

MASTER
M

SET 1920 FOLDER 3

PHOTOFACT® Folder

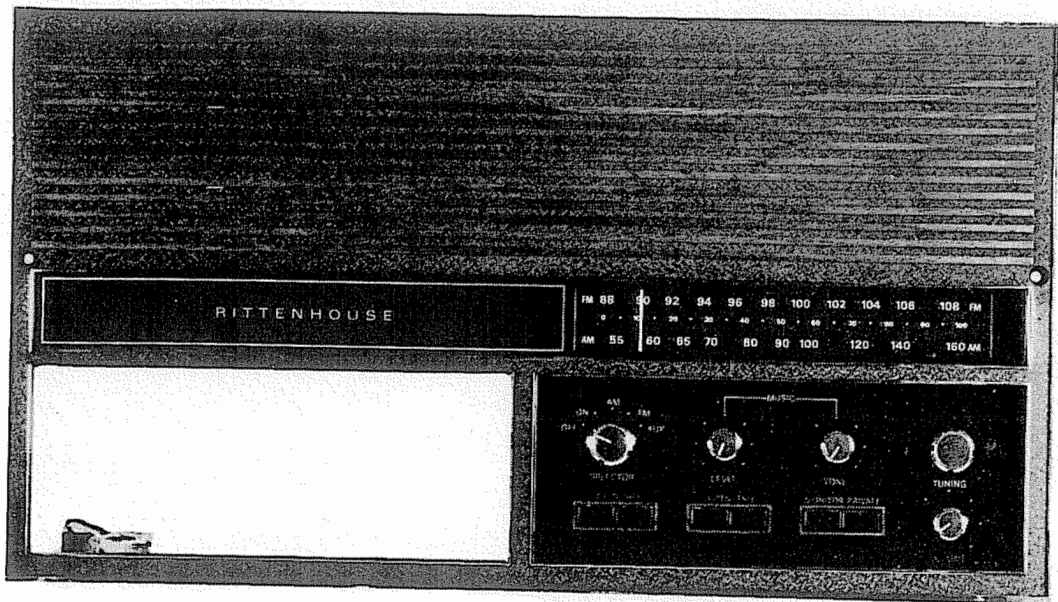
with CIRCUITRACE

RITTENHOUSE
MODELS M9040/41/45/46/47, M9300/02/04/12/30

For Supplier Address See PHOTOFACT Index



RITTENHOUSE
MODELS M9040/41/45/46/47, M9300/02/04/12/30



RITTENHOUSE
MODELS M9040/41/45/46/47, M9300/02/04/12/30

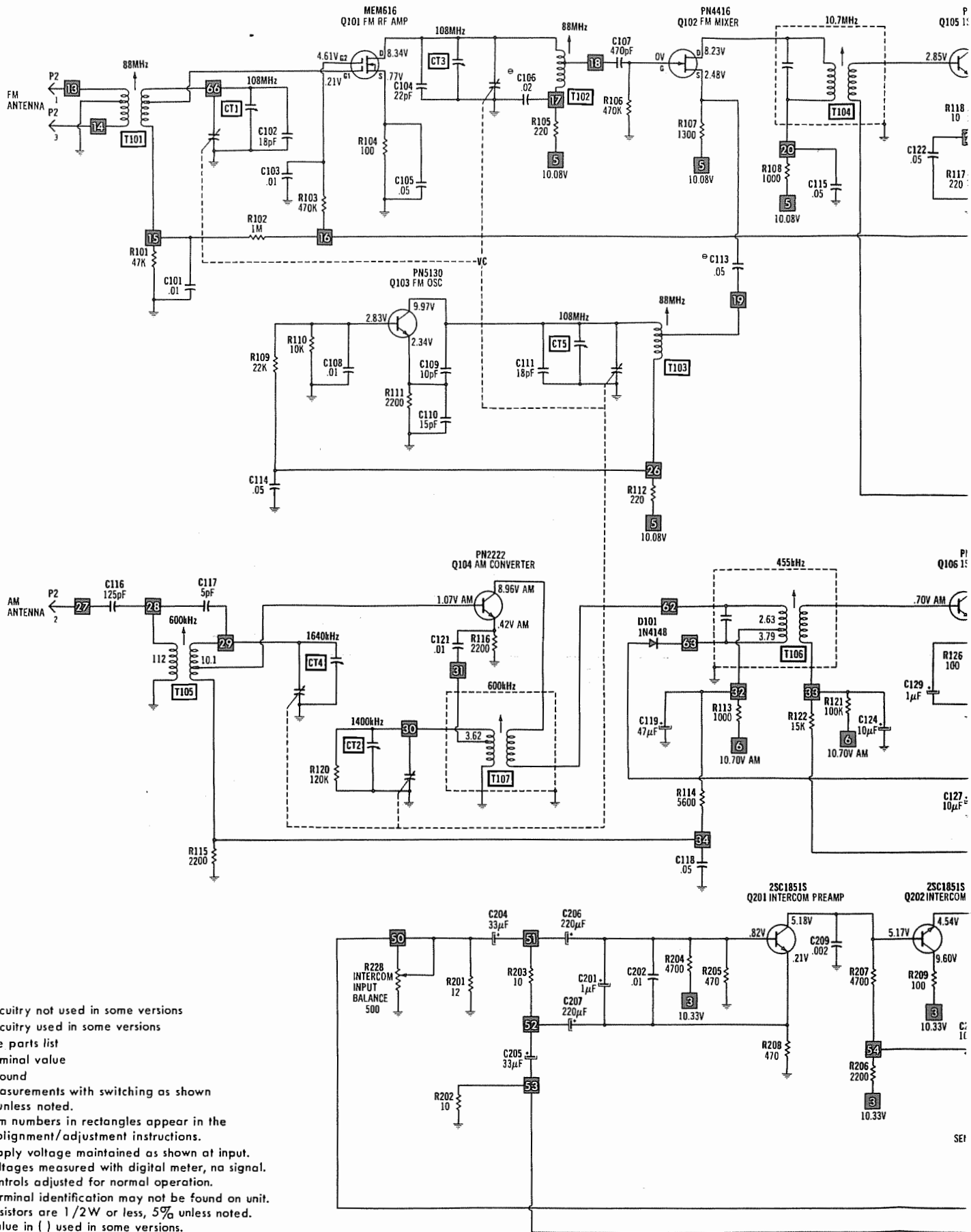
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed.

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1980 Howard W. Sams & Co., Inc., Indianapolis, Indiana 46206. Printed in U. S. of America

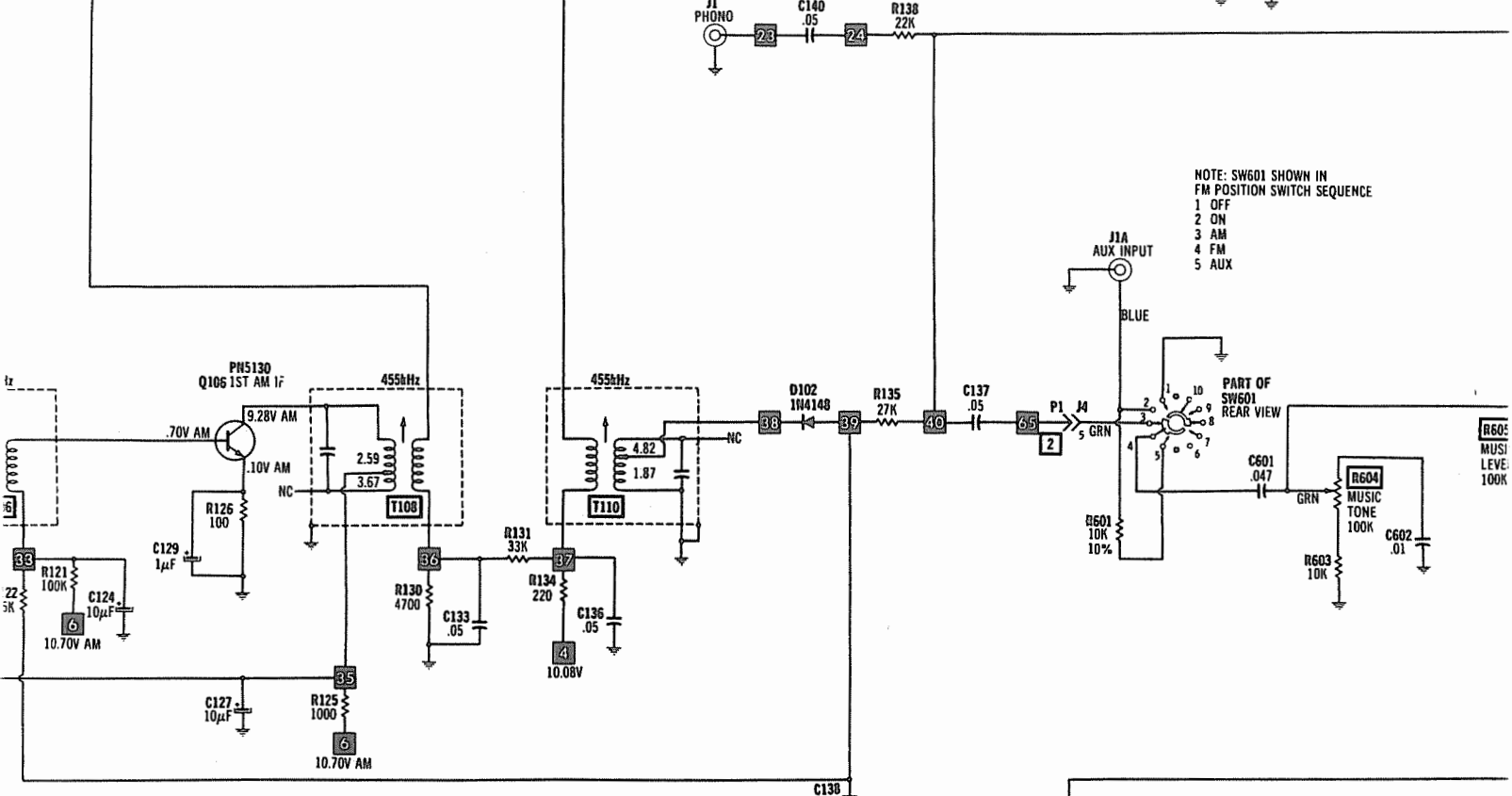
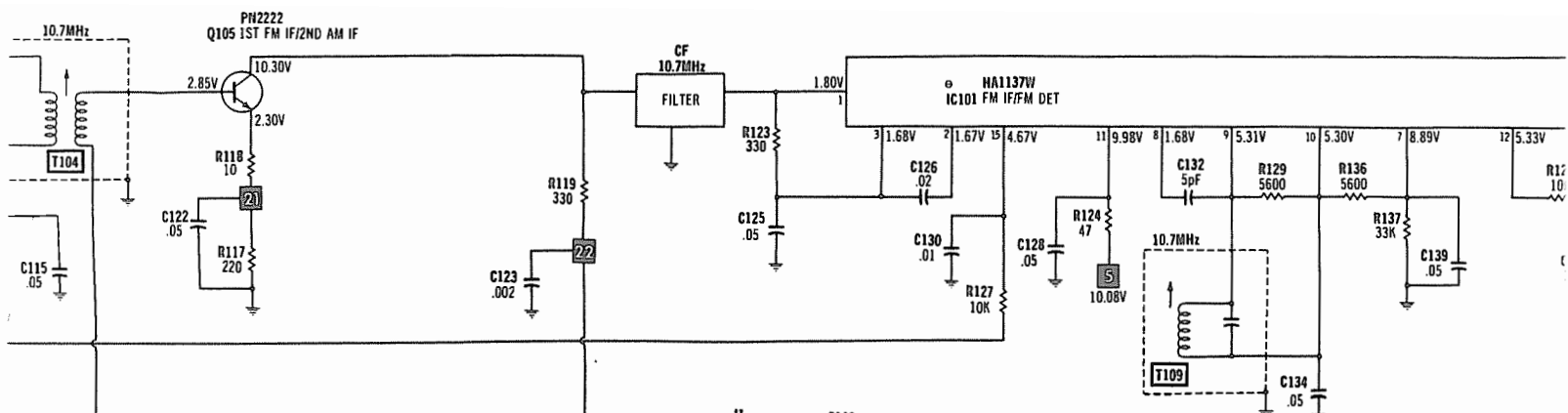


SET 1920 FOLDER 3

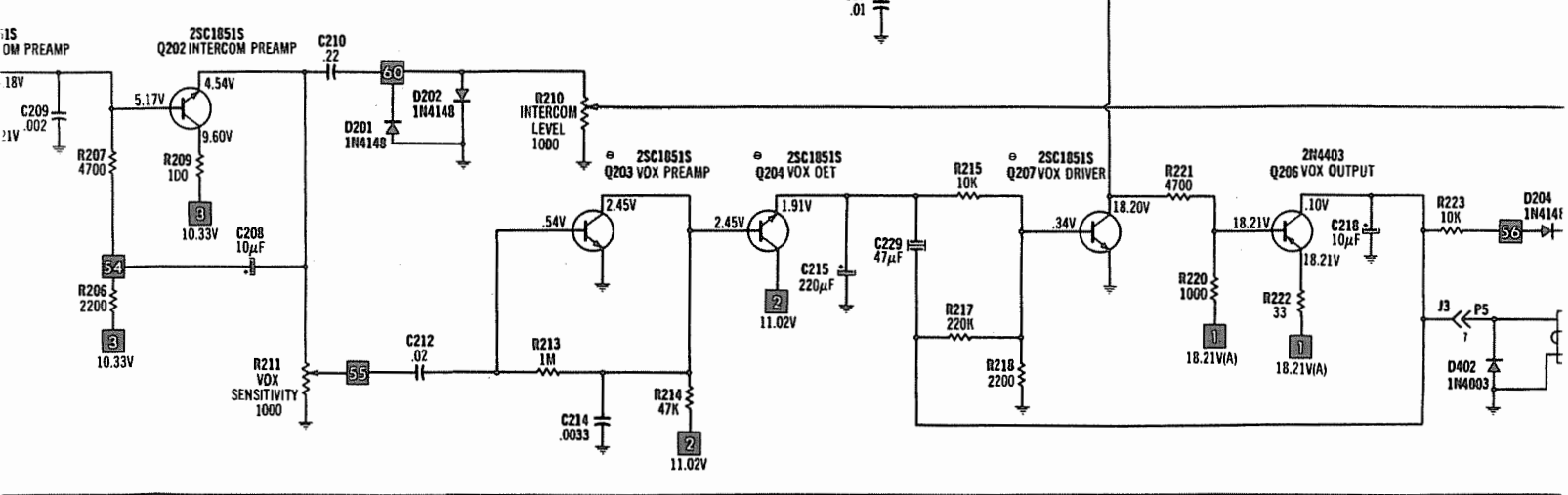


✖ Circuitry not used in some versions
 --- Circuitry used in some versions
 ⊕ See parts list
 * Nominal value
 ⚡ Ground
 Measurements with switching as shown unless noted.
 Item numbers in rectangles appear in the alignment/adjustment instructions.
 Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.
 Controls adjusted for normal operation.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 5% unless noted.
 Value in () used in some versions.

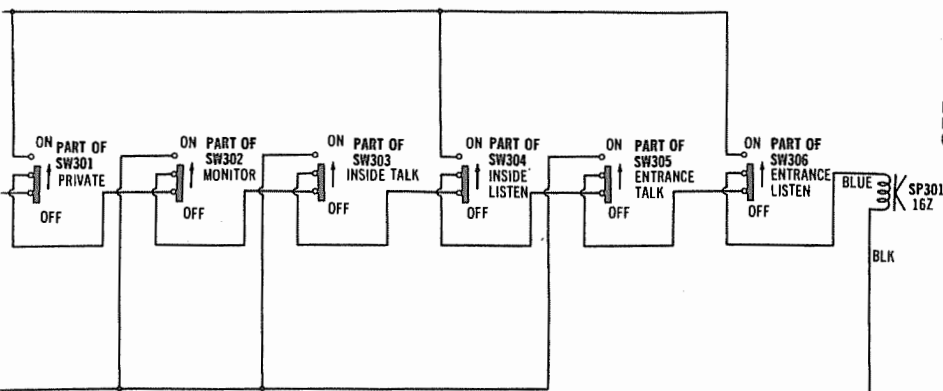
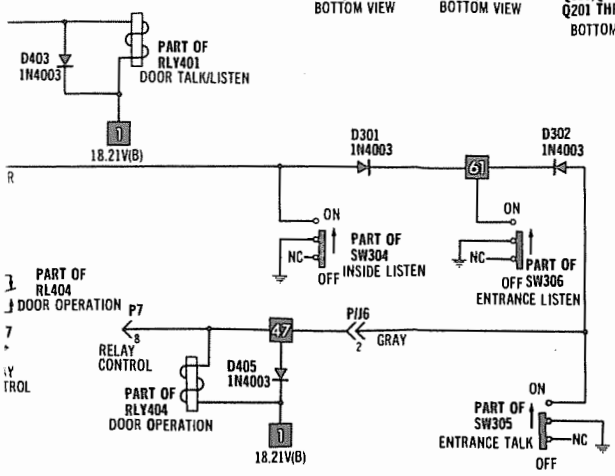
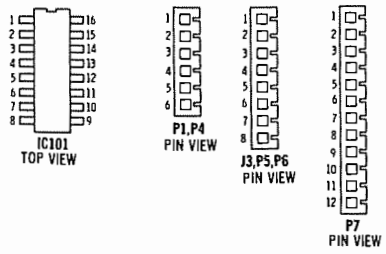
A PHOTOFACIT STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE**
 © Howard W. Sams & Co., Inc. 1980



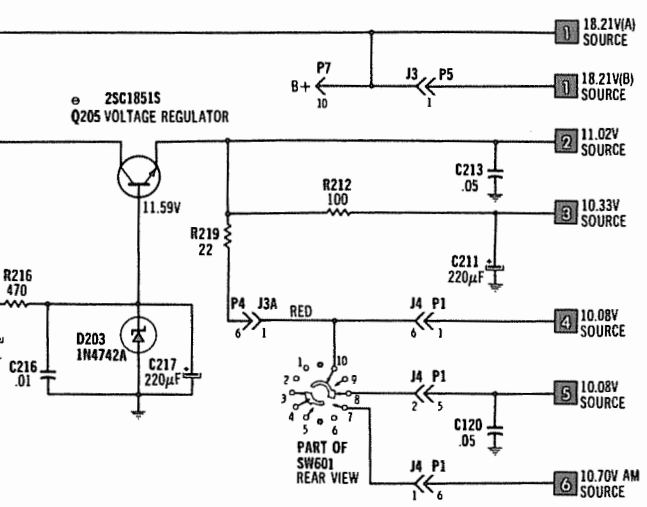
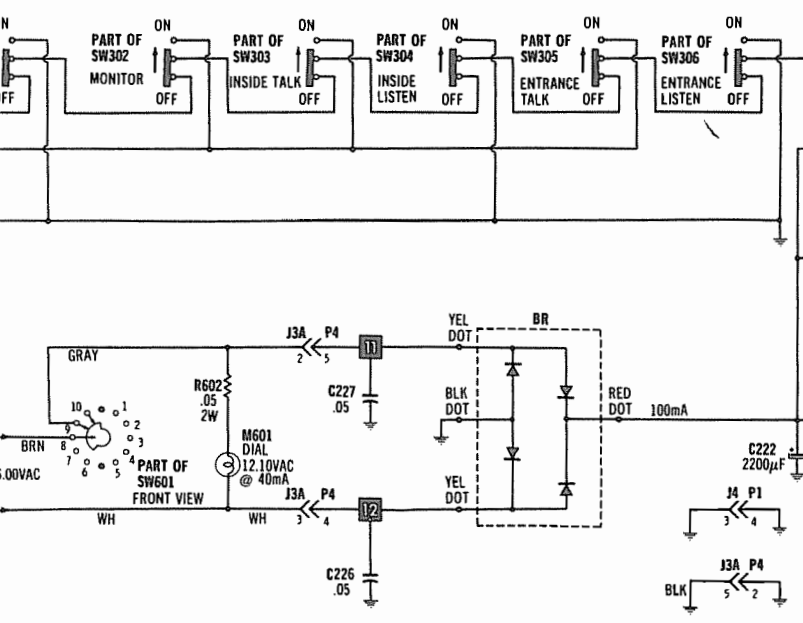
NOTE: SW601 SHOWN IN FM POSITION SWITCH SEQUENCE
 1 OFF
 2 ON
 3 AM
 4 FM
 5 AUX



TERMINAL GUIDES

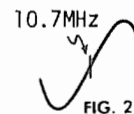


NOTE: MAY BE CONNECTED TO STD REMOTE SPKR OR REMOTE CONTROL



ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Connect low sides of generator and indicator to ground unless specified otherwise. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication. Suggested Alignment Tools: GC ELECTRONICS: All coils and trimmers 5000, 8276, 9089



AM ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across loop fashioned of several turns of wire. Set volume at maximum.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
455kHz 400-hertz Modulation	Tuning gang fully open	Output meter across voice coil	T110,T108, T106	Adjust for maximum. Repeat until no further improvement is noted.
600kHz	600kHz	"	T105,T107	Adjust for maximum.
1640kHz	1640kHz	"	CT4	Adjust for maximum.
1400kHz	1400kHz	"	CT2	Adjust for maximum. Repeat AM alignment until no further improvement is noted.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to antenna.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non- interference	AC probe of VTVM to tuner output P1, Pin 2.	T109,T104	Adjust for maximum.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to antenna.

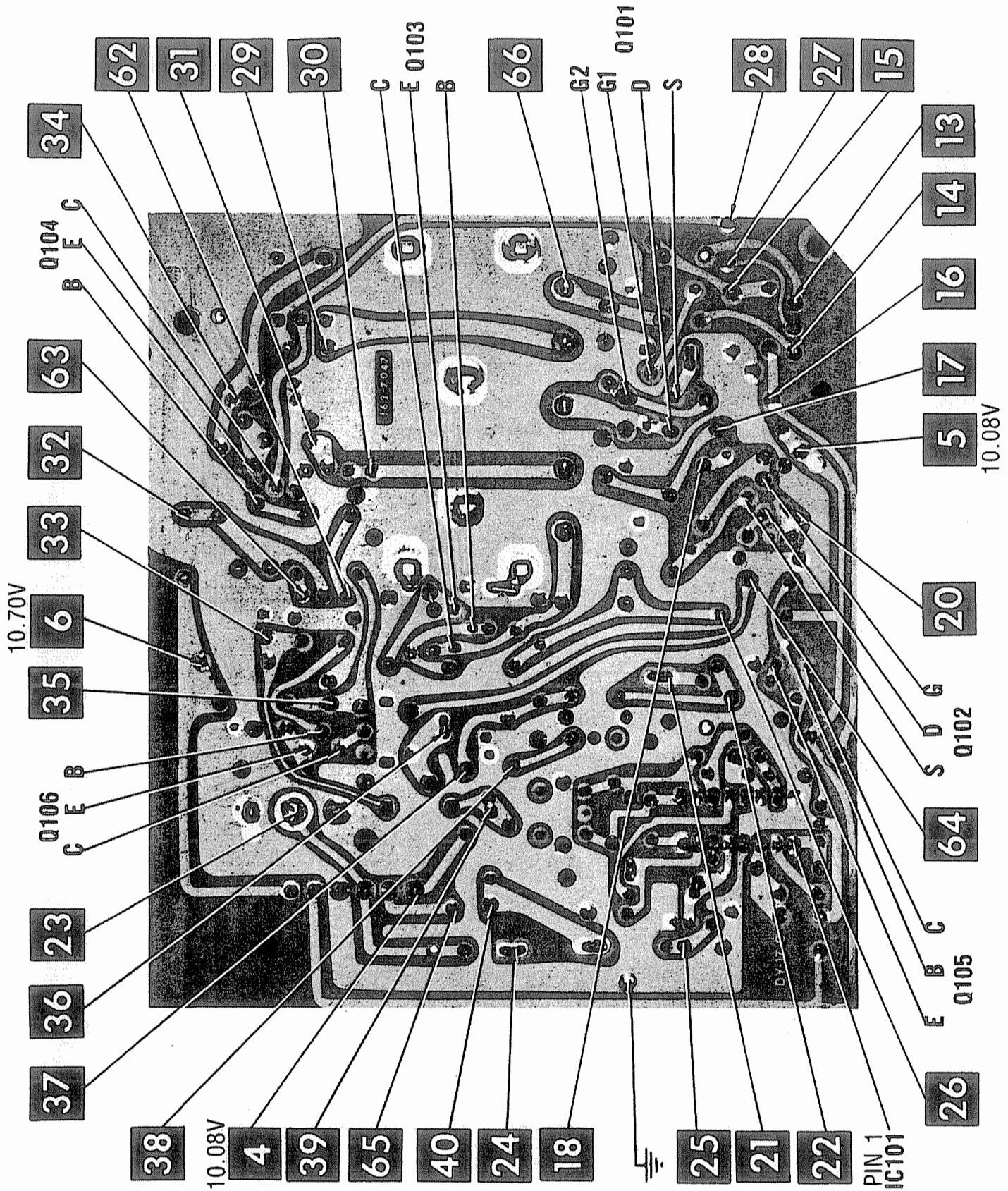
Use only enough marker signal for indication. Use 60-hertz, frequency-modulated signal, 450kHz sweep. Use 60-hertz sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz 450kHz Sweep	Point of non- interference	Vert input of scope to tuner output P1, Pin 2	T109,T104	Adjust T109 to place marker at center of S curve similar to Fig. 2. Readjust T104 for maximum amplitude and straightness of line.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
88MHz Modulated	88MHz	AC probe of VTVM to speaker.	T103,T102, T101	Adjust for maximum.
108MHz Modulated	108MHz	"	CT5,CT3, CT1	Adjust for maximum. Repeat FM RF steps until no further improvement is noted.



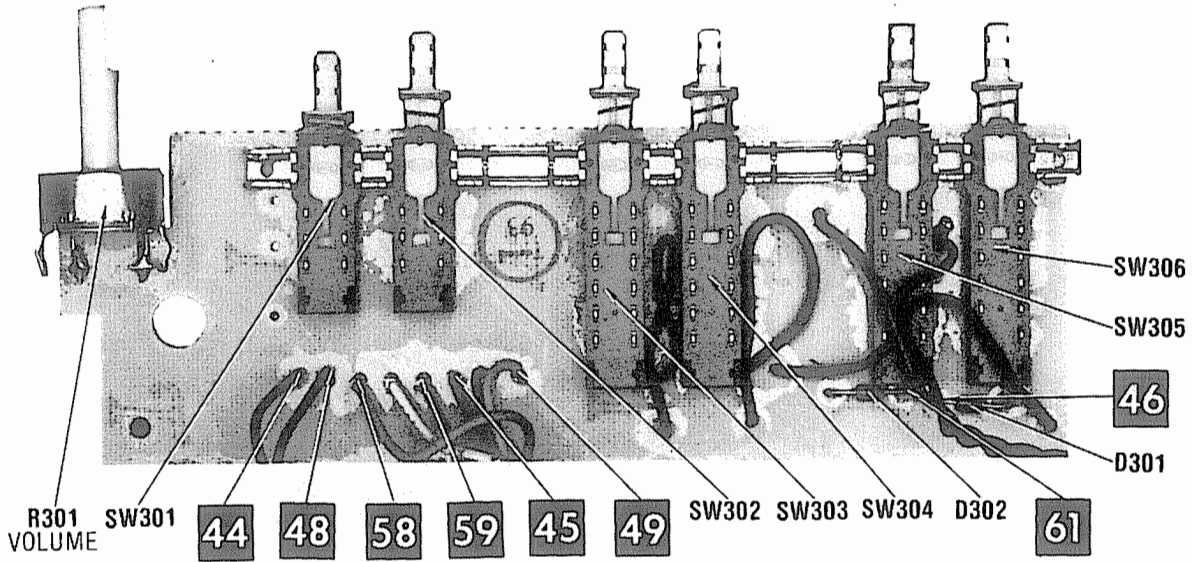
MODELS M9040/41/45/46/47, M9300/02/04/12/30

RITTENHOUSE

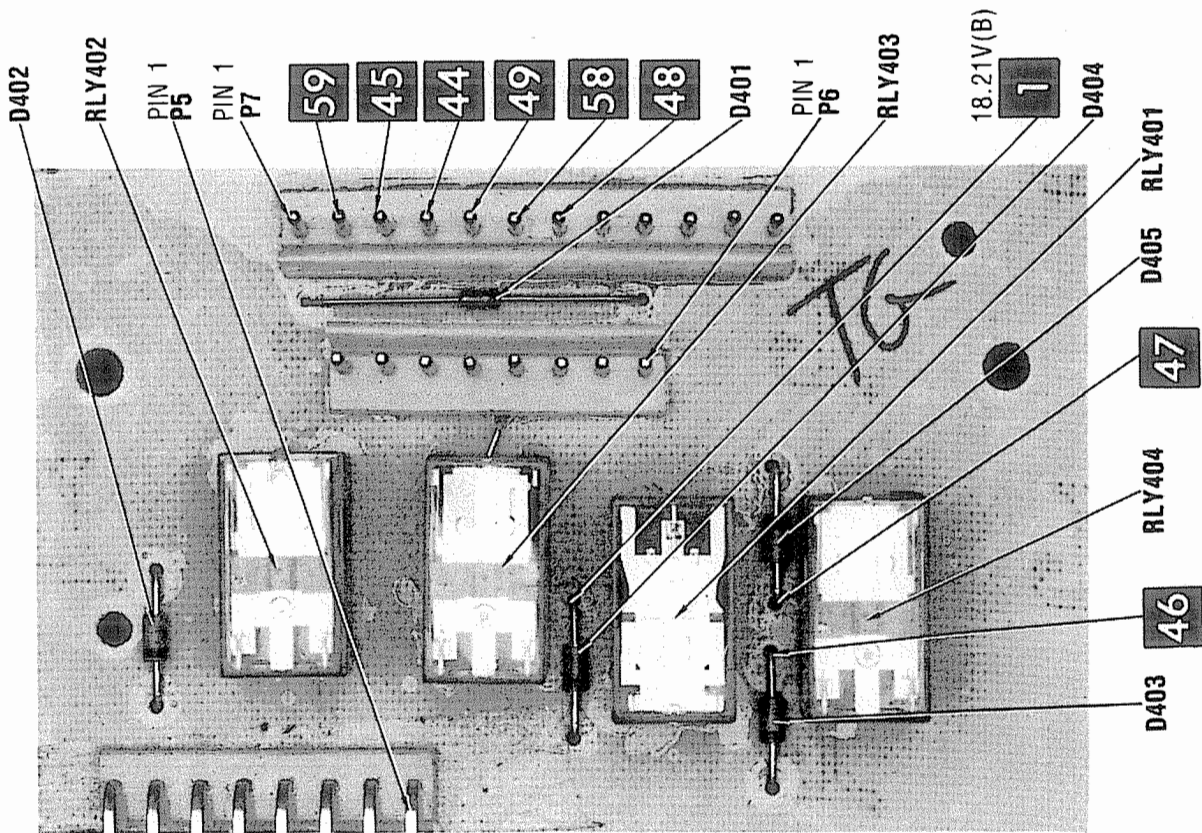
FOLDER 3

A Howard W. Sams **CIRCUITRACE** Photo

MAIN BOARD



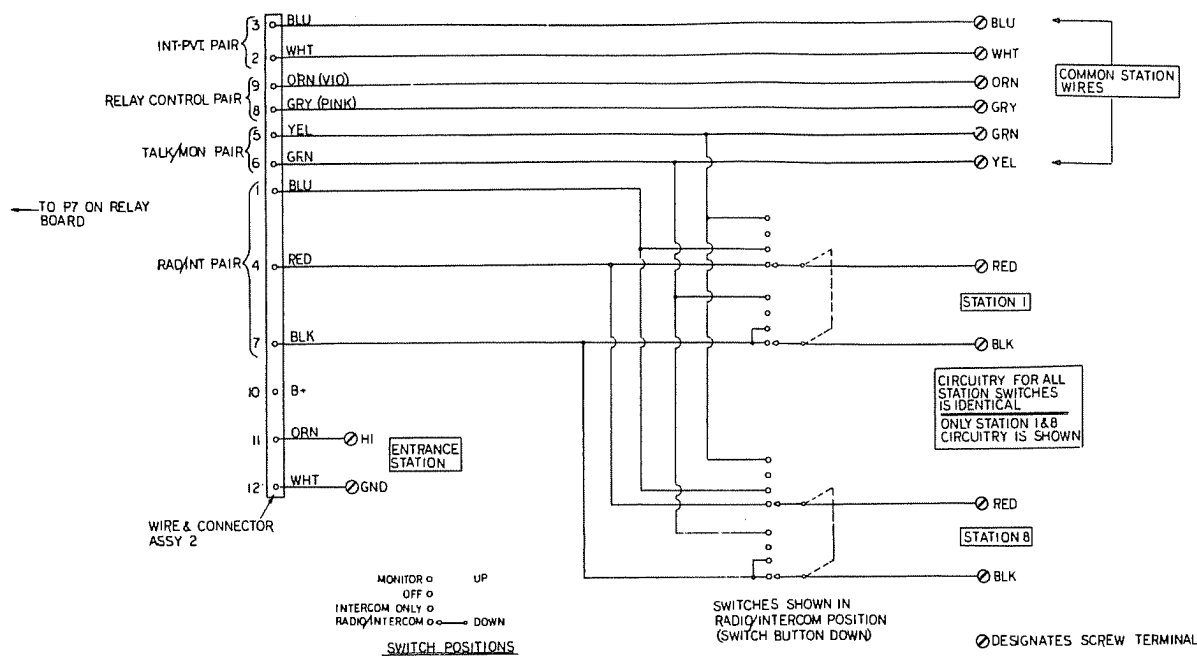
A Howard W. Sams **CIRCUITRACE** Photo CONTROL BOARD



RELAY BOARD A Howard W. Sams **CIRCUITRACE** Photo

OL

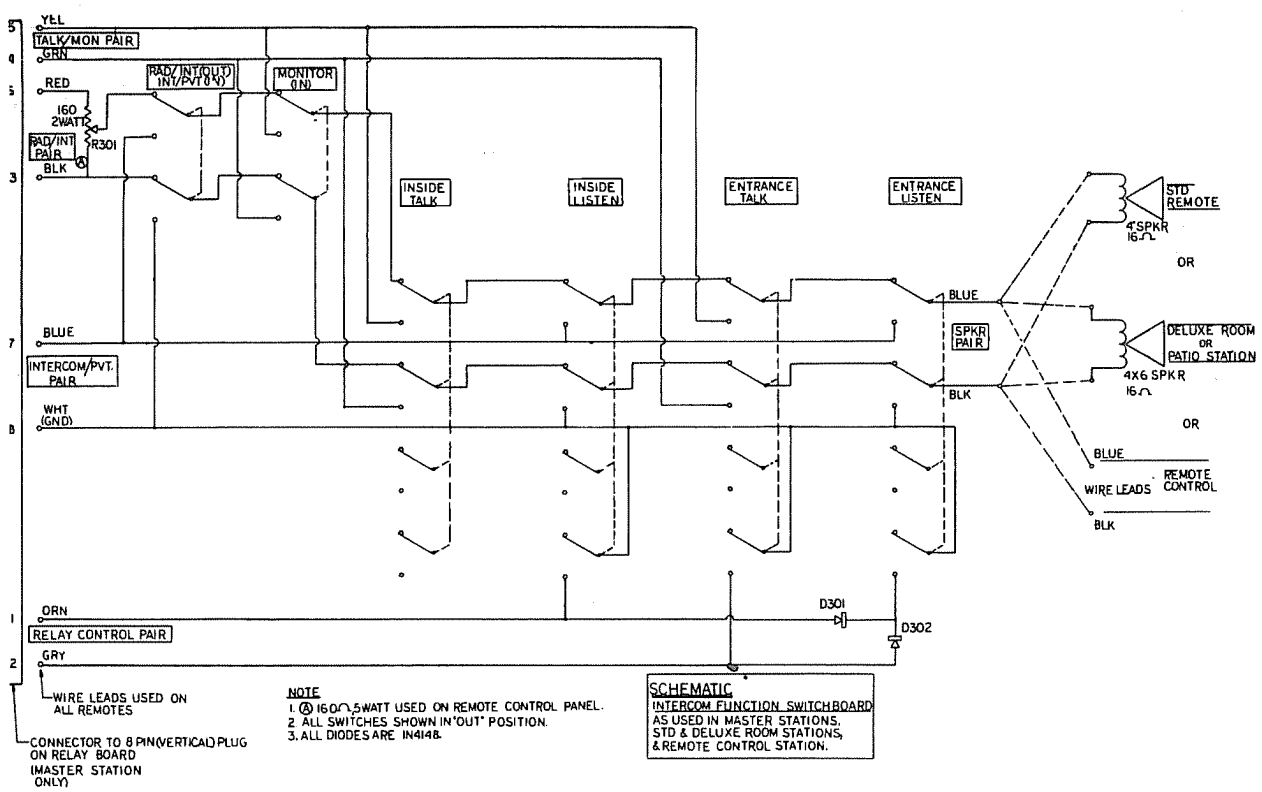
- No.
- 1-01
- 4-01
- 5-01
- 5-01
- 3-01
- 1-01
- 0-01
- 2-01
- 3-01



SCHEMATIC - CONTROL PANEL B VERSION

SCHEMATIC C

- No.
- 50-01
- 89-01
- 68-01
- 03-01
- 052-01
- 23-01



SCHEMATIC - REMOTE STATION

SCHEMATIC D

NOTE

1. 160 2WATT USED ON REMOTE CONTROL PANEL.
2. ALL SWITCHES SHOWN IN 'OUT' POSITION.
3. ALL DIODES ARE IN4148.

SCHEMATIC INTERCOM FUNCTION SWITCHBOARD AS USED IN MASTER STATIONS, STD & DELUXE ROOM STATIONS, & REMOTE CONTROL STATION.

WIRE LEADS USED ON ALL REMOTES

CONNECTOR TO 8 PIN (VERTICAL) PLUG ON RELAY BOARD (MASTER STATION ONLY)

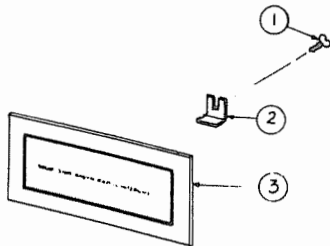
MODELS M9040/41/45/46/47, M9300/02/04/12/30

RITTENHOUSE

FOLDER 3

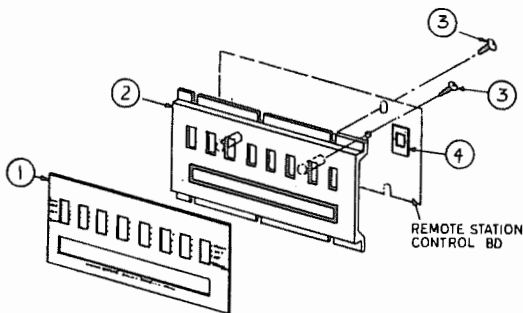
Courtesy of the Manufacturer

M9045, M9046 PARTS IDENTIFICATION CONTROL MODULES I & II



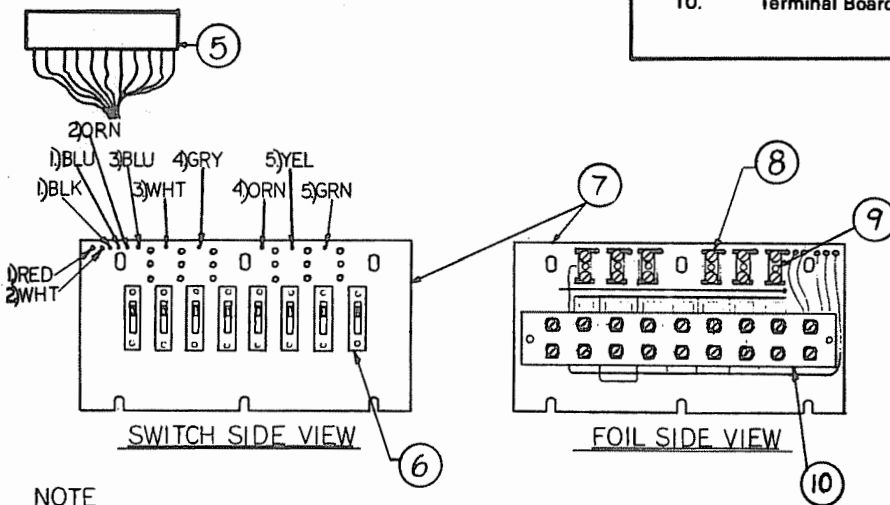
CONTROL MOD. I

Key No.	Description	Part No.
1.	Screw	104-7248-01
2.	Angle Bracket	101-7335-01
3.	Panel Insert	126-7313-01



CONTROL MOD. II

Key No.	Description	Part No.
1.	Overlay	126-7312-01
2.	Function Panel-Plastic	135-7320-02
3.	Screw	104-7248-01
4.	Switch Mask	126-7309-01
5.	Wire and Connector Assy.	220-7789-01
6.	Slide Switch - 4 Pos.	166-7064-01
7.	Blank P.C. Board	162-7051-01
8.	Screw Terminal	321-7089-01
9.	Eyelet	308-7036-01
10.	Terminal Board Assy.	321-7090-01



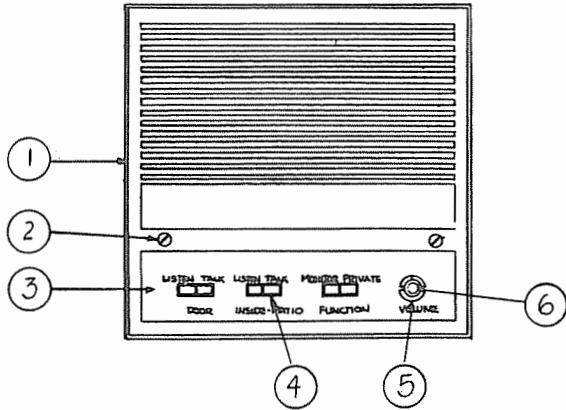
NOTE

WIRES TWISTED IN THE FOLLOWING PAIRS:

- 1) RED/BLK/BLU
- 2) ORN/WHT
- 3) BLU/WHT
- 4) GRN/ORN
- 5) YEL/GRN

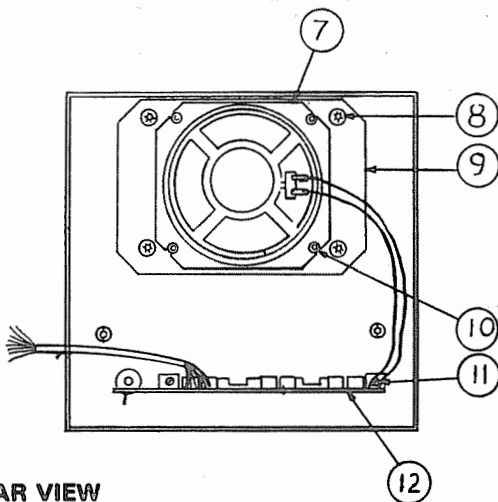
Courtesy of the Manufacturer

M9300, M9302, M9312 PARTS IDENTIFICATION REMOTE STATIONS



REAR VIEW

Key No.	Description	Part No.
1.	Housing, M9300 - White	109-7365-02
1.	Housing, M9302 - Brown	109-7365-04
1.	Housing, M9312 - White	109-7365-05
2.	Screw, M9300 - Silver	104-7251-01
2.	Screw, M9302, M9312-Bronze	104-7250-02
3.	Overlay Plate	126-7306-01
4.	Knob, Push Button	126-7141-01
5.	Knob, Volume	126-7307-01
6.	Thrust Bearing	100-7027-01



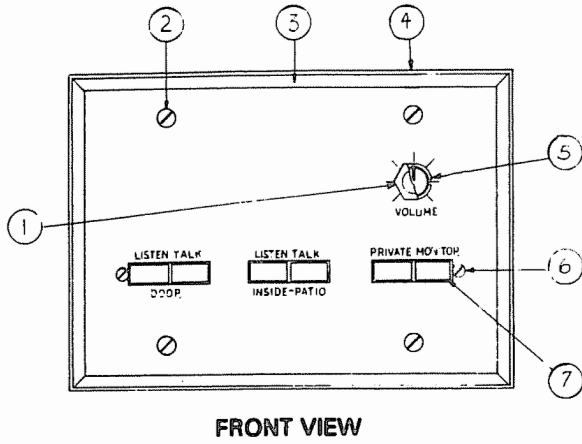
REAR VIEW

Key No.	Description	Part No.
7.	Speaker, M9300 - 4" x 4"	170-7029-01
7.	Speaker, M9302 - 4" x 6"	170-7028-02
7.	Speaker M9312 - 4" x 6" Weather proof	220-7800-01
8.	Pushnut	105-7054-01
9.	Grill Baffle - M9300 only	135-7314-01
10.	Eyelet - M9300 only	308-7039-01
11.	Screw - Push Button Assy.	104-7249-01
12.	P.C. Board Assembly	220-7782-01

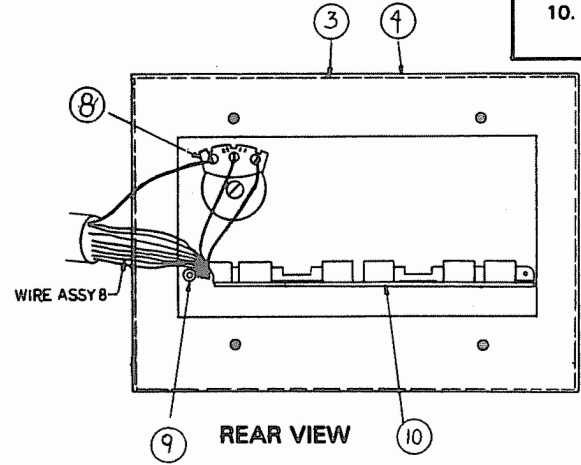
MODELS M9040/41/45/46/47, M9300/02/04/12/30

RITTENHOUSE

M9330 PARTS IDENTIFICATION-REMOTE CONTROL



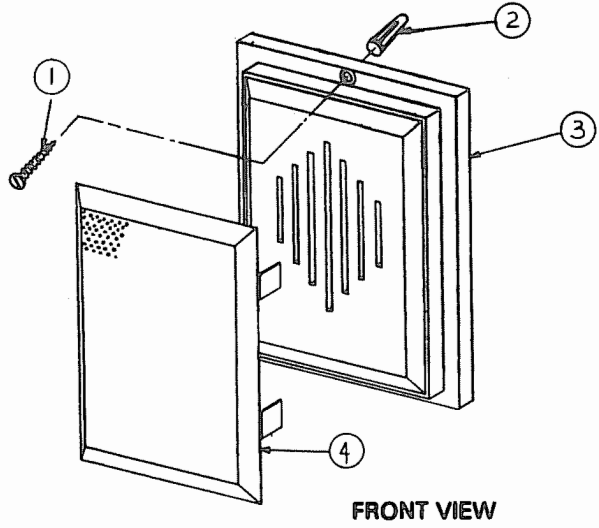
FRONT VIEW



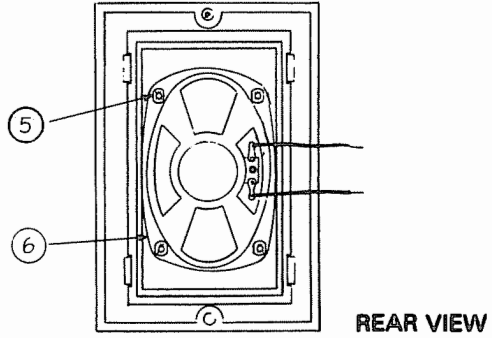
REAR VIEW

Key No.	Description	Part No.
1.	Nut, 3/8 x 32	105-7081-01
2.	Screw	104-7174-01
3.	Plate - Decorative	126-7315-01
4.	Gasket	340-7405-01
5.	Knob, Volume	126-7305-01
6.	Screw, P.B. Assembly	104-7253-01
7.	Push Button Knob	141-7141-01
8.	Volume Control	163-7020-01
9.	Spacer	118-7042-01
10.	P.C. Board Assembly	220-7783-01

M9304 PARTS IDENTIFICATION-DOOR STATION



FRONT VIEW

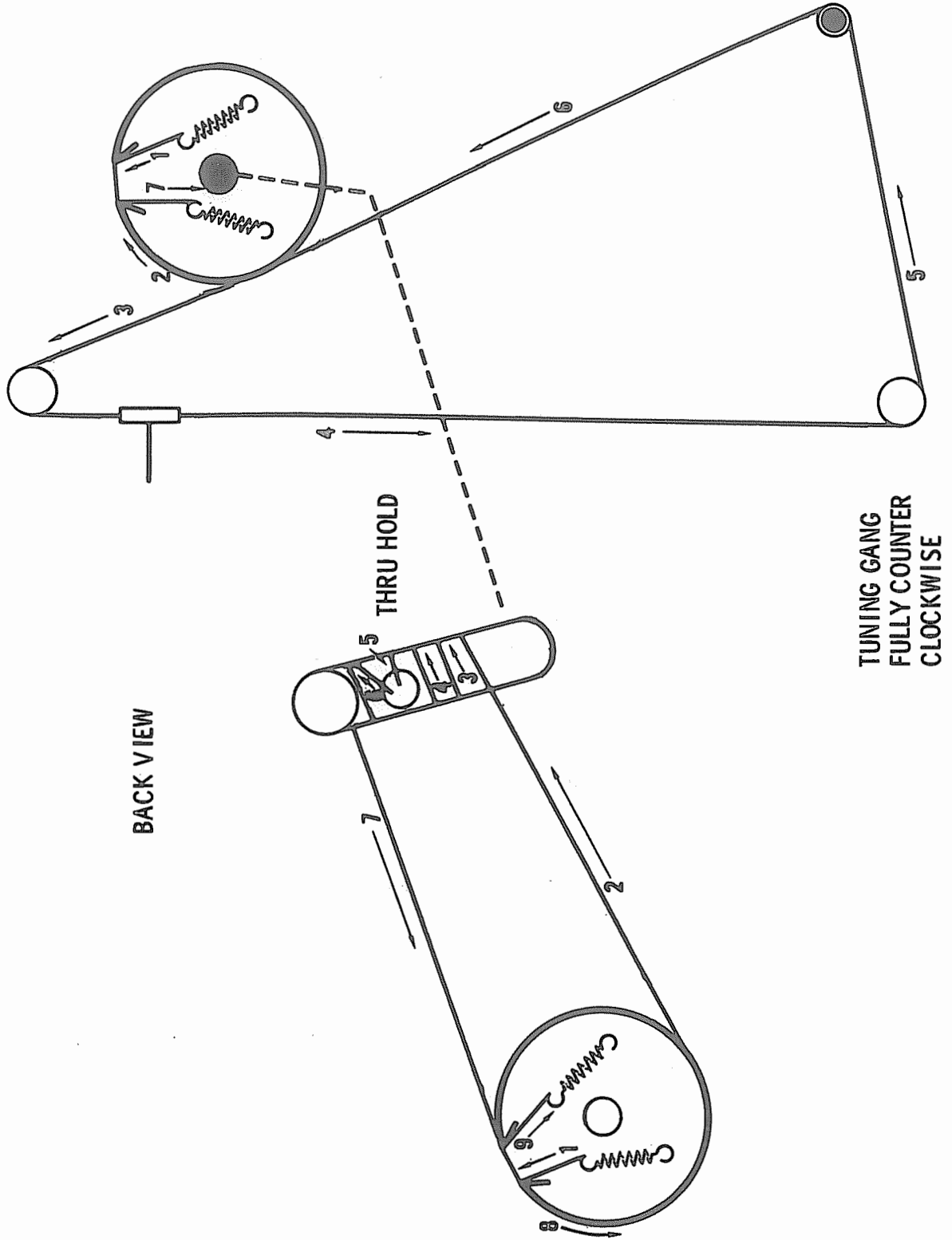


REAR VIEW

Key No.	Description	Part No.
1.	Screw - Bronze	104-7250-01
2.	Anchor - Plastic	105-7089-01
3.	Housing	109-7368-01
4.	Grill	126-7303-01
5.	Retainer - Push On	105-7052-01
6.	Speaker	170-7023-01

Courtesy of the Manufacturer

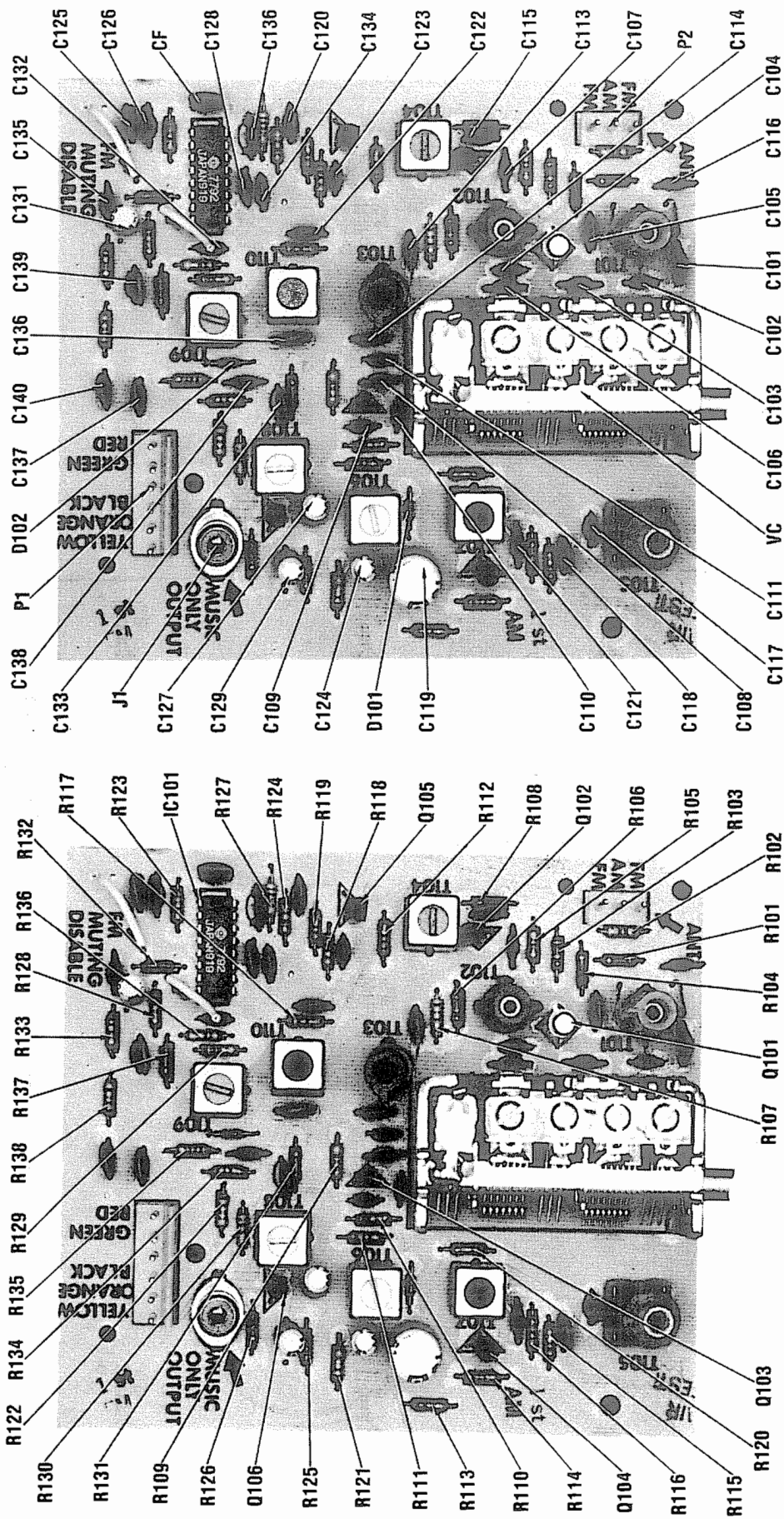
DIAL CORD STRINGING



RITTENHOUSE
MODELS M9040/41/45/46/47, M9300/02/04/12/30

FOLDER 3

MAIN BOARD



10.70V

34

63

32

33

35

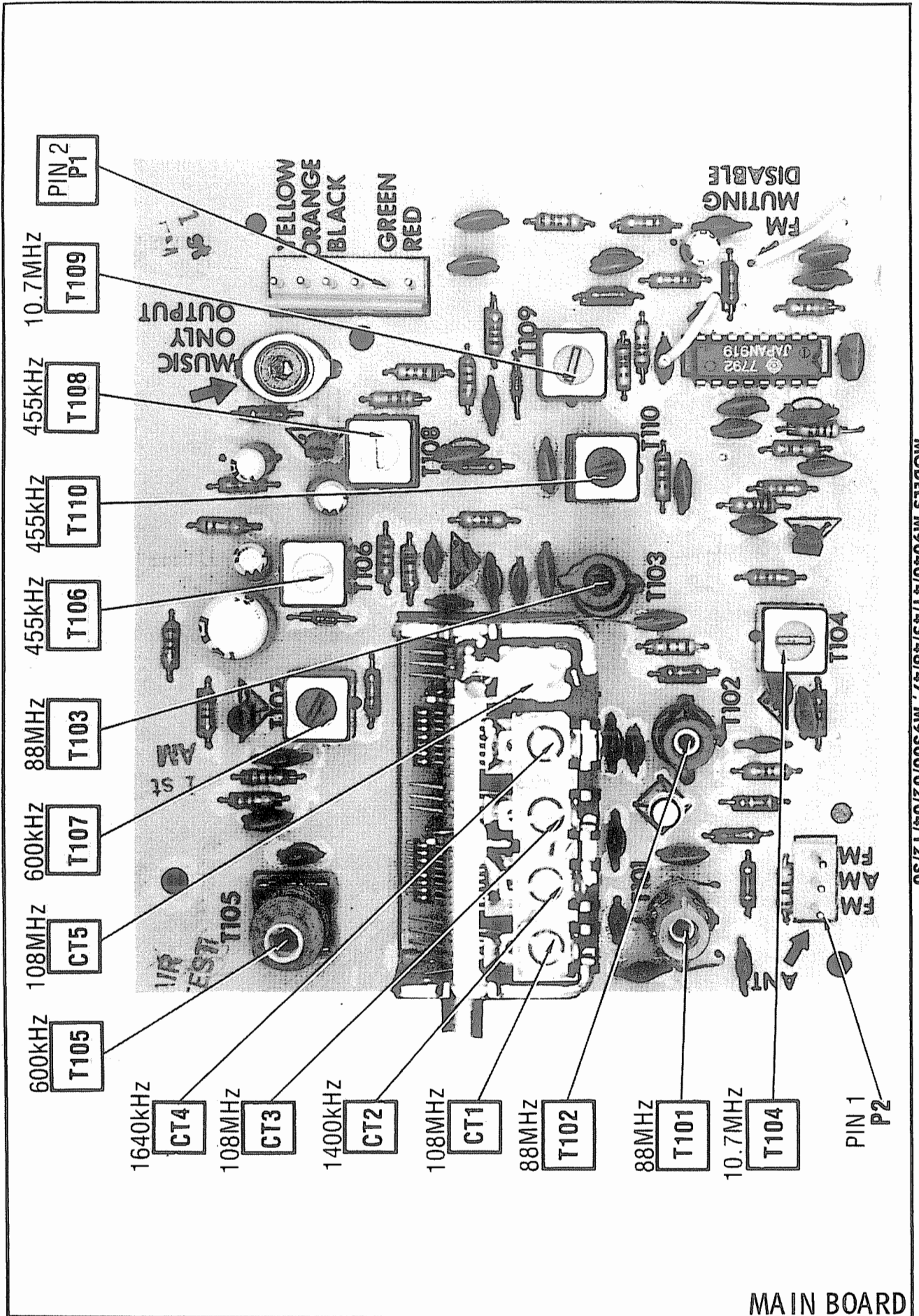
23

36

37

Q104
B E C

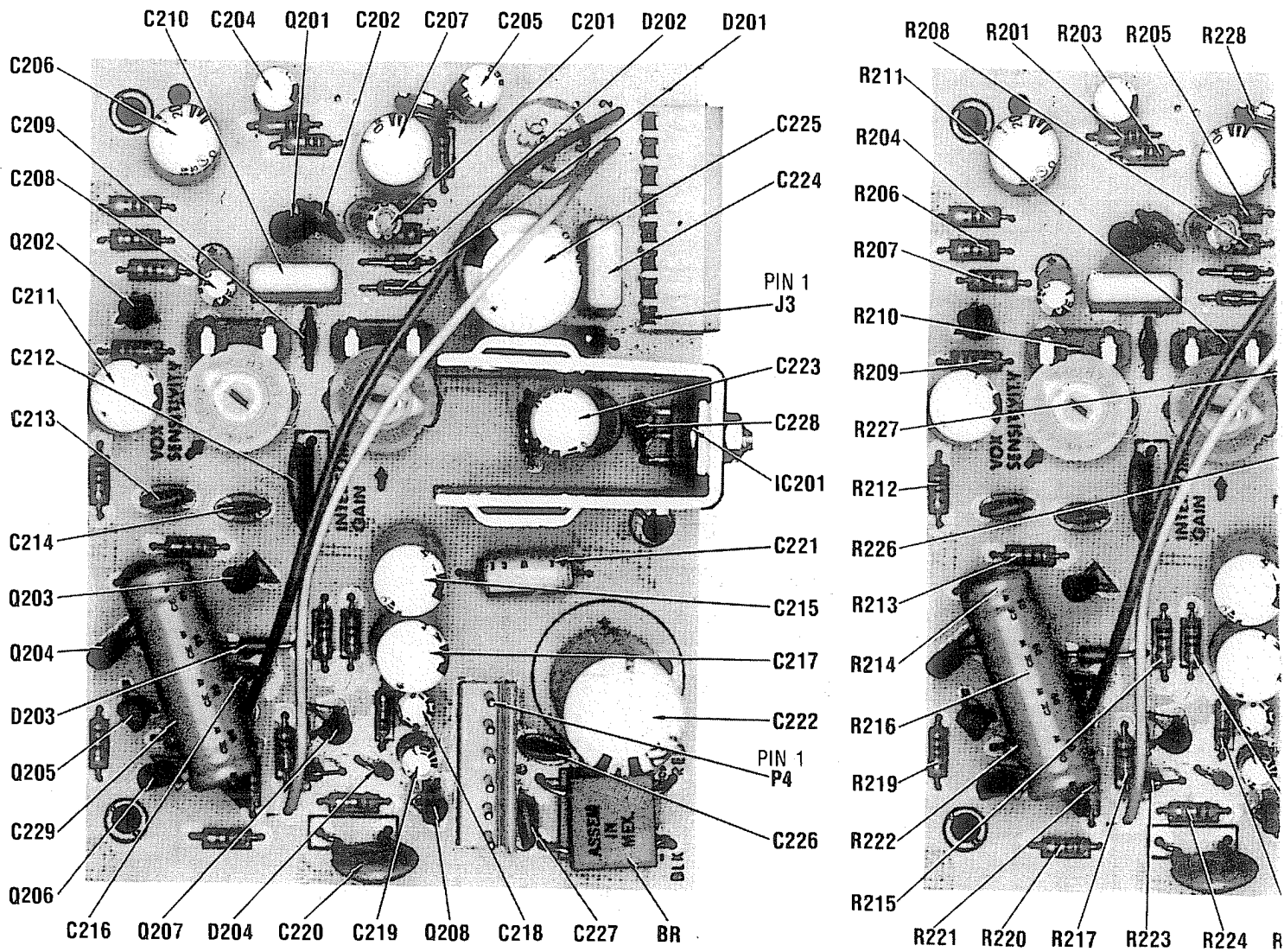
Q106
C E B



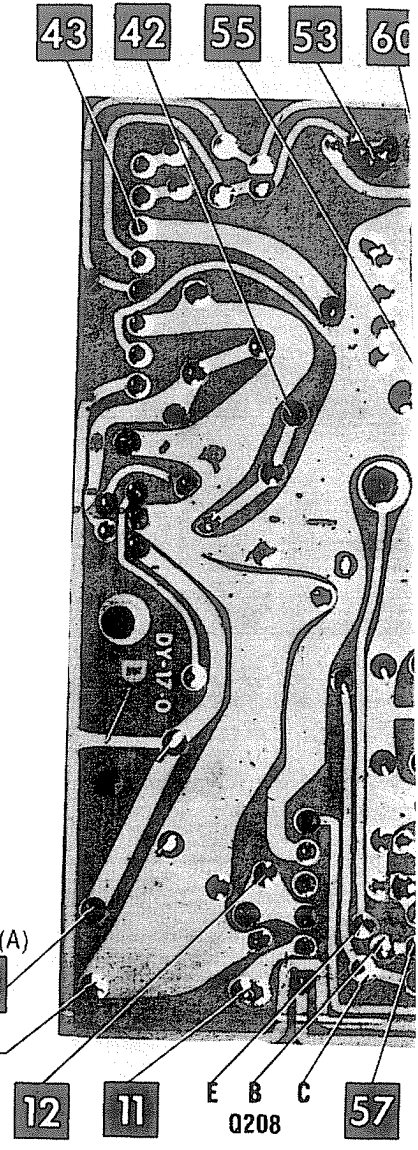
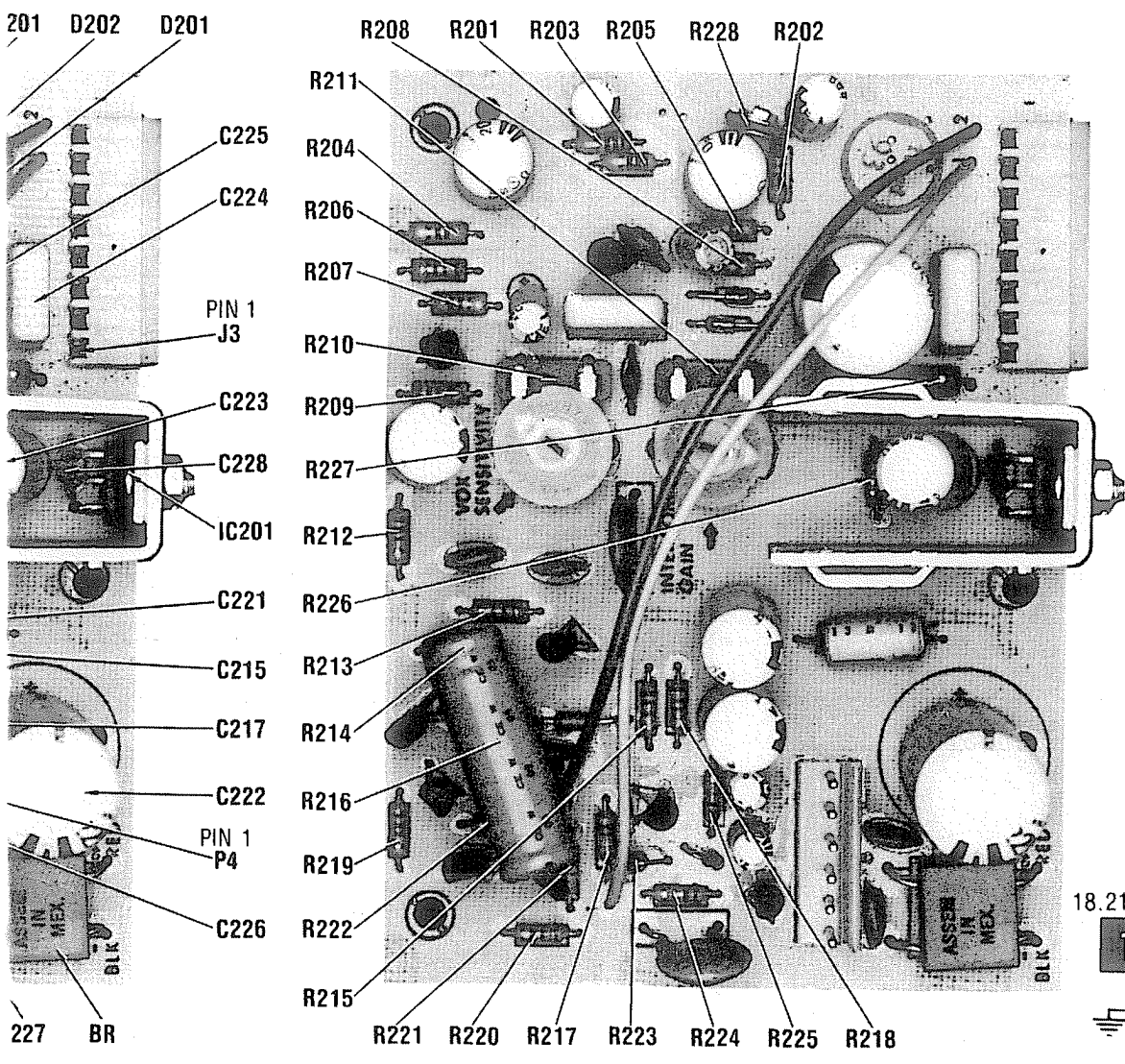
MODELS M9040/41/45/46/47, M9300/02/04/12/30

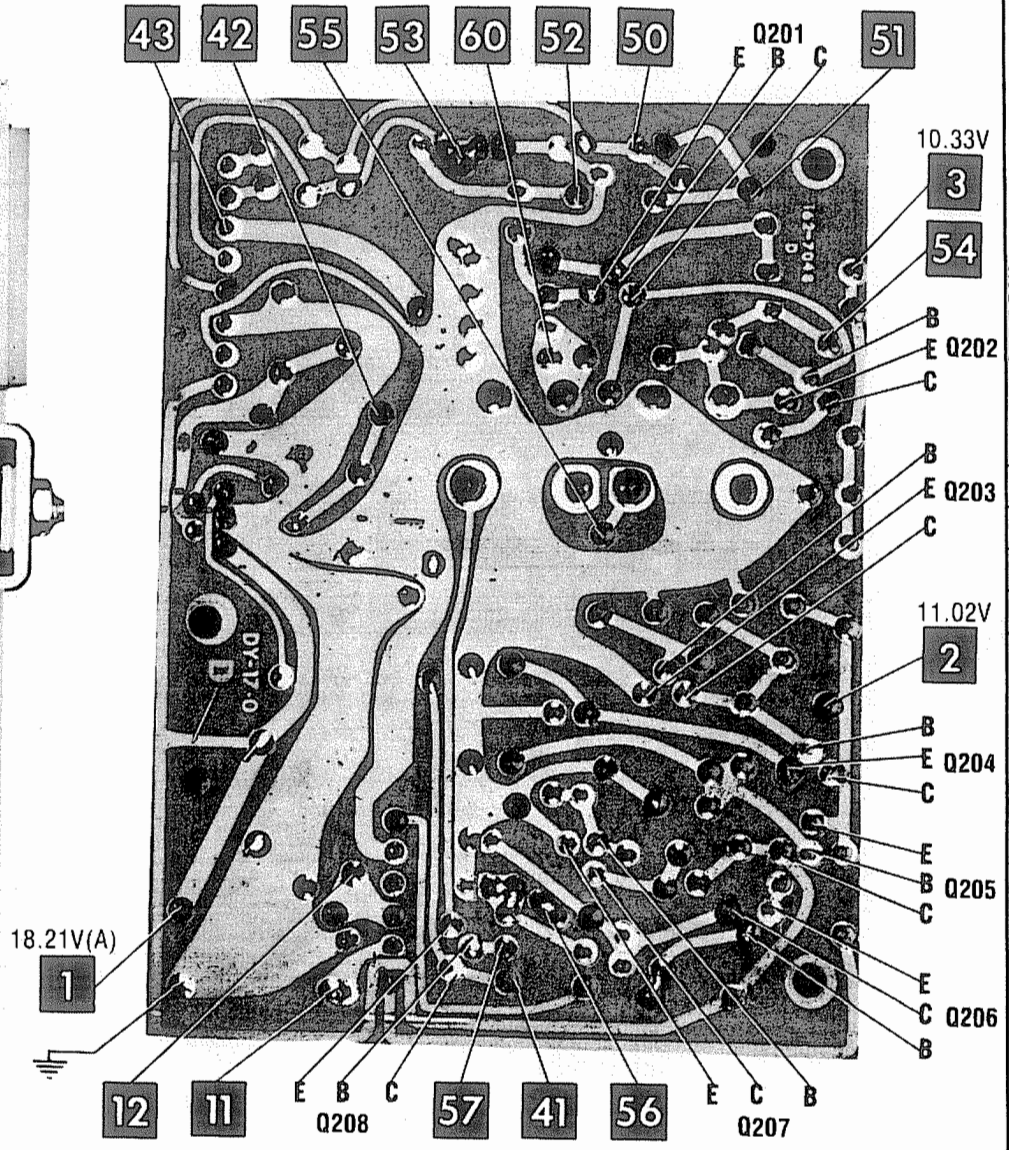
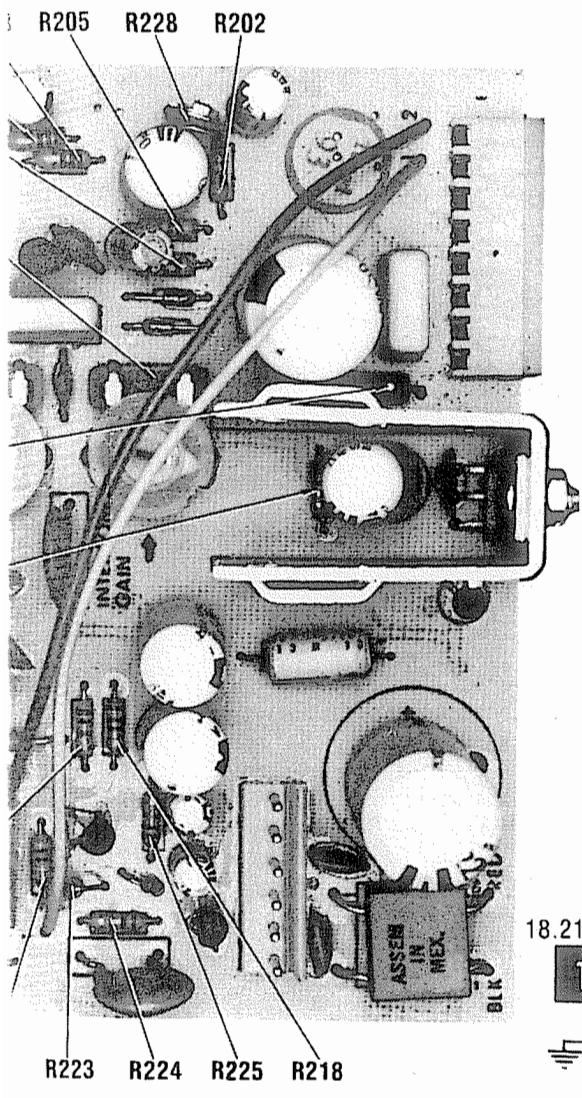
RITTENHOUSE

FOLDER 3



AMPLIFIER BOARD





RITTENHOUSE
 MODELS M9040/41/45/46/47, M9300/02/04/12/30

FOLDER 3

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

PARTS LIST AN

(When ordering parts, stc

Replacement parts show
Have your local distribu

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA						
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
BR		144-7015-01	GEBR-206	PTC401	SK3647/167	ECG166	TM166	WEP1051/166	212-29001
D101	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
D102	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
Q201	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
Q202	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
Q203	1N4742A	144-7013-01	GEZD-12	ZB12B	SK3062/142A	ECG142A	TM142A	WEP1112/142A	103-29003
D204	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
D301	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
0302	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
0401	1N4148	144-7016-01	GE-514	PTC214	SK3100/519	ECG519	TM519	WEP925/519	103-131
D402	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
0403	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
D404	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
D405	1N4003	144-7001-02	GE-504A	1N4003	SK3312	ECG116	TM116	WEP156	212-76-02
	1N4002	144-7001-02	GE-504A	1N4002	SK3312	ECG116	TM116	WEP156	212-76-02
IC101	7792	147-7042-01	GEIC-229	PTC767	SK3147	ECG788	TM788	WEP2040/788	221-29037
	HA1137W	147-7042-01	GEIC-229	PTC767	SK3147	ECG788	TM788	WEP2040/788	221-29037
IC201	LM383T	147-7043-01	GEIC-334		SK3852/1232	ECG1232	TM1232	WEP2150/1232	
	LM383	147-7043-01	GEIC-334		SK3852/1232	ECG1232	TM1232	WEP2150/1232	
Q101	MEM616	147-7036-01	GE-FET-4	PTC182*	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q102	PN4416	147-7037-01	GE-FET-2	PTC161	SK3834/132	ECG312*	TM312*	WEP920/312*	921-1067*
Q103	PN5130	147-7038-01	GE-11*	PTC132	SK3452/108	ECG108	TM108	WEP56/108	121-925
Q104	PN2222	148-7031-01	GE-47	PTC143	SK3444/123A	ECG123AP	TM123AP	WEP912/293*	121-29066
Q105	PN2222	148-7031-01	GE-47	PTC143	SK3444/123A	ECG123AP	TM123AP	WEP912/293*	121-29066
Q106	PN5130	147-7038-01	GE-11*	PTC132	SK3452/108	ECG108	TM108	WEP56/108	121-925
Q201	Z5C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q202	Z5C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q203	Z5C1851S	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
	Z5C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q204	Z5C1851S	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
	Z5C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q205	Z5C1851S	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
	Z5C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q206	2N4403	147-7044-01	GE-82	PTC103	SK3466/159	ECG159	TM159	WEP62/159	121-29003
Q207	2N4403	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
	25C1851S	147-7041-01	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
Q208	25C1851S	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792
	25C1851S	147-7019	GE-47	PTC144*	SK3024/128	ECG128	TM128	WEP736/123A	121-792

* Lead configuration may vary from original.

CAPACITORS

ITEM No.	RATING
C101	.01 25V
C102	18 25V
C103	.01 25V
C104	22 NPO 25V
C105	.02 25V
C106	.05 25V
	.05 25V
C107	470 25V
C108	.01 25V
C109	10 25V
C110	15 NPO 25V
C111	18 25V
C113	.05 25V
	.02 25V
	.01 25V
C114	.05 25V
C115	.05 25V
C116	125 25V
C117	5pF 25V
C118	.05 25V
C120	.05 25V
C121	.01 25V
C122	.05 25V
C123	.002 25V
C125	.05 25V
C126	.02 25V
C128	.05 25V
C130	.01 25V
C132	5pF 25V
C133	.05 25V
C134	.05 25V
C135	.01 25V
C136	.05 25V
C137	.05 25V
C138	.01 25V
C139	.05 25V
C140	.05 25V
C202	.01 25V
C209	.002 25V
C210	.22 50V 10%
C212	.02 100V
C213	.05 25V
C214	.0033 25V
C216	.01 25V
C220	.02 100V
C224	.22 50V 10%
C226	.05 25V
C227	.05 25V
C228	.001 100V
C601	.047 100V 10
C602	.01 50V
VC	Tuning Gang
CT1	Trimmer
CT2	Trimmer
CT3	Trimmer
CT4	Trimmer
CT5	Trimmer

(1) Part of Tuning Gan

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA			
		MFR. PART No.	MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C119	47 25V	243-7126-01	VTT47E25	QV1-77	EV-1426.1
C124	10 16V	342-7125-01	VTT10B25	QV1-41	EV-1222
C127	10 16V	342-7125-01	VTT10B25	QV1-41	EV-1222
C129	1 50V	342-7147-01	VTT1A50	QV1-11	EV-1615
C131	1 50V	342-7147-01	VTT1A50	QV1-11	EV-1615
C201	1 50V	342-7147-01	VTT1A50	QV1-11	EV-1615
C204	33 16V	342-7156-01	VTT33025	QV1-63	EV-1325
C205	33 16V	342-7156-01	VTT33025	QV1-63	EV-1325
C206	220 6.3V	342-7151-01	VTT220F10	QV1-115	EV-1140
C207	220 6.3V	342-7151-01	VTT220F10	QV1-115	EV-1140
C208	10 16V	342-7125-01	VTT10B25	QV1-41	EV-1222
C211	220 16V	342-7127-01	VTT220H16	QV1-117	EV-1240
C215	220 16V	342-7127-01	VTT220H16	QV1-117	EV-1240
C217	220 16V	342-7127-01	VTT220H16	QV1-117	EV-1240
C218	10 16V	342-7125-01	VTT10B25	QV1-41	EV-1222
C219	10 16V	342-7125-01	VTT10B25	QV1-41	EV-1222
C221	10 25V	342-7152-01	VTT10B25	QV1-41	EV-1422
C222	2200 25V	342-7148-01			EV-1380
C223	470 10V	342-7150-01	VTT470K16	QV1-151	EV-1251
C225	1000 16V	342-7149-01	VTT1000M16	QV1-183	EV-1261
C229	47 25V NP	342-7157-01	TCN1540		TVAN-1413.1

CONTROLS (All

ITEM No.	FUNCTION
R210	Intercom Level
R211	Vox Sensitivity
R228	Intercom Input B
R301	Volume
R604	Music Tone
R605	Music Level

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.

Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
T101	FM Antenna	156-7020-01			
T102	FM RF	156-7022-01			
T103	FM Osc	156-7021-01			
T104	FM IF	152-7028-01			
T105	AM Antenna	152-7030-01			
T106	AM IF	152-7027-01			
T107	AM Osc	152-7026-01			
T108	AM IF	152-7027-01			
T109	FM Detector	152-7028-01			
T110	AM IF	152-7025-01			

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF	Ceramic Filter	160-7011-01	10.7MHz
J1	Jack	172-7022-01	Phono
J1A	Jack	172-7023-01	Aux Input
J3	Socket	172-7049-01	8 Pin
J3A	Socket	220-7786-01	6 Pin (And Wire Assembly)
J4	Socket	220-7786-01	6 Pin (And Wire Assembly)
J6	Socket	220-7795-01	8 Pin (And Wire Assembly)
M601	Dial Lamp	176-7029-01	12.1VAC @ 40mA
P1	Plug	172-7041-01	5 Pin
P2	Plug	172-7040-01	3 Pin
P4	Plug	172-7041-01	5 Pin
P5	Plug	172-7044-01	8 Pin
P6	Plug	172-7042-01	8 Pin
P7	Plug	172-7043-01	12 Pin
RLY401	Relay	174-7023-01	SPOT Talk/Listen
RLY402	Relay	174-7022-01	DPDT VOX
RLY403	Relay	174-7022-01	DPDT Intercom
RLY404	Relay	174-7022-01	DPDT Door Operation
SW301	Switch	166-7062-01	Private
SW302	Switch	166-7062-01	Monitor
SW303	Switch	166-7062-01	Inside Talk
SW304	Switch	166-7062-01	Inside Listen
SW305	Switch	166-7062-01	Entrance Talk
SW306	Switch	166-7062-01	Entrance Listen
SW601	Switch	165-7018-01	Selector (Off/On/AM/FM/Aux)
	P.C. Board	220-7779-01	Amplifier
	P.C. Board	220-7778-01	Relay
	P.C. Board	220-7782-01	Switch
	P.C. Board	220-7777-01	Tuner

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Housing, Front (Model M9040)	109-7366-02	Knob, Volume, Tone, Level	126-7305-01
Housing, Front (Model M9041)	109-7366-03	Knob, Selector	126-7307-01
Dial	126-7308-01	Knob, Push Button (3 required)	141-7141-01
Knob, Tuning	126-7307-02		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. B528 (Solid) Available in 13 Colors 8522 (Stranded) Available in 13 Colors
Power Cord	Use BELDEN No. 17106 (Plastic) -6 Ft. 17109 (Plastic) -9 Ft.
Low-loss Shielded Lead (Interconnection) .	Use BELDEN No. 8401 or 8421