



Evaluation Kit Datasheet

Flexible Transparent Force Sensor

Overview of EVK

The Atomic Mechanics Evaluation Kit (EVK) is a true force sensor film. The underlying force detection mechanism is integrated between two ultra-thin layers of PET film and so it is suitable for touch displays or optical sensors. The sensor film detects the force (Z) applied by a finger. The EVK provides the opportunity to experience and experiment with two individual force sensor films. These have the same performance and are identical in design. Custom designed force sensors are available upon request.

Traditional touch screens are mostly based on projected capacitance (PCAP) controllers and are incompatible with harsh environments or users that do not have a bare finger available to use a touch screen. Atomic Mechanics force sensor films work by detecting the touch as well as the force of the touch, in order to solve this challenge. 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).

Real-time information about each touch on the panel can be viewed and logged by the accompanying EVK software application. The EVK Software can be installed on any Windows 10 PC, by simply double clicking the installation file pre-loaded onto the provided USB stick.

Features

- Flexible and fully transparent force sensor film
- Replaceable sensors (easily connect / disconnect)
- Gloved hand compatibility
- LEDs on drive circuit indicate successful connection
- Simple USB2.0 interface to Windows 10 (or above) PC/Laptop
- Safe, ultra low voltage operation
- Convenient, compact and easily portable

The current EVK model is in force mode. In this mode the sensor film detects the force applied to the sensor. A hybrid sensing mode where location is determined by a PCAP in addition to the force sensor is available upon request. The units in the table below refer to the EVK operating in force mode.

EVK Hardware specifications

Parameter, units	Min.	Typical value / Comment	Max.
Mechanical / Optical			
XY Dimensions of PCB, mm		120 x 100	
Height of PCB, mm		55	
XY Dimensions of sensor film			
Height of sensor film, mm		70 x 20	
Weight of whole EVK, g		50	
Bending radius, mm		10 @ 100k cycles	
Optical Transparency, %		92%	
Environment			
Operating, degC	5	20	80
Operation, RH%	0	40	85
Storage/shipping, degC	0		70
Storage/shipping, RH%	0	(non condensing)	85
Electrical			
USB connectivity		USB 2.0	
USB ports		1 x micro USB	
Power, V	4.5	5	5.5
Initialisation time, s			3
Touch detection			
Threshold force, N	0.1	1	10
Response time, ms	100	200	

EVK Software specifications

Parameter	Typical value / Comment
Current version	1.1.3
Minimum system requirements	Windows 10
Additional OS dependencies	None
Installed space, MB	2.1
App permissions	None
External licence requirements	All included
Atomic Mechanics License	Entitlement to one user licence per eVK



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