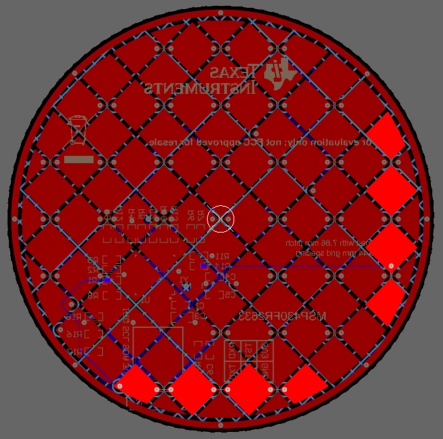
**Background**

Circular trackpads pose a particular problem when the combination of the sensors diameter and number of rows/cols position place some RX/TX intersections (aka element) outside of the sensor’s perimeter. These outside elements cannot be calibrated or measured and can cause unwanted behaviors. At present, the only solution is to un-map these RX/TX pairs so they are not included in the calibration or measurement process.



This document describes this scenario using an 8X8 configuration on a 100mm diameter sensor and explains how the work around is implemented.

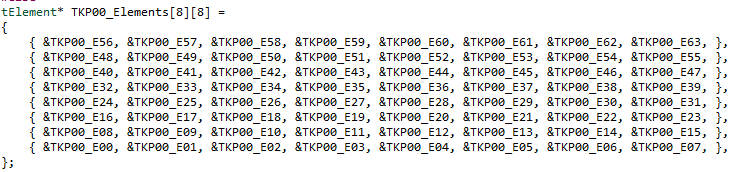
These are the connections for this example.



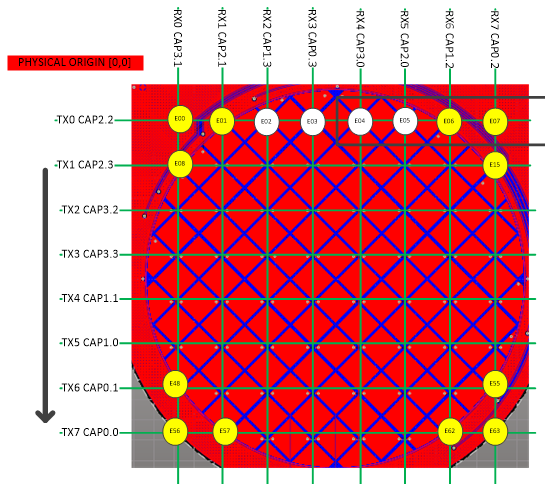
The CDC generated this electrode assignment.



Here is the matrix generated automatically by the CDC.



Observing the PCB, It is easy to identify the RX/TX intersections (yellow elements) that must be removed.



Here is complete list of electrodes to be removed in this example:

{E00,E01,E06,E07,E08,E15,E48,E55,E56,E57,E62,E63}

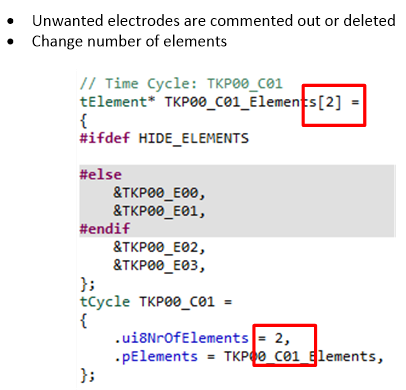
**Workaround**

The workaround requires the following steps:

1. Modify element arrays that contain one or more unused elements
2. Create a “dummy” element to represent the unused elements in the results matrix
3. Modify the matrix to replace

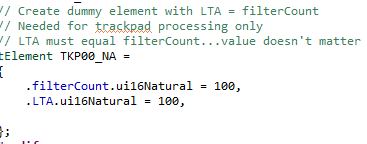
***(1) Modify element arrays***

Edit individual cycle array structures as shown below. As an example, you can see here that electrodes E00, E01, E06 and E07 can be commented out or deleted. Note that the number of elements must be changed from 4 to 2. Perform changes for all remaining unwanted electrodes.

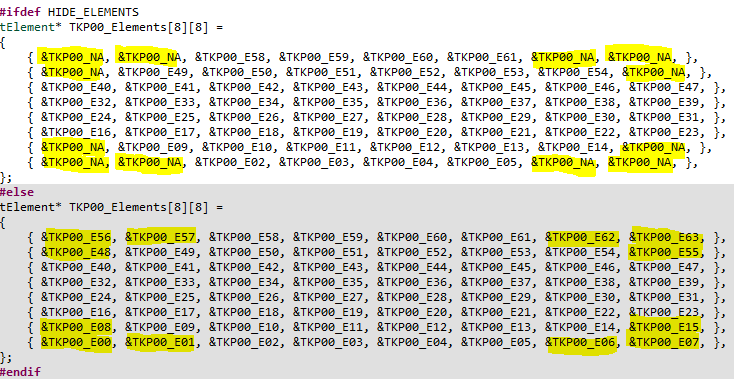


***(2) Create Dummy Element***

Create a dummy element TKP00\_NA, where TKP00 is the name assigned to your trackpad



Modify the results array by substituting the unused elements with the dummy element. Here is matrix before and after substituting the dummy element.



Compile and program target MCU. Calibration and measurements run normally and do not include those elements that have been removed. For the processing, the LTA and filterCount assigned to the single dummy element is used for those elements that are not included. Since the LTA and filterCount will always be the same, their contribution to the XY position calculation = 0.