



S E C T I O N

Troubleshooting and Repair

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Troubleshooting and Repair Overview

The SyberSonic Electronics System puts today's latest technology to work for you. It can assist you in troubleshooting tasks by providing comprehensive Input/Output Tests for the Control Computer, Keyboard and Display, and a testing utility for the Mechanism and Title Pages.

If an error occurs during normal operation, the Rock-Ola Control Computer will store an error code and then automatically remind you to check for error codes whenever the lid/door is opened.

We recommend that before beginning any troubleshooting or repair task that you thoroughly familiarize yourself with this section, along with sections E and G of this manual. If anything is still not clear, contact your dealer/distributor for assistance.

Information available in this section include:

- Troubleshooting Charts
- Fuse And LED Locations
- Block Diagrams
- Start Up and Diagnostic Mode Operation
- Test Mode Operation which includes **reading error codes, error code charts and running tests.**

Working With the Tools You've Got

Section G of this manual outlined the minimum tools and equipment necessary to properly service the Rock-Ola SyberSonic Jukebox. One set of tools it didn't mention were the tools you carry with you all the time... Your Senses and Common Sense.

When a malfunction occurs, the first thing you need to do is evaluate what the symptoms *really* are. This is where *common sense* comes in.

A common service call is, "I put money in the machine and got nothing for it."

Where do you begin? The Bill Acceptor? The Coin Acceptor? The CD Player? The Mechanism? The Amplifier?

All of those components can cause the above statement to be made. But what are the *real symptoms*?

As far as the patron is concerned, the above statement is all that needs to be said for you to be able to know what's wrong. Unfortunately, that simply is not the case. *You need more information.* You need to ask questions. Things like:

- "When you put your money into the machine, did it give you credits?"
- "Did you use bills or coins?"
- "How much money did you put in?"
- "How many credits did you get?"
- "Did the machine allow you to make selections?"
- "Did you hear *any* of the songs you selected?"
- "Did you hear any music at all?"
- "Have other patrons had any problems?"

The answers given to those questions will determine which approach you will take toward solving the problem.

For instance, in response to your question, the patron tells you, "I put in a Dollar bill and got no credits, but Joe over there put in 4 quarters and got his music." Common Sense should immediately tell you that you may have a problem with the Bill Validator.

Now let's say the response to your questioning is, "I made my selections and saw the display showed them playing, but there was no sound." Totally different symptoms! Now you're dealing with an audio problem.

So ask questions! It is probably the most powerful tool you possess.

Another set of tools that are often ignored are your senses. Sight, Sound, Smell, Touch. You can see if something is disconnected, hear if something is scraping, smell if something "smoked" or feel if something is vibrating. Use your senses to help isolate the problem to a specific area.

It is beyond the scope of this manual to teach troubleshooting. However, we feel that the tools available within the SyberSonic System teamed up with "your tools" will get even a novice to the source of the trouble quickly and easily.

A Few Words About Power

Because of reliability provided to us by all the "Self-diagnosing, self-programming, self-curing, whiz-bang electronics", we can sometimes forget even the most basic troubleshooting concept... "Does it have good power?"

The first thing to check for is to see if the machine is receiving the *proper* power. Ungrounded, reverse polarized, overloaded and loose power outlets are not only dangerous due to the possible electrocution and fire hazard, today's electronic systems are not very tolerant of

"dirty" power.

In many street location environments, it is not unusual to see neon lights, pool table lights, ice making machine *and the jukebox* all plugged into the same outlet. We, at Rock-Ola, understand what the conditions are "on the street" and have designed and manufactured our equipment to perform well even under the worst of conditions.

However, it is still most important to keep safety the first priority. Avoid using overloaded, ungrounded power sources. Avoid the use of extension cords. Be sure to install extension speakers securely. Use the proper wire and securing devices. Do not attempt to defeat any of the safety features built into the SyberSonic System.

By following the above basic, common sense safety rules, you can be assured the best performance will be attained from your Rock-Ola Jukebox.

Troubleshooting Charts

The following charts should be used when a fault does not display an error code. See the Error Code Charts for other faults.

Power and Start Up Problems

Fault	Symptom	Possible Cause
Jukebox fails to operate at all when power is turned on.	LEDs on Power Supply and fluorescent lamps not on.	Main (Corcom) Power Switch Off. Plug not in wall. Plug not seated in Corcom. Bad Power Cord. No power from wall outlet. Open fuse in Corcom. Bad Corcom Switch. Bad Transformer. Transformer not plugged in. Cutoff switch not plugged into Amp/Power Supply
	12 VDC LED only on.	System Power Plug on Power Supply not seated or broken connection. "Power In Plug" (P1) on Control Computer not seated or broken connection. Defective Power Supply.
Jukebox lamps not on.	Jukebox operational, but fluorescent lamp(s) will not ignite.	Check fuse in Power Supply Defective lamp(s). Defective ballast Lighting plug not seated. Defective lighting wiring. Defective Power Supply.

Mechanism runs but display is blank.	All Power Supply LEDs are on.	Broken connection at "Keyboard Connector" on Control Computer. Broken connection at "phone" connector on keyboard. Defective Keyboard Cable. Defective Keyboard Assy. Defective Control Computer.
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Credit Problems

Fault	Symptom	Possible Cause
No credits given when coins are inserted.	Coins are jammed in coin acceptor.	Foreign object blocking coin path. Dirty coin acceptor. Defective coin acceptor.
	Coins fall into coin return cup.	Foreign object blocking coin path. Dirty coin acceptor. Defective coin acceptor.
	Coins clear coin acceptor and coin switch, but no credits are given.	Defective coin switch actuator. Defective coin switch. Defective coin switch wiring. Pricing not programmed correctly. Defective Control Computer.
No credits given when bills are inserted.	Validator will not take bills.	Jammed bill. Stacker not seated correctly. Defective Bill Validator. Defective Bill Validator Harness. Defective Control Computer.
	Validator accepts bills, but gives no credits	Defective Bill Validator Harness. Defective Bill Validator. Pricing not programmed correctly. Defective Control Computer.

Play Problems

Trouble	Symptom	Possible Cause
Not playing all songs.	Songs "Skipping". Songs "Cutting Out".	CD Mechanism not unbolted. Dirty disc. Dirty laser eye. Disc not clamping properly. Defective disc. Defective laser.

	Mechanism picks up disc then puts it back into the magazine without spinning it.	Disc installed backwards. Dirty disc. Dirty laser eye. Defective disc. Disc not clamping properly. Defective disc. Defective laser. Defective Control Computer.
	Mechanism picks up disc, spins it, then puts it back into the magazine without playing.	Dirty disc. Dirty laser eye. Disc not clamping properly. Defective disc. Defective laser. Defective Control Computer.
Playing wrong songs.	Patron selected a track other than track 1, but the machine played track 1.	Dirty disc. Dirty laser eye. Disc not clamping properly. Defective disc. Defective laser.
	Gripper picked up wrong disc.	Indexing adjustment. Dirty Mech Opto Sensor. Defective Mech Opto Sensor. Defective Opto Sensor wiring.
	Titles on disc and title strip do not match.	Correct/replace title strip. Replace disc.

Page Problems

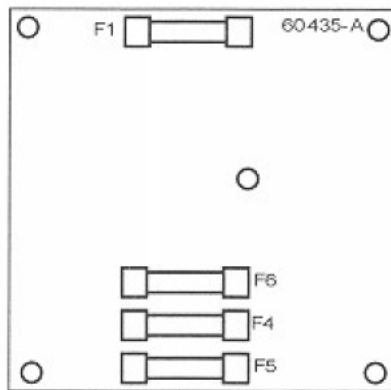
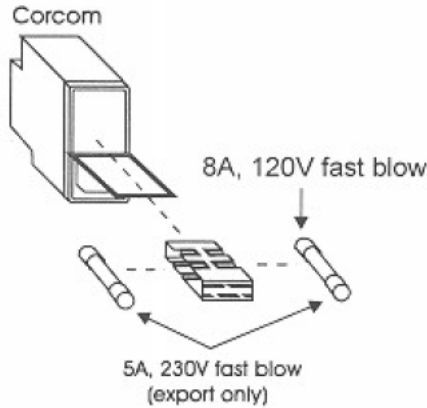
Fault	Symptom	Possible Cause
Pages will not turn.	Pages will not turn at all.	Pages not plugged in. Pages harness at computer not seated. Pages not programmed properly. (see Page Options in section E.) Defective pages detent switch. Defective pages motor. Defective computer.
	Pages will only turn to a certain point.	Pages not programmed properly. (See Pages Options in section E).

Fuse and LED Locations

Power Supply

- (1) 8 Amp, 120V Fast Blow (Main Power In)
(For Domestic)
- (2) 5 Amp, 230V Fast Blow (For Export)

Location: Inside Corcom

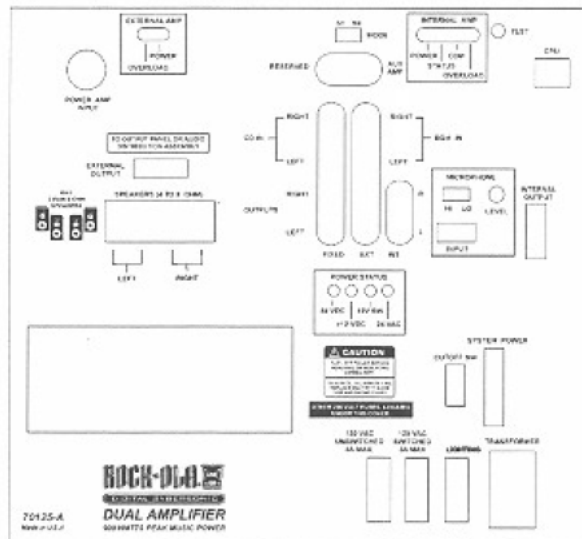


Keyboard LEDs

Data = Flashing
Power = Always ON

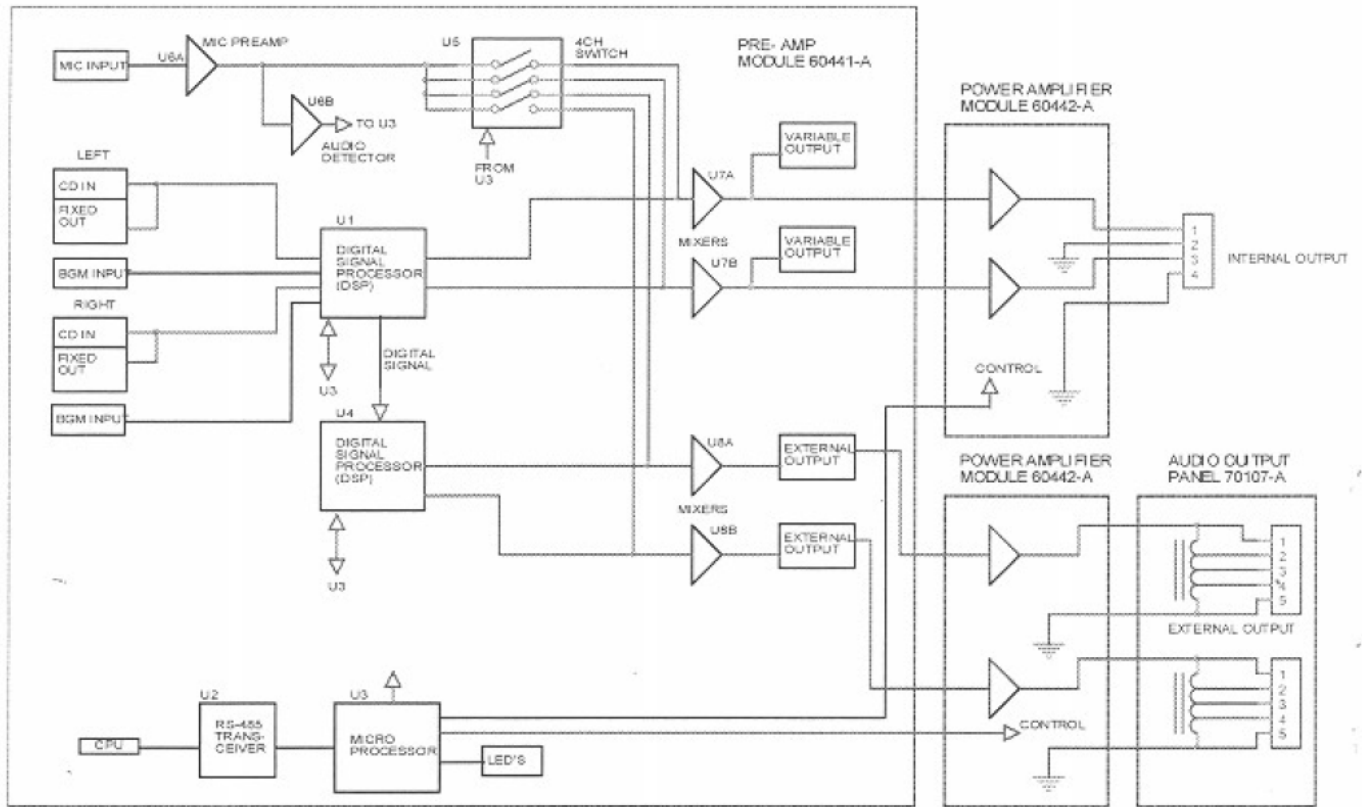


Digital Amplifier & Power Supply LEDs and Connections

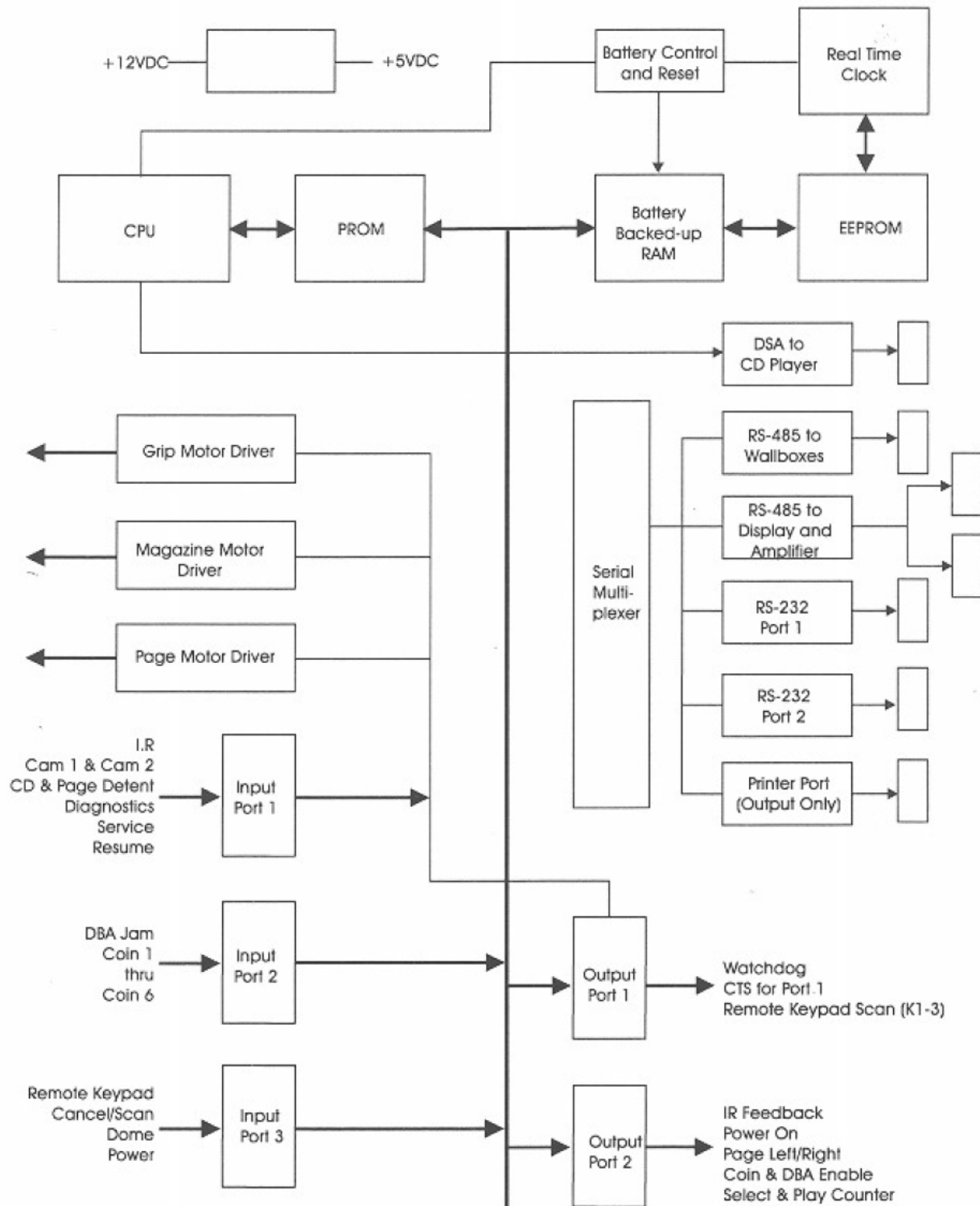


Block Diagrams

Amplifier Block Diagram

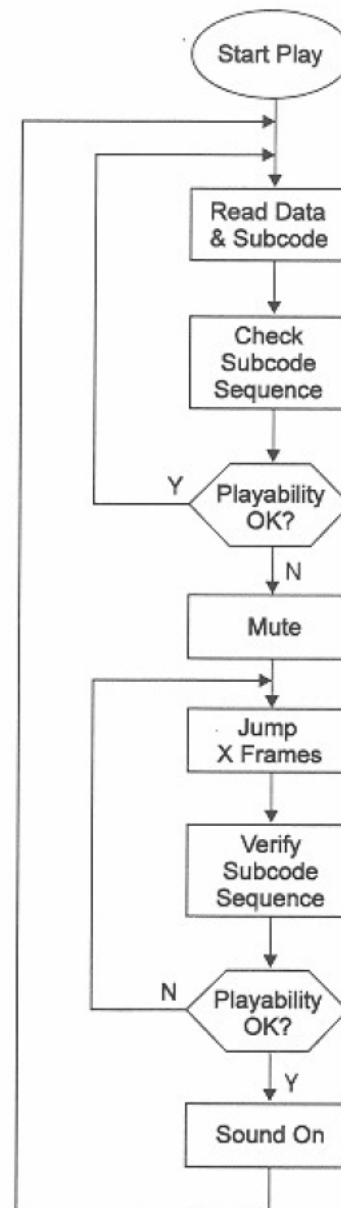


CPU Block Diagram

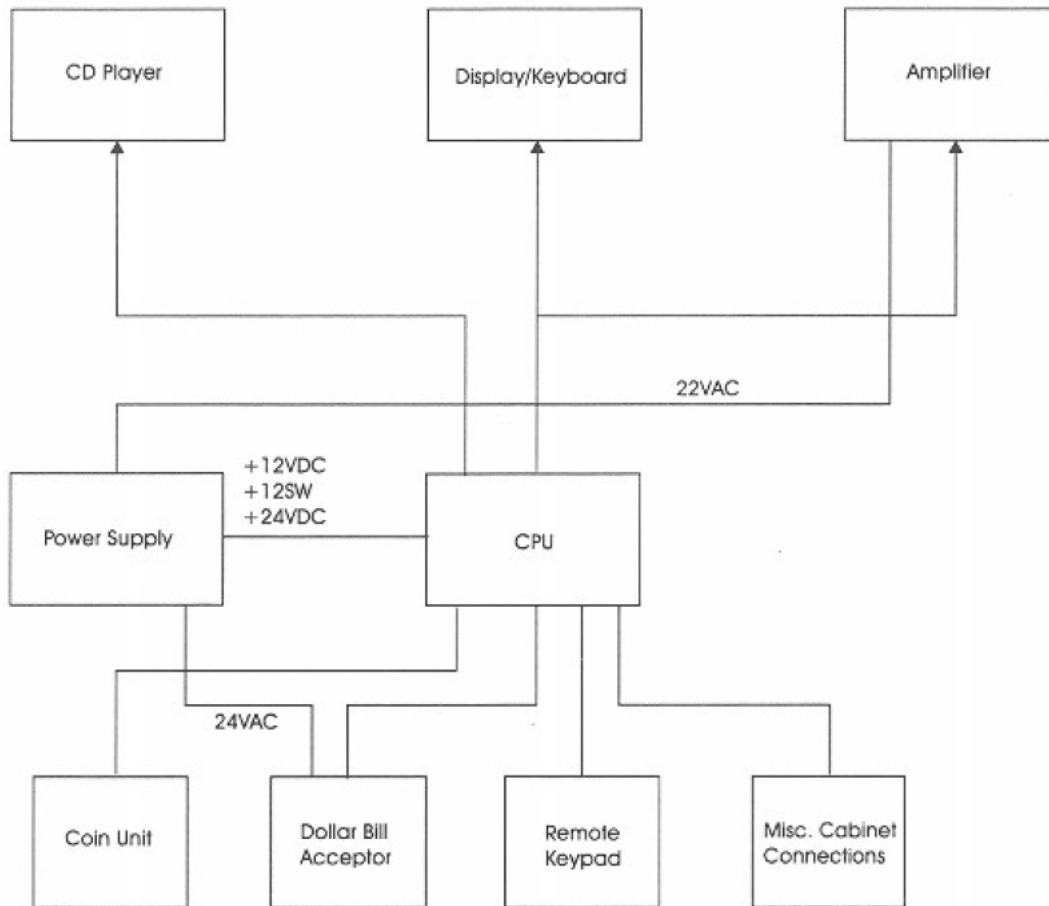


CD Start Up Procedure and Run Diagram

- Laser on
- Focus on and find focus
- Turntable start
- Internal DSICS optimization for radial and focus. (offset and gain)
- Radial tracking
- Read table of contents. (start and stop times of first 21 tracks)
- Jump to selected track. (or track 1 if selected track is not found).



Power Distribution Block Diagram



Start Up and Diagnostic Mode Operation

Start Up

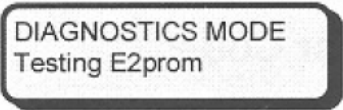
The first thing the SyberSonic Computer does upon start up is to establish communication with the CD Player. If successful, and assuming the machine is in the Play or Service mode, the disc magazine will begin to rotate. During this time, the computer is synchronizing the speed of the magazine motor to the mechanism's opto sensor. It takes 3 revolutions to initialize the disc magazine synchronization. Once initialized, the basket stops at the home position. Also, during the initialization process, the computer is establishing communication with the keyboard and amplifier.

If all communication is established and no errors are detected, the machine will enter the play mode. If a problem is detected, the problem will be shown on the keyboard/display. See the Diagnostic/Power Up Error Code Chart for specific code information.

Diagnostic Mode

Diagnostics Mode is entered by pressing the Diagnostics Button on the front of the control computer while in the Service Mode. Tests are automatically performed and status messages are displayed as the tests are run.

Example Message:



DIAGNOSTICS MODE
Testing E2prom

Each test is displayed on the bottom line while the test is being run.

List of Test Messages:

DIAGNOSTICS MODE
Testing Ram

DIAGNOSTICS MODE
Testing E2prom

DIAGNOSTICS MODE
Testing Eprom

DIAGNOSTICS MODE
Testing Rtcc

DIAGNOSTICS MODE
Testing Keyboard

DIAGNOSTICS MODE
Testing CD Comm.

If all of the tests are successful, the following message will be displayed:

DIAGNOSTICS MODE
Tests Successful

Otherwise, one of the following failure messages will be displayed:

DIAGNOSTICS MODE
Ram Failure

DIAGNOSTICS MODE
E2prom Failure

DIAGNOSTICS MODE
Eprom Failure

DIAGNOSTICS MODE
Rtcc Failure

DIAGNOSTICS MODE
Keyboard Failure

DIAGNOSTICS MODE
CD Comm. Failure

Note: If the keyboard/display is non-operational, the error code can be read on the STATUS LED located on the front of the CPU.

See the Diagnostic/Power Up Error Codes Chart for Error code details.

The Diagnostic Test takes about 50 seconds to run. If the keyboard/display is not illuminated, while in the Service Mode, ensure all four (4) Power Supply LEDs are illuminated, press the DIAG button on the Control Computer once and wait for about 50 seconds for an error code to appear. Then refer to the below chart for further instruction.

Diagnostic/Power-Up Error Codes: Readout on LED on the front of the control computer.

Error Value	Device Error	Error Code Explanation	What To Do
0	NONE	All devices passed their specific test.	
1	RAM	Unable to write/read each byte in RAM.	Check battery and battery holder, U4 or U5
2	E2PROM	Unable to write/read each byte in E2prom.	Replace U1
3	EPROM	Eprom is corrupt.	Replace U8
4	RTCC	Unable to write/read a valid time in the real time counter clock.	Replace U7
5	KEYBOARD/DISPLAY	Unable to establish communication with the Keyboard/Display.	Check cable, 12 volt power to keyboard (is it lit?) and U2
6	CD PLAYER	Unable to establish communication with the CD Player.	Check connections and cables to CD player. Defective CD Player
7	Reserved		
8	EPROM	Eprom is bad, missing, installed incorrectly or is blank.	Check and/or replace U8.

Exit the diagnostic mode by pressing the **RESUME** button on the computer or closing the door/lid.

Test Mode

Rock-Ola's SyberSonic Electronics System provides an easy to understand and simple to use self-diagnostic and self-testing utility. This section will provide information designed to assist you in using this tool to quickly diagnose and repair any problem that may develop.

Viewing Error Codes

When entering the Service Mode the SyberSonic Jukebox automatically checks its memory for the existence of stored error codes. If any exist, the warning "Errors Present in XXXX." (XXXX indicates the area in which the error exists) will scroll across the digital display to remind you to view the error codes.

To view the stored error codes:

- Enter the set up mode.
- Access "View Errors" in the Test Mode Menu (Quick Find #130).

- Use the Right Pages Button to scroll to the area for which you want to view errors. (i.e. View Page Errors).
- Press Hits. You will see the error code, date of error and time of error on the display. (See "Test Mode" flow chart in section E for sample displays).
- Refer to the following Charts for information and what to do about each error.

Using Error Codes

After retrieving and reviewing the error code, the next step in the troubleshooting process is to determine why the error code exists. In most cases the problem is a "mechanical" one. That is, the problem could be a mechanical bind, a broken or bent cam, a bad switch or a broken wire. Occasionally, a malfunction may be caused by the electronics. By analyzing the code and its meaning, you can usually determine the cause of the malfunction very easily.

If the Error Code Chart refers to a test, the instructions can be found under "Running Tests" later in this section.

CPU (Input) Error Codes

Error Value	Input Error	Error Code Explanation	What To Do
C00	SERVICE	Service key depressed for longer than 1 minute.	Check Service Switch on Control Computer, Replace Control Computer.
C01	DIAGNOSTIC	Diagnostics key depressed for longer than 1 minute.	Check Diagnostic Switch on Control Computer, Replace Control Computer.
C02	RESUME	Resume key depressed for longer than 1 minute.	Check Resume Switch on Control Computer, Replace Control Computer.
C03	SCAN CANCEL	Scan/Cancel key depressed for 1 minute.	Check Scan/Cancel switch. Check wiring between switch and control computer for a short circuit.
C05	COIN 1	Coin 1 input active for longer than 1 minute.	Check Coin Switch 1, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C06	COIN 2	Coin 2 input active for longer than 1 minute.	Check Coin Switch 2, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C07	COIN 3	Coin 3 input active for longer than 1 minute.	Check Coin Switch 3, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C08	COIN 4	Coin 4 Input active for longer than 1 minute.	Check Coin Switch 4, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C09	COIN 5	Coin 5 Input active for longer than 1 minute. (In the U.S. this is the Quarter input).	Check Coin Switch 5, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C10	COIN 6	Coin 6 Input active for longer than 1 minute. (In the U.S. this is the Bill Validator input).	Check Coin Switch 6, Check wiring between Coin Switch and Control Computer for a short circuit, Replace Control Computer.
C11	EXT VOL UP	External Volume Up key depressed for longer than 1 minute.	Check External Volume Up Switch, Replace Remote Volume Control, Check Remote Volume Control wiring for a short circuit, Replace Control Computer.
C12	EXT VOL DOWN	External Volume Down key depressed for longer than 1 minute.	Check External Volume Down Switch, Replace Remote Volume Control, Check Remote Volume Control wiring for a short circuit, Replace Control Computer.
		Internal Volume Up key de-	Check internal Volume Up Switch, Replace Remote Volume Control,

C13	INT VOL UP	pressed for longer than 1 minute.	Check Remote Volume Control wiring for a short circuit, Replace Control Computer.
C14	INT VOL DOWN	Internal Volume Down key depressed for longer than 1 minute.	Check Internal Volume Down Switch, Replace Remote Volume Control, Check Remote Volume Control wiring for a short circuit, Replace Control Computer.
C15	MUTE	Pause key depressed for longer than 1 minute.	Check Mute Switch, Replace Remote Volume Control, Check Remote Volume Control wiring for a short circuit, Replace Control Computer.
C16	CANCEL	Cancel key depressed for longer than 1 minute.	Check Cancel Switch, Replace Remote Volume Control, Check Remote Volume Control wiring for a short circuit, Replace Control Computer.

Keyboard Error Codes

Error Value	Key Error	Error Code Explanation	What To Do
K00	NUMBER 0	Number 0 key depressed for longer than 1 minute.	Check S12, Replace Keyboard/Display
K01	NUMBER 1	Number 1 key depressed for longer than 1 minute.	Check S3, Replace Keyboard/Display
K02	NUMBER 2	Number 2 key depressed for longer than 1 minute.	Check S4, Replace Keyboard/Display
K03	NUMBER 3	Number 3 key depressed for longer than 1 minute.	Check S5, Replace Keyboard/Display
K04	NUMBER 4	Number 4 key depressed for longer than 1 minute.	Check S6, Replace Keyboard/Display
K05	NUMBER 5	Number 5 key depressed for longer than 1 minute.	Check S7, Replace Keyboard/Display
K06	NUMBER 6	Number 6 key depressed for longer than 1 minute.	Check S8, Replace Keyboard/Display
K07	NUMBER 7	Number 7 key depressed for longer than 1 minute.	Check S9, Replace Keyboard/Display
K08	NUMBER 8	Number 8 key depressed for longer than 1 minute.	Check S10, Replace Keyboard/ Display
K09	NUMBER 9	Number 9 key depressed for longer than 1 minute.	Check S11, Replace Keyboard/ Display
K10	PAGE LEFT	Page Left key depressed for longer than 1 minute.	Check S1, Replace Keyboard/Display
K11	PAGE RIGHT	Page Right key depressed for longer than 1 minute.	Check S2, Replace Keyboard/Display
K12	PLAY HITS	Play Hits key depressed for longer than 1 minute.	Check S14, Replace Keyboard/ Display
K13	RESET	Reset key depressed for longer than 1 minute.	Check S13, Replace Keyboard/ Display

Mechanism Error Codes

Error Value	Mechanism Error	Error Code Explanation	What To Do
M01	MAGAZINE	Unable to locate a compact disc (slot number). Unable to find "Home".	Run Index Test, Check/Replace Mech Opto Sensor, Check Mech Opto Sensor Wiring, Replace Control Computer. Check magazine motor. Check cam switch wiring.
M02	LOADING	Unable to load a compact disc.	Run Gripper Test, Check 24 VDC, Check Gripper Motor, Check Gripper Motor Wiring, Replace Control Computer. Check cam switches.
M03	UNLOADING	Unable to unload a compact disc.	Run Gripper Test, Check 24 VDC, Check Gripper Motor, Check Gripper Motor Wiring, Replace Control Computer. Check cam switches.
M04	COMMUNICATION	Unable to establish communication with CD player.	Check CD player wiring from Control Computer to Laser. Replace CD player. Replace Control Computer.
M05	CD RESPONSE	Unable to obtain the correct response from the CD player.	Check CD player wiring from Control Computer to Laser. Replace CD player. Replace Control Computer.

Page Unit Error Codes

Error Value	Page Unit Error	Error Code Explanation	What To Do
P01	PAGE LEFT	Unable to flip the pages left.	Run Pages Test, Check 24 VDC, Check wiring between Page Unit and Control Computer, Check Pages Motor, Check Pages Detent Switch and Wiring, Check Pages Left Switch on Keyboard, Replace Control Computer.
P02	PAGE RIGHT	Unable to flip the pages right.	Run Pages Test, Check 24 VDC, Check wiring between Page Unit and Control Computer, Check Pages Motor, Check Pages Detent Switch and Wiring, Check Pages Right Switch on keyboard, Replace Control Computer.

Running Tests

Rock-Ola's SyberSonic Electronics System has a set of built-in diagnostic tests that can be run via the keyboard. These tests are designed to eliminate guess work when troubleshooting a specific problem. You have the ability to test all inputs and outputs of the control computer, the electronics and mechanics of the CD Player, the turning of the pages, the digital display and the functions of the mechanism.

CPU Tests

The CPU Tests consist of three (3) individual tests. The Power Up Test, Inputs Test and Outputs Test.

Power Up Test - This test checks the internal functions of the control computer and communication with the CD Player and keyboard.

To run this test access "Run Power Up Test" (Quick Find 142) in the Test Mode Menu. Press HITS. The control computer will run the test. If all tests pass the display will indicate the following message:

PowerUp Test:
No Failures

If a failure occurred one of the following messages will be displayed.

PowerUp Test:
Ram Failure

PowerUp Test:
E2prom Failure

PowerUp Test:
Eprom Failure

PowerUp Test:
Rtcc Failure

PowerUp Test:
Keyboard Failure

PowerUp Test:
CD Comm. Failure

Refer to the Diagnostic/Power Up Error Codes Chart for further instruction.

Inputs Test

This test checks the status of the inputs to the control computer.

To run this test:

- Access "Run Inputs Test" (Quick Find 143) in the Test Mode menu.
- Press HITS. The control computer will run the test.
- As the test progresses the keyboard display will indicate which input is tested and its current logic level (Hi or Lo). Sample displays can be found on the Test Mode Flow chart in Section E of this manual. Refer to the Test Inputs Code Chart for information about each input.

Note: The Normal Logic Level shown on the chart assumes the machine is at rest with the magazine and gripper bow in the home position and the pages at page 1.

Test Input Codes:

Input Value	Normal Logic Level	Input Location	Input Description
1	Hi	S1 on CPU Board	RESUME Button.
2	Hi	S3 on CPU Board	SERVICE Button.
3	Hi	S2 on CPU Board	DIAGNOSTICS Button.
4	Hi	J14.8 on CPU Board	PAGE OPTO SENSOR Input Line.
5	Lo	J2.3 on CPU Board	MAGAZINE OPTO SENSOR Input Line.
6	Hi	J5.12 on CPU Board	CAM 1 Switch Input Line.
7	Hi	J5.11 on CPU Board	CAM 2 Switch Input Line.
8	Hi	J3.2 on CPU Board	IR DETECTOR Input Line.
9	Hi	J4.1 on CPU Board	COIN 6 Input Line.
10	Hi	J4.2 on CPU Board	COIN 5 Input Line.
11	Hi	J4.3 on CPU Board	COIN 4 Input Line.
12	Hi	J4.4 on CPU Board	COIN 3 Input Line.
13	Hi	J4.5 on CPU Board	COIN 2 Input Line.
14	Hi	J4.6 on CPU Board	COIN 1 Input Line.
15	Hi	J4.11 on CPU Board	DOLLAR BILL JAM Input Line.
16	Hi	N/A	Unused Input Line.
17	Hi	J6.3 on CPU Board	POWER SWITCH Input Line.
18	Lo	J6.2 on CPU Board	SERVICE SWITCH Input Line.
19	Hi	J5.7 on CPU Board	CANCEL/SCAN BUTTON Input Line.
20	Hi	N/A	Unused Input Line.
21	Hi	N/A	Unused Input Line.
22	Hi	J7.3 on CPU Board	CANCEL/MUTE Matrix Input Line.
23	Hi	J7.2 on CPU Board	EXT. VOL. UP/EXT. VOL. DOWN Matrix Input Line.
24	Hi	J7.1 on CPU Board	INT. VOL. UP/INT. VOL. DOWN Matrix Input Line.

To stop the test, press RESET on the keyboard or RESUME on the control computer.

Outputs Test

The outputs test checks the voltage level of the control computer outputs. It will either be Gnd (0 Volts) or Vcc (12 or 24 Volts depending on the output). To run the output test, access "Run Outputs Test" (Quick Find 144) in the Test Mode

menu. Press HITS and the test will begin. As the test progresses, the keyboard display will indicate the status of the output line. Sample displays can be found on the Test Mode Flow chart in Section E of this manual.

Test Output Codes:

Output Value	Output Level	Output Location	Output Description
1	Gnd	J6.7 on CPU Board	PLAY COUNTER Output Line.
2	Gnd	J6.6 on CPU Board	MONEY COUNTER Output Line.
3	Gnd	J4.10 on CPU Board	DOLLAR BILL ENABLE Output Line.
4	Gnd	J4.7 on CPU Board	COIN ENABLE Output Line.
5	Gnd	J14.2 on CPU Board	PAGE LEFT Output Line.
6	Gnd	J14.1 on CPU Board	PAGE RIGHT Output Line.
7	Gnd	J3.3 on CPU Board	IR LED FEEDBACK Output Line.
8	Gnd	J5.1 on CPU Board	GRIP IN MOTOR Output Line.
9	Gnd	J5.2 on CPU Board	GRIP OUT MOTOR Output Line.
10	Gnd	J5.5 on CPU Board	MAGAZINE MOTOR Output Line.
11	Gnd	J7.4 on CPU Board	MUTE/EXT. VOL. DOWN/INT. VOL. DOWN Matrix Output Line.
12	Gnd	J7.5 on CPU Board	CANCEL/EXT. VOL. UP/INT. VOL. UP Matrix Output Line.
13	Gnd	J7.6 on CPU Board	Unused Matrix Output Line.
14	Gnd	J10.1 on CPU Board	CLEAR TO SEND 1 Output Line.

Keyboard Test

Access "Run Keyboard Test" (Quick Find 132) in the Test Mode Menu. Press HITS. Now as you press a Keyboard Button the Display will indicate which button is pressed. Sample displays can be found on the Test Mode Flow chart in Section E of this manual.

To exit the Keyboard Test, either press RESUME on the Control Computer or close the door/lid. (Pressing RESET will not cause you to exit from this test as the reset switch is one that is checked during the Keyboard Test).

The keyboard/display has its own built-in diagnostics system to test all aspects of the device to ensure proper functions and reliability.

To run the keyboard/display diagnostics test, you must first push and hold the test switch then connect a 12 volt DC source to plug J2 pin 4 (pos) and pin 5 (neg). Release the test switch and then the device is in self-diagnostics. It will fill the display with varying characters for ap-

proximately 2 seconds. The display will then blank and when the keys on the keyboard are pushed, they will be shown on the display.

To take the device out of test, you must press the RESET and HITS keys at the same time or disconnect the power to the keyboard.

Display Test

Access "Run Display Test" (Quick Find 133) in the Test Mode Menu. Press HITS. The display will scroll through all of its available characters.

Observe that all the characters are properly displayed. Sample displays can be found on the Test Mode Flow chart in Section E of this manual.

To exit the display test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Pages Test

Access "Run Pages Test" (Quick Find 134) in the Test Mode Menu. Press HITS. The Title Pages will run a full cycle from front to back. Observe that the pages move smoothly back and forth and that they stop in the correct position. Sample displays can be found on the Test Mode Flow chart in Section E of this manual.

To run the test again, press HITS.

To exit the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Mechanism Tests

Rock-Ola's SyberSonic System provides five (5) individual mech tests which together create a comprehensive testing tool for the CD Mechanism and CD Player. Included are:

- Index Test which checks the synchronization between the Control Computer and the CD Magazine.
- Gripper Test which allows the testing of the electrical functions of the Gripper Motor as well as the mechanical functions of the Gripper Bow.
- Short Test which causes the mechanism to pick up each CD, read its table of contents and display the number of tracks on the CD.
- Test All Disc which causes the mechanism to pick up each CD, display the number of tracks on that CD then play five (5) seconds from each track on that CD.
- Run CD Tests which provides a testing tool for the CD Player. This includes a Play Test and a Servo Test. The Play Test allows the testing of the Play Functions of the CD Player. The Servo Test allows the Testing of the electro-mechanical functions of the CD Player.

Running Mechanism Tests

Index Test

Access "Run Index Test" (Quick Find 145) in the View Mech Tests area of the Test Mode Menu. Press HITS. Select "Once" or "Continuous". The

disc magazine will rotate a full revolution then stop at position 00, pick up the disc then put it back away. It will then go to position 01 and repeat the above procedure. After 01 it will go to positions 49, 50, 98 and 99 to check synchronization at those positions.

While the test is running you should check to see that the disc is being picked up and put away properly. See Magazine Indexing Adjustment in Section G for details.

Sample displays can be found on the Test Mode Flow Chart found in Section E of this manual.

To exit this test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Gripper Test

Access "Run Gripper Test" (Quick Find 146) in the View Mech Tests area of the Test Mode Menu. Press HITS. The display will indicate "Push Cancel/Scan to Move Gripper." Doing so will cause the Gripper Motor to run allowing you to check the electrical and mechanical functions of the Gripper Bow and related mechanics. Also check the Gripper Rest Adjustment. See Gripper Rest Adjustment in Section G for details.

For sample displays, see the Test Mode Flow Chart in Section E of this Manual.

To stop the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Short Test

Access "Run Short Test" (Quick Find 147) in the View Mech Tests area of the Test Mode Menu. Press HITS. The Disc Magazine will rotate a full revolution and stop at position 00. The disc in slot 00 will be picked up and placed on the CD Player. It will then be spun to read its table of contents. Once the table of contents has been read, the number of tracks on that CD will be displayed and then the disc will be put back into the magazine.

The magazine will then stop at position 01, 02, 03... etc. and perform the above procedure. The Short Test will continue until all of the magazine positions have been checked.

For sample displays, see the Test Mode Flow Chart in Section E of this Manual.

To stop the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Test All Disc (AKA Long Test)

Access "Test All Disc" (Quick Find 148) in the View Mech Tests area of the Test Mode Menu. Press HITS. The Disc Magazine will rotate a full revolution and stop at position 00. The disc in slot 00 will be picked up and placed on the CD Player. It will then be spun to read its table of contents. Once the table of contents has been read, the number of tracks on that CD will be displayed and then five (5) seconds of each song on that disc will be played. After all tracks from that disc have been played it will be put back into the magazine.

For sample displays, see the Test Mode Flow Chart in Section E of this Manual.

The magazine will then stop at position 01, 02, 03... etc. and perform the above procedure. Test All Disc will continue until all of the magazine positions have been checked.

To stop the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Run CD Tests

Access "Run CD Tests" (Quick Find 149) in the View Mech Tests area of the Test Mode Menu. Press HITS. The magazine will rotate a full revolution then stop and pick up the disc in position 00.

At this point you may choose "Run Play Test" by pressing HITS or you may choose "Run Servo Test" by pressing the RIGHT TURN PAGES button then pressing HITS.

Play Test

Four (4) play functions are available by using Keyboard Buttons 1 - 4.

- #1 Start play
- #2 Stop play
- #3 Next Track
- #4 Previous Track

To stop the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Servo Test

Five (5) servo functions are available by using Keyboard Buttons 1 - 5.

- #1 Focus On
- #2 Focus Off
- #3 Turntable On
- #4 Turntable Off
- #5 Arm In/Out

To stop the test, either press RESET on the Keyboard, press RESUME on the Control Computer or close the door/lid.

Amplifier Troubleshooting

Rock-Ola's Digital SyberSonic amplifier has different color LED's to indicate the status of various systems. The state of the LED's is the most important tool when beginning to troubleshoot the audio system.

LED's

* Power	Green	Preamp PCB Power	On - Normal Off - No power to the pre-amp board
* Status	Orange	State of the MP & Paging System	On - Normal Blinking - Paging System Active Off - Processor Faulted
* Com	Orange	State of the MP & Communication	On - Normal Flashing - Communicating with the Jukebox CPU Off - Settings not loaded
* Overload	Red	Power Amp Muting	On - Amplifier muted* Blinking - Power Amp Overload Off - Normal

* The Power amplifier is muted whenever a CD is not in play and the background music system is off.

Symptom	LED	Problem	Solution
No Sound	Green LED Off	No Power to Pre-amp	Check that preamp and power amp PCB's are properly mated.
	Green LED On Status LED On Comm LED Off	Not set up	Check communications cable from amplifier to CPU.
	Green LED On Status LED Off	Processor not running	Replace Pre-amp PCB
	Green LED On Orange LED's On Red LED On	Amplifier Muted	Be sure CD is in play (Now Playing on the Display) Defect in Power Amplifier
	Green LED On Orange LED's On Red LED Blinking	Amplifier Overload	Unplug speakers. If red LED stays off, check for speaker overload. If red LED still blinks, replace power amplifier PCB.

Amplifier Test Mode

The Digital SyberSonic Amplifier contains a test mode. This mode initializes the DSP's to a straight through, 0 gain signal path. This would be the same as EQ's flat, Balance center, CD Input, Volumes 40.

To use, power up the amplifier without the communication cable connected. Press the test button located under the LED's. CAUTION: If a live input is connected to the CD inputs, full volume output will appear at the speaker connections. Plug the audio output from a walkman or

signal generator into the CD Input jacks. Audio should be present on all output jacks. If it does, the amplifier is working properly.

Bad or Distorted Sound

- Check Red LED's while a CD is in play.
- **Red LED on or flashing** - Indicates the channel is overloaded. Check the speakers and speaker wiring.

- **Red LED's all off** - Note which channel sound bad. Reverse the input connections. If the opposite channel now sounds bad, the input source (CD Input or AUX BGM Input) is defective. If the same channel still sounds bad, replace the affected channel's power amplifier board.
- **Overload System Operation (Section D)**

Weak Bass From The External Speakers

- Check speaker connections. All external speakers must be *wired in phase*. Positive (+) to positive (+) and negative (-) to negative (-).