ノルウェーEMIT 社製　オリエンテーリング用機器の説明

以下に EMIT 社の製品説明をさせていただきます。ノルウェーEMIT 社の機器は、オリエンテーリングと呼ばれるスポーツで、主に計時を行う器具です。

オリエンテーリング

野山をコンパス地図だけを頼りに、決められたチェックポイント（以下コントロール）を決められた順番にできるだけ早く廻ることを競う競技です。

コントロールユニット（Control Unit, Online Control Unit）　Page2-3

コントロールに設置され、競技者が通過したことを電子的に記録する装置。
オンラインコントロールは、パソコンに接続が可能なコントロール。

タッチフリーコントロールユニット（Touch Free Control Unit）Page4-5

物理的な接触なしに､競技者は１m以内を通過するだけでＥカードへ通過証明を記録することのできるコントロールユニット。

Ｅカード（e-card Ver2, Ver3）Page6-8

競技者は、Ｅカードを持って競技します。コントロールに到達した際に、電子的な通過証明と時刻が記録されます。Ver3 はさらに液晶に時刻が表示されます。

スタートユニット Page9

スタートに設置されるコントロールユニット。

リーディングユニット Page10

ゴールでコンピュータに競技者の記録をＥカードから読み出す装置。

ミニタイムレコーダ Ver4（MTR4）またはタイムレコーダ（ETR3）　Page11

Ｅカードに記録されたデータを保存したり、プリンタに出力する簡易装置。

ジョーカーコントロールユニット(Joker control) Page11

同一種類のコントロールユニットを任意に複製できるコントロールユニット。

ラジオコントロールユニット(Radio control)　Page11

無線でデータ転送可能なオンラインコントロールユニット。

ミニタイムレコーダ用プリンタ（EPT-3Printer）　Page12

Ｅカードに記録されたデータをプリンタに出力する簡易装置。

RTR2 フィニッシュクロック（RTR2）Page13-14

ゴールにて手動でゴール時刻を計時するゴールタイマー。

バックアップラベル Page15

機器の故障時に、紙にあけられたパンチ穴で目視で通過証明を確認するためのラベル紙。

ノルウェーEMIT 社のホームページに記載されている資料を添付いたします。以上

Return

Electronic Punching and Timing system

Product information sheet - Control units

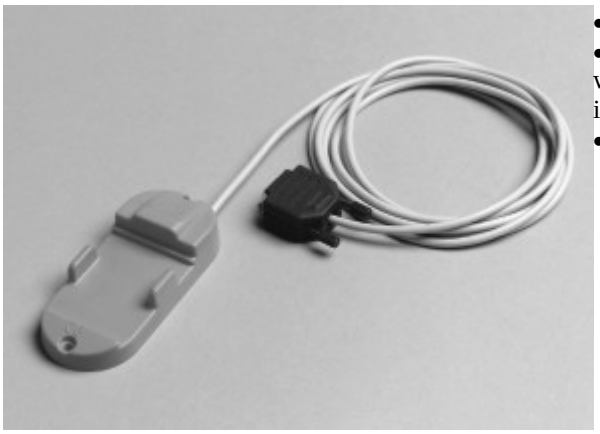
Control unit - electronic unit at the control which transfers it's identity code to the e-card when the e-card is placed on the control unit. Control codes from 31 to 176 (exept 66, 68, 86, 89, 98, 99) exist. As part of the back-up system each control unit is equipped whith a small spike which will place a mark in the back-up label. 140 spike positions exist each corresponding to the electronic code. This way it is also possible manually to check that the runner has been to all the right controls. The control unit has a sealed in battery with a capasity to last 8 - 10 years.

- **Facts:**
  - 5 years limited guarantee.
  - 8-10 years expected life time
  - Battery warning if remaining lifetime is less that 14 days.
  - Control code range 31-176
  - Extra control code range 177-276 (Except 186,189,198 and 199)
  - Integrated backup system with no time loss for a runner in case of any failure.
  - No preprogramming neccesary before a race.
  - No batterry changing. Control last for 8-10 years with the same battery.
  - Can be used in permanent courses.
  - Can be set into the forrest without any preparations.
  - Optional light signal shows that the unit is working, and that an e-card is activated.
  - Operational temperature range -20 to +50C.
  - Must be mounted 10mm from magnetic metal.

Return

Electronic Punching and Timing system

Product information sheet - Online control unit



- **Online control unit**
- The online control unit is a normal control unit, but equipped with an RS232 cabel. This unit is used to read data from an e-card into a clock. radiotrasmitter or a PC.
- **Facts:**

  - Reads information from e-card into a RTR2 or a pc or a transmitter.
  - 5 year limited guarantee.
  - 8-10 years expected life time
  - Equipped with an RS232 port.
  - Battery check
  - Codes as normal control.
  - Backup spikes as for a control.
  - Can be equipped with a light signal

Return

Electronic Punching and Timing system
Product information - Touch-free control

Touch-free punching in general

Touch-free punching is a new way of approve right control visit for orienteering and related sports. A control unit is placed on the control site and runners had to "near-touch" or run close beside the control. Range is app. 1.0 meter. Runner will see in the e-card display that they have punched successfully. If no registration, runner must either try again or punch at the designed area at the control plate for getting a backup punch. A light signal verifies proper backup punch.

This system is a mixture of our traditional orienteering system, being used for 10 years, and our e-line system used for almost 3 years. Both systems are build into the control unit. The system has been used in races since 2002 and more than 20000 times has been taken. Usage includes the Nordic Ski-orienteering championship 2004.

Main difference from our orienteering system is the fact that runner get responsible for verifying that a proper punch has been done. Since each runner gets their own punch verification, where will not be any situations where they are in doubt whom of them getting the verification.

Features of touch free-punching control
Integrated control panel 29x29 cm and control unit. Battery powered. Expected lifetime is 2000 race hours for battery. Control unit's starts with a punch on the control by ecard. Once started. Control unit remains active for 10 hours. Weight is about 550 gram. The control unit will normally be mounted on a orienteering flag. Unit is complete sealed and waterproof.

Low weight and easy set up makes this system ideal for all kind of orienteering races, but the system is also well suited for multi sport / extreme races and other competitions where a control point is desired.

Range
Controls have a range of app. 1 meter, Strongest in front and behind and weakest around the sides. The range is selected based on the fact that, for orienteering purposes, it still should be a control point to find, making no changes in the way of doing the sport.

Faster punching.
Emit hands-free punching allows much faster punching that any other punching system and it is very suitable for ski-orienteering, mountain bike orienteering and sprint orienteering.

Easier organization of orienteering races.
Since our hands free controls have everything integrated, it is very easy to put out: just one 500 gram item per control site.

Backup
Integrated backup system secures that runners with a broken e-card or a version 2 e-card, also get a approved punch. Time delay using the backup feature is same or less than competitive systems.

Usage
Runner should "near touch" the control with the e-card and later check on the display to verify proper registration.

On the e-card control code is showed as soon the e-card reach the range of the control. A scroll bar continues to scroll for at least 5 seconds. (For ski-orienteering version of e-cards for 15 seconds).

If the e-card failed to register the control, runner should punch on the designed field at the control unit getting a backup registration or use another unit or manually punch-pin.
A special designed e-card holder can be bought making

it easier to carry the e-card.

Development
Ready for sale January 2004.

Main features & advantages:

- World leading punching system with over 130.000 units sold (version 1 & 2 & 3).
- Worlds fastest punching system. Data transfer between control and e-card is done within 1/20th of a second. Control of proper punching can be done after leaving the control by observing the display
- Lowest cost electronic punching system. Comparable purchasing cost but lower operating cost than main competitor.
- Completely sealed - no maintenance on controls. Battery last for 2000 race hours
- Integrated electronic backup system ensures backup punch with only minor time loss.
- Reset and start in one operation at start.
- Battery warning and power control
- Backup system and possible to use also with version 2 e-cards
- Control codes can be programmed.
- Unit can be stopped manually.

References (Orienteering and Multi sport)

Norwegian championship ski orienteering relay 2003	Stoltzekleiven opp (Running 2000 runners))
4 races Norwegian cup ski-orienteering 2002 and 2003	Postgirobygget opp (Running)
NWR Skio-race Vålådalen Sweden 2002	Rondane extreme (Multisport)
Stavernsprinten Larvik OK July 2003	VesterGyllen Asker sk Sept 2003
Sprint-o Idre Sweden June 2003	Fana il Okt 2003
Salsås Grand Prix - Larvik Sept 2003	Samnanger il Okt 2003
NOM Ski-orienteering 2004	World rank races ski-o Sweden 2003/2004
Norges Idrettshøyskole Several races 2004	Lillomarka o-lag Test race October 2003
Several test races Japan 2004	Test races Sweden May 2004
MTBO Peel adventure 31.5.04 UK (Mountain Bike)	Nydalten 06.06.04 Norway (500 orienteering)

▶ Action pictures

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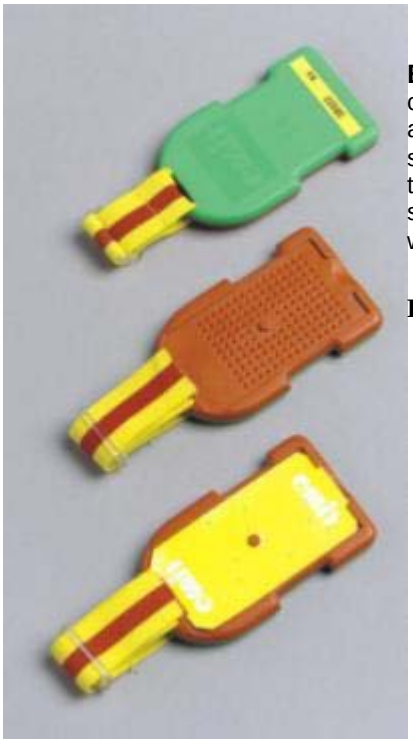
Electronic Punching and Timing system

Product information sheet - E-cards



E-card - electronic card (tag) which the runner carries with him for punching at the controls. The e-card registers the control unit's electronic code (up to 50 controls) and the elapsed time. This information is stored in the e-card until it is reset by the start unit at
the next event. The e-card contains a sealed in battery which when properly stored should last for 8 to 10 years depending on how often it is used. The e-card is both waterproof and can withstand temperatures down to minus 20 degrees Celcius.

Facts:

- E-cards are sold with a 5 years limited guarantee.
- 8-10 years expected life time
- Internal counter count races
- Compleately sealed
- Integrated backup system gives backup punch without any time loss.
- Very fast punching. Data transfers between controls and e-card is done faster than 1/8th of a second.
- Reset and start in one operation at start.
- More than 50.000 units sold.
- Sutiable also for Skiorienteering
- Temperature range for usage -20 to +50 C

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Electronic Punching and Timing system
Product information - E-card Version 3

E-card's in general (version 1, 2 and 3)
Emit e-card - (also named electronic card or tag) is a small card that a orienteering runner carries along for punching at the controls. When punching at a control, by placing the card on top of a control (within a few centimeters), the e-card stores the controls electronic code along with the elapsed time since start. The e-cards hold until 48 control codes and times in its memory that remains until reset by a start unit at the next event. The e-card contains a sealed in battery that supplies the e-card with energy for 8 to 12 years of normal use. The e-card is waterproof and can operate in temperatures from minus 20 to plus 50 degrees Celsius.

Features of Emit Display card (version 3).
LCD display.
Emit display cards are fitted with a display giving information such as used time, controls and split times.

Faster punching.
When a runner punches at a control, the display shows the control code/split time and a vividly scrolling vertical bar to announce that proper punching at the control has been accomplished. The runner can verify this after leaving the control without having to wait at the control for any feedback from the control (i.e. a light signal). This enables much faster and securer punching than any other manual or electronic punching system.

Progress indication during a race.
The e-card can hold the control- codes to visit in its memory and show the next control to punch at (when the card has uploaded this on a preprogrammed start unit). The punching at the correct control can then be verified immediately from the display. If the e-card has not uploaded these controls it still will show race progress by sequence numbers. The next control to visit is then shown (after start "P1", after first control "P2"...), along with the elapsed time (from start).

Immediate split times after a race.
After finishing a race, the runner can immediately scroll though all split times (and accumulated times to every control) by pressing the red scroll button.

Increased lifetime.
New technology has improved the expected lifetime of the display e-card by approx. 20% to 10 to 12 years of normal use (i.e. 12 years and 600 races). For the ski model the expected life time is 4 years. This model is active all the time compared to the Orienteering model with time-out after each race and therefore has to be activated on start before use.

e-line receiver.
The e-card also comes in with an e-line receiver. This allows the runner to finish a race by crossing a wire, without punching at an control. This will also enable the runner to use the e-card in other kind of sports such as cycling/running where Emit's e-line technology is used. The receiver can also be used for start and intermediate split times and will have a resolution of up to 1/10 of a second.

Main features & advantages:

- World leading punching system with over 120'000 units sold (version 1 & 2 & 3).
- Worlds fastest punching system. Data transfer between control and e-card is done within 1/8th of a second. Control of proper punching can be done after leaving the control by observing the display (display cards).
- Lowest cost electronic punching system. Comparable purchasing cost but lower operating cost than main competitor.
- 10-12 years expected lifetime and 5 years limited guarantee. (orienteering model)
- Completely sealed - no maintenance on neither e-cards or controls.
- Integrated mechanical backup system ensures backup punch without time loss.
- Reset and start in one operation at start.
- Ready for multi sport usage.

▶ User manual

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Electronic Punching and Timing system

Product information sheet - Start unit

- **Start unit** - electronic unit with light signal placed at the start which resets and activates the e-card. When the e-card is lifted from the start unit the timer in the e-card will start.
- **Facts:**
  - Resets old information in an e-card
  - Starts the internal timer in e-card when the e-card is removed from the start unit.
  - Expected lifetime 8-10 years
  - 5 years limited guarantee.
  - Integrated backup system. Two start spikes.
  - Start unit allways have code 0.
  - Same design as a control unit.
  - Temperature range for usage -20 to +50C
  - Battery warning

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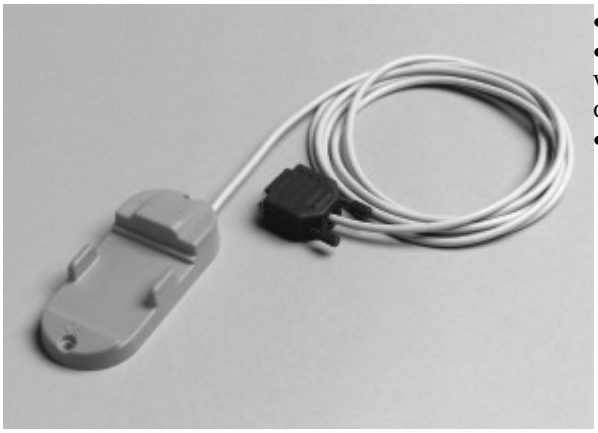
Electronic Punching and Timing system

Product information sheet - 250 unit



- **250 reading unit**
- The 250 reading unit is a normal control unit, but equipped with a 250 RS232 cabel. This unit is used to read data from an e-card into a clock or a PC.
- **Facts:**

  - Reads information from e-card into a RTR2 or a pc
  - 5 year limited guarantee.
  - 8-10 years expected life time
  - Equipped with an RS232 port.
  - Battery check
  - Always code 250
  - No backup spikes

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New products from Emit

Emit is continuously developing our Electronic Punching and Timing system (EPT) to make life easier both for the organizers of orienteering events, and for the orineteerers themselves. We can now introduce three new products especially designed for the clubs and organizers.

MINI TIME RECORDER MTR 4

The new Mini Time Recorder MTR 4 is a reading and storage unit made specially for the Emit Electronic Punching and Timing (EPT) system. MTR 4 can be connected to the EPR3 printer and a PC (USB or serial), and has storage capacity for more than 2.000 e-cards with up to 50 controls each. The data stored in MTR 4 may be transferred immediately or at a later time. This makes the MTR 4 ideal for all orienteering events, small or large. MTR 4 has an integrated keyboard which makes it easy to enter e-cards manually and/or setting the internal clock. It is also possible to set the MTR 4 to only print e-card number and time, using it as a backup clock. The built-in batteries have an expected lifetime of 10 years, and may be replaced.

JOKER CONTROL

The new Joker Control from Emit makes it possible to manually set the code number for a control. This makes it possible for organizers of orienteering events to manage without having to buy unnecessary many control codes. The control code for the Joker Control is set by using a special e-card from Emit. The Joker Control's spike is placed at a spot previously unused by control units.

RADIO CONTROL

The new radio control set from Emit consists of online control units, transceiver radios and a receiver radio. Up to 8 online controls may be connected to each transceiver, and it is possible to have as many as 7 transceivers simultaneously sending data to the receiver in the finish area. The range between the transceivers and the receiver depends upon the topographic situation, but may be improved by using one of the transceivers as an amplifier. The radio controls are compatible with the speaker module in eTiming, and the controls may be used for intermediate times. The system uses approved radio frequencies and is based upon standard industrial products.

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Electronic Punching and Timing system

Product information sheet - EPT-3Printer

- **Printer for MTR-3**
- The Mini time recorder printer is a standard thermal printer. Prints split times from e-cards. Chargeable. Will print about 1000 e-cards with an average of 15 controls.
- **Facts:**
  - Easy handled and easy carried printer for connecting to MTR-3.
  - Print split times and control codes from e-cards.
  - Charge for 4-5 hours.
  - Possible to print on multi copy papers.
  - Serial connection.
  - Battery warning.
  - Easy paper and battery change

EPR connected to a MTR3

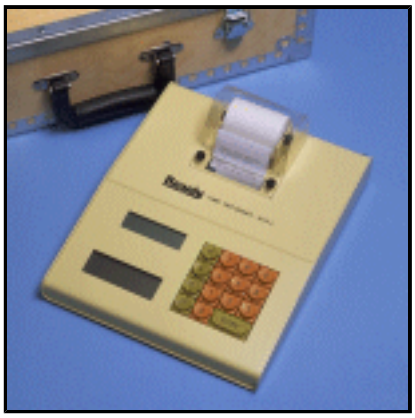
Read more

Manual and Faq (Zipped world file)
EPR-3 Printer for MTR-3l
Printout example

Options

8390 EPR-3 Thermal printer
8391 Extra battery package for EPR-3
8392 Y-cable Pc/Martel printer

EMIT TIME RECORDER RTR 2



The Time Recorder RTR 2 is one of the most advanced timimg equipment at the market, but still it is easy to use. Its price is also very competitive. Due to its user-friendliness and its capacity, the RTR 2 is suited for small as well as for large competitions.

Emit Time Recorder RTR 2 is a timing device meant to be used in a variety of sports. The most common use is time-taking combined with the registration of start-numbers. It is possible to connect the RTR 2 with various extra equipment used to handle competitions where times, start-numbers, points etc., are to be registered.

Description

The Time Recorder RTR 2 has a key board used to register start-numbers. There are two displays that present information. The first one displays start-numbers with large characters. The other display , four lines, gives information in both the programming and the user mode. The built-in printer prints all registrations. The RTR 2 has got two gates (connections) for external equipment. Among these is one connection for a PC and another for a barcode reader.

Equipment that comes with the RTR 2:

✔ Finishline-button with 3 meter cable.

✔ Battery recharger (to charge the built-in batteries).

✔ Several language modules available

Built-in programs

The Time Recorder RTR 2 has 13 programs located in its PROM. The user decides which program that is to be used, and then he answers the questions associated with this particular sport (programming). Thereafter the RTR 2 is put into user mode.

Choices of programs:

- Output of the finish-line times
- Output of the start numbers and the finish-line times.
- Interval start. Output of the start-numbers, the used times, and the finish-line times.
- Alpin program no. 2, advanced alpin that makes use of some extra equipment (RAC assembly box and RKP key pads). Both the start-numbers and the times are recorded at all places where the used times are to be taken.
- Alpin program no. 1, simple alpin where the startgate and the photocell(s) are coupled directly to the RTR 2.
- Cross country, special program with a startgate, intermediate times, and photocells at the finish line.
- Biathlon, special program with the same possibilities as in program 6. In addition, misses can be registered at the place where the shooting takes place, with RKP keypads.
- Parallel slalom
- Time-taking in mass running competitions. The time is taken at the same time as the start-number is registered (usually with a bar code reader).
- Track & Field, time-taking in heats, one lane.
- Track & Field, time-taking in heats, multiply lanes.
- Orienteering, EPT manually timing
- Orienteering, EPT Electronic timing

Extra equipment

The most common equipment extra equipment is:

- A special case for storage and transportation.
- A synchronizing box with 25 m. cable (orienteering, road races, etc.)
- Datacable between RTR 2 and a PC.
- Start gate (alpin, cross-country, etc.)
- EPT reading unit
- Photocell (alpin, cross-country, etc.)
- Barcode reader (reads start numbers written in barcodes).
- RAC assembly box with 10 inputs.
- RKP keypads (alpin, biathlon, etc.)

Specifications

- ✔ Battery driven, built-in rechargeable batteries that can be uses for at least 10 hours.
- ✔ Remembers (stores) 5.000 pairs of start numbers/times. Contents of 200 e-cards
- ✔ 125 different classes may be programmed (competitions with interval start).
- ✔ Capacity for people in funnel: 255 (255 times can be taken before any start numbers are registered.
- ✔ Display for presenting start numbers.
- ✔ Display, 4 lines, for message in the programming mode and the user mode.
- ✔ Built-in printer with output of all "events".
- ✔ RS 232 series output to a PC.
- ✔ RS 232 series output to a PC.
- ✔ 5 extra inputs for various extra equipment.
- ✔ Size: 22x28cm.
- ✔ Weight: 1.8 kg.
- ✔ Developed and produced in Norway by Emit AS.

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Return

Electronic Punching and Timing system

Product information sheet - Backup labels

- **Backup label**
- Is attached to the e-card serving as an extra feature for the runner.
- **Facts:**
  - Made of plastic coated paper.
  - Receives a mark, unique for each control code.
  - Comes in rolls of 550.
  - Can be printed directly on by thermal printers. Ovation2 is a well designed printer for such printing.
  - Yellow color on Out page, withe inside.

- Our integrated backup system gives a runner confidence of having a visible and valid proof from punching at a control, even if a control unit or an e-card should fail. Backup is automatically taken without any time loss or distractions for a runner.

ELECTRONIC PUNCHING- AND TIMING SYSTEM (EPTS)

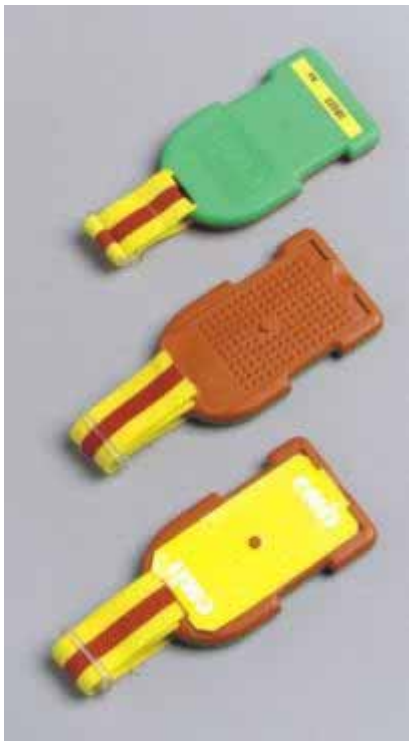
The Emit Electronic Punching and Timing system (EPT) is an Electronic Punching and Timing system for use in orienteering. The system is developed by Emit AS (formerly Regnly - Timetech AS) in cooperation with the Norwegian and Swedish Orienteering Federations.

The main intention of EPT was to eliminate the organizer's manual checking of the control cards, which with a traditional manual punching system often is a time consuming and difficult operation. It turns out however that EPT also makes the punching both simpler and faster. In addition the runner can get his split times immediately after having crossed the finish line. These features have all made the system very popular.

1. PRODUCT SPESIFICATION

2nd generation equipment in sale from Sep. 98 The system consists of the following components, all with a five year guarantee:

E-card - electronic card (tag) which the runner carries with him for punching at the controls. The e-card registers the control unit's electronic code (up to 50 controls) and the elapsed time. This information is stored in the e-card until it is reset by the start unit at the next event. The e-card contains a sealed in battery which when properly stored should last for 8 to 10 years depending on how often it is used. The e-card is both waterproof and can withstand temperatures down to minus 20 degrees Celcius.



Start unit - electronic unit with light signal placed at the start which resets and activates the e-card. When the e-card is lifted from the start unit the timer in the e-card will start.

Control unit - electronic unit at the control which transfers it's identity code to the e-card

when the e-card is placed on the control unit. Control codes from 31 to 176 (exept 66, 68, 86, 89, 98, 99) exist. As part of the back-up system each control unit is equipped whith a small spike which will leave a hole in the back-up label. 140 spike positions exist each corresponding to the electronic code. This way it is also possible manually to check that the runner has been to all the right controls. The control unit (as well as the start unit) has a sealed in battery with a capasity to last 8 - 10 years.

Back-up label - thin plastic coated label which is attached to the backside of the e-card serving as a part of the manual back-up system.

Reading unit - electronic unit placed near the finish for reading the e-cards after the runner has crossed the finish line. The reading unit is connected to the Time Recorder, or directly to a PC if using "electronic timing", i.e. the time is taken by the timer in each e-card.

Time Recorder - Emit Time Recorder (RTR2 modified version) which registers finish times and pairs these with the information from the e-card for transmission to the PC.

PC-program - PC-program especially made for checking the information from the e-card against the "correct" course and for printout of results with split times. The program also offers the usual functions found in ordinary event administration programs.

Mini Time Recorder (MTR) with thermal printer. The MTR is a reading unit with replacable battery and storage capacity for up to 2500 e-cards. The MTR can be connected to a PC when using the PC-stand alone alternative or directly to a special thermal printer with rechargeable battery for print out of total time, split times and control codes.

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2. HOW TO USE

The easiest way to use EPT is to use or the PC stand -alone alternative and «electronic timing» or the MTR with the thermal printer.

PC stand-alone solution. Enter the names of the runners (and e-card number if the runner has his own e-card), classes, clubs and courses with the electronic conrol codes in the PC-program. Make the drawing in order to get a start list. Use the start list to allocate an e-card (e-card code) to runners who do not have their own e-card. Print or write the runner's name, class, start time and e-card code on the back-up label and attach it to the e-card. Keep the e-cards sorted in starting

order for handing out to the runners at the start. Place the start unit on the start line. Place a control unit on each control (one unit is normally enough). Control units must not be attatched directly to metal (keep a distance of 1cm). Use a control unit with the same electronic code as the control's visual code in order to limit misunderstandings. Place a normal control on the finish line and define this control as finish in the PC-program.

The e-card is handed to the runner a few minutes before start. The runner should fasten the e-card on a finger on the opposite hand of the compass hand with the back-up label facing down. The runner places the e-card in the start unit a few seconds before the start time. At the start signal the e-card is lifted from the start unit as the runner starts. The timer in the e-card is thus activated and the time is running. To obtain a record at each control the e-card is placed in the control unit with the back-up label down and given a firm push with the thumb. This in order to also obtain a manual back-up punching record from the spike at the control unit in addition to the electronic record. The total time (finish time) will be taken when the e-card is placed in the control unit placed on the finish line. After obtaining a record at the finish control the runner walks on to the reading unit, places his e-card and immidiately gets his individual printout showing split times, total time, which controls he has been to and whether the race is approved or not.

With EPT it is impossible to cheat by taking the controls in wrong order. disqualified. This fact makes the system ideal for instance when using small areas with crossing courses.

If punching on the wrong control a runner will be automatically disqualified. The PC-program offers automatic printout on every runner that is disqualified. This printout together with the runner's back-up label will normally eliminate all discussions as to whether a runner should be disqualified or not. If a runner has neither electronic record nor the manual punch mark from the control one must conclude that he has not been to the control or not done the punching properly. Consequently he must be disqualified.

Punching several times on a certain control or punching on to many controls will not cause problems and of course no disqualification. For instance, if a runner has punched on a wrong control, discovers this and afterwards punches on the right control it will be approved.

MTR with thermal printer. This is the ideal solution for smaller events where there is no access to electricity and for organizers who do not have, or want to use, computers and software.

MTR is always used together with «electronic timing» as described above.
The MTR automatically assumes the last control to be the «finish line» and calculates both total time and split times from this. When reading the e-card the thermal printer automatically prints out the e-card number, total time, split times and the control codes registered by the e-card. Since the MTR is not programmed it will not know the runner's name or class or whether the runner has been to the correct controls in correct order. The result list and the punching control hence has to be done manually (by checking the printout). After checking the printout and written the total time on the result board the runner keeps the printout.

If organizing a regular event back-up timing should be obligatory. The runners must then be given a start time and a seperate clock should be kept next to the MTR in order to be able to calculate the runner's time if a runner has not activated the e-card properly or the e-card does not work.

3. REFERENCES

Testing of the EPT started in 1993 and continued in 1994 when 2000 e-cards and 400 control units were made and used by all classes at 11 events in Norway, Sweden and Denmark. After these test events NOF made a report which concluded that the system had worked satisfactory. This report is available at NOF in both English and Norwegian.

In 1995 EPT equipment was offered for hire, and important events like WOC in Germany, the open Nordic championships in Sweden, the Norwegian and the Swedish championships, Tio-mila, Smålandskavlen and the elite classes at the Swedish 5-days used EPT. Altogether more than 40 events and more than 42.000 runners used EPT during 1995.

In 1996 the first major event to use the system was the SKI-O-World Championship at Lillehammer in February. Most world cup events also used EPT. Altogether 100 events and about 80.000 runners used the hire equipment in 1996.

In 1997 EPT was made an obligatory system for organizers of IOF E-events and national events in Norway. Emit EPT system was also used at WOC, NOM, JWOC, Tiomila etc.

In 1998 Finland also chose Emit EPT and intend to use it on a large scale from 1999.

WOC 99 in Scotland will also use Emit EPT system.

4. PRICES 2nd GENERATION EPT EQUIPMENT

(All prices in NOK ex VAT and transport costs)

START KIT

All you need to get started. Ideal for club training and for the organizer to get acquainted with EPT. Special introduction price NOK 20.000. You save NOK 4.000 on ordinary sales prices.
Consists of MTR and printer, 20 e-cards, 1 roll of 550 back-up labels, start unit, reading unit, 20 control units and PC-program «Etiming».

Ordinary prices for additional items per unit (volume discount not included):

- e-card NOK 250
- control unit NOK 350
- start unit NOK 450
- reading unit NOK 750
- 1 roll of back-up labels NOK 209
- MTR NOK 3.333
- Thermal printer NOK 4.667

Start kits and additional EPT items will be in stock from September 1998.

Assuming the organizer at least has bought a start kit it is also possible to hire additional equipment when using EPT at an event. Contact us for an offer.

TIME RECORDER RTR2 - EPT VERSION

The Emit Time Recorder (RTR2) is the most used time recorder (finish clock) in Norway. It can be used in most sports and features 13 different programs. The EPT version includes 2 special EPT programs. Price NOK 13.400.

If you already have the RTR2 you can upgrade it to the EPT version. The upgrading includes the PC-program «Tracy». Price NOK 2.400.

PC-PROGRAMS

Emit supplies two PC-programs which can be used against EPT:

«Tracy» which is ideal for individual events (only) when using a PC stand-alone solution with «electronic timing». Price NOK 2.000. English or norwegian version.

«X-Sport» (formerly Axess X-sport) which is ideal for all major events with speaker support, relay program etc. Norwegian version only. (Finnish version hopefully soon available.)

«Etiming» is Emit's new Windows based software for complete event administration. Price NOK 2.000,-.

MTR2 complete with Thermal printer

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