

ULTRASONIC INSPECTION USING FLEXIBLE TWO-DIMENSIONAL ARRAY APPLIED ON SURFACE OF ARTICLE

ABSTRACT

Methods for ultrasonic inspection of a structure by laying a flexible two-dimensional flexible ultrasonic transducer array over a damage site on the structure with minimal physical interaction with the array during set-up and without further movement of the array during data acquisition. In addition, the array may remain in place on a difficult-to-access surface to enable easy periodic inspections over a long period of time. In some embodiments, the array is sandwiched between a flexible delay line substrate and a flexible display panel. In accordance with one wireless embodiment, a GPS receiver, a transceiver, pulser/receiver circuitry, and a source of electrical power (e.g., a battery) are attached to a portion of the flexible delay line substrate that extends beyond one edge of the array.

Fig. 1