

# FAA ACS 10B ASA ACS Series: The Ultimate Guide to Avionics Systems Certification



The Federal Aviation Administration (FAA) has established a comprehensive set of regulations and standards to ensure the safety and reliability of aircraft and their systems. Among these regulations is the FAA

Advisory Circular (AC) 10B, which provides guidance on the certification of avionics systems. The AC 10B is complemented by the American Society of Aviation (ASA) ACS Series of standards, which provide specific requirements for the design, development, and testing of avionics systems.



## Airman Certification Standards: Remote Pilot - Small Unmanned Aircraft Systems: FAA-S-ACS-10B (ASA ACS Series)

★★★★★ 5 out of 5

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This guide provides a comprehensive overview of the FAA ACS 10B ASA ACS Series, including its history, purpose, and scope. We will discuss the certification process, the requirements that must be met, and the benefits of compliance. We will also provide resources for obtaining additional information and support.

### History of the FAA ACS 10B ASA ACS Series

The FAA ACS 10B was first published in 1972 as a means of providing guidance on the certification of avionics systems. The AC 10B has been updated several times over the years to reflect changes in technology and regulatory requirements. The current version of the AC 10B was published in 2019.

The ASA ACS Series was developed in the early 1990s as a way to provide more specific guidance on the design, development, and testing of avionics systems. The ASA ACS Series is based on the FAA AC 10B, but it provides more detailed requirements and guidance.

## **Purpose and Scope of the FAA ACS 10B ASA ACS Series**

The FAA ACS 10B ASA ACS Series is intended to provide guidance on the certification of avionics systems. The AC 10B provides general guidance on the certification process, while the ASA ACS Series provides more specific requirements for the design, development, and testing of avionics systems.

The AC 10B and ASA ACS Series apply to all avionics systems installed on aircraft, regardless of the size or type of aircraft. Avionics systems include any electronic or electro-mechanical system that is used for navigation, communication, flight control, or other aircraft functions.

## **The Avionics Systems Certification Process**

The avionics systems certification process is a complex and multi-faceted process. The following are the key steps in the process:

- 1. Development of a certification plan:** The first step in the certification process is to develop a certification plan. The certification plan outlines the specific requirements that must be met, the testing that will be conducted, and the documentation that will be submitted to the FAA.
- 2. Design and development of the avionics system:** The next step is to design and develop the avionics system. The design must meet all of the applicable requirements in the AC 10B and ASA ACS Series.
- 3. Testing of the avionics system:** Once the avionics system has been designed and developed, it must be tested to ensure that it meets all of the applicable

requirements. The testing must be conducted in accordance with the test plan that was developed as part of the certification plan. 4. **Review of the test data:** The FAA will review the test data to ensure that the avionics system meets all of the applicable requirements. The FAA may also conduct its own testing of the avionics system. 5. **Issuance of a type certificate:** If the FAA is satisfied that the avionics system meets all of the applicable requirements, it will issue a type certificate. The type certificate is a legal document that certifies that the avionics system is safe and reliable for use on aircraft.

### **Benefits of Compliance with the FAA ACS 10B ASA ACS Series**

There are many benefits to complying with the FAA ACS 10B ASA ACS Series. These benefits include:

- \* **Improved safety:** Avionics systems that are certified in accordance with the AC 10B and ASA ACS Series are more likely to be safe and reliable. This is because the AC 10B and ASA ACS Series set forth rigorous requirements for the design, development, and testing of avionics systems.
- \* **Reduced costs:** Avionics systems that are certified in accordance with the AC 10B and ASA ACS Series are less likely to fail. This can lead to reduced maintenance and repair costs.
- \* **Improved efficiency:** Avionics systems that are certified in accordance with the AC 10B and ASA ACS Series are more likely to be efficient and reliable. This can lead to improved aircraft performance and reduced fuel consumption.
- \* **Increased marketability:** Avionics systems that are certified in accordance with the AC 10B and ASA ACS Series are more attractive to customers. This is because customers know that these systems are safe, reliable, and efficient.

The FAA ACS 10B ASA ACS Series is a comprehensive set of regulations and standards that govern the certification of avionics systems. The AC 10B provides general guidance on the certification process, while the ASA ACS Series provides more specific requirements for the design, development, and testing of avionics systems.

Compliance with the FAA ACS 10B ASA ACS Series is essential for ensuring the safety and reliability of avionics systems. Compliance with these regulations and standards can also lead to reduced costs, improved efficiency, increased marketability, and improved aircraft performance.

## Resources

\* [FAA Advisory Circular (AC) 10B]

([https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC\\_10B.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_10B.pdf))

\* [ASA ACS Series](<https://www.asa.com/acs-series>) \* [FAA Type Certification Process]

([https://www.faa.gov/aircraft/air\\_cert/design\\_approvals/type\\_certification/](https://www.faa.gov/aircraft/air_cert/design_approvals/type_certification/)) \* [Avionics Systems Certification]

(<https://www.sae.org/standards/content/as55030/>) \* [Avionics Systems Engineering](<https://www.intechopen.com/books/avionics-systems-engineering/avionics-systems-engineering-an-overview>)



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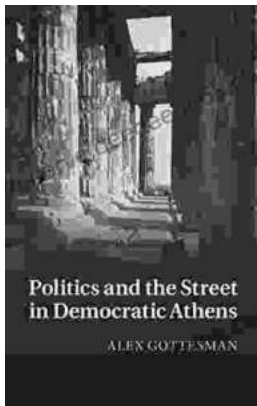
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