DATA MODUL

15.6″ PCAP Solution
12028416

Revision: 004

Date: 02.02.2022

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1 Scope

DATA MODUL's PCAP solution 12028416 consists of a 15.6" 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	15.6 inch / 39.6 cm
Format	wide
Composite	SITO with COF
Outline dimensions	359.14 x 209.41 x 1.1 mm (WxHxT)
Active area	348.6 x 197.9 mm (WxH)
Bending radius of tail	R = 2 mm recommended
Transmissivity	86% (min.)
Operating temperature and humidity	-30 to 85 °C
Storage temperature and humidity	-40 to 85 °C
Tail connector	FPC-Connector (10 pin 0.5mm pitch)

2.2 Reliability Tests

Low Temperature Storage Test	-30°C / 120h
High Temperature Storage Test	70°C / 120h
High Temperature / High Humidity Test	60°C / 90% RH for 120h
Cycle test	-30°C / 80°C, 30min each, 100 cycles

3 Touch Controller (2952T2 USB/I²C)

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

3.1 2952T2 USB

3.1.1 Electrical specification

Power supply	3.3V ± 5%
Vin ripple	40 mV peak-peak max.
On board voltage	3.3V and 8.5V max. (subject to configuration)
Power consumption	400 mW max. (subject to configuration)

3.1.2 Interface specification

Protocol	USB 2.0
	HID specification 1.11 with amendments for multitouch digitizer
Endpoint Address	0x81(Endpoint 1)
	0x02(Endpoint 2)
	0x83(Endpoint 3)
Touch report	16 fingers simultaneously max.
Resolution	4096 x 4096 (x/y)
vendor ID / product ID	0x03EB (Atmel) / 0x214E (mXT2952T2)
Bus speed	12 Mbps max. (subject to configuration)

3.1.3 Pin Configuration

Pin	Signal	Description
1	VDD	Power Supply
2	-	*Pull up to VddIO*
3	-	*Pull up to VddIO*
4	-	*Pull up to VDD*
5	RES	Reset, active low
6	USBDM	USB data minus
7	USBDP	USB data plus
8	CSEL	Connect to VddIO for USB
9	-	*Do not connect*
10	GND	Ground

NOTE : Autocalibration on each power cycle.

3.2 2952T2 I²C

3.2.1 Electrical specification

Power supply	3.3V ± 5%
Vin ripple	40 mV peak-peak max.
On board voltage	3.3 and 9V max. (subject to configuration)
Power consumption	400 mW max. (subject to configuration)

3.2.2 Interface specification

Protocol	I²C version 6.0	
Touch report	16 fingers simultaneously max.	
Resolution	4096 x 4096 (x/y)	
I²C address	0x4A or 0x4B	
HID-I²C vendor ID / product ID	0x03EB (Atmel) / 0x214E (mXT2952T2)	
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

3.2.3 Pin Configuration

Pin	Signal	Description
1	VDD	Power Supply
2	CHG	Change Interrupt, active low, 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	ADDSEL	*Pulled down by 15K Ohm, Pull up for 0x4B leave unconnected for 0x4A*
8	CSEL	Connect to Ground for I²C
9	I²CM	I²C mode selection, *low to select HID-I²C mode, high to select I²C mode, floating for automatic mode selection*
10	GND	Ground

NOTE : Autocalibration on each power cycle.

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.

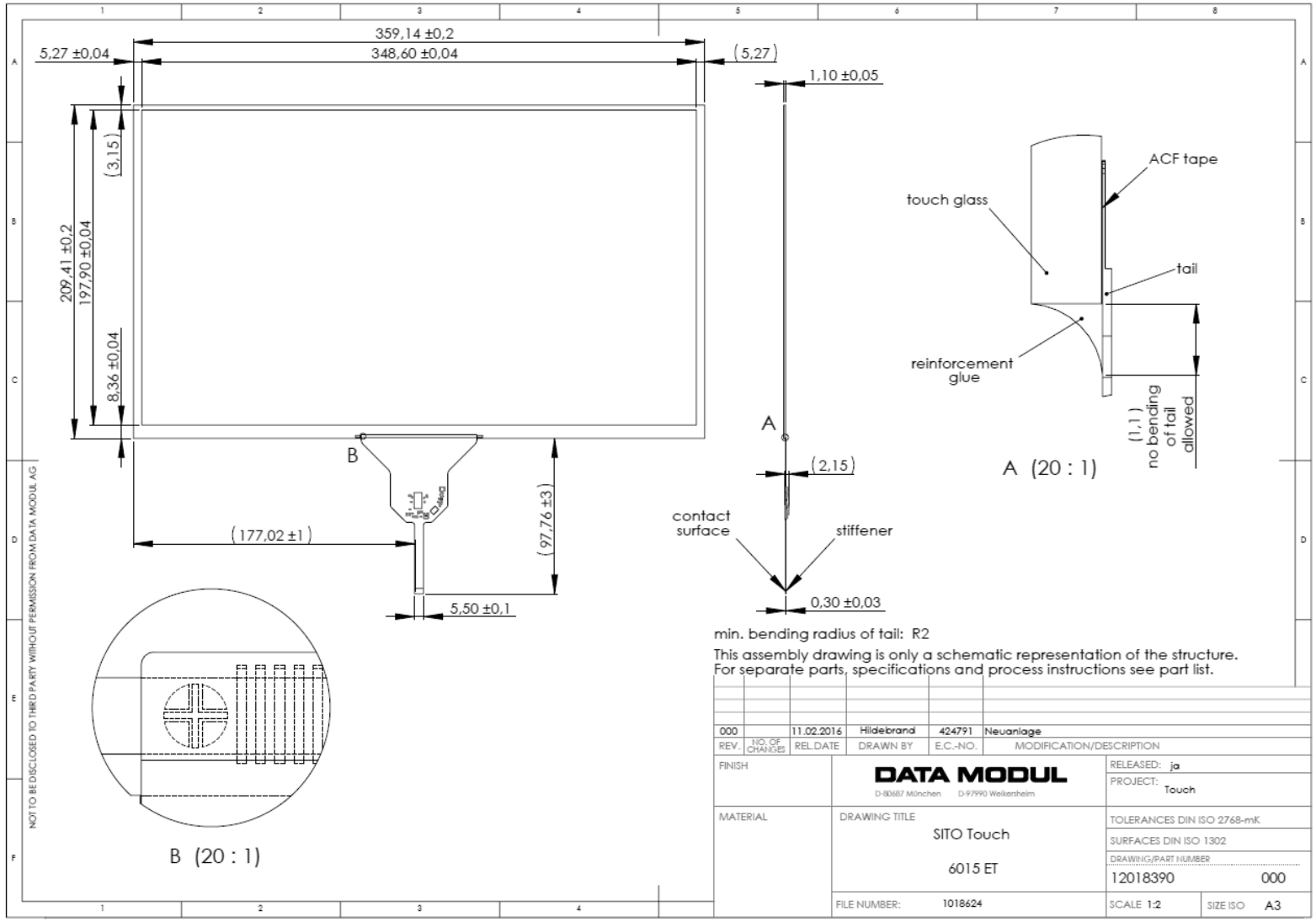
Precautions for mounting

- 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

Revision	Date	Author	Changes
001	20.12.2018	T. Golling	initial version
002	25.11.2019	T. Golling	correction of dimensions, page 5
003	13.12.2019	T. Golling	additional note, page 4 and page 5
004	02.02.2022	T. Golling	value of Power supply corrected, page 4

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