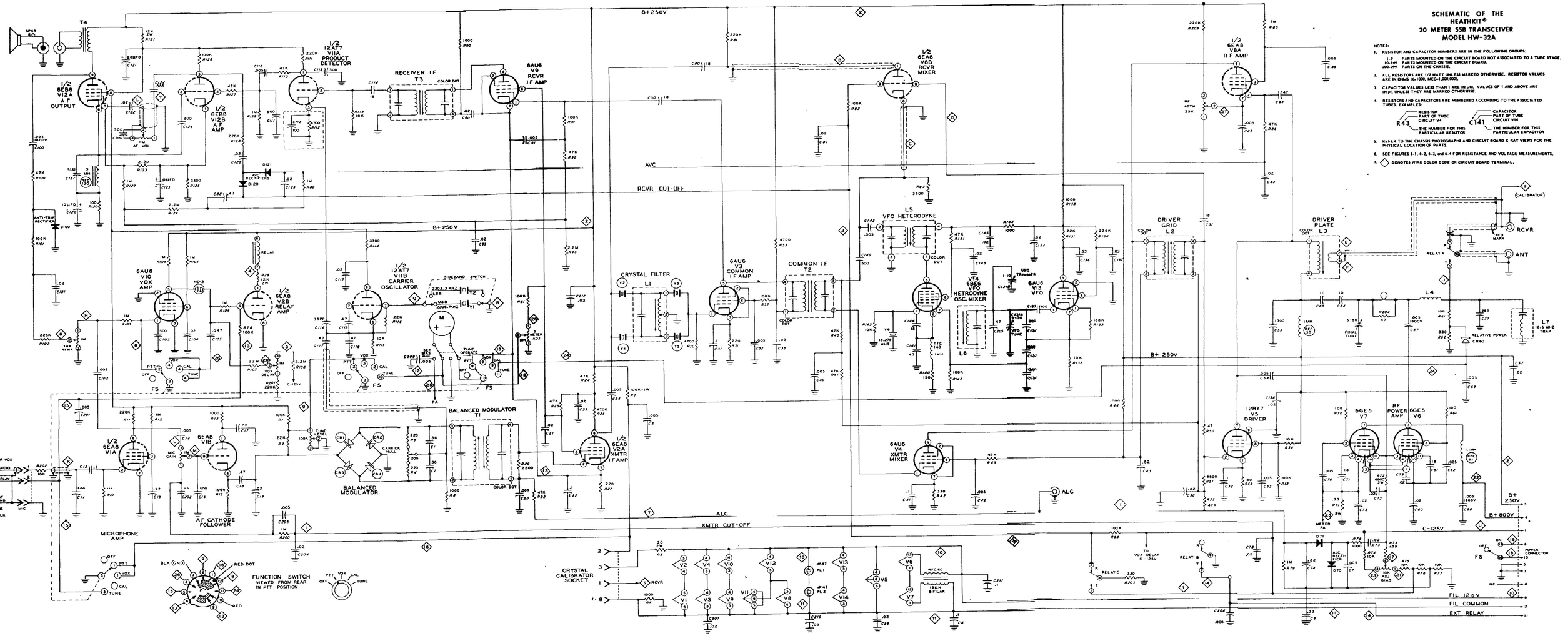
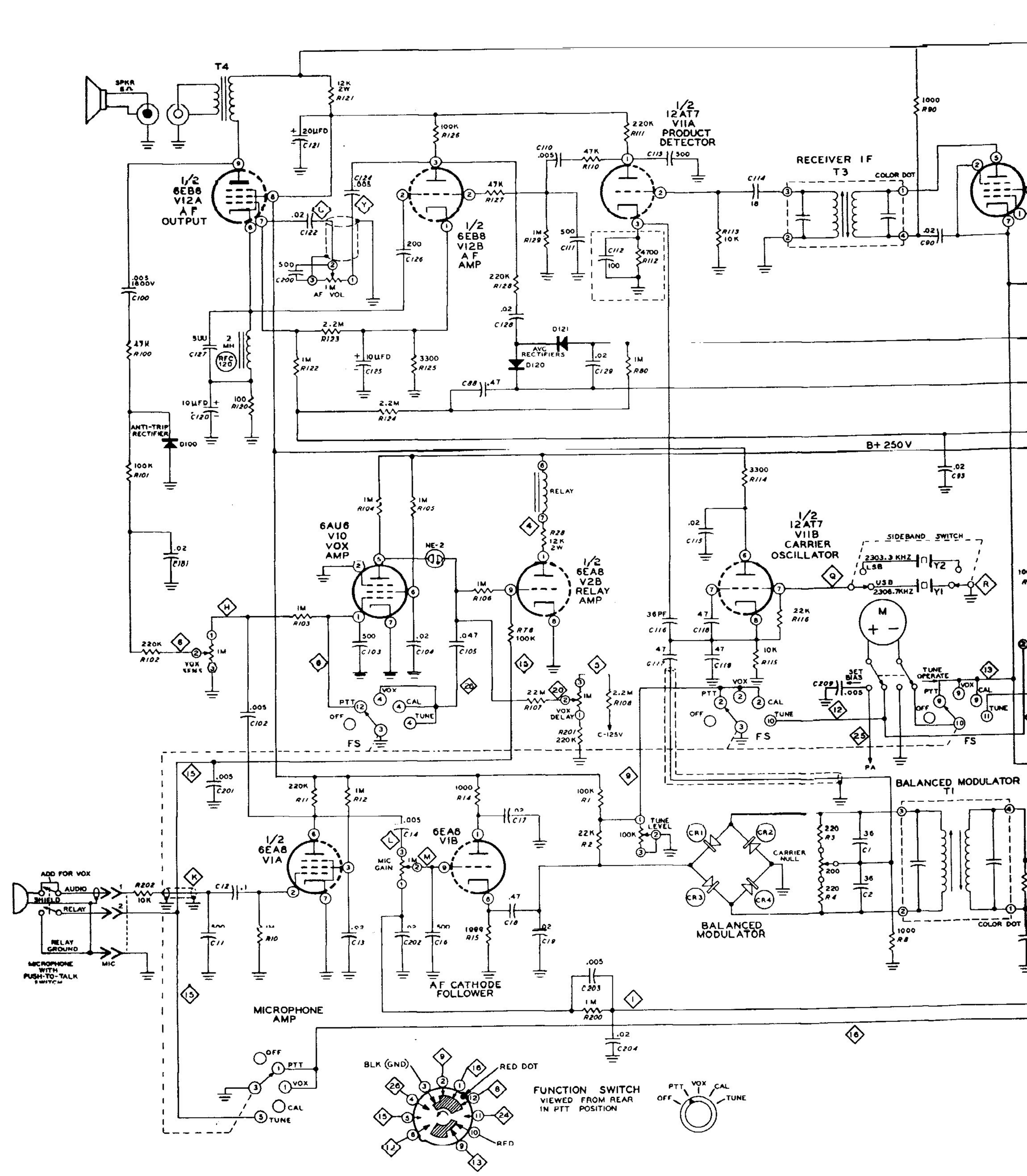
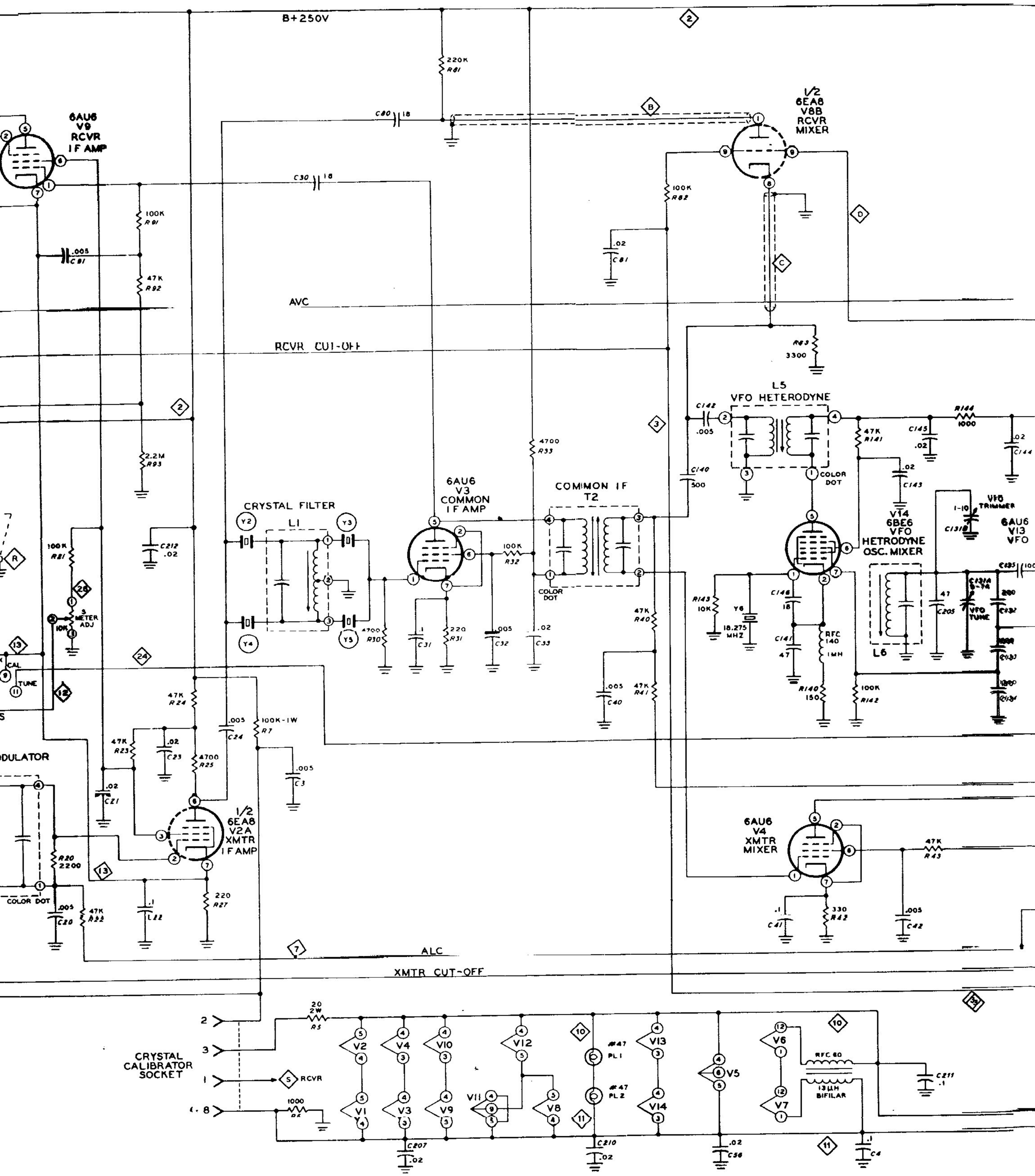

SCHEMATIC OF THE HEATHKIT®
20 METER SSB TRANSCEIVER
MODEL HW-32A
NOTES:
1. RESISTOR AND CAPACITOR NUMBERS ARE IN THE FOLLOWING GROUPS:
1-9 PARTS MOUNTED ON THE CIRCUIT BOARD NOT ASSOCIATED TO A TUBE STAGE.
10-149 PARTS MOUNTED ON THE CIRCUIT BOARD.
200-299 PARTS ON THE CHASSIS.
2. ALL RESISTORS ARE 1/2 WATT UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (K=1000, MEG=1,000,000).
3. CAPACITOR VALUES LESS THAN 1 ARE IN μfd. VALUES OF 1 AND ABOVE ARE IN μf, UNLESS THEY ARE MARKED OTHERWISE.
4. RESISTORS AND CAPACITORS ARE NUMBERED ACCORDING TO THE ASSOCIATED TUBES. EXAMPLES:
R43 — RESISTOR PART OF TUBE CIRCUIT V4 — THE NUMBER FOR THIS PARTICULAR RESISTOR
C141 — CAPACITOR PART OF TUBE CIRCUIT V14 — THE NUMBER FOR THIS PARTICULAR CAPACITOR
5. REFER TO THE CHASSIS PHOTOGRAPHS AND CIRCUIT BOARD X-RAY VIEWS FOR THE PHYSICAL LOCATION OF PARTS.
6. SEE FIGURES 6-1, 6-2, 6-3, and 6-4 FOR RESISTANCE AND VOLTAGE MEASUREMENTS.
7. ◇ DENOTES WIRE COLOR CODE ON CIRCUIT BOARD TERMINAL.
T4
1/2 6EB8 V12A AF OUTPUT
1/2 6EB8 V12B AF AMP
1/2 12AT7 V11A PRODUCT DETECTOR
RECEIVER IF T3
6AU6 V9 RCVR IF AMP
1/2 6EA8 V8B RCVR MIXER
1/2 6EA8 V8A RF AMP
B+ 250V
AVC
RCVR CUT-OFF
6AU6 V10 VOX AMP
1/2 6EA8 V2B RELAY AMP
1/2 12AT7 V11B CARRIER OSCILLATOR
SIDEBAND SWITCH
CRYSTAL FILTER
6AU6 V3 COMMON IF AMP
COMMON IF T2
L5 VFO HETERODYNE
V14 6BE6 VFO HETRODYNE OSC. MIXER
L6
6AU6 V13 VFO
DRIVER GRID L2
DRIVER PLATE L3
(CALIBRATOR)
RCVR
ANT
L4
L7 18.8 MHZ TRAP
12BY7 V5 DRIVER
6GE5 V7
RF POWER AMP 6GE5 V6
B+ 800V
C-125V
1/2 6EA8 V1A
6EA8 V1B
AF CATHODE FOLLOWER
MICROPHONE AMP
BALANCED MODULATOR T1
1/2 6EA8 V2A XMTR IF AMP
6AU6 V4 XMTR MIXER
ALC
XMTR CUT-OFF
CRYSTAL CALIBRATOR SOCKET
FUNCTION SWITCH VIEWED FROM REAR IN PTT POSITION
FIL 12.6V
FIL COMMON
EXT RELAY


T4
SPKR 8Ω
12K 2W R121
20µFD C121
1/2 6EB8 V12A AF OUTPUT
.02 C122
500 C200
1M AF VOL
C124 .005
100K R126
1/2 6EB8 V12B AF AMP
200 C126
47K R127
220K R128
.02 C128
D121
AVC RECTIFIERS
D120
.02 C129
1M R80
C88 .47
2.2M R124
2.2M R123
1M R122
10µFD C125
3300 R125
.005 1800V C100
47K R100
500 C127
2 MH
RFC 120
10µFD C120
100 R120
ANTI-TRIP RECTIFIER
D100
100K R101
.02 C101
220K R110
C110 .005
C113 500
1/2 12AT7 V11A PRODUCT DETECTOR
1M R129
500 C111
C112 100
4700 R112
R113 10K
C114 18
RECEIVER IF T3
COLOR DOT
1000 R90
.02 C90
B+ 250V
.02 C93
3300 R114
.02 C115
1/2 12AT7 V11B CARRIER OSCILLATOR
SIDEBAND SWITCH
2303.3 KHZ LSB
Y2
USB 2306.7KHZ
Y1
22K R116
36PF C116
47 C118
47 C117
47 C119
10K R115
M
SET BIAS
C209 .005
TUNE OPERATE
PTT
VOX
CAL
TUNE
OFF
FS
PA
RELAY
R28 12K 2W
1/2 6EA8 V2B RELAY AMP
R76 100K
1M R106
6AU6 V10 VOX AMP
1M R104
1M R105
NE-2
1M R103
500 C103
.02 C104
.047 C105
.005 C102
220K R102
1M VOX SENS
22M R107
1M VOX DELAY
2.2M R108
R201 220K
C-125V
.005 C201
220K R11
1M R12
1000 R14
100K R1
22K R2
100K TUNE LEVEL
.005 C14
C17
1/2 6EA8 V1A
6EA8 V1B
MIC GAIN
1M
.47 C18
.02 C19
1000 R15
.02 C202
500 C16
500 C11
1M R10
.02 C13
R202 10K
C12 .1
ADD FOR VOX
AUDIO
SHIELD
RELAY
RELAY GROUND
MICROPHONE WITH PUSH-TO-TALK SWITCH
MIC
MICROPHONE AMP
AF CATHODE FOLLOWER
.005 C203
1M R200
.02 C204
BALANCED MODULATOR
CR1
CR2
CR3
CR4
CARRIER NULL
220 R3
200
220 R4
36 C1
36 C2
BALANCED MODULATOR T1
1000 R8
COLOR DOT
OFF
PTT
VOX
CAL
TUNE
BLK (GND)
RED DOT
RED
FUNCTION SWITCH
VIEWED FROM REAR
IN PTT POSITION


B+250V
220K R81
C80 18
1/2 6EA8 V8B RCVR MIXER
6AU6 V9 RCVR IF AMP
C30 18
100K R82
.02 C81
100K R91
.005 C91
47K R92
AVC
RCVR CUT-OFF
R83 3300
L5 VFO HETERODYNE
C142 .005
C140 500
R144 1000
C145 .02
C144 .02
47K R141
.02 C143
COLOR DOT
V14 6BE6 VFO HETRODYNE OSC. MIXER
VFO TRIMMER 1-10 C131B
6AU6 V13 VFO
C135
C131A 6-74
VFO TUNE
C132
C133
C134
R143 10K
Y6 18.275 MHZ
C146 18
C141 47
RFC 140 1MH
R140 150
100K R142
L6
47 C205
2.2M R93
C212 .02
100K R81
S METER ADJ 10K
CAL
TUNE
CRYSTAL FILTER
L1
Y2
Y3
Y4
Y5
6AU6 V3 COMMON IF AMP
4700 R30
.1 C31
220 R31
.005 C32
.02 C33
100K R32
COMMON IF T2
COLOR DOT
4700 R33
47K R40
.005 C40
47K R41
47K R24
.005 C24
100K-1W R7
.005 C3
47K R23
.02 C23
4700 R25
.02 C21
1/2 6EA8 V2A XMTR IF AMP
R20 2200
COLOR DOT
.005 C20
47K R22
.1 L22
220 R27
6AU6 V4 XMTR MIXER
47K R43
.1 C41
330 R42
.005 C42
ALC
XMTR CUT-OFF
CRYSTAL CALIBRATOR SOCKET
20 2W R5
RCVR
1000 DK
V2
V4
V10
V12
V13
V5
V6
V1
V3
V9
V11
V8
V14
V7
#47 PL1
#47 PL2
RFC 60
13µH BIFILAR
C211 .1
C207 .02
C210 .02
C56 .02
C4 .1

SCHEMATIC OF THE HEATHKIT® 20 METER SSB TRANSCEIVER MODEL HW-32A

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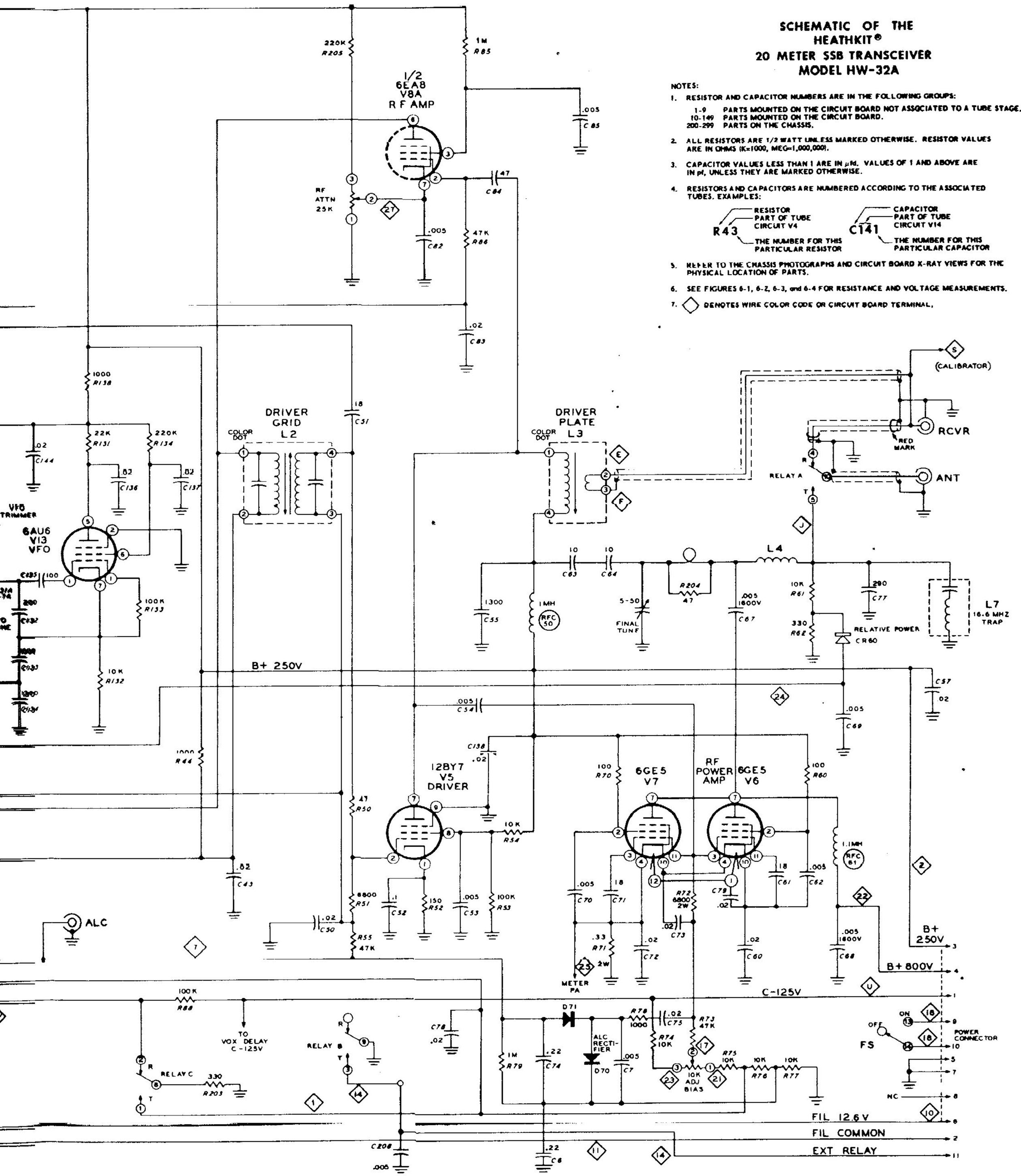
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