MANUAL DGT CAÏSSA SYSTEM
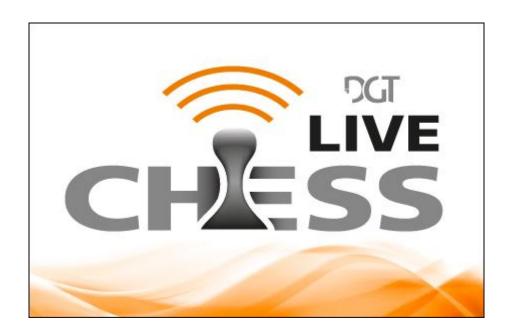

Author: Jan Krabbenbos
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1 ABOUT THE DOCUMENT

1.1 VERSIONS

Number	Date	Name	Remark
1.4.2	20130315	Jan Krabbenbos	Taken from DGT LiveChess manual
1.4.3	20130409	Jan Krabbenbos	Added checklist for tournaments

1.2 LITERATURE AND REFERENCES

1. "DGT LiveChess Manual", Jan Krabbenbos, DGT

1.3 COPYRIGHT

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1.4 TRADEMARKS

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2 INTRODUCTION

This is the manual for setting up the DGT Caïssa System in a tournament environment or any other environment. It describes the components, how to connect (or not to connect) these components and how to setup the physical components with boards and computer.

The DGT Caïssa System must be used with DGT LiveChess. From DGT LiveChess the Board Modules can be updated with the latest firmware. This is described in this manual. Other DGT LiveChess related matters are described in the DGT LiveChess Manual (a separate document).

This manual and other manuals can be downloaded from the DGT web site: http://www.digitalgametechnology.com (go to the Support section for the downloads).
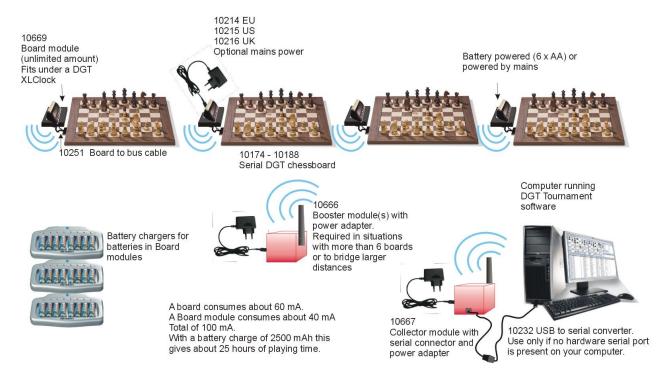
3   HARDWARE SETUP

FIGURE 1 THE CAÏSSA SYSTEM OVERVIEW

3.1   COLLECTOR MODULE

The collector communicates with both board modules (wireless) and computer (wired) and acts therefore as a bridge between wireless system and computer. Every system must have exactly one collector. The collector connects to the serial port of the computer.

3.2   BOOSTER MODULE

The booster is used to boost the wireless signal, e.g. when playing in a large hall. If the range of a single collector is not sufficient, it is advised to add a booster to your wireless system. Maximum of 8 boosters can be added to the system, however in general a small system will need no booster, and larger systems will only need 1, 2 or 3 boosters (depending on the configuration of the room, etc.).

3.3   BOARD MODULE

The board module converts the moves on the board to wireless signals. The board module connects to the board using a board-to-bus-cable. There is a shorter version of the cable available for the Caïssa System, which will fit neatly and there will not be an abundance of cables at the board.

Remark: The board module uses 6 AA batteries. These will last for approximately 3-4 games with a total time control of 6-8 hours per game.

4   TOURNAMENT CHECKLIST

Before starting a tournament and during the tournament the Caïssa System needs some different attention than a wired setup of DGT e-boards. The following list gives a checklist for starting a tournament with the Caïssa System. For details is referred to the LiveChess manual or the technical details in this manual.

4.1   CHECKLIST

- If in doubt which version of the firmware the Board Modules have, check this with the latest version of DGT LiveChess by updating them before the first round.
- When updating the Board Modules, select the wanted communication channel. This must be the same as for the Booster and the Collector.
- Check the Booster and Collector if they use the wanted communication channel. This can be read from the switches inside the module.
- If necessary add or replace the batteries in the Board Module.
- Setup the e-boards. Connect the e-board and the DGT XL with a Board Module, do not power up the Board Module.
- Connect the Collector to the computer. Place the module (or antenna) well above the boards!
- Add a Booster, also placed well above the boards, if necessary. Boosters can be used for distance, complex rooms or many boards.
- Start DGT LiveChess, connect the Collector.
- Switch on the Board Modules. Preferably not all at once, but in batches of approximately 5 until they are seen by DGT LiveChess. This can take considerable time!
- Now add tournament and round information in DGT LiveChess and start the round.
- During the tournament check the boards and the voltage of the Board Modules.

4.2   REMARKS

- When the Board Module is powered, it starts to read the e-board memory.
- When the Board Module connects to DGT LiveChess, it will transmit all relevant memory parts to DGT LiveChess. This can be necessary for reconstructing games.
- Check the voltages of the Board Modules in the serial port overview. Above 7V the board will work fine. Below 6V the board will not work correctly any more. In between is a safety barrier.
- Moves will come in with some delay. When many e-boards are connected, the delay can be long when the round is started or during time trouble.
- All moves will eventually be recorded, but it can take some time before everything is transmitted from the board to LiveChess.
- Using the "King to e4" trick for setting up the boards before the round in LiveChess might be a slow process especially when you have just started up all Board Modules.
- Do not change the batteries during playing. This disturbs the players!

5   TECHNICAL DESCRIPTION CAÏSSA SYSTEM

5.1   SETUP

For the wireless boards setup the default serial DGT e-Boards can be extended with the Caïssa System. This system consists of a Board Module per board, a Collector Module and zero or more Booster Modules.

The Collector Module is connected to the computer and takes care of the connection with all the e-Boards. Per board you need a Board Module. Depending on the room the system is used in, there are zero or more Booster Modules necessary.

The connection between the e-Board and the Board Module is made through a standard Board-To-Bus cable (there are shorter versions available). Each Board Module needs six AA type 1.5 Volt batteries. Between the boards there is no need for cabling anymore.

Depending on the room(s) where you want to setup the wireless Caïssa System, you may need one or more Booster Modules to transfer the board data to and from the Collector Module (and your computer). There is currently no exact definition available how many Booster Modules are needed in a given situation.

If you are planning to use many board through the wireless Caïssa System, it might be necessary to divide the number of Board Modules over multiple Collector Modules. For this the Collector Module must be adapted to use a different band. This is done by setting the small switches inside the Collector Module to the wanted band. The Board Modules must be told which Collector Module to use. Therefore the Board Modules must be programmed with the correct number for the band to use (see 5.2.2). If you are using also the Booster Modules, than also the Booster Module must be adapted for the correct band.

5.2   WHEN TO USE BOOSTER MODULES

Depending on the amount of boards and the setup of your e-Boards with the Caïssa system, you might need Booster Modules added to your environment. A Booster Module can be placed anywhere in the playing hall where there is a power connection available.

In the following situations the use of a Booster Module might be required:

- You have distances over 40-50 meter;
- The Collector Module and the boards are in different rooms and the wall disturb the wireless signal;
- You have many boards;

5.2.1   POSITIONING THE COLLECTOR AND BOOSTERS

For optimal reception of the signal of the Board Modules the Collector Module and the Booster Modules that are used, should be placed higher than the board modules. The best would be above the boards, e.g. by putting them on a pole or mounting on the ceiling.

For the Collector, because of the short serial cable an extension cable for the antenna is in the box. This cable makes it possible to put the antenna on a higher place.

5.2.2   UPDATING CAÏSSA BOARD MODULE FIRMWARE

The Caïssa Board Modules can be reprogrammed with new firmware. If errors have been resolved or new functionality has been implemented, you can upload your board modules through DGT LiveChess.

For this you need a special programming cable which was delivered together with your Caïssa Set.

REMARK : You cannot use a USB cable with the same type of plug on the side of the Board Module !!!

Select the menu item *Caïssa Board Module Updater* from the *File* menu. DGT LiveChess contains always the latest release version of the firmware. After selecting the menu item a dialog as seen in Figure 2 will be shown.
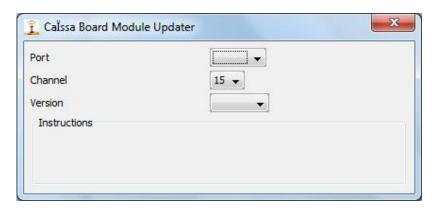

FIGURE 2 CAÏSSA BOARD MODULE UPDATER

You have to select the port and then first connect the Caïssa Board Module before switching it on. The action you have to take or are taken by the program are shown in the *Instructions* part of the dialog. It will look like Figure 3.

Before selecting the port, if you just have started DGT LiveChess, you need to wait some time until it has found the serial ports available. After that the serial ports will also show up in the *Updater* dialog.

The channel of the board module can also be selected. The default channel is 15. If another channel is selected then the Collector and Boosters should select the same channel (see 7.9.6).
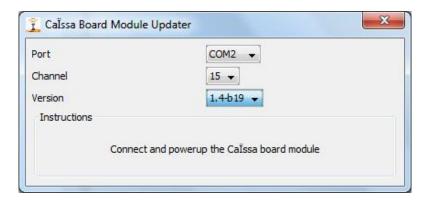
FIGURE 3 WITH PORT SELECTED AND INSTRUCTIONS

If the Board module is reprogrammed, the program will ask you to disconnect the module. It is possible to immediately connect another module to reprogram.

5.2.3   BOARD MODULE LED SEQUENCES

At the back of the Board Module there is a LED (light) showing which gives information about the status of the Caïssa System Board Module.

During boot of the module, immediately after switching it on, the following can be seen for approximately three (3) seconds :

- Fast flashing green : voltage below 8.5 V (5 Hz flashing frequency)
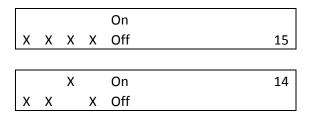- Fast flashing red : voltage below 7 V (5 Hz flashing frequency)

When the Board Module is flashing fast red, this means the battery voltage is too low. The result is that the board cannot be powered for a whole game and you will loose the game or parts of it.

During boot :

- Slow flashing red : configuration of the internal broadcast module (2 Hz flashing frequency)
- Slow flashing green : detection of the board(s) (2 Hz flashing frequency)
- Continuous green : found board(s)
- Continuous red : after approximately 6 minutes if no LiveChess instance is detected.
- Off : a LiveChess has been detected (only if the board(s) are detected.

5.2.4   SELECTING A CHANNEL ON GATEWAY AND BOOSTER

A channel can be selecting by flipping the dip switches. First the cover should be removed (4 screws). Then there are four dipswitches. Select the desired configuration.

				On	
X	X	X	X	Off	15

	X			On	14
X	X		X	Off	

| X X | | On | 13 |
| | X X | Off | |

| X | | On | |
| X | X X | Off | 12 |

| X | | On | 11 |
| X X X | Off | |

| X | X | On | 17 |
| X | X | Off | |

| X X X | | On | 19 |
| X | Off | |

| X X | | On | 18 |
| X | X | Off | |

5.3 STORAGE

If you are storing the Caïssa System for some time, please keep in mind the following points :

- Remove the batteries from the Board Modules to prevent leakage of the batteries ;
- If you remove the antenna from the Booster or Collector modules to store these easier, keep in mind that the antenna for both modules are different! There is male/female difference in the connection. If the wrong antenna is placed back, this results in malfunction of the module. It might also damage either the antenna or the module !