

# Product Overview



# DARK DEER TIMERS

Simple  
Affordable  
Functional

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# Dark Deer Timers

Affordable and Easy to Use – From just £980<sub>+VAT</sub>



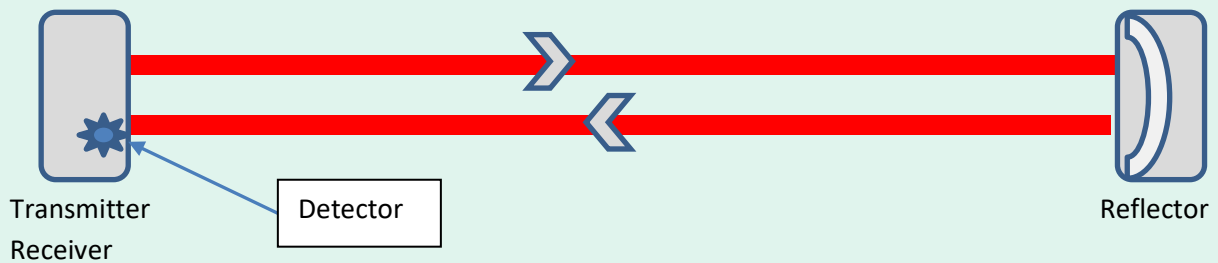
**For the first time, yards both large and small can afford to hold Show Jumping events which are accurately timed. Apart from their low cost, Dark Deer Timers employ a novel gate technology which makes alignment extraordinarily quick even when the gate units are 50 metres apart. The control box is very simple with clearly labelled buttons. Add an external display so the audience can share the excitement of a jump-off.**

- The package includes a control box and two sets of gates.
- It is VERY small and VERY light but accurate to 1/100<sup>th</sup> second and with all the features you need.
- Everything is wireless so there are no cables between the gate units, the control box and the display.
- The maximum distance between the gates and the control box is 120m – extendable to over 300m with the external antenna; the distance between the two gate units may be up to 50m.
- Modern Lithium Ion batteries are used giving an effective usage time of 48 hours and they can be charged with a USB cable from a USB charge station, a computer or a car. All gate units have a battery condition indicator.
- The control box can be connected to your PA system via a jack plug to sound the bell.
- The system can work in tables A and C, single phase or two phase mode with an optional 45 second countdown.
- Time Faults are automatically calculated for both BS and FEI rules and for single and two phase competitions.
- We can supply an 8 channel USB charging unit and standard tripods.
- A waterproof wireless 7 colour LED Matrix Display with 11" characters visible from a distance of 100m in bright sunlight is available at just £925.
- There are 3 different frequency channels to allow up to 3 sets to be used concurrently in close proximity.
- You can "cross the beams" therefore avoiding all the problems with course design when this is not possible.
- Our Timers have been used as the official timing provider at the Pony Club Inter-Branch, the Blair International Horse Trials and the British Showjumping National Championship at Stoneleigh.
- ❖ "I was very impressed, such an easy set of equipment to use & very user friendly. An excellent set of timing equipment that is sensibly priced & I would happily recommend to anyone buying". Diane Beaumont – BS Level 4 (Median) Course Designer
- ❖ "We used Dark Deer timing in the main International arena at Blair. The Timing was Innovative, Professional and very easy to set up." Colin Hexley BS Course Designer for Blair Athol International Horse Trials.
- ❖ "Thought it was very good, would work with it happily anytime". Doreen Blackie Level 3 (2\*) BS Judge
- ❖ "Having used Dark Deer Timing for 2 days of Showjumping and 1 day timing Eventing, I found it very easy to set up and the working of it to be very reliable and would highly recommend the set." John Ormiston Level 4 (Median) Course Designer, Level 2 (1\*) Judge

# The Gates

Dark Deer Timers are based on the latest infra-red technology which makes them accurate and very quick and easy to align.

## Traditional Systems



Most of the timers use a transmitter to send an infra-red beam across the horses path to a reflector as shown in the diagram above. The reflector sends the beam back to a detector in the transmitter box. When the horse breaks the beam, the detector sends a signal to the control unit. The boxes have to be aligned so that the narrow beam hits the detector exactly after being reflected. It is like trying to focus a light onto a small spot with a mirror but, because it is infra-red, you cannot see the light. Tricky, especially if the mirror is 30 metres from the spot you are trying to hit! It is not surprising that people can take up to 15 minutes trying to align these devices, they are also susceptible to wind and small disturbances.

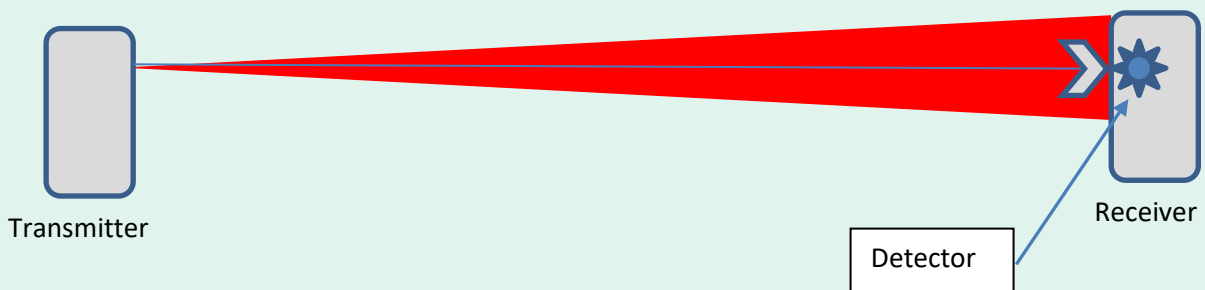
## Dark Deer System



Transmitter



Receiver



As shown in the pictures and the diagram above, Dark Deer Timers have a separate transmitter and receiver; there is no reflector. Furthermore, the transmitter sends out an infra-red beam which widens with distance, at 20 metres the cone is 1 metre wide. All you have to do is place the receiver within the "cone" of the beam and the alignment is done. At a distance of 20 metres this took 4 seconds and at 40 metres it took 20 seconds. Within the cone, the detector in the receiver responds to just that very narrow part of the beam

that hits it directly shown by the arrowed line in the diagram, so there is no loss of accuracy. The system will beep if it is not aligned and send a message that is displayed on the judge's control panel.

Is there a downside? Not really, but the receiver as well as the transmitter contains 2 lithium batteries which have to be charged but being Lithium Ion they last for 48 hours between charges. All our units, gates and controllers are charged through a mini-usb port for which we can supply a suitable charger.

# The Control Panel

Dark Deer Timers are easy to use but do not lack functionality. The control panel has been designed by a specialist in User Interfaces so that people can learn to use it in 5 minutes and errors during operation are minimised.



It is no use making the gates easy to use if the control panel looks like the cockpit of a jumbo jet. Ours contains 8 colour coded buttons and a couple of switches which do the following:

- 1) **Last Rider:** When pressed this recovers and displays the times for the previous rider. It is useful if you forget to write the time down before pressing “Start/Stop” which clears the display.
- 2) **Bell:** This button sounds a tone for 2 seconds which is sent to your PA system. The control box has a standard jack plug for making the connection.
- 3) **Config:** This button allows you to configure the system, in particular:
  - a. The brightness of the external display,
  - b. the competition type – A7, single or two phase with or without a countdown
  - c. the parameters for recording time faults, i.e. the allowed time and the number seconds (or parts thereof) for each additional fault.
  - d. Setting the channel number

The functionality is implemented in software so it can be upgraded if necessary without any additional hardware costs.

- 4) **Reset:** This resets the system and makes it ready to receive a new rider. You press this button at the start of each session when the display will show “Waiting for Start”

- 5) **Start/Stop:** When pressed this starts a session and begins the countdown. If pressed during a session it stops the clock. When pressed again, the clock starts from where it left off. This is used to pause the timer while a fence is being rebuilt for example.
- 6) **Arm:** This button “arms” the next gate in the process. This means that when the beam is broken, the clock will start or stop depending on where the gate is in the sequence. The system “knows” the sequence of steps for A7, single and two phase events:
  - a. The operator presses “Start/Stop” and “Bell” when the rider enters the arena and everything is ready. The bell sounds and the display shows “New Rider”. As the rider approaches the first gate, the “Arm” button is pressed and the display shows “Waiting – S Gate”. In addition, if a 45 second countdown was chosen, the display will show this countdown. If the countdown gets to zero, then the system will display “Counting” and the timing will start. Otherwise, if the rider goes through the start gate before the end of the 45 second countdown, then the timing starts when the beam is broken.
  - b. When the rider is approaching the finish gate, the operator presses “Arm” button again and the display shows “Waiting – F Gate”. When the finish gate beam is broken, the timing stops and the elapsed time is displayed.

For a single or two phase event, a third set of gates is placed at the end of stage 1 and the beginning of stage 2. When this stage 1 finish gate is crossed, the time for the first phase is displayed on the control panel and the timer starts timing the second phase – the display shows “Counting” again. When the rider approaches the last fence in the second phase, the operator presses the “Arm” button again and the display changes to “Waiting – F2 Gate”. When the rider crosses the beam after the final fence, the timer stops and displays the time for the second phase underneath that for the first. The display changes to “Waiting – Start”.

The difference between one and two phase is that in two phase any faults that are accrued in stage 1 disqualify the rider from stage 2. As the system knows about time faults, it will stop at the end of stage 1 automatically if there are time faults in stage 1. If there are other types of fault such as a knock down, then the judge presses “Reset” at the end of phase 1 and phase 2 is then cancelled. In a single phase contest, the rider does both phases regardless of any faults in the first phase.

This “Arm” button together with the “intelligence” built into the control panel software, avoids having a proliferation of buttons and makes the whole system easy to use. All the operator needs to do after setting the configuration, is to press “Start/Stop” and then “Arm” before each gate until the round is complete. When finished, pressing “Reset” again, clears all the displays and primes the system for the next round.

- 7) **Disarm:** Pressing this button resets an armed gate. It is not used often but can be useful when a rider goes through the start gates but does not start the round or if the previous rider has not left the arena and passes through the start gates. Disarming the gates stops the clock starting when the beam is broken.
- 8) **Gate Lights:** These lights are illuminated when a gate is armed or when the gates have lost alignment. When the latter happens, a message appears on the CP display and the lights above the offending gate are illuminated.
- 9) **Memory:** This is the “Oops” button and is used when the judge has forgotten to arm the gate before the rider passes through it. If this button is pressed up to 10 seconds after the rider has broken the

beam, the system will behave as if the gate had been armed, e.g. If the rider goes through the final finish gate while it is unarmed, the clock will continue counting but if the “Memory” button is pressed within 10 seconds, the clock will stop and display the time when the beam was broken.

**10) Interface Connections:** On the back of the Control Panel (not shown in the picture) are two connectors.

- a. The first is a jack socket for connecting to a PA system or amplifier. This is the connection for the bell. Adaptors can be provided to convert the connection into a mini jack socket or an XLR connection.
- b. The final connection is a “mini-usb” connection which is used for both charging the unit and for downloading new versions of the system software.

The control panel can be up to 120 metres from the gates and does need a clear line of sight. The unit is very light and portable as it does not need to be plugged into the mains or connected to a large battery. You can walk around the arena with it and check that the breaking the beams is recorded correctly.



**BS National Championship, Stoneleigh**

# Tripods

You can use any tripods which have a standard camera fitting but we can supply these if needed. We recommend tripods which contain a hook on which you can place a bag of water or sand to keep it steady if there are very high winds. This is an alternative to using very heavy specialised steel tripods which are expensive and you have to carry the weight even on calm days. We supply a range of tripods though you can purchase these yourself if you so wish. The tripod shown on the left extends to 50" and is very light to



handle. The one on the right is typical of a stronger tripod and should be chosen if your system is going to be used frequently and will be subject to rough handling; it costs £60.

The timer box fits to the tripod using a standard camera fitting, i.e. per ISO 1222:2010, the current tripod screw thread standard for attaching the camera calls for a 1/4-20 UNC thread. Most tripods conform to this standard but some use a different thread size so be careful or ensure you also purchase an adaptor.



# The 8 Channel USB Charger

The USB charger is shown below. It connects to the heads with cables having a USB “A” connection on one end and a “Mini USB” connection on the other as shown below. The model is a YIKESHU® 8-Port 40W 8A Smart USB charger and costs £20 from Amazon. The cables are £2.79 each and you need 7 if you have 3 sets of gates and 5 if you have 4 sets. We can supply them or you can order direct from Amazon. Note that you can use other USB chargers – there are plenty on the market.



# External Display

Our external display is comprised of panels each 32cm x 16cm (12" x 6") and the standard configuration is 3 panels wide by 2 panels high measuring 96cm x 32cm (3' x 1'). However, you can order whatever size you require (within reason!) and as the panels contain a matrix of LED's, you can display numbers, letters and even simple graphics. The standard display colour is red but you can choose from red, yellow, magenta, green, blue, white and cyan using a button on the side of the display.

The standard configuration has 28cm (11") high characters but the larger displays can display much bigger characters if needed. The standard configuration is ideal for arenas up to 100 metres in length.



The display is waterproof and strongly made. It is powered either by a mains power supply if you wish to attach it permanently or by 12V DC from a leisure battery (shown above).

Very important is the fact that it is wireless so you can move it around the arena as long as it is within 150 metres from the control panel. You can also use multiple displays as they will all receive the same wireless signal and therefore be automatically synchronised.

The characters are very bright and can be seen clearly in direct sun-light with a 160° display angle – so it can be seen by everyone around the arena apart from those who are level with it – and if this is a problem you can put in a second display – just place it in the arena and set it to the same radio channel!

A larger display is shown below. Note that the time is displayed in a large font and the rider and horse's name are shown below in different colours. This display has been mounted in a frame but could equally well be suspended against a wall. It measures 128cm x 96 cm (4' x 3') and is clearly visible at well over 100 metres.

We can supply software for these larger displays. It runs on a laptop and allows the judge to show the rider and horse being judged.

Alternatively we can supply "Show Manager", our own integrated software which manages, competition entry, collecting ring, judging, results, forms for BS and integrates with the timing and the small and large displays.



# Prices and Terms & Conditions

The prices shown below are subject to change. While we try and keep them stable, we are at the mercy of commodity and labour costs.

Description	Price
Single phase system comprising one control panel and two sets of gates	£950 + VAT + P&P
A third set of gates to enable two phase competitions	£300 + VAT + P&P
An Yikeshu 8 Port Dedicated USB Charging Station with USB Cables	£50 + VAT + P&P
Tripods - 3 Way Pan & Tilt head With Free Carry Case	£20 - £45 + VAT + P&P
12V DC to 240V AC Inverter. 300 Watt	£50 + VAT + P&P
External Antennae	£50 + VAT + P&P

Description	Size	Price
LED Display: Basic, 7 colours	96cm x 32 cm – 3' x 1'	£925 + VAT + P&P
LED Display: Large, 7 Colours	128cm x 96cm – 4' x 3'	£2,700 + VAT + P&P

We can produce LED Displays in bespoke sizes – please ask for a quotation.

All items are covered by a one year parts and labour guarantee. Items must be returned to Dark Deer Croft for repair or replacement.

VAT is charged at the current rate.

Postage and Packing are charged separately.

We build products to order and ask for payment with order.