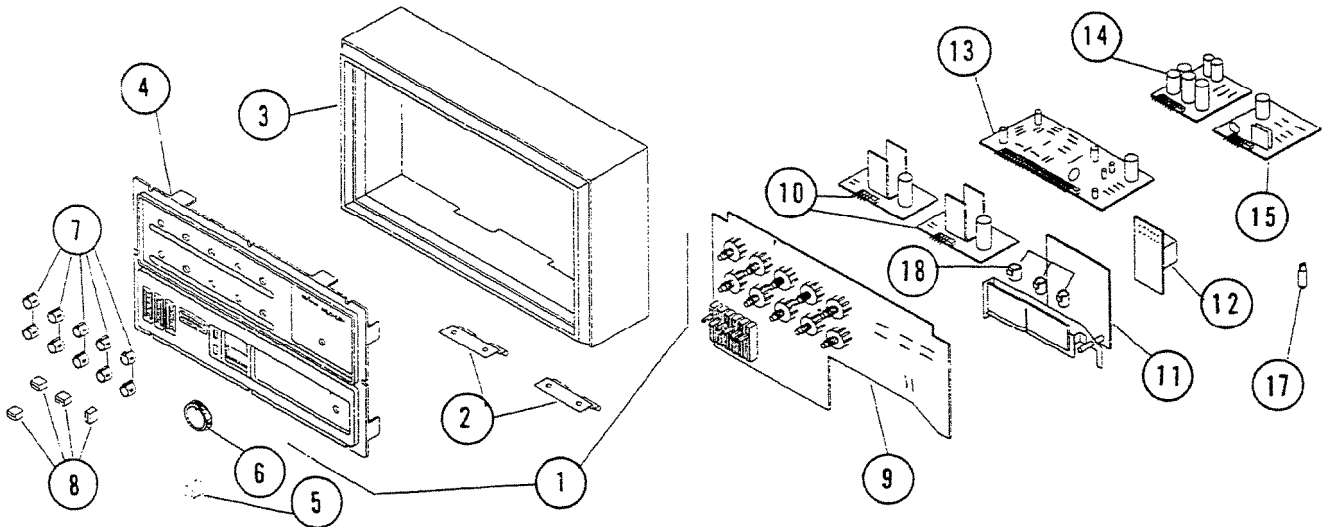


# PARTS LIST

EFFECTIVE DATE	MODEL	PRODUCT GROUP
FEBRUARY 1977	SM-428	ELECTRONICS



REF.	ORIGINAL PART NO	PART DESCRIPTION	MODEL USED ON	CURRENT REPLACEMENT PART NO
1	41999	Panel & Frame Assy.	SM-428	41999-000
2	39620	Hinge Brkt. (1) 2-Required	SM-428	39620-036
3	38823	Frame	SM-428	38823-000
4	42001	Panel Assy.	SM-428	42001-000
5	39624	Tuning Knob	SM-428	39624-000
6	39627	Knob - Program Selector	SM-428	39627-000
7	39626	Knob - Station Selector	SM-428	39626-000
8	39625	Knob - Slide Control	SM-428	39625-000
9	42002	Parent P. C. Board Assy.	SM-428	42002-000
10	42014	Power Amp. P. C. Board (1)	SM-428	42014-000
11	42007	Tuner P. C. Board Assy.	SM-428	42007-000
12	42096	Control P. C. Board Assy.	SM-428	42096-000
13	42012	Pre-Amp P. C. Board Assy.	SM-428	42012-000
<b>Please See Other Side</b>				

**NuTone Division**

C. P. SM-428 ELECTRONICS

Order Parts From:  
**Parts Department c/o NuTone**  
 P.O. Box 27 • Cincinnati, Ohio 45227

REF	ORIGINAL PART NO	PART DESCRIPTION	MODEL USED ON	CURRENT REPLACEMENT PART NO
14	42016	Power Supply P. C. Board Assy.	SM-428	42016-000
15	42018	Multiplex P. C. Board Assy.	SM-428	42018-000
16	42103	Lamp Assy. Comp. (not shown)	SM-428	42103-000
17	39330	Pilot Lamp	SM-428	39330-000
18	31815	Socket	SM-428	31815-000
19	31813	Lamp Indicator (not shown)	SM-428	31813-000
20	39610	Lamp Socket (not shown)	SM-428	39610-000
21	39611	Lamp	SM-428	39611-000
22	42020	Envelope Assy. (not shown)	SM-428	42020-000
<p><b>FOR ELECTRONIC PARTS SEE SERVICE MANUAL</b></p>				

## SM428 SYSTEM REPLACEMENT PARTS LIST

RESISTORS: Value in ohms  $\pm 5\%$ ,  $\frac{1}{4}$  watt, Carbon Film, unless otherwise noted.

K = Kilo =  $(10^3)$

M = Mega =  $(10^6)$

CAPACITORS: Value in micro  $(10^{-6})$  farads  $\pm 10\%$ , 500WVDC, Ceramic Disc, unless otherwise noted.

p = pico =  $(10^{-12})$

Schematic Symbol	NuTone Part No.	Description
<b>MODEL SM-428 MASTER UNIT</b>		
	38823-000	Frame
	42001-000	Front Panel Assembly
	41999-000	Frame & Front Panel Assy.
	39620-036	Hinge Leaf (2 required)
	28031-015	Screw, #8 x $\frac{3}{8}$ " Ph Hex/W "A" Hinge Leaf Mounting
	39624-000	Knob, AM/FM Tuning
	39627-000	Knob, Program Selector Switch
	39626-000	Knob, Speaker Operating Mode Switch, (10 required)
	39625-000	Knob, Treble; Bass; Balance; and Volume Controls, (4 req.)
	38825-000	Lens, engraved, AM/FM Tuning Dial
	38828-000	Lens, FM Stereo/Mono Indicator
<b>PARENT PRINTED CIRCUIT BOARD</b>		
	42002-000	Complete Assembly
	90029-004	Mounting Screws, #6 x 38" Ph. Tr. "A" (12 required)
	31984-000	Clamp, cable, for power wiring and ground wire.
	39387-003	Screw, #6 x $\frac{5}{8}$ " Ph. Pan 25" Cable Clamp Mounting
	39612-000	Plastic Guide/Support for PC boards. Amp. type #58325-1. For Power Amplifier; Preamplifier; Power Supply; and Multiplex Modules.
<b>CAPACITORS</b>		
C101, C102	35100-180	47pf
C103, C104	35101-142	15pf, Temperature Compensated
C105	35055-101	.47 $\pm 20\%$ , 100 WVDC, Polyester Film
C106	35100-127	.1, +80%, -20%, 200 WVDC
C107, C108	35100-188	100pf
C109	35100-142	330pf
<b>FUSE</b>		
F101	39664-000	3 Amp., 250V, Fast-Blow, Type AGC3
	42000-000	Fuseholder and Wire Assembly for F101
<b>INDICATORS</b>		
I101	39611-000	Lamp, 14V, .08A, GE type #73 Tuning Meter Illuminator
	39610-000	Socket, Lamp, Elecon type #1818, for I101
I102	31813-000	Lamp, 12V, .035 - .045 Amp., Type #12ESB, FM Stereo Indicator
	31815-000	Socket, Lamp, Sylvania type BO150, for I102
I103	36105-000	Meter, 0-200 microAdc $\pm 10\%$ , Mura Meters type #YN-40, AM/FM Tuning Indicator

Schematic Symbol	NuTone Part No.	Description
I104, I105, I106	39330-000	Lamp, 6.3V, .250A, Wedge Base, Type #259 (series connected pilot lights)
	42103-000	Socket and Wire Assembly using Molex type SDX-6013 wedge type sockets, for use with I104, I105, and I106
<b>CONNECTORS</b>		
J101, J102	39339-101	Receptacle, 5-pin PC board mounting, Molex type A-2145-5B (for Audio Power Amplifier Modules)
J103	39339-108	Receptacle 6-pin PC board mounting, Molex type A-2145-6B (for FM MPLX Decoder Module)
J104	39339-103	Receptacle, 8-pin PC board mounting, Molex type A-2145-8B (for Power Supply Module)
J105	39339-107	Receptacle, 15-pin PC board mounting, Molex type, A-2145-15B (for Dual Stereo Preamplifier and Intercom Preamp Module) filling space for J105 and J106 (pins 1 to 15) as shown on PC board layout in Figures 22 & 23
J106	Not Used	
J107	39339-110	Receptacle, 12-pin PC board mounting, Molex type A-2145-12B (for Dual Stereo Preamplifier and Intercom Preamp Module, pins 16-28)
J108-J115	39595-000	Receptacle, RCA shielded phono jack type for PC board mounting
P101	39338-101	Plug, 5-pin, PC board mounting, Molex type A2461-5D (for AM/FM Tuner Module)
P102	39338-101	Same as P101 (for Terminal Board pins 1 to 5)
P103	39338-102	Plug, 7-pin PC board mounting, Molex type A-2461-7D (for Control Module, pins 9 to 15)
P104	39338-103	Plug, 8-pin PC board mounting, Molex type A-2461-8D (for Control Module, pins 1 to 8)
P105, P106	39338-105	Plug, 15-pin PC board mounting, Molex type A-2461-15D (for Terminal Board: pins 6 to 20; and pins 21 to 35)
P107	39338-108	Plug, 3-pin PC board mounting, Molex type A-2461-3D (for AM/FM Tuner Module to Tuning Meter)
<b>TRANSISTOR</b>		
Q101	36613-000	NPN, SILICON, muting switch to input of Channel B Audio Power Amplifier Motorola MPS-A20 Texas Inst. TIS-098

Schematic Symbol	NuTone Part No.	Description
<b>RESISTORS</b>		
R101, R102	B-34660	Variable, 100Kohm $\pm$ 20%, 1/2 watt, slide type, modified logarithmic taper: 20% R at 50% travel, Channels A and B Volume Control Stackpole type 5020 Original production: White Shaft Intermediate production: White Shaft Later production: Red Shaft CHECK PART NUMBER ON CASE.
R103, R104	B-34661	Variable, 100Kohm $\pm$ 20%, 1/4 watt, slide type, Modified linear taper: 53% R at 25% travel; 95% R at 50% travel; 97% R at 75% travel, Channels A and B Balance Control Stackpole type 5005R Original production: White Shaft Intermediate production: Black Stripe Later production: Blue Shaft CHECK PART NUMBER ON CASE
R105, R106	B-34662	Variable, 100Kohm $\pm$ 20%, 1/4 watt, slide type, modified logarithmic taper: 10% R at 25% travel; 27% R at 50% travel; 48% R at 75% travel, Channels A and B Bass Control Stackpole type 6535 Original production: White Shaft Intermediate production: Red Stripe Later production: Black Shaft CHECK PART NUMBER ON CASE
R107, R108	B-34663	Variable, 100Kohm $\pm$ 20%, 1/4 watt, slide type, modified logarithmic taper: 4% R at 25% travel; 12% R at 50% travel; 30% R at 75% travel, Channels A and B Treble Control, Stackpole type 6515 Original production: White Shaft Intermediate production: Blue Stripe Later production: White Shaft CHECK PART NUMBER ON CASE
R109, R118, R119	33082-470	47
R110, R111	33082-102	1K
R112, R113	33082-474	470K
R114	33082-103	10K
R15	33101-103	10K $\pm$ 10%, 1/2 watt, Carbon Comp.
R116, R117	33082-105	1M
R120, R121	33082-684	680K
R122, R123	33082-472	4.7K
R124	33101-331	330 $\pm$ 10%, 1/2 watt, Carbon Comp.
R125	33082-101	100
<b>SWITCHES</b>		
S101-S110	34664-000	Rotary, non-shorting contacts, 4-position, OAK Migr. #521521-348. Speaker Operating Mode
	39626-000	Knob, for S101-S110
S111	34665-000	Rotary, non-shorting contacts, 5-position. PROGRAM SELECTOR Standard Grigsby Co. #45462-4MLR-1

Schematic Symbol	NuTone Part No.	Description
S112, S13	39627-000 39666-000	Knob, for S111 Slide type, DPDT, 0.5Adc, 0.3Aac, 125V Switchcraft #4606L POWER ON/OFF; MONO/STEREO
<b>TRANSFORMER</b>		
T101	42055-000	Power, 120Vac, 60 hz. Primary; Secondary 12.3Vac @ d-c output of 1.9Aavg; 30 VA. Secondary protected by non-replaceable 5A fuse. (Supplied with IR-14) Better Coil & Transformer #PN-10520-PI
<b>INTEGRATED CIRCUIT</b>		
Z101	36648-000	3-terminal, Positive Voltage Regulator: Output 12Vdc (11.1V to (12.9V) with internal short circuit current limiting and thermal overload protection Motorol #78L12CP Fairchild #78L12WC
<b>DC POWER SUPPLY MODULE</b>		
	42016-000	Complete Assembly
<b>CAPACITORS</b>		
C201, C202	35091-108	100, +100%, -10%. 25WVDC Electrolytic
C203, C204	35091-107	1000, +100%, -10%, 35WVDC Electrolytic
C205	35091-114	100, +100%, -10%. 50WVDC Electrolytic
C206, C207	35091-105	470, +100%, -10%, 25WVDC Electrolytic
C208-C212	35100-139	.01, +80%, -20%, 50 WVDC
<b>DIODES</b>		
D201, D202	36549-000	Silicon Rectifier, 1Adc, 100PIV, 1N4002
D203-D206	36608-000	Silicon Rectifier, 3Adc, 100PIV, General Instrument 1N540Z Motorola MR-502
D207, D208	36539-000	Silicon Zener. 12V $\pm$ 5% 1N4742A
<b>CONNECTOR</b>		
P201	39619-103	Plug, 8-pin, PC board mounting, Molex type A-2373-8M
<b>RESISTORS</b>		
R201	33101-100	10 $\pm$ 10%, 1/2 watt, Carbon Comp.
R202	Not Used	
R203	33039-101	100 $\pm$ 10%, 1 watt, Wire Wound
R204	33101-470	47 $\pm$ 10%, 1/2 watt, Carbon Comp. (Early production units)
R204	33101-101	100 $\pm$ 10%, 1/2 watt, Carbon Comp.
<b>AM/FM RADIO TUNER MODULE</b>		
	42004-000	Complete Assembly
<b>AM/FM PRINTED CIRCUIT BOARD</b>		
	42007-000	Complete Assembly

(Parts List continued on page 49)

Schematic Symbol	NuTone Part No.	Description
<b>CAPACITORS</b>		
C301	35100-174	150pf
C302, C312	35101-142	15pf, temperature compensated
C303A-C303J	35092-000	Variable, AM/FM Ganged Tuning
	42024-000	Dial Cord/Terminal Assembly
	31208-000	Spring, Dial Cord Pulley
	39335-000	Dial Pointer
	39327-000	Pulley, tuning capacitor
	39135-000	Cap, tuning capacitor pulley
	31872-000	Lock Washer, tuning capacitor pulley
	26471-038	Screw, #6 × 5/16, Ph Pan, Pulley retainer
C304, C307, C356	35100-120	.001
C305	Not Used	
C306, C313, C316, C317, C321, C332, C341, C346	35100-139	.01, + 80%, - 20%, 50WVDC
C308, C325, C355	35101-140	10pf, temperature compensated
C309, C326	35100-138	.005 ± 20%, 100WVDC
C310	35101-134	3.3pf, temperature compensated
C311, C315	35100-125	220pf
C314	35101-147	1.2pf ± 0.25pf temp. compensated
C318	35076-101	.22, + 80% . - 20%, 12WVDC
C319	Not Used	
C320, C337, C338	35091-109	47, + 100%, - 10%, 16WVDC, Electrolytic
C332, C344	35101-141	5.6pf, temperature compensated
C323	Not Used	
C324	35101-135	7.5pf, temperature compensated
C327	35101-126	1.2pf ± 0.25 ppf, temp. compensated
C328	35090-000	1-8pf variable, oscillator high-frequency trimmer, 100WVDC/AC
C329, C330	Not Used	
C331, C335	35076-106	.1 ± 20%, 25WVDC
C333, C334, C336, C342	35100-141	.05. + 80%, - 20%, 50WVDC
C339	35091-103	4.7, + 100%, - 10%, 25WVDC, Electrolytic
C340	35076-108	.02 ± 20%, 16WVDC
C345	35100-175	56pf
C347-C352	Not Used	
C353	35100-173	.001
C354	35100-120	.001
<b>FILTERS</b>		
CF301	36088-000	R10.7 MHz. FM IF, Ceramic Vernitron Piezoelectric Div. FM-4 (Preferred) Murata Corp. SFG-10.7MA
CF302, CF303	36087-000	455 KHz. AM IF, Ceramic Murata Corp SFB-455D
<b>DIODES</b>		
D301	36617-000	Silicon Switching, 50ma. dc, 75PIV 1N914 Texan Inst. 1N4148
<b>INTEGRATED CIRCUITS</b>		
IC301	36623-000	FM IF, Detector RCA CA3089E S.G.S. ATES TDA-1200

Schematic Symbol	NuTone Part No.	Description
<b>CONNECTORS</b>		
J1	39339-101	Receptacle, 5-pin PC board mounting, Molex type A-2141-5B (voltage and signal connector to parent board.
J6	39339-105	Receptacle, 3-pin PC board mounting, Molex type A-2141-3B (tuning signal to tuning meter via parent board)
<b>COILS AND TRANSFORMERS</b>		
L301	30087-000	FM Ant. Primary
L301	30086-000	FM Ant. Trap
L301	30096-000	FM Ant. Secondary
L302	30097-000	FM RF Drain Tank
L303	30088-000	FM Oscillator
L304	30092-000	10.7 MHz Quadrature Detector Tuning
L305	30091-101	22 microhenry, fixed inductor
L306, L307, L308, L311	30062-000	10.7 MHz. RF Choke
	30073-000	Coil Form. for L301, L302, and L303
	31915-000	Tuning Slug, in coil form for L301, L302, and L303
L309	30597-000	Transformer, AM Ant.
L310	30598-000	Transformer. AM Oscillator
T301A	30590-000	10.7 MHz. Mixer collector tank. primary
T301B	30591-000	10.7 MHz. IF Filter input, secondary
T302	30589-000	IF, AM, 455 KHz.
<b>TRANSISTORS</b>		
Q301	36624-000	Dual Gate FET, FM RF Ampl. Gen. Inst. MEM615A, MEM614 Motorola MFE130 Texas Inst. 3N203
Q302	36578-000	NPN Epitaxial Planar Silicon, FM Mixer Texas Inst. SKA-4231 Motorola SPS-4448 Nat. Semiconductor SM-43-050
Q303	36581-000	NPN Planar Silicon, FM Oscillator Texas Inst. SKA-4230 Nat. Semiconductor SM-43-050
<b>RESISTORS</b>		
R301	33082-564	560K
R302	33082-224	220K
R303	33082-154	150K
R304	33082-391	390
R305, R310, R322, R324	33082-331	330
R306	33082-333	33K
R307, R311	33082-392	3.9K
R308	33082-102	1K
R309	33082-103	10K (Original Production)
R309	33082-470	47
R312	Not Used	
R313	33082-153	15K
R314	33082-104	100K
R315	34043-000	500K variable, trim potentiometer, FM Squelch Control
R316	33082-470	47
R317	Not Used	
R318	33082-822	8.2K
R319, R320, R328	33082-103	10K
R321, R329	33082-182	1.8K
R323	33082-332	3.3K

Schematic Symbol	NuTone Part No.	Description
R325	33082-681	680
R326	33082-222	2.2K
R327	33082-393	39K
R330, R332	33082-101	100
R333	33082-183	18K
<b>MISCELLANEOUS</b>		
	41648-000	Coax Cable Assembly, Antennae Lead-in
	39598-003	RF Shield
<b>CONTROL CIRCUIT MODULE</b>		
	42096-000	Complete Assembly
<b>CAPACITORS</b>		
C401	35091-103	4.7, +100%, -10%, 25WVDC Electrolytic
C402	35091-110	22, +100%, -10%, 16WVDC Electrolytic
C403, C404	35091-106	2.2, +100%, -10%, 25WVDC Electrolytic
<b>DIODES</b>		
D401-D406	36617-000	Silicon, Switching 50mADC, 75PIV, Texas Inst. 1N4148 1N914
D407	36549-000	Silicon Rectifier 1Adc, 100PIV, 1N4002
<b>CONNECTORS</b>		
J2A	39339-103	Receptacle, 8-pin PC board mounting, Molex type A-2145-8B (connect to P104 on Parent Board)
J2B	39339-105	Receptacle, 3-pin PC Board mounting, Molex type A-2145-3B (J2B pins 9-11 connect to pins 9-11 of P103 on Parent Board)
J2B	39339-106	Receptacle, 4-pin PC board mounting, Molex type A-2145-4B (J2B pins 12-15 connect to pins 12-15 of P103 on Parent Board)
<b>RELAYS</b>		
K401	39336-000	TALK/LOSTEN. 4PDT Nominal coil voltage: 24Vdc Coil Resistance: 700 ohm ±10% Must Pull-in at 14Vdc American Zettler #AZ429-70-10L Potter Brumfield #R10-E2Z4V700
K402	39337-000	STANDBY, SPST Reed Nominal coil voltage: 12Vdc Max coil voltage: 20Vdc Coil Resistance: 960 ohm ±10% Must Pull-in at 8Vdc Must Release at 1Vdc New Product Engr. #118-0003-001
<b>TRANSISTORS</b>		
Q401	36509-000	Darlington, PNP Planar Silicon, Motorola MPS-A65
Q402	36590-000	Darlington, NPN Planar Silicon Motorola MPS-A13
Q403	36613-000	NPN Silicon Motorola MPS-A20 Texas Inst. TIS-98 NPC Elect. NPC-069
Q404	36606-000	PNP Silicon Motorola MPS-K71 (Yellow) NPC Elect. NPC-079

Schematic Symbol	NuTone Part No.	Description
<b>RESISTORS</b>		
R401, R411	33082-182	1.8K
R402	33082-392	3.9K
R403, R410	33082-682	6.8K
R404	33082-472	4.7K
R405, R416	33082-103	10K
R406	33082-332	3.3K
R407	Not Used	
R408	33082-102	1K
R409	33082-561	560
R412	33082-124	120K
R413	Not Used	
R414, R417	33082-223	22K
R415	33082-473	47K
R418	Not Used	
R419	33082-560	56
<b>POWER AMPLIFIER MODULE</b>		
	42014-000	Complete Assembly (for original production schematic diagram and PC layout, see publication, Part No. FE980)
<b>CAPACITORS</b>		
C501, C502, C506, C507, C512	35091-108	100, +100%, -10%, 25WVDC Electrolytic
C503	35055-103	.1 ±20%, 2 50WVDC, Mylar (Original Production)
C503	35055-101	.47 ±20%, 100WVDC, Mylar (Later Production)
C504	35100-169	2700pf
C505	35100-134	470pf
C508, C510, C511	35100-127	.1, +80%, -20%, 100WVDC
C509	35091-107	1000, +100%, -10%, 35WVDC Electrolytic
C513	35100-127	.1, +80%, -20%, 100WVDC (Later Production Only)
<b>DIODES</b>		
D501	36639-000	18V ±10%, Zener 1N4746, 1N4746A (Original Production)
D501	36549-000	Silicon Rectifier, 1Adc, 100PIV 1N4002 (Later Production)
D502	36549-000	Silicon Rectifier, 1Adc, 100PIV 1N4002 (Later Production Only)
<b>COIL</b>		
L501	30062-000	1 microhenry choke (Original Production Only)
	8169-W2	Wire, jumper (used in lieu of L501 in later production units)
<b>CONNECTORS</b>		
P501	39619-101	Plug, 5-pin, PC board mounting, Molex type A-2373-5M
<b>RESISTORS</b>		
R501	33082-104	100K
R502	33082-560	56
R503	33101-010	1 ±10%, ½ watt, Carbon Composition
R504	33101-101	100 ±10%, ½ watt, Carbon Composition
R505, R508	33082-273	27K
R506	33082-395	3.9M
R507	33082-333	33K

Schematic Symbol	NuTone Part No.	Description
<b>TRANSISTOR</b>		
Q501	36580-000	NPN Planar Silicon, Low-Noise Texas Inst. SKA-4220 Motorola SPS-1216 National Semiconductor SMO-7329
<b>INTEGRATED CIRCUIT</b>		
Z501	36667-000	Comple audio amplifier, including voltage amplifier, inverter, class B linear output. SGS-ATES TBA810AS
	39622-000	Heat Sink, for Z501
	39623-000	Spacer, heat sink
	31990-015	Screw, #4-40 × 1/2" Ph. Pan "M" Heat Sink Mounting
	11159-003	Nut, #4-40 Hex for Heat Sink Mounting Screws
<b>DUAL AUDIO PREAMP &amp; INTERCOM PREAMP MODULE</b>		
	42012-000	Complete Assembly
<b>CAPACITORS</b>		
C601, C603, C607, C614, C615, C618, C619, C626, C627, C633	35091-102	10, +100%, -10%, 16WVDC, Electrolytic
C602	35100-163	6800pf ±20%
C604	35100-156	2200pf
C605, C613 C616, C625, C628	35091-103	4.7, +100%, -10%, 25WVDC, Electrolytic
C606, C617	35100-127	.1, +80%, -20%, 100WVDC
C608, C620	35091, 104	33, +100%, -10%, 25WVDC, Electrolytic
C609, C621	35055-105	.0047, 400WVDC, Polyester Film
C610, C622	35055-106	.047, 250WVDC, Polyester Film
C611, C624	35055-107	.0015, 250WVDC, Polyester Film
C612, C623	35055-108	.015, 250WVDC, Polyester Film
C629-C632	35091-108	100, +100%, -10%, 25WVDC, Electrolytic
C634-C635	35100-157	120pf, +80%, -20%
C636	35100-145	1000pf,
<b>DIODES</b>		
D601, D602	36549-000	Silicon Rectifier 1Adc, 100PIV 1N4002
<b>CONNECTORS</b>		
P601, P602	39619-104	Plug, 14-pin, PC board mounting, Colex type A-2373-5M
<b>TRANSISTORS</b>		
Q601-Q605 Q607-Q610	36580-000	NPN Planar Silicon, Low-Noise Texas Inst. SKA-4220 Motorola SPS-1216 National Semiconductor SMO-7329
Q606, Q611 Q612	36613-000	NPN Silicon Motorola MPS A20 Texas Inst. TIS098
<b>RESISTORS</b>		
R101, R622, R623, R644, R647	33082-103	10K
R602	33082-221	220
R603	33206-683	68K ±20%, Metal Film

Schematic Symbol	NuTone Part No.	Description
R604, R611, R636	33082-683	68K
R605, R607, R629, R651	33082-274	270K 270K
R606, R630, R650	33082-224	220K
R608	33082-470	47
R609	Not Used	
R610, R635	33206-224	220K ±2%, Metal Film
R612, R624, R637, R646	33082-104	100K
R613, R618, R631, R638, R641, R654	33082-333	33K
R614, R633	33082-562	5.6K
R615, R634	33206-182	1.8K ±20%, Metal Film
R616, R639	33082-222	2.2K
R617, R640	34050-000	LEVEL SET Potentiometer 5K ±30%, 1/10 watt, Linear Taper, C.T.S. Corp. V-201-2SS
R619, R642	33082-183	18K
R620	33101-332	3.3K ±10%, 1/2 watt, Carbon Composition
R621, R645	33082-182	1.8K
R625, R648	33082-153	15K
R626, R652	33082-123	12K
R627, R653	33206-222	2.2K ±2%, Metal Film
R628, R649	33206-104	100K ±2%, Metal Film
R632	Not Used	
R643	33082-332	3.3K
R655, R658	33082-152	1.5K
R656, R659	33082-682	6.8K
R657	Not Used	
R660, R663	33082-101	100
R661, R662	33082-105	1M
<b>TRANSFORMER</b>		
T601	30592-000	INTERCOM INPUT Primary: .180 ohms d-c Secondary: 600 ohms d-c Better Coil & Transformer #7486
	32159-003	Bracket, T601 mounting
<b>FM MULTIPLEX DECODER MODULE</b>		
	42018-000	Complete Assembly
<b>CAPACITORS</b>		
C701	35100-127	.1, +80%, -20%, 100WVDC
C702	35091-103	4.7, +100%, -10%, 25WVDC, Electrolytic
C703	35110-106	2000pf, ±5%, 100WVDC Silver Mica
C704, C705	35100-179	3300pf
C706	35100-141	.05 +80%, -20%, 50WVDC
C707	35101-149	220pf, 100WVDC, Temperature Compensated
C708	35055-101	.47 ±20%, 100WVDC, Polyester Film
C709, C710	35055-104	.22 ±20%, 100WVDC, Polyester Film
C711	35091-105	470, +100%, -10%, 25WVDC Electrolytic
C712	35101-150	220pf ±5%, 100WVDC, Temperature Compensated
C713	35091-108	100, +100%, -20%, 25WVDC Electrolytic

(Parts List continued on page 58)

Schematic Symbol	NuTone Part No.	Description
<b>CONNECTOR</b>		
P701	39619-102	Plug, 6-pin, PC board mounting, Molex type A2373-6M
<b>TRANSISTORS</b>		
Q701	36580-000	NPN Planar Silicon, Low-Noise Texas Inst. SKA-4220 Motorola SPS-1216 National Semiconductor SMO-7329
Q702	36613-000	NPN Silicon Motorola MPS-A20 Texas Inst. TIS-98 NPC Elect. NPC-069
<b>RESISTORS</b>		
R701	33082-123	12K
R702	33082-223	22K
R703	33082-105	1M
R704	33082-152	1.5K
R705	33082-562	5.6K
R706	34041-000	MPLX DECODER INPUT Rheostat 50K $\pm$ 30%, 1/10 Watt (minimum), Linear Taper C.T.S. Corp. X-201
R707	33039-181	180 $\pm$ 10%, 1 Watt, Wirewound
R708	33100-472	4.7K $\pm$ 5%, 1/2 Watt, Carbon Comp.
R709, R710, R715	33082-392	3.9K
R711	33082-102	1K
R712	33082-153	15K
R713	34072-000	19KHz. ADJUST Rheostat 10K $\pm$ 20%, 1/2 Watt, Cermet C.T.S. Corp. 362-U
R714	33082-271	270
R716	33082-471	470
<b>INTEGRATED CIRCUITS</b>		
Z701	36668-000	FM MPLX Decoder Motorola MC-1310-P
Z702, Z703	37582-000	38KHz. Notch Filter Centralab #ES601185
<b>TERMINAL BOARD MODULE</b>		
	42011-000	Complete Assembly
<b>CONNECTORS</b>		
J801, J802	39339-107	Receptacle, 15-pin, PC board mounting, (terminals 21-35, and 6-20) Molex type A-2145-11B
J803	39339-101	Receptacle, 5-pin, PC board mounting, (terminals 1-5) Molex type A-2145-5B
<b>RESISTORS</b>		
R801, R802	33082-047	4.7
	39613-000	Brass Terminal Cap for use with Orng, Orng/W, Blk, and Blk/W Terminals
	31669-003	Screw, #6 $\times$ 3/8" (use with brass terminal caps)
	39209-003	Screw, #6 $\times$ 3/8" tapping Speaker Wiring Terminals
	39387-003	Screw, #6 $\times$ 5/8" Terminal Board Mounting
<b>MISCELLANEOUS</b>		
	47743-000	Protective/Instruction Card
	47588-000	Installation Instructions

Schematic Symbol	NuTone Part No.	Description
	47589-000	Homeowner's Operating Manual
	47590-000	Label, Room Designator, for use with Speaker Operating Mode Switches
	38632-036	Hinge Bracket, Adjustable leaf for installation in Rough-in Housing
	39326-000	Hing Pin
	22391-001	Screw, #8 $\times$ 3/8" PH Tr. Hinge Bracket mounting
	39659-000	Support Strap
	31987-000	Hook, use with support strap
	39628-000	Bracket, Installation, attach to rough-in housing
	25075-000	Screw, #6 $\times$ 3/8" Slit. RH Installation Bracket mounting
	31526-036	Screw, #6 $\times$ 1 3/4" PH, Black Master Unit mounting

## MODEL IR-14 ROUGH-IN HOUSING

42058-000	Frame Assembly Complete
39096-000	Antenna Terminal Strip
40072-000	FM Antenna Assembly
40676-000	Envelope Assembly (including 5, #6 $\times$ 3/8" frame mounting screws)
47905-000	Installation Instruction Sheet
42055-000	Power Transformer, 120Vac/ 12Vac @ 30VA
29911-000	Power Transformer 230M (X302N) FOR EXPORT USE ONLY

## SPEAKERS

36106-000	Speaker, Deluxe, 8-inch, 8-ohm: Used in SS-40
42076-000	SS-40 Frame and Grille Assembly
36074-000	Speaker, 8-inch, 16-ohm, 20-watt peak, Ceramic Magnet, Weatherproof. Used in IS-77; and IS-79
36089-000	Speaker, 8-inch, 25-ohm voice coil. Used In: ISA-48D; ISA-48L; SS-48C; SS-48; and IS-78
36090-000	Speaker, 5-inch, 25-ohm voice coil. Used In: ISA-45; ISA-47
36076-000	Speaker, 3 1/2-inch, 16-ohm, weatherproof: Used in door speakers.

## CONTROLS

### MONAURAL

	41795-000	Control Board, complete PC Assembly. Used in: ICA-41; ISA-45; ISA-47; ISA-48D; and ISA-48L (See Figure 24)
R1	34075-000	Variable Resistor, 200-ohm VOLUME CONTROL
R2	33101-103	10K $\pm$ 10%, 1/2 watt, Carbon Comp.
R3	33101-221	220 $\pm$ 10%, 1/2 watt, Carbon Comp.

Schematic Symbol	NuTone Part No.	Description
S1	34637-000	Switch, DPDT, Push, Momentary; DOOR LISTEN
S2, S3, S4	34636-000	Switch, 4PDT, Push, Momentary; DOOR TALK, I/P LISTEN, I/P TALK
	39557-000	Knob, for Volume Control R1
	38729-000	Operating Arm, for talk/listen switches S1; S2; S3; and S4
<b>STEREO</b>		
	41994-000	Control Board, complete PC Assembly. Used in: SR-42/ and SS-48C
R2	33101-103	10K $\pm$ 10%, 1/2 watt, Carbon Comp.
R3	33101-221	220 $\pm$ 10%, 1/2 watt, Carbon Comp.
S1	34637-000	Switch, DPDT, Push Momentary; DOOR LISTEN
S2, S3, S4	34636-000	Switch 4PDT, Push, Momentary; DOOR TALK, I/P LISTEN, I/P TALK
	38729-000	Operating Arm, for talk/listen switches S1; S2; S3; and S4
R1A, R1B	34075-000	Dual, Concentric 200-ohm VOLUME CONTROL
	39607-000	Knob, outer, Channel A (RIA) Volume Control
	39608-000	Knob, inner, Channel B (RIB) Volume Control

Schematic Symbol	NuTone Part No.	Description
<b>ISA-47 5-IN. SPEAKER CLOCK TIMER</b>		
<b>CLOCK TIMER PROTECTION CIRCUIT</b>		
	41600-000	Complete Assembly
C31	35100-127	.1, 100WVDC
D31	36549-000	Silicon Rectifier, 1Adc, 100PIV. 1N4002
J31	39421-101	3-pin Receptacle
P31	41601-000	Plug and Wire, complete assembly
R31	33101-103	10K $\pm$ 10%, 1/2 watt, Carbon Comp.
R32	33101-223	22K $\pm$ 10%, 1/2 watt, Carbon Comp.
R33	33101-182	1.8K $\pm$ 10%, 1/2 watt, Carbon Comp.
VR31, VR32	39438-000	Neon Lamp, 105-125 Vac/dc G.E. #C2A-ET(NE2H3T)
<b>CLOCK &amp; CONTROL CIRCUIT</b>		
	36094-000	Digital Clock Assembly
	38611-000	Ground Strap
	32603-000	Interlock Plug/Cord
	17351-000	End Connector
	39407-000	Knob, MODE SWITCH TIME/ALARM SET
R21/VR21 R22/VR22	41582-000	Complete Assembly, lamps and resistors Resistors 22Kohm each. Lamps. 125V, 2.6ma, 1/2 watt G.E. D-2A