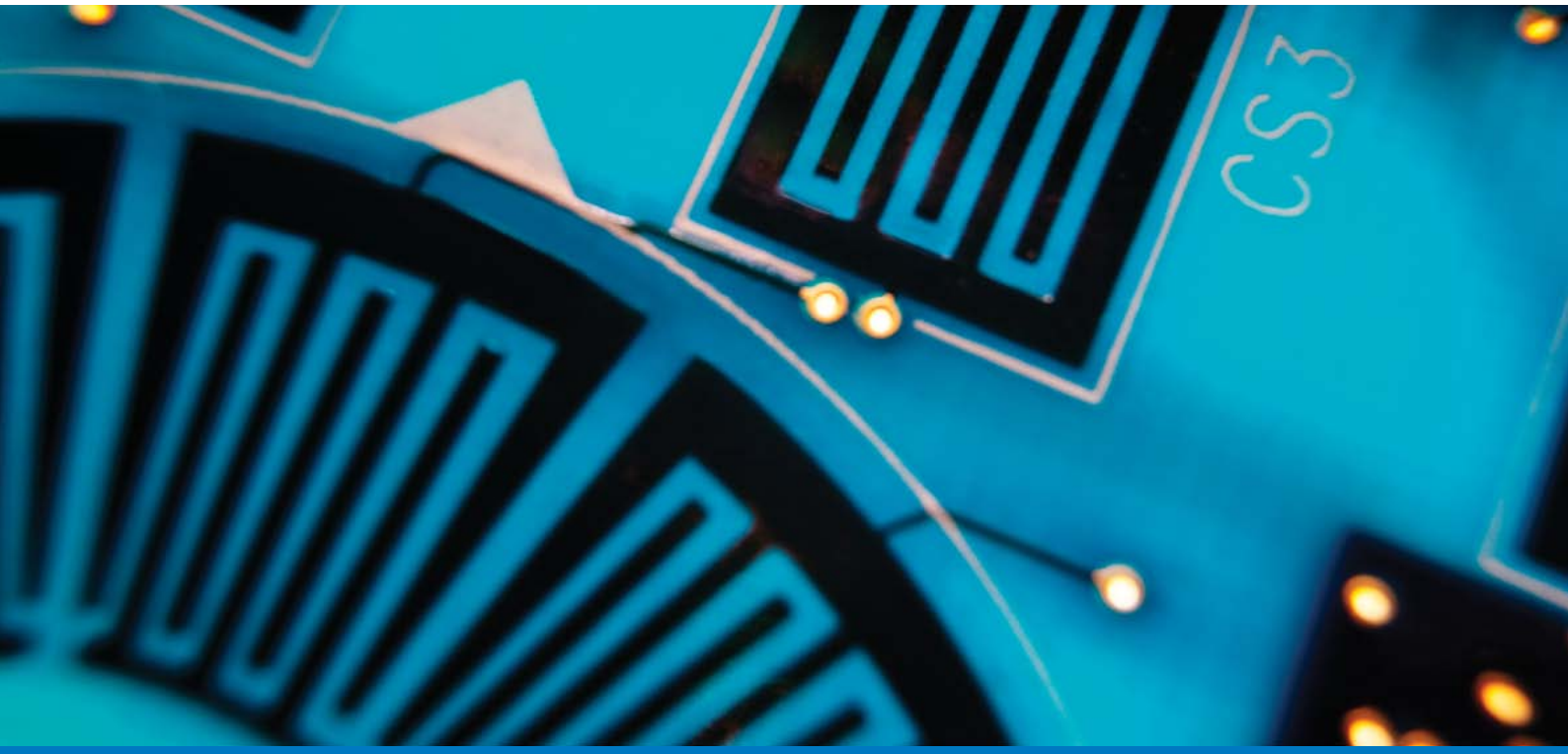


Application Specific QTouch Solutions

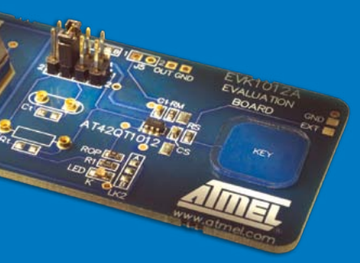
Buttons, Sliders and Wheels

Application Specific QTouch Solutions

Buttons, Sliders and Wheels

Lead with Atmel Touch Solutions

Atmel® offers market-proven technology for implementing nonmechanical buttons, sliders, and wheels on any touch-sensitive device. These integrated circuits (ICs) enhance the user experience with excellent precision and reliability. They also deliver superb low-power characteristics, a critical requirement for today's battery-powered handheld and mobile devices. The technology supports simple 1–10 button configurations (self capacitance) as well as more complex scanned-matrix configurations (mutual capacitance) of up to 48 buttons at very low cost per button. In addition to the application specific chips, Atmel offers the QTouch® Library for embedding buttons, sliders, and wheels into the industry-leading AVR® microcontrollers and Atmel AT91SAM.



Atmel EVK1012A Evaluation board
for the Atmel AT42QT1012 controller

Capacitive Touch Controllers for Buttons, Sliders and Wheels

Family Names	Part Number	Description	QTouch/QMatrix	Functionality	Vdd Low	Vdd High	#of I/O	Pins	Interface	Package	Temp Range
SINGLE TOUCH	AT42QT1010-TSHR	1-button, proximity capable, w/ timer to reset "stuck key"	QTouch	Buttons	1.8V	5.5V	2	6	Digital Output	SOT23	-40 to 85 C
	AT42QT1010-MAH	1-button, proximity capable, w/ timer to reset "stuck key"	QTouch	Buttons	1.8V	5.5V	2	8	Digital Output	UDFN/USON	-40 to 85 C
	AT42QT1011-TSHR	1-button, proximity capable, no reset timer	QTouch	Buttons	1.8V	5.5V	2	6	Digital Output	SOT23	-40 to 85 C
	AT42QT1011-MAH	1-button, proximity capable, no reset timer	QTouch	Buttons	1.8V	5.5V	2	8	Digital Output	UDFN/USON	-40 to 85 C
	AT42QT1012-TSHR	1-button, proximity capable, toggle output w/ power down timer	QTouch	Buttons	1.8V	5.5V	2	6	Digital Output	SOT23	-40 to 85 C
	AT42QT1012-MAH	1-button, proximity capable, toggle output w/ power down timer	QTouch	Buttons	1.8V	5.5V	2	8	Digital Output	UDFN/USON	-40 to 85 C
BUTTONS ≤10	AT42QT1040-MMH	4-channels, AKS	QTouch	Buttons	1.8V	5.5V	8	20	Pin-per-key	VQFN	-40 to 85 C
	AT42QT1060-MMU	6-channels, AKS, w/ PWM control for LED	QTouch	Buttons	1.8V	5.5V	7	28	I2C & Discrete	MLF	-40 to 85 C
	AT42QT1070-SSU	7-channels, Guard Channel, AKS,Optimized (no external components needed and 1-sensor per pin)	QTouch	Buttons	1.8V	5.5V	2	14	I2C	SOIC	-40 to 85 C
	AT42QT1070-MMH	7-channels, Guard Channel, AKS,Optimized (no external components needed and 1-sensor per pin)	QTouch	Buttons	1.8V	5.5V	2	20	I2C	VQFN	-40 to 85 C
BUTTONS > 10	AT42QT1110-MU	11-channels, AKS	QTouch	Buttons	3V	5.5V	22	32	SPI	MLF	-40 to 85 C
	AT42QT1110-AU	11-channels, AKS	QTouch	Buttons	3V	5.5V	22	32	SPI	TQFP	-40 to 85 C
	AT42QT1111-MU	11-channels, AKS	QTouch	Buttons	1.8V	5.5V	22	32	SPI	MLF	-40 to 85 C
	AT42QT1111-AU	11-channels, AKS	QTouch	Buttons	1.8V	5.5V	22	32	SPI	TQFP	-40 to 85 C
WHEELS & SLIDERS	AT42QT2100-MU	7 channels & 1-slider or 1-wheel, proximity capable, AKS, Conducted Immunity EN61000-4-6 Level 2 B	QTouch	1-slider or 1-Wheel	2.0V	5.5V	20	32	SPI	QFN	-40 to 85 C
	AT42QT2100-AU	7 channels & 1-slider or 1-wheel, proximity capable, AKS, Conducted Immunity EN61000-4-6 Level 2 B	QTouch	1-slider or 1-Wheel	2.0V	5.5V	20	32	SPI	TQFP	-40 to 85 C
AUTOMOTIVE	AT42QT1110-MZ	11-channels, AKS	QTouch	Buttons	3V	5.5V	22	32	SPI, Change Pin, Discrete	QFN	-40 to 125 C
	AT42QT1110-AZ	11-channels, AKS	QTouch	Buttons	3V	5.5V	22	32	SPI, Change Pin, Discrete	TQFP	-40 to 125 C
HAPTICS	AT42QT1085-AU	8-channels, proximity, 14-haptic effects, AKS	QTouch	Buttons	2.0V	5.5V	20	32	SPI	MLF	-40 to 85 C
	AT42QT1085-MMU	8-channels, proximity, 14-haptic effects, AKS	QTouch	Buttons	2.0V	5.5V	20	32	SPI	TQFP	-40 to 85 C
BUTTONS > 10	AT42QT60160-ISG	16-channels, AKS	QMatrix	Buttons	1.8V	5.5V	2	32	I2C & Shift registers	MLF	-40 to 85 C
	AT42QT60168-ASG	16-channels, AKS	QMatrix	Buttons	3.0V	5.5V	0	32	SPI	TQFP	-40 to 105 C
	AT42QT60240-ISG	24-channels, AKS	QMatrix	Buttons	1.8V	5.5V	2	32	I2C & Shift registers	MLF	-40 to 85 C
	AT42QT60248-ASG	24-channels, AKS	QMatrix	Buttons	3.0V	5.5V	0	32	SPI	TQFP	-40 to 105 C
	AT42QT60326-ASG	32-channels, AKS	QMatrix	Buttons	4.8V	5.3V	3	44	SPI & UART	TQFP	-40 to 105 C
	AT42QT60486-ASG	48-channels, AKS	QMatrix	Buttons	4.8V	5.3V	3	44	SPI & UART	TQFP	-40 to 105 C
SLIDER	AT42QT2160-MMU	8X by 2Y either 16-key or 1-slider (2-8 channels) + keys (2-8 channels), w/ PWM control for LED, AKS	QMatrix	1-Slider	1.8V	5.5V	11	28	I2C	MLF	-40 to 85 C
	AT42QT2161-MMU	8X by 2Y either 16-key or 1-slider (2-8 channels) + keys (2-8 channels), w/ smooth PWM control for LED, AKS	QMatrix	1-Slider	1.8V	5.5V	11	28	I2C	MLF	-40 to 85 C
HOME APPLIANCE	AT42QT1481-AU	48-channels, FMEA / EN60730, AKS, Conducted Immunity EN61000-4-6 Level 2 B	QMatrix	Buttons	4.75V	5.25V	15	44	UART, SPI	TQFP	-40 to 85 C

Touch Solutions

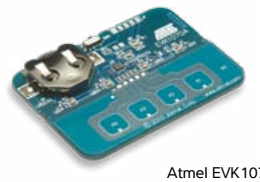
Buttons, Sliders and Wheels

Evaluation/ Development Kits

Part Number	Description	QTouch/QMatrix
E6240	Eval for ATQT60160/ATQT60240	QMatrix
E6248	Eval for ATQT60168/ATQT60248	QMatrix
E6486	Eval for ATQT60326/ATQT60486	QMatrix
EVK1010A	Eval for AT42QT1010	QTouch
EVK1012A	Eval for AT42QT1012	QTouch
EVK1040A	Eval for AT42QT1040	QTouch
EVK1060A	Eval for AT42QT1060, 5-sensors and guard channel	QTouch
ATEVK1070A	Eval for AT42QT1070, Stand alone: eval board w/ coin cell battery - 4-sensors and guard channel	QTouch
ATEVK1070B	Eval for AT42QT1070, Comms: eval board USB powered, w/ 6-sensors and guard channel	QTouch
EVK1085A	Eval kit for AT42QT1085, Comms: eval board USB powered, with 7-sensors and a guard channel, 14-haptic effects	QTouch
EVK2160A	Eval for AT42QT2160 8-sensors and slider	QMatrix
AT9206 USB Plug-In Card	Interface board to PC for EVK1060A & EVK2160A	NA
TS2080A	ATAVRTS2080A - QTouch Library w/ATmega88 QTouch	QTouch
TS2080B	ATAVRTS2080B - QTouch Library w/ATtiny88 QMatrix	QMatrix
ATQT600	QTouch Library capactive sensing modular development board	Both

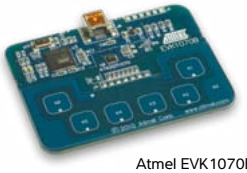
Atmel uses their patented charge transfer sensing technology that enables robust capacitive sensing, even in harsh environments. This is further improved with the post acquisition processing that occurs. With over 15-years of capacitive sensing experience, this technology is a market leader today!

For more information see our Sensor Design Guide: http://www.atmel.com/dyn/resources/prod_documents/doc10620.pdf
QTouch Library Selection Guide: http://www.atmel.com/dyn/products/tools_docs.asp?category_id=170&family_id=702&subfamily_id=2259&tool_id=4627



Atmel EVK1070A

Atmel EVK1012A



Atmel EVK1070B

Atmel Corporation
2325 Orchard Parkway
San Jose, CA 95131
USA
Tel: (+1)(408) 441-0311
Fax: (+1)(408) 487-2600
www.atmel.com

Atmel Asia Limited
Unit 01-5 & 16, 19F
BEA Tower, Millennium City 5
418 Kwun Tong Road
Kwun Tong, Kowloon
HONG KONG
Tel: (+852) 2245-6100
Fax: (+852) 2722-1369

Atmel Munich GmbH
Business Campus
Parkring 4
D-85748 Garching b. Munich
GERMANY
Tel: (+49) 89-31970-0
Fax: (+49) 89-3194621

Atmel Japan
9F, Tonetsu Shinkawa Bldg.
1-24-8 Shinkawa
Chuo-ku, Tokyo 104-0033
JAPAN
Tel: (+81)(3) 3523-3551
Fax: (+81)(3) 3523-7581