

TELEMETRY





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SOFTWARE MANUAL





HOW TO INSTALL?

Windows users

- Download the “**BYB Telemetry_Win**” from the BYB Telemetry repository
- Launch the BYB Telemetry installer
- Follow the instruction to conclude the installation
- Launch the program

Mac users

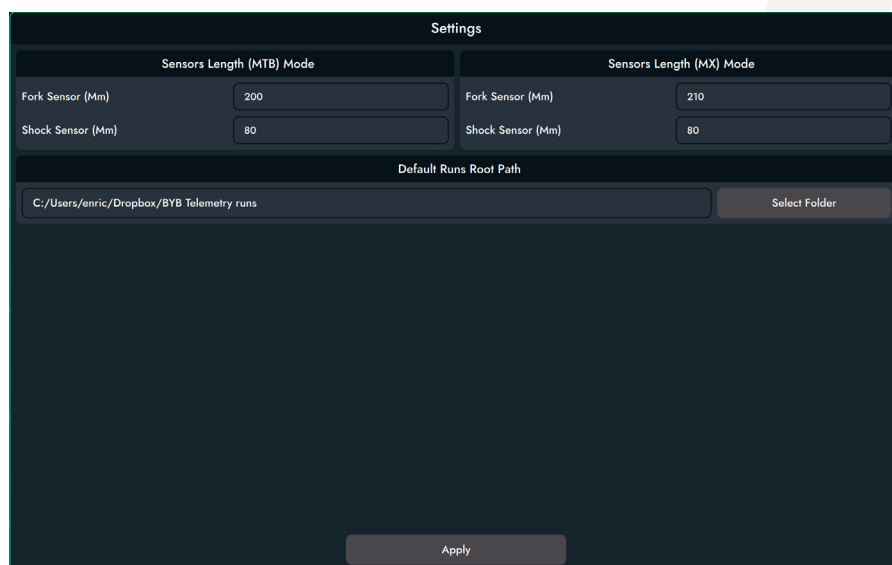
- Download the “**BYB Telemetry_Mac**” from the BYB Telemetry repository
- Open the .dmg archive
- Move the BYB Telemetry app to the application folder
- Launch the program

PRELIMINARY CONFIGURATION

Set your sensors length

Click settings from the top menu bar. To visualize the data properly and make the auto-calibration effective, is important to set the fork and shock sensor lengths. Default values are:

- MTB Fork 210 mm
- MTB Shock 80 mm
- MOTO Fork 350 mm
- MOTO Shock 150 mm



Root path

The root path defined by the user is automatically loaded at startup. The best practice is to set the root path to the main folder which contains all the .byb files.

If you are using the DropBox upload function from the smartphone, it's advisable to set the "BYB Telemetry runs" folder as your root folder. Click on the "Select folder" button to pick one. Once done, click Apply.

USER INTERFACE

Section of the software

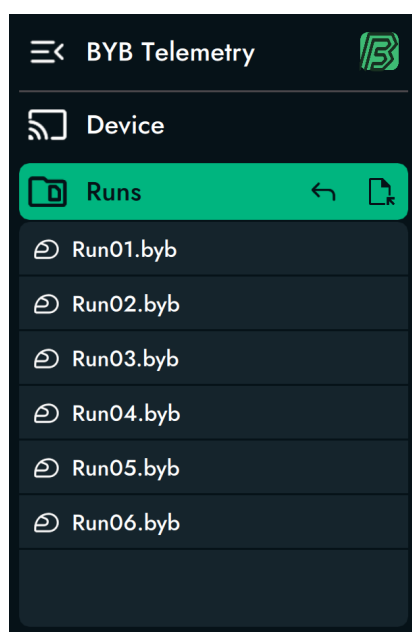
- Menu bar
- File browser
- Control panel
- Tab selector
- GPS and altitude charts
- Tabs



FILE BROWSER

How to open a .byb file

The file browser is loaded at startup\ accordingly to the root folder decided by the user. To open a file it's enough to navigate through the folders. Click on the folder name to advance, click on the top arrow to go back and click on the .byb file to open it in the software.



[TIPS]

To keep all the .byb runs tidy, it's advisable to create a folder for every day of riding/testing. The folder name should contain the date and other information such as the place or the name of the rider.

Example: "2021-02-15_Pila Bike Park"

For an easy handling, all the folders should be placed inside your root folder.

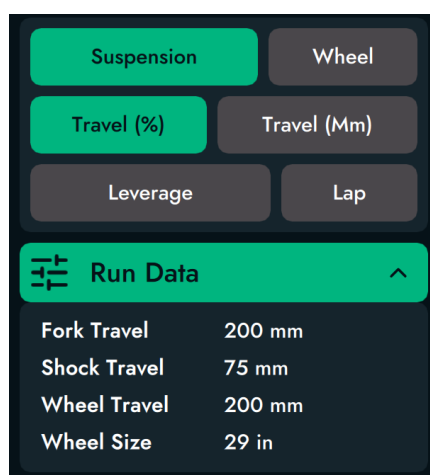
CONTROL PANEL

How to change the display mode

The control panel shows the current display mode by highlighting the respective buttons. There are several choices that can be selected:

- SUSPENSION - It's used to set the display mode to suspension travel
- WHEEL - It's used to set the display mode to front and rear wheel travel
- TRAVEL (%) - It's used to set the display mode to percentage
- TRAVEL (mm) - It's used to set the display mode to millimeters
- LEVERAGE - It's used to set the leverage ratio between the shock and the rear-wheel
- LAP MANAGER- It's used to obtain time splits and lap times

The software automatically updates all the charts and visualizations about every tab according with the selected parameters.



In the image above, the control panel contains all the information that are automatically loaded from the .byb file.

[TIPS]

If the values haven't been entered properly, it's possible to modify them straight from the "Notes" tab, once done click "Save". Once done, reload the run by clicking on the .byb file.

[CAUTION]

If the "Leverage settings" button is not selected, the wheel display mode for the rear wheel will be a linear approximation, using as reference the values of the shock travel and the bike rear travel.

CONTROL PANEL

Leverage settings

Click on "Leverage settings" to open the leverage dialog.

Here you can set the parameters about the geometry of your frame. In particular, you can convert the shock travel into the effective rear-wheel travel.

The default leverage is linear and it's automatically loaded from the data contained inside the notes. The custom leverage curve can be obtained by filling the table.



How to plot the leverage curve

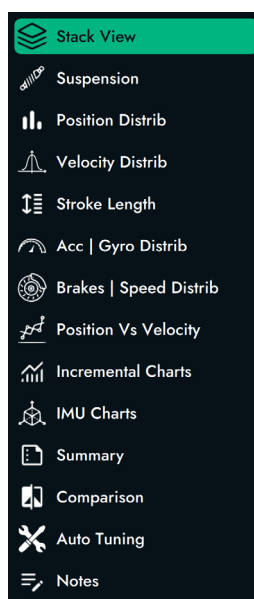
- Input the values of shock travel and rear-wheel travel in the table (optimal amount is 6/7 points). As first point use 0,0 and as last point use max shock travel, max rear wheel travel
- Click the "Plot" button to display the points on the graph
- To generate the curve, click on the "Interpolate" button. The software automatically calculates the leverage curve relative to your swingarm
- Now you can select the "Wheel travel" option from the control panel
- You can save and load the leverage points of your bikes using the "Save" and "Load" buttons
- If needed, click the "Toggle" button to remove the custom interpolation

TAB SELECTOR

Tabs

The software is characterized by several tabs. They are:

- **STACK VIEW** - It contains all the charts stacked together
- **SUSPENSION VIEW** - It contains detailed charts about all the data
- **POSITION DISTRIBUTION** - It contains the histograms of the bike's balance
- **VELOCITY DISTRIBUTION** - It contains the histograms of the suspension's shaft velocities
- **STROKE LENGTH** - It contains the histograms and the number of stroke events
- **IMU DISTRIBUTION** - It contains the histograms of the IMU usage
- **BRAKE DISTRIBUTION** - It contains the histograms of the brake usage
- **SPEED DISTRIBUTION** - It contains the histograms of the rider's speed
- **POSITION vs VELOCITY** - It contains the charts of the suspension position and velocity
- **INCREMENTAL CHARTS** - It contains the cumulative charts of suspension and IMU
- **IMU CHARTS** - It contains the charts of IMU points, suspension position and suspension velocity
- **SUMMARY** - It contains all the information about the opened run
- **COMPARISON** - This advanced function is used to compare two runs.
- **AUTO TUNING** - This tab let you tune the suspension according to our algorithm
- **NOTES** - It contains all the settings and notes regarding the current run



[TIPS]

It's possible to hide the tab selector and the control panel in order to increase the charts' dimension by clicking on the upper left arrow.

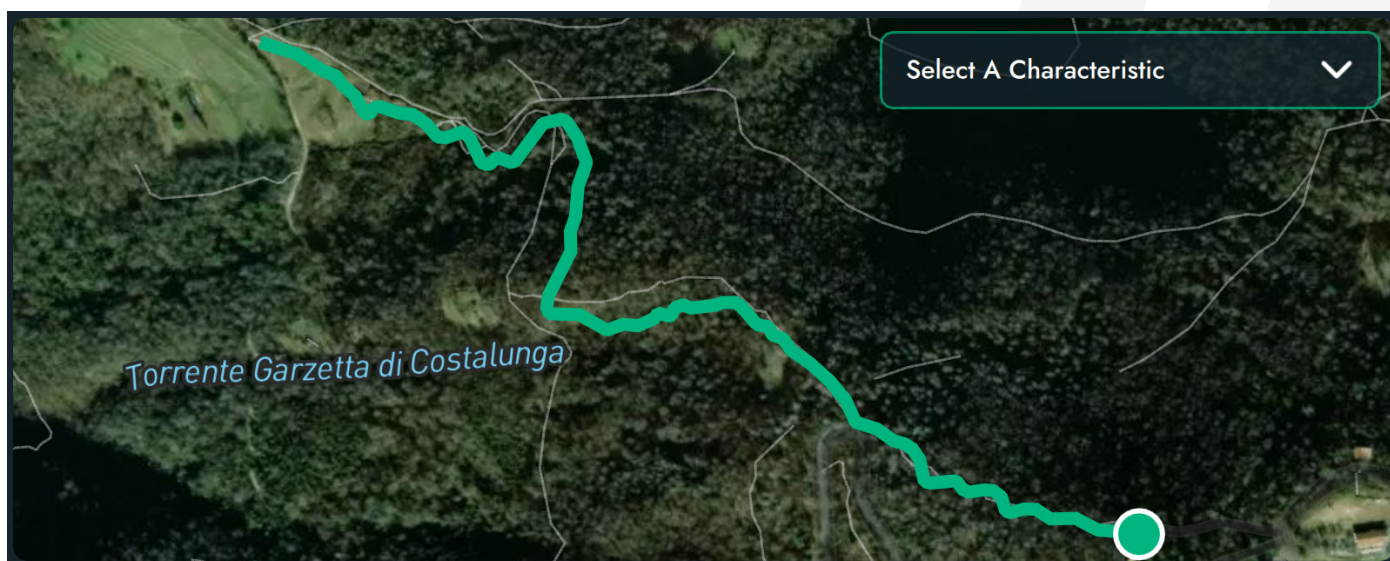
TABS

GPS map

The GPS map is automatically loaded when a .byb file is selected.

The route travelled by the rider is painted on the map, while the dot represent the current position of the rider which is animated by the cursor that scrolls the data.

The map can be zoomed and repositioned using the arrow and mouse wheel



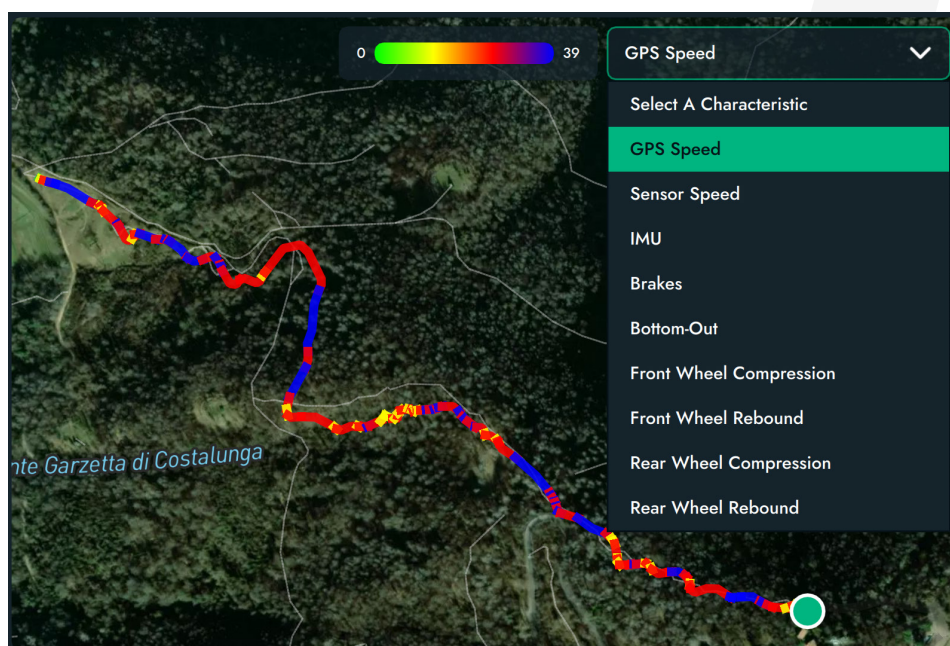
Operations

- Zoom the map
- Move the map

TABS

Maps characteristics

The GPS route can be overlaid using different characteristics. For example, it's possible to plot the whole route according to a color gradient that reflects a specific type of data, selectable through the dropdown menu.



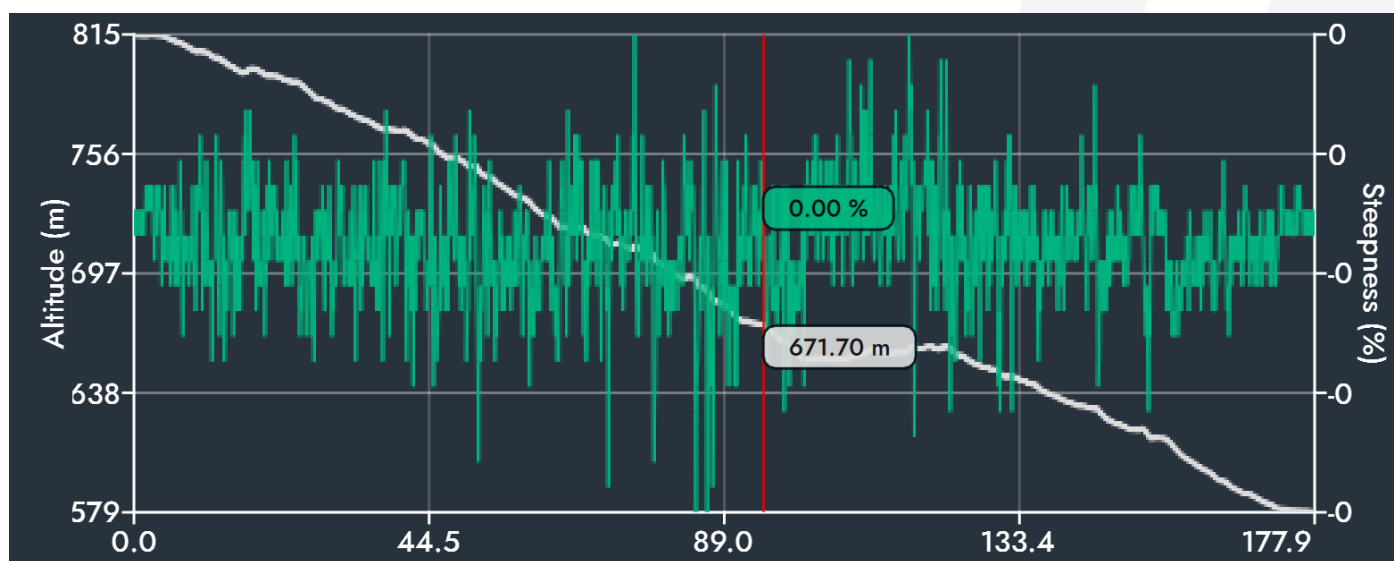
Operations

- Select the map characteristics

TABS

Altitude and steepnees chart

The altitude chart shows the vertical drop of the track.
The steepnees is calculated from the GPS data and it's approximante. Negative values represent downhills, while positive values represent climbs.



Operations

- Zoom the chart
- Scroll the chart

TABS

Stack view

The stack view shows all the available charts.

For example, it's possible to analyze the suspension movement, the vehicle velocity (both from the GPS and the speed sensor), the IMU lines, the brakes usage and more.

On the left, it's possible to update the average and maximum values according to the current selection.



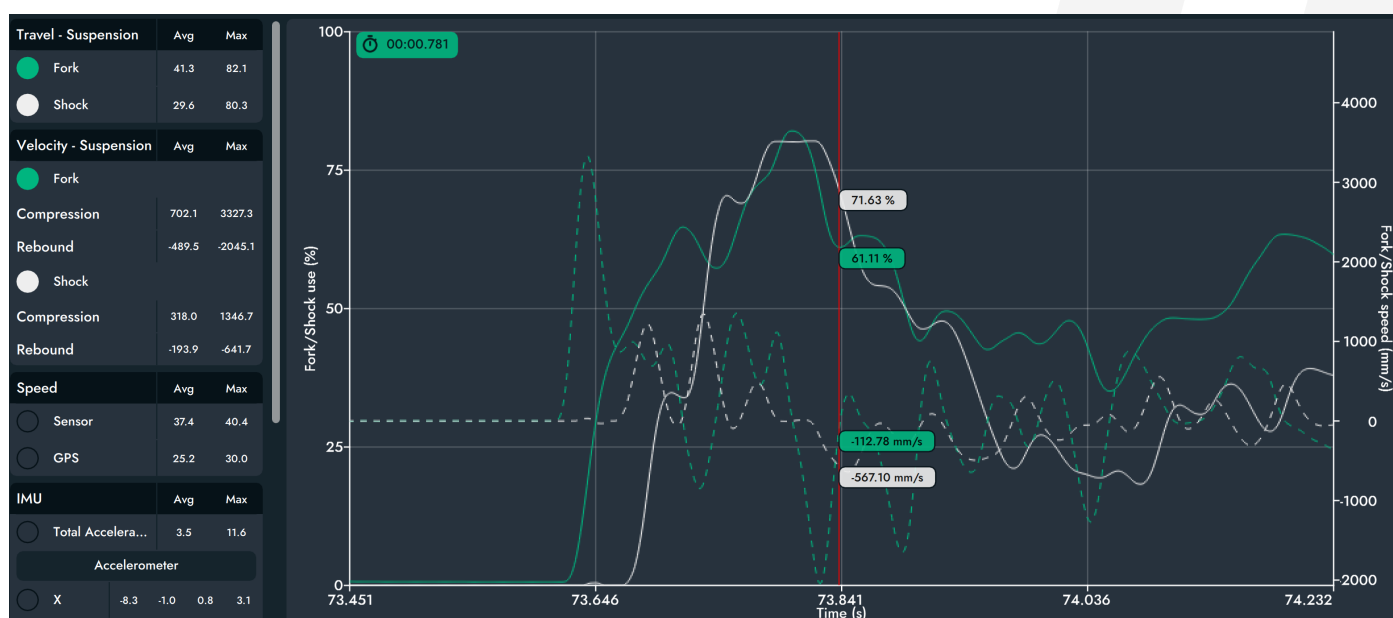
Operations

- Select the display mode from the control panel
- Scroll the charts and move the GPS pointer
- Scroll the charts and read the current value from the pointer's labels
- Click, drag and release the mouse on any graph to zoom-in the interval. The corresponding selection will be highlighted inside the GPS track too, while the average and the maximum values are dynamically updated on the left. The current selection is shared between the tabs
- Double-click anywhere on the chart to zoom-out

TABS

Suspension view

The suspension view is used for deep analysis and to overlay all the data. Through the buttons on the left side, it's possible to select which data needs to be shown. On the top left corner there's a banner that shows the time elapsed (referred to the current selection). It's mainly used to perform chronometric measures on a track (or a specific selection).



Operations

- Select the display mode from the control panel
- Scroll the charts and move the GPS pointer
- Scroll the charts and read the current value from the pointer's labels
- Select which data to show and manage the overlay of the different lines
- Click, drag and release the mouse on any graph to zoom-in the interval. The corresponding selection will be highlighted inside the GPS track too, while the average and the maximum values are dynamically updated on the left. The current selection is shared between the tabs
- Double-click anywhere on the chart to zoom-out

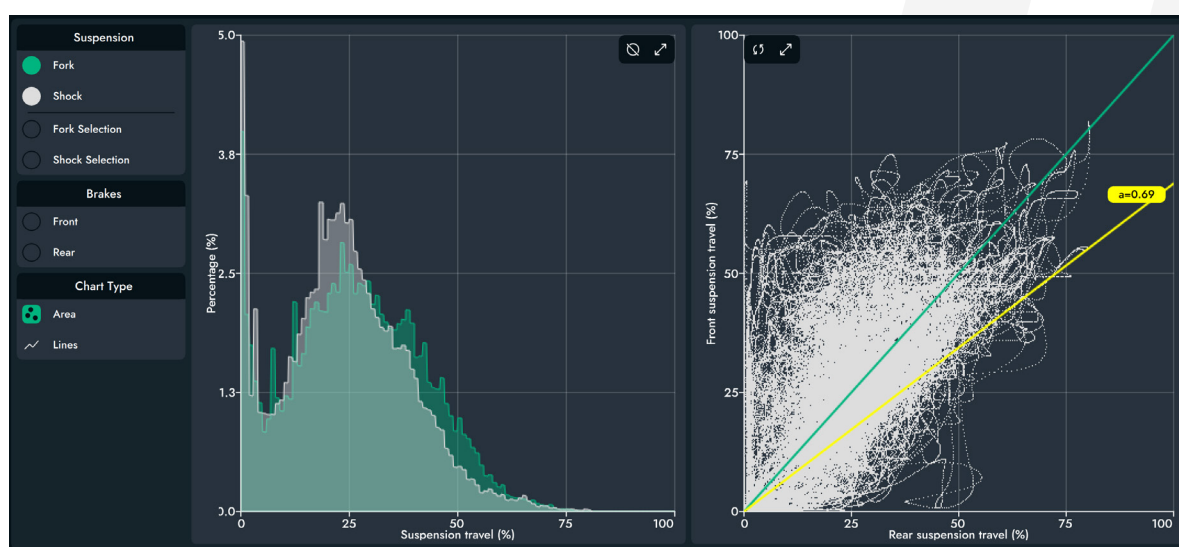
TABS

Position distribution

The position distribution represents for how long (in percentage) your suspension are used at a certain value of travel. These data are displayed through histograms.

These charts represent and useful way to check the balance of the bike. To do this, it makes sense to plot the wheel position instead of the suspension position because wheel travel values differs from shock travel values (due to the leverage ratio).

The chart on the right represents the dispersion of the points related to the suspension. The green line is just the median that splits the chart in two equal parts, while the yellow line represents the best fit for a perfectly balanced position between each wheel.



Operations

- Select the display mode from the control panel
- Select which histogram to plot for the full run
- Select which histogram to plot for the current selection
- Select to sync the scatter plot with the current selection
- Select the overlay of brakes data
- Select the "hide zero button" to remove the zeros from the charts
- Select which type of chart to show between histograms and lines
- Enlarge the charts

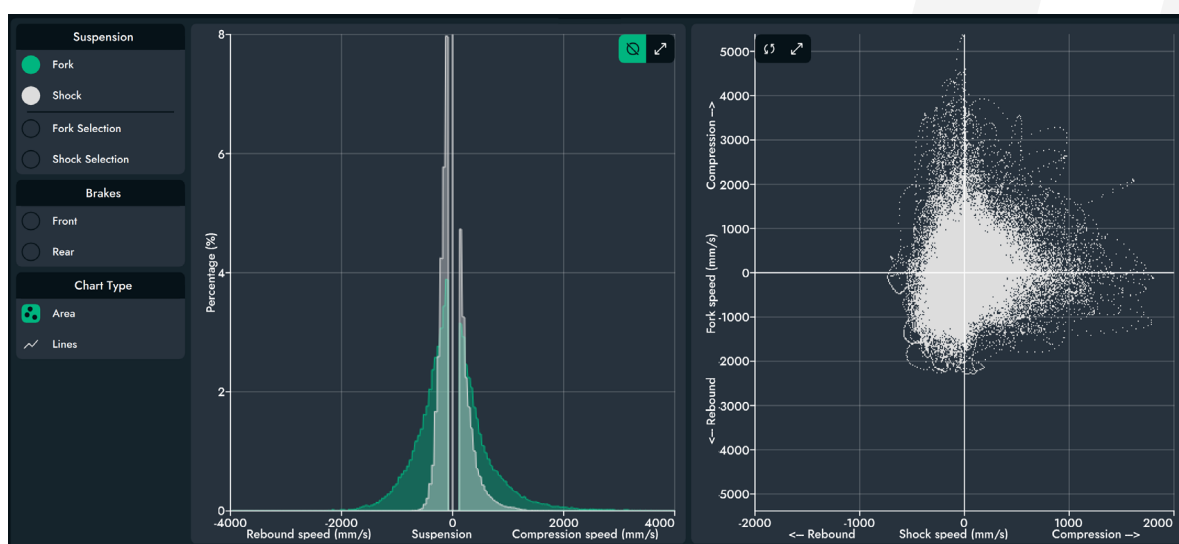
TABS

Velocity distribution

The velocity distribution represents for how long (in percentage) your suspension are used at a certain value of speed. This is displayed through histograms.

These charts represent an useful way to check the dynamic balance of the bike. To do this, it makes sense to plot the wheel position instead of the suspension position because wheel speed values differs from shock velocity values (due to the leverage ratio).

The chart on the right represents a dispersion of the points related to the suspension's velocities.



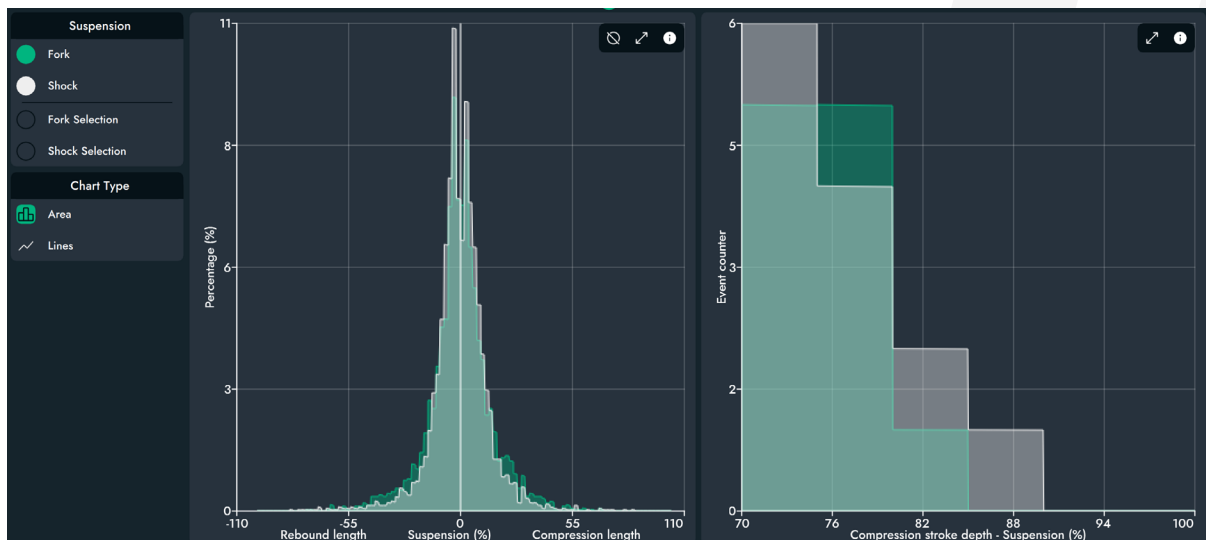
Operations

- Select the display mode from the control panel
- Select which histogram to plot for the full run
- Select which histogram to plot for the current selection
- Select to sync the scatter plot with the current selection
- Select the overlay of brakes data
- Select the "hide zero button" to remove the zeros from the charts
- Select which type of chart to show between histograms and lines
- Enlarge the charts

TABS

Stroke length

The stroke length represents a single (and complete) compression or rebound event. The histogram on the left shows how many (in percentage) stroke events are occurring for each possible suspension length, both for rebound and compression. The chart on the right is just a counter of the deep stroke events. A deep stroke event is when more than the 70% of the travel is used in just one stroke event.



Operations

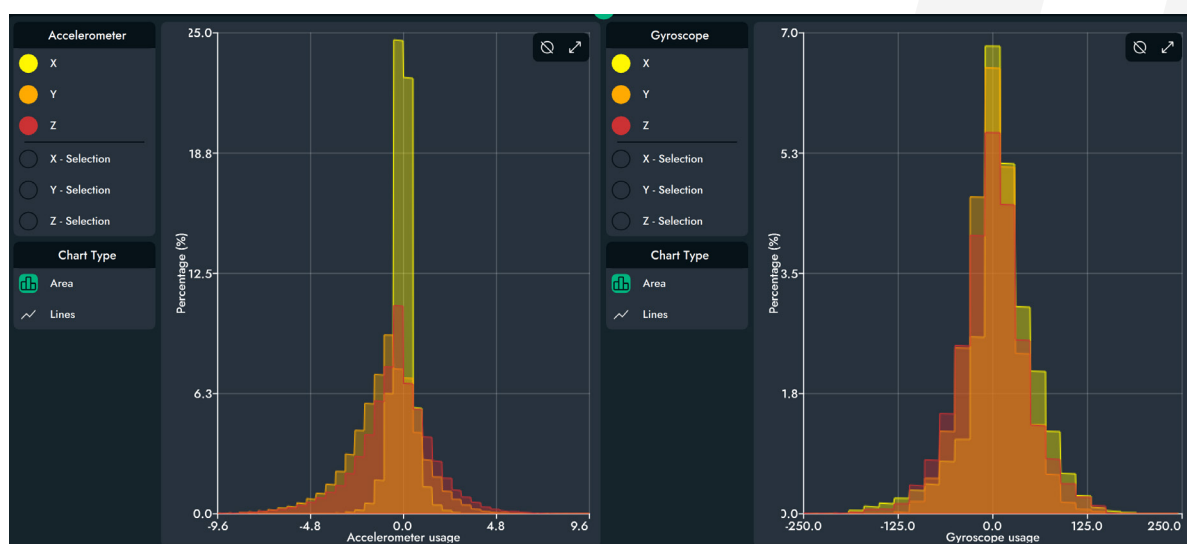
- Select the display mode from the control panel
- Select which histogram to plot for the full run
- Select which histogram to plot for the current selection
- Select the "hide zero button" to remove the zeros from the charts
- Select which type of chart to show between histograms and lines
- Enlarge the charts

TABS

IMU Distribution

The IMU distribution is divided into accelerometer and gyroscope distribution. For each view, the distribution for all the 3 axis is represented. The acceleration distribution can be used to spot the “shocks” perceived, while the gyroscope distribution can be used to evaluate the pitch, roll and yaw” angles.

The data must be evaluated according to the acquisition unit installation.



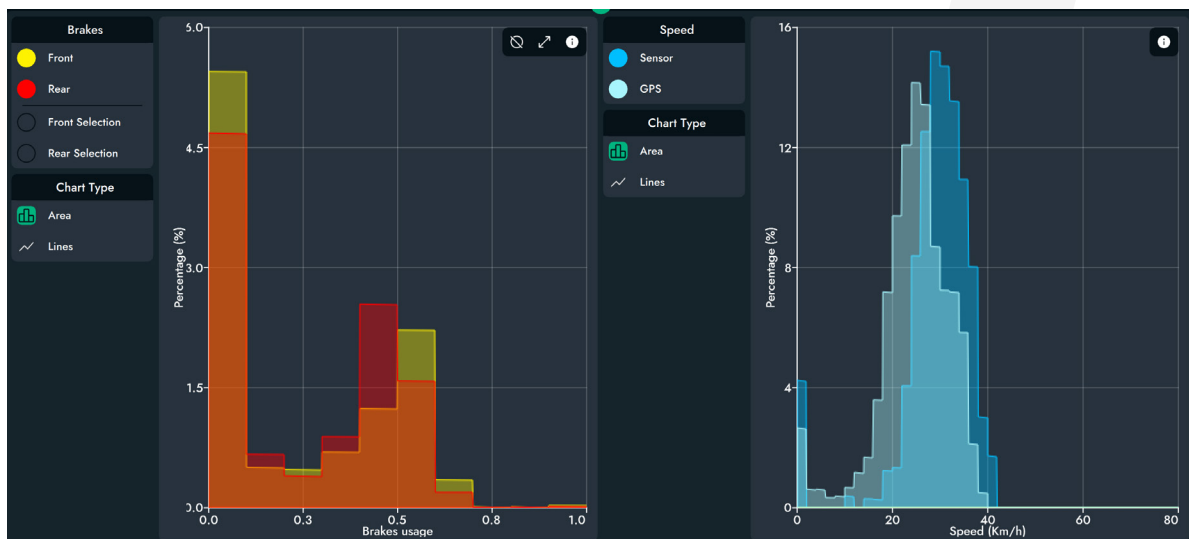
Operations

- Select which histogram to plot for the full run
- Select which histogram to plot for the current selection
- Select the “hide zero button” to remove the zeros from the charts
- Select which type of chart to show between histograms and lines
- Enlarge the charts

TABS

Brakes and speed distribution

The brake distribution represents for how long (in percentage) the brake levers are pulled. The speed distribution represents for how long (in percentage) a certain speed is sustained. It's normal that the GPS speed differs from the sensor speed because the first one is less accurate and conditioned by the GPS reception.



Operations

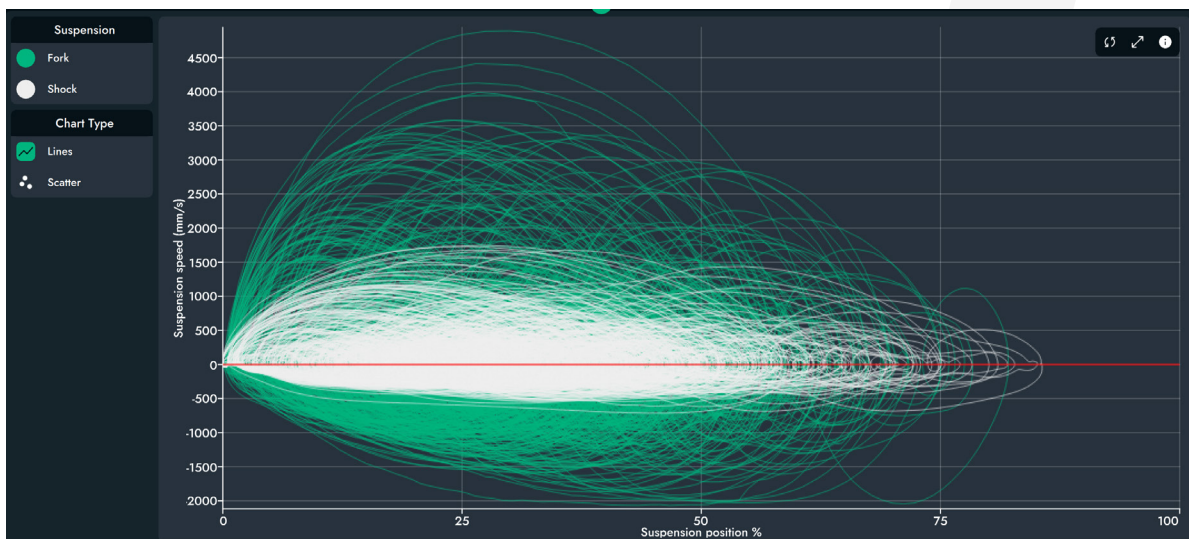
- Select to plot the histogram of the brakes
- Select to plot the histogram of the speed
- Select to sync the data to plot with the current selection
- Select the "hide zero button" to remove the zeros from the charts
- Select which type of chart to show between histograms and lines

TABS

Position vs velocity

The position vs velocity charts shows the relation that exists between the suspension position and the suspension velocity.

It's broadly used to evaluate the balance, the stroke usage and the peak velocities about the compression and the rebound.



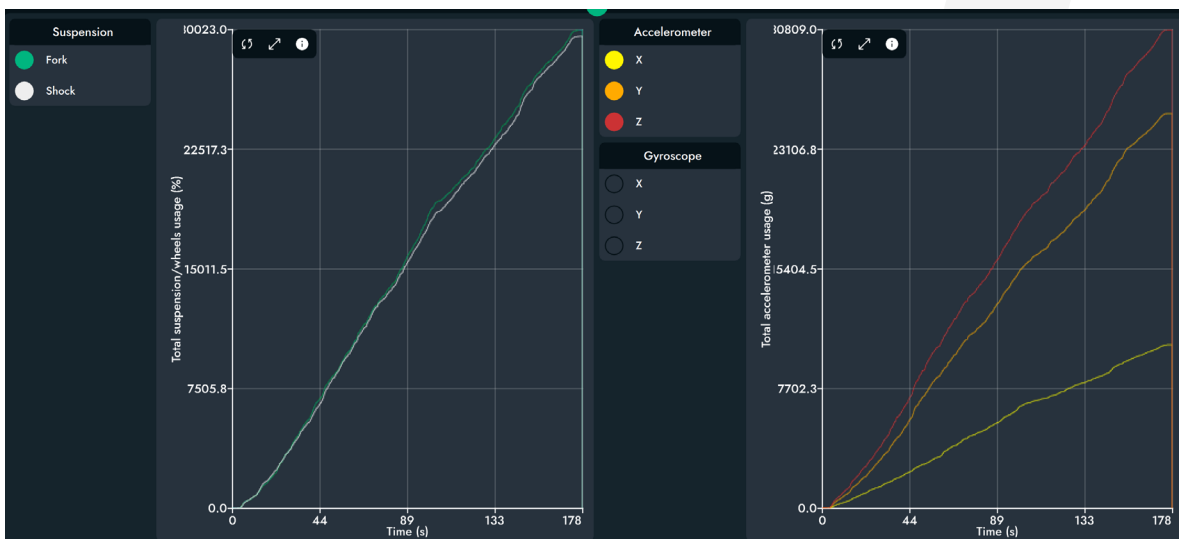
Operations

- Select the display mode from the control panel
- Select which lines to plot
- Select to sync the chart with the current selection
- Select which type of chart to show between points and lines
- Click on any point of the chart to see the time of the event
- Enlarge the charts

TABS

Incremental charts

The incremental charts represent the cumulative sum of the point obtained from the suspension and the IMU. They can be used to evaluate unexpected drifts in the series.



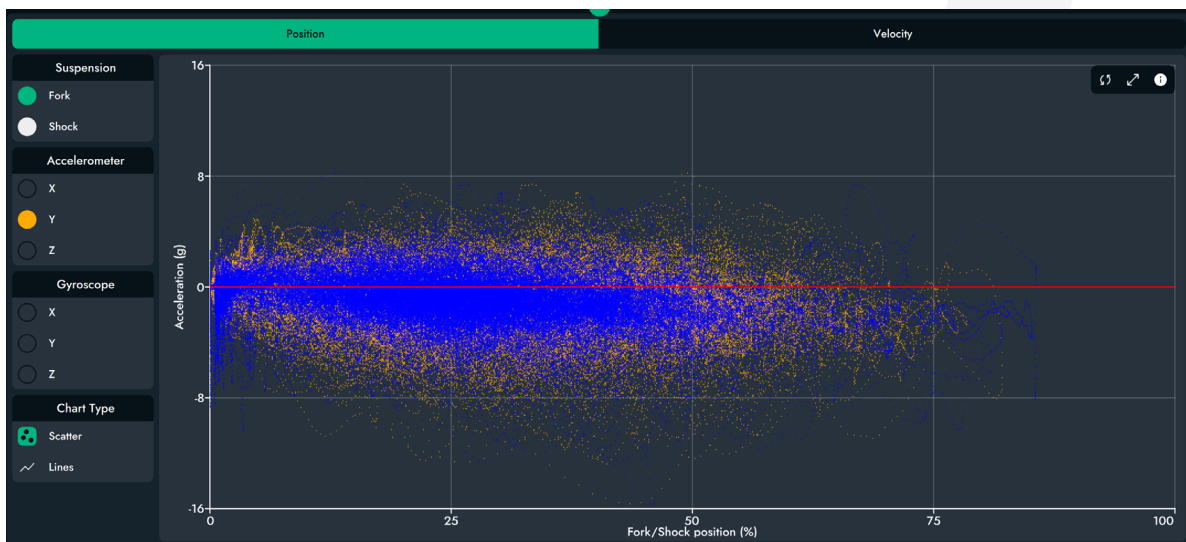
Operations

- Select the display mode from the control panel
- Select which lines to plot
- Select to sync the chart with the current selection
- Click on any point of the chart to see the time of the event
- Enlarge the charts

TABS

IMU Charts

The IMU charts relate the data coming from the accelerometer and gyroscope with the suspension data. The tab is characterized by two sub-tabs: one for suspension position and one for suspension velocities.



Operations

- Select the display mode from the control panel
- Select which lines to plot
- Select to sync the chart with the current selection
- Select which type of chart to show between points and lines
- Click on any point of the chart to see the time of the event
- Enlarge the charts

TABS

Summary

The summary shows the relevant data about the current run. It's an easy way to get the data you need without consulting the charts.

To show the data referred to a specific interval (and not the whole run) it's possible to click on the "sync with selection" button.

Run Informations		Fork		Shock	
Run Name	Cagno2	Position [AVG]	26.8 % - 53.7 mm	Position [AVG]	25.7 % - 19.3 mm
Total Run Time	177.9 s	Position [MAX]	82.1 % - 164.2 mm	Position [MAX]	85.6 % - 64.2 mm
Total Moving Time	7.0 s	Bottom-Out (> 97%)	0	Bottom-Out (> 97%)	0
Jumps Number	12	Position [95th]	52.8 % - 105.6 mm	Position [95th]	52.0 % - 39.0 mm
GPS Speed [AVG]	24.8 Km/h	Compression Speed [AVG]	380.7 mm/s	Compression Speed [AVG]	153.8 mm/s
GPS Speed [MAX]	39.4 Km/h	Compression Speed [MAX]	4892.0 mm/s	Compression Speed [MAX]	1747.6 mm/s
GPS Distance	1223.0 m	Compression Speed [95th]	1308.0 mm/s	Compression Speed [95th]	532.4 mm/s
Sensor Speed [AVG]	29.2 Km/h	Compression Counter	1983 times	Compression Counter	2040 times
Sensor Speed [MAX]	41.4 Km/h	Rebound Speed [AVG]	-313.9 mm/s	Rebound Speed [AVG]	-105.1 mm/s
Sensor Distance	1442.0 m	Rebound Speed [MAX]	-2067.3 mm/s	Rebound Speed [MAX]	-714.0 mm/s
IMU		Rebound Speed [95th]	-959.9 mm/s	Rebound Speed [95th]	-303.7 mm/s
Acc Total [RMS]	3.0252 g	Rebound Counter	1914 times	Rebound Counter	1992 times
Acc Total [MAX]	16.01 g	Stroke [TOTAL]	60.04 m	Stroke [TOTAL]	22.21 m
Acc X [RMS]	0.5796 g				
Acc X [MIN]	-8.35 g				
Acc X [MAX]	4.91 g				
Acc Y [RMS]	2.1396 g				
Acc Y [MIN]	-15.63 g				
Acc Y [MAX]	8.30 g				
Acc Z [RMS]	2.0585 g				
Acc Z [MIN]	-11.28 g				
Acc Z [MAX]	10.77 g				
Brakes					
Total Time Front Brake	84.4 s				
Longest Front Brake	4.2 s				
Total Time Rear Brake	101.3 s				

Operations

- Select the display mode from the control panel
- Synchronize the values according to the current selection

TABS

Advanced comparison

The comparison allows you to compare and evaluate the gain/loss between two runs recorded on the same track. The software automatically calculates the distance axis for both runs and displays the suspension (and all the other data) in the top graph, while the gain or the loss of the first run compared with the second one is displayed in the bottom graph.

This tool is commonly used by racers and people who want to improve their times and dig into the best set-up possible, taking into account all compromises of every section of the track. The comparison is enriched by many sub-tabs and the possibility of comparing data coming from different runs and tunings.



Operations

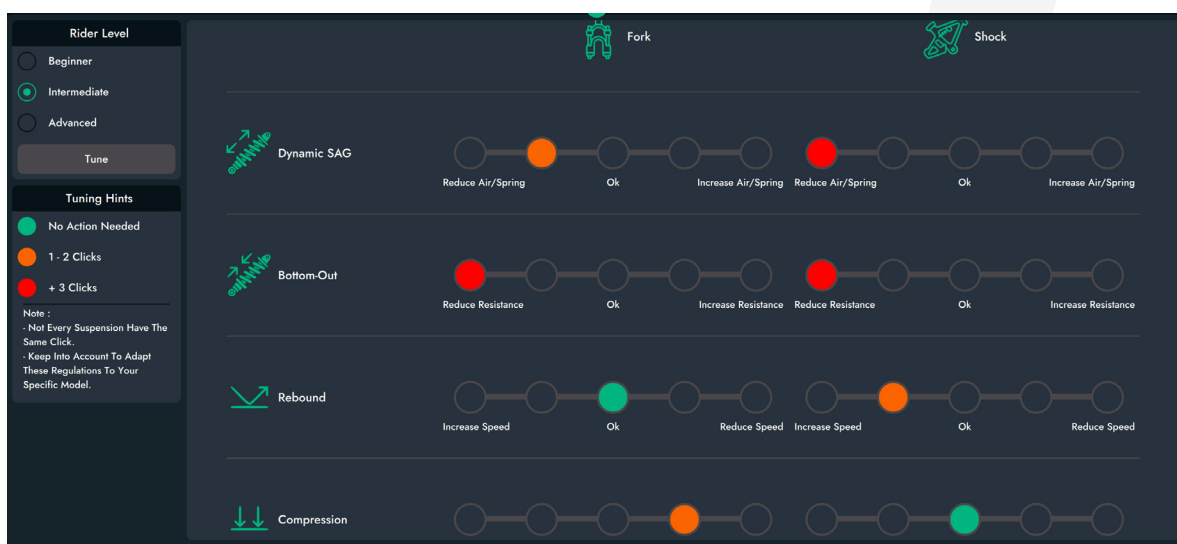
- Select the display mode from the control panel
- Select the data source for the distance calculation between speed sensor and GPS
- Navigate between all the sub-tabs
- Select which data to plot
- Enlarge all the charts

TABS

Auto tuning

The auto tuning provide a simple and fast way to improve your suspension setup. The auto tuning is using our broad experience and some AI algorithm to find the best suspension setup, according to the rider level and other parameters.

The results must be adapted to your bike. Which way to follow is clearly expressed under each dot. By clicking on the “sync with selection” button, it’s possible to evaluate the suspension setup according to a specific selection



Operations

- Select the rider level
- Click the “Tune” button to view the results
- Synchronize the values according to the current selection

TABS

Notes

The notes tab contains all the information on the current setup. It's the best place to secure your settings and be able to consult them when needed.

Run Data		Rider And Location Data		Bike Data			
Date	07.03.2021	Rider	Enrico-MTB	Bike	Specialized Demo 29	Frame Size	L
Time	12:13:20 (UTC)	Rider Weight	75 Kg	Fork Travel	200	Shock Travel	75
Sampling Rate	1000 Hz	Location	location	Wheel Size	29	Rear Wheel Travel	200
Sampling Mode	ANALOG	Trail Name	trail name	Stem Length	0	Stem Spacers	0
BYB Mode	MTB	Terrain	terrain	Handlebar Length	0	Handlebar Size	0
Firmware	v2.1	Weather	weather	Brakes Model	brakes model	Brake Pads	brake pads
Serial Number	3166420118	Run Score	run score				
Fork - Front				Shock - Rear			
Fork Model	fork model	Tuning Version	tuning version	Shock Model	shock model	Tuning Version	tuning version
Air Pressure Pos.	air pressure pos.	Air Pressure Neg.	air pressure neg.	Air Pressure Pos.	air pressure pos.	Air Pressure Neg.	air pressure neg.
Air Ramp-Up	air ramp-up	SAG	SAG	Air Ramp-Up	air ramp-up	SAG	SAG
Spring Rate	spring rate	Preload	preload	Spring Rate	spring rate	Preload	preload
Tokens	tokens			Tokens	tokens		
HSC	HSC	LSC	LSC	HSC	HSC	LSC	LSC
HSR	HSR	LSR	LSR	HSR	HSR	LSR	LSR
Comp HS/LS Cut	comp HS/LS cut	Reb. HS/LS Cut	reb. HS/LS cut	Comp HS/LS Cut	comp HS/LS cut	Reb. HS/LS Cut	reb. HS/LS cut
Front Tyre	front tyre	Tyre Pressure	tyre pressure	Front Tyre	front tyre	Tyre Pressure	tyre pressure
Tyre Insert	tyre insert	Spoke Tension	spoke tension	Tyre Insert	tyre insert	Spoke Tension	spoke tension
Notes							
<input type="text"/>							
<input type="button" value="Save"/>							

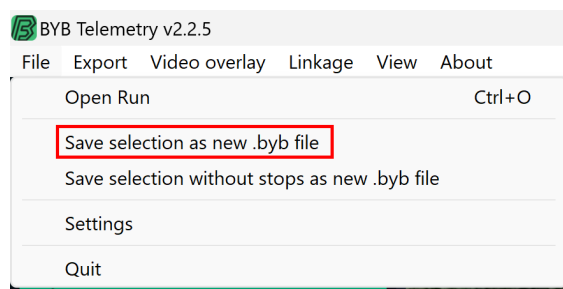
Operations

- Change the field content
- Save the changes

TRIM BYB RUNS

Save selection as new .byb file

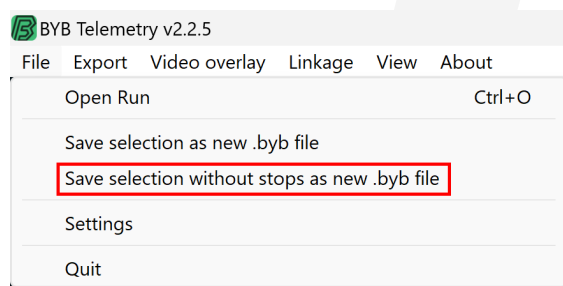
This function is used to remove the pauses, refine the start and stop of the runs or simply trim it. To generate a new .byb trimmed file is necessary to select an interval from the stack view or the suspension view. Once the interval has been set, click on "File" from the menu bar and select "Save selection as new .byb". This function will generate a new .byb file that reflects the selection and contains the notes and all the original information.



Save selection without stops as new .byb file

This function is used to automatically remove the stops occurred during a run. The points characterized by a GPS speed below than 6 km/h are removed.

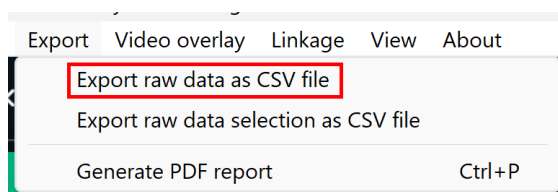
To generate a new .byb trimmed file is necessary to select an interval from the stack view or the suspension view. Once the interval has been set, click on "File" from the menu bar and select "Save selection without stops as new .byb". This function will generate a new .byb file that reflects the original run without any stop and that contains the notes and all the original information.



EXPORT RAW DATA

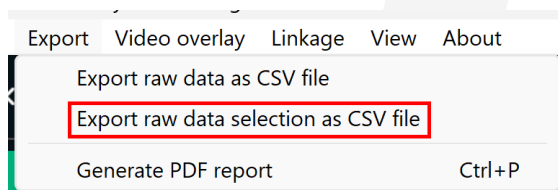
Export raw data as text

This function is used to export raw not-processed data to allow further custom analysis. To generate the comma-separated values file (.csv) is necessary to click on “Export” from the menu bar and select “Export raw data as text”. This function will generate a new .csv file that contains the full list of data points acquired divided into columns. Every column will include a specific header which represent the column title and the definition of the data type contained in that column.



Export raw data selection as text

This function is used to export raw not-processed data to allow further custom analysis. The difference between the previous function concerns the possibility of exporting data from a specific selection. To generate the comma-separated values file (.csv) is necessary to select an interval inside the software from the stack view or the suspension view. Once the interval is set, click on “File” from the menu bar and select “Export raw data as text”. This function will generate a new .csv file that contains only the full list of data points acquired divided into columns. Every column will include an header which represent the column title and the definition of the data type contained in that column.

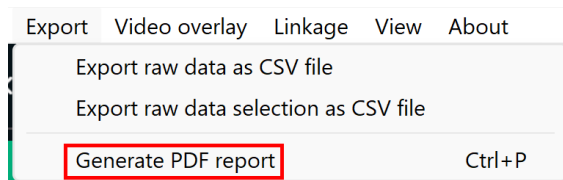




EXPORT PDF REPORT

Export pdf report

This function is used to export a full .pdf of the entire run. To generate the pdf file it's necessary to click on "Report" from the menu bar and select "Export report as .pdf". This function will generate a new .pdf file that contains all the relevant information about the run.

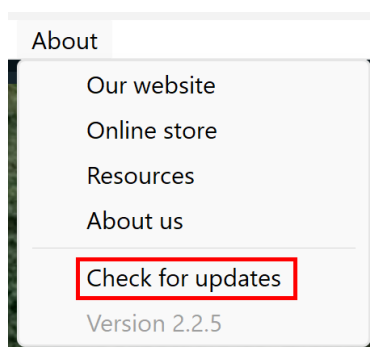




CHECK FOR UPDATES

Check for updates

To check if your BYB Telemetry software is up to date, click on the “Check for updates” button from the main menu.
The software will perform a check at every startup too, and it will prompt a dialog if an update has been found.



VIDEO OVERLAY

How to create video overlay using data and any action cam

Using this function is possible to create awesome video overlays. Basically, a video overlay is the animated overlay of data within a video.

The key point for an awesome video overlay is to synchronize the time frames.

It is necessary to proceed with the following steps:

- Start recording with the camera
- Start recording with the telemetry system
- Frame the suspension with the camera and perform a single squeeze. This will allow us to synchronize the timing of video and of the data easily
- Ride
- Stop the video and the acquisition once done



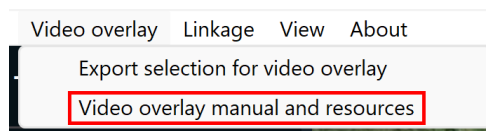
As in the image above, it's important to record with the camera a single compression of the fork. By doing this it will be easier to synchronize the time frames.

VIDEO OVERLAY

Post processing - One-time operations

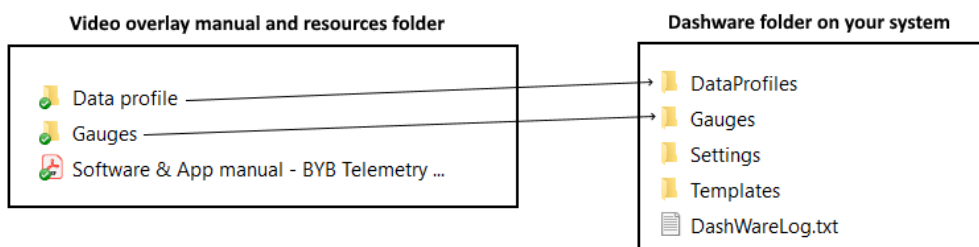
The following operations need to be performed only the first time:

- Download the 3rd-party software "Dashware" from: <http://www.dashware.net/dashware-download/>
- Click on the "Video overlay manual and resources" to download the packages needed



- Go inside the folder "Data profile" and copy the "BYB Telemetry v2.0.xml" file to ".../documents/Dashware/Data Profiles"
- Go inside the folder "Gauges" and copy all the files to ".../documents/Dashware/Gauges"

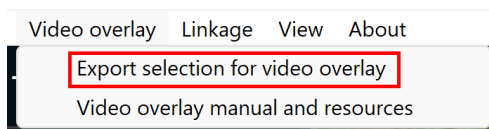
Copy the **CONTENT** of Data profile and Gauges folders to the respective folders in the Dashware installation folders



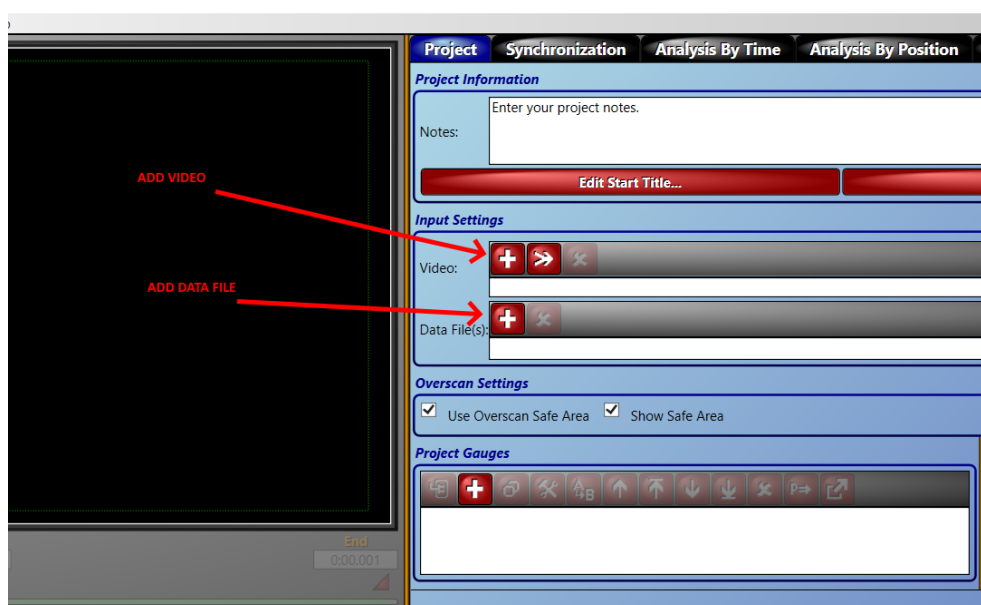
VIDEO OVERLAY

Post processing

- Open you run and click on the “Export selection for video overlay” on the main menu to export the current selection



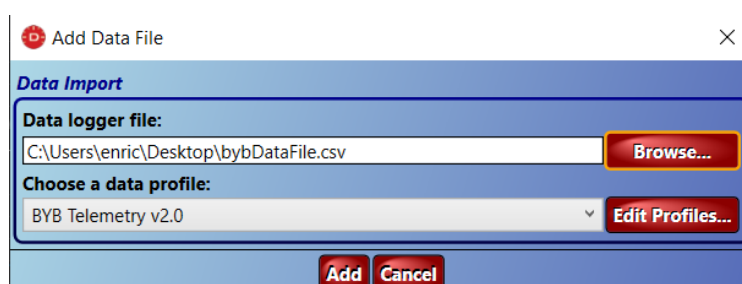
- Open “Dashware” and create a new project
- Click “+” inside the “input settings” rectangle to add the recorded video
- Click “+” inside the “input settings” rectangle to ad the data file exported in the previous steps



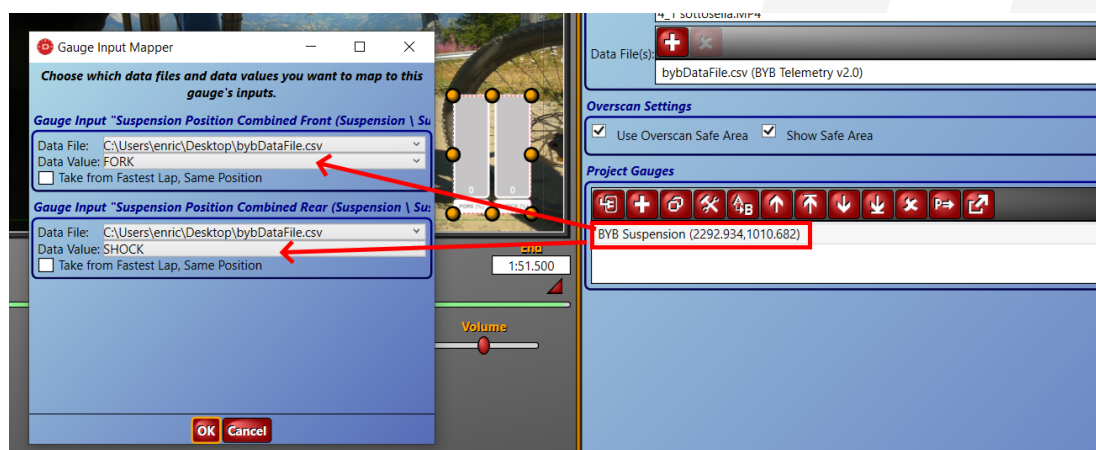
VIDEO OVERLAY

Post processing

- Browse the data file on your PC and select the data profile "BYB Telemetry v2.0"



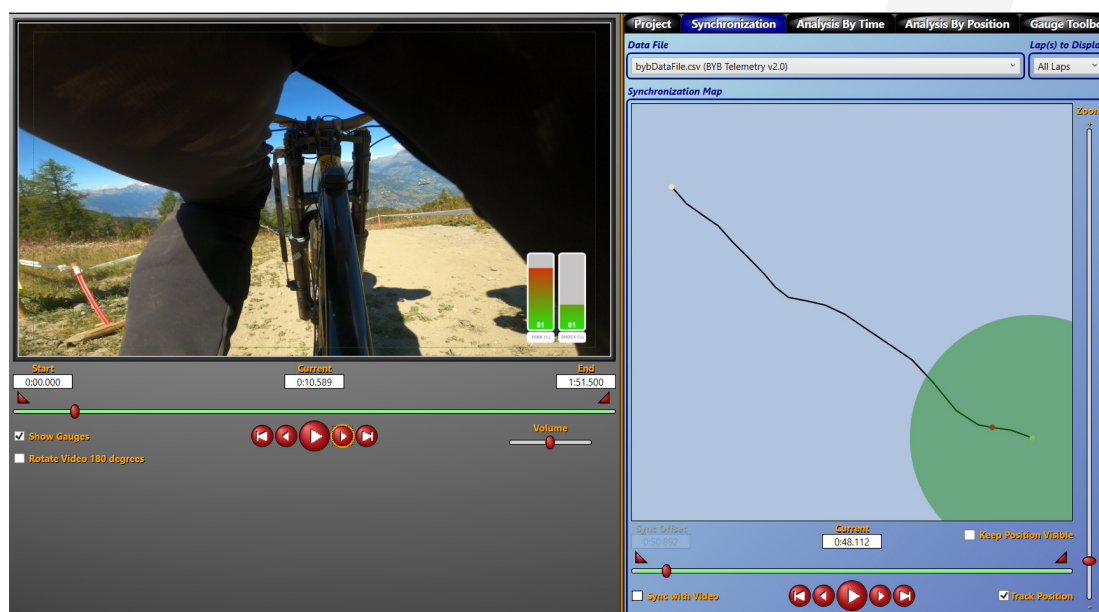
- Drag and drop your "Gauges" on the screen from the "Gauges toolbox" panel
- Connect the gauges with the correct data source (Example: Suspension front > Fork)



VIDEO OVERLAY

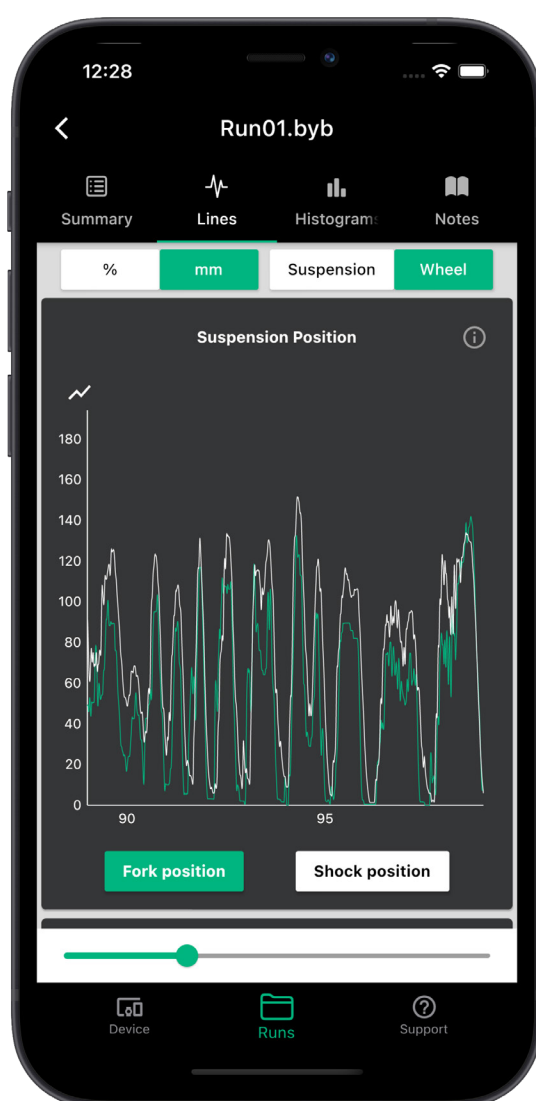
Post processing

- Go into the “Synchronization” panel and match the time frame of video with the time frame of the data. Now it’s time to use the single compression we recorded in the video. Find the compression on the data and match it with the images on the video, exactly like in the image below.



- Once done click “Sync with video”
- Now you can export and render your video (File > Create video...)

APP MANUAL



HOW TO INSTALL?

iOS users

The smartphone app is available for iOS smartphones and iPads.

- Download the “**BYB Telemetry**” app from the Apple Store



Android users

The smartphone app is available for Android smartphones and tablets.

- Download the “**BYB Telemetry**” app from the Play Store

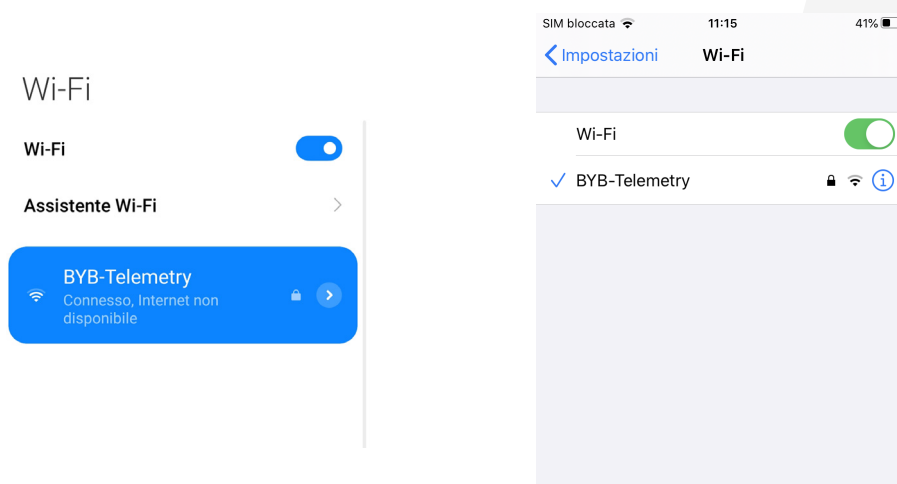


CONNECT THE ACQUISITION UNIT

Establish WiFi connection

To enable the connection between the smartphone and the acquisition unit is necessary to:

- Enable the WiFi connection on the BYB Telemetry device by click the "Run button" for 3 seconds
- Once the run LED is blinking fast the device is discoverable by smartphones and PC
- Open the WiFi settings of your smartphone and login to "**BYB-Telemetry**" networkd (if default)



Troubleshooting

Sometimes can happen that some smartphones reject the connection because "connection has not internet".

In this case is necessary to (according to the image on the right):

- Open "BYB-Telemetry" network WiFi settings
- Set the IP address as "static"
- Type "192.168.1.1" as IP address

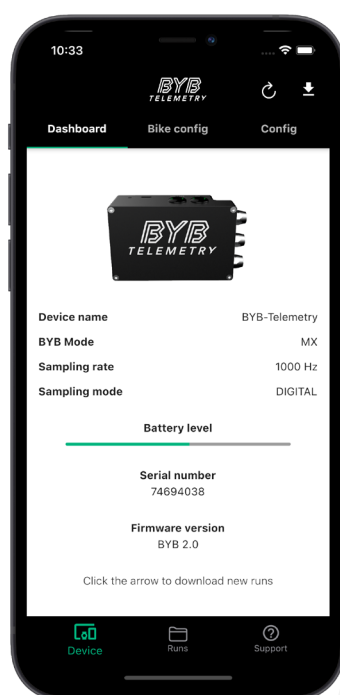
Impostazioni IP		Statico ↕
Indirizzo IP	192.168.1.1	
Gateway	192.168.1.1	
Lunghezza prefisso rete	24	
DNS 1	8.8.8.8	
DNS 2	8.8.4.4	

DEVICE PAGE

Dashboard

To check the current acquisition unit status is necessary to:

- Be sure the acquisition unit is connected to the smartphone
- Click on the "Device" tab and then click the "refresh" button in the upper right corner.



Here is possible to check the following configurations:

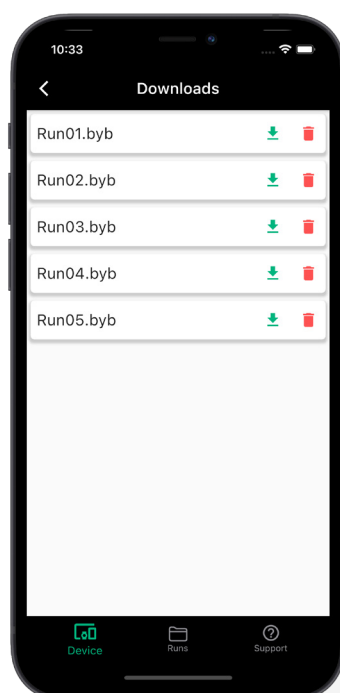
- Current device name
- Current "BYB Mode"
- Current "Sampling rate"
- Current "Sampling mode"
- Current battery level
- Device serial number
- Device firmware version

DEVICE PAGE

Download run

To download runs inside the device:

- After clicking on the download button from the the "Device page" the following page is shown
- Click on the "Download" button to download a run from the device
- Click on the "Delete" button to delete a run from the device



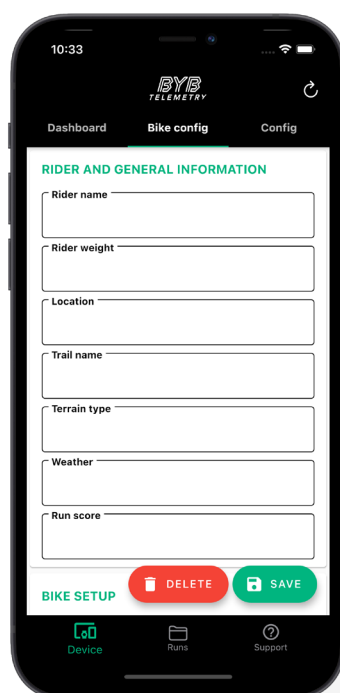
DEVICE PAGE

Bike config

To add personal information such as rider/bike settings or comments open the “Bike config” tab and fill the required fields.

- Fill the required fields
- Press “Save” once done
- Press “Delete” to empty all the fields

These data will be included as notes inside every new .byb file.



[TIPS]

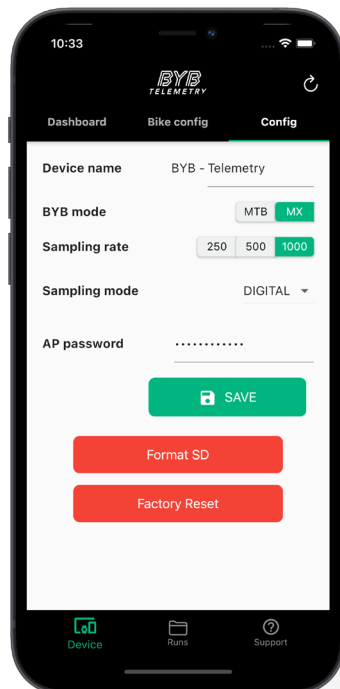
To keep notes tidy it's good practice to update the current “Bike config” every time you make changes to your bike setup. It's advisable to update all the info before starting a new run too.

DEVICE PAGE

Device config

To modify the acquisition unit configurations go the "Config" tab. From here it's possible to:

- Modify the name of the acquisition unit (it's equal to the network name too)
- Change the "BYB mode" between MTB and MX
- Change the "Sampling rate" between 250 Hz, 500 Hz, 1000 Hz (1000 Hz is recommended)
- Change the "Sampling mode" between "DIGITAL" and "ANALOG" (brake sensors configurations)
- Change the WiFi network password
- Once done click "Save"
- To empty the memory of the device click "Format SD"
- To restore default configurations (including name and password) click "Factory reset"

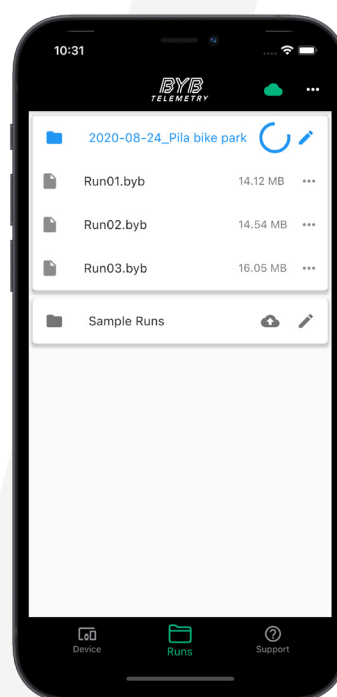
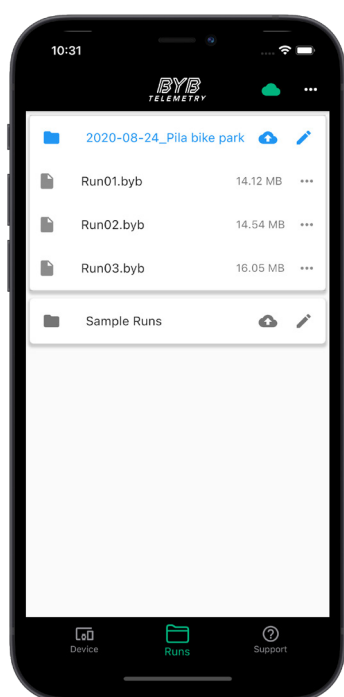


RUNS PAGE

Folders and Dropbox upload

Here are stored all the downloaded runs. Every run is downloaded inside a folder named with the date of the current day. The page offers the following possibilities:

- Rename the folders
- Rename the runs
- Delete a run
- Share a run outside the app
- Sign-in to Dropbox services (green cloud if Dropbox is already signed-in)
- Push runs to DropBox folder "BYB Telemetry runs" on your PC (click on the green cloud)
- Open a .byb file



[CAUTION]

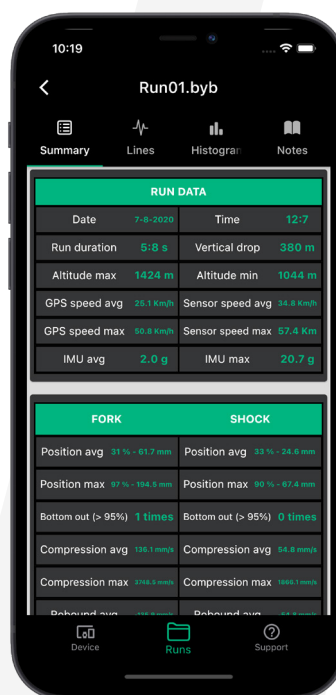
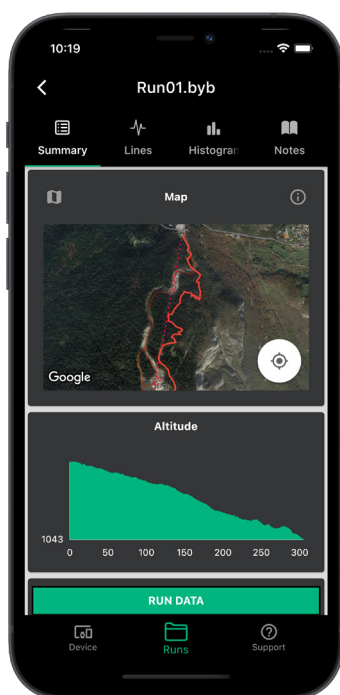
After clicking on the run you want to open it may take several seconds before the run is loaded. This is due to the huge amount of data and calculations that must be performed.

RUNS PAGE

Summary tab

The summary shows all the relevant data about the current run. The tab includes:

- The GPS map
- The altitude chart
- Run data
- Suspension data
- Brakes data



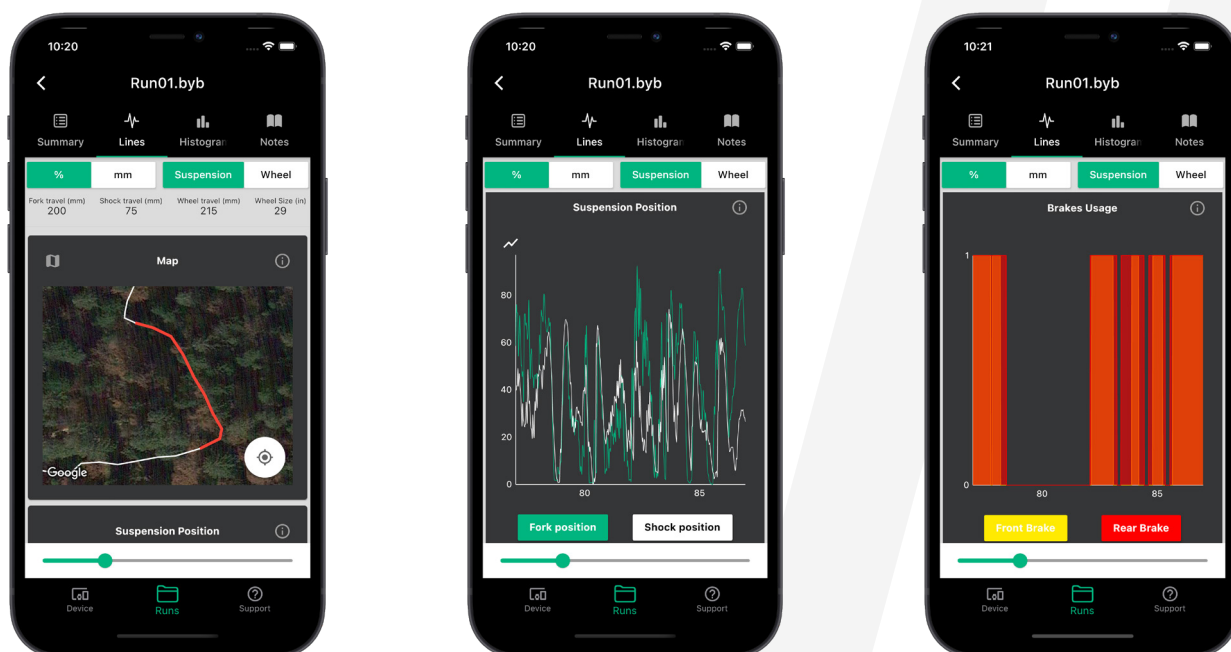
RUNS PAGE

Lines tab

The lines tab shows the following charts:

- GPS map
- Suspension position
- Suspension velocity
- Accelerometer (shocks at the handlebar)
- Brakes
- Rider speed

It's possible to change the view selecting "Suspension", "Wheel", "%" or "mm".



The bottom slider is used to advance the time axis. All the charts are synchronized and controlled by the bottom slider.

To see the whole run it's necessary to bring the slider till the end. Representing all points can slow down the performance of the application. This is due to the huge amount of points

[CAUTION]

The charts may be different than the software because the graphic interface is lighter in order to match the smartphones capabilities.

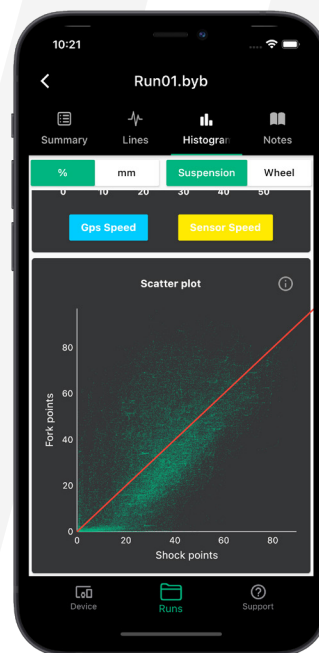
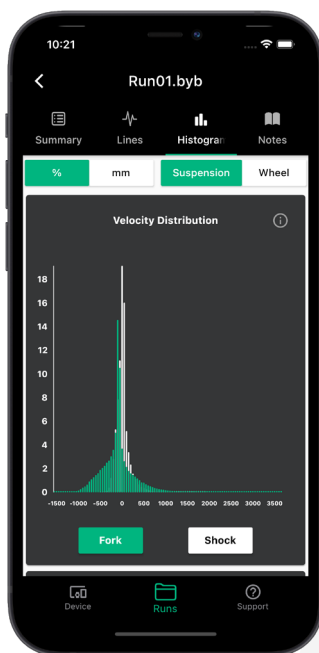
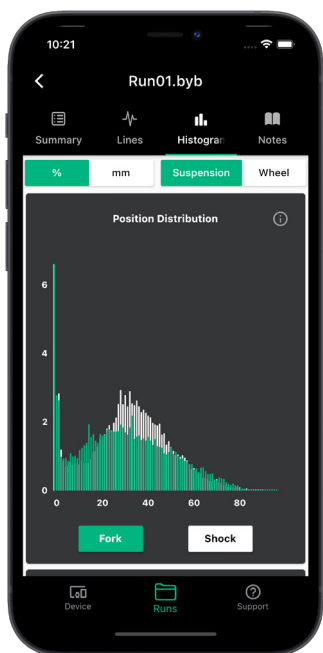
RUNS PAGE

Histogram tab

The histogram tab shows the following charts:

- Position distribution
- Velocity distribution
- Speed distribution
- Scatter plot

It's possible to change the view selecting "Suspension", "Wheel", "%", or "mm".

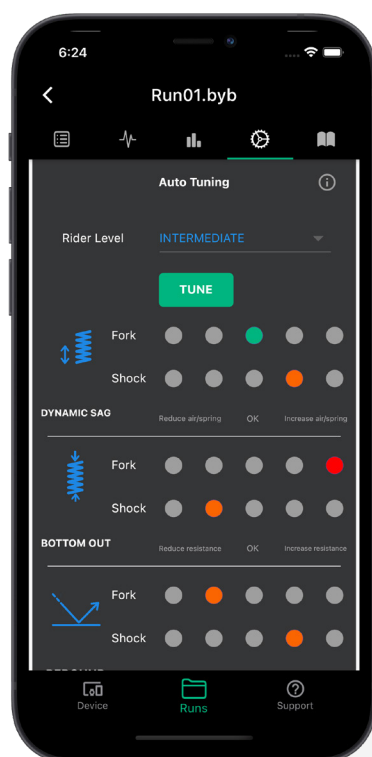


RUNS PAGE

Automatic tuning tab

The auto tuning is a simple tool which uses a developed algorithm in order to find out if your suspension are working properly. The algorithm takes into account the level of the rider. Depending on the result obtained is necessary to translate the suggestions on your bike. What to do is explained under each dot.

Select your rider level and click on the "Tune" button to see the results.

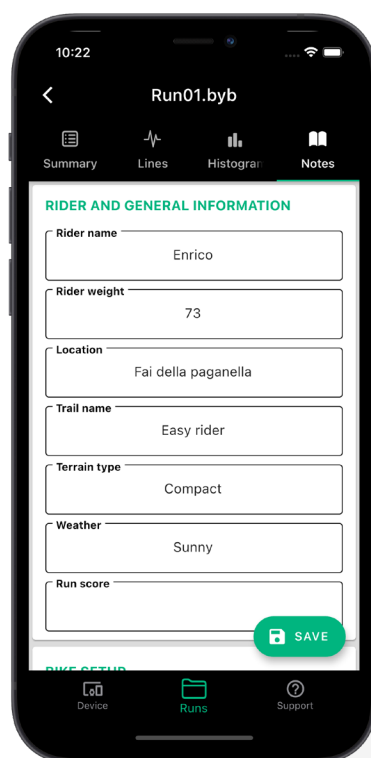


SUPPORTS PAGE

Notes

The notes page contains all the configurations saved inside the .byb file.
It's possible to:

- Modify the already written fields
- Fill the empty fields
- Click "Save" to accept changes



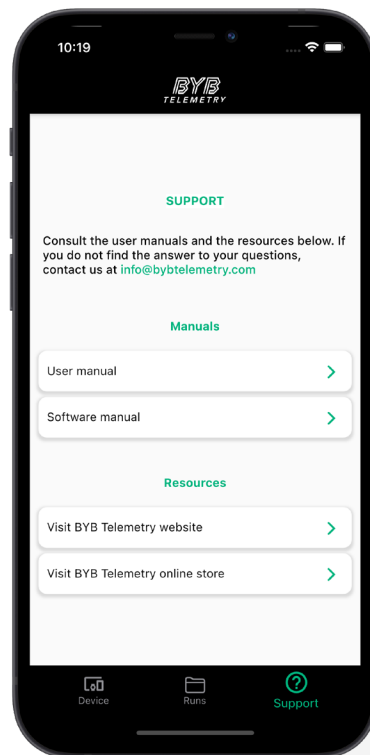


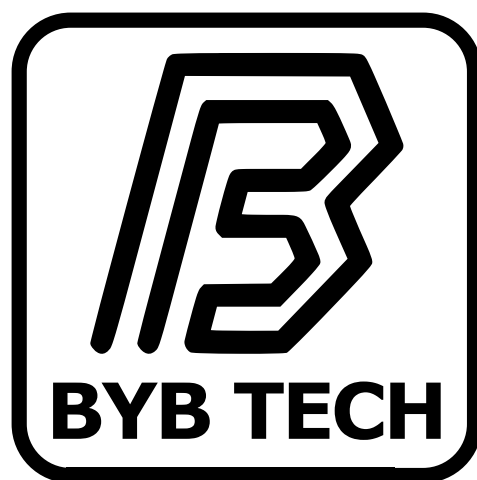
SUPPORTS PAGE

Support

The support page contains some useful resource such as:

- Email address for any kind of support
- Consultable user manual
- Consultable software & app manual
- BYB Telemetry website
- BYB Telemetry online store





www.bybtech.it