The Digital Camera

The process of acquiring and storing a digital image using a Kodak digital camera is extremely easy for you to accomplish. That's because the bulk of the work goes on inside the camera, where you can't usually go. However, this section will familarize you on the internal workings of a Digital camera.
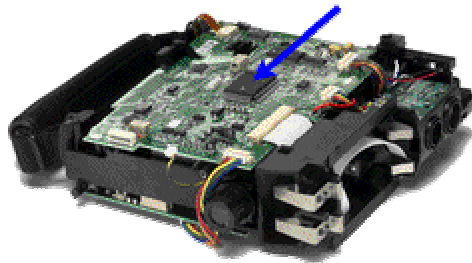

New lets get started on your tour of the Kodak Digital cameras interal operation.

In order to illustrate the process used by the camera, we've dissected it. The images below are various views which provide you the opportunity to see the appropriate component(s) as described in the process step.
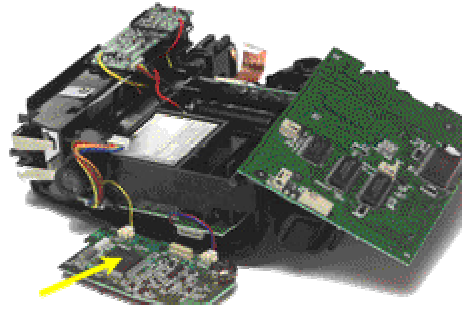
1 Power on the camera

The MCU chip (indicated by the blue arrow) is the "project manager" for the camera and monitors all tasks taking place in the camera. During power up, the MCU goes out and checks that all the major camera components are okay and ready to do their jobs. If any major component is not working, a message appears in the LCD and the camera stops working. If everything is okay the camera will be ready to capture images.

2 Focus on a subject

Kodak Digital cameras are auto-focus. When a user takes a picture he/she presses and holds down the shutter button half way. This position is called the "S1 position." When the button is in the S1 position the 4-bit MPU (indicated by the yellow arrow) takes a light reading and determines how

long the shutter should remain open and how much light is necessary.

3 Snap the picture

The shutter opens for the length of time specified by the 4-bit MPU. The charged-coupled device (CCD) (indicated by the blue arrow) captures light reflected from the original scene and stores that light as red, green, and blue pixels.
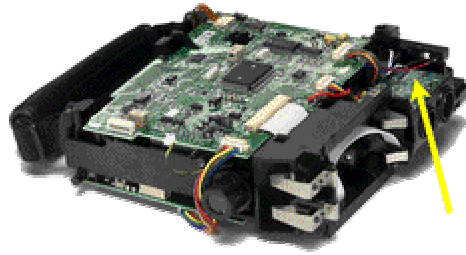
4

Process the image

The pixels start moving off the CCD row by row in a serial fashion (one after the other). They pass through many of the components in the camera for white balance, color, and aliasing correction. The pixels continue on until they get to the 4MB Frame board (indicated by the red arrow).

5

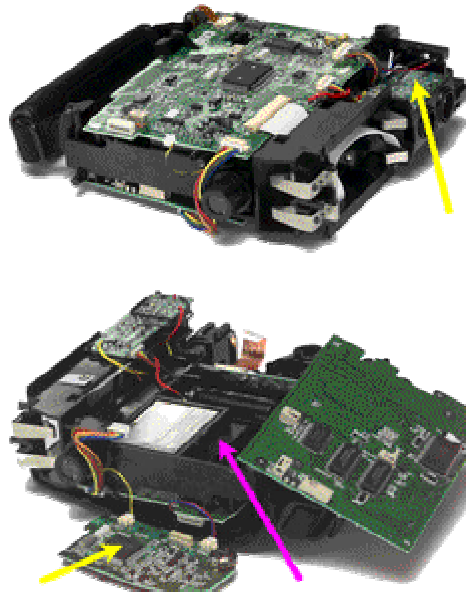Put the image back together

The 4MB Frame board (indicated by the yellow arrow) puts all the pixels back together in the form of a digital image.
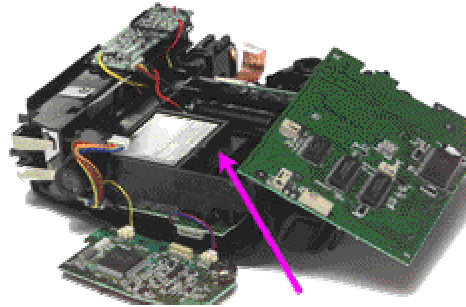
6

Compress the image

As the image continues on its journey it leaves the 4MB Frame board (yellow arrow) and is compressed. The compression applied is determined by the user before they capture the image. There are two compression options: Snapshot (aggressive compression) or High (minimum compression).

7

Long-term storage

The "project manager" I(MCU chip) sends out a message to move the compressed image to the 1MB flash RAM (magenta arrow) which is used for long-term storage.

8

Adjust LCD display

When the image safely reaches the 1MB flash RAM (magenta arrow) the project manager sends a message to the 4-bit MPU (yellow arrow) to reduce the "Pictures Remaining" field on the LCD by one.