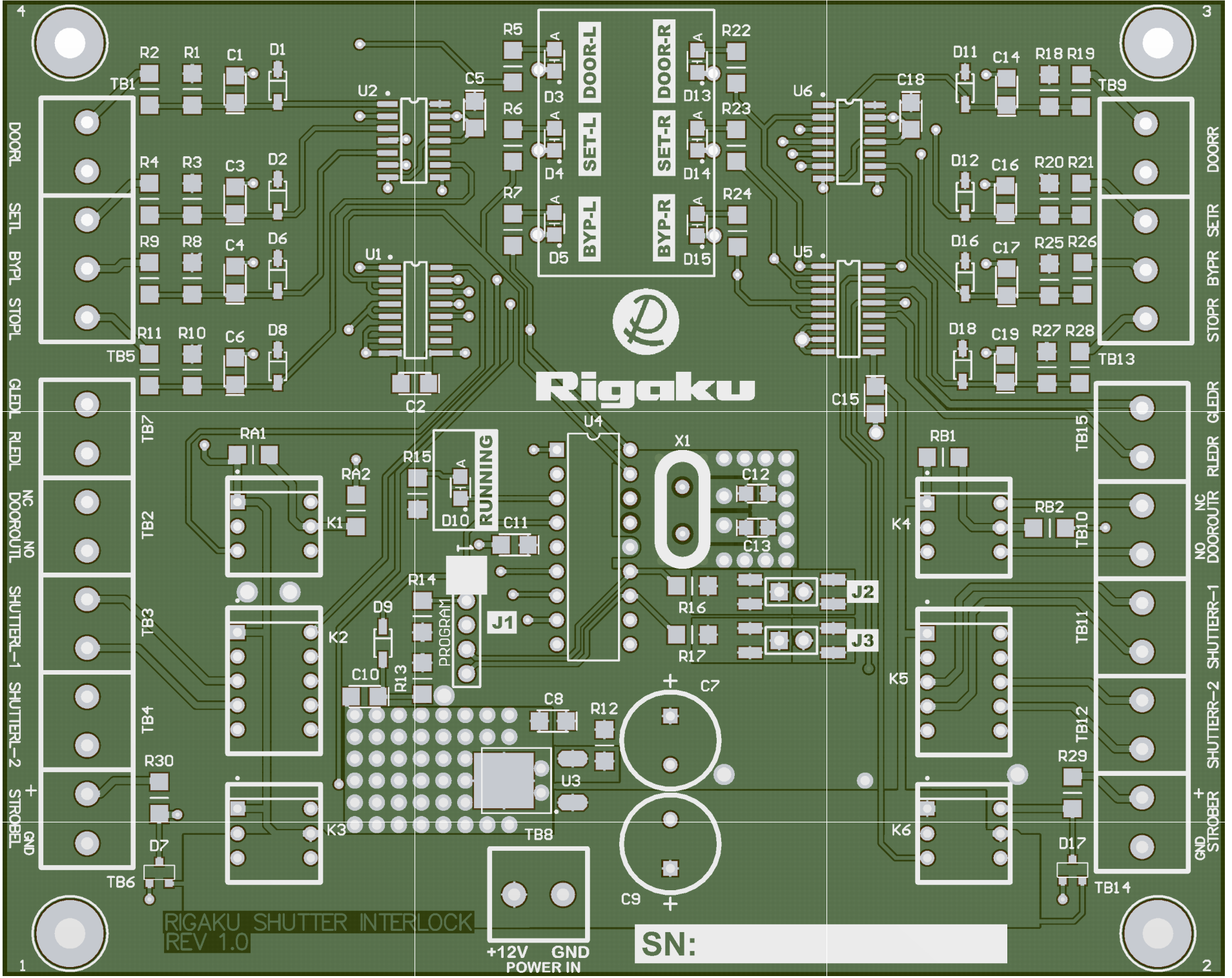
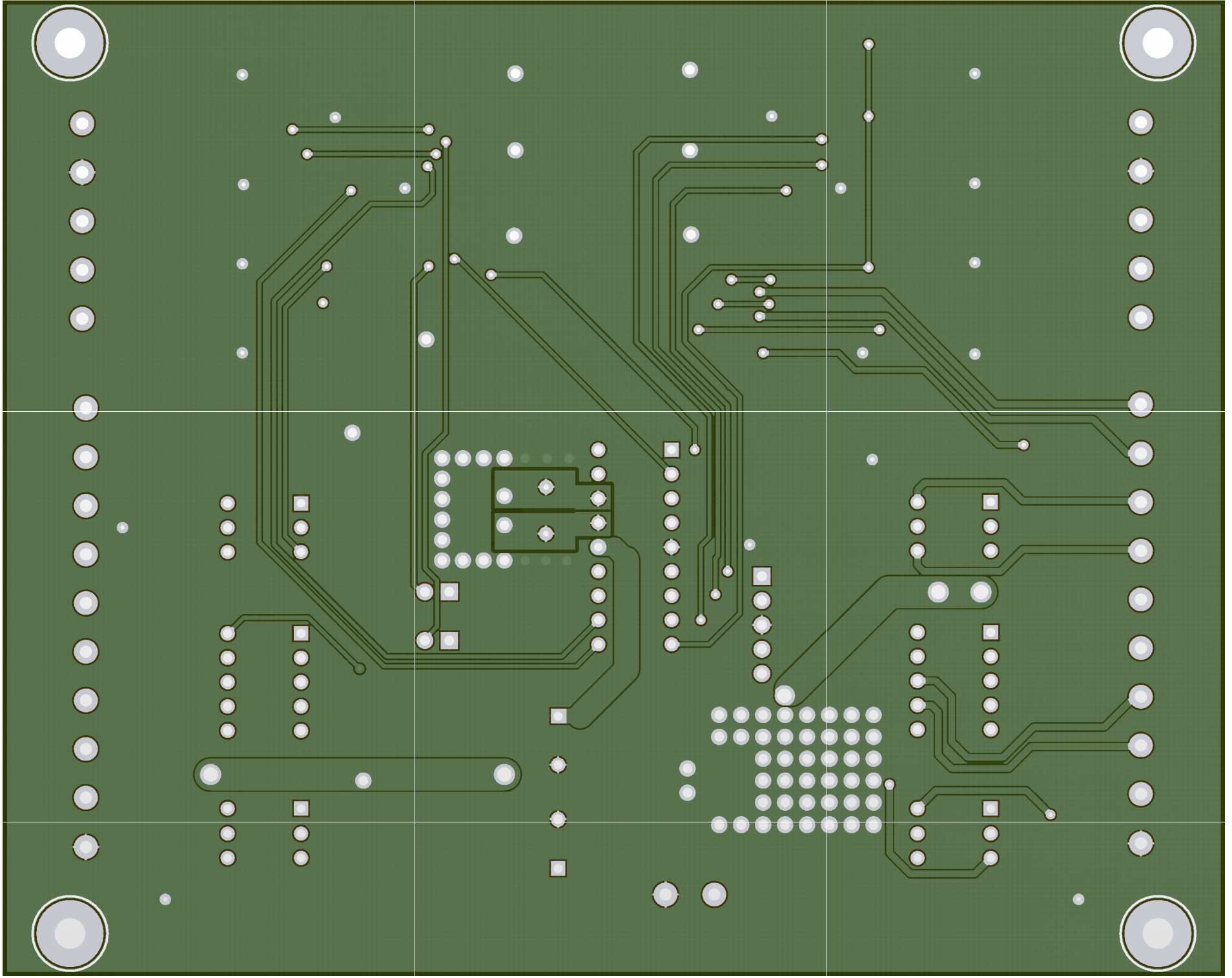

DOORL
SETL
BYPL
STOPL
GLEDL
RLEDL
NC
DOOROUTL
NO
SHUTTERL-1
SHUTTERL-2
+
STROBEL
GND
DOORR
SETR
BYPR
STOPR
GLEDR
RLEDR
NC
DOOROUTR
NO
SHUTTERR-1
SHUTTERR-2
+
STROBER
GND
DOOR-L
SET-L
BYP-L
DOOR-R
SET-R
BYP-R
RUNNING
PROGRAM
Rigaku
RIGAKU SHUTTER INTERLOCK
REV 1.0
+12V GND
POWER IN
SN:



Stackup consists of copper clad cores separated by Prepreg evenly distributed in thickness.

Layer Stack Up Detail for: LETTER 4 - LAYER.PcbDoc

Layer Name	Gerber Document	Copper Thickness	Dielectric Material	Dielectric Type
Top Solder Mask	(.GTS)		Solder Resist	
Top Layer	(.GTL)	2.8mil		
			POLYIMIDE (IPC 4101/41)	PrePreg
Mid-Layer 1	(.G1)	1.4mil		
			POLYIMIDE (IPC 4101/41)	Core
Mid-Layer 2	(.G2)	1.4mil		
			POLYIMIDE (IPC 4101/41)	PrePreg
Bottom Layer	(.GBL)	2.8mil		
Bottom Solder Mask	(.GBS)		Solder Resist	

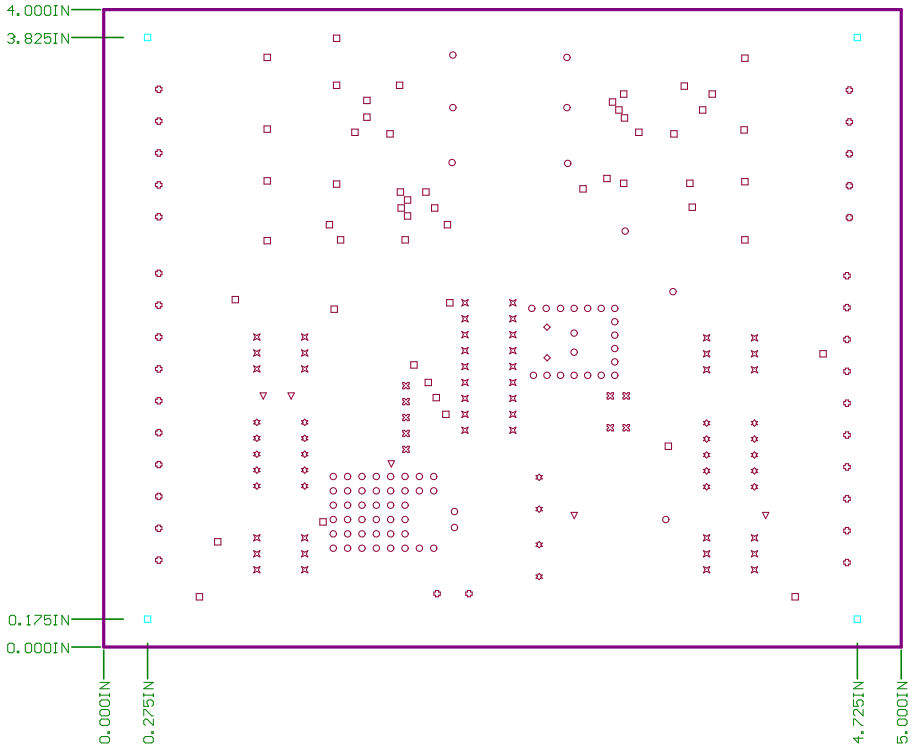
PCB FABRICATION NOTES:

1. MATERIAL: POLYIMIDE WOVEN E-GLASS (IPC 4101/41)
2. COPPER: 2 OZ EXTERNAL, 1 OZ INTERNAL
   Copper foils are all 1 ounce with the outer layers plated up to 2 oz.
3. FINISH PLATING: NI-PD-AU (Nickel-Palladium-Gold) Gold 5-12 u"
   Plating requirements are: Nickel 200-600 u" Palladium 5-12 u"
4. PCB THICKNESS: .062 IN +/- 10%
5. HOLE TOLERANCE: +/- 5 MILS
6. SOLDER MASK COLOR: RED
7. SILKSCREEN COLOR: WHITE
8. INSPECTION STANDARDS: IPC-6012 CLASS 3

COMPONENT COUNT : 106
HOLE COUNT : 244
SLOT HOLE COUNT : 0
SQUARE HOLE COUNT : 0
DIMENSIONS ARE IN INCHES: .XXX = +/-.005
.XX = +/- .01
X DEGREE = +/- 1 DEGREE

FABRICATION FILE EXTENSIONS:

G1, G2, etc	Mid-layer 1, 2, etc
GBL	Bottom Layer
GBO	Bottom Overlay
GBP	Bottom Paste Mask
GBS	Bottom Solder Mask
GD1, GD2, etc	Drill Drawing
GG1, GG2, etc	Drill Guide
GKO	Keep Out Layer **(PCB OUTLINE)**
GM1, GM2, etc	Mechanical Layer 1, 2, etc
GP1, GP2, etc	Internal Plane Layer 1, 2, etc
GPB	Pad Master Bottom
GPT	Pad Master Top
GTL	Top Layer
GTO	Top Overlay
GTP	Top Paste Mask
GTS	Top Solder Mask
P01, P02, etc	Gerber Panels
APR	Aperture File (RS274X)
APT	Aperture File (RS274X not used)
DRR	DRILL REPORT
DRL	DRILL FILE (BINARY)



Symbol	Hit Count	Tool Size	Plated	Hole Type
□	53	18mil (0.4572mm)	PTH	Round
◇	2	25mil (0.635mm)	PTH	Round
⌑	42	35.433mil (0.9mm)	PTH	Round
✡	24	38mil (0.9652mm)	PTH	Round
○	73	40mil (1.016mm)	PTH	Round
⊠	9	42mil (1.0668mm)	PTH	Round
✪	32	51.181mil (1.3mm)	PTH	Round
▽	5	60mil (1.524mm)	PTH	Round
□	4	125.984mil (3.2mm)	PTH	Round
	244 Total			

REV	ECO	PURPOSE	DATE
01	NA	ORIGINAL	MM/DD/YYYY

DESIGNER CONTACT INFORMATION:

CHRIS.BARNES@TERRAVICI.COM
713-975-4220

TITLE: **PCB, FUNCTION**

PCB FAB PART NO: FAB-NUMBER
PCB ASSEMBLY PART NO: PCBA-NUMBER
PCB DESIGNER: Chris Barnes - 3dPCBs.com
ENGINEER: A ABCDEFGHIJKLMNOPQRST

PRINT SIZE: **8.5X11**
FILE NAME: ETS Shutter Interlock.PcbDoc
ALTIUM DESIGNER VERSION: 9.4.0.20159
PRINT: Drill Drawing For (Top Layer,Bottom Layer)
PRINTED: 1/29/2011 6:54:02 AM
REV: 01
PRINT SCALE: SCALE: 1.00

Christopher Barnes
103 Prairie Dawn Cir
The Woodlands, TX 77385

Stackup consists of copper clad cores separated by Prepreg evenly distributed in thickness.

Layer Stack Up Detail for: LETTER 4 - LAYER.PcbDoc

Layer Name	Gerber Document	Copper Thickness	Dielectric Material	Dielectric Type
Top Solder Mask	(.GTS)		Solder Resist	
Top Layer	(.GTL)	2.8mil		
			POLYIMIDE (IPC 4101/41)	PrePreg
Mid-Layer 1	(.G1)	1.4mil		
			POLYIMIDE (IPC 4101/41)	Core
Mid-Layer 2	(.G2)	1.4mil		
			POLYIMIDE (IPC 4101/41)	PrePreg
Bottom Layer	(.GBL)	2.8mil		
Bottom Solder Mask	(.GBS)		Solder Resist	

PCB FABRICATION NOTES:

1. MATERIAL: POLYIMIDE WOVEN E-GLASS (IPC 4101/41)
2. COPPER: 2 OZ EXTERNAL, 1 OZ INTERNAL
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   Plating requirements are: Nickel 200-600 u" Palladium 5-12 u"
4. PCB THICKNESS: .062 IN +/- 10%
5. HOLE TOLERANCE: +/- 5 MILS
6. SOLDER MASK COLOR: RED
7. SILKSCREEN COLOR: WHITE
8. INSPECTION STANDARDS: IPC-6012 CLASS 3

COMPONENT COUNT : 106
HOLE COUNT : 244
SLOT HOLE COUNT : 0
SQUARE HOLE COUNT : 0
DIMENSIONS ARE IN INCHES: .XXX = +/-.005
.XX = +/- .01
X DEGREE = +/- 1 DEGREE

FABRICATION FILE EXTENSIONS:

G1, G2, etc	Mid-layer 1, 2, etc
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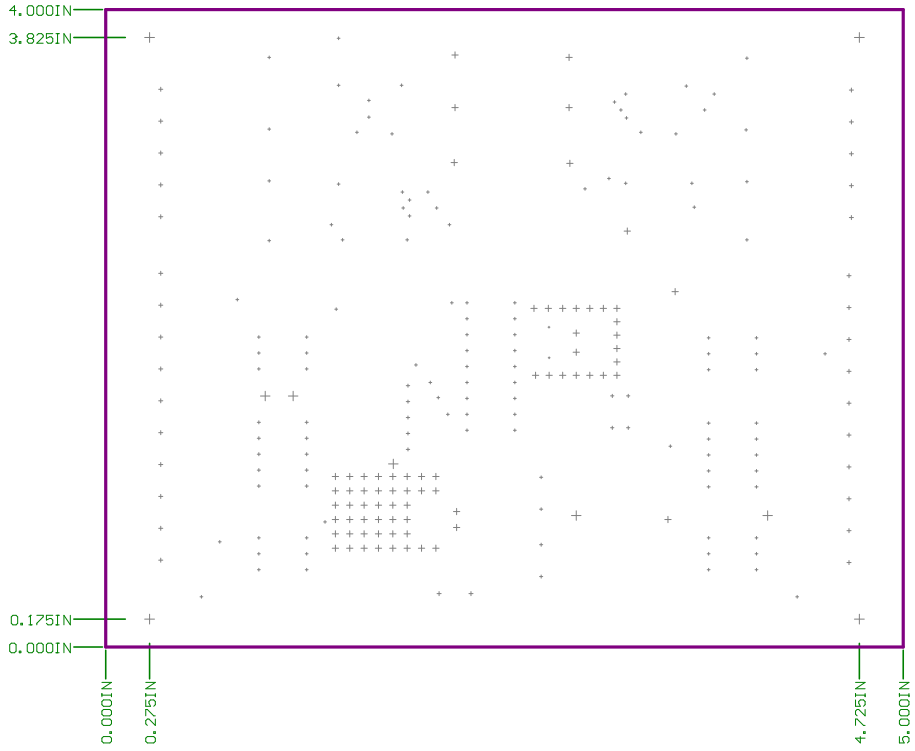
DRL	DRILL FILE (BINARY)



REV	ECO	PURPOSE	DATE
01	NA	ORIGINAL	MM/DD/YYYY

TITLE: **PCB, FUNCTION**

PCB FAB PART NO: FAB-NUMBER
PCB DESIGNER: Chris Barnes - 3dPCBs.com
PCB ASSEMBLY PART NO: PCBA-NUMBER
ENGINEER: A ABCDEFGHIJKLMNOPQRST

PRINT SIZE: **8.5X11**
FILE NAME: ETS Shutter Interlock.PcbDoc
ALTIUM DESIGNER VERSION: 9.4.0.20159
PRINT: Drill Guide For (Top Layer,Bottom Layer)
PRINTED: 1/29/2011 6:54:02 AM
REV: 01
PRINT SCALE: SCALE: 1.00

CONFIDENTIAL

Do not disclose, use, or reproduce without written approval from:

Christopher Barnes
103 Prairie Dawn Cir
The Woodlands, TX 77385

DESIGNER CONTACT INFORMATION:

CHRIS.BARNES@TERRAVICI.COM
713-975-4220

Design Rules Verification Report

Filename : C:\Users\3dPCBs\Documents\ALTIUM\ETS Shutter Interlock\ETS Shutter Interlock.PcbDoc

Warnings 0
Rule Violations 0

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=15mil) (InNet('GND')),(InNet('CLKOUT') OR InNet('CLKIN'))	0
Room LEFT (Bounding Region = (5536.181mil, 3201.5mil, 7708.937mil, 6735mil) (InComponentClass('LEFT'))	0
Room PROCESSOR (Bounding Region = (7045mil, 4129.528mil, 8857.466mil, 5090.472mil)	0
Room RIGHT (Bounding Region = (8186.063mil, 3211.5mil, 10283.819mil, 6730mil) (InComponentClass('RIGHT'))	0
Room POWER (Bounding Region = (7302mil, 2976.181mil, 8350mil, 4100mil) (InComponentClass('POWER'))	0
Room PROGRAM (Bounding Region = (6776mil, 3941.063mil, 7390mil, 4635mil) (InComponentClass('PROGRAM'))	0
Hole Size Constraint (Min=18mil) (Max=300mil) (All)	0
Minimum Annular Ring (Minimum=6mil) (All)	0
Un-Routed Net Constraint ((All))	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Power Plane Connect Rule(Direct Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Width Constraint (Min=6mil) (Max=300mil) (Preferred=10mil) (All)	0
Clearance Constraint (Gap=7mil) (All),(All)	0
Clearance Constraint (Gap=15mil) (All),(OnMid)	0
Total	0