Distribution | System Solutions | Engineering
Product Portfolio 2020
Since its foundation TRS-STAR GmbH focused on distribution of electronic components, displays and assemblies for industrial customers as well as the Retail Market. The portfolio scopes many well-known manufacturers providing the following attractive product groups:

- IPC Systems
- IPC Boards
- Displays
- Memory & Storage
- Batteries
- Power Components
- Frequency Components
- LED / Lighting
- PEMCO
- GPS Tracker / Routers
- Programmable Logic
- Lighting systems

Since 2014 TRS-STAR has an own development center with a team of long-term experienced engineers coming from various industry sectors. The core competence of this team covers a broad spectrum of complex applications related to Hard- and Software.

In the range of Sensor Systems, a fine selection of high-end tracker solutions are available, being designed for tracking vehicles, persons and assets. Based on our long-term partnership with leading manufacturers of trackers, system integrators and network providers, we are in the position offering standard solutions but customized in terms of hard-, firm and Software.

Besides distribution, TRS-STAR also offers a service for excess and shortage management. Our expansive network of global suppliers, combined with our technical expertise, enable TRS-STAR to source any component required. Send us your shortage and hard to find requirements or check for stock and availability online on our webpage. Customers take benefit from our extensive know-how which is based on 20 years of experience. Increase your working capital by choosing TRS-STAR to market your overstock according to your personal needs by setting up a consignment agreement, selling your excess to TRS-STAR, or letting us promote your overstock through the worldwide market.

It would be our pleasure, if you would give us the chance to convince you about our competences and strengths.
Product Portfolio and Services

Engineering

Portfolio

- IPC Systems
- IPC Boards
- Displays
- Memory & Storage
- Batteries
- Power Components
- Frequency Components
- LED / Lighting
- PEMCO
- GPS Tracker / Routers
- Programmable Logic
- Lighting systems

Services

- Sourcing of EOL (End of Life) Components
- Sourcing of Allocation Components
- Implementation of System Solutions
- Overstock Management
- Technical Support
- Implementation of Logistics Concepts
- Appropriate and professional Warehouse Logistics
Products

IPC Systems

- Industrial PCs
- Panel PCs
- Rackmount
- Tablets/ Mobile
- Digital Signage
- PoS/ Kiosk
- Monitors

| Industrial PCs | Panel PCs | Rackmount | Tablets/ Mobile | Digital Signage | Digital Signa- | PoS/ Kiosk | Monitors |
|----------------|-----------|-----------|-----------------|-----------------|ture | |
| Embedded       | Fanless   | Expandable | Ruggedized      | Wide-Temperature | Barcodes | Industrial | Rugged | High Performance | Medical | Open Frame |
| Avalue         |           |           |                 |                 |             |           |          |                 |         |           |
| Elcom          |           |           |                 |                 |             |           |          |                 |         |           |
| Kontron        |           |           |                 |                 |             |           |          |                 |         |           |
| LCD World      |           |           |                 |                 |             |           |          |                 |         |           |

IPC Boards / CPUs

- Industrial Motherboards
- SBCs
- SOM
- CPUs

<table>
<thead>
<tr>
<th>Industrial Motherboards</th>
<th>SBCs</th>
<th>SOM</th>
<th>CPUs</th>
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<tbody>
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<td>ATX</td>
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<tr>
<td>AMD</td>
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</table>
## Products

### Displays
- TFT-Displays
- LC-Displays (Passiv)
- Capacitive Touches
- Resistive Touches
- OLED Displays
- E-Paper Displays
- Controller Boards
- Camera Modules

<table>
<thead>
<tr>
<th>Displays</th>
<th>Holitech</th>
<th>DLC</th>
<th>LCD World</th>
<th>Winstar</th>
<th>Riverdi</th>
<th>RCL Display</th>
<th>Mildex</th>
<th>TouchNetix</th>
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</table>

### Programmable Logic
- FPGA
- ASIC

<table>
<thead>
<tr>
<th>FPGA</th>
<th>ASIC</th>
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<tbody>
<tr>
<td>TRION®</td>
<td>TRION® TITANIUM</td>
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<tr>
<td>TOOLS</td>
<td>EFA-BOARDS</td>
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<td>DASHSHEETS</td>
<td>ANALOG</td>
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<td>DIGITAL</td>
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<td>MIXED SIGNAL</td>
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| Efinix            |          |
| Serma             |          |
Products

Memory & Storage

- DRAM Memory Modules:
  U-DIMM, SO-DIMM, ECC-DIMM, ECC-REG-DIMM
- Flash Storage:
  Memory Card, embedded Card, SSD, USB
- HDD

<table>
<thead>
<tr>
<th>DRAM Memory Modules*</th>
<th>Flash Storage</th>
<th>HDD</th>
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<tbody>
<tr>
<td>U-DIMM</td>
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<td>ECC-REG-DIMM</td>
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<td>USB</td>
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<td>HDD</td>
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*wide temperature / anti corrosion possible as additional feature

Batteries

- Cell: Li-Ion, NiMh, NiCd, Alkaline
- Battery Pack: Li-Ion, NiMh, NiCd
- Lead Acid: VRLA, AGM
- Charger
- DC - UPS Lithium

<table>
<thead>
<tr>
<th>Cells: Li-Ion, NiMh, NiCd, Alkaline</th>
<th>Battery Packs: Li-Ion, NiMh, NiCd</th>
<th>Lead Acid: VRLA, AGM</th>
<th>Chargers</th>
<th>DC - UPS Lithium</th>
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<td>Light Gears</td>
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</table>
## Products

### Power Components

- **Power Discrete:** Mosfets, IGBTs, Diodes, Rectifiers, Thyristors, Triacs
- **Integrated Circuits:** Power Management ICs & Special ICs
- **Power Supplies:** AC-DC & DC-DC Converters & LED Drivers
- **Passive Components:** Transformers & Inductors, Filters, Ceramic- & HV-Capacitors

<table>
<thead>
<tr>
<th>UTC / Unisonic Technology</th>
<th>YDS / Yuan Dean Scientific</th>
<th>Trinno Technology</th>
<th>EIC Semi</th>
<th>ACAP</th>
<th>Magic Power</th>
<th>Fenghua Advanced Technology</th>
<th>Wayon</th>
<th>Ansas Semiconductors</th>
<th>Mornsun</th>
</tr>
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</table>

### Frequency Components

- **Crystals**
- **Oscillators**
- **Filters**
- **Duplexer**
- **Multiplexer**
- **Resonators**

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<tr>
<th>TST</th>
<th>SGC Technologies Inc.</th>
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Products

LED / Lighting

- COB Modules
- SMD LEDs
- Lamp LEDs
- COB Series
- Numeric LED Displays
- UV + IR LEDs
- LED Modules & LED Light Stripes
- Automotive LEDs

* We design and produce customer-specific COB modules outside of the standard designs.

PEMCO

- Switches
- Relays
- Connectors
- Terminals
- Cables

* ECE
* Deca
* Vega
* Samwon
* Gabou
The deployment of recent GPS-based tracking solutions for vehicles, assets and people as well as animals has more and more become a tool to analyze and optimize complex processes. They offer following advantages:

- Real-time location
- Logging and monitoring of operating statuses, sensor data, alarm contacts, etc.
- Remote controlling and triggering of switches, relays and alarm signals
- Establishing voice communication
- Data transfer from and to external devices

Our platform visualizes the data and puts it in relation to relevant figures. These intelligent reporting and analysis features (drivers log, green driving assessment, operation times, transit and turnover times, etc.) offer deep insights to complex processes. Thus allowing to optimize and automatize and thereby to reduce costs. The obtained information is available via PC, Tablet PC and Smartphone - everywhere and at all times:

- Analysis of movement profiles
- Recording of measurements and journey data
- Monitoring of thresholds
- Compiling of automated reports (Excel, PDF, CSV)
- Logging of Alarm signals
- Visualization of Positions and GPS coordinates
- Individual administration of access- and admin rights
As an independent supplier in the electronic industry we offer our customers a service for excess and shortage management.

**TRS-STAR Shortage-Management**

Long delivery times, discontinuations and product shortages can also occur in efficient manufacturing or sales planning. With TRS-STAR GmbH you have a reliable partner on your side who closes the gap. In addition, we offer our customers more security to protect themselves against substandard and counterfeit products. Upon request and if required, TRS-STAR GmbH will rely on qualified testing laboratories to immediately inspect the components which come from special sourcing to ensure their quality.

**TRS-STAR Excess-Management**

We offer our customers a custom-tailored concept, which returns capital from unused surplus stock. Complete excess inventories or individual line items are sold to the global market in accordance with the special needs of the customer via consignment, commission or direct sales. Our customers can choose from the following three models:

1. **Consignment agreement**: the flexible variant
2. **Excess purchase**: the efficient variant
3. **Excess stock marketing**: the easy variant

For more information please visit our website under [www.trs-star.com/en/service/excess-management-service](http://www.trs-star.com/en/service/excess-management-service)
With a team of highly experienced engineers for the development of electronic products in diverse sectors of industry, we offer all necessary and specific services, either under one roof or in shared projects in cooperation with several partners:

- Project Management / -Coaching / Documentation
- Requirement and Specification Management
- Contract Management
- Implementation of the whole Development Process
- Product Design and mechanical construction
- Digital / Analog Hardware design
- FPGA Design
- Software-, Firmware-, embedded Software Design, Windows Applications and Tools
- PCB Layouts (conform with EMC-, HF Requirements)
- Realisation of Productqualification and certification (i.e. EMC, CE, UL, R&TTE, FCC, E1)
- Specification of Production and test
- Prototyping (Electronic and Mechanic)
- Implementation of Production
- Production of Pre-Series and Mass Production

Know-how

Our engineering team has, also on the basis of variety to successfully implemented projects in different branches of industry, a detailed know-how in the areas of:

- Embedded computing with all necessary Software / Firmware
- Windows / Linux / Embedded / Graphic User Interface
- Production and Testing Environment
- High Frequency in the area 125KHz … 5,8 GHz

 Technologies

The main technologies the TRS-STAR engineers have been working with are:

- Zigbee Network GSM, GPS, GPRS
- TCP/IP, UDP
- UART, USB, I2C, SPI, 1-Wire, SATA, PATA
- Real Time Locating Systems (RTLS), 2,4GHz
- LED / Lighting DC-Power bis zu 200W
- Mechanical Construction, 2D, 3D
- PCB Layout
- EMC, UL, FCC, R&TTE, CE, E1, Environmental Conditions
- DALI, DMX Powerline
- Flash [SLC, MLC]
- RFID Identification Systems [125KHz … 5,8GHz]
- SD, CF, DDR SO-DIMM, SSD, Memory Products
- S.M.A.R.T
- C, C++, C#, ASM, LUA, VBA, PEARL, QT

If you don’t find your specific area, please contact us.