

## RS232 command

1. Data transmission (hexadecimal transmission, baud rate 9600, no parity bit, 1 stop bit, 8 data bits)

|      |      |     |      |      |     |
|------|------|-----|------|------|-----|
| 0xEF | 0xEF | LEN | ADDR | DATA | SUM |
|------|------|-----|------|------|-----|

ADDR: Data address bits

DATA: Set parameter data bits; they don't need to be written when reading the parameters.

SUM:  $\text{Sum} = 0xEF + 0xEF + \text{LEN} + \text{ADDR} + \text{DATA}$

LEN: Data length = DATA length + 2

2. Data reception (hexadecimal reception, baud rate 9600, no parity bit, 1 stop bit, 8 data bits)

|      |      |     |      |      |     |
|------|------|-----|------|------|-----|
| 0xED | 0xFA | LEN | ADDR | DATA | SUM |
|------|------|-----|------|------|-----|

ADDR: Data address bits

DATA: Return parameter bits

SUM:  $\text{SUM} = 0xED + 0xFA + \text{LEN} + \text{ADDR} + \text{DATA}$

LEN: Data length = DATA length + 2

3. Query device type (address bits 0x02)

Send command:

|      |      |      |      |      |
|------|------|------|------|------|
| 0xEF | 0xEF | 0x02 | 0x02 | 0xE2 |
|------|------|------|------|------|

Return command:

|      |      |      |      |          |     |
|------|------|------|------|----------|-----|
| 0xED | 0xFA | 0x10 | 0x02 | DATA1~14 | SUM |
|------|------|------|------|----------|-----|

Device type:  $\text{DeviceType} = \text{DATA14}$  (Type: 0, 1, 2, 3)

Send command: EF EF 02 02 E2

Return command: ED FA 10 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 FA

Device=1.

4. Query working status (address 0x00)

Send command:

|      |      |      |      |      |
|------|------|------|------|------|
| 0xEF | 0xEF | 0x02 | 0x00 | 0xE0 |
|------|------|------|------|------|

Return command:

|      |      |      |      |          |     |
|------|------|------|------|----------|-----|
| 0xED | 0xFA | 0x0E | 0x00 | DATA1~12 | SUM |
|------|------|------|------|----------|-----|

For DeviceType 0 & 1

Laser current:  $\text{CurRead} = \text{DATA1} * 256 + \text{DATA2}$  (mA)

Laser temperature:  $\text{LDTemp} = (\text{DATA9} * 256 + \text{DATA10}) / 100$  (°C)

For DeviceType 2 & 3

Laser current:  $\text{CurRead} = \text{DATA3} * 256 + \text{DATA4}$  (mA)

Laser temperature:  $\text{LDTemp} = (\text{DATA11} * 256 + \text{DATA12}) / 100$  (°C)

For DeviceType 0 & 1 & 2

Output power:  $\text{PowRead} = (\text{DATA7} * 256 + \text{DATA8}) / 10$  (mW)

For DeviceType 3

Output power:  $\text{PowRead} = \text{DATA7} * 256 + \text{DATA8}$  (mW)

Example:

Send command: EF EF 02 00 E0

Return command: ED FA 0E 00 03 E8 03 E7 00 00 03 E8 09 C4 09 C5 50

For DeviceType 0 & 1

$\text{CurRead} = 0x03 * 256 + 0xE8 = 1000$  (mA)

$\text{LDTemp} = (0x09 * 256 + 0xC4) / 100 = 25.00$  (°C)。

For DeviceType 2 & 3

$\text{CurRead} = 0x03 * 256 + 0xE7 = 999$  (mA)

$\text{LDTemp} = (0x09 * 256 + 0xC5) / 100 = 25.01$  (°C)。

For DeviceType 0 & 1 & 2

Output power:  $\text{PowRead} = (0x03 * 256 + 0xE8) / 10 = 100.0$  (mW)

For DeviceType 3

Output power:  $\text{PowRead} = 0x03 * 256 + 0xE8 = 1000$  (mW)

#### 5. Query target power

Send command:

|      |      |      |      |      |
|------|------|------|------|------|
| 0xEF | 0xEF | 0x02 | 0x03 | 0xE3 |
|------|------|------|------|------|

Return command:

|      |      |      |      |     |     |     |
|------|------|------|------|-----|-----|-----|
| 0xED | 0xFA | 0x04 | 0x03 | HSB | LSB | SUM |
|------|------|------|------|-----|-----|-----|

For DeviceType 0 & 1 & 2

$\text{TargetPower} = (\text{HSB} * 256 + \text{LSB}) / 10$  (mW)

For DeviceType 3

$\text{TargetPower} = (\text{HSB} * 256 + \text{LSB})$  (mW)

Example:

Send command: EF EF 02 03 E3

Return command: ED FA 04 03 03 E8 D9

For DeviceType 0 & 1 & 2

$\text{TargetPower} = (0x03 * 256 + 0xE8) / 10 = 100.0$  (mW)

For DeviceType 3

$\text{TargetPower} = (0x03 * 256 + 0xE8) = 1000$  (mW)

#### 6. Set target power

Send command:

|      |      |      |      |     |     |     |
|------|------|------|------|-----|-----|-----|
| 0xEF | 0xEF | 0x04 | 0x04 | HSB | LSB | SUM |
|------|------|------|------|-----|-----|-----|

For DeviceType 0 & 1 & 2

$\text{HSB} = (\text{TargetPower} * 10) / 256$ ;  $\text{LSB} = (\text{TargetPower} * 10) \% 256$ 。

For DeviceType 3

$\text{HSB} = (\text{TargetPower}) / 256$ ;  $\text{LSB} = (\text{TargetPower}) \% 256$ 。

Return command:

|      |      |      |      |     |     |     |
|------|------|------|------|-----|-----|-----|
| 0xED | 0xFA | 0x04 | 0x03 | HSB | LSB | SUM |
|------|------|------|------|-----|-----|-----|

For DeviceType 0 & 1 & 2

TargetPower=(HSB\*256+LSB)/10 (mW)

For DeviceType 3

TargetPower=(HSB\*256+LSB) (mW)

Example:

Send command: EF EF 04 04 03 E8 D1

Return command: ED FA 04 03 03 E8 D9

For DeviceType 0 & 1 & 2

TargetPower =(0x03\*256+0xE8)/10=100.0(mW)

For DeviceType 3

TargetPower =(0x03\*256+0xE8)=1000(mW)

#### 7. Query soft activation(Optional)

Send command:

|      |      |      |      |      |
|------|------|------|------|------|
| 0xEF | 0xEF | 0x02 | 0x25 | 0x05 |
|------|------|------|------|------|

Return command:

|      |      |      |      |            |     |
|------|------|------|------|------------|-----|
| 0xED | 0xFA | 0x03 | 0x25 | SoftActive | SUM |
|------|------|------|------|------------|-----|

Example:

Send command: EF EF 02 25 05

Return command: ED FA 03 25 00 0F

SoftActive=0

Return command: ED FA 03 25 01 10

SoftActive=1

#### 8. Set up soft activation(Optional)

Send command:

|      |      |      |      |            |     |
|------|------|------|------|------------|-----|
| 0xEF | 0xEF | 0x03 | 0x26 | SoftActive | SUM |
|------|------|------|------|------------|-----|

Return command:

|      |      |      |      |            |     |
|------|------|------|------|------------|-----|
| 0xED | 0xFA | 0x03 | 0x25 | SoftActive | SUM |
|------|------|------|------|------------|-----|

Example:

Send command: EF EF 03 26 00 07

Return command: ED FA 03 25 00 0F

SoftActive=0

Send command: EF EF 03 26 01 08

Return command: ED FA 03 25 01 10

SoftActive=1