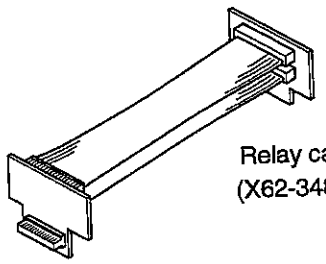
ADJUSTMENT

REQUIRED TEST EQUIPMENT

1. **Stabilized Power Supply**
   ①The supply voltage can be changed between 3V and 16V and the current is 1A or more.
   ②The standard voltage is 13.8V.
2. **DC Ammeter (DC.A)**
   ①Class 1 ammeter (17 ranges and other features)
   ②The full scale can be switched between 300mA and 3A.
   ③A cable with low internal loss must be used.
3. **Frequency Counter (f. counter)**
   ①Frequencies of up to 1 GHz or so can be measured.
   ②The sensitivity can be changed to 250 MHz or below and measurements are highly stable and accurate (about 0.2 ppm).
4. **Power Meter (terminal type)**
   ①Measurable frequency: Up to 500 MHz
   ②Impedance: 50Ω, unbalanced
   ③Measuring range: Full scale of 10W
   ④The specified special connection cable must be used.
5. **RF VTVM (RF V.M)**
   ①Measurable frequency: Up to 500 MHz or so
6. **Linear Detector**
   ①Measurable frequency: Up to 500 MHz
   ②Characteristic is flat and CN is 60 dB or more.
7. **Digital Voltmeter**
   ①Voltage range: FS = 18V or so
   ②Input resistance: 1MΩ or more
8. **Oscilloscope**
   ①Measuring range: DC to 30 MHz
   ②Provides highly accurate measurements for 5 to 25 MHz
9. **AF Voltmeter (AF V.M)**
   ①Measurable frequency: 50 Hz to 1 MHz
   ②Maximum sensitivity: 1mV or more
10. **Spectrum Analyzer**
    ①Measuring range: DC to 1GHz or more
11. **Standard Signal Generator (SSG)**
    ①Maximum frequency: 500MHz or more
    ②Output: -133 dBm (0.05 μV) to -13 dBm (50mV)
    ③Output impedance: 50Ω
12. **Tracking Generator**
    ①Center frequency: 50 kHz to 200 MHz
    ②Frequency deviation: ±35 MHz
    ③Output voltage: 100 mV or more
13. **Dummy Load**
    ①8Ω, 3W or more

Adjustment service jig



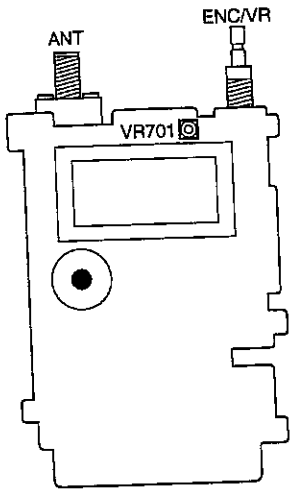
Relay cable
(X62-3480-00)

Used to connect the control unit with the RF unit.

Adjustment Points

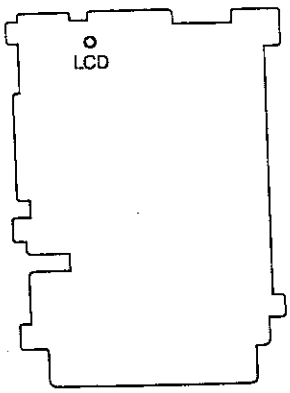
TX-RX unit

Control section
(Component Side View)



VR701: LCD contrast

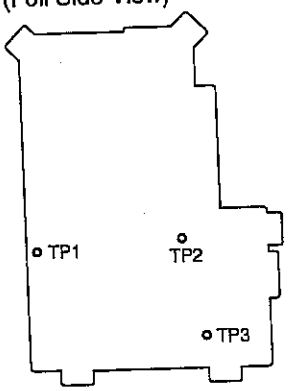
(Foil Side View)



LCD: VLCD voltage point

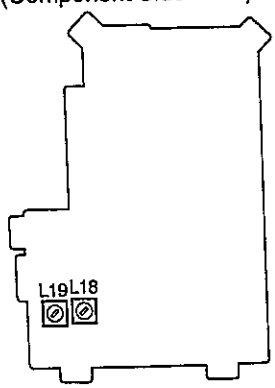
TX-RX unit

(Foil Side View)



TP1: A -Band Lock Voltage Point.
TP2: B -Band Lock Voltage Point.
TP3: 2nd Local frequency

(Component Side View)



L18: RX Demodulation (W-FM)
L19: RX Demodulation (FM)

ADJUSTMENT

Single tone transmission

Function Overview

- This function enables you to transmit a single tone.

Example

- It is used to adjust DTMF deviation during production.

Operation

① Press [PTT] and enter transmission mode.
② Press [MONI] to enter the single tone mode.
③ Press any of [1] to [8] numeric keys to transmit a single tone.

Details

- The single tone has eight frequencies.

[1]	697Hz
[2]	770Hz
[3]	852Hz
[4]	941Hz
[5]	1209Hz
[6]	1336Hz
[7]	1477Hz
[8]	1633Hz

- The single tone mode can be enabled only during transmission.
- When the unit returns from transmission mode to reception mode, the single tone mode is canceled. When transmission mode is set again and a numeric key is pressed, dual tone (DTMF) is transmitted.
- When [MONI] is pressed again in single tone mode, it returns to dual to tone mode.
- A dual tone is transmitted during DTMF memory transmission even in the single tone mode.

Service Setup Mode

Function Overview

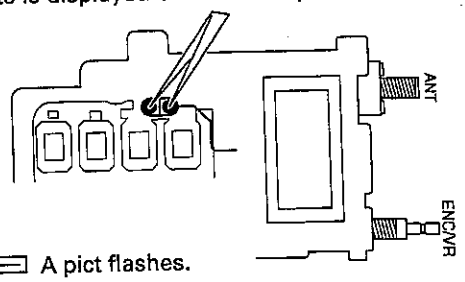
A. Power supply voltage	:Set power supply voltage to 6.5 V.
B. TCXO	:PLL reference TCXO adjustment
C. BPF	:Adjust the BPF tune level.
D. 2nd local	:Adjust the B band 2nd local oscillator.
E. SSB BFO	:Adjust the SSB offset frequency (LSB, USB) level.
F. Squelch	:Adjust the squelch threshold and level 2 (level 2) voltage.
G. S meter	:Adjust the first segment and all-segment ON level of the S meter.
H. APC	:Adjust the HI, LOW, EL transmission power.
I. DCS modulation balance	:Adjust the DCS modulation balance.
J. MAX deviation	:Adjust the max deviation.
K. Tone deviation	:Adjust the tone deviation.
L. DCS deviation	:Adjust the DCS deviation.
M. 9600 deviation	:Adjust the 9600 deviation.
N. VOX gain adjustment	:Adjust VOX gain.

Example

- It is used to replace the EEPROM, readjust it, or review the design in a service center.

Operation

1) Set the tone frequency and DCS code of each of the frequency bands (144, 200, 400, 1200) of the A band to specified values.
2) Set single band mode.
3) Service Setup Mode appears when accessing two illustrated lands on the component mounted side of the TX-RX Unit (A/3) while the trasceiver is switched ON. When the Service Setup Mode is set, the following is displayed and adjustment item setting state is displayed on the non-operation band side.



▭ A pict flashes.

```
▶144.000
VOLT : 83     : FF
```

- [◄], [►] : Changes adjustment items.
- [▲], [▼] : Increase or decrease frequency and memory channel number.
- Encoder : Increase or decrease the adjustment value (real-time value).
- [MNU] : Set the adjusted real-time value in the EEPROM.
- Press [LAMP] : Press the [LAMP] key to enter into the menu modes. To release the mode, press the key once again.
- Keys other than the above can be operated normally.

A. Power supply voltage adjustment
1) Display the "VOLT" item.
2) Set power supply voltage to 6.5 V.
3) Press [MNU] key to set the 6.5V reference voltage in the EEPROM.

Overvoltage warning, battery remaining voltage display and APC are controlled based on this value.

```
▶144.000
 VOLT :[83]     [FF]
        ↑        ↑
Real-time value  EEPROM setting
```

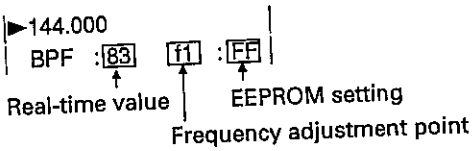
B. TCXO adjustment
1) Display the "TCXO" item.
2) The "real-time value" can be changed by turning the encoder during transmission with "L" power.
3) Press [MNU] key to set the "real-time value" in the EEPROM.

```
▶144.000
 TCXO :[83]     [FF]
        ↑        ↑
Real-time value  EEPROM setting
```

ADJUSTMENT

C. BPF adjustment

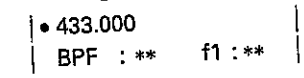
1) Display the "BPF" item.
2) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
3) Set the display frequency to the frequency appropriate to the frequency adjustment point.
4) Turn the encoder to change the "real-time value".
5) Press [MNU] key to set the "real-time value" in the EEPROM.
6) Adjust all frequency adjustment points.



- Frequency adjustment points

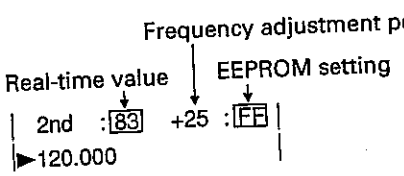
Band		Frequency adjustment point
A band	144MHz	3 points (f1, f2, f3)
	220MHz	3 points (f1, f2, f3) K destination only
	Others	No adjustment
B band	AM radio	3 points (f1, f2, f3)
	HF	3 points (f1, f2, f3)
	50,FM radio	3 points (f1, f2, f3)
	118,144	3 points (f1, f2, f3)
	TV-V,200	
	Others	No adjustment

- To adjust "AM radio" or "HF" band, the bar antenna must be activated (factory default: ON).
- If a band does not require adjustment, the following message appears. Operations 4) and 5) are invalid.



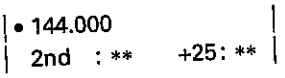
D. Second local adjustment

1) Display the [2nd: 0] item.
2) Set the operation band to B band.
3) Set display frequency to the adjustment frequency.
4) Turn the encoder, change the "real-time value", and maximize the receiver volume. (Max. sensitivity)
5) Press [MNU] key to set the "real-time value" in the EEPROM.
6) Display the [2nd: -25] item.
7) Set the measuring equipment frequency to the "display frequency -2.5kHz" and perform steps 4) and 5).
8) Display the [2nd: +25] item.
9) Set the measuring equipment frequency to the "display frequency +2.5kHz" and perform steps 4) and 5).



- Adjustment in FINE mode.
- Adjustment in B band only.
- There are only three frequency adjustment points (0, -25 and +25).

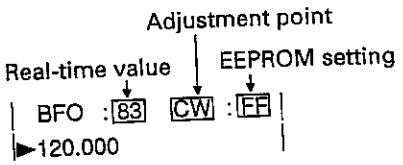
- If the operation band is A band, no adjustment is required, and the following message appears. Operations 4) and 5) are invalid.



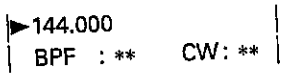
E. SSB BFO adjustment

Note: You do not need to adjust [BFO: SW].

1) Display the [BFO: LS] item.
2) Set demodulation mode to LSB.
3) Turn the encoder, change the "real-time value", and set the detection frequency to 1 kHz.
4) Press [MNU] key to set the "real-time value" in the EEPROM.
5) Display the [BFO: US] item.
6) Set demodulation mode to USB.
7) Turn the encoder, change the "real-time value", and set the detection frequency to 1 kHz.
8) Press [MNU] key to set the "real-time value" in the EEPROM.

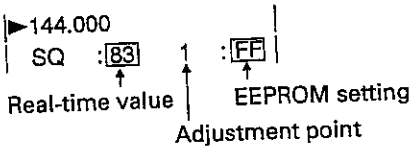


- Adjustment in B band only
- There are only two adjustment points (LS and US).
- If the operation band is A band, no adjustment is required and the following message appears. Operations 3), 4), 7) and 8) are invalid.



F. Squelch adjustment

1) Display the [SQ: 1] item.
2) Set the display frequency and demodulation mode as shown in the "Frequency/Mode Adjustment Points" table below.
3) Press [MNU] key to set the "real-time value" in the EEPROM as a threshold value.
4) Display the [SQ: 2] item.
5) Press [MNU] key to set the "real-time value" in the EEPROM as a level 2 value.
6) Adjust all frequency/mode adjustment points.



ADJUSTMENT

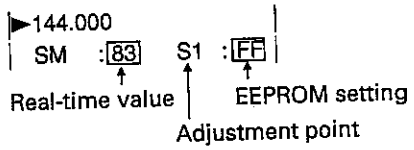
- Frequency/mode adjustment points

Band		Mode	Adjustment point
A band	144MHz	FM	2 points (Threshold, level 2)
	220MHz	FM	2 points (Threshold, level 2) K destination only
	400MHz	FM	2 points (Threshold, level 2)
B band	AM radio	FM	2 points (Threshold, level 2)
	HF	FM	2 points (Threshold, level 2)
	50MHz	FM	2 points (Threshold, level 2)
	80MHz	W-FM	2 points (Threshold, level 2)
	120MHz	FM	2 points (Threshold, level 2)
	144MHz	FM	2 points (Threshold, level 2)
	TV-V	W-FM	2 points (Threshold, level 2)
	200MHz	FM	2 points (Threshold, level 2)
	400MHz	FM	2 points (Threshold, level 2)
	TV-U	W-FM	2 points (Threshold, level 2)
	1200MHz	FM	2 points (Threshold, level 2)

- To adjust "AM radio" or "HF" band, the bar antenna must be activated (factory default: ON).

G. S meter adjustment

1) Display the [SM: S1] item.
2) Set the display frequency and demodulation mode as shown in the "Frequency/Mode Adjustment Points" table below.
3) Press [MNU] key to set the "real-time value" in the EEPROM as the first segment ON value.
4) Display the [SM: S9] item.
5) Press [MNU] key to set the "real-time value" in the EEPROM as all-segment ON value.
6) Adjust all frequency/mode adjustment points.



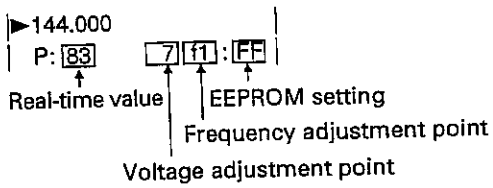
- Frequency/mode adjustment points

Band		Mode	Adjustment point
A band	144MHz	FM	2 points (First segment ON, all-segment ON)
	220MHz	FM	2 points (First segment ON, all-segment ON) K destination only
	400MHz	FM	2 points (First segment ON, all-segment ON)
B band	AM radio	FM	2 points (First segment ON, all-segment ON)
	HF	FM	2 points (First segment ON, all-segment ON)
	50MHz	FM	2 points (First segment ON, all-segment ON)
	80MHz	W-FM	2 points (First segment ON, all-segment ON)
	120MHz	FM	2 points (First segment ON, all-segment ON)
	144MHz	FM	2 points (First segment ON, all-segment ON)
	TV-V	W-FM	2 points (First segment ON, all-segment ON)
	200MHz	FM	2 points (First segment ON, all-segment ON)
	400MHz	FM	2 points (First segment ON, all-segment ON)
	TV-U	W-FM	2 points (First segment ON, all-segment ON)
	1200MHz	FM	2 points (First segment ON, all-segment ON)

- To adjust "AM radio" or "HF" band, the bar antenna must be activated (factory default: ON).

H. APC adjustment

1) Display the [P: BAf1] item.
2) Set the A band to the operation band.
3) Set power supply voltage to 6 V.
4) Set display frequency and transmission power as shown in the "Frequency/Power Adjustment Points" table below.
5) Press [PTT] and turn the encoder during transmission to increase or decrease transmission power and change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Set the item display to "f2" and "f3" and adjust all frequency/power adjustment points.
8) Display the [P: 7f1] item.
9) Set the power supply voltage to 7.4 V and perform steps 4 to 7 above.
10) Display the [P: 13f1] item.
11) Set the power supply voltage to 13.8 V.
12) Set transmission power to H and perform steps 4) to 7). For any band that does not requires three-point adjustment, enter the same data at all three points.



- Frequency/power/power supply voltage adjustment points

Power supply voltage	Band	Power	Frequency adjustment point
Dry cell 6[v]	144MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)
	220MHz	H	3 points (f1, f2, f3) K destination only
		L	3 points (f1, f2, f3) K destination only
		EL	3 points (f1, f2, f3) K destination only
	400MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)
Lithium ion 7.4[v]	144MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)
	220MHz	H	3 points (f1, f2, f3) K destination only
		L	3 points (f1, f2, f3) K destination only
		EL	3 points (f1, f2, f3) K destination only
	400MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)
13.8[v]	144MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)

ADJUSTMENT

Power supply voltage	Band	Power	Frequency adjustment point
13.8[v]	220MHz	H	3 points (f1, f2, f3) K destination only
		L	3 points (f1, f2, f3) K destination only
		EL	3 points (f1, f2, f3) K destination only
	400MHz	H	3 points (f1, f2, f3)
		L	3 points (f1, f2, f3)
		EL	3 points (f1, f2, f3)

- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.

```
| P :  **      f2 :**  |
|▶50.000               |
```

I. DCS balance adjustment

1) Display the "BAL" item.
2) Set the A band to the operation band.
3) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
4) Set the display frequency to the frequency appropriate to the frequency adjustment point.
5) Press [PTT] and turn the encoder during transmission to change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Adjust all frequency adjustment points.

```
|▶144.000                  |
| BAL  :83   f1  :FF       |
```

Real-time value | EEPROM setting

Frequency adjustment point

- Frequency adjustment points

Band	Frequency adjustment point
144MHz	3 points (f1, f2, f3)
220MHz	3 points (f1, f2, f3) K destination only
400MHz	3 points (f1, f2, f3)

- When transmission is performed in DCS balance adjustment mode, a 100Hz square waveform is modulated.
- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.

```
| BAL  :**    f2 :**  |
|▶50.000              |
```

J. Max deviation adjustment

1) Display the "MAX" item.
2) Set the A band to the operation band.
3) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
4) Set the display frequency to the frequency appropriate to the frequency adjustment point.
5) Press [PTT] and turn the encoder during transmission to change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Adjust all frequency adjustment points.

```
|▶144.000                  |
| MAX  :83   f1  :FF       |
```

Real-time value | EEPROM setting

Frequency adjustment point

- Frequency adjustment points

Band	Frequency adjustment point
144MHz	3 points (f1, f2, f3)
220MHz	3 points (f1, f2, f3) K destination only
400MHz	3 points (f1, f2, f3)

- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.

```
| MAX  :**    f2 :**  |
|▶50.000              |
```

K. Tone deviation adjustment

1) Display the "TON" item.
2) Set the A band as the operation band.
3) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
4) Set the display frequency to the frequency appropriate to the frequency adjustment point.
5) Press [PTT] and turn the encoder during transmission to change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Adjust all frequency adjustment points.

```
|• 144.000                 |
| TON  :83   f1  :FF       |
```

Real-time value | EEPROM setting

Frequency adjustment point

- Frequency adjustment points

Band	Frequency adjustment point
144MHz	3 points (f1, f2, f3)
220MHz	3 points (f1, f2, f3) K destination only
400MHz	3 points (f1, f2, f3)

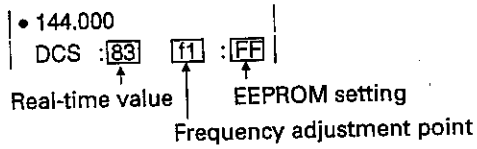
- The tone frequency of each band must be set to a specified value before entering the service adjustment mode.
- To adjust, switch the tone ON (ensure to switch it OFF after adjustment).
- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.

```
| TON  :**    f2 :**  |
|▶50.000              |
```

ADJUSTMENT

L. DCS deviation adjustment

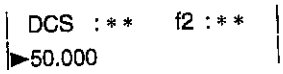
1) Display the "DCS" item.
2) Set the A band as the operation band.
3) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
4) Set the display frequency to the frequency appropriate to the frequency adjustment point.
5) Press [PTT] and turn the encoder during transmission to change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Adjust all frequency adjustment points.



- Frequency adjustment points

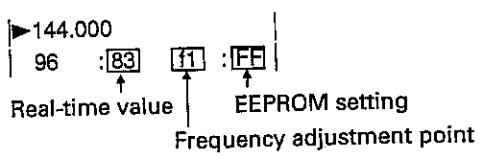
Band	Frequency adjustment point
144MHz	3 points (f1, f2, f3)
220MHz	3 points (f1, f2, f3) K destination only
400MHz	3 points (f1, f2, f3)

- The DCS code of each band must be set to a specified value before entering the service adjustment mode.
- To adjust, switch the DCS ON (ensure to switch it OFF after adjustment).
- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.



M. 9600 deviation adjustment

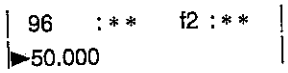
1) Display the "96" item.
2) Set the A band as the operation band.
3) Select points f1 to f3 as shown in the "Frequency Adjustment Points" table below.
4) Set the display frequency to the frequency appropriate to the frequency adjustment point.
5) Press [PTT] and turn the encoder during transmission to change the "real-time value".
6) Press [MNU] key to set the "real-time value" in the EEPROM.
7) Adjust all frequency adjustment points.



- Frequency adjustment points

Band	Frequency adjustment point
144MHz	3 points (f1, f2, f3)
220MHz	3 points (f1, f2, f3) K destination only
400MHz	3 points (f1, f2, f3)

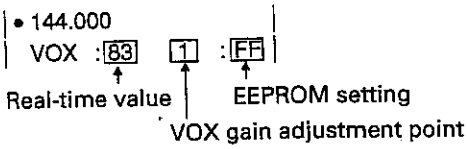
- If no adjustment is necessary for an item (for example, 50 MHz f2), the following message appears. Operations 5) and 6) are invalid.



When this item is selected, set 9600 (menu) to ON. When this item is deselected, set it to OFF.
Press [LAMP] key in the Service Setup mode to enter a menu mode.

N. VOX gain adjustment

1) Display the "VOX" item [1].
2) Enter the voltage of level 1 of the VOX gain.
3) Press [MNU] key to set the "real-time value" in the EEPROM.
4) Display the "VOX" item [9].
5) Enter the voltage of level 9 of the VOX gain.
6) Press [MNU] key to set the "real-time value" in the EEPROM.



To adjust, switch VOX ON (ensure to switch it OFF after adjustment).

To terminate the Service Setup mode, turn the power supply OFF.

ADJUSTMENT

Item	Conditions	Measurement			Adjustment			Specifications/Remarks
		Test equipment	Unit	Terminal	Unit	Parts	Method	
Power check [138V] DC-IN	Power:Hi 19)Frequency:224.000MHz (K) Transmission 20)Frequency:222.050MHz (K) Transmission 21)Frequency:224.995MHz (K) Transmission	DC.A Power meter	TX-RX (B/3)	ANT			Check	4.5W~5.4W 2.1A or less
	Power:Low 22)Frequency:224.000MHz (K) Transmission 23)Frequency:222.050MHz (K) Transmission 24)Frequency:224.995MHz (K) Transmission							1.6W~2.4W 1.8A or less
	Power:EL 25)Frequency:224.000MHz (K) Transmission 26)Frequency:222.050MHz (K) Transmission 27)Frequency:224.995MHz (K) Transmission							0.3W~0.7W 0.9A or less

Item	Conditions	Measurement			Adjustment			Specifications/Remarks
		Test equipment	Unit	Terminal	Unit	Parts	Method	
MAX DEV	Switch to Service Setup mode and carry out the operations for item J. 1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) AG:1KHz/80mV Mod.Analyzer 15KHz, LPF,FM+/-Peak Transmission	Oscilloscope Linear detector Power meter		ANT		Tuning control MNU key	Write	4KHz ± 200Hz
	2) Frequency:144.050MHz					MNU key	Write	
	3) Frequency:147.995MHz (K) Frequency:145.995MHz (E,T)					MNU key	Write	
	4) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) Transmission					Tuning control MNU key	Write	4KHz ± 200Hz
	5) Frequency:438.050MHz (K) Frequency:430.050MHz (E,T) Transmission							4KHz ± 200Hz
	6) Frequency:449.995MHz (K) Frequency:439.995MHz (E,T) Transmission							4KHz ± 200Hz
	7) Frequency:224.000MHz (K) Transmission	-						4KHz ± 200Hz
	8) Frequency:222.050MHz (K)					MNU key	Write	
	9) Frequency:224.995MHz (K)					MNU key	Write	
MIC Sencitivity	1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) AG:1KHz/7mV Transmission	Linear detector Power meter Oscilloscope AG		ANT			Check	2.2KHz~3.6KHz
	2) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T)							2.2KHz~3.6KHz
	3) Frequency:224.000MHz (K)							2.2KHz~3.6KHz

ADJUSTMENT

Item	Conditions	Measurement			Adjustment			Specifications/Remarks
		Test equipment	Unit	Terminal	Unit	Parts	Method	
VOX Sencitivity write	Switch to Service Setup mode and carry out the operations for item N. 1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) VOX1 AG:1KHz/50mV Transmission 2) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) VOX9 AG:1KHz/3mV Transmission	AG		MIC		MNU key	Write	
DCS balanc	Switch to Service Setup mode and carry out the operations for item I. 1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) Transmission 2) Frequency:144.050MHz Transmission 3) Frequency:147.995MHz (K) Frequency:145.995MHz (E,T) Transmission 4) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) Transmission 5) Frequency:438,050MHz (K) Frequency:430,050MHz (E,T) Transmission 6) Frequency:449.995MHz (K) Frequency:439.995MHz (E,T) Transmission 7) Frequency:224.000MHz (K) Transmission 8) Frequency:222.050MHz (K) 9) Frequency:224.995MHz (K)	Power meter Linear detector Oscilloscope		ANT		Tuning control MNU key	By turning the tuning control, adjust the modulation wave until if becomes the square wave.	
DCS Dev. write	Switch to Service Setup mode and carry out the operations for item L. 1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) cade:D023 Transmission 2) Frequency:144.050MHz 3) Frequency:147.995MHz (K) Frequency:145.995MHz (E,T) 4) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) Transmission 5) Frequency:438.050MHz (K) Frequency:430.050MHz (E,T) Transmission 6) Frequency:449.995MHz (K) Frequency:439.995MHz (K) Transmission 7) Frequency:224.000MHz (K) Transmission 8) Frequency:222.050MHz (K) 9) Frequency:224.995MHz (K)	Power meter Linear detector Oscilloscope		ANT		Tuning control MNU key MNU key MNU key Tuning control MNU key MNU key MNU key	Write Write Write Write Write Write	0.9KHz ± 50Hz 0.9KHz ± 50Hz 0.9KHz ± 50Hz 0.9KHz ± 50Hz 0.9KHz ± 50Hz

ADJUSTMENT

Item	Conditions	Measurement			Adjustment			Specifications/Remarks
		Test equipment	Unit	Terminal	Unit	Parts	Method	
CTCSS Dev.	Switch to Service Setup mode and carry out the operations for item K.							
	1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) TONE:151.4HZ Transmission	Power meter Linear detector Oscilloscope		ANT		Tuning control MNU key	Write	0.8KHz ± 50Hz
	2) Frequency:144.050MHz					MNU key	Write	
	3) Frequency:147.995MHz (K) Frequency:145.995MHz (E,T)					MNU key	Write	
	4) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) Transmission					Tuning control MNU key	Write	0.8KHz ± 50Hz
	5) Frequency:438.050MHz (K) Frequency:430.050MHz (E,T) Transmission							0.8KHz ± 50Hz
	6) Frequency:449.995MHz (K) Frequency:439.995MHz (E,T) Transmission							0.8KHz ± 50Hz
	7) Frequency:224.000MHz (K)	Power meter Linear detector Oscilloscope		ANT				0.8KHz ± 50Hz
	8) Frequency:222.050MHz (K)					MNU key	Write	
	9) Frequency:224.995MHz (K)					MNU key	Write	
9600bps Dev.	Switch to Service Setup mode and carry out the operations for item M.							
	1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) AG:1KHz/0.566V Transmission	Power meter Linear detector Oscilloscope		ANT		Tuning control	Write	2.2KHz ± 500Hz
	2) Frequency:144.050MHz					MNU key		
	3) Frequency:147.995MHz (K) Frequency:145.995MHz (E,T)					MNU key	Write	
	4) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) Transmission					MNU key	Write	2.2KHz ± 500Hz
	5) Frequency:438.050MHz (K) Frequency:430.050MHz (E,T) Transmission							2.2KHz ± 500Hz
	6) Frequency:449.995MHz (K) Frequency:439.995MHz (E,T) Transmission							2.2KHZ ± 500Hz
	7) Frequency:224.000MHz (K)					Tuning control MNU key	Write	2.2KHZ ± 500Hz
	8) Frequency:222.050MHz (K)					MNU key	Write	
	9) Frequency:224.995MHz (K)					MNU key	Write	

Item	Conditions	Measurement			Adjustment			Specifications/Remarks
		Test equipment	Unit	Terminal	Unit	Parts	Method	
DTMF Dev. check [7.4V]	1) Frequency:146.000MHz (K) 2) Frequency:145.000MHz (E,T)	AG AF.V.M Power meter DC.A Linear detector osilloscope	TX-RX (B/3)	ANT MIC			Check	2.0KHz~4.2KHz
Protection check [7.4V]	1) Frequency:146.000MHz (K) Frequency:145.000MHz (E,T) 2) Frequency:444.000MHz (K) Frequency:435.000MHz (E,T) ANT:Open Transmission							2.4A or less