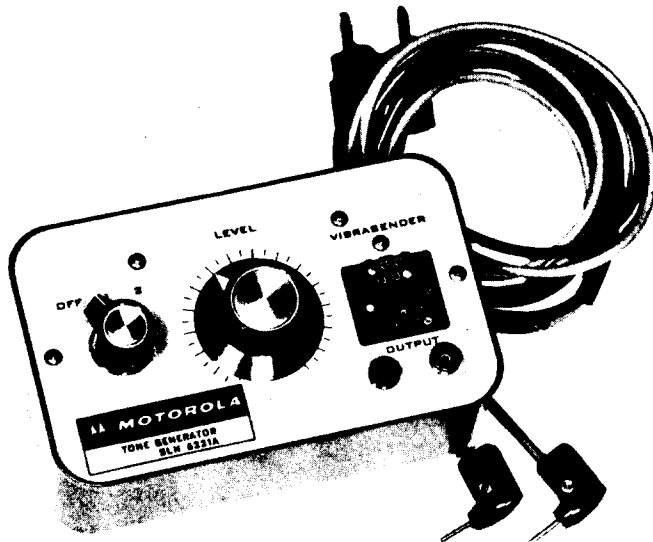


MOTOROLA

tone GENERATOR

MODEL SLN6221A



1. APPLICATION

The Motorola Model SLN6221A Tone Generator is used for testing and trouble-shooting receiver "Private-Line" squelch circuits and other tone operated two-way radio equipment. The tone squelch sensitivity of the receiver can be checked by using an FM signal generator modulated by the Model SLN6221A Tone Generator. The tone generator output may also be applied directly into the tone circuits of the receiver for stage-by-stage isolation of any trouble.

The tone generator requires the use of a "Vibrasender" resonant reed of the same frequency as the "Vibrasponder" resonant reed in the radio circuit to be tested. The tone generator will accommodate Motorola Model TLN6364A, TLN6824A and TLN6492B* Series "Vibrasender"

*Model TLN6492B is a combination unit with both "Vibrasender" and "Vibrasponder" resonant reeds. Only the "Vibrasender" resonant reed portion is used to generate a tone.

Resonant Reeds. The Motorola Model T1034A-6A Series FM Signal Generator is used with the tone generator for tone squelch sensitivity measurements.

2. DESCRIPTION

The Model SLN6221A Tone Generator is a battery-powered unit supplied with a test cable for connection to the FM signal generator. Two additional test lead kits are available on separate order. These are the Model TEKA-18 Test Lead Kit which is terminated with two "Minigator" clips, and the Model TEKA-19 Test Lead Kit which is terminated with one "Minigator" clip and a test prod.

The front panel of the tone generator has a "function" switch with an OFF, 1 and 2 position, an output LEVEL control, two "VIBRASENDER" resonant reed receptacles, and a pair of OUTPUT jacks.

3. OPERATION

a. Modulating the T1034A-6A Series FM Signal Generator

(1) Connect the 2-pin plug on the test cable to the EXT MOD and GND terminals on the FM signal generator. (The pin connected to the BLACK lead plugs into the GND terminal.)

(2) Connect the two plugs on the other end of the test cable to the OUTPUT connectors on the tone generator (BLACK plug to BLACK connector; RED plug to RED connector).



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(3) Set the LEVEL control on the tone generator to the maximum clockwise position.

(4) Set the modulation selector switch on the FM signal generator to the EXT position.

(5) Plug a "Vibrasender" resonant reed of the proper frequency into the proper socket on the tone generator panel.

(6) Set the function switch of the tone generator as shown in the Function Switch Table.

FUNCTION SWITCH TABLE

"VIBRASENDER" RESONANT REED MODEL SERIES	SWITCH POSITION
TLN6824A	1
TLN6364A	1
TLN6492B	2

(7) Set the FM signal generator for the proper carrier frequency output in accordance with its associated instruction manual. Use the modulation level control on the FM signal generator to set the required amount of deviation. The amount of deviation may be read on the modulation meter of the FM signal generator. Approximately 2 to 5 kc deviation may be obtained when modulating an FM signal generator. This is adequate deviation for any receiver tests that might be required.

NOTE

A typical deviation of 2 to 4 kc can be obtained when using Models TLN6824A or TLN6492B Series "Vibrasender" resonant reeds. The deviation may be lower when using Model TLN6364A Series. "Vibrasender" resonant reed, depending on the frequency of the reed used.

b. Applying the Output Directly to Receiver
Tone Circuits

(1) Connect a pair of test leads to the OUTPUT terminals on the panel of the tone generator.

(2) Plug a "Vibrasender" resonant reed of the proper frequency into the proper socket on the tone generator panel.

(3) Set the function switch of the tone generator as shown in the Function Switch Table.

(4) Set the LEVEL control of the tone generator to the desired output voltage level.

4. BATTERY REPLACEMENT

To replace the battery, remove the two screws on the rear cover and remove the cover. The battery is mounted on the printed circuit board. Observe correct polarity when inserting the new battery. (See battery note in Parts List)

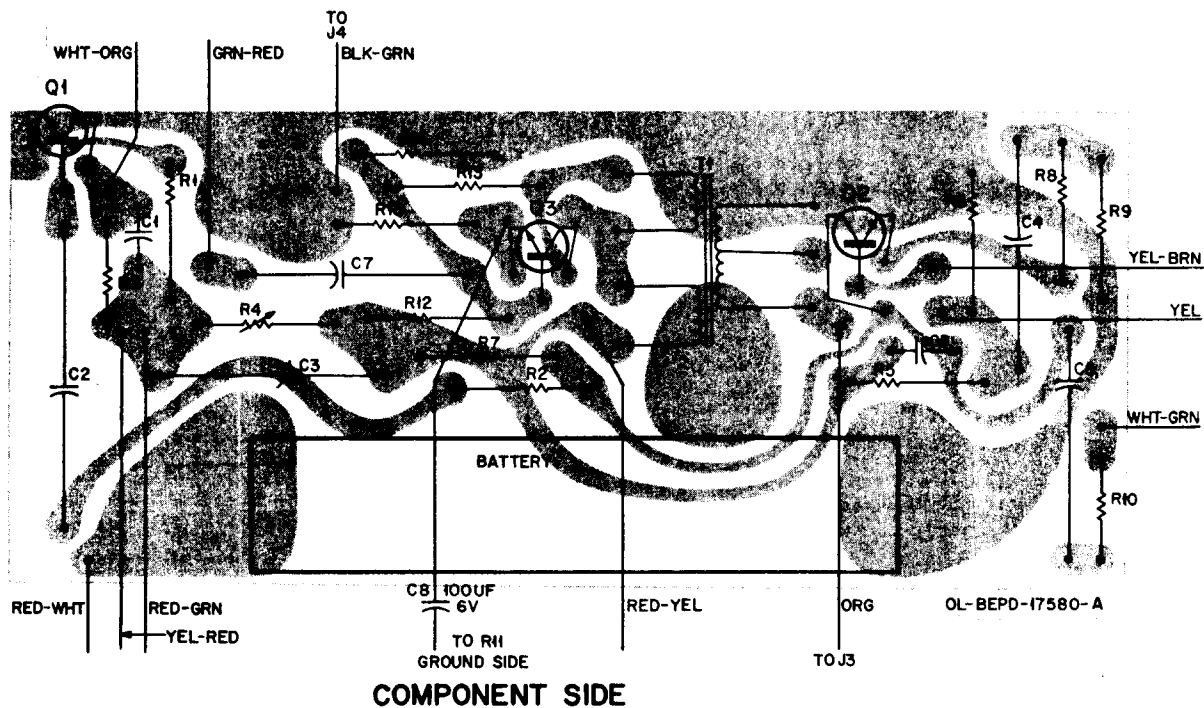
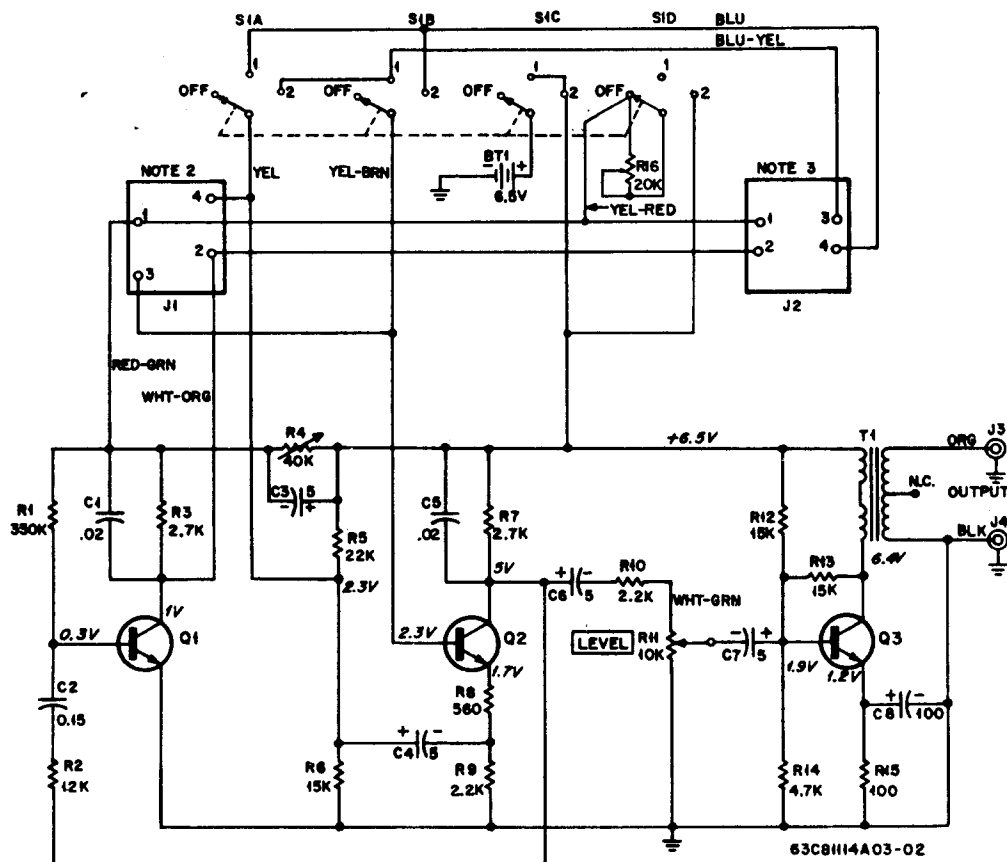
WARNING

Do not discard mercury batteries so that they may be placed in a fire. Exploding batteries may cause injury.

5. DATA INCLUDED

Model SLN6221A Tone Generator
Schematic Diagram and
Circuit Board Detail

PEPD-17578



NOTES:

1. SEE PARTS LIST FOR RESISTOR WATTAGE RATINGS.
2. SOCKET (BOTTOM VIEW) FOR TLN6824A SERIES "VIBRASENDER" RESONANT REEDS.
3. SOCKET (BOTTOM VIEW) FOR TLN6364A AND TLN6492B SERIES "VIBRASENDER" RESONANT REEDS.
4. VOLTAGE READINGS ARE TYPICAL VALUES MEASURED WITH A MOTOROLA DC MULTIMETER (11 MEGOHM INPUT RESISTANCE).

EPD-17470-A

PREVIOUS REVISIONS AND PARTS LIST SHOWN ON BACK OF THIS DIAGRAM

Model SLN6221A Tone Generator
Schematic Diagram and
Circuit Board Detail
Motorola No. PEPD-17578-B
6/11/69-UP

REVISIONS

DIAG. ISSUE	CHASSIS AND SUFFIX NO.	REF. SYMBOL	CHANGE	LOCATION
O1	SLN6221A	C1, 5	WERE .01 uf +80-20%; 600 V	PARTS LIST
		R4	WAS 18C82567D01 20K	
		R16	ADDED 20K	
O2	SLN6221A		JUMPER ADDED BETWEEN SID-OFF AND J2-1	SID SID-OFF

Note: The battery may be one of the following brands and types:

Burgess H135R
Eveready E-135N
Mallory TR-135N
Ray-O-Vac T-135N

This is a 6.75 volt, 1000 mAh mercury battery that is 0.662" in diameter and 3.245" long.

PARTS LIST

SLN6221A Tone Generator

EPD-17592-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
BT1	60B863919	<u>BATTERY:</u> 6.5 v See Note
C1, 5	21K832502	<u>CAPACITOR, fixed: uf</u> .02 +60-40%; 250 v
C2	8K867213	.15 ±10%; 200 v
C3, 4, 6, 7	23D82601A11	5 +33-10%; 25 v
C8	23D82601A12	100 +150-10%; 6 v
J1	9C83035A02	<u>RECEPTACLE:</u> female; 4 cont
J2	1B82520C01	female; 4 cont
J3	9K833983	female; single cont; RED
J4	9A833982	female; single cont; BLK
Q1, 2, 3	48R869430	<u>TRANSISTOR: (SEE NOTE)</u> N-P-N; type M9430
R1	6S2096	<u>RESISTOR, fixed: ±10%; 1/2 w</u> 330K
R2	6S6394	12K
R3, 7	6S5577	2.7K
R4	18C82567D02	40K ±20%; 1/8 w
R5	6S6397	22K
R6, 12, 13	6S6477	15K
R8	6S6291	560
R9	6S6069	2.2K
R10	6R128688	2.7K; 1/4 w
R11	18K805241	10K ±30%; 1/4 w
R14	6S6080	4.7K
R15	6S6326	100
R16	18C82567D01	20K ±20%; 1/8 w
S1	40K801196	<u>SWITCH</u> 4 pole; 3 position
T1	25C852299	<u>TRANSFORMER, audio:</u> pri: imped. 6000 ohm; res. 670 sec: imped. 280 ohm; res. 13 ohms total
NON-REFERENCED ITEMS		
	36B82630H01 36B82630H05 39A83070A01 28A804791 28A82675C01 28A82675C01 1V80795A61	KNOB, control #4 KNOB, control CONTACT, battery PLUG, male; double cont PLUG, male; single cont; BLK PLUG, male; single cont; RED REED SOCKET, ASSY; incl the following 64C82078F01 BOARD, socket; 1 req'd 5S131567 RIVET (.088 x 5/16") 2 req'd 5S115009 RIVET (.060 x 7/32") 2 req'd Ref Parts J1 and J2

NOTE:

Replacement transistors must be ordered by Motorola part number only for optimum performance.

END OF DOCUMENT