



Product/Process Change Notification (PCN)

PCN Number: QC161201
PCN Title: ATMXT640T FIRMWARE UPDATE FROM v1.6.AA TO v1.7.AA
PCN Issue Date: 15-Mar-16
Proposed First Ship Date: 15-Jun-16

Change Category:

☐ Material / Composition	☐ Manufacturing Location
☐ Processing / Manufacturing	☐ Quality / Reliability
☒ Design / Firmware	☐ Logistics
☐ Datasheet	☐ Other:

Change Description:

Changed Item	Current	New
Jumplimit	None	Improved separation of fast alternate taps without compromising fast swipes
Edge Linearity	None	Improved performance on single layer screens
Wake-up gesture	None	Improved wake-up gesture

Reason for Change: - Improved user experience

Change Impact: - Enhanced produced performance with v1.7.AA
- Please refer to Annex A. for details

Product Identification:

Current Part Number	New Part Number (if applicable)
MXT640T-CCU-CCUR (SL# Q1027)	MXT640T-CCU-CCUR (SL# Q1112)

Samples Availability

Part Number	Sample ordering code	Remarks
MXT640T-CCU-CCUR (SL# Q1027)		☒ Currently available ☐ Will be available: (dd-Mmm-yy): ☐ Not Applicable

Ordering Samples: Samples can be ordered through Atmel Sample Center by logging on to <http://www.atmel.com/samples> or contact your Atmel Sales Representative.

Qualification Data: ☐ Available ☐ Will be available (mm/dd/yr): ☒ Not Applicable

Characterization Data: ☐ Available ☐ Will be available (mm/dd/yr): ☒ Not Applicable

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Method to Identify Change:

Others

Reported firmware version 1.7, Build 0xAA

Marking Change:

☒ No

☐ Yes

Data Sheet:

To view Data sheet please contact your Atmel Sales Representative
<http://www.atmel.com/>

Please contact your Atmel Sales Representative or Distributor for additional information

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Customer Acknowledgement of Receipt:

Atmel requests you acknowledge receipt of this PCN. Please complete and email to pcnadm@atmel.com and the Atmel Contact listed above. In your acknowledgement, you can grant approval or request additional information. **Atmel will deem this change accepted unless specific conditions of acceptance are provided in writing within 30 days from the date of this notice.**

To be completed by customer:

☐ Approved

☐ Rejected (Please state reason for rejection):

Company:

Name:

Title:

Date:

Email Address:

Location:

Comments:

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Annex A. Change details

This table provides a summary of the changes related to MXT640T firmware release v1.7.AA from v1.6.AA.

NEW FEATURES	Summary	Backward Compatible?
	Added T40.CTRL.EVLEACHCYCLE and T40.NUMTCHBEFSUP for new grip modes to allow touches to reported on the grip suppressed region when they are less than a configurable threshold and stop reporting when they move to the unsuppressed region depending from the user selected mode	Y
	Added T42.EDGSUPSTR to control the aggressiveness of touch suppression at the edges of the sensor.	Y
	Updated T8.MEASIDLEDEF and T8.MEASACTVDEF to change the types of measurements in idle and active states.	Y
	Introduced new T72.BGNLRATIOSTAB, T72.BGNLRATIONOIS, T72.BGNLRATIOVNOI and T72.NLRATIO to change the background noise scan rate in various T72 states.	Y
	Introduced new T111.DCTHRX, T111.DCTHRY and T111.DCIDLESLEWMIN for all T111 instances except for SESC to control the DC measurement in low power idle state.	Y
	Added T80.MOISTVLDTHRSF to modify the threshold used to validate mutual deltas as part of moisture processing to help finger touch performance under very noisy conditions.	Y
	Added T80.TCHIMEASMOV to stop fast moving touches from potentially being marked as moisture due to timing elapsed between different types of touch measurements on a single cycle.	Y
	Added T80.DISATCHCHECK to make sure small touches placed along the same sense line can be boosted correctly on sensors suffering from strong retransmission problem (Retransmission Level RL > 1.5).	Y
	Introduced new T100.CONFTHR to delay a contacting touch class from being reported as passive stylus under very noisy conditions.	Y
	Improved movement hysteresis and also added T47.MOVHYSTCFG and T100.MOVHYSTCFG controls to allow improved filtering of stationary jitter while minimising the impact on moving touches.	Y
	Adding T111.DCGAINSF which allows the DC level estimate to be tuned so that it matches the Main Selfcap measurement which it is associated with.	Y
	Added T47 controls (SATBXLO, SATBXHI, SATBYLO, SATBYHI, SATBDXXLO and SATBDXXHI) to saturate the passive stylus positions away from the edge. This avoids the jitter whilst still enabling the positions to be pulled closer to the edge.	Y
	Added T111.SYNCDELAY, T111.ADCSPERSYNC controls for each of the Selfcap measurements to denote whether that particular measurement should be sync'd and to allow different delays for each of the measurements.	Y
	Added T15.CFG.DBGREFSEN, T15.CFG.DBGDELTAEN for outputting key debug data through SPI.	Y

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	Added a T6.DIAGNOSTIC mode (0x37) to output DC information tuning data via T37.	Y
REMOVED FEATURES	Summary	Backward Compatible?
	None	
BEHAVIOURAL CHANGES	Summary	Backward Compatible?
	A fix has been made to the T100 JUMPLIMIT feature, which allows smaller values to be used without compromising fast swipes. Smaller values will allow improved separation of fast alternate taps.	Y
	Improved T42.MAXNUMTCHS screen suppression behaviour so only the master touch of two/several merged touches are considered by the logic.	Y
BUG FIXES	Summary	Backward Compatible?
	The T93 Touch Sequence Logger object is updated so the problem that a subsequent double tap gesture is missed if the number of touch detected by the system on the sensor exceeds the maximum number of touches that t100 is able to report is now fixed.	Y
	Fixed a problem that T93 did not use the correct T100.XRANGE and T100.YRANGE when T100.SWITCHXY is set.	Y
	Fixed a problem that the power-on reset timing could potentially be influenced by different user configuration used.	Y
	The T42 TOUCHSUPPRESSION object is updated so the problem of distance suppression being triggered on a large touch that is too close to another large touch is now fixed	Y
	The T100 Multi Touch Touchscreen object is updated so the problem that multiple close taps can join when using low values of (INTTHR – INTTHRYST) is now addressed.	Y