# MYLAPS

# MANUAL
# PROCHIP TIMING SYSTEM

PRODUCTCODE
40R248

**CAN BE USED FOR**

**EXPERIENCE PROGRESS**

| Manual revision history | | |
| --- | --- | --- |
| Version | Date | Amendments |
| Version 2.0 | November 2020 | |

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1)      This device may not cause harmful interference, and
(2)      This device must accept any interference received, including interference that may cause undesired operation.

RF Exposure (OET Bulletin 65)
To comply with FCC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20 cm separation distance between the antenna and all persons.

This device complies with the EMC directive 2004/108/EC and RTTE directive 1999/5/EC.  A copy of the declaration of conformity can be obtained at:

MYLAPS B.V.
Zuiderhoutlaan 4
2012 PJ Haarlem
The Netherlands

RoHS Compliant
This equipment has been tested and found to comply with the limits for RoHS compliant materials. These limits require manufacturers to ensure that they do not use materials or components that contain restricted substances that may be harmful to the environment.

## 1. How to use this manual

### 🔍 Search for Keywords

Search ProChip for keywords such as "decoder or installation" to find a topic. Press Ctrl+F on Windows or Command+F on Mac.

### 📄 Navigate Topics

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.

### 🖨 Printing this Document

This document supports high resolution printing.

## Legends

💡 Hints and Tips          ⚠ Important          📖 Reference

## Software

Timing & Scoring and/or Orbits Cycling

## About this Manual

This manual is intended for operating and supervisory personnel and provides information on installing and operating the ProChip decoder.

This publication has been written with great care. However, the manufacturer cannot be held responsible, either for any errors occurring in this publication or for their consequences.

The sale of products, services of goods governed under this publication are covered by MYLAPS' standard Terms and Conditions of Sales and this product manual is provided solely for informational purposes. This publication is to be used for the standard model of the product type given on the cover page.

# Contents

## 2. General

The ProChip Timing System is fast, reliable and is easy to use. The system can be used at a wide range of active sports, including running, cycling, swimming, triathlon, horse racing, cross country skiing, ice skating, inline skating and more

Our ProChip Timing System is very suitable for professional events.
It is very accurate and can determine the closest of finishes.
Attached to the detection loop, it decodes the transponder signal into the runner's ID and the exact time at which the runner crossed the timeline.

- Easy system set-up with simple wire antennas
- Easy to handle, easy to carry
- Intuitive operation
- Highly accurate GPS synchronization
- Connectivity through Ethernet

Transponders compatible:
- ProChip Flex – for individual racers
- ProChip Timer – for timers
- ProChip Timer Go – for timers

## 2.1. What is in the box

| | | |
|---|---|---|
| ProChip decoder including cabling. | 15R017 |  |

For a basic set up, you need besides the decoder and transponders

| | | |
|---|---|---|
| Detection loop with coax<br>6 meter loop, 5 meter coax<br>9 meter loop, 5 meter coax<br>12 meter loop, 5 meter coax<br>16 meter loop, 5 meter coax | 30R061<br>30R062<br>30R063<br>30R064 |  + |
| Detection loop end box<br>6 meter<br>9 meter<br>12 meter<br>16 meter | 30R066<br>30R067<br>30R068<br>30R091 |  |
| Connection box with coax<br>5 meter<br>20 meter<br>50 meter<br>100 meter | 30R065<br>30R090<br>30R094<br>30R095 |  |
| Software<br>MYLAPS Orbits Cycling<br>Timing & Scoring | 25R030<br>Free downloadable | |

The following components can be ordered from MYLAPS as part of ProChip Timing system

| | | |
|---|---|---|
| ProChip Flex transponder<br>With 1 year subscription<br>With 2 year subscription<br>With 5 year subscription | 10R131<br>10R132<br>10R135 | |
| ProChip Timer transponder #20<br>With 1 year subscription<br>With 2 year subscription<br>With 5 year subscription<br><br>ProChip Timer communicator | 10R161<br>10R162<br>10R165<br><br>40R121 | |
| ProChip Timer Go | 10R170 | |

## 2.2 Specifications ProChip Decoder

| | |
|---|---|
| Dimensions | 180 x 160 x 45 mm / 7 x 6.3 x 1.8 in |
| Weight | 720 g / 1.6 lb |
| Decoder Clock stability | 0.5 ppm |
| Decoder Timing Resolution | 0.001 s |
| Time of day clock stability (decoder off) | +/- 25 ppm |
| Time of day clock stability (decoder on) | +/- 0.5 ppm |
| Time of day clock resolution | 1 sec. |
| Time of day clock synchronisation | via GPS receiver to UTC |
| Max. track width | max. 20 m / 66 ft |
| Operating temperature range | -20 to 50 C / -4 to 122 F |
| Humidity range | 10 % to 90 % relative |
| Operating voltage range | 10 to 14.4 V, typical 12V |
| Power consumption | max. 650 mA @ 12V, typical 500 mA |
| Interfaces | RS232, 9600 baud, 8 bits, 1 stopbit<br>RJ45,10/100 BaseT USB A |
| Network connection | DHCP client, APIPA, Static IP |
| Aux. Power | 5 VDC, max 100 mA |
| Aux. Output | Opto coupled closing contact max 50 mA switched |
| Aux. Inputs | 3x Opto coupled 5-12 VDC / 5-15 mA |
| Compatibility | ProChip Classic, ProChip Flex, ProChip Timer, ProChip Timer Go |

## 2.3. Specifications Detection loop

| | |
|---|---|
| Track width | 2-12m (10-36ft) |
| Loop width | 60cm (2ft) |
| Coax to decoder | max. 100m (330ft) double shielded |
| Loop wire | d=3 mm (1/8 in), tinned copper, 0.75 mm² (18 AWG) |

Specifications are subject to change without notice.

# 3. Installation of the ProChip Timing system

The MYLAPS ProChip Timing System, is designed for the timing and scoring of athletes in active sports.

The active detection loop continuously sends a signal to activate the transponder when crossing the loop, and the transponder then emits a signal which is picked up by the loop.
The detection loop is connected by wire to the MYLAPS Prochip decoder. The decoder timestamps the received transponder signals and sends this data to a connected computer.

The Prochip transponder can be attached to the competitor's ankle by using a strap or attached to the competitor's footwear by using shoelaces. It can also be attached to the competitor's bicycle.
The (magnetic) signal of each athlete carrying a ProChip transponder is picked up by the detection loop installed in the track surface. This loop is connected to the ProChip decoder. The decoder timestamps the received transponder signals and sends this data to a connected computer.
Each transponder has a unique number, which enables you to identify and time/score each athlete with a ProChip transponder on the track.

The MYLAPS decoder is a precision instrument. Therefore, please handle it with care and keep the decoder out of direct sunlight and avoid high humidity. Take special precautions in case of thunderstorms by disconnecting all cables (coax, Ethernet and mains) from the MYLAPS decoder. Nearby lightning strikes can damage the decoder when these cables are connected.
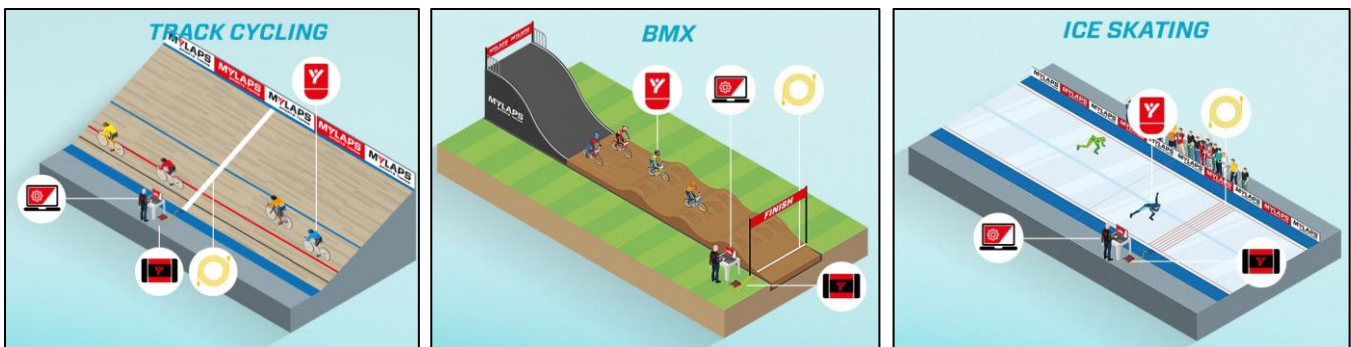
## 3.1. Installation ProChip Timing system
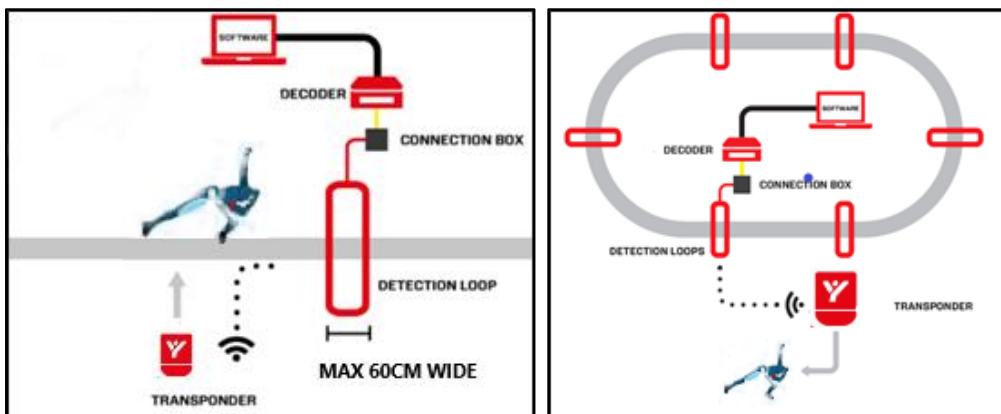


To install the ProChip Timing System, one needs to install a detection loop, connect the decoder and the computer to detect the ProChip transponders of athletes.

# 4. Installation of the detection loop

All wiring of the detection loop must be installed according to the drawings, to avoid a serious degradation in the performance of the system.

## 4.1. Positioning the detection loop

- The system marks the passing time of a competitor when the transponder is in the exact center of the loop wires. Therefore, the actual finish line should be in the centre middle of the detection loop wires, or at a point where the lead part of a competitor is at a constant distance from the transponder and adjusted accordingly.
- The loop wires are laid across the width of the course in parallel to form a rectangle.
- Make sure that the loop length is never less than 2m (6,6ft) or greater than 12m (36ft).
- Always cover 30cm (1ft) more than the track width on each side to make sure that competitors never get closer than 30cm (1ft) to either end of the loop.
- Do not leave wires or coaxial cables rolled up or tangled up as this may negatively affect system performance.
- For competitor and spectator safety as well as to avoid disconnections of the detection loops, always cover and protect loop wires and coaxial cables.
- All metal in the environment of the loop may decrease the activation signal and transponder detection height significantly. Avoid installation above or near metal, including reinforced concrete.
- Even though the coaxial cable to the loop is double shielded it is still possible for transponder signals to be received via the coaxial cable. Therefore, keep the coaxial cable at least 1m (3ft) away from areas where participants with transponders might pass.

**Example:** In cycling events the competitor finishes when the leading edge of the bicycle's front tire is right above the finish line. For correct installation, first measure the distance between the transponders and the leading edge of the front tire. Then position the middle of the loop wires in front of the finish line, at the exact same distance. This will ensure that the transponder is accurately scored at the same instant the leading edge of the front tire is right above the finish line.
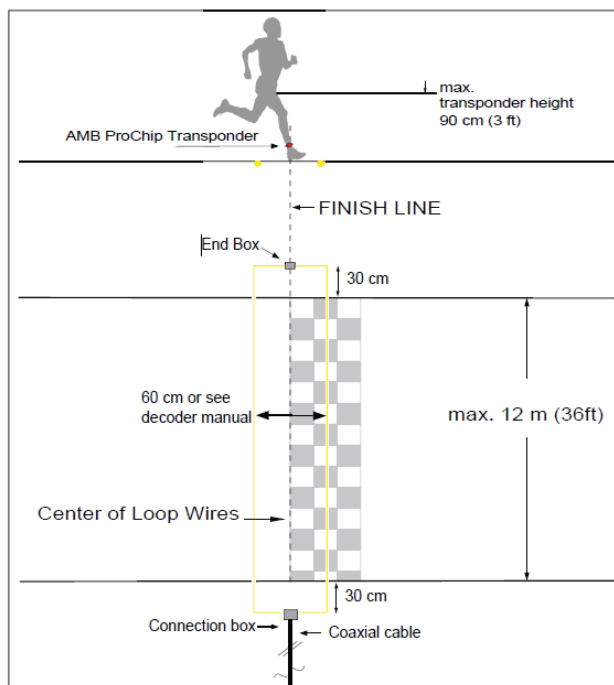
The Prochip detection loop is supplied with connectors. Do not use any other connectors than the ones supplied. The connectors are intended to be used for short term installations (up to 2 days). For longer term installation, solder the loop wires as described below. For active sports there are different distances between the two loop wires to consider, which are related to the sport setting of your MYLAPS ProChip decoder.

| Sport | Loopwidth | Transponder placement |
|---|---|---|
| Ice Skating | 50 cm / 19,69 Inch | Strap around the ankle |
| Inline Skating | 60 cm / 23,62 Inch | Strap around the ankle |
| Cycling | 60 cm / 23,62 Inch | Vertically mounted to the bike |
| Other | 60 cm / 23,62 Inch | |

⚠ The Prochip loop is not compatible with any other MYLAPS system loops. If you have a setup with multiple loops, keep the loops at least 10m (30ft) apart from each other. Be aware that even when the loops have some distance from each other, the transponder signal may transfer from one loop to another through surrounding metal. If this happens, you will receive the tranponder signals on both loops simultaneously.

The detection loop is sensitive to interference that can be created by nearby cabling or picked up by nearby metal structures. When possible, keep other cables at least 5m (15ft) away. Also, make sure athletes on other parts of the track will not get closer than 5m (15ft) to the detection loop to avoid false inputs. The type of loop installation that is most suitable depends on the ground surface. Please follow the instructions according to the surface your loop in installed on.

## Asphalt/concrete, not permanent (tape)
Adhesive tape can be used to affix the loop wires to the course. We recommend industrial strength Polyken #203, Tesa 4651 or similar tape, 10cm (4 inch) wide.
Lay the tap over each loop wire, placing the wire in the center of the strip of tape and secure the tape to the road.

## Ice
Cut slots 2 cm (1 inch) deep in the ice. Put the loop wires in the slots and fill them with snow/water at least 12 hours prior to the start of the event to allow the slot to re-freeze.

## Snow
Cut slots in the snow, approximately 20cm (8 inch) deep. Try to keep the slots as horizontal as possible. Put the loop wires in the slots and fill them with snow.

Make certain that the loop is installed securely to avoid possible injury to competitors and spectators from loose loop wires.

## 4.2. Testing the detection loop installation

Once the loop has been installed, it should be tested to ensure that it is functioning correctly. We also recommend repeating the same procedure at the start of each race event. You can determine if your loop is functioning correctly by doing the following tests:

1.  Connect the detection loop to the decoder and computer running MYLAPS timing software. Check the background noise, which is updated every 5 seconds in the MYLAPS timing software. The background noise level should be between 0 and 40 points.

A higher value may indicate a bad loop installation or interference by other electrical equipment in the area. Try switching off any suspected equipment or removing nearby objects and check for improvements.

2.  Check the signal strength of the transponders as they are picked up by the system during a test
    A good loop will yield consistent transponder signal strength of at least 100 points with a hit rate of at least 10 hits. The hit rate may vary depending on the speed of the transponder passings, as well as the height of the transponder as it passes over the loop (slower and lower passings may yield higher hit counts). Performance of the system depends on the difference between the received signal strength of the transponder and the background noise level. Usually, if the transponder strength is more than 60 points higher than the background noise, the detection of the transponder will be reliable.
3.  Check the detection height. The detection height will vary depending on correct installation of the detection loop and the presence of metal items in the vicinity of the loop and coaxial cable. Metal in the vicinity of the coaxial cable and loop may weaken the activation field and consequently decrease the detection height. Examples are reinforced concrete floors or ice rink floors with cooling installations. To measure detection height, connect headphones or a speaker to the decoder. Stand in the middle of the detection loop and hold up a ProChip transponder as high as possible. Slowly move the transponder toward the ground. Determine the detection height by listening for the beep.

⚠ In case of reinforced concrete floor or other metal below, the transponders may need to be placed a maximum of 30cm (1ft) above the track.
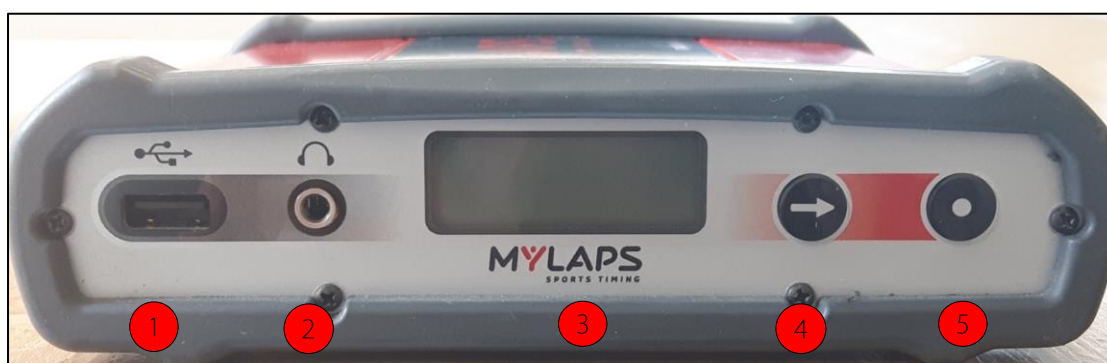
## 4.3.The decoder

The decoder is not equipped with an on/off switch, therefore connecting the decoder to the mains will switch it on. This will enable timing of transponder passings after approximately 15 seconds.  With each detection of a transponder, a beep will sound in the headphone and received transponder information is shown on the decoder display

Back side
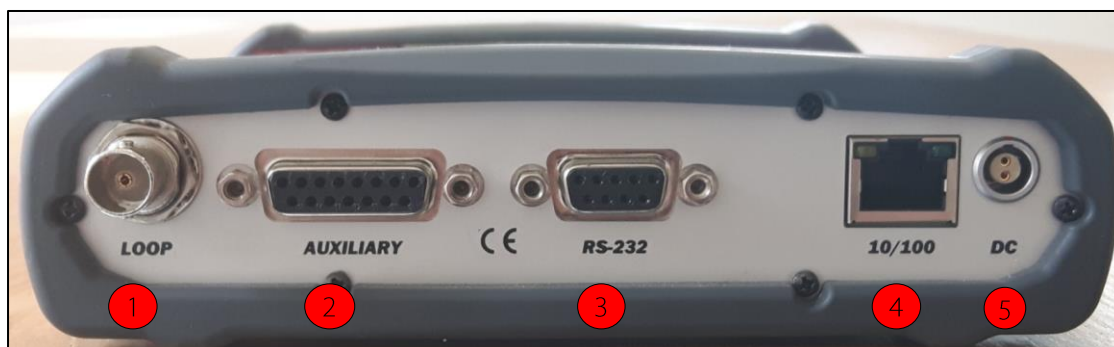


| 1. | Detection loop | Connect the supplied 75 Ohm double-shielded coax cable to the decoder. |
|----|----------------|-------------------------------------------------------------------------|
| 2. | Auxiliary port | The auxiliary port This port can be used to connect a photocell, external start pulse or a sync pulse. |
| 3. | Serial port | This port can be used to connect the decoder with the computer through a RS232 cable. |
| 4. | Network | This port can be used to connect the network cable between the decoder and the network connection port of the computer. |
| 5. | Power | Connect the supplied VDC adapter to the decoder and mains. It is recommended to connect the VDC adapter to mains through a UPS (Uninterruptable Power Supply) to avoid any interruption of power supply to the decoder. |

Front side



| 1. | USB port |  |
|----|----------|--|
| 2. | Headphone | A beep will sound for every passing transponder, which provides an easy check for proper operation of the decoder and the transponders on the track. |
| 3. | Information display | Here you find the menu for setting up your decoder. |
| 4. | Select button | The "Select" button will highlight the next option on the menu when pressed. |
| 5. | Acknowledge button | The "Acknowledge" button will either open the highlighted sub-menu or select the highlighted option, depending on the situation. |

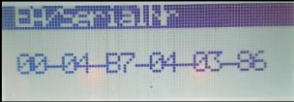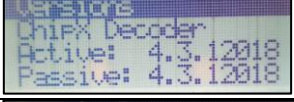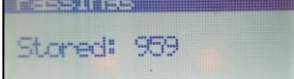## 4.4. Information display – status of the decoder

When the decoder is connected, this is the start screen of the information display.
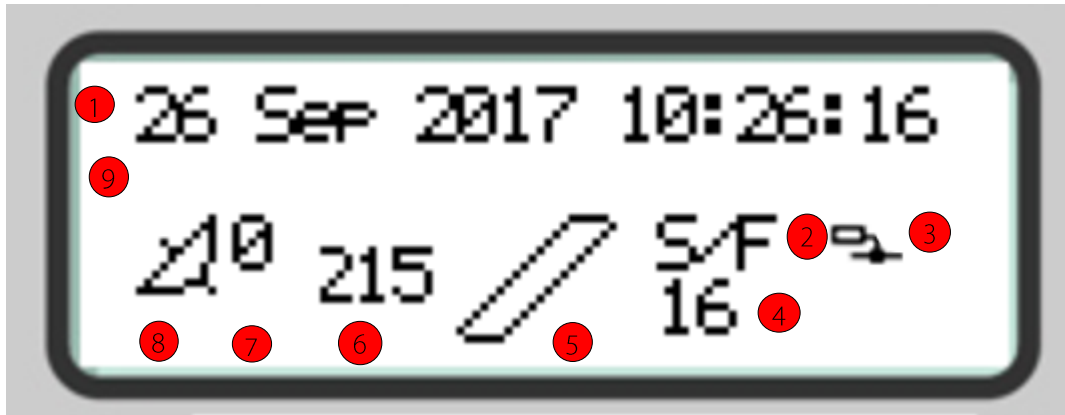


| | |
|---|---|
| 1. | Decoder date/time, UTC when synchronized to GPS. |
| 2. | Timeline name. S/F – start or finish |
| 3. | Blinks when connecting to Mylaps Practice, steady when connected to MYLAPS Practice |
| 4. | Background noise indication |
| 5. | Indication that hits are received, remains black when a transponder is being received by the loop. |
| 6. | Strength of last received transponder. |
| 7 | Number of received GPS satellites. |
| 8. | Links when GPS receiver attached, steady when decoder is locked to UTC time. |
| 9. | Message line – You will see errors or warnings. E/g DNS error |

## 4.5. Decoder menu

By clicking on the acknowledge button ◉ you will cycle through the status screens:

| | |
|---|---|
| Network<br>IP: 169.254.3.134<br>Obtained: APIPA | Network<br>• Active IP Address |
| EA/SerialNr<br>00-04-B7-04-03-86 | EA/Serial Nr<br>• MAC Address/serial number |
| Versions<br>ChipX Decoder<br>Active: 4.3.12018<br>Passive: 4.3.12018 | Versions<br>• Firmware version |
| Passings<br>Stored: 959 | Passings<br>• Stored passings |

## 4.6. Main menu

By clicking on the Select ⬤ and Acknowledge ⬤ buttons you can choose which information you want to see on the display. Here you find all detailed information and the menu options.
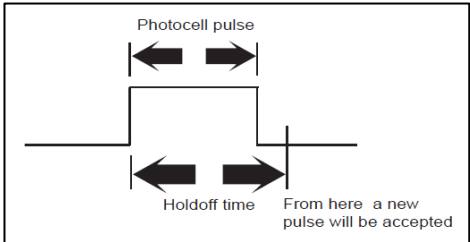
Click on the select button to see the main menu.
With the select button you go from top to bottom.

| |
|---|
| Timeline |
| General |
| Network |
| Data server |
| << |

## 4.7.Sub menu

Click on the select button to go to Menu and click on the acknowledge button to go to the submenu. Click on the select button to go to down in the menu. When you got the right submenu, click on the acknowledge button again to set the information.

### 4.7.1.Timeline

| | |
|---|---|
| Name<br>Index<br>Main/Back up | With these settings, you can define the role of the decoder.  The settings do not influence the decoder performance but can be retrieved by the software for easier track setup. If multiple intermediate points are used the Index can be used to set the order of the intermediate points. |
| Sport | There are many parameters which may influence timing performance. With the sport setting the decoder uses some pre-defined parameters optimized for a certain type of sport / transponder placement. Select <Iceskating>, <Inline skating>, <cycling> or other.<br>Use 'other' if there is no exact match for sport and transponder placement. |
| Squelch | With the squelch setting you can suppress weak transponder signals. This is sometimes useful if cars or drones are near the loop or the coaxial cable and are picked up accidently. E.g. if the squelch setting is set to 60 all transponders with received strength below 60 will be ignored. |
| Loop trigger | Optional for future developments |
| Auxilliary | Photo holdoff, External start holdoff, Sync holdoff. This is the time in milliseconds the decoder will wait before accepting a new pulse via one of those inputs. At the start of the pulse the holdoff period will be active. During the holdoff period all other signals will be ignored.<br><br>Photocell pulse<br>Holdoff time   From here  a new pulse will be accepted |
| << | Go back to the previous menu |

## 4.7.2. General

| | |
|---|---|
| Clear passings | Enables you to clear the passings in the flash memory. |
| Clock | **Date:** Here you can change the date.<br>**Time:** Here you can change the time of day.<br>To set your decoder to a specific time in seconds: First select the time in hours and minutes that you wish to set the decoder on. After this, the decoder will ask you to select SET. At the exact moment SET is selected, the decoder clock will start at the selected time from zero seconds. For example: the new time setting for the decoder is 11.15; when you press SET, the decoder clock will start counting at the exact time, 11h:15m:00s. |
| Beep | Choose the tone of the beep. |
| First contact | When switched on, the decoder will send a record without a time stamp instantly as the transponder is detected. This is intended to allow TV graphics applications to display competition information at first detection, allowing the passing time to be displayed after the competitor exits the detection field and passing time is determined.<br>Note: this option is enabled only in the P3 protocol. |
| Protocol RS232 | This is used to select the protocol on the RS232 interface. Applies to ProChip transponders. There are 3 options:<br>**Enhanced** - This protocol is here only for compatibility reasons. Not all features are available via this protocol.<br>**P3** - If you are a software developer this is the preferred protocol to use. This protocol is also used for software like 'Racewave'.<br>**Remote** - Allows the host computer to select the protocol by using a command. Use this setting when used with Orbits. |
| Contrast | Contrast of the display - Here you can adjust the contrast settings. |
| Factory defaults | Reset to the factory defaults - You can reset the settings of the decoder to the initial settings. |
| Firmware | Software running inside the decoder - When you update the firmware in your decoder, the decoder will retain the current version of the firmware. With the switch decoder firmware option you can revert back to the previous version. |
| << | Go back to the previous menu |

## 4.7.3. Network

Please leave the decoder in the automatic menu if you are not familiar with network basics.

| | |
|---|---|
| Automatic | To automatically determine the IP address of the decoder. If your decoder is placed in a network and you select automatic "on" the decoder will first try via the DHCP server (DHCP = Dynamic Host Configuration Protocol) to get an IP address which is in the range of the network. Please note that it can take about 60 sec. to obtain the settings via DHCP. If a DHCP server is not found, the decoder will use an IP address via APIPA (Automatic Private IP Addressing). |
| IP Address | IP address of your decoder - An identifier for a computer or device on a TCP/IP network. |
| Subnet Mask | A mask used to determine what subnet an IP address belongs to. |
| Gateway | A node on a network that serves as an entrance to another network. |
| DNS | Short for Domain Name System (or Service or Server), an Internet service that translates domain names into IP addresses. Gateway and DNS are both used to set up the decoder for  MYLAPS Practice. |
| << | Go back to the previous menu |

## 4.7.4. Data server

This function enables the decoder to contact a server to upload data to. Contact MYLAPS for more details.

| | |
|---|---|
| Enabled | Live upload to a data server is enabled. |
| Host | Host name or IP address of a server to upload data to. |
| MYLAPS Practice code | A unique code which should be used for registering on MYLAPS Practice website (www.mylaps.com/practice). Please visit mylaps.com for more information about online race results. |

⚠ For accessing server functionality, you need a functioning internet connection. Also, the DNS server and gateway setting must be correctly configured (see menu Network).

# 5.Detection issues

## 5.1. Few or all transponders are not detected.

A few of the transponders are not being detected.
If this is the case, the problem is most likely related to the transponder or the positioning of the transponder.
• Check the position of the transponder

None of the transponders are being detected.
If this is the case, the problem is most likely related to the detection loop, decoder, timing computer or cabling.
Please take the following steps:
• Check if a beep is heard in the headphone, or if the loop in the decoder display changes to black during a transponder passing. If this is working, and the computer screen appears blank, check the cabling between the decoder and the computer.
• Check the coaxial cable by measuring the resistance (with multimeter) between the center pin and the outside of the BNC connector. The reading should be approximately 150 kOhm after 30 seconds. If not, the coaxial must be replaced.
• Check the loop wire measuring the resistance between the loop wires in the track. The reading should be approximately 220 Ohm. If this is not the case, the loop must be replaced.

## 5.2. Noise level

What if my background noise is higher than 40 points?
An increased background noise is an indication of a higher interference level picked up by the system. Every five seconds, a background noise measurement is performed by the decoder and sent to the computer. The noise level should be as low as possible, but as long as the received signal from the transponders is 60 points higher then the noise level, detection will be reliable. If the noise level is higher than 70 there is most likely something wrong with the installation.

Possible causes of high background noise levels:
• When the detection loop is damaged, a fluctuation in noise level will be noticeable, especially in wet conditions. If this is the case, check the loop wire and coaxial for cuts or breakage.
• Electrical equipment too close (<3 m) to the loop or coaxial cable.
• Use of a generator with a poor ground connection.
• Use of DC/AC converter for AC power.
• Poor connections between the detection loop and the coaxial cable.
• BNC connector incorrectly fitted to the coaxial cable.
  Poor ground connection of the AC power. If this is the case, ground the decoder by connecting the outside of the BNC connectors on the decoder to a piece of metal (copper rod or tube) that is in a fixed connection with the ground.

Troubleshooting Tips for High Noise Levels
• 1. Be sure to keep ALL non-MYLAPS wires (including power wires) at least 30ft. away from the loop.
• 2. Try using a different power supply.
  3. Try moving the existing loop around and see if the noise level drops. There may be power cables underneath the ground that could cause higher noise levels.
• 4. Try moving the loop.
• 5. Try using a new loop wire.
• 6. Try using another MYLAPS decoder

## 5.3. Signal strength

Transponder signal strength, as shown by the timing software and on the decoder screen, should preferably be above 100 points and should at least be 60 points higher than the indicated background noise. The closer the transponder is to the track, the higher the received signal strength will be. A higher transponder signal strength should allow for greater immunity against outside interference.

## 5.4. Number of hits

The number of hits, as shown by the software, is an indication of the number of repeated transponder signal receipts during a passing. Hit-rates vary with the speed of a passing transponder. Slower passings yield higher hit counts. Usually the number of hits is greater than 10.

## 5.5. Firmware update

We constantly strive to improve all our products. For new functionalities and minor changes, you can check our website for a MYLAPS decoder firmware update. Please go to the support section of the firmware.mylaps.com website and follow the instructions found there to download and install updated firmware as applicable.

## 5.6. Noise

The decoder determines the average background noise.
The background noise in combination with the signal strength is the most important indicator of the performance of the hardware system. If a decoder is connected to the computer, the background noise will be indicated in the timeline status screen.

The average background noise is sent to the computer by the decoder every five seconds.

Noise values:
0 – The loop is not detected
10-30 noise level is ok
30-50 noise level is medium
50+ noise level is high, not reliable detection.

If noise is higher than 40 points, make sure that the signal strenght of the transponder is at least 60 points higher that the noise level.

# 6. Usefull tools

**Useful Tools**
- Resistance meter (Range at least: 1 Ohm - 1 Mega Ohm)
- Wire cutter/stripper
- BNC Crimper
- (Butane) Soldering gun
- Blade knife
- Coax stripper
- Ice pick
- Screwdriver (normal and Phillips)
- Shrink sleeve

**Useful Spare Parts**
- BNC couplers (3 pieces)
- Thick BNC connectors (5 pieces)
- Spare loops (6, 9, or 12 m)

**Additional Tools for new loop installations**
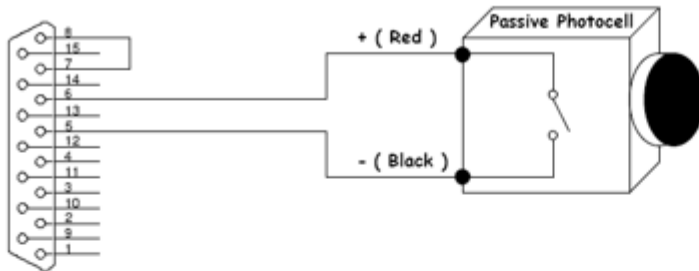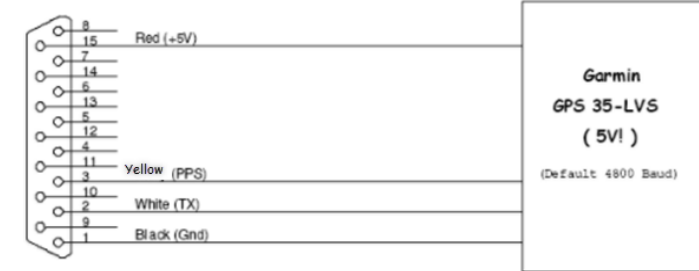- Polyken #203 4-inch-wide tape/ Tesa 4651
- Chalk line
- Caulk gun

# 7. Appendix Auxiliary connections

The MYLAPS decoder is equipped with an auxiliary port (15 pin sub D-connector). The auxiliary port has 3 inputs, photo cell 1, photo cell 2, sync pulse and a control port for a GPS receiver. All inputs can be triggered by a 5 VDC (5-15 mA) pulse. Figure 1 explains the connection setup. To use a photocell, connect it using the MYLAPS photocell cable or make an appropriate cable using figure 1 below. Two types of photocells are available, passive and active photocells. They both operate as a switch; to connect the passive photocells please follow the connection setup in figure 1a and scheme 1b. Active photocell can be connected directly to the photocell/sync – and + input pins.
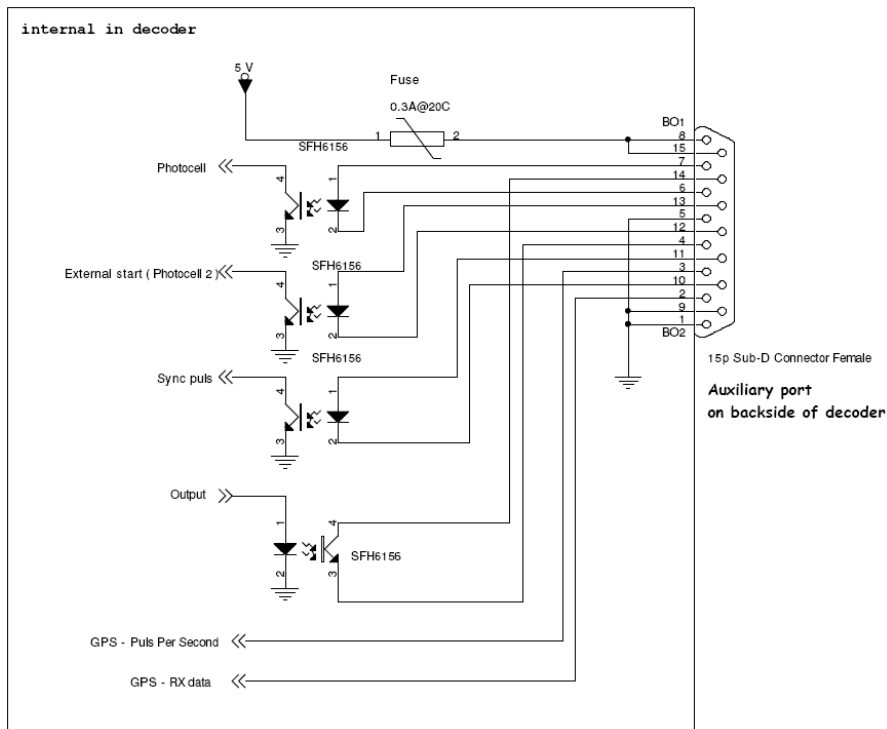


Auxiliary port
on backside of decoder

| | |
|---|---|
| +5 V (Max 300mA) | 8,15 |
| Ground | 1,5,9 |
| Photocell + | 7 |
| Photocell − | 6 |
| External start + | 13 |
| External start − | 12 |
| Sync. puls + | 11 |
| Sync. puls − | 10 |
| Output + | 14 |
| Output − | 4 |
| Puls Per Second | 3 |
| GPS RX Data | 2 |

![MYLAPS]

**Diagram 1 — Passive Photocell**

15p Sub-D Connector Male

+ ( Red )
- ( Black )
Passive Photocell

- Connect pin 7 to pin 8 ( or 15 )
- Connect pin 6 to + terminal of photocell
- Connect pin 5 to - terminal of photocell

**Diagram 2 — Start button**

15p Sub-D Connector Male

- Connect pin 13 to pin 8 ( or 15 )
- Connect pin 12 to terminal of start button
- Connect pin 5 to terminal of start button

**Diagram 3 — Sync. contact**

15p Sub-D Connector Male

- Connect pin 11 to pin 8 ( or 15 )
- Connect pin 10 to + terminal of sync. contact
- Connect pin 5 to - terminal of sync. contact

**Diagram 4 — Garmin GPS 35-LVS**

15p Sub-D Connector Male

Red (+5V)
Yellow (PPS)
White (TX)
Black (Gnd)

Garmin
GPS 35-LVS
( 5V! )

(Default 4800 Baud)

- Connect Red wire to pin 15 ( or 8 )
- Connect Black wire to pin 1 ( or 9 )
- Connect White wire to pin 2
- Connect Yellow wire to pin 3

# 8. Support

In case you encounter any issues, please contact your sales offices:

MYLAPS EMEA Office
Haarlem, The Netherlands
Tel: +31 23 7600200

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MYLAPS 24/7
Only in cases of direct needed support for event
organizers and companies.

Tel: +31 23 7600200

Our Frequently Asked Questions (FAQ) can be found on help.mylaps.com

# CE Declaration of Conformity MYLAPS PROCHIP - Decoder

We,

MYLAPS
Zuiderhoutlaan 4
2012 PJ Haarlem
The Netherlands

Declare that the RF system

MYLAPS ProChip Decoder

In accordance with the following directives:

| | |
|---|---|
| 2006/95/EC | The Low Voltage Directive |
| 2004/108/EC | The Electromagnetic Compatibility Directive |
| 1999/5/EC | Radio & Telecommunications Terminal Equipment Directive |

Has been designed and manufactured to the following specifications:

EN 301-489-1 (2005-09)
EN 301-489-3 (2002-08)
EN 302-208-2 (2008-04)
EN 61000-3-2 (2006)
EN 61000-3-3 (2008)

I hereby declare that the product named above is designed to comply with the relevant sections of the above referenced specifications, and all essential requirements of the Directives.

| | |
|---|---|
| Name of authorized person: | John Verwoerd |
| Function of authorized person: | R & D Director |
| Place and Date: | Haarlem, November 2020 |

Signature of authorized person: