



TAGHeuer

PROFESSIONAL TIMING

TCDUHF 1 & 4 Port UHF RFID DECODER

User manual

Version 10/2016



General

With its vast experience in timing, TAG Heuer by Chronolec presents the UHF RFID chip detection system. Compatible with induction devices including the Chronoprinter 540 & 545 and THbC decoders the RDID Solution brings a global solution by performing automatic identification of competitors.

Recommended Use:

- High-Speed Vehicle Identification eg. Rally, Hill Climb
- Mass –Participation sports events (Running, Cycling, Triathlon...)



1. Product Specifics :

The RFID decoder (4 antennae port version)



Front side of the RFID Box



Rear side of the RFID Box



On the front panel you will find :

- Manual button input for backup (connector is also installed on the Distant Decoder)
Use only Stereo Jack connector
- AUDIO socket for speaker (confirmation beep of chip detection)
- Serial data connection RS232 for PC or CP540/545
- RJ45 socket for a local area network connection

On the rear panel you will find :

- The general power supply socket
- A backup photocell input available only in « Distant » mode
- The link socket for the RFID Decoder (max. length : 50m)
- DB15 socket for Elite decoder connection over RS485

Important

**NEVER connect the power supply unless all antennae are connected.
Before removing an antennae, ensure that the decoder has the correct settings otherwise it will damage the power driver stage of the reader!**

2. Installation :

➤ Content:

- The RFID decoder with 1 or 4 type N female sockets
- The «RFiD Box » considered as remote front panel of the decoder
- 1 or 4 RFID UHF Antennas ETSI (865-867MHz)
- 1 or 4 H155 Coaxial cables (ultra-low loss)

The UHF chips ref. **TCUHFTAG** and EVA spacers ref. **TCK100SP** are sold separately

The antennae may be installed in different ways :

Track side installation (recommended)

Approximately 1m apart installed at a similar height as the UHF chips are mounted or worn. The UHF RFID chips should be mounted vertically on the bib number or a non metallic surface. Using EVA spacers is recommended to ensure that the chip does not contact the skin or metalwork.



Gantry / Finish gate mounting (Antenna positioned horizontally)

2m apart from each other with a maximum distance of 4m between antennae and chip.

UHF chips should be installed horizontally and facing the antennas.

You can stick the chips on any non-metallic surface . Using EVA spacers is recommended.



Positioning the antennae

Any installation should have clear line of sight from UHF chip to antennae. All antennas should face the chip in direct view. Any multi-antennae setup should also ensure antennae faces the chip. Reducing the number of antennae connected will increase the reading speed. A single chip can be detected at 240km/h with a single antenna.

To increase the field of detection position the antennae back a little from the vehicle and chip

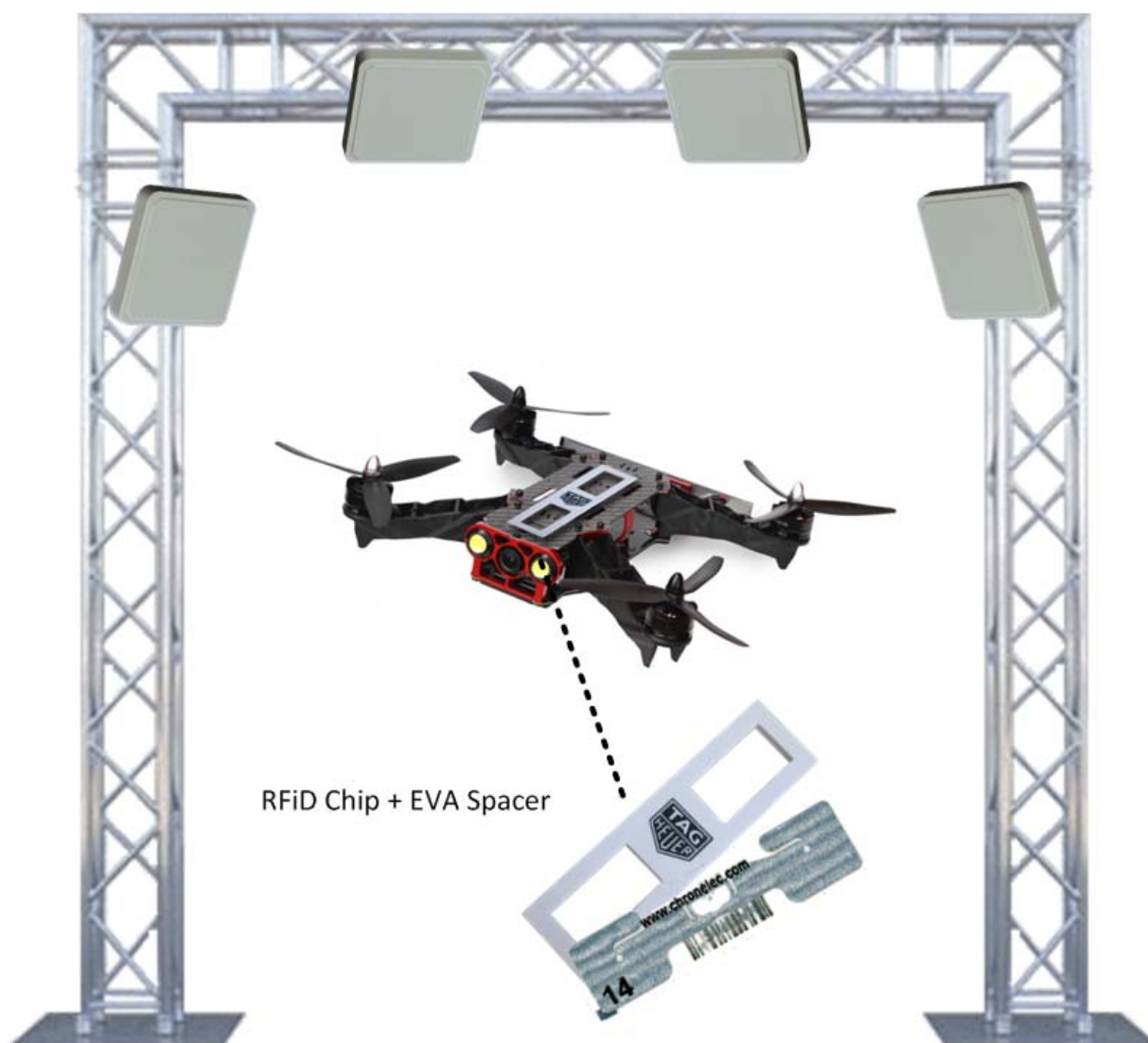


Alternative Mounting Positions

Ensure that all antennae have the chip in direct line of sight. Avoid any “blind spots” (human body or any other object which will deflect the signal from the chip away from the antennae).

Observe a minimum proximity between multiple antennae to ensure maximum reading area.

Note: the antennae have a small radiation pattern on the rear, in order to avoid any undesired chip detections ensure that you have a clear zone around the finish line.



3. Decoder settings.exe

DecoderSettings.exe is the programming software for all TAG Heuer by Chronolec products. On the RfID you may also select and change the communication protocol as :

TAG Heuer by Chronolec Distant

In this mode, the decoder runs on its own timebase. You can connect it to an Elite decoder or can be controlled directly with the TAG Heuer by Chronolec software Elite V3 as a main system.

TAG Heuer WP26 «Chronoprinter Mode without bib nr. buffering»

In this mode, the RfID decoder uses the THCOM08 protocol. Its timebase is disabled and only sends chip number on the serial I/O of the Chronoprinter on channel 1.

Each new read chip will be replaced on the channel 1 if the Chronoprinter has not been triggered.

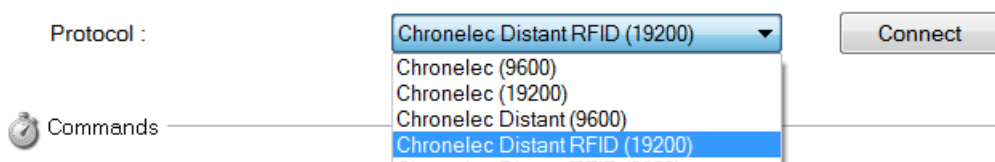
TAG Heuer WP27 « Chronoprinter Mode with bib nr. buffering»

Similar to WP26 mode but each chip read will be buffered.

All numbers will appear in a chronological order on channel 1. Check that you use the last firmware of the Chronoprinter 545 in order to have a buffer for 64 numbers. All CP540s only have up to 8 numbers in the buffer.

Default mode is « distant 19200».

In order to connect with decoder settings use **Distant RfID mode at 19200 Bds**



Until you changed into Chronoprinter. In order to connect again with Decoder Settings, you should use another Baud rate. The RfID decoder will be in « **Distant RfID 9600 Bds** » mode.

Protocol : Chronelec Distant RFID (19200) Connect

Commands Chronelec (9600)
Chronelec (19200)
Chronelec Distant (9600)
Chronelec Distant RFID (19200)
Chronelec Distant RFID (9600)

Level (STA) :

Important

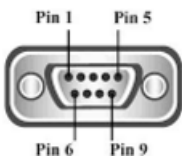
The default IP address of the decoder **192.168.0.10**
We recommend that any settings you wish to modify are only made using the serial I/O connection

A) Computer connection

Use the serial I/O (DB9 socket) or the Ethernet socket RJ45.

If you choose to connect via LAN, ensure that your computer host is not in DHCP mode and is set to the same gateway. Only Elite V3 can use the direct connection with the RFID decoder (optional Hardlock dongle is required).

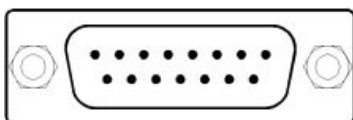
DB9 Pinout



TX	2
RX	3
GND	5

B) Elite decoder connection

The RFID decoder can be used as a distant decoder and send all data to the Elite decoder. The baud rate is at 19200 Bds instead of 9600 Bds. Ensure that your Elite decoder firmware is up to date. The connection is 1 to 1 done over the DB15 socket.



Signal A	14 + 6 (jump)
Signal B	15

You can also use the TCD-COM box in order to make the link with banana plug cable.

Art. Nr. TCD-COM

C) Chronoprinter 540 or 545 connection

The chip number input is managed over the RS232 socket of the Chronoprinter (RJ12). You will need a cross-over cable (null modem) and the Computer cable 540

Art. Nr. **TAG Heuer STH200-10** + Art. Nr. **STH540-10**

The RFID decoder will need to be in WP26 or WP27 mode at 9600Bds

Technical Specifications

General

- ETSI UHF RFID system

Compatibility

- THcom08 Protocoll
- TAG Heuer by Chronelec

Power supply

- 8-15 VDC on external power supply or battery

Operating Temperature

- -10°C to $+50^{\circ}\text{C}$ (-40°F to 122°F)
Never leave in direct sunlight
- Humidity 10 – 85% RH (non-condensing)



**Protect your decoder from direct sunlight.
The temperature can increase and exceed 60°C if placed directly under the sun and damage internal components.**

Ref. TCD-COM

Used to connect RFID Decoders to Elite Decoder and photocells



Ref. TCKVI

Autonomous case with internal batteries.

Allows 2 systems to be connected in parallel.

Also connect to the CP540 or CP545 with optional cable Ref : STH520-17

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NOTES





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