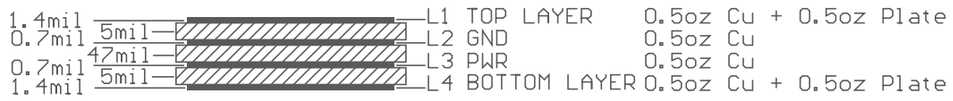
Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane

* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:23 PM

Board Thickness: 1.6mm 4 Layers FR4

Top Layer

Mechanical 1

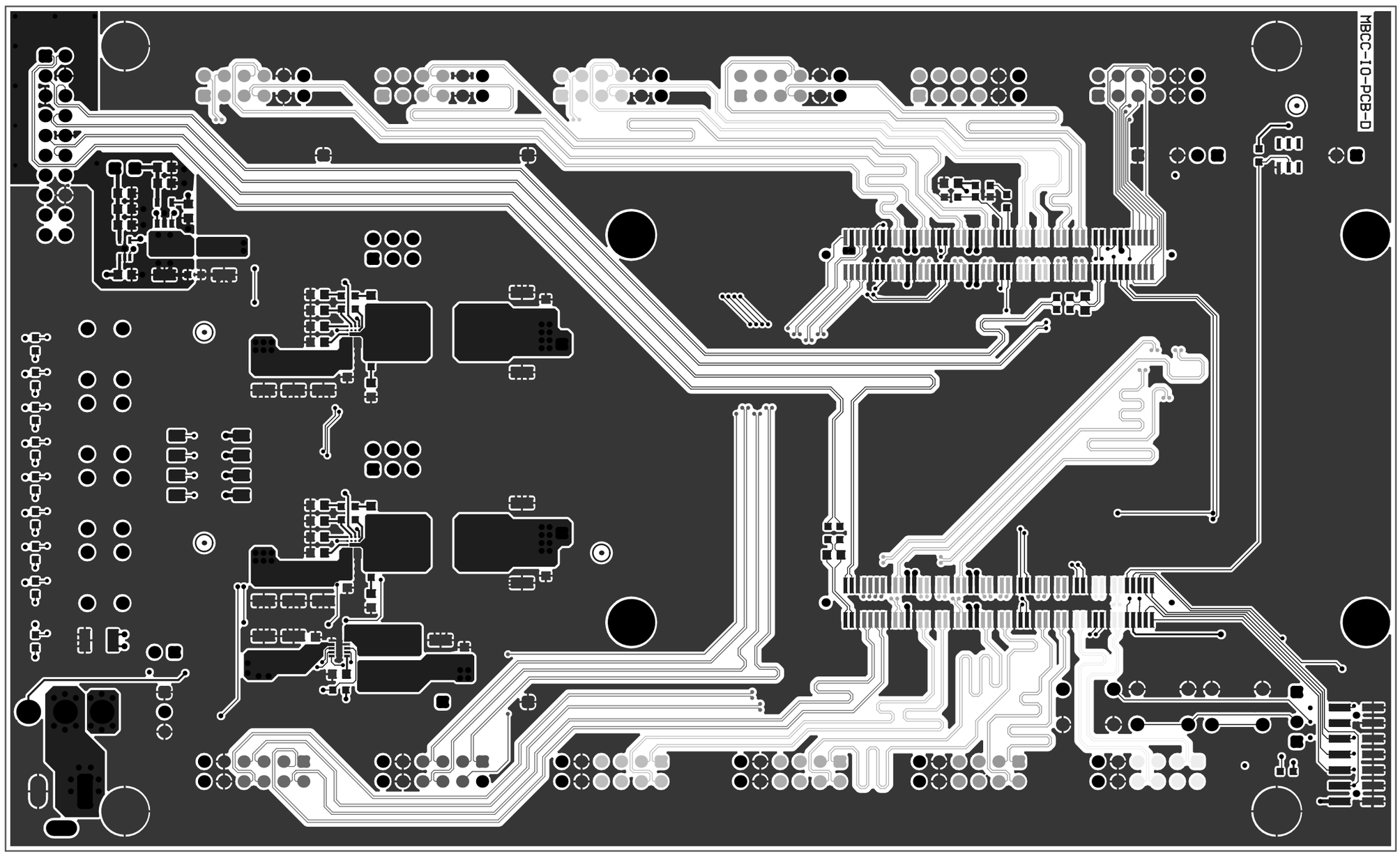
Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012

Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94OV-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)

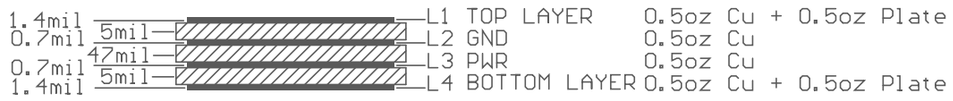
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)

Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel

This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

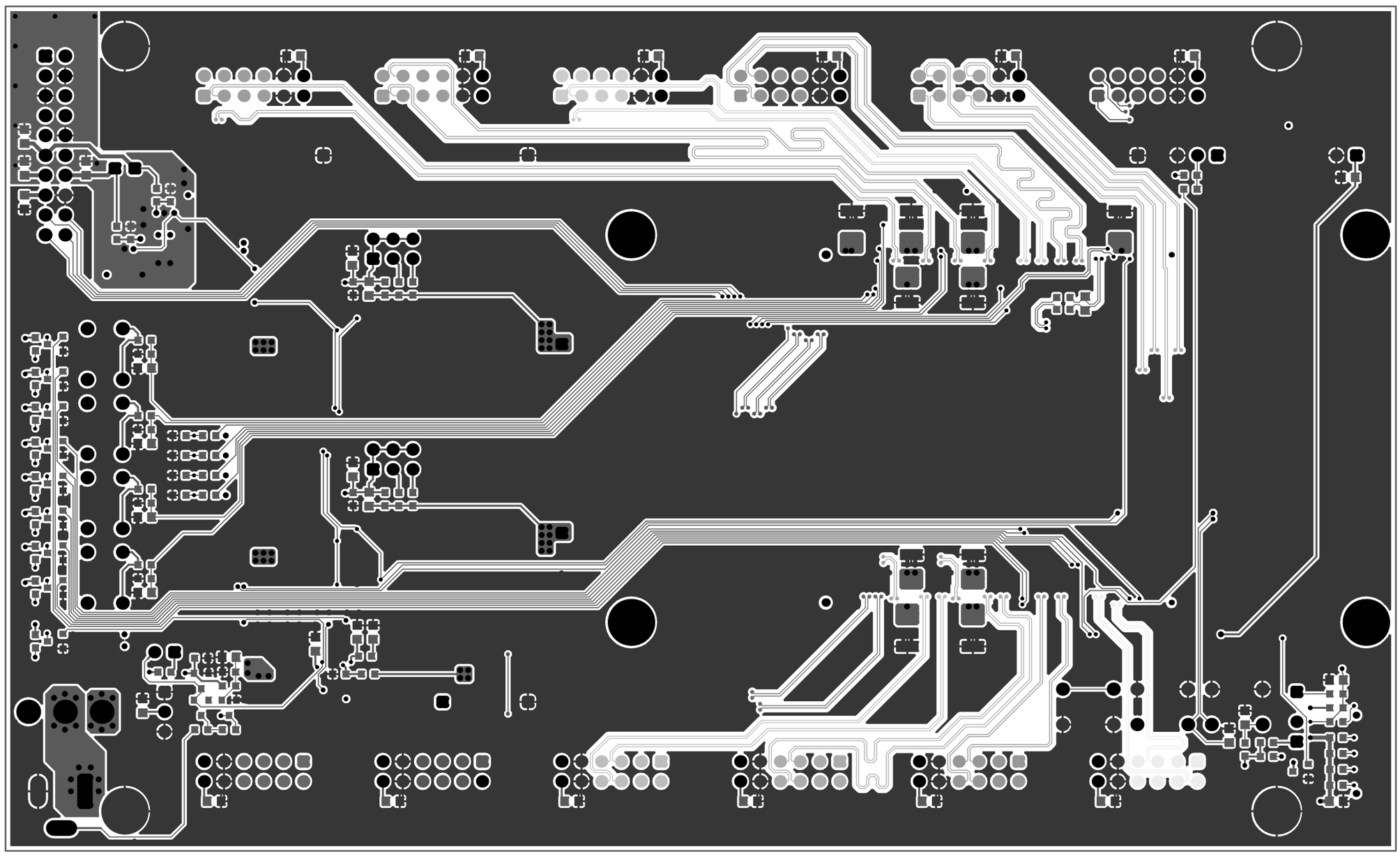
Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane
* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D AES-MBCC-IO-Rev.D
Ref Sch: V D 10/23/2013 1:35:25 PM
Board Thickness: 1.6mm 4 Layers FR4

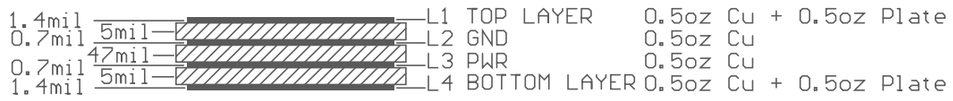
Bottom Layer

Mechanical 1

Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012
Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94OV-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)
Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel
This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane
* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

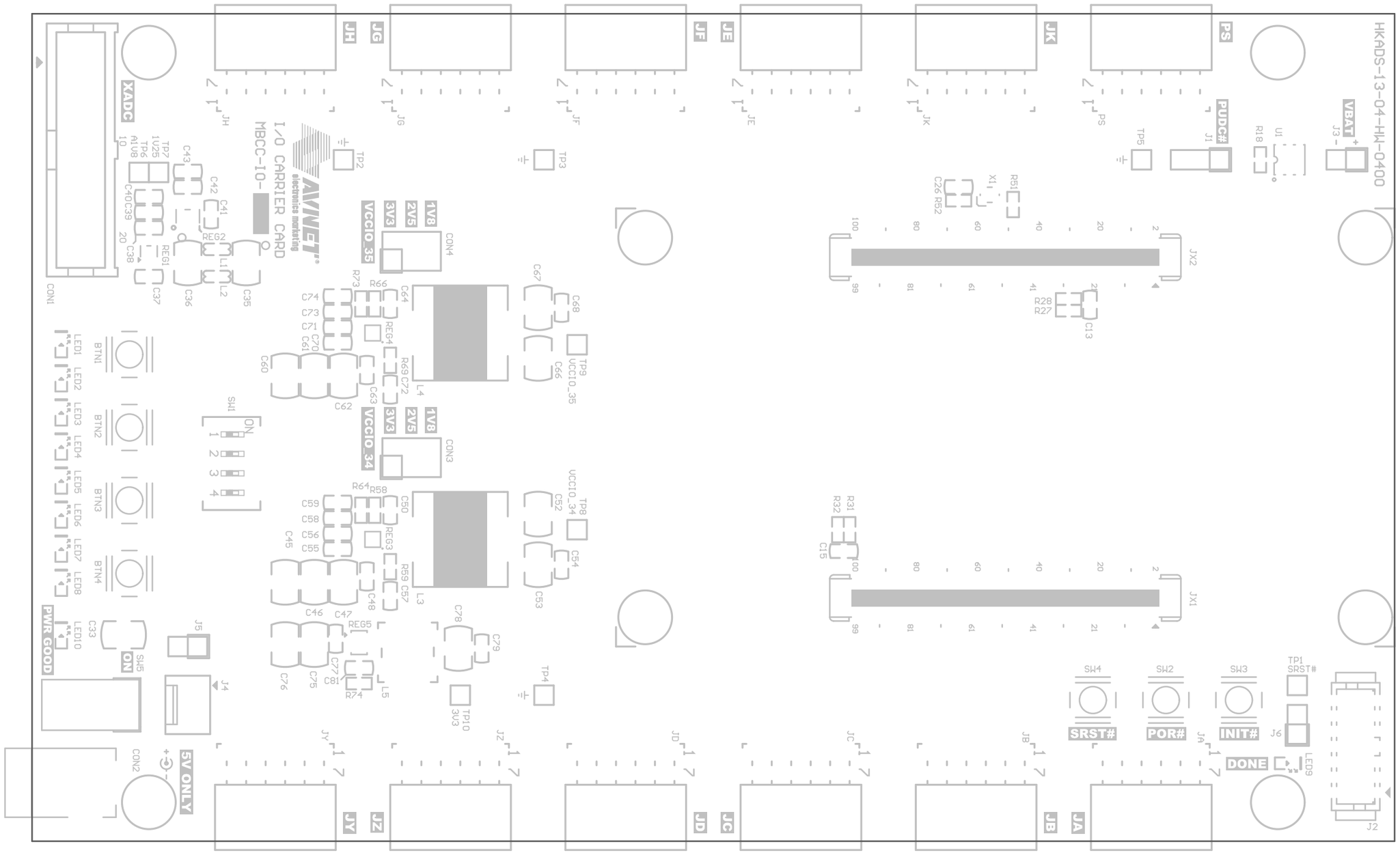
MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:28 PM

Board Thickness: 1.6mm 4 Layers FR4

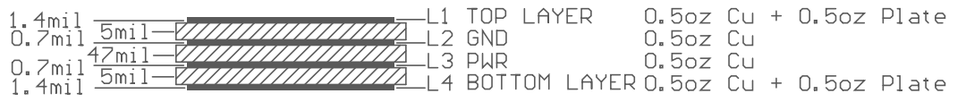
Top Overlay

Mechanical 1

Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012
Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)
Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel
This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane

* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:28 PM

Board Thickness: 1.6mm 4 Layers FR4

Mechanical 1 Bottom Overlay

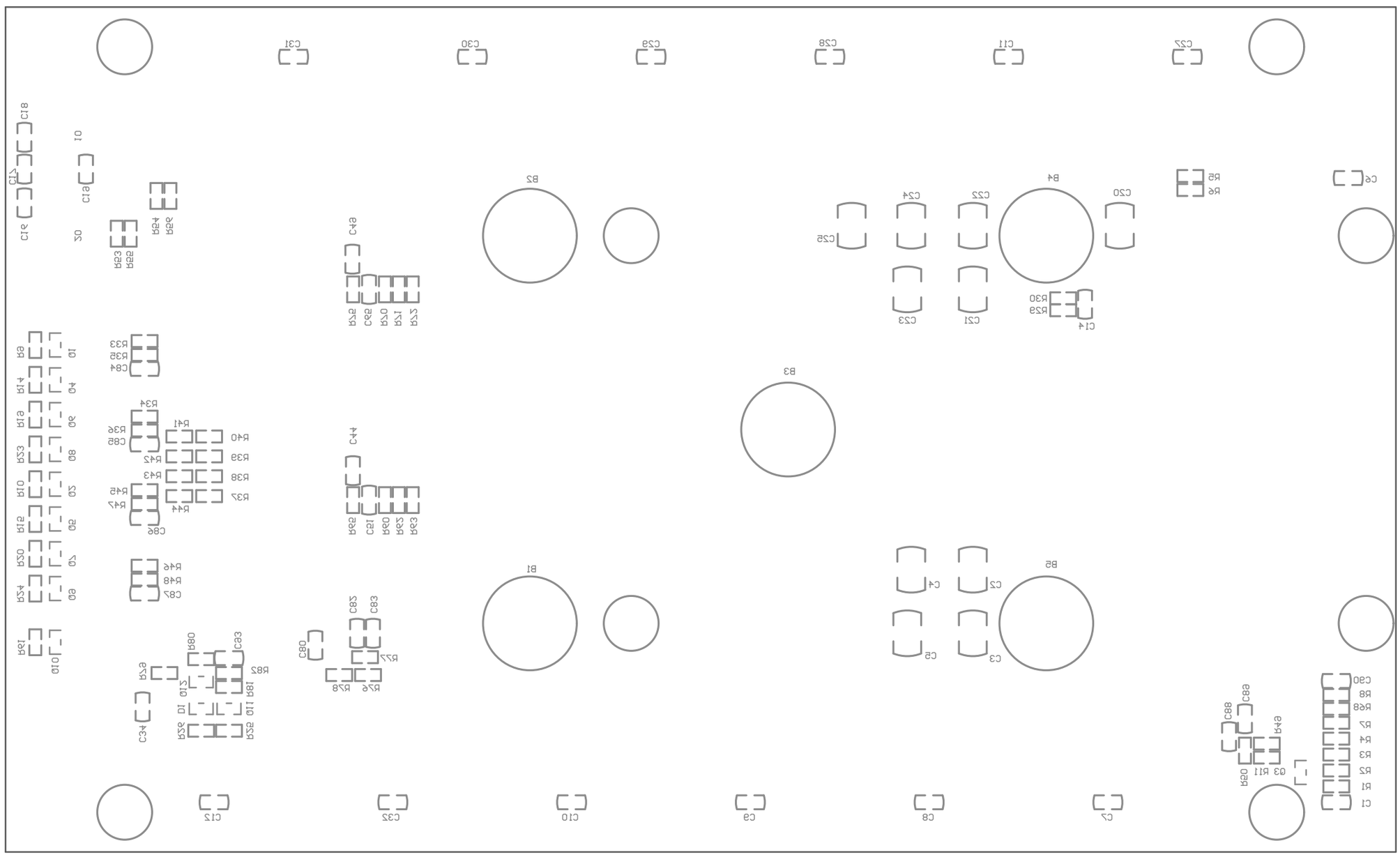
Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012

Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)

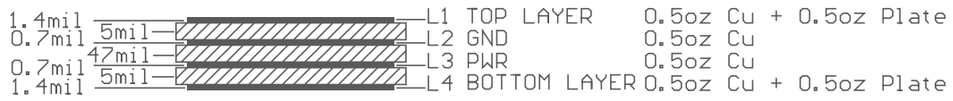
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)

Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel

This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane
* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

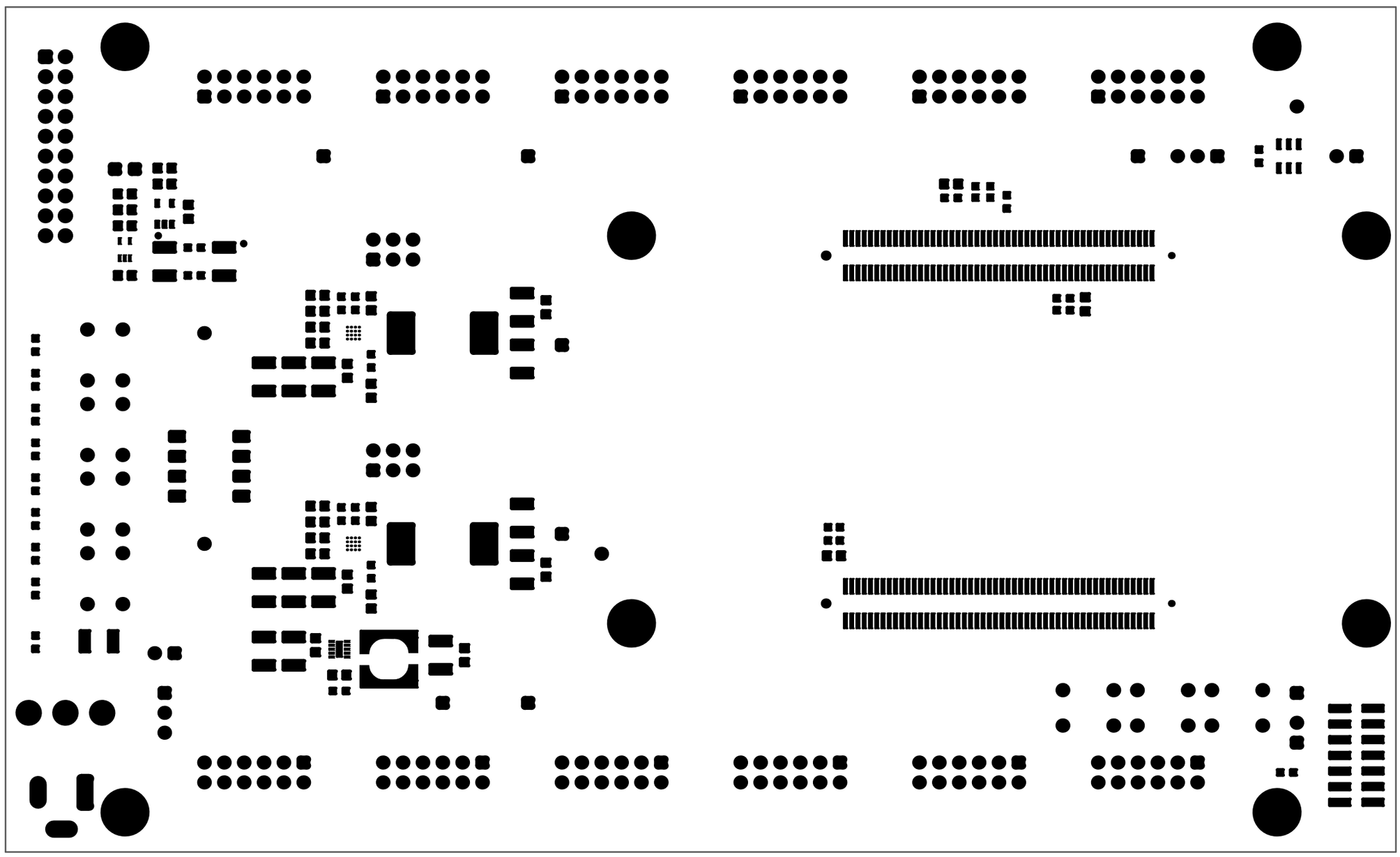
MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:31 PM

Board Thickness: 1.6mm 4 Layers FR4

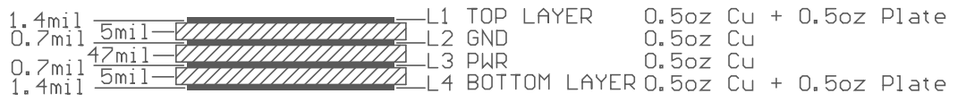
Top Solder

Mechanical 1

Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012
Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-0,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)
Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel
This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

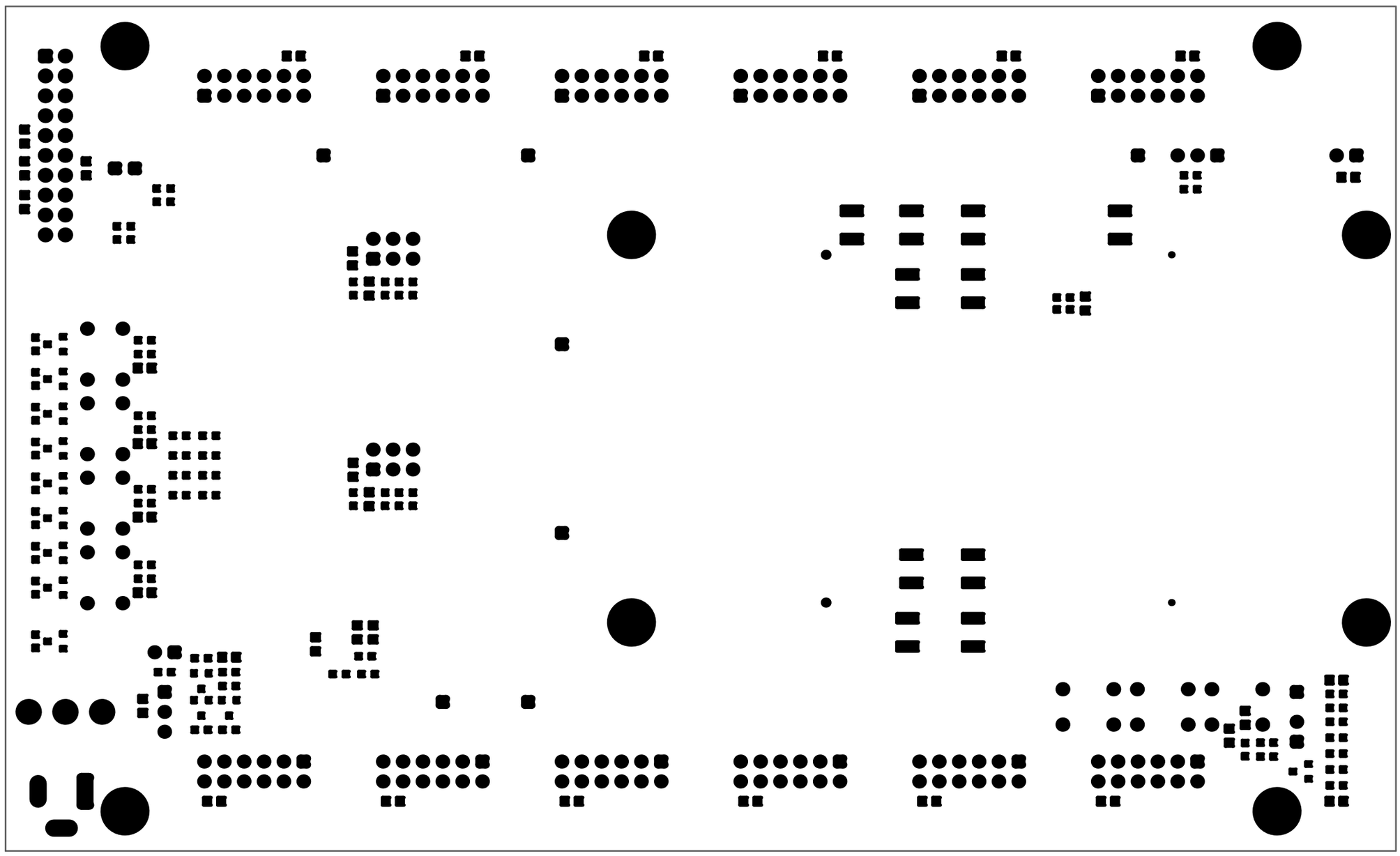
Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane
* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D AES-MBCC-IO-Rev.D
Ref Sch: V D 10/23/2013 1:35:31 PM
Board Thickness: 1.6mm 4 Layers FR4

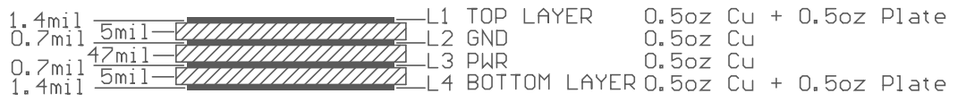
Bottom Solder

Mechanical 1

Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012
Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-0,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)
Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel
This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane

* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:32 PM

Board Thickness: 1.6mm 4 Layers FR4

Top Overlay

Mechanical 1
Mechanical 2

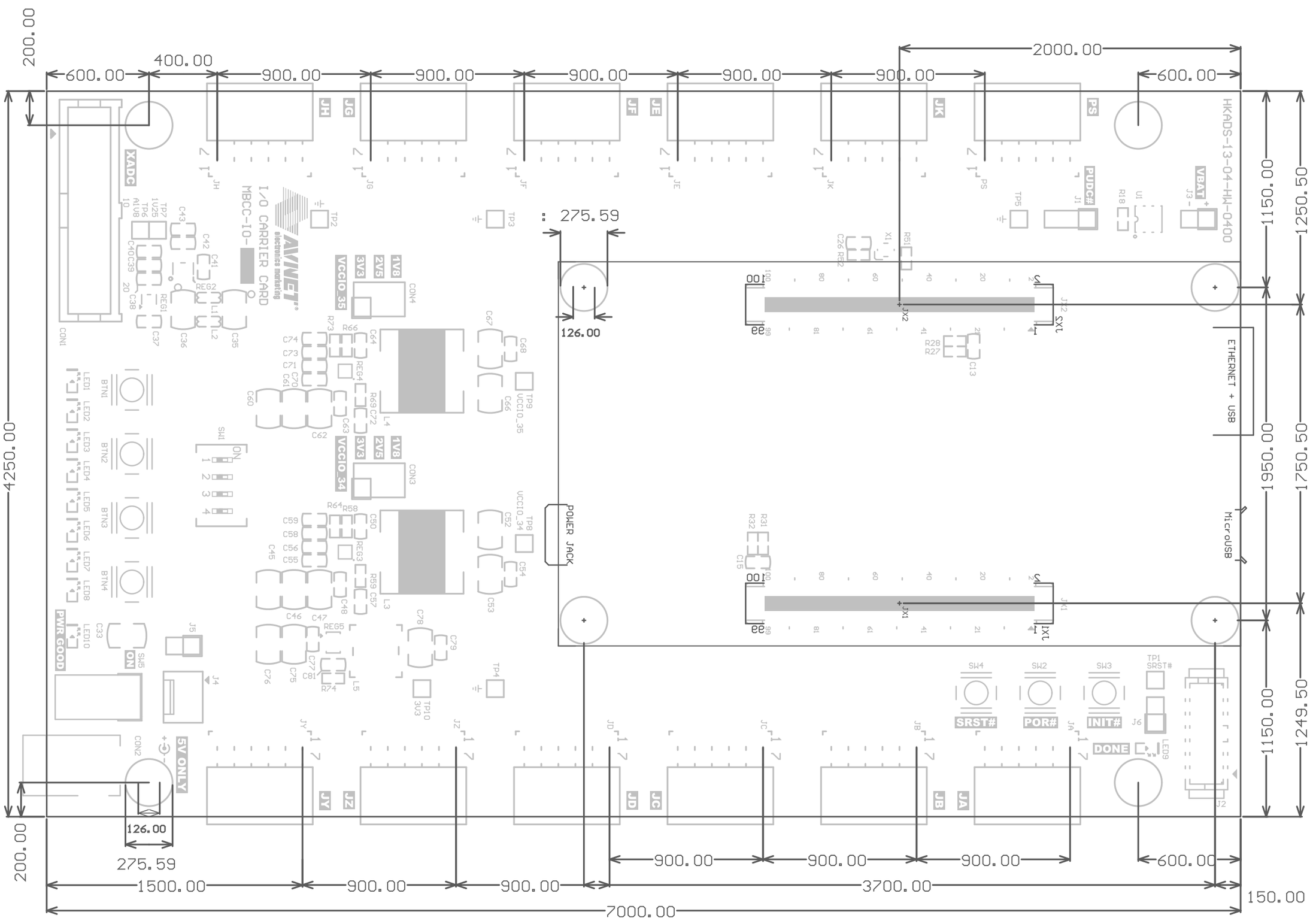
Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012

Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)

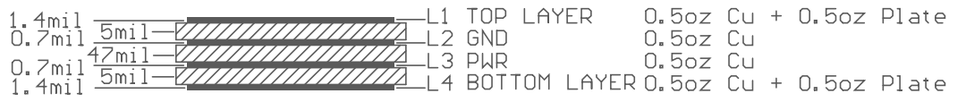
Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)

Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel

This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.



Suggested Stack Up



Impedance Control	TraceWidth/Space	Impedance
Differential	4.5 / 7 / 4.5 (mil)	100 ohm 5%
Single Ended	5 (mil)	50 ohm 10%

Signal traces on L1 reference L2 plane & Signal traces on L4 reference L3 Plane

* Manufacturer should change the stack up to match the impedance control base on the PCB material used.

MBCC-IO-PCB-D	AES-MBCC-IO-Rev.D
Ref Sch: V D	10/23/2013 1:35:33 PM

Board Thickness: 1.6mm 4 Layers FR4

Top Solder

Top Overlay

Mechanical 1
Mechanical 2

Board shall be fabricate - Performance Class II as per IPC-6011 & IPC-6012

Material: Per IPC-4101A/24/26/29/99, Copper Clad,
High Temperature FR4 Class Epoxy Glass Rated UL94V-O,
0.5 OZ Copper for External Layers & 0.5 OZ Copper for Internal Layers.
Must be RoHS compliant & survive a Lead-Free Assembly Max reflow of 260 DEG C (6 Passes)
Td Rating: >340 DEG C
Z Axis CTE < 3.5%
Tg > 170 DEG C (Min)

Solder Mask: SMOBC Per IPC-SM-840C, Class T, Must be RoHS Compliant
TYP LPI, 0.0002 Min to 0.0008 Max measured over copper plating,
must clear all lands as indicated on gerber solder mask layers, (Color = Red)

Finish: Electro-less Nickel Immersion Gold (ENIG), 2~8 Micro Inches Gold Over 150~250 Mirco Inches Nickel

This Assembly shall be RoHS Compliant. Vendor shall deliver assembly with accompanying certificate of compliance.