

ONYX

ONYX is a data acquisition system designed to work in a wide range of applications.

The core is a 10 samples/sec GNSS module, that works with GPS (L1), GLONASS (L1), Galileo (E1) y Beidou (B1) simultaneously to obtain optimum resolution in both position and speed.

It also includes a 6 axis accelerometer to include linear and rotational acceleration and in three axes (X, Y, Z).

Data logging is accomplished by means of an SD or SDHC memory unit. SPILBA ONYX supports FAT32 formatted memories of all capacities.



Processing core

Core	32 bit ARM Cortex-M4
System clock	50 Mhz

GNSS

Systems	GPS (L1) GLONASS (L1) Galileo (E1) Beidou (B1)
Data acquisition speed	10Hz
Accuracy (CEP50*)	<1.5m
Sensitivity	Acquisition -148 dbm Navigation -163 dbm Tracking -165 dbm
Channels	99 searching 33 simultaneous tracking

Note: *CEP = Probable error circle 50 indicates that a 50 % probability of an uncertainty is lower than specify.

Accelerometer specifications

Axis	X,Y,Z
Maximum acquisition rate	1000Samples/sec
Range	±4G
Resolution	0.0001G

Gyro specifications

Axis	X,Y,Z
Maximum acquisition rate	8000Samples/sec
Range	±250°/s
Resolution	0.01°/s

Memory modules specifications

Supported memory cards	SD SDHC
File system	FAT32
Size	Any
Writing speed	Variable and adaptable to the memory card
Approx. File size	3.2Mb/hour

Electric specifications

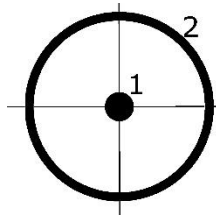
Power supply	+ 9-24 VDC
Current consumption	130mA typ.
Protections	Over voltage, voltage inversion, overcurrent
Operating temperatures	-25°C+70°C

GNSS Antenna

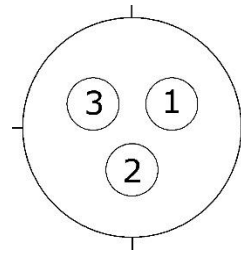
Frequency	1575MHz/1602MHz
Total Gain (including LNA)	26 ± 3dBic @ Zenith @ 1575.42MHz 27 ± 3dBic @ Zenith @ 1602MHz
Nominal Impedance	50 Ω 66.52+j3.85 Ω @ 1575MHz 46.77+j0.98 Ω @ 1602MH
VSWR	2.6 dB maximum
Mounting	Magnetic Base
Protection	IP67
Connector	SMA male
Operating temperature	-40°C a + 85°C

Power supply connector

Protection	IP68
Contact material	Copper gold plated
Body material	Ni Zn alloy
Connection type	Bayonet
Peak current	5 ^a
Operation Temperature	-25°C a +85°C
Operation cycles	1000
Vibration	Maximum disconnection time 10 μ s. Vibration test: 10 to 55Hz 0.75mm amplitude 10G during 3 hours.
Shock	Maximum disconnection time 10 μ s during a 50 G three axis Shock impact test



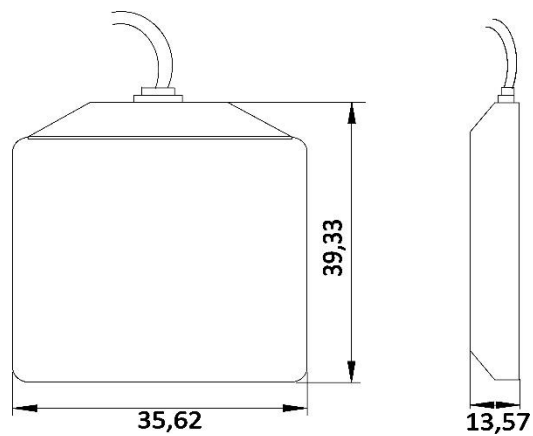
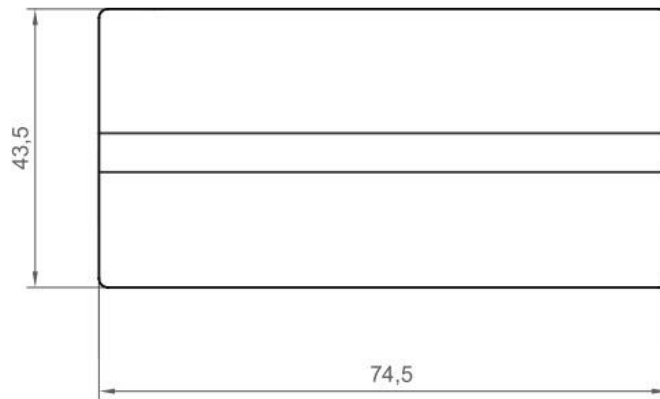
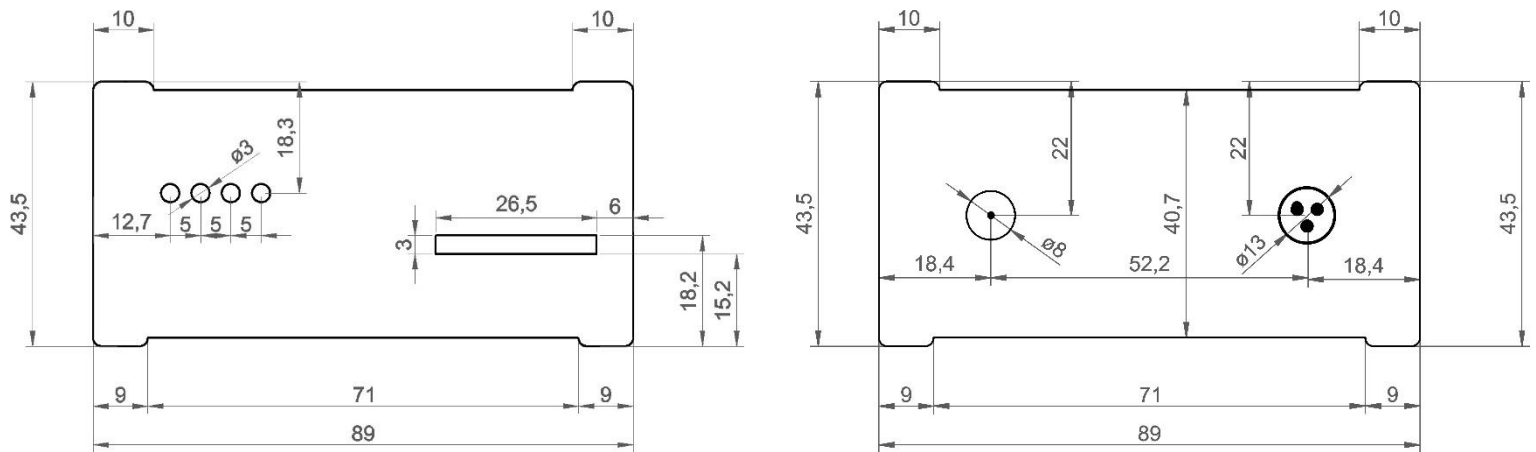
1 - SEÑAL DE RF / VCC
2 - GND



1 - NC
2 - VCC
3 - GND



Dimensions



**Note: All dimensions are in mm. Images are not in scale.*