

Manual FalseStart III Club



SPORT TIMING SYSTEMS

Version: 2018v1



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PREFACE

Welcome to the "FALSESTART III Club" user manual.

May we recommend you to gently browse through the entire manual first, just to have an initial idea of how the book is structured. As we can't possibly explain all details simultaneously, this might help you a bit in understanding and tracing things back. Of course, the table of contents will also help you in doing so.

Please note that all pictures are examples, the delivered version can be different than shown in this manual please inform yourself before purchase.

If you, after reading this document, have any further question regarding the operation or service of this or any other TimeTronics equipment, please contact your local distributor or TimeTronics directly, by email: info@timetronics.be, or call us at +32 (0) 14 23 19 11.

Please also contact us if you have any remarks or advise regarding this user manual: info@timetronics.be

Good luck with FalseStart III and thank you for your confidence in the TimeTronics products and services.

The editors

Important note to comply with IAAF regulations:

- Check if you have firmware version 2.0 or later. If not you should take contact with TimeTronics immediately.
- Male and Female athlete setting: sensitivity 40 *

* Juvenile athletes (<16y, and for local events; outside of official international races): set sensitivity number to 32

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1. INTRODUCTION

Track and field timing and resulting has entered a whole new episode after IAAF has introduced the zero false start rule. As a consequence, time measurement in track and field races should be very accurately measured, up to one thousandth of a second to assure all athletes to be evaluated in the same way.

A very significant part of a race (particularly sprint races) is the start. A right interpretation of the start movement is a very difficult, almost impossible task for the human eye and brain. The development of our system, FalseStart III, enables you to electronically detect a false start and give a fair analysis of the start of all athletes. During the development we have taken attention to get a powerful start beep/bang on each starting module to eliminate the sound delay between each athlete and the starter. Furthermore we have added a wireless option so you do not need wires between the FalseStart caddy and each starting block. Of course you still have to choice to use it wired (optional purchase of wires necessary).

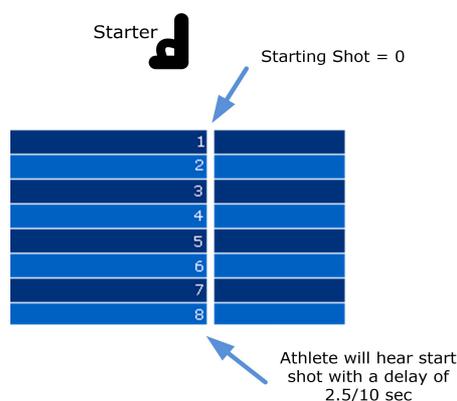
An athlete causes a false start whenever he or she starts before 100 thousandths of a second after the starting shot (= current IAAF regulation). The IAAF considers this limit of 100 thousandths as being the fastest human reaction time possible. This means that a starter in the current system has to judge whether an athlete starts sooner or later than the 100 thousandths of a second, thus causing a false start or not. An athlete can be privileged (e.g. letting him run at a start after 65 thousandths) or handicapped (e.g. shooting back at a start after 105 thousandths). By applying an electronic detection, these inaccuracies can be avoided.

1.1 Optimization of the audibility of the starting shot

With FalseStart III Club, we want to prevent the possibility of:

- a) The sound of the starting shot does not reach all athletes simultaneously.
- b) The sound of the starting shot reaches the athletes too late.

At a start of 8 athletes, where all starting blocks are positioned next to each other, the distance between the athlete in lane 1 and the one in lane 8 amounts to approximately 8.5 meters. When looking at the time difference with respect to the moment at which both athletes hear the starting shot, and taking into account the sonic speed (= 343 m/s), we can conclude that the athlete in lane 8 hears the starting shot 2.5 hundredths of a second later than the athlete in lane 1 provided that the starter is positioned at the far left side from the track (see drawing).

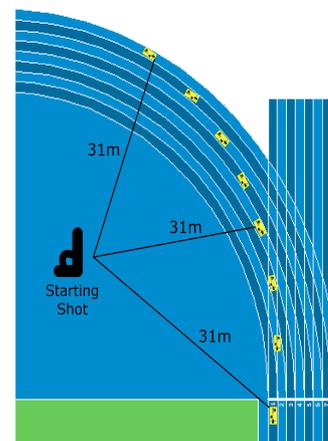


This difference may even become larger at races such as the 400 meters, at which the starting blocks are positioned at least 7.5 meters from each other. The athlete in lane 8 would hear the starting shot 14.4 hundredths later than the athlete in lane 1, on condition of course that the starter would take place close to the athlete in lane 1, which would rather be unfair. At the 4x400meter the sound delay for lane 8 is almost 3/10 of a second!

The starter could in fact position himself at an equal distance to each athlete, in other words in the center of an imaginary circle which is drawn over the starting blocks. Consequently he will be about 31 meters apart from each athlete so that all athletes will simultaneously hear the starting shot 9 hundredths of a second too late.

That is why this virtual distance between starter and athlete will have to be reduced. We transfer the start signal to each athlete by using wireless (rf) transmission and use a loudspeaker on EACH StartModule to generate a start sound without delay. We call this "no delay", because the radio frequency wireless transmission has a speed of 300.000 Km/sec, which is 1.000.000x faster than the speed of sound (343 m/s) when the start sound has to travel through air.

What we certainly want to emphasize is that the FalseStart III detection system remains an auxiliary **TOOL** for the starter, to **ASSIST** him. It still remains the starter's responsibility to make the final decision when it comes to defining a false start. In subsequent parts you will encounter a more elaborate description of our FalseStart III detection system.



2. FALSESTART III Club SYSTEM

2.1 Contents

The FalseStart III Club system configuration is packed as follow

FalseStart III Central Unit:

- P490 Plastic Case
- P1057 FalseStart III Club Central Unit
- P330 Spare paper rol for printer in SpeakerBox
- P1118 Nano clamp
- P1119 Micro ball head
- P1098 FalseStart III club Quick setup schematic
- P72 Battery Charger for SpeakerBox
- P25 Manual
- P37 Start button with beeper and led
- P1120 Magic Arm (Optional)

SpeakerBox

StartModules

- P1113 2x Carrying case for FalseStart III Club StartModules
- P1056 8 or 10 FalseStart III Club StartModules
- P1058 Hex Screwdriver
- P116 Powercord
- P1011 Charging cable for FalseStart III Club StartModules

Optional:

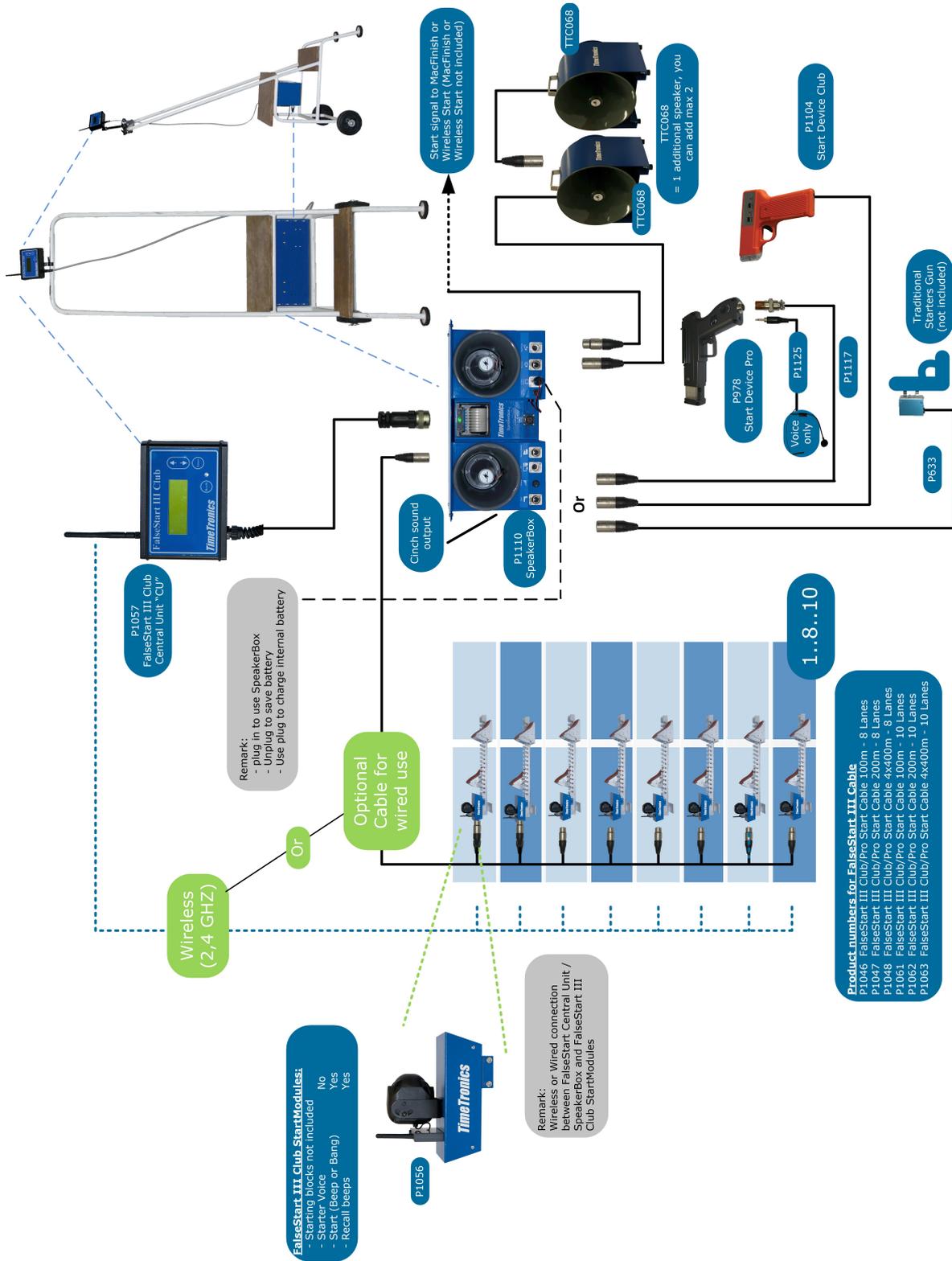
- P1046 FalseStart III cable for 100 m
- P1047 FalseStart III cable for 200 m
- P1048 FalseStart III cable for 400 m or 4 x 400 m

2.2 FalseStart III Club setup

2.2.1 FalseStart III Club general overview

Important remarks

The following setup shows you how to connect different items to the FalseStart III Club system. Please note that not all items displayed on the picture are included in the FalseStart III Club configuration but can be ordered separately. You can check the list of components which are included in the FalseStart III Club configuration in chapter 2.1.



2.2.2 FalseStart III Central unit mounting

Central Unit can standard be mounted on top of a starter stand with the P1118 Nano clamp together with P1119 Micro ball head. Optional you can mount with P911 Super clamp and P1120 Magic arm system

The Central unit will get power from the SpeakerBox here below once connected



2.2.3 SpeakerBox

You can mount your SpeakerBox on your starter's stand so you do not have to move it separately over the track during your meeting.

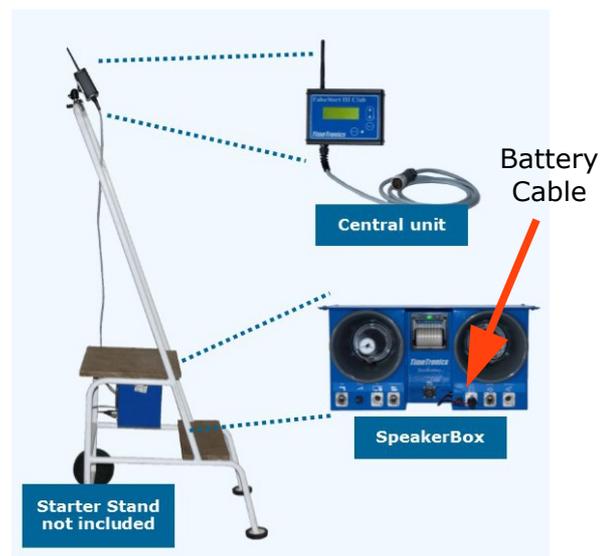
Furthermore connect the 12-pole connector from the central unit (see above) to the 12-pole connector in the middle of the SpeakerBox to power the system.

Charging the Speakerbox – FalseStart III Club can be done by connecting the delivered charger to same the 5-pole battery cable which you use to power up the SpeakerBox.



Important remarks

- Do not use the battery charger in wet conditions.
- Connect first the cable of the central unit to the SpeakerBox before you power up the SpeakerBox.
- To switch on/off the system you have to plug/unplug the 5-pole battery connector from the SpeakerBox



2.2.4 Additional LoudSpeaker

Maximum 2 extra LoudSpeaker can be connected the SpeakerBox to complete the FalseStart III Club system. In this way you can bring the start sound closer to the athletes. You can move them together with the FalseStart III Club or you can leave them at their position when you buy multiple sets.



2.2.5 Mounting of StartModules FalseStart III Club

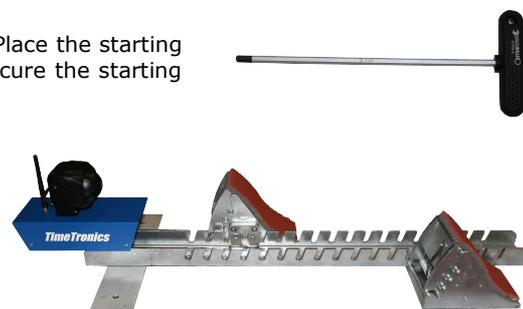
All StartModules are equipped with an U-shaped bracket on the bottom. Place the starting module on the starting block with the loudspeaker facing the athlete. Secure the starting module to the starting block with the delivered mounting tool.

Mount the StartModules at the end of the starting block to allow athletes to position their block in their most optimal position and to avoid that the athletes will kick the on the StartModules when they position themselves in the starting blocks.

Make sure the starting module is tightly mounted on the starting block.

!!! Important remark !!! :

Transport the StartModules in a horizontal way as shown here. Not transport them vertically when it rains !



To charge the starting modules, use the power adapter connected to the charging cable. Remember to only use the chargers indoor!



2.2.6 StartModules Wireless setup

On the rear panel of a StartModule there is 1 connection for the false start cable and a power on button.

After mounting the StartModules to the starting blocks, they are ready to be powered up by pressing once the power on/off button on the rear panel.

At power up:

1. A led will light permanently.
2. When the StartModules has associated (wireless mode) with the central unit the led shall blink fast at a speed of 4 blinks each second.
3. After some time (about 45 seconds) the led shall blink just once each one or two seconds. This means that the starting module is synchronized and ready to operate.

Important remark for wireless usage:

First start-up the Central unit than the StartModules.

To shut down the FalseStart III Club StartModules after use:

- you can hold the power on/off button of each StartModules at least 3 seconds. This will be confirmed by 1 beep from the StartModules. You can also check that a StartModule is shut down if the led on the StartModule stopped blinking.
- An easier "power down" of all StartModules can be done with the menu selection "Power Down" on the Central Unit
- disconnect the battery cable in the SpeakerBox
- disconnect cables from Central Unit to the StartModules in case of wired usage.

Important remark:

Charge battery of SpeakerBox and all StartModules immediately after you meeting to keep you batteries healthy. When SpeakerBox and/or StartModules ares not used during longer time you should charge batteries recommended each 2 months again till full charge.

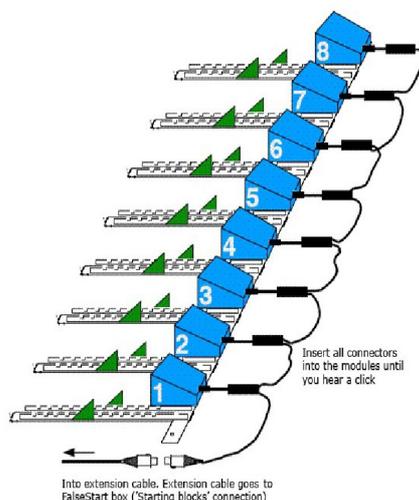
2.2.7 FalseStart III Club Wired setup (Optional)

An optional false start cable can be provided to work in wired mode. Depending on the type of race, you should connect the starting modules to each other by means of either the cable for 100 m, 200 m or (4x) 400 m. The three cables have different length and also the distance in between their branch points varies.

Important remark for wired usage:

- First connect all StartModules with with cable
- Start-up all StartModules
- Start-up Central Unit
 - connect first 12-pole cable of the Central Unit to the SpeakerBox
 - plug in the 5-pole cable of the battery
- On the Central Unit go to "Operation Mode" to choose "Wired", repeat last step in case the central unit did not find all StartModules

Power on
button



3. FalseStart III Club: Central unit operations

3.1 System start up

F	a	l	s	e	S	t	a	r	t	I	I	I									
w	w	w	.	t	i	m	e	t	r	o	n	i	c	s	.	b	e				
S	o	f	t	w	a	r	e	:		1	.	0	0								

Menu Options:

- Status details (chapter 3.4)
- Print reactions (chapter 3.5)
- Shutdown System (chapter 3.6)
- Measurement Sensitivity (chapter 3.7)
- Operation mode (chapter 3.8)
- Start Sound (chapter 3.9)
- Auto printing (chapter 3.10)
- Serial output (chapter 3.11)
- LCD backlighting (chapter 3.12)
- Test Blocks (chapter 3.13)
- CU factory reset (chapter 3.14)



Use arrow up or down to choose between Menu Options

-	→			P	r	i	n	t		r	e	a	c	t	i	o	n					
				S	t	a	t	u	s		d	e	t	a	i	l	s					
				S	e	n	s	i	t	i	v	i	t	y								
				O	p	e	r	a	t	i	o	n		m	o	d	e					

3.2 Status window

1	2	3	4	5	6	7	8	9	1	0											
x	x	x	x	x	x	x	x	x	x	x											
M	F	:	R	E	A	D	Y		S	t	a	r	t	:	C	o	n	n			
F	S	:	W	A	I	T			B	a	t	t		:	1	2	,	5	V		

Status info:

- MF (MacFinish) : WAIT or READY
- FS (FalseStart) : WAIT or READY
- Start : Loose or Conn (Connected)
- Batt : battery status, will give alarm at 11,0 V
- X Possible Starting Module Status
 - U: Unconnected - No Start Module associated with this lane
 - I: Idle
 - R: Ready
 - E: Error

Operation:

- Once all Starting modules are in I = Idle mode you can arm the FalseStart III Club by pushing on the ready button. Please note that it takes a little time after switching on the Starting Modules to get connected with the FalseStart III Central Unit. Once all Start Modules are in ready position you will see R = Ready status on your screen for all starting modules
- Standard the MF status (MacFinish) = WAIT. Once the MacFinish is set armed and ready you will get a MF: READY status
- When both MF (MacFinish) and FS (FalseStart) are in READY status you will see also see the Ready LED lighting up. You can give now a start and you will go automatically to the next screen

Remark:

In wired mode you will notice that after you have pressed the "Ready" button a message "waiting" will be shown. After 2,5 seconds the system will go to the "ready" status which indicates you can start the race.



Ready LED will be on when both MacFinish and FalseStart III are ready

Press Ready button to arm the FalseStart III Club

3.3 Reaction Times

When you want to print the reaction times please use the print reaction function via the menu or use the Auto printing modus to have automatic printout after each race.

L	a	n	e					S	i	g	n	a	l			T	i	m	e
5			F	A	L	S	E		2	3	2			-	0	,	0	7	8
1	0			O	K				1	1	5				0	,	1	2	4
2				O	K						4				-	-	-	-	-

Lane : Lane 1 - 10
 Signal : Amount of "force" applied by the athlete in that lane during the start.
 Time : Reaction time of athlete in that lane; could be " - " (started before shot), " + " (started after shot)

3.4 Print reaction (no screen displayed, printing immediately)

3.5 Status details of Starting Modules

L	a	n	e	:	1	0		M	a	c	:	2	2	:	4	7	:	B	5
B	a	t	t	:	1	1	,	1	V										
C	o	m	m	:	c	o	n	n	e	c	t	e	d						
S	y	n	c	:															

- Mac : Mac Number of the StartModule (=unique serial number)
- Batt : Battery status to check if the Starting Module is enough charged for operation
- Comm : connected or disconnected (when you have "U" in status window)
- Sync : YES or NO
- With ↑ and ↓ you can check the status of the different (connected and synchronized) StartModules

3.6 Shutdown system

S	h	u	t	d	o	w	n		s	y	s	t	e	m					
S	t	a	r	t	i	n	g		m	o	d	u	l	e	s		a	r	e
s	w	i	t	c	h	e	d		o	f	f								

Once confirmation is given, the "Shutdown system" will power down all StartModules. Once all StartModules are switched off you will see the status window.

3.7 Measurement Sensitivity

S	e	n	s	i	t	i	v	i	t	y										
						V	a	l	u	e	:	0	5	0						

Important note to comply with IAAF regulations:

- Check if you have firmware version 2.0 or later. If not you should take contact with TimeTronics immediately.
- Male and Female athlete setting: sensitivity 40 *

* Juvenile athletes (<16y, and for local events; outside of official international races): set sensitivity number to 32

3.8 Operation mode

O	p	e	r	a	t	i	o	n		m	o	d	e							
	-	→				W	i	r	e	l	e	s	s							
						W	i	r	e	d										

3.9 Start sound

S	t	a	r	t		s	o	u	n	d										
	-	→				E	l	e	c	t	r	.	p	i	s	t	o	l		
						B	e	e	p											
						B	a	n	g											

	Typical usage	SpeakerBox sound	StartModule sound
Pistol	Electronic Start Device	Sound of Start Device	Bang
Beep	Push button / Traditional gun with startdetector	Beep	Beep
Bang	Push button / Traditional gun with startdetector	Bang	Bang
Off	Traditional gun with startdetector	Nothing	Nothing

4. Modify setting of a Starting Module

4.1 Software FalseStart III Club

Please download the software on our support website: <http://www.timetronics.be/software.html>

- FalseStart III Club Admin software
- P-982 USB to Serial convertor

Install both software programmes on a computer.

4.2 Connect your computer to a Starting Module

Directly connect P-928 to the device

- PC connector of speakerbox for Central Unit **Versta Niet**
- Connector on backside of Starting Module

Beware to set dipswitch 3 to the upper position when it is connected to P-928

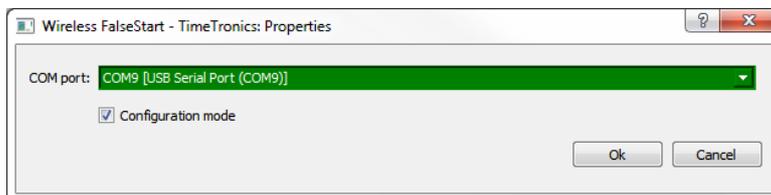
Dipswitch 3 in upper position makes the Starting Module able to communicate with a device over RS232 (programming mode)

In lower position the starting module will communicate with a device over RS485 (default operation mode)

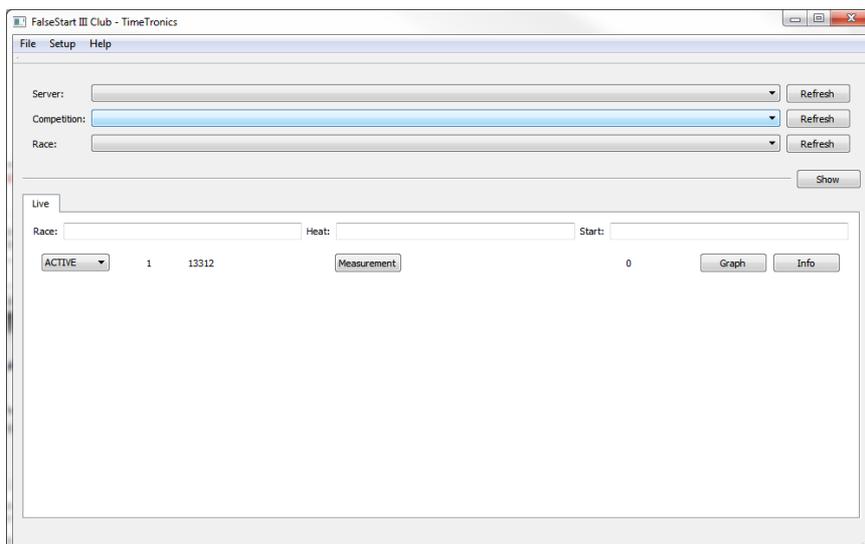
4.2 What is a PAN ID and Lane number

4.4 Changing PAN ID and Lane number

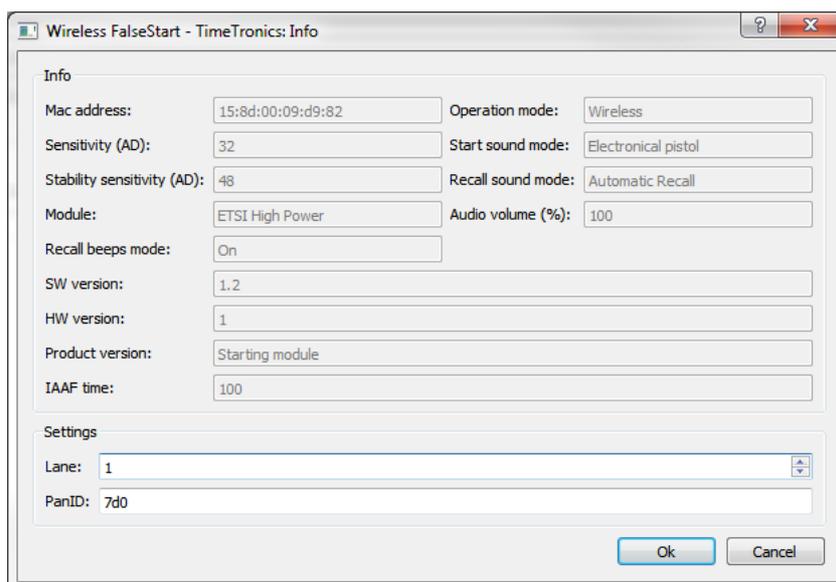
- Set the application in configuration mode. Select Setup -> properties



- Select the COM port and enable configuration mode.
 - In configuration mode, the software will only ask the settings from the connected device. The device will automatically appear on the screen.



- If the device is enabled, click on the info button



- You can define the PAN ID or lane. Press OK and a confirmation is asked.
- The settings will be written in the device
- Click again on the info button to see if the settings are changed.

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