

Data Format

- Gerber/extended Gerber (RS-274X)¹
- Eagle
- ODB ++
- PDF
- DXF

Layertype

- single sided
- double sided, double sided PTH
- multilayer (<= 40 layer; *in planning: 70 layer*)

Type of material

- Quality
 - CEM1
 - **FR4**
 - **R1755M mid TG² (150°C, Panasonic)**
 - PCL 370 hTg (180°C, Isola)
 - P96 hTg (260°C, Isola)
 - Ceramic / HF
 - IMS/Alu/Cu
- Manufacturer
 - ISOLA
 - **Panasonic**
 - ARLON (Air-/Spacecraft, FR6)
 - Rogers (HF-Material with ceramic)
 - Megtron (HF-Material, cheaper as Rogers)
 - Ventec (Alu-PCB, single-sided!)

Panel Sizes(maximum used area)

- non PTH boards
 - HAL lead free 500 x 458 mm (0,5 <x<3,2mm)
 - ENIG 580 x 458 mm
- PTH boards 561 x 411 mm
(*in planning 810 x 510 mm*)

PCB Thickness

- 0,05 <= **1,5** <= 6 mm (*in planning: 7mm*)
- Tolerance: ± 10 %

Design Rules

- Cu-Thickness
 - layer: 18/ **35** / **70** / 105 / 140 / 210µm(± 10%)
 - im Via: >23µm
- Line/Space: @ Cu-Thickness
 - >=0,05/0,03 18µm
 - **>= 0,100mm 35µm**
 - >= 0,200mm 70µm
 - >= 0,250mm 105µm
 - >= 0,300mm 120µm
- drilling: 0,05 <= **0,3** <= 6,0mm
(final diameter, via >6mm are milled)
 - Tolerance:
 - PTH: +0,1/-0,05mm
 - non PTH: +0,1/-0,00mm
 - Aspect Ratio (AR):
 - PTH 20:1 (1,6mm -> 80µm)
 - blind via 1:1
- Millingdiameter:
 - D= 0,6 <= **2,00mm**
 - Tolerance: ± 0,05/0,1/0,15/**0,2mm**

Special Technology

- Drilling process
 - standard via
 - tented: IPC 4761 Typ II-b (Conformask + Probimer)
 - filled (with resin Taiyo THP-100, DX1 HTG, non conductive) IPC 4761-Typ V-b
 - capped & filled, Typ VII-b (copper pad for Via-In-Pad app.)
 - Blind vias with Cu-filling, d<= 120µm, for therm. or high current app.)

- burried via
 - staggered
 - stacked

Special Technology (con.)

- controlled deep-milling (z-axis milling)
- Edge Plating
- Slots
- Connector Gold
- Soldersurface without nickel --> Palladium (EP)
- QR-Code (PCB tracability for the customer)

Soldersurface

- **Tin**
 - **HAL (Hot Air Leveling) lead-free**
 - chemical 0,8 – 1,1µm
- Gold
 - chemical
 - ENIG (Ni-Au)
 - ENEPIG (NI - Pd - Au)
 - electronic plating
 - Hard gold 5-10µm Ni + 1-3µm Au
 - Connector gold
- OSP (Entek Plus, useability up to 6 months)

Soldermask

- **Liquide – Probimer 77 (green, white –** soldering web >= 100µm)
 - typ. dielectric strength: 160kV/mm
 - typ. thickness: 20-30µm @35µm Cu
 - ➔ >= 3,2kV
- Foil – Conformask (green - soldering web >= 125µm)
 - typ. dielectrical strength: 98,43kV/mm
 - typ. thickness: 36µm @35µm Cu
 - ➔ ~3,5kV

Colours

- SolderResist/-mask: **green** / white / black / red / blue
- Silkscreen: **white** / black / red / blue / green (width>= 125µm)

Outline

- Milling
- V-Cut
- edge-beveling

Impedance

- adapted (layerstack)
- Back Drill (final drill-diameter +250µm clearance)
- tested (adapted layerstack + measurement)
 - test-coupon (panel edge)
 - tolerance ± 10%
 - Polar Testequipment

Production Time (depends on PCB-properties)

- Express 08 hours – 02 working days
- **Standard 03-08 working days**
- Eco 10-15 working days
- order acceptance 3 pm (production start next day)
- minimum order value € 100,-

Manufacturing Standard

- IPC-A-600 **Class 2** / Class 3

Testing

- eTest 100%

Certifications

- UL E237108 ([ZPMV2.E237108](#))
- ULC E237108 ([ZPMV8.E237108](#))
- ISO-9001:2015
- several QS-Audits designated by our customers

Further details can be found in the designrules on our website at <http://www.piu-printex.at/design-hilfe> or you are welcome to contact us direct by phone: +43 1 250 80-90



¹highlighted values are standard (no additional costs)

² permanent temperature approx. Tg -50°C