

**ASTRA MICROWAVE PRODUCTS LIMITED**

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Email : mktg@astramp.com, website : www.astramp.com  
CIN : L29309TG1991PLC013203

May 26, 2023

To  
The General Manager  
Department of Corporate Relations  
**BSE Limited**  
Sir Phiroze Jeejeebhoy Towers,  
Dalal Street, Fort,  
Mumbai -400 001

To  
The Vice President,  
Listing Department  
**The National Stock Exchange of  
India Limited**  
Exchange Plaza  
Bandra Kurla Complex, Bandra (East)  
Mumbai 400 051

**Scrip code: 532493**

**Scrip code: ASTRAMICRO**

Dear sir,

**Sub: – Intimation pursuant to Regulation 30 of the SEBI (LODR) Regulations, 2015 – Investor Presentation.**

Please find enclosed herewith Investor Presentation for Q4 & FY 23 for your information and records.

We request you to take the above on record and the same be treated as compliance under the applicable regulations of the SEBI (LODR) Regulations, 2015.

Thanking you,

Yours faithfully,  
**For Astra Microwave Products Ltd**

**T.Anjaneyulu**  
**G.M - Company Secretary**



Works :

Unit 1 : Plot No. 12, ANRICH Industrial Estate, Bollaram, Medak Dist., Telangana State - 502 325

Unit 2 : Plot No. 56A, ANRICH Industrial Estate, Bollaram, Medak Dist., Telangana State - 502 325

Unit 3 : Sy. No. 1/1, Imarath Kancha, Raviryala (Vil), Maheshwaram (Mdl) R.R. Dist., Telangana State - 500 005

Unit 4 : Sy. No. 1/1, Plot No. 18 to 21, Imarath Kancha, Hardware Park, Raviryala (V), Maheshwaram (M) R.R. Dist., T.S. - 500 005

R&D Centre : Plot No. 51 P, Bengaluru Aerospace Park(KIADB), Survey Nos Parts of 36 to 40, Bengaluru North, K.S. - 562 149.

# ASTRA Microwave Products Ltd

ASTRAMICRO.BO  
ASTRAMICRO.NS  
ASTM.IN

Investor Presentation – Q4 & FY23



Astra Microwave Products Ltd.



[www.astramp.com](http://www.astramp.com)

Radar Electronics | Electronic Warfare | Missiles | Telemetry | Space | Meteorology | Hydrology | Telecom



# Safe harbour

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# Quarterly Highlights



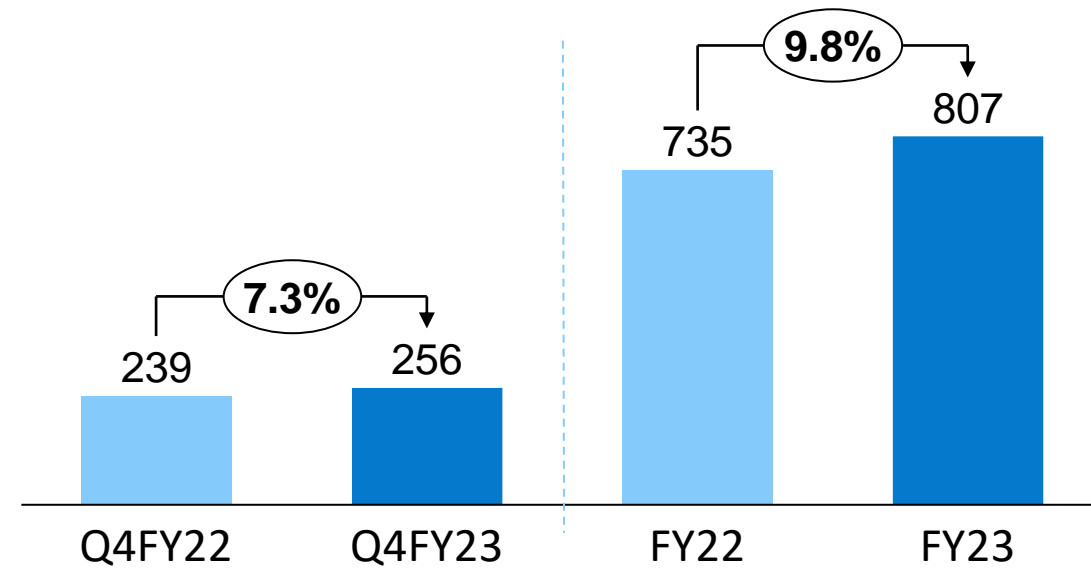


# Performance Highlights

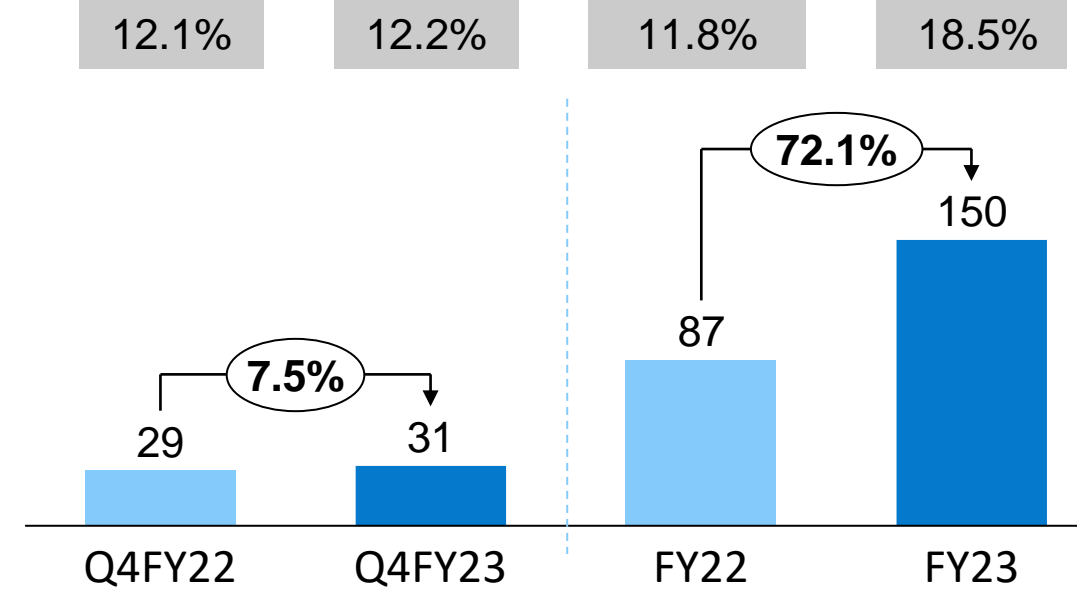
Margins

Standalone

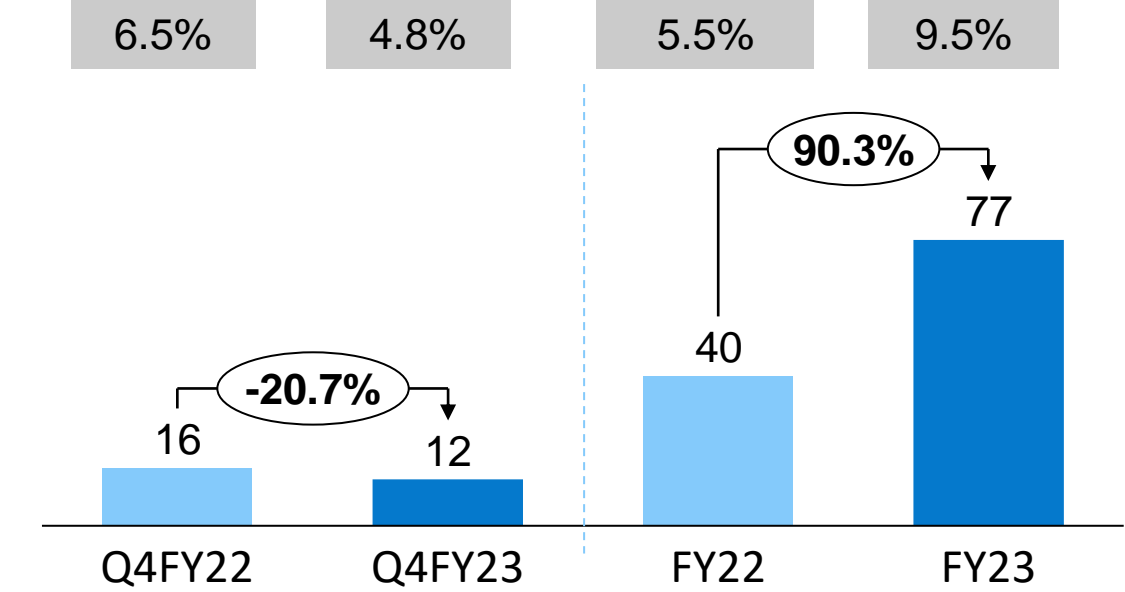
## Revenue (Rs. in Crs)



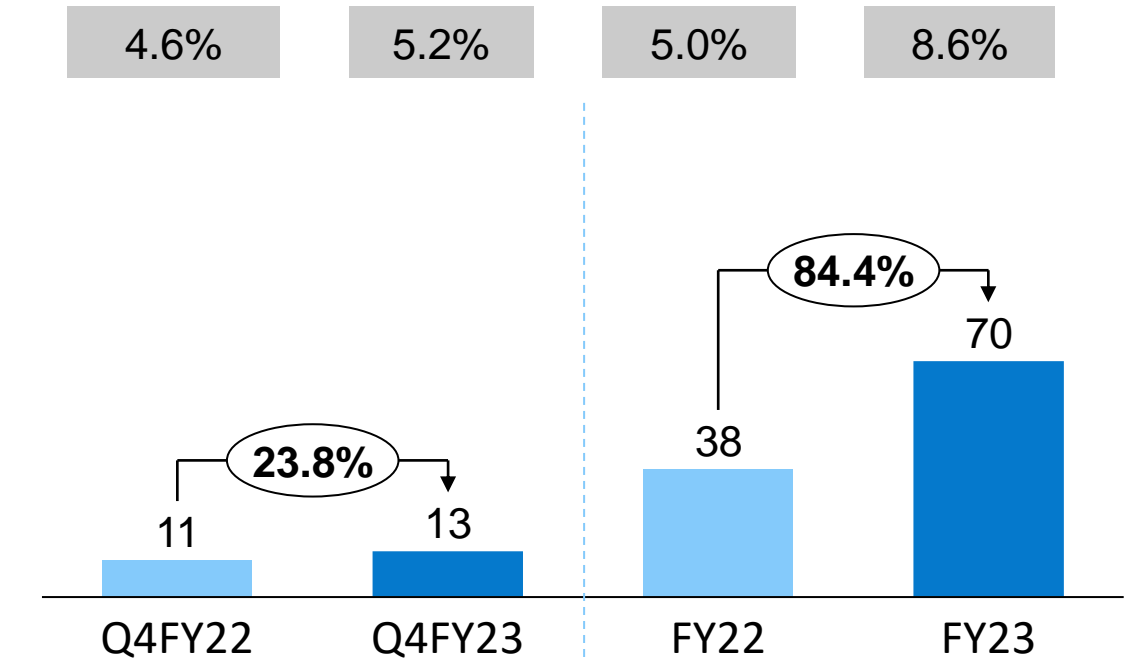
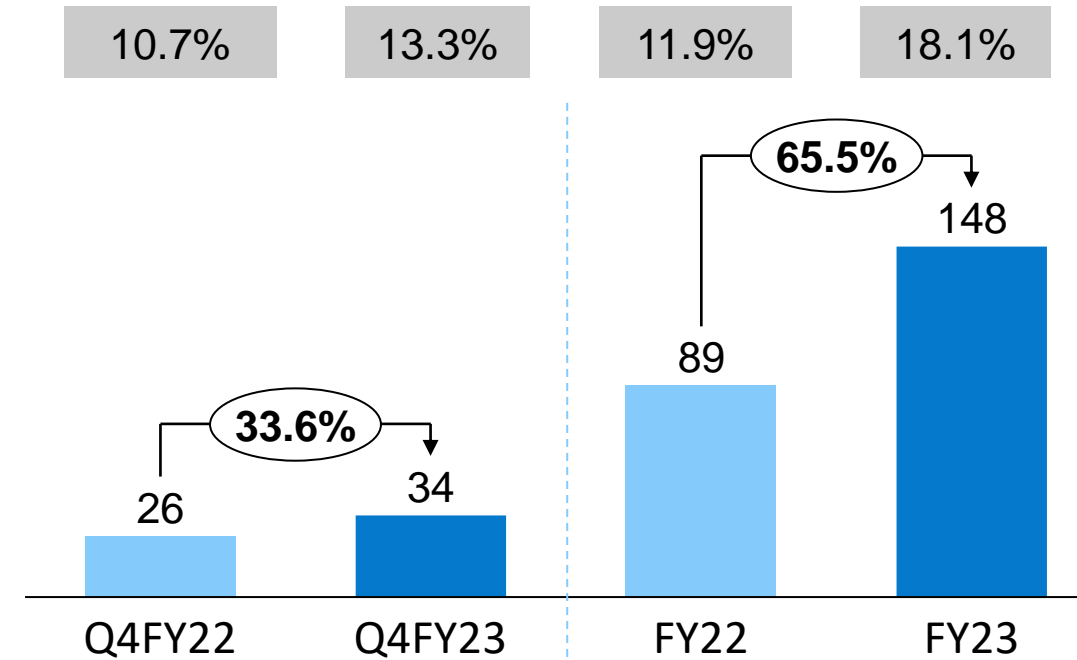
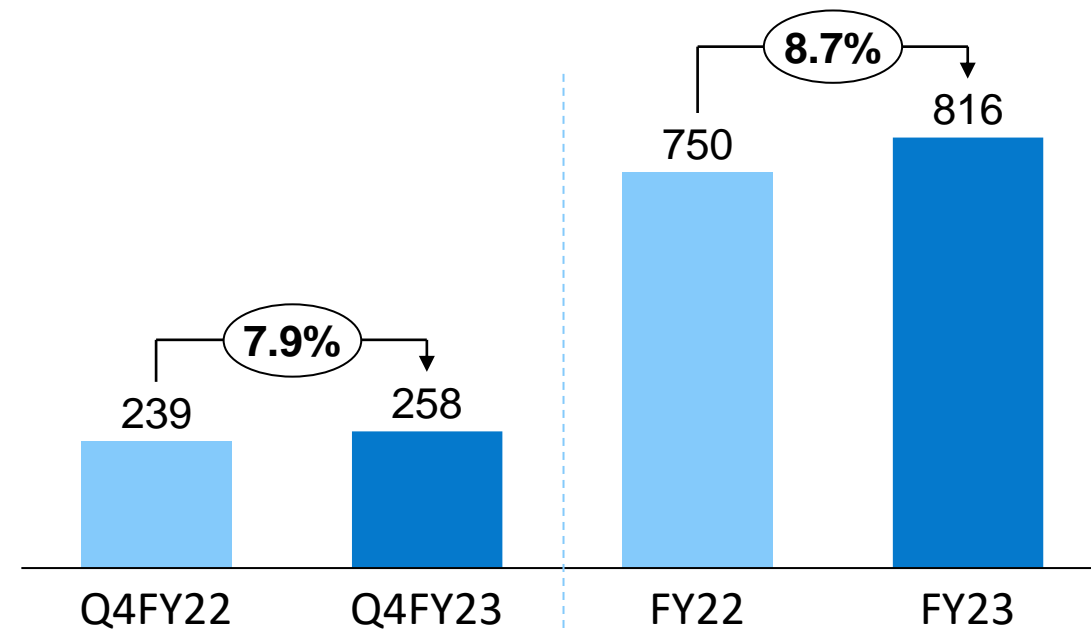
## EBIDTA (Rs. in Crs)



## PAT (Rs. in Crs)



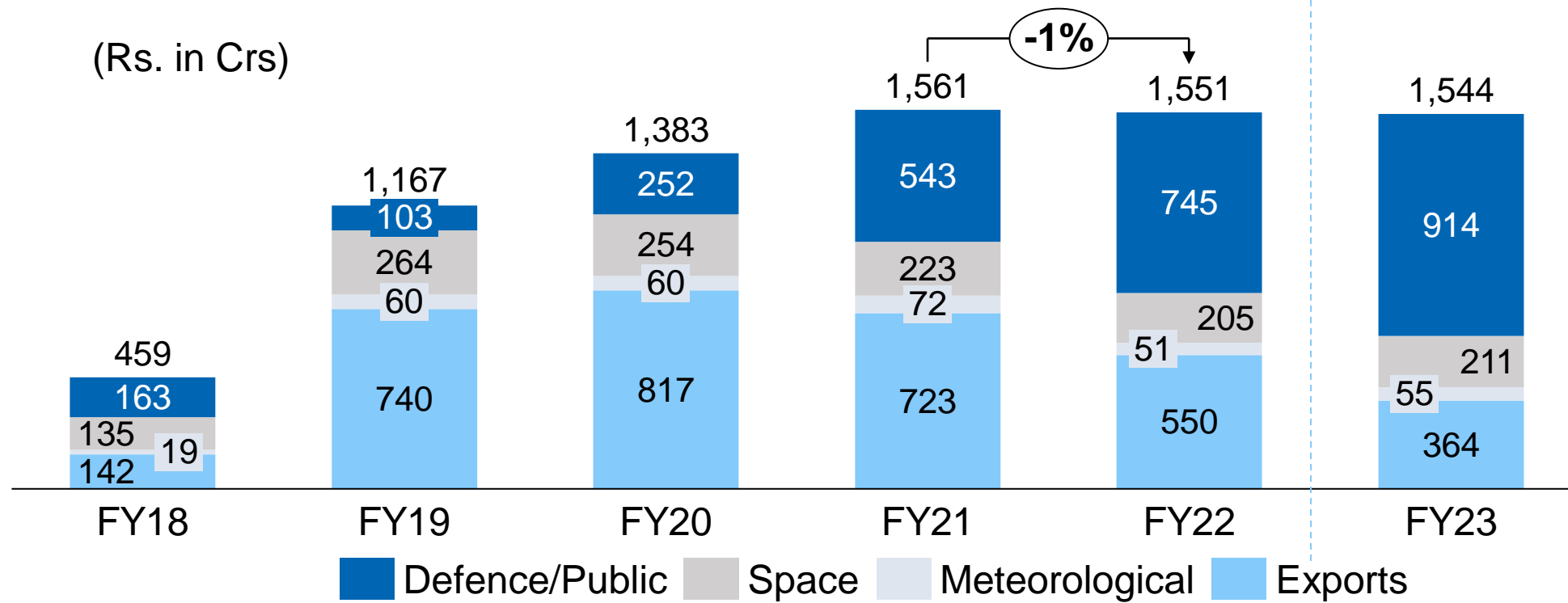
Consolidated



# Robust Order Book

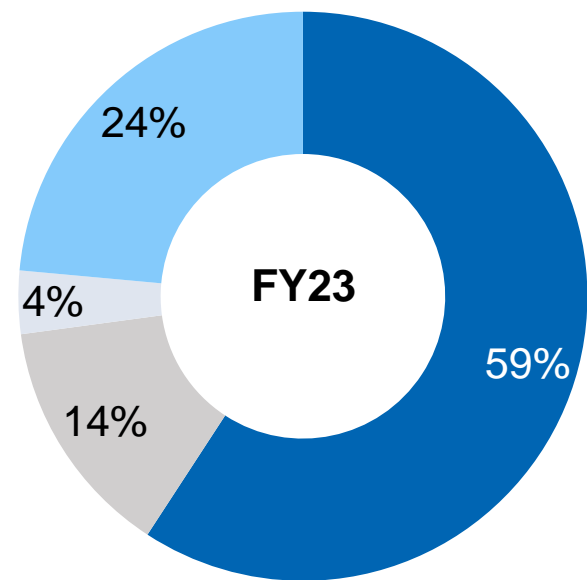
## Historical Orderbook Build-Up

(Rs. in Crs)



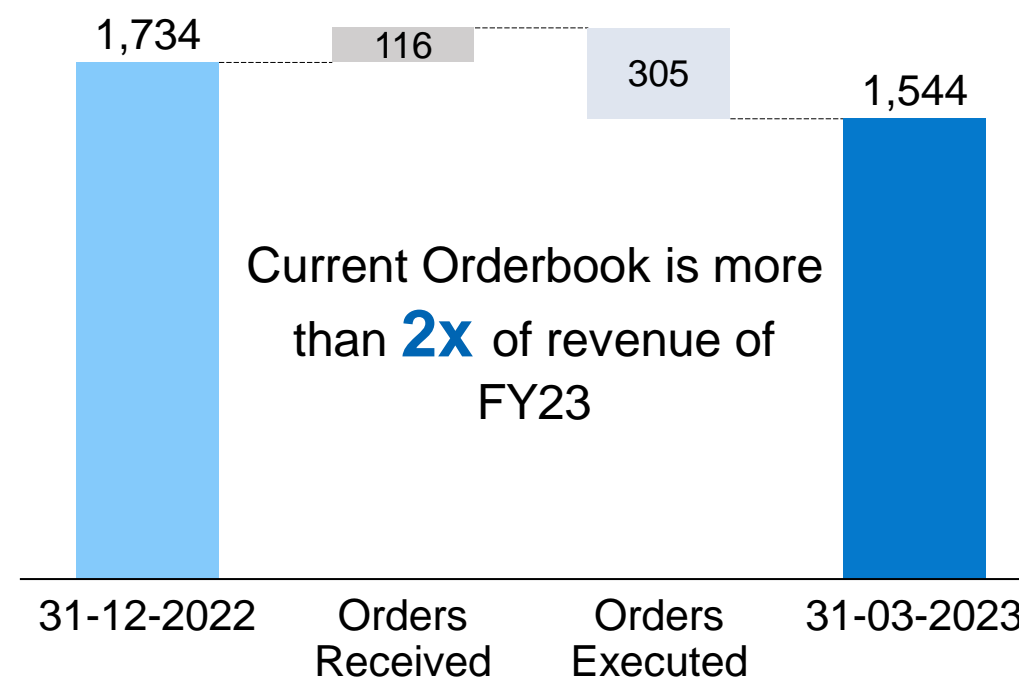
## Diversified Orderbook

Defence/Public, Space, Meteorological, Exports



## Orderbook Build-Up

(Rs. in Crs)



## Orderbook Updates

### Total orders received during the quarter

Sno	Segment Name	Amount (Rs. Cr)
1	Defence	72.22
2	Exports	12.19
3	Space	3.58
4	Meteorological	27.94
<b>TOTAL</b>		<b>115.92</b>

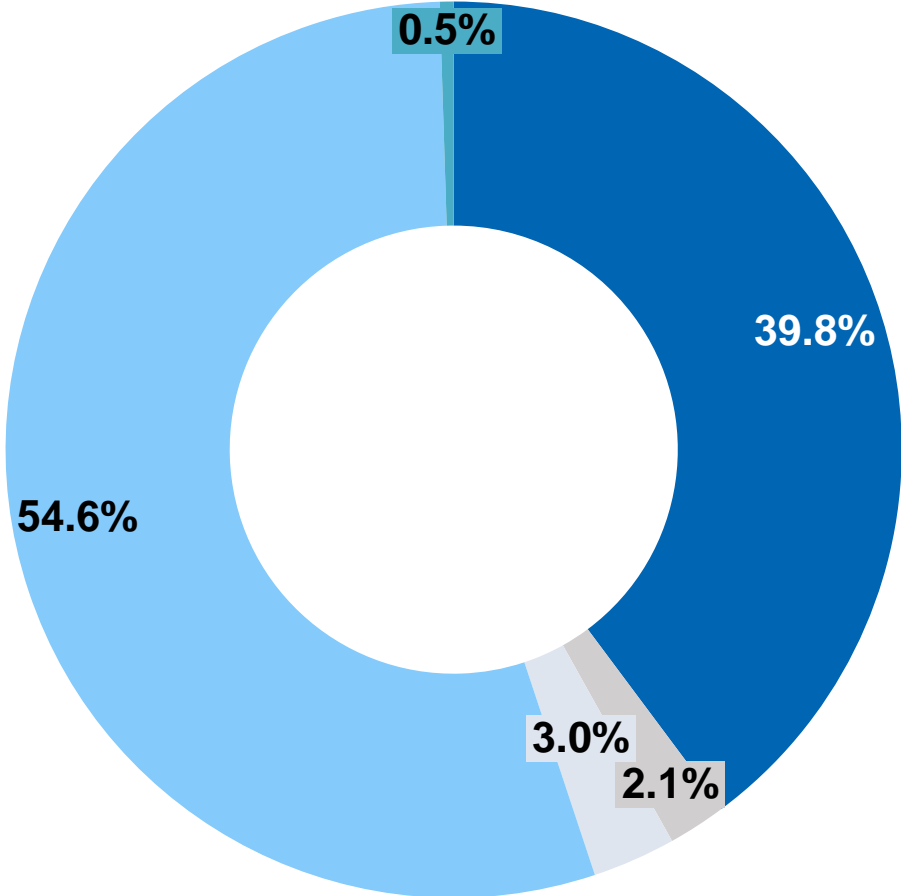
*Astra Rafael recently received a new order for Rs.158 Cr, this will be completed by FY24.*



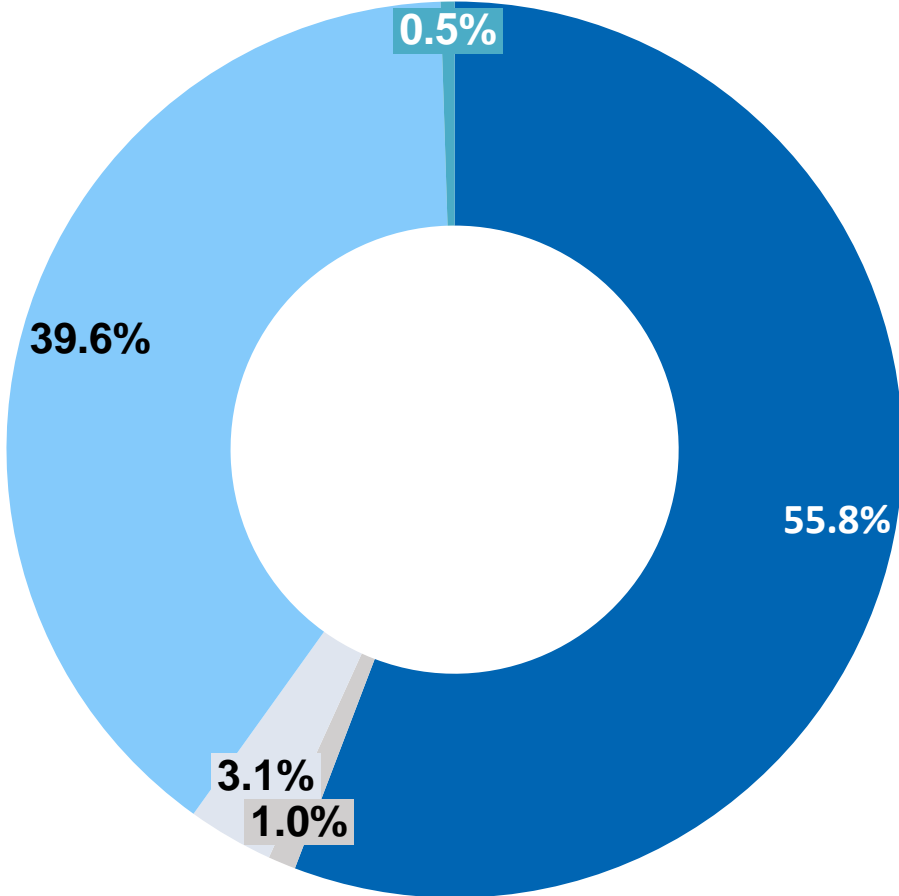


# Segmental Revenue Break-up

Q4FY23



FY23



Defence Space Meteorological Exports including Deemed Exports Others

Revenue Break-up in %	Q4FY23	Q3FY23	Q2FY23	Q1FY23
Defence	39.8%	65.3%	66.5%	57.1%
Space	2.1%	0.3%	0.8%	0.4%
Exports including Deemed Exports	54.6%	31.5%	27.9%	39.4%
Meteorological	3.0%	2.4%	4.3%	2.8%
Others	0.5%	0.5%	0.5%	0.3%

Break up of revenue on Gross Sales basis



# Standalone Profit & Loss

PARTICULARS (Rs. In Cr)	Q4FY23	Q4FY22	YOY	FY23	FY22	YOY
Revenue from Operations	256.3	238.9	7.3%	807.3	735.0	9.8%
Raw Material Consumption	183.4	170.8		518.7	523.8	
<b>Gross Profit</b>	<b>72.9</b>	<b>68.1</b>	<b>7.1%</b>	<b>288.6</b>	<b>211.2</b>	<b>36.7%</b>
<b>Gross Profit Margin</b>	<b>28.5%</b>	<b>28.5%</b>		<b>35.7%</b>	<b>28.7%</b>	
Employees Expenses	24.9	23.2		86.8	73.3	
Other Expenses	16.9	15.9		52.3	50.9	
<b>EBITDA</b>	<b>31.2</b>	<b>29.0</b>	<b>7.5%</b>	<b>149.6</b>	<b>86.9</b>	<b>72.1%</b>
<b>EBITDA Margin</b>	<b>12.2%</b>	<b>12.1%</b>		<b>18.5%</b>	<b>11.8%</b>	
Other Income	1.0	2.1		5.7	7.3	
Depreciation	6.2	6.1		23.3	21.6	
<b>EBIT</b>	<b>26.0</b>	<b>25.0</b>	<b>4.0%</b>	<b>132.0</b>	<b>72.6</b>	<b>81.7%</b>
<b>EBIT Margin</b>	<b>10.1%</b>	<b>10.5%</b>		<b>16.3%</b>	<b>9.9%</b>	
Finance Cost	9.2	4.2		29.0	19.9	
<b>Profit before Tax</b>	<b>16.8</b>	<b>20.8</b>	<b>-19.1%</b>	<b>102.9</b>	<b>52.7</b>	<b>95.2%</b>
<b>Profit before Tax Margin</b>	<b>6.5%</b>	<b>8.7%</b>		<b>12.7%</b>	<b>7.2%</b>	
Tax	4.5	5.2		26.3	12.5	
<b>PAT</b>	<b>12.3</b>	<b>15.6</b>	<b>-20.7%</b>	<b>76.7</b>	<b>40.3</b>	<b>90.3%</b>
<b>PAT Margin %</b>	<b>4.8%</b>	<b>6.5%</b>		<b>9.5%</b>	<b>5.5%</b>	
<b>EPS (in Rs.)</b>	<b>1.43</b>	<b>1.80</b>		<b>8.85</b>	<b>4.65</b>	

- Change in margins due to change in geographic sales mix
- Notably, Q2 & Q3 FY23 saw higher amounts of domestic sales resulting in better margins
- This trend was reverse in Q1 & Q4 FY23





# Balance Sheet

ASSETS (Rs. In Cr)	Mar-23	Mar-22
<b>Non-Current Assets</b>	<b>228</b>	<b>215</b>
Property, plant and equipment	165	158
Capital WIP	2	0
Investment in Associates	2	2
Investments in joint ventures	20	20
Investments in subsidiaries	15	15
<b>Financial Assets</b>		
i. Other Financial Assets	6	9
Deferred tax assets	8	6
Non Current Tax Assets	5	3
Other non-current assets	5	3
<b>Current assets</b>	<b>818</b>	<b>743</b>
Inventories	396	402
<b>Financial assets</b>		
i. Investments		-
ii. Trade receivables	282	202
iii. Cash and cash equivalents	49	21
iv. Bank balances other than (iii) above	55	49
Other financial assets	0	4
Current tax assets (net)	0	1
Other current assets	36	62
<b>Total assets</b>	<b>1,047</b>	<b>958</b>

EQUITY AND LIABILITIES (Rs. In Cr)	Mar-23	Mar-22
<b>Equity and Liabilities</b>	<b>653</b>	<b>590</b>
Equity share capital	17	17
Equity attributable to owners of the Company	636	572
<b>Non-current liabilities</b>	<b>77</b>	<b>47</b>
Financial liabilities		
i. Borrowings	3	3
Provisions	6	4
Contract liabilities	68	40
<b>Current liabilities</b>	<b>316</b>	<b>321</b>
Financial liabilities		
i. Borrowings	166	56
ii. Trade payables	44	53
iii. Other financial liabilities	18	15
Current tax liabilities (net)	4	-
Provisions	4	3
Contract liabilities	79	192
Other current liabilities	3	2
<b>Total equity and liabilities</b>	<b>1,047</b>	<b>958</b>



# Cash Flow Statement

Cash Flow Statement (Rs. in Cr)	FY23	FY22
Profit Before Taxes	102.9	52.7
Changes in working capital	-99.1	67.8
Cash generated from operations	3.8	120.5
Direct taxes paid (net of refund)	-25.6	-19.8
<b>Net Cash from Operating Activities</b>	<b>-21.8</b>	<b>100.8</b>
<b>Net Cash from Investing Activities</b>	<b>-28.0</b>	<b>-26.8</b>
<b>Net Cash from Financing Activities</b>	<b>76.3</b>	<b>-66.7</b>
<b>Net Increase in cash and cash equivalents</b>	<b>26.5</b>	<b>7.2</b>
Add: Cash & Cash equivalents at the beginning of the period	21.4	14.2
Cash & Cash equivalents at the end of the period	47.9	21.4

• **Reconciliation of cash and cash equivalents**

Particulars	As on March'23	As on March'22
<b>Cash and cash equivalents comprise of:</b>		
In Current account	49.4	21.4
In EEFC accounts	0.0	0.0
Cash on hand	0.0	0.0
Cash credit facility availed from bank	(1.5)	(0.1)
<b>Balance as per standalone statement of cash flows</b>	<b>47.9</b>	<b>21.4</b>





# Company Overview



# ASTRA: A Company With Deep Domain Expertise...

Astra Microwave Products Limited (AMPL) was incorporated as a Private Limited Company in 1991.

AMPL is into Design, Development and Manufacturing of RF & Microwave Systems, sub-systems and components.

With over 30 years of experience in microwave radio frequency (RF) applications, AMPL has moved up the value chain from sub-systems to high value-added systems.

AMPL's products find applications in high end markets of Defense, Space, Telecom, Meteorology and Civil communications.

Working with various Indian Govt. Labs, Indian Defense PSUs, ISRO, and many foreign OEM's.

Rs. 807.3 Cr.  
Revenue

35.7% Gross  
Margins

Rs. 149.6 Cr.  
EBITDA

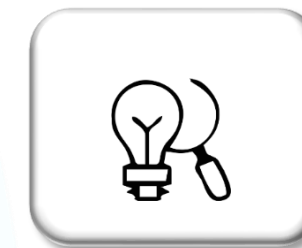
Rs. 76.7 Cr.  
PAT

**FY23 Standalone Financial Snapshot**



## WEALTH OF EXPERIENCE

- More than 30 years of domain expertise in microwave radio-frequency (RF) applications domain
- Promoted by a team of distinguished scientists from DRDO



## STRONG R&D CAPABILITIES

- Track record of new product development; now graduated to a SYSTEM integrator in Radars
- Dedicated R&D facility at Bengaluru to manufacture radars



## STATE-OF-THE-ART FACILITIES

- 5 facilities in Hyderabad
- Continuous investment in World Class Infrastructure for Assembly, Functional and Environment testing. Astra's facilities are approved by several foreign companies for production

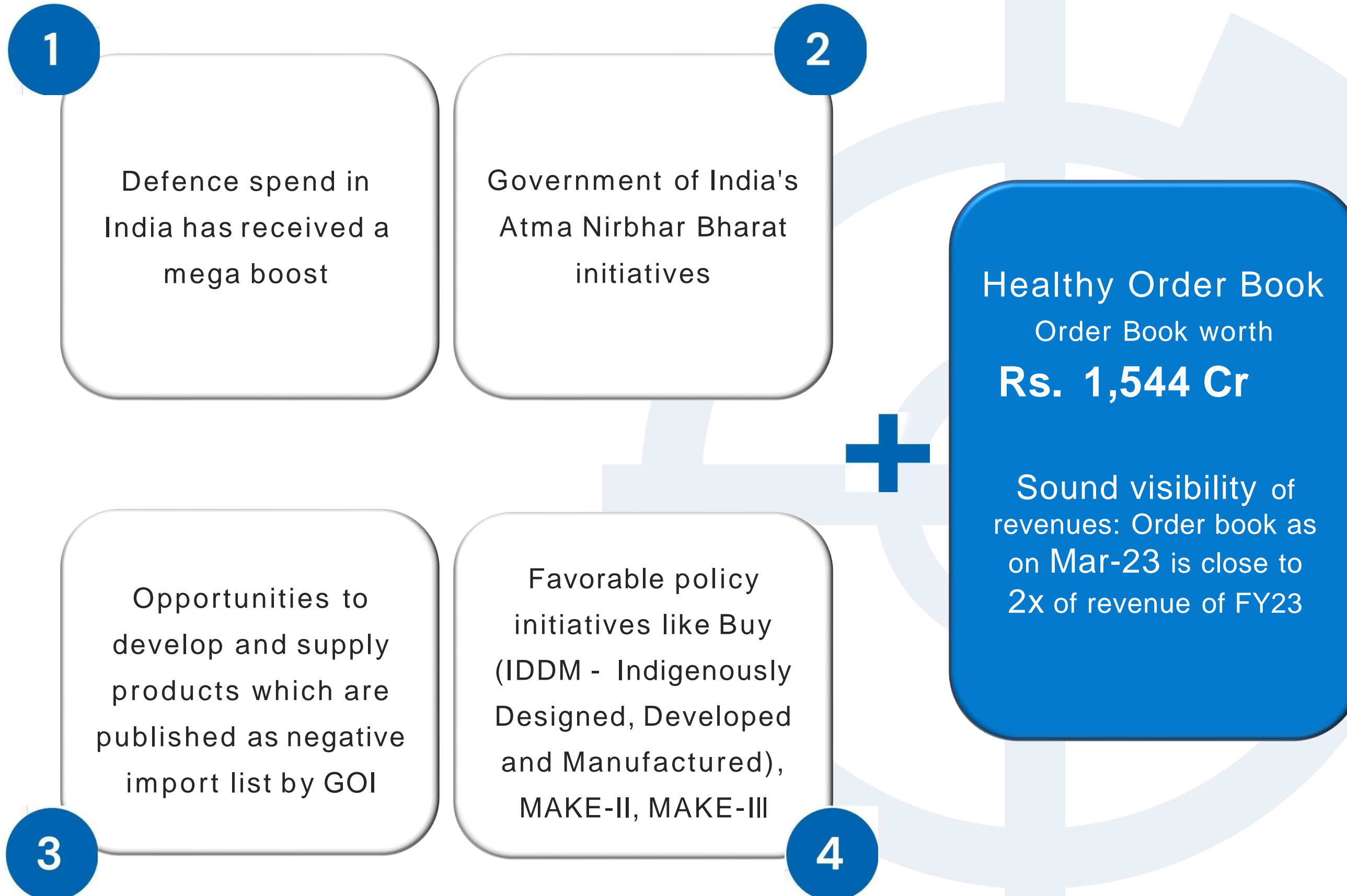


## LONGSTANDING RELATIONSHIP WITH CUSTOMERS

- Recognized as a qualified vendor by defense research establishments
- Clientele includes Indian Government Laboratories, Indian Defense
- Public Sector Undertakings, Indian Space Research Organization and many foreign OEM's



# ... Poised for Strong Growth Amidst Sectoral Tailwinds



AMPL has a proven track record of making high value-added SYSTEMS, RF and microwave super components and sub-systems which are becoming more relevant due to various government initiatives like IDDM, MAKE-II.

AMPL has been able to create a diversified and healthy order book on the back of its strong capabilities.

AMPL is very well placed to capture a bigger pie of the growing Indian defence sector with deep domain expertise, seasoned promoters, high focus on R&D and robust strategy in place.





# Leadership

## Significant Equity Holders & Directors



**PA Chitrakar**  
Non-Executive Director  
Head of R&D



**Atim Kabra**  
Executive Director  
Strategy & Business Development



**Dr. Avinash Chander**  
Chairman & Independent Director



**Kiran Dhingra**  
Independent Director

## Business & Technology Team



**S. Gurunatha Reddy**  
Managing Director



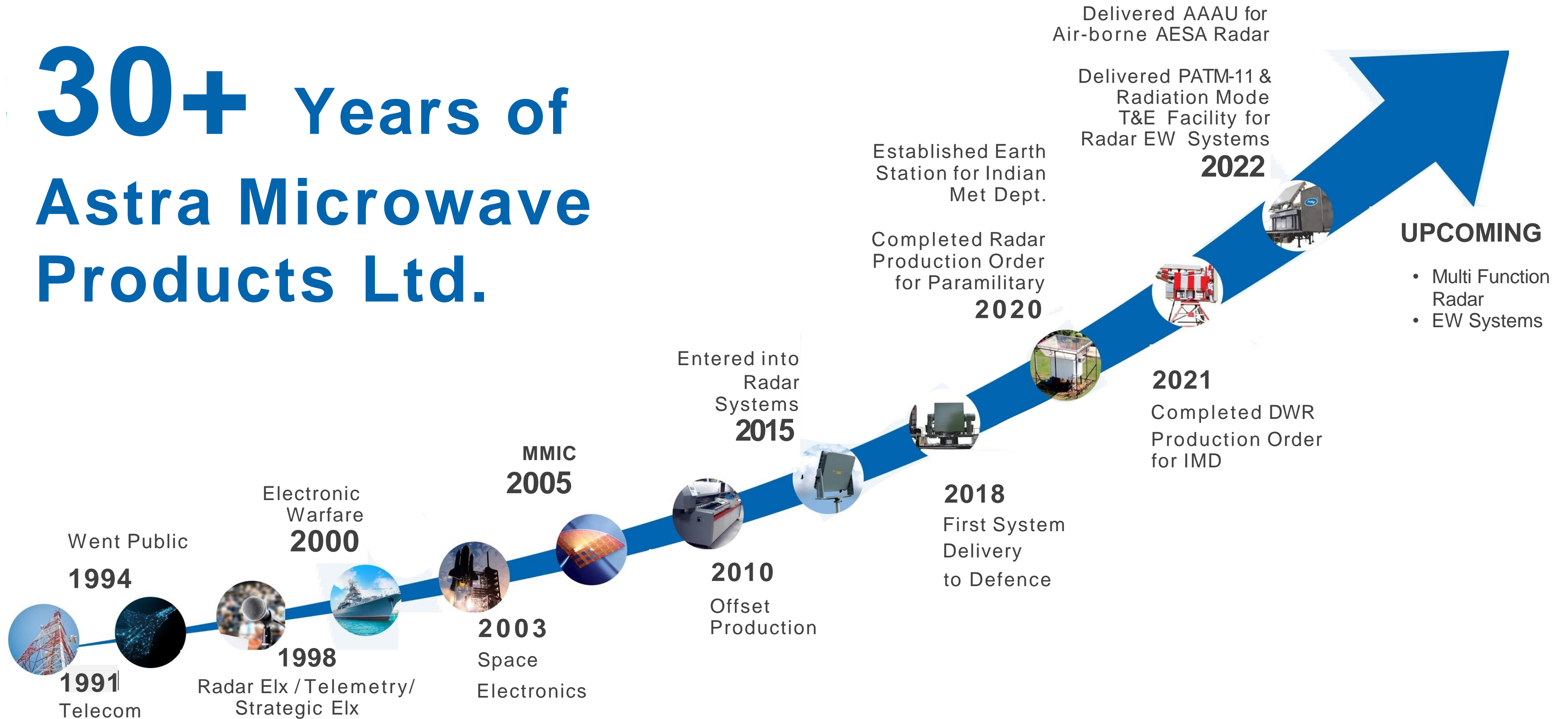
**Maram Venkateshwar Reddy**  
Joint Managing Director

<b>Key Team Members</b>	<b>C Nageswara Rao</b> VP - Production		<b>LGM Prakasam</b> VP - Radar Systems	
	<b>GR Shinde</b> Sr. GM – Design	<b>Chandrakanth</b> Sr. GM - Marketing & Sales	<b>V Sudhakar</b> Sr. GM – Design	<b>M Pravin</b> Sr. GM - Design (EW)
	<b>Dr. P Srinivasulu</b> GM- Design	<b>Balachary</b> GM-Antenna Design	<b>CV Rao</b> GM- Mech. Systems	<b>S Praveen Kumar</b> GM - Digital & Software
	<b>L Sudhakar</b> GM- EMI/EMC	<b>Jai Ram Reddy</b> GM - Production (Antenna & Weather)	<b>SDM Rao</b> GM - Special Projects	<b>V Venkatesh</b> GM - Quality
	<b>C Vinod Kumar</b> GM - Marketing & Sales (Weather & Telemetry)	<b>R Narasimhan</b> GM - Production (Special Products)	<b>Vikram</b> DGM - Production	



# Journey so far

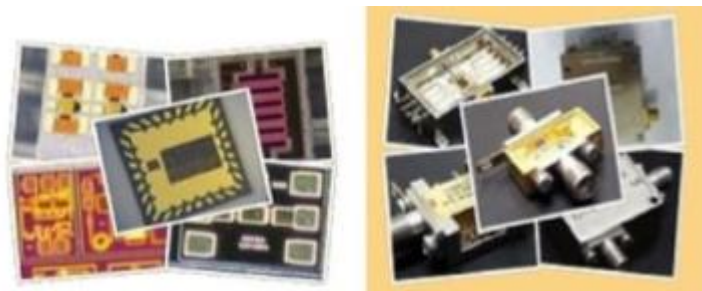
## 30+ Years of Astra Microwave Products Ltd.



# Offerings

## Components & MMICs

- Design
- Prototyping
- Testing & Qualification
- Production



## Subsystems

### BTS:

- Design
- Prototyping
- Testing & Qualification
- Production



### BTP:

- Bulk Production
- Testing & Qualification



## Systems

- Design
- Manufacturing
- Integration
- Testing & Qualification
- Installation & Commissioning





# Product Range

**Astra has designed, developed and produced critical sub systems and systems for its customers for building various airborne, naval and ground based platforms.**

**Radar, Missile Electronics, Electronic Warfare, Satellites, MMIC and Communication**

## Defence

- Radars
- Electronic Warfare
- Missile Electronics
- Telemetry
- Counter-Drones

## Space

- Flight Model Application
- Ground based Application
- INSAT MSS Terminals

## Hydro/Meteorology

- Water Level Measurement (Bubbler/Radar Sensor)
- Automatic Weather Stations (AWS)
- Agromet Met Stations (AMS)
- Automatic Rain Gauge (ARG) X Band Doppler Weather Radar

## Other areas of work

- Antennas
- MMIC
- Contract Manufacturing
- Homeland Security



# Expertise & Capabilities of AMPL (1/2)

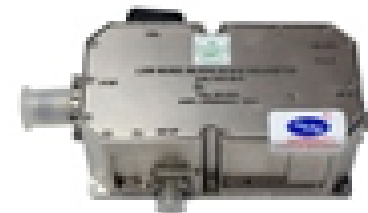
## Radar

- Design & development of Gallium Arsenide (GaAs) and Gallium Nitride (GaN) TRMs across all frequency bands VHF, UHF, L, S, C, X, Ku and Ka band with various power levels.
- Design and development of all kind of radar sub-systems including power amplifiers, receivers, exciters, filters, synthesizers, converters etc.
- In-house development of Signal Processing & Radar Data Processor
- Only Indian Company with proven capability of developing Active Array Antenna Unit (AAAU) for airborne radars of fighter aircraft - Uttam Radar for LCA Mk IA. Variant of Uttam with GaN TRMs is proposed for modernising existing radars of Su-30 Mk I and for future LCA Mk 2 and AMCA fighter aircrafts
- AMPL is developing Pulse Phased Array Tracking Radar, AAAU for Ship Borne Radars, DBF based Counter Drone Radar, Bird Detection & Monitoring Radars, Telemetry Tracking System and manufacturing Coastal Surveillance Radars, Counter Drone Radar and Ground Penetration Radars
- AMPL has been supplying Wind Profile Radars, Doppler Weather Radars, Automatic Weather Stations to IMO



## Electronic Warfare (EW)

- AMPL has been supplying various kind of EW sub systems and components to DPSUs, such as Direction finding Receivers, Passive Homing Head for RF Seekers used in NGARM, Jammers, Filters, Amplifiers, Receivers etc.
- AMPL has been EW sub-systems and components to programs of Indian Airforce, Indian Navy and Indian Army. AMPL has been associated with Jammer's program of LCA and other fighter platforms in India.



## Telemetry

- Astra has been supplying various sub-systems for Telemetry applications such as S- Band FM Transmitter Airborne RF Trans receiver, Ground Up Down Converters, C & S band switch antenna systems, Telemetry Tracking Systems etc.
- Astra has been supplying telemetry sub-systems to LCA and Intermediate Jet Trainer (IJT) aircraft.



# Expertise & Capabilities of AMPL (2/2)

## Missiles



- Leading company in India to design, develop and supply Radio Proximity Fuze, Airborne Diplexer, Transponder, transmitter, Command Guidance Unit, HAPS etc.
- AMPL has developed Solid-State High-Power Amplifiers in Ku-band to replace Multi Beam Klystrons used in AMPL & Akash NG missiles
- It has been associated with the program to develop AESA Seekers for SLCM & AMPL missiles
- New generation Course Correction Electronic Fuze has been added for smart ammunition
- AMPL has taken up the development of TeraHertz Proximity Sensor with DRDO which is an advanced version of proximity
- sensor for guided weapons

## Satellites

- AMPL has been supplying various key microwave sub-systems for ground and space based or payload applications
- It has supplied critical TR modules for Synthetic Aperture Radars (SAR) used in RISAT Satellites
- AMPL can provide required microwave electronics for launch vehicle sub-systems for private sector players
- AMPL has been a part of NAVIC module which has immense scope of application going ahead



## AEW&CS

- AMPL has supplied complete gamut of Radar, EW & Datalink products for AEW&CS-1 developed by DRDO



## SATCOM

- AMPL has been supplying MSS terminals for communication during disasters

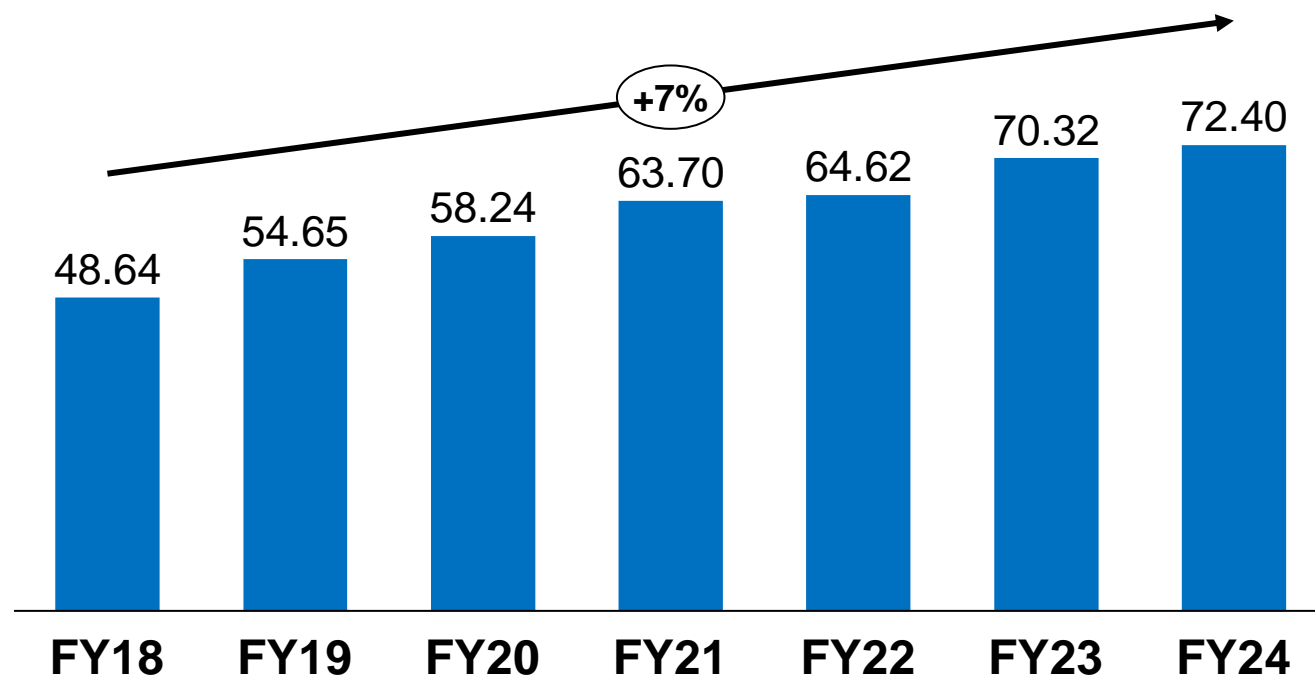




# Growing defence products opportunity

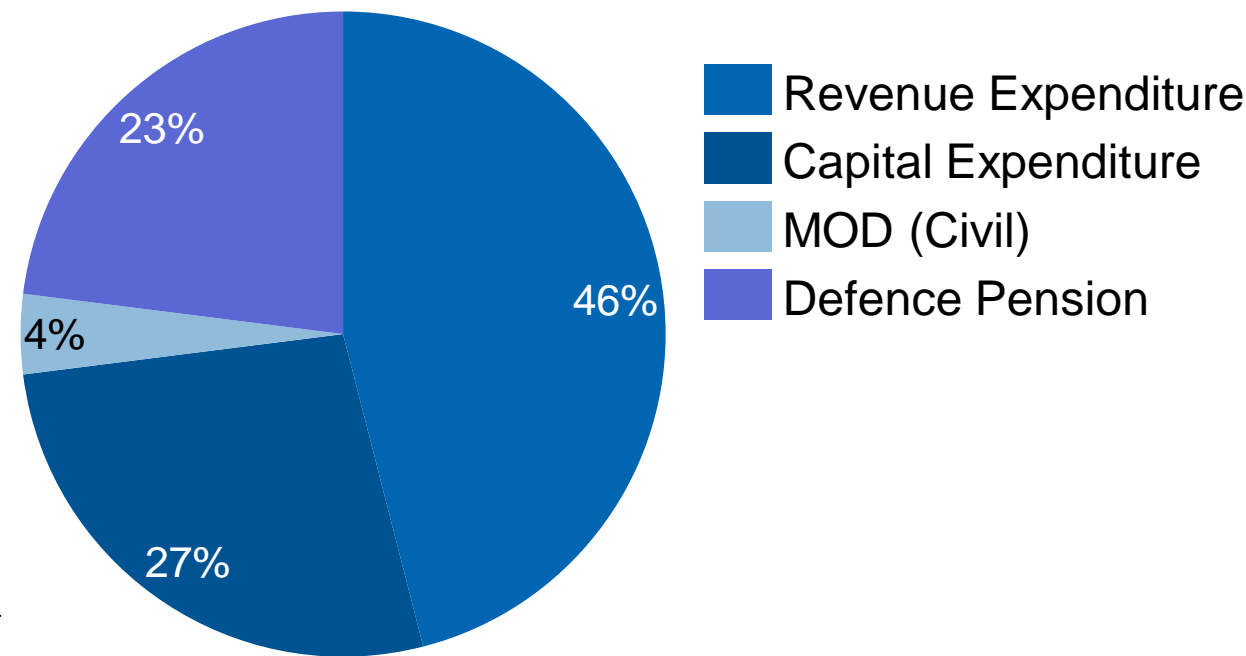
India's extensive modernisation plans, an increased focus on homeland security to increase government allocation for defence expenditure along with Make in India focus are expected to drive healthy growth in the sector.

## Growing Defence Budget (in Bn \$)



India is the 3rd largest military spender

## Defence Budget Components - FY23



Source: Ministry of Defence - Budget

The Indian government has taken various initiatives to promote on indigenization in this space:

**Atma Nirbhar Bharat**

**Imports Embargo**

The Indian government has set the defence production target at USD 25 bn by 2025 (including US\$5 bn from exports by 2025)

ISRO has planned multiple deep space and experimental missions to strengthen India's position in global space industry through new technology development

Indigenous shipbuilding with a remarkable increase in capability and programme fulfillment

Defence Acquisition Procedure, 2020

Category	Indigenous Content (IC)
Buy (Indian-IDDM)	Indigenous design and ≥ 50%
Buy (Indian)	In case of indigenous design ≥ 50% otherwise ≥ 60%
Buy and Make (Indian)	≥ 50% of the 'Make' portion Category not present
Buy (Global - Manufacture in India)	50% or more
Foreign Vendor	Foreign Vendor - Nil/ Indian Vendor ≥ 30%

## Business Potential till 2028

Rs. 4,000 Cr.  
Defense & Aerospace

Rs. 500 Cr.  
Space

Rs. 1,500 Cr.  
Turnkey Projects,  
Metrology & System

Rs. 1,000 Cr.  
Export

Rs. 7,000 Cr.  
Total



# Total Addressable Market

Major opportunities for AMPL of around Rs 24,000-25,000 Crs across all sectors till FY28.





# Esteemed Clientele



## Major stake in upcoming Defence Programs





# State of the Art Infrastructure

Astra has advanced in-house facilities for lower turnaround time for product realization appreciated by domestic and foreign customers.

## Hyderabad, Telangana

## Karnataka

### Unit I



Land : 1.13 Acres  
 Building : 18,000 Sq. Ft  
 Status : Own  
 Year : 1999

#### Facility Offering

Automatic weather  
 Station AWS and  
 other Hydrology &  
 Meteorology

### Unit II



Land : 2.0 Acres  
 Building : 20,000 Sq. Ft  
 Status : Own  
 Year : 1995

#### Facility Offering

Near Field Test  
 Range Out-Door  
 Test Range Multi-  
 Layer Antenna  
 Fabrication

### Unit III



Land : 9.9 Acres  
 Building : 77,000 Sq. Ft  
 Status : Own  
 Year : 2003

#### Facility Offering

Clean Room  
 Laser Welding  
 Vibration Table

### Unit IV



Land : 19.0 Acres  
 Building : 1,80,000 Sq. Ft  
 Status : Own  
 Year : 2009

#### Facility Offering

EMI/EMC  
 Halt/Hass  
 Chamber  
 ESS Chamber

### Unit V



Land : 0.59 Acres  
 Building : 23,000 Sq. Ft  
 Status : Own  
 Year : 2019

#### Facility Offering

MIC Facility CNC  
 Drilling Copper  
 Plating Gold  
 Plating  
 Etching developing

### Bengaluru Unit



Land : 5.0 Acres  
 Building : 1,00,000 Sq. Ft  
 Status : Own  
 Year : 2012

#### Facility Offering

Near Field Test Range

## Equipped with

Clean room  
 compatible oven  
 for curing epoxy

Temperature  
 controlled hot plate  
 with nitrogen purging  
 facility for eutectic  
 attachment

High-precision  
 bonding  
 machines

ESD measurement  
 equipment

DC probing station for  
 on-chip measurement  
 of DC parameters



# State of the Art Infrastructure

## Assembly Infrastructure

- 450,000 sq.ft. of research, design, development and manufacturing across 6 units
- Fully automated Assembly facility consisting of 3 Automatic SMT assembly lines with high end testing capabilities that include AOI, 3D X Ray, and functional test using Flying probe tester.
- Class 10000 clean rooms
- Laser Welding
- SMT Lines

## Functional Testing

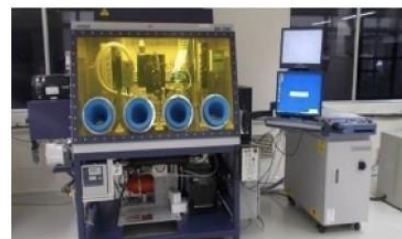
- Near Field Test Range (NFTR)
- Digital Signalling
- Function and pulse generators
- Open air antenna test range
- Spectrum Analyzers, Vector Network Analyzer, Signal generator, RF power meter
- Distortion Analyzer
- ATE-ATS facility

## Environment Testing

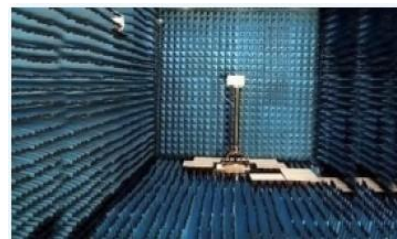
- EMI/EMC Test facility
- HASS/HALT Chambers
- Environment Chambers (-650C to +1750C; 98% RH)
- Vibration systems
- WeissChamber



Clean Rooms - Class 10,000



Laser Welding



FFTR



ATE ATS - Facility



EMI-EMC Test



Environmental Chamber



SMT Lines



Automated Optical Inspection



Open Air Antenna - Test Range



Oscilloscope



Vibration



HASS Chamber





# Strong R&D Capabilities

Through its focus on R&D, the company develops innovative designs useful for the manufacture of cost-effective products.

Strong in-house capability in the microwave radio frequency (RF) applications domain. Executes orders through BTS (Build To Specifications) and BTP (Build To Print) route

- Engineering Capabilities**
- In-house PCB assembly facility
  - In-house Mechanical design & simulation R&D
  - In-house digital R&D
  - In-house environmental qualification facility

## Dedicated Facility in Bengaluru

Astra Research and Development center is recognized by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

Investing further to develop expertise on system design and integration.

## Key product developments

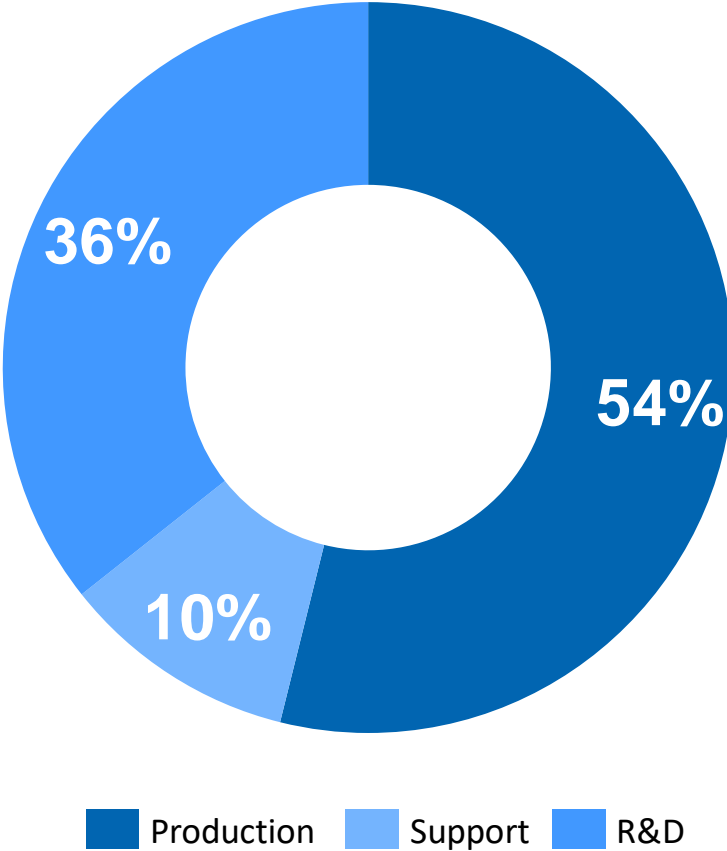
Strong track record of new product development and seamless execution leading to new orders.

**Defence** - Developed sub-systems for various defence programs and new technologies in India for radars such as Ashlesha, LRTR, CSR, AESA radars, BFSR, 3D-CAR, AEW&C and electronic warfare equipment

**Space** - Developed sub-systems for India's RISAT & GSAT program, Resourcesat, Megatronics, Cartosat.

**Meteorology** - Developed and manufactured DWR (Doppler Weather Radar), Wind Profiler Radar (WPR), automatic weather stations along with met towers, Agromet towers, hydrology stations.

Total workforce (as on March 31st, 2023) - 1,290



Astra has a highly experienced workforce (including 401 technocrats of which two are Doctorates) which keeps the company on forefront of technology. Its employees are continuously trained through in-house workshops and external programs.

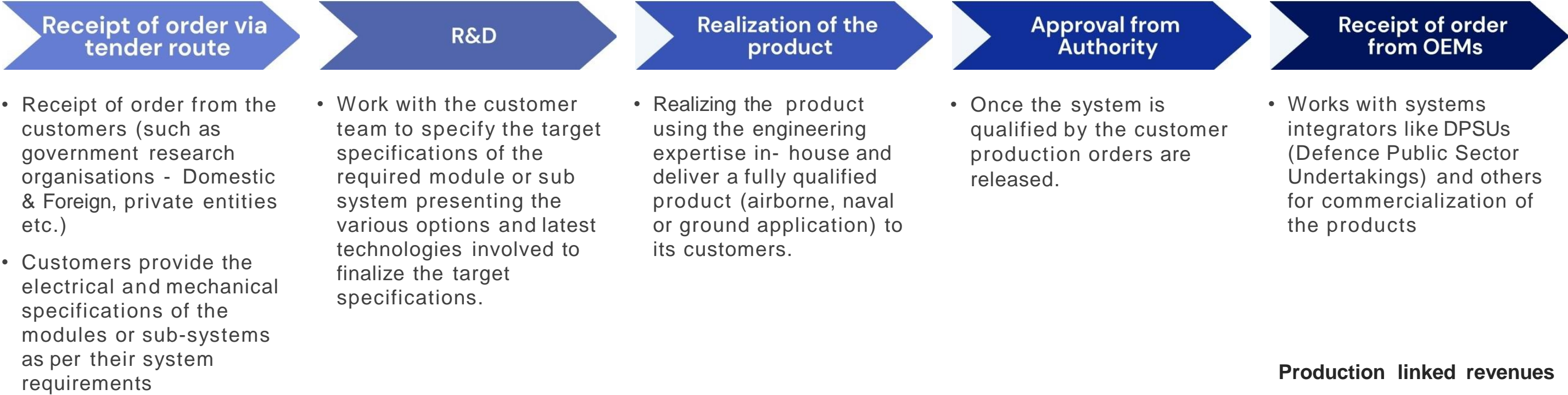




# Serving Markets Through

## Build To Specifications (BTS) Orders

The company's strong relationship with large corporations builds its brand equity and helps it in establishing itself as a prime contractor for large and longer-term programs in the marketplace. AMPL works on high-value complex projects awarded by companies.



High value addition leads to better margins

## Build To Print (BTP) Orders

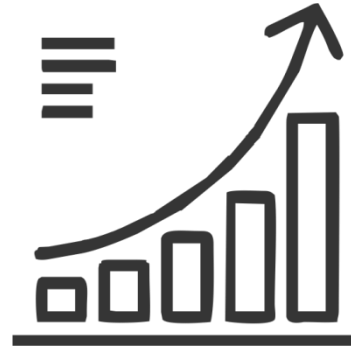
Astra Microwave has produced more than USD 150 million worth of high-end modules under BTP route.



Marginal value addition - Acts as a capacity filler



# Strategy for Growth



## New product development To accelerate growth

Develop products in close association with government research organizations for defence and space.

Gol has introduced policy measures promoting Indigenous shipbuilding.

Grow business by producing new and innovative products.

Enter commercial end user markets for radars.



## Focus on Research & Development

Invest in modern technology and equipment's to address changing industry trends and customer requirements.

Leverage strong R&D base to broad base domestic offerings.

Developing digital expertise by spending more on R&D.



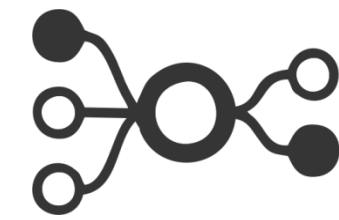
## Joint Ventures and Strategic alliances

Through JV or strategic alliances, offer improved technology and products.

Target the offset requirement in large defence procurement programmes of Gol.

**Exploring the areas in the anti drone, EW, satellites, SDRs and electro-optics through JVs.**

In discussion with our JV partners to expand the origin 21.30 like in the SDR product portfolio to develop EO (electro-optics) product line.



## Reap benefits of sectoral tailwinds

By doing extensive investments to strengthen our position as a systems vendor.

**Bidding for the whole system - the complete radar system - for both DRDO and for future MoD requirements.**

Atma Nirbhar Bharat initiative is To encouraging the industry develop the system either through in-house development or through foreign technology tie-up.



# Opportunities

## Wide Array of Opportunities due to Government Initiatives

Various government initiatives are encouraging the industry to develop the system either through in-house development or through foreign technology tie-up.

Astra in alliance with System Knowledge of its partners aims to deliver the product that meets Government thrust on Atma Nirbhar Bharat.

Getting opportunity from the Services to build for the intersystems.

Indian industries are getting opportunities to develop and supply products which are published as negative import list by GOI.

Astra will utilise its skill on design and production of high-end defense equipment in India and would also cater to the after-sale support.

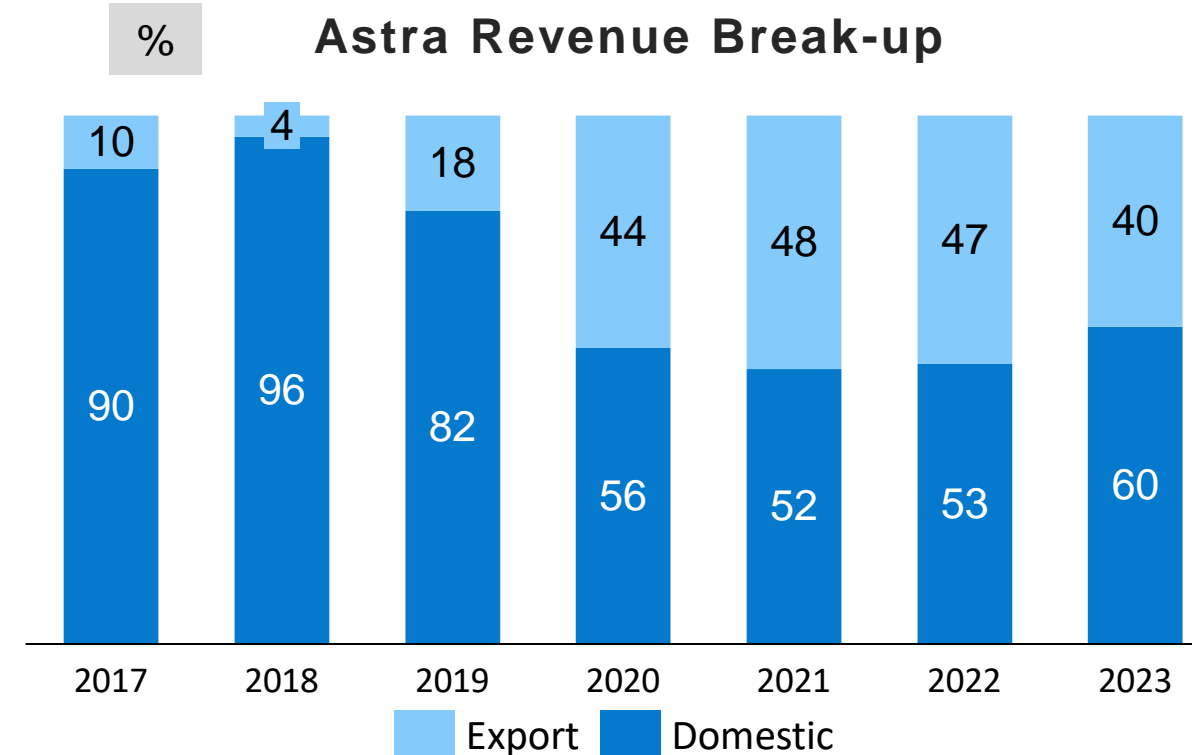
Indigenous integrated and strategic defence and aerospace electronics solutions provider which is well positioned to benefit from the Atma Nirbhar Bharat initiative.

**We aim to achieve 70% Domestic 30% Export Revenue distribution over next 2-3 years. Domestic business on an average carries 40 to 45% of gross margin as against 8 to 10% gross margin in exports.**

## Defence Offset

The defence offset policy mandates a foreign vendor to source at least 30% of the value of an order (when the order is worth Rs.2,000 crore or more) from Indian manufacturers.

Astra has been active in tapping this opportunity and its export business is driven by these offset provisions.



## Ready for Electronic Warfare

- Antennas
- EDLVA and BLI Super Components
- EW Simulators
- DIFM Receivers
- Front End Receivers
- Up/Down convertors
- Homodyne Receivers

## Strategic Electronic Telemetry Sub-systems

- Command guidance units
- Radio Proximity Fuze
- L, S, C & X-Band Transponders
- Phased Array based Telemetry Tracking System
- Sub-system for gimbal based and AESA Seeker
- Ground and Airborne data link systems
- Data and video Telemetry transmitters, Transponders,
- Encoders & decoders Telemetry Receivers





# Competitive landscape

	Systems	Supplied >25 Radars	Sub-Systems	Components	MMIC	Planar Antenna Testing (NFTR)
BDL	✓					
BEL	✓	✓	✓	✓	✓	✓
L&T	✓					
Mahindra Defence	✓					
Bharat Forge	✓		✓			
Adani Defence	✓		✓			
<b>Astra Microwave</b>	✓	✓	✓	✓	✓	✓
Paras Defence	✓		✓			
Data Patterns	✓		✓	✓		
Centum Electronics			✓	✓		
CoreEL			✓	✓		
Mistral			✓	✓		
Alpha Design	✓		✓	✓		
TASL	✓		✓			



# Annexure





# Standalone Profit & Loss

PARTICULARS (Rs. In Cr)	FY23	FY22	FY21	FY20	FY19
<b>Revenue from Operations</b>	<b>807.3</b>	<b>735.0</b>	<b>589.2</b>	<b>461.6</b>	<b>286.2</b>
Total Raw Material	518.7	524	418	267	159
<b>Gross Profit</b>	<b>288.6</b>	<b>211.2</b>	<b>170.7</b>	<b>194.7</b>	<b>126.9</b>
<b>Gross Profit Margin</b>	<b>35.7%</b>	<b>28.7%</b>	<b>29.0%</b>	<b>42.2%</b>	<b>44.3%</b>
Employee Expenses	86.8	73	64	66	61
Other Expenses	52.3	51	42	45	36
<b>EBITDA</b>	<b>149.6</b>	<b>86.9</b>	<b>64.2</b>	<b>83.8</b>	<b>29.8</b>
<b>EBITDA Margin</b>	<b>18.5%</b>	<b>11.8%</b>	<b>10.9%</b>	<b>18.2%</b>	<b>10.4%</b>
Other Income	5.7	7	12	12	24
Depreciation	23.3	22	23	25	29
<b>EBIT</b>	<b>132.0</b>	<b>72.6</b>	<b>52.8</b>	<b>70.5</b>	<b>25.7</b>
<b>EBIT Margin</b>	<b>16.3%</b>	<b>9.9%</b>	<b>9.0%</b>	<b>15.3%</b>	<b>9.0%</b>
Finance Cost	29.0	20	21	8	9
<b>Profit before Tax</b>	<b>102.9</b>	<b>52.7</b>	<b>31.4</b>	<b>62.7</b>	<b>16.7</b>
<b>Profit before tax margin</b>	<b>12.7%</b>	<b>7.2%</b>	<b>5.3%</b>	<b>13.6%</b>	<b>5.9%</b>
Tax	26.3	12	7	15	4
<b>PAT</b>	<b>76.7</b>	<b>40.3</b>	<b>23.9</b>	<b>47.3</b>	<b>12.5</b>
<b>PAT Margin %</b>	<b>9.5%</b>	<b>5.5%</b>	<b>4.1%</b>	<b>10.3%</b>	<b>4.4%</b>
<b>EPS (Rs.)</b>	<b>8.85</b>	<b>4.65</b>	<b>2.76</b>	<b>5.47</b>	<b>1.45</b>





# Standalone Balance Sheet

ASSETS (Rs. In Cr)	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
<b>Non-Current Assets</b>	<b>228</b>	<b>215</b>	<b>202</b>	<b>213</b>	<b>222</b>
Property, plant and equipment	165	158	150	158	176
Capital WIP	2	0	0	12	2
Investment in Associates	2	2	2	-	-
Investments in joint ventures	20	20	20	16	16
Investments in subsidiaries	15	15	13	8	8
<b>Financial Assets</b>					
i. Other Financial Assets	6	9	10	11	12
Deferred tax assets	8	6	2	-	-
Non Current Tax Assets	5	3	-	5	5
Other non-current assets	5	3	3	2	2
<b>Current assets</b>	<b>818</b>	<b>743</b>	<b>714</b>	<b>644</b>	<b>391</b>
Inventories	396	402	291	226	130
<b>Financial assets</b>					
i. Investments	-	-	14	13	20
ii. Trade receivables	282	202	254	247	190
iii. Cash and cash equivalents	49	21	14	7	7
iv. Bank balances other than (iii) above	55	49	24	43	18
Other financial assets	-	4	13	-	-
Current tax assets (net)	-	1	1	-	-
Other current assets	36	62	103	107	26
<b>Total assets</b>	<b>1,047</b>	<b>958</b>	<b>915</b>	<b>857</b>	<b>613</b>

EQUITY AND LIABILITIES (Rs. In Cr)	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
<b>Equity and Liabilities</b>	<b>653</b>	<b>590</b>	<b>561</b>	<b>547</b>	<b>503</b>
Equity share capital	17	17	17	17	17
Equity attributable to owners of the Company	636	572	543	530	486
<b>Non-current liabilities</b>	<b>77</b>	<b>47</b>	<b>4</b>	<b>3</b>	<b>9</b>
Financial liabilities					
i. Borrowings	3	3	-	-	5
Deferred tax liabilities (net)	-	-	-	-	5
Provisions	6	4	4	3	-
Contract liabilities	68	40	-	-	-
<b>Current liabilities</b>	<b>316</b>	<b>321</b>	<b>351</b>	<b>307</b>	<b>101</b>
Financial liabilities					
i. Borrowings	166	56	100	47	0
ii. Trade payables	44	53	35	38	22
iii. Other financial liabilities	18	15	11	16	20
Current tax liabilities (net)	4	-	1	2	-
Provisions	4	3	2	2	3
Contract liabilities	79	192	201	201	51
Other current liabilities	3	2	2	1	5
<b>Total equity and liabilities</b>	<b>1,047</b>	<b>958</b>	<b>915</b>	<b>857</b>	<b>613</b>



# Subsidiaries & JV

## Subsidiaries

BE

Bhavyabhanu Electronics Pvt. Ltd.

- BEPL is a fully owned subsidiary of Astra Microwave
- Established with State-of-the-Art manufacturing & test facilities to meet Global Standards. This combined with experienced man power & stabilized processes ensure that the needs of various Industry Segments can be met easily.
- A dependable player with excellent technological capabilities and a long-term commitment to the defense, aerospace, medical and industrial electronics industry
- Products are known for ruggedness and reliability and conform to the latest quality standards. BEPL can handle both high-mix, low/medium volume products as well as high volume production for our customers.



- A fabless MMIC Design House, based in Singapore. Aelius Semiconductors develops GaAs and GaN MMIC products based on a robust and reliable design philosophy. These designs are fabricated at leading foundries across the world.
- The products are tested and packaged as per customer's requirement utilizing state-of-the-art facilities
- Aelius's unique and wide range of MMIC products are focused primarily on the Defense and Space industries, with competitive time lines and prices. We offer the flexibility to custom-package our products to customer's chosen configuration of die, package, or module.

## JV



- Astra Microwave Products Ltd and M/s RAFAEL ADVANCED DEFENSE SYSTEMS LTD., Israel (RAFAEL) came together to form a Joint Venture Company called Astra Rafael Comsys Private Ltd. (ARC) in Aug-19
- Focuses on indigenous technology and Atma Nirbhar Bharat programs
- Engages in carrying out production, integration, customization, marketing, sale, life cycle support and additional activities as required in the fields of Tactical Radio Communication systems, Electronic Warfare Systems and Signal Intelligence Systems.



# Capabilities

## Engineering Capabilities

### Research & Development

- Expertise in development of critical products for Radar, EW, Missile, Telemetry and Space Elx
- PCB Design
- Mechanical design & simulation
- ATE design
- Test validations
- Environment & EMI/ EMC qualification
- Antenna Testing & Calibration

## Digital System R&D Capability

### 80+ R&D Manpower in Digital domain

- Xilinx Alliance Partner
- Hardware Design
- Firmware Development
- Software Development
- Algorithm Development and simulation
- GUI development
- Real Time Operating System
- System Level Integration
- Inhouse Cadence team for RF & High speed Digital PCB design including SI, PI and Thermal Analysis

## Test Facilities

- Near Field Test Range (NFTR)
- Open Air Antenna Test Range
- Far Field Test Range (RF Anechoic Chamber)
- EMI/EMC Test Facility
- Vibration/Shock Machine/ Bump Test Facilities
- HASS Chamber
- ATE and ATS Facilities
- Other Facilities
  - Multilayer Microstrip Antenna Assembly Facility
  - Thermovac Facilities
  - Laser Welding Machine

## Quality Standards

- Compliant to AS 9100D
- Inward Inspection
- In-process Inspection
- Final Inspection
- Counterfeit part control
- Reliability Engineering
- Reliability prediction and estimation
- **FMECA & FRACAS**
- Process standardization





# Products : Defence

## Radar Electronics

- Active Antenna Array Units - L, S, C, X, Ku-Bands
- TR Modules- V/UHF, L, S, C, X, Ku and Ka-Bands
- Wideband TR modules
- Solid State Power Amplifiers
- Receiver Exciters upto Ka Band
- Central Units- L & S Bands
- Antenna Beam forming units
- All receiver subsystems
- Array Group Receivers
- Monopulse Receivers
- Waveform Generators
- Own MMIC's

## Electronic Warfare

- Antennas
- EDLVA and BLI Super Components
- EW Simulators
- DIFM Receivers
- Front End Receivers
- Up/down converters
- Homodyne Receivers

## Missile Electronics

- Command Guidance Units
- Radio Proximity Fuze
- L, S, C & X-Band Transponders
- Phased Array based Telemetry Tracking System
- Sub-systems for Gimbal based and AESA Seeker
- Ground and Air-borne data link systems

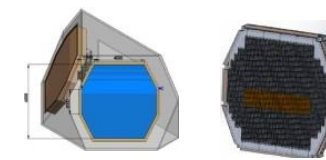
## Telemetry

- Data and Video Telemetry transmitters, transponders, encoders & decoders
- Telemetry Receivers

## Products



S-band Pulsed Phased Array Tracking Radar (PPTR) - PXE, DRDO



AAAU for Naval Radar



Phased Array Telemetry System (PATM)- ITR, DRDO



Counter Drone System Received (LAToT from DRDO)



Bird Detection & Monitoring Radar



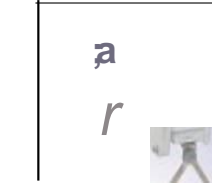
Coastal Surveillance Radar (LAToT from DRDO available)



AATRU for ASPJ Pod



Radiation Mode T&E Facility for Radar EW Systems



Parth Anti-Personal Mine (Received LAToT from DRDO)



Course Correction Fuse (CCF)



# Products : Meterology

## Ground-based

- Water Level Measurement (Bubbler/ Radar Sensor)
- Agromet Meteorological Stations (AMS)
- Automatic Rain Gauge (ARG)
- Automatic Weather Stations (AWS)
- Mini boundary layer masts
- 50m tower masts
- Agro met towers

## Products



Agro-Meteorology



Flood Monitoring Station



Data Buoy



1 kW VHF TRMs:  
NARL (MST Radar)



Wind Profiler  
Radars : NARL



Weather  
Monitoring Station



Meteorology  
Radar Systems



Avalanche Radar



Multi Mission Met Data Rx &  
Processing System  
(MMDRPS) : Antrix/IMD



53 MHz ST Radar:  
Kolkata University





# Products : Space

## Ground-based

- Sub-systems for Multi-object Tracking Radar
- Coherent frequency generators
- L-band modulators
- 8x8 switchable routers for earth station
- V/UHF T/R modules for ST radar
- Ka-band indoor/outdoor units

## Flight Model

- Sub-systems for SAR Payloads
- Sub-systems for Geostationary Satellites
- Sub-systems for Remote Sensing Satellites
- Fabrication of Flight sub systems
- Screening of components of FM
- Examples:
  - C-band T/R modules
  - SSPA
  - X-band phase shifter, power amplifier
  - S-band transmitter

## Association

Proud to be associated with every major satellite launch in India.

- RISAT, RISATIA
- GSAT Series
- HTS GSAT Series (GSATII, GSAT19)
- ASTROSAT
- GISAT
- IRNSS
- Ka band payload GSAT-20 and
- Remote sensing satellites of ISRO
- Mega tropics
- Cartosat
- Resourcesat
- SARAL

## Defence Satellite Programs

- Kautilya (EMISAT):  
Development of Quad Super Het Rx (0.5-18 GHz)
- Anvesha : Development of Communication Modules

## Navigation

- Integrated NavIC & GPS Receivers - MEITY





# Major Opportunities: Radar Programs

## Bharat Electronics

Program: Arudhra (MPR)  
Opportunity: Rs 400Cr  
Timeline: FY24



## Indian Air Force

Program: HPR Sub-Systems  
Opportunity: Rs 1,100 Cr  
Timeline: FY27



## Bharat Electronics

Program: Mountain Radar  
Opportunity: Rs 130 Cr  
Timeline: FY26



## HAL

Program: Uttam AESA Radar (LCA Mk 1A)  
Opportunity: Rs 450Cr  
Timeline: FV25-27



## HAL

Program: Uttam AESA Radar (LCA Mk2)  
Opportunity: Rs 300Cr  
Timeline: FY28-30



## HAL

Program: Uttam AESA Radar (Su-30 Mk I)  
Opportunity: Rs 1,000 Cr  
Timeline: FV26-30



## HAL

Program: Uttam AESA Radar (AMCA)  
Opportunity: Rs 500Cr  
Timeline: FV26-30



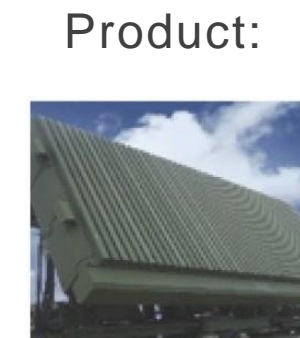
## HAL

Program: Uttam AESA Radar (TEDBF)  
Opportunity: Rs 300Cr  
Timeline: FY27



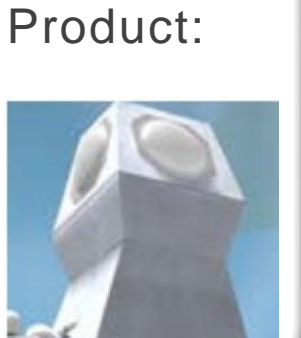
## DRDO

Program: Long Range Radar (LRR)  
Opportunity: Rs 1,000 Cr  
Timeline: FY24



## DRDO

Program: LRSAM Radar  
Opportunity: Rs 500Cr  
Timeline: FY24

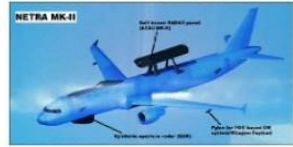


# Major Opportunities: Radar Programs

## DRDO

Program: AEW&C-11  
Opportunity: Rs 160 Cr  
Timeline: FY24

Product:



## Bharat Electronics

Program: QRSAM  
Opportunity: Rs 2,000 Cr  
Timeline: FY24-26

Product:



## ISRO

Program: Space Debris Radars  
Opportunity: Rs 1,400 Cr  
Timeline: FY24-27

Product:



## Bharat Electronics

Program: FCR  
Opportunity: Rs 1,317 Cr  
Timeline: FV26

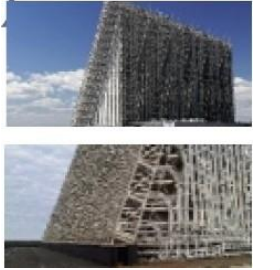
Product:



## DRDO

Program: UHF Radar (2 Systems)  
Opportunity: Rs 450Cr  
Timeline: FV29

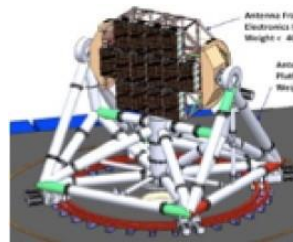
Product:



## DRDO

Program: S-band Radar  
Opportunity: Rs 1200 Cr  
Timeline: FY29

Product:



## DRDO

Program: AD Radars  
Opportunity: Rs 700Cr  
Timeline: FY27

Product:



## DRDO

Program: Counter Drone Radar  
Opportunity: Rs 140Cr  
Timeline: FY24-30

Product:



# Major Opportunities: Missiles

## DRDL / BDL

Program: ASTRA  
Opportunity: Rs  
400Cr  
Timeline:  
FY24-26

Product:



## BDL

Program:  
AKASH  
Opportunity: Rs  
435Cr  
Timeline:  
FY24-26

Product:



## BDL

Program: QR  
SAM  
Opportunity: Rs  
64Cr  
Timeline:  
FY24-26

Product:



## ANSP

Program: SLCM  
Opportunity: Rs  
132 Cr  
Timeline: FY27

Product:



## DRDL

Program: NGARM  
Opportunity: Rs  
186 Cr  
Timeline: FY27

Product:



## DRDL / BDL

Program: Pralay/  
Brahmos/  
SMART  
Opportunity: Rs  
50Cr  
Timeline: FY24



## ITR

Program: Test  
Range Systems -  
PATM, Decoy  
etc. Opportunity:  
Rs 100 Cr  
Timeline: FY24-26

Product:



## DRDO

Program:  
Telemetry  
Modules  
Opportunity: Rs  
94Cr  
Timeline: FY24-26

Product:



## SPIC

Program:  
Converters  
Opportunity: Rs  
34Cr  
Timeline: FY27

Product:



## DRDL

Program:  
Transponders  
Opportunity: Rs  
64Cr  
Timeline: FY27

Product:





# Major Opportunities

## EW

### HAL

Program: ASPJ Pod  
for LCA Mk 1A  
Opportunity: Rs 50  
Cr  
Timeline: FY25-27

Product:



### Bharat Electronics

Program: EW Products  
Opportunity: Rs 230 Cr  
Timeline: FY25-27

### Bharat Electronics

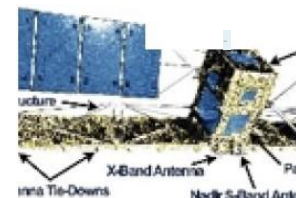
Program: DR118-DST, MASS,  
BIT for Su-30 Mk I  
Opportunity: Rs 250 Cr  
Timeline: FY24-26

## Space

### MoD, ISRO, Satellite Users

Program: SAR, Commn.  
Payload Satellites  
Opportunity: Rs 925 Cr  
Timeline: FY24-30

Product:






# Major Opportunities

## Systems

<p><b>Indian Armed Forces</b></p> <p>Program: C-UAS Opportunity: Rs 2,000 Cr Timeline: FY24</p> <p>Product:</p> 	<p><b>Indian Air Force</b></p> <p>Program: Wind Profiler Radar &amp; DWR Opportunity: Rs 200Cr Timeline: FY24-27</p> <p>Product:</p> 	<p><b>Indian Army</b></p> <p>Program: Low level light Weight Radar Opportunity: Rs 100 Cr Timeline: FY25</p> <p>Product:</p> 	<p><b>Indian Air Force</b></p> <p>Program: Bird detection &amp; monitoring Radar Opportunity: Rs 80Cr Timeline: FY25</p> <p>Product:</p> 
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## Special Projects

<p><b>Commercial Market</b></p> <p>Program: IRNSS module and VTU Opportunity: Rs 300Cr Timeline: FY25-30</p> <p>Product:</p> 	<p><b>Telcos, Banks, MoD, ISRO, Airports, Power grids etc</b></p> <p>Program: NAVIC Timing Receiver Opportunity: Rs 500Cr Timeline: FY25-30</p> <p>Product:</p> 	<p><b>State Govts for Survey of India</b></p> <p>Program: CORS Receiver Opportunity: Rs 500Cr Timeline: FV25-30</p> <p>Product:</p> 	<p><b>MoD, MHA, State Police</b></p> <p>Program: Robotics Opportunity: Rs 75 Cr Timeline: FY25-30</p> <p>Product:</p> 	<p><b>Smart Cities, NHAI and state traffic Police Dept</b></p> <p>Program: 70 GHz ITS Radar Timing Receiver Opportunity: Rs 100 Cr Timeline: FV25-30</p> <p>Product:</p> 
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# Quality certifications

## Industry Leading Certifications

**Certificate of Registration**

**nqa**

This is to certify that the Quality Management System of:

**Astra Microwave Products Limited**  
 SP-1, Unit-4, 100% EOU, Plot no. 18 to 21, Survey No 1/1, Hardware Park, Imarah Kancha, Raviryala(V), Maheshwaram (M) Ranga Reddy Dist., Hyderabad, Telangana, 500005, INDIA  
 applicable to:

**Manufacture of RF/Microwave & Digital Sub Systems for aerospace and defence applications**  
 has been assessed and registered by NQA against the provisions of:

**AS9100D & BS EN ISO 9001:2015**  
 in accordance with the requirements of EN 9104-001:2013. This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA.

*Managing Director*  
 Managing Director

**Certificate No:** 60007  
**ISO Approval Date:** 23 June 2011  
**ASCS Approval Date:** 23 June 2011  
**Issue Date:** 17 June 2020  
**Expiry Date:** 15 June 2023  
**EAC Code:** 19\_21  
**Site Structure:** Single Site

**UKAS** **ASCS** **AEROSPACE CERTIFICATION SCHEME**

Page 1 of 1

**intertek**  
 Total Quality Assured

**CERTIFICATE OF REGISTRATION**

This is to certify that the management system of:

**Astra Microwave Products Limited**  
 Main Site: Registered Office: Astra Towers, Survey No. 12(P), Kothaguda Post, Opp. CI Green Building, Hitech City, Kondapur, Hyderabad - 500084, Telangana, India

See attached appendix for lists of other sites covered by certification  
 has been registered by Intertek as conforming to the requirements of:

**ISO 9001:2015**

The management system is applicable to:  
 Supply of Microwave Components, Equipment, Antennas and Monolithic Microwave Integrated Circuits (MMIC) for Defence, Space and Telecommunication Applications.

**intertek** **UKAS**

*Calin Moldovan*  
 President, Business Assurance

Intertek Certification Limited, 53A Victoria Park, Victoria Road, Derby DE24 0EQ, United Kingdom

**intertek**  
 Total Quality Assured

**CERTIFICATE OF REGISTRATION**

This is to certify that the management system of:

**Astra Microwave Products Limited**  
 Main Site: Registered Office: Astra Towers, Survey No. 12(P), Kothaguda Post, Opp. CI Green Building, Hitech City, Kondapur, Hyderabad - 500084, Telangana, India

See appendix for additional sites and additional site scopes  
 has been registered by Intertek as conforming to the requirements of:

**ISO/IEC 27001:2013**

The management system is applicable to:  
 The Information Security Management System in Design, Development, Production, Marketing and Supply of RF and Microwave Components, Sub Systems and Systems, Monolithic Microwave Integrated Circuits (MMIC), Antennas, Automatic Weather Systems, Repeaters, Filters, Manufacturing and supply of Microwave Printed Circuits Boards used in Defence, Space, Meteorology and Telecommunications. It also Covers EMI-EMC testing, SMT for PCB/MIC Assembly.

This is in accordance with the Statement of Applicability version 1.3 dated 19/10/2021.

**intertek** **UKAS**

*Calin Moldovan*  
 President, Business Assurance

Intertek Certification Limited, 53A Victoria Park, Victoria Road, Derby DE24 0EQ, United Kingdom

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 Total Quality Assured

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See appendix for additional sites and additional site scopes  
 has been registered by Intertek as conforming to the requirements of:

**ISO 14001:2015**

The management system is applicable to:  
 Design, Development, Manufacture and Supply of RF and Microwave Components, Sub-Systems and Systems, Antenna Systems, Monolithic Microwave Integrated Circuits (MMIC), Automatic Weather Stations, Hydrology and other Weather Related Systems for Defence, Space, Weather Application, Telecommunication, Metrology and Hydrology Sectors.

**intertek** **UKAS**

*Calin Moldovan*  
 President, Business Assurance

Intertek Certification Limited, 53A Victoria Park, Victoria Road, Derby DE24 0EQ, United Kingdom

**intertek**  
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**Astra Microwave Products Limited**  
 Main Site: Registered Office: Astra Towers, Survey No. 12(P), Kothaguda Post, Opp. CI Green Building, Hitech City, Kondapur, Hyderabad - 500084, Telangana, India

See appendix for additional sites and additional site scopes  
 has been registered by Intertek as conforming to the requirements of:

**ISO 45001:2018**

The management system is applicable to:  
 Design, Development, Manufacture and Supply of RF and Microwave Components, Sub-Systems and Systems, Antenna Systems, Monolithic Microwave Integrated Circuits (MMIC), Automatic Weather Stations, Hydrology and other Weather Related Systems for Defence, Space, Weather Application, Telecommunication, Metrology and Hydrology Sectors.

**intertek** **UKAS**

*Calin Moldovan*  
 President, Business Assurance

Intertek Certification Limited, 53A Victoria Park, Victoria Road, Derby DE24 0EQ, United Kingdom

**ilac-MRA** **NABL**

**National Accreditation Board for Testing and Calibration Laboratories**

**CERTIFICATE OF ACCREDITATION**

**EMC TEST SERVICES, ASTRA MICROWAVE PRODUCTS LIMITED**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

**"General Requirements for the Competence of Testing & Calibration Laboratories"**

for its facilities at

**PLOT NO 18-21, IMARATH KANCHA, HARDWARE PARK, RAVIRYALA VILLAGE, MAHESHWARAM MANDAL, HYDERABAD, RANGA REDDY, TELANGANA, INDIA**

in the field of

**TESTING**

**Certificate Number:** TC-6264  
**Issue Date:** 11/09/2022  
**Valid Until:** 10/09/2024

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.  
 (To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

**Name of Legal Identity:** Astra Microwave Products Limited

Signed for and on behalf of NABL

*N. Venkateswaran*  
 N. Venkateswaran  
 Chief Executive Officer





# Awards & Accolades



LAToT Ceremony for Coastal Surveillance Radar



Excellence in Innovation, Design Technology, R&D 2021



Counter-Drone System LAToT Handing over Ceremony



SIATI Aerospace Award – 2022  
Award for Excellence in Aerospace Indigenisation-2021



ELCINA EFY - Award-Business Excellence  
ELCINA EFY Award for Business Excellence



## Our Contribution towards the Society

Eradicating hunger, poverty and malnutrition

Promoting education

Promoting gender equality

Ensuring environmental sustainability

Protection of national heritage

Benefit of armed forces veterans

Training to promote rural sports

Contribution to the PM's National Relief Fund

Funds provided to technology incubators

Rural development projects

Building dedicated to Naturopathy Training Centre, Ibrahimpatnam on 01st November 2019



GARA HIGH SCHOOL, SRIKAKULAM DISTRICT RENOVATED BY AMPL (WHICH WERE DAMAGED DURING HUDHUD CYCLONE)



Building dedicated to Vivekananda Bharathi Ashram, Medipalli on 20th April 2019





# Thank You

**For more information please contact:**



**Astra Microwave Products Ltd.**

**Astra Microwave Products Limited**

CIN No: L293091G1991PLC013203

Mr. T. Anjaneyulu, GM – Company Secretary

Email id: [secretarial@astramwp.com](mailto:secretarial@astramwp.com)

**SGA** Strategic Growth Advisors

**Strategic Growth Advisors Pvt Ltd.**

CIN No: U74140MH2010PTC204285

Shikha Puri / Dharmik Kansara

Email id: [shikha.puri@sgapl.net](mailto:shikha.puri@sgapl.net) / [dharmik.k@sgapl.net](mailto:dharmik.k@sgapl.net)

Tel No: +91 9819282743 / +91 72081 79323

