DATA MODUL

easy TOUCH

- ✓ **Atmel maXTouch Technologie**
- ✓ **Customized Controller Configuration**
- ✓ **Right Mouse Button Emulation**
- ✓ **Multi-Touch up to 10 Fingers**
- ✓ **easyANALYZER Support**
- ✓ **easyBUTTON Support**
- ✓ **USB HID Protocol**

easyTOUCH mXT224S
PCAP USB Controller

SPECIFICATION
Rev 1.0

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1   Introduction

The easyTouch mXT224S 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. For the connection the customer can use the cable or connect the controller board via soldering pads on top of another PCB.

The controller is based on the Atmel maXTouch 224S which offers a good touch performance and a high noise resistance. With outstanding filter technologie 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

Mechanical Features

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Size	31x43x5 mm
Operating Temp.	-20 to +70 °C
Storage Temp.	-25 to +85 °C
Temperature Slew Rate	10 °C /min max.
Relative Humidity	95 % at 60 °C no condensation
RoHS Compliant	Yes

Connection Features

Protocol	HID Mouse, HID Digitizer
Multi Touch	10 Fingers max.
Single Touch	HID Mouse with Right Mouse Button Emulation
Resolution	4096 x 4096 (x/y)
Report Rate	200 Hz max. subject to configuration
USB Connector	MOLEX 53261-0971 or equivalent

Electrical Features

Power Supply	5 V± 5%
Vin Ripple	±50 mV Peak-Peak max.
On Board Voltage	3,3 V and 6,6 V
Power Consumption	200 mW max.

3 Mechanical Drawing
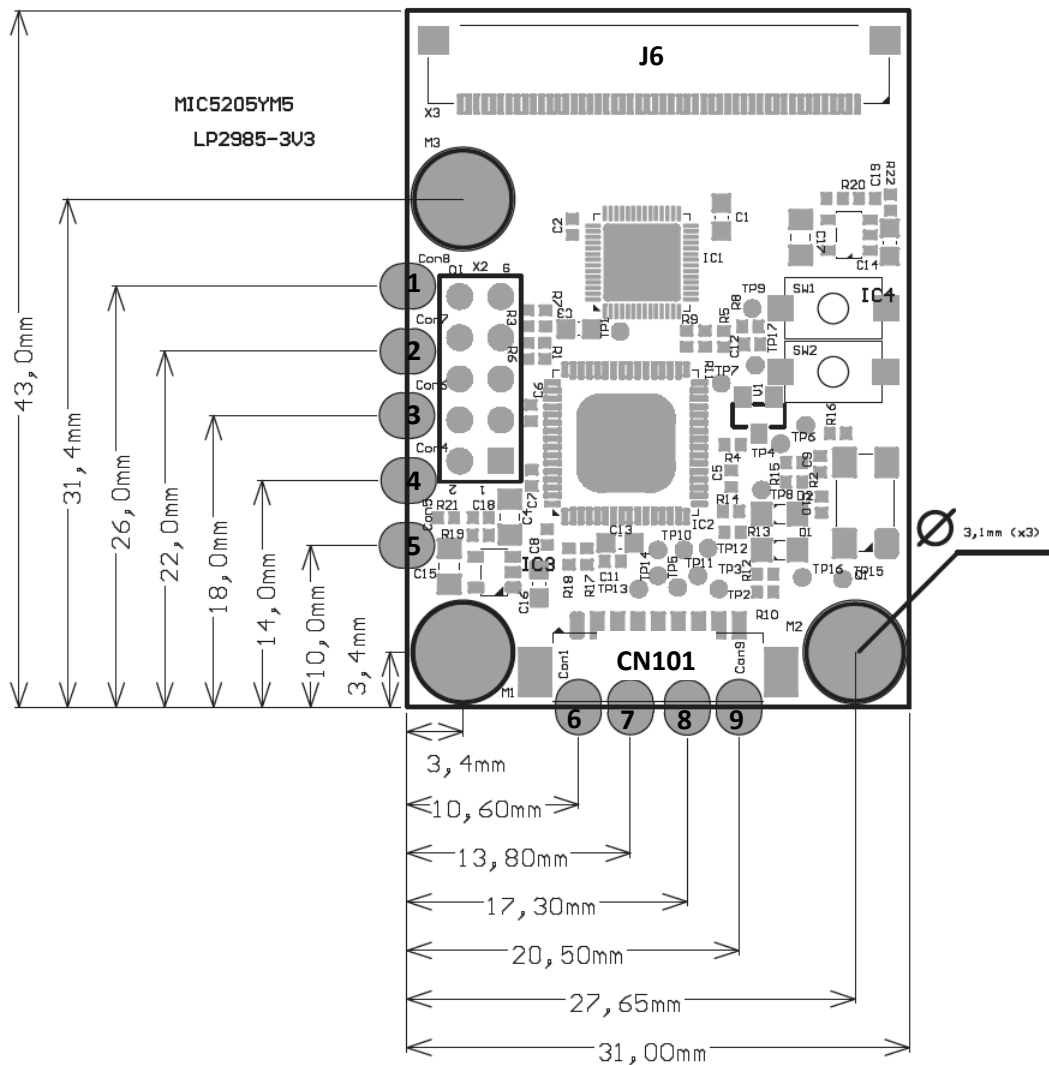
4 Connectors and Signals

4.1 Connectors

Connector	Type	Connection
CN101	1.25 mm Pitch 9 pin header MOLEX 53261-0971	USB
J6	0.5 mm pitch 50 pin header	Flextail to touch panel
Soldering pads 1-9		Alternative Connector of CN101

4.2 CN101 and Soldering Pads

CN101	Pads	Signal	Description
1	6	VDD_5V	USB Power Supply
2	7	USB DM	USB Signal -
3	8	USB DP	USB Signal +
4	4		Do not use
5	5		Do not use
6	3		Do not use
7	2		Do not use
8	1		Do not use
9	9	GND	

Data Modul provides a matching USB cable of 2m length (Article-Nr.: TP72241).

5 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.

Connecting is done, but no touch function at all?

If the tail is inserted "upside-down" you will not get any touch event. Please check if the tail is connected correctly. When connecting the touch panel to the controller, do not let the golden finger side misleading you. Always check the alignment of the three ground connections on the tail (marked blue in the following picture) to make sure the connection is correct. Please always connect the tail first before you connect to USB. You also should check if you touch the correct side of the panel. The glass side is the touch side which most of them has a black printed frame.
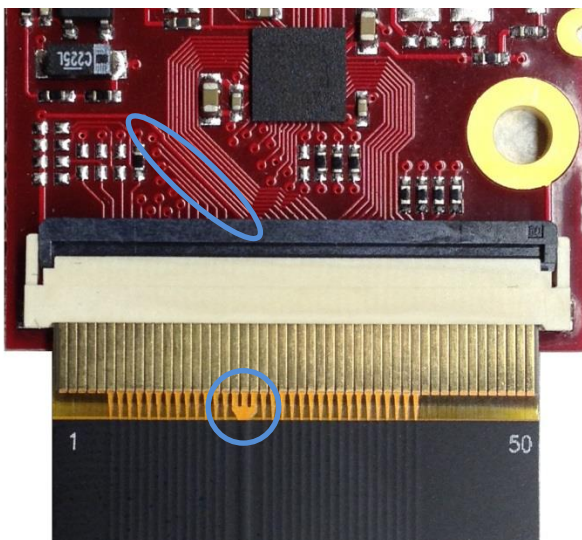
6 Revision History

Rev.	Date	Page	Description	By
1.0	11.05.2014	All	Initial release	CO

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