Technical Data Sheet for
Projected Capacitive Touch-Screen

Scope of delivery

The scope of delivery for the projected capacitive touch-screens includes at least:

- Printed front glass plate
- Optically laminated sensor
- Touch electronic sensing module
- Mechanical integration interface

In addition we would be happy to offer you an all-in-one solution/an all-in-one device.

Front glass plate

Front glass thickness:	max. 6 mm
Standard glass thickness:	3.0 $^{+/-0.2}$ mm
Processing options:	grinding, etching, cutting out, bending, polishing, matting or scoring
Glass types:	Nonflex glass, float glass, white glass, gray glass, hardened glass (chemically, thermally), etched glass, non-reflective glass, toughened safety glass or special
Edge surface:	ground (standard), scored/chamfered, water jet ground (rough) or highly polished
Edge quality:	Edges beveled on both sides (standard 0.5 x 45°), edges beveled on one side (2nd side with protective bevel) or "C" edge
Printing:	screen, digital, ceramic or pad printing
Printing colors:	RAL, HKS or Pantone

Sensor

Sensor:	capacitive PCT technology based on Atmel maXTouch

Transparent ITO sensor film

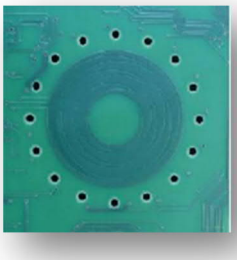
Operating temperature:	-20 °C to +65 °C
Sensor height:	0.4 - 0.6 mm
Screen diagonals:	to 15“
Available screen diagonals:	customized
Exterior dimensions:	customized

Transparent TCO glass sensors

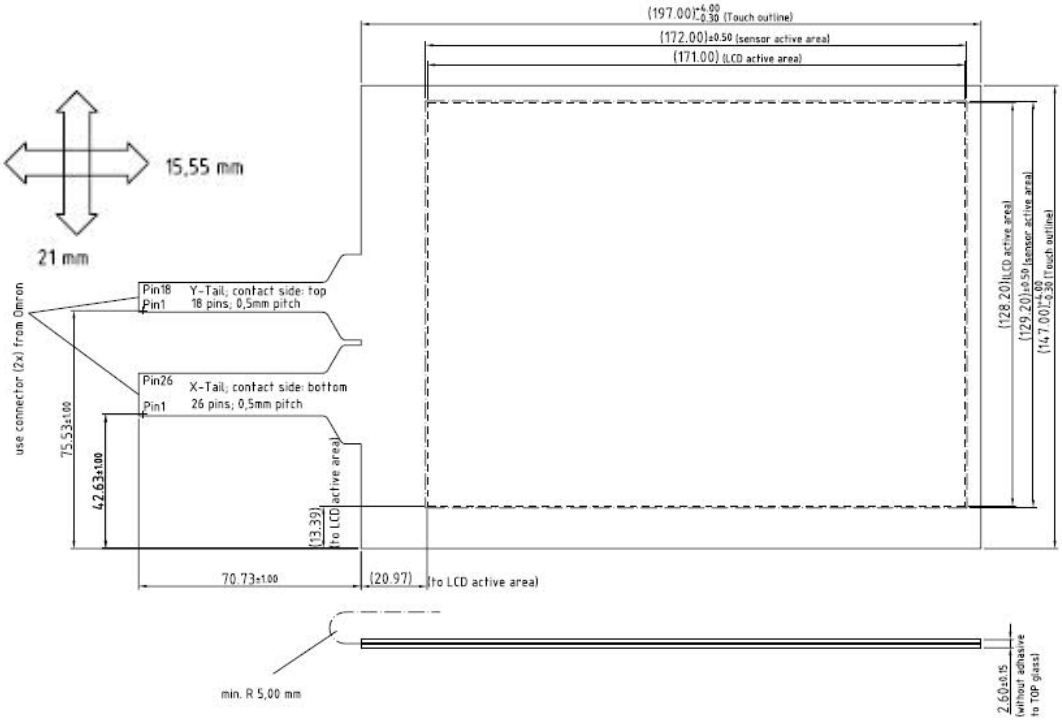
Operating temperature:	-40 °C to +85 °C (non-condensing)
Humidity:	DIN EN 60068-2-30-DB (5 cycles 55°C @95% relative humidity)
Transmission:	> 86% at 550 nm
Sensor height:	2.6 mm
Screen diagonals:	to 24“
Available screen diagonals:	see dimensional drawings
Additional screen diagonals:	customized
Exterior dimensions:	customized
Quality Criteria:	according to RAFI standard 05713

Sensor surface in copper on printed circuit board

Operating temperature:	-40 °C to +85 °C
Sensor height:	integrated in printed circuit board
Dimensions:	max. 460 x 400 mm
Available dimensions:	customized



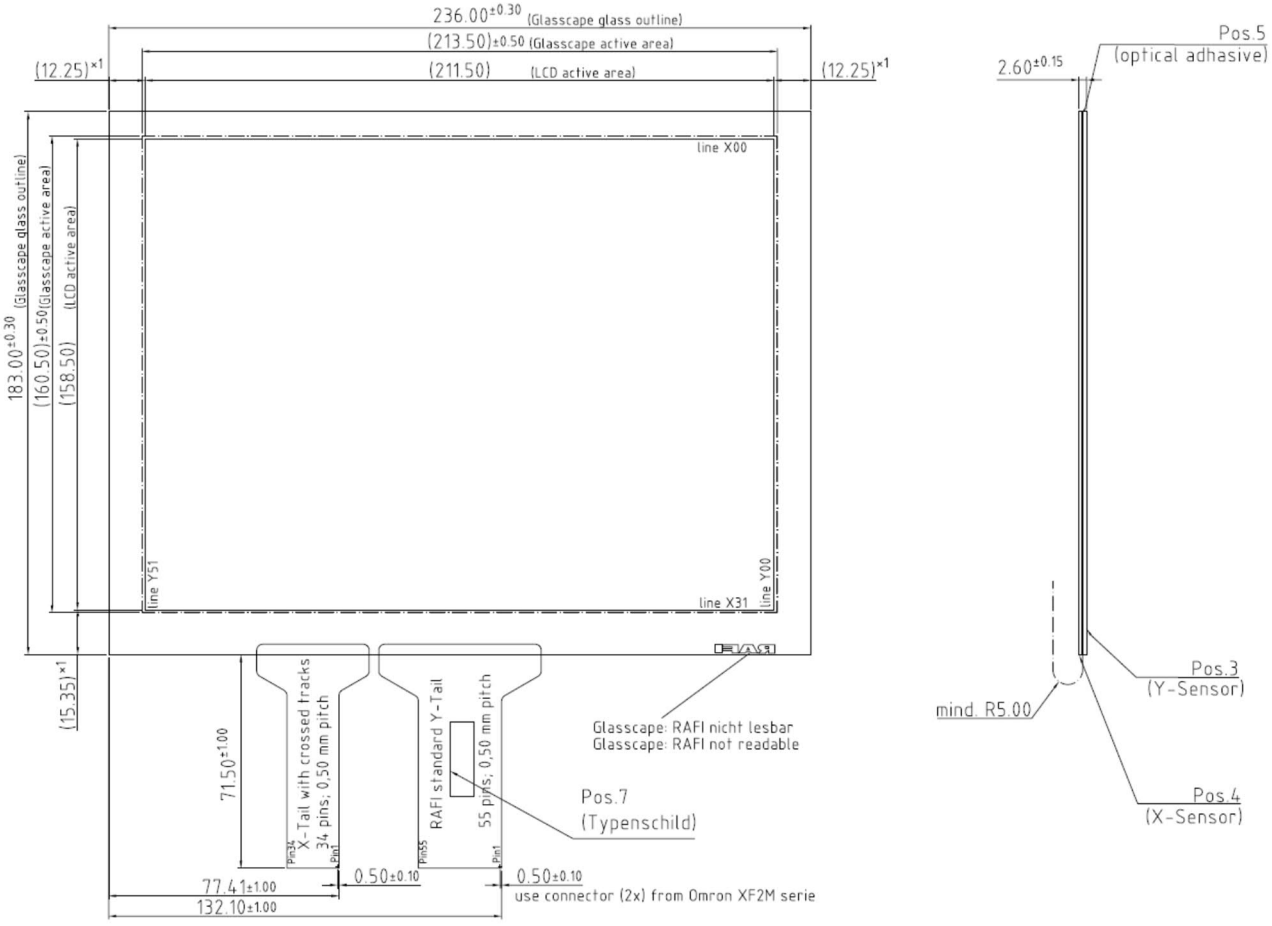
Dimensional Drawing TCO glass sensor 8.4“ 4:3, mXT336S, 5.00.406.798/0000



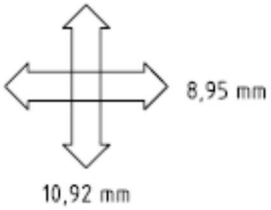
Finger Separation

A restricted area of 2 mm (see drawing tolerance) is to be considered, since the optical clear adhesive overflows. Interactions with other adhesives are to be tested. An air gap of minimum 0.5 mm between display and glass sensor has to be provided.

Dimensional Drawing TCO glass sensors 10.4” 4:3, mXT1664S, 5.00.406.799/0000



Finger Separation



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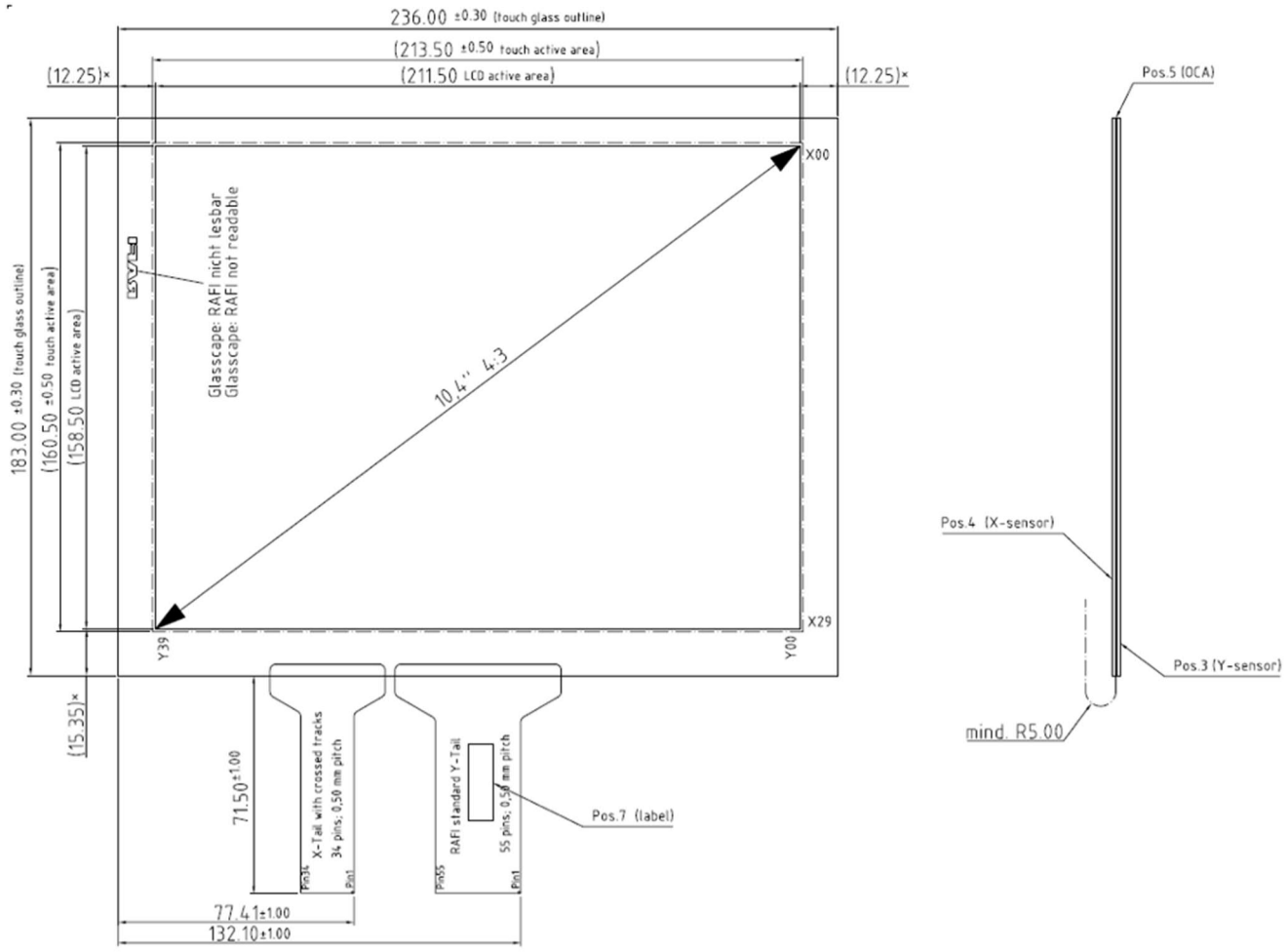
Dimensional Drawing TCO glass sensors 10.4” 4:3, mXT1664T, 5.00.404.518/0000



Finger Separation

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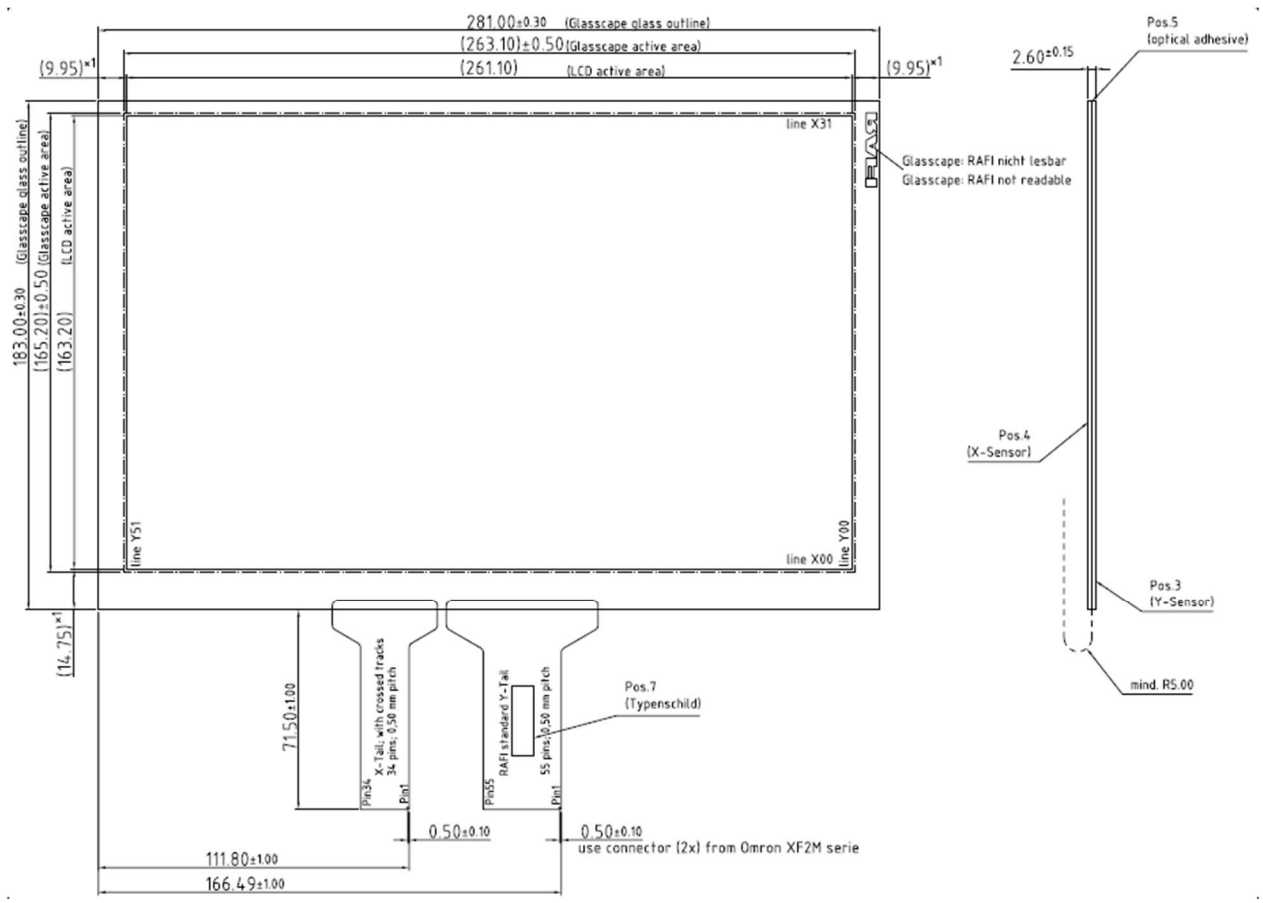
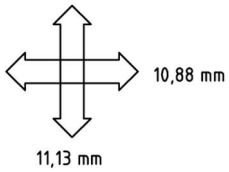
Dimensional Drawing TCO glass sensors 12.1” 16:10, mXT1664S, 5.00.406.800/0000



Finger Separation



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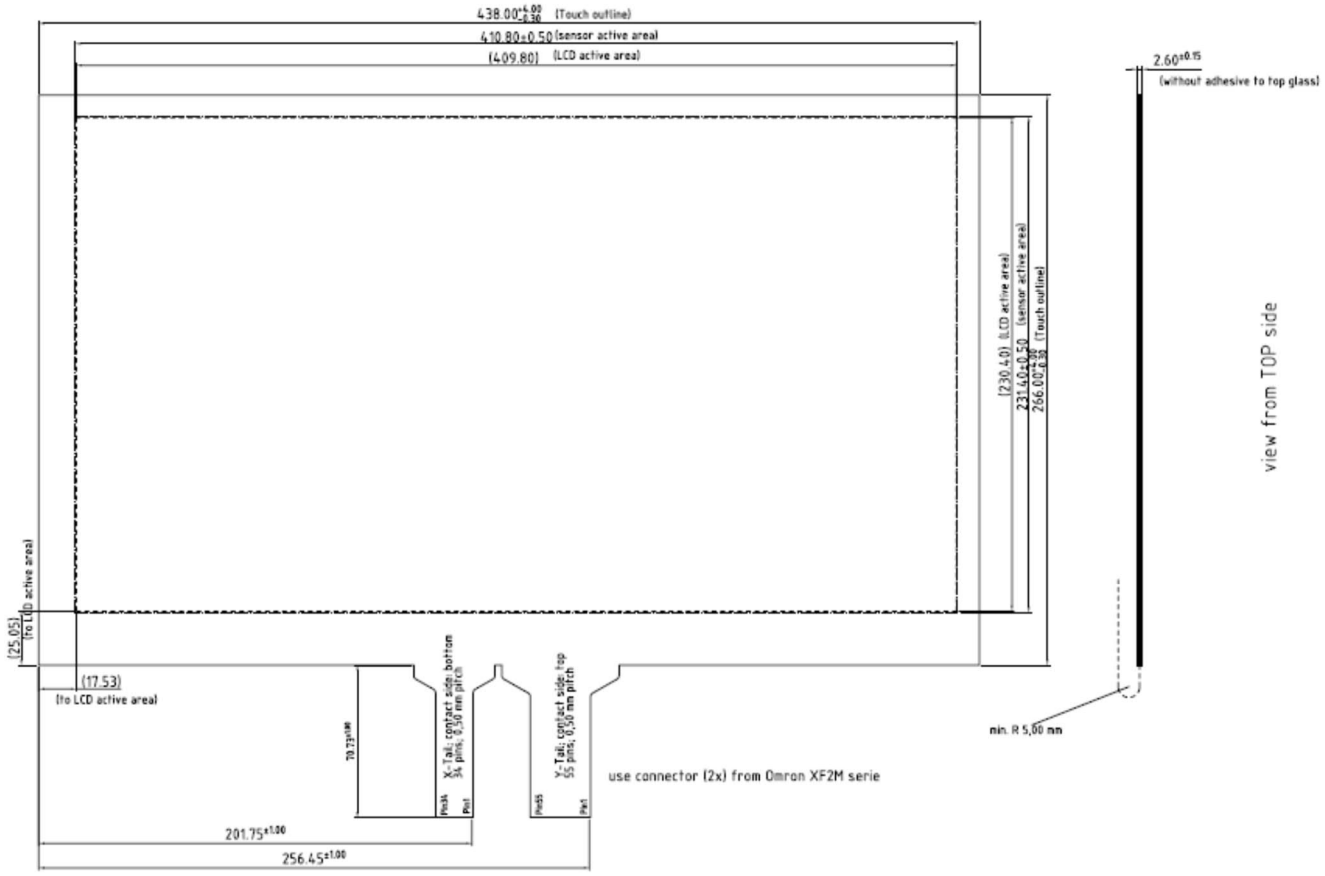
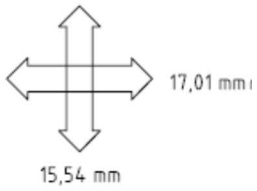
Dimensional Drawing TCO glass sensors 18.5” 16:9, mXT1664S, 5.00.406.802/0000



Finger Separation



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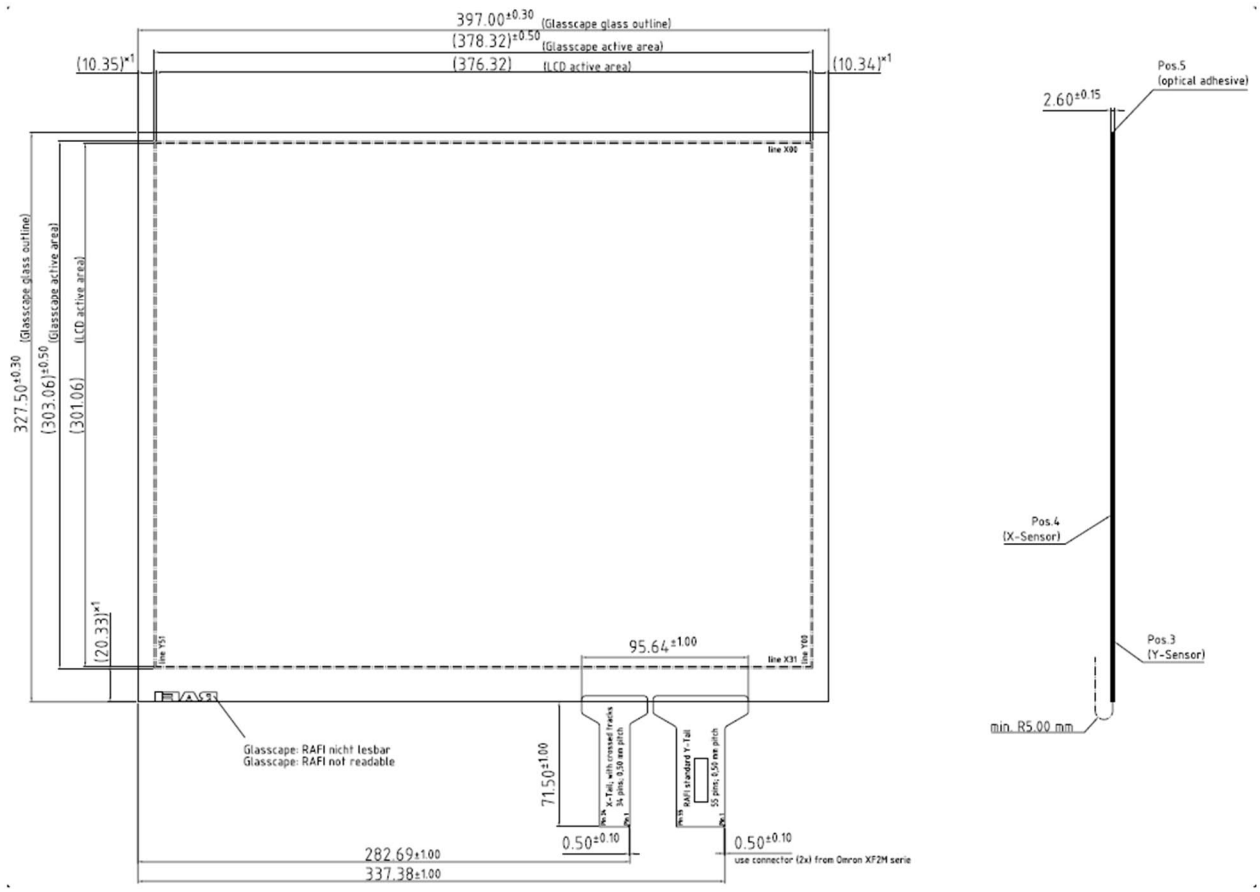
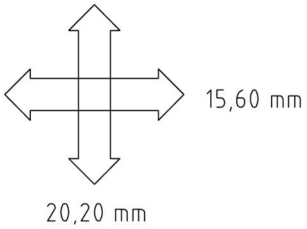
Dimensional Drawing TCO glass sensors 19” 5:4, mXT1664S, 5.00.406.969/0000

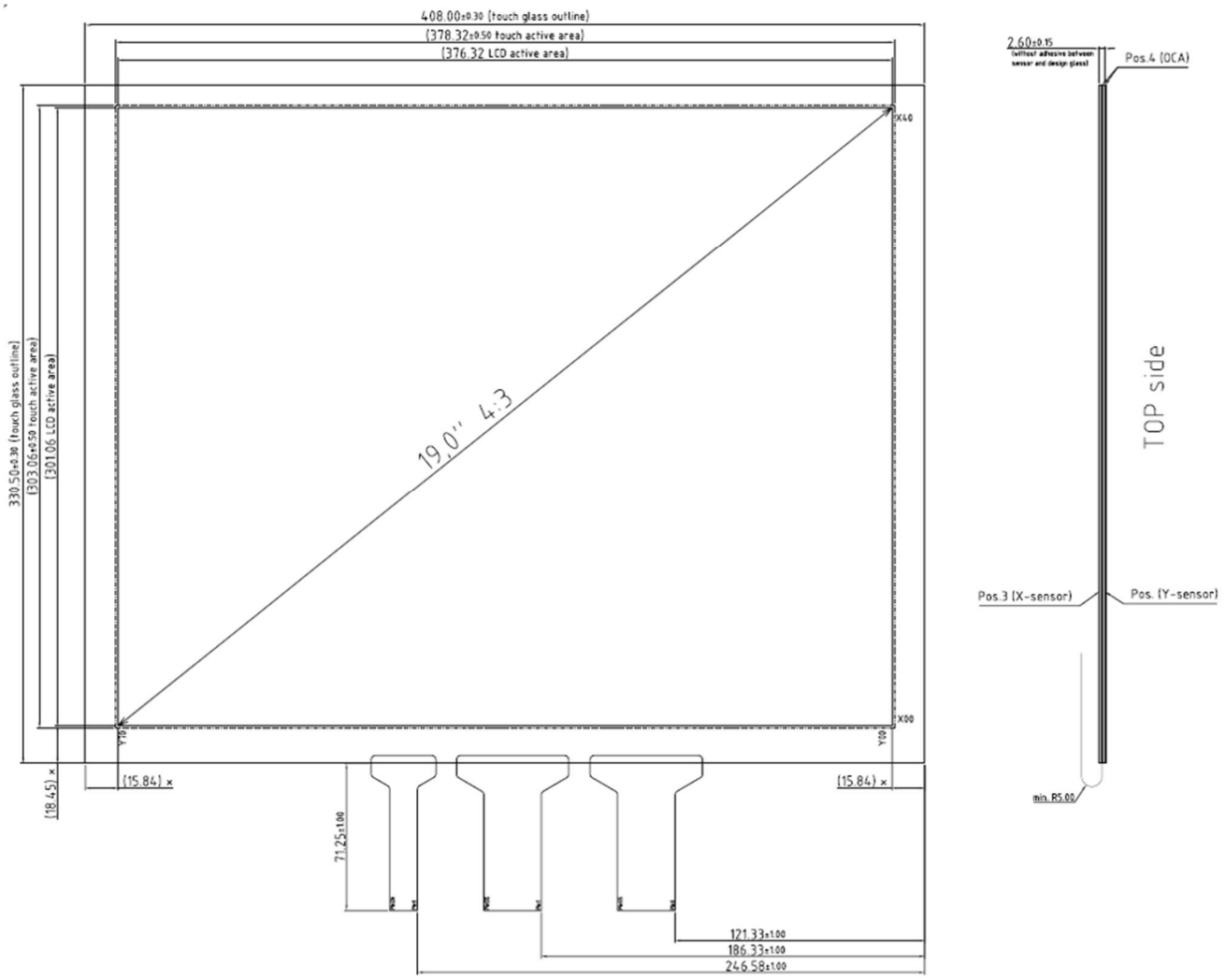


Finger Separation

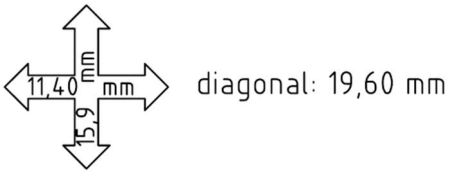


A restricted area of 2 mm (see drawing tolerance) is to be considered, since the optical clear adhesive overflows. Interactions with other adhesives are to be tested. An air gap of minimum 0.5 mm between display and glass sensor has to be provided.

Dimensional Drawing TCO glass sensors 19” 5:4, mXT2952T, 5.00.404.404/0000



Finger Separation



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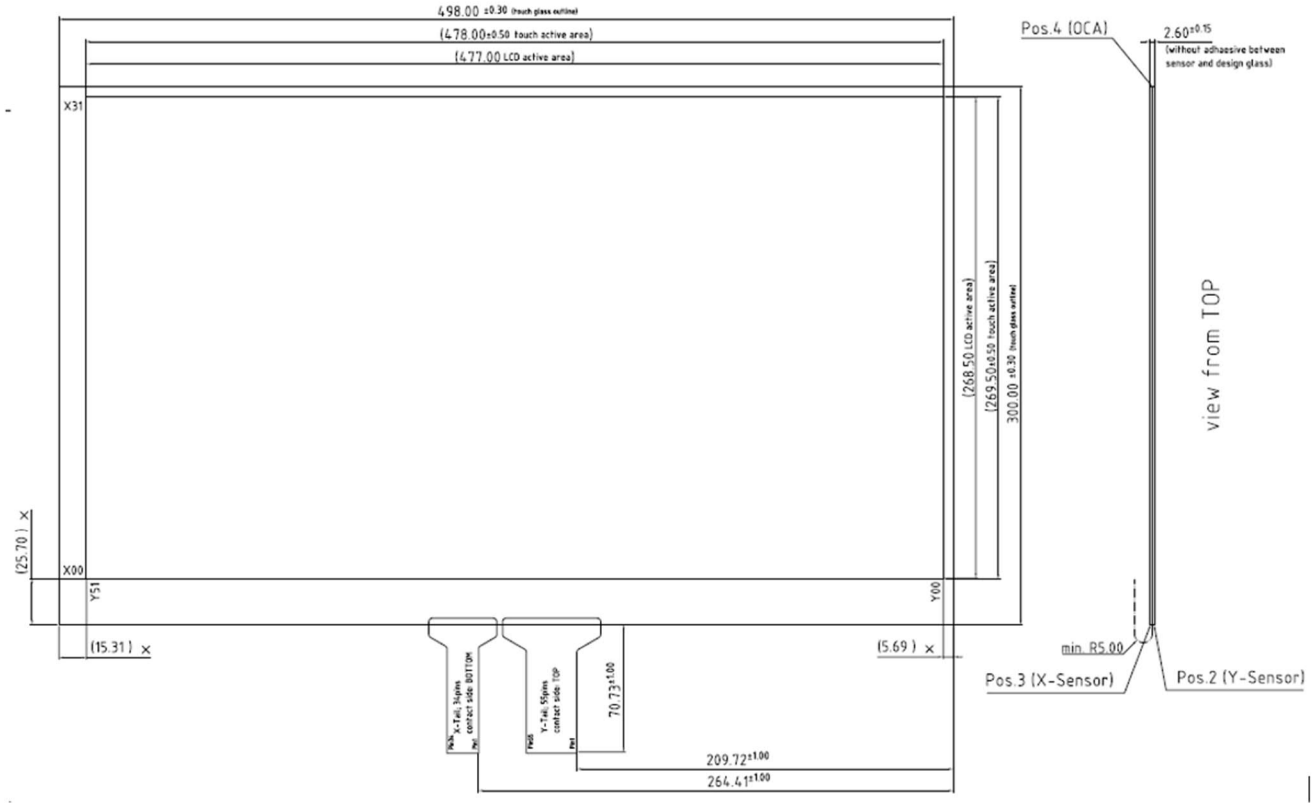
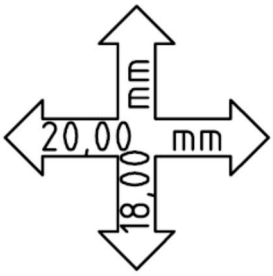
Dimensional Drawing TCO glass sensors 21.5” 16:9, mXT1664S, 5.00.406.855/0000



Finger Separation



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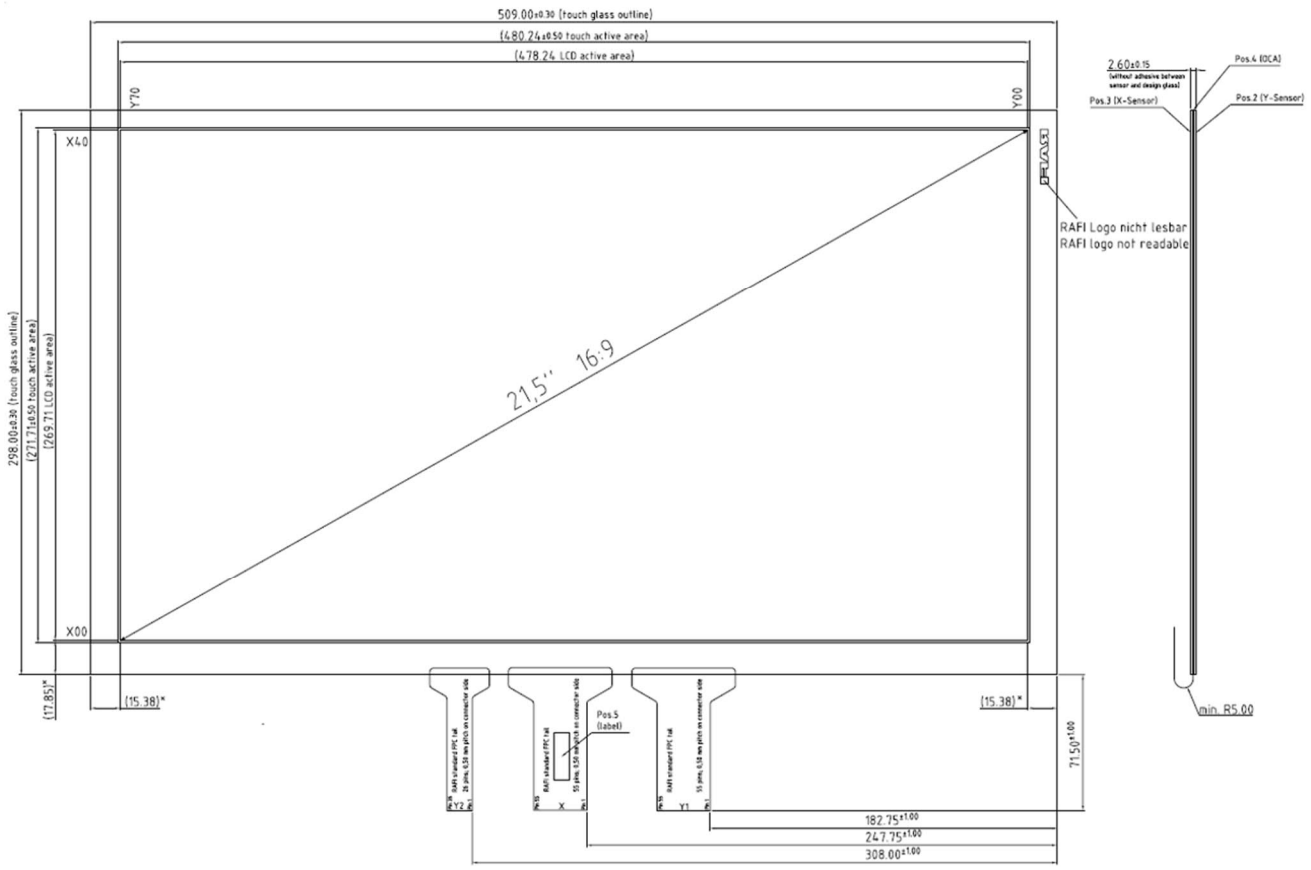
Dimensional Drawing TCO glass sensors 21.5” 16:9, mXT2952T, 5.00.404.291/0000



Finger Separation

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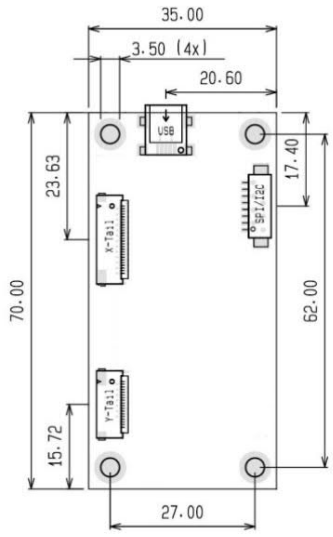
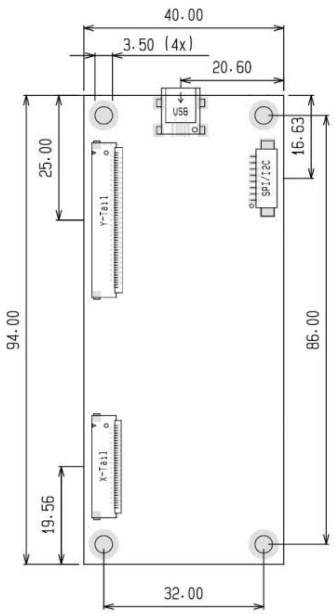
Electronic sensing module

Controller:	Atmel maXTouch
Electronic sensing module:	mXT336S (5.04.060.284/0100) for screen diagonals up to 8.4“ (depending on finger spacing) mXT1664S (5.04.060.653/0300) for screen diagonals from 10.4“ to 21.5“ (depending on finger spacing) mXT1664T (5.04.060.086/0100) for screen diagonals from 10.4“ to 21.5“ (depending on finger spacing) mXT2952T (5.04.060.707/0200) for screen diagonals from 15“ to 24“ (depending on finger spacing)
Supply voltage:	5 V DC ± 5%
Power consumption:	mXT336S < 100 mA mXT1664S < 150 mA mXT1664T < 150 mA mXT2952T < 150 mA
Multi-touch capability:	up to 16 fingers
Use with gloves:	yes
Palm suppression:	yes (suppression of large actuating areas)
Stylus support:	optional
Moisture detection:	possible with T series
Separate keys via touch controller:	up to 16 keys possible (depending on maXTouch controller)
Combination with further Capacitive sensor systems:	Keys, slider, wheel, proximity sensor or touch pad
Operating temperature:	-40 °C to +85 °C
Operating system:	singletouch: Windows XP, Windows CE 6 (with RAFI driver) multitouch: Windows 7, Windows 8, Windows 8.1, Windows 10, Windows EC 7 (2 fingers with RAFI driver), Windows Embedded Standard 7, Windows Embedded 8.1 Industry, Linux (USB: hid-multitouch, I²C: RAFI driver)
Interfaces:	USB 2.0 full speed composite device (two logical endpoints [Def0: HID Digitizer, Def1: HID Vendor defined device]) optional: I²C

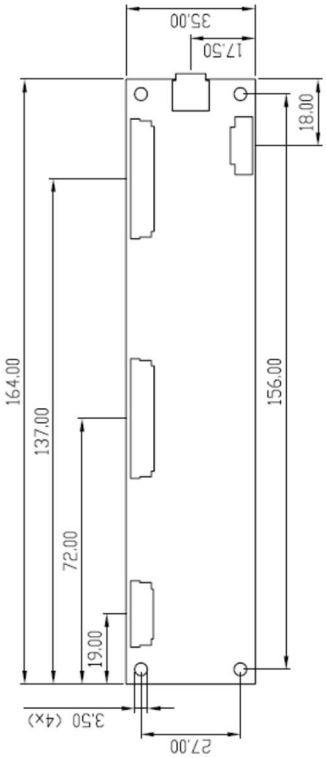
Dimensional drawing mXT336S



Dimensional drawing mXT1664S/mXT1664T



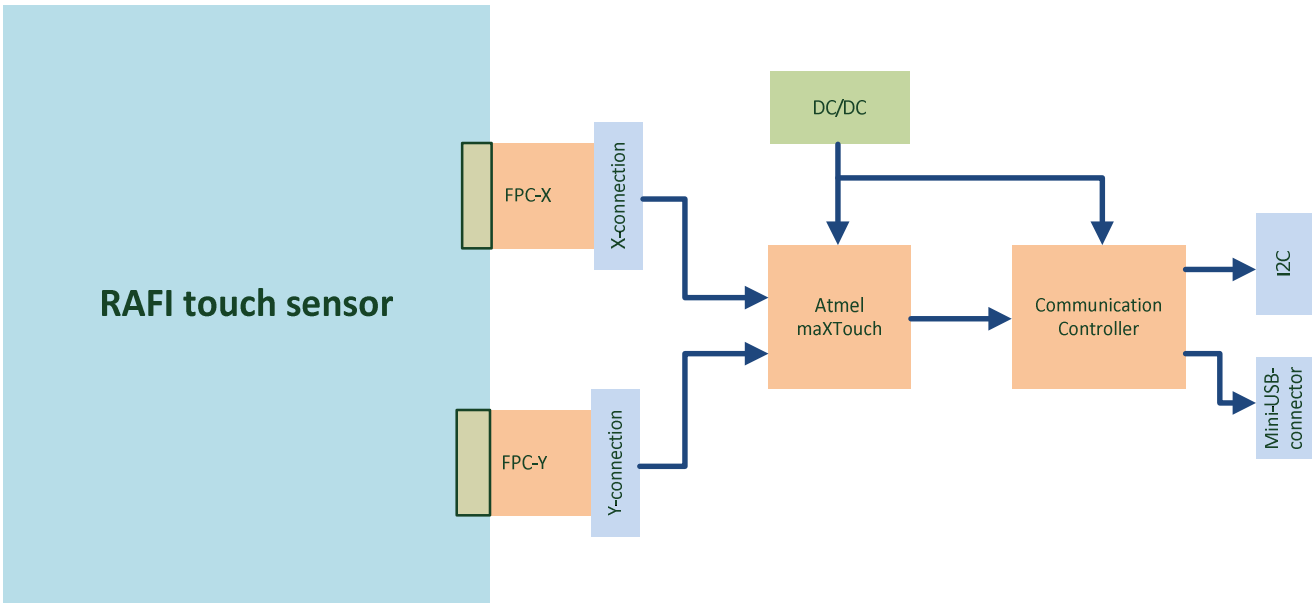
Dimensional drawing mXT2952T



Further details

EMC:	Industrial standard according to DIN EN 61000-4-3 – immunity test level 3 – criterion A (80MHz - 1GHz /10V/m, 1.3GHz - 2.7GHz / 3V/m)
ESD:	Industrial standard according to DIN EN 61000-4-2 – immunity test level 4 – criterion B (+/-8kV [air discharge] / +/-4kV [contact discharge])
Transmission system:	Depending on the front glass used (surface roughness)

Block wiring diagram



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