

TTM Technologies, Inc. is a leading global manufacturer of technology solutions including mission systems, radio frequency (“RF”) components and RF microwave/microelectronic assemblies and quick-turn and technologically advanced printed circuit boards (“PCBs”). TTM stands for time-to-market, representing how TTM’s time-critical, one-stop manufacturing services enable customers to shorten the time required to develop new products and bring them to market. Additional information can be found at [www.ttm.com](http://www.ttm.com)

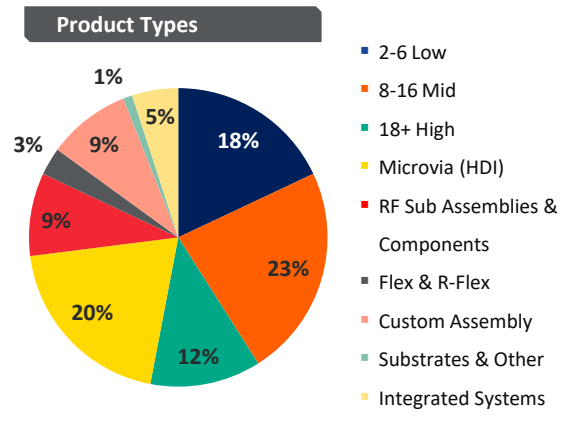
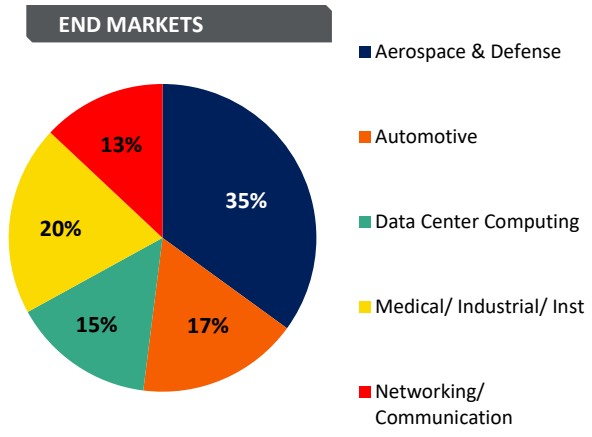
<b>Headquarters</b>	Santa Ana, CA
<b>Founded</b>	1998 - Publically Listed: NASDAQ TTMI
<b>Employees</b>	Approximately 17,900
<b>Total Facilities</b>	26 factories in operation worldwide; new factory under construction in Penang, Malaysia

- 2 Sectors, 5 Business Units**
- Aerospace & Defense Sector**
- C4ISR & Space
  - Radar Systems
- Commercial Sector**
- Automotive & Medical, Industrial & Instrumentation (“AMI&I”)
  - Communication and Computing (“C&C”)
  - RF & Specialty Components (“RF&S”)

**Operations**

## TTM’s Market Diversification

FY 2022 net sales of \$2.5B



## Global Leader in Advanced PCB Solutions

- Up to 64 layers
- Oversized large format PCB
- Flex and Rigid-Flex PCBs
- RF/microwave (“mmWave”) PCBs for wide range of frequency bands, 110GHz+
  - Amplifier, Filter, Patch Antenna, Power Dividers, Balun, etc.
- Advanced High-Density Interconnect (“HDI”) solutions
  - Sequential lamination blind and buried via technology
  - Via in pad technology
  - Copper filled and epoxy filled microvias
  - Advanced pattern plating & etching process
- High aspect ratio plating,  $\geq 30:1$
- Signal Integrity modeling, characterization and testing
  - Impedance, Insertion Loss, Back drilling, Via Structures, 3D electromagnetic (“EM”) Modelling
- Back drilling and via structures to minimize signal noise
- Advanced Materials expertise and testing
- Buried Capacitance and Buried Resistance
- Engineered Thermal Management Solutions
- Heavy copper up to 12 ounces
- Defense/Aerospace certifications; ITAR, CGP, MIL-PRF-31032, MIL-PRF-50884, MIL-PRF 55110 and 55110G, AS9100D, NADCAP
- Commercial certifications: ISO9001, ISO14001, ISO/IEC 17025, ISO27001, ISO45001, IATF16949, TL9000, QC080000

## Diversified Technology and Solutions Offering

<b>Printed Circuit Boards</b> <ul style="list-style-type: none"> <li>Conventional PCB</li> <li>Advanced HDI PCB</li> <li>Flex / Rigid-Flex PCB</li> <li>RF and Microwave PCB</li> <li>Thermal Management</li> <li>Substrate-Like PCB</li> <li>Ceramics</li> </ul>	<b>RF and Specialty Components</b> <ul style="list-style-type: none"> <li>Xinger®</li> <li>RF Components</li> <li>Resistive Components</li> <li>mmWave Filters</li> <li>Circulators</li> <li>Thermal Management Solutions</li> <li>Etched Thick Film</li> </ul>	<b>RF and Microwave</b> <ul style="list-style-type: none"> <li>Integrated Microwave Assemblies and Line Replaceable Units</li> <li>Complex RF Subsystems</li> <li>Wideband Converters and Receivers</li> </ul>	<b>Microelectronics</b> <ul style="list-style-type: none"> <li>High-Performance, Radiation-Hardened and Space-Qualified Microelectronics</li> <li>Power Management, Amplifiers and Motor Control Products</li> <li>High Temperature Products</li> <li>Custom Hybrids and Multi-Chip Module ("MCM") Design, Fab, and Test</li> </ul>	<b>Engineered Systems</b> <ul style="list-style-type: none"> <li>Integrated Radar Systems</li> <li>Air Traffic Control Signal Processing</li> <li>Integrated Sensor and Man-Portable Systems</li> <li>Mode 5 Operational Autonomous Surveillance System</li> <li>Wireless Intercom</li> </ul>
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## Advanced Technology & Specialty Assembly

<b>CoreEZ®</b> <ul style="list-style-type: none"> <li>Custom Substrate / interposer technology for RF and digital designs</li> <li>High-Performance, Radiation-Hardened product used in many applications including space</li> <li>High density &lt;25 micron L/S</li> <li>No raw material lead time</li> </ul>	<b>Advanced Ceramic Components</b> <ul style="list-style-type: none"> <li>High-Density, Multilayer Low Temperature Co-fired ceramics ("LTCC") Solutions</li> <li>Precision Thick-Film Substrates and Resistive Products</li> <li>High-Frequency Etched Thick-Film Substrates</li> <li>High-Power Resistive Components</li> </ul>	<b>HyperBGA®</b> <ul style="list-style-type: none"> <li>Industry leading high density RF substrate</li> <li>High Performance Chip Package</li> <li>High density &lt;25 micron L/S</li> <li>No raw material lead time</li> </ul>	<b>Specialty Assembly</b> <ul style="list-style-type: none"> <li>Backplane Assembly ("BPA"), Flex, RF, Heatsink &amp; Chassis Integration</li> <li>Oversize panels up to 36 x 54</li> <li>Press fit (compliant pin), Surface Mount Technology ("SMT") &amp; Through hole</li> </ul>	<b>3D Printing</b> <ul style="list-style-type: none"> <li>Prototyping and manufacturing solutions</li> <li>3 DragonFly Pro Systems</li> <li>Dedicated team of 3D Engineers</li> </ul>
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## Digital Solutions – Engineering & Manufacturing Capabilities

<b>Signal Integrity</b> <ul style="list-style-type: none"> <li>Ansys HFSS</li> <li>Polar Si9000-XFE</li> </ul>	<b>RF and mmWave Modeling</b> <ul style="list-style-type: none"> <li>Ansys HFSS</li> </ul>	<b>Power Distribution</b> <ul style="list-style-type: none"> <li>Solaria Thermal</li> <li>Solaria PCB</li> </ul>	<b>PCB Design</b> <ul style="list-style-type: none"> <li>Allegro (Cadence)</li> <li>Xpediton (Mentor)</li> <li>Altium Designer</li> </ul>	<b>Thermal Modeling</b> <ul style="list-style-type: none"> <li>SolidWorks Premium</li> </ul>
<b>Rigid / HDI PCB Fab.</b> <ul style="list-style-type: none"> <li>HDI &amp; Microvia DCAs</li> <li>Heavy Cu / BPAs (58")</li> <li>Advanced Interconnect</li> <li>HyperBGA® &amp; CoreEZ®</li> </ul>	<b>Flex/Rigid-Flex Fab.</b> <ul style="list-style-type: none"> <li>Types 3, 4 +Bookbinder</li> <li>Up to 51" Lengths (std)</li> <li>High-Speed &amp; High-Temp</li> <li>Composite Encapsulated</li> </ul>	<b>RF/Microwave</b> <ul style="list-style-type: none"> <li>Fab &amp; Assembly</li> <li>Cavities, Foams</li> <li>Large Form Factor Solution</li> <li>Development (up to 110 GHz)</li> </ul>	<b>Metal &amp; Integration</b> <ul style="list-style-type: none"> <li>Metal Fabrication</li> <li>Integrated Chassis</li> <li>Conformal Coating</li> <li>Environmental Stress Screening ("ESS") - Thermal &amp; Vibe</li> </ul>	<b>Mechanical Design</b> <ul style="list-style-type: none"> <li>SolidWorks Premium</li> <li>Creo (PTC)</li> </ul>
<b>BPA &amp; Specialized PCBA</b> <ul style="list-style-type: none"> <li>Press Fit</li> <li>SMT</li> <li>Through Hole</li> <li>Large Format</li> <li>High Mix</li> <li>Low to Medium Volume</li> </ul>	<b>Flex &amp; Rigid Flex Assembly</b> <ul style="list-style-type: none"> <li>Press Fit</li> <li>SMT</li> <li>Through Hole</li> <li>High Speed</li> <li>High Temp</li> <li>Passive/Active</li> <li>Conformal Coat</li> </ul>	<b>Custom Metal &amp; Machining</b> <ul style="list-style-type: none"> <li>Multi Axis Machining</li> <li>Turret Punch</li> <li>Bar Punch</li> <li>Water Jet</li> <li>Deburr</li> </ul>	<b>Chassis Integration &amp; ESS Testing</b> <ul style="list-style-type: none"> <li>Electro Mechanical</li> <li>Sub Rack Assembly</li> <li>COTS Systems (VPX)</li> <li>ESS Testing</li> <li>Liquid Cooled Systems</li> </ul>	