



Archimede^{plus}

User manual

Software Version 61.2

CONGRATULATIONS

Thank you for choosing Digifly!

You have purchased a high technology instrument designed expressly for free flight. The multiple functions and flight data it provides, effectively make it an on board computer. Learning to use this instrument will make your flying easier in terms of performance and safety. It will enable you to improve your flying technique and make piloting decisions more quickly thanks to the comprehensive flight information that is provided. Another benefit is the ability to download and analyze your flight data afterwards. Our designers can foresee future software developments, so the software at the heart of this instrument can be updated at any time via the Internet using the optional Digifly PC cable.

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The Digifly guarantee applies provided the product is handled properly for its intended use, in accordance with its operating instructions and upon presentation of the original invoice or cash receipt, indicating the date of purchase, the dealer's name, the model and the serial number of the instrument. The customer is however, responsible for any transportation costs. The unit must be securely packaged for return.

The Digifly guarantee may not apply if:

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- Repairs or product modifications and alterations have been executed by unauthorized person or service.
- Damage is caused by accidents including but not limited to lightning, water or fire, misuse or neglect.

Digifly assumes no responsibility for special, incidental, punitive or consequential damages, or loss of use. If your Digifly product is not working correctly or is defective, please contact your Digifly dealer. In order to avoid unnecessary inconvenience, we advise you to read the operating instructions carefully before contacting your dealer.



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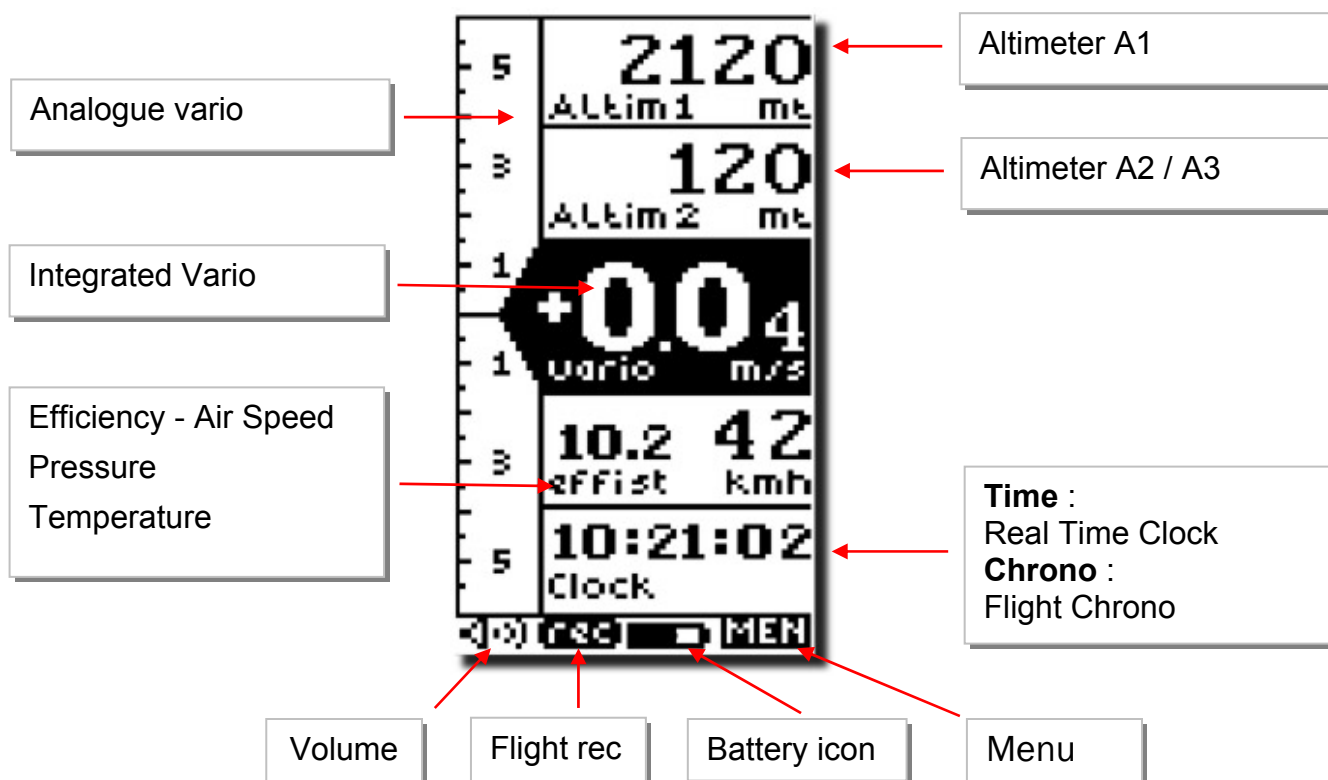
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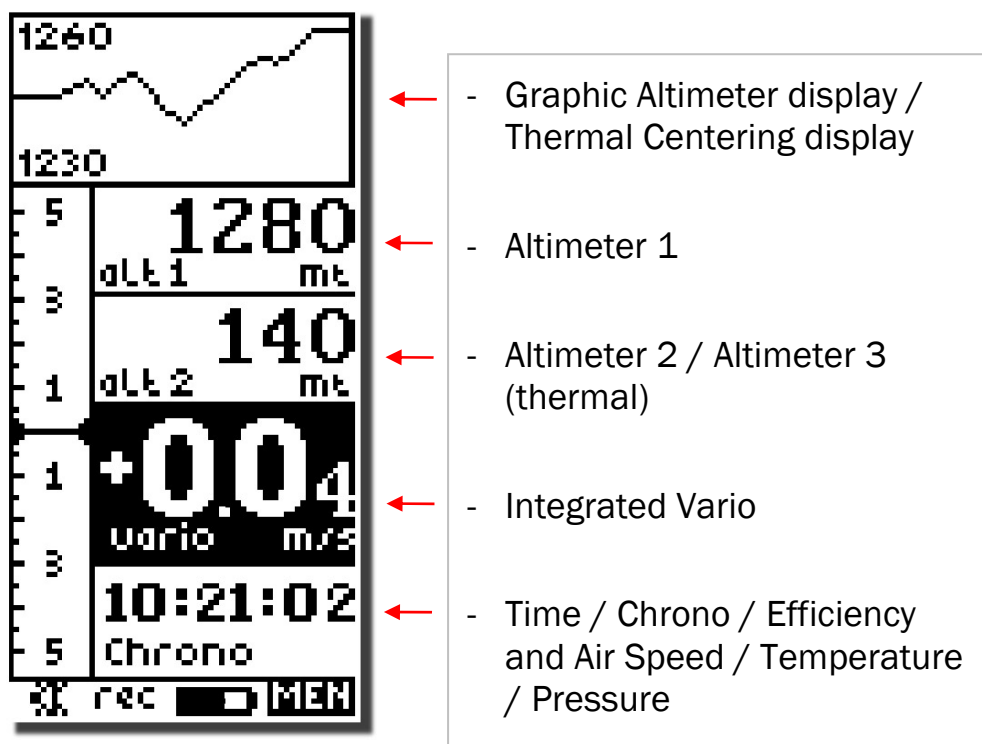
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2 QUICK REFERENCE GUIDES

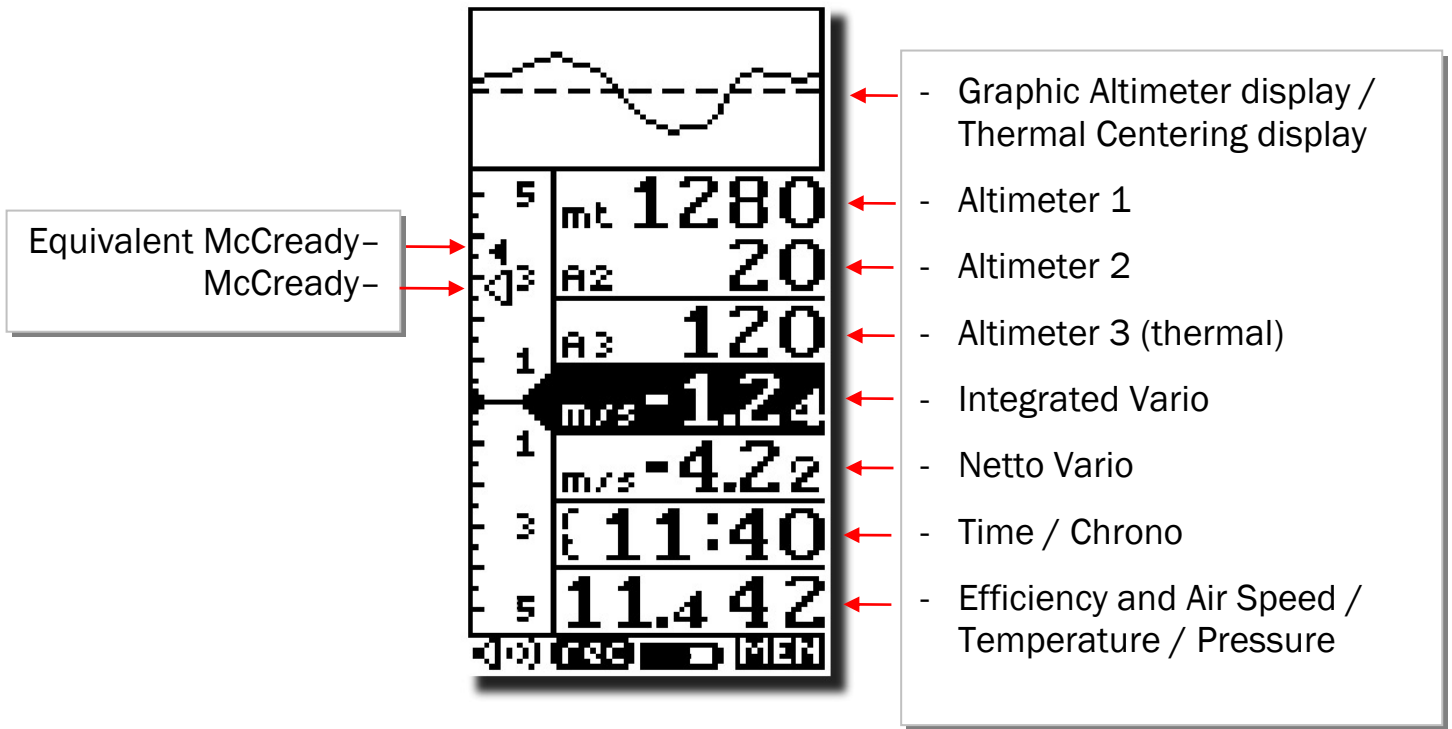
2.1 BASIC DISPLAY SCREEN



2.2 ADVANCED DISPLAY SCREEN

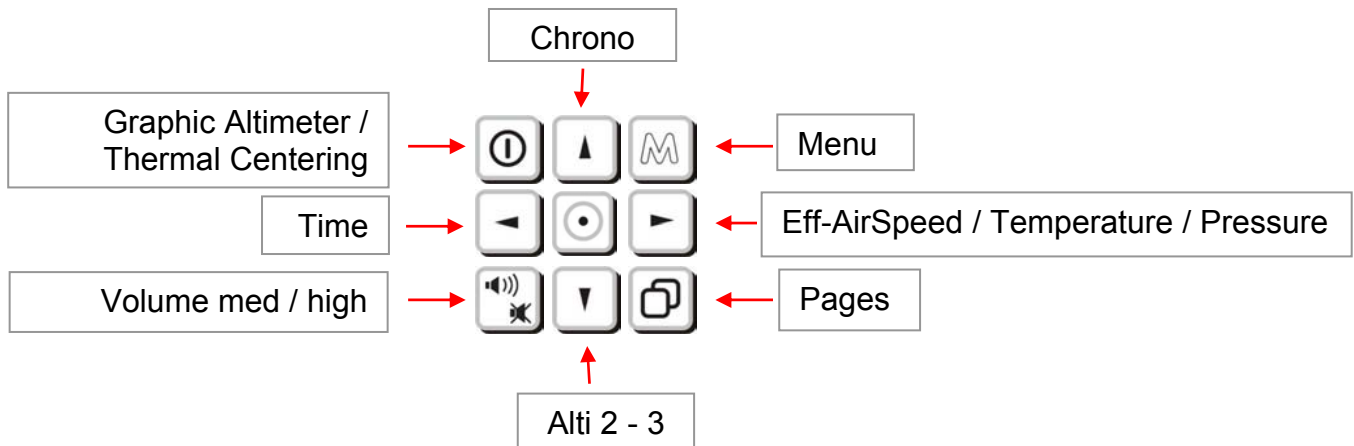


2.3 NAVIGATION DISPLAY SCREEN

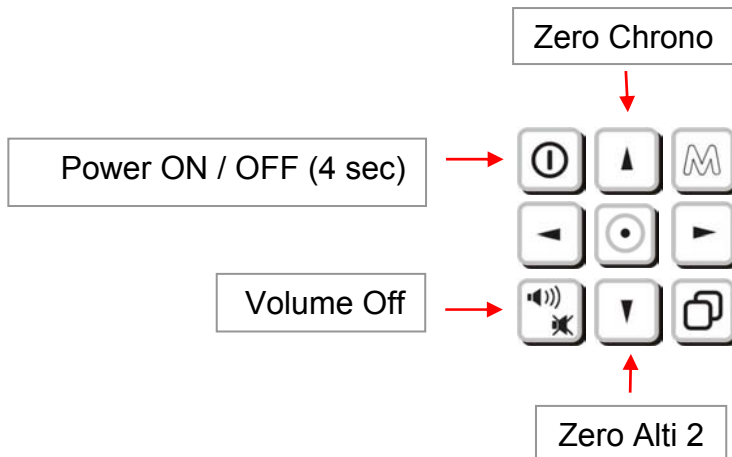


2.4 KEY GUIDE

2.4.1 NORMAL KEY PRESSURE



2.4.2 LONG KEY PRESSURE (2 seconds)



3 GETTING STARTED

3.1 GUIDE TO SOCKETS



3.2 BATTERIES

3.2.1 BATTERY TYPES

- The Digifly Archimede Plus is supplied with a none rechargeable 1.5V AA battery.
- It also support a 1.2V AA Ni-MH rechargeable battery.

3.2.2 BATTERY LIFE INDICATOR



- The battery life is up to 200 hours.
- The battery level is continuously monitored by an internal voltmeter that indicates the remaining battery life.
- The battery icon starts to blink when there is less than 20 hours of battery life remaining.
- The battery life can be affected by use in extreme conditions such as cold and humidity.
- The battery icon only starts at 100% when using a standard alkaline AA 1.5V battery.





3.3 LONG OR NORMAL KEY PRESS

- The length of time a key is pressed on your Digifly Archimede Plus influences the functions available.
- For a long key press, you must keep the button pressed down for at least 2 seconds (green functions).
- For a normal key press, you must press the button for less than a second.
- When not specified, the key press is to be considered as a normal key press.










3.4 TURNING ON & OFF

- To turn on your Digifly Archimede Plus, press the  key at least for 2 seconds.
- To turn off your Digifly Archimede Plus, press the  key at least for 2 seconds.
- After switching off your Digifly Archimede Plus, you must wait at least 5 seconds before you can turn it on again. This prevents unwanted operation e.g. during transit in your glider bag.
- After turning your Digifly Archimede Plus on, the first screen briefly shows the vario model, pilot name (if set), vario serial number, software version, date, time and battery voltage.

3.5 DISPLAY CONTRAST ADJUSTMENT











- The contrast of the Digifly Archimede Plus LCD display can be adjusted to suit ambient light conditions.
- To change the contrast of the display, press the  key to go “MAIN SETUP” menu, and go to (M-SET \ n. 1 CTRS). Edit the parameter and save by pressing the  key (function “SAV”).

3.6 MENU NAVIGATION

- To navigate the menus on your Digifly Archimede Plus, go to the setup MENU page by pressing the  key (function “MEN”).
- To return to the instrument’s main display, press the  key (function “ESC”).
- From the “MENU” page, to select the sub-menus, move up and down using the arrow keys ,  and to confirm, press the  key (function “ENT”).
- To change the selected parameter’s values, use the arrow keys ,  and confirm with the  key (function “SAV”) or you can also leave without saving your edit with the  key (function “ESC”).



3.7 SETTING UP YOUR VARIO



- To setup your Digifly Archimede Plus and adjust parameters, press the  key (function “MEN”), select the “MAIN SETUP”(M-SET) sub-menu and press the  key (function “ENT”). Move up and down with the arrow keys ,  Press the  key (function “EDIT”) to go to the edit mode. To change the selected parameter’s values, use the arrow keys ,  and confirm with the  key (function “SAV”) or you can also leave without saving your edit with the  key (function “ESC”).
- To return to the instrument’s main display, press the  key (function “ESC”).




3.8 MULTI LANGUAGE HELP

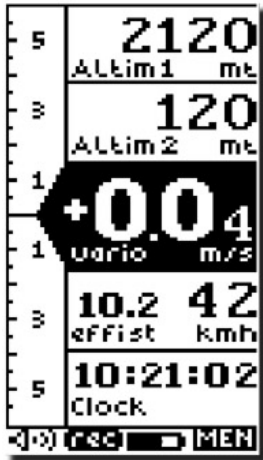
- To help you set up your Digifly Archimede Plus, the instrument supports several help languages. To change the help language go to (M-SET \ n.30 LANG) & select the language of choice.

3.9 RESTORE FACTORY SETTINGS

- To restore the factory settings (default values for all parameters), press and hold down the  key as you turn vario on. Keep the  key pressed until a message “FACTORY SET?” appears, then confirm with “YES” or “NO”.

4 DISPLAY SCREENS

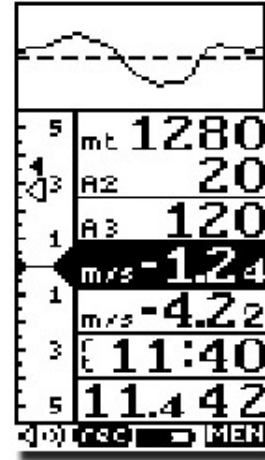
- The are 3 main display screens on the Digifly Archimede plus:
 - The **Basic Display** screen.
 - The **Advanced Display** screen.
 - The **Navigation Display** screen.
- To switch between these 3 main display screens, press the  key.



BASIC DISPLAY






ADVANCED DISPLAY











NAVIGATION DISPLAY

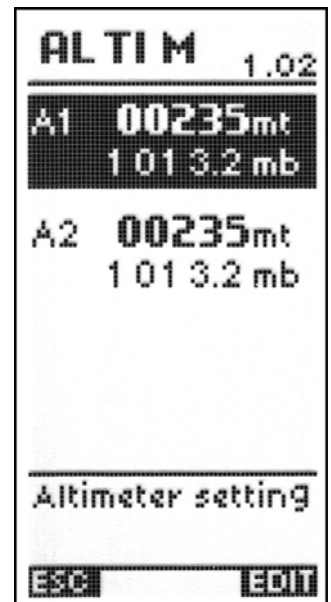
5 BASIC FUNCTIONS

5.1 ALTIMETER


- The Digifly Archimede Plus has 3 different altimeters: **A1**, **A2**, **A3**.
- The altimeters can be shown in metric (mt) or imperial (ft) units. To change the units of display. Press the  key, (function “ENT”) to select and then select (M-SET \ n. 26 U-AL)” and change to “FT” or “MT”.
- On the **Basic Display** page, the **A1** (barometric altimeter) is the first altimeter shown.
- Below the altimeter **A1** is there the **A2-A3** altimeter display . To switch between **A2** or **A3** press the  key.
- To zero the **A2** altimeter press the  key (long press).
- The **A3** altimeter is automatically zeroed when a thermal is found. There are 2 parameters that can be adjusted to allow the instrument to identify a thermal; the change in height and the time over which the change in height occurs.
- To set the thermal detection parameters, go to (ADVANCED SETUP \ n. 1 THEV) and (ADVANCED SETUP \ n. 2 THET) to adjust the time over which a change in height is required for detection of a thermal.

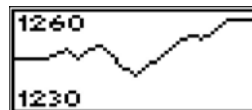
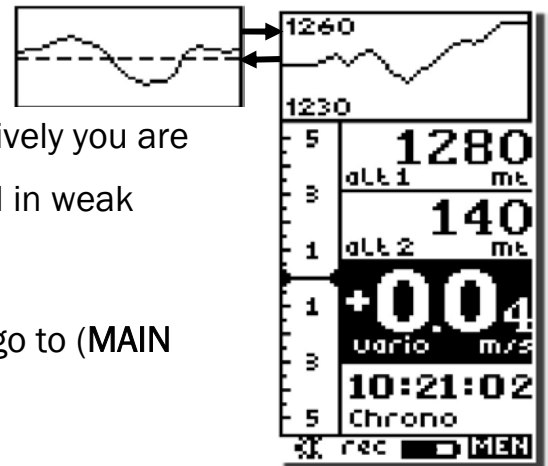
5.1.1 ADJUSTING ALTIMETERS A1, A2

- Go to the altimeter menu “**ALTIMETER**” and select which altimeter (A1 or A2) you want to adjust. Move up and down using the arrow keys ,  and press the  key (function “**EDIT**”). To adjust the altimeter value use the arrow keys ,  and confirm with the  key (function “**SAV**”) or leave without saving with the  key (function “**ESC**”).
- To reset the A1, A2 altimeters to standard QNH (1013 mb), go to the altimeter menu “**ALTIMETER**”. Press the  central key (long press). A confirmation of “**YES**” or “**NO**” is required.
- If the altimeters have been set in feet and the “ft” icon is blinking, the altitude indication is in tens of feet.

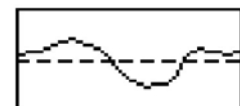


5.1.2 GRAPHIC ALTIMETER AND THERMAL CENTERING DISPLAY

- This is a live plot of your altitude (Altimeter1) against time (highlighted here in red), it scrolls whilst you are flying. It will help you to see how effectively you are climbing or turning in a thermal. It is especially useful in weak conditions.
- The scales on the graphic altimeter can be changed go to (MAIN SETUP \n. 13 BARY and \n. 14 BARY).
- To switch between the graphic altimeter and the thermal centering display, press the  key.



GRAPHIC ALTIMETER DISPLAY



THERMAL CENTERING DISPLAY

5.2 VARIOMETER

5.2.1 SUPERFAST INTELLIVARIO

- The Intellivario is a revolutionary system designed by Digifly which is based on the use of sophisticated digital filters. This results in a very sensitive vario and is immune to radio interference. All the variometric functions are subject to these filters.
- The Digifly **Archimede Plus** has a very fast pressure sensor and an excellent data acquisition system that allows the instrument to perform as a very fast and accurate vario (updated 20 times a second).

5.2.2 VARIO REACTIVITY

- To adjust the reactivity of the vario, go to (M-SET \ n. 5 RVAR).


5.2.3 ANALOGUE VARIO

- The long data field on the left of the display shows the analogue vario value.
- The analogue vario is an instantaneous vario reading. This information is shown on the analogue display on the left of the screen by a bar graph, indicating lift or sink.
- The scale of the analogue vario can be adjusted by setting parameter (M-SET \ n. 7 FS_V) to 1, 6, 12 m/s.

5.2.4 INTEGRATED (AVERAGED) VARIO

- The integrated vario is an average vario reading. This time over which the reading is averaged is adjustable.
- You can change the integration interval by setting parameter (M-SET \ n. 6 INTE) between “0” and “60” seconds.
- It can be delayed or immediate. If you set a value that is too low, its value will be close to the instantaneous reading. Normally this is the most common setting. It can also be used for example to see if the rate of lift or sink is improving or getting worse. If the integrated vario reading over a number of seconds is higher than the actual reading, it means that you are doing worse than before.




5.2.5 ACOUSTIC VARIO

- The acoustic vario represents the instantaneous values of the vario with a modulated tone.
- The volume of the tone is adjustable over three levels pressing the  key.
- **Important:** this volume level influence all acoustic indications, but not power ON/OFF indication.




- You can set the threshold level for the Digifly Archimede to indicate lift, go to (M-SET \ n. 2 V.UP) and sink, go to (M-SET \ n. 3 V.DN).
- To change the vario tone modulation, based on your personal preferences, go to (M-SET \ n. 4 TONE), the acoustic vario tone modulation between SFT (soft), STD (standard) and FAS (fast).
- A very useful function to “hear” the vario tone modulation without flying is the Vario Simulator function, see paragraph below.

5.2.6 VARIO SIMULATOR

- The Vario Simulator is a very useful function, that allows to simulate all the vario instrument functions (acoustic vario, analog and integrator vario) while you are on the ground.
- To activate this function, go to (**M-SET \ n. 8 SIMV**), press the  key (function “**EDIT**”) and select **ON**.
- Go back to **BASIC/ADVANCED/NAVIGATION** display and press up and down the arrow keys ,  to change the vario value.
- **Important:** for your safety, this function is always reset to “**OFF**” when you turn the vario on.

5.3 AIR SPEED (WITH OPTIONAL AIR SPEED PROBE)

- To display your air speed, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
- The air speed reading can be shown in metric (km/h) or imperial (mph) units. To change the units of display, go to (**M-SET \ n. 27 U-SP**) menu & then change to “**MHP**” or “**KMH**”.
- The airspeed can be shown on the **BASIC/ADVANCED/NAVIGATION DISPLAY** screen on the right side of the efficiency-airspeed dual instrument display.
- To display the efficiency-airspeed dual instrument press the  key.





5.3.1 STALL ALARM

- To activate the stall alarm function, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario. It is possible to adjust the value that the acoustic stall alarm is activated. Go to (**M-SET \ n. 9 STAL**). Enter the value in km/h.


5.3.2 AIR SPEED RECALIBRATION

- If the air speed probe is showing inaccurate readings, it is possible to recalibrate the air speed probe, go to (**M_SET \ n. 11 KIAS**). An adjustment (in %) of the air speed reading can be made, (100% = no adjustment, 110% = increase, 90% = decrease).
- **Attention:** incorrect re-calibration will make the air speed readings on the Digifly Archimede Plus inaccurate.




5.4 TEMPERATURE

- The temperature can be shown on the **BASIC/ADVANCED/NAVIGATION Display** screen.
- Press the right arrow key  to switch between the functions. In sequence the following values are shown:
Temperature / Pressure / Air Speed
- The ambient temperature reading can be shown in metric (°C) or imperial (°F) units. To change the units of display, go to the main setup menu page by pressing the  key (function “MEN”), select the “MAIN SETUP” menu and go (M-SET \ n. 28 U-TE).
- It is possible to adjust the temperature indication, go to (MAIN SETUP \ n. 29 KTMP).
- **Note:** temperature sensor is inside the instrument and takes several minutes to reach the external temperature. Differences in readings of about 1° or 2° are normal.

5.5 BAROMETER

- The barometer can be shown on the **BASIC/ADVANCED/NAVIGATION DISPLAY** screen.
- To display the barometric pressure press the  key.
- To recalibrate the barometer, go to (M-SET \ n. 12 KBAR)
- **Attention:** Incorrect re-calibration makes the readings of the barometer & the altimeters less accurate.

5.6 TIME/CHRONOGRAPH

- The Time/Chronograph function can be shown on the **BASIC/ADVANCED/NAVIGATION Display**.
- Press the key  TIME or , CHRONO to switch between the functions.
- To zero the chronograph, press the  key (long press).
- **Note:** The chronograph is always set at zero when flight recorder starts.
- To adjust the time and date, go to (M-SET \ n. 15 HOUR), (M-SET \ n. 16 MIN), (M-SET \ n. 17 DAY), (M-SET \ n. 18 MONT), (M-SET \ n. 19 YEAR).

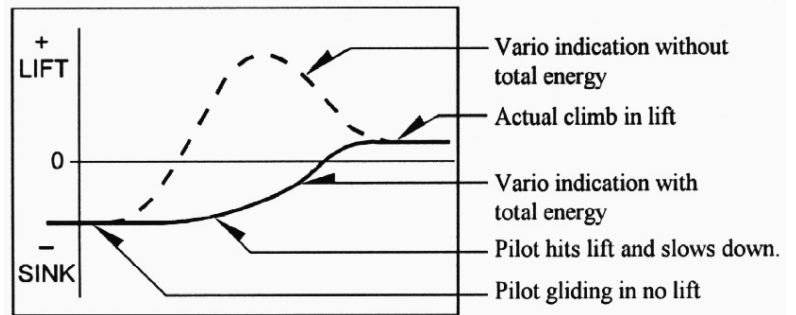
5.7 PILOT NAME

- To set the pilot name, go to (M-SET \ n. 20 PILO).

6 ADVANCED FUNCTIONS

6.1 TOTAL ENERGY COMPENSATION


- Total energy compensation is the rate of change of atmospheric pressure and displays this as a vertical speed. If you slow down in flight, your glider will climb using the excessive kinetic energy. A “non-compensated” vario would interpret this as lift. Now, if you are flying

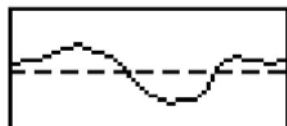


quite fast and slow down when you enter a thermal, the vario reading gets rather difficult to interpret. Part of the lift reading is due to slowing down, and part is due to lift from the thermal. With total energy compensation, the part of the climb due to the change in velocity is ignored, allowing you to identify “real” thermals.


- To identify the correct total energy compensation value, an air speed probe must be connected to your vario. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
- To determine the correct total energy compensation value, with an air speed probe connected, you should fly in calm air conditions and slow down as if you are entering a thermal. If the vario shows a change in lift, you have to increase the total energy compensation value, go to (**M-SET \ n. 10 TEC**). Then try again until the change in velocity isn't recorded as lift.
- A typical value for hang gliders is **65**. Setting this value to “0” deactivates the total energy compensation function.

6.2 THERMAL CENTERING FUNCTION

- This is a live plot of your vario against time, it scrolls whilst you are flying. It will help you to see how wide the thermal is and how far you flew from the best lift you encountered. It is especially useful in weak conditions.
- To switch between the **Thermal Centering Function** and the **Graphic Altimeter** press the  key (long pressure).
- The horizontal (x) scale, time (in minutes) can be changed, go to (**MAIN SETUP \ n. 13 BARX**).
- The vertical scale (y) height (in meters) can also be adjusted, go to (**MAIN SETUP \ n. 14 BARY**).

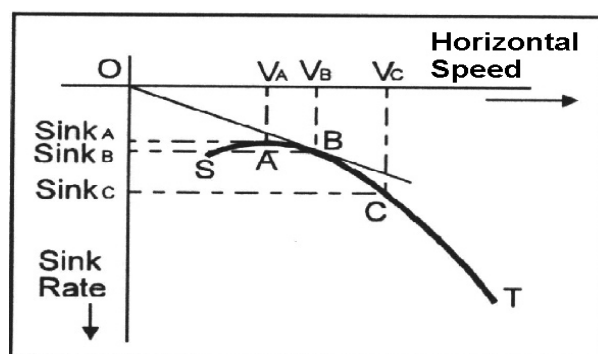


6.3 EFFICIENCY (GLIDE RATIO)

- The efficiency indicates the current instant efficiency (glide ratio) related to the air.
- To display your efficiency you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
- If your Air speed drops lower than 5km/h, the display is blank.
- To adjust the time over which efficiency is averaged, go to (ADV. SETUP \ n. 3 EFF).
- The efficiency can be shown on the **BASIC/ADVANCED/NAVIGATION DISPLAY** screen on the left side of the efficiency-airspeed dual instrument display.
- To display the efficiency-airspeed dual instrument press the  key.

6.4 POLAR DATA

- To utilize the polar data functions, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.

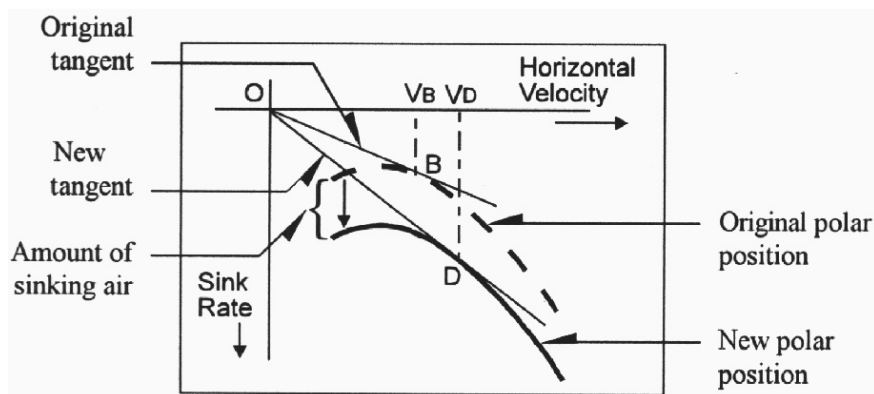


- A polar curve (shown in bold on the figure) is a graph of your glider's sink rate over its speed range.
- The glider's stall speed is shown by at point **S** and the glider's max speed at point **T** on the graph.
- On the graph, you can also see three pairs of relative speed readings and sink rates. At point **A**, you can see that the lowest sink rate achieved is at the top of the curve. Therefore **SinkA** is the minimum sink rate and **VA** is the speed at which this is achieved.
- The glide ratio is the ratio between the glider's horizontal speed and the sink rate. To find the best glide rate on the graph, a straight line is from the origin of the graph (point **O**) to the tangent of the curve (point **B**). The speed to fly at to achieve the best glide (air related) is therefore **VB** and the glide ratio is **VB/SinkB**.
- On your instrument you can insert three different polars, go to (ADVANCED SETUP \ n. 6/14 PX-A/B/C) and choose which polar to use, go to (ADVANCED SETUP \ n. 5 POLA).

- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “**OFF**”, all information relating to **McCready, McCready Equivalent, Thermal Sniffer, Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
- There are three polars preloaded, (2 for hang gliders and 1 for a paraglider). To see the three default polar curves and to calculate your own, use the Digifly Excel software available from the Digifly web site (www.digifly.com).
- We suggest that you insert your own polar curve data which best reflects the actual performance of your glider.

6.5 SPEED TO FLY

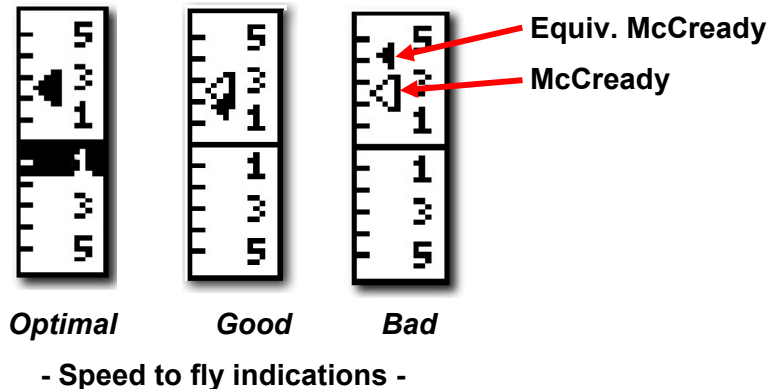
- To utilize the speed to fly functions you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “**OFF**”, all information relating to **McCready, McCready Equivalent, Thermal Sniffer, Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
- The speed to fly value is the optimum flying speed to obtain the best glide ratio. This value depends on performance of your glider as well as vertical and horizontal airflow. In calm air, the optimum flying speed is the same as the best glide speed (point **B** on the figure).



- On the figure above, you can see different values of speed to fly value related to different flight conditions.

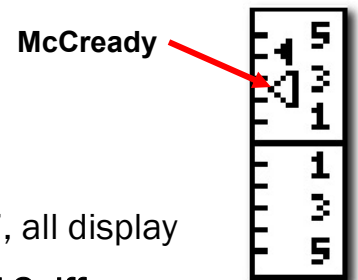
- The X-axis shows horizontal speed, the Y-axis shows sink rate. In a head wind or sink conditions, the best glide speed increases. In order to find the optimum speed to fly value in sink, you simply add the sink of the air to the polar of your glider, drawing a new polar and a new tangent line from the initial point of axes. The new tangent (point D) meets the polar at the point giving a higher optimum flying speed **VD**.

- To obtain the correct “Speed to fly” you have to adjust your speed so both McCready arrows are in the same position.



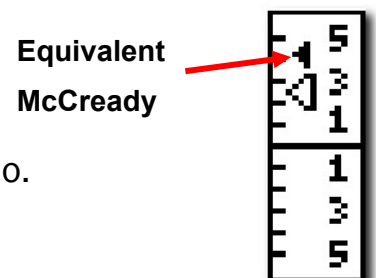
6.6 McCREADY

- To utilize the McCready functions, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “OFF”, all display information relating to **McCready**, **McCready Equivalent**, **Thermal Sniffer**, **Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
- The McCready value is the average lift value of last 10 minutes . The average time can be adjusted , go to (**ADVANCED SETUP \ n. 15 MCRA**).



6.7 EQUIVALENT McCREADY

- To utilize the McCready functions, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.



- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “OFF”, all display information relating to **McCready, McCready Equivalent, Thermal Sniffer, Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
- This value indicates the Equivalent McCready value, using the actual air speed as the optimal speed.
- The Equivalent McCready indicator is a kind of "reverse" speed to fly calculation. It tells you that flying at the current air speed you are assuming that the average thermal value of the flight is the value indicated from the Equivalent McCready.
- To set the average of the Equivalent McCready, go to (**ADVANCED SETUP \ n. 16 MCRE**).

6.8 NETTO VARIO

- To utilize the netto vario function, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.
-
- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “OFF”, all display information relating to **McCready, McCready Equivalent, Thermal Sniffer, Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
 - The netto vario indicates the vertical speed of the rising or sinking air mass you are flying through and is displayed with black digits with a white background (this to be distinguished from the standard vario that is displayed in “reverse” mode).
-
- To use this function, you also need to set up the polar curve of your glider.

6.9 THERMAL SNIFFER

- To utilize the thermal sniffer function, you must have an air speed probe connected. The optional air speed probe should be plugged in to the right hand socket on the bottom of the vario.

- If this parameter (**ADVANCED SETUP \ n. 5 POLA**) is set to “OFF”, all display information relating to **McCready, McCready Equivalent, Thermal Sniffer , Netto Vario** is not displayed on the instrument, creating a cleaner display for users not needing this functionality.
- The thermal sniffer is an innovative function that helps you to detect a thermal early.
- It alerts you with a sound and the popup message “**THERMAL**” when you are in a thermal but your vario is still indicating sink because your sink rate is higher than the speed of the rising air.
- This function uses two parameters, the thermal strength and the time over which the thermal must occur.
- To set the thermal detection parameters, go to (**ADVANCED SETUP \ n. 1 THEV**) and (**ADVANCED SETUP \ n. 2 THET**) to adjust the time over which a change in height is required for detection of a thermal.
- To use this function you need to set up the polar of your glider.

7 FLIGHT RECORDER

- When the Digifly Archimede plus is recording a flight, the record icon is shown at the bottom of the screen. has been activated.



7.1 ACTIVATING THE FLIGHT RECORDER

- The flight data recorder can operate in 3 different modes:
 - “**AUT**” Automatic start record mode.
 - “**ALW**” Always record mode
 - “**OFF**” No data recording.

7.1.1 AUTOMATIC START RECORD MODE

- The default record mode is automatic start record mode, “**AUT**”, parameter (**MAIN SETUP \ n. 21 RECM**).

- In automatic start record mode, the flight recorder will start on take off, provided there is a change in height of 2 meters.
- In the automatic start record mode it is possible to change the parameters that initiates the recording. You can adjust the change of height in meters (**MAIN SETUP \ n. 22 R-DS**) and required for the instrument to automatically start recording a flight.
- In order to respect the FAI rules access to the setup menu on the Digifly **Archimede plus** is blocked when the flight recorder has been activated.
- Once the recorder is activated, the flight recorder will only stop recording when the instrument is turned off.

7.1.2 ALWAYS RECORD MODE


- In the always record mode “**ALW**” (**MAIN SETUP \ n. 21 RECM**) the flight data recorder starts recording 5 seconds after the instrument is turned on and stops recording when the instrument is turned off.
- In order to respect the FAI rules access to the setup menu on the Digifly **Archimede plus** is blocked when the flight recorder has been activated.

7.1.3 RECORD MODE OFF









- In the record mode “**OFF**” (**MAIN SETUP \ n. 21 RECM**), no data is recorded.

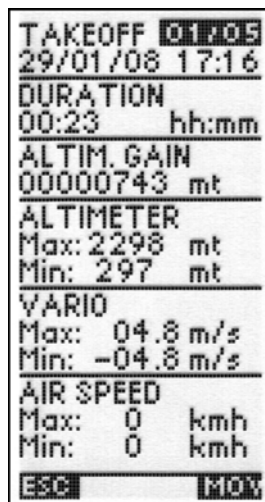
7.2 RECORD RATE

- The recorder rate can be adjusted from 1 to 60 seconds, go to (**MAIN SETUP \ n. 23 RECR**).
- At 1 data point per second you can record 24 hours of flight data.
- At 1 data point per minute, you can record up to 1000 hours of flight data.
- Up to 105,000 flight data points can be recorded from 250 flights.
- When the recorder memory is full, the oldest flight is automatically deleted.







- The remaining free recorder memory is displayed shortly at the instrument power on .
- If a single flight fills the whole memory the recorder is stopped and the message “MEM FULL” is displayed). To record a new flight is necessary to clear the whole recorder memory : to delete all flights goto the “LOGBOOK” menu, press the  key (long press). A confirmation of “YES” or “NO” is required.

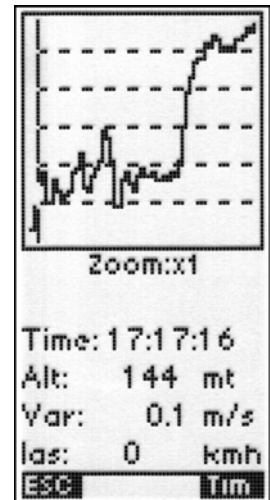
7.3 LOG BOOK MANAGEMENT

- To view saved flight data go to press the  key (function “ENT”) and select “LOGBOOK”. A list of all recorded flights with take off date and time is shown.
- To select which flight you want to view, move up and down using the arrow keys ,  and then press the  key (function “ENT”). The first flight listed is the last recorded flight.
- To scroll to view the others flights navigate using the arrow keys , 
- Press the  key (function “ESC”) to return to the previous menu.
- To delete all flights from the flight log, from the “LOGBOOK” menu, press the  key (long press). A confirmation of “YES” or “NO” is required.
- For each flight, the flight data screen includes the following information:
 - Take off date and time, the duration of the flight and the total gain of altitude attained, the minimum and maximum values of altimeter A1, the variometer values and air speed.



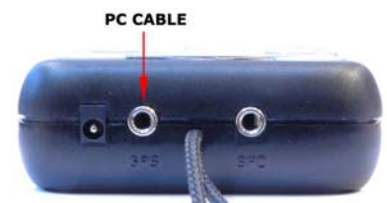
7.4 FLIGHT PLAYBACK

- This is a special function that allows you to review (playback) on your vario the whole flight in detail.
- Moving the cursor on the graph you can read on the screen at each data point:
 - Pressure altitude, variometer, air speed, time and chronograph values.
- To activate the playback function, press the  key (function “MOV”).
- From this screen you can use these keys for the following functions:
 - Press the arrow keys  ,  to zoom-in/zoom-out .
 - Press the arrow keys  ,  to move the graphic cursor to the left or to the right.
 - Press the  key (function “Tim”) to change the time display to chronograph display.



8 PC CONNECTION AND INTERFACE

- To download your flight data to your PC, plug the optional PC serial or USB cable into the middle socket on the base of your Digifly Archimede Plus.



8.1 CONNECTING WITH THE DIGIFLY VLTOOLS SOFTWARE

- The “VLTOOLS” software is a free Digifly Windows PC software that allows you to download your recorded flights (logbook) from the Archimede Plus to a PC in Windows Excel format and IGC format.
- Connect the PC cable with both the Digifly Archimede Plus and the PC switched off.
- Switch on the Digifly Archimede Plus and then the PC.
- From the Digifly Archimede Plus, go to the menu “VLTOOLS”, the message “LINK” start to flash.
- From your PC, run the latest Digifly Vlttools software and click the “CONNECT” button.

- A successful connection is confirmed by a message with the serial number of your instrument.
- Click the “**Download Last Flight**” or the “**Download All Flights**” button.
- At the end of the download *.XLS and *.IGC files will be created in the VLTOOLS directory.
- The “**Download Last Flight**” button will save last flight in two different file format **flight.igc** and **flight.xls** .
- The “**Download All Flights**” button will save each flight in two different formats (*.igc and *.xls) with file name 01, 02, 03 etc.
- **Note:** these files will be always overwritten so it's very important that you rename them after the download.
- Files *.igc can be viewed on your PC with most IGC compatible software packages e.g. CompeGPS, MaxPunkte, GpsDump, Seeyou, Oziexplorer, etc.
- Files *.xls can be read & edited by Excel program.
- For more info read the Digifly Vtools user manual.



8.2 CONNECTING WITH COMPETITION SOFTWARE

- The Digifly **Archimede Plus** instrument can communicate and downloads flights with some of the commonly used competition software packages e.g. **CompeGPS**, **MaxPunkte**, **GpsDump**.
- To communicate with a PC connect the optional PC serial cable or USB cable in to the left socket on the bottom of the vario, marked GPS.

8.2.1 DOWNLOAD A SINGLE FLIGHT TO COMPETITION SOFTWARE

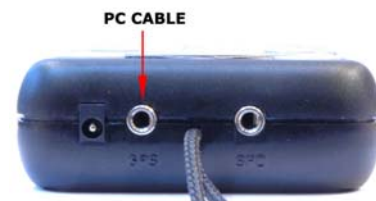
- To download single flights from your Digifly **Archimede plus** to your PC Competition software , enter the “**LOGBOOK**” menu on your instrument.
- With up and down arrows, highlight the desired flight (without entering in it).
- From the PC Competition software (CompeGPS, MaxPunkte, GpsDump) select “**download flight track**” using the protocol MLR 38400 baud.
- The download can be stopped pressing the “**ESC**” key on the your Digifly **Archimede plus**.

8.2.2 DOWNLOAD ALL FLIGHTS TO COMPETITION SOFTWARE

- To download all flights from your Digifly **Archimede plus** to your PC Competition software, go to the “**LOGBOOK**” menu (without entering in it).
- From the PC software (CompeGPS, MaxPunkte, GpsDump) select “**download flight track**” using the protocol MLR 38400 baud.
- The download can be stopped pressing the “**ESC**” key on the Digifly **Archimede plus**.





8.3 FIRMWARE UPGRADE


- The software (firmware) on your Digifly **Archimede plus** can be updated as new releases are made available from Digifly. This will allow your instrument to be kept up to date with new functions and improvements.

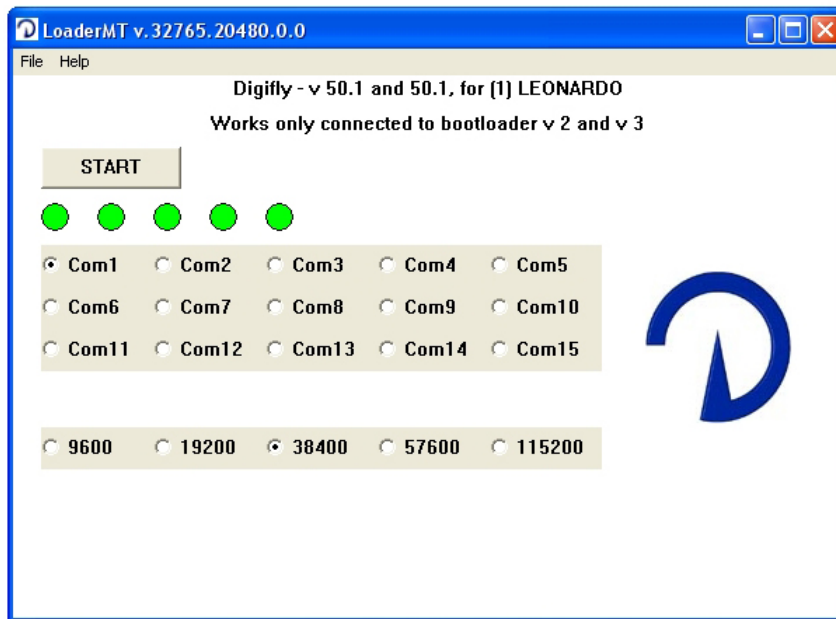


- The latest Digifly software may be downloaded from the Digifly web site (www.digifly.com) & installed using the optional PC serial or USB cable.
- The optional PC serial or Digifly USB cable is connected to the middle socket on the base of the Digifly **Archimede plus**. .

8.3.1 UPGRADE PROCESS

- Make sure the battery on your Digifly **Archimede plus** is fully charged.
- Turn off your Digifly **Archimede plus** and plug the Digifly PC serial or USB cable in to the middle socket on the base of the Digifly **Archimede plus**.
- Keeping the  key pressed, press the  key and wait a long “beep” acoustic confirmation. Note that the screen will not come on.
- Now release the  key and then the  key.
- From your PC, run the “Upgrade_xx_x_Archimede plus.exe” program.
- Press Start Button
- Make sure you have only one version of the “Upgrade_xx_x_Archimede plus.exe” programme open at a time.

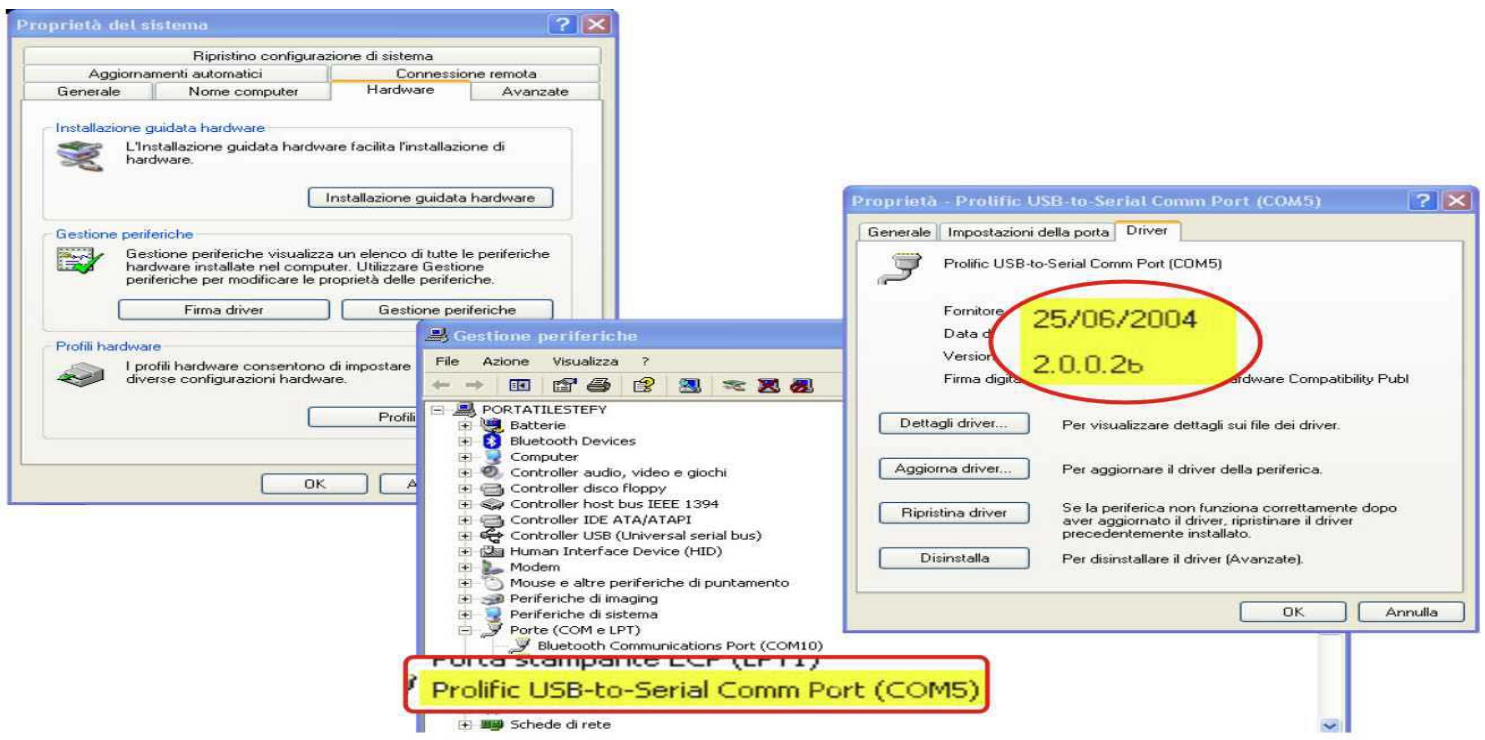
- When the “Upgrade_xx_x_Archimede plus.exe” tools software is operating you will see a the progress of the software.
- The upgrade process take about 5 minutes and on completion, your PC will confirm with a long “beep”.
- Press the  key and disconnect the PC cable.
- When you restart your Digifly **Archimede plus** the version number of the new software you have just installed is briefly shown on the start up screen.



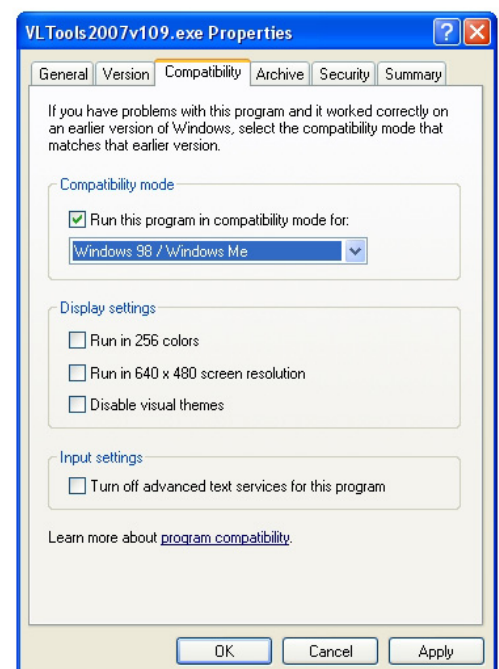
8.4 PROBLEMS CONNECTING TO YOUR PC

- **Problem** : I attached the cable but the software do not connect
- **Solution** :
- **A)** Unplug the cable , download from our web site the driver installer (www.digifly.com ->software -> " DIGIFLYNEXTGEN-USB Driver.zip" , run it on your PC than plug again the cable.
- **How to Check the Driver Installation**
- 1) Go to the Device Manager : Start -> Control Panel -> System -> Hardware -> Device Manager
- 2) Click on the plus sign (+) next to "Ports."
- 3) If the device is installed properly, you will see "Prolific USB-to-Serial Comm Port. (COMx)". Note that x is the number of the COM port assigned to the cable.
- **B)** Look for a conflict with a another program or device and turn off firewall / antivirus programs

- C) It is also possible that the COM port number assigned is too high or duplicated with some other devices (Bluetooth - Irda).
- Try to reassign the COM port number :
- 1) Go to the Device Manager :Start ->Control Panel ->System ->Hardware ->Device Manager
- 2) Click on the plus sign (+) next to "Ports."
- 3) Right click on the "Prolific USB to Serial Port" and click on Properties
- 4) Click on the "Port Settings" tab. Click the "Advanced" button.
- 5) Pull down the scrollbar on the bottom, left side and select COM 1, 2, 3 or 4 (NOTE: Choose one that does not say "in use" next to it). Click "OK."
- 6) Click "OK" again. Notice that the device will show up as being on the same COM port that it was before (i.e., COM5), but will show up on the new port if you close the Device Manager and open it again.



- **Problem** :The cable is working with the Digifly VIttools but not with the software i'm using
- **Solution** :Make sure that the software and the cable are using the same COM port number (try with Digifly VIttools program to verify the COM port number).
- If you are still experiencing problems try with the following:
 - Temporarily disable your antivirus and firewall software.



- Manually setup on your PC the communication protocol MLR 38400 baud.
- If this still fails, try adjusting the communication protocol to MLR 19200 baud.
- Again :From Windows, right click on the Vtools2007 icon and tick the check box “run this program in Windows98/WindowsMe compatible mode”.

9 DIGIFLY ACCESSORIES

9.1 DIGIFLY ARCHIMEDE STANDARD ACCESSORIES

- The Digifly Archimede Plus has the following accessories provided as standard:
 - Protective case.
 - Leg strap.
 - AA 1.5V alkaline battery.
 - User manual.

9.2 OPTIONAL ACCESSORIES

- The following optional accessories are available from Digifly:
 - Digifly PC serial cable to download flight data and upload new firmware directly from the Internet.
 - Digifly PC USB cable to download flight data and upload new firmware directly from the Internet.
 - Air speed probe for hang glider.
 - Air speed probe for paraglider.
 - Hang gliding vario mount.
 - Paragliding vario mount (vario holder)

10 APPENDIX

10.1 DIGIFLY TECHNICAL FEATURES

10.2 STANDARD FUNCTIONS

- Graphic altimeter.
- 3 Altimeters 9,000 m (29527 ft) with adjustable pressure reference.
- Super fast vario with dynamic filter ‘IntelliVario’ .
- Adjustable acoustic vario reactivity
- Acoustic vario with adjustable levels, volume and tone.
- Analogue vario +/- 12 m/s (2400 ft/min).
- Digital vario +/- 25 m/s (5000 ft/min).
- Vario integrator adjustable from 0 to 60 sec.
- Total energy compensation (with optional air speed probe).

- Input for optional air speed probe 150 km/h (93 mph) with user calibration.
- Adjustable stall alarm visual and acoustic (with optional air speed probe).
- Barometer (range 300 to 1200 mB) with user calibration.
- Thermometer (range -30°C to +70°C) (range -22 °F to +158 °F).
- Constant battery monitoring.
- Date and time , chronometer, flight timer.
- 50 flights data recorder with autostart.
- Adjustable units of measure.

10.3 ADVANCED FUNCTIONS

- 3 adjustable polar curves.
- McCready and Equivalent McReady function (with optional air speed probe).
- Speed To Fly (with optional air speed probe).
- Efficiency related to the air (with optional air speed probe).
- Netto Vario (with optional air speed probe).
- Thermal sniffer (with optional air speed probe).
- Thermal centering function.
- Auto zero thermal altimeter.

10.4 GENERAL SPECIFICATIONS

- High resolution graphic LCD display 128 x 64 pixels with adjustable contrast.
- Upgradeable Flash memory software available from the Internet using the optional PC cable via your PC.
- PC connection.
- Input for optional air speed probe.
- Single AA battery required (1.2V or 1.5V).
- AA 1.2V rechargeable battery compatibility.
- Battery life 200 hours.
- Dimensions (H x L x D) 144mm x 72mm x 25mm.
- Weight (with battery) 160 g.
- The Digifly **Archimede Plus** is supplied with leg strap, protective case , AA 1.5V battery and user manual.
- 3 year warranty.

10.5 SETUP PARAMETERS

The following is a list of parameters that can be adjusted. For each parameter you can see the range of values, the factory setting (default) and the unit of measure.



n	Name	Description	Range	Default	Units
1	CTRS	display contrast setting	40 - 60	53	%
2	V.UP	acoustic vario lift setting	0 - 25	0.05	m/s
3	V.DN	acoustic vario sink setting	0 - 25	3.5	m/s
4	TONE	acoustic vario tone modulation	SFT/STD/FAS	STD	---
5	RVAR	acoustic vario reactivity	0.1 - 3.0	0.4	sec
6	INTE	vario integrator	0 - 60	1	sec
7	FS_V	graphic vario scale(1,6,12 m/s) LOW/MED/HIG		MED	---
8	SIMV	vario simulator	ON/OFF	OFF	---
9	STAL	stall alarm level	0 - 150	0	km/h
10	TEC	total energy compensation	0 - 100	0	%
11	KIAS	air speed calibration	50 - 200	100	%
12	KBAR	barometer calibration	+/- 20.0	0	mB
13	BARX	graphic altimeter x scale	0.4 - 4.0	1	minute
14	BARY	graphic altimeter y scale	3 - 3000	30	mt
15	HOUR	time setting: hours	0 - 23	---	hour
16	MIN	time setting: minutes	0 - 59	---	minute
17	DAY	time setting: day	1 - 31	---	day
18	MONT	time setting: month	1 - 12	---	month
19	YEAR	time setting: year	0 - 99	---	year
20	PILO	pilot name	6 characters	---	---
21	RECM	recorder mode	AUT/ALW/OFF	AUT	---
22	R-DS	autorecorder meter	1 - 30	2	mt
23	RECR	recorder rate	1 - 60	1	sec
24	GTYP	glider type	6 characters	---	---
25	GID	glider id	6 characters	---	---
26	U-AL	altimeter, variometer units	FT/MT	MT	---
27	U-SP	air speed units	MHP/KMH	KMH	---
28	U-TE	temperature units	FAR/CEL	CEL	---
29	KTMP	temperature calibration	-20.0 +20.0	0	°C
30	LANG	help language	ITA/ESP/DEU/FRA/CZE/HUN/LN1/LN2	UK	

10.6 ADV-SETUP (ADVANCED SETUP) PARAMETERS

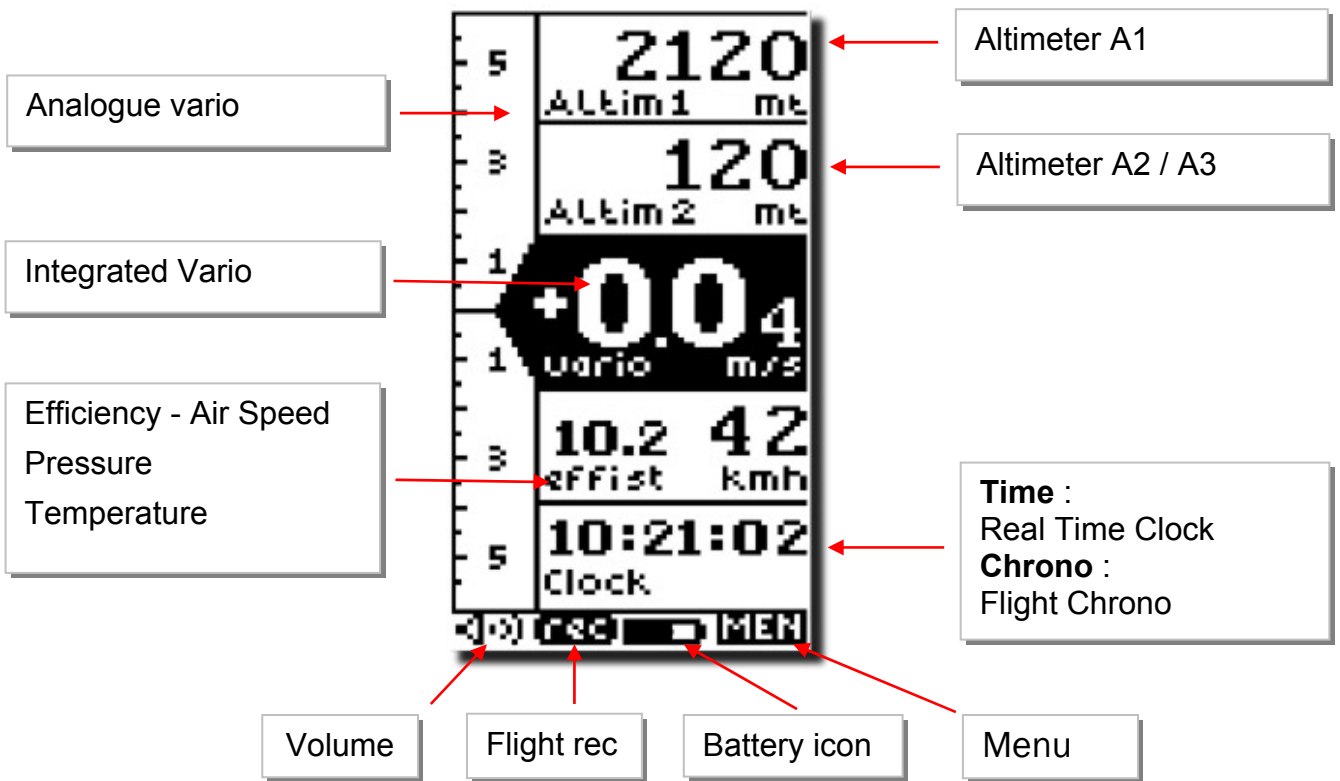
The following is a list of parameters that can be adjusted. For each parameter you can see the range of values, the factory setting (default) and the unit of measure.

n	Name	Description	Range	Default	Units
1	THEV	thermal detect vario thres.	0 - 25	0.5	m/s
2	THET	thermal detect time thres.	1 - 30	10	sec
3	EFF	instant efficiency average	1-30	10	sec
4	TELE	not used	OFF	OFF	---
5	POLA	active polar	OFF/P1/P2/P3	OFF	---
6-8		P1-A P1-B P1-C	polar 1 coeff.	xxx	---
9-11		P2-A P2-B P2-C	polar 2 coeff.	xxx	---
12-14		P3-A P3-B P3-C	polar 3 coeff.	xxx	---
15	MCRA	McCready value	0.2 - 30	10	min
16	MCRE	McCready equiv average time	0.1 - 3	0	sec

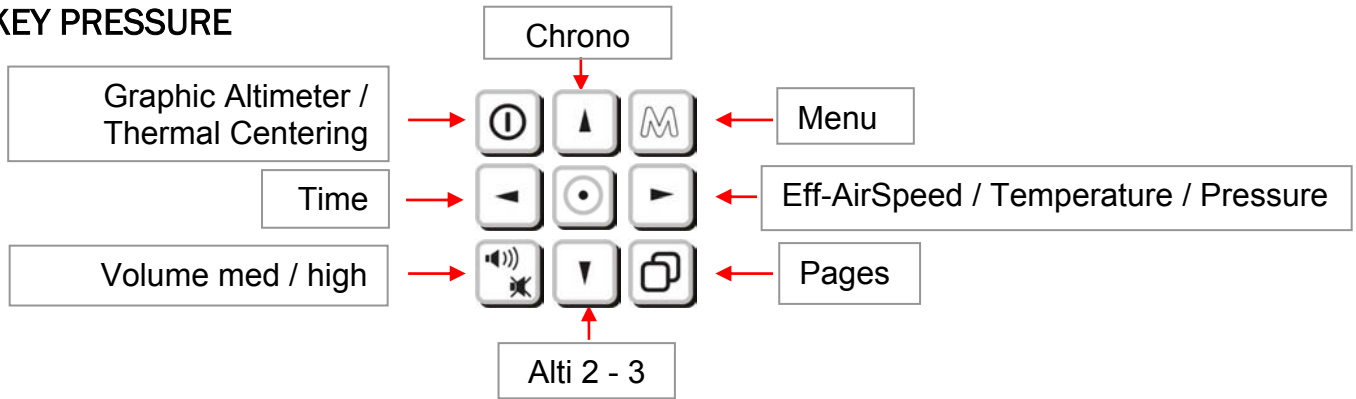
10.7 RESTORE FACTORY SETTINGS

- To restore the factory settings (default parameters) and default screen setups, press and hold down the  key as you turn vario on. Keep the  key pressed until a message "FACTORY SET?" appears, then confirm with "YES" or "NO".

BASIC DISPLAY SCREEN



NORMAL KEY PRESSURE



LONG KEY PRESSURE (2seconds)

