



# Brief Introduction of Antenna Radome

## ◆ R&D Ability



- ◆ NWIEE is advanced in research and production of composite materials that have been successfully used for satellite antenna, CFRP antenna, fiberglass antenna and the radomes with thick wall, good microwave transmission and super-wide band for satellite communications antenna (air-borne, ship-borne) high power feed, different horns and dielectric cones in the quantity of several thousands.

- ◆ NWIEE has a special composite material research and application center in the research and production of large radomes. The radome in diameter of 6.5M, 9.1M and 20M, respectively for Ka-band, S-band and X/S band, are the representatives which have been widely accepted by customers. Tens of radomes in multi-band and high frequency are under production with the maximum



diameter of 40M for dual C and S band and the radome in diameter of 20M with high technology will be used for Ka, X and S bands, of which the specifications meet its requirement.

## ◆ Advantages

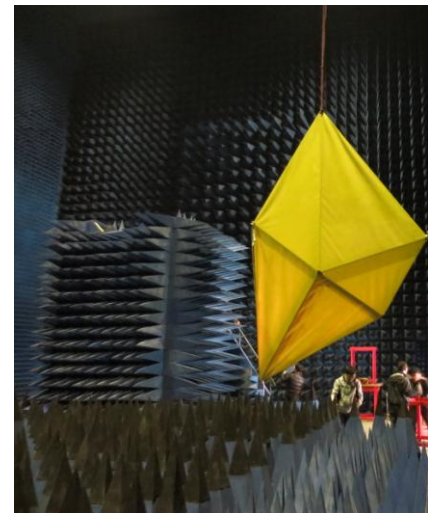
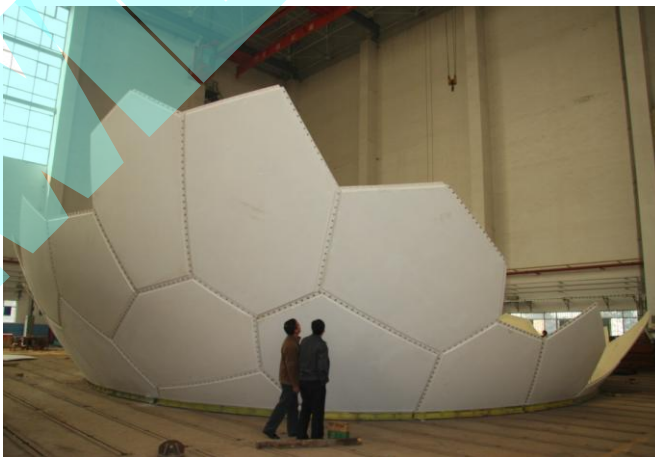
- ◆ NWIEE is the professional research institute in precision antenna tracking systems. Compact and high-effective production management organization has been built after ten years design and production. NWIEE has past ISO9000 certification, design and production certification for weapon equipment and secret qualification.



✧ In the design and production of radome, NWIEE has many technicians with profession in composite and microwaves. In hardware of technological equipment, there is a high standard composite laying laboratory with purification of one hundred thousand levels and professional composite forming equipment (hot press tank and accessories) in diameter of 1.5X3 meters. NWIEE also has DSC, pre-steeping configuration machine and multi-channel digital deformeter, C-scanning nondestructive test equipment and electronic universal tesion tester, etc. The professional composite structural analysis and design software (MSC/PATRAN LAMINATE MODELER) purchased from MSC Company can be used for timely simulation analysis of structural strength.



✧ NWIEE has a large microwave chamber for electrical performance test of element of radome, that provides the gurantee for batch production. The software developed by NWIEE for the analysis of electrical performance of a complete radome provides enough theoretical basis for earlier stage development.





◆ Typical Radomes

◇ Fiber-glass Radome in Diameter of 6.5 Meters

Main Technical Specifications:

Frequency	19.20~20.20GHz	29.00~30.00GHz
Loss	$L \leq 0.8\text{dB}$	$L \leq 1.5\text{dB}$
Aiming Error	$\leq 0.02^\circ$	
First Sidlobe Higher	$\leq 1.0\text{dB}$	
Wind	67m/s	
Life	$\geq 15$ Years	



◇ Fibre-glass Radome in Diameter of 7.64 Meters



Main Technical Specifications:

Frequency	5.85~6.45GHz	3.62~4.20GHz
Loss	$L \leq 0.5\text{dB}$	$L \leq 0.5\text{dB}$
Aiming Error	$\leq 0.01^\circ$	
First Sidlobe Higher	$\leq 1.0\text{dB}$	
Wind	46m/s	
Life	$\geq 20$ Years	

◇ Fiber-glass Radome in Diameter of 9.1 Meters

Main Technical Specifications:

Frequency	2.2~2.3GHz
Loss	$L \leq 0.25\text{dB}$
Aiming Error	$\leq 0.01^\circ$
First Sidlobe Higher	$\leq 1.0\text{dB}$
Wind	46m/s
Life	$\geq 15$ Years

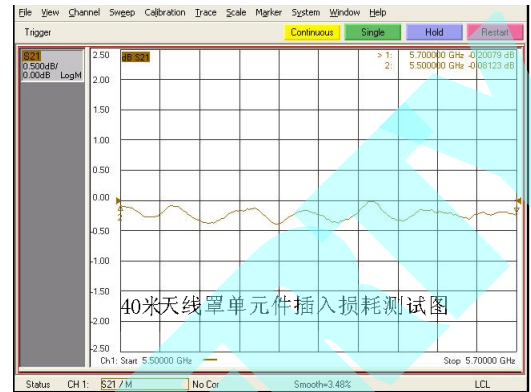




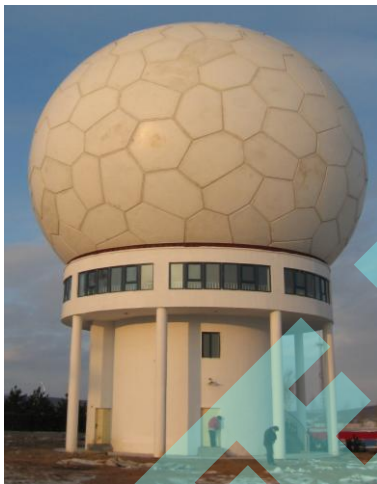
❖ **Fiber-glass Radome in Diameter of 40 Meters**

Main Technical Specifications

Frequency	5.5~5.7GHz	2.2~2.4GHz
Loss	$L \leq 1.5\text{dB}$	$L \leq 0.25\text{dB}$
Aiming Error	$\leq 0.1\text{mrad}$	
First Side lobe Higher	$\leq 1.0\text{dB}$	
Wind	46m/s	
Life	$\geq 20\text{ Years}$	



❖ **Fiber-Glass Radome in Diameter of 20 Meters**



Main Technical Specifications:

Frequency	7.75~8.95GHz
Loss	$L \leq 0.5\text{dB}$
Beam Shift	$\leq 0.03^\circ$
Beam Widing	$\leq 0.03^\circ$
First Sidelobe Higher	$\leq 1.0\text{dB}$
Wind	67m/s
Life	$\geq 20\text{ Years}$

❖ **Metal Truss Radome in Diameter of 20 Meters**

Frequency	25 ~27GHz	7.9~9GHz	2.0~2.3GHz
Loss	$L \leq 1.3\text{dB}$	$L \leq 0.8\text{dB}$	$L \leq 0.5\text{dB}$
Aiming Error	$\leq 0.01^\circ$		
First Sidelobe Higher	$\leq 1.0\text{dB}$		
Wind	50.9m/s		
Temperature	$-70^\circ\text{C} \sim 65^\circ\text{C}$		

