CHESSCARD

CXG-241

◇◇ SPHINX

INSTRUCTION MANUAL

CONTENTS

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1. INTRODUCTION

Your CHESS CARD computer is an ideal opponent. It is ready to play you at any time, as often as you like, at whatever level of skill you choose. Its small size makes it especially suitable for use on a journey in conjunction with a travelling chess set.

2. STARTING PLAY

To follow the moves of the game, you will need to set up a standard chess board and pieces.

The computer is powered by one 3V Lithium Battery. Remove the lid on the underside of the machine and install the batteries in their compartment, making sure that the polarity is correct.

Press the "ON" key. Then press the control key marked NG (for "new game"). The liquid crystal display (LCD) should now be showing four horizontal dashes. This means that the machine is ready for white to make a move.

Before starting a game, you may adjust the computer's level of playing strength if you like. See section 9.

The computer announces its move with a characteristic sound signal, and displays it in the same form of notation that you used for your own move. For example:

G8 F6

– meaning that it has decided to move the knight from the g8 square to f6. Carry out this move on your chessboard, then enter your reply in the same way as before.

A capture is entered and displayed in the same way as any other move.

If you want to play with the black pieces, start the game by pressing the key marked MO (for "move") after NG. The computer will then make White's first move.

If you enter a move that isn't legal, the machine will beep and clear it from the display. Usually you will then simply see four dashes, which will be at the

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bottom if White is to move, and at the top if it is Black's move. (Alternatively a "threat" may be displayed, as explained in section 8.) Now start your move again.

5. SPECIAL MOVES

a) Castling:

To castle, simply enter the king's move. Similarly, if the computer is castling, it will display (for example):

E8 G8

– telling you to move the black king from e8 to g8, and then the rook from h8 to f8.

b) Pawn Captures "en passant":

The old and new squares of the capturing pawn are entered and displayed in the normal way. Don't forget to remove the captured pawn from the chessboard.

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c) Promotion of Pawns:

Whenever a pawn reaches the far end of the board, the computer assumes it is being promoted to a queen.

6. CHECKMATE – STALEMATE – NEW GAME

The words CHECK and MATE appear in the LCD if either side has been checkmated.

To indicate stalemate, the display will show:

To start a new game, simply press the NG key. You may do this when checkmate or stalemate is indicated, or whenever the computer is expecting a move from you.

7. INTERRUPTING THE COMPUTER – CHANGING SIDES

If you press MO while the machine is computing, it will cut short its calculations and make the move which is best according to its analysis so far.

3. CHESS NOTATION

To communicate your moves to the computer, the system of algebraic notation is used.

The files, or vertical columns of squares on the chessboard, are identilied by the letters a-h (looking at the board from White's side, and reading from left to right). The ranks, or horizontal rows, are humbered 1-8, starting from the White end.

This means that every square can be named by giving the letter of its file and the number of its rank – like a grid reference on a map. For instance, at the start of the game the white king is on e1 and the black queen is on d8.

4. MAKING MOVES

The eight control keys with labels A1, B2... H8 are used for indicating your move to the computer. If you want to play white, start the game like this:–

Decide which letter and number correspond to the square from which you want to move a piece.

- Press the key that has the right letter next to it.
- Press the key that has the right number.
- Now do the same for the square that the piece is moving to: press the key marked by the corresponding letter, then the key with the number.
- Check that your move is correctly displayed on the LCD.
- Press the key marked EN (for "enter"). Your move is now registered by the computer.
- Carry out the move with your piece on the chessboard.

For example, suppose you want to move the pawn in front of your queen two squares forward. This pawn starts on the d2 square; so press the key marked D4 (to indicate the "d" file), followed by the key marked B2 (tc

indicate the 2nd rank). The pawn is moving to the square d4; so the key marked D4 must now be pressed two more times – once to indicate the "d" file, once to indicate the 4th rank. The LCD should now show:

> d2 d4
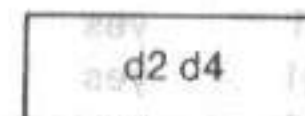
If it does, press EN. If it shows something different (because you've pressed a wrong key by accident), press the key marked CE (for "clear entry") – and enter your move again.

The computer may now indicate its reply immediately. If on the other hand it needs time to think, the display will show:

> ‾| |‾
> _| |_
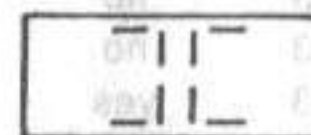
Note that special operations such as changing the level, checking the locations of the pieces, or setting up a position (see section 9, 11 and 12), can only be carried out when it is your turn to move. It is for this reason that you may sometimes want to interrupt the computer's analysis.

If you press MO when it is your turn, CHESS CARD will start computing a move for the side you have been playing, and will expect you to take over the other side. You can change sides like this as often as you like. By pressing the MOVE key after every move played, you can make the computer play an entire game against itself.

8. WARNINGS OF THREATS

If you press EN after the computer's move, the LCD will sometimes show the notation of one square on the chessboard. If your king is on this square, you are in check. Otherwise, the machine is warning you of a possible capture on this square, which may lead to loss of material for you.

To clear this message from the display, press CE. Some of the "levels", as explained in section 9, give no warnings of display when the computer checks you.

9. LEVELS OF PLAY

The operating key marked LV (for "level") enables you to after the speed and strength of the computer's play. The program has sixty-four different "levels". On level 1, it takes an average of five seconds per move. On higher levels, it takes more time and its playing strength is correspondingly increased; the average for level 64 is 20-25 seconds per move.

To check the current level, press LV. The display will then show "L" followed by a letter and a number, denoting the level in the manner explained by the table below. Once the level is displayed, you have the option of changing it. If you don't want to do so, press CE and carry on with the game.

If you do wish to after the level, first look up the table (below), to find out the notation for the level that you want. Then press the keys marked by the appropriate letter and number. For example, to select level 20, press "D" and then "3". Then press EN.

On some levels (as indicated in the tables), the computer will warn you of threats against your pieces, as described in section 8. Other levels dispense with these warnings.

Also note that on some levels, whenever you make your move, the machine automatically responds by computing a move for the other side – in the way we have seen already. These levels are indicated by "AUTOMATIC RESPONSE" in the table. On other levels, the machine will not compute a move unless you use the MO key to instruct it to do so. See section 10.

LEVEL	DISPLAY	THREAT SIGNALS	AUTOMATIC RESPONSE
1	a1	no	no
2	b1	no	no
3	c1	no	yes
4	d1	no	yes
5	e1	yes	no
6	f1	yes	no
7	g1	yes	yes
8	h1	yes	yes
9	a2	no	no
10	b2	no	no
11	c2	no	yes
12	d2	no	yes
13	e2	yes	no
14	f2	yes	no
15	g2	yes	yes
16	h2	yes	yes
17	a3	no	no
18	b3	no	no
19	c3	no	yes
20	d3	no	yes
21	e3	yes	no
22	f3	yes	no
23	g3	yes	yes
24	h3	yes	yes
25	a4	no	no
26	b4	no	no
27	c4	no	yes
28	d4	no	yes
29	e4	yes	no
30	f4	yes	no
31	g4	yes	yes
32	h4	yes	yes
33	a5	no	no
34	b5	no	no
35	c5	no	yes
36	d5	no	yes
37	e5	yes	no
38	f5	yes	no
39	g5	yes	yes
40	h5	yes	yes
41	a6	no	no
42	b6	no	no
43	c6	no	yes
44	d6	no	yes
45	e6	yes	no
46	f6	yes	no
47	g6	yes	yes
48	h6	yes	yes
49	a7	no	no
50	b7	no	no
51	c7	no	yes
52	d7	no	yes
53	e7	yes	no
54	f7	yes	no
55	g7	yes	yes
56	h7	no	no
57	a8	yes	yes
58	b8	no	no
59	c8	no	yes
60	d8	no	yes
61	e8	yes	no
62	f8	yes	no
63	g8	yes	yes
64	h8	yes	yes

The level remains the same (even when a new game starts), until you change it again; you may do so as often as you like. When you first switch on after installing the batteries, the computer automatically selects level 7.

On any level, the computer is likely to take more time in a complicated position – with queens and many other pieces on the board – than in a relatively simple one. On the other hand, the program is equipped with knowlege of

"piece type" keys in the same way as before. Similarly, the key with a white square next to it enables you to switch to checking white pieces.

When you've checked as many pieces as you want, press CE to clear the display, then carry on with the game.

12. SETTING UP A POSITION

You may sometimes want to construct a particular position on the board, to see how the computer handles it. To do this, begin by pressing the "SET" key. This clears the LCD except for a single dash. You are now able to after the current position by adding or removing pieces in the following ways:

(a) To remove a piece, press the CE key, followed by the keys giving the notation of the square to be cleared. Then press EN. For example, to remove the piece currently on f5, press CE F 5 EN.

(b) To insert a piece, press the key with the appropriate "piece type" symbol, then the keys denoting the

square, then the EN key. For example, to insert a queen on d2, press D 2 EN. This automatically replaces any piece that was previously on the square.

When the dash on the left of the display is at the bottom, any pieces inserted will be white; when it is at the top, they will be black. To switch from one colour to the other, use the keys marked with black and white squares.

Note that when you are inserting a piece, the piece type is recorded on the display according to the code mentioned on page 9. When you press CE to clear a square, the display shows "D". If you press a wrong key during either of these operations, CE allows you to start again.

When the position is ready, press the "White" or "Black" key to tell the computer which side moves next. Then repress the SET key to return to normal playing conditions.

You can now start play by carrying out a move or by pressing MO to make the computer do so. First, however, we recommend that you carefully check the piece locations as described in section 11, to make sure that the position you have constructed is legal. There should not be too many pieces of the same type – for example, if there are eight white pawns on the board, there cannot be two white queens. Each side must, of course, have one and only one king and the king of the player who is not to move must not be in check. There must be no pawns on the first or either rank. If you find that the position is illegal, Press SET again and correct it. If you do try to make the computer play from an illegal position, don't be surprised if the results are crazy !

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If a king or rook has been placed on the board in the way we have just described, there can be no castling with

LEVEL	DISPLAY	THREAT SIGNALS	AUTOMATIC RESPONSE
27	c4	no	yes
28	d4	no	yes
29	e4	yes	no
30	f4	yes	no
31	g4	yes	yes
32	h4	yes	yes
33	a5	no	nc
34	b5	no	no
35	c5	no	yes
36	d5	no	yes
37	e5	yes	no
38	f5	yes	no
39	g5	yes	yes
40	h5	yes	yes
41	a6	no	no
42	b6	no	no
43	c6	no	yes
44	d6	no	yes
45	e6	yes	no
46	f6	yes	no
47	g6	yes	yes
48	h6	yes	yes
49	a7	no	no
50	b7	no	no
51	c7	no	yes
52	d7	no	yes

LEVEL	DISPLAY	THREAT SIGNALS	AUTOMATIC RESPONSE
53	e7	yes	no
54	f7	yes	no
55	g7	yes	yes
56	h7	no	no
57	a8	yes	yes
58	b8	no	no
59	c8	no	yes
60	d8	no	yes
61	e8	yes	no
62	f8	yes	no
63	g8	yes	yes
64	h8	yes	yes

The level remains the same (even when a new game starts), until you change it again; you may do so as often as you like. When you first switch on after installing the batteries, the computer automatically selects level 7.

On any level, the computer is likely to take more time in a complicated position – with queens and many other pieces on the board – than in a relatively simple one. On the other hand, the program is equipped with knowlege of

several standard chess openings – so the first few moves of a game are likely to be played fast, irrespective of the level.

10. PLAYING BOTH SIDES

In the table in section 9, some of the levels were marked "no" in the column headed "AUTOMATIC RESPONSE". By selecting one of these levels, you enable yourself to make a continuous sequence of moves for both sides. For example, you may want a game to begin with a particular opening variation. Simply carry out the moves for White and Black, entering them into the computer in the usual way. When you arrive at the position from which you want the machine to play against you, switch to a level that has "yes" in the AUTOMATIC RESPONSE column, and press MO to start the machine computing.

11. CHECKING THE POSITION

In case of confusion, you can make the computer show you where each piece on the board should be, according to its

square, then the EN key. For example, to insert a queen on d2, press D 2 EN. This automatically replaces any piece that was previously on the square.

When the dash on the left of the display is at the bottom, any pieces inserted will be white; when it is at the top, they will be black. To switch from one colour to the other, use the keys marked with black and white squares.

Note that when you are inserting a piece, the piece type is recorded on the display according to the code mentioned on page 9. When you press CE to clear a square, the display shows "D". If you press a wrong key during either of these operations, CE allows you to start again.

When the position is ready, press the "White" or "Black" key to tell the computer which side moves next. Then repress the SET key to return to normal playing conditions.

You can now start play by carrying out a move or by pressing MO to make the computer do so. First, however, we recommend that you carefully check the piece locations as described in section 11, to make sure that the position you have constructed is legal. There should not be too many pieces of the same type – for example, if there are eight white pawns on the board, there cannot be two white queens. Each side must, of course, have one and only one king and the king of the player who is not to move must not be in check. There must be no pawns on the first or either rank. If you find that the position is illegal, Press SET again and correct it. If you do try to make the computer play from an illegal position, don't be surprised if the results are crazy !

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If a king or rook has been placed on the board in the way we have just described, there can be no castling with

that piece. To create a position in which (say) White has the right to castle king's side, press NG before SET – then leave the white king and king's rook undisturbed on their starting squares, while other pieces are removed and re-inserted as necessary.

After a position has been set up, the next move cannot be a pawn capture en passant. To create a position where such a capture is legal, set up the immediately preceding position and then make the move which permits the capture.

13. SOUNDS

Press the SOUND key if you prefer the computer to operate without its audio signals. The sounds can be switched on again by repressing the same key.

14. MEMORY

If a game in progress has to be interrupted, the computer can be switched off, and will retain the game position in its memory while using a minimum of current. When you switch on again, the