

White Paper :

# **Sea Tel**

## **Quatraded Oriented Reflectors (QOR)**



**Sea Tel**  
*COBHAM*



## Quadrated Oriented Reflectors

### Project Overview:

This project is very exciting and will allow customers to have a truly all in-one system without the need for manual intervention.

The QOR (Quadrated Oriented Reflectors) pedestal contains a standard 2.4 Meter C-band antenna and a 1.2 Meter KU band antenna orthogonally mounted to one another. With just a single pedestal, the IFL cable can be switched electronically allowing for either C band or KU band operation in a matter of seconds.

### Software Implementation:

The Software designed for this system will allow for the storing of completely separate sets of ACU and PCU parameters depending on the reflector that is selected. Once the desired reflector is chosen, the parameters are loaded in to the ACU and you may now.

There are several new commands that have been introduced in the Software that will allow the QOR concept to become a reality. There are 4 sets of commands for the Monitor and Control of the antenna. These new commands will allow for KU band Co Pol and Cross Pol selections as well as reflector selection. With a single button, the selection of C or KU band can be made.

To fully accommodate all possible tracking selections, the Tracking display windows have updated to include all possible C and KU band selections. This is a total of twelve selections that can be made from the Tracking display window in the DAC 2202/2302.



DAC2202 Rear Panel



DAC2302 Front Panel



DAC2302 Rear Panel

**Theory of Targeting:**

A reflector offset has been implemented that sets the angle from the rear projection of Reflector A's bore sight pointing vector to reflector B's bore sight pointing vector. The ideal setting is 90 degrees and may require slight adjustment depending on optimum angle position of the counteracting reflectors.

**Operational Details:**

When switching from reflector A to reflector B, the reported values for Cross Level, Elevation, Azimuth, Relative, and Polarization change. The position of the antenna does not change until a command to target the reflector is issued. This will allow cycling from Reflector A and B without moving the antenna from its current position.

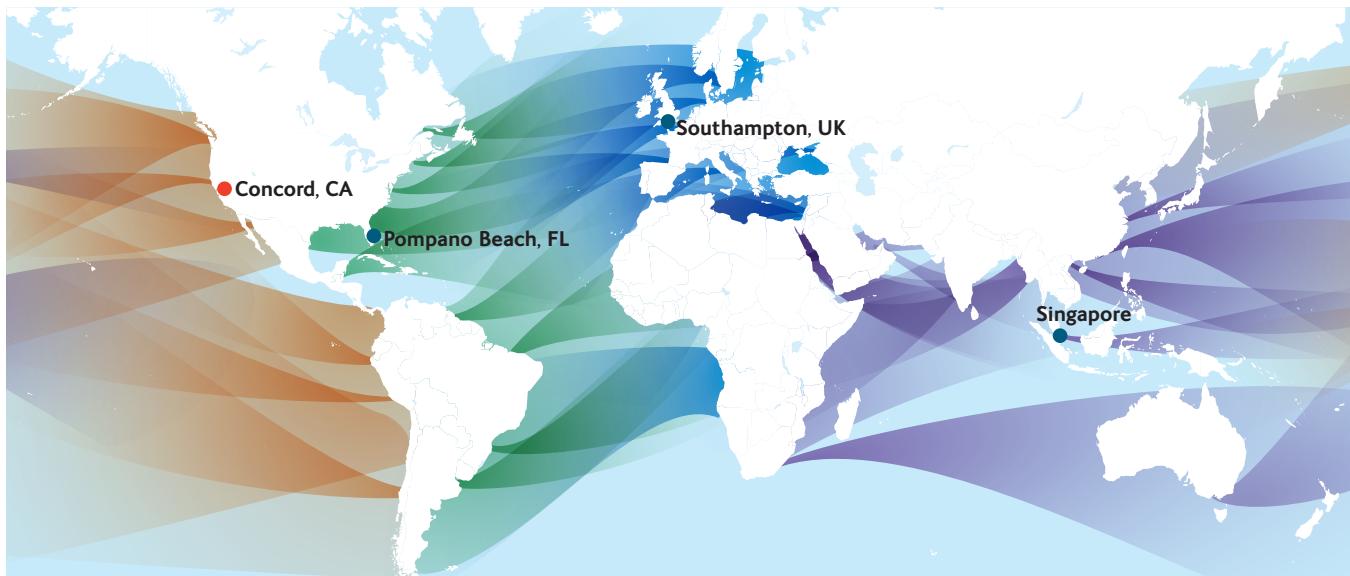
The antenna remains fully compatible with the existing Sea Tel web interface and external modem controls.

**Antenna Setup Details:**

Parameters that are set at the time of installation will be stored upon saving the configuration. These parameters that are specific to the appropriate reflector setting will be retrieved and dumped in to the ACU once that reflector is selected.

**Why QOR Technology:**

With feedback from our global dealer network, Sea Tel has identified a need of our customers to make the selection from C to Ku band without the necessity of climbing in to the dome and changing the feed. QOR which stands for "Quadrature Oriented Reflectors" is a term that identifies a 90 degree phase shift of two or more objects. An all in one solution has been developed and is controlled electronically.



# Sea Tel

COBHAM

The most important thing we build is trust

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