**KM003C/002C Protocol Trigger by Virtual Serial Port (Instructions)**

**Command List**

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| **Command** | **Description** |
| pdm open | Start protocol trigger module |
| pdm close | Exit protocol trigger module |
| pdm set type=?,em=? | Customized PD protocol trigger |
| type: PD protocol trigger type, 0: automatic, 1: PD3.0, 2: PD3.1, 3: Proprietary PPS (two types for now) |
| em: Emarker/Cable simulation, 0: off, 1: 20V5A, 2: 50V5A (EPR), LA135 6.75A |
| entry pd | Enter the PD protocol trigger and some of the proprietary protocols (type=2) |
| entry ufcs | UFCS (Universal Fast Charging Specification) |
| entry qc | Qualcomm QC, including QC2.0/3.0, it’ll automatically judge when triggered |
| entry fcp | FCP proprietary protocol |
| entry scp | SCP proprietary protocol |
| entry afc | AFC proprietary protocol |
| entry vfcp | VFCP proprietary protocol |
| entry sfcp | SFCP proprietary protocol |
| reset | Reset protocol trigger, restore to initial state: pdm open after sending |
| qc ?V | Request fixed voltage of QC2.0 protocol |
| Example: qc 5V, qc 9V, qc 12V, qc 20V |
| qc3 volt=? | Request any voltage of QC3.0, the minimum step is 200mV |
| Range: 3600-20000 mV |
| Example: qc3 volt=3800, qc3 volt=19800, qc3 volt=5000 |
| qc3 inc=? | QC3.0 increases voltage |
| Example: qc3 inc=8 |
| qc3 dec=? | QC3.0 reduces voltage |
| Example: qc3 dec=6 |
| fcp ?V | Request fixed voltage of FCP protocol |
| Example: fcp 5V, fcp 9V, fcp 12V |
| scp volt=?,cur=? | Request any voltage of SCP protocol, the minimum step is determined by the charger, the unit is mV |
| Example: scp volt=11000,cur=5000 |
| afc ?V | Request fixed voltage of AFC protocol |
| Example: afc 5V, afc 9V, afc 12V |
| sfcp ?V | Request fixed voltage of SFCP protocol |
| Example: sfcp 5V, sfcp 9V, sfcp 12V |
| vfcp volt=?,cur=? | Request VFCP protocol |
| Range: 7000-20000,0.01-6000 (the maximum value is determined by the charger) |
| Example: vfcp volt=7100,cur=3000 |
| ufcs req=?,volt=?,cur=? | Request any voltage of UFCS protocol, the range is determined by the charger |
| Example: ufcs req=1, volt=11000, cur=4000 |
| ufcs req=2, volt=12000, cur=5000 |
| ufcs pdo | Get Output\_Capabilities value of UFCS charger |
| ufcs cmd=? | Send control commands, please refer to the number in Table 14 of the UFCS protocol manual |
| range: ufcs cmd=6 |
| ufcs data=? | not yet implemented |
| pd pdo | Get the SourceCapabilities in the PD protocol |
| pd req=?,cur=? | Request a fixed voltage without volt, if the cur value is not used, take the Max current of PDO |
| req means ObjectPosition |
| Example: req=2, cur=20000, req=3 |
| pd req=?,volt=?,cur=? | If you need to request PPS or AVS, request the fixed voltage with volt. If it is a fixed voltage, ignore the volt value |
| If the cur value is not used, take the Max current of PDO |
| Example: req=5, volt=12000, cur=20000  req=6, volt=20000 |
| pd cmd=? | send control command |
| Example: pd cmd=25 |
| pd data=? | send data command |
| The first byte represents SOP, the second/third represents the header, and does not contain CRC |
| Example: Send a vdm command, pd data=  008F5141A000FF992E0018181500000000000040400800 |
| Since the PD protocol requires state machine, not all commands or data can be sent. And the internal counter is also determined by the state machine, so there is a difference between the header and the actual sent bytes. Only the data type and number of objects in the header are selected. | |

**Important Notice**

1. If you’re using Windows 7, please install the virtual serial port driver firstly.

<https://power-z.oss-cn-hongkong.aliyuncs.com/driver.exe>

Virtual serial port does not need to set Baud

After the driver is installed, the port with the POWERZ logo will be displayed.

1. If you’re using Windows 10/11, you can use it without driver, but the port with the POWERZ logo will not be displayed.