Element Solutions – Electronics Overview

Joe D'Ambrisi, SVP & Head of Electronics



element solutions

October 2020

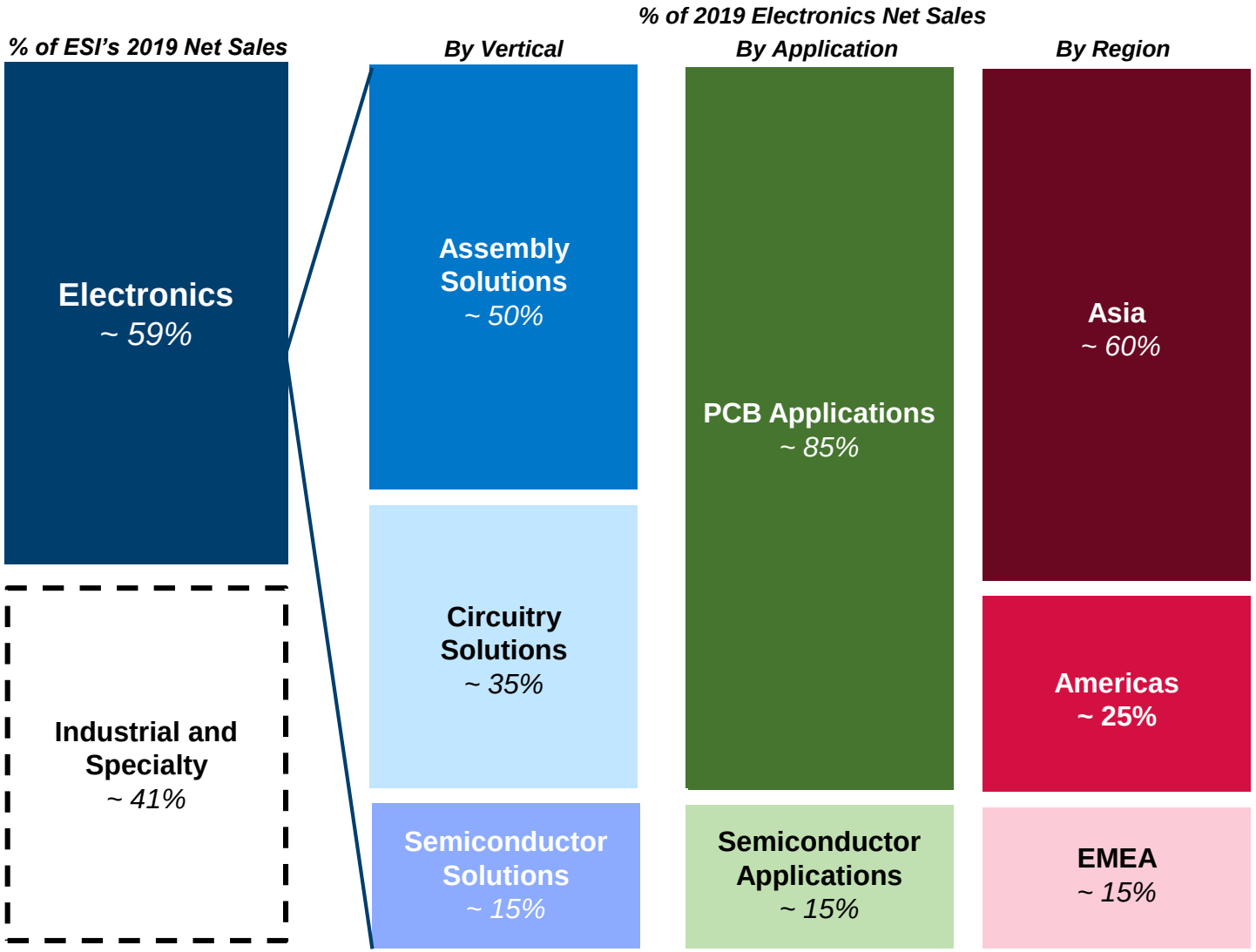
Legal Notices

Please note that in this presentation, we may discuss events or results that have not yet occurred or been realized, commonly referred to as forward-looking statements. The Private Securities Litigation Reform Act of 1995 provides a safe harbor for forward-looking statements made by or on behalf of the Company. Such discussion and statements will often contain words such as “expect,” “anticipate,” “project,” “will,” “should,” “believe,” “intend,” “plan,” “assume,” “estimate,” “predict,” “seek,” “continue,” “outlook,” “may,” “might,” “aim,” “can have,” “likely,” “potential,” “target,” “hope,” “goal,” “priority” or “guidance” and variations of such words and similar expressions, and relate in this presentation, without limitation, to category positions for profitable above-market growth; supporting increasingly complex customer needs and increasing requirements for circuit board and semiconductor manufacturing in the high-end of key end-markets; 5G rollout driving growth, including projected annual shipments of 5G mobile equipment through 2028 and 5G base station rollout through 2025; leveraging materials expertise to support new technology vehicles; growing demand for electric vehicles and increased levels of automation with the adoption of new technology; innovating for customers’ future needs; and technology developing to address global, durable megatrends.

These projections and statements reflect management's estimates, assumptions and expectations with respect to future events and financial performance and are believed to be reasonable, though are inherently uncertain and difficult to predict. Such projections and statements are based on the assessment of information available to management as of the current date, and management does not undertake any obligations to provide any further updates. Actual results could differ materially from those expressed or implied in the forward-looking statements if one or more of the underlying estimates, assumptions or expectations prove to be inaccurate or are unrealized. Important factors that could cause actual results to differ materially from those suggested by these forward-looking statements include, but are not limited to, the duration and spread of the coronavirus (COVID-19) pandemic; new information concerning its transmission and severity; actions taken or that might be taken by governments, businesses or individuals to contain or reduce its repercussions and mitigate its economic implications; evolving macroeconomic factors, including general economic uncertainty, unemployment rates, and recessionary pressures; decreased consumer spending levels; reduction or changes in customer demand for the Company's products and services; the Company's ability to manufacture, sell and provide its products and services, including as a result of travel restrictions, closed borders, operating restrictions imposed on its facilities or reduced ability of its employees to continue to work efficiently; increased operating costs (whether as a results of changes to the Company's supply chain or increases in employee costs or otherwise); collectability of customer accounts; additional and prolonged devaluation of other countries' currencies relative to the dollar; the general impact of the pandemic on the Company's customers, employees, suppliers, vendors and other stakeholders; the Company's ability to realize the expected benefits of its cost containment and cost savings measures; business and management strategies; debt and debt leverage ratio; shares repurchases; expected returns to stockholders; and the impact of acquisitions, divestitures, restructurings, refinancings, impairments and other unusual items, including the Company's ability to raise and/or retire new debt and/or equity and to integrate and obtain the anticipated benefits, results and synergies from these items or other related strategic initiatives. Additional information concerning these and other factors that could cause actual results to vary is, or will be, included in the periodic and other reports filed by Element Solutions with the Securities and Exchange Commission. Element Solutions undertakes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

Certain product information, competitive position data and market trends contained in this presentation have been prepared internally and have not been verified by any third party. Use of different methods for preparing, calculating or presenting such information may lead to different results and such differences may be material. In addition, certain industry and market data described in this presentation was obtained from industry and general publications and research, surveys and studies conducted by third parties. While Element Solutions believes this information is reliable and appropriate, such information has not been verified by any independent source. You are cautioned not to place undue reliance on this product, competitive and market information or industry and market data.

Element Solutions' Electronics Segment Snapshot



$1,086M
2019 Net Sales

23%
2019 Adj. EBITDA Margin*

>25
Countries We Operate In

~10,000
Customers Globally

>99%
Consumable Products

>50%
Of Employees in Innovation, Sales and Technical Service Roles

- Leading category positions with strong competitive advantages and product breadth
- Positioned for profitable, above-market growth in exciting electronics categories

* *Adjusted EBITDA is not prepared in accordance with GAAP. Adjusted EBITDA for each of ESI's segments is defined as earnings before interest, taxes, depreciation and amortization, as further adjusted for additional items included in earnings which the Company believes are not representative or indicative of each segment's ongoing business or are considered to be associated with its capital structure. Adjusted EBITDA for each segment also includes an allocation of corporate costs, such as compensation expense and professional fees. For a reconciliation, please refer to the appendix of this presentation.*

Leading-Edge, High-Quality Materials & Brands

element solutions

Century-Long legacies of experience and customer trust

MacDermid Alpha ELECTRONICS SOLUTIONS

Materials We Supply	Vertical	Brand Families	Years in Market
Specialty Chemicals for PCB Fabrication	Circuitry Solutions	MacDermid Enthone	~100
Circuit Deposition for Wafers	Semiconductor Solutions	MacDermid Enthone	~100
Attachment Materials and Plating Solutions for Semiconductors and Advanced Packaging		Alpha	~150
		Kester	~120
Solder Alloy Technology	Assembly Solutions	Alpha	~150
Attachment Materials for PCB Assembly		Kester	~120

An Integrated, Comprehensive High-End Electronics Portfolio

Enabling all critical interfaces for printed circuit boards and semiconductor applications

Flagship Smartphone CPU / Board Interface

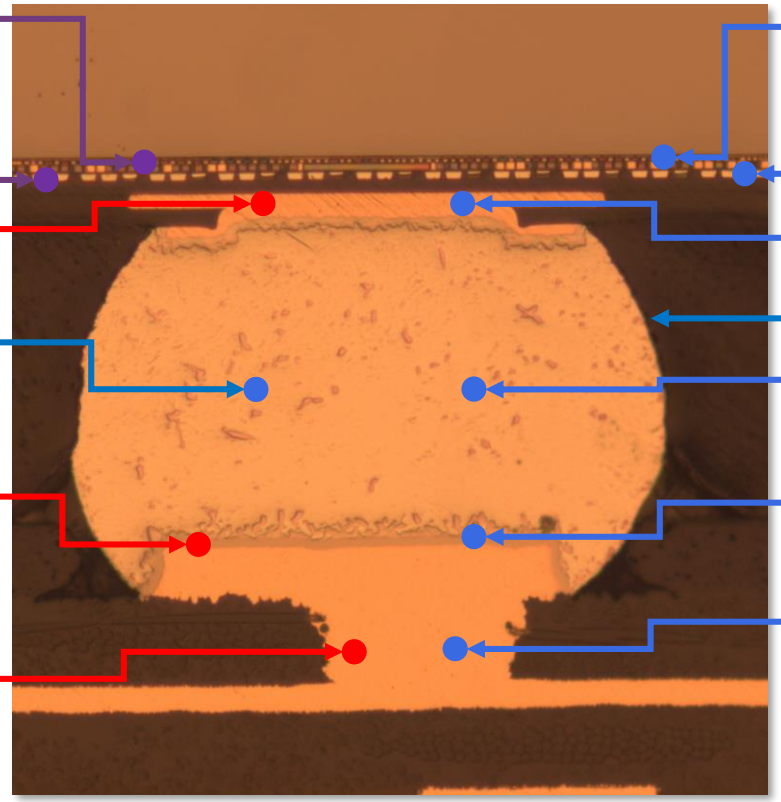


Photo source: Prismark/Binghamton University

MacDermid Alpha ELECTRONICS SOLUTIONS
Viaform

MacDermid Alpha ELECTRONICS SOLUTIONS
MICROFAB, Novafab

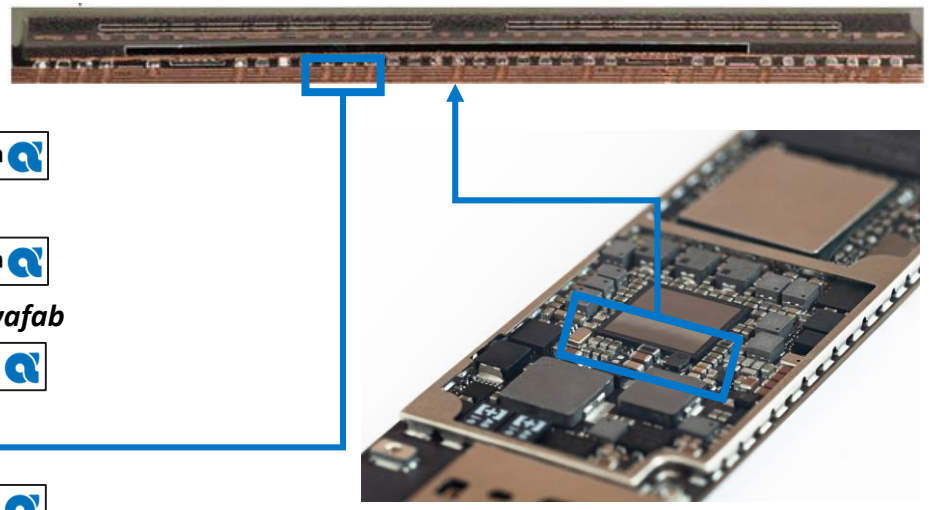
MacDermid Alpha ELECTRONICS SOLUTIONS
Systek

MacDermid Alpha ELECTRONICS SOLUTIONS
ALPHA

MacDermid Alpha ELECTRONICS SOLUTIONS
Affinity, ENTEK

MacDermid Alpha ELECTRONICS SOLUTIONS
MacuSpec
Blackhole
Eclipse
M-Speed

Extremely Dense Flagship Smartphone PCB



Circuitry

- **MacDermid Alpha**
- DuPont
- JCU
- Uyemura
- Atotech

Assembly

- **MacDermid Alpha**
- Indium
- Senju
- Heraeus

Semiconductor

- **MacDermid Alpha**
- DuPont
- Atotech
- BASF
- Henkel

Supporting Increasingly Complex Customer Needs

Increasing requirements for circuit board and semiconductor manufacturing in the high-end of key end-markets

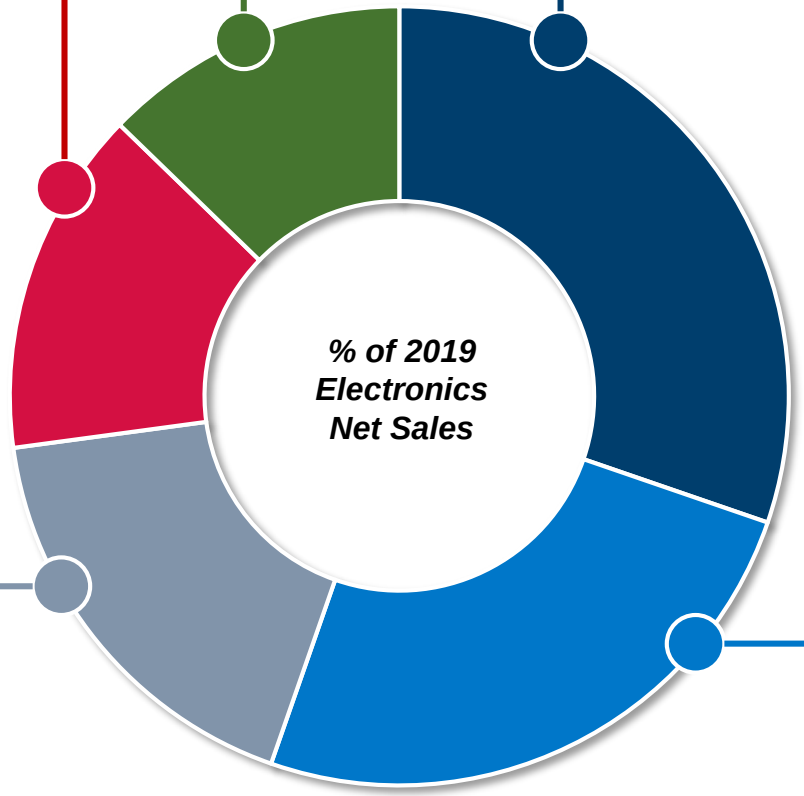
Other Electronics: ~ 15%

Engineering Applications: ~ 15%

- **Internet of Things (IoT), artificial intelligence, medical devices and high-tech manufacturing**
- *More power and computing*
- *Higher density boards and more complexity of assembly materials*

Mobile & Tablets: ~ 30%

- **5G devices, advanced wearables**
- *Higher density circuit boards*
- *Flexible circuitry use increased*
- *More components to attach*
- *More complex interconnect dies utilized*



Automotive: ~ 15%

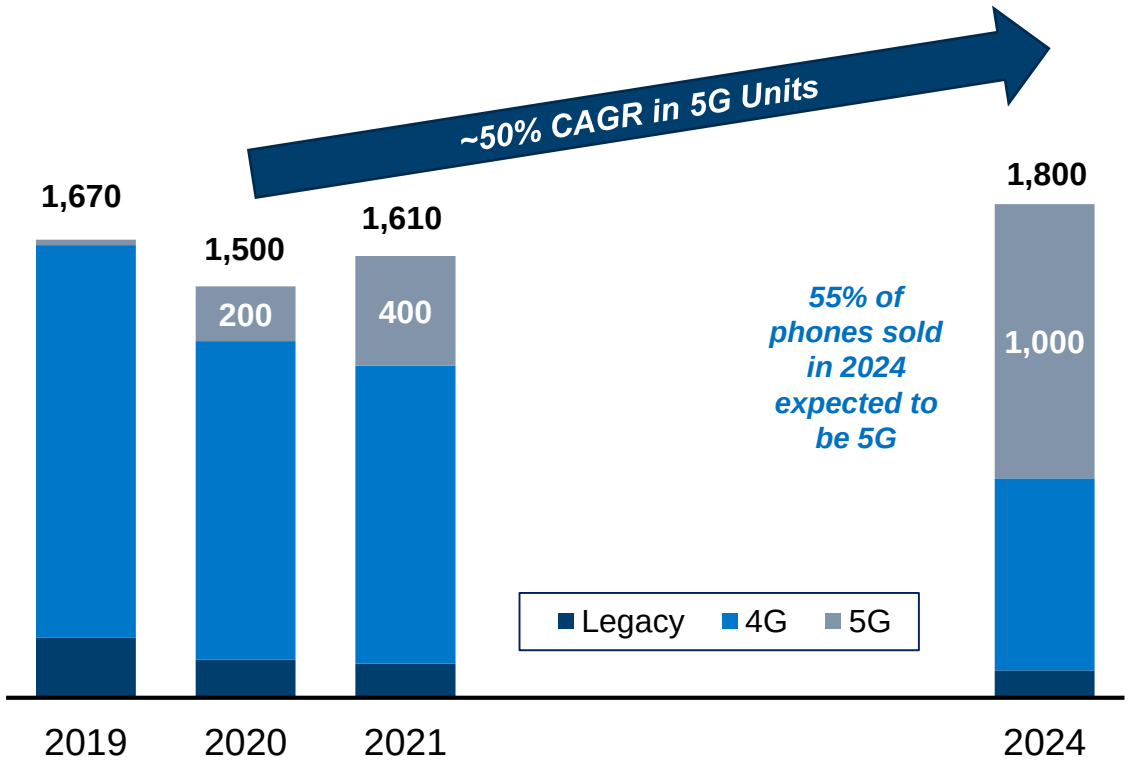
- **Electric vehicles, safety systems (ADAS), interior electronics**
- *Lightweight, complex assembly materials*
- *Higher density and computing*
- *Environmental / sustainability requirements*

Data Storage & Telecom: ~ 25%

- **5G telecom infrastructure, next-gen computing**
- *More power and storage*
- *Increased usage of edge servers*
- *Higher density boards and more complexity of assembly materials*

5G Rollout Driving Growth

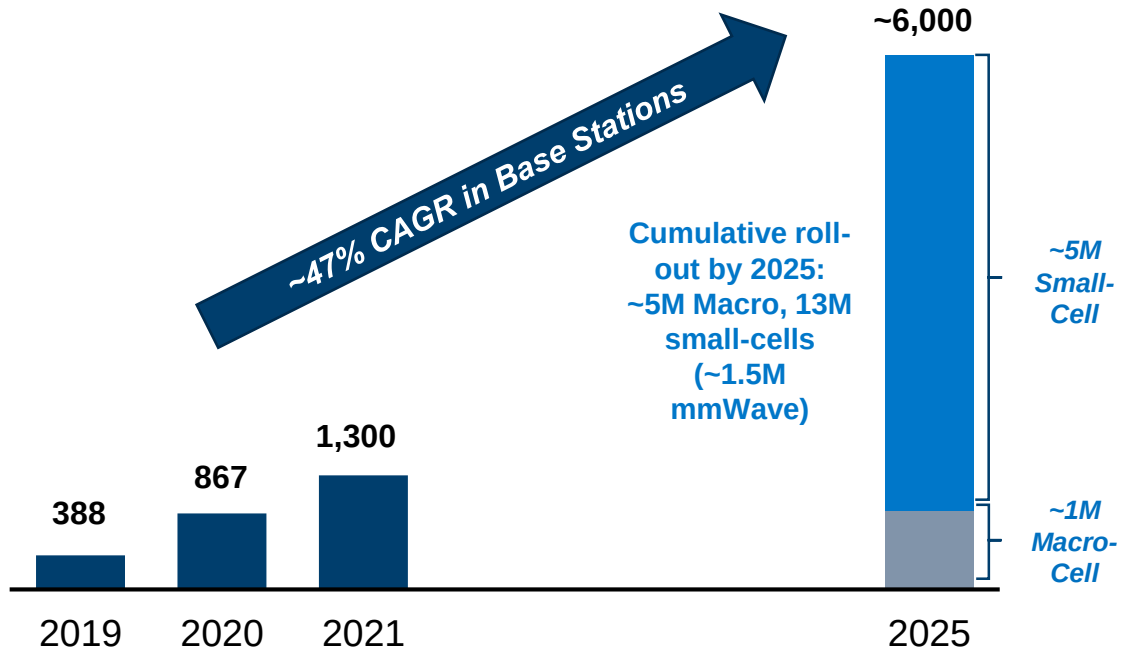
Mobile Devices – Annual Shipments (M Units)



Source: Prismark

ESI Content Per Phone	
Mid-Level Phone	~ $0.70-$0.80
Premium Phone	~ $1.10-$1.20
5G Phone	~ 15%+ vs. Premium

5G Base Station – Annual Rollout (K Units)



Source: Prismark

- Higher user density than 4G – addressed with small cells
- Main near-term driver expected to be enhanced mobile broadband
- Anticipate Massive Machine Type Communication and Ultra Reliable Low Latency Communication to be longer-term drivers

ESI Automotive – Convergence of Electronics & Automotive

Materials expertise enabling cutting-edge automotive innovation

Focus Areas	
EVs and Powertrain	Inverter and Battery Management System technologies to enhance range, power and reliability
Safety Systems (ADAS)	Enhancing safety systems to reach next level autonomy (cameras, radar and connectivity)
Interior Technologies	Technologies to create a modern cockpit experience while meeting sustainability requirements
Lightweight	High-strength lightweight materials and surface coatings to drive efficiency in the connected vehicle
Exterior	OEM-approved sustainable exterior decorative coatings that offer durability and long-lasting beauty

1.5 – 2.0x

more value in electric vehicles

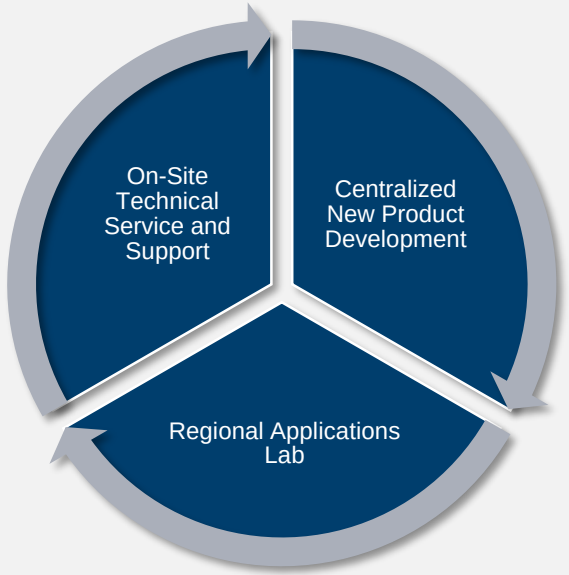


Source: management estimates

Innovating for Our Customers' Future Needs

The technology for tomorrow's megatrends is developing today

Customer-Led Product Innovation





5G Technologies

Higher density and reliability requirements for 5G technologies in both infrastructure and mobile devices



Automotive Electronic Content

Increasing electronic content in automotive systems compounded by growth in electric vehicle markets



Internet of Things

Growing focus on connectivity and the electrification of consumer goods

Materials requirements at the leading edge of innovation driving convergence of printed circuit board, assembly and semiconductor industries

ESI Electronics sits at the nexus

Key Takeaways

A Comprehensive Integrated, High-End Electronics Portfolio

Longstanding, defensible and leading category positions in attractive end-markets

Uniquely broad portfolio providing differentiation and more complete product offering

At the forefront and in the early phase of global, durable megatrends

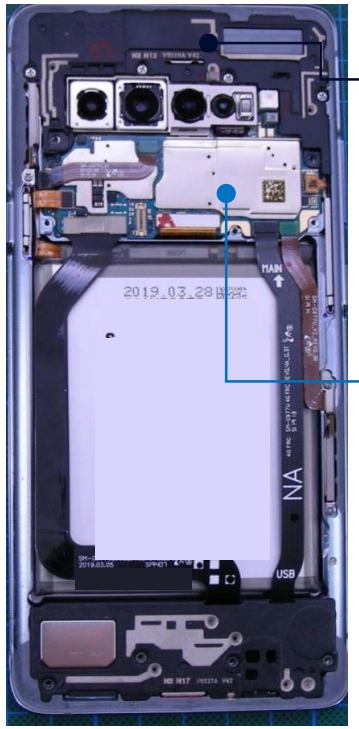
Appendix



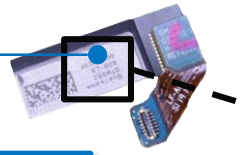
Comprehensive 5G Device Portfolio

Semiconductor
Circuitry
Assembly

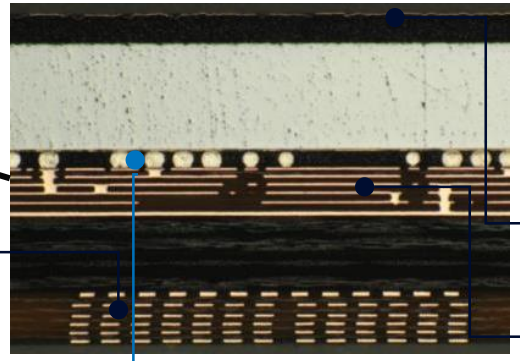
5G Smartphone



5G mmWave Antenna Module



5G Transceiver / Antenna



MID Antenna

Shield Attach

High Speed Innerlayer

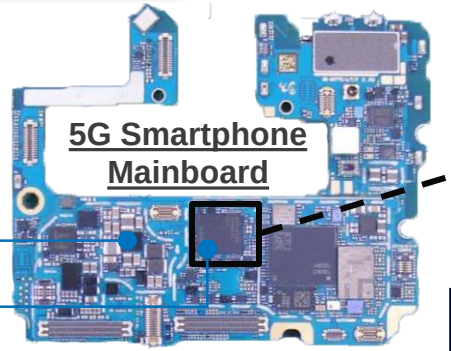
Shielding or AiP

HDI Metallization

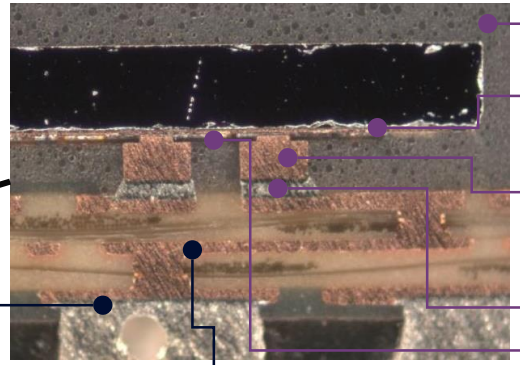
SMT Component Attach and Rework

Second Level Underfill and Encapsulation

5G Smartphone Mainboard



5G Baseband



First Level Underfill and Encapsulation

Au plating for GaAs wafer

High-Reliability Cu Pillar

SnAg Pillar Capping

Redistribution Layer (RDL)

Final Finish

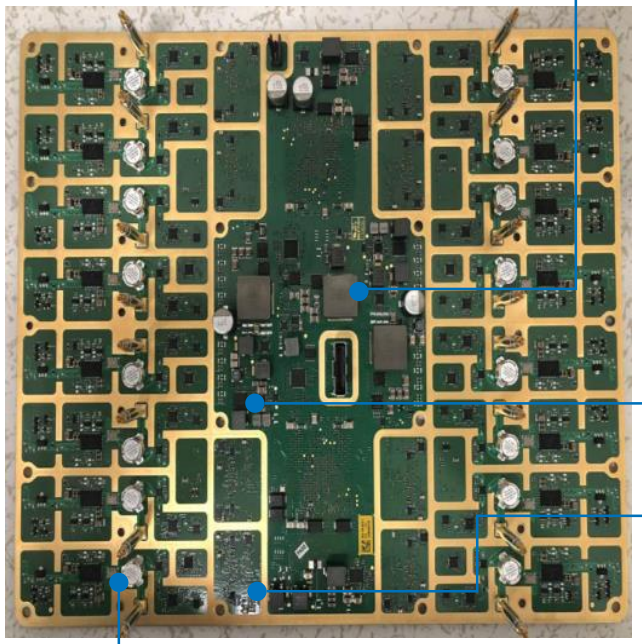
IC Substrate Metallization

Significant 5G Infrastructure Content

element solutions

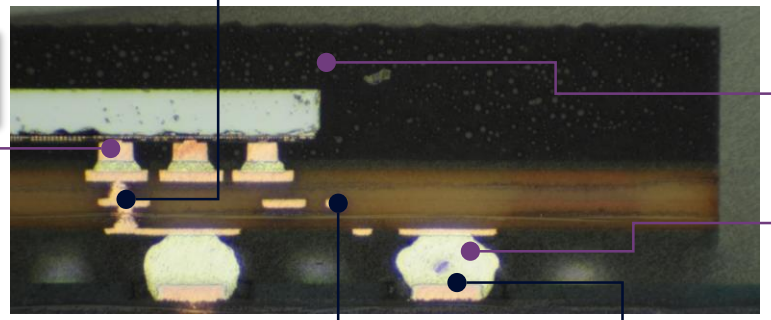
Semiconductor
Circuitry
Assembly

5G Antenna-in-Radio PCB



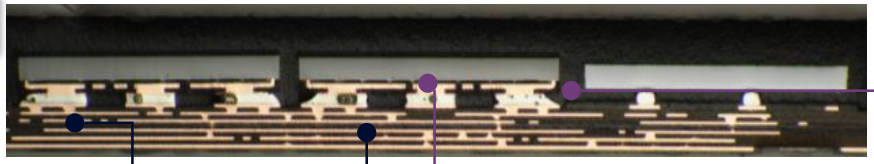
Underfill and Encapsulation
High-Reliability Cu Pillar Interconnect
SMT Component Attach and Rework
SMT Shield Attach
Through Hole Component Attach

5G Transceiver



HDI Micro Vias
Plated Shielding
Solder Sphere Interconnect
Final Finish
High Speed Innerlayers

Power Amplifier Duplexer Module



Underfill and Encapsulation
Primary Metallization
Au Plating for GaAs Wafer
Micro Via Fill / HDI

Net income attributable to common stockholders reconciliation to Adj. EBITDA

($ millions)	FY 2019
Net income attributable to common stockholders	**$92**
Add (subtract):	
Net income attributable to the non-controlling interests	1
(Income) from discontinued operations, net of tax	(13)
Income tax expense	61
Interest expense, net	91
Depreciation expense	42
Amortization expense	113
EBITDA	**386**
Adjustments to reconcile to Adjusted EBITDA:	
Amortization of inventory-step-up	1
Restructuring expense	14
Acquisition and integration costs	2
Foreign exchange loss on foreign denominated external and internal long-term debt	(32)
Debt refinancing	62
Change in fair value of contingent consideration	(17)
Other, net	1
Element Solutions Adjusted EBITDA	**417**
Less: Industrial & Specialty Adjusted EBITDA	(164)
Electronics Adjusted EBITDA	**$253**

* *Note totals may not sum due to rounding.*