

WITTY

WIRELESS TRAINING TIMER



Train
your **TIME**





WITTY•TIMER

The compact size, ergonomic shape, and innovative design make the **Witty•TIMER** practical and easy to use. Graphical icons and on screen instructions on its color display ensure user-friendliness and ease of use. With 8 different radio frequencies to choose from, it is possible to work simultaneously with several Witty timing systems (timer and photocells) in the same training area. Various preconfigured test types are available (single tests, group tests, in-line tests, go & return, counter, etc.), plus the user can also create customized test protocols directly on the timer. **Witty•TIMER** stores and displays all times which can then be downloaded into the Witty Manager software.

PRACTICAL AND PRECISE

THE NEW WITTY HAS BEEN DESIGNED TO FULLY SATISFY TIMING REQUIREMENTS CONNECTED TO THE NEW TRAINING METHODS.



The Witty Kit includes all the accessories necessary to immediately start a training session:

- 1 Witty•TIMER
- 2 Witty•GATE wireless photocells
- 2 reflectors
- 4 telescopic tripods
- 1 battery charger (charges the two photocells and timer simultaneously)
- 4 USB cables
- 1 backpack for transport with safety padding (contains all the components of the Kit, including accessories)

WITTY•GATE

Due to the integrated transmission system, which has a range of 150 meters, the **Witty•GATE** photocells are highly reliable. Redundant radio transmission ensures that the data acquired is transmitted to the timer with the maximum precision (± 0.4 thousandths of a second) even if the signal is disturbed. The Witty timer remotely recognizes the photocell ID number, so the user can easily set the signal type on the photocell: start, stop, and intermediate times.

Double Photocells

It is also possible to use the Witty System with double photocells, i.e. one on top of the other, so that only the simultaneous interruption of both photocells generates a signal. This system ensures that the photocells are interrupted by the chest and not by the athlete's leading arm. It is also possible to use an unlimited number of **Witty•GATE** photocells to allow intermediate times.



ADVANTAGES OF WITTY

- new, intuitive, easy to use graphical interface
- simple and quick learning process
- color display
- perform all the tests typical of modern athletic preparation (such as sprint, shuttle, resistance, courses) or customized ones
- single or double photocells available
- unlimited extra photocells for unlimited intermediate times
- acquire results with an accuracy higher than one thousandth of a second
- easy and fast repositioning of the photocells when passing from one exercise to another, thanks to a reliable wireless transmission (range 150 m)
- calculate speed (km/h, m/s, mph)
- battery powered (10 hour autonomy)
- very quick **Witty•TIMER** to PC data transfer (for rankings, data assessment and export), thanks to the USB interface
- self-configuring **Witty•GATE** photocells
- several transmission frequencies available
- water resistant
- great portability is ensured by the included backpack
- compatibility with Optojump Next system
- the system is largely expandable with the possibility to add (single or double) photocells for lap times, accessories such as starting pads, time displaying LED boards, direction



THE RIGHT TOOL FOR EVERY TRAINER

Witty compact size and anatomical form make the Witty•TIMER practical and easy to use in the field.

The Witty's wireless transmission allows coaches to move around the training pitch and can provide immediate feedback to athletes.



MULTI SPORT

Witty has been developed to satisfy timing requirements for all forms of training and testing. The timer comes with a variety of preconfigured tests, used in athletic preparation (including sprint, shuttle, endurance, course), it also allows the trainer to define and set sport specific customized tests.





WITTY•TAB

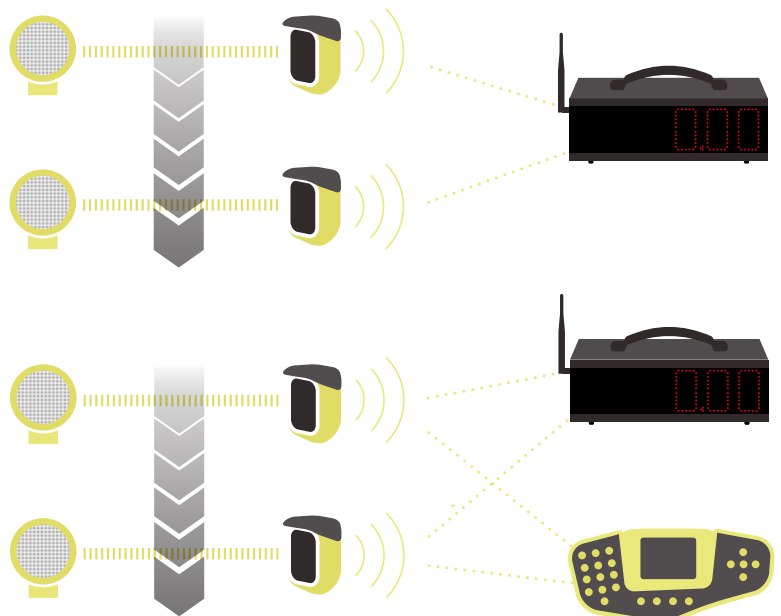
Witty•TAB is the ideal choice for anyone seeking a multi-capable, lightweight, easily transportable and user-friendly display board. Measuring 13x41.5x6 cm, the board is equipped with a Led dot matrix displaying 6 numeric digits of 7 segments each (10 x 5 Leds), and a sensor allowing automatic adjustment of the brightness level to suit the ambient light conditions. Brightness can also be controlled manually. The 2 lead storage batteries guarantee stand-alone operation for at least 10 hours without the need for a connection to the a.c. mains supply.

The **Witty•TAB** display board has an internal timer and comes complete with a radio transceiver able to communicate with Witty photocells: as the athlete passes, the photocell transmits the pertinent signal (start/lap/stop) to the board by radio. The transmission range is 150 metres under standard conditions.

The **Witty•TAB** display board can be used in 2 different modes:

- on its own, in combination with **Witty•GATE** photocells only; in this mode, times are simply displayed, without being saved for subsequent computer analysis

- in combination with the **Witty•TIMER**; pulses transmitted by the photocells are received by the board and by the timer independently, but in this case, with the timer function, data can be saved and stored for analysis subsequently on a computer using the **Witty•MANAGER** software package





PROGRAMS

The Witty•TAB is equipped with a library of internal programs, designed to meet the many and various timing requirements connected with athlete assessment and performance monitoring.

#	Name	Description
P0	Start, Stop	Basic timing with auto reset after 5 seconds
P1	Start, Lap1, Stop	Basic timing with 1 intermediate time
P2	Start, Lap1, Lap2, Stop	Basic timing with 2 intermediate times
P3	Speed	Speed measurement based upon any length between two photocells
P4	Lap Speed	Lap speed measurement with one photocell
P5	Start, LapN, Stop	Basic timing with n intermediate times and configurable display time
P6	Continuous Timing	Continuous timing, configurable "dead time"
P7	Starting System	Start and Stop with reaction time at start
P8	Event Counter	Counter increasing automatically with each impulse
P9	Parallel Event Counter	Two counters (left and right) for two photocells
P10	Date and Time	Displays date and time
P11	Time	Time display
P97	LED Segments Test	Checks that the LEDs work correctly
P98	Photocell Radio Signal Test	Checks the correct radio transmission functioning
P99	Parameter Configuration	Configuration of the brightness, radio channel and date & time parameters





WITTY•SEM

Witty•SEM is the newcomer to the Witty family: a “smart indicator” composed of a 7x5 LED matrix that can display different symbols and colours. Thanks to the built-in proximity sensor, **Witty•SEM** is the perfect solution for optimal planning and management of specific training for reactivity, agility, and motor-cognitive abilities.

Specifically, each **Witty•SEM** indicator can display:

- Colours: Red, green and blue
- Arrows in different colours and directions
- Numbers in different colours
- Letters in different colours

Witty•SEM indicators can be used in standalone mode or in combination with the photocells and other products in the Witty series (photocells, RFID identification system, display board). Exceptional flexibility and user friendliness make **Witty•SEM** indicators ideal for both sports training and rehabilitation activities.

Witty•SEM is centrally controlled by the **Witty•TIMER** via a radio transmission system with range of up to 150 m, which makes it possible to model the different types of training and analysis with the maximum flexibility and reliability. Up to 16 indicators can be managed from a single **Witty•TIMER** console with data acquisition in real time.

Flexible configuration of the system makes it possible to manage and customise various types of tests via the **Witty•TIMER** and the **Witty•MANAGER** software:

- **Witty•SEM** indicator as a start semaphore with or without countdown to manage starts at pre-set times
- Agility tests. Various agility test modes available using the indicator in standalone mode or in combination with a photocell.
- Direction change tests
- Reactivity tests for specific work on motor-cognitive and coordination skills.

Witty•SEM shares the same multichannel technology that distinguishes the entire Witty family: up to 8 different radio frequencies managed. This feature allows different types of training with several groups in the same training area (e.g. sports field or gym). For example, one group can work on sprint exercises with recovery, another on agility drills and a third on specific reactivity drills.





START SEMAPHORE

Witty•SEM can be used as a start semaphore for all sprint tests managed by the **Witty•TIMER** (sprint, shuttle, go & back, group timing tests, repetitions, etc.).

Depending on the settings, in this configuration **Witty•SEM** displays a countdown followed by a green “start” signal. You can set up the system to define whether or not the timer will record the “green light trip” as a start pulse. In some cases the athlete’s start can be calculated from the time he/she transits in front of a **Witty•GATE** photocell or when the foot shifts from a specific position; in this case the indicator can be configured to display the green “start” signal without transmitting a start pulse.



AGILITY TEST

In the majority of sports, training and classic straight sprint work is accompanied by combination agility drills. This type of training allows athletes to boost their coordination and cognitive skills as well as their stamina and muscular performance. These types of exercises are designed to improve the complex process of motor response to stimuli.

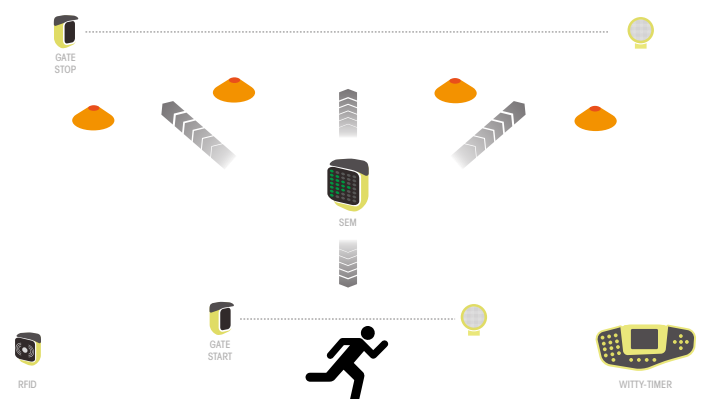
Witty•SEM offers a range of visual stimuli composed of colours and symbols (numbers, letters and direction arrows) also in different combinations; this makes it possible to use **Witty•SEM** in all aspects of the motor process (stimulus interpretation ability, processing, movement strategy, etc.)

The exceptional flexibility of the system (positioning, number of indicators that can be used together, radio transmission distance up to 150 metres, etc.) makes it possible to replicate different stimuli directly associated with the sports practised and as far as possible connected to a real situation.

DIRECTION CHANGE TESTS

A classic example is the direction change test: this type of strength training with natural loads places high demands on athletes’ coordination skills. You can replicate this type of test perfectly using **Witty•TIMER** by setting it up as shown in the following diagram:

The ability to set a specific delay between a pulse and the display of the directional arrow on the indicator is a key factor in situations requiring specific training of stimulus interpretation and reaction times.



REACTIVITY AND COORDINATION TEST (INDICATOR ONLY)

Witty•SEM is equipped with a proximity sensor capable of detecting the presence of objects in the immediate vicinity of the indicator (max 40 cm), without direct contact.

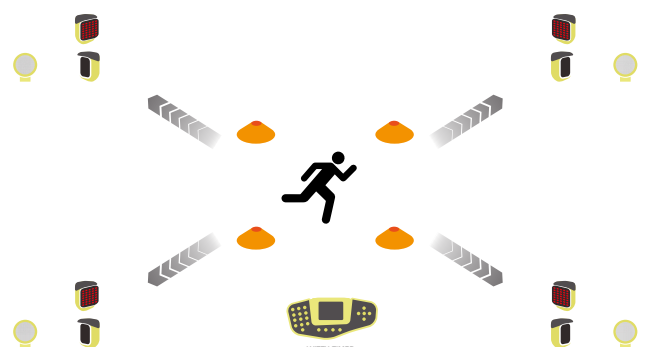
This feature can be used for both rehabilitation work and sports training for exercises to stimulate the coordination capacity and reaction times of the patient or athlete. By creating a system of several Witty•SEMs with additional elements such as wobble boards or specific sports equipment (racket, ball etc.), athletes can work on the general aspects that form the basis of good sensorimotor skills, improving the economy of each action type: stimulus – cognitive and decisional process – strategic processing – movement.

Also in this case the facility to set a specific delay interval between one pulse and the next allows the athlete or patient to return to his/her starting position.



REACTIVITY AND COORDINATION TEST (PHOTOCELL AND INDICATOR)

This type of test can be performed in larger areas to allow the maximum flexibility of execution in tests that require ample space, combining the basic coordination factor also with specific skills (sprinting, ball control...). The indicator can therefore be installed on top of the photocell and the start pulse is transmitted to the timer by the athlete breaking the Witty•GATE photocell beam rather than by the Witty•SEM internal proximity sensor.



CUSTOMISED TESTS

The entire Witty system is managed by the Witty•MANAGER application, which has been enhanced with a new feature that allows users to design a customised training course and transfer it to the timer. This makes it possible to design courses with various elements (indicators, cones, etc.), set directions and define the distance between the various elements so that also the speed of execution can be measured.



WITTY•RFID

The new Witty•RFID is a system comprising an RFID reader and an identification wristband for automatic athlete recognition. Witty•RFID was developed to streamline and simplify the work of coaches by relieving them of the need to make manual settings on the timer.

Athletes' data are linked to the wristband by the Witty•MANAGER software. After this quick configuration step, whenever an athlete approaches the RFID reader with the wristband he/she is automatically identified and his/her data are transmitted via radio to the Witty•TIMER.

For ease of use and absolute safety the wristbands are made of washable silicone rubber.

The timing process is fully automated when using Witty•RFID so the coach can concentrate exclusively on the athletes and follow their progress during the various tests.

Example: Wearing a previously configured wristband, before starting the test the athlete first approaches the RFID reader (around 20 cm distance) so his/her data are transmitted to the Witty•TIMER and shown on the timer display in real time. Registration is confirmed by an audible signal and activation of the green LEDs on the RFID reader. The athlete can now perform the test (sprint, agility...) and the results will be automatically linked to his/her name in the Witty•TIMER memory.



WITTY•MANAGER

The Kit includes also the **Witty•MANAGER** software for Windows PCs. It can be used to create athletes' personal data, configuring customized tests and displaying acquired results. It is divided into 4 main sections:

ATHLETES' PERSONAL DATA

In this section athlete profiles can be created and edited. Every profile can contain detailed information (personal data, notes, pictures, etc.).

In addition, it is possible to create 'start lists' so that when transferring data to **Witty•TIMER**, not only the athletes' names and information are sent, but also in the exact order of athletes performing the tests. The lists can be used to divide a large athletes' personal database into groups (e.g. squads).



TEST

The main function of this software section is to define customized tests to be then downloaded to the **Witty•TIMER**. There are 3 main test types: **Basic**, **Multistart**, and **Counter**.

BASIC: this test is usually executed with one person after the other, allowing to carry out most of the tests. Depending on the requirements it is possible to define a **Sprint** test (straight or circuit, with or without intermediate times), **Go & return** (multiple runs from one point to another or with more points), as well as **Shuttle with recovery** (if a monitored recovery period is needed between one run and another).

MULTISTART: this option is selected if, for example because of the test length, it is necessary to have the next athlete start before the first has finished the test.

COUNTER: This test type is useful to verify how many repetitions of a given action an athlete can execute within a certain amount of time, or, viceversa, how much time an athlete needs to carry out a set number of repetitions.



RESULTS

In this section the results of previously performed tests can be viewed.

The results can be filtered by athlete (typing the name of an athlete only the results of tests, in which that person has participated, will be displayed), test type, date or a combination of these.

Once a test is selected and the **View** mode is entered, the results are displayed in graphical and numerical form, depending on the layout of the predefined or customized **Tables**.

Data can be printed and exported using a one-click option (selecting various tests) or a **Report** (selecting one test, where the data to be printed or exported can be configured, a logo may be added, etc.).



WITTY

When accessing this part of the software, you will be able to interact with your **Witty•TIMER**. In order to, for example: delete information stored on **Witty•TIMER**., download data from your PC to **Witty•TIMER**., upload data from **Witty•TIMER**. to your PC, update the firmware of Witty and the **Witty•GATE** photocells.



Witty • TIMER

Weight	337g, battery included
Dimensions	214 x 100 x 36 mm
Operating temperature	0° C/+45°C
Measurement resolution	4 x 10 ⁻⁵ s (1/25000 s)
Display	Graphic color TFT display, visible area 59x44 mm, 320x 240 pixel, with backlight adjustment via software
Radio module	Multi-Frequency Transceiver 433.1125-434.790 MHz
Radio transmission power	10 mW
Processing unit	Two 32-bit microprocessors
Time base	12 quartz 8 MHz, stability ±10ppm between 0°C and +45°C
Power supply	Internal polymer lithium battery, external power supply 5VDC
Battery life	> 10 hours
Connections	<ul style="list-style-type: none"> • MICRO USB type B connector for charging and connecting to a PC • Jack connector for external input

Witty • GATE

Weight	169g, battery included
Dimensions	75 x 103 x 48 mm
Operating temperature	0° C/+45°C
Minimum resolution	0.125 ms
Delay with respect to the event	1 ms
Optical range	12 m
Radio module	Multi-Frequency Transceiver 433.1125-434.790 MHz
Radio transmission power	10 mW
Impulse transm.accuracy	±0.4 ms
Radio transmission range	Approx. 150 meters
Processing unit	16-bit microprocessor
Time base	8 MHz quartz, stability ±30ppm between 0°C and +45°C
Power supply	Internal lithium ion battery, external power supply 5VDC
Battery life	> 10 hours
Connections	<ul style="list-style-type: none"> • MICRO USB type B connector for charging and connecting to a PC • Jack connector for external input connection or double photocells.

Witty • TAB

Weight	2.9 kg, battery included
Dimensions	13 x 41.5 x 6 cm (H x W x D)
Operating temperature	0° C/+45°C
Unit of time measurement	1/100 s Selectable speed m/s – km/h – mph
Measurement resolution	4 x 10 ⁻³ s (1/25000 s)
LED matrix	Numerical: 6 digits x 7 segments (10 x 5 LEDs) with 4 punctuation marks (full stop or colon) with manual/automatic brightness adjustment.
Radio module	433-434MHz multi-frequency transceiver
Radio transmission	Digital FSK transmission; redundant code with information correctness verification and auto-correction
Radio frequencies	433.1125 MHz to 434.790 MHz
Radio transmission power	10 mW
Radio transmission range	Approx. 150 meters
Processing unit	16-bit microcontroller
Time base	12. quartz 8 MHz, stability ±10ppm between 0°C and +45°C
Power supply	Two internal Pb batteries
Battery charging	Intelligent external Pb battery charger device
Battery life	> 10 hours
Buttons	<ul style="list-style-type: none"> • START/STOP button • LAP/RESET button
Connections	<ul style="list-style-type: none"> • Type B MICRO USB connector to connect to a PC • Jack connector for external input/output • SMA connector for connection to an external aerial

Witty • SEM

Weight	238g, battery included
Dimensions	83 x 103 x 68 mm
Operating temperature	0° / +45°C
Maximum resolution	4 x 10 ⁻⁵ s (1 / 25000 s)
Display	<ul style="list-style-type: none"> • Front matrix 5 x 7 ultra-high brightness RGB LEDs, visible area 42 x 60 mm • Rear lines 2 x 5 ultra-high brightness RGB LEDs
Sensors	<ul style="list-style-type: none"> • Proximity sensor • Ambient light sensor
Radio module	433 – 434 MHz Multi-Frequency Transceiver
Radio transmission	FSK digital transmission; redundant code with information error checking and auto-correction
Radio frequency	from 433.1125 MHz to 434.790 MHz
Radio transmission power	10 mW
Impulse transmission accuracy	±0.4 ms
Radio transmission range	Approx. 150 m
Processing unit	16-bit microprocessor
Timebase	8 MHz quartz, stability ±10 ppm between 0° and +45°C
Power supply	Internal lithium ion polymer battery, external power supply 5VDC
Battery charging	Integrated intelligent charger
Battery life	> 10 hours
Connections	<ul style="list-style-type: none"> • MICRO USB type B connector for battery charging and PC interface • 3.5 mm 3-pole / stereo jack for Photocell, StartPad, Button, etc.



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Witty • RFID

Weight	169g, battery included
Dimensions	83 x 103 x 68 mm
Operating temperature	0° / +45°C
Maximum resolution	4 x 10 ⁻⁵ s (1 / 25000 s)
Display	5 ultra-high brightness RGB LEDs
Sensors	<ul style="list-style-type: none"> • Proximity sensor • Ambient light sensor
RFID Module	13.56MHz RFID transceiver (ISO 15693)
Radio module	433 – 434 MHz Multi-Frequency Transceiver
Radio transmission	FSK digital transmission; redundant code with information error checking and auto-correction
Radio frequency	from 433.1125 MHz to 434.790 MHz
Radio transmission power	10 mW
Impulse transmission accuracy	±0.4 ms
Radio transmission range	Approx. 150 m
Processing unit	16-bit microprocessor
Timebase	8 MHz quartz, stability ±10 ppm between 0° and +45°C
Power supply	Internal lithium ion polymer battery, external power supply 5VDC
Battery charging	Integrated intelligent charger
Battery life	> 10 hours
Connections	<ul style="list-style-type: none"> • MICRO USB type B connector for battery charging and PC interface • 3.5 mm 3-pole / stereo jack for Photocell, StartPad, Button, etc.

Witty • MANAGER

	Minimum	Recommended
Operating System	Ms Windows 7	Ms Windows 7/8/10 (x86 o x64)
CPU	Atom/Centrino	i3/i5/i7
RAM	2 GB	>=4 GB
Graphic Display Resolution	1024x600	1600x900 or higher
USB ports	1	1