



OEM-DES Devices

13.56 MHz OEM RFID Module

Communication Protocol, Add-On IO Control

iDTRONIC GmbH
Ludwig-Reichling-Straße 4
67059 Ludwigshafen
Germany/Deutschland

Phone: +49 621 6690094-0
Fax: +49 621 6690094-9
E-Mail: info@idtronic.de
Web: idtronic.de

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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 shine 150ms 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