September 30, 2013

Subject: **PCN#09A-13 Notification of Changes to the ispPAC-POWR1014/A, LA-ispPAC-POWR1014/A, ispPAC-POWR6AT6 and ispPAC-POWR1220AT8 Family Data Sheets**

Dear Lattice Customer,

Lattice is providing this notification of changes to the ispPAC™-POWR1014/A, LA-ispPAC-POWR1014/A, ispPAC-POWR6AT6 and ispPAC-POWR1220AT8 Family Data Sheets to provide clarifications on functionality.

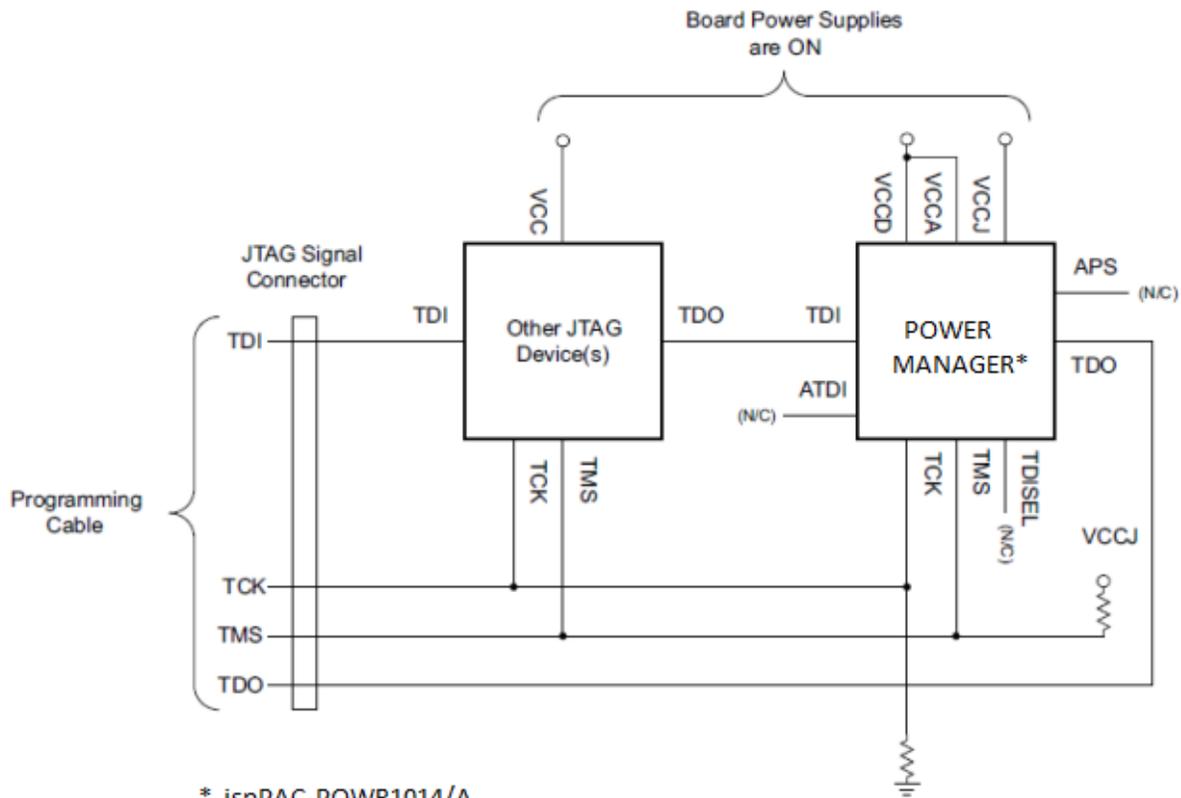| Changes	Affected Devices	Updated Datasheet Revision
Renamed VCC_PROG pin to APS	ispPAC-POWR1014/A LA-ispPAC-POWR1014/A ispPAC-POWR1220AT8	DS1014 Revision 02.0 DS1018 Revision 01.3 DS1015 Revision 01.9
Added Normal Programming Configuration Figure (See Exhibit A)	ispPAC-POWR1014/A LA-ispPAC-POWR1014/A ispPAC-POWR1220AT8	DS1014 Revision 02.0 DS1018 Revision 01.3 DS1015 Revision 01.9
Added the ADC typical error for operation below 600mV (See Exhibit B)	ispPAC-POWR1014/A LA-ispPAC-POWR1014/A ispPAC-POWR6AT6	DS1014 Revision 02.0 DS1018 Revision 01.3 DS1016 Revison 01.4

Affected Products

The Ordering Part Numbers (OPNs) affected by this PCN are listed in Exhibit C. This PCN also affects any custom devices (i.e. factory programmed, special test, tape and reel, non-standard speed grade and package, etc.), which are derived from any of the devices listed in the table.

Datasheet Specifications

The revised ispPAC-POWR Product Family Data Sheets listed above (released in September 2013) reflect the changes described above and are available on the Lattice website. There are no changes to device functionality or performance.

Exhibit A – Normal Programming Configuration Figure

JTAG Interconnection Configuration Diagram

Exhibit B – ADC Typical Error for Operation Below 600mV

ispPAC-POWR1014/A

ADC Error Budget Across Entire Operating Temperature Range[1]

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
TADC Error	Total Measurement Error at Any Voltage[2]	Measurement Range 600 mV - 2.048V, Attenuator =1	-8	+/-4	8	mV
		Measurement Range Zero to 600mV, Attenuator = 1		+/-10		mV

1. ispPAC-POWR1014A only.
2. Total error, guaranteed by characterization, includes INL, DNL, Gain, Offset, and PSR specs of the ADC.

LA-ispPAC-POWR1014/A

ADC Error Budget Across Entire Operating Temperature Range[1]

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
TADC Error	Total Measurement Error at Any Voltage[2]	Measurement Range 600 mV - 2.048V, Attenuator =1	-10	+/-4	10	mV
		Measurement Range Zero to 600mV, Attenuator = 1		+/-12		mV

1. LA-ispPAC-POWR1014A only.
2. Total error, guaranteed by characterization, includes INL, DNL, Gain, Offset, and PSR specifications of the ADC.

ispPAC-POWR6AT6

ADC Error Budget Across Entire Operating Temperature Range

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
TADC Error	Total Measurement Error at Any Voltage[1]	Measurement Range 600 mV to 2.048V, VMONxGS > -100mV, Attenuator =1	-8	+/-4	8	mV
		Measurement Range 600 mV to 2.048V, VMONxGS > -200mV, Attenuator =1		+/-6		mV
		Measurement Range 0 to 600 mV, VMONxGS > -200mV, Attenuator =1		+/-10		mV

1. Total error, guaranteed by characterization, includes INL, DNL, Gain, Offset, and PSR specs of the ADC.

Exhibit C – Affected Ordering Part Numbers (OPNs)

Product Family	Ordering Part Number (OPN)	Package
ispPAC-POWR1014	ispPAC-POWR1014-01T48I	48-TQFP
	ispPAC-POWR1014-01TN48I	Pb-Free 48-TQFP
	ispPAC-POWR1014-02T48I	48-TQFP
	ispPAC-POWR1014-02TN48I	Pb-Free 48-TQFP
ispPAC-POWR1014A	ispPAC-POWR1014A-01T48I	48-TQFP
	ispPAC-POWR1014A-01TN48I	Pb-Free 48-TQFP
	ispPAC-POWR1014A-02T48I	48-TQFP
	ispPAC-POWR1014A-02TN48I	Pb-Free 48-TQFP
LA-ispPAC-POWR1014	LA-ispPAC-POWR1014-01TN48E	Pb-Free 48-TQFP
LA-ispPAC-POWR1014A	LA-ispPAC-POWR1014A-01TN48E	Pb-Free 48-TQFP
ispPAC-POWR1220AT8	ispPAC-POWR1220AT8-01T100I	100-TQFP
	ispPAC-POWR1220AT8-01TN100I	Pb-Free 48-TQFP
	ispPAC-POWR1220AT8-02T100I	100-TQFP
	ispPAC-POWR1220AT8-02TN100I	Pb-Free 48-TQFP
ispPAC-POWR6AT6	ispPAC-POWR6AT6-01S32I	32-QFNS
	ispPAC-POWR6AT6-01SN32I	Pb-Free 32-QFNS

Note: This PCN also affects any custom devices (i.e. factory programmed, special test, tape and reel,

non-standard speed grade and package, etc.), which are derived from any of the devices listed in the table.