Procurement Quality Requirements
(Q Clauses)

H-1999Q

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Procurement Quality Requirements (Q Clauses)

Note to Suppliers: *Refer to H-1999Q-2, Procurement Quality Clause Cross-Reference Matrix (Legacy Q-Clauses), to cross-reference legacy Q clauses on the L3Harris Existing Suppliers website.*

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1.0 PURPOSE

This document establishes the Quality Assurance requirements (Q Clauses) which are applicable as specified on the Purchase Order. **Suppliers shall follow the requirements and guidelines in the Corporate Supplier Quality Manual and any applicable Q Clauses.**

2.0 DEFINITIONS

L3Harris - The legal entity which is the contracting party with Seller with respect to the Purchase Order.

ATP - Acceptance Test Procedure. The formal test that is executed for supplier final acceptance.

Buyer- The L3Harris authorized procurement representative that originates the Purchase Order with the Seller.

Seller- The legal entity which is the contracting party with L3Harris with respect to the Purchase Order.

L3Harris Supply Chain – The collection of L3Harris procurement, supplier quality, commodity management, and subcontracts management personnel.

Item- Products or services contracted for by the Purchase Order.

Material – Materials used to create products typically raw metals, plastics, elastomers, adhesives, etc.

Service – Services are manufacturing operations, consulting, skilled labor, utilities and other commodities,

Product – Products are an aggregate of material and services transformed into components, assemblies, and other tangible items.

P.O. – Purchase Order. The contractual vehicle used to procure services, products, and materials from a seller.

Supplier/Sub tier Supplier – An entity that supplies services, products, or materials to the Seller.

OEM – Original Equipment Manufacturer. OEMs manufacture others designs.

ODM – Original Design Manufacturer. ODMs manufacture their own designs.

OCM – Original Component Manufacturer

Franchised Distributor – An entity that supplies services, products, or materials to the Seller under expressed authorization by the OEM/ODM.

Non-Franchise Distributor – An entity that supplies services, products, or materials to the Seller without expressed authorization by the OEM/ODM.

COTS – Commercial off the shelf

HCOTS – L3Harris Commercial off the Shelf

XRF – X-Ray Fluorescence

Customer Furnished Equipment/Material (CFE/CFM)- Customer-furnished equipment/material acquired by the Customer and delivered or otherwise made available to the contractor as part of a contractual requirement.

Government Furnished Property (GFP)- “Government-furnished property” means property in the possession of, or directly acquired by, the Government and subsequently furnished to the Contractor for performance of a contract. Government-furnished property includes, but is not limited to, spares and property furnished for repair, maintenance, overhaul, or modification. Government-furnished property also includes contractor-acquired property if the contractor-acquired property is a deliverable under a cost contract when accepted by the Government for continued use under the contract. (FAR 52.245-1)

Other Plant Equipment (OPE)- Equipment means a tangible item that is functionally complete for its intended purpose, durable, nonexpendable, and needed for the performance of a contract. Equipment is not intended for sale and does not ordinarily lose its identity or become a component part of another article when put into use. Equipment does not include material, real property, special test equipment or special tooling. (FAR 52.245-1)

Special Test Equipment (STE)- “Special test equipment” means either single or multipurpose integrated test units engineered, designed, fabricated, or modified to accomplish special purpose testing in performing a contract. It consists of items or assemblies of equipment including foundations and similar improvements necessary for installing special test equipment, and standard or general-purpose items or components that are interconnected and interdependent so as to become a new functional entity for special testing purposes. Special test equipment

does not include material, special tooling, real property, and equipment items used for general purposes or property that with relatively minor expense can be made suitable for general purpose use. (FAR 2.101)

Special Tooling (ST)- "Special tooling" means jigs, dies, fixtures, molds, patterns, taps, gauges, and all components of these items including foundations and similar improvements necessary for installing special tooling, and which are of such a specialized nature that without substantial modification or alteration their use is limited to the development or production of particular supplies or parts thereof or to the performance of particular services. Special tooling does not include material, special test equipment, real property, equipment, machine tools, or similar capital items. (FAR 2.101)

Counterfeit Item – "Counterfeit Item" is defined to include, but is not limited to, (i) an item that is an illegal or unauthorized copy or substitute of an Original Equipment Manufacturer ("OEM") or Original Component Manufacturer ("OCM") item; (ii) an item that does not contain the proper external or internal materials or components required by the OEM or OCM or that is not constructed in accordance with OEM or OCM design, but is represented as such; (iii) an item or component thereof that is used, refurbished or reclaimed but the Seller represents as being a new item; (iv) an item that has not successfully passed all OEM or OCM required testing, verification, screening and quality control but that Seller represents as having met or passed such requirements; or (v) an item with a label or other marking intended, or reasonably likely, to mislead a reasonable person into believing a non-OEM or OCM item is a genuine OEM or OCM item when it is not.

Authorized Seller/Supplier – "Authorized Seller/Supplier" is defined as a Franchised Distributor, OEM, OCM or After Market Manufacturer with whom the Original Manufacturer has a contractual agreement to stock, repackage, sell and distribute its product lines as defined in SAE AS6174, AS6081 and AS5553. Authorized Sellers/Suppliers must offer the product for sale with full manufacturer flow-through warranty.

SSR – Supplier Support Request – A form (record) within the expo Supply Chain portal used for the submission of a SIR, SDR, SCN and to submit a FAI to L3Harris. A Supplier Support Request (SSR) is required for each shipment where a written approval to a deviation to a contractual requirement is needed. If the Supplier has opened any SSRs requiring information, review, deviation and/or approval to L3Harris contractual requirements, those SSRs shall be approved prior to delivery of product to L3Harris.

- FAI (First Article Inspection) Submit an SSR-FAI First Article Inspection Report (Reference AS9102) when the Drawing specifies or if the Q-Clause is on the Purchase Order (Notes). The FAI documentation can be attached in the SSR-FAI record prior to submitting for approval, then submit the SSR-FAI for approval in the expo system. All SSRs are specific to a single part number, quantity, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.
- SCN (Supplier Change Notification) Submit an SSR-SCN Supplier Change Notification when the supplier wants to notify L3Harris of a change which will affect the contractual requirements of the Purchase Order. This may include but is not limited to these examples: Drawing Revision changes, Material changes, Location of Manufacture change, Process and/or equipment change, etc. Dimension and test data shall be provided on electronic media (read-only format via CD or DVD). This media shall contain data of ALL parameters listed on the Purchase Order as well as dimensional data selected by the Seller to demonstrate product conformance. Data MUST reference, at a minimum, PO number, Part Number, Lot identification and Serial Number (if applicable) on media delivered. All SSRs are specific to a single part number, quantity, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.
- SDR (Supplier Deviation Request) Deviation request if the parts/product do not meet the L3Harris contractual requirements from the supplier, an SDR shall be submitted. This request is made when parts/product are in process and/or finished. All SSRs are specific to a single part number, quantity, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.
- SIR (Supplier Information Request) Information request for a print change, clarification to Purchase Order requirements such as drawings, specifications, etc., or approval of documentation that is required to the start of production or prior to shipment to L3Harris. This request shall be made before parts are built. All SSRs are specific to a single part number, quantity, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.

3.0 QUALITY ASSURANCE REQUIREMENTS

The following Q Clauses are a requirement of the procurement when specified by number and letter designation paragraph (Q-XX or QC-1-QC-XXXX), as applicable on the Purchase Order. The general Quality Assurance requirements, QC-1 apply to all applicable procurements including L3Harris Interdivisional procurements.

Requests for buyer approval shall be submitted to L3Harris on a Supplier Support Request (SSR).

Additional Purchase Document Clauses/Notes

Additional Program or Specification clauses or notes form a part of an order as defined in the Purchase Order.

4.0 DELETED 08/2024

5.0 HARMONIZED Q CLAUSES (FOR USE ON ALL PURCHASE ORDERS)

QC-1 QUALITY CONTROL GENERAL

GENERAL

- Unless otherwise specifically stated in the Purchase Order, design media, or Statement of Work (SOW), the conditions defined in the Supplemental Quality Purchase Order Conditions (Q-Clauses) assigned also apply. In the event there is a conflict between the requirements of this clause and design media, SOW, or other Q-Clause; the design media, SOW, or other Q-Clauses take precedence.
- If a task or service listed in a section of this clause, (i.e., testing, processing of moisture sensitive parts, etc.) is not applicable to the product or service being provided that section of the clause does not apply and an SSR or waiver is not required.
- If the Seller is unable to comply with this or any other Q-Clause they shall contact the Buyer immediately and not accept the Purchase Order until they have either received a written deviation/waver from L3Harris Supply Chain, an amended purchase order or have achieved compliance through changes within their processes and or subcontractors. Approval requests shall be submitted to the Buyer on a Supplier Support Request (SSR) through the expo portal.
- When the Seller is unsure about Q-Clause applicability they should contact L3Harris Supplier Quality for clarification/ consensus.
- Changes to this Purchase Order can only be approved by the L3Harris Buyer. The Seller is liable for any changes made without prior written approval from the Buyer. Seller shall only accept changes in the revision status of any of these drawings by means of a duly executed Purchase Change Order. Seller shall not accept changes via verbal or email direction. Any unapproved changes will be at Seller's own risk.

CHANGE IN APPROVED DRAWINGS, PROCESSES, MATERIALS OR PROCEDURES

This section is not relevant for Commercial and/or Military Part Numbers.

- Seller shall not change any process, material, or procedure from that used to qualify items or which was used by Seller to become a qualified source without written approval by L3Harris, through the SSR process.
- Any change in chemical compounds shall be communicated to L3Harris to determine if a chemical compatibility study is required.
- In the event of a change, L3Harris, under this Article, reserves the right to request and receive first article samples for evaluation and to examine the associated distributors, facilities, drawings, processes, material, or procedures to access their suitability for provision of compliant products and services.
- The change approval must be referenced on the Seller's shipping documents and applicable certifications/test reports.
- Failure to notify L3Harris of these changes may result in rejection of the material.

PART SUBSTITUTION

- Part Substitution shall not be allowed unless otherwise specifically authorized in the Purchase Order; the exact part number as identified on the Purchase Order, or the exact part number identified in the purchase item drawing shall be provided. If the ordered part is not available, and there is a replacement part, the seller shall submit an SSR/SIR to L3Harris with a suggested part number for a technical evaluation and approval prior to delivery of the replacement part.

SELLER RESPONSIBILITY FOR CONFORMANCE

The Seller named on the Purchase Order retains full responsibility for ensuring products, catalog items, Suppliers, or services furnished here under; comply with all applicable specification and standard requirements for design, construction, and workmanship. All Industry Standards/Specifications and flow downs shall be to the latest revision unless otherwise stated on the L3Harris Purchase Order.

Acceptance of the Purchase Order and receipt of product at L3Harris' location certifies that items processed on this order meet all the requirements imposed. This includes any/all material or services purchased from a secondary (sub-tier) Supplier that are incorporated into or are used to produce, inspect, or test products or services under this Purchase Order. The Seller shall:

- Provide (flow-down) of applicable specification and standards requirements to sub-tier suppliers.
- Be aware of their contribution to product or service conformity.
- Be aware of their contributions to product safety.
- Be aware of the importance of ethical behavior.
- Ensure, that sub-tier Suppliers have complied with the requirements of this Purchase Order.
- Upon request, Seller shall provide objective evidence to L3Harris Quality personnel of compliance to this provision.

Inspection and testing of materials, work in process and end items shall be described by clear and complete instructions. These instructions shall include acceptance and rejection criteria.

Neither surveillance, inspection, and/or tests made by L3Harris, or their representatives, or representatives of the L3Harris' Customer at either Seller's or L3Harris' facility, nor Seller's compliance with all applicable Quality Assurance requirements, shall relieve Seller of the responsibility to furnish items which conform to the requirements of the Purchase Order.

Seller shall control sub-tier procurements to the extent required to assure quality requirements specified in Buyer Purchase Orders are satisfied. All relevant Purchase Order requirements (key characteristics, supplemental quality Purchase Order notes, etc., as applicable) required to assure that L3Harris' quality requirements are satisfied shall be flowed down to their sub-tier suppliers.

Seller shall notify Buyer promptly when nonconformance is discovered that may affect delivered products. Notification shall include sufficient traceability information to identify and locate affected parts/material.

The Sellers quality program shall assure that completed items are tested and inspected. Inspection status shall be known at all times. When all characteristics cannot be verified at final inspection or test, in-process verifications shall be utilized. If the product is reworked or repaired, any characteristics affected must be verified as conforming to requirements by test and/or inspection as appropriate. Rework that is not totally compliant with the drawings and specifications are not permitted unless specifically authorized by L3Harris Supply Chain. All products successfully completing final inspection and test shall be positively controlled and identified as well as traceable to inspection and test records.

L3HARRIS SURVEYS, SURVEILLANCE, AUDITS, AND INSPECTION

- L3Harris, L3Harris' Customer, and Authorities have the right to conduct surveys, audits, and surveillance of Seller's facilities, or those of Seller's subcontractors, or Suppliers with prior coordination with Seller to determine the capability to comply and to verify continuing compliance with the requirements of the Purchase Order.

- L3Harris, L3Harris' Customer, and Authorities have the right to perform inspection at Seller's facilities, or those of Seller's subcontractors, or Suppliers with prior coordination with Seller during the period of manufacture and inspection prior to shipment.
- Final inspection is the Seller's responsibility to complete prior to shipment for validation of contractual requirements. Final acceptance Inspection shall be completed at the L3Harris' facility, unless otherwise specified on the Purchase Order.
- Neither surveillance, inspection and/or tests made by L3Harris or their representatives at either the Seller's or L3Harris' facility, or the Seller's compliance with all applicable Product Assurance Requirements shall relieve the Seller of the responsibility to furnish items which conform to the requirements of the Purchase Order.
- L3Harris reserves the right to use Structured Sampling at L3Harris facilities for the acceptance or rejection of supplies.

PACKAGING

- A packing slip listing the Purchase Order number must accompany all shipments. Absence of a packing slip shall be justification for rejection of the shipment.
- Unless specifically detailed on the Purchase Order, packaging materials shall not be returned.
    - Cautionary Handling Instructions (when applicable) Boxes or containers, as applicable, shall be selected to the extent necessary to provide protection from physical and environmental damage during shipping and handling. Cushioning materials shall be applied, as required, to protect and to restrict movement of the item(s).
- Electrical components shall be kept from direct contact with cardboard and other paper products. Electrostatic Discharge sensitive component shall be packaged in static shielding packaging which meets the requirements of MIL-PRF-81705, EOS/ESD S11.31, or equivalent. A label identifying that the parts are static sensitive shall be attached to the package.
- Machine/Fabricated Parts shall be clean, free of oil, FOD and other contaminants prior to packaging. Packaging shall be IAW ASTM D3951 unless otherwise specified on the purchase order. Parts shall be packaged using materials IAW ASTM D3951, reference APPENDIX X1.4 – X1.5 with material selection based on part size, mass and fragility prior to packaging in shipping box.
- Parts shall be packaged in a way that restricts shifting inside the box during shipping and handling. The selected shipping box shall have strength to support and protect the contents. The shipping box material shall be IAW ASTM D4727/D4727M with Single or double wall corrugated fiberboard having a minimum bursting strength of 275 psi.
- The shipping box shall be sealed using tape and/or strapping IAW ASTM D1974/D1974M to secure for shipping, but also allow to be opened without destroying the box.
- Weight of box packaged for shipping shall not exceed 40lbs. Individual machined/fabricated parts exceeding 40lbs shall be palletized for shipping in a manner as to not incur damage during the shipping process under normal environmental conditions.
- The Seller shall ensure that special labeling requirements shall also be listed in the appropriate shipping documents and on each package.
- All text markings whether on product or on packaging shall be legible in accordance with the following guidance:
    - Target

      Markings legible when viewed without magnification. Markings are distinct, of uniform height, and of a color that contrasts with the background.
    - Defect
        - Marking not legible/blurred.

  - Any missing letter segments are considered a defect.

- All international wooden shipping crates and pallets must meet the latest ISPM-15 specification (International Standard for Phytosanitary Measures Number 15). All domestic wooden shipping crates and pallets are strongly encouraged to meet the latest ISPM-15 specification (International Standard for Phytosanitary Measures Number 15).
- All solvents must be supplied in new containers that have not been used before to prevent contamination by residual material.

PART MARKING

- If a National Stock Number (NSN) is noted on this Purchase Order, all parts delivered against this order must be marked with the listed NSN. The appropriate number, if applicable, shall be shown below the L3Harris part number on this order. If no NSN is shown, NSN marking is not required. Applicable NSN marking is required in addition to any other labeling as identified on the reference drawings, specifications, standards, and guidelines. NSN marking shall be placed in a location that shall not harm or interfere with the operation or use of the delivered items.
- Seller shall serialize parts and/or materials at the Seller's facility when serialization is designated by the Purchase Order. No two items of the same part number (on this or any other L3Harris Purchase Order) are to be assigned the same serial number.

ELECTRONIC DATA DELIVERY

Test data shall be submitted in one of the following ways: Through upload to expo, or through the provision of CD ROMs, or hard copy with the parts. All electronically delivered test data shall be compatible with Microsoft Office. L3Harris Supply Chain may request an email notification of data upload. Electronic data may include the OEM C of C, test data and other applicable documentation, as required by the PO.

TEST SAMPLES/REJECT/REWORK PART PACKAGING AND IDENTIFICATION

All test samples and/or reject parts to be shipped to L3Harris shall be packaged in appropriate packaging medium to protect parts from damage. These items shall be packaged separately from compliant product and shall be identified/labeled with part number, date/lot code, and identified as test samples/rejected and/or reworked parts (if applicable).

RESUBMITTAL OF REJECTED/RETURNED ITEMS

Items rejected by L3Harris, and subsequently resubmitted to L3Harris, shall be clearly identified as resubmitted items on Seller's shipping document. Any required documentation submitted with the original shipment shall be resubmitted with this shipment.

An SIR with the RCCA attached along with references to the L3Harris' rejection document and new lot control identification numbers are to be provided with the shipment, if required by L3Harris. Supplier shall perform a full ATP on each returned item unless abbreviated testing has been authorized by L3Harris in advance. This would not apply to Distributors with the exception of part replacement when an incorrect/wrong part is received.

COUNTERFEIT PARTS PREVENTION

At a minimum, Seller shall have a maintained and updated Counterfeit Parts Prevention process internally and with its sub tier Sellers. Seller's process shall meet or exceed SAE AS6174 orAS6081 or AS5553 recommendations and requirements.

Seller shall provide evidence of counterfeit item risk mitigation process implementation in accordance with Seller Quality Management System documentation.

Unless first approved in writing by L3Harris, Seller, and its' sub-tier suppliers, shall ensure that only new OEM items (EEE parts, components, equipment, hardware, or materials) are used in products required to be delivered to L3Harris.

If Seller is a US or Canada based entity, Seller shall participate in the Government Industry Data Exchange Program (GIDEP) monitoring and acting on GIDEP reports which affect product delivered to L3Harris. Seller shall report any counterfeit incident to L3Harris, and GIDEP within 60 days of discovery.

Seller and all sub-tier Suppliers of Seller shall not use any of the identified Suppliers who have been suspended or indicted for counterfeit part reasons or are listed on the “Prohibited Suppliers Suspected of Delivering Counterfeit Parts” list maintained by L3Harris.

To further prevent the inadvertent use of counterfeit parts, the Seller Shall only purchase components and parts procured directly from the Original Component Manufacturer (OCMs), the Original Equipment Manufacturers (OEMs), or through the OCM/OEM’s authorized distribution chain.

The Seller, and its sub-tier suppliers, shall not provide items through non-franchised distributors unless first approved in writing by L3Harris through the SSR process. If procurement from non-franchised suppliers is the only viable option; Items without traceability to OEM (purchased through Non-Franchised Distributors/Brokers) shall be tested/inspected per SAE AS6171 as determined by L3Harris. Sellers are required to submit separate validation reports for each Lot Date Code for review and approval prior to shipment. L3Harris reserves the right to require additional 3rd party testing and submission of test reports via Suppler Support Request to supplement evidence obtained by the seller to confirm authenticity of material.

Seller shall have approval from any deviation from test requirements provided by L3Harris.

If seller is an OEM, any materials approved by L3Harris for procurement from non-authorized suppliers shall not release the seller from any product warranty or service obligations as defined in the terms & conditions in effect at the time of the request.

The Seller shall segregate and provide full, inclusive of all supply chain intermediaries from the part manufacturer to the direct source of the product, traceability identifiers (i.e., name and location of all supply chain intermediaries, date code/lot code, and serial number) for all items delivered to L3Harris which contain an item procured from sources other than OEMs or OCMs or their Authorized Distributors. Upon L3Harris request, Seller shall provide all documentation regarding the chain of custody of material back to the original manufacturer or an Authorized supplier.

Seller shall include CofC / Certificate Of Test Completion (when buying from non OEM) documentation to L3Harris’ in a format which is acceptable to L3Harris/Industry standards prior to deliverable product being inspected at L3Harris’ facility – reference MIL-STD-790 for MIL-STD CofC requirements.

Seller shall flow down these requirements to their sub tier suppliers and subcontractors at all levels.

Seller shall provide notification to Buyer, within 24 hours with the pertinent facts if Seller becomes aware of delivery of potential fraudulent, suspect counterfeit, or counterfeit material. Seller may also notify L3Harris Supplier Quality Engineer via e-mail or telephone immediately upon discovery of suspect material. Seller is responsible to obtain documented L3Harris acknowledgement of Seller notification(s) regarding suspect material discovered in the supply chain. Seller shall obtain L3Harris acknowledgement within 24 hrs. after providing the notification.

Suspect counterfeit or counterfeit parts Shall not be returned to Seller nor reimbursed. Seller shall at its expense promptly replace any suspect counterfeit or counterfeit parts with new parts conforming to the requirements of the Purchase Order at no additional cost. Buyer Shall provide documentation to the Seller with results of investigation indicating suspect counterfeit parts and coordinate any Seller review of suspect counterfeit parts at L3Harris’ facility or L3Harris designated test lab. L3Harris reserves the right to request formal corrective action from the Seller and require additional 3rd party testing to supplement evidence obtained by the seller to confirm authenticity of material. L3Harris may turn such items over to US Governmental authorities (Office of Inspector General, Defense Criminal Investigative Service, Federal Bureau of Investigation, etc.) for investigation and reserves the right to withhold payment for the suspect items pending the results of the investigation. Confirmed counterfeit parts shall be segregated until formally dispositioned by L3Harris. Counterfeit parts shall not be reintroduced into the supply chain. Notwithstanding any other provision in this Order, Seller shall be liable for all costs relating to the removal and replacement of Counterfeit Work, including without limitation L3Harris’ costs of removing Counterfeit Work, of reinserting replacement Work and of any testing necessitated by the reinstallation of Work after Counterfeit Work has been replaced.

Counterfeit parts are deemed to have no monetary value. Counterfeit material is non-conforming product, and a Supplier Corrective Action Request (SCAR) shall be issued to the seller. The parts will not be returned.

Compliance with these requirements in no way is to be interpreted as relieving the Seller from their responsibility to assure that Counterfeit Parts are not contained in products delivered.

DATA CONTROL

Sellers shall employ a data control system designed so that data is controlled at a level to assure that integrity of product and/or tooling configuration is maintained throughout the Seller's system from receipt of electronic data through creation of derivatives, to product acceptance and process improvement.

All documents relating to the Quality system are to be reviewed for adequacy and approved by Seller's authorized personnel prior to issue.

Seller documentation and data related to products or services shall be controlled. Obsolete documents Shall be removed from points of issue or otherwise controlled to preclude unintended use.

ELECTROSTATIC DISCHARGE PROTECTION (ESD)

For parts that are ESD sensitive, the Seller shall have an Electrostatic Sensitive Discharge (ESD) control program subject to review and approval by L3Harris in compliance to the requirements of the applicable standard specified by the Purchase Order.

SOLDERABILITY/MOISTURE-SENSITIVE PARTS

Products that have leads, terminations, wiring, etc. intended to be soldered by L3Harris may be solderability tested to the solderability requirements. If no Solderability requirements are specified, the testing Shall be performed to MIL-STD-202 Method 208, MIL-STD-883 Method 2003 or MIL-STD-750 Method 2026. Failure to meet these solderability requirements may be cause for rejection.

Plastic Encapsulated Microcircuits (PEMs) and non-IC Electronic Components that exhibit moisture sensitivity in relation to the surface mount reflow soldering processes shall be "dry" packed in a Moisture Barrier Bag (MBB) with desiccant and humidity indicator card (HIC) I.A.W. J-STD-033, or equivalent, approved by L3Harris. Seller shall label all moisture sensitive devices with level, seal date, shelf life and baking instructions I.A.W. J-STD-033/J-STD-075 or equivalent approved by L3Harris. Received items shall have a minimum of nine months of dry pack shelf life remaining upon receipt. Component users (this includes anyone storing, packaging, handling, or performing high temperature operations like soldering) and suppliers shall handle moisture or process sensitive components (as classified by J-STD-020, J-STD-075, or equivalent, approved by L3Harris Supply Chain) per J-STD-033, or equivalent approved by L3Harris.

ADDITIONAL BUILD TO PRINT OR BUILD TO SPEC REQUIREMENTS (NON COTS PARTS)

CERTIFICATE OF CONFORMANCE/COMPLIANCE

A legible and reproducible Certificate of Conformance/Compliance (C of C), attesting that the articles provided conform to the Purchase Order requirements, is required to be kept on file by the seller and provided to L3Harris upon request within 2 business days unless otherwise specified.

Certifications must be signed and dated by an authorized agent of the Seller. If it is an electronic certification, an electronic signature is required from an authorized agent of the Seller.

MARKING

- Marking of the item is required in accordance with the L3Harris drawing and/or specification. Pay particular attention to nearside or far side marking locations symbols.
- When L3Harris supplied drawings specify marking parts with Cage Code Numbers 14482, 17903, 33472, 60214 or 62065 the product shall only be marked with Cage Code number "62065". The only exception to this requirement, when a Cage Code of "53711" is specified, that number shall be marked on parts. If a company name other than L3Harris is required to be marked on any part, contact L3Harris Supply Chain for clarification.
- If marking is to be identified with a L3Harris serial number, as required per drawing, the Seller shall contact L3Harris Supply Chain for serialization assignment.

- Marking permanency shall meet solvent resistance requirements per MIL-STD-202, Method 215.
- Semiconductors must meet the marking permanency requirements of MIL-STD-750 Method 1022.5.
- Microcircuits must meet the marking permanency requirements per MIL-STD-883 Method 2015.13.
- If part marking is not addressed on P.O., design media, or SOW supplier shall provide materials/parts to L3Harris without part marking.

REQUIREMENTS FOR PROVIDED ELECTRONIC DATA OR CAD FILES

- Standard Drawings

  Electronic Data or CAD neutral files (STP, IGES, DXF etc.), when provided by L3Harris, are offered only as an aid to manufacturing. No guarantee of compatibility or correctness of the file in relation to the drawing is given. The drawing and the Purchase Order are the only contractual documents for the requirement. If the fabricator should find a conflict between the CAD file and the drawing, they are to immediately contact the Buyer and submit an SSR for clarification as it may be an indication of a drawing issue. All SSRs are specific to a single part number, quality, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.

- Simplified Drawings

  Electronic Data or CAD neutral files (STP, IGES, DXF etc.), when provided L3Harris on Simplified Drawings, are a component of the contractual requirements. As referenced on the drawing, both the CAD file and the drawing are to be used to manufacture the part. If the Seller should find a conflict between the CAD file and the drawing, they are to immediately contact the Buyer and submit an SSR for resolution. All SSRs are specific to a single part number, quality, PO number, and PO line item. The same SSR shall not be referenced for any other PO number and line item.

CONFIGURATION MANAGEMENT REQUIREMENTS

Seller shall assure that only the applicable versions of controlled drawings, parts lists (PL), specifications and P.O. instructions incorporating authorized changes are used to fabricate, inspect and test deliverable products. All products delivered under the P.O. - including but not limited to design documentation, hardware, software and firmware - shall conform to configuration management and engineering documentation requirements implicit in the applicable specification(s). Seller shall impose the same configuration requirements on their sub-tier Suppliers in concert with the above requirements. The following configuration management processes are required to the extent identified in the P.O. and design media:

- Product and Baseline Identification
- Configuration change control
- Material traceability

Seller shall maintain a configuration change management system to control the incorporation of L3Harris drawing and specification changes into Seller's engineering, manufacturing, and inspection processes. Seller change management system shall also control any Seller-generated changes to product(s) delivered to L3Harris. All changes shall be documented via an SSR and/or P.O. change order, as applicable. No changes shall be made without submittal to and approval by L3Harris.

If an item on the P.O. is controlled by a drawing that lists or references a PL, Seller must assure they have the appropriate revisions in effect for the date of this P.O. Seller shall contact the Procurement Agent whose name is on the P.O. for the current drawing revision level listing of the subsidiary drawings on the PL.

QC-10 CABLE AND WIRE HARNESS ASSEMBLIES, ACCEPTANCE REQUIREMENTS

Requirements and Acceptance for Cable Assemblies shall be in accordance with IPCWHMA-A-620, Class 3. Solid conductor wire shall not be crimped regardless of any manufacturer/document allowance; solid conductor wire shall be soldered coated and soldered to de-golded contact. This requirement does not apply to Commercial Off the Shelf (COTS) Cable Assembly, Fiber Optic Cable Assembly, bare PWBs, and Flex Circuit (Polyimide "Kapton" Laminate) Cable Assembly.

QC-20 SOLDERING PROCESS REQUIREMENTS

This item requires that all processes, material, cleaning, coating, encapsulation, product assurance, and personnel certification meet the requirements of:

A. Soldering shall comply with NASA Standard 8739.2. Requirements for Surface Mount.

B. Soldering shall comply with NASA Standard 8739.3. Requirements for Soldered Electrical Connections.

C. Soldering shall comply with IPC-A-610 Class 3. If the observed condition does not have a defined acceptability criteria established within IPC-A-610, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

D. Soldering shall comply with IPC-A-610 Class 2. If Class 2 requirements are not established within IPC-A-610, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

E. Soldering shall comply with IPC J-STD-001 Class 3. If the observed condition does not have a defined acceptability criteria established within J-STD-001, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

F. Soldering shall comply with IPC J-STD-001 Class 2. If Class 2 requirements are not established within IPC J-STD-001, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

G. Soldering shall comply with IPC J-STD-001 XS Space Applications. If the observed condition does not have a defined acceptability criteria established within J-STD-001, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

H. Other Standards as approved by L3Harris

I. Solderability of leads and terminations shall comply with requirements of J-STD-001 Class 3. If the observed condition does not have a defined acceptability criteria established within J-STD-001, an SIR shall be issued for concurrence and approval. See additional clarification of requirement this subsection below.

J. Electrical and Mechanical solderable component parts shall meet the solderability requirements of J-STD-002, JESD22-B102 or MIL-STD-202 for a minimum of one year (12-Months) after receipt of parts at L3Harris.

SUBSECTION CLARIFICATIONS (C, D, E, F, G, and I)

If within IPC-A-610 or IPC J-STD-001, the following verbiage exists, “manufacturer and buyer shall establish and agree on requirements”, this shall be submitted via SIR for formal L3Harris review and approval. Common examples include, but are not limited to;

1. “shall meet requirements of the assembly drawing/documentation” or
2. “validation process shall be documented and available for review”

NOTE: If the statement noted above (Bullet 1 or similar), is found in J-STD or IPC, the expectation is that the Manufacturer refers to the assembly drawing or documentation. If the assembly drawing documentation does not call out a specific requirement pertaining to the specific section of the JSTD or IPC standard an SIR shall be submitted.

If the statement noted above (Bullet 2 or similar), is found in J-STD or IPC, the expectation is that the Manufacturer submits the validation package for the specific section within JSTD or IPC standard section, an SIR shall be submitted.

QC-30 DELETED 11/2019

QC-40 DELETED 11/2019

QC-50 PRODUCT HOMOGENEITY

A. All product supplied to this Purchase Order line item shall be from manufacturer's single lot and/or date code. Partial shipments are not acceptable.

B. All product supplied to this Purchase Order line item shall be from manufacturer's single lot and/or date code and be less than 5 years old upon receipt. Partial shipments are not acceptable.

C. All product supplied to this Purchase Order line item shall be from manufacturer's single lot and/or date code and be less than 16 months old upon receipt. Partial shipments are not acceptable.

D. All components supplied to this Purchase Order must be assembled from homogeneous lots of subcomponents. subcomponents shall be defined as electrical parts and packages.

E. If multiple lot and/or date codes are required to fulfil this order, the codes shall be on separate lines on the packing slip.

The Seller shall obtain the approval of L3Harris through an SSR prior to shipping goods that do not meet this single lot/date code requirement. When mixed lot/date codes are requested, the SSR shall list individual lot/date codes and quantity. Multiple lot/date codes shall not be co-mingled. In addition, the individual part containers shall be marked with the quantity and lot/date code.

QC-60 PRODUCT TRACEABILITY

A. The Distributor (a Seller other than the manufacturer) shall identify:

- Manufacturer
- Manufacturing plant location or cage code (if known)
- Manufacturer's part number
- Manufacturer's lot or batch number (if applicable)
- Lot date code (if applicable) for each item under the procurement.

B. All parts and/or material and applicable documents must be identified by a manufacturing lot number or batch number by the Seller. A lot is the quantity that has been manufactured during an uninterrupted period of time by essentially the same personnel, following a standard process and using the same equipment/facility. When size does not permit the application of this number on the part, a unique method shall be used that provides traceability to the manufacturer's lot.

C. Materials must be identifiable by lot number, material type, specification and revision letter(s) or number(s), heat number, etc. and traceable to records of inspection acceptance. Items fabricated by the Seller shall be identified with the lot of material used. When two or more parts are joined in an assembly, the Seller shall prepare an assembly parts list identifying each item in the assembly. Records of traceability shall be available for review by a L3Harris Technologies quality representative.

D. Documentation that demonstrates a solid chain of custody from the original manufacturer through all intermediate distributors down to the buyer. Traceability documentation shall be maintained for all hardware.

E. The material delivered shall require poling date identification for each lot. When multiple pole dates are delivered within a single shipment the material shall be segregated and identified by pole date.

F. The item ordered per this drawing requires serialization and or other information. Please contact the Buyer on this Purchase Order to obtain marking guidance.

G. Manufacturer is required to serialize parts delivered on this Purchase Order. Unless otherwise stated the manufacturer may use serialization method of their choice.

QC-70 SUB-TIER SUPPLIER MANAGEMENT

This Purchase Order requires that all requirements that are invoked or applied to the suppliers purchasing document and its associated documents, including key characteristics where applicable, be flowed down to all sub-tier suppliers.

For all Purchase Order items it is the responsibility of the Seller to procure components, it is the responsibility of the Seller to obtain any product assurance requirements (i.e.: screening/qualification data, product certifications, DPA reports, PMT reports, PIND reports, source inspection (pre-cap or final), receiving inspection) either dictated by L3Harris source control drawing, L3Harris engineering drawing, military/commercial specification, and/or standard internal procedure. These requirements shall be retained at the Seller's facility for a term dictated by the Purchase Order.

The Seller shall maintain a supplier control system ensuring all sub-tier Suppliers can meet the requirements of the Purchase Order. L3Harris retains the right to approve any sub-tier Suppliers considered for use on deliverable hardware. The Seller shall notify the Buyer of any intentions to subcontract work required to complete the Purchase Order requirements.

QC-80 TRACEABILITY DOCUMENTATION

Traceability documentation shall be provided to the following requirements:

A. MIL-PRF-19500 (Semiconductors)

B. MIL-PRF-38534 (Hybrid Microcircuits)

C. MIL-PRF-38535 (Microcircuits)

D. Manufacturer’s heat, lot, or batch number and the Buyers Purchase Order number shall be included with the material.

E. All electronic components or electronic subassemblies are required to be accompanied by OEM/OCM certificate of authenticity, indicating the part number as marked on the component or subassembly. If an OEM/OCM certificate is not available, and if contractual requirements allow, and with the approval of Quality team, a manufacturer/distributor’s COC and a counterfeit prevention plan can be substituted in lieu of OEM/OCM Certificate of authenticity.

F. When items are serialized, the serial number shall be listed on any certifications.

G. For material with date codes, the Seller must supply documentation detailing the quantities supplied of each date code in each incoming lot or be able to furnish that information within 48 hours of request.

H. Materials furnished by L3Harris for production of items shall reference the shipper number on which the materials were received.

I. In absence of traceability, and with written authorization from L3Harris Supply Chain prior to shipment, all pertinent test data/authenticity documentation shall accompany each shipment.

J. Traceability Documentation – Certification indicating compliance with the Specialty Metals clause as defined by DFAR 225.7002. See Clause 44.0 for additional clarifications.

K. JAN Device Traceability from Mfr. (per MIL-PRF-19500) (Direct Mfr/Distributor) to be supplied with the shipment:

- Manufacturer’s name and address
- Name and address of original customer (L3Harris Technologies or distributor)
- Device type and product assurance level (i.e., JAN, JANTX, JANTXV, JANS)
- Lot identification code (including assembly plant code)
- Inspection data or latest re-inspection date on the documentation (Must be less than 24 months old on receipt at L3Harris Technologies)
- Quantity of devices in shipment (from manufacturer to original customer)
- Manufacturer authorized signature and date.
- Other than Device Mfr. – Additional Requirements:

- Distributor's name and address
- L3Harris Technologies name and address and previous distributor's name and address, if applicable
- Quantity of devices in shipment
- Latest re-inspection date, if applicable
- Certification that the shipment is a part of the shipment covered by the manufacturer's documentation
- Distributor authorized signature and date of transaction

L. Seller shall furnish material identification and traceability with the shipment of product. For metals, physical and chemical test reports are required. For non-metals, objective evidence that the correct material was used shall be provided. Seller shall maintain a copy of all supplier's procured raw material certifications, which must be readily retrievable and shall include material specification, dimension/ description, alloy and condition.

M. Shipment must include the approved OEM/Manufacturer's certification document or the distributor's certificate of compliance when lot traceability is maintained.

N. Seller shall maintain a method of item traceability that ensures tracking of the supply chain back to the manufacturer of all Electrical, Electronic, and Electromechanical (EEE) parts included in assemblies and subassemblies being delivered per this order. This traceability method shall clearly identify the name and location of all of 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 identifications.

QC-90 DELETED 11/2019

QC-100 DELETED 11/2019

QC-110 DELETED 11/2019

QC-120 DELIVERABLE INSPECTION/TEST DATA

Subcontractor shall include with each shipment a copy of the results of the lot or item acceptance tests required by the applicable specification. The report shall include the principal specifications including revision numbers or letters which govern the production of the item. Seller records are also to include parts & materials data, certifications, inspection results, and are to be associated with the part or material manufacturer's lot/batch number/and or date codes as well as the seller's lot number. Where quantitative limits are established by the specification, the report Shall indicate the actual values obtained. Required data to be supplied shall be:

A. QC Attributes data for lot specific screening tests in accordance with the Purchase Order part number Qualified Products List (QPL) document.

B. Variable data for all burn-in and operations life tests.

C. 100% of all dimensional measurement data (reference dimensions not required) of actual measurements covering all mechanical parameters of the referenced drawing and/or specification on a quantity of pieces per the following table:

i. For complete PO Line item shipments use the following table.

Quantity of parts being shipped to L3H per PO Line item	Quantity to be inspected by the supplier and the "as measured" data submitted to L3H in an inspection data report
1	1
2 - 8	2
9 - 15	3

16 - 25	5
26 – 50	8
51 – 90	13
91 – 150	20
151 – 250	32
251+	50

ii. For partial or incomplete PO Line item shipments, use the above table based on the quantity of parts being shipped within the partial shipment.

iii. When shipping multiple PO Line items simultaneously to L3Harris the supplier shall not combine the quantities of the individual shipments and shall provide the data reports required per each individual PO Line item

D. Lot specific final electrical parameter test data.

E. Data specified in the referenced drawing.

F. Group A Test/Inspection Data in accordance with the Purchase Order part number Qualified Products List (QPL) document.

G. Group B Test/Inspection Data in accordance with the Purchase Order part number Qualified Products List (QPL) document.

H. Group C Test/Inspection Data in accordance with the Purchase Order part number Qualified Products List (QPL) document.

I. Group D Test/Inspection Data in accordance with the Purchase Order part number Qualified Products List (QPL) document.

J. Group E Test/Inspection Data in accordance with the Purchase Order part number Qualified Products List (QPL) document.

K. Each deliverable device shall be supplied with the following: Lot specific data necessary to prove compliance to all electrical performance and Group A testing requirements of the specification. Summary reports of all screening tests performed and Group B, C, D and E (if radiation data is available) as required by the governing specification including dated indication of completion and compliance.

L. Provide test measurement/inspection data (actual readings) covering the functional (defined as operative inspections, e.g., mechanical, electronic, hydraulic etc.) parameters of the referenced drawing and/or specification. This data shall contain, as a minimum, readings of the parameters listed on the Purchase Order, readings of the parameters selected by the Seller to demonstrate item conformance shall be furnished.

M. Electronic x-ray or film (Approved by L3Harris) must as a minimum be annotated with:

- Part Number
- Part Serial Number(s)
- Identification of the area photographed
- Identification of the view direction

Radiographic/Photographic film shall be interpreted by L3Harris approved facility and the findings documented in a written report. The radiographic report shall include at a minimum:

- Name and location of the radiographic facility performing the inspection
- Radiographic/photographic specification or procedure used
- Quantity of parts inspected

- Quantity of parts accepted
- Quantity of parts rejected and reason for rejection
- Name of the reader and the signature of a responsible agent

N. Environmental Test Reports (defined as vibration, temperature, salt fog, dust, etc.). Data must be provided showing that all equipment is capable of meeting specifications when subjected to the environmental extremes/requirements listed on the L3Harris drawing, R.F.Q., P.O. or S.O.W. with shipment of the material.

O. Pressure or Leak Test report

P. 100% VSWR and Continuity Test. Where testing is not specified by the drawing, test data confirming that 100% VSWR and Insertion Loss Testing was successfully performed for all RF cables and 100% Continuity check was successfully performed for all DC cables, shall be recorded and retained (electronically preferred) by Seller for each shipment and shall indicate acceptance by seller's stamp (or signature) and date performed.

Q. Inspection documentation stamped by the responsible quality inspector showing 100% inspection for all attributes noted on the drawings, for all parts submitted under this Contract/Purchase Order.

R. When L3Harris specifications require test data to be reported during the performance of acceptance testing, a copy of the recorded data (test report) showing evidence of Seller’s inspection and verification of conformance shall accompany shipment of items to L3Harris. This test report shall list actual test results obtained from an analysis of representative samples of each lot of material used to fill this order. In the case of a drop shipment to other than L3Harris’ plant, a copy of the report shall also be submitted, together with a copy of the packing slip, at time of shipment.

Minimum report data provided shall consist of the part number, revision letter, nomenclature, Purchase Order number, engineering orders, lot numbers, serial numbers, lot date codes, lot quantity, inspection sample size, type of test performed, characteristics/parameters inspected and/or tested, quantity accepted, and quantity rejected, any codes/keys/or other information necessary to interpret Seller’s data, and signature/stamp of Seller's inspection/test representative. If Go/No-Go test method is used, test program must be identified.

S. Items A through R as appropriate to the items being tested and requirements of the Purchase Order

T. The supplier shall provide a serialized and itemized list of all Flight and Group Test (Destruct) parts. The supplier shall package Flight Parts separately from Group Test (Destruct) Parts. The packaging shall be clearly labeled “Flight” or “Destruct” on their respective containers. All “Destruct” parts shall be marked with a permanent red dot prior to test.

QC-130 DELETED 11/2019

QC-140 DESTRUCTIVE PHYSICAL ANALYSIS

The parts procured on this PO require the seller to provide a Destructive Physical Analysis (DPA).

A. The DPA is to be performed per s311-m-70, using the sample size identified in the PO. The DPA must be performed by an independent lab approved by L3Harris Technologies the DPA is to include RGA testing, where applicable, on at least one part, and include screening for prohibited materials. The DPA report shall be included with shipment of the parts. The Seller shall contact L3Harris Technologies prior to shipping any lot that fails DPA.

B. The (DPA) shall be performed in accordance with L3Harris Specification 2016745.

C. L3Harris approval of Seller’s DPA procedure is required prior to implementation. If Seller chooses to have the analysis performed by an outside Supplier, L3Harris approval of that Supplier is required.

D. L3Harris approval of the lab to be used for the DPA is NOT required.

E. The DPA must be done by an independent third party lab which is DSCC certified to perform DPAs on this part commodity. The DPA must be done according to the requirements of MIL-STD-1580 (current revision). A comprehensive DPA report must be supplied as part of the delivered data package for the shipped parts.

F. The sample quantity shall be those designated as the quantity of parts listed on an RFQ/PO line as “Samples for DPA.”

G. DPA shall be done in accordance with L3Harris’ Source Control Drawing.

QC-150 DIMENSIONAL INSPECTION SAMPLING

For dimensional inspection, sampling per ANSI/ASQ z1.4, level iii, AQL xx (except all sample sizes shall be accept on "0" reject on "1") is acceptable.

A. AQL = 1.0

B. AQL = 2.5

C. AQL = 4.0

QC-160 DELETED 04/2023

QC-170 L3HARRIS SOURCE INSPECTION ALTERNATIVE

Prior to shipment, and in lieu of tests witnessed by a L3Harris product assurance representative, test data sheets shall be submitted to L3Harris QE for review and approval. Each shipment must be accompanied by legible copies of evidence of Seller’s in process and final product verification. Actual measurement and/or test data shall be included. In addition, if required by the Purchase Order, each deliverable device shall be supplied with the following:

A. Attributes data for all screening tests

B. Variable data for all burn-in and operations life tests

C. Final electrical parameter test data

D. Data specified in the referenced drawing/specification

E. Objective evidence of current acceptable Group B, B, and D testing

F. Each deliverable device shall be supplied with the following:

1. Data necessary to prove compliance to all electrical performance and group a testing requirements of the specification

2. Summary report of all screening tests performed and Group B, C, and D testing (as applicable) including dated indication of completion and compliance

G. Furnish test measurement data (actual readings) covering the functional parameters of the reference drawing and/or specification

H. Furnish complete dimensional measurement data (actual readings) covering the mechanical parameters of the referenced drawing and/or specification

QC-180 HEAT TREATMENT OVEN CHARTS

The Seller shall supply heat treatment oven charts for all heat treatments specified in the procurement documentation and referenced drawings. Oven charts shall include reference to oven used, date of heat treatment, starting time, and definition of pen scales used to record times and temperatures.

QC-190 DELETED 04/2023

QC-200 MICROCIRCUIT DIE TESTING

A. Microcircuit die supplied on this order shall be shipped with lot-specific wafer identification along with summary data for all required MIL/883 wafer lot qualification tests and inspections. All information shall be provided as part of the data package supplied with the parts.

B. Microcircuit die supplied on this order shall be shipped with additional testing and inspections as specified in TOR-2006(8583)-5236, latest revision, Table 960-1 All Subgroups. Summary test results for the lot to be shipped to L3Harris shall be provided for all subgroups in Table 960-1 as part of the data package supplied with the parts.

C. Semiconductor dice on this order shall be shipped with lot-specific wafer identification along with summary data for all wafer lot qualification tests and inspections. All information shall be provided as part of the data package supplied with the parts.

D. Semiconductor dice on this order shall be shipped with additional testing and inspections as specified in TOR-2006(8583)-5236, latest revision, Table 960-2 All Subgroups. Summary test results for the lot to be shipped to L3Harris shall be provided for all subgroups in Table 960-1 as part of the data package supplied with the parts.

E. Die geometry shall be supplied with each lot shipment.

F. Element evaluation is to be performed in accordance with L3Harris specification provided for each manufacturer's wafer lot.

QC-210 DELETED 04/2023

QC-220 DELETED 11/2019

QC-230 OUTGASSING REQUIREMENT

Outgassing: All nonmetallic and organic materials shall be tested per ASTM E 595. Materials shall exhibit a total mass loss (tml) of not more than 1.0 percent and a collected volatile condensable material (cvcm) of not more than 0.1 percent. Data listed in the NASA reference publication 1124 for applicable materials may be used in lieu of actual testing. Materials having an outgassing characteristic in excess of these limits shall require L3Harris approval, in writing, at least sixty (60) days prior to start of assembly of the first lot of parts.

QC-240 PASSIVE ELEMENT EVALUATION FOR HYBRIDS AND ASSEMBLIES

All required test information and data below shall be provided as part of the data package supplied with the parts.

A. All passive elements shall meet the evaluation requirements of MIL-PRF-38534, Appendix C.

B. Ceramic chip capacitors shall be M123 per MIL-PRF-123.

C. Chip resistors shall be M55342 at FR T per MIL-PRF-55342.

D. Discrete semiconductors shall be JANKC or JANS according to MIL-PRF-19500.

E. Monolithic microcircuits shall be QML V or JAN Class S according to MIL-PRF-38535.

F. Silicon substrate, metal element, chip resistors, with wire bond terminals must be compliant with MIL-PRF-55342. The only exception to this is Power Conditioning; which may be done, with Buyer approval of sample size, on a sample basis.

G. Hybrid packages shall be hermetic and meet all MIL-PRF-38534 package requirements.

H. Any hybrids contained as elements of a hybrid or assembly ordered from the Seller shall meet all of the requirements of this Quality Code.

I. Any alternates to the parts specified above, and parts of types not covered above, require Buyer approval and processing according to the tables in TOR-2006(8583)-5236, latest revision, section 960.

J. The use of commercial parts is strongly discouraged. Buyer approval of such parts shall require strong technical justification and a strong quality assurance/reliability assurance plan from the Seller. The judgment as to the efficacy of the aforementioned justification and plan rests solely with the Buyer.

K. A complete As-Designed EEEE Parts list shall be provided to the Buyer for approval before purchasing or parts or hybrid/assembly build begins.

L. A complete As-Built EEEE Parts list shall be provided to the Buyer with the data pack shipped with the finished hybrids or assemblies.

M. Passive elements supplied on this order shall conform to the requirements of Buyer's specification.

QC-250 PIND TESTING

PIND testing required for microcircuit devices with cavities when it is not performed during standard product flow. PIND test per MIL-STD-883 TM 2020A PDA less than or equal to 1%. Single pass not allowed.

QC-260 PROCESS CONTROL DATA

Each shipment must be accompanied by legible and reproducible process control data to include statistical charts used to control the work processes involved in preparing the product shipped to L3Harris Technologies When “variable” data is required, this shall be stated in a special instruction or the Purchase Order.

QC-270 RADIATION TEST DATA

Radiation test data shall be supplied with order to include TID, DDD, SEE/SEU and RLAT.

QC-280 SCANNING ELECTRON MICROSCOPE (SEM) ANALYSIS

L3Harris approval of Scanning Electron Microscope (SEM) Analysis is required for wafer lots to be incorporated in parts supplied to L3Harris. The SEM Analysis shall be performed by Seller and must be approved in writing by L3Harris prior to incorporation of wafers in parts.

QC-290 SELLER INSPECTION REPORTING REQUIREMENTS

A. Seller is required to submit with each shipment of items one copy of an inspection report reflecting 100 percent inspection (of all drawing characteristics for each part in the order). Seller shall inspect and report on everything called out on the drawing characteristics.

Items with a total tolerance >.010” or threaded features, shall allow, at the manufacturer’s discretion, the use of an attribute gauge for inspection. If an attribute gauge is used the manufacturer may record the dimension as “OK” or acceptable in the inspection report.

The report shall delineate each drawing characteristic, location (sheet and zone), tolerance, and specify actual measurement results for all drawing characteristics including all out-of-tolerance conditions. The only exception to the above procedure applies to items machined under tape control or automated conditions.

The inspection data shall be keyed to unique serial numbers assigned to each item (check the Purchase Order for pre-assigned serialization). Serial numbers shall be affixed to each item with a tag and are not to be physically scribed or stamped into the items unless directed by L3Harris, PO, or drawing.

Suggested report format is as follows:

Dimension (UOM)	Tolerance (UOM)	DWG Location	S/N 001	S/N 002
0.250	+0.005 -0.005	Sheet 1 C5	0.251	0.253
0.250	+0.010 -0.000	Sheet 1 C5	0.259	0.253
0.250	+0.010 -0.010	Sheet 1 C5	0.257	0.263

B. Seller is required to submit with each shipment of items one copy of an inspection report reflecting all drawing characteristics as required in QC-290-A. This report shall be limited to the first, middle and last item produced from one continuous set-up; and the inspection report shall state the items were machined under tape controlled, automated conditions, or if a batch assembly process was used. If a sampling plan is specified by L3Harris’ drawing, inspection of a lot to that sampling plan is allowed. The document number of the sampling plan and relevant sampling plan information used shall be

recorded on the inspection report. When no sampling plan is specified by drawing and seller is a distributor of catalog parts (i.e., connectors, pins, sockets, plugs, screws, nuts, bolts etc.), inspection of the first and last packaged is allowed.

C. Same as QC-290-A, however, the only documented drawing characteristics required on the inspection report are those characteristics and notes identified as Critical to Function (CTF) and any other nonconforming dimensions. Seller is responsible for compliance to dimensions and notes on the drawing.

D. Provide normal inspection/test data covering parameters identifying conformance to the requirements of the referenced drawing and/or specification

E. Provide test measurement data (actual readings) covering the functional parameters of the referenced drawing and/or specification

F. Provide Dimensional measurement data (actual readings) for each part in this order, covering the mechanical parameters of the referenced drawing and/or specification

A bubble/balloon drawing shall be included that provides a unique identifier to each attribute that shall be referenced on the inspection report.

If this order is lot-controlled and thus there is no unique identifier for each part, it is acceptable to report the lot as a range of the actual measurements taken. Supplier must retain the actual measurements for all parts, even if the data cannot be tied to a single part.

G. Supplier shall provide inspection / test results which are identified and traceable to the individual parts and indicate actual values measured or observed on critical requirements on a sample of parts to be delivered. Inspection and Test results shall be sampled per ANSI/ASQ Z1.4, General Inspection Level II, Table II-A, 1.0 AQL Single Sampling Plan

QC-295 L3HARRIS IN-PROCESS SOURCE INSPECTION

In-process source inspection by L3Harris must be performed at Seller’s facility prior to shipment. Upon receipt of this Order and prior to commencing work, promptly notify the Customer's Procurement Quality Assurance Representative (PQAR) assigned to the Seller's facility so the appropriate inspection plan can be coordinated. In the event that a Procurement Quality Assurance Representative does not normally service the Seller's facility, immediately notify the Customer Procurement representative to obtain a point of contact for the appropriate Procurement Quality Assurance Representative (PQAR) assignment.

In-process source inspection shall be conducted by L3Harris at the Seller's facility or where designated in the Order.

Seller shall provide reasonable inspection facilities for L3Harris to verify conformance to requirements and shall make available to the PQAR all applicable drawings, specifications, procedures, statements of work, Seller’s Order, test software, and changes thereto, related inspection and/or test equipment, and such other information as may be required to satisfactorily perform the inspections and tests required under this Order.

L3Harris In-Process Source Inspection may include validation of Seller’s automatic test programs, procedures to L3Harris specification requirements, witnessing Seller’s performance of acceptance testing, and review of acceptance test data to L3Harris’ specification/drawing.

Detailed parts of assemblies are subject to inspection by the quality representative prior to assembly and/or testing. However, Inspection of such detailed parts does not negate inspection of the finished item by the Seller’s quality representative prior to shipment. The Seller shall make available his/her inspection records to the L3Harris Corporation quality representative at the time of presentation of produced items.

At the discretion of the L3Harris Corporation quality representative, a review/acceptance of the Seller’s documentation may be performed at L3Harris Corporation in lieu of the onsite surveillance.

Seller shall notify the Buyer no less than 5 working days prior to the time items are ready for L3Harris In-Process Source Inspection.

After L3Harris In-Process Source Inspection, any unplanned processing of the material, which may include rework, nonscheduled entry, such as removal of a panel, cover, or enclosure will void the source

inspection, unless otherwise specified on the Source Inspection Report. In case of any nonscheduled entry, rework, or test, Seller shall request L3Harris to repeat source inspection.

Evidence of L3Harris in-process source inspection must accompany or be shown on the shipping documents.

L3Harris reserves the right of final acceptance at L3Harris' facility. Items submitted under this clause shall have passed Seller's inspection. In-process inspection or tests or both are required. Parts, assembly processes and tests are subject to detailed inspection by L3Harris' Quality Representative prior to assembly, test and/or delivery.

When Government Source Inspection is imposed, the Seller is required to schedule L3Harris In-Process Source Inspection in advance of presentation to the Customer/DCMA. The identical data must be presented at the time of review/inspection.

The above requirements of QC-295 apply regardless of which sub-clause is applied.

L3Harris In-Process Source Inspection points may include one or more of the following, but are not limited to:

A. L3Harris shall perform in-process source inspection at defined machining steps as specified in the Procurement Document.
B. L3Harris shall perform in-process source inspection prior to cleaning of the part.
C. L3Harris shall perform in-process source inspection prior to plating/coating.
D. L3Harris shall perform in-process source inspection prior to assembly close-up.
E. L3Harris shall perform in-process source inspection prior to encapsulation/conformal coating.
F. L3Harris shall perform in-process source inspection of inner layer.
   - Inner Layer (CSI) is not required if Automated Inner Layer Inspection is accomplished via an L3Harris approved process (L3Harris Quality representative must approve). Detailed results must be provided for review at in-process and final CSI and be included with associated delivered product.
G. L3Harris shall witness major/critical tests on site as specified in the Procurement Document.
H. L3Harris shall perform other points specified in the Procurement Document.

QC-300 L3HARRIS FINAL SOURCE INSPECTION

Inspection by L3Harris must be performed at Seller's facility prior to shipment. Upon receipt of this Order and prior to commencing work, promptly notify the Customer's Procurement Quality Assurance Representative (PQAR) assigned to the Seller's facility so the appropriate inspection plan can be coordinated. In the event that a Procurement Quality Assurance Representative does not normally service the Seller's facility, immediately notify the Customer Procurement representative to obtain a point of contact for the appropriate Procurement Quality Assurance Representative (PQAR) assignment.

Final Source Inspection shall be conducted by L3Harris at the Seller's facility or where designated in the Order.

Seller shall provide reasonable inspection facilities for L3Harris to verify conformance to requirements and shall make available to the PQAR all applicable drawings, specifications, procedures, statements of work, Seller's Order, test software, and changes thereto, related inspection and/or test equipment, and such other information as may be required to satisfactorily perform the inspections and tests required under this Order.

L3Harris Final Source Inspection may include validation of Seller's automatic test programs, procedures to L3Harris specification requirements, witnessing Seller's performance of acceptance testing, and review of acceptance test data to L3Harris' specification/drawing.

Detailed parts of assemblies are subject to inspection by the quality representative prior to assembly and/or testing. However, Inspection of such detailed parts does not negate inspection of the finished item by the Seller's quality representative prior to shipment. The Seller shall make available his/her inspection records to the L3Harris Technologies quality representative at the time of presentation of produced items.

At the discretion of the L3Harris Technologies quality representative, a review/acceptance of the Seller's documentation may be performed at L3Harris Technologies in lieu of the onsite surveillance.

Seller shall notify the Buyer no less than 5 working days prior to the time items are ready for L3Harris Final Source Inspection.

After L3Harris Final Source Inspection, any rework or test of the item, including any nonscheduled entry, such as removal of a panel, cover, or enclosure will void the final source inspection, unless otherwise specified on the Source Inspection Report. In case of any nonscheduled entry, rework, or test, Seller shall request L3Harris to repeat final source inspection.

Evidence of L3Harris final source inspection must accompany or be shown on the shipping documents.

L3Harris reserves the right of final acceptance at L3Harris' facility. Items submitted under this clause shall have passed Seller's inspection. Final inspection or tests or both are required. Parts, assembly processes and tests are subject to detailed inspection by L3Harris' Quality Representative prior to assembly, test and/or delivery.

When Government Source Inspection is imposed, the Seller is required to schedule L3Harris Source Inspection in advance of presentation to the Customer/DCMA. The identical data must be presented at the time of review/inspection.

QC-310 GOVERNMENT INSPECTION

All work on this Purchase Contract is subject to inspection, test, or other Government procurement quality assurance activities by the Government at any time and any place.

Government inspection is required on this order prior to shipment from Seller's facility.

Government inspections performed Shall be determined by the delegated Government inspection representative and may be conducted during processing, fabrication, or final inspection.

Upon receipt of this Purchase Contract, promptly notify and provide a copy of the order to the Government representative who normally services your plant so that appropriate Government inspection planning can be accomplished. If your facility is not serviced by Government inspection and/or the area Government inspection representative or agency cannot be located, immediately notify Customer.

NOTE: Do not proceed with fabrication/manufacture processing until Government mandatory inspection points (GMIPs) are added to Seller's manufacturing planning. GMIPs shall not be by-passed unless authorized in writing by the Government inspection representative.

The period and method for the advance notification shall be identified in the Governments delegation letter.

Typically, request shall not require more than 2 workdays of advance notification of the Government representative is in residence in the Contractors plant, nor more than 7 workdays in other instances.

Without additional charge to the L3Harris the Seller shall provide all reasonably required facilities and assistance (applicable drawings, specifications, change orders, inspection and/or test equipment) for the US Government representative to perform their duties.

The Seller shall ensure that Government inspection acceptance is evident for every individual GMIP and that completion of Government inspection is evident on Sellers shipping document/packing list. Evidence may be the signature of Government inspection representative with printed name and office, or application of the representative's stamp. The Government shall accept or reject supplies as promptly as practical after their activities, unless otherwise provided in the contract.

Government failure to inspect and accept or reject the supplies shall not relieve the Contractor from responsibility, nor impose liability on the Government, for nonconforming supplies.

When manufacturing processing affected by GMIPs is subcontracted by Seller, the provisions of this Clause shall be included in the Seller's Purchase Order verbatim.

QC-320 GOVERNMENT SOURCE INSPECTION

Government inspection is required prior to shipment from Seller. Upon receipt of this order, promptly notify the Government Representative who normally services your plant so that appropriate planning for Government inspection can be accomplished.

On receipt of this order, promptly furnish a copy to the Government Representative who normally services your plant, or, if none, to the Army, Navy, Air Force, NASA or Defense Supply Agency inspection office. In the event the representative or office cannot be located, L3Harris Supply Chain Shall be notified immediately.

The Seller, without additional charge, shall provide all reasonable facilities and assistance for the safety and convenience of the Government representative in the performance of their duties. The Seller Shall also provide the government quality representative with all drawings, specifications, or other documents necessary to satisfactorily inspect the material.

During performance on this order, your quality control or inspection system and manufacturing processes are subject to review, verification and analysis by authorized Government representatives. Government inspection or release of product prior to shipment is not required unless you are otherwise notified.

All work on this procurement is subject to inspection and test by the Government at any time and place. The Government representative who has been delegated Quality Assurance functions on this procurement shall be notified immediately upon receipt of this Purchase Order. In the event that the Government representative cannot be contacted, Buyer shall be notified immediately.

The period and method for the advance notification shall be identified in the Governments delegation letter.

Typically request shall not require more than 2 workdays of advance notification of the Government representative is in residence in the Contractors plant, nor more than 7 workdays in other instances.

All shipments Shall be accompanied by the Seller's shipping documents noting the assembly or drawing number and applicable revisions, quantity, serial number(s) if applicable, and objective evidence of government inspection.

When corrective action is required for Government Source Inspected items, Seller shall coordinate such action with the L3Harris and Government Quality Assurance Representative assigned to Seller's facility.

QC-330 L3HARRIS HARDWARE PROCESS AUDITS/SYSTEM AUDIT

L3Harris Hardware Process Audits/System Audit is required on this order. Notify L3Harris Technologies Supplier Quality Department (notification must reference L3Harris Technologies Purchase Order Number) as to the availability of in process material.

QC-340 L3HARRIS SOLDER INSPECTION

This component requires a L3Harris inspector certified to J-STD-001 to perform inspection and acceptance.

QC-350 HYBRID DESIGN REVIEW

Hybrid design review shall be performed and documentation submitted prior to MRR.

QC-360 PRECAP INSPECTION

Items on this procurement require precap inspection by L3Harris Source Inspector subsequent to 100 percent precap visual inspection performed by the Seller. Seller shall notify L3Harris' Procurement or Quality Organization representative no less than five (5) working days prior to the time that the items are ready for inspection. Evidence of precap inspection shall be included with shipment.

QC-370 PRODUCTION TOOLING ACCEPTANCE

Acceptance of production tooling against this Purchase Order shall be contingent upon inspection and acceptance by L3Harris, of the applicable characteristics. Dimensional samples, quantity designated by Purchase Order, produced by this tooling must conform to tolerance limits of drawings and specifications specified by this Purchase Order. When duplicate tools are made to the same tool number, each must be proofed separately. Any rework of a tool after proofing (beyond its normal maintenance) shall require subsequent proofing and approval by L3Harris Seller shall maintain process records for molded parts, including mold release agents used, temperature, pressure, and time cycle data for preheat molding and cure, as applicable.

A. Tool proofing acceptance shall be under surveillance of the cognizant L3Harris quality representative at the Seller's facility. Seller shall furnish a legible and reproducible copy of tool proofing approval

with the initial shipment. Approval shall list the tool number and inspection variables data, signed or stamped and dated by the L3Harris quality representative, or

B. Items produced by production tooling may be shipped to L3Harris for acceptance inspection, in which case dimensional samples must be identified with the tool number, tool serial number and, when applicable, the individual cavity number.

QC-380 DELETED 04/2023

QC-390 DELETED 04/2023

QC-400 DELETED 03/2017

QC-410 DELETED 03/2017

QC-420 PWB IPC-J-STD-003 SOLDERABILITY REQUIREMENTS FOR CLASS 3 (HIGH PERFORMANCE PRODUCT)

Each printed wiring board lot shall meet the latest revision of IPC-J-STD-003 solderability requirements for Class 3 (High Performance Product), Category #3 (maximum Durability Coating) applying 8 hours of preconditioning prior to standard solderability testing.

- Reflowed SnPb and HASL SnPb: Steam Aging.
- ENIG, ENEPIG, and dual Reflowed SnPb/Gold: 72 °C and 85% R.H.

Thereafter, followed by the Edge Dip Method per IPC-J-STD-003. L3Harris production flux (Indium NC-SMQ-92J) Shall be used as an exception to the J-STD-003 for solderability testing. Solderability conformance shall include BGA pads on boards when applicable.

QC-430 PACKAGING TEMPERATURE SENSITIVE MATERIAL

Each shipment of temperature sensitive material shall include a packing slip with a statement that the material is temperature sensitive and/or perishable. The packaging shall also have a label affixed indicating that material is temperature sensitive. This label shall be affixed to any/all external packaging. The label shall also identify the temperature storage requirements. All temperature sensitive/perishable material to be shipped shall be packaged and stored in accordance with the manufacturer's specification. Material shall not be accepted without this evidence.

Seller shall furnish Commercial Shipping Documents/Packing List, capable of being photographically reproducible through two additional reproductions, showing the following:

- P.O. Number
- Part Number(s)
- Description
- Qty ordered
- Qty shipped
- Lot/Date Code/serialization (as applicable)

Any handling constraints or cautions such as, but not limited to:

- Optics; open only in clean room environments
- ESD sensitive items opened only at approved ESD workstation
- Moisture sensitive components, open/store only in humidity controlled area
- Shock sensitive components (shock monitoring shall be specified if required).

QC-440 DELETED 11/2019

QC-450 DELETED 11/2019

QC-460 CASTING AND FORGING SAMPLES

Seller shall furnish the following with each shipment of castings or forgings:

A. Two test bars representative of each heat lot and made from the same melt of castings supplied. One spectrographic disc shall be representative of the entire heat or melt.

B. Two test bars produced from the same heat of material as forgings supplied; test bars must have the same percentage of reduction as the forged items supplied.

C. Test bars shall be identified with the applicable Purchase Order number, material heat number, lot number, and alloy identification. Spectrographic discs shall also be identified.

D. Test specimens shall conform to FED-STD-151, “Metal Test Methods.”

E. GRAIN FLOW ANALYSIS REPORT – The Supplier shall forward with the first shipment of material, a report of grain flow analysis. The report shall be in accordance with the requirements of the forging specifications listed on the drawing and shall contain legible photographs of a sectioned and suitably etched forging showing grain flow structure. An inspection report listing actual measurements of all forging dimensions must be forwarded with the laid out part to L3Harris for First Article approval.

F. SHOT PEENING PROCESS CONTROL – The Supplier shall furnish with shipment of material, a report of process control and intensity value of the shot peen operation for each lot of parts processed on this Order and a witness test specimen processed with the lot. The report shall list the information specified in AMS-S-13165 under "Test Records" and "Acquisition Requirements". The test specimens shall be as described in the "Quality Assurance Provisions" section of AMS-S-13165.

G. A radiographic inspection report per PS 21206, PS 23001.1 and PS 23001 (Para. 5.2 and Table 1). (Class 2B castings require only first article foundry control radiography). Heat treatment and hardness testing report for castings.

Penetrant inspection per PS 21202 and pre penetrant etch per PS 12050

Tensile testing of test bars cast for each casting heat treated with castings. Testing shall be in accordance with the material specification and PS 23001.

H. Ultrasonic inspection report per PS 21211 Class a (for raw forging stock). Magnetic particle inspection report per PS 21201 Class A. Hardenability testing report in accordance with the material specification. Macrostructure and gain size analysis in accordance with material specification.

QC-470 DELETED 11/2019

QC-480 DELETED 11/2019

QC-490 LOT ACCEPTANCE COUPONS

The Seller shall provide representative Surrogate Test Coupons and/or Qualification Test Articles as defined by L3Harris provided drawings and/or instructions for the purpose of process qualification and/or lot acceptance. Unless otherwise specified, the test specimens shall be processed at the same time and conditions and traceable for each uniform lot or batch processed.

QC-500 DELETED 11/2019

QC-510 DELETED 11/2019

QC-520 DELETED 11/2019

QC-530 DELETED 11/2019

QC-540 RECORDs & RETENTION

Seller shall maintain records of all inspections and tests performed on items delivered to L3Harris. Records include, assembly, test, inspection and verification/ validation data identifying conformance to each of the requirements specified in the referenced drawing and/or specification as applicable. Records associate with manufacture of serialized or lot controlled articles Shall provide continued traceability of serial numbers or lot number identified through all phases of manufacture, starting with the raw material continuing through final acceptance of the end item. These records shall include heat and lot number of materials, unit or lot serialization and be traceable to the L3Harris’ Purchase Order number. If identified in L3Harris design media; The Seller shall keep records of any sampling plan requirements and Shall include lot quantity, sample size, sampling size requirement, and values for each part required by the L3Harris Design media. All records and test samples shall be made available to L3Harris and/or

Government/Regulatory Representative upon request. These records shall identify nonconformances and shall be made available for L3Harris, L3Harris' customer and regulatory review. Period of retention is XX years (see below) from close of order. This retention period supersedes retention periods identified in other clauses unless otherwise specified on the Purchase Order.

A. Record Retention – 2 Years (Non-Government)

B. Record Retention – 4 Years

C. Record Retention – 5 Years

D. Record Retention – 7 Years

E. Record Retention – 10 Years

F. Record Retention – 15 Years

G. Record Retention – 20 Years

H. L3Harris-Specified Record Retention—Conformity records and QMS records shall be controlled. A documented procedure must define adequate secure storage, retrieval, retention, and disposition of records. It is the responsibility of the Seller to ensure that sub-tier suppliers also control records in accordance with this document. Design records shall be retained for the life of the product. Records related to the product (including manufacturing, purchasing, calibration, inspection) shall be retained for a minimum of years specified by L3Harris, in writing, prior to contract award. The Seller shall not accept the P.O. without receipt of the record retention timeframe.

I. Records created by the supplier or distributor of products produced or delivered to Buyer shall be included with material delivered to Buyer as specified in Purchase Order.

If seller cannot meet selected retention time, the Buyer shall be notified prior to contract award, in some cases the Buyer may be able to allow the Seller to ship all the records to satisfy this requirement. All deviations to this requirement must be issued in writing by the Buyer.

Seller shall notify the Buyer 30 days prior to expiration of record retention time to allow for the retrieval of all records from Seller. Records held for the required retention periods may not be without Customer's written concurrence.

QC-550 SOFTWARE DELIVERY DOCUMENTATION

Seller shall deliver documentation of software as specified in the Purchase Orders. Software documentation shall be sufficient to establish that:

- All requirements are achieved or waivers submitted and approved.
- Configuration is correct and deliverables are properly identified or marked for version.
- Planned level of acceptance is achieved and/or deviations/waivers are made part of the deliverable documentation package.
- Operating instructions accompanying the developed software are sufficient to enable loading, initialization, and operation by L3Harris' personnel.
- Software Version Description Document, which includes, any known problems, target system configuration requirements, build/installation instructions and change history
- Contain ITAR marking (if applicable)
- Compliant to Data Item Description (DID) contents and format per contract

QC-560 DELETED 11/2019

QC-570 DELETED 04/2023

QC-590 QUALITY MANAGEMENT SYSTEMS AND INSPECTION PRACTICES

Specification establishes requirements for the Seller's inspection practices. Seller's inspection practices shall be subject to acceptance by L3Harris Technologies at all times.

A. Third Party registration is required for the QMS identified below. Copies of the registration certificates shall be provided to L3Harris upon origination or recertification. If the Seller is registered and they lose their registration, changes registrars, or decide to let the registration lapse; the Seller shall notify L3Harris utilizing the SSR – Supplier Change Notice (SCN) process within 10 business days after such changes.

B. ISO-9001. Seller shall provide and maintain a system that complies with 9001, “Quality System Requirements.” Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

C. MIL-I-45208 or Equivalent approved by L3Harris Supply Chain. This specification applies to all supplies or services when referenced in the Purchase Order. Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

D. MIL-Q-9858 or Equivalent approved by L3Harris Supply Chain. This specification applies to all supplies or services when referenced in the Purchase Order. Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

E. CONTROL OF QUALITY SAE AS9100. Seller shall provide and maintain a system that complies with SAE AS9100, “Quality System Requirements.” Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

F. NHB 5300.4(1C). Seller shall provide and maintain an inspection system that complies with NHB 5300.4(1C), “Quality System Requirements.” Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

G. NHB 5300.4(1B). Seller shall provide and maintain a quality system that complies with NHB 5300.4(1B), “Quality System Requirements.” Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

H. MIL-STD-1520 or equivalent approved by L3Harris Supply Chain. Seller shall provide and maintain a Corrective Action and Disposition System for Nonconforming Material that complies with MIL-STD-1520. Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris Technologies representatives.

I. AQAP-2110 Seller shall provide and maintain a Quality Assurance Program that complies with AQAP-2110. Compliance with the provisions of this clause in no way relieves the Seller of the final responsibility to furnish acceptable supplies or services as specified. This system shall be subject to audit by L3Harris representatives.

Seller may use, at his option, the higher-level requirements of SAE AS9100 in place of ISO-9001, provided there is no increase in cost to L3Harris. The most current version of these standards shall apply unless otherwise modified by the Purchase Order.

Waivers to quality system requirements are not valid unless obtained via an SSR.

The government’s authorized representative and/or L3Harris may review the Seller’s inspection system; i.e., documentation to determine conformance with these specifications.

QC-600 DELETED 11/2019

QC-610 SOFTWARE DEVELOPMENT PROGRAMS

A. Seller shall provide and maintain a software development program, which is in conformance with ISO/IEC 90003.

B. Seller shall provide and maintain a software development program, which is in conformance with ANSI/IEEE-STD-730.

C. Seller shall provide and maintain a software development program, which is in conformance with CMMI (Level to be specified in the SOW or Design Media).

D. Seller shall provide and maintain a software development program, which is in conformance with DO-178C/DO-278A (Level to be specified in the SOW or Design Media).

E. Seller shall provide and maintain a software development program, which is in conformance with IEEE/EIA 12207.

F. Seller shall provide and maintain a software development program, which is in conformance with AS9006.

G. Seller shall provide and maintain a software development program, which is in conformance with DOD STD-2167, or Equivalent approved by L3Harris Supply Chain.

H. Seller shall provide and maintain a software development program, which is in conformance MIL-STD-498, or Equivalent approved by L3Harris Supply Chain.

I. Software produced to support product development or to be supplied as a line item on this order shall be structured to the model provided by ISO IEC 900003 and/or ANSI/IEEE-STD-730 as required.

J. Seller shall provide and maintain a software development program, which is in conformance with AS9100- Quality Management System Aerospace Requirements by adhering to AS9115: Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations - Deliverable Software (Supplement to 9100:2016).

K. Seller shall provide and maintain a firmware development program, which is in conformance with DO254 (Level to be specified in the SOW or Design Media).

QC-620 DELETED 11/2019

QC-630 DELETED 11/2019

QC-640 DELETED 11/2019

QC-650 INDEPENDENT LABORATORY COUPON PROCESSING

A. PWB suppliers shall manufacture and supply independent laboratory coupons in accordance with 8252313, latest released revision. These coupons shall be submitted to GSFC per GFSC PCB Coupon submittal form (No. GSFC 23-16) or an GSFC approved laboratory identified by L3Harris for evaluation. Supplier will then ship material, original GSFC or approved lab report, and the analyzed coupons to L3Harris.

B. PWB suppliers shall manufacture and supply independent laboratory coupons in accordance with 2012559, latest released revision. These coupons shall be submitted to GSFC per GFSC PCB Coupon submittal form (No. GSFC 23-16) or an GSFC approved laboratory identified by L3Harris for evaluation. Supplier will then ship material, original GSFC or approved lab report, and the analyzed coupons to L3Harris.

C. The supplier shall manufacture in accordance with IPC-6013. Four (4) test coupons of the most complex pattern of each flex processed that have passed acceptance testing by the supplier, are required. Two (2) of these coupons, from opposite ends, shall be submitted to GSFC per GFSC PCB Coupon submittal form (No. GSFC 23-16) or an GSFC approved laboratory identified by L3Harris for evaluation. Supplier will then ship one of the remaining coupons, material, original GSFC or approved lab report, and the analyzed coupons to L3Harris.

D. In accordance with 2012559, latest released revision. Two (2) sets of test coupons, of the most complex pattern of each PWB that have passed acceptance testing by the PWB supplier, are required. These coupons shall be submitted to GSFC per GFSC PCB Coupon submittal form (No. GSFC 23-16) or an GSFC approved laboratory identified by L3Harris for evaluation. Supplier will then ship material, original GSFC or approved lab report, and the analyzed coupons to L3Harris.

QC-660 DELETED 11/2019

QC-670 PACKAGING PRINTED WIRING BOARDS INTERCEPT BRAND POLYETHYLENE BAGS

Printed wiring boards must be enclosed in static intercept brand polyethylene bags available from Engineered Material Inc, 113 McHenry Road, Suite 179, Buffalo Grove, Il 60089, (708) 215-1725. Each PWB shall be in a separate bag with desiccant included in packaging. Either flat bags or zipper closure are acceptable.

QC-680 DELETED 5/20

QC-690 PRINTED WIRING BOARDS CONSTRUCTION AND TEST GENERAL

Printed wiring boards shall be constructed and tested in accordance with:

A. MIL-PRF-31032 (Rigid and Flex) or MIL-PRF-55110

B. MIL-P-50884

C. IPC 6010 Series:

- IPC 6010
- IPC 6011
- Rigid Printed Board Fabrication shall be per IPC 6012. If Class is not specified, Class 3 shall apply.
- Flexible printed boards shall be per IPC-6013/MIL-P-50884. If Class is not specified, Class 3 shall apply.
- IPC 6014

D. L3Harris' drawing 8147294

E. DELETED - 06/23

F. DELETED - 06/23

G. DELETED – 06/23

H. DELETED – 06/23

I. DELETED – 06/23

J. L3Harris' Drawing 8252313

The Seller shall provide one coupon from each printed wiring board panel with each shipment. Unless otherwise specified, the test specimens shall be processed at the same time and conditions and traceable for each uniform lot or batch processed.

QC-700 PRINTED WIRING BOARD REQUIREMENTS

- **Order of precedence is as follows:**
  1. Purchase Order
  2. Printed Wiring Board Master Pattern Data
  3. Printed Wiring Board (PWB) Drawing
  4. Printed Wiring Board Requirements Document - Supplier shall use 2012559 PWB requirements document unless other document for PWB requirements is called out on the drawing or specification.
  5. Applicable PWB specifications (i.e., IPC-6012, etc.)
- **Compliance Requirements**

  Printed Wiring Boards shall comply with Buyer Drawing 2012559 and the master drawing. It is the responsibility of the Seller to assure that the design data and documentation is acceptable to produce a product that is compliant to this Purchase Order and the master drawing. Identification of non-compliant design data or documentation shall be transmitted via the Supplier Support Request (SSR).
- **Date of Manufacture**

All materials delivered shall have a manufacturer date code in compliance with Specification 2012559 solderability requirements. Exceptions shall be approved by L3Harris through the use of the Supplier Support Request (SSR) in expo.

- **Deliverables**
  - Coupons and Microsections

    Note: A/B Coupons and microsections shall be retained for a minimal of 7 years unless otherwise directed by PO or Drawing.

    - AB Coupon Microsection or Mounted Sections: Retained at the Seller. ***Do not deliver unless directed by PO or Drawing.***
    - Impedance Control Test Coupons: Retained at the Seller. ***Do not deliver unless directed by PO or Drawing.***
    - Coupon strip 1: Retained at the Seller. One as-received unmounted coupon strip from each panel so identified to the parent panel. ***Do not deliver unless directed by PO or Drawing.***
    - Coupon Strip 2: **Delivered with PWB shipment.** One as-received unmounted Coupon Strip from each panel. The coupon configuration must support solderability testing to be performed at the Buyer's facility. Coupons shall be individually packaged as specified for the final boards.

- **Seller Shall Deliver the Following Along with the Final Material**

  Note: Ref QC-1980- Electronic Data: If applicable/required by Purchase Order, all deliverable data will be uploaded to L3Harris expo system.

  1. **Standard Certificate of Conformance/Compliance (CofC):** Information shall include Seller Name, Purchase Order Number, Line Item, Part Number, Revision, Quantity and Serial Number(s).
  2. **One Un-Mounted as-received coupon from each panel:** (Coupon Strip 2) (If coupons have already been provided on a previous shipment, make notation and reference previous Purchase Order Number on CofC).

     (Example: Coupons D/C XXXX previously supplied on PO XXXXXXXX line item XXX)
  3. **Solderability Test Results:** Solderability test result report is supplied. (Note: Retesting shall be conducted per Specification 2012559 solderability requirements. (SSR-Deviation is required if boards do not meet the Specification 2012559 solderability requirements. Buyer will only accept product with passing test results).
  4. **Supplier Support Requests:** Copies of approved Supplier Support Requests related to the product being shipped
  5. **Source Inspection:** Copy of applicable Source Inspection Reports or Waiver Authorization
  6. **Ref QC1800-Certificate of Conformance**: (If Applicable/Required by Purchase order)
  7. **Impedance Test results:** (If Applicable by Drawing or Purchase order)
  8. **Gold Measurement Data:** (If Applicable by Drawing or Purchase order)
  9. **Additional reports as applicable per drawing:** This can include wire bond testing, buried resistor testing, IST or D-coupon testing, RF via testing, etc.
  10. **IPC-6012 & 6013 Class 3 Orders**:

      Group A/Microsection Report—Seller format may be used (see 2012559 section 5.0 for all applicable reference information).

- **Solder Samples (Scrap PWB): DO NOT SHIP WITH PWBs.** If available and requested by the Purchase Order, solder samples shall be shipped separately and directly to and attention of L3Harris' Supply Chain representative.
  - Marking PWB Solder Sample: Mark with an "X" with indelible ink on the primary side of the PWB.

- Marking Bag: Label as “Solder Sample” and applicable part number.

QC-710 PWB ASSEMBLY REQUIREMENT SOW – Q00006

Sellers that are providing assemblies containing PWBs shall meet the requirements of SOW Q00006 (Latest Revision) or a Supplier prepared and L3Harris approved document for fabricating PWBs.

QC-720 PWB COUPON PROCESSING BY ROBISAN LABORATORY 1 COUPON PER PANEL

The PWB Seller shall send one coupon from each panel to Robisan Laboratory, Inc. for analysis. Coupons shall contain a representative sample of all plated holes in the PWB, including blind and buried vias. Seller shall hold all material until Robisan acceptance of coupon analysis. Seller shall then ship material, original Robisan report and the analyzed coupons to L3Harris. Final acceptance/rejection of the PWBs Shall be upon completion of the real time x-ray inspection performed by L3Harris. The Seller shall send the original report to L3Harris with a completed Seller Information Request form (VIR) if the coupons do not meet requirements. An approved VIR shall be required to ship the PWBs.

Ship coupons to the following:

Robisan Laboratory Inc.,
6502 East 21st St.
Indianapolis, IN 46219-0451

QC-730 PWB COUPON PROCESSING BY ROBISAN LABORATORY 2 COMPLEX COUPONS

Two sets of test coupons of the most complex pattern of each PWB that have passed acceptance testing by the PWB supplier, are required. These coupons shall be provided to Robisan laboratories or a L3Harris approved lab for evaluation. Only one coupon shall be analyzed unless a failure is discovered. Seller shall then ship material, original Robisan or approved lab report, and the analyzed coupons to L3Harris ship coupons to the following or a L3Harris approved lab. Robisan Laboratory, Inc. Attn: Susan--P.O. _____ 6502 East 21st Street, Indianapolis, In, 6219-0451 or a L3Harris approved lab.

QC-740 DELETED 11/2019

QC-750 PWB REQUIREMENT DRAWING NUMBER 3132450

The requirements of L3Harris Drawing Number 3132450 (Independent Laboratory Coupon Evaluation for Printed Wiring Boards.)—latest version, are applicable to this Purchase Order and are to be flowed down to the Independent Laboratory which Shall be performing the coupon evaluation analysis.

QC-760 PWB REQUIREMENT SOW – Q00006

The requirements of L3Harris Statement of Work (SOW – Q00006, latest revision) applies to this Purchase Order. L3Harris panel layout approval is required for all new designs as well as CL changes BEFORE FABRICATION. D-Coupon evaluation shall ONLY be performed per paragraph 3.2 when blind, buried, and/or microvias are a part of the build process.

QC-770 PWB TRACEABILITY TO LOT FABRICATION AND TESTING PROCESSES

Provide Quality assurance criteria to PWB Suppliers to assure a quality product is delivered to L3Harris and provide adequate traceability to lot fabrication and testing processes.

Requirement:

All images are to be serialized.

Each PWB lot delivered to L3Harris-Reston must be accompanied by the following:

1. Certificate of Conformance/Compliance, stating that the boards were fabricated in accordance with all requirements and instructions listed on the Purchase Order and applicable L3Harris documents
2. Micro-Section & Final Inspection Results
3. Certificate of Electrical Test
4. One coupon from each panel if not sent to independent vendor for analysis
5. Material Certificates for all materials used to layup PWBs
6. At least one solder sample per board lot

QC-780 DELETED 11/2019

QC-790 DELETED 04/2023

QC-800 DELETED 04/2023

QC-810 FACTORY/QUALITY ASSURANCE ACCEPTANCE TEST PROCEDURES AND DATA

A. Proposed Factory/Quality Assurance Acceptance Test Procedures shall be submitted to L3Harris, for approval, 30 days prior to conducting the tests. The procedure format shall include the parameters to be measured, step by step method of test, test equipment required, and provisions for recording results in such a manner as to permit recording of each required performance characteristic in a clear and concise form. When these procedures make reference to test fixtures for acceptance testing, a copy of the schematic of the fixtures shall be supplied.

B. Factory/Quality Assurance Acceptance Test Procedures and the actual test data recorded during acceptance testing shall be provided with each item/equipment delivered at the time of delivery of the equipment. One hundred percent (100%) of the items delivered shall be tested.

C. An acceptance test procedure (ATP) and digital data shall be provided with the hardware. ATP requires L3Harris' approval prior to start of acceptance testing. Digital data shall be provided as ascii sequential files on CD or DVD.

QC-820 DELETED 11/2019

QC-830 SDS REQUIREMENT (PER ITEM)

The Seller is required to provide a Safety Data Sheet (SDS) for each of the items included in each shipment in accordance with the Federal Hazard Communication Standard. The SDS Shall include chemical and common names of all ingredients, physical and chemical properties, information on potential physical and health hazards, primary routes of entry, exposure limits and safe handling, control, first aid, and emergency procedures. Each SDS must include the date the document was prepared or revised.

QC-840 CHIP MICROCIRCUIT STARTING WITH DESIGNATORS U$..,

Chip Microcircuit starting with designators U$.., supplied on this order, shall meet and conform to the requirements of L3Harris drawing No. 3131395 (General Specification for Microcircuit, Chip).

QC-850 CHIP RESISTORS STARTING WITH DESIGNATORS RS, RC, RT AND RB

Chip Resistors starting with designators RS, RC, RT and RB, supplied on this order shall meet and conform to the requirements of L3Harris drawing No. 3131399 (General Specification for Resistor, Chip).

QC-860 CHIP SEMICONDUCTORS STARTING WITH THE DESIGNATORS T$. OR D$…,

Chip Semiconductors starting with the designators T$. or D$…, supplied on this order, shall meet and conform to the requirements of drawing No. 3131394 (General Specification for Semiconductor, Chip).

QC-870 DELETED 11/2019

QC-880 DELETED 11/2019

QC-890 PROCUREMENT OF GATE ARRAYS—

A. STANDARD PRODUCT

- Container Marking

  Each individual container containing the articles to be delivered hereunder, must be clearly and permanently marked with: Quantity, batch, or lot number; specifications or material control information number; L3Harris' designation; Purchase Document Number as a minimum.

- Packaging

  Boxes or containers, as applicable, shall be selected to the extent necessary to provide protection from electrostatic discharge and physical or environmental damage during shipping and handling. Cushioning materials shall be applied, as required, to protect and to restrict movement of the item(s).

- Inspection System

  Seller shall provide and maintain an inspection system, which is in conformance with ISO 9001.

- Milestone Monitoring

  Thirty days after acceptance of the order, the following milestone completion dates on every lot of parts required to satisfy the order quantity are to be submitted to the Buyer: ATP approval

B. FULLY SCREENED

- Container Marking

  Each individual container containing the articles to be delivered hereunder must be clearly and permanently marked with:

  Quantity, batch, or lot number; specifications or material control information number; L3Harris' designation; Purchase Document Number as a minimum.

- Packaging

  Boxes or containers, as applicable, should be selected to the extent necessary to provide protection from electrostatic discharge and physical or environmental damage during shipping and handling. Cushioning materials shall be applied, as required, to protect and to restrict movement of the item(s).

- Quality System

  Seller shall provide and maintain a quality system, which is in conformance with ISO 9001.

- Milestone Monitoring

  Thirty days after acceptance of the order, the following milestone completion dates on every lot of parts required to satisfy the order quantity are to be submitted to the Buyer:

  - ATP approval
  - Wafer lot acceptance testing
  - Start lot assembly
  - Preseal visual inspection
  - Lot assembly complete
  - Start screening
  - Preburn-in electrical testing
  - Postburn-in electrical testing
  - Screening complete
  - Ship screened devices

  The Seller shall advise the Buyer of each completed milestone step defined within 3 days. A summary of the lot status shall be submitted every 2 weeks, starting with the week the first milestone is completed. This status is to define the current location of the lot and its relationship to the milestone schedule. The Buyer is to be advised immediately of any milestone slip, which results in a schedule slip of greater than 3 days from the schedule as defined by the original milestone schedule. Upon definition of a milestone slip, a revised milestone schedule is to be communicated to the Buyer with an explanation for the slip and definition of the action to the Buyer.

- Test Data Requirements

  The Supplier is required to generate an acceptance test procedure (ATP) in accordance with L3Harris specification.

  The following documentation shall be provided in the data package with each shipment of deliverable parts:

- Screening attributes summary data, including the quantity in and out at each step and the quantity failed
- Control samples electrical test data by serial number, variable test data, and deltas over burn-in
- Failure analysis reports for any catastrophic rejects
- All deviations or waivers granted by L3Harris

- L3Harris Source Inspection

  Inspection by L3Harris must be performed at the Seller's facility prior to shipment. Seller shall notify the Buyer no less than 3 working days prior to the time that items are ready for L3Harris Source Inspection. Source inspection is required at the following points:

- Preseal Visual Inspection
- Final Inspection After Screening

  After L3Harris Source Inspection, any rework or test of items, including any nonscheduled entry, will void the source inspection. In case of any nonscheduled entry, rework, or test, Seller shall request L3Harris to repeat source inspection.

  L3Harris reserves the right to onsite monitoring of any process steps by its designated representative.

  In the event of a lot rejection, the Supplier must notify the Buyer and provide new lot control identification numbers as soon as assigned.

- Control Samples

  Where parameter drift testing (drift calculations) is required, serialized control samples shall be used for all electrical tests requiring drift calculation. These samples (minimum of three per device type) shall not receive any environmental or power conditioning tests but shall receive the electrical tests only to validate repeatability of the test equipment. These samples shall not be shipped against this order. The electrical tests on the samples shall be read and recorded data included in the data package.

QC-900 DELETED 11/2019

QC-910 RE-BALLED BGA'S AND BALLED LGA'S

Evidence of Item Alteration:

With each shipment of material against this Purchase Order, the Supplier shall provide evidence of the item alteration specified in L3Harris' drawing.

Any of the following evidence is acceptable to verify that the correct alloy, in the form of a solder sphere, has been attached.

List of acceptable evidence – depends on alteration – see below

Re-Balling

Material composition testing (e.g., XRF testing) of the replacement solder balls of the component. At a minimum, two solder balls shall be tested.

Manufacturing documentation (e.g., Work Order) showing the solder balls were replaced.

When re-balling of Ball Grid Arrays (BGA) services are supplied, the requirements of 433485-000 are required when no other device specific specifications are referenced as part of the purchase order or Drawing/Specification.

Balling

Material composition testing (e.g., XRF testing) of the attached solder balls of the component. At a minimum, two solder balls shall be tested.

Processing documentation (e.g., Work Order) showing the solder balls were attached.

QC-920 WIRE BOND

Wire bond lifts that occur during group B inspection shall be considered rejectable. During L3Harris' independent destructive physical analysis, wire bond lifts shall also be considered a rejectable condition.

QC-930 DELETED 11/2019

QC-940 GOVERNMENT FURNISHED MATERIAL

Government Furnished Material—All Government furnished property must be routed through L3Harris Asset Management.

QC-950 DELETED 11/2019

QC-960 DELETED 11/2019

QC-970 DELETED 11/2019

QC-980 HEXAVALENT CHROMIUM

Any L3Harris drawing or specification where the finish requirements specify or include MIL-C/ MIL-DTL-5541, all product shall be processed in accordance with Type II requirements – compositions containing no hexavalent chromium. The Class shall be as specified in the drawing or specification.

All items furnished for Cage Code 62065, as identified on the drawing, shall be, clear/colorless in appearance. Gold or iridescent yellow shall not be permitted for this product unless otherwise approved, in writing, by L3Harris.

QC-990 LIMITED LIFE PRODUCT REQUIREMENTS

A. Minimum Age (50% Shelf Life): Product that has a shelf life requirement shall be supplied according to the following minimum requirements:

Shelf Life:

- All materials furnished under this Purchase Order shall have, as a minimum, 50% of the useable product shelf life remaining.

Documentation Requirements:

Required to be supplied on the certifications and shipping documents for each item, package or container (based on the OEM method to determine useful life):

- Buyers P.O. number
- Batch number
- Chemical name and part or code number, type, size, and quantity
- Specification number
- Date of manufacture or cure date
- Date of shipment or expiration date
- Storage and special handling information (when specified material has variable shelf life periods based on specific storage conditions, ex. 1 year at -40oC or 6 months at 0oC).
- Environmentally Sensitive Material (Temperature, Humidity, Barometric Pressure, Ambient Light, other) must be identified with the Storage Conditions (Temperature, Humidity, Barometric Pressure, Ambient Light, other), as applicable on the outside shipping container and the lowest level packages containing the material.

B. Maximum Age (4 years) – The maximum age of parts supplied to L3Harris shall not exceed 4 years of age per the manufacturer's date code. Where Manufacturer's specifications state a shorter shelf life, it shall take precedence to this requirement (example: silver finish is 1 year maximum). Use of parts exceeding the maximum age requirements shall require Buyer approval prior to shipment.

C. Maximum Age (3 Years) – Parts delivered on this Purchase Order shall be less than 3 years old at date of shipment.

D. Maximum Age (2 Years) – Shelf life: Lot Date codes of devices delivered under this procurement shall not exceed two (2) years from the date of this Purchase Order unless otherwise approved in writing by the buyer.

E. Minimum Age (Shelf Life): Product that has a shelf life requirement shall be supplied according to the following minimum requirements:

Shelf Life Requirement:

- All materials furnished under this Purchase Order that have a 364 day or LESS shelf life shall have, a minimum, 75% of the useable product shelf life remaining.
- All material furnished under Purchase Order that have a 365 day or MORE shelf life, shall have a minimum, 50% of useable product shelf life remaining.

Documentation Requirements:

Required to be supplied on the certifications and shipping documents for each item, package or container (based on the OEM method to determine useful life):

- Buyers P.O. number
- Batch number
- Chemical name and part or code number, type, size, and quantity
- Specification number
- Date of manufacture or cure date
- Date of shipment or expiration date
- Storage and special handling information (when specified material has variable shelf life periods based on specific storage conditions, ex. 1 year at -40 °C or 6 months at 0 °C).
- Environmentally Sensitive Material (Temperature, Humidity, Barometric Pressure, Ambient Light, other) must be identified with the Storage Conditions (Temperature, Humidity, Barometric Pressure, Ambient Light, other), as applicable on the outside shipping container and the lowest level packages containing the material.

F. Certification of Incorporated Shelf Life Material – Seller shall furnish a legible and reproducible copy of certification with each shipment of items incorporating shelf-life material that does not require age control after installation (e.g., adhesives, resins, plastic-based paints, etc.). Certification shall state that the shelf-life materials were properly controlled prior to use and within the shelf-life period when incorporated. The certification shall be identified with the Purchase Order number and the item(s) produced and signed by a representative of the Seller.

G. Shelf Life Material Shipping Documentation – For Age-Controlled item(s) Seller shall include on shipping documentation (or the labeling when specified by specification) the following:

- Buyers P.O. number
- Date of the manufacture or cure date (date in which the shelf life starts)
- Part number
- Manufactures Name
- Shelf life (period of time material maintains characteristics if stored properly)
- Storage temperature (if applicable)
- Respective control identifier for each lot, batch, heat, heat treat, billet and/or unit identification number

The item(s) shipped under this contract must arrive at Buyer's facility with at least 85% of the specified shelf-life remaining.

If the Seller's product does not meet the minimum shelf-life remaining requirement of 85%, the Seller shall notify the Buyer prior to shipping the product to the Buyer's facility, for the Buyer to determine whether the product's remaining shelf-life is acceptable.

H. Short Life Shelf Life – Time and/or Environment (Temperature, Humidity, Barometric Pressure, Ambient Light, other) Sensitive Material must be identified with the following information on the outside of the shipping container and the lowest level packages containing the material:

- Date of Manufacture
- Storage Requirements (Temperature, Humidity, Barometric Pressure, Ambient Light, other) as applicable to the item.
- Shelf life (expiration date) at stated storage conditions.

A minimum of 75% of the shelf life period must be remaining at the time of receipt at the Buyer's ship to address.

Any material which has six (6) months or less of shelf life when received at the Buyer's ship to address, shall be boldly and obviously marked as "Short Life Material" on the outside of the shipping container and on the lot documentation shipped with the material.

I. Electronic or Electromechanical (EEE) parts – All Electrical, Electronic or Electromechanical (EEE) parts procured from the Seller or its suppliers shall have been manufactured within three (3) years from the delivery date for Plastic Encapsulated Microcircuits (PEMs) and five (5) years for all others. This shall include all sub- assemblies of the article being procured. Any deviation from this requirement shall be in the form of a written authorization from L3Harris Supply Chain, and the authorization shall be included with each shipment.

J. Solderability Verification for Leads and Terminations over 3 Years Old – Any parts with solderable leads/terminations, delivered that are over 3 years old from date of manufacture shall be accompanied by supporting documentation that parts have been re-certified to meet solderability requirements. If Seller is unable to meet the solderability requirements, a Supplier Discrepancy Report (SDR) shall be submitted to the Buyer and approved prior to any shipment of product. The Buyer reserves the right to require testing to ensure solderability of leads. Recertification testing/acceptability, when required, shall be in accordance with IPC/JEDEC J-STD-002 Category 2, Test Condition Category C (or applicable military/industry standard). Steam aging for wire and cable shall be limited to 1 hour with insulation removed. Shipments must be accompanied by supporting documents that parts have been re-certified to meet above requirements.

K. Maximum Age (5 Years) – Parts delivered on this Purchase Order shall be less than 5 years old at date of shipment.

L. Shelf Life on Fabricated Items - For items that are fabricated using a purchased chemical or chemical article material, the Date of Manufacture/original Manufacturer's expiration date of the original chemical material shall be captured and tracked for the item being processed. This original Date of Manufacture/original Manufacturer's expiration date must be clearly labeled on the packaging or be supplied with the product being shipped to L3Harris.

Example: An adhesive sheet film is purchased, and a manufacturer's shelf life is applied. That item is cut to a specific size or form and a new part number is created. The original Date of Manufacture/original Manufacturer's expiration date or of the adhesive sheet film shall be carried over to the new part and submitted with the completed part.

M. Maximum Age (7 Years) – Parts delivered on this Purchase Order shall be less than 7 years old at date of shipment.

N. Maximum Age (10 Years) – Parts delivered on this Purchase Order shall be less than 10 years old at date of shipment.

O. All Electrical, Electronic or Electromechanical (EEE) parts utilized for the assembly of the article being procured shall not exceed four (4) years of age per the manufacturer's date code to the assembly.

Assembly is defined by the date the component is soldered to the circuit card assembly. Where Manufacturer's specifications state a shorter shelf life, it shall take precedence to this requirement (example: silver finish is 1 year maximum). Use of parts exceeding the maximum age requirements shall require submission and approval of the Supplier Support Request (SSR) prior to assembly. All component date codes shall be traceable in the final assembly and the supplier shall provide the oldest EEE date code under 4 years in the assembly and list all components exceeding 4 years with approval document number.

Solderability Verification for Leads and Terminations over 3 Years Old – Any parts procured or utilized with solderable leads/terminations that are over 3 years old from date of manufacture to assembly, supporting documentation with passing test results shall be acquired to validate that parts have been re-certified to meet solderability requirements. If Seller is unable to meet the solderability requirements, a Supplier Discrepancy Report (SDR) shall be submitted to the Buyer and approved prior to assembly. The Buyer reserves the right to require testing to ensure solderability of leads. Recertification testing/acceptability, when required, shall be in accordance with IPC/JEDEC J-STD-002 Category 2, Test Condition Category C (or applicable military/industry standard). Steam aging for wire and cable shall be limited to 1 hour with insulation removed. Shipments must be accompanied by supporting documents that parts have been re-certified to meet above requirements.

QC-1000 MATERIALS TO BE USED IN AN OPERATOR-CONFINED ENVIRONMENTS

Items supplied Shall be used in an operator-confined environment. The Seller assures that all requirements below have been met, including those procured from secondary sources and/or included as assembly components as ordered hereunder:

A. All wiring shall be in accordance with SAE-AS50881. Wire insulation shall not be of a flammable or toxic material, such as PVC or Kapton.

B. All RF cabling, flexible and semi-rigid shall be in accordance with MIL-DTL-17.

C. Seller assures that all the material supplied, including those from all Seller's suppliers, are 100% asbestos free, including asbestos composite materials. Asbestos and asbestos composites can be any of the following fibrous forms of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals: (a) Actinolite Asbestos, (b) Amosite (brown Asbestos), (c) Anthophyllite Asbestos, (d) Chrysolite (white Asbestos), (e) Crocidolite (blue Asbestos), (f) Tremolite Asbestos.

QC-1010 DELETED 11/2019

QC-1020 PACKAGING BERYLLIUM COPPER, ALBEMET OR ANY OTHER BERYLLIUM COMPOSITE MATERIAL REQUIREMENTS:

A. All material and components shipped to L3Harris Technologies, Inc. must be processed in a manner that maintains surface Beryllium cleanliness levels below 25 micrograms per square foot prior to packaging. L3Harris Technologies, Inc. reserves the right to analyze incoming shipments for conformance to this requirement. Each individual package shall be labeled with a Beryllium warning label. This label shall be conspicuous and shall notify any and all recipients of the package that the package contains Beryllium and that Beryllium is considered hazardous. In cases where the P.O. specifies more specific information about the warning label the P.O. content shall be adhered to.

B. For L3Harris INTERNAL USE ONLY: This Article contains Beryllium but is not made from Beryllium, and it may be plated, coated or have other coatings. L3Harris will mark individual packages with a Contains Beryllium Label upon inspection completion.

QC-1030 PROCUREMENT OF WIRE AND CABLE (AGE REQUIREMENTS)

M22759 Wire and M27500 Cable shall have a date of manufacture less than three (3) years from date of shipment to L3Harris.

QC-1040 PROHIBITED MATERIALS

No organic or polymeric material (lacquers, varnishes, coatings, adhesives, greases, etc.) shall be used inside or outside the package without permission from L3Harris. Polymer impregnations of packages shall not be permitted.

Beryllium oxide (beo), pure zinc, pure cadmium, selenium, mercury, alloys of zinc, alloys of cadmium, or alloys of mercury shall not be used. the actual acceptable percentages of zinc and cadmium in alloys shall be technically substantiated with data in the intended applications and shall require L3Harris approval, in writing, at least sixty (60) days prior to start of assembly of the first lot of parts.

QC-1050 REQUIREMENTS FOR PROCESSING OF LEAD FREE COMPONENT FINISHES

Items (exclude PWBs) supplied on this order shall conform to the requirements of L3Harris dwg. No. 3133209 (Requirements for Processing of Lead Free Component Finishes).

QC-1060 SILVER PLATED WIRE MANUFACTURED BEYOND A 2 YEAR LOT DATE CODE

No silver plated wire manufactured beyond a 2 year lot date code shall be used in the assembly without written consent from L3Harris via SSR.

QC-1070 SOLDER FLUX AND CORED WIRE

Solder flux and cored wire shall meet the characteristics and properties of ROLO per J-STD-004. Solder pastes shall meet the requirements of J-STD-005. Flux within the paste shall meet the characteristics and properties of ROLO per J-STD-004.

The most current versions of these standards shall apply. The Seller's workmanship standards may be considered for use if granted in writing by a L3Harris Technologies Quality representative in advance of accepting the order.

QC-1080 SPECIALTY METALS DFARS *225.7003-3*

This Clause prohibits Seller and all Seller's sub-suppliers from incorporating into military parts, components, systems, subsystems, and/or end item deliverables "specialty metals" (identified in the clause, including titanium and stainless steel) which have been melted outside the United States, its possessions, or Puerto Rico, unless certain limited exceptions set forth in the clause or DFARS 225.7003-3 apply. One such exception is for specialty metals melted in a qualifying country or incorporated into an article manufactured in a qualifying country. Those countries are listed at DFARS 225.872-1(a) or (b). If a qualifying country exception applies, the source for specialty metals melted outside the United States must be listed in an applicable Qualified Products List (QPL).

QC-1090 SUPPLIED PRE-WIRED CONNECTORS

Pre-wired connectors supplied on this Purchase Order shall be manufactured after the Purchase Order

issue date. L3Harris Technologies supplied static intercept bags shall be used for packaging. Shipment shall occur immediately after source inspection acceptance via overnight delivery.

QC-1100 SELLER RAW MATERIAL RESPONSIBILITY

The Seller is responsible for documented chemical and physical testing of raw materials (where applicable). The extent of the testing is outlined in the notes' section of the drawings or specified on the Purchase Order.

QC-1110 CONTRACT NUMBER MARKING ON PARTS

This item requires a contract number including the delivery order to be marked on the part. Please contact your L3Harris Supply Chain to obtain the required contract number and delivery order.

QC-1120 PACKAGING CONTAINER MARKING

A container is any packaging containing one or more articles to be delivered that must be clearly and permanently marked with:

- Quantity
- Batch or Lot Number
- Date of Manufacture or Shipping Date
- Hazardous Material Marking, if applicable
- Specifications or Material Control Information Number (if applicable)

- L3Harris' Part Number*

*Purchase Document Number, plus L3Harris' P/N and the Manufacturer's P/N must be on the Packaging slip as a minimum.

QC-1130 DELETED 11/2019

QC-1140 GIDEP PARTICIPATION

The Seller shall participate in the Government-Industry Data Exchange Program (GIDEP) in accordance with the requirements of the GIDEP S0300- BT-PRO-010 and S0300-BU-GYD-010, available from the GIDEP Operations Center, PO Box 8000, Corona, California 91718-8000. The Seller shall review all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories, and GIDEP Agency Action Notices to determine if they affect the Seller's products/services provided to L3Harris. For those that affect the program, the Seller shall take action to eliminate or mitigate any negative effect to an acceptable level. The Seller shall generate the appropriate failure experience data report(s) (GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory) whenever failed or nonconforming items, available to other buyers, are discovered during the course of the contract.

QC-1150 DELETED 11/2019

QC-1160 DELETED 11/2019

QC-1170 ASSET TAG – FOR L3Harris INTERNAL USE ONLY

An asset tag for L3Harris Property Management is required upon receipt. The item Shall be diverted to the identified asset tag area, where the asset tag Shall be applied and item sent for distribution.

QC-1180 DELETED 11/2019

QC-1200 DELETED 11/2019

QC-1210 DELETED 04/2023

QC-1220 COMPONENT PART NUMBER SUBSTITUTION

Part Substitution shall not be allowed unless otherwise specifically authorized in the Purchase Order; the exact part number as identified on the Purchase Order, or the exact part number identified in the purchase item drawing shall be provided. For Distributors only, if the ordered part is not available, and the Distributor has a replacement part, the Distributor shall request, from L3Harris, a technical evaluation and approval prior to delivery of the replacement part.

Component part number Substitution as applied to L3Harris Product shall be permitted without prior authorization provided the change in part number only applies to the products packaging (i.e., bulk or tape and reel, or quantity etc.) intended to support the Seller's internal process management.

Component part number Substitutions are also allowed when granted in the controlling Military document that allows for substitution with higher reliability components (this higher reliability part number is also identified in L3Harris document 251800).

Deviations from the specified manufacturers shall not be allowed without prior approval from L3Harris utilizing the Supplier Deviation Request (SDR) Process.

Variations of the product characteristics that affect form, fit or functional performance that differs from the released and approved part number on the Bill of Material shall not be used without prior written approval from L3Harris Supply Chain. Electronic devices of higher reliability (better than parts) are not acceptable to this situation. Parts with Improved Functional Values ("Better Than" parts) are not acceptable unless approved in writing by L3Harris.

QC-1230 DELETED 11/2019

QC-1250 DELETED 11/2019

QC-1260 MRB AUTHORITY

A. It shall be understood that Seller has Limited MRB authority on this contract. These limitations shall be restricted to "Rework to Conformance," "Scrap," and "Return-To-Vendor" (RTV). "Repair" and "Use As Is" depositions shall require L3Harris approval. The Seller must submit a written request (SDR)

and shall include root cause/corrective action for all requested deviations to L3Harris Technologies for approval prior to actual release/usage of the nonconforming product.

B. It shall be understood that the Seller has No MRB authority, except scrap, on this contract. Any departure from drawings, specifications, or other Purchase Order requirements must be recorded on the SSR – Supplier Deviation Request (SDR) form and submitted to L3Harris Technologies for approval along with root cause corrective action prior to actual release/usage of the nonconforming product.

QC-1270 DELETED 11/2019

QC-1280 DELETED 03/2017

QC-1290 INDIVIDUAL PACKAGING

Each part on this PO line shall be packaged and/or boxed individually so as not to incur damage to the hardware. Cushion all exposed metallic surfaces that are susceptible to damage as a result of scratches or dents. Package individual packages within a larger box with a minimum of 2 inches of dunnage on all sides. Do not use loose fill dunnage in inner box or outer box. Each individual package shall be clearly labeled per PO/Specification requirements.

QC-1300 POTENTIALLY CALIBRATED ASSET – FOR L3Harris INTERNAL USE ONLY

This asset has been evaluated and has the potential to be used for the measurement and acceptance of product. The item Shall be diverted to the identified asset tag area, where the Calibration Evaluation Notice Label, H-3311, shall be applied to internal and external packaging then sent for distribution.

QC-1310 SUBCONTRACTING

The Seller shall not be entitled to assign, delegate or otherwise transfer (by merger, asset sale, contract, operation of law or otherwise) its rights or obligations under the Contract, or subcontract the Contract or any part of it, without the prior written consent of the Buyer.

Where a Seller requires to use sub tier supplier(s) for higher risk activities and special processes (defined as those processes that cannot be subsequently verified after the process has been undertaken), that directly affect the quality of product produced they shall ensure they use sources that comply with the minimum standards listed below. Where they wish to use sources who do not meet the minimum requirements listed then they shall obtain the written approval of L3Harris purchasing prior to implementation.

Material Purchase – AS9100/AS9120/ISO9001 stock lists with lot traceability to source. Where parts are specified as Grade A then full mill lot traceability shall be required along with the use of AS9100/AS9120 stock lists.

Parts/Component Purchase – traceability to OEM source via C of C to minimize counterfeit parts being procured. No re-use, re-manufactured or previously owned parts permitted.

Inspection – UKAS approved

NDT – All personnel performing flaw detection shall be certified to a Level 2 standard for the operation being carried out according to the requirements of EN 4179 or NAS 410. A Certified Level 3 shall be appointed by the NDT agency.

Heat Treatment – UKAS/NADCAP approved

Casting/Forging/Molding – AS9100 preferred where possible but ISO9001 accepted unless specified on the order.

Plating/Painting/Material Finishing – AS9100 preferred but ISO9001 accepted unless specified on the order.

Welding/Brazing/Silver Soldering – accredited welders to be used

PCB, Cabling, Wiring – ISO9001

The Seller shall ensure that all sub tier suppliers are approved by their organization and these requirements shall be flowed down to the sub tier supplier(s).

No further flow down is permitted without L3Harris permission.

QC-1320 DELETED 11/2019

QC-1330 CONTAMINATION CONTROL PROGRAM

The Seller shall provide and maintain a program for contamination control approved by L3Harris. L3Harris retains the right to audit any of the Seller's CC procedures, documents, certifications, and clean room/clean bench environments. Requirements include, but are not limited to, meeting one of each of the following sets of standards.

- Federal Standard 209E and/or ISO 14644-2
  - Clean rooms and associated controlled environments – Part 2:
  - Seller Quality Requirements
  - Specifications for testing and monitoring to prove continued compliance with ISO 14644-1
- IEST-STD-CC1246D (formerly Mil.Std.1246D)

  Product Cleanliness Levels and Contamination Control Program and/or JSC SN-C-0005D

QC-1340 FOREIGN OBJECT DAMAGE (FOD) PREVENTION – QUALITY ASSURANCE

A. The Seller shall establish and maintain an effective Foreign Object Damage (FOD) Prevention Program to reduce FOD using NAS412 as a guideline. The Seller's program shall utilize effective FOD prevention practices. The program shall be proportional to the sensitivity of the design of the product(s) to FOD, as well as, to the FOD generating potential of the manufacturing methods. The written procedures or policies developed by the Seller shall be subject to review and audit by L3Harris and/or government representative and disapproval when the Seller's procedures or policies do not accomplish their objectives. Styrofoam/Packaging "peanuts" shall not be used as packing for any item.

B. The Seller shall establish and maintain an effective Foreign Object Damage (FOD) Prevention Program IAW AS9146. The Seller and Sellers' subcontractors shall utilize effective FOD prevention practices that are compliant with the standard to prevent, detect and eliminate FOD. By delivering items to L3Harris, Seller shall be deemed to have certified to L3Harris that such items and packaging are free from any foreign object or foreign object debris. The written procedures or policies developed by the Seller shall be subject to review and audit by L3Harris and/or government representative and disapproval when the Seller's procedures or policies do not accomplish their objectives. Styrofoam/Packaging "peanuts" shall not be used as packing for any item.

QC-1350 DELETED 11/2019

QC-1360 PACKAGING FLEX ASSEMBLIES PACKAGING MIL-STD-2073-1

Flex Assemblies shall be packaged and handled (at a minimum) in accordance with the most current MIL-STD-2073-1 (Method 50 and 51): Standard Practice for Military Packaging and ANSI standard ANSI/ESD-S-20.20: Protection of Electrical and Electronic Parts, Assemblies, and Equipment unless otherwise noted in drawing.

Flex assemblies Shall be placed in inner packaging's that separate the assemblies to prevent damage, shifting of contents, and/or release of contents.

Volume	Suggested Packaging Type	Suggested Material	Notes
Prototype	Individual	N/A	N/A
Low-Medium	Clamshell w/Foam Die Cuts	<u>Thermoform:</u> RPET, PET, PVC, HIPS <u>Foam:</u> Anti-Stat Polyethylene	• Die-cuts shall allow for minimal handling and easy removal of the flex assembly without strain of weaker joints.

		or Anti-Stat Polyurethane	• Thumb releases or increased hole sizing may be employed to achieve this result. • Design shall be review by L3Harris before implementation.
Medium-High	Thermoformed Tray (w/ Anti-Stat Additive)	RPET, PET, PVC, HIPS	• Design shall be review by L3Harris before implementation.

If a packaging strategy is other than the aforementioned design Shall be reviewed with L3Harris prior to PO placement.

Please contact the Buyer to determine standard pack quantities and suggested package dimensions.

All deviations to these requirements must be approved by L3Harris prior to shipment.

QC-1370 Packaging CRITICAL FINISH HANDLING

Hardware finish/plating is sensitive to contamination during handling. The Seller shall appropriately handle the hardware to prevent contamination during handling. The Seller shall include the following label on all packaging:

Warning: Hardware must be handled with ESD compliant gloves or finger cots.

QC-1380 PROCUREMENT OF FASTENERS (Hi-Rel)

All component hardware (including nuts, bolts, washers, screws, pins, rivets, inserts, etc.) shall be procured from the below listed approved distributors only or USA manufacturers. The approved distributors shall utilize only domestic manufacturers (Made in USA). The approved distributors may ship from other domestic (USA site) stocking locations which may reflect a different Cage code within the C of C.

- Hardware Specialty Co. (CAGE Code 7R019)
- Century Fasteners Corp. (CAGE Code 8R639)
- ServTronics, Inc. (CAGE Code 0D2B8)

All fasteners supplied to the Purchase Document shall be lot segregated in sealable static shielding bags or sealed polyethylene bags and labeled as a minimum with:

- Part Number
- Quantity
- Manufacturer’s Name and/or Manufacturer’s CAGE Code Identification Number
- Manufacturer’s Lot Number
- Packing slip shall contain the information below, at a minimum.
    - Part Number
    - Quantity
    - Manufacturer’s Name and/or Manufacturer’s CAGE Code Identification Number
    - Manufacturer’s Lot Number
    - Distributor’s Name (not applicable if supplied by USA manufacturer)
    - Purchase Document Number

Only domestic (Made in USA) manufacturers, which have a past history of supplying reliable fasteners, shall be utilized. NAS1130 inserts are approved (No SSR required) from manufacturer KATO (CAGE Code 0YC40) made in UK. No re-work or alteration shall be performed on any fasteners (i.e., reducing overall length, increasing thread lengths, plating changes, etc.) without prior written approval by L3Harris. Approval requests shall be submitted to L3Harris in writing via SSR. No alterations of requirements are permitted until a Sellers request is dispositioned and signed by L3Harris. Original fastener manufacturers are authorized to alter their parts without SSR when they assign new part numbers and lot numbers to these altered parts. Lot testing shall be performed after all alterations are complete on parts.

Required Documentation:

- Certificate of Compliance (C of C) or supporting evidence stating all requirements specified in the fastener's specification, and purchasing document, have been met.
- Certificate of Analysis (C of A) from manufacturer specifying chemical composition, and heat treatment, if applicable (excluding washers and excluding fasteners with an ultimate tensile strength less than 100,000 PSI (100 KSI) at standard room temperature). 200 and 300 series corrosion resistant "stainless" steel do not require C of A.
- Lot Test Data (tensile strength and/or hardness, etc.) from the manufacturer showing test results required in accordance with the applicable fastener procurement specification (excluding washers and excluding fasteners with an ultimate tensile strength less than 100,000 PSI (100 KSI) at standard room temperature), 200 and 300 series corrosion resistant "stainless" steel do not require Lot Test Data.

QC-1390 PROCUREMENT OF FASTENERS (NON HI-REL)

All fasteners supplied to the Purchase Document Requirements shall be lot segregated in sealable static shielding bags or sealed polyethylene bags labeled as a minimum with:

- Part Number
- Quantity
- Packing slip must have the following information:
- Part Number
- Quantity
- Manufacturer's Name and/or Manufacturer's CAGE Code Identification Number
- Distributor's Name (if applicable)
- Purchase Document Number

Only domestic (USA) manufacturers, which have a past history of supplying reliable standard (English) fasteners, shall be utilized. Metric fasteners may be domestic (USA) or foreign manufacturers.

No rework or alternation shall be performed on any fasteners (i.e., reducing overall length, increasing thread lengths, plating changes, etc.) without prior written approval by L3Harris. Approval requests shall be submitted to L3Harris in writing. No alterations of requirements are permitted until a dispositioned and approved SSR is issued by L3Harris.

Original fastener manufacturers are authorized to alter their parts without approval from L3Harris when they assign new part numbers and lot numbers to these altered parts. Lot testing shall be performed after all alterations are complete on parts.

QC-1400 DELETED 11/2019

QC-1410 DELETED 11/2019

QC-1420 FIRST ARTICLE INSPECTION (FAI) I.A.W. AS9102

A. The processes and requirements of AS9102 and QA-01.1.1 (Supplier FAI Requirement) apply to this First Article Activity and the report shall be compliant to all AS9102 requirements. The revision of AS9102 to be used shall be the released revision at the time of purchase order acceptance. All data required for the acceptance of the First Article shall be submitted to L3Harris via SSR-FAI for review

and acceptance five business days prior to the planned shipment date. Note that the line item input to the SSR-FAI will be that of part number and not the FAI Line Item. SSR-FAI shall be approved prior to shipment. (Ref QC-1 for further details)

An FAI is required if:

- New part number for the seller
- An FAI has never been submitted/approved before for the part number
- After a 2 year break in production
- After a manufacturing site change (including subcontractor locations)
- After part number, material, hardware, process, design media revision(s)—these items may require partial FAI's
- Otherwise as specified by L3Harris

Commercial Off the Shelf (COTS)/Mil-Spec items and Reworked hardware as a result of a return from L3Harris are excluded from this FAI requirement.

3D CAD Models / Validation -

- Model Based/Digital Product Definition (DPD) and limited dimension or simplified drawings require that a model be interrogated to determine dimensions.
- FAI's shall include validation points which represent nominal points on the model used in the inspection of the manufactured part. 100% of the features must be validated at First Article by CMM and/or manual methods and documented.
- The validation points originally created for an approved first article will be required for recurring inspections.
- Validation points (including Balloon Call-Outs) require L3Harris QA and Engineering approvals via a SSR-SIR (Supplier Support Request).

Balloon Call Outs - The FAI report package shall include a ballooned drawing, traceable to Form 3 characteristic listing, to facilitate review and approval. "Ballooning" is a common technique used to:

- Identify each characteristic on the drawing, DPD and
- Establish an organized method of capturing objective evidence that each drawing requirement is met.

The First Article(s) shall be produced on production equipment using processes and materials which Shall be utilized on production runs.

AS9102 Forms 1, 2, and 3 are to be completed as follows:

- Form 1 Optional (O) fields 11 and 12 are considered mandatory by L3Harris and shall be completed.
- Conditionally Required (CR) fields shall be completed as applicable.
- Fields not applicable shall be filled in as "N/A" to demonstrate the FAI has been completely reviewed by the Seller.
- In Form 1, L3Harris requires that the revision levels of the drawing and parts list are entered in fields 7 and 5 respectively.
    - Detail FAI, for which the drawing will not have a parts list, enter the drawing revision in field 7, and enter "N/A" in field 5.
    - For Assembly FAI, enter the drawing revision in field 7 and enter the parts list revision in field 5.
- Each detail part number shall have its own complete FAI package submitted with the assembly's FAI package.

Seller shall not submit parts from a production run for L3Harris inspection prior to L3Harris' acceptance of the associated FAI Report.

L3Harris reserves the right to verify First Article results at the Sellers facility.

B. QC-1420-A applies with the exception that an FAI is required after a 1 year break in production.

C. QC-1420-A applies with the following additional requirements. In the event of a conflict between this clause and QC-1420-A, this clause takes precedence.

- Manufacturing Traveler

    1. Supplier shall include a copy of the manufacturing record (work order, traveler) that was documented in AS9102 Form 1 block 9.

QC-1430 DELETED 11/2019

QC-1440 ELECTROSTATIC DISCHARGE CONTROLS

A. Seller shall provide and maintain a program for electrostatic discharge control for applicable ESD sensitive hardware items to be furnished on this procurement. Buyer requirements are as specified in the Purchase Orders. The Seller's electrostatic discharge control program is subject to review and approval by L3Harris. As a minimum, MIL-STD-1686, ANSI/EIA-625, ANSI/ESD S20.20, or JESD 625 shall be complied with.

Areas in which ESD items are handled shall be equipped with humidity monitoring devices. When the relative humidity drops below the permitted lower limit of 30%, all work on ESDS items shall cease until either:

- The relative humidity increases to at least the lower limit or,
- Ionization equipment utilized at the ESD workstation must be turned on and properly positioned with respect to the product and operated in accordance with the manufacturer's operating instructions.

The Sellers' ESD program shall flow down to their Subcontractors and Distributors, to the extent necessary, to ensure continuation of the manufacturer's ESD control and safe delivery to L3Harris. Minimal flow down requirements shall address handling, storage, packaging, and marking of items under an ESD control program.

B. All Components specified being ESD sensitive by the Original Component Manufacturer datasheet, shall be packaged and handled in accordance with the latest current MIL-STD-2073-1 (Method 50 and 51):

Parts must be properly packaged and identified as required in ANSI/ESD-S20.20. All electrostatic sensitive devices shall be packaged in static shielding packaging that meets the requirements of ESD ANSI/STM 11.31 and ANSI/ESD S541.

Leads shall be shorted together as appropriate using closed cell non sloughing conduction foam, packaged in sealed static shielding containers or bags designed for ESD protection. Each individual package shall include a destructible ESD precautionary label (ANSI/ESD S8.1 or Mil-STD-129P), applied over the closure.

All goods Shall be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, etc., for shipment.

The packaging must be clearly labeled to indicate that it contains electrostatic sensitive goods. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive.

C. Seller shall provide and maintain a program for electrostatic discharge control for all Electronic items furnished on this procurement. Electrostatic discharge control shall be per ANSI/ESD S20.20. All electrostatic sensitive devices shall be packaged in static shielding packaging that meets the requirements of ESD ANSI/STM 11.31 and ANSI/ESD S541.The Sellers ESD control program is subject to review and approval by L3Harris.

Leads shall be shorted together as appropriate using closed cell non sloughing conduction foam, packaged in sealed static shielding containers or bags designed for ESD protection. Each individual package shall include a destructible ESD precautionary label (ANSI/ESD S8.1 or Mil-STD-129P), applied over the closure area of the packaging item.

QC-1450 DELETED

QC-1460 ELECTRONIC COMPONENT PACKAGING

Packaging

Unless otherwise specified on the P.O., SOW, Design Media, and Mil-Standard; the following are the default packing requirements for Electronic components.

- Bulk packaging is prohibited.
- Packaging shall be in accordance with acceptable commercial practices and as indicated i.e., tubes, tape and reel, JEDEC matrix trays, etc. Parts shall be packaged in such a manner as to prevent damage to components.
- All SMT Quadpacks provided in JEDEC matrix trays shall have pin 1 oriented and loaded into the tray in the same direction.
- Packages shall be marked with part number, lot/date code, and Sellers Name or CAGE CODE as a minimum.
- Packing Slip shall contain the Purchase Order number, part number, Sellers name or CAGE code as a minimum. Use tape (& reel as applicable) or waffle pack as originally packaged from the Manufacturer for all electrical components where applicable, in accordance with ESD (ANSI/ESD S20.20) or equivalent. Bulk packaging or repackaging from bulk pack to tape or waffle pack is prohibited. In lieu of bulk packaging, parts can be individually packaged.
- Packaging constituents shall not contain amine based or ionic antistatic chemistry – meaning no pink poly, no pink foam, or equivalent, etc. It is required that packaging for all electrostatic discharge sensitive material must be packaged in ESD-shielding in accordance with ANSI/ESD S541. Packaging shall be designed to provide physical protection for device case and leads.
- Preservation, packaging, packing, handling, and shipment of items shall be in accordance with appropriate procedures to prevent damage and ensure that original quality is maintained. All electrostatic discharge sensitive material must be packaged in ESD-shielding in accordance with ANSI/ESD S541.
- Packaging shall be designed to provide physical protection for device case and leads. Leads must be protected with conductive foam to prevent puncturing of ESD bag.
- Individual unit containers (including waffle carriers) shall be marked with ESD Caution Symbol (i.e., EOS/ESD S8.1).

Surface Mount Packaging

Surface Mount Technology (SMT) components shall be provided on Tape and Reel IAW EIA-481. In addition to this EIA standard, the following items apply. Reel material must be made of plastic. All reels shall have a minimum of 7 inches of blank carrier and cover tape as a leader and a minimum of 2 inches of carrier and cover tape at the end. High capacity 13 inch reels are recommended when order quantities justify large volume purchases.

NOTE: For parts procured in quantities of less than 200 per line item the product must be on tape and reel. Passive components with maximum surface area equivalent to SMD Package Type 0402 (dimensions 0.04 in. x 0.02 in. or 1.0 mm x 0.5 mm) or smaller shall be packaged in punched paper carrier tape.

Tube Components

Dual Inline Packages (DIP's) and SMT Flatpack may be provided in anti-static tubes. Pin 1 must be loaded consistently for all parts in the tubes. SMT Flatpacks may also be provided on Tape and Reel

IAW EIA-481 and the SMT note above. Parts must be secured from movement. Tubes must be greater than 7 inches in length.

PEM Packaging Requirements (Moisture Sensitive Parts)

- Plastic encapsulated devices, ranked in categories 2 through 6 per IPC-SM-786A and IPC-TM-650, or defined as moisture sensitive per IPC/JEDEC Standard J-STD-033 are moisture sensitive.
- Seller shall “dry” pack (vacuum package) all moisture sensitive devices in a Moisture Barrier Bag (MBB) with desiccant and humidity indicator card (HIC) I.A.W. J-STD-033 or equivalent.
- Seller shall label all moisture sensitive devices with level, seal date, shelf life and baking instructions I.A.W. J-STD-033 or equivalent. Received items shall have a minimum of nine months of shelf life remaining upon receipt.

Waffle or Gel Packed Components

- All bare die components and passive components requested in Waffle or Gel pack shall be packaged in 2”x2” ESD protective Waffle or Gel pack tray with a minimum of 2 sheet of sulfur-free tissue paper between base and cover. Each single stack Waffle tray shall be secured using clip and labeled with part number, quantity, and applicable details of specification. Tape or adhesive label shall not overlap cover to waffle tray.
- Any components under .050” x .050” shall be placed in a pocketed conductive 2” tray Waffle pack with three sheets of sulfur-free tissue paper (Tyvek paper) as spacer between lid and tray.
- Components ranging from >0.050” in any dimension may be placed in a pocketed 2” conductive Waffle tray or vacuum release Gel Pack tray with a tackiness grade ranging from ER0 (Low) to ER4 (Medium). Die placed on vacuum release Gel Pack tray must be removable from external protective packaging. Die placement directly on Gel Pack containers is not permitted. No sulfur-free tissue paper is required for Gel packaging.
- For components not fitting in 2” square tray, 4”X4” tray packaging is acceptable. Use of 2” trays when possible is preferred.
- Waffle or Gel Packed components shall be placed into a nitrogen backfilled ESD protective bag and sealed. Product marking shall be placed on the exterior of ESD bag or be visible through ESD bag on waffle tray.

Components shall be oriented the same direction within Waffle or vacuum release Gel pack.

QC-1460-A Electronic Components Tape and Reel Required

The product must be on tape and reel. Surface-mount devices (SMD) shall be packaged in accordance with EIA standard 481. Each line items shall have a continuous strip of carrier and cover tape (not spliced). Part marking shall be provided on the reel and meet the Purchase Order and specification requirements.

Passive components with maximum surface area equivalent to SMD Package Type 0402 (dimensions 0.04 in. x 0.02 in. or 1.0 mm x 0.5 mm) or smaller shall be packaged in punched carrier tape.

QC-1470 DELETED 09/2024

QC-1480 DELETED 09/2024

QC-1490 DELETED 09/2024

QC-1500 COUNTERFEIT PARTS PREVENTION WITH CUSTOMER APPROVAL

When applicable to this Purchase Order, L3Harris’ Customer written approval is required prior to use of any Non-Franchised Distributor/Broker.

QC-1510 DELETED 09/2024

QC-1520 PARTS PURCHASED FROM A BROKER OF INDEPENDENT DISTRIBUTOR

As this part is being purchased from a broker or independent distributor, special requirements are added to this Purchase Order to assure authenticity. Acquisition traceability certifications leading back to the

original manufacturer and test data (if required) shall be submitted on a SSR (Special Processor Related Request) prior to shipment. Upon receipt, L3Harris Shall perform special inspections and tests of supplied parts to verify that material is not counterfeit. If there is indisputable evidence that the parts are counterfeit, L3Harris Shall not pay for the material, parts shall not be returned to the supplier, and notification to GIDEP authorities may occur. All exceptions to this clause must be approved in writing via approved SSR-SIR.

QC-1530 HIGH RELIABILITY SPACE NASA NB, NBS, AND NLS CONNECTOR PROCUREMENT

Procurements shall be made directly to Amphenol Aerospace (CAGE Code 77820) and/or ITT Cannon (CAGE Code 71468) for continental USA built and tested Connectors (no Procurement allowed thru Distribution). Metal piece parts, platings, assembly and testing/screening shall be from the continental USA. The three (3) Coupling Nut Inspection Holes in all Plug Connectors shall be Round Configuration only (ITT Cannon Kidney Shaped Holes Prohibited).

L3Harris Receiving Inspection shall verify that the CofC and PO was placed directly with Manufacturer (no Distributor).

All aluminum piece parts shall be impact extruded and/or machined (die casting Prohibited). Electroless nickel plate, 500 microinches minimum, over aluminum piece parts. A double Zincate coating shall precede the nickel plating. The double Zincate coating shall be applied after the aluminum is cleaned to eliminate aluminum oxide formation which improves nickel plating adhesion.

Prohibited Finishes. Cadmium, zinc, and pure tin (>97 percent tin by weight) finishes are prohibited. Zincate coating under nickel plating is allowed.

NASA NLS (40M38277) Space Connectors shall be placed directly with Amphenol Aerospace (CAGE Code 77820) in Sidney, NY and/or ITT Cannon (CAGE Code 71468) in Irvine, CA.

ITT Cannon Reference only: NLS0T (CDSA#40020891), NLS6GT (CDSA#40020896) and NLS7T (CDSA#40020898).

NASA NB (40M39569) and NASA NBS (40M38298) Space Connectors shall be placed directly with ITT Cannon (CAGE Code 71468) in Irvine, CA.

ITT Cannon Reference only: NB0E (CDSA#40020869), NB6GE (CDSA#40020876), NB7E (CDSA#40020882), NBS6GE (CDSA#40020878), NBS7E (CDSA#40020883), NBS8GE (CDSA#40020889) and NBS9GE (CDSA#40020886).

QC-1540 PROCUREMENT OF CONNECTORS, BACKSHELLS AND CONTACTS (HI-REL SPACE)

A. CONNECTORS

All Connectors (Crimp Contacts, Solder Cup Contacts, PCB/PWB Leads, Hermetic, etc.) shall have metal piece parts, platings, assembled and tested/screened in continental USA. All aluminum piece parts shall be impact extruded and/or machined (die casting Prohibited). A double Zincate coating shall precede the plating(s). The double Zincate coating shall be applied after the aluminum is cleaned to eliminate aluminum oxide formation which improves plating adhesion.

Prohibited Finishes. Cadmium, Zinc, Silver, and Pure Tin (>97 percent tin by weight) finishes are prohibited. Zincate coating under plating(s) is allowed.

Supply all crimp contact connectors less (without) crimp contacts. Crimp contacts are ordered separately. L3Harris Receiving Inspection to remove any crimp contacts supplied as part of connector kit and scrap.

B. BACKSHELLS

All Backshells (M85049 Part Numbers, Commercial Part Numbers and Source Control Drawing “SCD” Part Numbers) shall have platings, assembly and testing/screening in continental USA. All aluminum piece parts shall have a double Zincate coating applied prior to plating(s). The double Zincate coating shall be applied after the aluminum is cleaned to eliminate aluminum oxide formation which improves plating adhesion.

Prohibited Finishes. Cadmium, Zinc, Silver, and Pure Tin (>97 percent Tin by weight) Finishes are Prohibited. Zincate coating under plating(s) is allowed.

All Saddle Clamps “Strain Reliefs” screw threads shall be American/English Threads (UNC, UNF, etc.) in accordance with Unified National Thread Standard (Metric screw threads are Prohibited on all Saddle Clamps). Example: Amphenol India manufacturer is Prohibited because their M85049 Part Number Backshells are not processed in continental USA and have Saddle Clamps with Metric screw threads.

Acceptable manufacturers are: Glenair, Electro Adapter and Joslyn Sunbank.

C. CONTACTS

All Contacts (M39029 Part Numbers, Commercial Part Numbers and Source Control Drawing “SCD” Part Numbers) shall have platings, assembly (if applicable) and testing/screening in continental USA. (Exception is Carlisle “Tri-Star” (made in Mexico) Contacts)

Prohibited Finishes. Cadmium, Zinc, Silver, and Pure Tin (>97 percent Tin by weight) Finishes are Prohibited.

Contact Manufacturers shall have their Insignia (Mint Mark) marked/stamped on each Contact in accordance with AIR1351 “Manufacturers’ Identification of Aerospace Electrical and Electronic Wiring Devices and Accessories”. If Manufacturers’ Insignia is Not identified in AIR1351 then Manufacturer shall notify Buyer with a SSR including a Company Letter with their Insignia identified.

Acceptable Manufacturers are Ella Engineering, Positronic Industries (made in USA) and Carlisle “Tri-Star” (made in Mexico).

QC-1550 AS BUILT LIST

An “As Built List” shall be provided, in the Seller’s standard reproducible format, identifying the part numbers, revision levels, and serial numbers of all assemblies, at the lowest repairable unit level, that are incorporated into the major assembly identified on this Purchase Order. A copy of this document shall be supplied with each unit delivered to this Purchase Order.

QC-1560 AS DESIGNED/AS BUILT LISTS L3HARRIS PROVIDED FORMAT

Seller shall provide an as-designed parts, materials and processes list prior to procurement of components and an as-built parts, materials and processes list at time of delivery to L3Harris. The format of these As Designed/As Built lists shall be provided at the time of PO Placement.

QC-1570 FUNCTIONAL AND PHYSICAL CONFIGURATION MANAGEMENT

Seller shall be responsible for controlling/tracking changes to parts and components manufactured to ensure that the end product meets specified design functional and physical characteristic requirements. This includes any part or component manufactured to Sellers' drawings, specifications, or special process procedures.

The Seller and L3Harris shall document the agreements as to the extent of organization internal configuration management to be applied to this contract/Purchase Order. At a minimum, with each shipment, the Seller shall submit configuration documents, which define the requirements, designs, build/production and verification for a configuration controlled item. This record shall be signed and dated by an official of the Seller's Quality Assurance department, and in addition to the aforementioned required information, shall include the following minimum requirements: Seller's Contract/Purchase Order number Line item number Part number (Of deliverable item and all traceable/repairable sub-tiered parts) Serial number (Traceability as required per contract/Purchase Order) Lot number (Traceability as required per contract/Purchase Order) Drawing number (For traceable/repairable sub-tiered parts) Revision level (baselined configuration of drawing to which hardware was built) Engineering order(s) (or equivalent drawing changes as applicable) L3Harris approved deviations and waivers (as applicable).

QC-1580 SELLER SUPPLIED CONFIGURATION INFORMATION

A. With the initial shipment, the Seller shall furnish at no cost to L3Harris two legible copies of applicable specifications, drawings, and/or catalogs or catalog page(s) sufficient to inspect and/or test the product(s) specified in the Purchase Order.

B. With each shipment, the Seller shall furnish at no cost to L3Harris two legible copies of applicable specifications, drawings, and/or catalogs or catalog page(s) sufficient to inspect and/or test the product(s) specified in the Purchase Order.

It is understood that data supplied is not expected to be of a sensitive proprietary nature. The Seller shall notify L3Harris in writing of any changes proposed in product design, fabrication methods, materials, or processes on proprietary products, including those procured from secondary sources and/or included as assembly components as ordered hereunder, and shall obtain L3Harris' approval prior to supplying such products on this order. In the event of Buyer approval, Seller shall identify those articles on which the change is incorporated.

The L3Harris drawing specified in this order may differ from the Seller catalog items referenced on the drawing. The responsibility for verification of the dimensional correctness of the items to L3Harris lies with the recipient of the Purchase Order.

QC-1590 DELETED 03/2017

QC-1600 DELETED 04/2023

QC-1610 SOFTWARE CONFIGURATION CONTROL

Seller shall utilize a software version control tool to maintain configuration control of the delivered software including source code. Software version shall be assigned to the deliverable baseline and be provided as part of the end item data or final test documentation. Firmware is considered as software.

Seller shall maintain archived backups of the deliverable software including source code.

QC-1620 DELETED 11/2019

QC-1630 DELETED 11/2019

QC-1640 AUTHORIZED DISTRIBUTOR'S CERTIFICATION

The EEE Component or device Manufacturer's authorized distributor shall be used for this procurement. The manufacturer's authorized distributor shall, at a minimum, provide the following information with each shipment of product to L3Harris:

- Authorized Distributor's Name and address.
- Authorized Distributor's and Manufacturer's part number (if different).
- Batch Identification for the item(s) such as lot and/or date codes, serialization, or other batch identification and the quantity for each lot or date code shall be annotated on the Certificate of Conformance/Compliance.
- Signature or stamp on the C of C with title of Seller's authorized personnel signing the Certificate of Conformance/ Compliance to accompany product for shipment shall be included.
- Authorized Distributor's shall, in addition to the above, include the actual Manufacturer's name for each product shipped to L3Harris.
- If available, supply Manufacturer's certification and associated data submitted to authorized distributor at time of purchase.
- Substitution of equivalent part from another OEM is not authorized. L3Harris will only accept delivery of parts from OEM defined in this Purchase Order.

Note: Unless negotiated otherwise prior to acceptance of this quality provision, failure to meet the above provisions will result in product REJECTION upon delivery to L3Harris.

QC-1650 DELETED 11/2019

QC-1660 DELETED 03/17

QC-1670 DELETED 03/17

QC-1680 CERTIFICATE OF NDI/NDT

Seller Shall include with each shipment a certificate for the NDI/NDT performed. As a minimum, the certification shall contain the following information:

- Customer's Purchase Order/Contract number
- Name and address of the Company performing NDI/NDT

- Date of Inspection
- Quantity of parts tested by part number
- Specification or other requirement defining the NDI/NDT acceptance/rejection criteria
- Inspector/name/stamp
- NDI/NDT certification level
- NDI/NDT specification including revision
- Material or item identification (part number, heat lot number, Foundry Record (FR) number
- Material or item traceability (serial number, lot number, batch number, lot/date code)
- Inspection results (accept/reject)
- Reference to previous NDI/NDT reports for repair/rework if applicable
- Reference to attached recordings i.e., films or photographs if applicable

A record of the procedures or techniques used, and actual results shall remain on file for at least five years after shipment to Customer and shall be furnished to Customer upon request. These records shall include all information listed above as well as acceptance/rejection criteria, and related test instrument data used in the NDI/NDT process.

QC-1690 DELETED 03/2017

QC-1700 CERTIFICATE OF ANALYSIS

A legible and reproducible Certificate of Analysis (Physical/chemical) shall be required with each shipment of material. The certificate shall identify the material by reference to the:

- Manufacturer's name
- Specification, type, class, and/or grade to uniquely identify the surface treatment in accordance with the source control document
- Measured thickness in accordance with the specification or source control document
- Confirmation that the surface treatment was processed in accordance with the specification or source control document for steps that cannot be readily verified by testing (i.e., annealing, post baking, etc.)
- The name of the company performing the surface treatment
- Material condition
- Size
- Heat Lot
- Date Code
- Batch Number
- Results of testing required by the specification or source control document (Chemical Analysis/Physical properties)

When required by the Purchase Order or the source control document, test coupon(s) shall accompany each batch or lot. A description of the coupon(s) or the coupon(s) themselves Shall be provided with the order. Marking or scribing on coupons shall be prior to surface treatment.

QC-1710 CERTIFICATION OF ELECTRICAL WIRE AND CABLE

Seller shall provide certification that each shipment of electrical wire or cable furnished under this contract conforms to the applicable specifications. For each lot or cable in each shipment, a certified test report or copy thereof shall be included with the packing sheet. The test report shall, at a minimum, include a record of the physical, chemical, or electrical (and in the case of RF cable, electronic) inspections and tests conducted to satisfy the acceptance requirements of applicable specifications, and shall include

numerical results when applicable. For cable shipments, these requirements apply to both basic and finished cable. When the specification requires other inspection or test data to be reported, it shall be included in the test report. Reports shall provide the Seller or Supplier's name, the specification vide number and revision date or change letter, and other data required by the specification, and must be identified to or correlated with the lot shipped.

QC-1720 DELETED 11/2019

QC-1730 DOMESTIC SPECIALTY METAL CERTIFICATION

When this quality clause is referenced, the Seller shall ensure that the parts supplied meet the requirements of DFARS 252.225-7014, Alternate 1. The Seller is to flow down the applicable specialty metals requirement to all its vendors that supply any parts delivered under this Purchase Order that include specialty metals. The DFARS 252.225-7014, Alternate 1 clause prohibits L3Harris Impact Science & Technology and all of its suppliers at every tier from incorporating specialty metals into military parts, components, and/or end item deliverables unless the specialty metals have been melted in the United States, its outlying areas, or a qualifying country listed in DFARS 225.872-1. The Seller furnishing this product must certify that all requirements of the contractual clause DFARS 252.225-7014, Alternate 1 are met for this Purchase Order line item. The Seller is also responsible to maintain adequate records for ten (10) years to support an audit of its specialty metals compliance.

A certificate must be included with the shipment which specifically references compliance to this QA clause; DFARS 252.225-7014, Alternate 1; OR that specialty metal incorporated into this line item was melted within the United States, its outlying areas, or a qualifying country listed in DFARS 225.872-1.

Exemptions to the Specialty Metals requirements of the above clauses may exist, as outlined in the clauses themselves or by operation of applicable Department of Defense Domestic Non-Availability Determinations (DNADs) posted on its public web site for that purpose. Note that any exemptions that may apply are dependent on the date of the prime contract not the date of your Purchase Order. If you believe an exemption(s) applies, please specify the specifics and immediately provide L3Harris with documents and information sufficient to demonstrate your entitlement thereto.

QC-1740 GENERAL CERTIFICATE OF CONFORMANCE/COMPLIANCE

A legible and reproducible Certificate of Compliance/Compliance (C of C), attesting that the articles provided conform to the Purchase Order requirements, is required with each shipment including shipments from distributors.

Certifications must be signed and dated by an authorized agent of the Seller. If it is an electronic certification, an electronic signature is required from an authorized agent of the Seller.

Certifications shall include:

A. Basic C of C

- Purchase Order Number
- Line number as shown on the Purchase Order (provided Purchase Order has multiple line items)
- Part Number or identification as shown on the Purchase Order
- Material Traceability Identification: Serial Numbers, Date Codes, Shop/Job Numbers, other pertinent traceability data of L3Harris supplied materials contained in the shipment, etc. (if applicable)

B. OEM C of C

- Certificate of compliance shall be from the manufacturer (OEM) and provided with each shipment of material supplied against this Purchase Order.
- Purchase Order Number
- Line number as shown on the Purchase Order (provided Purchase Order has multiple line items)
- Part Number or identification as shown on the Purchase Order

- Material Traceability Identification: Serial Numbers, Date Codes, Shop/Job Numbers, other pertinent traceability data of L3Harris supplied materials contained in the shipment, etc. (if applicable)
- For consumable commodities (e.g., Metal stock or Chemicals) a Certificate of Analysis is acceptable in lieu of the C of C.

If the Supplier is not the OEM, the supplier shall ensure there is traceability between the Supplier documentation and OEM documentation.

C. OEM C of C with CAGE

- Original manufacturer FMSC/CAGE Code Identification Number
- Certificate of compliance shall be from the manufacturer (OEM) and provided with each shipment of material supplied against this Purchase Order.
- Purchase Order Number
- Line number as shown on the Purchase Order (provided Purchase Order has multiple line items)
- Part Number or identification as shown on the Purchase Order
- Material Traceability Identification: Serial Numbers, Date Codes, Shop/Job Numbers, other pertinent traceability data of L3Harris supplied materials contained in the shipment, etc. (if applicable)
- For consumable commodities (e.g., Metal stock or Chemicals) a Certificate of Analysis with OEM CAGE Code is acceptable in lieu of the C of C.

If the Supplier is not the OEM (i.e., the Supplier is a Distributor), the OEM C of C shall contain the Purchase Order Number (and Line Number) between the Supplier and OEM. Supplier shall list the OEM name and Cage Code on the Supplier documentation and ensure there is traceability between the Supplier and OEM documentation.

D. Full C of C with CAGE

- Distributor’s Name (if applicable)
- Distributors Address (if applicable)
- Manufacturer's Name
- Manufacturer’s Address (where part or material is made)
- Manufactures FSCM/Cage Code Identification Number
- Manufacturer’s Part Number
- Purchase Order Number
- Line number as shown on the Purchase Order (provided Purchase Order has multiple line items)
- Part Number or identification as shown on the Purchase Order
- Material Traceability Identification: Serial Numbers, Date Codes, Shop/Job Numbers, other pertinent traceability data of L3Harris supplied materials contained in the shipment, etc. (if applicable)
- Serial Numbers (if applicable)
- Quantity and unit of measure (each, box, case, gallons, etc.)
- For kits, the C of C must list all part numbers with their respective quantity.
- Revision of Part Number or identification as shown on the Purchase Order (if applicable)
- Revision of Parts List as shown on the Purchase Order (if applicable)
- Manufacturer's heat, lot, batch number (as applicable) for each article under the procurement

- Expiration and/or cure date (if applicable)
- Special process and inspection/specification numbers, including revision (as applicable)

For Raw materials and consumables where applicable C of C information is contained within the deliverable material certifications, test reports, MSDS, etc.; delivery of these records is an acceptable alternative to providing all the information on one C of C document.

Conformance to the Purchase Order requirement encompasses:

- Materials used are those which have been specified by Buyer, and that the articles delivered were produced from materials for which Seller has on file reports of chemical or physical analysis and any other required evidence of conformance of such articles to applicable specifications.
- Processes used in the fabrication of articles delivered were in compliance with applicable specifications forming a part of this Purchase Order.
- The articles delivered comply with all specifications and other requirements of the Purchase Order.
- The article(s) and/or service(s) provided meet manufacturer's specifications or requirements.

Conformance shall be objectively supported through test records, inspection data, material certifications, manufacturing control records, etc. and be subject to audit by L3Harris.

In cases where the procured articles are to be drop shipped the C of C and any associated material certifications, test reports shall be submitted directly to L3Harris at the time of shipment.

Any discrepancies within the C of C identified upon L3Harris review, or lack of a C of C, could impact the Sellers rating, require formal corrective action, or result in the articles being returned at the Sellers cost.

E. OEM C of C - CAGE/Serialization

- Original manufacturer FSCM/CAGE Code Identification Number
- Certificate of compliance shall be from the manufacturer (OEM) and provided with each shipment of material supplied against this Purchase Order.
- Purchase Order Number
- Line number as shown on the Purchase Order (provided Purchase Order has multiple line items)
- Part Number or identification as shown on the Purchase Order
- Material Traceability Identification: Serial Numbers, Date Codes, Shop/Job Numbers, other pertinent traceability data of L3Harris supplied materials contained in the shipment, etc. (if applicable)
- Serial Numbers or Serial Number Range Identification is required for all parts made on a SMD (standard micro-circuit drawing) per MIL-PRF-38534 or MIL-PRF-38535 (Prefixed with 5962)
- For consumable commodities (e.g., Metal stock or Chemicals) a Certificate of Analysis with OEM CAGE Code is acceptable in lieu of the C of C.

If the Supplier is not the OEM (i.e., the Supplier is a Distributor), the OEM C of C shall contain the Purchase Order Number (and Line Number) between the Supplier and OEM. Supplier shall list the OEM name and Cage Code on the Supplier documentation and ensure there is traceability between the Supplier and OEM documentation.

QC-1750 DELETED 11/2019

QC-1760 HAZARDOUS MATERIAL TRANSPORT AND CERTIFICATION

Substances, chemicals, materials & parts required by this PO/ subcontract may be subject to US gov't, state, or local regulations, statutes, or similar requirements for the handling, processing & transportation of Mercury, Beryllium, PCBs, Radioactive materials, Cyanide & Arsenic.

By accepting this order, seller certifies they are in compliance with all such regulations & statutes.

Prior to shipment or delivery of any items which contain or incorporate any of the above materials, seller shall notify L3Harris of delivery, provide a completed MSDS or equivalent & include a copy w/each order.

QC-1770 MATERIAL CERTIFICATE OF CONFORMANCE

Seller shall include with each shipment a legible copy of the manufacturer's certification. The certification Shall include the following information:

a) Name and address of the manufacturer

b) Part number and the ordering and procurement specification, including revision levels that controlled the manufacture of the goods

c) Manufacturer's production order/lot number

d) Raw material data:

1. Material specification
2. Alloy class, type, or grade
3. Raw material heat, lot, or melt number
4. Name of raw material producer

e) Chemical analysis report

f) Mechanical test report as defined by the applicable specification (e.g., Tensile and/or single/double shear strength)

g) Metallurgical examination report as defined by the applicable specification (e.g., microstructure and/or macrostructure)

h) NDT test results: dye, penetrant and magnetic particle results, when required by applicable specification

If Seller is not the manufacturer, Seller's name and Purchase Order/contract number Shall be referenced on the manufacturer's certification. Seller's Quality Control organization shall be responsible for ensuring that items of this Order are packaged in such a manner that the dimensional integrity is preserved, contamination and corrosion are prevented, and no physical damage occurs to the threads during shipment. The preferred method, when size permits, shall be to individually sleeve the threaded portion of the fastener. Any method used shall insure that threads remain undamaged during shipment. Bulk packaging of unprotected threads is prohibited. Fasteners made of plain carbon or low alloy steel shall be protected from corrosion. When plating is specified, it shall be compatible with the space environment (as appropriate). On steels harder than RC 33, plating shall be applied by a process that is not embrittling to the steel.

QC-1780 DELETED 11/2019

QC-1790 NICHROME FILM FREE CERTIFICATE OF CONFORMANCE

A legible and reproducible Certificate of Compliance (C of C), attesting that the articles provided conform to the Purchase Order requirements, is required with each shipment including shipments from distributors. Certifications shall comply with all the requirements of QC-1740-A (Basic C of C) and shall also include:

A statement on the C of C certifying that the articles supplied comply with all the requirements of QC-2020.

QC-1800 DELETED 11/2019

QC-1810 PROHIBITIVE MATERIALS AND PLATINGS

A. Space Prohibited Material- Verification Testing Required by Supplier

The following materials shall not be contained in any deliverable product except where specified on drawing or material specification:

All metals (internal as well as external) shall be such that they shall not promote the growth of whiskers, dendrites, intermetallic formation or Kirkendall voids, corrosion, and shall not sublime in the intended application conditions.

- Pure, unalloyed cadmium or alloys containing 5 percent by weight or greater cadmium not completely over-plated by a L3Harris approved material
- Pure, unalloyed zinc or alloys containing 20 percent by weight or greater zinc not completely over-plated by a L3Harris approved material
- Compound (e.g., plating, paint, other surface finishes) containing greater than 1 percent by weight of cadmium or zinc. Only applies to EEE components; excludes connectors, contacts, wire, lugs, and other mechanical or structural components.
- Corrosive solder fluxes, unless detailed cleaning procedures are specified, along with appropriate verification methods to insure removal of residual contaminant
- Pure tin, or >97 percent tin by weight, internally or externally. Tin-Lead finishes and connections shall be alloyed with a minimum of 3 percent lead (Pb) by weight. Note that Sn96/Ag4, Au80Sn20, and Sn95/Sb5 are standard solder-attach materials used in high temperature soldering applications and are acceptable for those applications only.
- Magnesium or selenium shall not be used unless inside a hermetically sealed device.
- Mercury, alloys of mercury, or compounds of mercury
- Materials exhibiting or known to exhibit natural radioactivity such as uranium, potassium, radium, thorium, and/or any alloys thereof.
- Materials exhibiting or known to exhibit health hazards such as unalloyed Beryllium, toluene, lithium, and/or any alloys thereof.
- Gold plating over silver without a nickel barrier coating, silver under plate on gold contacts and silver-plated terminals and contacts, except movable contacts

Verification testing, such as XRF testing, shall be required to demonstrate the surface of the item complies with the requirements listed above as a minimum. At a minimum, a single sample shall be tested for each lot/date code. Non-metallic items (e.g., tape, labels) are exempt from the verification testing requirement. The Seller shall supply the test results.

The Seller shall alert L3Harris of the presence of any restricted or prohibited materials prior to the execution of the purchase order.

Incompatible Dissimilar Metals used in conjunction with each other is discouraged. The Seller shall notify the Buyer of any instances in which incompatible dissimilar metals are used in conjunction with each other.

Vinyl and Polyvinyl chloride (PVC) shall not be used as wire insulation or in any other product usage.

No silicone is allowed on exterior component surfaces. If silicone is used internally by design, the product shall be hermetic to not introduce silicone contamination.

B. Pure Tin Prohibited Material

All Products Supplied on this Purchase Order shall be free of solder, platings, coatings, and claddings that exhibit either of the following:

- Material composition greater than 97% tin by weight
- Tin-lead alloy with composition of less than 3% lead by weight

This requirement is applicable to the internal and external configuration of the products.

C. Pure Tin Prohibited Material – With Analysis

All Products Supplied on this Purchase Order shall be free of solder, platings, coatings, and claddings that exhibit either of the following:

- Material composition greater than 97% tin by weight
- Tin-lead alloy with composition of less than 3% lead by weight

This requirement is applicable to the internal and external configuration of the products.

The Seller shall perform finish verification testing, such as XRF testing. At a minimum, a sample of at least two parts shall be tested for each lot/date code. The Seller shall supply the test results with each shipment.

D. Space Prohibited Material – Verification Testing Not Required by Supplier

The following materials shall not be contained in any deliverable product except where specified on drawing or material specification:

All metals (internal as well as external) shall be such that they shall not promote the growth of whiskers, dendrites, intermetallic formation or Kirkendall voids, corrosion, and shall not sublime in the intended application conditions.

- Pure, unalloyed cadmium or alloys containing 5 percent by weight or greater cadmium not completely over-plated by a L3Harris approved material
- Pure, unalloyed zinc or alloys containing 20 percent by weight or greater zinc not completely over-plated by a L3Harris approved material
- Compound (e.g., plating, paint, other surface finishes) containing greater than 1 percent by weight of cadmium or zinc. Only applies to EEE components; excludes connectors, contacts, wire, lugs, and other mechanical or structural components.
- Corrosive solder fluxes, unless detailed cleaning procedures are specified, along with appropriate verification methods to insure removal of residual contaminant.
- Pure tin, or >97 percent tin by weight, internally or externally. Tin-Lead finishes and connections shall be alloyed with a minimum of 3 percent lead (Pb) by weight. Note that Sn96/Ag4, Au80Sn20, and Sn95/Sb5 are standard solder-attach materials used in high temperature soldering applications and are acceptable for those applications only.
- Magnesium or selenium shall not be used unless inside a hermetically sealed device.
- Mercury, alloys of mercury, or compounds of mercury
- Materials exhibiting or known to exhibit natural radioactivity such as uranium, potassium, radium, thorium, and/or any alloys thereof
- Materials exhibiting or known to exhibit health hazards such as unalloyed Beryllium, toluene, lithium, and/or any alloys thereof
- Gold plating over silver without a nickel barrier coating, silver under plate on gold contacts and silver-plated terminals and contacts, except movable contacts

Incompatible Dissimilar Metals used in conjunction with each other is discouraged. The Seller shall notify the Buyer of any instances in which incompatible dissimilar metals are used in conjunction with each other.

Vinyl and Polyvinyl chloride (PVC) shall not be used as wire insulation or in any other product usage.

No Silicone/Fluorosilicone is allowed on exterior component surfaces unless the Parts by design have Silicone/Fluorosilicone **exterior** components designed in them.

Verification Testing will be performed at L3Harris. Data from the supplier may be submitted but is not required. If Verification Testing at L3Harris finds that the above materials are contained in any deliverable product, except where specified on the drawing or material specification L3Harris may elect to reject and return the material.

E. Space Prohibited Material – Exceptions to Section 1810-A

All products on this Purchase Order shall meet the requirements of QC-1810-A with the exception of the conditions listed below:

- Alloys containing Cadmium, Zinc, Mercury, or Selenium in concentrations greater than 15% (Purity>15%) shall not be used unless suitably covered with a flight approved plating (e.g., gold, nickel, or copper) or inside a hermetically sealed device or in a Space Proven Detector Device.

- In addition, the following plating shall not be used: Silver Plated Copper Wire with less than 40 microinches of Silver Plate, Gold Plating over Silver or Copper without a Nickel Barrier for Electrical Contacts (except nonmagnetic electrical contacts which do not require a nickel barrier), and Zinc plating without an overcoat of a suitable flight approved metal.

F. Silicone Contamination
- Materials used in the processing and/or assembly of the items on this purchase order shall not contain silicone. This clause also applies to sub tier suppliers that provide secondary processing of items on this purchase order. If a supplier has a question on a material's applicability, they are encouraged to contact SSG for clarification. A Certificate of Compliance to this clause is not required.

G. Pure Tin Part Tinning
- Leaded Solder Finish: This applies to all parts prefixed with "NL". Prior to shipment to the Buyer, Supplier shall have all component termination areas hot solder dipped with a minimum of 3% lead alloy solder. Supplier's Certificate of Compliance shall attest to the 3% lead content in the resulting termination finish. For all components, irrespective of package type.

QC-1820 QPL ARTICLE CERTIFICATE OF CONFORMANCE

A. A legible and reproducible Certificate of Compliance (C of C), attesting that the articles provided conform to the Purchase Order requirements, is required with each shipment including shipments from distributors. Certifications shall comply with all the requirements of QC-1740D (Full C of C with CAGE) and shall also include:

- For QPL Articles:

  Name of QPL manufacturer and applicable test number of the qualification approval

- For Assemblies containing QPL Articles:
  - QPL articles involved
  - QPL reference numbers
  - QPL Manufacturer's name and designation

QC-1830 RAW MATERIAL CERTIFICATE OF ANALYSIS

The Seller shall include with each shipment the raw material or raw materials incorporated into a finished or semi-finished product a legible copy of the manufacturer's test report (e.g., mill test report) that states that the lot of material furnished has been tested, inspected, and found to be in compliance with the applicable material specifications. The test report Shall list the specifications, including revision numbers or letters, to which the material has been tested and/or inspected and the identification of the material lot to which it applies. When the material specification requires quantitative limits for chemical, mechanical, or physical properties, the test report Shall contain the actual test and/or inspection values obtained. When serialization of items has been imposed by the Purchase Order, such serialization shall be a part of the test reports/data. These reports must contain the signature and title of an authorized representative of the agency performing the tests and must assure conformance to specification requirements.

For aluminum mill products (except castings), certifications for chemistry may indicate compliance within the allowed range.

When the Seller supplies converted material produced by a raw material manufacturer, the Seller shall submit all pre and post conversion chemical/physical tests reports.

Each Shipment of metallic or non-metallic raw material must be accompanied by:

A. Manufacturer or mill inspection/test report for the raw material containing:
- Name and location of the raw material manufacturer or mill
- Material identification by specification number and material condition
- Manufacturer or mill lot identification number of the raw material
- Actual chemical and physical test results as specified in the applicable specification

- Actual size and form of billets if required by the applicable standard

B. Certification from Seller containing:

- Name and location of the raw material manufacturer or mill
- Material identification by specification number and material condition
- A statement that the raw material meets applicable specification requirements

C. Shipment of finished or semi-finished items manufactured from raw materials must be accompanied by a certification from Seller containing:

- Name and location of the manufacturer(s) of the raw material(s) and the lot number(s) of the raw materials(s) used in the manufacture of the finished, or semi-finished, item(s)
- A statement, that the raw material(s) used in the manufacture of the finished or semi-finished item(s) meet applicable specification requirements

D. Each Shipment of nonmetallic raw material must be accompanied by Chemical inspection/test report for the raw material containing:

- Name and location of the raw material manufacturer
- Material identification by specification number
- Manufacturer lot or batch number of the raw material
- Actual chemical test results as specified in the application specification

E. Certification from Seller containing:

- Name and location of the raw material manufacturer
- Material identification by specification manufacturer
- A statement that the raw material meets applicable specification requirements
- Certification of shelf life

F. Shipment of finished or semi-finished items manufactured from metallic or non-metallic raw materials shall be accompanied by manufacturer test reports containing:

- Name and location of raw material manufacturer or mill
- Material identification by specification number and material condition
- Manufacturer's mill lot identification number or batch or heat number of the raw material
- Actual chemical and physical property test results as specified in the applicable specification

QC-1840 DELETED 03/2017

QC-1850 SPECIAL PROCESS REQUIREMENTS

Seller and any sub-tier supplier engaged in special processes (as defined by a process that produces outputs which cannot be fully verified on a part by part basis prior to shipment to customer/L3Harris), shall be responsible for maintaining a system to control such special processes whether performed at their facilities or at a lower-tier facility. The Seller shall ensure systematic, periodic evaluation of personnel, equipment, methods, and material required in these special processes to ensure positive control at all times. Objective evidence of these evaluations shall be made available to L3Harris upon request. Nadcap or L3Harris' approval of these systems does not relieve the seller of this responsibility.

A. (Nadcap/Site Audit) Special Processes shall be Nadcap accredited or pre-approved by L3Harris quality assurance personnel.

B. **DELETED 05/2024**

C. Special Processes shall be approved by L3Harris Quality.

D. (Nadcap) Special Processes shall be accredited by Nadcap.

E. Special Processes shall be approved by L3Harris Quality and L3Harris Customer.

F. A special process certification shall be provided with each shipment of item(s) delivered on this contract. Special Process Certifications may be in Seller format and shall include the following:

- Customer's Order number
- Part number(s) Serial and/or lot numbers, of the hardware processed (if applicable)
- Special process specification and revision
- Objective evidence demonstrating compliance with the applicable process, (i.e., temperature charts and hardness test results for heat treatment, destructive test results, etc.....)
- A certification stating the special process was performed per the applicable drawing/specification requirements with a date, and signature of a responsible agent or Seller Name and address of entity that performed the special process

G. The Seller shall retain all records associated with the selection and approval of supplier approved special process providers. These records shall be made available to the Customer and/or regulatory agencies upon request. The Seller shall notify the Customer prior to destruction of records relative to this contract.

H. **DELETED 05/2024**

For 1850-A through F:

L3Harris Supplier approvals will be input into the Approved Special Processor List (ASPL). The ASPL is the list of controlled process specifications and L3Harris approved sources to perform those processes and is available in expo under Supplier Quality. Suppliers shall review the ASPL to ensure sources certificate(s) have not expired and independently verify the source's capability and quality specific to the supplier's product.

If L3Harris approval is required, then an SSR-SDR shall be submitted to L3Harris prior to any processing of product and approved prior to shipment. If the Seller (or its sub-tiers) has been audited for the specific special process by a L3Harris onsite assessment and has been approved for use of the special process, the Seller does not need to submit an SSR-SDR for each shipment. The audit is documented within L3Harris internal system. The audit of the special process is valid for two years, the Seller will need re-certification from L3Harris prior to the expiration date.

Upon receipt of material, any C of C from unapproved or expired sources (based on manufacturing date) as per the ASPL or Nadcap will be considered a supplier escape.

The supplier is responsible for ensuring the details of Nadcap or L3Harris accreditation for the special process being performed.

Upon PO receipt and acceptance, the Seller shall verify the special processor alignment to L3Harris on eauditnet.com for Nadcap approved suppliers, this alignment can only be verified by the Nadcap accredited supplier under their company's account on eauditnet.com. If special processor is not aligned to L3Harris, the Seller shall submit an SSR-SIR with the below information requesting alignment to be created.

If utilizing a L3Harris approved special processor, Seller shall validate its alignment to the sub-tier supplier on the L3Harris ASPL, found under "first tier alignment". If the applicable alignment is not present, Seller shall provide to L3Harris via an SSR-SIR, the following documentation showing evidence of special processor qualification and/or certification:

- Special Process Supplier Name and Location
- Special Process Specification being performed
- Supplier's Special Process certification

L3Harris reserves the right to audit or otherwise review the special processor and its associated controls.

Commercial-Of- the-Shelf (COTS)/MIL-SPEC items are an exception to this clause and do not require special processes approval.

If the Seller (or its sub-tiers) have not obtained previous approval or have processed material and determined their supplier was not accredited or pre-approved then an SSR- Supplier Deviation Request (SDR) shall be submitted to L3Harris and approved prior to any shipment of product.

The Seller shall flow-down this requirement, including document and retention requirements, to all lower-tier subcontracts for work performed under this contract. The table below lists but is not limited to commonly defined special processes by Nadcap.

The list of Nadcap approved Sellers can be found at https://www.eauditnet.com by creating an account. Upon access, refer to Buyer's Guide in the Public Documents.

Category	Sample Specifications
Chemical Processing	Paint/Dry Film Coatings, Chem Film, Anodize, Chem Etching, Chem Cleaning, Plating, Stripping, Surface Treatment / Passivation
Coatings	Thermal Spray, Diffusion Coatings, Vapor Deposition, Coating Evaluation Laboratory, Stripping of Coatings, Heat Treating of Coated Parts, Dry Film Lubrication of Coated Parts, Plating of Coated Parts
Composites	Compression Molding (CMP), Core Processing (CP), Liquid Resin Processing (LRP), Metal Bonding (MB), Prepreg/Adhesive Bonding/Resin Film Infusion (PAR)
Elastomer Seals	O-rings, Seals
Electronics	Printed Boards, Flexible and Rigid-Flexible Printed Boards, High Density Interconnect Printed Boards, Circuit Card Assemblies, Printed Board Assemblies, Printed Board Assemblies Personnel Qualification, Plated Though-Hole Technology (PTH), Surface Mount Technology (SMT), Mixed Metallurgy for Ball Grid Array (BGAs), Conformal Coating of Printed Board Assemblies, Encapsulation, Programming, Final Testing, Repackaging, Cable and Harness
Heat Treatment	Metal Systems (Carbon & Alloy Steel / Tool Steel / Stainless Steel / pH Steel Cast Iron / Aluminum Alloys / Titanium Alloys / Heat Resisting Alloys / Other Nonferrous Metals), Heat Treating Processes (Normalizing / Annealing / Hardening & Tempering / Solution Heat Treating / Aging / Carburizing / Nitriding / Stress Relieving), Heat Treating Equipment (Furnace / Pyrometry / Instrumentation / Atmospheric Control), Brazing (Vacuum Brazing / Induction Brazing), Hot Forming
Material Testing	Chemical Analysis, Mechanical Testing, Metallography (Micro & Macro), Micro-Indentation Hardness Vickers, Knoop, Macro-hardness Brinell, Rockwell, Vickers, Corrosion, Mechanical Test Specimen Preparation, Differential Thermal Analysis (DTA), Specimen Response/Capability to Heat Treat, Fastener Testing
Non-destructive testing	Liquid Penetrant Testing, Magnetic Particle Testing, Ultrasonic Testing, Radiographic Testing, Eddy Current Testing, Digital Radiographic Testing (DDA)
Nonconventional Machining and Surface Enhancement	Nonconventional Machining, Electrochemical Machining (ECM), Electrochemical Grinding (ECG), Electrical Discharge Machining (EDM) (Fast Hole / Sinker / Wire), Laser Beam Machining (LBM) (Cutting / Drilling / Marking),

Category	Sample Specifications
	Surface Enhancement, Shot Peening (Automated, Computer Controlled / Flapper / Manual / Peen Forming)
Non-Metallic Materials Manufacturing	Manufacturing Resin, Manufacturing Prepreg, Manufacturing Adhesive Films, Manufacturing Core, Manufacturing Fibers (Currently Carbon Fibers Only)
Sealants	Adhesion Promoters Coatings & Coating Processes Peel Panels, Shear Specimens, Tensile Bars, Polyurethanes Silicones & Fluorosilicones, Two Part Polysulfide Sealants
Welding	Torch / Induction Brazing, Flash Welding, Electron Beam Welding, Resistance Welding, Fusion Welding, Laser Welding, Friction / Inertia Welding, Diffusion Welding, Percussion Stud Welding

QC-1860 SPECIALTY METALS DFARS SUBPART 252.225-7009 CERTIFICATION

The items/components contained in this Purchase Order are in support of a DOD contract and have been identified as having the potential to contain “Specialty Metals” pursuant to DFARS 252.225-7009. Acceptance of this P.O. requires the Seller to conform to the requirements of DFARS 252.225-7009. Evidence of conformance demands that the Seller shall provide a (CofC) or an approved report certifying that the items/components provided conforms to DFARS 252.225-7009 requiring items/components be melted or produced in the United States, its outlying areas, or a qualifying country.

QC-1870 DELETED 11/2019

QC-1880 CORRECTIVE ACTION LISTING

Seller shall provide a list of corrective action taken to close non-conformances and test failures.

QC-1890 CORRECTIVE FAILURE ANALYSIS (P9561)

Supplier Failure Analysis and Corrective Action Report Requirements shall comply with per (P9561).

QC-1900 DELIVERABLE CORRECTIVE ACTION REPORTS

Each shipment shall be accompanied by a legible and reproducible copy of failure analysis for each identified defect noted on L3Harris’ rejection reports and proposed corrective action to prevent recurrence. This document shall be in the Seller’s standard format and must be submitted to buyer and approved by L3Harris prior to delivery of repaired material.

QC-1910 QUALITY MANAGEMENT SYSTEM: CONTROL OF NONCONFORMING PRODUCT, AND CORRECTIVE AND PREVENTIVE ACTION

Seller shall provide and maintain a program for control of nonconforming product, and for corrective and preventive action, which is in conformance with ISO 9001.

Sellers shall maintain documented procedures for addressing the identification, quarantine and disposal of nonconforming product. Repaired and reworked products shall be re-inspected by Seller’s authorized personnel.

Sellers shall have a documented procedure to review non-conformances. This review shall include performing a root cause analysis, developing a corrective action plan, and performing corrective actions to prevent recurrence of non-conformances.

Records of root cause analysis methods and corrective actions shall be maintained and available for review upon request by L3Harris.

QC-1920 DELETED 11/2019

QC-1930 DELETED 11/2019

QC-1940 TANTALUM CAPACITOR SURGE TESTING

Solid Tantalum electrolytic capacitors shall be 100% surge current tested. The preferred method of testing is:

- 10 consecutive cycles at both -55 °C and +85 °C
- Applied voltage DC rated +/- 2%
- Energy storage bank of 50000 microfarad (mf) minimum across the input terminals
- Charge and discharge time of 4 seconds
- Total DC resistance of the of wiring and connections to be 1 ohm +/- 2 ohms including the impedance of the power supply

Capacitors shall meet the capacitance, DF, and DC leakage after test. Approval of alternate test methods shall be submitted in writing to L3Harris prior to acceptance of the order.

QC-1950 CALIBRATION PROCESS GENERAL

The Seller shall acquire and maintain gauges, inspection and test equipment to assure that material conforms to the P.O. These devices shall be calibrated at established intervals, before they become inaccurate, against certified standards that have known relationships to national standards. The level of accuracy shall be a minimum of 4 to 1 greater than the tolerance measured. In cases where the level of accuracy cannot be achieved please provide written justification to L3Harris for deviation consideration. The Seller must maintain records of calibration for all measuring and test equipment and made available to L3Harris for review upon request. Reference ISO 9001-2008, ISO 10012, ANSI/NCSL Z540-1, ISO/IEC 17025, or MIL-STD-45662A (canceled).

QC-1960 CALIBRATION SERVICES

Seller shall provide and maintain a calibration system that complies with ANSI/NCSL-Z-540-1, ISO 10012, and/or ISO/IEC 17025. The most current version of these standards shall apply. A certificate or report providing traceability to the National Institute of Standards and Technology shall accompany each instrument calibrated. This system shall be subject to audit by L3Harris.

The Seller shall submit for each item calibrated, one reproducible record of actual calibration results, including applicable graphic and tabular data. Records shall be traceable to the individual item tested, by part number, serial number and customer's order number for the item shipped. Prior to adjustment, verify any out-of-tolerance condition. The certificate shall also state the operating error per specification, the degree of correction of out of tolerance condition and remaining uncorrected out of tolerance condition, if applicable.

QC-1970 DELETED 11/2019

QC-1980 ELECTRONIC DATA DELIVERY – REQUIRED

All documentation shall be uploaded PRIOR to shipment, via L3Harris' expo data portal through the link *https://supplychain.l3harris.com/secure/requisition/document_list.aspx* in a format which is acceptable to L3Harris/Industry standards. Uploading instructions are at: *https://www.l3harris.com/sites/default/files/202008/L3HarrisSupplierInformationPackage_0.pdf.*

L3Harris shall provide access (login and password) to this secure site at time of order. L3Harris Supply Chain may request an email notification of data upload. **This includes the OEM C of C and test data, if required by the PO.**

If supplier is unable to upload data, supplier shall notify buyer at time of purchase order via SSR to coordinate an alternate means of ensuring documents are received with shipment to avert a non-conformance. In the case that this is coordinated prior to shipment and the SSR has been approved and closed, Supplier shall include paper copies of all required data with the shipment or as per other direction provided on the SSR.

Note: For COTS parts, if the only required documentation is the Basic Certificate of Conformance/Compliance and the C of C is provided on the Seller's packing slip, the Supplier is not required to upload the C of C in the electronic format. Supplier shall still meet record retention requirements per QC-1 or QC-540.

Documentation provided on digital media does not have to be uploaded to the L3Harris expo Supplier Document List.

QC-1990 DELETED 04/2023

QC-2000 PAINTED PART COUPON ANALYSIS

Samples shall represent the same materials and processes used for each lot. Supplier shall submit an SSR in EXPO requesting an L3Harris paint coupon evaluation and a minimum of two (2) samples shall be shipped Attention To: L3Harris QC-2000 Coupon Receiving and Inspection and the SSR shall be approved by L3Harris prior delivery of the hardware.

Each sample shall be approximately 3 inches wide x 8” long x 0.062” thick.

Each sample submitted shall have the following information included: purchase order number, supplier name, SAE-AMS-STD-595 color number, part number, and lot # or date code that the samples represent.

Upon L3Harris SSR acceptance, the supplier shall ship the deliverable hardware to L3Harris.

Supplier shall maintain other coupons (not submitted to L3Harris) for the duration of the retention requirement as specified by the Purchase Order.

QC-2010 APQP (ADVANCED PRODUCT QUALITY PLANNING)

In accordance with AS9145, Seller shall begin implementation of APQP at the time of order or prior to start of production. Seller shall submit an APQP PPAP package IAW AS9145, as defined by elements listed below, a minimum of (5) days prior to shipping for review and approval. The APQP Package shall be submitted through a Supplier Support Request (SSR) type (Supplier Information Request) and approved prior to the shipment of hardware. If an approved package is on file for this part number with no changes in location, process, design or lapse in production of more than 2 years, a resubmittal is not required. As defined by AS9102 guidelines, if changes or lapse in production has occurred, Seller shall submit a delta APQP package validating only those conditions, such as changes in location, process, or design, that have changed since the last package approval. Seller shall not ship parts from a production run for L3Harris inspection prior to L3Harris' acceptance of the associated APQP Package.

- Design Failure Mode and Effect Analysis (DFMEA) (only applicable if seller has design authority)
- Key Characteristics (KC)
- Process Flowchart(s)
- Process Failure Mode and Effects Analysis (PFMEA)
- Control Plan(s)
- Measurement Systems Analysis (Gage R&R)
- First Article Inspection Report IAW AS9102 Form 3 (if not already required by contract)

QC-2020 USE OF UNPASSIVATED NICHROME BASED FILMS

The use of unpassivated Nichrome film chip resistors is not acceptable for this procurement. Unpassivated Nichrome film is susceptible to corrosion/dissolution when exposed to humid conditions which will cause changes in the resistance value of the element. Nichrome based resistive elements which are trimmed shall have their passivation applied after the trim operation. The use of Tamalox, tantalum nitride thin films with low ohms/square sheet resistance, or ruthenium oxide thick films are acceptable.

QC-2030 LEGACY WORKMANSHIP 980300 AND 15215

A. Electrical workmanship shall be in accordance with the requirements called out on applicable drawing or specification. In the event no requirements are specified, L3Harris Specification or an acceptable supplier equivalent approved by L3Harris shall be used. L3Harris spec 980300 "Requirement for Soldered Electrical Electronics Assemblies".

B. Mechanical workmanship shall be in accordance with the requirements called out on applicable drawing or specification. In the event no requirements are specified, L3Harris Specification 15215 or an acceptable supplier equivalent approved by L3Harris shall be used.

QC-2040 BOEING APPROVED SPECIAL PROCESS SOURCES

When L3Harris Engineering drawing cites Boeing Process Specification "PS" Document Number then the following requirement shall apply. The supplier and all of its' subcontractors shall use Boeing-approved special processors as called out in the Boeing document D1-4426. If the source the supplier plans to use is not listed in the D1-4426, authorization must be obtained from L3Harris prior to use. Boeing document D1-4426 is in *http://www.boeingsuppliers.com/d14426/index.html*.

QC-2050 RAYTHEON P8658300 SILVER-COATED COPPER WIRE CORROSION CONTROL

Items delivered under this purchase order must conform to the latest revision of Raytheon specification P8658300, Silver Coated Copper Wire-Corrosion Control. Supplier shall manufacture and package product in accordance with this specification. P8658300 content shall be imposed as requirements for handling materials certified as having a silver coating thickness of 40 micro-inches minimum when measured in accordance with ASTM B298. A Raytheon approved red plaque risk mitigation plan shall be in effect for materials certified as having a silver coating thickness of 80 micro-inches minimum when measured in accordance with ASTM B298. L3Harris requires that the Certificate of Conformance(s) delivered with the product specify the silver coating thickness and state that the delivered items were manufactured and packaged in accordance with Raytheon specification, P8658300.

QC-2060 VARIATION MANAGEMENT OF KEY CHARCTERISTICS

The following requirements apply if Key Characteristics are identified on L3Harris drawings:

- Supplier shall develop and maintain a Variation Management Program in accordance with AS9103.
- Supplier procedures shall include Process Control Documents (PCDs) which detail how key characteristics are manufactured, critical process steps identified, and how variation shall be analyzed, evaluated, and controlled. Supplier shall submit a procedure to L3Harris Quality for approval prior to manufacture of parts via the L3Harris SSR process.
- Supplier shall submit toL3Harris, control charts, histograms and/or other analytical charts upon request via the L3Harris SSR process. Supplier shall provide evidence of analysis of data and actions taken in response to identified variations, outside of established statistical control limits.
- Supplier shall flow down to sub tier suppliers the applicable requirements in the purchase order, including key characteristics, when the control of key characteristics are a requirement of this order.

QC-2070 FASTENER MATERIAL TEST REPORT REQUIREMENT

The fastener manufacturer shall produce a document that certifies information required including:

- Fastener Lot Number
- Manufacturing Date
- Lot Quantity
- Raw Material Heat Number
- Chemical Composition
- Mechanical and Metallurgical Test Results

QC-2080 OPTICAL AND TELESCOPE SOURCE INSPECTION REQUIREMENTS

A. Optical elements such as:

- Lenses
- Filters
- Beam Splitters
- Fold Mirrors
- Windows
- Mirror Blank

shall have a pre-coat optical inspection and a post-coat optical inspection.

B. Telescopes shall have a post-coat optical inspection:

- Primary Mirrors
- Secondary Mirrors

Telescope final inspection shall consist of Optical, Mechanical, and Engineering inspection.

C. Prior to acceptance and/or shipment of any "optics*", the associated CD or data file transfer of spectral response data shall be approved by the L3Harris Radiometric Systems Engineer for the project.

For the purposes of this note, "optics" includes individual parts, sub-assemblies, and full assemblies. Examples include:

- Scan Mirror Assemblies
- Telescopes
- Lenses
- Fold Mirrors
- Beam Splitters
- Windows
- Focal Plane Modules
- Detectors

D. Orientation Dependent Optic Mark Verification

Suppliers that mark orientation dependent optics shall demonstrate and document that the orientation mark adheres to the drawing at the final customer source inspection (CSI).

E. Verification of Properties Associated with Identification Marking

Suppliers that alter the properties of a part based on an applied identification mark (including but not limited to side dependent optical coatings or masking) shall demonstrate and document that the applied properties adhere to the requirements of the identification mark in the drawing and/or specification at the final customer source inspection (CSI).

QC-2090 SILVER PLATED/COATED COPPER WIRE/BRAID RED PLAGUE CONTROL REQUIRMENT

For Red Plague mitigation, all silver plated/coated copper wire or braid in this order shall be packaged per IPC WP-113.

QC-3000 DELETED 04/2023

QC-3010 PACKAGED IN SYRINGES REQUIREMENT

When packaged in syringes, with the exception of RTV and silicone-based materials, all materials shall be packaged in syringes free of silicone or wax.

QC-3020 OBSOLESCENCE/END OF LIFE (EOL)

Supplier shall notify L3Harris Buyer of any potential for or known obsolescence/EOL material. (Component(s) no longer in production by the manufacturer or component(s) nearing the end of life cycle. The manufacturer has plans to discontinue components(s) within the next 12 months as a minimum, and/or up to as much as 4 years.)

QC-3030 REQUIRED SUPPLIER READINESS REVIEWS

Scheduled reviews are required to be held prior to delivery of the product on this PO Line item at the point(s) noted by the applied sub-clause(s). Requests to schedule the required review shall be entered via SSR/SIR.

A. PO Review – Upon acceptance of this PO, the supplier shall submit a request to schedule a PO Review within five (5) business days of PO acceptance. For OEMs, this review shall take place prior to the start of manufacturing.

B. Manufacturing Readiness Review (MRR) - supplier shall present a MRR which shall cover the detailed production design highlighting any changes made for manufacturability. The suppler shall chair the MRR. The MRR shall be conducted at the supplier's site and include, at a minimum, an L3Harris Supplier Quality representative. The supplier shall request this via SSR/SIR at least ten (10) days prior to the start of manufacturing. The MRR shall be a "walk through" of the entire process from order receipt to shipping. It includes, but is not limited to:

- Contract Review
- Final PPAP (APQP) – as applicable
- Parts supply chain availability
- Incoming inspection (Receiving inspection)
- Stock and control procedures including rejected materials (MRB, Counterfeit Avoidance, Obsolescence)
- Manufacturing processes and specific work instructions including inspection and test
- Test processes and specific procedures
- Review of special fixtures and maintenance (Highlighting any L3Harris owned equipment)
- Rework process review
- Factory acceptance test (if required)
- Final inspection, packaging and shipping

C. Pre-Plating Readiness Review – The supplier shall participate in a Pre-Plating Readiness Review to cover the detailed plating procedure, highlighting any steps in the process that are of a critical nature or concern. Form H-3541 shall be used to perform such review, including the entire process from pre-plating preparation to post-plating inspection. Upon receipt of PO, the Supplier shall contact the Buyer to request the H-3541 form and to schedule the Pre-Plating Readiness Review. The meeting should be scheduled with a minimum five-day advance notice of the scheduled plating date. The supplier shall chair the Pre-Plating Readiness Review and shall ensure that the appropriate team members are included, as identified in H-3541. The Pre-Plating Readiness Review may be conducted virtually or on-site. The checklist shall be completed by the Supplier and L3Harris concurrence shall be received on the content within the checklist. The completed checklist shall be included within the end item data package as evidence that the review occurred.

In the event that the plater deems process details as proprietary sensitive, the plater should be prepared to discuss topics in a general manner that does not disclose true proprietary sensitive information.

The intent of the Pre-Plating Readiness Review is to provide a collaborative, mutually beneficial forum where all stakeholders (the supplier, the plater, and L3Harris) can communicate in a manner that will enhance the likelihood of first pass yield through the plating process. By holding this Pre-Plating Readiness Review, L3Harris does not accept any liability for the outcome of plating that was not otherwise agreed to. Any feedback given is to be considered solely advice based on the experience of the L3Harris team, but it is the responsibility of the subject matter and process experts at the supplier and the plater to concur with and decide the path forward. In this Pre-Plating Readiness Review, technical questions can be answered, lingering concerns can be addressed, proven best practices can be shared, and necessary fixturing can be identified.

D. Pre-Machining Readiness Review – The supplier shall participate in a Pre-Machining Readiness Review (PMRR) to cover the detailed machining procedure, highlighting any steps in the process that are of a critical nature or concern. Form H-3633 shall be used to perform such review, including the entire process from pre-machining preparation to post-machining inspection. Upon receipt of PO, the Supplier shall contact the Buyer to request the H-3633 and to schedule the Pre-Machining Readiness Review. The initial PMRR meeting should be scheduled 1-2 weeks post PO award with the subsequent meeting to be scheduled 1-3 weeks after the first PMRR meeting (2-5 weeks post PO award). The second meeting can be omitted if all of H-3633 has been discussed. The supplier shall chair the Pre-Machining Readiness Review and shall ensure that the appropriate team members are included, as identified in H-3633. The Pre-Machining Readiness Review may be conducted virtually or on-site. The checklist shall be completed by the Supplier and L3Harris concurrence shall be received on the content within the checklist. The completed checklist shall be included within the end item data package as evidence that the review occurred.

In the event that the supplier deems process details as proprietary sensitive, the supplier should be prepared to discuss topics in a general manner that does not disclose true proprietary sensitive information.

The intent of the Pre-Machining Readiness Review is to provide a collaborative, mutually beneficial forum where all stakeholders (the supplier and L3Harris) can communicate in a manner that will enhance the likelihood of first pass yield through the fabrication process. It is an opportunity for the fabricator and L3Harris to discuss design and manufacturability. By holding this Pre-Machining Readiness Review, L3Harris does not accept any liability for the outcome of machining that was not otherwise agreed to. Any feedback given is to be considered solely advice based on the experience of the L3Harris team, but it is the responsibility of the subject matter and process experts at the supplier to concur with and decide the path forward. In this Pre-Machining Readiness Review, technical questions can be answered, lingering concerns can be addressed, proven best practices can be shared, and necessary fixturing can be identified.

QC-3040 PACKAGING OF OPTICAL FILM OPTICAL FILM

Each piece of optical film shall be individually placed into a bag to prevent contamination. Once film is in the bag, place and center a rigid backing material (not cardboard) on either side of bag. Backing material shall then be secured with tape on at least two edges of the backing material and shall be labeled with optical film part number. The packaging sequence shall be as follows: rigid backing material/bagged film/rigid backing material/rigid backing material/bagged.

QC-3050 PACKAGING ALUMINUM MACHINED PARTS

The following are basic requirements that each supplier must adhere to in developing expendable packaging, returnable containers and identification. The goal of this clause is to inform suppliers of the general guidelines required to reach our goal of optimum part quality. With the cooperation of all parties, we can continually make productivity improvements, increase our competitiveness and minimize packaging costs. Nonconformance to this specification can and will lead to re-handling, repacking and /or any other miscellaneous nonconformance costs being charged back to the supplier at the discretion of L3Harris.

1.0 PACKAGING REQUIREMENTS

Package Design

All part quotations are to assume expendable packaging. The supplier is responsible for the design of this packaging.

Part Cleanliness and Protection:

All parts will be clean prior to packaging. Cleanliness of the part is not to be degraded by any of the packaging materials used to pack and ship. All parts being packaged must be free of dirt, rust, scratches, etc.

When part shifting or rubbing will cause damage and/or entanglement of the part or package, separation is required. All fragile parts will then be required to ensure added cushion properly protects from shock and vibration damage.

Surface Protection

Painted and/or machined surfaces must be protected against rust, abrasions, nicks, scratches, dents, etc. Surface protection should be provided to any part which requires the need, by using an approved protective material.

The surface protection requirement continues through point of use.

Package Closure Requirements

The package closure must maintain interior cleanliness and ensure that the contents remain intact during shipping and handling.

Package closure and construction shall permit access to the contents for inspection without destroying the usefulness of the container.

Preferred materials for closure of a carton is reinforced (non asphaltic) gummed tape or pressure sensitive tape, minimum width two (2) inches.

Protection of Parts, with consideration of eventual removal from the package:

Parts should be adequately protected for handling up to point of use.

Design package so parts may be removed without special maneuvering.

Construct packaging so it does not fall away from the part when the closure is removed.

Safety:

All packaging must be free from handling hazards (protruding nails, loose banding, staples, etc.) Staples are permissible if their removal is not required to open the package.

2.0 HANDLING AND SHIPPING REQUIREMENTS

Manually Handled Packages:

The design of the container shall fall within the action limits as defined by the National Institute for Occupational Safety. The gross weight of any one package shall not exceed 40 pounds. The unsupported bottom of a carton must be able to hold the contents within the carton.

Cartons must be constructed of fiberboard having a minimum bursting strength of 275 psi (pounds per square inch), or e.c.t. (edge crush test) unless a pre-shipment test indicates a lower strength material will perform satisfactorily.

Hand holes are desirable for bulky packages.

Mechanically Handled Packages (Palletization):

Any part(s) or component part(s) weighing 45 pounds or more must be palletized. Note: Drums and barrels will also be included in this classification. NO drums or barrels may be used as shipping containers for production parts. Oils and chemicals apply only.

Note: Suppliers should minimize the use of internal dunnage without being detrimental to the parts being shipped.

Palletized Materials:

Corrugated Unit Loads - Cartons, trays, pieces, etc. stacked in layers on a pallet to form a unitized, uniformly dimensioned load. Some loads may require plywood or corrugated separators between layers and on top.

Corrugated Pallet Box - One large, single carton attached to a pallet.

Palletized Bulk Loads - large, bulky parts not in containers, nested or individually stacked on a pallet.

Miscellaneous Palletized Corrugated Cartons - Several individual cartons on a pallet (not uniformly dimensioned).

Miscellaneous Pallet Loads - Drums, barrels, single metal containers or trays on pallets (oils, chemicals, bulk liquids only).

Palletized Specifications:

- Any pallet load that is leaning, bulging, unstable or over hanging will not be acceptable.
- Suppliers may not reuse any expendable packaging materials previously used in other shipments, unless approved by L3 Harris.
- All pallet loads must be adequately banded or secured to prevent shifting in handling and transportation.
- All palletized loads should only contain one part number per load, unless the load is marked "Mixed Load".

A Mixed Load is acceptable ONLY when:

- Multiple part numbers are required to be shipped in which the individual parts have a release quantity that is less than one layer on a pallet. However, no part number will appear in more than one mixed pallet in one shipment.
- All containers on the pallet are individually identified with a bar code label along with a “Mixed Load” label in bold 1.0” (25.4 mm) or larger letters, attached in a noticeable location.
- Individual part numbers are sorted on the pallet with all labels easily readable on the pallet without need to break down pallet.
- Packing list is broken down on a pallet level basis for part quantity checking purposes on our Receiving Dock.

QC-3060 FOUNDRY CONTROL OF CAST

Foundry control castings are required when new tooling (patterns or molds) is made; a change is made in gates, risers, chills, or as-cast shape; or a pattern is transferred to another supplier.

A minimum of one foundry control casting shall be submitted for review and approval prior to initiation or continuation of production.

The control casting shall be representative of the foundry practices and processes to be used for production castings. In addition, the following shall accompany the casting:

- A certified statement of the test bar mechanical properties (the test bar must be from the same melt and heat treat as the foundry control casting.
- A certified statement of chemical analysis of the material used showing the percentage of each element in the specimen.
- Radiographic film and test report.

QC-3070 OPTICAL SUPPLIER COMPONENT PERFORMANCE RECORD

Supplier will provide a completed Optical Supplier Component Performance Record form (SEO-R316) with the shipment.

QC-3080 CONTINUOUS WIRE LENGTH

Spooled electrical wire and cable shall have continuous length with no breaks or splices.

QC-3090 PRODUCT SUPPORT CLAUSE

In the event that the deliverable on this PO Line experiences a failure (a defect, malfunction, anomaly, test failure, etc.) or is the cause of a failure on a higher level assembly for any reason and at any time (even after the applicable warranty period has expired), including while integrated into a higher level assembly, including the End Item, Supplier shall provide a thorough Root Cause and Corrective Action (RCCA) investigation, upon L3Harris request. In addition, if a higher level assembly that the deliverable on this PO Line is incorporated into has a failure, Supplier shall provide full support for any troubleshooting activities that L3Harris is performing to the extent that the deliverable item on this PO

Line is a potential contributor to the failure. The above applies to all deliverables including deliverables that have been launched into orbit.

L3Harris shall be provided with full visibility of all information obtained during the RCCA investigation and/or all information requested to support troubleshooting activities, to the extent the information pertains to the deliverable on this PO Line. This information includes, but is not limited to, technical and programmatic aspects of the failure occurring that are relevant to the deliverable on this PO Line. Technical and programmatic aspects of the failure includes any information on process or design for the deliverable on this PO Line that could be a contributing factor to the failure, including information that may be viewed by the Supplier as proprietary. The information shall be provided in the form of a formal root cause and corrective action package. All information provided is protected by Intellectual Property Assertations and Non-Disclosure Agreements between L3Harris and Supplier under this Purchase Order.

All associated requirements that are invoked in this clause are applicable to all sub-tier suppliers and the sub-tier supplier's' associated components that are incorporated into the deliverable.

QC-4000 REWORK PROCEDURES AND REWORK RATE

Rework Procedures. Rework instructions/procedures shall accompany all Rework dispositions.

Nonconformances that require Rework shall be addressed at the drawing level of the violated requirement. (i.e. An item-level nonconformance found during a higher level assembly shall be disassembled and addressed at the item level.)

- Reworked items shall proceed through the remaining item-level operations, as appropriate, and repass all item-level inspections and/or tests that would normally occur during the item-level production process.
- Assemblies with reworked items returned to them shall proceed through all assembly-level operations, as appropriate, and repass all assembly-level inspections and/or tests that occurred prior to the discovery of the original nonconformance.
- Rework instructions/procedures shall include a provision for reinspection to validate that the Rework has been completed in accordance with the instruction/procedure.

Any rework instruction/procedure that reverses a permanent mating of hardware (e.g. potting, press-fitting, swedging, welding; but not soldering) shall require L3Harris approval via SSR. Requests shall include a description of the nonconformance, root cause, and corrective action. Rework disposition requests shall contain proposed rework procedures, including a provision for reinspection to validate that the rework has been completed in accordance with the procedure. L3Harris will respond to all requests within 10 calendar days of submission.

Rework rate. The contractor and/or any of their suppliers/subcontractors shall keep a record of nonconformances and Rework dispositions. More than 10% rework of a characteristic is not typical. The contractor shall notify L3Harris of the rework exceeding 10% of a monthly production quantity and submit a plan of action to L3Harris to reduce the nonconformance rate. Rework exceeding 20% is considered excessive; the contractor shall notify L3Harris of the excessive rework and implement a plan to decrease the nonconformance rate. If the rework rate exceeds 20% the contractor shall notify L3Harris, shut down and investigate the root cause of the nonconformance. This paragraph does not apply to Distributors.

Change Log

Date	Description
02/26/2025	Per CR 7254 & QPCR 1182, new subclause “D” added to QC-3030. Per QPCR 1199, update to QC-1420 - Added reference to QA-01.1.1 (Supplier FAI Requirement). Per QPCR 1201, update QC-1020 - create a new internal clause for items that contain Be.
11/06/2024	Per CR 7171 and QPCR 1180. Subsection O added to QC-990. Section 3.0 removed wording related to expo and added wording for buyer approval process.
09/17/2024	Per CR 7116 and QPCR 1175. Add back L3HARRIS SURVEYS, SURVEILLANCE, AUDITS, AND INSPECTION section into QC-1.
08/30/2024	Per CR 7101 and QPCR 1168. Deleted section 4.0, various updates to QC-1, moved content from QC-1470, QC-1490, QC-1510 to QC-1. QC-1470, 1490, and 1510 have been deleted.
05/29/2024	Per CR 7019 and QPCR 1138, Updated QC-990-A and E to clarify the requirements for shelf life. Modified QC-1460-A slightly to remove redundant portions. Updates to QC-1850 – formatting updates, rearranging existing content and removing the option for supplier self survey. Deleted QC-1850-B and QC-1850-H. Added QC-4000 needed for Plano due to a specific Contract requirement that is not covered anywhere else.
12/14/2023	Per QPCR 1132 & CR 6869. Added subsection K to QC-610 for DO254.
12/06/2023	Per QPCR 1116 & CR 6830. Updated QC-20 for class clarification expectations, New Clause QC-3090 requested for (Product Support), Update to QC-1420 for AS9102 Rev C.
06/29/2023	Per QPCR 1103 & CR 6733 Updated QC-540-I to remove the strikethrough from the I. Updated QC-650-B to update requirements document to “2012559”. Updated QC-650-D to update requirements document to “2012559”. Deleted QC-690-E thru -I. Added New QC-3080 Continuous Wire Length. Corrected QC-1760 from “mat’ls” to “materials” and other capitalizations.
04/17/2023	Per QPCR 1094 & CR 6655. Added “Corporate” to Purpose section. Added QC-990-M and -N to add 7 and 10 year maximum age of parts. Added QC-3060 and QC-3070 – requested for new business area Updated QC-1020 to add two options (QC-1020-A and 1020-B), clarified for “distributor” type parts “Articles” and removed testing detailed requirements. Updated QC-1540-C to remove Glenaire as a Manufacturer and added Carlisle. Updated QC-1560 to add “As Designed” to the criteria and removed program specific document “T13000-0169 Rev A”. Deleted several clauses due to lack of use or redundancy where other clauses can be used (QC-160, QC-190, QC-210, QC-380, QC-570, QC-790, QC-800, QC-1210, QC-1600, QC-1990, QC-3000).
03/01/2023	Significant update to QC-1 to remove items already covered in the new Quality Manual created at the Corporate level for Suppliers. Added QC-1810-G in order to add proper lead tinning of tin components for PO’s.
01/17/2023	Per QPCR 1043 & CR 6555. Modified QC-1460 & 1460-A to remove QTY requirement and clarification on packaging requirement of T&R components.
10/14/2022	Per QPCR 1022 & CR 6444. Modify QC-3030 from Required Stage Gates to Required Supplier Readiness Reviews, Added QC-Clause 3030-C (Pre-Plating Readiness Review), Added reference to H-3541 (Pre-Plating Readiness Review Checklist).

08/08/2022	Combination of numerous QPCRs & CR 6322. Updates include: • QC-1 added new bullet statement under SELLER RESPONSIBILITY FOR CONFOMANCE paragraph to align with AS9100 QMS requirements; awareness of supplier contribution to conformity (QPCR 1030) • QC-50 added "partial shipments not acceptable" for A, B and C (QPCR 1021) • QC-290 removed "100%" from title and added new subclause G (QCPR 1021) • QC-295 added verbiage and detailed each type of in-process source inspection item (QPCR 1020) • QC-300 added "final" to source inspection throughout, removed in-process inspection type listing (QPCR 1020) • QC-700 corrected un-mounted coupon delivery requirement from "purchase order" to "shipment" (QPCR 1021) • QC-990 added new subclauses L (QPCR 1021) • QC-1740 corrected misplaced statement for requiring C of C to be signed and dated by authorized seller agent; was misplaced under subclause D. (QPCR 1021) • QC-1810 added new subclause F for silicone contamination (QPCR 1021) • QC-1850 updated subclause E to align with requirement for supplier special processes to comply with L3H's flow down to use customer approved processor. (QPCR 1021) • QC-1980 added note to exempt COTS suppliers from uploading electronic data when the only required documentation is C of C. (QPCR 1010) • QC-2080 added to subclause C for data file transfer. Swapped requirements between subclause D and E, no content change. (QPCR 1018) • QC-3050 new Q Clause for packaging requirements for aluminum machined parts (QPCR 1024) Removed proprietary statement at footer of document. Removed proprietary statement at footer. Moved Historical Q-Clause Revision Record to end of document
06/13/2022	Per QPCR 999 & CR 6293. QC-120-C, clarifying supplier expectations and removing subjectivity, QC-2000, clarifying supplier expectations and removing requirements of Q00025, Section 2.0 Definitions - corrected typo error under SSR type details.
02/10/2022	QC-700 Inclusion of Specification 2012559 solderability requirements
01/02/2022	Initial Release.

****For additional details regarding revisions to Q-Clauses, refer to Historical Q-Clause Revision Record below****

HISTORICAL Q-CLAUSE REVISION RECORD

Date	Revision Description
10/17/12	Q-1 A: Clarification for distributors regarding relocation of facilities Q-1 J: Removal of Bright Tin Finish Prohibition Q-18: Added reference to JESD 625 Standard Q-53: Updates/clarifications to PWB section
03/19/13	Q-1 K: Updates for Counterfeit Parts Prevention Q-3: Updates for Counterfeit Parts Prevention with Buyer approval required Q-4: Updates for Counterfeit Parts Prevention with cost liability Q-9: Added Counterfeit Parts Prevention – Level A Class 3 Q-23: Clarification on items to reference Q-24 B: Added bullet for requesting more info Q-54: Clarification for Electronic Component Packing Q-56: Clarified standard vs. metric regulations Q-59 – Q63: Deleted and moved to definitions Q--74: Deleted
06/05/13	Q-1 E: Measuring and Test Equipment: Sentence added for requirement clarification. Q-1 K: Revised to align with DFAR requirement. Q-3: Revised per flow down from customer contracts. Customer approval is required; not just Harris. Q-4: Revised per flow down from customer contracts. Customer approval is required; not just Harris. Q-10: Removed obsolete standards and added current applicable standards. Removal of the 3-year date code requirement. Date code requirement to be added in a new clause regarding solderable parts requiring 3-year date code restriction. This change requires ALL parts to be solderable; not just within a 3 year date code. Q-11: New clause to add solderability requirements with date code restriction. Also addresses required SDR process to suppliers if the date code requirement cannot be met. Sentence added to note Q-11 will take precedence over Q-10, as applicable. Q-31: New clause added to address NAS-412 FOD flow down requirements. Q-43: Removal of 'or Manufacturer's Part Number', as the Buyers part number is required on container marking. Q-57: Added sentence for clarification. Q-64: Added requirement for programs that have this requirement. Q-77: Removed. Marking must be on drawing.
08/20/13	Q-78: Added new requirement to address Harris interdivisional work.
01/20/14	Q-79: Added new requirement to assist Property Management in being notified of incoming assets that require tagging.

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03/17/14	Q-25: Added new Q-clause for Temperature Sensitive Material Q-54: Clarifications on Electronic Component Packaging Q-59: Added new requirement to Tape and Reel only Electronic components Q-75: Clarifications on Electronic Data Delivery Requirements Q-76: Clarifications on First Article Inspection Requirements
04/16/14	Q-59: Combined into Q-54 and added clarifications. Q-66: Added new requirement for high reliability space NASA connectors procurement
06/25/14	Q-80: Added new Q-clause for internal use of H-3311 on items that may need calibration.
09/23/14	General: Added title page and Table of Contents for easy reference Q-1B: Added clarification that all Standards/Specifications and flow downs shall be to the latest revision unless otherwise stated on the Purchase Order. Q-57: Expanded guidance to remove “No Cadmium allowed.” and add: Cadmium or zinc in the construction and surface finish of space hardware (cadmium alloys or zinc alloys (e.g., brass); Pure, unalloyed cadmium or alloys containing 5 percent by weight or greater cadmium not completely over-plated by an approved material. Pure, unalloyed zinc or alloys containing 10 percent by weight or greater zinc not completely over-plated by an approved material. Q-64: Updated the format of the C of C requirements; added an exclusion for consumable commodities; only require a C of A from a sub tier supplier for product received from a main supplier. Q-75: Updated for clarification
11/05/14	Q-17: New Q-Clause to provide traceability for 3D type printed parts. Q-54: Update requirements for the use of Waffle or gel packs
02/25/15	Q-58: Revised to clarify this is not applicable to RoHS compliant material. Q-64: Revised title to clarify difference of Q-64 versus new Q-81. Q-75: Updated for clarification. Q-81: Added new Q-clause to capture OEM C of C requirements minus the FSCM/CAGE Code requirement.
04/13/15	Q-57: Clarified use of silicone on components internally as long as the product is hermetic in order to not introduce contamination.
09/23/15	Q-10 Removed references to J-STD-002 and Buyer requesting solderability. The product specification or OEM documentation defines solder specification that might not meet J-STD-002. Q-46 updated to be consistent with other command media on determining shelf life (130432). Q-54 PEM packaging references withdrawn/obsolete specifications.
11/17/15	Q-1: Updated shelf life to align with Q-46. Q-29: Clarified requirement for certification requested. Q-54: Clarified electronic component packaging requirements. Q-76: Clarified FAI submittal requirements.
01/18/16	Q-76: Clarified FAI submittal requirements.

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03/01/16	Q-1: Correction to include paragraphs A through P.
05/09/16	Q-1: Updated part substitution guidance. Q-29: Updated control of processes guidance. Q-66: Updated title “High Reliability Space NASA NB, NBS, and NLS Connector Procurement” Q-69: Updated guidance Procurement of Connectors (Hi-Rel Space) Q-82: Updated guidance Procurement of Wire and Cable (Age Requirements) Q-83: Updated guidance Anti-Tamper Process Requirements
05/26/16	Q-1K: Modified to address escapes of suppliers providing refurbished material. Q-84: New clause to add record retention requirements.
06/21/16	Q-85: New clause for hardware not being packaged individually or in separate packing material to reduce damage during shipment and packaging.
07/11/16	Q-71: Corrected typo in reference to IPC/WHMA-A-620; removed obsolete references.
08/15/16	Q-29: Control of Special Processes updated. Q-86: Added Control of Special Processes: NADCAP Required.
09/15/16	Q-29: Clarification to when accreditation is not required; expanded applicability to Seller’s sub-tiers. Q-86: Clarification to when accreditation is not required; expanded applicability to Seller’s sub-tiers.
03/22/17	Added new harmonized Q-clause listing and Cross Reference Matrix listing QC1 thru QC-1980 and Cross Reference Matrix
05/04/17	Para 3.0 revise to include interdivisional transfers Q-53, QC-700: Clarification that all solder samples are marked and shipped separately from the deliverable product
06/21/17	Q-57, QC-1810: clarified the guidance in Q-57 prohibited materials. QC-50: clarify clause is per po line item not the entire po QC-60: clarify title of clause
06/29/17	QC-1: additions for compliance to AS9100 Rev D QC-990-J: update the category to the current industry standard
08/30/17	QC-1: Revise inspection record retention from three to four years to comply with FAR, removed the eco comments in sir, as each SSR type could result in an eco QC-390: Remove non-applicable sentence QC-590: Clarify change notice instructions QC-1220, QC-1260: clarify SSR usage deviations versus information (i.e., questions) QC-1990: New electronic data clause for GPP QC-2000: New electronic data clause for EW

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11/17/17	Revise QC-1530 and 1540 to ensure USA Made parts in Connectors for space programs. Update 1420 to clarify FAI requirements. Current wording was not clear for us or suppliers. Update QC-1850 to ensure it is correct with respect to Nadcap requirements. Update QC-1 to add Fab/Machining packaging requirements to minimize damage. Add Q Clause 2010 for APQP implementation.
02/21/18	Added Q Clause QC-2020 for clarification on Nichrome components. Modified QC-1400, QC-1410 and QC-1420 to clarify FAI requirements for submittals. Modified QC-1540 and QC-1790 to correct formatting errors in these clauses. Modified QC-1 to clarify MRB requirements. Changed QC-1290 as that packaging note was not used and we needed individual packaging put back in. Modified QC-1810 to clarify requirements, including testing. Modified QC-1540 to add Silver as a prohibited finish and changed note for Contacts to “C.” Updated QC-1740 to clarify OEM C of C Purchase Order Number for Distributors.
02/27/18	Correction to typo to replace Q-1400 with QC-1400.
4/16/18	Updated QC-1460 to change “and” to “or” with respect to what is required on a packing slip. As long as there is a supplier name or cage code that is acceptable.
08/02/18	Updated QC-1020 to add the word Copper based on input from Safety committee. Updated QC-1340 to add New FOD Spec option and broke this clause into 2 sections (A and B). Updated QC-2020 to clarify APQP items required. Updated QC-1 to clarify commercial item requirements for suppliers and removed OEM C of C for Counterfeit parts. Updated QC-1380 to add “and shipped” to the clause to make it clearer for suppliers.
09/26/18	Updated QC-910 in order to clarify the requirements when having BGA re-balled or LGA’s balled. QC-320 added “NASA” in order to include SIS SSD activities for GSI. QC-540 Corrected a typo. QC-610 Added a new line (J) for SW Development for SIS SSD usage.
02/06/19	Q-XX format clauses deleted. QC-1 corrected errors in formatting/font. QC-120 updated sections A, F, G, H, I and J to clarify for suppliers. QC-460 added QC-460-E and QC-460-F for Castings requirements for RS&AP. QC-540 clarification to record destruction time frame. QC-1020 combined all subparts into one overall clause. QC-1200 added separate clause for RS&AP legacy programs with no drawing note for Cage Code. QC-1460-A added for business units that require tape and reel for 200 or less components. QC-1700 removed redundant sentence. QC-1810-A revised for clarity. QC-1810-D removed requirement for XRF Testing when not needed. QC-1810-E added for RS&AP-specific application requirements. QC-2030, QC-2040, and QC-2050 added to incorporate RS&AP prime-specific clauses.

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09/09/19	Rebranded L3Harris. QC-1 sections addressing Resubmittal of Rejected/Returned Items; Inspection Records; Electrostatic Discharge Protection (ESD); and Electronic Data Delivery updated to require SSR approval prior to shipment (changed to shall); removed the Shelf Life requirement in QC-1; Updated guidance for resubmittal of rejected items and inspection records. QC-420 – Corrected a typo changing 720C to 720C. QC-610 Incorporated latest ISO update; updated guidance associated with Software Development Programs; Limited Life Product Requirements. QC-990 – Update to change QC-990-A to a 50% shelf life requirement for certain items for Limited Life Product Requirements. QC-1020 – Packaging Beryllium Copper, Albemet or Any Other Beryllium Composite Material Requirements updated to remove “Brush Wellman” as it is a company and not a specification.
11/20/19	Section 2.0 Definitions—revised and reformatted. Section 5.0 Harmonized Q-Clauses—revised as follows**:** • QC-1—Quality Control General ○ General—moved section from bottom of QC-1 to top and combined with existing text. Bulletized text. ○ Definitions—moved to section 2.0, Definitions. ○ Change in Approved Drawings, Processes, Materials or Procedures—moved part substitution paragraph from unauthorized submittal section of QC 1 to this section and revised to indicate that seller shall submit an SSR with suggested part number for technical evaluation and approval ○ Resubmittal of Rejected/Returned Items—Revised to include a requirement for submittal of an SIR with a RCCA attached with shipment. ○ Unauthorized Submittal of Production-Deleted section—Reference to first article FAI requirement is not needed in QC-1 as QC clause for FAI should be applied as a QC clause if a FAI is required. Part substitution paragraph moved to change in approved drawings, processes, materials or procedures section of QC1 ○ Part Marking—Deleted section that indicates that when the PO, Design Media, or SOW do not address part marking and replaced with bullet that states "If part marking is not addressed on P.O., design media, or SOW supplier shall provide materials/parts to L3Harris without part marking." ○ Configuration Management Requirements—Changed last sentence FROM: The seller shall not accept changes via verbal or email direction from anyone other than Harris Supply Chain TO: The seller shall not accept changes via verbal or email direction. All changes shall be documented via an SSR and a PO change order, as applicable. ○ Shelf Life—Shelf life section deleted in its entirety; effort being worked to revise shelf life requirements independently of this mass update ○ Documentation—Deleted incomplete sentence in second paragraph that read " If Harris Drawing(s) specified in this order requires dimensions that differ from the seller catalog items referenced on drawing". Also deleted sentence that read "Unless otherwise specified in the PO, SOW, or Design Media, final acceptance is performed at Harris". ○ Electronic Delivery—Updated to indicated that L3Harris Supply Chain prefers that all documentation is uploaded to expo, which may include OEM C of C, test data, and any other applicable, as required by the PO. Also revised to indicate that if supplier is unable to upload data, that they shall notify buyer at time of PO to coordinate an alternate means of document delivery to

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	avert non-conformance. Removed definitions of an SSR from this section and moved to definitions section 2.0 of the document. ○ Supplemental Quality PO Requirements—deleted this section and sentence as it is redundant to the general information • QC-430 Packaging Temperature Sensitive Material—combined bullets from QC-450 and deleted QC-450 • QC-570 Minimal QMS Requirements—revised verbiage for Control of Inspection, Measuring and Test Equipment as well as Corrective Action • QC-700 PWB Requirements Drawing 2012559—Complete rewrite to clarify deliverables and order of precedence for SI2 organization. • QC-1120 Packaging Container Marking—deleted one asterisk (currently shows 2) • QC-1220 Component Part Number Substitution—added paragraph on part substitution • QC-1360 Packaging Flex Assemblies Packaging Mil-Std-2073-1-removed reference to “and/or Stockroom Material Planning” • QC-1420 First Article Inspection-added "Note that Line Item inputted to SSR-FAI will be that of Part Number and not the FAI Line Item" • QC-1440 Electrostatic Discharge Controls—minor corrections to call outs of STM, ANSI and MIL-STD • QC-1540 Procurement of Connectors, Backshells, and Contacts (Hi-Rel Space)—added acceptable sources of supply • QC-1740 Certificate of Conformance—added clarification to letter designations B and C to clarify acceptable traceability to OEM C of C. • QC-1810 Prohibitive Materials and Platings—revised to clarify A and D on XRF requirements required by supplier or by L3Harris. • QC-1820 QPL Article Certificate of Conformance—revised reference to QC-1470D in first paragraph to 1740D (Full C of C with CAGE). • QC-1850 Special Process Requirements—complete rewrite • QC-1980 Electronic Data Delivery–Required—revised to clarify electronic delivery requirements of documentation. • QC-2010 APQP (Advance Product Quality Planning)—complete rewrite. **Deleted Q-Clauses:** • QC-30 Visual Inspection • QC-40 Workmanship Mil-HDBK-454 • QC-90 Ceramic Data • QC-100 Chemical and Physical Analysis (Typical Values) • QC-110 Customer/Router Specified Test Data • QC-130 Deliverable Pressure Vessel Data • QC-220 One Piece Inspection • QC-440 RFID Label • QC-450 Shipping Documentation and Material Handling

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	• QC-470 Crimp Test Samples • QC-480 Elastomer Samples shipped to Navy • QC-500 Molding Material Samples • QC-510 Rubber Samples • QC-520 Tensile Test Samples • QC-530 Operational Time Documentation • QC-560 Completed Item Inspection and Test • QC-600 Safety and Mission Success—NPD 8700.1 • QC-620 Seller QA Plan • QC-630 Flex Circuit Coupon Processing by GSFC or Delson Labs • QC-640 G-10 Material Substitution • QC-660 Packaging Printed Circuit Board Assemblies Mil-STD-2073-1 • QC-740 PWB Marking and Data Delivery • QC-780 PWB's Packaged in Moisture Barrier Bags • QC-820 Quality and MFG Control Plan • QC-870 Microcircuit and Semiconductor Dice Evaluation • QC-880 Mil-PRF-38534, Hybrid Microcircuits • QC-900 Precap High Resolution Digital Color Photographs • QC-930 Anti Tamper Process Requirements • QC-950- L3Harris Provided Material • QC-960 L3Harris Supplied Material Cadmium Free • QC-970 L3Harris Supplied Material Mercury Free • QC-1010 Mercury Free • QC-1090 Supplier Pre-Wired Connectors • QC-1130 UID Identification • QC-1150 3rd Party Inspection, Sort, Rework • QC-1160 Additional Part Requirements • QC-1180 Best Repair Effort • QC-1200 Buyer Supplied Information (A and B) • QC-1230 Electro-Ceramic FAA-PMA Fuel Sensor Probe P/N 378211 • QC-1250 Master Drawing • QC-1270 NADCAP Plating Processes • QC-1320 Unincorporated Notice of Revision • QC-1350 Flex Circuits Packaged in Moisture Barrier Bags • QC-1400 First Article Inspection

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	• QC-1410 First Article Inspection • QC-1430 HPQP (L3Harris Part Qualification Process) • QC-1620 Controlled Goods Registration Program (CGRP) • QC-1630 Additive Manufacturing Part Certification • QC-1650 Aviation/Avionics Documentation • QC-1720 Contact Corrosivity Testing Certificate of Conformance • QC-1750 Harris C of C (Certificate of Conformance) • QC-1780 Mercury Free Certificate of Conformance • QC-1800 Non-Deliverable Certificate of Conformance • QC-1870 Welder Certification Delivery • QC-1920 Chip Capacitors with Designators CN, C, and CT • QC-1930 Mil-PRF-28861 Filters and Capacitors • QC-1970 NASA NPD 8730.1C Calibration Addendum
01/24/20	Updated instances where a standard ANSI/ESD S541 was called out by the old name EIA-541 and where standard ANSI/ESD STM 11.31 was called out by ESD STM 11.31 per QPCR 740.
06/02/20	• QC-1 Quality Control General—updated to enable distributors and commercial suppliers to not require SSRs for processes that are not applicable to their operations. Updated Counterfeit section to align with updates in the Federal Counterfeit Regulations. • QC-1380 Procurement of Fasteners (Hi-Rel)—revised to include a non-US-approved manufacturer for space hardware. • QC-1420 revised to add (B) a 12 month lapse in production in support of customer requirements when applicable. Added “COTS Items” exempt from FAI’s and incorporated clarification of previous FAI and C of C. • QC-1340 Foreign Object Damage (FOD) Prevention – Quality Assurance—revised to prohibit use of Styrofoam packing peanuts. • QC-2060 Variation Management of Key Characteristics—added (required for some contracts).
01/22/21	• QC-120 Deliverable Inspection/Test Data: Updated to add flight and group test parts requirements. • QC-290 Seller 100% Inspection Reporting Requirements: Added requirement for a bubble/balloon drawing is to be included to denote unique identifiers to be referenced on the inspection report. • QC-295 L3Harris In-Process Inspection: Added new clause. • QC-540 Records & Retention: Retitled clause; updated thresholds for retention; Added supplier/distributor requirement to provide records with material delivered. • QC-650 Independent Laboratory Coupon Processing: Amended title; revised all associated requirements. • QC-680 Printed Wiring Boards Constructed and Tested in Accordance With 8252313: Deleted 5/20. • QC-690 Printed Wiring Boards Construction and Test General: Added requirement for Section E, L3Harris’ drawing 8193759 to indicate that seller will provide coupon with each shipment. • QC-810 Factory/Quality Assurance Acceptance Test Procedures and Data: Added Section C to include requirements for ATPs and digital data.

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	• QC-990 Limited Life Product Requirements • QC-1090 Supplied Pre-Wired Connectors: Reinstated clause. • QC-1830 Raw Material Certificate of Analysis: • QC-2070 Fastener Material Test Report Requirement: Add new clause. • QC-2080 Optical and Telescope Inspection Requirements: Added new clause. • QC-2090 Silver Plated/Coated Copper Wire/Braid Red Plague Control Requirement: Added new clause. • QC-3000 AS Designed As-Built List: Added new clause. • QC-3010 Packaged in Syringes Requirement: Added new clause. • QC-3020 Obsolescence/End of Life (EOL): Added new clause
05/31/21	• QC-50 Product Homogeneity: Added subclause E, if multiple lot and/or date codes are required to fulfil this order, the codes shall be on separate lines on the packing slip. • QC-910 Re-Balled BGA'S and Balled LGAs: Clarified when 433485-000 is required. • QC-120-T Deliverable Inspection/Test Data: Corrected typo. • QC-1420 First Article Inspection: Noted Commercial Off the Shelf (COTS)/Mil-Spec items and Reworked hardware as a result of a return from L3Harris are excluded from this FAI requirement. • QC-1740-D General Certificate of Conformance: Updated to require "Revision of Parts List as shown on the Purchase Order (if applicable)." • QC-1980 Electronic Data Delivery: Updated links for document submissions. • QC-2080-A Optical and Telescope Source Inspection Requirements: Replaced "should" with "shall" for pre-coat optical inspection and post-coat optical inspection requirement. • QC-3030 Required Stage Gates: New quality clause. • QC-3040 Packaging of Optical Film: New quality clause.
10/25/21	• QC-300 clarification for FINAL SOURCE INSPECTION • QC-1420-C NEW Clause • QC-1740 adding section E for OEM C of C - CAGE/Serialization • QC-2080 add section Orientation Dependent Optic Mark Verification • QC-3030_B update for Manufacturing Readiness Review to change PDR to MRR