

## PCN20027: Maximum Read Frequency on Certain LSRAM Read Modes Has Been Reduced

December 7, 2020

### Description

The following LSRAM configurations have derated  $F_{MAX}$  specifications.

**Table 1 • Derated  $F_{MAX}$  Specifications**

| Condition                                                             | Datasheet<br>Revision 1.7 |     | Datasheet<br>Revision 1.8 |            | Unit |
|-----------------------------------------------------------------------|---------------------------|-----|---------------------------|------------|------|
|                                                                       | STD                       | –1  | STD                       | –1         |      |
| Dual-port, all supported widths, non-pipelined, and read-before-write | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Dual-port, all supported widths, pipelined, and read-before-write     | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Two-port, all supported widths, pipelined, and read-before-write      | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Two-port, all supported widths, non-pipelined, and read-before-write  | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Two-port pipelined ECC mode, pipelined, and read-before-write         | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Two-port non-pipelined ECC mode, pipelined, and read-before-write     | 274                       | 285 | <b>198</b>                | <b>240</b> | MHz  |
| Two-port pipelined ECC mode, non-pipelined, and read-before-write     | 274                       | 285 | <b>240</b>                | 285        | MHz  |
| Two-port non-pipelined ECC mode, non-pipelined, and read-before-write | 193                       | 285 | 193                       | <b>240</b> | MHz  |

### Reason for Change

On-going QA testing and verification exposed a timing criticality in a critical path within the LSRAM.

### Application Impact

Users should upgrade to Libero 12.6 and re-run static timing using SmartTime if they are using one of the above LSRAM configurations and the design is running faster than the new limits listed in the table above.

### Production Shipment Schedule

This has no affect on production shipments. Libero 12.6 will contain the new LSRAM timing model.

### Qualification Data

N/A

### Samples Availability

N/A

### Method of Identifying Changed Product

By part number.

## Products Affected

| PolarFire Part Numbers |                   |                    |                   |
|------------------------|-------------------|--------------------|-------------------|
| MPF100T-FCG484E        | MPF100TL-FCG484E  | MPF100T-1FCG484E   | MPF100T-FCG484I   |
| MPF100T-FCVG484E       | MPF100TL-FCVG484E | MPF100T-1FCVG484E  | MPF100T-FCVG484I  |
| MPF100T-FCSG325E       | MPF100TL-FCSG325E | MPF100T-1FCSG325E  | MPF100T-FCSG325I  |
| MPF200T-FCG484E        | MPF200TL-FCG484E  | MPF200T-1FCG484E   | MPF200T-FCG484I   |
| MPF200T-FCVG484E       | MPF200TL-FCVG484E | MPF200T-1FCVG484E  | MPF200T-FCVG484I  |
| MPF200T-FCG784E        | MPF200TL-FCG784E  | MPF200T-1FCG784E   | MPF200T-FCG784I   |
| MPF200T-FCSG325E       | MPF200TL-FCSG325E | MPF200T-1FCSG325E  | MPF200T-FCSG325I  |
| MPF200T-FCSG536E       | MPF200TL-FCSG536E | MPF200T-1FCSG536E  | MPF200T-FCSG536I  |
| MPF300T-FCG484E        | MPF300TL-FCG484E  | MPF300T-1FCG484E   | MPF300T-FCG484I   |
| MPF300T-FCVG484E       | MPF300TL-FCVG484E | MPF300T-1FCVG484E  | MPF300T-FCVG484I  |
| MPF300T-FCG784E        | MPF300TL-FCG784E  | MPF300T-1FCG784E   | MPF300T-FCG784I   |
| MPF300T-FCSG536E       | MPF300TL-FCSG536E | MPF300T-1FCSG536E  | MPF300T-FCSG536I  |
| MPF300T-FCG1152E       | MPF300TL-FCG1152E | MPF300T-1FCG1152E  | MPF300T-FCG1152I  |
| MPF500T-FCG784E        | MPF500TL-FCG784E  | MPF500T-1FCG784E   | MPF500T-FCG784I   |
| MPF500T-FCG1152E       | MPF500TL-FCG1152E | MPF500T-1FCG1152E  | MPF500T-FCG1152I  |
| MPF100TL-FCG484I       | MPF100T-1FCG484I  | MPF100TLS-FCG484I  | MPF100TS-FCG484I  |
| MPF100TL-FCVG484I      | MPF100T-1FCVG484I | MPF100TLS-FCVG484I | MPF100TS-FCVG484I |
| MPF100TL-FCSG325I      | MPF100T-1FCSG325I | MPF100TLS-FCSG325I | MPF100TS-FCSG325I |
| MPF200TL-FCG484I       | MPF200T-1FCG484I  | MPF200TLS-FCG484I  | MPF200TS-FCG484I  |
| MPF200TL-FCVG484I      | MPF200T-1FCVG484I | MPF200TLS-FCVG484I | MPF200TS-FCVG484I |
| MPF200TL-FCG784I       | MPF200T-1FCG784I  | MPF200TLS-FCG784I  | MPF200TS-FCG784I  |
| MPF200TL-FCSG325I      | MPF200T-1FCSG325I | MPF200TLS-FCSG325I | MPF200TS-FCSG325I |
| MPF200TL-FCSG536I      | MPF200T-1FCSG536I | MPF200TLS-FCSG536I | MPF200TS-FCSG536I |
| MPF300TL-FCG484I       | MPF300T-1FCG484I  | MPF300TLS-FCG484I  | MPF300TS-FCG484I  |
| MPF300TL-FCVG484I      | MPF300T-1FCVG484I | MPF300TLS-FCVG484I | MPF300TS-FCVG484I |
| MPF300TL-FCG784I       | MPF300T-1FCG784I  | MPF300TLS-FCG784I  | MPF300TS-FCG784I  |
| MPF300TL-FCSG536I      | MPF300T-1FCSG536I | MPF300TLS-FCSG536I | MPF300TS-FCSG536I |
| MPF300TL-FCG1152I      | MPF300T-1FCG1152I | MPF300TLS-FCG1152I | MPF300TS-FCG1152I |
| MPF500TL-FCG784I       | MPF500T-1FCG784I  | MPF500TLS-FCG784I  | MPF500TS-FCG784I  |
| MPF500TL-FCG1152I      | MPF500T-1FCG1152I | MPF500TLS-FCG1152I | MPF500TS-FCG1152I |
| MPF100TS-1FCG484I      |                   |                    |                   |
| MPF100TS-1FCVG484I     |                   |                    |                   |
| MPF100TS-1FCSG325I     |                   |                    |                   |
| MPF200TS-1FCG484I      |                   |                    |                   |
| MPF200TS-1FCVG484I     |                   |                    |                   |
| MPF200TS-1FCG784I      |                   |                    |                   |
| MPF200TS-1FCSG325I     |                   |                    |                   |
| MPF200TS-1FCSG536I     |                   |                    |                   |
| MPF300TS-1FCG484I      |                   |                    |                   |
| MPF300TS-1FCVG484I     |                   |                    |                   |
| MPF300TS-1FCG784I      |                   |                    |                   |
| MPF300TS-1FCSG536I     |                   |                    |                   |
| MPF300TS-1FCG1152I     |                   |                    |                   |
| MPF500TS-1FCG784I      |                   |                    |                   |
| MPF500TS-1FCG1152I     |                   |                    |                   |

**Contact Information**

If you have any questions about this subject, contact Microsemi Technical Support department by using the support portal at <https://soc.microsemi.com/Portal/Default.aspx>

**Regards,**

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**Microsemi**

2355 W. Chandler Blvd.  
Chandler, AZ 85224 USA

Within the USA: +1 (480) 792-7200  
Fax: +1 (480) 792-7277

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