

instruction book

Cedar Rapids Division | Collins Radio Company, Cedar Rapids, Iowa

212Z-1 Remote Amplifier

Guarantee

The equipment described herein is sold under the following guarantee:

Collins agrees to repair or replace, without charge, any equipment, parts, or accessories which are defective as to design, workmanship or material, and which are returned to Collins at its factory, transportation prepaid, provided

- (a) Notice of the claimed defect is given Collins within two (2) years from date of delivery and goods are returned in accordance with Collins instructions.
- (b) Equipment, accessories, tubes, and batteries not manufactured by Collins or from Collins designs are subject to only such adjustments as Collins may obtain from the supplier thereof.
- (c) No equipment or accessory shall be deemed to be defective if, due to exposure or excessive moisture in the atmosphere or otherwise after delivery, it shall fail to operate in a normal or proper manner.

Collins further guarantees that any radio transmitter described herein will deliver full radio frequency power output at the antenna lead when connected to a suitable load, but such guarantee shall not be construed as a guarantee of any definite coverage or range of said apparatus.

The guarantee of these paragraphs is void if equipment is altered or repaired by others than Collins or its authorized service center.

No other warranties, expressed or implied, shall be applicable to any equipment sold hereunder, and the foregoing shall constitute the Buyer's sole right and remedy under the agreements in this paragraph contained. In no event shall Collins have any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of the products, or any inability to use them either separately or in combination with other equipment or materials, or from any other cause.

How to Return Material or Equipment

If, for any reason, you should wish to return material or equipment, whether under the guarantee or otherwise, you should notify us, giving full particulars including the details listed below, insofar as applicable. If the item is thought to be defective, such notice must give full information as to nature of defect and identification (including part number if possible) of part considered defective. (With respect to tubes we suggest that your adjustments can be speeded up if you give notice of defect directly to the tube manufacturer.) Upon receipt of such notice, Collins will promptly advise you respecting the return. Failure to secure our advice prior to the forwarding of the goods or failure to provide full particulars may cause unnecessary delay in the handling of your returned merchandise.

ADDRESS:

Collins Radio Company
Sales Service Division
Dallas, Texas

INFORMATION NEEDED:

- (A) Type number, name and serial number of equipment
- (B) Date of delivery of equipment
- (C) Date placed in service
- (D) Number of hours of service
- (E) Nature of trouble
- (F) Cause of trouble if known
- (G) Part number (9 or 10 digit number) and name of part thought to be causing trouble
- (H) Item or symbol number of same obtained from parts list or schematic
- (I) Collins number (and name) of unit subassemblies involved in trouble
- (J) Remarks

How to Order Replacement Parts

When ordering replacement parts, you should direct your order as indicated below and furnish the following information insofar as applicable. To enable us to give you better replacement service, please be sure to give us complete information.

ADDRESS:

Collins Radio Company
Sales Service Division
Dallas, Texas

INFORMATION NEEDED:

- (A) Quantity required
- (B) Collins part number (9 or 10 digit number) and description
- (C) Item or symbol number obtained from parts list or schematic
- (D) Collins type number, name and serial number of principal equipment
- (E) Unit subassembly number (where applicable)



instruction book

212Z-1

Remote Amplifier

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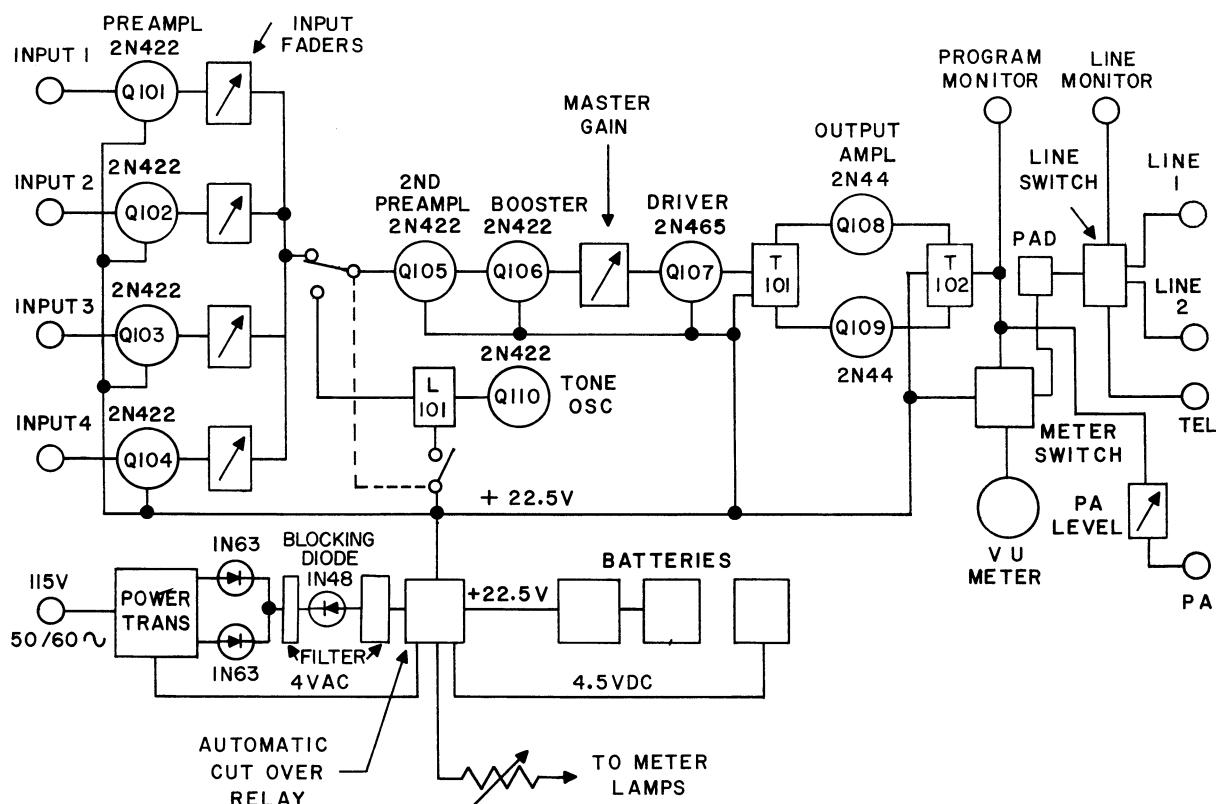


Figure 1-1. 212Z-1 Remote Amplifier in Carrying Case and 212Z-1 Block Diagram

general description

1.1 General.

This instruction book has been compiled as a guide to the proper installation, adjustment, operation, and maintenance of the transistorized Collins 212Z-1 Remote Amplifier, see figure 1-1.

The Collins 212Z-1 Remote Amplifier greatly simplifies the problem of on-the-spot broadcasts. The amplifier is built into a small carrying case, is light in weight, and can be easily carried by one person. The 212Z-1 includes four input channels with individual controls, a master control, a-c power supply, and a battery power supply built into a single compact unit. The batteries are switched automatically into operation whenever the a-c power source fails. Two output circuits are provided, one for program and one for telephone. If the program line fails, a twist of the OUTPUT line control will reverse the lines and the program will be fed into the line previously used for telephone. The receptacles for the microphone, terminals for the lines, and the receptacle for the a-c power cord plug are accessible from the rear of the amplifier. Program monitor, line monitor, and multiple jacks are mounted on the right-hand end of the unit.

The fader controls are of the low impedance ladder type to give low insertion loss. The master gain control is also a low impedance ladder type. All controls have an attenuation of 2 db per step. A range switch and meter switch connect a standard vu meter to the proper circuit for measuring the output level in vu or the battery voltages. A 400-cps tone oscillator is provided to aid in setting up line level.

The carrying case is similar in size and features to the more popular portable typewriter cases. The amplifier can be removed entirely from the case or, more conveniently, it can be left in the case and just the lid of the case removed. All of the controls, plugs, and terminals are perfectly accessible with just the lid removed. Whenever the lid of the case is closed, an interlock switch is actuated to disconnect the B source from the transistors. This is only a safety feature to prevent accidentally discharging the B batteries in event the POWER switch is inadvertently left on.

An additional feature of the 212Z-1 is the MULTIPLE connection jack which can be used to patch 212Z-1 Remote Amplifiers together to provide more input channels. Four input channels (and input controls) are gained for each 212Z-1 connected, then they are

all fed through the master gain control on the 212Z-1 to which the output line is connected.

The use of transistors throughout provides a power saving in the order of 15-1 over previous models, in addition to the savings in weight and space.

1.2 Reference Data.

Dimensions	14 in. x 15-1/2 in. x 6-1/2 in. (including case).
Weight.	22 lb (with batteries and case).
Frequency response	.±1.5 db 50 to 15,000 cps.
Input impedance	. . . 30 to 600 ohms.
Gain	90 db.
Output impedance	. . . Normally 600 ohms, 150 ohms on special order.
Distortion	1.5 percent max at +5 dbm.
Equivalent noise level at the input	Less than -115 dbm.
Power output	+1 uv (+11 dbm) normal, +6 vu (+16 dbm) emergency.
Power source	115 volts a-c, 50 to 60 cps or self-contained batteries (two 22-1/2-volt "B" and 4.5-volt meter illuminating).
Input connectors, Cannon	Use Cannon XL-3-13N plugs. Other connectors available on special order.

1.3 Transistor and Diode Complement.

QUANTITY	TYPE	FUNCTION
4	2N422	Channel amplifiers
1	2N422	Input amplifier
1	2N422	Interstage amplifier
1	2N465	Driver amplifier
2	2N44	Output amplifier
1	2N422	Tone oscillator
1	1N48	Blocking diode
2	1N63	Rectifiers

SECTION 1

General Description

1.4 Fuse Complement.

QUANTITY	TYPE	FUNCTION
1	1/16 amp 3AG	F101, power line fuse
1	1/16 amp 3AG	Spare F101

1.5 Battery Complement.

QUANTITY	COLLINS PART NUMBER	MFR TYPE NUMBER	FUNCTION
1	015-0519-00	National Carbon Company 726	4.5 V Meter Lamp
2	015-0520-00	National Carbon Company 763	22.5 V B Supply