



IQS7211AEV02A USER GUIDE

IQ Switch® - ProxFusion® Series

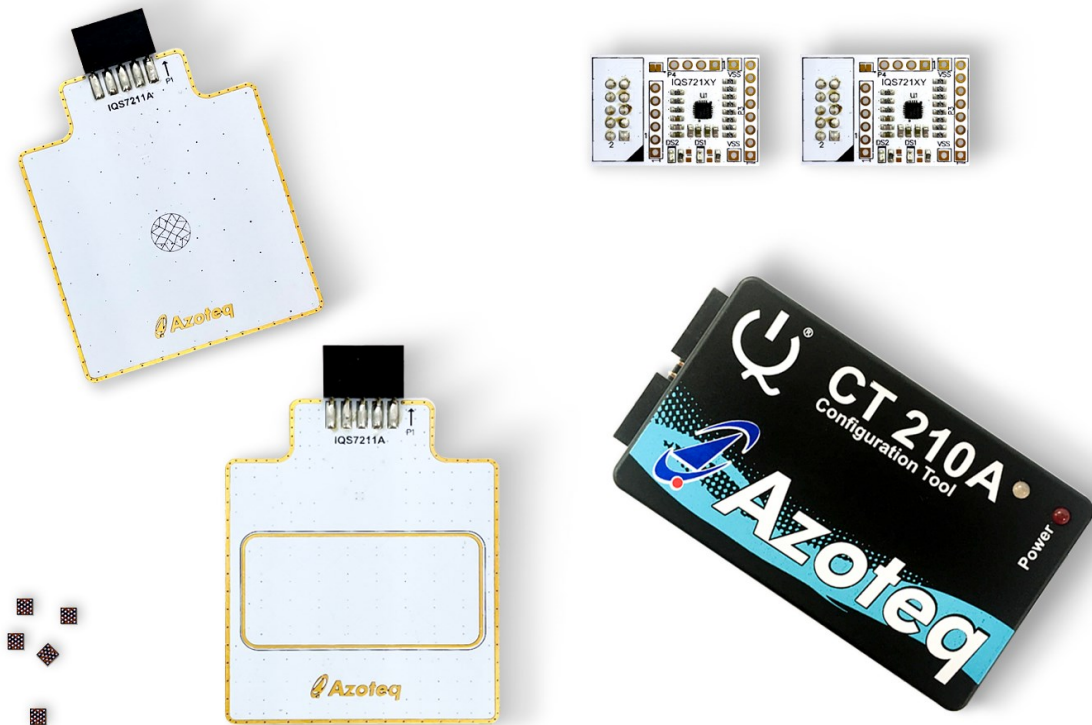




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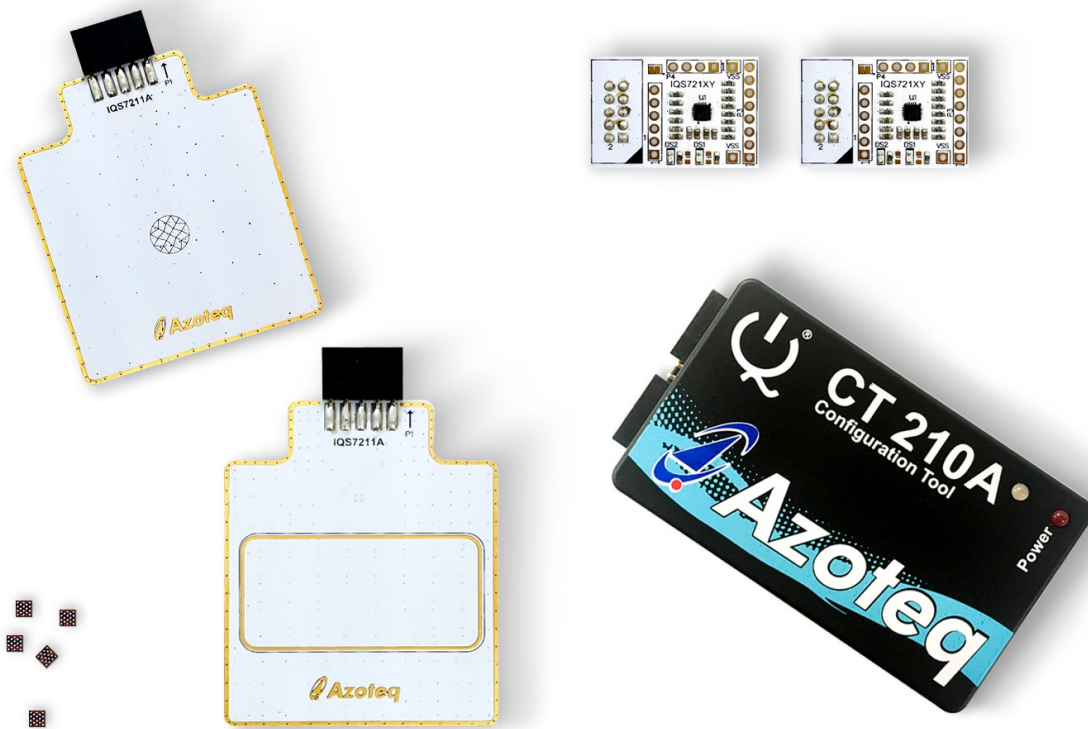


1 Introduction

This user guide describes the operation of the IQS7211AEV02A Evaluation Kit. The EV-Kit consists of five parts:

- IQS7211A Rectangle Trackpad x 1
- IQS7211A Flower Trackpad x 1
- CT210A x 1
- IQS7211A Stamp x 2
- IQS721XY IC x 5

To visualise raw data from the EV-Kit, the Trackpad board can be interfaced to any personal computer with USB support, along with the CT210A and the relevant IQS7211A software Graphical User Interface (GUI) available to download from the Azoteq website. The purpose of the IQS7211AEV02A EV-Kit is to help application and development engineers in evaluating this IC's capabilities. A picture of the evaluation kit is shown below.





2 Stamps

To interface the IQS7211A Stamp to a PC we advise using the CT210A. This EV Kit can be setup with the following steps:

- Download & Install GUI from Azoteq website
- Plug the stamp board into the CT210A as shown below





- Connect the CT210A to the PC with a USB cable (use USB data cable only)
- Run the IQS7211A GUI (latest version available from the www.azoteq.com website)
- Click “Start Streaming” button
- GUI should look as follow.

The screenshot displays the Azoteq IQS7211A V0.0.32 GUI. The interface is divided into several sections:

- Top Bar:** Includes navigation links (Visit Product Page, Reset Layout, About), the product name 'IQS7211A', and the Azoteq logo.
- Configuration Tool Manager:** Shows the device ID 'CT210A : 432465353235544805D8FF3'. It has 'PAUSE STREAMING' and 'STOP STREAMING' buttons. A status box indicates 'Device Connected', 'Power On', 'I2C Address: 0x56', and 'Settings read from device'. Below are 'LOGGING', 'IMPORT H FILE', and 'EXPORT H FILE' buttons.
- Settings Panel:** Contains 'WRITE CHANGES' and 'READ SETTINGS' buttons. A message says 'No Changes To Write'. A list of settings categories is shown, including ATI Settings, ALP ATI Compensation, Report Rates and Timing, System Settings, Trackpad Settings, ALP Settings, Settings Version Numbers, Gesture Settings, RxTx Mapping, Allocation of channels into cycles 0-9, and Allocation of channels into cycles 10-17. There is a 'Load settings from last session?' link and an 'EXPORT HEX...' button.
- Streaming Controls:** A row of buttons: ACK RESET, TRACKPAD RESEED, TRACKPAD RE-ATI, ALP RESEED, ALP RE-ATI, SOFTWARE RESET, and ENTER EVENT MODE.
- Data Grid:** A 6x5 grid of numerical values:

1049	930	1061	839	1078	603
1008	787	1018	503	1019	297
801	298	542	563	298	807
1032	987	1046	941	1065	820
1033	984	1045	949	1067	867
- Streaming Options:** Includes a 'CLEAR' button, 'RXTX MAPPING', and radio button options: None, Counts, Counts and Reference, Deltas, ATI Compensation, and Touch (checked). It also has 'XY Line Thickness' (set to 5) and 'Relative X'/'Relative Y' (both 0) fields.
- Finger Mapping:** Shows settings for Finger 1 (Line: Blue, X: 65535, Y: 65535, Touch Strength: 0, Area: 0) and Finger 2 (Line: Red, X: 65535, Y: 65535, Touch Strength: 0, Area: 0).
- Bar Chart:** A chart with a legend for 'Counts' (green) and 'LTA' (blue). The Y-axis ranges from 0 to 500. Below the chart are 'Counts' and 'LTA' fields, both showing 0, and 'Count A'/'Count B' fields, both showing 0.
- EVENTS VIEW LOG:** Shows 'INFO FLAGS' such as 'Trackpad Movement Too Many Fingers' and 'ALP Output'. It also displays 'Amount of Fingers' with a bar chart showing 0 for '0' and 1 for '1', and a total of 2. Below are more 'INFO FLAGS' like 'ATI Error', 'Re-ATI Occurred', 'ALP ATI Error', 'Reset Occurred', and 'ALP Re-ATI Occurred'.
- Charging Mode:** Shows 'Active Mode', 'Idle-Touch Mode', 'Idle Mode', and 'LP1 Mode'.
- GESTURES:** Lists 'Single Tap', 'Press And Hold', 'Swipe X-', 'Swipe X+', 'Swipe Y+', and 'Swipe Y-'.

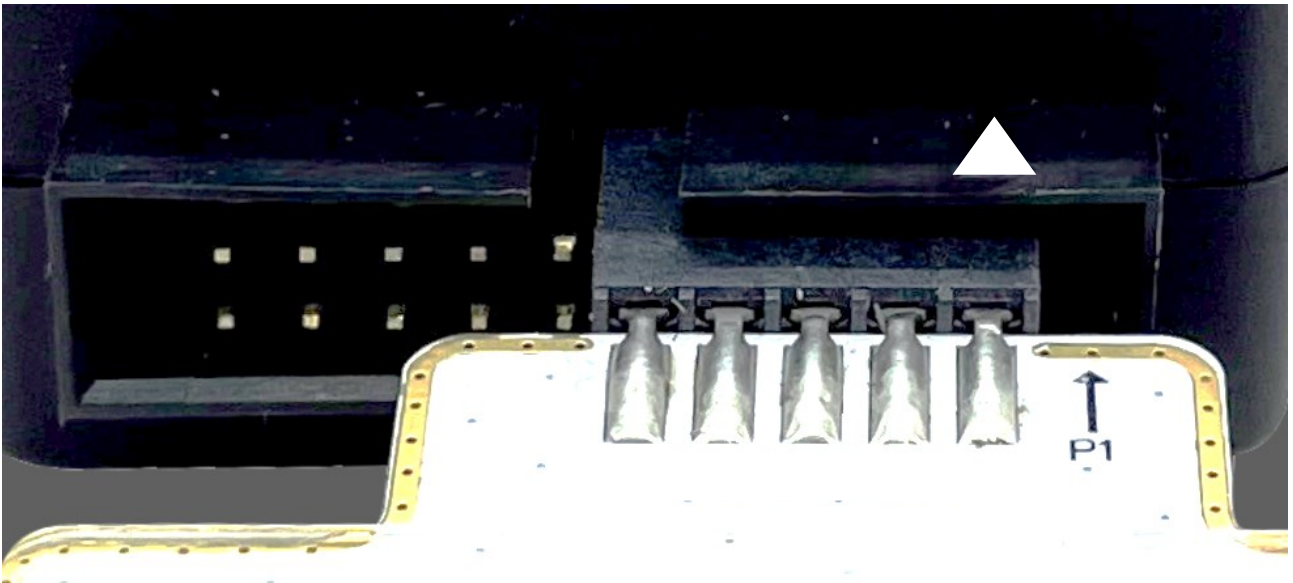


3 Trackpad Careful Consideration

Please note following picture when Flower Trackpad and Rectangle Trackpad modules are plugged into the CT210A.

Take care in ensuring pin alignment is correct as shown in picture below.

The pin on the right must line up directly below the black triangle (shown below as white triangle to clearly indicate) on the CT210A.





4 Setting up for the IQS7211A Rectangle Trackpad

To interface the IQS7211A Rectangle Trackpad to a PC we advise using the CT210A. This EV Kit can be setup with the following steps:

- Download GUI and Header files from Azoteq website
 - azoteq_iqs7211a_setup.zip
 - iqs7211a_header_files.zip
- Install GUI on PC
- Unzip iqs7211a_header_files.zip file to obtain header files
- Plug the Trackpad into the CT210A (Please ensure pin 1 from Trackpad module line-up with black triangle as shown earlier)
- Connect the CT210A to the PC with a USB cable (use USB data cable only)
- Run the IQS7211A GUI (latest version available from the www.azoteq.com website)
- Click “Start Streaming” button
- Click “IMPORT H FILE”
- Browse to “IQS7211A_Rectangle_Trackpad.h” file and click Open
- Click “ACK RESET”
- Click “TRACKPAD RE-ATI”
- GUI should look as follow.

The screenshot displays the Azoteq IQS7211A V0.0.32 GUI. The interface is divided into several sections:

- Configuration Tool Manager:** Includes buttons for PAUSE STREAMING, STOP STREAMING, LOGGING, IMPORT H FILE, and EXPORT H FILE. It shows settings read from the device and an imported H-file.
- Settings:** A list of settings categories such as ATI Settings, ALP ATI Compensation, Report Rates and Timing, System Settings, Trackpad Settings, ALP Settings, Settings Version Numbers, Gesture Settings, RxTx Mapping, Allocation of channels into cycles 0-9, and Allocation of channels into cycles 10-17.
- Main Data Grid:** A table of numerical values, likely representing touch coordinates or counts. The values are arranged in a grid with 4 rows and 8 columns.
- Streaming Options:** Includes a CLEAR button, RXTX MAPPING, and options for None, Counts, Counts and Reference, Delts, ATI Compensation, and Touch. It also shows XY Line Thickness (5), Relative X (0), and Relative Y (0).
- Finger Configuration:** Shows Finger 1 with Line Color (blue), X: 65535, Y: 65535, Touch Strength: 0, and Area: 0.
- Bar Chart:** A chart showing Counts for ALP (4085) and LTA (396). It also displays Count A (2047) and Count B (2047).
- Events and Info Flags:** A section for tracking events like Trackpad Movement, Too Many Fingers, and ALP Output. It also shows various error flags and charging modes.

Trackpad is now active to be evaluated.



5 Setting up for the IQS7211A Flower Trackpad

To interface the IQS7211A Flower Trackpad to a PC we advise using the CT210A. This EV Kit can be setup with the following steps:

- Download GUI and Header files from Azoteq website
 - azoteq_iqs7211a_setup.zip
 - iqs7211a_header_files.zip
- Install GUI on PC
- Unzip iqs7211a_header_files.zip file to obtain header files
- Plug the Trackpad into the CT210A (Please ensure pin 1 from Trackpad module line-up with black triangle as shown earlier)
- Connect the CT210A to the PC with a USB cable (use USB data cable only)
- Run the IQS7211A GUI (latest version available from the www.azoteq.com website)
- Click “Start Streaming” button
- Click “IMPORT H FILE”
- Browse to “IQS7211A_Flower_Trackpad.h” file and click Open
- Click “ACK RESET”
- Click “TRACKPAD RE-ATI”
- GUI should look as follow.

The screenshot displays the Azoteq IQS7211A V0.0.32 GUI. The main window shows a 3x3 grid of touch counts. The top row contains three '297' values. The middle row contains '295', '298', and '295'. The bottom row contains '298', '296', and '298'. To the right of the grid is a 'Finger: 1' panel with the following data: X: 65535, Y: 65535, Touch Strength: 0, and Area: 0. The top right corner features a 'Bar Chart' and an 'EVENTS INFO FLAGS' section with various status indicators.

Trackpad is now active to be evaluated.



6 Reference Designs

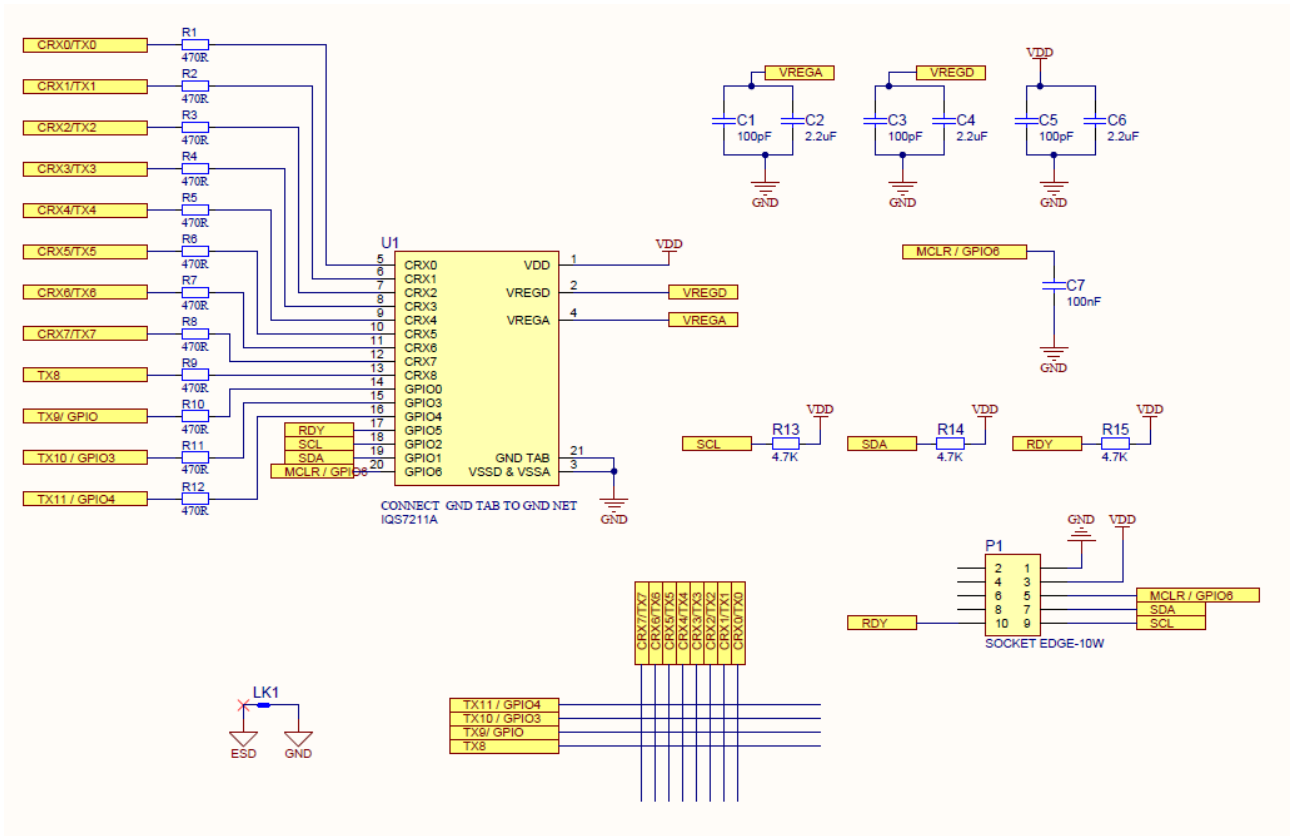


Figure 6-1 IQS7211A Rectangle Trackpad Layout

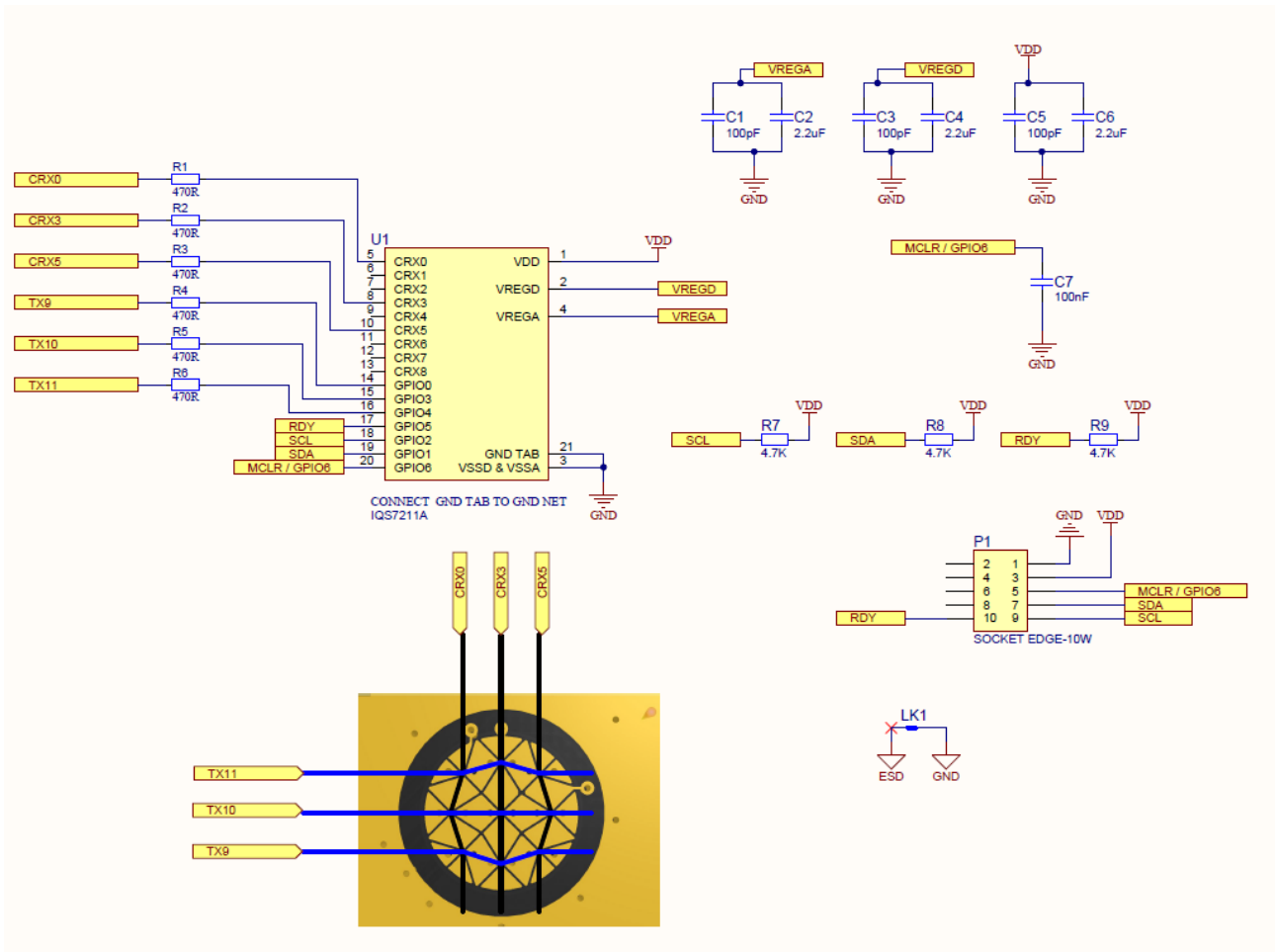


Figure 6-2 IQS7211A Flower Trackpad Layout

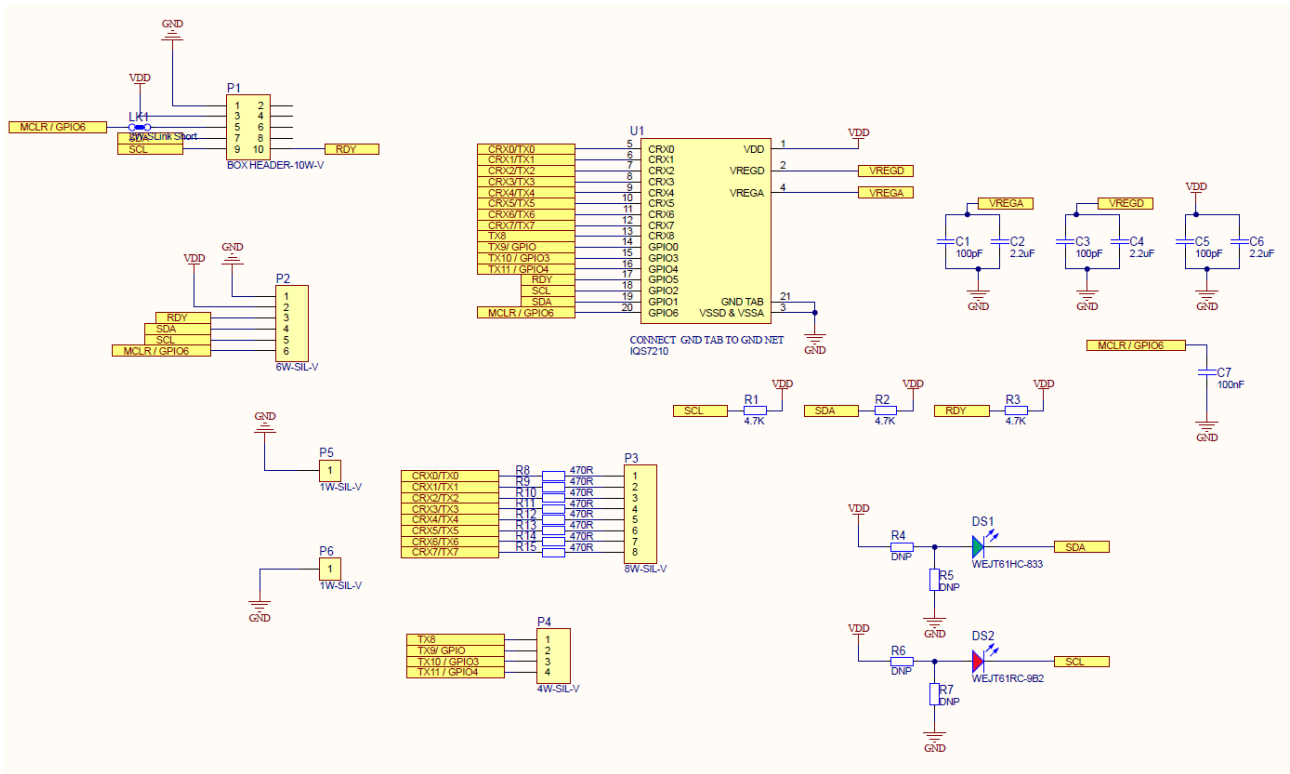



Figure 3 IQS7211A QFN20 Stamp Layout



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