



# Sierra Circuits, Inc.

1108 West Evelyn Ave., Sunnyvale, CA 94086, U.S.A.  
Phone: 408-735-7137 Fax: 408-735-1408  
Send RFQs to: files@protoexpress.com  
www.ProtoExpress.com

## Quotation

**Quote Number: Q630186-1**

**Quote Date:** Feb 18th, 2016

**Quote Valid Till:** Mar 18th, 2016

|                                                                                                                 |                 |                                                                                        |                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Customer</b><br><b>Monterey Bay</b><br><b>Aquarium Research Ins</b><br>Payment Terms: Net Credit<br>Approved | <b>Address:</b> | <b>Buyer: Duane Thompson</b><br>Phone: 831-775-2003<br>Email: drthom@mbari.org<br>Fax: | <b>Account Manager : Sudeshna Biswas</b><br>Phone: 1-408-735-7137x9804<br>Email: sudeshnab@protoexpress.com<br>Fax: 408-735-1408 |
|-----------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

**PART NUMBER: 10020932\_41 REV: B**

| Quote Line Item                         | Quantity       | Turn Time | Price                      | NRE                           | Testing                                             | Other  | Line Total       |
|-----------------------------------------|----------------|-----------|----------------------------|-------------------------------|-----------------------------------------------------|--------|------------------|
| <b>Q630186-1A</b><br>PCB<br>Fabrication | 5<br>Board(s)  | 5 Days    | \$599.00<br>Piece<br>Price | \$0.00<br>(Tooling<br>waived) | \$0.00<br>(Testing will be done,<br>charges waived) | \$0.00 | <b>\$2995.00</b> |
| <b>Notes:</b>                           |                |           |                            |                               |                                                     |        |                  |
| <b>Q630186-1B</b><br>PCB<br>Fabrication | 10<br>Board(s) | 5 Days    | \$474.50<br>Piece<br>Price | \$0.00<br>(Tooling<br>waived) | \$0.00<br>(Testing will be done,<br>charges waived) | \$0.00 | <b>\$4745.00</b> |
| <b>Notes:</b>                           |                |           |                            |                               |                                                     |        |                  |

|                                                  |                         |                                                         |                                    |                                             |                               |
|--------------------------------------------------|-------------------------|---------------------------------------------------------|------------------------------------|---------------------------------------------|-------------------------------|
| <b>Layers</b>                                    | : 6                     | <b>Indv Brd Dimensions</b>                              | : 12.50 in x<br>12.34 in           | <b>Array</b>                                | : No                          |
| <b>PCB Fabrication Spec (IPC Spec)</b>           | : IPC-600G<br>Class 2 # | <b>Scoring</b>                                          | : No                               | <b>Min Space (Inner layer)</b>              | : 5 mils                      |
| <b>Material</b>                                  | : FR4                   | <b>Dicing</b>                                           | : No                               | <b>Solder Mask Type</b>                     | : LPI                         |
| <b>Finished Thickness</b>                        | : 0.125 inches          | <b>Milling</b>                                          | : None                             | <b>Solder Mask Sides</b>                    | : Top and<br>Bottom           |
| <b>Thickness Tolerance</b>                       | : Plus or Minus<br>10%  | <b>UL Marking Required</b>                              | : No                               | <b>Solder Mask Color</b>                    | : Green                       |
| <b>Surface Finish</b>                            | : HASL                  | <b>ROHS compliant</b>                                   | : No                               | <b>Solder Mask Finish</b>                   | : Standard<br>(Semi-Gloss)    |
| <b>Surface Finish 2</b>                          | : None                  | <b>Edge Plating</b>                                     | : No                               | <b>Solder Mask Via Opens</b>                | : Open on both<br>sides       |
| <b>Gold Fingers</b>                              | : No                    | <b>Etchback</b>                                         | : No                               | <b>Carbon Ink</b>                           | : No                          |
| <b>Starting Copper Outer</b>                     | : Choose #              | <b>Electrical Test</b>                                  | : Yes                              | <b>Silk Screen Sides</b>                    | : Both                        |
| <b>Outer Layer Finish Copper</b>                 | : 0.5 Oz #              | <b>Controlled Impedance</b>                             | : None                             | <b>Silk Screen Color</b>                    | : White                       |
| <b>Inner Copper</b>                              | : 1 oz Inners #         | <b>Controlled Dielectric</b>                            | : No                               | <b>Logo Allowed</b>                         | : In copper or<br>silk screen |
| <b>Gerbers provided?</b>                         | : Yes                   | <b># of Holes Per Board</b>                             | : 1746                             | <b>Via in Pad</b>                           | : No                          |
| <b>Layer order provided?</b>                     | : Yes                   | <b>Minimum Hole Size</b>                                | : 12 mils                          | <b>Filled Vias</b>                          | : None                        |
| <b>Board outline provided?</b>                   | : Yes                   | <b>Aspect ratio</b>                                     | : 8.3:1                            | <b>SM Plugged Vias</b>                      | : No                          |
| <b>Drill file provided?</b>                      | : Yes                   | <b>Minimum Annular Ring<br/>Width (Component Holes)</b> | : 7.9 mils                         | <b>Minimum Drill to Copper<br/>distance</b> | : 0.0081 inches<br>and above  |
| <b>Fab drawing provided?</b>                     | : No                    | <b>Internal Slots</b>                                   | : None                             | <b>Socket/BGA Pitch</b>                     | : none                        |
| <b>IPC Netlist Provided?</b>                     | : No                    | <b>Internal Cutouts</b>                                 | : Both Plated<br>and Non<br>Plated | <b>Blind vias</b>                           | : No                          |
| <b>Additional Customer<br/>Specification</b>     | : No                    | <b>Number of slots/cut-outs</b>                         | : 8                                | <b>Buried vias</b>                          | : No                          |
| <b>Assembly BOM Available ?</b>                  | : No                    | <b>Counter Sink</b>                                     | : Yes                              | <b>Controlled depth drilling</b>            | : No                          |
| <b>Flex Board?</b>                               | : No                    | <b>Counter Bore</b>                                     | : No                               | <b>Cross Section certificate</b>            | : No                          |
| <b>ITAR?</b>                                     | : No                    | <b>Edge Plated Holes</b>                                | : No                               | <b>Micro Section Coupon</b>                 | : No                          |
| <b>Arrays need to be created<br/>by Sierra ?</b> | : No                    | <b>Min Trace (Outer layer)</b>                          | : 6 mils                           | <b>Medical Application</b>                  | : Choose                      |
| <b>Individual Route</b>                          | : Yes                   | <b>Min Space (Outer layer)</b>                          | : 5 mils                           |                                             |                               |
| <b>Route and Retain</b>                          | : No                    | <b>Min Trace (Inner layer)</b>                          | : 8 mils                           |                                             |                               |

# Not sure due to missing information    ## Not sure due to discrepancy

Generic Terms & Conditions:

1. All orders are FOB Sunnyvale, California, USA unless otherwise specified within the Quote. For deliveries outside USA, all Duties and Customs are the responsibility of the customer, unless otherwise agreed upon in writing.

2. Prices are quoted in US Dollars; Taxes and Shipping Charges are extra as applicable.
3. This quote is only valid for 30 days unless otherwise agreed upon in writing by our representatives.
4. Payment terms are mentioned at the top of this Quote.
5. Prices shown on this document are based on information provided by customer's Gerber files and associated instructional documents at date of quotation/order. To facilitate quick-turns, customers sometime request us to release orders with a pending PO. Any changes requested to PCB manufacture/assembly processes after placing order, or any new details that emerge in a pending PO, may result in additional charges.
6. The Turn Time shown is calculated using business days. Weekends and business holidays are excluded in any turn time calculations. Additional turn days may be added to orders that are placed "On Hold," waiting for customer response for resolution of missing information or discrepancies.

**PCB Fabrication Terms & Conditions:**

1. Sale subject to limited warranty. Warranty extends only to bare PCBs and does not apply after components are added by you or others. Our liability shall not exceed price paid by you for the ordered PCBs. No change or addition to these terms, or any additional or different terms on your purchase order, shall be binding on us unless executed in writing by one of our officers.
2. If Sierra Circuits is assembling the boards then we will also warranty the Assembly Labor workmanship.
3. If IPC Netlist is not provided in 356 format, Sierra Circuits will create a net-list from the incoming customer Gerber files to generate an electrical test program. In such cases, Sierra cannot guarantee, nor can it be liable for the electrical performance of the boards, since the test program itself is derived from the files submitted.
4. If you are ordering our "Web PCBs" product, the selection you made online, and the product you chose online, takes priority over your fab drawing or readme notes. Example: Say you chose material FR4 online and your fab drawing calls for Rogers material, we will simply process your order using FR4 material. The price quoted online is based on the specifications and product you chose online.
5. Manufacturing Optimizations: As with most other PCB manufacturers, we may make simple optimizations to your design to ensure boards are manufactured correctly. Such changes do not affect the electrical functionality of your design. These may include:
  - A) Teardrops may be added to pad/trace interfaces to ensure better connectivity.
  - B) Slivers less than .005" may be filled in to prevent resist slivers on the panels.
  - C) Soldermask dams that are less than .004" wide between SMD pads which have a .003" minimum clearance may be gang relieved.
  - D) Silkscreen may be clipped to ensure it does not get on top of pads/copper features.
  - E) Non-functional pads may be removed from inner layers.
6. No change or addition to these terms above, or any additional or different terms on your purchase order, shall be binding on us unless executed in writing by one of our officers.

**Please contact me if you have any questions about this quote.**

**Best Regards,**  
**Sudeshna Biswas**  
**Account Manager**  
**Sierra Circuits, Inc.**

Email: [sudeshnab@protoexpress.com](mailto:sudeshnab@protoexpress.com)  
Phone: 1-408-735-7137x9804  
[www.ProtoExpress.com](http://www.ProtoExpress.com)

**End of Quote Q630186-1 from Sierra Circuits, Inc.**

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