

ERRATA do książki

„Mikrokontrolery STM32 dla początkujących”

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1)

str. 222, od linii 38. (nie licząc linii pustych oraz nagłówka i linii rozdzielających), do końca str. 223. Omyłkowo wstawiono niewłaściwy listing, powinien być on podmieniony na:

List. 12.2. Plik *Inc/frame_parser.h*

```
#ifndef frame_parser_header
#define frame_parser_header

#include "stdint.h"
#include "stdlib.h"
#include "string.h"
#include "main.h"
#include "ws2812b.h"

struct frame_parser_state {
    ws2812b_config * led_strip_handler;
    uint8_t diodes_count;
    uint8_t line_buffer[800];
    uint8_t writer_position;
    uint8_t reader_position;
    uint8_t field_buffer[30];
    uint8_t field_position;
    uint8_t process_frame;
};

struct frame_parser_state frame_parser_init(ws2812b_config *
_led_strip_handler, uint8_t _diodes_count);
void frame_parser_recv_char(struct frame_parser_state * state,
uint8_t recv_char);
void frame_parser_read_field(struct frame_parser_state * state);
void frame_parser_process_frame(struct frame_parser_state * state);

#endif
```

2)

str. 224, od linii 2. do str. 225, do linii 6.

Omyłkowo wstawiono niewłaściwy listing, powinien być on podmieniony na:

List. 12.3. Plik *Src/frame_parser.c*

```
#include "frame_parser.h"

struct frame_parser_state frame_parser_init(ws2812b_config *
_led_strip_handler, uint8_t _diodes_count) {
```

```

struct frame_parser_state state;

state.led_strip_handler = _led_strip_handler;
state.diodes_count = _diodes_count;
for(uint16_t i=0; i<800; i++) state.line_buffer[i] = '\0';
state.writer_position = 0;
state.reader_position = 0;
for(uint8_t i=0; i<30; i++) state.field_buffer[i] = '\0';
state.field_position = 0;
state.process_frame = 0;

return state;
}

void frame_parser_rcv_char(struct frame_parser_state * state,
uint8_t rcv_char) {
    if (state->writer_position == 0 && rcv_char == '@') {
        state->writer_position++;
    } else if (state->writer_position >= 1 && state->writer_position < 799) {
        if (rcv_char == '\r' || rcv_char == '\n') {
            state->line_buffer[state->writer_position - 1] = '\0';
            state->writer_position = 0;
            state->process_frame = 1;
        } else {
            state->line_buffer[state->writer_position - 1] =
rcv_char;
            state->writer_position++;
        }
    } else {
        state->writer_position = 0;
    }
}

void frame_parser_read_field(struct frame_parser_state * state) {
    state->field_position = 0;
    while(state->line_buffer[state->reader_position] != ',' &&
state->line_buffer[state->reader_position] != '\0'
&& state->field_position < 29) {
        state->field_buffer[state->field_position] = state->
line_buffer[state->reader_position];
        state->reader_position++;
        state->field_position++;
    }
    state->field_buffer[state->field_position] = '\0';
    state->reader_position++;
}

void frame_parser_process_frame(struct frame_parser_state * state) {
    if(state->process_frame == 0) return;
    state->process_frame = 0;
}

```

```

state->reader_position = 0;
for(int i=0; i<30; i++) {
    ws2812b_color rgb;

    frame_parser_read_field(state);
    sscanf(state->field_buffer, "%d", &(rgb.red));

    frame_parser_read_field(state);
    sscanf(state->field_buffer, "%d", &(rgb.green));

    frame_parser_read_field(state);
    sscanf(state->field_buffer, "%d", &(rgb.blue));

    ws2812b_set_diode_color(state->led_strip_handler, i, rgb);
}
ws2812b_refresh(state->led_strip_handler);
}

```

3)

str. 225, od linii 7. do str. 226, do linii 13

Omyłkowo wstawiono niewłaściwy listing: "**List. 11.4.** Plik *Inc/ws2812b.h*", powinno być: "**List. 12.4.** Plik *Inc/ws2812b.h*". Listing powinien wyglądać, jak poniżej:

List. 12.4. Plik *Inc/ws2812b.h*

```

#ifndef ws2812b_header
#define ws2812b_header

#include "stm32f4xx_hal.h"
#include "spi.h"

typedef struct ws2812b_color {
    uint8_t red, green, blue;
} ws2812b_color;

typedef struct ws2812b_config {
    SPI_HandleTypeDef * spi_handler;
    uint16_t diodes_count;
    ws2812b_color * colors_array;
} ws2812b_config;

ws2812b_config ws2812b_init(SPI_HandleTypeDef * spi_handler,
    uint16_t diodes_count);
void ws2812b_set_diode_color(ws2812b_config * config, uint16_t
    diode_id,
    ws2812b_color color);
void ws2812b_refresh(ws2812b_config * config);

#endif

```

5)

str. 226, linia 14.:

Omyłkowo wstawiono niewłaściwy listing. Jest: "**List. 11.5.** Plik *Src/ws2812b.c*", powinno być: "**List. 12.5.** Plik *Src/ws2812b.c*". Listing powinien wyglądać, jak poniżej:

List. 12.5. Plik *Src/ws2812b.c*

```
#include "ws2812b.h"

ws2812b_config ws2812b_init(SPI_HandleTypeDef * spi_handler,
uint16_t diodes_count) {
    ws2812b_config config;
    config.spi_handler = spi_handler;
    config.diodes_count = diodes_count;
    config.colors_array = calloc(diodes_count,
sizeof(ws2812b_color));
    return config;
}

void ws2812b_set_diode_color(ws2812b_config * config, uint16_t
diode_id, ws2812b_color color) {
    config->colors_array[diode_id] = color;
}

void ws2812b_refresh(ws2812b_config * config) {
    const uint8_t zero = 0b00011111;
    const uint8_t one = 0b00000111;

    uint8_t buffer[30 * 24];

    for (uint16_t i = 0, j = 0; i < config->diodes_count; i++) {
        // Green
        for (int16_t k = 7; k >= 0; k--) {
            if ((config->colors_array[i].green & (1 << k)) == 0)
                buffer[j] = one;
            else
                buffer[j] = zero;
            j++;
        }

        // Red
        for (int16_t k = 7; k >= 0; k--) {
            if ((config->colors_array[i].red & (1 << k)) == 0)
                buffer[j] = one;
            else
                buffer[j] = zero;
            j++;
        }

        // Blue
```

```
        for (int16_t k = 7; k >= 0; k--) {
            if ((config->colors_array[i].blue & (1 << k)) == 0)
                buffer[j] = one;
            else
                buffer[j] = zero;
            j++;
        }
    }

    HAL_SPI_Transmit(config->spi_handler, &buffer, config-
>diodes_count * 24, 1000);
    HAL_Delay(1);
}
```