December 7, 2009

PCN number: 0918

PCN change level: Major

Subject: Change in Temperature Monitor Accuracy, AFS600 and AFS1500

Dear Customer,

This PCN provides information on changes to the Analog Channel Specifications for Actel's AFS1500 and AFS600 devices. Actel made the change to improve analog channel yield to increase product availability. The offset specifications for the external and internal temperature monitors have been changed according to the table below. The offsets apply to the entire temperature range that you are monitoring. Offset and gain are part of the temperature monitor's accuracy parameters; the gain is unchanged and this PCN is limited to the offset values only.

If your design uses the temperature monitor, then the CalibIP within the SmartGen Analog System Builder needs to be used in order for your design to have a 0°C offset. We believe there is no impact if you are using CalibIP.

These changes are reflected in v2.0 of the *Actel Fusion Family of Mixed-Signal FPGAs* Datasheet, which is available at: http://www.actel.com/documents/Fusion_DS.pdf

Device Prefix	Previous Uncalibrated Offset	New Uncalibrated Offset	Calibrated Offset
AFS600	5°C	11°C	0°C
M1AFS600			
P1AFS600			
U1AFS600			
AFS1500	5°C	11°C	0°C
M1AFS1500			
P1AFS1500			

*When using SmartGen Analog System Builder, CalibIP is required to obtain a 0°C offset. For further details on CalibIP, refer to the “Temperature, Voltage, and Current Calibration in Fusion FPGAs” chapter of the *Fusion FPGA Fabric User’s Guide*.

**AFS090, AFS250, and M1AFS250 are not affected by this change.

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A list of affected part numbers is shown below.

Fusion Devices			
AFS600-FG256	AFS600-FG484I	AFS1500-FG256	AFS1500-FG484I
AFS600-FGG256	AFS600-FGG484I	AFS1500-FGG256	AFS1500-FGG484I
AFS600-1FG256	AFS600-1FG484I	AFS1500-1FG256	AFS1500-1FG484I
AFS600-1FGG256	AFS600-1FGG484I	AFS1500-1FGG256	AFS1500-1FGG484I
AFS600-2FG256	AFS600-2FG484I	AFS1500-2FG256	AFS1500-2FG484I
AFS600-2FGG256	AFS600-2FGG484I	AFS1500-2FGG256	AFS1500-2FGG484I
AFS600-FG256I	AFS600-PQ208	AFS1500-FG256I	AFS1500-FG676
AFS600-FGG256I	AFS600-PQG208	AFS1500-FGG256I	AFS1500-FGG676
AFS600-1FG256I	AFS600-1PQ208	AFS1500-1FG256I	AFS1500-1FG676
AFS600-1FGG256I	AFS600-1PQG208	AFS1500-1FGG256I	AFS1500-1FGG676
AFS600-2FG256I	AFS600-2PQ208	AFS1500-2FG256I	AFS1500-2FG676
AFS600-2FGG256I	AFS600-2PQG208	AFS1500-2FGG256I	AFS1500-2FGG676
AFS600-FG484	AFS600-PQ208I	AFS1500-FG484	AFS1500-FG676I
AFS600-FGG484	AFS600-PQG208I	AFS1500-FGG484	AFS1500-FGG676I
AFS600-1FG484	AFS600-1PQ208I	AFS1500-1FG484	AFS1500-1FG676I
AFS600-1FGG484	AFS600-1PQG208I	AFS1500-1FGG484	AFS1500-1FGG676I
AFS600-2FG484	AFS600-2PQ208I	AFS1500-2FG484	AFS1500-2FG676I
AFS600-2FGG484	AFS600-2PQG208I	AFS1500-2FGG484	AFS1500-2FGG676I
ARM Cortex-M1-enabled Fusion Devices			
M1AFS600-FG256	M1AFS600-FG484I	M1AFS1500-FG256	M1AFS1500-FG484I
M1AFS600-FGG256	M1AFS600-FGG484I	M1AFS1500-FGG256	M1AFS1500-FGG484I
M1AFS600-1FG256	M1AFS600-1FG484I	M1AFS1500-1FG256	M1AFS1500-1FG484I
M1AFS600-1FGG256	M1AFS600-1FGG484I	M1AFS1500-1FGG256	M1AFS1500-1FGG484I
M1AFS600-2FG256	M1AFS600-2FG484I	M1AFS1500-2FG256	M1AFS1500-2FG484I

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ARM Cortex-M1-enabled Fusion Devices (cont.)			
M1AFS600-2FGG256	M1AFS600-2FGG484I	M1AFS1500-2FGG256	M1AFS1500-2FGG484I
M1AFS600-FG256I	M1AFS600-PQ208	M1AFS1500-FG256I	M1AFS1500-FG676
M1AFS600-FGG256I	M1AFS600-PQG208	M1AFS1500-FGG256I	M1AFS1500-FGG676
M1AFS600-1FG256I	M1AFS600-1PQ208	M1AFS1500-1FG256I	M1AFS1500-1FG676
M1AFS600-1FGG256I	M1AFS600-1PQG208	M1AFS1500-1FGG256I	M1AFS1500-1FGG676
M1AFS600-2FG256I	M1AFS600-2PQ208	M1AFS1500-2FG256I	M1AFS1500-2FG676
M1AFS600-2FGG256I	M1AFS600-2PQG208	M1AFS1500-2FGG256I	M1AFS1500-2FGG676
M1AFS600-FG484	M1AFS600-PQ208I	M1AFS1500-FG484	M1AFS1500-FG676I
M1AFS600-FGG484	M1AFS600-PQG208I	M1AFS1500-FGG484	M1AFS1500-FGG676I
M1AFS600-1FG484	M1AFS600-1PQ208I	M1AFS1500-1FG484	M1AFS1500-1FG676I
M1AFS600-1FGG484	M1AFS600-1PQG208I	M1AFS1500-1FGG484	M1AFS1500-1FGG676I
M1AFS600-2FG484	M1AFS600-2PQ208I	M1AFS1500-2FG484	M1AFS1500-2FG676I
M1AFS600-2FGG484	M1AFS600-2PQG208I	M1AFS1500-2FGG484	M1AFS1500-2FGG676I
ARM M7-enabled Fusion Devices			
M7AFS600-FG256	M7AFS600-1FGG256I	M7AFS600-FG484I	M7AFS600-1PQG208
M7AFS600-FGG256	M7AFS600-2FG256I	M7AFS600-FGG484I	M7AFS600-2PQ208
M7AFS600-1FG256	M7AFS600-2FGG256I	M7AFS600-1FG484I	M7AFS600-2PQG208
M7AFS600-1FGG256	M7AFS600-FG484	M7AFS600-1FGG484I	M7AFS600-PQ208I
M7AFS600-2FG256	M7AFS600-FGG484	M7AFS600-2FG484I	M7AFS600-PQG208I
M7AFS600-2FGG256	M7AFS600-1FG484	M7AFS600-2FGG484I	M7AFS600-1PQ208I
M7AFS600-FG256I	M7AFS600-1FGG484	M7AFS600-PQ208	M7AFS600-1PQG208I
M7AFS600-FGG256I	M7AFS600-2FG484	M7AFS600-PQG208	M7AFS600-2PQ208I
M7AFS600-1FG256I	M7AFS600-2FGG484	M7AFS600-1PQ208	M7AFS600-2PQG208I

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Pigeon Point Devices			
P1AFS600-2FG256	P1AFS600-2FG484	P1AFS1500-2FG256	P1AFS1500-2FG484
P1AFS600-2FGG256	P1AFS600-2FGG484	P1AFS1500-2FGG256	P1AFS1500-2FGG484
P1AFS600-2FG256I	P1AFS600-2FG484I	P1AFS1500-2FG256I	P1AFS1500-2FG484I
P1AFS600-2FGG256I	P1AFS600-2FGG484I	P1AFS1500-2FGG256I	P1AFS1500-2FGG484I
MicroBlade Devices			
U1AFS250-FG256	U1AFS250-FGG256I	U1AFS600-FG256I	U1AFS1500-FGG256
U1AFS250-FGG256	U1AFS600-FG256	U1AFS600-FGG256I	U1AFS1500-FG256I
U1AFS250-FG256I	U1AFS600-FGG256	U1AFS1500-FG256	U1AFS1500-FGG256I

If you have any questions, please contact Actel's Application Technical Support at tech@actel.com.

Regards

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