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Redco RDS-1 Manual

RDS-1
DIGI-SCAN

REDCO

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

DIGI-SCAN

Model RDS-1

Operation and Installation Manual
Release Date 1-1-78

This manual applies directly to
REDCO Model RDS-1 basic Digi-Scan system

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.

TABLE OF CONTENTS

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

1.1   Description:

The REDCO DIGI-SCAN system is designed to expand the capabilities of the UNIDEN 858 PLL 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 28.045 MHz and a minimum of 26.055 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 . . . . 26.055 MHz to 28.045 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
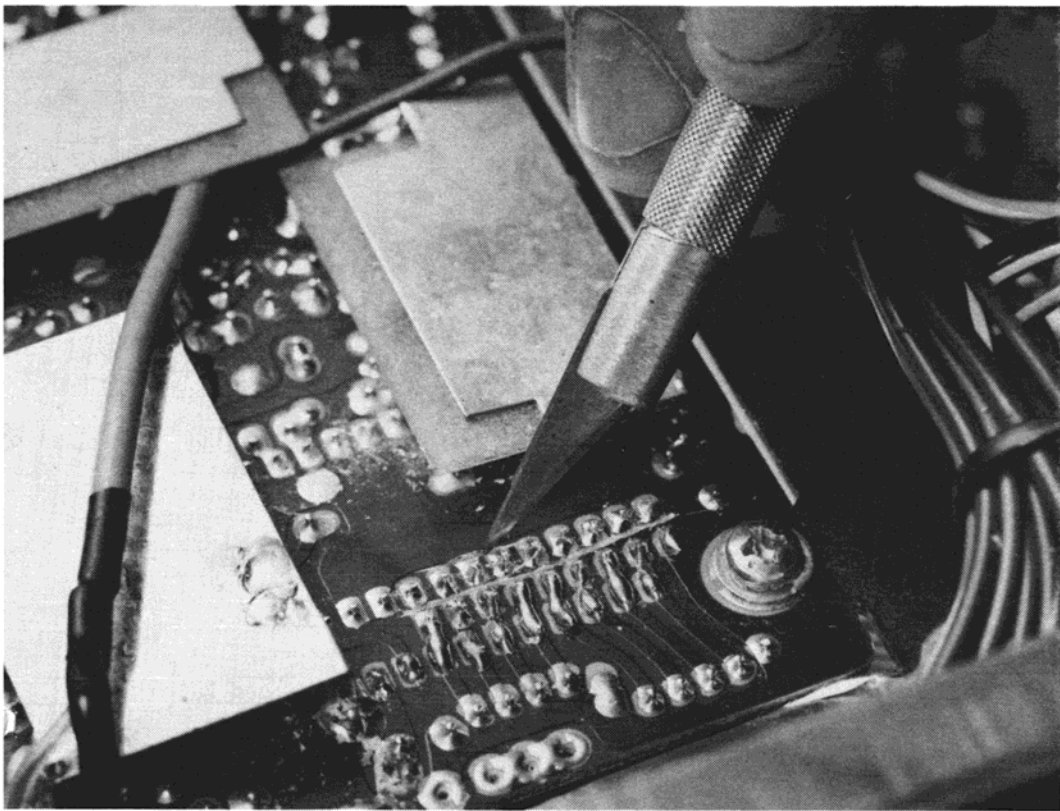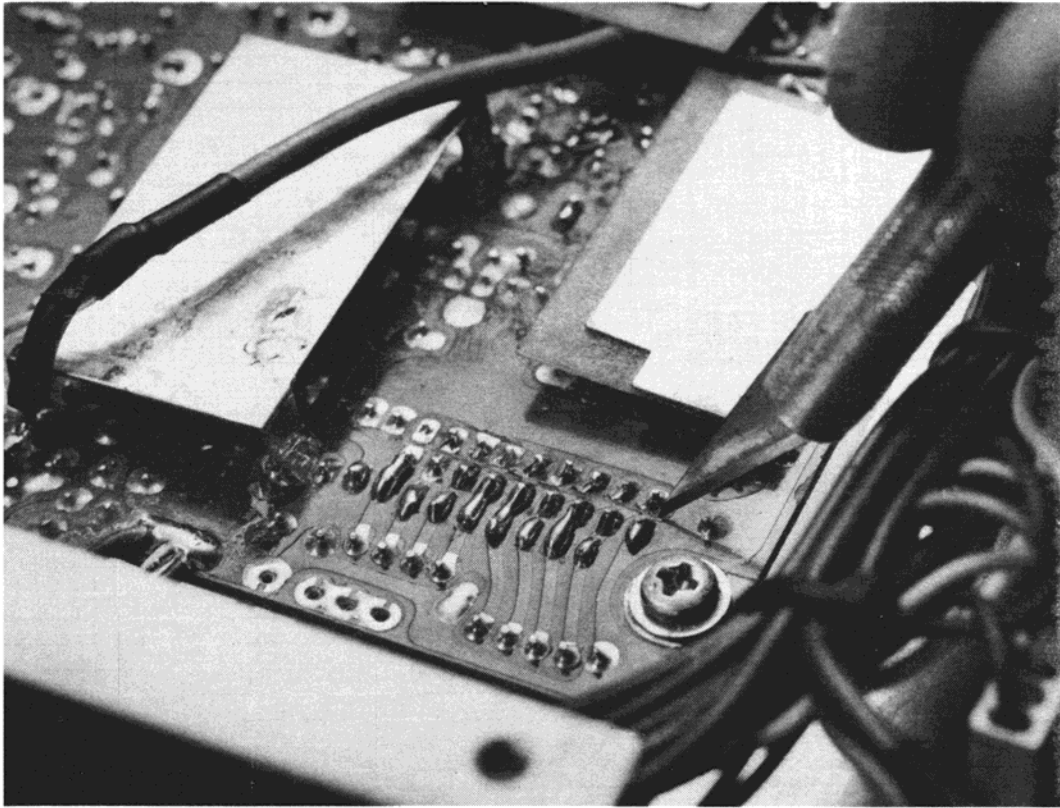
Fig. 3 & 4 — Cutting Circuit Foil
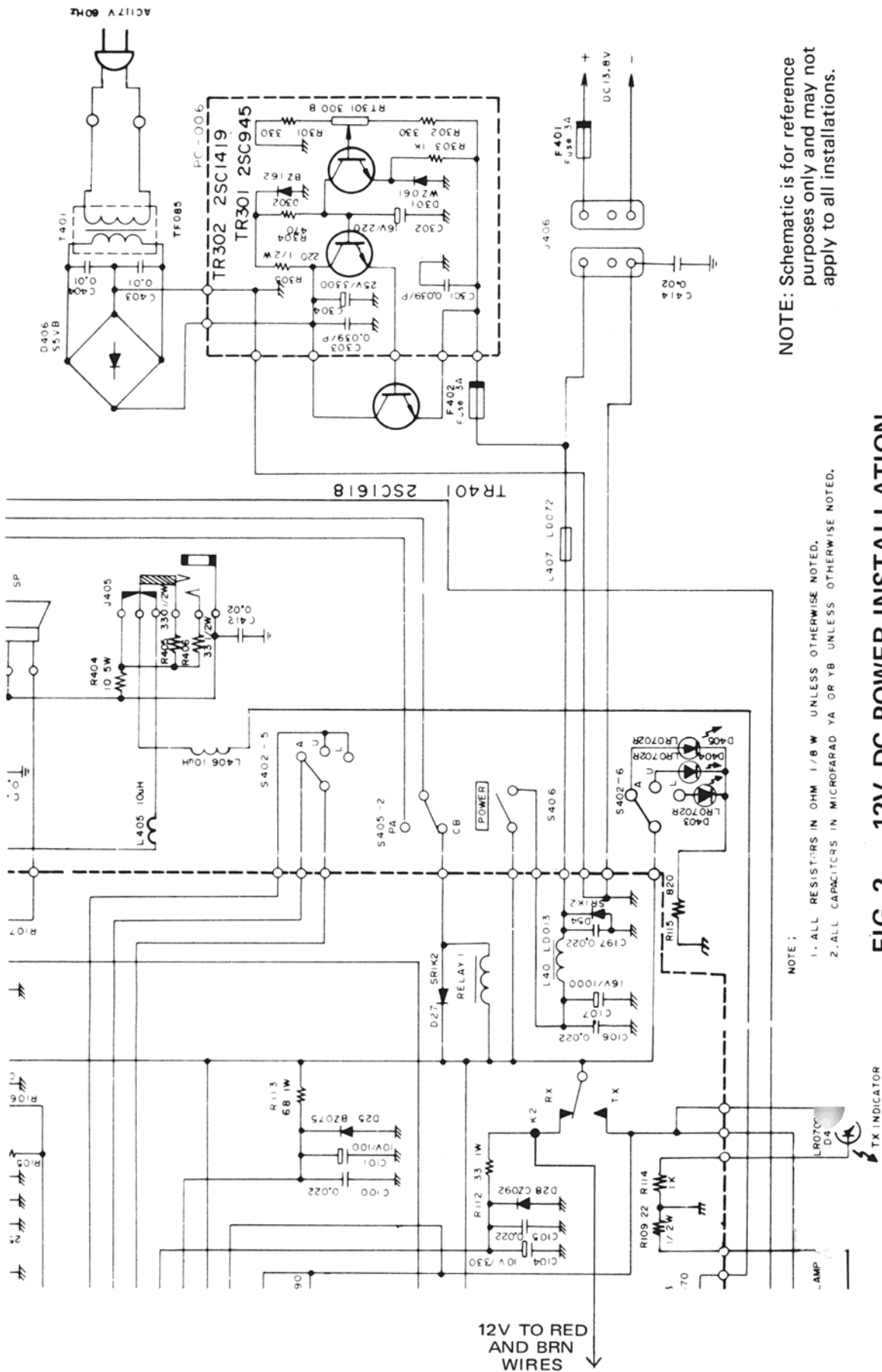
FIG. 2 — 12V DC POWER INSTALLATION

NOTE: Schematic is for reference purposes only and may not apply to all installations.

NOTE;
1. ALL RESISTORS IN OHM 1/8 W UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS IN MICROFARAD YA OR YB UNLESS OTHERWISE NOTED.

12V TO RED AND BRN WIRES

Color	Pin	Note
BRN	PIN 15	02A
RED	PIN 17	02A
ORG	PIN 13	02A
YEL	PIN 12	02A
I-GRN	PIN 11	02A
BLU	PIN 10	02A
VIO	PIN 9	02A
GRY	PIN 8	02A
WHI	PIN 7	02A

BLK --- NC
BRN --- +12V
RED ---
ORG --- GND
YEL ---

FIG. 1 — RIBBON CABLE INSTALLATION

BOTTOM VEIW OF PINOUT

UNIDEN 858

13 14 15 16 17 18 19 20 21 22 23 24

12 11 10 9 8 7 6 5 4 3 2 1

RIBBON CABLE

BROWN
RED
ORG
YEL
GRN
BLU
VIO
GRY
WHI
BLK
BRN
RED
ORG
YEL

CUT BACK

½"

STRIP .1"

WIRE LIST	
FROM	TO
BRN ---- PIN 13 858	
RED ---- PIN 14 858	
ORG ---- PIN 15 858	
YEL ---- PIN 16 858	
GRN ---- PIN 17 858	
BLU ---- PIN 18 858	
VIO ---- PIN 19 858	
GRY ---- PIN 20 858	
WHI ---- PIN 21 858	
BLK ----- NC	
BRN ---	
RED ---- +12V	
ORG ---	
YEL ---- GND	

Fig. 5 — Installation of Cable Assembly

2. CONTROLS AND OPERATION

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

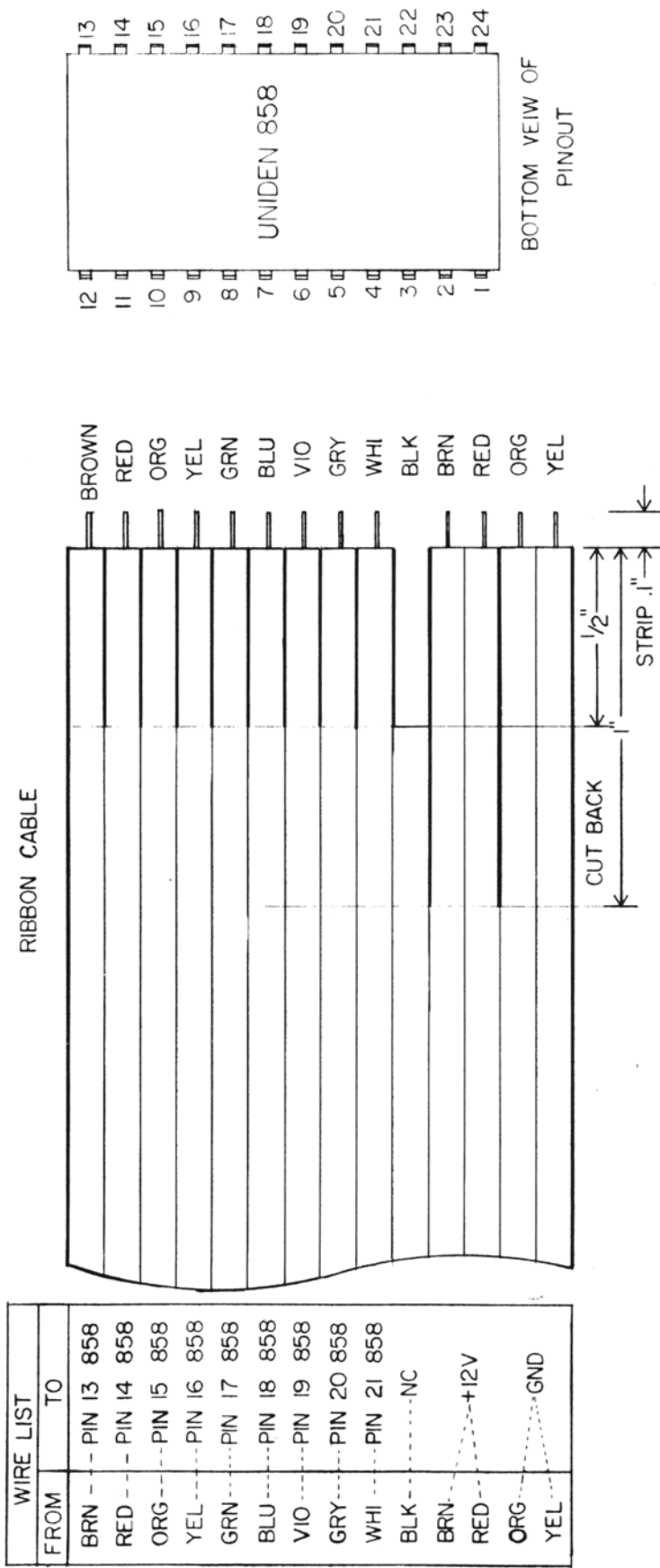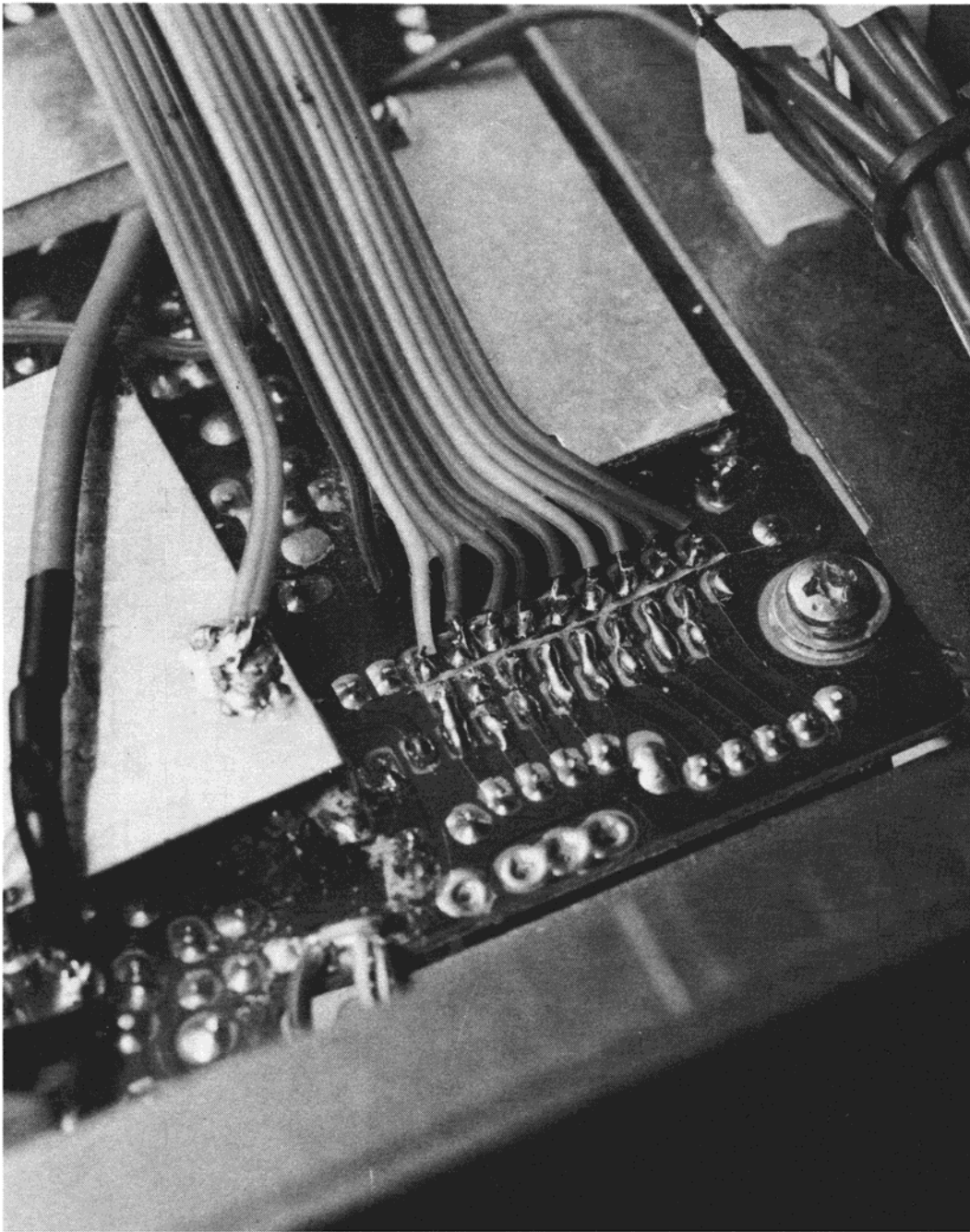2.1 Scan Switch: A momentary toggle switch which controls the scan function. Push the scan switch down or up and hold for fast changes in frequency. (12 steps/sec.)

2.2 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.

2.3 Displays: Consists of 5 individual .50" 7 segment LEDs.

2.4 Power: Power is applied from the radio. The system will automatically center at 27.055 (CH. 8) when the receiver is turned on.

2.5 CAUTION: DO NOT ATTEMPT TO SCAN AND STEP SIMULTANEOUSLY AS THIS WILL CAUSE THE DIGI-SCAN TO LOOSE SYNCHRONIZATION BETWEEN READ-OUT AND OPERATING FREQUENCY. THIS CONDITION CAN BE RECOGNIZED BY TESTING THE UPPER OR LOWER LIMIT OF THE READ-OUT. TO CORRECT THIS CONDITION MOMENTARILY TURN POWER OFF.

3. INSTALLATION PROCEDURE

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

3.1 Equipment Required for Installation:
1. Soldering iron (suggested 25 watts max.)
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")

3.2 Installation:

1. Remove the transceiver and Digi-Scan cases.

2. Locate the UNIDEN 858 chip — normally close to the selector switch.

3. Cut existing circuit lines on printed circuit board connecting to pins 13 thru 21. (Refer to figures #3 & 4)
NOTE: Pin 13 thru 21 should be isolated from all printed circuit lines. Special attention should be given to pin 19 to insure isolation from ground.

3.2   Installation (continued):

    4. Measure and cut ribbon cable to desired length for installation.

    5. Separate wires as shown in Figure 1.

    6. Solder wires to UNIDEN 858 chip as follows: Start with brown wire to pin 13, continue installation as shown on Figure 1. (Refer to Figure 5.)

    7. The black wire is not used.

    8. Solder the orange and yellow wires to the ground shield as shown in Figure 5.

    9. Solder the red and brown wire to the 12V power line of the receiver. (See Figure 2). If additional wire length is required, install a 20-22 GA insulated wire for additional length.

    10. Notch rear chasis to allow adequate clearance for cable.

    11. Re-install cases of radio.

    12. Plug in cable assembly to Digi-Scan system. NOTE: Install with arrow pointed toward front of unit. Add strain relief clip to connector.

    13. Re-install cover of Digi-Scan system.

3.3   Performance Test:

    1. Turn power of radio on. Digi-Scan will automatically center at 27.055 MHz (CH. 8).

    2. Allow for 1 second delay before changing frequency.

    3. Momentarily push step switch up or down and check for 10 MHz frequency changes.

    4. Push scan switch up. Unit should stop scan at 28.045 MHz.

    5. Push scan switch down. Unit should stop scan at 26.055 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.

4. MAINTENANCE

4.1 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.

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 aply 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.