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2. INITIAL ACTIVATION

Congratulations on your new Mephisto Phoenix chess computer. You have acquired the most powerful chess computer ever produced in series. The Mephisto Phoenix is a UCI-based chess computer that runs many different chess programs (so-called engines). In addition, it offers the possibility to emulate classic chess computers as well as to play online directly against other people on Lichess.org. To thoroughly enjoy the device, we ask for a few minutes of your attention to familiarize you with the special features of this complex system.

This manual is primarily intended to describe the system logic and its basic functions. Since the system is set up to receive regular updates, we regularly add new features to our website at <https://computerchess.com/mephisto-phoenix/#faq>.

Connection of components

Connecting the board

First, connect the chessboard by attaching the Mini-Din connector to both the board and the back of the computer module. Make sure that the arrow on the cable is pointing upwards and insert the cable firmly into the respective connections. Be careful not to bend the pins.

The Mephisto Phoenix is compatible with all chess boards of the Millennium Exclusive and Supreme Tournament series.

Connect power supply

Now plug the power adapter into the appliance and connect the power adapter to your socket.

Controls on the device

On the front of the device you will find a 7" touch screen, via which you can control its various functions.



On the back you will find the USB port (for connecting USB flash drives for updates or PGN exports), the port for the chessboard, the power socket, the ON/off switch, the control led and the reset button.

Switch on

Toggle the switch on the back to I to start up the device.

The MEPHISTO lettering appears briefly on the display. Note that the system will take about 30 seconds to start.

The control LED turns on in about 20 seconds after flipping the switch, it indicates that the firmware of the chess computer has been loaded.

When the main menu appears with the mode selection, the system is ready for operation.

Manage the most important initial settings

Set Language

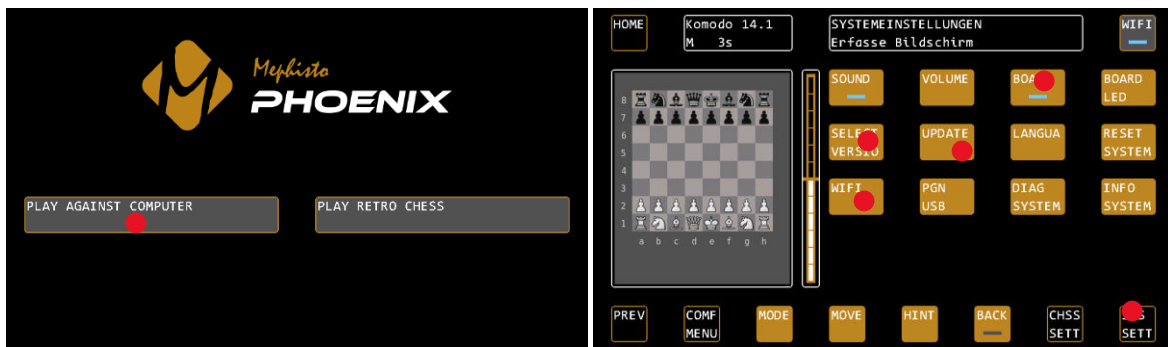
The language selection appears automatically at the first start of the Mephisto Phoenix:



Confirm the desired system language. You can choose between English, German, French, Dutch and Spanish. You can also find the settings for the system language in the "PLAY AGAINST COMPUTER" mode under SYS SETT / LANGUA.

SYS SETT – main system settings

The system settings of the Mephisto Phoenix can be found in "PLAY AGAINST COMPUTER" mode under the SYS SETT button, at the bottom right of the display:



Determine board orientation (BOARD)

Indicate whether the cable leads away from your chessboard to the right or to the left. Under SYS SETT / BOARD you can change this. If the cable leads to the right (you are sitting in front of the logo badge), then the LED on the BOARD button must light up. If the cable leads away to the left, tap the button once.

Turn on WiFi (WIFI)

Turn on the WiFi in the device to check for system updates. You can find the settings under SYS SETT / WIFI. For more details on connecting to a WiFi network, see page 21.

Check for updates (UPDATE)

Check if there are system updates for your chess computer. After you have successfully connected the WiFi, press UPDATE under SYS SETT to start the update process. See page 20 for more details.

Select the latest version (SELECT VERSIO)

If updates have been found and installed for your system, you must now select the latest version. Under SYS SETT, press SELECT VERSIO, confirm with CONFIRM, and confirm again with CONFIRM (the system displays the current version in the status box). The system now restarts with the latest version. See page 20 for more details.

Starting a game now

You can now start your first game with the Mephisto Phoenix. To do this, the board must be connected to the computer.

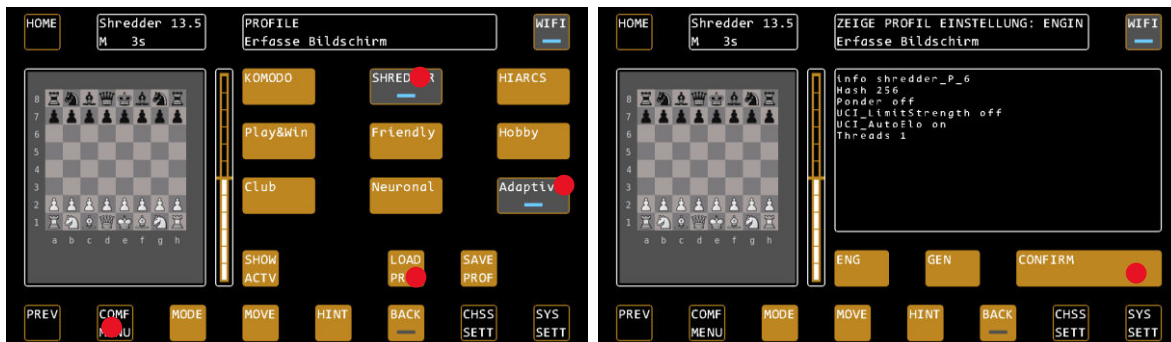
If not already done, select "PLAY AGAINST COMPUTER" mode, or exit the system settings so that you can see the chessboard display on the control screen.

Now please set up the pieces in their initial position.

The computer is now ready to play with its default settings. First, however, please select a suitable game profile. In the example, we now start with the adaptive SHREDDER mode, which also shows you your own ELO rating.

To do this, press COMF MENU (COMFORT MENU) and select the SHREDDER chess engine in the top row. The selection is indicated by a blue LED. Now select the last profile "Adaptive", the selection is confirmed again with the blue LED.

Now press LOAD PROF (LOAD PROFILE) to preview the profile parameters. Confirm this with CONFIRM.



You now start a game against the Engine Shredder in adaptive mode. This mode starts at 1400 ELO and changes its ranking depending on the win or loss of the game. After a few games, you will always have an equal opponent with this mode and can easily track your development based on your ELO rating.

Main tips for operation

In the following, we would like to give you a few tips on the key operating logics of the system.

Which parameters are loaded automatically when the system is restarted?

After a restart of the system, the general system settings, as last used *outside the profiles*, are reloaded, the so-called "Profile 0". These include the SYSTEM SETTINGS (volume, led settings, etc.) in particular, but also the most recently used engine, the configuration of the analysis box, the configuration of the opening books and the selected time setting.

All engine-specific parameters, the so-called UCI settings, are NOT loaded automatically. For example, the ELO setting as well as specific engine options such as "Use NNUE" or "Skill Level".

Also, the settings that you may have used by loading a profile in the previous session will NOT be loaded automatically.

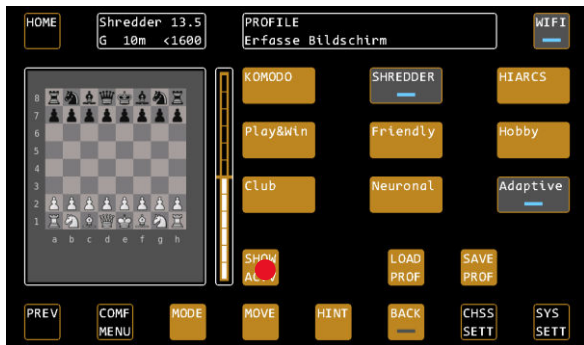
TIP: If you want to play regularly with consistent settings, we recommend that you save them in a profile in the COMFORT MENU and load them immediately after starting the system.

For this purpose, the COMFORT MENU "remembers" which profile you last used and highlights this in grey.

Changing settings during a game

If you change settings during a running game, please note that some settings can only be activated with the next "New Game" command. These include, in particular, settings with a significant influence on the playing strength, such as the ELO limitation of the engine.

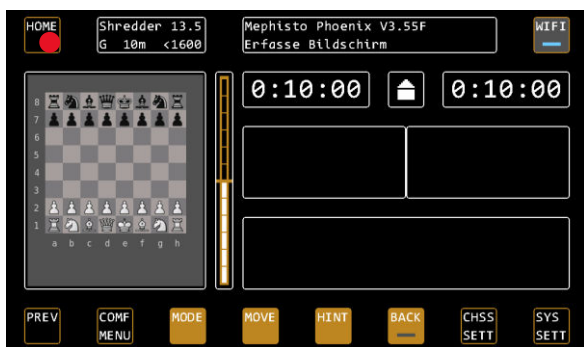
If you are not sure whether the changes made are immediately active, select COMF menu / SHOW ACTV to view the current settings. Parameters marked with an "*" will not be activated until the next new game. See also page 11.



How do I get back to the main menu?

To return to the main menu, i.e. to select the operating modes of the chess computer, proceed as follows:

- 1) From the PLAY AGAINST COMPUTER mode, press HOME a second time in the control screen. The button changes to MENU, press again to return the main menu.



- 2) From the emulations by pressing the MEN key (bottom left) in an emulation.



Meaning of the status LEDs in the buttons

The blue status LEDs in the buttons usually mean "ON" (blue) or "OFF" (grey). An exception is the COMFORT MENU, where the blue LED marks the selected profile, which is loaded with LOAD PROFILE.

Software version

This manual is based on software version V4.01E, as of January 2024. Due to permanent improvements to the system, details can deviate from the procedure described here. For detailed descriptions of individual functions, please see our FAQ at <https://computerchess.com/mephisto-phenix/#faq>.

3. OPERATION MODES

Main menu

In the main menu, select how you want to use the chess computer. The offered modes depend on which software licenses have been purchased for your device.

"PLAY AGAINST COMPUTER" MODE

This is the main operating mode of the chess computer. Here you can play against various chess programs, analyze or play in 2-player mode. You can also find the system settings such as volume, WiFi, the led control of the board, etc., here.

PLAY RETRO CHESS MODE

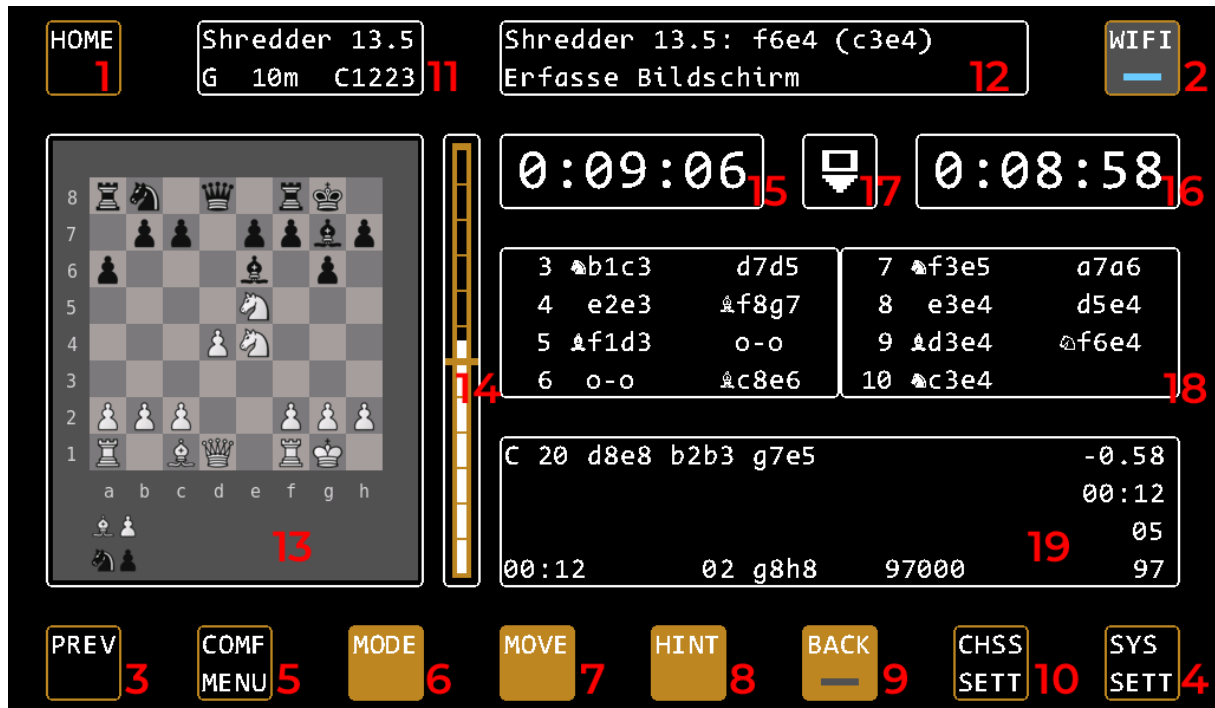
In this mode you will find the emulations of old chess computers. You can play against these old programs.

PLAY ONLINE MODE

In this mode you can connect your Phoenix to the LiChess server and play online against other people directly from your chess computer.

4. THE CHESS COMPUTER MODE "PLAY AGAINST COMPUTER"

Controls on the control screen



1: HOME & MENU	HOME returns you to the control screen at the touch of a button, no matter where you are in the menu. If you press HOME again on the control screen, the menu button appears. This takes you back to the main menu to select the operating mode.
2: WIFI	Switch WiFi on and off
3: PREV	Go back a level in the menu
4: SYS SETT	System settings
5: COMF MENU	Profile selection, quick engine selection and preferred engine settings
6: MODE	Mode selection, here you can switch between the game modes single player, two player, analysis and position input. You can also start a new game here. Note: You can also start a new game by building the initial position on the board.
7: MOVE	Allows you to have the moving side moved by the computer immediately. If the computer is already calculating, this cancels its calculation and the computer plays the best move found so far.
8: HINT	Get tip on current position from computer

9: BACK	Activates the move back mode. The led turns on, you can now undo the moves according to the LED display on the board. Once you are done, deactivate the mode by pressing this button. Note: You can also start the move back mode directly on the board.
10: CHSS SETT	Here you will find chess-specific settings such as game strength, game duration, opening books, display settings and engine-specific settings.
11: Infobox	Here you will find the chess-specific settings such as game strength, game duration, opening books, display settings and engine-specific settings. (U = User / C = Computer).
12: Status box	Here you can see system messages. In the game, for example, the last move of the engine, in the menu the top and selected submenu item.
13: Chessboard	The chessboard shows you the target score of the connected board as well as the already struck pieces.
14: Rating bar	The rating bar shows which side is currently doing better. Depending on the engine settings, the information is given in point value or as the probability of winning.
15: Clock for White	The clock for White, depending on the selected time control.
16: Clock for Black	The clock for Black.
17: Side to move	Shows whose turn it is (white or white-black rectangle) as well as the current direction of play (triangle).
18: Notations	Shows the last 8 moves of the game.
19: Analysis-Box	Displays various evaluations of the engine for the current gameplay. You can configure these via the display settings.

Special features of the rating bar

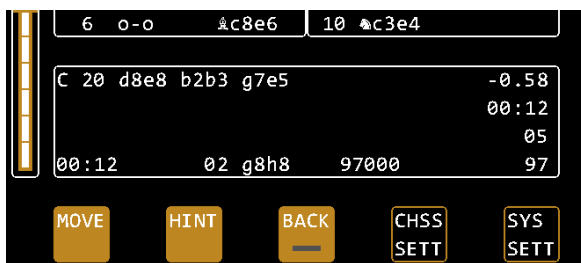
The ratings bar shows you the current position rating of the active engine. The way it works depends heavily on the engine used. Classical chess programs usually evaluate on the basis of point value. If the white bar is a box above the center mark, white is better by a value of one point. Neural engines, so-called NNUE engines, on the other hand, evaluate according to the probability of victory. Another special feature can be very weak playing strengths, such as the Play&Win profile in Komodo 14.1. Komodo uses the position evaluation in such a way that it evaluates itself significantly more strongly than it actually stands, in order to sacrifice material more willingly. The display of the rating bar will therefore work completely differently depending on the engine and profile or settings of the engine.



In the example, Komodo gives itself a score of +9.99, so it thinks to be much stronger than it actually is. The position has the same material strength for both sides, so it is actually balanced. Komodo uses this on very low levels to handle their own material more "carelessly" and give the player a chance to beat it.

Views of the Analysis Box

Depending on the configuration, you will find the following information in the analysis box.



Main variant

The main variant indicates how the engine suspects the game will continue. It is preceded by the current move number. The main variant is ideal for training with engines. You can switch them on and off via CHSS SETTIN / display SETTIN / MAIN.

Position assessment

In the first line after the main variant you will find the position evaluation, the value corresponds to the ratings bar. Please also note the special features of the ratings bar on page 9.

Last move time

In the second line after the main variant you will find the time required for the last completed move.

Calculation Depth

In line 3 you will find the calculation depth, divided in half, possibly depending on the engine, into minimum search depth (which applies to the complete development of the game) and a peak depth, which applies to individual, further precalculated variants.

Current reflection time of the moving side

In line 4 you will first find the current reflection time of the player who is moving.

AST (last move examined)

After the reflection period, the indication of the last move examined and the number of the sequence follow. In the example, the move "branch", which starts with g8-h8, was examined as second.

Calculated positions

The branch is followed by the number of calculated positions per second (number of calculated nodes until the current main variant has been found), followed by the number of calculated positions for the entire move (number of nodes per second).

Line 4 can be switched on and off via CHSS / SETT /display SETTIN/ EXPERT.

The HINT Option

If HINT is disabled, a "----" appears in the expected game development instead of the expected countermove.

TIP: This is only the case if "Ponder" is switched on. This option is intended for users who deliberately do not want to see the direct expectation of the computer and want to use the maximum playing strength of the system (Ponder active).

COMF MENU – Profile selection, quick selection of the engine and its settings

General Information

For the Komodo, Shredder and Hiarcs engines, you can easily access predefined profiles via the Comfort menu. Profiles combine a variety of general and engine-specific settings, so you can quickly adjust many settings at once.

General settings are, for example, the engine, the time setting, CPU speed, the displays in the analysis box and the settings of the opening book. Engine-specific settings vary from engine to engine. Typically, these are ELO or skill levels, the use of NNUE networks, the number of threads, hash size and pondering (engine calculates even when it's your turn).

The stored profiles were defined by the Mephisto Phoenix development team in such a way that there is a suitable "level" for each player type. Special features of the respective engines are also taken into account. Typically, the profiles are divided according to playing strength, "Play & Win" is a level that is intended for beginners and children, the other levels then become increasingly stronger. Some profiles contain special features that only the respective engine offers:

Special profiles you should try

In the following, we highlight a few profiles that access special features of the engines.

Komodo Adaptive uses the in-game adaptation of Komodo. Here, the engine adapts to your level during the game.

Shredder Neuronal uses internal NNUE function of Shredder. Here the engine uses its neural network.

Shredder Adaptive uses Shredder's well-known good adaptive mode. The engine adapts to its abilities after each game, depending on whether you have won or lost. As a special feature, Shredder evaluates your playing strength and gives you an ELO rating. These can be found in the info box with the note "U1400" (= User 1400 ELO). After each game, by executing the next "New Game" command, the result of the previous game is recorded and your score is recalculated. Accordingly, the engine adapts to your skills. You can use the feature to measure your training progress. Please remember to press NEW GAME again after your last game to take over the rating, even if you want to switch off the system so that your rating can be updated.



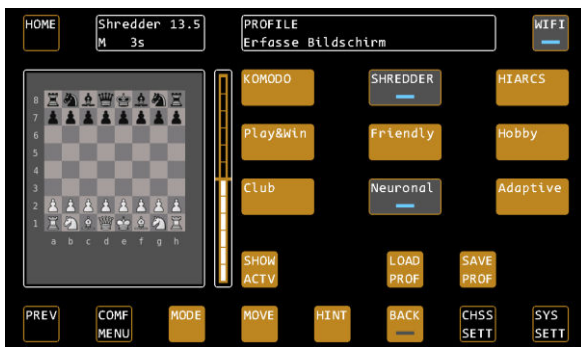
In the example, Shredder is currently set to 1223 ELO (C-rating of the computer, if there is a U in front of it, it is the rating of the player (user)).

Hiarcs Champion expects maximum strength, so you can, for example, carry out analyses with the device.

Selection and control of profiles

If you press the COMF MENU button, you can select the engine in the top line. The selected engine is displayed by means of a blue LED, the last used engine is displayed in grey.

The lines 2 and 3 in this display then show the 6 available profiles. There are 6 profiles available for each of the 3 engines.



The Shredder Neuronal profile is preselected here.



LOAD PROF (Load Profile) opens the profile view, and CONFIRM loads it.

In the 4th line you will find the control buttons with which you can load, overwrite or restore the profiles, as well as the function for displaying the current settings of the system. In the following we describe them in more detail:

SHOW ACTV – Show current settings

"SHOW ACTIVE" shows you the current settings the system expects.

Under the ENG (ENGINE) button you will find all engine-related settings, such as Threads, Hash, Ponder, Skill / Elo, NNEU and so on.

Under the GEN (GENERIC) button you will find all the general settings of the system, such as level (time control), CPU speed, activated display options and the selected options of the opening book.

If individual values are marked with a "*" at the end, this means that you have last changed these settings in the system, and the new values can only be adopted with the next new game. The background here is that some settings cannot be adjusted during a game.



In the example, we have set an ELO limit of 1600 ELO based on the Shredder adaptive profile. The SHOW ACTV menu now displays the affected UCI parameters with *, because the settings have not yet been activated. To do this, we need a "New Game" command. This is executed the fastest by lifting a piece in the basic position and setting it down again. The "ping" tone for a new game will sound and the new settings will be active.

Tip: If your pieces are in the initial position, simply lift up a piece and set it down again. This will trigger the "New Game" command and the settings will take effect immediately.

Tip 2: If you want such settings to take effect immediately during a game without starting a new game, leave your pieces on the board. Then select the NEW GAME command from the MODE menu, followed by POSITION. In the position input menu, confirm the current position and continue with the changed settings.

The typical settings that cannot be changed during a game are mainly the change of ELO or SKILL levels as well as the use of the NNUE networks.

LOAD PROF – Loading a Profile

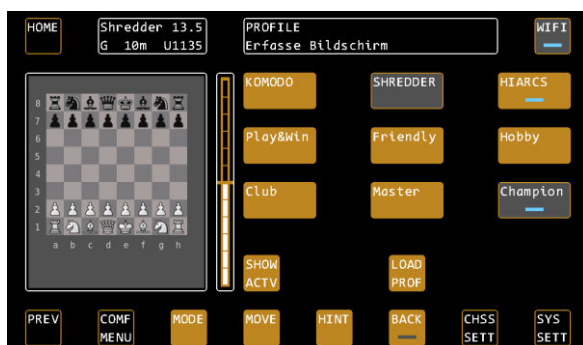
Use the LOAD PROFILE function to activate a profile previously selected by means of the led buttons. By pressing the button you will first see the preview of the profile, again with the distinction in ENG (engine parameters) and GEN (generic parameters). You can now either load the profile with CONFIRM, or use the PREV key to keep the previous settings.

SAVE PROF – Override a profile

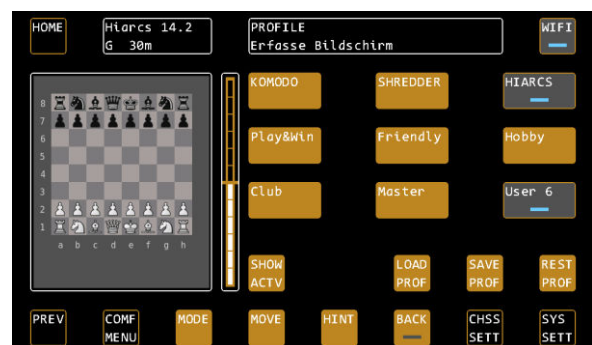
You can use the SAVE PROFILE function to customize each of the pre-saved profiles for the associated engine. To do this, load the profile you want to customize. You can now change the desired settings using the CHSS SETT AND SYS SETT functions. Go back to the COMF MENU and press the SAVE PROF button. The system now shows you the preview of the (new) settings again. Use CONFIRM to overwrite the profile with your settings. The name of the profile will now change to "User 1", which indicates that this profile has been changed by you. For example, you can quickly and permanently adjust the Hiarc's Play & Win profile from 1000 ELO to 800 ELO.

REST PROF – Restore factory profiles

The option RESTORE PROFILE appears if you have overwritten a profile. This allows you to restore the factory settings of the selected profile. Other USER profiles are retained. Select the USER profile to be restored and press REST PROF. The system displays the preview as usual, confirm with CONFIRM and the factory profile is restored.



Hiarc's CHAMPION profile is selected, it can now be loaded with LOAD PROF. With SHOW ACTV, the system displays the currently loaded settings.

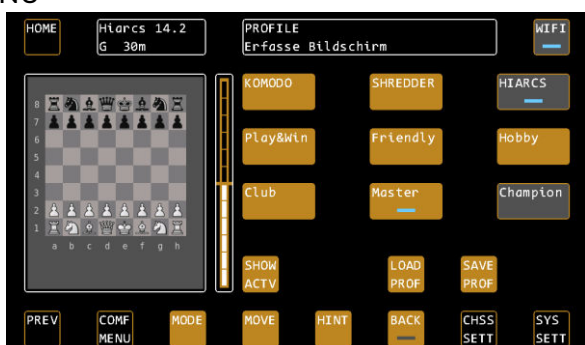


The Hiarc CHAMPION profile has been changed by the user. The modified profile can now be loaded, overwritten (SAVE PROF) or restored (REST PROF).

Operating instructions for the COMFORT MENU

The last selected profile is highlighted in dark grey, the currently selected profile is displayed by means of the LEDs. Only after loading with CONFIRM will the settings really be changed. You can thus navigate through the profiles as you like and use the preview to see which settings are hidden in the profiles. This will teach you how to use the different options of the engines.

Within the selected engine, profile settings can be changed at any time by simply making the desired adjustments via Chess Settings and overwriting the existing profile with SAVE PROF.

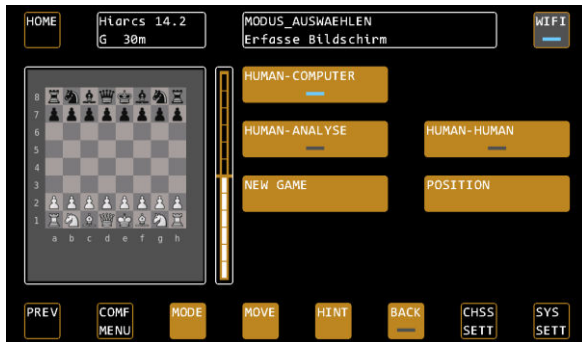


TIP: The loading of a profile after a system restart does not take place automatically. The system always loads the system parameters made by the user via the menu as well as the most recently used engine with its default values.

For example, if you always want to play with Shredder Adaptive, press the COMF MENU button after system startup. The last used profile is shown in grey background, just press LOAD PROF / CONFIRM and Shredder Adaptive is fully active again.

MODE – Mode Selection

TIP: You can only change the mode when it's your turn! In case of a long reflection time, you can force the move of the computer by means of MOVE.



Single player mode „HUMAN-COMPUTER“

The default mode to play against the selected computer engine.

Two-player mode „HUMAN-HUMAN“

When playing a human-against-human game, the computer pays attention to the observance of the rules. Other functions, such as the ratings bar or the information in the analysis box, are still active (according to the selected display settings).

Analysis mode „HUMAN-ANALYSE“

For position analysis. You can enter moves for both sides in this mode. The computer analyzes the position with the maximum performance of the engine used.

Position input mode "POSITION"

The mode for entering positions. The position is changed based on the current board position.

REVERSE: Changes the direction of play, LED OFF means white from below.

WHITE / BLACK: Use this to select the side that has the first move.

Castling rights: With the buttons Wo-o-o etc. you can set the castling rights per color, W stands for white, B for black, o-o-o for castling long and o-o for castling short.

TIP: Note that starting the position input mode will delete the history of the current game.



New Game

Starts a new game from the initial position.

Alternatively, you can trigger the command for a new game by placing the pieces in the initial position. If the pieces are already in the initial position and you want to execute the command for a new game, then it is sufficient to simply lift and set down any piece in the initial position.

TIP: If you have changed chess-specific settings such as game strength, you must trigger a "New Game" command to make them active.

CHSS SETT – Chess Settings

With the CHSS SETTINGS you can make the chess-specific settings. In this menu you can configure your computer manually, i.e. without the help of the profiles.

TIP: You can use a profile that you like as a starting point for further settings.

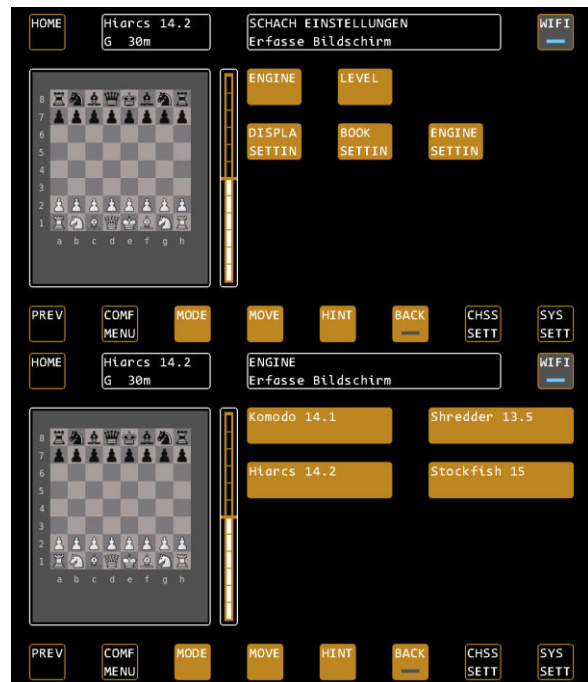
ENGINE – Selection of the current engine

Allows you to choose between the available engines in the device. Each program has its own strengths and weaknesses. In addition, the Mephisto Phoenix is the first chess computer that also provides neural engines, so-called NNUE engines.

Currently the commercial engines Komodo 14.1, Shredder 13.5 (with NNUE option) and Hiarcs 14.2 are available.

Stockfish 16 (with NNUE option) is available as a free engine.

TIP: Changing an engine always automatically executes a NEW GAME command. If you want to continue playing from the current deployment, please confirm this via the position mode.



The engine add-on package M911 for Mephisto Phoenix

The add-on package is available since July 2023 via the webshop on Computerchess.com, and offers the following additional engines:

GinkGo 1

GinkGo is the engine, which is behind Power Fritz 18 for PCs - and thus should be well known to many Fritz users. In the software group of the WCCC Computer Chess World Championship 2022 in Vienna (all participants with identical hardware) Ginkgo came out on top. In Valencia in Summer 2023, Ginkgo (reported under FRITZ) won both, the software group, and the blitz group.

The program is suitable for "Fritz lovers", who can play and analyze with largely the same setting options as on the computer here with the Mephisto Phoenix. The playing style is solid, elements of the NNUE technique are implemented, as in the Vienna Championship version.

The total playing strength corresponds to about 3200 Elo points. In Ginkgo, the calculation depth levels (ply levels) are an above-average instrument to reduce the playing strength for the self-play, since selectively no deeper is calculated than corresponds to the setting. A playing strength reduction via Elo defaults is not available in Ginkgo. The engine is thus suitable for stronger self-players, and of course for analysis.

Leela Zero 0.29

Leela is the community's answer to Google's Alpha Zero - an "intelligent" program that accesses an integrated neural network. On fast and powerful hardware, this program belongs to the absolute top group, and became the world rapid chess champion in 2022.

On the Mephisto Phoenix, it needs about 30 seconds of thinking time to reach master strength. Due to the positionally very subtle playing style and the seemingly intuitive recognition of attacking chances, it is a real challenge for ambitious hobby players and club players - even with calculation times under 5 seconds. If the speed limiter is set to 5 percent, for example, the program is still beatable even for better hobby players. The program does not require any further configuration. Therefore, there are no special configuration options, the playing strength of Leela is set purely via the thinking times and the CPU speed limiter.

Komodo Dragon 3

The world champion 2022 in computer chess, the actual main group. Due to lack of space in the Mephisto Phoenix, this program is only called "Dragon 3" and is in a close race with the industry leader Stockfish. On the Mephisto Phoenix, Dragon 3 should reach about 3350 Elo.

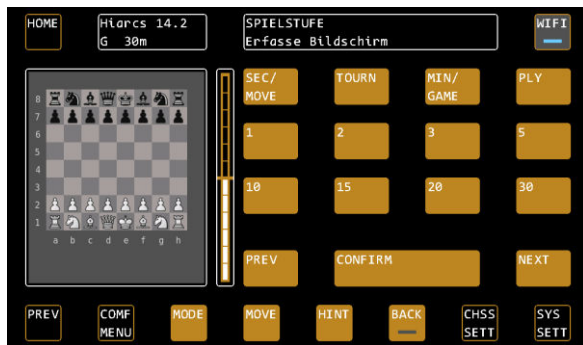
In contrast to the also available Komodo 14.1, Dragon 3 is the current neural variant of the popular software. Even in the default settings, Komodo has a riskier play style than its "colleagues", both in attack and defense, which allows it to master many threatening situations.

The software offers numerous setting options regarding game styles, the search strategy (Reduction) and additional search methods (Monte Carlo Tree Search). It is therefore an interesting program for chess players

who like to experiment. Via Elo levels a very clear lowering of the playing strength to beginner level is possible. The Phoenix tablebases are also supported by Dragon 3.

LEVEL – Selection of time control

Use level to set time control, i.e. how long or how deep the chess computer is allowed to "think".



Example: "Seconds per move" Game Stages



Example: Tournament Stages

SEC / MOVE – Seconds per move

Press SEC/MOVE TO MOVE to the levels that specify a specific number of seconds per move. If you press the SEC/MOVE button a second time, further selection options appear:

Side 1: 1 second – 30 seconds / Side 2: 45 seconds – 900 seconds

Tap the desired time control to select it.

Tournament Stages

Here you will find the standard tournament stages with increments, for example one game in 15 minutes with 10 seconds increment per turn.

TIP: Pay attention to the information in the status box that provides you with explanations about the individual levels.

MIN / GAME - Minutes per Game

Here you will find the fast chess stages (minutes per game) without increments.

PLY – Search Depth

With the PLY steps you limit the search depth of the computer so that it can only "look ahead" to a certain number of moves. It will then play a weaker game.

DISPLA SETTIN - Configuration of the analysis box

Use the DISPLAY SETTINGS to set what information the computer shows you in the analysis box during the game.

MAIN – the main variant

Turns the display of the main variant on and off, i.e. how the computer thinks the game should continue according to its calculations. The main variant is very helpful if you want to play at a high level and see what the computer thinks.

BOOK – The Opening Names

Toggles the display of the opening names on and off.

EXPERT – Calculation information for professionals

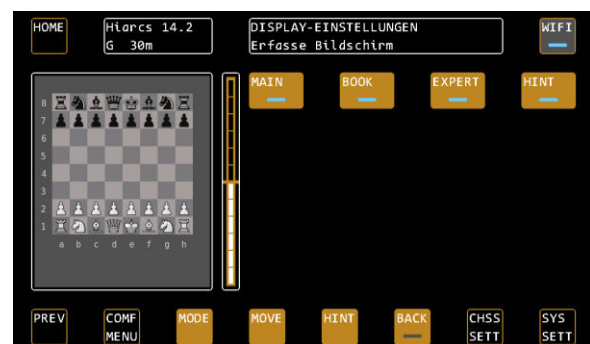
Switches the expert displays in the analysis box on and off, see also page 9.

HINT – The expected move

If HINT is disabled, a "----" appears in the expected game development instead of the expected countermove.

Score - Evaluation bar & output of the position evaluation as a decimal number

If SCORE is deactivated, only a black bar is displayed in the evaluation bar next to the chessboard and the decimal output of the position evaluation in the analysis box is deactivated. Use this option if you want to play an "honest game" against the engine and do not want to see the engine's evaluation.



BOOK SETTIN – the settings of the opening books

Use BOOK SETTINGS to set which opening book you want to use and how widely.

BOOK SELECT

Select the opening book to be used by the chess computer or turn it off completely. The device offers 5 different books:

The Millennium Book is written by Mark Uniacke of HIARCS and offers over 1,000,000 positions, all of which come from grandmaster games. It is the largest opening book ever used in a chess computer.

The Fun Book offers rather unusual openings for experimentation.

There are 3 other books, "Carlsen", "Fischer" and "Kasparov", which were generated from the games of the respective world champions.

BOOK – Turn Using the book On or Off

BOOK turns the books on or off. When the book is switched off, the engine calculates from the home position.

RANDOM – The random factor

RANDOM activates the random factor that varies the openings played.

DEPTH – Limit book depth

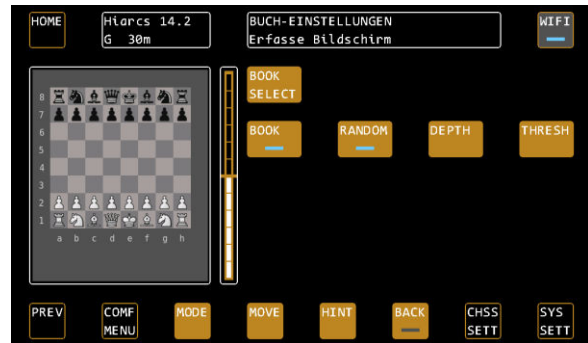
DEPTH limits the depth of the book, i.e. how many moves are played from the opening books at the most, until the engine calculates its own moves.

THRESH – Limit to the best book moves

With THRESHOLD BOOK, you can determine that, for example, only the 25% best openings are used. This limits variety, but produces stronger openings.

TIP: Opening training

You can use the device to train openings and try out the various opening options. For example, if you do not like an opening played by the device, use the BACK function to reverse the move. Now press MOVE, the computer will automatically play the second best move from the opening book, and so on. With this function, you can "scroll through" the opening variants directly on the board.



ENGINE SETTIN – The engine settings

The chess computer uses the UCI protocol and can operate various engines. Each engine has its own specific settings. The most important settings, however, are offered by almost all programs, so that you can find them centrally under the menu item ENGINE SETTINGS.

The submenu ENGINE DYNAMIC also offers the functions that the selected engine offers. These differ depending on the selected engine.

ELO – Limitation of the engine's playing strength

With ELO, the ELO playing power of the respective engine is limited. You can easily adjust the playing strength to your own ability.

Here are some special features:

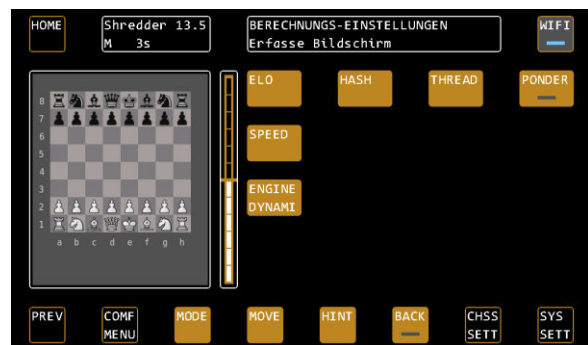
ELO OFF means that the engine expects maximum strength.

Shredder: In the case of Shredder, OFF means that the neural network is connected too. Adapt switches on the adaptive game strength including the user elo rating (analogous to the profile Shredder Adaptive).

Komodo: Komodo does not offer ELO levels, so the menu item is not active when Komodo is selected as engine. Please use the Skill Levels in the ENGINE DYNAMIC menu to set the strength of Komodo.

HASH – Resize the hash memory

Specifies the size of the hash memory used by the engine. Especially in endgames with few pieces, an increase in hash memory (deviating from the standard specification) can lead to better performance, especially in the case of long computing times.



THREAD – Number of simultaneous calculation processes

With the THREAD setting, you enable 1 or 2 computing processes for the engine. The more computing processes are available to the engine, the more powerful it normally becomes. Note that the power consumption and temperature of the device may also increase. Comment: Hiarcs 14.2 can only work with 1 thread.

PONDER

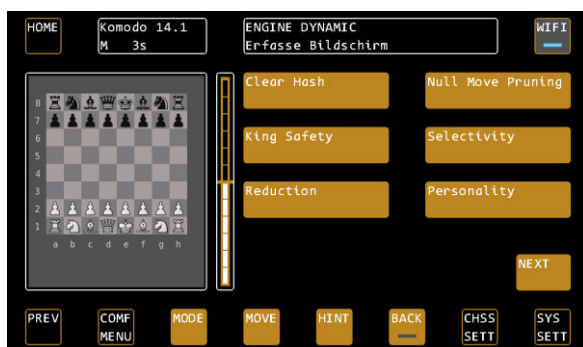
"PONDER" means that the engine calculates even when it is your turn. It therefore uses more reflection time and will play a correspondingly stronger role.

SPEED

Sets the speed limit of the processor. The lower the set value, the weaker the corresponding chess program plays.

ENGINE DYNAMIC

Under ENGINE DYNAMIC you will find all the UCI settings that were not mentioned before, but which have an influence on the gameplay of the engine. The available settings vary from engine to engine. Typical examples are the king safety, playing style, in the case of Komodo and Stockfish skill levels and also Auto Skill (Adaptive adaptation at Komodo). In Stockfish, for example, there is the function "USE NNUE", which switches on the neural network. The most exciting functions of the commercial engines have already been stored in the profiles for trial and error.



In the example we see the Engine Dynamic menu of the Komodo Engine. Here, for example, king safety (how much importance the engine places on the protection of its own king) or the player personality (aggressive or passive play) can be changed. The options offered vary from engine to engine.

TABLEB - Activate tablebases

Tablebases are endgame databases that work similar to an opening book. They help the engines in the endgame to quickly find the right way to mate or to recognize early on how the game will end, even in very long endgames.

These databases are permanently installed on the system as of version [V4.01A], for endgames with a maximum of 5 pieces ("5-men"), including kings.

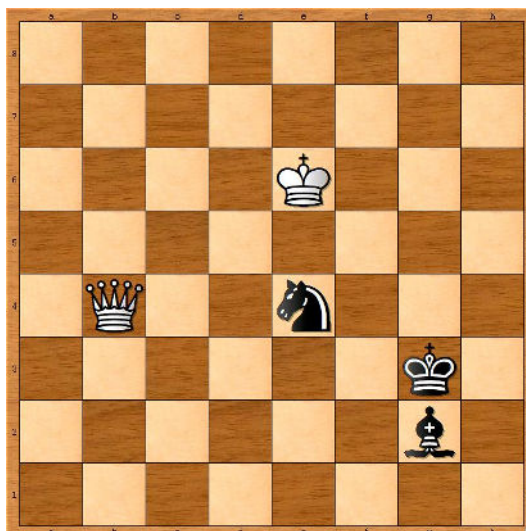
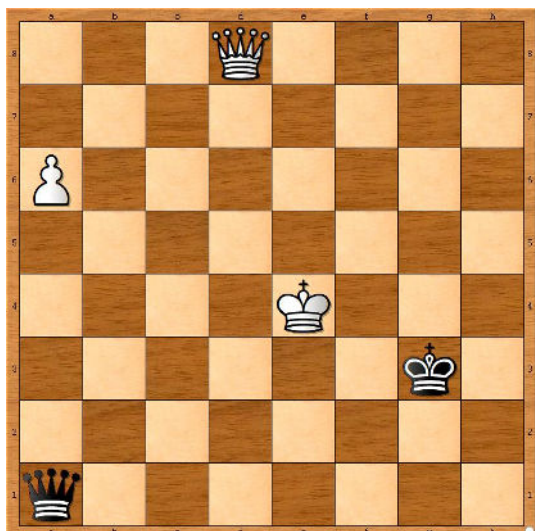
We have activated the tablebases exclusively for the engines that basically offer tablebases support and that were able to handle them flawlessly in our tests in every situation and setting. Currently, these are Komodo 14.1, Stockfish 15 and Komodo Dragon 3 (available separately in the engine expansion pack).

The tablebases activation has the consequence that such game situations no longer have to be calculated through, but known positions are accessed, and thus it is quickly recognized whether a position is won or not.

The activation is done via <CHESS SETT> <ENGINE SETT> and the button TABLEB, which is provided with a status LED. (Note: in analysis mode the tablebases are always disabled).

One might argue that with engines being over 3000 Elo points, most endgames with few pieces are handled correctly anyway. This is also true. However, there can always be cases where this is not necessarily true.

Two examples:



Left: Only 1. dd8-g5+! wins. From a practical point of view 1. Dd8-c7+? followed by 2. a6-a7 seems to be good, but it isn't!

Right: Only 1. Db4-b8+! wins, because Black has reached a stable position, and after 1. ...Kh2! would be unassailable. (1. Kf5 ? Kh2! And Black always has moves like Kh2-g1-h1 or Lh2-g1-h2 and Black dominates the square F1-H1-H3_F3)

Training for experts

Another use case is training in self-play. Example: "Am I really able to win with king and queen against king and rook?"

More than 5 pieces on the board

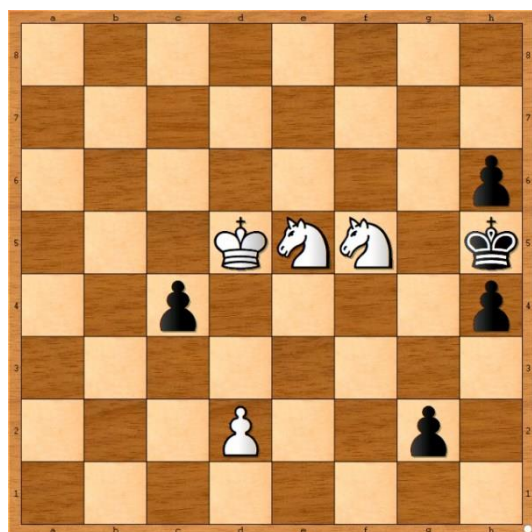
If there are more than five pieces on the board, things get much more complicated. In the course of the calculation, pieces will disappear at some point in the calculated variations, and "known" positions will arise, which will then be evaluated. If these lead to victory, everything is good for the engine, but if not, then it may try to find better solutions outside the tablebases.

The Syzygy default settings in the "Engine Dynamic" options are the best for most cases, or the settings recommended by the manufacturers of the programs. We therefore advise not to change these settings. For more information on this complex area, please refer to the Komodo Dragon website.

<https://komodochess.com/store/pages.php?cmsid=14>.

Example of more than five figures.

The so-called Bething study (source: Computerschach International, 1983).



The solution is 1. Kc6!!!

Once you have found this, the rest is easy. Black gets a queen, but cannot win because the white knights prevent the black king from moving. And with the queen alone, Black cannot mate the opponent's king.

So the point is, unless you have special knowledge, to calculate through until the 50-move remis rule would take effect that Black cannot win.

Using the tablebases, this is successful at the highest level of play (15 min./move) with Stockfish 15.

Display in the position evaluation:

Basically: if the tablebases are activated, and at least one tablebase position is detected by the engine during the precalculation, a prefixed "T" appears in the position evaluation, then the numerical value.

If it is a clear winning position, the rating is +9.99, so the display is T+9.99 in Stockfish. This also applies to Komodo if there are more than 5 pieces on the board.

With a maximum of five pieces, you will always have a "T". If Komodo 14.1 or Dragon 3 sees that the position can lead to mate in any case, T# 100 appears, i.e. a "#" for a mate announcement, where the 100 is only a symbolic value, i.e. it does not mean mate in 100 moves. (The Syzygy tablebases cannot tell you in how many moves the mate will occur).

For example:

User plays with white.

Display T#100 means: The computer will win.

Display T#-100: means: The user will win.

Amount of position evaluation:

When the correct move is found, for example, one that allows for a draw if played correctly, the position rating will in most cases initially continue to be negative (e.g. -1.5), since it is initially only one move that is (rightly) recognized as the best. In the above example (Bething study), in order to see the full implications, a calculation until the 50-move draw rule takes effect is necessary in the worst case.

SYS SETT – System Settings

Important: These settings apply throughout the system!

Here you can set the system-wide settings, which also apply to the other modes that can be selected in the main menu.



SOUND - Sounds

Toggles the sound on and off

VOLUME - Sound volume

Here you can determine the volume of the sound effects.

BOARD – Cable right or left?

Determine whether the cable on the board goes off to the right or left. On the right is the normal state (the logo badge points to you), on the left the board is rotated so that you can continue to play with the white pieces from below.

BOARD LED – brightness of the board LEDs

Determine how bright the LEDs should light up in the board.

SELECT VERSION – activate latest version

SELECT VERSION allows you to go back to previous firmware versions if you wish. After receiving updates, you can activate the latest firmware version with this function.

Confirm with CONFIRM if you want to change a firmware version. The system now displays the latest available version. Confirm this with CONFIRM or select a different version with LEFT / RIGHT.

TIP: Note that changing a firmware version is always associated with rebooting the system.

UPDATE – Perform system update

With this function, the system searches for updates, both on the USB port and via WiFi on the update server. Make sure that your device is connected to WiFi if you want to install updates from the server.

If you have purchased additional software for your chess computer in the webshop at www.computerchess.com, it will also be transferred to your device via the update function and installed.

After a successful download of an update, it will be installed automatically. Look for the ads in the status box to track progress.

If all updates have been installed, you can retrieve the latest version with the function SELECT VERSION.

LANGUA – Set the language of the system

Use the LANGUAGE menu item to set the system language. The texts in the buttons do not change, but all system messages in the status box are output in their selected language. English, German, Dutch, French and Spanish are available.

RESET SYSTEM – Perform system reset

This function resets the system to factory settings. Attention, this deletes all user-related data such as: Your WiFi settings, but also custom profiles or the ELO values of Shredder.

WiFi – Connect to a wireless network

You need a stable WiFi connection to perform updates and to play online games on Lichess.org (from version 4.01E). With the WiFi button you can establish the connection.

As soon as you access the menu, the device automatically scans the available networks. Also pay attention to the status indicators in the status box at the top of the display.

The device has 2 WiFi adapters and supports both 2.4 and 5 GHz networks.

After scanning, it will show you the found networks with their names, for example: 'M2000 / wlan0 / 54 / 64'.

M2000 is the name of the network, wlan0 denotes the WiFi adapter, 54 is the signal strength and 64 is the channel of the network. Please note: A signal strength indication of "-" does not necessarily mean that no network connection is possible.

Choose your network and enter the password. The password is stored in the device until you call up the WiFi menu item again or reset the system.

The status box gives you information about whether the connection was successful.

Once the device is registered in the network, you can simply switch WiFi on and off using the WiFi button on the top right of the control screen.

PGN USB – Export your games as a PGN file

This function allows you to export the last game to a USB flash drive. Plug the drive into the USB port and press the PGN USB button in the system settings. All your games will be updated on the drive in a file in PGN format. You can then open it with a chess program or interface.

Note: The USB flash drive must be formatted with the widely used FAT32 standard.

Since version 4.01B, the PGN export has been optimized to allow seamless insertion into the most common chess GUIs, even if the game contains captures or pawn conversions:

- Fritz (>15)
- ChessBase (Reader 17 tested)
- Hiarcs
- Shredder Chess
- Arena GUI
- SciD Chess Database (MacOS, Windows)
- Banksia GUI
- Chess.com
- Lichess
- Lucas Chess

INFO SYSTEM – View the latest information about the system

Here you can view current system parameters, such as firmware status, serial number, processor temperature, WiFi connection status, device Mac address, IP address (if connected), signal strength, and board connected information. This information may be of interest to our service team if you contact us with any issues.



Features that can be activated directly on the board

Some features of the chess computer can be activated directly on the board:

New Game

Place the pieces in the initial position. The last piece set up automatically triggers the "New Game" command. If the pieces are already in the initial position, lift up any piece and set it down again.

Move back mode

Start the move back mode by simply moving back the last move of the computer. The BACK button in the control screen lights up, the board now shows you all the moves played one after the other. Move back as many moves as you want and exit the Move back mode by pressing the BACK button when finished.

5. „PLAY RETRO CHESS“ MODE

In the “PLAY RETRO CHESS” mode you will find emulations of old chess computers against which you can play at different speeds. This mode is optional in the Mephisto Phoenix, if you have not yet activated the emulation package for your device, you can do so at any time via the webshop on www.computerchess.com.

Overview of emulations & speeds

The following chess computers are available as emulations in the Mephisto Phoenix:

Programs included

Saitek RISC 2500, Mephisto Montreux, Tasc Gideon V2.1, Tasc King V2.20, 2.23 & 2.50 (R30 & R40); Mephisto Rebell 5.0, Mephisto MMIV, Mephisto MMV, Mephisto MMV (Version 5.1), Mephisto Polgar, Mephisto Milano 1.01 & 1.02, Mephisto Nigel Short

World Championship Programmes 1985 to 1991

Mephisto Amsterdam, Dallas, Roma, Almeria, Portorose, Lyon, Vancouver, London.

Authors

Johan de Koning, Ed Schroeder, Richard Lang, Elmar Henne & Thomas Nitsche

Adjustable speeds & processor types

6502 processors: 5MHz, 10MHz, 18MHz, unlimited (approx. 35 times the speed of the original devices)

Motorola 60XXX processors: 16 bit, 32 bit, tournament machine, unlimited (approx. 40 times the speed of the original 16 bit device)

Abbreviations and program names used

RS: Saitek RISC 2500 MN: Mephisto Montreux G2: Tasc Gideon 2.1

K2, K3, K5, Tasc King Versionen 2.20, 2.23, 2.50 (R30, R40)

RB: Mephisto Rebell 5.0 M4: Mephisto MM IV M5: Mephisto MM V M5: Mephisto MMV (5.1)

PL: Mephisto Polgar NS: Mephisto Nigel Short, Mephisto Milano GL: Mephisto Glasgow

AM: Meph. Amsterdam DA: Mephisto Dallas RO: Mephisto Roma AL: Mephisto Almeria

PO: Mephisto Portorose LY: Mephisto Lyon VA: Mephisto Vancouver LO: Mephisto London

Starting an emulation

Select an emulation by touching the corresponding abbreviation of the emulation in the overview, e.g. AM for the Mephisto Amsterdam.

With the Tasc King as well as the Mephisto Almeria - London emulations, you can select the next configuration level of the available memory of the emulation by exiting and restarting an emulation. With the Mephisto Nigel Short, you select the Milano emulations in this way.



Controls in the emulations

Structure of the emulation screen

The screen of each emulation is structured as follows:

The upper part (above the white line) shows the original display layout of the chess computer of that time. In this display area, there is a "hidden" function that allows you to switch between the original speeds of the processors at that time and fine-tune the speed in 1% steps.

Directly below you will find the "Speed-Bar", i.e. the knob for setting the speed of the emulation.

Below the program name, you will find the original keys of the emulated chess computer in 3 destinations, in the above example as PLY, BCK, MEN and so on.

The last line is reserved for the system functions of the emulations.

Set emulation speed

By default, the maximum possible speed of the respective emulations is set after program start.

You can now change this to the original speeds as follows:

1 x tapping of the display area in the middle:

The speed of the original chess computer in the basic version is set. Each further tap on the display in the middle sets the speeds that simulate faster program versions of "back then". For example, 10 MHz of the standard devices, 18MHz of the then turbo kits for 6502 processors or 33 MHz or 66 MHz for tournament machines of the Motorola 68xxx processors.

The set situation can be read in grey to the left of the scale.

Regardless of this, the speed can be set in +1%/-1% steps based on the full scale length by tapping the display in the right (for +) or left corner (for -).

Original button layout of the chess computer

Example: Mephisto III-S (Glasgow) (see illustration)



The offered buttons of the chess computers vary from emulation to emulation and follow the original devices of that time.

Control keys of the emulations

MEN - Back to main menu

This key is placed in the bottom left corner of each emulation and returns to the main menu (PLAY AGAINST COMPUTER / PLAY RETRO CHESS)

SND - Sound

Sound output ON/OFF

SEL - back to the selection screen of the emulations

The button takes you back to the selection screen where you can select a different emulation.

RES - (Reset)

This directly triggers a NEW GAME for many programs. Exception: The Mephisto-emulations in the bottom row. Here you get to a selection menu (CONT START DELETE...). Navigate with the arrow keys to START, then ENTER, and start a new game.

Please note that a RESET of the emulation (RES key) takes longer at minimum CPU power than at original speed.

SAV - (save)

Available for the emulations of the first and last line of the selection menu, saves a started game. You can then CONTINUE using the RES button with the option CONT.

Instructions for emulations

For legal reasons, we are not allowed to provide operating instructions for the original chess computers, since the copyrights lie with the respective author of the instructions (and not with the author of the actual chess program). In most cases, however, you can easily find them online or find help with like-minded people in the forums on the subject of chess computers.

Back to Main Menu

Press the MEN button in the emulations to return to the selection screen.

Installation of further ROMs into the emulator

The "Play Retro Chess" mode installed in the Mephisto Phoenix is capable of emulating other chess computer programs.

The installation of the necessary programs (or their ROMs), including the risk of legal permissibility of their use, is the sole responsibility of the user.

Millennium 2000 GmbH is not allowed to provide these ROMs for licensing reasons.

Installation

The ROMs must be stored as single, unpacked files on a USB stick in the main directory (please observe FAT32 format analogous to PGN export). The files must have the extension ROM to be "understood". Normally the user has to add the file extension .rom. In Windows Explorer, file type ROM will be displayed.

Example: Novag Diablo

ACTUAL situation

In the directory CB_EMU/ROMS/Diablo68 are after unpacking:

- 502.u4
- D904.u3
- D924.u2

TARGET situation

The files must be named as follows so that they can be read by Mephisto Phoenix via USB:

- 502.rom
- D904.rom
- D924.rom

Uploading to the system is done in "Native Mode" !!!, i.e. not in the retro area of the device. Insert the USB stick in the switched on state, and select the Update function in the SYS SETT menu.

Possible error sources

If there are different ROM versions for a chess program, certain ROMs will not be accepted if it is the "wrong" version.

Renaming of file types does not work, although ".rom" has been entered: Solution: In Windows Explorer under "File"-> "Folder Options"->"View" uncheck "Extensions for known file types".

Correct roms will be removed by the Phoenix after loading from the USB stick. Files that are not readable by the Phoenix remain on the stick.

Emulation	CB-EMU/...ROM-Directory	Files
Novag Super B	sexpertb	Se_f_hi0_605.rom
		Se_hi1_619.rom
		Se_lo_619.rom
Novag Super C	sexpertc2	Se_c22_h0.rom
		se_c23_h1.rom
		Se_c24_l.rom
Novag Diablo 68000	diablo68	502.rom
		d_904.rom
		d_924.rom
Fidelity Elite V2 / V4*	feagv2	6114_e5_yellow.rom
		6114_o5_green.rom
CXG Sphinx 40	sphinx40	gold.rom
		orange.rom
Saitek Corona C/D+	corona	bw2_708a_u3.rom
		w2_708g_u2.rom

	coronaa	w2_a14c_u2.rom
	coronab	bw2_a14_u3.rom
	egr2	egrii_707_u4.rom

*) With 1024KB instead of 128KB hashtables, otherwise program equal to the widely used series devices Elite Avantgarde version 2, Mach III/ Designer 2265.

6. „PLAY ONLINE“ MODE

In "PLAY ONLINE" mode, you can play against other people directly from your chess computer on the LiChess server. The mode starts the version of the MILLENNIUM ChessLink app adapted for the Mephisto Phoenix.

Using the ChessLink app

Operating instructions for the ChessLink app can be found at <https://computerchess.com/ChessLink-app-manual/>. Although this refers to cell phones, it is largely identical in terms of operation and options.

Most important tips for the initial setup

If you want to use the ChessLink app on the Phoenix for the first time, you must first set up the WIFI in the device. See [Turn on WiFi \(WIFI\)](#), page 5.

Now you need to create the access token in your LiChess account. Enter this token in the Phoenix to give the device access to your LiChess account. You can find the menu item on the LiChess website (www.lichess.org) by clicking on your user name at the top right and then on Settings. The menu item is then "API access token". Important: Activate all authorizations except the option "bot:play". You can find detailed instructions in the link above.

When you click on PLAY ONLINE for the first time, you start the ChessLink app on your Phoenix. You will now be prompted to enter the token. Take your time when entering the token in the Phoenix and pay particular attention to the characters O and 0 (Oh and zero) and I and l (upper case I and lower case L), as these are difficult to distinguish in the token.

After entering the token, you can log in to LiChess and start your first online game directly from the chess computer.

Common causes of errors

If you cannot log in to LiChess from Phoenix, something went wrong when you entered the token. If the app starts but you cannot play, it is likely that not all authorizations for the token have been set. In such cases, simply create a new token.

If the connection to the server is interrupted, please check whether the WIFI connection from the Phoenix is stable and whether your Internet connection is running smoothly. A stable connection to the Internet is crucial for a smooth game.

Attention: Sometimes it can happen that the LiChess server itself is not or only sporadically available due to maintenance work or malfunctions. Such problems can be localized, for example, if the connection to the lichess.org website itself is slow or fails, or if LiChess' own app on your smart phone cannot connect.

Another cause of errors could be a temporary blocking of your LiChess account due to suspected cheating. LiChess uses special algorithms to identify cheaters. If these algorithms kick in - for whatever reason - your account may be blocked for a certain period of time. This can sometimes happen even in completely harmless games, especially as the algorithms are regularly adjusted.

7. PERFORM RESET

If your system stops booting because, for example, a problem occurred during a system update, you can use the RESET button on the back to start in a safe mode.

To do this, press the reset button as soon as the control led on the back lights up.

From Safe Mode, you can select and launch the latest version that ran smoothly on your system. From there, you can, for example, perform a system update again.

8. TECHNICAL INFORMATION

Frequency range:

RP4 2.4G WiFi	2400 – 2483.5 MHz
RP4 5G WiFi	5150 – 5250 MHz, 5250 – 5350 MHz, 5470 – 5725 MHz
WiFi-Dongle, 2.4G WiFi	2.4 – 2.4835 GHz

Transmission performance:

RP4 2.4G WiFi	20 dBm max EIRP
RP4 5G WiFi	23 dBm max EIRP (5150 – 5350 MHz) 30 dBm max EIRP (5470 – 5725 MHz)
WiFi-Dongle, 2.4G WiFi	20 dBm max EIRP

Item no: M900, M901, M902

Power supply: Input: 100–240 V 50/60 Hz, 1,00A max.; Output: 9V DC 4A

Changes to the specifications, in particular in connection with technical developments, as well as errors are expressly reserved.

9. SAFETY INSTRUCTIONS, MAINTENANCE & CONFIRMATION OF CONFORMITY

Important information

Before operating the device, please read the following safety instructions and the operating instructions completely, observe them carefully and store them with the device for later reference purposes. If you pass the device on to another user, please also provide these instructions.

This device is intended for private use in dry indoor environments.

Safety Instructions

Please note that this product is not a children's toy within the meaning of Directive 2009/48/EC. If you allow your children to use the appliance, instruct them accordingly and make sure that the appliance is only used as intended.

Keep packaging bags and foils away from babies and toddlers, there is a risk of suffocation!

Do not expose the appliance to heat, e.g. on radiators or direct sunlight, or to moisture in order to avoid damage.

Do not operate the device on or directly next to devices that generate magnetic fields or electromagnetic radiation, such as televisions, loudspeakers, radio telephones, WLAN devices, etc., in order to avoid malfunctions.

Check the appliance regularly for damage, do not use it if it is damaged.

Never open the device, it does not contain any parts to be serviced. In the event of malfunctions, contact the specified service address or your local dealer.

Storage and cleaning instructions

If necessary, clean the appliance surfaces only with a slightly damp cloth and make sure that no moisture penetrates into the appliance.

Do not use solvents or other aggressive or abrasive cleaning agents, otherwise the surfaces and the label may be damaged.

For devices with real wood: Please note that real wood requires special care. Handle the wood carefully, always store the appliance in a dry place and do not expose it to strong sunlight.

Notes on the power supply

Operate the appliance only with the supplied original power supply. Input: 100–240 V 50/60 Hz; Output: 9V DC 4.0A.

Observe the following instructions when handling the power supply:

- The outlet should be close to the appliance and easily accessible.

- The device should not be connected to more power sources than recommended.
- The connection contacts must not be short-circuited.
- Always disconnect the power supply from the mains before cleaning.
- Check the product and the power supply regularly for damage and stop using it if it is damaged. Never open it.
- If necessary, observe the safety instructions on the mains adapter.

Certificates of conformity

For the EU

Millennium 2000 GmbH hereby declares that the devices comply with relevant EC directives (in particular those listed below) and that the series is manufactured accordingly:

- (RED) Radio Equipment (FTEG) 2014/53/EU
- (WEEE) Waste/scrap electrical and electronic equipment 2012/19/EU
- (RoHS) Restriction of the use of certain hazardous substances in electrical and electronic equipment 2011/65/EC
- Low Voltage Directive 2014/35/EU

(RoHS) Restriction of the use of certain hazardous substances in electrical and electronic equipment 2011/65/EC

NOTE: This product is not protected against the effects of electrostatic charge, strong electromagnetic radiation or other electrical interference, since a malfunction under these conditions is not critical.

For the USA

Contains a Raspberry Pi 4 Model B, FCC ID: 2ABCB-RPI4B.

WARNING: This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For products available in the USA/Canada market, only channels 1 to 11 are available for 2.4GHz WLAN. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter except in accordance with FCC's multi-transmitter procedures. This device operates in the 5.15~5.25GHz frequency range and is restricted to indoor use only

IMPORTANT NOTE: FCC Radiation Exposure Statement; Co-location of this module with other transmitter that operate simultaneously are required to be evaluated using the FCC multi-transmitter procedures. This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The device contains an integral antenna hence, the device must be installed so that a separation distance of at least 20cm from all persons.

For Canada

Contains a Raspberry Pi 4 Model B, IC: 20953-RPI4B.

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

For products available on the USA/Canada market, only channels 1 to 11 are available for 2.4GHz WLAN. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located with any other transmitters except in accordance with IC multi-transmitter product procedures.

The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

IMPORTANT NOTE: IC Radiation Exposure

Statement: This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum separation distance of 20cm between the device and all persons.

Disposal

Dispose of packaging materials in an environmentally friendly manner in the collection containers provided for this purpose.

In accordance with EC Directive 2012/19, the device must be disposed of in an orderly manner at the end of its service life. In this case, valuable materials contained in the device are recycled and the pollution of the environment is avoided. Contact your local waste disposal company or your local administration for more information.

10. WARRANTY, SERVICE AND MANUFACTURER INFORMATION

Warranty conditions

Your statutory warranty rights apply to this product. We also offer a 3-year warranty on this product. This does not limit your statutory warranty rights. The following warranty conditions apply:

We will repair any damage or defects to the device free of charge, which can be proven to be due to a manufacturing defect. Please report any faults immediately after detection and within the warranty period.

The warranty does not cover batteries or fragile parts such as glass or plastic. A warranty obligation is not triggered by slight deviations from product descriptions that are irrelevant to the value or usability of the device, by damage caused by chemical, electrochemical or water influences, and generally by abnormal external conditions.

The warranty is provided in such a way that, at our discretion, defective parts are repaired free of charge or replaced by faultless parts. Devices with warranty claims must be handed over to the point of purchase or sent to our service centre. Replaced parts are passed into our ownership.

When asserting the guarantee, the proof of purchase with the date of purchase or delivery must always be submitted or sent.

The warranty claim expires if repairs or interventions carried out by unauthorized persons are the cause of the warranty claim.

Warranty services do not extend the warranty period, nor do they set a new period in motion. The warranty period for installed spare parts ends with that for the entire device.

Further claims, in particular for compensation for damage incurred outside the device, are excluded – unless justified by legal regulations.

Customer Service Contact

Customers from Germany, Austria and Switzerland contact our customer service in case of warranty.

Hotline Germany: 0800 – 64 55 366

Hotline Austria: 0800 – 28 18 29

Hotline Switzerland: 0800 – 83 51 28

MILLENNIUM 2000 GmbH, Servicecenter, Reiherstrasse 2, D-35708 Haiger

Phone: +49 (0)2773 7441 222, E-mail: support@millennium2000.de

Customers from other countries should contact the distributor from whom you purchased the product.

If only a part is missing, you can request the missing part from your dealer or our customer service.

Manufacturer Information

Product Development & Manufacturing by

MILLENNIUM 2000 GmbH, Heisenbergbogen 1, 85609 Aschheim, Germany. www.millennium2000.de

11. LICENSES

For details on the licenses used in the Mephisto Phoenix, see www.computerchess.com/mephisto-phoenix/#licenses.

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Hiarcs 14.2

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Stockfish 16

Stockfish, a UCI chess playing engine derived from Glaurung 2.1

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GinkGo

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Leela Zero 0.29

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Millennium Opening Book

“Millennium Book” by Mark Uniacke, © Applied Computer Concepts Ltd (UK)

Johan de Koning

Saitek Risc 2500, Saitek Montreux, Tasc King 2.2, Tasc King 2.23, Tasc King 2.5

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Ed Schroeder

Mephisto MM4, MM5, Polgar, Nigel Short, Milano, Tasc Gideon (Rebel)

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Mephisto Phoenix

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12. CHANGE LOG – OVERVIEW OF THE VERSION CHANGES

Version 4.00D, December 2022

- DIAG SYSTEM function removed
- List of included emulations expanded

Version 4.01A, July 2023

- Tablebases option for Komodo 14.1, Stockfish 15 and Komodo Dragon 3 added, see page 17, [TABLEB - Activate tablebases](#)
- Emulator Expansion added, additional ROMs can be loaded by the user independently, see page 24, [Installation of further ROMs into the emulator](#)
- Support for license upgrades added
- Engine extension package (Komodo Dragon 3, Leela Zero, Ginkgo) available, see page 14, [The engine add-on package M911 for Mephisto Phoenix](#)

Version 4.01B, November 2023

- Bugfix: Emulation Mephisto Portoroze was not usable in version 4.01A
- Stockfish 15: Update to Stockfish 16
- New display option "Rating": Deactivates the rating bar and the position rating for an "honest game". See page 15
- Optimized PGN export: Format has been optimized for seamless integration into the most common chess GUIs:
 - Fritz (>15)
 - ChessBase (Reader 17 tested)
 - Hiarcs
 - Shredder Chess
 - Arena GUI
 - SciD Chess Database (MacOS, Windows) (New!)
 - Banksia GUI (New!)
 - Chess.com (New!)
 - Lichess (New!)
 - Lucas Chess (New!)

Version 4.01C, January 2024

- Preparation for firmware upgrade 4.01D

Version 4.01D, January 2024

- Firmware upgrade of the complete Phoenix operating system in preparation for the online chess function.
- A return to earlier versions is no longer possible from 4.01D.

Version 4.01E, January 2024

- Change to the WIFI interfaces
- Addition of the "Play Online" game mode
- Bug fixes for the emulations: Sounds not available in some emulations
- Optimizations in the connection of the 40cm chess boards
- Bugfix for USB game output for conversion to PGN format