RAYMER

MODEL 807-10 RECEIVER

OPERATING INSTRUCTIONS

DESCRIPTION

Model 807 is a monaural all solid state background music receiver consisting of a sensitive high fidelity FM tuner and a 10 watt (RMS) audio amplifier. The unit has an external amplifier jack, a crystal phono jack and a Multiplex Converter jack. It also has speaker output for 4 or 8 ohms as well as 25 and 70 volt lines. The 807-10 receiver incorporates a design which eliminates the use of a circuit breaker.

UNPACKING:

The unit is to be removed carefully from the carton and inspected for any possible damage in transit. If there is any evidence of any damage which might have occurred in shipment, notify your dealer at once, or the transportation company which delivered it. Claims for damage sustained in transit must be made upon the Carrier. Save all packing material for inspection by the claim agent who will furnish you with the proper forms and will also give you the necessary instructions for filing a claim. In addition to the Unit, there should be a warranty card included in the carton.

To insure proper servicing and to protect your rights under the warranty, be sure to fill in the warranty registration card without delay and mail to the factory.

WARRANTY

This unit has been very carefully inspected and should require no further service. Each unit is warranted to be free from defects in material and workmanship under normal use and service for a period of one year from date of delivery to the original purchaser. If this unit appears to be defective, the factory will repair any unit returned within said one year, providing all transportation charges are pre-paid, and which our examination shall disclose to our satisfaction to be defective.

This Warranty does not include free labor, nor is it applicable to any unit which shall have been subject to accident, tampered with, mis-used, abused, or altered in any manner whatsoever. Further, this Warranty shall not apply to any unit which has been connected improperly.

It is recommended that any unit on which service is required, be processed through your dealer wherever possible.

This Warranty is expressly in lieu of all other Warranties, expressed or implied, and of all other obligations or liabilities on our part. We neither assume nor authorize any other person to assume for us any other liability in connection with the products manufactured by Trutone Electronics, Inc.

INSTALLATION:

Because of its attractive appearance this unit may be placed on a table or a shelf. Although the unit has ample vents for normal ventilation, sufficient space should be allowed around it to permit free air flow. DO NOT PLACE it on top of vacuum tube equipment: DO NOT STORE OR OPERATE it in areas where the ambient temperature exceeds 140 degrees Fahrenheit. If installed in a cabinet, ample ventilation must be allowed around the unit.

Plug the AC line cord in any outlet furnishing 105 to 120 volts, 60 cycles AC.

An AC receptacle is located on the back of the chassis to supply power to other components such as phonograph motor, etc. The auxiliary equipment connected to the AC receptacle is controlled by the POWER on-off switch so that turning off the unit turns off all equipment.

OUTPUT CONNECTIONS

All connections are made on the rear panel of the unit.

The speaker(s) or line matching transformers are connected to the screw terminal board located on the rear panel. For short distances, any ordinary insulated wire, such as parallel lamp cord, may be used.

Connecting to the 25 volt or 70 volt tap on the unit permits the use of a number of speakers each with its own corresponding line matching transformer, thereby eliminating the necessity of calculating impedances. The tap on the line matching transformer is selected to give the power desired for each speaker. The total of all the power settings should be no greater than the amplifier output rating.

When a speaker with an impedance of 8 ohms is connected to the amplifier, use the terminals on the amplifier marked GND and 8Ω. For a 4 ohm speaker or two 8 ohm speakers in parallel, use GND and 4Ω.

The circuit design, which eliminates the use of a circuit breaker, reduces the power delivered to the speaker terminals when the output is shorted or overloaded due to mismatch. For this reason it is very important that the speaker load is properly matched to the correct output terminals of the amplifier to obtain maximum power output from the unit. Four output impedance taps are available: 4 ohms, 8 ohms, 62 ohms (25 volt line), and 500 ohms (70 volt line). Connecting a total load impedance at any tap less than the impedance indicated will deteriorate the performance of the unit.

Long lines have an appreciable resistance with a resultant power loss. The use of parallel matching transformers on either 25 volt or 70 volt lines is recommended for long distances. When it is desired to have less than 15% power loss on low impedance lines and 5% on high impedance lines, the following table may be used as a guide for the proper wire size to be used. In all cases, it is advisable to run as heavy a wire as possible consistent with the requirements.

WIRE SIZE B & S	MAXIMUM LENGTH OF LINE BETWEEN OUTPUT AND LOAD			
	4 Ohms	8 Ohms	62 Ohms (25V)	500 Ohms (70V)
14	125'	250'	650'	5000'
16	75'	150'	450'	3000'
18	50'	100'	250'	2000'
20	25'	50'	175'	1500'

The External Amplifier (EXT. AMP.) jack is to be used when it is desired to connect to an external amplifier for greater power. It can also be used to feed the signal from the tuner to a tape recorder which has an Aux or Line input. Both the external and internal amplifiers will operate simultaneously when the external unit is plugged in the EXT. AMP. jack.

The Multiplex jack can be used for connecting to a Multiplex Converter to receive simultaneous signals on both FM and Multiplex broadcast, and for Multiplex Stereo Reception.

INPUT CONNECTIONS

All connections are made on the rear panel of the unit, and are clearly identified.

The AUX/PHONO input jack enables the unit to amplify program material from a source other than the self-contained radio tuner. This input is high impedance with a maximum sensitivity of one-half volt and will accommodate the output of a ceramic phono cartridge or the output from any preamplifier such as tape, phono, etc. If the source into the auxiliary input is from leased telephone lines, a Raymer TM-2 telephone adaptor is required to match the telephone lines to the AUX input.

For FM reception a short wire attached to the antenna terminal is sufficient for most locations. In the event that the unit is located in a remote area an external Dipole antenna will increase the efficiency and a number of distant stations can then be received. This external antenna is to be connected across the terminals marked ANT.

OPERATION:

The front panel has three knobs and three slide switches. The functions of the knobs are as indicated. The Volume Control knob is used to adjust the level of the sound of the radio or auxiliary. The Tone Control knob may be turned to the position that is most pleasing to the listener as it affects both the high and low frequency response. The Tuning knob is to select the desired FM station. The Select switch is used to select radio or auxiliary. The Power switch at the lower left is to turn the unit on or off. The slide switch at the lower right is used for AFC defeat.

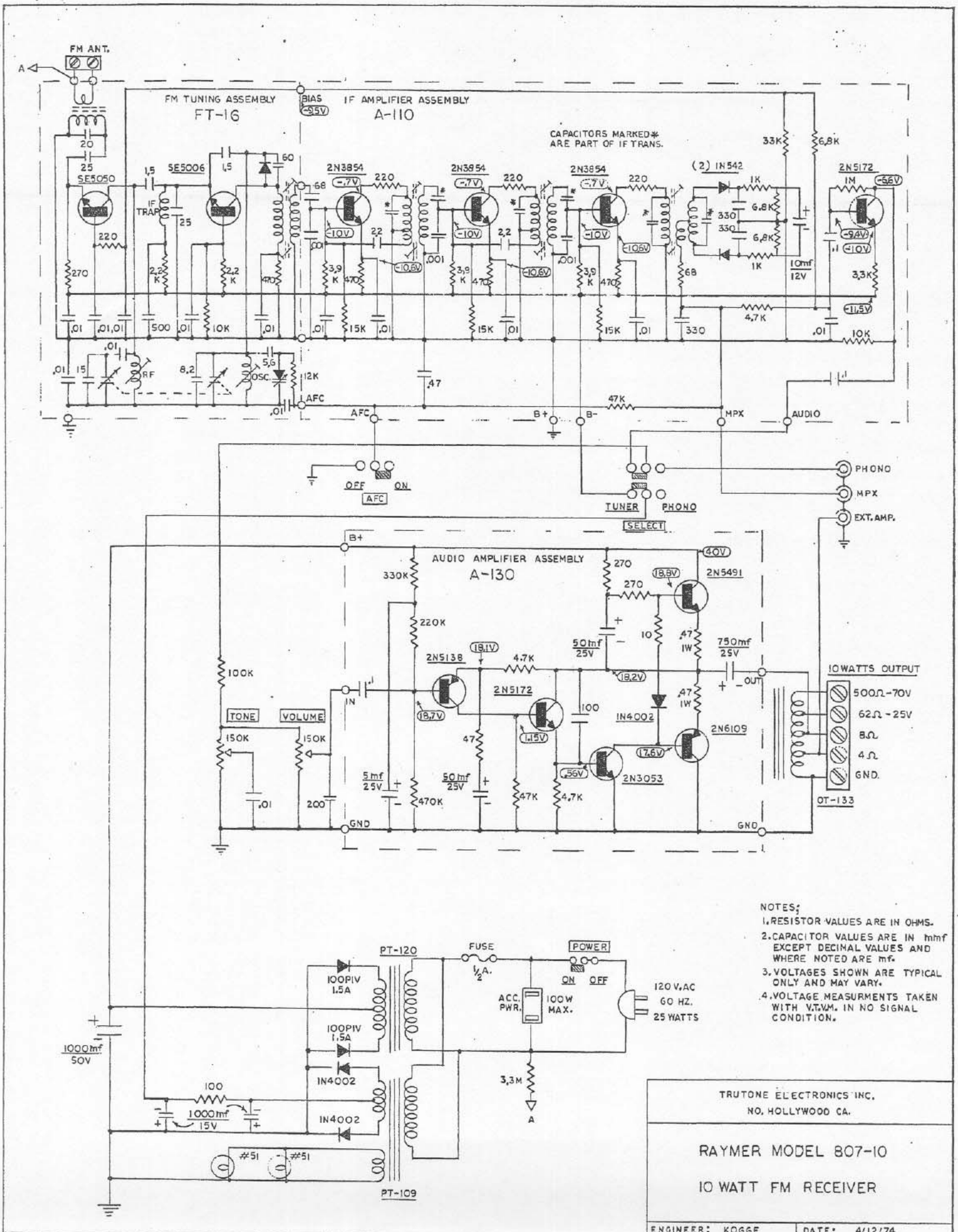
AFC refers to "Automatic Frequency Control" and is an electronic means of keeping the receiver properly tuned to the FM Broadcasting station. Even if the FM tuner pointer is not in the exact center of the channel, the AFC will automatically pull in the station to the proper point. However in tuning a weak station adjacent to a strong one even if the AFC is in an operating position, it may lock on the stronger signal. It is for this reason that a selector switch has been provided for disabling the AFC.

For normal operation, the AFC selector switch should be left in the ON position. For very precise tuning, or for tuning a weak station next to a powerful station on FM, it is suggested that the AFC selector switch be set to the TUNE position until the station is received the loudest. The switch is then to be moved to the ON position and the station will be properly tuned and locked in position.

The lower marking on the dial glass is a LOG scale for easy recording of the position of the pointer for any specific station.

Made in U.S.A. by

TRUTONE ELECTRONICS, INC. 7315 Fulton Avenue • North Hollywood, California 91605 • (213) 875-0423



FM ANT.
FM TUNING ASSEMBLY
FT-16
BIAS
-9.5V
IF AMPLIFIER ASSEMBLY
A-110
CAPACITORS MARKED * ARE PART OF IF TRANS.
SE5050
SE5006
IF TRAP
2N3854
2N3854
2N3854
(2) IN542
2N5172
RF
OSC.
AFC
B+
B-
MPX
AUDIO
OFF
ON
AFC
TUNER
PHONO
SELECT
PHONO
MPX
EXT. AMP.
AUDIO AMPLIFIER ASSEMBLY
A-130
2N5491
2N5138
2N5172
IN4002
2N6109
2N3053
TONE
VOLUME
IN
OUT
GND
10 WATTS OUTPUT
500Ω-70V
62Ω-25V
8Ω
4Ω
GND.
OT-133
PT-120
FUSE
½A.
POWER
ON
OFF
ACC. PWR.
100W MAX.
120 V.AC
60 HZ.
25 WATTS
100PIV 1.5A
100PIV 1.5A
IN4002
IN4002
1000mf 50V
1000mf 15V
#51
#51
PT-109
3,3M
NOTES;
1. RESISTOR VALUES ARE IN OHMS.
2. CAPACITOR VALUES ARE IN mmf EXCEPT DECIMAL VALUES AND WHERE NOTED ARE mf.
3. VOLTAGES SHOWN ARE TYPICAL ONLY AND MAY VARY.
4. VOLTAGE MEASURMENTS TAKEN WITH V.T.V.M. IN NO SIGNAL CONDITION.
TRUTONE ELECTRONICS INC.
NO. HOLLYWOOD CA.
RAYMER MODEL 807-10
10 WATT FM RECEIVER
ENGINEER; KOGGE
DATE; 4/12/74