

# Pinouts of Laptop/Notebook Batteries:

| Type                                                                                                                              | Manuf.       | Notebook            | Remark                                     | Pin1 | Pin2  | Pin3       | Pin4          | Pin5        | Pin6 | Pin7   | Pin8  | Pin9 | Pin10 | Source                                                              | Added  |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|--------------------------------------------|------|-------|------------|---------------|-------------|------|--------|-------|------|-------|---------------------------------------------------------------------|--------|
| 40001926                                                                                                                          | ?            | ?                   |                                            |      |       | V+         |               |             |      |        |       |      | GND   | Hannes                                                              | 160708 |
| 755-4S4000-S1S1                                                                                                                   | ?            | ?                   | 14.8V 4Ah                                  | V+   | V+    | C          | D             | 300R to GND | GND  | GND    | X     | X    | X     | Hannes                                                              | 190215 |
| BTP-34A1                                                                                                                          | ?            | ?                   | 14.8V 4Ah                                  | GND  | empty | ?          | ?             | ?           | ?    | ?      | V+    | X    | X     | Hannes                                                              | 170325 |
| BTP-S31                                                                                                                           | ?            | ?                   | 10.8V 5.4Ah, Note2b?, stops charging >13V? | GND  | ?     | ?          | ?             | ?           | V+   | X      | X     | X    | X     | Hannes                                                              | 171129 |
| AS07B41                                                                                                                           | ACER         | ?                   | ?                                          | BAT+ | BAT+  | 10k Temp?  | SCL           | SDA         | GND  | GND    | x     | x    | x     | Florian                                                             | 190809 |
| AS10B5E                                                                                                                           | ACER         | ?                   | 11.1V 6Ah                                  | BAT+ | BAT+  | EN         | ?             | SCL         | SDA  | GND    | GND   | x    | x     | Florian                                                             | 190809 |
| AS10D31                                                                                                                           | ACER         | Travelmate 5740     | 10.8V 4.4Ah                                | BAT+ | BAT+  | EN         | TEMP          | SCL         | SDA  | GND    | GND   | x    | x     | Florian                                                             | 190118 |
| GRAPE32                                                                                                                           | ACER         | ?                   | 10.8V 4.4Ah; 11.1V 4.0Ah, Note2            | GND  | ?     | ?          | ?             | EN(GND)     | ?    | BAT+   | x     | x    | x     | Hannes                                                              | 180325 |
| GRAPE34                                                                                                                           | ACER         | ?                   | 14.8V 4.8Ah                                | GND  | SCL   | SDA        | ?             | EN(GND)     | ?    | BAT+   | x     | x    | x     | Florian                                                             | 190617 |
| A1175                                                                                                                             | Apple        | 15-inch MacBook Pro |                                            | GND  | ?     | ?          | ?             | ?           | BAT+ | x      | x     | x    | x     | Hannes                                                              | 170210 |
| 7564 ?                                                                                                                            | ASUS         | EeePC 4G-BK022      |                                            | GND  | +V    |            |               | EN          |      |        |       |      | GND   | <a href="http://nathandumont.com/">nathandumont.com/..</a>          | 131205 |
| A32-K72                                                                                                                           | ASUS         | ?                   | 10.8V 5.2Ah                                | GND  | GND   |            | EN 10k V+     |             |      |        | V+    | V+   |       | Wolfgang                                                            | 150103 |
| A41-X550A                                                                                                                         | ASUS         | R510L               | 14,4V 2,6Ah                                | GND  | GND   | GND        | SDA           | SCL         | ?    | ?      | V+    | V+   |       | Florian                                                             | 190207 |
| 3R305                                                                                                                             | DELL         | D500/D600           | Note2b                                     | GND  | GND   | ON/OFF     | ?             | GND         | SDA  | SCL    | V+    | V+   | X     | <a href="http://Xlaptop-junction.com/">X laptop-junction.com/..</a> | 131203 |
| 75UYF                                                                                                                             | DELL         | C510/C610 / C840    | Note2b                                     | GND  | NC    | Sys        | GND           | SDA         | SCL  | V+     | X     | X    | X     | Hannes                                                              | 190424 |
|                                                                                                                                   | DELL         | E4300               | Note2b                                     | BAT- |       |            | /Ena          |             |      |        |       | V+   | X     | Hannes                                                              | 131203 |
|                                                                                                                                   | DELL         | Inspiron 6400/M70   | Note2b                                     | GND  | GND   | BAT_VOLT   | SYSPRES#(GND) | BAT_PRE#    | SDA  | SCL    | V+    | V+   | X     | Hannes                                                              | 190424 |
| M5Y0X                                                                                                                             | DELL         | Latitude E6430      | 11.1V 9Ah                                  | GND  | GND   | ?          | ?             | ?           | SDA  | SCL    | BAT+  | BAT+ |       | Florian                                                             | 190524 |
| EM-G320L1                                                                                                                         | Elitegroup   | ?                   | 14.8V 2.2Ah                                | V+   | empty | C          | D             | T           | GND  | GND    | X     | X    | X     | Hannes                                                              | 170325 |
| 4UR18650F-2-5                                                                                                                     | Fujitsu,u.a. | ?                   | 14.8V 3.2Ah                                | GND  | ?     | ?          | Ena           | ?           | V+   | X      | X     | X    |       | Hannes                                                              | 170326 |
| 4UR18650F-2-QC-EF3                                                                                                                | Fujitsu      | ?                   | 14.8V 4Ah                                  | V+   | ?     | ?          | ?             | GND         | X    | X      | X     | X    |       | Hannes                                                              | 170326 |
| 3S4400-*                                                                                                                          | Fujitsu      | Amilo M1425         | Note2b?                                    | GND  | TEMP  | ?          | ?             | ?           | SMBD | SMBC   | ?     | ?    | V+    | Hannes                                                              | 190424 |
| BP-8389                                                                                                                           | Fujitsu      | Amilo K 7600        | 11.1V 6.0Ah                                | GND  | Key   | GND        | T             | D           | C    | V+     | V+    | X    | X     | Hannes                                                              | 190410 |
| BTP-52EW                                                                                                                          | Fujitsu      | ?                   | 14.8V 4.4Ah                                | V+   | V+    | Bus?       | Bus?          | temp?       | GND  | empty  | GND   |      |       | Wolfgang                                                            | 160726 |
| FPCBP59                                                                                                                           | Fujitsu      | ?                   |                                            | V+   | V+    | EN         | Bus?          | Bus?        | Bus? | temp?  | empty | GND  |       | Wolfgang                                                            | 150103 |
| FPCBP331                                                                                                                          | Fujitsu      | ?                   | 10.8V 4.4Ah                                | V+   | V+?   | ?          | ?             | SCL         | SDA  | TEMP?  | empty | GND  |       | Florian                                                             | 190118 |
| FPCBP429                                                                                                                          | Fujitsu      | ?                   | 10.8V 6,7Ah                                | V+   | ?     | ?          | EN(3,7V)      | SCL         | SDA  | EN(4V) | x     | GND  |       | Florian                                                             | 190912 |
| SQU-809-F01                                                                                                                       | Fujitsu      | ?                   | 11.1V 4.4Ah, Note1                         | GND  | ?     | ?          | ?             | ?           | ?    | V+     | X     | X    |       | Hannes                                                              | 190329 |
| UN34AS1-S1                                                                                                                        | Gericom      | ?                   | 11.1V 6Ah                                  | V+   | V+    | C          | D             | T           | GND  | GND    |       |      |       | Hannes                                                              | 160721 |
| NC6120, 364602-001, 365750-001, 372772-001, 398854-001, HSTNN-C12C, PB994A, HSTNN-IB05, HSTNN-LB05, PB994, HSTNN-I03C, HSTNN-I05C | HP           | ?                   | 10.8V/7.8Ah                                | GND  | GND   | T          | C             | D           | V+   |        |       |      |       | Hannes                                                              | 160709 |
| HSTNN-CB47                                                                                                                        | HP           | ?                   | ?                                          | GND  | GND   | 10k Temp?  | ?             | SDA         | SCL  | BAT+   | BAT+  | X    | X     | Florian                                                             | 190809 |
| HSTNN-DB30                                                                                                                        | HP           | ?                   | 10.8V/43Wh                                 | GND  | ?     | ?          | E             | ?           | V+   | X      | X     | X    | X     | Hannes                                                              | 170405 |
| HSTNN-IB2P, 632427-001                                                                                                            | HP           | ?                   | 14.8V/83Wh                                 | BAT+ | BAT+  | SDA        | SCL           | ?           | GND  | GND    | GND   |      |       | Florian                                                             | 190523 |
| HSTNN-UB73, 509459-001                                                                                                            | HP           | ?                   | 10.8V/55Wh                                 | GND  | GND   | 8,7k Temp? | ?             | SCL         | SDA  | BAT+   | BAT+  |      |       | Florian                                                             | 190730 |
| 42T4504                                                                                                                           | IBM Lenovo   | T60?                |                                            | V+   | V+    | Bus?       | Bus?          | temp?       | GND  | GND    |       |      |       | Wolfgang                                                            | 150103 |
| 42T4649                                                                                                                           | IBM Lenovo   | X200                | 10,8V/7,8Ah                                | V+   | V+    | SCL        | SDA           | temp?       | GND  | GND    |       |      |       | Florian                                                             | 190207 |
| 42T4653                                                                                                                           | IBM Lenovo   | ?                   | 10,8V/4,9Ah Note1                          | V+   | V+    | SCL        | SDA           | temp?       | GND  | GND    |       |      |       | Hannes                                                              | 190606 |
| 42T4670                                                                                                                           | IBM Lenovo   | ?                   |                                            | V+   | V+    | SCL        | SDA           | temp?       | GND  | GND    |       |      |       | Florian                                                             | 190118 |
| 42T4694                                                                                                                           | IBM Lenovo   | ?                   |                                            | V+   | V+    | Bus?       | Bus?          | temp?       | GND  | GND    |       |      |       | Wolfgang                                                            | 150103 |
| 42T4879 52+                                                                                                                       | IBM Lenovo   | X220T               |                                            | V+   | V+    | SCL        | SDA           | Temp (10k)  | GND  | GND    |       |      |       | Florian                                                             | 190207 |
| 08K8039                                                                                                                           | IBM Lenovo   | ?                   |                                            | GND  | temp? | Bus?       | Bus?          | V+          |      |        |       |      |       | Wolfgang                                                            | 150103 |
| 02K6817                                                                                                                           | IBM Lenovo   | ?                   |                                            | GND  | temp? | Bus?       | Bus?          | V+          |      |        |       |      |       | Wolfgang                                                            | 150103 |
| 45N1001 70+                                                                                                                       | Lenovo       | T430/530            | 10.8V/5,2Ah                                | V+   | V+    | SCL        | SDA           | Temp (10k)  | GND  | GND    |       |      |       | Florian                                                             | 181211 |
| 45N1011 70++                                                                                                                      | Lenovo       | T430/530/ W530      | 11.1V/8.4Ah                                | V+   | V+    | SCL        | SDA           | Temp (10k)  | GND  | GND    |       |      |       | Florian                                                             | 181211 |

| Type       | Manuf.  | Notebook           | Remark                         | Pin1 | Pin2      | Pin3      | Pin4 | Pin5       | Pin6       | Pin7            | Pin8 | Pin9 | Pin10 | Source                                              | Added  |
|------------|---------|--------------------|--------------------------------|------|-----------|-----------|------|------------|------------|-----------------|------|------|-------|-----------------------------------------------------|--------|
| 45N1775 68 | Lenovo  | T450s              | 11.1V/2.09Ah                   | V+   | V+        | SCL       | SDA  | Temp (10k) | GND        | GND             |      |      |       | Florian                                             | 190207 |
| BTP-C0BM   | MEDION  | ?                  | 11.1V/4.0Ah                    | GND  | 10k Temp? | ?         | SCL  | SDA        | BAT+       |                 |      |      |       | Florian                                             | 190822 |
| BTP-C2BM   | MEDION  | MD96850 MD96640    | 11.1V/7.8Ah                    | GND  |           |           |      |            | V+         |                 |      |      |       | Wolfgang                                            | 160726 |
| A32-A15    | MSI     | ?                  | 10.8V/4.4Ah                    | BAT+ | BAT+      | TEMP?     | SDA  | SCL        | EN         | EN              | GND  | GND  |       | Florian                                             | 190523 |
| BTY-L74    | MSI     | ?                  | 11.1V/4.4Ah                    | GND  | GND       | 10k Temp? | SDA? | SCL?       | EN         | EN              | BAT+ | BAT+ |       | Florian                                             | 190723 |
| PCGA-BP2NX | SONY    | ?                  | 14.8V/4Ah                      | V+   | empty     | ?         | ?    | ?          | ?          | /Ena(1k zu GND) | GND  | GND  | X     | Hannes                                              | 170325 |
|            | Toshiba | Satellite C675D    |                                | GND  | GND       | SCL       | SDA  | Temp?      | SysPresent | ?               | BAT+ | BAT+ |       | <a href="http://kuzyatech.com/">kuzyatech.com/.</a> | 131205 |
| PA2510U    | Toshiba | ?                  |                                | GND  |           |           |      |            |            | temp?           |      |      | V+    | Wolfgang                                            | 150103 |
| PA3107U    | Toshiba | Satellite Pro 4600 | ON: beide Zusatzpins verbinden | GND  |           |           |      |            |            | temp?           |      | V+   |       | Wolfgang                                            | 150103 |
| PA3534U    | Toshiba | ?                  | Note2b?                        | GND  | GND       | SCL       | SDA  | 10k Temp?  | /Ena       | ?               | ?    | V+   | X     | Hannes, Florian                                     | 190722 |

- Note1: Battery only starts charging when empty or discharging directly before charging.
- Note2: Needs single bus communication before charging.
- Note2b: Needs bus communication for charging (details unknown).
- Note3: Needs continuous bus communication every <30s for charging (for Dell: see details below).

Pinzuordnung: so wie der Akku in Laptop kommt und der Laptop dann aufm Tisch stehen würde, ist oben. Dann werden die Kontakte von links aufsteigend nummeriert.



## DELL-battery charge-enable:

DELL-Akkus müssen zur Aktivierung der Ladung mittels SMBUS-Kommunikation dazu motiviert werden.

- I2C-Adresse: 0x0B (Standard-Adresse eines SMBus-Akkus)
- Daten: 0x00 0x0A 0x00 (Register 0x00 = ManufacturerAccess-Register)

getestet mit:

- Type 4R084 (Aktivierungssequenz reicht einmal)
- Type 75UYF (Latitude C510/C610/C840 Akku) (Aktivierungssequenz reicht einmal)
- Type NT349 (Sequenz muss mindestens alle 30s wiederholt werden)
- Type U4873 (Precision M90)(Aktivierungssequenz reicht einmal)

## MSI BTY-L47 charge-enable:

Um den Akku zum Laden zu bewegen ist es notwendig, die Enable-Pins auf GND zu ziehen und an den SMBus Pins 3,3V (z.B. über 10k) anzulegen. Buskommunikation ist nicht nötig.

## Bestimmen einer unbekannten Anschlussbelegung:

Hier kommt in naher Zukunft eine kleine Anleitung, wie sich die unbekannte Pinbelegung eines Akkus recht einfach bestimmen lässt.

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