MIDTRONICS

Advancing Battery Management

Supplier Quality Requirements Manual

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About Midtronics

At Midtronics, our entire focus is developing and producing leading edge battery management equipment and services for the global automotive industry. We have now become the leading provider of equipment to service electric vehicles.

Midtronics was founded in 1984, and soon thereafter acquired a battery testing technology from Motorola that allows a technician to diagnose the condition of a lead acid battery by measuring its electrical conductance. Working with customers and users around the world our engineering team invented the world's first digital battery tester which has become the standard for automotive battery and electrical system testing. This led to the development of many successful new battery management products and services. Our advancements in testing, diagnostic charging, monitoring, and analytics have provided value across the entire battery lifecycle in automotive, heavy truck and motor sport industries.

The Midtronics brand has become synonymous with vehicle battery maintenance around the world. As the global leader in the industry, we have invented numerous advances in battery management that are covered by over 200 US patents as well as patents in Europe and Asia.

Since the introduction of electric vehicles, Midtronics has pioneered products that are used for the service and maintenance of lithium-ion batteries in hybrid and electric vehicles. Partnering with automotive manufacturers around the world, our maintenance equipment has become essential tools for dealers servicing EVs.

Our team listens to the needs of customers. Our curiosity fosters innovation. We are ready and committed to meet the needs of the automotive industry as the world transitions to electric vehicles.

Our future is electric!

Purpose and Scope

The purpose of this document is to define minimum quality requirements for suppliers providing products to Midtronics.

Service and development partners are outside of the scope of this manual.

Acceptance of a Midtronics Purchase Order indicates supplier acceptance of the requirements set forth in this manual and the additional supplier requirements found in the documentation below:

- Midtronics Supplier Code of Conduct
- Midtronics Supply Chain Terms and Conditions

Midtronics expects these requirements to be contractually flowed down to sub-tier suppliers.

General Quality Management System Requirements

Our expectation is that suppliers establish, document, implement, maintain, and continually improve a quality management system that conforms to the requirements of ISO 9001. Industry specific management systems (e.g. - IATF 16949, ISO 13485, AS9100, etc.) also satisfy this expectation.

Midtronics may elect to conduct additional QMS verification and supplier monitoring activities if the supplier's QMS is not certified by an accredited third party. Verification activities may include periodic on-site QMS audits by Midtronics personnel or a third party.

Midtronics Part Approval Process (MPAP)

The Midtronics Part Approval Process (MPAP) is based on the Automotive Industry Action Group (AIAG) Production Part Approval Process (PPAP). All purchased parts and assemblies provided to Midtronics are subject to this process.

The MPAP applies to a variety of components, including custom parts and modified commercial off-the-shelf (COTS) items.

SAMPLES AND FIRST ARTICLE INSPECTION (FAI)

Depending on the type of part or assembly, either product samples and/ or a First Article Inspection (FAI) may be required as part of the approval process.

- First Article samples must be segregated from normal production, and the shipment should be conspicuously labeled for easy identification.
- Example label text: “First Article Samples”.

MPAP WORKBOOK

Suppliers are expected to utilize the designated MPAP workbook to document and submit required information for part approval. This workbook must be completed for all relevant assemblies, mechanical parts, printed circuit board assemblies (PCBAs), and modified COTS items.

Suppliers may use their own PPAP or FAI documentation in lieu of Midtronics MPAP workbook if approved by Midtronics Quality Department.

MPAP LEVELS

MPAP consists of four levels: 0, 1, 2, and 3. The appropriate level of documentation and review will be determined based on the type of part or assembly being supplied. The level will reflect the complexity, risk, and process capability of the supplier with 0 being the lowest risk, and 3 being the highest.

Non-Conforming Material

DISPOSITION AUTHORITY

The authority to allow the use of non-conforming material lies solely with Midtronics Design Engineering and Quality management. Suppliers are prohibited from shipping non-conforming material without prior written approval.

Authorization can be requested by submitting a Supplier Deviation Request Form. It is expected that corrective action is initiated as part of this request to prevent recurrence.

A copy of this authorization shall accompany each shipment containing the non-conforming material. Hard copies can be included with the packing slip or electronically submitted to Quality@midtronics.com.

Non-conforming material shipped without prior written approval is subject to rejection at the supplier’s expense.

MRB AUTHORITY IS AS FOLLOWS:

DISPOSITION	AUTHORITY
Use As Is	Midtronics
Scrap	Supplier
Rework	Supplier

Repair*	Midtronics

REWORK is defined as action taken on a non-conforming part to bring it back into conformance by reprocessing using an original, approved production method. (e.g. – installing a missing component on a PCBA and resubmitting for test.)

REPAIR is defined as action taken on a non-conforming part using methods *outside* of the original, approved production process to address a functional or cosmetic defect. In some cases, repaired parts may still be considered non-conforming. (e.g. – repairing a lifted PCBA pad by adding a jumper wire and epoxy.)

> **NOTE: Repairs that are performed in accordance with commonly accepted industry standards do not require Midtronics approval. Example: IPC-7711 Rework, Modification and Repair of Electronic Assemblies.*

NOTICE OF ESCAPE

Should the supplier identify that non-conforming material has left their facility, they must provide written notification to Midtronics within 24 hours of discovery. The supplier is required to implement immediate containment actions, followed by corrective action.

DEFECTIVE MATERIAL IDENTIFIED AT MIDTRONICS

If defective material is found at Midtronics, the supplier will be notified via email. Midtronics may issue debits for component costs and reserves the right to recover expenses related to inspection, testing, and labor.

Suppliers have three days to provide an RMA; otherwise, parts will be scrapped at supplier cost. Options for rework or repair may be discussed as necessary.

Midtronics retains the right to seek reimbursement for activities including sorting, inspection, and rework.

Corrective Action & Operational Risk Management

Suppliers are required to maintain a formal corrective action system.

Supplier Corrective Action Requests (SCARs) should follow the 8D methodology, with containment completed within 24 hours, root cause identified within 10 days, and CAR closure achieved within 30 days.

A Supplier Corrective Action Request (SCAR) may be initiated in response to a single event, such as lot rejection, high risk or safety defects, or repeated defects, as well as for overall performance issues like recurring minor non-conformities or repeated late deliveries.

Suppliers are also required to have a risk management process, including preventive actions, to address reasonably foreseeable risks that could result in non-conformance.

Product Identification and Traceability

PART MARKING

Suppliers may utilize their own labeling scheme for part marking, provided that all required information is clearly indicated and that the marking complies with all applicable engineering drawings and purchase order (PO) requirements.

PACKAGE MARKING

Packages should be marked according to the supplier's standard labeling practice, ensuring information is legible and traceable, and consistent with the specifications outlined in engineering drawings and purchase orders.

At a minimum, Midtronics part number, revision level, and PO number should be marked on each container.

PCBA LABELING

Printed Circuit Board Assemblies (PCBAs) must be labeled in accordance with the Midtronics PCBA Labeling Standard. In addition, all labeling and marking must fully comply with the requirements detailed in the relevant engineering drawings and purchase orders.

Compliance with these standards is mandatory to ensure proper identification and traceability.

Each lot or batch must be controlled and serialized as appropriate, in accordance with engineering drawings and PO requirements. This enables accurate tracking and traceability throughout the supply chain.

TEST & INSPECTION DATA

Certifications of Conformance, Test or inspection reports, and other quality data should be included with the packing slip when shipped as hardcopy. If the data is not packed with the slip, the box containing the test or inspection data must be conspicuously marked so that it is easily identifiable.

Control of Changes

Supplier shall have controls in place to manage changes to:

- Product Design
- Manufacturing or assembly process, including new tooling
- Source of supply
- Raw materials or components

- Manufacturing location

These controls shall extend to sub-tier suppliers.

Unless explicitly allowed by the engineering specification, no changes to materials, manufacturing processes, or manufacturing locations are permitted without obtaining written approval from the Midtronics Quality and Engineering Departments.

Changes to sub-tier suppliers are not permitted when sub-tier suppliers are specified by Midtronics.

Requests for changes must be submitted at least 90 days before the proposed change is planned to occur to allow time for sufficient review. Approval must be received by the supplier prior to implementing any changes and re-submission of first article samples may be required as part of the approval process.

Counterfeit Parts Prevention & Obsolescence Management

Suppliers must have counterfeit parts prevention measures to actively identify and eliminate potential counterfeit components from the supply chain, with notification to Midtronics within 24 hours if counterfeit or suspect counterfeit parts are detected.

Product obsolescence should also be addressed by notifying Midtronics as soon as obsolete items are identified.

Training and Competence

A documented training program shall be established and maintained to ensure all personnel possess the necessary skills and knowledge required for their responsibilities.

Training records must be maintained for all employees. These records should provide evidence of completed training and demonstrate ongoing compliance with established requirements.

Employees whose work has a direct impact on product quality are required to complete appropriate training before performing assigned duties.

Training requirements for each position must be clearly defined and documented. The organization is responsible for identifying, implementing, and reviewing these requirements to ensure continued employee competence.

Record Retention

All quality records must be retained for a minimum period of five years after shipment of goods. These records include, but are not limited to, test data, inspection data, design and development specifications, and design verification and validation.

When disposing of quality records, the organization shall follow the procedures outlined in the applicable Midtronics Terms and Conditions to ensure proper and compliant record disposal.

Preservation of Product

PACKAGING

All exterior product packaging shall be rated to withstand the rigors of transport, ensuring that the products remain protected during shipment.

Appropriate cushioning materials must be used within the packaging, considering the size and weight of each product. The selected cushioning should effectively safeguard the contents without causing any damage to the product when it is removed from the packaging.

SENSITIVE ELECTRONICS

Sensitive electronic components require specialized handling to prevent damage.

All such items must be packaged using Electrostatic Discharge (ESD) protective packaging. Each package must be clearly marked with ESD warnings to ensure that Midtronics warehouse personnel are aware of the proper handling requirements.

For products with moisture sensitivity, packaging should include vacuum sealing and the use of desiccant materials to control humidity. These items must be properly marked and labeled to indicate their moisture sensitivity.

Supplier Development and Continuous Improvement

PERFORMANCE

Midtronics monitors supplier performance for:

- Quality
- Delivery

Suppliers are expected to maintain a culture of continuous improvement. When performance falls below acceptable thresholds, suppliers shall:

- Submit corrective action plans using structured methods (e.g., 8D).
- Demonstrate measurable improvement.

Failure to meet performance requirements may result in a Supplier Performance Improvement Plan, business hold, or removal from approved supplier list.

Midtronics will periodically assess supplier compliance and performance through monitoring quality performance, surveys, and audits. These activities ensure alignment with quality expectations and continuous improvement objectives.

SUPPLIER SURVEYS

Midtronics evaluates new suppliers to confirm capability and alignment with quality expectations.

All prospective suppliers must complete a supplier onboarding survey prior to approval. The survey assesses quality systems, process controls, risk factors, and compliance with Midtronics requirements. Accurate and timely completion is mandatory for onboarding progression.

QUALITY AUDITS

Based on risk classification and product criticality, Midtronics may conduct a quality system audit on-site or remotely.

Midtronics, its delegates, or regulatory authorities, reserve the right to access supplier facilities, processes, and records necessary to verify compliance with contractual and quality requirements, with reasonable notice.

Any gaps identified during onboarding audits require documented corrective actions before production approval. Failure to address findings may delay onboarding or result in disqualification.

Approved suppliers remain subject to periodic surveys and audits to ensure continued compliance and performance improvement.

Sub-Tier Supplier Control & Verification of Purchased Product

SUB-TIER SUPPLIER SELECTION AND EVALUATION

Criteria for the selection and ongoing evaluation of sub-tier suppliers must be defined. This ensures that all suppliers meet the necessary standards and requirements for quality, reliability, and compliance. Regular assessments should be conducted to verify that suppliers continue to adhere to these criteria over time.

RECEIVING INSPECTION AND VERIFICATION

Receiving inspection processes shall be implemented to verify the quality and conformity of purchased products. The degree of inspection may vary depending on the nature of the product and associated risks, but all incoming materials must undergo some level of verification to ensure they meet specified requirements before acceptance into inventory or production.

Sustainability & ESG

The supplier shall maintain compliance with environmental regulations and standards as they pertain to Midtronics operations and products. The following key areas are addressed to ensure responsible environmental management:

- EU RoHS (Restriction of Hazardous Substances)
- EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)
- SDS (Safety Data Sheets)
- Conflict Minerals (Dodd-Frank Act Section 1502)
- UFLPA
- Additional Sustainability and ESG expectations can be found in Midtronics Supplier Code of Conduct

Additional material compliance requirements may apply based on product or market specific requirements.

Midtronics routinely issues compliance requests relating to supply chain and material compliance, which suppliers are expected to respond to promptly and thoroughly. Furthermore, Midtronics reserves the right to engage third-party entities to verify compliance with these requirements at any time.

Cybersecurity and Data Integrity

Suppliers shall protect Midtronics data and intellectual property. Minimum expectations include:

- Secure file transfer protocols.
- Controlled access to drawings and specifications.
- Basic IT security measures aligned with recognized frameworks.

Business Continuity and Disaster Recovery

Suppliers should maintain contingency plans for operational disruptions.

Plans should address:

- Alternate sourcing and production recovery.
- Notification to Midtronics within 24 hours of any event impacting delivery.

REVISION HISTORY

Revision	Revision Date	Change Description	Revision By
1.0	1/7/2026	Initial release	A. Babic