

# Diameter 22 M Radio Telescope for the Geodetic VLBI Observation

**Model No.** 22M – RT



**Options**

- S, X, K and Q Band Antenna System
- 4 Band Feed Simultaneous receiving
- HXAC System
- Serve System
- Turnkey Installation and Testing
- Packing for Sea and Air Transport

## Electrical Specifications

Electrical Item	S – Band Linear Pol. Receive	X – Band Linear Pol. Receive	K – Band Receive	Q – Band Linear Pol. Receive
Frequency (GHz)	2	8	22	43
Gain (Mid:dBi)	50.65	62.69	71.47	77.3
Beam Width (3 dB)	0.53 °	0.13 °	0.05 °	0.02 °
VSWR	1.3	1.3	1.3	1.3
Axial Ratio	N/A	N/A	N/A	N/A
Pointing Accuracy	<8arcsec(@ wind10m/sec)			
Reflector Surface Accuracy	<150um (0.015mm) RMS			
Aperture Efficiency	≥ 60 %			

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## Mechanical Specifications

Antenna Diameter	22 Meter
Antenna Type	Cassegrain dual reflector and FSS reflector for band selector
Reflector	Shapingformed aluminum panels, welded steel back-up structure frequency selective mirror
Pedestal Configuration	Elevation over azimuth pedestal, constructed of steel yoke tower
Azimuth Travel	$\pm 270^\circ$
Elevation Travel	$0 \sim 90^\circ$
Azimuth Travel Rate	$3^\circ / \text{sec}$
Elevation Travel Rate	$3^\circ / \text{sec}$
Foundation(L x W x D)	Base W15000xW15000x2000H, Yoke $\phi$ 7000x4700H

## Environmental Specifications

Survival Wind Loading	200 km/h
Operational Wind Loading	10m/sec
Operational Temperature	$-20^\circ$ to $+40^\circ\text{C}$
Survival Temperature	$-30^\circ$ to $+60^\circ\text{C}$
Rain	up to 100 mm/h
Relative Humidity	$0 \sim 100\%$
Solar Radiation	1000 kcal/h/m <sup>2</sup>
Ice (Survival)	2cm on all surfaces or 1.3 cm on all surfaces with 130 km/h wind gusts

※ Without active elements and components.

## Antenna Drawing (unit : mm)

