PowerStream

# THE PROTOCOL FRAME AND INSTRUCTION BETWEEN POWER SUPPLY AND PC

## 1. Serial ports setup

**1.1 Baud Rate: 9600 bps**

**1.2 Data Bit: Bit 8**

**1.2 Stop Bit: Bit 1**

**1.3 Parity: None**

## 2. Frame

**The length of the frame is 26 bytes (compatible with FAB). The form is as follows.**

| 1 | 2 | 3 | 4-25 | 26 |
|---|---|---|---|---|
| AAH | Address | Command Byte | Related Information Contents | Checking Code |

**Directions:**

**1). AAH occupies a byte.**

**2). Address ranges from 0 to FEH and occupies a byte.**

**3). Command Byte ranges from 80H to 90H and occupies a byte.**

**The contents of the Command Byte are as follows:**

**a. 80H Setupping the Max Current, the Max Power, the Voltage Level of the power supply.**

**b. 81H Reading the current value, the voltage value, the power value and the state of the power supply. The state of the power supply contents the ON/OFF state, the Over-current state and the Over-power state.**

**c. 82H Supervising the ON/OFF of the power supply.**

**d. 83H Programming.**

**4). Byte 4 to Byte 25 are the information contents.**

**5). Byte 26 is the checking code and is the accumulating of the 25 previous bytes.**

## 3. Use of the Command Bytes

**1). Setup of the Max Current, the Max Power and the Voltage Level of the Power supply (80H)**

| Byte 1 | AAH |
|---|---|
| Byte 2 | Address (0-FEH) |
| Byte 3 | Command Byte (80H) |
| Byte 4 | Low Byte of the Max Current |
| Byte 5 | High Byte of the Max Current |
| Byte 6 | Low Byte of the Max Voltage |
| Byte 7 | High Byte of the Max Voltage |
| Byte 8 | Low Byte of the Max Power |
| Byte 9 | High Byte of the Max Power |
| Byte 10 | Low Byte of the Voltage Setup |
| Byte 11 | High Byte of the Voltage Setup |
| Byte 12 | New Address of the Power Supply |
| Byte 13 to Byte 25 | Preserved by the System |
| Byte 26 | Checking Code |

**Current, Voltage and Power are all expressed by two bytes, with low byte in the front and the high byte behind.**

**For example: The current value 3589H is expressed as**

| 89H | 35H |
|---|---|

**2). Read the current, the voltage, the power and the state of the power supply**

| Byte 1 | AAH |
|---|---|
| Byte 2 | Address (0-FEH) |
| Byte 3 | Command Byte (81H) |
| Byte 4 | Low Byte of the Current |
| Byte 5 | High Byte of the Current |
| Byte 6 | Low Byte of the Voltage |
| Byte 7 | High Byte of the Voltage |
| Byte 8 | Low Byte of the Power |
| Byte 9 | High Byte of the Power |
| Byte 10 | Low Byte of the Max Current |
| Byte 11 | High Byte of the Max Current |
| Byte 12 | Low Byte of the Max Voltage |
| Byte 13 | High Byte of the Max Voltage |
| Byte 14 | Low Byte of the Max Power |
| Byte 15 | High Byte of the Max Power |
| Byte 16 | Low Byte of the Voltage Setup |
| Byte 17 | High Byte of the Voltage Setup |
| Byte 18 | The State of the Power Supply |
| Byte 19 to Byte 25 | Preserved by the System |
| Byte26 | Checking Code |

**Current, Voltage and Power are all expressed by two bytes, with low byte in the front and the high byte behind.**

**The state of the power supply is expressed by a byte. Each Unit is defined as:**

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|---|---|

**Position 0: State of the power supply. 0 is OFF and 1 is ON.**

**Position 1: Over-current State of the power supply. 0 is normal and 1 is abnormal.**

**Position 2: Over-power state of the power supply. 0 is normal and 1 is abnormal.**

**Position 3: Operating State. 0 is for keyboard and 1 is for PC.**

**Notes: The frame of power supply answering the PC is the same as the above.**

**3). Control the ON/OFF of the power supply**

| | |
|---|---|
| **Byte 1** | **AAH** |
| **Byte 2** | **Address** |
| **Byte 3** | **Command Byte** |
| **Byte 4** | **State of the Power Supply** |
| **Byte 5 to Byte 25** | **Preserved by the System** |
| **Byte 26** | **Checking Code** |

**The state of the power supply is expressed by a byte. Each Unit is defined as:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **7** | **6** | **5** | **4** | **3** | **2** | **1** | **0** |

**Position 0: State of the power supply. 0 is OFF and 1 is ON.**
**Position 1: PC control over the power supply. 0 is the power supply self-control and 1 is the PC control over the power supply.**

**4). Power supply automatically upper-transmits the max current, the max power and the voltage levels to the PC.**
**The frame is the same as frame of the setup of the max current, the max power and the voltage levels.**