

TY421MEMS AHRS

1. Brief introduction

TY421 type MEMS AHRS is R & D by the Xi'an Jierui. This product uses MEMS gyro and MEMS accelerometer, as well as a mature attitude calculation algorithm, can autonomously complete the attitude calculation function in harsh environmental conditions, can also provide heading by being combined with dual antenna GPS or magnetometer. And the combination of dual antenna GPS can continuously and real-time provide the instant position (longitude and latitude), velocity, acceleration, heading and attitude of the aircraft.



2. Features

- (1) Auto-output of navigation information
- (2) Meet the requirement of accurate measurement of attitude angle of aircraft, when in large maneuver flight and hovering.
- (3) Small volume and weight.
- (4) Communication interface RS422、CAN, to be selectable.
- (5) Wide voltage input range.
- (6) Can complete redevelopment according to customers' requirement.

3. Performances

Sr. No.	Item	Grade	Remark
System			
1	Preparation time	$\leq 2\text{min}$	
2	Attitude accuracy	$\leq 1^\circ \quad 1\sigma$ (static)	
		$\leq 2^\circ \quad 1\sigma$ (dynamic)	
3	Heading accuracy	$\leq 0.2^\circ$ / Baseline(GPS combined)	
		$\leq 0.5^\circ$ Magnetometer combined	
4	Height accuracy	10 m (GPS combined)	
5	Horizontal position accuracy	10m (CEP)(GPS combined)	
6	Velocity accuracy	0.02m/s (GNSS combined)	
Environment suitability			
7	Shock	30g	
8	Working temperature	$-40^\circ\text{C} \sim 65^\circ\text{C}$	
9	Vibration	Meet the vehicle vibration requirement of GJB150.16A-2009	
Physics characteristics			
10	Size	150*110*50mm	
11	Weight	$< 700\text{g}$	
12	Power supply	18VDC \sim 36VDC	
13	Working power dissipation	10W	
Interface characteristics			
14	Interface	RS232、RS422、CAN	Selectable
15	MTBF	$\geq 1500\text{h}$	
16	Data refresh rate	100Hz	
17	Band rate	115200bps	
18	Memory	32G	customized

4. Application

- (1) Unmanned aerial vehicle
- (2) Unmanned surface vessel
- (3) Counter-terrorism, search for and rescue.
- (4) Robots, unmanned vehicles