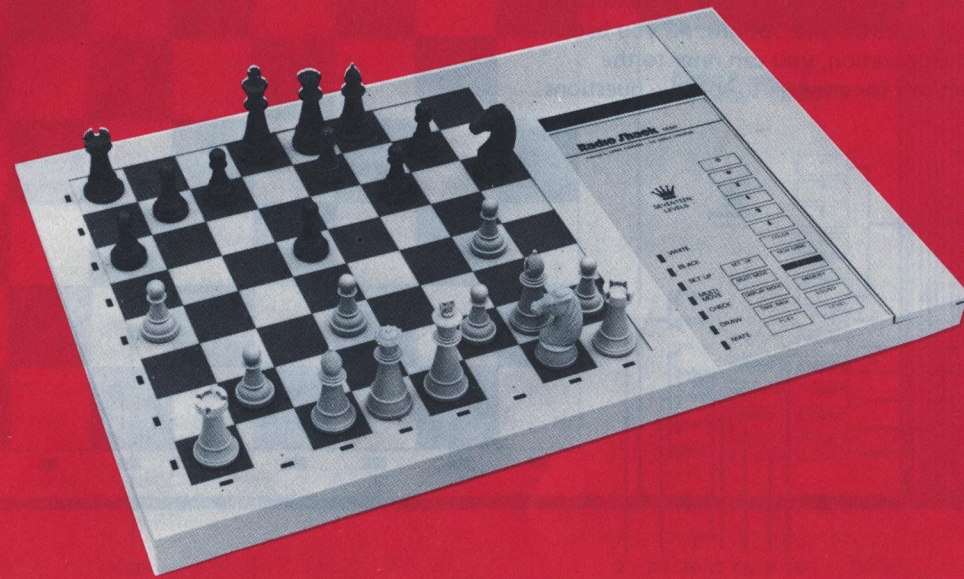


**OWNER'S MANUAL**

60-2201

# RADIO SHACK 1850 CHESS 17 LEVEL PROGRAM

PLEASE READ BEFORE USING EQUIPMENT

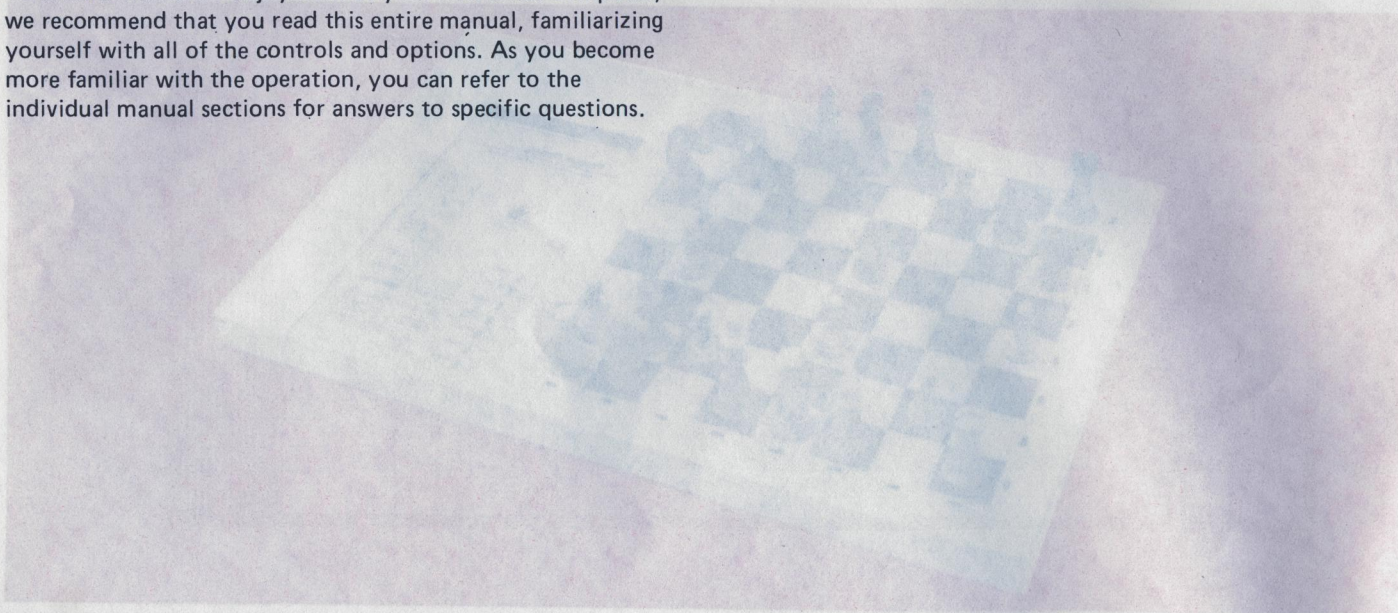


**Radio Shack<sup>®</sup>**

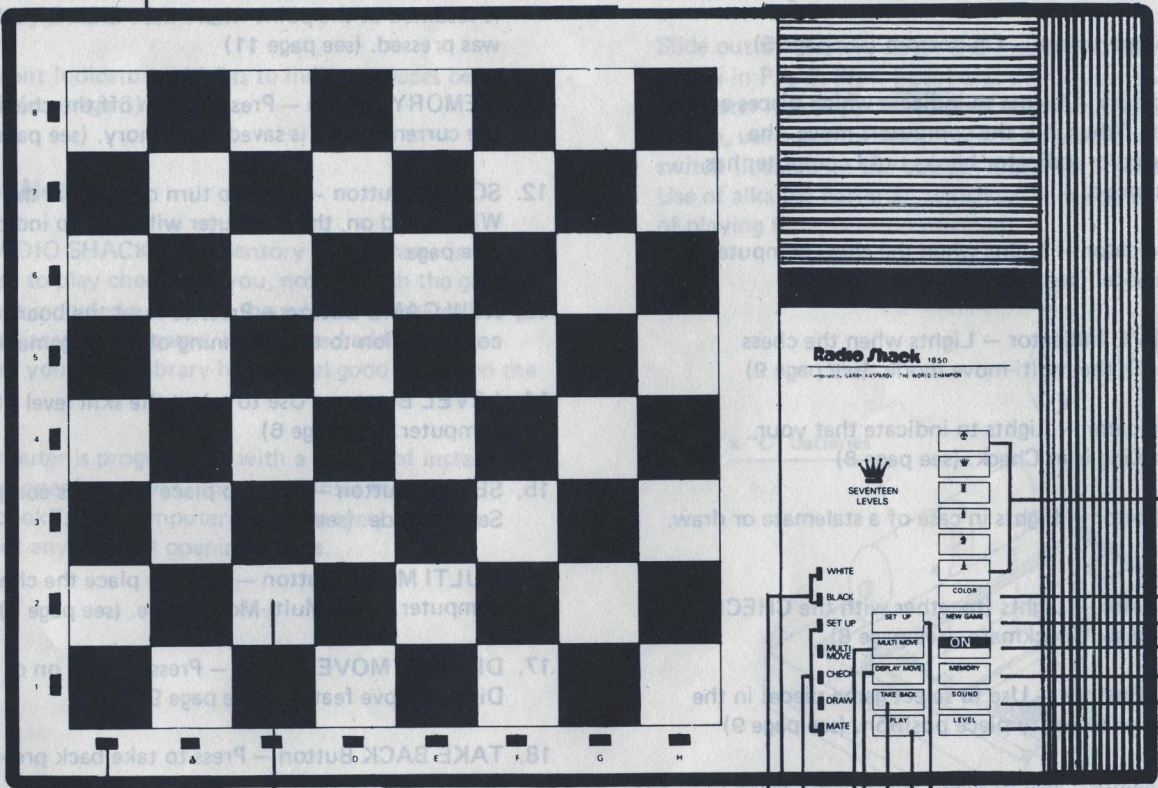
## Introduction

Radio Shack® 1850 is an uncomplicated yet state-of-the-art chess computer which automatically registers your moves on the built-in chessboard. It uses the 16 lights on the edge of the board to indicate its own moves. This computer is battery operated and contains a low-power memory which will retain the last position of an interrupted game for up to 18 months.

To ensure maximum enjoyment of your new chess computer, we recommend that you read this entire manual, familiarizing yourself with all of the controls and options. As you become more familiar with the operation, you can refer to the individual manual sections for answers to specific questions.







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## KEYS AND FUNCTIONS

1. **Battery Compartment** — On bottom (see page 5)
2. **Color Indicators** — Lights to indicate which pieces are to be moved. When it is the computers move, the appropriate color indicator blinks until computer has selected its move.
3. **SET UP Indicator** — Lights when the chess computer is in the set up mode. (see page 9)
4. **MULTI MOVE Indicator** — Lights when the chess computer is in the multi-move mode. (see page 9)
5. **CHECK Indicator** — Lights to indicate that your computer's King is in Check. (see page 8)
6. **DRAW Indicator** — Lights in case of a stalemate or draw. (see page 8)
7. **MATE Indicator** — Lights (together with the CHECK LED) to indicate Checkmate. (see page 8)
8. **Game Piece Buttons** — Use to select game pieces in the set-up mode or to verify piece position. (see page 9)
9. **COLOR Selector** — Use to select which color game pieces are being placed in the set-up mode or which color set is being verified. (see page 9)
10. **ON Button** — Press to activate the chess computer; play is resumed at the point where the "MEMORY" button was pressed. (see page 11)
11. **MEMORY Button** — Press to turn off the chess computer; the current board is saved in memory. (see page 11)
12. **SOUND Button** — Press to turn on and off the sound. With sound on, the computer will beep to indicate moves. (see page 11)
13. **NEW GAME Button** — Press to reset the board configuration to the beginning of a new game. (see page 8)
14. **LEVEL Button** — Use to select the skill level of the chess computer. (see page 6)
15. **SET UP Button** — Press to place the chess computer in the Set-up Mode. (see page 9)
16. **MULTI MOVE Button** — Press to place the chess computer in the Multi-Move Mode. (see page 9)
17. **DISPLAY MOVE Button** — Press to turn on or off the Display Move feature. (see page 9)
18. **TAKE BACK Button** — Press to take back previous moves. (see page 8)
19. **PLAY Button** — Press to force the chess computer to immediately make its move. (see page 7)



- 20. Sensory Chessboard — Each square has a sensor for indicating piece movement.
- 21. Movement Indicator — Lights to indicate pieces being moved. (see page 3)

### Important Note

- Your RADIO SHACK 1850 Sensory Chess Game is programmed to play chess with you, not to teach the game to you. We have included a copy of the rules of chess, in case you are not familiar with the game. If you need additional information, your local library has several good books on the subject.
- The computer is programmed with a variety of instant responses to opening moves. These responses form the "Opening book". The computer will, however, calculate responses for any unusual opening moves.

## 1. Getting started

Slide out the battery cover and insert 4 'C' size batteries as shown in Fig. 2. Press **ON** and then **NEW GAME** . If the computer locks up, due to static discharge for some other reason, use a pin (or sharp object) to press and hold ACL switch (located on the bottom label) for 2 seconds to reset. Use of alkaline batteries, which will provide up to 200 hours of playing time, is recommended.

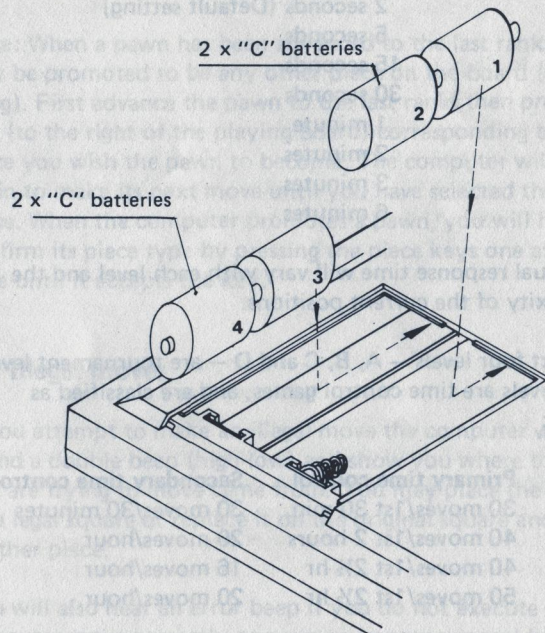


Fig. 2 Install batteries by order.



## 2. Setting the level of skill

Your Radio Shack 1850 Chess Computer has 17 different skill levels. The first nine levels are designed for casual play. The computer will select its move for these levels based on the following average response times:

Level	Average response time per move
0	0.5 second (Handicap Level for beginners)
1	2 seconds (Default setting)
2	5 seconds
3	15 seconds
4	30 seconds
5	1 minute
6	2 minutes
7	3 minutes
8	6 minutes

The actual response time will vary with each level and the complexity of the current positions.

The next four levels — A, B, C and D — are tournament levels. These levels are time control games, and are classified as follows:

Level	Primary time control	Secondary time control
A	30 moves/1st 30 min.	30 moves/30 minutes
B	40 moves/1st 2 hours	20 moves/hour
C	40 moves/1st 2½ hr	16 moves/hour
D	50 moves/1st 2½ hr	20 moves/hour

Taking Level B as an example, the computer would have to finish its first 40 moves within 2 hours (2 hours computer time — not including time for your moves), and then make the following 20 moves within one hour (computer time). The remaining moves in the game would continue to be limited by the secondary time control.

NOTE: Any time remaining on the Primary Time Control is carried forward to the Secondary Time Control, so it is possible that the secondary time can be longer than indicated. For example, in Level B, if the computer is fast enough to complete its first 40 moves using only 1 hour of thinking time, then it would have a total of 2 hours thinking time for the next 20 moves. The remaining time for each time control period will be accumulated until the end of the game.

Level	Description
E	5 min/game — The computer will try to complete a game in 5 minutes time (total computer thinking time — player time not included). This is sometimes abbreviated as a 'blitz' game.
F	10 sec/move — The computer will indicate its move within 10 seconds.
G	Infinite Level — The computer will search for a best move as long as possible (unless it is interrupted by pressing the 'play' key). In very complicated set-ups it could take several days to move.
H	Problem Solving Level — See Section 14 of this manual for a complete description.



Press **LEVEL** until the lighted indicator corresponds to the level you want or no lights are on to select Handicap Level 0. Pressing **COLOR** will increment the level by 8 steps as a short-cut in setting higher levels. The level setting may be changed at the beginning or at any time during a game. (But only when it is your turn to move)

### 3. Making moves

To make a move press down on the piece you wish to move, then place it on its destination square and press down again.

If you wish, you may select to let the computer make the opening move. To do this, simply press **PLAY**. The computer will make its move. Note that when the computer moves first, it will have the white pieces, so the board should be set up accordingly. When you move first, the computer will have the black set and you will have white.

When capturing, key in the capturing pieces move. The computer will automatically remove the captured piece from the board memory. When castling, move the King's move first, then the Rook's.

Note: The computer is programmed to allow en passant captures where the pawn can capture a piece by moving diagonally behind it (refer to the rules of Chess for a more detailed explanation). When it makes an en passant capture, the computer will remind you to remove the captured piece by lighting the two lights corresponding to its position (press the piece down before removing it).

### 4. Computer moves

The computer will indicate its own moves by sounding a beep and turning on two lights on the side of the chess board. These lights indicate the horizontal rank and vertical column of the piece the computer wishes to move. Press the piece down on its square. The computer will now show you where the piece must go. Move the piece to the square indicated and press down to complete the move.

Note: When a pawn has been advanced to the last rank; it may be promoted to be any other piece on the board (except King). First advance the pawn to the last rank, then press the key (to the right of the playing board) corresponding to the piece you wish the pawn to become. The computer will not begin to make its next move until you have selected the piece. When the computer promotes a pawn, you will have to confirm its piece type by pressing the piece keys one at a time until it accepts the key.

### 5. Illegal moves

If you attempt to make an illegal move the computer will sound a double beep (high-low) and show you where the piece you are trying to move came from. You may place the piece on a legal square or replace it on the original square and move another piece.

You will also hear an error beep if you do not execute a computer move correctly or press an improper panel key.



## 6. Check, Mate and Draw

When the computer puts your king in check the CHECK light will come on. If a game ends in checkmate, the MATE light will be turned on as well (the WHITE or BLACK lights indicate which side has been checkmated).

In case of a stalemate or draw by threefold repetition or fifty move rule, the DRAW light will be turned on.

## 7. New Game

To start a new game press **NEW GAME** when it is your turn to move. New game does not affect the level setting. If **MULTI MOVE** or **DISPLAY MOVE** have been pressed, they should be reset prior to starting a new game.

## 8. Take Back

When it is your turn to move you may take back (erase) the last computer move and your previous move. To do this press **TAKE BACK**. The computer will show you where the pieces came from and where you should replace them. The Radio Shack 1850 can take back up to 8 times.

## 9. Changing sides

If you wish to change sides with the computer you may do so by pressing **PLAY** instead of making your move. The computer will play the next move for you and you can go on playing for the other side.

You can change sides as often as you like during the course of a game. You can even press **PLAY** after every move and make the computer play an entire game against itself. The **PLAY** key is also useful when you need help and want the computer to suggest a move for you.

If you want to begin a game with the black pieces, set up the board with the black pieces at the bottom. Press **NEW GAME** and **PLAY**. The computer will make the first move for white, playing down from the top of the board.

Note: White King is on square D8 and black King is on square D1.

## 10. Interrupt

When the computer is computing a move you may interrupt it by pressing **PLAY**. This will cause it to stop computing and play the best move it has found so far.



## 11. Multi Move

The **MULTI MOVE** key puts the computer into a special mode that allows you to enter openings or to force the computer to play a certain continuation. In this mode the computer will not begin to compute a reply when a move has been entered. It will only keep track of the board position and make sure that the moves entered are legal. To return to normal play you must press **MULTI MOVE** a second time.

The Multi Move mode is also useful when you are playing a game with a friend. The computer will act as a referee and each side can always ask it for advice by pressing **PLAY**. The Multi-Move LED stays on when computer is in the Multi-Move mode.

## 12. Verifying piece position

If you upset the pieces or for other reasons are not sure that the board position is correct, the computer will show you the proper location of each piece.

Press one of the piece keys (to the right of the playing surface) when it is your turn to move. The computer will light up a horizontal rank and one vertical column to show you the position of the selected piece. Press the same piece key again to see if there are any more pieces of that kind on the board. When the computer finds no more of the piece selected it will sound a double beep and return to play mode.

You may verify the piece positions for either side by pressing **COLOR**. Always check the WHITE/BLACK lights when you are verifying a position. They will show which side is being verified.

The Verify function may be used at any time; even when Radio Shack 1850 is computing a move. Press **PLAY** again after you have verify the pieces to continue computing a move.

## 13. Setting up a special position

If you wish to set up a special position first press **SET UP**. The SET UP light will be turned on and you may then move, add, or remove pieces at will.

If the position you want to set up contains only a few pieces, press **NEW GAME** immediately after pressing **SET UP**. This will clear the board of all pieces.



To set up or modify the position select a color (by pressing **COLOR**) and then a piece key for the piece you wish to enter, move, or delete.

- To move it the piece, press it down on its current square, move it to its new position and press it down again.
- To remove the piece simply press it down on its current square and remove it from the board.
- To add a piece simply press the piece down on an empty square.



When you have set up or modified the position as required, make sure the WHITE/BLACK lights correctly indicate the side to move next and then press **SET UP** to resume play (the SET UP light will go out).

After you have set up a position always verify it as described in section 12. Do not enter an illegal position as this may yield unpredictable results.

**Example:** To set up a position with white King on E1, white rook on A1, black king on D5, and black rook on B2, first place the pieces on the board. Now press **SET UP** and **NEW GAME** to clear the board. Press **COLOR** (if necessary) to turn the WHITE indicator on. Press  and then press the white King on its square. Press **COLOR** (BLACK indicator on) and then the black King on its square. Now press the  and then the black Rook on its square. Press **COLOR** (WHITE light on) and the white Rook on its square. Press **SET UP** to return to play mode.

Note: In the above position the computer will permit castling. If you press **PLAY** it will castle and capture the black rook on the next move!

## 14. Problem mode

Your computer has a special problem mode (Level H) in which it will solve chess problems up to mate in 10 moves. Press **PLAY** to start computing for checkmate. A corresponding lamp will light to indicate the depth of computing. In this

mode the computer will only make a move if it can see a forced mate in 10 moves or less. Complicated moves may take hours/weeks. Press **PLAY** to stop the search any time you like.

If the computer finds a forced checkmate it will play the first move — the “key move” — which will lead to mate. You may try to defend the position for the opposite side (the side being checkmated) by entering moves as usual. The computer will continue playing the checkmating side until the game is over.

If the computer does not find a forced mate for the side it is playing, it will give a double beep and make no move.

## 15. Display Moves

This is a unique feature that allows you to observe the “thought process” of the computer. To activate this mode press **DISPLAY MOVE**. The computer will now show you the moves it is considering while it computes a move. It will do this by turning on the FROM square for three seconds and then the TO square for one second. You can watch how it changes its mind as it computes deeper. Pressing **DISPLAY MOVE** again switches off this feature.

If you wish to interrupt the computer while it is computing a move simply press **PLAY**. This does not operate in the problem mode.



## 16. Turning sound off

If the computer "beeps" are distracting you or others during a game you may temporarily turn off the sound by pressing **SOUND** when it is your turn to move. Press this key again to turn the sound back on. You must watch the indicator lights and press pieces and keys carefully when playing without sound.

## 17. Game memory

Your computer allows you to interrupt a game at any stage, even when it is computing a move, by pressing the **MEMORY** Key.

Play will be stopped at that point and battery power conserved. The computer will "remember" the position and resume play when you press **ON** . With a fresh set of batteries the position will be retained for up to 18 months.

## 18. ACL Button (on the back)

If the computer locks up, because of static discharge or some other reasons, press the **MEMORY** switch once, then use a pin or other sharp objects to press the ACL button. This resets the computer and clears the memory.

## MAINTENANCE

Your Radio Shack<sup>®</sup> 1850 represents a fine example of electronic engineering and construction. As such it should be treated accordingly. We offer the following suggestions so you will enjoy this product for many years to come.

If at anytime you suspect that your unit is not performing as it should, stop by your local Radio Shack store. Our personnel are there to assist you and arrange for service, if needed.



Keep it dry. If water should get on it, wipe it off immediately. Water contains minerals that can corrode electronic circuits.



Do not store in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and can even distort or melt certain plastics.





Do not drop your product. This will likely result in failure to operate. Circuit boards can crack and cases may not survive the impact. Handling your product roughly will shorten its useful life.



Do not use or store in areas of high levels of dirt or dust. The electronics may be contaminated. Any moving parts will wear prematurely.



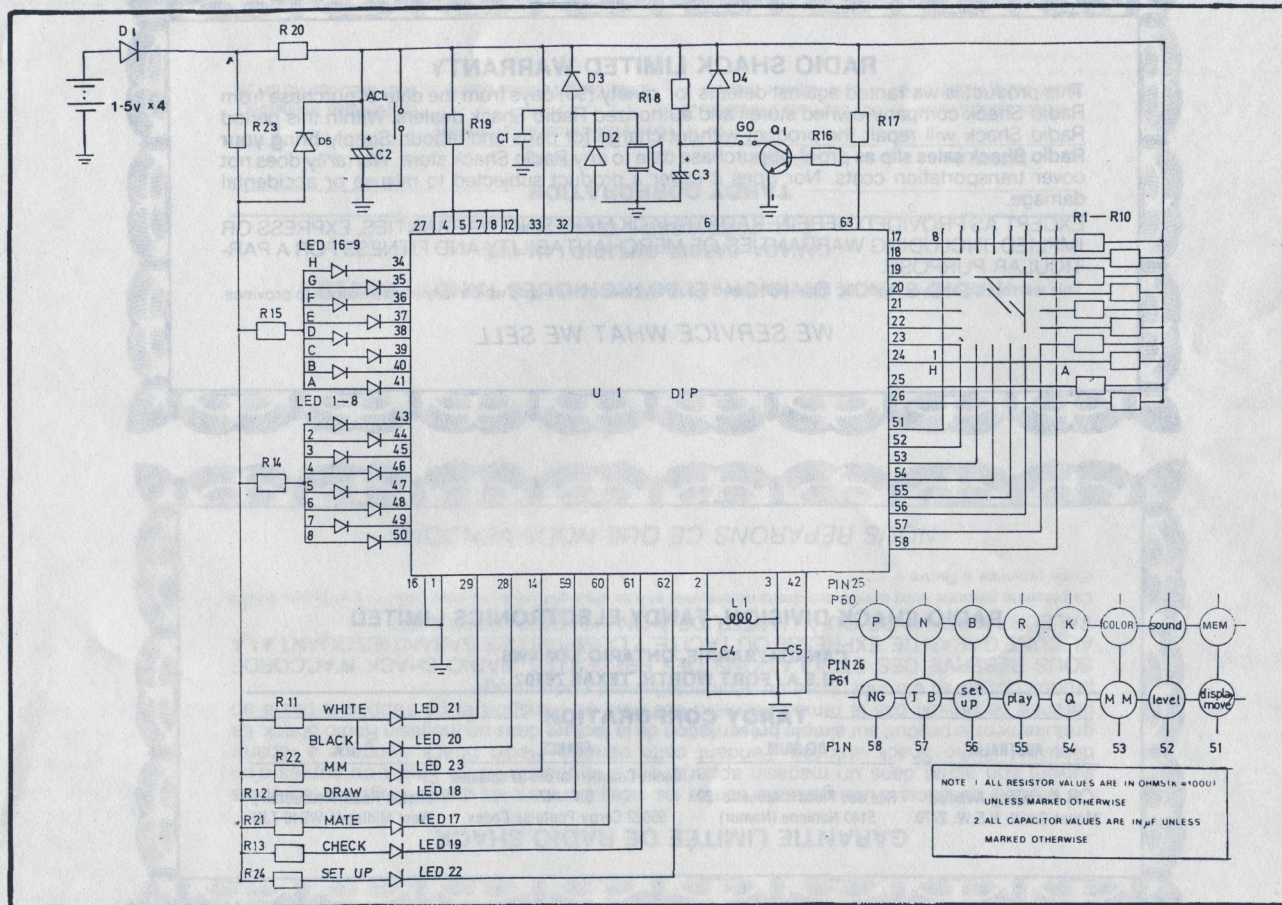
Do not use harsh chemicals, cleaning solvents or strong detergents to keep your unit looking new. You need only wipe it with a dampened cloth from time to time.



Always make sure any batteries used are fresh and are of the correct type. Never use general purpose batteries if alkaline cells are called for. Old or almost-dead batteries are also dangerous. A worn out battery can leak chemicals which will destroy electronic circuits.



# SCHEMATIC DIAGRAM





### RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for ninety (90) days from the date of purchase from Radio Shack company-owned stores and authorized Radio Shack dealers. Within this period Radio Shack will repair the product without charge for parts and labour. Simply **bring your Radio Shack sales slip** as proof-of-purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This warranty gives you specific legal rights and you may have other rights which vary from province to province.

*WE SERVICE WHAT WE SELL*

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