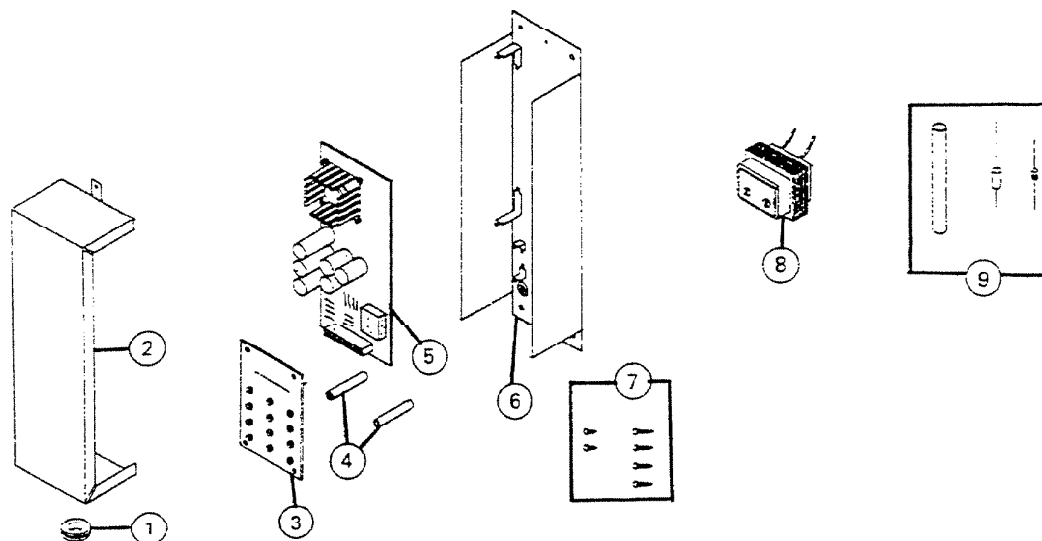


PARTS LIST

EFFECTIVE DATE	MODEL	PRODUCT GROUP
JUNE 1981	I-600 NEW	ELECTRONICS



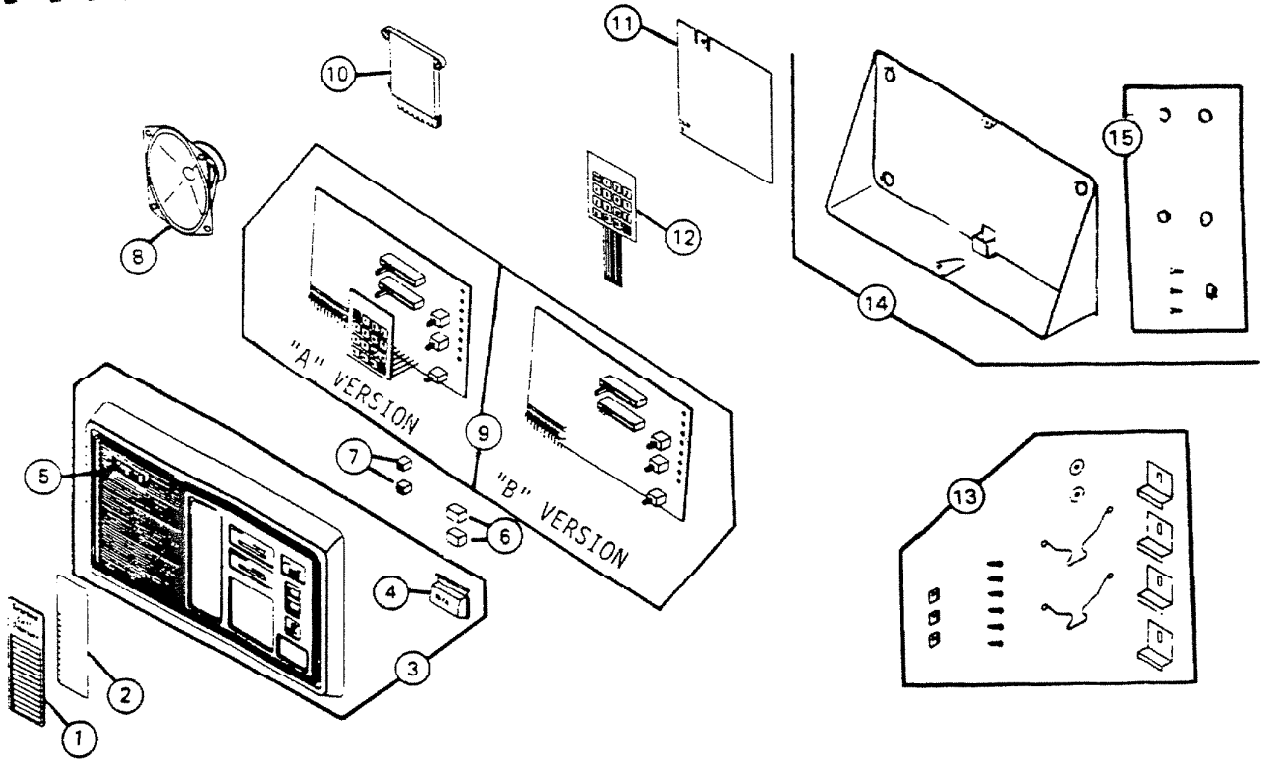
REF.	ORIGINAL PART NO.	PART DESCRIPTION	MODEL USED ON	CURRENT REPLACEMENT PART NO.
1	39705	GROMMET	I-600	39705-000
2	39824	COVER	I-600	39824-005
3	42515	P.C. Board Assy.-TERM. BD.	I-600	42515-000
4	39683	SPACER (1) 2-REQUIRED	I-600	39683-000
5	42561	P.C. BOARD ASSY.-CENTRAL CONT.	I-600	42561-000
6	39823	BASE HOUSING	I-600	39823-005
7	42572	ENVELOPE ASSY.	I-600	42572-000
8	29910	TRANSFORMER	I-600	29910-000
9	42550	ENVELOPE ASSY.	I-600	42550-000

NuTone

NOTE: Always order by current part number.
PL-I-600

PARTS LIST


EFFECTIVE DATE	MODEL	PRODUCT GROUP
JUNE 1988	I-614, I-614B I-614L, I-614BL REVISED	ELECTRONICS



REF	ORIGINAL PART NO	PART DESCRIPTION		MODEL USE D UN	CURRENT REPLACEMENT PART NO
1	35204	LENS		I-614, I-614L	35204-000
2	48464	NAMECARD		I-614, I-614L	48464-000
3	42755	FRONT PANEL ASSEMBLY	"A" VERSION	I-614	42755-000
	42909		"A" VERSION	I-614L	42909-000
	0559A		"B" VERSION	I-614	0559A-000
	-----		"B" VERSION	I-614L	Void-Not Available
4	38996	PUSHBUTTON - TALK	"A" VERSION	I-614, I-614L	38996-000
	8251A		"B" VERSION	I-614, I-614L	8251A-000
5	39331	NAMEPLATE (Early Models Only)		I-614	39331-000
6	35202	PUSHBUTTON (1) 2 Req.	"A" VERSION	I-614, I-614L	35202-000
	8249A		"B" VERSION	I-614, I-614L	8249A-000
7	35460	KNOB - SLIDE (1) - 2 REQUIRED	"A" VERSION	I-614, I-614L	35460-000
	8247A		"B" VERSION	I-614, I-614L	8247A-000

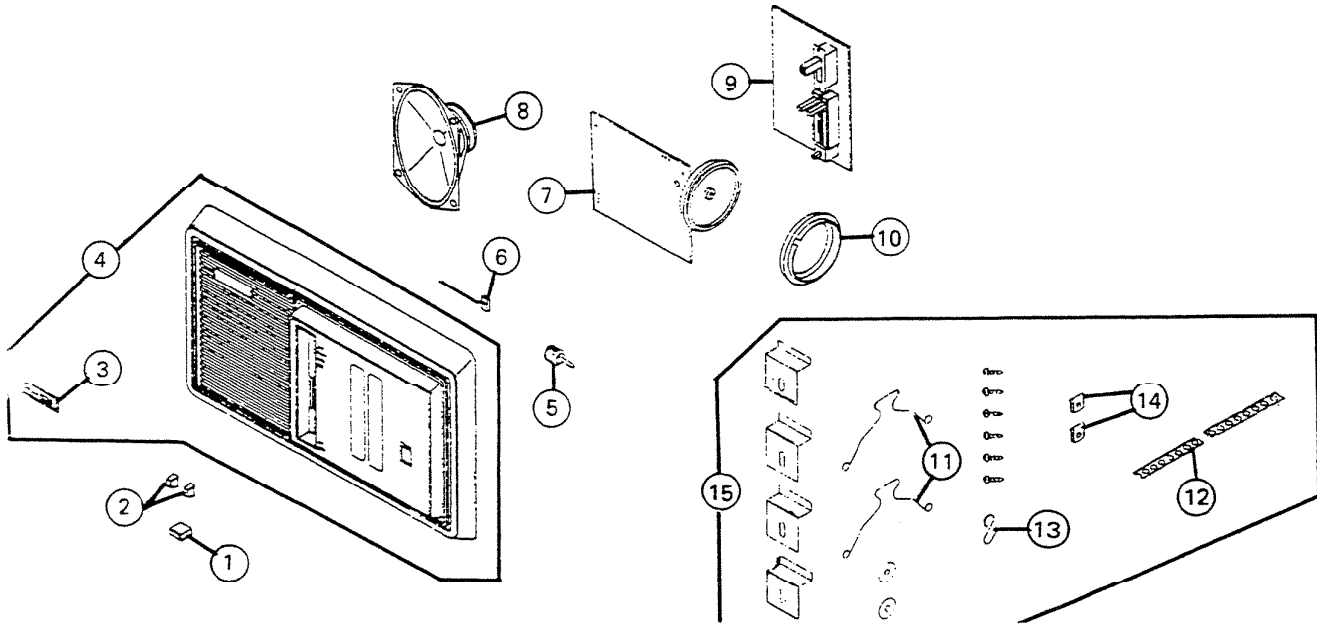
NuTone

NOTE: Always order by current part number.

REF	ORIGINAL PART NO	PART DESCRIPTION		MODEL USED ON	CURRENT REPLACEMENT PART NO
8	36119	SPEAKER		I-614, I-614L	36119-000
9	42501	P.C. BOARD	"A" VERSION - W/KEYPAD	I-614, I-614L	42501-REB
	8264A		"B" VERSION - BOARD ONLY	I-614, I-614L	Void - Not Available
10	38997	BEZEL	"A" VERSION	I-614, I-614L	39903-000
11	48637	STATION SELECTOR & WIRING LABEL		I-614, I-614L	48637-000
12	8255A	KEYPAD W/CABLE	"B" VERSION	I-614, I-614L	8255A-000
13	42490	HARDWARE SET		I-614, I-614L	42490-000
14	35203	BASE		I-614B	35203-000
	35462			I-614BL	35462-000
15	42480	ENVELOPE ASSEMBLY		I-614B I-614BL	42480-000
		DECAL FOR KEYPAD "A" VERSION			48502-000
					 NOTE Always order by current part number!

PARTS LIST

EFFECTIVE DATE	MODEL	PRODUCT GROUP
JUNE 1981	M-640 NEW	ELEC-TRONICS



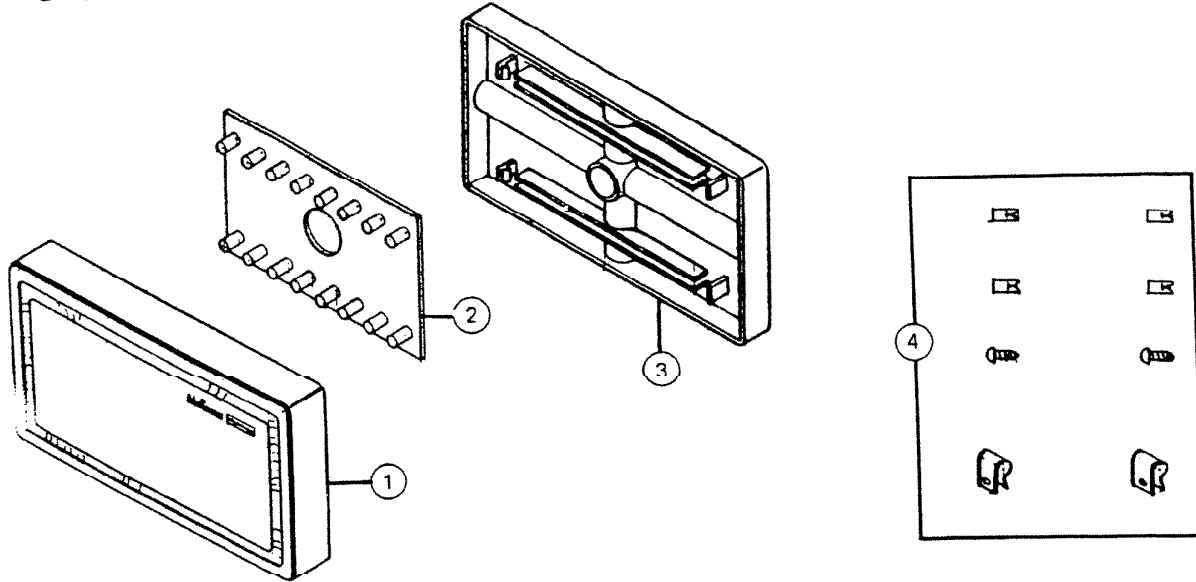
REF.	ORIGINAL PART NO.	* PART DESCRIPTION	MODEL USED ON	CURRENT REPLACEMENT PART NO.
1	35233	BUTTON - OFF/ON	M-640	35233-000
2	35219	KNOB (1) VOL. or TONE	M-640	35219-000
3	39331	NAME PLATE	M-640	39331-000
4	42522	PANEL ASSY.	M-640	42522-000
5	35231	TUNING WHEEL	M-640	35231-000
6	39786	DIAL POINTER	M-640	39786-000
7	42567	TUNER P.C. BOARD ASSY.	M-640	42567-000
8	36119	SPEAKER 16 OHM	M-640	36119-000
9	42565	P.C. BOARD ASSY - RADIO	M-640	42565-000
10	35220	FRICTION BAND-TUNER	M-640	35220-000
11	35210	SPRING (1) 2 REQUIRED	M-640	35210-000
12	31986	STRAP	M-640	69808-000
13	31987	HOOK	M-640	31987-000
14	64823	SPRING CLAMP (1)	M-640	64823-000
15	42490	HARDWARE BAG ASSY.	M-640	42490-000

NuTone

NOTE: Always order by current part number.

PARTS LIST

EFFECTIVE DATE	MODEL	PRODUCT GROUP
JUNE 1981	I-650 NEW	ELECTRONICS



REF	ORIGINAL PART NO.	* PART DESCRIPTION	MODEL USED ON	CURRENT REPLACEMENT PART NO.
1	35206	COVER-TERMINAL BOARD	I-650	35206-000
2	42478	TERMINAL BOARD ASSY.	I-650	42478-000
3	35205	BASE-TERMINAL BOARD	I-650	35205-000
4	42479	ENVELOPE ASSY. <u>CONTAINS</u> 16-TERMINAL CAPS 2-SCREWS 2-CABLE CLAMPS	I-650	42479-000

NuTone Division
Scovill
Printed in U.S.A.

NOTE: Always order by current part number.
PL - I 650

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 farads (10^{-6}) $\pm 10\%$, 500Vdc, Ceramic Disc, unless otherwise noted.

p = pico = 10^{-12}

Schematic Symbol	NuTone Part No.	Description	Schematic Symbol	NuTone Part No.	Description
MODEL I-600					
POWER SUPPLY/DOOR SPKR. CONTROL					
	38881-000	Base Housing (Original Production)			
	39823-000	Base Housing (Later Production)			
	48524-000	Label, Door Station Identity			
	38882-000	Cover (Original Production)			
	39824-000	Cover (Later Production)			
	39705-000	Grommet			
T1	8700-900	NuTone Model X301N 120/16 Vac, 30VA, Automatic-reset overload			
CONTROL CIRCUIT MODULE					
	42513-000	Complete Assembly (Original Production)			
	42561-000	Complete Assembly (Later Production)			
	37738-000	PC Board (Original Production)			
	37750-000	PC Board (Later Production)			
CAPACITORS					
C201	35091-107	1000 $\pm 100\%$, -10% , 35WVDC, Electrolytic			
C202, C203	35091-118	1000 $\pm 50\%$, -10% , 25WVDC, Electrolytic (Early Production Units, and must be used when Fairchild Type A78H15SC is used as Voltage Regulator Z205.)			
C202, C203	Not Used	(In later production units, i.e. when LAMBDA Type LAS 1415 is used as Voltage Regulator Z205.)			
C204-C206	35091-105	470 $\pm 100\%$, -10% , 25WVDC, Electrolytic			
C207	35091-106	2.2 $\pm 20\%$, 25WVDC, Electrolytic (Original Production)			
C207	Not Used	(Later Production)			
C208, C209	35091-106	2.2 $\pm 20\%$, 25WVDC, Electrolytic			
C210	35091-103	4.7 $\pm 100\%$, -10% , 25WVDC, Electrolytic			
C211	35125-104	.82 $\pm 5\%$, 35WVDC, Tantalum			
C212, C213	35100-145	.001			
C214-C217	35100-139	.01 $\pm 80\%$, -20% , 50V			
C218	35100-159	.01			
C219-C223	35100-146	.05 $\pm 20\%$, 50V			
C224, C225	35100-127	.1 $\pm 80\%$, -20% , 50V			
C226	35100-159	.01			
C227	35100-127	.1 $\pm 80\%$, -20% , 50V			
C228	35100-127	.1 $\pm 80\%$, -20% , 50V (Original Production)			
C228	35055-101	.47 $\pm 20\%$, 100V, Polyester Film (Later Production)			
C229, C230	35100-187	.005			
C231	35100-155	.0027 $\pm 80\%$, -20%			
C232	Not Used	(In original production units, i.e. when Fairchild Type A78H15SC is used as Voltage Regulator Z205.)			
C232	35091-108	100, $\pm 100\%$, -10% , 25WVDC, Electrolytic (Used in later production units, i.e. when LAMBDA Type LAS 1415 is used as Voltage Regulator Z205.)			
DIODES					
D201-D204	36608-000	Silicon Rectifier, 3 Adc, 100 PIV Power Supply Bridge Rectifier Motorola MR-502			
D205-D208	36549-000	Gen. Inst. 1N540Z Silicon Rectifier, 1 Adc, 100 PIV 1N4002			
			RELAYS		
K201	39775-000	TALK/LISTEN: 4PDT; normally in listen, momentary talk; contact rating 60W, 100VA, 220V, 2 Aac/dc; coil voltage nominal 12V, minimum pull-in 8.4V, maximum 21V. ARROW M NF412V			
			CONNECTORS		
J201	39339-110	Receptacle, 12-pin; to Terminal Board			
P202, P203	39330-102 32687-W7	Connector, 7-post, Station Identity Wire Assy, Station Identity connect			
			TRANSISTORS		
Q201	36590-000	NPN Planar Silicon Darlington Motorola MPS-A13			
Q202	36509-000	PNP Planar Silicon Darlington Motorola MPS-A65 Fairchild TWN0264			
			RESISTORS		
R201	33039-010	1 $\pm 10\%$, 1-watt, wirewound			
R202	33039-102	1K $\pm 10\%$, 1-watt, wirewound			
R203, R204	33082-102	1K			
R205, R206	33082-473	47K			
R207	33039-561	560 $\pm 10\%$, 1-watt, wirewound			
R208, R209	33082-563	56K			
R210-R212	33082-223	22K			
R213	33082-683	68K			
R214-R222	33082-104	100K			
R223, R224	33039-100	10 $\pm 10\%$, 1-watt, wirewound			
R225, R226	33082-224	220K			
R227	33082-683	68K			
R228	33082-474	470K			
R229	34042-000	0-100K $\pm 30\%$, 0.1-watt, potentiometer, 225° minimum rotation. C.T.S. Corp. Type X-201 Stackpole Carbon Co. #1556			
R230	33082-223	22K			
R231	33082-104	100K			
R232	Not Used	(Original Production)			
R232	33039-010	1 $\pm 10\%$, 1-watt, wirewound (Later Production)			
			INTEGRATED CIRCUITS		
Z201	36681-000	NOR Gate, Dual, 4-input Motorola MC14002CP			
Z202	36658-000	Quad Bilateral Switch RCA CD4002AE			
Z202	36658-000	Quad Bilateral Switch Motorola MC14066CP			
Z203	36700-000	RCA CD4066BE Operational Amplifier (OpAmp), Talk Preamplifier Motorola MC1741CP1			
Z204	36641-000	Audio Amplifier National Semiconductor LM380N			
Z205	36717-000	Original Production, (use with C202 and C203). 15Vdc Voltage Regulator Fairchild A78H15SC			
Z205	36720-000	Later Production, (use with C232). 15Vdc Voltage Regulator LAMBDA LAS1415			
Z206	36715-000	4-Bit Latch/4-16 Line Decoder Motorola 14514BP			
			I.C. SOCKETS (DIP)		
	39810-000	8-Pin			
	39811-000	14-Pin			
	39791-000	24-Pin			

Schematic Symbol	NuTone Part No.	Description
HEAT SINK		
	38994-000	For Z205 Voltage Regulator Wakefield Eng. #689-100B2 Thermalloy #6003B-2
	64973-003	Screw, #6 x 3/8 Std. Pan Hd. #25 for Heat Sink Mounting
	11077-003	Hex Nut #6-32, for Heat Sink mounting screws
	10333-000	Washer, fibre insulating, for Heat Sink mounting

Schematic Symbol	NuTone Part No.	Description
TERMINAL BOARD		
	42515-000	Complete Assembly
	37743-000	Printed Circuit Board
	39209-003	Screw, #6 x 3/8 Std. Pan Hd. Terminal Board Connecting
	20257-003	Screw, #8-32 x 2 1/4" Std. Rd. Hd. Terminal Board mounting retainer
	18028-015	Nut, #8-32 Hex for Terminal Board mounting screws
	39683-000	Standoffs, plastic Terminal Board Mounting
C299	35066-101	Capacitor, .1 ±20%, 150V, Mylar tubular
D209	36549-000	Diode, Silicon Rectifier 1 Adc, 100 PIV 1N4002
P201	39338-106 (Two Used)	6-Pin male connector post Assy. (12-pin in-line, connect Terminal Board to Control PC Board)
R299	33101-561 39818-000	Resistor, 560, 1/2-watt Carbon Film Insulating tubing, for C299 and R299
	42550-000	(Original Production) Envelope Assembly, contains C299, R299 and insulating tubing.
RV201-RV209	36719-102	Varistor, 47V GE V47ZA-1

Schematic Symbol	NuTone Part No.	Description
MISCELLANEOUS		
	48538-000	Homeowners Manual
	48525-000	Installation Instructions
	48584-000	Installation Instructions (Supplement)
	42572-000	Envelope Assembly, including two, #6 x 1/4 Std. Rd. Hd. Cover Mounting Screws
	16269-003	Screw, #6 x 1/2, Std. Rd. Hd. Unit installation mounting

MODEL I-614 MASTER STATION

	42500-000	Front Panel, complete assembly
	38996-000	Pushbutton, TALK BAR, for TALK/LISTEN switch S4
	39331-000	Nameplate

Schematic Symbol	NuTone Part No.	Description
PRINTED CIRCUIT		
	42501-000	Complete Assembly
	37737-000	PC Board

Schematic Symbol	NuTone Part No.	Description
CAPACITORS		
C101	35100-127	.1 +80%, -20%, 50V
C102	35055-101	.47 ±20%, 100V, Polyester Film
C103	35100-127	(Original Production) .1, +80%, -20%, 50V
C103	35100-159	(Later Production) .01
C104	35100-127	.1 +80%, -20%, 50V
C105	35100-159	.01
C106, C107	35100-127	.1 +80%, -20%, 50V
C108	35100-166	.01, ±20%, 25V
C109, C110	35100-159	.01
C111-C115	35100-146	.05 ±20%, 50V
C116, C117	35100-145	.005
C118	Not Used	
C119, C120	35055-101	.47 ±20%, 100V, Polyester Film
C121	35100-159	.01
C122	35091-105	(Original Production) 470 +100%, -10%, 25WVDC, Electrolytic
C122	35091-117	(Later Production) 1000 +100%, -10%, 35WVDC, Electrolytic

Schematic Symbol	NuTone Part No.	Description
C123	35091-105	470 +100%, -10%, 25WVDC, Electrolytic
C124, C125	35091-108	100 +100%, -10%, 25WVDC, Electrolytic
C126	35091-110	22 +100%, -10%, 16WVDC, Electrolytic
C127, C128	35091-103	4.7 +100%, -10%, 25WVDC, Electrolytic
C129-C132	35091-106	2.2 ±20%, 25WVDC, Electrolytic
C133, C134	35100-138	.005 ±20%, 100V

Schematic Symbol	NuTone Part No.	Description
DIODES		
D101-D107	36549-000	Silicon Rectifier, 1 Adc, 100 PIV 1N4002
D108-D122	36617-000	Silicon Switching, 50 mA dc, 75 PIV 1N914
D123	36676-000	LED, Red, BUSY INDICATOR, 50 mA, 5 PIV Xcitor #XC556-2
	0008-S08	Insulating Sleeve for D123 leads
D124	36549-000	Silicon Rectifier, 1 Adc, 100 PIV 1N4002

Schematic Symbol	NuTone Part No.	Description
RELAYS		
K1	39775-000	TALK/LISTEN: 4PDT, normally in LISTEN, momentary TALK; contact rating 60W, 100VA, 220V, 2 Aac/dc; coil voltage nominal 12V, minimum pull-in 8.4V, maximum 21V. ARROW M NF412V

Schematic Symbol	NuTone Part No.	Description
CONNECTORS		
P1	39776-000	Post Connector Assy including 14 station identilly terminals

Schematic Symbol	NuTone Part No.	Description
TRANSISTORS		
Q101, Q102	36590-000	NPN Silicon, Planar, Darlington, Motorola MPS-A13

Schematic Symbol	NuTone Part No.	Description
RESISTORS		
R101	33039-010	1 ±10%, 1-watt, wirewound
R102	33039-100	(Original Production) 10 ±10%, 1-watt, wirewound
R102	33039-120	(Later Production) 12 ±10%, 1-watt, wirewound
R103	33039-470	47 ±10%, 1-watt, wirewound
R104-R110	33082-102	1K
R111	33082-272	2.7K (Original Production)
R111	33082-101	100
R112	33082-103	10K
R113	33082-472	4.7K
R114	33082-103	10K
R115	33082-333	33K (Original Production)
R115	33082-683	68K (Later Production)
R116-R119	33082-473	47K
R120	33082-563	56K
R121	33082-473	47K
R122-R124	33082-683	68K
R125	33082-823	82K
R126, R127	33082-563	56K
R128-R131	33082-104	100K
R132	33082-224	220K (Original Production)
R132	33082-474	470K (Later Production)
R133-R140	33082-104	100K
R141-R143	33082-224	220K
R144	33082-224	220K (Original Production)
R144	33082-104	100K (Later Production)
R145-R146	33082-824	820K
R147	33082-474	470K
R148	33082-474	470K (Original Production)
R148	33082-564	560K (Later Production)
R149, R150	33082-105	1M
R151	33082-225	2.2M (Original Production)
R151	33082-335	3.3M (Later Production)
R152	33039-470	47 ±10%, 1-watt, wirewound
R153-R154	34679-000	0-100K ±20%, 1/2-watt, Potentiometer, slide type. INTERCOM LISTEN VOLUME; RADIO VOLUME, modified log taper Stackpole type 5020
	39773-000	Knob, for slide pots R153 and R154

Schematic Symbol	NuTone Part No.	Description
R155	34043-000	0-500K \pm 30%, linear taper, 0.1-watt, 255° rotation. ANNUNCIATOR TONE LEVEL SET CONTROL CTS Corp. Type X-201
R156	33082-104	100K
R157	33082-473	47K
R158	33082-223	22K (Original Production)
R158	33082-153	15K (Later Production)
R159	33082-104	100K
R160	33082-272	2.7K
R161	Not Used	(Original Production)
R161	33082-104	100K (Later Production)
VARISTORS		
RV101-RV107	36719-102	Varistor, 47V GE V47ZA-1
SWITCHES		
S1	39514-000	DPDT, double-wipe, break before make (SPST in this operation) RADIO ON/OFF Switchcraft 11A-1352
S2	34676-000	DPDT LISTEN-IN ON/OFF, normally OFF, interlock in ON position. Push to activate. Centralab Electronics
S3	34676-000	DPDT, PRIVATE ON/OFF, normally OFF, interlocking in ON position. Push to activate (same as S2)
S4	34677-000	DPDT, TALK/LISTEN, normally in LISTEN; momentary in TALK
	35202-000	Knob, pushbutton for S2 and S3
INTEGRATED CIRCUITS		
Z101	36700-000	Operational Amplifier (OpAmp) TALK PREAMPLIFIER MOTOROLA MC1741CP1
Z102	36641-000	Audio Amplifier National Semiconductor LM380N
Z103	36633-000	Oscillator/Timer Motorola MC14541CP
Z104	36715-000	4-Bit Latch/4-16 Line Decoder Motorola 14514BP
Z105	36713-000	16-Key to 4-Bit Encoder National Semiconductor MM74C922
Z106	36658-000	Quad Bilateral Switch Motorola MC14066CP RCA CD4066AE
Z107	36666-000	NAND Gate, Quad, 2-Input Motorola MC14011CP RCA CD4011AE
Z108	36661-000	NOR Gate, Dual, 4-Input Motorola MC14002CP RCA CD4002AE
Z109	36677-000	Hex Schmidt Trigger Inverter Motorola MC14684BCP
I.C. SOCKETS (DIP)		
	39810-000	8-Pin
	39811-000	14-Pin
	39700-000	18-Pin
	39791-000	24-Pin
KEYBOARD		
	39774-000	4 x 5 Matrix Switch Pad (4 x 4 switches used in this unit) Texas Inst. #11KS121R
	48502-000	Keyboard Front Label
	38997-000	Bezel, Keyboard mounting
	92635-004	Screw, 6-9 x 3/8" PH for Keyboard Bezel mounting
SPEAKER		
	36119-000	3" x 5" Oval, 16-ohm voice coil Pioneer #A132BP45
	32556-W67	Black Speaker wire with terminals
	32558-W3	Blue Speaker wire with terminals
	39789-003	Screw, 6-20 x 5/16" PH/Sit, Speaker mounting

Schematic Symbol	NuTone Part No.	Description
MISCELLANEOUS		
	48464-000	Label Card, Call Directory
	35204-000	Lens, Engraved, Call Directory
	42490-000	Bag Assembly, Installation Hardware
	48589-000	Installation Instructions
	39708-003	Screw, 6-20 x 3/8" PH/Sit, Wiring terminal connectors and PC Board mounting
	48637-000	Protective Card with station selection and wiring diagram
I-614R ROUGH IN HOUSING		
	42488-005	"A" Housing Assy. Complete
	42490-000	Hardware Bag Assy.
	25511-015	Screw #6 x 1/4 Sit. Pan Hd. #23
	35210-000	Spring
	64823-000	Spring Clamp
	31986-000	Strap
	31987-000	"S" Hook
	48478-000	Instruction Sheet
I-614B MASTER STATION BASE ASSEMBLY		
	85203-000	Base
	42480-000	Envelope Assy.
	7220-000	Screw #4 x 3/8 Sit. Pan Hd. Type "A"
	39680-000	Foot Bumper
	39247-000	Cable Clamp
	48455-000	Instruction Sheet
MODEL M-640 AM/FM RADIO RECEIVER (Original Production Units)		
	42522-000	Front Panel Assembly
	39331-000	Nameplate
	35231-000	Tuning Wheel
	42523-000	Dial Cord Assembly
	39786-000	Pointer, AM/FM Dial
	39262-000	Spring, AM/FM Dial Pointer
	39327-000	Pulley, Dial Cord
	39135-000	Cap, Pulley
	39465-015	Screw, #6 x 1/4", Slotted Hex Pulley retention
	31396-000	Washer, #6
	35220-000	Friction Band, tuning drive
	42491-000	Cable, Coaxial Assembly Complete, Antenna Lead-in Shield, RF
	39598-003	Speaker, 3" x 5" Oval, 16-Ohm voice coil
	36119-000	Pioneer #A132BP45
	39789-003	Screw, 6-20 x 5/16" PH/Sit, Speaker mounting, amplifier PC Board mounting, and wiring terminal connectors
AM/FM TUNER MODULE		
	41881-000	Complete Assembly
	37655-000	PC Board
CAPACITORS		
C301	35100-174	150 pf
C302	35101-142	15 pf, temperature compensated
C303A-J	35092-000	Variable AM/FM Tuning Gang
C304	35100-120	.001
C305	Not Used	
C306	35100-139	.01 +80%, -20%, 50V
C307	35100-120	.001
C308	35101-140	10 pf, temperature compensated
C309	35100-138	.005 \pm 20%, 100V
C310	35101-134	3.3 pf, temperature compensated
C311	35100-125	220 pf
C312	35101-142	15 pf, temperature compensated
C313	35100-139	.01 +80%, -20%, 50V
C314	35101-147	1.2 pf \pm 0.25 pf, temperature compensated
C315	35100-125	220 pf
C316, C317	35100-139	.01 +80%, -20%, 50V

Schematic Symbol	NuTone Part No.	Description
C318	35076-101	.22 +80%, -20%, 12V
C319	35100-156	.0022
C320	35091-109	47 +100%, -10%, 16WVDC Electrolytic
C321	35100-139	.01 +80%, -20%, 50V
C322	35101-141	5.6 pf, temperature compensated
C323	Not Used	
C324	35101-135	7.5 pf, temperature compensated
C325	35101-140	10 pf, temperature compensated
C326	35100-138	.005 ±20%, 100V
C327	35101-126	1.2 pf, ±0.25 pf, temperature compensated
C328	35090-000	1-8 pf, 100VAC, Oscillator Trimmer ALPS #CTY 114B11
C329, C330	Not Used	
C331	35076-106	.1 ±20%, 25V
C332	35100-139	.01 +80%, -20%, 50V
C333, C334	35100-141	.05 +80%, -20%, 50V
C335	35076-106	.1 ±20%, 25V
C336	35100-141	.05 +80%, -20%, 50V
C337, C338	35091-109	47 +100%, -10%, 16WVDC, Electrolytic
C339	35091-103	4.7 +100%, -10%, 25WVDC, Electrolytic
C340	35076-108	.02 ±20%, 16V
C341	35100-139	.01 +80%, -20%, 50V
C342	35100-141	.05 +80%, -20%, 50V
C343	35101-148	22 pf, 1,000V
C344	35101-141	5.6 pf, temperature compensated
C345	35100-175	56 pf
C346	35100-139	.01 +80%, -20%, 50V
C347-C354	Not Used	
C355	35101-140	10 pf, temperature compensated
C356	35100-120	.001
C357	35100-134	470 pf
CERAMIC FILTERS		
CF301	36109-000	10.7 MHz. FM IF, Ceramic Murata Corp. SFE10.7MS23
CF302, CF303	36087-000	455 KHz. AM IF, Ceramic Murata Corp. SFB4550
DIODES		
D301	36617-000	Silicon Switching, 50 mA, 75 PIV 1N914 Texas Inst. 1N4148
INTEGRATED CIRCUITS		
IC301	36623-000	Monolithic IC, FM IF Amplifier Detector, Audio Preamp, etc. RCA CA3089E
IC302	36622-000	Monolithic IC, AM Oscillator/Mixer, IF Amplifier, Detector, Audio Preamp, etc. RCA CA3088E
CONNECTORS		
J1	39339-101	Receptacle, 5-pin PC board mounting, Voltage and signal connector to Amplifier Board. Molex type A-2141-5b
J6	Not Used	(Space shown on PC Board)
RF & IF COILS AND TRANSFORMERS		
L301	30087-000	FM Ant. Primary
L301	30086-000	AM Ant. Trap
L301	30096-000	FM Ant. Secondary
L302	30097-000	FM RF Drain Tank
L303	30088-000	FM Oscillator
	30073-000	Coil Form, for L301, L302 and L303
	31915-000	Tuning Slug, for L301, L302, and L303
L304	30092-000	10.7 MHz adjustable quadrature coil
L305-L307	30091-101	22 microhenry, fixed inductor
L308, L311	30062-000	10.7 MHz. RF Choke
L309	30597-000	Transformer, AM Ant.
L310	30598-000	Transformer, AM Oscillator
T301A	30590-000	10.7 MHz transformer primary, FM Mixer collector tank

Schematic Symbol	NuTone Part No.	Description
T301B	30591-000	10.7 MHz. transformer secondary, IF filter input
T302	30589-000	IF, AM 455 KHz. transformer
TRANSISTORS		
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. SKA4231 Motorola SPS-4448 National Semi. SM-43-049
Q303	36581	NPN Planar Silicon, FM Oscillator Texas Inst. SKA-4230 National Semi. SM-43-050
RESISTORS		
R301	33082-564	560K
R302	33082-224	220K
R303	33082-154	150K
R304	33082-391	390
R305	33082-331	330
R306	33082-333	33K
R307	33082-392	3.9K
R308	33082-102	1K
R309	33082-470	47
R310	33082-331	330
R311	33082-392	3.9K
R312	33082-272	2.7K
R313	33082-153	15K
R314	33082-104	100K
R315	34043-000	0-500K variable trim potentiometer. FM SQUELCH CONTROL CTS Corp. Type X-201
R316	33082-470	47
R317	Not Used	
R318	33082-822	8.2K
R319, R320	33082-103	10K
R321	33082-182	1.8K
R322	33082-331	330
R323	33082-332	3.3K
R324	33082-331	330
R325	33082-681	680
R326	33082-222	2.2K
R327	33082-393	39K
R328	33082-103	10K
R329	33082-182	1.8K
R330	33082-101	100
INDICATOR LAMP		
VR301	39438-000	Neon, 105-125Vdc/ac. ¼ watt; 1.9 mA. GE "Glow Lamp" #C2A-ET (NE-2H3T), or equivalent
AMPLIFIER MODULE		
	42524-000	Complete Assembly
	37740-000	PC Board
CAPACITORS		
C401, C402	35100-127	.1 +80%, -20%, 50V
C403	35100-140	.02 ±20%, 50V
C404	35100-127	.1 +80%, -20%, 50V
C405, C406	35091-103	4.7 +100%, -10%, 25WVDC
C407	35091-108	100 +100%, -10%, 35WVDC
C408	35100-127	.1 +80%, -20%, 50V
C409	35068-129	470 +100%, -10%, 25WVDC
C410	35091-108	100 +100%, -10%, 35WVDC
C411, C412	35100-188	100 pf
C413	35100-125	220 pf
C414	35100-127	.1 +80%, -20%, 50V
DIODES		
D401	36683-000	Light Emitting Diode (LED); Red, Forward Voltage 1.6V @ 20mA typical; 2.0Vmax. Litronix RL4403 Fairchild FLV-160
D402-D404	36549-000	Silicon Rectifier, 1A, 100PIV 1N4002

Schematic Symbol	NuTone Part No.	Description
CONNECTORS		
J401, J402	39797-000	Jack, for audio pin-plug, PHONO and TAPE connectors, PC mounting
P401	39338-000	5 Pin Assembly, to AM/FM Tuner Module
ⓐ, ⓓ	39723-000	Terminal, push-on, tuner antenna coax lead-in connector
	39708-003	Screw, interconnecting wiring terminals; #6-20 x 3/8", PH/SL "25"
TRANSISTORS		
Q401	36580-000	NPN Planar Silicon, Low-noise Motorola SPS-1216 National Semi. SMO-7329 Texas Inst. SKA-4242
Q402	36613-000	PNP Silicon Motorola MPS-A20 Texas Inst. TIS-98 NPC Elect. NPC-069
RESISTORS		
R401	Not Used	
R402	39101-027	2.7, 1/2-watt
R403	33039-010	1 ±10%, 1-watt wirewound
R404	33082-102	1K
R405	33082-222	2.2K
R406	33101-561	560, 1/2-watt
R407	33101-101	100, 1/2-watt
R408	33082-103	10K
R409	33082-104	100K
R410	33082-564	560K
R411, R412	34679-000	0 to 100K ±20%, 1/2-watt, carbon composition; variable slide-tap; VOLUME, TONE Stackpole Type 5020 Knob. for R411 and R412
R413	33082-102	1K
R414	33082-104	100K
R415	Not Used	
R416	33082-123	12K
SWITCHES		
S401	34676-000	Push for ON, interlocking release, POWER ON/OFF; 25W maximum; 0.5A @ 50Vdc/ac Button, for S401 (early production)
	35213-000	Button, for S401 (later production)
S402	35233-000	DP4T, break before make, PROGRAM SELECTOR
	34680-000	
INTEGRATED CIRCUITS		
Z401	36641-000	Audio Amplifier National Semi. LM380N
	39811-000	IC Socket, 14-pin for Z401
SPEAKER		
	36119-000	3" x 5" Oval, 16-ohm voice coil Pioneer #A132BP46
	32256-W57	Black Speaker wire with terminals
	32258-W3	Blue Speaker wire with terminals
	39789-003	Screw, 6-20 x 5/16" PH/SLT, Speaker mounting
MISCELLANEOUS		
	40072-000	Inside FM Antenna Assembly
	48531-000	Installation Instructions
M-640R ROUGH IN HOUSING		
	42489-000	Frame Assy. Complete
	42488-005	"A" Housing Assy.
	39096-000	Terminal Strip
	40072-000	Antenna Assy.—F.M.
	42490-000	Hardware Bag Assy.
	25511-015	Screw #6 x 1/4 Sl. Pan Hd. #23
	35210-000	Spring
	64823-000	Spring Clamp
	31986-000	Strap
	31987-000	"S" Hook
	48478-000	Instruction Sheet

Schematic Symbol	NuTone Part No.	Description
M-640 AM/FM RADIO RECEIVER (Later Production Units)		
AM/FM TUNER MODULE		
	42567-000	Complete Assembly
	37751-000	PC Board
CAPACITORS		
C301	35100-174	150 pf
C302	35101-142	15 pf
C303A-J	35092-000	Ganged, AM and FM Tuning
C304	35100-120	.001
C305	35100-139	.01 ±20%, 50V
C306	35100-120	.001
C307	35100-139	.01 ±20%, 50V
C308	35076-101	.22 +80%, -20%, 12V
C309	35101-142	15 pf
C310	35100-138	.005 ±20%, 100V
C311, C312, C313	Not Used	
C314	35100-139	.01 ±20%, 50V
C315	35101-147	1.2 pf, 0.25%/pf
C316	35100-125	220 pf
C317	35100-120	.001
C318, C319	35100-139	.01 ±20%, 50V
C320	35076-101	.22 +80%, -20%, 12V
C321	35100-156	.0022
C322	35100-139	.01 ±20%, 50V
C323	35101-139	470 pf
C324	35100-139	.01 ±20%, 50V
C325	35100-138	.005 ±20%, 100V
C326	35101-140	10 pf
C327	35101-141	5.6 pf
C328	35101-135	7.5 pf
C329	35101-148	22 pf, 100V
C330	35090-000	1-8 pf, 100VAC, Oscillator Trimmer ALPS #CTY 114B11
C331	35101-126	1.2 pf, ±0.25%/pf
C332	Not Used	
C333	35091-109	47 +100%, -10%, 25WVDC Electrolytic
C334	35100-141	.05 +80%, -20%, 50V
C335	35101-140	10 pf
C336, C337	35100-139	.01 ±20%, 50V
C338	35076-106	.1 ±20%, 25V
C339	35100-141	.05 +80%, -20%, 12V
C340, C341	35076-104	.082 +80%, -20%, 12V
C342	35100-141	.05 +80%, -20%, 50V
C343	35076-108	.02 ±20%, 16V
C344	35100-139	.01 ±20%, 50V
C345	35091-102	10 +100%, -10%, 16WVDC, Electrolytic
C346	35091-109	47 +100%, -10%, 25WVDC, Electrolytic
C347	35101-141	5.6 pf
C348	35100-139	.01 ±20%, 50V
C349	35100-141	.05 +80%, -10%, 50V
C350	35076-104	.082 +80%, -20%, 12V
C351	Not Used	
C352	35091-109	47 +100%, -10%, 25WVDC, Electrolytic
C353	35100-139	.01 ±20%, 50V
C354	35100-174	150 pf
C355	35100-193	.03 +80%, -20%, 50V
C356	35101-139	470 pf
CERAMIC FILTERS		
CF301	36109-000	FM 10.7 MHz. IF; Ceramic Murata Corp. SFE10.7MS23
CF302	36087-000	AM 455 KHz. IF; Ceramic Murata Corp. SFB4550
INTEGRATED CIRCUITS		
IC301	36623-000	Monolithic IC, FM IF Amplifier, Detector, Audio Pre-amplifier, etc. RCA CA3089E
IC302	36622-000	Monolithic IC, AM Oscillator/Mixer, IF Amplifier, Detector, AF Pre-amplifier, etc. RCA CA3088E

Schematic Symbol	NuTone Part No.	Description
CONNECTORS		
J1	39339-101	5-pin receptacle
J6	Not Used	
J6	39339-105	3-pin receptacle
COILS		
L301	30106-000	22 microH $\pm 10\%$ @ 100 mA
L302	35232-000	Ferrite Bead, FM RF amplifier drain-lead parasitic suppressor
L303	30590-000	10.7 MHz. tank circuit for FM Mixer collector load
L304	30591-000	10.7 Mhz. adjustable coupling between FM Mixer collector and CF301
L305	30062-000	RF Choke (decoupler)
L306	30105-000	220 microH $\pm 10\%$ @ 50 mA
L307	30092-000	10.7 MHz. adjustable quadrature coil
L308	30062-000	RF Choke (decoupler)
L309	30088-000	Coil, FM Oscillator
	30073-000	Form, for oscillator coil L309
	31915-000	Core, powdered iron (Tuning Slug) for oscillator coil
L310	30062-000	RF Choke (decoupler)
L311	35232-000	Ferrite Bead, AM RF amplifier drain-lead parasitic suppressor
TRANSISTORS		
Q301	36624-000	DGFET, FM RF Amplifier General Instruments Corp MEM615A, MEM614 Motorola MFE-130 Texas Inst. 3N203
Q302	36578-000	Silicon, NPN, Epitaxial Planar, FM Mixer Texas Inst. SKA-4231 Motorola SPS 4484 National Semi SM-43-049
Q303	36581-000	Silicon, NPN Planar FM Oscillator Texas Inst. SKA-4230 National Semiconductor SM-43-050
Q304	36624-000	DGFET, AM RF Amplifier (for suppliers, see Q301 above)
RESISTORS		
R301	33082-474	470K
R302	33082-684	680K
R303	33082-124	120K
R304	33082-334	330K
R305	33082-391	390
R306, R307	33082-103	10K
R308	33082-331	330
R309	33082-333	33K
R310	33082-392	3.9K
R311	33082-102	1K
R312	33082-221	220
R313	33082-331	330
R314	33082-392	3.9K
R315	33082-471	470
R316	33082-623	62K
R317	34043-000	0-500K $\pm 30\%$, 0.1 watt, linear taper SQUELCH CONTROL CTS Corp. Type X-201
R318	33002-272	2.7K
R319	33082-822	8.2K
R320, R321	33082-103	10K
R322	Not Used	
R323	33082-564	560K
R324, R325	33082-334	330K
R326	33082-103	10K
R327	33082-393	39K
R328	33082-121	120
R329	33082-820	82
R330	33082-391	390
R331	33082-271	270
R332	33082-332	3.3K
R333	33082-222	2.2K
R334	33082-153	15K
R335	33082-562	5.6K
R336	33082-682	6.8K
R337	33082-152	1.5K

Schematic Symbol	NuTone Part No.	Description
R338	33082-332	3.3K
R339	33082-182	1.8K
R340	33082-331	330
R341	Not Used	
R342	33082-101	100
R343	33082-470	47
R344	33082-621	620
TRANSFORMERS		
T301	30087-000	RF, Antenna/RF-Amplifier input
	30108-000	Primary Winding
	30107-000	Secondary Winding
	31915-000	Tap Section Secondary Winding
	30073-000	Core, powdered iron (Tuning Slug)
	30073-000	Coil Form
T302	30597-000	AM, 537-1620 KHz. operating range Antenna/RF-Amplifier input Toko America RHR-42185R G.I. Ex. #27402
T303	30598-000	AM, 992-2075 KHz. operating range Oscillator Tuning/Coupling Toko America RWR-42209N Gen. Inst. Tex #3227
	30599-000	Alternate EL-Filters, Inc. EO #405
T304	30579-000	AM IF, 455 KHz. TRW #50137 Gen. Inst. Corp. #22562
T305	30087-000	RF, RF Amplifier output/FM Detector input
	30109-000	Primary Winding
	31915-000	Secondary Winding
	30073-000	Core, powdered iron (Tuning Slug)
	30073-000	Coil Form
MISCELLANEOUS		
	42491-000	Cable, Coaxial Assembly Complete, Antenna Lead-in
	39598-003	Shield, RF
AMPLIFIER MODULE		
	42565-000	Complete PC Assembly
	37749-000	PC Board
CAPACITORS		
C401, C402	35100-127	.1, +80%, -20%, 50V
C403	35100-140	.02 $\pm 20\%$, 50V
C404	35055-101	.47 $\pm 20\%$, 100V, Polyester Film
C405, C406	35091-103	4.7, +100%, -10%, 25WVDC, Electrolytic
C407	35091-108	100, +100%, -10%, 25WVDC, Electrolytic
C408	35100-127	.1, +80%, -20%, 50V
C409	35068-129	470, +100%, -10%, 25WVDC, Electrolytic
C410	35091-108	100, +100%, -10%, 25WVDC, Electrolytic
C411, C412	35100-188	100pf
C413	35100-184	.001
C414	35100-127	.1, +80%, -20%, 50V
C415	35091-102	10, +100%, -10%, 16WVDC, Electrolytic
C416	35091-103	4.7, +100%, -10%, 25WVDC, Electrolytic
C417	35100-155	.0027, +80%, -20%, 50V
C418	35091-108	100, +100%, -10%, 25WVDC, Electrolytic
DIODES		
D401	36683-000	Light Emitting Diode (LED), Red; Forward Voltage @ 20mA, 1.6V typical, 2.0Vmax. Litronix RL4403 Fairchild FLV-160
D402	Not Used	
D403, D404	36549-000	Silicon Rectifier, 1A, 100PIV 1N4002
CONNECTORS		
J401, J402	39797-000	Jack, for audio pin-plug, Phono and Tape connectors. PC mounting

Schematic Symbol	NuTone Part No.	Description
P401	39338-110	5-Pin assembly, to AM/FM Tuner Module
(e), (d)	39723-000	Terminal, push-on, tuner antenna coax lead-in connector
	39708-003	Screw, interconnecting wiring terminals. #6-20 x 3/8", PH/SL "25"
TRANSISTORS		
Q401	36580-000	NPN Planar Silicon, Low-noise Motorola SPS-1216 National Semi. SMO-7329 Texas Inst. SKA-4242
Q402	36613-000	NPN Silicon Motorola MPS-A20 Texas Inst. TIS-98 NPC Elect. NPC-069
RESISTORS		
R401	Not Used	
R402	33101-220	22, 1/2 watt
R403	33030-010	1, 1 watt, wirewound
R404	33082-102	1K
R405	33082-122	1.2K
R406	33101-561	560, 1/2 watt
R407	33101-101	100, 1/2 watt
R408	33082-103	10K
R409	33082-104	100K
R410	33082-564	560K
R411, R412	34679-000	0 to 100K $\pm 20\%$, 1/4 watt, carbon comp., variable slide-tap, VOL-UME, TONE Stackpole Type 5020
	35219-000	Knob, for R411 and R412
R413	33082-102	1K
R414	33082-104	100K
R415	33082-102	1K
R416	33082-123	12K
R417	33101-181	180, 1/2 watt
R418	33101-101	100, 1/2 watt

Schematic Symbol	NuTone Part No.	Description
SWITCHES		
S401	34676-000	Push for ON, interlocking release, power on/off, 25 watt maximum, .5A @ 50 Vdc/ac
	35233-000	Knob, for S401
S402	34680-000	DP4T, break before make, Program Selector
INTEGRATED CIRCUIT		
Z401	36641-000	Audio Amplifier National Semi. LM380N
	39811-000	IC Socket, 14-pin for Z401
MISCELLANEOUS		
	42522-000	Front Panel Assembly
	39331-000	Nameplate
	35231-000	Tuning Wheel
	42523-000	Dial Cord Assembly
	39786-000	Pointer, AM/FM Dial
	39262-000	Spring, AM/FM Dial Pointer
	39327-000	Pulley, Dial Cord
	39135-000	Cap, Pulley
	39465-015	Screw, #6 x 1/4, Slotted Hex "17"
		Pulley retention
	31396-000	Washer, #6
	35220-000	Friction Band, tuning drive
	35218-000	Turning Knob
I-650 WIRING TERMINAL BLOCK		
	42477-000	Wiring Block Assy. Complete
	35205-000	Base—Terminal Board
	42478-000	Terminal Board Assy.
	37734-000	P.C. Board—Terminal
	39777-000	Terminal
	35206-000	Cover—Terminal Board
	42479-000	Envelope Assy.
	39778-000	Terminal Cap
	39247-000	Cable Clamp
	25075-003	Screw #6 x 3/8 Std. Rd. "A"
		To Attach Cable Clamp
	48452-000	Instruction Sheet

NuTone

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