ECN	REV	DESCRIPTION
DCN-105	01	Initial Release, Never Built by SBI
---	02	Updated manufacture notes.Never released
---	03	- Updated manufacture notes and Layer Stack. - Added Dummy Copper (Copper Pour) to Layer 3. - Never Released
DCN-108	04	- Changed VIA annular rings and drill sizes to meet IPC Class 3. - Changed Drill Charts to matched drill files and Note 1D. - Changed the copper pour on the rigid edge layer 4 to match the copper pour on layer 2 - Changed Note 5A Soderability Test - Deleted Note 6 - Added dummy copper on frame top and bottom layer. - Mirror Board part number on bottom layer
DCN-109	05	- Updated Layer stack - Removed Material description from manufacture notes. - Changed text in Material and Finish blocks from "See Notes and Stack-up" to "See Stack-up, Pg. 9".

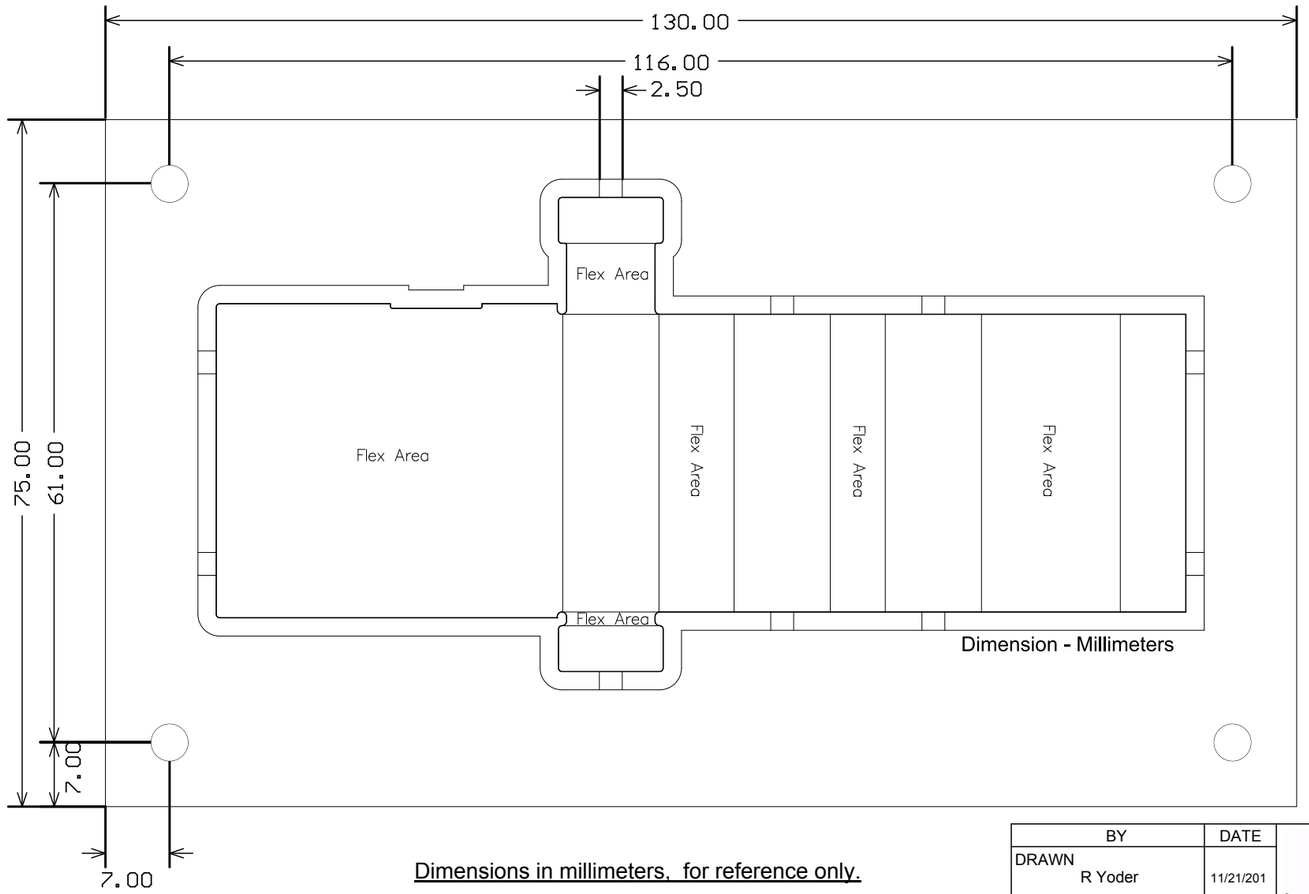
1. Board Technology
A. The Rigid-Flexible PCB shall be fabricated to IPC-6013 Types 1 to 3 and 5, Class 3 and IPC-2223 Types 1 to 3 and 5, Class 3 standards.
B. Maximum overall rigid thickness shall not exceed 450um. This is measured over finished plated surfaces. The maximum overall flexible thickness shall not exceed 120.0um
C. Finished hole size unless noted should be +/- 3 mil (0.076mm)
D. All materials must be compliant with the European Union RoHS 2 directive, 2011/65/EU
E. Finish shall be ENIG
1. Electroless nickel thickness: 3-6um (Refer to IPC-4552)
2 Immersion Gold Thickness: .051-0.127um (refer to IPC-4552)
F. Solder mask shall be LPI, Blue, 15-25um thick, and on both sides.
G. No silkscreen on either side.

2. Certificate of Conformity:
A. Complete description of the item with revision
B. Number of lot and Date Code
C. Delivered quantity
D. RoHS compliance
E. Remark/Exception as concession note
F. Name of the responsible with signature and date

3. Inspection Report:
A. Type of used base material and metallizations processes
1. Brand, reference and lot number of used base material
2. Used metallization and processes (chemical/galvanic) on Cu, Ni and Au
B. Visual checks and results:
1. Aspect (contamination, color, asperities, residues, mark, scraping, repair, etc.)
2. Open, short-circuit, etching non-conformities
3. Metallization adherence according to IPC-TM-650 -- Method 2.4.1
4. Solder mask adherence according to IPC-TM-650 -- Method 2.4.28.1
C. Dimensional checks and results:
1. Length and width of Strip
2. Length, width and total thickness of circuit
3. Diameter of index holes.
D. Electrical Test:
1. Continuity and shorts 100% tested.

4. Micro section report:
A. Configuration of stack-up with measurements of different thicknesses
B. Thickness of Nickel and Gold metallizations on external layer
C. Thickness of Copper metallization
D. Pictures of these micro-sections, general results and approval by responsible

5. Solderability test report:
A. Result of the solderability test according to ANSI/J-STD-003 -- Category 2 Test A -Hand Dipped



Dimensions in millimeters, for reference only.

BY	DATE
DRAWN R Yoder	11/21/201
CHECKED A. Zbrzeski	11/21/201
MATERIAL See Stack-up, Pg. 9	
FINISH See Stack-up, Pg. 9	

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DOCUMENT NAME
NNP Pulse Generator PCB, Unpopulated

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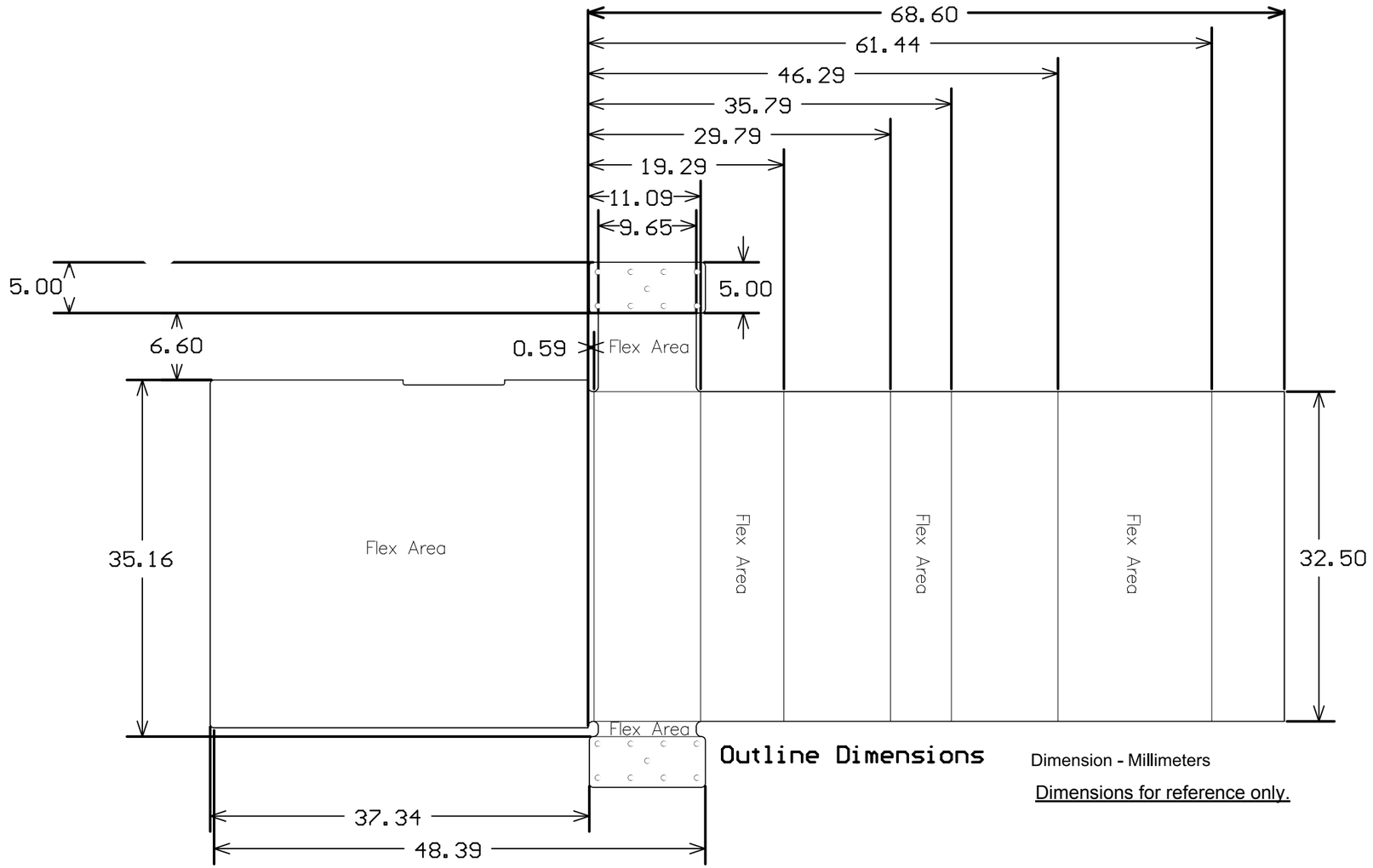

Outline Dimensions

Dimension - Millimeters

Dimensions for reference only.

BY	DATE
DRAWN R Yoder	11/21/201
CHECKED A. Zbrzeski	11/21/201

MATERIAL
See Notes and Stack-up

FINISH
See Notes and Stack-up

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DOCUMENT NAME
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SIZE	DOCUMENT NO.	REV
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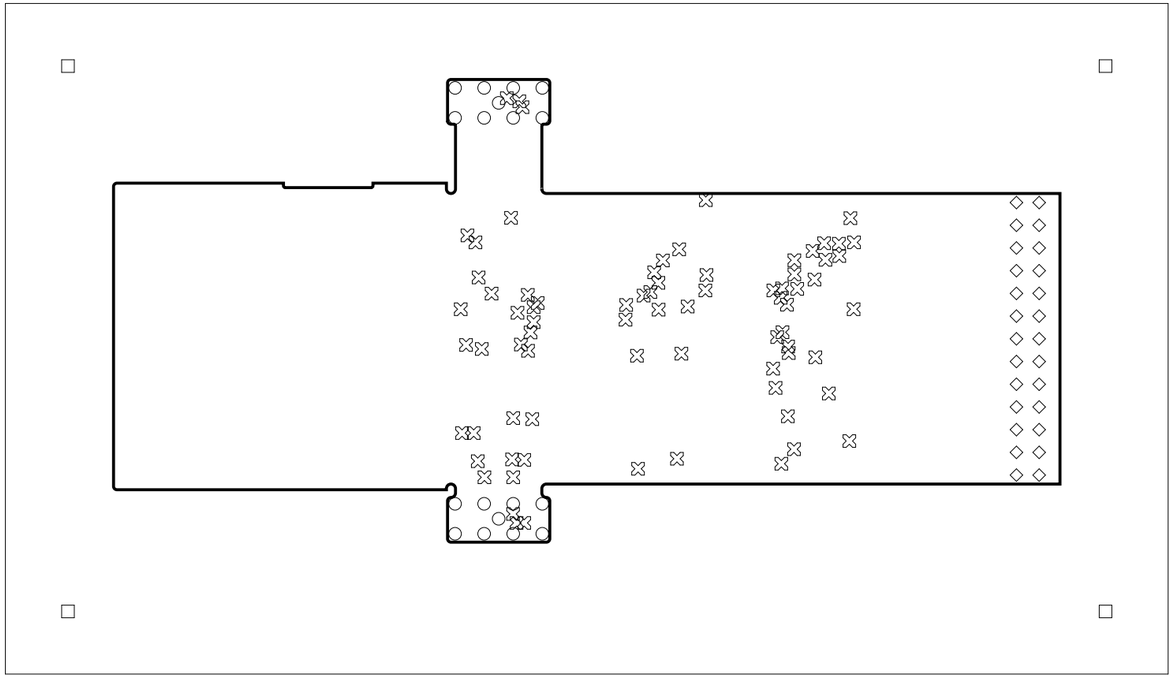
Drill Table Top - Bottom Layer

Symbol	Count	Hole Size	Plated	Drill Layer Pair	Hole Tolerance
□	4	157.9921mil	Non-Plated	Top Layer - Bottom Layer	None
◇	26	36.0000mil	Plated	Top Layer - Bottom Layer	None
○	18	20.0000mil	Plated	Top Layer - Bottom Layer	None
⊠	76	7.9000mil	Plated	Top Layer - Bottom Layer	-7.9000mil
	124 Total				

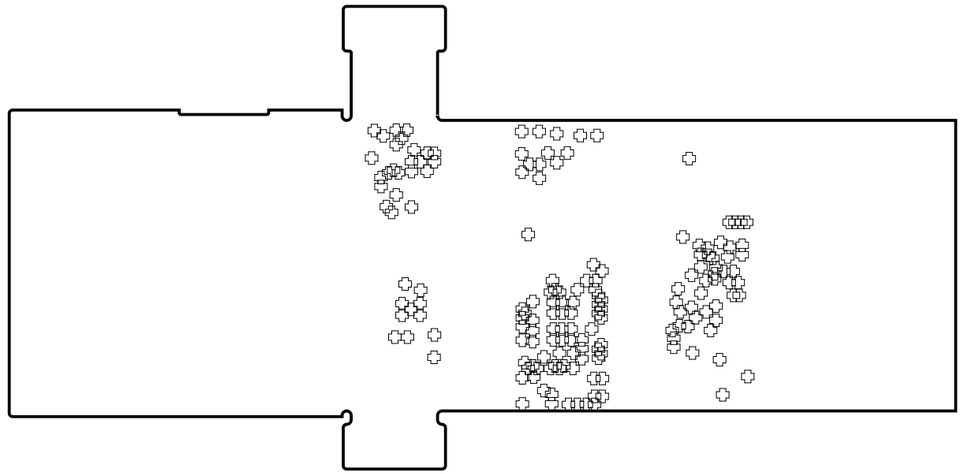


Drill Files

52-2002 Rev4.GD1	Drill Table (Top-Bottom Layer)
52-2002 Rev4.GD2	Drill Table (Top - L2)
52-2002 Rev4.GD3	Drill Table (L2 - L3)
52-2002 Rev4.GG1	Drill Guide1 (Top-Bottom)
52-2002 Rev4.GG2	Drill Guide2 (Top-L2)
52-2002 Rev4.GG3	Drill Guide3 (L2-L3)
52-2002 Rev4.-Plated.TXT	Text Document (Top-Bottom)
52-2002 Rev4-Plated.TX1	TX1 File (Top-L2)
52-2002 Rev4-Plated.TX2	TX2 File (L2-L3)
52-2002 Rev4-NonPlated.TXT	Text Document (Top-Bottom of Frame)
52-2002 Rev4.apr	CAMtastic aperture data
52-2002 Rev4.EXTREP	Extrep File
52-2002 Rev4-macro.APR_LIB	APR File
52-2002 Rev4.LDP	LDP File
52-2002 Rev4.DRR	NC Drill Report File

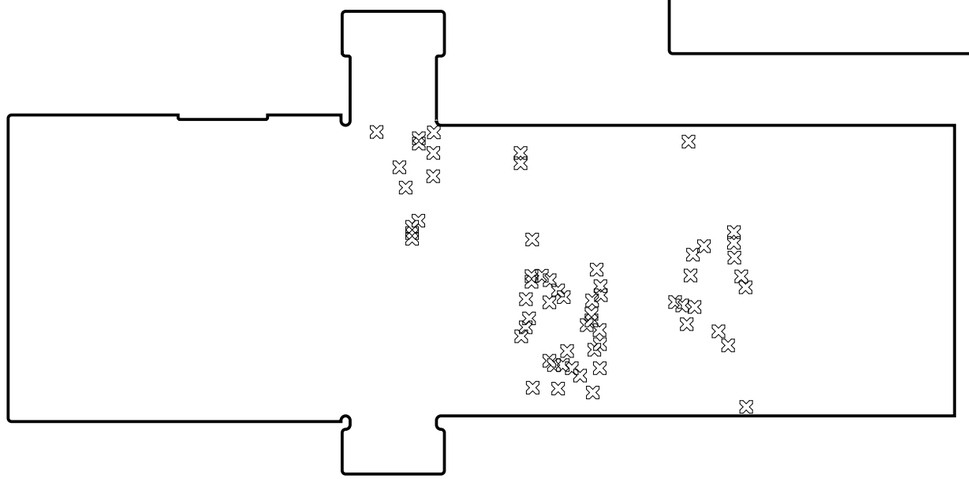
Drill Table Top - L2

Symbol	Count	Hole Size	Plated	Drill Layer Pair	Hole Tolerance
⌖	167	5.9000mil	Plated	Top Layer - L2 Flex GND	-5.9000mil
	167 Total				



Drill Table L2 - L3

Symbol	Count	Hole Size	Plated	Drill Layer Pair	Hole Tolerance
⊠	62	7.9000mil	Plated	L2 Flex GND - L3 Flex Signals	-7.9000mil
	62 Total				



BY	DATE
DRAWN R Yoder	11/21/201
CHECKED A. Zbrzeski	11/21/201
MATERIAL See Notes and Stack-up	
FINISH See Notes and Stack-up	

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NNP Pulse Generator PCB, Unpopulated

SIZE	DOCUMENT NO.	REV
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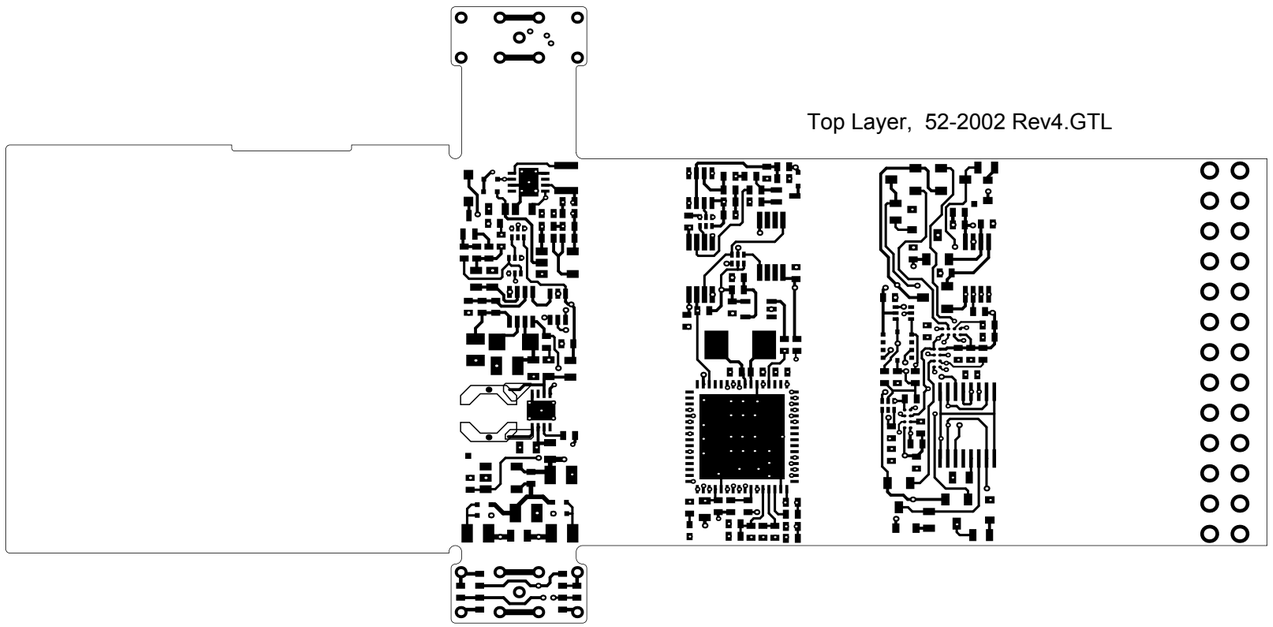
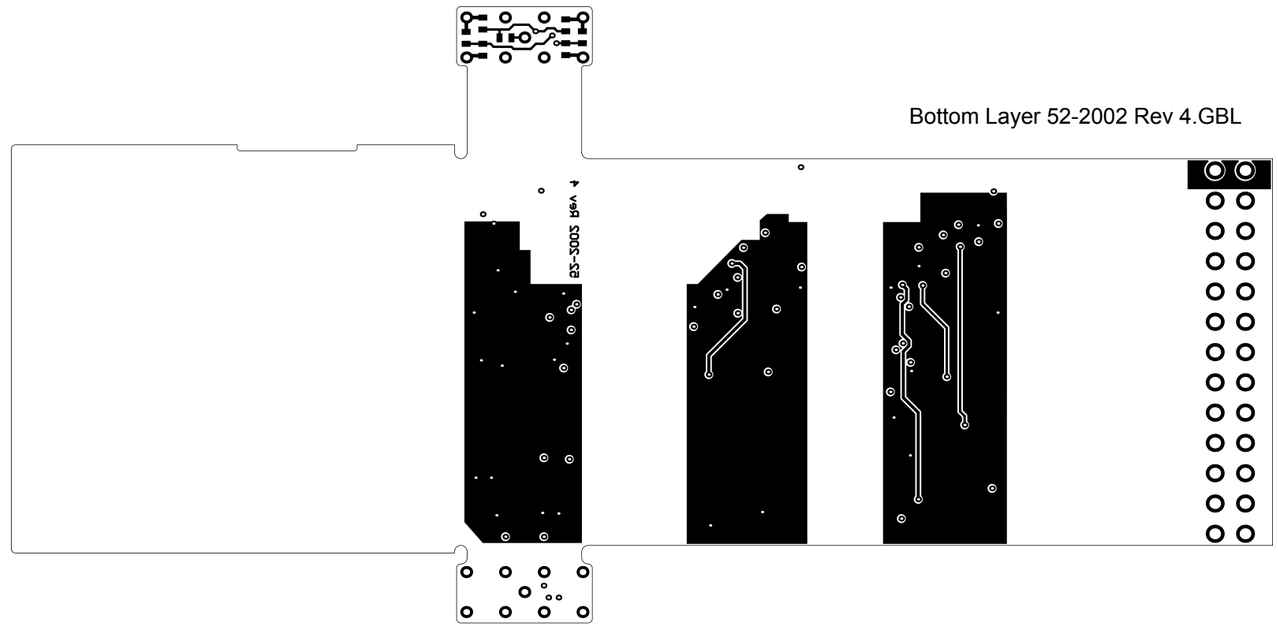
Top Layer, 52-2002 Rev4.GTL



Bottom Layer 52-2002 Rev 4.GBL



BY	DATE
DRAWN R Yoder	11/21/201
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MATERIAL See Notes and Stack-up	
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NNP Pulse Generator
PCB, Unpopulated

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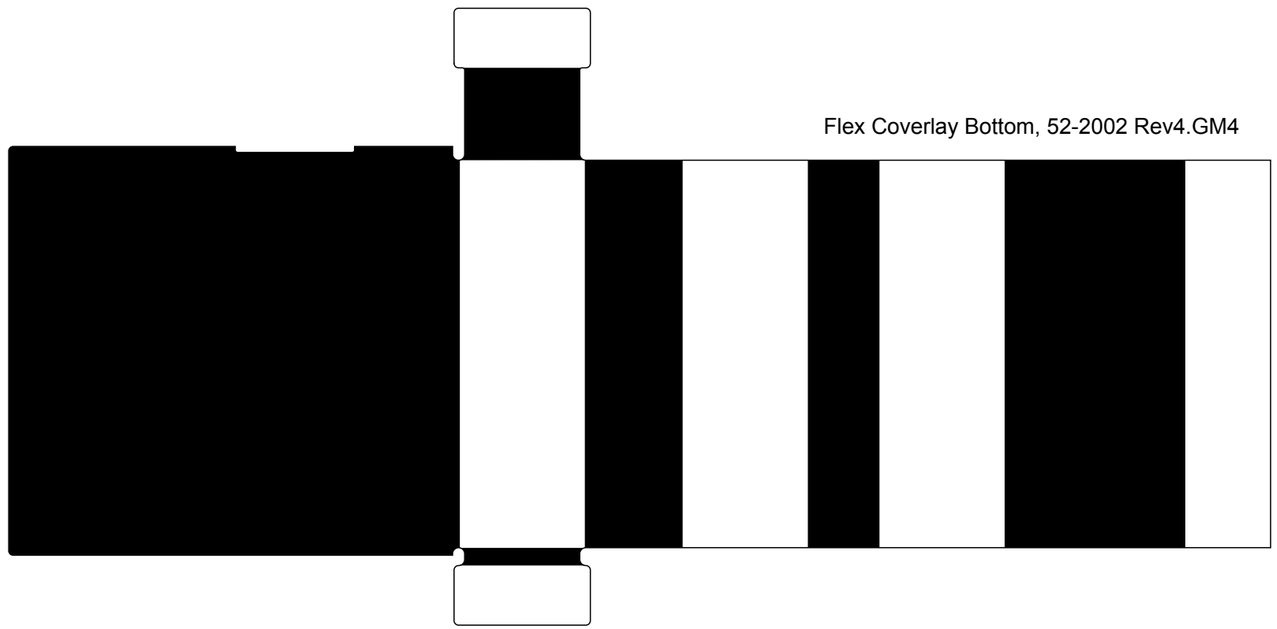
Flex Coverlay Top, 52-2002 Rev4.GM3



Flex Coverlay Bottom, 52-2002 Rev4.GM4

BY	DATE
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CHECKED A. Zbrzeski	11/21/201

MATERIAL
See Notes and Stack-up

FINISH
See Notes and Stack-up

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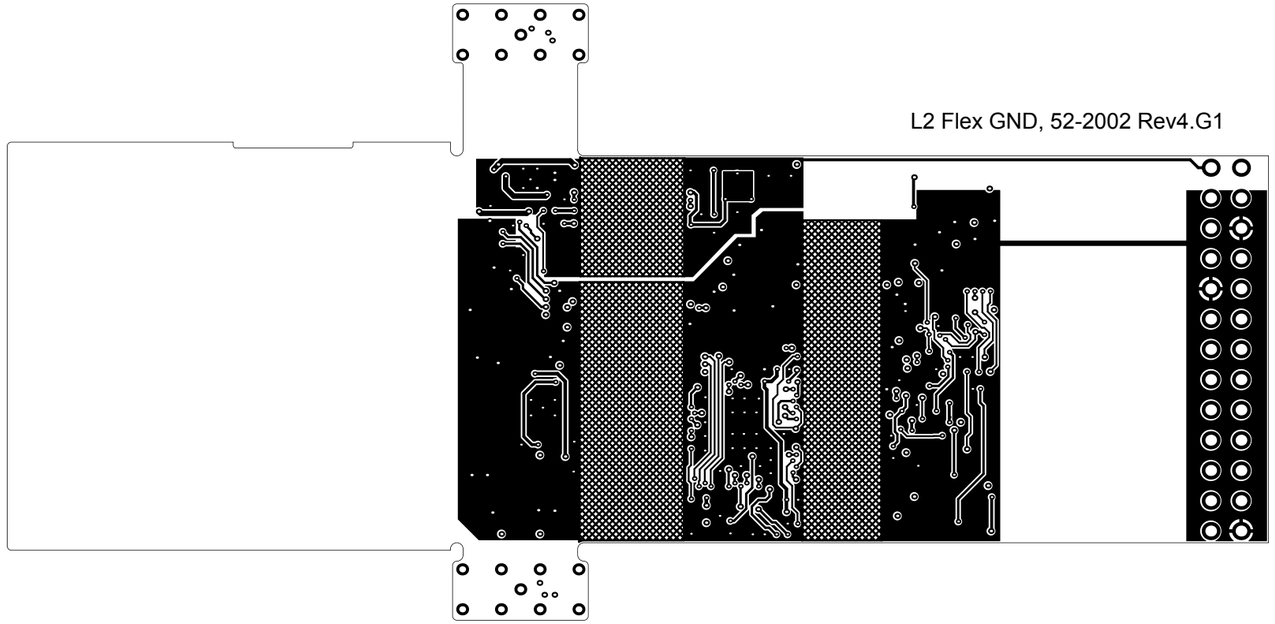
DOCUMENT NAME
NNP Pulse Generator PCB, Unpopulated

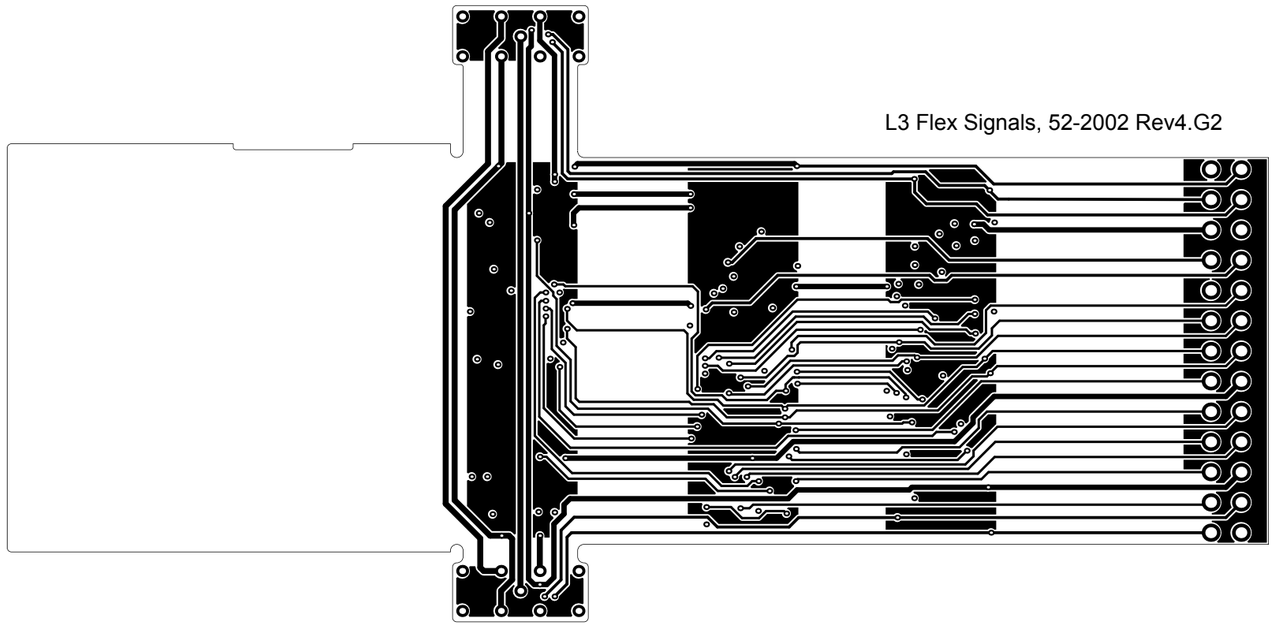
SIZE	DOCUMENT NO.	REV
B	52-2002	05

SCALE: NA | NEXT ASSY 51-2002 | SHEET 5 OF 9

L2 Flex GND, 52-2002 Rev4.G1



L3 Flex Signals, 52-2002 Rev4.G2



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MATERIAL
See Notes and Stack-up

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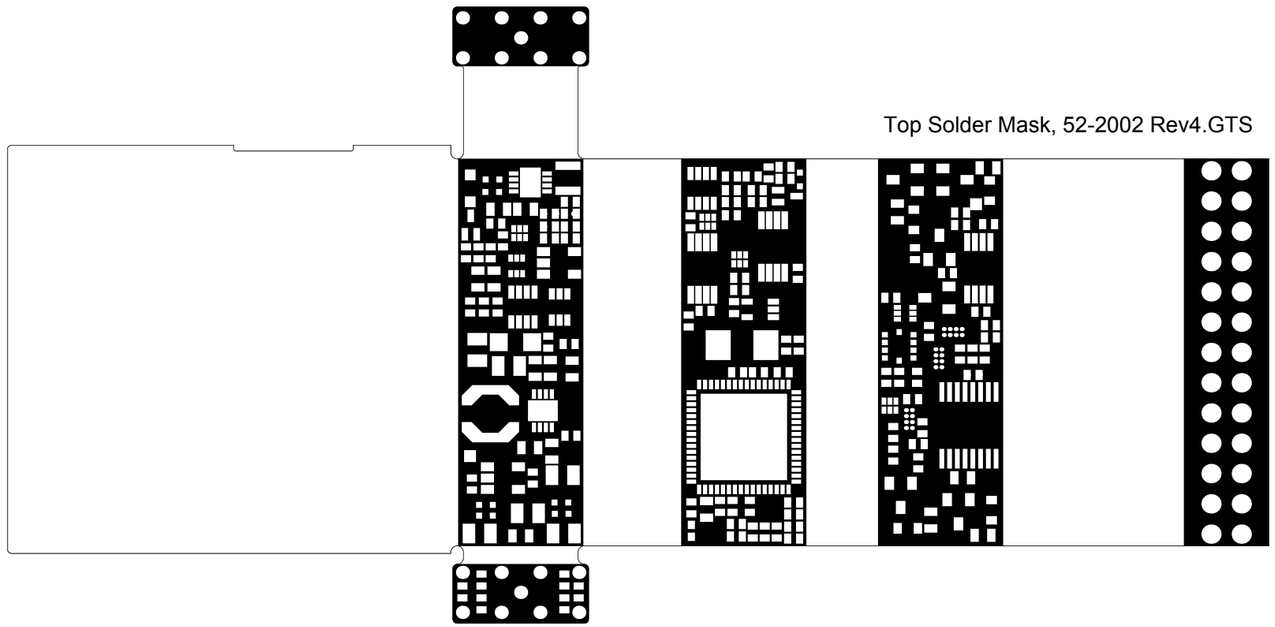
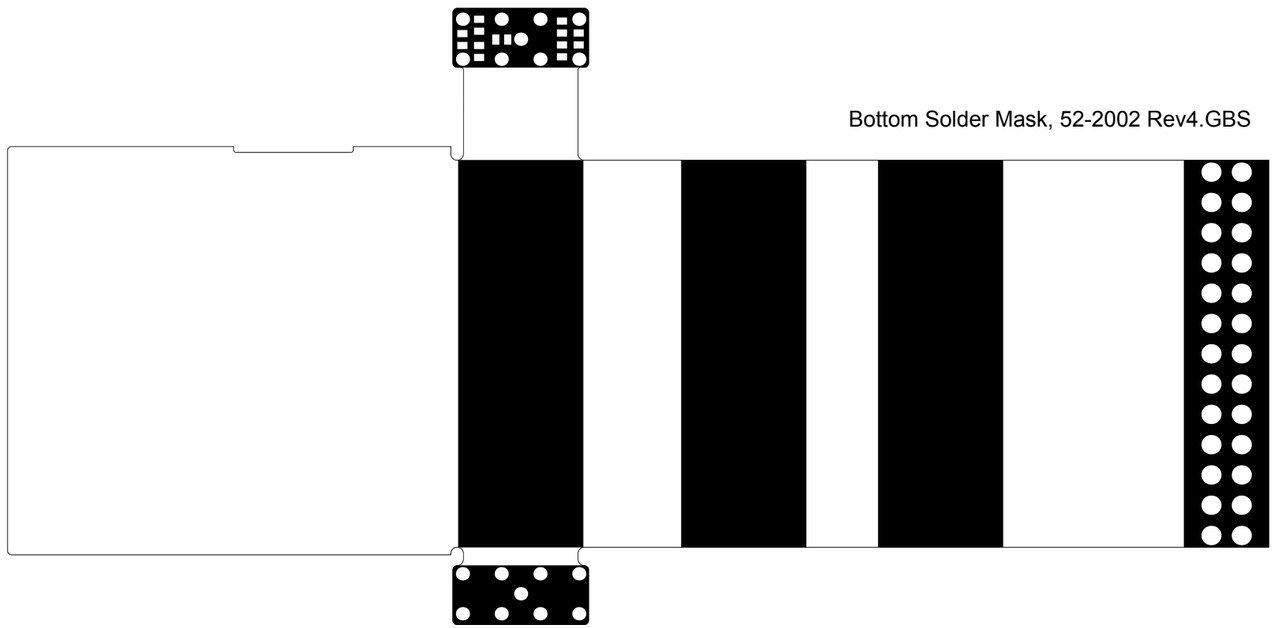


Top Solder Mask, 52-2002 Rev4.GTS



Bottom Solder Mask, 52-2002 Rev4.GBS

BY	DATE
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MATERIAL See Notes and Stack-up	
FINISH See Notes and Stack-up	

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DOCUMENT NAME

NNP Pulse Generator PCB, Unpopulated

SIZE	DOCUMENT NO.	REV
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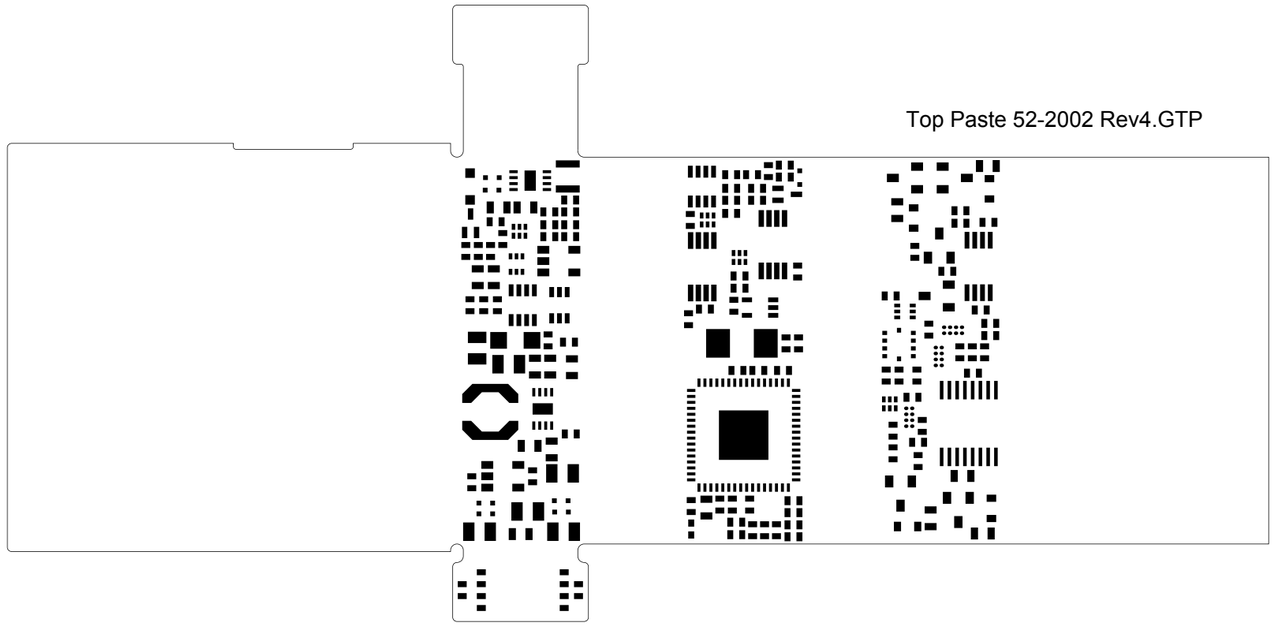
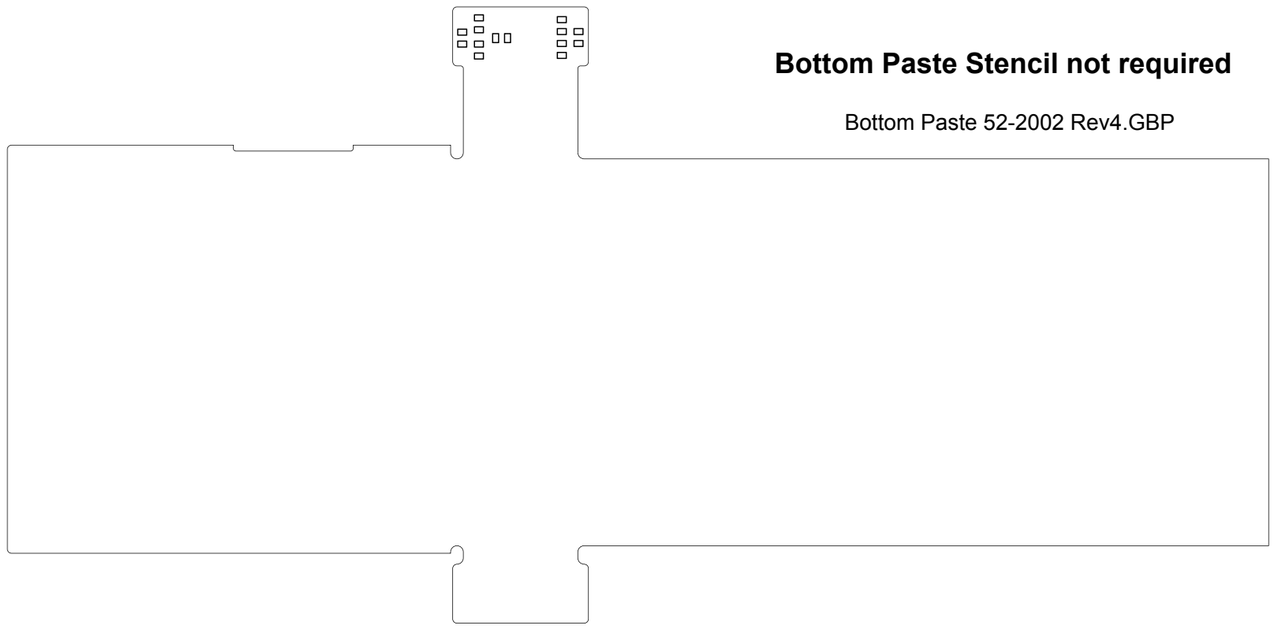


Top Paste 52-2002 Rev4.GTP



Bottom Paste Stencil not required

Bottom Paste 52-2002 Rev4.GBP

BY	DATE
DRAWN R Yoder	11/21/201
CHECKED A. Zbrzeski	11/21/201
MATERIAL See Notes and Stack-up	
FINISH See Notes and Stack-up	

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NNP Pulse Generator PCB, Unpopulated

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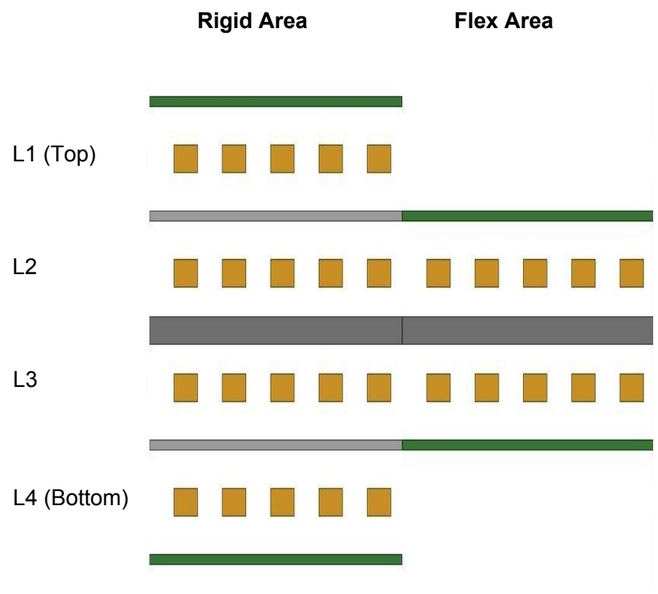
SCALE: NA | NEXT ASSY 51-2002 | SHEET 8 OF 9



Rigid Area	Flex Area
Layer 1, 0.7mil Cu base (0.5 oz), Copper	
Dielectric, 2.0mil, VT-47 FR4 .002 H/0	
Dielectric, 1.9mil, Prepreg 106 FR406 N.F.	Flex Coverlay Top, LF-7001, GM3
Layer 2, 0.7mil (0.5 oz), Copper, G1	Layer 2, 0.7mil (0.5 oz), Copper, G1
Dielectric (Core), 1.0mil, Polyimide AP-8515R	Dielectric (Core), 1.0mil, Polyimide AP-8515R
Layer 3, 0.7mil (0.5 oz), Copper, G2	Layer 3, 0.7mil (0.5 oz), Copper, G2
Dielectric, 1.9mil, Prepreg 106 FR406 N.F.	Flex Coverlay Bottom, LF-7001, GM4
Dielectric, 2.0mil, VT-47 FR4 .002 H/0	
Layer 4, 0.7mil Cu base (0.5 oz), Copper	

BY	DATE
DRAWN R Yoder	11/21/201
CHECKED A. Zbrzeski	11/21/201

MATERIAL
See Notes and Stack-up

FINISH
See Notes and Stack-up

SYNAPSE Biomedical Inc.

DOCUMENT NAME
NNP Pulse Generator PCB, Unpopulated

SIZE	DOCUMENT NO.	REV
B	52-2002	05

SCALE: NA | NEXT ASSY 51-2002 | SHEET 9 OF 9