ANALOG DEVICES

AHEAD OF WHAT'S POSSIBLE™

ADIS1648x/EVAL-ADIS Remote Evaluation Tools

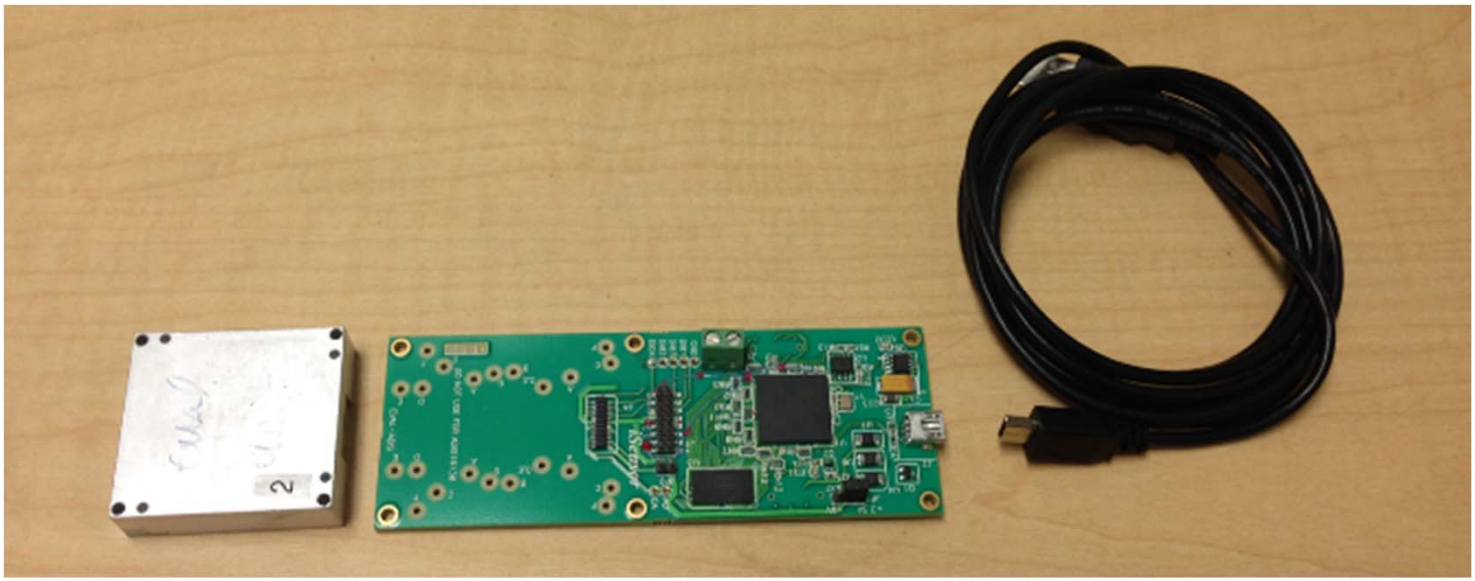
MARK LOONEY

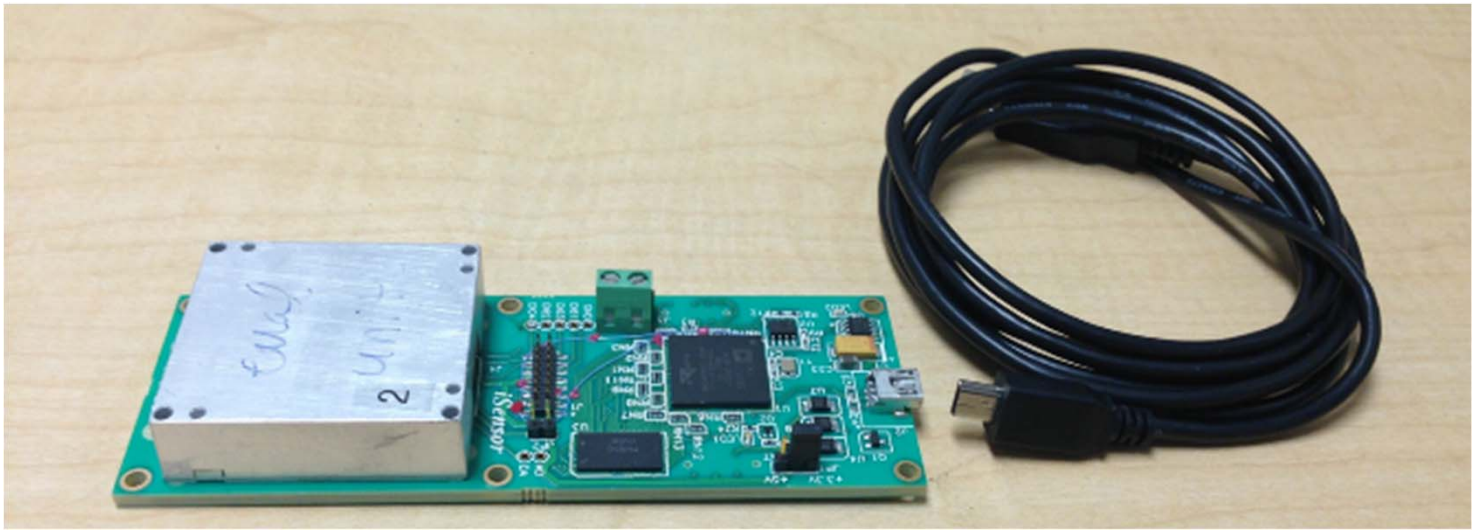
11/12/2019

50 ADI 1965 2015

ADIS1648x Remote Evaluation Accessories

Present PC-based Evaluation System: EVAL-ADIS





ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x Remote Evaluation Accessories

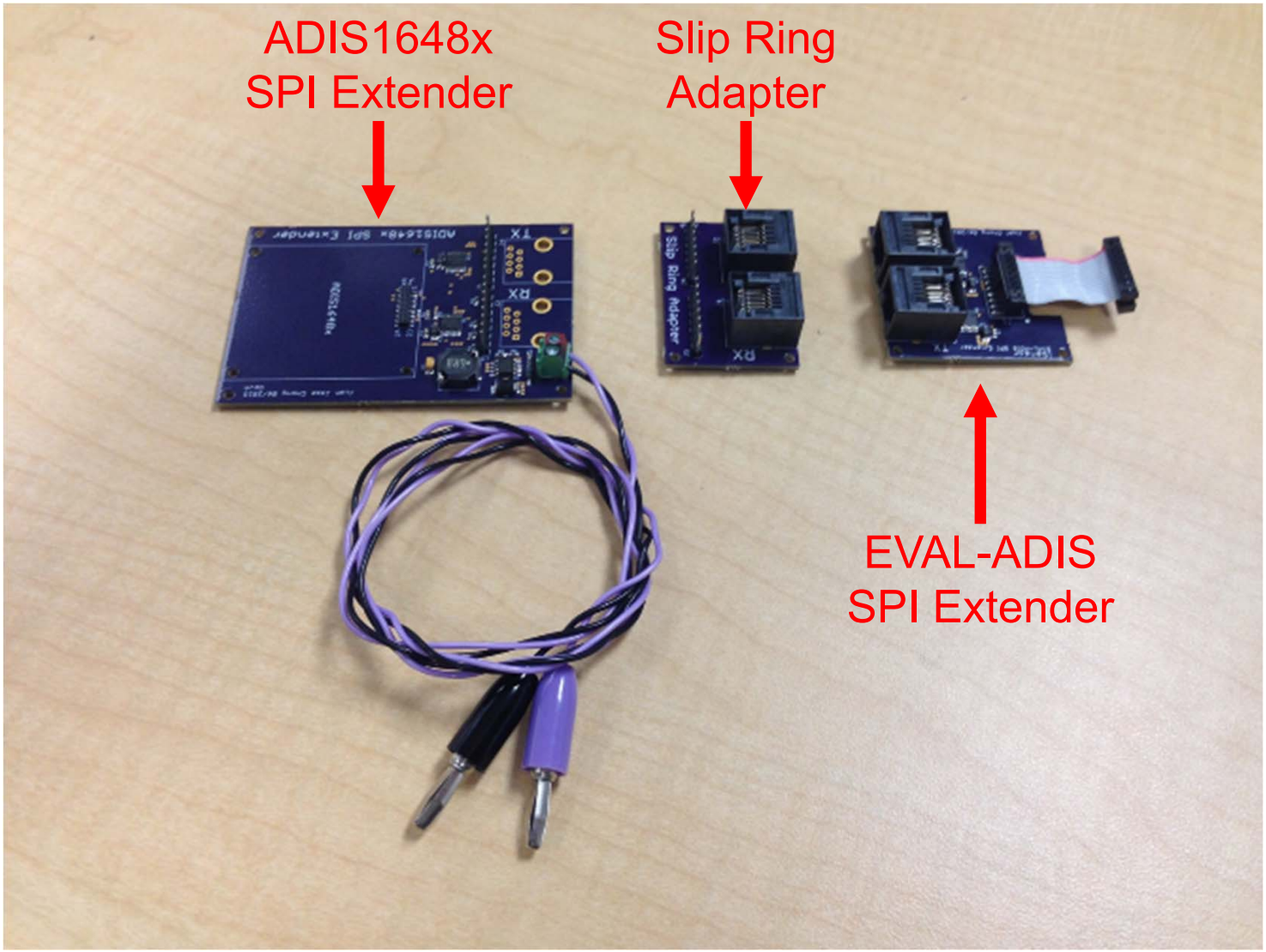
Present PC-based Evaluation System: EVAL-ADIS

- KEY LIMITATIONS
  - EVAL-ADIS will not presently support full temperature range of ADIS1648x devices.
  - J1 provides a convenient remote cable jack, which can deliver power to a remote device, while also supporting SPI, data-ready, input clocks and other I/O requirements.
  - ISSUE: J1 signal drive capability is inconsistent and can typically only supports 12 inches of ribbon cabling
  - SOLUTION:
    - EVAL-ADIS2 will improve both temperature and cable drive limitations but is still 2 months away from validation and preliminary availability.
    - In the interim, ADI has developed another possible solution.

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x Remote Evaluation Accessories

This kit includes three (3) Interface Boards

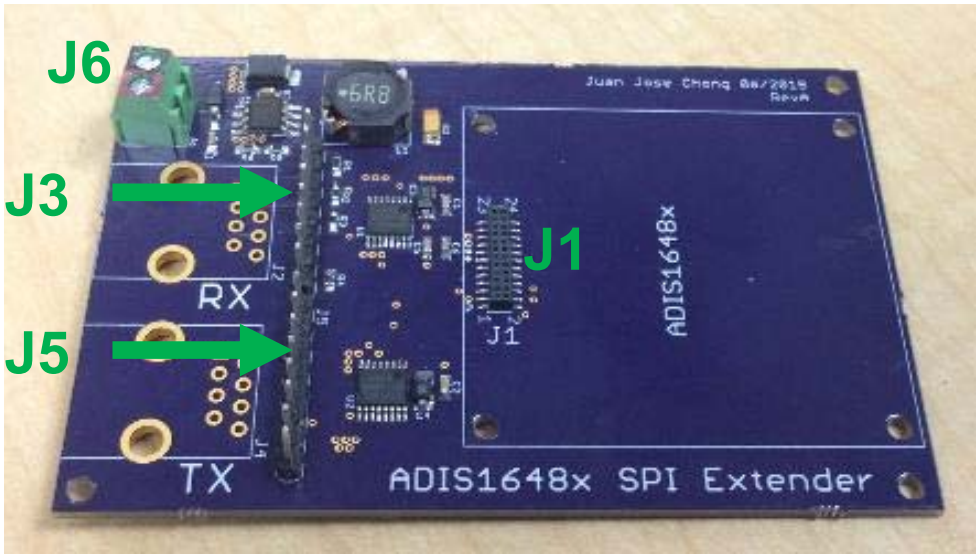


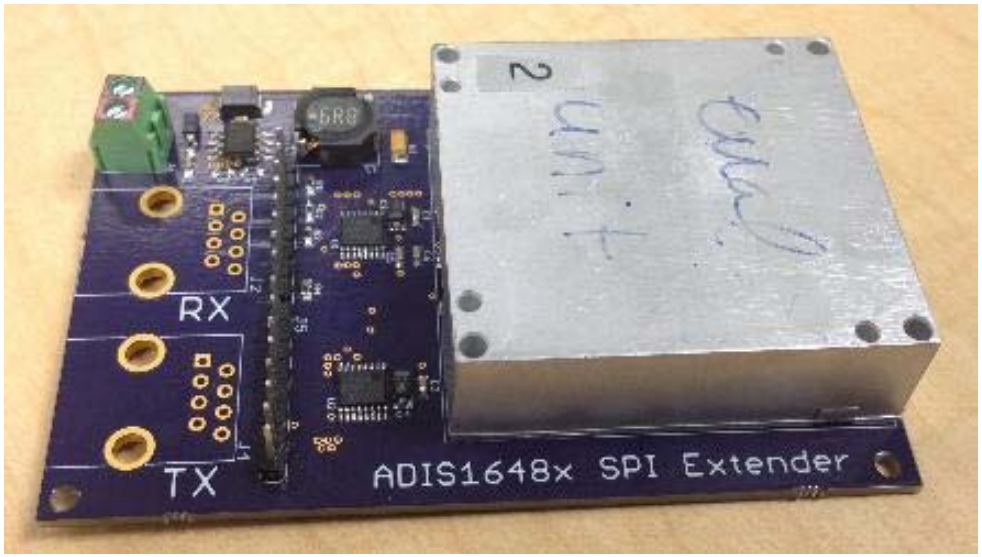
ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x SPI Extender

ADIS1648x to Slip Ring Interface PCB (LVDS drivers)

- ADIS1648x unit mates to J1 and PCB has through-holes for mounting to the rotating platform.
- J3 and J5 provide connection points to a slip ring interface
- CMOS to LVDS conversion happens between J1 and J3/J5 combination
- J6 provides power interface: +5V to +16V input range. Wires from this connector can also go through a slip ring.



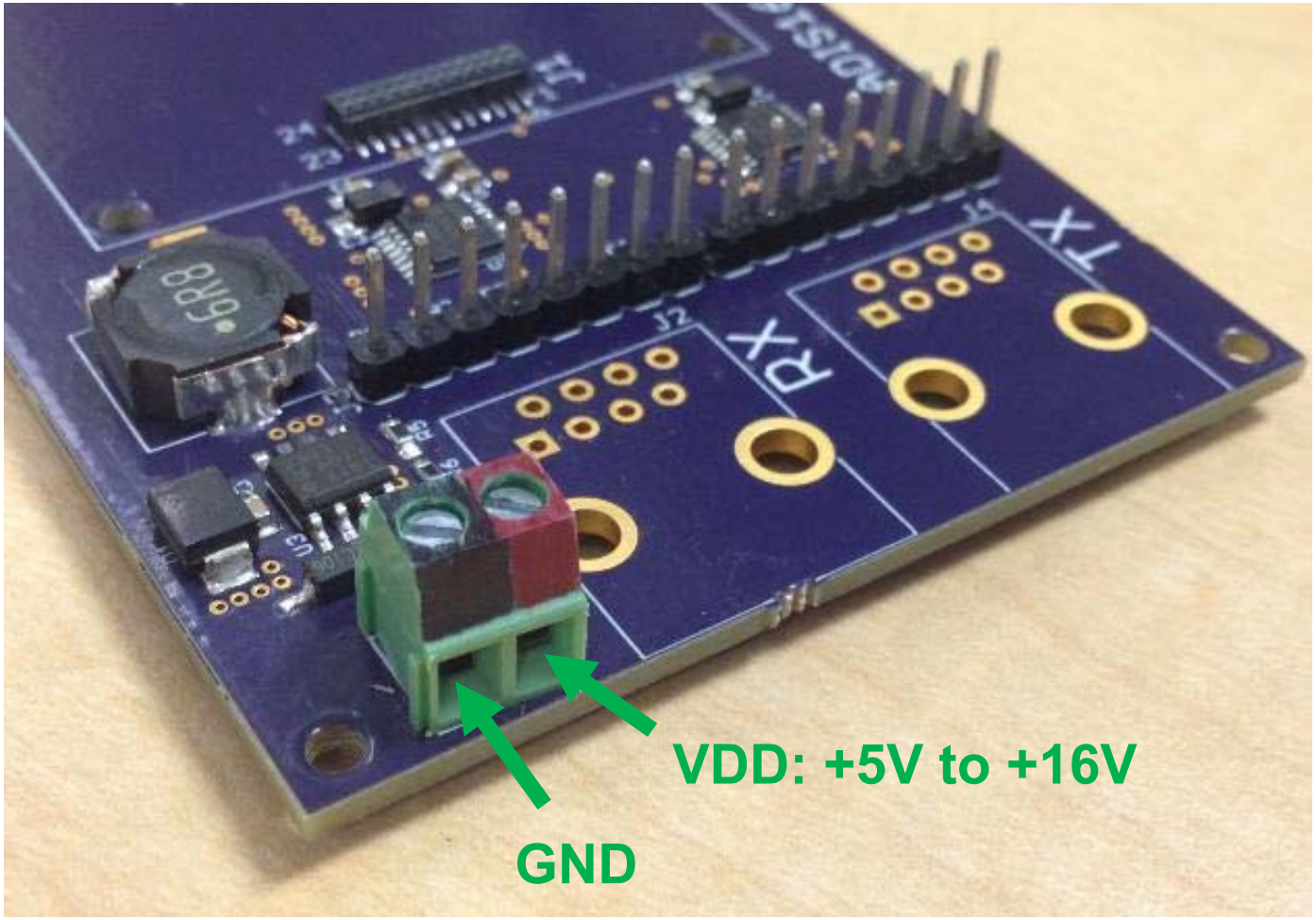


ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x SPI Extender

ADIS1648x to Slip Ring Interface PCB (LVDS drivers)

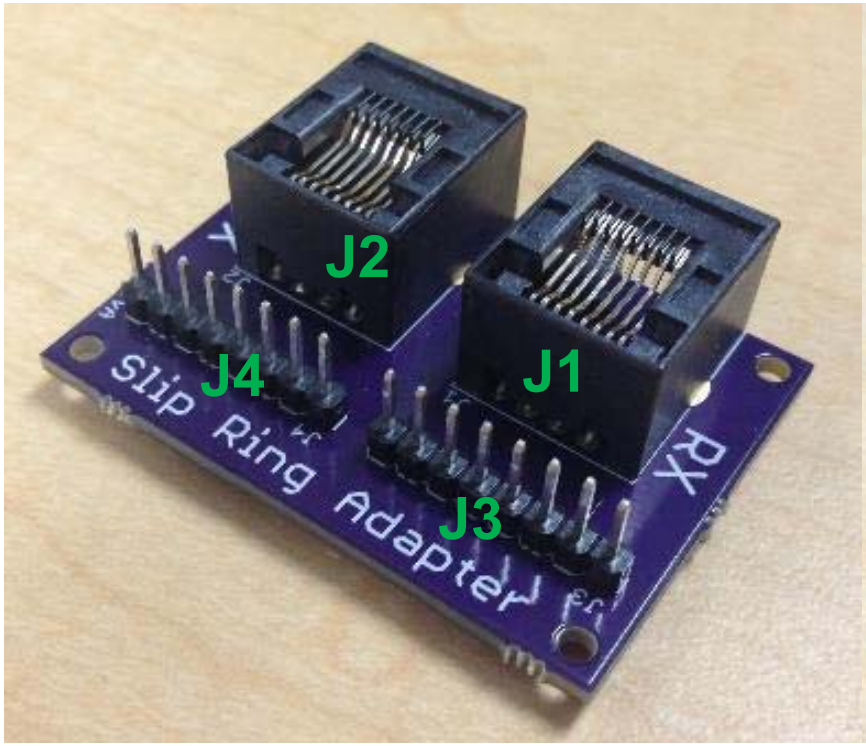
- J6 Detail

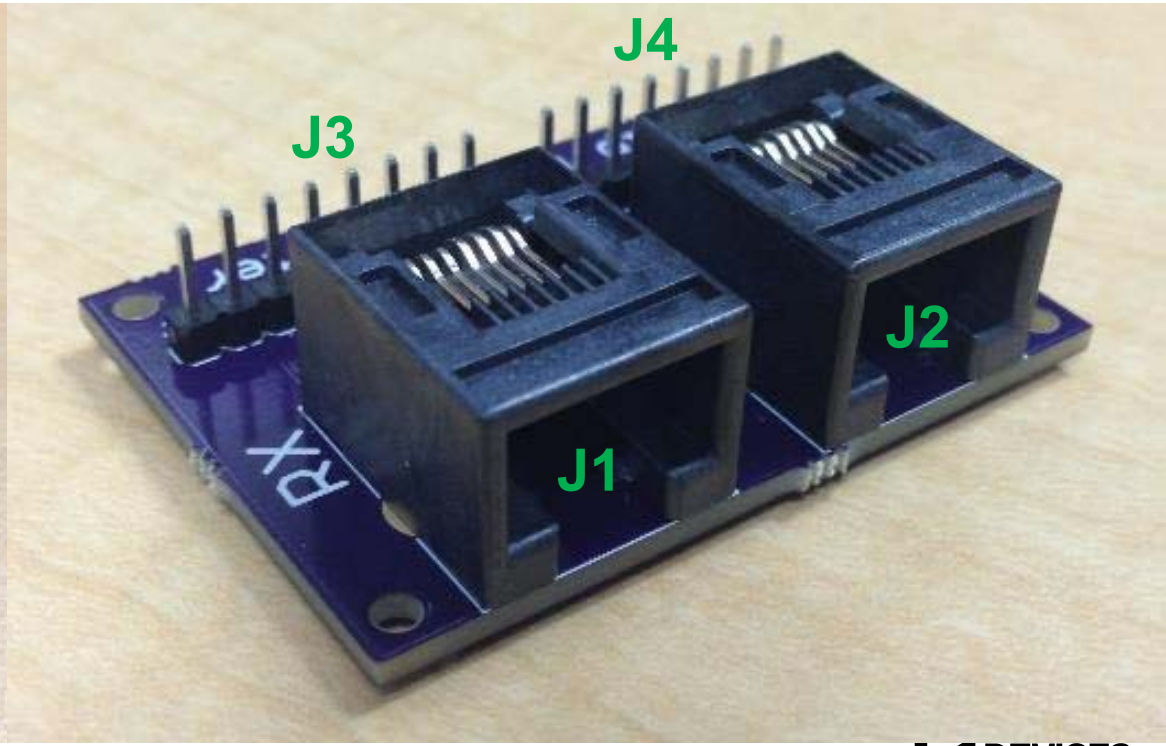


ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

Slip Ring Adapter PCB
Simple connector translation

- J1 and J2 connect to Ethernet cable
  J1 connects to J2 on the EVAL-ADIS SPI Extender PCB
  J2 connects to J3 on the EVAL-ADIS SPI Extender PCB
- J3 and J4 provide connection points to a slip ring interface
  J3 connects to J2 on the ADIS1648x SPI Extender PCB
  J4 connects to J3 on the ADIS1648x SPI Extender PCB

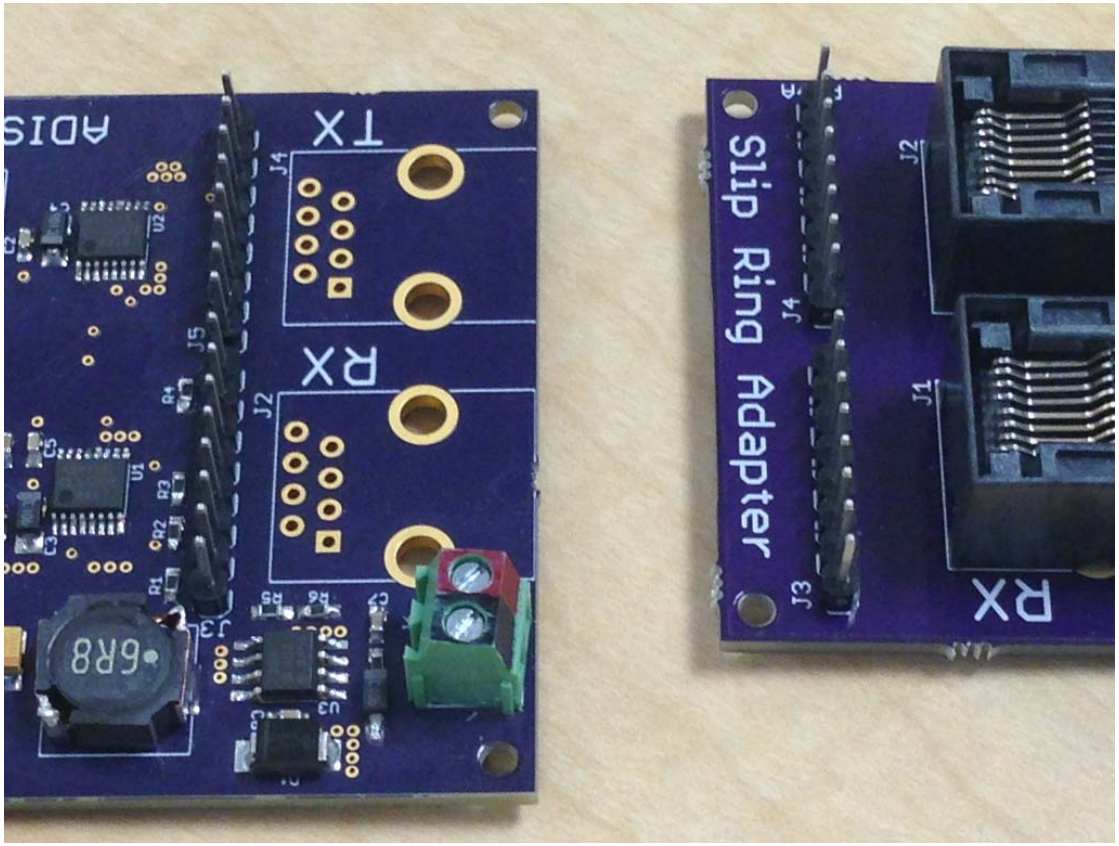




DEVICES
AHEAD OF WHAT'S POSSIBLE™

Slip Ring Adapter PCB
Simple connector translation

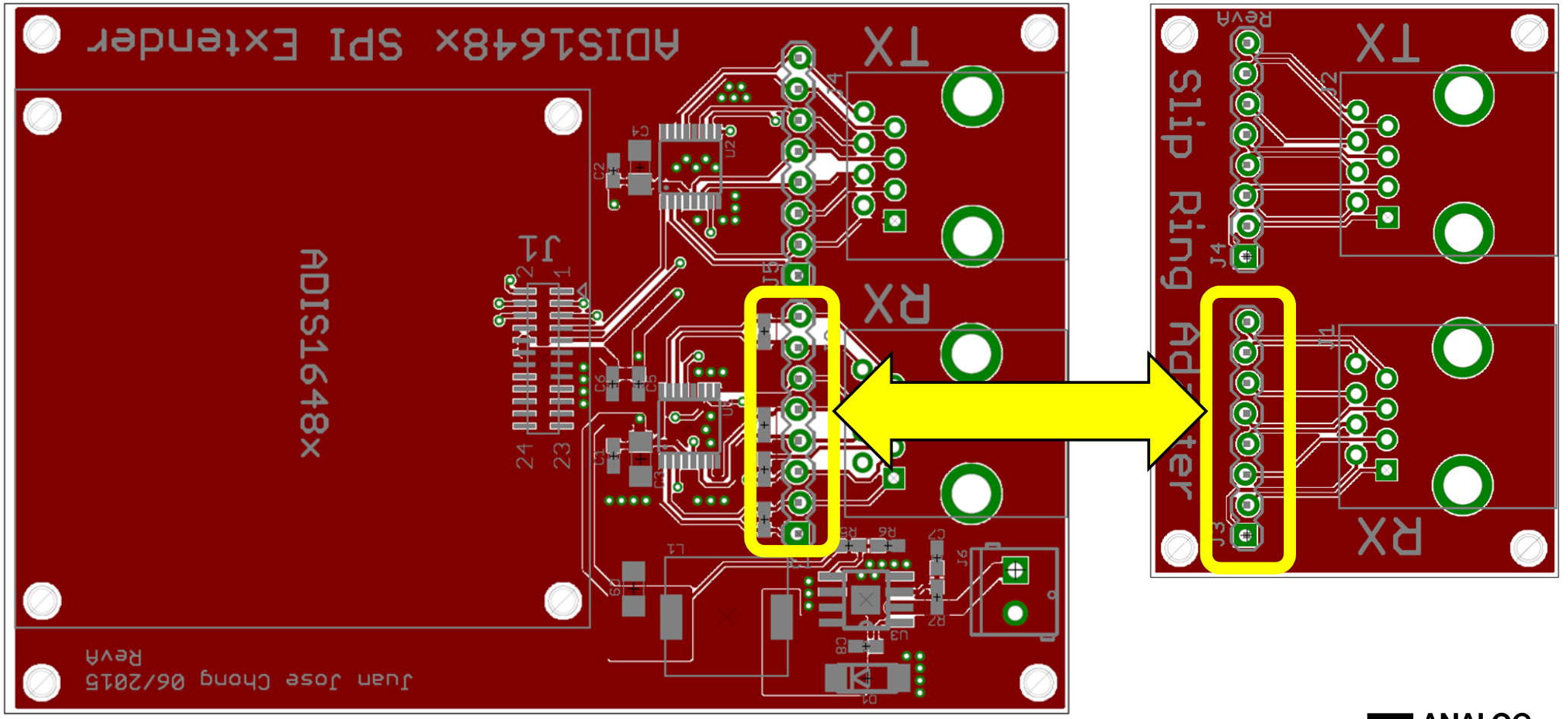
- J3 and J4 provide connection points to a slip ring interface
  J3 connects to J2 on the ADIS1648x SPI Extender PCB
  J4 connects to J3 on the ADIS1648x SPI Extender PCB



ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

Slip Ring Adapter PCB
Simple connector translation

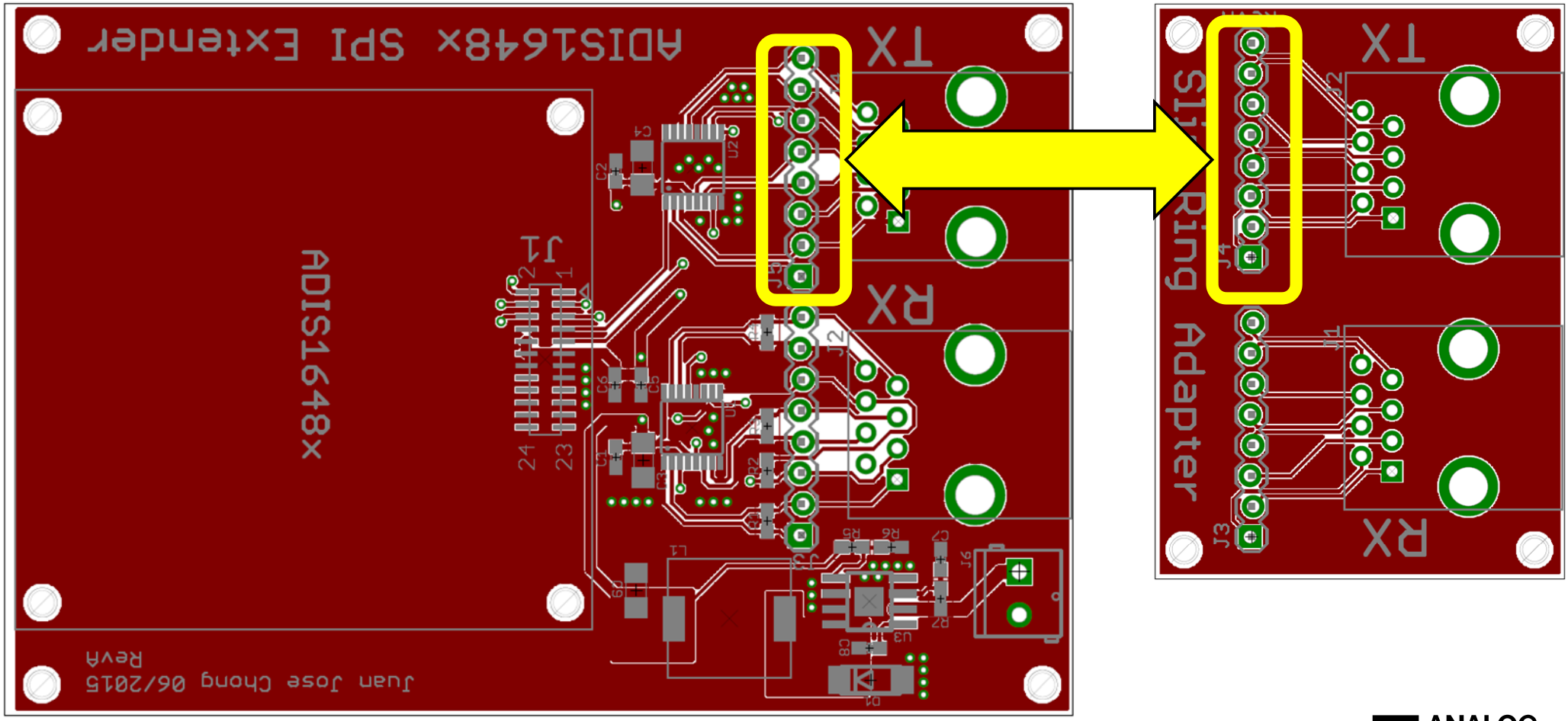
- J3 connects to J2 on the ADIS1648x SPI Extender PCB (connector have the same pin assignments)



ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

Slip Ring Adapter PCB
Simple connector translation

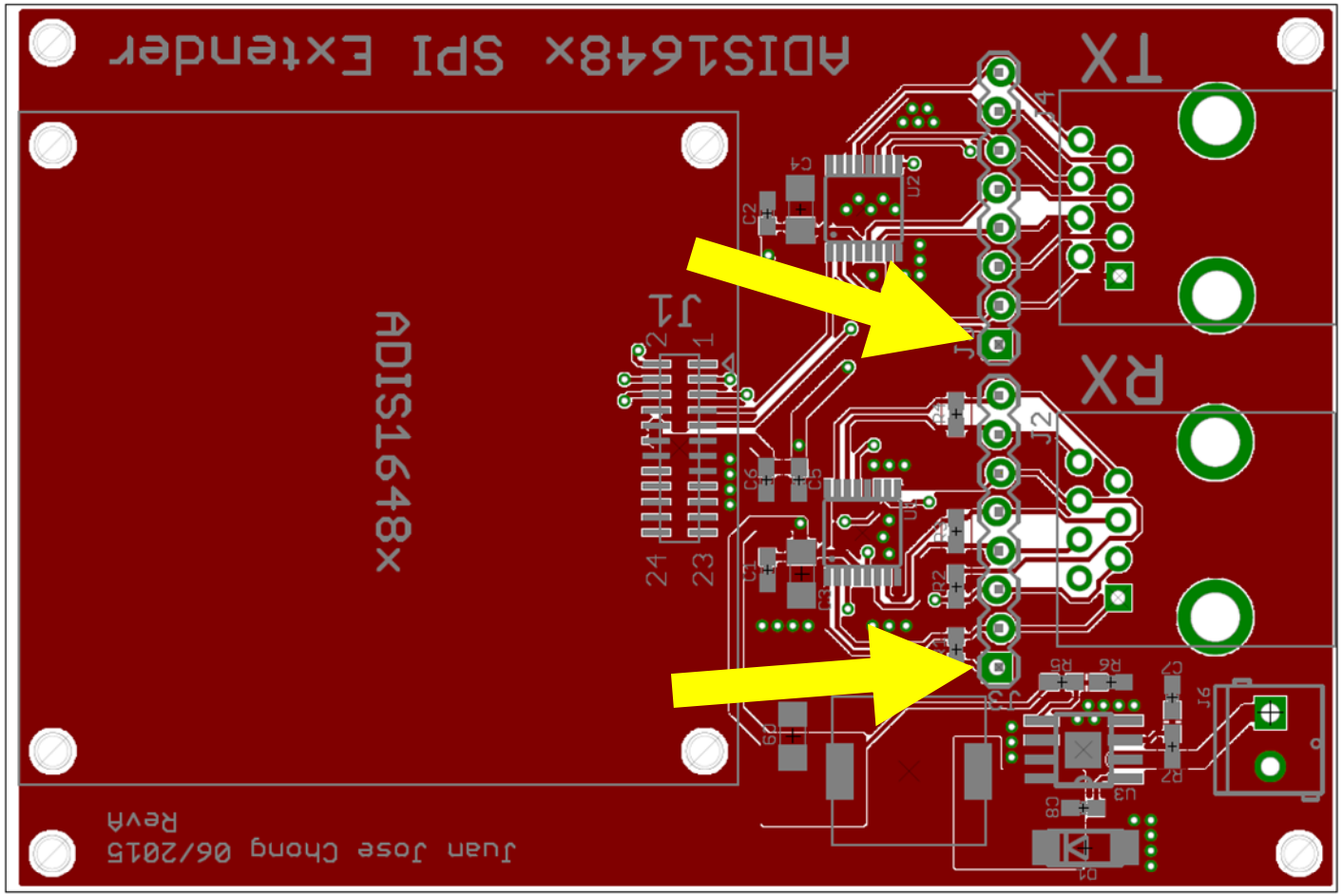
- J4 connects to J3 on the ADIS1648x SPI Extender PCB (connector have the same pin assignments)

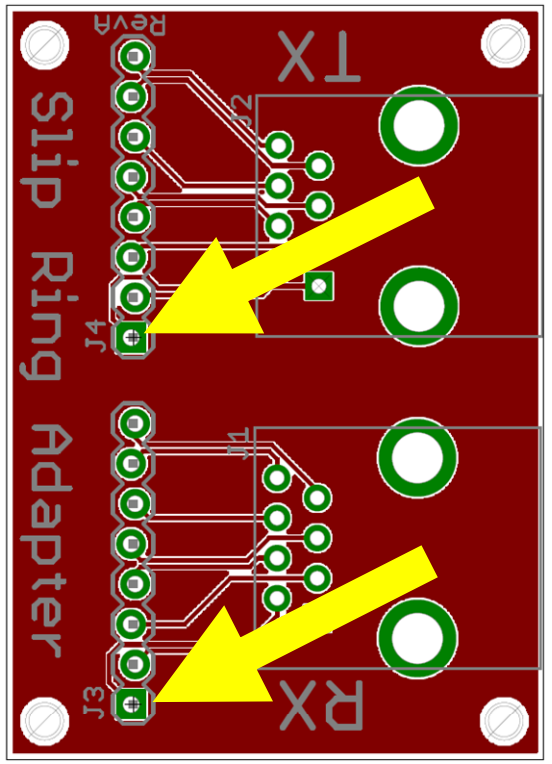


ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

Slip Ring Adapter PCB
Simple connector translation

- Pin #1 locations for each connector for the slip ring interface

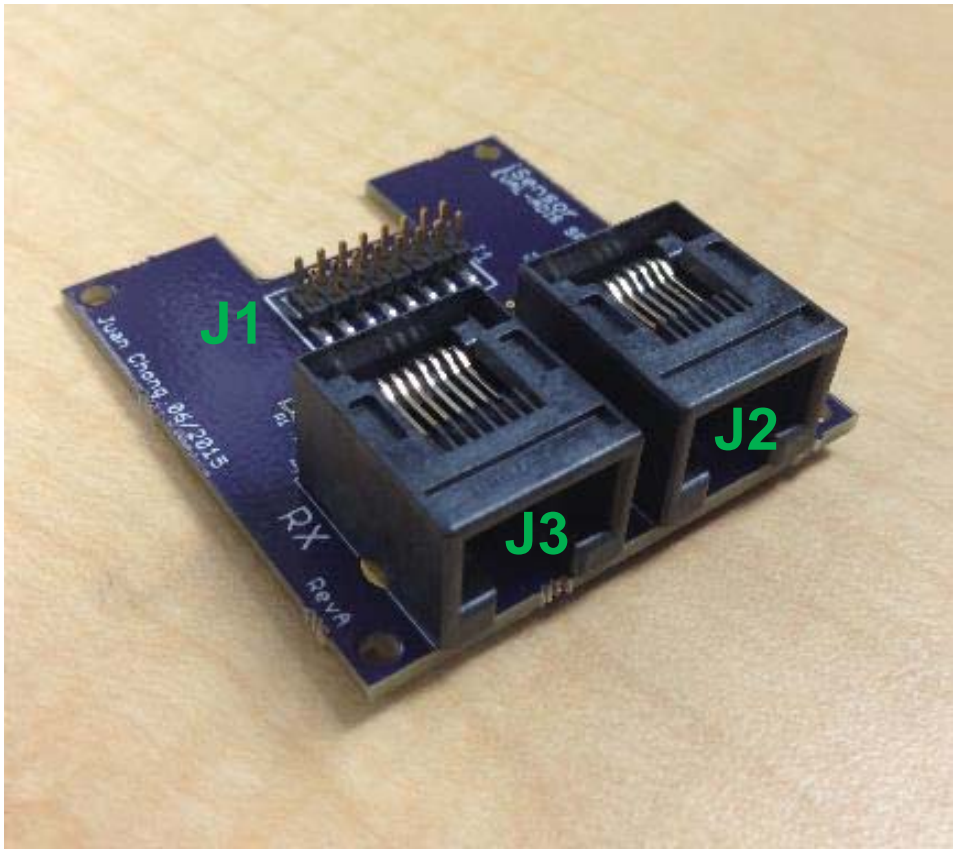


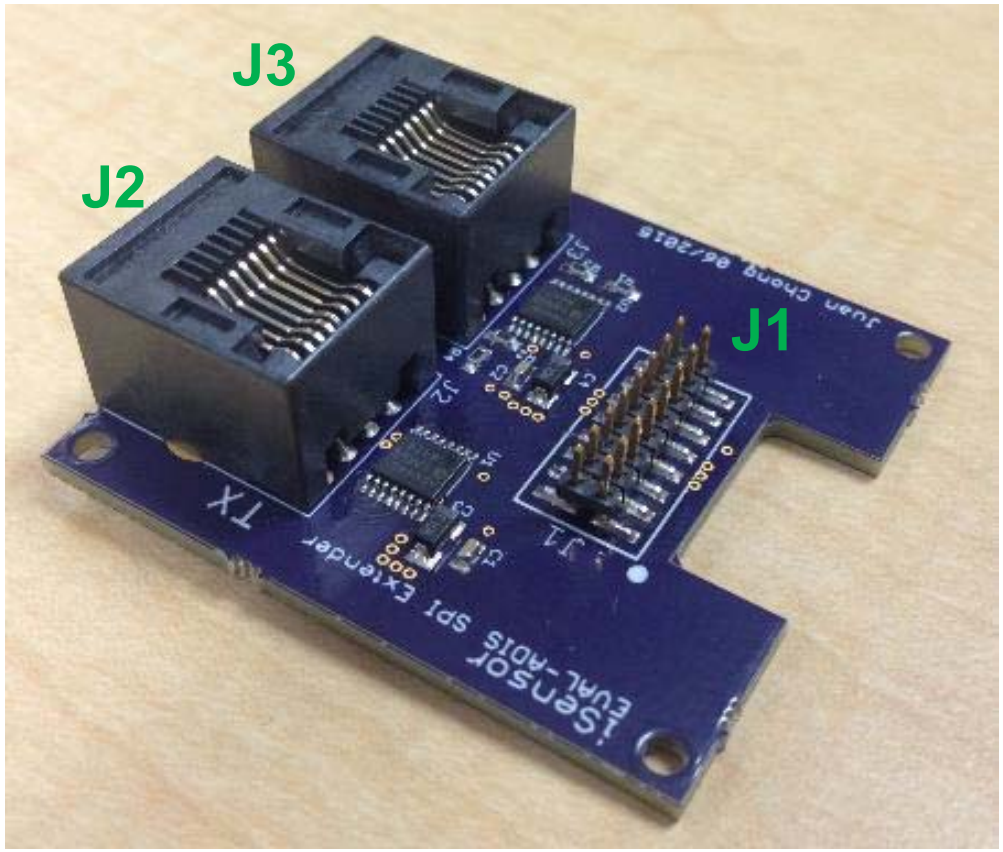


ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

EVAL-ADIS SPI Extender PCB
Translates EVAL-ADIS to LVDS signals for Ethernet cables

- J1 Connects to J1 on the EVAL-ADIS, using a 2x8/1mm pitch ribbon cable that has 2mm pitch connectors on theme
- J2 and J3 connect to Ethernet cable

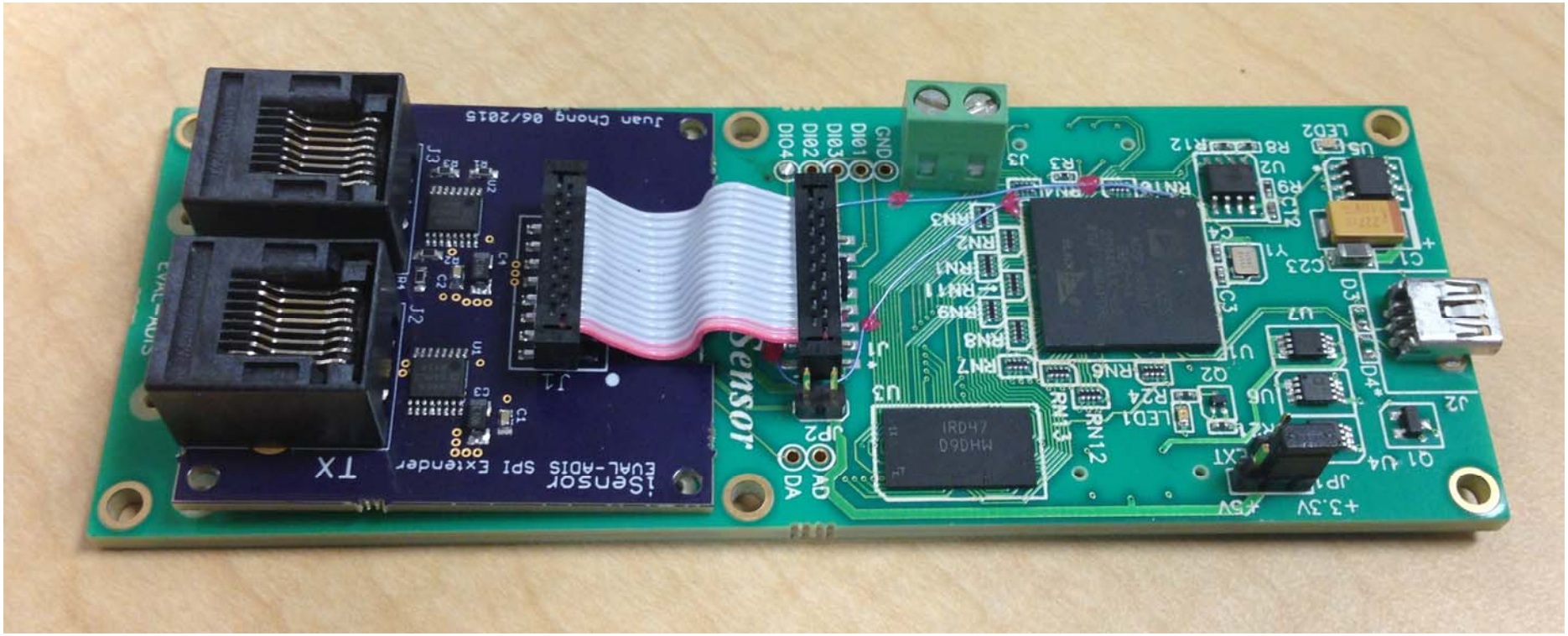




ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

EVAL-ADIS SPI Extender PCB
Translates EVAL-ADIS to LVDS signals for Ethernet cables

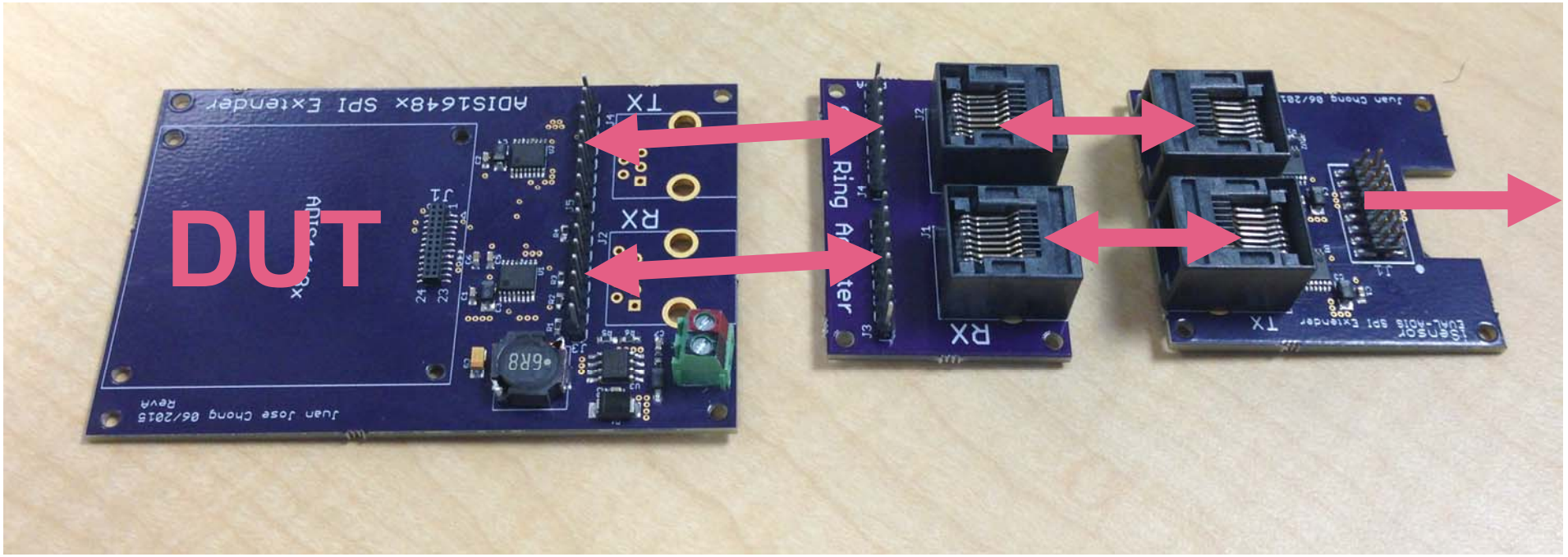
- J1 Connects to J1 on the EVAL-ADIS, using a 2x8/1mm pitch ribbon cable that has 2mm pitch connectors on theme
- J2 and J3 connect to Ethernet cable



ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x Remote Evaluation
Signal Flow, From Sensor (DUT) to PC

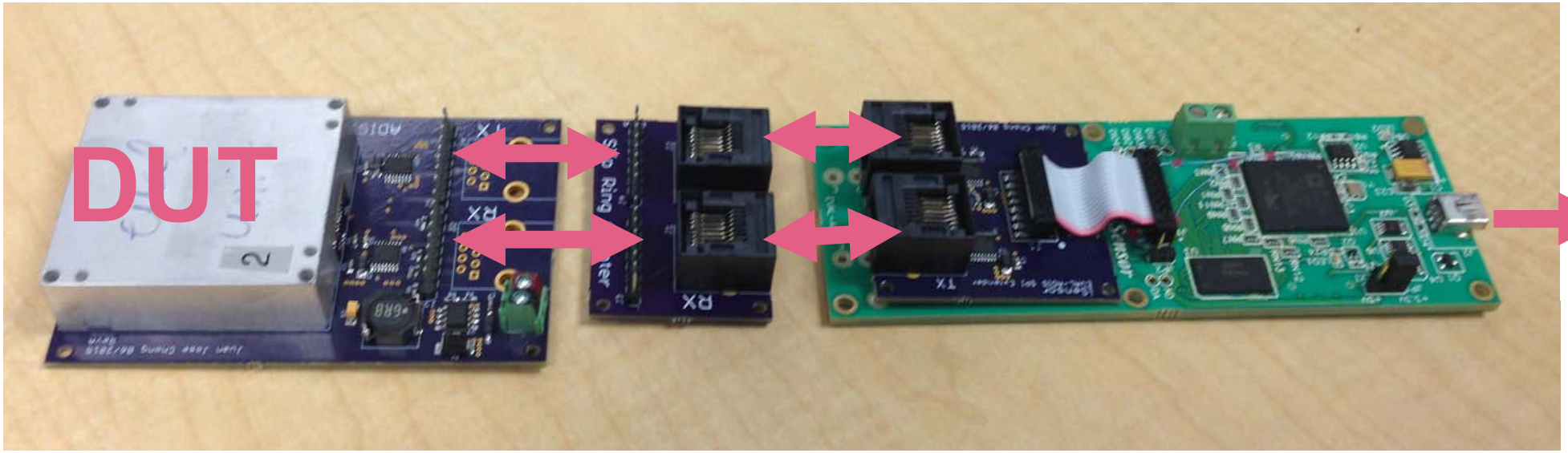
- Basic connections



ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADIS1648x Remote Evaluation
Signal Flow, From Sensor (DUT) to PC

- Basic connections
- Ethernet cable



ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™