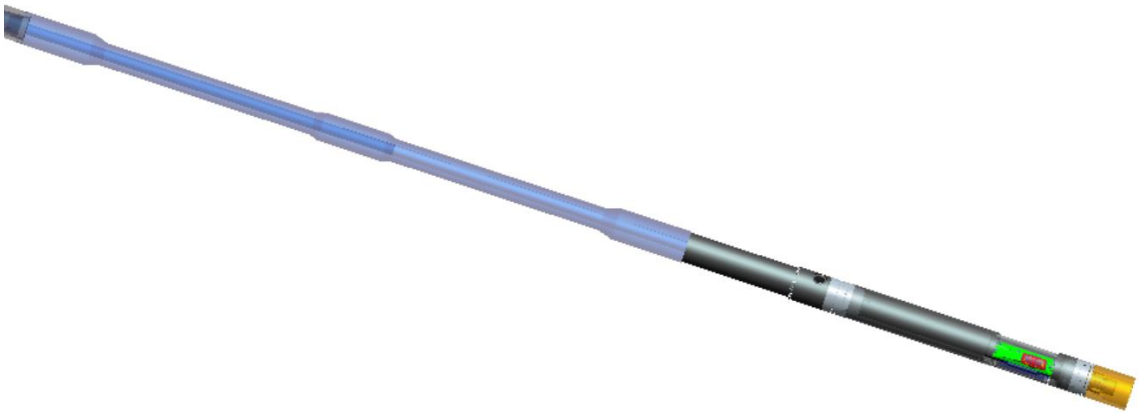
Rotary Steerable System

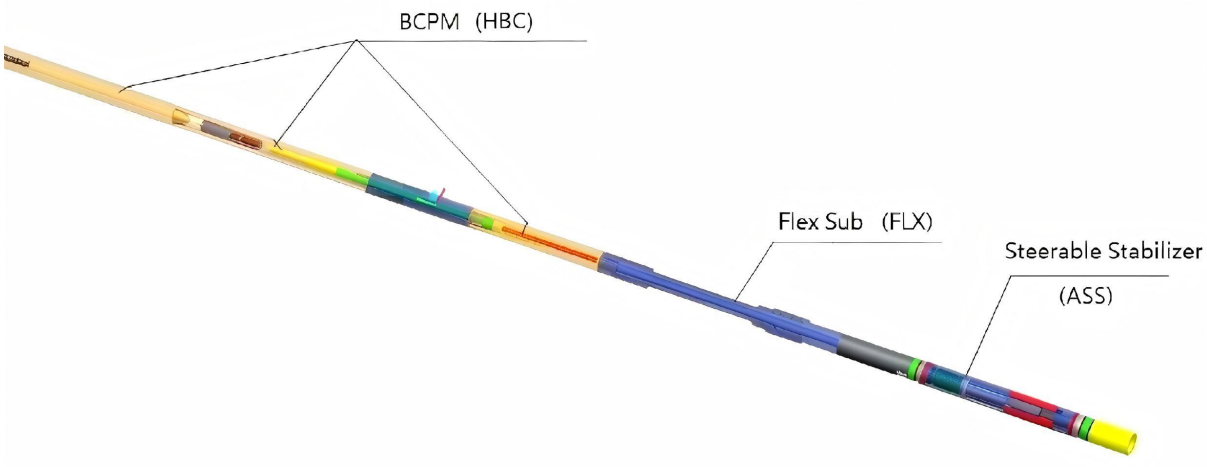


Tel: 1 778 8310158 | Fax: 1 778 8310168 | Email: etech@etech-eie.com www.etech-eie.com

Intelligent drilling rotary steering system is a kind of steering drilling system, which can complete the steering function in real time while drilling, and it is a major change in directional drilling technology. Rotary steering drilling has the characteristics of low friction and torque, high penetration rate, low cost, short well construction period, smooth well trajectory, easy regulation and control, and can extend the length of horizontal section, which is considered as the development direction of modern steering drilling technology.

System Composition：

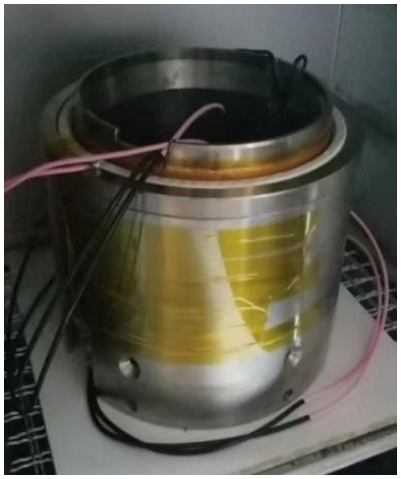
In the rotary guiding system, the guiding tool is the core part, which mainly includes mechanical structure, hydraulic module, circuit, non-contact transmission module, bearing and so on. Based on the principle of static pushing against the drill bit, a relatively rotatable structure is formed by connecting the non-rotating outer cylinder and the rotatable spindle through bearings. The non-rotating outer cylinder is equipped with a control circuit, an attitude measuring sensor, a hydraulic drive module and three supporting ribs distributed at 120 degrees respectively. According to the requirements of real-time control, the shaft wall is supported by constantly adjusting the force components of the three supporting ribs to form resultant forces in different directions and sizes to change the direction of the drill bit. It has the advantages of no impact on the drill string, easy control, high reliability and so on while obtaining larger bias force and build-up rate.



Mechanical Design：

Spraying wear-resistant layer on wing ribs

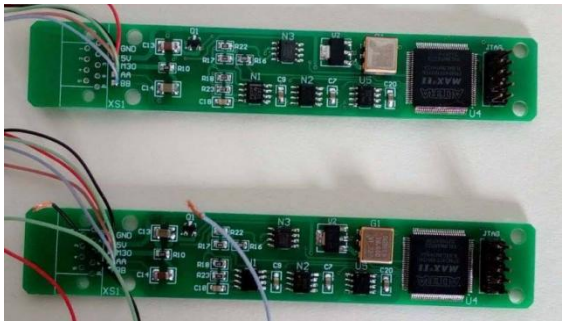
Wear-resistant bearing



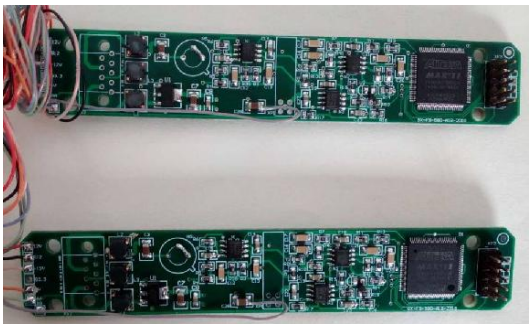
Contactless resolver

Electronic cabin

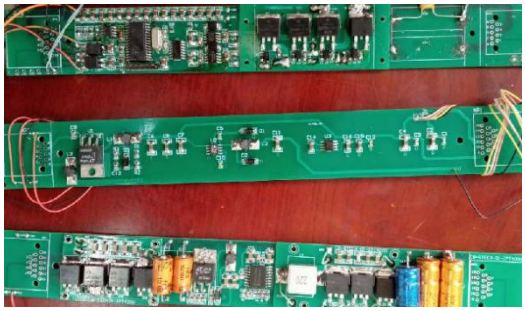
Circuit Design：



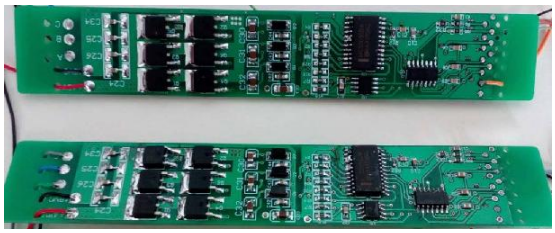
Monobus



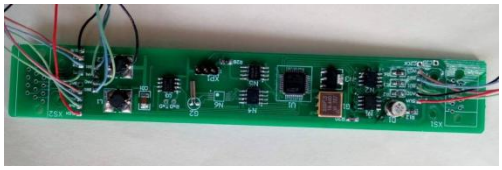
Contactless communication



Contactless power supply



fluid drive



Main control circuit

Non-contact debugging

Main performance parameters of 6.75 "rotary guide:

- Outside diameter of instrument: ϕ Φ178mm；
- Maximum build-up slope: 15°/30m；
- Applicable working temperature: 175℃；
- Applicable working pressure: 140MPa；
- Applicable speed: 20 ~ 200 rpm；
- Maximum compressive strength (static): 500kN；
- Maximum tensile strength (failure): 2000kN；
- Maximum torsion (continuous): above 50kN•m；
- Vibration: 20Grms,50-1000Hz；
- Impact: 500G,0.5ms(z axis), 1000g, 0.5ms (X, Y axis)；