



**OEM-DES Devices**  
**13.56 MHz OEM RFID Module**  
**Communication Protocol, Add-On IO Control**

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## 1 IO Control

### 1.1 Overview: What Commands Controls Which IO

IO1	=>	controlled with command "SET_BUZZER(0x02)"
IO2	=>	controlled with "SET_LED(0x03)", Extended Command
IO3	=>	controlled with "SET_LED(0x03)", Extended Command
IO4	=>	controlled with "SET_LED(0x03)", Standard Command
IO5	=>	not accessible by user command
IO6	=>	not accessible by user command

#### Command examples for LED IOs

50 00 02 03 03 04 56 (Standard Command Example)

50 00 03 03 FF 03 03 AF (Extended Command Example)

### 1.2 Commands for IO Control

#### 1.2.1 SET\_BUZZER(0x02)

```
int SetBuzzer(          unsigned char ucRates,
                      unsigned char ucTimes);
```

#### -----DLL Explanation-----

ucRates:           beep keeping times will be  $ucRates * 50$  ms and silence  $(500 - ucRates * 50)$ ms  
ucTimes:           beep ucTimes times.

Return:           0(OK) or Error Code

#### -----Protocol Example-----

Send: >> 50 00 02 02 03 04 57    (beep 4 times, every beep keep sound 150ms and silence 350ms)

Return: << 50 00 00 02 52

#### 1.2.2 SET\_LED(0x03) Standard Version

```
int SetLed(           unsigned char ucRates,
                    unsigned char ucTimes);
```

#### -----DLL Explanation-----

ucRates:           Shine keeping times will be  $ucRates * 50$  ms and go out  $(500 - ucRates * 50)$ ms  
ucTimes:           Flicker ucTimes times.

Return: 0(OK) or Error Code

-----Protocol Example-----

Send: >> 50 00 02 03 03 04 56 (flicker 4 times, every time shine150ms and go out 350ms)

Return: << 50 00 00 03 53

1.2.3 SET\_LED(0x03) Extended Version

This is not supported in the API so far.

Command from PC/PLC to RFID

Example telegram: 50 00 03 03 FF 03 03 AF

- The Bytes in detail: 50 = Start of Telegram
- 00 03 = 3 Byte payload between command code and checksum
- 03 = Command code
- FF = Extended version
- 03 = Bitmask enable IO control, 0x07 enables IO2...IO4 to be controlled with this command
- 03 = Bitmask set IO ON/OFF, 0x07 switches IO2...IO4 ON
- xx = Checksum

Bitmask Enable IO Control by Command

Bit 7	Bit6	Bit 5	Bit 4	Bit 3	Bit2	Bit 1	Bit 0
RFU	RFU	RFU	RFU	RFU	IO4	IO3	IO2

Bitmask Set IO ON/OFF

Bit 7	Bit6	Bit 5	Bit 4	Bit 3	Bit2	Bit 1	Bit 0
RFU	RFU	RFU	RFU	RFU	IO4	IO3	IO2

Examples

- 50 00 03 03 FF 07 01 A9 = IO2 ON
- 50 00 03 03 FF 07 02 AA = IO3 ON
- 50 00 03 03 FF 07 03 AB = IO3 + IO2 ON
- 50 00 03 03 FF 07 04 AC = IO4 ON
- 50 00 03 03 FF 07 05 AD = IO4 + IO2 ON
- 50 00 03 03 FF 07 06 AE = IO4 + IO3 ON
- 50 00 03 03 FF 07 07 AF = IO4 + IO3 +IO2 ON
- 50 00 03 03 FF 07 00 A8 = All OFF

RFU = Reserved for Future Use