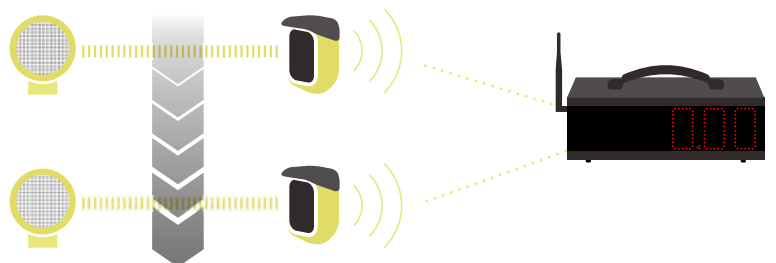# WITTY

WIRELESS TRAINING TIMER

Train
your **TIME**

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

5
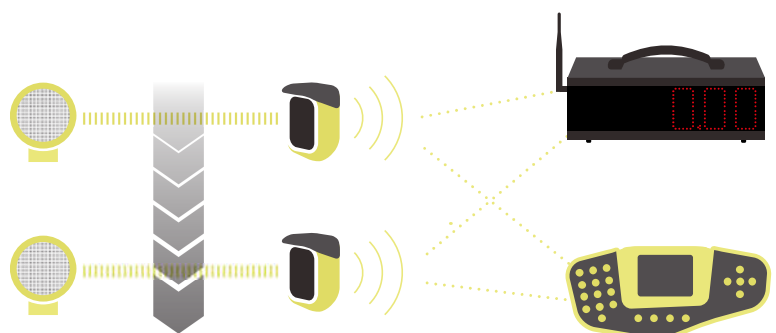
PROGRAMS

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•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	• 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	• 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^{-6} 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	• START/STOP button • LAP/RESET button
Connections	• 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 x103x68mm
Operating temperature	0° / +45°C
Maximum resolution	4 x 10-5 s (1 / 25000 s)
Display	• Front matrix 5 x 7 ultra-high brightness RGB LEDs, visible area 42 x60 mm • Rear lines 2 x 5 ultra-high brightness RGB LEDs
Sensors	• Proximity sensor • Ambient light sensor
Radio module	433 – 434 MHz Multi-Frequency Transceiver
Radio transmission	FSK digital transmission; redundant code with information error checkingand 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	• MICRO USB type B connector for battery charging and PC interface • 3.5 mm 3-pole / stereo jack for Photocell, StartPad, Button, etc.

MICROGATE
TIMING AND SPORT

MICROGATE Srl
via Stradivari, 4
I-39100 Bolzano (BZ) Italy
Tel. +39 0471 501 532
Fax +39 0471 501 524
info@microgate.it
www.microgate.it

www.microgate.it/witty

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	• 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	• 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 Windoes 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