DEFENSE LOGISTICS AGENCY
DEFENSE SUPPLY CENTER, COLUMBUS
POST OFFICE BOX 3990
COLUMBUS OH 43218-3990

IN REPLY REFER TO DSCC-VQ (VQE-05-8644/Mr. Werman/614-692-0631/wew)

SUBJECT: Notification of Qualification, MIL-PRF-31032 / MIL-PRF-55110, CAGE Code: 1WQ42

Mr. Terry Lichte
TTM Technologies, Inc.
2630 South Harbor Blvd.
Santa Ana, CA 92704

Dear Mr. Lichte:

Qualification of your products is granted under the current issue of the specification as a result of successful qualification testing to Military Performance Specification MIL-PRF-31032, Printed Circuit Board/Printed Wiring Board, and associated specification MIL-PRF-31032/1 and MIL-PRF-31032/2. The material and classification indicated below shall be listed on Qualified Manufacturers List QML-31032. Additionally, qualification is granted to QPL-55110 per paragraph 6.3.4 of MIL-PRF-31032 and MIL-PRF-55110 Appendix B. The effective date of these qualifications is May 9, 2005.

MANUFACTURER NAME & ADDRESS	BASIC PLANT LOCATION	CAGE CODE: 1WQ42
TTM Technologies, Inc. 2630 South Harbor Blvd. Santa Ana, CA 92704	SAME	CONTACT: Terry Lichte PHONE#: (714) 241-0303 X3127 FAX #: (714) 241-0708 EMAIL: tlichte@ttmtech.com

CAPABILITIES BY TECHNOLOGY / PRINTED BOARD TYPE: MIL-PRF-31032 /1, /2		QUALIFICATION LETTERS:
Base Materials	GF (Woven E-Glass, Epoxy resin)	VQE-05-008644
Max. Panel Size	21” X 28”	
Max. Board Thickness	0.200”	
Max / Min Drilled Thru Hole	0.044” / 0.0135”	
Aspect Ratio	14 : 1	
Aspect Ratio Microvias	1 : 1	
Min. Blind Via	0.005” Laser	
Min. Buried Via	0.0135” Mechanical Drill	
Number of Layers	24	
Min. Conductor Width	0.003”	
Min. Conductor Spacing	0.003”	
Part Mounting	SMT, THM	
Finish Systems	Hot Air Solder Level (HASL), Electroless nickel immersion gold (ENIG), Organic Solderability Preservative (OSP), Immersion Silver (ImmAg)	
Hole Preparation	Desmear, Etchback	
Copper Plating	Acid Copper	
Solder Resist	Liquid Photoimageable (LPI), Dry Film	
Other	Sequential Lamination	

CAPABILITIES BY TECHNOLOGY / PRINTED BOARD TYPE: MIL-PRF-31032 /1, /2		QUALIFICATION LETTERS:
Base Materials	GI (Woven E-Glass, Polyimide resin)	VQE-05-008644
Max. Panel Size	18” X 24”	
Max. Board Thickness	0.200” (for Desmear) 0.105” (for Etchback)	
Max / Min Drilled Thru Hole	0.044” / 0.0135”	
Aspect Ratio Drilled	14 : 1	
Aspect Ratio Microvias	1 : 1	
Min. Blind Via	0.005” Laser	
Min. Buried Via	0.0135” Mechanical Drill	
Number of Layers	24	
Min. Conductor Width	0.003”	
Min. Conductor Spacing	0.003”	
Part Mounting	SMT, THM	
Finish Systems	Hot Air Solder Level (HASL), Electroless nickel immersion gold (ENIG), Organic Solderability Preservative (OSP), Immersion Silver (ImmAg)	
Hole Preparation	Desmear, Etchback	
Copper Plating	Acid Copper	
Solder Resist	Liquid Photoimageable (LPI), Dry Film	
Other	Sequential Lamination	

This qualification is based on your MIL-PRF-31032 certification and is subject to the conditions stated below:

1. A listing on the Qualified Manufacturers List (QML) does not guarantee acceptance of the product(s) in any future purchase.

2. QML listing does not constitute a waiver of any requirements of the specification or of the provisions of any contract.

3. Advertising of qualification information is permitted. Permission to use such information for advertising or publicity purposes is granted provided that such publicity or advertising does not state or imply that the product(s) is the only product of that type qualified or that the Department of Defense in any way recommends or endorses the manufacturer's product.

4. The listing applies only to products produced in the plant(s) specified in this letter of notification of qualification and applies to future amendments or revisions of the specification, unless otherwise notified.

5. The listing applies only to materials and manufacturing construction techniques identical to or covered by that (those) qualified. The qualifying activity must be advised in advance of any change to the materials and manufacturing construction techniques. Failure to notify the qualifying activity of any change to the materials and manufacturing construction techniques is cause for removal from the QML.

Since we are held responsible for the accuracy and currency of this QML, please inform us if your company discontinues production utilizing these materials or processes. If you have any questions, please contact Mr. Bill Werman at bill.werman@dla.mil or (614) 692-0631.

Sincerely,

ROBERT P. EVANS
Chief
Sourcing and Qualification Unit