I2C TRACE kit

Setup and operating Instructions:

1. **Important!** Power down the PC and target I2C board before making connections.
   To avoid possible damage, DO NOT make the serial or I2C connections to the I2C Trace unit when other equipment is powered.
2. Connect DB9 female connector to any RS232 serial input port on PC,SUN, or MAC computer. Install the I2C Trace software. Alternatively, a standard terminal program (Hyperterminal or modem program) can also be used with I2C Trace when configured for 19.2k baud, 8 bits, no parity, 1 stop, 1 start, no handshake.
3. Connect the 7.5 VDC power supply to the board. After power is applied you should see a RESET message and board configuration settings if your terminal program is configured properly.
4. Connect I2C bus to either one of the I2CMON jacks on the board (they are parallel in connection). You MUST have SDA, SCL and GND connected. Power supply from your I2C target board is not recommended or required.
5. Powerup equipment and I2C Trace.
   - If using the I2C Trace software, click "Trace Control", then "start trace" and push the reset (closest to the Xtal).
   - If using another terminal/modem program, start the application and push the reset button.

Other Information:

- If desired, 5vdc power can be supplied to the I2C Trace via the I2CMON jacks (but not 3VDC). I2C Trace requires regulated 5VDC at approx 200mA**
- I2C TRACE can supply DC power to your application up to 200ma 3vdc or 5vdc dependent on JUMPER I2CPWR on the board. Jumper 1-2 for 5vdc and jumper 2-3 for 3vdc. This jumper also selects 10 k I2C pullup resistors bias voltage for the I2C bus.
- LED D4 will indicate that proper power has been applied.
- LED D3 will flicker to indicate I2C bus traffic.
- LED D1, D2, and MODE are reserved for possible future use and non-operational at this time.
- Do not make connections to JP7 (16 pins) or "prog" terminals.
- Currently, the I2C TRACE provides logging up to 125khz SCL clock. If your I2C implementation is nonstandard, clock to data timing is marginal, or risetimes are poor, your I2C bus may not operate reliably with other slaves. I2C TRACE is a monitoring tool, not a standard analyzer. If errors are displayed via I2C Trace, then your I2C bus configuration may be operating near its limit for risetime or speed.
- I2C specifies no more than 3ma sink current from clock or slave devices. This determines the minimum pullup resister of 1k at 3.3v and 1.5k at 5v. Bus speed is a function of load and risetime not to mention input noise processing by many slave devices.
- The 32k message buffer is implemented as a true fifo and I2c data is buffered for display via the lower speed RS232 output to the PC/display. I2C Trace fifo overflow is possible with large amounts of I2C data under certain conditions. This is normally not a problem, however it could happen if the target I2C system is continuously communicating I2C messages at full speed. If fifo overflow occurs, I2C Trace resets and a new RESET CONFIGURATION message is generated; Fifo data will be lost at this point, and the buffer will refill with new data. Slowing the target I2C bus clock may prevent Fifo overflow in this situation.

**** WARNING: Do not supply power to I2C TRACE via I2CMON jacks unless unless regulated 5vdc is supplied and the "I2CPWR" jumper is set for 5vdc (position 1-2).**

→ *Most I2C Trace failures are due to EOS damage to the I2C port of the socketed controller IC that can be user- replaced. Please email us at sales@demoboard.com for details in this situation.*

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