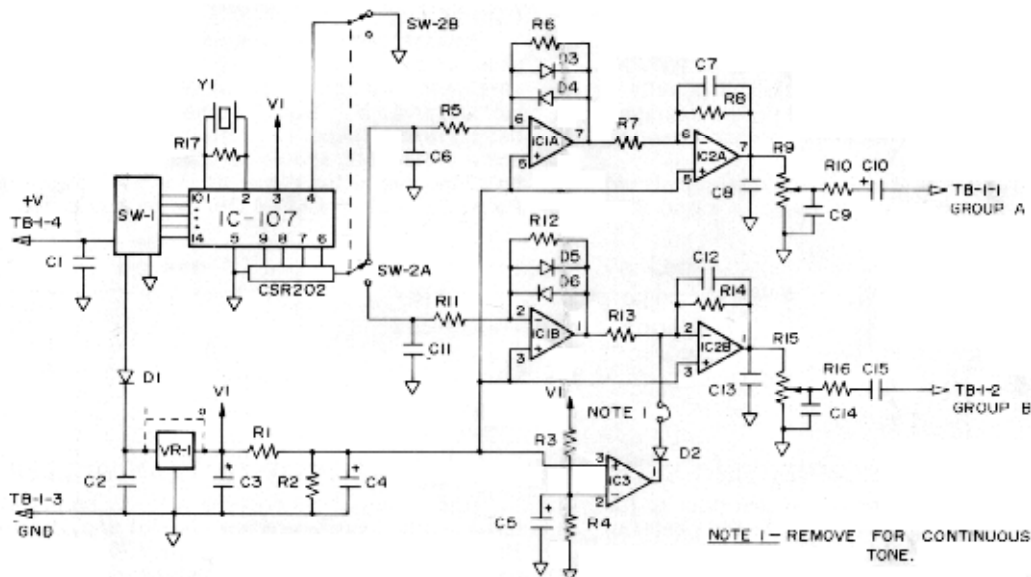


TE-64 INSTRUCTION SHEET

INTRODUCTION

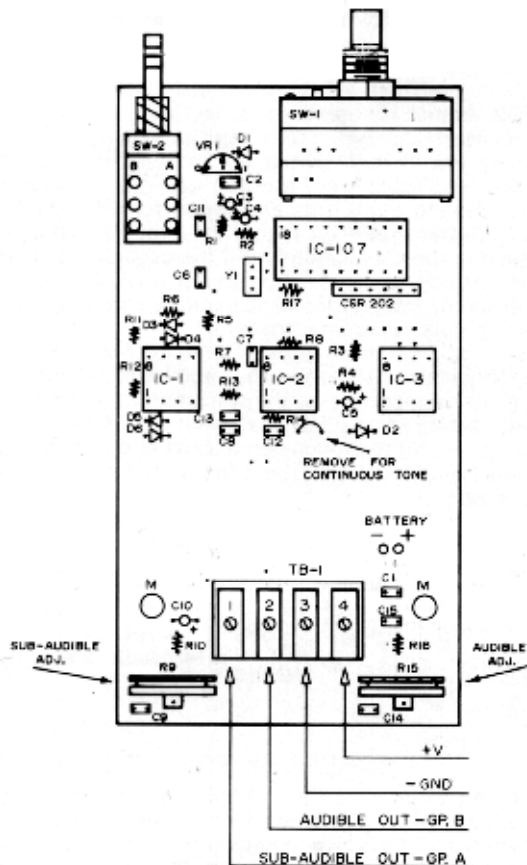
The TE-64 is a Universal Encoder capable of encoding 64 different tones. This consists of the 32 standard sub-audible tones, plus an additional 32 audible tones including standard Burst Tones, Test Tones, and Touch Tones. Frequency selection is accomplished by a front panel mounted 33 Position switch. Output tones are accessible through the back panel, and connections are made to an internal terminal block. Two level adjust pots are

provided to independently vary the output amplitude of each group, since the outputs typically will not be connected to the same point. Outputs may however be connected together for connections to a modulation input on an RF signal generator for testing. In addition, provisions are incorporated so the TE-64 may be operated off of an internal 9V transistor battery for portable use.



PARTS LIST

R1 -	10K	1/8 watt	5%	carbon film resistor	\$.31 ea.
R2 -	8.1K	"	"	"	.31 ea.
R3 -	470K	"	"	"	.31 ea.
R4 -	1Meg	"	"	"	.31 ea.
R5 -	68K	"	"	"	.31 ea.
R6 -	22K	"	"	"	.31 ea.
R7 -	47K	"	"	"	.31 ea.
R8 -	270K	"	"	"	.31 ea.
R9 -	5K	CTS potentiometer (upright)		.60 ea.	
R10 -	1.2K	1/8 watt	5%	carbon film resistor	.31 ea.
R11 -	68K	"	"	"	.31 ea.
R12 -	22K	"	"	"	.31 ea.
R13 -	47K	"	"	"	.31 ea.
R14 -	270K	"	"	"	.31 ea.
R15 -	5K	CTS potentiometer (upright)		.60 ea.	
R16 -	1.2K	1/8 watt	5%	carbon film resistor	.31 ea.
R17 -	10Meg	"	"	"	.31 ea.
C1 -	.22uf	50v	CW15	ceramic	2.25 ea.
C2 -	.033 uf	"	"	"	1.75 ea.
C3 -	1uf	35v	tantalum	"	1.05 ea.
C4 -	1uf	"	"	"	1.05 ea.
C5 -	1uf	"	"	"	1.05 ea.
C6 -	.01uf	50v	CW15	ceramic	1.50 ea.
C7 -	1500pf	"	"	"	1.25 ea.
C8 -	220pf	"	"	"	1.00 ea.
C9 -	220pf	"	"	"	1.00 ea.
C10 -	1uf	35v	tantalum	"	1.05 ea.
C11 -	470pf	50v	CW15	ceramic	1.00 ea.
C12 -	220pf	"	"	"	1.00 ea.
C13 -	220pf	"	"	"	1.00 ea.
C14 -	220pf	"	"	"	1.00 ea.
C15 -	.22uf	"	"	"	2.25 ea.
D1 -	1N4148	silicon	diode		.15 ea.
D2 -	1N4148	"	"		.15 ea.
D3 -	1N4148	"	"		.15 ea.
D4 -	1N4148	"	"		.15 ea.
D5 -	1N4148	"	"		.15 ea.
D6 -	1N4148	"	"		.15 ea.
Y1 -	1.000 Mhz crystal				7.50 ea.
VR-1 -	78LD8A regulator				1.00 ea.
IC1 -	TL062				2.20 ea.
IC2 -	TL062				2.20 ea.
IC3 -	TL062				2.20 ea.
TB-1 -	Terminal block, 4 position				1.90 ea.
SW-1 -	33 position binary switch				9.95 ea.
SW-2 -	Push-on, push-off switch, with button				2.10 ea.
IC-107 -	Com-Spec microcircuit				17.50 ea.
CSR202 -	Resistor network				2.30 ea.
3 -	8 pin IC sockets				.39 ea.
1 -	18 pin IC socket				.60 ea.
1 -	PC board				10.00 ea.
1 -	Plastic case, 2 pieces with screws				7.50 ea.
1 -	Front panel, with label, punched				2.00 ea.
1 -	Rear panel, punched				1.50 ea.
1 -	Mounting bracket				2.25 ea.
2 -	Knurled knobs				.60 ea.
2 -	PCB mounting screws				.05 ea.
	Knob assembly				1.90 ea.



Communications Specialists
 426 W. Taft Ave., Orange, CA 92667
 (714) 998-3021 (California) / (800) 854-0547