

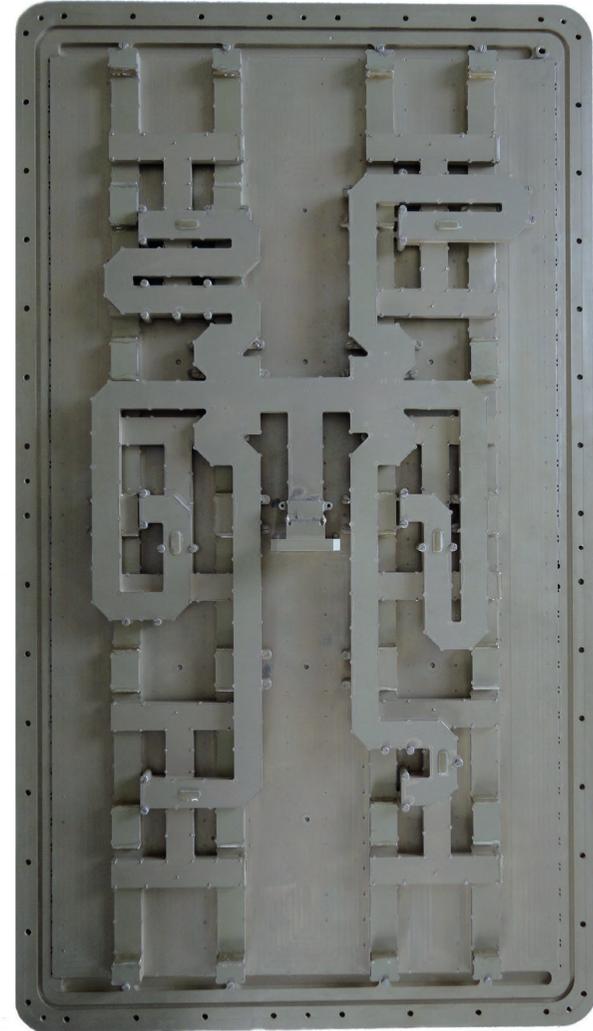
## INTRODUCTION



Sylatech is a world leading designer and manufacturer of complex waveguide assemblies, antennas and microwave devices. Our in-house skilled team of engineers and scientists deliver on customer antenna requirements with both linear and monopulse feed networks through our

- ▶ End-to-end device design and manufacturing capability
- ▶ State of the art software enabling complete electrical antenna design
- ▶ Extensive manufacturing facility which includes CNC machining, brazing and heat treatment
- ▶ Robust test and qualification standards operating within an AS9100C certificated quality management system

Contact us today to discuss your requirements.



## X BAND LIGHTWEIGHT SLOTTED ARRAY ANTENNA

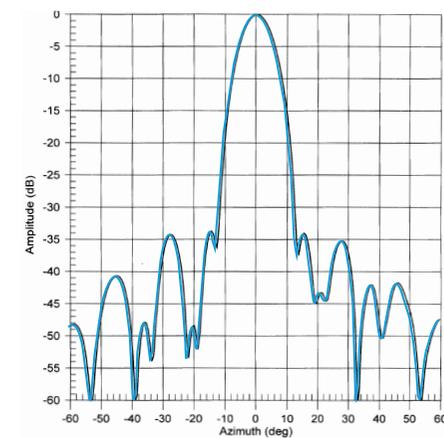
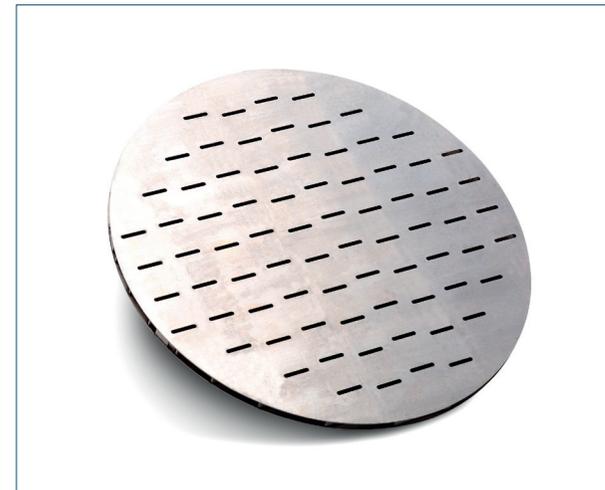


### SA15001

This lightweight slotted array antenna is a resonant antenna device designed to pick out a very limited bandwidth with a very narrow beam width. The design focusses on producing the highest signal gain whilst achieving the lowest weight possible. It should be noted that gain is proportional to physical size. If space is at a premium then a monopulse comparator system feed network can be integrated into the rear of the antenna. Typical applications for this device include weather radars and security scanning technologies.

#### TYPICAL SPECIFICATION

Frequency Range	9350MHz $\pm$ 50MHz
Gain	25dBi min
Polarisation	Linear
3dB Beamwidth	10 degrees max
Sidelobes	25dB min
Return loss	14.0dB min
Circular Size	254mm diameter



## X BAND MONOPULSE COMPARATOR WITH SLOTTED ARRAY >

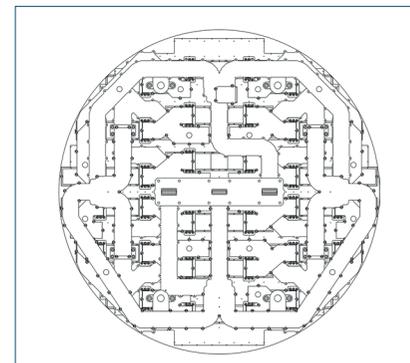
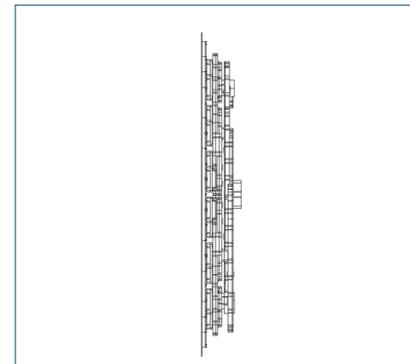
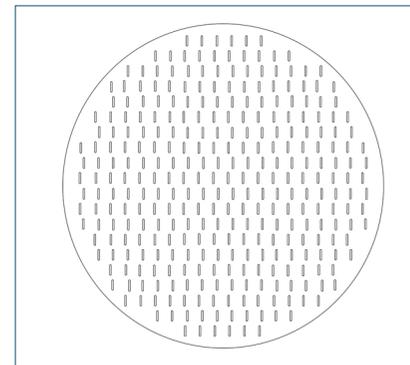
### SA16003

Sylatech Systems are proud to present this high performance array antenna which can be redesigned to accommodate your needs. This product consists of a high gain antenna and an integrated compact monopulse comparator design, making it ideal for radar applications. It has excellent characteristics such as compact structure, high radiation efficiency, high power handling capacity and accurate control over amplitude and phase.

The fractional bandwidth of this device is just over 5%, i.e. it is narrow band.

#### TYPICAL SPECIFICATION

Frequency Range	X-Band	9.5 to 10GHz
Gain	30dB min	
3dB Beamwidth	5 degrees typical	
Sidelobes	25dB max	
Polarisation	Linear	
Null Depth	25dB typical	
Return Loss:	Sum Port	6dB min
	Diff Port	6dB min
Isolation:	Sum-Diff Port	30dB min
Comparator Phase Error	+/- 5 degrees max	
Circular Size	480mm diameter	



## KA BAND SLOTTED ARRAY ANTENNA



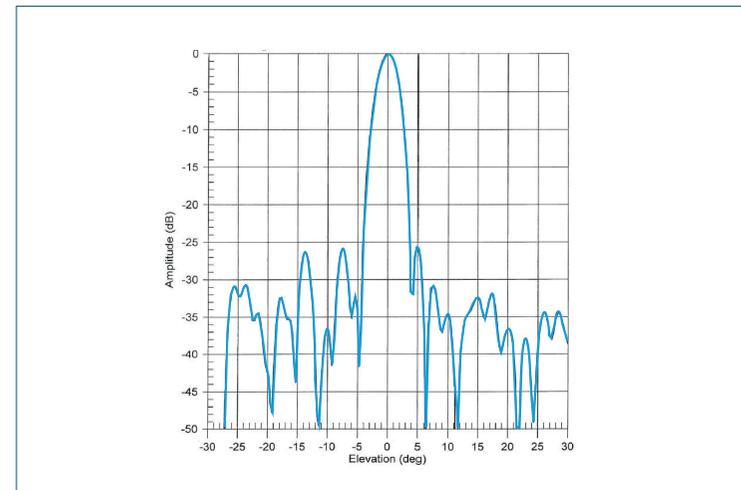
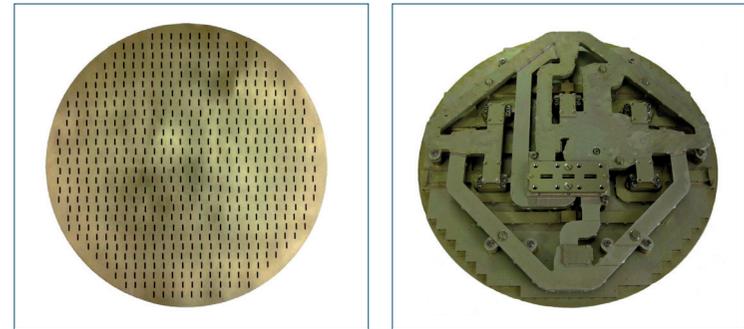
### SA22001

This lightweight, slotted array antenna is designed for security scanning applications in public places. It's compact monopulse comparator is fixed to the rear giving a very low profile with excellent performance.

Please contact our sales team for further information.

#### TYPICAL SPECIFICATION

Frequency (Passband)	35.02 to 35.42 GHz
Gain	33dB min
Beamwidth	3° min
Sidelobes	25dB min
Isolation Sum to EL, Sum to AZ	30dB min
Null Depths (Diff Patterns)	30dB min
Diff Pattern Amp Unbalance	0.8dB max
Return Loss (SUM)	16.71 dB min
Return Loss (DIFF)	13.03 dB min



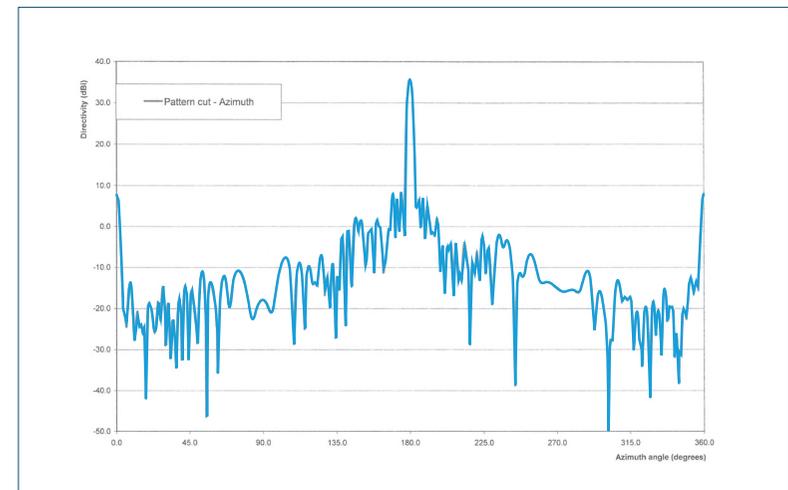
## SLOTTED ARRAY ANTENNA FOR GROUND SURVEILLANCE RADAR >

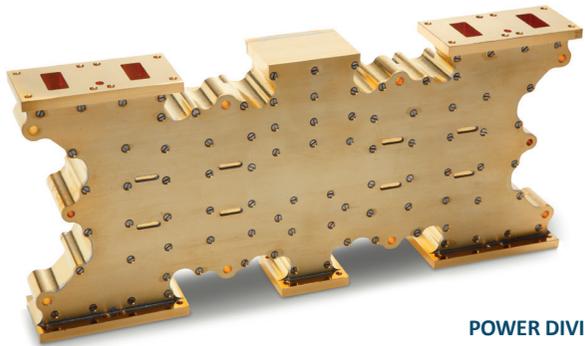
### SA18000

Sylatech's dedicated microwave engineering team designed and manufactured this slotted array antenna with an integrated feed network. Used on the GO12 man portable radar system, this antenna offers excellent performance in a wide range of conditions along with low mass. Sylatech offers slotted array antennas from S to Ka band and incorporate either linear or monopulse feed networks.

#### TYPICAL SPECIFICATION

Frequency (Passband)	16.375GHz to 16.825GHz	
Gain	34.5dBi min	
Polarisation	Linear	
3dB Beamwidth	Azimuth	2.7degrees max
	Elevation	3.7degrees max
Sidelobes	Azimuth	24dB min
	Elevation	16dB min
Return Loss	9.54dB Full Band	
	19.09dB at 16.6GHz	





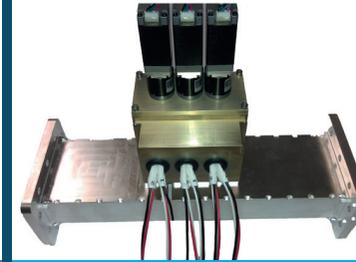
POWER DIVIDERS



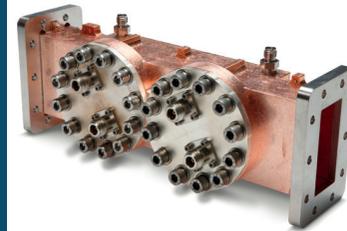
CROSSGUIDE COUPLERS



WAVEGUIDE BENDS



STUB-TUNERS



LOOP COUPLERS



ROTARY JOINTS



LOADS



TEES



TRANSITIONS



MONOPULSE  
COMPARATORS

- ▶ **Slotted Array Antenna** - Precision passive designs with exacting performance
- ▶ **Monopulse Comparators** - Custom designs for narrowband frequencies
- ▶ **Power Dividers/Combiners** - With minimal amplitude and phase unbalance
- ▶ **Rotating Joints** - Single/multi-channel waveguide and coaxial options
- ▶ **Crossguide Couplers** - Supports coupling across large bandwidths
- ▶ **Directional Couplers** - Offering superior coupling and directivity
- ▶ **Loop Couplers** - Single and dual configurations in compact designs
- ▶ **Sidewall and Top Wall Couplers** - WG6 to WG22 with typical VSWR of 1.1:1
- ▶ **Antenna Feeds** - Single and dual-bands with horizontal, vertical and circular polarisation.

- ▶ **OMT** - Typical orthogonal isolation of better than 40dB
- ▶ **Stub Tuners** - Double short and triple boss designs available
- ▶ **Loads and Attenuators** - Suitable for low, medium and high power applications
- ▶ **Waveguide Bends** - Available in E and H planes covering WG6 to WG25
- ▶ **Flanges** - A range of plain, choke and double-ridged flanges are available
- ▶ **Pressure Windows** - Covering a range of waveguide sizes from WG11 to WG22
- ▶ **Magic Tees** - Offered as standard linear, folded E-plane and folded H-plane variants
- ▶ **Transitions** - Available in a variety of waveguide and coaxial interfaces.



**ROJO COMPONENTS**

# ENGINEERING YOUR FUTURE



**SLOTTED ARRAY ANTENNAS**

Sylatech delivers precision custom engineering solutions for our customers.

Operating from the UK, Sylatech has a global customer base across multiple business sectors including Aerospace, Space, Defence, Medical, Automotive and Construction.

As a trusted partner for delivering high quality systems and components to exacting standards, our customer base spans all tiers of the manufacturing supply chain.

Sylatech's service offering spans three core functions:

- **RF and Microwave** - custom design and manufacture of microwave sub-systems, assemblies and components.
- **Investment Casting Foundry** - manufacturing precision metal parts through lost-wax investment casting.
- **CNC Machining** - comprehensive machining delivering precision engineered metal components.



# Engineering your future



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