Technical data

Microprocessor:	65C02
Speed:	4MHz
Program memory:	32 KByte
User memory:	8 KByte
Program:	High speed selective type
Level:	Normal Levels A1–A8. Analysis levels B1–B8. Infinite level B8. Tournament levels C1–C8. Speed chess D1–D8. Novice levels E1–E8. Test levels F1–F8. Mate problems G1–G8.
Openingbook:	8000 moves, 1200 lines, user expandable with 3000 moves
Display:	2x4 character LCDs
Monitor of analysis:	Mainline 6 halfmoves, Position evaluation, analysis depth, move counter.

H1 : Auto-Play ON/OFF
H2 : Change Direction
H3 : EASY Mode ON/OFF

SPHINX
DOMINATOR
CXG-239

INSTRUCTION MANUAL

Welcome to the CXG SPHINX CHESS COMPUTER

Thank you for buying our latest product. It has been our intention to provide you with value beyond comparison, an extremely strong chess program in an attractive and easy to use housing.

Naturally, your chess computer knows all the rules of chess and will not make illegal moves. It has a large opening book from which you can select your own lines, or add new lines to it, and it will not be fooled if you transpose the moves of a particular line. During a game all the moves are stored in memory so that you can replay all the moves from the beginning to the end (max. 250 single moves).

The computer allows you to examine its analysis and keep track of the time used by both players. It will make move suggestions and will monitor games between humans on its board. A final possibility is to program positions and move sequences of your choice into the computer and to let the computer analyse these.

Although all these features are easy to use, we strongly recommend that you read this manual first, in order to get the most out of your computer.

1. The batteries.

To insert the batteries, open the battery door at the bottom of the unit and place the batteries as indicated by the + and — signes.

If you want to use an adapter, first check that the voltage specified is the one used in your country. The adapter socket is located at the back of your computer. Note that you must only use the adapter specified for your computer. The use of another automatically invalidates the warrenty.

2. Starting a game.

Set up the pieces on the chess board in their starting position, and switch on the computer. You will hear the characteristic tones and the COLOR light will come on, indicating that it is your turn to move. There are two color lights, one for white and one for black. Remember that the color lights always show who is next to move. You should also notice the two digital chess clocks. These clocks show how much time white and black have used for thinking. When you start a game, the chess clocks are of course set to zero.

3. Making moves.

Your computer has sensory switches under each square, which detect your moves.

To make a move, first press down on the center of the square occupied by the piece you want to move. The most convenient way is to tilt your piece slightly and press down with the edge of its base. The machine 'beeps' when you press down on the center of the square.

Now move your piece to the square where you want it to go,

pressing down on the center of this square as before. The machine beeps again. It has now registered your move, and starts computing its reply.

4. Computer moves.

While the computer is computing its reply, it will flash the colorlight of the side it is playing. At the beginning of the game the computer will be able to move immediately because of its extensive opening library, with more than 8000 moves in it. When the computer has decided its move, it sounds two beeps, and flashes the two squares that indicate the move.

5. Special moves.

CAPTURES can be performed just like any other move. Just remove the captured piece from the board, before or after you move your own piece.

EN PASSENT CAPTURES are performed in the same way. The computer will remind you to remove the captured pawn.

CASTLING is done by first making the king's move in the usual way. The computer wil automatically remind you to move the rook.

PAWN PROMOTION is performed automatically by the computer. If your pawn reaches the 8th rank, the computer asks you to select a piece by flashing the knight, bishop, rook and queen light. When the computer promotes one of its pawns,

it will indicate which piece it wants by lighting one of the piece lights. If you did not pay attention you can always check by testing the position (see section16).

6. Illegal moves.

If you try to make an illegal or impossible move, or try to do something else that is not possible, you will hear the error signal, and the error light will come on. Whenever you hear this signal, it means that you have done something wrong, and that your last entry has been ignored.

7. Check, mate, draw and resign.

When the computer checks you, the checklight will flash.

A checkmate is indicated by the mate light.

If a draw occurs, the draw light will flash. The computer recognizes draw by stalemate, 3rd repetition and the 50 move rule.

If the computer decides to resign, the resign light will flash. The computer will resign if it is heavily behind in material, or if it cannot avoid an upcoming mate. When the computer resigns, you can always choose to ignore the resignation, and continue the game.

New game.

To start a new game, simply press the NEW GAME key and set up the pieces in the start up position again. You can always reset the computer by pressing the NEW GAME key.

9. Levels.

Normal Levels A1–A8.

The first 8 levels: A1–A8 are the normal playing levels. When selecting one of these 8 levels, you select an average response time for the computer.

LEVEL	TIME PER MOVE	Display
A1	2 sec.	L 1
A2	5 sec.	L 2
A3	10 sec.	L 3
A4	30 sec.	L 4
A5	1 min.	L 5
A6	2 min.	L 6
A7	3 min.	L 7
A8	6 min.	L 8

Analysis levels B1–B8.

The Levels B1–B8 are meant to analyse positions by allowing the computer to think for a long time. These levels are

particularly useful in combination with the autoplayer mode (see section 21). By selecting an analysis level in combination with the autoplayer mode you can set up the computer to show you how the game progresses from a certain position at a very high level of play, while not even attending the computer.

LEVEL	TIME PER MOVE	An:
B1	10 min.	
B2	20 min.	
B3	30 min.	
B4	1 hour	
B5	2 hour	
B6	3 hour	
B7	6 hour	
B8	infinite	

Infinite level B8.

Level B8 allows no limit to the time used in making each move. The computer will continue to search, looking deeper and deeper until it finds a forced mate or until the search is halted by you. When halted, the computer will make the best move it has found thus far in its search. You can halt The computer's thinking at any time by pressing the move key (see section 16).

Tournament levels C1–C8.

There are 8 preprogrammed tourament levels: C1–C8. Should

e of the players exceed the allowed time for a given number of moves, the computer will sound a beep and flash the display. If however you wish to continue the game, simply continue. When a tournament level is selected the digital clocks will display the countdown time rather than the total time used. At first, the time will be displayed in hours and minutes. When there is no more than one hour left, the clock will switch to displaying minutes and seconds.

LEVEL	MOVES	TIME	Display
C1	40	1 hour 30 min.	tn 40
C2	35	1 hour 45 min.	35
C3	40	1 hour 45 min.	40
C4	35	1 hour 30 min.	35
C5	40	2 hours	40
C6	45	2 hours 30 min	45
C7	50	2 hours	50
C8	40	3 hours	40

Speed chess D1—D8.

If you wish to play speed chess against your computer, you may select from 8 levels: D1—D8 that set the total time for the whole game. When a tournament or speed chess level is selected, the chess clocks will display the countdown time, showing you how much time is left. The other levels will show the total time used.

LEVEL	TOTAL TIME	Display
D1	1 min.	SP:
D2	5 min.	
D3	10 min.	
D4	15 min.	
D5	20 min.	
D6	30 min.	
D7	45 min.	
D8	60 min.	

Novice levels E1—E8. Display NL: 1 ... NL: 8

Levels E1—E8 are special levels for novice players. When playing one of these levels, the computer will play at a much lower level than usual, and it may choose inferior opening moves.

Test levels F1—F8. Sd: 1 ... Sd: 8

On these levels the search depth is limited to the number of moves corresponding to the level set. For example on level F1 the computer will only look one move ahead, and thus it will often overlook mate in one from the opponent. This gives weaker play, and thus gives average players a better chance of winning against the computer.

Mate problems G1—G8.

The levels G1—G8 are for solving mate problems. Check mates

1 to 5 moves can be found relatively quickly wheras solutions with 6 to 8 moves may take some time. However the search proces can always be interrupted by pressing the MOVE key.

Should there not be a solution to the problem within the number of moves stated, the computer will first search for a solution and having found that there is none, it will sound a beep and show four lines (– – – –) in the display.

H-Levels siehe Seite 22

10. Sounds.

If you prefer your computer to operate without its audio signals, just press the SOUND/COLOR key. The sound can be swiched on again by pressing the SOUND/COLOR key again.

11. Information display.

The information display allows you to look at the computer's thougth processes. By repeatedly pressing the HINT key, the computer will show on its left display the line of play that is considers best so far, to a maximum of 6 moves. On its right display it wiil show in succession:

– The evaluation of the position is shown as a number, with a pawn being worth 100 points. A positive number means that the computer is ahead.

– The time that has been used for this particular move.

– The move that is under consideration now.

– The number of moves that have been played so far.

– The depth to which the computer is looking ahead every line.

– The selective search depth to which the computer analyses the possible lines of play.

12. Changing sides.

If you press the MOVE key the computer will make a move. Thus if you want to change sides with the computer, just press the MOVE key. The computer will make a move and expect you to move for the other side. If you want to play a game with the black pieces, press the MOVE key in the starting position.

13. Changing the direction of play.

At any point in the game you can change the direction of play, for example if you want to play the black pieces from the bottom of the chess board. To change the direction of play you first enter LEVEL mode with the LEVEL key. Then you press down on square H2. The displays will show you the CHANGE DIRECTION status: ON or OFF. By pressing down on square H2 you toggle the direction of play. Press the LEVEL key once more to exit from the LEVEL mode.

14. Taking back moves.

If you press down a piece on it's square but then decide not to move it after all, just press it down again on its original square. If you made a mistake and wish to retract your move, you may press the TAKE BACK key. If the move was a capture, the computer will remind you to replace the captured piece, by indicating the square and the type of the captured piece. If you want to take back more moves, simply continue taking back moves as long as you wish. The computer remembers the last 120 moves for each player.

15. Terminate search.

If you press the MOVE key while the computer is thinking, it will immediatly terminate the search and play the move that it considers best.

16. Checking the position.

In case of confusion, you can make the computer show you where every piece should be, according to its memory.

Press one of the six keys with a piece on it, and the computer will show you where the pieces of that type are. A steady light indicates a white piece while a flashing light indicates a black piece.

17. Enter position.

When you press the ENTER POSITION key, the computer will enter the ENTER POSITION mode. The ENTER POSITION mode is used to change or set up a position on the board. In the ENTER POSITION mode, the computer will show you the position as described in the previous section: Checking the position.

If you want to remove a piece, simply press it down on it's square and remove it from the board. Thus if you want to clear the whole board, simply remove all the pieces. You may also use the ~~TAKE BACK~~ LIBRARY/CLEAR key to clear the board.

If you want to move a piece from one square to another, simply press it down on it's original square, take it up and press down immediately on the new square. The light of the square will be turn on when you press down the piece on the new square.

If you want to add a piece, first press the corresponding piece key. The computer will show you the positions of the pieces of that type. Then check that the color light indicates the color of the piece, you want to add. If not, press the SOUND/COLOR key to change the color. When the piece and color lights show the correct type and color, simply press down on the square with the piece.

When you have entered the correct position, first make sure that the color light shows the color of the side to move. You

change the color by pressing the SOUND/COLOR key. Then press the ENTER POSITION key once more to exit from the POSITION mode.
The position can of course be changed at any time during the game, when it is your turn to move, However the previous moves will be erased from memory by any change that you make to the position.

18. Multi move.

Pressing the MULTI MOVE key places the computer in the MULTI MOVE mode. In this mode the computer will not move itself, so that you may enter the moves for both sides. This feature may be used to enter a particular opening, to replay a game to a certain position, or to use the computer as a normal chess board, allowing two humans to play against each other, while the computer checks the legality of the moves.

The MULTI MOVE is switched off by again pressing the MULTI MOVE key.

19. Replay game.

When you have played a nice game you will often want to write it down afterwards, or maybe just study one of the interesting positions more carefully. The replay game feature allows you to replay the game, you have just played.

To replay a game, set up the pieces in the starting position

and press the REPLAY key (do not press the NEW GAME key). This puts the computer in the special REPLAY mode. The computer will show you the move on the board, and the displays will at the same time show the movenumber and the move itself. If you want to replay the game on the board, you can play the moves one after the other as the computer presents them to you. You can also step through the game, forward or backward, without playing the moves by pressing the MOVE of TAKEBACK key. If you press the REPLAY key the computer will immediately jump to the end of the game. If you press the TAKE BACK key the computer leaves the REPLAY mode.

20. Library.

Your computer has an extensive opening library with more than 8000 moves. If this is enough your computer offers you the ability to program openings and variations into the computer yourself. This feature allows you to store up to 64 complete games, to a total of 3000 moves in the computer memory. To enter an opening line or game into the computer memory you first play the moves as usual on the chess board. Then you press the LIBRARY key. You can now simply store the line/game, by pressing the ENTER POSITION key. The computer will assign a square to each stored line or game and show the square on the display. The display will also tell you the length of the line/game that you have just stored.

The computer will always select the first unused square to store a line or a game, but you may also select a square yourself, by picking up a piece and putting it down on the square of your

choice. If this square is not alrealy in use, the length that will read in the display will show 0. If not, you can delete a stored line or game with the TAKEBACK key.

To quickly find out which squares are in use and which squares are not, you press the hint key. The light on every used square will come on.

To exit from the LIBRARY mode, press the LIBRARY key.

If you have stored a game in the computer memory, you will like to restore it and resume the game, or perhaps go through it again. Press the LIBRARY key, to enter the LIBRARY mode. Select the square to which the game was assigned. The game will now be restored by pressing the REPLAY mode. If you leave the LIBRARY mode, with the LIBRARY key you can resume the game from the last move.

The librarian will refuse to store a line or game if the selected square is not free, or if the game that you want to store does not start from the normal starting position, or if the total amount of 3000 moves storage capacity is exceeded.

21. Autoplayer.

When the AUTOPLAYER mode is switched on the computer will play a game against itself until the game is decided by mate or draw.

The moves will be indicated over the board by the flashing of the "from" and "to" squares, so that you may follow the game in progress. The autoplayer is activated in the LEVEL mode,

so you will first have to enter the LEVEL mode with the LEVEL key. Then you press down on square H1. The display will show you the AUTOPLAYER status: AP: on/off. By again pressing down on square H2 you toggle the AUTOPLAYER status. Press the LEVEL key once more to exit from the LEVEL mode. The MOVE key is used to start the game, you may terminate the AUTOPLAYER at any time by pressing the MOVE key.

22. Easy mode.

Easy mode is an option that weakens all playing levels without affecting the computer's time controls. This is accomplished by restricting the computer's use of its allotted time. Ordinarily, the computer will do some thinking on your time, while you are contemplating your next move. This feature is part of what makes your chess computer such a tough opponent.

Selecting EASY mode will prevent the computer from thinking on your time. Since this weakens all of the skill levels, you are thus given the optin of having more playing levels to choose from.

EASY mode is selected through square H3 in LEVEL mode, in the same way as AUTOPLAYER and CHANGE DIRECTION (see section 13 and 21).

TROUBLE SHOOTING LIST

Nothing happens when I turn on the computer

nere is probably something wrong with the power. If you use batteries, check that they are placed correctly in the holder and that they are new ones. If you use an adapter, check that the power is on.

The computer does not accept my move

If the computer answers your move with the ERROR signal, you have made an illegal move, check that your king is not in check!

If the computer shows you a square with a row and a column light, then try to press down this square. You have probably hit this square by accident and you have to turn it off again.

The computer will protest if you try to move on of the pieces of the opposite color. In case of confusion check the position (section 17).

The computer doesn't move

If the computer is flashing a move, it has already moved. If the color light is flashing, the computer is still thinking. Otherwise try the MOVE key.

How do I beat the computer?

Use level D1, this is the weakest level. When you do not know what to do, use the hint function. Use the take back function to take back your move when you made a bad move.

QUICK REFERENCE

Making moves	Just move the piece.
Computer moves	move the piece as indicated by the lights.
Special moves	Just make the move. (section 5)
Start new game	NEW GAME.
Reset computer	NEW GAME.
Change level	LEVEL, square, LEVEL (section 9)
Turn off sounds	SOUND
Piece of advice	HINT
Play black pieces	NEW GAME, MOVE
Take back move	TAKE BACK, take back move
Terminate search	MOVE
Checking position	Piece keys (steady light white, flashing black)
Enter position	ENTER POSITION, change position
— Remove piece	Just remove the piece
— Move piece	Just move the piece
— Add piece	Piece key, color key, place piece
— Change color	COLOR
— Exit from mode	ENTER POSITION
Display best line	HINT serveral times
Replay game	REPLAY
Store game/line	LIBRARY, ENTER POSITION, LIBRARY