

ER0218
Errata
PolarFire FPGA Production Devices

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a  **MICROCHIP** company

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1 Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

1.1 Revision 6.0

Revision 6.0 was published in May 2021. The following is a summary of changes.

- Updated details for SGMII/1000BASE-X row in Table 4 Supported Transceiver Protocols.

1.2 Revision 5.0

Revision 5.0 was published in December 2020. The following is a summary of changes.

- Removed information for "Dynamic Training of HSIO/GPIO IOD Interfaces" and "Temperature-Voltage Sensor (TVS) Temperature Flags Values".
- Updated status for SDI, SLVS-EC, and Half-duplex (independent Rx/Tx) to "Complete".
- "SD-SDI (270 Mbps)" and "6G-SDI and 12G-SDI" are supported.
- Deleted "Enhanced Receiver Management (ERM) is not supported".

1.3 Revision 4.0

Revision 4.0 was published in December 2019. The following is a summary of changes.

- Removed MIPI D-PHY support information. For MIPI D-PHY support information, see the PolarFire Datasheet Revision 1.7.
- Added Temperature-Voltage Sensor (TVS) information (per CN19030).
- Added system control suspend mode interaction with JTAG.

1.4 Revision 3.0

Revision 3.0 was published in September 2019. The following is a summary of changes.

- Removed memory interface limitation from errata for production silicon using Libero SoC version 12.0 or later software.
- Removed IOCDR limitations from errata for production silicon using Libero SoC version 12.1 or later software.
- Removed RxPLL behavior and DFE calibration limitations from errata for production silicon using Libero SoC version 12.1 or later software using PF_XCVR_ERM core.
- Removed errata on the IBIS-AMI DFE support. The released IBIS-AMI models offer full feature support.

1.5 Revision 2.0

Revision 2.0 was published in November 2018. MPF100T device offerings were added.

1.6 Revision 1.0

Revision 1.0 was published in November 2018. It was the first publication of this document including the MPF200T and MPF300T device offerings.

2 Overview

The PolarFire® MPF100T, MPF200T, MPF300T, and MPF500T production FPGA devices are subject to the limitations described in this document. This document describes updates about known issues, available limitations, and workarounds. It provides a snapshot of the current validation status for feature sets. The document highlights dependencies that may exist between silicon device revisions and specific support by Libero® PolarFire SoC software versions. Contact Microsemi Technical Support at soc_tech@microsemi.com for more information.

Table 1 • Device Revisions

Device	Package	Revisions
MPF100T, TL, TS, TLS	FCG484, FCG484, and FCSG325	0, 1
MPF200T, TL, TS, TLS	FCG784, FCG484, FCG484, FCSG536, and FCSG325	0, 1
MPF300T, TL, TS, TLS	FCG1152, FCG784, FCG484, FCG484, and FCSG536	0, 1
MPF500T, TL, TS, TLS	FCG1152 and FCG784	0, 1

Note: See [CN19014](#) for details on revision 1 devices.

Table 2 • Device Options

Device	Extended Commercial 0 °C–100 °C	Industrial –40 °C–100 °C	STD	–1	Transceivers T	Lower Static Power L	Data Security S
MPF100T, MPF200T, MPF300T, MPF500T	Yes	Yes	Yes	Yes	Yes		
MPF100TL, MPF200TL, MPF300TL, MPF500TL	Yes	Yes	Yes		Yes	Yes	
MPF100TS, MPF200TS, MPF300TS, MPF500TS		Yes	Yes	Yes	Yes		Yes
MPF100TLS, MPF200TLS, MPF300TLS, MPF500TLS		Yes	Yes		Yes	Yes	Yes

For specifications, see [DS0141: PolarFire FPGA Datasheet](#).

3 Errata Descriptions and Workaround

The following sections describe device errata and workarounds wherever applicable. This document is intended to describe variations or deviations from information in the [DS0141: PolarFire FPGA Datasheet](#) or any PolarFire user or demo guide.

The following table lists the specific device erratas and the affected PolarFire production devices.

Table 3 • Summary of PolarFire FPGA Errata

Description	MPF100T, TL, TS, TLS	MPF200T, TL, TS, TLS	MPF300T, TL, TS, TLS	MPF500T, TL, TS, TLS
MPF300T-ES bitstream compatibility	N/A	N/A	*	N/A
System controller suspend mode interaction with JTAG	*	*	*	*

* indicates that the errata exists for that particular device. Details are discussed in the following sections.

For feature clarifications about supported transceiver protocols, see section Supported Transceiver Protocol Status for Production Devices.

Bitstream Compatibility

MPF300T-ES bitstreams cannot be used to program pre-production (PP) or production MPF300T devices.

System Controller Suspend Mode Interaction with JTAG

If system controller suspend mode is enabled, device initialization may be interrupted after exiting JTAG programming. As workaround, reset the device after JTAG programming.

4 Supported Transceiver Protocol Status for Production Devices

Transceiver protocol capabilities are validated and tested for robustness as per the specifications listed in the [DS0141: PolarFire FPGA Datasheet](#) and [UG0677: PolarFire FPGA Transceiver User Guide](#).

The following table summarizes transceiver protocols and validation status for production devices.

Table 4 • Supported Transceiver Protocols

Transceiver Protocol by Device	MPF100T/MPF200T/MPF300T/MPF500T Status	Details
SGMII/1000BASE-X	Complete	Transceiver: 1.25 Gbps with CoreTSE IP core. TxPLL SyncE validation is in-progress. Contact factory.
CPRI	Complete	Support for CPRI data rates 1–7 and 7A, 8, 9.
10GBASE-R	Complete	Transceiver: 10.3125 Gbps with Core10GMAC IP core. TxPLL SyncE is supported. IEEE 1588 time stamping is not supported.
10GBASE-KR	Complete	Contact Microsemi for complete solution.
Interlaken	Complete	
JESD204B	Complete	Up to 12.5G with CoreJESD20BTX/RX IP core.
PCIe Endpoint Gen1/Gen2	Complete	
PCIe Rootport Gen1/Gen2	Complete	
LiteFast	Complete	Up to 12.7 Gbps (8b10b only).
XAUI	Complete	
RXAUI	Complete	
HiGig/HiGig+	Complete	
DisplayPort	Complete	Per VESA DisplayPort Standard 1.2a.
SRIO	Complete	
PMA only	Complete	
SATA	Complete	Contact factory.
Fiber channel	Complete	Tested for electrical compliance
SDI	Complete	HD-SDI (1.485 Gbps) and 3G-SDI (2.970 Gbps) are supported. SD-SDI (270 Mbps) are supported. 6G-SDI and 12G-SDI are supported.
OTN	Complete	Tested for electrical compliance.

Transceiver Protocol by Device	MPF100T/MPF200T/ MPF300T/MPF500T Status	Details
QSGMII	Complete	
USXGMII	Complete	
CoaXPress	Complete	Tested with external PHY.
SLVS-EC	Complete	
Half-duplex (independent Rx/Tx)	Complete	

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