
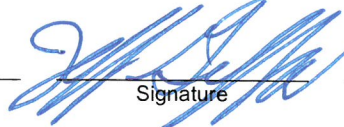



QUALITY PROVISION (QP) RIDERS

APPROVALS

Emad Khoury	Quality Reliability, Compliance Sr. Director		8-31-2016
Name	Responsibility Authority	Signature	Date
Jeff Gifford	Supplier Quality Control Manager		8-31-2016
Name	Responsibility Authority	Signature	Date
Rick Goutermont	Supplier Quality Engineer		8-31-2016
Name	Responsibility Authority	Signature	Date

1.0 PURPOSE:

The purpose of this document is to establish quality requirements for procurement and to define supplier responsibilities for ensuring that purchased items and processes conform to Teledyne Controls, LLC drawings, specifications, and purchase order requirements. Applicable quality requirements are indicated by three-digit code numbers listed on the purchase order.

It's the responsibility of the contracted supplier to ensure that they adhere to the specified QP Riders Requirements on each purchase order. In the event there's a QP Rider added that doesn't pertain to the product and material being purchased, it's the responsibility of the contracted supplier to contact their Teledyne Controls, LLC purchasing representative to initiate the required changes on the purchase order prior to acceptance.

2.0 ACTIVITY:

- Purchasing
- Quality and Compliance
- Supplier

3.0 TELEDYNE REFERENCE DOCUMENTS:

- TCF1066: Source Inspection Report Form
- TCF1158: Deviation/Waiver/Clarification Request Form
- TCF1432: ICT Test Fixture Validation Form

4.0 DEFINITION:

Deviation/Waiver/Clarification Request Form Log:

Database kept by Material Review Board (MRB) to issue unique, sequential numbers to Deviation/Waiver Request Forms for tracking and disposition purposes.

Clarification Request:

Clear up confusion, ambiguity on a drawing and/or specification.

Deviation Request:

A specific written authorization, granted prior to the manufacture or processing of an item, to depart from a particular performance or design requirement of a specification for a limited number or units or period of time.

Waiver Request:

A specific written authorization to accept a configuration or other designated item that, during production or after having been submitted for inspection, are found to depart from specified requirements but are considered suitable for the design specification.

ICT Test Fixtures:

Production equipment such In-Circuit-Test Fixture, tools and software program used to automate and control/monitor product shall be validated and approved by Teledyne Controls, LLC prior to release for production and shall be maintained there after by Supplier.

Purchase Order (PO):

A form issued by Purchasing Department upon receipt of an approved Purchase Requisition for the order of goods, software or services.

Document Number: **2232391**

Revision: **V**



Date of Revision: **08/31/16**

Date of Original: **11/03/94**

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Quality Provision (QP) Rider:

A Quality-related provision imposed on a Contract, Purchase Requisition, or Purchase Order. These provisions are described and numbered (with a 3-digit 'code') in Teledyne Controls drawing 2232391.

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QUALITY PROVISION (QP) RIDERS**102 INSPECTION AND TEST PLAN:**

The seller shall prepare an inspection and test plan including a flow chart of inspection and test points. Type of inspection or test at each point must be identified for the items to be fabricated on this purchase order. One (1) copy of the test plan shall be submitted to Teledyne Controls, LLC Buyer, for approval by the Teledyne Quality Department prior to start of fabrication.

103 SUPPLIER DEVIATION/WAIVER/CLARIFICATION FORM (TCF1158):

All departures from drawings, specifications, or other purchase order requirements must be recorded and reported on a Supplier Deviation/Waiver/Clarification Form TCF1158. Disposition of these departures must be approved by Teledyne Quality Assurance and Engineering prior to shipment.

The supplier is responsible to fully complete sections 1-2-3 (TCF1158 shall be ready for MRB approval), an incomplete TCF 1158 will not be accepted by your Teledyne Controls, LLC purchasing representative.

Note: The description of the nonconformance shall be clear and concise, and provide a marked-up drawing, sketch, or photos to substantiate the reporting nonconformance, when applicable.

The requested nonconformance must be specific to the purchase order, part number, and quantity identified on the Supplier Deviation/Waiver/Clarification Request TCF1158 only. Additional purchase order(s), part number, and/or quantities will require the contracted Supplier to initiate a new separate Supplier Deviation/Waiver/Clarification Request, on form TCF1158.

104 ACCEPTANCE OF PRODUCTION TOOLING:

Acceptance of production tooling on this purchase order shall be contingent on inspection and acceptance by Teledyne. Representative dimensions of each sample produced from this tooling must conform to the dimension and tolerance as specified on the engineering drawing and specifications on this purchase order. This inspection shall be performed under the cognizance of the Teledyne Quality Representative at the seller's facility or as directed by the buyer. Samples must be identified with Teledyne's tooling number and name.

105 FIRST ARTICLE INSPECTION REPORT (FAIR):

It's the seller responsibility to provide a full or a partial FAI for affected characteristics, when any of the following conditions occurs:

- A. A change in ownership.
- B. A change in the design characteristics affecting fit, form, or function of the part.
- C. A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
- D. A change in numerical control program or translation to another media that can potentially affect fit, form, or function.
- E. A natural or man-made event, which may adversely affect the manufacturing process.
- F. An implementation of corrective action required to complete a previous FAI.
- G. A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production

All parts the seller manufacturers for Teledyne Controls, LLC, must maintain records of the full & partial First Article Inspection Report and be available for Teledyne Controls, LLC review.

A unit/part, representative in every way of the product to follow, shall be identified and designated 'First Article', and identify the packing (box) "Contains FAI Unit/Part". The First Article shall be approved by Teledyne's Quality Assurance prior to any shipment of the purchased product. Submittal of a "First Article" shall be required unless the following conditions are satisfied:

- A. The supplier identifies a Teledyne purchase order number on which delivery of the product was made within the past twenty-four (24) months.

The "First Article" shall be 100% inspected and the data recorded by the supplier prior to its submittal to Teledyne.

One (1) legible and reproducible copy of the supplier's inspection report shall accompany the "First Article" submitted. This report shall contain, as a minimum, the following:

QUALITY PROVISION (QP) RIDERS

1. The Teledyne purchase order number.
2. The specification or drawing number, including the revision level.
3. The technique(s) used in the production as reflected in the "First Article" for example,
 - A. Production tooling, identification number.
 - B. Numerical control, identification number
 - C. Jigs and fixtures for alignment, gang drilling, etc.
 - D. Individual set-up and fabrication.
4. A list of actual measurement data taken from the "First Article" on a form and in a format which can be used to verify the results. The report shall include ALL actual dimensions (break out each specific characteristic, e.g., thread, countersink, thread depth is three individual characteristics) and verification of all dimensions, drawing notes, bill of material requirements, surface finish(es), processes and characteristics contained on the engineering drawing. The FAI results should include the actual engineering requirements with the allowable engineering tolerances (e.g., $.275 \pm .010$). Teledyne Controls, LLC designed parts; the supplier **MUST** include a marked-up (balloon) Teledyne Controls, LLC drawing that corresponds to FAIR item numbers. If the report is not 100% complete, please explain the omissions.

The selection of the "First Article" shall be made in a manner approved by Teledyne Controls, LLC.

Note 1: If the "First Article" is to be considered as proof test for reproduction or numerical control tooling, please advise Teledyne at the time of submittal.

Note 2: When there's a Deviation Waiver Request involved, record the Control No.: "DWXX-XXXX" to the item number(s) that doesn't comply with the applicable drawing, specification or purchase order requirement, and note this FAIR to be incomplete, until the nonconformance is corrected.

106 SELLER'S CONTROLLED PRODUCTS:

The initial shipment on this purchase order shall be accompanied by one (1) legible and reproducible copy of applicable specifications, drawings, and/or catalogs.

107 TELEDYNE SOURCE INSPECTION:

All items covered by the purchase order are subject to source inspection by a Teledyne Quality Representative.

When requesting source inspection, call the buyer whose name appears on this purchase order at least five (5) working days in advance or as agreed upon with Teledyne Purchasing & Quality Representatives.

All parts, material requiring source inspection **MUST** be ready, including the required cert documentation package, prior to commencing source inspection activities at the contracted suppliers' facilities.

This will include surveillance of the products and seller's system procedures and facilities. The seller shall furnish the necessary facilities and equipment, supply data, and perform tests as required by applicable drawings, specifications and inspection instructions under surveillance of the Teledyne Quality Representative. Final acceptance of source inspected material shall be at Teledyne Controls, LLC. Evidence of Teledyne inspection shall accompany each shipment.

Seller must obtain stamp or signature of the Teledyne Quality Representative on the shipping documents (e.g., Certificate of Compliance, Packing List, Material Certificates, Test Reports (as required), and Deviation Waiver Request (when applicable), and any other documents required by the Purchase Order QP Rider Requirements) prior to shipment of material. Failure to do this may result in rejection of the material by Teledyne Receiving Inspection.

Seller must include the approved Teledyne Controls, LLC Source Inspection Report TCF1066 form with Certification Package.

108 TELEDYNE IN-PROCESS INSPECTION:

In addition to the requirements of Teledyne Source Inspection (107), all items covered by this purchase order are subject to in-process inspection by a Teledyne Quality Representative. Prior to the application of epoxy materials, hermetic sealing, and permanent closure, or as required by specification, the supplier will notify the

QUALITY PROVISION (QP) RIDERS

cognizant buyer within adequate time for in-process inspection coverage. Evidence of in-process inspection will accompany each shipment.

120 GOVERNMENT SOURCE INSPECTION (DOD):

- A. Government inspection is required prior to the shipment from your plant. 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.
- B. On receipt of this order, promptly furnish a copy to the Government Representative who normally services your plant, or if none, to the nearest
- C. Defense Supply Agency Inspection office. In the event the representative or office cannot be located, our buyer should be notified immediately.

121 NASA PROCUREMENT OTHER THAN THOSE REQUIRING GSI:

The Government reserves the right to inspect any or all of the work included in this order at the supplier's plant.

122 FACILITY ACCESS:

Teledyne reserves the right to inspect any or all of the work included in this order at the supplier's plant and at any sub-tier supplier's plant. Access rights shall be extended to accompanying Teledyne customer and Government representatives.

123 QUALITY CONTROL SYSTEM REQUIREMENTS UNDER NASA CONTRACTS:

The seller shall provide and maintain a system that complies with NASA specification NHB 5300.4 (IC) "Inspection System Provision for Aeronautical and Space System materials, Parts, Components, and Services, incorporated herein and made a part hereof by reference.

124 GOVERNMENT SOURCE INSPECTION UNDER NASA CONTRACTS:

All work on this order is subject to inspection and test by the Government at any time and place. The Government Quality Representative who has been delegated NASA Quality Assurance functions on this procurement shall be notified immediately upon receipt of this order. The Government representative shall be notified immediately upon receipt of this order Government shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test.

125 TRACEABILITY TO RAW MATERIAL:

All items fabricated under this purchase order shall be traceable to raw materials used. All traceability and inspection records must be identifiable upon request or audit by Teledyne or Teledyne's customer representatives.

- A. Raw materials used shall be identified by lot number as well as material type, specification, heat number, etc., and shall be identifiable with lot of raw material used.
- B. All material fabricated by the seller in one lot shall be identifiable to that lot when supplied to Teledyne. When the seller is combining material fabricated in two or more different lots to fulfill purchase order requirements, these materials shall be segregated and identifiable to the lot in which it was fabricated.

126 TRACEABILITY OF MATERIALS - GENERAL:

The supplier shall maintain traceability information on file of all materials, parts and assemblies used in fabricating the product. The supplier shall maintain records that provide evidence that the delivered product or service meets the requirements of the purchase order or contract. The records must be legible, readily identifiable and retrievable within (5) business days. The records shall be retained for a minimum of ten years (unless otherwise specified in the purchase order), after the final delivery of the product or service contracted under the purchase order or contract. Records can include, but are not limited to: Test Data, Purchase Orders, Certificate of Conformances, Travelers and Inspection Data.

Note: Titanium parts shall be clearly and permanently marked.

144 TEST REPORTS:

Each shipment must be accompanied by one (1), legible and reproducible copies of actual test reports, as indicated below, identifiable with the material submitted. The reports shall contain the chemical and/or

QUALITY PROVISION (QP) RIDERS

physical properties of the purchased material. 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.

145 NON-DESTRUCTIVE TEST REPORTS:

Each shipment shall be accompanied by one (1) legible and reproducible copy of non-destructive test reports identifiable with acceptable requirements of the material submitted. These reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance to specification requirements.

146 FUNCTIONAL TEST REPORTS:

A. Each shipment shall be accompanied by one (1) legible and reproducible copy of actual test results identifiable with test parameters defined as operational, mechanical, electrical, hydraulic inspection, etc., of material submitted. These reports must contain the signature and title of a representative of the agency performing the test and must assure conformance to specification requirements.

B. Unless otherwise specified, the Supplier shall provide **one copy of actual test results for each CCA** with the shipment. Test data information shall include as a minimum:

- Part Number
- Drawing Revision Letter
- Serial Number
- Test Date
- Test Technician Name
- Test Parameters as issued by Test Data Sheet
- Test result (Passes / fails)

147 PRESSURE OR LEAK TESTS:

Each shipment shall be accompanied by one (1) legible and reproducible copy of actual test results identifiable with test parameters and product submitted. These reports must contain the signature and title of a representative of the agency performing the tests and must assure conformance to specification requirements.

148 X-RAY REPORTS:

All items included in this purchase order requiring radiographic inspection will be submitted to Teledyne Controls, LLC and processed in accordance with applicable specifications and standards. All findings will be reported. This form shall contain the name of the individual reading the film and the signature and title of an authorized laboratory representative. The X-Ray film and one (1) reproducible copy of the report must accompany the material. A control number must be assigned to each part, appear on each film, and be referenced on each report for a method of cross referencing each file exposure and report.

149 TEST BARS (CASTING):

The seller shall furnish with each shipment of castings the following:

- A. One (1) test-bars representative of each heat treated lot made from the same melt as casting supplies. Specimens shall conform to Federal Test Method QQ-M-151.
- B. One (1) spectrographic disc representative of the entire heat or melt.
- C. Test bars and discs shall be permanently identified with the seller's name or trademark.

160 CERTIFICATE OF CONFORMANCE:

Each shipment shall be accompanied by a legible and reproducible Certificate of conformance (commonly known as a C of C) which shall include as a minimum:

- A. A statement that the items being procured were produced from material which the supplier has available for examination, AND/OR,
- B. The supplier has available specific data or other objective evidence that the material conforms to the Purchase Order, Drawing & Specification(s) requirements and that this data is available for Teledyne Controls, LLC to review.

QUALITY PROVISION (QP) RIDERS

- C. If Teledyne supplied material is to be used in the manufacture of the items, the certificate shall include a statement that the material supplied was used in the manufacture of the items in the manner required by the applicable specification(s).
- D. The signature and title of a representative of the supplier, electronic signatures are acceptable.
- E. The Certificate of Conformance shall also include:
 - 1. The Part Number & Revision Letter as called out on Teledyne's Purchase Order.
 - 2. The quantity and where applicable the serial numbers, date codes, and/or lot numbers of the items being delivered.
 - 3. Teledyne's Purchase Order Number.

Note: If the packing list contains the information listed in a, b, and c above, it is acceptable to reference the packing list on the Certificate of Conformance instead of recording the information on the Certificate of Conformance.

161 CERTIFICATE OF PROCESS CONFORMANCE:

Each shipment shall be accompanied by a legible and reproducible certificate of process conformance which defines the process(es); e.g., soldering, surface preparation and treatment, heat treatment, welding, non-destructive testing processes, etc., the applicable specification(s) to which the item(s) are procured or processed, and the identity of the processor(s) used.

Each process used shall be listed on the certificate in sufficient detail to permit buyer verification. Processed items that are serialized shall have the serial numbers listed on the certificate (unless Teledyne Controls, LLC Supply Chain Management Director & Supplier Quality Control Manager has instructed the seller serialization is not required). Teledyne approval of any process source shall not relieve seller of any obligation and liability under this order.

163 INSPECTION AND TEST PLAN CERTIFICATION:

The seller shall prepare and maintain objective evidence of inspection and test. The type of inspection or test at each point of inspection must be identifiable to the item being fabricated on this purchase order. Each shipment must be accompanied by one (1) legible and reproducible copy of the seller's certification, identifiable with material submitted, that the inspection and test plan are on file and available upon request. The certification shall contain the signature and title of a representative of the supplier and assure conformance to specification requirements.

164 FUNCTIONAL TEST CERTIFICATION:

Each shipment shall be accompanied by one (1) reproducible copy of the Seller's Functional Test Certification. The certification shall be identifiable to the delivered material (for which test reports are on file and available for examination). This certification must contain the signature and title of a representative of the supplier.

165 GOVERNMENT APPROVED QPL SOURCE:

Supplies furnished under this purchase order must be produced by an approved Q.P.L. manufacturer who is listed in the current Quality Products List. A certification stating this must accompany the material shipment. If a copy of the certification is not available, verify that the part and manufacturer are listed in the current Quality Products List.

180 IDENTIFICATION OF LIMITED -CALENDAR-LIFE MATERIAL:

The seller shall identify each item, package or container of limited-calendar-life material with the cure or manufacture date, storage temperature and special handling conditions, in addition to the normal identification requirement of name, part or code number, specification number, type, size, quality and manufacturing recommended shelf life. This identification, including special handling conditions, shall be recorded on certifications and shipping documents for the material.

The item being delivered under subject purchase order shall have a minimum remaining shelf life of 60% of the initial shelf life at the time of manufacture or a minimum of two years.

QUALITY PROVISION (QP) RIDERS**181 IDENTIFICATION OF LIMITED-CALENDAR-LIFE MATERIAL INSTALLED IN AN ASSEMBLY:**

- A. The seller shall furnish cure date, assembly date, part name and number, and manufacturers' identification (if different from part number) for rubber parts (synthetic or natural) installed in assemblies delivered under this purchase order. This information shall be identifiable with the assembly, and when applicable, component parts within the assembly on an attached tag.
- B. The seller shall furnish with each shipment of an assembly incorporating a limited-calendar life material that does not require age control after installation (e.g., adhesives, resins, plastic, base paints, etc.) one (1) legible and reproducible copies of a certification stating that the limited-calendar-life material as properly controlled prior to use and within the shelf-life period when incorporated. The certification shall be identifiable with the assemblies to which it applies and this purchase order. This certification shall contain the signature and title of a representative of the seller.

182 WELDER'S STAMP:

Certified welder s stamp must appear on all items welded in accordance with Government Specifications MIL-W-8604 and/or MIL-W-8611. Also show certified welder's stamp on shipping documents.

183 WIRE:

Each spool of wire on this order must be legibly and permanently identified with (1) purchase order, (2) gauge, (3) cure date (if applicable), (4) military specification number (if applicable) and (5) Teledyne part number (if applicable).

184 PACKAGING:

Minimum packaging per MIL-P-116 III. Packaging shall not contain masking tape or Styrofoam packing materials.

186 DOMESTIC BEARING CERTIFICATION:

Compliance with DFAR Clause 52.208-7000 which requires that all bearings and/or components of the bearings must be manufactured in the US or Canada is required. Certification stating that domestic bearings were used is required with each shipment of parts.

187 IDENTIFICATION MARKING:

Physical item marking per MIL-STD-130 is required.

188 REQUIRED SOURCE FOR ALUMINUM INGOT:

The clause set forth in ASPR 1-327.2 is hereby incorporated herein by reference, except that the term "Contractor" shall mean Seller, and "this contract" shall mean this order.

189 PREFERENCE FOR DOMESTIC SPECIALTY METALS (JUN 2013) DFARS:

The supplier agrees only to supply materials in accordance with Defense Federal Acquisition Regulation Supplement (DFARS) 252.225-7009. (To access the DFARS requirements on the Internet go to <http://www.acq.osd.mil/dpap/dars/dfars/html/current/252225.htm#252.225-7009>). Contracted Suppliers' C of C must reference the specific section of the (DFARS) 252.225-7009, in which the material meets the applicable compliancy requirements.

190 PROCUREMENT TRACEABILITY OF MIL-S-19500 JAN BRANDED SEMICONDUCTORS:**A. Government Source Inspection at Manufacturers:**

Government source inspection shall be required as a condition for the use of a JAN brand on all semiconductor devices procured to and meeting the requirements of this specification and the applicable military specification. The government representative shall inform the manufacturer the extent of inspection and the date on which the inspection will begin.

B. Government Source Inspection at Facilities other than the manufacturer's:

Government source inspection for Jan brand devices, which are procured from distributors, shall be required. The distributor shall have traceability documentation and related lot records available. The distributor shall have an inventory control system for JAN branded devices which are acceptable to the government representative.

QUALITY PROVISION (QP) RIDERS**191 ELECTROSTATIC DISCHARGE (ESD) CONTROL:**

- A. The seller shall provide equipment and materials as described in ANSI/ESD S20-20-2014, which meet requirements as specified in ANSI/ESD S20.20-2014 as applicable, including identification with ESD Caution Labels on each item.
- B. All items shall be packaged in static-shielding material in accordance with DOD-STD-1686 and DOD-HDBK-263. Unit packs shall contain a caution label conforming to MIL-STD-129, paragraph 5.4.37.

192 PRINTED WIRING BOARD TEST REQUIREMENTS - COMMERCIAL AIRCRAFT PRODUCTS:

Unloaded (Bare) Printed Wiring Boards procured under this purchase order shall be tested in accordance with the requirements of IPC-6012 Section 3.9. Each lot shipped shall be accompanied by a Test Certification, which shall include the name and address of any third party tester if used,

193 PRINTED WIRING BOARD COUPONS:

- A. Printed Wiring Boards manufactured under this purchase order shall have quality conformance circuitry (coupons), conforming to the requirements of MIL-STD-275, paragraph 5.9, as part of every panel. These coupons shall be utilized to perform Group "A" and Group "B" inspection, as specified in MIL-PRF-55110. Coupons will be maintained at the supplier's facility for a period of two years.
- B. Printed Wiring Boards (PWBs) manufactured under this purchase order shall have quality conformance circuitry (coupons), as designed by the supplier. Coupons shall be micro-sectioned and inspected to establish circuit board integrity (plating thickness, registration, hole wall quality, laminate condition, etc.). A minimum of one micro-sectioned coupon will be shipped with each lot of PWBs delivered.

196 STANDARD INSPECTION SYSTEM:**General:**

The seller shall provide and maintain an inspection system acceptable to Teledyne Controls. The seller's system shall be subject to audit by Teledyne Controls, LLC. The procedures shall be clear, concise and adequate to fulfill the requirements of this purchase order. The system shall provide sufficient controls, records and inspections to assure compliance to contract or purchase order requirements. The system shall have a method obtaining and providing written corrective action.

Deviations:

When it is known by the supplier prior to the start of production that there is some product feature that may have a requirement that is desirable to deviate from, either because of manufacturing ease, lead-time or cost reduction, or some other benefit either to the supplier or to Teledyne Controls, LLC, the supplier shall first contact their Teledyne Controls, LLC purchasing representative, and obtain written approval for such deviation from the Teledyne Controls, LLC Quality & Compliance Department and Purchasing Department prior to implementing any change. The request must be in writing and contain (as a minimum):

- A. Purchase order number, item and revision level.
- B. Part number, revision level, revision date and name.
- C. Specification or drawing requirement (include page number or print location).
- D. Actual condition that is being proposed.

Discrepancy Reporting:

Any departures from drawings, specifications, or other procurement requirements shall first contact their Teledyne Controls purchasing representative, and submit their request to Teledyne Controls, LLC Quality & Compliance Department and Purchasing Department for review and consideration using the "Supplier Deviation/Waiver/Clarification Request", form TCF1158. Disposition must be approved by Teledyne Controls MRB approval process, before shipment of the product. One reproducible copy of the approved "Supplier Deviation/Waiver/Clarification Request" shall accompany each affected shipment.

Submission of discrepant material on an "Supplier Deviation/Waiver/Clarification Request" does not guarantee Teledyne Controls, LLC acceptance or approval. Teledyne Controls acceptance and approval of the "Supplier Deviation/Waiver/Clarification Request" and authorization to ship is applicable only to the discrepancies noted on the "Supplier Deviation/Waiver/Clarification Request" and the applicable material lot(s) thereon noted, and DOES NOT constitute acceptance or approval of additional lots of the material with the same or other discrepancies. Reference QPR 103 - Subcontractor Deviation / Waiver Form (TCF1158)

QUALITY PROVISION (QP) RIDERS

Nonconforming Material:

The seller is to provide immediate notification, in writing, of suspected problems with previously delivered product. This notification shall be sent to Teledyne Controls, LLC Quality & Compliance Department and Purchasing Department. Reference QPR 220 Notification of Non-Compliant Product.

Notification of Changes:

The seller shall notify Teledyne Controls, LLC buyer whenever there has been a change in ownership, top management, and head of the quality department, Quality Management System certification (QMS) is discontinued/suspended, facility location, major supplier or process used on the end item being delivered on this purchase order.

Quality Provision Riders (QPR) Incorporated by Reference:

In addition to this Quality Provision Rider the below listed QP Riders are incorporated into this Purchase Order:

- QPR 103 - Supplier Deviation / Waiver /Clarification Form,
- QPR 105 – First Article Inspection Report (FAIR)
- QPR 219 - Failure Review and Corrective Action,
- QPR 220 - Notification of Non-Compliant Product,
- QPR 235 - Declaration of an ITAR Controlled Item are incorporated in to this purchase order.
- QPR 271 – AS9102 First Article Inspection Report (FAIR)

Calibration:

The system shall provide for calibration and control of gauges and test equipment to the National Institute of Standards Technology (NIST), and procedures that are clear, concise and adequate for purchase order requirements.

Failure Review and Corrective Action:

When requested by Teledyne via the issuance of a Corrective Action Request (CAR), the Supplier shall conduct investigations to determine Root Cause associated with the non-compliant condition or Failure Trend identified in Corrective Action Request. Positive Corrective Actions shall be implemented to ensure that the Root Cause conditions are eliminated. The Supplier shall provide written response to Teledyne issued Corrective Action Requests within (30) days and, when requested, provide status reports every (7) days until the root cause has been identified and associated corrective actions have been implemented to Teledyne's satisfaction.

Investigation and get well visits: If significant failure or defect trends occur, Teledyne reserves the right to conduct on-site visits to review manufacturing, inspection, and test processing associated with the failure or defect trend. This right also extends to accompanying Teledyne customer and US Government representatives.

Records:

The supplier shall maintain records that provide evidence that the delivered product or service meets the requirements of the purchase order or contract. The use of records in the supplier's format is preferred. However, the records must be legible, readily identifiable and retrievable within (5) business days. The records shall be retained for a minimum of ten years (unless otherwise specified in the purchase order), after the final delivery of the product or service contracted under the purchase order or contract. Records can include, but are not limited to: Test Data, Purchase Orders, Certificate of Conformances, Travelers and Inspection Data.

Flow Down of Requirements:

The seller shall flow down to sub-tier suppliers the applicable requirements of the purchasing documents, including key characteristics (when identified) and these quality provisions.

Notes:

- A. For all purchase orders, (unless otherwise specified) the seller must use the latest revision level of all applicable specifications or drawings that are in effect at the time that the purchase order is issued.

Foreign object (FO) or Foreign Object Debris (FOD):

A substance, debris or article alien to the system that has invaded the product/part and could cause damage. Any foreign material that is inadvertently left on/inside an assembly/product after close-out or test.

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Based on the complexity of the part/assembly where FOD can become captured in a closed or inaccessible area(s) Teledyne Controls, LLC suppliers or sub-tier suppliers must implement an effective FOD program/procedure that meets the requirements of NAS 412 -Foreign Object Damage / Foreign Object Debris (FOD) Prevention and/or NCATT -National Center for Aerospace & Transportation Technologies- Foreign Object Elimination Elements of Basic Awareness.

197 PRINTED WIRING BOARDS:

Fabricate printed wiring boards in accordance with Teledyne:

2243191 Printed Wiring Board Fabrication Notes For Single-Sided Boards (as required, refer to drawing)

2243192 Printed Wiring Board Fabrication Notes For Double-Sided Boards (as required, refer to drawing)

2243193 Printed Wiring Board Fabrication Notes For Multi-layer Boards (as required, refer to drawing)

Noted: The above requirements supersede the engineering drawing requirement for printed wiring board fabrication notes. The reason being is that the Military Specifications and the IPC Specifications for printed wiring board fabrication on the engineering drawings are obsolete. This Quality Provision Riders supersedes the engineering drawing requirements.

198 STATISTICAL PROCESS CONTROL:

The subcontractor equipment required to validate the quality using Statistical Process Control (SPC) techniques as defined in the American National Standards Institute (ANSI) 21.1, 21.2, and 21.3.

A plan for the implementation of SPC shall be submitted by the sub-contractor for review and approval by Teledyne Controls, LLC prior to the initiation of production. Where a First Article is contractually required, availability of the SPC plan will be required prior to First Article inspection by Teledyne Controls, LLC.

Notification of acceptance or rejection shall be furnished to the subcontractor through the buyer/subcontractor administrator.

All SPC inspection records, failure reports, capability studies, corrective action reports, and control charts shall be maintained and available for Teledyne and the FAA review for a period of two (2) years. Scrap and rework records must also be readily available for Teledyne and FAA review. Copies of SPC inspection records shall be presented with each shipment for review by Teledyne Controls Quality Engineering and Manufacturing Engineering.

199 CERTIFIED SUPPLIER:

The subcontractor is approved as a Teledyne Controls, LLC Certified Supplier and as such is authorized to ship the items listed on this purchase order using the Teledyne acceptance stamp provided. Certifications of Conformance and packing lists and/or shippers shall be stamped by the subcontractor's quality representative for each shipment.

200 MATERIAL SAFETY STANDARD:

Seller will include manufacturer's product safety information with each shipment. This information shall contain applicable product handling precautions and procedures, disposal information, and emergency procedures for contact or contamination. Reference: OSHA Title 8, CCR5194 (g), (e).

201 TAPE AND REEL:

Parts shall be shipped on reels; leads tape shall be 6 inches. Pitch shall be $.200 + 0.015$ inch for parts with body diameter up to $.200$ inch. Pitch shall be $.375 + 0.015$ inch for parts with body diameter from $.200$ to $.375$ inch. Leads must be straight within $1/32$ of an inch between the body and the tape. Component bodies must be in line within $1/32$ inch. Polarized components shall be oriented all in one direction. No more than three (3) consecutive components may be missing from the tape and such a gap must have three (3) consecutive components, both proceeding and following. The center to center distance between tapes shall be two (2) inches minimum for parts with a body length of $.600$ or less.

202 STANDARD PACKAGE REQUIREMENTS:

Orders must be received in multiples of standard package requirements.

QUALITY PROVISION (QP) RIDERS**203 ISO 9001- QUALITY MANAGEMENT SYSTEMS REQUIREMENTS:**

The seller shall provide and maintain a system that complies with latest issue of ISO9001 Quality management systems Requirements - Requirements for quality management systems in design/development, production, installation and servicing. Compliance with the provisions of this clause in no way relieves the seller of the final responsibility to furnish acceptable supplies or services. The system shall be subject to audit by Teledyne Controls, LLC.

207 DELIVERABLE DOCUMENTATION FOR IN-CIRCUIT TESTING OF CIRCUIT CARD ASSEMBLIES:

Test reports and certifications shall be submitted to Teledyne Controls, LLC with each lot of circuit card assemblies (CCA's). The test reports shall specify:

- A. CCA part number, serial number and revision.
- B. Indication of test results (pass or fail).
- C. For items that fail initial test:
 - 1. Indication of failure mode.
 - 2. Listing of failed components
 - 3. Indication that rework was performed.
 - 4. Indication that CCA passed retest
- D. Indication of the Test document number and the revision used to test the CCA's.
- E. Certificate of Conformance as required by Quality Provision Rider 160 of this document.

208 MANAGEMENT OF GOVERNMENT PROPERTY IN THE POSSESSION OF CONTRACTORS:

When Government Property is provided to the supplier as part of this purchase order, the supplier will put into place processes and procedures as necessary to comply with the requirements of FAR 45.500 and its subsections.

209 CERTIFICATE OF CALIBRATION:

When deliverable Inspection and/or Test Equipment is part of this purchase order, then the supplier shall furnish a Certificate of Calibration (traceable to NIST) for each piece of Inspection and/or Test Equipment. When the Inspection and/or Test Equipment is part of a system, then the supplier may furnish one Certificate of Calibration covering the total system, including indication of compliance to applicable requirements as defined in ISO 10012-3, Quality Assurance requirements for measuring equipment.

212 PRINTED WIRING BOARD ASSEMBLY COMPONENT VERIFICATION INSPECTION:

Printed Wiring Board Assembly Component Verification Inspection shall be conducted on one Printed Wiring Board Assembly (PWBA) of each lot. The component verification inspection shall consist of verifying that the parts are in accordance with drawing, and parts list. When a Component Control Number (CCN) is used instead of the primary part number call out on the parts list, the supplier shall verify that the CCN Part meets the requirements of Drawing Number 2250000. Results of this inspection shall be recorded in on a copy of the parts list.

The supplier shall clearly indicate parts that were verified and that were not verified using a legend of the supplier's choice. The purpose of this inspection is to assure that the correct components have been installed on the printed wiring board assembly.

213 SOLDERING:

Electrical Soldering shall be in accordance with ANSI/IPC J-STD-001 and Printed Wiring Board Assembly Inspection shall be in accordance IPC-A-610 Class 2.

Noted: The above requirements supersede the engineering drawing requirement for soldering. The reason being is that the Military Specifications for Soldering on the engineering drawings are obsolete. This Quality Provision Rider supersedes the engineering drawing requirements.

214 FORM 8130-3 AIRWORTHINESS APPROVAL TAG:

The supplier shall furnish an Airworthiness Approval Tag FAA Form 8130-3 for each item produced on this purchase order. If the supplier cannot furnish an Airworthiness Approval Tag on one or more items produced under this purchase order, the supplier shall contact buyer for further instructions.

QUALITY PROVISION (QP) RIDERS**215 ASSEMBLIES PACKAGE LABEL:**

The supplier shall individually label each bag with the following information: Purchase Order, Purchase Change Number (if applicable), Shipping Date (month & year), Part Number, Serial Number (can be a range), drawing revision letter, parts list revision, list all authorized build short parts, (using reference designation or item number) for the assembly, and follow Deviation Waiver Request Instructions, when required.

216 CONFIGURATION DATA LIST:

The supplier shall furnish subassembly Configuration Data List (CDL) for each top end item assembly delivered. The CDL shall list the installed serialized subassemblies by Part Number, Serial Number, and Drawing Revision Level. The CDL may list multiple top end items (i.e. spreadsheet).

217 MATERIAL REVIEW BOARD AUTHORITY:

The seller is not authorized material review board authority. The seller is to furnish the buyer with a copy of the seller's standard repair procedure, upon request.

218 SUPPORT OF FAA CONFORMITY INSPECTION:

The supplier may be required to support FAA conformity Inspection at the Suppliers' Manufacturing Facility. This inspection would be conducted by a representative of the FAA and would be accompanied by a Teledyne Representative. The Conformity Inspection may include any examination or test, or material verification that would be requested by the FAA Representative to verify that the product under examination conforms to the design documentation and functionally passes the Acceptance Test Procedure. Teledyne will provide a minimum of two weeks' advance notification prior to scheduling the conformity inspection.

219 FAILURE REVIEW AND CORRECTIVE ACTION:

When requested by Teledyne via the issuance of a Corrective Action Request (CAR), the Supplier shall conduct investigations to determine Root Cause associated with the non-compliant condition or Failure Trend identified in Corrective Action Request. Positive Corrective Actions shall be implemented to ensure that the Root Cause conditions are eliminated. The Supplier shall provide written response to Teledyne issued Corrective Action Requests within (30) days and, when requested, provide status reports every (7) days until the root cause has been identified and associated corrective actions have been implemented to Teledyne's satisfaction.

Investigation and get well visits: If significant failure or defect trends occur, Teledyne reserves the right to conduct on-site visits to review manufacturing, inspection, and test processing associated with the failure or defect trend. This right also extends to accompanying Teledyne customer and US Government representatives.

220 NOTIFICATION OF NON-COMPLAINT PRODUCT:

The supplier shall notify Teledyne Purchasing within (10) days, when nonconformity is discovered in the supplier's processes or products that may affect product already delivered. Notification shall include a clear description of the discrepancy, parts affected including customer part number (serial numbers, lot numbers or manufacturing date) quantity delivered and corrective action for the discrepancy.

221 CONFIGURATION MANAGEMENT – DESIGN CHANGE AUTHORIZATION:

After Teledyne has approved the Product Design, changes to the design shall be made in accordance with the following requirements:

Definitions:

Minor Change: – a "minor change" is defined as one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. Operational characteristics are considered to be those hardware and software functional characteristics associated with the product's performance Specification requirements. Note: "no appreciable effect" is interpreted as meaning no significant degradation in any of the listed characteristics.

Major Change – all changes that are not "Minor Changes" are considered to be "Major Changes".

QUALITY PROVISION (QP) RIDERS

Requirements:

Change Evaluation: The supplier shall evaluate proposed design changes to determine if the design change requires approval by Teledyne prior to implementation.

The criteria to identify design changes that requires Teledyne Approval is as follows:

All Major Design Changes

Specific Types of Minor Design Changes as listed below:

DESIGN CHANGE APPROVAL BY TELEDYNE IS REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:	TELEDYNE APPROVAL IS NOT REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:
Addition, deletion, changes in value and characteristics due to electrical circuit changes.	Drawing corrections due to typos and general drawing updates (except outline drawings).
Overall lesser reliability due to electrical circuit changes.	Non-complex component replacements with equal or better reliability.
Component changes with lesser reliability.	Changes to board level testing.
LRU modification-levels (hardware and software).	Nut, bolt, screw, washer, etc. changes that do not affect form, fit, or function.
All revisions to the supplier's governing document(s) (i.e., LRU ATP and/or CMM) that affect Teledyne test requirements.	
All revisions to the effected Outline Drawing.	
Any change or addition of a new source of any complex or significant component involved in a significant functional part of the equipment.	
Software or Firmware Changes: Minor changes to software (including firmware) that does not affect function, performance, or interchangeability of the equipment.	

Submitting Design Change for approval:

All proposed design changes shall be submitted to the Teledyne Purchasing Department along with the following information:

Identification number of change

- Reason for change
- Description of Change
- What conditions/problems are being fixed by the change?
- Under what circumstances was the condition/problem discovered?
- What caused the condition / problem to occur?
- Are delivered units affected?
- If so how will they be corrected?
- If not why are they OK as is?
- What is the expected frequency of the condition / problem occurrence?
- What conditions are necessary for the recovery of normal operations when the condition / problem occurs?
- What testing has been done to verify that the proposed change will correct the condition / problem?

Change Approval / Disapproval:

Teledyne will provide written response that will either approve or disapprove the change.

222 SOFTWARE PROGRAM REQUIREMENTS RTCA/DO-178 B:

The seller shall provide and maintain a system that complies with the specified Software Level of DO-178 B "Software Considerations in Airborne Systems and Equipment Certification". The Software Level must be specified in the SOW, Contract or 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. The seller's system shall be subject to audit by Teledyne Controls, LLC.

QUALITY PROVISION (QP) RIDERS**223 SOFTWARE SERVICES PROGRAM REQUIREMENTS:**

The seller shall perform all software development and documentation in accordance with current Teledyne Controls, LLC Policies and Procedures. All software lifecycle data must be submitted to Teledyne Controls, LLC Software Quality Assurance for review and approval. All required data and documentation shall be released through the Teledyne Controls Software Configuration Management and Data Control departments. The seller's system shall be subject to audit by Teledyne Controls. Compliance with the provisions of this clause in no way relieves the seller of the final responsibility to furnish acceptable supplies or services.

224 REWORK / REPAIR HISTORY:

The supplier shall provide a written record in (**BOLD PRINT**) on the contract suppliers Certificate of Conformance of the rework or repair activity (e.g., provide description of the rework or repair performed, and parts requiring replacement) on all items associated with this order.

225 ORIGINAL MANUFACTURER'S CERTIFICATE OF CONFORMANCE:

The seller shall furnish a copy of the original manufacturer's Certificate of Conformance with each shipment on this order.

226 FINAL INSPECTION:

The seller shall not use a sample inspection plan when performing final inspection on items designed by Teledyne Controls, LLC. If seller plans to use sample inspection during the Final Inspection Process, the seller shall obtain written authorization from buyer prior to delivery of product.

227 NATIONAL FASTENER ACT:

Fasteners procured on subject purchase order shall comply with the requirements of National Fastener Act.

228 AIS PRINTED WIRING BOARD:

For Printed Wiring Boards purchased under the subject purchase order, the following Quality Provision Riders of this document shall apply: 103, 122, 126, 160, 192, 193, 196, 197, 226, 235, 238, and 270.

If the supplier cannot comply with these requirements, contact the Buyer immediately for instructions.

229 CABLE ASSEMBLY CONTINUITY AND SHORTS TEST:

Cable Assembly will be 100% tested for electrical continuity. Continuity test can be a manual test or an automatic test. Only cable assemblies that pass electrical continuity test shall be delivered to Teledyne Controls, LLC. Continuity testing shall be performed from point to point.

Shorts testing shall be performed from each point to all other points that do not share a common circuit.

230 HANDLE ITEMS AS COMMODITY A (TELEDYNE INTERNAL PROCESSING):

Teledyne Controls, LLC Receiving Inspection shall process item(s) procured on the subject purchase order as a Commodity A item. The person performing the Receiving Inspection Function will go to the Receiving Inspection Files and perform the inspections called out on the Receiving Inspection Historical Record Card.

231 REPAIR UNDER CFAR TITLE 14 PART 120:

A. Persons performing maintenance or preventive maintenance on subject purchase order item shall be included in a FAA Antidrug and Alcohol Misuse and Prevention Program in accordance with Federal Regulations Title 14: Aeronautics and Space part 120. In addition, persons performing maintenance or preventative maintenance on subject purchase order item(s) shall adhere to Federal Regulation Title 14: Aeronautics and Space part 121 Section 121.377 Maintenance and preventative maintenance personnel duty time limitations.

B. The supplier shall provide a National Air Agency Return to Service Tag (such as FAA Form 8130-3) with each item repaired.

If the supplier cannot comply with either 1 or 2 above, notify the buyer immediately for instructions.

QUALITY PROVISION (QP) RIDERS**232 BATTERY MINIMUM SHELF LIFE AT TIME OF DELIVERY:**

Batteries delivered under the subject purchase order shall comply with the minimum shelf life at the time of delivery in Table 1 of drawing 2245574. If battery part number is not listed in drawing 2245574, then the minimum remaining shelf life shall be 60% of the initial shelf life at the time of manufacture.

233 PROHIBITED SUBSTANCES:

Use of materials containing magnesium or magnesium alloys with high content of magnesium, rilsan, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) is prohibited. If item(s) delivered under the subject purchase order contains one or more of the prohibited materials, contact the Buyer immediately for directions and disposition.

234 MINIMUM SHELF LIFE AT TIME OF DELIVERY:

The item being delivered under subject purchase order shall have a minimum remaining shelf life of 60% of the initial shelf life at the time of manufacture or a minimum of two years.

235 DECLARATION OF AN ITAR ITEM CONTROLLED ITEM:

If the product provided against the Order is subject to U.S. export control under the International Traffic in Arms Regulations (ITAR) then the Teledyne Controls, LLC Purchasing Agent must be immediately notified. Specific written approval must be provided by Teledyne prior to delivering an ITAR item to Teledyne Controls, LLC.

If after authority to deliver an ITAR item granted, the following statement must accompany the product on delivery to Teledyne.

“This product is subject to U.S. export control under the International Traffic in Arms Regulations (ITAR). The export, re-export, transfer or other disposition of this product outside the United States, either in its original form or after incorporation into an end-item, requires an export license or approval from the U.S. Department of State “

236 WEEE AND ROHS PROHIBITED SUBSTANCES:

The products provided on this order must be in compliance with the requirements of the below listed European Directives. These Directives prohibit, restrict, and or limit the use of specific materials including such materials as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

2002/95/EC	European Directive Rosh
2002/96/EC	European Directive WEEE
2003/11/EC	Brominated Fire Retardant

If item(s) delivered under the subject purchase order contains one or more of the prohibited materials, contact the Buyer immediately for directions and disposition.

237 WEE AND ROHS PROHIBITED SUBSTANCES – CERTIFICATE OF CONFORMANCE:

The products provided on this order must be in compliance with the requirements of the below listed European Directives. These Directives prohibit, restrict, and or limit the use of specific materials including such materials as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).

2002/95/EC	European Directive RoHS
2002/96/EC	European Directive WEEE
2003/11/EC	Brominated Fire Retardant

The products provided on this order must be accompanied by a Statement of conformity. It is preferred that the statement contains the following elements:

Title: **Certificate of Conformance - Prohibited Substances**

Supplier's Name:

Purchase Order:

Product Part Number:

Product Name:

QUALITY PROVISION (QP) RIDERS

Statement of Conformance:

The material contained in the products provided against this order is compliant with the following European Directives:

2002/95/EC	European Directive RoHS
2002/96/EC	European Directive WEEE
2003/11/EC	Brominated Fire Retardant

Company Representative:

Name:
Signature:
Date:
Title:

If supplier cannot comply with above, notify the Buyer immediately.

238 SUPPLIER PERFORMANCE REQUIREMENTS:

On-Time Delivery (D1):

It is expected that products will be provided no later than the dock date established on the Purchase Order. Suppliers must maintain a minimum of 96% or better On-Time-Delivery rating. Your company's performance for On-Time Delivery will be evaluated on deliveries earlier than (30) days and later that one day of the established Purchase Order date could adversely affect your supplier rating and status as an approved supplier. All Shipments earlier than (30) days may be returned at the supplier's expense.

Product Quality (R1):

It is expected that the products and or services provided will be 100% free of defects and be compliant with all applicable material and performance requirements. Your company's quality acceptance performance will be evaluated (number of pieces rejected / total number of pieces received) and acceptance rates of less than 98% could adversely affect your supplier rating and status as an approved supplier.

		D1 Performance (3 month rolling)	R1 Performance (3 month rolling)
	Green	96-100%	98-100%
	Amber	90-95%	90-97%
	Red	≤90%	≤90%

239 MOISTURE SENSITIVE SURFACE MOUNT DEVICES:

The Supplier is responsible to handle Moisture Sensitive Devices in accordance with IPC/JEDEC J-STD-033 Latest Revision.

250 ANTIDRUG AND ALCOHOL MISUSE AND PREVENTION PROGRAM REQUIREMENT AND PERSONNEL DUTY TIME LIMITATIONS:

Work performed on this purchase order is regulated under United States Code of Federal Regulations Title 14 Part 120 (here after called 14CFR 120 and Section 121.377 Maintenance and preventative maintenance personnel duty time limitations.

An electronic copy of the regulation can be found at: http://www.faa.gov/regulations_policies/faa_regulations/

Affected Work Personnel:

Persons performing specified work at all tiers (here after called safety-sensitive work) on the hardware called out in the purchase order, must participate in and be tested in accordance with a FAA/DOT Antidrug and Alcohol Misuse and Prevention Program as specified in 14 CFR 120.

The specified work is:

- Hardware disassembly.
- Hardware assembly.
- Hardware cleaning.
- Hardware testing
- Hardware inspecting

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Replacement of part (s), component (s), subassembly (s) or assembly (s) on hardware.

Repairing of part (s), component (s), subassembly (s) or assembly (s) on hardware.

Removing and/or installing of software contained in the hardware.

Type of Testing:

Pre-Employment Testing

Random Testing

Post-accident Testing

Testing Based on Reasonable Cause

Return to Duty Testing

Follow-up Testing:

For the purposes of this purchase order, Pre-Employment testing is defined as initial testing prior to the start of performing safety-sensitive work and becoming part of a random test pool of workers performing safety-sensitive work.

Within the United States, person or persons performing maintenance or preventive maintenance functions shall be relieved from duty for a period of at least **(24)** consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

If you have any questions or cannot comply with the above requirement, please contact your Teledyne Controls, LLC Buyer.

260 COTS ITEM: CERTIFICATE OF CONFORMANCE NOT REQUIRED:

COTS Item is defined as any item (including Services, Software and Hardware), customarily used for nongovernmental purposes, that has been sold, leased, or licensed to the general public or that has been offered for sale, lease, or license to the general public. For example, items sold in the commercial market, which includes wholesale and retail distribution centers, catalogs, personal sales and items offered for sale commercially, but not yet sold, are also included. General examples of commercial items DoD buys range from food, clothing, and computers to trucks and airplanes.

Many suppliers of COTS Items do not have a business practice of providing a Certificate of Conformance. Being such a supplier, a Certificate of Conformance is not required for items being purchased on the purchase order.

Records:

The supplier shall maintain records that provide evidence that the delivered product or service meets the requirements of the purchase order or contract. The use of records in the supplier's format is preferred. However, the records must be legible, readily identifiable and retrievable within (5) business days. The records shall be retained for a minimum of two years (unless otherwise specified in the purchase order), after the final delivery of the product or service contracted under the purchase order or contract. Records can include, but are not limited to: Test Data, Purchase Orders, Certificate of Conformances, Travelers and Inspection Data.

Note: The issuance of a Certificate of Conformance is highly encouraged, and should be provided, if possible.

261 INDUSTRIALIZATION PROCESS (GRESS):

Note: This rider is not applicable to CCA Assembly suppliers.

The supplier shall implement the following industrialization processes in accordance with Airbus GRESS AP1013 issue A Chapters 3 and 4.

- A. During the initial First Article Review the supplier shall support Teledyne in conducting an Industrial Process Control Assessment (IPCA). This review will include the elements of this Article and compliance with the supplier's ISO9001 approved Quality System.
- B. The supplier shall establish the processes as required to support the major topics of GRESS Chapter 3 and 4 listed below:

The major areas include the following elements:

QUALITY PROVISION (QP) RIDERS

Risk Assessments:

Supplier shall perform risk assessments to identify the risks and associated risk mitigation efforts in the following areas:

- Product risks
- Industrial process risks (Risk assessments of the Manufacturing operations)
- Special process risks
- Procurement and supplier risks

Note: The Risk Assessments shall be documented and made available to Teledyne.

Concurrent Engineering:

Concurrent Engineering design industrialization shall be performed to ensure:

Early detection of manufacturing and supply chain constraints in development.

Early adaptation of production means to the product:

- New means. purchasing or qualification
- New processes qualification
- Operators training or qualification
- Robustness tests definition
- Early considerations of maintainability

Note: Concurrent Engineering Assessments shall be documented and made available to Teledyne.

Manufacturing Process Flow Charts:

The supplier shall establish the manufacturing flow charts for the top assembly and all subassemblies manufacturing assembly processes.

The Manufacturing flow charts shall include the inspection and test control points for gathering metric data.

Quality Metrics:

Supplier shall establish performance metrics to identify:

- Pre-test First Pass Yield
- Environmental Stress Screening First Pass Yield
- Final Test (ATP) First Pass Yield.
- Supplier rejection rates.

Metric Data: If requested, Pascall shall provide Teledyne with periodic (frequency not greater than Quarterly) Metric performance reports that includes summary data of the above metrics, defect trends, and corrective actions taken.

Root Cause and Corrective Action Analysis:

The supplier shall identify non-conformities associated with product, process, supplier, and delivery schedule and implement root cause and corrective actions associated with significant non-conformity trends.

Test Strategy and Control:

The supplier shall evaluate the equipment, sub-assembly and component tests coverage rates and analyze how each component, manufacturing phase are validated and verified all along the Production Process. The supplier shall justify what is not covered by the amount of tests applied.

Within the United States, each certificate holder (or person performing maintenance or preventive maintenance functions for it) shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least (24) consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

262 INDUSTRIALIZATION PROCESSES – CIRCUIT CARD ASSEMBLY SUPPLIERS:

The supplier shall implement the following industrialization processes.

During the initial product manufacturing First Article Review the supplier shall support Teledyne in conducting an Industrial Process Control Assessment (IPCA) activities. This review will include the elements of this Article and compliance with the supplier's approved Quality System.

- A. The supplier shall establish the processes as required to support the major topics listed below:

The major areas include the following elements:

QUALITY PROVISION (QP) RIDERS**Risk Assessments:**

Supplier shall perform risk assessments to identify the risks and associated risk mitigation efforts in the following areas:

- ➔ Industrial process risks (Risk assessments of the Manufacturing operations)
- ➔ Special process risks
- ➔ Note: As agreed between the supplier and Teledyne, the Risk Assessments may be facilitated and supported with personnel from Teledyne Controls, LLC along with the relevant process and management personnel from the supplier.

Manufacturing Process Flow Charts:

- ➔ The supplier shall establish the manufacturing flow charts for the top assembly and all sub-assemblies manufacturing assembly processes.
- ➔ The Manufacturing flow charts shall include the inspection and test control points for gathering metric data.

Quality Metrics:

Supplier shall establish performance metrics to identify:

- ➔ Inspection Defect Parts per Million Opportunities (DPMO)
- ➔ Process yield data such as solder paste yields, AOI yields, etc.
- ➔ Test yield data (based on the tests established for the products, Flying probe, Entry Level ICT, ICT, JTAG / Boundary Scan, etc.).

Notes:

1. The specific set of metrics shall be as agreed between the supplier and Teledyne.
2. Metric Data: If requested, supplier shall provide Teledyne with periodic (frequency not greater than Quarterly) Metric performance reports that includes summary data of the above metrics, defect trends, and corrective actions taken.

Root Cause and Corrective Action Analysis:

The supplier shall identify non-conformities associated with product, process, supplier, and delivery schedule and implement root cause and corrective actions associated with significant non-conformity trends.

263 CCA AOI AND BGA X-RAY INSPECTION REQUIREMENTS:

This Quality Rider imposes two requirements:

A. Automated Optical Inspection (AOI):

If the supplier has AOI capabilities, then all Circuit Card Assemblies (CCA) shall be AOI inspected during the fabrication processing. Unless otherwise agreed between Teledyne and the Supplier, the AOI inspection process shall be conducted within the supplier's normal manufacturing process flow.

Delivery Documentation: On delivery of the CCAs the supplier shall provide a statement that they have been AOI inspected.

Note: If the supplier does not have AOI capabilities, they shall provide a one-time notification to the Teledyne Purchasing department and wait to receive written instructions before proceeding. If the supplier acquires AOI capabilities, then this requirement immediately becomes applicable.

B. Ball Grid Array (BGA) X-Ray Inspection:

As an element of the inspection process 100% of all BGAs shall be X-Ray inspected after attachment onto the Circuit Card Assembly to verify that the solder ball joints are acceptable. The x-ray inspection process shall verify that the solder ball joints are in compliance with the applicable design data and/or the applicable elements of IPC-A-610 class II requirements.

Delivery Documentation: On delivery of the CCAs the supplier shall provide a statement that the BGAs have been x-ray inspected.

Note: If the supplier does not have BGA X-Ray capabilities, the supplier shall immediately notify the Teledyne Purchasing department and wait to receive written instructions before proceeding.

264 PACKAGING OF METAL PARTS:

Teledyne Packing and Shipping Requirements – Metal parts:

QUALITY PROVISION (QP) RIDERS

- A. Seller shall ship only as specified by this Order, or as subsequently directed in writing by Buyer, and in the strict conformity with any applicable governing tariff rules and regulations.
- B. Seller shall pack or otherwise prepare all Goods to meet carrier requirements and safeguard against damage from weather, transportation and handling.
- C. Each package shall be marked with the applicable Order number and include a packing sheet in each package.
- D. Each part shall be individually wrapped with thick* Kraft brown paper packing material which will provide adequate protection to the painted and/or plated surface(s) of a part and prevent them from being scratched and chipped during transportation and handling.
 - * Note: The Kraft brown paper must be sufficiently thick so as to provide protection of the metal product from abrasion, chipping, scratches, dents, dings, marring that could occur during material handling, packaging, and transportation. Material damage due to poor packaging will be returned to Supplier for repair or replacement at Supplier's expense.
- E. Individually bagged parts must be packaged in a manner that provides adequate protection to the painted and/or plated surface(s) of a part and which prevents them from being scratched and chipped during transportation and handling.

265 UN LITHIUM BATTERY TEST CERTIFICATE OR COMPLIANCE STATEMENT:

The supplier shall provide one of the following documents with each shipment of Lithium cells or lithium batteries:

- A. A copy of the Manufacturer's Published Catalog or Product information that states that the Cell or Battery Type have been proven to meet the requirements of each test in the UN "Manual of Tests and Criteria", Part III, subsection 38.3.
- B. The Manufacturer's Published Catalog or Product information must be applicable to and list the part number of the battery as called out on the Teledyne Purchase Order.
- C. Test Statement or Test Data published by the Battery Manufacturer indicating that the Cell or Battery type has been proven to meet the requirements of each test in the UN "Manual of Tests and Criteria", Part III, subsection 38.3.
- D. The Test Statement or Test Data must be applicable to and list the part number of the battery as called out on the Teledyne Purchase Order
- E. A legible and reproducible certificate that:
 - 1. is titled "UN Lithium Cell or Battery Test Certificate"
 - 2. confirms the lithium cells and/or batteries delivered on the order are of a type tested by the manufacturer and proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3.
 - 3. references the part number of the battery, as called out on the Teledyne purchase order, and Teledyne's purchase order number.
 - 4. includes the signature and title of the certifying representative of the supplier (electronic signatures are acceptable).

266 X-RAY INSPECTION OF COMPONENTS ON CIRCUIT CARD ASSEMBLIES:

During the Circuit Card Assembly (CCA) manufacturing process the supplier shall conduct X-Ray inspection of the soldering for the specific components as indicated by Teledyne.

The Supplier shall review the purchase order "Notes" to determine the specific components that require X-Ray Inspection of the solder.

If the Purchase Order does not indicate the specific component(s) that require X-Ray Inspection of the Soldering, then the Supplier shall contact Teledyne's Purchasing Agent for direction.

After the supplier has received direction for the specific components that require X-Ray inspection, the supplier's manufacturing build instructions (Traveler) and Manufacturing Build records shall indicate the requirement and inspection results for this X-Ray inspection.

These manufacturing build instructions and manufacturing build records and shall be made available for Teledyne review on request.

QUALITY PROVISION (QP) RIDERS**267 CONTINUATION OF PRODUCT DELIVERY: DESIGN CHANGES AND PARTS OBSOLESCENCE PROVISIONS:****A. Design Changes:**

Nine (9) month advance notification is required prior to the implementation of any design change that requires Teledyne approval.

Regardless of the change requested the Supplier must ensure that they maintain their delivery commitments of the previously accepted configuration for a minimum of nine (9) months without implementing changes that require Teledyne approval.

Teledyne requires a minimum of nine (9) months to evaluate change requests and determine if the change will be accepted or declined. During this period the supplier must be able to continue the delivery of the product in its previously accepted configuration. If the change is approved by Teledyne, the implementation phase-in will be as agreed between Teledyne and the Supplier.

B. Parts Obsolescence / End of Life (EOL) Provisions:

Immediate Notification is required on discontinued products and lower level parts.

In the event of product discontinuation for any reason, including the obsolescence of any part or sub-assembly contained in the product, the Supplier shall provide immediate notification to Teledyne no more than five (5) days of learning of such discontinuance. The supplier shall establish an EOL mitigation approach to resolve the impact of the discontinuation and advise Teledyne of their EOL plan. The supplier shall ensure that they can meet their delivery commitments for a minimum of nine (9) months without being impacted by the EOL occurrence.

The notification for Design Changes and Part Obsolescence shall be provided to the Teledyne Procurement Department.

268 COUNTERFEIT PARTS:

Seller hereby represents and warrants that it shall only deliver new and authentic components, devices, pieces, materials, modules, assemblies, subassemblies, or the like (hereafter "Parts") that are manufactured by or obtained from original equipment manufacturers (OEMs), original component manufacturers (OCMs), or authorized distributors. Seller shall make available to Buyer, upon request, OEM or OCM documentation that authenticates and provides traceability of the Parts to the applicable OEM or OCM.

Purchase of Parts from independent or unauthorized sources (Gray Market) is not permitted under Buyer's Order without the prior written approval of a duly authorized representative of Buyer.

Gray Market Screening:

If Teledyne authorization is granted to purchase parts from independent or unauthorized sources (gray market) the parts shall be subjected to authentication screening:

- ➔ The Screening shall be either in accordance with the provisions of "Teledyne Gray Market Screening Guidelines" form number TCF1401, or the screening shall be conducted as agreed in writing between the Supplier and Teledyne.

If Screening is conducted per the Teledyne Gray Market Screening Guidelines:

- ➔ Obtain TCF1401 form from TDY Buyer.
- ➔ For each part a Gray Market Screening Test Plan must be established and provided to Teledyne for approval in advance of performing the screening on the parts.
- ➔ Parts that do not successfully pass the screening shall not be incorporated into in products and shall not be delivered to Teledyne.
- ➔ The Gray Market Screening Test Results shall be made available to Teledyne on request.

Seller shall maintain policies, procedures, processes, or other such measures to ensure that any Parts sold or delivered by Seller to Buyer are authentic and not counterfeit.

269 CONFIGURATION MANAGEMENT- DESIGN CHANGE AUTHORIZATION- ALL ACTIVE COMPONENTS:

After Teledyne has approved the Product Design, changes to the design shall be made in accordance with the following requirements:

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Definitions:

Minor Change: – a “minor change” is defined as one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. Operational characteristics are considered to be those hardware and software functional characteristics associated with the product’s performance Specification requirements. Note: “no appreciable effect” is interpreted as meaning no significant degradation in any of the listed characteristics.

Major Change – all changes that are not “Minor Changes” are considered to be “Major Changes”.

Requirements:

Change Evaluation:

The supplier shall evaluate proposed design changes to determine if the design change requires approval by Teledyne prior to implementation.

The criteria to identify design changes that requires Teledyne Approval is as follows:

All Major Design Changes

Specific Types of Minor Design Changes as listed below:

DESIGN CHANGE APPROVAL BY TELEDYNE IS REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:	TELEDYNE APPROVAL IS NOT REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:
Addition, deletion, changes in value and characteristics due to electrical circuit changes.	Drawing corrections due to typos and general drawing updates (except outline drawings).
Overall lesser reliability due to electrical circuit changes.	Passive component replacements with equal or better reliability.
Component changes with lesser reliability.	Changes to board level testing.
DESIGN CHANGE APPROVAL BY TELEDYNE IS REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:	TELEDYNE APPROVAL IS NOT REQUIRED FOR THE FOLLOWING TYPES OF CHANGES:
LRU modification-levels (hardware and software).	Nut, bolt, screw, washer, etc. changes that do not affect form, fit, or function.
Additions or deletions of cuts and jumpers in electronic equipment.	
All revisions to the supplier's governing document(s) (i.e., LRU ATP and/or CMM) that affect Teledyne test requirements.	
All revisions to the effected Outline Drawing.	
Any change or addition of a manufacturer or part number of any active component (any semiconductor: diodes, transistors, FETS, etc.), or any Integrated Circuit (IC).	
Software or Firmware Changes: Minor changes to software (including firmware) that does not affect function, performance, or interchangeability of the equipment.	

Submitting Design Change for approval:

All proposed design changes shall be submitted to the Teledyne Purchasing Department along with the following information:

- ➔ Identification number of change
- ➔ Reason for change
- ➔ Description of Change
- ➔ What conditions/problems is being fixed by the change?
- ➔ Under what circumstances was the condition/problem discovered?
- ➔ What caused the condition / problem to occur?
- ➔ Are delivered units affected?
- ➔ If so how will they be corrected?
- ➔ If not why are they OK as is?
- ➔ What is the expected frequency of the condition / problem occurrence?

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- ➔ What conditions are necessary for the recovery of normal operations when the condition / problem occurs?
- ➔ What testing has been done to verify that the proposed change will correct the condition / problem?

Change Approval / Disapproval: Teledyne will provide written response that will either approve or disapprove the change.

270 AS9100- AS/EN/JISQ 9100, "QUALITY SYSTEMS"– AEROSPACE:

Model for Quality Assurance in Design, Development, Production, Installation and Servicing" as may be revised from time to time. The seller shall provide and maintain a system that complies with latest issue of AS9100 Quality management systems Requirements - Requirements for quality management systems in design/development, production, installation and servicing. Compliance with the provisions of this clause in no way relieves the seller of the final responsibility to furnish acceptable supplies or services. The system shall be subject to audit by Teledyne Controls, LLC. The Supplier's Quality Management System shall be certified by an certification/registration body (CRB) that is accredited to perform aerospace quality management system (AQMS) assessments under the provisions of the International Aerospace Quality Group (IAQG).

Note: It's the responsibility of the supplier to notify Teledyne Controls, LLC Supply Chain Management & Quality Reliability, Compliance Departments when suppliers AS9100 certification is discontinued/suspended.

271 AS9102 – FIRST ARTICLE INSPECTION REPORT (FAIR):

It's the seller responsibility to provide a full or a partial FAI for affected characteristics, when any of the following conditions occurs:

- A. A change in ownership.
- B. A change in the design characteristics affecting fit, form, or function of the part.
- C. A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
- D. A change in numerical control program or translation to another media that can potentially affect fit, form, or function.
- E. A natural or man-made event, which may adversely affect the manufacturing process.
- F. An implementation of corrective action required to complete a previous FAI.
- G. A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production

All parts the seller manufacturers for Teledyne Controls, LLC, must maintain records of the full & partial First Article Inspection Report and be available for Teledyne Controls, LLC review.

The Supplier shall conduct First Article Inspections that are in compliance with the Requirements of AS9102.

A unit/part, representative in every way of the product to follow, shall be identified and designated 'First Article', and identify the packing (box) "Contains FAI Unit/Part". The First Article shall be approved by Teledyne's Quality Assurance prior to any shipment of the purchased product. Submittal of a "First Article" shall be required unless the following conditions are satisfied:

- A. The supplier identifies a Teledyne purchase order number on which delivery of the product was made within the past twenty-four (24) months.

The "First Article" shall be 100% inspected and the data recorded by the supplier prior to its submittal to Teledyne.

One (1) legible and reproducible copy of the supplier's inspection report shall accompany the "First Article" submitted. This report shall comply with the requirements of AS9100 and contain, as a minimum, the following:

- 1. The Teledyne purchase order number.
- 2. The specification or drawing number, including the revision level.
- 3. The technique(s) used in the production as reflected in the "First Article" for example,
 - a. Production tooling, identification number.
 - b. Numerical control, identification number

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- c. Jigs and fixtures for alignment, gang drilling, etc.
 - d. Individual set-up and fabrication.
4. A list of actual measurement data taken from the "First Article" on a form and in a format which can be used to verify the results. The report shall include ALL actual dimensions (break out each specific characteristic, e.g., thread, countersink, plus thread depth is three individual characteristics) and verification of all dimensions, drawing notes, bill of material requirements, surface finish(es), processes and characteristics contained on the engineering drawing. The FAI results should include the actual engineering requirements with the allowable engineering tolerances (e.g., $.275 \pm .010$). Teledyne Controls, LLC designed parts; the supplier **MUST** include a marked-up (balloon) Teledyne Controls, LLC drawing that corresponds to FAIR item numbers. If the report is not 100% complete, please explain the omissions.

The selection of the "First Article" shall be made in a manner approved by Teledyne.

NOTE 1: If the "First Article" is to be considered as proof test for reproduction or numerical control tooling, please advise Teledyne at the time of submittal.

Note 2: When there's a Deviation Waiver Request involved, record the Control No.: "DWXX-XXXX" on the item number(s) that doesn't comply with the applicable drawing, specification or purchase order requirement, and note this FAIR to be incomplete, until the nonconformance is corrected.

272 BOEING DOCUMENT D1-4426, "APPROVED PROCESS SOURCES":

The for any special processing, composite raw materials, composite products, aircraft bearings, designated fasteners, and metallic raw materials listed in the Boeing D1-4426 document the supplier shall only use Approved Process sources that are listed in the D1-4426 document (when an approved source is required).

Note: Chemical Conversion Coatings and Anodizing are some of the processes that require Boeing Approved Process Sources per D1-4426.

To access D1-4426: Google "Doing Business with Boeing", click on D1-4426. Locate the process of concern, and then locate an approved source. Contact Teledyne Purchasing if supplier has questions regarding this provision.

Note: D1-4426 website is updated regularly, supplier should access D1-4426 website on every new job to avoid any departures from the latest revisions to Boeing specified requirements.

273 NADCAP ACCREDITATION:

The manufacturer of metal parts must use NADCAP Accredited suppliers for that specific process (e.g., Chem-File, Anodizing, Electroless Nickel), and they're approved by Teledyne Controls, LLC (Contact Teledyne Purchasing if supplier has questions regarding this provision). Click here to view NADCAP website: <https://www.eauditnet.com>, to verify the suppliers scope of approval.

274 SUPPLIERS DELEGATED INSPECTOR PROGRAM:

Supplier's participating in this program have consistently supplied Teledyne Controls, LLC (TDY) with high quality products, manufactured under a strong quality control system focused on continual quality improvement. With this approval, your company joins an elite group of suppliers who have proven themselves as high quality performers.

Teledyne Control has delegated inspection responsibilities to individuals that are employed by suppliers and are not members of the Teledyne Controls Quality and Compliance organization. A Delegated Inspector has been authorized to perform inspection on behalf of Teledyne Controls, LLC Quality and Compliance Department, and has been given an acceptance stamp to perform inspections. These individuals have demonstrated Inspection Proficiency by the required training and testing as defined in Teledyne Controls QPPM 6003.14 Subcontractor Delegated Inspection Procedure.

The Supplier's Delegated Inspector shall perform the functions, responsibilities, and provide Teledyne the required documentation as defined in QPPM 6003.14.

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275 PRE-TEST FIRST PASS YIELD REPORTS:

The Supplier is required to maintain a Pre-Test First Pass Yield Log to assess the process efficiency/effectiveness. A Pre-Test First Pass Yield Report is required, to be submitted with each batch delivered. The Report shall be traceable to the Batch Delivered.

276 EU REACH COMPLIANCE:

REACH – Registration, Evaluation, Authorization and Restriction of Chemicals: The reporting products containing Substances of Very High Concern.

The European Union (EU) has adopted regulation no.1907/2006, also known as the REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) regulation, which became effective June 1st, 2007.

REACH requires actors in the supply chain to identify the presence of Substances of Very High Concern (SVHC) identified on the Candidate List maintained by ECHA (European Chemical Agency) and substances restricted under Annex XVII of REACH. It is planned that this Candidate List will be updated on a regular basis and at least annually. In accordance with Article 33 of REACH, suppliers of articles must communicate the presence of any Candidate List substances present in the articles at a concentration of greater than >0.1% by weight.

ECHA defines an article as an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition. Please review the updated SVHC Candidate List of substances found at the URL below:

→ <http://echa.europa.eu/web/guest/candidate-list-table>

and Annex XVII of REACH at:

→ <http://echa.europa.eu/addressing-chemicals-of-concern/restrictions/list-of-restrictions>

Teledyne Controls requires that all suppliers understand and comply with REACH. If you have questions regarding the requirements of REACH, please visit the European Chemicals Agency website at

→ http://ec.europa.eu/echa/reach_en.html

REACH Compliance:

Seller and their subcontractors shall be responsible for continuous monitoring of the publication and updates of the European Chemicals Agency list of Substances of Very High Concern ("SVHC") (viewable at <http://echa.europa.eu/web/guest/candidate-list-table>) and immediately notify Buyer [Teledyne Controls] if the delivered Goods contain SVHCs that are greater than > 0.1% by weight or substances restricted under Annex XVII of REACH.

Notification to Teledyne Controls, LLC:

Seller shall notify Teledyne Controls, LLC of all products that contain SVHCs that are greater than >.1% of the product weight prior to delivery of the product.

The notification shall include the following information:

- Supplier's Name
- Purchase Order Number
- Product Part Number and Description
- Name and weight of the SVHC substance(s)
- The weight percentage present, if greater than > 0.1% by weight of the delivered Good.
- Supplier Representative's Name, Signature, and Contact Information

Note: The Teledyne Controls' Procurement Department shall forward all suppliers SVHC notifications to the Teledyne Controls Environmental Compliance Manager.

The presence of SVHCs that are less than < 0.1% by weight of the delivered Goods does not need to be reported.

Unreported SVHCs present above the threshold or substances restricted under Annex XVII of REACH, may result in purchase order cancellation and/or return of Goods.

Please forward all notification or direct any inquiries related to this requirement to the Procurement Department – Teledyne Controls.

QUALITY PROVISION (QP) RIDERS**277 ICT TEST FIXTURES AND CONTROL OF CUSTOMER OWNED EQUIPMENT:**

The purpose of this QP Rider 277 is to establish a guideline for maintain traceability of Circuit Card Assemblies and In-Circuit-Test Fixture.

A. Circuit-Card-Assembly:

1. Supplier shall maintain traceability information on file of all Test, Rework, and Repair activities associated to all CCAs Circuit-Card-Assembly that required In-Circuit-test.
2. In addition to maintain traceability information on file, Supplier required to fill out one of the "Test Report" form (Supplier Furnished).
3. Each shipment must be accompanied by one, legible and reproducible copies of the actual Test, Rework, and Repair reports identifiable with the material submitted.
4. The records shall be retained for a minimum of ten years (unless otherwise specified in the Purchase Order), after the final delivery of the product.

B. In-Circuit-Test Fixture:


1. Production equipment such In-Circuit-Test Fixture, tools and software program used to automate and control/monitor product shall be validated and approved by Teledyne Controls, LLC prior to release for production and shall be maintained there after by Supplier.
2. Supplier required to immediately notify Teledyne Control Procurement when problems are detected related to In-Circuit-Test Fixture. Supplier may only repair In-Circuit-Test Fixture after received an approval to do so from Teledyne Controls, LLC.
3. Any In-Circuit-Test Fixture that received a repair whether by Teledyne Controls, LLC or by Supplier will have to be revalidating by Teledyne Test Engineer /Quality and approved by Teledyne Controls, LLC, prior to release for production. The approval will be documented on the ICT Test Fixture Validation TCF1432 form.

QUALITY PROVISION RIDERS QUICK REFERENCE LIST

102 INSPECTION AND TEST PLAN	209 CERTIFICATE OF CALIBRATION
103 SUBCONTRACTOR DEVIATION/WAIVER FORM (TC1158)	212 PRINTED WIRING BOARD ASSEMBLY COMPONENT VERIFICATION INSPECTION
104 ACCEPTANCE OF PRODUCTION TOOLING	213 SOLDERING
105 FIRST ARTICLE INSPECTION	214 FORM 8130-3 AIRWORTHINESS APPROVAL TAG
106 SELLER'S CONTROLLED PRODUCTS	215 ASSEMBLIES PACKAGE LABEL
107 TELEDYNE SOURCE INSPECTION	216 CONFIGURATION DATA LIST
108 TELEDYNE IN-PROCESS INSPECTION	217 MATERIAL REVIEW BOARD AUTHORITY
120 GOVERNMENT SOURCE INSPECTION (DOD)	218 SUPPORT OF FAA CONFORMITY INSPECTION
121 NASA PROCUREMENT OTHER THAN THOSE REQUIRING GSI	219 FAILURE REVIEW AND CORRECTIVE ACTION
122 FACILITY ACCESS	220 NOTIFICATION OF NONCOMPLAINT PRODUCT
123 QUALITY CONTROL SYSTEM REQUIREMENTS UNDER NASA CONTRACTS	221 CONFIGURATION MANAGEMENT – DESIGN CHANGE AUTHORIZATION
124 GOVERNMENT SOURCE INSPECTION UNDER NASA CONTRACT	222 SOFTWARE PROGRAM REQUIREMENTS RTCA/DO-178 B
125 TRACEABILITY TO RAW MATERIAL	223 SOFTWARE SERVICES PROGRAM REQUIREMENTS
126 TRACEABILITY OF MATERIALS - GENERAL	224 REWORK / REPAIR HISTORY
144 TEST REPORTS	225 ORIGINAL MANUFACTURER'S CERTIFICATE OF CONFORMANCE
145 NON-DESTRUCTIVE TEST REPORTS	226 FINAL INSPECTION
146 FUNCTIONAL TEST REPORTS	227 NATIONAL FASTENER ACT
147 PRESSURE OR LEAK TESTS	228 AIS PRINTED WIRING BOARD
148 X-RAY REPORTS	229 CABLE ASSEMBLY CONTINUITY AND SHORTS TEST.
149 TEST BARS (CASTING)	230 HANDLE ITEMS AS COMMODITY A (TELEDYNE INTERNAL PROCESSING)
160 CERTIFICATE OF MATERIAL CONFORMANCE	231 REPAIR UNDER CFAR TITLE 14 PART 120
161 CERTIFICATE OF PROCESS CONFORMANCE	232 BATTERY MINIMUM SHELF LIFE AT TIME OF DELIVERY
163 INSPECTION AND TEST PLAN CERTIFICATION	233 PROHIBITED SUBSTANCES
164 FUNCTIONAL TEST CERTIFICATION	234 MINIMUM SHELF LIFE AT TIME OF DELIVERY
165 GOVERNMENT APPROVED QPL SOURCE	235 DECLARATION OF AN ITAR ITEM CONTROLLED ITEM
180 IDENTIFICATION OF LIMITED -CALENDAR-LIFE MATERIAL	236 WEEE AND ROHS PROHIBITED SUBSTANCES
181 IDENTIFICATION OF LIMITED-CALENDAR-LIFE MATERIAL INSTALLED IN AN ASSEMBLY	237 WEE AND ROHS PROHIBITED SUBSTANCES – CERTIFICATE OF CONFORMANCE
182 WELDER'S STAMP	238 PERFORMANCE REQUIREMENTS
183 WIRE	239 MOISTURE SENSITIVE SURFACE MOUNT DEVICES
184 PACKAGING	250 ANTIDRUG AND ALCOHOL MISUSE AND PREVENTION PROGRAM REQUIREMENT AND PERSONNEL DUTY TIME LIMITATIONS.
186 DOMESTIC BEARING CERTIFICATION	260 COTS ITEM: CERTIFICATE OF CONFORMANCE NOT REQUIRED
187 IDENTIFICATION MARKING	261 INDUSTRIALIZATION PROCESS (GRESS)
188 REQUIRED SOURCE FOR ALUMINUM INGOT	262 INDUSTRIALIZATION PROCESSES – CIRCUIT CARD ASSEMBLY SUPPLIERS
189 PERFERENCE FOR DOMESITIC SPECIATLTY METALS (JUN 2013) DFARS	263 CCA AOI AND BGA X-RAY INSPECTION REQUIREMENTS.
190 PROCUREMENT TRACEABILITY OF MIL-S-19500 JAN BRANDED SEMICONDUCTORS	264 PACKAGING OF METAL PARTS
191 ELECTROSTATIC DISCHARGE (ESD) CONTROL	265 UN LITHIUM BATTERY TEST CERTIFICATE OR COMPLIANCE STATEMENT
192 PRINTED WIRING BOARD TEST REQUIREMENTS - COMMERCIAL AIRCRAFT PRODUCTS	266 X-RAY INSPECTION OF COMPONENTS ON CIRCUIT CARD ASSEMBLIES
193 PRINTED WIRING BOARD COUPONS	267 CONTINUATION OF PRODUCT DELIVERY: DESIGN CHANGES AND PARTS OBSOLESCENCE PROVISIONS
196 STANDARD INSPECTION SYSTEM	268 COUNTERFEIT PARTS
197 PRINTED WIRING BOARDS	269 CONFIGURATION MANAGEMENT- DESIGN CHANGE AUTHORIZATION- ALL ACTIVE COMPONENTS
198 STATISTICAL PROCESS CONTROL	270 AS9100- AS/EN/JISQ 9100, “QUALITY SYSTEMS”- AEROSPSACE
199 CERTIFIED SUPPLIER	271 AS9102- FIRST ARTICLE INSPECTION
200 MATERIAL SAFETY STANDARD	272 BOEING DOCUMENT D1-4426, “APPROVED PROCESS SOURCES”
201 TAPE AND REEL	273 NADCAP ACCREDITATION
202 STANDARD PACKAGE REQUIREMENTS	274 TELEDYNE CONTROLS SOURCE DELEGATION
203 ISO 9001- QUALITY MANAGEMENT SYSTEMS REQUIREMENTS	275 PRE-TEST FIRST PASS YIELD REPORT
207 DELIVERABLE DOCUMENTATION FOR IN-CIRCUIT TESTING OF CIRCUIT CARD ASSEMBLIES	276 EU REACH COMPLIANCE
208 MANAGEMENT OF GOVERNMENT PROPERTY IN THE POSSESSION OF CONTRACTORS	277 ICT TEST FIXTURES

Product - **Various**

No.: **16-3312**

<input type="checkbox"/> OUTSTANDING		DCR NO. -----		DATE 08/31/16		ENGINEERING ORDER			DOCUMENT NUMBER 2232391		REV V			
<input checked="" type="checkbox"/> INCORPORATED		TSO ITEM <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO												
ECP NUMBER		CHANGE CLASS <input type="checkbox"/> MAJ <input checked="" type="checkbox"/> MIN		PMA AFFECTED <input type="checkbox"/> Y <input checked="" type="checkbox"/> N IF YES, CHECK BELOW: <input type="checkbox"/> NOC NO. _____ <input type="checkbox"/> MINOR SUBMIT <input type="checkbox"/> Y <input checked="" type="checkbox"/> N		 TELEDYNE CONTROLS Everywhereyoulook™ 501 CONTINENTAL BLVD. EL SEGUNDO, CALIFORNIA 90245 CAGE CODE 98571			DOCUMENT TITLE QUALITY PROVISION RIDERS		SHEET 31 of 33			
EFFECTIVITY						REASON FOR CHANGE				APPROVALS		RELEASED DATE 09/01/16		
(1) <input type="checkbox"/> MANDATORY		SER NO. / DATE												
(2) <input type="checkbox"/> FUTURE		N/A												
(3) <input checked="" type="checkbox"/> DWG CHANGE ONLY														
PARTS DISPOSITION														
					<input type="checkbox"/> VENDOR REQ <input type="checkbox"/> EO INCORPORATION		PREPARED BY		ENGINEERING		MFG ENG	QA	CM/SCM	
					<input type="checkbox"/> CUSTOMER REQ <input type="checkbox"/> DOCUMENT ERROR		Rick Goutermont		N/A		N/A	Emad Khoury	N/A	
USE AS IS (1) (2) (3) (4)					OTHER: For the specific changes to this document, see below:		REVIEWER/CHECKER		CUSTOMER SUPPORT		PRODUCTION		SQA	TELEDYNE
REWORK (5) (6) (7) (8)							Jeff Gifford		N/A		N/A		N/A	N/A
CONFORM (9) (10) (11) (12)														
SCRAP (13) (14) (15) (16)														
AFFECTED DOCUMENTS: <input type="checkbox"/> TEST <input type="checkbox"/> SOFTWARE <input type="checkbox"/> CID <input type="checkbox"/> S/B, S/L <input type="checkbox"/> TECH MAN. <input type="checkbox"/> _____														

EFFECTIVITY | PARTS DISP:

1. Header Block Changed Date of Revision from 1/21/15 to 08/31/16.
2. Header Block Changed Revision "U" to "V".
3. Page 1, Approvals Deleted David Murillo & Title
4. Page 1, Approvals Added Jeff Gifford & Title, and Rick Goutermont & Title
5. Page 1, Added 1.0 Purpose, 2.0 Activity, 3, Teledyne Reference Documents & 4.0 Definitions Statements
6. Page 2, Table of Contents, Added to 105 "(FAIR)", Deleted QP Rider 210.
7. Page 3, Table of Contents, deleted 211, Added to 224 "Rework", Added to 271 "(FAIR)", Added to New QP Rider 276 EU Reach Compliance & 277 ICT Test Fixtures, Added Quality Provision Quick Reference List & Engineering Order.
8. Throughout 2232291 document, Added "LLC" to QP Rider 102, 103, 105, 148, 160, 196, 198, 199, 203, 207, 222, 223, 226, 229, 230, 235, 250, 262, 270, 271, 274
9. Throughout 2232291 document, changed sub-paragraphs from numerical to alpha numbering
10. Page 4, Added the following requirements to QP Rider 105
It's the seller responsibility to provide a full or a partial FAI for affected characteristics, when any of the following conditions occurs:
 - A. A change in ownership.
 - B. A change in the design characteristics affecting fit, form, or function of the part.
 - C. A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
 - D. A change in numerical control program or translation to another media that can potentially affect fit, form, or function.
 - E. A natural or man-made event, which may adversely affect the manufacturing process.
 - F. An implementation of corrective action required to complete a previous FAI.
 - G. A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production

All parts the seller manufacturers for Teledyne Controls, LLC, must maintain records of the full & partial First Article Inspection Report and be available for Teledyne Controls, LLC review.
Added "part", and identify, the packaging (box) "Contains FAI Unit / Part"
Deleted "The supplier includes with the product submitted, a copy Teledyne "First Article" approval for the product".
Next to (Balloon) Added, "Teledyne Controls, LLC" drawing
Note 2: When there's a Deviation Waiver Request involved, record the Control No.: "DWXX-XXXX" on the item number(s) that doesn't comply with the applicable drawing, specification or purchase order requirement, and note this FAIR to be incomplete, until the nonconformance is corrected
11. Page 4, Move Note: from bottom to top of QP Rider 107:
Removed "NOTE".
NOTE: When requesting source inspection, call the buyer whose name appear on this purchase order at least five (5) working days in advance.
Added the following verbiage:
", or as agreed upon with Teledyne Purchasing & Quality Representative".

ENGINEERING ORDER



501 CONTINENTAL BLVD. EL SEGUNDO, CALIFORNIA 90245
CAGE CODE 98571

DOCUMENT NUMBER
2232391

DOCUMENT TITLE
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EFFECTIVITY | PARTS DISP:

All parts, material requiring source inspection MUST be ready, including the required cert documentation package, prior to commencing source inspection activities at the contracted suppliers' facilities. (e.g., Certificate of Compliance, Packing List, Material Certificates, Test Reports (as required), and Deviation Waiver Request (when applicable), and any other documents required by the Purchase Order QP Rider Requirements)

Seller must include the approved Teledyne Controls LLC Source Inspection Report TCF1066 form with Certification Package.

- 12. Page 8, QP Rider 146, Added "Drawing Revision Letter".
- 13. Page 8, QP Rider 160.E.1, Added "Revision Letter"
- 14. Page 9, QP Rider 161, Added the following verbiage "(unless Teledyne Controls, LLC Supplier Chain Management Director & Supplier Quality Control Manger has instructed the seller serialization is not required)."
- 15. Page 11, QP Rider 191, Changed ANSI/ESD S20 20-1999 to ANSI/ESD S20 20-2014.
- 16. Page 11, QP Rider 193, Changed MIL-P-55110 to MIL-PRE-55110.
- 17. Page 11, QP Rider 196, Notification Changes, Added the following verbiage:
"Quality Management System certification (QMS) is discontinued/suspended"
Added "QPR 105 First Article Inspection Report (FAIR)"
Added "QPR 271 AS9102 First Article Inspection (FAIR)"
- 18. Page 11, Combined QP Rider 210 requirements into QP Rider 191 and Deleted QP Rider 210:
A. The seller shall provide equipment and materials as described in ANSI/ESD S20-20-2014, which meet requirements as specified in ANSI/ESD S20.20-2014 as applicable, including identification with ESD Caution Labels on each item.
- 19. Page 11, Combined QP Rider 211 requirements into QP Rider 193, and Deleted QP Rider 211
B. Printed Wiring Boards (PWBs) manufactured under this purchase order shall have quality conformance circuitry (coupons), as designed by the supplier. Coupons shall be micro-sectioned and inspected to establish circuit board integrity (plating thickness, registration, hole wall quality, laminate condition, etc.). A minimum of one micro-sectioned coupon will be shipped with each lot of PWBs delivered.
- 20. Page 15, QP Rider 215, Deleted "and Subcontractor Deviation/Waiver Number (if applicable), and Added ", and follow Deviation Waiver Request Instructions, when required."
- 21. Page 17, QP Rider 224. Changed verbiage:
The supplier shall provide a written record of repair activity (i.e. a description of the work performed, parts replaced) on all items associated with this order.
The supplier shall provide a written record in (BOLD PRINT) on the contract suppliers Certificate of Conformance of the rework or repair activity (e.g., provide description of the rework or repair performed, and parts requiring replacement) on all items associated with this order.
- 22. Page 17, QP Rider 228. Added QP Rider 103, 193, 197, 226, 235, 238 and 270:
- 23. Page 23, QP Rider 238 Added to On-Time Delivery (D1): "Suppliers must maintain a minimum of 96% or better On-Time Delivery Rating".
- 24. Page 23, QP Rider 238 changed deliveries earlier than from 5 to 30 days. All shipments earlier than (changed from 5) to 30 days.

Changed acceptance rate from 98.5% to 98%
Changed from:

		R1 Performance (3 month rolling)	D1 Performance (3 month rolling)
	Green	<.3%	>99%
	Light Green	.3% - .9%	96% - 99%
	Amber	.9 - 1.4%	92% - 96%
	Red	>1.5%	<92%

Added:

		D1 Performance (3 month rolling)	R1 Performance (3 month rolling)
	Green	96-100%	98-100%
	Amber	90-95%	90-97%
	Red	≤90%	≤90%

	ENGINEERING ORDER	DOCUMENT NUMBER 2232391	REV V
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	CAGE CODE 98571		

EFFECTIVITY | PARTS DISP:

QP Rider 270 Added Note:

Note: It's the responsibility of the supplier to notify Teledyne Controls, LLC Supply Chain Management & Quality Reliability, Compliance Departments when suppliers AS9100 certification is discontinued/suspended.

25. Page 26, Added the following requirements to QP Rider 271

It's the seller responsibility to provide a full or a partial FAI for affected characteristics, when any of the following conditions occurs:

- A. A change in ownership.
- B. A change in the design characteristics affecting fit, form, or function of the part.
- C. A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
- D. A change in numerical control program or translation to another media that can potentially affect fit, form, or function.
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- F. An implementation of corrective action required to complete a previous FAI.
- G. A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production

All parts the seller manufacturers for Teledyne Controls, LLC, must maintain records of the full & partial First Article Inspection Report and be available for Teledyne Controls, LLC review.

Added "part", and identify, the packaging (box) "Contains FAI Unit / Part"

Deleted "The supplier includes with the product submitted, a copy Teledyne "First Article" approval for the product".

Next to (Balloon) Added, "Teledyne Controls, LLC" drawing.

Note 2: When there's a Deviation Waiver Request involved, record the Control No.: "DWXX-XXXX" on the item number(s) that doesn't comply with the applicable drawing, specification or purchase order requirement, and note this FAIR to be incomplete, until the nonconformance is corrected

26. Page 27, Changed QP Rider 273 verbiage:

Deleted:

~~Seller and Seller's processor/supplier base shall be NADCAP accredited for equivalent/similar technologies as required by Boeing document D1-4426, Approved Process Sources.~~

~~To access D1-4426: Google "Doing Business with Boeing", click on D1-4426. Locate the process of concern, and then locate an approved source. Contact Teledyne Purchasing if supplier has questions regarding this provision.~~

Added:

The manufacturer of metal parts must use NADCAP Accredited suppliers for that specific process (e.g., Chem-File, Anodizing, Electroless Nickel), and they're approved by Teledyne Controls, LLC (Contact Teledyne Purchasing if supplier has questions regarding this provision). Click here to view NADCAP website: <https://www.eauditnet.com>, to verify the suppliers scope of approval.

27. Page 29, Added New QP Rider 276 EU Reach Compliance

28. Page 29, Added New QP Rider 277 ICT Test Fixtures and Control of Customer Owned Equipment