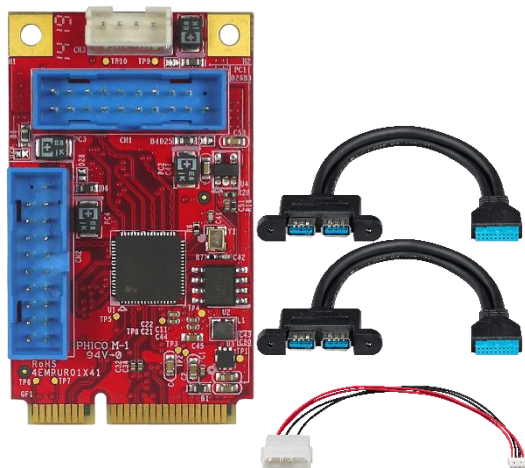


## EMPU-3401

mPCIe to Four USB 3.0 Module



### HIGHLIGHT FEATURES

- Supports 4 x USB 3.0 ports, provides up to SuperSpeed (5Gbps) data rate (share PCIe Gen2 x1 bandwidth)
- Independent 1.5A overcurrent protection (OCP) for each port
- Compliant with xHCI 1.0, USB 3.0 Rev 1.0
- 2 x USB ports from CN1 provides limited power natively
- 2 x USB ports from CN2 needs external power
- Supports USB Battery Charging Specification Revision 1.2
- Optional Industrial Temperature (-40°C to 85°C) support

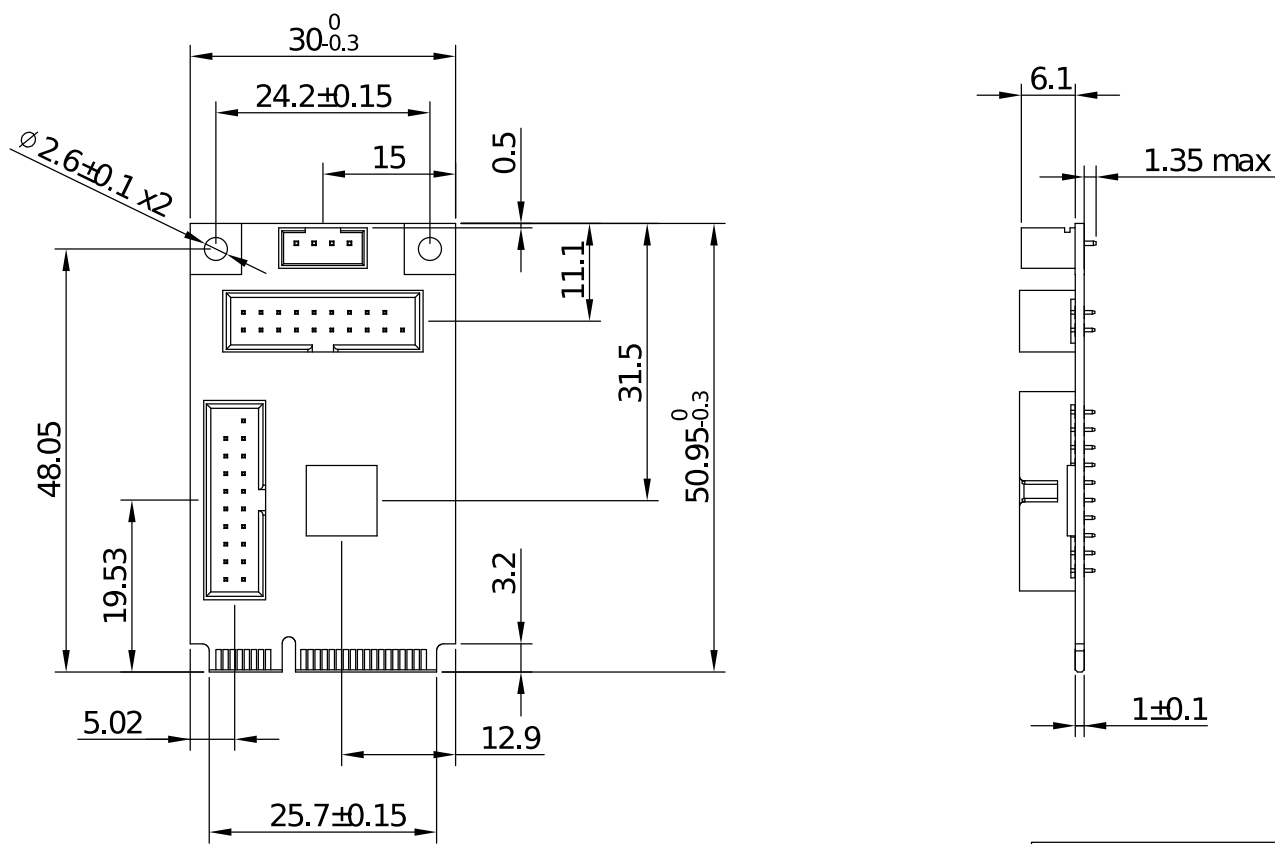
### SPECIFICATIONS

|                          |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|
| Model Name               | EMPU-3401                                                                         |
| Module Type              | mPCIe to Four USB 3.0 Module                                                      |
| Form Factor              | mPCIe                                                                             |
| Function                 | USB 3.0                                                                           |
| Input I/F                | PCI Express 2.0 x1                                                                |
| Output I/F               | USB 3.0                                                                           |
| Output Port              | 4                                                                                 |
| Output Connector         | 19-pin header                                                                     |
| Max. Power Consumption   | 1.12W (3.3V, 340mA)                                                               |
| Dimension (W x L x H/mm) | 30.0 x 50.9 x 8.45                                                                |
| Temperature              | Operation : S/T 0°C ~ 70°C ; W/T -40°C ~ 85°C (Ta)<br>Storage : -55°C ~ 95°C (Ta) |
| Vibration                | 5G@[7~2000Hz]                                                                     |
| Shock                    | 50G@0.5ms                                                                         |
| OS Support               | Windows : XP (32 bit), 7 (32 / 64bit), Vista<br>Linux : Kernel v2.6.0, v2.6.8     |
| Warranty                 | 3 Years                                                                           |
| Notes                    | After Win8 and Linux Kernel v2.6.31 supports built-in xHCI 1.0.                   |

ORDER INFO.

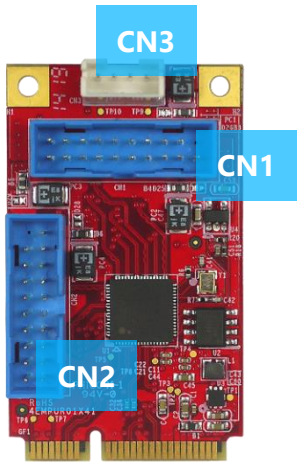
| P/N          | Description                                         |
|--------------|-----------------------------------------------------|
| EMPU-3401-C1 | mPCIe to Four USB 3.0 Module / Standard Temperature |
| EMPU-3401-W1 | mPCIe to Four USB 3.0 Module / Wide Temperature     |

MECHANICAL DRAWING



TOLERANCE:  $\pm 0.25 \text{ mm}$

PIN DEFINE



| 4 Pin Header (CN3) Pin Define |        |
|-------------------------------|--------|
| Pin                           | Signal |
| 1                             | 5V     |
| 2                             | GND    |
| 3                             | GND    |
| 4                             | 5V     |

| SMD 2 x 10P (cut 1 pin) Connector (CN1 & CN2) USB 3.0 Pin Define |     |     |               |
|------------------------------------------------------------------|-----|-----|---------------|
| Signal                                                           | Pin | Pin | Signal        |
| NC                                                               | 10  | 11  | IntA_P2_D+    |
| IntA_P1_D+                                                       | 9   | 12  | IntA_P2_D     |
| IntA_P1_D-                                                       | 8   | 13  | GND           |
| GND                                                              | 7   | 14  | IntA_P2_SSTX+ |
| IntA_P1_SSTX+                                                    | 6   | 15  | IntA_P2_SSTX  |
| IntA_P1_SSTX-                                                    | 5   | 16  | GND           |
| GND                                                              | 4   | 17  | IntA_P2_SSRX+ |
| IntA_P1_SSRX+                                                    | 3   | 18  | IntA_P1_SSRX  |
| IntA_P1_SSRX-                                                    | 2   | 19  | Vbus          |
| Vbus                                                             | 1   |     |               |