



**RT PolarFire® SoC Military Temperature  
Engineering Silicon FPGAs  
June 6, 2025**

To facilitate design evaluation activities of the RT PolarFire SoC FPGA, Microchip offers RTPFS460ZT and RTPFS160ZT engineering silicon (MS) devices. These devices use the first RT PolarFire SoC silicon. Note that some flight-model tests are not performed on the RT PolarFire SoC MS devices:

1. RT PolarFire SoC MS devices are intended for hardware functional verification only. They should not be used for space flight applications. They should also not be used for applications or activities which require the quality of space flight parts, such as qualification of space flight hardware.
2. RT PolarFire SoC MS devices are tested at full military temperature from  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . Silicon validation of the production RT PolarFire SoC FPGAs is currently in progress. For known issues, refer to AN4903 application note.
3. No MIL-STD-883 Class B testing is performed. RT PolarFire SoC MS devices are not subjected to temperature cycling, fine and gross leak testing, X-ray inspection, PIND testing, assembly lot Group B testing, or burn-in.
4. Customers are recommended to operate RT PolarFire SoC MS devices within the datasheet recommended operating conditions.
5. Microchip does not guarantee lifetime or reliability of RT PolarFire SoC MS devices.
6. RT PolarFire SoC MS devices hermeticity of the lid seal is not tested and is not guaranteed. The seal integrity should be sufficient to protect the FPGA during normal PCB manufacturing and cleaning processes. However, since hermeticity is not guaranteed, the RT PolarFire SoC MS devices should not be subjected to thermal vacuum tests. System level flight-model qualification should be performed with flight-qualified FPGAs, meaning FPGAs screened to at least MIL-STD-883 Class B.
7. The lids of RT PolarFire SoC RTPFS460ZT MS devices have a shallow dimple drilled through the top plating layers but not penetrating the thickness of the lid. The purpose of this dimple is to deter counterfeiting. The drilling operation does not cause operating characteristics of the device to deteriorate.
8. RT PolarFire SoC MS units may be assembled using an assembly process that is not qualified for space flight.
9. A system-generated Certificate of Conformance will be shipped with the RT PolarFire SoC MS units. No other data will be shipped or available to ship RT PolarFire SoC MS units will be marked as "MS".
10. RT PolarFire SoC MS units may have cosmetic visual imperfections.
11. RT PolarFire SoC MS units are not DLA or QML certified.
12. RT PolarFire SoC MS units are not tested for radiation performance.



13. A system-generated Certificate of Conformance will be shipped with the RT PolarFire SoC MS units. No other data will be shipped or available to ship with the units.
14. Microchip provides general technical support for RT PolarFire SoC MS through the local Field Application Engineers and through the general Technical Support channels, but will not provide failure analysis support for RT PolarFire SoC MS devices.  
Technical support is available through the website at: [www.microchip.com/support](http://www.microchip.com/support)
15. If programming at the Microchip factory is required, the programming files must be supplied at the time of order placement; Microchip cannot reserve inventory or units from lots in process pending receipt of customer programming files.
16. No special or customer specific testing will be available for RT PolarFire SoC MS units. Requests for Single Lot Date Code, specific date codes, Single Wafer Lot, date code restrictions, or specific wafer lots will not be accepted.
17. Microchip cannot guarantee availability of flight units from the same wafer lot or date code as the RT PolarFire SoC MS units.
18. No customer QA and/or P.O. clauses will be reviewed or accepted on RT PolarFire SoC MS orders. There will be no review of customer Terms and Conditions on RT PolarFire SoC MS orders. Orders will be accepted to Microchip standard Terms and Conditions only, <https://www.microchip.com/en-us/about/legal-information>
19. RT PolarFire SoC MS units are subject to the same export controls as standard RT PolarFire SoC FPGA units.