

ASTRA MICROWAVE PRODUCTS LIMITED

Regd. Office: ASTRA Towers, Survey No. 12(P), Kothaguda Post, Kondapur, Hitechcity. Hyderabad, Telangana, INDIA - 500084 Tel: +91 40 46618000, 46618001, Fax: +91 40 46618048 Email: mktg@astramwp.com, website: www.astramwp.com CIN: L29309TG1991PLC013203

February 10, 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: Astra Microwave Products Limited - Press Release and Investor Presentation - Reg.

With reference to the above stated subject, please find enclosed herewith the Press Release and Investor Presentation on Q3FY23 Standalone Results.

This is for your information and record.

Thanking you,

Yours faithfully. For Astra Microwave Products Ltd

T.Anjaneyulu G.M - Company Secretary



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.

CIN No: L293091G1991PLC013203

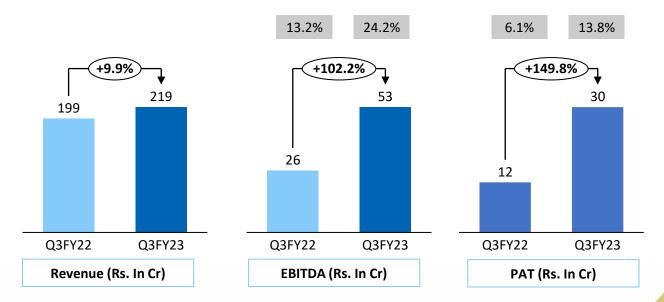
ASTRA MICROWAVE PRODUCTS LIMITED Q3FY23 Standalone Results

Friday, 10th February 2023, Hyderabad – Astra Microwave Products Limited, engaged in the business of design, development and manufacture of RF and Microwave Components, sub-systems and systems used in defense, space, meteorology and telecommunication announced its un-audited Financial Results for the guarter ended December 31st, 2022.

Recorded highest ever quarterly EBITDA & PAT Booked orders worth Rs. 89.5 Crores during Q3FY23;

Standalone Q3 FY23 Result Highlights

- The Revenues stood at Rs. 218.9 crores for Q3FY23 as against Rs. 199.1 crores for Q3FY22; growth
 of 9.9% YoY
- Gross margins jumped from 30.0% in Q3FY22 to 41.1% in Q3FY23. This surge has been driven by a higher focus on domestic markets
- EBIDTA of Rs. 53.0 crores for Q3FY23 was double in contrast to the EBIDTA of 26.2 in Q3FY22
- The company reported Profit after Tax of Rs. 30.3 crores in Q3FY23 saw a multifold increase as compared to Rs. 12.1 crores in Q3FY22 with margins going up to 13.8% from 6.1%
- Geographical spread of total revenue for the quarter stands as follows: India 68% and Exports –
 32%





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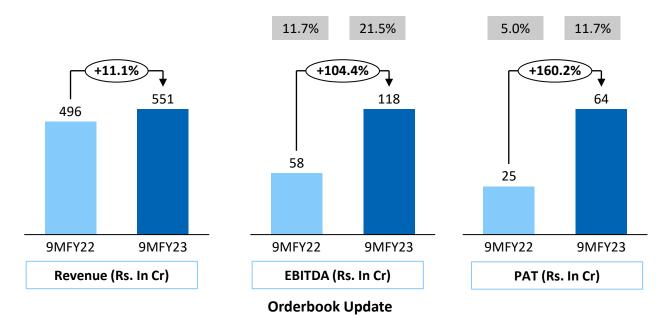


Investor Release

CIN No: L293091G1991PLC013203

Standalone 9M FY23 Result Highlights

- The Revenues stood at Rs. 550.9 crores for 9MFY23 as against Rs. 496.1 crores for 9MFY22; growth
 of 11.1% YoY
- Gross profit increased by 50.7% to Rs. 215.7 crores in 9MFY23 vs Rs. 143.1 crores in 9MFY22
- Our 9MFY23 EBITDA of Rs. 118.4 crores was double the EBITDA in 9MFY22
- The company reported Profit after Tax of Rs. 64.3 crores in 9MFY23 as against Rs. 24.7 crores in 9MFY22 with margins soaring to 11.7% from 5.0%
- Geographical spread of total revenue stands as follows: India 67% and Exports 33%



- Order book of Rs. 1,733.6 Crores as on December 31, 2022, which is primarily executable in the next 12 to 38 months period.
- Orders booked during the quarter till 31st December 2022 are worth Rs. 89.5 Crores.

Commenting on the performance Mr. S G Reddy, Managing Director, Astra Microwave Products Limited said, "Our efforts in terms of revenue shift towards domestic markets continued to pay-off in Q3FY23. This focused approach helped us achieve our highest ever quarterly profits both in terms of EBITDA as well as PAT of Rs. 53 Crores and Rs. 30.3 Crores, respectively.

Going ahead, our healthy orderbook of Rs. 1,733.6 Crores, continues to mirror a similar geographic mix with domestic orders dominating the pie. Also, our sales contribution from the space segment is expected to be grow in the foreseeable future. This will help us further diversify our sales mix and enhance our margins.



Investor Release

CIN No: L293091G1991PLC013203

India's defence production policy like Atmanirbhar Bharat Abhiyan and higher focus on our category in the recent budget will give an impetus to our growth in the future. This combined with the strides that we are making, Astra is targeting to achieve Rs. 2,000 Crores revenues over the next 4 to 5 years."

About Astra Microwave Products Limited

Astra Microwave Products Limited (Astra) was incorporated in 1991 by a team of distinguished scientists with experience in RF/Microwave/Digital electronics and management of projects with high technology content. The company has grown substantially since inception with continuous investments in infrastructure, captive test facilities and other resources. The company has various certificates such as AS9100D & BS EN ISO 9001:2015, ISO27001:2013, ISO9001:2015, ISO14001:2015, ISO45001:2018, ISO/IEC17025:2017. The company's product portfolio spans across Defense, Space, Meteorology, Homeland Security and Systems Verticals.

Astra has 3 Automatic assembly lines for PCBA assembly, 5 class 10K cleanrooms, functional test infrastructure that extends from 30MHz up to 40GHz, in-house Environment test facilities including EMI/EMC facility and a first for any Indian Private Industry - Near Field Antenna test and measurement range.

Starting with a diverse range of microwave products like filters, transmitters, receivers, antennas etc., the company has produced actual space-borne hardware that has flown on Indian satellites.

Safe Harbor Statement

Statements in this document relating to future status, events, or circumstances, including but not limited to statements about plans and objectives, the progress and results of research and development, potential project characteristics, project potential and target dates for project related issues are forward-looking statements based on estimates and the anticipated effects of future events on current and developing circumstances. Such statements are subject to numerous risks and uncertainties and are not necessarily predictive of future results. Actual results may differ materially from those anticipated in the forward-looking statements. The company assumes no obligation to update forward-looking statements to reflect actual results changed assumptions or other factors.

For further details please contact:

Company	Investor Relations Advisor
Astra Microwave Products Ltd.	SGA Strategic Growth Advisors
Astra Microwave Products Limited	Strategic Growth Advisors Pvt Ltd.
CIN No: L293091G1991PLC013203	CIN No: U74140MH2010PTC204285
Mr. T. Anjaneyulu, GM – Company Secretary	Shikha Puri / Dharmik Kansara
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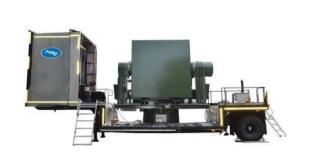
ASTRA Microwave Products Ltd

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Investor Presentation – Q3 FY23











www.astramwp.com

Safe harbour

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This presentation contains certain forward-looking statements concerning the Company's future business prospects and business profitability, which are subject to a number of risks and uncertainties and the actual results could materially differ from those in such forward-looking statements. The risks and uncertainties relating to these statements include, but are not limited to, risks and uncertainties regarding fluctuations in earnings, our ability to manage growth, competition (both domestic and international), economic growth in India and abroad, ability to attract and retain highly skilled professionals, time and cost over runs on contracts, our ability to manage our international operations, government policies and actions regulations, interest and other fiscal costs generally prevailing in the economy. The Company does not undertake to make any announcement in case any of these forward-looking statements become materially incorrect in future or update any forward-looking statements made from time to time by or on behalf of the Company.



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. 550.9 Cr. Revenue

39.1% Gross Margins

Rs. 118.4 Cr. EBITDA

Rs. 64.3 Cr. PAT

9M FY23 Standalone Financial Snapshot



WEALTH OF EXPERIENCE

- More than 30 years of domain expertise in microwave radiofrequency (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

Defence spend in India has received a mega boost

Government of India's Atma Nirbhar Bharat initiatives

Opportunities to develop and supply products which are published as negative import list by GOI

Favorable policy initiatives like Buy (IDDM - Indigenously Designed, Developed and Manufactured), MAKE-II, MAKE-III

Healthy Order Book Order Book worth

Rs. 1,733.6 Cr

Sound visibility of revenues: Order book as on Dec-22 is more than 2x of revenue of FY22

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.

Space I

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

	C Nageswara Rao VP - Production		LG VP
	GR Shinde Sr. GM - Design	Chandrakanth Sr. GM - Marketing & Sales	V S Sr. (
1/			

Key Dr. P Srinivasulu GM- Design Team **Members** L Sudhakar

Balachary GM-Antenna Design

Jai Ram Reddy GM- EMI/EMC GM - Production (Antenna & Weather)

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

GM Prakasam P - Radar Systems

Sudhakar .GM - Design

> **CV** Rao GM- Mech. Systems

> > **SDM** Rao GM - Special Projects

> > > **Vikram**

DGM - Production

R Narasimhan GM - Production (Special Products) **M** Pravin Sr. GM - Design (EW)

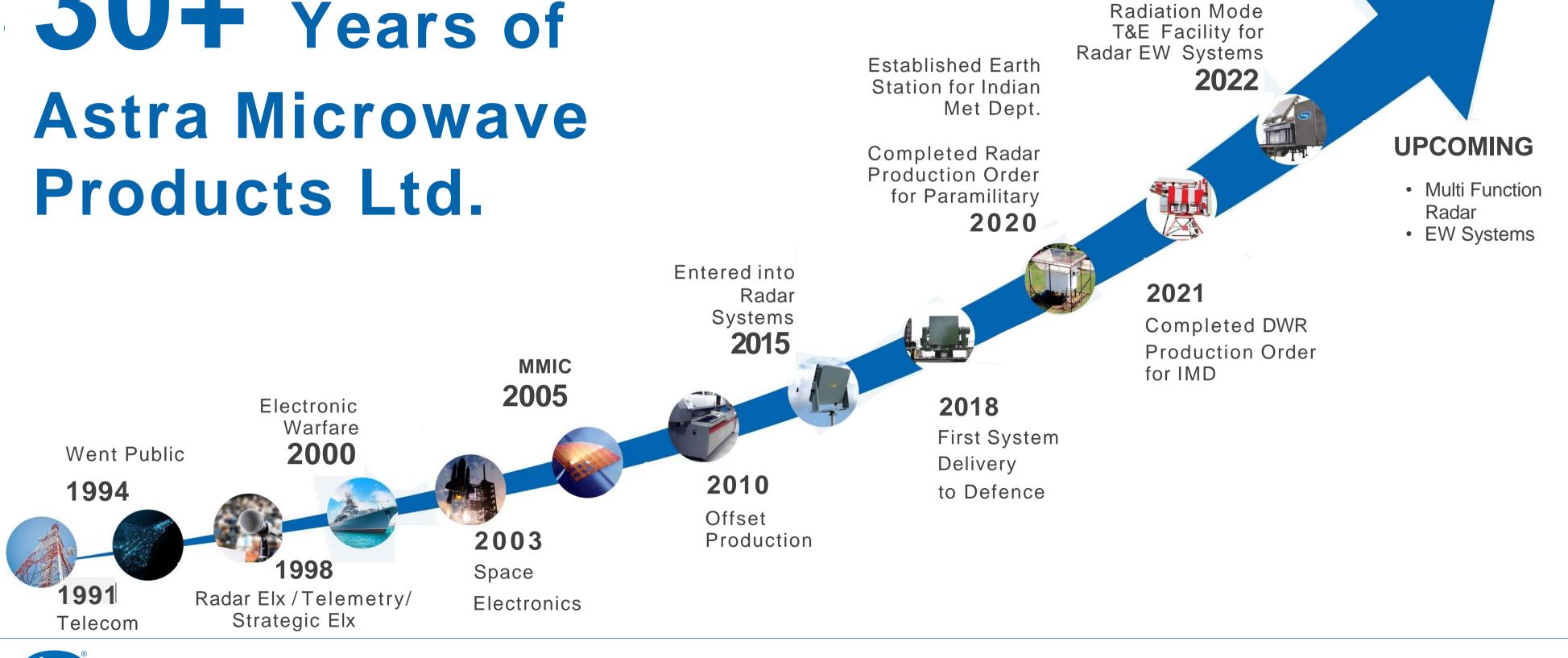
S Praveen Kumar GM - Digital & Software

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VVenkatesh GM - Quality

Journey so far

30+ Years of Products Ltd.



Delivered AAAU for

Delivered PATM-11 &

05

Air-borne AESA Radar

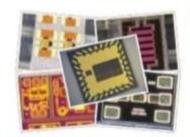


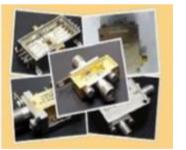
Electronic Warfare I Missiles I Telemetry I Space I Radar Electronics Meteorology Hydrology Telecom

Offerings

Components & MMICs

- Design
- Prototyping
- Testing & Qualification
- Production





Subsystems

BTS:

- Design
- Prototyping
- Testing & Qualification
- Production



- 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 Airborne RF Trans receiver, Transmitter 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 subsystems 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

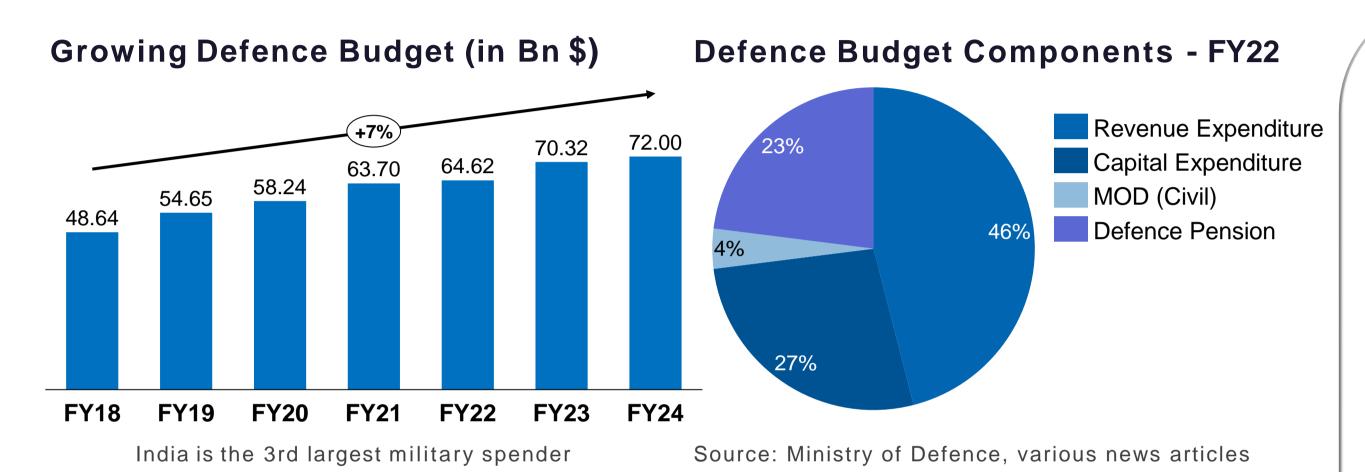
SATCOM

 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.



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 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
Buy and Make	not present
Buy (Global - Manufacture in India)	50% or more
Foreign Vendor	Foreign Vendor - Nil/Indian Vendor ≥ 30%

Total Addressable Market

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



Meteorology/

Hydrology

Special Projects

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Esteemed Clientele



Major stake in upcoming Defence Programs



Long Range Radar

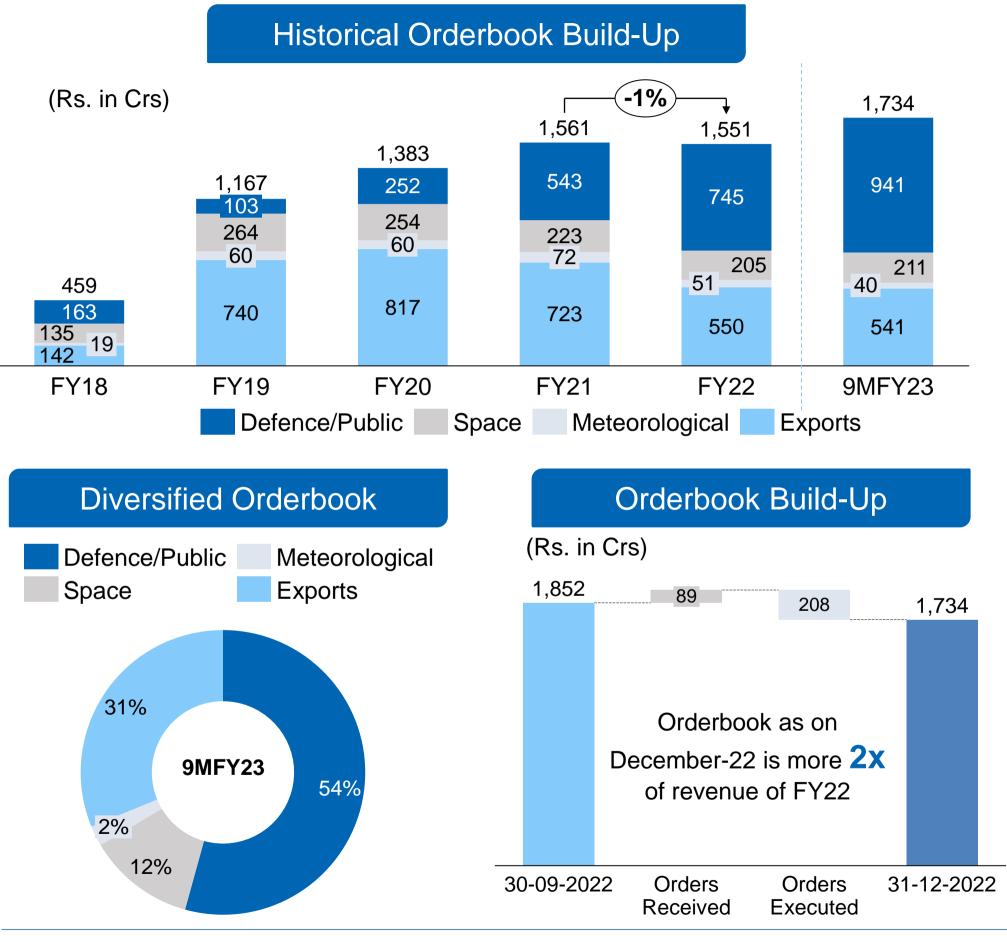
TRMs, BSNs, PS

Medium Power

Radar DTRMs



Robust Order Book



Orderbook Updates

Total orders received during the quarter

Sno	Segment Name	Amount (Rs. Cr)
1	Defence	81.89
2	Exports	3.91
3	Space	3.45
4	Meteorological	0.23
	TOTAL	89.48

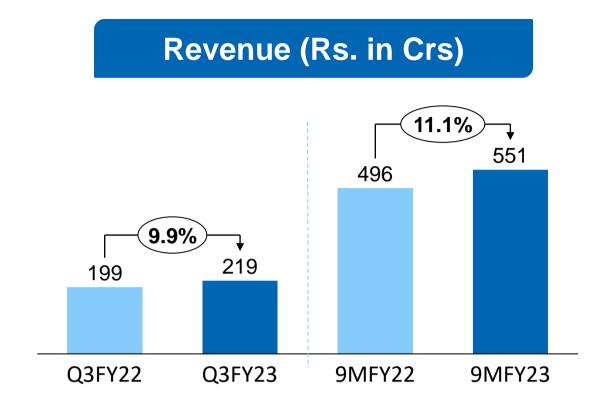
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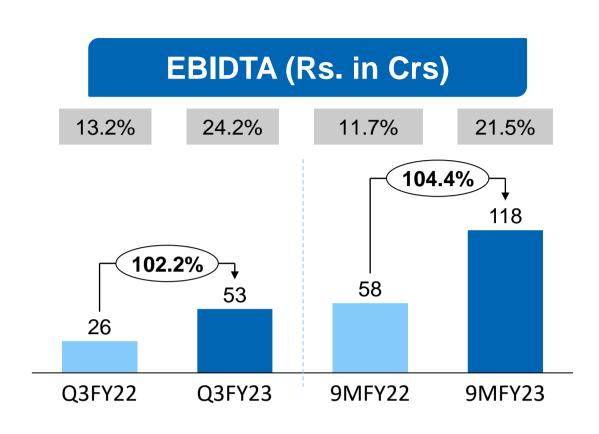


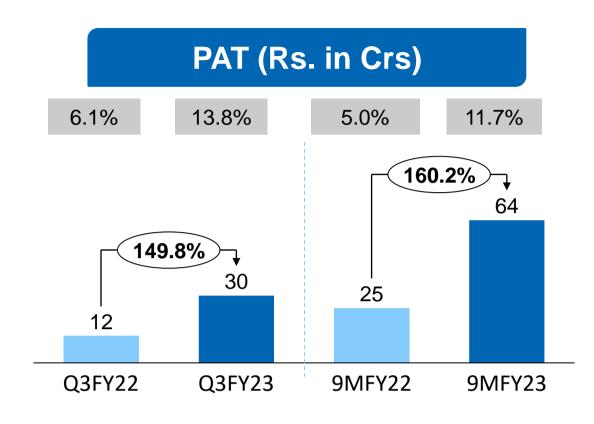
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Performance Highlights

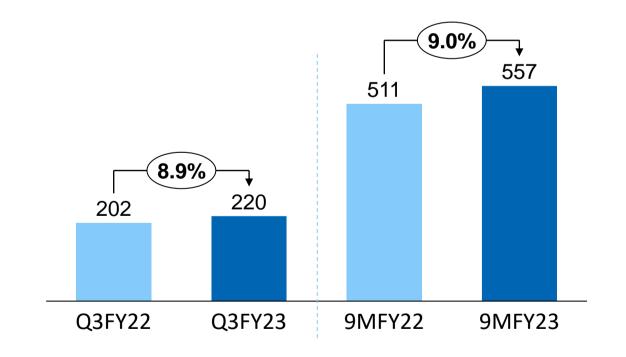
Standalone

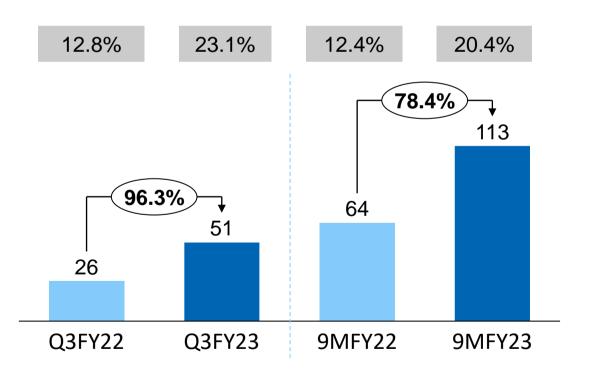


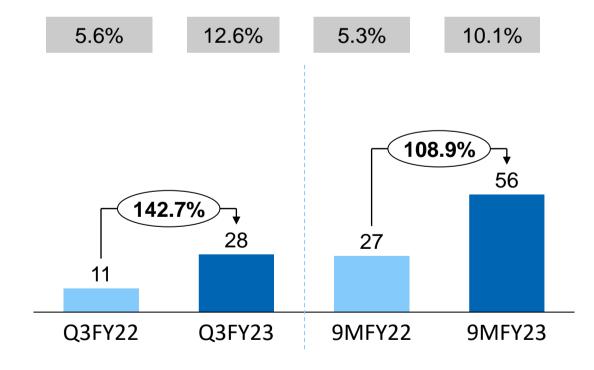




Consolidated







Margins



Space I

Standalone Profit & Loss

PARTICULARS (Rs. In Cr)	Q3FY23	Q3FY22	YOY	9MFY23	9MFY22	YOY
Revenue from Operations	218.9	199.1	9.9%	550.9	496.1	11.1%
Raw Material Consumption	128.9	139.2		335.3	353.0	
Gross Profit	90.0	59.8	50.5%	215.7	143.1	50.7%
Gross Profit Margin	41.1%	30.0%	11.1%	39.1%	28.8%	10.3%
Employees Expenses	24.4	18.4		61.9	50.1	
Other Expenses	12.6	15.2		35.4	35.1	
EBITDA	53.0	26.2	102.2%	118.4	57.9	104.4%
EBITDA Margin	24.2%	13.2%	11.0%	21.5%	11.7%	9.8%
Other Income	1.6	1.3		4.7	5.2	
Depreciation	5.9	5.8		17.1	15.5	
EBIT	48.6	21.7	123.8%	105.9	47.6	122.5%
EBIT Margin	22.2%	10.9%	11.3%	19.2%	9.6%	9.6%
Finance Cost	7.8	5.4		19.8	15.6	
Profit before Tax	40.8	16.3	149.8%	86.1	32.0	169.3%
Profit before Tax Margin	18.6%	8.2%	10.4%	15.6%	6.4%	9.2%
Tax	10.5	4.2		21.8	7.3	
PAT	30.3	12.1	149.8%	64.3	24.7	160.2%
PAT Margin %	13.8%	6.1%	7.7%	11.7%	5.0%	6.7%
EPS (in Rs.)	3.50	1.40		7.42	2.85	



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

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

: 1999

Facility Offering

Year

Automatic weather Station AWS and other Hyderology & 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

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 epory

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

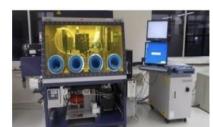
State of the Art Infrastructure

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
- SMTLines









Automated Optical Inspection

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
- DistortionAnalyzer
- ATE-ATS facility

Environment Testing

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















Vibration



Chamber

Telecom



Radar Electronics I

Space I

Meteorology Hydrology

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

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

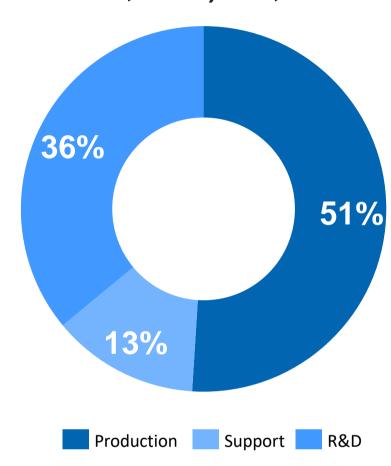
Defence - Developed sub-systems for various defence programs and new technologies in India for radars such as Ashlesha, LRTR, CSR, AESA radars, BFSR, 3D-CAR, AEW&C and electronic warfare equipment

Space sub-systems for India's - Developed 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.

Space I

Total workforce (as on March 31st, 2022) - 1,240



Astra has a highly experienced workforce (including 401 technocrats of which two are which keeps Doctorates) the forefront company of on technology. Its employees are continuously trained through Inhouse 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.

Receipt of order via tender route

- Receipt of order from the customers (such as government research organisations - Domestic & Foreign, private entities etc.)
- Customers provide the electrical and mechanical specifications of the modules or sub-systems as per their system requirements

R&D

 Work with the customer team to specify the target specifications of the required module or sub system presenting the various options and latest technologies involved to finalize the target specifications.

Realization of the product

 Realizing the product using the engineering expertise in- house and deliver a fully qualified product (airborne, naval or ground application) to its customers.

Approval from Authority

 Once the system is qualified by the customer production orders are released.

Receipt of order from OEMs

 Works with systems integrators like DPSUs (Defence Public Sector Undertakings) and others for commercialization of the products

Production linked revenues

20

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.

Receipt of order from global OEMs

- Works with many foreign OEMS for producing their products in India under this mode for meeting their offset requirements.
- Key customers include Elta Systems Ltd, ELBIT, Rafael, Thales.

Approval from Authority

 Once the prototype is approved by the OEM, production commences.

Production

 Production based on designs shared by OEMs.

Production linked revenues

Marginal value addition - Acts as a capacity filler



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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.



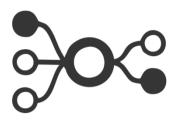
Joint Ventures and Strategic alliances

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 antidrone, 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.

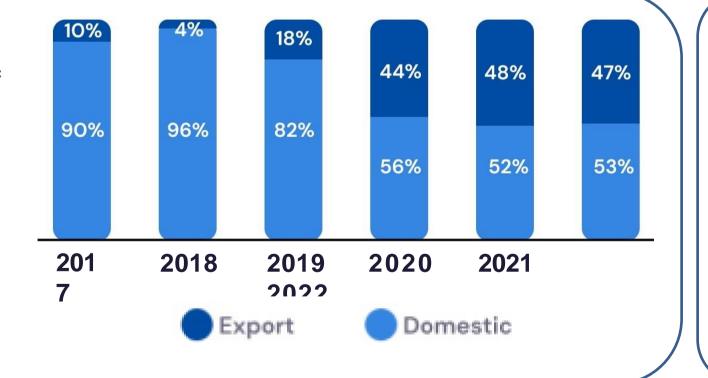
Indigenous integrated and strategic defence and aerospace electronics solutions provider which is well positioned to benefit from the Atma Nirbhar Bharat inititative.

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 prov1s1ons.



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	мміс	Planar Antenna Testing (NFTR)
BDL						
BEL			⊘	⊘	⊘	⊘
L&T						
Mahindra Defence	②					
Bharat Forge			⊘			
Adani Defence			⊘			
Astra Microwave	⊘	⊘	⊘	⊘	⊘	⊘
Paras Defence	⊘		⊘			
Data Patterns			⊘	⊘		
Centum Electronics				⊘		
CoreEL				⊘		
Mistral				⊘		
Alpha Design				⊘		
TASL						





Standalone Profit & Loss

PARTICULARS (Rs. In Cr)	FY22	FY21	FY20	FY19	FY18
Revenue from Operations	735.0	589.2	461.6	286.2	360.5
Total Raw Material	524	418	267	159	152
Gross Profit	211.2	170.7	194.7	126.9	208.5
Gross Profit Margin	28.7%	29.0%	42.2%	44.3%	57.8%
Employee Expenses	73	64	66	61	66
Other Expenses	51	42	45	36	33
EBITDA	86.9	64.2	83.8	29.8	109.5
EBITDA Margin	11.8%	10.9%	18.2%	10.4%	30.4%
Other Income	7	12	12	24	8
Depreciation	22	23	25	29	27
EBIT	72.6	52.8	70.5	25.7	90.9
EBIT Margin	9.9%	9.0%	15.3%	9.0%	25.2%
Finance Cost	20	21	8	9	12
Profit before Tax	52.7	31.4	62.7	16.7	78.9
Profit before tax margin	7.2%	5.3%	13.6%	5.9%	21.9%
Tax	12	7	15	4	18
PAT	40.3	23.9	47.3	12.5	60.7
PAT Margin %	5.5%	4.1%	10.3%	4.4%	16.8%
EPS (Rs.)	4.65	2.76	5.47	1.45	7.01



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Standalone Balance Sheet

ASSETS (Rs. In Cr)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18
Non-Current Assets	215	202	213	222	217
Property, plant and equipment	158	150	158	176	193
Capital WIP	0	0	12	2	1
Investment in Associates	2	2	-	-	-
Investments in joint ventures	20	20	16	16	
Investments in subsidiaries	15	13	8	8	6
Financial Assets					
i.Other Financial Assets	9	10	11	12	17
Deferred tax assets	6	2	0	-	-
Non Current Tax Assets	3	-	5	5	-
Other non-current assets	3	3	2	2	1
Current assets	743	714	644	391	457
Inventories	402	291	226	130	104
Financial assets					
i. Investments	-	14	13	20	126
ii. Trade receivables	202	254	247	190	188
iii. Cash and cash equivalents	21	14	7	7	21
iv. Bank balances other than (iii) above	49	24	43	18	8
Other financial assets	4	13	0	-	-
Current tax assets (net)	1	1	-	-	-
Other current assets	62	103	107	26	11
Total assets	958	915	857	613	674

EQUITY AND LIABILITIES (Rs. In Cr)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18
Equity and Liabilities	590	561	547	503	502
Equity share capital	17	17	17	17	17
Equity attributable to owners of the Company	572	543	530	486	484
Non-current liabilities	47	4	3	9	20
Financial liabilities					
i. Borrowings	3	-	-	5	14
Deferred tax liabilities (net)	-	-	-	5	4
Provisions	4	4	3	-	1
Contract liabilities	40	-	-	-	-
Current liabilities	321	351	307	101	152
Financial liabilities					
i. Borrowings	56	100	47	0	20
ii. Trade payables	53	35	38	22	14
iii. Other financial liabilities	15	11	16	20	66
Current tax liabilities (net)	-	1	2	-	2
Provisions	3	2	2	3	5
Contract liabilities	192	201	201	51	24
Other current liabilities	2	2	1	5	23
Total equity and liabilities	958	915	857	613	674

26



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Subsidiaries & JV

Subsidiaries



- 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 Amp lifiers
- 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

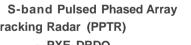
- Command Guidance Units
- Radio Proximity Fuze
- L, S, C & X-Band Transponders
- Phased Array based Telemetry **Tracking System**
- Sub-systems for Gimbal based and AESA Seeker
- Ground and Air-borne data link systems

Telemetry

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

Products







(LAToT from DRDO available)

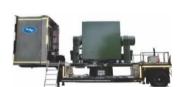








AATRU for ASPJ Pod



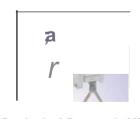
Phased Array Telemetry System (PATM)- ITR, DRDO



Radar EW Systems



Received (LAToT from DRDO)



Parth Anti-Personal Mine (Received LAToT from DRDO)



Monitoring Radar



Course Correction Fuse (CCF)



Telecom

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

Product:

Program:

Arudhra (MPR) Opportunity: Rs

400Cr

Timeline: FY24



Program: HPR Sub-Systems

Opportunity: Rs

1.100 Cr

Timeline: FY27



Bharat Electronics

Program:

Mountain Radar Opportunity: Rs

130 Cr

Timeline: FY26



Product:

HAL

Program: Uttam AESA Radar (LCA Product:

Product:

Mk 1A)

Opportunity: Rs

450Cr

Timeline: FV25-27

HAL

Program: Uttam AESA Radar (LCA

Mk2)

Opportunity: Rs

300Cr

Timeline: FY28-30

HAL

Product: Program: Uttam

MkI)

Opportunity: Rs

AESA Radar (Su-30

1,000 Cr

Timeline: FV26-30

HAL

Program: Uttam

AESA Radar (AMCA)

Opportunity: Rs

500Cr

Timeline: FV26-30



Product:

HAL

Program: Uttam

AESA Radar (TEDBF)

Opportunity: Rs

300Cr

Timeline: FY27



Program: Long

Timeline: FY24

DRDO

Range Radar

(LRR)

Opportunity: Rs 1.000 Cr

DRDO

Program: LRSAM Product:

Radar

Opportunity: Rs

500Cr

Timeline: FY24



Product:



Major Opportunities: Radar Programs

DRDO

Program:

Product:

Product:

AEW&C-11

Opportunity: Rs

160 Cr

Timeline: FY24

Bharat Electronics

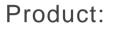
Program:

QRSAM

Opportunity: Rs

2,000 Cr Timeline:

FY24-26





ISRO

Program: Space Debris Radars

Opportunity: Rs

1,400 Cr Timeline:

FY24-27





Timeline: FV26

1,317 Cr

Bharat Electronics

Program: FCR Product:
Opportunity: Rs



Program: UHF Product:

Opportunity: Rs

Radar (2 Systems

450Cr

DRDO

Timeline: FV29



33

DRDO

Program: S-band

Radar

Opportunity: Rs

1200 Cr

Timeline: FY29

DRDO

Program: AD

Radars

Opportunity: Rs

700Cr

Timeline: FY27





DRDO

Program: Counter

Drone Radar Opportunity: Rs

140Cr

Timeline: FY24-30





Major Opportunities: Missiles

DRDL/BDL

Program: ASTRA Product:

Opportunity: Rs

400Cr Timeline:

FY24-26



BDL

Program:

AKASH Opportunity: Rs

435Cr

Timeline:

FY24-26

BDL

Program: QR

SAM

Opportunity: Rs

64Cr

Timeline: FY24-26

Product:



Product:

ANSP

Program: SLCM Product:

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:

Product:



Opportunity: Rs

94Cr

DRDO

Program:

Telemetry

Modules

Timeline: FY24-26

SPIC

Program:

Converters

Opportunity: Rs

34Cr

Timeline: FY27



Program:

Transponders Opportunity: Rs

64Cr

Timeline: FY27



34

Telecom

Product:



Major Opportunities

EW

HAL

Program: ASPJ Pod for LCA Mk 1A

Product:

Opportunity: Rs 50

Cr

Timeline: FY25-27

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

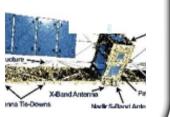
MoD, ISRO, Satellite Users

Program: SAR, Commn.

Payload Satellites

Opportunity: Rs 925 Cr

Timeline: FY24-30



Product:



Major Opportunities

Systems

Indian Armed Forces

Program: C-UAS Product: Opportunity: Rs

2,000 Cr

Timeline: FY24



Indian Air Force

Product:

Program: Wind Profiler Radar &

DWR

Opportunity: Rs

200Cr

Timeline: FY24-27

Indian Army

Program: Low level light

Weight Radar Opportunity: Rs

100 Cr

Timeline: FY25

Product:



Indian Air Force

Program: Bird detection &

monitoring Radar

Opportunity: Rs

80Cr

Timeline: FY25



Product:

Product:

Special Projects

Commercial Market

Program: IRNSS module and VTU

Opportunity: Rs 300Cr

Timeline:

FY25-30



Telcos, Banks, MoD, ISRO, Airports, Power grids etc Product:

Program: NAVIC

Timing Receiver

Opportunity: Rs

500Cr

Timeline: FY25-30

State Govts for Survey of India

Program: CORS

Opportunity: Rs

Receiver

500Cr

Timeline: FV25-30



Product:



MoD, MHA, State Police

Program:

Robotics

Opportunity: Rs

75 Cr

Timeline: FY25-30

Smart Cities, NHAI and state traffic **Police Dept**

Program: 70 GHz ITS Product:

Radar Timing Receiver Opportunity: Rs 100 Cr

Timeline: FV25-30





Quality certifications

Industry Leading Certifications















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

Awards & Accolades



LAToT Ceremony for Coastal Surveillance Radar



Excellence in Innovation, Design Technology, R&D 2021



Counter-Drone System LAToT Handing over Ceremony



Award for Excellence in Aerospace Indigenisation-2021



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











Telecom

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

$SGA \underline{\hbox{Strategic Growth Advisors}}$

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