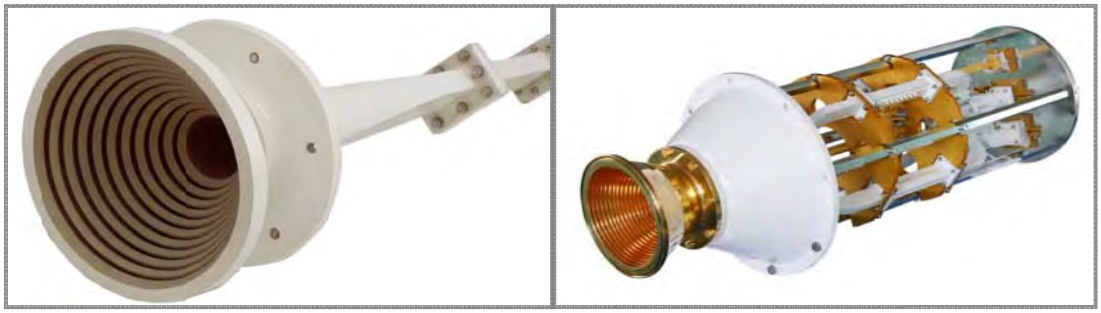
Company Profile

DOLPH
MICROWAVE



—Dolph Microwave Co.,Ltd

FengHuiNan Road NO.34, High-Tech Zone, Xi'an, China
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General

Dolph was founded in 2001, state owner 806 Factory is the predecessor. We designs & manufactures a wide range of high performance Waveguide Components and integrate Earth Station Antennas (ESA) system applied for defence agencies, commercial broadcast networks and research agencies.

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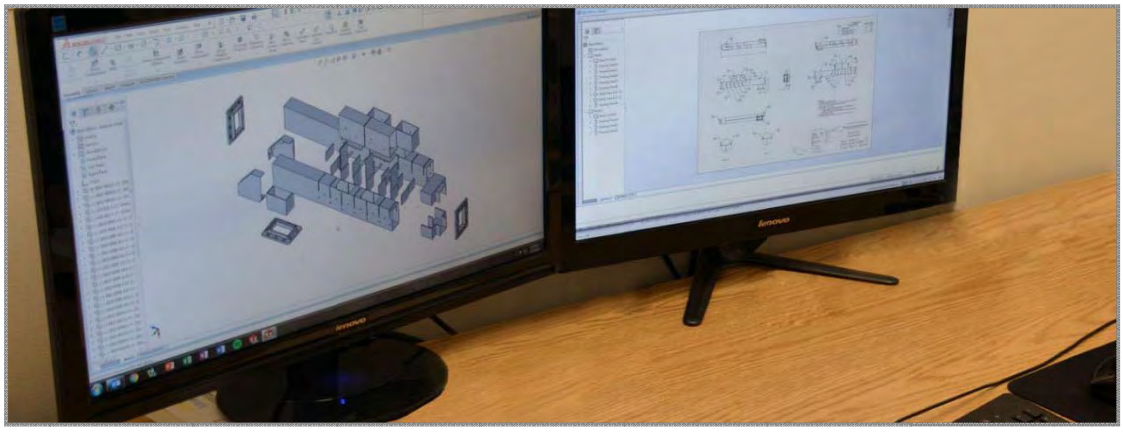
Research & Development

Dolph Microwave has leading R & D ability of microwave components and antenna feeds. Our products meet the required specification based on wide skills in CAD/solid modeling/RF simulation/prototype design, etc. Completed testing equipment help us to reduce time cycle from design to certification, making the whole process more efficient and guaranteed. In addition, we keep closed cooperation with well partners in this industry to offer competitive products for customers.



➢ Microwave Project Design

Our engineers adopt the advanced electromagnetic design tools to design Dolph products, which include:

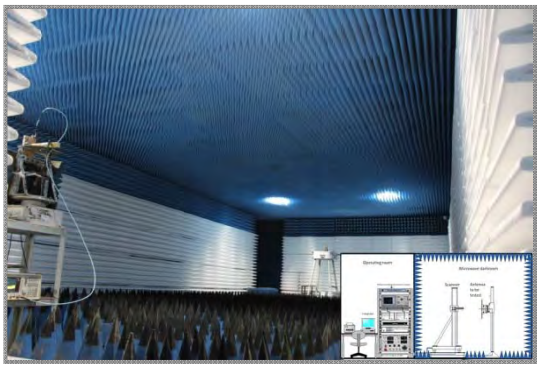
1. CST studio for feed, OMT, filter, phase shifter.

2. The latest CUDA GPU technology.

3. GRASP & POS from TICRA for designing & optimizing antenna optical parts such as multiple beam, dual optical parts, shaped reflector.

4. QuickWave-V2D for designing axial symmetry equipment such as feed, filter,standard gain antenna.

Our testing facility takes key role in Dolph Microwave's continuous development, including the advanced 100GHz compact testing system.



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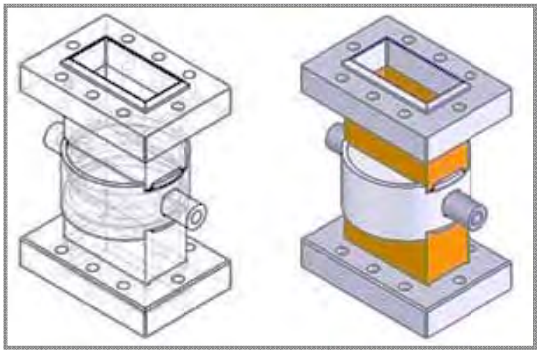
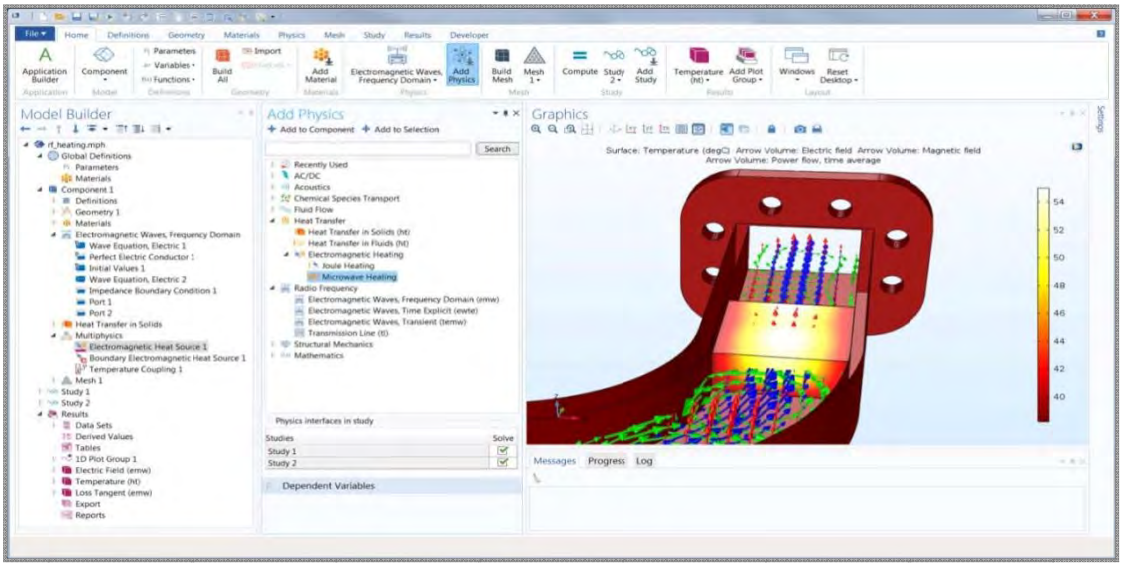
➢ *Machine Design*

Our experienced mechanical engineers assure product mechanical integrity and working life, including Solidworks Flow Simulation (CFD) and ANSYS or Solidworks finite element software. By external wind tunnel, the engineers run wind tunnel test to confirm the computer simulation.

Dolph adopts advanced FARO and LEICA laser scanner to measure surface accuracy and key size of reflecting mirror and other parts.

Our lab built with a salt-fog chamber to test if the paint or pre-painted metal parts meet ASTM B117 standard. And we use environmental test chamber to measure influence for microwave components structure and feed element from the extreme cold or hot environment.





Production & Inspection

Not limited in manufacturing, Dolph offers you excellent solutions for microwave components and satellite antennas. Please contact us with your requirements, a representative will be in touch to discuss details.

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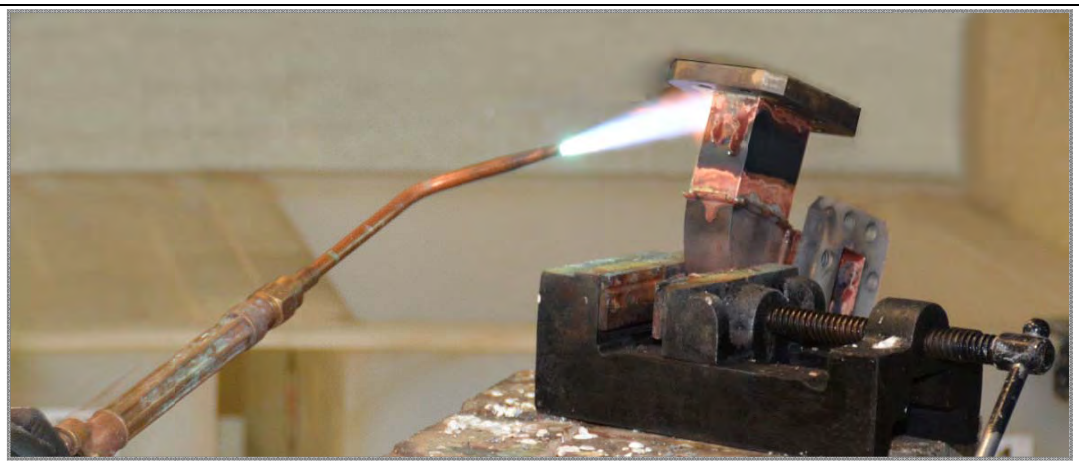

➢ *Our Quality Standards*

We supply our products to your exact needs, which are high quality, competitively priced and available on a quick delivery. We provide strong support for microwave components & feed systems.

Dolph adopts the advanced technology to ensure that every component is manufactured to meet and often exceed specification. Our production under tightly controlled environment, taking CNC Milling and Turning facilities,Bending, Brazing and Assembly.

➢ *Our manufacturing capabilities include*

- CNC machining utilising high accuracy 4 and 3 Axis machines
- Lathes,Turning facilities

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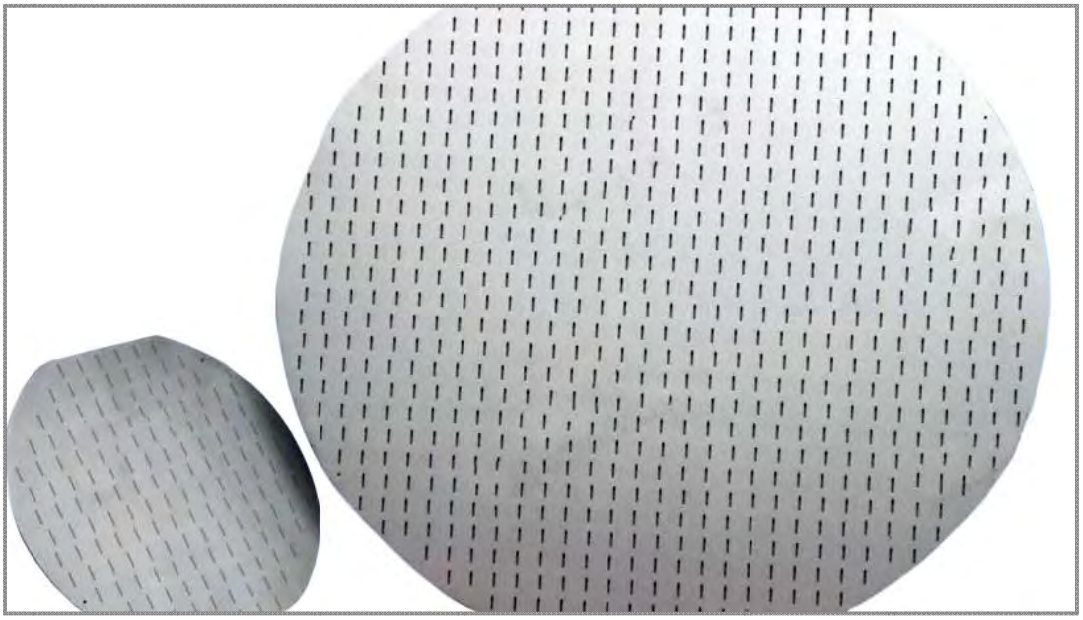
- Waveguide forming and bending
- Anodising and Passivation (RoHS)
- Abrasive Machining
- Diamond Grinding
- Plating – Electrolytic and Electroless
- Soldering and Brazing of Copper, Copper Alloys and Aluminium
- Electroforming



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We test and verify the designed specific parts for product & system stability, and goods quality will be assured by this method together with our advanced measurement technology.

➢ *Our manufacturing capabilities include*

- Powerful RF vector and scalar systems up to 100 GHz
- Antenna Anechoic Chambers
- High Power Transmitters
- Waveguide Calibration Service
- Environmental Testing:
- Temperature/Altitude
- Salt Fog
- Humidity

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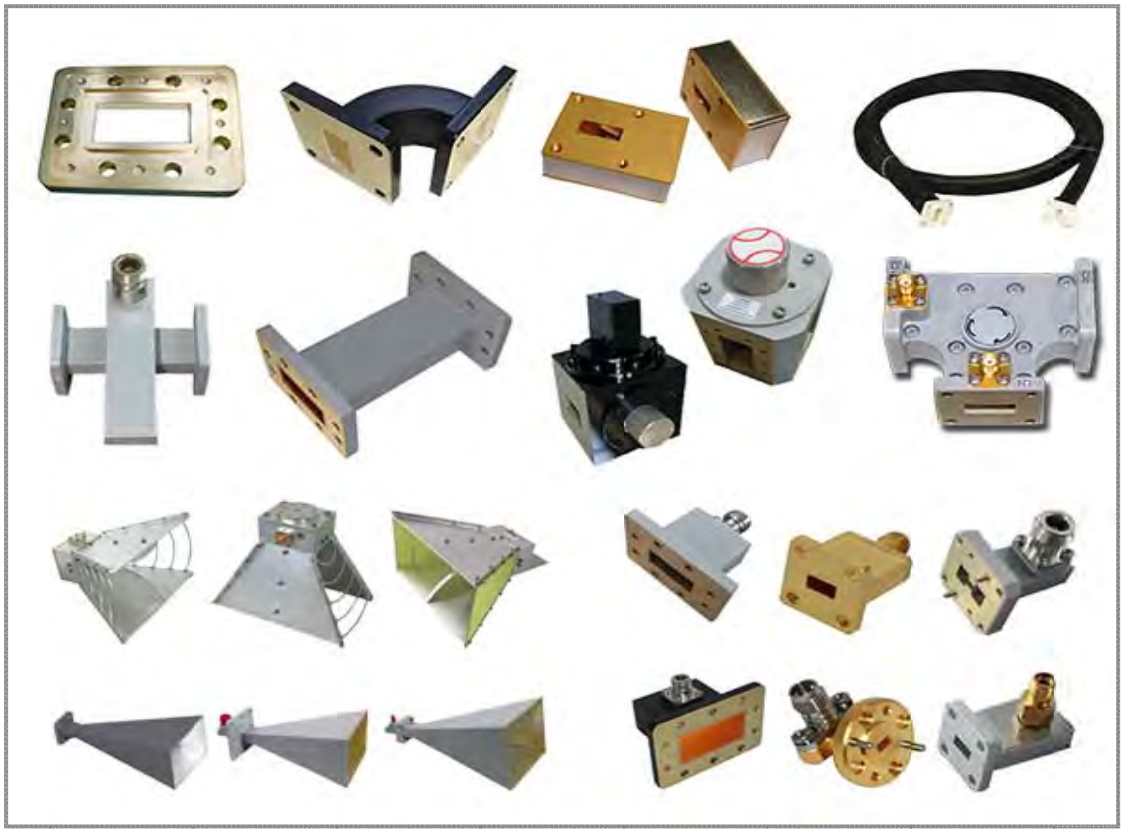
Product & Service

Dolph Microwave manufactures a wide array of high quality Waveguide Components, Earth Station Antennas (ESA) Solutions, and Sub-Assemblies for almost any application you can think of. All of our products are built to meet or exceed your stringent specifications. If you have any special requirements, or would like to discuss your project with one of our knowledgeable engineers please call us.

➢ Waveguide Components & Sub-Assemblies

Waveguides from Dolph Microwave consist of Straight waveguide, Waveguide Twists, Waveguide Bends, Waveguide to Coaxial Adapters, Cross-guide Directional Couplers, Broad-wall Directional Coupler, Waveguide Transitions, Waveguide Tee, Waveguide Switches, Waveguide Rotary Joint, Waveguide Terminations, Waveguide Attenuator, Waveguide Short, Waveguide Circulator, Waveguide Isolator, Coaxial Components, Elliptical Waveguides, Flexible Twist Waveguide, Standard Gain Horn Antenna. Dolph waveguides are available in standard sizes from WR-2300 through WR-15 depending on type of waveguide product, which encompasses frequencies from 1.7 GHz to 110 GHz.



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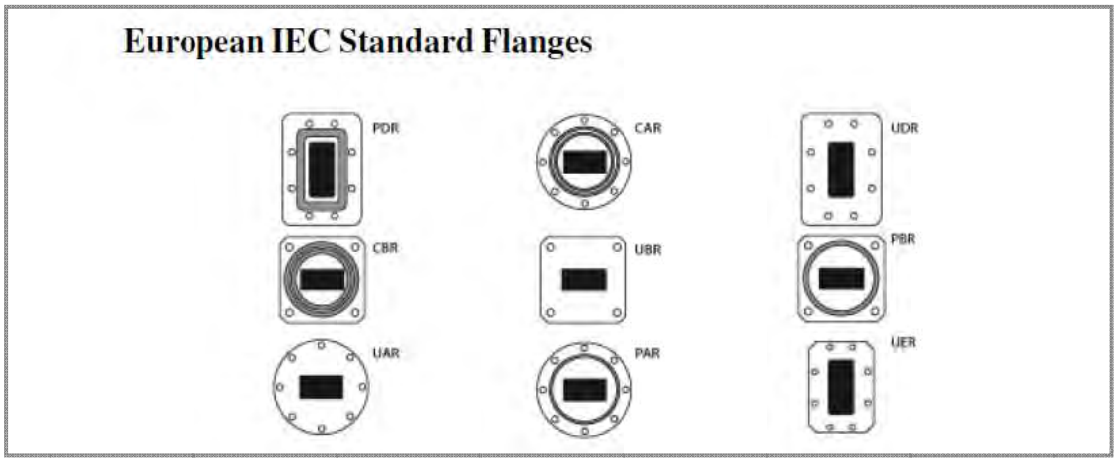
➢ *Flange Types Designations*

Dolph Microwave Components and Engineering manufacture and supply flanges made to current IEC and EIA standards.



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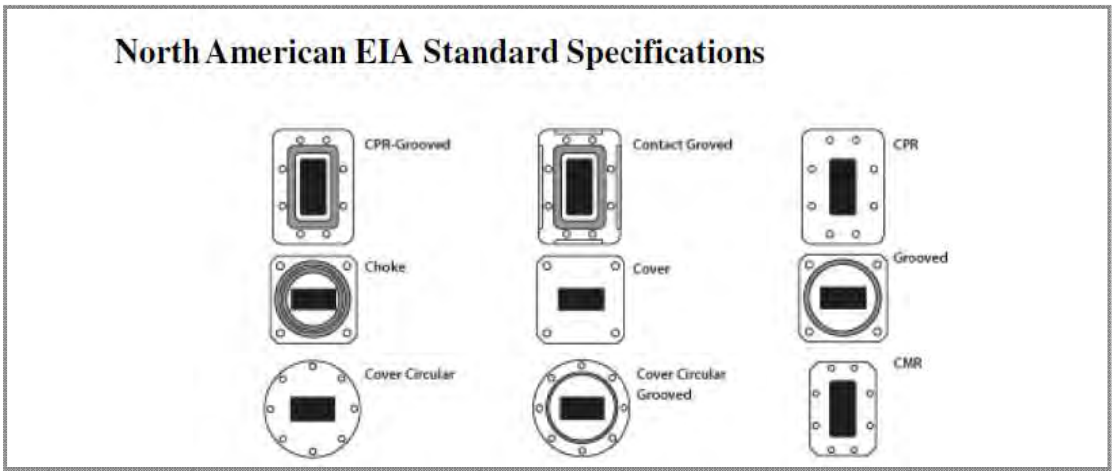
North American EIA Standard Specifications



WG Type		A Type			B Type			D Type		FUGP
EIA Std	IEC Std	FAP (RND COVER)	FAM (RND GROOVED)	FAE (RND CHOKE)	FBP (SQ COVER)	FBM (SQ GROOVED)	FBE (SQ CHOKE)	FDP (CPRF)	FDM (CPRG)	
WR2300	R3							FDP3	FDM3	
WR2100	R4							FDP4	FDM4	
WR1800	R5							FDP5	FDM5	
WR1500	R6							FDP6	FDM6	
WR1150	R8							FDP8	FDM8	
WR975	R9							FDP9	FDM9	
WR770	R12							FDP12	FDM12	
WR650	R14							FDP14	FDM14	
WR510	R18							FDP18	FDM18	
WR430	R22							FDP22	FDM22	
WR340	R26							FDP26	FDM26	
WR284	R32	FAP32	FAM32	FAE32				FDP32	FDM32	
WR229	R40	FAP40	FAM40	FAE40				FDP40	FDM40	
WR187	R48	FAP48	FAM48	FAE48				FDP48	FDM48	
WR159	R58	FAP58	FAM58	FAE58				FDP58	FDM58	
WR137	R70	FAP70	FAM70	FAE70				FDP70	FDM70	
WR112	R84				FBP84	FBM84	FBE84	FDP84	FDM84	
WR90	R100				FBP100	FBM100	FBE100	FDP100	FDM100	
WR75	R120				FBP120	FBM120	FBE120	FDP120	FDM120	
WR62	R140				FBP140	FBM140	FBE140	FDP140	FDM140	
WR51	R180				FBP180	FBM180	FBE180	FDP180	FDM180	
WR42	R220				FBP220	FBM220	FBE220			

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WR34	R260				FBP260	FBM260	FBE260			
WR28	R320				FBP320	FBM320	FBE320			
WR22	R400	FAP400	FAM400							FUGP400
WR18	R500	FAP500	FAM500							FUGP500
WR14	R620	FAP620	FAM620							FUGP620
WR12	R740	FAP740	FAM740							FUGP740
WR10	R900	FAP900	FAM900							FUGP900

➢ *Wave Band Designations*

Frequency	Wave Band Designations		Frequency	Wave Band Designations	
	Old	New		Old	New
500~1000 MHz	VHF	C	8~10GHz	X	I
1~2GHz	L	D	10~12.4GHz	X	J
2~3GHz	S	E	12.4~18GHz	Ku	J
3~4GHz	S	F	18~20GHz	K	J
4~6GHz	C	G	20~26.5GHz	K	K
6~8GHz	C	H	26.5~40GHz	Ka	K

➢ *Antenna Feed Networks & ESA Solutions*

Feed system, being the primary radiator, plays a fatal role in antenna systems. Therefore, it's regraded as the heart of antenna. It is used to provide effective radiation for parabolic antenna, sort the electromagnetic wave reflected from refelctor to keep their Pol. direction same, do impedance conversion so that the electromagnetic wave in the feed transferred from Circular waveguide transmission to rectangular waveguide transmission. Thus, the antenna efficiency can be improved.

We take advantages of our own feed and reflectors from different manfactures, the excellent desgian, production and integration capabilitiesassure us to offer best solution for customer. The solution can be applied for rader, aerospace and communication industry.

Dolph provides flyaway antenna, prime focus parabolic antenna, ring focus antenna and cassegrain antenna with 2GHz to 40GHz, we take both advantages of our own feed network and reflector from manufacturers, the excellent production and integration capacity promote us to offer best product for customers. The offered antennas can be applied for rader, aerospace and communication industry.

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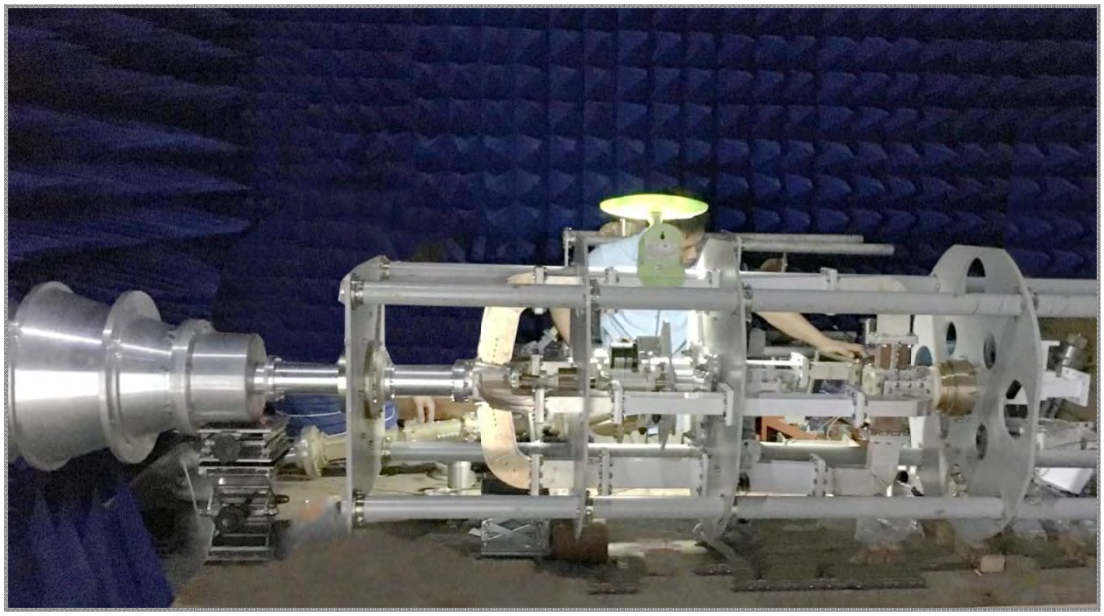

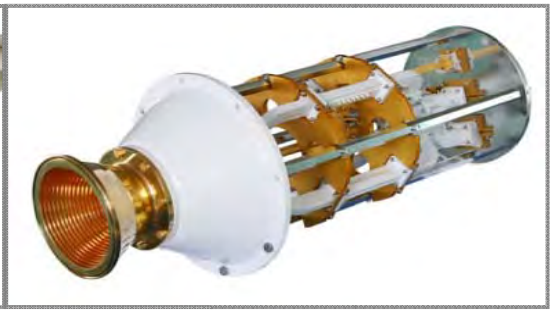

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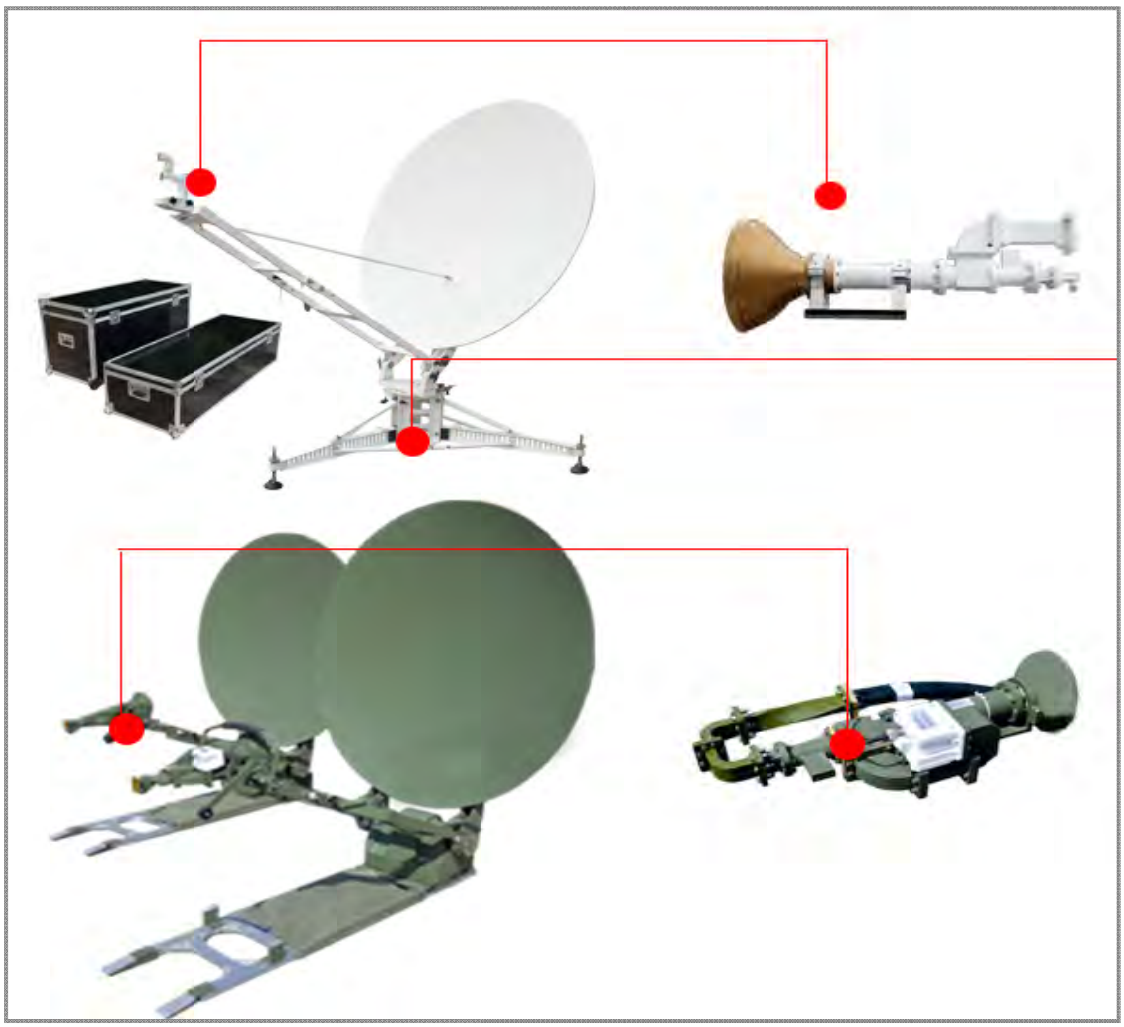

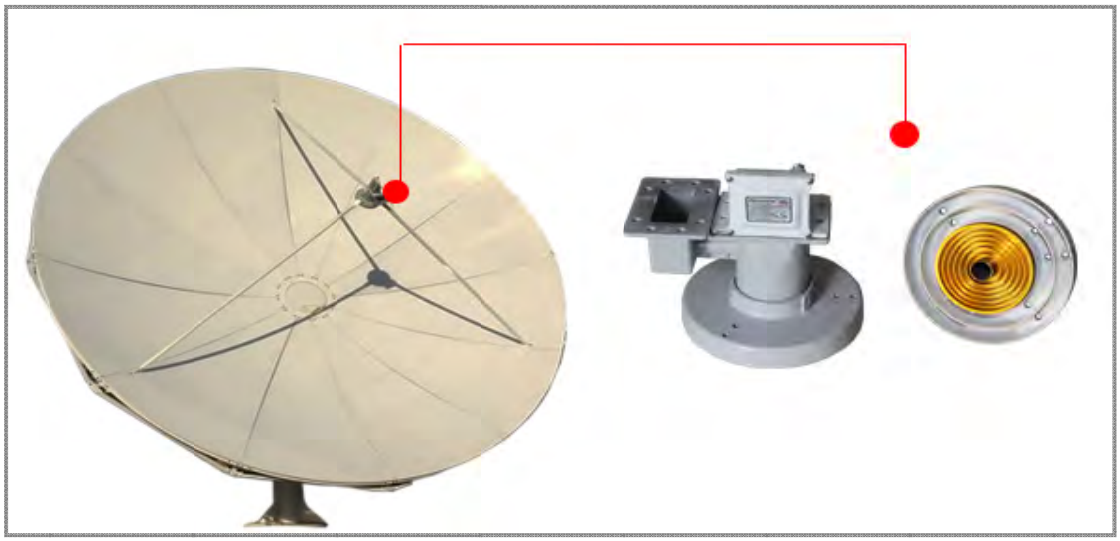

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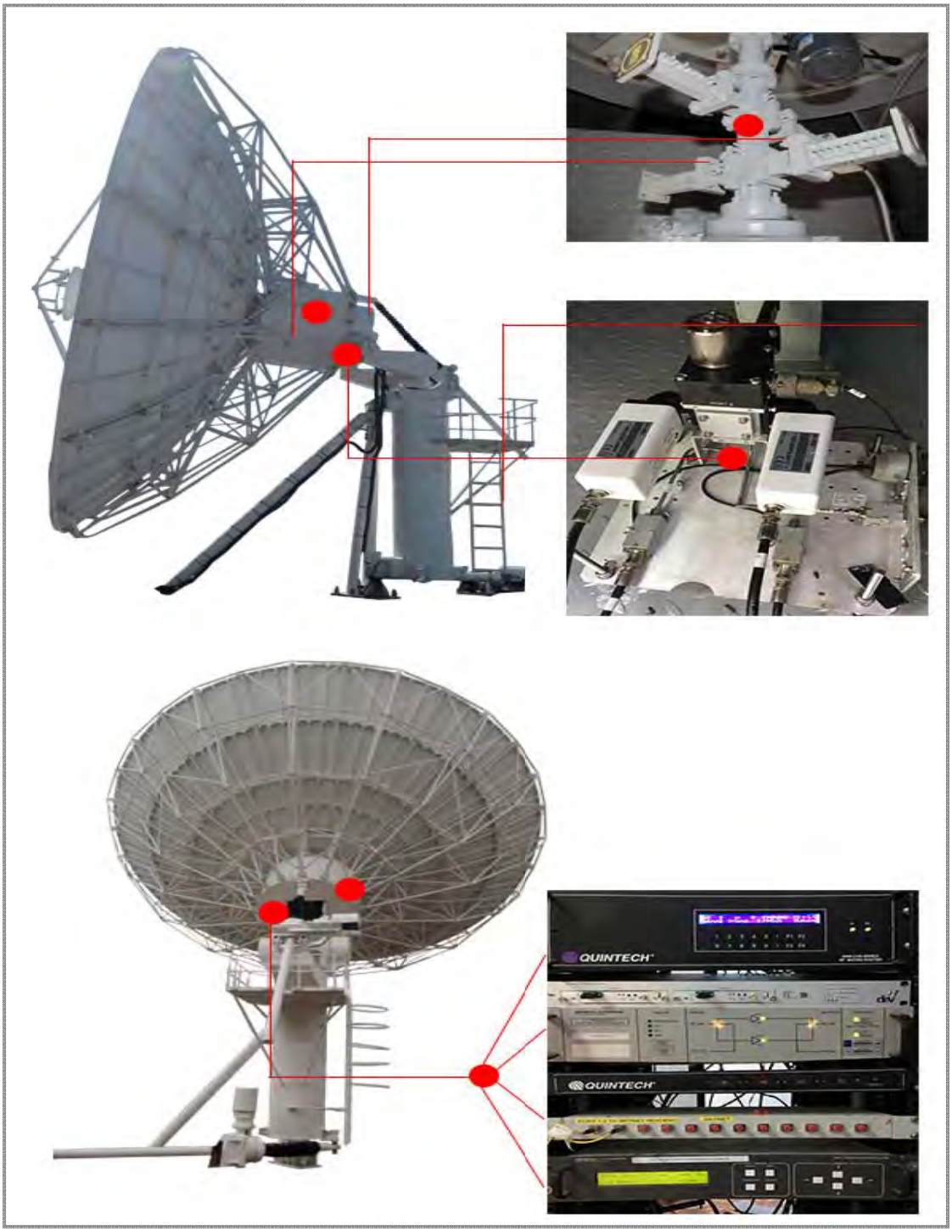

➢ *Responsibility & Service*

Dolph offers satisfactory products for customers according to their detailed request. Our team devoted to the advanced solutions with high quality and competitive cost and rapid delivery time. We focus on improvements on all fields

including technology & production & active team. We invest in quality control system, equipment and procedure to meet the strict requirement, and all operated under ISO9001:2001.

All products of Dolph shall be ordered according to specific model. If you required to modify or specifically testing for application, please send email to sale@dolphmicrowave.com, the sales engineer team will offer product information & quotation & other detailed info, which assures our customers satisfied with Dolph service.

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Rectangular Waveguide Tubing Information

Model No	EIA WG	IEC WG	Fre. (GHz)	Material	Inside Dimensions (mm)	Std Tol ±Inside Dim(mm)	Nom Wall Thickness (mm)	Outside Dimensions (mm)	Std Tol ±Outside Dim(mm)	Freq of Cut-Off for TE1,0 Mode(GHz)	Wave-length of Cut-Off for TE1,0 Mode(mm)	Theoretical Attenuation lowest to highest freq (dB/100ft)	
												Al	Cu
DH-BJ3	WR2300	R3	0.32-0.49	Al	584.2*292.1		6			0.257	1169.2	0.27-0.4	
DH-BJ4	WR2100	R4	0.35-0.53	Al	533.4*266.7		5			0.281	1067.5	0.31-0.46	
DH-BJ5	WR1800	R5	0.41-0.62	Al	457.2*228.6	0.51	5			0.328	915.0	0.39-0.58	
DH-BJ6	WR1500	R6	0.49-0.75	Al	381*190.5	0.38	3.18			0.393	762.5	0.51-0.76	
DH-BJ8	WR1150	R8	0.64-0.98	Al	292.1*146.05	0.38	3.18			0.513	584.6	0.760-0.113	
DH-BJ9	WR975	R9	0.76-1.15	Al	247.65*123.82		3.18			0.605	495.6	0.098-0.145	
DH-BJ12	WR770	R12	0.96-1.46	Al	195.58*97.79		3.18			0.766	391.4	0.140-0.206	
DH-BJ14	WR650	R14	1.13-1.73	Co/Al	165.1*82.55	0.33	2.03	169.16*86.61	0.2	0.908	330.4	0.18-0.266	0.214-0.317
DH-BJ18	WR510	R18	1.45-2.2	Co/Al	129.54*64.77	0.26	2.03	133.6*68.83	0.2	1.157	259.1	0.259-0.382	0.309-0.456
DH-BJ22	WR430	R22	1.72-2.61	Co/Al	109.22*54.61	0.22	2.03	113.28*58.67	0.2	1.372	218.4	0.334-0.494	0.399-0.588
DH-BJ26	WR340	R26	2.17-3.3	Co/Al	86.36*43.18	0.17	2.03	90.42*47.24	0.17	1.736	172.7	0.475-0.702	0.567-0.837

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DH-BJ32	WR284	R32	2.6-3.95	Co/Al	72.14*34.04	0.14	2.03	76.2*38.1	0.14	2.078	144.3	0.652-0.953	0.777-1.136
DH-BJ40	WR229	R40	3.22-4.9	Co/Al	58.17*29.08	0.12	1.625	61.42*32.33	0.12	2.577	116.3	0.86-1.27	1.026-1.514
DH-BJ48	WR187	R48	3.94-5.99	Co/Al	47.549*22.149	0.095	1.625	50.8*25.4	0.1	3.153	95.1	1.231-1.795	1.467-2.14
DH-BJ58	WR159	R58	4.64-7.05	Co/Al	40.386*20.193	0.081	1.625	43.64*23.44	0.08	3.712	80.77	1.487-2.195	1.773-2.617
DH-BJ70	WR137	R70	5.38-8.17	Co/Al	34.849*15.799	0.07	1.625	38.1*19.05	0.08	4.301	69.7	2.004-2.910	2.390-3.470
DH-BJ84	WR112	R84	6.57-9.99	Co/Al	28.499*12.624	0.057	1.625	31.75*15.88	0.05	5.260	57	2.761-3.993	3.292-4.761
DH-BJ100	WR90	R100	8.2-12.5	Co/Al	22.86*10.16	0.046	1.27	25.4*12.7	0.05	6.557	45.72	3.833-5.547	4.570-6.614
DH-BJ120	WR75	R120	9.84-15	Co/Al	19.05*9.525	0.038	1.27	21.59*12.06	0.05	7.869	38.1	4.590-6.775	5.472-8.078
DH-BJ140	WR62	R140	11.9-18	Co/Al	15.799*7.899	0.031	1.015	17.83*9.93	0.05	9.488	31.6	6.077-8.971	7.246-10.696
DH-BJ180	WR51	R180	14.5-22	Co/Al	12.95*6.477	0.026	1.015	14.99*8.51	0.05	11.575	25.91	8.185-12.082	9.759-14.406
DH-BJ220	WR42	R220	17.6-26.7	Co/Al	10.668*4.318	0.021	1.015	12.7*6.35	0.05	14.051	21.34	12.970-18.487	15.464-22.042
DH-BJ260	WR34	R260	21.7-33	Co/Al	8.636*4.318	0.02	1.015	10.67*6.35	0.05	17.358	17.27	15.036-22.197	17.928-26.465

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DH-BJ320	WR28	R320	26.3-40	Co/Al	7.12*3.556	0.02	1.015	9.14*5.59	0.05	21.053	14.22	20.120-29.701	23.989-35.413
DH-BJ400	WR22	R400	32.9-50.1	Co/Al	5.69*2.845	0.02	1.015	7.72*4.88	0.05	26.344	11.38	28.119-41.508	33.526-49.491
DH-BJ500	WR19	R500	39.2-59.6	Cu	4.775*2.388	0.02	1.015	6.81*4.42	0.05	31.393	9.55		43.603-64.367
DH-BJ620	WR15	R620	49.8-75.8	Cu	3.795*1.88	0.02	1.015	5.79*3.91	0.05	39.499	7.52		62.425-92.152
DH-BJ740	WR12	R740	60.5-91.9	Cu	3.0988*1.5494	0.0127	1.015	5.13*3.58	0.05	48.374	6.2		83.409-123.128
DH-BJ900	WR10	R900	73.8-112	Cu	2.54*1.27	0.0127	1.015	4.57*3.3	0.05	59.016	5.08		112.397-165.920

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