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**Kotaki et al.**

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(54) **ULTRASOUND DIAGNOSTIC DEVICE AND METHOD OF GENERATING AN INTERMEDIARY IMAGE OF ULTRASOUND IMAGE**

(58) **Field of Classification Search**  
CPC ..... A61B 8/14; A61B 8/461; A61B 8/462; A61B 8/5207; A61B 8/5246; A61B 8/54; G06T 2207/10016; G06T 2207/10132; G06T 2207/30004; G06T 3/4053  
See application file for complete search history.

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(65) **Prior Publication Data**

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Torfinn Tøxt, Superresolution of Ultrasound Images Using the First and Second Harmonic Signal, IEEE Transactions on Ultrasonics, Ferroelectric, and Frequency Control, Feb. 2004, pp. 163-175, vol. 51, No. 2.

**Related U.S. Application Data**

(63) Continuation of application No. 13/703,961, filed as application No. PCT/JP2011/061436 on May 18, 2011, now abandoned.

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(30) **Foreign Application Priority Data**

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(57) **ABSTRACT**

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**A61B 8/00** (2006.01)  
(Continued)

In order to acquire high resolution ultrasound images while maintaining an appropriate frame rate in ultrasound diagnostic devices, the disclosed method generates high resolution ultrasound images by performing image reconstruction on the basis of multiple ultrasound frame images captured along a time series and the magnitudes of positional shifts, or forms high resolution ultrasound images by performing image reconstruction on the basis of multiple ultrasound frame images acquired by controlling the ultrasound probe and varying scan orientation or scan focal length frame by frame.

(52) **U.S. Cl.**  
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**14 Claims, 18 Drawing Sheets**

