4. The ultrasonic inspection device as recited in claim 3, wherein said data acquisition module comprises:

pulser-receiver circuitry electrically coupled to receive said ultrasonic data in said first format from said flexible ultrasonic transducer array; and

a processor programmed to convert said ultrasonic data in said first format to ultrasonic data in said second format and control said flexible display panel to display said ultrasonic data in said second format.

5. The ultrasonic inspection device as recited in any one of claims 3-4, wherein said flexible display panel comprises a polymeric substrate, a multiplicity of pixels arranged in rows and columns in or on said polymeric substrate, and a multiplicity of thin-film transistors disposed in or on said polymeric substrate and electrically coupled to respective pixels of said multiplicity of pixels.

6. The ultrasonic inspection device as recited in claim 5, wherein said pixels comprise respective organic light-emitting diodes.

7. The ultrasonic inspection device as recited in claim 5, wherein said pixels comprise liquid crystal.

8. The ultrasonic inspection device as recited in any one of claims 1-3, wherein said data acquisition module, said global positioning system receiver, said transceiver, and said battery are physically attached to a portion of said flexible delay line substrate that extends beyond a perimeter of said flexible ultrasonic transducer array.

9. The ultrasonic inspection device as recited in any one of claims 1-3 or 8, wherein said flexible ultrasonic transducer array comprises a multiplicity of ultrasonic transducer elements arranged in rows and columns.

10. The ultrasonic inspection device as recited in any one of claims 1-3 or 8-9, wherein said flexible ultrasonic transducer array comprises a plurality of mutually parallel transmit electrodes and a plurality of mutually parallel receive electrodes which overlap with, but are not parallel to, said transmit electrodes.

11. A method for calibrating an ultrasonic inspection device, comprising:

(a) storing structural model data representing material properties of a structure as a function of location in a coordinate system of the structure;

(b) attaching a flexible ultrasonic inspection device to a surface of a portion of the structure, wherein the flexible ultrasonic inspection device comprises a flexible substrate, a two-dimensional flexible ultrasonic transducer array attached to the flexible substrate, and a global positioning system receiver attached to the flexible substrate;

(c) acquiring location data using the global positioning system receiver, said location data representing a location of the global positioning system receiver;

(d) sending the acquired location data to a computer system at a remote location;

(e) determining a location of the flexible ultrasonic inspection device in the coordinate system of the structure;

(f) retrieving structural model data representing material properties of the structure in proximity to said location of the flexible ultrasonic inspection device in the coordinate system of the structure;

(g) generating or retrieving a calibration file containing calibration data which is a function of said retrieved structural model data representing material properties of the portion of the structure in proximity to the location of the flexible ultrasonic inspection device;

(h) sending the calibration file to a data acquisition module that is configured to communicate with the flexible ultrasonic transducer array; and

(i) calibrating the data acquisition module using calibration data from the calibration file.