

DATA MODUL AG

**Project: EP101WARM131-PCAP-DM-Slim
eDM-SBC-iMX6-PPC, Linux**

10,1 inch wide format PCAP Touch Panel PC Open frame



DATA MODUL

Revision: 002

Date: 2020-08-06

Contents

1 Description Project3

2 Components.....3

 2.1 Display.....3

 2.2 Touch.....3

 2.3 Embedded4

 2.4 Housing & Design6

3 Panel PC Solution7

 3.1 Connector panel.....7

 3.2 Packaging8

 3.3 Environmental conditions8

 3.4 Rules & Approvals.....8

4 Outgoing Inspection9

Revision History

Rev	Datum	Beschreibung
000	16.05.2019	First Draft


1 Description Project

10,1" Panel PC Part number (12036790) EP101WARM131-PCAP-DM-S, currently no modification or customizations known. Design is new and currently in sample stage, minor changes are still possible.

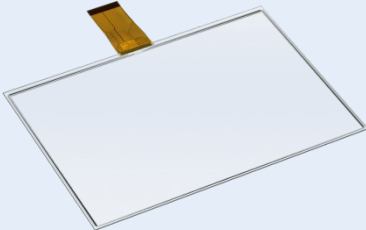

2 Components



The following components are used in (12036790) EP101WARM131-PCAP-DM-S

2.1 Display



Part	Description
TFT- Display	<p>Innolux G101ICE-L01 (12010891)</p> <ul style="list-style-type: none"> • Size: 10,1" • Resolution: 1280 x 800 dots • Brightness typ.: 500 cd/m² • Contrast typ.: 800:1 • Viewing Angle: 85°/85°/85°/85° (l/r/t/b) • Temp.-Range: -20° to +65°C operating • Backlight-Lifetime: 50khrs (LED) • Panel Interface: LVDS Single / 12 VDC <p>Comment / Options: An Innolux Industry TFT was chosen here. Customization is also possible to integrate other TFT- Manufacture like AUO/ Powertip /NLT e.g.</p> 


2.2 Touch

Part	Description
Touch-Sensor	<p>Easy Touch-Sensor SITO 10,1" (12014890)</p> <ul style="list-style-type: none"> • SITO "Single sided ITO" has improved signal-to-noise ratio • Sensors are designed to use with gloves • Sensor optical bonded with below mentioned glass 
Touch-Controller	<p>Easy Touch-USB-Controller easyTOUCH mXT640T(12010945)</p> <ul style="list-style-type: none"> • Multi Touch max. 10 Touchpoints / Fingers • PCAP Controller settings optimized to use with gloves • palm suppression and water detection activated <p>Note: Further configuration and tuning to the ambient conditions is possible and will be done in-house, we are happy to support you in optimizing your touch integration in the operating system used.</p> 

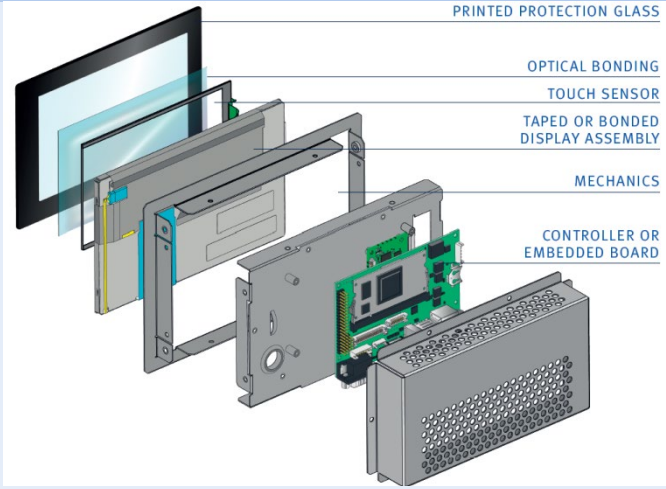
<p>Glass</p>	<p>Float-Glass (12011459)</p> <ul style="list-style-type: none"> • Dimension: 267 x 234 (+/- 0.3mm) • Glass thickness: 3 mm (+/- 0.2mm) • Edge grinded and chamfered, corners with radius R3 • Surface: antiglare Gloss 85 (+/- 10) • Thermally hardened glass • Border print: rear side printed, RAL 9005 printing ceramic light tight <p>Note / Options: For customization of a front glass, Data Modul recommends a separate project meeting to discuss and coordinate the other options (glass material, coating, edge processing, printing, hardening, etc.) is recommended</p>	
<p>Touch Assembly</p>	<p>Symbolic construction (Cover lens, Touch, Display)</p> <p>Front Glass to Touch-Sensor: optical bonded, “LOCA” Liquid Optical Clear Adhesive Technology</p> <p>Front Glass / Touch-Sensor Unit to Display: Air-Bonding with 4 strip double-sided Industry-tape.</p> <p>Optical specification: according Data Modul Outgoing Specification 12005965</p>	

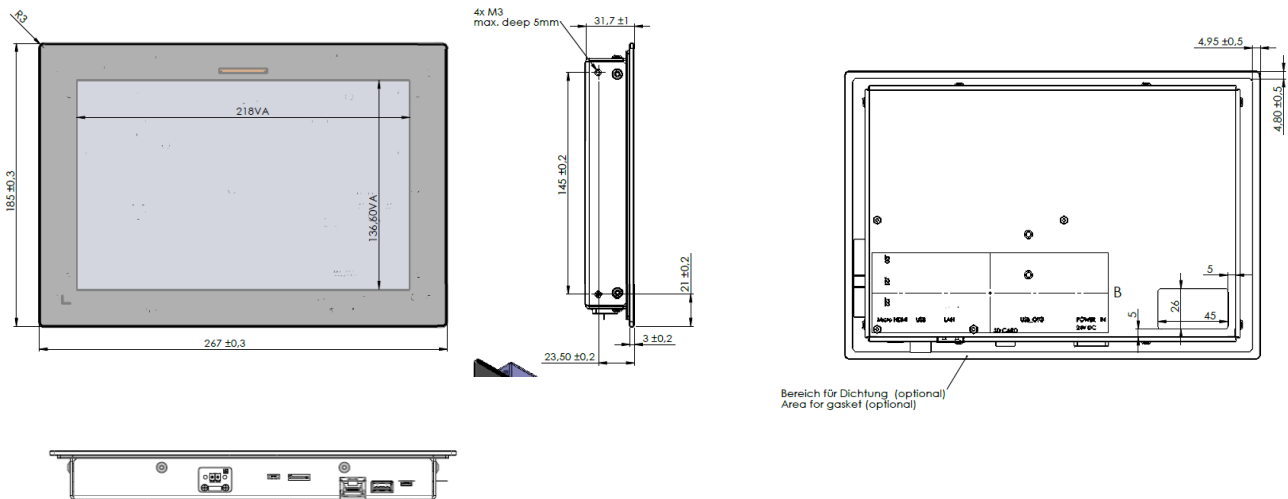
2.3 Embedded

<p>Embedded Board</p> <p>Version 1</p>	<p>eDM-SBC-iMX6-PPC-S-1G (12028335)</p> <ul style="list-style-type: none"> • i.MX6 Solo 800MHz • 1GB RAM, • 8GB eMMC • Power In: 24 VDC (+/-30%) • Additional Features: Audio, Ethernet, 2xCAN, mPCIe, 4 x RS232, 1 x RS485,I²C, SPI, Micro-SD, Micro-HDMI 	
<p>Embedded Board</p> <p>Version 2</p>	<p>eDM-SBC-iMX6-PPC-DL-1G (12028336)</p> <ul style="list-style-type: none"> • i.MX6 DualLite 800MHz • 1GB RAM • 8GB eMMC • Power In: 24 VDC (+/-30%) • Additional Features: Audio, Ethernet, 2xCAN, mPCIe, 4 x RS232, 1 x RS485,I²C, SPI, Micro-SD, Micro-HDMI 	

Embedded Board Version 3	eDM-SBC-iMX6-PPC-Q-2G (12033216) <ul style="list-style-type: none">• i.MX6 Quad 800MHz• 2GB RAM• 16GB eMMC• Power In: 24 VDC (+/-30%)• Additional Features: Audio, Ethernet, 2xCAN, mSATA on mPCIe, 4 x RS232, 1 x RS485, I²C, SPI, Micro-SD, Micro-HDMI 
Embedded SW	Software Package for Data-Modul eDM-SBC-iMX6-PPC <p>Linux Board-Support-Package(BSP), the available releases includes:</p> <ul style="list-style-type: none">• Bootloader: Barebox version 2017.04• Linux kernel Version: 4.9• Yocto 2.4 Rocko• Qt 5.9• Gstreamer 1.8.3• Browser: QupZilla <p>Attached is the manual of the Linux Board-Support-Package(BSP).</p> <p>Latest version available here: https://github.com/data-modul/documentation/blob/master/Linux-BSP-Manual_eDM-SBC_iMX6.pdf</p> <p>Latest sources are available in GitHub: https://github.com/data-modul</p>

2.4 Housing & Design

Teil	Beschreibung
<p>Open Frame Housing</p>	<p>Open Frame Metal Housing</p> <p>Material: zinc-plated steel</p> <p>Surface: no additional surface treatment</p> <p>Note: Open frame housings are intended for the integration in a customer housing.</p> <p>Oxidation cannot be avoided with “zinc-plated steel“</p>
<p>System Assembly</p>	<p>Symbolic construction</p> <p>On the bonded cover lens and PCAP touch sensor the metal fixing frame is taped the TFT-Panel is screwed to the fixing frame. The Touch controller is mounted on the Backside of the TFT-Panel . The embedded board is fixed on the backside of the cover plate. The CPU is also connected to the cover plate. For the integration are 4x M3 Mounting Points integrated. Outline Dimension drawing attached.</p> 
<p>OLD</p>	<p>Outline Dimension</p> <p>Size: 185 x 267 x 31,7 mm</p>
<p>Mouting Points</p>	<p>4x M3 Mounting Points integrated</p>



3 Panel PC Solution

3.1 Connector panel

Part	Description
Connectors	1x Ethernet GBE LAN / RJ45 1x Micro-HDMI 1x USB 2.0 type A 1x µUSB 2.0 A/B 1x Micro SD Slot Feature connector on the side: <ul style="list-style-type: none"> • Audio, CAN or RS232, RS485 or UART/RS232 (Molex 87833-1619) • CAN or CAN galvanic isolated (Molex 87833-0419) • System control SPI, GPIOs, JOG DIAL, UART, I2C, PWM (Molex 87833-2019)
Power Supply	Power In: 24 VDC (+/-30%) via PHOENIX CONTACT DFK-MC1,5/2



3.2 Packaging

Teil	Beschreibung
Package	5x Unit's per box

3.3 Environmental conditions

Environmental Conditions		
Operating temperature		+0 to +50°C
Non-operating temperature		-20°C ... +70°C
Humidity		10% ...90% (non-condensing)
IP Protection	No request known	can be discussed project based
IK- Protection	No request known	can be discussed project based
max. Altitude		2000m operating
Vibration	No request known	can be discussed project based
Life Time		
Backlight lamps	acc. panel spec*)	50,000 hours

*) The life time is determined as the time which luminance of the LED is 50% compared to that of initial value at the typical LED current (PWM :100%) on condition of continuous operating in at 25±2° C.

3.4 Rules & Approvals

EU Directives		
EMC directive		2014-30-EC
RoHS (Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment)		2011-65-EC
REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals)		2006/1907/EC
Standards & Approvals		
EMV – EMI/EMC Noise Emission		
Product standard	DIN EN 55011:2011-04 // DIN EN 55032:2016-02	EMC Emission test can be offered, details must be defined
Conducted emission	EN 55016-1-2:2014EN 55016-2-1:2014	EMC Emission test can be offered, details must be defined

Radiated emission	EN 55016-2-3:2010 + A1:2010 + AC:2013 + A2:2014	EMC Emission test can be offered, details must be defined
EMC Immunity		
Product standard	DIN EN 55024:2016-05	EMC Immunity test can be offered, details must be defined
Electrostatic discharge	EN 61000-4-2	EMC Immunity test can be offered, details must be defined
RF electromagnetic field	EN 61000-4-3	EMC Immunity test can be offered, details must be defined
Fast transients (“Burst”)	EN 61000-4-4	EMC Immunity test can be offered, details must be defined
Surge voltages (“Surge”)	EN 61000-4-5	EMC Immunity test can be offered, details must be defined
RF common mode	EN 61000-4-6	EMC Immunity test can be offered, details must be defined
CE- Marking	CE- Marking	CE can be offered, details must be defined
Approval mark	cULus / FCC	cULus / FCC can be offered, details must be defined

4 Outgoing Inspection

Visual Inspection of the device

- Optical Inspection according Data Modul Outgoing Spec.: 12005965 (cover lens, Touch, Display)

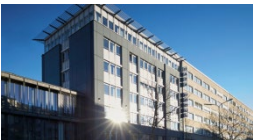
Functional Inline Test

- Picture Test: Verify that the TFT is correct connected
- Touch Test: Verify that the touch works

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ALL TECHNOLOGIES. ALL COMPETENCIES. ONE SPECIALIST.



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