

European Aviation Safety Agency

European Technical Standard Order (ETSO)

Subject: **EXTENDED SQUITTER AUTOMATIC DEPENDENT SURVEILLANCE
– BROADCAST (ADS-B) AND TRAFFIC INFORMATION SERVICES
(TIS-B) EQUIPMENT OPERATING ON THE RADIO FREQUENCY
OF 1090 MHZ**

1 - Applicability

This ETSO gives the requirements which Extended Squitter Automatic Dependant surveillance-Broadcast (ADS-B) and Traffic Information Services - Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 MHz that are manufactured on or after the effective date of this ETSO must meet in order to be identified with the applicable ETSO marking.

2 - Procedures

2.1 - General

Applicable procedures are detailed in CS-ETSO Subpart A.

2.2 - Specific

None

3 - Technical Conditions

3.1 - Basic

3.1.1 - Minimum Performance Standard

Section 2 of RTCA DO-260A " *Squitter Automatic Dependent Surveillance - Broadcast (ADS-B) and Traffic Information Services - Broadcast (TIS-B)*", dated April 10, 2003, as modified by Change 1 to RTCA/DO-260A, dated June 27, 2006, and Change 2 to DO-260A, dated December 13, 2006. The 1090 MHz equipment classes applicable to this ETSO are defined in RTCA/DO-260A, Section 2.1.11.

This ETSO supports two major classes of 1090 MHz ADS-B and TIS-B equipment:

- (a) Class A equipment, consisting of transmit and receive subsystems; and
- (b) Class B equipment, containing a transmit subsystem only

(a) Class A equipment includes Classes A0, A1, A2 and A3. This standard requires 1090 MHz airborne Class A equipment to include the capability of receiving both ADS-B and TIS-B messages and delivering both ADS-B and TIS-B reports, as well as transmitting ADS-B messages. A Receive-only Class of equipment is allowed.

(b) Class B equipment includes Classes B0 and B1. Classes B0 and B1 are the same as A0 and A1, except they do not have receive subsystems. Note that Classes B2 and B3 are not for aircraft use.

3.1.2 - Environmental Standard

EUROCAE ED-14E (RTCA DO160E) "*Environmental Conditions and Test Procedures for Airborne Equipment*" from March 2005.

The means for verifying equipment performance must be consistent with the test procedures specified in section 2.3 of RTCA/DO-260A dated April 10, 2003 Change 1 to RTCA/DO-260A, dated June 27, 2006, and Change 2 to DO-260A, dated December 13, 2006.

3.1.3 - Computer Software

If the article includes a digital computer, the software must be developed according to EUROCAE ED-12B (RTCA DO-178B) "*Software Considerations in Airborne Systems and Equipment Certification*" from 1992.

3.2 - Specific

None

4 - Marking

4.1. - General

Marking is detailed in CS-ETSO Subpart A paragraph 1.2.

4.2. – Specific

Transmitting and receiving components must be permanently and legibly marked.

The following table explains how to mark components.

RTCA/DO-260A provides the equipment class in Section 2.1.11, and the receiving equipment type in Section 2.2.6.

<i>If component can:</i>	<i>Mark it with:</i>	<i>Sample marking pattern:</i>
Transmit and receive	Equipment class it supports, and Receiving equipment type	Class A0/Type 1
Transmit, but not receive	Equipment class it supports	Class B1, or Class A3-Transmitting Only
Receive, but not transmit	Equipment class it supports, and Receiving equipment type	Class A2/Type 2-Receiving Only

5 - Availability of Referenced Document

See CS-ETSO Subpart A paragraph 3