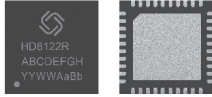


# HD8122R CYNOSURE III LITE GNSS CHIP



QFN40: 5mm\*5mm

## PRODUCT DESCRIPTION

ALLYSTAR HD8122R is a high-performance single chip GNSS solution targeting for the location awareness and logistic transportation markets.

HD8122R is based on the CYNOSURE III Lite architecture, integrated with dual-channel RF and baseband for the concurrent reception from GPS/QZSS and BDS systems. This newly designed architecture is optimized in positioning and power-saving performance for industrial and portable applications. Its highly integrated architecture brings full positioning functionality, from antenna input to position data output, in a self-contained solution that requires less external components.

It can be widely used in shared bikes, wearable devices, unmanned aerial vehicles (UAVs), fleet management, unmanned driving, car navigation, marine navigation, and other fields.

## HIGHLIGHTS

- Concurrent reception of GPS/QZSS and BDS systems
- Low power consumption
- ARM Cortex-M4F processor with cache controller
- Smart jammer detection and suppression
- Intelligent power control mechanism
- Single supply with wide voltage range
- Pin-compatible with the products in the mass market
- ROM built-in firmware

## APPLICATIONS



Shared bike



Wearable device



UAV



Fleet management

## GENERAL SPECIFICATIONS

### GNSS Engine

Cynosure III Lite GNSS engine  
88 channels in total & DSP accelerator

### GNSS Reception

GPS/QZSS: L1C/A  
BDS: B1I, B1C

### Update Rate

GNSS 1 Hz

### Position Accuracy

GNSS 2.5m CEP

### Velocity & Time Accuracy

GNSS 0.1 m/s CEP  
1PPS 25 ns

### Time to First Fix (TTFF)

Hot start 1s  
Cold start 28s

### Sensitivity

Cold start -148 dBm  
Hot start -156 dBm  
Reacquisition -158 dBm  
Tracking & Navigation -162 dBm

### Operating Condition

Main voltage 1.7V to 3.63V  
Digital I/O voltage 1.7V to 3.63V  
Backup voltage 1.62V to 3.63V

### Operation Limit

Velocity 515 m/s  
Altitude 18,000 m

### Power Consumption

Tracking 11 mA @ 3.3V  
Acquisition 12 mA @ 3.3V  
Standby 15 uA @ 3.3V

### Interfaces

UART 1  
I<sup>2</sup>C 1

### Peripheral

PWM 2  
INCP 2  
Ext. interrupt 8  
Digital I/O 16

### Clock

Main clock oscillator TCXO (26 MHz)  
Sub clock oscillator 32.768 kHz Crystal

## ENVIRONMENT DATA

Operation temperature -40°C to +85°C  
Storage temperature -40°C to +125°C  
Certification RoHS, REACH

## PACKAGE

Package QFN40  
Dimension 5.0\*5.0 mm

