PCB Price+
Costing tool for printed circuit boards

Calculate the production cost & selling price of single and multilayer printed circuits boards

A SMART TOOL FOR PURCHASING DEPARTMENTS

From a short data input list, with no need for a technical expertise, PCB Price+ will help you:
- Estimate the purchasing price of PCBs,
- Identify the best supply sources/costs according to technology and volume and their evolution,
- Make the best technological choice to fit with your delivery schedule.

A POWERFUL TOOL FOR SENIOR TECHNOLOGISTS AND PROJECT LEADERS

From a detailed data input list and fine tuning of technical parameters, PCB Price+ will help you:
- Evaluate a PCB technology through costs evolution,
- Calculate the production cost and selling price of a PCB, depending on manufacturers,
- Evaluate the relationship between a technology, a finish option, manufacturing cost, floor price, etc.

EASY TO INSTALL, FRIENDLY TO USE, AND SAFE FOR WORKGROUPS

No admin privilege is required for setup
- PCB Price+ is working from a single MS-Excel™ file and an external and sharable data file.
- Requires only basic MS-Excel™ or MS-Office™ suite (from 2003 to 2010 release)

Results are fully open-format
- You can modify or export final results, and build reports your own style as in any Excel workbook.

Workgroup-compliant, safely
- All the data managed by PCB Price+ are stored in an external MS-Access™ database file. Data cannot be read from the single Excel file and access rights to the database are needed. Multiple access, data sharing and data integrity are secured.

Market relevant features
- Price versus quantity rules are predefined and manufacturer business model and overhead can be set to fit precisely your project.

Prices evolution
- Power Price+ is ready to calculate PCB costs and prices with progressive metal prices and labor cost.

Multiple finish option
- PCB costs and prices can be calculated for various finish options such as HASL Lead Free, Organic Solderability Preservatives or immersion.

Manufacturer database
- Assembly unit can be selected from a reference database.

Reference database includes more than 590 assembly units owned by 296 companies

System Plus Consulting
WORKING WITH PCB Price+

1 - Set the technology input data in 2 steps:
   a) Select technical options and describe the substrate using the technology generator wizard.
   b) Select the Fab unit in the database.

   PCB Price+ calculates the technology-relative data

2 - Set a few economical data:
   a) Select the manufacturer business model and overhead, the transport mode and the manufacturing yield.
   b) Check metal price and labor cost value and annual raise.
   c) Set the delivery input schedule.

   The results are ready!

3 - Display results:

### SUBSTRATE COST & BREAKDOWN - PCB FR4 6 layers 1dm2

<table>
<thead>
<tr>
<th>Substrate area</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 dm²</td>
<td>1.00 dm²</td>
<td>1.00 dm²</td>
<td>1.00 dm²</td>
</tr>
<tr>
<td>Panel design cost</td>
<td>$0.8309</td>
<td>$0.8309</td>
<td>34.8%</td>
</tr>
<tr>
<td>Tooling setup</td>
<td>$0.2992</td>
<td>$0.2992</td>
<td>12.2%</td>
</tr>
<tr>
<td>Copper foils</td>
<td>$0.1472</td>
<td>$0.1472</td>
<td>6.2%</td>
</tr>
<tr>
<td>Finish materials (total)</td>
<td>$0.0930</td>
<td>$0.0930</td>
<td>4.0%</td>
</tr>
<tr>
<td>Copper</td>
<td>$0.0040</td>
<td>$0.0040</td>
<td>0.0%</td>
</tr>
<tr>
<td>Tin</td>
<td>$0.0053</td>
<td>$0.0053</td>
<td>0.0%</td>
</tr>
<tr>
<td>Silver</td>
<td>$0.0024</td>
<td>$0.0024</td>
<td>0.1%</td>
</tr>
<tr>
<td>Other material</td>
<td>$0.8414</td>
<td>$0.8414</td>
<td>35.5%</td>
</tr>
<tr>
<td>Labor</td>
<td>$0.1420</td>
<td>$0.1591</td>
<td>0.7%</td>
</tr>
<tr>
<td>Building</td>
<td>$0.0242</td>
<td>$0.0242</td>
<td>1.0%</td>
</tr>
<tr>
<td>Yield losses</td>
<td>$0.0000</td>
<td>$0.0000</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**SUBSTRATE COST**

2012: $2.386
2013: $2.386
2014: $2.404
**Inputs:**
- Fab Unit description name, company, country and hourly rate
- Technology description laminate technology, number of layers, internal and external copper thickness, substrate total thickness, drilling technologies.
- Substrate description board dimensions, finish options, holes and vias options
- Panelization description panel size, clearance.
- Manufacturer description business model, overhead.
- Cost parameters hourly cost and raise, metal prices and raise, yield, transport mode and overhead.
- Delivery schedule / scenario

**Outputs:**
- Varying costs: hourly rate cost and metal prices cost at every delivery step.
- Technology cost breakdown (cost per square decimeter)
- Substrate cost breakdown
- Selling prices versus time
- Detailed data

**Up to 5 scenarios**

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**Inputs / Outputs**

**Outputs**

**PCB Price**

**SUBSTRATE COST & BREAKDOWN - PCB FR1 6 layers 1dm^2**

<table>
<thead>
<tr>
<th>Substrate area</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel (total area)</td>
<td>1.00 dm^2</td>
<td>1.00 dm^2</td>
<td>1.00 dm^2</td>
<td>1.00 dm^2</td>
</tr>
<tr>
<td>Equipment cost</td>
<td>$0.8414</td>
<td>$0.8414</td>
<td>$0.8414</td>
<td>$0.8414</td>
</tr>
<tr>
<td>Freeway materials</td>
<td>$0.0006</td>
<td>$0.0006</td>
<td>$0.0006</td>
<td>$0.0006</td>
</tr>
<tr>
<td>Copper</td>
<td>$0.1472</td>
<td>$0.1472</td>
<td>$0.1472</td>
<td>$0.1472</td>
</tr>
<tr>
<td>Finish materials (total)</td>
<td>$0.0938</td>
<td>$0.0938</td>
<td>$0.0938</td>
<td>$0.0938</td>
</tr>
<tr>
<td>Other materials</td>
<td>$0.8414</td>
<td>$0.8414</td>
<td>$0.8414</td>
<td>$0.8414</td>
</tr>
<tr>
<td>Labor</td>
<td>$0.1420</td>
<td>$0.1591</td>
<td>$0.1784</td>
<td>$0.2000</td>
</tr>
<tr>
<td>Yield losses</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

**SUBSTRATE COST**

<table>
<thead>
<tr>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,368</td>
<td>100.0%</td>
<td>$2,368</td>
<td>100.0%</td>
</tr>
<tr>
<td>$2,406</td>
<td>100.0%</td>
<td>$2,426</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
ORDER FORM

Please enter my order for “PCB Price+” costing tool:

- Corporate license price: EURO 3 600*
- Site license price: EURO 3 000*
- one year support price: EURO 1 200 **
- one year support price: EURO 900**

*For price in dollars please use the day’s exchange rate / For French customer, please add 19.6 % for VAT
**First year support is compulsory

SHIP TO

Name (Mr/Ms/Dr/Pr):

Job Title:

Company:

Address:

City: State:

Postcode/Zip:

Country*:

*VAT ID Number for EU members:

Tel:

Email:

Date:

Signature :

BILLING CONTACT

First Name:............................................................Email:............................................................

Last Name:............................................................Phone:............................................................

System Plus Consulting is specialized in the cost analysis of electronics from semiconductor devices to electronic systems. Around this main line System Plus Consulting developed a complete range of services and costing tools to provide in-depth production cost studies and estimation of the objective selling price of the product.

ABOUT SYSTEM PLUS CONSULTING

Costing Services
- On demand Reverse Costing studies are performed on ICs, ASICs, MEMs, Power Devices, ECU's, electronic boards and full electronic systems
- The catalog of available reports includes cost analyzes on MEMS, Electronic components and Electronic systems (Telecom terminals, Power systems, Consumer products)

All these studies are performed using in-house developed costing tools and their technological databases.

Costing Tools
- Software
  - IC Price+ to calculate to cost of any integrated circuit
  - Power Price+ to calculate to cost of any power transistor or module
  - PCB Price+ to calculate the cost of printed circuit boards
  - SYS.Cost which is a powerful costing tool for electronic boards and systems

Costing Models
- Easy to use Excel-based models
- Other costing models can be developed according to customer specification

Cost Simulation Tools
- Powerful flow builders including exhaustive databases to simulate a device processing cost
- Available now: MEMS CoSim+ • Power CoSim+ • LED CoSim+ • TSV CoSim+ • PV CoSim+ (photovoltaic)

PAYMENT

DELIVERY on receipt of payment

By bank transfer:

BANK INFO: TARNEAUD, 27 rue du calvaire, F-44000 Nantes, France,

Bank code : 10558, Branch code : 02250

Account No : 2133 9700 200,

SWIFT code : NORDFRPP,

IBAN : FR76 1055 8022 5021 3397 0020 096

By Credit Card:

Number:_____________________Expiration date:_________

Card Verification Value:___

Return order by:

FAX: +33 (0)253 55 10 59

MAIL: SYSTEM PLUS CONSULTING,

9 rue Alfred Kastler – BP 10748,

F-44307 Nantes Cedex 3, France

Contact:

Christiane BERGER, cberger@systemplus.fr, Tel: +33 (0)240 18 09 16

Our prices are subject to change. Please check our new releases and price changes on www.systemplus.fr

The present document is valid 6 months after its publishing date: 1st June 2012.
1. INTRODUCTION
The present terms and conditions apply to the offers, sales and deliveries of services managed by System Plus Consulting except in the case of a particular written agreement.
Buyer must note that placing an order means an agreement without any restriction with these terms and conditions.

2. PRICES
Prices of the purchased services are those which are in force on the date the order is placed. Prices are in Euros and worked out without taxes. Consequently, the taxes and possible added costs agreed when the order is placed will be charged on these initial prices.
System Plus Consulting may change its prices whenever the company thinks it necessary. However, the company commits itself in invoicing at the prices in force on the date the order is placed.

3. REBATES and DISCOUNTS
The quoted prices already include the rebates and discounts that System Plus Consulting could have granted according to the number of orders placed by the Buyer, or other specific conditions. No discount is granted in case of early payment.

4. TERMS OF PAYMENT
System Plus Consulting delivered services are to be paid within 30 days end of month by bank transfer except in the case of a particular written agreement.
If the payment does not reach System Plus Consulting on the deadline, the Buyer has to pay System Plus Consulting a penalty for late payment the amount of which is one and half the French legal interest rate. The legal interest rate is the current one on the delivery date. This penalty is worked out on the unpaid invoice amount without taxes, starting from the invoice deadline. This penalty is sent without previous notice.
When payment terms are over 30 days end of month, the Buyer has to pay a deposit which amount is 10% of the total invoice amount when placing his order.

5. OWNERSHIP
System Plus Consulting remains sole owner of the delivered services until total payment of the invoice.

6. DELIVERIES
The delivery schedule on the purchase order is given for information only and cannot be strictly guaranteed. Consequently any reasonable delay in the delivery of services will not allow the buyer to claim for damages or to cancel the order.

7. ENTRUSTED GOODS SHIPMENT
The transport costs and risks are fully born by the Buyer. Should the customer wish to ensure the goods against lost or damage on the base of their real value, he must imperatively point it out to System Plus Consulting when the shipment takes place. Without any specific requirement, insurance terms for the return of goods will be the carrier current ones (reimbursement based on good weight instead of the real value).

8. FORCE MAJEURE
System Plus Consulting responsibility will not be involved in non execution or late delivery of one of its duties described in the current terms and conditions if these are the result of a force majeure case. Therefore, the force majeure includes all external event unpredictable and irresistible as defined by the article 1148 of the French Code Civil?

9. CONFIDENTIALITY
As a rule, all information handed by customers to System Plus Consulting are considered as strictly confidential. A non-disclosure agreement can be signed on demand.

10. RESPONSABILITY LIMITATION
The Buyer is responsible for the use and interpretations he makes of the reports delivered by System Plus Consulting. Consequently, System Plus Consulting responsibility can in no case be called into question for any direct or indirect damage, financial or otherwise, that may result from the use of the results of our analysis or results obtained using one of our costing tools.

11. APPLICABLE LAW
Any dispute that may arise about the interpretation or execution of the current terms and conditions shall be resolved applying the French law.
If the dispute cannot be settled out-of-court, the competent Court will be the Tribunal de Commerce de Nantes.