



RF & MICROWAVE COMPONENTS

SUPPLIER QUALITY ASSURANCE REQUIREMENT CLAUSES – GENERAL CLAUSES

DOCUMENT NO.: 104100-042

APPROVED MERCURY DEPT. MGR: Signature On File DATE: 02-12-2013

Paul Mouldenhauer

QUALITY ASSURANCE MGR: <u>Signature On File</u> DATE: 02-12-2013

Sandy Herrell

REVISION	А	В	С					
SHEETS AFFECTED	1-29	1-29	1-30					

REV	PAGES AFFECTED	ECO NO.	DATE	DEPT. MGR	OTHER
Α	ALL	10012	08-10-2012	Paul Mouldenhauer	New
В	ALL	10017	09-10-2012	Paul Mouldenhauer	Changed logo & changed GSQ009
С	ALL	10318	02-08-2013	Paul Mouldenhauer	Changed logo, company name, updated GSQ007.

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1. INTRODUCTION

There are two Supplier Quality Assurance Requirement clause documents, the "General" and the "Specific". The "General" Supplier Quality Assurance Requirement clauses (codes: GSQXXX) apply to all Purchase Orders and are referenced by the procedure number on the order, unless otherwise noted. The "Specific" Supplier Quality Assurance Requirement clauses (codes: SSQXXX) apply when called out / referenced by code on the Purchase Order and shall compliment or override a "General" code of the same or related subject.

This Supplier Quality Assurance Requirements (SQAR) document details Mercury Commercial Electronics, Inc., a division of Mercury Systems, Inc., General quality requirement and expectation Purchase Order clauses. Mercury Commercial Electronics, Inc. (Mercury hereafter) is dedicated to continuous improvement in the quality and integrity of its products and services and to the satisfaction of its customer requirements and expectations. The Suppliers contribution to this approach through the quality and reliability of their products and services is a prerequisite. It is the intent of MERCURY to purchase from Suppliers who consistently meet MERCURY expectations for quality, delivery, value and service. This document forms a part of the MERCURY Purchase Order, unless otherwise specified herein. It contains general and specific information and quality requirements. The Supplier shall manufacture, service and deliver all products in accordance with the Purchase Order and all requirements identified on it. All products shall be manufactured strictly and in accordance with the Purchase Order. The delivery of incomplete product is not permissible unless specified on the Purchase Order. Enquiries concerning the content of this document and other referenced documents should be referred to the MERCURY Buyer responsible for the Purchase Order.

This document establishes the General Supplier Quality Assurance Requirement clauses for Purchase Orders issued to Suppliers providing materials, goods and services for use in MERCURY products. It is the intent of this document to assure that procured products or services are of the required quality and reliability. Any and all MERCURY documentation is for the sole use of fulfillment of the order. You should not, without written consent from MERCURY, disclose information or knowingly permit to be published any information directly relating to the business of MERCURY which is made available to you on a confidential basis or has otherwise come into your possession.

2. SCOPE

This document applies to Suppliers providing MERCURY with materials, products, processing, and services, including intra-company Suppliers and Sub-tier Suppliers at all levels.

Additional Item-specific requirements may be included on the MERCURY Engineering Documents / Drawings and / or Purchase Order. Outsource Manufacturing Suppliers may also be required to enter into a supplemental agreement that will be published on the Purchase Order. In the event of any conflict between the requirements of the Purchase Order, the Engineering Documents / Drawings and this Document, the precedence is as follows:

- 1. Purchase Order,
- 2. Engineering Documents / Drawings,
- 3. "Specific" Supplier Quality Assurance Requirement clauses (SQAR codes: SSQXXX),
- 4. "General" Supplier Quality Assurance Requirement clauses (SQAR codes: GSQXXX),

The Supplier Quality Assurance Requirement clauses will be referred to as SQAR codes hereafter.

Depending on the specific Purchase Order, not all sections or sub-sections may apply. Any and all allowed exceptions or deviations will be documented and published on the Purchase Order. Deviations, including the selection of Suppliers Subtier Suppliers from specified requirements are only allowed after written approval by MERCURY's Buyer. All documents are considered part of the Purchase Order requirements when referenced.

This document compliments the requirements of AS 9100C and ISO 9001 (current versions). Suppliers that have not been certified to AS9100C or ISO 9001are expected to have a Quality Management System (QMS) that meets the requirements of these standards where it relates to the product being supplied to MERCURY. MERCURY requires each



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Supplier and their Sub-tier Suppliers to comply with the quality requirements set forth in this document and other applicable documents, and to maintain a quality system that ensures supplies and services comply with all requirements.

Objective evidence shall be available to demonstrate compliance with the requirements of this document and with any additional requirements which may be imposed on the Purchase Order.

If a Supplier cannot comply with any portion of this document, then the Supplier must advise the MERCURY Buyer in writing.

The MERCURY Buyer is responsible for processing all Supplier requests through the proper MERCURY authorization process pertaining to issues with this document, engineering documents and Purchase Orders.

This document supersedes and replaces all prior Supplier Quality Assurance Requirements documents. All prior documented Supplier quality requirements and flow down documents remain valid, unless otherwise stated in a revised Purchase Order or at the time of publication of this document to the Supplier.

3. <u>DEFINITIONS</u>

- 3.1. The term "Supplier" or "Sub-tier Supplier" or "Sub-Supplier" or "Contractor" or "Sub-Contractor" or "Distributor" or "Manufacturer" or "Producer" or "Provider" or any other entity empowered to sell goods or services, or any entity that is receiving and fulfilling the Purchase Order, for the purpose of this document, shall have the same meaning as "Supplier". Supplier refers to the entity that is receiving and fulfilling the Purchase Order.
- 3.2. The term "Supplier", for the purpose of this document, shall always refer to all levels of "Sub-tier Suppliers", unless otherwise noted.
- 3.3. The term "MERCURY" used in this document refers to either MERCURY the company, or MERCURY the person, responsible for the Purchase Order.
- 3.4. "Item or Items" is an all-inclusive term used in place of any of the following: article, assembly, commodity, component, data, document, equipment, goods, machinery, material, merchandise, model, module, part, piece, product, report, service, subassembly, subsystem, supplies, support systems, system, test or unit, to name some.
- 3.5. In this document the terms:
 - 3.5.1. "shall" and "must" mean that the described action is mandatory,
 - 3.5.2. "should" means that the described action is necessary and expected with some flexibility allowed in the method of compliance,
 - 3.5.3. "may" means that the described action is permissible or discretionary.

4. RESPONSIBILITIES

- 4.1. It is the responsibility of the MERCURY Buyer and / or any MERCURY personnel issuing MERCURY Purchase Orders to adhere to this document and all related documents that are relevant.
- 4.2. It is the responsibility of the Supplier to deliver material that is 100% compliant with all the requirements of the Purchase Order, engineering documents / drawings, SQAR's and this document and for the performance of their Sub-tier Suppliers to do the same.
- 4.3. Engineering, Materials and Quality functions within MERCURY are responsible for developing and maintaining this document and leading Supplier quality and development initiatives within MERCURY and with Mercury's Suppliers.

5. SQAR CODE LISTING



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- 5.1. All SQAR codes list minimum requirements unless otherwise noted.
- 5.2. General requirement SQAR Codes have a prefix of "GSQ" and apply to all Suppliers and Sub-tier Suppliers unless noted otherwise.
- 5.3. Specific requirement SQAR codes have a prefix of "SSQ" and apply to Suppliers and Sub-tier Suppliers when called out on the Purchase Order. Specific SQAR codes are described in MERCURY procedure 104100-043.
- 5.4. General SQAR Codes:

SQAR Code:	SQAR Description:
GSQ001	PURCHASE ORDER REQUIREMENTS AND ACCEPTANCE:
	Purchase Order Requirements - Suppliers are advised that only MERCURY Buyer's have the authority to make contractual commitments with Suppliers. Suppliers who proceed without a Purchase Order from the authorized purchasing personnel risk non-payment and may further jeopardize their ability to be considered for future business opportunities.
	All Items acquired by MERCURY for production purposes will be processed on a Purchase Order. Verbal authorizations are not allowed. Do not proceed until a Purchase Order is generated. The Purchase Order will state part numbers, revisions, prices, quantities, quality and other requirements that govern the purchase and supply of the Items.
	All quotations from Suppliers must include any abnormal additional costs, such as delivery and packaging, required to supply the item or service.
	Suppliers should not make commitments they cannot meet. Accepting quality, delivery and cost requirements and living up to those commitments are critical towards maintaining a long term relationship with MERCURY.
	MERCURY requires that all Supplier invoice prices match Mercury's Purchase Order prices exactly to ensure timely processing. To achieve this, any price change must be documented by the issuance of a corrected Purchase Order, which defines what MERCURY understands as the agreed price. Invoices that do not match will be returned to the Supplier
	Purchase Order Acceptance - The Supplier shall ensure a process is in place to :
	1. Review and understand all requirements of the Purchase Order and terms & conditions stipulated,
	Review, understand and adhere to all associated engineering documents, drawings and specifications,
	3. Review, understand and adhere to all SQAR codes associated with this Purchase Order,
	 Have a defined process of review to ensure the total compliance against all MERCURY requirements is achieved.
GSQ002	SUPPLIER COMPLIANCE WITH LAWS AND REGULATIONS & CODE OF CONDUCT:
	The Supplier warrants by acceptance of the Purchase Order that he has been duly authorized to do

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SQAR Code:		SQA	R Descrip	tion:				
	MERCURY or Mercury' connection this Purchas	ion in which the work is to s customer(s), all necess se Order and that he / she andards of such country o	ary and re will comp	quired license ly fully with all	es and permits required pertinent laws, dec	iired in crees,		
		operations are being performations are being performations.		manner that i	s appropriate, as it	applies to their		
		RCURY person be expos				ions as a result		
	For Items with inherent hazards, safety notices must be clearly visible. As applicable, documented safety handling and protection information must be provided.							
		riminate against race, coloristics as prohibited by loc						
GSQ003	PROHIBITED PRACTICES:							
	to the Purchase Order	practices are prohibited, where applicable, from the upplier for future business	MERĊUF	RY Buyer. Vio				
		ot change any drawing, fa tier Suppliers) that was us						
	During perform before:	ance on the Purchase Ord	der, the Su	pplier shall gi	ve MERCURY writt	en notice		
	a. change in r	nanagement or ownership),					
	b. relocating a	any production, inspection	, test or pr	ocessing facil	ities,			
	c. transferring	work between different fa	acilities,					
		ating any changes in the s for use in or for installation						
	e. making any	other changes which ma	y affect pro	oduct quality,	reliability or integrit	y.		
	the individual designate	ect to approval / disapprovid as the management rep I be construed as a facility	resentativ	e with respec	t to the Suppliers Q	uality /		
	3. The Supplier m	ay not perform:						
	a. any repairs	such as welding, brazing	, soldering	, plugging, pe	ening, bushing, or			
	b. use of pain	ts, adhesives or plating or						



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SQAR Code:		SQA	R Descripti	ion:		
	discrepant du repairs are sp	ard or other repair practing fabrication or proceedifically permitted by the MERCURY in writing for	essing or on he applicab	defects in colle drawing o	astings or forging	s, unless such
	Unless specifically authorically plating (stripping) and re-pstripping has been accompattached document a list of salvage or stripping, and the	lating. In those cases, oblished, the Supplier shift the products that have	where MER all include o	CURY authon the packing	orized product rep ng list / shipper or	pair, salvage or on a separate
	Purchase Order, of be contingent on N	not make any changes drawing, specification, s MERCURY conducting ppliers facilities, or the	tandard, or an on-site r	other applic eview of the	able document. A proposed produc	authorization may et or service
GSQ004	FLOW DOWN:					
	The Supplier shall ensure drawings and this docume Sub-tier Suppliers. All refe Supplier are also required	nt are flowed down to t rences to documentation	heir Supplie on, certificat	ers, their Sub ions and an	tier Suppliers an	nd continuing to all
GSQ005	RIGHT OF ACCESS:					
	Acceptance of the Purchase Customer representatives to the applicable areas of a products and processes conditions, inspections, survey Suppliers with prior arrange effective control of quality, provide acceptable products	(only if needed and authe Suppliers and Sub- onform to specified request and surveillance of the led approval. Such verification by the cust	thorized by tier Supplier uirements. In the Suppliers dification will tomer does	MERCURY) rs facility and MERCURY s facility and not be used not absolve	and any regulated to verification to shall have the righthose of the Supplier at the Suppliers res	ory representatives all documents, at to conduct oliers Sub-tier as evidence of
GSQ006	ALTERING DATA ON	DOCUMENTS:				
	The use of any method that use of correction fluids, condata and / or entries on an is strictly prohibited. Correction was made and it MERCURY, products or secorrected or altered in an incorrected or altered in an incorrect.	rrection tape, write-ove y certifications, test rep ctions may be made on it is signed (initialed) ar ervices represented by	r or other morts or other inspection of / or stamp documents	nethods) to der documents reports' proped by an authat show e	correct, modify or or some some some some some some some some	otherwise alter the Purchase Order, obvious that a al. Upon receipt at
GSQ007	CERTIFICATIONS:					
(02-08-13)	Certification of all Items ar end product. Sub-tier Supp					

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SQAR **SQAR Description:** Code: contained in the Mercury Purchase Order including the requirement to furnish certifications and test reports the same as required of the Supplier. MERCURY requires 100% compliance with all physical and chemical requirements. We do not accept general commercial-grade materials unless they comply with the specified requirement and are certified as such. The Supplier is responsible for supplying material that is as specified and is certified as such. Certification is required on all materials and services supplied to MERCURY. Suppliers shall establish controls to prevent the use of non-certified Items when certified Items are required. Certificate of Conformance / Conformity / Compliance / Analysis, Certificate of Origin, Certificate of Traceability, "Certs" of all types, Inspection and Test Reports, Material Certification, Physical Test Reports, Plating Certificates, Test Certificates, etc., shall all be considered the same as a Certificate of Conformance or (COC). All Items supplied or provided to MERCURY shall be accompanied by the appropriate (COC) for each shipment or service. The Supplier shall be responsible for maintaining and supplying this documentation as objective evidence of meeting Purchase Order, document / drawing and SQAR requirements. The COC may be a separate document or included on the packing slip / sheet. The COC shall include traceability to the Items provided. Examples of traceability documents indicating proper component transfer from one company to another in the supply chain include but are not limited to: 1. Packing slips, 2. Receiving documents, 3. Purchase Orders, 4. Shipping documents. MERCURY supplied material will be maintained by MERCURY and is not subject to the above. Chemical / Material / Physical Analysis & Test Reports - A COC with the actual chemical and / or mechanical test data for the material(s) being supplied under the contract issued by MERCURY. The test report shall state the actual analysis of the material for the chemical and / or mechanical properties, and shall identify, as applicable, the type, grade, temper, material dimensions, heat / lot number, specification(s), and be signed for Certification of Compliance. Conflict Minerals - Supplier shall provide Mercury with a written certification as to the presence of "Conflict Minerals" contained in or used in the production of the items purchased by Mercury and the country of origin of such "Conflict Minerals" as defined by the Dodd-Frank Wall Street Reform and Consumer Protection Act. "Conflict minerals," as defined in Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. are: 1) columbite-tantalite (Fe, Mn, Mg)(Nb, Ta)2O6-(Fe, Mn)(Ta, Nb)2O6 (coltan) - tantalum (Ta), 2) cassiterite (SnO2) - tin (Sn), 3) wolframite (Fe,Mn)WO4 - tungsten (W), 4) and **gold** (Au), or any other derivatives; or any other mineral or its derivatives determined by the Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country.

Supplier(s) must include a statement of compliance on all Certificates of Conformance delivered to Mercury.

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SQAR **SQAR Description:** Code: **Distributors - COC** documentation requirements from distributors can be met in one of the following ways: 1. Original manufacturer's certifications shipped with Items plus the distributor's certification. 2. Distributor's certification referencing original manufacturer's certifications and documentation that is maintained on file. Distributors in this category are designated as "Authorized or Franchised Distributors" and must be licensed by the manufacturer to distribute product. Fastener Material - If this Purchase Order is for procurement of ASTM, ASME, SAE, MS, BAC, AN, or NAS specification fasteners, (bolts, nuts, screws, studs, washers, rivets, pins, etc.), the Supplier shall provide a certification attesting that materials, processes (including applicable inspection processes) and finished Items were controlled and tested in accordance with the requirements of this Purchase Order and applicable specifications and that such records are on file or that materials used were supplied by MERCURY. The certification shall identify the original manufacturer and their lot numbers for each lot in the shipment. Multiple lots within a shipment shall be kept separate and clearly identified as to the original manufacturers and their lot numbers. Non-destructive Testing Requirement – When x-ray, dye penetrant, magnetic particle or similar requirements are required by the Purchase Order, engineering documentation / drawing or SQAR code, results shall be on a COC that identifies the results of the evaluation, the name of the evaluator, the date, the signature and title of a responsible laboratory representative, and an adequate method of identifying and cross referencing each evaluation document to the specific parts being examined. When parts are serialized, serial numbers must appear on the COC. Unless otherwise directed, films and reports shall accompany each shipment. Origin – The country of Origin must appear on the COC, attesting that the goods in a particular export shipment have been wholly produced (manufactured, mined or processed) in a particular country. The "Origin" does not refer to the country where the goods were shipped from but to the country where the Items were produced (manufactured, mined or processed). In the event the products were produced in two or more countries, Origin is obtained in the country where the last substantial economically justified working or processing is carried out. If more than 50% of the cost of producing the goods originates from one country, the "national content" is more than 50%, then, that country is acceptable as the country of origin. Outsource Manufacturing / Consignment Assembly / Fabrication / Machining Suppliers - The COC shall also provide a link (via the Supplier's internal job number, work order number, or other identifier) to all documentation for this product. Printed Circuit Boards (PCB) / Printed Wiring Boards (PWB) - PCB's / PWB's regardless of their type (rigid, semi-rigid, flex, single-sided, double-sided, and multi-layered) shall be delivered with certification and test results that qualification and performance requirements are per their respective documentation / drawing. Raw Material - A COC shall accompany each shipment and include chemical and physical analysis. The certificate must state that the material supplied meets the applicable specifications and must specify the revision level of the material specification. The country of Origin must appear on the COC. Rework or Repair or Replacement or Modified Items - Suppliers Certification of Conformance and / or packing slip / sheet document shall reflect the following requirements for rework, repair, replacement or

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SQAR Code:	SQAR Description:
	modification Items returned to Supplier or including work performed by Supplier at MERCURY facility.
	 The Items(s) have been reworked, repaired, replaced or modified (as applicable), in accordance with respective non-conformance documents or Purchase Order.
	2. The Item(s) meet(s) the requirements of the engineering documents.
	3. The original configuration and qualification status of the Item(s) remains in effect (as applicable).
	4. All applicable non-conformance document numbers or other references to ensure traceability.
	Special Processes and Testing - Suppliers performing special processes and testing, such as but not limited to: Autoclave cure, Bronzing, Chemical Processing, Composite manufacture, De-scaling, Elastomeric Seals, Environmental and Laboratory Testing, Etching and Priming, Firing, Flame/Metal Spraying, Heat Treatment, Non-conventional Machining (ECM/ECG/EDM/LBM), Nondestructive Testing (i.e. Ultrasonic, Magnetic Particle, Dye Penetrate, and X-ray inspections, etc.), Plating and Coatings, Sealants, Welding, etc., shall list the number and revision level of the applicable process specification (s), lot size, lot number or heat number, sample size, applicable process specifications / controls and applicable test results. If the job was processed using a NADCAP or other accredited process, the Supplier shall include a statement indicating the job was processed per their Accreditation and shall include their Accreditation Number and expiration date.
	Test Reports – A COC with actual test data with indication of pass / fail test results shall accompany each shipment. The Supplier's format is acceptable and shall reference at least the Purchase Order number, Supplier's name and address and / or the name and address of the independent laboratory, product number, serial number or lot number if applicable, and the date of the test.
	Traceability – Suppliers shall maintain records for traceability throughout all steps of their manufacturing and outside processing or distributing processes for all Items delivered under a Purchase Order. All Items must be traceable back to raw materials. Traceability information shall be provided to MERCURY on the packing slip / sheet and / or on the COC with each delivery. Documentation shall provide for one-way (backward) traceability for all Items used in Items supplied on a Purchase Order. Traceability requirements shall also apply to supplies that are modified, repaired or reworked. Each serialized Item shall be traceable, forward and backward, by serial number. The country of Origin must appear on the COC.
	COC contents – The COC must contain, at a minimum, all of the following that are applicable:
	a) MERCURY Purchase Order number
	b) packing slip number
	c) date
	d) part number
	e) description of Item
	f) revision
	g) shipment quantity
	h) serial number(s)
	i) lot / batch / heat number

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SQAR Code:	SQAR Description:
Code.	
	j) date code
	k) date of manufacture
	I) country of origin
	m) material type
	n) material grade
	o) temper
	p) percentage of each element that makes up the chemical composition properties
	 q) material and performance test results for chemical, physical, metallurgical and functional performance requirements
	r) Suppliers internal job or work order number
	s) statement of conformance to the Purchase Order requirements
	t) certifiers title, and signature or stamp and date
	u) Suppliers name and address
	v) manufacture's name if different
	w) pass or fail
	 bare evidence that final inspection has been performed with the final inspectors stamp affixed and dated
	y) expiration date
	z) DFARS, REACH, RoHS, WEEE, etc. compliance
	The Supplier shall retain a copy of all documents in support of Sub-tier Supplier activity, including Sub-tier COC, Material Analysis, Certificates and Test results where applicable. Certifications from a Sub-tier Supplier to the Supplier shall provide traceability to the manufacturer and manufacturing lot. Certification documents are required to be retained for a minimum of seven years.
	MERCURY reserves the right to reject or refuse delivery of product that does not have appropriate documentation.
GSQ008	DOCUMENT / RECORD RETENTION AND TRACEABILITY (7 YEARS):
	Suppliers and Sub-tier Suppliers shall maintain verifiable objective evidence of all records of analysis, assembly, conformance, inspections and tests performed, obtained results, and dispositions of non-conforming articles. These records shall be identified to associated articles, including heat and lot number of materials, unit or lot serialization when applicable and certifications. All data shall be traceable to the organization performing the testing, special processing and / or inspection(s). The Supplier shall retain Quality Assurance and Quality Control records, manufacturing data, engineering drawings and tooling. All actual information shall be included to demonstrate conformance of specification and / or Purchase Order requirements. These shall be made available for review to MERCURY or authorized MERCURY representatives or MERCURY authorized customer representative upon request.



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	manufa location the Sup applical number Unless retained Order p hours. A Mercury	pplier shall maintain recacturer of all Items being of all of the supply charplier. Materials used muble lot number, date coor, heat number, etc. Item extended retention required by Supplier in a safe, a payment. Records shall a Anytime during or after the retention of the	delivered. This train intermediaries foust be traceable to de, material, manures fabricated by the uirements are speciaccessible location remain legible and the seven-year reto Supplier shall not	aceability me rom the mar the manufa facturer s ty e Supplier s sified elsewh n for a period readily retri ention period	ethod shall of nufacturer to cturer's recope, specificate hall be identified in this Formula of the dere in this Formula of the evable for records significant d, records significant number of the description of description of the description of description of descri	clearly identify the othe direct source ords of acceptance ation, applicable clifiable to the lot of Purchase Order, ref. (7) years following eview during reasonall not be destroy	e name and e of the product for the and identified by thange letter or f material used. ecords shall be g final Purchase tonable business yed without
GSQ009 (09-10-12)	PREVI MERCU	UCT / MATERIAL A ENTION: JRY and its customers of se Order, engineering d	expect our Supplie	rs to deliver	material tha	at is 100% compli	
	unautho written	er Item, other than new a orized copy and no "bett authorization, by formal	ter than" product o change to the Pur	r material m chase Orde	ay be subst r, by the ME	ituted whatsoever ERCURY Buyer.	r without prior
	Product	t and material supplied s feit.	shall be new and u	in-used and	not knowing	gly counterfeit or s	suspected to be
		terfeit Parts" shall mear teristics are misrepreser					rformance, or
	1.	Items that have been redisguise them or falsely					erwise modified to
	2.	Defective Items and / o	or surplus material	scrapped by	the origina	l manufacturer,	
	3.	Previously used Items	pulled, salvaged o	r reclaimed	and provide	d as "new",	
	4.	Incomplete Items not fu processes,	ully cycled through	the original	manufactur	er's production a	nd testing
	5.	Original manufacturers passed the up-screening				ted) that have no	t completed or
	Items th	hat have been identified	as refinished or u	p-screened	up-rated a	re not considered	counterfeit.
	" <u>Suspe</u>	ect Counterfeit and Sus	spect Counterfeit	Item (SC/I)	" shall mea	n, but is not limite	d to:
	1.	Items whose document been knowingly misrep					eristics may have
	2.	a component or assem	bly of questionable	e manufactu	re and / or o	origin,	

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SQAR Code:			SQAR D)escript	ion:				
	3.	known to have been pre	eviously counterfeited	, j,					
	4.	having sufficient physica	having sufficient physical attributes to raise questions as to its acceptability,						
	5.	there is an indication by established government standards.							
	Note: By definition, for an Item to be considered S/CI it must first be non-conforming to specified requirements. Therefore all confirmed S/CI are non-conforming Items but all non-conforming Items are not necessarily S/CI.								
	"Authe	entic Item" shall mean, b	out is not limited to:						
	1.	genuine, true, real and	accurately represente	∍d,					
	2.	from the legitimate sour	ce claimed or implied	d by the	marking and	design of the Item	١,		
	3.	manufactured by, or at tapplied its name and tra		e standa	rds of, the m	anufacturer that h	as lawfully		
	4.	of undisputed origin.							
	Manufa manufa product docume	al Manufacturer (OM) a acturer (OEM)" shall me actures (or consigns / out at to other companies, typent, Original Manufacture (OEM)	an companies that d sources manufacturi ically through Author er (OM) and Original	esign Ite ng), and ized or F Compon	ems, hold Inte may authorized Franchised Dent Manufac	ellectual Property I ze or license the s istributors. For the turer (OCM) and (Rights, sale of the purpose of this Original		
	Note: A	product may be legitima	ately produced by mo	re than o	one manufac	turer.			
	produce	"Authorized Aftermarket Manufacturer (AAM)" shall mean a manufacturer authorized by the OM to produce and sell Items. The Aftermarket Manufacturer must label or otherwise identify its Items to ensure that the "as-shipped" aftermarket manufactured Item cannot be mistaken for Items made by the OM.							
		Authorized Distributors shall, in addition to supplying the OM COC and traceability, include their company's certification for each Item shipped.							
	authorize the mare Franchi through	hised Distributor or Aur zed and / or franchised b nufacturer has a contract ised and Authorized Dist n warranty. These compa ised and Authorized Dist	y an OM or AAM to stual agreement to stoributors normally offernies are also referred	sell or dis ock, re-pa er the pro d to as A	stribute their ackage, sell a oduct for sale Authorized Su	products. A distrib and distribute its p with full manufac upplier or Franchis	outor, with which product lines. cturer flow- sed Supplier.		
	(OCM) Authori	purpose of this documer and Original Equipment zed Distributor and Franc ized Source".	Manufacturer (OEM)	and Aut	thorized After	rmarket Manufacti	urer (AAM) and		

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SQAR Code:	SQAR Description:
	Certifications from the Authorized Source must be readily retrievable and made available upon request.
	Use the: Electronic Components Industry Association (ECIA): collaboration between Electronic Components Association (ECA) and National Electronics Distributors Associations (NEDA) and the Independent Distributors of Electronics Association (IDEA) links to help determine authorized sources.
	ECIA: http://www.eciaauthorized.com/
	IDEA: http://www.idofea.org/
	All electrical, electronic, electromagnetic, electromechanical, electro-optical Items and non-electrical Items, like fasteners, nuts, washers, springs, O-rings, inserts, standoffs, pins, etc. shall be from the Authorized Source and have certification from the Authorized Source. All Items must have applicable certification(s) and evidence of supply chain traceability (chain of custody) back to the Authorized Source with all intermediate certifications. The Certification shall clearly identify the name and location of all of the supply chain intermediaries from the original manufacturer to the final source of the product delivered to MERCURY.
	Suppliers shall supply Items from OMs or Authorized Distributors or Authorized Sources. Suppliers shall submit complete and compelling support for any request to supply Items from sources other than OMs or Authorized Distributors or Authorized Sources and include in the request all actions completed to ensure the Items are not Counterfeit Items. Suppliers supporting documentation shall include:
	1. Results of authentication test and analysis conducted using AS5553 as a guide,
	2. Traceability with identification of all supply chain intermediaries,
	3. Identification of and traceability to the source for any re-marked or re-surfaced Items.
	Suppliers are not authorized to deliver any Item from sources other than OMs or Authorized Distributors or Authorized Sources without prior without prior written authorization, by formal change to the Purchase Order, by the MERCURY Buyer.
	"Independent Distributor" shall mean a person, business, or firm that is neither authorized nor franchised by an Original Manufacturer (OM) or Original Component Manufacturer (OCM) or Original Equipment Manufacturer (OEM) to sell or distribute their products but which purports to sell, broker, and / or distribute such OM products. Independent Distributors are also referred to as un-franchised or unauthorized - brokers or distributors.
	MERCURY shall make every attempt to only purchase from Authorized Sources. In the event an Item is not directly available from the Authorized Source, purchase from Independent Distributors may be made if the following is completed:
	 All Items must have applicable certification(s) and evidence of supply chain traceability (chain of custody) back to the Authorized Source with all intermediate certifications.
	 The Certification(s) shall clearly identify the name and location of all of the supply chain intermediaries from the original manufacturer to the final source of the product delivered to MERCURY.
	3. Independent Distributors must summit all Authentic Item evidence to the MERCURY Buyer.

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	4. The MERCURY Buyer will present all evidence to MERCURY Engineering and Quality Assurance.							
	5. Mercury Engine	ering and Quality Assurar	nce must o	contact and re	ceive customer wr	itten approval.		
	supply written a	ngineering and Quality As uthorization, by formal cha ependent Distributor.						
	in SAE International Rel	assurance may require the eases Standard AS5553, on, before any further cor	Counterfe	eit Électronic F	Parts; Avoidance, D			
	If evidence of supply chain traceability (chain of custody) to the OM is not available, the Supplier must request MERCURY Engineering to evaluate the risk of using the material and receive prior written authorization, by formal change to the Purchase Order, by the MERCURY Buyer before delivering any such Items.							
	If suspect counterfeit Items are furnished by the Supplier, the Supplier shall promptly notify MERCURY an promptly replace all suspect counterfeit Items with Items that are acceptable to MERCURY. The Supplier shall be liable for all costs relating to the removal and replacement of all suspect Items. Any suspect counterfeit Items will be returned to the Supplier. If the Supplier verifies the said Items to be counterfeit, the Supplier must certify that the counterfeit Items will be destroyed and the Supplier must report the Item to Electronic Retail Suppliers Association International (ERAI), Government - Industry Data Exchange Program (GIDEP) and Independent Distributors of Electronics Association (IDEA).					The Supplier suspect counterfeit, the rt the Item to		
	ERAI: http://www.erai.co	om/						
	GIDEP: http://www.gide	o.org/						
	IDEA: http://www.idofea	.org/						
	property damage resulti including but not limited	nnify MERCURY, its custong directly or indirectly fro to materials that are defectenses; and materials or oduct failure.	m Items tl ctive, susp	nat are not ge pect or counte	nuine, original and rfeit; materials tha	unused, t have been		
GSQ010	QUALITY MANAGE	MENT SYSTEM (QMS	<u>S):</u>					
	equivalent. Suppliers that	ain a QMS which conforn at have not been certified equirements of this standa	to ISO900	1: (current re	vision) are expecte	ed to have a		
	manufacturing and proc	ain an English language tess documentation such a st reports and any other o	as certifica	itions, manufa	cturing plans, insp	ection reports,		



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SQAR Code:			SQAI	R Descrip	otion:			
GSQ011	INSPE	ECTION SYSTEM	<u>1:</u>					
	service assess	MERCURY requires that all Suppliers maintain a quality system, which ensures all supplied products and services comply with all requirements. The Supplier shall manufacture, verify, inspect, test, dimensionally assess, service, and deliver all products in accordance with the Purchase Order, documents / drawings and to all requirements identified on them.						
GSQ012	MATE	RIAL REVIEW B	OARD (MRB) AUT	HORITY	<u>′:</u>			
	or non-		nctional group that revies and determines their lier.					
	specific disposi	Suppliers do not have MRB authority for MERCURY or any of its customer's designed Items unless specifically authorized in writing by the MERCURY Buyer. The Supplier MRB shall not perform any disposition on any non-conformance requirements that affect form, fit, function, weight, interchangeability, maintainability, reliability, unique key characteristics or safety.						
		uppliers disposition a rap. These terms are	outhority of non-conform e defined as follows:	nance is li	imited to rewo	rk to specification	n return to Supplier	
	1.	addressed by gove authorized by spec	material to specification erning process specification shall be submited e provided with rework	ation(s). It itted to M	ems subject t ERCURY MR	o subsequent pro	ocessing not	
	2.	Return To Supplie	er - Return of Item foun	d to be di	screpant for s	subsequent rewo	rk or replacement.	
	3.		t removal from product shall be segregated or				oe unfit for use.	
	When MERCURY MRB has disposition material as "Scrap" the material shall be physically rendered unusable within 72 hours (three working days, weekends excluded) unless an alternate disposition is requested. The Supplier shall not ship to MERCURY any non-conforming products that have not been disposition by MERCURY MRB unless authorized by MERCURY in writing. When MERCURY MRB disposition products are delivered to MERCURY, the Supplier shall reference on the packing list(s)hipper the MRB document which describes the MERCURY MRB disposition. When the Suppliers shipment includes products disposition by MERCURY MRB along with conforming products, the products disposition by MERCURY MRB shall be segregated and marked or tagged so as to permit easy identification upon receipt at MERCURY.							
							position products MRB document products by MERCURY	
GSQ013	NON-	CONFORMING IT	TEM CONTROL / R	ESUBM	ITTAL OF	REJECTED IT	EMS:	
	conside may be	ered non-conforming e required to complet	documentation, drawing g and shall not be shipp te a corrective action re be identified and segreg	ed withous equest. SI	ut MERCURY hould MERCL	written prior app JRY authorize sh	roval. Supplier ipment, non-	

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SQAR **SQAR Description:** Code: conforming material will be made by MERCURY. Non-conforming materials received by MERCURY may be reworked at the Suppliers expense should these materials be needed to meet scheduled deliveries. Non-Conforming Item In Route - The MERCURY Buyer and Quality Manager must be notified immediately if it becomes known that non-conforming material may have been inadvertently shipped. Notifications should be made via email with a follow-up via telephone. Email notification must include at least part number, Purchase Order number, lot or batch, date information and defect description. The Supplier will additionally include Return Materials Authorization (RMA) instructions with the notification. Non-Conforming Material in transit may result in material shortages at MERCURY. The Supplier must advise the MERCURY Buyer whether and when expedited or adjusted deliveries can cover any shortages. Nonconforming materials will not be shipped to MERCURY once identified by the Supplier unless formal deviation is submitted and approved by MERCURY in writing. Non-Conforming Item at MERCURY - If non-conforming material is discovered at MERCURY, the Supplier will be notified with the Corrective Action Request (CAR) information. The CAR is utilized by MERCURY to ensure a systematic analysis of corrective actions. All response must be returned using this form although further explanation may be submitted via telephone or email. When MERCURY issues a CAR, Suppliers are required to submit to the MERCURY Buyer and Quality Manager an initial acknowledgement (including defect identification & containment plan) within 48 hours. The Supplier must submit within 5 days corrective action updates and root cause is due within 12 days however the goal is to have permanent corrective actions in place within this time frame also. Within 24 hours of notification the Supplier must authorize MERCURY to scrap, rework or return the Non-Conforming Materials (at the Suppliers' expense). If the Supplier does not respond to the request within 24 hours. MERCURY will make disposition without Supplier authorization. The Quality manager will provide the Supplier with appropriate evidence of the failure so the Supplier can accurately investigate the failure mode. Obvious defects may only require descriptions of the defect, while more complicated failures may require photos or dimensional measurements. If failure samples are needed for review, it will be the primary responsibility of the Supplier to retrieve those samples from the MERCURY MRB. If the MERCURY Buyer receives information of non-conforming materials from the Supplier or discovers product field failures & malfunctioning products, or request from Mercury's customer(s), MERCURY may request from the Supplier to conduct a formal failure investigation and analysis report to identify the root cause(s) of the failure. Such investigation and analysis require a timely and documented response. When deemed necessary by the MERCURY Buyer, the Supplier shall provide a Corrective And Preventive Action report for non-conformities reported by the MERCURY Buyer. Resubmitting Previous Non-Conforming Material – Any non-conforming Item returned to the Supplier shall not be resubmitted without reference being made to the original rejection, together with a completed Corrective Action Report, when requested by MERCURY detailing the action to avoid recurrence of the deficiency. Non-conforming Items that are deemed beyond economical repair, or otherwise scrapped shall be disposed of, such that they can NEVER be salvaged or made to appear fit for purpose. At no time shall MERCURY be held liable for non-conformities produced by the Supplier or the Suppliers sub-tiers. The final authority of the usability of non-conforming product that cannot be reworked to drawing requirements shall be determined by Mercury's Quality Manager. All rework shall be performed in accordance with drawing and specification requirements. MERCURY reserves the right to recover all



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SQAR Code:		SQA	R Descrip	tion:					
	incurred costs related to non-	conforming product	produced	from the Supp	olier or the Suppli	ers sub-tiers.			
	The Supplier may request cordrawing and or Purchase Ord rejection report. The non-conformance being consiconcession consideration prior	er requirements. Th formance report mus dered. MERCURY r	e Supplier st include a nust appro	shall submit a cause and o	such requests usi corrective action s	ing their internal statement for each			
	MERCURY Owned Material MERCURY that has been det MERCURY. Materials shall be	ermined by MERCU	IRY or its o						
	When a non-conformance is r to begin the investigation produced		RY, the Su	upplier shall n	ot wait until the p	roduct is returned			
GQS14	CALIBRATION SYSTEM	<u>:</u>							
	The Supplier shall have as a rexceeds the requirements of and maintain procedures that controlled, calibrated and trace	ANSI/NCSL Z540-1 ensure that all equi	or an equi pment use	valent docum d for measuri	ent. The Supplier	shall establish			
	1. Each Item of equipme	ent is clearly and uni	quely iden	tified togethe	r with the current	calibration status.			
	2. Each Item is capable	of the accuracy and	precision	necessary.					
	Calibration Records a checks, check method			nent type, uni	que number, loca	tion, frequency of			
	4. Calibration Results ar	e reviewed and fred	juency adj	usted to refle	ct equipment cond	dition.			
	Handling, preservatio maintained.	n and storage of eq	uipment is	such that acc	curacy and fitness	s for use is			
	6. Items are recalled to a	a defined method w	hen require	ed for calibrat	ion.				
	Equipment that cannot test house.	ot be calibrated withi	n the Sup	oliers calibrati	ion system is sen	t to an approved			
	8. The calibration record	ds and certificates sh	nall be mai	ntained withir	n the Suppliers ca	alibration system.			
	9. The Supplier shall assess the validity of previous inspection results when equipment is found to be faulty or out of calibration and shall recall the product for re-inspection when the assessment indicates the result may be a non-conforming product.								
GSQ015	ELECTROSTATIC DISCI	HARGE (ESD) C	ONTROL	<u>.s:</u>					
	The Supplier shall maintain a requirement of MIL-STD-1686 training. Take the necessary plems are protected from elected	6 "Electrostatic Dischorecautions to ensur	narge Con e static se	trol Program"	, including docum	ented employee			



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SQAR Code:		SQAF	R Descrip	tion:				
GSQ016	PACKAGING, HAN	DLING, STORAGE AN	ID PRES	SERVATION	<u> </u>			
	All products shall be pa	acked, packaged, marked a	and otherw	vise prepared	for shipment in a r	manner which is:		
	in accordance and	with good commercial prac	tices unle	ss otherwise	specified in a parti	cular manner,		
	acceptable to the particular S	common carriers for shipme Suppliers; and	ent at the l	owest rate the	at could include oc	ean shipment for		
	3. adequate to in	sure safe arrival of the mate	erial.					
	The label and characte	er size should be legible.						
	information. Suppliers shipping damage (nick Items are permanently MERCURY part number	k each container, rack, box are held responsible to ens s, dings, bends, scratches, and legibly identified. Ident er, part number revision lev e following that are applicab	ure packa etc.). The ification re el and ME	ging is suffici Supplier sha equirements a	ent to protect mate Il also assure that always include the	erial from all packaged complete		
	1. Name of manu	facturer,						
	2. Lot Number ar	nd / or Date code (date of m	anufactur	e),				
	Identification a	nd Quantity of Items per ca	rton,					
	Certificate of C	rigin - where applicable,						
	An Itemized pa	ackage sheet must accomp	any each	shipment.				
	Bar codes must be Hui	man Readable.						
	Items subject to corrosion or damage or degradation or deterioration by contact with air, humidity or other factors during handling, construction, storage or transportation shall be cleaned and protected by a process designed to minimize exposure to the detrimental condition. Storage areas shall be suitably environmentally controlled. The Supplier shall be responsible for the preservation and packaging of the deliverable items in a manner that shall prevent deterioration and physical damage and insure safe delivery in good condition in accordance with MIL-STD-129 or ANSI / EIA / IPC J-STD-033 or equivalent. Packaging of the unit for shipping and storage shall insure that condensation on the unit does not occur. Do not use "pink poly" (polyethylene) for bagging or packaging.							
	Supplier shall identify Item(s) and / or package(s) container(s) of shelf life material with the manufacture date or the expiration date along with special storage and handling conditions, in addition to the normal identification requirements of manufacturer name, part number, revision type, size, quantity, etc. When the Item/material/product is age control sensitive and requires shelf-life certification to accompany each shipment. If not otherwise specified, minimum 80% shelf life must be remaining upon receipt at MERCURY.							
GSQ017	FOREIGN OBJECT	DEBRIS / DAMAGE (FOD) PI	REVENTIO	<u> </u>			
		s / Damage (FOD): A subsi						

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SQAR Code:			SQAI	R Descrip	tion:			
	deburri		e same potential as foreignarts, high concentration of grease, etc.					
	1.	1. Foreign Objects Debris : Any loose objects such as chips, cleaning materials, clippings, corrosion, detached burrs, dust, filings, grease, grindings, oil, RTV clods, screws, shavings, solder balls, staples, tools, washers, water, etc.						
	2.	 Foreign Object Damage: Any damage attributed to a foreign object that can be expressed in physical or economic terms which may or may not degrade the product's required safety and / or performance characteristics. 						
		ntrapment. The S	be clean and FOD free fro Supplier shall have approp					
	Supplier shall assure that MERCURY procured product be protected against corrosion, contamination, deterioration, or other spoilage during transit. All material shall be packed with suitable protection as to prevent damage through handling, transit, and during storage prior to use. Packaging will be in accordance to "Best Commercial Practice" unless otherwise stated in the Purchase Order.							
	Other s	shipping instruction	ons may be contained in th	ne Purcha	se Order.			
GSQ018	AGE / ENVIRONMENT SENSITIVE AND SHELF LIFE RESTRICTED ITEMS:							
	with ag	e and / or enviro	ify all Items and materials nment. The Supplier may Supplier shall affix a labe	not delivei	any Items o	materials with le	ess than 80% of	
	1.	the date useful	life was initiated					
	2.	the date at which	ch useful life will be expend	ded				
	3.	list of any and a	all required storage condition	ons to mai	intain stated u	useful life		
	4.	any lot numbers	s or manufacturers identific	cation nun	nbers			
	Suppliers shall establish a shelf life and storage control program to ensure that no material that has exceeded its shelf life can be used in the assembly of MERCURY product. Such a program shall include policies and procedures for:							
	1.	Identifying and special storage	maintaining a database (a requirements.	list) of all	Items that ha	ve shelf life limita	ations and / or	
	2.	A receiving insplife limitation pe	pection process that can eleriod.	nsure that	all incoming	products are still	within their shelf	
	3.		hysically identifying, labeli I stating that the Item is un			so that its shelf	life can be readily	
	4.		for reviewing (auditing) the issued Items/products.	e status of	all Items und	ler shelf life contr	rols both in stock	



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SQAR Code:		SQA	AR Descrip	otion:					
		racking repackaged cons mber, batch number, reco \							
		sumables with shelf life(s) Id be properly disposed o		ondition requi	rements, on which	the status			
GSQ019	CORRECTIVE AND	PREVENTATIVE AC	TION:						
	action. Any corrective or conformities shall be to	a and maintain document repreventive action taken a degree appropriate to t lier shall implement and re ventive action.	to eliminat he magnitu	e the causes of the the causes of the causes	of actual or potentins and commensu	al non- ate with the risks			
	Suppliers shall aggressi cost.	vely correct and proactive	ely approa	ch any item a	dversely affecting p	performance and			
	The procedures for corrective action should include at a minimum:								
	Effective handling of customer complaints and reports of the nonconformance,								
	Investigation into the cause of the nonconformance relating to product, process, and quality system and recording the results of the investigation,								
	3. Determination of	f the corrective action ne	eded to eli	minate the ca	use of the nonconf	ormance,			
	4. Application of co	ontrols to ensure that the	corrective	action is take	n and that it is effe	ctive.			
	The procedures for preventive action should include at a minimum:								
	product quality,	opriate sources of inform concessions, audit result etect, analyze, and elimin	ts, quality r	ecords, servic	ce reports, and cus	tomer			
	2. Determination of	f the steps needed to dea	al with any	problems req	uiring preventive a	ction,			
	3. Initiation of prev	entive action and applica	ation of con	trols to ensur	e that it is effective	,			
	4. Ensuring that re	levant information on act	tions is sub	mitted for ma	nagement review.				
	On occasion a nonconformance may be identified with goods and services procured. In the event of that occurrence a Supplier corrective action may be initiated. Suppliers shall respond to a corrective action request in a timely manner. A letter sent to the Supplier from MERCURY gives a description of nonconformities along with a due date that the Supplier shall respond by. When Suppliers do not respond to the corrective action by the due date, their approved Supplier status may be revoked.								
	MERCURY reserves the right to conduct verification of corrective and preventive action at the Suppliers and Suppliers Sub-tiers facilities to assess the effectiveness of the corrective and preventive action taken.								
GSQ020	MATERIAL SAFETY	' DATA SHEET (MSI	DS):						

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SQAR Code:			SQAI	R Descripti	on:				
	labeling	All Suppliers must submit MSDS information applicable to the Item with the first shipment and appropriate abeling on each container / Item with each shipment thereafter. Whenever an MSDS is revised, a post revision copy shall be furnished with the next shipment.							
GSQ021	PROH	HIBITED MATERIA	ALS:						
			by the Purchase Ordens ordered by MERCU		nt / drawing	or SQAR, the follo	owing materials		
	1.	as a surface finish f hermetic cavity or e in hybrids shall not shall not be plated v lead or at least thre three percent lead.	(greater than 97% Tin for hardware, including encapsulated within an consist of pure tin; the with pure tin.) Solder-ce and a half percent so Unalloyed tin or tin platin with less than 97% ceptable.	g the surface assembly. potted port dipped tin al ilver. All oth ate where tin	e finish on c (For examp tion of leads loy finishes er tin and tir n is greater	omponents or par le, terminations or on devices that a shall contain at le n alloy finishes sha than 97% pure an	ts used inside a n chip capacitors re encapsulated ast three percent all contain at least d the remainder is		
	2.	Unplated brass (an than 21 percent zin is over-plated with a gold. Unplated alloy Unplated alloys otherware over-plated copper or gold. Zing	v is prohibited. The use alloy containing copper is prohibited. Brass varieties a minimum of 50 microsys other than brass alloys the dwith a minimum of 50 c or alloys containing z zinc alloys (>=15% Zinc	er and zinc with greater or inches of rat contain great contain go micro inchet inc that are	as the main than 21 per nickel, or 100 reater than 1 greater than less of nickel a sealed with	constituents) con reent zinc is accep 0 micro inches of 10 percent zinc ar 10 percent zinc a , or 100 micro incl	taining greater btable if the brass either copper or e prohibited. re acceptable if nes of either		
	3.	space hardware. Un Alloys containing gr minimum of 50 micr alloys containing ca	l) alloy is prohibited. The nplated alloys containing the reater than five percent or inches of nickel, or admium that are sealed alloys (>=15%Cadmium).	ng greater to the cadmium 100 micro in the distribution of the cadmium and the cade in the	than five per are acceptanches of eith ermetic cavi	cent cadmium are ble if they are ove ner copper or gold	e prohibited. r-plated with a . Cadmium or		
	4.	assembly, testing o	use of mercury contai or any phase of manufa 15% Mercury) are prof	acture of an					
	5.	Pure selenium and	high selenium alloys (>=15% Sel	enium) are p	orohibited.			
	6.	Pure Beryllium is pr	rohibited.						
	7.	protective coating of	r high magnesium allo of Dow 17 or equivalen ouminum and Steel allo	it coating. T					
	8.		ixes (Type RA, etc.) ur rification methods to e				pecified, along		

9. All radioactive materials including uranium, potassium, radium, thorium, and / or any alloy thereof.

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SQAR Code:	SQAR Description:						
	 Incompatible dissimilar metals shall not be used in conjunction with each other unless specified in drawings or specifications'. 						
	11. Vinyl and Polyvinyl chloride (PVC) shall not be used as wire insulation or in any other product usage.						
	12. No silicone is allowed. The component must not contain silicone nor have silicone contamination.						
	13. Pink Poly antistatic material is prohibited. Supplier shall NOT package hardware in Pink Poly Antistatic bags or bubble wrap or foam due to concerns regarding unreliable ESD event protection and possible contamination due to out-gassing.						
	 Cyanoacrylate bonding as primary adhesives. In-process bonding is acceptable provided an approved adhesive provides the primary bond support. 						
	15. Graphite as filler for lubricants or grease						
	16. Elastomeric materials that contact hydrazine except for F-E-332 for diaphragms and AF-E-411 for soft valve seats. Materials that have known compatibility by test, usage, or similarity are acceptable.						
	17. Silicone greases intended for thermal bonding for end-item design (not test).						
	18. Flammable materials that are not packaged to preclude accidental fire.						
	19. Honeycomb, metallic or non-metallic, except when perforated or vented.						
	20. Silver-plated copper wire with less than 40 micro inches of silver plating.						
	21. Polyimide (Kapton) insulated copper/copper alloy wire used in applications where the voltage is greater than 18 volts and where flexure, tight bend radii, physical or chemical damage, or abrasion could crack the insulation.						
	Teflon (tetrafluoroethylene-TFE) insulated hookup wire when not routed or protected to prevent cold flow.						
	 Fluorinated Ethylene Propylene (FEP) tubing where it provides the sole insulation for a wire conductor and is routed or contacts adjacent metal conductors. 						
GSQ022	CHANGE NOTIFICATION:						
	The Supplier and Sub-tier Supplier must submit written request to MERCURY and receive pre-approved written permission from MERCURY before any Item can be produced and delivered with any of the following changes:						
	1. to the manufacturing facility location,						
	2. to senior management						
	3. to key Suppliers,						
	4. to the in-sourcing or out-sourcing of any operations,						
	5. to product,						
	6. to process,						
	7. to sub-tier process flows,						

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SUPPLIER QUALITY ASSURANCE REQUIREMENT CLAUSES – GENERAL CLAUSES

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SQAR Code:		SQAR Description:					
	8. to material,						
	9. to fabrication,						
	10. to product end of life	notification,					
	11. to any activity affecti fit, function, weight, i to name some.						
GSQ023	PURCHASE ORDER / E	NGINEERING C	HANGES:	-			
	MERCURY Initiated Chang points, all changes initiated to Order change and / or amen drawings, specifications, test to the Suppliers management shall include appropriate comprovide objective evidence the evidence may be in the form records are subject to on-site Suppliers sub-tier sources. A back to MERCURY within the Supplier Initiated Changes performance specifications, STD-973) without specific application. When applicable, the Suppliers sub-tier sources engineering design control the furnish a copy of the Class II that MERCURY can verify the	by MERCURY and condment and / or supplets, inspection or fabriat and administrative at rols and records, in the changes were incomposed of date, lot, serial number verification by MERCURY Suppliers aree (3) working days at the Supplier may materials or processing proval by MERCURY Suppliers are supplier shall flow-down at result in a Class I change to MERCURY	ommunicate ement. Suc cation meth systems. T cluding con corporated a imber, revis CURY at th are require not make a es that will i Y in writing wn this require I change (a RY prior to t	ed to the Sup- ch changes menods, etc., and he Suppliers trols at the Sas required by sion letter, or he Suppliers any changes in result in a Cla prior to making uirement to the ges on produ s defined by he initial delive	plier through a formal be in the form d may apply to probusiness manage uppliers sub-tier sy the Purchase O other positive ide facilities or the facilities	rmal Purchase of revised oducts as well as ement system sources, which rder. Objective ntification. Such silities of the est and respond drawings, defined by MIL- in products or ers proprietary he Supplier shall	
GSQ024	CONTROL OF MERCUF	RY SUPPLIED MA	TERIALS	<u>S:</u>			
	When materials are provided a Purchase Order, the mater		e Supplier f	for incorporat	tion into product in	n the execution of	
	inspected immediate	ely upon receipt for q	uality & qua	intity,			
	supply written notific	ation to MERCURY	of any discr	epancies fou	nd during inspect	ion,	
	segregated and with from MERCURY,	hold from use all Iter	ns found to	be discrepar	nt pending written	authorization	
	4. adequately identify a	all Items,					

5. controlled to prevent damage, mix-up or any otherwise detrimental condition,

6. return all unused Items at end of the Purchase Order deliveries.



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GSQ025	SOLDERABILITY:					
	Items shall be capable of meeting the solder ability requirements of ANSI / EIA / IPC J-STD-002 or equivalent. Surface solder and PCB's shall meet the solderability requirements per ANSI / EIA / IPC J-STD-003 unless listed below:					
	1. Component & PCB / PWB Solderability. The Supplier (manufacturer or distributor) shall ensure that all parts: leads, lugs, terminal, wires and terminations cited on this Purchase Order shall meet the component solder requirements of ANSI / EIA / IPC J-STD-001 and the solderability requirements of ANSI / EIA / IPC J-STD-002 or MERCURY acceptable equivalent, and Printed Circuit Boards shall meet the solderability requirements of ANSI / EIA / IPC J-STD-003 or MERCURY acceptable equivalent.					
	2. Pre-Tinning. Component leads or the like shall be tinned with SN63PB37 or SN60PB40 solder per ANSI / EIA / IPC J-STD-006 and properly cleaned to remove flux residue. Leads shall meet the solderability requirements of ANSI / EIA / IPC J-STD-002, Category 3 or MERCURY acceptable equivalent.					
	3. Fluxes, Solder and Solder Paste. Fluxes, solder alloys, and solder pastes shall meet the ANSI / EIA / IPC J-STD requirements: ANSI / EIA / IPC J-STD-004 for Fluxes, ANSI / EIA / IPC J-STD-005 for Solder Pastes, and ANSI / EIA / IPC J-STD-006 for Solder Alloys, or MERCURY acceptable equivalent. Unless otherwise authorized in writing by the MERCURY Buyer, the tin content of any solder used shall not exceed 97 percent, and shall be alloyed with a minimum of 3 percent lead.					
GSQ026	ENVIRONMENTAL COMPLIANCE:					
	MERCURY is committed to compliance with the EU RoHS and WEEE Directives and other hazardous substance legislation and industry initiatives. As a result, MERCURY Suppliers are required to certify that the named hazardous substances are within legislated limits.					
GSQ027	MATERIAL OBSOLESCENCE:					
	Supplier will notify MERCURY at least one (1) year in advance if Supplier anticipates discontinuing the manufacture of any of Mercury's Items.					
	Suppliers shall make available discontinued Items for five (5) years after the Items are discontinued by:					
	1. Finding an acceptable source to provide the discontinued Item which is acceptable to MERCURY, or					
	2. Finding a substitute for the discontinued Item which is acceptable to MERCURY, or					
	3. Carrying an inventory of the Item as required to support MERCURY, or					
	 Recommend a replacement or upgraded Item, the Supplier shall formally notify MERCURY of its intent and shall provide a detailed engineering analysis of the re-screening or testing requirements which will provide form, fit and function equivalency to the original Item, or 					
	After exhausting the above alternatives, provide MERCURY with the opportunity to make a last-time buy.					
GSQ028	SEMI-CONDUCTOR AND MICROCIRCUIT DEVICES:					

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	Semiconductor and Microcircuit devices which have passed quality conformance inspection and have been held by the manufacturer or Supplier(s) for a total time period (time held by the manufacturer plus time held by Supplier(s) exceeding 24 months) shall be re-inspected by the manufacturer for all specified group A inspection requirements prior to shipment. Shipped devices shall have a quality conformance inspection date or a re-inspection date less than 24 months old. In case of lot failure during re-inspection, the lot shall be subjected to 100% inspection for all failed parameters and characteristics. All devices that fail any of these tests shall be removed from the lots, rejected and the JAN Brand shall be removed within 30 days. The remaining devices shall retain the original lot identification code. Re-inspection date marking shall be marked on the unit container.
	JAN Brand definitions:
	JAN: JAN (Joint Army Navy) is the prefix assigned by the DSCC to designate devices on the DSCC qualified Item list.
	JANTX: Military screening level as specified in MIL-PRF-19500 for a DSCC qualified device.
	JANTXV: Military with visual inspection screening level as specified in MIL-PRF-19500 for a DSCC qualified device.
	JANS: Space level screening as specified in MIL-PRF-19500 for a DSCC qualified device.
	MERCURY will only receive diodes from pre-qualified lots unless the diode is a Commercial Off The Shelf (COTS) Item.
	Semiconductor devices or microwave microcircuit devices supplied on a Purchase Order shall, whenever possible, be from one continuous wafer, lot or batch. The lot, wafer, or batch number and governing specification and revision shall be identified on the Item container and on the Certificate of Conformance.
GSQ029	SPECIAL PROCESSES:
	Special Processes definition - A process that is any production or service delivery process that generates outputs that cannot be measured, monitored or verified prior to delivery and use. It's often too late because deficiencies may not be obvious until after the resulting products have been used or services have been delivered. In order to prevent output deficiencies, these special processes must be validated in order to prove that they can generate planned results.
	Special Processes - such as but not limited to: Autoclave cure, Brazing, Bronzing, Chemical Processing, Composite manufacture, De-scaling, Elastomeric Seals, Environmental and Laboratory Testing, Etching and Priming, Firing, Flame / Metal Spraying, Heat Treatment, Non-conventional Machining (ECM / ECG / EDM / LBM), Non-conventional Machining and Surface Enhancement, Nondestructive Testing (i.e. Ultrasonic, Magnetic Particle, Dye Penetrate, and X-ray inspections, etc.), Plating and Coatings, Sealants, Welding, etc
	Suppliers may use any applicable Special Process source that is NADCAP (National Aerospace and Defense Contractors Accreditation Program) certified / approved without MERCURY approval. All other sources must be selected from Mercury's Approved Supplier List or approved in writing by the MERCURY Buyer.

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	Sub-tie perforn perforn quantit supplie specific review Certific	Special Processes require Supplier, the Suppliers in Supplier, the Suppliers in Sup	s shall furnish the contribution / test representation, revision / test representation, revision / test representation / test repres	ertification a ort shall ind in effect a st report sh sis and / or rt the certifi these tests	/ test report clude a compat the time of all contain a inspection rication is on a shall be as	issued by the Supplete description of order, type, class statement that in equired by the apfile and available defined in the specific states.	oplier actually of the process s, grade, etc., the dicates the plicable to MERCURY for ecification.
GSQ030	SUPP	LIER APPROVAL P	ROCESS:				
		uppliers will be evaluate placement of a Purchase					
	Only S	SL will be maintained as uppliers eligible to receiv ner not be entered in ER	ve Purchase Orders	s from MEF	RCURY will b	oe set to "Active"	Status. All others
		Suppliers are required to				be placed on the	e ASL. Suppliers
	1.	Goods and services pr	ovided shall not hav	ve an impa	ct on custon	ner product quality	У,
	2.	Supplier is on a Custor	mer's Approved Sup	oplier List,			
	3.	Raw materials and / or	tooling are propriet	tary and av	ailable throu	igh no other sourc	ce,
	4.	National OEM Supplier	rs such as Digi-Key	, Grainger,	McMaster C	Carr, MSC, Staple	s, etc.,
	5.	One time purchases fro quality or customer sat Item has been received be used.	isfaction. The Supp	lier must ir	nmediately b	e put to Inactive	status after the
		a Supplier to the ASL m		plier to be	evaluated co	onsidering and / o	r using one or
	1.	Successful completion	of a MERCURY su	pplied self	survey,		
	2.	Submission of a currer	nt ASxxxx or ISOxxx	xx registrati	ion certificat	e,	
	3.	Supplier is on a Custor	mer's Approved Sup	oplier List,			
	4.	Sole source and propri	etary Item not avail	able from a	any other so	urce,	
	5.	Past quality, delivery a	nd cost performanc	e record,			
	6.	Ability to meet quality a	and contractual requ	uirements,			
	7.	Ability to meet current schedule,	and potential capac	city requirer	ments and d	o so on the desire	ed delivery

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	8. Item complexity / compatibility,						
	9. Process control and inspection capability,						
	10. Ability to mana	ge prototype / pre-product	ion activitie	es			
		d Quality On-Site Review a for MERCURY production		lity to confirm	the self-assessr	ment information	
	12. Financial healt	h review,					
	allow for the open exch for quotation (RFQ). In Supplier's financial hea MERCURY, you will be Financial Analysis agei	ceed, Suppliers will be requange of MERCURY confidences relating to lith, MERCURY may initiate expected to support these to by providing the request mpanies underlying finance.	dential infor o significan e a Supplie e financial i ed compar	mation asso t business aver financial he reviews with	ciated with new b vards or concern ealth review. As a MERCURY and /	ousiness requests s over the a Supplier to or Mercury's	
		e criteria of the evaluation s is a potential Supplier g				ed to the ASL.	
	MERCURY approved Squality and delivery per	Suppliers awarded product formance.	ion busines	ss will be rev	iewed on an ong	oing basis for	
		uppliers that do not meet t ss or removal from the AS xpectations:					
	1. failure to delive	er quality goods and servic	es,				
	2. failure to provid	de on time delivery,					
	3. failure to provid	de the correct order,					
	4. failure to provid	de the complete of order,					
	5. non-competitiv	e pricing,					
	6. alternate source	es for critical materials is a	available,				
	7. unprofessional	business practice.					
		e right to use approved Som the Approved Supplier			xpectations base	d on review criteria	
GSQ031	SUPPLIER PERFO	RMANCE MEASUREM	MENT:				
	Supplier performance will be periodically repo	vill be continuously monito	red and me	easurements	of quality and de	elivery performance	
	As Received Quality:						
		nsiders each lot delivered	to have one	e (1) opportu	nity for defect. If	a part cannot be	

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	immediately used for its intended application, it is considered to be a defect.							
	2. Delivering the wrong "off-the-shelf" unit(s) will be considered one (1) defect per lot received.							
	3. Missing units will also be considered "defective."							
			eived with more than or be considered as one		or example,	a part with a rust	ed surface and a	
	5. A	s-Received Qualit	y is based on the num	ber of defea	cts divided b	y the number of l	ots measured.	
	Suppliers	must maintain a 9	98% or higher to avoid	Supplier Co	orrective Act	tion requests.		
	On Time	Delivery:						
	1. Suppliers should not promise delivery dates they cannot meet. For each Purchase Order line delivered in full into our building we measure the promise date on the Purchase Order against the actual delivery date to our dock. Promised dates may be modified only if a Supplier obtains written approval from MERCURY. MERCURY defines "On-Time Delivery" as the percentage of Purcha Order lines received in full at Mercury's Receiving Dock (i.e. from the dock date, not the date of shipment).					rder against the er obtains written age of Purchase		
	2. Note that MERCURY does not review, modify, or make exceptions to these dates "after the fact."							
	sy yo	ystem in place to d	esponsibility to have acconstantly respect the lapply representative as e actual delivery.	Purchase C	Order parame	eters, and to com	municate with	
	4. O	n-time delivery pe	rformance will be calc	ulated as de	elivery Prom	ise date VS. Rec	eipt date.	
	Suppliers must maintain a 95% or higher to avoid Supplier Corrective Action.							
GSQ032	DOCUM	ENTATION AN	D CONTROL:					
	A document control system shall be maintained that provides for document distribution to the proper points at the proper times and the removal of obsolete documents from operating areas. MERCURY will provide Suppliers with the required documents for the scope of work. Suppliers shall control documents and changes thereto to the extent necessary to ensure that only documents of the revision specified in the Purchase Order are utilized.				IRY will provide nents and			
	Instruction instruction shall iden manufacti	ns shall be in the fons, shop orders, tra tify, in sufficient de	instructions for all mar orm of planning, manu avelers, work instruction etail, the controls and controls and controls and controls.	ifacturing or ons or any c conditions o	peration she other identify of manufactu	ets / instructions, ring document. So ring peculiar to th	router / routing uch instructions ne Item being	
	The Supp	lier shall protect p	roprietary information	and require	Sub-tier Su	ppliers to do the	same.	
GSQ033	PURCH	ASE ORDER A	ND ENGINEERING	CHANG	ES & THE	IR EFFECTIVI	<u>TY:</u>	



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	MERCURY Initiated Changes: The Supplier shall incorporate, at the specified and agreed upon effectivity points, all changes initiated by MERCURY and communicated to the Supplier through a formal Purchase Order change. Such changes may be in the form of revised drawings, specifications, tests, inspection or fabrication methods, etc., and may apply to products as well as to the Suppliers management and administrative systems. The Suppliers business management system shall include appropriate controls and records, including controls at the Suppliers Sub-tier sources, which provide objective evidence that changes were incorporated as required by the Purchase Order. Objective evidence may be in the form of date, lot, serial number, revision letter, or other positive identification. Such records are subject to on-site verification by MERCURY at the Suppliers facilities or the facilities of the Suppliers Sub-tier sources. Supplier Initiated Changes: The Supplier may not make any changes in product design, drawings, performance specifications, materials or processes that will result in a Class I change (as defined by MIL-STD-973) without specific approval by MERCURY in writing prior to making such changes in products or data. When applicable, the Supplier shall flow-down this requirement to the					Such changes hods, etc., and s. The Suppliers portrols at the ated as required by vision letter, or at the Suppliers
	Suppliers Sub-tier source engineering design control furnish a copy of the Clas that MERCURY can verify	ol that result in a Class II s II change to MERCUR	change (a Y prior to	as defined by the initial deli	MIL-STD-973). T very of the (chan	The Supplier shall
GSQ034	MERCURY reserves the advertised physical and for Supplier concurrence will	inctional characteristics	as well as			
GSQ035	shall comply with protection proced components. Mea	FINE SHELF (MOD C f (COTS) and Modified Copted standards applicable, but are not limited to, Electrical and Electronic	Commercialle to proceed institute for sending noted about a handling for accept	al Off The Sheess and work for Interconneers (IEEE), an applicable, bay and other move. In addition and transportance testing	elf (MOD-COTS) manship controls ecting and Packag d the American Nased on commodi nanufacturing spe on, electrostatic di ting all static sens shall be in a calib	products shall be c. Commercially ging Electronic National Standards ity type: ccial processes ischarge (ESD) sitive electronic
		nodities: measuring and acts shall be in a calibrat				process of



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	Modules, cables and chassis: equipment provided under this contract shall adhere to all published manufacturer's specifications. Unit(s) shall have successfully passed supplier acceptance testing. If items are ordered to vendor item drawings (VID's), specifications, or statements of work (SOW), test procedures shall have been approved by LM IS&S Engineering prior to acceptance testing. Products provided under this contract must also meet commercially accepted safety standards.				
GSQ036	DEFECTIVE COMMERCIAL OFF THE SHELF (COTS) NOTIFICATION:				
	Suppliers of COTS products shall notify the MERCURY Buyer of any defects that may exist in COTS products previously delivered to the MERCURY Buyer immediately upon receipt of such defect information. Sources of such defect data include: seller's own determination, data received from manufacturer, Government Industry Data Exchange program (GIDEP) alerts, and reports from other buyers of the same products.				
GSQ037	CATALOG ITEM INFORMATION:				
	The Supplier shall furnish, with each lot of an Item shipped, a copy of the catalog specification sheets which describes, as applicable, the material requirements, envelope and interface dimensions and any operating characteristics necessary to inspect the item(s) at MERCURY.				
GSQ038	CORROSION CONTROL - COMPATIBILITY OF PROCESS MATERIALS:				
	The Supplier shall insure that processes or materials will not have any deleterious effects on metallic materials or their properties. As an example, chlorinated and sulfonated fluids and solvents shall not be used with titanium and nickel alloys. All flux materials used for soldering operations on printed circuit board assemblies shall be removed to prevent corrosion and / or contamination.				
GSQ039	ADHESIVE BONDING:				
	Structural Adhesive Bonding shall meet the requirements of MSFC-SPEC-445A; with the exception of paragraph 3.1.1.1.:				
	 Surface Preparation: The Supplier shall insure all surfaces to be bonded, coated, or sealed shall be properly prepared and cleaned to defined and proven process methods to assure adequate adhesion of adhesive, thermal control coatings or sealant to the designated surfaces. 				
	 Curing: Processes shall allow for adhesives and coatings to cure at ambient conditions. An accelerated cure for materials is generally not recommended unless previously proven and standardized for a certain material. 				
	 Mix ratio: The Supplier shall document the mix ratio and cure times of all adhesive mixes used on deliverable hardware. 				
GSQ040	RUBBER GOODS:				
	Rubber goods delivered under this Contract shall conform to the requirements set forth in MIL-STD-1523. Non-installed 'O' rings shall be individually packaged in 'cure date' marked, preservation wrapping in accordance with Method IC1 (latest revision) of MIL-P-116 and shall be delivered to MERCURY with a				



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	minimum of fifty percent of useful shelf life remaining.
GSQ041	WORKMANSHIP STANDARDS:
	The Supplier shall document its Workmanship Standards, and they shall be available for review by MERCURY and Mercury's Customer.
GSQ042	GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP) PROCESS:
	Supplier shall implement a process for reviewing and evaluating problems identified in either Government- Industry Data Exchange Program (GIDEP) Alerts or GIDEPs forwarded by MERCURY. Supplier shall ensure that these Alerts do not adversely affect previous, current or future purchases / deliveries, and that

REPAIR HISTORY

Supplier shall provide repair history describing the extent of repairs including any replacement of parts/materials and inspection/testing to restore repaired items to an operable condition. Supplier can use own repair history form. For items repaired by replacement, repair history is not required.

new designs or redesigns and Supplier's supply chain transactions consider relevant GIDEP information.