

Quality System Document

DOC #	4000000	REV	Y
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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	Initial Release	2/21/13	MNM
B	ECO 8476	6/18/13	MNM
C	ECO 8492	7/8/13	MNM
D	ECO 8509	7/31/13	MNM
E	ECO 8685	1/22/14	MNM
F	ECO 8838	7/2/14	MJM
G	ECO 8912	10/6/14	MRA
H	ECO 9056	4/8/15	MJM
J	ECO 9130	6/26/15	SPT
K	ECO 9291	11/09/15	SPT
L	ECO 9296	12/17/15	SPT
M	ECO 9399	5/10/16	MJM
N	ECO 9424	6/16/16	MJM
P	ECO 9506	11/29/16	MJM
R	ECO 9751	3/26/18	MJM
T	ECO 9764	5/3/18	MJM
U	ECO 11014	8/31/20	DE
V	ECO 11556	9/18/23	ACC
W	ECO 11635	01/25/24	LMM
Y	ECO 11649		

TRM Microwave Quality Notes

NOTE: This document is distributed outside the normal TRM Microwave control system. Whenever this document is updated, ensure that it is also updated on the TRM website.

NOTE: This document is an integral part of the contract (purchase order), which calls out the specific Quality Notes. The revision in effect at the time the purchase order was placed applies.

PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF TRM MICROWAVE INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF TRM MICROWAVE INC. IS PROHIBITED.	APPROVALS		<div> <div>Quantic™ TRM</div> <div>280 SOUTH RIVER ROAD, BEDFORD, NH 03110-6822</div> </div>		
	PREPARED BY:	DATE			
	M. Malnati	2/14/2013			
	CHECKED BY:	DATE	TITLE		
	M. May	7/31/13			
	ENGINEERING:	DATE	QUALITY NOTES		
	C. Hebert	2/21/13			
	MANUFACTURING:	DATE	DOCUMENT NUMBER		REV
	M. Minuti	2/21/13			Y
	QUALITY:	DATE	4000000		
	M. Malnati	2/21/13			
	RELEASED BY:	DATE	CUSTOMER	MODEL NUMBER	FSCM #
	M. Minuti	2/21/13	Common	Common	50021

Q Note	Description
AA	Universal Quality Note
AA1	Quality Management System
AA2	Quality Flow Down to Sub-Tier Sellers
AA3	Product & Process Control, Traceability, and Record Retention
AA4	Documentation – Revision and Configuration Control
AA5	Manufacturer's Part Numbers
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AG	RoHS
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AI	Removed
AJ	First Article Inspection (FAI)
AK	Berry Amendment
AL	OEM / OCM requirements
AM	Cadmium and Zinc prohibition
AN	Single Lot Requirement
AO	Export Control
AP	Restriction on Acquisition of Certain Articles Containing Specialty Metals
AQ	Titanium Restriction
AR	Prohibition of Hexavalent Chromium
AS	Restricted Solder Materials
AT	Mercury Restriction
AU	J-STD-001 solder workmanship
AV	Sapa Profiles Extruded Aluminum
AW	Buy America Act-Balance
AX	Calibrated Equipment

AA – Universal Quality Note

All portions of “AA” have continual flow down requirements. In accepting the purchase order from TRM Microwave, the Supplier agrees to meet the terms of AA and agrees to flow them to their sub-tier suppliers.

AA1. Quality Management System

Sellers quality management system shall be certified to a nationally recognized standard and be in compliance with the current revision of AS9100, ISO 9001 or have a TRM Microwave approved Quality Management System.

AA2. Quality Flow Down to Sub-Tier Sellers

The seller’s Quality System shall assure all relevant Purchase Order requirements are flowed down to their sub-tier suppliers. The seller’s sub-tier suppliers are responsible to comply with the same specifications and requirements specified on this Purchase Order.

AA3. Product & Process Control, Traceability, and Record Retention

Seller’s Product, Process Control and Quality Records shall be retained at the seller’s location. The records shall be adequate to provide traceability, including OEM name & lot number, and quality level of production processes. Records will contain date and/or lot codes associated with the purchase order. Quality records shall be provided upon request from TRM Microwave. Records may be destroyed after Seller receives written permission from TRM Microwave.

AA4. Documentation – Revision and Configuration Control

The seller shall assure the drawing revision matches the revision noted on this Purchase Order.

AA5. Manufacturer’s Part Numbers

If an item on this Purchase Order is controlled by a drawing that references a “Suggested Source of Supply” and/or “Manufacturer Part Number”, this shall not to be construed as a guarantee that the suggested seller and/or manufacturer’s part number meets the requirements of the drawing. It is the Sellers responsibility to assure that the “Suggested Source of Supply” and/or “Manufacturer Part Number” meets all drawings required on this Purchase Order.

AA6. No Changes without Approval

Except for first time purchases, items furnished under this Purchase Order shall be identical in form, fit and function to a product previously supplied. The seller shall notify TRM Microwave in writing of any proposed changes including changes in design, materials, parts, fabrication methods or processes, significant changes of personnel, major plant rearrangement, or plant relocation and changes that will impact form, fit and/or function. Prior to fulfilling a TRM purchase order, TRM must approve any/all changes with written notification provided to the seller.

AA7. Nonconforming Material

The seller shall not ship nonconforming material without prior written approval from TRM Microwave. The seller will notify TRM Microwave of any nonconforming materials, the seller will obtain approval from TRM Microwave for nonconforming product disposition.

AA8. Certificate of Conformance

Material supplied on this purchase order shall conform to requirements stated therein, and shall be accompanied by a Certificate of Conformance, which must contain the following information:

1. Sellers name, address, and part number.
2. Country of origin.
3. TRM Microwave purchase order number, line item number.
4. Part number of item (as specified on the purchase order), revision, and quantity.
5. Serial number(s) if applicable.
6. Statement of conformance to all requirements.
7. Authorized agent's signature, title and date.
8. OEM name and lot number

The supplier or distributor shall provide a Certificate of Conformance with each shipment of items delivered to TRM. The certificate shall state that the product meets all of the requirements identified on the TRM Purchase Order.

AA9. Counterfeit Part Detection and Avoidance

Supplier shall practice and comply with the requirements of SAE AS5553 and DFAR 252.246-7007. In cases where the supplier does not have a standard control plan in place, a risk analysis and TRM approved control plan will be required for the product being purchased. Disclosure is required as to whether or not the source of supply is authorized (franchised) to supply parts being quoted, and whether or not they are providing manufacturer's warranty.

AA10. Right of inspection

TRM reserves the right to inspect and test product before, during and after delivery. Buyer may require Seller to repair, replace or reimburse the purchase price of rejected goods. When requested, Seller shall furnish information and assistance necessary for the safe and convenient inspection required by Buyer.

AA11. Material Substitution Prohibition

Unauthorized material substitutions are not permitted. Unauthorized material substitution includes any deviation from the engineering definition of a raw material. Engineering definition includes Buyer design drawing and applicable specifications, product specification, form, size, shape, chemistry, melt method, origin, temper/condition, product testing or surface finish.

AA12. Conflict Minerals

As a supply chain partner supporting our collective End Customer, support compliance to Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”). Support includes awareness of the requirements, and participating in providing evidence when requested. A typical form of providing evidence is populating and submitting a “country of origin inquiry”, such as the EICC/GeSI survey.

“Conflict Minerals” are described as tin, tantalum, tungsten or gold (also referred to as “3TG”) contained in products that are manufactured or contracted to be manufactured.

AA13. Applicable to All Orders at any Tier (required flow downs)

- FAR 52.204-21; Basic Safeguarding of Covered Contractor Information Systems (unless basic off-the-shelf parts).
- 252.203-7002: Requirement to Inform Employees of Whistleblower Rights.
- 52.222-50: Combating Trafficking in Persons.
- 41 CFR 601.4(A), 60-300.5(A) & 60-741.5(A): Prohibitions of discrimination against qualified individuals based on statuses protected in the regulations.
- All suppliers are expected to conduct business according to all applicable local, state and federal laws in an ethical manner.
- All Suppliers shall have an active policy and procedure ensuring their employees are aware of:
 - Their contribution to product or service conformity;
 - Their contribution to product safety;
 - The importance of ethical behavior.

AA14. Prohibition of Pure Tin

Unless otherwise specified by the Procurement Activity, the uses of Pure Tin Plated finishes are strictly prohibited. Any Tin Plating or Tin Solder processes shall contain a minimum of 3 percent lead composition, unless specifically authorized in writing by TRM Microwave. These restrictions apply for all types and levels of procurements, with the supplier responsible for communicating these restrictions to subcontractors or sub-tier suppliers as required

AA15. DFARS 252.204-7012 (as if printed here in full)

Safeguarding Covered Defense Information and Cyber Incident Reporting

NOTE: Applicable to all Orders at any tier unless the Order is solely for commercially available off-the-shelf items.

AB – Special Process Control Requirements

AB1. Special Process Control Requirements

A Special Manufacturing Process is a process where it is not possible to assure, by typical verification techniques, that product integrity is achieved by the process. The Seller shall certify that these processes such as but not limited to plating, painting, soldering, radiography, welding, heat-treating, cleaning, electroplating, anodizing, chemical films, etc. were performed in accordance with specification requirements. The certificate shall identify the products processed, the Procurement Agent’s Purchase Order number, and the applicable specifications (including revision letters or numbers) to which the processes conform and the date and the name of the agency that performed the process if other than the Seller.

AC – Prohibition of Pure Tin

Removed.

AD – Foreign Object Elimination**AD1. Foreign Object**

The material supplied on this purchase order shall be manufactured in an environment that is free of foreign objects. Material supplied shall be free of foreign objects. The seller's program shall utilize effective FOD prevention practices. The program shall be proportional to the sensitivity of the design of the product(s) to FOD, as well as, to the FOD generating potential of the manufacturing methods.

The seller's program shall include FOD preventive practices in packaging. There shall be no foreign objects received in packaging and packaging containers. Foreign objects can include staples used for closure of unit packaging, foam peanuts used for cushioning and Styrofoam (can break down and particles cling to parts) used for cushioning. In general, no packaging material shall be used that will leave any residue from the packaging material on the parts as a result of packaging or unpacking the product.

The written procedures or policies developed by the seller shall be subject to review upon request by the TRM Microwave.

AE – Electrostatic Discharge Control Program**AE1. Electrostatic Discharge Control**

For electrical and electronic parts, assemblies, and equipment, susceptible to damage from Electrostatic Discharge (ESD), the seller is responsible to establish and implement an ESD Control Program compliant with the latest revision of MIL-STD-1686 and/or JESD625. The seller shall take the necessary precautions to ensure that static susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging and shipping. Packaging shall be marked with an ESD cautionary note or symbol.

AF – Department of Defense Priorities and Allocations (DPAS)

AF1. This is a Rated Order and is certified for National Defense use under the system regulation (DPAS). This notice has been added to communicate that the DPAS rating of this order must flow down throughout the entire procurement chain. See the specific rating on the purchase order. Reference 15 CFR 700. DPAS information can be found at <http://www.bis.doc.gov/dpas/default.htm>

AG – RoHS

AG1. The material supplied on this purchase order shall be compliant with current RoHS requirements. The supplier shall provide a written statement of compliance with each shipment. RoHS information can be found at <http://www.bis.gov.uk/nmo/enforcement>.

AH – REACH

AH1. The material supplied on this purchase order shall be compliant with current REACH requirements. The supplier shall provide a written statement of compliance with each shipment. REACH information can be found at http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm

AI – Conflict Materials

AI1. – Removed

AJ – First Article Inspection (FAI)

AJ1. The seller shall perform a First Article Inspection on TRM Microwave controlled drawings and specifications unless otherwise specified by the Purchase Order. The First Article Inspection (FAI) report shall conform to the requirements of Aerospace Standard AS9102, the revision of this standard at the time of the purchase order applies.

AK – Berry Amendment

AK1. The material supplied on this purchase order shall be compliant with current Berry Amendment requirements. The supplier shall provide a written statement of compliance with each shipment. Berry Amendment information can be found at http://www.acq.osd.mil/dpap/cpic/ic/berry_amendment_faq.html. This Quality Note requires continual flow down, the Supplier agrees to meet the terms and agrees to flow them to their sub-tier suppliers.

AL – OEM / OCM requirements

AL1. Electronic (EEE) parts shall be procured only through Original Equipment Manufacturers (OEMs) / Original Component Manufacturers (OCMs) or their franchised distributors. This Quality Note requires continual flow down, the Supplier agrees to meet the terms and agrees to flow them to their sub-tier suppliers.

AM – Cadmium and Zinc prohibition

AM1. The use of cadmium or zinc is prohibited. All cadmium alloys or zinc alloys (e.g., brass) may be completely over plated with an approved metal when approved in advance in writing by TRM Microwave.

AN – Single Lot Requirement

AN1. Each individual item number provided against this purchase order must be from a single material lot.

AO – Export Control

AO1. Seller represents that it maintains an effective export/import compliance program in accordance with the ITAR and it is registered with the United States Office of Defense Trade Controls as required by the ITAR.

AP – Restriction on Acquisition of Certain Articles Containing Specialty Metals

AP1. Seller is required to meet the terms described in DFARS 252.225-7009. This DFARS clause incorporates domestic source requirements for certain specialty metals when the end customer will be the US Government. Compliance with the requirements of this clause, at both the prime and subcontractor levels at all tiers, is required.

AQ – Titanium Restriction

AQ1. No products delivered under this purchase order shall contain rolled plate or forged bar titanium sourced from Western Titanium Inc. or Mach 2 Metals at any subtier level. The supplier is to flow down to subtier suppliers the applicable requirements in the purchasing documents, including key characteristics where specified.

Material shipped against this purchase order item shall not contain any marking with the Westinghouse name or logo. Should any specification forming a part of this purchase order item contain a requirement for such marking, the seller shall immediately contact the buyer for appropriate direction.

AR – Prohibition of Hexavalent Chromium

AR1. Products supplied to TRM Microwave must meet the requirements of DFARS clause “252.223-7008 Prohibition of Hexavalent Chromium”. No products delivered under this purchase order shall contain hexavalent chromium in a concentration greater than 0.1 percent by weight in any homogenous material, or requires the removal or reapplication of hexavalent chromium materials during subsequent sustainment phases of the deliverable or construction material.

AS – Restricted Solder Materials

AS1. Lead-free (Pb) alloy bulk solders shall be restricted except as used for die attach. Use of lead-free alloy bulk solder shall require written approval from TRM Microwave and compliance to GEIA-STD-0005-1. Certain tin-silver (Sn96/Ag4) and tin antimony (Sn95/Sb5) solders, which are standard, attach materials used in high-temperature soldering applications for joints and assembly shall be acceptable for those applications only.

Tin-lead-antimony solders containing not more than 95.0 percent tin shall be allowed only with the written approval of TRM Microwave. Any changes of bulk solder material, including a change of SnPb solder to SnAg solder, shall require written approval from TRM Microwave.

AT – Mercury Restriction

AT1. The equipment or supplies furnished under this Purchase Order shall contain no metallic mercury or mercury compounds and reasonable steps shall be taken to ensure that said equipment or supplies are not contaminated with mercury or mercury compounds. Should the Technical Data Package require mercury or mercury compounds, notify the buyer.

AU – J-STD-001 Solder Workmanship

AU1. Solder Workmanship. Applicable products shall meet the soldering workmanship requirements contained in the latest issue of ANSI/J-STD-001 Class 3 or IPC-610 Class 3, unless otherwise specified on the PO/Subcontract or drawing/specification. In case of a conflict, ANSI/JSTD-001 Class 3 shall supersede.

AV – Sapa Profiles Extruded Aluminum

AV1. Research procurement records, including those of all suppliers and subtier suppliers, and records of material supplied to TRM Microwave to determine if Sapa Profiles extrusions from an affected plant or work order was used in product supplied to TRM Microwave. Notify TRM Microwave of any potentially impacted product supplied to TRM Microwave. "Sapa Profiles, Inc." was previously "Technical Dynamics Aluminum".

Please refer to GIDEP Document Number AAN-U-15-208A dated 28 September 2015 for additional details.

AW – Buy America Act-Balance

AW1. The buyers Prime Contract contains DFARS 252.225-7001, Buy America Act-Balance of Payments Program. The Supplier shall not deliver any Foreign end product or a component that contains more than 50% of material that was not mined, produced, or manufactured in the United States or a Qualifying Country listed in 252.225-7001, without prior written approval of the Buyer.

AX - Calibrated Equipment

AX1. Calibrate equipment in compliance with ANSI/ NCSL Z540.1-1994 leveraging equipment that is traceable to the SI through NIST or another national measurement institute.

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For electrical and electronic parts, assemblies, and equipment, susceptible to damage from Electrostatic Discharge (ESD), the seller is responsible to establish and implement an ESD Control Program compliant with the latest revision of MIL-STD-1686 and/or JESD625. The seller shall take the necessary precautions to ensure that static susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging and shipping. Packaging shall be marked with an ESD cautionary note or symbol.

AF – Department of Defense Priorities and Allocations (DPAS)

AF1. This is a Rated Order and is certified for National Defense use under the system regulation (DPAS). This notice has been added to communicate that the DPAS rating of this order must flow down throughout the entire procurement chain. See the specific rating on the purchase order. Reference 15 CFR 700. DPAS information can be found at <http://www.bis.doc.gov/dpas/default.htm>

AG – RoHS

AG1. The material supplied on this purchase order shall be compliant with current RoHS requirements. The supplier shall provide a written statement of compliance with each shipment. RoHS information can be found at <http://www.bis.gov.uk/nmo/enforcement>.

AH – REACH

AH1. The material supplied on this purchase order shall be compliant with current REACH requirements. The supplier shall provide a written statement of compliance with each shipment. REACH information can be found at http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm

AI – Conflict Materials

AI1. – Removed

AJ – First Article Inspection (FAI)

AJ1. The seller shall perform a First Article Inspection on TRM Microwave controlled drawings and specifications unless otherwise specified by the Purchase Order. The First Article Inspection (FAI) report shall conform to the requirements of Aerospace Standard AS9102, the revision of this standard at the time of the purchase order applies.

AK – Berry Amendment

AK1. The material supplied on this purchase order shall be compliant with current Berry Amendment requirements. The supplier shall provide a written statement of compliance with each shipment. Berry Amendment information can be found at http://www.acq.osd.mil/dpap/cpic/ic/berry_amendment_faq.html. This Quality Note requires continual flow down, the Supplier agrees to meet the terms and agrees to flow them to their sub-tier suppliers.

AL – OEM / OCM requirements

AL1. Electronic (EEE) parts shall be procured only through Original Equipment Manufacturers (OEMs) / Original Component Manufacturers (OCMs) or their franchised distributors. This Quality Note requires continual flow down, the Supplier agrees to meet the terms and agrees to flow them to their sub-tier suppliers.

AM – Cadmium and Zinc prohibition

AM1. The use of cadmium or zinc is prohibited. All cadmium alloys or zinc alloys (e.g., brass) may be completely over plated with an approved metal when approved in advance in writing by TRM Microwave.

AN – Single Lot Requirement

AN1. Each individual item number provided against this purchase order must be from a single material lot.

AO – Export Control

AO1. Seller represents that it maintains an effective export/import compliance program in accordance with the ITAR and it is registered with the United States Office of Defense Trade Controls as required by the ITAR.

AP – Restriction on Acquisition of Certain Articles Containing Specialty Metals

AP1. Seller is required to meet the terms described in DFARS 252.225-7009. This DFARS clause incorporates domestic source requirements for certain specialty metals when the end customer will be the US Government. Compliance with the requirements of this clause, at both the prime and subcontractor levels at all tiers, is required.

AQ – Titanium Restriction

AQ1. No products delivered under this purchase order shall contain rolled plate or forged bar titanium sourced from Western Titanium Inc. or Mach 2 Metals at any subtier level. The supplier is to flow down to subtier suppliers the applicable requirements in the purchasing documents, including key characteristics where specified.

Material shipped against this purchase order item shall not contain any marking with the Westinghouse name or logo. Should any specification forming a part of this purchase order item contain a requirement for such marking, the seller shall immediately contact the buyer for appropriate direction.

AR – Prohibition of Hexavalent Chromium

AR1. Products supplied to TRM Microwave must meet the requirements of DFARS clause “252.223-7008 Prohibition of Hexavalent Chromium”. No products delivered under this purchase order shall contain hexavalent chromium in a concentration greater than 0.1 percent by weight in any homogenous material, or requires the removal or reapplication of hexavalent chromium materials during subsequent sustainment phases of the deliverable or construction material.

AS – Restricted Solder Materials

AS1. Lead-free (Pb) alloy bulk solders shall be restricted except as used for die attach. Use of lead-free alloy bulk solder shall require written approval from TRM Microwave and compliance to GEIA-STD-0005-1. Certain tin-silver (Sn96/Ag4) and tin antimony (Sn95/Sb5) solders, which are standard, attach materials used in high-temperature soldering applications for joints and assembly shall be acceptable for those applications only.

Tin-lead-antimony solders containing not more than 95.0 percent tin shall be allowed only with the written approval of TRM Microwave. Any changes of bulk solder material, including a change of SnPb solder to SnAg solder, shall require written approval from TRM Microwave.

AT – Mercury Restriction

AT1. The equipment or supplies furnished under this Purchase Order shall contain no metallic mercury or mercury compounds and reasonable steps shall be taken to ensure that said equipment or supplies are not contaminated with mercury or mercury compounds. Should the Technical Data Package require mercury or mercury compounds, notify the buyer.

AU – J-STD-001 Solder Workmanship

AU1. Solder Workmanship. Applicable products shall meet the soldering workmanship requirements contained in the latest issue of ANSI/J-STD-001 Class 3 or IPC-610 Class 3, unless otherwise specified on the PO/Subcontract or drawing/specification. In case of a conflict, ANSI/JSTD-001 Class 3 shall supersede.

AV – Sapa Profiles Extruded Aluminum

AV1. Research procurement records, including those of all suppliers and subtier suppliers, and records of material supplied to TRM Microwave to determine if Sapa Profiles extrusions from an affected plant or work order was used in product supplied to TRM Microwave. Notify TRM Microwave of any potentially impacted product supplied to TRM Microwave. "Sapa Profiles, Inc." was previously "Technical Dynamics Aluminum".

Please refer to GIDEP Document Number AAN-U-15-208A dated 28 September 2015 for additional details.

AW – Buy America Act-Balance

AW1. The buyers Prime Contract contains DFARS 252.225-7001, Buy America Act-Balance of Payments Program. The Supplier shall not deliver any Foreign end product or a component that contains more than 50% of material that was not mined, produced, or manufactured in the United States or a Qualifying Country listed in 252.225-7001, without prior written approval of the Buyer.

AX - Calibrated Equipment

AX1. Calibrate equipment in compliance with ANSI/ NCSL Z540.1-1994 leveraging equipment that is traceable to the SI through NIST or another national measurement institute.