MICROCHIP®

ATUSB-GESTIC-PCB Information Sheet

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Information Sheet
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PCB Design file layout
GestIC I2C to USB-Bridge Firmware file for I²C address 0x42: *Hillstar_DK_I2C_TO_USB_BRIDGE_v21_r31_0x42.hex*
GestIC I2C to USB-Bridge Firmware file for I²C address 0x43: *Hillstar_DK_I2C_TO_USB_BRIDGE_v21_r31_0x43.hex*

Kit Contents

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|---|
| **1x ATUSB-GESTC-PCB (10190)** |

Using the ATUSB-GESTIC-PCB

This product provides an interface to convert I2C signals to USB and communicate with PC-based applications. The board is designed to be used with Microchip GestIC 3D gesture controllers.

The PCB can supply 3.3V to a single MGC3030, MGC3130 or MGC3140. Note however that it cannot supply a complete target system and it cannot be powered by the target.

When using separate supplies, the bridge board should be powered up *before* and powered down *after* the target.
I/O ports are open drain and designed to operate at 3.3V only.

LED indications and options

The board provides 3 LEDs to simplify diagnostic. Optional (not assembled) SDA and SCL line 1.8kΩ pull-up resistors R2 to 3.3V and R3 to 3.3V can be mounted if the target is not providing them. Pull-up on /TS line must always be supplied externally (10kΩ recommended).
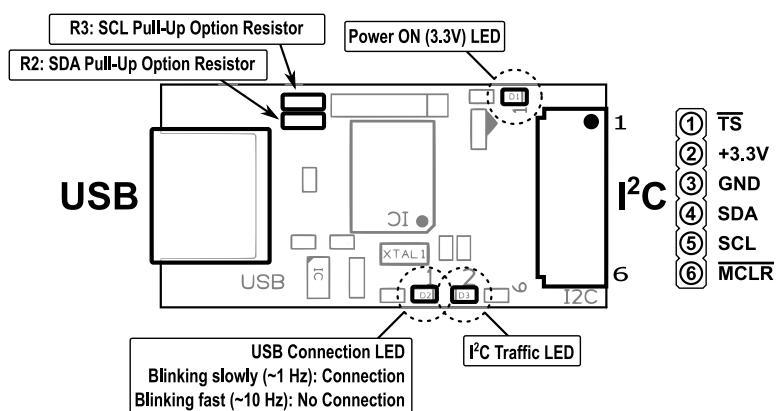
Alternative I²C configuration address

The bridge board comes readily configured to use I²C address **0x42** that is the default for GestIC chips.
To communicate with an MGC3030 or MGC3130 configured for address **0x43** the bridge needs to be programmed with an alternative firmware: *Hillstar_DK_I2C_TO_USB_BRIDGE_v21_r31_0x43.hex*, that is available in a packaged .zip file and can be downloaded here: https://www.microchip.com/DevelopmentTools/ProductDetails/PartNO/EV91M41A

The next steps need to be followed assuming a "PICkit 3" * In-Circuit Debugger is used:
- Disconnect the board from the PC and from the target GestIC
- Connect the debugger to the board as indicated in the figure below (pinout is 1:1, however the pitch is different)
- Reconnect the bridge board to the PC (to supply power during programming)
- Open the Integrated Programming Environment MPLAB IPE V3.55 (or later)
  (Instructions on how to download MLAB IPE can be found at http://microchipdeveloper.com/ipe:installation)
- In the "Family" drop down box select "All Families"
- In the "Device" drop down box select "PIC18F14K50"
- In the "Source" field enter the name of the file required to program the bridge board
- Click on "Connect"
- Click on "Program" button and wait for the programming to finish.
- Close MPLAB IPE V3.55
- Disconnect the bridge board from PICkit 3 and from PC
- Connect the bridge board to the GestIC device with address 0x43 and to the PC again
- Run Aurea on the PC and confirm that the PC is now talking to the target GestIC through the bridge board

The bridge can be configured back to address 0x42 following the same steps above using the file *Hillstar_DK_I2C_TO_USB_BRIDGE_v21_r31_0x42.hex* that can be found in the same package above.
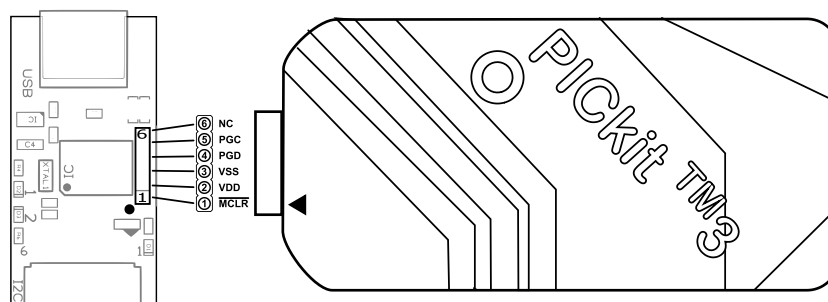
*Note: other Microchip programmers compatible with PIC18F14K50 could also be used.

Additional Information

The product documentation zip file and more information about the device can be found here: https://www.microchip.com/design-centers/capacitive-touch-sensing/gestic-technology or is available from your Microchip representative.