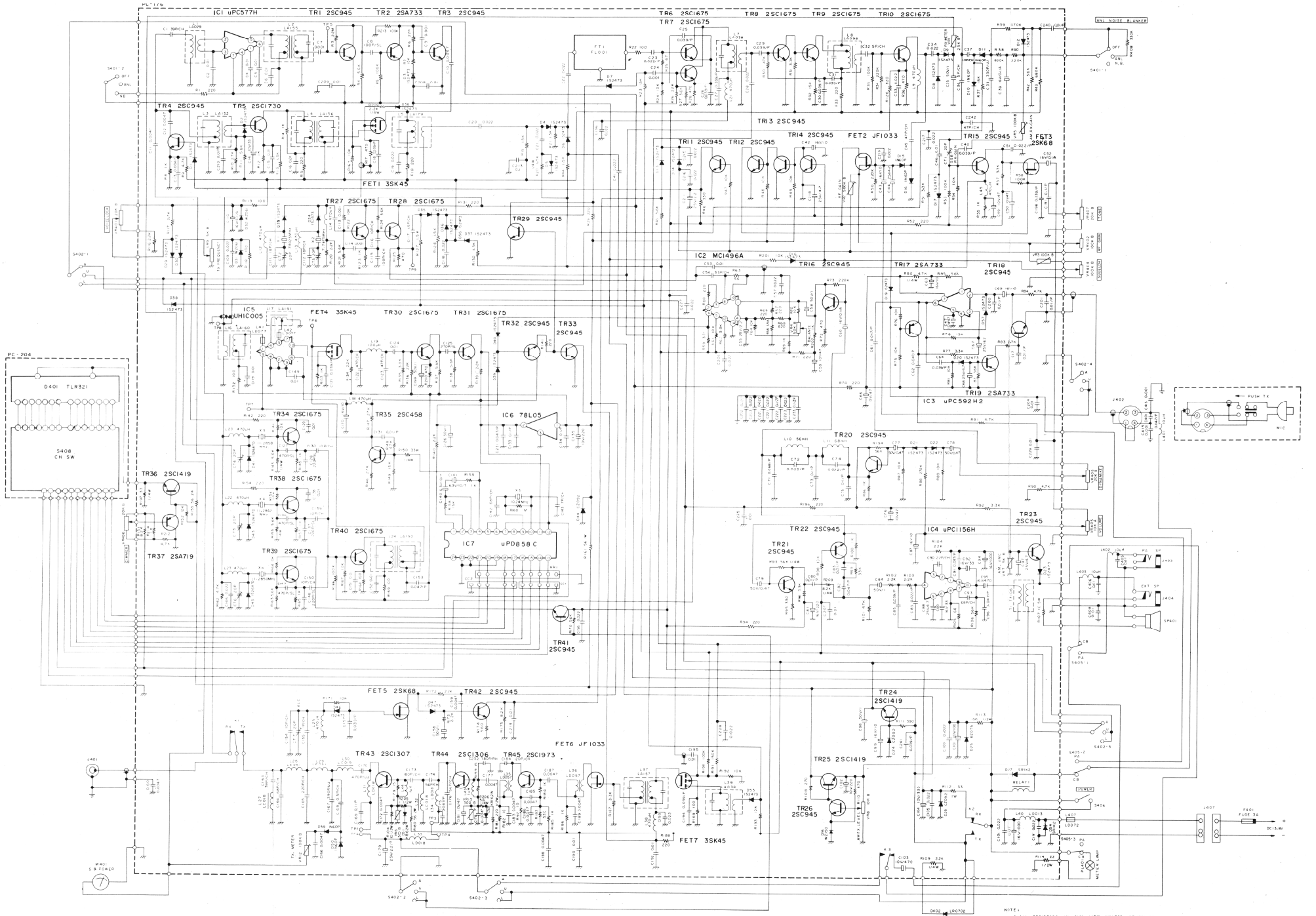


# CIRCUIT DIAGRAM FOR COBRA 138XL



NOTE 1: ALL RESISTORS IN OHM UNLESS OTHERWISE NOTED.  
 NOTE 2: ALL CAPACITORS IN MICROFARAD UNLESS OTHERWISE NOTED.

# BILLS OF MATERIAL FOR COBRA 138XLR

CIRCUIT SYMBOL	DESCRIPTION	DYNASCAN PART NO.
<b>IC, TRANSISTORS &amp; DIODES</b>		
TR-1, 3, 4, 11, 12, 13, 14, 15, 16, 18, 20, 21, 23, 26, 29, 32, 33, 41, 42, 22	Transistor 2SC945 (A) P . . . . .	176-060-9-003
TR-6, 7, 8, 9, 10, 27 28, 30, 31, 34, 38, 39, 40	Transistor 2SC1675 L . . . . .	176-065-9-001
TR-35	Transistor 2SC458 C . . . . .	176-049-9-002
TR-5	Transistor 2SC1730 L . . . . .	176-073-9-001
TR-43	Transistor 2SC1307 - (1) . . . . .	176-073-9-002
TR-44	Transistor 2SC2306 . . . . .	172-024-9-002
TR-45	Transistor 2SC1973 . . . . .	176-073-9-003
TR-2, 17, 19	Transistor 2SA733 P . . . . .	177-020-9-001
TR-24, 25, 36	Transistor 2SC1419 - C . . . . .	176-055-9-004
TR-37	Transistor 2SA719 P . . . . .	177-024-9-001
FET-3, 5	FET 2SK68A-M . . . . .	182-044-9-001
FET-2.6	FET JF 1033 Red . . . . .	182-044-9-002
FET-1, 7	FET 3SK45 (B) . . . . .	182-138-9-001
FET-4	FET 3SK45 (B)-09 . . . . .	182-042-9-001
IC-1	Integrated Circuit $\mu$ PC-577H . . . . .	307-112-9-007
IC-2	Integrated Circuit MC1496A . . . . .	307-112-9-005
IC-3	Integrated Circuit $\mu$ PC592H2 . . . . .	307-112-9-006
IC-4	Integrated Circuit $\mu$ PC1156H . . . . .	307-112-9-001
IC-5	Integrated Circuit $\mu$ HIC005 . . . . .	307-112-9-002
IC-6	Integrated Circuit $\mu$ PC78L05 . . . . .	307-112-9-003
IC-7	Integrated Circuit $\mu$ PD858C . . . . .	307-112-9-004
D-10, 11, 15, 16, 50,59	P Diode IN60P (12.5) Forming . . . . .	150-006-9-001
D-8, 9, 37, 56	P Diode IS2473- (12.5) Forming . . . . .	151-064-9-001
D-1, 2, 3, 4, 5, 6, 7, 12, 13, 14, 17, 18, 19 20, 21, 22, 23, 29, 30, 33, 34, 35, 36, 38, 39, 40, 46, 47, 53, 58	P Diode IS2473- (10) Forming . . . . .	151-064-9-002
D-57	Diode IS2473 . . . . .	151-035-9-003
D-27, 54	Diode SRIK-2 . . . . .	151-045-9-001
D-401	Diode TLR321 . . . . .	158-014-9-001
D-402	Diode LR0702R . . . . .	151-064-9-003
D-25	Zener BZ-075 . . . . .	152-079-9-004
D-24, 28, 44	Zener CZ-092 . . . . .	152-051-9-001
D-26	Zener WZ-050 (10) Forming . . . . .	152-079-9-001
D-32	Zener WZ-061 (10) Forming . . . . .	152-079-9-002
D-31	Zener WZ-061 (12.5) Forming . . . . .	152-079-9-003
D-41, 43, 45	Vari cap IS2687D Forming . . . . .	153-008-9-001
D-51, 52	Varistor KB-162-W . . . . .	153-008-9-002
<b>COILS</b>		
L-1	Coil LA-029 . . . . .	060-023-9-001
L-7, 39	Coil LA-038 . . . . .	060-018-9-001

**CIRCUIT  
SYMBOL**

**DESCRIPTION**

**DYNASCAN  
PART NO.**

**COILS**

L-8	Coil LA-096 . . . . .	.060-018-9-003
L-3	Coil LA-152 . . . . .	.060-023-9-002
L-2	Coil LA-155 . . . . .	.060-023-9-003
L-4	Coil LA-156 . . . . .	.060-023-9-004
L-37	Coil LA-157 . . . . .	.060-023-9-005
L-16	Coil LA-160 . . . . .	.046-018-9-001
L-5	Coil LA-179 . . . . .	.046-018-9-002
L-24	Coil LA-090 . . . . .	.046-018-9-003
L-17	Coil LA-191 . . . . .	.046-018-9-004
L-401, 402, 403	Coil LD-046 . . . . .	.048-018-9-005
L-27, 32	Coil LC-018 . . . . .	.046-018-9-006
L-30	Coil LC-019 . . . . .	.046-018-9-007
L-40	Coil LD-013 . . . . .	.046-018-9-008
L-31, 33, 34	Coil LD-018 . . . . .	.046-018-9-009
L-35, 36	Coil LD-057 . . . . .	.046-018-9-010
L-407	Coil LD-072 . . . . .	.046-018-9-011
L-28, 29	Coil LE-051 . . . . .	.046-018-9-012
L-19	Micro Inductor LZ-012 100 $\mu$ H . . . . .	.041-084-9-001
L-9, 12, 13, 14, 15, 18, 20 21, 22, 23, 25, 38	Micro Inductor LZ- 012 100 $\mu$ H . . . . .	.041-086-9-002
L-10	Micro Inductor LZ-015 56mH . . . . .	.041-086-9-003
L-11	Micro Inductor LZ-015 68mH . . . . .	.041-086-9-004
L-43, 44	Micro Inductor LZ-002 1 $\mu$ H . . . . .	.041-086-9-005
T-1	Output Trans TF-106 . . . . .	.061-032-9-001
L-41, 42	Bead Core LD-007 . . . . .	.763-080-9-003

**VARIABLE RESISTORS**

VR-7, 9	Semi fixed resistor RV-135 5K B . . . . .	.008-307-9-001
VR-8	Semi fixed resistor RV-135 10K B . . . . .	.008-307-9-002
VR-1	Semi fixed resistor RV-133 25K B . . . . .	.008-307-9-003
VR-4	Semi fixed resistor RV-135 50K B . . . . .	.008-307-9-004
VR-2, 3, 5, 12	Semi fixed resistor RV-135- 100K B . . . . .	.008-307-9-005
VR-15, 16	Semi fixed resistor RV-135 300 B . . . . .	.008-307-9-006
VR-405	Variable resistor RV-138 . . . . .	.008-307-9-007
VR-402, 404	Variable resistor RV-048 . . . . .	.008-307-9-008
VR-401, 408	Variable resistor RV-049 . . . . .	.008-283-9-002
VR-406, 407	Variable resistor RV-187 . . . . .	.008-307-9-009

**RESISTORS**

R-153	P Carbon resistor 1K 1/8W J . . . . .	.002-108-5-102
R-114	P Carbon resistor 22 1/2W J . . . . .	.002-102-5-220
R-181	P Carbon resistor 220 1/2W J . . . . .	.002-102-5-221
R-109, 209	P Carbon resistor 2.2K 1/4W J . . . . .	.002-104-5-222
R-197	P Carbon resistor 33 1/4W J . . . . .	.002-104-5-330
R-204	P Carbon resistor 10 1/2W J . . . . .	.002-102-5-100
R-205	U carbon resistor 1 1/2W J . . . . .	.002-102-5-010
R-80	U Carbon resistor 4.7K 1/4W J . . . . .	.002-104-5-472
R-143, 155	U Carbon resistor 5.6K 1/4W J . . . . .	.002-104-5-562
R-150	U Carbon resistor 33K 1/4W J . . . . .	.002-104-5-333
R-206	P Carbon resistor 5.6 1/8W J . . . . .	.002-108-5-569
R-15	P Carbon resistor 220 1/8W J . . . . .	.002-108-5-221
R-174	P Carbon resistor 560 1/8W J . . . . .	.002-108-5-561

CIRCUIT SYMBOL	DESCRIPTION	DYNASCAN PART NO.
<b>RESISTORS</b>		
R-126	P Carbon resistor 820 1/8W J . . . . .	.002-108-5-821
R-97, 182, 186	Carbon resistor (Forming type) 10 1/8W J 12.5. . . . .	.002-108-5-100
R-179, 199	Carbon resistor (Forming type) 15 1/8W J 12.5. . . . .	.002-108-5-150
R-93	U Carbon resistor 56K 1/4W J . . . . .	.002-104-5-563
R-25	Carbon resistor (Forming type) 47 1/8W J 12.5. . . . .	.002-108-5-470
R-63	Carbon resistor (Forming type) 56 1/8W J 12.5. . . . .	.002-108-5-560
R-105	Carbon resistor (Forming type) 68 1/8W J 12.5. . . . .	.002-108-5-680
R-22, 118, 119, 132, 168, 169, 189	Carbon resistor (Forming type) 100 1/8W J 12.5-	002-108-5-101
R-32	Carbon resistor (Forming type) 150 1/8W J 12.5. . . . .	.002-108-5-151
R-1, 18, 29, 33, 52, 56, 60, 65, 71, 74, 94, 131, 141, 142, 154, 183, 196	Carbon resistor (Forming type) 220 1/8W J 12.5. . . . .	.002-108-5-221
R-108	Carbon resistor (Forming type) 220 1/8W J 12.5. . . . .	.002-108-5-271
R-46, 95, 183	Carbon resistor (Forming type) 330 1/8W J 12.5. . . . .	.002-108-5-331
R-111	Carbon resistor (Forming type) 390 1/8W J 12.5. . . . .	.002-108-5-391
R-17, 18, 36, 72, 110 125, 220	Carbon resistor (Forming type) 470 1/8W J 12.5. . . . .	.002-108-5-471
R-68	Carbon resistor (Forming type) 820 1/8W J 12.5. . . . .	.002-108-5-821
R-208	U Carbon resistor 8.2K 1/4W J. . . . .	.002-104-5-822
R-20	U Carbon resistor 1.5K 1/4W J. . . . .	.002-104-5-152
R-8, 12, 14, 55, 69, 86, 100, 123, 133, 145, 157, 159, 165, 184, 185, 202	Carbon resistor (Forming type) 1K 1/8W J 12.5	002-108-5-102
R-99	Carbon resistor (Forming type) 1.2K 1/8W J 12.5 . . . . .	.002-108-5-122
R-13, 19, 21, 23, 44, 66, 127, 128, 130	Carbon resistor (Forming type) 1.5K 1/8W J 12.5 . . . . .	.002-108-5-152
R-47, 102, 103, 116, 120, 134, 140, 173, 139	Carbon resistor (Forming type) 2.2K 1/8W J 12.5 . . . . .	.002-108-5-222
R-10, 83, 90, 117, 146	Carbon resistor (Forming type) 2.7K 1/8W J 12.5 . . . . .	.002-108-5-272
R-31, 51, 59, 62, 77, 92, 96, 135, 187	Carbon resistor (Forming type) 3.3K 1/8W J 12.5 . . . . .	.002-108-5-332
R-9, 84, 91, 101, 162, 212	Carbon resistor (Forming type) 4.7K 1/8W J 12.5 . . . . .	.002-108-5-472
R-4, 11, 27, 45, 121 163, 137, 138	Carbon resistor (Forming type) 5.6K 1/8W J 12.5 . . . . .	.002-108-5-562
R-175, 151	Carbon resistor (Forming type) 8.2K 1/8W J 12.5 . . . . .	.002-108-5-822
R-2, 16, 24, 48, 49, 54, 61, 64, 70, 76, 57, 81, 87, 98, 122, 171, 144, 152, 156, 164, 167, 192, 193, 201, 89	Carbon resistor (Forming type) 10K 1/8W J 12.5 . . . . .	.002-108-5-103
R-149, 158, 78	Carbon resistor (Forming type) 15K 1/8W J 12.5 . . . . .	.002-108-5-153
R-37	Carbon resistor (Forming type) 18K 1/W J 12.5 . . . . .	.002-108-5-183
R-6, 26, 136, 172, 104	Carbon resistor (Forming type) 22K 1/8W J 12.5 . . . . .	.002-108-5-223
R-147	Carbon resistor (Forming type) 27K 1/8W J 12.5 . . . . .	.002-108-5-273
R-30, 148	Carbon resistor (Forming type) 47K 1/8W J 12.5 . . . . .	.002-108-5-473
R-82, 106, 124, 170, 194, 195	Carbon resistor (Forming type) 56K 1/8W J 12.5 . . . . .	.002-108-5-563
R-5, 35, 39, 53, 58, 75, 166, 190	Carbon resistor (Forming type) 100K 1/8W J 12.5. . . . .	.002-103-5-104

CIRCUIT SYMBOL	DESCRIPTION	DYNASCAN PART NO.
<b>RESISTORS</b>		
R-42, 191	Carbon resistor (Forming type ) 150K 1/8W J 12.5	002-108-5-154
R-34, 38, 40, 50, 73	Carbon resistor (Forming type) 220K 1/8W J I 2.5 . . .	002-108-5-224
R-88	Carbon resistor (Forming type) 270K 1/8W J 12.5. . . .	002-108-5-274
R-44, 43	Carbon resistor (Forming type) 820K 1/8 J . . . . .	002-108-5-824
R-160	Carbon resistor (Forming type) 1M 1/8 J . . . . .	002-108-5-105
R-3	Carbon resistor (Forming type) 2.2M 1/8W J 12.5 . . . .	002-108-5-225
R-107	Cement resistor 10 5W K . . . . .	013-014-9-001
R-180	Metal Covered Resistor 56 2W K . . . . .	013-014-9-002
R-112	Metal Covered Resistor 33 1W K . . . . .	013-014-9-003
R-161	Metal Covered Resistor 56 1W K . . . . .	013-014-9-004
R-113	Metal Covered Resistor 68 1W K . . . . .	013-014-9-005
<b>CAPACITORS</b>		
C-77, 78, 79	Electrolytic Capacitor 0.47 $\mu$ 50V . . . . .	022-152-9-003
C-35, 58, 98, 84, 126 158, 199	Electrolytic Capacitor 1 $\mu$ 50V . . . . .	022-152-9-004
C-55, 211	Electrolytic Capacitor 2.2 $\mu$ 25V . . . . .	022-122-9-002
C-44, 67, 68, 88, 97, 218	Electrolytic Capacitor 4.7 $\mu$ 25V . . . . .	022-122-9-000
C-42, 43, 63, 69, 87, 99 120	Electrolytic Capacitor 10 $\mu$ 16V . . . . .	022-120-9-001
C-14	Electrolytic Capacitor 33 $\mu$ 10V . . . . .	022-122-9-005
C-89, 92	Electrolytic Capacitor 33 $\mu$ 16V . . . . .	022-132-9-005
C-47, 49, 50, 59, 66, 76 181	Electrolytic Capacitor 47 $\mu$ 10V . . . . .	022-120-9-002
C-101	Electrolytic Capacitor 100 $\mu$ 10V . . . . .	022-122-9-007
C-102, 135, 402	Electrolytic Capacitor 220 $\mu$ 10V . . . . .	022-122-9-009
C-81	Electrolytic Capacitor 220 $\mu$ 16V . . . . .	022-122-9-008
C-104	Electrolytic Capacitor 330 $\mu$ 10V . . . . .	022-122-9-011
C-103	Electrolytic Capacitor 470 $\mu$ 10V . . . . .	002-152-9-001
C-97	Electrolytic Capacitor 470 $\mu$ 16V . . . . .	022-099-9-006
C-94, 107	Electrolytic Capacitor 1,000 $\mu$ 16V . . . . .	022-152-9-002
C-39, 52, 110, 60	Aluminum Condenser 0.1 $\mu$ 16V M . . . . .	033-025-9-001
C-17, 83, 131, 200, 201 210, 80	Mylar Condenser 0.01 $\mu$ 50V K . . . . .	025-087-9-001
C-23, 51, 72, 74, 86	Mylar Condenser 0.022 $\mu$ 50V K . . . . .	025-071-9-002
C-18, 25, 26 27, 29, 30 31, 40, 64, 121, 159 194, 198, 85	Mylar Condenser 0.039 $\mu$ 50V K . . . . .	025-099-9-001
C-71	Mylar Condenser 0.068 $\mu$ 50V K . . . . .	025-116-9-001
C-73, 75, 133, 134, 191 169	Mylar Condenser 0.1 $\mu$ 50V K . . . . .	025-074-9-007
C-153, 61, 62, 82, 91, 96 231, 401, 175	Mylar Condenser 0.047 $\mu$ 50V K . . . . .	025-116-9-002
C-117, 155	Ceramic Condenser 1P 50V C CH . . . . .	020-161-9-002
C-32, 36, 37	Ceramic Condenser 5P 50V D CH . . . . .	020-175-9-012
C-143	Ceramic Condenser 7P 50V D CH . . . . .	020-175-9-013
C-116, 130, 139, 150, 154	Ceramic Condenser 10P 50V J CH . . . . .	020-175-9-014
C-168	Ceramic Condenser 0.5P 50V C CH . . . . .	020-175-9-015
C-111, 112	Ceramic Condenser 18P 50V J CH . . . . .	020-175-9-016
C-90	Ceramic Condenser 22P 50V J CH . . . . .	020-175-9-017
C-54	Ceramic Condenser 33P 50V J CH . . . . .	020-175-9-018
C-1, 163	Ceramic Condenser 39P 50V J CH . . . . .	020-175-9-019
C-45, 53, 122, 123	Ceramic Condenser 47P 50V J CH . . . . .	020-175-9-020
C-174, 176	Ceramic Condenser 56P 50V J CH . . . . .	020-175-9-021

CIRCUIT SYMBOL	DESCRIPTION	DYNASCAN PART NO.
<b>CAPACITORS</b>		
C-93, 142, 164	Ceramic Condenser 68P 50V J CH . . . . .	.020-175-9-022
C-115	Ceramic Condenser 100P 50V K CH . . . . .	.020-126-9-007
C-184	Ceramic Condenser 120P 50V K CH . . . . .	.020-126-9-011
C-165	Ceramic Condenser 220P 50V K CH . . . . .	.020-175-9-023
C-173	Ceramic Condenser 180P 50V K CH . . . . .	.020-175-9-002
C-125	Ceramic Condenser 270P 50V K SL . . . . .	.020-175-9-003
C-8	Ceramic Condenser 100P 50V K SL . . . . .	.020-126-9-007
C-128, 137, 148	Ceramic Condenser 220P 50V K SL . . . . .	.020-125-9-005
C-127, 136, 147	Ceramic Condenser 470P 50V K SL . . . . .	.020-175-9-004
C-38	Ceramic Condenser 330P 50V K UJ . . . . .	.020-175-9-005
C-170	Ceramic Condenser 470P 50V K UJ . . . . .	.020-175-9-006
C-167	Ceramic Condenser 390P 50V K UJ . . . . .	.020-175-9-007
C-232	Ceramic Condenser 180P 50V K RH . . . . .	.020-175-9-008
C-7, 9, 24, 113, 114, 415, 416	Ceramic Condenser 0.001 $\mu$ 50V K B . . . . .	.020-175-9-009
C-10, 11, 12, 13, 159, 160 166, 172, 177, 178, 183 185, 186, 187, 188, 189	Ceramic Condenser 0.0047 $\mu$ 50 V K B . . . . .	.020-175-9-010
C-2, 4, 5, 6, 15, 16, 46 119, 124, 195, 129, 138 149, 151, 152, 190, 192 204, 205, 207, 208, 209 214, 405, 406, 408	Ceramic Condenser 0.01 $\mu$ 50V K B . . . . .	.020-175-9-011
C-19, 20, 21, 22, 28, 33 34, 41, 57, 100, 105, 106 109, 118, 146, 156, 193 196, 197, 202, 203, 215 216, 217, 219, 220, 221 223, 227, 228, 406, 407 408, 206	Ceramic Condenser 0.022 $\mu$ 50V Z ZF . . . . .	.020-175-9-001
C-213, 222, 233	Ceramic Condenser 0.1 $\mu$ 50V Z ZF . . . . .	.020-161-9-029
C-179	Tantalum Condenser 2.2 $\mu$ 25V M . . . . .	.027-021-9-001
C-140, 141	Tantalum Condenser 10 $\mu$ 6.3V M . . . . .	.027-021-9-002
CT-1, 2, 3, 4, 5, 6, 7	Trimmer Condenser CV-020 20P . . . . .	.028-013-9-000
FT-1	Crystal filter FL-001 . . . . .	.143-004-9-000
RR-1	Component parts HA-004 . . . . .	.527-075-9-001
CC-1, 2	Component parts HA-003 . . . . .	.527-075-9-002
<b>CRYSTALS</b>		
X-1	Crystal 7.8025MHz QX-017 . . . . .	.133-007-9-001
X-2	Crystal 7.7975MHz QX-054 . . . . .	.133-013-9-002
X-4	Crystal 11.2842MHz QX-081 . . . . .	.133-013-9-003
X-6	Crystal 11.2850MHz QX-081 . . . . .	.133-013-9-004
X-3	Crystal 11.2858MHz QX-081 . . . . .	.133-013-9-005
X-5	Crystal 10.240MHz QX-080 . . . . .	.133-013-9-001

CIRCUIT  
SYMBOL

DESCRIPTION

DYNASCAN  
PART NO.

MISCELLANEOUS

	Printed Circuit Board	PC-196AA	.302-230-9-001
	Flexible Board	PC-204AA	.427-081-9-001
SP-401	Speaker SP-029		.580-024-9-001
M-401	Meter		.320-084-9-001
Relay-1	Realy RL-023		.441-016-9-001
	Microphone MK-046		.562-017-9-001
J-402	Jack JK-058		.773-079-9-001
J-401	Antenna connector JK-068		.773-036-9-001
J-407	Jack JK-052		.773-079-9-002
J-403, 404	Jack JK-010		.773-079-9-003
	Plug PG-016		.775-044-9-001
	Relay socket SK-018		.749-094-9-001
	Crystal socket SK-001		.749-094-9-002
J-408	LED socket		.762-019-9-001
TP-5, 6, 7, 8, 9	Check terminal TP-019		.757-032-9-001
TP-1, 2, 3, 4	Check terminal TP-027		.757-032-9-002
F-1	Fuse FS-001 3A		.191-251-3-003
	Relay hook pin YY-046		.763-080-9-001
	Enclosing seal YY-050		.763-080-9-002
	DC Cord W-070088		.426-020-9-001
	Service Station List		.492-092-9-000
	Warranty Cord		.491-138-9-001
	Instruction Booklet		.480-198-9-001
	Composite		.499-104-9-001
	Schematic		.488-185-9-001
	Parts List		.488-185-9-001
	FCC License Application F 505		.492-041-9-001
	FCC Temporaty Form 555-B		.492-046-9-001
	FCC Rules Part 95		.492-047-9-001