

Evaluation Kit Datasheet

AI-Powered UltraTouch Technology
for Smart Devices

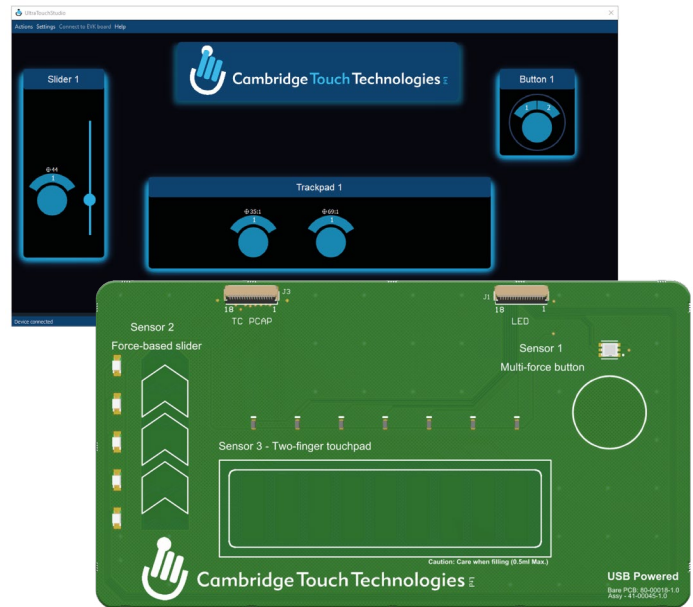
Cambridge Touch Technologies Evaluation Kit Datasheet

Cambridge Touch Technologies Evaluation Kit (EVK) is a true touch panel. As implemented it represents a smart surface, but the underlying force detection mechanism is optically transparent so it is equally suitable for touch displays. The smart surface detects the location (XY) of either one or two fingers on the panel, and the force (Z) applied by each finger. The EVK functions autonomously, requiring only external power from a standard USB charger or PC port. The EVK provides the opportunity to experience and experiment with three types of touch interface:

- Single-finger multi-force button
- Single-finger force-based slider
- Two-finger, multi-force touch pad

These touch interfaces represent the majority of use cases; for example, the single-finger force-based slider is functionally equivalent to a push-on/push-off power/volume button commonly used on car entertainment and info systems. The two-finger multi-force touch pad is the core component of all smart screen pinch gestures.

Traditional touch screens are mostly based on projected capacitance (PCAP) controllers and are incompatible with harsh environments. Cambridge Touch Technologies (CTT) touch panels work by detection of touch, so they do not have this limitation. The EVK can be used to demonstrate that force detection continues unchanged when the user is wearing gloves (e.g. personal protective equipment, or woolen or leather gloves) and when the smart surface is wet or even submerged (applies only to certain models of EVK).



Real-time information about each touch on the panel can be viewed and logged by the accompanying UltraTouch Studio application. In addition, UltraTouch Studio provides access to a wealth of configurable parameters to permit customisation and tuning of the EVK to suit precisely the intended application. UltraTouch Studio can be installed on any Windows 10 PC with a free USB 2.0 port. The disk, RAM and CPU requirements to run UltraTouch Studio are exceedingly modest.

The EVK enables designers and engineers to experience the benefits and capabilities enabled by touch and explore a world of possibilities in intuitive human-machine interaction.

Features

- Stand-alone, multi-position and multi-force smart surface
- Button, slider and pinch gesture simulation
- LEDs indicate touch detection and the force applied
- Harsh environment compatibility
- Safe, ultra-low-voltage operation
- Convenient, compact and easily portable
- Simple USB 2.0 interface to Windows 10 (or above) PC
- Fully configurable using the accompanying UltraTouch Studio application

The default operating mode of the touch panel is a hybrid mode where location is determined by PCAP and force by CTT technology. To avoid false positives, PCAP is only enabled once detection of touch by force has occurred. Some models of EVK can operate in a force-only mode, where the PCAP controller is disabled and finger location (XY) determined from the force signal. The units in the table below refer to the EVK operating in hybrid mode.

EVK hardware

Parameter, units	Min.	Typ./comment	Max.
Mechanical			
Dimensions XY, mm		122 x 68	
Height, mm			
PCB + components		7.7	
Including water dam			12.7
Weight, g		45	
Environment			
Operating, °C	15	20	25
Operating, RH%	0	40	85
Storage/shipping, °C	0		70
Storage/shipping, RH% (non-condensing)	0		85
Electrical			
USB connectivity		USB 2.0	
USB ports		1 x micro B	
USB power, V	4.75		5.25
USB power operation, mA		80	
USB power switch-on, mA			100
USB communications, device class		Physical 05h	
USB communications, Mbit/s			12
Initialisation time, s			3
Touch detection			
Threshold force, N (configurable via UltraTouch Studio)	0.5	1.5 (default)	10
Response time, ms (configurable via UltraTouch Studio)	100	150 (default)	
Finger localisation X or Y, % nominal (110 mm ² fingertip area)		±25	
Touch detection confidence, %	>95		

UltraTouch Studio software

Parameter	Value/comments
Current version	1.1.1
Minimum system requirements	Windows 10
Additional OS dependencies	None
Installed space, MB	45
App permissions	None
External licence requirements	All included
Cambridge Touch Technologies licence	Entitlement to one user licence per EVK

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17 May 2021



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Cambridge Touch Technologies UK

154 Cambridge Science Park,
Cambridge, CB4 0GN, UK

info@camtouch3d.com

www.camtouch3d.com

version 1.0

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