INSTALLATION

The relay box may be mounted on a tower leg, mast or building wall. The mounting hardware furnished will accept a tubular mast up to 1 ½" diameter.

If the box is mounted on a building wall discard the "U" bolt assembly and use two ½" screws to attach the bracket to the wall.

The relay box must be mounted with the connectors down. Do not attempt to air seal the relay box. Install drip loops below the box if the feedlines are brought in from a higher location. Lightning retarding loops area recommended precaution on all cables (see illustration).

Relay Box Cable Connections

Connect your antennas to coax connectors numbered 1-4 and note which antenna is connected to each socket.

Connect a coax lead to the connector marked "CONTROL CONSOLE." This lead should be long enough to attach to the control console.

If control power fails, the relay box selects antenna "4". It would thus be wise to put the most frequently used antenna in position 4.

Control Console Connections

Locate the RCS-4 control console at a convenient location on the station operating desk.

The control console supplies 12V AC and DC control voltages. It has an internal 1A fuse in the transformer secondary circuit that protects the power supply if a short circuit occurs in the feedline. Caution must be exercised when connecting the RCS-4 to prevent damage to station equipment.

Use coax to connect the "STATION" SO-239 connector to the output connector of your transceiver, amplifier or tuner. Connect the coaxial line from the relay box to the "RELAY BOX" SO-239 connector.

DO NOT CONNECT THE "RELAY BOX" CONNECTOR TO THE STATION. CONNECT IT TO THE RELAY BOX FEEDLINE ONLY. DO NOT "HOT SWITCH" THE RELAY BOX WITH POWER LEVELS OVER 100 WATTS.

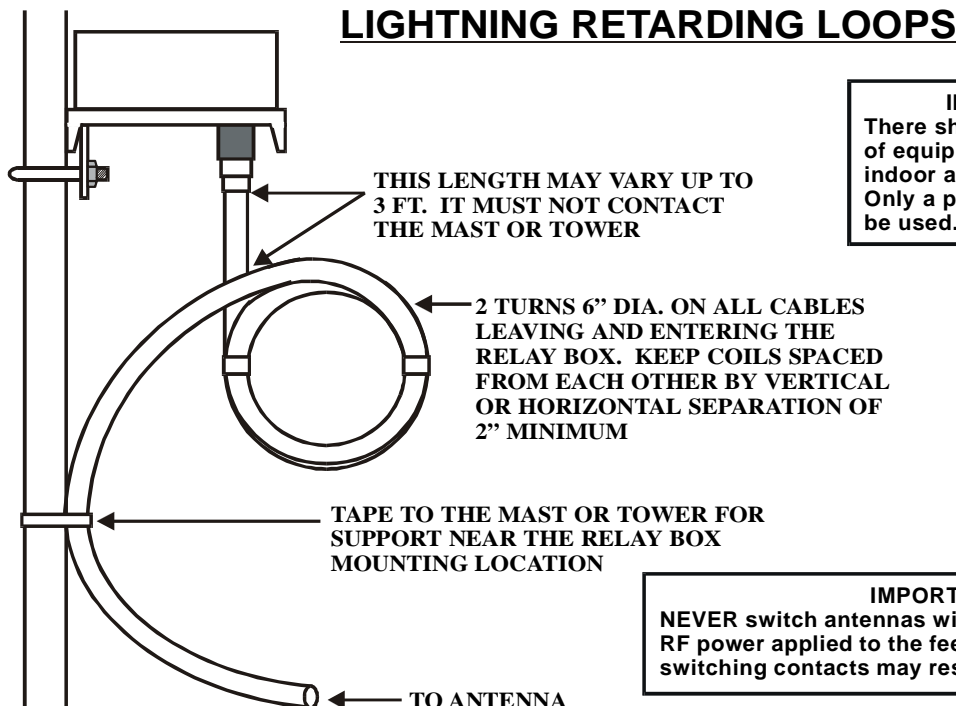**THERE SHOULD BE NO PIECE OF EQUIPMENT BETWEEN THE INDOOR AND OUTDOOR BOX.**

OPERATION

1. Plug the line cord into a 117 VAC outlet.

2. Place the PWR switch in the "ON" position.

3. Rotate the SELECT control and observe the lights one through four.

The switch positions are numbered on the front of the control box and a space is provided above each position so you can pencil in its designation for each antenna.

GROUNDING

The RCS-4 has small air gaps near each antenna connector on the printed circuit board to protect against lightning damage. We strongly recommend the use of lightning retarding loops in the coaxial cables near the relay box (see illustration). Remember that lightning travels through the path of least resistance. Station ground leads should be solid, large surface area conductors. Do not use braided or stranded wire for the ground leads. Avoid sharp bends in the ground leads. Use multiple ground rods and/or radials to provide the earth termination.

LIGHTNING RETARDING LOOPS

THIS LENGTH MAY VARY UP TO 3 FT. IT MUST NOT CONTACT THE MAST OR TOWER

2 TURNS 6" DIA. ON ALL CABLES LEAVING AND ENTERING THE RELAY BOX. KEEP COILS SPACED FROM EACH OTHER BY VERTICAL OR HORIZONTAL SEPARATION OF 2" MINIMUM

TAPE TO THE MAST OR TOWER FOR SUPPORT NEAR THE RELAY BOX MOUNTING LOCATION

TO ANTENNA

IMPORTANT
There should be no piece of equipment between the indoor and outdoor box. Only a piece of coax should be used.

IMPORTANT
NEVER switch antennas with more than 100 watts RF power applied to the feedline. Damage to the switching contacts may result from "hot switching."

TECHNICAL ASSISTANCE

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or reading the manual does not solve your problem, call *Ameritron* at **662-323-8211**. We can only help if you have your RCS-4 manual, radio manual, and information about your station available during the call.

We strongly recommend calling Ameritron with any questions, but questions can be mailed directly to Ameritron at 116 Willow Road, Starkville, MS 39759 or faxed to 662-323-9810. Be sure to send a complete description of the problem, explain how this unit is being used, and include a complete description of your station.
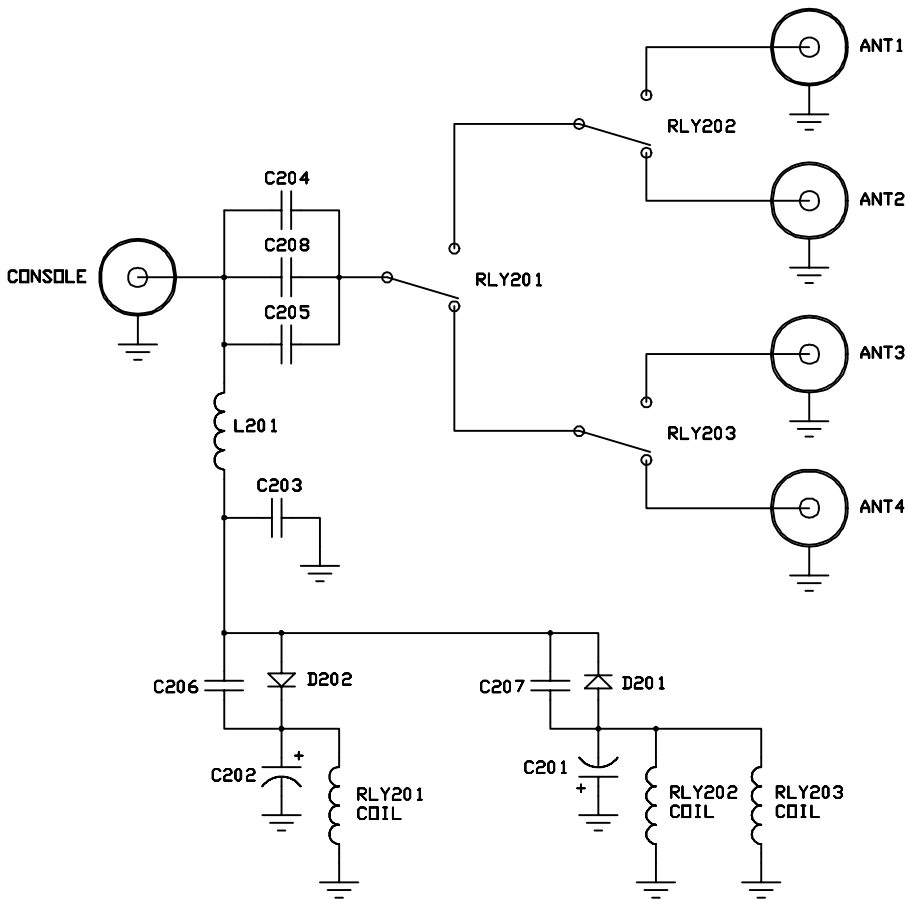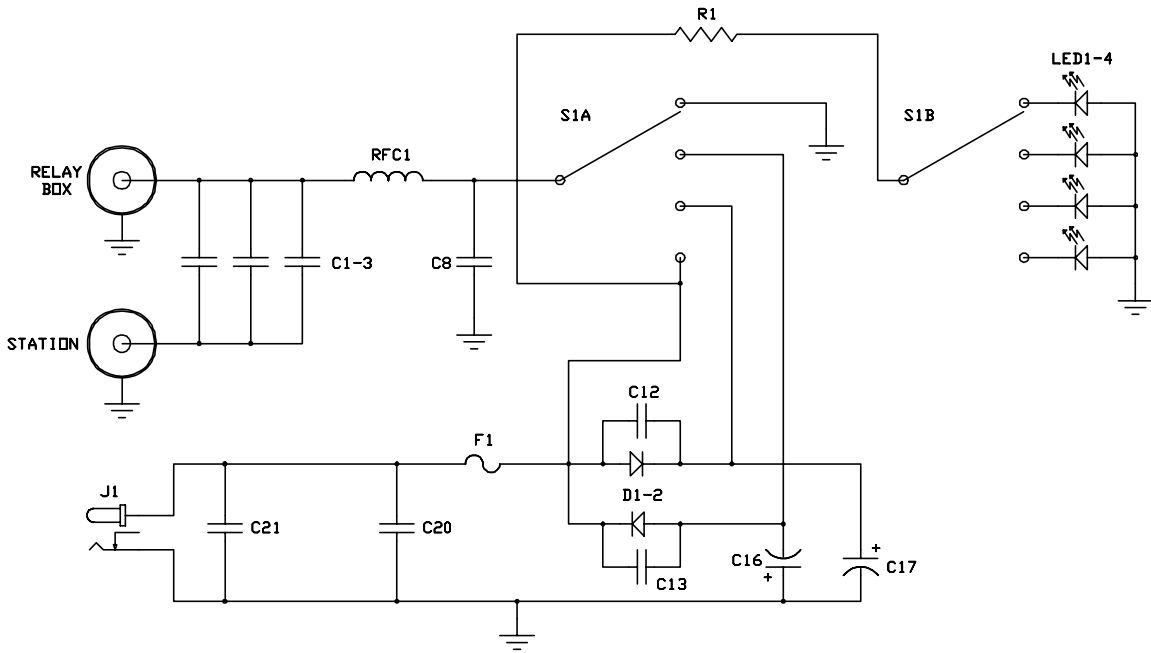

PARTS LIST

Console Box

Designator	Part Description	Part Number
R1	470 ½ watt	101-2470
C1,2,3,8,20	.01 uF 1KV	200-2100-2
C12,13,21	.01 uF 100V	200-2100-1
C16,17	220 uF 25V	270-6220-1
D1,2	1N4007	300-4007
LED1,2,3,4	1.5V Red	351-3002
Power Adapter	120VAC	407-1072
Power Adapter	240VAC	407-1072X
RFC1	Choke	409-2150
S1	Rotary Switch	500-0563
S2	Toggle Switch	503-1233
F1	1 AMP 125VAC FB	755-0101

Relay Box

Designator	Part Description	Part Number
C201,202	220 uF 25V	270-6220-1
C203,206,207	.1 uF 100V	200-3100
C204,205,208	.01 uF 1KV	200-2100-2
D201,202	1N4007	300-4007
L201	Choke	409-2150
RLY1,2,3	Relay	408-6114

SCHEMATIC

<u>NOTES</u>