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RF/Microwave Capability

Microwave Design & Manufacturing Heritage

With over 50 years of heritage supplying microwave components and sub-systems, our designs and system assemblies can be found globally on commercial and military aircraft, satellites and military equipment.

Panels for satellites, power dividers for large ground station radars, and antennas for air defence systems and rotating joints for weather radar systems, feature in the application of our products.

Our highly skilled design and applications engineers relish unique and challenging customer requirements and are recognised in industry for their design excellence and quality of finished product.

Our Clients

AIRBUS
BAE SYSTEMS
COBHAM
HONEYWELL
ROCKWELL COLLINS
SAAB
SABCA
ELTA SYSTEMS
SUPRAERO
THALES

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Quality

- AS9100 Certification
- Nadcap Certification for Welding
- Fully automated CMM with SPC Software
- Full batch metal traceability

bsi. AS/EN 9100 Series Aerospace

Accredited Nadcap™

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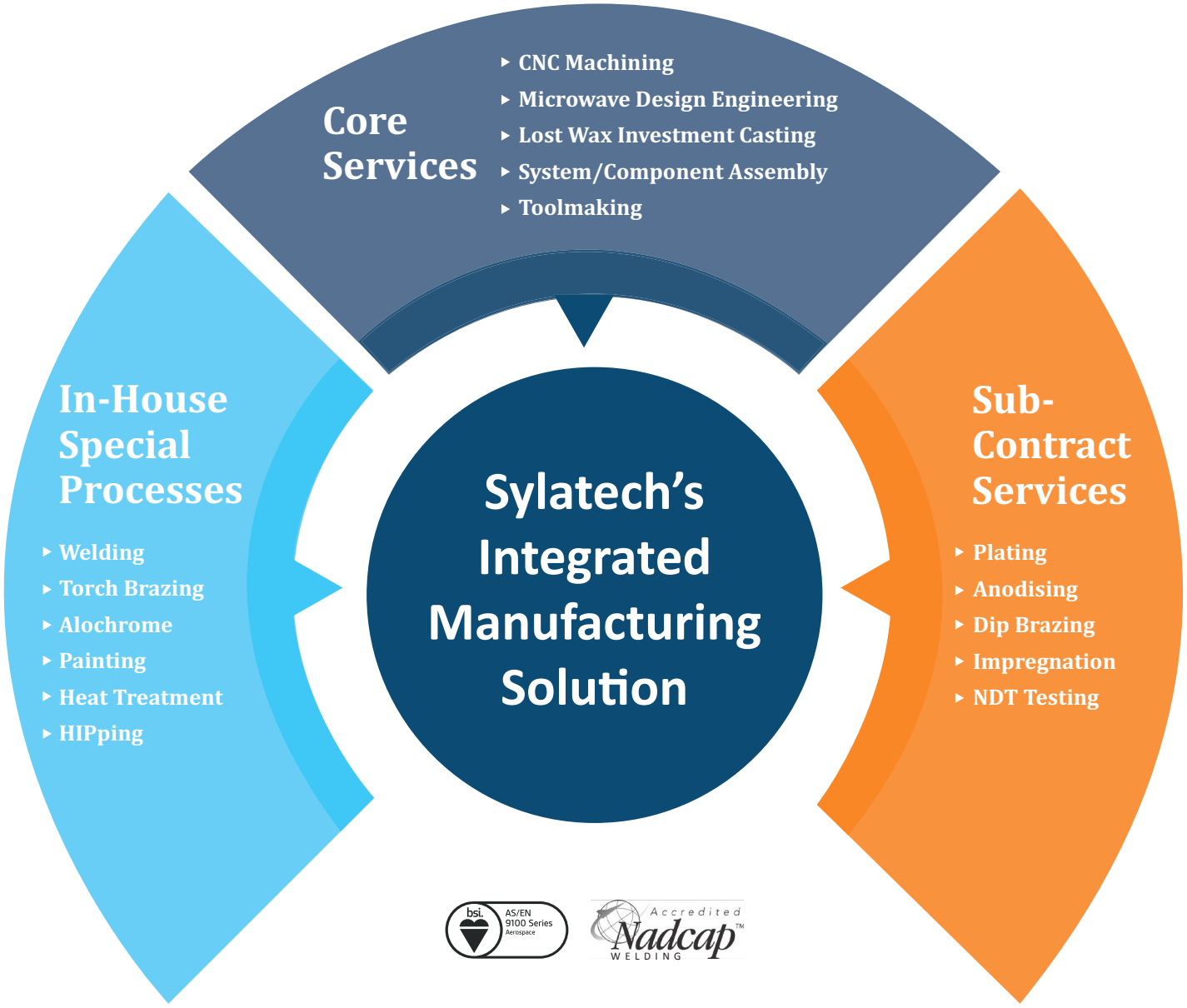
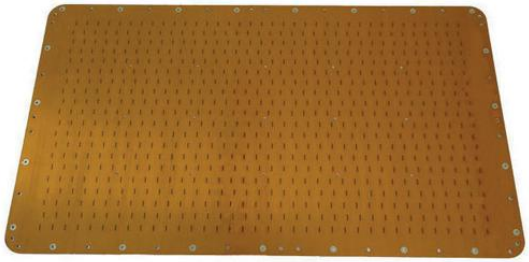
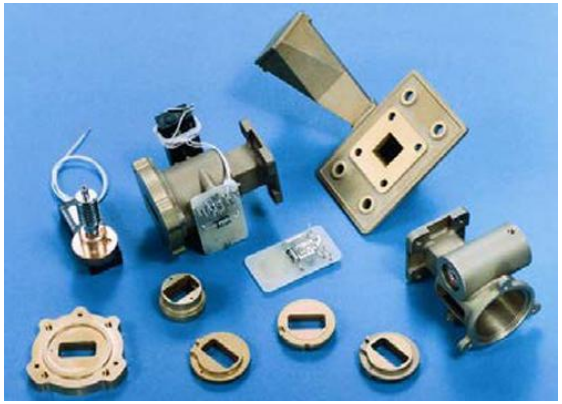


Core Sectors

- Aerospace
- Defence
- Space
- Sat Comm
- Scientific & Research
- Medical





Defence Applications

- Antennas and antenna components for Ground Surveillance Radar
  - MSTAR (DRS/Thales)
  - Blighter (Plextek)
  - GO12 (Thales)
- Battlefield Radar
  - Arthur, Giraffe, Sea Giraffe, CEROS & Grippen (SAAB)
  - Variant (Thales)
  - WLR & Flycatcher (Bharat Electronics)
  - TRS Transmitter (Airbus Defence and Space)

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Satcom Applications

- Feeds
  - S, X, Ku bands
  - Dual channel
  - Linear and circular polarization
- Waveguide assemblies
- Rotating joints
- CGC Technology, UBS, SVS Telekom

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Space Applications

- Current programs Eutelsat 72B and SES 12
- Clients include Airbus, OHB Systems, NEC Toshiba Space

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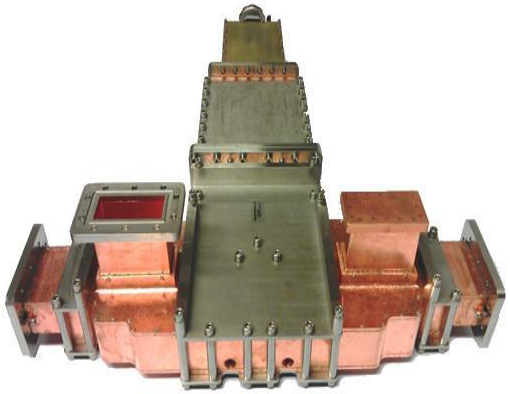

Scientific and Instrumentation

- Components for particle accelerators
  - Waveguide assemblies in OFHC copper
  - Stub tuners
  - Couplers in OFHC copper and designed for high radiation environments
  - Variable power dividers in OFHC copper
  - CERN, DESY, Mevex, Tata Institute
- Microwave Instrumentation for Power Industry
  - ISM band In process monitoring of carbon in ash
  - Measures complex permittivity
  - Waveguide & electronics design

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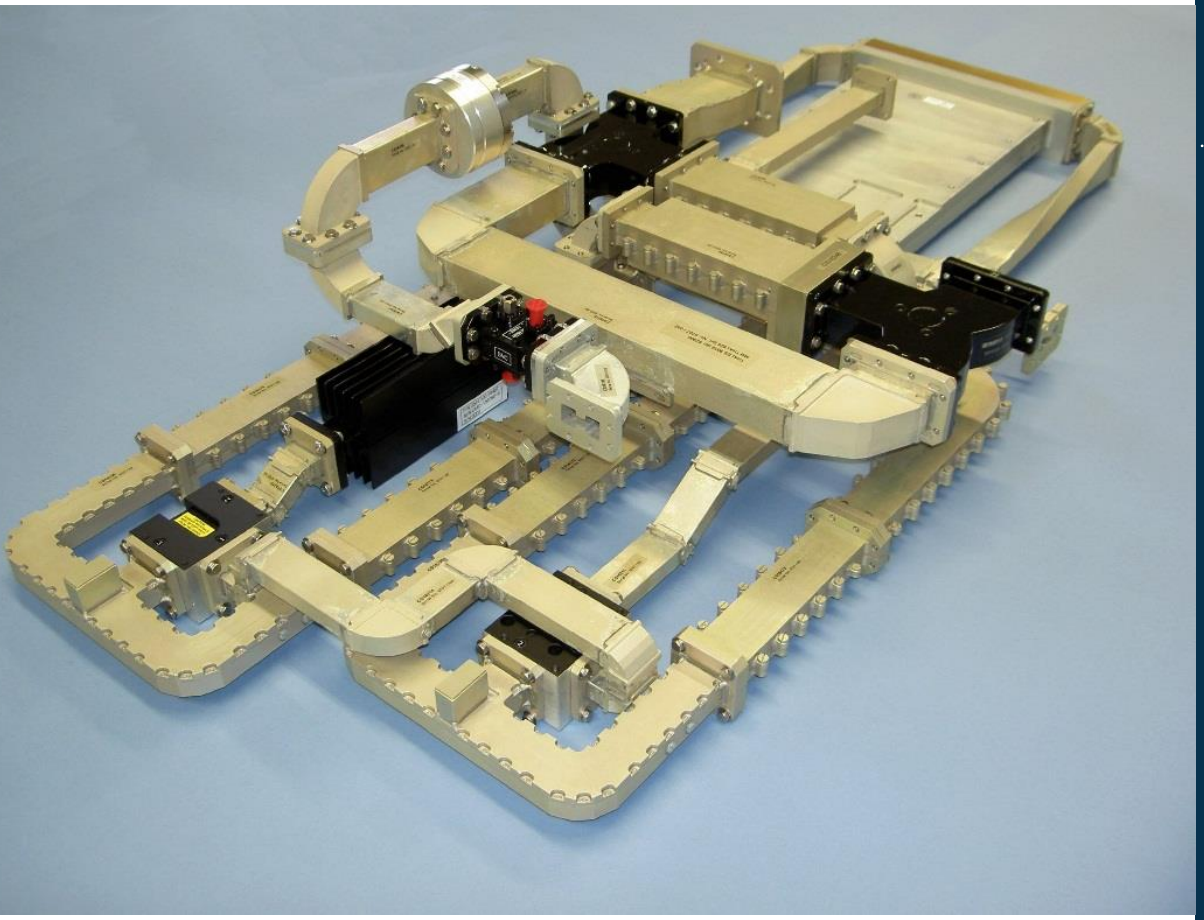

Systems Applications

- Waveguide based sub-systems
  - Dual band waveguide sub-system
  - I&G band
  - High power

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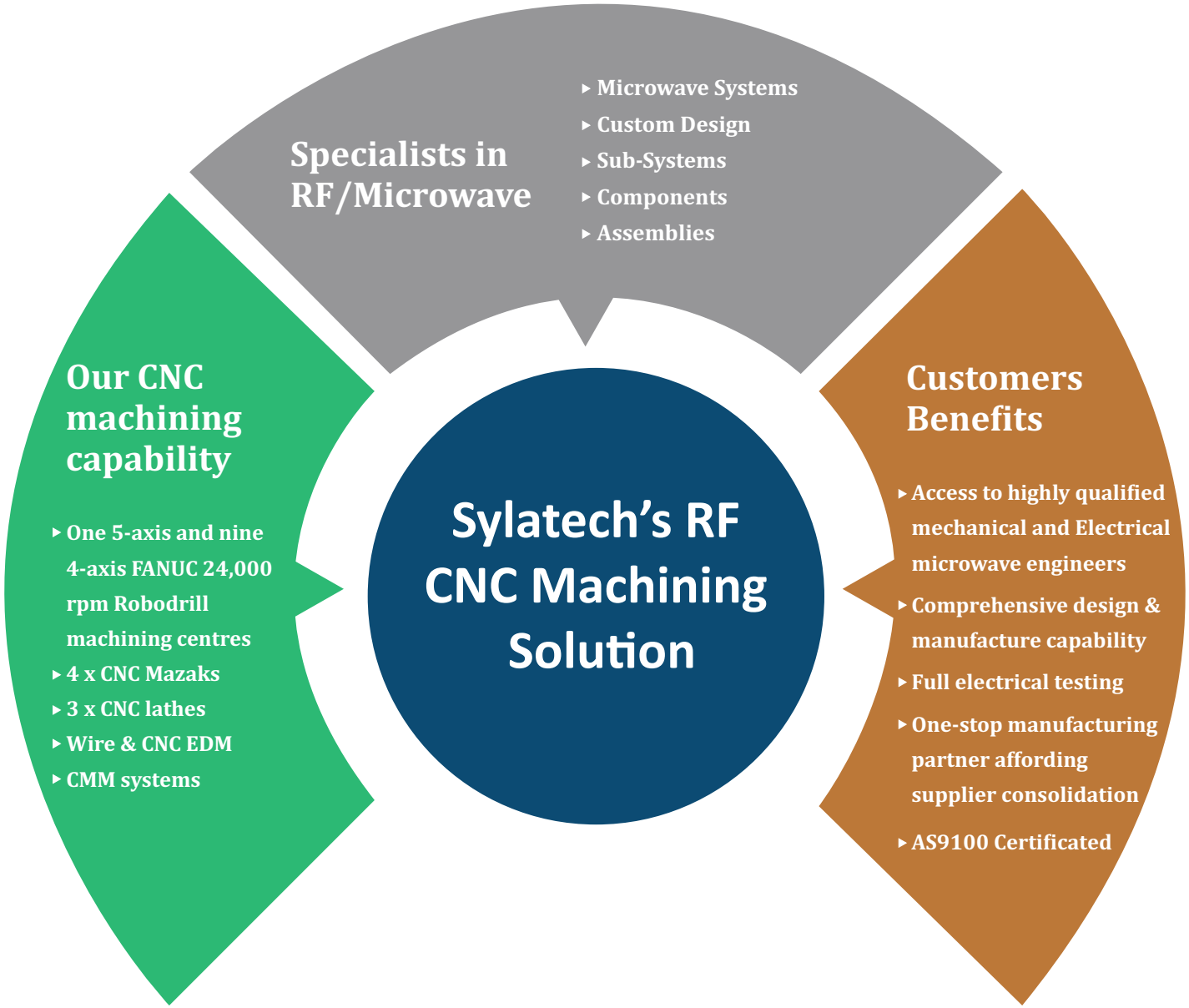
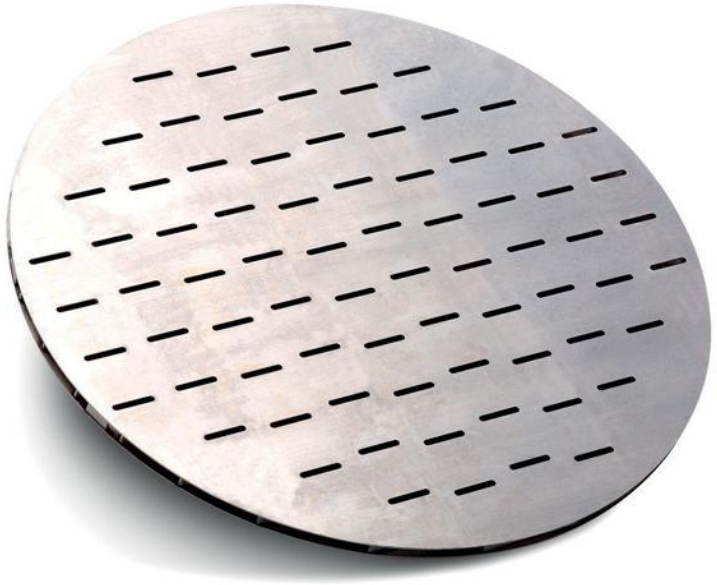
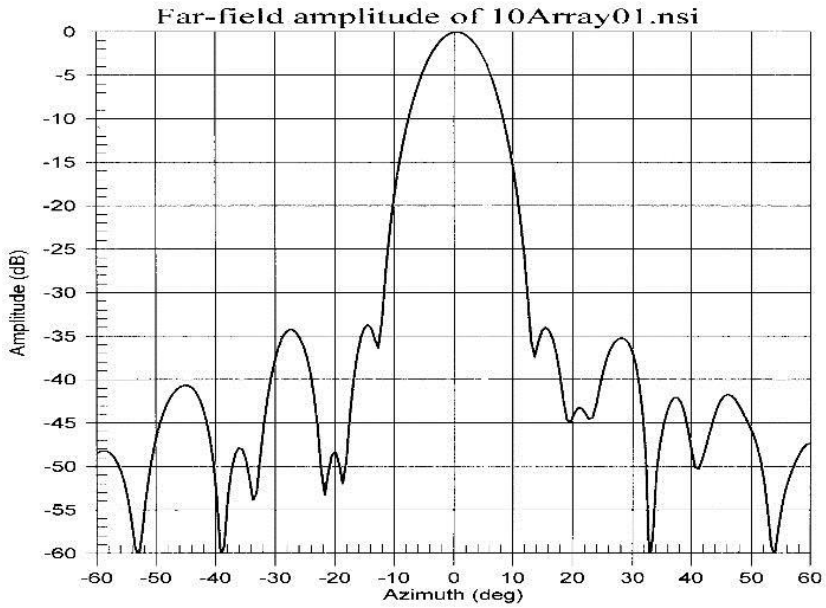


- Highly skilled team of Programmers utilising Solidworks and MasterCam
- Fully Integrated Renishaw Probing Systems across all Fanuc Robodrills
- Optimisation of design through RF simulation software CST





Antennas

- Frequency 9.3GHz to 9.4GHz
- Gain 26dB
- Beam width (3dB) 10° max
- Side lobes 25dB min
- VSWR 14dB min

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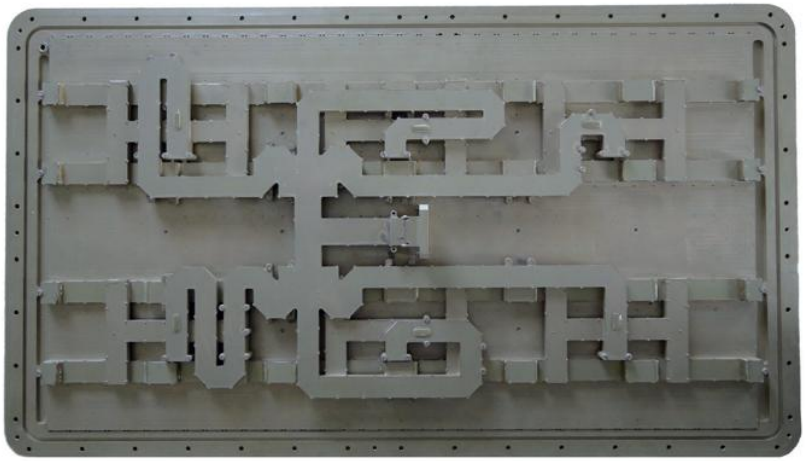

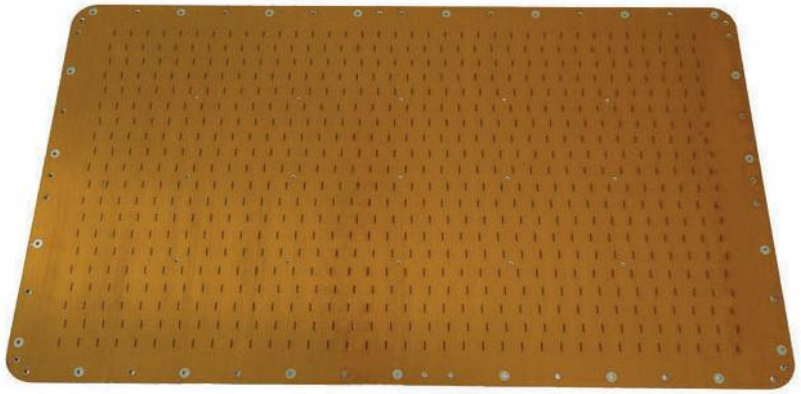

Antennas

❖ Frequency	Ku Band	
❖ Gain	34dB	
❖ Beam width (3dB)	Az	3° max
	EI	3.7° max
❖ Side lobes	Az	24 dB min
	EI	16 dB min

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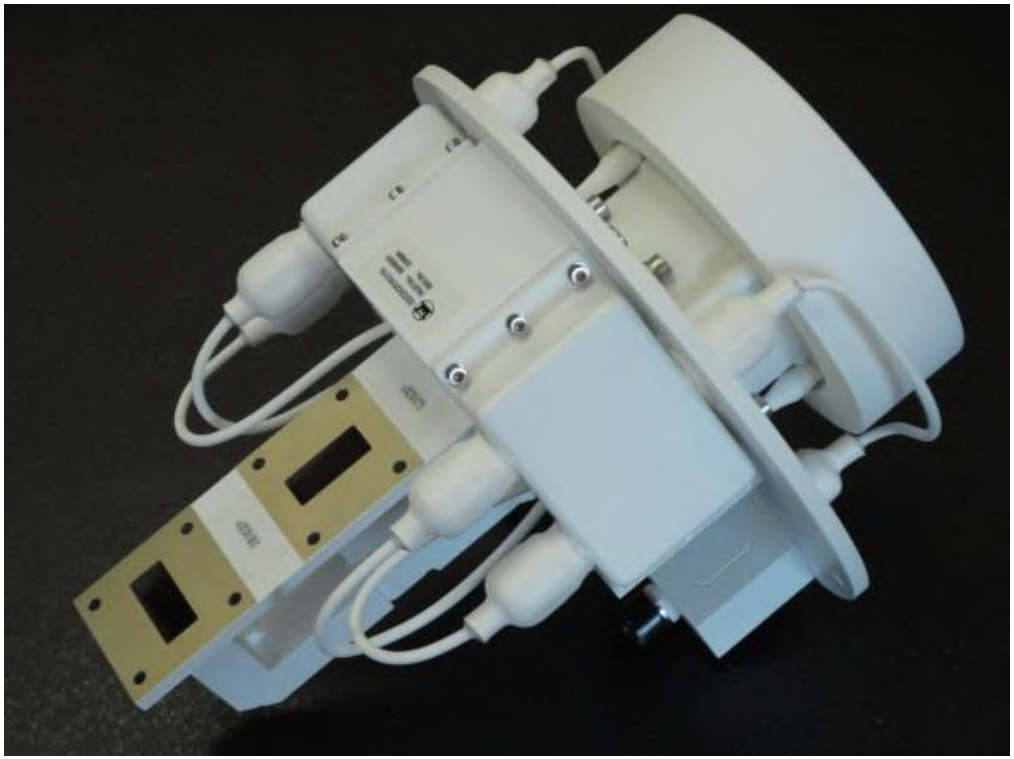

Antenna and Feeds

❖ Frequency	X band (WR112) 8.025 GHz to 8.4 GHz S Band (coaxial) 2.025GHz to 2.3 GHz
❖ Polarisation	LHCP and RHCP
❖ Axial ratio	2.0 dB max
❖ Return loss	11.73 dB min
❖ Isolation	X band 18.3 dB min S band 7 dB min

ISIS INNOVATION

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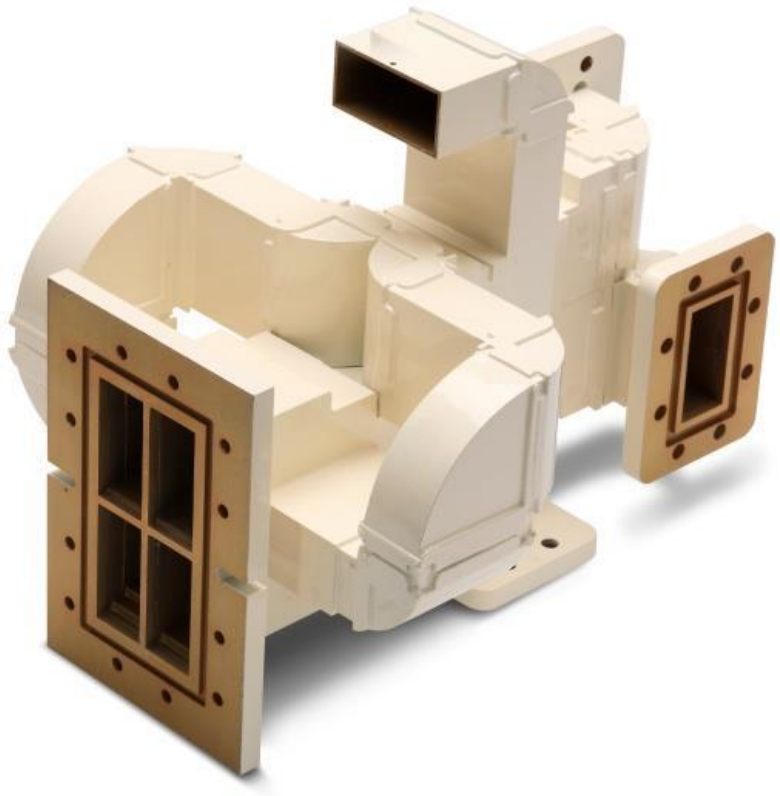

C Band Monopulse Comparator

❖ Frequency	5.4 GHz to 5.9 GHz
❖ Return Loss	20.83 dB min
❖ Isolation	35 dB min
❖ Amplitude unbalance max	0.2 dB max
❖ Phase unbalance	4° max

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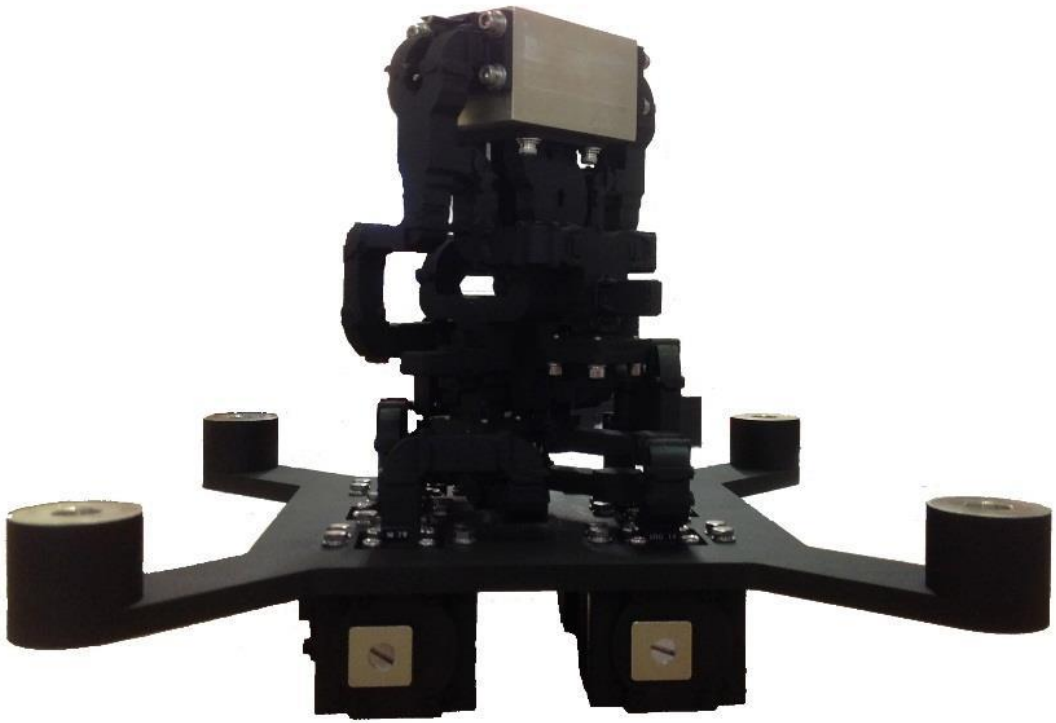

Ka Band Dual Monopulse Comparator

❖ Frequency	29 GHz to 31 GHz
❖ Return Loss	
SUM port	14.0 dB min
DIFF port	12.0 dB min
❖ Insertion loss	0.9 dB max
❖ Isolation	
SUM - DIFF ports	30 dB min
❖ Amplitude unbalance	+/- 0.4 dB max
❖ Phase unbalance	4° max
❖ Phase varition with frequency	4° max
❖ Polarization	V & H

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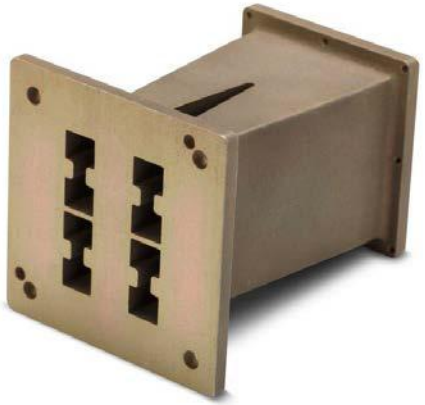

Antenna and Feeds

- Quad horns
- Standard gain horn

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Rotating Joints

- ❖ Single channel rotating joints
  - commercial aerospace (weather radar on commercial jets)
  - Satcoms
  - Military radar
- ❖ Dual channel rotating joints for military radar

• Frequency	CH1 (WR112)	8.5 GHz to 9.6 GHz
	CH2 (coaxial)	2.0 GHz to 4.0 GHz
• Insertion Loss	CH1 (WR112)	0.15 dB max
	CH2 (coaxial)	0.5 dB max
• VSWR	CH1 (WR112)	1.1:1 max
	CH2 (coaxial)	1.5:1 max

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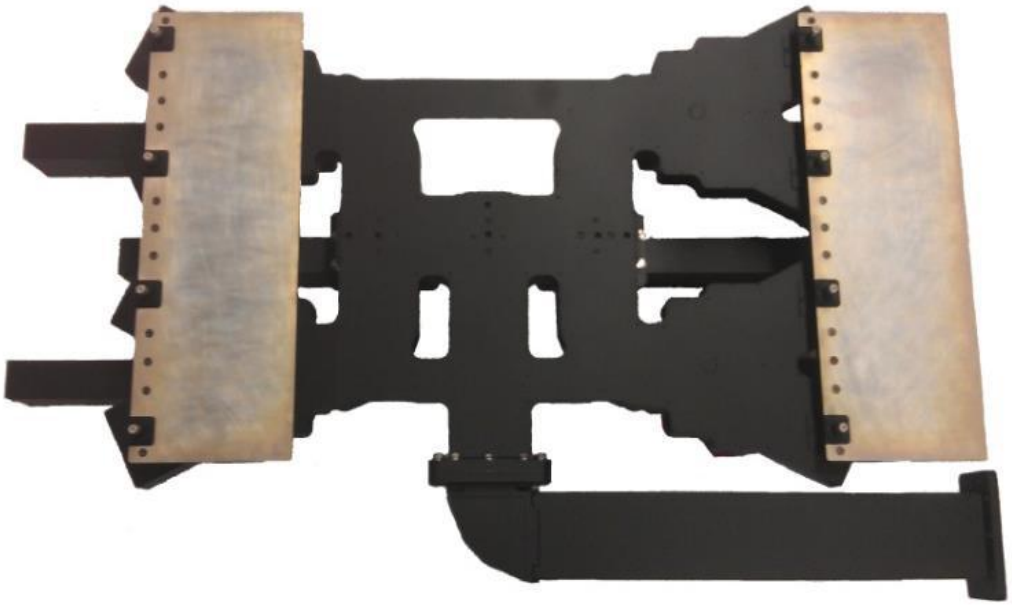
Power combiner for ATC application



Power Dividers / Combiners

❖ Device Type	8:1 combiner
❖ Frequency	2.7GHz to 2.9 GHz
❖ VSWR	1.16:1 max
❖ Insertion Loss	0.25 dB max
❖ Isolation	22.0 dB min
❖ Power Handling	20 kW pk 2kW mean

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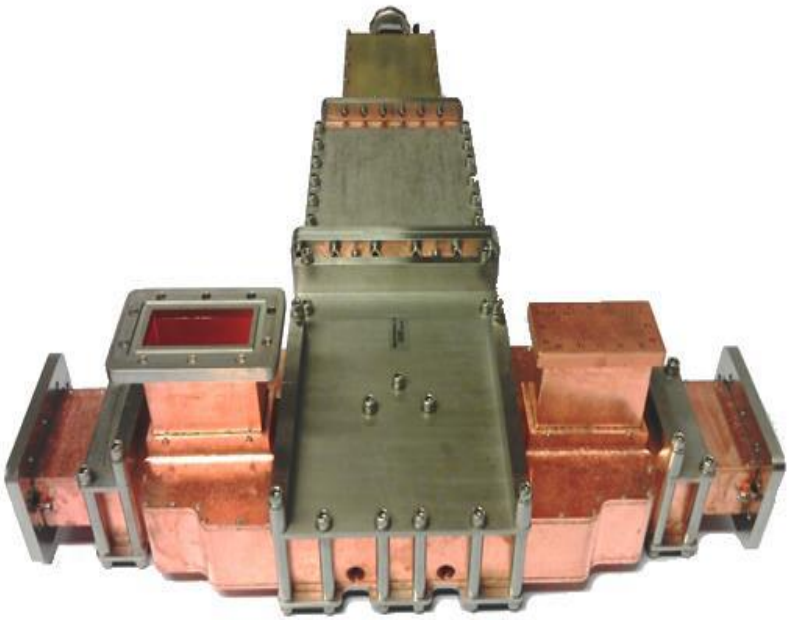
Variable Power Divider for Particle Physics Application



Power Dividers / Combiners

❖ Device Type	Variable 2:1 divider
❖ Frequency	2.851 GHz to 2.861 GHz
❖ VSWR	1.3:1 max
❖ Insertion Loss	0.1 dB max
❖ Power Handling	10 MW pk 30 kW mean
❖ Material	OFHC suitable for UHV applications

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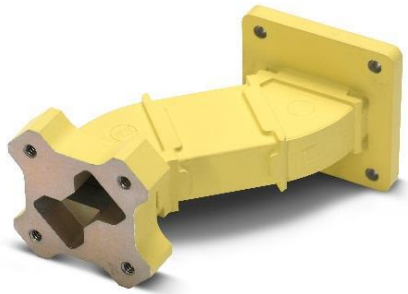

Waveguide Products

- Waveguide assemblies
- Flexible assemblies
- Couplers

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Waveguide Products

- Double Ridge Components
  - Magic Tees & Tees
  - Couplers
  - Transitions
- Loads
- Pressure Windows

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Sylatech's design and manufacturing capability delivers:-

- ✓ Microwave systems design
- ✓ Antenna and feed, including array design and manufacture
- ✓ Waveguide components, couplers, windows, transitions, bends, diplexers, multiplexers
- ✓ Waveguide assemblies
- ✓ High power microwave components.

Contact Us

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