The FT260 HID over I^{2}C touchpad demo

Human Interface Device (HID) is one of the most popular USB device classes. It is a protocol developed to simplify the process of connecting accessories such as mouse, keyboard and touchpad to the PC. HID was originally developed to run over USB or Bluetooth. For Windows 8, Microsoft created a new device type called "HID over I^{2}C", which allows the device to communicate a HID protocol over an Inter-Integrated Circuit (I^{2}C) bus. The new "HID over I^{2}C" devices are only supported natively by Microsoft Windows 8 or above.

FTDI has introduced a new USB bridge chip, the FT260, which is able to connect a "HID-over-I²C" device to a PC over USB. The device appears to the PC as a standard USB HID class device allowing HID over I^{2}C peripherals to connect to any PC. Here is an example below which shows the connection. The "HID over I^{2}C" device successfully connects to a Windows 7 PC via the FT260 bridge, works as a USB HID touchpad, and starts to play a game!
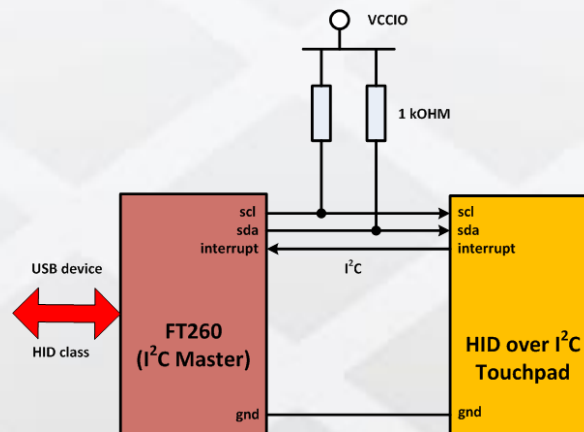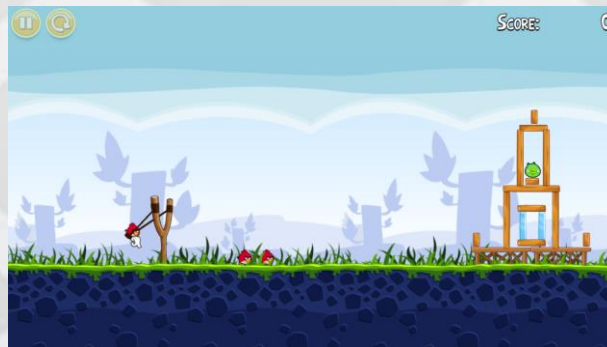

Figure 1: The HID over I^{2}C bridge to USB

Figure 2: Game control with a HID over I^{2}C controller

Further information on the new FT260 HID class, Full Speed, USB to I^{2}C bridge series may be found at:
www.ftdichip.com/FT260

Future Technology Devices International Ltd. (FTDI Chip)
www.ftdichip.com

FTDI Introduces Highly Sophisticated Single-Chip Solution for USB Full Speed Bridging

Easy to implement HID class IC features both USB-to-I^{2}C & USB-to-UART functionality

23rd February 2016 - FTDI Chip continues to explore innovative new approaches for ensuring that USB technology is as straightforward to use as possible. The new FT260 is a human interface device (HID) class interface controller IC, which complements the company's expansive vendor class portfolio. It can provide USB 2.0 Full Speed (12Mbps) connectivity to a broad range of application scenarios - including connection of touchscreens, computer peripherals and IoT sensing apparatus, as well as USB interfacing of microcontroller or programmable logic centric system designs, plus industrial automation equipment and USB instrumentation. Supplied in compact 28-pin SSOP and 28-pin QFN package options, these USB bridge chips have dual HID interface support, with I^{2}C and UART bus conversion capabilities.

As the entire USB protocol is handled on the chip, the FT260 offering presents engineers with a plug-and-play solution that is simple to incorporate into contemporary embedded system designs. These ICs employ a standard class driver, which means it is not necessary to worry about installing complex vendor-specific drivers. Their flexible IOs mean they are compatible with 1.8V to 3.3V systems. During full operation only 24mA of current is drawn and this drops to just 385μA when in suspend mode.

The FT260 is the first device of its kind to be compliant with the HID-over-I^{2}C protocol, as specified by Microsoft with the release of Windows 8. A total of 4 different speed modes can be utilized while in I^{2}C bus - standard mode (SM), fast mode (FM), fast mode plus (FM+) and high speed (HS) with 7-bit addressing supported. The integrated memory resource enables storage of customized USB descriptors. The built-in oscillator PLL dispenses with the need for an external crystal - thereby saving space and lowering bill of materials costs. Furthermore, unlike competing ICs, the FT260 has USB battery charger detection mechanism included, so that more efficient charging may be benefitted from. To further assist engineers, this IC will be backed up by a series of board level products.

For more information on the FT260 visit: **www.ftdichip.com/FT260**