Note: I am Using Scipy v1.1.0. In case of any errors you can install scipy 1.1.0 by the following command: pip install scipy==1.1.0

In [26]:
```
import scipy
scipy.__version__
```

Out[26]:
```
'1.1.0'
```

To download images Click on this url: https://drive.google.com/drive/folders/1pcaTwofZGfoCxZ3Hv2X6vW6xf_1i88eb?usp=sharing (https://drive.google.com/drive/folders/1pcaTwofZGfoCxZ3Hv2X6vW6xf_1i88eb?usp=sharing)

In [1]:
```
import numpy as np
import matplotlib.pyplot as plt
from scipy.misc import imread
import math
from skimage.util import random_noise
from skimage.filters import rank
from scipy import ndimage
```

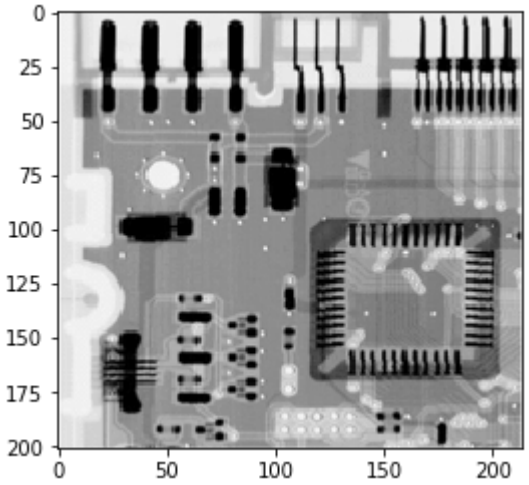
Original Image

In [2]:
```
original_image=imread("circuit_image.png",False,'L')
```

```
C:\ProgramData\Anaconda3\lib\site-packages\ipykernel_launcher.py:1: DeprecationWarning: `imread` is deprecate
d!
`imread` is deprecated in SciPy 1.0.0, and will be removed in 1.2.0.
Use ``imageio.imread`` instead.
  """Entry point for launching an IPython kernel.
```

In [3]:
```
plt.imshow(original_image,plt.cm.gray)
```

Out[3]:
```
<matplotlib.image.AxesImage at 0x199481c5388>
```



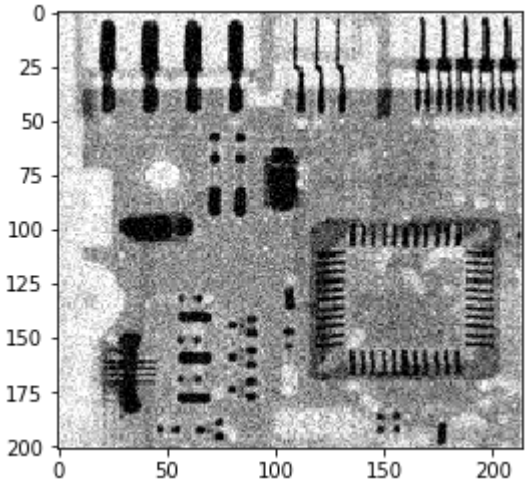
In [5]:
```
processed_image=original_image.copy()
```

Adding Gaussian Noise

In [6]:
```
noise_img = random_noise(processed_image, mode='gaussian')
noise_image=noise_img*255
```

In [7]:
```
plt.imshow(noise_image,plt.cm.gray)
```

Out[7]:
```
<matplotlib.image.AxesImage at 0x1994a2e7808>
```



Applying Arithmetic Mean Filter

In [14]:
```
kernel_arithmetic_mean = 1/9*np.ones((3,3))
img=ndimage.convolve(noise_image, kernel_arithmetic_mean, mode='constant', cval=0.0)
plt.imshow(img,plt.cm.gray)
```

Out[14]: <matplotlib.image.AxesImage at 0x1994a595308>