

WHAT'S NEW?

PRODUCTS

DOWNLOADS

REQUEST INFO

ORDERING INFORMATION

[Touch Sensors](#)

[Continuous Sensors](#)

[Evaluation Boards](#)


[Custom Products](#)

[Product Summary](#)

[Product Lifecycles](#)

PRINTER FRIENDLY 

SEND A LINK 

BOOKMARK THIS PAGE 

GET NEWS BY EMAIL 



**Developer's Toolbox --
All The Tools You
Need -- click here**

QT60000 FAMILY QMatrix™ TOUCH ICs
For Charge-Transfer Capacitive Matrix Keypanel Sensing

QT60161-AS has been upgraded to QT60161B-AS. The QT60161B-AS chips are available now. [Click here for a factsheet explaining the difference between these parts.](#)

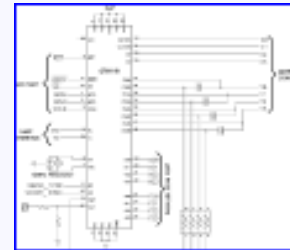
QT60000 digital QMatrix™ ICs are charge-transfer ("QT") devices designed for touch sensing on 4, 16, 32, 48 or 64 keys when used in conjunction with a simple scanned, passive X-Y matrix. They project keys through almost any dielectric, e.g. glass, plastic, stone, ceramic, and wood, up to thicknesses of 5 cm or more.

Touch pads are made using simple 2-part interleaved electrodes of almost any conductor; like copper, carbon, clear ITO, or screened silver on the rear of a panel. These shapes can be created using ordinary PCBs, flex circuits, or clear film. Key sizes, shapes and placement are almost entirely arbitrary and can be mixed within a panel. On 16-key devices and larger, the sensitivity of each key can be set individually using a serial communications port from a host microcontroller or PC. These setups are permanently stored in e2prom.

The devices are designed for appliances, kiosks, control panels, portable instruments, machine tools, or similar products that are subject to a variety of environmental influences or vandalism. They permit the construction of sealed, watertight panels immune to humidity, temperature, dirt, or physical deterioration. These devices contain Quantum-pioneered adaptive self-calibration, drift compensation, and digital filtering to make sensing adaptable, robust, and survivable. 16-key devices and up also feature patent-pending Adjacent Key Suppression (AKS™) which prevents cross-detection on closely spaced keys, and aids with the cancellation of water films.

QT60000 family ICs employ transverse charge-transfer sensing in a matrix format that minimizes the number of required connections to the matrix. Unlike older technologies it does not require one IC per key.

[Click here to see a QMatrix™ keypanel in action.](#)



[Click Here for Larger Circuit Diagram](#)

Kiosk Keyboard (Gonogo Concept Design)

Kiosk Keyboard

[Click Here for More Real World Applications](#)




FEATURES

- 4 to 64 keys through any panel**
- Autocal and environmental compensation**
- UART or SPI communications***
- Parallel interface (4, 16 keys only)**
- Keys are individually adjustable***
- Sleep mode with wakeup pin***

Find a QProx(tm)
Consultant -- click here

**COMPARE QMatrix™ GLASS-TOUCH TECHNOLOGY
WITH COMPETING INDUSTRY SOLUTIONS**
Click here for a Comparison between Quantum's
QMatrix™ Solution and One-Chip-Per-Key-Solutions

SELECTION TABLE

	QT60010	QT60181	QT60326, 486	QT60325, 485, 845
Datasheets			n/a	
Keys	4	16	32, 48	32, 48, 64
Matrix Configuration	4X, 1Y	4X, 4Y	8X, 4Y / 8X, 6Y	8X, 4Y / 8X, 6Y / 8X, 8Y
Interface	4 Discrete	UART, SPI, Parallel	UART, SPI	SPI
External Active Parts	0	0	0	4
External Passive Parts	1	10	14	11
AKS™ Feature	-	Yes	Yes	Yes
Sensitivity Change	Vary Cs	User-Defined	User-Defined	User-Defined
Drift Compensation	Fixed	User-Defined	User-Defined	User-Defined
Recal Timeout	10s, 60s	User-Defined	User-Defined	User-Defined
Line Noise Sync	-	Yes	Yes	Yes
N-Key Rollover	2 Keys	Full	Full	Full
Supply voltage	+4~+5	+5	+5	+5
Supply Current (Max)	1.5mA	25mA	25mA	15mA
PC Dev Software	n/a	QmBtn™	QmBtn™	QmBtn™
Dev Boards	E604	E616	E6486	E6325, E6645

Synchronous noise suppression*

Vary key sizes / shapes in one panel*

Adjacent Key Suppression (AKS™)*

Panel thickness to 5 cm or more

Small SOIC packages

Simple +5V only operation

* 16 Keys and Up

APPLICATIONS

Appliance Controls

Industrial Keyboards

Outdoor Keypads

Security Key Panels

ATM Machines

Automotive Interior Controls

Touch Screens

ORDERING INFORMATION

For placing any orders directly with Quantum, Minimum Order Quantities (MOQs) must be met -- see below. For quantities below MOQs, please contact **DigiKey** in North America, **Farnell** in Europe or your **Local Distributor** in other countries.

Please Note: All -S parts have now been replaced by -IS parts.

Part	Eval Board	Temp	Pkg	Output	Pwr	T&R	MOQ
QT60040-D	E604	0~70°C	DIP14	Discrete	+5V		60
QT60040-IS	E604	-40~85°C	SO14	Discrete	+5V	✓	57
QT60161-AS	E616	-40~105°C	TQFP44	Par, Ser	+5V	✓	30
QT60325-AS	E6325-SPI	-40~105°C	TQFP44	SPI	+5V	✓	30
QT60326-AS †	n/a	-40~105°C	TQFP44	SPI, UART	+5V	✓	30
QT60485-AS	E6485-SPI	-40~105°C	TQFP44	SPI	+5V	✓	30
QT60486-AS †	n/a	-40~105°C	TQFP44	SPI, UART	+5V	✓	30
QT60645-AS	E6645-SPI	-40~105°C	TQFP44	SPI	+5V	✓	30

† = PRE-RELEASE INFORMATION



news

- » [Fitch Provides World-Class QProx™ Design](#)
- » [New German Language Mini-site](#)
- » [NEW! QSlide™ Technology](#)
- » [New Chinese Language Sub-Site!](#)
- » [qprox.com Goes Japanese!](#)
- » [VIDEOS ADDED! Check Them Out!](#)
- » [How to Make Backlit Touch Controls](#)
- » [Advance Info on QT240 Spread Spectrum IC](#)



sales and distribution

subscribe to our newsletter