

**PCB IDENTIFICATION**

Item ID : 1883642-9
Item Name : 1370-B / NI USB-6501 Realys

STANDARD REQUIREMENTS

The PCB should be manufactured according to the following:

- IPC-A-600H Class 3
- IPC-6012C Class 3
- PERFAG 3D for multilayer boards
- RoHS Compliance. Directive 2002/95/EC

This document specifies additional requirements and exceptions from above general requirements.

MECHANICAL DATA

PCB Thickness : 1.6 mm +/- 10% (Incl. plating and solder masks)
Board size : 124 mm X 125 mm
Number of holes : 217
Smallest hole size : 0.3 mm
Smallest track width : 0.5 mm
Smallest clearance : 0.2 mm
Smallest Annular ring : 0.2 mm
Type of board : 4 Layers
SMD on TOP layer : YES
SMD on Bottom layer : NO
Plated holes : YES
Non-plated holes : YES

Notes:

- 70 um Nominal cu thicknesses on all layers.

Basis Laminate

- FR4 in accordance to IPC4101/99
- Tg $\geq 150^{\circ}\text{C}$
- Td $\geq 325^{\circ}\text{C}$
- CTE, Z-axis: Pre-Tg $\leq 50 \text{ ppm}/^{\circ}\text{C}$
- Post-Tg $\leq 250 \text{ ppm}/^{\circ}\text{C}$
- Flammability UL94V-0

CU thickness

Top/Bottom : Minimum Surface Conductor Thickness after Processing **52,9um** (IPC6012C Table 3-12 Class 3)
Inner layers : Minimum Final Finish after Processing **55,7um** (IPC6012C Table 3-11)
In holes : Minimum **20um** in thin areas. Minimum **25um** average (IPC6012C Table 3-3 Class 3)

**SURFACE**

Ni/Au : YES (IPC6012C 3.2.7.6 and IPC4552 Table 3-2 Code ENIG)

Solder mask

Photopolymer Liquid Film according to IPC-SM840 class T. Able to withstand cleaning and fluxes used in the soldering processes. (IPC-SM-840C 3.6.1)

Solder mask Top side : YES
Solder mask Bottom side : YES
Clearance : Minimum 100 um
Solder mask Colour : Green

Optimization of the solder mask for production improvement is allowed, as long as unprotected copper does not occur.

Silk screen

Silk screen Top side : Yes
Silk screen Bottom side : NO
Silk screen Colour : White

No silk screen on solder land must occur, if necessary silk screen must be cut.

BOARD MARKING

The PCB manufacturer must uniquely identify the individual PCB production batch by placing an appropriate production ID:

- Production Year-Week Batch (YYYY-WW X, e.g.: **2011-21 1**) (Gregorian calendar)
- UL marking
- Logo of PCB manufacturer incl. production site

This must only be placed in the silk screen of the PCB, inside the box or field for the purpose, unless otherwise specified. The PCB manufacturer must not add further information to a PCB.

**MULTILAYER BUILD-UP**

TOP	Layer1	Cu		
PREPREG			0.4	mm
Inner layer	Layer2	Cu		
CORE			0.5	mm
Inner layer	Layer3	Cu		
PREPREG			0.4	mm
BOTTOM	Layer4	Cu		

TEST

Bare board EL-TEST : YES
Optical test (AOI) : YES

IPC356 net list is supplied, compliance must be checked. No IPC Net shorts are allowed.

SETTINGS**Gerber**

Format : RS-274-X
Data code : ASCII
Type : Absolute coordinates
Units : mm
Zero suppression : Leading
Digits leading : 3
Digits trailing : 5

Drill

Format : Enhanced Excellon
Data code : ASCII
Type : Absolute coordinates
Units : mm
Zero suppression : Leading
Digits leading : 3
Digits trailing : 5

APPENDIX, INCLUDED FILES**Documentation data**

Filename	Contents	Format
3094528-1.pdf	PCB Specification (This file)	PDF

Gerber data

Filename	Contents	Format
ASSEMBLY_TOP.art	Assembly TOP	Gerber
SILK_TOP.art	Silkscreen TOP	Gerber
PMT	Paste mask TOP	Gerber
SMT.art	Solder mask TOP	Gerber
TOP.art	Cu Layer1 TOP	Gerber
LAYER_2.art	Cu Layer2	Gerber
LAYER_3.art	Cu Layer3	Gerber
BOTTOM.art	Cu Layer12 BOTTOM	Gerber
SMB.art	Solder mask BOTTOM	Gerber
MASTERDRAWING.art	Drill Table / symbol drawing	Gerber
OUTLINE.art	PCB border	Gerber

Drill data

Filename	Contents	Format
1370-B-1-4.drl	Drill file	Excellon

IPC net list

Filename	Contents	Format
IPC_1370-B.ipc	IPC net list	IPC-D-356A

Assembly data

Filename	Contents	Format
place_1370-B.txt	Pick and place information	Text
ASSEMBLY_TOP.pdf	Assembly drawing TOP	PDF
MASTERDRAWING.pdf	Drill Table / symbol drawing	PDF