



Conical Scan Feeds

The TCS Conical Scan Feed, built with the latest technology concepts, is more powerful and less expensive than traditional feeds. Our feed contains very few components. We believe it to be the lightest feed available. It operates in L and S bands providing simultaneous Right Hand Circular Polarization (RHCP) and Left Hand Circular Polarization (LHCP). It will be configured to the customer's requirements depending on frequency of operation, gain requirement and out-of-band rejection specifications.

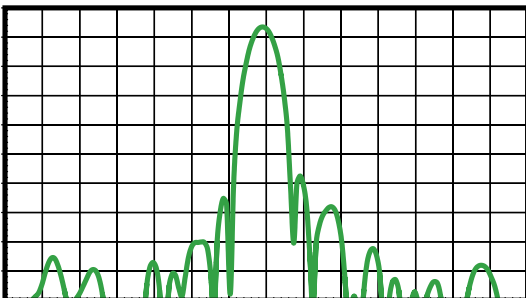
Special Features

- Small and lightweight
- DC brushless motor to rotate waveguide horn
- Speed control of the motor to realize variable scan frequency
- PWM type motor controller for highest efficiency
- Use of custom filters and LNAs where required
- Either circular or linear or both polarizations
- Simultaneous RHCP (Vertical) and LHCP (Horizontal) RF channels
- Optional uplink capability up to 200 W
- Only one proximity sensor is used to generate the scan reference signals
- Good sidelobe performance
- Optional test inject port
- No adjustments or phasing necessary
- Can be configured to replace other feed types in use
- All parts are easily accessible for maintenance and repair
- Built-in heater to keep electronics warm
- Dry air intake port

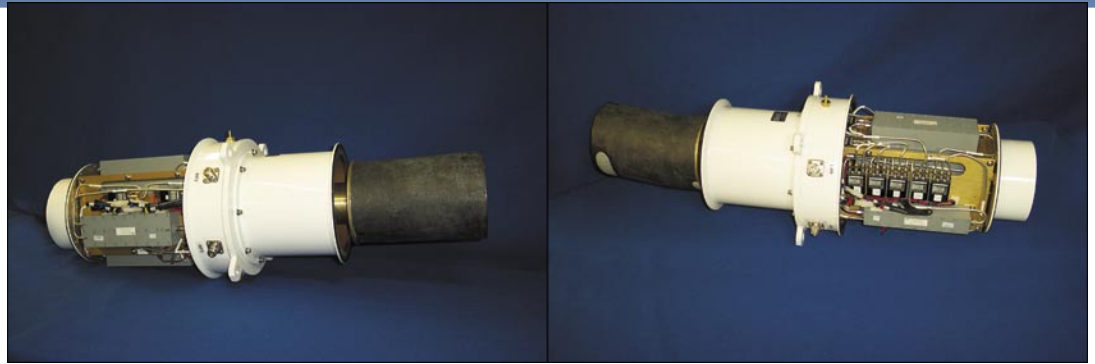


Conical Scan Advantages

- Simplicity of our feed design leads to lower cost and ease of maintenance
- Unlike a SCM feed, our conical scan feed is field serviceable
- Improved side lobe levels as combining of sum and difference channels is not needed
- Better G/T from higher gain and lower losses
- Better gain due to lower RF losses and less aperture loss
- Each feed is custom designed to meet your RF requirements
- Variable scan frequency to minimize effects of spin and propeller modulations

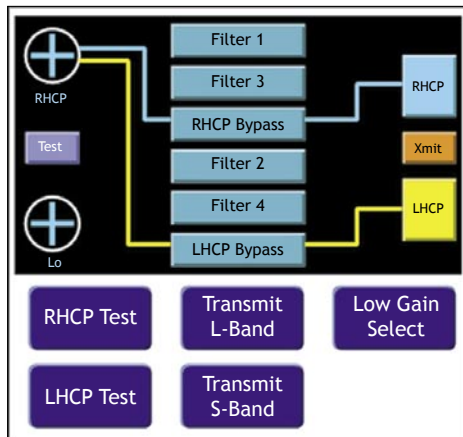


Typical pattern of TCS feeds. Data provided by Northrop Grumman Corporation - Tejon Range



Specifications

Dimensions	8" (20.32 cm) diameter x 18" (44.45cm) length
Weight	8 lbs (3.6 kg) for standard configuration
Frequency	1,435 to 2,400 MHz
Polarization	Simultaneous RHCP and LHCP or Vertical and Horizontal
Sidelobes	Better than 17 dB for 4 foot reflector. Better than 22dB for larger reflectors.
Axial Ratio	1 .5 typical
Scan Speed	30 Hz typical
VSWR	2 .0 over the entire frequency. Better for selected RF bands
RF Connector	N type
Motor Power	2 4VDC @ 2A (typical)



An example of how the different RF paths are chosen when connected to an ACU-M1.



Telemetry & Communications Systems, Inc.

20860 Plummer Street
 Chatsworth, California 91311-5004
www.tcs.la