CowTop Laptop Brainstorming

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1 Introduction

CowTop is an ARM based laptop that uses the Raspberry Pi 4B (4GB version) SBC[1]. Main user input is the ThinkPad keyboard with TrackPoint mouse. The user can add a mouse when needed.

2 Parts Used

- Board: Raspberry Pi 4B (4GB version)
- USB Hub: USB Hub based on Terminus Technology FE1.1s USB Hub IC
- USB 90 degree extension for last USB port for above hub
- USB 3.0 panel mount with cable for user access
- Display: Leftover 1366x768 LG Display LP156WH2 or 1440x900 LG Philips Display
- Display Controller: LP156WH2 display controller based on Realtek or Novatek IC
- HDD: Hitachi 320GB SATA in USB 3.0 SATA case based on Norelsys NS1068 IC
- Keyboard: ThinkPad Wired USB Keyboard with TrackPoint
- RTC: Dallas Semiconductor/Maxim Integrated DS3231

2.1 Battery and Power Management

- Battery: 3S2P (6 cell) Samsung 18650 Lithium Ion Battery
- Battery controller: 15A DC-DC Boost Converter, DC-DC 5-40v 8A Buck Converter
- Battery voltage monitor

[1]SBC - Single Board Computer

3 Specifications

- SoC: Broadcom BCM2711 Quad Core ARM Cortex-A72 64bit @ 1.5GHz
- Memory (RAM): Micron Technology 4GB LPDDR4 SDRAM
- OS Storage: 32GB Samsung MicroSD
- User Storage: HDD Hitachi 320GB
- Ethernet: 10/100/1000 from Broadcom BCM5421 controller
- WiFi/Bluetooth: Broadcom 802.11b/g/n/ac, Bluetooth, 5.0 BLE
- User USB ports: 4x2.0, 1x3.0
- Battery: 5000mAh (milliamp hour)