SHORTFORM DATASHEET

Subject to change, consult TNx prior to design-in

Part of the Brilliance family of touchscreens

<table>
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<tr>
<th>Rev</th>
<th>Date</th>
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<tr>
<td>A1</td>
<td>20/11/2014</td>
<td>PG</td>
<td>First Issue</td>
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<tr>
<td>A2</td>
<td>01/12/2014</td>
<td>PG</td>
<td>Lens added Single I2C address 0x4A</td>
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<td>A3</td>
<td>08/12/2014</td>
<td>PG</td>
<td>Assembly drawing added</td>
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<tr>
<td>A4</td>
<td>22/12/2014</td>
<td>PG</td>
<td>Lens detail in section 2.2 added Assembly drawing updated with lens thickness</td>
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<td>A5</td>
<td>20/02/2015</td>
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1 Highlights

Arcas is part of TouchNetix’ Brilliance family of capacitive touchscreen assemblies. It has the following features:

- **Up to 12-bit XY multi-touch reporting**
- **Supports up to 10 simultaneous touches**
- **Reporting rate typically 80 to 100Hz depending on configuration**
- **1.6mm chemically strengthened glass front lens**
- **Option for customizable cover lens up to 4mm glass subject to quantity**
- **Available as sensor only, without lens**
- **Robust sensor design allows operation with a wide range of 7” displays**
- **Industry leading EMC performance, especially for conducted immunity**
- **Active area is diagonal 16:10, tailored to fit most 7.0” TFT LCD panels**
- **I2C communication interface**
- **Optional USB adapter PCB to support multi-touch HID digitizer or “mouse mode” in legacy O.S.s and embedded versions of Windows™**
- **Active FPC tail connects to host via low cost 10 way 1mm pitch ZIF connector**
- **Two user configurable FPC tail length options**
- **Allows contemporary “bezel free” designs**
- **3D CAD available on request**
- **Supported by TouchNetix’ proprietary TNx TouchHub tuning software for Windows™**

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1 STEP file
2 Ordering Part Numbers

2.1 Touchscreen Assembly

Touchscreen Assembly Part Number: **TNxBR-070E-A8-AC-002rr**

2.2 Sensor Assembly

Sensor Assembly Part Number: **TNxBR-070E-A8-AC-001rr**
2.3 Optional Accessories

2.3.1 Mouse Mode USB Adapter (TNxAC-003)
Connects to the 10-way FFC connector on the sensor control PCB and outputs to a USB Mini-B receptacle. This allows the host to treat the touch panel as a Mouse HID device in either relative (touchpad) mode or absolute (digitizer style) mode. The board measures 32x30mm².

2.3.2 EVK
An evaluation kit is available

Part Number: **TNxBR-EVK-070E-A8-AC-001rr**

Each kit contains the following items:

1x Arcas Touchscreen Assembly
1x TNxAC-003 Mouse Mode USB Adapter
1x USB stick containing TNx TouchHub evaluation and tuning software for XP/Win7/8

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² Note that J1 (rectangular 5-way B2W connector) in the picture is an optional fit and is *not* populated by default.
3 Specifications

3.1 Sensor
Base material: PET (Polyethylene terephthalate) interconnects in silver
Thickness: 0.4mm typ. from rear of lens
Overall dimension: 167mm x 111mm
Touch active area: 159.9mm by 99.9mm
Transmittance >85%
Max lens thickness: 4mm glass, 2.5mm polycarbonate, 2mm acrylic
Mass: Consult TNx
Orientation: Suitable for portrait or landscape use
Attachment to housing: See “TNxAN00010 Recommended Attachment Methods for Touchscreen Assemblies”

3.2 Standard Cover Lens
Material: 1.6mm (nom) chemically strengthened soda-lime glass
Overall dimensions: 183.3mm by 122.3mm
Transparent window: 153.4mm by 92.4 mm
Border decoration: Process black ink, rear-side printed
Surface treatment: Anti-fingerprint (AF) coating
Surface hardnness: 6-7H typ.
Anti-shatter: Fragmentation resistance of bonded sensor
Protective film: Peel off type, to entire upper lens surface

3.3 FPC
Position on sensor: Exits sensor at middle of long edge
Material: Polyimide substrate + localized epoxy-glass FR4 rigidiser
Rigidiser dimensions: 17.6mm by 13.8mm
Rigidiser thickness: 0.6mm
Components: Top (touch) side only above rigidiser
Max component height: 1.0mm above rigidiser top surface
Length: 100.0mm standard, 13.6mm by user cutting excess tail
Contact fingers: Gold plated
Mounting: See “TNxAN00009 FPC Considerations for Touchscreen Assemblies”. Rear side is component free and is suitable for adhesive tape mounting.
Host connector type: 1mm pitch 10way ZIF. Example: FCI SFW10R-2STxxLF or equivalent
Min bend radius: 2mm
Max bending cycles: 3

3 Defined as transparent area inside silver print
4 Application testing required: sensor does not cover entire lens
5 Measured to the nearest edge of the component rigidiser
3.4 LCD Mounting
An LCD can be mounted to the rear of the sensor using an adhesive gasket\(^6\) using suitable pressure sensitive adhesive e.g. 3M VHB™ or equivalent\(^7\). The sensor is also suitable for full optical bond to the LCD using wet or dry adhesive. Contact TNx for guidance.

See “TNxAN00010-A1 Recommended Attachment Methods for Touchscreen Assemblies”.

It is strongly recommended that early testing with a target LCD is conducted to identify any incompatibilities with noisy LCD drive electronics\(^8\).

3.5 Environmental
- Operating temperature: -20°C to +70°C
- Operating humidity: 5 to 90% RH non-condensing
- Storage temperature: -30°C to +85°C
- Storage humidity: 45 to 85% RH non-condensing
- Impact rating: IK rating dependent on final application. Consult TNx
- RoHS: Compliant

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\(^6\) To be fitted by customer or as part of 3<sup>rd</sup> party “moduler’s” responsibility
\(^7\) It is very important to conduct material compatibility trials for any adhesives that are in direct contact with any part of the sensor, unless they are already proven to be non-aggressors
\(^8\) The Brilliance series is designed to repel most LCD noise but there are so many LCD variants with radically different levels of noise emitted, that pre-testing is advised.
6 Mechanical Drawing

6.1 Sensor Assembly drawing
6.2 Touchscreen Assembly drawing