Electronic Manufacturing Services
Agenda

- **About Syrma Technology**
  Organization, numbers, customers, facility

- **Technology & Manufacturing**
  Design, build, RRW, electromechanicals

- **Products**
  RFID tags, readers, solutions, magnetics, memory

- **PCB & Box-Build Assemblies**
  Products, industries

- **Contact Details**
  Get in touch with Syrma Technology
About Us

Creative & cost-efficient design, engineering, & electronic manufacturing solutions

Based in Silicon Valley and Chennai, India, Syrma Technology specializes in high-mix, flexible volume, precision OEM manufacturing with a rich supply ecosystem that serves as a catalyst for growth in the electronics manufacturing industry.
Global Partner

1. Continues Tandon Group’s 40-year legacy of developing technology manufacturing companies all over the world.

2. Accelerates turnkey electronics contract manufacturing and innovative products in RFID and magnetics. Serving 100+ OEM customers.

3. Over 200 million units of OEM products delivered in the last decade.

4. Built on a world-class manufacturing facility and supply chain network of 120+ vendors in 12 countries.

5. Now bringing IoT solutions to commercial and industrial markets, with specialization in RFID-based products.
Syrma by Numbers

Solid experience backed by data

- **Sales Growth**: Over 30% growth, two years running
- **OEM Products Produced & Distributed**: 200 million units in last decade
- **Current OEM Customers**: 100+ companies
- **Current Shipping Destinations**: 20+
- **Production Facilities**: 5
- **Total Employees**: 2000+
- **Vendor/Supplier Network**: 120+ in 12 countries
Syrma Technology
Pioneering electronics design & manufacturing

M.L. Tandon, the Tandon Group founder, started Tandon Magnetics in India.

Tandon Group launched Syrma Technology, a global electronics design & manufacturing company.

Syrma added a 20,000 sq. ft. facility near Bengaluru to make magnetic coils. RFID tags are now made here too.

Syrma added a 30,000 sq. ft. facility within Chennai’s SEZ that supports complete board & box builds.

Syrma entered into building smart products, leverage its strengths in custom RFID tags & board-builds.

Syrma started to offer repair & rework services, as well as product design services.

Syrma opened a 5th facility in Bawal for India’s high-growth domestic electronics markets.
Tandon Group Company
Leader in innovation & manufacturing for 40 years

• Manufactured first floppy drive for IBM PC and invented first double-sided floppy drive head

• Largest manufacturer of disk drives for PCs and word processors

• Developed innovative technology to improve quality and widespread use of memory and flash drives

• Launched Celetronix, first world-class EMS in India

• Launched Syrma Technology to design and manufacture RFID tags, magnetics, and electronics

• Launched MEPL to manufacture defense electronic equipment
Our Founder

M.L. Tandon

As Chairman of Tandon Group, M.L. Tandon is one of India’s most distinguished business leaders in the electronics manufacturing industry. He experienced the classic voyage and return story: from traveling to America to study in the 1960s and landing a managerial post at IBM in San Jose, to returning to India and launching several successful computer hardware and electronics manufacturing facilities in Mumbai.

During the late 70s and 80s, he led disk drive manufacturing operations for Tandon Corporation in India, producing what became the industry standard double-sided floppy drive disk read-and-write heads.

Over the last 50 years, M.L. Tandon has contributed significantly to the rise of India’s economy, helped advance the rights and family status of Indian women, and improved the lives of individuals worldwide through technological innovation. He’s actively involved in improving trade and promoting export from India, spearheading several associations.
India Expertise

Syrma Technology, a Tandon Group company

- Understands and navigates regulatory and selling environments across markets
- Supports growth opportunities in the India market through a technology incubation ecosystem
- Assists global OEMs that want to enter the India market
- Leverages local supply chain and low-cost operating environments for cost reductions
- Efficiently takes products to market in India
What We Do

Three areas of focus

**Design**
Collaborative design engineering and design for electronic manufacturing services.

**Build**
Precision electronics manufacturing capability that’s competitive and fast to market.

**Innovate**
Product innovations in custom magnetics, memory, wireless, RFID, and related IoT technologies.

**RRW**
Specialized product maintenance and improvement services.
Collaborative Product Design (CDM)

Comprehensive product design services

**Concept Co-creation**
- Define requirements with your product team
- Develop specifications
- Gather market data
- Select technology
- Develop firmware and software
- Analyze costs
- Build the first prototype

**Product Realization**
- Ready product for mass production via NPI
- Evaluate for design robustness, manufacturability, and other key attributes for successful long-term product

**Lifecycle Management**
- Manage the product lifecycle with any re-engineering and cost reduction
- Ensure lasting performance without compromising cost competitiveness or quality
Manufacturing

Focus on ongoing product innovations

• Manage product changes
• Focus on long-term success
• Manage changes in components
• Re-engineer where necessary
• Reduce costs
• Deliver lasting performance
Design & Engineering

Hardware, software, & firmware

- Hardware design & development
  - Analog & digital
- Software development
  - C++, VB, .NET, etc.
- Firmware development
  - Microcontroller/FPGA/DSP-based products
- RFID & microwave
- Power systems

- Embedded systems
- Mechanical housing design & tooling
- Industrial products
- Component, validation, & test engineering
- Reverse engineering, & re-engineering
- CAD services
  - E-CAD (schematic capture, PCB layout)
  - M-CAD (2D/3D)
- BOM cost reduction, alternate sourcing
Our Design Process

Product Design Services

- Customer input & product requirements
- Generate product design specifications
- Overall block level architecture design
- Identification of key components/building Blocks and circuit design for specific controller/processor/DSP/FPGA
- Component engineering, BOM, & AVL finalization
- DFx engineering, PCB layout, mechanical enclosure design
- System interconnect diagram, cable harness development
- Environmental testing (in-house/third-party facilities)
- EMC compliance/safety & regulatory certifications (working with test labs)

Test Development Services

- Function test
- In-house test fixture
- ATE programming
- Software QA
- X-ray inspection
- Failure analysis
- Equipment calibration

New Product Introduction Services

- 5-stage (phase gate) design and NPI structure
- Dedicated manufacturing transition team
- Program manager determines budget & scheduling
- Cross-functional team reviews
- Pilot runs to benchmark quality in advance of full production
Our Customers

Create products for diverse industries

• Aerospace
• Automotive
• Consumer
• Defense
• Healthcare
• Industrial
• Opto-Electronics
• Power
• RFID/Wireless
• Smart Homes
• Software
• Telecom
Manufacturing
Our Facilities

World-class facilities for export operations

- Flagship Chennai location opened in 2006, within the Chennai Special Economic Zone (SEZ) for electronics manufacturing
- Primary facility within 90 minutes of Chennai seaport; 20 minutes to international airport
- Convenient import-export access with rail, road, and air connectivity linking rest of India and beyond
- Infrastructure advantages with faster import and export clearances
- Certified for ISO 9001, ISO 13485, ISO 14001, OHSAS 18001, & IATF 16949, ANSI/ESD S20.20-2014
- Favorable labor force availability, both skilled and unskilled, matching scalable customer demand
- 2,000+ employees across 4 locations/5 facilities:
  - Chennai SEZ
  - Bargur Domestic Tariff Area (DTA)
  - Nashik DTA
  - Bawal DTA
PCB Assembly

Fast placement machines

- Multiple Fuji SMT lines at our main facility
- Total placement capacity of 200,000 components per hour with 40-micron placement accuracy capable of 3-sigma
- Component ranges from 0201 to BGA and uBGA & CSP up to 55 mm square; fine pitch placement down to 12 mil
- Board size: 500 x 450 mm; board types: rigid, flex, ceramic substrate
- Placement machines: Fuji, Universal, Yamaha; screen printers: MPM Accuflex; reflow ovens: Electrovert, Heller; wave soldering: Electrovert, Ersa, Seho
- Solder paste inspection (SPI): Koh Young, AOI - Vitrox, conformal coating - manual and automatic with multi-nozzle spray with UV check chamber; manufacturing defect analyzer (TRI-518); router/depanelizer (manual and automatic systems); BGA repair station; Fuji Trax software for traceability; laser marking machine
System Integration & Box Assembly

Support large & small volume orders

• Dedicated team in place to support:
  o Sub-system and full system integration
  o HiPot, functional, and system level testing
  o System configuration to unique order requirements
  o Firmware and software loading
  o Final configuration validation and testing
  o Packing in commercial or custom packaging for specific customers together with hardware, manuals and other requirements.

• Able to support one-piece flow models for volume orders or a one-off model for smaller orders

• Domestic and international drop ship to customers

• Semi-cleanroom experience for optical sensors
Reliability & Testing

Variety of testing equipment

- Profile projector
- 125Khz LCR meter
- Solder paste viscosity meter
- Solder paste height measurement
- Customized automated test equipment
- X-ray inspection system
- ATT Micro tester for inductance, turns ratio, DC resistance
- Environment chamber
- Thermal shock chamber
- Vibration and bump tester
SEZ Location Benefits

**Inbound**
- Imports: Duty + GST free
- Domestic (Within state purchases): GST free
- Domestic (Interstate purchases): GST free

**Outbound**
- Exempt from duties & taxes
- Export or interzone transfer (other SEZs in India)
- Applicable duties & taxes
- Domestic sales

Syrma Technology (SEZ)
Our Facilities

World-class facility for domestic operations

• 75 minute drive from IGIA Airport, Delhi. Located in the Domestic Tariff Area (DTA) of Bawal, Rewari district of Haryana.

• Situated at HSIIDC Industrial Area, the heart of Delhi Mumbai industrial corridor.

• Dedicated state-of-the-art manufacturing facility for India’s national market.

• 26,000 sq. ft. facility with capacity to expand to 5X its current production output.

• SMT manufacturing at Class 10K SMT cleanroom and TH assembly at Class 100K cleanroom

• Site began operations in June 2018
PCB Assembly

SMT assembly in Class 10K cleanroom

- High speed Fuji SMT line
- Total placement capacity of 200,000 CPH
- Fine pitch placement up to 12 mil
- Component ranges from 0201 mm to BGA and uBGA, CSP up to 55 mm square
- ±25 micron placement accuracy with 3-Sigma capability
- Board Size: 534 x 610 mm
- Board types: Rigid, Flex, Ceramic Substrate
- Online AOI: Zenith Lite
- Syrma Traceability and Control (STAC) for traceability systems
Backend Assembly

TH assembly in Class 100K cleanroom

- Automated TH components assembly
- Axial and radial machines 12K CPH each
- HT 6 x 2 M manual insertion line
- Wave soldering machine: WS 450(JT) with isolated board fluxing unit
- PCBA auto router (Aurotek)
- Automatic conformal coating machine (Nordson)
System Integration & Box Assembly

Backend process in Class 100K cleanroom

- Dedicated product assembly lines
- Sub-system and full system integrations
- Firmware and software loading
- Final configuration, validation, and testing
- Packing in commercial or custom packing for specific customer requirements
Reliability & Testing

Equipment infrastructure

- In-circuit tester (ICT): TR5001
- 3D online X-ray: XYLON Cheetah
- Customized automated test equipment
- Video measuring machine (VMM)
- Extensive debugging and failure analysis capability for complex products
DTA Location Benefits

**Inbound**
- Imports: Applicable duty & GST (credit allowed)
- Domestic (within state purchases): GST applicable (credit allowed)
- Domestic (interstate purchases): GST applicable (credit allowed)

**Outbound**
- Domestic sales: GST applicable (credit allowed)
- Export or interzone transfer (other SEZs in India): Applicable duties & taxes
**Import & Export by Air**

**Import by air**
- Pre-alert & shipping documents (Day 0)
- Flight arrival (Day 1)
- Filing bill of entry for customs assessment (Day 1)
- Handing over cargo to IAAI; stored at their warehouse by airlines (Day 1)
- Processing of documents & clearance (Day 1)
- Upon release of cargo by forwarder delivers cargo to Syrna

**Export by air**
- Request or hands over shipping request to logistics (Day 0)
- Cargo + shipping doc ready & given to nominated forwarder (Day 1)
- Document filing with customs for assessment (Day 1)
- Self examination & sealing the packages (Day 1)
- Sealed packages handed over to nominated forwarder for export (Day 1)
- Process documents at air cargo complex & load shipment into aircraft (Day 1)
- Flight departure (Day 1)

**Notes:**
- Import by air (maximum 2 days)
- Export by air (single day)
Quality Assurance

Global ISO certifications

- Philips Sustainability Audit Green-Rated Supplier
- Certified for ISO 9001, ISO 13485, ISO 14001, OHSAS 18001, & IATF 16949, ANSI/ESD S20.20-2014
- Assembly technicians are certified J-STD-001 specialists
- Quality control managers & production experts are IPC-A-610 certified
- Maintains all requirements of IPC 610 Class 3 (Class-2 standard) and ANSI/NCSL Z540.3
- Sophisticated, automated optical inspection (AOI) equipment checks. PCB assemblies are fully inspected for various potential defects
- X-ray inspection methods check solder integrity of leadless components
- Highly trained test engineers provide automated in-circuit testing, functional testing, and environmental stressing to exact customer specifications
Nashik Facility for Electromechanical

Sheet metal, machining, & surface treatments

- Custom panels and electromechanical subassemblies
- Amada presses, press breaks, and turret punches
- Amanda bending machines
- Computer numeric control (CNC) machining
- Serves consumer, energy, industrial, and telecom industries
Electromechanical Capabilities

Supports turnkey manufacturing

Sheet Metal/Stamped Parts
- Including HR, CR, pre-coated sheet, ferrous, non-ferrous, & aluminum
- Stamping material thickness from 0.25 to 9.98 mm (0.01 to 0.393 in)
- Part size from 2 mm to 3 m (.07 in to 10 ft)

Casting/Machining
- Pressure die casting in aluminum, mazak (zamak)
- Hot or cold chamber die casting
- Part wt 1 to 500 gm or 1 by ½ m by volume

Surface Treatment
- Powder coating
- Electroplating in silver, tin, zinc, & copper, as well as anodizing process
# Quality Assurance

5 types of QA processes & 20 different tests

<table>
<thead>
<tr>
<th>Supplier Quality Assurance</th>
<th>Process Quality Assurance</th>
<th>Outgoing Quality Assurance</th>
<th>Reliability Testing</th>
<th>System Quality Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• New supplier qualification</td>
<td>• In-process yield monitoring &amp; enforcement for improvement</td>
<td>• Outgoing sampling inspection</td>
<td>• Reliability &amp; safety tests planning &amp; execution for the incoming parts</td>
<td>• New quality systems implementations</td>
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<tr>
<td>• Supplier performance feedback &amp; corrective actions</td>
<td>• Periodic process audits</td>
<td>• Corrective actions for lot rejections at OQA</td>
<td>• Quality system audits</td>
<td>• Periodic supplier process audits</td>
</tr>
<tr>
<td>• Periodic supplier process audits</td>
<td>• Qualification of new products</td>
<td>• Monitoring the quality level of our products at customer side &amp; improvement actions</td>
<td>• Documentation control</td>
<td>• Incoming parts inspection/source Inspection</td>
</tr>
<tr>
<td>• Incoming parts inspection/source Inspection</td>
<td>• ECN/DN verifications</td>
<td>• Customer feedbacks, analysis &amp; corrective actions</td>
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<tr>
<td>• First article evaluation</td>
<td>• Product failure analysis</td>
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<tr>
<td>• Incoming components failure analysis</td>
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</tbody>
</table>

5 types of QA processes & 20 different tests
Quality Management

ISO 9001, ISO 13485, ISO 14001, OHSAS 18001, & IATF 16949, ANSI/ESD S20.20-2014

Environmental

Automotive Products

Medical Devices
Order Fulfillment
Cost, quality, & on-time delivery

Supply Chain Management

- Supply chain is fully integrated from sourcing of raw materials to OEM components delivered to factory
- Use a combination of OEM and distributors to ensure streamlined supply, as well as flexibility
- Geographic redundancy is taken into account when selecting second sources; hubbing
- Safety stock for critical sole source/single definitions source components
- Key mechanical assemblies are co-located within Syrma facilities by suppliers or located in close vicinity
- Supply chain functions have a dedicated focus on commodity development independent of planning and buying activities
- Commodity specialists for key components and assemblies
Shipping & Repairs

Export & import services

Export & Import

• Our primary facility is in a Special Economic Zone (SEZ)

• Importing raw materials into India is streamlined and doesn’t attract customs tariffs

• Chennai has sea and air connectivity to ensure fast and cost competitive exports

• Fast-tracked customs clearances for all products entering and leaving the SEZ

• Can fulfill in India while competitively optimizing taxes, import duties and VAT; fulfillment available to direct ship to end customer

Post-Sale Repair & Services

• Outbound and reverse logistics management, custom tailored repair services, warranty repair, and end-of-life product cycle management
Repair & Rework Services
Repair & Rework Services
Product maintenance & improvement

REWORK
Printed circuit board (PCB) manufacture and rework, including BGA. State-of-the-art equipment and IPC-certified operators ensure our work is done quickly, correctly, and reliably.

REFURBISH
Internal or cosmetic replacement, such as adding or replacing circuits, and swapping mechanical components and outer casings.

REPAIR
Analysis and repair of PCBA, embedded firmware, and components. Re-test to ensure sure return to original out-of-the-box functionality.

MODIFICATION
Comprehensive board modification services, including circuit modification of outer and inner layers, drill, etch, fill, and re-drill of tooling holes.
Failure Analysis
Pinpointing & correcting root causes

- Comprehensive failure analysis (FA) of multiple electronic assemblies and components:
  - Printed circuit boards (PCBs) and printed wiring boards (PWBs)
  - Integrated circuits
  - Memory chips
  - Transistors, diodes, capacitors, and resistors
  - LEDs, power modules, and more

- Able to analyse devices, components, and assemblies for specific defects, such as ESD, EOS, shorts, opens, corrosion, solderability, vibration, thermal fatigue, and connector failures.
Ball Grid Array (BGA)

Full range of BGA rework & repair services

- BGA services offered:
  - BGA component removal
  - Site prep
  - Replacement
  - Salvage
  - X-ray or optical verification
  - Circuit design changes
  - BGA pad repair
  - Trace repair
  - Mask repair
  - BGA underfill

- Comprehensive reballing services available, such as pad and trace repair for boards with BGAs, as well as process troubleshooting of BGA issues during initial assembly
Design for Multiple Verticals

- RFID/Wireless
- Power
- Industrial
- Defense
- Aerospace
- Telecom
- Healthcare Tech
- Opto-Electronics
- Automotive
- Software
Design for Performance

We focus on ongoing product innovations and solutions as the product changes to ensure long-term success.

- Manage changes in components
- Re-engineer where necessary
- Reduce costs
- Deliver lasting performance
Engineering Services

Solution engagement examples

• Design and development of airborne power supply for mission-critical equipment
• Automated test equipment for a global power products OEM
• Industrial control system for bike share rental installation
• Complete reverse engineering of complex defense equipment
• Embedded solution for two-wheeler engine control, emphasizing fuel optimization, for a leading European automotive component maker
• Wireless transceiver system for reaction testing for US startup
• Value-add engineering for telecom GSM product
• Concept-to-completion for a dental imaging medical product
• Communication interface unit with audio/video/data links
• Software development (GUI/device drivers/applications) offering local customization for a European set top box design house
Manufacturing Services

Precision electronics manufacturing services with superior capabilities from concept to completion for sustainable long-term product and mass production.

- Quality end-to-end parts procurement
- 360° prototyping and electronics testing
- Evaluate design robustness, manufacturability, and other key attributes
- World-class production infrastructure, assembly services, and manufacturing
Our Equipment Advantage

We own and use state-of-the-art equipment that provides optimal capacity utilization which passes savings in time and cost to our clients.

- PCB assembly
- Systems integration & box build assembly
- Electromechanical assembly
PCB Assembly

- Multiple Fuji SMT lines at our main facility
- Total placement capacity of 200,000 components/hour with 40-micron placement accuracy capable of 3-sigma
- Component ranges from 0201 to BGA and uBGA & CSP up to 55 mm square; fine pitch placement down to 12 mil
- Board size: 500 x 450 mm; board types: rigid, flex, ceramic substrate
- Placement machines: Fuji, Universal, Yamaha; screen printers: MPM Accuflex; reflow ovens: Electrovert, Heller; wave soldering: Electrovert, Ersa, Seho
- Solder paste inspection (SPI): Koh Young, AOI - Vitrox, conformal coating - manual and automatic with multi-nozzle spray with UV check chamber; manufacturing defect analyzer (TRI-518); router/depanelizer (manual and automatic systems); BGA repair station; Fuji Trax software for traceability; laser marking machine
System Integration & Box-Build Assembly

- Dedicated team in place to support:
  - Sub-system and full system integration
  - HiPot, functional and system level testing
  - System configuration to unique order requirements
  - Firmware and software loading
  - Final configuration validation and testing
  - Packing in commercial or custom packaging for specific customers together with hardware, manuals and other requirements.

- Able to support one-piece flow models for volume orders or a one-off model for smaller orders

- Domestic and international drop ship to customers

- Semi-cleanroom experience for optical sensors
Nashik Facility for Electromechanicals

- Custom panels and electromechanical subassemblies
- Amada presses, press breaks, and turret punches
- Amanda bending machines
- Computer numeric control (CNC) machining
Electromechanical Capabilities

Vertical integration to support turnkey manufacturing

**Sheet Metal/Stamped Parts**
Including HR, CR, pre-coated sheet, ferrous, non-ferrous and aluminum
Stamping material thickness from .25 to 9.98 mm (0.01 to 0.393 in)
Part size from 2 mm to 3 m (.07 in to 10 ft)

**Casting/Machining**
Pressure die casting in aluminum, mazak (zamak)
Hot or cold chamber die casting
Part wt 1 to 500 gm or 1 by ½ m by volume

**Surface Treatment**
Powder coating
Electroplating in silver, tin, zinc, and copper, as well as anodizing process
Product Types
Assemblies

PCBA

Box Build
Industry Focus

- Telecom
- Medical
- Home Automation
- Industrial
- Automotive
Telecom

Controller Boards

Relay Boards

Power Supply Boards

Modem Boards
Antennas

System integration products for telecom industry

- Outdoor GSM cellular antenna system for communication infrastructure in production for last five years
- Production build size ranges from 1K to 20K per month
- Ships worldwide
- Local sourcing of all components except 2 custom connectors from China
- Sheet metal, electronics and cable assemblies manufactured in house
- Functional and system level testing on three variations of antennas
Medical

Smart Cane for Visually Challenged People

X-ray Machine Control & Power Board
Industrial Products for industrial applications

- Industrial Applications Circuit Boards
- System-On Modules
- Industrial Camera Control Boards
- Vending Machine Power Supply Boards
- Air Conditioner Control & Power Supply Boards
- Talking Currency Identifier for Visually Challenged
- Speed Sensor Boards
- Industrial Application Circuit Boards
- RF Wireless Boards for Energy Meters
- Industrial Boiler Application Boards
- Load Cell Application Boards
- Welding Machine Boards
- RFID Readers
- Bike Rental Kiosk Board
- Industrial Camera Control Boards
- Vending Machine Power Supply Boards
- Air Conditioner Control & Power Supply Boards
- Talking Currency Identifier for Visually Challenged
- Speed Sensor Boards
- Industrial Application Circuit Boards
- RF Wireless Boards for Energy Meters
- Industrial Boiler Application Boards
- Load Cell Application Boards
- Welding Machine Boards
- RFID Readers
- Bike Rental Kiosk Board
Industrial

Solar Inverter

Power Distribution Assembly

Automatic Voltage Control Board
Industrial

Hybrid Controller

Automatic Lock Assembly
Automotive

- Industrial vehicle light systems for commercial construction vehicles made for UK and USA.
- PCBA and box build assembly production for three years with build size with 800/month
- Functional and system level testing
- Custom packout with documentation and accessories
Automotive

Beacon Lamps

LED Driver Assembly

Vehicle Monitoring Device
More System Integrations

- Set top box for audio visual systems made for USA. 2U box with multiple PCBAs
- Functional and system level testing
- Firmware and software loading with final configuration per end customer

- Eye tracking data collection system made for USA
- PCBA and box build assembly production for one year with build size ranges from 500 to 100 per month
- Functional and system level testing
- Class A surface finish for all outer surfaces due to high quality cosmetic requirements
Power Enclosures

Products for energy service providers
Sheet Metal/Casted Parts

Precision engineered mechanical parts

Currently producing 37 different sheet metal assemblies for global OEM. EAU’s vary from 21-50 for each assembly.
Additional Products & Services

Magnetics

RFID

Memory
Magentics

Custom magnetics & magnetic components

• Global OEM manufacturer of high performance magnets, transformers, precision magnetics, coils, and inductors in highly customized versions in many industries.
• Designs, produces and supplies OEM magnetic components that flawlessly perform with little or no maintenance for extended periods of time.
• Powered by highly qualified electronic engineers and sophisticated magnetics design infrastructure capital.
• Used in machineries, motors, solar panels, automobiles, aircrafts, batteries, and more in range of critical industrial components.
• Supports entire lifecycle of magnetic products:
  • Prototyping of magnetics
  • Conceptualization
  • Primary design
  • Optimizing designs
  • Validation testing
  • Pre-production trials
RFID Tags & Inlays

Optimized for IoT applications

- Designs, engineers and manufactures industry standard tags and inlays in different form factors for applications in LF, HF, and UHF.

- Provides reliable, automated asset management and transaction systems to reduce expenditure and waste.

- Supports complex IoT implementation by empowering assets to communicate with each other and reduce complexities inherent to manual application.

- Integrates with smart devices, cattle, vehicle, furniture, machinery, computers, supplies, and more increased reliable data accuracy.
Memory

Custom memory modules & USBs

- Global OEM manufacturer for a wide-ranging memory product portfolio in addition to a strong domain in test solutions and custom product development.
- Standard products include memory modules, USB flash drives, and chip testing solutions.
- Supply customized high capacity USB flash drives in different shapes and sizes, 100% tested and in OEM packaging, if required.
- Our factories are qualified by Samsung, Micron, Spectec, Corsair, PNY, PDP, and Avant.
<table>
<thead>
<tr>
<th>Customer</th>
<th>Challenge</th>
<th>Syrma Delivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Power Conversion OEM</td>
<td>Meet challenging price competition for custom magnetics</td>
<td>✓ We sampled and obtained approval for 37 different products in 6-month span</td>
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<td>✓ New business model allowed the OEM to become more competitive in the market and better defend their market position versus global competition</td>
</tr>
<tr>
<td>EU Inverter Manufacturer</td>
<td>OEM needed a partner for high running components</td>
<td>✓ We created dedicated prototyping team to work on Component Engineering and First Article submission</td>
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<td>✓ First 6 months completed development and launch for 8 different components types</td>
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<tr>
<td>American Multinational</td>
<td>Alternate source to China</td>
<td>✓ Our engineers optimized the cost through alternate sourcing</td>
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<tr>
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<td>✓ Initial samples were approved Syrma quality was appreciated</td>
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<td>✓ Obtained PO for 8 types</td>
</tr>
<tr>
<td>EU Filter Manufacturer</td>
<td>A low cost high volume manufacturer</td>
<td>✓ We worked with EU based RFI Filter manufacturer</td>
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<tr>
<td></td>
<td></td>
<td>✓ Manufacture and supply one container every month</td>
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<tr>
<td></td>
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<td>✓ Single source for more than 6 years now</td>
</tr>
</tbody>
</table>
## Case Studies

Some of our success stories

<table>
<thead>
<tr>
<th>Customer</th>
<th>Challenge</th>
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</thead>
<tbody>
<tr>
<td>Dental imaging OEM with main product focus on North American and European markets</td>
<td>Adapt existing IP into cost-efficient product line for introduction to India and other emerging international markets.</td>
<td>✓ Collaborative reengineering of product PCBs, hardware, and firmware. ✓ Cost-conscious sourcing of sensors and other components. ✓ Transition to volume manufacturing at Syrma facilities.</td>
</tr>
<tr>
<td>Maker of MIL-SPEC aerospace SAR radar systems</td>
<td>Develop power supply unit for aircraft-mounted transmitter/receiver modules, within size/weight constraints.</td>
<td>✓ Custom designed unit, using low-current DC modules for maximum heat dissipation within performance parameters. ✓ Passed customer’s extensive test processes, per MIL-STD requirements.</td>
</tr>
<tr>
<td>Urban bike-sharing service provider, US and Europe</td>
<td>Develop proprietary end-to-end technology; kiosk structure, RFID controllers, lock mechanisms and other hardware, embedded software.</td>
<td>✓ Design validation, prototype construction, and initial field test deployment within six-month timeframe.</td>
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## Case Studies

### Manufacturing engineering

<table>
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<tr>
<th>Customer</th>
<th>Challenge</th>
<th>Syrma Delivers</th>
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<tbody>
<tr>
<td>India Defense Department</td>
<td>Update and enhance outdated 20-year-old test device for monitoring fire control systems in tanks.</td>
<td>✓ Complete “black box” re-engineering, duplicating all functions of original equipment. ✓ Development of control board, assemblies, calibration points, and power frequencies.</td>
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<tr>
<td>Globally-branded power conversion product OEM</td>
<td>Develop automated test equipment (ATE) to accommodate high volume demand of new product from customer’s manufacturing facilities.</td>
<td>✓ Instrumentation engineering and custom test development by dedicated project team. ✓ Critical end solution delivered within 3 months, far shorter than normal development cycle.</td>
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</table>
# Case Studies

**Software & Hardware Customization – STB/Telecom Industry**

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| STB/Telecom Industry OEM | Front-ending with system integrators on technical aspects and adapting localization requirements:  
• Product Enhancement  
• Product Customization  
• Video/Audio Decoding Development (MPEG2/MPEG4/AC3)  
• High Speed Multi-Cast and Internet Access Environments | ✓ Allocated exclusive development team allocation for off-shore development  
✓ Onsite Training and Development Support at Customer Premises |

Application software development:  
• EPG  
• GUI Development & Modification  
• Device Drivers  
• Games Development  
• Recording & Playback  
• Teletext
Case Studies

Value Engineering – Telecom Industry

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</table>
| Wireless telecom equipment OEM | Sought to manufacture products in India for domestic distribution, bypassing import tariffs for outside countries. | ✓ Arranged meetings with Government officials to discuss tax breaks and other incentives.  
✓ Cost-effective sourcing of materials with local suppliers.  
✓ Estimated 5-10% BOM reduction vs. other Asian manufacturers. |
Our Guarantee

End-to-end electronics OEM manufacturing services

• Globally accredited manufacturing brand.
• “One-stop shop” for all end-to-end electronics manufacturing requirements.
• Excels at managing high technology product development lifecycles and manufacturing operations.
• State-of-art manufacturing facilities and highly efficient supply chain connecting our solutions to your requirements.
• Powered by a team of highly experienced technocrats, engineers, and management team.
• Superior IoT, NFC, and M2M capabilities.
• Proven ROI in all our engagements and operations.
• Manages costs, labor, and delivery commitments
• Minimizes risks and seizes opportunities
• Gold standard customer service
• 40 years of technology legacy as a part of the renowned Tandon Group, which knows how to build successful and entrepreneurial businesses in the emerging India market.
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