METER SWITCH	
POS.	SII READS
1	R109
2	NO CONNECTION
3	NO CONNECTION
4	R57
5	R167
6	A+B
7	NO READING
8	B+
9	B−
10	R94
11	R99
12	R104

NOTES:

1. SWITCHES ARE VIEWED FROM END OPPOSITE CONTROL KNOB.
2. SECTIONS DESIGNATED "A" ARE NEAREST THE KNOB END.
3. ALL SWITCHES ARE SHOWN IN THE EXTREME COUNTERCLOCKWISE POSITION, EXCEPT SII.
4. RELAYS K1 AND K2 ARE SHOWN IN A DE-ENERGIZED POSITION.
5. UNLESS OTHERWISE SPECIFIED; ALL CAPACITORS ARE IN UUF, ALL RESISTORS ARE IN OHMS. (K= 1,000 OHMS).
6. * THESE RESISTORS WERE 68K ON CONVERTERS, SERIAL NUMBERS 1 THRU 200.
7. + THESE RESISTORS WERE 100K ON CONVERTERS, SERIAL NUMBERS 1 THRU 200.
8. ₹ THIS RESISTOR WAS 15K ON CONVERTERS, SERIAL NUMBERS 1 THRU 200.
9. ₹ THESE RESISTORS WERE OMITTED ON CONVERTERS, SERIAL NUMBERS 1 THRU 200.

TM2241-70

Figure 59. B+ voltage distribution diagram.

Note. On converter units, with serial numbers from 1 to 200, the negative increase goes to approximately −30 volts with an input signal of 2,500 microvolts. For any further increase in input voltage, the readings remain relatively constant at −30±5 volts. The curves in figure 58© illustrate the dc voltage across the threshold potentiometer with changing signal input to the converter.

71. Overall Transmission Tests

The final test of the frequency-shift converter is an operational test. Connect the INPUT A and INPUT B jacks to the output of two receivers (par. 14). Connect the output of the converter to a teletypewriter such as Teletypewriter TG–7–B. Satisfactory performance is achieved when 25 lines of test copy are received on the teletypewriter.

CHAPTER 7

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

72. Repacking for Shipment or Limited Storage

a. The exact procedure in repacking for shipment or limited storage depends upon the material available and the conditions under which the equipment is to be shipped or stored. Refer to paragraph 12 and follow the instructions in reverse order.

b. Whenever practicable, place a dehydrating agent such as silica gel inside the chests or packing boxes. Protect the chests (or boxes) with a waterproof paper barrier. Seal the seams of the paper barrier with waterproof sealing compound or tape. Pack the protected chests in a padded wooden case, providing at least 3 inches of excelsior padding or some similar material between the paper barrier and the packing case.

73. Demolition to Prevent Enemy Use

The demolition procedures outlined in paragraph 74 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon order of the commander.

74. Methods of Destruction

a. Smash. Smash the crystals, controls, tubes, coils, motors, switches, capacitors, and transformers; use sledges, axes, handaxes, pickaxes, hammers, crowbars, or heavy tools.

b. Cut. Cut cables and wiring; use axes, handaxes, or machetes.

c. Burn. Burn cables, resistors, capacitors, coils, wiring, and instruction books; use gasoline, kerosene, oil, flamethrowers, or incendiary grenades.

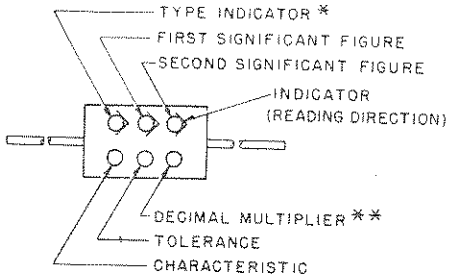
d. Bend. Bend panels, cabinet, and chassis.

e. Explosives. If explosives are necessary, use firearms, grenades, or TNT.

f. Disposal. Bury or scatter the destroyed parts in slit trenches, fox holes, or other holes, or throw them into streams.

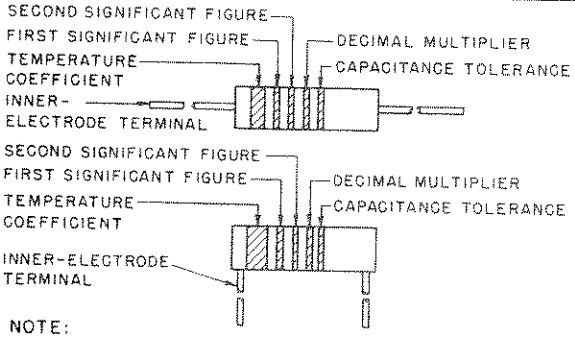
g. Other. Destroy everything.

CAPACITOR COLOR CODE MARKING
(MIL-STD CAPACITORS)



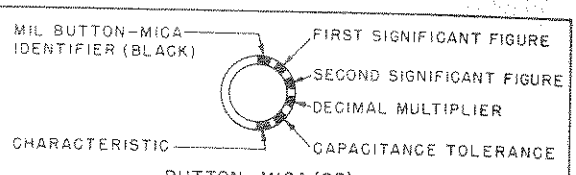
* BLACK DOT: MICA DIELECTRIC
SILVER DOT: PAPER DIELECTRIC
**INDICATES NUMBER OF ZEROS ON PAPER TYPE.

MICA (CM) AND PAPER (CN)

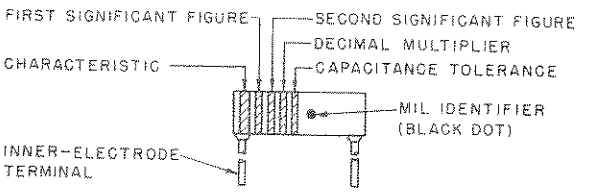


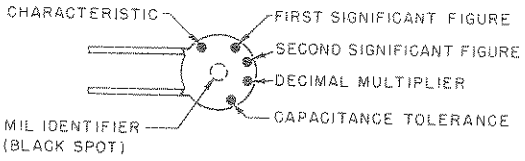
NOTE:
SPOTS MAY BE USED INSTEAD OF BANDS; TEMPERATURE COEFFICIENT MARKING IS LARGER.

CERAMIC-TEMPERATURE COMPENSATING (CC)



BUTTON-MICA (CB)





NOTES:
1. SPOTS MAY BE USED ON TUBULAR CAPACITORS; CHARACTERISTIC SPOT IS LARGER AND MIL IDENTIFIER IS ON SIDE DIAMETRICALLY OPPOSITE COLOR SPOTS.
2. MIL IDENTIFIER OF DISK TYPE IS ON REVERSE SIDE; CHARACTERISTIC SPOT IS LARGER OR SPACE BETWEEN CHARACTERISTIC AND TOLERANCE SPOTS IS THREE TIMES SPACE BETWEEN ADJACENT SPOTS.
3. TOLERANCE: YELLOW, +100%, -20%.

CERAMIC-GENERAL PURPOSE (CK)

CAPACITOR COLOR CODE

COLOR	SIG FIG.	MULTIPLIER		CHARACTERISTIC[1]				TOLERANCE [2]					TEMPERATURE COEFFICIENT (UUF/UF/°C)
		DECIMAL	NUMBER OF ZEROS	CM	CN	CB	CK	CM	CN	CB	CC		
											OVER 10UUF	10UUF OR LESS	CC
BLACK	0	1	NONE		A			20	20	20	20	2	ZERO
BROWN	1	10	1	B	E	B	W				1		-30
RED	2	100	2	C	H		X	2		2	2		-80
ORANGE	3	1,000	3	D	J	D			30				-150
YELLOW	4	10,000	4	E	P								-220
GREEN	5		5	F	R						5	0.5	-330
BLUE	6		6		S								-470
PURPLE (VIOLET)	7		7		T	W							-750
GRAY	8		8			X						0.25	+30
WHITE	9		9								10	1	-330(±500) [3]
GOLD		0.1						5		5			+100
SILVER		0.01						10	10	10			

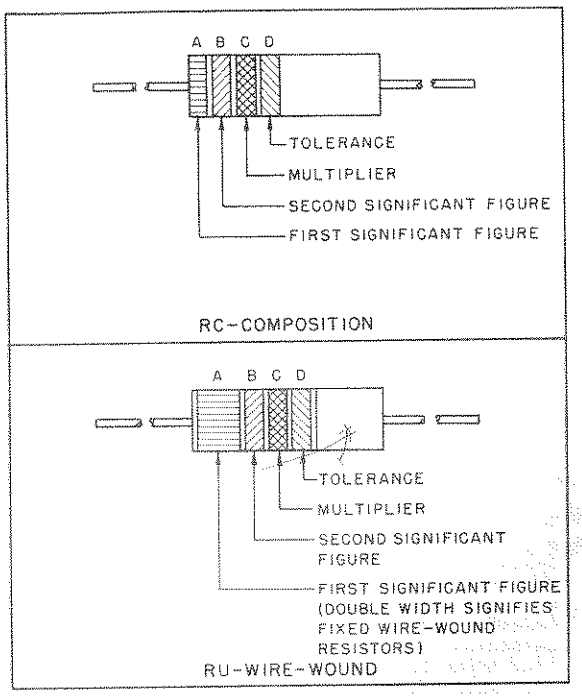
1. LETTERS ARE IN TYPE DESIGNATIONS GIVEN IN MIL-C SPECIFICATIONS.
2. IN PERCENT, EXCEPT IN UUF FOR CC-TYPE CAPACITORS OF 10 UUF OR LESS.
3. INTENDED FOR USE IN CIRCUITS NOT REQUIRING COMPENSATION.

STD-CI

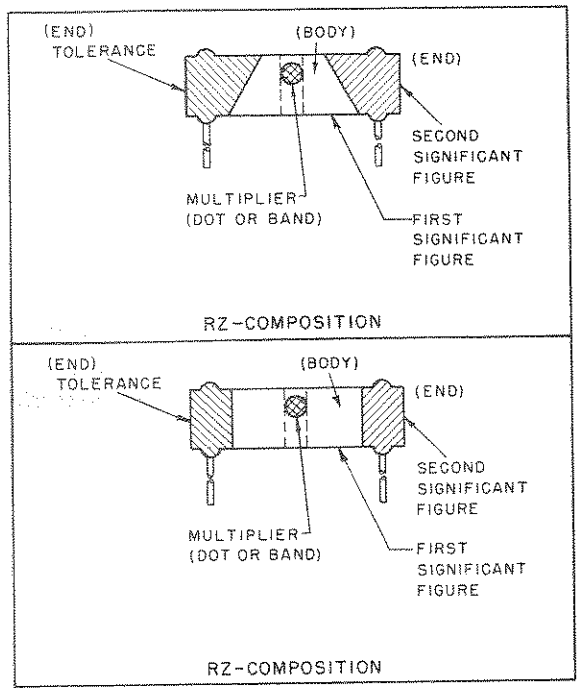
Figure 60. Capacitor color code.

RESISTOR COLOR CODE MARKING
(MIL-STD RESISTORS)

AXIAL-LEAD RESISTORS (INSULATED)



RADIAL-LEAD RESISTORS (UNINSULATED)



RESISTOR COLOR CODE

BAND A OR BODY*		BAND B OR END*		BAND C OR DOT OR BAND*		BAND D OR END*	
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)
BLACK	0	BLACK	0	BLACK	1	BODY	± 20
BROWN	1	BROWN	1	BROWN	10	SILVER	± 10
RED	2	RED	2	RED	100	GOLD	± 5
ORANGE	3	ORANGE	3	ORANGE	1,000		
YELLOW	4	YELLOW	4	YELLOW	10,000		
GREEN	5	GREEN	5	GREEN	100,000		
BLUE	6	BLUE	6	BLUE	1,000,000		
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7				
GRAY	8	GRAY	8	GOLD	0.1		
WHITE	9	WHITE	9	SILVER	0.01		

*FOR WIRE-WOUND-TYPE RESISTORS, BAND A SHALL BE DOUBLE-WIDTH. WHEN BODY COLOR IS THE SAME AS THE DOT (OR BAND) OR END COLOR, THE COLORS ARE DIFFERENTIATED BY SHADE, GLOSS, OR OTHER MEANS.

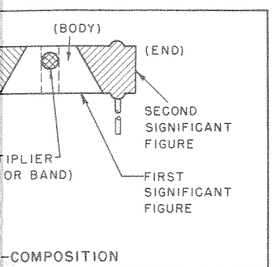
EXAMPLES (BAND MARKING):
10 OHMS ±20 PERCENT: BROWN BAND A; BLACK BAND B; BLACK BAND C; NO BAND D.
4.7 OHMS ±5 PERCENT: YELLOW BAND A; PURPLE BAND B; GOLD BAND C; GOLD BAND D.

EXAMPLES (BODY MARKING):
10 OHMS ±20 PERCENT: BROWN BODY; BLACK END; BLACK DOT OR BAND; BODY COLOR ON TOLERANCE END.
3,000 OHMS ±10 PERCENT: ORANGE BODY; BLACK END; RED DOT OR BAND, SILVER END.

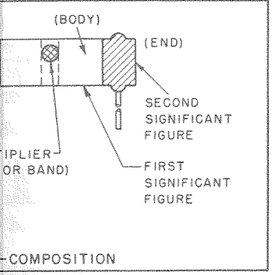
STD-R1

Figure 61. Resistor color code.

-LEAD RESISTORS
NINSULATED)



-COMPOSITION



-COMPOSITION

*	BAND D OR END*	
	COLOR	RESISTANCE TOLERANCE (PERCENT)
	BODY	± 20
	SILVER	± 10
	GOLD	± 5

G):
OWN BODY; BLACK END; BLACK DOT
TOLERANCE END.
ORANGE BODY, BLACK END, RED DOT

STD-R1

Figure 62. Frequency Shift Converter CV-116/URR, serial numbers 1-200, schematic diagram.

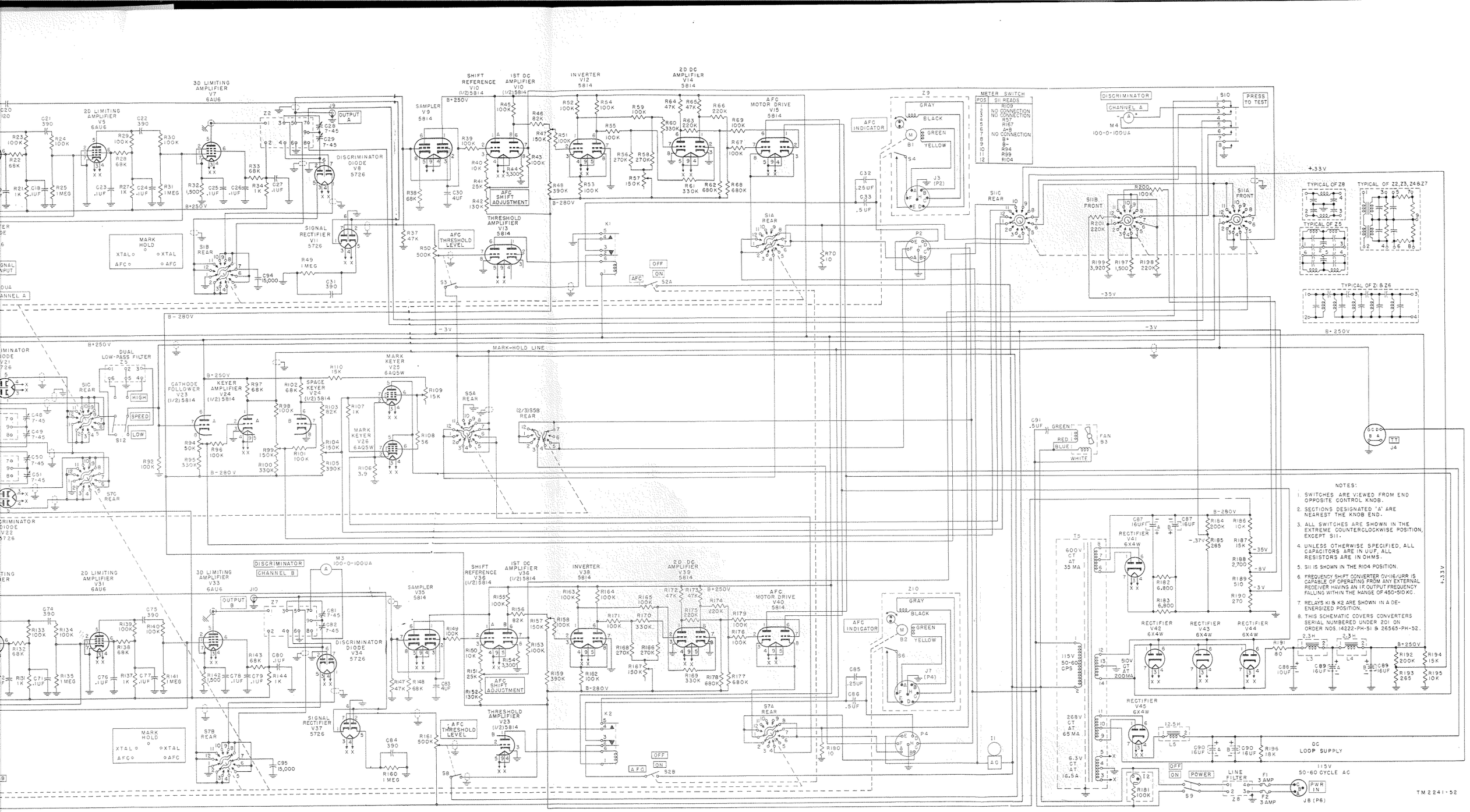


Figure 62. Frequency Shift Converter CV-116/URR, serial numbers 1-200, schematic diagram.

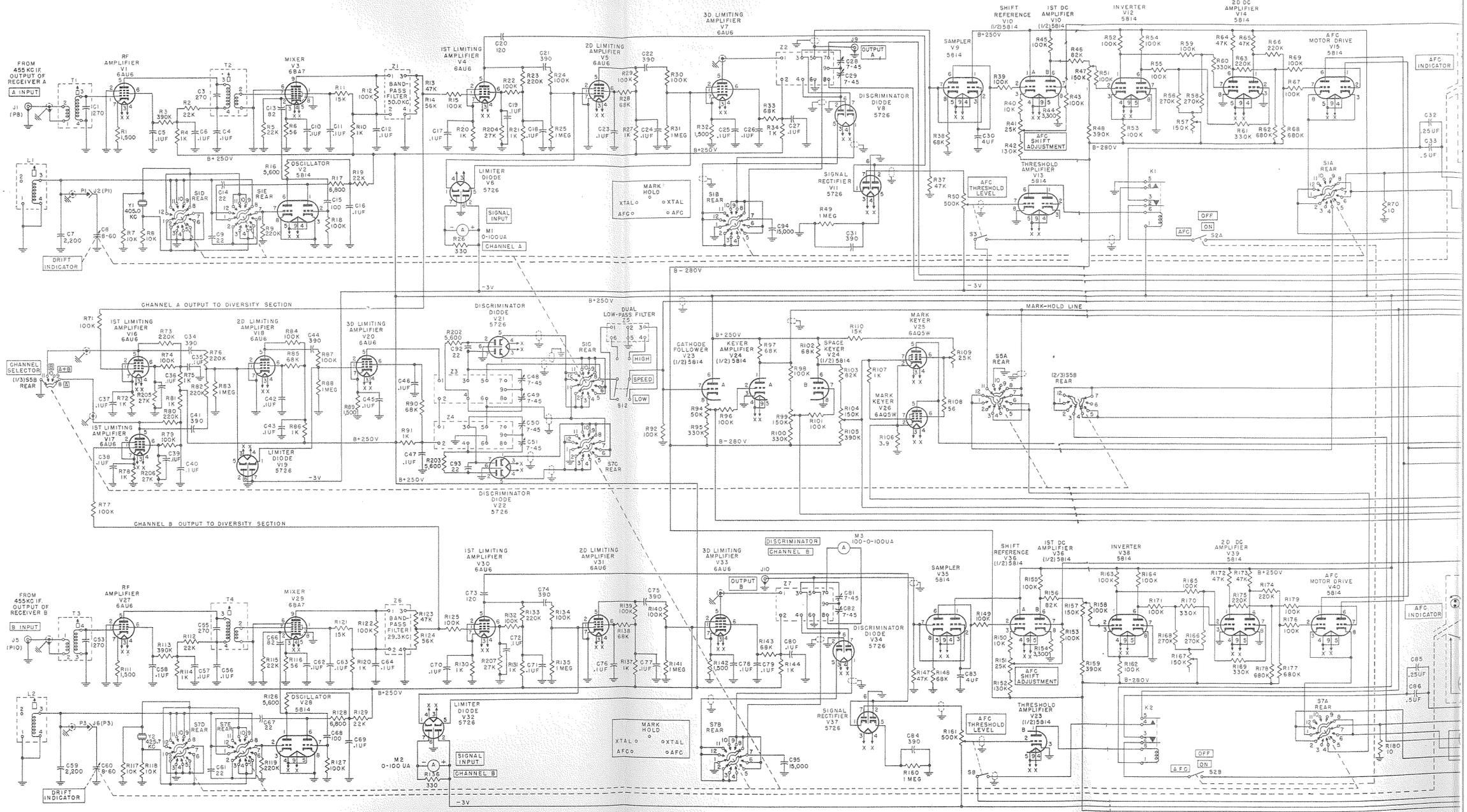
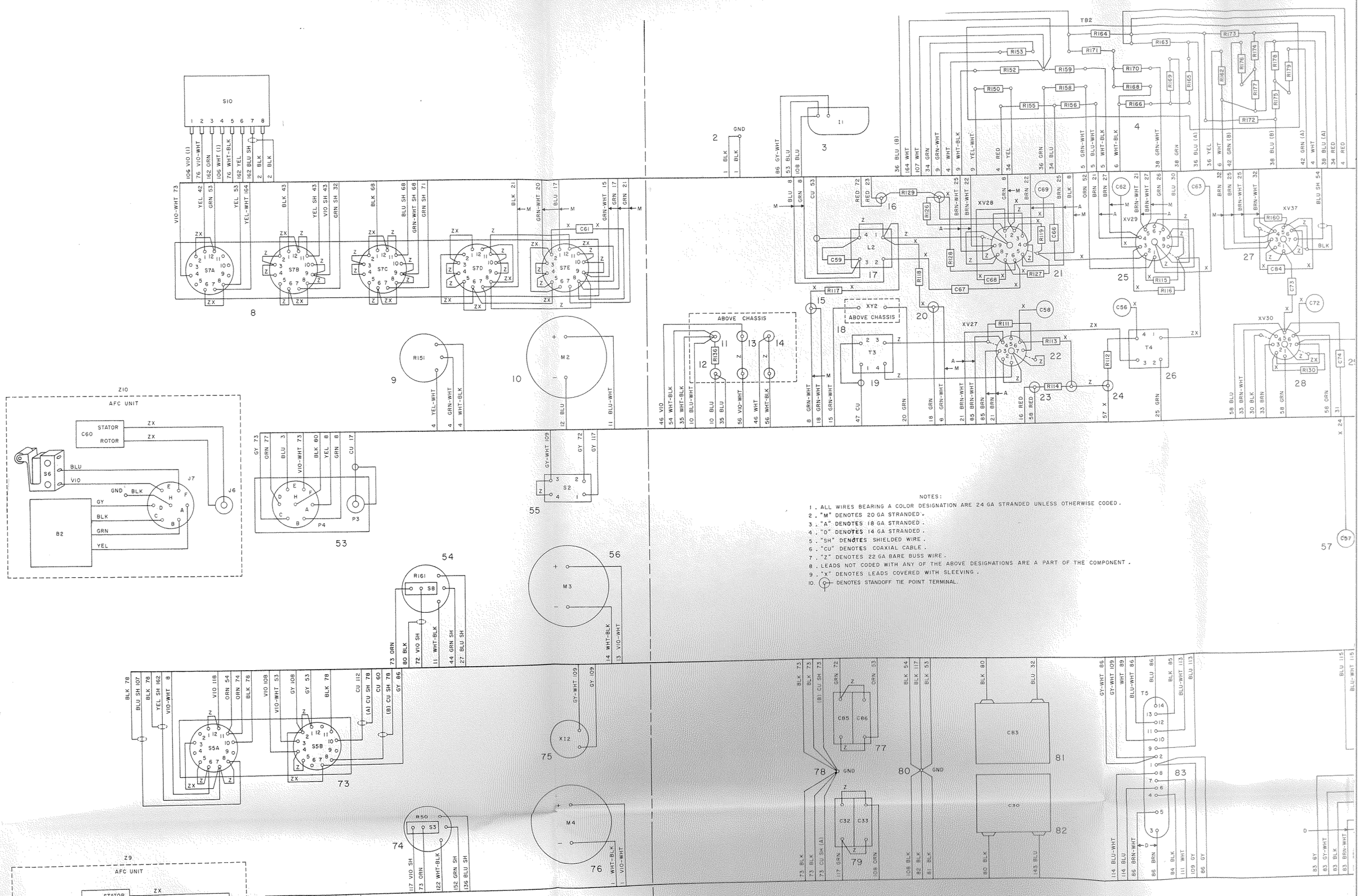
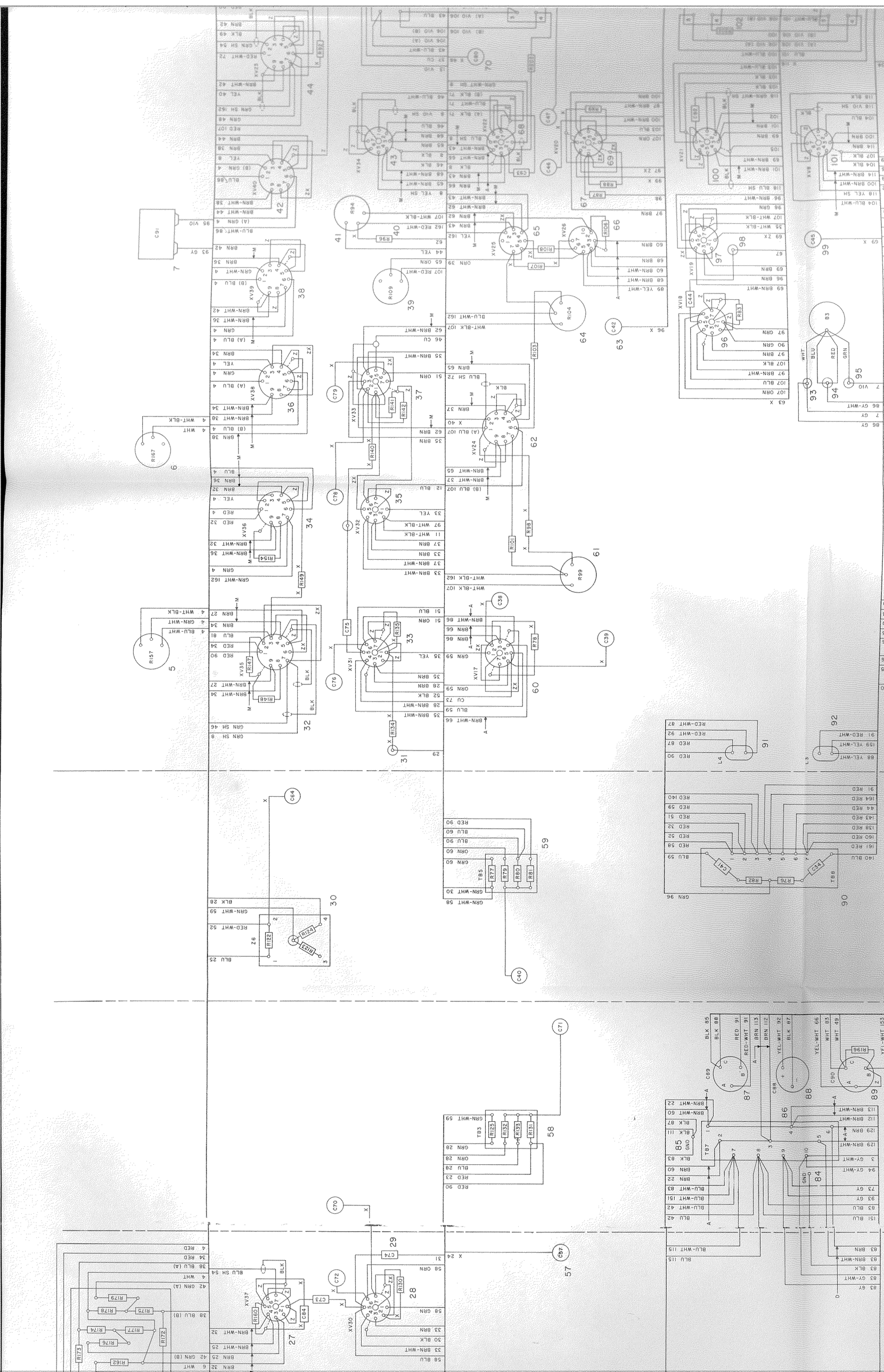
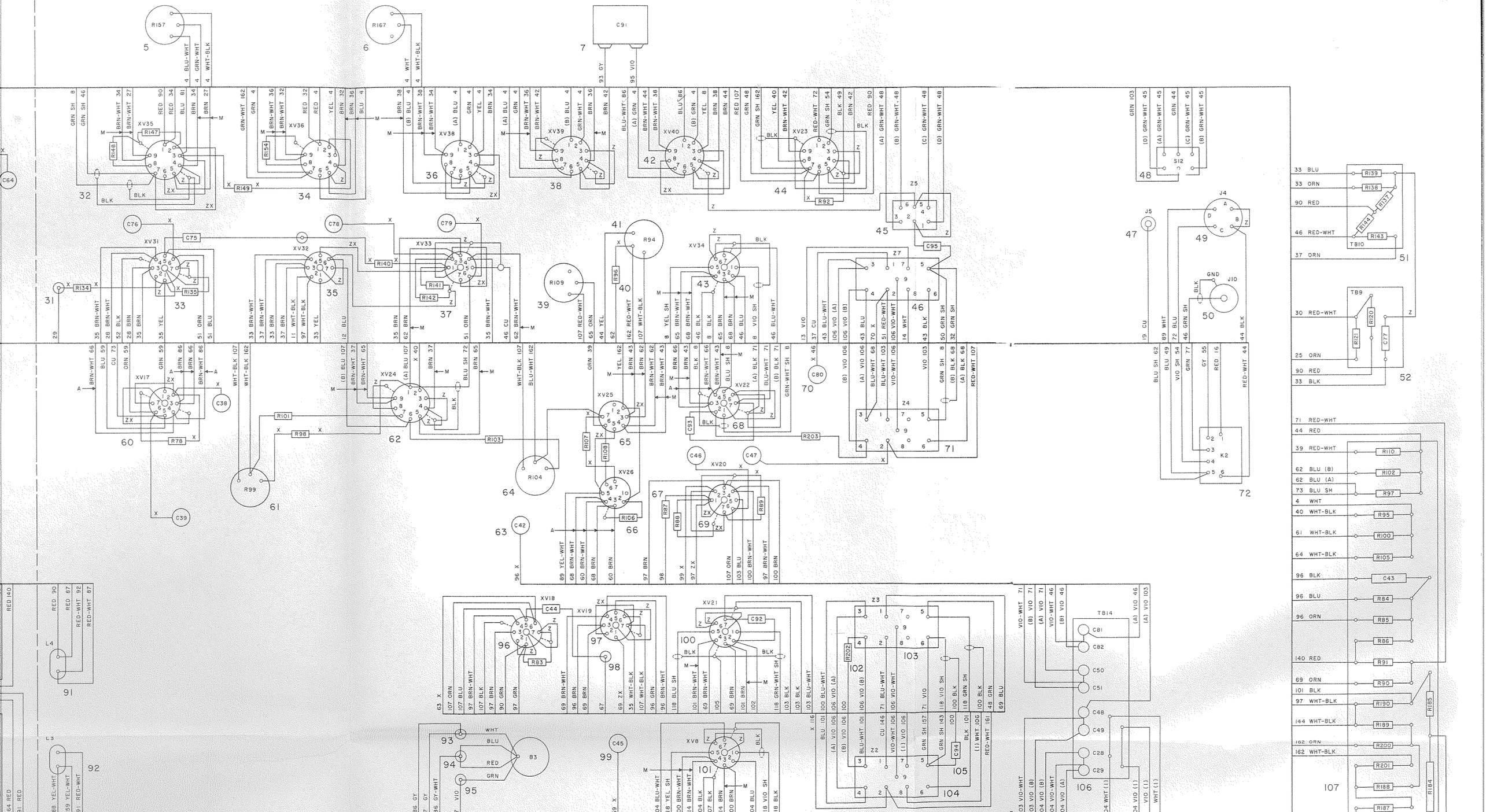


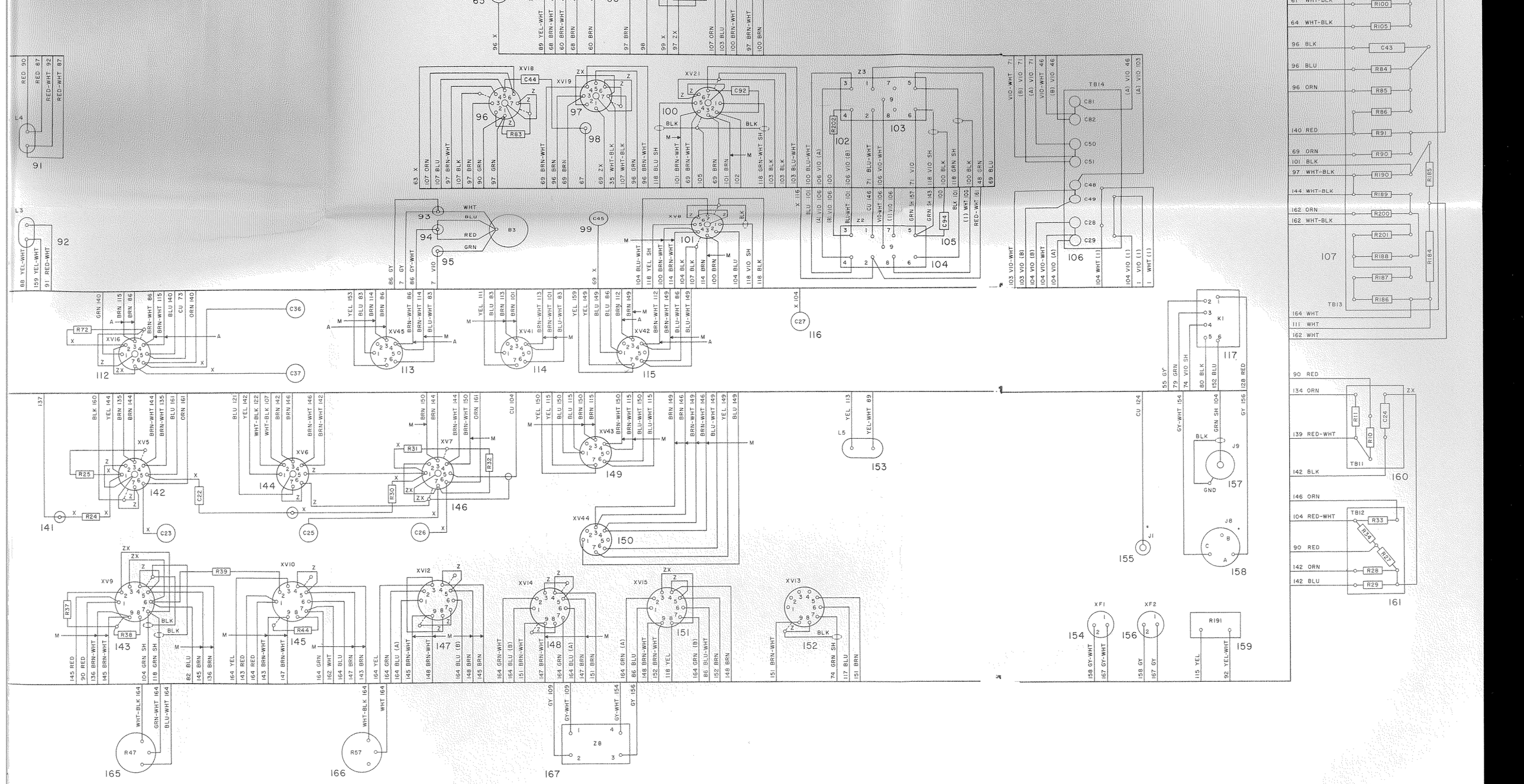
Figure 63. Frequency Shift Converter CV-116/URR, serial numbers 201 and higher, schematic diagram.

Figure 63. Frequency Shift Converter CV-116/URR, serial numbers 201 and higher, schematic diagram.


S10
S7A
S7B
S7C
S7D
S7E
C61
R151
M2
Z10
AFC UNIT
C60 STATOR
ROTOR
S6
J7
J6
B2
P4
P3
S2
GND
TB2
R164
R171
R153
R152
R159
R150
R158
R155
R156
R163
R170
R168
R166
R169
R165
R173
R174
R176
R177
R178
R179
R175
R172
R162
I1
I2
I3
I4
L2
R129
R126
R128
R118
R117
R127
R119
C66
C59
C67
C68
XV28
XV29
XV37
C62
C63
C69
R160
C84
C73
C72
R115
R116
XV30
R130
C74
ABOVE CHASSIS
R136
XY2
T3
XV27
R111
R113
R114
R112
T4
C58
C56
S5A
S5B
R161
S8
R150
S3
M3
M4
X12
C85
C86
C83
C30
C32
C33
T5
C57
NOTES:
1. ALL WIRES BEARING A COLOR DESIGNATION ARE 24 GA STRANDED UNLESS OTHERWISE CODED.
2. "M" DENOTES 20 GA STRANDED.
3. "A" DENOTES 18 GA STRANDED.
4. "D" DENOTES 14 GA STRANDED.
5. "SH" DENOTES SHIELDED WIRE.
6. "CU" DENOTES COAXIAL CABLE.
7. "Z" DENOTES 22 GA BARE BUSS WIRE.
8. LEADS NOT CODED WITH ANY OF THE ABOVE DESIGNATIONS ARE A PART OF THE COMPONENT.
9. "X" DENOTES LEADS COVERED WITH SLEEVING.
10. DENOTES STANDOFF TIE POINT TERMINAL.




R157
R167
C91
XV35
XV36
XV38
XV39
XV40
XV23
S12
J4
J5
J10
K2
TB10
TB9
TB14
XV31
XV32
XV33
XV34
XV17
XV24
XV25
XV22
XV26
XV20
XV18
XV19
XV21
XV8
Z3
Z2
Z4
Z5
Z7
C95
C80
C38
C39
C42
C46
C47
C76
C75
C78
C79
C44
C92
C45
R94
R96
R109
R99
R104
R101
R98
R103
R107
R108
R106
R78
R134
R135
R140
R141
R142
R149
R154
R147
R148
R92
R203
R202
R83
R87
R88
R89
R93
R95
R100
R105
R110
R102
R97
R84
R85
R86
R91
R90
R190
R189
R200
R201
R188
R187
R139
R138
R137
R144
R143
R121
R120
C77
R185
R184
B3
L4
L5



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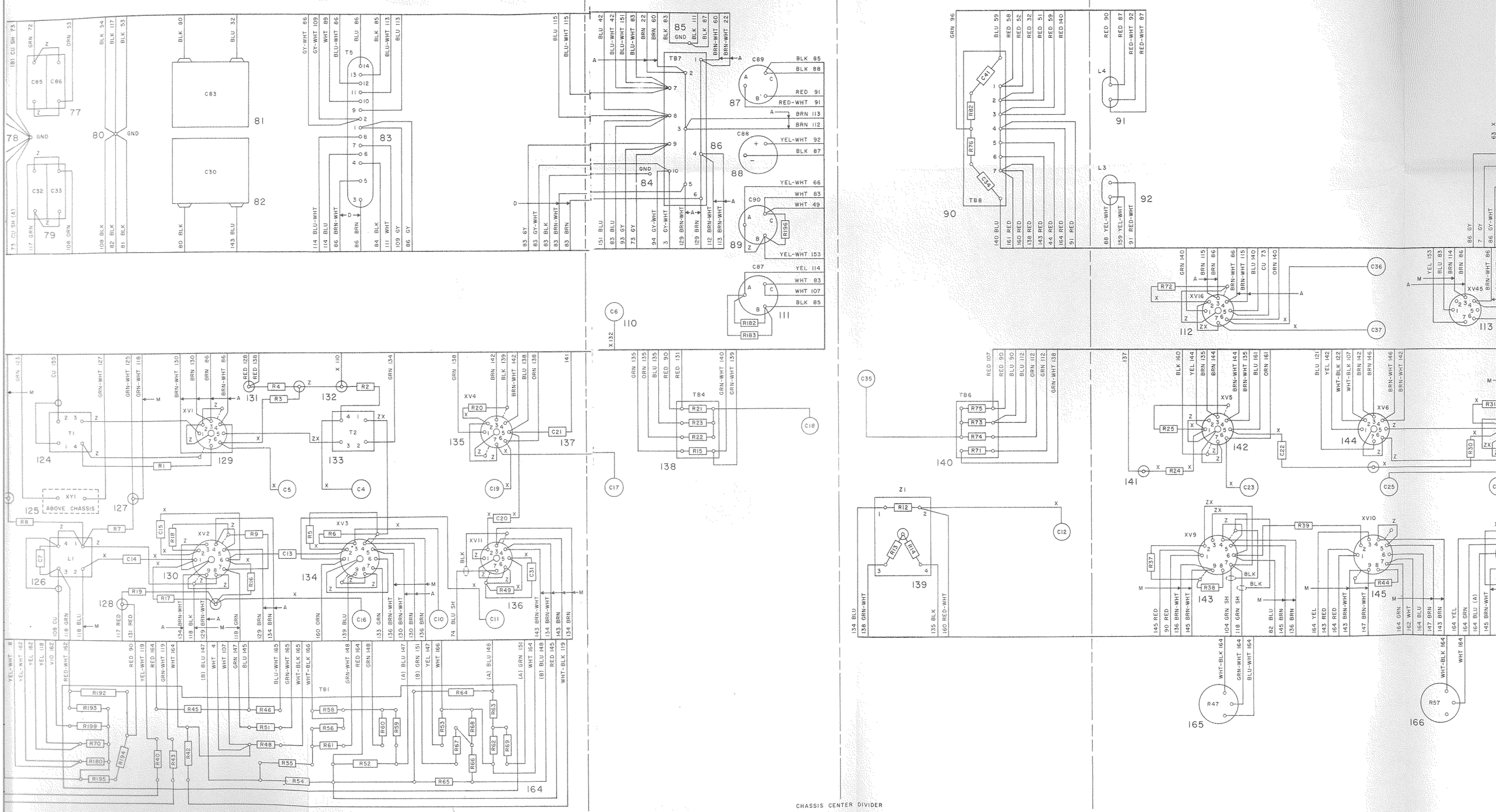
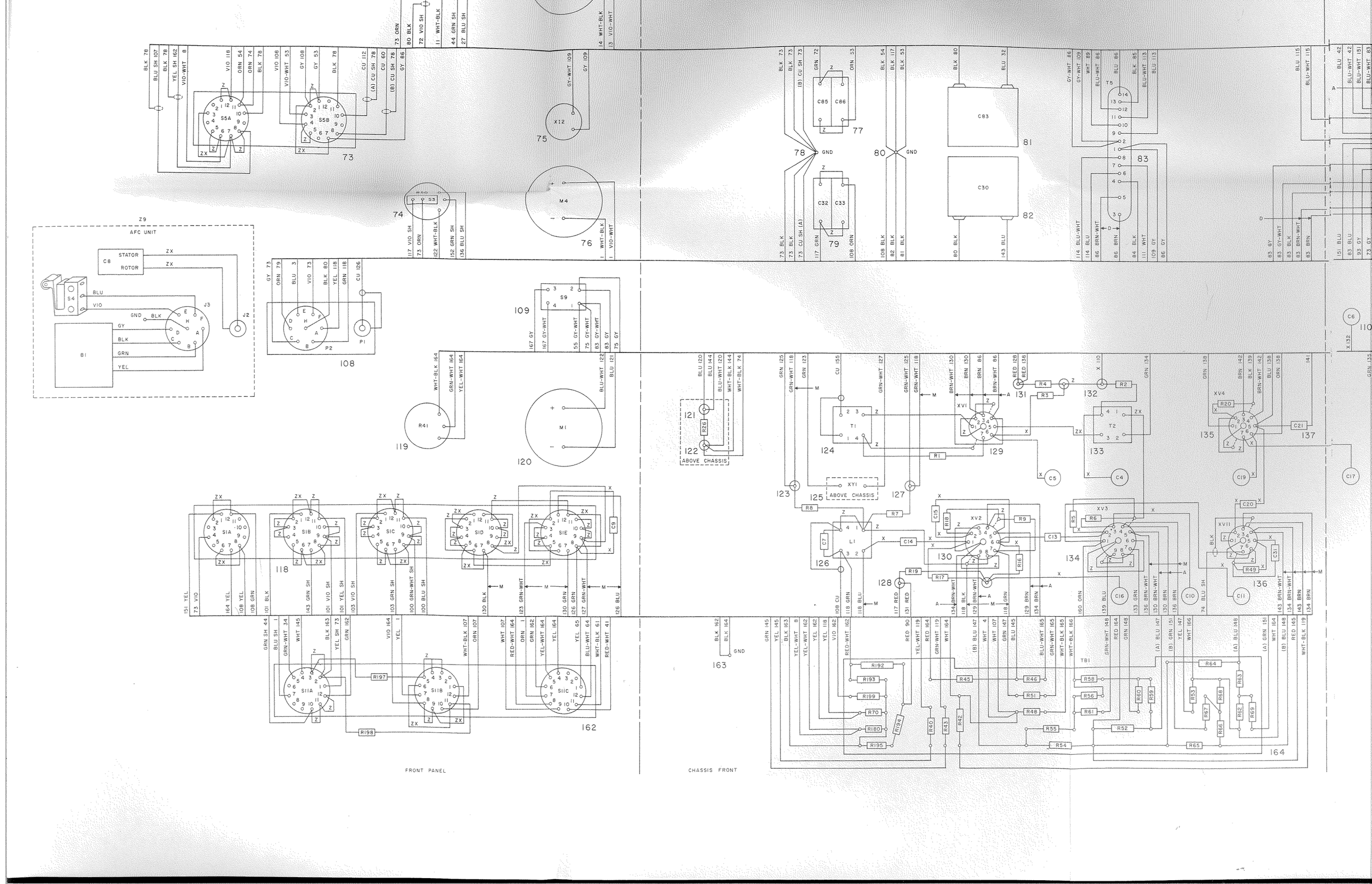


Figure 64. Cabling diagram, Frequency Shift Converter CV-116/URR.


Z9
AFC UNIT
C8
STATOR
ROTOR
ZX
S4
BLU
VIO
GND
BLK
GY
BLK
GRN
YEL
J3
J2
B1
S5A
S5B
73
S3
74
X12
75
M4
76
77
78
GND
79
80
GND
C85
C86
C83
C30
C32
C33
81
82
83
T5
S9
109
P2
P1
108
R41
119
M1
120
121
R28
122
ABOVE CHASSIS
T1
124
XV1
129
123
125
ABOVE CHASSIS
XV1
127
R1
X110
R4
R3
R2
131
132
T2
133
C5
C4
XV4
R20
135
C21
137
C19
C17
C6
110
X132
R8
R7
L1
126
C7
C14
XV2
130
R18
R9
R16
R19
R17
128
C15
C13
XV3
134
R5
R6
C16
C10
C11
XVII
136
C20
C31
R49
SIA
SIB
SIC
SID
SIE
118
C9
SIIA
SIIB
SIIC
R197
R198
162
TB1
R192
R193
R199
R70
R194
R180
R195
R45
R46
R51
R48
R40
R43
R42
R55
R54
R58
R56
R61
R52
R60
R59
R64
R53
R67
R68
R63
R66
R62
R69
R65
164
163
GND
FRONT PANEL
CHASSIS FRONT