



The **UltraRad** Radio Transmitter Model **UTX1** is designed to be used with any **UltraRad** radio receiver and battery electric vehicle controller.

It is not suitable for use with controllers for live steam vehicles, for which transmitter model **UTX2** is required.

It incorporates one analogue speed channel, one digital forward / stop / reverse channel and two digital auxiliary channels for the control of horns and lights.

Each transmitter is coded with a unique serial number which permits it to be locked to one or more specific receivers and controllers.

It complies fully with all UK legislation for licence free operation.

### Specification

Frequency	434.20 MHz
Radiated Power	+10 dBm [10 mW]
Modulation	Frequency Modulation
Duty Cycle	9% maximum
Range	Up to 30 metres with <b>URX1</b> receiver, in a normal model railway or garden environment
Size	111mm x 66mm x 50mm
Weight	150g
Batteries	2 x 1.5 V AA cells
Battery Life	In excess of 100 hours in normal operation

## Operation

Data is transmitted in packets, approximately 26 ms long, which incorporate details of all analogue and digital channel settings, the unique serial number of the transmitter and checksum data to permit the data integrity to be verified by the receiver.

Normally, a new data packet is transmitted approximately once every second but, in addition, an immediate transmission is made each time the user makes a change to any channel setting, up to a maximum rate of one packet every 300 milliseconds.

Each time a new data packet is transmitted, the **Transmit** indicator flashes once.

A receiver and associated controller will respond only to transmissions from one specific transmitter, to whose serial number they have been locked.

Multiple transmitters and associated receivers/controllers may be operated in close proximity at the same time without mutual interference.

If the direction switch is set to **Stop**, the transmitted speed level is set to **zero**, irrespective of the **speed control** setting.

## Batteries

The **UTX1** is designed to operate from 3V battery supplies, using two 1.5V AA primary cells mounted within the case. Operation from rechargeable cells is not permitted, as these only provide a voltage of 1.2V per cell.

In normal operation, battery life is in excess of 100 hours continuous operation.

To change batteries, proceed as follows:

- 1 Remove the four case fixing screws on the rear of the case.
- 2 Carefully separate the two halves of the case, hinging about the left hand vertical side, taking care not to strain the cable harness connecting the front panel.
- 3 Locate the battery holder at the lower end of the case rear.



- 4 Carefully remove the old batteries, and replace with two new 1.5 V size AA primary [non-rechargeable ] cells, checking that you have installed them with the correct polarity.
- 5 Refit the battery holder in the case as shown in the illustration, re-assemble the front panel to the case rear and finally refit the four fixing screws.

## ***Digital Auxiliary Channels***

The **Aux 1** and **Aux 2** controls of the **UTX1** function only when used with a controller Model **URC2**, which is equipped with auxiliary outputs. When used with a Model **URC1** controller, they perform no function.

## **Other Timpdon UltraRad Radio Control Products**

### **Transmitters**

- Model **UTX2**                      Primarily for use with live steam vehicle controllers Models **URC3** and **URC4**. Incorporates reverser trim and servo programming functions.  
Also suitable for use with Model **URC1** and **URC2** controllers.
- Model **UTX3**                      Multi-channel version of UTX2, permitting user switched control of up to ten different vehicles.

### **Receivers**

- Model **URX1**                      Compatible with all **UltraRad** transmitters

### **Controllers**

- Model **URC1**                      For battery electric vehicles  
Bi-directional PWM speed controller
- Model **URC2**                      For battery electric vehicles  
Bi-directional PWM speed controller  
Two digital auxiliary channels – for lights and horn
- Model **URC3**                      For live steam vehicles with separate regulator and reverser servos  
Three servo outputs
- Regulator
  - Reverser
  - Auxiliary- for steam whistle
- One digital auxiliary channel – for lights
- Model **URC4**                      For live steam vehicles with combined regulator and reverser servo  
Two servo outputs
- Regulator / Reverser
  - Auxiliary – for steam whistle
- One digital auxiliary channel – for lights
- Model **URC5**                      For battery electric vehicles fitted with external third party ESC  
Requires ESC with BEC  
Directional forward/reverse lighting outputs  
Additional auxiliary output for horn