

## **Resistive Touch Total Solutions**

*Touch Panel, PenMount Control Board and Drivers*



## 4-, 5- and 8-wire Resistive Touch Screen

AMT offers a patented 5-wire resistive touch screen designed to produce superior linearity and high durability that withstands 36 million single-point touches. AMT's 4- and 8-wire resistive touch screens have been operationally tested for 10 million single-point touches and are widely used worldwide. Screen sizes are available from 3" to 24". AMT offers a wide assortment of optional features such as EMI shielding, ESD protection and gasket materials, front and rear foam gaskets or backside double-sided adhesives as well as optically bonded graphics, laminated to either the front or back side. In order to meet the anti-fog effect or let the LCD monitor display normally under the low temperature environment, AMT offers Heater Touch to fulfill these needs. Besides, you can choose Enhance film for enhancing the durability of products.



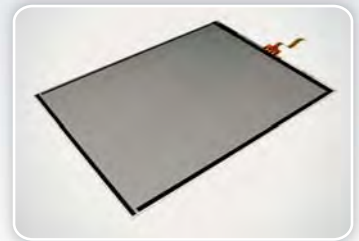
## Glass-Film-Glass (GFG/ GFG LR) Touch Screen



AMT Glass-Film-Glass (GFG) touch screens are designed and developed for the applications exposed to extremely harsh environments such as the industrial, automotive or medical fields that require touch screens with special features such as an easy cleaning and anti-scratch surface, good chemical resistance, and endurance to extremely high or low operating and storage temperatures. AMT GFG touch screens, laminated with a very thin glass layer over the front surface, provide all these much needed requirements while having excellent light transmission and optical properties at the same time. You can also select Heavy Duty (HD) film which its surface hardness is 9H. The thickness of HD film is 0.2mm, it is made up of special materials and strong on chemical resistance. It is anti-Ultraviolet (UV) for outdoor application and fits for applying on using stylus pen input products. The GFG touch screen can also be made as a Low Reflective GFG if you desire.

## Low Reflective / High Light Transmission Touch Screen

Designed for the readability for outdoor use, AMT's Low Reflective (LR) touch screen has a polarizer plus a  $1/4\lambda$  retarder film added to its construction to reduce reflection from sunlight. AMT offers LR touch screens of different constructions to be tailored to meet different requirements. The LR touch screen reduces the reflection rate to the lowest as 1.0% or less for the total stack. Besides, AMT also offers wide-temperature low reflective touch panels, its operating temperature can reach to  $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$  and storage temperature can widely reach to  $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$ . AMT's High Light Transmission (HLT) touch screen improves the optical quality of your application. It maintains viewing brightness while reducing the reflection that distracts the user in the mean time. HLT touch solution provides you with superior optical qualities with light transmission rates going up to 85% at the highest.

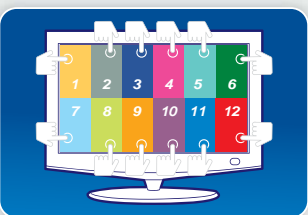


## Touch Window & Framed Touch



Many new product designs require a "true flat" touch screen that is seamlessly carried by the LCD cover. AMT's Touch Window & Graphic Overlay Lamination are designed to meet such requirement. With them, your product design can be fashioned and unique due to your own ID image on the graphic overlay. AMT has the innovative ideas and technology to provide you with such true flat touch screen. AMT's Touch Window and Framed Touch realize the unique design and trendy look for your product.

## Multi-Finger Touch Solution



AMT's patent pending Multi-Finger touch screen is a resistive technology enabling the touch input of two or more fingers simultaneously. With the touch screen divided into multiple touch zones, MF detects up to 12 concurrent touches on the touch screen. The size and location of each touch zone are definable by customer. Each touch zone functions like an individual analog touch screen. MF is a good choice for the industrial use for the purpose of reconfirmation and safety. MF touch solution includes a MF touch sensor and a PenMount touch controller, M1, complete with drivers and gesture utilities.

## PenMount Multi-Finger Touch Controller Features

The M1 touch controller, patent pending, is the newest technology from PenMount. The new M1 controller supports AMT's Multi-Finger touch screen to allow touch input with multiple fingers at the same time. With very high accuracy for multiple touches in one touch screen, M1 controller is the optimum solution for the Multi-Finger resistive touch screen which supports screen size ranging from 3" to 22". Additional features and benefits are:

- PenMount M1 controller IC and PM 6250 control board
- Supports AMT MF series of Multi-Finger touch screens
- Supports USB and RS-232 interface
- Supports up to 12 touch zones for one touch screen
- Mounting hole location same as PM6200 control board
- Supports multiple fingers touch at the same time
- Supports Microsoft Windows and Linux OS
- Provides gesture recognition on Microsoft Windows XP / Vista / 7
- Software library is available by request for developing application programs based on Microsoft Windows 2000 and later operating systems

- Available software utilities :

- Advanced calibration
- Right mouse button simulation
- Multi-monitor setting
- Cursor position auto mapping screen rotation
- Draw program



**PM 6250 Control Board**

- USB and RS-232 interface COMBO
- Board size : 62 x 42 (mm)

## PenMount 6000 Series Controller Features

- For 4-, 5-, or 8-wire resistive touch screens
- Supports both USB and RS-232 interface with auto-detection
- Sample Rate : 160 points (minimum)
- Resolution : 2048 x 2048
- Diagnostic LED on board
- Meets RoHS specifications
- ESD protection of Control Boards : (IEC-61000-4-2)
  - 15KV for Air Discharge
  - 8KV for Contact Discharge
- Drivers : DOS, Windows 2000/ XP/ XPE/ 2003/ 2008/ Vista/ 7/ 8, WinCE 4.2/ 5.0/ 6.0/ 7.0, Linux (Kernel 2.6 and X-Window mode), QNX 6.2/ 6.3.2/ 6.4.1/ 6.5



**PM 6200 Control Board**



- USB and RS-232 interface COMBO
- PnP and non-PnP mode selectable
- 4 pin 1.0mm pitch ZIF connector for 4-wire touch screens
- Board size : 62 x 33 (mm)

**PM 6202 Control Board**



- Various boards for selection
- Separate parts for 4- or 5-wire touch screen application
- With pin header for touch screen direct connection
- Separate parts for USB, RS-232 and COMBO interface application
- Board size : 70 x 20 (mm)

**PM 6300 Control Board**



- USB interface control board
- Board size : 60 x 26 (mm)

**PM 6500 Control Board**



- USB and RS-232 interface COMBO
- PnP and non-PnP mode selectable
- Board size : 60 x 26 (mm)

## PenMount 9000 Series Controller Features

- For 4-, 5-, or 8-wire resistive touch screens
- Supports RS-232 interface only
- Sample rate is 133 points
- Resolution : 2048 x 2048
- Diagnostic LED on board
- Meets RoHS specifications
- ESD protection of Control Boards : (IEC-61000-4-2)
  - 15KV for Air Discharge
  - 8KV for Contact Discharge



- Drivers :

- Windows 2000/XP/2003, operates in mouse emulation mode
- Windows XP Tablet PC 2005/Vista/7/8, operates in touch digitizer mode.
- Windows 3.x/95/NT 4.0, WinCE 4.2/5.0/6.0/7.0
- Linux (Kernel 2.6 and X-window mode)
- QNX 6.2/ 6.3.2/ 6.4.1/ 6.5
- DOS (RS-232 only)
- Solaris 10



**PM 9036BH Control Board**

- RS-232 interface only
- PnP and non-PnP mode selectable
- Board size : 60 x 26 (mm)

### Environmental specification of Resistive control boards :

- Operating Temperature : IC : -40°C ~ +85°C Board : -20°C ~ +70°C
- Storage Temperature : IC : -65°C ~ +150°C Board : -40°C ~ +85°C



PenMount is uniquely positioned to provide the most advanced touch screen performance available. Our years of experience with developing both touch screen controllers and touch screen drivers gives PenMount an unsurpassed capability of improving touch screen linearity and input accuracy. PenMount touch screen drivers are developed to be simple and easy to use and at the same time provide advanced features for a wide range of applications and systems.

## PenMount Driver Advantages

Providing application software development manual, under different operating system platform, the PenMount drivers under resistive and / or projected capacitive touch technology advantages are :

### Microsoft Windows Platform

- Supports Windows 2000/ XP/ Vista/ 7/ 8, Windows Server 2003/ 2008, Windows XP Embedded/ Embedded Standard 2009/ Embedded Standard 7. Provides single universal driver for all PenMount controller devices.
- Latest drivers are WHQL approved for Windows 7.
- Supports Windows Tablet PC features on Windows XP Tablet PC Edition 2005, Vista and Windows 7/ 8.
- Resistive Touch screen pin-out auto-adjustment after calibration.
- Supports resistive touch screen linearity correction with 4, 9, 16, or 25-point on-screen calibration mode.
- Resistive Touch screen linearity performance display.
- Beep alarm frequency and time on/off function user selectable.
- Wakes up system from suspend mode.(USB only)
- Right mouse click emulation.
- Supports auto detection for screen rotation with ATI, nVIDIA, Intel, SMI, AMD, VIA graphic drivers and Pivot Portrait software.
- Supports extended desktop and multiple display.
- Supports four kinds of operating modes : mouse emulation, pen input emulation, click on touch and click on release.
- Provides gesture recognition utilities.
- Self Development Kit (SDK) available for software developers.

### Linux Platform

- Supports Linux Kernel 2.6 and X Window based systems.
- Supports major Linux distributions : Ubuntu, Fedora, OpenSUSE, CentOS, Slackware, Debian,...etc.
- Provides device detection and auto installation process.
- Supports 4, 9, 16 and 25 points calibration for resistive touch screens.
- Supports screen rotation detection based on the X Resize and Rotate (RandR) extension.
- Provides beep feedback with frequency and duration adjustable.
- Supports four kinds of operating modes: mouse emulation, pen input emulation, click on touch and click on release.
- Line drawing smoothness adjustable.
- Provides powerful Drawing

\* Above features are subject to change without prior notice.



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