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Redco RDS-02, RDS-5, RDS-6 Manual

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DIGI-SCAN SYSTEMS

RDS-02, RDS-5, RDS-6



REDCO

Reliable Electronics Design Co.
11823 E. Slauson Ave., Santa Fe Springs, CA 90670

DIGI-SCAN

Models RDS-02, RDS-5, RDS-6

**Operation and Installation Manual
Release Date 6-1-78**

This manual applies directly to
REDCO Models RDS-02, RDS-5 and RDS-6
basic Digi-Scan systems.

CERTIFICATION

REDCO certifies that this instrument was thoroughly tested and inspected and found to meet the published specifications. Each unit is exposed to a minimum of 24 hours of burn in.

DISCLAIMER

REDCO'S Digi-Scan systems are manufactured as receiving systems only, and to use them for transmission is in direct violation of the Federal Communications Commission.

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1. INTRODUCTION: REDCO MODEL RDS-02 DIGI-SCAN SYSTEM

1.1 Description:

The REDCO DIGI-SCAN system is designed to expand the capabilities of the CYBERNET PLL02A system currently in use on a number of transceivers. The system will expand only the receiver system and will automatically shut down if the radio is keyed for transmission. The Digi-Scan automatically displays the receive frequencies with a 5 digit frequency monitor system. This display is continuous in both the scan and step function, which allows for fast, accurate tuning of the receiver. The operating range of the receiver is increased to a maximum of 28.005 MHz and a minimum of 25.995 MHz. The system should be installed by a licensed technician only.

1.2 Identification:

REDCO uses a basic numerical serial number series. Refer to the title page for any change that may effect your unit. All changes will be noted by serial number effectivity for easy reference. The serial number for the Digi-Scan is located on the rear panel.

1.3 Specifications:

Frequency range 25.995 MHz to 28.005 MHz*
in 10 KHz steps

Readout 1/2 inch high, 5 digit, 7 segment LED

Resolution least significant digit = 1 KHz

Power consumption 500 Ma. at 13.8 VDC

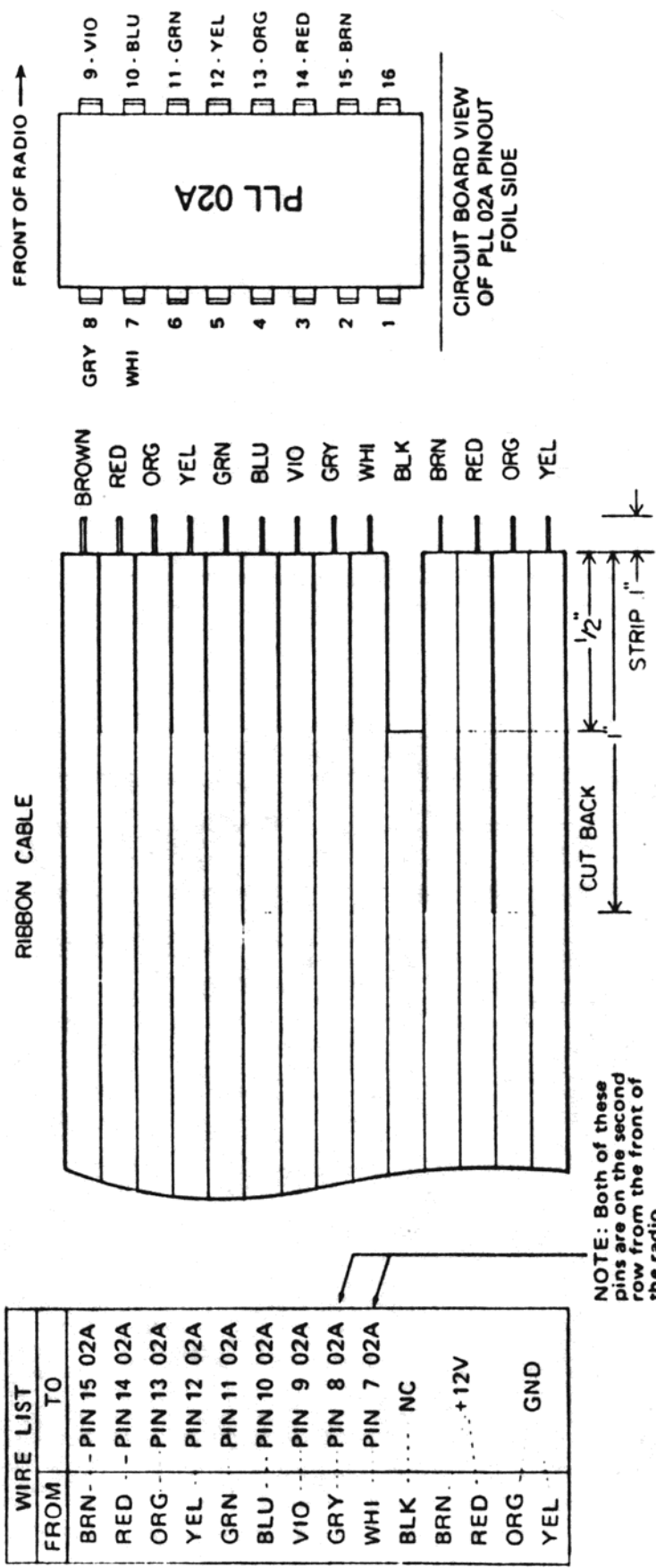
Size 4"L x 6"D x 1.25"H

Scan rate 12 steps/sec.

Operating temperature range 0° to 50°C

Storage temperature range - 40° to 75°C

**Frequency range is dependent on the type of radio used.*



NOTE: Both of these pins are on the second row from the front of the radio.

FIG. 1 — RIBBON CABLE INSTALLATION

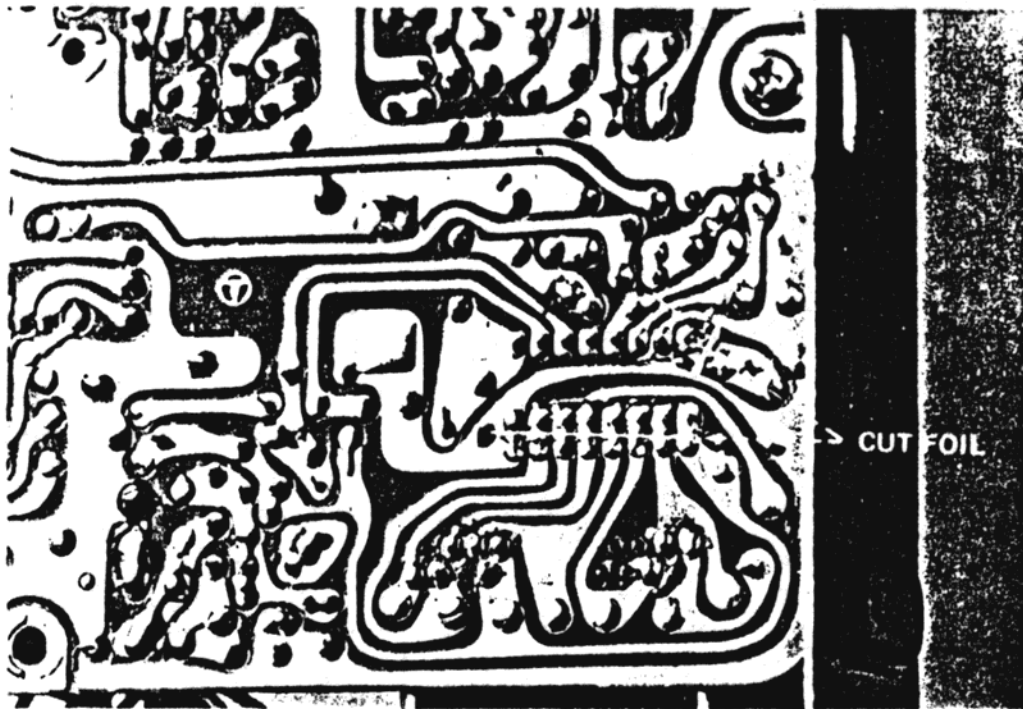


FIG. 2 — CUTTING CIRCUIT FOIL

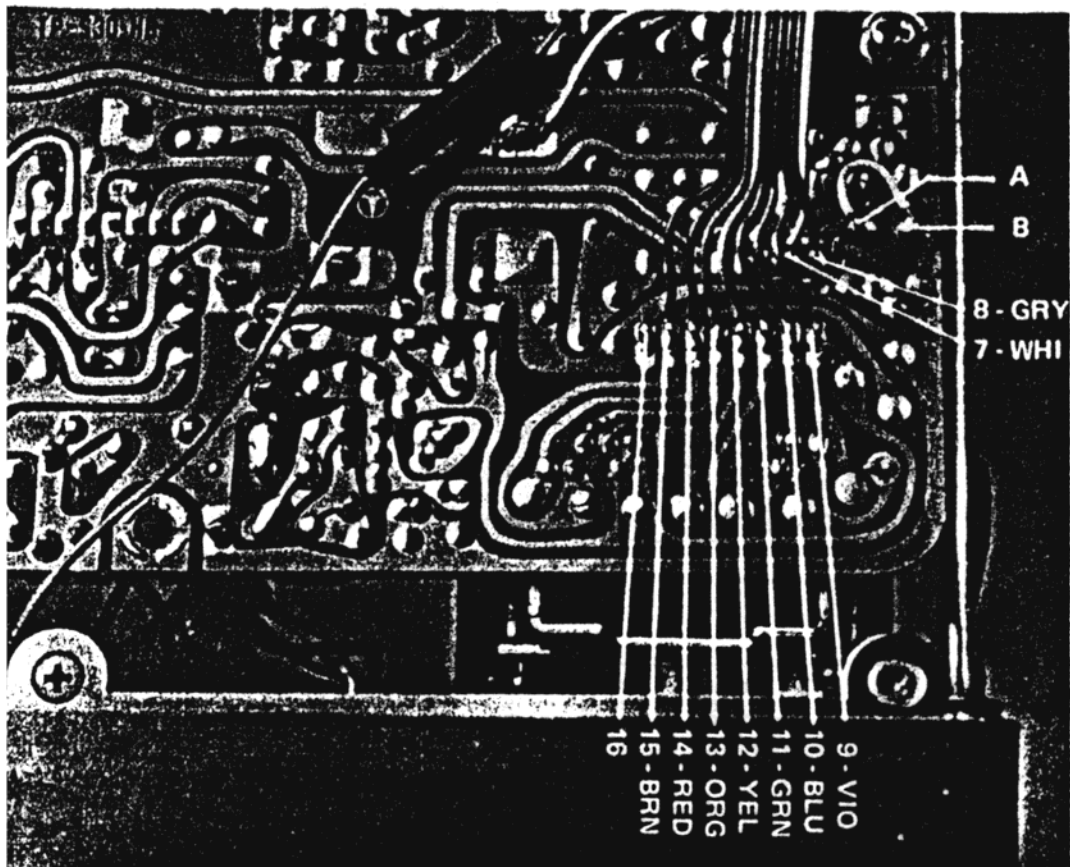


FIG. 3 — INSTALLATION OF CABLE ASSEMBLY

INSTRUCTIONS FOR RDS-02

2. INSTALLATION PROCEDURE

This section describes the installation of the Digi-Scan cable assembly to the synthesizer.

2.1 Equipment required for installation:

1. Soldering iron (suggested 25 watts max. designed for use in CMOS work)
2. Exacto knife
3. Wire stripper/cutter (26 gauge)
4. Phillips #1 or #2 screwdriver, and equivalent straight slot
5. Needle nose pliers (5" to 7")

2.2 Installation:

1. Remove the transceiver and Digi-Scan cases.
2. Remove the cable plug assembly inside the Digi-Scan.
NOTE: OBSERVE THE WAY THE CABLE IS PLUGGED IN!
3. Turn the radio over to expose the printed circuit board connections (foil side up).
4. Locate the PLL02 integrated circuit normally located next to the channel selector. (*See Figure 2.*)
5. Cut existing circuit lines on printed circuit board connecting pins 7 thru 15. (*Refer to Figure 2.*)
NOTE: Pins 7 thru 15 should be isolated from all printed circuit lines. SPECIAL ATTENTION should be given to pins 13, 7 and 8 to insure their isolation from all connections.
6. Measure and cut ribbon cable to desired length for installation.
7. Separate wires as shown in Figure 1.
8. Solder wires to PLL02 Chip as follows:
Start with brown wire to pin 15, red wire to pin 14, orange wire to pin 13, etc. (*Refer to Figure 3.*)
9. The black wire is not used.
10. Solder the orange and yellow wires to the ground foil as shown in Figure 3.
11. Solder the red and brown wire to the power line connected to the back of the power switch. If additional wire length is required, install a 20-22 GA insulated wire jumper.

2.2 Installation (continued):

12. Notch rear chassis to allow adequate clearance for cable.
13. Tape cable where it exits back of radio **TO PREVENT IT FROM SHORTING OUT.**

NOTE: STEPS 14 & 14a MUST BE DONE TO COMPLY WITH FCC REGULATIONS.

14. Locate and cut foil from pin 6. (*See Figure 2*).
- 14a Install a 22 GA insulated jumper between points A & B as shown in Figure 3. **THE RADIO NOW COMPLIES WITH FCC REGULATIONS.**
15. Re-install cases of radio.
16. Plug in cable assembly to Digi-Scan system. NOTE: Install cable with brown wire facing toward front of unit. **IF THE CABLE IS INSTALLED BACKWARDS, THE RADIO AND DIGI-SCAN MIGHT BE DAMAGED AND WILL VOID YOUR WARRANTY!**
17. Re-install cover of Digi-Scan system.

3. PERFORMANCE TEST:

1. Turn power of radio on. Digi-Scan will automatically center at 27.155 MHz (CH. 16).
2. Allow for 1 second delay before changing frequency.
3. Momentarily push step switch up or down and check for 10KHz frequency changes.
4. Push scan switch up. Unit should stop scan at 28.005 MHz.*
5. Push scan switch down. Unit should stop scan at 25.995 MHz.*

The Digi-Scan system is now controlling the PLL circuit of your receiver. The channel select switch has been disengaged and will not affect the operation of the system.

**Frequency range is dependent on the type of radio used.*

4. CONTROLS AND OPERATION

This section covers the various controls and basic description of their operation.

- 4.1 Scan Switch:** A momentary toggle switch which controls the scan function. Push the scan switch down or up and hold for fast changes in frequency. (12 steps/sec.)
- 4.2 Step Switch:** A momentary toggle switch which controls the frequency selection by one step (10KHz) at a time. Push the step switch up or down and release for each frequency change desired.
- 4.3 Displays:** Consists of 5 individual .50" 7 segment LEDs.
- 4.4 Power:** Power is applied from the radio. The system will automatically center at 27.155 (CH. 16) when the receiver is turned on.

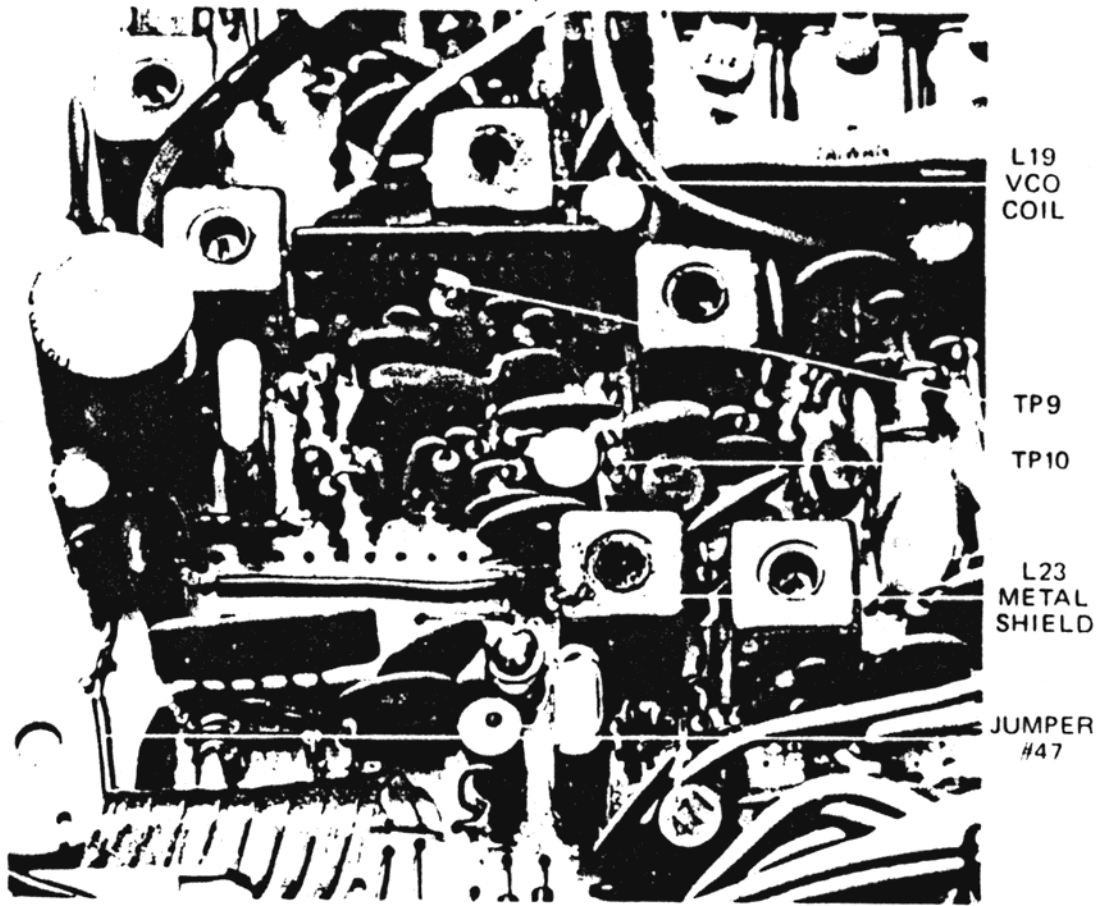


FIG. 4 — LOCATION OF TEST POINTS

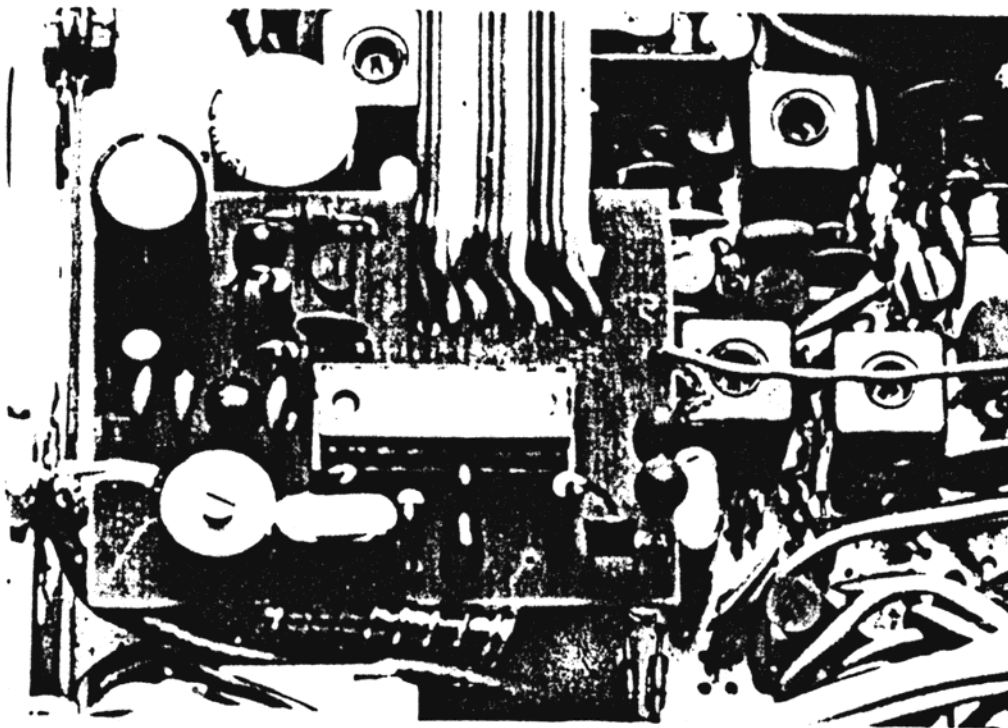


FIG. 5 — INSTALLATION OF CONTROLLER MODULE

5.2 Installation (continued):

8. Connect black wire from controller to any good Ground Point in the radio.
9. Connect the red wire to the 12 volt source in the radio.
(Example: to the power switch normally located on the back of the volume control).
10. Mount controller board close to the channel selector.
(See Figure 5).
11. CUT JUMPER WIRE (see Figure 4, labeled #47), LOCATED BEHIND THE CHANNEL SELECTOR TO COMPLY WITH FCC REGULATIONS.
12. Plug the Ribbon Cable from controller board to the Digi-Scan.
(NOTE: THE BROWN WIRE ON THE RIBBON CABLE GOES TOWARD THE FRONT. IF THE UNIT IS PLUGGED IN BACKWARDS IT MIGHT DESTROY YOUR RADIO OR THE DIGI-SCAN AND WILL VOID YOUR WARRANTY.

6. PERFORMANCE TEST:

1. Turn power of radio on. Digi-Scan will automatically center at 27.155 MHz (CH. 16).
2. Allow for 1 second delay before changing frequency.
3. Momentarily push step switch up or down and check for 10KHz frequency changes.
4. Push scan switch up. Unit should stop scan at 28.005MHz.*
5. Push scan switch down. Unit should stop scan at 25.995MHz.*
6. Note: It might be necessary to make some adjustments to the VCO coil located in the radio (see Figure 4) to cover the desired frequency range.

The Digi-Scan System is now controlling the PLL circuit of your receiver. The channel select switch has been disengaged and will not affect the operation of the system.

* Frequency range is dependent on the type of radio used.

7. MAINTENANCE

7.1 Cleaning unit:

- 1. Use a non-ketone-base cleaner and a soft cloth to remove residue from front panel.**
- 2. Do not allow moisture or liquids to run into vents as damage may occur.**

8. LIMITED 6 MONTH WARRANTY PARTS & LABOR

REDCO warrants this product to be free from defects in material and workmanship for a period of six months from date of original sale to the ultimate user. REDCO will repair free of charge any REDCO product which in the judgment of REDCO has proven to be defective within the six month period when said product is returned at customer expense to REDCO or one of REDCO's Authorized Warranty Stations. This warranty does not cover any expenses incurred in the removal and re-installation of this product.

This warranty does not apply to any REDCO product damaged by accident, misuse, abuse, improper line voltage, fire, flood, lightning, or other acts of God, or by being altered or repaired by anyone other than REDCO or one of its Authorized Warranty Stations. This warranty does not cover marred cabinets, or any other accessory used in connection with the product or damage due to a defect in the product.

This warranty is in lieu of all other warranties expressed or implied including any implied warranty of merchantability, and no person is authorized to assume for REDCO any other liability in connection with the sale of the product.

APPLICATIONS

The following list will help you determine if there is a REDCO Digi-Scan system available for your radio.

DIGI-SCAN RDS-1

Fits all Uniden radios with 858 chip. All AM models require crystal change.

PRESIDENT

Washington (old)
Grant (old)
Adams
Madison
All AM models

COBRA

138 XLR
139 XLR
All AM models

TEABERRY

Stalker 101
Stalker 102
All AM's with 858 chip

COURIER

Centurion 40
Gladiator 40
Spartan 40

ROBYN

510-D
520-D
All AM models

REALISTIC

TRC-449
TRC-455
TRC-457
TRC-458
All AM's with 858 chip

DIGI-SCAN RDS-02

Fits Cybernet SSB radios with 02A chip. All AM models require crystal change.

MIDLAND

78-976
78-999
78-892
All AM's with 02A chip

COLT · Most models

RCA · Most models

G.E. · Most models

HY-GAIN · Most models

LAFAYETTE · Most models

GEMTRONICS · Most models

DIGI-SCAN RDS-5

Fits new President Grant and any other new Uniden radio with 8719 chip and 11.3258 crystal.

DIGI-SCAN RDS-6

Fits new Uniden radios with 8719 chip and 11.1125 crystal.

PRESIDENT

McKinley
Washington (new)

COBRA

140 GTL
142 GTL

MIDLAND

78-900

This list is to be used as a reference only. If your radio is not listed above and you need more information, please contact your local REDCO distributor or the factory.

NOTES
