

## RFCOMM SOLUTIONS & SERVICES PRIVATE LIMITED

### RF & Microwave Solutions for Defence and Aerospace



## About Us

RFComm was formed in 2017 and is an MSME registered Company.

Established 46 GHz testing lab and 40 GHz NABL accredited Calibration Lab at Bangalore.

Offers wide range of Products / Solutions & Components for RF, Microwave & Avionics segments.

Core Team has vast experience and knowledge in RF, Microwave and Avionics domain.

## SERVICES

- Design & development
- Manufacturing (RF & Microwave Products)
- Simulations & Testing (RF & Microwave )
- Customization of RF and Microwave Systems
- Built to print(BTP)
- Installation and Commissioning and AMC of Antennas & RF Subsystems
  
- Antenna Test Range Outdoor far field 10 Mtr & 75 Mtrs for Aircraft and Missile platform system (From OrbitFR Israel)
- 5000 SQ Feet Clean and Controlled Area
- Measurement Setup for VSWR ,Isolation and other RF specifications for Aerospace and Defence Products
- Experienced Manpower in Antennas, RF & Microwave Products for Defence and Aerospace sector
- RF Simulations Software like HFSS and IE3D and 2D ,3D Mechanical Design Tools

### **RFCOMM SOLUTIONS & SERVICES PRIVATE LIMITED.**

G-06, Jain Heights Solus, 6th Floor, 1st Cross, JC Road, Bangalore – 560027, Karnataka, India.

E-mail: [sales@rfcomm.in](mailto:sales@rfcomm.in). Phone/Fax: +91-80-48900489.

CIN No: U74999KA2017PTC101024, GSTN: 29AAICR1498J1ZQ . Website: [www.rfcomm.in](http://www.rfcomm.in)

- **RF Passive Products**
  - Power Dividers/ Combiners
  - Couplers & Hybrids
  - Isolators & Circulators
  - Limiters
  - Filters
  - RF Detectors
  
- **RF Active Products**
  - Exciters
  - Receivers
  - TR Modules (VHF, UHF, L,S,C & X-Band)
  - Power Amplifiers(SSPAs)
  - High Power Amplifiers(SSPAs)
  - Medium Power Amplifiers
  - Amplifiers (LNAs/Gain Blocks)
  - UP/Down Converters
  - RF Simulators & BITE Units
  - Synthesizers
  - Calibration Modules, Beacon Units
  - Multipliers
  - Voltage Control Attenuator
  - Digital Attenuator
  - Phase Shifters
  - Bias-T
  
- **Antennas & Waveguides**
  - Horn Antenna
  - Patch Antenna & Array
  - Vivaldi Antenna
  - Helical Antenna
  - Slotted Wave Guide
  - Parabolic Antenna
  - Crossed Yagi antenna
  - Log periodic Antenna
  - Discone Antenna
  - Bi-Conical Antenna
  - Wave Guide to coaxial adaptors
  - Wave Guide Isolators
  - Wave Guide Transitions (Twist, Bends, Tee)

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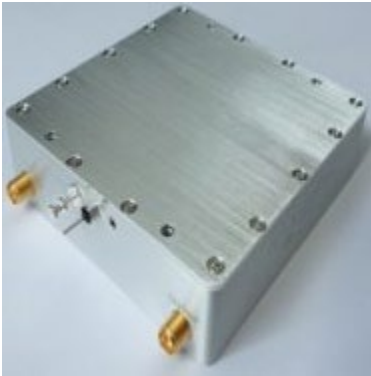
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**Features**

- Light Weight, Sleek Design
- Fast Cooling (Natural/Forced Air ,Liquid)
- Custom made mounting platform



S.No	Parameter	Specifications
1	Frequency Band	<u>VHF,UHF,L,S,C,X,Ku-Band</u> *
2	Power Amplifier type	Pulsed
3	I/P Power	0dBm
4	O/P Power	1W -10kW *
5	Pulse Width	100usec *
6	Duty Cycle	20% *
7	Droop	<1dB
8	Rise Time/Fall time	<100ns
9	Protections	Excess I/P Power Excess Duty Cycle Excess Pulse Width Excess Temperature
10	Status	I/P Power O/P Power Temperature
11	Power Supply	AC 230V/ DC-28to50V
12	Cooling	Conduction/Forced Air cooled/Liquid
13	Connector Type	TBD
14	Digital Interface	Ethernet/RS232

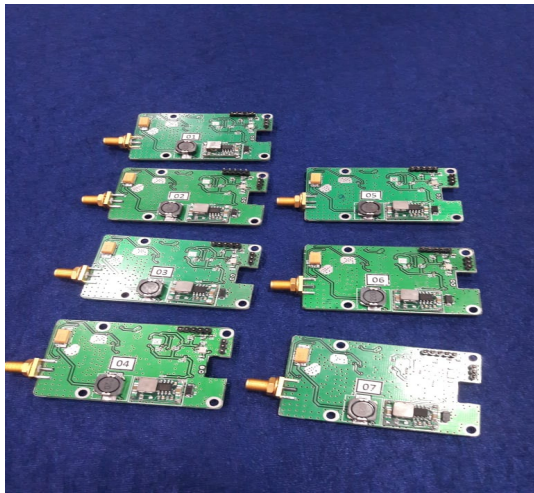
**Note:\*** parameters to be defined as per requirement to develop the TR Modules

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Parameter	Specifications
RF Frequency Range	VHF,UHF,L,S,C,X & Ku-Band *
Input Power Range	0 dBm
Transmit Output Power Level	10 W – 1000W *
Pulse width	1 µsec to 1msec *
Duty	20% max *
Power Droop	< 1dB
RF Pulse Rise / Fall Time	<100nsec
Receiver Chain Gain	30 dB *
Receiver Noise Figure	< 3.5 dB *
Output VSWR (Rx)	1.5 : 1 (typical)
Receiver Isolation at Rx OFF State	60 dB min
Digital Attenuator	6-bit, 0.5 dB Resolution
Digital Phase shifter	6-bit, 5.625 deg Resolution

**Note: \* parameters to be defined as per requirement to develop the TR Modules**

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## Features

- Low Gain/High Gain
- Lower Gain Slope
- Low Noise Figure
- High P1dB
- Better VSWR
- Specific/Narrow/Broad Band

## Optionals

- LNA With Gain Equalizer
- USB Power Supply
- Customised Solutions

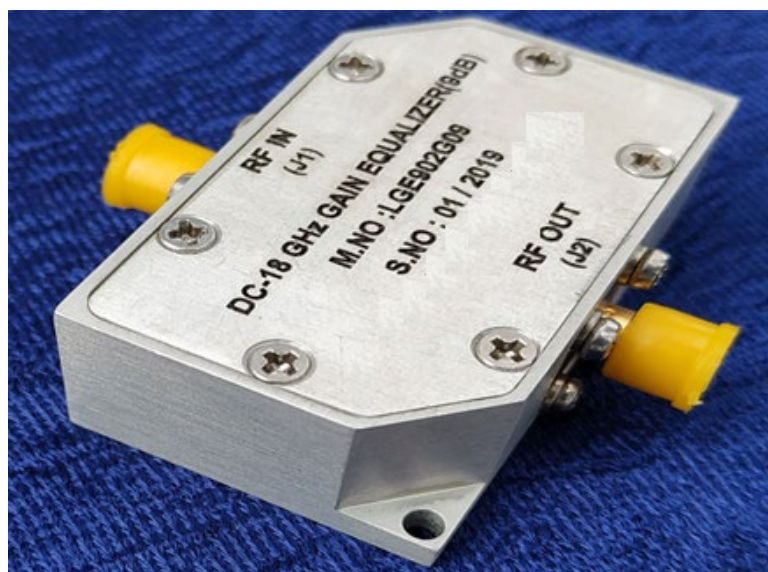
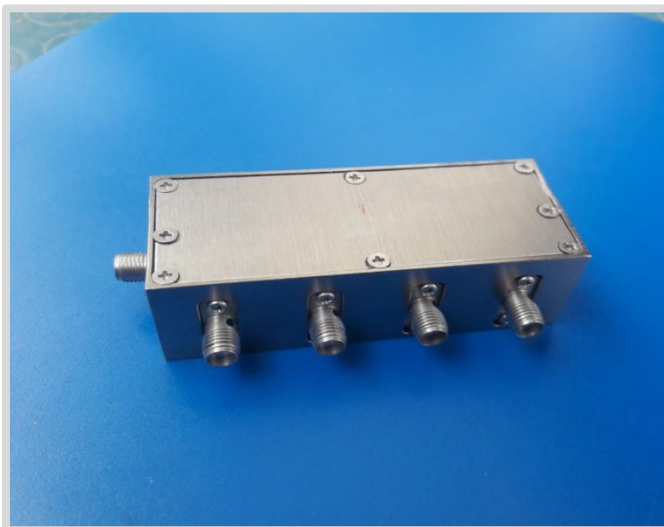
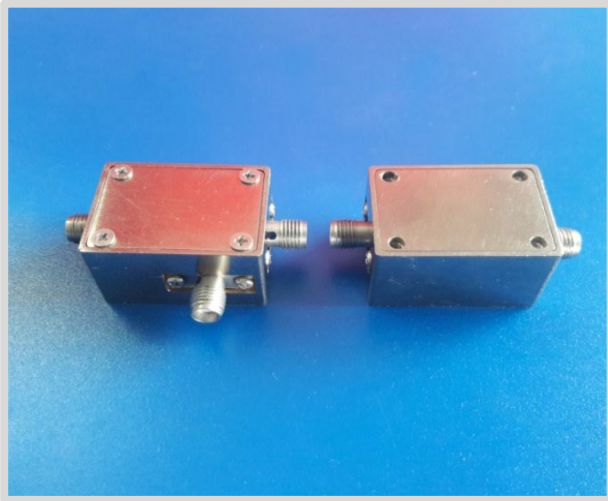


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Sl.No.	DESCRIPTION	SPECIFICATION
01	Frequency Range	5000MHZ to 6000MHZ
02	Frequency Resolution	100KHz
03	Output Level	+10dBm Min
04	Harmonics	40dBc
05	Phase Noise	1KHz Offset 100dBc/Hz
06	Digital Interface	Ethernet/RS 232
07	Power Supply	AC230V/DC
08	Internal Reference	50MHz(TCXO)
09	Frequency Stability	±1PPM(Internal TCXO)
10	RF O/P Connector	SMA(F)

**Note:** The above specifications are related to specific band and Synthesizers designed & developed as per requirement upto Ku-Band

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## Receivers

Sr. No	Parameter	Specifications
1	Frequency	VHF,UHF,L,S,C & X-Band
2	Gain	TBD
3	Gain Match	±2dB
3	Phase Match	±10 degrees(based on the Band)
4	Noise Figure	<4dB
5	Dynamic Range	-110 dBm to -50dBm
6	P1 dB	-20 dBm
7	Maximum Input Power	-20 dBm
8	Supply Voltage	+5V/+12V
9	Input & Output Impedance	50 Ohm
10	Input & Output connectors	SMA(F)
11	Size	TBD

Note: The above specifications are tentative and receivers will designed as per requirement

## Up/Down Converters

- Up/Down converters developed from DC- KU Band
- Better Isolations provided between RF to LO,LO to IF & RF to IF
- Image frequencies eliminated
- Required band widths provided as per requirement
- Low Noise Figure maintained
- UART/SPI/Ethernet interface provided. |

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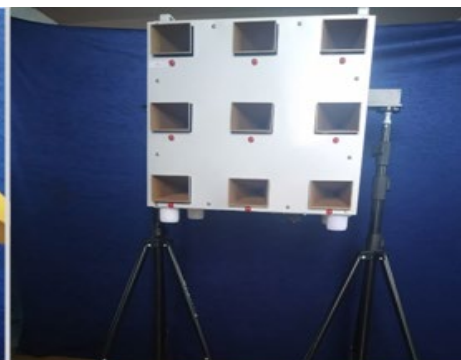
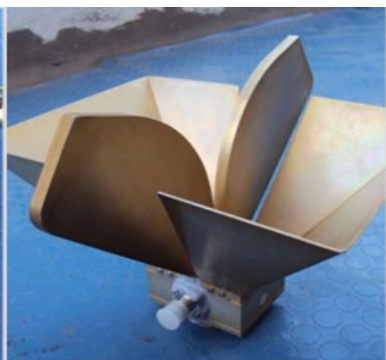
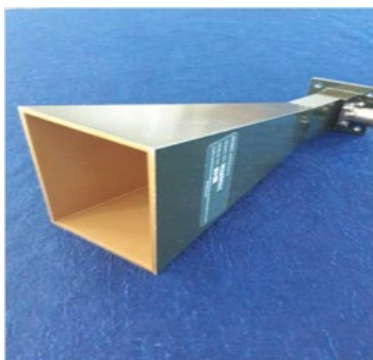


**Features**

- Light Weight
- Linealy Polarized
- Low VSWR
- Input: Coaxial Connector/Waveguide

**Optionals**

- Radome Cover
- Mounting Bracket
- Trypod Telescopic Stand



Typical specifications				
Frequency Band	0.75-1.12GHz	1.7-2.6GHz	12.4-18GHz	15-20GHz
Gain(dBi)	14	15	20	20
VSWR	1.5:1 max.	1.5:1 max.	1.5:1 max.	1.5:1
HPBW	40°	35°	15°	15°
polarization	Linear	Linear	Linear	Linear
Flange	WR975	WR430	WR62	WR51

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### Features

- Light Weight
- Low Insertion Loss
- Low VSWR
- Input: Coaxial Connector/Waveguide

### Optionals

- Custom Made W/G Sizes
- High Power Handling
- Half Height W/G Parts
- Shims for Waveguides



Frequency(GHz)	Waveguide(WR)	VSWR(Max)
1.14-1.73	650	1.2
1.73-2.6	430	1.2
2.5-3.9	284	1.2
3.3-4.9	229	1.2
4-6	187	1.2
5.5-6.4	137	1.2
6.5-10	112	1.2
8-12	90	1.2
10-15	75	1.2
12-18	62	1.2

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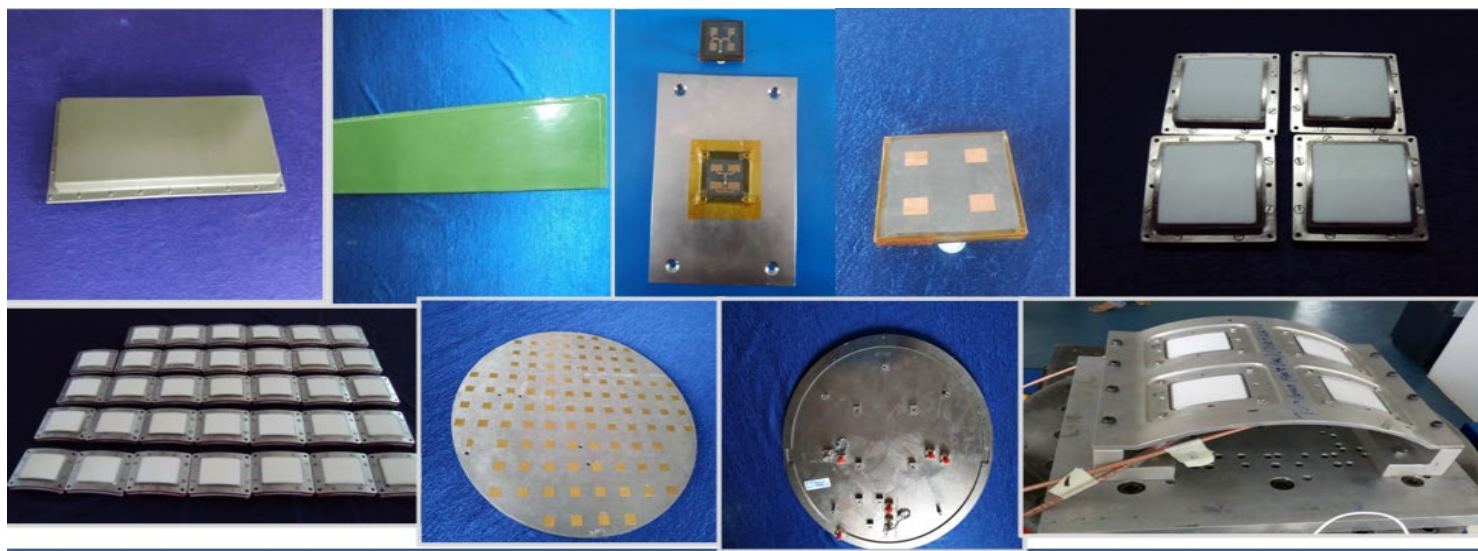
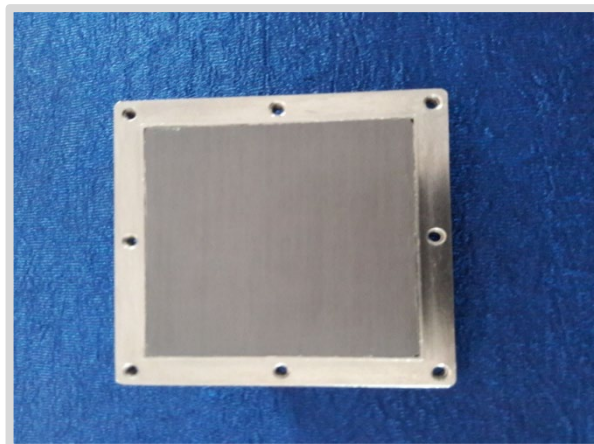
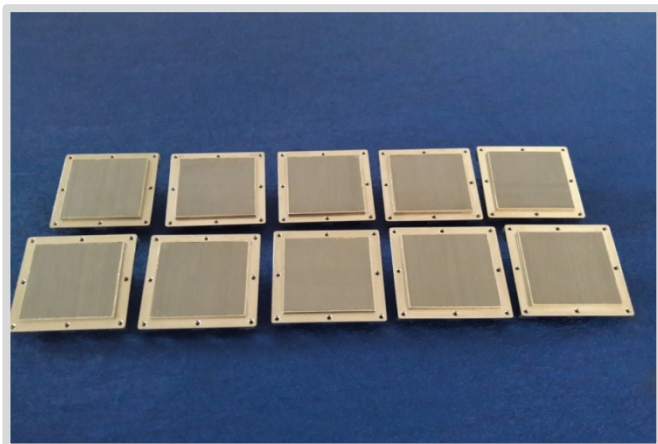
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## Features

- Light Weight
- Dual Linealry & Circular Polarized
- Low VSWR/High Gain
- Active Antenna Like GPS/GLONASS/MSS

## Optionals

- Conformal To Specific Shape
- Monopulse Antenna Array
- Autotracking with Azimuth & Elevation Movment



Typical specifications	
Operating Frequency	2.5-2.52GHz 2.67-2.69GHz
Gain	15dBci
Impedance	50Ω
SLL	15dB(min)
VSWR	1.5:1
Axial Ratio	≤3dB
Polarization	LHCP/RHCP
Termination	N(F) or SMA(F)
Size (mm)	365x215x22

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## Features

Portable & Light Weight  
 Aerodynamic, for Air & Ground Use  
 Low VSWR,  
 Field Deployable Quick Installation & Dismantling

## Optionals

Trypod Telescopic Stand  
 Pneumatic Mast  
 Fixed Standalone Towers  
 Spiral Array (BLI)



### Typical specifications

Frequency Band	30-1000MHz	200-2000MHz	1000-3000MHz
Gain(dBi)	3.5 to 5dBi	5dBi	5dBi
VSWR	≤3:1	≤3:1	≤3:1
Impedance	50Ω	50Ω	50Ω
HPBW E-PL(Nominal)	65±20°	65±20°	65±20°
HPBW H-PL(Nominal)	100±20°	100±20°	100±20°
polarization	Linear/Dual	Linear/Dual	Linear/Dual
Termination	N(F)	N(F)	N(F) or SMA(F)

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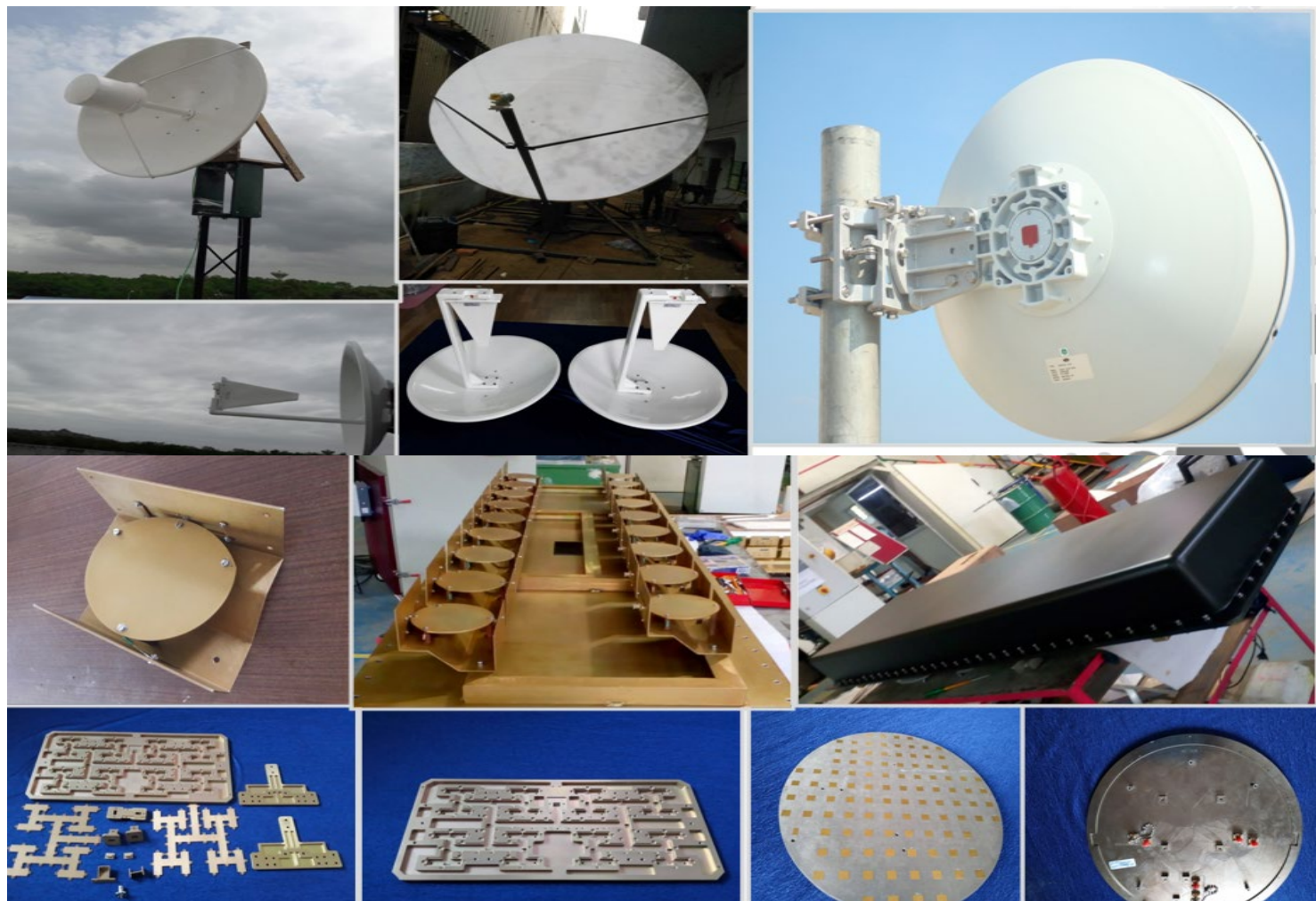
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## Features

Light Weight Construction (CFRP),  
Easy to Track Mechanism  
Input: Coaxial Connector/Waveguide  
Penetrating/Non Penetrating Mounts

## Optionals

Mounting Penmast Pole/Satand  
Pnematic Teliscopic Stand  
Mororized Polarization Tilt



### Typical specifications

Frequency Band	0.75-1.12GHz	1.7-2.6GHz	12.4-18GHz	15-20GHz
Gain(dBi)	14	15	20	20
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## Features

Rugged Construction  
Easy To Carry

## Optionals

Custom Made  
High Power Handling



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