

## **easyTOUCH mXT2952T2 2-tail PCAP USB controller**

Revision: 003

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# 1 Introduction

The easyTouch mXT2952T2 Controller is designed as a part of the capacitive touch systems developed by Data Modul. It offers the possibility to connect a projective capacitive touch sensor to standard computers or embedded systems using USB.

The controller is based on the Atmel maXTouch 2952T2 which offers a very good touch performance and high noise resistance. To get the best touch performance with water and glove usage the mXT2952T2 has integrated self-capacitance technology. In combination with the mutual-capacitance entity the controller is applicable for single- and multi-touch. Together with outstanding filter technology the maXTouch ICs are suitable for industrial, medical and other applications.

For the communication with the OS the controller uses Data Modul's Driverless firmware. The firmware connects as a Human Interface Device (HID) without an additional driver to the most popular operating systems like Windows XP, Windows 7 / 8, Windows CE5/6/7, OSX and Linux. For more information about the Data Modul Driverless firmware please refer to the *Driverless Controller User Guide*.

## 2 Controller specification

### 2.1 Mechanical features

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Size	105x27x6 mm
Operating temperature	-40 to +85 °C
Storage temperature	-40 to +85 °C
Temperature slew rate	10 °C /minute (max.)
Relative humidity	95 % at 60 °C no condensation
RoHS compliant	Yes

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### 2.2 Connection features

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Protocol	HID mouse, HID digitizer
Multi touch	16 fingers (max.)
Single touch	HID mouse with right mouse button emulation
Resolution	4096 x 4096 (x/y)
Report rate	>100 Hz for 15 touches, subject to configuration
USB connector	Mini USB or Molex 53261-0971

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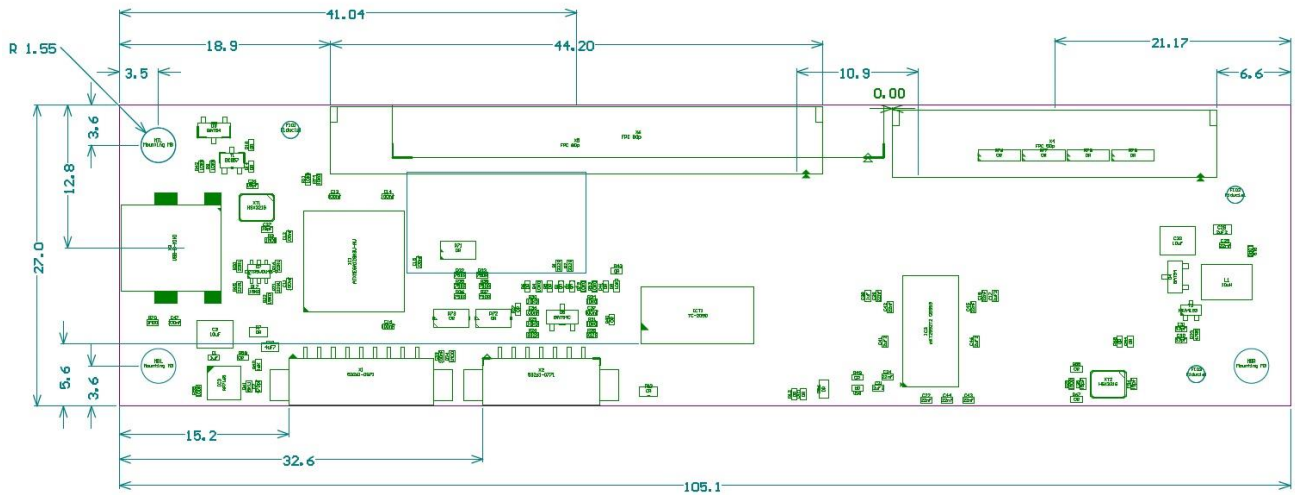
### 2.3 Electrical features

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Power supply	5 V± 5%
Vin ripple	±50 mV peak-peak (max.)
On board voltage	3.3 V and 8.5 V
Power consumption	500 mW (max. subject to configuration)

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### 3 Mechanical drawing



Height: 6 mm (including components)

## 4 Connectors and signals

### 4.1 Connectors

Connector	Type	Connection
X1	1.25 mm Pitch 9 pin header Molex 53261-0971 compatible	USB
X3	Mini USB connector	USB
X4	0.5 mm pitch 50 pin header	Flextail to touch sensor
X5	0.5 mm pitch 80 pin header	Flextail to touch sensor

### 4.2 X1 pin assignment

X1	Signal	Description
1	VDD_5V	USB power supply
2	USB DM	USB signal -
3	USB DP	USB signal +
4		Do not use
5		Do not use
6		Do not use
7		Do not use
8		Do not use
9	GND	Ground

Matching USB cable (length 2m): Article number **TP72241**

## 5 UL information

Part	Type	UL number
X1	1.25 mm pitch 9 pin header MOLEX 53261-0971 compatible	Molex 53261-xx71: E29179 or YeonHo 12505WR-xx: E108706
X3	Mini USB connector	FCI 10033526-N3212LF or W+P 8233-2-05-60-FTR/SW: Thermoplastic UL94V-0
X4	0.5 mm pitch 50 pin header	Hirose FH28D-xxS-0.5SH(05): LCP resin (UL94V-0)/gray LCP resin (UL94V-0)/black
X5	0.5 mm pitch 80 pin header	Hirose FH28H-xxS-0.5SH(05): LCP resin (UL94V-0)/gray LCP resin (UL94V-0)/black
PCB		Fastprint: E204460

## 7 Appendix: Frequently asked questions

### Touch coordinates are not stable and the cursor is “jumping around”?

In mains-operated systems this can happen if the touch controller is missing the systems ground reference. Another reason can be an extreme amount of noise present that exceeds the touch threshold set in the controller.

Please connect the system ground reference to one of the mounting holes. For best touch performance the touch controller needs a low impedance AC connection to the person that operates the system to achieve a good current loop back to the controller.

If the instability is caused by a noise source like a display, a switching regulator or a RF antenna your system may have an integration issue. With proper settings the controller can most likely suppress the noise. However, eliminating the noise source should be the first thing to check. If you have any difficulties to find the correct settings, please contact Data Modul.



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