



# Equipment for indoor laser tag



## Game kit ECLIPSE

### Instruction of the first start

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# 1. General specifications

Arena laser tag is one of the varieties of a fascinating and dynamic game of laser tag, taking place in real time and space. The difference of this type is that the games are held in closed darkened rooms, as a rule, authorized under space wars.

The goal of the game is to get the infrared ray of the blaster into the sensors mounted on the opponent's vest or weapons, or installed on special equipment. For each successful action (hitting an opponent, capturing the base, domination box, etc.), the player and his team are awarded points. For hitting from the opponent's blaster into the player's sensors, for rebirth, for an unsuccessful shot, etc. points can be removed (parameters are adjustable). Statistics are quickly transmitted to the control computer and can be displayed on a screen of a monitor, projector or television.

The minimum set for playing arena laser tag consists of sets of blaster + vest, router and chargers. The sets are configured and managed with a tablet or a phone (Android operating system).



Overview of the kit

Also, for a variety of gameplay, electronic devices manufactured by our company can be used: Smart Domination Boxes, Multistations, SIRIUS stations.

## 2. Blaster

Blaster is a simulator of "space" weapons, "hitting" an opponent with harmless infrared rays.

To increase realism the infrared beam at the moment of impulse is accompanied by a light beam similar to a laser pointer



**The main elements of the blaster**

The bumper part of the body is made of expanded thermoplastic elastomer, which reduces the risk of physical injury in possible collisions.

The blaster is connected to the vest through a flexible cable, reinforced with a sleeve.

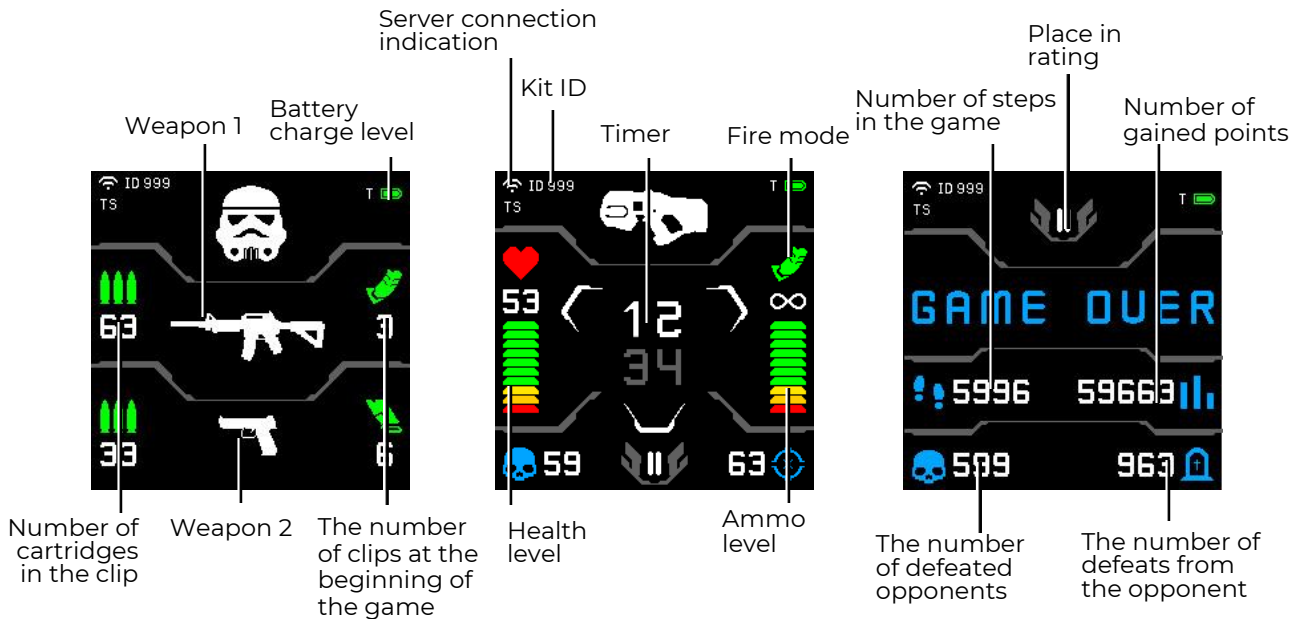
In addition to the hit sensor in the front of the blaster body, there is a shot illumination panel in the color of the team.

A capacitive hand sensor is installed in the body, which makes it impossible to play the game while holding the blaster with one hand. There is a vibration motor installed in the body to simulate recoil, as well as a gyroscope and a pedometer for counting steps in the game and signaling the player's aggressive behavior.

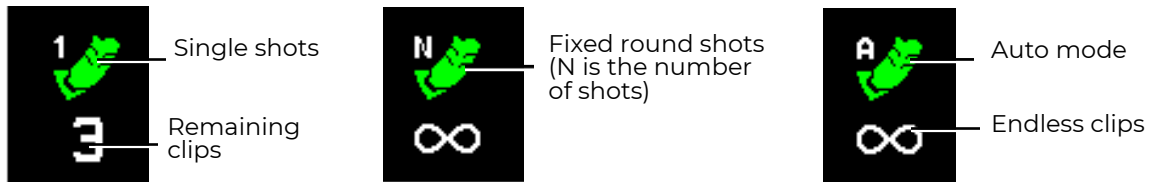
Each blaster is equipped with a high-resolution color IPS-screen (240x240), which operates in three modes:

- Pre-game mode displays initial parameters to start the game round;
- Game mode displays actual player's info during the game round;
- Post-game mode displays game statistics after the game is over.

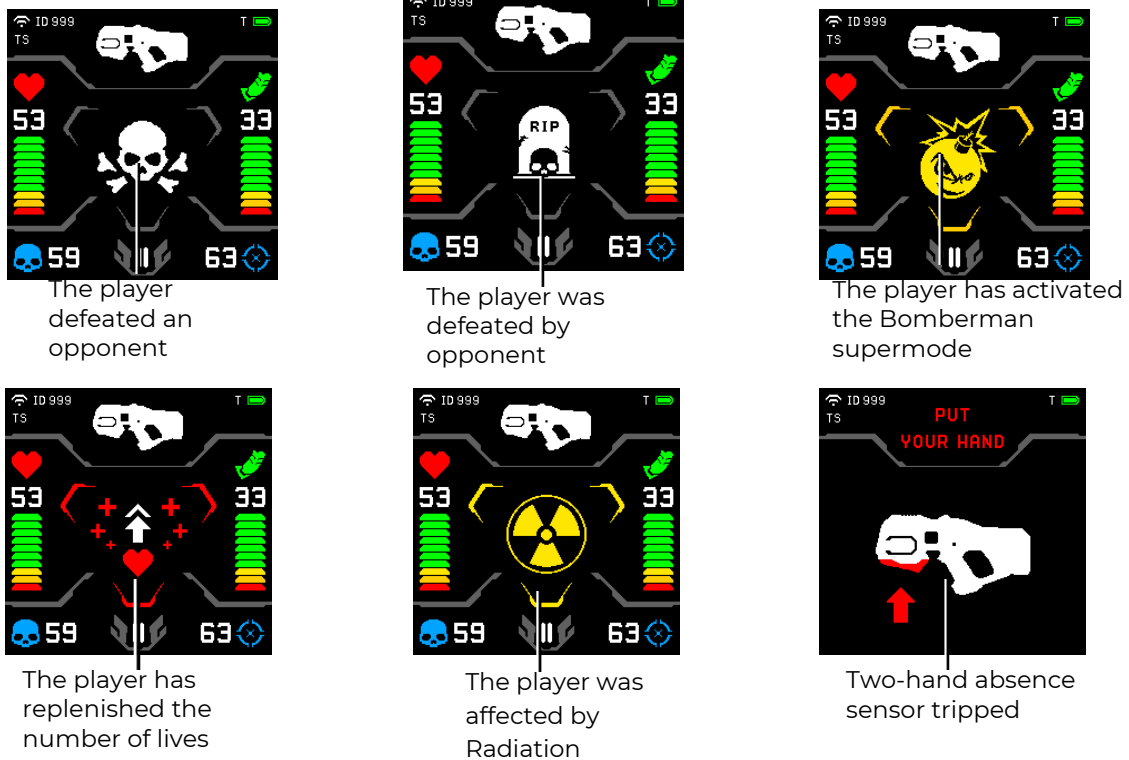
There are 10 values that are displayed on the screen at once: dynamic health and ammo level scales, number of successful hits, type of weapon, rating and much more.



Examples of information displayed on the blaster IPS-screen



Pictograms keys of firing modes



Game situations displaying on the screen of the blaster

### 3. Vest

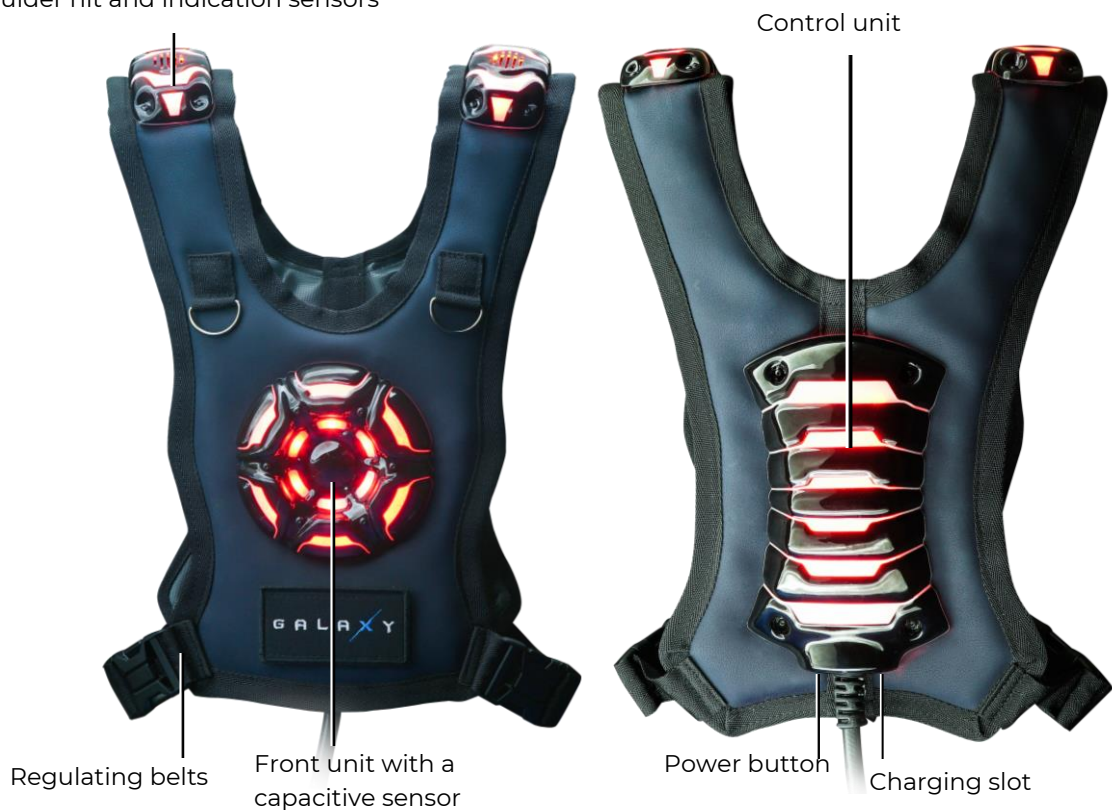
The vest is an integral part of the arena laser tag game kit and is connected to the blaster with a special cable.

There are 14 hit and indication sensors on the vest grouped in 4 sections - in front, back and on the shoulders. The hit sensors and the vest control unit are equipped with vibration and RGB light indication (52 independent LEDs), and are protected by shock-resistant polycarbonate bodies. The capacitive sensor allows the player to activate certain functions by touch. The supermodes in particular.

The outer layer of the vest's textile base is made of eco-leather. Two adjustable belts located on the sides allow you to adjust the size of the vest to the complexion and age of most players.

The kit is powered by Li-ion batteries (7.4 V, total capacity 4800 mAh), built-in the control unit of the vest.

Shoulder hit and indication sensors



Basic elements of the vest

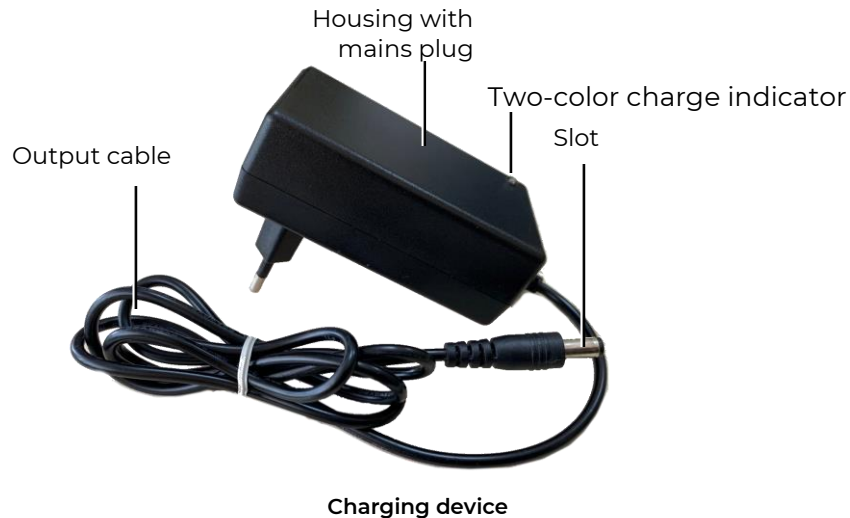


External elements of the control unit

## 4. Charging device

To charge the batteries of the arena laser tag equipment, the delivery set includes a charger connected to a 220 V electrical network.

The output voltage is 8.4 V, the maximum charge current is 2 A.



Charging device

Arena laser tag equipment, produced by Lasertag.net uses lithium-ion batteries with an internal overcharge, deep discharge and shortcut protection circuit.

However, the safe handling of Li-ion batteries should be paid serious attention.

Use a ventilated and fire-safe room to charge the batteries. If the batteries could ignite, they can't cause a fire in the entire room.

The temperature mode of the charge of lithium-ion batteries affects their capacity, which decreases when charging in the cold or in the heat. The charge can be carried out at an ambient temperature ranging from +4 °C to + 40 °C, but the optimum charging temperature is +24 °C.

Insert the charger output plug into the suitable socket on the vest control unit. Plug the charger into a 220 V connector.

The average charge time of the kit is 3 and a half hour.

## 5. Wi-Fi Router

As a Wi-Fi router in the set of laser tag equipment, the company supplies the Tp-link Archer C80 AC1900 device.

The router is based on a 1.2 GHz MediaTek network processor, which has a single core capable of performing two threads.

In the 2.4 GHz range, there is a processor that provides 802.11n protocols, supports MU-MIMO 3×3 and has a maximum connection speed of 600 Mbps.

For 5 GHz and 802.11ac is the processor, also working with MU-MIMO 3×3, and the maximum connection speed it is 1300 Mbps.



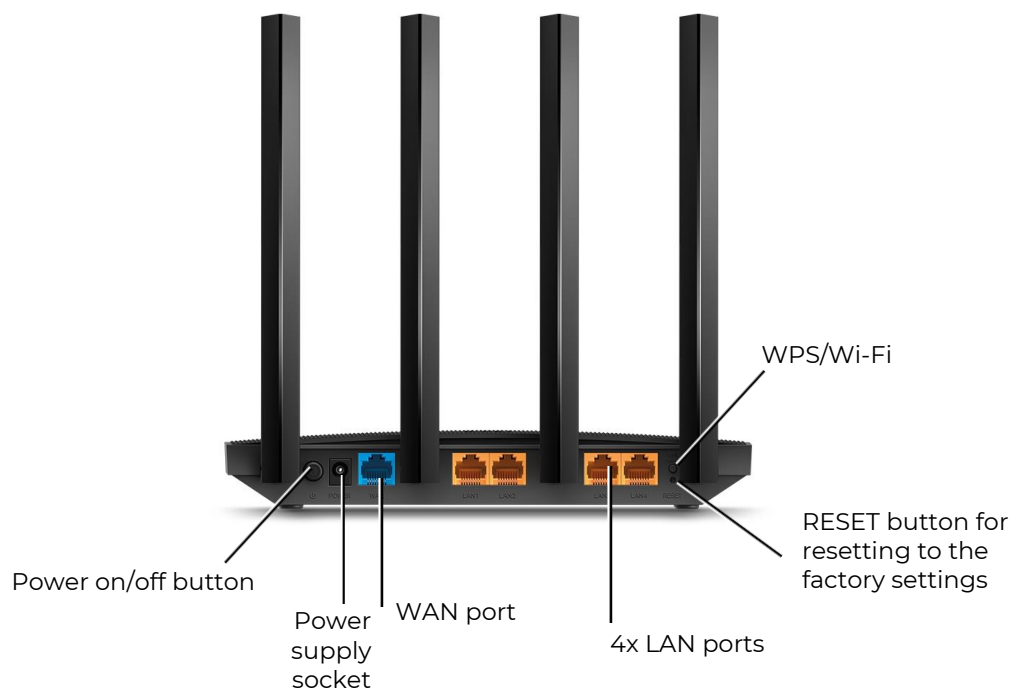
### The appearance of the router

The router is equipped with an external power supply (12 V, 1 A (EU Version) or 12 V, 1.5 A (US Version)) and RJ45 Ethernet cable.

- ❗ **Caution! When using a portable power supply (Power Bank) for the operation of the router, it is necessary that the output voltage on it corresponds to the nominal supply voltage of the router – 12 V.**
- ❗ **Do not use the power supply of the router to charge the batteries of laser tag equipment!**

On the mounting side of the router, the following objects are located:

- power on/off button;
- power connector;
- WAN – port for connecting the provider's cable;
- LAN1...LAN4 – four ports for connecting to the router of other devices, without indicators;
- WPS/Wi-Fi button – for simplified connection/disconnection of devices to the Wi-Fi network of the router;
- RESET button – reset the router settings to the factory settings.



**The appearance of the router from the mounting side**



**The device is delivered fully configured for use with software and laser tag equipment produced by the company and does not require any additional changes.**



## 6. Smart Domination Box

The Smart Domination Box – it is an absolutely new development of the Domination Box. The main difference from a standard Domination box is the presence of indicator scale, that shows the capture degree of each command, as well as 5 modes, which allow to record the capture for both - time and shots.

Capture is made by an infrared ray pulse directed from the blaster into the sensor. The sensor is placed in the lower inner part of the device, so the emitter must be placed vertically downward relative to the base plane of the Domination box.

The device is powered by Li-ion batteries (7.4 V, total capacity 4800 mAh) located in the case. The batteries are charged from the mains with a standard charger with an output voltage of 8.4 V and a maximum charge current of 2 A.



External view of Smart DB

The goal of the domination box is to record your “capture” by players of different teams, summarize the total capture time or the number of hits in the DB infrared receiver and determine the winner.

Device settings and control are performed in the Lasertag Operator program via Wi-Fi.

The Smart Domination box has three operating modes: standby, game and service.

Upon power-up, the Domination Box switches to the standby mode. Two central LEDs are lit with the color of the current DB mode. To find out the battery's charge level in this mode you should press and release the service button. The number of glowing purple LEDs will indicate the battery charge: 16 LEDs - 100%, 9 - 50%, etc.

The domination box can work in 5 display modes ("Capture for time"; "Capture with shots"; "Tug of war"; "Triple capture" and "Raise the flag"), each of which is configured either by the number of shots or by time DB holding required to determine the winner of the round. Indication of the settings is carried out by the glow of 10 central LEDs. The color of their glow corresponds to a certain mode, which is displayed in a sticker placed on the device case.

In the capture modes for time, you can set the timer for 1, 2, 4, 5, 7, 10, 15, 20, and 30 minutes.

In the modes of capture by shots, the number of hits in the device receiver is set from 50 to 500 in increment of 50.

The modes are installed and configured with the script editor of the Lasertag Operator program.

## 7. SIRIUS Station

Station SIRIUS (StS) is an analogue of the indispensable attribute of many scenario laser tag games - the Utility Box. It differs from the standard device by the presence of an indicator panel, side illumination, a futuristic case and 8 operating modes.



Power supply: 220 V network via a power supply unit (8.4 V 1 A) or a built-in 7.4 V 2600 mAh battery. Sound: buzzer (in devices released from 2020)

The device's activation (impact on the player's sets) is done in three ways, depending on the mode: by shooting the device ("Bonus" and "Flag" modes), automatically by timer (other modes) and compulsory: when a palm covers a sensor for a short time, the touch sensor is activated ("Med kit", "Respawn" and "Arsenal").

Range with direct visibility: 5-7 meters.

In sleep mode (before the start of the game and at the end), when the connection with the server is established, the station LEDs light up smoothly and fade alternately in different colors.

When the game starts, the device starts working in the selected mode with the settings specified in the program (the frequency of issued commands, the impact on players of certain teams, the number of shots for deactivation, etc.). Indication will correspond to the mode.

In the current release, SIRIUS station can operate in eight game modes: Respawn, Radiation, Medkit, Arsenal, Random, Bonus, Base and Flag.



Arsenal



Random



Respawn



Base



Radiation



Medkit



Bonus



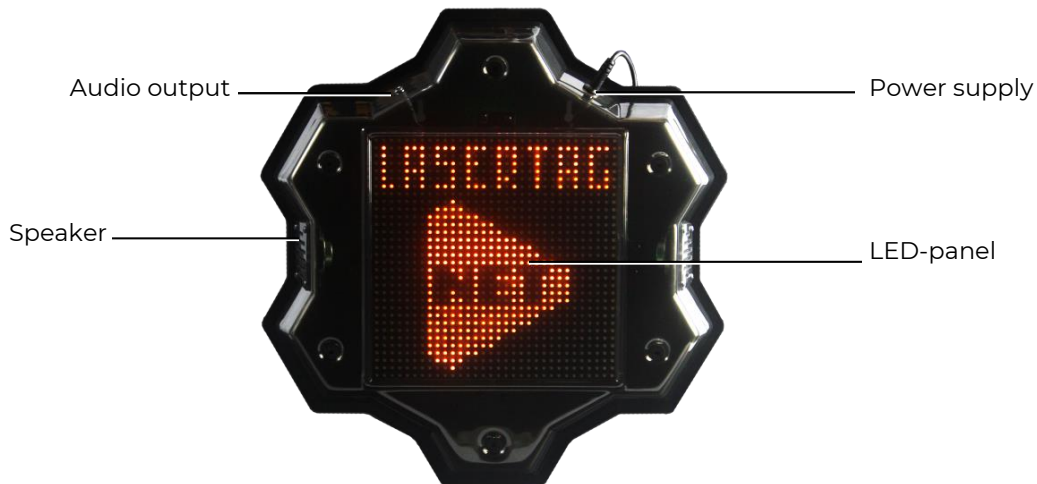
Flag

Station indication depending on the mode

## 8. Multistation

The Multistation (MS) is a multifunctional additional device for playing laser tag which significantly increase the list of possible scenarios.

The main advantage of the device is the presence of an LED panel screen (192x192 mm, 1024 pixels), which clearly shows in which mode the station is activated. Also, thanks to a futuristic design, interactive animation and side lighting, Multistation makes the games more colourful and spectacular and becomes an adornment of any platform.



**External Elements of the Multistation**

Power supply: 220 V network via 8.4 V 2 A. power supply.

Sound: built-in speakers + audio output.

The Multistation is inherently the development of a standard laser tag device - the Utility Box. But besides this, it acquired the functions of a Domination Box, an Electronic bomb and a Base.

In the current release, the Multistation can work in seven modes: Medical Kit, Arsenal, Respawn, Bomb, Domination box, Radiation and Base.

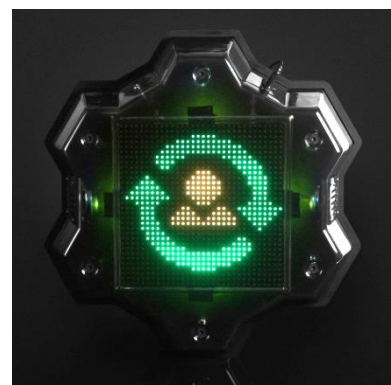
When the game round starts, on the LED screen of the Multi-station, instead of the company logo, a picture appears showing in which mode the device is operating. Moreover, the screen, like the device itself, is interactive and can respond to the actions of players.



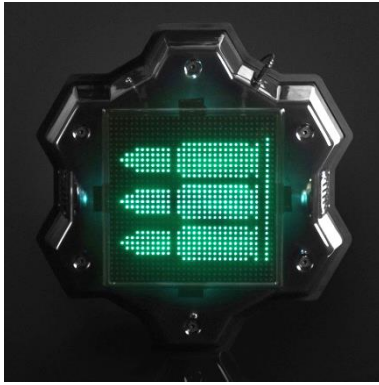
Medkit



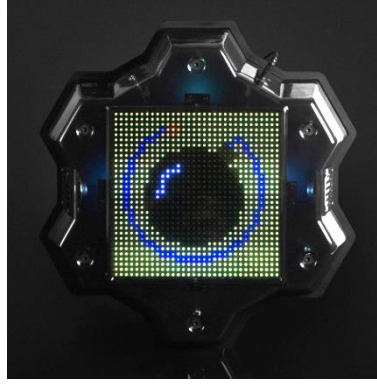
Radiation



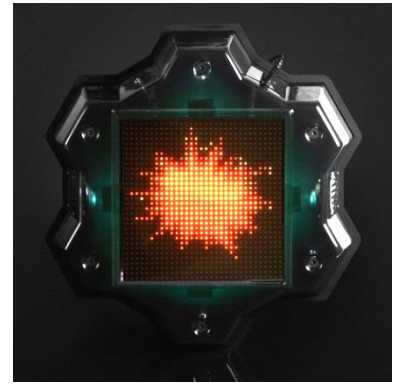
Respawn



Arsenal



Bomb

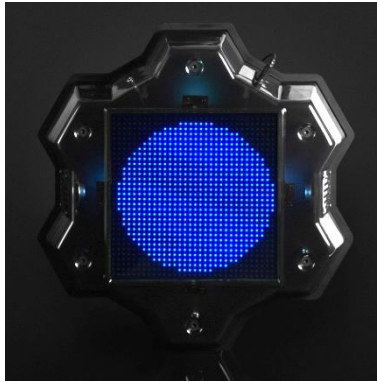
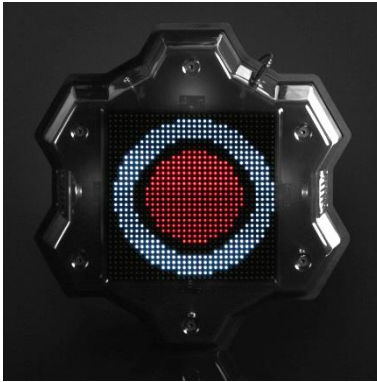


Detonation of the bomb

#### Multistation screens in Various Modes

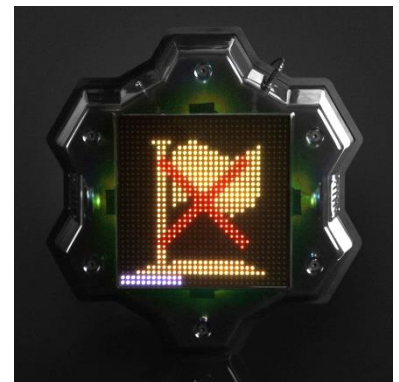
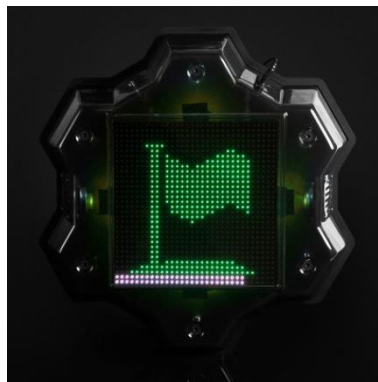
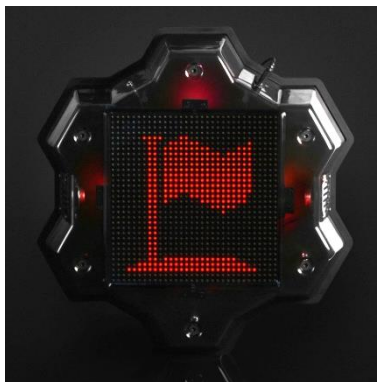
The multistation can also operate in the "Domination Box" mode. But the device's functionality as such takes into account the specifics of the indoor laser tag.

In order to prevent players from gathering near the Multistation operating in the "Domination box" mode, you can set the "Radiation" parameter in the program (the supply period and the damage are also set in the program).



#### Multistation screens in the "Domination Box" mode

The main difference of the "Base" mode is the respawn and radiation lesion of selectively players of teams of different colors. It is also possible to destroy (deactivate) the opponent's base. Players have the opportunity to destroy the base of opponents. For this, one need to shoot the number of times set in the scenario setting into the device. In this case, the white bar at the bottom of the screen will graphically display the degree of destruction. After the strip reaches the right edge, an explosion animation is displayed on the screen and the crossed-out flag appears. From this moment, the Base is inactive.



#### Multistation screens in "Base" mode

When using the "Bomb" mode, the players are divided into two teams - miners, who set the bomb, and sappers, which should neutralize it. The winner is the team that completed its mission. The parameters of the installation of a mine, its demining, the colors of the teams of miners and sappers, etc., are configured in the program.

The device is configured and controlled with the Lasertag Operator program via a Wi-Fi channel.

## 9. Equipment configuration

It is better to begin configuration of the equipment for indoor laser tag, manufactured by the company, with the connection a router to the server.

The router comes fully configured and does not require additional settings. If, for some reason, the device settings are reset (for example, you pressed the Reset button by a mistake or made changes to the settings that led to the incorrect router work), you should configure it yourself. (Indoor 3.0 equipment operation manual <https://lasertag.net/manuals/>).




Next, you should install and configure the software on devices (smartphone, tablet, etc.) with Android operating system version 7.0 or higher:

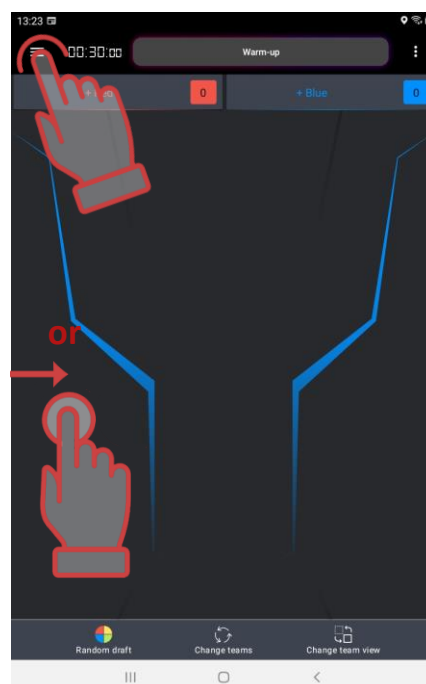
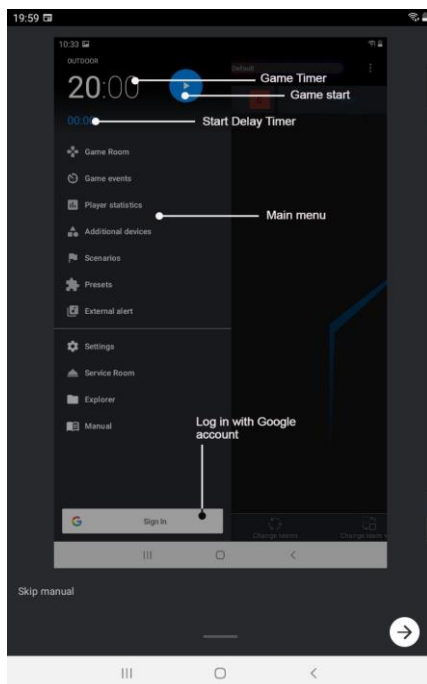


- Download and install the Lasertag Operator program on the device - available at:

<https://play.google.com/store/apps/details?id=net.lasertag.operator>  
or <https://lasertag.net/support/>

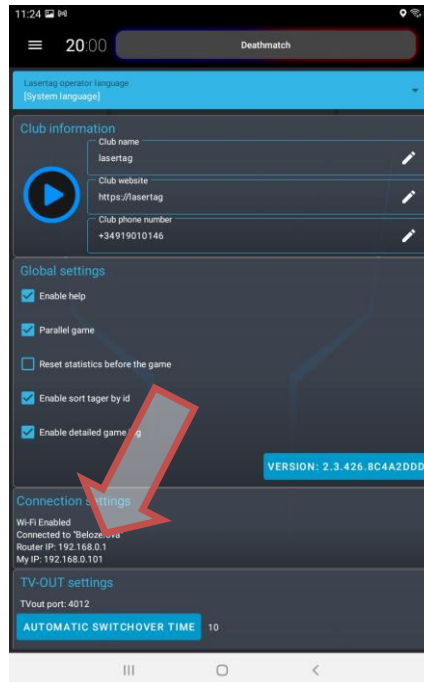
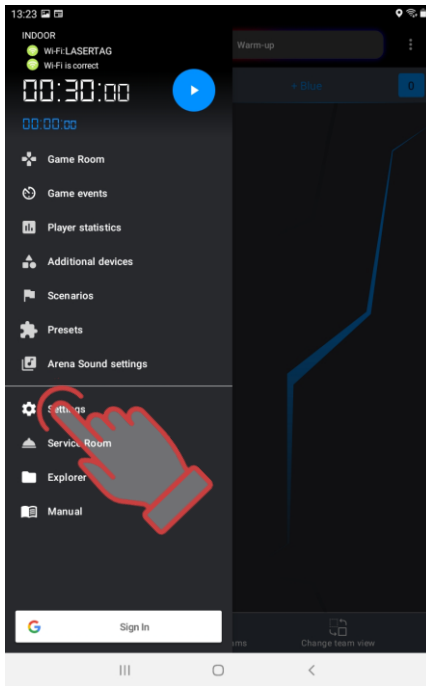


- Enable a Wi-Fi connection mode (Settings / Connections / Wi-Fi) on your smartphone or tablet, and search for an access point. (The setting procedure may differ depending on the operating system version and device model.)
- After finding the LASERTAG access point, select it, and enter the password 2015LT2015 in the tab.
- Open the Lasertag Operator program. When you open the app for the first time, the Quick Start Guide is enabled. It is recommended to get acquainted with it. In the future, the manual can be disabled.
- In the launch window, click on the "Main menu" button , or swipe to the right and go to the main menu screen.



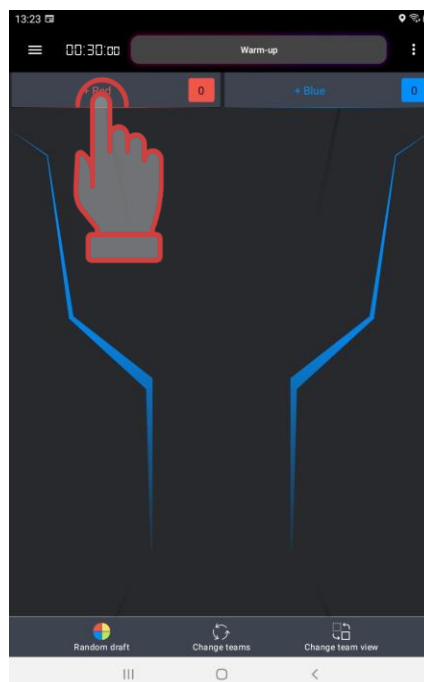
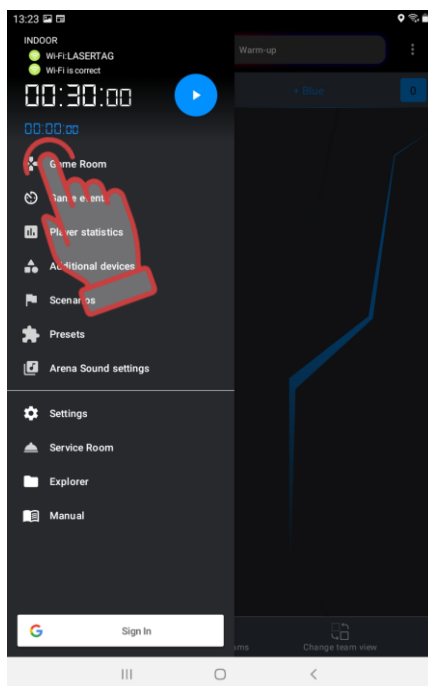
The first slide of the quick start guide and opening the main menu

- On the main menu screen, click on "Settings".
- In the window that appears, check the correctness of the selected name of the hotspot (LASERTAG).



Checking the connection settings

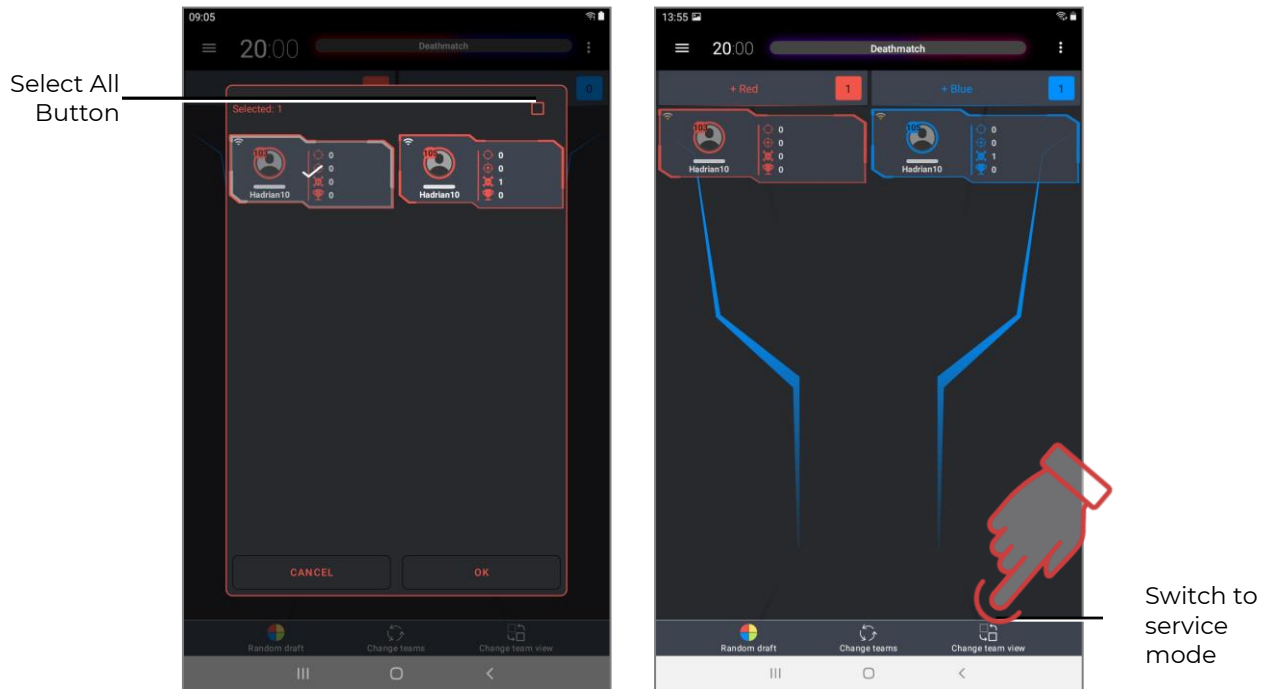
- Turn on all the kits that will participate in the game.
- In the main menu, click on "Game Room".
- In the screen that appears, click on the button with the name of the team color.



Go to the Game Room and activate the selection of players for the team

- In the player selection window, mark the cards of the kits connected to the server for the selected team or tick the box in the upper right corner to select all. Confirm your selection by clicking on the OK button. In this case, the LEDs on the sets will change the glow color to the color of the selected team.
- Click on the button with the name of the team of another color. Mark cards of the remaining players. Check the equipment for teams.



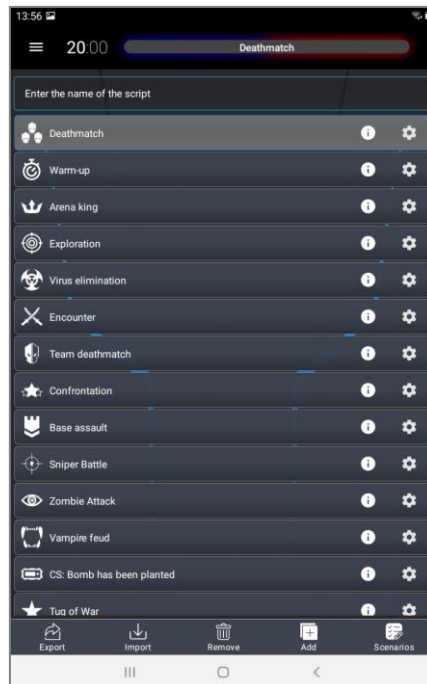
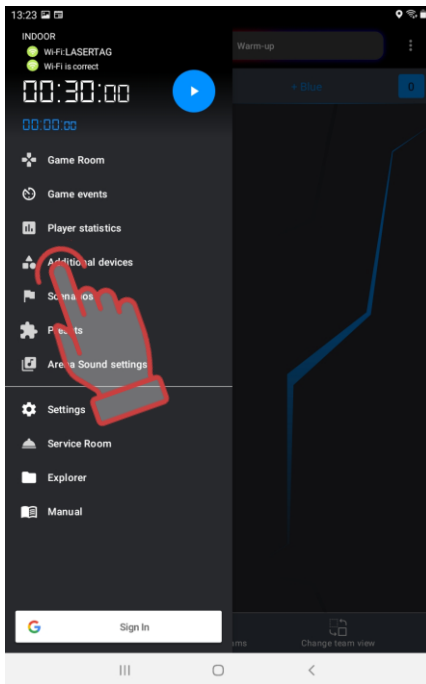


**Selecting players in a team and switching between types of player card display**



There are two types of player card display in the program - Statistics and Service. Switching between modes is done by clicking on the CHANGE DISPLAY TYPE button at the bottom of the screen.

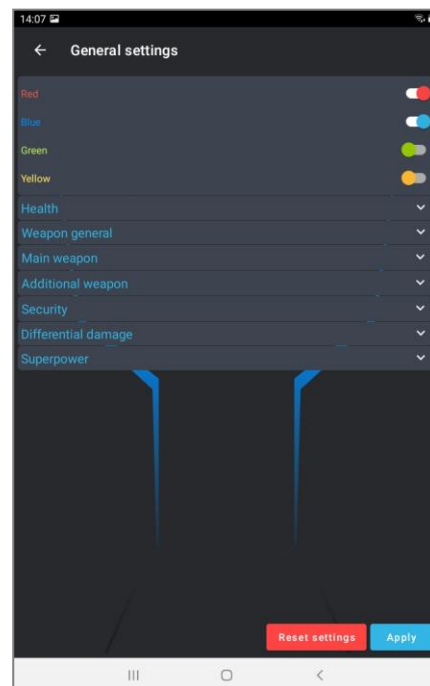
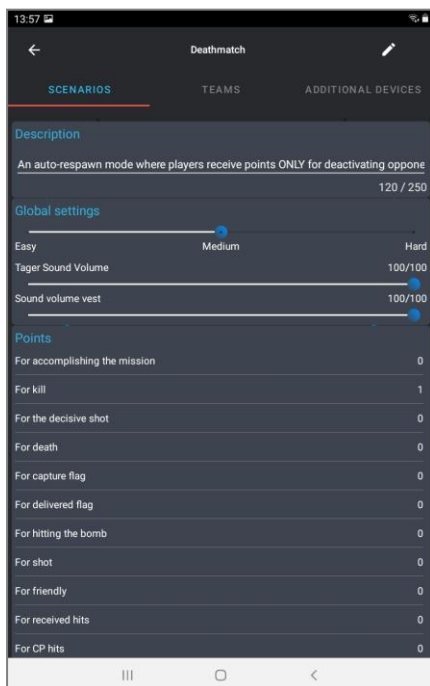


- Choose one of the suggested game scenarios (for example the Deathmatch scenario) or customize your own script. To do this, go to the Scenarios menu.



Go to the Scenarios menu and scenario options for selection

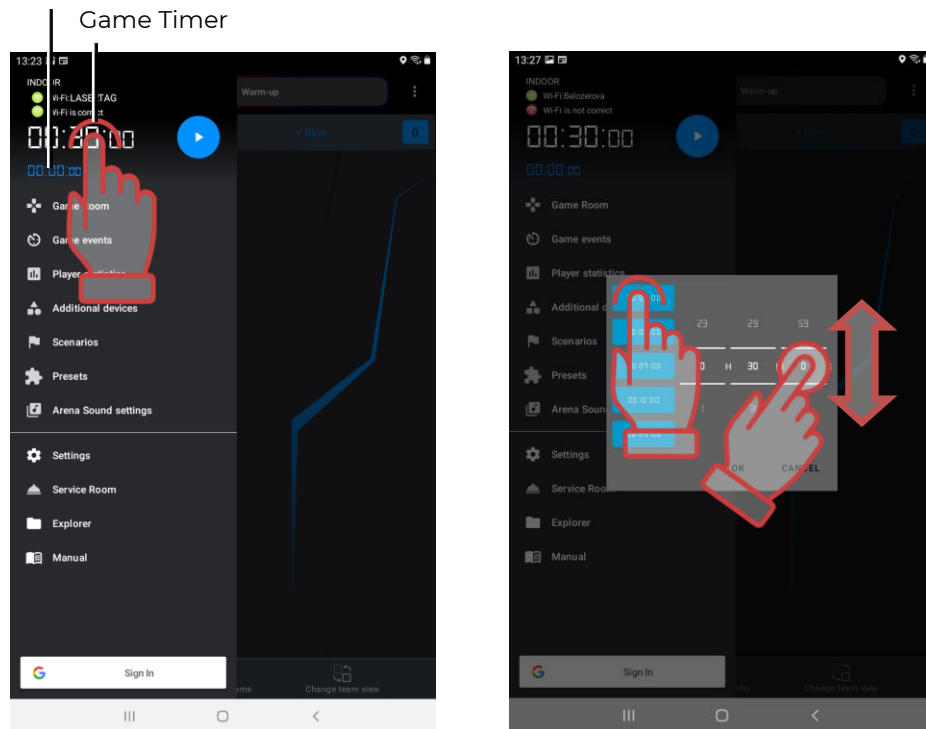
- The scenarios are presented in the form of tiles-lines. Clicking on the icon  will open information with data on the difficulty level and a brief description of the scenario. In order for the game to use the selected scenario, you must perform a long press on the tile. The scenario editor is invoked by clicking on the button with a gear .
- To create your own scenario, you need to tap on the blue button ADD in the bottom field of the screen. The program will suggest you entering a name for the new scenario, copy settings from one of the existing, and after that it will allow you to configure the parameters in the same way as for scenarios built into the program.



Scenario settings on the example of the "Deathmatch" scenario

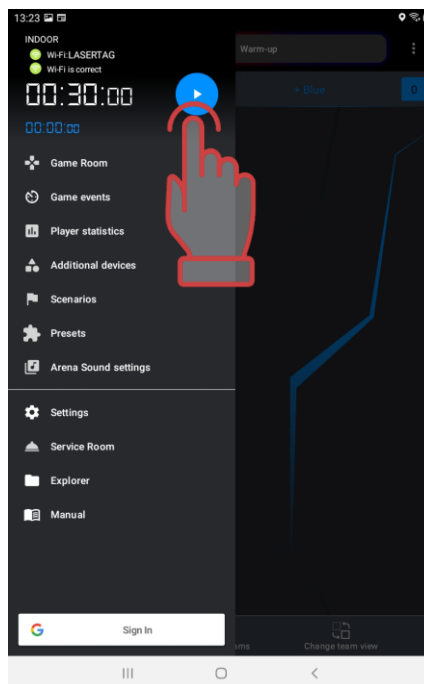
- Set the duration of the round. To do this, in the main menu, click on the large white numbers at the top of the screen. In the window that appears, either select one of the time presets on the left, or by shifting the numbers vertically, set the time in hours (0-23) minutes (0-59 min) and seconds (0-59 s).
- You can adjust the start delay the same way by clicking on the small blue numbers under the main timer.

Start Delay Timer



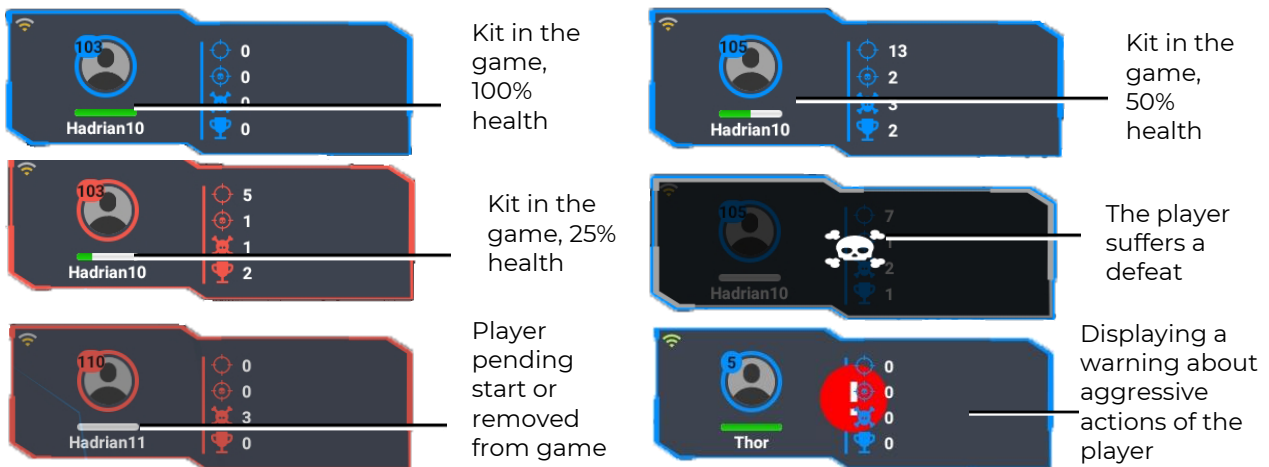
Setting start delay and game timer

- To start the game, you can use the control button in the main menu.



Start the game

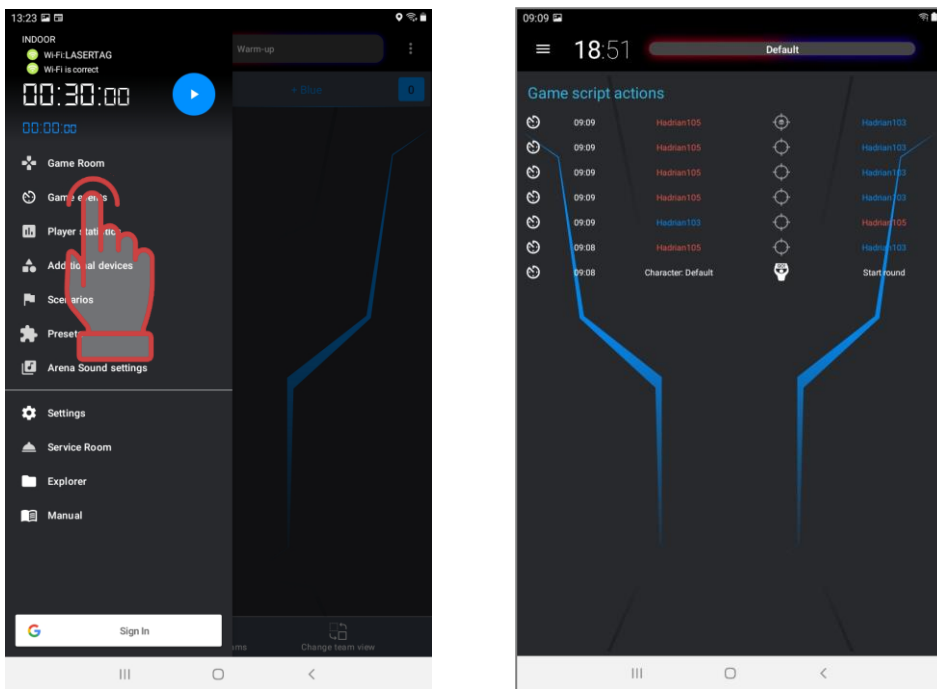
- During the game round, using the player's cards in the team fields you can control the kits status.
- The status bar on the player cards will show a green bar proportional to the remaining health points.



Display the status of sets during the gameplay

- Similarly, you can control the state of the additional devices involved in the scenario by clicking on the button of the main menu Additional devices.

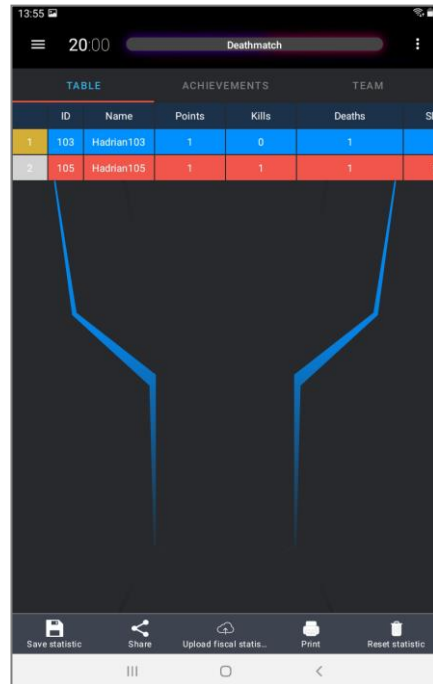
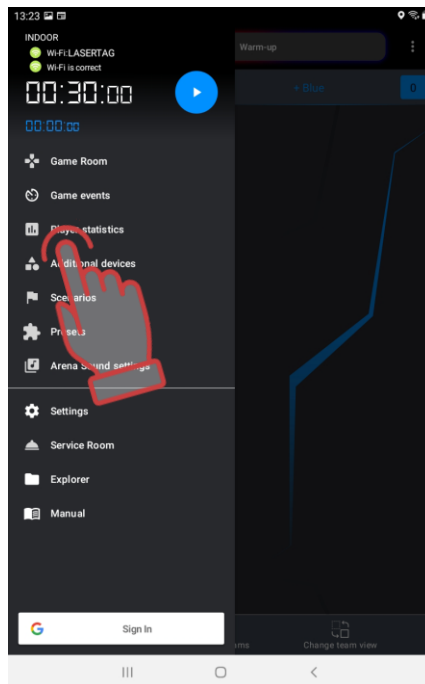
During the game, a log is shown on the screen, a report on the main events taking place on the site. To do this, you need to go to the main menu item "Game events" during the game. Moreover, the log can be viewed both extended and short - it is regulated by the checkbox "Enable detailed game logging" in the Settings menu.



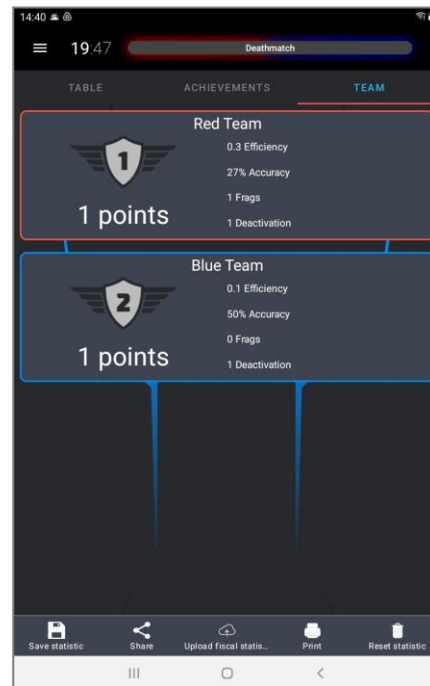
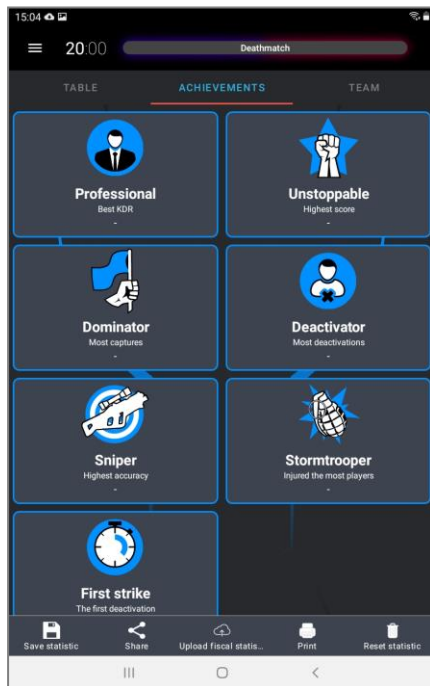
Displaying game events (logs)

- During the game, players who hit an opponent or additional devices will receive points, and at the end of the round both team and individual result will be summed up.
- In the simplest version, the game (including in the "Deathmatch" scenario) ends with a timer. In the scenario editor, you can set the game to end when certain

- conditions are met - capturing the opponent's base, capturing a Domination box, reaching a specified number of points, a bomb explosion, etc.
- At the end of the game, it is possible to view statistics, both in the form of a table, and in the form of various nominations.

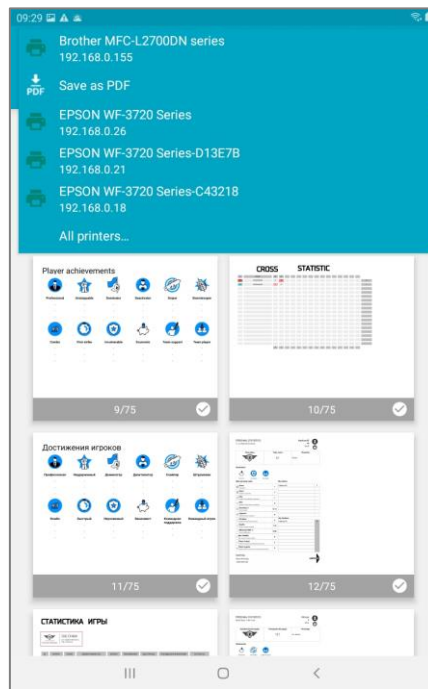
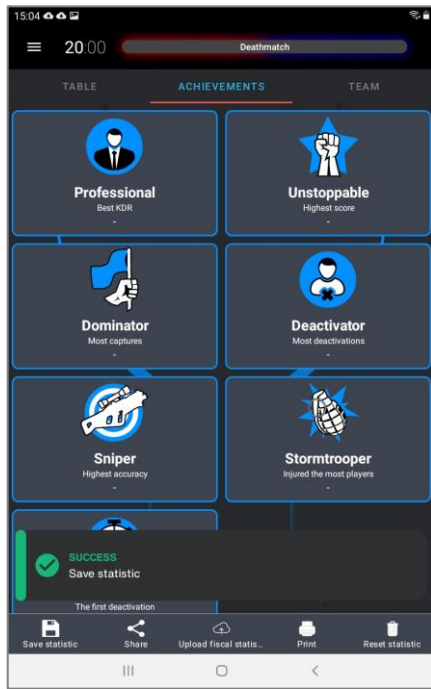


Opening the statistics window and its tabular display



Windows for displaying nominations and team statistics

The program allows you to save, print and reset statistics, as well as share the results saved in the form of colorful reports on social networks.



### Statistics screen and print preview

It is also possible to display statistics on an external screen.

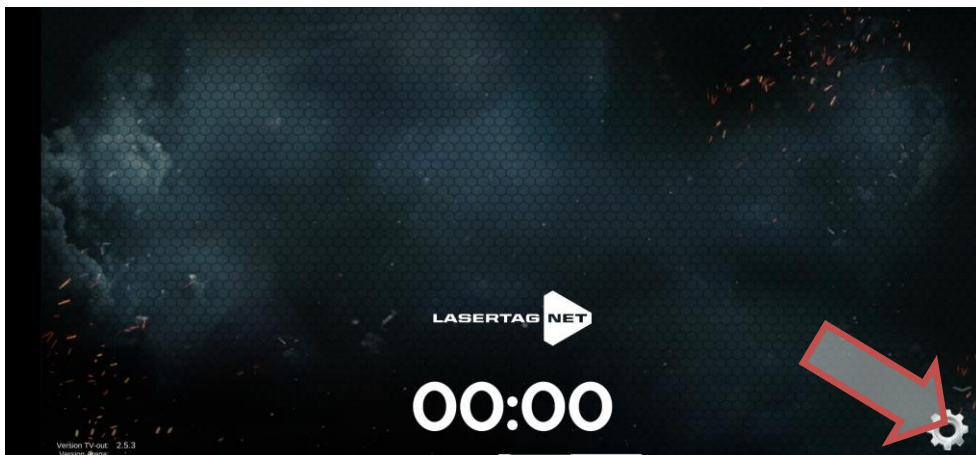


To do this, you need to download the LaserTagStatistic program for broadcasting statistics to an external screen <https://lasertag.net/support/> or in the Play Store application the Laser tag Scoreboard program <https://play.google.com/store/apps/details?id=ua.com.Netronic.TVOutLasterTagScoreboard>.



It must be installed on an Android device (TV, set-top box, tablet, etc.). The device must be connected to the same network as the tablet with Lasertag Operator installed.

After opening the LaserTagStatistic (Laser tag Scoreboard) program, move the cursor to the lower right corner of the program launch window.



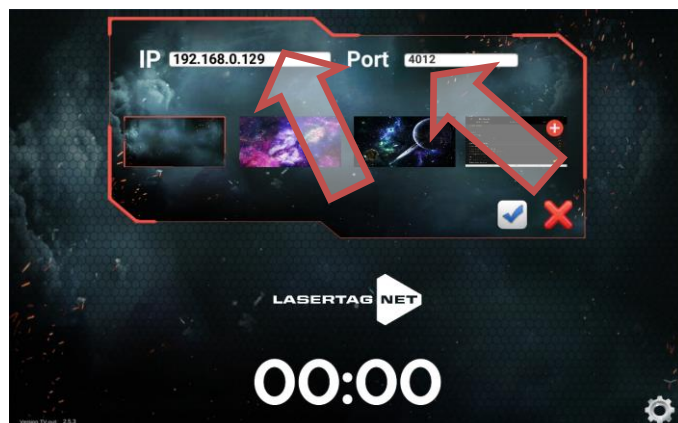
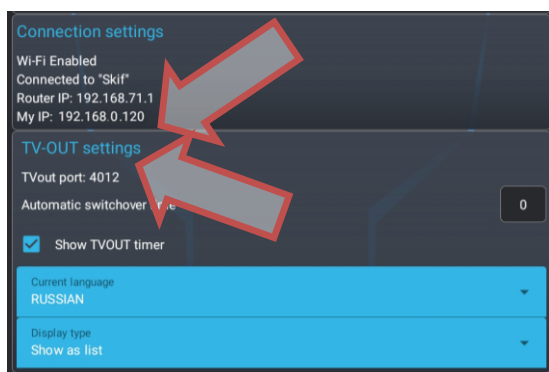
### Program LaserTagStatistic launch window

A gear icon will appear, you need to click on.

In the tab that appears, you need to check the compliance of the tablet's IP and port number with the data specified in the Lasertag Operator program (Menu/ Settings). If different, change manually by clicking on the corresponding value.

It is also possible to select the background of the program, including the custom one.

Confirmation of changes - click the checkmark button.



Checking the correspondence of the device's IP and port number

The detailed use of the programs is described in the Operating Manual, which can be downloaded from the company's website: <https://lasertag.net/manuals/> («Indoor 3.0 equipment operation manual).



## 10. Warranty obligations

Dear customer! Thank You for choosing Lasertag.net!

The warranty obligations of the supplier will be upheld providing the customers compliance to the rules of transportation, storage and operation during the warranty period.

After receiving your purchase, be sure to check the warranty card; it will be necessary for your warranty service. The serial number and model name of the product that You purchased must be identical to that which is noted on the warranty card. No changes or corrections to the card are allowed. In order to avoid any misunderstandings keep all the documents (warranty card, invoice, Contract, etc.) that were attached to the product.

Please carefully read the Operating Instructions, which you can download at <https://lasertag.net/manuals/> (Indoor 3.0 equipment operation manual), or by scanning the QR code, before using the product and before contacting the Technical Support Service of the company.



The guarantee period of the product is 12 months from the moment the user receives the equipment.

The guarantee does not cover certain parts (power button, reset button, remote control buttons, trigger, microswitch, charger connectors, output LEDs, audio cables, network and USB).

The guarantee for embedded batteries and third-party supplied equipment is determined by the manufacturer.

The guarantee does not cover the products with defects caused by:

1. non-compliance with transportation, storage and operating rules;
2. incorrect configuration and connection of the equipment;
3. damages caused by improper using, handling or application;
4. mechanical damage caused by a hit, falling, high pressure, animal activity etc.;
5. excessive pollution, ingestion of foreign objects and liquids, exposure aggressive to the materials of the equipment materials;
6. force majeure (natural disasters and emergencies);
7. repairs made by unauthorized persons;
8. making design or circuit changes and software changes unauthorized by the manufacturer;
9. redirection of power, telecommunications and cable networks;
10. natural depreciation and amortization of the product (abrasion of the device case, scratches, etc.).

Transportation services for warranty repairs are paid as follows: the customer pays transport costs when sending a product to a service center, the supplier pays the costs when sending from the service center to the customer. The method of sending a product by the customer must be agreed with the supplier.

In case of non-warranty repair the customer is entitled to the service repair, but the cost of work, supplies and transportation costs shall be paid at his/her own expense. The product is accepted for repair fully equipped, including a warranty card. The complete set of a product is specified in the passport.

The product must be sent complete, with all the components, including a warranty card. The complete set of a product is specified in the passport.

When performing non-warranty repairs, the service center gives a guarantee of 14 days for those components that have been repaired.

The manufacturer reserves the right to make design changes that improve the products quality while maintaining the basic operational characteristics.



The company undertakes to provide support (including updates) of the laser-tag software throughout the entire warranty period of its operation. If the customer, during the warranty period, has a program failure or a significant malfunction of the equipment is detected due to software faults, the repair work will be carried out as soon as possible depending on the complexity of the identified problem.

The actual versions of the equipment`s microcontrollers and the software versions should correspondent to each other.

**! Due to the peculiarities of the internal structure and chemical composition of lithium-ion batteries, as well as to avoid problems associated with the aging of the chemical composition of cells, such as spontaneous combustion, loss of capacity, etc., we recommend replacing the batteries in the equipment after 2 years of use.**

The software guarantee does not cover mistakes caused by:

1. non-compliance with the device requirements for the devices on which the program is installed;
2. failure or incorrect operation of the device on which the program is installed;
3. failure of an operating system installed on computer or mobile equipment and by the action of third-party software products, including computer viruses;
4. as a result of the independent intervention of the User in the device of the software product;
5. incorrect operation of the software in accordance with the instructions.

*The manufacturer reserves the right to make design changes that improve the quality of the product, while maintaining the basic performance characteristics.*