MOBILE RADIO

INSTRUCTIONS

FOR

SQUELCH TAIL ELIMINATOR BOARD 19A130001G1

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DESCRIPTION

The Squelch Tail Eliminator Board is required only in two-frequency transmit MASTR® II Remote Control Base Stations equipped with Channel Guard. The board circuitry holds either the F1 or F2 transmitter oscillator control leads at ground potential during the 160 millisecond DELAYED PTT period, preventing the selection of an alternate transmitter frequency before the DELAYED PTT is released.

CIRCUIT ANALYSIS

When remote PTT is released, the DELAYED PTT lead A9 is grounded at the Channel Guard board for a period of 160 ms. Assume that the transmit F1 oscillator was selected for the transmission. The transmit frequency control lead A5 will be grounded, with Q1 and Q2 (F1 LEVEL INVERTERS) operated. Conduction of Q2 provides a low to pin 9 of NOR gate U1-C. Pin 10 at U1-C will also be low as the result of the output of U1-A. The resultant high output of U1-C at pin 8 is inverted to a low by U1-D and this low is applied to pin 6 of F1 DETECT GATE U1-B.

The ground on the DELAYED PTT lead A9 operates PTT LEVEL INVERTER transistors Q3 and Q4, applying a low to pin 5 of U1-B. The resultant high at pin 4 of U1-B operates F1 LATCH SWITCH Q7 and maintains the ground on the TRANSMIT F1 lead A5 during the DELAYED PTT period. The F2 LATCH circuit operates in the same manner when the F2 transmitter oscillator is selected.

In DC remote control systems, with a number of paralleled remote control units, the control line current will not instantly rise to +6 mA or +11 mA at the station. The station may thus attempt to key momentarily on the non-selected transmitter oscillator as the control current passes through the alternate line level. Gates U1-C, U1-D and the DC CONTROL FREQ. INHIBIT SWITCH are provided to avoid this momentary keying of the undesired frequency. Gate U1-C will not allow F1 to be latched if F2 is selected. Q11 prevents the DC Control Board from selecting F1 when the current decays through the +6 mA level.

When PTT is released at the DC remote control unit, the REMOTE PTT lead D4 goes high. Transistors Q9 and Q10 are turned off and diode CR1 is forward biased from the PTT LEVEL INVERTER. Q11 is thus turned on, grounding the DC FREQ. SELECT INHIBIT lead A4 to prevent the DC Control Board from selecting the alternate transmitter oscillator during the DELAYED PTT period.

GENERAL ELECTRIC COMPANY • MOBILE COMMUNICATIONS DIVISION
WORLD HEADQUARTERS • LYNCHBURG, VIRGINIA 24502 U.S.A.

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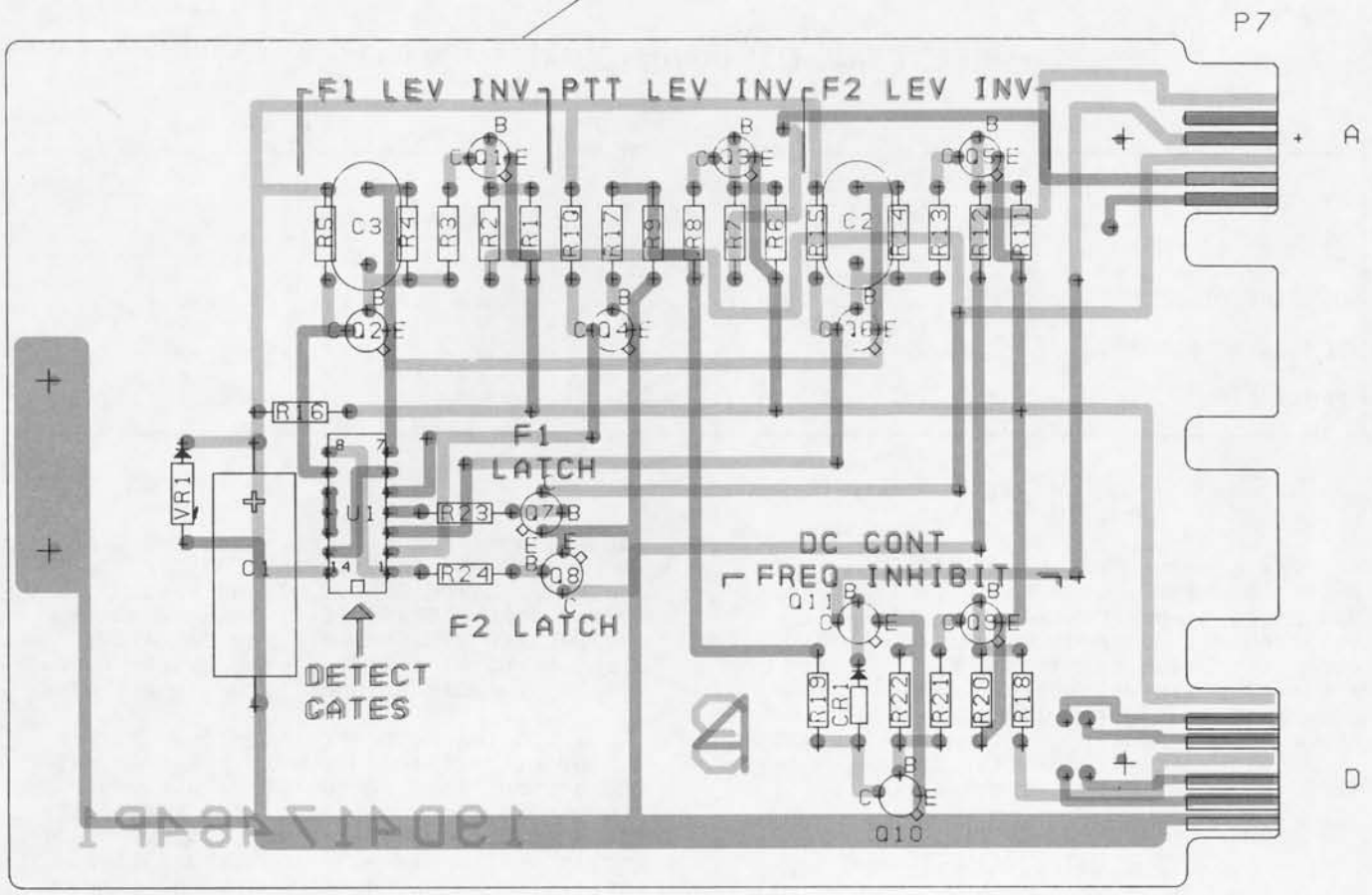
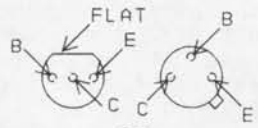
U.S.A.

19D417467



(19D423279, Rev. 2)
(19D417464, Sh. 2, Rev. 3)
(19D417464, Sh. 3, Rev. 4)

LEAD IDENTIFICATION
FOR Q1,Q3,Q5,&Q9



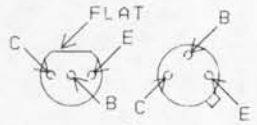
OR

IN-LINE TRIANGULAR

TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

LEAD IDENTIFICATION
FOR Q2,Q4,Q6,Q7,Q8,Q10,&Q11

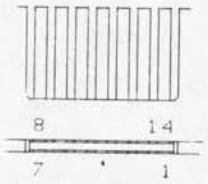


OR

IN-LINE TRIANGULAR

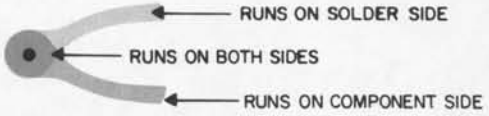
TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION



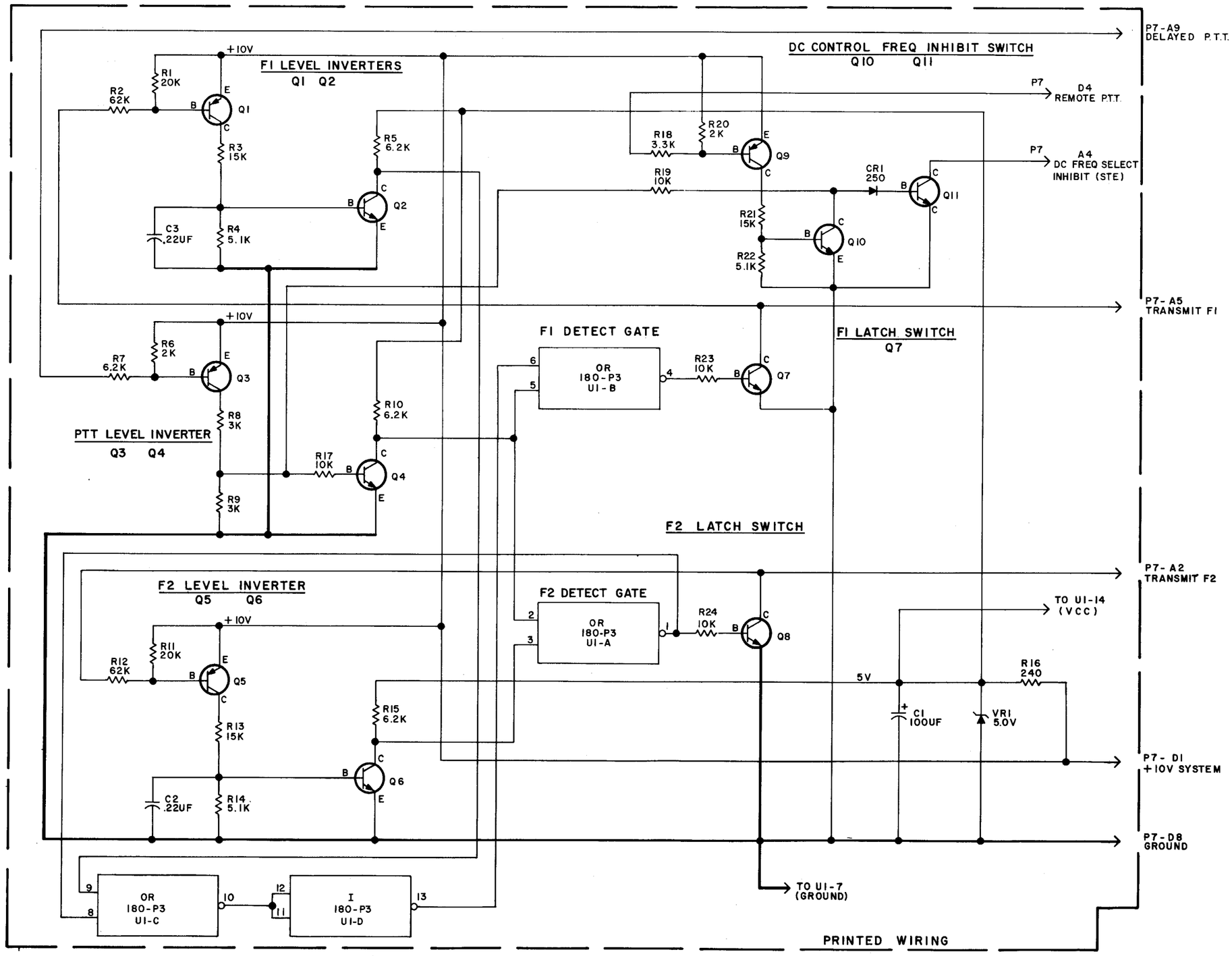
SOLDER SIDE
TYP. NUMBERING OF CONTACT FINGERS.

DETAIL "A"



OUTLINE DIAGRAM

SQUELCH TAIL ELIMINATOR BOARD
19A130001G1



(19D417468, Rev. 6)

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

MODEL NO	REV LETTER
PL19A130001G1	
PL19D417467G1	

ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

SCHEMATIC DIAGRAM

SQUELCH TAIL ELIMINATOR BOARD
19A130001G1

PARTS LIST

LBI-4881

SQUELCH TAIL ELIMINATOR BOARD
19A130001G1

SYMBOL	GE PART NO.	DESCRIPTION
	19B219690G1	Handle assembly.
	19D417384P1	Panel.
		COMPONENT BOARD 19D417467G1
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1	19A115680P7	Electrolytic: 100 µf +150% -10%, 15 VDCW; sim to Mallory Type TT.
C2 and C3	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1	19A115250P1	Silicon.
		- - - - - - - - - - - - PLUGS - - - - - - - - - - -
P7		(Part of printed board 19D417464P1).
		- - - - - - - - - - TRANSISTORS - - - - - - - - -
Q1	19A115768P1	Silicon, PNP; sim to Type 2N3702.
Q2	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q3	19A115768P1	Silicon, PNP; sim to Type 2N3702.
Q4	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q5	19A115768P1	Silicon, PNP; sim to Type 2N3702.
Q6 thru Q8	19A115910P1	Silicon, NPN; sim to Type 2N3904.
Q9	19A115768P1	Silicon, PNP; sim to Type 2N3702.
Q10 and Q11	19A115910P1	Silicon, NPN; sim to Type 2N3904.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R152P203J	Composition: 20,000 ohms ±5%, 1/4 w.
R2	3R152P623J	Composition: 62,000 ohms ±5%, 1/4 w.
R3	3R152P153J	Composition: 15,000 ohms ±5%, 1/4 w.
R4	3R152P512J	Composition: 5100 ohms ±5%, 1/4 w.
R5	3R152P622J	Composition: 6200 ohms ±5%, 1/4 w.
R6	3R152P202J	Composition: 2000 ohms ±5%, 1/4 w.
R7	3R152P622J	Composition: 6200 ohms ±5%, 1/4 w.
R8 and R9	3R152P302J	Composition: 3000 ohms ±5%, 1/4 w.
R10	3R152P622J	Composition: 6200 ohms ±5%, 1/4 w.
R11	3R152P203J	Composition: 20,000 ohms ±5%, 1/4 w.
R12	3R152P623J	Composition: 62,000 ohms ±5%, 1/4 w.
R13	3R152P153J	Composition: 15,000 ohms ±5%, 1/4 w.
R14	3R152P512J	Composition: 5100 ohms ±5%, 1/4 w.
R15	3R152P622J	Composition: 6200 ohms ±5%, 1/4 w.
R16	3R152P241J	Composition: 240 ohms ±5%, 1/4 w.
R17	3R152P103J	Composition: 10,000 ohms ±5%, 1/4 w.
R18	3R152P332J	Composition: 3300 ohms ±5%, 1/4 w.
R19	3R152P103J	Composition: 10,000 ohms ±5%, 1/4 w.
R20	3R152P202J	Composition: 2000 ohms ±5%, 1/4 w.
R21	3R152P153J	Composition: 15,000 ohms ±5%, 1/4 w.
R22	3R152P512J	Composition: 5100 ohms ±5%, 1/4 w.
R23 and R24	3R152P103J	Composition: 10,000 ohms ±5%, 1/4 w.
		- - - - - - - - - INTEGRATED CIRCUITS - - - - - - -
U1	19A116180P3	Digital, Quad 2-Input Nor Gate; sim to Texas Instrument Type SN7402N.
		- - - - - - - - - VOLTAGE REGULATOR - - - - - - - -
VR1	4036887P56	Silicon, Zener.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.