

White Paper :

**Sea Tel**

**Sea Tel 5004 UA**

**(Unlimited Azimuth)**

**TV-at-Sea Antenna System**



**Sea Tel**  
*COBHAM*

## Stabilized Marine Antenna Systems with Unlimited Azimuth Rotation



Sea Tel has supplied medium and large VSAT systems along with large TV-at-Sea systems with the Unlimited Azimuth feature since 1997. Whether it is a military, research, fishing, or mega yacht these vessels depend on a Sea Tel antenna to stay locked onto the satellite under the most extreme conditions and during numerous turns of the ship.

The major driving force for the Unlimited Azimuth feature for these highly reliable systems was the fact that the satellite link is a mission critical part of each and every voyage. These vessels cannot afford to lose satellite contact, even for a few seconds.

### What is azimuth?

When referring to a marine stabilized antenna system, the azimuth is the horizontal movement of the antenna pedestal. This movement can be clockwise or counter-clockwise. A full azimuth rotation is 360 degrees.

### Same Sea Tel reliability in a medium-size antenna

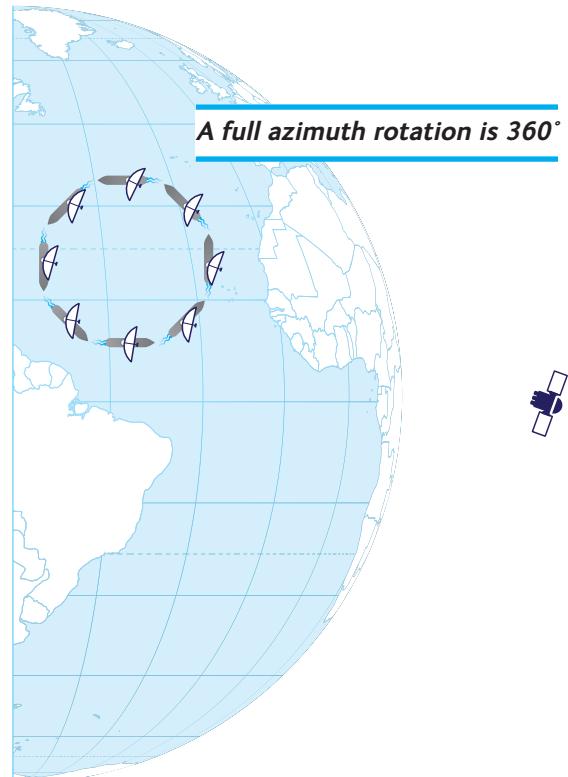
Sea Tel has incorporated the Unlimited Azimuth feature into the new 5004 UA system. The 5004 UA is a medium Ku-Band TV-at-Sea system that is capable of receiving worldwide Standard and High Definition satellite TV services. The 5004 UA has unlimited azimuth rotation without the need for end stops ensuring uninterrupted TV services no matter how many turns the vessel makes.

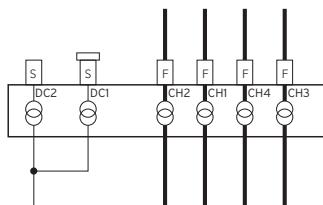
### Cable Wrap Systems

Cable wrap systems contact the clockwise or counter-clockwise end stop from time to time and have to unwrap the antenna pedestal 360 degrees. When unwrap occurs the antenna loses satellite signal. The loss of satellite signal lasts for several seconds.

This time may seem minimal but just imagine if you are watching your favorite sporting event and it has come down to the last few seconds of the game, or if you are watching a breaking news story and the antenna goes into an unwrap condition. By the time the antenna gets locked back onto the satellite, the game is over and you missed the most critical play of the game, or missed important news information.

With the 5004 UA system, there is no need to worry about the antenna going into an untimely unwrap condition.



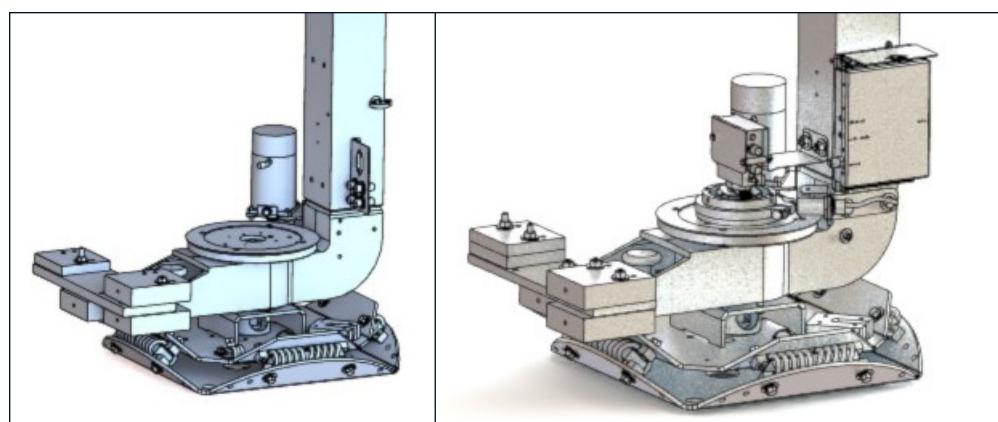


Schematic diagram of the  
6-channel rotary joint

## 6-Channel Rotary Joint

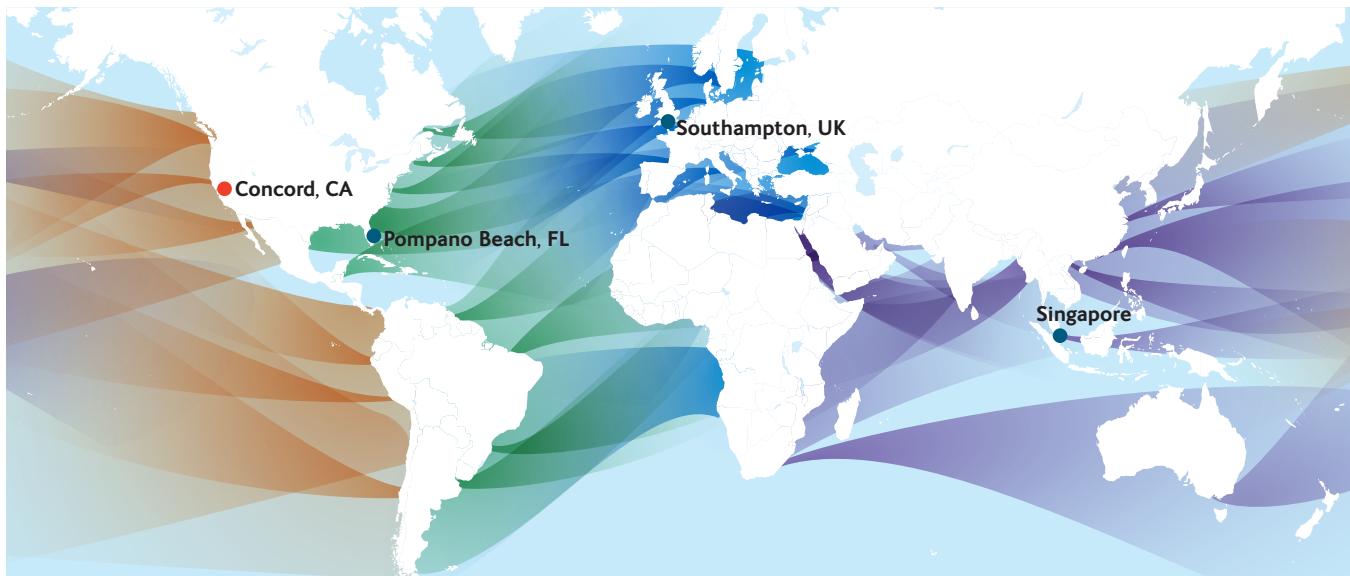
The rotary joint enables uninterrupted reception of the satellite signal while the antenna is rotating on the azimuth axis. The rotary joint eliminates cable twisting and untwisting—even during the most complex maneuvering—thus increasing system reliability. Sea Tel uses a 6-channel rotary joint on the 5004 UA system. This rotary joint provides 4 channels of RF and 2 channels of DC.

The 5004 UA can accommodate an LNB with up to 4 outputs without having to use any extra RF stacking and de-stacking components.



## 5004 and 5004 UA Comparison

	Sea Tel 5004	Sea Tel 5004 UA
Axis	3-Axis	3-Axis
Azimuth Range	680°	Unlimited
Minimum E.I.R.P.	41 dBW	41 dBW
Cable Wrap	Yes	No
Supports Dual Antenna Configuration	Yes	Yes



# Sea Tel

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The most important thing we build is trust

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