

KCSA

KS-1Q

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**Intro**



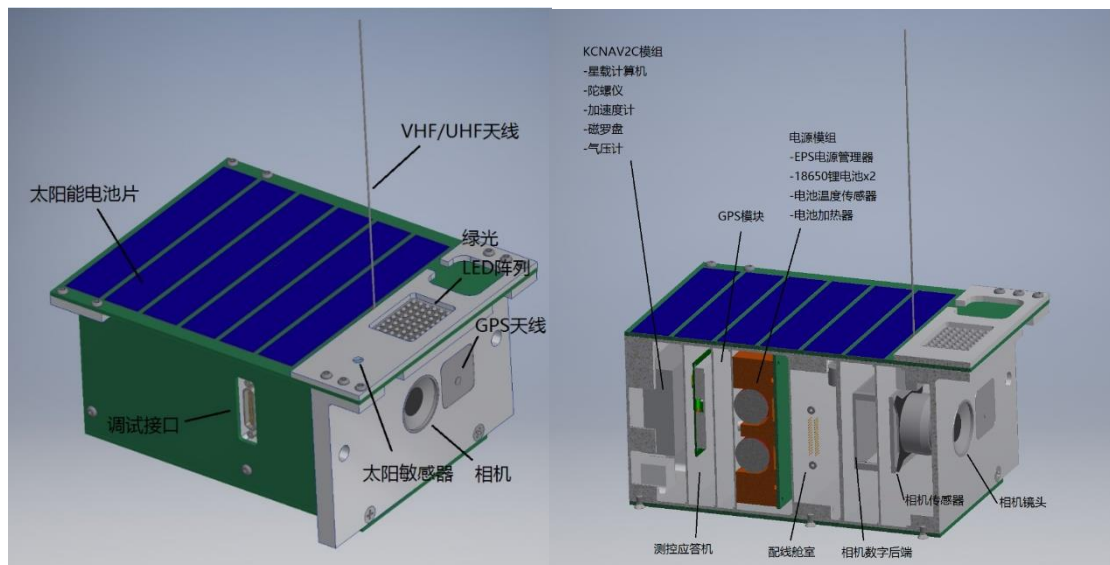
科创航天

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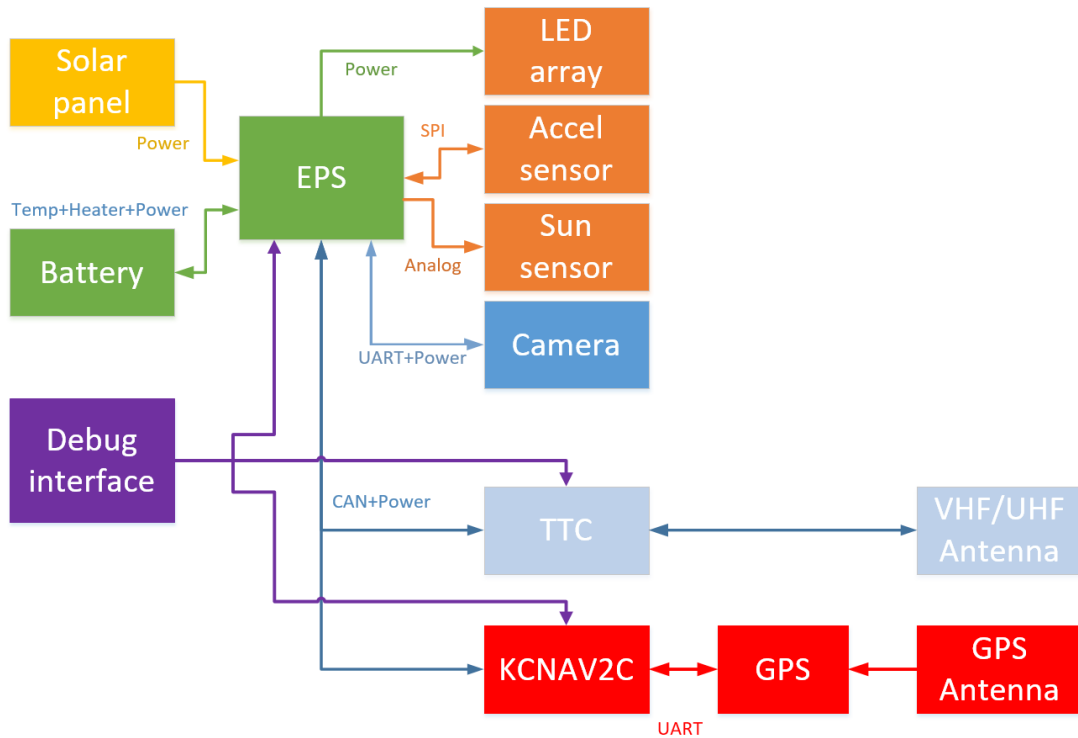
2018.1



## Structure



# Modules



- **EPS\_KS1 Electrical power system**

Features:

- MPPT solar converter
- Battery control
- **Separation switch**
- **Power on switch**
- **Battery protector**
- Battery heater
- Load switch
- Load latch up protection
- Initiator driver
- Magnetorquer driver
- Light Telemetry control
- Real time clock
- Acceleration sensor
- Status Telemetry

可管理的外设：

- Two solar panel input
- Two 18650 Li-ion battery
- Initiator / thermal knife driver
- 8V load switch x2
- Magnetorquer coil driver x3

- **TTC\_V03 U/V band telemetry and telecommand module**

- Frequency : Tx 430-440MHz, Rx 142-145 / 430-440MHz
- Other bands on demand

- Data rate : Downlink 20kbps Uplink 10kbps High speed downlink 1Mbps ;
- Occupied BW : Up/Down 50kHz, High speed downlink 2.5MHz ;
- Tx power : 0.1W-2W (+20 to +33dbm) , 4 level adjustable ;
- Rx sensitivity : -110dbm ;
- Antenna port : two 50Ohm MMCX connector, both can be TX / RX
- Modulation type : GMSK + CCSDS
- Protections : Supply voltage, Supply current, Power amplifier temperature
- Interface: Dual redundancy CANBUS, 2x UART, 1x analog input
- Protocols: CAN/CSP, UART/CSP, Serial direct link

## ● OBC\_V01 Onboard computer

- Main processor: 32bit, 200DMIPS, with hard floating-point instructions.
- Gyroscope : +-300deg/s, bias<12deg/hr
- Magnetic sensor +-4gauss, Resolution 0.5mgauss, RMS noise 3.2mgauss
- Memory : 32MB NorFlash, 4GB SDCard
- Interface : UART x3, CAN x1, I2C x1, Analog x4, USB x1,  
Pulse input x1, Switch output x1, GPIO x11 (Remap)
- Power : 5-9V 60mA
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## ● GNSS\_V00 Navigation module

- Beidou/GPS/GLONASS Triple mode receiver
- Orbit elements calculation
- Interface : DC 3.3-5V, UART/NMEA Protocol

## ● CAM\_V00 Onboard camera

- Lens: 4mm F/0.8
- Image resolution : 2592x1944
- Data Format : JPEG Image, H264 Video
- Interface: DC 5-12V, UART/Zmodem protocol

## ● LED illumination Array

- Light output : >4500lm
- Wavelength : 520-535nm
- Power consumption : Max 48W, Average 10W
- Modulation : Manchester coding

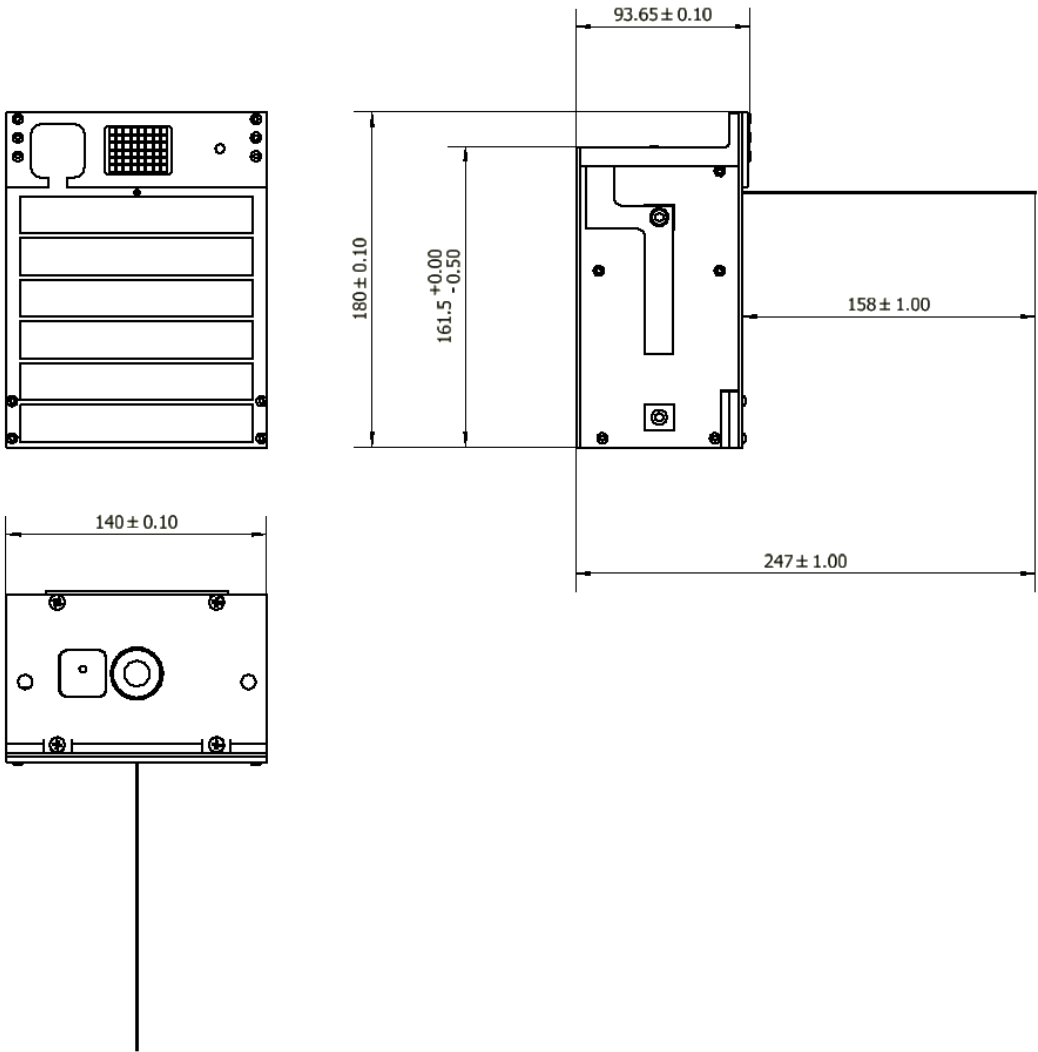
## ● Sun sensor

- Angle measurement precision : 2°
- Interface: analog voltage

## ● Embedded magnetorquer

- Magnetic dipole : XYZ, each axis  $0.02\text{Am}^2$
- Power supply : DC 5-20V 200mA@8V

Mechanical dimensions





版本修订历史记录					
序号	修订内容	修订人	修订日期	版本	备注
1	新建版本	Guan	2016.7.26	1.0	
2	改名、图片更新	WarMonkey	2016.9.10	2.0	
3	增加细节	WarMonkey	2016.9.13	3.0	



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