

TimeIt record transfer protocol version 1.0 specification

Initial draft, 1st May 2008

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Preface

This document provides a specification for the text-based protocol used in the TimeIt® lines of products from Eleiko Sport AB in Sweden. These products are used for timing of sport activities and provides a serial port for downloading the results to a computer with a standard EIA/TIA-232 compatible serial port. A small executable program exists for this purpose as well as an extended Microsoft® Excel® spreadsheet which includes program codes to facilitate direct download and presentation of the data. Both these software solutions require Microsoft® Windows® in order to operate.

Protocol description

This section explains the technical details of the protocol. This includes the low-level data format used for the information exchange as well as details on the exchange handshaking.

Transfer procedure

Host computer opens serial port.

User presses the PRINT button on the TimeIt device.

TimeIt device sends TRTP:1.0;

Host computer acknowledges with RESP:OK;

TimeIt device sends RECORDS:2;

Host computer acknowledges with RESP:OK;

TimeIt device sends PLAYERID:1;

TimeIt device sends TESTID:1;

TimeIt device sends TYPE:SW;

TimeIt device sends DATE:20080501123401;

TimeIt device sends RESULTS:00003510;

TimeIt device sends a \$ to mark the end of record.

Host computer acknowledges with RESP:OK;

TimeIt device sends PLAYERID:1;

TimeIt device sends TESTID:2;

TimeIt device sends TYPE:SW;

TimeIt device sends DATE:20080501123401;

TimeIt device sends RESULTS:00003001,0000350214;

TimeIt device sends a \$ to mark the end of record.

TimeIt device sends a @ to mark end of transmission

Host computer acknowledges with RESP:OK;

Host computer closes serial port.

TimeIt device indicates successful transmission to user and deactivates serial port.

Header

The first message sent between the units originates from the TimeIt® unit and is a header with which identifies the data as TRTP along with a version number for the protocol used. This allows the host computer to identify which protocol is in use if newer versions is later added to the products.

Name	Type	Constraints
TRTP	Decimal integer value	Must be equal to or greater than 1.0.

The header specifies the protocol version as a two-part decimal integer number separated by a period. This corresponds to the major and minor revision of the protocol. This document describes version 1.0 of the protocol, and thus a header will look like this:

Example: TRTP:1.0;

This identifies the data as TRTP protocol version 1.0.

Record

An entity representing the results of an individual test. It has the following fields.

Name	Type	Constraints
PLAYERID	Decimal integer	0-255
TESTID	Decimal integer	0-65536
TYPE	String constant	SS, SW, SR, SI, SM, JS, JM
DATE	Decimal integer string	Fixed length, 14 digits.
RESULTS	Comma-separated decimal integer string	Variable length, see details below.

PLAYERID This integer value specifies which player performed the test that this record describes. The mapping of names to player ID-numbers is done on the computer software. The user is responsible for assigning the correct player ID when executing a test on a player.

TESTID An integer identifying the test uniquely in the current dataset. This value is reset between each transfer from the TimeIt® device, so the user must be careful when merging result sets so that they do not overlap.

TYPE The type of test performed. This field has a number of distinct values.

SS – Sprint test an infrared sensor for start.
 SW – Sprint test using a special start switch/pedal.
 SR – Sprint test using a randomly-timed start signal.
 SI – Sprint test using a user-generated audio signal.
 SM – Sprint test with multiple runs.
 JS – Jump test, single jump.
 JM – Jump test, multiple jumps.

DATE A timestamp indicating when the test was started. It is encoded as a decimal text string of 14 characters in length. The resolution is down to one tenth of a second (just like a commercial stopwatch). The first four digits specifies the year, including the century. Then comes the month (two digits) and the day of the month (another two digits). After that comes the hours, minutes and seconds, all as two digits. 14 digits in total.

RESULTS Time results, basically high-resolution timestamps that gets added whenever a sensor gets triggered