

# ***RACETIME 2***

## **PARALLEL SLALOM PROGRAM**

*Revision 1.00*

**MICRO  GATE**

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# 1. ASSEMBLY DIAGRAMS

## COMMON START

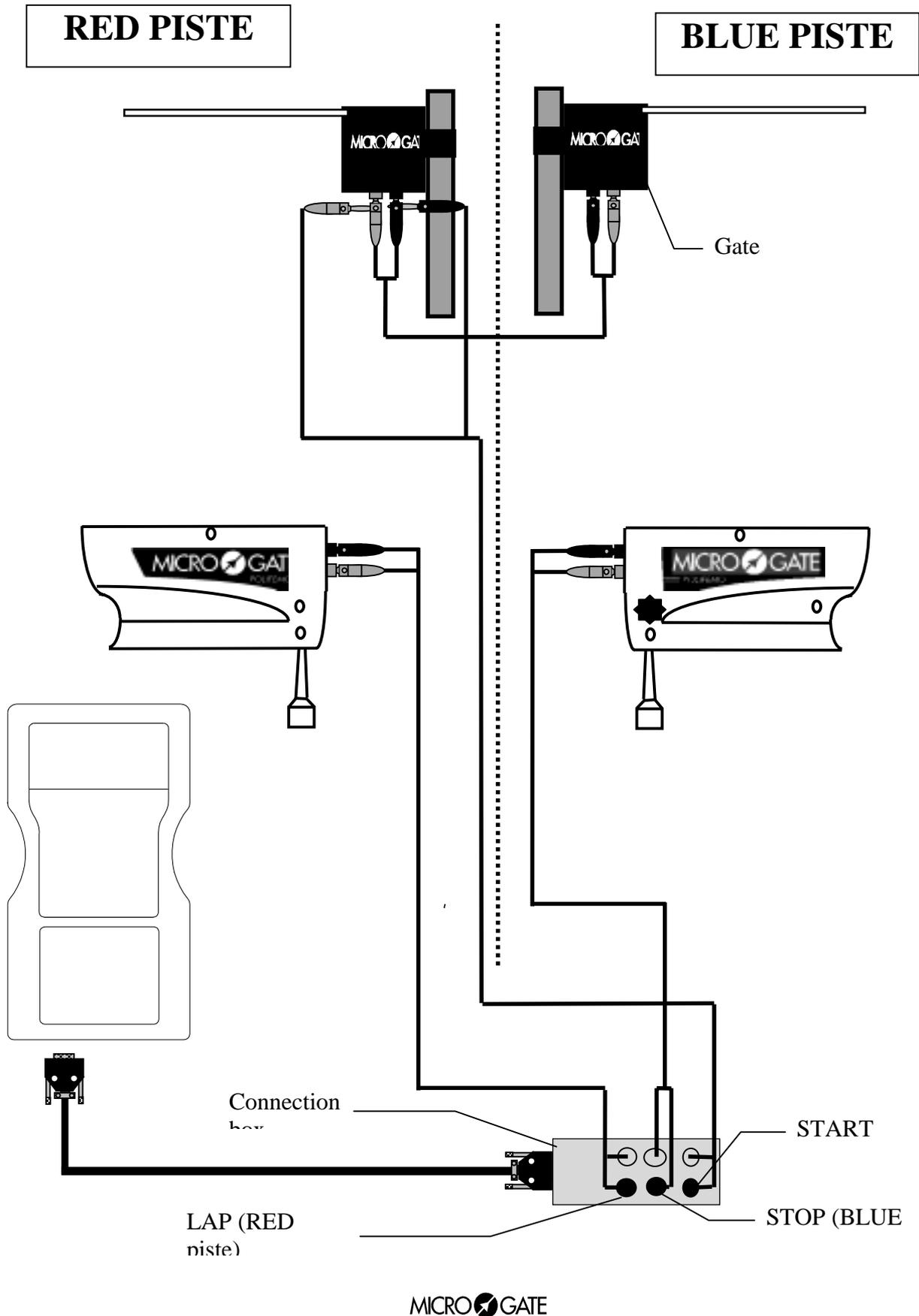


Fig. A

# SEPARATE STARTS

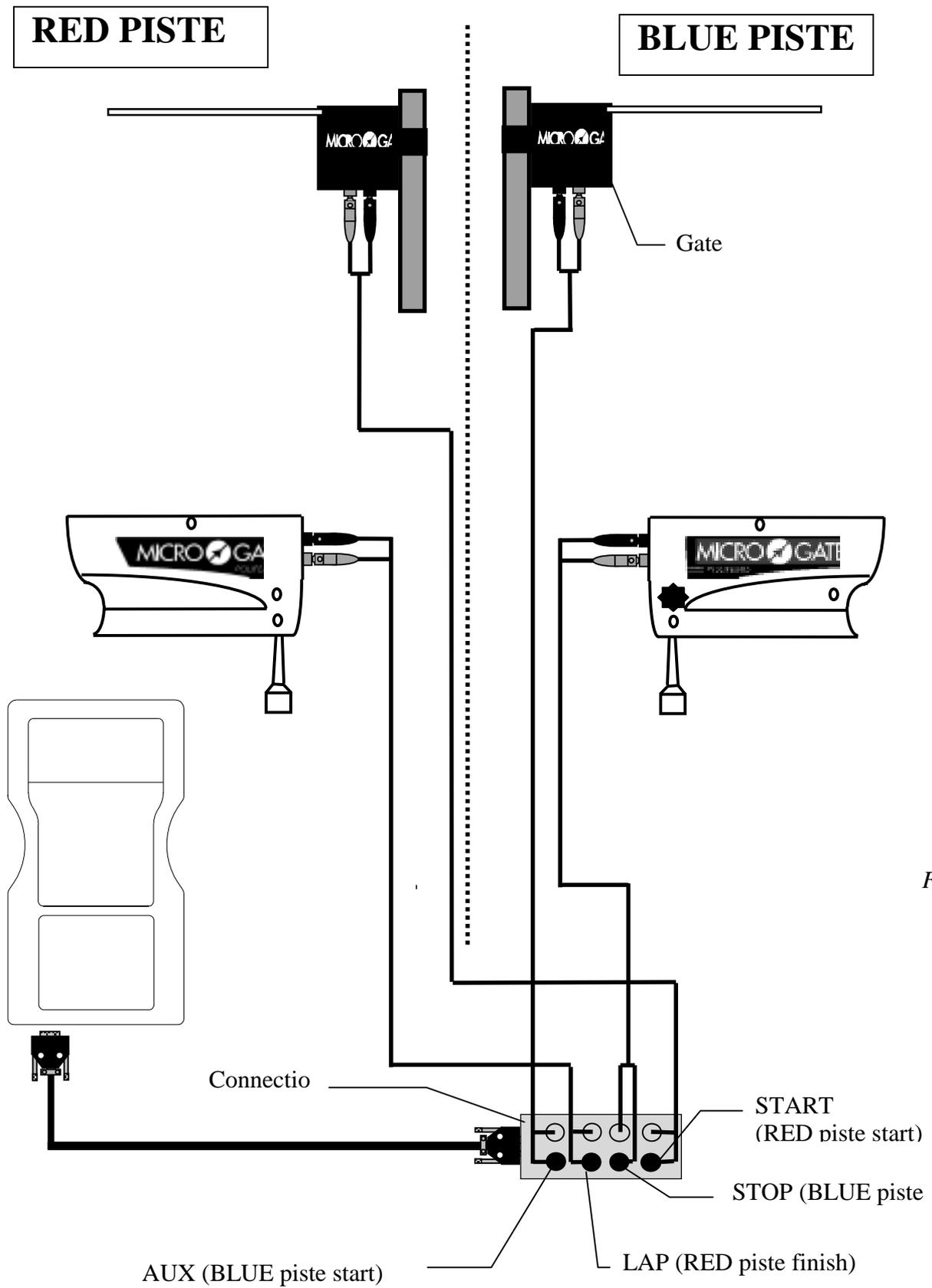


Fig. B

## 2. “Parallel Slalom” Software

This program offers simple and efficient management of parallel slalom competitions with immediate viewing of the winning piste and the time difference between the athletes on the display screen and displayboard. The times for the two pistes are also calculated and shown. This data is necessary during the preliminary phases of the race, in which the elimination of a competitor is not direct but based instead on the total times of the racers on the two pistes. The management of rankings enables you to have results for this phase of the race immediately.

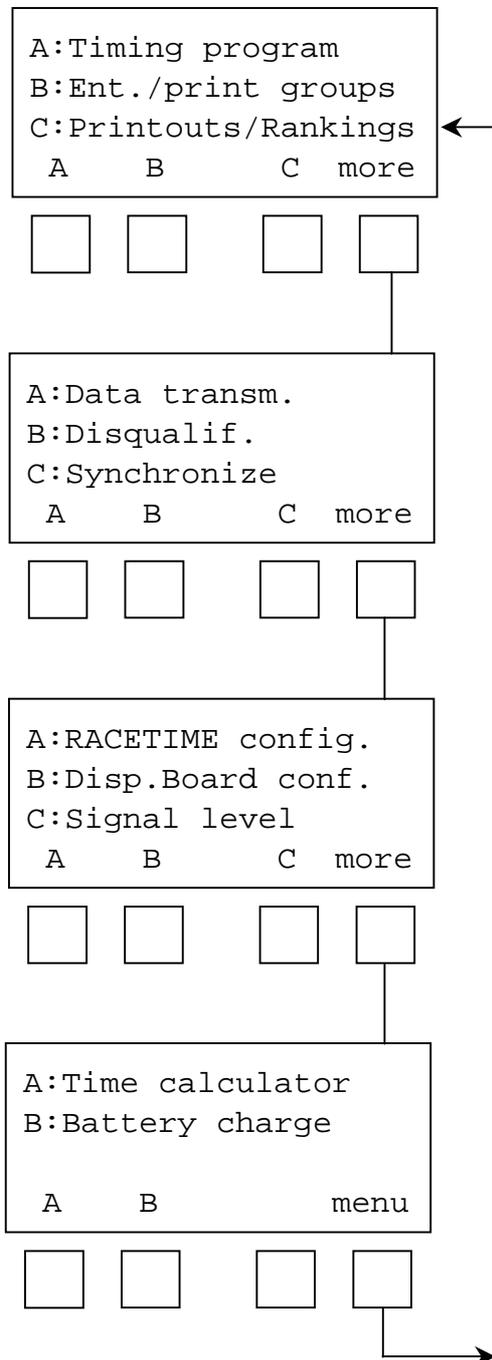
There are two start signals for track ‘R’ (Red) and ‘B’ (Blue) (connected to the START and AUX lines respectively), while the finishes are connected to the LAP (red piste) and STOP (blue piste).

If a single start signal is required, all you need do is connect the two START and AUX signals in parallel. It is also possible to use the Microgate LinkGate radio system for the start. The Linkgate Encoder should be set to START (0) and will generate a simultaneous signal for the two pistes.

The impulses for the two finishes should not be made via radio as possible overlapping signals (when there is a minimal or zero time difference between the athletes) could result in the incorrect reception of one or both signals.

The parallel slalom program can be selected by pressing F3 from the function program menu, which is only accessible when you have turned on Racetime and canceled stored data. After choosing the program, you immediately enter the main menu, from which you can choose the various functions available.

### 3. Main Menus



Select the items with the four function keys:  
**A.** To enter timing mode  
**B.** To access the group management and printout submenu  
**C.** To print rankings  
**F4.** To view next menu

Select the items with the four function keys:  
**A.** To transmit data to PC  
**B.** Disqualifications management  
**C.** To synchronize internal clock  
**F4.** To view next menu

Select the items with the four function keys:  
**A.** Device configuration  
**B.** Displayboard configuration  
**C.** Radio signal quality test (Linkgate system)  
**F4.** To view next menu

Select the items with the four function keys:  
**A.** Sexagesimal calculator  
**B.** Management of battery recharge functions  
**F4.** To return to main menu

## 4. Timing

```
A:Timing program
B:Ent./print groups
C:Printouts/Rankings
A      B      C  more
```

```
R      0      B
00:00.000  00:00.000
Wich run      1
                      menu
```

```
R      1      B      2
00:00.000  00:00.000
```

```
R      1      B      2
00:00.000  00:00.000
Timer ready
                      edit menu
```

Press F1 to start the timing session.

The chronometer immediately asks for the run number. (The run number previously set is shown by default).

The following information is shown on the display:

**Line 1:** shows the competitors' numbers at the start or during the race for both the race pistes (R and B) and the run number. Remember that piste **R** is coupled with the **LAP** line (key and input) while piste **B** is coupled with the **STOP** input. For both pistes a single start signal is generated, obviously by the **START** signal.

**Line 2:** shows net times (of run or totals, depending on the configuration of the device – see par. 10.1).

**Line 3:** is used to insert the run number and to show the message 'Ready to start' when the chronometer is waiting for the competitors to start. In addition to the competitors' finish, the winning piste and the time difference between the competitors is shown.

**Line 4:** shows the operational choices available using the function keys. Sometimes messages for the operator are shown.

Next the numbers of the competitors on the two pistes at the start must be inserted.

**NOTE:** if only one competitor is present at the start, set 0 for the absent competitor's start. At least one competitor, either on piste A or piste B, must be set (the chronometer does not accept two zeros as competitor numbers).

If the set number has already started in the same run, Racetime 2 signals the anomaly. Either the previous racer's descent can be annulled, or a different start number set.

Now Racetime2 is ready to start timing. This is indicated by the words 'Ready to start' on line 3. For runs after the first run, if viewing of total times has been set (see par. 10.1), the total times for the previous runs will be shown on the display.

If you make a mistake when inserting competitor numbers and/or the run number, you can reset the chronometer by pressing **F3** (Edit).

To quit and go to the main menu, press **F4** (menu).

```

R      1      B      2
32.625    32.625

OutR OutB
    
```

```

R      1      B      2
32.625    32.625

Sure?      Yes    No
    
```

```

R      1      B      2
00:00.000  54.587

OutB
    
```

```

R      1      B      2
00:35.824  00:34.312

OutR CleB
    
```

```

R      1      B      2
00:35.824  00:34.312
Vince B -1.900
CleR CleB Cle Conf
    
```

If display of race times is active, the net running times of the two competitors are shown when the start signal (manual, from input via cable or radio transmitted) is given.

If you do not wish to display the race times (as is usually preferable during the direct elimination phase) and only the time difference between the competitors is required, disable race times display.

In the event of a fall and subsequent withdrawal of a competitor, you can eliminate him/her from the race by pressing the function keys **F1** (El.R. – Eliminate competitor piste R) and **F2** (El.B. – Eliminate competitor piste B). Racetime 2 asks for confirmation before carrying out elimination, which is NOT reversible.

When one of the competitors finishes (piste R or B) the net time is displayed. When the second racer finishes, the display shows the second net time and on the third line the winning piste and the time difference between the two competitors appears.

On the **displayboard** for the presentation of results to the public, the running time remains active until all the competitors on the piste have reached the finish. Then the winning piste and the time difference between the competitors is displayed. After a few seconds, the net times of the competitors on pistes A and B are shown in succession.

In the event of an accidental interruption of the finish photocell/s (for example, if a spectator crosses the finishing line), it is possible to cancel the unwanted event by pressing **F1** (Ann.R - Annul event piste R) or **F2** (Ann.B - Annul event piste B). Annulment can be repeated a number of times and the operation must be confirmed.

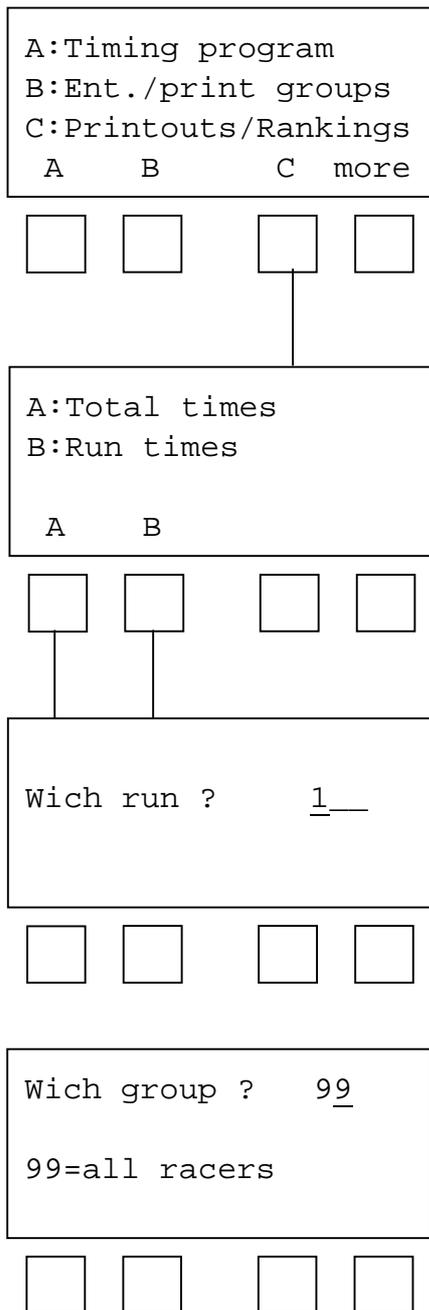
To confirm the results, press **F4** (Conf. - Confirm). After confirmation, the results are printed in the following format:

```

1      R1      36.213
2      B1      34.312
Start N° Piste and run Net time (MM:SS.dcm)
Vin.B - 1.901
Winning piste Time difference (SS.dcm)
    
```



## 6. Printout and rankings management



The ‘Parallel slalom’ program allows you to manage rankings for the run times and total times of the single athletes. For this reason the ranking calculated by Racetime 2 is useful in the time elimination phases which normally represent the first part of parallel slalom competitions. However, the chronometer does not automatically manage the last phase of the event, which is normally based on direct elimination (tournament). To access the rankings menu, select **F3** (Rankings printouts) from the first display of the main menu.

From the next menu it is possible to choose from rankings calculated on the basis of total or single run finish times. Remember that by total time is meant the total of the run times chosen added to the previous runs. Total time only exists if all the times of the previous runs exist.

All the rankings can be limited to a particular group or can be extended to all the competitor numbers (the latter choice can be obtained by setting 99 in the group settings display).

Rankings can be viewed on the display or printed out.

Enter the chosen run number.

If you select a group form the groups set (see chap. 1.2), the ranking will be calculated only on the basis of the competitor numbers belonging to the group selected. Group 99 is set as default and includes all competitor numbers.

```
Data output on:
A:Display
B:Printer
  A      B      menu
```



```
N 1

  1:06.247  Rp.  1
←      →      find menu
```



```
RANKING, RUN
Run N.1

Rank  Num  Time
1     2R   1:32.97
2     3B   1:33.22
```

### 6.1 Display presentation

If you select display with **F1**, the following display will appear: (N=Competitor number, p.=position).

With the function keys, it is possible to move around inside the ranking. In particular:

← → (**F1 - F2**) : allow you to go from one position in the ranking to the next or previous one.

search (**F3**) : you are asked for a competitor number and, after confirmation, the times and position of that number are displayed.

Press **F4** (menu) to return to the menu for selection of display presentation or print.

### 6.2 Printing the ranking

If you choose: ‘data output on: printer’ (**F2** key), the ranking you have selected will be printed in the format given here:

## 7. Off-line data transmission

```
A:Data transm.
B:Disqualif.
C:Synchronize
A      B      C  menu
```

```
Wich run ?  _
(0=all runs)
```

```
Wich group ?  99
99=all racers
```

```
Data to transmit :
RT.  Evt.  NANASQ menu
```

```
Wait, please
```

It is possible to transmit memorised times to a Personal Computer at any moment. To do this, select ‘Transm. data’ with **F1** from the third display of the main menu.

Insert the run number.

If you choose 0, the data for all the runs will be transmitted.

If you select one of the groups set (see chap. 5), the ranking will only be calculated on the basis of the competitor numbers belonging to the selected group. Group 99 is set as default and includes all the numbers.

Now you can choose whether to transmit only time events, net times or Disqualified competitors.

In each case the times are transmitted according to the protocol given below. For a detailed description of the transmission protocol, see appendix B of the Racetime 2 user manual (Single Start Program and Simple Stopwatch).

When all the data has been transmitted, you return automatically to the first menu.

The times are transmitted according to the protocol given in appendix B of the Racetime 2 user manual (Single Start Program and Simple Stopwatch).

## 8. Disqualifications/Reinstatements

```
A:Data transm.
B:Disqualif.
C:Synchronize
A      B      C  more
```

```
Disqualification
Num.  _1_ Run_
Toggle  other menu
```

```
Disqualification
Num. 1  Manche  1
      qualified
Toggle  other menu
```

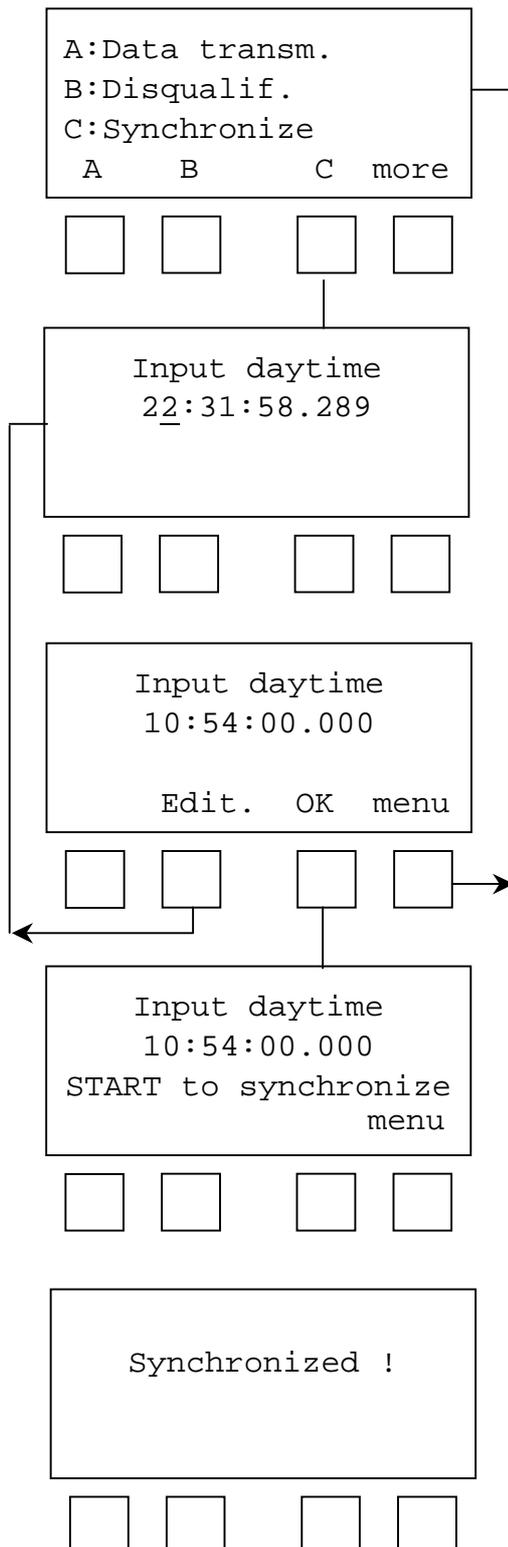
```
Disqualification
Num. 1  Manche  1
      disqualified
Toggle  other menu
```

Insert the run and the number of the athlete to be disqualified or reinstated. Confirm the numbers with **Enter** (use **F4** to return directly to the menu).

When you have identified the athlete and run, press **F1** to disqualify/reinstate

**F3** to insert another athlete code or run  
**F4** to return to the menu

## 9. Synchronization



Note that in the ‘Parallel slalom’ program, time events are not normally presented on the display. They are, however, memorised for each start and finish and so can be transferred to a Personal Computer for subsequent checking.

Insert the exact time:

For example: to synchronize RACETIME on 10.54 AM  
Press:

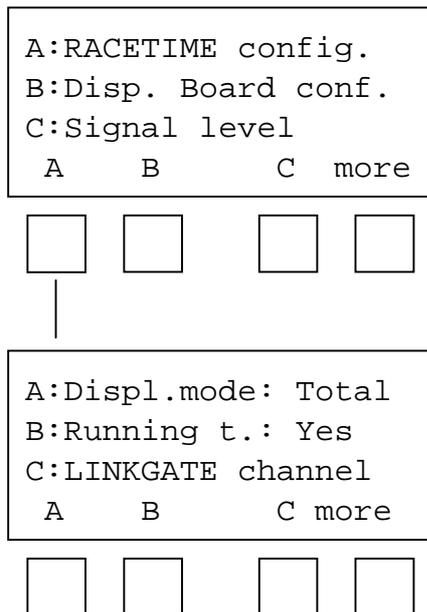
**1 0 ENTER 5 4 ENTER 0 ENTER 0 ENTER**

To correct press **F2**, otherwise press **F3**

Press **START** to synchronize RACETIME on the time set.

After receiving confirmation, you are automatically returned to the first menu.

## 10. RACETIME configuration



The configuration menu allows you to modify some of the settings which regulate the functioning of Racetime 2. Remember, however, that if you choose to cancel the configuration when the device is switched on or you reinitialize the configuration (see par. 10.3), all the parameters will be set at standard values.

The following configuration parameters are available:

### 10.1 Time display mode

Allows you to choose whether to show total times or run times on the display and displayboard. To select use key **F1**. When the display of total times is active, the total times of the athletes at the start are shown before they start.

### 10.2 Race time display (running time)

If this option is selected (Race time: Yes), the time starts when a start impulse is received and running time is shown on both the display and the alphanumeric displayboard.

If this option is disabled (Race time: No), only the difference between the two finish times (time difference) is measured and the start impulse is not used. In this case the time display mode is automatically set to ‘run times’. This configuration is recommended for direct elimination races where the race times are not important for the result.

### 10.3 LINKGATE channel

Allows you to change the channel of the LINKGATE system you are working with so you can move to another channel if this should be necessary. On the display, the setting of the *dip-switch* situated on the LINKGATE Encoder is indicated.. The first selector does not affect channel selection (its function is to select signal length and is therefore shown with the letter ‘S’). Following this, the status of the other switches is shown (1=selector up, 0=selector down). To modify the setting, press ‘Edit’ (F1). Again, remember that it is absolutely essential that the channel set on Racetime 2 and on LINKGATE Encoder coincide (see chap. B3).

### 10.4 Setting of serial transmission

ATTENTION: this configuration is present only on versions 20.x.yy, 21.x.yy, 22.x.yy and 24.x.yy.

Pressing **F1** modifies serial transmission velocity (1200, 2400, 4800 o 9600 bit/s).

Pressing **F2** allows you to choose between binary and ASCII for the format of the data transmitted. The

A:Printer	On		
B:Keyb.beep	On		
C:Initialize Setup			
A	B	C	menu



transmission protocols for the two modes are given in Appendix B of the Racetime 2 User Manual (Single and Group Start Program and Simple Stopwatch).

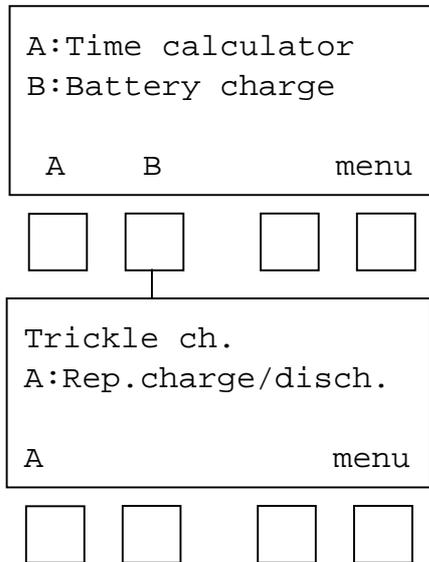
### 10.5 Activation/disactivation of the printer and of acoustic signal when pressing keys

To modify the settings use keys **F1** and **F2** respectively.

### 10.5 Configuration initialization

Press **F3** to restore standard configuration. This is equivalent to deleting the configuration of the initial settings of the device.

# 11. Battery recharge



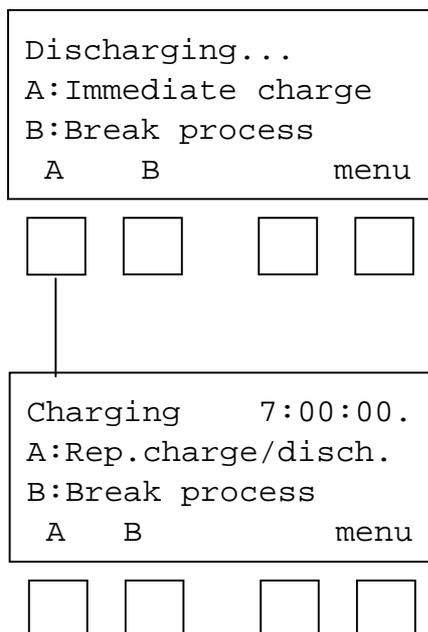
Recharging of Racetime 2’s internal batteries is managed entirely by the microprocessor which controls all of the chronometer’s functions. Consequently it has been possible to implement a recharge control which guarantees maximum battery efficiency at all times, at the same time prolonging the chronometer’s operational life.

To recharge the batteries, connect any 12 – 20 Volt power source (normally the AC/DC adaptor supplied in Racetime2’s kit will be used) to the appropriate socket (Chap. A2).

If the chronometer is off, information about the current status of the battery recharge management function will immediately be shown on the display.

In particular, the following messages may appear on the first line of the display:

Status/message	Function description	LED status
Maintenance	the chronometer is supplied by an external power source and, at the same time, the batteries’ efficiency is maintained by a weak recharge current	brief blinking every four seconds
Discharge	at the beginning of the recharge cycle, the batteries are completely discharged before being recharged	LED continuously on
Recharge	recharge in progress. On the first line of the display blinks the time still to go until the end of recharge	Blinking LED



If a blinking message ‘Vext. Ins.’ appears on the first line of the display, this means that the voltage supplied at the recharge/power supply input is insufficient. Attention: when external power is insufficient, recharging is interrupted and cannot be completed correctly or within the time anticipated.

If the chronometer is in ‘Maintenance’, press ‘A :Repeat discharge/recharge’ (F1) to begin a new charge cycle. This will start immediate discharging of the batteries. The duration of this discharge phase is variable and depends on the charge status of the batteries at that moment (The time for discharging can last up to about four hours).

After discharging the batteries, Racetime2 will automatically begin to recharge. This takes seven hours. When this time is over, the words ‘End of Charging – OK’ indicate that the process has been correctly completed. If, however, battery malfunction has caused premature interruption of charging, the messages ‘Err. Batteries – LV’ (insufficient battery voltage) or ‘Err. Batteries –HV’ (battery voltage too high) will appear. During recharging the time needed to complete the process will appear on the display.

During discharging, it is possible at any time to pass directly to charging by pressing ‘A: Recharge/discharge.’ (F1). This will shorten the time needed for recharging. However, you are advised not to charge the batteries without first discharging them as this could cause a reduction in their capacity (memory effect).

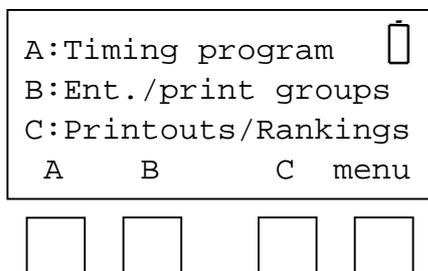
At any moment, you can interrupt discharging/recharging by pressing ‘B: Break process’ (F2).

**Note 1:** If the external power source is cut off during charging, charging will be interrupted and resumed from the same point it had reached before being interrupted when the power source has been restored. This represents an extra guarantee of the reliability of the recharge system.

**Note 2 :** During discharging and recharging, Racetime2 becomes slightly but noticeably warm. This is absolutely normal. However, avoid covering the device with insulating materials (blankets or others).

It is also possible to access these functions when the chronometer is on. In this way, you can begin to recharge the device without interrupting a timing session. To access recharge management, choose A: ‘Battery recharge’ from the fourth display of the main menu.

## 11.1 Low battery signal



When the batteries have nearly run down completely and an external power source is not connected, a warning symbol blinks at the top of the display. From the moment this symbol begins to blink, you still have a considerable amount of time to finish your work, nearly two hours without using the printer but much less if the printer is often used. If it is not possible to quickly connect the chronometer to an external power source, it might be advisable to disconnect the printer (see par.D7.3) in order to increase remaining operational autonomy.

Remember that when fully charged the batteries can be used continuously for approximately 8-9 hours if on average a printout is made every 20 seconds. Length of duration may be less in particularly harsh climatic conditions or if the batteries are worn out. It is absolutely normal for battery efficiency to decline after approximately 500-1000 recharge cycles. If you notice a significant reduction in the duration of the batteries, please contact Microgate for replacements.

## 12. Memory limits

Racetime2’s memory is large enough to store about 1350 events. Taking into account that each pair of competitors to descend corresponds to 4 events (2 starts and 2 finishes), the system makes it possible to manage about 330 races.

### 13. Radio signal quality

```
A:RACETIME config.
B:Disp.Board conf.
C:Signal level
A      B      C  more
```



```
Ready to receive !
                                     menu
```



```
Receiving...
      Start
```



```
Ready to receive !
      Start
Channel 4      S=100%
DIFF. CHAN.   menu
```



Racetime 2’s software includes a function for testing the quality of the radio signal received. This *function* is particularly useful when the radio signal received is considerably disturbed and it is therefore necessary to evaluate the degree of reliability of the transmission.

To access the function, select ‘C : Signal quality’ (F3) from the fourth display of the main menu. The words ‘Ready to receive!’ indicate that the system is waiting to receive a radio transmitted impulse. About 3 seconds after the start of signal reception (during reception ‘Reception in progress...’ is shown), the channel of the signal received and the quality of the signal as a percentage are shown on the display. Obviously the closer the percentage is to 100%, the better the quality. Values above 40% are to be considered ‘safe’.

If the channel set on the LINKGATE Encoder (see par. D7.2 e B3.9) does not coincide with the channel set on Racetime 2, the message ‘DIFF. CHANNEL’ (channel difference) appears.

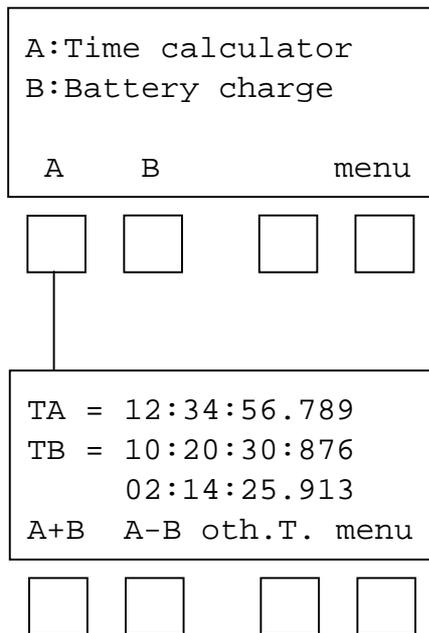
If reception is particularly difficult, several stratagems can be attempted:

- place both the transmitting and receiving radios (the radios connected to the encoder) in an elevated upright position
- if the disturbance is generated by interference from other transmitters operating on the same channel, change the frequency you are working on
- use more efficient antennas (1/4 wave or 5/8 wave, instead of the normal ‘charged’ type), especially for transmission radios.

### 14.



## 15. Sexagesimal calculator



To access the calculator function, select 'A : Calculator' (**F1**) from the third display of the main menu.

Key in the first time you wish to add or subtract (TA) ; then key in the second time (TB).

Select the operation to be carried out on the two times:

**F1** (A+B) adds the two times

**F2** (A-B) subtracts time B from time A (A-B)

To modify the times, press **F3**.

If you must modify only one of the times, the time which is not to be modified can be 'skipped' by pressing **CE**. In this way you avoid pressing **ENTER** four times.

Note 1 : times are 'normalized' at 24.00; for example, 2 :00 :00.000+23 :00 :00.000 = 1 :00 :00.000 and not 25 :00 :00.000!!!

Note 2 : pay attention when keying in the thousandths, especially if the times to be added or subtracted are expressed with an accuracy to the tenth or hundredth; for example, to insert the time 1:02.84 (one minute, two seconds, 84 hundredths of a second) you must key in

0 ENTER (hours)

1 ENTER (minutes)

2 ENTER (seconds)

840 ENTER (thousandths), and NOT 84 ENTER !!!



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