	Title: <h2 style="text-align: center;">Supplier Quality Manual</h2>	<b>Document Number:</b> QA-300.001 <b>Revision:</b> 01
	<b>Point of Contact:</b> James Garvin <b>Title:</b> Quality Engineering Manager	<b>Effective Date:</b> 18 MAR 2022 Document Level: 3

This document is controlled by:  
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 Supplier Quality  
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All prior editions are obsolete and should not be used. It is the user’s responsibility to assure that only the latest revision of this standard is used. (Go to <https://www.spartronics.com/terms-and-conditions> for the current standard.)

**Preface**

Spartronics Logan, LLC, formerly known as Inovar, Inc., (hereinafter called, “Spartronics Logan, LLC” or “Spartronics”) Quality Policy states:

We are committed to:

- exceeding our customer’s expectations by providing innovative Electronics Manufacturing Solutions.
- complying with applicable standards and requirements.
- improving continually and maintaining the effectiveness of our Quality Management Systems.
- maintaining mutually beneficial business arrangements.
- cultivating an employee friendly work environment.

We strive to continually improve our process performance by meeting quality objectives and maintain compliance of our work environment with applicable regulatory requirements. It is imperative that our business partners operate under the “zero defects and 100% on-time delivery” philosophy, striving for maintaining a quality system that ensures continual improvement in the quality of product or service and timely deliveries to support our customers’ needs. Emphasis should -be on defect prevention and the reduction of variation and waste in the supply chain. The ultimate aim of all activities is to continually comply with our customers’ increasing expectations.

This manual is based on the Quality Management System requirements and standards of Spartronics Logan, LLC and is considered an integral and legally binding part of any Spartronics Logan, LLC purchase order referencing this manual. Through implementation and adherence to the quality standards herein, Spartronics Logan, LLC looks forward to a long and mutually beneficial relationship with our suppliers.

**Introduction**

This manual outlines the expectations and requirements with which our suppliers and their sub-tier contractors must comply with when providing material and services covered by the purchase order. Suppliers are fully responsible for the quality and delivery of their products/services and their sub-tier suppliers. Depending on the specific order, not all sections or sub-sections apply.

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All communication relative to the requirements of the purchase order, the drawings, the specifications, or this manual shall be directed to Spartronics Logan, LLC 's authorized procurement representative or the supplier quality department.

As used in this manual, the term "Supplier" shall have the same meaning as the term "Seller" or "Vendor". Similarly, the term "Purchase Order" shall have the same meaning as "Contract".

All Purchase Orders that include a reference to this manual constitute acceptance and commitment on behalf of the recipient to comply with this manual's content.

This manual and Spartronics Logan, LLC 's specifications and documents are for the sole use of fulfillment of the order. Unauthorized use may result in legal action.

1. **Revision Control.** For the applicable revision of this manual refer to each individual shipment date, which may or may not be the date of the original Purchase Order. Subsequent revisions may NOT be used at the supplier's discretion unless mandated by a purchasing directive. Current revision is available on our website <https://www.spartronics.com/terms-and-conditions>. Unless otherwise authorized, the specified revision of applicable drawings, and instructions, as well as authorized changes thereto, flowed down with the purchase order, shall be used for fabrication, inspection and testing of Spartronics Logan, LLC products/services.

Products or services supplied under the purchase order shall be produced, inspected, and tested in accordance with the current revision of the specifications and standards referenced at the time of purchase order acceptance, unless otherwise expressly noted on the purchase order.

2. **Application.** The expectations and requirements described in this manual apply to all suppliers of production components, materials, and/or services. Suppliers must meet all applicable requirements specified herein.
3. **Implementation.** Suppliers are responsible for the development, documentation, implementation, and maintenance of a quality system that contains the processes outlined herein. We encourage suppliers to strive for eventual compliance to AS9100, ISO9001, and/or ISO13485 requirements.

#### 4. **Acronyms**

- ANSI – American National Standards Institute
- AQL – Acceptable Quality Level
- CAGE Code - Commercial and Government Entity Code
- CAR – Corrective Action Request
- C of C – Certificate of Conformance
- DPMO – Defects Per Million Opportunities
- ECT - Edge Crush Test
- ESD – Electrostatic Discharge
- FDA – Food and Drug Administration
- FMEA – Failure Mode and Effects Analysis
- SQM – Spartronics Supplier Quality Manual
- ITAR – International Traffic in Arms Regulation
- KPC – Key Product Characteristic
- M&TE – Measuring & Test Equipment

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- MSD – Moisture Sensitive Devices
- MSDS – Material Safety Data Sheet
- NADCAP – National Defense Contractors Association Program
- NIST – National Institute of Standards & Technology
- PO – Purchase Order
- PPAP – Production Part Approval Process
- SPC – Statistical Process Control
- VOC – Volatile Organic Compounds

**5. Definitions**

- **Mixed Item Pack:** A pack containing items with different part numbers from the same supplier.
- **Key Product Characteristic (KPC):** A feature of a material, process, or part (includes assemblies) whose variation within the specified tolerance has a significant influence on product fit, performance, service life, or manufacturability.


6. **Basic Quality/Delivery.** Spartronics Logan, LLC 's Quality and Delivery targets are 0 DPMO/0 Defect occurrences and 100% On-Time-Delivery. Any defect may result in rejection and return of defective product to the Supplier.

7. **Supplier Surveillance & Performance Management.** The Quality Internal Supplier Management Reviews are utilized by Supply Chain Management and Quality to monitor strategic supplier activity, review supplier performance, and evaluate high risk and/or poor performing suppliers for potential action/supplier controls. Internal Supplier Management Reviews shall be conducted no less than quarterly and archived for future record. Outputs of the Internal Supplier Management Review may include some of the following actions if supplier performance is not deemed satisfactory:

- Issuance of a Supplier Corrective Action Request in accordance with Control of Non-conforming Product procedure.
- Addition or tightening of Incoming Inspection criteria or sampling, in accordance with the Incoming Inspection procedure.
- Changes in the Approved Supplier List status, such as Disqualified as documented on the Supplier Assessment form and reflected in the Supplier Dashboard.
- Requests for a formal Supplier Performance Review, or increased frequency of reviews with supplier leadership.
- Requests for a documented Supplier Get Well Plan to be presented to Spartronics Logan, LLC Supply Chain Management and Quality leadership.
- Supplier Audits or on-site assessments.
- Spartronics Logan, LLC as a contract manufacturer, has many suppliers that we are directed to purchase from by our customers. Spartronics Logan, LLC will manage the custom Supplier's OTD and NCMR status as best as possible. As needed, this information will be provided to the Customer so that they are aware of the performance issues.

Spartronics Logan, LLC requires all suppliers to provide the delivery date, product and/or services, quantity and pricing stipulated in the purchase order/contract.

It is also Spartronics Logan, LLC 's expectation that the supplier develops processes and procedures to prevent the occurrence of defects and strive to continually improve upon those processes.

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Spartronics Logan, LLC recommends the use of Six Sigma tools, Lean Practices and 6S housekeeping activities

8. **Cooperative Management Attitude.** Spartronics Logan, LLC expects suppliers' top management to share its commitment of meeting customer's quality and delivery expectations through continuous improvements. It is also expected that they will fully support the relationship between our companies and demonstrate flexibility in assisting Spartronics Logan, LLC in meeting all our customer's requirements.

A serious concern is when a supplier product/service shuts down an Spartronics Logan, LLC production line, so suppliers should have a business continuity plan in place for our components and/or products. Any condition causing a line shutdown warrants the supplier's immediate action to facilitate Spartronics Logan, LLC's production activities and may result in associated costs charged back to the supplier.

All Spartronics Logan, LLC suppliers need to be aware they contribute to:


- Product and service conformity
- Product safety
- Ethical behavior in the supply chain

9. **Statistical Process Control (SPC).** Spartronics Logan, LLC encourages suppliers to continually improve the quality of products and services delivered to us. The supplier shall maintain documented evidence of an ongoing policy and practice of achieving continual improvement. This documentation must be available for review upon request by Spartronics Logan, LLC.

A key aspect of continual improvement is the proper use of statistical methodologies. Statistical data shall be provided when required for purchases as identified by the purchase order, drawing, etc. Spartronics Logan, LLC recommends the use of SPC manuals published by IPC.

10. **E-Business Capabilities.** Suppliers shall have e-mail, internet access, an internet browser and document scanning capability, at a minimum, for e-business capability.
11. **Confidentiality.** Spartronics Logan, LLC shall only disclose proprietary information to suppliers on a need-to-know basis in accordance with an established confidential relationship via a signed, active Non-Disclosure Agreement. This disclosed information may be in a variety of formats, including but not limited to, bills of materials, solid models, 2D and electronic drawings, software, etc. Suppliers shall, in turn, take the utmost care in protecting all proprietary information. This includes notification to Spartronics Logan, LLC prior to the transfer of proprietary information to a third party; wherein Spartronics Logan, LLC will make the decision to initiate a Non-Disclosure Agreement with them as well. All originals and copies of proprietary data must be properly destroyed or must be returned to the originating source when they are no longer needed. Proprietary documents are not to be disclosed to competitors of Spartronics Logan, LLC.

Certain information may have additional regulation and require additional controls. This information will be detailed in applicable procurement documentation. Suppliers may be required to demonstrate registration to applicable government bodies, as applicable (ITAR, FDA, etc.)

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12. **Supplier Qualification & Performance.** Spartronics Logan, LLC 's supply base will consist of organizations that are supportive of our business needs. Spartronics Logan, LLC uses controlled methods through which suppliers are evaluated, selected, developed, and monitored. Criteria for placement and for remaining on the Spartronics Logan, LLC Approved Suppliers List are based on the supplier's ability to consistently deliver defect-free products and/or services, meet our delivery requirements, be cost-competitive and be responsive to our needs.

13. **Supplier Monitoring & Rating.** A supplier's performance will be continuously monitored. Supplier performance will be measured on their ability to meet Spartronics Logan, LLC 's minimum requirements defined for product quality, delivery performance and responsiveness. Suppliers will be notified periodically of their performance. A supplier must remain in good standing with our customer's and failure to do so may result in supplier being placed in a risk category.

Once a supplier is placed in a risk supplier category, the supplier will be notified by their Purchasing or Quality representative and may then be required to submit a corrective action plan for performance improvement.

14. **Supplier Quality Programs / System Requirements.** Spartronics Logan, LLC requires each supplier to develop a Quality Management System with a goal of compliance with a recognized quality management system (e.g., AS9100, ISO9001, ISO13485, etc.) to assure that the requirements of Spartronics Logan, LLC 's supplied product or service are satisfied. Spartronics supplier quality assurance requirements specified within this manual shall be considered minimum requirements for supplier approval.

Objective evidence shall be on file, at supplier's premises, verifying that such a system exists and is being maintained. Procedures and records shall be available for examination by an authorized Spartronics Logan, LLC representative at any time, with reasonable notification.

15. **Notification Responsibilities.** If there is a change in the supplier's facility location, utilized equipment, upper-level management, sub-tier suppliers, or any changes that could potentially impact the quality of products received by Spartronics Logan, LLC, the supplier shall notify Spartronics Logan, LLC of such changes in writing within 90 days of implementation or as soon as. In addition, if a supplier loses an accrediting agency certification or is put on suspension by a registrar, the supplier shall notify Spartronics Logan, LLC in writing within 10 working days. When a supplier's certificate expires, a copy of the new certificate shall be forwarded to an Spartronics Logan, LLC representative.

16. **Sub-Tier Supplier Management.** It is Spartronics Logan, LLC 's requirement that suppliers maintain responsibility for all sub-tier suppliers, flow down purchase order requirements and provide guidance to their supply base consistent with purchase order provisions.

The supplier shall have a process in place to ensure that all sub-tier suppliers have and maintain the ability to provide defect-free materials and services in accordance with Spartronics Logan, LLC 's delivery requirements.



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The supplier shall ensure that all sub-tier suppliers provide timely response to all quality concerns. Requirements for sub-tier supplier flow down shall be detailed between supplier and Spartronics Logan, LLC. As a minimum, sub-tier suppliers shall maintain applicable acceptance documentation and relevant quality records for a minimum of ten (10) years from date of delivery, unless otherwise stated on the purchase order.

If a situation arises where Spartronics Logan, LLC must take an active role with a sub-tier supplier to address a specific concern, Spartronics Logan, LLC will do so only after supplier notification.

17. **General & Lot Traceable Requirements.** General Purchase Order / Contract. The purchase order is a legal contract between Spartronics Logan, LLC and the supplier. Only Spartronics Logan, LLC 's written authorization may be used to deviate from the purchase order requirements. All changes are to be approved by Spartronics Logan, LLC in written form (Supplier Exception Request or similar).
18. **Order of Precedence.** In the event of a conflict between or among the provisions of the purchase order, the following order of precedence shall prevail:
- Authorized changes to the purchase order and any continuation pages
  - Purchase order as printed
  - Engineering authorized drawing changes
  - Engineering drawings
  - Applicable Acceptance and Quality Specifications
  - Specifications cited on drawings
  - Documents cited with the applicable specifications
  - Spartronics Supplier Quality Manual (SQM)
19. **Traceability Verification.** The supplier must maintain traceability throughout all steps of the manufacturing process including any outside processing. All suppliers to Spartronics Logan, LLC must have a lot identification system that distinguishes one lot from another when shipping finished or raw product. The supplier shall ensure that the supplied products are legibly marked per purchase order and blueprint requirements.

When required by PO, component / product lots must be traceable to raw material lots.


Spartronics Logan, LLC will state on the purchase order if Lot Traceable documentation will be invoked for the specific order.

Spartronics Logan, LLC will review and approve certification and test reports for all material directly shipped from Spartronics Logan, LLC to a supplier for further processing. Certification shall reference material as supplied by Spartronics Logan, LLC.

It is the supplier's responsibility to review test reports and C of Cs of supplier-purchased materials or services. All sub-tier supplier C of Cs for material finish and processes must be retained by the supplier and be available for review. Spartronics Logan, LLC only assumes responsibility for conformance of material it has provided.

**20. Lot Traceable Documentation Requirements**

- One Packing List
- One Certificate of Conformance (may be found on the Packing List)

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- Any other documentation required by purchase order, drawings, or provided specifications

Note: All orders will be processed through Spartronics Logan, LLC Receiving Inspection and documentation will be verified. Any discrepancies shall be cause for rejection and an NCMR will be issued to the supplier.

At a minimum, the Supplier Packing List will contain the following information:

- Spartronics Logan, LLC 's Purchase Order Number
- Spartronics Logan, LLC PO Change Order Number (if applicable)
- Spartronics Logan, LLC Part Number
- Revision for the device (if applicable)
- Manufacturer's Name
- Manufacturer's Part Number
- Quantity supplied

Note: Multiple parts purchased on the same purchase order may be placed on a single packing list if delivered in the same shipment. All new shipments will require a new packing list and C of C.

At a minimum, the Supplier Certificate of Conformance will contain the following information:

- Company's name and address
- Manufacturer's Name and Part Number
- Date of certification
- Spartronics Logan, LLC 's Purchase Order Number
- Lot and/or Date Code of the delivered lot
- Quantity supplied
- Part description
- Spartronics Logan, LLC PO Change Order Number (if applicable)
- Spartronics Logan, LLC Part Number (and Revision if applicable) as it appears on the PO/Contract
- Raw material heat/lot number (if applicable)
- Material and test specifications and revision identification (as applicable)
- Reference to test reports for all raw material, traceable by heat/lot number (as applicable)
- Identifications of expectations such as a deviation or waiver (as applicable)
- A signature and title (original or electronic) from a relevant authority within the organization that assures the quality of the products supplied.

Note 1: Multiple parts purchased on the same purchase order may be placed on a single C of C if delivered in the same shipment. All new shipments will require a new packing list and C of C.

Note 2: Lot and/or Date Code listed on the C of C shall be EXACTLY as found on the part/part packaging. Any variance will be grounds for lot rejection (e.g., C of C reflects lot "0711M" and packaging is labeled as "0711").

Note 3: The C of C may be contained on the packing list if information required in section 4.3.3 of this procedure is included.

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21. **Date/Lot Code Requirements.** The Date/Lot Code provided to Spartronics shall be a unique identifier for a production run. This identifier will be used in our traceability program to reduce the scope of potential recalls that may occur. For this reason, accuracy of this data is extremely important to Spartronics Logan, LLC and its customers.

When possible, product supplied on a PO shall be from the same Date/Lot Code. This will help reduce processing time at Spartronics Logan, LLC by not having to account for the use of multiple lots. If multiple lots are supplied, each lot shall be individually recorded on the C of C with their respective quantities.

Each lot must be adequately identified to prevent mixing of inventory.

Multiple Date/Lot Codes, up to a maximum of 3, will be acceptable if all Date/Lot Codes and respective quantities are defined.

Handwritten changes to the Packing List or C of C are not permitted without proper execution of change: Single strike through old value, initial or sign, date, new value written clearly. No “write-overs”, “white-out”, “scribbling over”, etc.

Unless prior documented approval is granted by Spartronics Logan, LLC ’s Quality Department, any product that is received and found to not comply with the requirements of this document shall be rejected and dispositioned appropriately per Spartronics Logan, LLC procedure.

22. **First Article Inspection / Production Part Approval Process.** When required on PO, AS9102 will be used as the FAIR form and submitted to Spartronics Logan, LLC. For custom components, the supplier is required to prepare and maintain a First Article Inspection Report (FAIR) or Production Part Approval Process (PPAP) for each part number supplied to Spartronics Logan, LLC. These are used to determine whether all engineering designs and specifications are properly understood by the supplier and that the supplier’s process has the capability to produce products meeting these requirements during an actual production run. Suppliers must ensure that all drawing clarifications are resolved (use Supplier Exception Request or similar) during the request for quote phase and/or purchase order review.
23. **Resubmission Guidelines.** Process or product changes require FAIR or PPAP resubmission. Notification to Spartronics Logan, LLC prior to changes is essential as additional audits or supplier identification may be required for resubmission. Process or product changes are defined as changes in the process or product that could affect its capability to meet design requirements or the durability and reliability of the product, including:

- Use of a process or material other than that used in the previously approved part
- Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling
- Production from tooling and equipment transferred to a different plant
- Location or from an additional plant location
- Change of a supplier for parts or services (e.g., Heat treating, plating, welding) that affect customer fit, form function durability or performance requirements





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- Break in production or product produced after tooling has been inactive for volume production for 12 months or more
- Any changes in material, including not only raw material but also chemical compounds or processes (i.e., paints, adhesives, sealers, lubricants, plating, heat treat processes, etc.) which become a part of the finished product; this includes changing to an engineering approved alternate material or any change in the sequence of operations
- Change in test/inspection method or new technique (No effect on acceptance criteria)
- Upon request of Spartronics Logan, LLC 's Purchasing or Quality representative

24. **General Inspection & Test Requirements.** All inspection and testing shall be conducted:
- In accordance with the purchase order / print requirements
  - With equipment that is appropriate for the required characteristics and tolerances
  - Under conditions consistent with the nature of the part and manufacturing processes
  - In accordance with documented inspection instructions
  - With an appropriately developed statistical sampling methodology
  - With measuring test equipment that is calibrated and documented per the Quality Systems requirements
25. **Visual Inspection.** Where possible, acceptance criteria for visual inspections may be defined and quantified by enlarged color photographs and/or actual part samples. Spartronics Logan, LLC reserves the right to reject any product that exhibits an unusual visual condition.
26. **Dimensional Inspection / Material Testing.** If the supplier does not have the necessary equipment to conduct the required inspections and tests, an accredited third-party inspection source must be utilized at the supplier's expense. Whenever possible, the supplier should provide variable inspection data rather than attribute data.
27. **Material Test Reports.** If applicable, the supplier shall maintain a certified test report for each heat / lot of materials used in the production of the purchased product. The test report shall contain, at a minimum, the test requirements, actual test results, heat / lot number, and the corresponding specification number and revision level.
28. **Key Product Characteristic (KPC).** For lot-traceable custom mechanical parts, the supplier is required to provide evidence of compliance to all customer-identified key product characteristics (KPCs) on subsequent shipments to Spartronics Logan, LLC. KPCs are typically identified on the customer drawing and/or other associated documentation.
29. **Performance Test Reports.** If applicable, the supplier shall maintain a certified test report for those materials or products that have functional or safety performance test requirements specified on the purchase order, drawing, etc. Examples of functional or safety performance tests include push-out and torque-out tests for fasteners, pinch points, static and dynamic strength tests, flammability tests/certifications. The test report shall contain, at a minimum, the test requirements, actual tests results, heat/lot number, and corresponding specification number and revision level.
30. **Sampling Plan.** It is recommended in all instances where lot sampling is utilized, that 100% of drawing characteristics are inspected in accordance with the C=0 sampling plan below.



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### C = 0 Sampling Plan

Lot Size (N)	Sample Size (n)																
	0.01	0.015	0.025	0.04	0.065	0.1	0.15	0.25	0.4	0.65	1	1.5	2.5	4	6.5	10	
2 to 8	*	*	*	*	*	*	*	*	*	*	*	*	*	5	3	2	2
9 to 15	*	*	*	*	*	*	*	*	*	*	*	*	13	8	5	3	2
16 to 25	*	*	*	*	*	*	*	*	*	*	*	20	13	8	5	3	2
26 to 50	*	*	*	*	*	*	*	*	32	20	13	8	5	5	5	3	3
51 to 90	*	*	*	*	*	*	*	80	50	32	20	13	8	7	6	5	4
91 to 150	*	*	*	*	*	125	80	50	32	20	13	12	11	7	6	5	4
151 to 280	*	*	*	*	200	125	80	50	32	20	19	13	10	7	6	5	4
281 to 500	*	*	*	315	200	125	80	50	48	47	29	21	16	11	9	7	6
501 to 1200	*	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8	7
1201 to 3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9	8
3201 to 10,000	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9	8
10,001 to 35,000	1250	800	500	315	300	294	189	135	108	77	60	46	35	29	15	9	8
35,001 to 150,000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9	8
150,001 to 500,000	1250	800	750	715	476	345	270	200	156	119	90	64	40	29	15	9	8
500,001 and over	1250	1200	1112	715	556	435	303	244	189	143	102	64	40	29	15	9	8

\* Indicates entire lot must be inspected  
 Note: The acceptance number in all cases is ZERO

A single defect shall cause the rejection and 100% inspection of a lot when using sampling plans for final characteristic acceptance unless approved in writing by the Spartronics Logan, LLC 's Authorized Quality representative prior to use.

Sampling plans must meet all requirements imposed in applicable specifications, such as those addressing special processes. In such cases the use of standard sampling plans does not apply (e.g., weld visual inspection, non-destructive testing and examination, fastener applications)

In addition to the sampling plan, any drawing note categorized as a quality assurance provision which identifies a major or critical safety item characteristic must be inspected as indicated.

31. **Right of Access.** During the performance of this contract, Spartronics Logan, LLC reserves the right of access to all areas of the supplier's facility and applicable sub-tier suppliers for Spartronics Logan, LLC and/or customer and regulatory agency representatives to verify products/services. The supplier's quality control, inspection system, and manufacturing processes are subject to review, verification, and analysis.
32. **Source Inspection.** The items and supporting quality documentation covered by the purchase order may be subject to Customer or Government source inspection and/or witnessing of tests prior to shipment. Spartronics Logan, LLC reserves the right to invoke source inspection any time throughout the performance of this contact at no cost to Spartronics Logan, LLC. To accommodate source inspection representatives, supplier shall make facilities, equipment, M&TE, inspection records, and assistance readily available.

Government Source Inspection – Upon receipt of the purchase order, the supplier is required to promptly notify their government representative so that appropriate planning for government inspection can be accomplished. In the event the representative or office cannot be located, the Spartronics Logan, LLC Quality representative shall be notified immediately.

Three (3) days written notice is required prior to submission for inspection for resident and seven (7) days for itinerant Government representatives.

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Source inspection documentation must accompany every shipment when invoked. Unauthorized shipment of product without Government source inspection may result in a withholding of invoice payment and shall be cause for rejection.

Source inspection shall not replace supplier inspection or relieve supplier of its responsibility for furnishing an acceptable end item.

33. **Measuring and Test Equipment (M & TE).** Supplier shall maintain calibration for all M & TE such as gages, tools, jigs, fixtures, and dies used to verify conformity to requirements of the drawing / purchase order. The calibration shall be in accordance with a recognized standard and traceable to NIST (or equivalent). When no standard method exists, the methods used shall be documented and records maintained for review upon request.

34. **Inspection Records and Status**

Records of Compliance

- Records of compliance shall be formally documented and maintained to ensure that suppliers' products/services comply with the identified purchase specifications, engineering and/or material specifications, and contract requirements.

Records shall provide traceability to specific product/process information including:

- Part/drawing number revision level and quantity
- Applicable specifications with revisions
- Testing or MFG Facility
- Heat/lot number (if required)
- Procedure with revision traceability (if applicable)
- Contract/purchase order
- Government Contract number (if applicable)
- All actual data compared to requirements to indicate acceptability of the product
- The inspector's name, signature, and level of certification (if applicable)
- Date of inspection


Product Work Instructions and process control procedures/plans (including machining, assembling, inspection, and testing instructions) must be an integral part of the supplier's process and be maintained under revision control.

Computer data files (such as .DXF files) supplied by Spartronics Logan, LLC are for reference only and do not relieve the supplier from providing product that conforms to procurement requirements.

Inspection variable and/or attribute data must be documented on dimensional inspection report or equivalent and retained on file. All data must be made available to Spartronics Logan, LLC's personnel upon request. At Spartronics Logan, LLC's discretion, inspection reports will be requested to be submitted with the product shipment.

A control plan or equivalent may be on file. A revised control plan may be submitted for any changes in the supplier's processes.

Except as the parties may otherwise agree, all supplier records must be written in the English language and specified in the unit of measure designated within the drawing or standard.

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35. **Status Identification.** The supplier will maintain a positive system for identifying the inspection and testing status of supplied product. Identification may be accomplished by means of stamps, tags, routing cards, move tickets, tote box cards or other control devices. Such control will be of a design distinctly different from Spartronics Logan, LLC 's inspection identification.
36. **Nonconforming Product.** The supplier is responsible for establishing controls to ensure that products / services not conforming to the purchase order are identified, segregated, dispositioned, and controlled to prevent inadvertent use. All costs associated with non-conforming material (including freight, handling, material replacement, inspection costs, rework, etc.) may be charged back to the supplier. Supplier authorization to return nonconforming product is required within 24 hours of notification. Without this authorization, product may be returned at the discretion of Spartronics Logan, LLC.

If the supplier identifies a nonconformance with products or material, they shall notify Spartronics Logan, LLC 's representative. The supplier must quarantine and contain the suspect lot(s) and withhold shipment of these lots until authorization from Spartronics Logan, LLC 's quality representative.

The supplier is responsible to address containment of the nonconforming product at their facility, in transit, and at Spartronics Logan, LLC. If suspect product has been shipped, the supplier must notify Spartronics Logan, LLC 's Quality and/or Purchasing representative within 24 hours and provide complete traceability information for all known or suspect nonconforming product shipped, including but not limited to identification of batch/lot number, purchase order, part identification, and dates of shipment. It may be requested that the supplier send a representative to Spartronics Logan, LLC within 24 hours of notification to assist in verification and containment of the nonconforming product and to coordinate any required screening or rework activities.

37. **Corrective Action.** Supplier is responsible for implementing quality systems capable of resolving problems adversely affecting quality and correcting those conditions. Suppliers shall take prompt corrective action to correct assignable conditions, which have resulted or could result in the submission of nonconforming products/services to Spartronics Logan, LLC. Corrective action shall be documented and include as a minimum:
- Identification of root cause (primary reason which caused product nonconformance or quality systems deficiency)
  - Containment of affected products
  - List of required improvements and actions to be implemented to prevent problem recurrence and expected completion dates for actions.
  - Verification / validation of the effectiveness of any improvement or corrective action(s) taken
  - These records shall be maintained and available for review by Spartronics Logan, LLC if requested



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Nonconforming material or quality system deficiencies detected by Spartronics may require a supplier response to a Corrective Action Request (CAR). When a CAR is issued, response to Spartronics Logan, LLC with investigation details, corrective action plan, and expected completion dates is due within 30 business days of notification. If the 30-day timeline is not able to be met, a request for extension should be submitted to Spartronics Logan, LLC prior to due date. A supplier's corrective action format will be acceptable as long as the information requested by Spartronics Logan, LLC is contained therein.

The CAR will stay open until an Spartronics Logan, LLC Quality representative has verified evidence that the actions were effective. Failure to respond to a request for corrective action in a timely manner may place the supplier in the risk category.

38. **Identification Marking.** The supplier shall assure that the supplied products are legibly marked per the specified drawing method, or purchase order requirement. The identification marking shall be as permanent as the normal life expectancy of the item and be capable of withstanding the intended operating environment and cleaning procedure. Legibility shall be required for ready readability and be applicable after the specified protective coatings are applied. When not otherwise specified, as a minimum:

- The part, sub-assembly, or unit number with all applicable suffixes, drawing revision level and the manufacturer identification or CAGE code (if applicable) shall be marked on the supplied product.
- Any application of coatings shall maintain the manufacturer marking and identify the finisher and process date.


Where the marking method is "optional", notify your procurement representative if marking methods changed from prior shipment.

39. **Part/Component Cleanliness.** The supplier shall furnish parts/components free of mill scale, rust, carbon deposit, weld spatter or any surface contaminant that will be detrimental to the item's appearance or functional appearance (i.e., contamination that is detrimental to the adhesion of coatings). Any part not meeting this criterion is subject to return to supplier for immediate correction.

40. **Technical Documents.** The supplier shall have available all design records (drawings, specifications, etc.) for the products manufactured, including components or details of assemblies and technical standards noted on the drawings. For parts identified as catalog parts, this may consist of functional specification or a reference to a recognized industry standard. Documents are to indicate the date of the design record and the change level and shall include any authorized engineering change documents used in conjunction with the part drawings.

41. **Vendor Item Drawing.** Drawings identified as "Vendor Item Drawings" contain a list of recommended approved sources of components and the source's item identification. Written authorization from Spartronics Logan, LLC's Quality Representative is required if the identified drawing approved source of product or item is not utilized.

42. **Source Controlled Drawings.** Drawings identified as "Source Controlled" contain a list of approved sources of components and the source's item identification. A request for deviation must be

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submitted and subsequently approved by Spartronics Logan, LLC 's Quality Representative to deviate from the identified drawing source of the item.

43. **ITAR Controlled Drawings.** Supplier acknowledges that Spartronics Logan, LLC may provide technical data subject to Export Control laws and any drawings will be indicated as "ITAR Controlled". This technical data (drawings, as well as components) will not be disclosed to any foreign persons (or dual citizens) or foreign commercial entities, including employees, consultants, subcontractors, vendors, and suppliers. The technical data will only be utilized for the manufacture of articles required by the purchase order. The supplier will convey the same requirements to their sub-tier suppliers. The supplier also agrees to destroy or return all such technical data upon completion of the purchase order.
44. **Shipping Requirements.** Refer to the Purchase Order for specific shipping instructions. Unless otherwise agreed upon, the method of shipment will be as described in the PO. Spartronics Logan, LLC reserves the right to refuse additional shipping charges that may result from the Supplier's failure to use the provided shipping account number. Refer to procurement terms and conditions for specific shipment damage liability.
45. **Records Retention.** Supplier shall have a system for maintaining control of records of compliance to applicable procurement documents, drawings, specifications, and standards as previously defined.

Unless otherwise indicated on the purchase order, records shall be maintained for a minimum of ten (10) years after final shipment. Before disposal, supplier must contact Spartronics Logan, LLC Quality Assurance for authorization of disposal or instructions for forwarding records to Spartronics Logan, LLC for retention.

Supplier shall provide records to Spartronics Logan, LLC upon request. All requests for records shall be fulfilled by supplier with five (5) working days.


46. **Specifics for Printed Circuit Board Manufacturing.** Printed circuit boards shall be fabricated in accordance with all applicable standards (e.g., IPC-A-600, IPC-6011, IPC-6012, etc.) defined within documentation. Adjustments to layout and/or specification shall not be allowed without prior written consent of Spartronics Logan, LLC. The final product shall be fabricated in accordance with Gerber, fabrication and array documents provided.

With each delivery, we will expect the following deliverables:

- Evidence of completion of required testing (e.g., electrical, hi-pot, impedance, etc.)
- Evidence of evaluation/acceptance of the micro-section against customer criteria and IPC requirements
- Evidence of conformance to the assembly requirements (this may be in the form of a Certificate of Conformance)

With each lot, Spartronics Logan, LLC will expect the following deliverables (supplied with the first time the lot is delivered):

- A solder sample panel is to be supplied. This may be an x-out panel
- A Micro-section Analysis Report is required with all shipments.

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- Any impedance test coupons, solderability coupons or other physical samples that are relevant to the lot provided and will not be retained by supplier for minimum retention requirements
47. **Preservation of Product.** Reasonable precautions shall be taken to ensure that parts/products are not damaged during handling or storage at the supplier’s premises. This will include, as applicable, but is not limited to the following:
- Electro-Static Discharge (ESD Protection) per established standard (e.g., ESDA s20.20, IPC, etc.)
  - Moisture Sensitive Component Protection (J-STD-033)
  - Lead finish contamination prevention
  - Protection from physical damage
  - Environmental conditions (Temperature and Humidity) are suitable for the activity being carried out
48. **Counterfeit Mitigation.** Suppliers of Electrical, Electronic, and Electromechanical (EEE) parts shall comply with the requirements included in this section.

Suppliers shall maintain a fraudulent/counterfeit EEE parts control plan that documents its processes used for risk mitigation, disposition and reporting of suspect or confirmed fraudulent/counterfeit EEE parts and/or assemblies containing such parts. Use of a recognized National Standard for counterfeit part risk mitigation, such as AS-5553A, is strongly encouraged.

The Seller shall ensure that only new and authentic materials are delivered to Spartronics Logan, LLC. The Seller may only provide parts purchased directly from Original Component Manufacturer’s (OCMs), OCM authorized (franchised) distributors, or authorized aftermarket manufacturers. In this context, the Seller may be the actual OCM or an OCM authorized (franchised) distributor. Use of product that was not provided by these sources is not authorized unless it is first approved in writing by Spartronics Logan, LLC. The Seller must present compelling support for its request (e.g., OCM documentation that authenticates supply chain traceability of the parts to the OCM) and include in its request all actions to ensure the parts thus procured are authentic/conforming parts.

The Seller shall disclose in writing at the time of each individual quotation, the source of supply (by company name and location), whether the Seller is authorized (franchised) for the part(s) being quoted and whether the full manufacturer’s warranty is being provided on the quoted material.

The Seller shall maintain a method of item supply chain traceability that ensures tracking of the supply chain back to the manufacturer of all Electrical, Electronic and Electromechanical (EEE) parts, including those delivered in any assemblies and subassemblies. This supply chain traceability method shall clearly identify the name and location of all the supply chain intermediaries from the manufacturer to the direct source of the product for the Seller and shall include the manufacturer’s batch identification for the item(s) such as date codes, lot codes, serializations, or other batch identifiers.

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As required, tests and inspections shall be performed in accordance with defined accept/reject criteria provided or approved by Spartronics Logan, LLC. The Seller shall prepare and provide to Spartronics Logan, LLC records evidencing test and inspections performed and conformance of the product to specified acceptance criteria.

49. **Packaging Requirements.** The supplier is responsible for the packaging of direct materials to assure their proper condition and quality upon delivery to Spartronics Logan, LLC. Parts must arrive at Spartronics Logan, LLC without damage, rust/corrosion, or contamination. Packaging shall be defined and agreed upon prior to the first direct material shipment to Spartronics Logan, LLC.

It is the Supplier's responsibility to ensure adequate packaging for proper delivery of parts to Spartronics Logan, LLC.

Packaging shall not be a source of contamination. Barrier materials, (e.g., plastic bags), may be required. The supplier shall be responsible to wash returnable packaging when necessary.

Packaging is part of the supplier manufacturing process and shall be included as appropriate in the supplier's FMEA, Quality Plan, Source Release Plan or PPAP when these "tools" are used.

All packaging "modifications" or "new" proposals require authorization.

Laboratory Simulation Testing may be required and should be considered by the supplier to assure that the product and packaging will withstand "real-world" load conditions, handling, and any applicable transportation modes that may become necessary. If testing is required, contact your Spartronics Logan, LLC packaging representative.


A Sample Shipment may be required to test and prove that the packaging withstands delivery conditions and to allow Spartronics Logan, LLC to review the packaging.

Returnable Packaging shall be used when it is cost effective or when it is needed to meet specific Spartronics Logan, LLC objectives. When returnable packaging is not justifiable or feasible, environmentally friendly materials (recyclable) shall be used. If returnable packaging is required, suppliers shall be responsible for storing returnable packaging at their site.

Spartronics Logan, LLC Expectations: Spartronics Logan, LLC expects suppliers to proactively support and participate in actions to assure that the following conditions always exist when returnable packaging is utilized:

- The supplier uses the shipping pack as authorized. This pack has been designed to meet the requirements set forth in this document.
- Management of returnable and transportation logistics is performed in the most cost-effective method compatible with delivery requirements.
- An established minimum number of containers are available at the supplier's location when they are needed.
- Parts must arrive at Spartronics Logan, LLC without damage, rust/corrosion, or contamination.
- Spartronics Logan, LLC owned packaging shall not be used for storage and shipment of non-Spartronics Logan, LLC owned parts.



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Notification Required: In addition, suppliers are expected to notify Spartronics Logan, LLC immediately if containers are returned to the supplier:

- With supplied direct materials (parts) inside,
- Not properly identified (e.g., incorrect address),
- Without the full complement of returnable packaging components in the correct proportions (e.g., no lids, or more lids than totes),
- With trash or other foreign materials inside,
- Not properly prepared for safe transport (e.g., totes are banded or stretch wrapped to the pallet versus being stacked loosely),
- At a lower return rate than full packs being shipped to Spartronics Logan, LLC

50. **ESD Protection.** The supplier shall ensure that parts are protected from potential damage that may occur from exposure to static.

Packaging material should be dissipative and/or low generating materials. See Mil-1686 or ESDA s20.20 for additional information.

Parts classified by the manufacturer as Moisture Sensitive, shall be adequately protected to prevent un-needed exposure to moisture prior to, and upon receipt at Spartronics Logan, LLC.

- Product must be sealed in an industry approved Moisture Barrier Bag. A desiccant pouch and humidity card shall be required, per J-STD-033.
- The barrier bag shall be marked with a sticker denoting the material is sensitive to moisture and the J-STD-033 level.
- If the supplier has opened the bag, the number of hours decremented shall be clearly marked on a label found on the outside of the bag.

51. **Packaging Alternatives and Requirements.** Requirements:

- Corner Boards: As required to protect the pack. Fiberboard is preferred.
- Corrugated Specifications: Corrugated (paper fiber board) packaging material must have strength to adequately withstand transportation and handling rigors from the supplier's shipping dock to Spartronics Logan, LLC 's receiving dock. Corrugated material must have adequate ECT or burst test strength to protect the product.
- Corrugated packaging shall not utilize metal staples.
- If stacking exceptions are required, label accordingly: "DO NOT STACK, STACK ONLY 2 HIGH," etc.
- Weight Limitation:
- Max. Shipping Pack = 2,000 Lbs. (909 Kg) or as uniquely specified
- Max. Sub Pack < 40 Lbs.

Pallet Style/Type:

- All wood pallets shall conform to the National Wood Pallet Container Association Voluntary Standard for Wood pallets (NWPCA). Spartronics Logan, LLC prefers stringer, double deck, nonreversible, wood pallets. Stringers for wooden pallets shall have a minimum height of 3½".
- When possible, pallets should be 4-way entry.
- Imports into the U.S. utilizing wooden packaging shall be free of bark and pests and according to U.S. regulations.

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Smallest packaging unit(s) such as plastic bags may be considered to package parts inside totes, cartons, and/or bulk containers. However, when bags are used, they shall be marked with the Part Label as described in Section 7.

52. **Labeling Requirements.** The quality of the information on labels is essential. Bar code labels are helpful and used to eliminate opportunity for error. Errors made because of label deficiency are serious in nature. (Bar code print quality must pass verification per ANSI guidelines.) Suppliers shall not include information relating to quality on shipping identification labels. The supplier shall not apply adhesive-backed color tags to any of the required labels described herein.

53. **Returnable Packaging.** Card holders are recommended to contain and protect labels in conjunction with returnable packaging. Adhesive-backed labels shall be applied directly to placards. All labels applied to returnable packaging require that label stock is polyester material or equivalent AND the adhesive is classified as a “removable” type. The supplier is responsible for the removal of all old labels.

54. **General Label Specifications**

- Maximum label size is 2.0 inches high X 4.0 inches wide
- Label material is not specified. Should not be degraded with room temperature storage. The label must be capable of being removed without tearing. Paper is not preferred on returnable packaging.
- Each reel, tube or MSD package shall be labeled. Labels must adhere to package substrate and application is wrinkle-free. Label Color: White in color with black printing.
- Adhesive types can be pressure sensitive or dry gummed if adherence to the package substrate is assured and application is wrinkle-free. The adhesive must not leave a residue after the label is removed.
- If possible, supplier should show human readable zeroes (0) with a diagonal slash to differentiate them from alphabetic Os. If this is not supported by the selected font, the supplier should ensure that there is a distinct difference between alpha and numeric characters.
- The label shall contain Barcode (Code 39, Code 128 or other format approved by Spartronics Logan, LLC) and human readable characters (Font size shall be 14 or larger on all required fields) as defined.

A Supplier’s standard label format is acceptable provided it includes, as a minimum, the manufacturer’s name, manufacturer’s part number, lot code/date code, material expiration date (if applicable), and quantity.

55. **Specific Product Requirements.** Shelf-Life Material. This applies to synthetic rubber products, potting compounds, shrinkable tubing, epoxies, shelf-life adhesives, sealants, compounds, paints, solder fluxes, solder paste, solder wire and paints. Certificate of conformance for shelf-life materials shall contain the following as a minimum:

- Lot traceability by run, batch, lot or date of manufacture
- Shelf-life expiration date (as required by specification)
- Storage conditions to achieve shelf life, if not stated on material packaging

In addition to other requirements previously stated, these products shall be permanently marked with:

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- Date of expiration or “best if used by” designation
- Traceability to run, batch, lot, or date of manufacture
- The method of product marking shall not be detrimental to form, fit or function. As dictated by size or configuration, optical marking methods may be applied.
- Product must have a minimum shelf life remaining, in accordance with the Purchase Order requirements.

**Hazardous Material Control.** Applicable federal, state, and local specification requirements apply for usage, procurement, and shipping of hazardous materials, including special surface finishing processes such as paint, zinc or chrome plating or anodizing etc. which may contain Volatile Organic Compounds (VOC).

A MSDS shall be provided to Spartronics Logan, LLC for these items. This should be included in the shipment for all new orders or a link to a current electronic copy should be available on supplied documentation.

All supplied items must be labeled by the manufacturer in accordance with applicable code. As a minimum, to assure the proper storage and disposal of hazardous or potentially hazardous material, every shipment shall be clearly marked with the following, as applicable:


- Product Name
- Manufacturer’s Name and Contact Information
- Manufacturer’s Item Number
- Manufacturer’s Batch Number or Lot Number
- Date of Manufacture
- Expiration Date, as applicable
- Federal Hazardous Chemical Label
- Spartronics Logan, LLC Purchase Order Number
- Spartronics Logan, LLC’s Item / Part Number (if available)

56. **Special Process Approval.** Special processes are listed on the appropriate drawing and may include such processes as:

- Bonding
- Heat Treat
- Painting / Coating
- Welding
- Plating
- Non-destructive Testing
- Destructive Testing

Suppliers must ensure that documentation supporting process control is available prior to initial processing. This shall include Training / Certification of operators and inspectors to specific drawing and specification requirements.

Detailed special process procedures with revision control.

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An audit of the supplier's process to the requirements of the applicable specification performed by either Spartronics Logan, LLC 's representative or a third-party (e.g., NADCAP) who has knowledge of the specific process.

Product shipped to Spartronics Logan, LLC prior to approval / authorization will be rejected unless Spartronics Logan, LLC 's responsible Quality representative has waived this requirement.

Changes to process, product or specification require approval prior to implementation (e.g., manual weld to robotic weld process).

When a special process is performed by a facility other than the supplier shown on the Spartronics Logan, LLC Purchase Order, a copy of the certificate furnished by the sub-tier supplier shall be retained and available upon request to Spartronics Logan, LLC. Approval of the sub-tier must be obtained by Spartronics Logan, LLC prior to initial processing.



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### 57. Reference

Reference Number	Document Title	Controlling Organization
ISO 13485 Clause 5.4.1, 7.4.1	Medical Devices-Quality Management Systems-Requirements for Regulatory Purposes	External
AS9100 Clause 6.2, 6.2.1., 8.4.1, 8.4.2, 8.4.3	Aerospace Standard	External
ISO9001	Quality Management Systems	External
J-STD-033	Moisture Sensitive Component Protection	External

### 58. Revision History

Rev #	Date	Change Description	Change Originator
-	30 NOV 2009	Initial Release	Don McFarland
-	24 AUG 2011	Minor update to Sect 5 and various spelling corrections	D. McFarland
-	29 DEC 2011	Add PCB and ESD sections	D. McFarland
-	01 JAN 2012	Editorial changes from review process	D. McFarland
-	01 MAR 2012	Modified content of PCB specific section	D. McFarland
-	20 FEB 2013	Appendix A: 1.0 scorecard timing and 3.0 on-time period	C. Hensley
-	02 MAR 2015	Added acronyms to 1.4; removed 4.8(b) Customer Source Inspection; clarified shipping and packaging requirements in 4.15 and 5.0; clarified label requirements in 7.2; removed Appendix A and reference to Supplier Scorecard	C. Hensley
-	29 JAN 2016	Revised for lot traceability and labeling changes.	C. Hensley
-	29 AUG 2016	Added Counterfeit Mitigation requirements (Section 5.0)	C. Hensley
-	20 JUL 2017	Added definition for Key Product Characteristic (section 1.5.B). Added section 4.5.4 to define KPC compliance requirements.	C. Hensley
-	12 JAN 2018	Changed layout of document due to inconsistencies in outline format. Added information to "Cooperative Management Attitude" for AS9100D compliance.	T. Tagg
-	29 JUN 2018	Updated General & Lot Traceable Requirements sections: General Purchase Order/contract and First Article Inspection/ Production Part approval process	B. Buchanan
-	29 MAR 2021	Updated corrective action and change notification sections to include investigation timelines and expand expectations for investigation report	R. Cromwell
-	11 NOV 2021	Updated Basic Quality / Deliver section	T. Tagg
-	02 DEC 2021	Updated name from Inovar, Inc. to Spartronics Logan, LLC, used Spartronics graphics	T. Tagg
00	28 FEB 2022	Initial baseline of new guideline template using document and revision numbers. Updated to Spartronics Logo. Changed from procedure to manual	L. Dunsey
01	18 MAR 2022	Changing links to document location.	T. Tagg



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