



LORAN—Long Range Navigation, designed decades ago by the United States and the British governments, is seeing renewed worldwide interest.



“Orchid’s analog front-end design with variable gain and ‘Q’ allows us to dynamically alter our front-end performance to suit changing conditions on land and sea. Their design was accurate and quiet from the start! Nice work, OTEC!”

- Chief Technology Officer



**ORCHID TECHNOLOGIES  
ENGINEERING & CONSULTING, Inc.**

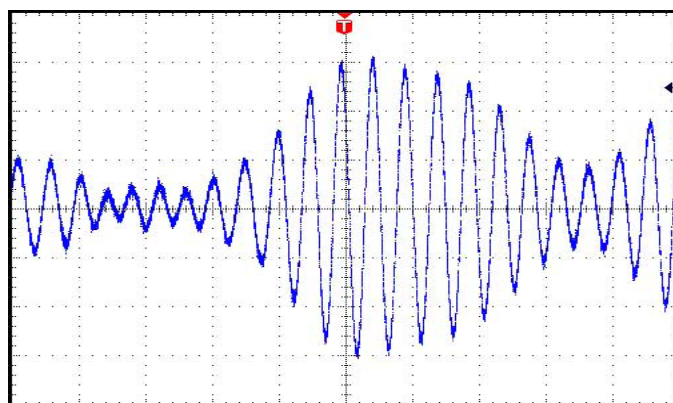
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### LORAN Software Radio Receiver

Orchid Technologies selected the Texas Instruments TMS320C6713 floating point DSP Processor for this four-channel LORAN receiver design. Built for flexibility and power, the 500MHz TMS320C6713 provides high performance floating point processing performance to make this receiver highly configurable. Working with Code Composer Studio, Orchid fashioned drivers, data acquisition modules and a number of low-level utilities.

### Precision Analog Receiver Front-End

LORAN signal groups must be received by a distortion-free, highly selective analog front-end amplifier chain. That analog front-end amplifier chain must provide distortion-free operation over a very wide dynamic input range. Orchid Technologies designed a multistage variable gain front-end amplifier and over-sampling data acquisition system. This highly selective system provides software controlled gain selection over 120 dB of dynamic range. The scope trace below shows a typical LORAN signal burst:



### Orchid Technologies: Analog and DSP Design

The development of custom electronics products for our OEM clients is Orchid’s entire business. High-performance custom analog amplifiers, data acquisition systems and DSP computer hardware with rapid design cycles, demanding technical requirements, and unforgiving schedules set us apart. Call Orchid Technologies today!



**Custom Engineering From Concept to Production**

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