



RC6gV Row-Column Array Transducer

Cutting edge technologies for research

Verasonics' newest volume imaging technology is pictured above - a 6 MHz [Row-Column Array \(RCA\) Transducer](#) made by Vermon. It features orthogonally oriented arrays of 128 elements each, with a 0.2mm pitch and 100% bandwidth. Verasonics provides example scripts for imaging and simulation support for RCA transducers with the Vantage 256 Research Ultrasound system. This RCA transducer may provide a cost-effective approach to volume imaging that eliminates the high channel count requirement of matrix arrays.

Transducers in Ultrasound Research

As we well know, the transducer is a critical component of ultrasonic research. Whether called a transducer, sensor, probe, or array, it is the link between the analog natural world and the digital data world. Transducers can be made using a variety of materials, in different geometries, and functional at a range of frequencies, depending on the intended application.

Verasonics partners with leading transducer manufacturers in offering a variety of high-quality arrays that meet researchers' general needs and provide advanced technologies that enable cutting edge research. Verasonics' transducer portfolio includes a variety of general imaging probes for biomedical and materials science research; high frequency arrays with bandwidths up to 39 MHz for pre-clinical and superficial applications; matrix and row-column arrays for volume imaging; and HIFUPlex pairings for R&D in focused ultrasound techniques.

Creating a custom probe? Look to Verasonics.

For scientists and engineers who are developing new transducer technologies, or want to integrate a custom probe, Verasonics offers hardware and software tools to facilitate the process. These include [Signal Break-out Board and Backshell Connector Kits](#), as well as a variety of adapters for biomedical and NDE/NDT transducers. A user-programmable scramble table allows Vantage users to arbitrarily assign signals from any element to any channel, enabling connection of probes even when the exact pin-out map is unknown.

Some of our Universal Transducer Adapters (UTAs) incorporate multi-plexing, which allows the use of transducers with 128 elements on systems with only 32 or 64 receive channels, or up to 1024 elements with 256 channels. All Verasonics transducer connection technologies are well-shielded and grounded to maximize signal fidelity and minimize noise, crosstalk, and other conditions that can interfere with signal transmission and acquisition.

Unique transducer technology

Our customers have developed and integrated unique probe technologies such as CMUT, PMUT and other MEMS arrays; unique geometries including ring arrays, concave and convex arrays, matrix and sparse arrays; arrays on the tips of catheters and endoscopes; dual frequency arrays; array designs for HIFU, histotripsy, cavitation and hyperthermia, and more. Verasonics provides documentation and technical support to assist developers with probe integration and optimization.

Watch for updates from Verasonics on new transducer options in the months ahead!

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