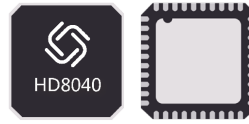


HD8040 SERIES CYNOSURE III GNSS CHIP



QFN40: 5×5mm



WLCSP: 2.78×2.933mm

PRODUCT DESCRIPTION

ALLYSTAR HD8040 series is a group of highly integrated GNSS receiver chips. It is the World's 1st multi-band multi-system SoC chip which supports BDS-3. It is capable of tracking all global civil navigation systems (BDS, GPS, GLONASS, Galileo, NavIC, QZSS and SBAS) in all bands (L1, L2, L5, L6).

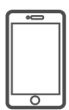
HD8040 series is based on state of the art CYNOSURE III architecture integrating multi-band multi-system GNSS RF and baseband, making this series chip achieve sub-meter level position accuracy without correction data from ground-based augmentation station.

HD8040 series can be widely used in mobile phones, wearable devices, unmanned aerial vehicle, vehicle management, unmanned driving, car navigation, marine navigation, engineering survey, and other fields.

HIGHLIGHTS

- Support BDS-3 signal
- Concurrent reception of multi-band multi-system satellite signals
- Support all civil GNSS signals
- Ultra low power RTC mode
- Built-in AES/DES/SM4 data encryption engine
- ARM Cortex-M4F processor with cache controller
- Smart jammer detection and suppression

APPLICATIONS



Mobile phones



Wearable devices



Unmanned aerial vehicle



Vehicle management

GENERAL SPECIFICATIONS

GNSS Engine

Cynosure III GNSS Engine
136 channels & DSP accelerator

GNSS Reception

GPS/QZSS: L1 C/A, L1C, L2C, L5, L6
BDS: B1C, B1I, B2a, B2I, B3I
GLONASS: G1, G2
Galileo: E1, E5, E6
NavIC: L5
SBAS: WAAS, EGNOS, MSAS, GAGAN, SDCM

Update Rate

GNSS 10Hz maximum

Position Accuracy

GNSS 1.0m CEP
SBAS <1.0m CEP
D-GNSS <1.0m CEP

Velocity & Time Accuracy

GNSS 0.1m/s CEP
SBAS 0.05m/s
D-GNSS 0.05m/s
1PPS 20ns

Time to First Fix (TTFF)

Hot start 1s
Cold start 28s

Sensitivity

Cold start -148dBm
Hot start -155dBm
Reacquisition -158dBm
Tracking & Navigation -162dBm

Operation Limit

Velocity 515 m/s
Altitude 18,000 m

Operating Condition

Main voltage 1.8V - 3.6V
Digital I/O voltage 1.8V - 3.6V
Backup voltage 1.62V - 3.63V

Power Consumption

L1 band 34mA
L1+L5 band 40mA
Standby 9uA

Interfaces

USB (FS, 12Mbps) 1
UART 2
SPI (master/slave) 2
SQI (master mode) 1
I²C 1

Peripheral

PWM 4
INCP 2
Ext. interrupt 7
Digital I/O 16

Clock

Main clock oscillator TCXO
Sub clock oscillator 32.768 kHz(optional)

ENVIRONMENT DATA

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

PACKAGE

QFN 5.0mm×5.0mm
WLCSP 2.78mm×2.933mm

ORDERING INFORMATION

HD8040D QFN40/WLCSP
HD8040DF QFN40
HD8040DW QFN40
HD8040A QFN40

