

TP-38 TO KENWOOD TKR-820 BASE/REPEATER

1

TO + 12 VDC. # 7 ACC. CONN.

2

N/C

3

P.T.T. TO # 8 ACC. CONN.

4

TO DETECTOR # 4 ACC. CONN.

5

GROUND (A-) TO # 11 ACC. CONN

6

REPEAT AUDIO TO # 5 ACC. CONN

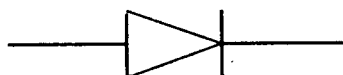
7

GROUND TO # 2 ACC. CONN.

8

CTCSS OUT TO # 3 ACC. CONN.

note : ground #1 of ACC. CONN.

NOTE : INSTALL A 1N4148 (OR EQUAL) BETWEEN THE CATHODE CR-3 AND ANODE OF CR-4. (L-1). ----- CR-3  CR-4 -----

ID-8 : CONNECT P.T.T, TO CATHODE OF CR-3 IN TP38 (PTT RELAY)

CONNECT THE TRIGGER AND INHIBIT TOGETHER WITH A 1N4148 TO ID-8 PTT....

CONNECT + & -- TO EACH SIDE OF TP-38 FILTER CAP. (C-43)

CONNECT ID-8 AUDIO OUT TO RESISTOR R-35 AND R-18 NEAR IC U-4 (TP-38)

PROGRAM ID-8 MESSAGE AND TIMERS AS NEEDED, LEAVE TRIGGER AND INHIBIT. AT THE DEFAULTS (TRIG = LO, INHIBIT = LO).

CIRCUIT DESCRIPTION

Accessory Connector

No.	Name	Functions & Specifications	Terminal Subject to TAKE OVER control
1	HK	External hook terminal / Set this terminal to GND level before using external PTT. Unlike MIC HOOK, no monitor function is provided.	○
2	LG	Line input GND / Used for No. 5 (LI).	
3	DI	Direct modulation input terminal / External input terminal for QT and DQT : $\pm 750\text{Hz DEV}$ at approx. 600Ω input impedance, 0.2Vp-p . Degree of modulation is to be adjusted externally.	
4	DO	Direct detection output / Direct output of detected (unfiltered) signal : Output impedance $10\text{k}\Omega$. Output level : -10dBs at $\pm 3\text{kHz DEV}$, 1kHz .	
5	LI	Line input / Input terminal for external modulation. Standard modulation is provided at 600Ω , 0.24dBm . Same as MIKE level except for input level.	○
6	SG	Speaker output GND / GND for output to external speaker. Used for No. 12 (SO).	
7	SB	+13.6V external power output / Power supply for external equipment. Up to 1A.	
8	PT	External PTT input / Transmission is started at GND level if No. 1 (HK) is at GND level.	○
9	SI	Internal speaker input / Usually connected to No. 12 (SO) via jumper wire.	
10	LO	Line output / Used for output of received signal, for standard modulation at 600Ω , -10dBm . -6dB/oct , 300Hz to 3kHz . Interlocked with No. 13 (CO).	○
11	GN	DC GND / GND for DC power supply.	
12	SO	Speaker output / Output terminal for external speaker.	
13	CO	Internal preset squelch output / Provides an output interlocked with internal preset squelch, or a tone squelch output when writing tone. When receiving signal, this output is at low level (open collector) with 10mA sink current.	
14	NC	Unused.	
15	NC	Unused.	

AVR Circuit

This power supply uses a tapped secondary transformer to maintain low voltage between the pass transistor collectors and emitters (Q5 and Q6) for excellent efficiency. Control and operating voltages are rectified and supplied independently for good ripple characteristics.

Temperature compensation for the regulator Zener diode D5 and error amplifier transistor Q4 is provided by silicon diodes D4 and D6.

At initial POWER-ON Q3 is ON to turn-down Q4 base voltage. This prevents a surge voltage from being output when no load is connected. As C5 charges, Q2 turns ON to shut Q3 OFF. Q4 is thereafter fully ON.

If the load is shorted, comparator Q1 is turned OFF and current proportional only to that in the initial turn-on circuit is output. When the output is shorted, the output current drops to 1A. This circuit protects the pass transistors, transformer and full wave bridge rectifies from thermal damage.

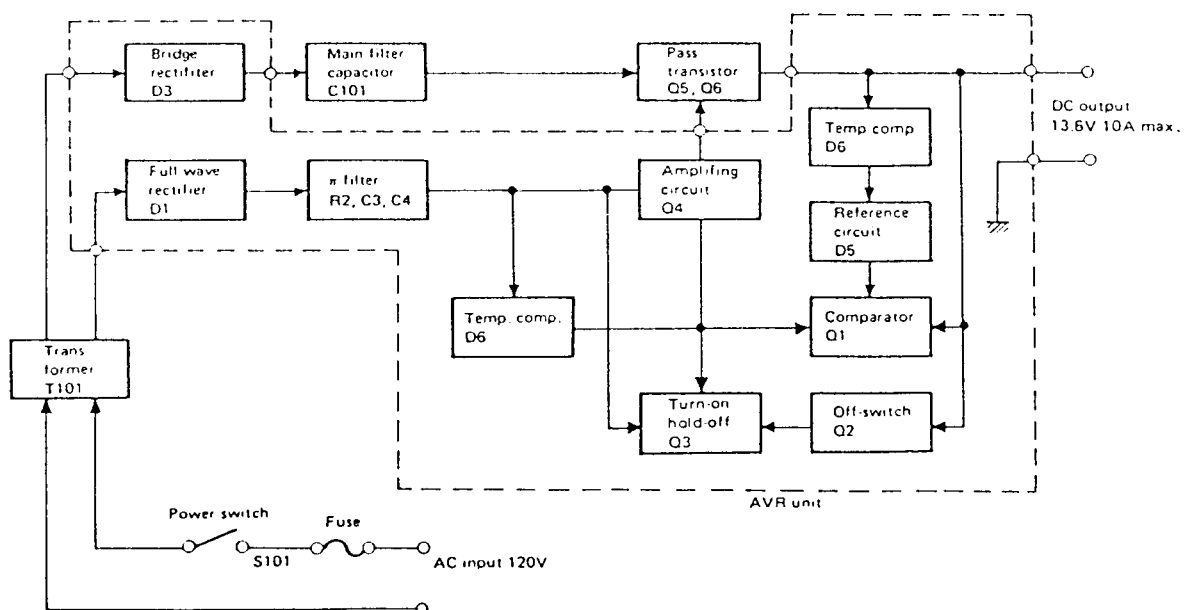


Fig. 6 AVR circuit block diagram