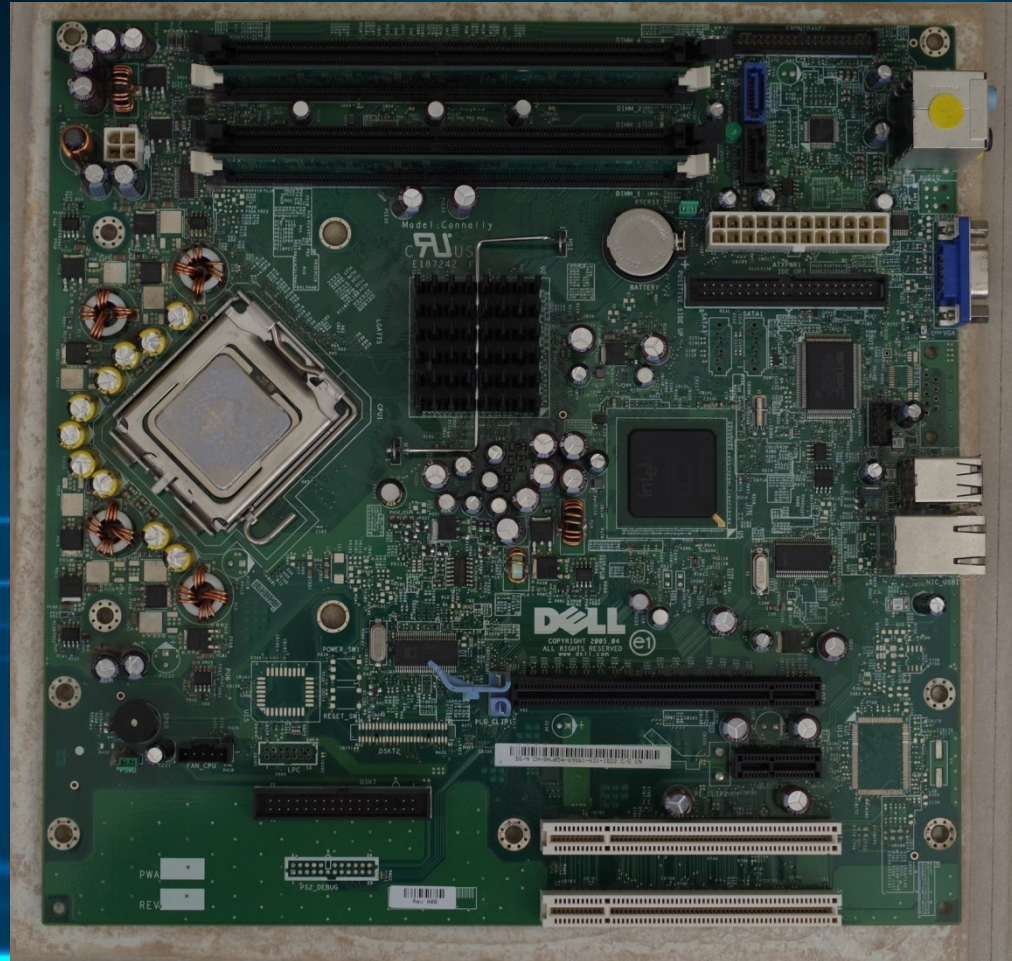# Focus Stacking

What is it ?

How to do it ?

A Quick Explanation

- Focus Stacking is the combining of several images taken at different focus distances so that the entire resulting image is in focus.

- Why would you do this ?

- Macro Photography

- Depth of Field

- Lens Sweet Spot

How to do it !

- In this example I have taken a number of images of a computer motherboard.

- I could take a picture from above and the entire motherboard would be a similar distance from the camera – easy to focus.

- This would be a boring picture !!

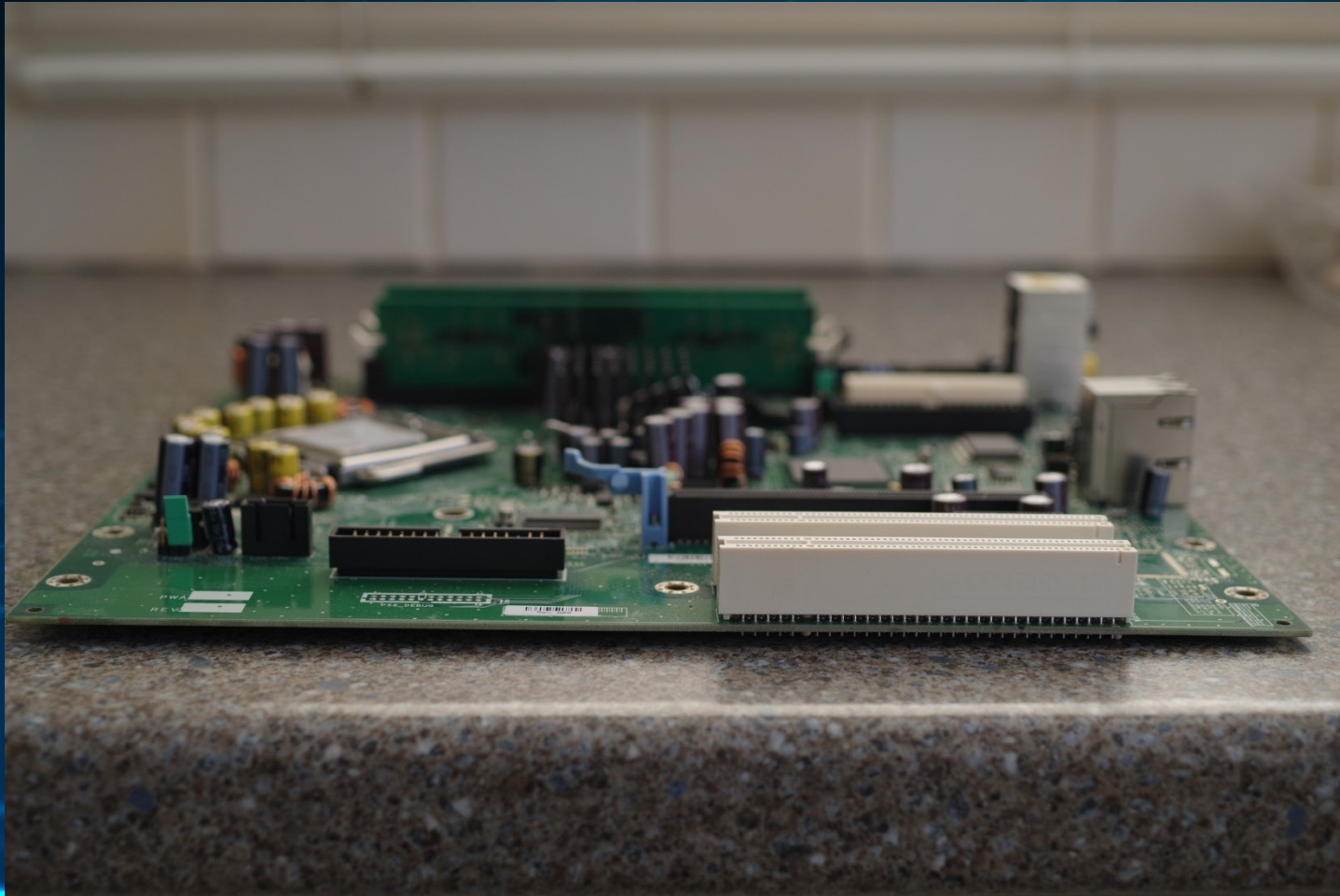- More interesting would be a picture taken from a low angle a one edge.
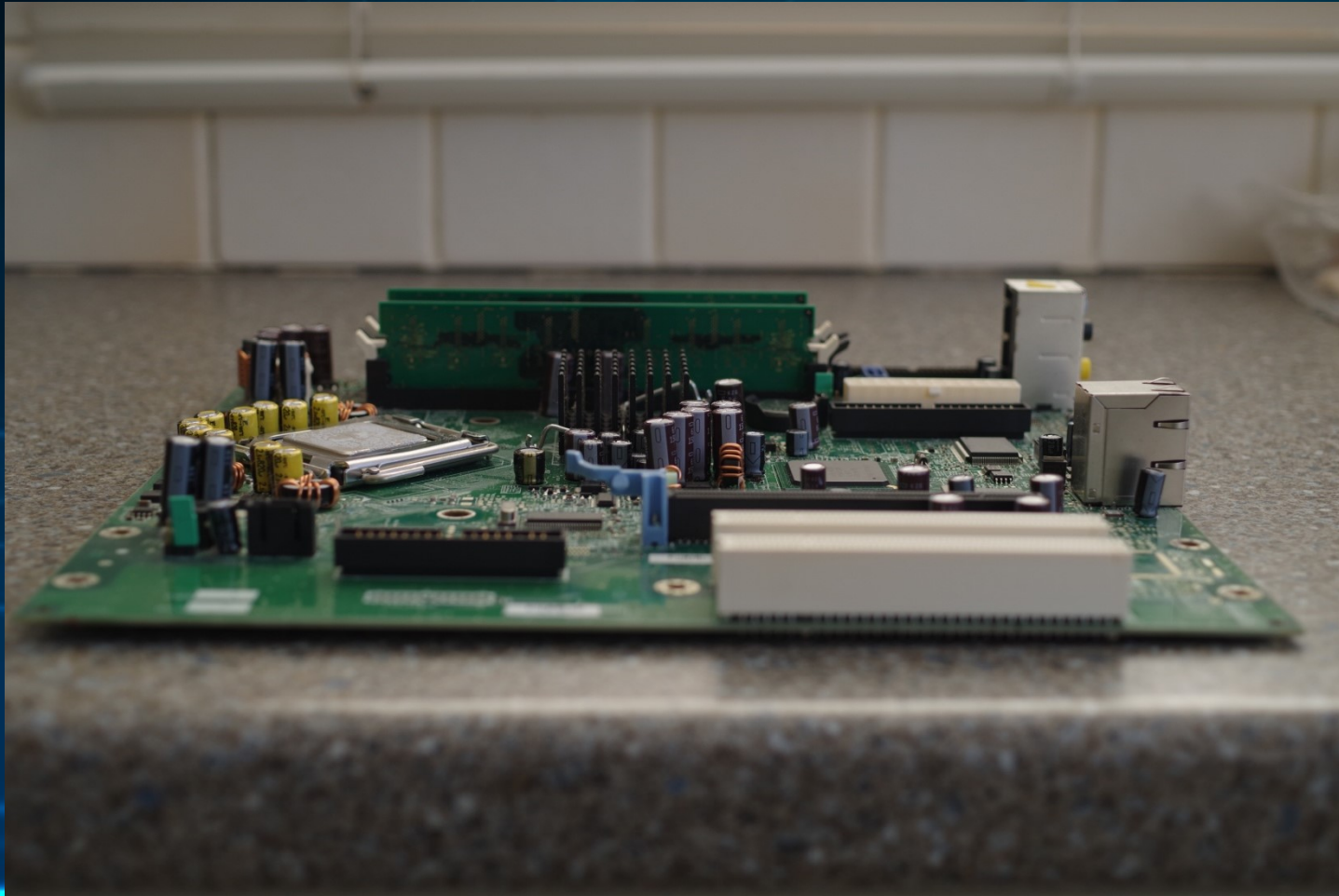
From Above – Boring !!

How to do it – Taking Pics!

- Camera to Manual Focus & Lens aperture to sweet spot.

- Focus on the foreground and take the 1st picture

- Look at the result. Refocus the camera where the furthest sharp area is. This will overlap the depth of fields.

- Repeat the process until you have got the whole object in the depth of field.

How to do it – Pic 1

How to do it – Pic 4

How to do it - Results

- Look at the pictures. What else changes apart from the focus point?

- The motherboard remained fixed in position. But there is a change in the size and position of each component from one photo to the next.

- When you change the focus, you're also affecting the size of the image on the sensor by a small amount.

- Therefore you need software to align the images before they are combined to give a sharp result.

Photoshop Procedure

- Files / Scripts / Load Files into Stack

- Select the files (or folder if they are all together)

- Tick 'Attempt to Automatically Align Source Images'

- You should see your photos arranged in the layers palette ready for processing.

- Select all the layers, and from the main menu, select Edit / Auto-Blend Layers.

Photoshop Procedure

- Select 'Stack Images' and tick both the other boxes and hit 'OK'. Photoshop will generate layer masks. These will reveal the sharp areas of each layer.

- Photoshop will then combine these layers into a new merged layer. This will appear at the top of your layers palette.

- You will then need to trim the resulting image to remove some blurred edges and you should have an image that is sharp across the entirety of the object you have photographed.

Other Set Ups Tonight

- Kiwi Fruit and Gel