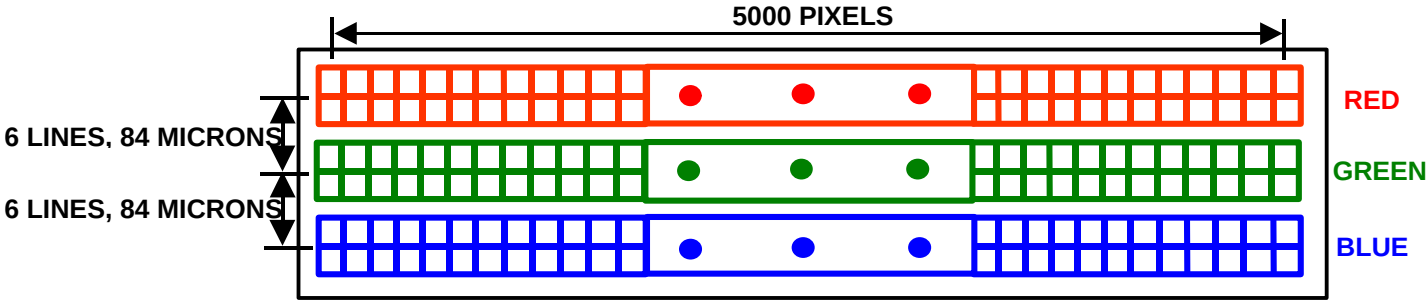
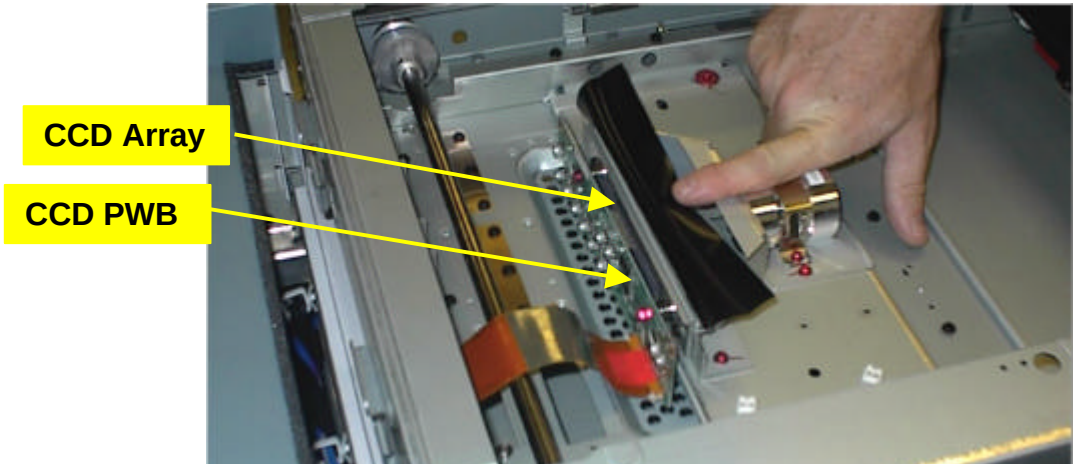
CCD Color Image Acquisition

The CCD Array is 3 sets of 2 rows of 5000 pixels and is part of the CCD PWB. Each set of pixel rows is filtered to detect a different color: red, green and blue. The two rows within each set are offset by.0025 inches (0.0635 mm), permitting the array to gather two lines of data at once. The sensor can scan a document 12.5 inches wide.





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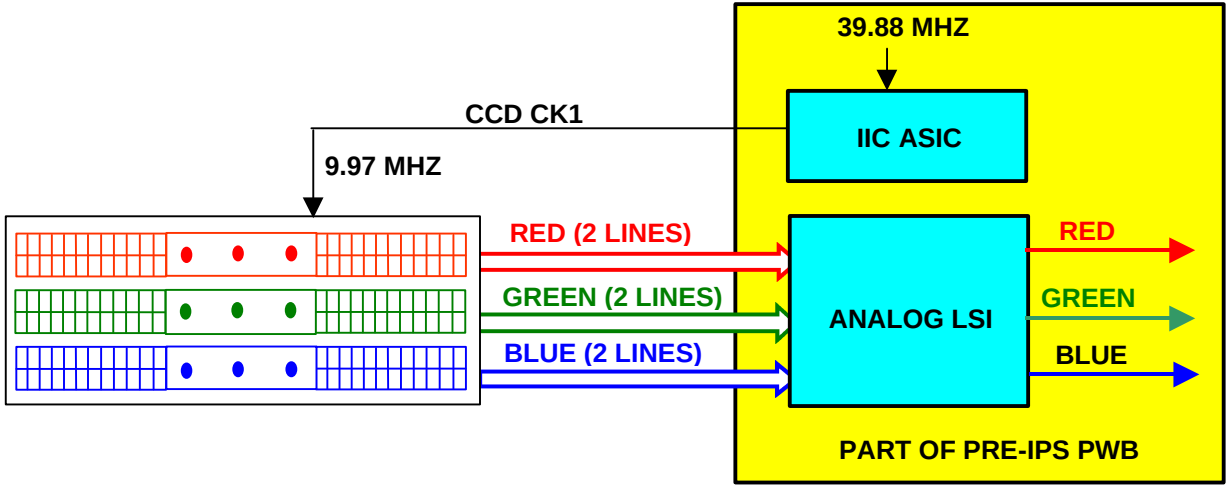
CCD Color Image Acquisition - Image Input Terminal

CCD Color Image Acquisition (continued)

Each row of the array acquires its image from the original document in a parallel fashion. However, the image is retrieved serially at a 9.97 MHz rate and sent to the Pre-IPS PWB. While an image is being shifted out, the CCD array cannot acquire another image. In addition, image acquisition takes time, reducing slightly the image line acquisition rate. However, having two CCD rows per color doubles the image line acquisition rate. Furthermore, the image acquisition line rate must be the same as the rate at which the Full-Rate Carriage sweeps the document original (225 mm/sec [8.858 inches/second] at 100% magnification). The desired pixel rate is 400 pixels/inch or 15.748 pixels/mm. The end result is that the CCD acquires image lines, in all three colors, at a rate of 3543.3 per second.



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