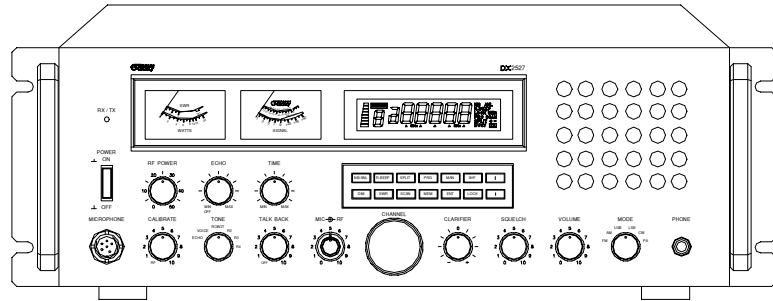


Galaxy

DX 2527



AM•FM•SSB•CW•PA

Amateur Base Station Transceiver

OWNER'S MANUAL

TABLE OF CONTENTS

| | |
|-----------------------------|----|
| SPECIFICATIONS | 2 |
| INSTALLATION | 3 |
| OPERATION | |
| Introduction | 6 |
| Control & Connections | 6 |
| Rear Panel Connectors | 10 |
| Microphone | 11 |
| Operation | 11 |
| Programming. | 12 |

SPECIFICATION:

GENERAL

| | |
|---------------------|---|
| Frequency Range | 28.0000 – 29.6999 MHz |
| Emission Types | CW, FM, AM, USB, LSB |
| Frequency Control | Phase-Lock-Loop Synthesizer |
| Frequency Tolerance | 0.005% |
| Frequency Stability | 0.003% |
| Temperature Range | -30°C to +55°C |
| Antenna Impedance | 50 Ohms |
| Antenna Connectors | Standard SO-239 Type |
| Meter Function | Meter #1: RF Output Power / Antenna SWR. Meter #2: Received Signal Strength / MOD% |
| AC Input Voltage | AC 120V , 60 Hz |

TRANSMITTER

| | |
|---------------------|--------------------------------|
| RF Power Output | 25W: USB, LSB. 10W: AM, FM, CW |
| Antenna Connectors | UHF Type, 50 Ohms |
| AM Modulation | Up to 100% |
| Clarifier Range | ±1 KHz |
| Spurious Emissions | -60dB |
| Carrier Suppression | -60dB |

RECEIVER

| | |
|------------------------------|---|
| Sensitivity for 10dB S/N | AM: 0.5uV |
| Sensitivity for 20dB S/N | FM : 0.25uV |
| Sensitivity for 10dB S/N | USB/LSB: 0.3uV |
| Adjacent Channel Rejection | -60dB |
| Image Rejection Ratio | -50dB |
| AGC Figure of Merit | SSB//AM: 80 dB for 50mV for 10 dB Change in Audio Output |
| Audio Output Power @ 10% THD | 2.5W |

(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.)

INSTALLATION:

Location/Connection

The transceiver should be placed in a convenient operating location close to an AC power outlet and the antenna lead in cable(s).

The transceiver is powered with the AC power cord set. Proceed as follows to complete all necessary connections to the transceiver.

1. Your transceiver has standard antenna connectors of type SO-239 both located on rear panel; for easy connection to standard PL-259 coax plugs. If the coax antenna cable must be made longer, use coax cable with impedance of 50 ohms and use only enough cable to suit your needs. This will insure a proper impedance match and maximum power transfer from the transmitter to the antenna.
2. AC Power Operation: Use 120 volts AC.

Noise Interference

There are several kinds of noise interference you may encounter in fixed operation. Some of these noise sources are; fluorescent buzz, nearby commercial broadcast, electrical appliance, lawnmower, and electrical storms, etc. Commercial products are available to reduce interference from these sources. Consult your dealer or professional amateur radio supply shops.

Antennas

Antennas are purchased separately and include installation instructions. Numerous type of antennas are available that range from emphasis on easy of installation to emphasis on performance. Often the difference in performance between many of the antenna is modest.

1. Vertical Ground Plane Antennas:

These are omni-directional antennas that provide optimum performance for contacting other fixed stations using vertical type antenna in addition to all mobile stations. For medium to long range communications work.

2. Directional Beam Antennas:

Highly efficient and directional antennas generally intended for fixed-to-fixed very long-range communications.

Remote Speaker

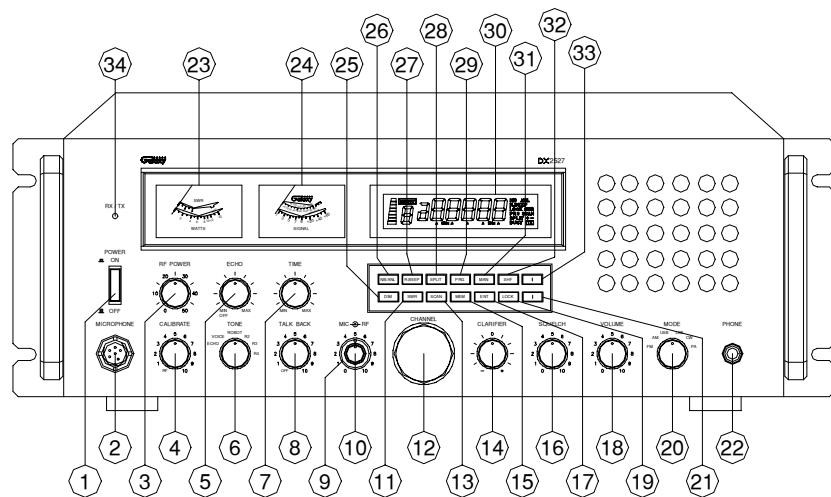
The external speaker jack (EXT. SP.) on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohms impedance and be able to handle at least 3 watts. When the external speaker is plugged in, the internal speaker is disconnected.

Note: The PHONE jack on the front panel overrides both external and internal speakers. When the plug from a headphone is plugged to the PHONE jack, both internal and external speakers are silenced simultaneously.

Public address

An external 8 ohms, 3-Watt speaker must be connected to the PA jack located on the rear panel when the transceiver is used as a public address system. The speaker should be directed away from the microphone to prevent acoustic feedback. Physical separation or isolation of the microphone and speaker is important when operating the PA at high output levels.

OPERATION:



INTRODUCTION

This section explains the basic operating procedures for the DX 2527 amateur band base station transceiver.

CONTROL & CONNECTIONS:

1. **POWER ON/OFF CONTROL:** Push ON to apply power to the unit.
2. **MICROPHONE JACK:** Used to connect microphone for voice source.
3. **RF POWER CONTROL:** This control adjusts the RF power output level.
4. **CALIBRATE CONTROL:** To check your SWR, simply rotate this control while transmitting until the needle on the left meter goes to the small red “notch” on the SWR scale. (You may need to be at maximum power in AM, FM or CW to reach the “SET”

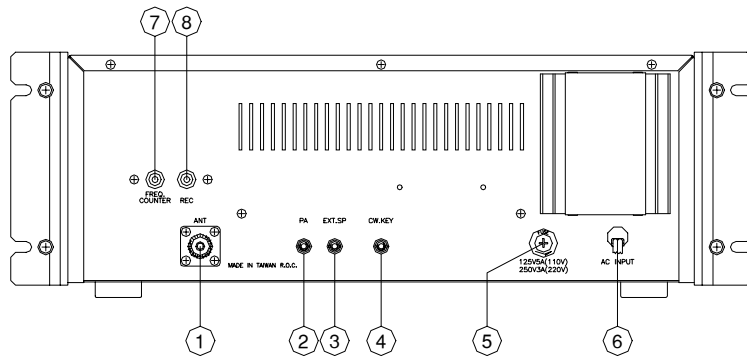
mark.) Then, while still transmitting, push the small white SWR switch (number 11). This will give you an SWR reading. When you are finished, be sure to turn the calibrate control. Fully CCW to the “RF” position so you are able to read your RF output power. You will hear the “RF” switch click on.

5. **ECHO:** This control is used to the amount of echo. This is a switched pot that must be on along with switch number 6 for the ECHO to operate.
6. **ECHO/VOICE/ROBOT SWITCH:** This switch selects between the ECHO, VOICE CHANGER and ROBOT sound effects. In the ECHO position, the ECHO control pot must also be on. The ECHO sound is controlled by the ECHO pot and the TIME pot. In the VOICE position, the TIME pot controls the pitch of the voice. In ROBOT 1, 2, 3 or 4 none of the sound are adjustable. They are fixed. In order to have all sound effects off, turn this switch to ECHO and turn the ECHO pot off.
7. **TIME:** This control sets the time delay of the ECHO repetitions in the ECHO modes. In the VOICE CHANGER mode, this pot controls the pitch of your voice. Fully left (CCW) raises the pitch of your voice. Fully right (clockwise) lowers the pitch of your voice.
8. **TALK BACK:** This is a switched pot that controls the volume of the talkback sound. It does not affect the sound your transmitting. You can turn the talkback off (Fully CCW) or adjust the volume as you desire. This talkback circuit can be used anytime – even without any sound effects. Please note that this particular main PC board does not allow much of a talkback signal. Therefore, even if you have this control up to maximum, the talkback will not be very loud.
9. **RF GAIN CONTROL:** This control is used to reduce the gain of the RF amplifier under strong signal conditions.

10. **MIC GAIN CONTROL:** This control adjusts the microphone gain in the transmit mode. This feature is designed for use in a high-ambient noise environment or to maximize talk power.
11. **SWR SWITCH:** This switch is used to check SWR.
12. **CHANNEL SELECTOR:** This control is used to select a desired frequency.
13. **SCAN SWITCH:** This switch is used to scan frequencies in each band segment. The operation section of this manual provides detailed information on using the scan control.
14. **CLARIFIER CONTROL:** Allows variation of the receiver operating frequency above and below the selected frequency. Although this control is intended primarily to tune in SSB signal, it may be used to optimize AM/FM signals as described in the operating procedure paragraph.
15. **MEMORY SWITCH:** This is used to program memory channels.
16. **SQUELCH CONTROL:** This control is used to control or eliminate receiver background noise in the absence of incoming signal. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background noise is eliminated. Turn fully counterclockwise, then slowly clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level that a signal must overcome in order to be heard. Only strong signal will be heard at a maximum clockwise setting.
17. **ENTER SWITCH:** This is used to program frequencies into memory.
18. **VOLUME:** Permits you to adjust the listening level when receiving.
19. **LOCK SWITCH:** This switch is used to lock a selected frequency.
20. **MODE CONTROL:** This control allows you to select one of six following operating modes FM/AM/LSB/USB/CW/PA.
21. **DOWN SWITCH:** This switch is used to move frequency downward to select a desired frequency.
22. **PHONE JACK:** Used to connect earphone to listening.
23. **RF/SWR METER:** This meter operates during transmit only. It reads power output or SWR.
24. **SIGNAL/MODULATION METER:** This meter indicates signal strength of incoming signals during receive and your percentage of modulation when transmitting in the AM. Modulation readings are most accurate when using maximum output power. The modulation meter does not work at all in FM or SSB.
25. **DIM SWITCH:** This switch adjusts the display backlighting in four different steps to best match environment.
26. **NB/ANL SWITCH:** The noise Blanker is very effective in eliminating repetitive impulse noise such as ignition interference. In the ANL position, the automatic noise limiter is active.
27. **ROGER BEEP SWITCH:** When this switch is placed in the ROGER BEEP position, the radio automatically transmits an audio tone at the end of your transmission so that people who are having trouble hearing you will know that you are done speaking. As a courtesy to others, use the Roger Beep only when necessary.
28. **SPLIT SWITCH:** This switch enables you to split operating frequency for FM repeater operation.

29. **PROGRAM SWITCH:** This switch is used to program operating or scanning frequency into memory.
30. **FREQUENCY COUNTER:** The frequency counter indicates the frequency of operation.
31. **MANUAL SWITCH:** This is used to return to the manual mode.
32. **SHIFT SWITCH:** This is used to select 100Hz, 1KHz, 10KHz, 100KHz or 1MHz frequency steps.
22. **•UP SWITCH:** This switch is used to move frequency upward to select a desired frequency.
23. **RX/TX LED:** This LED is green during receive and changes to red while transmitting.

REAR PANEL CONNECTOR:



1. **ANTENNA:** This jack accepts 50 Ohm coaxial cable with a PL-259 type plug.
2. **PA SP:** Used to connect a PA speaker (8 Ohm 4w) for PA operation. Before operating PA you must first connect a PA speaker to this jack.

3. **EXTERNAL SPEAKER:** This jack accepts 4 to 8 ohms, 5-watt external speaker. When the external speaker is connected to this jack, the built-in speaker will be disabled.
4. **CW KEY:** This is used for Morse Code operation. To operate this mode, connect a CW key to this jack and place the mode switch in the CW position.
5. **FUSE:** Accommodates a fuse for AC input circuit protection. Use 125V/7A fuse for replacement.
6. **AC POWER CORD:** Connects to AC power outlet for AC mains supply.
7. **FREQUENCY COUNTER JACK:** The RCA-type jack provides a signal used by some frequency counters so you can read the frequency digitally. This readout signal operates on transmit only.
8. **RECORDING OUTPUT JACK:** The RCA-type jack provides output for connection to a tape recorder to permit recording of receiver signals or you modulating voice.

MICROPHONE:

1. **PTT SWITCH:** Use the Push-To-Talk (PTT) switch to control the transmit and receive of the radio. Push to transmit and release to receive.
2. **REMOTE UP/DOWN SWITCH:** An operating frequency can be stepped up or down simply by pushing either of these buttons.

OPERATION PROCEDURE

Frequency Selection

Frequency selection for the **DX 2527** is simple. Select the desired operating frequency by rotating the Frequency selector or using the **UP/DOWN** buttons on the top of the microphone. Press the **LOCK** button to lock the selected frequency. This will disable the frequency selector and the **UP/DOWN** buttons on the top of the microphone. Repressing the **LOCK** button unlocks the frequency. Use the **SHF** button to set the step frequency in 100Hz, 1KHz, 10KHz, 100KHz or 1MHz increments. The frequency step is indicated by a small triangle directly under the corresponding digit on the frequency display.

Mode Selection

To select an operating mode on your **DX 2527**, simply rotate the **MODE** selector, and place it in the desired operating mode position. The **PTT** switch on the microphone controls the transmit and receive of your radio.

RF Power Control

This control adjusts the power output continuously from 1 to 25 watts, on SSB and from 0.25 to 10 watts on AM.

PROGRAMMING

Frequency Selection

Frequency selection in the radio can be accomplished using any three of the following methods:

1. The first method of frequency selection is through the use of the **SHF** key and the **UP** and **DOWN** arrows. To accomplish this, press the **SHF** button until the cursor arrow is positioned under the digit of the frequency that is to be changed. Then use the **UP** arrow to increase the number. If a decrease in frequency is desired, press the **DOWN** arrow. Perform the steps described above for each digit of the frequency until the desired frequency is displayed in the **LCD** display windows.

2. The second method of frequency selection is accomplished using the **SHF** button and the channel select knob located on the front panel. Use the **SHF** button in the manner described above to select the digit to be changed. Then proceed to rotate the channel selector knob clockwise to increase the frequency. Rotate the channel select knob counterclockwise to decrease the frequency.
3. The third method of selecting the operating frequency of the radio is through the use of the **SHF** button and the channel **UP** and **DOWN** buttons located on the microphone. Frequency selection by this method is accomplished in the same manner as with the **UP** and **DOWN** arrows on the keypad. The only difference is that the channels **UP** and **DOWN** buttons on the microphone are used.

Once a signal has been detected on a particular frequency, it may be necessary to slightly change the frequency to provide the best audio through the speaker. This can be accomplished by rotating the clarifier control to vary the frequency by ± 0.5 KHz. After this fine-tuning has been accomplished, press the **LOCK** button to lock in the frequency at the point of best reception.

Receive Scanning

The receive scanning feature allows you to locate active frequencies in the entire band segment. To begin scanning, slowly turn the squelch control clockwise until the receiver noise disappears. Next, press the **SCAN** button. The unit should start scanning from the lower to the higher frequency. Pressing the **SCAN** button again will change the direction of scanning. When the **SCAN** button is pressed "**SCAN+**" or "**SCAN-**" will be displayed on the **LCD** display. The scan will stop on any active frequency for the duration of the transmission. When the transmission stops, the **DX 2527** will wait approximately 2 seconds before it resumes scanning. If you want to deactivate Scan mode while it's scanning, press the **MAN** (manual) button

or turn the Squelch control counterclockwise until you hear the receiver noise. The **MAN** button will disable the Scan function. (See Frequency Scanning for more information.)

Split Function

This function enables you to split the transmit and receive frequencies for FM repeater operation. To split frequencies, press the **MAN** button and the **SPLIT** button to select + split frequency. If you want - split frequency, press the **SPLIT** button again. If + split is selected, the transmit frequency will be higher than the receiver frequency. If - split is selected, it will be lower than the receive frequency. (See Offset Frequency Operation for more information.)

Memory Function

The DX 2527 can store up to 10 channels (from 0 to 9). To program a frequency into memory, follow the procedure described below:

1. Press the **MAN** button.
2. Press the **PRG** button.
3. Press the **MEM** button. ("**MEMORY**" and "**0**" should appear on the left-hand side of the LCD display. Pressing the **MEM** button will advance the memory number from "**0**" to "**9**".)
4. Select the desired frequency you wish to store in memory.
5. Press the **ENT** button.
6. Repeat the procedure to program other memory channels.

Memory Channel Scanning

You can scan and select any of the 10-programmed frequencies by following the procedure described below:

1. Press **MAN** button.

2. Press the **MEM** button.
3. Slowly turn the Squelch knob clockwise until the receiver noise disappears.
4. Press the **SCAN** button. The unit will scan from lower to higher frequencies. Press again, the unit will scan from higher to lower frequencies.
5. To stop scanning a certain channel, press the **MAN** button, or turn the Squelch knob counterclockwise until you hear the receiver noise.

Metering

The meter built into your **DX 2527** on the left hand side of the LCD display provides the following information:

1. **RF/SWR METER:** This meter operates during transmit only. It indicates power output or SWR.
2. **S/MOD METER:** This meter indicates incoming signal strength during receive and your modulation percentage while transmitting on AM. Modulation indications are most accurate at maximum AM output. There is no reading while transmitting on FM or SSB.

Frequency Scanning

Frequency scanning can be achieved using one of two methods: the first method involves scanning of pre-programmed memory channels; the second method will permit the user to scan all frequencies between a pre-set upper and lower scan limit. Both methods of frequency scanning follow.

All-Frequency Scanning

To allow all Frequency scanning, one must first program the upper and lower scanning limits. The scan limits are simply the highest and lowest frequencies that will be scanned. To program these limits, perform the following steps:

1. Press the **PRG** (Program) button.
2. Press the **SCAN** button. ("**PRG SCAN+**" should appear in the lower right corner of the display window.)
3. Using the **SHF** button and **UP** and **DOWN** arrows, select the upper scan limit, then press **ENT**.
4. Press the **SCAN** button again. ("**SCAN-**" should appear in the display window.)
5. Using the **SHF** button and **UP** and **DOWN** arrows, select the lower scan limit, then press **ENT**.

The upper and lower scan limits have now been programmed. To activate the scan feature, return the radio to manual operation and press the **SCAN** button. If the display shows "**SCAN+**", the radio will scan from the lower limit to the upper limit. If "**SCAN-**" is displayed, the unit will scan from the upper limit to the lower limit. To change from "**SCAN+**" to "**SCAN-**" or vice versa, press **SCAN**.

NOTE: When programmed, the upper and lower scan limits will also act the upper and lower operating limits of the radio. The radio cannot now be programmed to operate above or below the scan limits.

Memory Scanning

The DX 2527 has 10 non-volatile (i.e., memory resident) memory locations that can be programmed with any available frequency within the operating band of the radio. The scan function of the unit can be programmed to scan these memory channels. The radio will then scan only those memory channels that have been pre-programmed.

The first step in utilizing the memory scan function is to program the desired frequency into the radio memory. This can be accomplished by performing the following steps:

1. With the radio operating in the manual mode, press the **PRG** (Program) button.

2. Press the **MEM** button. "**PRG**" should be display in the lower right-hand corner of the LCD display window. In the upper left portion of the display, "**MEM**" should be displayed. Directly below **MEM**, a number between 0 and 9 will be displayed. This number represents the memory location currently being displayed. Pressing the **MEM** key will increase the memory counter to the next memory location and the contents of that memory location will be displayed.
3. Using the **SHF** button and **UP** and **DOWN** arrows, enter the frequency to be stored in the memory location displayed. After the desired frequency has been entered, press **ENT**.
4. Repeat steps 2 and 3 for all of the memory locations to be programmed.
5. After the desired memory locations have been programmed with frequencies, return the unit to the manual mode of operation by pressing the **MAN** button.
6. To initiate memory scanning, press **MEM** and then press **SCAN**. As previously discussed, the display will show "**SCAN+**" or "**SCAN-**" to indicate whether the radio is scanning from the lowest to the highest memory location or vice versa. To return the radio to normal (non-scanning) operation, press the **MAN** button.

Offset Frequency Operation

The DX 2527 has an offset or split frequency feature that will permits the radio to be operated in a half-duplex mode. This will allows the user to talk on FM repeaters operating in the 10 meter band. This split frequency function offsets the

transmitter frequency either above or below the receive frequency by a user programmable amount. In the following example, programming of a 100 KHz offset will be described. Before attempting to program the offset frequency, ensure that the radio is operating in the manual mode by pressing the **MAN** button.

1. Press the **PRG** (Program) button.
2. Press the **SPLIT** button. The LCD display window will display "**00000**" with "**PRG**" and "**SPLIT**" being displayed in the lower left-hand corner.
3. Using the **SHF** button and the **UP** and **DOWN** arrows as described earlier, program the display to read "**01000**".
4. Press **ENT**. A 100 KHz offset has now been programmed into the radio.
5. Return the radio to manual operation by pressing the **MAN** button.
6. Using the **SHF** button and the **UP** and **DOWN** arrows as described previously, set the radio for the desired receive frequency.
7. Press **SPLIT**. In the lower right corner of the display, either "**SPLIT+**" or "**SPLIT-**" will be displayed. If "**SPLIT+**" is displayed, the transmitter will be offset 100 KHz above the receive frequency when keyed. If "**SPLIT-**" is displayed, the transmitter will be offset 100 KHz below the receive frequency.

NOTE: When the transmitter is keyed, the frequency display will change to show the frequency being transmitted.

WARRANTY

This radio is covered by a two year limited parts and labor warranty.

- "Limited" means that we will repair problems caused by factory defects or normal use at no charge.
- Before returning a radio to us for warranty service, please call our Service Department for a Repair Authorization Number (RAN). This RAN must be written below your return address on the outside of the shipping box. Boxes, which arrive without a RAN, will be refused, and the shipping company will return the unopened box to you. Be sure to have a pen and paper ready along with the serial number of your radio before calling. We will give you the RAN and our shipping address over the phone. The telephone number of the Service Department is (760) 480-8800, and we suggest calling between 10:00 AM and 4:00 PM Pacific Time.
- Please include a note with a detailed description of the symptoms. This is important because it will help the technician who works on your radio to locate your problem. Intermittent problems are easily overlooked, so be sure to give as much detail as possible in your note. Also, please include your telephone number in case our technicians have any additional questions.
- Do not send your power cord or microphone unless we ask for these items during our telephone conversation.
- You are responsible for getting the radio safely to us. (We suggest using United Parcel Service.) You must pay to ship the radio to us, and we will pay to ship the radio back to you. Since we use UPS and they do not ship to Post Offices boxes, please provide us with a street address for the return of your radio.
- We will repair and return your radio as soon as we can. We appreciate your choosing a Galaxy radio and we want you to be on the air as much as possible!
Be sure to visit our web site at

www.GalaxyRadios.com

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