



Key Features

- Compliant with USA, European, Australian, and RSA spectrum allocations.
- Robust anti-collision protocol (up to 120 tags simultaneously)
- Simple to use – only one ON/OFF switch for all systems
- Real Time Clock
- Valid tag read and status indicators
- Battery management circuit: beeps on low voltage, or incorrect input polarity, charge level indicator
- Power input connector for 12V DC external supply
- Automatic antenna tuning, tunes out environmental influences—can be manually invoked
- Connects to 4 (2 x 1 m) antenna mats
- Range 0.6 m using STK shoe tag (57 x 43 mm)
- Tag data stored on internal flash drive (with battery backup); storage capacity > 400,000 tag reads
- Ethernet port for computer connection; WiFi or RS485 optional
- DSP enhanced receivers (future)
- Can store data from a single STK Lite Reader

IP-X DF Long Range Sport Time-Keeping Reader—Elite

Sport Time-Keeping requires reliable medium range reading of light-weight tags in large numbers, the ability to read many tags simultaneously as participants crowd past the finish line, and the use of robust weather-proof equipment that can operate in RF-unfriendly conditions. The IPICO Dual Frequency technology is ideally suited to this application, combining the benefits of low frequency signals for penetration through “lossy” substances, and the high data through-put usually associated with HF or UHF systems, so that it can provide timing accuracy and avoid tag data being lost due to over-congestion.

Being able to operate independently is essential, so the reader is powered by an internal rechargeable battery, and contains a flash drive for storage of tag numbers and times. These can be uploaded to a computer, or remotely accessed if the reader is connected to a network. Four antenna mats can be connected, allowing an 8-meter timing line to be realised. Several tags are available for STK use, including a shoe tag, number plate or bike tag, and an ankle tag is in development.

Item	Specification
Power requirements	12 V DC, 3 A (Internal battery capacity = 17 A-h, gives 5 hours continuous operation)
Antenna type	2 x 1 m flexible mat on ground surface, Reader connects to 4 mats
Operating frequencies	125 kHz transmit, 6.8 MHz receive
Real Time Clock	Time set by PC application and Ethernet connection
Communications	Ethernet port for setup and data upload, RS485 for receiving data from STK Lite reader
Data output, storage	“Concentrator Unit”, stores data on 256 MB flash drive, holds more than 400,000 tag reads. Data can be uploaded via Ethernet port. Tag data is output immediately. Tags are read and CRC verified
Read performance	0.6 m range with 57 x 43 mm STK shoe tag, max tag speed 10 m/sec
Controls	ON/OFF switch, manual tune push button
Indicators (LEDs unless otherwise indicated)	Power supply indicator LEDs: Battery voltage, +5 V, Concentrator, TX units, RX units, Input 12 V Battery level - High, Medium, Low 12 V supply voltmeter Tuning (TXA and TXB) - High, Medium, Low (each monitors 2 antennas) CPU activity - 2 flashes/sec indicates correct operation of CPU Tag read - (RXA, RXB) Flashes when tag is read RX communications fault detected Network activity - flashes when Ethernet data is detected Concentrator activity - flashes when data is written to flash drive Buzzer - beeps when valid tag is read (also warns of incorrect external power supply polarity)
Electrical connections	12 V external input, 12 V auxiliary output Antenna mat connectors: TXA, TXB; RXA, RXB colour coded connectors Ethernet port For factory setup only: RS232, USB, Console ports
Physical	Aluminium covered plywood case. Dimensions: 285 mm H x 325 mm W x 370 mm L. Weight: 18 kg. Vented

Order Information	Product Code	Description
DF Long Range STK Elite Reader RO	IP3909	IP-X DFRDR-LR-STK-EL-RO