Abstract— “Melanoma kills an estimated 9,940 people in the US annually”[1] but fortunately it is most often recognized easily and treated early and most often curable. MelaFind is a device recently created to detect Melanoma in its early stages to help prevent progression of the cancer.

I. INTRODUCTION

To begin, Melanoma is the rapid multiplication of the cells in the melanocytes of the epidermis who lack the genetic tools to apoptose. This results in a malignant tumor that can eventually spread to other parts of the body and potentially cause significant damage. There are various methods to determine whether or not a growth on the skin is cancerous, but in many scenarios, a biopsy in needed to ensure that the growth is not malignant. To reduce the amount of biopsies needed and to increase doctoral accuracy, MelaFind was created to examine growths and determine whether or not it poses a threat.

II. METHODS

Currently, there are plenty of methods that doctors use to determine the status of growths on the skin, the growths asymmetry, border, color, diameter, and the fact that over time malignant growths will grow, are all factors doctors take into mind when looking at growths. Presence of anyone of these can potentially indicate towards a malignant growth. To counteract any human error, engineers have created MelaFind. MelaFind is a device that examines growths on the skin, and with an algorithm, compares them to a scan bank to determine if the growth should be biopsied or not. MelaFind uses ten different electromagnetic waves to view skin growths up to 2.5mm beneath the skin and compares the results of the scan to previous scans uses various algorithms to determine whether or not the biopsy would be necessary.

III. RESULTS

One trial, consisting of 1384 patients and 1831 skin lesions was used to test the effectiveness of MelaFind. Dermatologists were capable of detecting 126 of the 175 melanomas and high-grade lesions. MelaFind technology was capable of correctly identifying 98.3%.

IV. DISCUSSION

While the precision of MelaFind if remarkable, some doctors believe that it is devices like this that will put them out of practice and/or make doctors incapable of making decisions concerning a patient’s health on their own. Doctors are worried that when machines come to a conclusion that differs from their own, there will be disputes between them and the patient. It is difficult to decide who is right, whether it is a person who went to medical school for four years to learn about an illness, or a machine who is non-objective that was told about an illness. Unfortunately it is difficult to tell when it is not a case to case basis, but MelaFind is statistically better at determining whether or not a growth is malignant or not.

REFERENCES