

# UP TWL



UP TWL Developer Board with Intel® Processor N-series Processor (formerly Twin Lake)

## Features

- Intel® Processor N-series
- Onboard LPDDR5 Memory, up to 8GB
- Onboard eMMC Storage, up to 64GB
- 1Gigabit LAN x 1
- HDMI 1.4b x 1
- USB 3.2 Gen 2 (Type-A) x 3, 10-pin USB 2.0 x 2/UART x 1
- 40-pin GPIO x 1
- 12V DC-in, 5A
- TPM 2.0

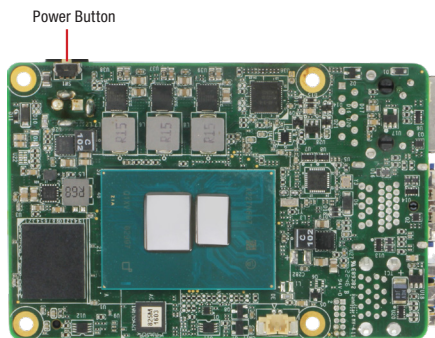
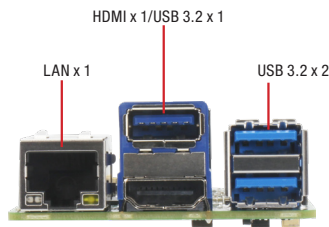
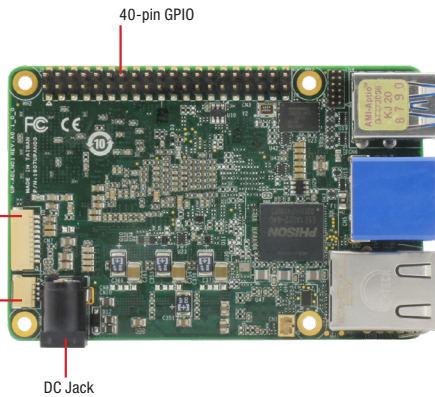


## Specifications

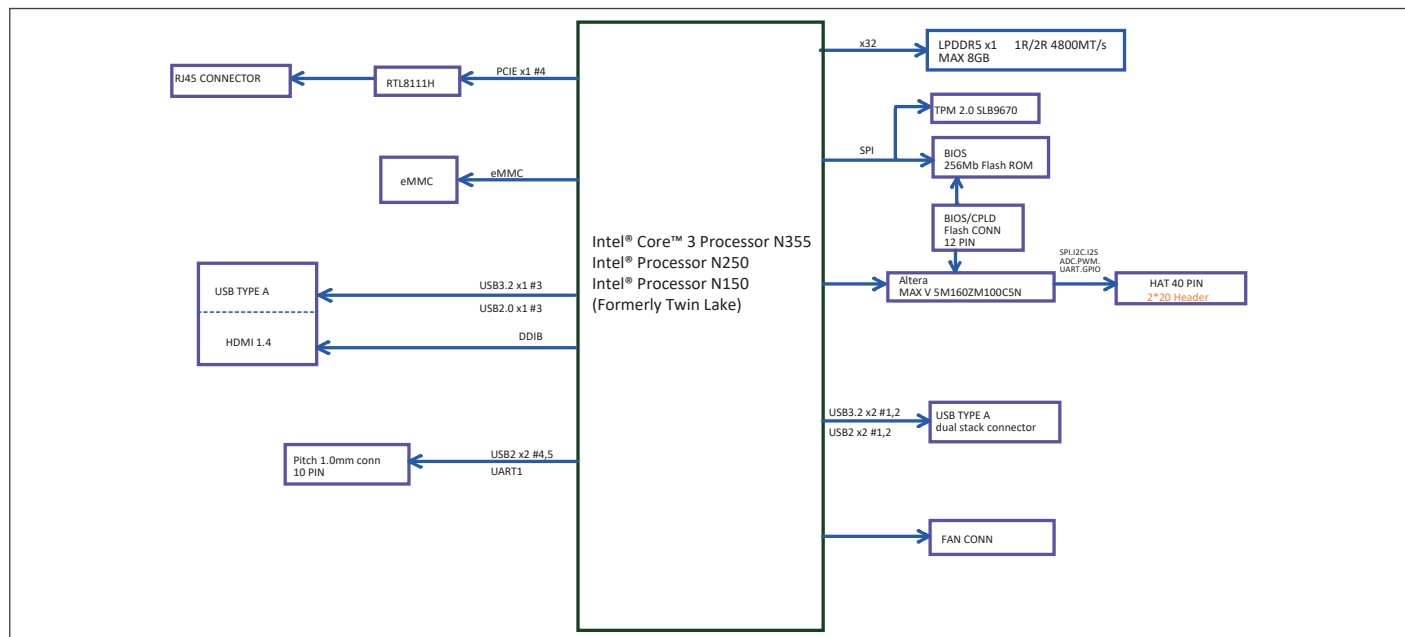
| System                      |                                                                                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Processor                   | Intel® Core™ 3 Processor N355<br>Intel® Processor N250<br>Intel® Processor N150<br>(formerly Twin Lake)                                   |
| Graphics                    | Intel® UHD Graphics                                                                                                                       |
| Memory                      | Dual-Channel LPDDR5, up to 8GB                                                                                                            |
| Storage                     | Up to 64GB eMMC                                                                                                                           |
| I/O                         | HDMI 1.4b/USB 3.2 Gen 2 STACK Connector x 1 (Type-A)<br>4-pin Front Panel x 1<br>2-pin Fan Wafer x 1 (12V)<br>2-pin RTC Battery Wafer x 1 |
| Camera                      | —                                                                                                                                         |
| USB                         | USB 3.2 Gen 2 (Type-A) x 3<br>10-pin USB 2.0 x 2/UART x 1                                                                                 |
| Expansion                   | 40-pin GPIO x 1                                                                                                                           |
| Display Interface           | HDMI 1.4b x 1                                                                                                                             |
| Ethernet                    | 1GbE RJ-45 x 1 (Realtek RTL8111H CG)                                                                                                      |
| Security                    | Onboard TPM 2.0                                                                                                                           |
| RTC                         | Yes                                                                                                                                       |
| OS Support                  | Windows® 10 Enterprise LTSC 2021<br>Linux: Ubuntu 22.04 LTS/Kernel 5.15, Yocto 4.0                                                        |
| Power Requirement           |                                                                                                                                           |
| Power                       | 12V DC-in, 5A                                                                                                                             |
| Power Supply Type           | AT (default) /ATX                                                                                                                         |
| Power Consumption (Typical) | 30~36W                                                                                                                                    |
| Mechanical                  |                                                                                                                                           |
| Dimension                   | 3.34" x 2.20" (85mm x 56mm)                                                                                                               |
| Net Weight                  | 0.33 lb. (0.15Kg)                                                                                                                         |
| Gross Weight                | 0.44 lb. (0.20Kg)                                                                                                                         |
| Environment                 |                                                                                                                                           |
| Operating Temperature       | 32°F ~ 140°F (0°C ~ 60°C) / 0.5 airflow, WITAS1 -4°F ~ 158°F (-20°C ~ 70°C) with active cooler                                            |
| Operation Humidity          | 0% ~ 90% relative humidity, non-condensing                                                                                                |
| MTBF                        | 685,218 Hours                                                                                                                             |
| Certification               | CE/FCC Class A, RoHS Compliant, REACH                                                                                                     |

## Packing List

- UP TWL with Passive Heatsink

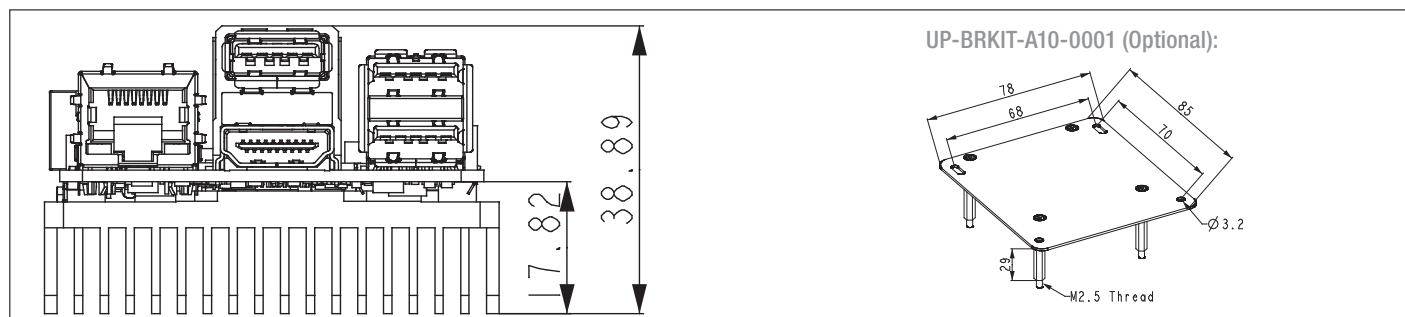


## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part Number         | CPU                   | Core | TDP | Memory | Storage | Thermal Solution |
|---------------------|-----------------------|------|-----|--------|---------|------------------|
| UP-TWLN150-A10-0864 | Intel® Processor N150 | 4    | 6W  | 8GB    | 64GB    | Passive Heatsink |
| UP-TWLN150-A12-0864 | Intel® Processor N150 | 4    | 6W  | 8GB    | 64GB    | Active Cooler    |

## Optional Accessories

| Part Number          | Description                                                                      |
|----------------------|----------------------------------------------------------------------------------|
| 125530060L           | Power Adapter (TF)PowerAdapter.DC.100/240V.12V.5A.60W.Powertron.PS1065-120IB500. |
| UP-ADLN01-COOLER-A01 | UP-ADLN01.heatsink w/cooler.A1.0                                                 |