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FUNCTION OF ACTIVE CIRCUIT DEVICES

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2.1033 (c) (10)

Schematic DesignationFunctionInterface Board Unit : SPD-2000 I/F P/B Schematic DiagramCR1-CR14  
Z1Light Emission  
LCD ModuleMain Board Unit : LOGICSPD-2000 Main Logic Block Schematic DiagramCR500,CR706-CR709,CR810-CR81,CR900-CR902  
CR702-CR705  
R700,CR701  
Q700  
Q500,Q501,Q701-Q705,Q900,Q901,Q902,Q903,Q904  
U500Protection  
Switching diode  
Schottky Barrier diode  
Buffer  
Switch  
Digitizing, Voice CODEC and Digital to  
Analogue conversions  
OP Amp  
Audio Power Amplifier  
DSP  
SRAM  
CPU  
Flash ROM  
SRAM  
EEPROM  
SERIAL No. ROM  
RegulatorU501,U503,U705  
U502  
U600  
U601  
U700  
U701  
U702  
U703  
U704  
U900,U902,U904

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**FUNCTION OF ACTIVE CIRCUIT DEVICES**

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2.1033 (c) (10) (continued)

Main Board Unit : RADIOSPD-2000 Main Radio Block Schematic Diagram

CR101,CR103,CR104,CR203	Protection
CR201	Attenuator
CR202	Switching diode
Q101-Q104,U202	RF Amplifier
Q201,Q207	DC Amplifier
Q105,Q202-Q206,Q301,Q302	Switch
U102,U304,U306	Switch
U101	<b>IF Amplifier and Mixer</b>
U201	PA Module (RF Power Amplifier)
U203	QPSK Modulation IC
U205,U206,U207	Regulator IC
U301	OP Amp
U305	Synthesizer IC
U307	<b>Inverter</b>
Z302	Switch and Filter
Z303-Z305	Oscillator

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ALIGNMENT PROCEDURE

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## 2.1033 C (9)

## 1. Test Equipment

Service Monitor	(HP8920B or equivalent)
DC Power Supply	(7.5 Volts at 3A)
IBM Personal Computer	(or compatible equivalent)
Programming Interface	(TQ3370)
Serial Interface Cable	
SPD Radio Programming Software	( )
SPD Programming Cable	( )
BNC-BNC Cable	
DC Power Cable with Dummy Battery	

## 2. Initial setup

- a. Attach DC Power Cable with Dummy Battery to Radio and DC Power supply.
- b. Attach Serial Interface Cable to Programming Interface and personal Computer.
- c. Attach Programming Cable to Radio and Programming Interface.
- d. Attach RF coaxial cable (50 ohms) between antenna connector and service monitor (RF port).
- e. Attach BNC-BNC Cable between Programming Interface and Service Monitor.  
(from RX AUDIO to AUDIO INPUT HI and from TX AUDIO to AUDIO OUTPUT)
- f. Set DC Power Supply to 7.5 Volts dc.
  - g. Apply power to Radio, and turn radio on/off switch to on position.
  - h. Execute SPD Radio Programming Software.

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 ALIGNMENT PROCEDURE
 

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## 2.1033 C (9) (continued)

## 3. TX frequency Adjustment

- |                        |                    |                                      |
|------------------------|--------------------|--------------------------------------|
| a. Enter Test Mode     | cmd 0              |                                      |
| b. Set TX frequency    | cmd 70 (frequency) | (ex.) set to 806MHz cmd 70 806000000 |
| c. Key transmitter     | cmd 74 1           | (Key : cmd 74 1 , Unkey : cmd 74 0 ) |
| d. Adjust TX frequency | cmd 8 (value)      | value : 0-1023                       |

## 4. TX power Adjustment

- |                       |                    |  |
|-----------------------|--------------------|--|
| a. Enter Test Mode    | cmd 0              |  |
| b. Set TX frequency   | cmd 70 (frequency) |  |
| c. Key transmitter    | cmd 74 1           |  |
| d. Set TX power level | cmd 71 x1 x2 x3    | x1:power level setting (0=0.5W , 1=1W , 2=3W)<br>x2:Tx band (0= 806-825 MHz , 1= 851-870 MHz)<br>x3:frequency band location (0=low, 1=mid, 2=high) |

## 5. Tx modulation

- |  |                    |                                       |
|--|--------------------|---------------------------------------|
| a. Enter Test Mode   | cmd 0              |                                       |
| b. Set TX frequency  | cmd 70 (frequency) |                                       |
| c. Key transmitter   | cmd 74 1           |                                       |
| d. Unmute Microphone   | cmd 75 1           | (Unmute : cmd 75 1 , Mute : cmd 75 0) |
| e. Enable external mic   | cmd 5 1            |                                       |
| f. Adjust the input level until it becomes the modulation to expect. |                    |                                       |
| g. Otherwise, when radio transmit v.52 data                          | cmd 76             |                                       |

## 6. RX frequency Adjustment

- |                     |                    |                                      |
|---------------------|--------------------|--------------------------------------|
| a. Enter Test Mode  | cmd 0              |                                      |
| b. Set RX frequency | cmd 50 (frequency) | (ex.) set to 851MHz cmd 70 851000000 |