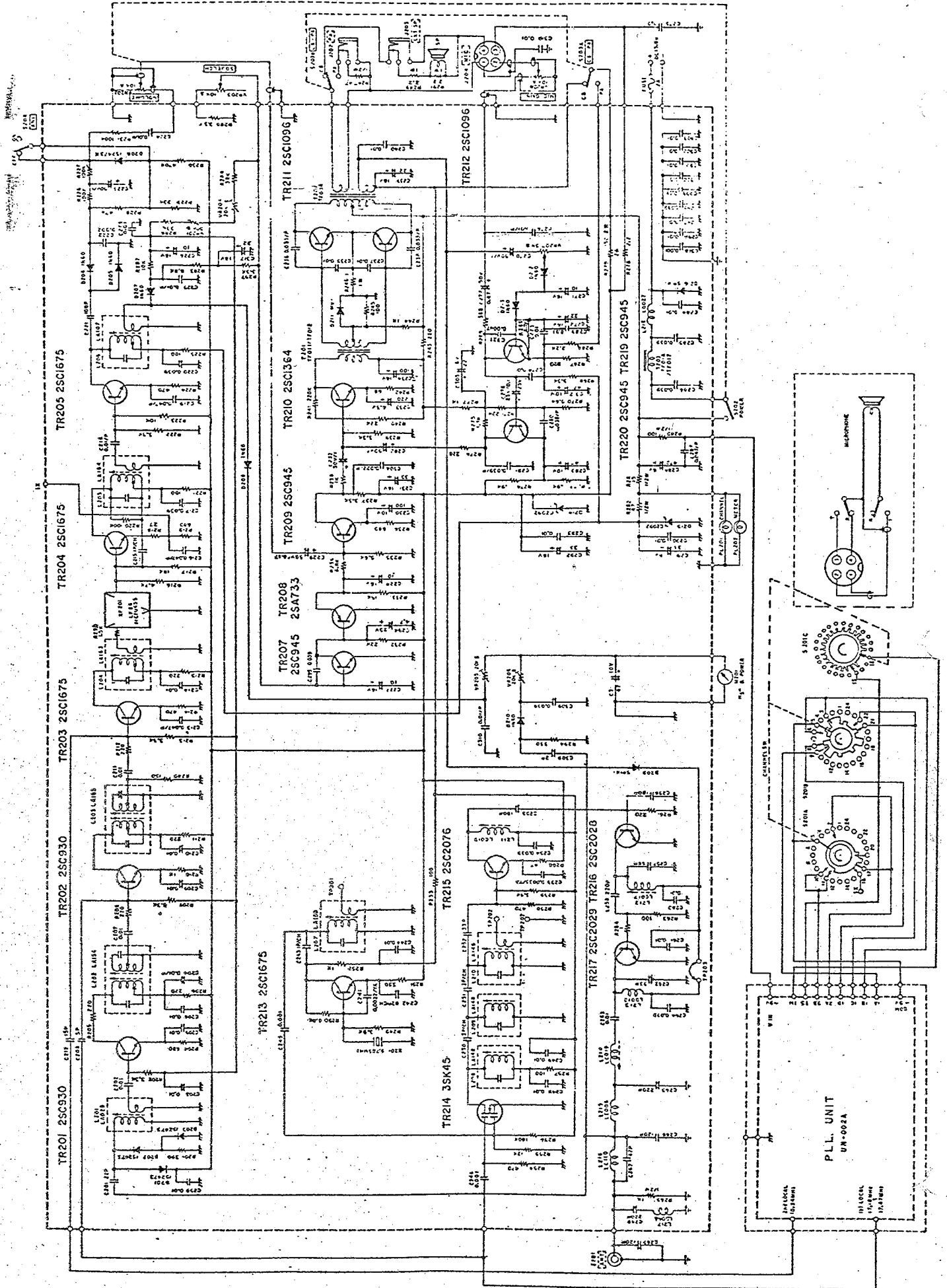


# CIRCUIT DIAGRAM FOR COBRA 21X



# BILLS OF MATERIAL FOR COBRA 21X

CIRCUIT SYMBOL NO.	DESCRIPTION	DS PART NO.
<b>TRANSISTORS &amp; DIODES</b>		
TR-214	F.E.T. 3SK45-B	182-135-9-001
208	Transistor 2SA733-Q	177-018-9-001
301 202	Transistor 2SC930-D	176-060-9-001
203, 204, 205, 213	Transistor 2SC1675-AH	176-060-8-002
TR-207, 209, 219, 220	Transistor 2SC945-AP	176-060-9-003
TR-210	Transistor 2SC1364-6	176-054-9-001
TR215	Transistor 2SC2076-C6	176-060-9-004
TR-216	Transistor 2SC2028-B/20	172-038-9-001
TR-217	Transistor 2SC2029-B/10	172-038-9-002
TR-211, 212	Transistor 2SC1096-4ZL	172-038-9-003
D-204, 205, 208, 210	Diode 1N60	150-001-9-005
212, 213		
D-206	Diode 1S2473K	151-050-9-001
D-201, 202, 203	Diode 1S2473	151-059-9-001
D-209, 216	Diode SR1K-1	151-040-9-003
D-214, 215	Zenor Diode CZ-092	152-051-9-001
D-211	Varistor MV-1	151-049-9-002
<b>COILS &amp; TRANSFORMERS</b>		
L-201	Coil LA-029	066-017-9-001
L-202	Coil LA-154	066-025-9-001
L-203	Coil LA-153	066-025-9-002
L-204	Coil LA-163	060-022-9-001
L-205	Coil LA-184	060-022-9-002
L-206	Coil LA-107	060-022-9-003
L-207	Coil LA-159	066-025-9-003
L-208, 209	Coil LA-148	046-017-9-001
L-210	Coil LA-146	066-025-9-004
L-211, 214	Coil LC-019	044-028-9-002
L-212	Coil LC-017	044-028-9-004
L-216	Coil LC-110	041-078-9-001
L-213	Coil LD-012	044-028-9-003
L-218	Coil LD-027	042-011-9-001
L-217	Coil LD-056	042-019-9-001
L-215	Coil LE-006	044-028-9-001
T-203	Choke Transformer TF-017	044-028-9-006
T-201	Input Transformer TF-011	061-022-9-001
T-202	Output Transformer TF-038	061-022-9-002
<b>VARIABLE RESISTORS</b>		
VR-204, 205, 206	Semi-fixed Resistor	008-209-9-010
VR-201	Semi-fixed Resistor RV-103	005-209-9-008
VR-207	Semi-fixed Resistor RV-102	008-284-9-001
VR-203, 208	Variable Resistor RV-055 10K-A	008-187-9-002
VR-202	Variable Resistor RV-027 10K-A	008-187-9-001

CIRCUIT SYMBOL NO.	DESCRIPTION	DS PART NO.
<b>RESISTORS</b>		
R-246	Metalized Resistor 1 ohm 1W K	013-002-9-002
R-248	Metalized Resistor 2.2 ohm 1W K	013-011-9-001
R-291	Metalized Resistor 2.2 ohm 1W K	013-011-9-002
R-279	Metalized Resistor 150 ohm 2W K	013-018-9-003
R-281	Solid Resistor 15 ohm 1/2W	001-102-5-150
R-282, 247	Solid Resistor 47 ohm 1/2W	001-102-5-470
R-280	Solid Resistor 100 ohm 1/2W	001-102-5-101
R-265	Solid Resistor 1K ohm 1/2W	001-102-5-102
R-232	Carbon Resistor 22K ohm 1/2W	002-104-5-223
R-297	Carbon Resistor 3.3K ohm 1/2W	002-104-5-332
R-283	Carbon Resistor 6.8K ohm 1/2W	002-104-5-682
R-287	Carbon Resistor 10K ohm 1/2W	002-104-5-103
R-264	Carbon film 1 ohm 1/2W	002-104-5-010
R-278	Carbon film 2.2 ohm 1/2W	002-104-5-229
R-260	Carbon film 47 ohm 1/2W	002-104-5-470
R-242	Carbon film 68 ohm 1/2W	002-104-5-680
R-253, 257, 263, 221	Carbon film 100 ohm 1/2W	002-104-5-101
225, 245		
R-289	Carbon film 150 ohm 1/2W	002-104-5-151
R-261, 276, 206, 208	Carbon film 220 ohm 1/2W	002-104-5-221
212, 211, 205, 215		
243		
R-251, 294	Carbon film 330 ohm 1/2W	002-104-5-331
R-258, 214, 224, 254	Carbon film 470 ohm 1/2W	002-104-5-471
R-204, 219, 236	Carbon film 680 ohm 1/2W	002-104-5-681
R-201	Carbon film 390 ohm 1/2W	002-104-5-391
R-267	Carbon film 820 ohm 1/2W	002-104-5-321
R-252, 277, 210, 238	Carbon film 1K ohm 1/2W	002-104-5-102
244		
R-290	Carbon film 1.5K ohm 1/2W	002-104-5-152
R-273, 274	Carbon film 1.8K ohm 1/2W	002-104-5-182
R-288	Carbon film 2.2K ohm 1/2W	002-104-5-222
R-269	Carbon film 560 ohm 1/2W	002-104-5-561
R-285, 209, 237, 239	Carbon film 3.3K ohm 1/2W	002-104-5-332
200, 268, 275, 202		
213, 222		
R-249, 259	Carbon film 309K ohm 1/2W	002-104-5-392
R-216, 266	Carbon film 4.7K ohm 1/2W	002-104-5-472
R-235, 270	Carbon film 5.6K ohm 1/2W	002-104-5-562
R-250, 234	Carbon film 6.8K ohm 1/2W	002-104-5-682
R-233	Carbon film 15K ohm 1/2W	002-104-5-153
R-223	Carbon film 10K ohm 1/2W	002-104-5-103
R-255	Carbon film 12K ohm 1/2W	002-104-5-123
R-217	Carbon film 18K ohm 1/2W	002-104-5-183
R-240, 211	Carbon film 22K ohm 1/2W	002-104-5-223
R-229, 286	Carbon film 33K ohm 1/2W	002-104-5-333
R-226	Carbon film 47K ohm 1/2W	002-104-5-473
R-284	Carbon film 39K ohm 1/2W	002-104-5-393
R-231, 220, 226, 227	Carbon film 100K ohm 1/2W	002-104-5-104
R-256	Carbon film 180K ohm 1/2W	002-104-5-184
R-241	Carbon film 220K ohm 1/2W	002-104-5-224
R-230	Carbon film 470K ohm 1/2W	002-104-5-474
R-218	Carbon film 27 ohm 1/2W	002-104-5-270

CIRCUIT SYMBOL NO.	DESCRIPTION	DS PART NO.
<b>CAPACITORS</b>		
C-215, 243	Ceramic Condenser 1pF ±0.25PF 50V CH	020-109-9-005
C-242	Ceramic Condenser 82pF 50V K CH	020-165-9-001
C-250, 251	Ceramic Condenser 3pF C CH 50V	020-109-9-003
C-308	Ceramic Condenser 2pF 50V C SL	020-109-9-007
C-208	Ceramic Condenser 5pF 50V C SL	020-109-9-010
C-212	Ceramic Condenser 15pF 50V K SL	020-161-9-012
C-201	Ceramic Condenser 22pF 50V K SL	020-097-9-006
C-252, 262	Ceramic Condenser 33pF 50V K SL	020-125-9-001
C-267	Ceramic Condenser 47pF 50V K SL	020-109-9-011
C-257	Ceramic Condenser 68pF 50V K SL	020-143-9-001
C-221	Ceramic Condenser 100pF 50V K SL	020-103-9-008
C-266, 269	Ceramic Condenser 120pF 50V K SL	020-125-9-004
C-255, 256	Ceramic Condenser 180pF 50V K SL	020-148-9-002
C-265, 268, 258	Ceramic Condenser 50V SL 220PF	020-109-9-013
C-245, 246, 318	Ceramic Condenser 25V YG 0.001µF	020-165-9-002
C-222	Ceramic Condenser 25V YG 0.0022µF	020-165-9-003
C-202, 203, 205, 205	Ceramic Condenser 25V YG 0.01µF	020-165-9-004
207, 209, 210, 211		
259, 214, 289, 235		
237, 240, 244, 249		
250, 251, 263, 275		
273, 284, 290, 293		
319, 296, 300, 301		
302, 303, 299, 273		
297, 274		
C-217, 220, 254, 264	Ceramic Condenser 25V YG 0.039µF	020-143-9-004
285, 266, 298, 309		
295		
C-321	Ceramic Condenser 25V YG 0.0047µF	020-143-9-006
C-241	Ceramic Condenser 50V YA 0.0022µF	020-165-9-005
C-253	Ceramic Condenser 50V YA 0.0033µF	020-165-9-006
C-204, 218, 225, 310	Mylar Condenser 50V 0.01µF	025-087-9-001
227, 276		
C-304	Mylar Condenser 50V 0.022µF	025-071-9-002
C-236, 238	Mylar Condenser 50V 0.033µF	025-050-9-003
C-280, 281	Mylar Condenser 50V 0.039µF	025-099-9-001
C-287, 213, 216, 219	Mylar Condenser 50V 0.047µF	025-074-9-005
C-277, 229	Electrolytic Condenser 50V 0.47µF	022-122-9-016
C-223, 232, 270, 282	Electrolytic Condenser 50V 1µF	022-144-9-001
226, 227, 228, 271	Electrolytic Condenser 16V 10µF	022-142-9-001
230, 272, 305, 317	Electrolytic Condenser 16V 22µF	022-144-9-002
C-291, 292, 231	Electrolytic Condenser 16V 33µF	022-144-9-004
C-311, 283, 312	Electrolytic Condenser 10V 47µF	022-099-9-001
C-294	Electrolytic Condenser 25V 4.7µF	022-122-9-003
C-230	Electrolytic Condenser 10V 100µF	022-099-9-004
C-234	Electrolytic Condenser 16V 100µF	022-099-9-005
C-233	Electrolytic Condenser 6.3V 220µF	022-122-9-010
C-288	Electrolytic Condenser 16V 470µF	022-099-9-006
C-278	Aluminum Condenser 25V 0.1µF	022-122-9-013
<b>CRYSTAL</b>		
X-201	Crystal OX-070 9.78MHz	132-028-9-001

CIRCUIT SYMBOL NO.	DESCRIPTION	DS PART NO.
<b>MISCELLANEOUS</b>		
J-201	M type Jack JK-035	772-027-9-001
J-202, 203	Jack JK-010	772-025-9-001
J-204	Jack JK-028	773-072-9-001
S-201	Rotary switch SR-130	083-206-9-001
S-203, 204	Slide switch SW-054	084-051-9-001
SP	Speaker SP-003	580-013-9-001
M-201	Meter MT-018	320-078-9-001
TP-201, 202	Test terminal TP-011	345-041-9-001
TP-207	Test terminal TP-020	757-028-9-001
PL-201	Pilot Lamp PL-005, 14V 50mA	400-035-9-004
PL-202	Pilot Lamp PL-005, 14V 50mA	400-040-9-001
XF-201	Ceramic Filter FL-019	140-015-9-001
	PC Board PC-153AA	302-204-9-001
	Microphone MK-046	582-006-9-001
	Plug PG-016	775-039-9-001
	Fuse FS-001 2A	191-251-9-002
	Wire cramp YY-035	741-092-9-001
	Chassis	257-083-9-001
	Upper case	272-112-9-001
	Lower case	272-113-9-001
	Bracket	251-187-9-001
	Heat sink	747-044-9-001
	Mike hanger	741-092-9-002
	Front panel	255-142-9-001
	Channel knob	751-095-9-001
	Knob	751-095-9-002
	Channel disc	380-176-9-001
	Lamp holder	752-011-9-001
	Front plate	260-088-9-001
	FCC label	
	Serial No label	N/A
	Warning label	433-255-9-001
	Transmitter card	492-044-9-001
	FCC ACC label	N/A
	Cord stopper	380-267-9-001
	Display box	500-287-9-001
	Styrofoam, front	503-112-9-001
	Styrofoam, back	503-112-9-002
	Double carton	500-288-9-001
	Instruction manual	420-183-9-001
	Composite Consisting of:	499-092-9-001
	Schematic diagram	428-172-9-001
	Parts List	423-172-9-002
	Warranty card	491-138-9-001
	Service station card	492-042-0-000
	FCC application form	492-041-9-001
	+ bnd screw M3 x 5	634-069-9-001
	+ bnd screw M2 x 4 Ni	634-069-9-002
	+ bnd screw M3 x 8 Ni	634-067-9-001
	Tapping + 35 x 8 ZMC	710-021-9-001
	Tapping + 5 x 10 ZMC	710-021-9-002
	Tap tight + 3 x 6 ZMC	710-021-9-003
	Bind tap tight 3 x 6 Ni	710-021-9-004

CIRCUIT SYMBOL NO.

DESCRIPTION

DS PART NO.

MISCELLANEOUS

Flat tap tight 3 x 5 ZMC	710-021-9-005
Nut M2 Ni	653-025-9-001
Nut M3 with celede ZMC	653-025-9-002
Rugged washer (A) 3.5	731-041-9-001
Rugged washer (B) 5.0	731-041-9-002
CS type fixing washer 10.9	731-041-9-003
Screw for mounting bracket	634-044-9-001
Illumination board	763-059-9-001
Wool tac	763-059-9-002
Rubber washer	347-055-9-001
Rubber washer	347-055-9-002
Speaker Grille	763-059-9-003
Felt washer 6.9 x 3t	347-055-9-003
Cushion	502-094-9-001

PLL UNIT

CIRCUIT SYMBOL NO.

DESCRIPTION

DS PART NO.

IC, TRANSISTORS & DIODES

IC-1	Integrated circuit UHIC-001	307-095-9-001
IC-2	Integrated circuit 4011-PC	307-095-9-002
IC-3	Integrated circuit 78L05-AV	307-095-9-003
IC-4	Integrated circuit $\mu$ PD858C	307-095-9-004
TR-2	F E T 3SK-45-B	182-138-9-001
TR-3	Transistor 2SC458-C	176-048-9-002
TR-1	Transistor 2SC945-AQ	176-062-9-001
D-2, 3	Diode 1S2473	151-059-9-001
COILS		
L-1	Coil LA-166	066-025-9-005
L-2	Coil LA-167	044-039-9-001
L-7	Coil LA-168	044-039-9-002
L-3	Micro inductor LF-4 2.2 $\mu$ H	041-055-9-002
L-4, 5	Micro inductor LF-1 100 $\mu$ H	041-078-9-002
L-6	Micro inductor LF-1 390 $\mu$ H	041-078-9-003
L-9	Micro inductor LF-4 5.6 $\mu$ H	041-078-9-004

CIRCUIT SYMBOL NO.

DESCRIPTION

DS PART NO.

RESISTORS

R-13	Carbon film 100 ohm $\frac{1}{4}$ W J	002-104-5-101
R-1	Carbon film 220 ohm $\frac{1}{4}$ W J	002-104-5-221
R-6	Carbon film 270 ohm $\frac{1}{4}$ W J	002-104-5-271
R-2	Carbon film 2.2K ohm $\frac{1}{4}$ W J	002-104-5-222
R-4	Carbon film 2.7K ohm $\frac{1}{4}$ W J	002-104-5-272
R-9	Carbon film 3.3K ohm $\frac{1}{4}$ W J	002-104-5-332
R-7	Carbon film 18K ohm $\frac{1}{4}$ W J	002-104-5-182
R-8, 10	Carbon film 33K ohm $\frac{1}{4}$ W J	002-104-5-332
R-5, 11	Carbon film 47K ohm $\frac{1}{4}$ W J	002-104-5-472
R-3, 12, 14	Carbon film 100K ohm $\frac{1}{4}$ W J	002-104-5-102

CAPACITORS

C-4	Ceramic Condenser 2P C CH 50V	020-143-9-003
C-20	Ceramic Condenser 5P C CH 50V	020-109-9-010
C-19	Ceramic Condenser 15P K CH 50V	020-161-9-012
C-5, 6	Ceramic Condenser 22P K CH 50V	020-097-9-005
C-18	Ceramic Condenser 47P K CH 50V	020-103-9-011
C-22	Ceramic Condenser 100P K SL 50V	020-126-9-007
C-7	Ceramic Condenser 0.01 $\mu$ M YA 50V	020-109-9-002
C-2	Ceramic Condenser 0.022 $\mu$ M YA 50V	020-165-9-007
C-1, 8, 11, 21	Ceramic Condenser 0.039 $\mu$ Z YG 25V	020-165-9-008
C-3	Ceramic Condenser (temperature compensated) 39P K RH 50V	020-165-9-009
C-12	Mylar Condenser 0.01 $\mu$ M 25V	025-108-9-001
C-14	Mylar Condenser 0.047 $\mu$ M 25V	025-108-9-002
VC-1	Trimmer Condenser 50P CV-026	028-036-9-001
C-10, 23	Tantal Condenser 10 $\mu$ 5.3V M	027-019-9-001
C-9	Electrolytic Condenser 1 $\mu$ 50V	022-122-9-001
C-13	Electrolytic Condenser 33 $\mu$ 16V	022-144-9-003
C-15	Electrolytic Condenser 100 $\mu$ 10V	022-144-9-005
CR-1, 2, 3, 4, 5, 7	Composed parts HA-002 CR-004	523-162-9-001

CRYSTAL

X-1	Crystal QX-074 10.24MHz	132-027-9-001
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MISCELLANEOUS

Test terminal TP-019	757-028-9-002
Connector pin TP-026	757-028-9-003
Shield case	256-058-9-001
Shield case, top cover	256-060-9-001
Printed circuit board PC-151AB	302-205-9-001

Printed in Japan

PLL PACK CIRCUIT DIAGRAM FOR COBRA 2

