

Mephisto[®]

senator/magellan

Instruction Manual
Bedienungsanleitung
Instrucciones de Funcionamiento

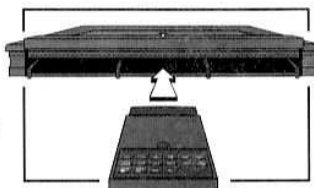
QUICK START

To play a game right away, without reading the entire manual first, simply follow these Quick Start steps!

- 1** First, make sure that your Exclusive board is turned **off**. *Never insert a module while the Exclusive board is on!*



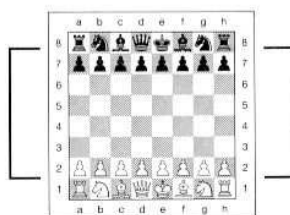
- 2** Open the drawer in the front of your Exclusive board, and swing the handle up. Insert the module into any open slot, pushing in until it is firmly seated. Also insert the 6. Generation LCD Module now (not included).



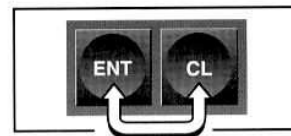
- 3** Turn the Exclusive board on, and then press **GO/STOP** on the Chess Module for at least 1 second to turn the module on. If the computer doesn't respond, press **GO/STOP** once more.



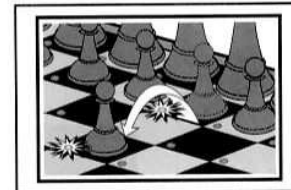
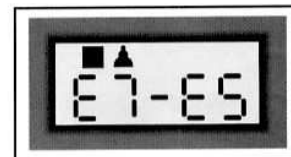
- 4** Set up the pieces in the initial starting position, with the White pieces closest to you. Make sure all the pieces are centered on their squares!



- 5** To reset the module for a **NEW GAME** of chess, simultaneously press the **ENT** and **CL** keys.



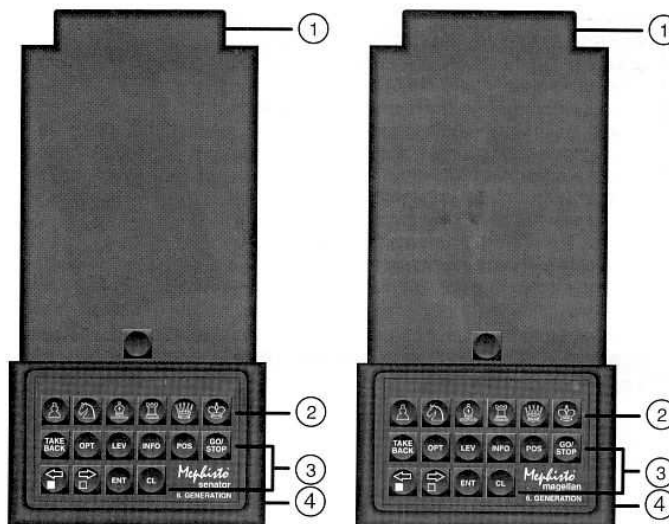
- 6** Enter your moves by simply making them on the board. When the computer moves, board lights indicate its move. The display on 6. Generation LCD module (not included) will also show you the piece, the color, and the **from** and **to** squares of the computer's move. Here, the computer wants to move its Black pawn from E7 to E5. Lift the Black pawn and make the move on the board. This completes the computer's move, and now it's your turn again. Enjoy your game!



Press **GO/STOP** at any time to turn the Chess Module off before switching off the Exclusive board. Your current game (up to 200 individual moves) will be stored in memory. When you switch back on, you can continue playing right where you left off!

KEYS AND FEATURES

1. **CONNECTOR:** 40-pin edge connector plugs the module into your Exclusive board.
2. **PIECE SYMBOL KEYS:** Used in Verify and Position Modes. Also used for pawn promotions.
3. **GAME KEYS**
 - **TAKE BACK KEY:** Press to enter Take Back Mode; within Take Back Mode, press to move forward by 10 moves at a time (or to final/initial position in memory). Also used to enter Two Player Mode.
 - **OPT KEY (OPTION):** Press to enter Option Mode; within Option Mode, press to cycle through the main option groups.
 - **LEV KEY (LEVEL):** Press to enter Level Mode; within Level Mode, press to skip over eight levels at a time.
 - **INFO KEY:** Press to enter Info Mode; within Info Mode, press to cycle through the main info groups. Press during your move to request a hint.
 - **POS KEY (POSITION):** Press to enter Position Mode.
 - **GO/STOP KEY:** Press to turn the module on/off. Your current game will be saved in memory (up to 200 individual moves).
 - **WHITE/← and BLACK/→ KEYS:** Press to change levels one at a time in Level Mode, and to cycle through options in Option and Info Modes. Also used to set the color in Position Mode. Within Take Back Mode, press to move backward/forward one move at a time.
 - **ENT KEY (ENTER):** Press together with **CL** to reset for a **NEW GAME**. Press to change sides with the computer, and press while the computer is thinking to force it to move. Press to turn option settings on and off, to select Bronstein Clock settings, and to exit Level Mode with your new level selected. Press to



clear the board in Position Mode, then press again to confirm. Within Take Back Mode, press to move to the final/initial position in memory.

- **CL KEY (CLEAR):** Press together with **ENT** to reset for a **NEW GAME**. Press to exit Option, Verify, and Position Modes. Press to exit Take Back Mode and Two Player Mode. Press to clear Info Displays and cancel Clear Board requests in Position Mode. Press to speed up the computer's play in the opening when Auto Play is activated. Press to cancel Level Mode if you decide not to make changes.
- 4. **ACL:** In base of unit. Used to eliminate static discharge. (see section 7.1 for detail).

ACCESS EXCITING FEATURES WITH THE 6 .GENERATION LCD MODULE (NOT INCLUDED)!
If you don't already have the LCD Module, it's available as an accessory! The display shows all game moves, gives you in-depth information on the computer's search process, and lets you access all the unique features built into your new Chess Module! In fact, many of the options described in this manual are dependent on the use of the LCD Module. If you enjoy your computer now, wait until you experience the exciting world of computer chess with the added dimension of these two modules!



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TROUBLESHOOTING GUIDE

INTRODUCTION

Congratulations on your purchase of this new and exciting Chess Module! If your current chess computer has been a great opponent and partner up to now, wait until you discover the difference this extraordinary module makes! Once you turn the module on, its strong chess program takes over, backed by a powerful 32-bit RISC processor.

With a Swedish ELO rating of around 2200, this Senator will challenge even the most advanced players—yet it also includes a number of

features aimed specifically at beginners. It's perfect for anyone, and we guarantee that your chess games will never be the same!

For the Magellan Module, the incorporation of built-in hash tables (512K) offers the ultimate in mid- and endgame performance, with Swedish ELO rating of around 2280! Plus, along with all the features designed for advanced players, the program also includes a number of levels and options aimed specifically at beginners. It's the perfect chess opponent for everyone!

And that's not all! You'll gain a great number of additional game options on the companion LCD Module (6. Generation LCD Modules, not included). If you don't have the LCD Module yet, you need one to explore all the exciting features offered and to see how these two modules (that is, the Senator plus LCD module or Magellan plus the LCD module) work hand-in-hand. Take your time, study the features at your leisure, and above all, have lots of fun!

1. GETTING STARTED!

IMPORTANT NOTE...

For the remainder of this manual, it is assumed that you are using the 6. Generation LCD Module along with your new Chess Module. Please be aware that some of the features will only work if the LCD Module is inserted.

1.1 Power Off? Plug In the Modules!

Always make sure your chess computer is **OFF** before inserting or removing modules!

CAUTION: NEVER INSERT OR REMOVE A MODULE WHILE THE COMPUTER IS ON. DOING SO COULD DAMAGE YOUR CHESS COMPUTER!

Open the drawer in the front of your computer, and swing the handle up. Insert the module into any of the open slots, pushing it in until it is firmly seated. You should also insert the 6. Generation module now, into one of the remaining open slots.

1.2 Power On; Set Up the Pieces

Turn your chess computer on, and then activate the Chess Module by pressing its **GO/STOP** key for at least 1 second. Set up the pieces in

their starting positions, with the White pieces nearest to you. Once the computer recognizes that you are setting up the initial position, it automatically resets itself for a new game! You can also simultaneously press **ENT** and **CL** on the module to reset the computer for a **NEW GAME** of chess.

The computer will not play until all pieces are centered on their squares. If the H8 Rook is off the board, for example, or if it is too far off-center in its square, the H8 light will remain on until you center the Rook correctly.

1.3 Ready? Try Out Your New Opponent!

Begin playing chess as you normally would—pick up your piece and make your move on the board. After you have moved, the computer will beep and start thinking for Black. You'll soon see that your new module is making your chess computer a stronger and much more versatile opponent! You may notice that the computer often moves instantly at the beginning of a game, instead of taking time to think. This is because it is playing from memory, using a built-in "book" of opening moves (for more information, see Section 2.9).

1.4 Now It's the Computer's Turn

When the computer makes its move, it beeps and turns on board lights to indicate its move—the light in the **from** square and the light in the **to** square flashes alternately. The computer's move is also shown in the display window on LCD module. Check it out—you'll see the **from** and **to** squares of the computer's move, along with the color and type of piece it is moving! Pick up the indicated piece and move it on the board to complete the computer's move. And it's your turn again...

1.5 Change Your Mind? Take Back!

When you're playing against this module, nothing is "set in stone"—you can change your mind or decide to play a different move whenever you want! When it's your turn, simply press **TAKE BACK**. Then press **WHITE/←**, and the display and board lights will indicate the move to be taken back. Pick up the indicated piece, and move it back to the square it came **from** to complete the take-back. Press **WHITE/←** again if you want to take back another move. You can take back up to 200 individual moves (100 moves for each side). To resume play at any point, press **CL** and make another move.

After taking back a capture, the computer reminds you to put the

captured piece back on the board—the lights for the capture square and the original location of the captured piece will come on. The LCD also shows the capture square, along with the piece and color symbols for the captured piece. Put the indicated piece back on the board to complete the take-back.

The **TAKE BACK** feature also offers some "express" options which allow you to go back and forth in your game rapidly, without having to take back or replay each individual move! This can come in very handy, for example, if you want to go back to an earlier position in a game and play on from there.

See "**EXPRESS TAKE-BACK FEATURES!**" for a chart showing all your options at a glance.

After pressing **TAKE BACK**, you can do the following:

- Press **ENT** to jump forward to the final position of a game or back to the initial position in memory (up to 200 individual moves).
- Press **TAKE BACK** again to jump forward in 10-move steps (or to the final/initial position in memory).
- Press **WHITE/←** or **BLACK/→** to jump backward or forward one individual move at a time.

Press **CL** when you reach your desired position, verify and restore the board and continue play (see section 6)!

1.6 Game Over? Why Not Play Again!

Whenever you finish a game (or if you give up on your current game), it's easy to start over again! Reset the module by pressing **ENT** and **CL** together. The **NEW GAME** sound signifies that the computer is ready for another game of chess. The same playing level will be in effect, but you can change it if you'd like, as explained in Section 3.

IMPORTANT: Pressing **ENT** and **CL** together for a **NEW GAME** clears your current game from the computer's memory—be careful not to press these keys by mistake!

1.7 Too Easy/Hard? Change the Level!

When you first turn your computer on, it's automatically set to Normal Playing Level 4 (five seconds a move). However, you have 64 different levels to choose from—you'll want to try them all out! For descriptions of the playing levels and how to change levels, see Section 3.

EXPRESS TAKE-BACK FEATURES!



1. Press TAKE BACK.

You now have the following options:



- **ENT** jumps forward to the final position or back to the initial position of the game (up to 200 individual moves).



- **TAKE BACK** jumps forward by 10 moves at a time (or to the final/initial position in memory).



- **WHITE/←** jumps backward one move at a time.



- **BLACK/→** jumps forward one move at a time.



2. When you reach your desired position, press CL to return to normal play!

3. Verify and restore the chess board (see section 6).

For more details, see Section 1.5.

2. MORE FEATURES TO EXPLORE

2.1 Whose Move? Check the Display!

When the computer plays Black, the display flashes the black square (the symbol for Black). After the computer has moved, a white square is displayed steadily to show that it is now White's turn to move. You can tell at a glance if the computer is currently thinking, and which side is to move!

2.2 Special Chess Moves

Captures: Captures are played on the board exactly as in a normal game of chess—pick up your piece, take the captured piece off the board, and put your piece down on the capture square. Captures are displayed as in E5≡F4.

En Passant Captures: In this type of capture, the computer reminds

you to remove the captured pawn by lighting that square. As soon as you remove the pawn, the computer beeps to signify completion of the move.

Castling: The computer automatically recognizes castling after the King is moved. After you have moved the King, the board lights remind you to move the Rook. Note that Kingside castling is displayed as O-O , and Queenside castling as O-O-O .

Pawn Promotions: When your pawn reaches the eighth rank, the computer beeps to indicate that a promotion is taking place, and it automatically assumes that you are promoting to a Queen. Simply replace the pawn with a Queen to complete the promotion. If you wish to *underpromote* to a Knight, Bishop or Rook, first remove the pawn from the board (the display automatically shows the Queen symbol). Next, press the **PIECE SYMBOL KEY** on the Chess Module that corresponds to your desired promotion piece, and that symbol will show in the display. Put the new piece down on the eighth rank—the computer immediately recognizes your new piece and begins thinking about its next move! **When the computer's pawn promotes**, first pick up its pawn as usual. You'll notice that the display shows both the pawn and the promoted piece. Put the piece down on the indicated square to complete the move. Remember to change the piece on the board after a pawn is promoted!

2.3 Illegal Moves

Your computer will never accept an illegal move! If you try to make one, you'll hear a low beep, and the display will simply continue to show the square the piece came **from**. Move the piece back to its original square to cancel the illegal move indication. Now, make another move to continue the game.

If you move the computer's piece to an incorrect square, you won't hear the normal beep that sounds when a move is completed. Instead, the square of the correct to lights up under its incorrectly placed piece, and the board won't accept any other move. If this happens, pick the piece up again, and move the piece to that square to complete the move. You can simply check the display for the correct move.

If you pick up a piece, but decide not to move it after all, put the piece back down on that same square again to cancel; then make a different move. If you change your mind after entering your whole move, take the move back as described in Section 1.5.

2.4 Check, Mate, and Draw

When user's King is in check, the computer first displays its move as usual. After the move is made, **CHCK** flashes in the display for a few seconds, along with the checking move. The display then goes back to showing the clock.

If the computer discovers a forced mate against its opponent, it first displays its move as usual. After the move has been made on the board, the computer flashes a mate announcement along with the move for several seconds (e.g., K n 2 for a mate in two moves). The display then goes back to showing the clock.

When a game ends in checkmate, you'll hear beeps and the display will flash **MATE** (along with the mating move) for a short time after the move is made. The display then goes back to showing the clock.

The computer recognizes draws by stalemate, three-fold repetition, the 50-move rule and insufficient material. After a draw has occurred, the display flashes the type of draw: **END** for stalemate or draw by insufficient materials, **END3** for three-fold repetition, and **END50** for a draw by the 50-move rule. The display then goes back to showing the clock.

2.5 Interrupting the Computer's Search

Think the computer is taking too long to move? You can interrupt it any time! Simply press **ENT** while the computer is thinking, and it will stop and play the best move it has found so far. This feature can be handy on the higher levels, where the computer can take a long time to move, and on the Infinite Level, where the computer thinks indefinitely unless you stop it.

*On the Problem Solving Levels, pressing **ENT** won't force the computer to make a move. Instead, the computer will sound an error beep and display — — — — to indicate that it was interrupted before it found a mate. To continue play, switch to another level.*

2.6 Changing Sides with the Computer

To change sides with the computer, simply press **ENT** when it's your turn—and the computer will make the next move for your side. Change sides as often as you wish!

2.7 Two Player Mode

Besides taking back moves as described in Section 1.5, the **TAKE BACK** key is also used to activate Two Player Mode. Normally, the

computer automatically answers with a countermove whenever you enter a move. If you activate Two Player Mode with **TAKE BACK**, however, you can enter any number of moves one by one, without allowing the computer to answer. To exit Two Player Mode at any time, press **CL**. If it's the computer's turn when you exit Two Player Mode, simply press **ENT** after exiting Two Player Mode and the computer will make the next move.

The following are some great ways to use this feature:

- Play through master games. Press **CL** then **ENT** to see what the computer would do in any position!
- Keep records of your own chess games. When a game is over, play to any position to see how other moves or different strategies might have affected the outcome.
- Study opening lines by entering them manually.
- Play against a friend, with the computer acting as referee. It will monitor your game, checking all moves for legality!

*When playing against another person, if either side should need help from the computer, press **INFO** to see a suggested move.*

2.8 Playing Black from the Bottom

See "**PLAYING BLACK FROM THE BOTTOM? HERE'S THE POSITION!**" for a diagram showing the correct piece set-up.

Want to depart from the usual standard and let the computer play the White pieces from the top? Then try out this interesting feature! Set up the board with the Black pieces closest to you, as shown in the diagram in this section. Press **ENT** and **CL** together to reset for a **NEW GAME**, and then press **ENT** again. The computer will reverse sides—watch as it makes the first move for White from the top of the board!

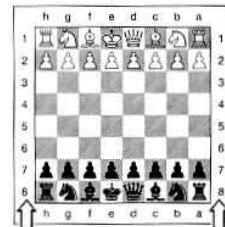
When you play Black from the bottom, note that the notation on the board is reversed.

2.9 Built-In Openings

At the beginning of a game, the computer will often move instantly on many levels. This is because the Chess Module is playing from memory, using its own built-in "book" of opening chess moves. This book contains thousands of positions, including most major openings and many positions from grandmaster play. If the current board position is in its book, the computer plays a response to that position automatically, instead of having to think about the move!

PLAYING BLACK FROM THE BOTTOM? HERE'S THE POSITION!

If you play Black from the bottom of the board, as described in Section 2.8, be sure to set up the pieces correctly! Notice that the Kings and Queens are positioned differently, and the board notation is reversed.



Also included is a unique user-selectable book feature, which lets you choose from different types of opening books, or even turn the book off, if desired. For complete details, see Section 5.2.

2.10 Thinking on the Opponent's Time

As you play, you may notice that the computer sometimes replies to your moves immediately, even in the middle of games played on the higher levels. This is because the computer thinks on your time, using the time you are taking for your move to think ahead and plan its own strategies. It tries to guess the move you are likely to make, and then calculates its responses for that particular move while you are still thinking. If the computer has guessed right, there's no reason for it to keep on thinking—it immediately plays the move it has already found!

You can disable this feature, if you'd like, by turning on the Easy Mode option! For more information, see Section 5.2.

2.11 Game Memory

Press **GO/STOP** on the Chess Module at any time to interrupt and save your game. Play is then suspended, and the module stores your current game in memory (up to 200 individual moves). When you switch back on again (by pressing **GO/STOP** for at least 1 second), you can continue right where you left off!

*Note: If you press **GO/STOP** while computer is searching, you have to press **CL** after switching back on.*

IMPORTANT NOTE...

You must switch off the Chess Module by pressing **GO/STOP** before switching off the Exclusive board, otherwise, the game and memory would be lost and you may need to press **GO/STOP** once or twice after switching on the Exclusive board. Before pressing **GO/STOP** to turn on the chess module, switch on the Exclusive Board, otherwise the memory would be lost and you will have to press ACL.

After switching off the Mephisto Exclusive Board, please wait for at least **4 seconds** before unplugging the Senator/Magellan module, in order to avoid any electrical noise from influencing the unit.

3. THE PLAYING LEVELS

Your Chess Module offers 64 different playing levels! When you set the level, keep in mind that when the computer has more time to think about its moves, it becomes stronger and plays better—just like a human player! For an overview of all the levels, refer to the Level Chart. The levels are also described individually in this section.

Setting a Playing Level

See **"USE THIS CHART TO SELECT A PLAYING LEVEL!"** for a look at how to set levels and an overview of all 64 levels.

Press **LEV** to enter Level Mode, and the computer displays the current playing level. When you enter Level Mode the first time, the module is set on Level 4 (with an average response time of five seconds a move), and the display shows **L 0:05**. Change levels one at a time by using the **BLACK/⇒** and **WHITE/⇐** keys. As a shortcut, press **LEV** repeatedly to skip over eight levels at a time. When the display shows your desired level, press **ENT** to enter your new level into the computer and exit Level Mode.

If you press **LEV** to verify the level but you don't want to actually change levels, press **CL**. This lets you exit Level Mode without changing the level or clock settings, even while the computer is thinking.

Other important points to remember regarding levels:

- Changing the level always resets the chess clocks.
- We don't recommend changing levels while the computer is thinking, since the clock is reset and the current search is aborted. If you must do this, first press **ENT** to abort the computer's search, and

**NEED HELP CHOOSING A LEVEL?
SOME TIPS FOR YOU!**

- **Are you a beginning player?** You have lots of choices! Check out the Fun Levels or the lower Training Levels. They restrict the computer's search depth in different ways, resulting in weaker play and giving you the chance to learn about the game and maybe even beat the computer!
- **Are you an intermediate or more advanced player?** Try the Normal, Training, or Tournament Levels. The Normal Levels go from easy all the way up to a difficult 15-minute response time, and the Tournament Levels are extremely challenging. Don't forget to try the Speed Chess Levels for some fast and exciting games! By the way, for Tournament and Speed Chess games, you can activate the Bronstein Clock option, as you'll see in Section 5.1!
- **Want to experiment?** Use the Problem Solving Levels to solve problems up to mate in eight—try searching from a position in one of your own games, or set up an actual mate problem. Or, choose the Infinite Level to have the computer analyze complicated positions for hours or even days!

make its move on the board. Then, take back the computer's move and change the level. Finally, press **ENT** to make the computer start thinking on the new level.

3.1 Normal Playing Levels

LEVEL	TIME PER MOVE	DISPLAY
1.....	1 second.....	L 0:01
2.....	2 seconds.....	L 0:02
3.....	3 seconds.....	L 0:03
4.....	5 seconds.....	L 0:05
5.....	10 seconds.....	L 0:10
6.....	15 seconds.....	L 0:15
7.....	20 seconds.....	L 0:20
8.....	30 seconds.....	L 0:30
9.....	45 seconds.....	L 0:45
10.....	1 minute.....	L 1:00

11.....	1.5 minutes.....	L 1:30
12.....	2 minutes.....	L 2:00
13.....	3 minutes.....	L 3:00
14.....	5 minutes.....	L 5:00
15.....	10 minutes.....	L 10:00
16.....	15 minutes.....	L 15:00

When you choose one of the Normal Playing Levels, you are selecting an average response time for the computer. Note that the times are averaged over a large number of moves. In the opening and endgame, the computer tends to play faster, but in complicated middlegame positions, it may take longer to move.

3.2 Tournament Levels

LEVEL	TOTAL TIME / NUMBER OF MOVES	DISPLAY
17.....	1 hr. 30 min. / 40 moves.....	1:30:40
18.....	1 hr. 45 min. / 35 moves.....	1:45:35
19.....	1 hr. 45 min. / 40 moves.....	1:45:40
20.....	1 hr. 30 min. / 35 moves.....	1:30:35
21.....	2 hrs. / 40 moves.....	2:00:40
22.....	2 hrs. 30 min. / 45 moves.....	2:30:45
23.....	2 hrs. / 50 moves.....	2:00:50
24.....	3 hrs. / 40 moves.....	3:00:40

The Tournament Levels require you to make a certain number of moves within a given amount of time. If a player exceeds the allotted time for a given number of moves, the computer flashes "time" (**L TIME**) along with the elapsed time, to show that the game is over. If you wish, you can continue to play even after the time has run out.

If you choose a Tournament Level, you may want to set the clocks to display countdown time instead of elapsed time (see Section 5.1). When game time runs out, the countdown clock automatically reverts back to the normal clock display.

You also have the option of using Bronstein Clock time controls when playing Tournament games! For details, see Section 5.1.

3.3 Speed Chess Levels

LEVEL	TIME PER GAME	DISPLAY
25.....	5 minutes.....	0:05:99
26.....	10 minutes.....	0:10:99
27.....	15 minutes.....	0:15:99
28.....	20 minutes.....	0:20:99

29.....	30 minutes.....	0:30:99
30.....	45 minutes.....	0:45:99
31.....	60 minutes.....	1:00:99
32.....	90 minutes.....	1:30:99

On the Speed Chess Levels (also called *Blitz* or *Sudden Death* Levels), you set the total time for the whole game. If game time is exceeded, the computer flashes "time" (**L TIME**) along with the elapsed time, to show that the game is over.

If you select a Speed Chess Level, you may want to set the chess clocks to display countdown time instead of elapsed time (see Section 5.1). When game time runs out, the countdown clock automatically reverts back to the normal clock display.

You also have the option of using Bronstein Clock time controls when playing Speed Chess games! For details, see Section 5.1.

3.4 Fun Levels

LEVEL	TIME PER MOVE	DISPLAY
33.....	1 second.....	Fun: 1
34.....	2 seconds.....	Fun: 2
35.....	3 seconds.....	Fun: 3
36.....	4 seconds.....	Fun: 4
37.....	5 seconds.....	Fun: 5
38.....	6 seconds.....	Fun: 6
39.....	7 seconds.....	Fun: 7

Are you a novice or beginning chess player? If so, these levels are meant especially for you! On these unusual playing levels, the Chess Module causes your computer to be much more "human" than most chess computers—it gives everyone a chance to win, in a world where chess machines are typically relentless and often quite difficult to beat. Even though the general consensus seems to be that computers never make mistakes, on the Fun Levels, your computer actually will!

Various handicaps are built into the Fun Levels, demonstrating common mistakes made by beginners. Level 33 is the weakest level.

Even after you have mastered the Fun Levels, they can still be a valuable training tool. You can start a game on a Fun Level, for example, and, when the computer makes a bad move, you can switch to a normal level and try to convert your advantage to a win, playing against the stiffer opposition of a higher level!

USE THIS CHART TO SELECT A PLAYING LEVEL!

1.  Press LEV to enter Level Mode.

2. Next, select your level, using the chart on the right. Cycle through until your level is displayed, as follows:




• Press **BLACK/→** to increase levels by one.



• Press **WHITE/←** to decrease levels by one.



• Press **LEV** to increase levels by eight.

3.  Finally, press ENT to exit Level Mode, using your new level!

For more details, see Section 3.

30 sec. per move L 0:30 Level 8	15 min. per move L 15:00 Level 16	40 moves in 3:00 3:00:40 Level 24	90 min. per game 1:30:99 Level 32	Infinite Level 9:99:99 Level 40	Mate in 8 moves 7 in: 8 Level 48	8 ply search PLY: 8 Level 56	16 ply search PLY: 16 Level 64				
20 sec. per move L 0:20 Level 7	10 min. per move L 10:00 Level 15	50 moves in 2:00 2:00:50 Level 23	60 min. per game 1:00:99 Level 31	7 sec. per move Fun: 7 Level 39	Mate in 7 moves 7 in: 7 Level 47	7 ply search PLY: 7 Level 55	15 ply search PLY: 15 Level 63				
15 sec. per move L 0:15 Level 6	5 min. per move L 5:00 Level 14	45 moves in 2:30 2:30:45 Level 22	45 min. per game 0:45:99 Level 30	6 sec. per move Fun: 6 Level 38	Mate in 6 moves 6 in: 6 Level 46	6 ply search PLY: 6 Level 54	14 ply search PLY: 14 Level 62				
10 sec. per move L 0:10 Level 5	3 min. per move L 3:00 Level 13	40 moves in 2:00 2:00:40 Level 21	30 min. per game 0:30:99 Level 29	5 sec. per move Fun: 5 Level 37	Mate in 5 moves 5 in: 5 Level 45	5 ply search PLY: 5 Level 53	13 ply search PLY: 13 Level 61				
5 sec. per move L 0:05 Level 4	2 min. per move L 2:00 Level 12	35 moves in 1:30 1:30:35 Level 20	20 min. per game 0:20:99 Level 28	4 sec. per move Fun: 4 Level 36	Mate in 4 moves 4 in: 4 Level 44	4 ply search PLY: 4 Level 52	12 ply search PLY: 12 Level 60				
3 sec. per move L 0:03 Level 3	1.5 min. per move L 1:30 Level 11	40 moves in 1:45 1:45:40 Level 19	15 min. per game 0:15:99 Level 27	3 sec. per move Fun: 3 Level 35	Mate in 3 moves 3 in: 3 Level 43	3 ply search PLY: 3 Level 51	11 ply search PLY: 11 Level 59				
2 sec. per move L 0:02 Level 2	1 min. per move L 1:00 Level 10	35 moves in 1:45 1:45:35 Level 18	10 min. per game 0:10:99 Level 26	2 sec. per move Fun: 2 Level 34	Mate in 2 moves 2 in: 2 Level 42	2 ply search PLY: 2 Level 50	10 ply search PLY: 10 Level 58				
1 sec. per move L 0:01 Level 1	45 sec. per move L 0:45 Level 9	40 moves in 1:30 1:30:40 Level 17	5 min. per game 0:05:99 Level 25	1 sec. per move Fun: 1 Level 33	Mate in 1 move 1 in: 1 Level 41	1 ply search PLY: 1 Level 49	9 ply search PLY: 9 Level 57				
NORMAL PLAYING LEVELS		TOURNAMENT LEVELS		SPEED CHESS LEVELS		FUN LEVELS/ INFINITE LEVELS		PROBLEM SOLVING LEVELS		TRAINING LEVELS	

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3.5 Infinite Level

LEVEL	MOVE TIME	DISPLAY
40	No time limit	9:99:99

On the Infinite Level, the computer will search indefinitely, until it finds a forced mate or forced move; until it has fully searched the position to its maximum depth; or until you press **ENT** to stop the search. If you halt the search, the computer makes the move it currently thinks is best.

Try experimenting with this level—set up some interesting board positions and let the computer analyze them for you. It will think for hours or even days on end, trying to come up with the best possible move! And you can even watch the computer as it thinks—take advantage of the unique Rotating Display feature described in Section 5.3!

3.6 Problem Solving Levels

LEVEL	PROBLEM	DISPLAY
41	Mate in 1	7 in: 1
42	Mate in 2	7 in: 2
43	Mate in 3	7 in: 3
44	Mate in 4	7 in: 4
45	Mate in 5	7 in: 5
46	Mate in 6	7 in: 6
47	Mate in 7	7 in: 7
48	Mate in 8	7 in: 8

Selecting one of these levels activates a special Mate Finder Program. If you have a position where there may be a mate and you would like the computer to find it, set the computer on one of the Problem Solving Levels. Your Chess Module can solve mates in up to eight moves. Mates in one to five are usually found quite quickly, whereas solutions taking six to eight moves may take quite some time. If there is no mate present or the computer can't find a mate, it will beep and display dashes (-----). To continue play, switch to another level.

3.7 Training Levels

LEVEL	DISPLAY	LEVEL	DISPLAY
49	PLY: 1	57	PLY: 9
50	PLY: 2	58	PLY: 10
51	PLY: 3	59	PLY: 11
52	PLY: 4	60	PLY: 12
53	PLY: 5	61	PLY: 13
54	PLY: 6	62	PLY: 14

55	PLY: 7	63	PLY: 15
56	PLY: 8	64	PLY: 16

On the Training Levels, the computer's search depth is limited to a certain number of moves, as shown above. As you cycle through the levels, the computer displays PLY: # for each level. A "ply" is an individual move (a move for either side), and "#" is the number representing the search depth. For example, on Level 49, the computer searches to a depth of one ply, and thus looks ahead only one individual move. On this level, therefore, it will often overlook a mate in one. This produces weaker play, giving beginners a chance win!

4. INFO MODE: WATCH THE COMPUTER THINK!

Imagine this: You're playing chess against a friend, and it's his move. You'd love to know what move he's thinking about, and you'd really like to get his opinion of the board position. But, of course, you won't ask—because that's just not done! Well, guess what—when you enhance the capabilities of your computer with the Chess Module and LCD Module, you can ask anything you want, and you'll get all the answers! In fact, with the help of these two modules, you can get an incredible amount of information about the computer's thought process. On request, it will show you the move it's thinking of, the line of play it expects after that move, its evaluation of the current board position, how deeply it's searching, and more. As you can imagine, studying this information can help you learn so much more about chess!

Using Info Mode

How do you access all this game information? By using Info Mode at any time! If you do this while the computer is thinking, you'll see the information displays change as the computer considers different moves and searches deeper!

See **"INFO MODE AT A GLANCE!"** for a chart summarizing all the Info Mode displays.

Game information is divided into three groups, and pressing **INFO** cycles from one group to another. The **BLACK/→** and **WHITE/←** keys can be used to cycle through the displays within each of the groups. Press **CL** to exit Info Mode and go back to the normal clock. After learning about Info Mode, take a look at Section 5.3 for a

description of the Rotating Display. Selecting this feature makes the computer automatically cycle through the requested information in one-second intervals every time it thinks about its move—you can actually watch the computer *think out loud*!

Whenever requested information is not available, the display will show dashes (-----).

4.1 Principal Variation

Press **INFO** the first time to get information on the principal variation (the predicted line of play, or the sequence of moves the computer thinks will be made). The first display you'll see is the move the computer is currently thinking of making. This principal variation is shown to a maximum depth of six individual moves. Press **BLACK/⇒** repeatedly to scroll forwards through all the moves:

- Moves 1 through 6 of the predicted line of play

Press **WHITE/⇐** to scroll backwards and see the previous displays again. Press **CL** to return to the normal clock display.

Since the first move of the predicted line of play is the move the computer assumes you will make, you can also consider this move as a hint! So—whenever you need help, press **INFO** on your turn!

4.2 Search Information

Press **INFO** a second time to get information on the computer's search! Press **BLACK/⇒** repeatedly to scroll forwards through these displays:

- Evaluation of the current position (based on a pawn being worth 1.0 points; a positive number indicates White is ahead)
- Two numbers: (a) current search depth (number of individual moves the computer is looking ahead); and (b) number of moves the computer has examined so far
- The move currently being considered
- The search speed (number of positions or nodes searched every second)

Press **WHITE/⇐** to scroll backwards and see the previous displays again. Press **CL** to return to the normal clock display.

4.3 Chess Clock Information

Press **INFO** a third time for chess clock information. The chess clocks keep track of the time for both sides. Press **BLACK/⇒** repeatedly to scroll forwards through the clock displays:

- Elapsed time since the last move was made
- Total elapsed time for White
- Total elapsed time for Black
- Remaining time for White (*Speed Chess/Tournament Levels only*)
- Remaining time for Black (*Speed Chess/Tournament Levels only*)

Press **WHITE/⇐** to scroll backwards and see the previous displays again. Press **CL** to return to the normal clock display.

The clocks stop when you take back a move, verify levels, select options, verify a position, or turn the module off with **GO/STOP**. However, the times are kept in memory, and the clocks resume as soon as play is continued. When you change levels position or press **ENT** and **CL** together for a new game, the clocks are always reset to 0:00:00.

4.4 Move Count/Game Moves

Press **INFO** a fourth time to show the move number in the game so far. Pressing **WHITE/⇐** repeatedly will scroll backwards through the moves of your game (up to 200 individual moves).

- Current move number so far
- Moves of the current game

Press **BLACK/⇒** to go forward through the moves again at any point. Press **CL** to return to the normal clock display.

4.5 Want a Hint? Just Ask!

If you ever need advice on a move, you can always ask for a hint. Simply press **INFO** when it's your turn to move, and the computer will show a suggested move for your side!

5. OPTIONS FOR FUN AND VARIETY

In addition to all the features you've learned about so far, your Chess Module also offers many other exciting game options! All these options are user-selectable at any time during a game. They are described individually in this section, and summarized in the Option Mode Chart.

Selecting Game Options

See "THE BASICS OF OPTION MODE: HERE'S HOW!" for a complete overview of this feature.

The game options are divided into three groups: *Operation Mode*,

INFO MODE AT A GLANCE!

PRINCIPAL VARIATION INFO:



- x1** • Move 1 (predicted line of play)
- Move 2 (predicted line of play)
 - Move 3 (predicted line of play)
 - Move 4 (predicted line of play)
 - Move 5 (predicted line of play)
 - Move 6 (predicted line of play)

SEARCH INFO:



- x2** • Evaluation of current position
- 2 numbers: Search depth + number of moves examined so far
 - Current move under consideration
 - Positions searched per second

CHESS CLOCK INFO:



- x3** • Elapsed time since last move
- Elapsed time for White
 - Elapsed time for Black
 - Remaining time for White*
 - Remaining time for Black*

**Speed Chess/Tournament Levels only*

MOVE COUNT INFO:



- x4** • Current move number so far
- Moves of the current game



Press **CL** at any time to exit Info Mode.

For details, see Section 4.

Playing Mode, and Rotating Display Mode. Pressing **OPT** cycles from one group to another. Each group contains eight different options, and the **BLACK/⇒** and **WHITE/⇐** keys are used to cycle through the options within each of the groups. For each option (except option for Bronstein clock), a plus (+) in the display indicates the displayed option is ON, and a minus (−) means the option is OFF. Press **ENT** to turn each option on or off as it is displayed.

For the Bronstein Clock, press **ENT** to cycle through the time settings. The clock option you choose to display will be the selected time control when you exit Option Mode. If you decide not to turn the Bronstein Clock on, press **ENT** until the display shows bc 0 again.

After you have made all your option selections from any or all of the option groups, press **CL** to return to normal game play.

When the computer is first powered on, certain default options are set. Options which are ON at the first startup are shown in the chart with a (+), and options which are OFF are shown with a (−). When you reset for a new game, most of your selected options are carried over to your next game. An exception is Auto Play, which is automatically set back to OFF when you start another game. To return the module to its default settings at any time, select **ESC** in option mode, then press **ENT** and **CL** simultaneously after the LED and LCD scan test.

5.1 Operation Mode Options

Press **OPT** once to select the Operation Mode Options. Then use the **BLACK/⇒** and **WHITE/⇐** keys to select options within this group, and press **ENT** to turn options on (+) or off (−). For the Bronstein Clock, press **ENT** to cycle through the time settings.

a. Auto Play

On: +Auto Off: −Auto

In a normal game against the computer, you make your move and the computer makes its countermove. If you turn Auto Play on, however, you can actually watch the computer play against itself! This feature can be very useful for studying the computer's tactics and strategies. Simply set the computer on a high level—Level 58, for example, where it searches to a depth of 10 ply for each move. Then, let the computer play against itself for hours or even days! When the game ends, you can take back up to the last 200 individual moves and replay them on the board. This lets you study the results of the computer's work at your leisure! Some notes regarding Auto Play:

THE BASICS OF OPTION MODE: HERE'S HOW!

1. Press **OPT** repeatedly to select a Mode.
2. Next, select your option(s), using the Option Chart below. Cycle through the options within each mode:



• Press **BLACK/** to cycle forward.



• Press **WHITE/** to cycle backward.



When your option is displayed, press **ENT** to toggle it **on (+)** or **off (-)**. (For the Bronstein Clock, press **ENT** repeatedly to select a time setting.)

3. Finally, press **CL** to exit Option Mode, using your new option(s)!



ROTATING DISPLAY OPTIONS	Variation to play 1	Variation to play 2	Variation to play 3	Variation to play 4	Position Evaluation	Depth & Moves	Nodes Searched	Time per Move
	-rd:1	-rd:2	-rd:3	-rd:4	-rd:E	-rd:d	-rd:n	-rd:t
	Selective Search	Easy Mode	Random Play	Book On/Off	Full Book	Passive Book	Active Book	Tournament Book
	+SEL	-ESY	-rnd	+book	-b:FL	-b:P3	-b:2t	-b:t:n
PLAYING MODE OPTIONS	Auto Play	Sound with Keypress	Silent Mode	Coach Mode	Ticking Clock	Countdown Clock	Bronstein Clock	System Test
	-Auto	+Snd	-Sil	-Coach	-t:c	-c:n	bc 0	-t:EST
OPERATION MODE OPTIONS								

bc 2 → bc 5 → bc 10 → bc 15 → bc 20 → bc 30 → bc 60

For more details, see Section 5.

- To speed up the computer's play in the opening, press **CL** while it's still playing from its built-in book of openings.
- Auto Play will be cancelled if you press **ENT** during a game to abort the computer's search.
- This option will go back to its default setting of OFF whenever you press **ENT** and **CL** together for a **NEW GAME**.

b. Sound with Keypress

On: +Snd Off: -Sil

This option lets you turn off the sound that accompanies each keypress. You'll still hear beeps when the computer moves, pressing **GO/STOP** or resetting for a **NEWGAME** or when an illegal move or keypress is made.

c. Silent Mode

On: +Sil Off: -SIL

Normally, the computer always beeps when it has found its move. For completely silent operation, turn on Silent Mode.

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d. Coach Mode

On: +Coach Off: -Coach

Selecting +Coach turns on special coaching features that encourage you to concentrate on your strategic planning! In Coach Mode, the computer looks over your shoulder while you play, watching what you do and helping you when you need assistance! Here, the computer will warn you if you are in danger of losing a piece. If one of your pieces is threatened by a lesser valued piece, for example, the computer will sound warning beeps and flash the board light of the threatened piece for a few seconds. To continue the game, make your next move (or take back both the computer's and your last move and make a different one).

With Coach Mode on, the computer will also sound warning beeps if it thinks you have committed a blunder and your move is about to lead to an avoidable material loss. It does this by sounding warning beeps and flashing the move it intends to make. You can either enter the computer's move, or take back your own move and make another one.

e. Ticking Clock

On: +t:c Off: -t:c

When you turn this option on, you activate a ticking sound that makes the computer's clock sound like a real chess clock! Just imagine—you can create the atmosphere of a championship chess tournament in your own living room!

f. Countdown Clock

On: +c:n Off: -c:n

Turning this option on causes the computer to display the countdown time instead of the elapsed time. *This option can only be used with the Tournament and Speed Chess Levels.*

g. Bronstein Clock

On: bc 2 → bc 5 → bc 10 → bc 15 → bc 20 → bc 30 → bc 60
Off: bc 0

On the Speed Chess and Tournament Levels, you have a fixed amount of time for each game, and the time decreases as you think. On these levels, players often find themselves running out of time towards the end of the game—struggling to try and make good moves in a hurry, and often ending up making inferior moves instead. The Bronstein Clock offers special time controls that help alleviate such problems! This is done by adding a certain amount of time **after** each move, where the

time for the whole game is **only** reduced if you go over this fixed time.

Here's an example: Let's say you're playing Speed Chess Level 28, where you have a total of 20 minutes for the whole game. Activating the bc 10 option will give you an extra 10 seconds per move maximum (added after you make your move). Note that you can't gain extra time or increase overall thinking time by playing each move more quickly, since:

- If you use 7 seconds to make your move, only 7 seconds will be added to your total time, not 10 seconds.
- If you use 10 seconds or more to make your move, only 10 seconds will be added to your total time.

When the Bronstein Clock option is displayed, press **ENT** repeatedly to select your desired time setting, as described below:

BRONSTEIN CLOCK SETTINGS	DISPLAY
Bronstein Clock off	bc 0
2 sec. added after each move	bc 2
5 sec. added after each move	bc 5
10 sec. added after each move	bc 10
15 sec. added after each move	bc 15
20 sec. added after each move	bc 20
30 sec. added after each move	bc 30
60 sec. added after each move	bc 60

h. System Test

On: +t:EST Off: -t:EST

Turning this option on causes the module to run an internal test program. To stop the test, press **ENT** and **CL** together to reset the module for a **NEW GAME**. **CAUTION:** Selecting +t:EST will clear your game from memory. This option is included mainly for technical troubleshooting by an authorized service center in the event of a malfunction.

5.2 Playing Mode Options

Press **OPT** twice to select the Playing Mode Options. Then use the **BLACK/** and **WHITE/** keys to select options within this group, and press **ENT** to turn options on (+) or off (-).

a. Selective Search

On: +SEL Off: -SEL

The program in this Chess Module normally uses a *Selective Search algorithm*. This allows the computer to see combinations that would

otherwise take much longer to compute. Turning this option off makes the program switch to a powerful *Brute Force algorithm*. This search method minimizes the risk of an occasional oversight. *Note that the Problem Solving Levels always use the Brute Force method.*

b. Easy Mode

On: +ER5Y Off: -ER5Y

Want to beat your computer more often? Try turning on Easy Mode, which prevents the computer from thinking on your time! This weakens all the playing levels without affecting the computer's time controls. Normally, as described in Section 2.10, the computer thinks on your time, using the time you are contemplating your next move to think ahead and plan its strategies. This is part of what makes your computer such a tough opponent! By using Easy Mode to make all the levels weaker, you effectively have many more levels to choose from!

c. Random Play

On: +r3nd Off: -r3nd

Turn this option on for greater variety of play! Instead of selecting one single best move, the computer will then choose one of the best moves to play by consulting its built-in Randomizer.

d. Book On/Off

On: +book Off: -book

If you ever want to completely lock out the computer's built-in book of openings, set this option to -book. When the book is off, the computer is forced to take time to think of its moves from the beginning of the game, rather than making its moves from memory. For complete details on openings, see Section 2.9.

If you turn the book completely off, the other book options (described below) are also automatically disabled.

e. Full Book

On: +bE:FL Off: -bE:FL

Turning on the Full Book option gives the computer the freedom to choose any move from its built-in book of openings, so you'll see a greater variety of opening lines being played. *If this option is selected, the Passive, Active, and Tournament Book options are disabled.*

With this option on, you may see the computer make some questionable moves. This is because its built-in book of openings must contain

responses to certain lines of play (even questionable lines), in case they are played. While the computer would not make these moves on its own, it needs to know how to respond to them in the best way. Therefore, when you turn on the Full Book, the computer could potentially play one of these moves.

f. Passive Book

On: +bE:P3 Off: -bE:P3

Selecting the Passive Book option forces the computer to give preference to passive openings and closed positions when deciding which lines to play. *If this option is selected, the Active Book and Tournament Book options are disabled.*

g. Active Book

On: +bE:3E Off: -bE:3E

When this option is activated, the computer will give preference to active lines and open positions when deciding which lines to play. *If this option is selected, the Passive Book and Tournament Book options are disabled.*

h. Tournament Book

On: +bE:En Off: -bE:En

When you turn the Tournament Book option on, the computer is forced to always select the best possible line of play in every opening. While this results in the best chess play, it also narrows down the computer's choice of moves by limiting its available book lines. *If this option is selected, the Active Book and Passive Book options are disabled.*

5.3 Rotating Display Options

Normally, the LCD Module's display shows the time for the player to move. However, the computer can also display other information, as described in Section 4 (Info Mode). The Rotating Display feature works hand-in-hand with Info Mode, since it allows you to choose which of the Info Displays you want to see, and then cycles your choices in one-second increments. You may turn on any or all of the Rotating Display options, as desired.

IMPORTANT: The Rotating Display feature is only activated WHILE THE COMPUTER IS THINKING.

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Press OPTION twice to select the Rotating Display Options. Then use the **BLACK/⇒** and **WHITE/⇐** keys to select the options you want to see rotated in the display. The options are described below and summarized in the Option Mode Chart in this section. Press **ENT** to turn these options on (+) or off (-).

If you think the display information is changing too quickly when it rotates, press **INFO** to freeze the display. Successive presses of **INFO** and the **BLACK/⇒** and **WHITE/⇐** keys will allow you to cycle through the displays manually, as described in Section 4. To start the display rotation again, press **OPT** followed by **CL**. In any event, when the computer starts thinking about its next move, the display starts rotating again automatically.

The game information you can see **while the computer is thinking** includes the following:

- r d: l to r d:4 = predicted line of play (up to four individual moves)
- r d:E = evaluation of the current position
- r d:3 = search depth and number of moves examined so far
- r d:n = number of nodes searched per second
- r d:t = amount of time the move has taken so far

Whenever requested information is not available, the display will show a series of dashes (-----).

For complete descriptions of these options and details on how to interpret the displays, see Section 4.

6. VERIFYING/SETTING UP POSITIONS

6.1 Verifying Positions

See **"IT'S EASY TO VERIFY PIECES!"** for an example of using Verify Mode.

If you should knock over the chess pieces or if you think your board position may be incorrect, you can have the computer verify all the piece locations for you!

When it's your turn, press one of the **PIECE SYMBOL KEYS** (♙, ♚, ♜, ♛, ♞, ♟, ♠, ♡, ♢, ♣, ♤, ♥, or ♦). The computer will show you where the first piece of that type is located on the board—the display window shows the piece symbol, color, and square, and a board light also indicates the square. Press the same **PIECE SYMBOL KEY** again to see the location of the

next piece of that same type. All the White pieces are shown first, and then the Black pieces. When there are no more pieces of that type on the board, only the piece symbol remains in the display.

Want to verify some more pieces? Simply repeat the above procedure using the other **PIECE SYMBOL KEYS**, verifying the entire board if desired! Press **CL** at any time to return to normal play.

6.2 Changing and Setting Up Positions

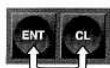
See **"TRY OUT POSITION MODE!"** to get an idea of how this feature works.

Caution: All previous moves in your current game will be erased from memory if you make any changes to your position during the game!

Position Mode is an exciting feature which lets you set up special board positions to play from, or problems you would like the computer to solve! Press **POS** to enter Position Mode, and -POS- will show in the display. You can change or set up a position whenever it is your turn to move. After setting up your new position, press **CL** to exit Position Mode.

- **To remove a piece from the board**, simply pick up the piece and physically remove it from the board. Notice that the display window indicates the piece type and color, along with a minus sign (-) and the square location.
- **To move a piece from one square to another**, pick up the piece from its original square, and put it down on the new square. As you do this, the display will show a minus sign (-) for the first square, and a plus sign (+) for the second square.
- **To add a piece to the board**, first press the **PIECE SYMBOL KEY** for that piece (♙, ♚, ♜, ♛, ♞, ♟, ♠, ♡, ♢, ♣, ♤, ♥, or ♦). Make sure the display shows the correct color symbol for the piece you want to add. If it does not, press **BLACK/⇒** or **WHITE/⇐** to change the color. When the display shows the correct piece type and color, place that piece on the desired square. The display shows a plus sign (+), along with the location for that square. To add another piece of the same type, simply put another piece on the board. To add a different piece, press a different **PIECE SYMBOL KEY** and follow the same steps outlined above.
- **To clear the board**, press **ENT** while you are in Position Mode. The display will show [----] to symbolize an empty chessboard. Press **ENT** once more to confirm that you do want to clear the board.

IT'S EASY TO VERIFY PIECES!



1. Set up the pieces for a new game, and press **ENT** and **CL** together to reset the module.
Display: □ 0:00:00.



2. Press the **KNIGHT** Key.
Display: □, ♖, b1 (the first White Knight).
Board light on: B1.



3. Press **KNIGHT** again.
Display: □, ♖, c1 (the second White Knight).
Board light on: G1.



4. Press **KNIGHT** again.
Display: ♜, ♖, b8 (the first Black Knight).
Board light on: B8.



5. Press **KNIGHT** again.
Display: ♜, ♖, c8 (the second Black Knight).
Board light on: G8.



6. Press **KNIGHT** again.
Display: ♞ (no more Knights on the board).



7. Repeat to verify any other piece! Press **CL** to exit Verify Mode.

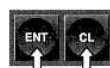
For more details, see Section 6.1.

Then add pieces as described previously. If you decide not to clear the board, press **CL** instead of **ENT** to cancel. This feature can be handy when you want to set up a position with only a few pieces, where it would be much easier to start out with an empty board!

- **Once you have changed the board position as described above**, make sure the color indicator in the display is showing the correct color of the side to move. Change the color, if necessary, by pressing **BLACK/⇌** or **WHITE/⇌**.
- **To exit Position Mode**, press **CL**. This returns you to normal game play, with your new board position!

Note that any legal position can be set up using the above outlined

TRY OUT POSITION MODE!



1. Set up the pieces for a new game, and press **ENT** and **CL** together to reset the module.
Display: □ 0:00:00.



2. Press **POS** to enter Position Mode.
Display: -POS-



3. Pick up the White pawn from Square E2, and remove it from the board.
Display: □, ♖, -E2.



4. Put that same pawn down on Square E3 to add it to the board.
Display: □, ♖, +E3.



5. Pick up the Black Queen from Square D8, and remove it from the board.
Display: ♜, ♚, -d8.



6. Put the Black Queen down on Square H5 to add it to the board.
Display: ♜, ♚, +H5.



7. Press **WHITE/⇌** to change the color to move next to White.



8. Press **CL** to return to normal game play.

For more details, see Section 6.2.

procedures. The computer will not allow you to set up an illegal position, such as one where there are more than the prescribed number of pieces for a normal game, or one where a King is in check and is not to move. In such cases, the computer will simply beep when you press **CL**, and you will not be allowed to exit Position Mode. Check the position using the **PIECE SYMBOL KEYS**, and correct the position (by adding a piece, removing a piece, or moving an incorrectly placed piece). Then press **CL** to exit Position Mode.

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7. TECHNICAL DETAILS

7.1 The ACL Function

Computers sometimes "lock up" due to static discharge or other electrical disturbances. If this occurs, ensure that the chess module and LCD module are installed and the power on Exclusive board is on. Use a pin or another sharp object to press into the hole marked ACL in the base of unit for at least one second. This resets the computer and clears its memory.

7.2 Care and Maintenance

Your Chess Module is a precision electronic device, and should never be subjected to rough handling or exposed to extreme temperatures or moisture. Do not use chemical agents to clean the module, as they can cause damage.

7.3 Battery Information

As described in Section 2.11, your game is retained in memory whenever you press **GO/STOP** on your Chess Module. The module has a 3-Volt Lithium battery installed for this purpose. To prevent possible loss of your current game information due to a weak battery, we recommend that you replace the battery approximately every 12 months.

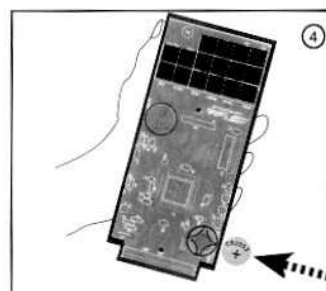
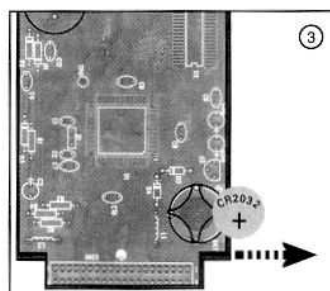
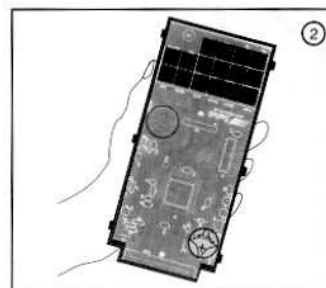
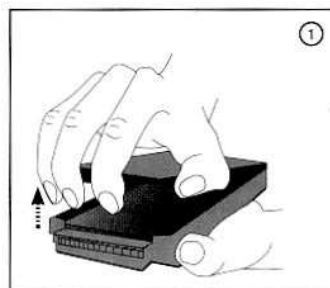
7.4 Replace new battery

To open the modules, take the lower part and loosen it on all sides. Then you can open the lower part completely. Put the circuit board on the bottom cabinet as shown in the diagram. Remove the old battery, insert a new battery type CR2032.

7.5 Technical Specifications


Clock Frequency:	20 MHz
Keys:	16
Battery:	1 x 3V Lithium button cell (CR2032)
Connection to board:	40-pin edge connector
Dimensions:	194 x 96 x 25 mm
Weight:	.25 kg

The manufacturer reserves the right to make technical changes without notice in the interest of progress.



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TROUBLESHOOTING GUIDE

SYMPTOMS	POSSIBLE CAUSES	ACTION TO TAKE
The module doesn't function.	<ul style="list-style-type: none"> The module has not been inserted properly. Electro static discharge. You have pressed GO/STOP to turn on the module while Exclusive Board is off. 	<ul style="list-style-type: none"> Power off the computer, and disconnect the module. Plug the module back in, making sure it is seated correctly. Press ACL to reset computer and clear the memory (see section 7.1) Press ACL to reset computer and clear the memory (see section 7.1)
The computer doesn't react, behaves erratically, or "freezes" during a game.	<ul style="list-style-type: none"> Wrong or defective adapter. The module has not been inserted properly. Electro static discharge. 	<ul style="list-style-type: none"> Use HGN 5009 (9V 300mA) adapter (not included). Turn the power off, and try reinserting the module. Press ACL to reset computer and clear the memory (see section 7.1)
The computer won't make a move.	<ul style="list-style-type: none"> Two Player Mode may be turned on. You may be on a level where the computer thinks for a long time. 	<ul style="list-style-type: none"> The computer only plays automatic responses to your moves if Two Player Mode is off (see Section 2.7). To force the computer to make a move, press ENT.
The computer won't accept your move.	<ul style="list-style-type: none"> Is it your turn? Is your King in check? Will your move put your King into check? Are you trying to castle incorrectly? The computer is thinking (its color symbol is flashing). 	<ul style="list-style-type: none"> Review the chess rules. Verify the position to make sure it is correct (see Section 6.1). To interrupt the computer, press ENT.
The light in the to square is on, even after moving the computer's piece.	<ul style="list-style-type: none"> You have not entered the computer's last move correctly (wrong from or to square). 	<ul style="list-style-type: none"> Pick the piece up again, and the computer will light the correct to square. Put the piece down on the indicated square. Check the display for the correct move.
You can't exit Position Mode by pressing CL .	<ul style="list-style-type: none"> You have set up an illegal position. A King may be in check and is not to move, you may have too many pawns on the board, etc. 	<ul style="list-style-type: none"> Check your position, and make necessary changes (see Section 6.2). Press CL again to exit Position Mode.
The display is showing  .	<ul style="list-style-type: none"> You are in Position Mode, and have pressed ENT to clear the board. 	<ul style="list-style-type: none"> To clear the board, press ENT once more; to cancel, press CL (see Section 6.2).
The computer seems to be making illegal moves.	<ul style="list-style-type: none"> The computer has made a special move, such as castling, en passant, or a pawn promotion. Your position is incorrect—pieces have been moved. 	<ul style="list-style-type: none"> Review the chess rules. Verify the position (see Section 6.1). Verify the position (see Section 6.1).
The computer is silent.	<ul style="list-style-type: none"> The Silent Mode option may be activated. 	<ul style="list-style-type: none"> Check the option settings (see Section 5.1).
The computer is making instant or irrational moves.	<ul style="list-style-type: none"> The computer may be on a level where it moves quickly and plays weaker because its search depth is limited. 	<ul style="list-style-type: none"> Press LEV to see which level is selected (see Section 3). Change to another level, if desired.
Your game and settings are not being retained in memory when the module is off.	<ul style="list-style-type: none"> The module's battery is weak or bad. You have not pressed GO/STOP to switch it off before switching off the power of Exclusive board. 	<ul style="list-style-type: none"> Replace the 3-Volt Lithium battery every 12 months. Press GO/STOP to turn the module off each time before switching off the power of Exclusive board.

