

TITLE: Policy Outlining Documentation Requirements for Subassemblies Not Manufactured by the Applicant**MSHA Mine Safety and Health, Administration Approval & Certification Center**

1.0 PURPOSE

The purpose of this policy is to specify the requirements for documentation of purchased subassemblies not manufactured by the applicant but used in the applicant's approved/certified/accepted equipment.

2.0 SCOPE

This policy applies to purchased subassemblies, not previously approved, certified or otherwise accepted by MSHA and not manufactured by the applicant but included in approval, certification or acceptance applications, evaluated by the Electrical Safety Division.

3.0 REFERENCES

30 CFR Parts 6 through 27

4.0 DEFINITIONS

- 4.1. **Purchased Subassembly:** An electrical circuit or mechanical devices not designed, fabricated or assembled by the applicant but used in an applicant's product submitted for approval, certification or acceptance such as Liquid Crystal Display (LCD) modules, hybrid integrated circuits or cable strain relief devices, but not including integrated circuits, molded case circuit breakers, ground fault relays or overcurrent relays.
- 4.2. **An integrated circuit (also known as monolithic IC, microcircuit, microchip, silicon chip, or chip):** A miniaturized electronic circuit (consisting mainly of semiconductor devices, as well as passive components) that has been manufactured in the surface of a thin substrate of semiconductor material.
- 4.3. **A hybrid integrated circuit:** A miniaturized electronic circuit constructed of individual semiconductor devices, as well as passive components, bonded to a substrate or circuit board.

5.0 POLICY

- 5.1. **Purchased Subassembly:** For a purchased subassembly that has not been previously approved, certified, or accepted by MSHA, the applicant should provide MSHA with complete design documentation such as schematic diagrams, layout drawings, printed circuit board artwork, parts lists, wiring diagrams, assembly drawings and component specifications. This

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documentation may be provided to MSHA by one of the following methods:

- 5.1.1. Manufacturer's Documentation From Applicant: The applicant submits the required documentation from the subassembly manufacturer with the application. The applicant may copy the applicable documentation with the manufacturer's title block onto a drawing containing the applicant's own title block.
- 5.1.2. Manufacturer's Documentation From Manufacturer: If the subassembly manufacturer will not provide the applicant with the required documentation, MSHA will accept the drawings directly from the subassembly manufacturer. It is the responsibility of the applicant to make all arrangements with the subassembly manufacturer for MSHA to obtain the documentation and components necessary for evaluation and test. MSHA will assure the confidentiality of the documentation submitted by the subassembly manufacturer. The drawings submitted to MSHA by the subassembly manufacturer will be filed at MSHA as part of the investigation and identified on the drawing list sent to the applicant. The drawing list will include a note that those drawings specific to the purchased subassembly may not be released to the applicant.
- 5.1.3. Manufacturer's Documentation Not Available to the Applicant or MSHA:
 - 5.1.3.1. If the subassembly manufacturer will not, or cannot, provide the necessary documentation, the applicant may create the required documentation based on an inspection of the subassembly and component measurements.
 - 5.1.3.2. REGARDING INTRINSIC SAFETY EVALUATIONS AND APPROVALS ONLY. If the subassembly manufacturer will not provide the applicant or MSHA with the documentation, and the applicant is unable to generate complete design documentation of the subassembly, MSHA may accept the minimum documentation specified in 5.1.3.2.1 or 5.1.3.2.2:
 - 5.1.3.2.1. A schematic diagram of the subassembly circuitry and additional notes which define:

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- The total maximum lumped circuit capacitance
 - The total maximum lumped circuit inductance
 - The minimum resistor ohmic value and minimum wattage rating
 - The circuitry contains no hot filament components
 - Power rating of semiconductor components
 - The circuitry contains no voltage generating components or circuits
- 5.1.3.2.2. Photographs of the subassembly's printed circuit boards with sufficient detail and a parts list identifying all electrical/electronic components so that a schematic of the subassembly circuit could be generated, and additional notes which define:
- The total maximum lumped circuit capacitance
 - The total maximum lumped circuit inductance
 - The minimum resistor ohmic value and minimum wattage rating
 - The circuitry contains no hot filament components
 - Power rating of semiconductor components
 - The circuitry contains no voltage generating components or circuits
- 5.1.3.3. The schematic diagram and associated drawings and photographs must meet the drawing requirements of the appropriate part of Title 30 Code of Federal Regulations (30 CFR).
- 5.1.3.4. The submission of a schematic diagram of the subassembly circuitry may not be required if the subassembly circuitry performs a single function, such as a radio frequency (RF) receiver, transmitter or transceiver assembly. However, the additional notes will be required that define:
- The total maximum lumped circuit capacitance
 - The total maximum lumped circuit inductance

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- The minimum resistor ohmic value and minimum wattage rating
 - The circuitry contains no hot filament components
 - Power rating of semiconductor components
 - The circuitry contains no voltage generating components or circuits
- 5.1.3.5. After approval of a product, the applicant is responsible for assuring that purchased subassemblies used in the approved product have been built according to the drawings on file at MSHA. The applicant must request approval from MSHA before installing a modified purchased subassembly in an approved product.
- 5.1.4. Recommendation: The applicant's quality control program should include an agreement with the subassembly manufacturer to notify the applicant if changes are made to the subassembly by the manufacturer.
- 5.1.5. Recommendation: The applicant's quality control program should include inspection and test sampling procedures to verify all critical component specifications.
- 5.2. If changes are made to a Purchased Subassembly, the applicant shall notify MSHA. All changes made to the subassembly shall be evaluated and accepted by MSHA before they are incorporated into the applicant's product.
- 5.3. All drawings in the direct control of the applicant and included as part of the official drawing list must contain the note "Do not change without MSHA approval" or equivalent language, if required by the applicable part in 30 CFR.