

AUTOMOTIVE

# Electrification. Connectivity. Safety.

TTM Technologies is Driving the Future of Advanced  
Automotive Electronics

ABOUT TTM

TTM Technologies, Inc. is a leading global printed circuit board manufacturer, focusing on quick-turn and volume production of technologically advanced PCBs and backplane assemblies as well as a global designer and manufacturer of high-frequency radio frequency (RF) and microwave components and assemblies. 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.

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OUR WEBSITE [WWW.TTM.COM](http://WWW.TTM.COM)



*Inspiring Innovation*



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## AUTOMOTIVE

# TTM Technologies has a proven track-record for high reliability PCB, RF and Microwave, and Engineered Solutions for Automotive applications

### WHY CHOOSE TTM?

TTM Technologies ("TTM") is committed to the continuous development of advanced solutions and expertise in Advanced Driver Assistance Systems ("ADAS"), e-mobility, and electrified powertrain systems with high current, high voltage, and high thermal load applications, and connectivity.



### Global Footprint

- Full service offering
- Product development, quick-turn, volume production, and assembly
- Seamless transfer from prototype to volume production
- Global sales and field applications support
- Worldwide manufacturing locations



### Reputation

- Trusted supplier to the Automotive industry for over 20 years
- Award-winning manufacturing facilities and teams
- Strong relationships with Tier-1 and OEMs
- High-reliability expertise
- TTM is a major supplier of HDI technology

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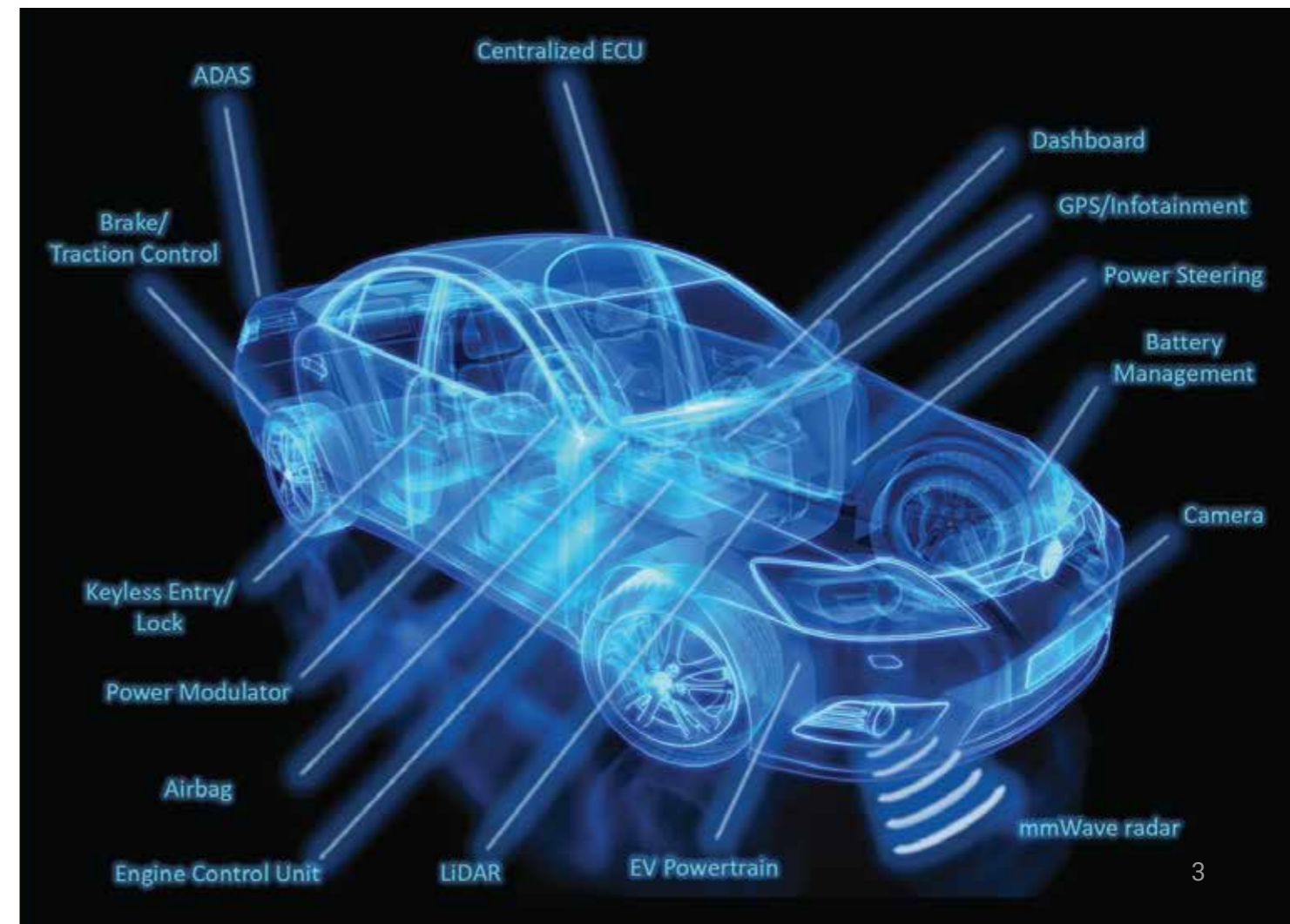
### Technology

- Ongoing capital investment for capacity and advanced capabilities to support automotive customers
- HDI, advanced HDI, and RF processing expertise
- Early technology collaboration; improved design for manufacture and cost
- State-of-the-art R&D lab to support extensive materials testing, metrology, and failure analysis capabilities



### Applications

- **Hybrid/Electric Vehicles**
  - Electrified Powertrain
  - Vehicle Charging Stations
  - Energy Storage
- **Infotainment & Connectivity**
  - Vehicle-to-Everything ("V2X")
  - Networking, Data Storage, Augmented Reality
- **Advanced Driver Assistance System ("ADAS")**
  - Autonomous Driving ("AD")
  - Sensors (LiDAR, Radar, Stereo Cameras)
- **And more...**



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## Common Stack-Up Generation

Asia materials and manufacturability incorporated into North American stack-ups.

## Reduced Risk

Greater ease and reliability when transferring part numbers from prototype site to volume site. Not to mention the peace of mind that comes from a professionally managed global supply chain and network of manufacturing facilities.

## Manufacturability For Volume: Considered From The Start

TTM has developed strategies that provide our customers with efficient, streamlined approaches to help their products seamlessly transfer from prototype to volume production across our sites in North America and Asia Pacific. The streamlined quoting, in-parallel stack-ups, Design For Manufacture (“DFM”) reviews during the tooling stage, and the efficient technical query (“TQ”) process allow our global teams to reduce risk and provide faster time-to-market and superior quality products to customers worldwide.

## Save Time & Resources

A single TQ sent to our customer, outlining all issues, valid for prototyping and production. Faster development cycles mean shorter time-to-market.

## Common Material Strategy

No need to redesign to account for different dielectric parameters; saving time and resources.



## Satisfaction is more than products and capabilities

Great products with extended capabilities are always a key to a successful business. Good experience around your offerings will improve customer satisfaction and loyalty to your brand, products, services, value proposition, and capabilities and bring in more revenue to your business in the long run. At TTM, we know customer satisfaction is delivering what is needed and what we can differentiate from others. The outbreak of the pandemic has dramatically impacted all aspects around the world. One of our customers faced the problem of “shutdowns” and “shortages” right after the Chinese New Year in 2020. Our fast responses to resolve its challenges have earned the customer’s trust in us.

## Challenges – Unforeseeable Shutdowns

Our customer had a major Printed Circuit Board (“PCB”) supply shortages as one of its key Chinese suppliers was forced to shut down, which caused a significant impact on its production timeline. With all the pressure and uncertainty, TTM Zhongshan (“ZS”) team stepped in promptly with effective risk management and contingency plan that covered all proper responses and necessary measures to recover from an unexpected factory shutdown in only three weeks. As TTM has always been one of the customer’s key suppliers, our ZS team understood and addressed the project specifications immediately and, therefore, worked closely with the customer in respect of engineering query, material pull-in, production planning, and more. Working alongside, our sales team kept close communication on a daily basis to ensure every party was on the same page.

## The Advantages of TTM Technologies – Pivot Against the Unexpected

Through this project, our ZS team once again demonstrated the ability of TTM's mentality to deliver high-level products and technical support despite a shortening project qualification process from generally one year to within a month. This tremendous achievement has gained the confidence of our customer. In return, the customer awarded an additional project to us over the next four years. It is obviously a new milestone and excitement to our team as this is going to be the first HDI project awarded by this customer. TTM has demonstrated its technical support capabilities with a quick turnaround service by aligning sales, program management, customer services, and the production planning team. We are proud to provide excellent service to our customers and be a potential partner for future projects and product development.



For more information on Automotive Solutions, please speak with your TTM Sales representative or contact us by:



[CorporateMarketing@ttm.com](mailto:CorporateMarketing@ttm.com)



[ttm.com/contact](http://ttm.com/contact)

## TTM GLOBAL LOCATIONS



### CORPORATE LOCATIONS /REGIONAL OFFICE

LOCATION	PHONE
<b>NORTH AMERICA</b>	
Global Headquarters (HQ)	+1.714.327.3000
TTM St. Louis (STL)	+1.314.727.2087
<b>ASIA PACIFIC</b>	
Commercial Sector Headquarters (CS HQ)	+852.2660.3100
	+852.2272.2222
TTM Taiwan (TW)	+886.3.280.7577
TTM Japan (JP)	+81.050.5306.2122
	050.5306.2123 (Japan Domestic Only)
<b>EMEA</b>	
TTM Germany (DE)	+49.171.285.4994
TTM India (IN)	+91.9980.047.215

### COMMERCIAL FACILITIES

LOCATION	PHONE
<b>NORTH AMERICA</b>	
TTM Chippewa Falls (CF)	+1.715.720.5000
TTM Logan (LG)	+1.435.753.4700
TTM San Jose (SJ)	+1.408.280.0422
TTM Syracuse (SYR-W)	+1.315.233.5510
TTM Toronto (TOR)	+1.416.208.2100
<b>ASIA PACIFIC</b>	
TTM Dongguan (DMC)	+86.769.8622.8000
TTM Guangzhou (GZ)	+86.20.6287.8777
TTM Huiyang (HY)	+86.752.261.7111
TTM Hong Kong (OPCM)	+852.2660.3100
TTM Shanghai (SH)	+86.21.6495.4551
TTM Suzhou (SUZ)	+86.512.6274.9282
TTM Zhongshan (ZS)	+86.760.2226.9805