

ENGINEERING CHANGE NOTIFICATION FORM

ECN: 80200524	REV: 1	ISSUE DATE: 02/16/2015						
TYPE OF CHANGE: Change in operating parameters on boards using CSAC oscillator								
DETAILED DESCRIPTION OF CHANGE: All Jackson Labs Technologies, Inc. CSAC based products use the Microsemi CSAC oscillator. Microsemi has issued a Field Service Bulletin (FSB) in late December of 2014 detailing new restrictions to operating and storage temperatures to achieve rated MTBF numbers. This document explains how this FSB affects JLT CSAC based products.								
REASON FOR CHANGE: Reduction in MTBF and potential premature failures of the CSAC oscillator								
PRODUCTS AFFECTED: <table border="1" data-bbox="129 777 1461 1039"> <thead> <tr> <th>Products</th> <th>Models</th> </tr> </thead> <tbody> <tr> <td>All JLT products using the Microsemi CSAC</td> <td> CSAC GPSDO HD CSAC Low Power HD CSAC SAASM HD CSAC LN CSAC DROR-II, IIA </td> </tr> </tbody> </table>			Products	Models	All JLT products using the Microsemi CSAC	CSAC GPSDO HD CSAC Low Power HD CSAC SAASM HD CSAC LN CSAC DROR-II, IIA		
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AVAILABILITY: <table border="1" data-bbox="129 1092 1461 1165"> <thead> <tr> <th></th> <th>MILESTONE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>ECN release</td> <td></td> <td>02/16/2015</td> </tr> </tbody> </table>				MILESTONE	DATE	ECN release		02/16/2015
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Issue: Microsemi's December 2014 FSB for the SA.45s CSAC oscillators recommends limiting the CSAC operating temperature to a maximum of +35C, and the storage temperature to a maximum of +40C to achieve rated MTBF. This is to address a potential CSAC manufacturing issue that may cause the MTBF to be limited from its specified value if the unit is operated at higher than these temperatures.								
Impact: Microsemi issued a Field Service Bulletin late last year that limits the upper temperatures of the CSAC to maintain the specified MTBF of the CSAC. There is a potential misunderstanding that this means the CSAC does not "lock" above +35C. This is not the case. The CSAC will lock at higher temperatures, but its MTBF specification may be impacted and MTBF may be reduced if the unit is operated above these new limit temperatures.								
We have had numerous discussions with Microsemi since the FSB was released to understand how this may impact our products and our customers. We have asked for verification of the statement that the specification is now limited to +35C. The answer from Microsemi is that operation at higher temperatures may affect the lifetime and MTBF of the CSACs and reduce it from stated specifications. Microsemi is actively working on fixing this issue, and has already implemented three fixes to address the issue. Microsemi believes the restrictions to be lifted for new product within 2015.								
Resolution: To accommodate a more pragmatic operating environment, JLT asked Microsemi to confirm their expectation of lifetime impact and MTBF reductions for the following real-world application scenario:								

- 1) Power-off, and storage below +35C for 16 hours
- 2) Power-on operation at a temperature of +65C for 8 hours

Microsemi estimates that the lifetime under such a periodic usage scenario could be up to 6 years, but insufficient data is available to substantiate that further. Due to this restriction, Microsemi and JLT will replace any CSACs that fail during the warranty period. Operating or storage at higher temperatures than the above limits may impact reliability and lifetime of the CSAC oscillators and is thus not recommended.

References:

Microsemi FSB #: 098-50620-075, www.microsemi.com

REFERENCE DOCUMENTS/ATTACHMENTS:

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PLEASE CONTACT JACKSON LABS TECHNOLOGIES, INC. WITH ANY QUESTIONS