

# UNITED STATES INTERNATIONAL TRADE COMMISSION

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In the Matter of

Investigation No.

CERTAIN WEARABLE ELECTRONIC

337-TA-1266

DEVICES WITH ECG FUNCTIONALITY AND

COMPONENTS THEREOF

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## OPEN/CLOSED SESSIONS

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1 analysis this morning.

2 JUDGE ELLIOT: That's right. Thank you. Now I  
3 remember. Very good. All right.

4 We're on the public record. And I'm waiting for  
5 Dr. Stultz.

6 Good morning Dr. Stultz. Let me remind you  
7 you're still under oath.

8 COLLIN STULTZ,

9 having been previously duly sworn and/or  
10 affirmed on his oath, was thereafter examined and testified  
11 further as follows:

12 DIRECT EXAMINATION (resumed)

13 BY MR. AMON:

14 Q. Good morning, Dr. Stultz. I'd like to now start  
15 with your obviousness analysis.

16 If we could bring up RDX-3.39.

17 What framework did you use in analyzing your --  
18 whether the Asserted Patents are invalid for obviousness?

19 A. So the framework I use is as illustrated on this  
20 slide. There were four steps in the process.

21 First, to determine the scope and content of the  
22 prior art, and to understand differences between that art  
23 and the patent claim, and all of this is done within the  
24 context of the person of ordinary skill in the art at the  
25 time, and then, lastly, there were specific secondary

1 considerations presented, is my understanding, by AliveCor,  
2 and the question there is whether those considerations  
3 affected my view.

4 Q. Dr. Stultz, what is Apple's burden in proving  
5 that the Asserted Patents are invalid?

6 A. It is my understanding that it must be shown by  
7 clear and convincing evidence.

8 Q. And just to backtrack for one second, is it your  
9 understanding that Apple's burden is clear and convincing  
10 for the patent-ineligible subject matter as well?

11 A. That is my understanding.

12 Q. If we go to RDX-3.40. What is this timeline,  
13 Dr. Stultz?

14 A. So this timeline includes the relevant dates for  
15 the patents in question, and it also outlines, briefly,  
16 papers that represent the state of the art at the time.

17 So just -- I'm sorry to interrupt, but just to  
18 expand upon that a little bit.

19 When I began this process, what I did was sit in  
20 front of my computer and do a literature search setting the  
21 time frame to 2013, which is the earliest date for the '499  
22 and '731 patents, and then gathered the papers, and I think  
23 there were maybe 50 to a hundred papers that were -- and  
24 then reviewed those data.

25 And I think what was known at the time and the

1 work going on at the time is well encapsulated by these four  
2 references in green.

3 MR. AMON: For the record, Your Honor, the  
4 references that Dr. Stultz is referring to are RX-560,  
5 RX-562, RX-554, and RX-563.

6 Q. Dr. Stultz, if we go to RDX-3.41, what is on this  
7 slide here?

8 A. So this are the three primary references that I  
9 rely on for my obviousness argument. There is AMON 2004 and  
10 then there are two additional references, Kotzin, which was  
11 published in 2004, and Almen published in 2008.

12 Q. Let me pause there for a second.

13 MR. AMON: Your Honor, I think there was a little  
14 feedback. I don't know if you heard that.

15 (Clarification by reporter.)

16 JUDGE ELLIOT: I'm sorry. I was muted. I was  
17 actually trying to say something and I was muted. I don't  
18 know who that was, but, if you're not on video, please mute  
19 yourself.

20 MR. AMON: For the record, Your Honor, the AMON  
21 reference is RX-419, the Almen reference is RX-400, and the  
22 Kotzin reference is 401.

23 What is the date of the AMON reference?

24 A. The AMON reference is December 2004.

25 Q. What is the date of the Almen reference?

1 A. That's also in December of 2008.

2 Q. And, finally, what is the date of the Kotzin  
3 reference?

4 A. That was February 2004.

5 Q. If we go to RDX-3.42. What does the AMON  
6 reference disclose?

7 A. So Amon describes a wearable medical monitoring  
8 alert system, particularly targeting high-risk cardiac  
9 respiratory patients.

10 The interesting thing here is that this is a  
11 wrist-worn device that encompasses multiple sensors, sensors  
12 including SpO2, blood pressure, and ECG.

13 Q. Just so that the record is clear, does an SpO2  
14 sensor include a PPG?

15 A. That's right. So SpO2 technology is based on PPG  
16 technology. Indeed, PPG gives you changes in the blood  
17 volume in a particular vascular bed, so it sort of gives you  
18 an estimate of the pulse rate. And the SpO2 builds on that  
19 technology by incorporating different light sensors that  
20 allow you to estimate the oxygenation in the corresponding  
21 blood.

22 Q. If we go to RDX-3.43, was the AMON reference  
23 cited by others in the field before May of 2015?

24 A. So in my literature search, I found one paper  
25 that was listed on the left that specifically references

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