

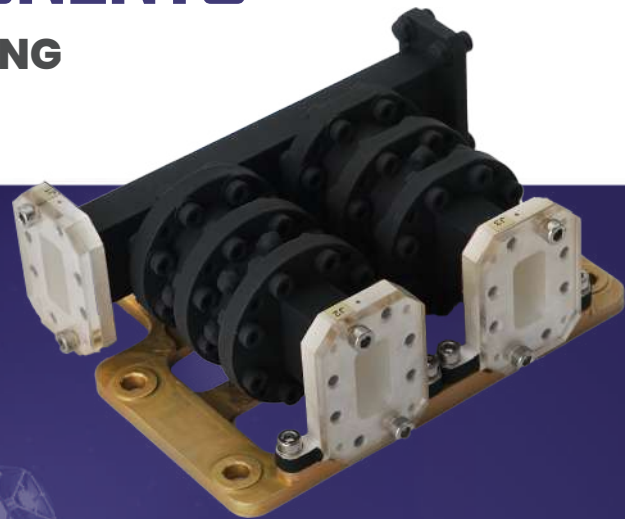
# WAVEGUIDE COMPONENTS

## TELEMETRY, COMMAND & RANGING SUBSYSTEM PRODUCTS

Multiplexers

### FILTERS & MULTIPLEXERS

- Low pass and band pass filters for harmonic and unwanted signal rejection
- Diplexers and OMUX's for TCR subsystems



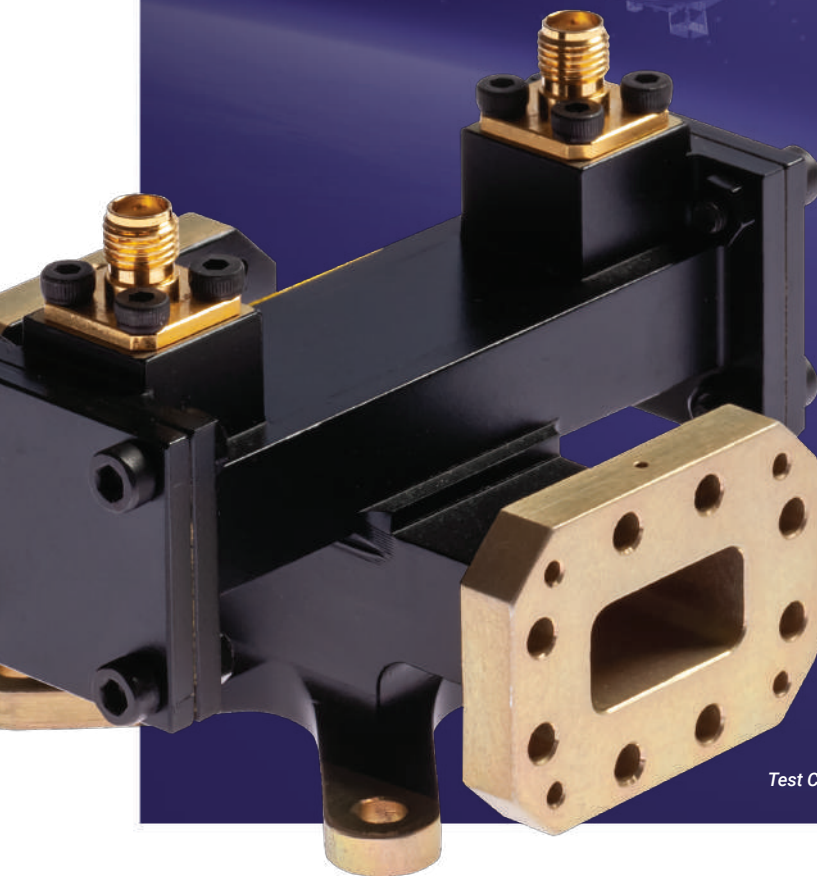
### HYBRID COUPLERS & TEST COUPLERS

- Hybrid couplers for telemetry and telecommand applications
- Test couplers for telemetry and telecommand applications

### FEATURES

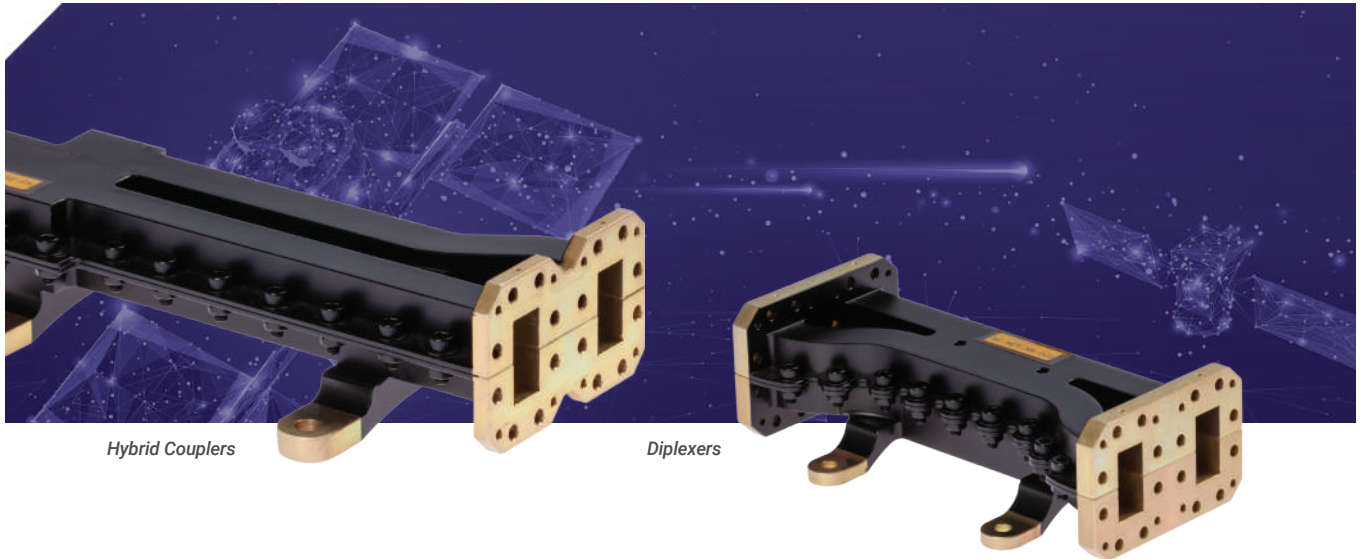
- Available for different frequency bands
- Waveguide components with optional coaxia connector assemblies
- High power handling for high power applications
- Multipaction and corona free design
- Manufactured using space qualified materials (aluminium 6061-T6 or Invar for thermal stability)
- Silver plated for low insertion loss performance
- Structural mass optimization for optimum solutions customization upon customer request
- Fully space qualified

Test Couplers



## OVERVIEW

Waveguide components, which aim to transmit RF signals with low loss or which allows transmission of high power RF signals, are qualified for geostationary satellites. Several different waveguide products with different specifications are available with the possibility of customization according to specific customer or mission requirements. These products can be used to combine, filter or separate RF signals.



Hybrid Couplers

Diplexers

SPECIFICATIONS	KU BAND HYBRID COUPLERS	KU BAND TEST COUPLERS	MULTIPLEXERS
Operating Frequency	10.75-12.75 GHz for telemetry 12.75-14.50 GHz for command	10.70-12.80 GHz for telemetry 13.50-14.50 GHz for command	Program Specific
Coupling	-3.1 ± 0.3 dB	-30 ± 1 dB	-
VSWR	1.119:1	1.1:1	1.1:1
Insertion Loss	< 0.1dB	< 0.1dB	< 0.8 dB
Isolation Between Input Ports	> 25 dB	> 25 dB	> 28 dB
Mass	< 150 g	< 120 g	Frequency Dependent
Size	66 x 41 x 130 mm for TX 78 x 41 x 116 mm for RX	97 x 52 x 68 mm for TX 85 x 53 x 68 mm for RX	Frequency Dependent
Corona Threshold (by analysis)	> 1,000 W	> 1,000 W	-
Out of Band Rejection	-	-	> 60 dB



### SPACE QUALIFIED

Fully space qualified equipment for geostationary satellites.



### CUSTOMIZABLE

Designed and optimized according to customer needs.



### HIGH RELIABILITY

Designed for more than 15 years of lifetime in geostationary orbit with lowest cost possible.



### LOW MASS

Mechanical design is optimized for mass to meet mission specific requirements.