SECTION I
LIST OF MANUFACTURERS' QUALIFIED CAPABILITIES FOR EACH TECHNOLOGY

MANUFACTURER INFORMATION:		CAGE Code: 1BQS8
Multicircuits Inc.		Phone: 920-385-7537
2301 Universal St, Oshkosh, WI, 54904		Fax:
		EMail: twalker@multicircuits.com

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
Qualification Letters: VQ(VQE-24-038887)
Composition: M - Mixed based material printed boards
Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant; Woven Glass Reinforced, Hydrocarbon Resin with Ceramic Fill
Max. Panel Size: 21" x 24"
Max. Number of Layers: 18
Max. Board Thickness: .177"
Min. Hole Size: .0079" Drilled Plated-Through Hole Before Plating
Aspect Ratio: 9:1 Through-Hole
Min. Conductor Width/Space: .0035"/.003"
Hole Preparation: Permanganate Desmear, Permanganate Etchback, Plasma Desmear, Plasma Etchback
Hole Wall Conductive Coating: Electroless Copper
Copper Plating: Direct Current Plate
Hole Fill/Via Plug: Conductive, Non-Conductive
Solder Resist: Liquid Photoimageable
Finish System: ENIG, Electrolytic Ni / Hard Au, HASL, ImmAg
Additional Fab Capabilities: Blind Vias, Foil Lamination, Sequential Lamination
Controlled Impedance: Differential, Single-Ended

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
Qualification Letters: VQ(VQE-19-033227)
Composition: S - Homogenous thermosetting base material printed boards
Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant
Max. Panel Size: 21" x 24"
Max. Number of Layers: 18
Max. Board Thickness: .177"
Min. Hole Size: .0079" Drilled Plated-Through Hole Before Plating
Aspect Ratio: 9:1 Through-Hole
Min. Conductor Width/Space: .0035"/.003"
Hole Preparation: Permanganate Desmear, Permanganate Etchback, Plasma Desmear, Plasma Etchback
Hole Wall Conductive Coating: Electroless Copper
Copper Plating: Direct Current Plate
Hole Fill/Via Plug: Conductive, Non-Conductive
Solder Resist: Liquid Photoimageable
Finish System: ENIG, Electrolytic Ni / Hard Au, HASL, ImmAg
Additional Fab Capabilities: Blind Vias, Foil Lamination, Sequential Lamination
Controlled Impedance: Differential, Single-Ended

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
Qualification Letters: VQ(VQE-19-033870)
Composition: S - Homogenous thermosetting base material printed boards
Rigid Base Material: GI: Glass Base, Woven, Polyimide Resin, Heat Resistant
Max. Panel Size: 18" x 24"
Max. Number of Layers: 16
Max. Board Thickness: .093"
Min. Hole Size: .01" Drilled Plated-Through Hole Before Plating
Aspect Ratio: 9.3:1 Through-Hole
Min. Conductor Width/Space: .003"/.003"
Hole Preparation: Permanganate Desmear, Permanganate Etchback, Plasma Desmear, Plasma Etchback
Hole Wall Conductive Coating: Electroless Copper
Copper Plating: Direct Current Plate
Hole Fill/Via Plug: Conductive, Non-Conductive
Solder Resist: Liquid Photoimageable
Finish System: ENIG, Electrolytic Ni / Hard Au, HASL, ImmAg
Additional Fab Capabilities: Foil Lamination
Controlled Impedance: Differential, Single-Ended

SECTION I
LIST OF MANUFACTURERS' QUALIFIED CAPABILITIES FOR EACH TECHNOLOGY

MANUFACTURER INFORMATION:	PLANT LOCATION:	CAGE Code: 0EJD7
Murrietta Circuits 5000 E. Landon Drive, Anaheim, CA, 92807 US	Same Address as Manufacturer	Phone: 714-970-2430 Fax: 714-970-2406 EMail:

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
Qualification Letters: VQE-20-034846
Composition: S - Homogenous thermosetting base material printed boards
Rigid Base Material: GI: Glass Base, Woven, Polyimide Resin, Heat Resistant
Max. Panel Size: 18" x 24"
Max. Number of Layers: 18
Max. Board Thickness: .103"
Min. Hole Size: .01" Drilled Plated-Through Hole Before Plating
Aspect Ratio: 9.4:1 Through-Hole
Min. Conductor Width/Space: .0045"/.0045"
Hole Preparation: Plasma Etchback
Hole Wall Conductive Coating: Electroless Copper
Copper Plating: Direct Current Plate
Solder Resist: Liquid Photoimageable
Finish System: ENIG, HASL
Additional Fab Capabilities: Foil Lamination
Controlled Impedance: Differential, Single-Ended

CAPABILITIES BY TECHNOLOGY/ASSOCIATED SPECIFICATION

Specification: MIL-PRF-31032/1, MIL-PRF-31032/2
Qualification Letters: VQE-15-029521, VQE-18-032565,
Composition: S - Homogenous thermosetting base material printed boards
Rigid Base Material: GF: Woven E-Glass, Epoxy Resin, Flame Resistant
Max. Panel Size: 18" x 24"
Max. Number of Layers: 18
Max. Board Thickness: .11"
Min. Hole Size: .011" Drilled Plated-Through Hole Before Plating
Aspect Ratio: 10:1 Through-Hole
Min. Conductor Width/Space: .004"/.004"
Hole Preparation: Permanganate Etchback, Plasma Desmear, Plasma Etchback
Hole Wall Conductive Coating: Electroless Copper
Copper Plating: Direct Current Plate
Hole Fill/Via Plug: Non-Conductive
Solder Resist: Liquid Photoimageable
Finish System: ENIG, HASL, Ni/Pd/Au
Additional Fab Capabilities: Foil Lamination
Controlled Impedance: Single-Ended