



August 14, 2023

ASTRA MICROWAVE PRODUCTS LIMITED

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CIN: L29309TG1991PLC013203

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 enclose herewith Investor Presentation for Q1 & FY 24 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



An ISO 9001, ISO 14001, ISO 45001 and ISO 27001 Certified Company

Works:

Unit 1: Plot No. 12, ANRICH Industrial Estate, Bollaram, Medak Dist., Telangana - 502325

Unit 2: Plot No. 56A, ANRICH Industrial Estate, Bollaram, Medak Dist., Telangana - 502325

Unit 3: Sy. No. 1/1, Imarath Kancha, Raviryala (V), Maheshwaram (Mdl) R.R.Dist., Telangana - 501510

Unit 4: Sy. No. 1/1, Plot No. 18 to 21, Imarath Kancha, Hardware Park, Raviryala (V), Maheshwaram (M), R.R.Dist, Telangana - 501510

Unit 7: Sy. No.114/1, Plot No. S-2/9 & 10, E-City, Raviryala & Srinagar (V), Maheshwaram (M), R.R.District, Telangana - 501359

R&D Centre: Plot No. 51(P), Bangalore Aerospace Park, Singanahalli Village, Budigere Post, Bangalore North Taluk, Karnataka - 562149

ASTRA Microwave Products Ltd

ASTRAMICRO.BO
ASTRAMICRO.NS
ASTM.IN

Investor Presentation – Q1FY24



Astra Microwave Products Ltd.



www.astramp.com

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

Safe harbour

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Quarterly Highlights

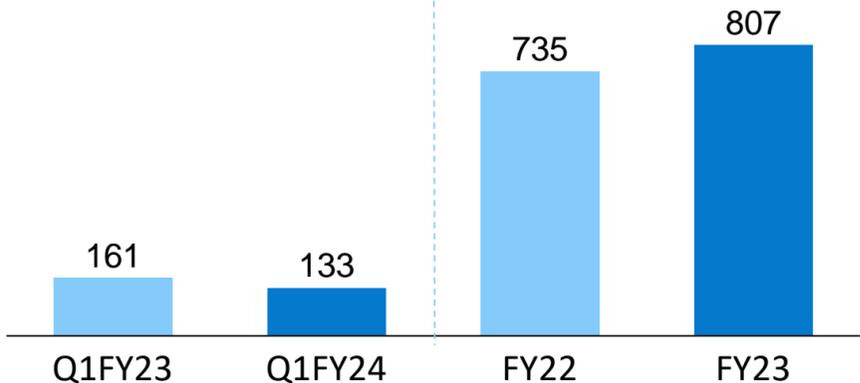


Performance Highlights

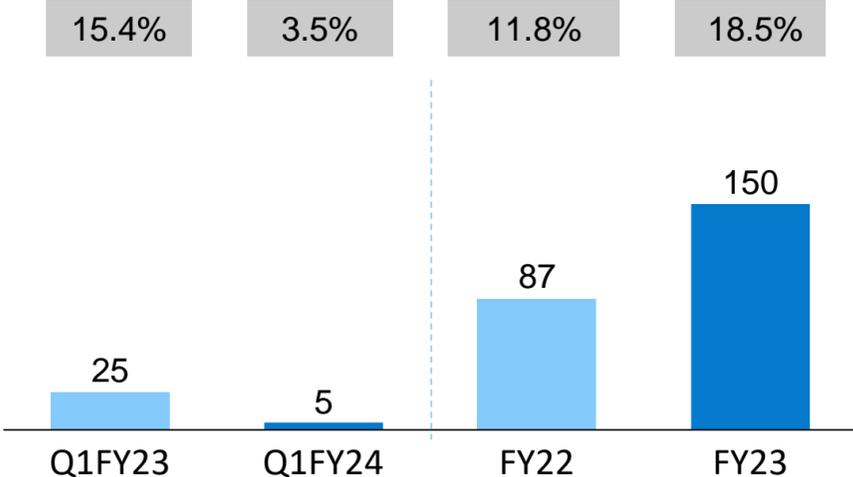
Margins

Standalone

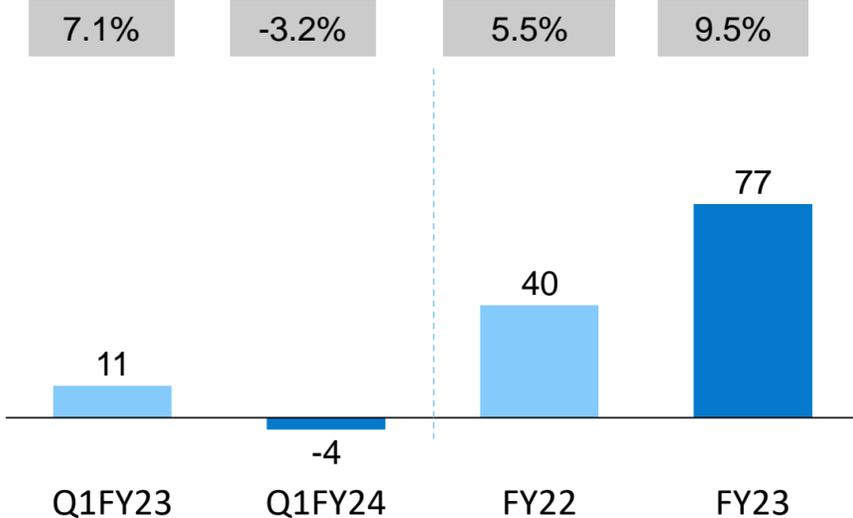
Revenue (Rs. in Crs)



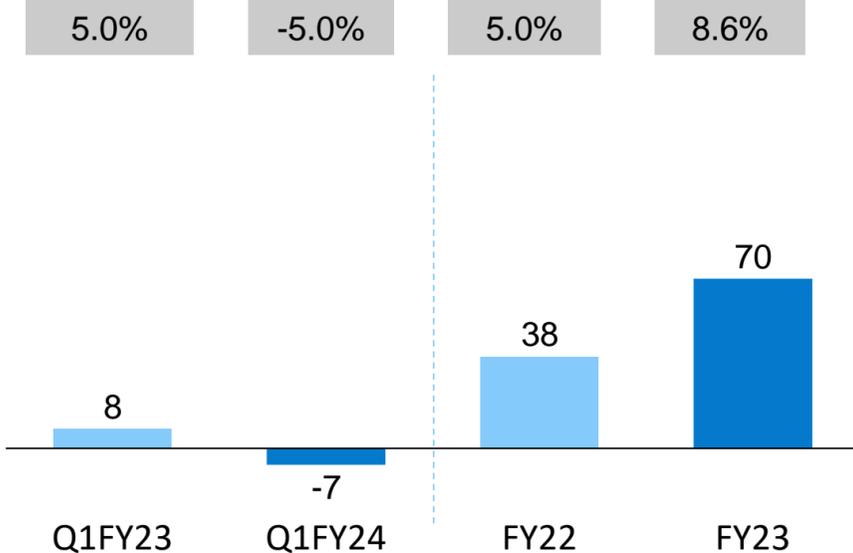
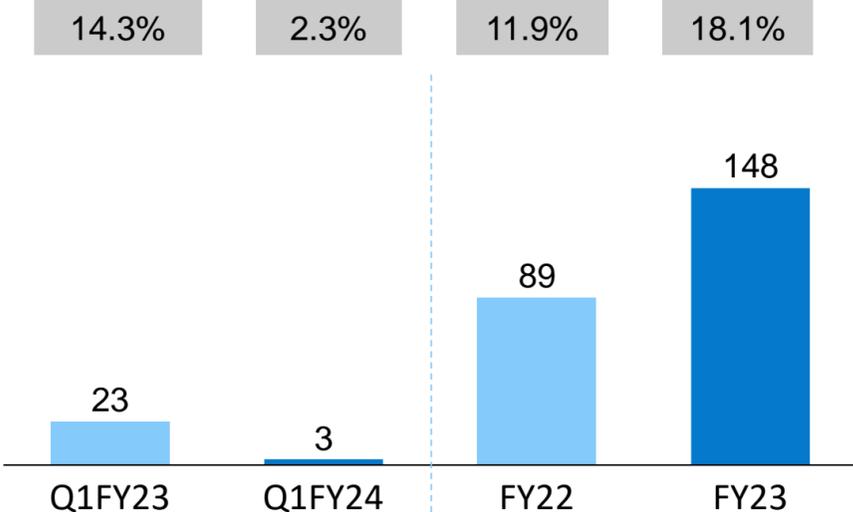
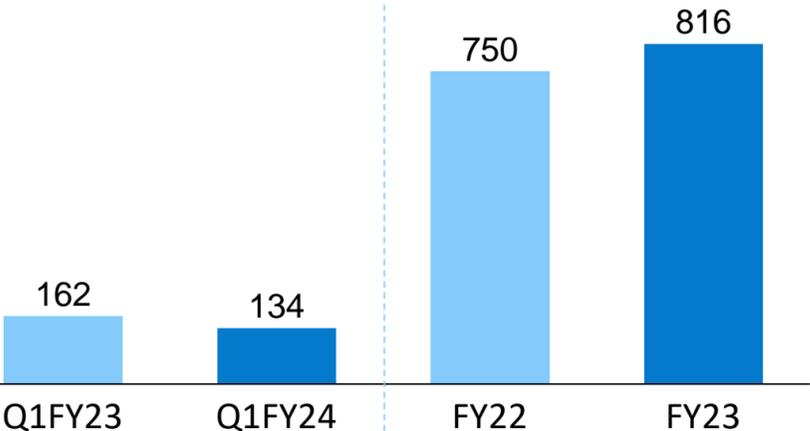
EBIDTA (Rs. in Crs)



PAT (Rs. in Crs)



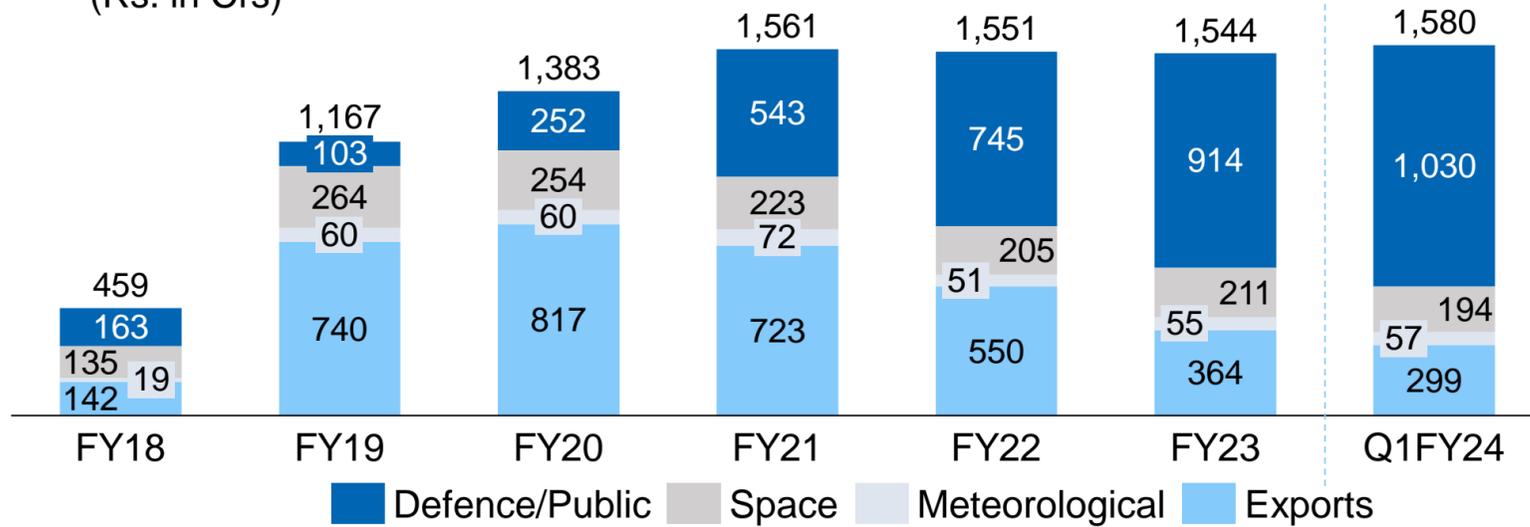
Consolidated



Robust Order Book

Historical Orderbook Build-Up

(Rs. in Crs)

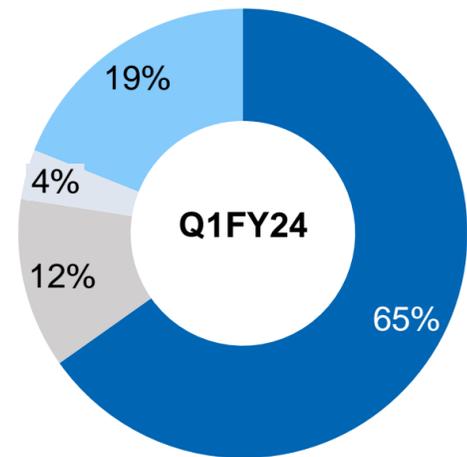


Orderbook Updates

Total orders received during the quarter

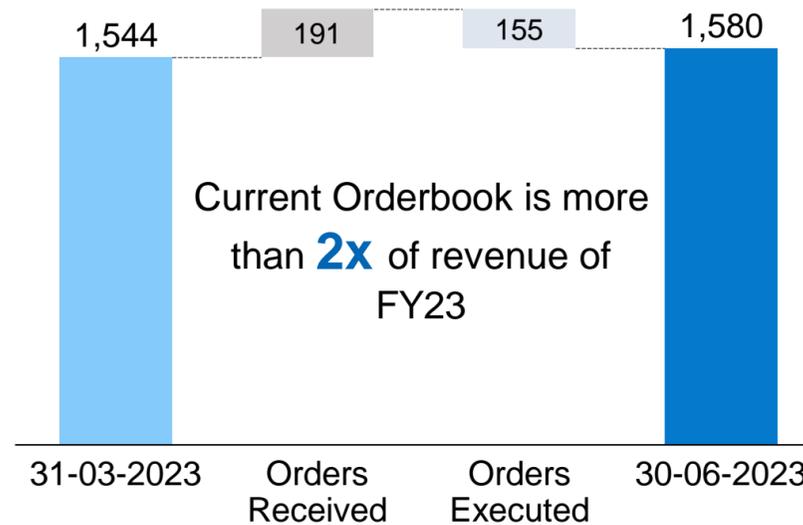
| Sno | Segment Name | Amount (Rs. Cr) |
|--------------|----------------|-----------------|
| 1 | Defence | 164.49 |
| 2 | Exports | 13.87 |
| 3 | Space | 0.29 |
| 4 | Meteorological | 12.44 |
| TOTAL | | 191.08 |

Diversified Orderbook



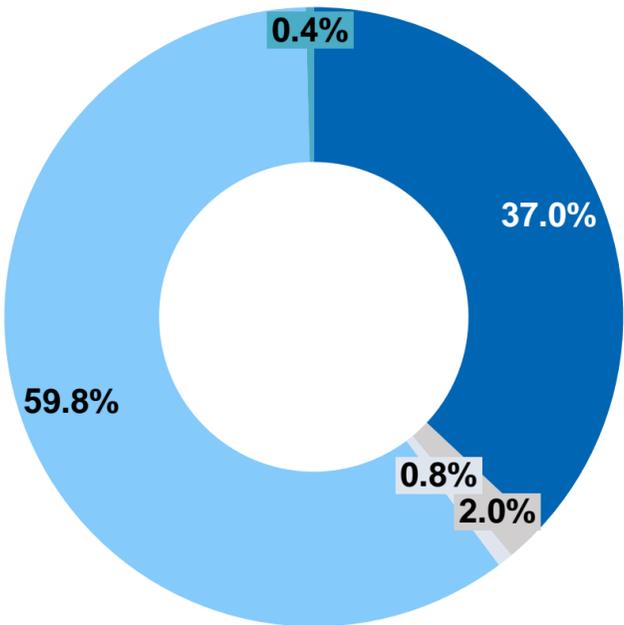
Orderbook Build-Up

(Rs. in Crs)

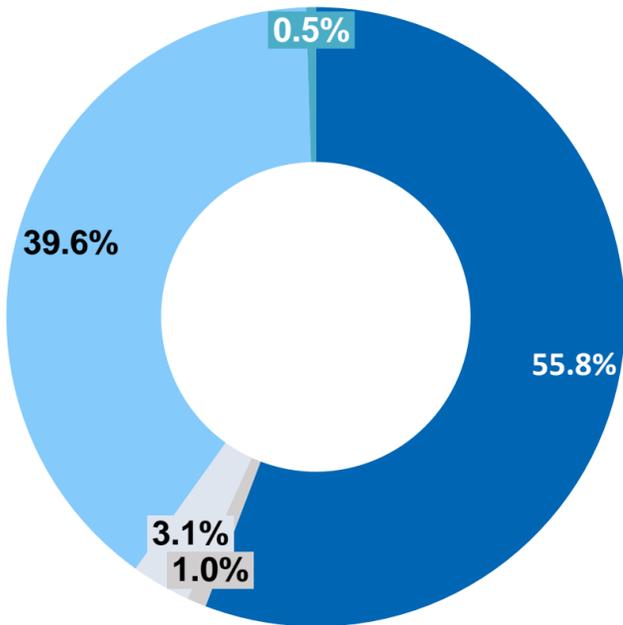


Segmental Revenue Break-up

Q1FY24



FY23



Defence | Space | Meteorological | Exports including Deemed Exports | Others

| Revenue Break-up in % | Q1FY24 | Q4FY23 | Q3FY23 | Q2FY23 | Q1FY23 |
|----------------------------------|--------|--------|--------|--------|--------|
| Defence | 37.0% | 39.8% | 65.3% | 66.5% | 57.1% |
| Space | 2.0% | 2.1% | 0.3% | 0.8% | 0.4% |
| Exports including Deemed Exports | 59.85 | 54.6% | 31.5% | 27.9% | 39.4% |
| Meteorological | 0.8% | 3.0% | 2.4% | 4.3% | 2.8% |
| Others | 0.4% | 0.5% | 0.5% | 0.5% | 0.3% |

Break up of revenue on Gross Sales basis



Standalone Profit & Loss

| PARTICULARS (Rs. In Cr) | Q1FY24 | Q1FY23 | YOY | FY23 |
|---------------------------------|--------------|--------------|----------------|--------------|
| Revenue from Operations | 132.9 | 161.2 | -17.6% | 807.3 |
| Raw Material Consumption | 96.3 | 104.5 | | 518.7 |
| Gross Profit | 36.6 | 56.6 | -35.4% | 288.6 |
| Gross Profit Margin | 27.5% | 35.1% | | 35.7% |
| Employees Expenses | 19.3 | 19.2 | | 86.8 |
| Other Expenses | 12.7 | 12.5 | | 52.3 |
| EBITDA | 4.6 | 24.89 | -81.4% | 149.6 |
| EBITDA Margin | 3.5% | 15.4% | | 18.5% |
| Other Income | 2.2 | 1.1 | | 5.7 |
| Depreciation | 5.6 | 5.4 | | 23.3 |
| EBIT | 1.2 | 20.5 | -94.0% | 132.0 |
| EBIT Margin | 0.9% | 12.7% | | 16.3% |
| Finance Cost | 6.9 | 5.4 | | 29.0 |
| Profit before Tax | -5.7 | 15.1 | -137.6% | 102.9 |
| Profit before Tax Margin | -4.3% | 9.4% | | 12.7% |
| Tax | -1.4 | 3.7 | | 26.3 |
| PAT | -4.3 | 11.4 | -137.6% | 76.7 |
| PAT Margin % | -3.2% | 7.1% | | 9.5% |
| EPS (in Rs.) | -0.47 | 1.32 | | 8.85 |

- **Revenue** was close to the guidance for Q1FY24 given in the previous quarter
- Reduced topline is mainly coming from a lower domestic business in this quarter
- That resulted in inflated export contribution in % terms and also resulted in overall lower margins
- **Expense** - Interest provision on customer advances has contributed to > Rs. 3 Cr, this is not actual cost & will get adjusted as the company delivers goods to the customer



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

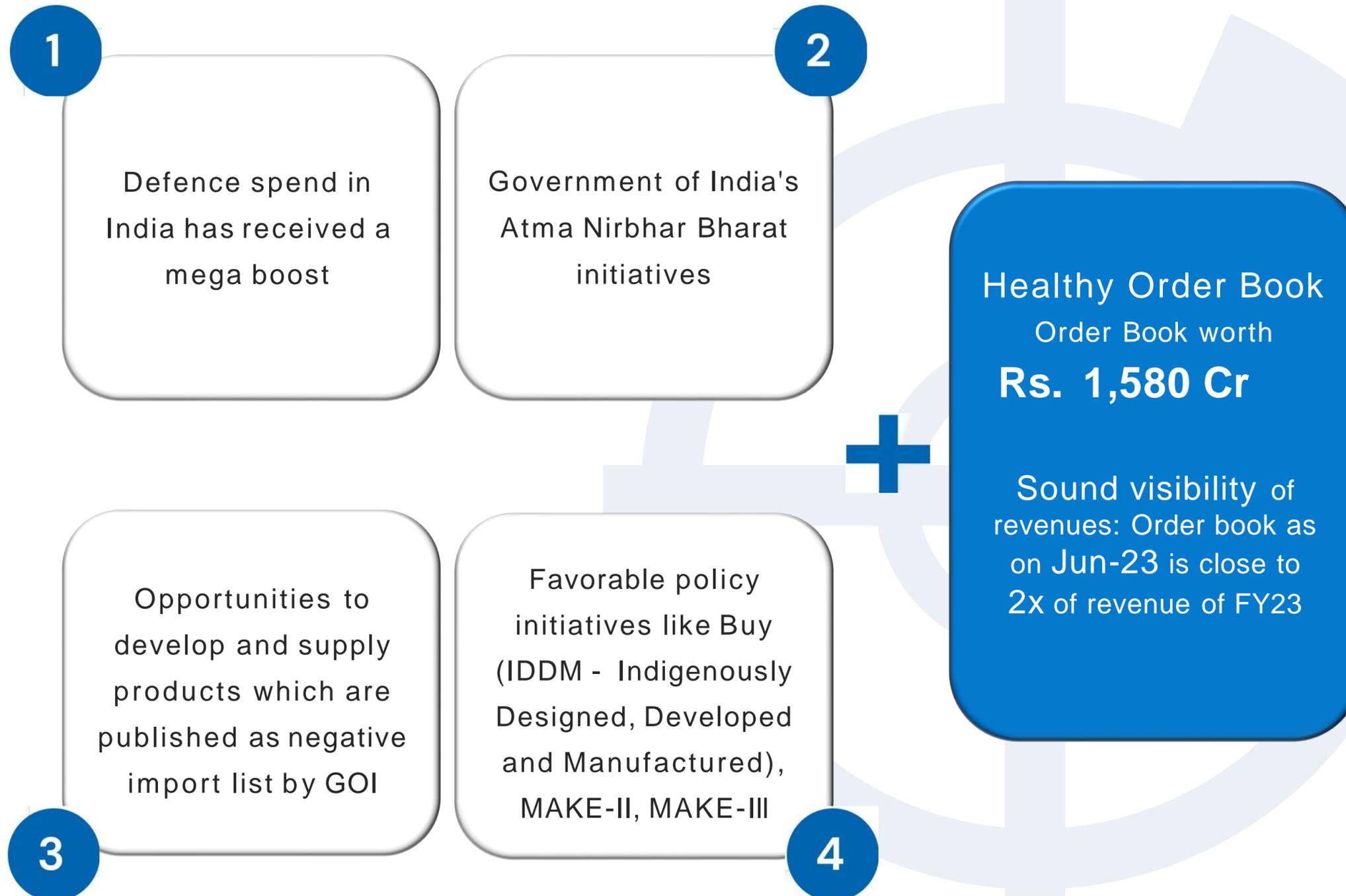


LONGSTANDING RELATIONSHIP WITH CUSTOMERS

- 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

Key Team Members

T.N. Ramesh
GM – Production

GR Shinde
Sr. GM – Design

Dr. P Srinivasulu
GM- Design

L Sudhakar
GM- EMI/EMC

C Vinod Kumar
GM - Marketing & Sales (Weather & Telemetry)

Chandrakanth
Sr. GM - Marketing & Sales

Balachary
GM-Antenna Design

R Narasimhan
GM - Production (Special Products)

LGM Prakasam
VP - Radar Systems

V Sudhakar
Sr. GM – Design

CV Rao
GM- Mech. Systems

SDM Rao
GM - Special Projects

Vikram
DGM - Production

M Pravin
Sr. GM - Design (EW)

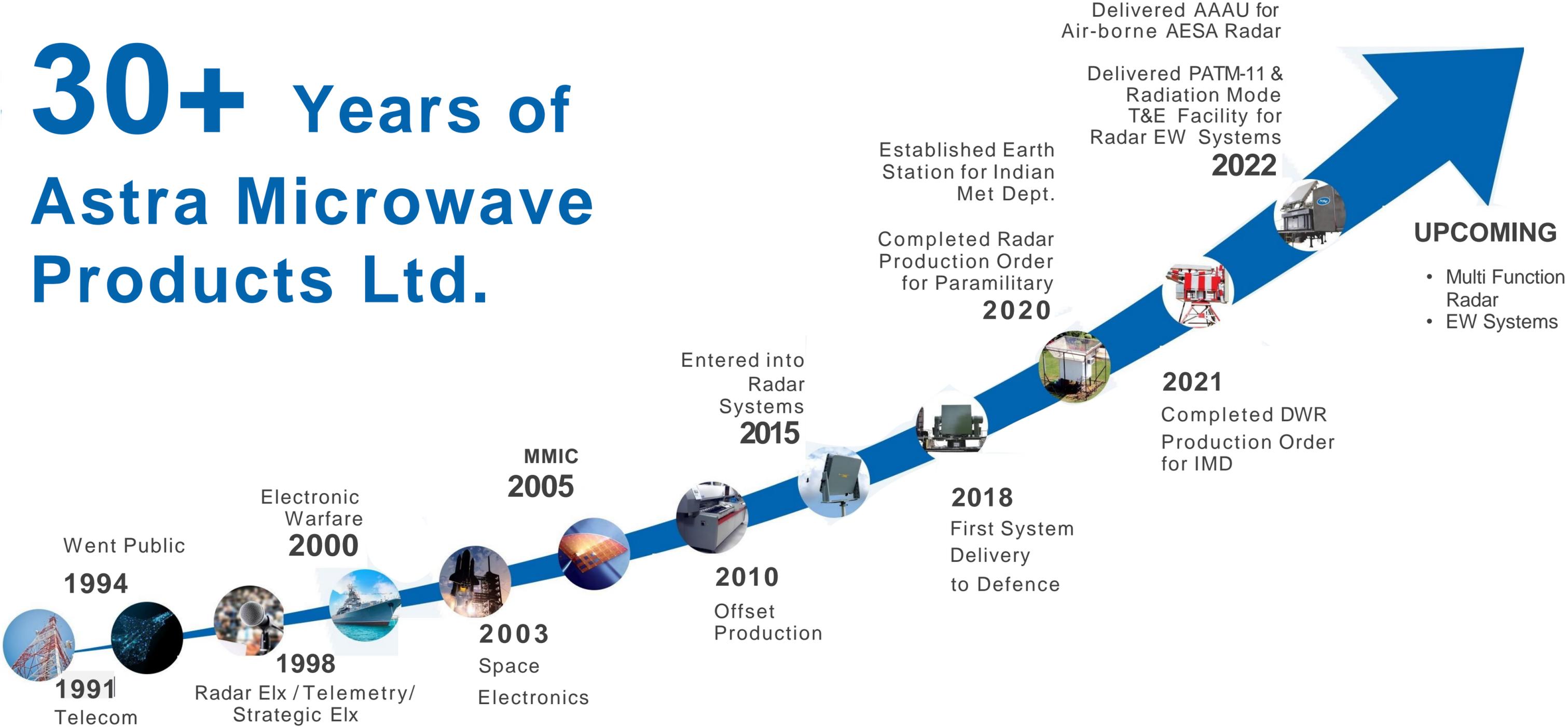
S Praveen Kumar
GM - Digital & Software

V Venkatesh
GM - Quality



Journey so far

30+ Years of Astra Microwave Products Ltd.



UPCOMING

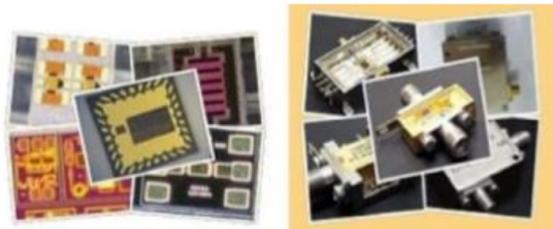
- Multi Function Radar
- EW Systems



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

AEW&CS

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



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



SATCOM

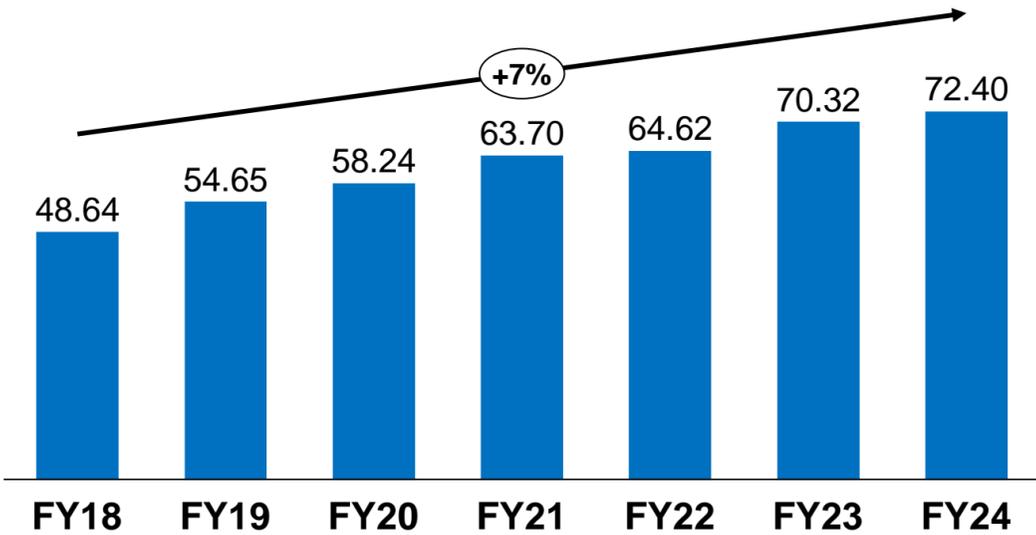
- AMPL has been supplying MSS terminals for communication during disasters



Growing defence products opportunity

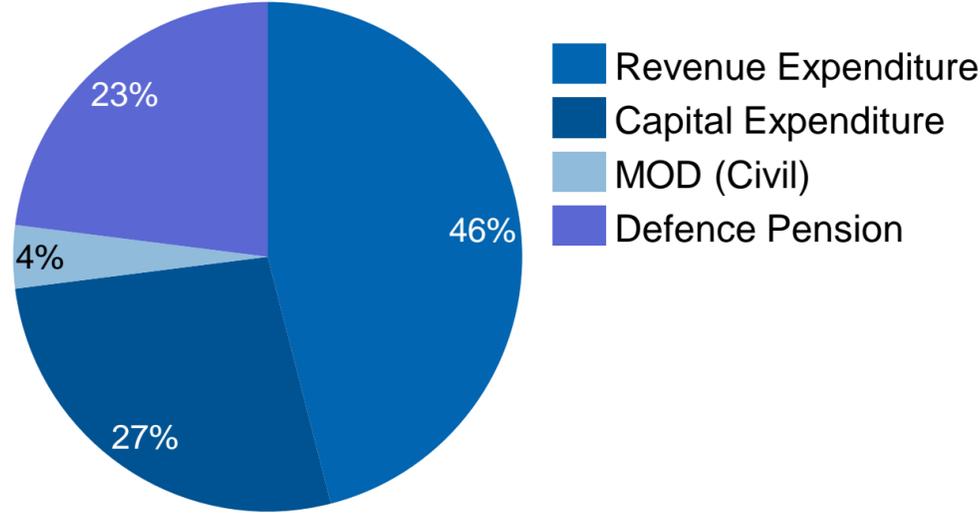
India's extensive modernisation plans, an increased focus on homeland security to increase government allocation for defence expenditure along with Make in India focus are expected to drive healthy growth in the sector.

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-IDDMM) | 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 and Make | 50% or more |
| Buy (Global - Manufacture in India) | Foreign Vendor - Nil/ Indian Vendor ≥ 30% |
| Foreign Vendor | |

Business Potential till 2028



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

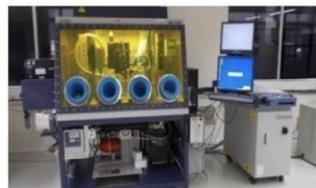
- Near Field Test Range (NFTR)
- Digital Signalling
- Function and pulse generators
- Open air antenna test range
- Spectrum Analyzers, Vector Network Analyzer, Signal generator, RF power meter
- Distortion Analyzer
- ATE-ATS facility

Environment Testing

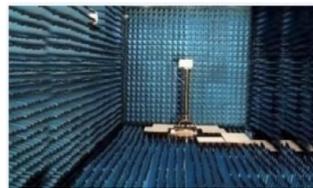
- EMI/EMC Test facility
- HASS/HALT Chambers
- Environment Chambers (-650C to +1750C; 98% RH)
- Vibration systems
- WeissChamber



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

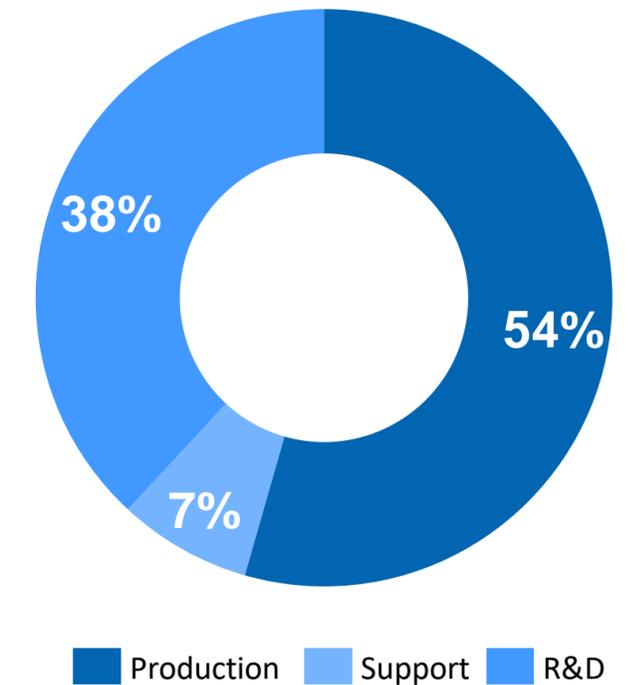
Strong track record of new product development and seamless execution leading to new orders.

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 of June 30th, 2023) – 1,300



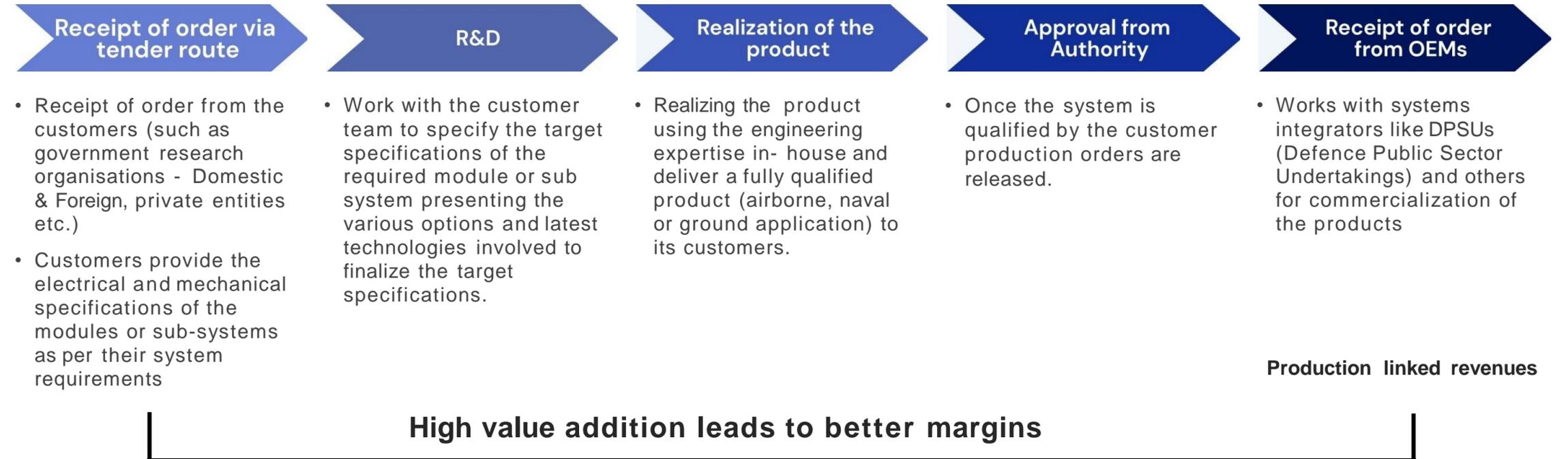
Astra has a highly experienced workforce (including 485 technocrats of which two are Doctorates) which keeps the company on forefront of technology. Its employees are continuously trained through in-house workshops and external programs.



Serving Markets Through

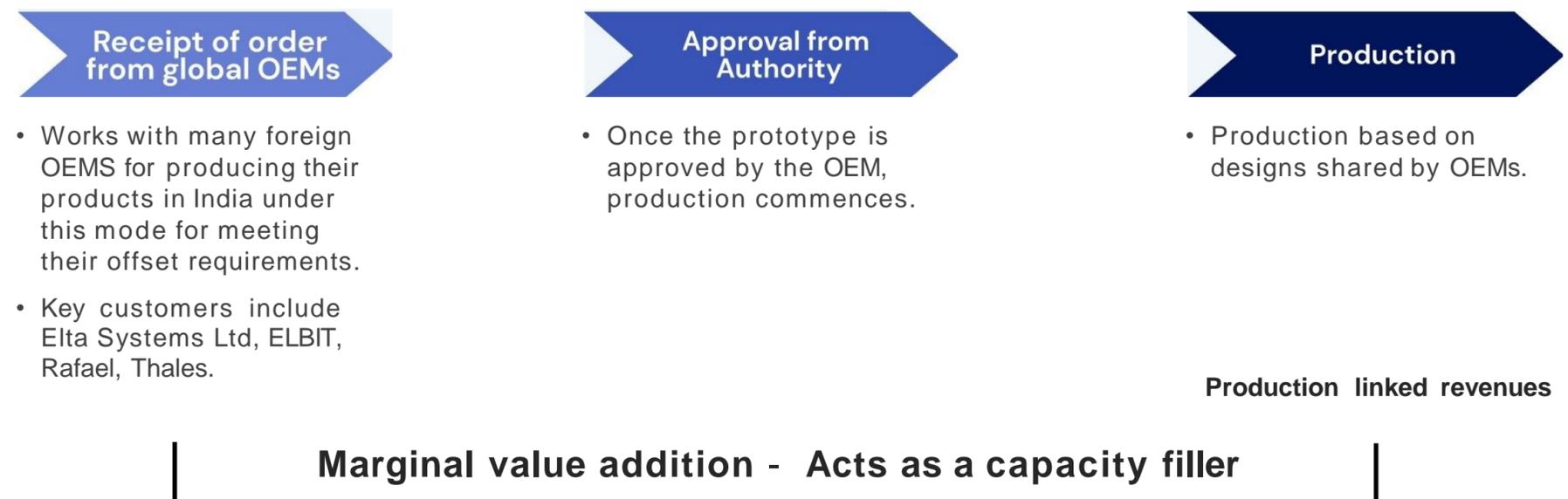
Build To Specifications (BTS) Orders

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.

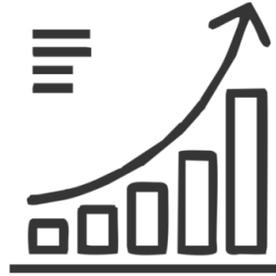


Build To Print (BTP) Orders

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



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.



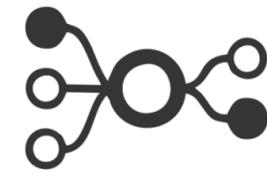
Joint Ventures and Strategic alliances

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.

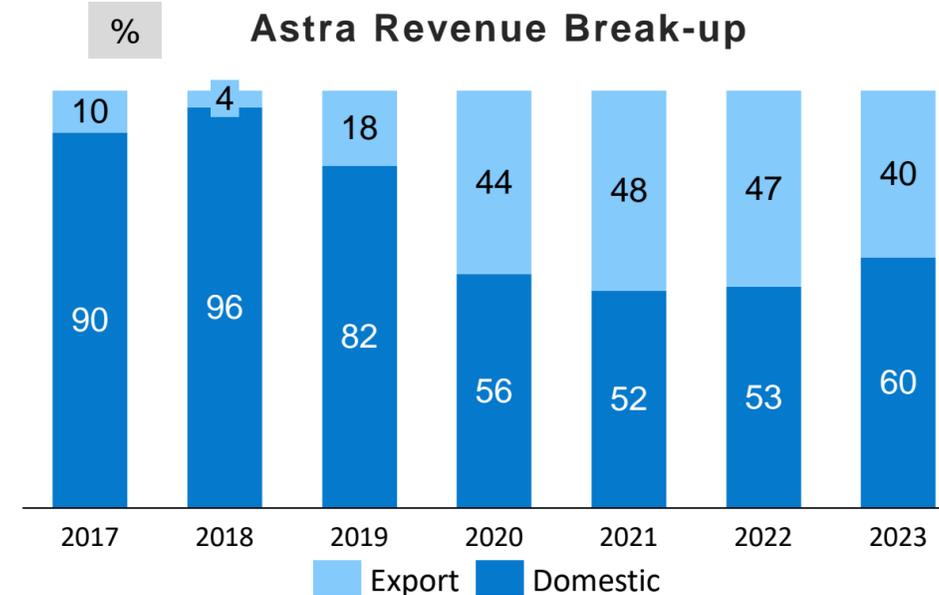
Indigenous integrated and strategic defence and aerospace electronics solutions provider which is well positioned to benefit from the Atma Nirbhar Bharat initiative.

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 | ✓ | | ✓ | | | |
| Astra Microwave | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Paras Defence | ✓ | | ✓ | | | |
| Data Patterns | ✓ | | ✓ | ✓ | | |
| Centum Electronics | | | ✓ | ✓ | | |
| CoreEL | | | ✓ | ✓ | | |
| Mistral | | | ✓ | ✓ | | |
| Alpha Design | ✓ | | ✓ | ✓ | | |
| TASL | ✓ | | ✓ | | | |



Annexure



Standalone Profit & Loss

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



Standalone Balance Sheet

| ASSETS (Rs. In Cr) | Mar-23 | Mar-22 | Mar-21 | Mar-20 | Mar-19 | EQUITY AND LIABILITIES (Rs. In Cr) | Mar-23 | Mar-22 | Mar-21 | Mar-20 | Mar-19 |
|--|--------------|------------|------------|------------|------------|--|--------------|------------|------------|------------|------------|
| Non-Current Assets | 228 | 215 | 202 | 213 | 222 | Equity and Liabilities | 653 | 590 | 561 | 547 | 503 |
| Property, plant and equipment | 165 | 158 | 150 | 158 | 176 | Equity share capital | 17 | 17 | 17 | 17 | 17 |
| Capital WIP | 2 | 0 | 0 | 12 | 2 | Equity attributable to owners of the Company | 636 | 572 | 543 | 530 | 486 |
| Investment in Associates | 2 | 2 | 2 | - | - | Non-current liabilities | 77 | 47 | 4 | 3 | 9 |
| Investments in joint ventures | 20 | 20 | 20 | 16 | 16 | Financial liabilities | | | | | |
| Investments in subsidiaries | 15 | 15 | 13 | 8 | 8 | i. Borrowings | 3 | 3 | - | - | 5 |
| Financial Assets | | | | | | Deferred tax liabilities (net) | | | | | 5 |
| i. Other Financial Assets | 6 | 9 | 10 | 11 | 12 | Provisions | 6 | 4 | 4 | 3 | - |
| Deferred tax assets | 8 | 6 | 2 | - | - | Contract liabilities | 68 | 40 | - | - | - |
| Non Current Tax Assets | 5 | 3 | - | 5 | 5 | Current liabilities | 316 | 321 | 351 | 307 | 101 |
| Other non-current assets | 5 | 3 | 3 | 2 | 2 | Financial liabilities | | | | | |
| Current assets | 818 | 743 | 714 | 644 | 391 | i. Borrowings | 166 | 56 | 100 | 47 | 0 |
| Inventories | 396 | 402 | 291 | 226 | 130 | ii. Trade payables | 44 | 53 | 35 | 38 | 22 |
| Financial assets | | | | | | iii. Other financial liabilities | 18 | 15 | 11 | 16 | 20 |
| i. Investments | - | - | 14 | 13 | 20 | Current tax liabilities (net) | 4 | - | 1 | 2 | - |
| ii. Trade receivables | 282 | 202 | 254 | 247 | 190 | Provisions | 4 | 3 | 2 | 2 | 3 |
| iii. Cash and cash equivalents | 49 | 21 | 14 | 7 | 7 | Contract liabilities | 79 | 192 | 201 | 201 | 51 |
| iv. Bank balances other than (iii) above | 55 | 49 | 24 | 43 | 18 | Other current liabilities | 3 | 2 | 2 | 1 | 5 |
| Other financial assets | - | 4 | 13 | - | - | Total equity and liabilities | 1,047 | 958 | 915 | 857 | 613 |
| Current tax assets (net) | - | 1 | 1 | - | - | | | | | | |
| Other current assets | 36 | 62 | 103 | 107 | 26 | | | | | | |
| Total assets | 1,047 | 958 | 915 | 857 | 613 | | | | | | |



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

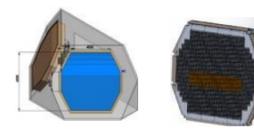
Telemetry

- 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



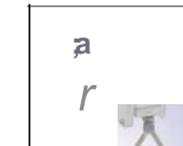
Coastal Surveillance Radar (LAToT from DRDO available)



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 (GSAT11, 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

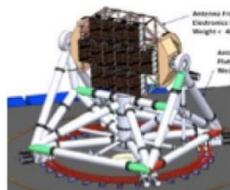
Product:



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

Systems

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

Special Projects

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

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

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 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

intertek
 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
 Total Quality Assured

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 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)

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



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

SGA Strategic Growth Advisors

Strategic Growth Advisors Pvt Ltd.

CIN No: U74140MH2010PTC204285

Shikha Puri / Dharmik Kansara

Email id: shikha.puri@sgapl.net / dharmik.k@sgapl.net

Tel No: +91 9819282743 / +91 72081 79323

