



TONGYU COMMUNICATION

[www.tongyucom.com](http://www.tongyucom.com)

# Tongyu Communication Satcom Product Introduction

Tongyu Communication,  
Aims to become a well-respected international company within the communications industry.

The world's leading communication solutions provider

- 
- The producer of the first BTS antenna in China ●
  - The world's first TDD smart antenna manufacturer ●
  - The world's first integrated filter 5G antenna designer ●

**01**

# **Products Group**

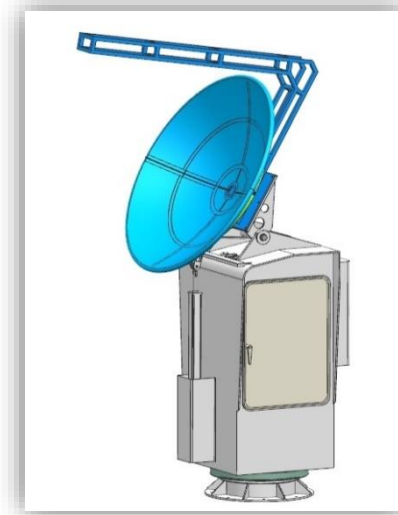
# Products Group



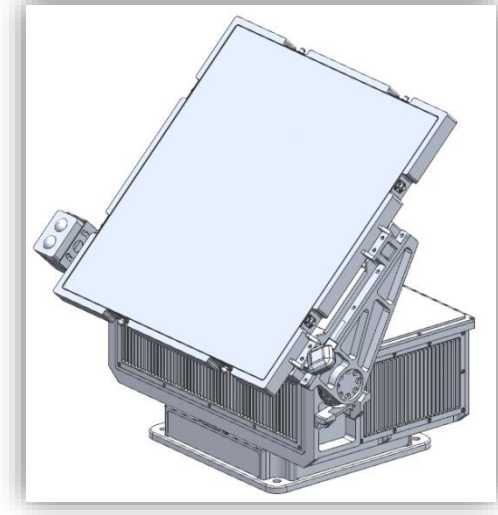
Ground station



Shipborne



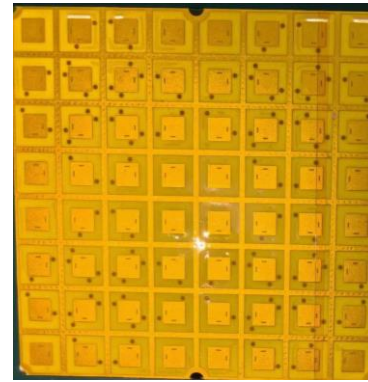
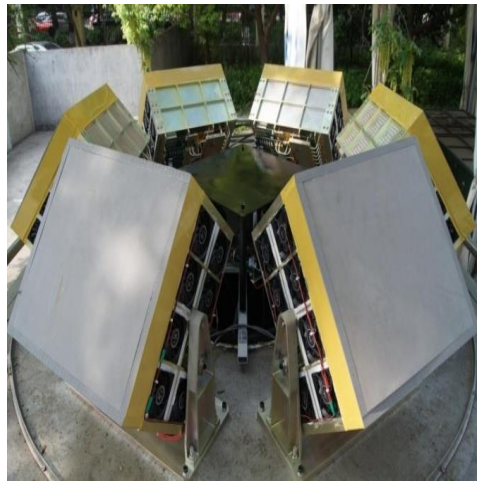
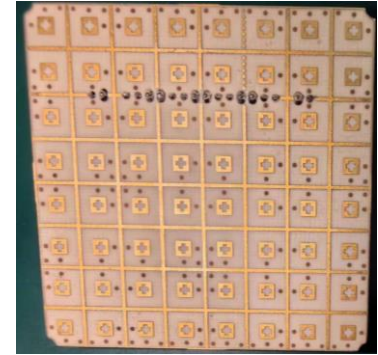
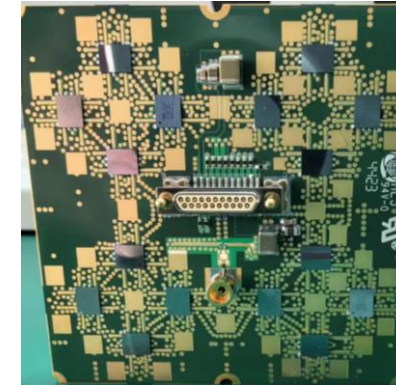
All-in-one



Portable

# Products Group

## Phase array antennas, filters, TR parts



02

# Key Products

# Ground Station

## 3.7m C/Ku ground station (Synchronous Satellite)



Pole



Truss Type  
(Manual)

### Feature

- Ring-focus design
- High Accuracy Stretch-formed Aluminum Panel
- Meet data receive and TV receive requirement
- Optional Band Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Single/Dual Polarization as option
- Manual/Motorized as option
- High Erosion Resistance
- Assembled and tested feed system before delivery

# Ground Station

## 3.7m C/Ku ground station (Synchronous Satellite)

Electrical Specification	C band Rx	C band Tx	Ku band Rx	Ku band Tx
Operating Frequency	3.4- 4.2 GHz	5.85-6.65 GHz	10.95-12.75 GHz	13.75-14.5 GHz
Gain, Mid-band (dBi)	$\geq 41.9 + 20\lg(f/4)$	$\geq 45.4 + 20\lg(f/6)$	$\geq 51.1 + 20\lg(f/12)$	$\geq 52.4 + 20\lg(f/14)$
VSWR	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$
Beam Width(-3dB)	$\leq 1.32^\circ$	$\leq 0.88^\circ$	$\leq 0.47^\circ$	$\leq 0.41^\circ$
Noise Temperature	2 Ports		2/4 Ports	
10° EI	$\leq 48$		$\leq 58/69$	
20° EI	$\leq 40$		$\leq 51/60$	
30° EI	$\leq 38$		$\leq 49/58$	
Maximum Power Capacity(Kw)		3		1
Feed Interface	CPR-229G	CPR-159G/137G	WR-75	WR-75
Polarization	Linear/Circular		Linear	
Feed Insertion Loss(dB) Including TRF	0.3	0.3	0.35/0.5	0.35/0.5
Tx to Rx Isolation (dB)		$\geq 85$		$\geq 85$
Cross Polarization Isolation, Axial (dB)		$\geq 35$		$\geq 35$
First Side Lobe		$\leq -14\text{dB}$		
Side Lobe Envelop		$29-25\lg e \quad 1^\circ \leq e \leq 20^\circ$		

# Ground Station

## 3.7m C/Ku ground station (Synchronous Satellite)

### Environmental Specification

Wind Loading Operational	20.8m/s
Wind Loading	35m/s
Wind Loading Survival	55m/s
Temperature Operational	-20°C- +55°C (-45°C- +60°C)
Humidity	5%-95%
Vibration	0.3G's(H) 0.15G's(V)
Solar Radiation	360BTU/h/ft <sup>2</sup>
Ice Loading	3 cm

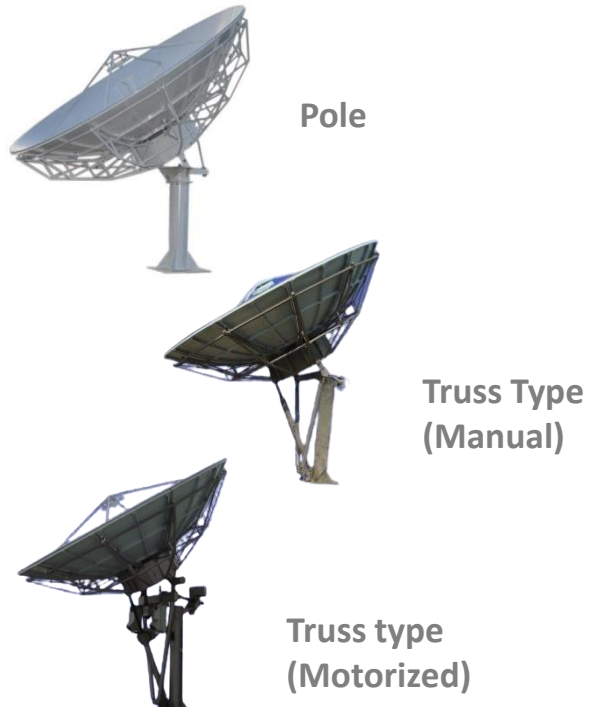
### Mechanical Specification

Antenna Type	Ring Focus		
King Post Type	Pole	Truss type	
Drive Mode	Manual	Manual/Motorized	
Azimuth Range	0°~360°	-85°~+85°	
Elevation Range	5°~90°		
Polarization Range	±90°		



# Ground Station

## 4.5m C/Ku ground station (Synchronous Satellite)



### Feature

- Ring-focus design
- High Accuracy Stretch-formed Aluminum Panel
- Meet data receive and TV receive requirement
- Optional Band Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Single/Dual Polarization as option
- Manual/Motorized as option
- High Erosion Resistance
- Assembled and tested feed system before delivery

# Ground Station

## 4.5m C/Ku ground station (Synchronous Satellite)

Electrical Specification	C band Rx	C band Tx	Ku band Rx	Ku band Tx
Operating Frequency	3.4- 4.2 GHz	5.85-6.65 GHz	10.95-12.75 GHz	13.75-14.5 GHz
Gain, Mid-Band(dBi)	$\geq 43.5 + 20\lg(f/4)$	$\geq 47 + 20\lg(f/6)$	$\geq 52.8 + 20\lg(f/12)$	$\geq 54.1 + 20\lg(f/14)$
VSWR	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$
Beam Width (-3dB)	$\leq 1.10^\circ$	$\leq 0.73^\circ$	$\leq 0.39^\circ$	$\leq 0.34^\circ$
Noise Temperature	2/4 Ports		2/4 Ports	
10° EI	$\leq 48/50$		$\leq 58/69$	
20° EI	$\leq 40/45$		$\leq 51/60$	
30° EI	$\leq 38/40$		$\leq 49/58$	
Maximum Power Capacity (Kw)		5		1
Feed Interface	CPR-229G	CPR-159G/137G	WR-75	WR-75
Polarization		Linear/Circular		Linear
Feed Insertion Loss (dB)Including TRF	0.3/0.4	0.3/0.4	0.35/0.5	0.35/0.5
Tx to Rx Isolation(dB)		$\geq 85$		$\geq 85$
Cross Polarization Isolation, Axial (dB)		$\geq 35$		$\geq 35$
Axial Ratio	$\leq 1.5$	$\leq 1.5$		
First Side lobe			$\leq -14\text{dB}$	
Side lobe Envelop			29-25lge $1^\circ \leq e \leq 20^\circ$	

# Ground Station

## 4.5m C/Ku ground station (Synchronous Satellite)

### Environmental Specification

Wind Loading Operational	20.8m/s
Wind Loading	35m/s
Wind Loading Survival	55m/s
Temperature Operational	-20°C- +55°C (-45°C- +60°C)
Humidity	5%-95%
Vibration	0.3G's(H) 0.15G's(V)
Solar Radiation	360BTU/h/ft <sup>2</sup>
Ice Loading	3 cm

### Mechanical Specification

Antenna Type	Ring Focus		
King Post Type	Pole	Truss type	
Drive Mode	Manual	Manual/Motorized	
Azimuth Range	0°~360°	-85°~+85°	
Elevation Range	5°~90°		
Polarization Range	±90°		

# Ground Station

## 6.2m C/Ku ground station (Synchronous Satellite)



### Feature

- Ring-focus design
- High Accuracy Stretch-formed Aluminum Panel
- Meet data receive and TV receive requirement
- Optional Band Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Single/Dual Polarization as option
- Manual/Motorized as option
- High Erosion Resistance
- Assembled and tested feed system before delivery

# Ground Station

## 6.2m C/Ku ground station (Synchronous Satellite)

Electrical Specification	C band Rx	C band Tx	Ku band Rx	Ku band Tx
Operating Frequency	3.4- 4.2 GHz	5.85-6.65 GHz	10.95-12.75 GHz	13.75-14.5 GHz
Gain, Mid-Band(dBi)	$\geq 46.4 + 20\lg(f/4)$	$\geq 49.9 + 20\lg(f/6)$	$\geq 55.6 + 20\lg(f/12)$	$\geq 56.9 + 20\lg(f/14)$
VSWR	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$
Beam Width(-3dB)	$\leq 0.86^\circ$	$\leq 0.57^\circ$	$\leq 0.29^\circ$	$\leq 0.25^\circ$
Beam Width(-10dB)	$\leq 1.58^\circ$	$\leq 1.06^\circ$	$\leq 0.54^\circ$	$\leq 0.46^\circ$
Noise Temperature	2/4 Ports		2/4 Ports	
10° EI	$\leq 46/52$		$\leq 57/68$	
20° EI	$\leq 38/44$		$\leq 48/59$	
30° EI	$\leq 38/42$		$\leq 47/57$	
Maximum Power Capacity(Kw)		5		1
Feed Interface	CPR-229G	CPR-159G/137G	WR-75	WR-75
Polarization		Linear/Circular		Linear
Feed Insertion Loss (dB)Including TRF	0.3/0.4	0.3/0.4	0.35/0.5	0.35/0.5
Tx to Rx Isolation, dB		$\geq 85$		$\geq 85$
Cross Polarization Isolation, Axial, dB		$\geq 35$		$\geq 35$
Axial Ratio	$\leq 1.5$	$\leq 1.5$		
First Side lobe			$\leq -14\text{dB}$	
Side lobe Envelop			29-25lge $1^\circ \leq e \leq 20^\circ$	

# Ground Station

## 6.2m C/Ku ground station (Synchronous Satellite)

### Environmental Specification

Wind Loading Operational	20.8~28.4m/s
Wind Loading	35m/s
Wind Loading Survival	55m/s
Temperature Operational	-20°C- +55°C (-45°C- +55°C)
Humidity	5%-95%
Vibration	0.3G's(H) 0.15G's(V)
Solar Radiation	360BTU/h/ft <sup>2</sup>
Ice Loading	3 cm

### Mechanical Specification

Antenna Type	Ring Focus
RMS	≤0.5mm
King Post Type	Truss type
Drive Mode	Motorized
Azimuth Range	-85°~+85°
Elevation Range	5°~90°
Polarization Range	±90°

# Ground Station

## 7.3m C/Ku ground station (Synchronous Satellite)



### Features

- Ring-focus design
- High Accuracy Stretch-formed Aluminum Panel
- Meet data receive and TV receive requirement
- Optional Band Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Single/Dual Polarization as option
- Manual/Motorized as option
- High Erosion Resistance
- Assembled and tested feed system before delivery

# Ground Station

## 7.3m C/Ku ground station (Synchronous Satellite)

Electrical Specification	C band Rx	C band Tx	Ku band Rx	Ku band Tx
Operating Frequency	3.4- 4.2 GHz	5.85-6.65 GHz	10.95-12.75 GHz	13.75-14.5 GHz
Gain, Mid-Band(dBi)	$\geq 47.8 + 20\lg(f/4)$	$\geq 51.3 + 20\lg(f/6)$	$\geq 57.0 + 20\lg(f/12)$	$\geq 58.3 + 20\lg(f/14)$
VSWR	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$
Beam Width(-3dB)	$\leq 0.73^\circ$	$\leq 0.49^\circ$	$\leq 0.25^\circ$	$\leq 0.21^\circ$
Beam Width(-10dB)	$\leq 1.34^\circ$	$\leq 0.89^\circ$	$\leq 0.46^\circ$	$\leq 0.38^\circ$
Noise Temperature	2/4 Ports		2/4 Ports	
10° EI	$\leq 45/50$		$\leq 57/65$	
20° EI	$\leq 40/45$		$\leq 48/59$	
30° EI	$\leq 35/40$		$\leq 43/51$	
Maximum Power Capacity(Kw)		5		1
Feed Interface	CPR-229G	CPR-159G/137G	WR-75	WR-75
Polarization		Linear/Circular		Linear
Feed Insertion Loss(dB)Including TRF	0.3/0.4	0.3/0.4	0.35/0.5	0.35/0.5
Tx to Rx Isolation(dB)		$\geq 85$		$\geq 85$
Cross Polarization Isolation, Axial(dB)		$\geq 35$		$\geq 35$
Axial Ratio	$\leq 1.5$	$\leq 1.5$		
First Side lobe			$\leq -14\text{dB}$	
Side lobe Envelop			$29-25\lg e$	$1^\circ \leq e \leq 20^\circ$



# Ground Station

## 7.3m C/Ku ground station (Synchronous Satellite)

### Environmental Specification

Wind Loading Operational	20.8~28.4m/s
Wind Loading	35m/s
Wind Loading Survival	55m/s
Temperature Operational	-20°C- +55°C (-45°C- +55°C)
Humidity	5%-95%
Vibration	0.3G's(H) 0.15G's(V)
Solar Radiation	360BTU/h/ft <sup>2</sup>
Ice Loading	3 cm

### Mechanical Specification

Antenna Type	Ring Focus
RMS	≤0.5mm
King Post Type	Truss type
Drive Mode	Motorized
Azimuth Range	-85°~+85°
Elevation Range	5°~90°
Polarization Range	±90°

# Ground Station

## 9m C/Ku ground station (Synchronous Satellite)



### Features

- Ring-focus design
- High Accuracy Stretch-formed Aluminum Panel
- Meet data receive and TV receive requirement
- Optional Band Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Linear or Circular Polarized feed system as option
- Single/Dual Polarization as option
- Manual/Motorized as option
- High Erosion Resistance
- Assembled and tested feed system before delivery

# Ground Station

## 9m C/Ku ground station (Synchronous Satellite)

Electrical Specification	C band Rx	C band Tx	Ku band Rx	Ku band Tx
Operating Frequency	3.4- 4.2 GHz	5.85-6.65 GHz	10.95-12.75 GHz	13.75-14.5 GHz
Gain, Mid-Band(dBi)	$\geq 49.7+20\lg(f/4)$	$\geq 53.1+20\lg(f/6)$	$\geq 58.8+20\lg(f/12)$	$\geq 60.2+20\lg(f/14)$
VSWR	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$	$\leq 1.25: 1$
Beam Width(-3dB)	$\leq 0.59^\circ$	$\leq 0.40^\circ$	$\leq 0.20^\circ$	$\leq 0.17^\circ$
Beam Width(-10dB)	$\leq 1.09^\circ$	$\leq 0.73^\circ$	$\leq 0.37^\circ$	$\leq 0.32^\circ$
Noise Temperature	2/4 Ports		2/4 Ports	
10° EI	$\leq 45/50$		$\leq 57/65$	
20° EI	$\leq 40/45$		$\leq 47/55$	
30° EI	$\leq 35/40$		$\leq 43/51$	
Maximum Power Capacity(Kw)		5		1
Feed Interface	CPR-229G	CPR-159G/137G	WR-75	WR-75
Polarization		Linear/Circular		Linear
Feed Insertion Loss(dB)Including TRF	0.3/0.4	0.3/0.4	0.35/0.5	0.35/0.5
Tx to Rx Isolation(dB)		$\geq 85$		$\geq 85$
Cross Polarization Isolation, Axial (dB)		$\geq 35$		$\geq 35$
Axial Ratio	$\leq 1.5$	$\leq 1.5$		
First Side lobe			$\leq -14\text{dB}$	
Side lobe Envelop			$29-25\lg e$	$1^\circ \leq e \leq 20^\circ$

# Ground Station

## 9m C/Ku ground station (Synchronous Satellite)

### Environmental Specification

Wind Loading Operational	20.8m/s ~28.4m/s
Wind Loading	35m/s
Wind Loading Survival	55m/s
Temperature Operational	-20°C- +55°C (-45°C- +60°C)
Humidity	5%-95%
Vibration	0.3G's(H) 0.15G's(V)
Solar Radiation	360BTU/h/ft <sup>2</sup>
Ice Loading	3 cm

### Mechanical Specification

Antenna Type	Ring Focus
RMS	≤0.5mm
King Post Type	Truss type
Drive Mode	Motorized
Azimuth Range	-85°~85°
Elevation Range	5°~90°
Polarization Range	±90°

# Ground Station

## 13 meter ground station (Synchronous Satellite)

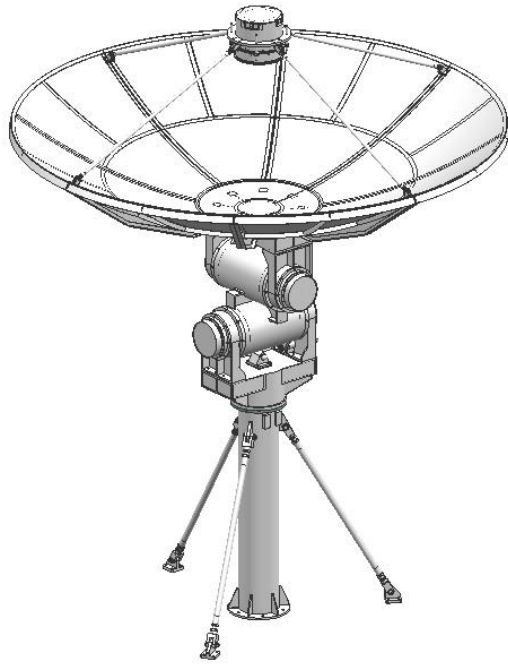


### Features

- Main Reflector Diameter: 13m
- Antenna Type: Cassegrain
- King Post Type: turntable
- Accuracy Of Main Surface:  $RMS \leq 0.5\text{mm}$
- Sub-surface Accuracy:  $RMS \leq 0.15\text{mm}$
- Range of Motion: Az:  $\pm 170^\circ$ , El:  $0 \sim 90^\circ$
- The Angular Velocity: AZ/El:  $0 \sim 0.3^\circ/\text{s}$
- The Angular Acceleration: AZ/El:  $0 \sim 0.3^\circ/\text{s}^2$
- Mechanical Precision:  $\leq 0.02^\circ$
- Operating Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Application Areas: synchronous orbit satellite communication , etc

# Ground Station

## 2.4m XY Antenna-Over-the-top target tracking

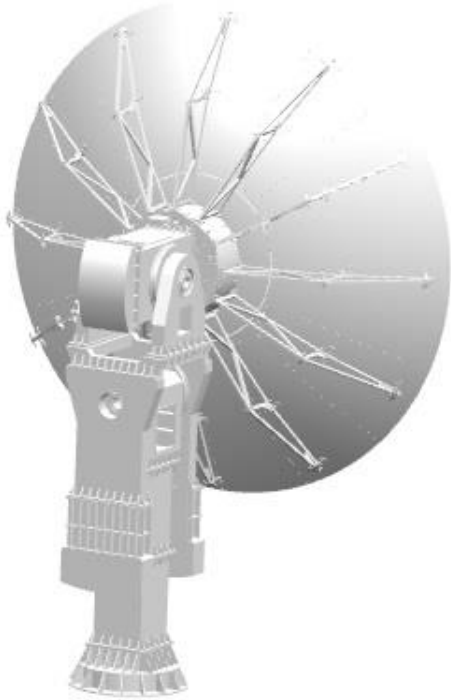


### Features

- Main Reflector Diameter: 2.4m
- Main-surface Accuracy:  $RMS \leq 0.35\text{mm}$
- King Post Type: X-Y
- Range of Motion: X/Y axis:  $0^\circ \sim 180^\circ$ ;
- The Angular Velocity: X/Y axis:  $0 \sim 5^\circ/\text{s}$
- The Angular Acceleration: X/Y axis:  $0 \sim 5^\circ/\text{s}^2$
- Mechanical Precision:  $\leq 0.1^\circ$
- Installation Platform: ground station
- Operating Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option
- Application Areas: Low Earth Orbit Satellites

# Ground Station

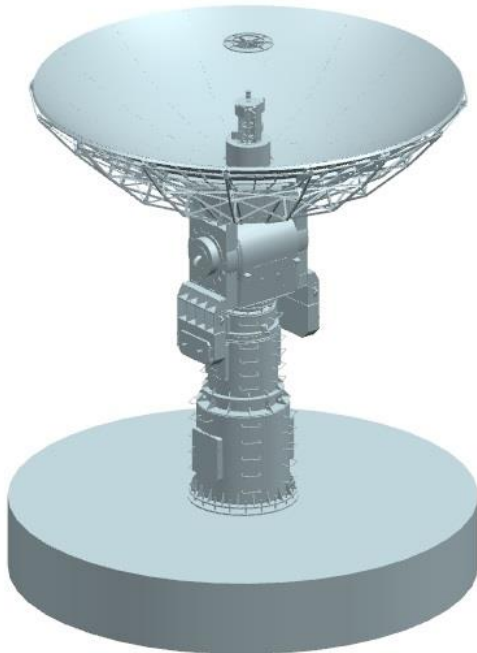
## 5.4m XY Antenna-Over-the-top target tracking



### Features

- Main Reflector Diameter: 5.4m
- Main-surface Accuracy:  $RMS \leq 0.5mm$
- King Post Type: X-Y
- Range of Motion: X/Y axis:  $0^\circ \sim 180^\circ$ ;
- The Angular Velocity: X/Y axis:  $0 \sim 5^\circ/s$
- The Angular Acceleration: X/Y axis:  $0 \sim 5^\circ/s^2$
- Mechanical Precision:  $\leq 0.02^\circ$
- Installation Platform: ground station
- Operating Frequency: C-band, Ku-band, ka-band, S-band, L-band  
frequency as option
- Application Areas: : Low Earth Orbit Satellites

## 7.3m Triaxial Antenna -Over-the-top target tracking



### Features

- Main Reflector Diameter: 7.3m
- Main-surface Accuracy:  $RMS \leq 0.5mm$
- King Post Type: A-E-T
- Range of Motion: Az:  $-340^\circ \sim 340^\circ/360^\circ$  Continuous optional, El:  $-90^\circ \sim 90^\circ$ , Tr:  $-175^\circ \sim 175^\circ$
- The Angular Velocity: Az/El:  $0 \sim 25^\circ/s$ , Tr:  $0 \sim 5^\circ/s$
- The Angular Acceleration: Az/El:  $\leq 20^\circ/s^2$ , Tr:  $\leq 5^\circ/s^2$
- Mechanical Precision:  $\leq 0.02^\circ$
- Installation Platform: ground station
- Operating Frequency: C-band, Ku-band, ka-band, S-band, L-band frequency as option;
- Application Areas: : Low Earth Orbit Satellites



# Shipborne Solutions

## Product features:

- 0.6m and 0.8m-KU band optional
- Modular design, high integration
- Two-axis stable structure, three-axis tracking. High tracking accuracy and fast response
- Power Amps, Controller, Mods are all integrated into the internal of the Satellite Signal, automatically search for satellite signals.

Spec&Datesheet	
caliber	0.6m (KU)
Axis mode	2-axis stabilization, 3-axis tracking
shape size	740 (diameter) x 830 (height) mm
net weight	32Kg (including Modem)
Radiation frequency band	Rx: 10.70~12.75GHz Tx: 13.75~14.50GHz
Midband Gain	Rx≥35.5dBi Tx≥36.5dBi
Cross polarization isolation	≥30dB
Polarization mode	Line Polarization
Tracking accuracy	≤0.2° R.M.S.
Antenna range of motion	Azimuthal angle: 360° continuous rotation Pitch angle: -10°~90° Polarization angle: -135°~135°
First-work time	≤120s
Rework-time when shelter	<60s covered, restart ≤3s
Voltage	24V DC(18~36V) 220V AC(100~240V)
Operating temperature	-25°C~55°C



# Shipborne Solutions

## 0.45m Ka-band two feed Paraboloid antenna

### Product features:

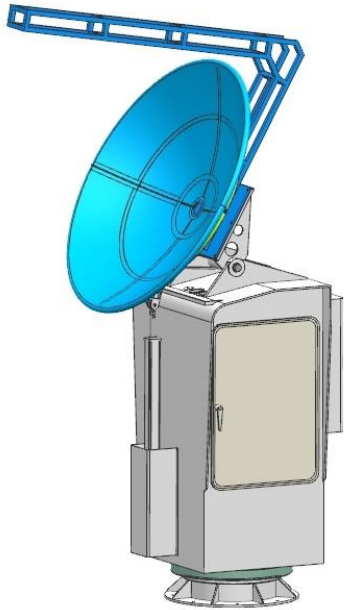
- Three-axis tracking platform support overtopping tracking
- The controller adopts the tracking mode of high-precision strapdown inertial navigation technology and beacon
- Built-in GPS module, ensure that accurately pointing the satellite during the ship's moving
- Suitable for high-throughput satellite. Provide high speed, high capacity and efficient low altitude satellite communication. Providing high-speed data service.



Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Polarization mode	Circular polarization adjustable
EIRP	$\geq 4343.4 + 20\lg(f/29.25)$ dBW
G/T Value	$\geq 11.5 + 20\lg(f/19.45)$ dB/K
Star alignment accuracy	$\leq 0.5$ dB (RMS)
Pedestal form	Three axis stability+polarization axis
Shape size	$\Phi 600\text{mm} \times 650\text{mm}$

# All-in-One Solutions

## Rain radar antenna device (fixed station)

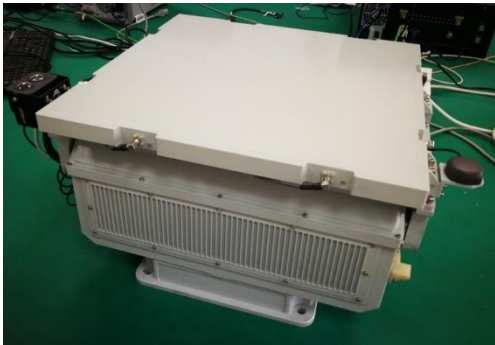
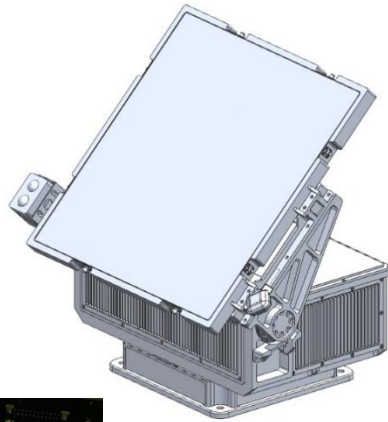


### Features

- Diameter: 1.8m
- Main surface accuracy:  $\text{RMS} \leq 0.3\text{mm}$
- Moving range: (Az) :  $360^\circ$ ; (El) :  $15^\circ \sim 110^\circ$
- Angular velocity : (Az) :  $0 \sim 20^\circ$ ; (El) :  $0^\circ \sim 20^\circ$
- Angular acceleration : (Az) :  $\leq 20^\circ/\text{s}$ ; (El) :  $\leq 20^\circ/\text{s}$
- Mechanical precision :  $\leq 0.05^\circ$
- Options: Integrated with T/R unit, control unit, and temperature controller

# Portable Solutions

## S-band self tracking telemetry antenna



### Features

- Tracking error :  $\leq 0.5^\circ$
- Moving range: AZ:  $360^\circ$ ; EI:  $-5^\circ \sim +95^\circ$
- Sensitivity:  $-115\text{dBm}$
- Power: DC 28V/250W
- Dimension:  $\leq 500 \times 450 \times 300\text{mm}$  (GPS antenna, camera excluded)
- Weight:  $\leq 30\text{kg}$
- Packing: suitcase

# Portable Solutions

## 0.6m Ka band dual feed device



### Features:

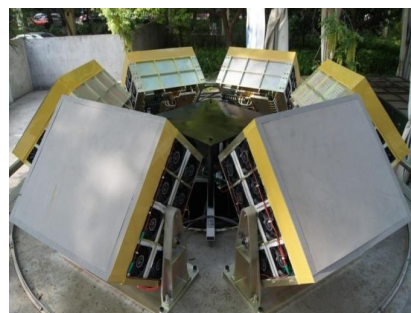
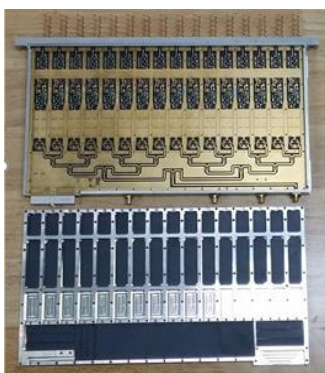
- Support satellite internet access and data transmission
- Foldable design, convenient for outdoor use
- Support posture correction, one click star alignment, automatic bookmarking, and emergency stop function

Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Polarization mode	R/L circular polarization configurable
EIRP	$\geq 50.4 + 20\lg(f/29.25)$ dBW
G/T Value	$\geq 13 + 20\lg(f/19.45)$ dB/K
Star alignment accuracy	$\leq 0.5$ dB (RMS)
Pedestal form	3 axis stability + polarization axis
Shape size	$\Phi 600\text{mm} \times 650\text{mm}$

# Other Solutions

## Ku phase array antennas

Radiation frequency band	11.7~12.75GHz
Number of beams	T1/R1
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis, 0 ~60 ° off axis
Polarization mode	left circular polarization
G/T Value	≥7.2dB/K((Normal reference value)
shape size	≤450mm×450mm×200mm



## Narrowband IoT terminal antenna

Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Intermediate frequency	Receive 3.2 GHz, send 3.8 GHz, Instant Band ≥ 400 MHz (center frequency can be custom)
Number of beams	T1/R1
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis 0 ~ 70 °
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	≥ 27.5dBW@29.25GHz (Normal reference value)
G/T Value	≥-3dB/K@19.45GHz((Normal reference value)
shape size	≤100mm×80mm×15mm
Weight	≤0.5kg
Connectors	RF: SSMP; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

# Other Solutions

## Dual-beam narrow-band Terminal ANT

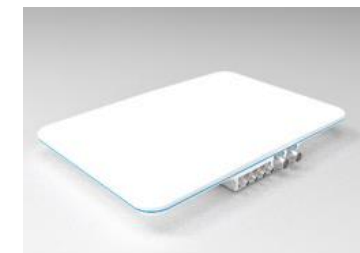
- Two independent beams 2T2R
- Circular Pol adjustable
- Seamless switching between high and low altitude satellite



Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Intermediate frequency	Receive 3.2 GHz, send 3.8 GHz, Instant Band $\geq$ 400 MHz (center frequency can be custom)
Number of beams	T2/R2
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis 0 ~ 70 ° off
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	$\geq$ 34dBW@29.25GHz (Normal reference value)
G/T Value	$\geq$ 2.5dB/K@19.45GHz((Normal reference value)
shape size	$\leq$ 260mm $\times$ 160mm $\times$ 35mm
Weight	$\leq$ 1.5kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

## Portable Dual-beam Terminal ANT

- Built-in INS/GPS
- Seamless switching between high and low altitude satellite in high mobility



Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Intermediate frequency	Receive 3.2 GHz, send 3.8 GHz, Instant Band $\geq$ 400 MHz (center frequency can be custom)
Number of beams	T2/R2
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis 0 ~ 70 °
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	$\geq$ 42.5dBW@29.25GHz (Normal reference value)
G/T Value	$\geq$ 8.5dB/K@19.45GHz((Normal reference value)
shape size	$\leq$ 500mm $\times$ 350mm $\times$ 35mm
Weight	$\leq$ 5.5kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

# Other Solutions

## Universal dual-beam wideband terminal

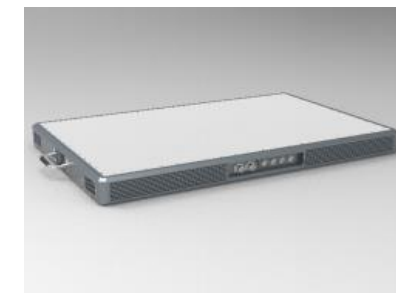
- Wideband telecommunication
- Conduction heat dissipation + forced air cooling



Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Intermediate frequency	Receive 3.2 GHz, send 3.8 GHz, Instant Band $\geq$ 400 MHz (center frequency can be custom)
Number of beams	T2/R2
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis 0 ~ 70 °
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	$\geq$ 45dBW@29.25GHz (Normal reference value)
G/T Value	$\geq$ 11.5dB/K@19.45GHz((Normal reference value)
shape size	$\leq$ 660mm $\times$ 400mm $\times$ 55mm
Weight	$\leq$ 9.8kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

## High performance 2-beam wideband terminal

- Support 3.5G band
- Dual beam working mode
- Improve throughput



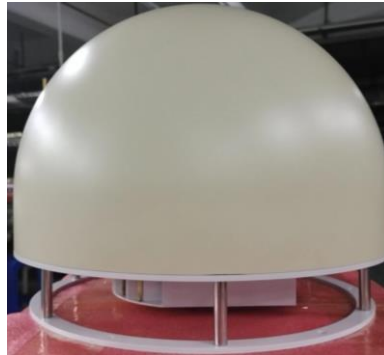
Radiation frequency band	Uplink frequency: 27.5~31GHz Downlink frequency: 17.7~21.2GHz
Intermediate frequency	Receive 3.2 GHz, send 3.8 GHz, Instant Band $\geq$ 400 MHz (center frequency can be custom)
Number of beams	T2/R2
Scanning range	Rotation 0 ~ 360 °, 0 ° off axis 0 ~ 70 °
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	$\geq$ 56dBW@29.25GHz (Normal reference value)
G/T Value	$\geq$ 15.5dB/K@19.45GHz((Normal reference value)
shape size	$\leq$ 1000mm $\times$ 560mm $\times$ 88mm
Weight	$\leq$ 15kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C



# Other Solutions

## Full airspace multibeam coverage Antenna

- Full airspace coverage
- Communication with LEO and GEO by multibeam at the same time.
- Frequency and diameter can be customized



Radiation frequency band	L,S
Intermediate frequency	L
Number of beams	T2/R2
Scanning range	Rotation 0 ~ 360 °, 0 ~ 80° off axis(0~105° off axis If need)
Working mode	Full duplex
Polarization mode	Up and down right and left circular polarization configurable
EIRP	≥ 45dBW
G/T Value	≥10.5dB/K
shape size	≤550mm×350mm
Weight	≤15kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

## Full airspace multibeam reception Antenna

- Full airspace receiving
- Reception with less than 8 GEO or LEO at the same time
- Frequency and diameter can be customized



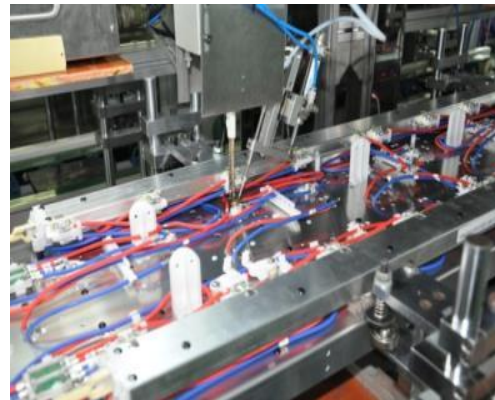
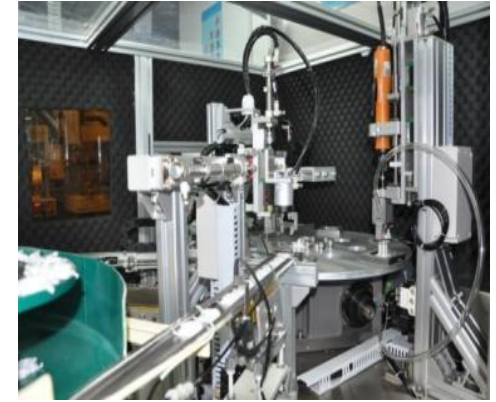
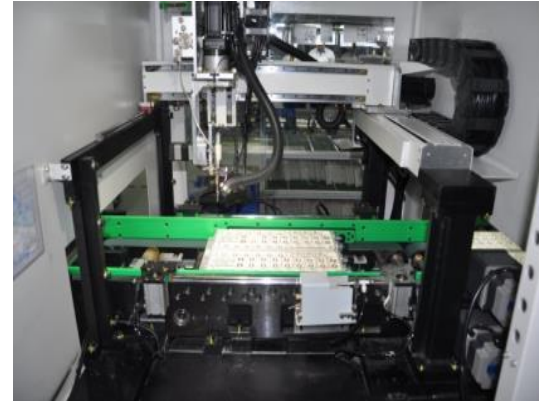
Radiation frequency band	L,S
Intermediate frequency	L
Number of beams	R8
Scanning range	Rotation 0 ~ 360 °, off axis 0 ~ 80 °
Working mode	Only reception
Polarization mode	Up and down right and left circular polarization configurable
EIRP	≥ 56dBW
G/T Value	≥15.5dB/K
shape size	≤700mm×450mm
Weight	≤45kg
Connectors	RF: TNC; Control power supply: air plug; Control power supply: air plug (can be customized)
Use of environment	IP67 grade dust and water resistance design - 55C ~ + 70C

03

# Production capability

# Automatic Production

- About 200 professional automation production team
- Complete product production, testing equipment and testing environment



# Reliability Verification Testing



H/L temperature  
humidity testing



Salt spray test



Drop Test



Rain Test



Aging test



Vibration testing

# Plenty instrument

Instrument	Qty Owned (PCS)
injection molding machines	16
punching press	6/125T, 6/80T, 8/40T
16T sheet metal stamping	6
CNC stamping machines	2
CNC machines	100
vector network analyzers	>50
fully automatic welding machines	20
fully automated robotic arms	31
SMT mounting machines	>10
die-casting machines	12
automated assembly production	5



Precision machining



Die casting workshop



Surface electroplating treatment



Surface powder spraying

# Indoor Test Facility



Signal Generator Amount: 3  
Work frequency MAX:90GHz



Numbers of VNA: 6  
Working frequency MAX: 90GHz



Freq. Spectrograph Amount: 2  
Work frequency MAX: 86GHz  
( 110GHz extendable)



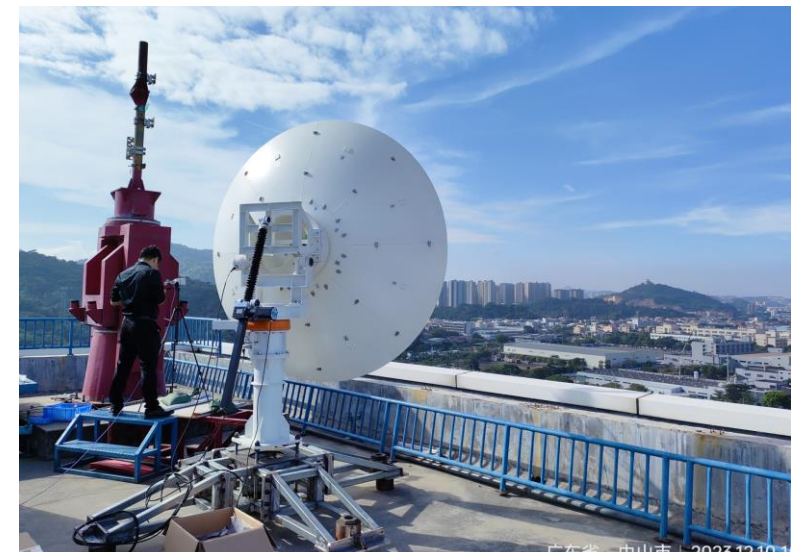
Numbers of SNA. 2  
Work frequency MAX: 43GHz



Dielectric Constant Test System  
Wok freq. MAX : 43GHz

# Far Field Test Facility

Antenna Size	0.1~3.7m
Antenna Weight	350kg
Angular Accuracy	0.02deg
No. of Axis for Rotary Table	4
Rotation Speed	0.05~10 deg/s
T/R distance	250m, 2.5km





TONGYU COMMUNICATION

# Thanks!

The world's leading communication solutions provider

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- The producer of the first BTS antenna in China.
- The world's first TDD smart antenna manufacturer.
- The world's first integrated filter 5G antenna designer.

