RAYMER

OPERATING INSTRUCTIONS

MODEL 824 FM TUNER WITH MUSIC-ON-HOLD DRIVER

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS RECEIVER TO RAIN OR MOISTURE.

DESCRIPTION

The Raymer Model 824 is an all solid state monaural FM tuner with output provisions to drive most music-on-hold arrangements. The units consists of a tuner for the 88-108MHz FM band, a one watt audio amplifier and an AC line operated power supply completely housed in a steel cabinet with provisions for surface wall mounting.

All connections and adjustments are made on the front of the unit. Three tamper resistant controls are provided: a slide switch to turn the unit on and off, screwdriver tuning adjust with slide rule dial indicator and a thumbwheel control to set the output level. Three different audio outputs are provided: a high impedance output at a fixed level suitable for driving the auxiliary input of an external amplifier, a 500 ohm output adjustable to a maximum level of +4dbm to drive the audio input of a MOH card, and an 8 ohm output adjustable to a maximum of 1 watt as required to drive the BELL SYSTEM music-on-hold arrangement.

Terminals are provided to connect to either a 72 ohm or 300 ohm outside FM antenna. Designed for continuous operation, this unit features a J-FET RF stage, two ceramic IF filters, an air dielectric tuning capacitor and permanent AFC to assure drift free FM reception.

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, immediately notify your supplier, 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.

INSTALLATION

The Model 824 may be mounted in any position. To mount the unit on a wall or other flat surface, use #6 screws through the holes provided on the mounting flanges. Do not install the unit in areas where the ambient temperature exceeds 140°F, such as on top of heat generating equipment or in direct sunlight.

The power cord should be connected to a 120 volt 60Hz power source. Because of the low power consumption of the unit, it may be left running continuously without heat build-up. However, if it is desirable to turn the unit on and off with associated equipment, the power cord should be plugged into the convenience outlet provided on the equipment with which it is used.

ANTENNA INPUT

In order to obtain FM radio reception, some form of antenna must be connected to the terminals marked FM ANTENNA. Screw terminals are provided to properly match either 72 ohm or 300 ohm antennas. In strong reception areas a four foot length of wire connected to terminal #6 should be sufficient. In remote areas, an external antenna will increase the number of stations received. Antenna connections should be made in accordance with the instructions supplied by the antenna manufacturer. 72 ohm antennas use a "coax" cable for the down lead. The outside shield of this cable should be connected to terminal #5 and the center conductor to terminal #6. A 300 ohm antenna uses "twin lead" for the down lead. These wires should be connected to terminals #6 and #7.

OUTPUT CONNECTIONS

Three different outputs are provided: 8 ohms, 500 ohms and high impedance (50K). Any combination of outputs may be used at the same time provided their loads are properly matched.

Connection to the high impedance output (#8) is made by means of a phono type plug. To prevent induced hum and noise, shielded audio cable must be used when wiring this circuit. The total lenght of this cable should be limited to 100 feet to prevent high frequency attenuation. The audio signal of this output is fixed at one volt maximum and is not affected by the level control. This signal is suffiient to drive the auxiliary input of an external amplifier with an imput impedance of 50,000 ohms or greater. Low frequency response will be attenuated if the load is less than this value.

Connection to the 8 ohm and 500 ohm outputs are made by means of screw terminals. The output signal at these terminals is adjusted by the LEVEL control.

The 500 ohm output (#3 and #4) is isolated from ground and may be used to drive a balanced line at a +4dbm level (1.23V). This output may be used to drive the music input of a music-on-hold line card in a privately owned key system such as those maufactured by T.I.E. and N.E.C. Refer to the technical specifications supplied by the manufacturer for proper connections and input voltage requirements.

The 8 ohm output (#1 and #2) has a maximum power output of 1 watt (2.83V) which may be used to drive a monitor speaker or the Bell Telephone system music-on-hold arrangement. The Bell System arrangement is identified by their USOC (Universal Service Order Code) as LVH for rotary dial systems and FTP for touch tone systems. This music-on-hold arrangement must be ordered from the local telephone business office.

OPERATION

A small flat blade screwdriver is required to make adjustments on the unit. With the screwdriver blade move the power switch to the ON position. The POWER INDICATOR light will show that the unit is in operation.

To tune the unit to the desired station:

1. Connect a monitor speaker or telephone test handset across the 8 ohm terminals (#1 and #2).
2. Move the LEVEL control knob in the direction indicated by the arrow until sound is heard through the monitor device.
3. Remove the plug from the hole marked TUNING by gently prying with the screwdriver blade. This exposes the screwdriver slot for tuning.
4. With the screwdriver, turn this adjustment until the dial indicator is at the frequency of the desired station (clockwise rotation increases frequency).
5. When the desired station is received, turn the tuning adjust both clockwise and counterclockwise until the dial indicator is in the center of the positions where best reception is observed.
6. To verify that the Automatic Frequency Control is permanently locked to the desired station, turn off the power switch for 10 seconds and then turn back on. If the unit does not return to the proper station, repeat Step 5 until it does.
7. Replace plug over hold marked TUNING.
8. When in the Music-On-Hold condition, adjust the LEVEL control for comfortable listening volume in the telephone headset.

WARRANTY

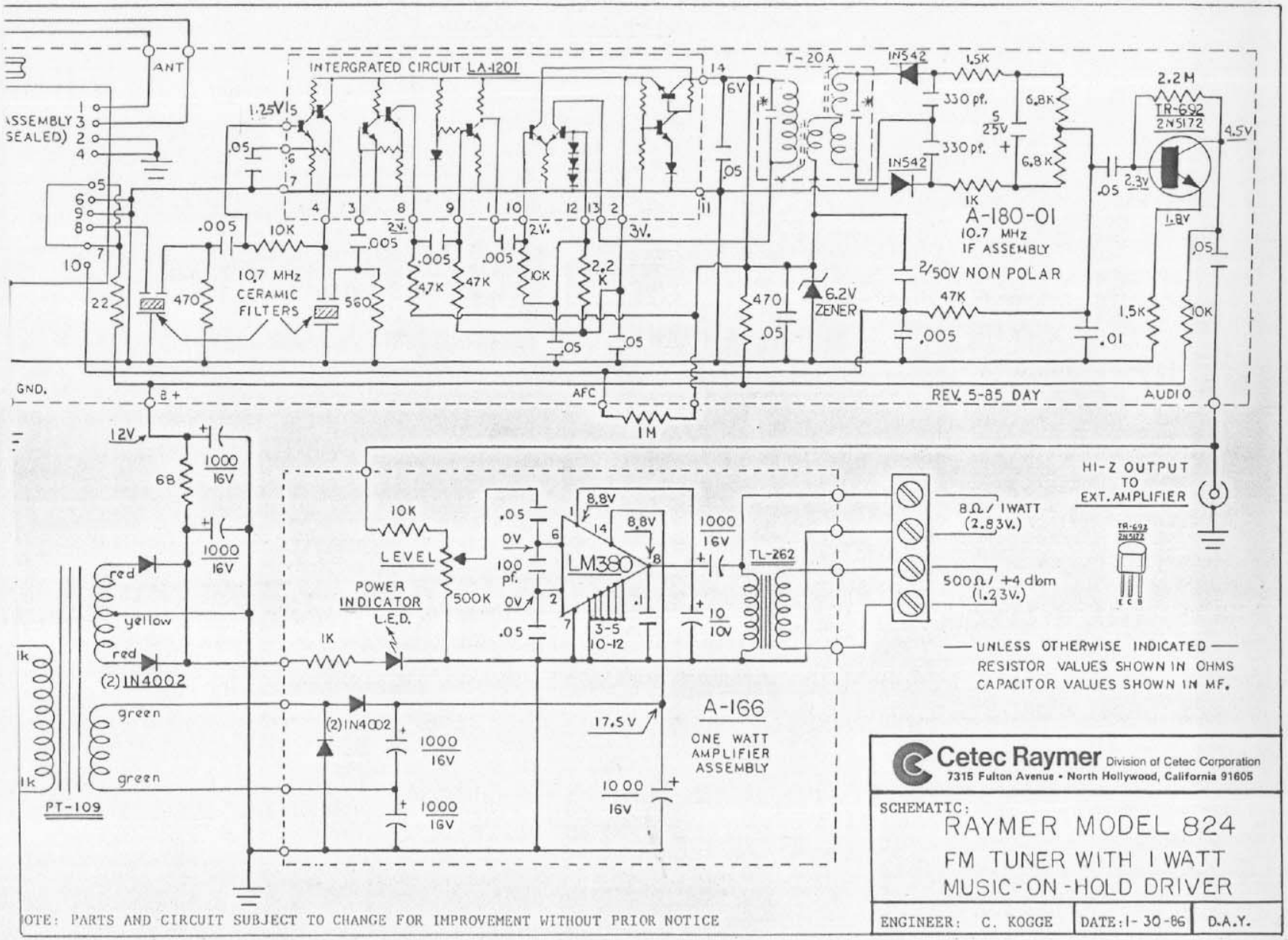
This unit has been very carefully inspected and is warranted to be free from defects in material and workmanship under normal use and service for a period of one year from date of sale to the original purchaser. This Warranty does not extend to any unit which has been subject to abuse, misuse, neglect, accident, improper installation, or alterations. The obligation of Trutone Electronics under this Warranty is limited to the repair of any defect in material or workmanship and/or the replacemnt of any defective part, provided the unit is returned to Trutone Electronics Inc. transportation paid within the year.

It is recommended that any unit on which service is required be processed through your distributor or installation company 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.

Made in U.S.A. by

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



Cetec Raymer Division of Cetec Corporation
7315 Fulton Avenue • North Hollywood, California 91605

SCHEMATIC:
RAYMER MODEL 824
FM TUNER WITH 1 WATT MUSIC-ON-HOLD DRIVER

ENGINEER: C. KOGGE	DATE: 1-30-86	D.A.Y.

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT PRIOR NOTICE