BIT RANGER V 1.1

POWER

F1 PTC 200mA
V+_PRE_REG
IC9 78L05
IN OUT +5V
GND
D6 1N4007
C14 1uF
DC+
RING SW PIN 9VDC
9V battery holder
C25 100nF C27 100nF C10 100nF C26 100nF
C22 100nF C24 100nF C11 100nF C7 100uF
+5V

HEADERS

MUX1_T MUX2_T
LFO_T
CV_OUT_T
+5V
SV3
CLK_INV_T CLK_SEL_T
VCO_T
CV_IN_T
CV_OUT_JK_T
+5V
SV4
MUX1 MUX2
LFO_B
LFO_SYNC_B
+5V
SV1
CLK_INV_B CLK_SEL_B
VCO_B
CV_OUT_B CV_IN_B
CV_OUT_JK_B
+5V
SV2
+5V LFO_B

BUFFERS

SYNC IN / UTILITY i/o

SYNC_IN
R56 10k
CV_IN_B
CV_IN_JACK
ZD1 5V6

CLK IN

+5V
CLK_IN
CLK_JK
R48 100K
T1 2N3904
CLK_JACK
R82 47k
R68 47k
R49 10K
LFO_SYNC_B

CV OUT

+5V
CV_OUT
CV_OUT_JK
R65 100k
R50 10k
R64 100k
T4 2N3904
R9 1k
CV_OUT_B
CV_OUT_T
CV_OUT
ZD2 5V6
CV_OUT_JK_T
CV_OUT_JK_B

CLK OUT

CLK_SEL_B
CLK_SEL
R57 100k
/32
/2
IC5B CD40106
CLK_SEL_T
CLK_INV_B
CLK_OUT_B
R83 10k
CLK_OUT_JK
CLK_OUT
C1 100nF
CLK_OUT

LFO

LFO_SYNC_T
C20 10nF
SYNC
C9 10nF
T2 2N3904
SYNC2
LFO_CV1
R67 1M R86 1M
R34 1M
R53 470k
T3 2N3904
C3 100nF
C12 10uF
LFO 500k
R47 1k
D1 1N4148
R90 1k
IC5A CD40106
LFO_I/O
LFO_T
C13 1uF

VCO

R2R1 R2R2 R2R3 R2R4
R55 22k
R28 22k
R27 22k R26 47k
R59 100k R87 100k
CV_OUT
R32 47k
VCO 100k
R30 3M9
R29 2M
R31 1M
VCO_CV
CV_IN_T
R51 2M
R54 270k
T5 2N3904
C2 1uF
C17 100nF
IC5C CD40106
LED1
VCO_I/O
VCO_T
+5V

HFO

OSC_SYNC
C19 470pF
HFO 100k
C15 470pF
R63 47k
T6 2N3904
HFO_SYNC_T
C21 10nF
HFO_CV
C18 10nF
R84 10k R85 10k
D2 1N4148
C16 100nF
R80 47k
IC5D CD40106
HFO_SYNC
HFO_I/O

XORs

IC7
LFO_B
C30 100nF
RESET_BUTT
R52 1M
RESET
R62 100k
XOR
R33 470k
R24 470k
IC4A CD4070
+5V

DIVIDER

/2 /4 /8 /16 /32 /64
R5 47k R13 47k R14 47k R15 47k R16 47k R17 47k R18 47k R19 47k R20 47k R21 47k R22 47k R23 47k
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12
RES
CD4040
/128 /256 /512 /1024 /2048 /4096

SHIFT/MUX

XOR_MIX
R25 6k2
IC4D CD4070
R70 100k
D4 1N4148
D3 1N4148
XOR_MOD
C28 1uF
IC4B CD4070
R11 100k
R12 47k
R10 100k
CLK_INV_B
IC4C CD4070
B7 B4
MUX2
IC1A CD4015
IC3 CD4051
R42 47k
IC2 CD4051
MUX1
R43 47k
MUX2
R58 100k
T9 2N3904
LED2
R89 1k
VCO_B
IC1B CD4015
X0 X1 X2 X3 X4 X5 X6 X7
INH A B C
R44 47k R45 47k
MUX1_INH MUX2_INH
BIT3 BIT5
MUX1_A MUX1_B MUX1_C MUX2_A MUX2_B MUX2_C
R1 470k R4 R8 470k R40 100k
R2 100k R3 100k R6 100k R7 100k
R91 100k
T10 2N3904
LED3
R92 1k

AUDIO_OUT

MUX2_T RIGHT_IN
R39 100k
IC5E CD40106
C6 10uF
MUX1_T LEFT_IN
R37 100k
IC5F CD40106
C8 10uF
RIGHT_OUT
R35 1k
AUDIO_OUT
R41 1k
LEFT_OUT
C23 100nF
R46 47k
R36 1k
IC6 LM386
C4 100uF
C5 100nF
R38 100
R58 100k
P51 P52
SP1 SP2