DATA MODUL

easy//TOUCH

5.0″ PCAP Solution
12033152

Date: 10.07.2018

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1 Scope

DATA MODUL's PCAP solution 12033152 consists of a 5.0″ capacitive touch screen. Please note that this is only a sub-assembly of the final product. The specification of the final end product might differ from this specification.

2 Touch Sensor and Cover Glass

2.1 Technical Parameters

Screen size	5.0 inch /12.7 cm
Format	Wide
Composite	Glass / Film / Film
Outline dimensions	130.02 x 83.61 x 1.73 mm (WxHxT)
Active area	111.82 x 67.52 mm (WxH)
Carrier glass	1.1 mm
Bending radius of tail	R = 5mm recommended
Transmissivity	85% (min.)
Haze	3% (max.)
Operating temperature and humidity	-20 to +70°C, 20 to 85 % RH
Storage temperature and humidity	-40 to +80°C, 20 to 90 % RH
Tail connector	Omron XF3M-1015-1B

* Note 1: When the ambient temperature is above 65°C, the humidity has to be below 50%RH

2.2 Reliability Tests

Low Temperature Storage Test	-30°C for 72h
High Temperature Storage Test	70°C for 72h
High Temperature / High Humidity Test	60°C, 85% RH for 250h
Cycle test	-20°C / 60°C, 2 h / cycle, 36 cycles

3 Touch Controller (640T I²C)

The touch controller IC is provided as a COF (chip on flex) assembly.

3.1 Electrical specification

Power supply	3.3V ± 5%
Vin ripple	40 mV peak-peak max.
On board voltage	3.3 and 6.6V max. (subject to configuration)
Power consumption	40 mW max. (subject to configuration)

3.2 Interface specification

Protocol	I^{2}C version 6.0	
Touch report	16 fingers simultaneously max.	
Resolution	4096 x 4096 (x/y)	
I^{2}C address	0x4A or 0x4B	
HID-I^{2}C vendor ID / product ID	0x03EB (Atmel) / 0x214D (mXT640T)	
Required pull-up resistance	Standard mode (100 kHz) Fast mode (400 kHz) Fast+ mode (1 MHz) High-Speed mode (3.4 MHz)	1k to 10k 1k to 3k 0.7k max. 0.5k to 0.75k
Low input logic level	SDA, SCL RES, GPIO	-0.3V to 0.3x VddIO
High input logic level	SDA, SCL RES, GPIO	0.7 x VddIO to VddIO 0.85 VddIO to VddIO
Low output logic level	CHG, GPIO	0V to 0.2 x VddIO
High output logic level	CHG, GPIO	0.8 x VddIO to VddIO

3.3 Pin Configuration

Pin	Signal	Description
1	VDD	Power Supply
2	CHG	Change, need Pull Up
3	SDA	I²C Data, need Pull Up
4	SCL	I²C Clock, need Pull Up
5	RES	Reset, active low
6	-	*Do not connect*
7	-	*Do not connect*
8	ADDSEL	I²C address selection *(GND for 0x4A, pull up to VddIO select 0x4B)*
9	I²CM	I²C mode selection *(GND to select HID-I²C mode, pull up to VddIO to select I²C mode)*
10	GND	Ground

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4 Optical Inspection Criteria and Handling Recommendations

4.1 Optical Inspection Criteria

For details on the optical inspection criteria, please refer to DATA MODULs Outgoing Spec or ask your local DATA MODUL sales representative.

4.2 Handling Recommendations

Precautions for operation

- Do not put a heavy, hard or sharp object on the product
- Do not bend the product in order to assure the reliability
- Do not put one product on the other. Otherwise, it may cause the product to be scratched
- Don't use any organic solvent acid or alkali solution.

Precautions for mounting

- The panel should be mounted using a configuration that either holds the panel by all four corners or by all four sides
- The bezel edge must be positioned outside the active area. The bezel may cause false activation if the edge overlaps the active area
- Any mounting configuration should ensure that there is no twisting force applied to the panel
- 1mm distance between TFT screen and touch panel is recommended

Precautions for tail

- The flex tail in general can be bent with a min. radius of about 1mm
- In order to avoid damaging and malfunction of the sensor, please don't bend the FPC area next to the panel
- Excess or repeated bending of the FPC connector should also be avoided

5 Appendix A: Technical Drawing
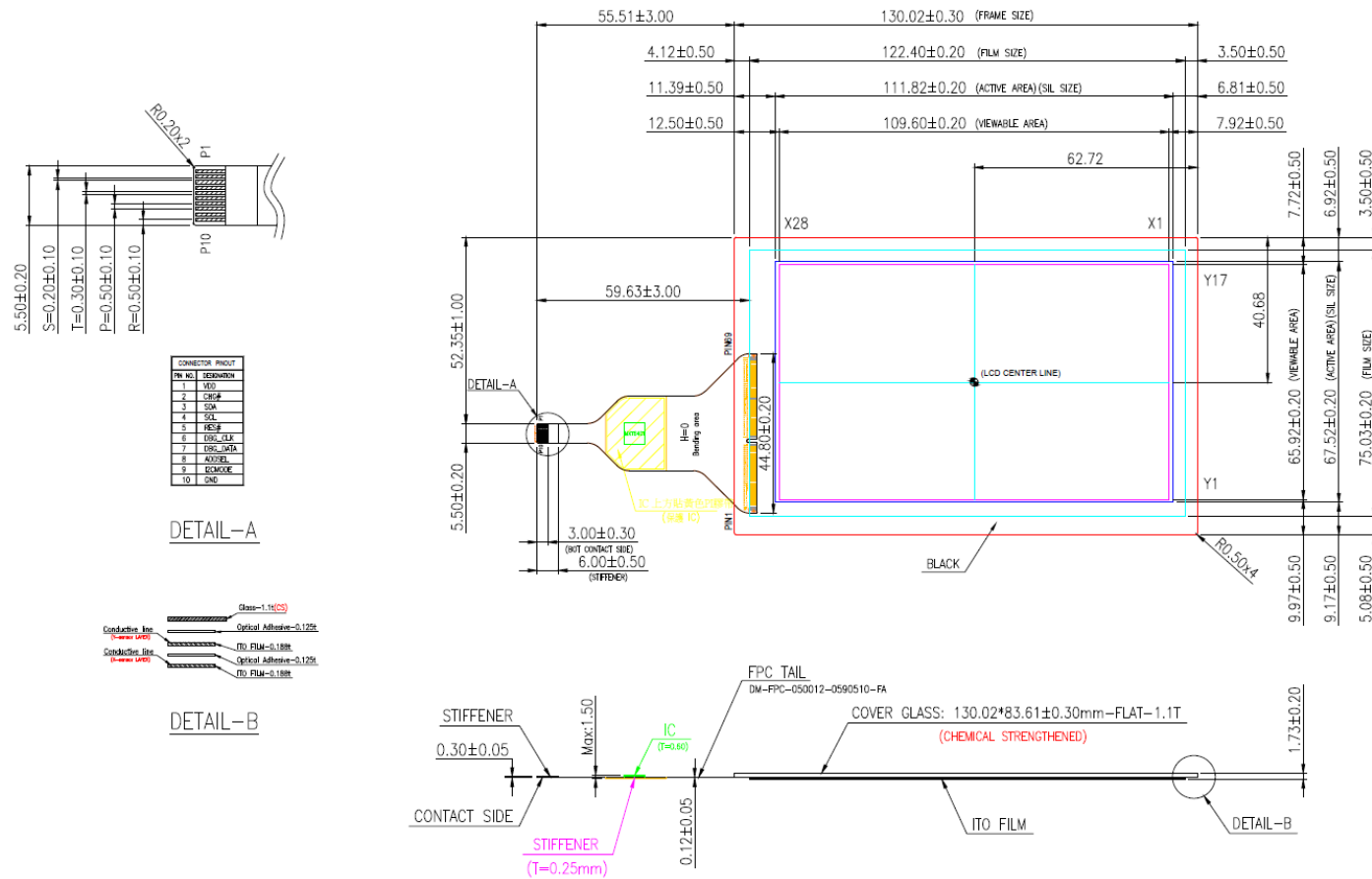
6 Revision History

Date	Author	Changes
09.07.2018	YLK	initial version
14.02.2018	Lübke	structure: drawing and appendix
19.02.2019	T. Golling	added, pin configuration

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