

**ASTRA MICROWAVE PRODUCTS LIMITED**

Regd. Office : ASTRA Towers, Survey No. 12(P), Kothaguda Post,  
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Tel : +91 40 46618000, 46618001, Fax : +91 40 46618048  
Email : info@astramwp.com, website : www.astramwp.com  
CIN : L29309TG1991PLC013203

February 14, 2022

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 Q3 FY 22 for your  
information and records.

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

Thanking you,

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

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



Works :

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

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

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

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

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





# Astra Microwave Products Ltd.

Investor Presentation – Q3 FY22



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



Astra Microwave Products Ltd.

With over 30 years of experience in microwave radio-frequency (RF) applications, Astra has moved up the value chain from **sub-systems to high value-added systems**. The company's products find applications in **high end markets of Defense, Space, Telecom, Meteorology** and Civil communications.

## ***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**

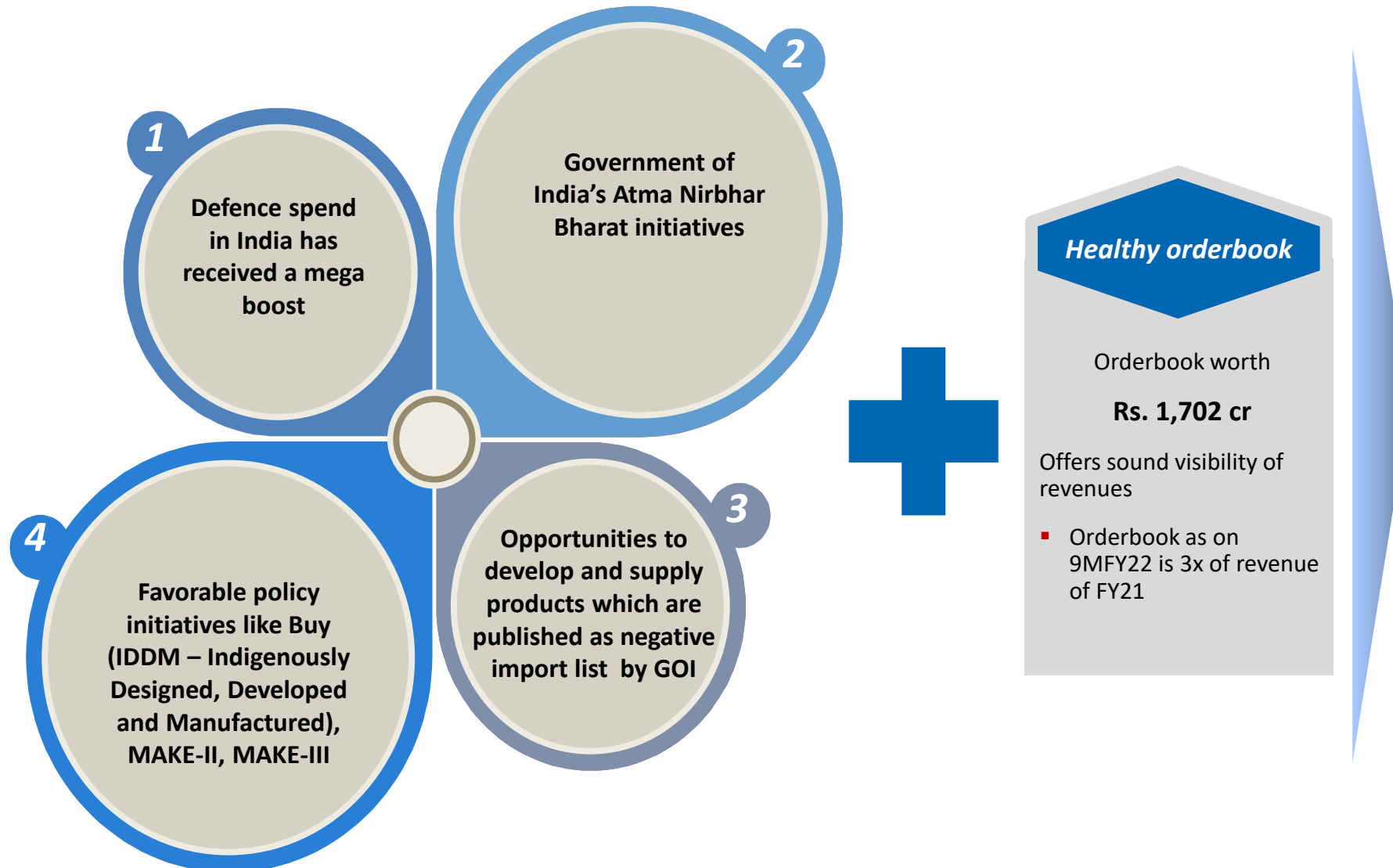
Clientele includes Indian Government Laboratories, Indian Defense Public Sector Undertakings, Indian Space Research Organization and many foreign OEM's



# ... Poised for Strong Growth Amidst Sectoral Tailwinds



Astra Microwave Products Ltd.



- Astra 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
- Astra has been able to create a diversified and healthy orderbook on the back of its strong capabilities
- Astra 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

# Longstanding Position in the Industry



Astra Microwave Products Ltd.

Over the past three decades, the company has revolutionized the realm of microwave technology with a range of innovative products

## Sub-systems provider

### Radar Electronics

Developed sub-systems of Radars for **DRDO**

### Telemetry / Strategic Electronics

Started building products for Telemetry/Strategic Electronics for DRDO for **Military Applications**



1993

### First R & D Deliveries to Defense

First deliveries of modules that found application in Telemetry/Missile Electronics for a **Surface to Air Missile** program of the DRDO.



1997

### Space Electronics

Components and sub-systems for **Satellite Application**. Proud to have associated with all the major satellite launches in India since 2008.



2003

## Forward integration towards SYSTEM provider

### Ventured into SYSTEMS

Entered into Radar Systems, Parameter Surveillance, Telematic System



2015

Delivered SATCOM Systems, Wind Profiler Radars & Ground Surveillance Radars



2019

1991



### Telecom

Supplied products to customers to set up their **telecom base** on the back of telecom revolution in India

1995



### IPO – Listed on Stock Exchanges

Raised money through IPO to invest in **Infrastructure, People & Test Facilities**

2000



### Electronic Warfare

Supplied many critical and wide band products for EW application, especially in the **Naval domain**

2005



### MMIC

**In-house design team** in order to design and develop critical MMIC's for the ability to control production requirements of critical devices in house

2018



### R&D Centre in Bengaluru

Established State-of-the-art Radar System R&D, Integration & Testing Facility. Started delivery of first System to Defence-PATM

2021



Delivered multiple Doppler Weather Radars  
Received LAToT from DRDO for Anti-Drone System, Coastal Surveillance Radar, Parth & Prachand Mines

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

## Defence

- Radars
- Electronic Warfare
- Strategic Electronics
- Telemetry
- Avionics

## Space

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

## Hydro/ Meteorology

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

## Others

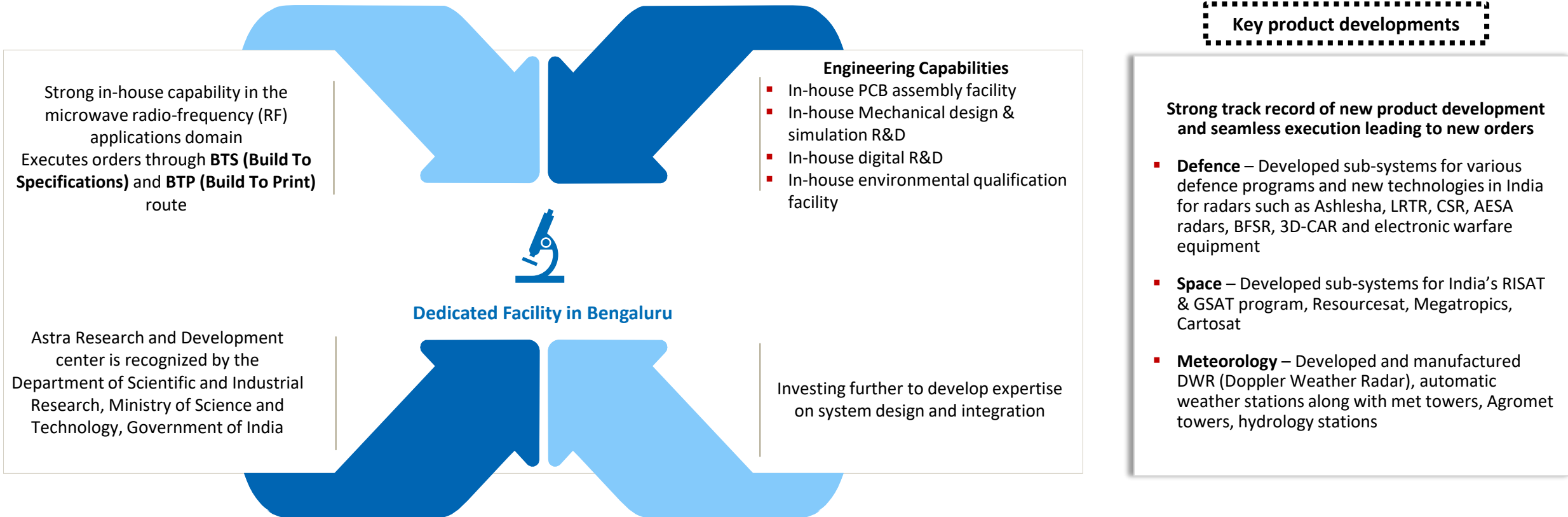
- Antennas
- MMIC
- Homeland Security
- Contract Manufacturing

# Strong R&D Capabilities...



Astra Microwave Products Ltd.

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



Average 2-3% of Total Revenue is spent on R&D Annually

A team of more than 400 R&D experts (including PhD, M Tech/B Tech, ITI – Diploma, PG/Graduates) works together on various initiatives

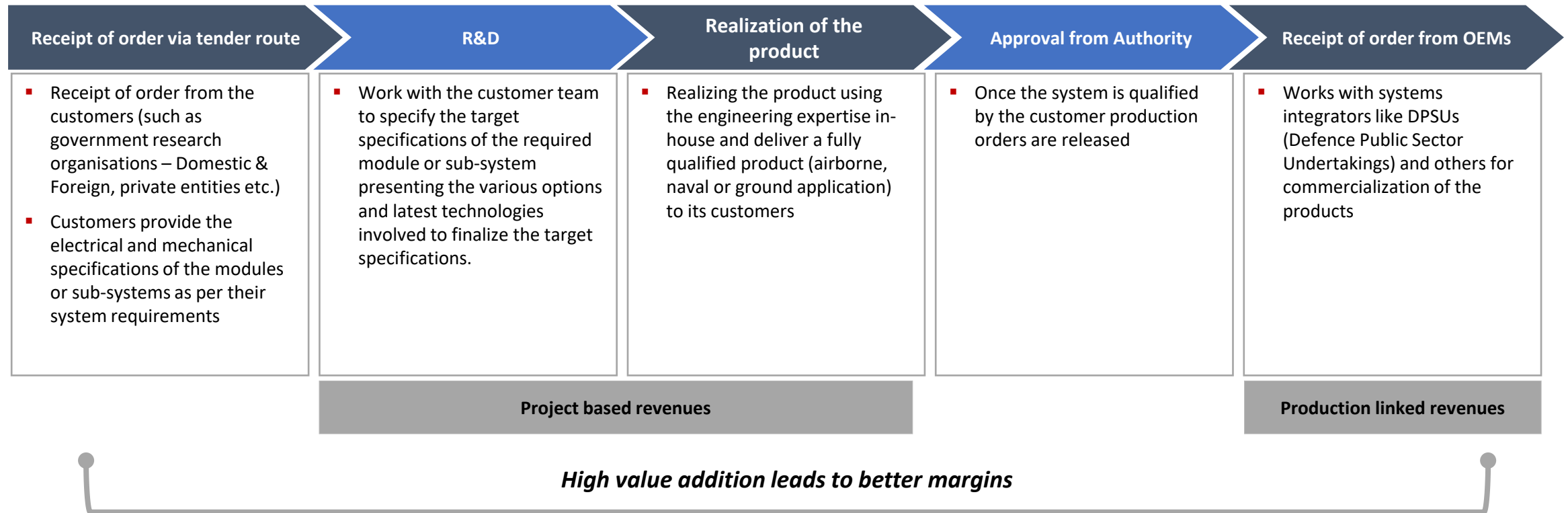


# Serving Markets Through Build To Specifications (BTS) Orders and...



Astra Microwave Products Ltd.

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

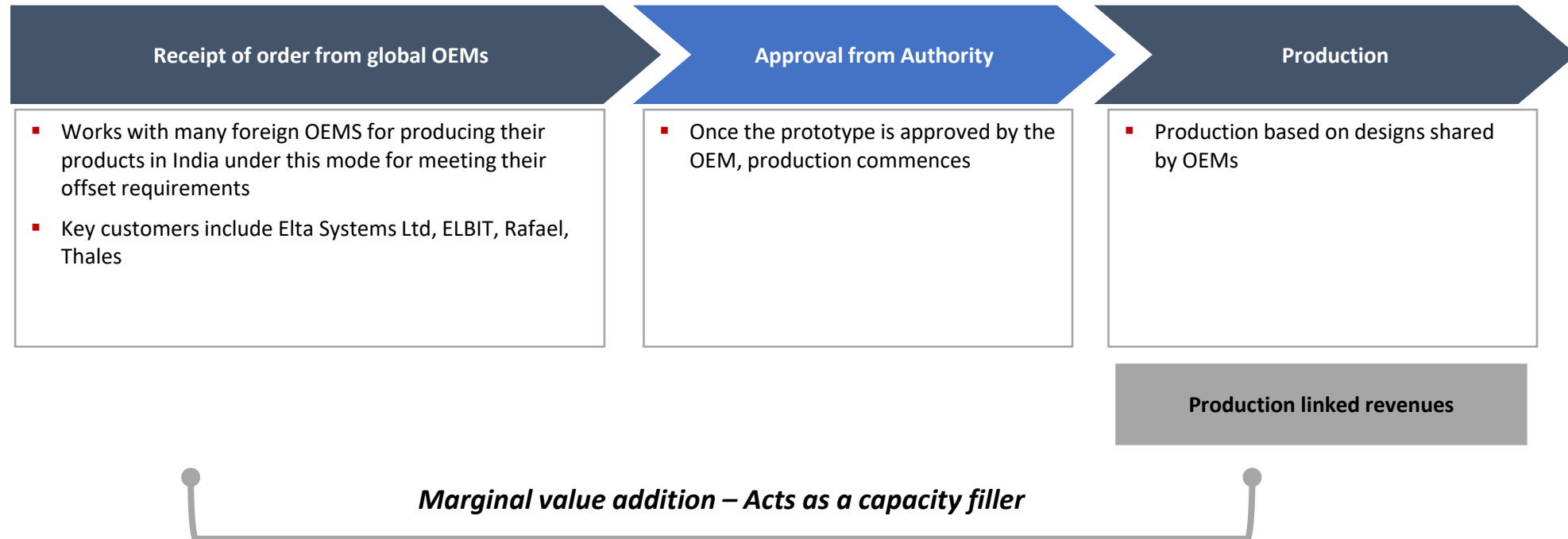


# ... Build To Print (BTP) Orders



Astra Microwave Products Ltd.

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



# Guided by Eminent Board of Directors



Astra Microwave Products Ltd.



- Former Secretary, Defence R&D and Director General, DRDO
- Eminent scientist in the field of missiles and has been a pioneer in Strapdown Inertial navigation & Guidance
- Instrumental in development of several critical technologies in the field of radars, simulation, propulsion, control and System engineering

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



- Graduate in Science and Mathematics and Fellow Chartered Accountant.
- Worked in private sector industry and gained over 33 years of experience in accounting, finance, taxation, secretarial etc.

**Mr. S. Gurunatha Reddy**  
Managing Director



- Graduate in Engineering (Electronics) and a Postgraduate in Business Administration.
- 28 years of experience in handling Marketing and Business operations in the domain of Defense, Space and Telecom segment in India and Overseas Market

**Mr. M. V. Reddy**  
Joint Managing Director



- Associated with the Defence Electronics Laboratory, Hyderabad, as a scientist for over 20 years before co-founding Astra Microwave
- An MSc (Physics) from Mysore University and an MTech (Advanced Electronics) from JNTU, Hyderabad.

**Mr. PA Chitrakar**  
Non-Executive Director



- Founder and Managing Director of Frontline Strategy Funds Pte. Ltd., a Singapore registered & licenced VCFM
- Over 25 years of well rounded "equities exposure" including Portfolio Management, Equity Sales and Equity Research with global institutions like ABN AMRO Bank, ANZ Grindlays Bank

**Mr. Atim Kabra**  
Non-Executive Director



- 38 years of experience in governance and have held senior positions in decision making capacities in practically all sectors - the developmental, agricultural, social, industrial, infrastructural, transportation, economic and regulatory.
- Joined Government in 1975, after standing first in the combined merit list for IFS/IAS, and opting to serve in the IAS.

**Ms. Kiran Dhingra**  
Independent Director



- Served as CMD of Bharat Electronics Limited country's largest enterprise in professional and defence electronics, where he was responsible for redefining the company vision for aggressive growth, achieving all time high sales turnover, profitability and a robust order-book.

**Mr. S. K. Sharma**  
Independent Director

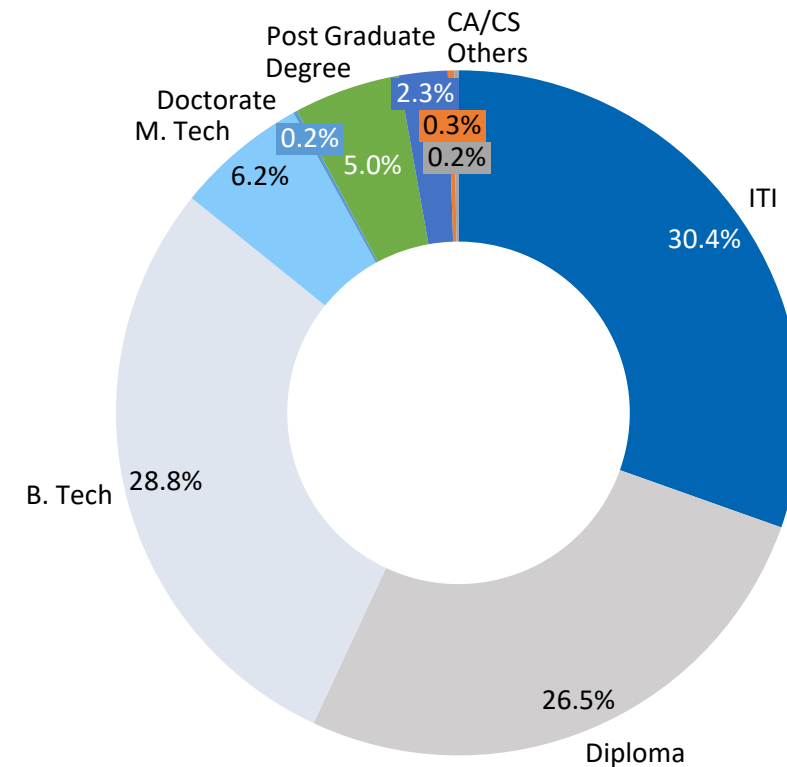
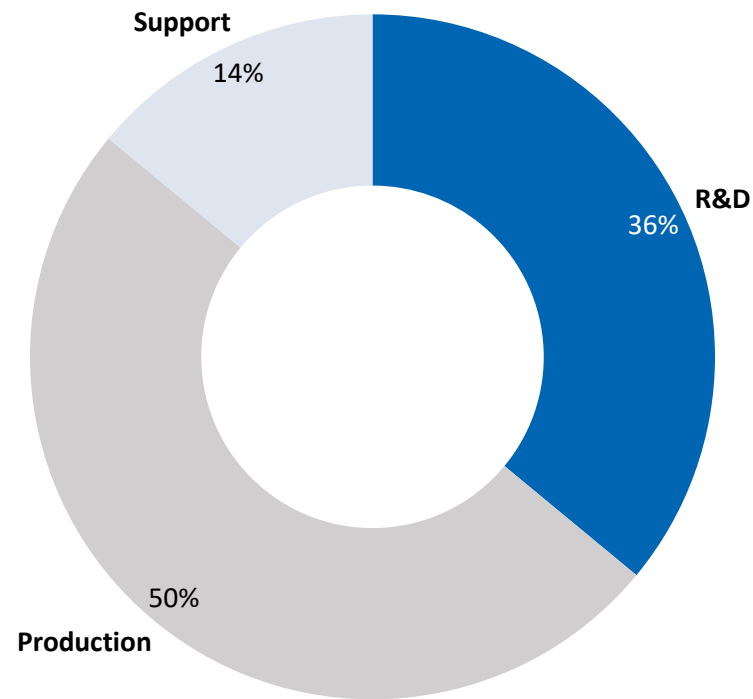
# Our Intellectual Capital



Astra Microwave Products Ltd.

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

Total workforce (as on December 31<sup>st</sup>, 2021) – 1,243







# Our Subsidiaries & JV



Astra Microwave Products Ltd.

Subsidiaries

JV

Overview	
<div>BE</div> <div>Bhavyabhanu Electronics Pvt. Ltd.</div>	<ul style="list-style-type: none"> <li>BEPL is a fully owned subsidiary of Astra Microwave</li> <li>Established with State-of-the-Art manufacturing &amp; test facilities to meet Global Standards. This combined with experienced man power &amp; stabilized processes ensure that the needs of various Industry Segments can be met easily.</li> <li>A dependable player with excellent technological capabilities and a long-term commitment to the defense, aerospace, medical and industrial electronics industry</li> <li>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.</li> </ul>
	<ul style="list-style-type: none"> <li>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.</li> <li>The products are tested and packaged as per customer's requirement utilizing state-of-the-art facilities</li> <li>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.</li> </ul>
	<ul style="list-style-type: none"> <li>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</li> <li>Focuses on indigenous technology and Atma Nirbhar Bharat programs</li> <li>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.</li> </ul>

**Way Forward**



# Indian Defence Industry... is Growing

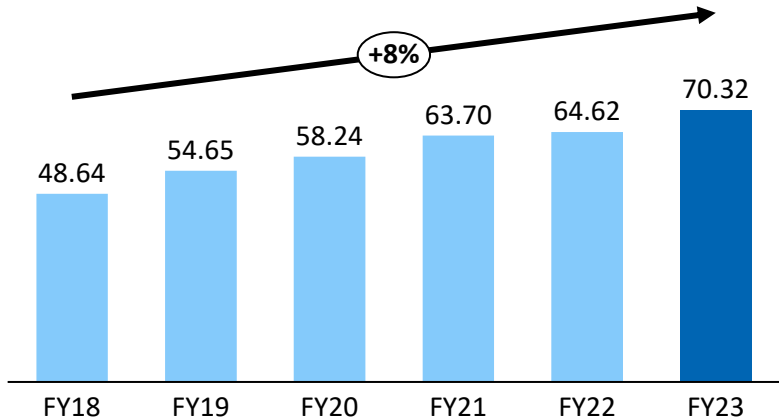


Astra Microwave Products Ltd.

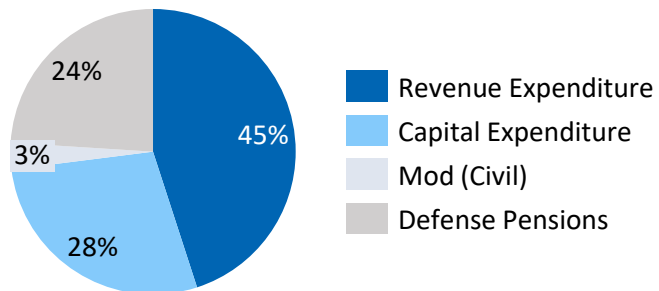
India's extensive modernisation plans, an increased focus on homeland security to increase government allocation for defence expenditure along with Make in India focus are expected to drive healthy growth in the sector

Large & growing market.....

India is the 3<sup>rd</sup> largest military spender  
Growing Defence Budget (in Bn \$)



Defence Budget Components – FY22



....with strong sectoral tailwinds

**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 fulfilment

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

Business Potential till 2026....

## Defence

Radars & Counter-Drone Systems Rs. 10,000 Cr.

Strategic Electronics & Telemetry Rs. 1,450 Cr.

Electronic Warfare Rs. 900 Cr.

## Space

On board Satellite Rs. 300 Cr.

Ground based Rs. 100 Cr.

Hydrology/Metrology Rs. 900 Cr.

Export Rs. 1,000 Cr.

**TOTAL Rs. 14,650 Cr.**

Make	Make I (Government Funded)	<ul style="list-style-type: none"> <li>Projects involving design and development of equipment, systems, major platforms or upgrades thereof by the industry. For Projects under Make-I sub-category, MoD will provide financial support upto 70% of prototype development cost or maximum ₹ 250 crores per Development</li> </ul>
	Make II (Industry Funded)	<ul style="list-style-type: none"> <li>This would include design and development and innovative solutions by Indian vendor, for which no Government funding will be provided. In Make-II, where solutions have been offered even by a single individual or a firm as a Suo-Moto proposal, the cases would be progressed as a Resultant Single Vendor. However, SHQ should seek for multivendor options in such cases, if feasible, before progressing the case as Single Vendor Case.</li> </ul>
	Make III	<ul style="list-style-type: none"> <li>Although would not be designed/developed indigenously, but can be manufactured in India as import substitution for product support of weapon systems/equipment held in the inventory of the Services. Indian firms may manufacture these either in collaboration or with ToT from foreign OEMs. In this category, an Indian vendor can enter into a JV with OEM.</li> </ul>
Innovation	Innovations for Defence Excellence (“iDEX”)	<ul style="list-style-type: none"> <li>Projects of Start-ups, MSMEs etc. with low capital investments and high innovation would be pursued under the iDEX category.</li> </ul>
	Technology Development Fund (TDF) Scheme	<ul style="list-style-type: none"> <li>Projects supported through TDF of DRDO for leveraging the domestic capabilities available with Indian Industries especially MSMEs including Start-ups.</li> </ul>
	Indigenous Development by Services through Internal Organisations	<ul style="list-style-type: none"> <li>These would include projects where prototype development of equipment/system will be processed by the Services through their internal R&amp;D organisations, such as Base workshop/Dockyards/ Base Repair Depots/ internal indigenisation Organisations/ Design Agency, etc.</li> </ul>



# Union Budget - 2022 – Key highlights



Astra Microwave Products Ltd.

Defence budget (2022-23) Rs. 385,370 cr  
(Rs. 368,418 cr estimate for 2021-22)

## 4 Major Priorities

- PM GatiShakti
- Inclusive Development
- Productivity Enhancement & Investment, Sunrise Opportunities, Energy Transition, and Climate Action
- Financing of Investments

Defense R&D will be opened up for industry, startups and academia with 25% of defense R&D budget.

An independent nodal umbrella body will be set up for meeting wide ranging testing and certification requirements

Private industry will be encouraged to take up the design and development of military platforms and equipment in collaboration with DRDO and other organizations through SPV model

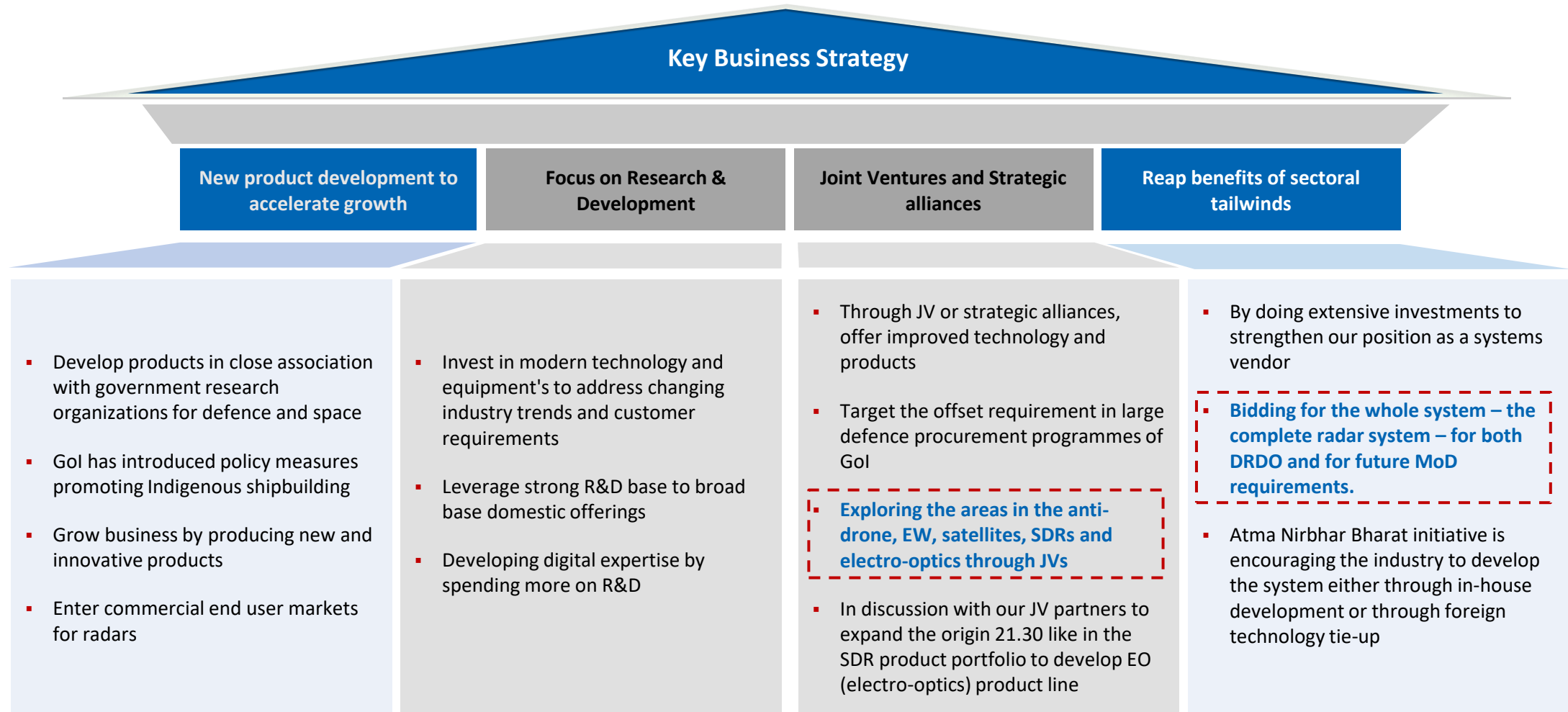
Startups will be promoted to facilitate Drone Shakti for Drone-As-A-Service

68% of capital for defence sector to be earmarked for local industry (up from the 58% last fiscal)

# Our Strategy for Growth...

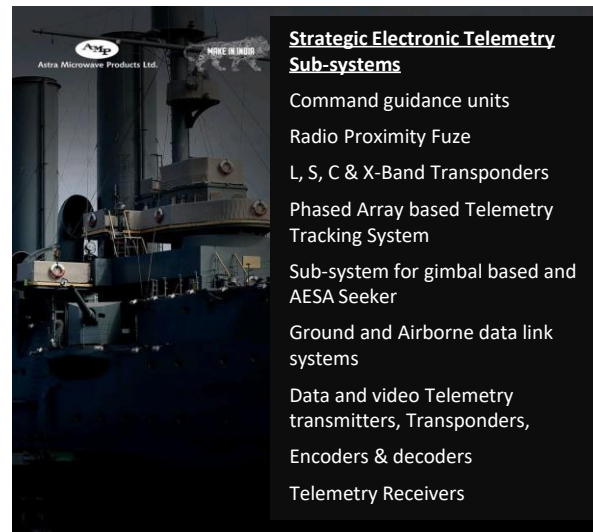


Astra Microwave Products Ltd.



# ... In the Changing Landscape of Opportunities

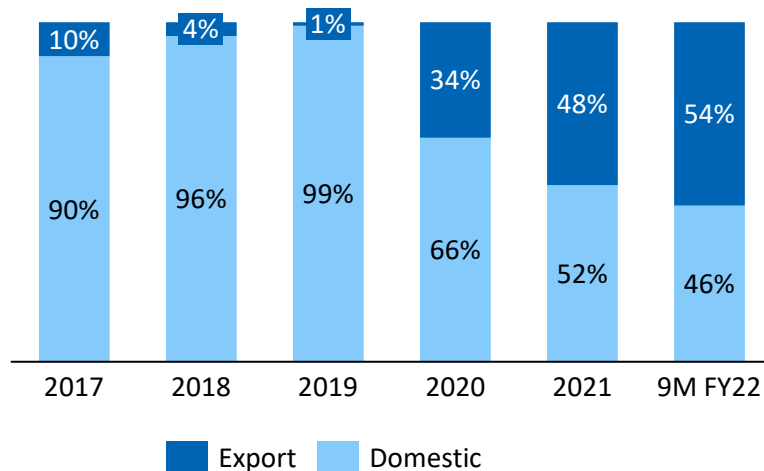
## India's Astra



## 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 Microwave 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

## Geographical distribution of Revenue



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

**We aim to achieve 70% Domestic 30% Export Revenue distribution over next 2-3 years**

# Financial Highlights



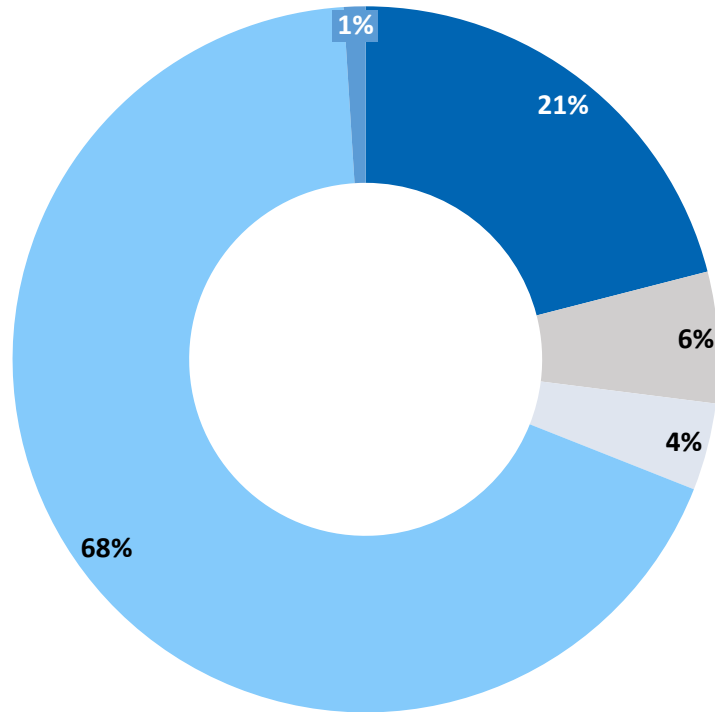


# Segmental Revenue Break-up

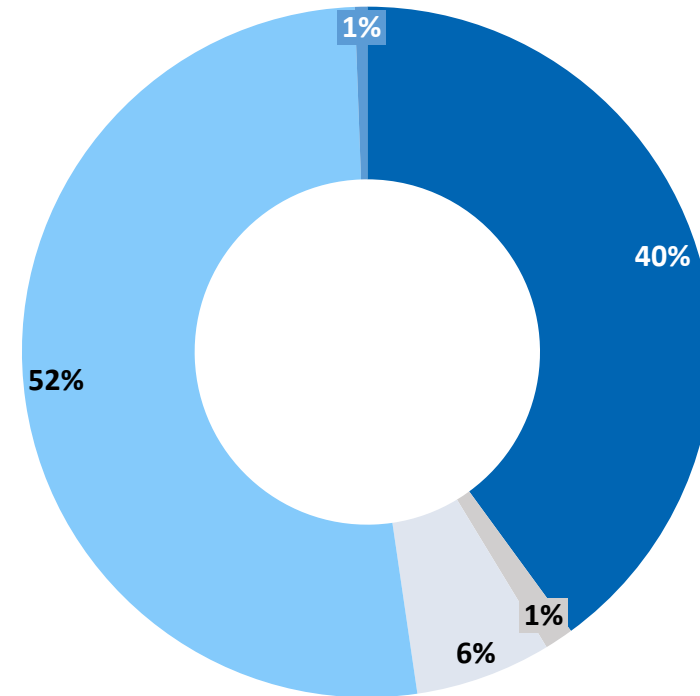


Astra Microwave Products Ltd.

9MFY21



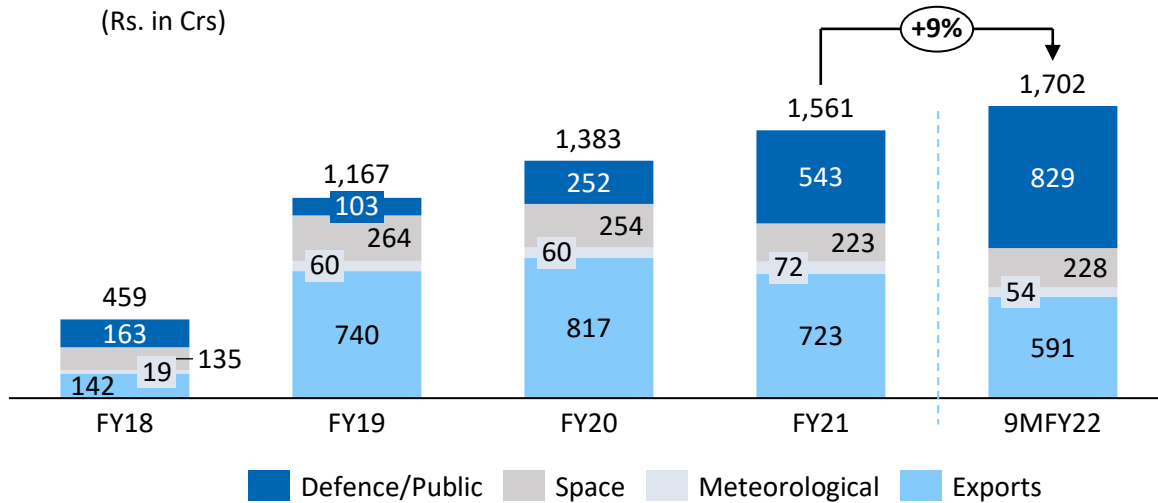
9MFY22



Defence Space Meteorological Exports including Deemed Exports Others

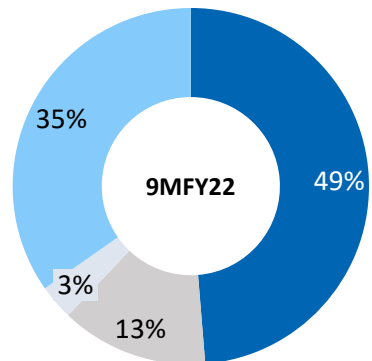
## Historical Orderbook Build-Up

(Rs. in Crs)



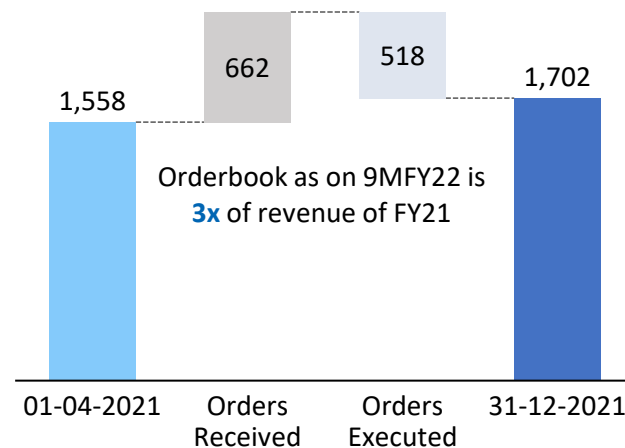
## Diversified Orderbook

Defence/Public  
Space  
Meteorological  
Exports



## Orderbook Build-Up

(Rs. in Crs)



## Orderbook Updates

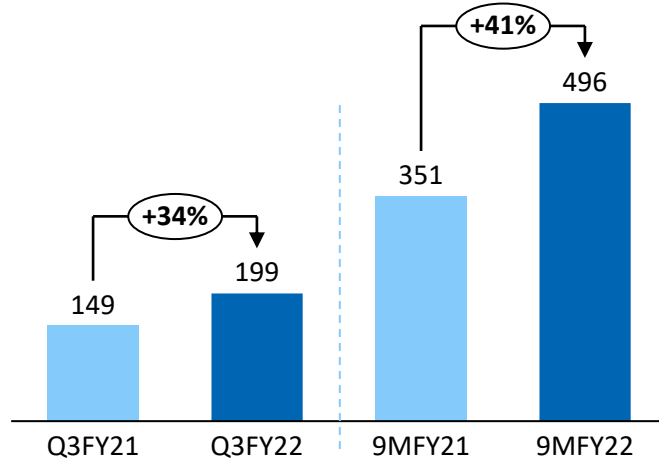
- Received Order for Space Communication Products ~40 Cr.
- Received Order for 16 Element AATRU from CASDIC ~ 34 Cr.
- Received ~ 20 Cr. Order from LRDE for Long Range Radar LRUs
- Received multiple orders from BDL for CGU ~15 Cr.
- Received ~ 16 Cr. Order from BEL-GAD for Aslesha Radar Spares
- Received ~7 Cr. Order from BEL-GAD for Revathi Radar Modules
- Received first production order for indigenously developed Converter Amplifier from HAL for Su-30
- Received order for Mobile Satellite Services (MSS) Briefcase Terminal from SPIC for ~6Cr.
- Received order from RCI for supply of first of its kind TeraHertz Proximity Sensor worth ~5 Cr.
- Received order from DGRE for supply of first of its kind Avalanche Radar ~2 Cr.
- Diversified orderbook across sectors giving us strong revenue visibility for the coming years
- Existing domestic and export orderbooks and the projects like Akash & opportunities in radar systems give us a revenue visibility on a sustainable basis
- Huge opportunity in the areas of anti-drone, EW, satellites, SDRs and electro-optics which will add up to the orderbook at revenues going forward

# Performance Highlights

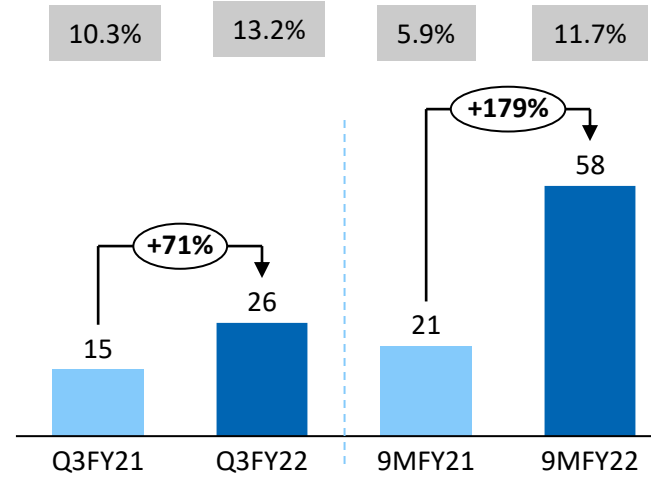


Astra Microwave Products Ltd.

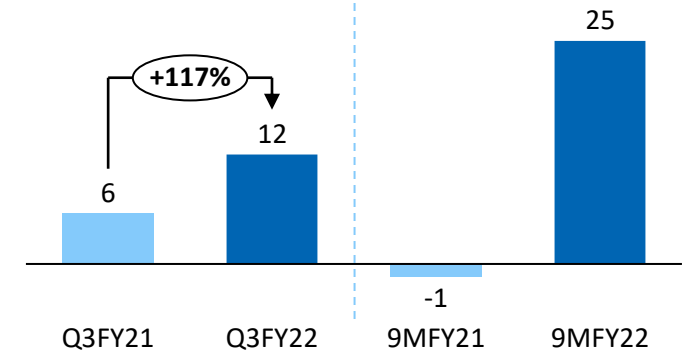
### Revenue (Rs. in Crs)



### EBIDTA (Rs. in Crs)

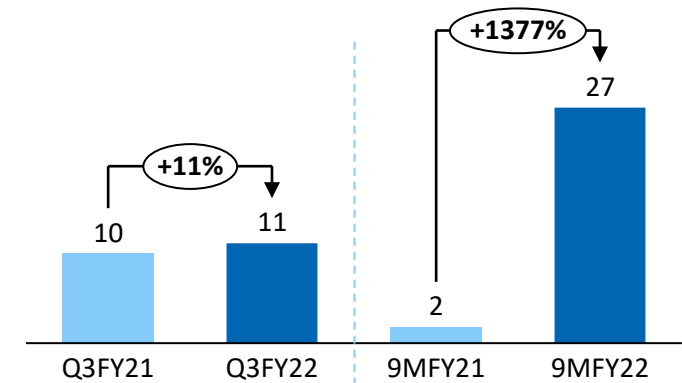
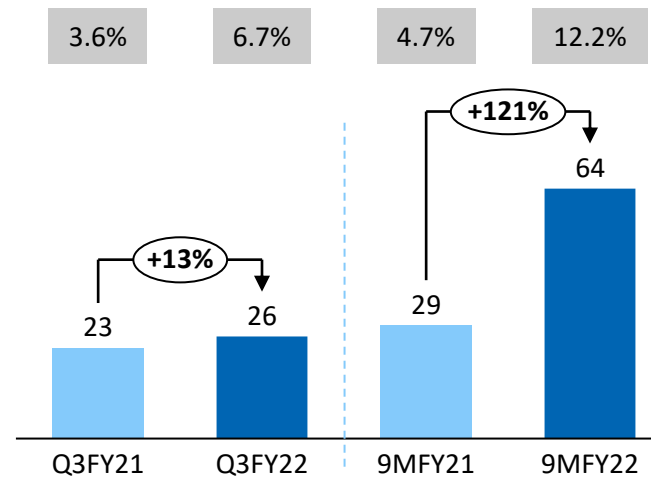
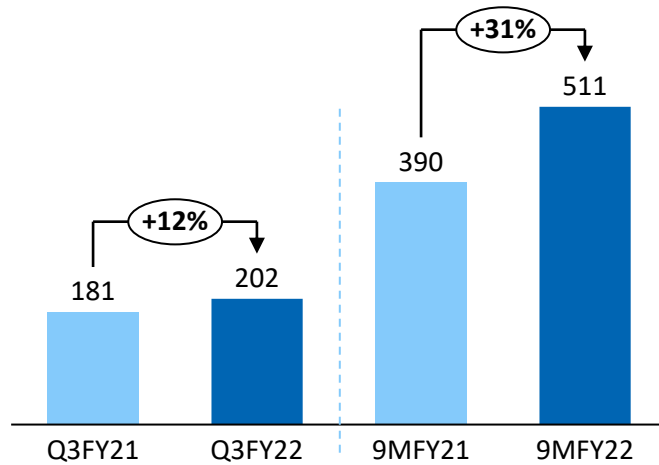


### PAT (Rs. in Crs)



Standalone

Consolidated



# Q3 & 9MFY22 Standalone Profit & Loss Statement

PARTICULARS (Rs. In Cr)	Q3FY22	Q3FY21	YOY	9MFY22	9MFY21	YOY
Revenue from Operations	199.1	149.0	33.6%	496.1	351.0	41.3%
Raw Material Consumption	139.2	105.2		353.0	251.7	
Gross Profit	59.8	43.8	36.7%	143.1	99.3	44.0%
Gross Profit Margin	30.0%	29.4%		28.8%	28.3%	
Employees Expenses	18.4	15.5		50.1	43.1	
Other Expenses	15.2	12.9		35.1	35.4	
EBITDA	26.2	15.4	70.6%	57.9	20.8	179.0%
EBITDA Margin	13.2%	10.3%		11.7%	5.9%	
Other Income	1.3	1.4		5.2	4.8	
Depreciation	5.8	5.8		15.5	17.2	
EBIT	21.7	11.0	98.2%	47.6	8.3	470.8%
EBIT Margin	10.9%	7.4%		9.6%	2.4%	
Finance Cost	5.4	4.7		15.6	10.0	
Profit before Tax	16.3	6.3	158.7%	32.0	-1.6	NA
Profit before Tax Margin	8.2%	4.2%		6.4%	-0.5%	
Tax	4.2	0.7		7.3	-0.3	
PAT	12.1	5.6	117.0%	24.7	-1.4	NA
PAT Margin %	6.1%	3.8%		5.0%	-0.4%	
EPS (in Rs.)	1.40	0.65	115.4%	2.85	-0.16	NA



# Historical Financials



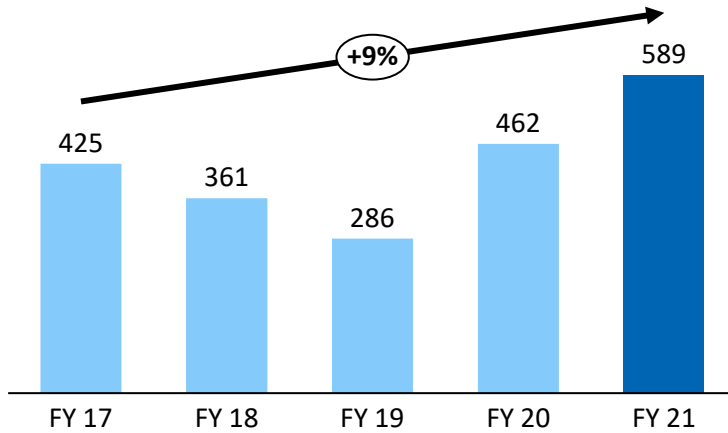
# Historical Performance Highlights



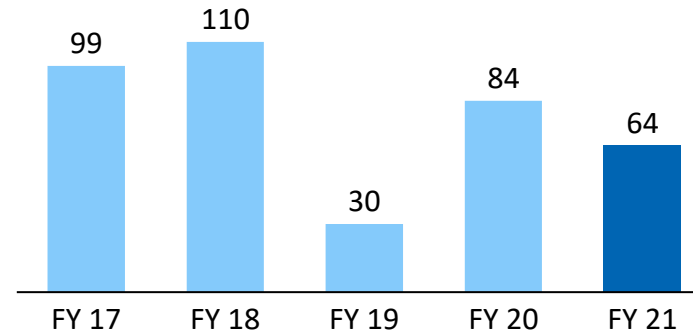
Astra Microwave Products Ltd.

Revenue (Rs. in Crs)

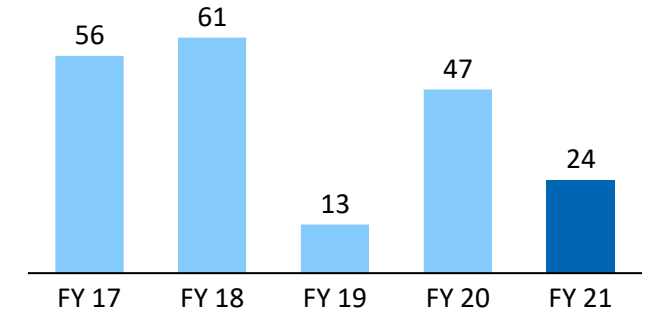
Standalone



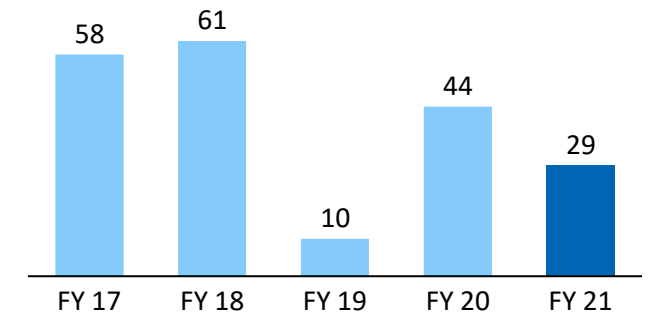
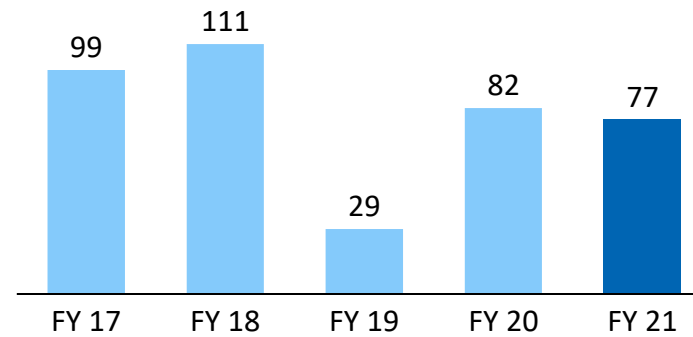
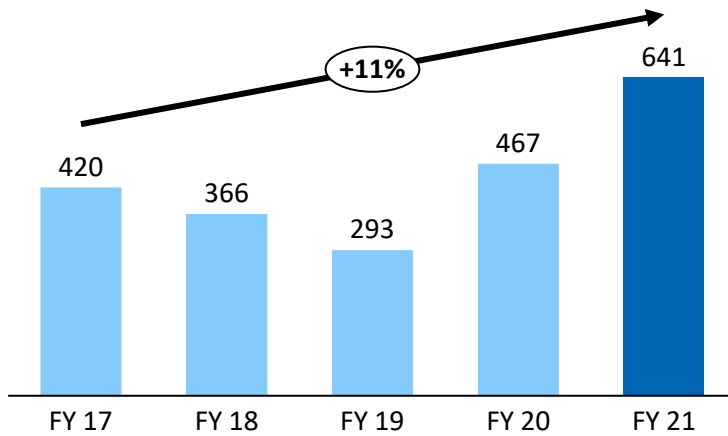
EBIDTA (Rs. in Crs)



PAT (Rs. in Crs)



Consolidated



# Historical Standalone Profit & Loss

PARTICULARS (Rs. In Cr)	FY21	FY20	FY19	FY18	FY17
Revenue from Operations	589.2	461.6	286.2	360.5	425.1
Total Raw Material	418	267	159	152	218
Gross Profit	170.7	194.7	126.9	208.5	199.3
Gross Profit Margin	29.0%	42.2%	44.3%	57.8%	47.7%
Employee Expenses	64	66	61	66	57
Other Expenses	42	45	36	33	40
EBITDA	64.2	83.8	29.8	109.5	99.0
EBITDA Margin	10.9%	18.2%	10.4%	30.4%	24.3%
Other Income	12	12	24	8	6
Depreciation	23	25	29	27	24
EBIT	52.8	70.5	25.7	90.9	83.5
EBIT Margin	9.0%	15.3%	9.0%	25.2%	20.0%
Finance Cost	21	8	9	12	11
Profit before Tax	31.4	62.7	16.7	78.9	72.6
Profit before tax margin	5.3%	13.6%	5.9%	21.9%	17.4%
Tax	7	15	4	18	12
PAT	23.9	47.3	12.5	60.7	56.6
PAT Margin %	4.1%	10.3%	4.4%	16.8%	14.4%
EPS (Rs.)	2.76	5.47	1.45	7.01	6.95

# Historical Standalone Balance Sheet

ASSETS (Rs. In Cr)	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	EQUITY AND LIABILITIES (Rs. In Cr)	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17
<b>Non-Current Assets</b>	<b>202</b>	<b>213</b>	<b>222</b>	<b>217</b>	<b>217</b>	<b>Equity and Liabilities</b>	<b>561</b>	<b>547</b>	<b>503</b>	<b>502</b>	<b>451</b>
Property, plant and equipment	150	158	176	193	148	Equity share capital	17	17	17	17	17
Capital WIP	0	12	2	1	37	Equity attributable to owners of the Company	543	530	486	484	434
Investment in Associates	2					Non-controlling interest					
Investments in joint ventures	20	16	16			<b>Non-current liabilities</b>	<b>4</b>	<b>3</b>	<b>9</b>	<b>20</b>	<b>71</b>
Investments in subsidiaries	13	8	8	6		Financial liabilities					
<b>Financial Assets</b>						i. Borrowings			5	14	67
i. Investments				0	6	ii. Other Financial Liabilities					
ii. Other Financial Assets	10	11	12	17	24	iii. Lease Liabilities					
Deferred tax assets	2	0				iv. Trade Payables					
Non Current Tax Assets		5	5			Deferred tax liabilities (net)			5	4	3
Other non-current assets	3	2	2	1	2	Provisions	4	3		1	1
<b>Current assets</b>	<b>714</b>	<b>644</b>	<b>391</b>	<b>457</b>	<b>428</b>	other non current liabilities					
Inventories	291	226	130	104	127	<b>Current liabilities</b>	<b>351</b>	<b>307</b>	<b>101</b>	<b>152</b>	<b>123</b>
Investment in Associates						Financial liabilities					
<b>Financial assets</b>						i. Borrowings	100	47	0	20	57
i. Investments	14	13	20	126	57	ii. Trade payables	35	38	22	14	19
ii. Trade receivables	254	247	190	188	219	iii. Other financial liabilities	11	16	20	66	12
iii. Cash and cash equivalents	14	7	7	21	0	iv. Lease Liabilities					
iv. Bank balances other than (iii) above	24	43	18	8	1	Current tax liabilities (net)	1	2		2	
Other financial assets	13	0				Provisions	2	2	3	5	3
Current tax assets (net)	1				1	Contract liabilities	201	201	51	24	
Other current assets	103	107	26	11	23	Other current liabilities	2	1	5	23	31
<b>Total assets</b>	<b>915</b>	<b>857</b>	<b>613</b>	<b>674</b>	<b>645</b>	<b>Total equity and liabilities</b>	<b>915</b>	<b>857</b>	<b>613</b>	<b>674</b>	<b>645</b>

# Annexure





# 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	Unit II	Unit III	Unit IV	Unit VII	Bengaluru Unit
					
Land : 1.13 Acres	Land : 2.0 Acres	Land : 9.9 Acres	Land : 19.0 Acres	Land : 0.59 Acres	Land : 5.0 Acres
Building : 18,000 Sq. Ft	Building: 20,000 Sq. Ft	Building: 77,000 Sq. Ft	Building: 1,80,000 Sq. Ft	Building: 23,000 Sq. Ft	Building: 1,00,000 Sq. Ft
Status : Own	Status : Own	Status : Own	Status : Own	Status : Own	Status : Own
Year : 1999	Year : 1995	Year : 2003	Year : 2009	Year: 2019	Year : 2012
Facility Offering	Facility Offering	Facility Offering	Facility Offering	Facility Offering	Facility Offering
Automatic weather Station	Near Field Test Range	Clean Room	EMI/EMC	MIC Facility	Near Field Test Range
AWS and other Hyderology & Meteorology	Out-Door Test Range	Laser Welding	Halt/Hass Chamber	CNC Drilling	
	Multi-Layer Antenna Fabrication	Vibration Table	ESS Chamber	Copper Plating	
				Gold Plating	
				Etching developing	

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

# ...for Assembly, Functional & Environment Testing



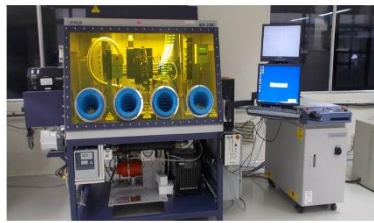
Astra Microwave Products Ltd.

## 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



CLEAN ROOMS -CLASS 10,000



LASER WELDING



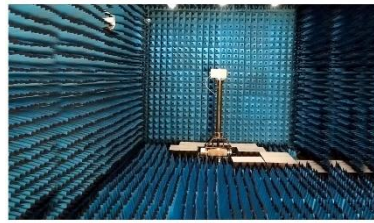
SMT Lines



Automated Optical Inspection(AOI)

## 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



FFTR



ATE ATS - FACILITY



Open Air Antenna -Test Range



Oscilloscope

## Environment Testing

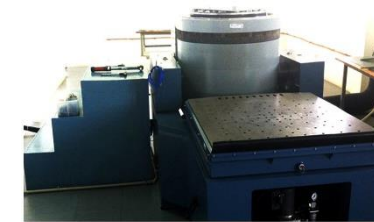
- EMI/EMC Test facility
- HASS/HALT Chambers
- Environment Chambers (-650C to +1750C; 98% RH)
- Vibration systems
- Weiss Chamber



EMI-EMC TEST



ENVIRONMENTAL CHAMBER



Vibration

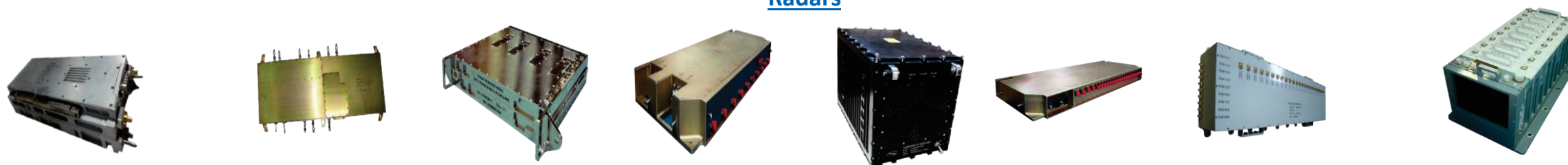


Hass Chamber



# Niche Product Offerings

## Radars



## Electronic Warfare (EW) Products



## Missile & Telemetry



## Space



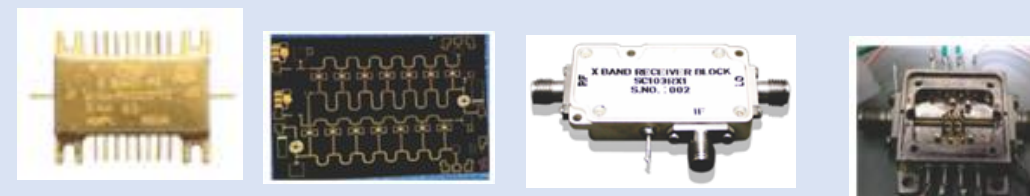
## Meteorology & Hydrology



## Antenna



## MMIC



# Strong Presence in SYSTEMS



Astra Microwave Products Ltd.

## Multi-function Radar Systems



AMP-MFRS-101

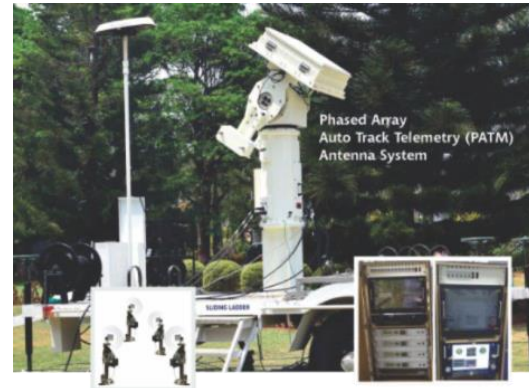


AMP-MFRS-102

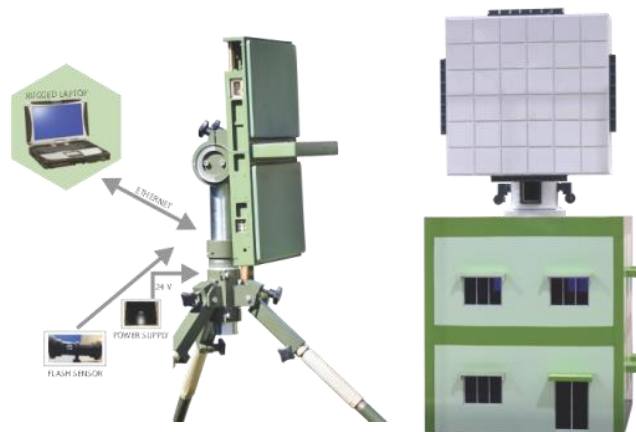


AMP-MFRS-103

## Instrumentation Radar & Telemetry systems



AMP-VADR-201/202



AMP-PATTS-203

AMP-PMTR-204

## Perimeter Intrusion Detection System



AMP-PIDR-301



AMP-PIDR-302

## Meteorology Radar Systems



AMP-WPR-402 & 403



## Air Traffic Management Radar System



AMP-PPAR-501



# Significant Entry Barriers



Astra Microwave Products Ltd.

## Industry Leading Certifications





# Awards & Accolades



Astra Microwave Products Ltd.



Testimony of  
Consistent Performance



LAToT Ceremony for Coastal Surveillance Radar



Excellence in Innovation, Design Technology, R&D 2021



Defence Technology Absorption Ceremony



Import Substitute Award



ELCINA EFY Award for Business Excellence



## Our Contribution towards the Society

Eradicating hunger, poverty and malnutrition

Promoting education

Promoting gender equality

Ensuring environmental sustainability

Protection of national heritage

Benefit of armed forces veterans

Training to promote rural sports

Contribution to the PM's National Relief Fund

Funds provided to technology incubators

Rural development projects



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



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



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

# Thank You

**For more information please contact:**



Astra Microwave Products Ltd.

**Astra Microwave Products Limited**

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**SGA** Strategic Growth Advisors

**Strategic Growth Advisors Pvt Ltd.**

CIN No: U74140MH2010PTC204285

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