

PROBLEM ADVISORY

1. TITLE Microcircuit, Digital, CMOS, Radiation Hardened, Monolithic Silicon LEON3/FT AHB Lock Release during Atomic Operation			2. DOCUMENT NUMBER SPO-2020-PA-0004																	
			3. DATE (Year, Month, Date) 2018, February 22nd																	
4. MANUFACTURER NAME AND ADDRESS CAES 4350 CENTENNIAL BOULEVARD COLORADO SPRINGS, COLORADO 80907-3486			5. MANUFACTURER POINT OF CONTACT NAME Gaisler Support																	
			6. MANUFACTURER POINT OF CONTACT TELEPHONE +46 (0) 31 775 8650																	
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8. CAGE CODE 65342	9. LDC START 1507/1535	10. LDC END 1906/1939	11. PRODUCT IDENTIFICATION CODE See table below for PA	12. BASE PART See table below																
13. BLANK			14. SMD NUMBER See table below	15. DEVICE TYPE DESIGNATOR 01																
			16. RHA LEVELS R	17. QML LEVEL See table below																
			18. NON QML LEVEL N/A	19. GIDEP NUMBER GB4-P-20-04A																
20. PROBLEM DESCRIPTION / DISCUSSION / EFFECT This document describes a corner case that affects specific versions of the LEON3/FT core that can cause the LEON3/FT core to lose the bus lock before making the store operation of an atomic instruction. The corner case can only be triggered when several additional conditions, including the use of the processor's memory management unit, are satisfied during execution. The issue is present in all LEON3/FT cores implemented with memory management unit (MMU) up to GRLIB build b4204.																				
<table border="1"> <thead> <tr> <th>Base part number</th> <th>PIC</th> <th>SMD number</th> <th>QML Level</th> </tr> </thead> <tbody> <tr> <td>UT699</td> <td>WQ07</td> <td>5962-108228</td> <td>Q</td> </tr> <tr> <td>UT699E</td> <td>WQ02</td> <td>5962-13237</td> <td>Q</td> </tr> <tr> <td>UT700</td> <td>WQ03</td> <td>5962-13238</td> <td>Q,V</td> </tr> </tbody> </table>					Base part number	PIC	SMD number	QML Level	UT699	WQ07	5962-108228	Q	UT699E	WQ02	5962-13237	Q	UT700	WQ03	5962-13238	Q,V
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21. ACTION TAKEN / PLANNED LEON3/FT AHB Lock Release during Atomic Operation Technical Note 2017-12-21 Doc. No GRLIB-TN-0011 Issue 1.4																				
22. DISPOSITIONARY RECOMM 23. ENDATION:		CHECK & <input checked="" type="checkbox"/> USE AS IS	CONTACT <input type="checkbox"/> MANUFACTURER	REMOVE & <input type="checkbox"/> REPLACE	CORRECT & <input type="checkbox"/> USE AS SPECIFIED															
24. ADEPT REPRESENTATIVE Lin-Chi Huang		25. SIGNATURE 			26. DATE 2018, February 22nd															