Remote Kart & Track Control
Xtra.Robust Xtra.Track Safety

the new standard

the **Xtra**.series
from the only original one

de Haardt
ELECTRONIC ENGINEERING

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Xtra.Robust Xtra.Track Safety
the new standard

De Haardt Electronic Engineering BV has developed its 2nd generation Remote Kart and Track Control system. This robust 2 way communication system has been developed with the practical feedback in mind we received from happy customers over the years.

Our Xtra.Remote Kart and Track Control system is a totally new design which uses the latest technology and is not just a 'modification' of our classic system. This has resulted in a very easy to use and innovative product which meets the necessary requirements for a rental karting track operator.

Xtra.Remote Control

With the portable and rechargeable Xtra.Remote Control track operators have full control over their karts and racing lights. Dedicated buttons on the keyboard allow for quick speed adjustments to preset levels for individuals, groups or all karts together. The speed limit can be adjusted easily with step-up and down buttons. The karts engines may be turned off completely. Penalties can be given to crazy drivers. This slows their karts down for some time after which the speed limitation is taken away automatically.

Reduced height antenna

Graphical display with backlight
• *User friendly graphical display*
• *Adjustable contrast and backlight*

Main Menu
📱 **Remote**
🏁 **Shutdown tp**

Brightness
○ **Bright**
◉ **Normal**
○ **Dark**
Exit

2-way radio communication system

Tracks
☑ Track A
☐ Track B
☐ Track C
☐ Track D

Control over racing lights
(e.g. start / stop & warning)

Full control over single, group or all karts

Multiple speed levels to choose from including complete engine shutdown

Membrane keyboard
• *Buttons provide tactile feedback*
• *Dust, moisture or even chemicals can not enter the unit through the keyboard*

Especially for the mechanics the Xtra.Remote Control shows engine total running time and real time tachometer on the graphical display. The modernly styled Xtra.Remote Control can be hooked up to a PC so computer programs* can control and monitor all activity on the track. New software versions can be simply uploaded without the need to return the unit to the factory.

Penalties can be given to drivers

Computer interface
• *Control karts with computer programs**
• *Easily install new software releases for Xtra.Remote Control and Xtra.Shutdown Transponder*
• *Monitor all activity of other Xtra.Kart and Track Control devices*

Accessories Xtra.Remote Control

Batteries

Serial cable

Carriage bag

Mains adapter

Xtra.Shutdown Transponder

Every kart to be controlled remotely must be equipped with an Xtra.Shutdown Transponder. Assembly is quite simple thanks to the V-shaped bottom which fits perfectly on both round and square frame tubes. Controlling may be done through individual kart, group of karts or all karts together. These numbers can be assigned by track operators using the Xtra.Remote Control. Multiple tracks can be controlled fully independently. Split tracks may be (re)combined to one single track with a few clicks on the Xtra.Remote Control. Because the Xtra.Shutdown Transponder operates without batteries, no charging is required prior to use.

The Xtra.Shutdown Transponder is available for TWIN engine karts also.

2-way radio communication system

The built in antenna gives ruggedness and prevents antenna damage easily caused by heavy vibrations or clumsy drivers.

Robust housing protects the inside electronics against heavy vibrations and other harsh conditions

The Xtra.Shutdown Transponder is controllable for an individual kart, a group of karts or all karts at the same time. Multiple tracks nearby can be controlled fully independently even when duplicate kart numbers are in use.

The enclosure sides are supported with tie-wrap feeds for better fixation and to prevent the unit from slipping off by vibrations

The Xtra.Shutdown Transponder does not contain nor require batteries. It comes fitted with a connector for a brake activated switch. If activated the Xtra.Shutdown transponder reduces the speed to idle.

Kart network port. For connecting (future) kart electronics to the Xtra.Shutdown Transponder easily with a single cable

The enclosure specially designed V-shape ensures stable fixation on both round and square frame tubes
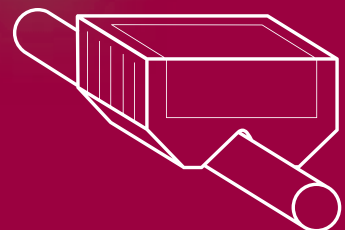
Accessories **Xtra.**Shutdown Transponder

Brake switch

Some of the Xtra.Shutdown Transponder features:
- *Tachometer*
- *Engine running timer*
- *Engine shutdown switch*
- *Max engine revolution limiter*

Xtra.Range Extender-Accesspoint

Use the Xtra.Range Extender-Accesspoint to cover hard-to-reach areas on the track. Hard-to-reach areas may be caused by distance (track size) or by protruding objects like buildings and trees (blind spots) or by interference like power lines running close by.

Because of its forwarding / repeating nature, placing several Xtra.Range Extender-Accesspoints spread evenly over the circuit will maximize reliability.

The unit provides an access point for a personal computer as well. Hook it up through the serial port and control /monitor karts or entire track with computer programs*. There is no need to return the unit to the factory for new software releases, uploading new software from personal computer to Xtra. Range Extender-Accesspoint is easy.

Xtra.Range Extender may be configured and checked remotely using the Xtra.Remote Control

Enclosed in a robust die-cast IP65 housing, designed to endure the worst outdoor conditions

Metal cable glands

Dual power supply. Operates on either mains or external DC power supply like a battery or solar panel system

Flexible antenna

Upgradeable with Xtra.Light Control board

Simply remove design covers to mount the unit without opening the enclosure

Enclosure features threaded holes for easy and secure wiring of racing lights through cable glands. Provided with blanking plugs

2-way radio communication system

Waterproof Computer interface
- Control and monitor karts with computer programs*
- Easily install new software releases for Xtra.Range Extender-Accesspoint
- Monitor activity of all Xtra.Kart and Track Control devices

Xtra.Light Controlboard

The Xtra.Range Extender-Accesspoint is upgradable with an Xtra.Light Control board. This board adds three mains switches and four low-voltage signal inputs to the Xtra.Range Extender-Accesspoint. Hook up green start, red stop and yellow warning lights and control these with an input signal or wirelessly using the Xtra.Remote Control and / or personal computer. With advanced system configuration the signal inputs may be assigned to other functions as well.
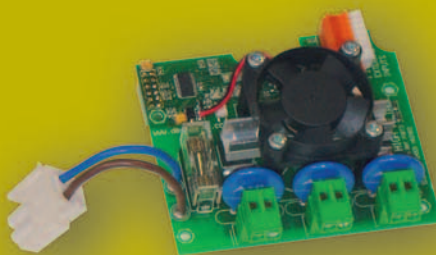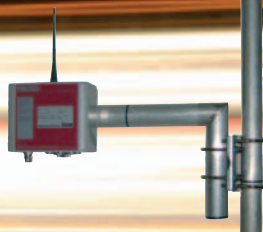
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Accessories **Xtra.**RangeExtender-Accesspoint

Wall mounting fixture　　Pole mounting fixture　　Serial cable

* third party

Technical specifications

Xtra.Remote Control

Dimensions	LxWxT = 172x77x25 mm (without antenna)
Maximum number of karts	Approx. 1.000.000
	245 custom assignable (short) kart numbers
Keyboard	Membrane with tactile feedback
Display	Graphic LCD, with backlight
Radio technology	2 way communication
Buzzer	Integrated
Power supply	mains adapter
	batteries
Batteries	2 x high capacity rechargeable Ni-MH, size AA
Battery charger	Integrated
PC connection	RS-232 port
Humidity	Max 85% relative
Traffic, Racelight Control	Yes
Default Speed 1 limit	2100 RPM
Default Speed 2 limit	3000 RPM
Default Speed 3 limit	4000 RPM
Default Speed 4 limit	Unlimited
Number of tracks to be controlled	4
Brightness control	Yes, multiple levels
Backlight modes	10s, 30s, off
Power save	Automatic 30s, 1m, 5m, off
Diagnostics functions	Available
Stepwise speed control range	2000 ... 6000 RPM and unlimited
Brake switch speed control range	1600 ... 6500 RPM and unlimited
Maximum speed limiter control range	1600 ... 6500 RPM and unlimited
Penalties	4 penalty times can be setup.
	Penalty speed limit can be selected
	from the 4 speed levels.
Software upgradable	Yes
Carriage bag	Available
Weight	Approx. 290 grams
Temperature range	-10 ... +55 Degrees Celcius

Xtra.(Twin)Shutdown Transponder

Dimensions	LxWxT = 76x67x39.5 mm
Antenna	Integrated
Maximum number of karts	Approx. 1.000.000
	245 custom assignable (short) kart numbers
Maximum number of groups	5 custom assignable group numbers
Maximum number of tracks	4 custom selectable
Engine shut down	Yes
Operating principle	Spark cancellation
Speed operating range	1600 – 6500 RPM
Radio technology	2 way communication
Brake switch	Limits the speed to custom preset value
	when the brake switch is activated
Network	By means of the network connection, (future)
	units on karts can mutually communicate
Tachometer	Real time readable with the Xtra.Remote Control
Engine running time counter	Real time readable with the Xtra.Remote Control
Motor type	Honda GX160/GX200 and compatible
Kart type	Single engine & Twin engine versions available
Enclosure	Mountable on round and square tubes,
	supported with tie-wrap feeds.
Weight	Approx. 200 grams
Temperature range	-10 ... +55 Degrees Celsius

Xtra.Light Controlboard

Outputs	3 channels (Mains switches)
Output light patterns	Continuously on
	Continuously off
	Blinking on/off (Blinking rate 20 ... 1000 mSec)
	Configurable for each output channel individually
Maximum total output current	6.3 Amp
Maximum individual output current	4 Amp
Inputs	4 galvanicly isolated 12 volt inputs.
	Both ac and dc voltages can be used.
Input triggers	Rising edge
	Falling edge
	Positive level
	Negative level
Fuse	6.3 Amp / Slow (20mm)
Power source	Internally from
	Xtra.Range Extender-Accesspoint.
Temperature range	-10 ... + 40 Degrees Celsius
Weight	Approx. 100 grams

Xtra.Range Extender-Accesspoint

Dimensions	LxWxT = 180 x148x91 mm
	(without antenna)
Power supply	230 V ac (+10 ... -15%) , 50-60 Hz 4.5 ... 15V dc
Radio technology	2 way
Enclosure	Die-cast IP65
Range extender	Enabled / disabled
	4 Tracks, can be individually enabled / disabled
Warning messages	Low battery detect warning
Access point interface	RS-232
Rated temperature range	-10 ... 50 Degrees
	(without light control board installed)
	-10 ... 40 Degrees (with light control
	board installed)
Maximum mains current	6.3 Amp with light control board installed
	0.1 Amp whithout light control board installed
Maximum current external dc port	250 mA
Software upgradable	Yes
Weight	Approx. 1650 grams

Other systems by de Haardt Electronic Engineering BV

- *Automatic speed reduction in the pit lane area*
- *Remote Kart and Track control for electric go-karts*
  (PERMTRAC, ZAPI, CURTIS, ASMO, CMP, others)
- *Customized systems*

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