Description of the EDiT iD Race Reader

1 Introduction

The EDiT iD race reader can securely read and identify RFID tags applied to moving animals. These tags may be either FDX or HDX ISO 11784 / ISO 11785 compliant tags, or tags known as industrial tags.

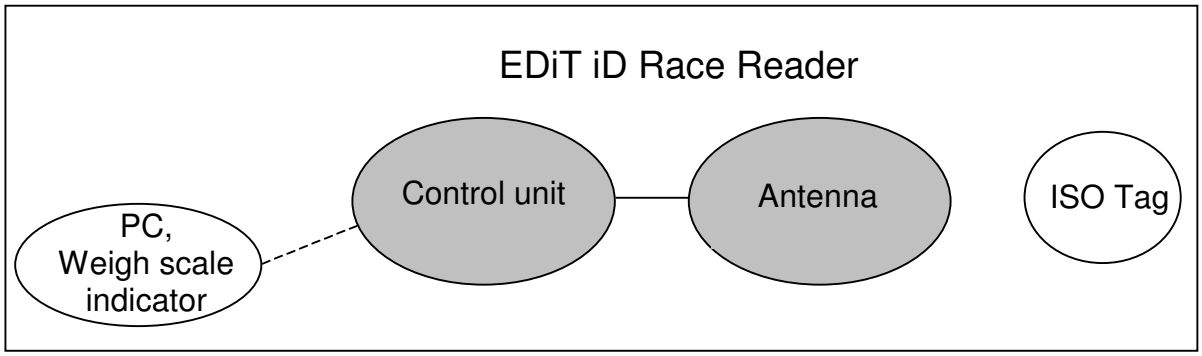

Figure 1: EDiT iD race reader diagram

Although the Race reader control unit and the antenna are separate units, they always operate together. The antenna is the load driven by the control unit. The race reader control unit is designed solely for the use with the EDiT antenna.

The control unit activates the interrogation field of RFID tags via an antenna, receives and decodes the response and also transfers the received data into a weigh scale indicator or a computer if desired by the operator.

The ISO tag is available from a number of third party sources.

2 Control unit

The control unit circuit consists of the following:

- Transmitter with auto tune capability (transmits on 134.2 kHz)
- Transmitted signal generator (gated carrier)
- HDX receiver and discriminator
- FDX receiver and demodulator
- Decoder and control circuitry
- Regulated power supply

- External interface and interconnections to supporting circuitry
    - 1 RSR232 connection for communication to PC and third party equipment (e.g. weigh scale indicator)
    - 2 antenna connections
    - 12VDC power connection from battery

The control unit is powered using an external lead acid battery in an environment where AC mains would not be available.

3 EDiT iD Antenna

The EDiT iD antenna is 840 x 640 x 25 mm in size. During operation, the antenna is connected to port ANTENNA 1 of the control unit. The antenna connectors on the control unit would be classed as being unique and cannot be used with a standard antenna jack or electrical connector.

The EDiT iD antenna is strictly speaking an induction loop with two turns of centre-tapped wire. The centre-tap of the coil is connected to ground. The antenna is therefore balanced.

Capacitors are connected in parallel across the coil to achieve resonance. The antenna resonates at 134.2 kHz.