

## 2. TUNE UP PROCEDURE

### 2.1 JSB-196GM RADIOTELEPHONE

#### Periodic Maintenance

The following procedures are recommended for performance at monthly intervals to minimize the possibility of equipment failure and to assure optimum performance.

1. Inspect the antenna system. Pay particular attention to the cleanliness of the antenna insulator(s), condition of electrical connections, coax transmission line and connections, antenna and lead-in, and ground strap and connections.
2. Check the condition of the DC13.6V power source. Make sure that all connections are clean, that the conductors have sufficient current capacity, and that the battery has sufficient capacity and high specific gravity.
3. Fuse ferrules are subject to corrosion which increases circuit resistance. Fuse should be removed from their holders, inspected, and cleaned of any free of corrosion, batteries should be in proper condition and clean, power cabling insulation should be in proper condition to prevent short circuits or corrosion of the conductors.
4. Plastic surfaces should be cleaned with lens tissue or soft nonabrasive cloth. Care should be exercised with any plastic surface to prevent scratching. Mild soap and water may be used in stubborn cases. DO NOT USE SOLVENTS.

#### Test Equipment Interconnection

The following block diagram shows hookup of test equipment for tune-up and troubleshooting procedures as outlined in the following pages.

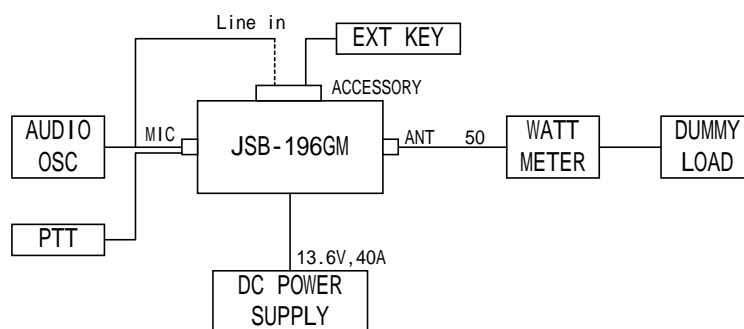


Figure 2-1 Test Equipment Interconnection

The test equipments mentioned above are , for example, as follows.

1. DC Power Supply :DC13.6V, 40A Continuous Duty, Minimum.
2. RF Power Meter :Bird Model 43, 50 ohms, 250W, 2-30MHz, or equivalent.
3. Audio Oscillator :HP 4204A or equivalent.
4. Coaxial Dummy Load :50 ohms, 150W minimum.

The JSB-196GM Radiotelephone is designed as a maintenance-free equipment after the initial installation, unless major repairs, requiring major component changes, have been performed. Upon initial installation or in the event of such changes, perform the following procedures:

### Transmitter Adjustment

Table 2-1 Transmitter Adjustment

No.	Item	Unit name	Test circuit	Adjusting procedures	Ratings
1.	POWER MENU operation	_____	Fig. 2-1	1. Initial settings: Audio oscillator: off 2. Adjustment: <u>Automatic power adjustment</u> 1) Clear the TX power data by MENU 17,PWR 2) Once turn off power, press both [POWER] and [MENU]. 3) Select "ADJ" by JOG dial. 4) Select "150" by JOG dial and then start Automatic power adjustment sequence.	
2.	MIC LEVEL MENU operation	_____	Fig. 2-1	1. Initial settings: TX frequency: 8294.0kHz Mode: USB Power: High Audio frequency: 1500 Hz Audio level : -55dBm 2. Adjustment: Adjust the transmit output by MENU 32.	30-70W
3.	LINE IN LEVEL RV430	TRX UNIT CMN-1960	Fig. 2-1	1. Initial settings: TX frequency: 8294.0kHz Mode: F1B Power: High Audio frequency: 1700 Hz Audio level : -15dBm 2. Adjustment: Adjust the transmit output by RV430.	30-70W
4.	PA BIAS RV1 and RV2	PA UNIT CAH-1960	Fig. 2-1	1. Initial settings: TX frequency: 8294.0kHz Mode: USB Power: Low Audio oscillator: off 2. Adjustment: 1) Rotate RV1 and RV2.	

				2) Turn on EXT KEY to transmit. 3) Measure the source current I <sub>x</sub> . 4) Adjust the source current by RV1. 5) Adjust the source current by RV2.	$I = I_x + 300\text{mA}$ $I = I_x + (700-730\text{mA})$
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Note: MENU 16-32 is User Definitions(Level 2 MENU).

Once turn off the power, both press [POWER] and [MENU].

## Receiver Adjustment

The following block diagram shows hookup of test equipment for receiver test and adjustment.

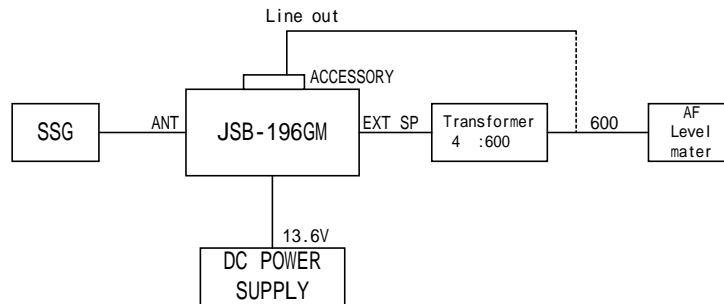


Figure 2-2 Receiver Test Circuit

Table 2-2 Receiver Adjustment

No.	Item	Unit name	Test circuit	Adjusting procedures	Ratings
1.	LINE OUT RV400	TRX UNIT CMN-1960	Fig. 2-2	1. Initial settings: RX frequency: 2400.0kHz Mode: USB SSG frequency: 2401.5kHz SSG level: 30dBu e.m.f.  2. Adjustment: Adjust the line output level by RV400.	0dBm

## 2.2 NCT-196N DSC/NBDP MODEM

The NCT-196N DSC/NBDP MODEM is designed as a maintenance-free equipment after the initial installation, unless major repairs, requiring major component changes, have been performed. Upon initial installation or in the event of such changes, perform the following settings on the CDJ-1999N CONTROL BOARD.

### Short plug setting

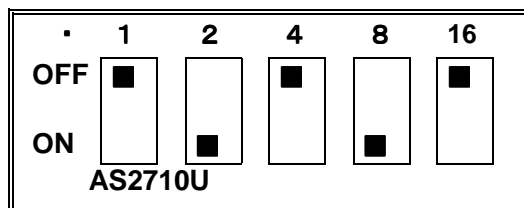
Plug	Function	Default	After installation
ST1	Line input level      A: 0dBm      B: -10dBm	A	A

### DIP switch settings

Switch No.	Function	Default	After installation
S1-1	Controlled by      OFF: DSC/NBDP      ON: DSC	OFF	OFF
S1-2	EEPROM initialization      OFF: Initialize      ON: Not initialize	ON	ON
S1-3	EEPROM writing      OFF: Enable      ON: Disable	OFF	ON
S1-4	Transmission of factory test signal OFF: Possible      ON: Not possible	OFF	OFF
S1-5	Signal transmit timing      OFF: Factory      ON: Normal	ON	ON
S1-6	High voltage control      Normally ON	ON	ON
S1-7	Reservation      Normally ON	ON	ON
S1-8	Reservation      Normally ON	ON	ON

### Attenuator setting

Adjust the attenuator setting to "10" so that the NCT-196N DSC/NBDP MODEM outputs 0dBm at transmitting.



## 2.3 NAH-692 POWER AMPLIFIER

The NAH-692 POWER AMPLIFIER is designed as a maintenance-free equipment after the initial installation, unless major repairs, requiring major component changes, have been performed. Upon initial installation or in the event of such changes, perform the following procedures.

### Charge Function setting

If the battery charge function is not required, set "CHARGE FUNCTION" menu to OFF as follows;

- Turn on the "AC" and "DC" switch, pressing **MENU** ,
- Press **MENU** and turn the dial to "CHARGE FUNCTION" menu on the LCD,
- Press **ENT** and set with the dial "ON" or "OFF" on the LCD, and

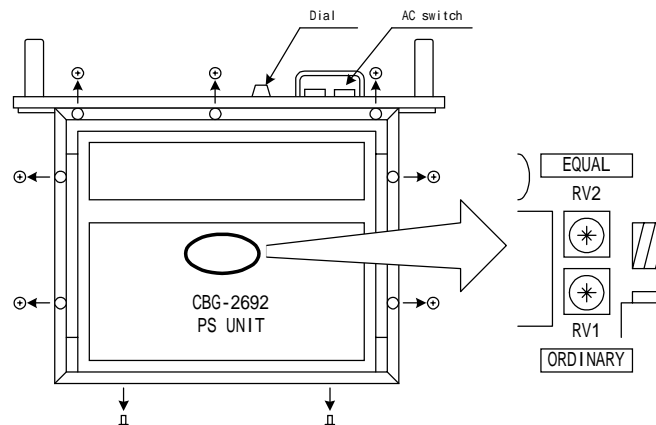


- Press **ENT** and turn off the both AC and DC switches.

### Battery and Charge Voltage setting

The battery charge voltage has been preset to level of the lead battery as default. When the other type of battery is to be installed, set the specific level as below in conformity with the following procedure;

Type	Model	Floating Charge Voltage	Equal charge Voltage
Lead	SS-200	26.2V	29.4V
Lead(Cell type)	HSE	26.8V	26.8V
Alkaline	AM-P	28.4V	30.4V



- Turn off the “AC” and “DC” switch on the front panel,
- Pull the Power Amplifier unit from console,
- Remove the upper panel of Power Amplifier unit,
- Turn on the “AC” switch, pressing **MENU** ,
- Press **MENU** and turn the dial to “CHG VOLT ADJUST” menu on the LCD,
- Press **ENT** and turn the dial to “ORDINARY” voltage on the LCD,

CHG VOLT ADJUST	
ORDINARY	26.2V

- Adjust the Floating Charge Voltage by RV1,
- Turn the dial to “EQUAL” and adjust the Equal Charge Voltage by RV2, and

CHG VOLT ADJUST	
EQUAL	29.4V

- Press **ENT** and turn off the “AC” switch.

### Battery operation setting

If the Emergency Power Generator is not equipped, set the battery using setting to SINGLE(SES/HF) by the “BATT USE SET” menu.

- Turn on the “AC” switch pressing **MENU** ,
- Press **MENU** and turn the dial to “BATT USE SET” menu on the LCD,
- Press **ENT** and turn the dial to “SINGLE(SES/HF)” on the LCD.

BATT USE SET	
DUAL(SES,HF)	

Note:

DUAL (SES, HF): Set this mode when the Emergency Power Generator is equipped on the vessel, then both SES and HF can be use simultaneously. However note that if the Battery is used for both of equipments in this mode without charging, the continuous operation time would be reduced to approx. 1hour.

SINGLE (SES/HF): Set this mode when the Emergency Power Generator is not equipped on the vessel, then SES and HF can not be use simultaneously. However note that if the Battery is used for either of equipments in this mode without charging, the operation could be continued for 6hour or more.

- Press **ENT** and turn off the “AC” switch.

## User Definitions

Turn on the AC and DC switch pressing **MENU** to access the following the level 2 menu.

Item	Function	Parameter	Default Setting
PA IN, PA OUT	RF input/output power indication	----	----
ARRESTOR VOLT	PA arrestor voltage indication	----	----
BATT USE SET	Set the battery operation equipment.	DUAL/SINGLE	DUAL(SES,HF)
USR SETTING CLR	Initialize the user setting parameter.	----	----
POWER DATA CLR	Initialize the TX power setting data.	----	----
80V ADJUST	Check and adjust PA 80V.	----	----
PA BIAS ADJUST	Check and adjust PA BIAS current.	----	----
CHG VOLT ADJUST	Check and adjust battery charger output voltage.	ORDINARY EQUAL	ORDINARY:26.2V EQUAL: 29.4V
PA POWER SET	Initialize the TX power setting data and start TX power setting.	----	----