

# GIP-220

## GPS Inertial platform

### Description

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GIP-220 (GPS Inertial Platform) is an integrated measurement unit with internal GPS. It consists of three axial accelerometer and three gyroscopes.

It can be used in car and motorbike racing applications.

In case of motorbike application, the bank angle estimation can be performed. Measurement must be supported by vehicle speed information.

### Main Features

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- 3 internal accelerometer (up to 6 g)
- 3 internal gyroscope (up to 150 °/s)
- Internal GPS
- 2 Digital output (1 available for trigger on finish line - the information is based on GPS)
- 2 Single-ended

### Benefits

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- GPS RAM backup battery available
- Fast GPS synchronization
- Analog Acquisition
- Measure of X, Y and Z accelerations
- Measure of Pitch, roll and yaw rates
- Estimation of bike's Bank Angle (\*)
- Microcontroller MPC5553 ensures high performance (including digital signal processing instructions)

### Typical Applications

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All race bikes/cars



# GIP-220

GPS Inertial platform

## Technical Characteristics

### Inputs

Single-ended (@ 12 bit resolution)	2
NTC internal temperature sensor	1
Internal accelerometer (up to 6 g)	3
Internal gyroscope (up to 150 °/s)	3
“Code Load” enable pin	1

### Outputs

Digital	2
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### Communications

CAN line (1 Mbit/s (*))	1
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(\*) Configurable on request

### Other Characteristics

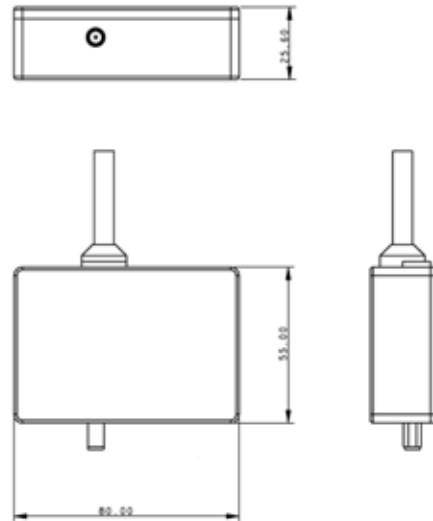
Power supply	8 to 16 V
Max operating internal temperature	85 °C
Protection class	IP 64
Cable length (min.)	50 cm
Dimensions	
without connector and cable	80 x 55 x 25.6 mm
Weight (with cable)	152 g

## Cable Pin Out

### Pin Out GIP-220 (Cable)

Function	Wire colour
<b>Inputs</b>	
Single ended IN_SE_1	Brown
Single ended IN_SE_2	Violet
<b>Outputs</b>	
Digital output SYNC_1	Orange
Digital output SYNC_2	Yellow
<b>Communication</b>	
CAN line - High	Green
CAN line - Low	Blue
<b>Miscellaneous</b>	
VBATT	Red
Power GND	Black
Analog ground	White
ENCP	Grey

## Dimensions



Dimensions in millimetres

## Installation

### Mounting

- It is suggested to fix the case by the use of silent block or Velcro for shock absorbing
- It is suggested to be mounted as closed as possible to the COG (Centre Of Gravity)

### Orientation

- Main surface must be parallel to the ground
- X, Y and Z axis directions must be respected, as shown in the following picture, with the X axis positive versus to the motorbike forward direction and Z positive versus to the top direction

NOTE: the described orientation is mandatory for proper computation of bank angle

