

# ***XTRA.REMOTE CONTROL***

User Manual

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## Safety

All De Haardt's products are designed as supplement to make go-karting safer, but cannot replace safe track procedures. If equipment fails, the normal operating procedure must still be adequate to safely operate the track.

This document 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.

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# 1 Get started

This manual provides information about correctly installing, configuring and using the Xtra.Remote Control.

The full functionality of the Xtra.Remote Control will be explained.

## 1.1 What's in the box



Figure 1 Xtra.Remote Control box

Before proceeding, check the contents of the kit. The box consists of the following parts:

- **Xtra.Remote Control Unit with industrial silicon cover (red cover around remote)**



*Figure 2 Xtra.Remote Control*

- **Power adapter (1A @ 5V DC) with USB A to USB mini cable 0,5mtr**



*Figure 3 Power adapter and USB cable*

- **Pair of rechargeable batteries (NiMH)**



*Figure 4 Rechargeable batteries*

- **De Haardt keycord**



*Figure 5 Xtra.Remote Control keycord*

- **De Haardt USB stick**



*Figure 6 De Haardt USB stick*

- **Xtra.Remote Control battery lid**



*Figure 7 Xtra.Remote Control battery lid*



## 1.2 Service accessories

These products are **NOT** included with the Xtra.Remote Control. Products below are necessary for advanced changing the switch tables of Xtra.EV transponders.

Xtra.EV transponder programming plug for the **BLACK** Xtra.EV transponders



*Figure 8 Programming plug black*

Xtra.EV transponder programming cable for the **RED** Xtra.EV transponders



*Figure 9 Programming plug red*

## 1.3 Installation

The installation of the Xtra.Remote Control consist of placing the batteries and recharging if the batteries are empty.

### 1.3.1 Placing Batteries

The Xtra.Remote Control Unit can be used with 2 rechargeable NiMH batteries type AA. Place the batteries according to the symbols + and – labelled in the battery compartment. Put in place as well the silicon ring. Close the battery compartment with one of the lids. Push it in place when fixing both screws just **hand tight**. The second lid can be kept as spare part!



Figure 10 Battery insertion



Only use rechargeable batteries of the type **NiMH**.  
Do **NOT** use conventional batteries.  
Do **NOT** use alkaline batteries.  
Do **NOT** use Lithium batteries.  
Do **NOT** use old and new batteries together.  
Do **NOT** use batteries from different manufacturers together.

### 1.3.2 Connecting the adapter

Connect the provided USB cable to the USB port on top of the Xtra.Remote Control unit and plug the adapter into the main power supply socket.

Connecting the adapter to the Xtra.Remote Control allows it to be used without batteries. The adapter can also be used to charge the NiMH batteries in the Xtra.Remote Control. The Xtra.Remote Control will also charge if it is connected to a PC with a mini-USB cable.

## 2 Operation

The default operation will be explained in this chapter.

### 2.1 Buttons overview

Below is a complete overview of the buttons on the Xtra.Remote Control. Each function will be explained in the following paragraphs.



Figure 11 Xtra.Remote Control button layout

## 2.2 On/Off

Press the **ON/OFF** button on the keyboard of the Xtra.Remote Control for at least one second to turn the device on. Once on, you can turn the device off by pressing and holding down the same button until the device turns off.



Figure 12 On/Off button

## 2.3 Main menu

The main menu shows 7 icons.



Figure 13 Main menu layout

- 1) Fuel/electro mode
- 2) Active tracks
- 3) Battery percentage
- 4) Penalty menu
- 5) Groups menu
- 6) Sector menu (Only applicable if Xtra.Sector beacon is used)
- 7) Light control board (Only applicable if Xtra.Light control board is used)

Each of the functionality will be further explained in this manual.

## 2.4 Stopping go-kart(s)

The different operations to use the stop button will be described in this chapter.

### 2.4.1 Stopping all go-karts at once

To stop all go-karts Press the **SHIFT** button, followed by the **STOP** button. This is the default operation and can be changed in the configuration menu. For example:



**IMPORTANT!**  
 The default usage of the **STOP** button is set to **SHIFT+STOP**. This can be changed to a single **STOP** press . **See chapter 3.1.1.**

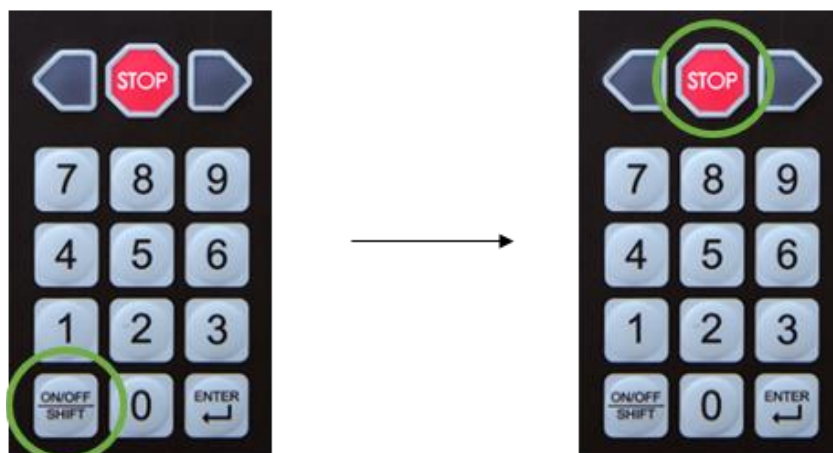


Figure 14 Stop sequence

After pressing the **SHIFT+STOP** button the display will show:



Figure 15 Stopped all karts

## 2.4.2 Stop an individual go-kart

Stopping an individual go-kart can be done in 2 ways:

### 2.4.2.1 Stopping by serial number

By entering the serial number of the Xtra.Shutdown Transponder mounted on the go-kart and then press **STOP**. For example:



Figure 17 Serial number input



Figure 16 Stop action

Serial numbers range from 65536 to 1048575 and can be found on the Xtra.Shutdown Transponder.

In the following example a transponder with serial number 519001 has been used.

Entering the serial number and pressing **STOP** will show the following on the display:



Figure 19 Example Xtra.EvTransponder



Figure 18 Serial number stop screen

#### 2.4.2.2 Stopping by go-kart number

Entering a go-kart number or the last two digits of the serial number and then press **STOP**. The supported range of go-kart numbers is 1 to 245. For example:

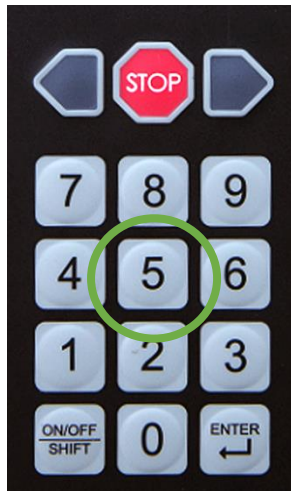


Figure 21 Go-kart number selection

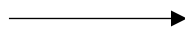


Figure 20 Stop action

The following will be shown on the display:



Figure 22 Go-kart stop screen



#### IMPORTANT!

The default go-kart numbers are the last two digits of the serial number. Custom go-kart numbers **must first be set**.

**See chapter 3.2.2 for more details.**

## 2.5 Adjusting speed of go-kart(s)

Adjust the speed of go-karts can be done in 2 ways:

### 2.5.1 Adjust speed of all go-karts

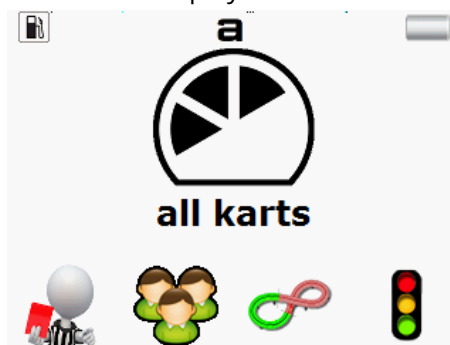
On the Xtra.Remote Control, there are 4 buttons for adjusting the speed of the go-kart(s). These buttons are:



**SPD1, SPD2, SPD3, SPD4**

*Figure 23 Speed buttons*

Each of the SPD buttons will have a default value. SPD1 means "Speed 1" and is the slowest speed, SPD4 means "Speed 4" and is the fastest speed. Pressing the SPD buttons will show an icon on the screen indicating the chosen speed setting. Pressing SPD3 will set **all go-karts** to "Speed 3" as show below. The following will be shown on the display:



*Figure 24 Speed 3 screen all go-karts*



Default SPD operating values for fuel go-karts

SPD 1 2100 RPM

SPD 2 3000 RPM

SPD 3 4000 RPM

SPD 4 unlimited (no limit imposed)

**See chapter 3.1.9.**



### 2.5.2 Adjusting the speed on 8 SPD mode

To adjust the speed beyond SPD 4 a special input is required. This is only available with transponders that support 8 SPD.

First, press the **SHIFT** button then press number 5. This will set the SPD to 5.

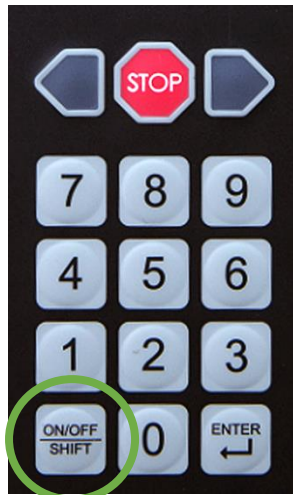


Figure 26 Speed 5 shift press

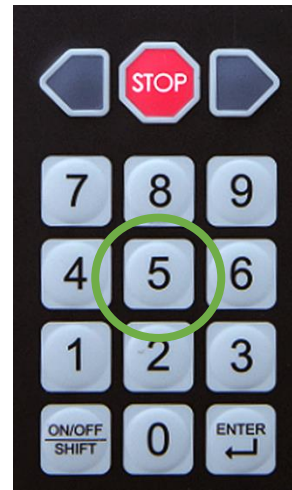


Figure 25 Speed 5 select

Using the numbers 5, 6, 7 and 8, four more SPD commands can be used.



#### IMPORTANT!

**The SPD 5, 6, 7 and 8 are set with the switch table and are only available with 8 SPD transponders.**

### 2.5.3 Adjusting an individual go-kart

The speed of an individual go-kart can also be adjusted with the serial number or go-kart number. First, press a number button and then press a SPD button. For example:

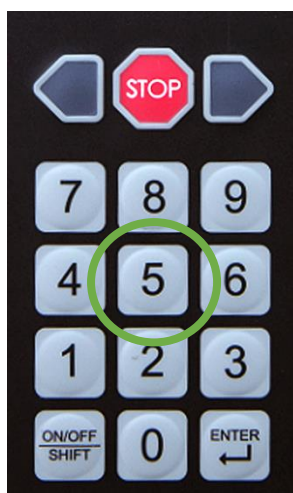


Figure 28 Go-kart number selection



Figure 27 Speed select

The following will be shown on the display:



Figure 29 Go-kart speed limit screen



**IMPORTANT!**

The default go-kart numbers are the last two digits of the serial number. Custom go-kart numbers **must first be set.**

**See chapter 3.2.2 for more details.**

## 2.6 Penalties

Penalties are a brief speed limitation. They can be given to an individual go-kart, a group of go-karts or all go-karts. Enter the penalty menu by pressing soft button 1 below the penalty icon. Giving a penalty to all go-karts is done by pressing the SPD button from this menu without a preceding number.



Figure 31 Penalty select



Figure 30 Speed select

The following will be shown on the display:

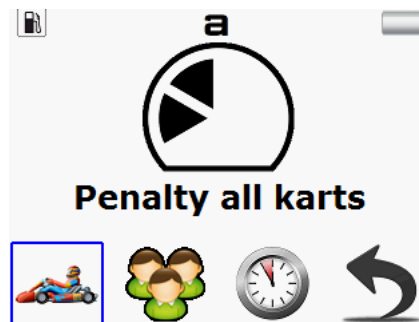


Figure 32 Penalty all go-karts screen

### 2.6.1 Penalty individual go-kart or group

To give a penalty to one go-kart or a group, first select the penalty icon



followed by the go-kart icon



or the group icon.



Then press the go-kart or group number, followed by the SPD button.



Figure 34 Go-kart number select



Figure 33 Penalty speed selection

The following will be shown on the display:



Figure 35 Penalty go-kart screen



**IMPORTANT!**

The default go-kart numbers are the last two digits of the serial number. Custom go-kart numbers **must first be set.**

**See chapter 3.2.2 for more details.**


## 2.6.2 Change penalty time

The penalty time can be changed by pressing the soft button 3 below the clock icon in the penalty menu.



Scroll up or down by pressing soft button 1 "Up" or soft button 2 "Down".



Press soft button 3  to confirm your choice. The chosen penalty time will be saved until another time is set.

## 2.7 Adjusting speed of a groups of go-karts



### IMPORTANT!

Group numbers must first be set before they can be used.

**See chapter 3.2.3 for more details.**

The speed of a group of go-karts can be adjusted by entering the group menu.

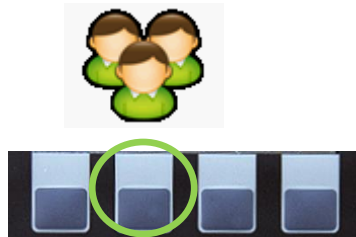


Figure 36 Go-kart group selection

Press the group number and then the SPD button. Group numbers range from 1 to 5.



Figure 38 Group number selection

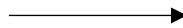


Figure 37 Group speed selection

The following will be shown on the display:



Figure 39 Group speed screen

## 2.8 Adjusting speed in a sector

To adjust the speed of all go-karts in a specific sector, enter the sector menu.

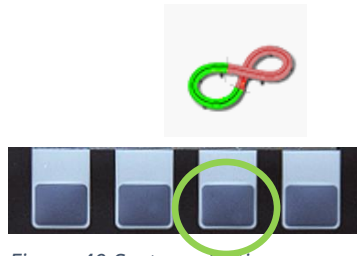


Figure 40 Sector selection

Press the number of the sector and finally the SPD button.



Figure 42 Sector number selection

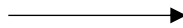


Figure 41 Sector speed

The following will be shown on the display:

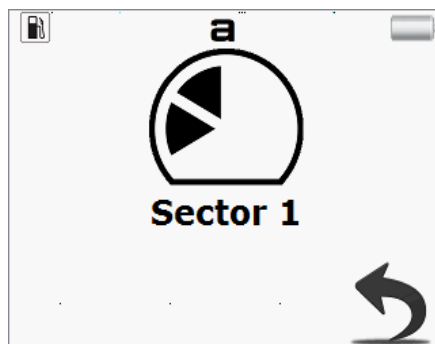


Figure 43 Sector speed screen

To adjust the speed in several succeeding sectors, enter the sector menu, press the first sector number and then the ENTER button. Then press the last sector number followed by the SPD button.



To use the sector options, the go-kart must be fitted with an **Xtra.Sector Sensor** which is connected to a Transponder.  
The track must also be subdivided into sectors using the **Xtra.Sector Beacon**.



## 2.9 Operate Race Lights

To operate the (race) lights, enter the light menu.



Figure 44 Race Lights button

Lights can be toggled by pressing the soft buttons below the corresponding colour. Pressing soft button 1 will turn the red light on. If there is no Xtra.Light Control Board connected, the display will always show "Please wait...".



Figure 45 Race Light selection

Pressing soft button 1 again will turn the red light off. This applies to soft button 2 and 3 as well.

You can quickly turn multiple lights on and off by using these number buttons:

Number 7 button will turn RED on and yellow and green OFF.  
 Number 8 button will turn YELLOW on and red and green OFF.  
 Number 9 button will turn GREEN on and yellow and red OFF.  
 Number 0 button will turn all lights OFF.



To use this option, the track must have the lights connected to the **Xtra.Range Extender** via the **Xtra.Light Control Board**



## 2.10 Heat control

With the Heat control users can start, pause and stop a heat.



To use this option, the Xtra.Range Extender or Xtra.Black Box must be connection with a computer which has software running that is compatible with Heat Control.

To get in the Heat control menu press **SHIFT** then the **LEFT** button from the Main menu.



Figure 46 Left button

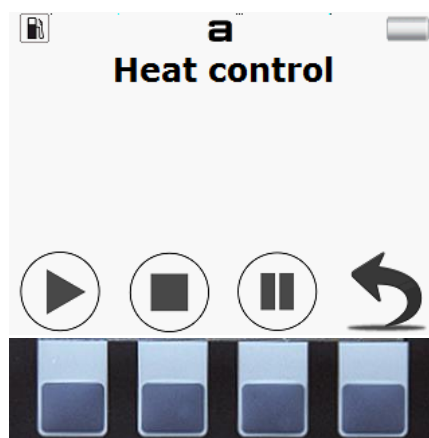


Figure 47 Heat control menu

The buttons have the following functionality:

- Soft button 1: Start a heat
- Soft button 2: Stop a heat
- Soft button 3: pause a heat
- Soft button 4: return

Below an example of the possibilities with heat control. This is implemented by the third party software supplier and our Xtra.Range extender or Xtra.Black Box.



Figure 48 Example heat control

## 2.11 Boost function (only transponders with boost support)

The boost function allows users to set the boost speed of a transponder.

 Only transponder that support boost can be used with this function.

To get into the boost menu press the **LEFT** button from the Main menu.



Figure 49 Left button

Enter the go-kart number or serial number to give that transponder boost.

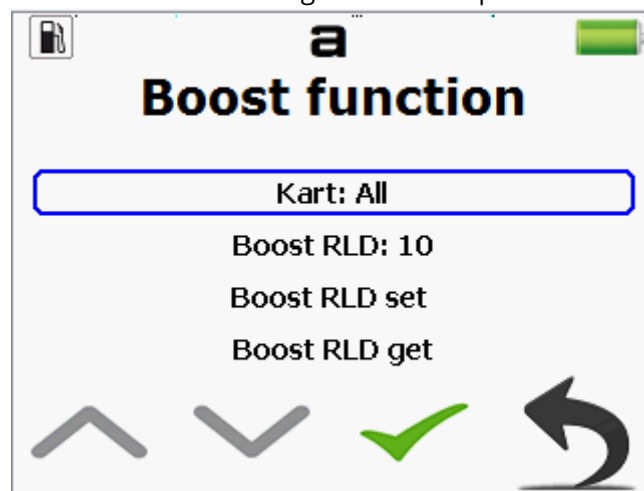


Figure 50 Boost function menu

With "Boost RLD" the timer of the boost can be set.

Use "Boost RDL set" to send the boost timer to a transponder.

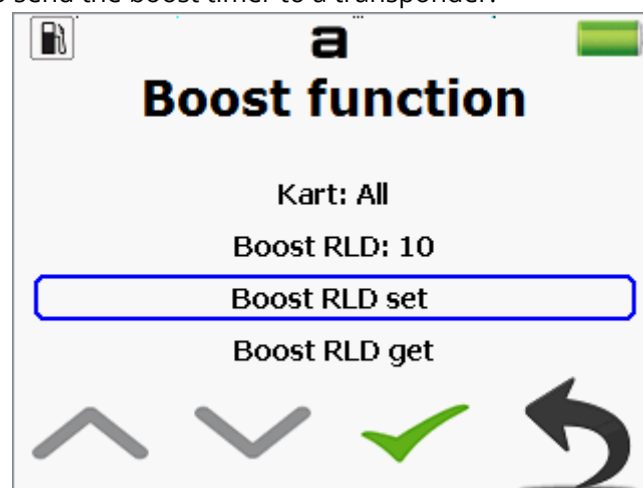


Figure 51 Boost timer set

With the "Boost RDL get" the remaining boost timer can be requested from the transponder.

### 3 Configurations

The configuration menu has three options. Which will be explained individually here.



Use the **RIGHT** button to go to the configuration menu.

This menu is protected with a PIN code. The default PIN code is **0000**.

*Figure 52 Right button*



The PIN code can be changed or disabled. **See chapter 3.1.11 for more details.**

The configuration menu displays all the components of the system which can be configured by the Xtra.Remote Control. The following sub-menus can be accessed from the configuration menu.



**Transponder  
menu**

**Preferences  
menu**

**Advanced  
functions**

*Figure 53 Configuration menu*

By pressing the **SHIFT** followed by the **0 button**, you can leave any menu at any time.

### 3.1 Transponder configuration



The transponder to be configured must be mounted on an **active go-kart!** When using a **Xtra.EV Transponder** make sure to connect the **Xtra.EV Transponder programming plug or cable** in order to set the switch table.

To configure an **black** Xtra.EV-Transponder the following procedures are necessary before configuring:

1. Make sure no i/o connector and network cable is connected.
2. Plug in the programming plug into the network port.
3. Power on the EV-transponder through the i/o cable.
4. The led on the programming plug starts blinking red and green. If the led stays red, start from procedure 1 again.
5. Configure the EV-Transponder.

After configuring the Xtra.EV Transponder, remove the programming plug. Power cycle the Xtra.EV Transponder by disconnecting the i/o cable, then connecting it again.

To configure an **red** Xtra.EV Transponder the following procedures are necessary before configuring:

1. Place the programming cable between the Xtra.EV Transponder and the cable harness.
2. Configure the Xtra.EV Transponder.

After configuring the EV-transponder, remove the programming cable. Without **Xtra.EV Transponder programming plug or cable**, communication will fail.

To connect to a go-kart, enter the configuration menu and press soft button 1.

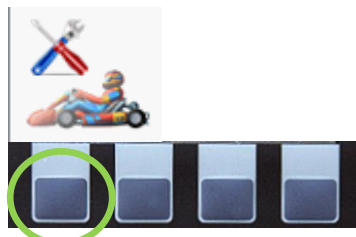


Figure 54 Go-kart configuration menu

Connecting to a transponder can be done in two ways.

- 1) Enter the serial number(last two digits) or go-kart number of the transponder and press the search button.



Figure 55 New transponder

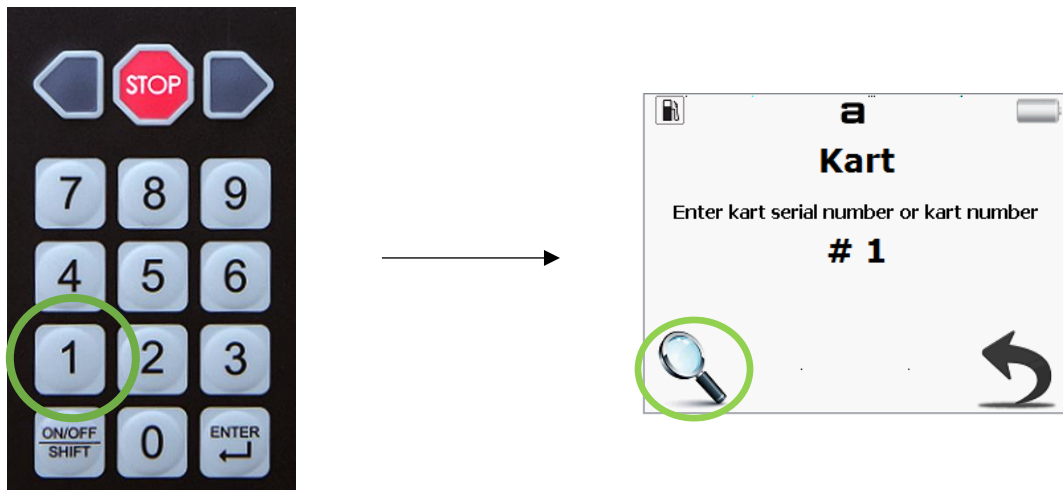


Figure 56 New transponder adding

- 2) Power off all active go-karts, except the go-kart to be configured. Then press the search button without a number. The Xtra.Remote Control will now connect to any active go-kart. Remember that only one go-kart can be active when using this feature.

After a successful connection with a transponder, the following screen will be shown. Use the soft button 1 "Up" and soft button 2 "Down" to navigate through the menu.

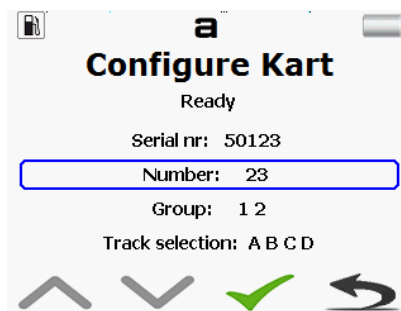



Figure 57 Go-kart configure menu

### 3.1.1 Serial number

The serial number corresponds to the serial number on the label of the transponder. The serial number cannot be changed.

### 3.1.2 go-kart number

The (go-kart) number can be changed to any number from 1 to 245. It is advisable to give a unique (go-kart) number to each go-kart.

Change the (go-kart) number by entering the new number and  press (soft button 3) to send the new settings.




Once a go-kart number has been changed. The configure transponder option can now be used with the corresponding go-kart number.

### 3.1.3 Groups

Each transponder can be assigned to a group between numbers one to five.


To change the group membership of a transponder, select the group line and press the corresponding number to toggle the membership. Press 0 to remove all groups.

Change the group number by entering the new number and  press (soft button 3) to send the new settings to the transponder.


### 3.1.4 Track selection

Each transponder must be assigned to at least one track. To change the tracks of a transponder, select the track line and press:


- 1 to toggle track A
- 2 to toggle track B
- 3 to toggle track C
- 4 to toggle track D

If no tracks are selected, track A will be activated as the default. Change the tracks and press  (soft button 3) to send the new settings to the transponder.

### 3.1.5 Read active timer

The transponder holds an active time timer. To read this timer, select the "Read timer" line and press  (soft button 3) to receive the active timer.

### 3.1.6 Reset active timer

To reset the timer, select the "Reset timer" line and press  (soft button 3) to reset the timer.

### 3.1.7 Read battery voltage and RPM

The supply voltage and RPM of a transponder can be monitored.

There is a difference between the information displayed by the Fuel and Electro go-karts.


In the fuel transponder menu you will see "Average: RPM", "Actual: RPM" and "Voltage:".

An electro transponder will show "Voltage:", "Minimum" and "Maximum".

### 3.1.8 Software version

This option shows the current software version of the transponder.

### 3.1.9 Max SPD limit


The max SPD limit can be set within the range of 0 – 7999 and 8000+ will be unlimited. If set to unlimited the maximum speed of the go-kart will depend on the engine. This setting will limit the maximum speed regardless of the SPD settings. Change the SPD limit number by entering the new number and press  (soft button 3) to send the new settings to the transponder.

### 3.1.10 Brake SPD limit

The brake SPD limit option will limit the SPD of a go-kart once the brakes are pressed.

The range can be set between 1 – 7999 and 8000+ will be unlimited for **fuel go-karts**.

The range for **EV go-karts** can be set between 1-3 and 4+ will be unlimited.

The default state is unlimited. The go-kart engine will not throttle when the brakes are pressed. Change brake SPD limit by entering the new break limit  and press (soft button 3) to send the new settings to the transponder.



This option will only be functional if the brake switch is connected.



### 3.1.11 Switch table

The Xtra.EV Transponder holds a table that configures the setting of the relays. Each speed can have its own set of relays settings. This menu has the following options:

Recall switch table from Xtra.Remote	recall default switch table.
Store switch table into Xtra.Remote	change default switch table.
Receive from any transponder	receive switch table from active transponder.
Send to any transponder	send current switch table to active transponder.
Power up	relays settings when a go-kart powers up.
Stop go-kart	relays settings when the <b>STOP</b> button is pressed.
Speed 1	relays settings when SPD 1 button is pressed.
Speed 2	relays settings when SPD 2 button is pressed.
Speed 3	relays settings when SPD 3 button is pressed.
Speed 4	relays settings when SPD 4 button is pressed.
Charge L	relays settings when the charge cable is connected.
Charge UL	relays settings when the charge cable is removed.
Speed 5	relays settings when <b>SHIFT + 5</b> button is pressed.
Speed 6	relays settings when <b>SHIFT + 6</b> button is pressed.
Speed 7	relays settings when <b>SHIFT + 7</b> button is pressed.
Speed 8	relays settings when <b>SHIFT + 8</b> button is pressed.



To read or write a transponders switch table the **Xtra.EV Transponder configuration cable or plug** has to be connected to the active transponder. Without the configuration cable the **communication will fail**.  
The **Charge Lock** and **charge Unlock** are special features that have to be implemented by the go-kart manufacturer.

## 3.2 Preference

The remote control can be configured to suit your requirements and preferences. Press soft button 2 to change the preferences of the remote control.

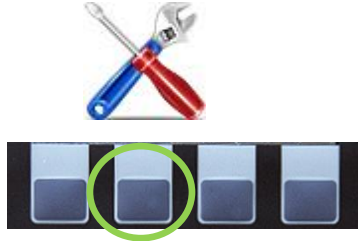


Figure 58 Preferences menu option

This will show a list of 15 available options.

Scroll up or down by pressing soft button 1 "Up" or soft button 2 "Down".



Figure 60 Up Down buttons



Figure 59 Left Right buttons

Alternatively the **LEFT** or **RIGHT** button can be used (buttons right next to the STOP button).

### 3.2.1 Stop or shift stop

All go-karts can be stopped by pressing **STOP** with or without **SHIFT** this will cause all engines to stop running.



#### IMPORTANT!

Pressing **STOP** on a track with fuel go-karts will shut down all engines. Engine restart is required.

Possible options are:

- Stop with Shift (default)
- Stop without Shift

### 3.2.2 Penalty time

The time that a go-kart is slowed down when given a penalty can be configured from this menu. The same menu is also accessible from the penalty menu itself.

Possible options are:

- 3 seconds
- 5 seconds
- 10 seconds (default)
- 20 seconds
- 30 seconds

### 3.2.3 Display brightness

The brightness of the LCD screen can be configured in this menu. Remember that a higher brightness will drain the batteries more quickly.

Possible options are:

- Maximum
- High (default)
- Medium
- Low

### 3.2.4 Display low brightness time

The display will dim if no buttons are pressed for a certain time. The time to dim can be configured with these settings. Lowering the active screen time will make the batteries last longer.

Possible options are:

- Always active (the screen will not dim)
- 10 seconds
- 30 seconds (default)
- 60 seconds

### 3.2.5 Power off time

The Xtra.Remote Control can power off itself to reduce battery usage. When connected with an USB cable to the power adaptor or PC the Xtra.Remote Control will always remain active.



**IMPORTANT!**

To respond quickly the remote should always be active/on during a heat or race.

Possible options are:

- Always active (the Xtra.Remote will not turn off automatically)
- 2 minutes
- 5 minutes
- 10 minutes
- 30 minutes (default)
- 60 minutes

### 3.2.6 Language

The Xtra.Remote Control supports multiple languages.

Possible options are:

- English (default)
- Nederlands
- Français
- Deutsch
- Italiano
- Español

### 3.2.7 Elektro / fuel

Both electro and fuel go-karts can be controlled with one Xtra.Remote Control. Please select the type of go-karts used on the active track. The Xtra.Remote Control now supports 8 SPD mode.



**IMPORTANT!**

Make sure your firmware corresponds with your Xtra.Transponders.  
CDI Transponders **do not work properly** when the remote is set to electro mode.

EV Transponders **do not work properly** when the remote is set to fuel mode.

EV 8 SPD mode **only works** with 8 SPD transponders.

The options are:

Fuel go-kart (default)



Electro go-kart



Electro go-kart 8 SPD



### 3.2.8 Track selection

Active tracks can be toggled by pressing the soft button below the corresponding track. It is possible to use the remote control on several circuits simultaneously. After changing the active tracks, press ENTER to confirm the changes. Changes can be undone by pressing the LEFT or RIGHT button.

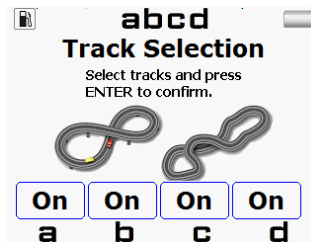


Figure 61 Track Selection menu



This functionality is useful if more go-karting tracks are located nearby.

The tracks are indicated with the characters **A**, **B**, **C** and **D**. Activated tracks are shown on the start screen.



Figure 62 Active track selection

### 3.2.9 Speed/ RPM settings for fuel go-karts

These settings are for fuel go-karts only. The standard RPM values can be modified to fit the customers or the layout of the track. All the SPD buttons can be adjusted to any RPM value between 0 and 8000.

To change the RPM of a SPD select the SPD and enter your preferred RPM. Press enter or confirm to save the changes.



When the RPM value is set to 0 it will act as a **STOP** button.

When the RPM value is set to 8000 or above it will automatically be set to unlimited.

The default speed limits are set to the following:

SPD1 – RPM 2100

SPD2 – RPM 3000

SPD2 – RPM 4000

SPD4 – RPM no limit

### 3.2.10 Edit default switch table

The edit default switch table will open the switch table menu. In the default switch table the switch table can be saved, see [chapter 3.2.11 Switch Table](#). As no communication has been made with any EV transponder it will show the default switch table.

### 3.2.11 Show commands from others

To see commands send by other Xtra.Remote Controls, Xtra.Minor Remotes, Xtra.Range Extenders or Xtra.Black Boxes enable the "Show commands from others" option. Commands will be displayed on the current Xtra.Remote Control.

Possible options are:

- Show Others
- Hide others (default)



#### **IMPORTANT!**

Keep the RPM settings on multiple remotes the same. Otherwise, the SPD icon displayed on the current remote could be different on another remote.

### 3.2.12 Protect advanced functions

The configuration menu can be protected with a PIN code. In that case, the PIN code must be entered before access to the configuration menu is granted. The default PIN code is **0000**. The PIN code can also be changed or disabled.

Select one of the options given:

- Disable protection
- Change PIN code/ Enable protection

If the "Disable protection" option is selected enter the current PIN code to disable the PIN code. Then a PIN code is no longer necessary.

If the "Change PIN code" option is selected, enter the new PIN code twice.

If the PIN code is disabled you can select the "Enable protection" and enter the PIN code twice to enable the PIN code.

### 3.2.13 Use penalties

If penalties are not be used, this function may be removed from the main menu.

Possible options are:

- Disable penalties (the penalty icon will disappear from the start screen)
- Enable penalties (default)

### 3.2.14 Use groups

If groups are not be used, this function may be removed from the main menu.

Possible options are:

- Disable groups (the group icon will disappear from the start screen)
- Enable groups (default)

### 3.2.15 Use sectors

If sectors are not be used, this function may be removed from the main menu.

Possible options are:

- Disable sectors (the sector icon will disappear from the start screen)
- Enable sectors (default)

### 3.2.16 Use lights

If no light control board is installed, this function may be removed from the main menu.

Possible options are:

- Disable lights (the light icon will disappear from the start screen)
- Enable lights (default)

### 3.2.17 Radio region

This option allows the user to set the radio region to make the device comply to local law.

Possible options are:

- General (default)
- South Korea (this will reduce the radio power output to  $\leq 3\text{mW}$ )

## 3.3 Advanced configuration

In the advanced configuration menu are three options available.

### 3.3.1 Find range extenders

The find range extender option will locate any Xtra.Range Extender within range. Once a range extender has been detected it will show the serial number on the display.

Selecting the range extender will show the current enabled/disabled tracks. The tracks can be enabled/disabled for the current selected range extender.

### 3.3.2 System information

The system information screen shows information about the Xtra.Remote Control. Information such as the serial number, hardware revision and software revision.



## 4 Technical specifications

Description	Min	Typical	Max	Unit
Operational temperature	-10	-	55	°C
Temperature charger	0	-	50	°C
Charge time	-	3	15	h
Input voltage USB [1]	4,7	5	5.25	VDC
Minimal input current	1A	-	-	VDC
Maximum range	-	-	100	m

[1] Minimal required for fast charge

### 4.1 Batteries

Only use rechargeable batteries of the type **NiMH!**

Do **NOT** use conventional batteries.

Do **NOT** use alkaline batteries.

Do **NOT** use Lithium batteries.

Do **NOT** use old and new batteries together.

Do **NOT** use batteries from different manufacturers together.



Batteries contain chemical substances. Treat old batteries as chemical waste and don't leave them in the vicinity of children.

### 4.2 USB cable

Use preferably the USB Cable delivered with the Xtra.Remote Control:

- USB A to USB mini
- cable length 0,5 meter



Use only a high quality and short cable. **Bad cables** can have **influence** on the **battery charge time**.

## 5 Support

For support, one can contact De Haardt's support department by email: [support@de-haardt.com](mailto:support@de-haardt.com).

### 5.1 Update firmware

Please follow these steps to update the Xtra.Remote Control with the latest firmware.

- 1) The first step to upgrading the Xtra.Remote Control Unit is removing the 2 rechargeable NiMH batteries type AA. To remove these batteries, open the cover by unscrewing the lid. Remove the batteries from the battery compartment.
- 2) While the remote is powered down, press and hold soft button 4.



Figure 63 Soft button 4

Connect the USB cable to the USB port on top of the Xtra.Remote Control unit and plug the other end into a PC.

The Xtra.Remote Control unit's display will flash a couple of times with different colours and after that a white screen with **Bootloader** will appear. Soft button 4 can be released now.

The Xtra.Remote Control is now in bootloader mode ready to receive its new firmware.

- 3) Before uploading new firmware the old one has to be deleted.  
Open the drive called "DE-HAARDT" and remove the file called **firmware.bin**.
- 4) To upload the new firmware simply copy the file called **remote\_control\_application.bin** to the drive called "DE-HAARDT" and wait for it to complete copying.
- 5) After the upload is complete do the following:  
Remove the USB cable from the USB port.  
Wait for 5 seconds  
Reinsert the USB cable

*Important: Do **NOT** press soft button 4 now!*

When you reinsert the USB cable the remote control should start as normal.  
Then go to Configuration -> Advanced configuration -> System information.  
The software version should match the newly supplied version.

### 5.2 Configure mini remote

See document "Configuring the mini.pdf" in combination with mini\_remote\_config\_installer.exe.  
Both can be found on the "De Haardt USB stick".