

Clearance Record
DOCUMENT COMMENT LOG

Originating Office: AIR-130	Document Description: TSO-C118a	Project Lead: Steve Plummer, 650-756-0227 x166	Reviewing Office:	Date of Review:
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Index No.	Name of Reviewer	Page & Paragraph	Comment	Suggested Change & Rationale	Disposition
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1	Garmin	Page 1, Para 3.	<p>Includes the statement:</p> <p>New models of TCAS I identified and manufactured on or after the effective date of this TSO must meet the MPS qualification and documentation requirements in RTCA Document No. RTCA/DO-197A, Minimum Operational Performance Standards for An Active Traffic Alert and Collision Avoidance System I (ACTIVE TCAS 1), dated September 12, 1994, Section Two (2), as modified by Change 1 dated July 29, 1997.</p> <p>Reference to the entire DO-197A section 2 as providing the minimum functional and performance requirements leads to confusion because DO-197A section 2 also includes the environmental qualification and test conditions.</p>	<p>Suggest changing to:</p> <p>New models of TCAS I identified and manufactured on or after the effective date of this TSO must meet the MPS qualification and documentation requirements in Sections 2.1 and 2.2 of RTCA Document No. RTCA/DO-197A, Minimum Operational Performance Standards for An Active Traffic Alert and Collision Avoidance System I (ACTIVE TCAS 1), dated September 12, 1994, as modified by Change 1 dated July 29, 1997.</p> <p>In a recent discussion on another TSO, FAA AIR-120 indicated that test sections are not part of the minimum functional and performance requirements that the equipment must meet in order to provide the intended function defined in paragraph 3.a of this TSO. In other words, TSO deviations do not need to be obtained in cases where the tests are not conducted precisely in accordance with the procedures defined within the MPS test section although the intent of the test must be followed and any modifications to the test must be validated.</p>	<p>Accepted. The intent of the comment has been incorporated.</p>

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2	Garmin	Page 2, Para 3.c	<p>Includes the statement:</p> <p>Demonstrate the required functional performance under the test conditions specified in RTCA/DO-197A section 2.</p> <p>The test conditions are specifically defined in DO-197A Section 2.4.</p>	<p>Suggest changing to:</p> <p>Demonstrate the required functional performance under the test conditions specified in RTCA/DO-197A section 2.4.</p> <p>The change will avoid confusion between functional/performance requirements, and test procedures.</p>	Accepted.
3	Garmin	Page 3, par 4.b.(2)	<p>Paragraph 4.b.(2) states:</p> <p>Each subassembly of the article that you determined may be interchangeable.</p> <p>This language is confusing.</p>	<p>The language for this requirement is confusing. This could mean that a stuffed printed circuit board needs the TSO number.</p> <p>Suggest removing the statement or if removing causes problems, work with industry to establish wording that is better understood.</p>	Not accepted. The language in this section is dictated by the TSO template in FAA Order 8150.1C CHG 2 dated 12/17/13.

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4	Garmin	Page 4, par 5.f	TSO paragraph 5.f and its subparagraphs include definition of non-TSO functions and the data to be submitted to the ACO for non-TSO functions. This guidance is inconsistent with Order 8110.4C CHG 4.	<p>TSO paragraph 5.f states “Identify functionality or performance contained in the article not evaluated under paragraph 3 of this TSO (that is, non-TSO functions).” Use of the term “performance” in the definition of a non-TSO function is inconsistent with the Order 8110.4C CHG 4 paragraph 6-9.b.(1) and 6-9.b.(3)(a) guidance regarding how to define a non-TSO function. The issue is non-TSO should not be defined as “performance”. It will create difficulty if these criteria are used. For example, if a TSO requires a minimum 10 watt transmitter and a company makes equipment that is robust at 11 watts, the performance exceeding the TSO is not called out under the TSO; consequently, by the paragraph 5.f “performance” definition, the 11 watt transmitter has a non-TSO 1 watt capability. The distinction of a “function that can be accomplished outside the TSO box” as is specified in Order 8110.4C CHG 4 paragraph 6-9 is critical to making non-TSO function work long term.</p> <p>Adjust the wording in the TSO (and template) to be consistent with the 8110.4C CHG 4 intent.</p>	<p>Not accepted. The format of paragraph 5.f is dictated by the TSO template. However, the apparent disconnect between the two Orders (8110.4C CHG4 and 8150.1C CHG 2) is noted and it has been discussed with the AIR-111 organization. They expect to coordinate with AIR-110 (the responsible organization for Order 8110.4C) to resolve the inconsistencies between the two orders. At this time the expected resolution will be to remove the non-TSO functionality guidance from order 8110.4C and absorb it into a future revision of Order 8150.1C.</p>

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5	Garmin	Page 6, par 7.b	TSO paragraph 7.b contains wording that is inconsistent with Order 8110.4C CHG 4.	<p>TSO paragraph 7.b includes additional guidance about what furnished data should be provided to an operator or repair station when the equipment includes a non-TSO function. The problematic guidance states “include one copy of the data in paragraphs 5.f.(1) through 5.f.(4).” This guidance is inconsistent with Order 8110.4C CHG 4. Order 8110.4C CHG 4 paragraph 6-9.b.(6) defines the FAA-industry agreed data that must be provided to an installer when equipment includes a non-TSO function.</p> <p>Adjust the wording in the TSO (and template) to be consistent with the 8110.4C CHG 4 intent.</p>	Refer to #4 for disposition.