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Schmidt et al.

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[54] **WIDE-BAND OMNI TELEMETRY SYSTEM**

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[58] **Field of Search** 367/134, 131, 367/130, 106, 21

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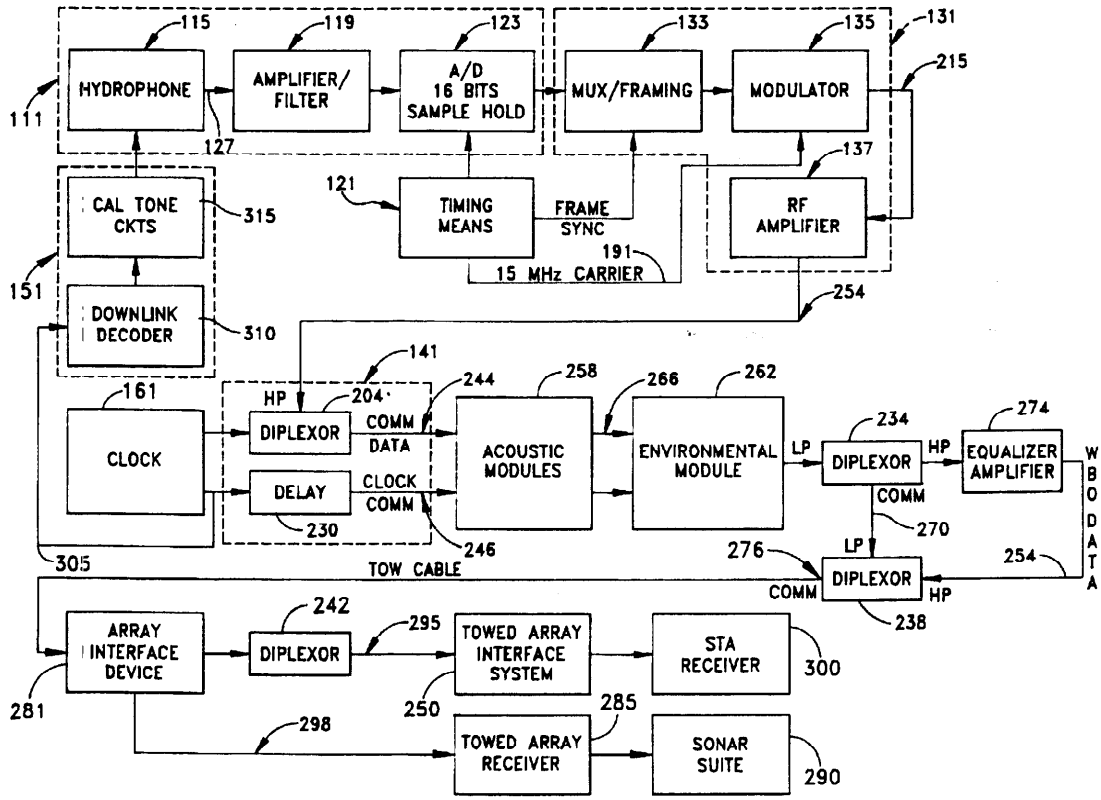
[57] **ABSTRACT**

The present invention comprises a wide-band omni telemetry system adapted for increasing the signal transmission bandwidth of an existing tactical array having a single shared transmission line. In accordance with one embodiment of the invention electronic elements are provided for conditioning and converting a wide-band analog data signal, received from an underwater acoustic sensing device, to an appropriate wide-band digital signal. Timing elements provide a carrier wave signal interface with telemetry elements for modulating the carrier wave signal with the wide-band digital signal wherein the carrier wave is quadrature phase shift key modulated. In this way two separate carrier waves are created that are shifted in phase by about 90° relative to one another. Coupling elements are employed to couple the two carrier waves to the tactical array wherein at least two diplexors interface with the carrier waves so as to couple the wide-band digital signal with a plurality of acoustic and environmental data gathered by the tactical array. The coupled carrier waves are then transmitted over the single shared transmission line. Command decoding elements provide a communication link to the tactical array so as to synchronize generation of the wide-band analog data signal by the underwater acoustic sensing device with the operation of the telemetry elements.

12 Claims, 5 Drawing Sheets