
AMRI – 5305

Low Power 10 Touch Controller

No. 5, Innovation Road I,
HsinChu Science Park,
HsinChu, Taiwan, R.O.C
Tel: 886-3-5795317

AMRI-5305: Low Power 10 Touch Controller

Description

A touch-screen system consists of an LCD or OLED display, a touch-sensitive panel, a protective cover plate and a touch controller. The AMRI-5305 is a low-power, 10-touch controller designed specifically to provide a touch screen system with high report rate, touch accuracy, and responsive on-screen navigation, with very low latency. The IC uses a mutual-capacitance measurement technique, where it senses capacitance changes on the touch panel, and detects multiple touch points simultaneously.

The AMRI-5305 touch controller is designed specifically for applications in a high-noise environment. It is robust against common-mode, display, and RF noise; thereby eliminating the need for a Ground shield on the touch panel, reducing system cost. Its high-density drive/sense lines support touch screens up to 5", with 10 simultaneous touch points. A passive stylus is also supported. Larger screens can also be supported where fine-cell spacing is not a priority.

The low-power design is ideal for extending battery life. Programmable power modes include:

Run mode [150 Hz report rate, 5 TPs]	60 mW
Run mode [80 Hz report rate, 1 TP]	32 mW
Shutdown	145 μ W

Additional programmable Idle/Rest modes are also available.

There are 30 kbytes of Flash memory for Pixart supplied based-line operational code storage. In addition, there are 2 kbytes of Flash memory for application-specific data storage, such as saved

register settings, customized configurations of drive/sense mapping, buttons, sliders and haptics. There is no overlap between the 30 kbytes and 2 kbytes spaces.

The controller IC operates from a single 1.7 – 2.0 V or 2.5 – 3.6 V supply voltage, with I/O voltage from 1.6 to 3.6 V. The part is housed in a 6 x 6 x 0.55 mm 48-pin TQFN package.

Features

- Multi-touch navigation (up to 10 points)
- Support for up to 5" screen (larger depending on application)
- Adjustable touch thresholds for up to 1.5 mm PMMA or PC curved lens
- Cover lens: up to 2 mm glass or 1.5 mm PMMA
- Gesture support
- Buttons and sliders support
- Opens/shorts test support
- Internal flash for saving user settings
- 1200 DPI resolution at full screen
- Greater than 200 Hz configurable report rate
- Fast response time: < 10 ms
- SPI/I²C host interface
- Operating temperature: -20 to +70 °C
- Haptics output, support for up to 10 waveforms, and a variety of triggers
- Lead-free RoHS compliant

Applications

- Smart phones
- Portable Media Players
- Mobile Internet Devices (MID)
- Personal Navigation Devices (PND)
- Tablet PC's

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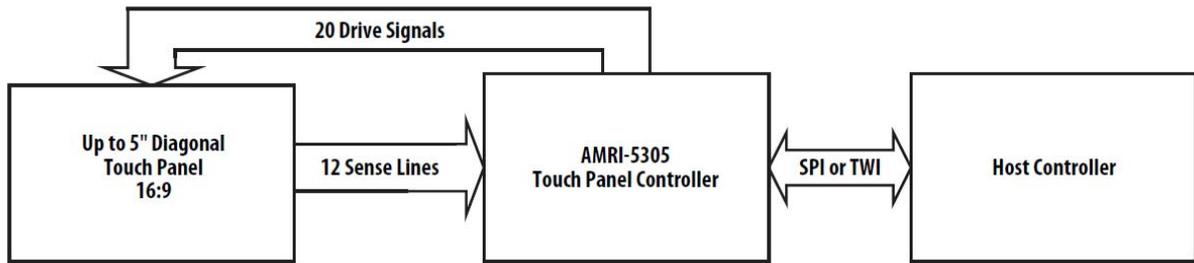


Figure 1: System Block Diagram

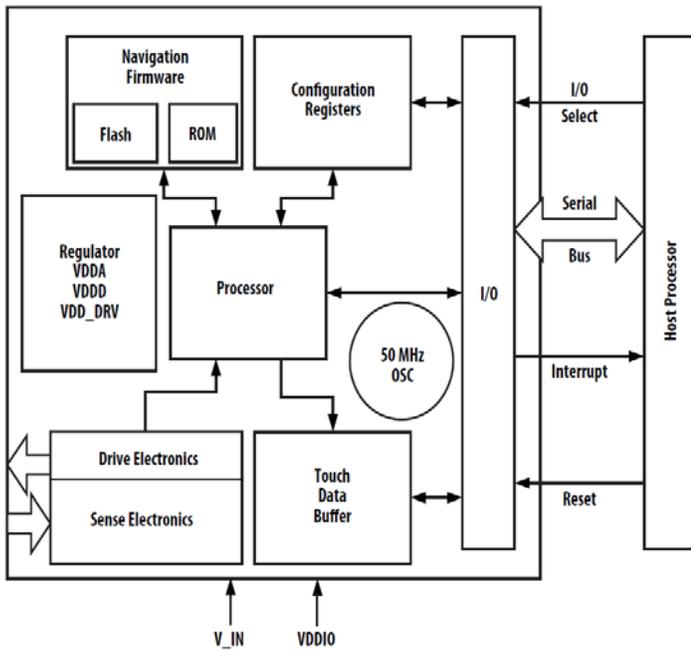


Figure 2: Functional Block Diagram