30.101 [00] 4135-0205 REV -

	4135-U2U5 KEV -		
100 \$	100 Series - QMS/Standards/Certifications		
100	AS9100 Quality System	The Supplier shall comply with the requirements of the latest revision of AS9100, which includes all the requirements of ISO 9001	
101	ISO 10012	The Supplier shall comply with the requirements of the latest revision of ISO10012, "Measurement Management Systems – Requirements for Measurement Processes and Measuring Equipment".	
102	ANSI Z540	The Supplier shall comply with the requirements of the latest revision of the ANSI Z540-3, "Requirements for the Calibration of Measuring and Test Equipment".	
103	AS9120	The authorized/franchised Distributor for the item to be purchased shall comply with the requirements of the latest revision of AS9120 or AS9100.	
104	ISO 17025	The Supplier shall comply with the requirements of the latest revision of the ISO- 17025, "General Requirements for the Competence of Testing and Calibration Laboratories".	
105	Workmanship Standards	The Supplier shall comply with the applicable portions of the Buyer's specification for Mechanical Workmanship.	
106	NASA-STD-8739.1	The Supplier shall comply with the requirements of the applicable portions within NASA-STD-8739.1 - "Workmanship Standards for Staking and Conformal Coating of Printed Circuit Boards and Electronic Assemblies", (latest revision).	
107	NASA-STD-8739.2	The Supplier shall comply with the requirements of the applicable portions within NASA-STD-8739.2' - "Workmanship Standard for Surface Mount Technology", (latest revision).	
108	NASA-STD-8739.3	The Supplier shall comply with the requirements of the applicable portions within NASA-STD-8739.3 - "Workmanship Standard for Soldered Electrical Connections", (latest revision).	
109	NASA-STD-8739.4	The Supplier shall comply with the requirements of the applicable portions within NASA-STD-8739.4 "Workmanship for Harnesses", (latest revision)	
110	ANSI/J-STD-001	The Seller must comply with the requirements of the latest revision* (and all cumulative change notices) of ANSI/J-STD-	

2020 Collins Aerospace

30.101 [00]

4135-0205 REV -

		001, "Requirements for Soldered Electrical and Electronic Assembles", Class level shall follow IPC (such as IPC-A-600, IPC-A-610 and IPC-A-620) class requirement as defined on FAB and Assembly drawings. Operators, Assemblers, Solderers and Inspectors must be initially certified and recertified every two years as a Certified IPC Application Specialist (CIS) by a Certified IPC Trainer (CIT). Certifications must include IPC Training Module 1 plus Modules 2 – 6 as applicable to the production operations performed. Official IPC serialized course completion certificates must be available for review as well as IPC certification tests and soldering samples on IPC approved Printed Wire Board as prescribed by the current IPC Instructor Guide. Certification to Module 1 only for Assemblers, Solderers and Inspectors will not satisfy the CIS certification requirement.
111	J-STD-001- Space Addendum	The Supplier shall comply with the requirements of the applicable portions Space Addendum for J-STD-001
112	ANSI/IPC-A-610	The Supplier shall comply with the requirements of the latest revision* (and all cumulative change notices) of ANSI/IPC-A-610, "Acceptability of Electronic Assemblies", Class level shall follow IPC class requirement as defined on FAB and Assembly drawings. Operators, Assemblers, Solderers and Inspectors must be initially certified and recertified every two years as a Certified IPC Application Specialist (CIS) by a Certified IPC Trainer (CIT). Certifications must include IPC Training Module 1 plus Modules 2 – 6 as applicable to the production operations performed. Official IPC serialized course completion certificates must be available for review as well as IPC certification tests and soldering samples on IPC approved Printed Wire Board as prescribed by the current IPC Instructor Guide. Certification to Module 1 only for Assemblers, Solderers and Inspectors will not satisfy the CIS certification requirement
113	IPC/WHMA-A-620	The Supplier shall comply with the requirements of the latest revision *(and all cumulative change notices) of IPC/WHMAA-620 "Requirements and Acceptance for Cable and Wire Harness Assemblies", Class level shall follow IPC class requirement as defined on FAB and Assembly drawings.
114	MIL-STD-454	The Supplier shall comply with the requirements of the latest revision* (and all cumulative change notices) of MIL-HDBK- 454, "GENERAL GUIDELINES FOR ELECTRONIC EQUIPMENT".

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

115	The Supplier's Workmanship Standards Manual	The Supplier's Workmanship Standards Document shall be approved by the Buyer with respect to the product being supplied under this Purchase Order or Sub-contract prior to fabrication.
116	Calibration Certification	The Supplier shall furnish a certification of calibration which states the equipment conforms/performs to the applicable specifications for the item supplied. The certification shall be compliant to ANSI/NCSL Z540-3 / ISO 17025 requirements, traceable to the equipment and signed by an authorized representative.
117	MIL-I-45208	The Supplier shall comply with the requirements of the latest revision* of MIL-I-45208, "Inspection System Requirements."

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

	4155-U2U5 KEV -		
200	Series - Process Controls		
		The supplied product shall not contain any of the following materials:	
		Pure tin and tin alloy coatings and finishes greater than 97% weight tin.	
		Pure cadmium and cadmium alloy coatings and finishes greater than 1% weight cadmium.	
200	Restricted Materials	Pure zinc and zinc alloy coatings and finishes greater than 1% weight zinc.	
		Pure selenium.	
		Mercury and compounds of Mercury.	
		Brass without an approved plating finish greater than 50um inches in thickness	
		Use of restricted materials in products supplied to ISRS is prohibited, unless authorized in writing by ISRS.	
	Restricted Materials with Specific Certification	The Supplier shall certify that the supplied product does not contain any of the following materials:	
		Pure tin and tin alloy coatings and finishes greater than 97% weight tin.	
		Pure cadmium and cadmium alloy coatings and finishes greater than 1% weight cadmium.	
201		Pure zinc and zinc alloy coatings and finishes greater than 1% weight zinc.	
		Pure selenium.	
		Mercury and compounds of Mercury.	
		Brass without an approved plating finish greater than 50um inches in thickness	
		Use of restricted materials in products supplied to ISRS is prohibited, unless authorized in writing by ISRS	
202	Foreign Object Damage/Debris Prevention	The Supplier shall inspect for foreign objects/materials. All delivered products shall be free of foreign objects/materials including grease, lubricant, coatings not specified on purchase order, burrs, etc.	

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4135-U2U5 REV -
203	Foreign Object Damage/Debris Control Program	The Supplier shall maintain a FOD (Foreign Object Damage/Debris) control program assuring work is accomplished in a manner preventing foreign objects or material from entering and remaining in deliverable items. Industry standard NAS0412, Foreign Object Damage/Foreign Object Debris (FOD) Prevention, may be used to comply with this requirement. The Supplier shall document and investigate all FOD incidents assuring elimination of the root cause. Collins Aerospace ISRS Solutions shall have the right to perform inspection and/or audits as a method of verification that The Supplier's FOD Control program is functional, documented, and effective.
204	Shelf Life Material	The Supplier shall furnish the date of manufacture (DOM) or the date of shipment (DOS) (whichever is applicable to shelf life calculation), the recommended shelf life and storage temperature of material shipped on this Purchase Order. Unless otherwise stated on the PO, drawing/specification; product having less than 75% of the total shelf life remaining will not be accepted.
205	Silver Plated/Coated Wire	Each spool shall be supplied individually sealed in a desiccated bag. Date of manufacture shall not be older than 2 years at date of shipment.
206	Conformance to Specialty Metals DFAR	Conformance to DFARS 252.225,7009, Restriction on Acquisition of Certain Articles Containing Specialty Metals, is required and must be flowed down to your sub-contractors. Specialty metals that apply per the DFAR are certain steels, titanium's, and zirconium based alloys. Aluminum and most other alloys are not included.
207	Outsourcing, Sub-tier Suppliers, and Subcontracting	All Suppliers, sub-tier Suppliers, vendors, laboratories, manufacturers, and franchised/authorized distributors shall be approved for use in advance by ISRS Space and Defense prior to use. This does not include raw material Suppliers.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

_		
208	Special Process Certification	Special processes shall be performed by Collins Aerospace ISRS Solutions approved sources. A legible and reproducible copy of special process certifications shall accompany each shipment of material or parts for which such processing has been accomplished. Certifications are to include all specifications listed in the order of sequence and date performed. All certifications supplied as objective evidence must indicate the processor company name, full address, telephone number, Commercial And Government Entity (CAGE) code number of the facility performing each special process. Repeating special process steps is considered "rework to print" and must be approved by ISRS Solutions prior to completion of the task. Stripping of plating/coatings/paint to repeat the plating/coating/painting process is not allowed unless approved by ISRS Solutions prior to completion of the task. This requirement must be flowed down to each sub-tier Supplier of special processes on each order.
209	NADCAP Special Processors	The Supplier shall only subcontract special processes to Suppliers that are NADCAP certified for the special process that is subcontracted. The Seller shall ensure the NADCAP certification has not expired. Note: NADCAP certification for one special process does not ensure NADCAP certification for every special process a supplier may perform. For processes to Industry and/or Military standards, a NADCAP certificate for the specific process is required. When a supplier is performing a process to ISRS specifications or MOPs (instead of an Industry/Military standard), the supplier's general NADCAP certification for the type of (painting, silk screening) process performed is acceptable
210	Hardware	The Buyer must approve the source of supply for hardware.
211	Wire	The Buyer must approve the source of supply for wire.
212	Flow Down to Sub-tier Suppliers	Whenever The Supplier subcontracts any part of the work required by this purchase order (including parts or any manufacturing process or is distributing product on behalf of an original manufacturer), it shall be The Supplier's responsibility to flow down all the applicable contractual requirements invoked on this purchase order.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4133-0203 REV -
213	Counterfeit Parts Prevention	The Supplier is hereby notified that the delivery of suspect/counterfeit, salvaged, remanufactured or reclaimed components, parts and/or materials is of special concern to ISRS Solutions. To mitigate the possibility of the inadvertent use of these components, parts and/or materials, The Supplier shall only purchase components, parts and/or materials procured directly from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM)/ Original Source, or through the authorized franchisee/distributor chain. Procurement through an independent distributor or broker is NOT authorized, unless first approved in writing by the Buyer. Regardless of the source of procurement, the Supplier shall provide original manufacturer documentation that authenticates traceability of the components of the applicable original manufacturer.
214	Counterfeit Parts Plan	Suppliers must have a counterfeit parts prevention program. The purpose of this program shall be to prevent the delivery of counterfeit parts and control parts identified as counterfeit. Further guidance can be found in SAE AS5553.
215	Astronaut Safety	For use in manned space flight; materials, manufacturing, and workmanship of the highest quality standards are essential to astronaut safety.
216	Tape and Reel	Devices shall be shipped in tape and reel packaging. Each lot date code and value must be readily identifiable on each reel. One lot date code per reel. All reels shall be submitted with leaders. Components shall be secured to the reel with heat activated cover tape.
217	Removed	
218	Software Quality Assurance Plan (SQAP) Review and Approval	The Supplier shall document the Software Quality Assurance System in the form of a deliverable plan for the Buyer's Software Quality Assurance review and approval.
219	Software Quality Assurance Plan (SQAP) Review Only	The Supplier shall document the Software Quality Assurance System in the form of a deliverable plan for the Buyer's Software Quality Assurance review.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

220	Software Development Plan (SDP) Review and Approval	The Supplier shall document the Software Development Plan (SDP) in the form of a deliverable plan for the Buyer's Software Quality Assurance review and approval.
221	Software Development Plan (SDP) Review Only	The Supplier shall document the Software Development Plan (SDP) in the form of a deliverable plan for the Buyer's Software Quality Assurance review.
222	Control Plan	Key Characteristics are defined on the drawing. A Control Plan, which identifies the key processes creating the characteristic, and defines the inspection procedures and outlines a reaction plan, is required. Control Plan approval is required by the Buyer before The Supplier may proceed with the balance of the order. Control Plan shall include a process map
223	Optical Material Conformance	Unless otherwise specified on the purchase order or drawings, all components shall comply with the requirements of MIL-PRF-13830 (latest revision).
224	Approved Sources	All Suppliers, sub-tier Suppliers, laboratories, manufacturers, special processors, and franchised/authorized distributors shall be approved for use in advance.
225	Parts Reuse	Parts that have been installed in an assembly and then removed from the assembly for any reason are not to be used again in any flight or spare item without the approval of ISRS Solutions.
226	ROHS Exclusion	The ROHS requirement for lead free solders is excluded for this procurement. Solder shall include at least 3% Pb with the 63/37 solder preferred.
227	Age of Electrical/Electronic Components	All electronic components shall be from lots manufactured no more than two (2) years from the date ordered. Exceptions to this provision must be approved by ISRS Solutions.
228	Age Control-1 year	The lot date code of material shipped on this line item shall be no older than 1 year from the date of shipment. The lot date code shall be marked on the part or part packaging or associated paperwork. The format shall include as a minimum 2 digit year and 2 digit week, YYWW.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

229	Age Control-3 year	The lot date code of material shipped on this line item shall be no older than 3 years from the date of shipment. The lot date code shall be marked on the part or part packaging or associated paperwork. The format shall include as a minimum 2 digit year and 2 digit week, YYWW
230	Age Control-5 year	The lot date code of material shipped on this line item shall be no older than 5 years from the date of shipment. The lot date code shall be marked on the part or part packaging or associated paperwork. The format shall include as a minimum 2 digit year and 2 digit week, YYWW.
231	Age Control-7 year	The lot date code of material shipped on this line item shall be no older than 7 years from the date of shipment. The lot date code shall be marked on the part or part packaging or associated paperwork. The format shall include as a minimum 2 digit year and 2 digit week, YYWW.
232	Distributor Restriction for Electronic Components	The items procured by way of this Purchase Order must be supplied only from the Manufacturer or a Manufacturer authorized distributor. Parts must be new and unused and as provided by the Manufacturer and must not be previously sold and/or returned parts. Procurement through an independent distributor or broker is NOT authorized and such an entity must reject this Purchase Order.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

300	300 Series - Inspection/Test		
300	Supplier Surveillance of Seller and Seller's Sub-Tier's	Authorized representatives of the Buyer and/or Buyer's Customer and Regulatory Authority shall have the right to survey, audit, and review the Quality Assurance System employed by The Supplier and/or its Sub-Tier's. Accordingly, The Supplier and its Sub-Tiers are expected to grant the designated representative(s) access to their facility at any reasonable time and access to areas where the production of the item(s) is covered by this Purchase Order	
301	Buyer Source Inspection	The product furnished under this Purchase Order or Subcontract is subject to a Buyer's Source Inspection. The purchase order will define the processing step when the Source Inspection shall occur and the inspection criteria. On receipt of order, Seller shall contact Buyer's Supplier Quality Assurance Representative (contact information to be provided by Buyer) to facilitate appropriate planning for in-process and/or final Source Inspection(s), unless otherwise specified on the PO. When material is ready for (in-process and/or final) inspection, The Supplier shall give 5-days advanced notification to Collins Aerospace ISRS Solutions. The Supplier is required to provide all requisite equipment, records reports, etc., to facilitate the work of the Buyer's Quality Assurance Representative, and to verify any physical or functional specifications as may be requested by him in the course of the inspection. A copy of the Buyer's Source Inspection Form verifying acceptance of the item(s) and properly stamped or signed shall accompany the shipment.	
302	Removed		
303	Customer Source Inspection	The product furnished under this Purchase Order or Sub-Contract is subject to Customer Source Inspection. On receipt of the Procurement Document, The Supplier shall furnish a copy to the Customer so that appropriate planning for Customer Inspection can be accomplished. In the event the representative or office cannot be located, the Buyer should be notified immediately. Evidence of Customer Source Inspection must be provided with shipment for product to be accepted at the Buyer's facility. All related documents shall be available for review.	

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

	T	4133-0203 I/EV -
304	Government Source Inspection	The product furnished under this Purchase Order or Sub-Contract is subject to Government Source Inspection. On receipt of the Procurement Document, The Supplier shall furnish a copy to the Government Representative who normally services the plant. In the event the representative or office cannot be located, the Buyer should be notified immediately. When product is ready for inspection, and preferably in advance thereof, The Supplier shall notify the Government Representative who normally services the plant. Evidence of Government Source Inspection must be provided with shipment for product to be accepted at the Buyer's facility. All related documents shall be available for review.
305	Customer Right of Inspection	The customer and/or his agent, have the right to inspect any or all of the work included in this order at The Supplier's plant, or The Supplier's sub-tier supplier's plants.
306	Government Source Inspection - NASA	All work on this order is subject to inspection and test by the Government at all times and places; and in any event prior to shipment. The Government quality representative who has been delegated NASA Quality Assurance functions on this procurement shall be notified upon receipt of this order. In the event the representative or office cannot be located, the Buyer should be notified immediately. The Government representative shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test. Evidence of Government Source Inspection must be shown on shipping documents, or inspection reports for product to be accepted at the Buyer's facility. All related documents shall be available for review.
307	Single Piece Inspection Report	A new Inspection Report shall be generated for each shipment of products manufactured to a Collins Aerospace ISRS Solutions drawing. A separate Inspection Report shall be generated for each item on the purchase order. Previous Inspection Reports do not fulfill this requirement. Inspection Reports shall include data comparing all drawing requirements, including reference dimensions and drawing notes, with the actual measurements of one item. The Report shall also include the drawing revision level, serial number of the item measured if applicable, the specified parameter, and the actual measurement. When an item does not have a serial number, the item used to complete the Inspection Reports shall be clearly tagged as "Single Piece Inspected". A new Inspection Report is not required for Standard Hardware purchases.

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

		4133-U2U3 REV -
		A FAIR is required with the shipment if any of the following
		conditions are met:
		1) Change in a subcontractor, change (including repaired) in a major processing equipment, change in a critical manufacturing process, change in a critical manufacturing personal, change in a special process; All of these conditions require an updated FAIR.
		Change in manufacturing location or when existing tooling is transferred to a new plant location, change in Sensors Unlimited Inc. drawing. Full FAIR is required.
		3) New build for the supplier or Two years or more since the part was last produced. Full FAIR is required.
		4) Four years since last approved FAIR. Full FAIR is required. This requirement is waived on parts in continuous production with approved MPC Plans.
308	First Article Inspection Reports (FAI)	5) Whenever required by Purchase Order or Supplier Quality Engineer request due to nonconformance of a severe or continuing nature as determined by Sensors Unlimited Inc.
		When a First article inspection report is required, all suppliers of production items shall use the following guidelines:
		The supplier shall perform a First Article Inspection (FAI) of the end item deliverable hardware, and furnish inspection results in an inspection report in accordance with SAE Aerospace Standard AS9102 latest revision or equivalent.
		 The First Inspection report (FAI) shall address 100% of characteristics and 100% of drawing notes for full FAIR.
		3) The First Inspection report must include signature, date and title of a responsible Quality Representative. In the event there are any hardware nonconformance(s) identified in the FAI report, the applicable VMRR(s) must be identified in the FAI report as well as in the COC.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4135-0205 REV -
		4) The Supplier shall maintain on file a First Article Inspection Requirements (FAIR) and special process certifications as defines by Sensors Unlimited Inc record retention requirements.
309	Supplier Inspection Report Submission	A copy of The Supplier's inspection report(s) shall be provided with shipment showing the complete Part Number(s), Revision(s), Method of Inspection, Drawing Number & Revision, and Serial Number(s), if applicable for the items on the inspection report(s).
310	Sampling Inspection	Sampling inspection of material lots is allowable at an AQL of 1%, Level II C=0 (acceptance number) but must be in accordance with the latest revision of ANSI/ASQC Z1.4, "Sampling Procedures and Tables for Inspection by Attributes," which corresponds directly to MIL-STD-105E or MIL-STD-414. The Seller may develop his own sampling technique similar to those prescribed in the above documents, but it must be approved for use by the Buyer and authorized by the Purchase Order. A record of "as measured" dimensions will be supplied via the Buyer supplied "Vendor Inspection Report" or The Supplier's equivalent form and shall list the parameter specified vs. the actual measurement. The "as measured" record shall consist of actual data recording of all, a check mark or stamp for all other dimensions and notes other than "reference dimensions."
311	100% Inspection	The Supplier is required to perform 100% inspection of all drawing requirements or referenced specifications for all parts. A record of "as measured" dimensions will be supplied to the Buyer through a "Vendor Inspection Report" or The Supplier's equivalent form and shall list the parameter specified vs. the actual measurement. The "as measured" record shall consist of actual data recording of all dimensions with a total tolerance of 0.010 inch or less with an accuracy of one tenth the total tolerance, a check mark or stamp for all other dimensions and notes other than "reference dimensions".

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

312	Pre-Pot Source Inspection	The product(s) furnished under this Purchase Order or Subcontract is subject to a Buyer's Pre-Pot Source Inspection prior to the potting process. When material is ready for inspection, The Supplier shall give 5 days' advance notification to Collins Aerospace. The Supplier is required to provide all requisite equipment, records reports, etc., to facilitate the work of the Buyer's Quality Assurance Representative, and to verify any physical or functional specifications as may be requested by him in the course of the inspection. A copy of the Buyer's Source Inspection Form verifying acceptance of the item(s) and properly stamped or signed shall accompany the shipment
313	Removed	
314	Detailed Inspection Plan (DIP)	A Detailed Inspection Plan is required. Buyer approval is required before The Supplier may proceed with the balance of the order.
315	Test Plan Report	The Supplier shall furnish a test plan to the Buyer for review and approval prior to proceeding with testing of supplied product(s). The test plan shall detail the testing steps required to meet PO requirements.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4135-U2U5 KEV -
	FAIR for Circuit Card Assemblies	If a First Article Inspection Report is required for circuit card assemblies, The Supplier shall balloon and number all drawing features including dimensions, specifications, and literary notes to aid in the review and any future correspondence. Discrete electronic components (or detail parts) are accounted for by color highlighting the reference designator as follows:
		Component in place and value/polarity verified – GREEN
317		Component in place and not able to visually verify value/polarity – YELLOW
		Component purposely not installed – RED. Indicate reason by reference designator on field of drawing or separate attached listing, also reference authorizing document e.g. VMRR#.
		No component to be installed at reference designator by design (not on parts list) – BLUE Include the color code legend on the field of the drawing.
318	Bonded Source Inspected Stock	Material may be bonded at The Supplier in the event that the entire lot of material sourced is to be shipped in complete.
319	Removed	
320	Removed	
321	Removed	
323	Supplier Inspection Records	The Supplier shall be responsible to perform all inspections and/or tests as necessary to ensure the quality of products delivered. Records shall be maintained of all inspections/tests and be available upon request from Buyer.
324	AS9100 Section 8.4.3 Requirements	In accordance with 8.4.3 of AS9100, the supplier shall: 1. Notify Collins Aerospace ISRS of nonconforming product, and obtain approval for nonconforming product disposition. 2. Notify Collins Aerospace ISRS of changes in product and/or process, changes of suppliers, changes of

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

		manufacturing facility location and, where required, obtain organization approval. 3. Flow down to the supply chain the applicable requirements of this Purchase Order; 4. Maintain all quality records associated with this Purchase Order for 10 Years. 5. Allow right of access by Collins Aerospace ISRS, our customer, and regulatory authorities, to the applicable areas of facilities involved with this order and applicable records.
325	Supplier 100% Inspection	The Supplier is required to perform 100% inspection of all drawing requirements and referenced specifications shown in the drawing field. Inspection of SG 3410 tolerances is optional. A record of "as measured" dimensions will be supplied to the Buyer through a "Vendor Inspection Report" or The Supplier's equivalent form and shall list the parameter specified vs. the actual measurement. The "as measured" record shall consist of actual data recording of all requirements with an accuracy of one tenth the total tolerance, a check mark or stamp for all other notes other than "reference dimensions".

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

400 Series - Configuration Management/Change Control/Lot Control		
400	Part/Material Substitution	Part and/or Materials substitution is not allowed. If unable to fulfill purchase order with specified part number, immediately notify the Buyer.
401	Single Lot/Date Code	This item must be supplied as a single lot or date code from one manufacturer to fulfill the demands of an individual purchase order. Multiple lots, batches, manufacturer's batches or date codes will not be accepted. Components too small to have a date code marking shall have their packaging identified with the appropriate date code marking.
		A single lot date code from one manufacturer per part number is required on this order. If all the parts for one part number cannot be supplied in a single lot date code, then they shall be supplied in lots no smaller than quantities listed below:
		Microcircuits 250 pcs
	Single Lot Date Code- Minimum Lot Size	Hybrids 50 pcs
		Gate Arrays 50 pcs
		Transistors JAN, JANTX, JANTXV 500 pcs
		Transistors JANS, SCDs 250 pcs
		Diodes JAN, JANTX, JANTXV 1000 pcs
402		Diodes JANS, SCDs 500 pcs
402		Resistors/Capacitors 1000 pcs
		Crystals/EMI Filters 100 pcs
		Relays 50 pcs
		Other Parts 250 pcs
		Smaller lots of a single lot date code will only be accepted if:
		The order quantity is the last shipment against a PO and the remaining quantity is smaller than the minimum lot size specified. The last quantity shall be supplied in a single lot date code.
		The PO line item order quantity is less than the minimum lot size indicated.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

ı	1	4155-UZU3 KEV -
		Any other deviations from the minimum lot date code size must be authorized by Collins Aerospace ISRS Purchasing prior to shipment.
403	Control by Lot	The Supplier shall assign a common lot control number to all items in a particular manufactured lot (defined for this purpose as a quantity that has been manufactured during an uninterrupted period of time, following a standard process and using the same equipment/facility),. When wafer lot traceability is required by the Collins Aerospace ISRS Solution purchase order, wafer lot traceability will appear on the Certificate of Compliance.
	Buyer's Cognizance of Deviations and Design Changes	Verbal authorizations from Collins Aerospace personnel are invalid at all times.
		Proposed changes in design from the Procuring Facility's supplied drawings or specifications must be reported to the Buyer immediately. No change will be considered approved without written confirmation of that fact from the Buyer.
404		The Supplier shall notify the Collins Aerospace ISRS Solutions Buyer when The Supplier or The Supplier's sub-tiers are found to be noncompliant to Buyer specifications, supplier is disapproved by a Government agency, or Government/Industry Data Exchange Program (GIDEP) Alert is required or received affecting Buyer items.
		The Supplier shall not ship any material, parts, or assemblies, which do not conform to all drawings, specifications, and purchase order to the Buyer's facility or their designated receiver, without prior approval from the procuring facility's Material Review Board.
		The Buyer will accept requests for material review on a Buyer furnished report, which is available upon request Materials with non-conforming characteristics will not be accepted unless approved prior to shipment by the Buyer and verified by written communication. Under no circumstances are repairs to be undertaken without prior written approval from the Buyer.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

i	1	4133-0203 NEV -
405	Retention of Inspection Records	Records shall be retained and available for review for a period of ten (10) years after the date of final payment. For the purposes of this instruction, records are defined as documentation that provides primary assurance of required product or service quality to the requirements of the purchase order. Examples of records include but are not limited to "Asbuilt" assembly verification records or manufacturing records, traceability records, inspections, test data, and calibration records.
406	Lot Date Code	Lot date code required. The lot date code shall be marked on the part or part packaging and associated paperwork. The format shall include as a minimum 2 digit year and 2 digit week, YYWW.
407	Equipment Control Software	The Supplier shall identify if the test equipment, manufacturing equipment or tooling contains software. If the item contains software then The Supplier shall certify that the software is tested and configuration controlled. If The Supplier is providing manufacturing or test equipment that has software that this supplier is generating for Collins Aerospace, then The Supplier shall provide the source code to Collins Aerospace Software Quality Assurance.
408	Frozen Processes	Processes developed for the manufacture, assembly or test of this item shall be approved by the Buyer. Once approved, the processes are to be frozen and cannot be changed by The Supplier without written approval from the Buyer.
409	Hi-Rel Commercial or Off- The-Shelf Items	Designated commercial or off-the-shelf items procured as generic, high reliability parts shall be identified by lot number or date code. Records for each single lot or date code shall be maintained to provide traceability of these items to purchase order, functional tests as applicable, dimensional and visual inspection data, and material acceptance data.
410	Optical Coating Lot Numbers	Coated items (components, parts, etc.) must be identified with coating lot numbers. Certifications and/or test data supplied must reference the lot numbers and be signed by an authorized representative.

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

411	Material Review Board Authority	Unless otherwise specified on the purchase order, Collins Aerospace ISRS Solutions shall retain Material Review Board (MRB) authority on nonconforming parts, processes, materials, and assemblies The Supplier shall not exercise material review authority for "repair" or "use-as-is" without written approval of the SUI buyer.
413	Notification of Changes	The supplier shall notify the Buyer of changes in product and/or process, changes of suppliers, changes of manufacturing facility location

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

500 \$	500 Series - EIDP/Acceptance Data/ C of C		
		The certificate of conformance shall be provided with each shipment and include the following information at a minimum:	
		Supplier name and manufacturing address and Commercial and Government Entity (CAGE code), if applicable	
		Part number (part number or raw material ordered if not the same as The Supplier's internal part number) and engineering drawing revision	
		Part name or description (as applicable)	
500	Basic Certificate of Conformance	Collins Aerospace purchase order number (Line item number if possible but not required)	
300		• Quantity of parts shipped	
		Serial, batch, or lot numbers (as applicable)	
		Date of the certification of conformance	
		Government contract # (where applicable)	
		Waiver/deviation/non-conformance documentation (as applicable)	
		Title and signature of authorized supplier representative attesting to C of C accuracy.	

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

		7133 0203 NEV
		The certificate of conformance shall be provided with each shipment and include the following information at a minimum:
		Supplier name, supplier address, supplier telephone number, and Commercial and Government Entity (CAGE code) number
		Manufacturer name (if different from Supplier name), manufacturer address, manufacturer telephone, and manufacturer CAGE code
		Part number (part number or raw material ordered if not the same as The Supplier's internal part number) and drawing or specification number and revision
		Part name or description (as applicable)
		Collins Aerospace purchase order number, purchase order revision, and purchase order line item number
		Quantity of parts shipped
		Serial, batch, or lot numbers (as applicable)
	Hi-Rel Certificate of Conformance	Date of the certification of conformance
501		Government contract # (where applicable)
		Waiver/deviation/non-conformance documentation (as applicable)
		Material and special process specifications (as applicable)
		Title and signature of authorized supplier representative attesting to C of C accuracy
		Shelf life date of manufacture and date of expiration (as applicable). When the item is supplied in syringes, the C of C must state that the syringes are lubricant and silicone free.
		A specific statement that the materials/processes furnished meets all the requirements of the purchase order, applicable drawings, and/or applicable specifications.
		Reference to and inclusion of the original manufacturer's or sub-tier supplier's C of C
		A statement that inspection and/or test data, when applicable, is on file and will be made available on request.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4133-0203 REV -
		A statement of certification that deliverable products are free of any foreign objects/materials that could cause damage to the product or to the components/ of which the product is a part or to which the product is attached
		A statement of conformance that suspect or counterfeit, salvaged, re-manufactured, or reclaimed components, parts, and/or materials are not provided as part of the purchase order.
502	Raw Material Certification	The Supplier shall submit a manufacturer or mill inspection/test report that states the material type and shows the physical and chemical properties by reference to melt, cast, heat, etc., and signed by its authorized representative (or by the agency performing the tests) with each shipment. Non-metallic material shall only require a chemical properties inspection/test report.
503	Material and Physical/Chemical Certifications	All materials shall be procured from the Collins Aerospace ISRS Solutions approved material's original source or its Collins Aerospace ISRS Solutions approved franchised/authorized distributor. The Supplier shall submit a manufacturer or mill inspection/test report that states that the material meets the requirements of the applicable specifications and/or engineering drawings, identifies the material's original source and the original lot or batch number, the material type and shows the physical and chemical properties by reference to melt, cast, heat, etc., and signed by its authorized representative (or by the agency performing the tests) with each shipment. Non-metallic material shall only require a chemical properties inspection/test report. All certifications supplied as objective evidence must indicate the processor company name, full address, telephone number, Commercial And Government Entity (CAGE) code number of the facility performing each special process.
504	Special Processes Certification	The Supplier shall furnish a certification of compliance which states the product conforms to applicable specifications required by PO, drawing or specification signed by an authorized representative of the agency performing the special process with each shipment. This requirement may appear as a separate deliverable line item on the PO. When applicable batch, lot, heat number, x-ray, heat treat chart, etc. for the special processes is performed, it shall accompany the shipment.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

i	1	4155-U2U5 KEV -
505	Special Process Collins Aerospace Approved Source	Special processes shall be performed by Collins Aerospace ISRS Solutions approved sources. A legible and reproducible copy of special process certifications shall accompany each shipment of material or parts for which such processing has been accomplished. Certifications are to include all specifications listed in the order of sequence and date performed. All certifications supplied as objective evidence must indicate the processor company name, full address, telephone number, Commercial And Government Entity (CAGE) number of the facility performing each special process.
506	Seller Records, Material/Special Processes	The Supplier shall submit a certification, signed by its authorized representative, which states that the materials used were furnished by the Buyer or that the materials supplied meet drawing or specification requirements, and that physical and chemical test reports of the materials, certifications of special processes performed such as heat treating, plating, finishing, welding, etc. used are on file and shall be available upon request from Buyer. This requirement may appear as a separate deliverable line item on the PO.
507	Control of Item Serial Numbers	The Buyer shall assign permanent, individual serial numbers to all items shipped under the Purchase Order or Sub-contract. If the Buyer elects to delegate this responsibility to The Supplier, it will be stated in the Purchase Order. The manner of affixing the serial numbers will also be specified in the notes of the Buyer furnished drawing. Serial numbers provided shall not be repeated within a lot or with respect to previously supplied lots, unless authorized in writing by the Buyer. Traceability of each serialized item to the raw materials employed in its fabrication will be maintained by The Supplier. Material certifications, analysis, test bars, samples, etc. and all pertinent inspection data, inspector identity, are maintained to provide traceability for each part and assembly serialized.
508	Functional Test Report	The Supplier shall submit a report with each shipment, which delineates the functional test results of each item in the shipment. The functional test will verify conformance with all functional specifications called on drawing or test specifications. The data sheets should list the test parameter specified vs. the actual test results. The test data shall indicate the approval of The Supplier's Quality Assurance Department.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4133-0203 KEV -
509	Data - Test Summary	Parts shipped against this order must be accompanied by evidence of manufacturer's compliance with all test requirements. Such evidence shall include one (1) copy of the manufacturer's test summary of tests performed to ISR-ABQ's requirements, and shall be verified by the manufacturer's Quality organization. Copies of all such data shall be retained by The Supplier for three (3) years from the date of final payment.
510	Data – Acceptance Test(s)	Parts shipped against this order must be accompanied by evidence of manufacturer's compliance with all test requirements. Such evidence shall include one (1) copy of the manufacturer's lot traveler and all acceptance test(s) data recorded by the manufacturer to ISRS-ABQ's requirements, and shall be verified by the manufacturer's Quality organization. Copies of all such data shall be retained by The Supplier for three (3) years from the date of final payment.
511	Data – Acceptance Test(s) w/o Lot travelers	Parts shipped against this order must be accompanied by evidence of manufacturer's compliance with all test requirements. Such evidence shall include one (1) copy of all acceptance test(s) data recorded by the manufacturer to ISRS-ABQ's requirements, and shall be verified by the manufacturer's Quality organization. Copies of all such data and the manufacturer's lot traveler shall be retained by The Supplier for three (3) years from the date of final payment
512	MSDS	The current manufacturer's Material Safety Data Sheet (MSDS) is required to be submitted prior to shipment of each order or with the shipment of each order.
513	Electronic Data	Please provide any requested data electronically. The preferred format is PDF, ASCII, or Microsoft Word, Excel, etc. Paper copies are not required, when the data is provided electronically, CD and DVD submittal are allowed. Disks shall be included with the shipment unless otherwise directed by the Buyer.
514	Flight Critical	The Certificate of Conformance shall indicate The Supplier's awareness that the items being supplied are Flight Critical by including "Flight Critical Item(s)" on the provided Certificate of Conformance
515	Seller Specifications, Drawings, Catalog, Date, Operating/Maintenance Manual, etc.	Items furnished under this Purchase Order or Sub-contract for which no Buyer drawing exists will be accompanied on the initial shipment by a copy of The Supplier's drawing, specifications, catalog, manuals, etc., to facilitate the Buyer's Incoming Inspection. It is understood that data supplied is not expected to be of a sensitive proprietary type.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4133-0203 REV -
516	Printed Wiring Board Lot Test Coupons	The Supplier shall furnish test samples, coupons, and micro sections for each Printed Wiring Board (PWB) included in the item(s) on this order traceable by lot and panel to serialized PWBs included in this order. Testing results showing compliance to requirements shall also be submitted with the coupons and micro sections.
517	Material/Process Test Specimens	The Supplier shall submit with this order test specimens or samples (same as the material kit) in the form of glass test samples or weldment samples, etc. representative of the items shipped, and in accordance wit referenced specifications. The sample shall be of sufficient size and configuration to permit Collins Aerospace ISRS Solutions to determine heat treatment, plating painting, etc., results in lieu of destroying a completed part. The samples shall be traceable by batch, melt, serial number or other unique identification to each specified item.
518	Optical Material Certification	The Supplier shall submit with each shipment a certification, signed by an authorized representative, which states that the optical glass is the type and grade specified on the drawing/purchase order, and conforms to specification MIL-G-174A (when applicable).
519	Optical Material Traceability	Traceability by melt (Boule or Lot) numbers is required on all material supplied for this purchase order. Actual test data for optical properties is required on each melt lot. All material must be identified with the melt (Boule or Lot) number.
520	Optical Data Requirements	The Supplier shall supply actual spectral and/or environmental data, as required by the specification/purchase order for each material melt and/or coating lot. Data must be certified by an authorized representative. Spectral data shall include a data file in Excel format.
521	Interferometric Data	The Supplier shall provide soft-copy Interferometric test data in a format as prescribed in Collins Aerospace specification ISR-SC-WI-007.

2020 Collins Aerospace

30.101 [00]

4135-0205 REV -

		4135-0205 REV -
522	Documentation and Certifications	The Supplier shall provide the Collins Aerospace ISRS Solutions buyer with an acceptance data package that contains the following documentation for each item provided: (1) Certificates of Compliance (See "Certificate of Compliance" requirements). (2) Materials: List of all materials (e.g. traceability to lot/date code/supplier/supplier CAGE code). Complete physical and chemical test data including material certifications and, physical/chemical test certifications and reports. Certifications shall be in conformance with the latest specification as defined by drawing or PO. (3) Parts Traceability to lot/date code/supplier/supplier CAGE code. (4) Manufacturing/Assembly and Test Traveler (including supplier QC inspections and Collins Aerospace ISRS Solutions, customer, and government source inspections when applicable.) (5) Documentation of all nonconforming materials, processes or test deviations. Deviations that result in a nonconformance to this specification must e submitted to the Collins Aerospace ISRS Solutions buyer. (6) Acceptance Test/ Inspection Data/First Article Inspection Reports (FAIR) measurements. All quality records (non-electronic) shall be documented in ink or other permanent marking. All data is to accompany the item shipment and must be complete, legible, reproducible, and authentic.
523	Traceability Requirements	The Supplier shall maintain traceability data for parts, processes, materials, and assemblies from procurement through fabrication, processing, assembly, test and delivery. Traceability data shall provide for the ready identification of suspect lots when individual items are found discrepant. Examples of traceable information may include, but are not limited to: • Date of Manufacture • Serial Number • Material Lot number • Wafer Lot number an Date Code • Heat Lot number
		Control Number
		Final Inspection Sequence Date
		Batch Number
		Casting Number

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

		4135-0205 REV -
524	Close Out photographs Required	Included with the documentation/data package shall be close out photographs of each item being delivered. The close out photographs shall be a series of photographs which document areas internal to the item that cannot be inspected without disassembly of the item. Each photograph shall be identified with the part number an serial number of the item being photographed.
		These photos will be taken at significant stages of assembly (i.e. encapsulation, lidding, or delivery to the next higher assembly level). Detailed photos shall be taken of each system, subsystem, assembly, and subassembly. Photos shall be adequately detailed to identify features including, but not limited to 91) serial numbers of subassemblies and/or pars, where such markings are visible; (2) orientation of polarized devices, such as tantalum capacitors, diodes, etc.; and (3) wire routing.
		Use camera with a minimum resolution of 10 megapixels or a resolution that allows component identification.
525	ESD Certificate of Conformance	The seller shall furnish a certificate of compliance which states the equipment is compliant to ESD standards as applicable, reference ANSI/ESD-20.20.
526	Solder Certificate of Conformance	Delivery of Solder Sn63Pb37 and any related product i.e. paste, wire, flux/ rosin, bar and or chips to Collins Aerospace must be accompanied by its corresponding solder IPC J-STD-004, 005 and or -006 certificate of conformance as called out in drawing or purchase order.
527	High Reliability and Military Part Procurement Sourcing Instructions	This part is listed on the Defense Logistics Agency's (DLA) Qualified Products List (QPL). This part number is prefixed by the Government Designation and appears on the QPL for the governing MIL document, along with the manufacturers approved by DLA to produce the item. Any part manufactured by any entity with a CAGE code not listed on the QPL at the time the part was manufactured is not considered a QPL part. Only QPL parts may be supplied on this purchase order and may be further restricted to one or more specific CAGE codes. If a manufacturer and/or CAGE Code is specified on the purchase order, only QPL parts from that specific entity will be accepted. This part must be procured as a QPL part either directly from the manufacturer listed on the QPL or from the manufacturer's authorized distributors. No substitutions are allowed without written permission of the buyer.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

600 \$	600 Series - Packaging/Handling		
600	Packaging/Shipping ESD Sensitive Parts (MIL-Spec.)	ESD sensitive Materials shall be packaged/marked/shipped in accordance with MIL-STD-2073. (Note: Order of precedence for other requirements shall be drawing when ESD packaging requirements are specified on drawing).	
601	Storage/Packing for Moisture Sensitive Parts	Parts supplied on this order shall be shipped in a sealed Moisture Barrier Bag with a desiccant and humidity / moisture indicator IAW J-STD-033B. Outer packaging or Moisture Barrier Bag shall be labeled with a Moisture Sensitive Caution Label.	
602	Handling of ESD sensitive materials Class 1A or less sensitive	All materials considered to be ESD sensitive shall be handled per ANSI/ESD S20.20.	
603	Handling of Class 0 sensitive parts	All Suppliers handling Class 0 sensitive materials less than 250V (HBM) shall be approved by Buyer and are subject to an ESD practice and program audit. Findings of the audit shall be resolved prior to commencement of work. Compliance to MAN-HDS-0150 is mandatory.	
604	Handling of ESD sensitive parts	All materials considered to be ESD sensitive shall be handled per ANSI/ESD S20.20.	
605	Packaging/Shipping ESD Sensitive Parts (ANSI Spec.)	Materials considered ESD sensitive per ANSI/ESD/S20.20 shall be marked per ANSI/ESD S8.1. They shall be packaged and shipped in accordance with ANSI/ESD S541 (Note: Order of precedence for other requirements shall be drawing when ESD packaging requirements are specified on drawing).	
606	Packaging/Shipping ESD Sensitive Parts (MIL-PRF- 81705)	Materials considered ESD sensitive per MIL-STD-1686, Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment, shall be packaged/shipped in accordance with Buyer requirements. In the absence of this requirement, packing shall meet or exceed MIL-PRF-81705, Barrier Materials, Flexible ESD Protective Heat-Sealable. Labeling, per MIL-STD-129, Marking for Shipment and Storage, for intermediate and external packages is required. For PCBA packaging PA Code 605 shall take precedence.	
607	Special Packaging	Parts delivered on this line item shall be packaged in individual ESD safe containers adequate to protect the device body and leads from normal shipping and handling damage.	
608	Packing, Packaging, and Shipment	All packing, packaging and shipment techniques must have Buyer written approval before use and shipment.	

2020 Collins Aerospace

SENSORS UNLIMITED INC

PA CODES, SUPPLIER QUALITY NOTES PRODUCT ASSURANCE CODES

30.101 [00] 4135-0205 REV -

609	Printed Wiring Board (PWB)	The Supplier shall ensure that all printed wiring boards are preservation packaged per MIL-P-55110 Level B, sub-method 33 of MIL-STD-2073-1 or as specified on the Purchase Order, drawing or specification. (latest revisions)
610	Tooling and Equipment	All Buyer or Customer furnished tooling or equipment must be controlled, properly stored and maintained.
611	Customer Furnished Materials	All Buyer or Customer furnished materials must be controlled, properly stored, and maintained. Residual material shall be returned upon completion of the order unless otherwise specified on the purchase order. The Supplier shall maintain traceability and inventory records for the furnished materials.

2020 Collins Aerospace

30.101 [00] 4135-0205 REV -

900 \$	900 Series - Miscellaneous		
900	Special Additional Requirements	Additional special provisions are required. Refer to the purchase order.	
901	Point of Contact	Collins Aerospace ISRS Solutions realizes that the procurement activity is a partnership and that both sides must clearly state and communicate requirements. Therefore, the focal point for all communications in regards to the purchase order is the Collins Aerospace ISRS Solutions buyer.	
902	Statement of Work	There is a Statement of Work associated with this purchase order.	
903	Buyer Furnished Parts/Materials	This Purchase Order line item requires Buyer Furnished parts and /or materials for fulfillment. If you do not have these parts/materials in hand, do not start work. If you do not receive these parts within 10 days after receipt of Purchase Order, notify the buyer. When shipping completed line items, include any traceability information that was provided with the part/material.	
950	AID (not for Supplier Use)	AID (for Danbury Internal Use Only)	
951	Non-AID (not for Supplier Use)	Non-AID (for Danbury Internal Use Only)	

2020 Collins Aerospace