UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

ALIVECOR, INC.,
Patent Owner.

IPR2021-00972
Patent 10,638,941

PETITIONER'S REPLY TO
PATENT OWNER'S PRELIMINARY RESPONSE

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EXHIBIT LIST

APPLE-1001	U.S. Patent 10,638,941 to Albert et al. ("the '941 patent")
APPLE-1002	Excerpts from the Prosecution History of the '941 patent ("the Prosecution History")
APPLE-1003	Declaration of Dr. Bernard A. Chaitman
APPLE-1004	PCT Patent Publication WO2012/140559 ("Shmueli")
APPLE-1005	U.S. Patent Publication 2014/0275840 ("Osorio")
APPLE-1006	Li Q, Clifford GD, "Signal quality and data fusion for false alarm reduction in the intensive care unit," J Electrocardiol. 2012 Nov-Dec; 45(6):596-603 ("Li-2012")
APPLE-1007	U.S. Patent Publication 2008/0004904 ("Tran")
APPLE-1008	U.S. Patent Publication 2014/0107493 ("Yuen")
APPLE-1009	U.S. Patent Publication 2015/0119725 ("Martin")
APPLE-1010	U.S. Provisional Application No. 61/794,540 ("Osorio Provisional")
APPLE-1011	Lee J, Reyes BA, McManus DD, Mathias O, Chon KH. International Journal of Bioelectromagnetism, Vol. 15, No. 1, pp. 26-29, 2013 ("Lee-2013")
APPLE-1012	Tsipouras MG, Fotiadis DI. Automatic arrhythmia detection based on time and time-frequency analysis of heart rate variability. Comput Methods Programs Biomed. 2004 May; 74(2):95-108 ("Tsipouras-2004")
APPLE-1013	Lu S, Zhao H, Ju K, Shin K, Lee M, Shelley K, Chon KH. Can photoplethysmography variability serve as an alternative approach to obtain heart rate variability information? J Clin

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APPLE-1014 Selvaraj N, Jaryal A, Santhosh J, Deepak KK, Anand S. Assessment of heart rate variability derived from finger-tip photoplethysmography as compared to electrocardiography. J Med Eng Technol. 2008 Nov-Dec; 32(6):479-84 ("Selvaraj-2008")

APPLE-1015 Lu G, Yang F, Taylor JA, Stein JF. A comparison of photoplethysmography and ECG recording to analyse heart rate variability in healthy subjects. J Med Eng Technol. 2009; 33(8):634-41 ("Lu-2009")

APPLE-1016 Suzuki T, Kameyama K, Tamura T. Development of the irregular pulse detection method in daily life using wearable photoplethysmographic sensor. Annu Int Conf IEEE Eng Med Biol Soc. 2009; 2009:6080-3 ("Suzuki-2009")

APPLE-1017 Reed MJ, Robertson CE, Addison PS. Heart rate variability measurements and the prediction of ventricular arrhythmias. QJM. 2005 Feb;98(2):87-95 ("Reed-2005")

APPLE-1018 Schäfer A, Vagedes J. How accurate is pulse rate variability as an estimate of heart rate variability? A review on studies comparing photoplethysmographic technology with an electrocardiogram. Int J Cardiol. 2013 Jun 5; 166(1):15-29 ("Schafer-2013")

APPLE-1019 K. Douglas Wilkinson, "The Clinical Use of the Sphygmomanometer," The British Medical Journal, 1189-90 (Dec. 27, 1924) ("Wilkinson")

APPLE-1020 U.S. Patent 6,095,984 ("Amano")

APPLE-1021 B.K. Bootsma et. al, "Analysis of R-R intervals in patients with atrial fibrillation at rest and during exercise." Circulation 1970; 41:783-794 ("Bootsama-1970")

APPLE-1022 Frits L. Meijler and Fred H. M. Wittkampf, "Role of the

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	Atrioventricular Node in Atrial Fibrillation" Atrial Fibrillation: Mechanisms and Management, 2nd ed. 1997 ("Meijler-1997")
APPLE-1023	Heart Diseases, Definition of Heart Diseases by Merriam-Webster Dictionary
APPLE-1024	Acharya UR, Joseph KP, Kannathal N, Lim CM, Suri JS. Heart rate variability: a review. Med Biol Eng Comput. 2006 Dec; 44(12):1031-51 ("Acharya-2006")
APPLE-1025	Saime Akdemir Akar, Sadık Kara, Fatma Latifoğlu, Vedat Bilgiç. Spectral analysis of photoplethysmographic signals: The importance of preprocessing. Biomedical Signal Processing and Control, 2013; 8(1):16-22 (Akar-2013)
APPLE-1026	U.S. Provisional Application No. 61/915,113
APPLE-1027	U.S. Provisional Application No. 61/953,616
APPLE-1028	U.S. Provisional Application No. 61/969,019
APPLE-1029	U.S. Provisional Application No. 61/970,551
APPLE-1030	U.S. Provisional Application No. 62/014516
APPLE-1031	U.S. Patent Publication No. 2012/0203491 ("Sun")
APPLE-1032	U.S. Patent 9,808,206 ("Zhao")
APPLE-1033	Kleiger RE, Stein PK, Bigger JT Jr. Heart rate variability: measurement and clinical utility. Ann Noninvasive Electrocardiol. 2005 Jan; 10(1):88-101 ("Kleiger-2005")
APPLE-1034	Chen Z, Brown EN, Barbieri R. Characterizing nonlinear heartbeat dynamics within a point process framework. IEEE Trans Biomed Eng. 2010 Jun; 57(6):1335-47 ("Chen-2010")
APPLE-1035	Karvonen, J., Vuorimaa, T. Heart Rate and Exercise Intensity

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	During Sports Activities. Sports Medicine 5, 303–311 (1988) ("Karvonen-1988")
APPLE-1036	Yu C, Liu Z, McKenna T, Reisner AT, Reifman J. A method for automatic identification of reliable heart rates calculated from ECG and PPG waveforms. J Am Med Inform Assoc. 2006 May-Jun; 13(3):309-20 ("Yu-2006")
APPLE-1037	AliveCor v Apple ITC Complaint Exhibit 10 (941 Infringement Chart)
APPLE-1038	Tavassoli, M, Ebadzadeh, MM, Malek H. (2012). Classification of cardiac arrhythmia with respect to ECG and HRV signal by genetic programming. Canadian Journal on Artificial Intelligence, Machine Learning and Pattern Recognition. 3. 1-13 ("Tavassol-2012")
APPLE-1039	Asl BM, Setarehdan SK, Mohebbi M. Support vector machine-based arrhythmia classification using reduced features of heart rate variability signal. Artif Intell Med. 2008 Sep;44(1):51-64 ("Asl-2008")
APPLE-1040	Yaghouby F., Ayatollahi A. (2009) An Arrhythmia Classification Method Based on Selected Features of Heart Rate Variability Signal and Support Vector Machine-Based Classifier. In: Dössel O., Schlegel W.C. (eds) World Congress on Medical Physics and Biomedical Engineering, September 7 - 12, 2009, Munich, Germany. IFMBE Proceedings, vol 25/4. Springer, Berlin, Heidelberg ("Yaghouby-2009")
APPLE-1041	Dallali, A, Kachouri, A, Samet, M. (2011). Integration of HRV, WT and neural networks for ECG arrhythmias classification. ARPN Journal of Engineering and Applied Sciences. VOL. 6. 74-82 ("Dallali-2011")
APPLE-1042	Sajda P. Machine learning for detection and diagnosis of disease. Annu Rev Biomed Eng. 2006; 8:537-65 ("Sajda-2006")

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