

Gemini Tec – Data pack requirements for quotation & manufacture

To provide you with an accurate quotation and subsequently process your order, we require a full data pack for our engineering team. A comprehensive data pack is essential for us to manufacture at the highest quality and provide you with a fast and responsive service.

Data packs contents [with issue control]

- BoM (Bill of materials)
- ODB++ or CAD ASCII data
- Gerber data for PCB manufacture
- Assembly Drawings and other information. [if applicable]
- Product test Documentation [if applicable]
- Purchase order release

1. BOM - Bill of materials

The Bill of Materials [BoM] should be supplied in an Excel format. Gemini will conduct extensive checks using our ILaunch system before manufacture to help identify errors. However resubmitted BoMs, because of errors found, may cause delays in both procurement and engineering which may have an impact on cost and naturally we aim to avoid this scenario.

- 1.1. The product part number, issue status and date should be listed on the BoM; we recommend this should be incremented when any documentation is modified, so that any changes can be easily addressed.
- 1.2. All items used on the build must be listed on the BoM. One of the most critical items is the bare PCB to be used, as this item is custom made and often the longest lead-time item, please ensure the part number and issue status is reflected on the BoM to avoid confusion.
- 1.3. Sub-Assemblies should have their own BoM, with the finished sub-assembly listed on the parent BoM. Any mechanical items or programmed parts should be on a separate line and where they exist; additional notes, work instructions or drawings may be necessary.
- 1.4. If the components have mixed RoHS and Non-RoHS devices, a RoHS column is required to clearly identify any known Non-RoHS items, as this may affect the process we adopt to manufacture the product. In the absence of this column, the default position will be that all items are RoHS compliant.
- 1.5. Listing any 'Non-Washable' parts is very helpful to us. Whilst we use a No-clean process, there may be a requirement to wash your assemblies. In certain cases, we may need to use an ultrasonic process that could potentially affect the functionality of a component.
- 1.6. The Footprint and Value columns are optional, assuming the value or part number is contained in the description column. Any additional part numbers [e.g: internal part numbers] should also be added to the BOM, with a column header of 'Customer Part number'. It is advisable and helpful for both parties, if not fitted items are also added to the BoM [Gemini will check that all circuit references in the layout are accounted for] using "NO" in the fitted column.



2. ODB++ or CAD ASCII Data

In order to apply the benefits of our advanced manufacturing systems, we require your ODB++ or a CAD ASCII data output. This replaces the old-style X/Y flat file, which has inherent limitations.

Our front-end software tools convert your CAD design data and BoM data into various and specific machine code to enable us to create jet paste printing typology, accurate placement data and optical inspection data along with a range of documentation to support the assembly and quality process.

It's essential the data be supplied at the same issue status as the Gerber data used to manufacture the PCB. If you are unable to supply ODB++ [or any appropriate CAD ASCII Data] please contact us for further help.

If you are unable to provide ODB++ data, we can support the following ASCII cad data formats.

| Native CAD Data – Output in ASCII format. | |
|---|--|
| Accel EDA , Accel Tango, & Accel PCAD | PADS PowerPCB, PADS Perform, PADS 2000, PADS Work Pantheon PDB File |
| Cadence Allegro via Aegis Script | P-CAD PDF Design File |
| DIF (Design Interchange Format), PADS DFT Audit, and C-Link | P-CAD for DOS |
| EE Designer III ASCII File | Protel 98/99 ASCII PCB File |
| GenCAD v. 1.4 | SCI Cards Neutral File |
| INCASES TL CAD File | Supermax CAD |
| Intergraph Veribest GenCAD | Tango for DOS |
| IPC-D-356 | Ultiboard |
| Mentor Graphics Neutral File | Valor ODB++ CAD Project |
| OrCAD | Zuken Visula and Cadstar |

3. Gerber Data for PCB manufacture

Please supply the Gerber data for the complete PCB [including each layer, the ident layer, resist and drill file] our preferred format is Extended Gerber [RS274X] and Excellon NC drill file.

1.1. Guidance on device polarity

Component ident data must be pictorially correct as to the component orientation and polarity. LED pads must be marked 'K' and 'A' for cathode and anode respectively; a simple polarity marker is insufficient for this type of component.

1.2. Advanced netlist compare service option

We provide an advanced netlist compare check, back to your original PCB data when a CAD netlist generated from your original PCB design file is supplied. Any discrepancies we find can be rectified prior to bare PCB manufacture. The result means the bare boards will be tested to the intelligent design netlist.

Typical errors detected include: Isolated thermals; causing power connections to be isolated from the main power net. Un-routed connections; connections or part connections where a route stops short of its destination and Split



plane errors; where ground and power planes are split using post-processing tricks which may not reflect the true electrical connectivity of the design.

All errors found within the design are reported using meaningful CAD references. They may then be confirmed as genuine errors or intentional work-around. The standard file format to supply IPC-D-356 Netlist Format IPC-D-356 [.ipc]

We support a wide variety of CAD Systems:

Protel/Altium Hyperlynx File [.hyp], Mentor Neutral File [.nf], PADS ASCII File [.asc], Seetrix Ranger Rislant [.ris] Cadence Allegro Symbol Pin Report [.rpt], Cadstar Report Generator File [.rep], FabMaster Net XY Report or Part Pins List [.asc], Orcad MODLOC Location File or Cross Reference Netlist [.cad] Veribest Generic ATE Report [.ate] Visula VIL [.vil], Vutrax Engineers Cross Reference List [.exg]

4. Assembly Drawings

Please supply any additional drawings that detail any relevant information pertaining to the product, such as:

- Mechanical fittings
- Assembly details/build instructions
- Modification procedures
- Label types or positions
- Final packing or custom requirements

5. Test Specifications

Test specifications should be written to enable our test engineers to set up and complete the procedure. We always encourage customers to assist in any handover process and suggest reference pictures are included.

Please ensure any test equipment supplied on loan is clearly labelled with your company name and serial number. This should correspond with the 'Equipment required' section in the test procedure. A valid set of circuit schematics will be required for any de-bug or fault-finding process.

As standard we retain extensive test results for each assembly produced, which will be made available upon request. If you have any specific requirements, please advise us.

6. Purchase Order Release

Please indicate the part number and issue status required to build the product on your PO. We ask that all purchase orders be sent to sales@geminitec.co.uk for immediate attention.

If you need any assistance, please contact our sales or operations team.

Gemini Tec Ltd



Gemini Tec Ltd
www.geminitec.co.uk
+44 (0)1252 333 444

No.1 Brook Trading Estate, Deadbrook Lane,
Aldershot, Hampshire, GU12 4XU
sales@geminitec.co.uk



DDI: 44 (0) 1252 333 444

sales@geminitec.co.uk

www.geminitec.co.uk



Gemini Tec Ltd
www.geminitec.co.uk
+44 (0)1252 333 444

No.1 Brook Trading Estate, Deadbrook Lane,
Aldershot, Hampshire, GU12 4XU

sales@geminitec.co.uk

