Manual for RyngDyngManager

Version 1.1 2024/01

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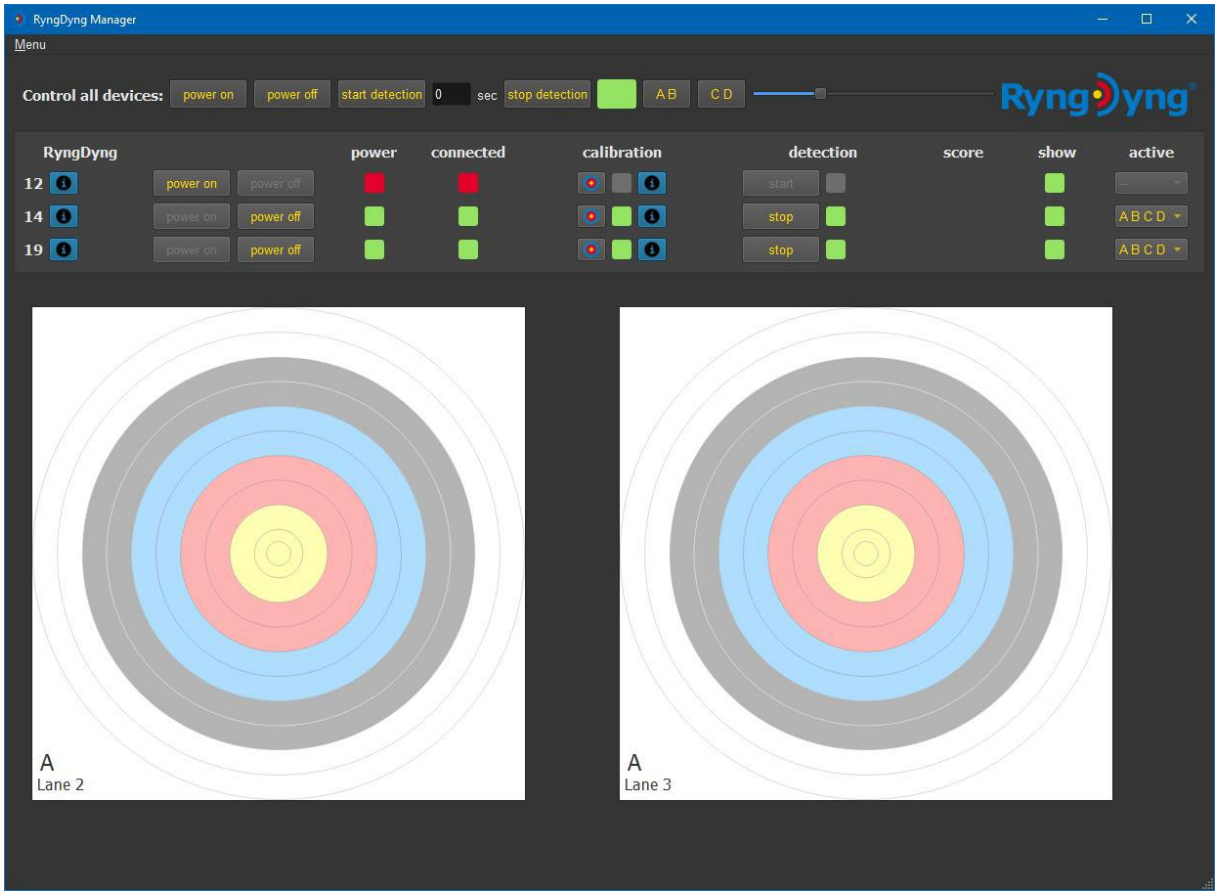
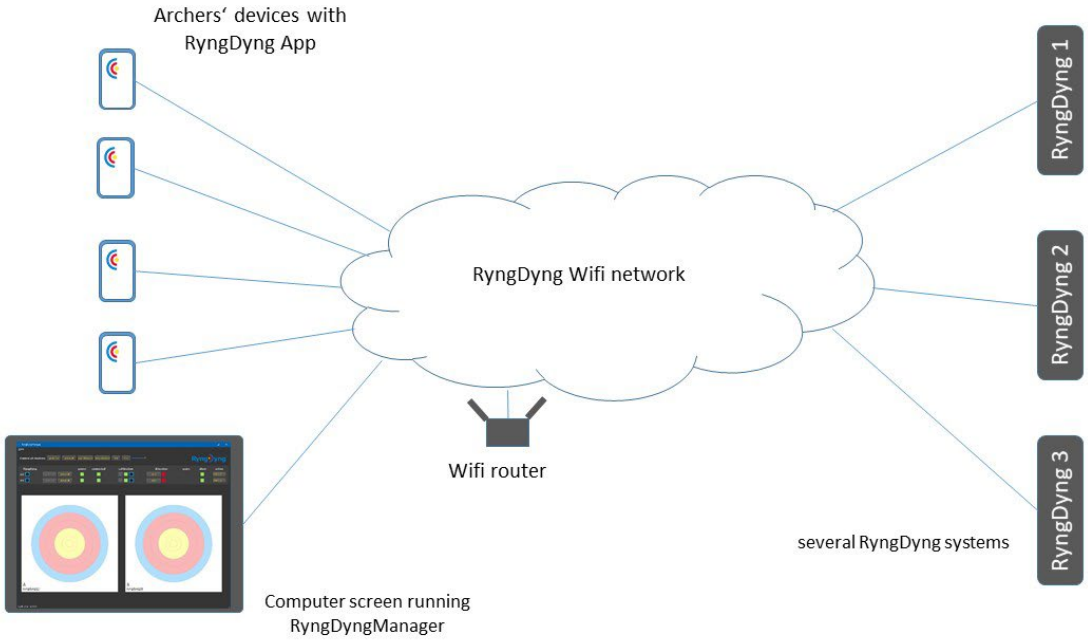

RyngDyng Manager
Menu
Control all devices:
power on
power off
start detection
0
sec
stop detection
A B
C D
RyngDyng
power
connected
calibration
detection
score
show
active
12
14
19
start
stop
A B C D
A
Lane 2
A
Lane 3

1. Introduction

RyngDyngManager is a complimentary software used to control and monitor several RyngDyng systems on one screen. Use cases include tournaments with several shooting lanes, or, installations in archery halls.

2. System architecture

Typically, the RyngDyng Wi-Fi router provides the local network needed to connect all systems:



It is also possible to connect the RyngDyng systems to an Ethernet switch, which then connects to the Wi-Fi router LAN port. This way it is possible to use the Wake-on-LAN feature supported by the RD720 devices.

The computer running the RyngDyngManager software is connected to the same network, via either Wi-Fi, or, using Ethernet cable and a switch.

If you need internet connectivity, e.g. for RyngDyng software updates or during tournaments, connect the Wi-Fi router WAN port with your local internet router using an Ethernet cable.

If the RyngDyngManager resides in a network other than the RyngDyng Wi-Fi network, then you can build a VPN tunnel to get the required connection to the RyngDyng systems. How to do that is described in another document called Remote Access to RyngDyng.

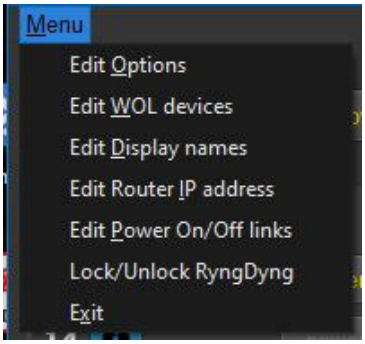
3. Installation

The RyngDyngManager comes as a setup file `RyngDyngManagerSetup.exe`, zipped as an archive `RyngDyngManagerSetup.zip`. We support Windows OS (version 10 or 11).[1]

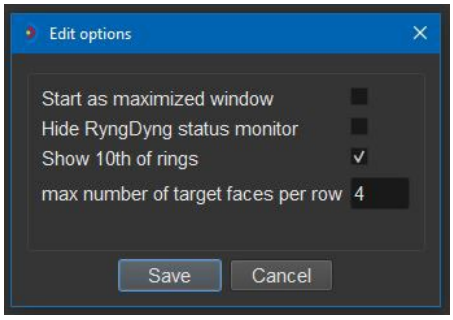
Download this file from the given internet source, extract the zip archive and run the setup file.

4. Settings

Change the settings using the Menu:



a) Edit Options



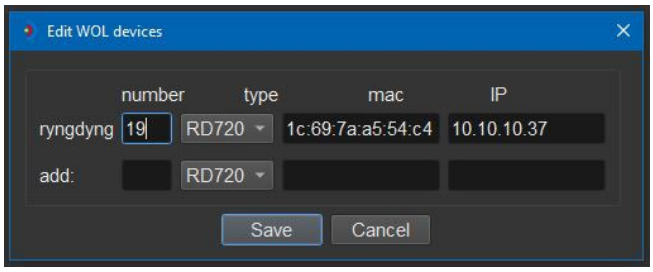
`Start as maximized window`: Use full screen when application starts

`Hyde RyngDyng status monitor`: hide the list of RyngDyng systems and their status. This will provide a maximum area for the target faces. This feature is useful when you want the screen to display live hits, but not to monitor the status of RyngDyng systems.

`Show 10th of rings`: Some archers prefer to show the score including a digit, such as 8.6 instead of just 8 points. RyngDyng can measure this 10th of a score as the distance to the next higher score.

`Max number of target faces per row`: This option controls the layout of the target faces shown. If there are many target faces being observed, the faces will be displayed as a grid, and this setting controls the number of columns (see also chapter 8 below).

b) Edit WOL devices



The RD720 supports powering on the device using a special command sent via Ethernet cable (called WOL – wake on LAN). If you add the device to this list (host number and Ethernet MAC address,

[1] For skilled Linux administrators we can provide the files also for such OS, but there is some work to do to prepare the runtime environment. RyngDyngManager is based on Python PyQt5.

optionally a fixed IP address if a VPN tunnel is in between), then there will be a button called `power on` for those devices and you can power on the devices using the RyngDyngManager.

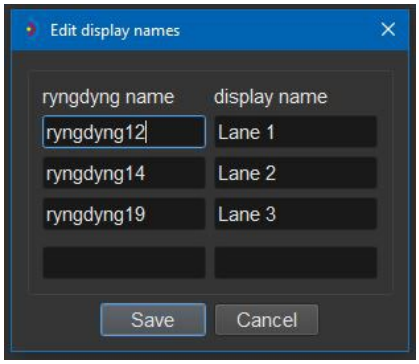
There is also a more convenient method for adding RD720 devices to this list: Once the device has been powered on manually, RyngDyngManager will discover the device with the help of the RyngDyng Wi-Fi router. Then, press the info- 12 button next to the RyngDyng number. In the dialogue choose `remember as WOL device`. This will create the required entry in the list, including the MAC address.

Please note that WOL only works for RD720 systems connected via Ethernet (not Wi-Fi).

Removing a device from this list: Delete the host number and the MAC address and then press `Save`.

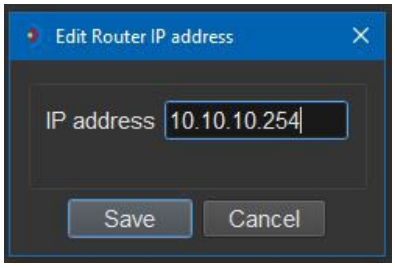
c) Edit display names

Sometimes you might want to show a meaningful name for the shooting lane or target, rather than a hostname like ryngdyng42. Using this setting, you can assign other display names for the individual devices.



Those names will show up on the target faces and replace the RyngDyng hostnames:

d) Edit router IP address

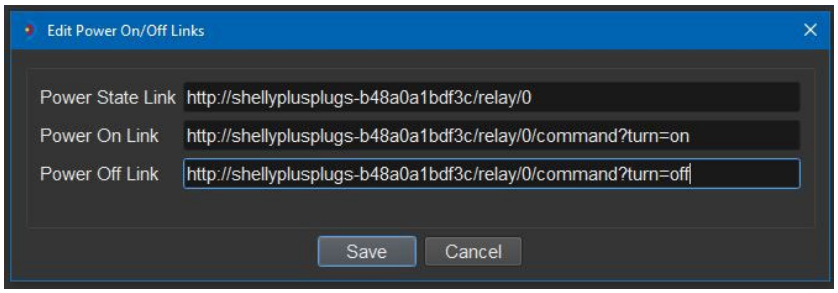


The standard IP address of all RyngDyng Wi-Fi routers is `10.10.10.254`. In case you want to use your own local network, change here the IP address to point to your local router.

Using another local network has some consequences you should be aware of: First, all RyngDyng systems must use Ethernet connection instead of Wi-Fi connection. Second, you cannot use the RyngDyng App anymore, as the App is bound to Archery Analytics' local domain provided by the RyngDyng router. Third, the automatic discovery of RyngDyng devices does not work anymore; therefore, you must manually add all RyngDyng systems to the list of WOL devices (see above).

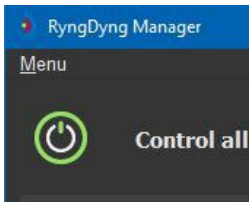
Therefore, using another local network router only makes sense, if you also use another software to control the devices (e.g. the tournament management software I@nseo, or, the Artemis app).

e) Edit Power On/Off links



As the RD600s do not support the WOL power on feature, we implemented support for switchable main plugs such as the Shelly Plug. This plug hooks up to a Wi-Fi network and allows switching on/off by means of some URLs (see example in screen shot above).

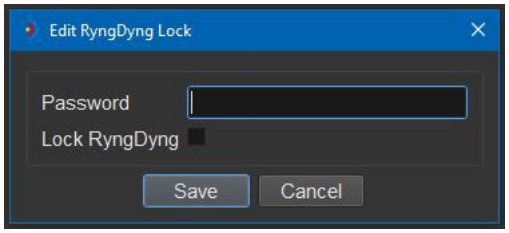
Once these links have been provided, the RyngDyngManager will show a power button to switch the plug and indicate the status: on or off.



Remotely powering on the RD600 devices is then possible by switching on the power supplies using this plug. Note that you should keep the Wi-Fi router powered on all the time; otherwise, you cannot send those switching commands to the plug via the network.

Please note that it is very important to shut down all RyngDyng systems properly (e.g. using the `power off` button of the RyngDyngManager) before cutting the power supply.

f) Lock/Unlock RyngDyng



All RyngDyng systems support locking up by means of a password. Instead of entering the password individually for each RyngDyng using the App, you can enter the password here and RyngDyngManager will then lock all connected RyngDyng systems centrally.

A locked RyngDyng blocks all attempts to control the device or edit recorded hits. Only Apps in possession of the same password are able to do these operations (e.g., mobile devices used by the judges can alter the recorded score of a hit).

Please note that after a reboot of RyngDyng the device is unlocked and needs locking again.

5. Keyboard shortcuts

Some keyboard shortcuts allow for convenient controlling functions of the RyngDyngManager:

- `t`: toggle display of the status monitor
- `+`: increase size of target faces shown
- `-`: decrease size of target faces shown

6. Central Control buttons

At the top of the window, you find the central control buttons. These buttons affect all connected RyngDyngs simultaneously.

For example, pressing the `power on` button will power on all configured WOL devices (see above). `Start/stop detection` is useful during tournaments, when you want to pause arrow detection between the ends and while pulling arrows.

Optionally, you can input a timer value in seconds. If this value is > 0, then a countdown will be used like in tournaments. After the countdown has reached 0, the arrow detection will be stopped.

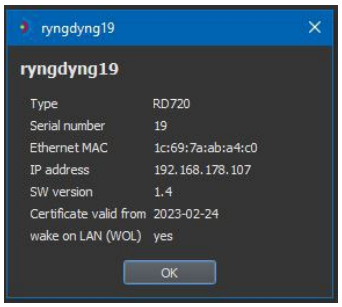
There is a colored indicator for the status of arrow detection. It is green when all connected devices are in active state. If some are not, it will be a mixture of green and red. If all are stopped, it will be red.

The `AB/CD` switching buttons allow for activation of the targets labelled with these letters. Arrows on a target labelled AC will match archer A when AB is active, and will match archer C when CD is active.

The slider changes the size of the displayed target faces (see below). This function corresponds to the keyboard shortcuts `+` and `-`.

7. Status Monitor

For each known RyngDyng device, there is a line in the status monitor area. The columns show status information for each device:



a) `RyngDyng`: The host number followed by an info button. Clicking the info button shows a popup with essential information regarding the device, such as the software version and the validity status of the SSL certificate.

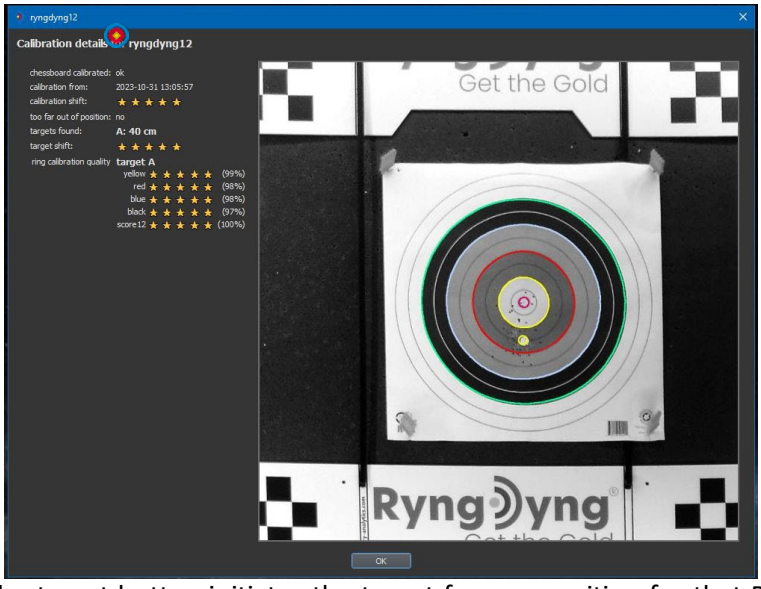
b) `Power on`: This button is enabled only, when the RyngDyng device has been configured as a WOL device (see above), and, it is powered off. Then, clicking the button powers on the device.

c) `Power off`: This button is enabled for all connected devices that are powered on. The recommended procedure to shut down RyngDyng systems is to click the `power off` button (or, using the power off button inside the RyngDyng App).

d) `Power`: an indicator showing the power state (red means 'powered off')

e) `Connected`: an indicator showing the connection status. If green, RyngDyngManager and RyngDyng are connected and can exchange messages.

f) `Calibration`: the color indicator turns green when both calibration steps have been completed (chessboard calibration and target face recognition, see RyngDyng Manual and RyngDyng App Manual). Clicking on the info button shows the status of the calibration:



Clicking on the target button initiates the target face recognition for that RyngDyng. This is useful when target faces have been exchanged and just this step is needed to continue.

g) `Detection`: the indicator turns green when arrow detection is active. The `start/stop` button is enabled when calibration is complete (=calibration indicator is green)

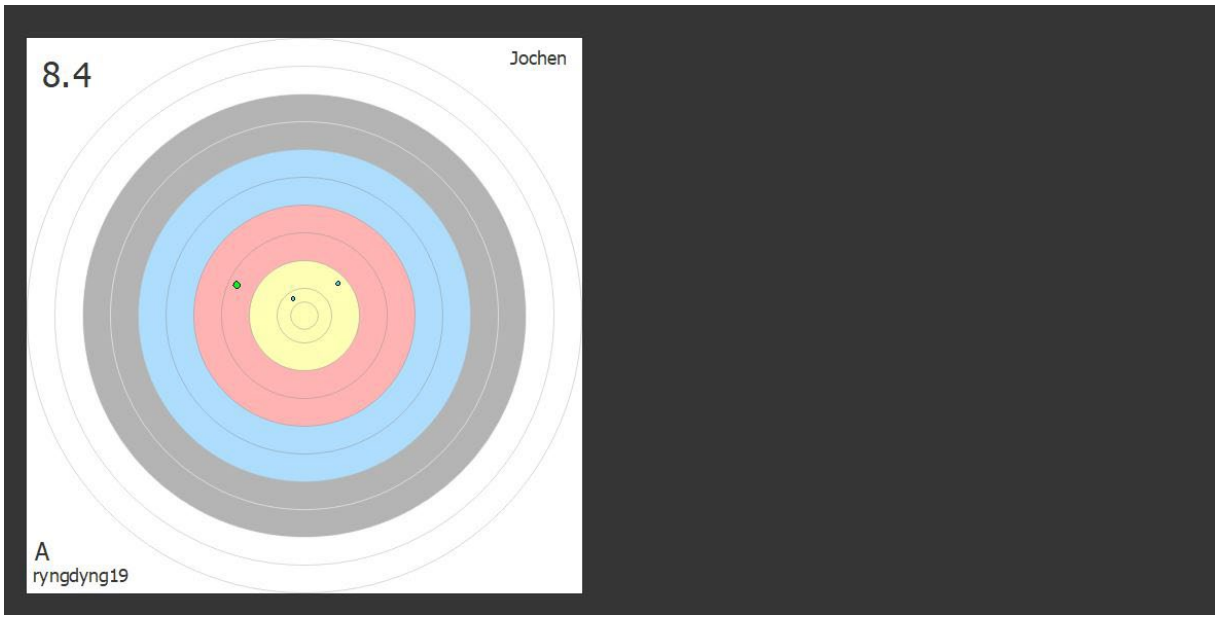
h) `Score`: The score of the last hit measured by this RyngDyng.

i) `Show`: a clickable indicator to control which target faces to show on the screen. If you want to restrict the display to some RyngDyng only, just disable the other `show` icons by clicking on them.

j) `Active`: Indicates whether all target letters are active (ABCD), or just AB resp. CD. Using the drop-down select you can switch AB/CD for just this RyngDyng (all RyngDyngs will be switched together using the central AB/CD switch above)

8. Target faces area

Below the status monitor there is the area to show the recognized and selected target faces (indicators `calibration` and `show` are both green). Example:



The area can contain up to eight target faces (four columns[2], two rows). Use the slider or the `+` and `–` key to change the size and to make them best fit to the area. If there are more than eight faces, every 10 seconds the display automatically switches between the first eight faces and the next group (and so on).

Each face represents the target face in an idealized way with perfect circles. Little circles represent the detected arrows with the correct shaft diameter relative to the size of the target face. The last hit is drawn a bit larger and in light green. In the upper left corner, there is the score of the last hit (including the 10th of value, if this option is set).

In the upper right corner, there is the name of the archer shooting at this target. To make this work, you need to assign archers to the faces, see the RyngDyng App Manual on how to do this.

9. Message area

Below the area for the target faces there is the message area. Error messages eventually show up here, as well as important information. For example, if the target face recognition was successful, this message appears:

Clicking on the button left to the message will make it disappear.

Note that using the toggle key `t`, both the status monitor as well as the message area will hide.

[2] In the options menu, you can change this value to another number of columns, see chapter 4.