



General Electric

Private Radio Systems

Lynchburg, Virginia

Mastr-2 Mobile Training Class Handouts

Circa 1975

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MASTR II MOBILE COMBINATIONS

I II III IV V VI VII VIII IX X
M C 6 4 C B W 3 3 A

I. MECHANICAL PKG
 M = STANDARD

II. SYSTEM VOLTAGE
 C = 12V, ±GND

III. POWER OUTPUT
 0 = RCVR ONLY
 4 = 8-16W
 5 = 16-38W
 6 = 38-66W
 7 = 66-128W

IV. CHANNEL SPACING
 2 =
 3 =
 4 = 20 kHz
 5 = 25 kHz
 6 = 30 kHz

V. FREQ CAPABILITY (CONTROL LIMITATION)
 A = 1
 C = 2
 K = 8

VI. NUMBER OF FREQUENCIES

	T	R
A	1/1	
B	2/1	
C	2/2	
D	1/2	
E	3/3	
F	4/4	
G	5/5	
H	6/6	
J	7/7	
K	8/8	

VII. OPTIONS
 G = CG + UHS
 N = NOISE BLANKER
 P = UHS
 S = STANDARD
 U = CG
 W = CG + BLANKER

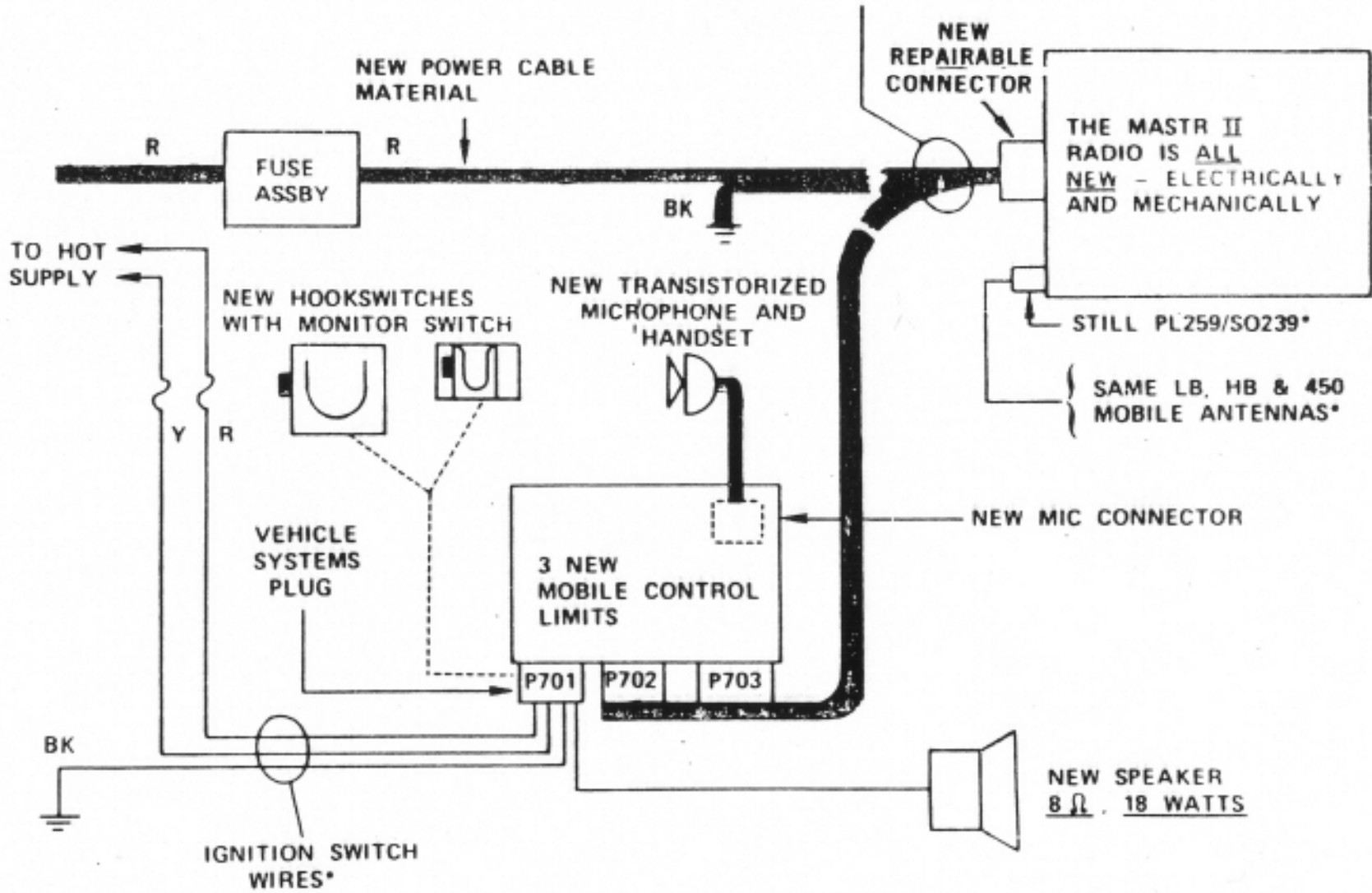
X. OSCILLATOR STABILITY
 A = 5 PPM
 B = 2 PPM

VIII. & IX. FREQ RANGE

12	= 25-30 MHz
13	= 30-36 MHz
23	= 36-42 MHz
33	= 42-50 MHz
44	=
45	=
56	= 138-150.8 MHz
66	= 150.8-174 MHz
77	= 406-420 MHz
88	= 450-470 MHz
89	= 470-494 MHz
91	= 494-512 MHz

MASTR II MOBILE COMBINATIONS

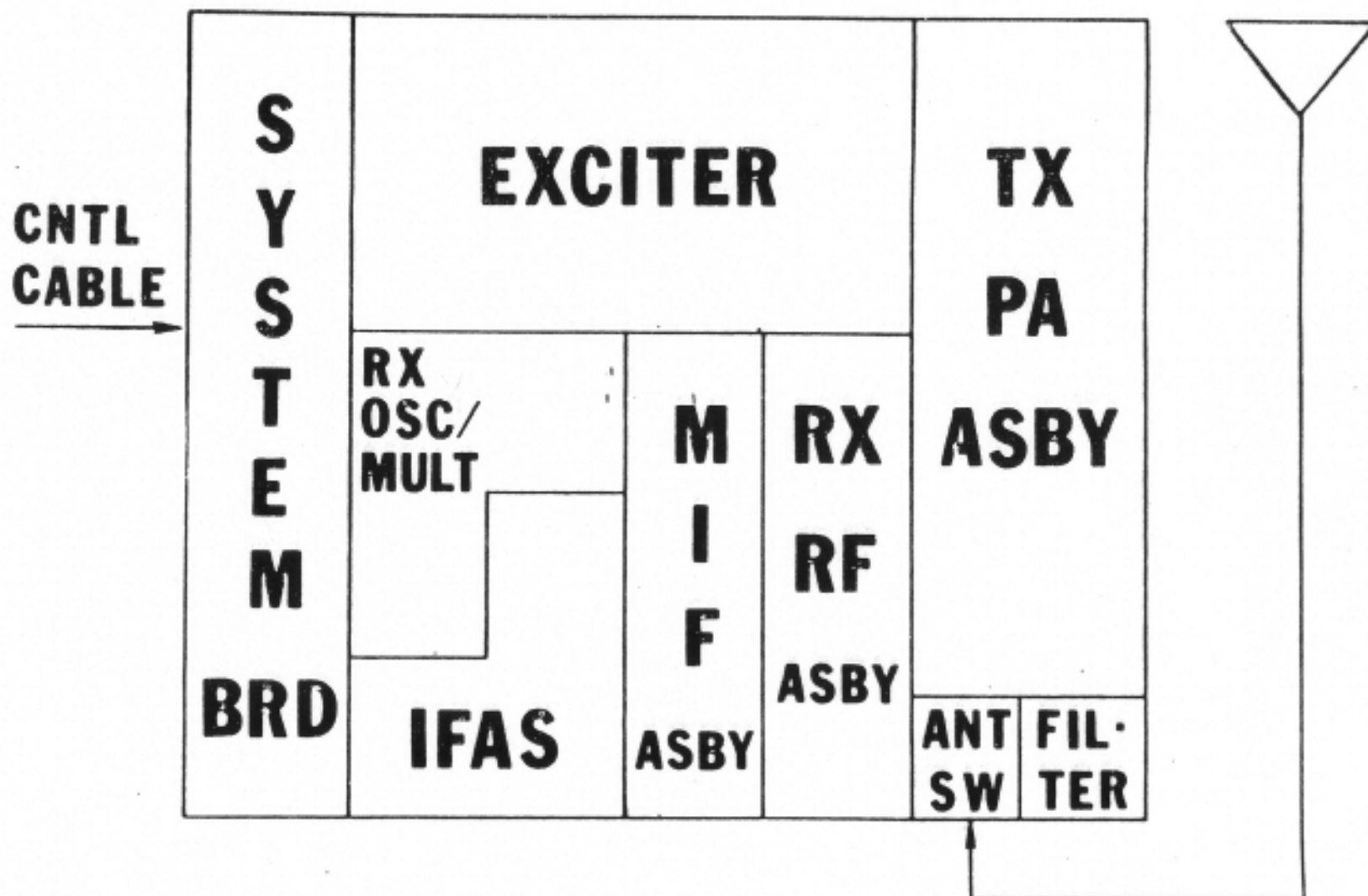
NEW COMBINATION POWER & CONTROL CABLE ASSEMBLIES
(3 LENGTHS) (3 CONTROL CAPACITIES) = 9 NEW ITEMS



*SAME AS MASTR PROFESSIONAL SERIES

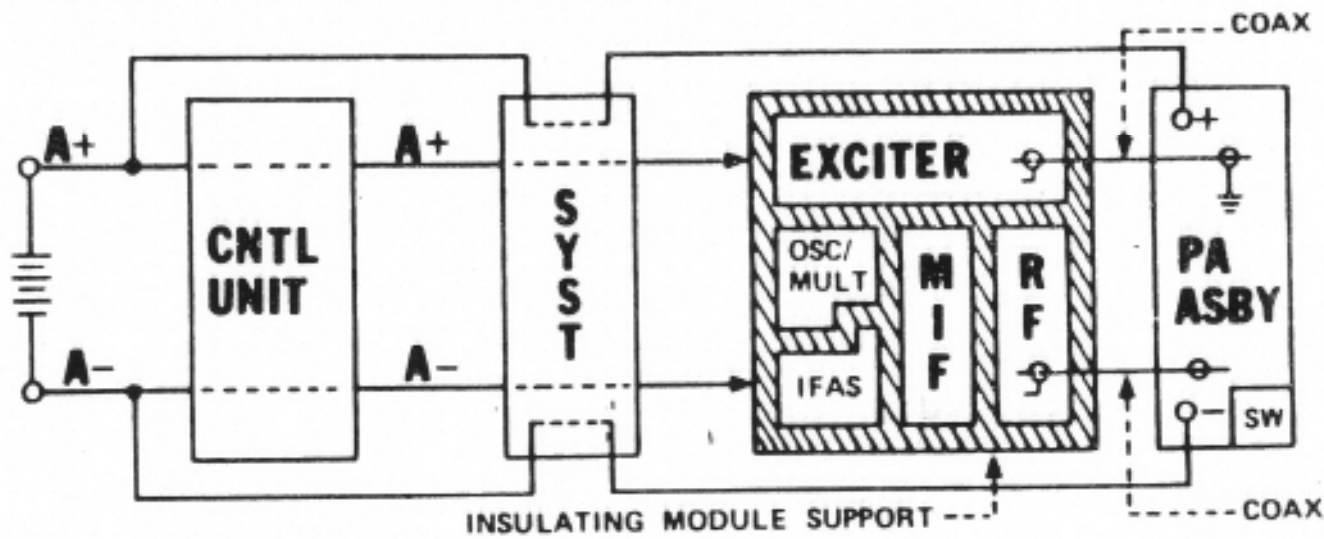
MASTR II MOBILES

WHAT'S INSIDE
COUNTS, TOO!

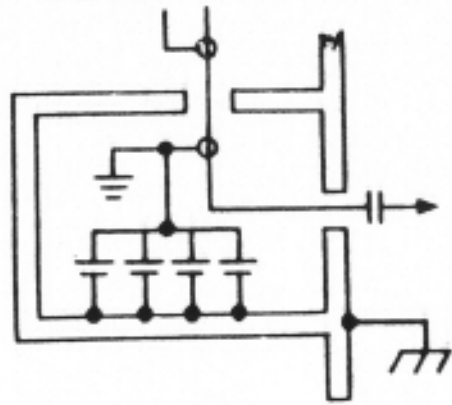


MASTR II MOBILES

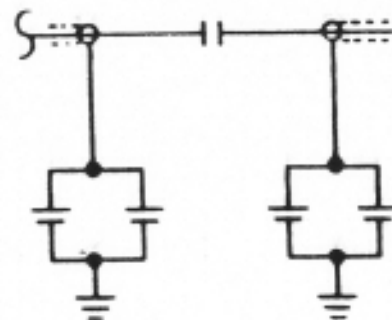
HOW THE RADIO FLOATS



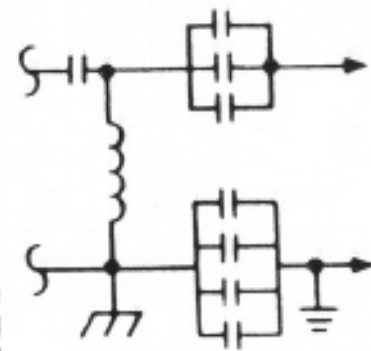
RCVR INPUT



PA INPUT



PA OUTPUT

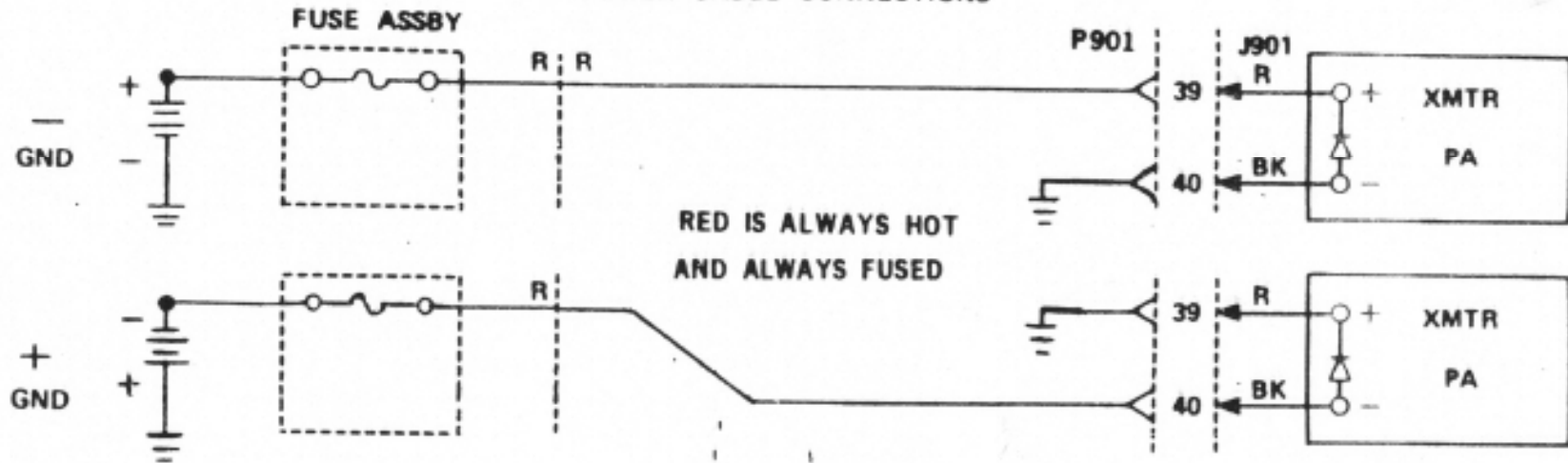


MASTR II MOBILE CONTROL

12 VOLT SYSTEM
CONNECTIONS FOR ±GROUND

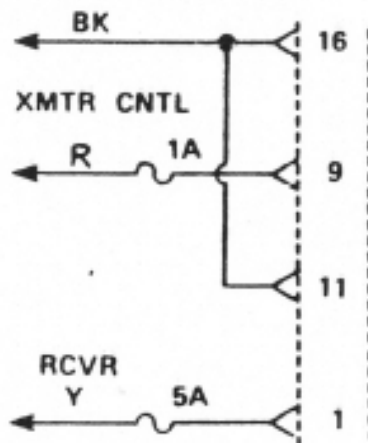
SO FAR AS VEHICLE GROUND IS CONCERNED, THE ENTIRE RADIO FLOATS

POWER CABLE CONNECTIONS

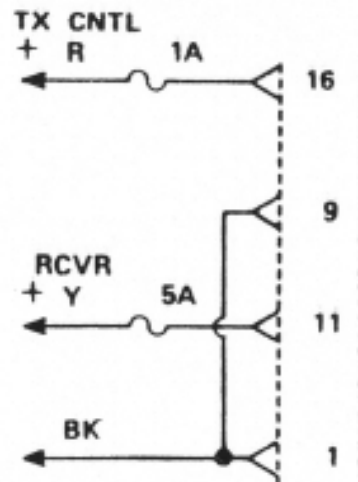


VEHICLE SYSTEMS PLUG

POSITIVE GROUND



NEGATIVE GROUND

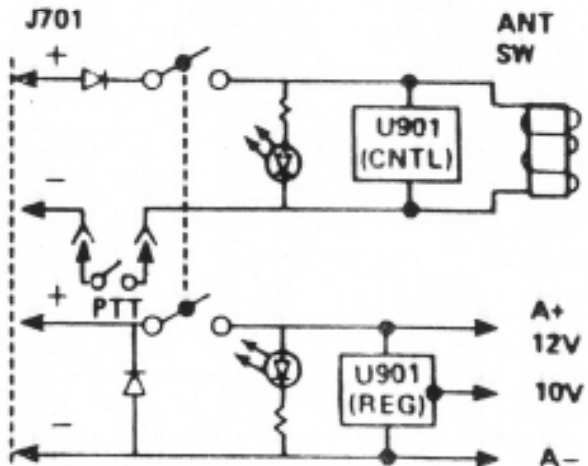


IGN SW
(PTT SUPPLY+)

PTT LOW

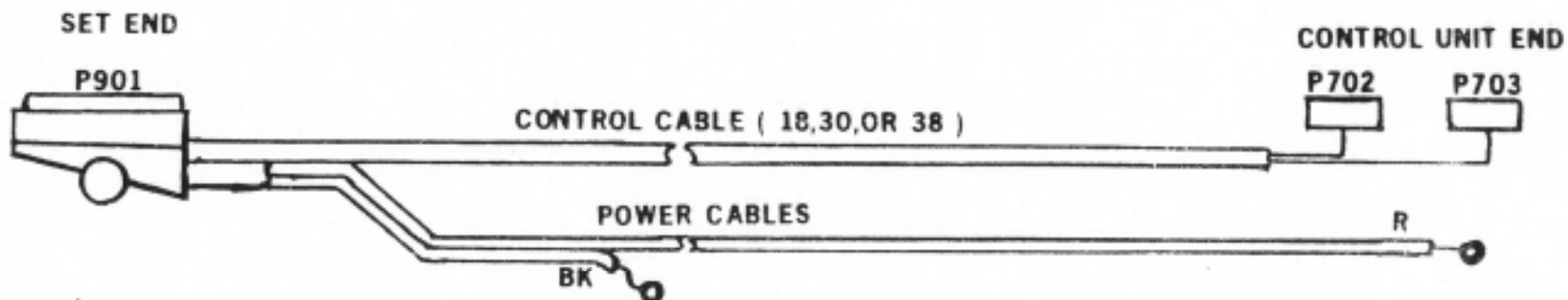
A+

A-



YELLOW AND RED ARE ALWAYS HOT AND ALWAYS FUSED CONNECTION & POLARITY CHANGES

MASTR II POWER/CONTROL CABLE ASSEMBLIES



POWER & CONTROL CABLE ASSEMBLY

19D423424(G)

SELECT GROUP NUMBER
FOR DESIRED LENGTH AND
NUMBER OF CONTROL CABLE
CONDUCTORS

NOMINAL LENGTH	ACTUAL LENGTH			POWER CABLE CONDUCTORS	SELECT GROUP NUMBER FOR DESIRED LENGTH AND NUMBER OF CONTROL CABLE CONDUCTORS		
	CNTL CABLE	POWER CABLES			18 COND	30 COND	38 COND
		RED	BLACK				
9ft.	9' ± 8"	15' ± 6"	5' 6" ± 6"	2 NO. 12 AWG	G1	G7	G13
20ft. STANDARD	20' ± 8"	26' ± 6"	5' 6" ± 6"	2 NO. 8 AWG	G2	G8	G15
27ft.	27' ± 8"	33' ± 6"	5' 6" ± 6"	2 NO. 8 AWG	G3	G9	G14

RAW POWER CABLE: TEMP RANGE -25°C (-13°F) +105°C (+221°F)

RAW CONTROL CABLE: TEMP RANGE -25°C (-13°F) +80°C (+176°F)

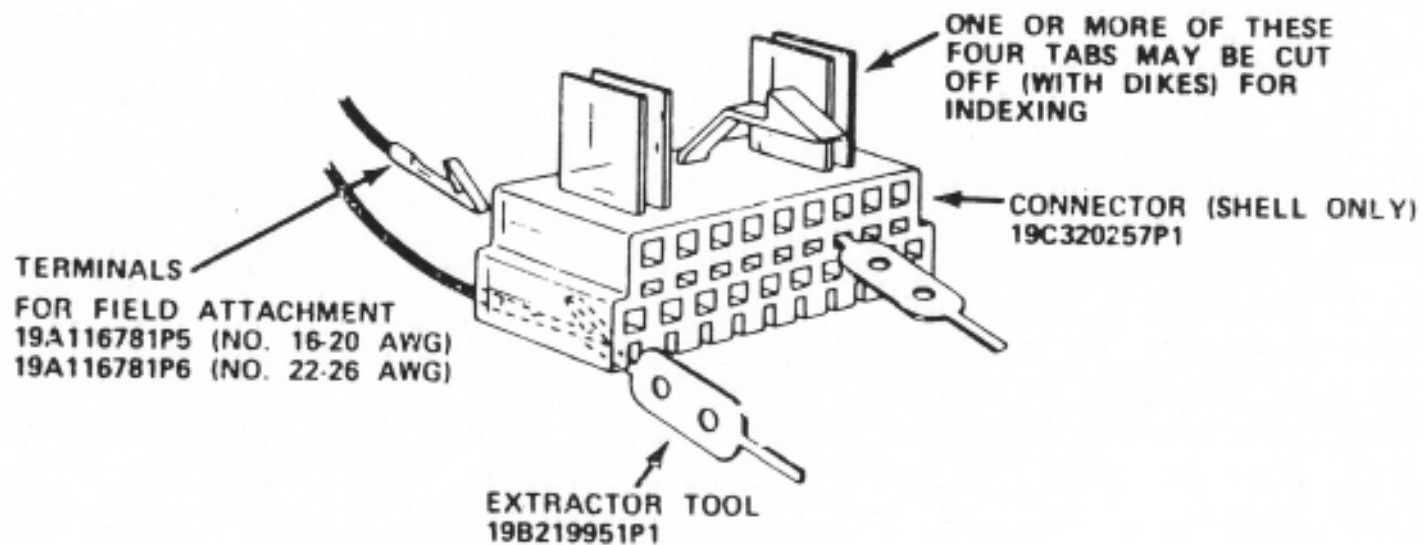
MASTR II CONTROL CABLE CAPABILITIES

NUMBER COND	FUNCTIONS PROVIDED	INCLUDES	STANDARD WITH
18 COND	BASIC OPERATION OF 1F OR 2F RADIOS; INCLUDES: CG DISABLE, SQUELCH DISABLE, CARRIER ACTIVITY SENSOR (FOR CHNL BUSY INDICATOR)	P901 P702	"A" 1F COMBS "C" 2F COMBS W/O OPTIONS WHICH USE CONDUCTORS
30 COND	ADDS F3-F11, 24V CONTROL, BLANKER DISABLE, RX PA INPUT	P901 P702 P703	"K" 8F MAX COMBS & "A" & "C" COMBS W/OPTIONS
38 COND	ADDS F12 AND 7 UNASSIGNED SPARES	P901 P702 P703	NONE (INTENDED FOR SPECIALS)

MASTR II MOBILES

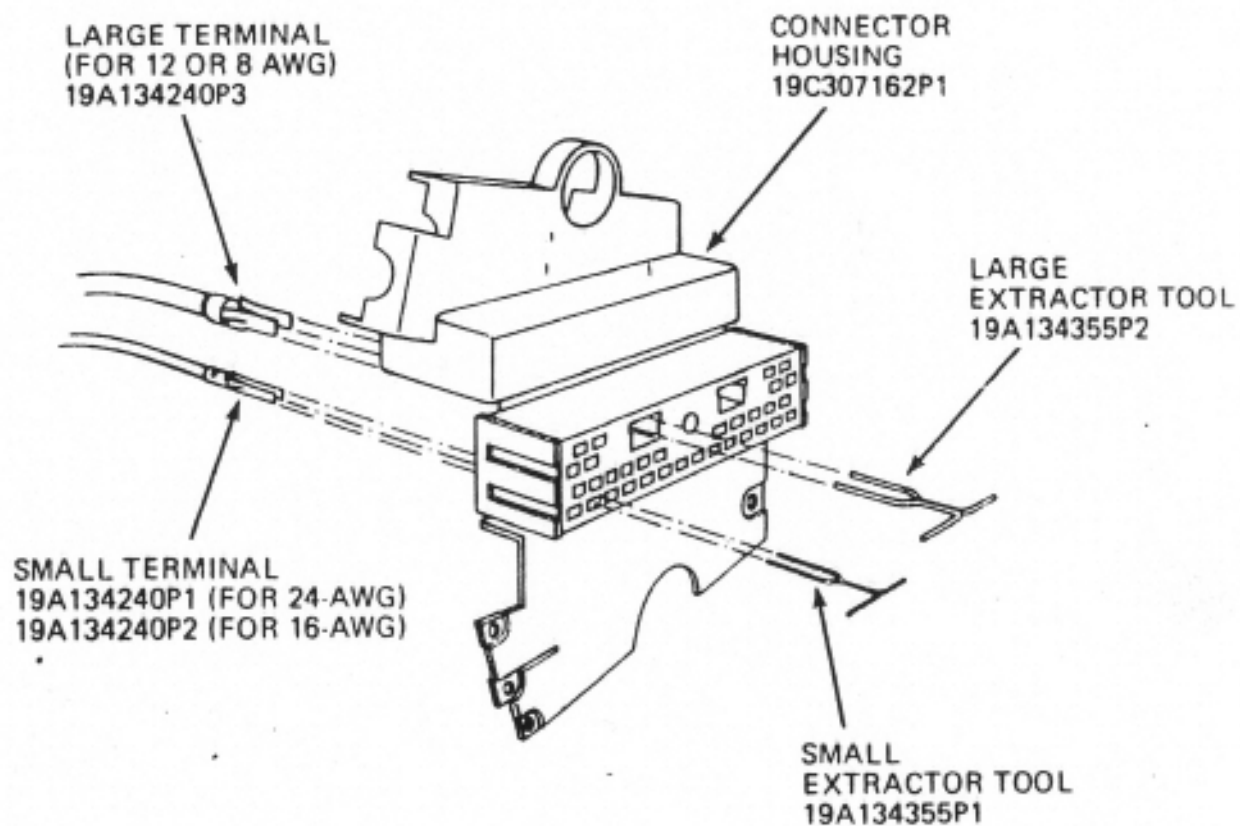
"KONEXTON"
CONTROL CONNECTORS

P701, P702, P703



MASTR II MOBILES

SET CONNECTOR P901



MASTR II MOBILE CONTROL

C-500 SERIES CONTROL UNITS

SINGLE FREQUENCY	19D423590G1
TWO FREQUENCY	19D423590G2
SINGLE FREQUENCY WITH OPTIONS.	19D423590G3
EIGHT FREQUENCY.	19D423590G4
TWELVE FREQUENCY	19D423590G5

CONTROL UNIT OPTION KITS

19A129567G1	INT/EXT SPKR	19A129567G7	NOISE BLANKER SW.
19A129567G2	PUBLIC ADDRESS	19A129567G8	DUAL CONTROL
19A129567G3	FIXED SQUELCH	19A129567G9	TYPE 99 DECODER
19A129567G4	SQUELCH RELAY	19A129567G13-15	TYPE 90 ENC/DEC.
19A129567G5	2 FREQ. PSLM	19A129567G17	TONE JACK
19A129567G6	CHANNEL BUSY LIGHT		

MUTUALLY EXCLUSIVE OPTIONS

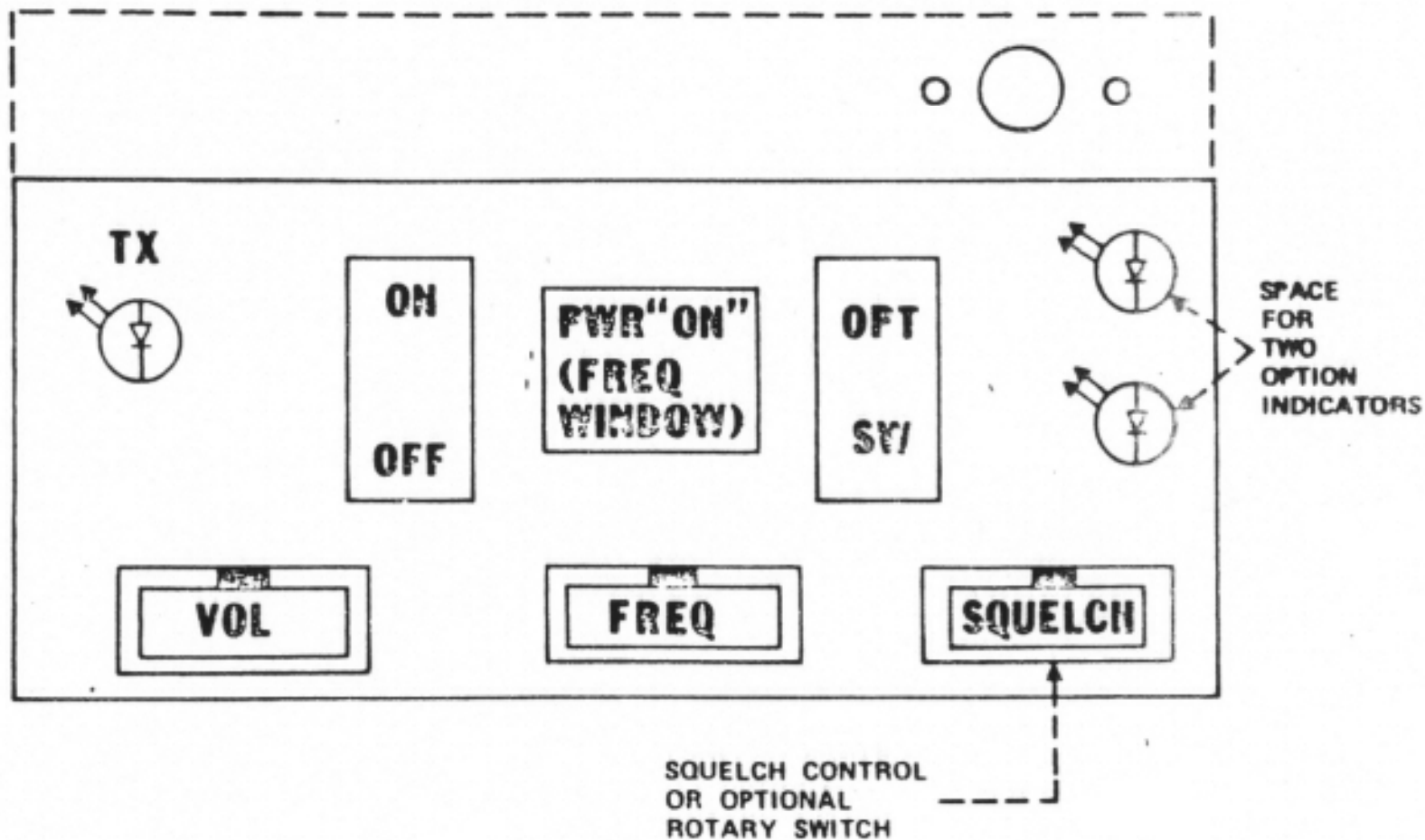
G1, G2, G4, G5, G9 & G13-G15 - USES SAME MOUNTING SPACE

G7 & G17 USES SAME MOUNTING SPACE

MASTR II MOBILE CONTROL

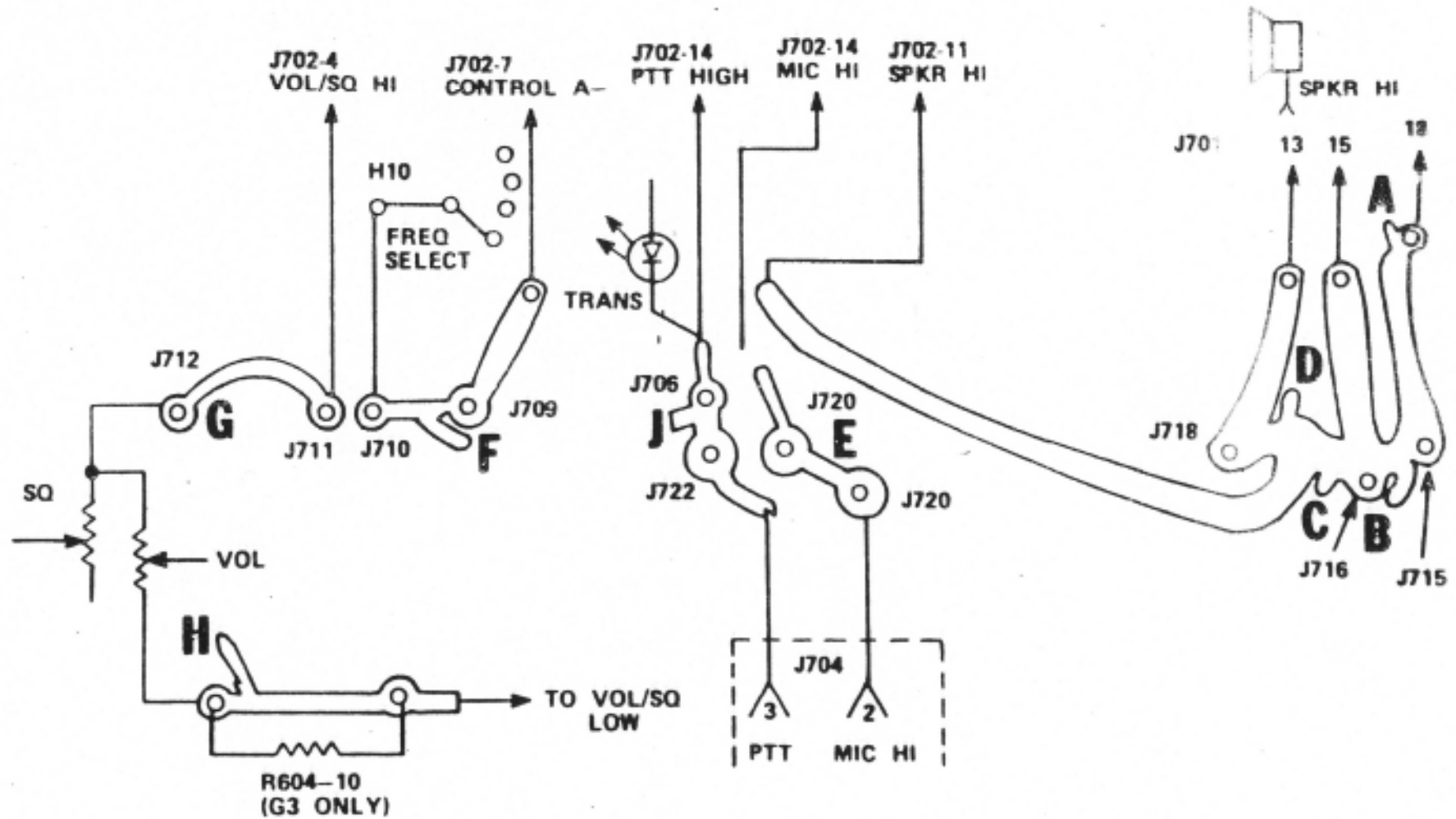
CONTROL
UNIT

MOUNTING SPACE FOR
SLIDESWITCH OR
WITCHESTER CONNECTOR
ON REAR LIP



MASTR II MOBILE CONTROL

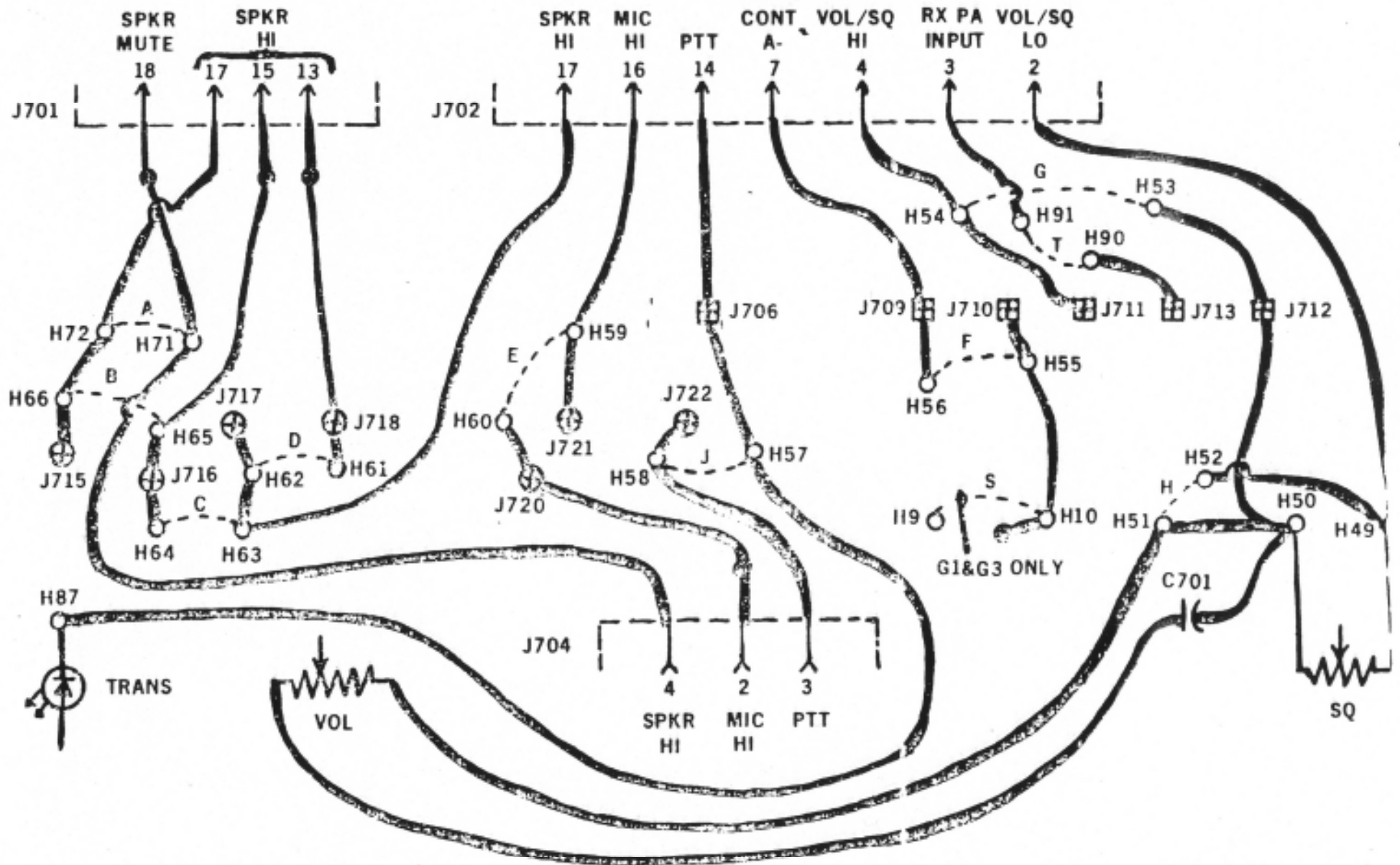
CONTROL UNIT PWB MODIFICATIONS



MASTR II MOBILE CONTROL

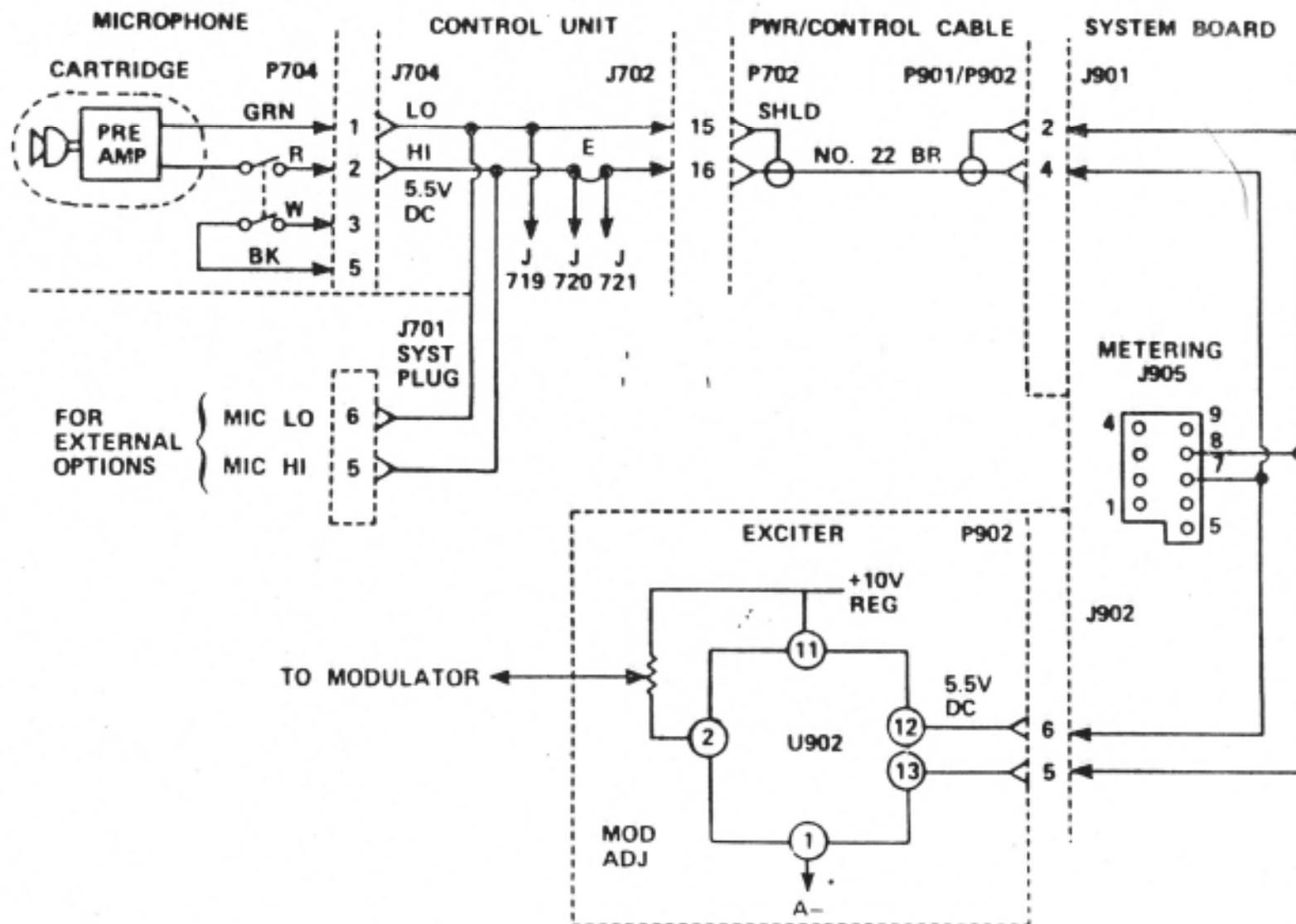
C-500 SERIES

CONTROL UNIT JUMPER MODIFICATIONS



MASTR II MOBILE CONTROL

MICROPHONE CIRCUIT



MASTR II MOBILE CONTROL

POWER DISTRIBUTION PUSH-TO-TALK CONTROL

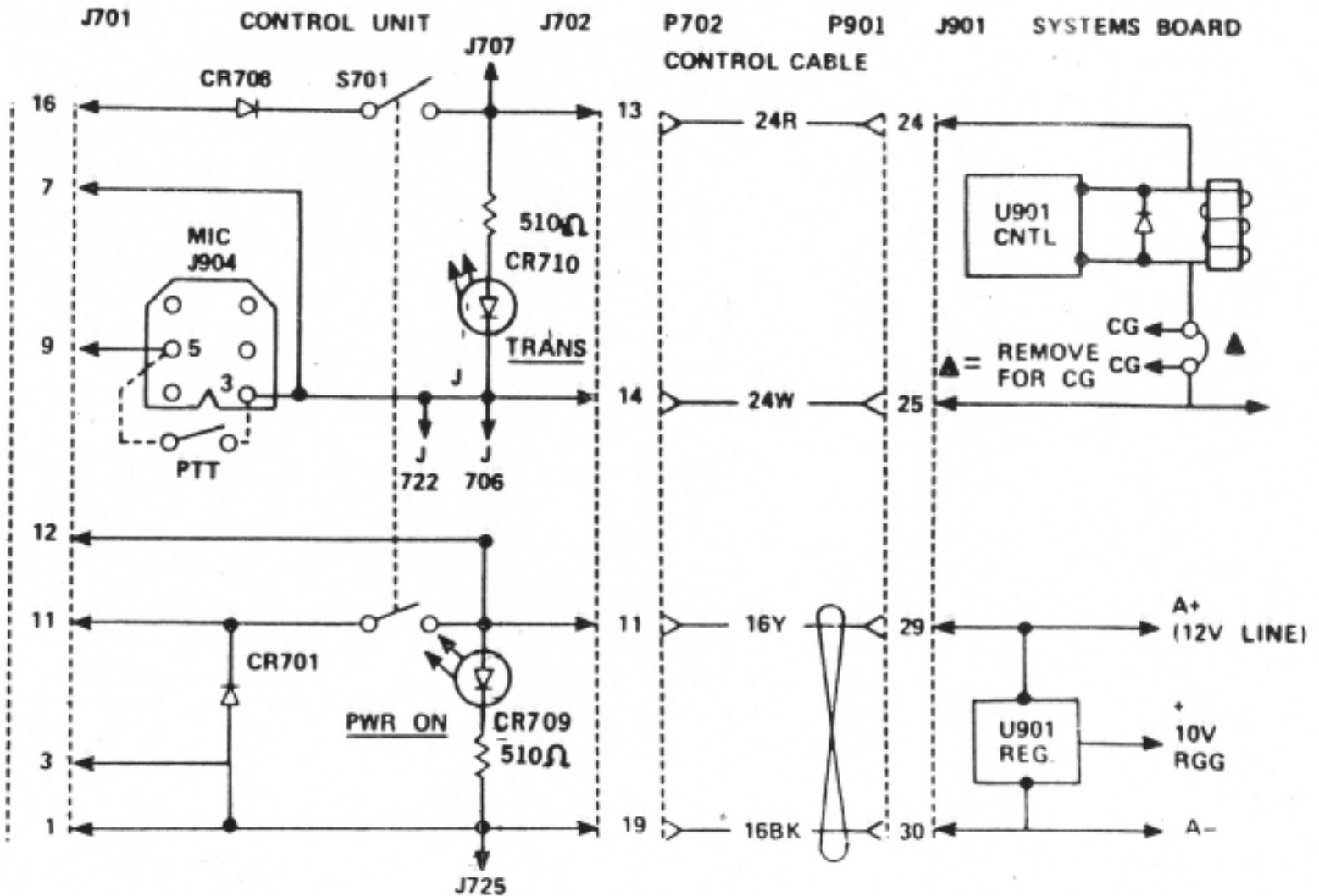
VEHICLE
SYSTEMS
PLUG

IGN SW
(PTT SUPPLY +)

PTT LOW
A-

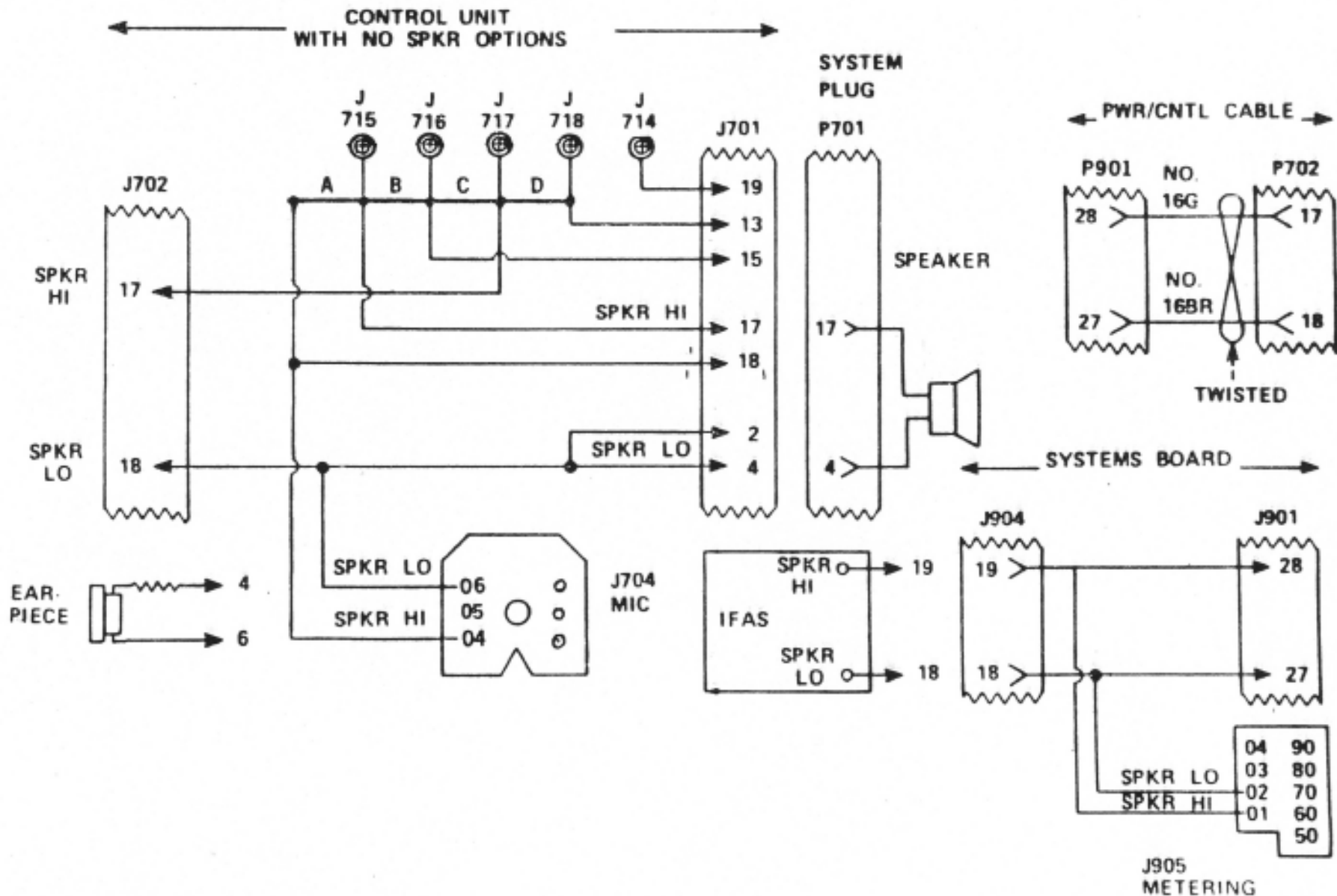
A+

A-



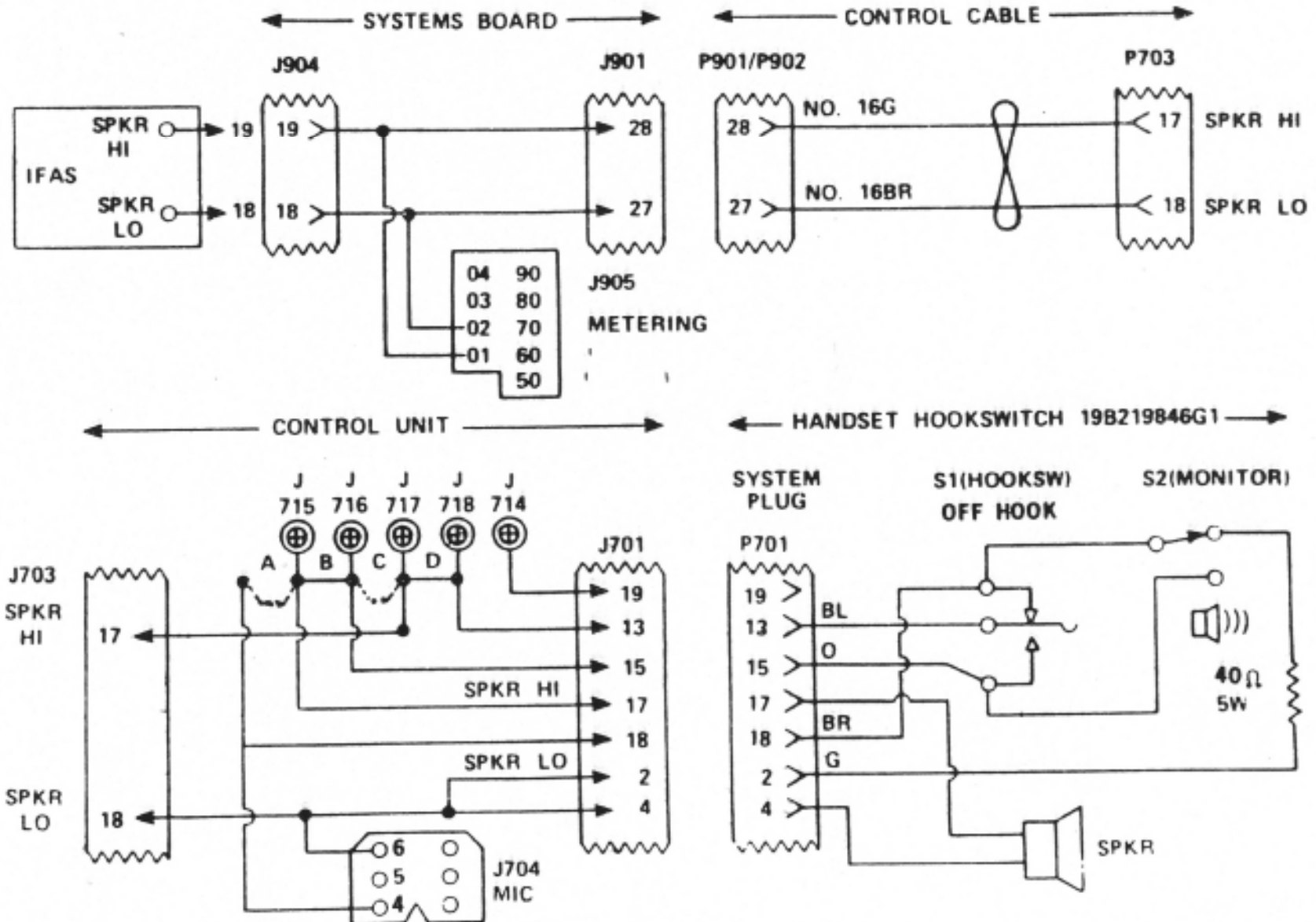
MASTR II MOBILE CONTROL

LOUDSPEAKER



MASTR II MOBILE CONTROL

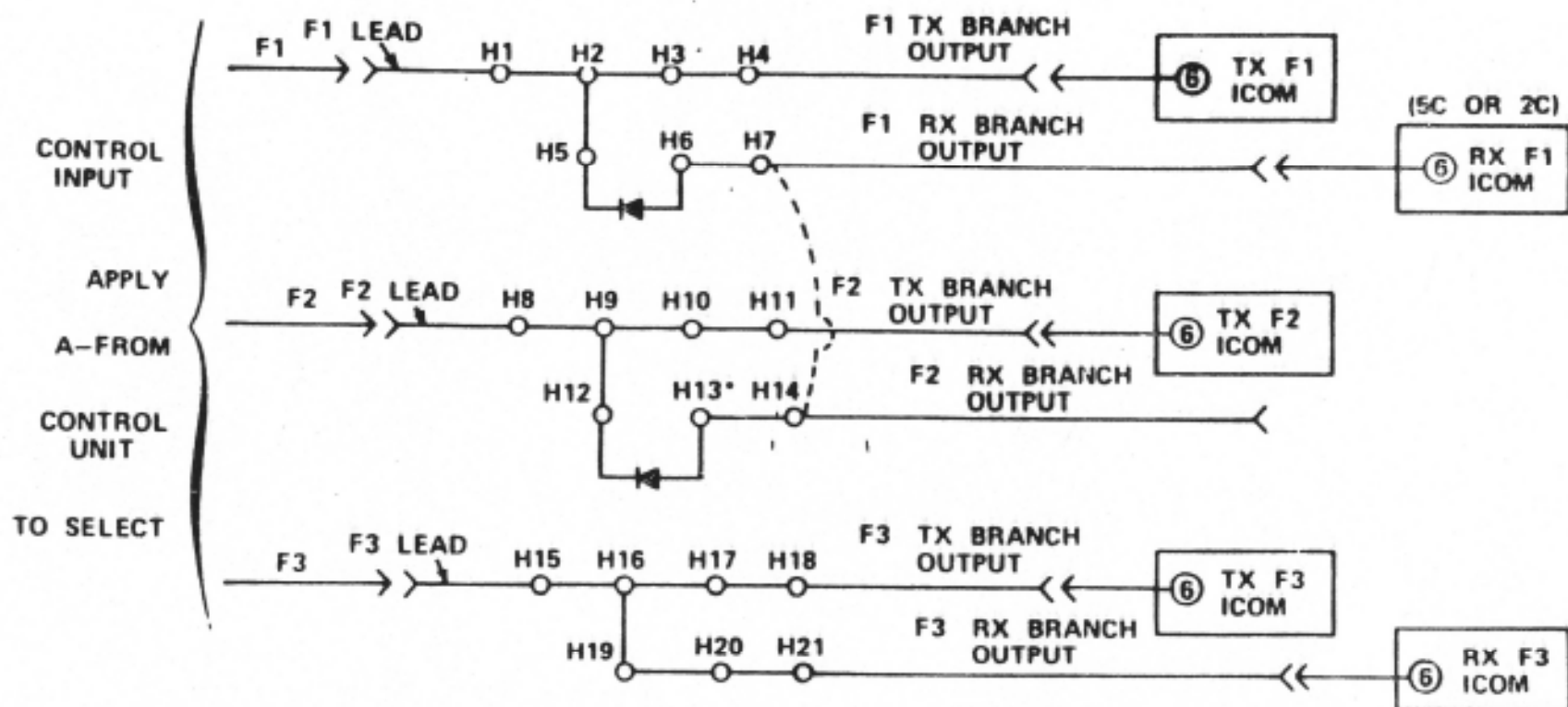
HANDSET AND HOOKSWITCH WITH SPEAKER MUTE



MASTR II MOBILE CONTROL

REPEATING FREQUENCIES
DIODE MATRIX

SYSTEM BOARD



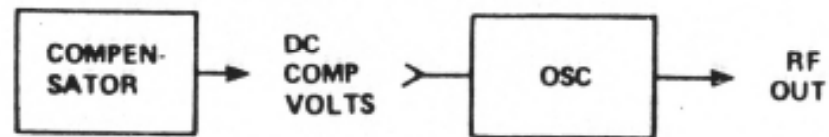
WHEN ONE ICOM (TX OR RX) IS TO BE ENERGIZED
BY MORE THAN ONE CONTROL INPUT

1. FOR EACH SUCH LEAD
 - A. CUT THE FIRST LINK IN THE APPROPRIATE BRANCH
FOR TX, H2-H3, H9-H10, ETC. FOR RX H5-H6, H12-13, ETC.
 - B. REPLACE EACH CUT LINK WITH DIODE CATHODE
TOWARD CONTROL INPUT
2. THE DIODE EQUIPPED BRANCH OUTPUTS TOGETHER
USING DA JUMPERS

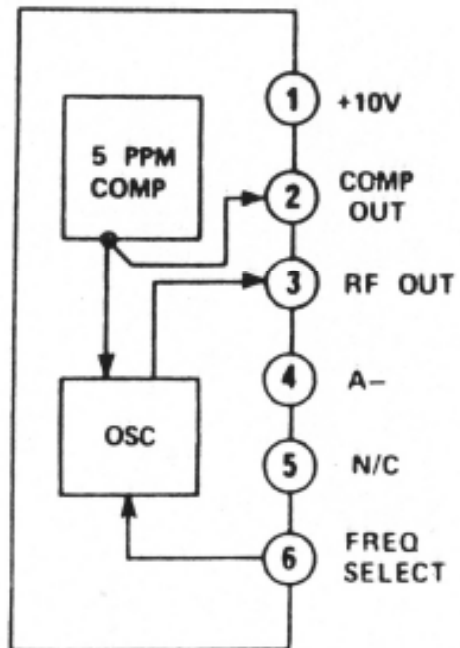
CONTROL UNIT SWITCH	RX FREQ	TX FREQ	LINKS CUT
1	RX F1	TX F1	5-6
2	RX F1	TX F2	12-13
3	RX F3	TX F3	
DELETE: RX F2, ADD: DA H7-H14			

MASTR II FREQUENCY CONTROL

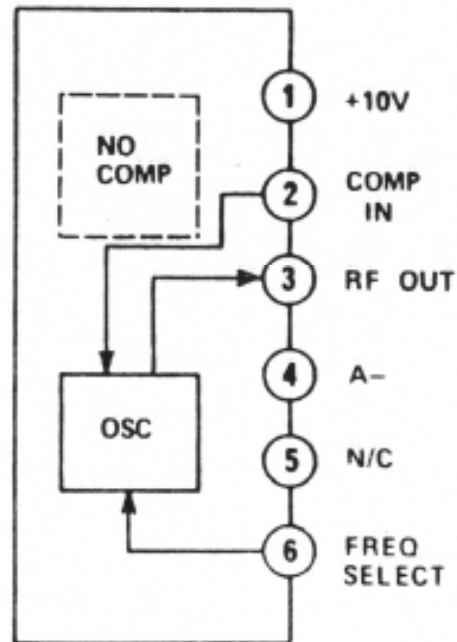
THE ELEMENTS



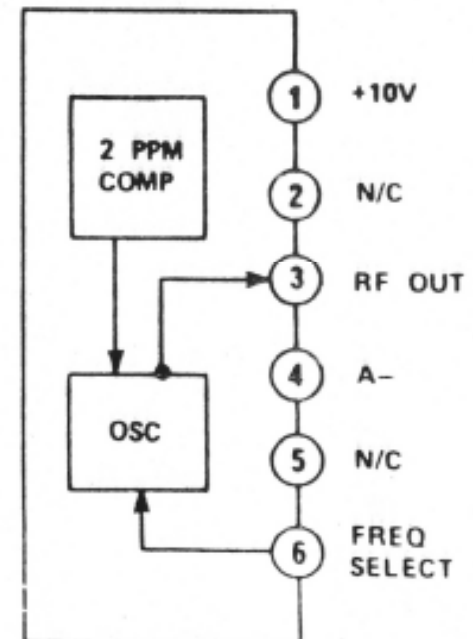
5C ICOM



EC ICOM



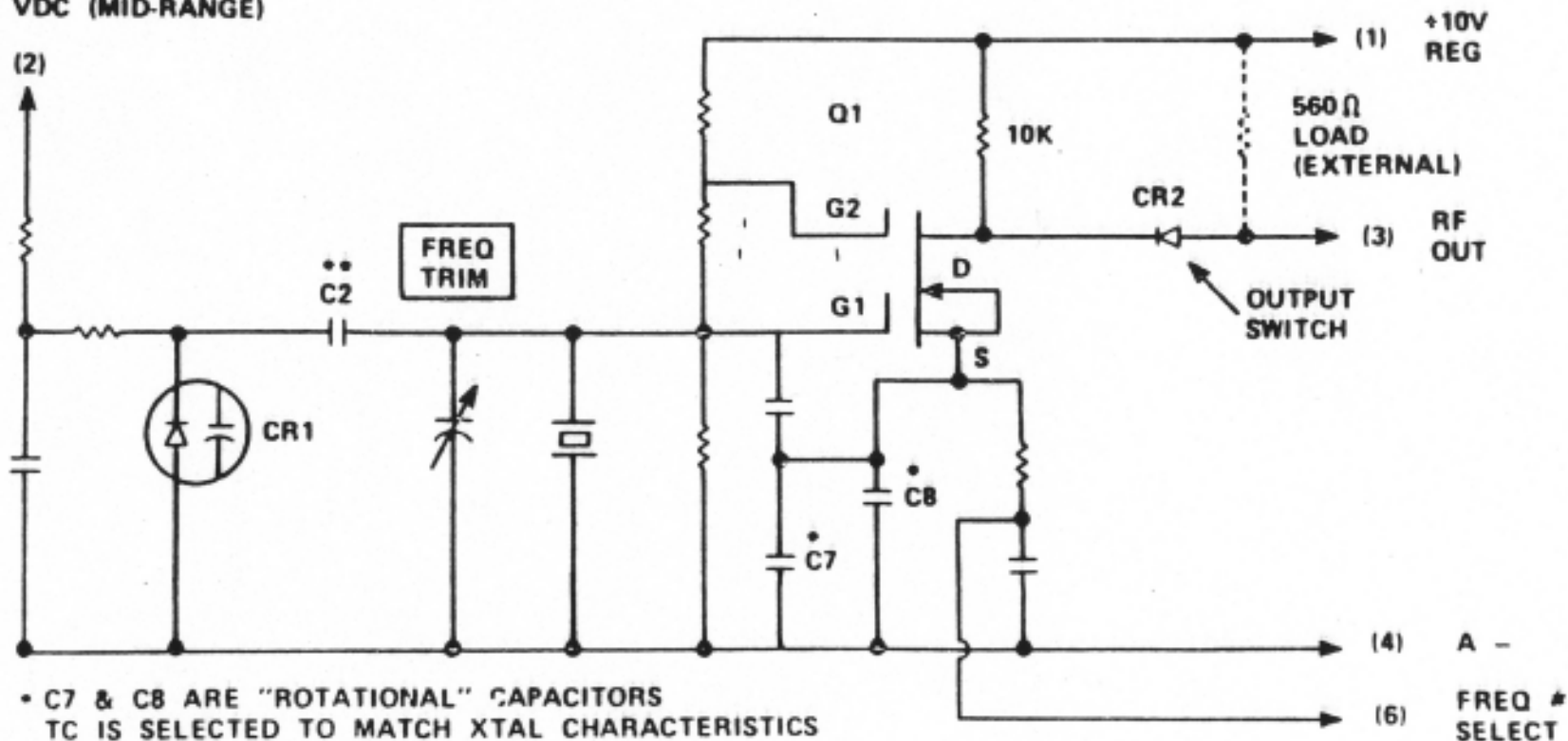
2C ICOM



MASTR II FREQUENCY CONTROL

ICOM OSCILLATOR

COMP INPUT
5 VDC (MID-RANGE)

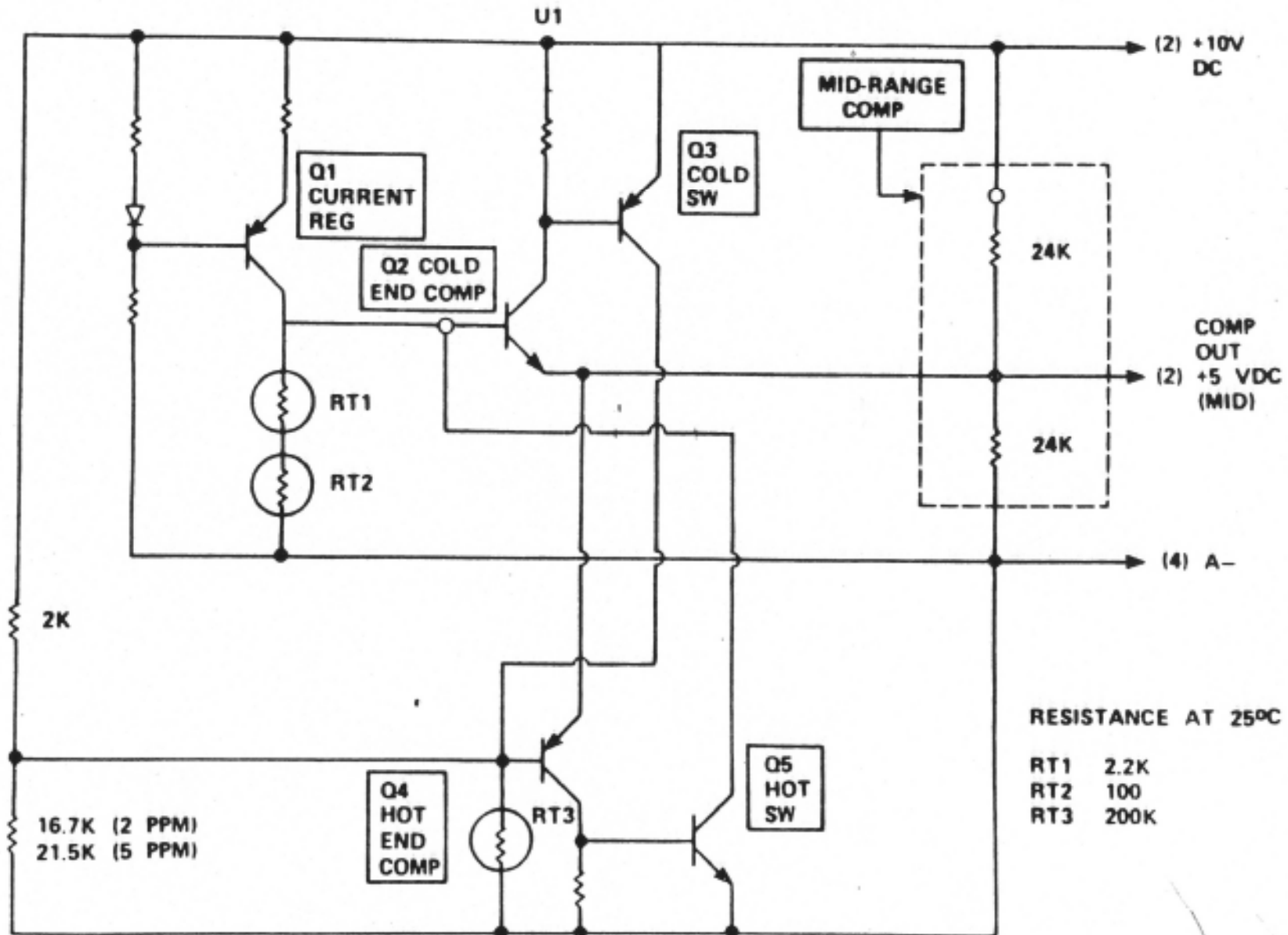


- C7 & C8 ARE "ROTATIONAL" CAPACITORS
TC IS SELECTED TO MATCH XTAL CHARACTERISTICS
- ** VALUE OF C2 IS SELECTED TO COMPENSATE
FOR VARIATIONS IN ΔC OF CR1

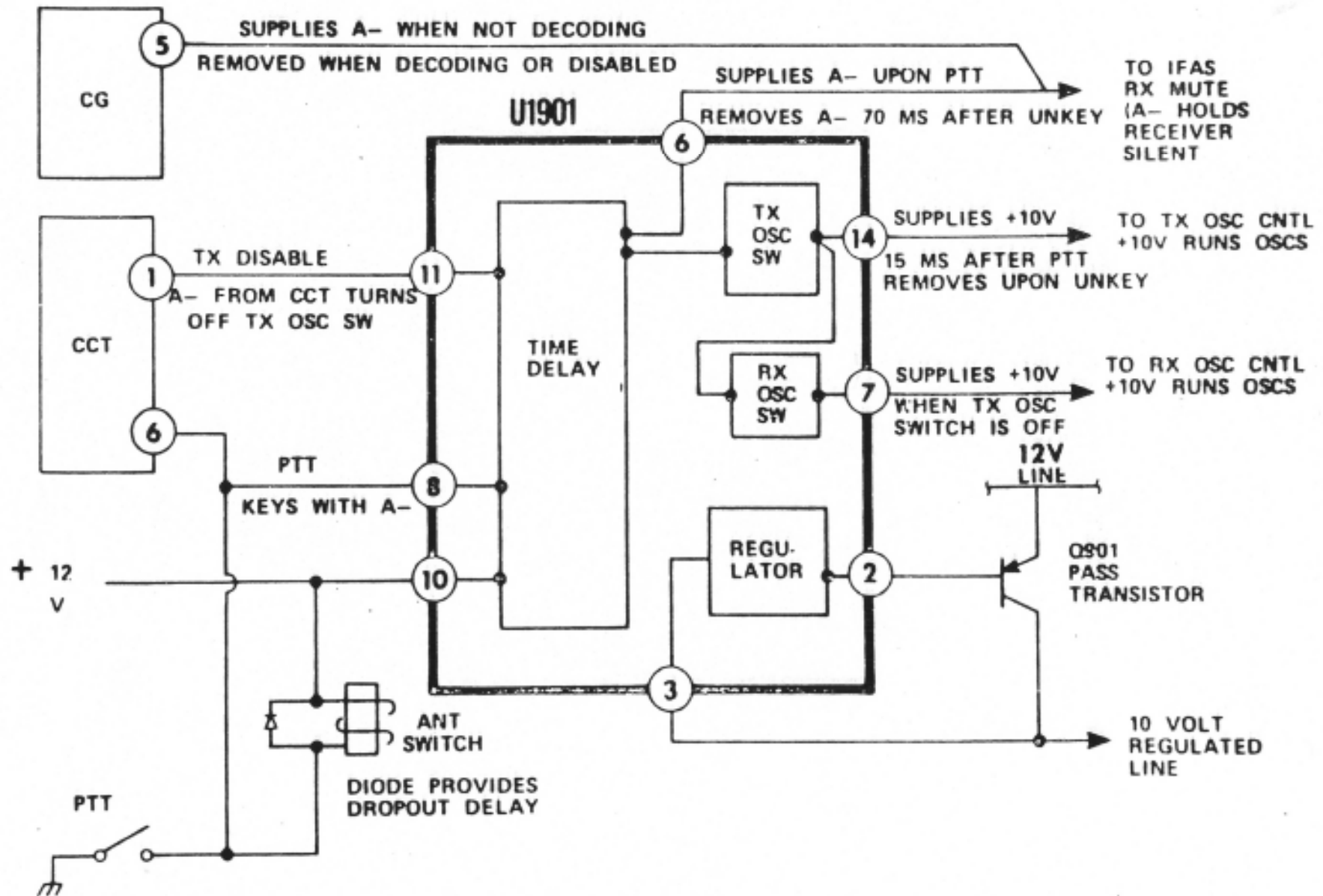
= TO SELECT, RETURN (6) TO A -

MASTR II FREQUENCY CONTROL

ICOM COMPENSATOR

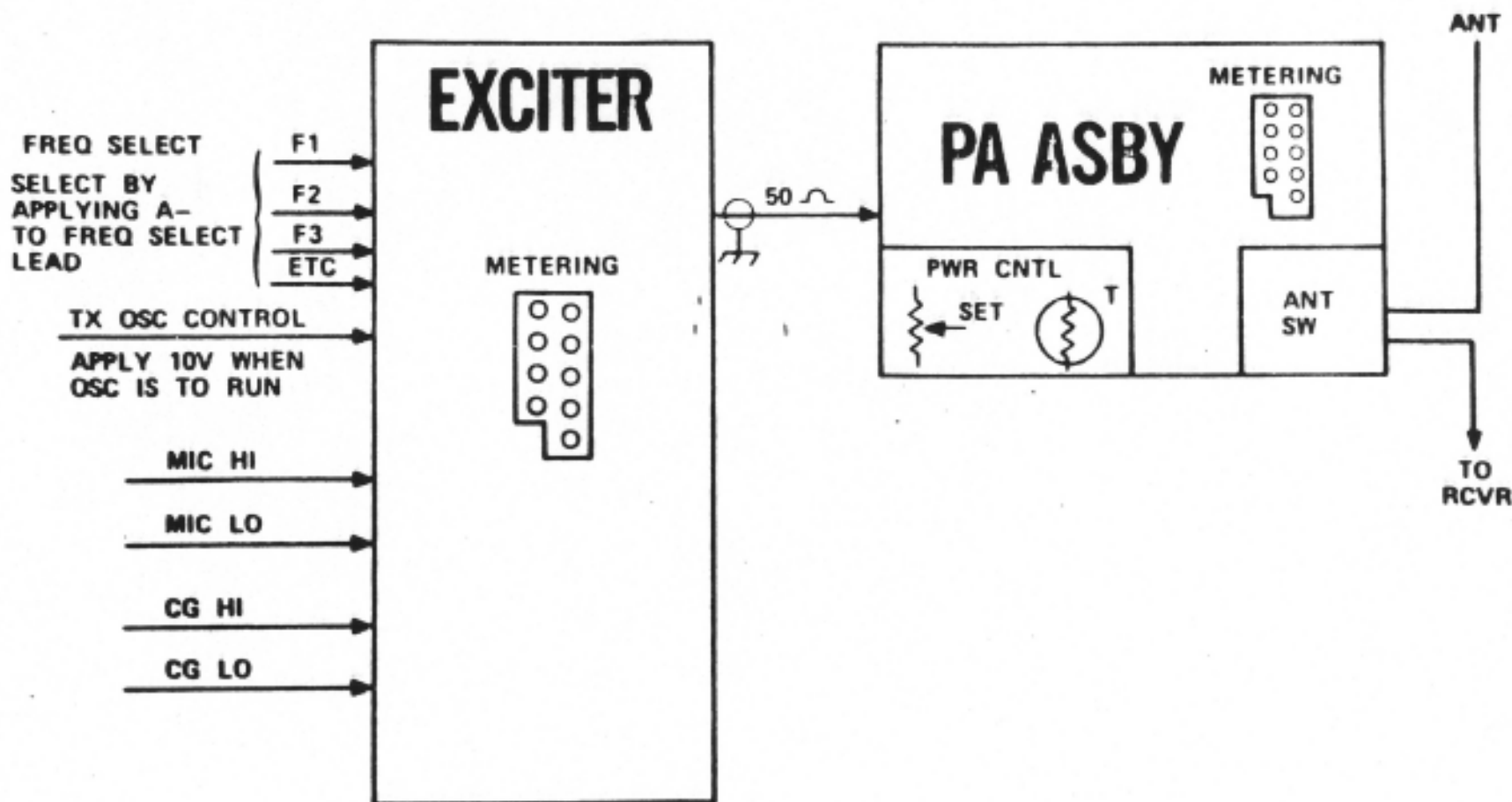


MASTR II MOBILES



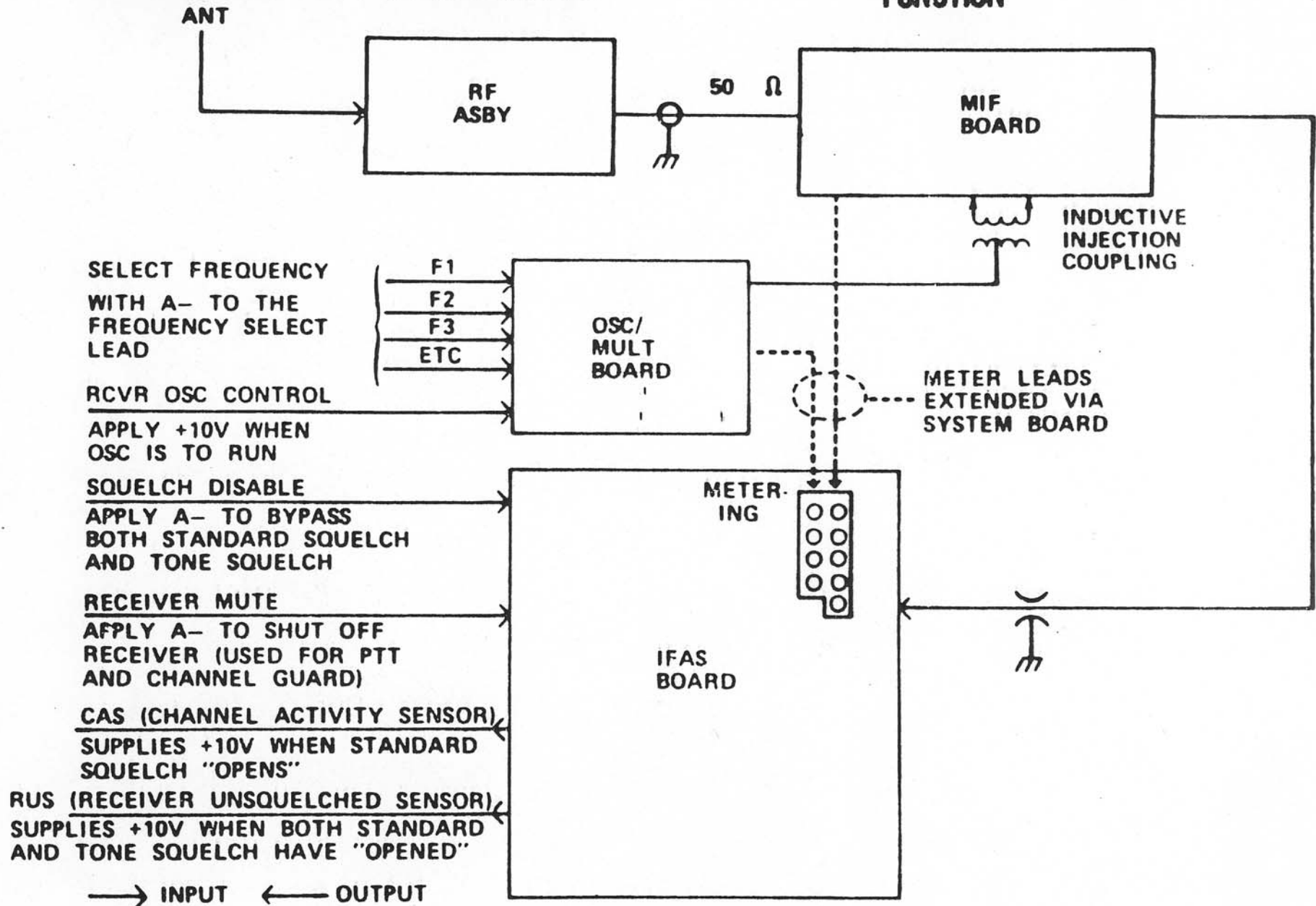
MASTR II MOBILES

THE TRANSMITTING FUNCTION



MASTR II MOBILES

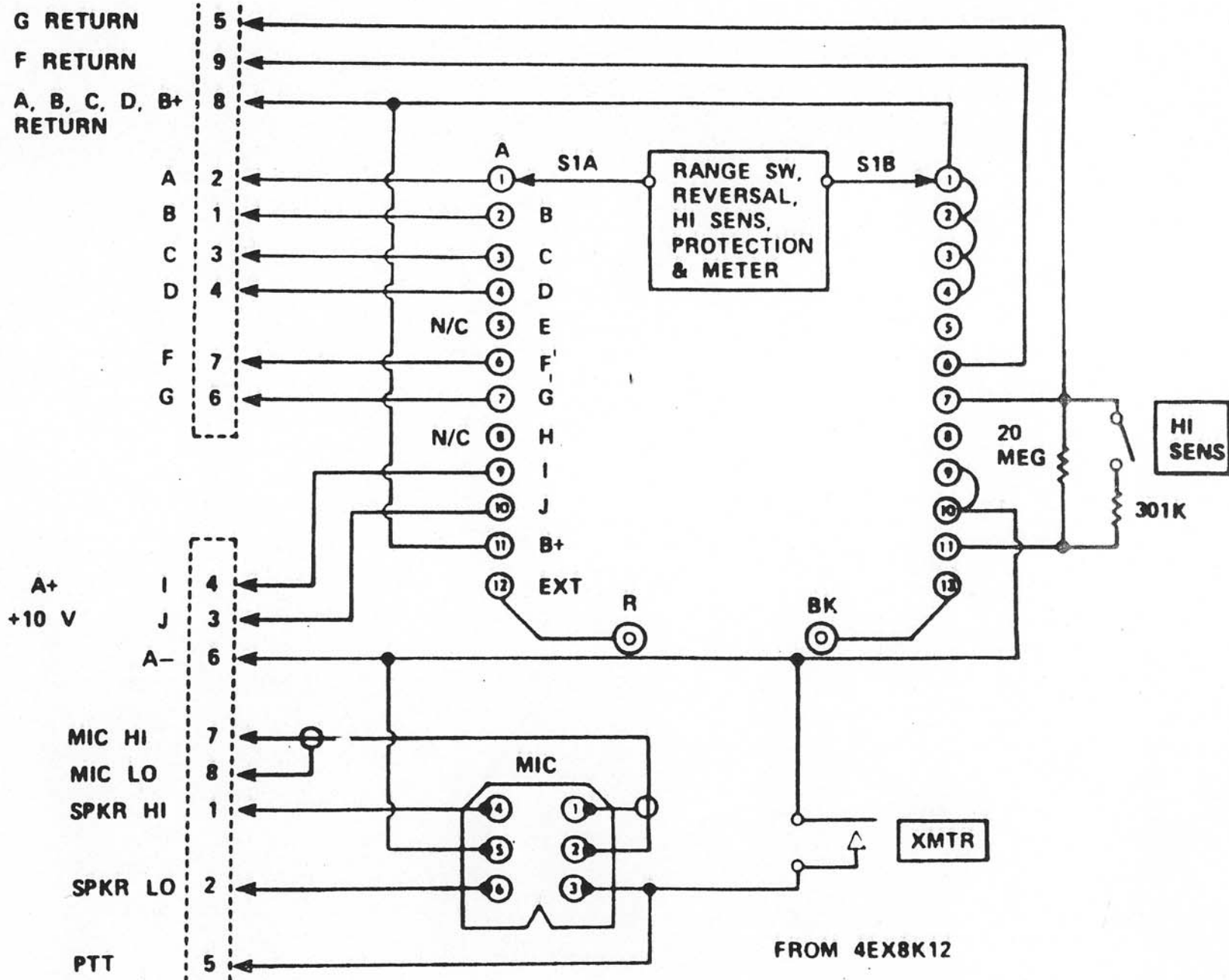
THE RECEIVING FUNCTION



MASTR II MOBILES

METERING

P2
BLACK



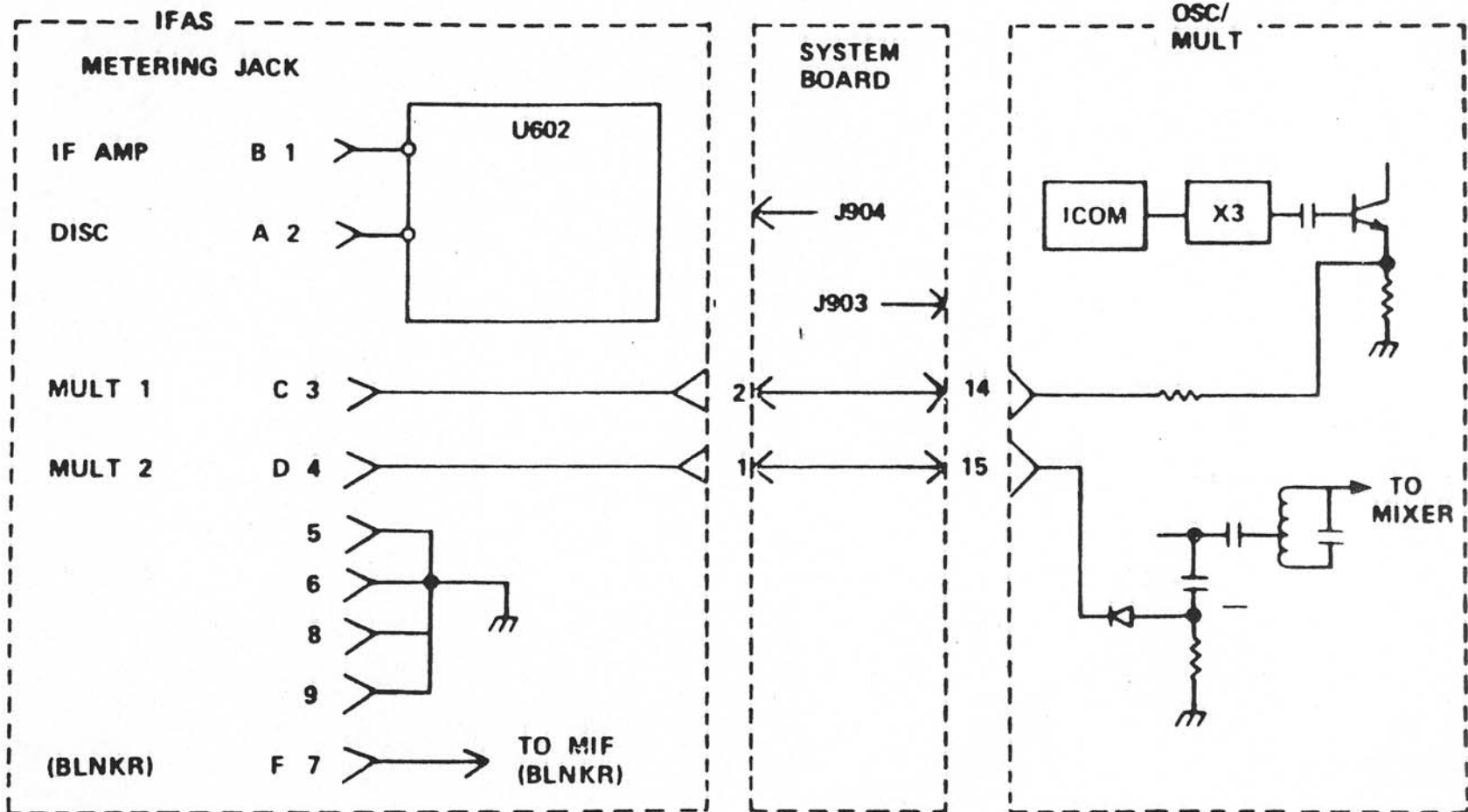
A+
+10 V

P1
RED

FROM 4EX8K12

MASTR II MOBILES

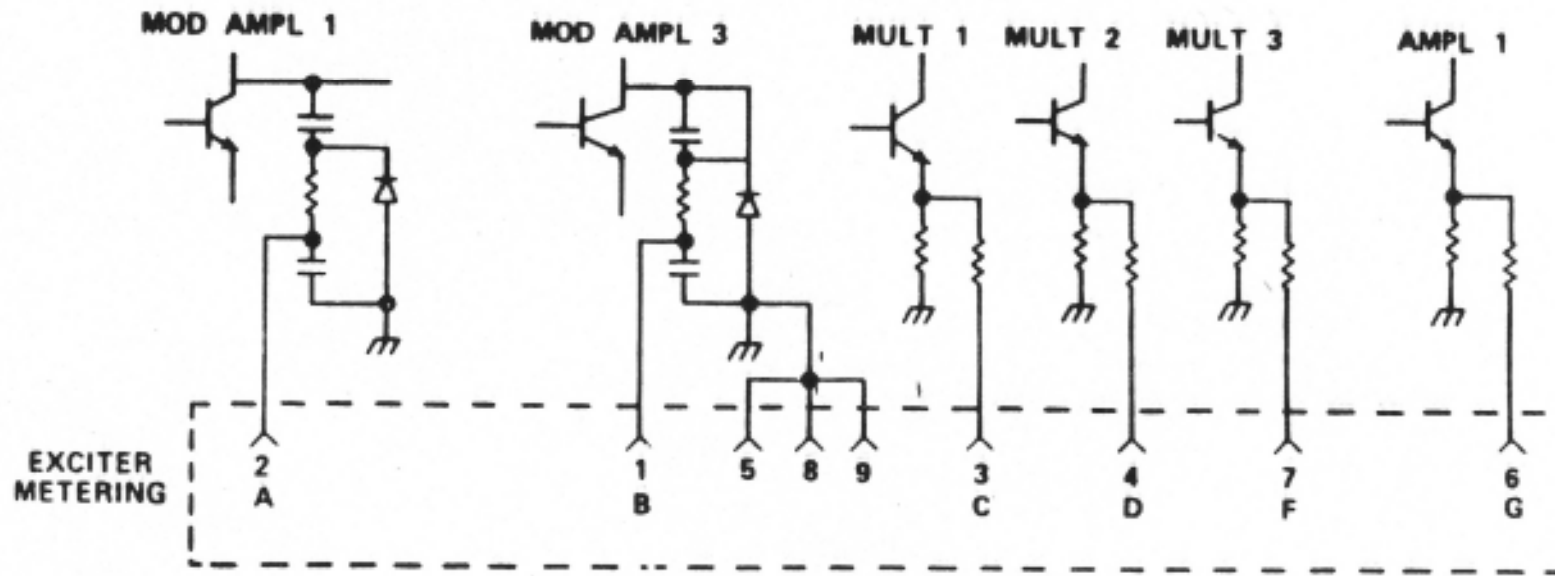
RECEIVER METERING



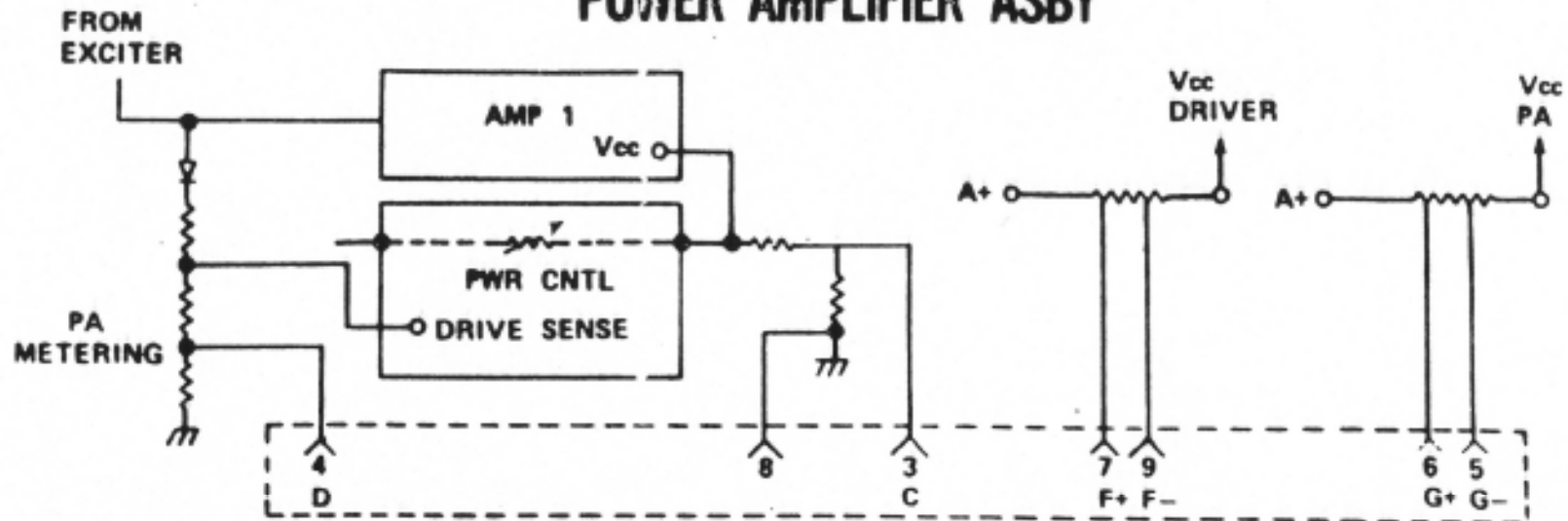
MASTR II MOBILES

TRANSMITTER METERING

EXCITER



POWER AMPLIFIER ASBY



H A N D T O O L S

POZIDRIV SCREWDRIVERS

SMALL #1 POZIDRIV 3/16" x 3"	ST0603
MEDIUM #2 POZIDRIV 1/4" x 4"	ST0604

XCELITE FOR HANDLE IN SERVICE MASTER

SMALL #1 POZIDRIV XCELITE 99-831	ST1018
MEDIUM #2 POZIDRIV XCELITE 99-832	ST1019
LARGE #3 POZIDRIV XCELITE 99-833	ST1020

MAGNETIC 1/4" DRIVE HANDLE

HANDLE 8" OVERALL IN LENGTH MAGNETIC	ST0701
SMALL #1 POZIDRIV TIP 2" LONG	ST0706
MEDIUM #2 POZIDRIV TIP 2" LONG	ST0705
#3 PHILLIPS	ST0704
FLAT BLADE 3/16" x 2 3/4"	ST0702
FLAT BLADE 1/4" x 1"	ST0703

TORQUE WRENCH KIT

GE PART NO.	ST2304
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