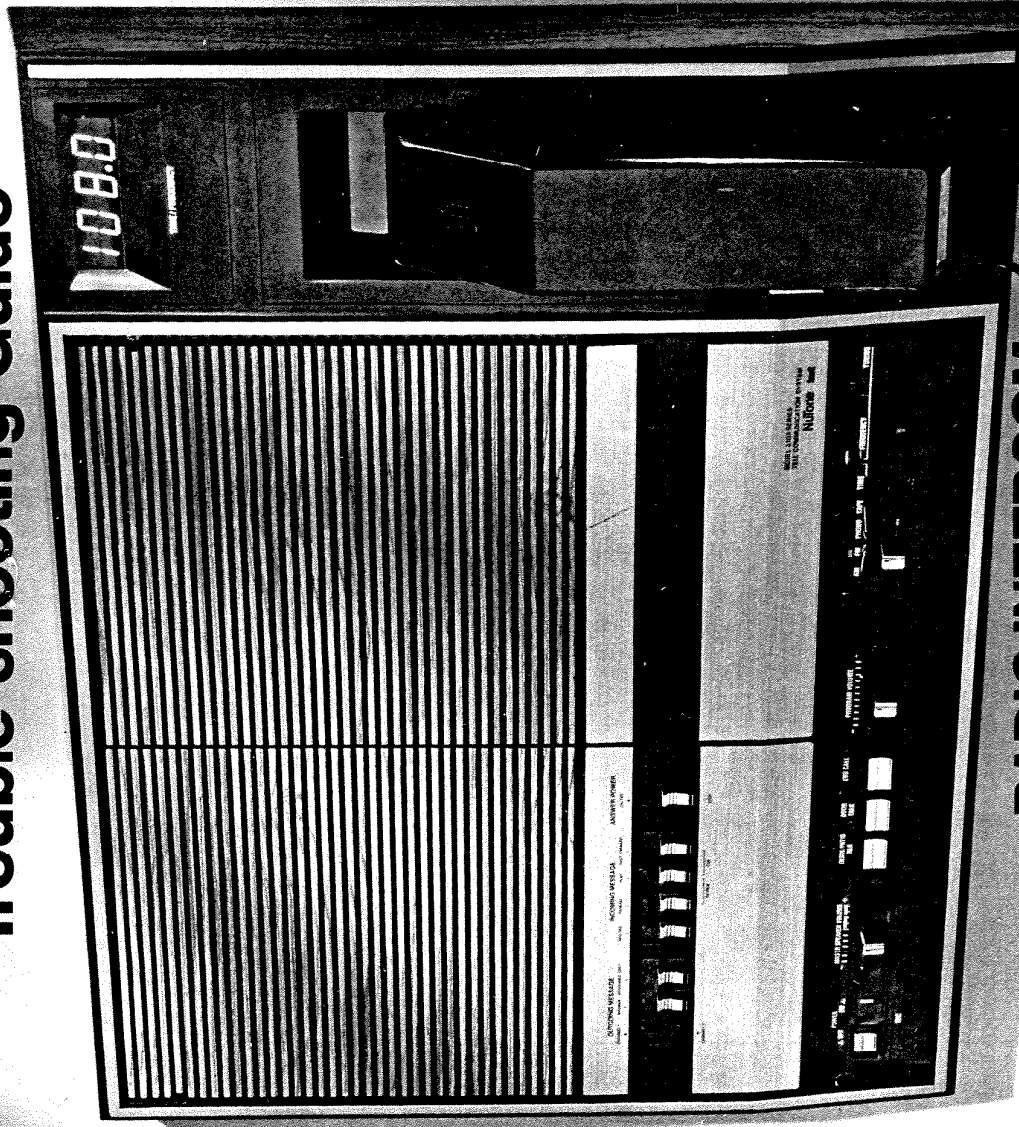


# Trouble-shooting Guide



## RADIO INTERCOM MODEL IM-3103

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**Nutone**

Housing Group

Scovill

## PROBLEM AREA: ANSWER POWER LED

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
Answer Power LED does not light when answer power switch is pressed. Radio Power On/Off LED works properly.	2-pin and 4-pin connector at Power Supply P.C. Board (37826).	Check that cables are plugged in and ribbon cables are not broken.	Power Supply P.C. Board (7644A).
	Voltage at emitter of Q901 on Power Supply P.C. Board (37826).	Voltage should measure 14.4vDC.	Power Supply P.C. Board (7644A).
	Proper Operation of Answer Power On/Off switch (SW901).	Switch should be shorted when in and open when out—look for broken foil around switch.	Replace Power Switch (7643A).
	Voltage at Pin 5 of IC706.	Voltage should measure .4vDC.	Replace Logic Control P.C. Board 7641A.
	Voltage at Pin 10 of IC706.	Voltage should measure .7vDC.	Replace Logic Control P.C. Board (7641A).
	LED D81C		Replace LED or LED and Switch P.C. Board (7642A).

## PROBLEM AREA: OGM

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
OGM will not play.	OGM tape.	OGM tape must be in place.	OGM tape.
	Proper operation of OGM play switch (SW-802).	Switch should short when pressed.	LED and Switch P. C. Board (7642A).
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board.	Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).
	Pin 5 of IC-701.	Check for 100ms pulse from 0vDC to 9vDC when CGM play button is pressed.	Logic Control P.C. Board (7641A).
	Pin 21 of IC701.	Check for voltage change from 9vDC to 2.5vDC after OGM play button is pressed.	Logic Control P.C. Board (7641A).
	Pin 3 of IC 708.	Check for 9vDC when OGM play button is pressed.	Logic Control P.C. Board (7641A).
	Pin 18 of IC701.	Check for 130ms pulse from 9vDC to 0vDC when CGM play button is pressed.	Logic Control P.C. Board
	Collector of Q705.	Check for 250ms pulse from 9vDC to 1vDC after OGM play button is pressed. Also check Solenoid SL1.	Logic Control P.C. Board 7641A or Solenoid SL1.
	Pin 11 of IC715.	Check for voltage change from 0vDC to 9vDC when OGM play button is pressed.	Logic Control P.C. Board (7641A).
	Pin 2 of IC706.	Check for voltage change from 0vDC to 9vDC when OGM play button is pressed.	Logic Control P.C. Board
	Pin 13 of IC706.	Check for voltage change from 13vDC to .7vDC when OGM play button is pressed.	Logic Control P.C. Board (7641A).
	LED D802.		LED or LED and Switch P.C. Board (7642A).

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
OGM will not record.	OGM tape.	OGM tape must be in place and record lockout tab on rear of cassette must be in place.	OGM tape.
	Proper operation of OGM record switch SW802.	Switch should short when pressed.	LED and Switch P.C. Board (7642A).
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board	Check that cables are plugged in and are not broken.	LED and Switch P.C. Board (7642A).
	Pin 3 of IC701.	Check for a series of .1ms pulses switching from 0vDC to 9vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 5 of IC701.	Check for a 100ms pulse from 0vDC to 9vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 23 of IC701.	Check for voltage change from 9vDC to 0vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 3 of IC708.	Check for voltage change from 0vDC to 9vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 18 of IC701.	Check for a 130ms pulse from 9vDC to 0vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Collector of Q705.	Check for a 250ms pulse from 9vDC to 0vDC after OGM record button is pressed.	Logic Control P.C. Board (7641A).
OGM record LED off—OGM record works properly.	Pin 10 of IC715.	Check for voltage change from 0vDC to 9vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 6 of IC707.	Check for voltage change from 0vDC to 9vDC when OGM record button is pressed.	Logic Control P.C. Board (7641).
	Pin 9 of IC707.	Check for voltage change from 13vDC to .7vDC when OGM record button is pressed.	Logic Control P.C. Board (7641A).
	LED801		LED or LED and Switch P.C. Board (7642A).
OGM does not switch from channel to channel.	Pin 1 and pin 2 of IC705.	Check for voltage change from 0vDC to 9vDC when OGM record or play buttons are pressed—also check ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board.	Logic Control P.C. Board (7641A).
	Pin 4 and pin 5 of IC707.	Check for voltage change from 0vDC to 9vDC when OGM record or play button are pressed. Pin 5 for channel 1; pin 4 for channel 2.	Logic Control P.C. Board (7641A).
	Pin 10 and 11 of IC707.	Check for voltage change from 13vDC to .7vDC when OGM record or play button are pressed; Pin 10 for channel 1; pin 11 for channel 2.	Logic Control P.C. Board (7641A).
	Pin 3 of IC718	Check for 9vDC when in O3M record and on channel 1.	Logic Control P.C. Board (7641A).
	Pin 11 of IC718.	Check for 9vDC when in O3M record and on channel 2.	Logic Control P.C. Board (7641A).
	Pin 4 of IC 718.	Check for 9vDC when in O3M play and on channel 1.	Logic Control P.C. Board (7641A).
	Pin 10 of IC718.	Check for 9vDC when in O3M play and on channel 2.	Logic Control P.C. Board (7641A).
	LED D811 and D812.		LED or LED and Switch P.C. Board (7642A).

# PROBLEM AREA: ICM

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE	
ICM will not play.	ICM tape.	ICM tape must be in place.	ICM tape.	
	Proper operation of ICM play switch (SW804).	Switch should short when pressed.	LED and Switch P.C. Board (7642A).	
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board.	Check that cables are plugged in and not broken.	LED and Switch P.C. Board	
	Pin 5 of IC701.	Check for 100ms pulse from 0vDC to 9vDC when ICM play button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 4 of IC708.	Check for 9vDC.	Logic Control P.C. Board (7641A).	
	Pin 21 of IC701.	Check for voltage change from 9vDC to 2.5vDC after ICM play button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 18 of IC701.	Check for 130ms pulse from 9vDC to 0vDC when ICM play button is pressed.	Logic Control P.C. Board (7641A).	
	Collector of Q707.	Check for 250ms pulse from 9vDC to 1vDC after ICM play button is pressed. Also check Solenoid SL2.	Logic Control P.C. Board (7641A) or Solenoid SL2.	
	Pin 3 of IC706.	Check for voltage change from 0vDC to 9vDC when ICM play button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 12 of IC706.	Check for voltage change from 13vDC to .7vDC when ICM play button is pressed.	Logic Control P.C. Board (7641A).	
	LED D804.		LED or LED and Switch P.C. Board (7642A).	
	ICM tape.	ICM tape must be in place and record lockout tab on rear of cassette must be in place.	ICM tape.	
	Proper operation of ICM record switch SW803.	Switch should short when pressed.	LED and Switch P.C. Board (7642A).	
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board.	Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).	
ICM play LED off—ICM play works properly.	Pin 3 of IC701.	Check for a series of .1ms pulses switching from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 5 of IC701.	Check for a 100ms pulse from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 21 of IC701.	Check for voltage change from 9vDC to 0vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 23 of IC701.	Check for voltage change from 9vDC to 0vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).	
	Pin 4 of IC708.	Check for a voltage of 9vDC.	Logic Control P.C. Board (7641A).	
	Pin 18 of IC701.	Check for a 130ms pulse from 9vDC to 0vDC after ICM record button is pressed.	Logic Control P.C. Board (7641A).	
	ICM will not record.	ICM tape.	ICM tape must be in place and record lockout tab on rear of cassette must be in place.	ICM tape.
		Proper operation of ICM record switch SW803.	Switch should short when pressed.	LED and Switch P.C. Board (7642A).

<b>PROBLEM</b>	<b>MEASURE/CHECK</b>	<b>CORRECT RESULT</b>	<b>REPLACE</b>
ICM will not record.	Collector of Q707.	Check for a 250ms pulse from 9vDC to 0vDC after ICM record button is pressed. Also check Solenoid SL2.	Logic Control P.C. Board 7641A or Solenoid SL2.
ICM record LED off—ICM record works properly.	Pin 4 of IC715.	Check for voltage change from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 10 of IC719.	Check for voltage change from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 3 of IC706.	Check for voltage change from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 6 of IC706.	Check for voltage change from 0vDC to 9vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 2 of IC706.	Check for a voltage of 0vDC before and after ICM record button is pressed.	Logic Control P.C. Board (7641A).
	Pin 9 of IC706.	Check for voltage change from 13vDC to .7vDC when ICM record button is pressed.	Logic Control P.C. Board (7641A).
	LED D803 and D304.		LEDs or LED and Switch P.C. Board (7642A)
	ICM tape.	ICM tape must be in place before rewind will function.	ICM tape.
	Proper operation of ICM rewind switch (SW805).	Switch should short when pressed.	LED and Switch P.C. Board (7642A).
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board	Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).
ICM will not rewind.	Pin 4 of IC701.	Check for 70ms pulse from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 22 of IC701.	Check for voltage change from 9vDC to 0vDC after rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 11 of IC701.	Check for voltage change from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 6 of IC702.	Check for voltage change from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 10 of IC702.	Check for voltage change from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 11 of IC728.	Check for voltage change from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 4 of IC706.	Check for voltage change from 0vDC to 9vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	Pin 11 of IC706.	Check for voltage change from 13vDC to .7vDC when rewind button is pressed.	Logic Control P.C. Board (7641A).
	LED D805.		LED or LED and Switch P.C. Board (7642A).
	ICM Tape.	ICM tape must be in place before fast forward will function.	ICM tape.
Rewind LED off—rewind works properly.			
ICM will not fast forward.			

# PROBLEM AREA: ICM

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
ICM will not fast forward.	Proper operation of ICM fast forward switch (SW807).	Switch should short when pressed.	LED and Switch P.C. Board (7642A).
	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board.	Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).
	Emitter of Q710.	Check for a series of .1ms pulses switching from CvDC to 9vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 6 of IC701.	Check for a series of .1ms pulses switching from CvDC to 9vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 24 of IC701.	Check for voltage change from 9vDC to 0vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 12 of C701.	Check for voltage changes from 0vDC to 9vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 5 of IC702.	Check for voltage change from 0vDC to 6vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 2 of IC702.	Check for voltage change from 0vDC to 9vDc when fast forward button is pressed.	Logic Control P.C. Board 7641A.
	Pin 4 of IC710.	Check for voltage change from 0vDC to 9vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 1 of IC706.	Check for voltage change from 0vDC to 9vDC when fast forward button is pressed.	Logic Control P.C. Board (7641A).
	Pin 4 of IC706.	Check for a voltage of 0vDC.	Logic Control P.C. Board (7641A).
	LED D806.		LED or LED and Switch P.C. Board (7642A).
	ICM will not rewind erase.	ICM tape.	ICM tape must be in place before rewind erase will function.
Proper operation of ICM rewind erase switch SW805.		Switch should short when pressed.	LED and Switch P.C. Board (7642A).
Ribbon Cable between LED and Switch P.C. Board and Logic Control P.C. Board		Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).
Pin 11 of IC731.		Check for voltage change from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
Pin 4 of IC701.		Check for 70ms pulse from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
Pin 5 of IC701.		Check for 70ms pulse from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
Pin 21 of IC701.		Check for voltage change from 9vDC to 0vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).

<b>PROBLEM</b>	<b>MEASURE/CHECK</b>	<b>CORRECT RESULT</b>	<b>REPLACE</b>
ICM will not rewind erase.	Pin 22 of IC701.	Check for voltage change from 9vDC to 0vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 11 of IC701.	Check for voltage change from 0vDC to 9vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 6 of IC702.	Check for voltage change from 0vDC to 6vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 10 of IC702.	Check for voltage change from 0vDC to 9vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 4 of IC711.	Check for voltage change from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 2 of IC712.	Check for voltage change from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 3 of IC712.	Check for voltage change from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 12 of IC712.	Check for voltage change from 9vDC to .7vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 13 of IC712.	Check for voltage change from 9vDC to .7vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Relay RE603.	Check coil resistance and contacts.	Power Amp Supply P.C. Board (7646A).
	Pin 3 of IC713.	Check for voltage change from 9vDC to 0vDC after rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 1 of IC707.	Check for voltage change from 0vDC to 9vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	Pin 14 of IC707.	Check for voltage change from 13vDC to .7vDC when rewind erase button is pressed.	Logic Control P.C. Board (7641A).
	LED D807.		LED or LED and Switch P.C. Board (7642A).
Rewind erase LED off—rewind erase works properly.			
<b>PROBLEM AREA: ANNOUNCE ONLY</b>			
<b>PROBLEM</b>	<b>MEASURE/CHECK</b>	<b>CORRECT RESULT</b>	<b>REPLACE</b>
Announce only LED will not light.	OGM tape.	OGM tape must be in place before Announce only will function.	OGM tape.
	Proper operation of announce only switch (SW809).	Switch should short when pressed.	LED and Switch F.C. Board (7642A).
	Ribbon cable between LED and Switch and Logic Control P.C. Board.	Check that cables are plugged in and not broken.	LED and Switch F.C. Board (7642A).
	Pin 11 of IC738.	Check for voltage change from 0vDC to 9vDC when announce only button is pressed.	Logic Control P.C. Board (7641A).
Pin 2 of IC707.	Check for voltage change from 0vDC to 9vDC when announce only button is pressed.	Logic Control P.C. Board (7641A).	Logic Control P.C. Board (7641A).

## PROBLEM AREA: ANNOUNCE ONLY

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
Announce only LED will not light.	Pin 13 of IC707.	Check for voltage change from 13vDC to .7vDC when announce only button is pressed.	Logic Control P.C. Board (7641A).
	LED D809.		LED or LED and Switch P.C. Board (7642A).

## PROBLEM AREA: ANSWER/ANNOUNCE ONLY

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
Announce only or answer will not answer when phone rings—answer or announce only LEDs work properly.	Collector of Q601.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should switch to 9vDC when the phone rings and 2vDC when the phone is not ringing.	Power Amp Supply P.C. Board (7646A).
	Pin 7 of IC602.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should switch to 9vDC for .5 seconds after approximately 3 rings.	Power Amp Supply P.C. Board (7646A).
	Pin 11 of IC724.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should switch from 9vDC to 0vDC for .5 seconds after approximately 3 rings.	Power Amp Supply P.C. Board (7646A).
	Pin 6 of IC712.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should rise from 0vDC to 7vDC in approximately .5 seconds after approximately 3 rings.	Logic Control P.C. Board (7641A).
	Pin 9 of IC712.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should change from 14vDC to .7vDC after approximately 3 rings.	Logic Control P.C. Board (7641A).
	Relay RE601.	Check coil resistance and contacts.	Power Amp Supply P.C. Board (7646A).
	Pin 3 of IC730.	Place unit into answer mode—finger to MIN. Call unit and measure voltage. Voltage should pulse from 0vDC to 9vDC for .5 seconds after approximately 3 rings.	Logic Control P.C. Board (7641A).

## PROBLEM AREA: ANSWER

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE
Answer LED will not light.	ICM tape.	ICM tape must be in place and record lockout tab on rear of cassette must be in place.	ICM tape.
	OGM tape.	OGM tape must be in place before going into answer mode.	OGM tape.
	Collector of Q802.	Check for voltage change from 9vDC to 0vDC when answer button is pressed.	LED and Switch P.C. Board (7642A).
	Proper operation of Answer Switch (SV808).	Switch should short when pressed.	LED and Switch P.C. Board (7642A).



<b>PROBLEM</b>	<b>MEASURE/CHECK</b>	<b>CORRECT RESULT</b>	<b>REPLACE</b>
Answer LED will not light.	Ribbon cables between LED and Switch P.C. Board and Logic Control P.C. Board. Pin 11 of IC737.	Check that cables are plugged in and not broken.	LED and Switch P.C. Board (7642A).
	Pin 4 of IC723.	Check for voltage change from 9vDC to 0vDC when answer button is pressed.	Logic Control P.C. Board (7541A).
	Pin 3 of IC707.	Check for voltage change from 0vDC to 9vDC when answer button is pressed.	Logic Control P.C. Board (7541A).
	Pin 12 of IC707.	Check for voltage change from 0vDC to 9vDC when answer button is pressed.	Logic Control P.C. Board (7541A).
	LED D808.	Check for voltage change from 13vDC to .7vDC when answer button is pressed.	LED or LED and Switch P.C. Board (7642A).
VOX		Place unit into answer mode—call unit and allow it to answer.	
	Pin 2 of IC602.	Check for AC voltage of approximately .2v P—P when whistling into calling telephone.	Power Amp Supply P.C. Board (7646A).
	Pin 1 of IC602.	Check for AC voltage of approximately 7v P—P when whistling into calling telephone.	Power Amp Supply P.C. Board (7646A).
	Collector of Q605.	Check for DC voltage change from 9vDC to 0vDC when whistling into calling telephone.	Power Amp Supply P.C. Board (7646A).
	Emitter of Q607.	Check for voltage change from 9vDC to 0vDC when whistling into calling telephone. Hanging up calling telephone should cause the voltage to rise to 4vDC in approximately 7 to 12 seconds. IM-3103 should disconnect.	Power Amp Supply P.C. Board (7646A).
	Pin 11 of IC724.	Check for voltage change from 0vDC to 9vDC when IM-3103 answers phone line. Voltage will switch back to 0vDC when 3103 disconnects.	Logic Control P.C. Board (7641A).
Time recording (30/60 seconds) does not function.	Pin 10 of IC720.	Check for voltage change from 9vDC to 0vDC for approximately 1 second after OGM stops and ICM tape starts.	Logic Control P.C. Board (7641A).
	Pin 5 of IC703.	Check for voltage changes from 0vDC to 9vDC when ICM starts. Voltage should stay high for 30 or 60 seconds then switch to 0vDC.	Logic Control P.C. Board (7641A).
	Pin 11 of IC724.	Check for voltage change from 0vDC to 9vDC when OGM starts. Voltage will return to 0vDC when ICM stops.	Logic Control P.C. Board (7641A).
<b>PROBLEM AREA: TAPE RECORDER AUDIO</b>			
<b>PROBLEM</b>	<b>MEASURE/CHECK</b>	<b>CORRECT RESULT</b>	<b>REPLACE</b>
Unit will not record using microphone.	Pin 11 of IC723.	Place unit into ICM or OGM record mode—input to "MIC". Check that voltage changes from 0vDC to 9vDC when record button is pressed.	Logic Control P.C. Board (7641A).
	Switch SW812.	Check that switch is in the "MIC" position and switch is working correctly.	LED and Switch P.C. Board (7642A).

# PROBLEM AREA: TAPE RECORDER AUDIO

PROBLEM	MEASURE/CHECK	CORRECT RESULT	REPLACE	
Unit will not record using microphone.	Pin 5 of IC506.	Check for voltage change from 0vDC to 9vDC when record button is pressed.	Power Amp Supply P.C. Board (7646A).	
	Pin 3 of IC506.	Check for a 20 mVP-P AC signal when whistling into microphone.	Power Amp Supply P.C. Board (7646A).	
	Pin 4 of IC501.	Check for a 100 mV P-P AC signal when whistling into microphone.	Power Amp Supply P.C. Board (7646A).	
	Pin 10 of IC601.	Check for a 3v P-P AC signal when whistling into microphone.	Power Amp Supply P.C. Board (7646A).	
	Pin 13 of IC601.	Check for a 3v P-P AC signal when whistling into microphone.	Power Amp Supply P.C. Board (7646A).	
	Unit will not record from radio.	J603	Place unit into ICM record mode—Input to "Line". Check for a 3v P-P AC signal when tuned to a radio station. Check Audio Cables between Power Amp Supply and Switch P.C. Board	Switch P.C. Board 7666A.
Pin 10 of IC601.		Check for a 3v P-P AC signal when tuned to a radio station.	Power Amp Supply P.C. Board (7646A).	
Pin 13 of IC601.		Check for a 3v P-P AC signal when tuned to a radio station.	Power Amp Supply P.C. Board (7646A).	
		Place unit into ICM record mode—Input to "TEL." Lift telephone handset.		
Capacitor C653.		Check for a 5v P-P AC signal when whistling into telephone.	Power Amp Supply P.C. Board (7646A).	
Pin 3 of IC506.		Check for a 20 mV P-P AC signal when whistling into telephone.	Power Amp Supply P.C. Board (7646A).	
Unit will not record from telephone.	Pin 10 of IC601.	Check for a 3v P-P AC signal when whistling into telephone.	Power Amp Supply P.C. Board (7646A).	
	Pin 13 of IC601.	Check for a 3v P-P AC signal when whistling into telephone.	Power Amp Supply P.C. Board (7646A).	