

# HD8128R CYNOSURE III LITE GNSS CHIP



WLCSP 2.169\*2.169 mm

## PRODUCT DESCRIPTION

ALLYSTAR HD8128R is a high-performance single chip GNSS solution targeting for the location awareness and logistic transportation markets, which supports GPS, BDS, and QZSS concurrently.

HD8128R is based on the CYNOSURE III Lite architecture, integrated with dual-channel RF and baseband for the concurrent reception from any three GNSS systems. This newly designed architecture is optimized in positioning and power-saving performance for industrial and portable application, and the intelligent power management unit built-in makes it possible to provide a highly robust service in complicated environment.

It can be widely used in wearable devices, fleet management, vehicle navigation, and other portable devices.

## HIGHLIGHTS

- Concurrent reception of three GNSS 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

## APPLICATIONS



vehicle navigation



Wearable device



Tracker



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 max.

### Position Accuracy

GNSS 2.5m CEP

### Velocity & Time Accuracy

GNSS 0.1 m/s CEP  
1PPS 20 ns

### Time to First Fix (TTFF)

Hot start 1s  
Cold start 29s

### Sensitivity

Cold start -148 dBm  
Hot start -156 dBm  
Reacquisition -158 dBm  
Tracking & Navigation -161 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 18,000m

### Power Consumption

Tracking 12 mA @ 3.3V  
Acquisition 13 mA @ 3.3V  
Standby mode 15 uA @ 3.3V

### Interfaces

UART 1

### Clock

Main clock oscillator TCXO  
Sub clock oscillator 32.768 kHz

## ENVIRONMENT DATA

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

## PACKAGE

Package WLCSP  
Dimension 2.169\*2.169 mm

