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**Calibration Specification for Strapdown Inertial Flight Attitudes
(English Translation)**

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Introduction

According to the level of domestic development trends and technology, inertial navigation system, according to GJB1185A-2005 "machine Inertial navigation system universal norms" of writing this specification, for strapdown attitude heading for the calibration of the fundamental ways of doing Norms and clear, and gives an example of the calibration uncertainty of the assessment parameters.

This specification is the first release.

Inertial AHRS Calibration Specification

1 Scope

This instruction applies to inertial AHRS instrument (hereinafter referred to as AHRS instrument) and the other on the same principle of strapdown attitude Department Conventional calibration.

2. References

This specification refers to the following documents.

GJB585A-1998 inertial technology terms GJB1185A-2005 Airborne Inertial Navigation System General specification for dated references, only the dated edition applies to this specification; undated reference documents Member, the latest edition (including any amendments) applies to this specification.

3 Terms and definitions GJB585A-1998 and established the following terms and definitions apply to this specification.

3.1 scale factor the ratio of change in input AHRS instrument output angular velocity change, the general method of least squares fitting the entire input rate Measured over a range of input and output data is obtained.

3.2 Bias zerooffset

When the output AHRS instrument input angular velocity is zero.

3.3 roll angle rolangle Vector north, day, east three directions constitute the right-handed around the north of the axis of rotation angle.

3.4 pitch angle Vector north, day, east three directions constitute the right-handed around

the axis of rotation of the east corner.

3.5 heading headingangle Vector north, day, east three directions constitute the right-handed, to the axis of rotation of the day around the corner.

Note: No reference heading refers to the forward direction and the angle between the north direction.

3.6 Misalignment misalignmentangle AHRS instrument error angle gyro sensitive axis mounting axis.

4 Overview

4.1 Principle

AHRS instrument works by accelerometers and gyroscopes mounted directly in its cavity, and then directly fixedly connected to the carrier on the body, the computer real-time calculation attitude matrix, the clearance between the carrier coordinate system and the navigation frame that is calculated quaternion Lines will come from the aircraft along the axis of the body coordinate system acceleration measured acceleration vector information associated with the solid converted to Information navigation frame, and then extract the attitude and heading information (see detailed information from the attitude matrix element