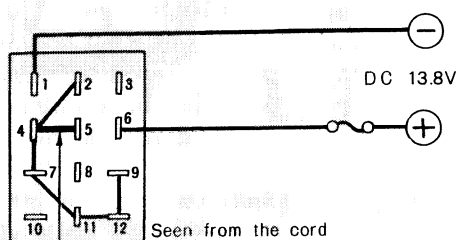


Fig. 5
Connection and Check the Voltage

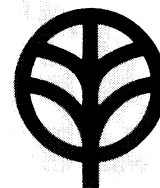
DC OPERATION

For DC operation of the TS-520 (with DK-520) and DG-5, it will be necessary to short pins 4 and 5 of the TS-520 DC power cable as shown in fig. 6.



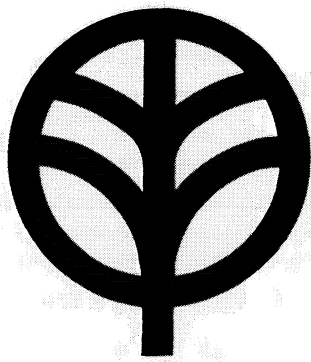
Short the No.4pin and No.5pin

Fig. 6



A product of
TRIO-KENWOOD CORP.

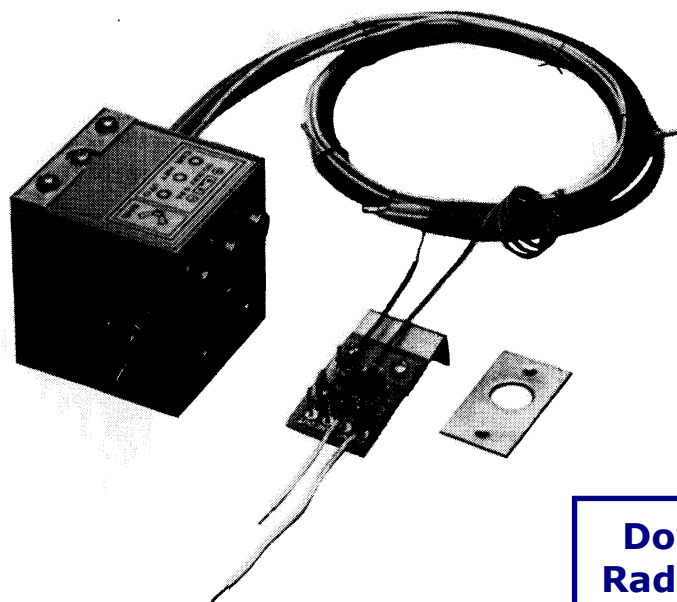
6-17, 3-chome, Aobadai, Meguro-ku, Tokyo 153, Japan



KENWOOD

SERVICE MANUAL

DK-520



Downloaded by ☐ RadioAmateur.EU

DIGITAL ADAPTOR KIT

FEATURES

FEATURES

The KENWOOD DK-520 Digital Adaptor Kit is designed for adapting the DG-5 digital counter to the TS-520. The DK-520 consists mainly of a power supply with connectors to supply the signals to the DG-5, and a buffer unit for the HET output signals.

CHECKING METHOD

Confirm that the whole wiring is free from misconnections. Turn on the power switch of the TS-520 D, X and check whether the power source output voltage is between DC 13V and 17.5V at no load. Connect the DG-5 and confirm that output is counted normally at the counter. Since then, make the DG-5 display each output.

FREQUENCIES AT RESPECTIVE TERMINALS

Carrier Frequencies

Mode	Reception	Transmission
LSB	3.3935 MHz	3.3935 MHz
USB	3.3965 MHz	3.3965 MHz
CW	3.3943 MHz	3.3950 MHz

Note: Since each frequency has been adjusted to the characteristics of the crystal filter, the frequency reading is acceptable if it does not widely deviate from the above standard.

VFO Frequencies

Dial graduation	0	300	600
Frequency	5.5 MHz ~ 5.2 MHz ~ 4.9 MHz		

Heterodyne Frequencies

Band	Frequency
3.5 MHz	12.395 MHz
7.0 MHz	15.895 MHz
14.0 MHz	22.895 MHz
21.0 MHz	29.895 MHz
28.0 MHz	36.895 MHz
28.5 MHz	37.395 MHz
29.1 MHz	37.995 MHz

PARTS LIST

TOTAL

☆: New parts

K: U.S.A.

W: Europe

Ref. No.	Parts No.	Description	Re- marks
—	B50-2555-00	Operating manual	☆
—	E08-0203-25	2P connector socket	
—	E09-0203-25	2P connector plug X 2	
—	E29-0403-04	Terminal cap	
—	F05-2023-05	Fuse (2A) X 2	
—	H01-2541-03	Carton case (inside)	☆
—	H12-0414-04	Packing material	☆
—	H12-0415-04	Packing material	☆
—	H25-0029-04	Polyethylene bag	
—	H25-0103-04	Protection cover	
—	J13-0029-05	Fuse holder	
—	J32-0218-04	Hex. boss	
—	J32-0713-04	Boss for mounting	☆
—	J61-0019-05	Vinyl tie X 5	
—	N09-0248-05	Bolt (butterfly type)	
—	N10-2030-46	Hex. nut X 3	
—	N15-1040-46	Washer X 3	
—	N16-0040-46	Spring washer X 2	
—	N30-3004-46	Round head screw X 3 (for PC board)	
—	N30-3008-46	Round head screw X 2 (for connector)	
—	N30-4006-46	Round head screw (4 mm)	
—	N87-3006-46	Tap-tight screw X 2	
—	N89-3006-46	Bind tap-tight screw X 3	
—	X43-1290-00	Power supply unit	☆
—	X44-1210-00	Buffer unit	☆

POWER SUPPLY UNIT (X43-1290-00)

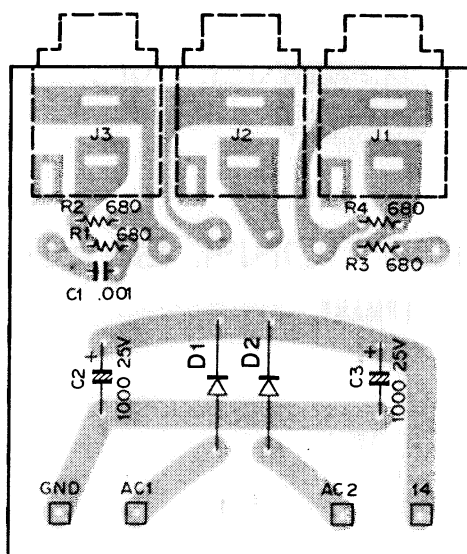
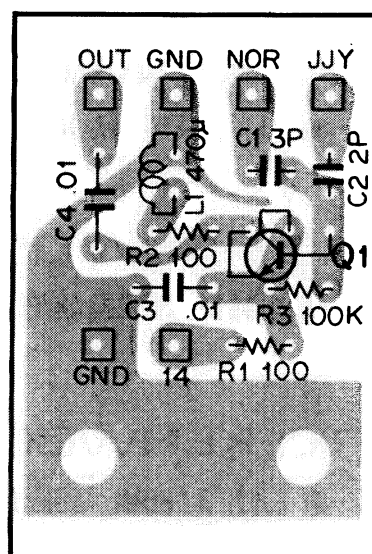
Ref. No.	Parts No.	Description	Re- marks
C1	C45B1H102K	Ceramic 1000pF ±10%	
C2, 3	CE04W1E102	Electrolytic 1000μF 25WV	
R1~4	RD14CB2E681J	Carbon 680Ω ±5% 1/4W	
D1, 2	V11-0270-05	Diode U05B	
J1, 3	E13-0163-05	Phono jack	
J2	E13-0162-05	Phono jack	
—	E23-0046-04	Terminal (square type) X 4	

BUFFER UNIT (X44-1210-00)

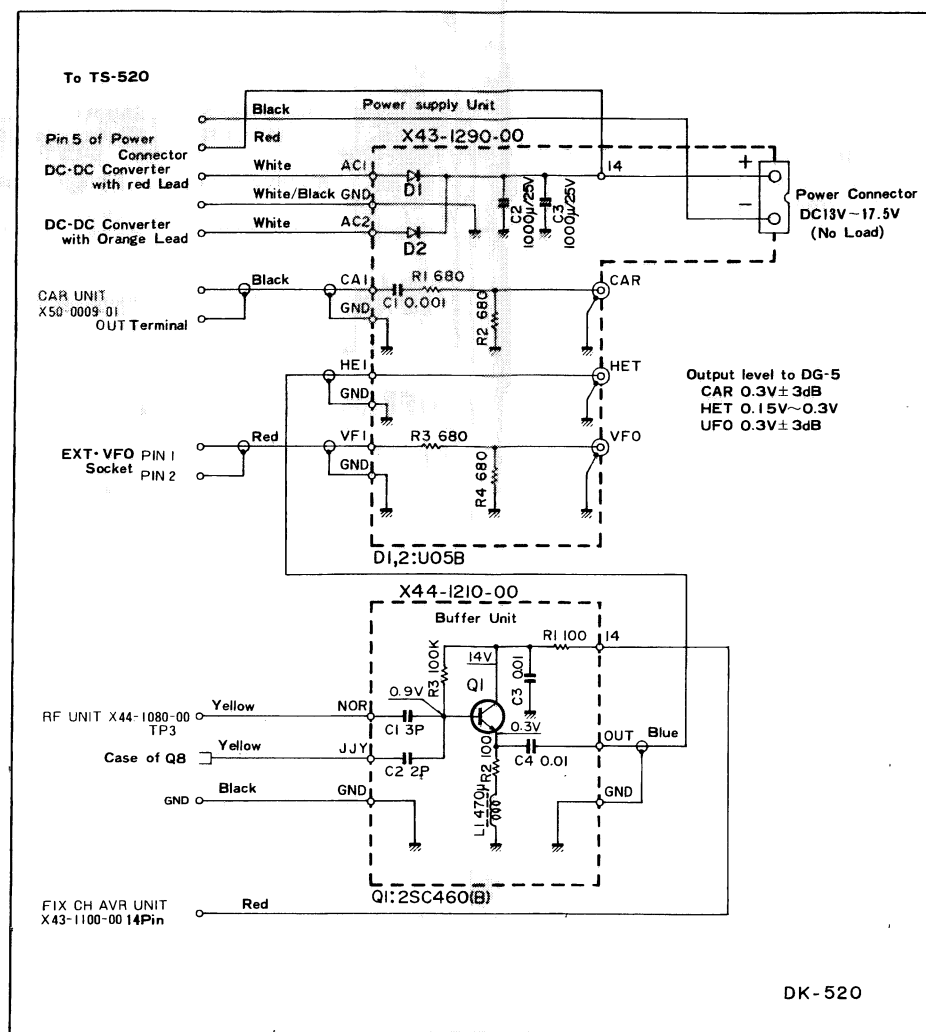
Ref. No.	Parts No.	Description	Re- marks
C1	CC45SL1H030C	Ceramic 3pF ±0.25pF	
C2	CC45SL1H020C	Ceramic 2pF ±0.25pF	
C3, 4	CK45F1H103Z	Ceramic 0.01μF +80%, -20%	
R1, 2	RD14CY2B101J	Carbon 100Ω ±5% 1/8W	
R3	RD14CY2B104J	Carbon 100kΩ ±5% 1/8W	
Q1	V03-0079-05	Transistor 2SC460(B)	
L1	L40-4711-03	Ferri-inductor 470μH	
—	E23-0046-04	Terminal (square type)	

Downloaded by ☐ RadioAmateur.EU

PC BOARD

▼ POWER SUPPLY UNIT
(X43-1290-00)▼ BUFFER UNIT
(X44-1210-00)

SCHEMATIC DIAGRAM



Downloaded by ☐ RadioAmateur.EU

TRIO-KENWOOD COMMUNICATIONS, INC.

■ 1111, WEST WALNUT STREET COMPTON CALIFORNIA 90220, U.S.A.

TRIO-KENWOOD COMMUNICATIONS, GmbH

■ D-6374 STEINBACH-TS INDUSTRIESTRASSE, 8A WEST GERMANY.

TRIO-KENWOOD CORPORATION.

■ 6-17, 3-CHOME, AOBADAI, MEGURO-KU, TOKYO, JAPAN.