

Company Name: Tracer Inc.	Doc ID Number / Revision Number: S11/04
Title of Document: Information Required for Quotes & Assembly	Effective Date: 12/22/2022
Author: Tyler Toth	Reviewed and Approved by: Tyler Toth

Information Required for Quotes & Assembly

Purpose: To standardize Customer-provided data in such a way that optimizes Tracer, Inc.'s Assembly processes with regards to cost and accuracy.

Scope: For any RFQ (Request for Quote) that Tracer, Inc. receives from a Client, below requirements need to be fulfilled by customer.

Requirements:

1. BOM:

- A. BOM (Bill of Materials) at minimum **must** include *Manufacturer P/N, Reference Designator, Quantity Used, and Part Description.
If Tracer's Client utilizes its own in-house P/Ns, please add that to the BOM in **addition to Manufacturer P/N.*
- B. **All** NL/DNI/DNP (No Load/Do Not Install/Do Not Populate) Reference Designators **must** be identified in the BOM.
- C. BOMs should be provided in Excel format (.XML).
- D. Reference designators that share a common P/N must be separated in the BOM by commas, in ascending order.

2. Gerbers:

- A. Gerbers **must be** supplied in one of the acceptable intelligent gerber formats as mentioned in table below.

CAD tool	Acceptable intelligent gerber formats
Altium Designer	.PCB
Altium P-CAD	.PCB
Cadence Allegro CAMCAD Extract	BRD.TXT or PAD.TXT or SYM.TXT or RTE.TXT or SHP.TXT
Cadence Allegro VAL Extract	.CAD or .TXT or .VAL
Cadence OrCAD Layout	.MIN
Calay	.PCB
CAMCAD CCZ	.CCZ or .CC
Eagle	.cad
Fabmaster FATF	.FAT or .ASC
GenCAD	.CAD, .PNL
GenCAM	.GCM
Mentor Board Station	Comps *.CMP
IPC 2581	Traces *.WIR
IPC 356	Nets *.NET

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Mentor Board/ Neutral	ASCII Geoms or*.PRT or .NEU
Mentor Power PCB	.ASC
ODB++	.TGZ
PDIF	.PDF
Protel PCB	.PCB
Scicards	*.DAT
Theda	.TL
Unicam	.PDW
Zuken CADIF	.PAF
Zuken CR5000/Board Designer	.PCF or .FTF or .PNF
Zuken PWS	.BSF or .CCF or .MDF or .PMA or .UDF or .WDF or .WSF

- B. If PCBs are Consigned by the customer, Array data (a.k.a. “Working Gerbers”) **must be** provided in Gerber package.
- C. When these files are managed into a compressed structure they must be in **.zip format.**
- D. Gerbers **must** be accompanied with PCB Fabrication specs. These are to include:
 - a) The number of layers
 - b) The dimensions of the PCB (width by length)
 - c) Material type (e.g. FR-4 Tg170, CEM-3, Flex (Kapton), Ventec VT4A1, etc.)
 - d) Solder mask type, color, and sides (top, bottom)
 - e) Silkscreen color legend
 - f) Surface Finish (e.g. ENIG, HSAL, OSP, etc.)
 - g) Final board thickness
 - h) Copper weight (for both inner and outer layers)
 - i) Applicable IPC Fab Standard(s) and Class

3. XY Data:

- A. XY Data **must** include: Reference Designator, Rotation, X position, Y position, Layer and Footprint for each component intended to be installed.
- B. XY Data should be provided in .xml, .txt., or .csv formats.

4. Drawings & Special Instructions:

- A. Unless clearly indicated in drawings or by special instructions, Tracer will assemble to industry accepted standards, specifically IPC-610-Class II (current revision).

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- B. When labels are required, please include precise instruction on the size and location of the desired label, the preferred format for serialization, and whether a barcode must be included.
 - C. Schematics are required.
 - D. Customers must clearly identify if Assemblies are used in High Frequency, High Vibration, High Voltage, or Space applications.
5. Quantity(s) Required
- A. BOM with quantity required per board for each line item must be provided.
6. Desired Turn Time:
- A. Note that Tracer’s “Standard” turn time is thirty (30) working days.
 - B. Quick turn is considered anywhere from 5-15 days.
7. RoHS, Lead, or other material type(s) to be used:
- A. Unless otherwise specified by the Client, Tracer will default the Assembly to a RoHS-compliance standard, and using a water-soluble flux & aqueous process to clean PCBAs.
8. Identify Assembly to be either Turnkey or Consigned:
- A. “Turnkey” means Tracer procures all parts while consigned means the Customer provides Tracer with a parts kit.
 - B. Tracer can also work with a turnkey/consignment mix. For instance, only PCBs or another custom or higher cost part may be consigned by the customer while the rest of the parts are to be procured by Tracer.

Please note that failure to adhere to Tracer’s requirements detailed herein may result in quoting and assembly delays, and/or additional costs incurred to the customer during the assembly process.

REVISION HISTORY:

Revision	Date	Description of changes	Requested By
C	6/13/2017	Initial release	Colton
04	12/22/2022	Updated 2.A, 2.D(i) and 5.A <i>Approved by Tyler Toth</i>	Rutuja Mhatre