Plunger firmware V0.1

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Chapter 1

Plunger firmware

Main file containing the setup and main loop functions.

Main file containing the setup and main loop functions.

1.1 Introduction

This project handles user interface interactions using a rotary encoder and buttons, allowing for navigation through menus, adjustment of settings, and controlling a display. It implements a multitasking approach using FreeRTOS to manage various tasks concurrently.

1.2 dependencies

Dependencies: The libraries needed for this to compile are:

- · Arduino.h
- FreeRTOS
- BfButton
- TFT_eSPI
- EthernetENC
- SPI
- ThreeWire
- RtcDS1302
- AccelStepper

2 Plunger firmware

1.3 Author

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```
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1.4 License

BSD license, all text here must be included in any redistribution.

1.5 Flow chart of the project

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1.6 HISTORY

V00 (07/2024):

- · Implemented rotary encoder input handling.
- Integrated button press detection (single, double, long presses).
- Configured display updates based on menu navigation.
- Developed tasks using FreeRTOS for efficient multitasking. V00.1 (08/2024):
- · Added Ethernet communication features for remote monitoring.
- Implemented real-time clock (RTC) functionality for accurate time management.
- Enhanced display functionality to show system status and settings.
- Improved input handling to support simultaneous button and encoder interactions.
- Introduced settings menu for configuring system parameters.
- Added logging functionality for troubleshooting and performance analysis.
- · Optimized task scheduling to reduce CPU load and improve responsiveness.
- · Refined user interface design for better user experience on the TFT display.

V01 (10/2024):

· Implemented data visualization features for displaying sensor readings.

1.6 HISTORY 3

- Developed communication protocols for data transmission over Ethernet.
- · Conducted extensive testing and debugging to ensure system reliability.
- Refined rotary encoder response for smoother menu navigation.
- Implemented power management features to reduce energy consumption.
- · Expanded documentation and comments for better maintainability.

This file includes the global configurations and necessary libraries for the project. The setup function initializes all configurations, including RTOS (Real-Time Operating System) tasks, which manage the entire functionality of the system.

The main loop (void loop ()) is intentionally left empty, as the RTOS tasks are responsible for the continuous execution of system tasks, following a multi-threading approach. The tasks are created and managed in the setup function.

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Chapter 2

File Index

2.1 File List

Here is a list of all documented files with brief descriptions:

libraries.h	
This header file groups all the libraries and external dependencies required for the project. In-	
cluding this file in the code ensures the correct inclusion of all necessary libraries, simplifying	
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setup/setup.h	
Contains all setup configurations for the project including Ethernet, LCD, Motor, Pin, RTC, and	
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Chapter 3

File Documentation

3.1 button/button.cpp File Reference

Implementation file for button press handling functions.

```
#include "button.h"
#include <globals/globals.h>
#include <motor/motor.h>
#include <GUI/GUI.h>
```

Functions

- void singlePressHandler (BfButton *btn, BfButton::press_pattern_t pattern)

 Handles single button press events.
- $\bullet \ \ void \ double Press Handler \ (Bf Button *btn, \ Bf Button :: press_pattern_t \ pattern)\\$

Handles double button press events.

• void longPressHandler (BfButton *btn, BfButton::press_pattern_t pattern)

Handles long button press events.

3.1.1 Detailed Description

Implementation file for button press handling functions.

This file contains the implementation of functions that handle button press events, including single, double, and long presses. These functions allow users to navigate through menus, control the motor, adjust screen settings, and perform other actions.

3.1.2 Function Documentation

3.1.2.1 doublePressHandler()

Handles double button press events.

This function toggles the engineering mode when a double press is detected.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (double press in this case).

3.1.2.2 longPressHandler()

Handles long button press events.

This function toggles the screen on/off. If the screen is turned off, it reduces the brightness to zero and puts the display into sleep mode. When turned back on, the display is woken up and the brightness is restored to the previous level.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (long press in this case).

3.1.2.3 singlePressHandler()

Handles single button press events.

This function manages the navigation between different menus (main menu, settings, motor control, etc.) based on the current state and selection. It sends update commands to the screen to reflect the changes in the UI.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (single press in this case).

3.2 button/button.h File Reference

Header file for button press handling functions.

```
#include <libraries.h>
```

Functions

- void singlePressHandler (BfButton *btn, BfButton::press_pattern_t pattern) Handles single button press events.
- $\bullet \ \ void \ double Press Handler \ (Bf Button *btn, \ Bf Button :: press_pattern_t \ pattern)\\$

Handles double button press events.

void longPressHandler (BfButton *btn, BfButton::press_pattern_t pattern)

Handles long button press events.

3.2.1 Detailed Description

Header file for button press handling functions.

This file contains the declarations of the button press handling functions, including single, double, and long press actions for navigating the menu and controlling various settings.

3.2.2 Function Documentation

3.2.2.1 doublePressHandler()

Handles double button press events.

This function is called when a double press is detected. It toggles the engineering mode or any other logic that needs to be implemented for a double press event.

Parameters

btn	Pointer to the button object.
patte	The press pattern detected (double press in this case).

This function toggles the engineering mode when a double press is detected.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (double press in this case).

3.2.2.2 longPressHandler()

Handles long button press events.

This function is called when a long press is detected. It toggles the screen on/off, adjusts the brightness, and manages the sleep mode of the display.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (long press in this case).

This function toggles the screen on/off. If the screen is turned off, it reduces the brightness to zero and puts the display into sleep mode. When turned back on, the display is woken up and the brightness is restored to the previous level.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (long press in this case).

3.2.2.3 singlePressHandler()

Handles single button press events.

This function is called when a single press is detected. It manages the navigation through different menus and performs specific actions based on the current menu and selection.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (single press in this case).

This function manages the navigation between different menus (main menu, settings, motor control, etc.) based on the current state and selection. It sends update commands to the screen to reflect the changes in the UI.

Parameters

btn	Pointer to the button object.
pattern	The press pattern detected (single press in this case).

3.3 button.h

Go to the documentation of this file.

```
00001
00010 #ifndef BUTTON_H
00011 #define BUTTON_H
00012 #include <libraries.h>
00013
00024 void singlePressHandler(BfButton *btn, BfButton::press_pattern_t pattern);
00025
00036 void doublePressHandler(BfButton *btn, BfButton::press_pattern_t pattern);
00037
00047 void longPressHandler(BfButton *btn, BfButton::press_pattern_t pattern);
00048
00049 #endif // BUTTON_H
```

3.4 arimo12.h 11

3.4 arimo12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Arimo_Regular_12Bitmaps[] PROGMEM = {
00005
                Bitmap Data:
             0x00, //''
00006
             0xAA,0xA8,0x80, // '!'
0x52,0x94, // '"'
00007
00008
             0x24,0x24,0xFE,0x24,0x28,0x48,0xFE,0x48,0x48, // '#'
00009
             0x10,0x7c,0x54,0x50,0x70,0x3c,0x16,0x12,0x06,0x7c,0x10,// '$'
0x71,0x09,0x10,0x92,0x09,0x20,0x75,0xC0,0x92,0x09,0x21,0x12,0x11,0xC0, // '%'
00010
              0x18,0x12,0x09,0x07,0x07,0x22,0x92,0x30,0x88,0x7B,0x00, // '&'
00012
00013
             0x44,0x88,0x88,0x88,0x84,0x60, // '
00014
             0x44,0x22,0x22,0x22,0x24,0x40, // ')'
0x23,0xE2,0x14, // '*'
00015
00016
00017
             0x20,0x8F,0x88,0x20, // '+'
             0xA8, // ','
0xC0, // '-'
00018
00019
             0x80, // '.'
00020
             0x22,0x44,0x44,0x48,0x80, // '/'
00021
             00022
00023
00024
              0x72,0x20,0x82,0x10,0x84,0x20,0xF8, // '2'
00025
              0x38,0x88,0x10,0x21,0x80,0x81,0x22,0x38, // '3'
00026
             0x08, 0x18, 0x18, 0x28, 0x48, 0x48, 0xFE, 0x08, 0x08, // '4'
             0x7C,0x81,0x03,0xC0,0x40,0x81,0x22,0x78, // '5' 0x72,0x28,0x3C,0x8A,0x28,0xA2,0x70, // '6' 0xF8,0x21,0x04,0x20,0x82,0x10,0x40, // '7'
00027
00028
00029
              0x72,0x28,0xA2,0x72,0x28,0xA2,0x70, // '8'
00031
              0x72,0x28,0xA2,0x89,0xE0,0xA2,0x70, // '9'
00032
              0x80,0x08, // ':'
             0x80,0x0A,0x80, // ';'
00033
             0x09,0xC8,0x1C,0x08, // '<'
00034
             0xF8,0x00,0x3E, // '='
0x81,0xC0,0x9C,0x80, // '>'
00035
00036
              0x71,0x10,0x30,0x41,0x86,0x08,0x00,0x20, // '?'
00037
00038
              0 \times 1F, 0 \times 04, 0 \times 11, 0 \times 35, 0 \times 49, 0 \times AA, 0 \times 25, 0 \times 44, 0 \times A8, 0 \times 94, 0 \times FC, 0 \times 80, 0 \times 08, 0 \times 20, 0 \times F8, 0 \times 00, \ // \ '0'
             0x10,0x28,0x28,0x28,0x44,0x7C,0x44,0x66,0x82, // 'A'
0xF9,0x0A,0x14,0x6F,0x90,0xA1,0x42,0xF8, // 'B'
0x3C,0x61,0x20,0x10,0x08,0x04,0x02,0x00,0x84,0x3C,0x00, // 'C'
0xF8,0x86,0x82,0x82,0x82,0x82,0x82,0x82,0x84,0xF8, // 'D'
00039
00040
00041
00042
              0xFD,0x02,0x04,0x0F,0xD0,0x20,0x40,0xFC, //
00043
              0xFD,0x02,0x04,0x0F,0x90,0x20,0x40,0x80, // 'F'
00044
00045
              0x7C,0xC6,0x80,0x80,0x8E,0x82,0x82,0xC6,0x3C, //
             0x82,0x82,0x82,0x82,0xFE,0x82,0x82,0x82,0x82,0x82,//'H'
0xAA,0xAA,0x80,//'I'
0x38,0x20,0x82,0x08,0x20,0xA2,0x70,//'J'
0x84,0x88,0x90,0xA0,0xE0,0x90,0x88,0x8C,0x84,//'K'
00046
00047
00048
00049
00050
              0x81,0x02,0x04,0x08,0x10,0x20,0x40,0xFC, // 'L'
              0xC2,0xC6,0xC6,0xC6,0xAA,0xAA,0xAA,0x92,0x92, // 'M'
00051
             0xC2,0xC2,0xA2,0xA2,0xA2,0xA4,0xA4,0xA6,0xA6,0xA6,0/* 'M'
0x7C,0xC6,0x82,0x82,0x82,0x82,0x82,0xC6,0x7C, // 'O'
0xF9,0xOA,0x14,0x28,0x5F,0x20,0x40,0x80, // 'P'
0x7C,0xC6,0x82,0x82,0x82,0x82,0x82,0xC6,0x7C,0x18,0x0C, // 'Q'
00052
00053
00054
00055
00056
              0xFC, 0x82, 0x82, 0x82, 0xFC, 0x88, 0x84, 0x86, 0x82, // 'R'
00057
              0x79,0x0A,0x07,0x01,0xC0,0x81,0x42,0x78, // 'S'
00058
              00059
00060
             0x44,0x44,0x28,0x38,0x10,0x28,0x28,0x44,0x44,//'X'
0x44,0x44,0x28,0x28,0x10,0x10,0x10,0x10,0x10,/''Y'
00062
00063
00064
              0x7C,0x04,0x08,0x18,0x10,0x20,0x60,0x40,0xFE, // 'Z'
             0xD2,0x49,0x24,0x93,0x00, // '['
0x88,0x44,0x44,0x42,0x20, // '\'
00065
00066
              0xC9,0x24,0x92,0x4B,0x00, // ']'
00067
              0x21,0x45,0x22, //
00068
             0xFE, // '_'
0x88, // '.'
00069
00070
             0x71,0x10,0x27,0xC8,0x93,0x3B,0x00, // 'a'
0x82,0x0F,0xA2,0x8A,0x28,0xA2,0xF8, // 'b'
0x72,0x68,0x20,0x82,0x67,0x00, // 'c'
0x08,0x2F,0xA2,0x8A,0x28,0xA2,0xF8, // 'd'
00071
00072
00073
             0x72,0x28,0xBE,0x82,0x27,0x00, // 'e'
0x64,0xE4,0x44,0x44,0x40, // 'f'
00075
00076
              0xFA,0x28,0xA2,0x8A,0x2F,0x82,0xF0, // 'g'
00077
             0x82,0x0F,0xA2,0x8A,0x28,0xA2,0x88, // 'h'
0x8A,0xAA,0x80, // 'i'
0x41,0x24,0x92,0x4B,0x00, // 'j'
00078
00079
              0x82,0x09,0x2C,0xA3,0x8A,0x24,0x98, // 'k'
00081
00082
              0xAA,0xAA,0x80, // '1'
00083
             0xFF, 0xA2, 0x28, 0x8A, 0x22, 0x88, 0xA2, 0x28, 0x88, // 'm'
              0xFA,0x28,0xA2,0x8A,0x28,0x80, // 'n'
00084
             0x72,0x28,0xA2,0x8A,0x27,0x00, // 'o'
00085
```

```
0xFA,0x28,0xA2,0x8A,0x2F,0xA0,0x80, // 'p'
            0xFA,0x28,0xA2,0x8A,0x2F,0x82,0x08, // 'q'
0xE8,0x88,0x88,0x80, // 'r'
00087
00088
            0x7C,0x44,0x40,0x3C,0x04,0x84,0x7C, // 's'
00089
            0x44,0xE4,0x44,0x44,0x60, // 't'
0x8A,0x28,0xA2,0x8A,0x2F,0x80, // 'u'
00090
00091
            0x8A,0x25,0x14,0x51,0x42,0x00, // 'v'
00093
            0x88,0xA5,0x25,0x51,0x54,0x55,0x15,0x42,0x20, // 'w'
00094
            0xD9,0x45,0x08,0x51,0x49,0x80, // 'x'
            0x8B,0x25,0x14,0x50,0x82,0x08,0xC0, // 'y'
0x70,0x43,0x08,0x61,0x0F,0x80, // 'z'
00095
00096
           0x32,0x10,0x84,0x61,0x08,0x42,0x0C, // '{'
00097
00098
00099
            0xC1,0x08,0x42,0x18,0x84,0x23,0x30 // '}'
00100 };
00101 const GFXglyph Arimo_Regular_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset 00103 { 0, 2, 1, 4, 0, -1}, //''
                                                    -1 }, // '
                                                    -9 }, // '!'
                     1,
                           2,
                                 9,
                                       4,
                                              1,
                                                    -9 }, // ""
00105
                     4,
                                 3,
                                              Ο,
                                                    -9 }, // '#'
00106
                                 9,
                     6,
                                              0,
                                11,
                                                   -10 }, // '$'
00107
                    15,
                           8,
                                       8,
                                              0,
                                                    -9 }, // '%'
                                 9,
00108
                    26,
                          12,
                                      12,
                                              0,
                                                               ' &'
                                       9,
                                                    -9 }, //
00109
                    40,
                           9,
                                 9.
                                              0,
                           2,
                                                    -9 }, // "'
00110
                    51,
                                 3,
                                       3,
                                              1,
                                                    -9 }, // '('
00111
                    52,
                           4,
                                11,
                                       5,
                                              1,
00112
                    58,
                                       5,
                                              Ο,
                                                    -9 }, // ')'
                                                    -9 }, // '*'
00113
                    64,
                           6,
                                 4,
                                       6,
                                              Ο,
                                                    -7 }, // '+'
00114
                    67,
                           6,
                                 5,
                                       8,
                                              1,
                                                    -1 }, // ','
00115
                    71.
                           2,
                                 3.
                                       4,
                                              1,
00116
                                              1,
                                                    -4 }, //
                    72.
                           3.
                                 1.
                                       5.
00117
                    73,
                           2,
                                       4,
                                                    -1 }, // '.'
                                              1,
                                 1,
00118
                    74,
                                 9,
                                       4,
                                              Ο,
                                                    -9 }, // '/'
                                                    -9 }, // '0'
00119
                    79,
                           8,
                                 9,
                                       8,
                                              0,
                                                    -9 }, // '1'
00120
                    88,
                           6,
                                 9,
                                       8,
                                              1,
                                                    -9 }, // '2'
00121
                    95,
                           6,
                                 9.
                                       8,
                                              1,
                                                    -9 }, // '3'
00122
                   102,
                           7,
                                 9,
                                       8,
                                              0,
                                                    -9 }, // '4'
                   110,
                           8,
                                 9,
                                       8,
                                              Ο,
00124
                   119,
                           7,
                                 9,
                                       8,
                                              Ο,
                                                    -9 }, // '5'
                                                    -9 }, // '6'
00125
                   127,
                                 9,
                                       8,
                           6,
                                              1,
                                                    -9 }, // '7'
-9 }, // '8'
00126
                   134,
                           6,
                                 9,
                                       8,
                                              1,
00127
                   141,
                           6,
                                 9,
                                       8,
                                              1,
                                                    -9 }, //
                                                               191
                                 9,
                                       8,
00128
                   148.
                           6,
                                              1,
                                                    -7 }, // ':'
00129
                   155,
                                       4,
                                              1,
                           2,
                   157,
00130
                                                    -7 }, // ';'
                           2,
                                 9,
                                       4,
                                              1,
                                                    -7 }, // '<'
00131
                   160,
                                 5,
                                       8,
                                              1,
                                                    -6 }, // '='
00132
                   164.
                           6,
                                 4,
                                       8,
                                              1,
                                                    -7 }, // '>'
-9 }, // '?'
00133
                   167,
                           6,
                                 5,
                                       8,
                                              1,
                                              1,
00134
                   171.
                           7.
                                 9.
                                       8.
                                                    -9 }, // '@'
                   179,
                          11,
                                11,
                                              1,
00135
                                      13.
                                                    -9 }, // 'A'
00136
                   195,
                                 9,
                                       8,
                                              0,
                           8,
                                       9,
                                                    -9 }, // 'B'
00137
                   204,
                                 9,
                                              1,
00138
                   212,
                           9,
                                 9,
                                      10,
                                                    -9 }, // 'C'
                                                    -9 }, // 'D'
00139
                   223,
                           8,
                                 9,
                                      10,
                                              1,
                                                    -9 }, // 'E'
                   232.
00140
                           7,
                                 9.
                                       9.
                                              1,
                                                    -9 }, // 'F'
00141
                   240,
                                 9,
                                       8,
                                              1,
                   248,
                                      10,
                                              1,
                                                    -9 }, // 'G'
                           8,
                                 9,
00143
                   257,
                                              1,
                                                    -9 }, // 'H'
                           8,
                                 9.
                                                    -9 }, // 'I'
00144
                   266,
                           2,
                                 9,
                                              1,
                                       4,
                                                    -9 }, // 'J'
-9 }, // 'K'
00145
                   269.
                           6,
                                 9.
                                       7,
                                              Ο,
00146
                   276.
                           8,
                                 9,
                                       9,
                                              1,
                                                    -9 }, // 'L'
00147
                   285,
                           7,
                                 9,
                                       8,
                                              1,
00148
                   293,
                           8,
                                 9,
                                      10,
                                              1,
                                                    -9 }, // 'M'
00149
                   302,
                                                    -9 }, // 'N'
                           8,
                                 9,
                                      10,
                                              1,
                   311,
                                                    -9 }, // '0'
00150
                           8,
                                 9.
                                      10,
                                              1,
                                                    -9 }, // 'P'
00151
                   320,
                           7,
                                 9,
                                       9,
                                              1,
                                                    -9 }, // 'Q'
00152
                   328.
                           8,
                                11,
                                      10,
                                              1,
                                                    -9 }, // 'R'
                                              1,
                   339.
00153
                           8.
                                 9.
                                      10.
                                              1,
                                                    -9 }, // 'S'
00154
                   348,
                                       9,
                           7.
                                 9.
                                                    -9 }, // 'T'
00155
                   356,
                           8,
                                 9,
                                              0,
                                                    -9 }, // 'U'
00156
                   365,
                           8,
                                 9,
                                      10,
                                                    -9 }, // 'V'
00157
                   374,
                           8,
                                 9,
                                       8,
                                              Ο,
                                                    -9 }, // 'W'
00158
                   383,
                          12,
                                 9,
                                      12,
                                              Ο,
                                                    -9 }, // 'X'
                   397.
00159
                           8.
                                 9.
                                       8.
                                              0.
                                                    -9 }, // 'Y'
                   406,
00160
                           8,
                                 9,
                                       8,
                                              0,
                   415,
                                 9,
                                              Ο,
                                                    -9 }, // 'Z'
00161
                           8,
                                       8,
                                                    -9 }, // '['
-9 }, // '\'
00162
                   424,
                                       4,
                                11,
00163
                   429,
                                 9,
                                       4,
                                              0,
                                                    -9 }, // ']
00164
                   434.
                           3.
                                11.
                                       4.
                                              0,
                                                    -9 }, // '^'
00165
                   439.
                           6.
                                 4,
                                       6,
                                              0.
                   442,
                                                      2 }, //
00166
                                       8,
                                              0,
                           8,
                                 1,
                                                    -10 }, // '`'
00167
                   443,
                                 2,
                           3,
                                              1,
00168
                   444,
                                                    -7 }, // 'a'
                   451,
00169
                                 9,
                                       8,
                                              1,
                                                    -9 }, // 'b'
                                                    -7 }, // 'c'
00170
                   458,
                           6,
                                       7,
                                              1,
                                                    -9 }, // 'd'
00171
                   464,
                           6,
                                 9,
                                       8,
00172
                   471,
                                                            11
                           6.
                                       8.
```

3.5 arimo9.h 13

```
477,
                                                         -7 }, // 'g'
-9 }, // 'h'
-9 }, // 'i'
00174
                    482,
                              6,
                                                   1,
00175
                    489,
                                     9,
                                           8,
00176
                    496,
                              2,
                                    9,
                                           4,
                                                   1,
                                                         -9 }, // 'j'
-9 }, // 'k'
00177
                    499,
                              3.
                                   11.
                                           4,
                                                   0,
00178
                    504.
                              6.
                                     9.
                                                   1.
00179
                     511,
                              2,
                                     9,
                                           4,
                                                   1,
                                                         -7 }, // 'm'
-7 }, // 'n'
-7 }, // 'o'
-7 }, // 'p'
00180
                    514,
                            10,
00181
                    523,
                                           8,
                                                   1,
                             6,
                    529,
00182
                              6,
                                           8,
                    535.
00183
                              6,
                                     9.
                                           8.
                                                   1,
                                                         -7 }, // 'q'
-7 }, // 'r'
00184
                                                   1,
                    542.
                              6.
                                     9.
                                           8.
00185
                     549,
                              4,
                                                   1,
                                                         -7 }, // 's'
00186
                    553,
                                                   Ο,
                                                         -9 }, // 't'
-7 }, // 'u'
-7 }, // 'v'
-7 }, // 'w'
00187
                    560,
                              4,
                                     9,
                                           4,
                                                   0,
00188
                    565,
                              6,
                                           8,
                    571,
00189
                              6.
                                           6.
                                                   0.
                    577,
                            10,
00190
                                          10,
                                                   0,
                                                         -7 }, // 'x'
00191
                     586,
                             6,
                                           6,
                                                   Ο,
                                                         -7 }, // 'y'
-7 }, // 'z'
00192
                     592.
                              6,
                                     9,
                                           6,
                                                   Ο,
00193
                     599,
                              6,
                                                   0,
                                                         -9 }, // '{'
                                   11,
00194
                    605,
                              5,
                                           5,
                                                   0,
                                                         -9 },
00195
                    612,
                              2,
                                   12,
                                           4,
                                                   1,
00196
                    615,
                              5,
                                   11.
                                           5,
                                                   0.
                                                          -9 }
00197 };
00198 const GFXfont Arimo_Regular_12 PROGMEM = {
00199 (uint8_t *)Arimo_Regular_12Bitmaps,(GFXglyph *)Arimo_Regular_12Glyphs,0x20, 0x7E, 14};
```

3.5 arimo9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Arimo_Regular_9Bitmaps[] PROGMEM = {
00004
              // Bitmap Data: 0x00, // ''
00005
00006
             0xAA, 0x88, // '!'
0xAA, // '"'
00007
00008
00009
              0x01,0x4F,0x94,0xF9,0x40,0x00, // '#'
00010
              0x21,0xCA,0x38,0x30,0xA2,0x9C,0x20, // '$'
             0x64,0x52,0x2A,0x0E,0xC1,0x51,0x28,0x98, // '%'
0x30,0x91,0x43,0x49,0x93,0x1F,0x00, // '&'
0xA0, // "'
00011
00012
00013
              0x52,0x49,0x24,0x40, // '('
00014
              0x89,0x24,0x92,0x80, // ')'
0x45,0x99,0x20, // '*'
00016
00017
              0x20,0x8F,0x88,0x20, // '+'
             0xA0, // ','
0xE0, // '-'
00018
00019
              0x80, // '.'
00020
00021
              0x22,0x44,0x48,0x80, // '/'
              0x72,0x48,0xA2,0x8A,0x47,0x00, /
0x46,0x10,0x84,0x23,0xC0, // '1'
00023
00024
              0x70,0x21,0x04,0x21,0x0F,0x80, // '2'
              0x72,0x21,0x0C,0x0A,0x27,0x00, // '3'
00025
             0x10,0xC5,0x14,0x93,0xE1,0x00, // '4'
0x71,0x07,0x02,0x0A,0x27,0x00, // '5'
0x71,0x07,0x22,0x89,0x27,0x00, // '6'
00026
00027
00028
              0xF8,0x41,0x08,0x20,0x82,0x00, // '7'
00029
              0x72,0x25,0x1C,0x8A,0x27,0x00, // '8'
00030
             0x72,0x48,0xA2,0x78,0x47,0x00, // '9'
0x80,0x80, // ':'
0x80,0xA0, // ';'
00031
00032
00033
              0x19,0x88,0x18,0x18, // '<'
0xF8,0x0F,0x80, // '='
00035
              0xC0,0xC0,0x8C,0xC0, // '>'
00036
              0x72,0x20,0x84,0x20,0x02,0x00, // '?'
00037
             0x3C, 0x42, 0x8E, 0xCA, 0xCA, 0xBC, 0x80, 0x78, // '@'
0x30, 0x60, 0xA2, 0x47, 0x90, 0xA1, 0x00, // 'A'
0xF2, 0x49, 0x3C, 0x8A, 0x2F, 0x00, // 'B'
0x3C, 0x44, 0x40, 0x80, 0x40, 0x42, 0x3C, // 'C'
00038
00039
00040
00041
00042
              0xF1,0x12,0x14,0x28,0x91,0x3C,0x00,
              0xF2,0x08,0x3C,0x82,0x0F,0x80, // 'E'
0xFA,0x08,0x3C,0x82,0x08,0x00, // 'F'
00043
00044
              0x38,0x8A,0x04,0x68,0x48,0x8E,0x00, // 'G'
0x8A,0x28,0xBE,0x8A,0x28,0x80, // 'H'
00045
              0x8A, 0x28, 0xBE, 0x8A, 0x28, 0x80, //
00046
              0xAA,0xA8, // 'I'
00047
              0x30,0x84,0x21,0x49,0xC0, // 'J'
00048
              0x92,0x8C,0x30,0xA2,0x49,0x80, // 'K'
0x84,0x21,0x08,0x43,0xC0, // 'L'
00049
00050
              0x8A,0x2D,0xB6,0xDA,0xAA,0x80, // 'M'
0x8B,0x2C,0xAA,0x9A,0x68,0x80, // 'N'
00051
00052
              0x38,0x44,0x82,0x82,0x82,0x44,0x38, // 'O'
```

```
0xF2,0x48,0xA4,0xE2,0x08,0x00, // 'P'
             0xF2,0x48,0xA4,0xE2,0x08,0x00, // 'P'
0x38,0x44,0x82,0x82,0x82,0x44,0x38,0x10,0x0C, // 'Q'
0xF9,0x12,0x27,0x89,0x11,0x22,0x00, // 'R'
0x78,0x81,0x01,0xC0,0x50,0x9E,0x00, // 'S'
0xF8,0x82,0x08,0x20,0x82,0x00, // 'T'
0x8A,0x28,0xA2,0x8A,0x27,0x00, // 'U'
0x84,0x91,0x22,0x43,0x06,0x0C,0x00, // 'V'
00055
00056
00057
00058
00059
00061
              0x88,0xA2,0x25,0x51,0x54,0x55,0x15,0x42,0x20, // 'W'
00062
              0x51,0x42,0x08,0x51,0x48,0x80, // 'X'
              0x44,0x44,0x28,0x10,0x10,0x10,0x10, // 'Y'
00063
              0x78,0x10,0x41,0x02,0x08,0x3F,0x00, // 'Z'
0xD2,0x49,0x24,0xC0, // '['
0x88,0x44,0x42,0x20, // '\
00064
00065
00066
              0xC9,0x24,0x92,0xC0, // ']'
0x4A,0xA0, // '^'
00067
00068
              0xF8, // '_'
0x48, // '''
00069
00070
00071
              0x70,0x47,0x24,0x68, // 'a'
              0x84,0x39,0x29,0x4B,0x80, // 'b'
00073
              0x72,0x08,0x20,0x70, // 'c'
              0x10,0x9D,0x29,0x49,0xC0, // 'd'
00074
              0x72,0x2F,0xA0,0x70, // 'e'
00075
              0x32,0x3C,0x84,0x21,0x00, // 'f'
00076
              0x74,0xA5,0x27,0x09,0xC0, // 'g'
0x88,0xEA,0xAA,0xAO, // 'h'
00077
00078
00079
              0x0A,0xA8, // 'i'
0x0A,0xAA,0x80, // 'j'
00080
              0x84,0x29,0x8C,0x52,0x40, // 'k'
0xAA,0xA8, // 'l'
0xED,0x2A,0x54,0xA9,0x40, // 'm'
00081
00082
00083
              0xEA, 0xAA, 0xAO, // 'n'
0x72, 0x28, 0xA2, 0x70, // 'o'
00084
00085
00086
              0xE4,0xA5,0x2E,0x42,0x00, // 'p'
              0x74,0xA5,0x27,0x08,0x40, // 'q'
0xD2,0x48, // 'r'
0x72,0x07,0x02,0x70, // 's'
00087
00088
00089
              0x4E,0x44,0x46, // 't'
0xAA,0xAA,0xE0, // 'u'
00090
00092
              0x84,0x91,0x21,0x83,0x00, // 'v'
              0xB5,0x6A,0xD2,0xC4,0x80, // 'w'
0x51,0x42,0x14,0x88, // 'x'
00093
00094
              0x84,0x91,0x21,0x83,0x04,0x30,0x00, // 'y'
00095
              0xF1,0x10,0x8F,0x00, // 'z'
0x64,0x44,0x84,0x44,0x60, // '{
00096
00097
00098
              0xAA,0xAA,0x80, // '|'
00099
              0xC4,0x44,0x24,0x44,0xC0 // '}'
00100 };
00101 const GFXglyph Arimo_Regular_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset 00103 { 0, 2, 1, 4, 0, -1}, //''
                                                              -1 }, // '
                                                              -7 }, // '!'
00104
                         1,
                                                       1,
                                                              -7 }, // '"'
00105
                                                       Ο,
                         3,
                                                              -7 }, // '#'
00106
                         4,
                                6,
                                               6,
                                                       Ο,
                                                              -8 }, // '$'
00107
                       10,
                                6,
                                       9,
                                               6,
                                                       Ο,
                                                              -7 }, // '%'
-7 }, // '&'
                                        7.
00108
                        17,
                                9,
                                               9,
                                                       0,
00109
                        25,
                                7,
                                                       0,
                                        2,
                                               3,
                                                              -7 }, // "
                        32,
                                                       Ο,
                                                              -7 }, // '('
00111
                        33.
                                                              -7 }, // ')'
00112
                        37,
                                3,
                                        9,
                                                       Ο,
                                                              -7 }, // '*'
-6 }, // '+'
00113
                        41,
                                5,
                                        4,
                                               5,
                                                       Ο,
00114
                        44,
                                6,
                                       5,
                                               6,
                                                       0,
                                                              -1 }, // ','
00115
                        48,
                                2,
                                       2,
                                              4,
                                                       1,
                                                              -3 }, // '-'
                        49,
00116
                                4,
                                       1,
                                              4,
                                                       Ο,
00117
                                                              -1 }, // '.'
                        50,
                                2,
                                               4,
                                                       1,
                                                              -7 }, // '/'
00118
                        51,
                                4,
                                              4,
                                                       Ο,
                                                              -, }, // '/'
-7 }, // '0'
-7 }, // '1'
-7 }, // '2'
00119
                        55,
                                6,
                                       7,
                                               6,
                                                       Ο,
00120
                        61,
                                5,
                                               6,
                                                       1,
00121
                                                       0.
                        66.
                                6.
                                               6.
                                                              -7 }, // '3'
00122
                        72,
                                        7,
                                6.
                                               6.
                                                       0.
                                                              -7 }, // '4'
-7 }, // '5'
-7 }, // '6'
00123
                        78,
                                6,
                                               6,
                                                       0,
00124
                        84,
                                               6,
                                                       Ο,
00125
                        90,
                                6,
                                               6,
                                                       Ο,
                                                              -7 }, // '7'
00126
                       96,
                                6,
                                               6,
                                                       Ο,
                                                              -7 }, // '8'
-7 }, // '9'
00127
                      102.
                                        7.
                                6,
                                               6,
                                                       0,
00128
                      108,
                                6,
                                               6,
                                                       0,
                                                              -5 }, // ':'
00129
                      114,
                                2,
                                               4,
                                                       1,
                                                              -5 }, // ';'
-6 }, // '<'
00130
                      116,
00131
                      118,
                                        5,
                                                       Ο,
                                                              -5 }, // '='
-6 }, // '>'
00132
                      122,
                                6,
                                        3.
                                               6,
                                                       0,
00133
                      125.
                                6.
                                        5.
                                               6,
                                                       0,
                                                              -7 }, // '?'
                      129,
00134
                                               6,
                                                       Ο,
                                6,
                                             10,
00135
                      135,
                                8,
                                        8,
                                                       1,
00136
                      143,
                                                              -7 }, // 'A'
                                                       0,
                      150,
                                                              -7 }, // 'B'
00137
                                                       1,
                                                              -7 }, // 'C'
00138
                      156,
                                8,
                                       7,
                                              8,
                                                       0,
                                                              -7 }, // 'D'
00139
                      163,
                                7,
                                               8,
                                                       1,
                                                                      // 'E'
00140
                      170,
```

3.6 custom_fonts.h

```
-7 }, // 'F'
-7 }, // 'G'
-7 }, // 'H'
-7 }, // 'I'
00141
                    176,
                             6,
                                    7,
00142
                    182,
                             7,
                                                  0,
00143
                    189,
                                          8,
                                                        -7 },
00144
                    195,
                             2,
                                          4,
                                                  1,
                                                        -7 }, // 'J'
-7 }, // 'K'
00145
                    197,
                                          6,
                                                  0,
00146
                    202.
                             6.
                                                  1.
00147
                    208,
                             5,
                                          6,
                                                  1,
00148
                    213,
                                                         -7 }, // 'M'
                                                        -7 }, // 'N'
00149
                    219,
                                          8,
                                                  1,
                                                         -7 }, // 'O'
00150
                    225,
                             8,
                                          8,
                                                  Ο,
                                                        -7 }, // 'P'
                    232.
00151
                             6,
                                          7,
                                                  1,
                                                         -7 }, // 'Q'
00152
                    238.
                             8.
                                    9.
                                          8.
                                                  0.
                                                         -7 }, // 'R'
00153
                    247,
                                          8,
                                                  1,
                                                         -7 }, // 'S'
00154
                    254,
                                          7,
                                                  Ο,
00155
                    261,
                                                  0,
                                                         -7 }, // 'T'
                                                        -7 }, // 'U'
-7 }, // 'V'
                                          8,
7,
00156
                    267,
                             6,
                    273,
00157
                             7.
                                                  0.
                                                        -7 }, // 'W'
                    280,
00158
                            10,
                                         10,
                                                  0,
                                                         -7 }, // 'X'
00159
                    289,
                             6,
                                          6,
                                                  Ο,
                                                         -7 }, // 'Y'
00160
                    295,
                             8,
                                          8,
                                                  Ο,
                                                        -7 }, // 'Z'
00161
                    302,
                                                  0,
                                                        -7 }, // '['
00162
                    309,
                             3,
                                    9
                                          4,
                                                  1,
00163
                    313,
                             4,
                                          4,
                                                  0,
                                                        -7 }, // '\'
-7 }, // ']'
-7 }, // '^'
1 }, // '-'
-8 }, // ''
00164
                    317,
                             3.
                                    9,
                                          4,
                                                  0,
00165
                    321,
                                          4,
                             4,
                                    3,
                                                  0,
                    323,
00166
                                          6,
                                                  0,
                             6,
                                    1,
00167
                    324,
                                    2,
                                          4,
                                                  Ο,
                                                        -0 }, // 'a'
-5 }, // 'a'
-7 }, // 'b'
-5 }, // 'c'
00168
                    325,
                                    5,
                                          6,
                                                  Ο,
                    329,
00169
                             5,
                                          6,
                                                  1,
00170
                    334.
                             6,
                                    5.
                                          6,
                                                  0.
                                                         -7 }, // 'd'
00171
                    338.
                             5.
                                    7.
                                          6.
                                                  0.
00172
                    343,
                                                         -5 }, // 'e'
                             6,
                                    5,
                                          6,
                                                  0,
00173
                    347,
                                                  Ο,
                                                         -7 }, // 'f'
                                                         -5 }, // 'g'
00174
                    352,
                             5,
                                          6,
                                                  Ο,
                                                        -7 }, // 'g'
-7 }, // 'h'
-7 }, // 'i'
-7 }, // 'j'
00175
                    357,
                                          6,
                                                  1,
                                    7.
00176
                    361.
                             2,
                                          3,
                                                  1,
00177
                    363,
                             2,
                                    9,
                                          3,
                                                  0,
00178
                             5,
                                    7,
                                          6,
                                                         -7 }, // 'k'
                    366,
                                                  1,
                    371,
00179
                             2,
                                          3,
                                                  1,
                                                         -7 }, // 'l'
00180
                    373,
                                          9,
                                                  1,
                                                         -5 }, // 'm'
                                                        -5 }, // 'n'
-5 }, // 'o'
00181
                    378,
                             4,
                                    5,
                                          6,
                    381,
00182
                             6,
                                    5,
                                          6,
                                                  0,
                                                                    'p'
                                                         -5 }, //
00183
                    385.
                             5,
                                    7,
                                          6,
                                                  1.
                                                         -5 }, // 'q'
00184
                    390,
                             5,
                                                  Ο,
                                          6,
                                                         -5 }, // 'r'
                    395,
00185
                             3,
                                          4,
                                                  1,
                                                         -5 }, // 's'
00186
                    397,
                                    5,
                                                  Ο,
                                                        -6 }, // 't'
00187
                    401,
                             4,
                                    6,
                                          4,
                                                  Ο,
                                                        -5 }, // 'u'
00188
                    404,
                             4,
                                    5,
                                          6,
                                                  1,
                                                        -5 }, // 'v'
00189
                    407.
                                          7,
7,
                                                  0.
                             7,
                                    5.
                                                         -5 }, // 'w'
00190
                    412,
                                    5.
                                                  0.
00191
                    417,
                                          6,
                                                  0,
                             6,
00192
                    421,
                                                  Ο,
                                                         -5 }, // 'y'
                                                        -5 }, // 'z'
00193
                    428,
                                    5,
                                          5,
                                                  Ο,
                                                        -7 }, // '{'
00194
                    432,
                             4,
                                    9,
                                          4,
                                                  Ο,
                                                        -7 }, // '|'
00195
                    437.
                             2.
                                    9.
                                          4.
                                                  1.
00196
                    440,
                             4,
                                    9,
                                          4,
                                                  0,
00197 };
00198 const GFXfont Arimo_Regular_9 PROGMEM = {
00199 (uint8_t *)Arimo_Regular_9Bitmaps,(GFXglyph *)Arimo_Regular_9Glyphs,0x20, 0x7E, 12};
```

3.6 custom_fonts.h

```
00001 #include <custom fonts/arimo9.h>
00002 #include <custom_fonts/arimo12.h>
00003 #include <custom_fonts/dialog9.h>
00004 #include <custom_fonts/dialog12.h>
00005 #include <custom_fonts/gothic9.h>
00006 #include <custom_fonts/gothic12.h>
00007 #include <custom_fonts/mono9.h>
00008 #include <custom_fonts/mono12.h>
00009 #include <custom_fonts/opensans9.h>
00010 #include <custom_fonts/opensans12.h>
00011 #include <custom_fonts/roboto9.h>
00012 #include <custom_fonts/roboto12.h>
00013 #include <custom_fonts/SansSerif9.h>
00014 #include <custom_fonts/SansSerif12.h>
00015 #include <custom_fonts/serif9.h>
00016 #include <custom_fonts/serif12.h>
00017
00018
00019
00020
00021 #define arimo9 &Arimo_Regular_9
```

```
00022 #define arimo12 &Arimo_Regular_12
00023 #define dialog9 &Dialog_plain_9
00024 #define dialog12 &Dialog_plain_12
00025 #define gothic9 &URW_Gothic_L_Book_9
00026 #define gothic12 &URW_Gothic_L_Book_12
00027 #define roboto9 &Roboto_Condensed_Light_9
00028 #define roboto12 &Roboto_Condensed_Light_12
00029 #define mono9 &Monospaced_plain_19
00030 #define mono12 &Monospaced_plain_12
00031 #define opensans9 &Open_Sans_Regular_9
00032 #define sansserif9 &SansSerif_plain_9
00034 #define sansserif12 &SansSerif_plain_12
00035 #define serif19 &Serif_plain_9
00036 #define serif12 &Serif_plain_12
```

3.7 dialog12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version! 00003 const uint8_t Dialog_plain_12Bitmaps[] PROGMEM = {
00004
00005
                  // Bitmap Data: 0x00, // ' '
00006
00007
                   0xAA, 0xA2, 0x80, // '!'
00008
                   0xAA, 0xA0, //
                   0x12,0x0A,0x1F,0xC4,0x82,0x47,0xF0,0xA0,0x90, // '#'
00009
                   0x21,0xCA,0xA8,0xE0,0xE2,0xAA,0x70,0x82,0x00, // '$'
00010
00011
                   0x61,0x12,0x42,0x48,0x4A,0x06,0xD8,0x14,0x84,0x90,0x92,0x21,0x80, // '%'
00012
                   0x30,0x24,0x10,0x0C,0x05,0x14,0x4A,0x19,0x88,0x7B,0x00, // '&'
00013
                   0xA8, //
00014
                   0x64,0x48,0x88,0x88,0x44,0x60, //
                   0xC4,0x42,0x22,0x22,0x44,0xC0, // ')'
0x22,0xA7,0x1C,0xA8,0x80, // '*'
00016
00017
                   0x10,0x10,0x10,0xFE,0x10,0x10,0x10, // '+'
                   0xA8, // ','
0xE0, // '-'
00018
00019
                   0xA0, // '.'
00020
00021
                   0x10,0x88,0x42,0x21,0x08,0x84,0x00, // '/'
                   0x78,0x92,0x14,0x28,0x50,0xA1,0x24,0x78, // '0'
00022
                   0xE0,0x82,0x08,0x20,0x82,0x08,0xF8, // '1'
00023
                   0x79,0x18,0x10,0x20,0x82,0x08,0x20,0xFC, // '2'
00024
                   0x79,0x08,0x10,0x23,0x80,0x81,0x42,0x78, // '3'
00025
                   0x18,0x30,0x32,0x44,0x91,0x3F,0x04,0x08,// '4'
0xF9,0x02,0x07,0xC0,0xC0,0x81,0x46,0x78,// '5'
00026
00028
                   0x38,0x8A,0x05,0xCC,0xD0,0xA1,0x26,0x78, // '6'
00029
                   0xFC,0x08,0x20,0x41,0x02,0x08,0x10,0x40, // '7'
                   0x79,0x0A,0x14,0x27,0x90,0xA1,0x42,0x78, // '8'
00030
                   0x79,0x92,0x14,0x2C,0xCE,0x81,0x44,0x70, // '9'
0xA0,0xA0, // ':'
00031
00032
                   0xA0,0xA0, // ':'
0xA0,0xA8, // ';'
00033
                   0x03,0x0F,0x38,0x1C,0x01,0xE0,0x18, // '<'
00035
                   0xFF, 0x00, 0x3F, 0xC0, // '='
                   0xC0,0x3C,0x01,0xC0,0xE7,0x86,0x00, // '>'
00036
                   0x72,0x20,0x84,0x20,0x80,0x08,0x20, // '?'
00037
                   0x1F,0x02,0x0C,0x40,0x48,0xF2,0x91,0x29,0x12,0x91,0x48,0xF8,0x40,0x02,0x08,0x1F,0x00, // '@' 0x18,0x0C,0x09,0x04,0x82,0x42,0x11,0xF8,0x84,0x81,0x00, // 'A'
00038
00039
                   0xF9,0x0A,0x14,0x2F,0x90,0xA1,0x42,0xF8, //
00040
                   0x38,0x8A,0x04,0x08,0x10,0x20,0x22,0x38, // 'C'
00041
00042
                   0xF8,0x84,0x82,0x82,0x82,0x82,0x82,0x84,0xF8,
                   0xF0,0x84,0x82,0x82,0x02,0x02,0x02,0x02,0x02,0x10,0xFD,0x02,0x04,0x0F,0xD0,0x20,0x40,0xFC, //
00043
00044
                   0xFA,0x08,0x20,0xFA,0x08,0x20,0x80, //
                   0x3C, 0x42, 0x80, 0x80, 0x88, 0x82, 0x82, 0x42, 0x3C, // 'G'
0x82, 0x82,
00045
00047
                   0xAA,0xAA,0x80, // 'I'
                   0x22,0x22,0x22,0x22,0x22,0xC0, // 'J'
00048
                   0x84,0x88,0x90,0xA0,0xC0,0xA0,0x90,0x88,0x84, // 'K'
00049
00050
                   0x82,0x08,0x20,0x82,0x08,0x20,0xF8, // 'L'
0x81,0x61,0xB0,0xD4,0xAA,0x54,0xCA,0x65,0x02,0x81,0x00, // 'M'
00051
                   0xC2,0xC2,0xA2,0xA2,0x92,0x8A,0x8A,0x86,0x86, // 'N'
00052
00053
                   0x38,0x44,0x82,0x82,0x82,0x82,0x82,0x44,0x38, // 'O'
00054
                   0xF9,0x0A,0x14,0x2F,0x90,0x20,0x40,0x80, // 'P'
                   0x38,0x44,0x82,0x82,0x82,0x82,0x82,0x44,0x38,0x08,0x04, // 'Q'
00055
                   00056
00057
00058
00060
                    0x40,0x88,0x10,0x84,0x10,0x82,0x10,0x24,0x04,0x80,0x60,0x0C,0x00, // 'V'
00061
                   0x84,0x24,0x44,0x44,0x44,0xA4,0x2A,0x82,0xA8,0x2A,0x81,0x10,0x11,0x00, // 'W'
                   \begin{array}{l} 0xC6,0x44,0x28,0x28,0x10,0x28,0x28,0x44,0x82,\ //\ 'X'\\ 0x82,0x44,0x44,0x28,0x28,0x10,0x10,0x10,0x10,\ //\ 'Y' \end{array}
00062
00063
                   0xFE, 0x02, 0x04, 0x08, 0x10, 0x20, 0x40, 0x80, 0xFE, // '2' 0xD2, 0x49, 0x24, 0x93, 0x00, // '['
00064
                   0xD2,0x49,0x24,0x93,0x00, //
```

3.7 dialog12.h 17

```
0x84,0x10,0x84,0x10,0x84,0x10,0x80, // '\'
            0xC9, 0x24, 0x92, 0x4B, 0x00, // ']'
00067
00068
            0x18,0x12,0x10,0x80, //
            0xFC, // '_'
0x42, // '.'
00069
00070
00071
            0x79,0x08,0x13,0xE8,0x51,0x9D,0x00, // 'a'
            0x81,0x02,0x07,0xCC,0xD0,0xA1,0x42,0xCD,0xF0, // 'b'
00073
            0x73,0x28,0x20,0x83,0x27,0x00, // 'c'
00074
            0x04,0x08,0x13,0xEC,0xD0,0xA1,0x42,0xCC,0xF8, // 'd'
            0x79,0x9A,0x17,0xE8,0x18,0x9E,0x00, // 'e'
0x32,0x11,0xE4,0x21,0x08,0x42,0x00, // 'f'
0x7D,0x9A,0x14,0x28,0x59,0x9F,0x02,0x4C,0x70, // 'g'
00075
00076
00077
            0x81,0x02,0x05,0xCC,0x50,0xA1,0x42,0x85,0x08, // 'h'
0x8A,0xAA,0x80, // 'i'
00078
00079
00080
            0x41,0x24,0x92,0x49,0x60, // 'j'
            0x81,0x02,0x04,0x49,0x14,0x30,0x50,0x91,0x10, // 'k' 0xAA,0xAA,0xA0, // 'l'
00081
00082
            0xF7,0x22,0x28,0x8A,0x22,0x88,0xA2,0x28,0x88, // 'm'
00083
            0xB9,0x8A,0x14,0x28,0x50,0xA1,0x00, // 'n'
0x79,0x9A,0x14,0x28,0x59,0x9E,0x00, // 'o'
00086
            0xF9,0x9A,0x14,0x28,0x59,0xBE,0x40,0x81,0x00, // 'p'
00087
            0x7D, 0x9A, 0x14, 0x28, 0x59, 0x9F, 0x02, 0x04, 0x08, // q'
            0xB6,0x21,0x08,0x42,0x00, // 'r'
0x72,0x28,0x1C,0x0A,0x27,0x00, // 's'
0x42,0x3C,0x84,0x21,0x08,0x70, // 't'
00088
00089
00090
            0x85,0x0A,0x14,0x28,0x51,0x9D,0x00, // 'u'
00092
            0x85,0x09,0x22,0x44,0x86,0x0C,0x00, // 'v'
00093
            0x88,0xA2,0x25,0x51,0x54,0x55,0x08,0x82,0x20, // 'w'
00094
            0x84,0x91,0x21,0x84,0x89,0x21,0x00, // 'x'
            0x85,0x09,0x22,0x42,0x86,0x04,0x08,0x21,0x80, // 'y'
0xF8,0x21,0x08,0x42,0x0F,0x80, // 'z'
00095
00096
            0x38,0x82,0x08,0x23,0x02,0x08,0x20,0x83,0x80, // '{
0xAA,0xAA,0xAA, // '|'
00097
00098
00099
            0xE0,0x82,0x08,0x20,0x62,0x08,0x20,0x8E,0x00 // '}'
00100 };
00101 const GFXglyph Dialog_plain_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103 { 0, 2, 1, 5, 0, -1}, //''
                                        5,
                     0,
                           2,
                                               Ο,
                                                     -9 }, // '!'
00104
                     1,
00105
                                                     -9 }, // '"'
                                      11,
                                                     -8 }, // '#'
00106
                     6,
                           9,
                                  8.
                                                     -9 }, // '$'
00107
                    15,
                           6,
                                11,
                                        9,
                                               2,
                                                     -9 }, //
00108
                         11.
                                       12,
                    24.
                                  9.
                                               0,
                                                     -9 }, // '&'
00109
                    37,
                           9,
                                  9,
                                       11,
                                               1,
                                                     -9 }, // "'
00110
                     48,
                           2,
                                  3,
                                        4,
                                               1,
                                                    -10 }, // '('
00111
                    49,
                           4,
                                 11,
                                                    -10 }, // ')'
00112
                    55,
                           4,
                                11,
                                        6,
                                               1,
                    61,
                                                     -9 }, // '*'
00113
                           6,
                                  6,
                                        7,
                                               1,
                                                     -7 }, // '+'
                                       11.
00114
                                               1.
                    66.
                           8.
00115
                    73.
                           2.
                                               1.
                                                     -2 }, //
                                  3.
                                        5.
                                                     -4 }, // '-'
00116
                     74,
                           4,
                                  1,
                                               1,
                                                     -2 }, // '.'
00117
                    75,
                                  2,
                                               1,
                                                     -9 }, // '/'
00118
                    76,
                                 10,
                                        5,
                                               Ο,
                                                     -9 }, // 'O'
00119
                    83,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // '1'
                                        9,
00120
                    91.
                           6,
                                  9.
                                               1,
                                                     -9 }, // '2'
00121
                    98,
                                  9,
                                        9,
                           7,
                                               1,
                                        9,
                                               1,
                                                     -9 }, // '3'
                   106.
                                  9,
                   114,
                                                     -9 }, // '4'
00123
                                               1,
                                                     -9 }, // '5'
00124
                   122,
                                  9,
                                        9,
                                                     -9 }, // '6'
                   130,
00125
                                  9,
                                        9,
                                                     -9 }, // '7'
00126
                   138.
                           7,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // '8'
00127
                   146,
                                  9,
                                        9,
                                               1,
00128
                   154,
                           7,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // '9'
                                                     -6 }, // ':'
00129
                                  6,
                                        5,
                                               1,
                   164,
                                                     -6 }, // ';'
00130
                                        5,
                                               1,
                                                     -7 }, // '<'
00131
                   166,
                           9,
                                  6,
                                      11,
                                               1,
                                                     -5 }, // '='
00132
                   173,
                           9,
                                  3,
                                       11,
                                                     -7 }, // '>'
00133
                   177.
                           9.
                                  6.
                                       11.
                                               1.
                                                     -9 }, // '?'
00134
                                        7,
                   184.
                           6.
                                  9.
                                               0.
                          12,
                                                     -9 }, // '@'
                   191,
                                 11,
                                               1,
00136
                   208,
                                  9,
                                               Ο,
                                                     -9 }, // 'A'
                                                     -9 }, // 'B'
00137
                   219,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // 'C'
                                  9,
00138
                   227,
                                        9,
                                               1,
                                                     -9 }, // 'D'
                   235.
                                       10.
00139
                           8.
                                  9.
                                               1,
                                                     -9 }, // 'E'
00140
                   244,
                                  9,
                                        9,
                                               1,
                   252,
                                               1,
                                                     -9 }, // 'F'
                            6,
                                  9,
                                        8.
00142
                   259,
                                                     -9 }, // 'G'
                                  9,
                                                     -9 }, // 'H'
00143
                   268,
                                  9,
                                       10,
                                                     -9 }, // 'I'
00144
                   277.
                           2.
                                  9.
                                        4.
                                                     -9 }, // 'J'
00145
                   280.
                                11.
                            4.
                                        4.
                                              -1,
                                                     -9 }, // 'K'
                                               1,
00146
                   286,
                                  9,
                           8,
                                        8,
00147
                   295,
                                  9,
                                               1,
                            6,
                   302,
                                                     -9 }, // 'M'
00148
00149
                   313,
                                  9,
                                       10,
                                                     -9 }, // 'N'
                                                     -9 }, // '0'
00150
                   322,
                           8,
                                  9,
                                      10,
                                               1,
                                                     -9 }, // 'P'
00151
                   331.
                                  9,
                                        9,
00152
                   339.
                                11,
                                       10.
                                                     -9 }, // 'Q'
```

```
350.
                                                    -9 }, // 'R'
-9 }, // 'S'
-9 }, // 'T'
-9 }, // 'U'
00154
                   359,
00155
                   367,
                           8,
                                  9,
                                       8,
                                               Ο,
00156
                   376,
                           8,
                                 9,
                                      10,
                                              1,
                                                     -9 }, // 'V'
00157
                   385,
                          11,
                                  9,
                                       9,
00158
                          12,
                   398.
                                  9.
                                      12.
                                               0.
00159
                   412,
                           8,
                                  9,
                                       8,
                                               0,
00160
                   421,
                                                     -9 }, // 'Y'
                                                     -9 }, // 'Z'
00161
                   430,
                           8,
                                  9,
                                      10,
                                                     -9 }, // '['
                                11,
00162
                   439,
                           3,
                                       6,
                                               2,
                                                    -9 }, // '\'
                                               Ο,
00163
                   444.
                           5.
                                10.
                                       5.
                                                    -9 }, //
00164
                                               1,
                   451.
                           3.
                                11.
                                        6.
                                                   -9 }, // '^'
2 }, // '-'
-10 }, // '-'
00165
                   456,
                           9,
                                  3,
                                      11,
                                               1,
00166
                   460,
                                               Ο,
00167
                   461,
                                 2,
                                                   -7 }, // 'a'
-10 }, // 'b'
00168
                   462,
                                       9,
00169
                   469.
                                10.
                                        9,
                                              1,
                                                    -7 }, // 'c'
00170
                   478,
                                               1,
                           6,
                                       8,
                                                    -10 }, // 'd'
                                10,
00171
                   484,
                           7,
                                        9,
                                               1,
00172
                                                     -7 }, // 'e'
                   493,
                                                    -10 }, // 'f'
00173
                   500,
                                10,
                                               0,
                   507,
                                                    -7 }, // 'g'
00174
                                10,
                                        9,
                                               1,
                                                    -10 }, // 'h'
00175
                   516,
                           7,
                                10,
                                       9,
                                              1,
                                                    -9 }, // 'i'
00176
                   525,
                           2,
                                 9.
                                       4,
00177
                   528,
                                12,
                                               0,
                                                     -9 }, // 'j'
                                       4,
                           3,
00178
                                                    -10 }, // 'k'
                   533,
                                10,
                                       8,
                                               1,
                                                    -10 }, // '1'
00179
                   542,
                                       4,
                                10,
                                                    -7 }, // 'm'
00180
                   545,
                         10,
                                 7,
                                      12,
                                               1,
                                                    -7 }, // 'n'
-7 }, // 'o'
00181
                   554,
                           7,
                                       9,
00182
                   561.
                           7.
                                 7.
                                        9.
                                               1,
                                                     -7 }, // 'p'
00183
                   568.
                                10,
                                               1,
                           7.
                                        9.
                                                    -7 }, // 'q'
-7 }, // 'r'
00184
                                        9,
                                10,
                                               1,
00185
                   586,
                                        6,
                                                     -7 }, // 's'
00186
                   591,
                                       8,
                                                    -9 }, // 't'
-7 }, // 'u'
00187
                   597,
                                  9,
                                               Ο,
00188
                   603.
                                        9,
                                               1,
                                                     -7 }, // 'v'
00189
                   610,
                                               0,
                   617,
00190
                          10,
                                               Ο,
00191
                   626.
                                               Ο,
00192
                   633,
                                10,
                                               0,
                                                     -7 }, // 'y'
                                                     -7 }, // 'z'
00193
                   642,
                                 7,
                                        6,
                                               0,
                                                            // '{'
                                                     -9 },
00194
                   648.
                           6,
                                11,
                                        9,
                                               2,
                                                     -9 },
                                               2,
00195
                   657.
                           2.
                                12.
                                        5.
00196
                   660,
                                11,
                           6,
00198 const GFXfont Dialog_plain_12 PROGMEM = {
00199 (uint8_t *)Dialog_plain_12Bitmaps,(GFXglyph *)Dialog_plain_12Glyphs,0x20, 0x7E, 15};
```

3.8 dialog9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Dialog_plain_9Bitmaps[] PROGMEM = {
00004
             // Bitmap Data: 0x00, // ''
00005
00006
             0xAA,0x88, // '!'
00007
00008
             0x28,0x53,0xF1,0x4F,0xCA,0x14,0x00, // '#'
0x21,0xEA,0x38,0x38,0xAF,0x08, // '$'
0xE4,0x52,0x2A,0x1F,0xE1,0x51,0x28,0x9C, // '%'
00009
00010
00011
00012
             0x30,0x91,0x03,0x29,0x53,0x1B,0x00, // '&'
00013
             0xA0, // "'
0x52,0x49,0x22, // '(
             0x91,0x24,0xA4, // ')'
0xA9,0xC7,0x2A, // '*'
00015
00016
             0x20,0x8F,0x88,0x20, // '+'
00017
00018
             0xA0, // ','
0xC0, // '-'
00019
             0x80, // '.'
00020
00021
             0x22,0x44,0x48,0x80, // '/'
             0x64,0xA5,0x29,0x49,0x80, // '0'
0xC4,0x44,0x44,0xE0, // '1'
00022
00023
             0x64,0x84,0x44,0x43,0xC0, // '2'
00024
             0x64,0x84,0xC1,0x0B,0x80, // '3'
0x10,0xC5,0x14,0x93,0xE1,0x00, // '4'
00025
00026
             0xF4,0x21,0xC1,0x0B,0x80, // '5'
0x76,0x21,0xC9,0x49,0x80, // '6'
00027
00028
             0xF0,0x88,0x42,0x21,0x00, // '7'
00029
             0x64,0xA4,0xC9,0x49,0x80, // '8'
00030
             0x64,0xA5,0xE1,0x1B,0x80, // '9'
0x80,0x80, // ':'
00031
             0x80,0x80, // ':'
0x80,0xA0, // ';'
00032
```

3.8 dialog9.h 19

```
0x04,0x73,0x01,0xC0,0x40, // '<'
00035
               0xFC, 0x03, 0xF0, // '='
00036
               0x80,0xE0,0x33,0x88,0x00, // '>'
               0xF0,0x88,0x84,0x01,0x00, // '?'
00037
               0x3C,0x21,0x27,0x54,0xAA,0x54,0xF1,0x10,0x70, // '@'
0x30,0x61,0x22,0x47,0x90,0xA1,0x00, // 'A'
0xF2,0x28,0xBC,0x8A,0x2F,0x00, // 'B'
00038
00039
00041
               0x73,0x28,0x20,0x83,0x07,0x80, // 'C'
00042
               0xF2,0x68,0xA2,0x8A,0x6F,0x00, // 'D'
              0xF4,0x21,0xE8,0x43,0xC0,/'E'

0xF4,0x21,0xE8,0x42,0x00,/'F'

0xF3,0x28,0x26,0x8B,0x27,0x00,/'G'

0x8A,0x28,0xBE,0x8A,0x28,0x80,/'H'

0xAA,0xA8,/'I'
00043
00044
00045
00046
00047
00048
               0x49,0x24,0x92,0x80, // 'J'
               0x8A, 0x4A, 0x30, 0xA2, 0x48, 0x80, // 'K'

0x84, 0x21, 0x08, 0x43, 0xC0, // 'L'

0x85, 0x9B, 0x35, 0xAB, 0x50, 0xA1, 0x00, // 'M'

0x8B, 0x2C, 0xAA, 0x9A, 0x68, 0x80, // 'N'
00049
00050
00051
               0x73,0x68,0xA2,0x8B,0x67,0x00,
00053
               0xE4,0xA5,0xC8,0x42,0x00, // 'P'
00054
00055
               0x73,0x68,0xA2,0x8B,0x67,0x04, // 'Q'
               0xF2,0x49,0x38,0xA2,0x48,0x80, // 'R'
00056
               0x72,0x28,0x10,0x0A,0x27,0x00, // 'S'
0xF8,0x82,0x08,0x20,0x82,0x00, // 'T'
0x8A,0x28,0xA2,0x8A,0x27,0x00, // 'U'
00057
00058
00060
               0x85,0x09,0x22,0x44,0x86,0x0C,0x00, // 'V'
               0x92,0x92,0x54,0x54,0x6C,0x28,0x28, // 'W'
00061
               0xCC,0x90,0xC1,0x83,0x09,0x23,0x00, // 'X'
0x89,0x45,0x08,0x20,0x82,0x00, // 'Y'
00062
00063
00064
               0xF8,0x21,0x08,0x42,0x0F,0x80, // 'Z'
00065
               0xD2,0x49,0x26, // '['
00066
               0x88,0x44,0x42,0x20, // '\'
              0xC9,0x24,0x96, // ']'
0x30,0x90, // '^'
0xF8, // '_'
0x88, // ''
00067
00068
00069
00070
               0x70,0xBD,0x2F,0x00, // 'a'
               0x84,0x21,0xC9,0x4A,0x5C, // 'b'
0x74,0x21,0x07,0x00, // 'c'
00072
00073
              0x10,0x84,0x89,0x4A,0x4E, // 'd'
0x64,0xBD,0x07,0x00, // 'e'
0x72,0x11,0xC4,0x21,0x08, // 'f'
0x74,0xA5,0x27,0x09,0x80, // 'g'
00074
00075
00076
00077
               0x84,0x21,0xE9,0x4A,0x52, // 'h'
0x8A,0xA8, // 'i'
00078
00079
               0x41,0x24,0x92,0xC0, // 'j'
08000
              0x84,0x21,0x2A,0x62,0x92, // 'k'
0x8A,0xAA, // 'l'
0xFE,0x92,0x92,0x92,0x92, // 'm'
0xF4,0xA5,0x29,0x00, // 'n'
0x64,0xA5,0x26,0x00, // 'o'
0xF4,0xA5,0x26,0x00, // 'o'
00081
00082
00083
00084
00085
00086
               0xE4,0xA5,0x2E,0x42,0x00, // 'p'
               0x74,0xA5,0x27,0x08,0x40, // 'q'
0xE8,0x88,0x80, // 'r'
0xE8,0x62,0xE0, // 's'
00087
00088
00089
               0x47,0x90,0x84,0x38, // 't'
               0x94,0xA5,0x2F,0x00, // 'u'
0x8A,0x25,0x14,0x20, // 'v'
00091
00092
              0x92,0xAA,0xAA,0x44,0x44,//'w'

0x89,0x42,0x14,0x88,//'x'

0x89,0x11,0x42,0x82,0x04,0x30,0x00,//'y'

0xF0,0x88,0x8F,0x00,//'z'
00093
00094
00095
00096
              0x64,0x48,0x44,0x46, // '{'
00097
00098
               0xC4,0x42,0x44,0x4C // '}'
00099
00100 };
00101 const GFXglyph Dialog_plain_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                                                  -1 }, // ' '
-7 }, // '!'
                         0,
                                  2,
                                         1,
                                                  4,
                                                           Ο,
00104
                                  2,
                                                                  -7 }, // '"'
00105
                          3,
                                   4,
                                          2,
                                                  5,
                                                                  -7 }, // '#'
-7 }, // '$'
-7 }, // '$'
                                                  9,
7,
00106
                          4,
                                  7,
                                                           1,
00107
                         11,
                                  6,
                                          8.
                                                           0.
00108
                                                 10,
                                  9,
                                                           0,
                         25,
                                  7,
                                                  9,
                                                                   -7 }, // '&'
                                                           1,
00110
                         32,
                                                                   -7 }, // "'
                                                                   -8 }, // '('
00111
                         33,
                                          8,
                                                                   -8 }, // ')'
                         36,
00112
                                  3.
                                          8.
                                                  5,
                                                                   -7 }, // '*'
00113
                         39.
                                  6,
                                          4,
                                                  6,
                                                           0,
                                                                   -5 }, // '+'
00114
                          42,
                                          5,
                                                  9,
                                  6,
                                                           1,
                          46,
00115
                                          2,
                                                  4,
                                                           1,
00116
                          47,
                                                                   -1 }, // '.'
00117
                         48,
                                                  4,
                         49,
                                                                   -7 }, // '/'
00118
                                  4,
                                                  4,
                                                           0,
                                                                   -7 }, // '0'
00119
                         53,
00120
                         58.
```

```
// '2'
// '3'
// '4'
// '5'
                                             7,
7,
7,
                       62,
                                                            -7 },
00122
                       67,
                                                            -7
00123
                       72,
                                                            -7 },
00124
                       78,
                               5,
                                      7,
                                             7,
7,
7,
                                                     1,
                                                            -7 }, // '6'
-7 }, // '7'
00125
                       83,
00126
                                                     1,
                       88.
00127
                                                            -7 }, // '8'
                       93,
                                                     1,
                                                            -7 }, // '9'
-5 }, // ':'
00128
                       98,
00129
                     103,
                                             4,
                                                     1,
                                                            -5 }, // ';'
-5 }, // '<'
00130
                     105,
                                             4,
00131
                               7,
                     107.
                                      5.
                                             9,
                                                     1,
                                                            -4 }, // '='
-5 }, // '>'
                                             9,
00132
                                                     1,
                     112.
                               7.
                                      3.
00133
                                             9,
                     115,
                                      5,
                                                     1,
                                                            -7 }, // '?'
00134
                     120,
                                             6,
00135
                     125,
                               9,
                                      8,
                                                            -7 }, // '@'
                                                           -7 }, // 'e'

-7 }, // 'A'

-7 }, // 'B'

-7 }, // 'C'
00136
                     134,
                                                     0,
00137
                     141.
                               6,
                                             8.
                                                     1,
00138
                     147,
                               6,
                                             8,
                                                     1,
                                             8,
                                                     1,
                                                            -7 }, // 'D'
00139
                     153,
                               6,
                                                            -7 }, // 'E'
-7 }, // 'F'
00140
                     159,
                                                     1,
00141
                     164,
                                                            -7 }, // 'G'
00142
                     169,
                                             8,
                                                     1,
                     175,
00143
                               6,
                                      7,
                                             8,
                                                     1,
                                                            -7 }, // 'I'
                     181,
                                             4,
4,
00144
                               2,
00145
                                                     0,
                                                            -7 }, // 'J'
                     183,
                               3,
                                      9,
00146
                     187,
                                             7,
                                                            -7 }, // 'K'
                               6,
                                                     1,
                                                            -7 }, // 'L'
00147
                     193,
                                                            -7 }, // 'M'
00148
                     198,
                                             9,
                                                     1,
                                                            -7 }, // 'N'
-7 }, // 'O'
00149
                     205,
                                             8,
                                             8,
7,
00150
                     211.
                               6,
                                      7,
                                                     1,
                                                     1,
                                                            -7 }, // 'P'
00151
                     217.
                               5.
                                      7.
00152
                     222,
                                             8,
                                                            -7 }, // 'Q'
                               6,
                                      8,
                                                     1,
00153
                     228,
                                             7,
                                                            -7 }, // 'R'
                               6,
                                                            -7 }, // 'S'
00154
                     234,
                                             8,
                                                            -7 }, // 'T'
00155
                     240,
                                      7,
7,
                                             6,
                                                     Ο,
                                                            -7 }, //
                                                                        , U,
                     246,
00156
                               6,
                                             8,
                                                     1,
                                                            -7 }, // 'V'
00157
                     252,
                                             7,
                                                     0,
                     259,
                                             8,
                                                            -7 }, // 'W'
00158
                               8,
                                                     Ο,
00159
                     266,
                                                     Ο,
                                                            -7 }, // 'X'
                                                            -7 }, // 'Y'
00160
                     273,
                                             6,
                                                     0,
                                                            -7 }, // 'Z'
-7 }, // '['
00161
                     279,
                                             6,
                                                     Ο,
                     285,
                                                            -7 },
00162
                               3,
                                      8,
                                             5,
                                                     1,
                                                            -7 }, // '\'
-7 }, // '\'
-7 }, // ']'
00163
                     288.
                                             4,
                                                     0,
                               4,
                                      7,
                                             5,
00164
                     292,
                                      8,
                               3,
                                                     1,
                     295,
                                             9,
00165
                                      2,
                                                             1 }, // '_'
00166
                     297,
                                                     Ο,
                                                           1 3, // '_'
-8 }, // ''
-5 }, // 'a'
-8 }, // 'b'
00167
                     298,
                               3,
                                      2,
                                             6,
                                                     1,
                                             7,
00168
                     299,
                               5,
                                      5,
                                                     1,
                                                     1,
00169
                      303.
                               5.
                                             7,
7,
                                      8.
                                                                        'c'
00170
                                                     1,
                                                            -5 }, //
                     308.
                               5.
                                      5.
                                                            -8 }, // 'd'
00171
                      312,
                                      8,
                                                     1,
00172
                      317,
                                      5,
                                                     1,
                                                            -5 }, // 'e'
                                                            -8 }, // 'f'
00173
                     321,
                                      8,
                                             4,
                                                     Ο,
                                                            -8 }, // 'f'

-5 }, // 'g'

-8 }, // 'h'

-7 }, // 'i'

-7 }, // 'j'
                                             7,
7,
00174
                     326,
                                                     1,
00175
                     331.
                               5,
                                      8.
                                                     1,
00176
                      336,
                               2,
                                             4,
                      338,
                               3,
                                      9,
                                             4,
                                                     Ο,
00178
                      342,
                                             6,
                                                            -8 }, // 'k'
                                                           -0 }, // 'k'
-8 }, // '1'
-5 }, // 'm'
-5 }, // 'n'
00179
                     347,
                                      8,
                                             4,
00180
                     349,
                               8,
                                      5,
                                            10,
                                             7,
7,
7,
00181
                     354.
                               5,
                                      5,
                                                     1,
                                                            -5 }, //
                                                                        , o'
00182
                     358,
                                                     1,
                               5,
                                      5,
00183
                      362,
                               5,
                                                     1,
                                                            -5 }, // 'p'
00184
                      367,
                                             7,
                                                            -5 }, // 'q'
                                                            -5 }, // 'r'
00185
                     372,
                                             5,
                                                     1,
                                                           -5 }, // 'r'
-5 }, // 's'
-6 }, // 't'
-5 }, // 'u'
00186
                     375,
                               4,
                                      5,
                                             6,
                                                     1,
00187
                     378,
                                      6,
                                             5,
                                                     Ο,
00188
                      382.
                                      5.
                                             7,
                                                     1.
00189
                     386,
                                             6,
                                                     0,
                                                            -5 }, //
                               6.
                                      5.
00190
                      390,
                               8,
                                             8,
                                                     0,
                                                            -5 }, // 'x'
00191
                      395,
                                                     Ο,
                                                            -5 },
00192
                     399,
                                             6,
                                                     Ο,
00193
                      406,
                                      5,
                                                     1,
                                                            -5 },
                                                            -7 },
                                                                    // '{'
00194
                     410.
                               4,
                                      8.
                                             6.
                                                     1,
00195
                      414,
                                      9,
                                             4,
00196
00197 };
00198 const GFXfont Dialog_plain_9 PROGMEM = {
00199 (uint8_t *)Dialog_plain_9Bitmaps,(GFXglyph *)Dialog_plain_9Glyphs,0x20, 0x7E, 12};
```

3.9 gothic12.h

00001 // Created by https://oleddisplay.squix.ch/ Consider a donation

3.9 gothic12.h 21

```
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t URW_Gothic_L_Book_12Bitmaps[] PROGMEM = {
00004
             // Bitmap Data: 0x00, // ''
00005
00006
             0xAA,0xA8,0x80, // '!'
0xDB,0x00, // '"'
00007
00009
             0x24,0x24,0xFE,0x48,0x48,0xFC,0x48,0x48,0x50, // '#'
             0x21,0xC8,0xA0,0xC0,0xC0,0xA2,0x89,0xC2,0x00, // '$'
00010
             0x62,0x25,0x09,0x41,0xA0,0x08,0x04,0xC1,0x48,0x92,0x23,0x00, // '%'
0x38,0x24,0x12,0x07,0x27,0x24,0x72,0x11,0x96,0x79,0x00, // '&'
00011
00012
             0x38,0x24,0x12,0x07,0x27,0x24,0x72,0x11,0x96,0x79,0x00, //
             0xA8, // ""
00013
00014
             0x32,0x11,0x08,0x42,0x10,0x41,0x04, // '
             0xC1,0x08,0x21,0x08,0x46,0x22,0x20, // ')'
0x04,0xEC, // '*'
00015
00016
             0x10,0x10,0xFE,0x10,0x10,0x10, // '+'
0x4A,0x00, // ','
0xF0, // '-'
00017
00018
00019
             0x80, // '.'
00020
             0x08,0x41,0x04,0x20,0x82,0x10,0x41,0x08,0x00,
00021
             0x79,0x9A,0x14,0x28,0x50,0xA1,0x66,0x78, // '0'
00022
00023
             0xE2,0x22,0x22,0x22,0x20, // '1'
             0x79,0x9A,0x10,0x20,0x82,0x08,0x20,0xFC, // '2'
0x70,0x90,0x21,0x80,0xC0,0xA1,0x66,0x78, // '3'
0x0C,0x0C,0x14,0x24,0x24,0x44,0xFE,0x04,0x04, // '4'
00024
00025
00026
             0x78,0x81,0xE6,0x40,0x40,0xA1,0x64,0x78, // '5'
00028
             0x10,0x40,0xE2,0x68,0x50,0xA1,0x66,0x78,
00029
             0xF8,0x21,0x04,0x20,0x82,0x10,0x40, // '7'
             0x71,0x12,0x23,0x8C,0xD0,0xA1,0x66,0x78, // '8'
00030
             0x79,0x9A,0x14,0x2C,0xCF,0x04,0x08,0x20, // '9'
0x80,0x20, // ':'
00031
00032
00033
             0x40,0x05,0x20, // ';'
00034
             0x04,0x31,0x86,0x03,0x01,0x80,0x00, // '<'
00035
             0xFC, 0x03, 0xF0, // '='
00036
             0x80,0xC0,0x60,0x63,0x18,0x00,0x00, // '>'
             0x72,0x68,0x82,0x10,0xC2,0x00,0x20, // '?'
0x3E,0x1B,0xCD,0x2A,0x92,0xA4,0xA9,0x4F,0xF1,0x84,0x3E,0x00, // '@'
0x08,0x05,0x01,0x40,0x90,0x22,0x0F,0x84,0x11,0x04,0x80,0x80, // 'A'
00037
00038
00040
             0xF1,0x12,0x24,0x4F,0x11,0xA1,0x42,0xF8, // 'B'
00041
             0x3E,0x18,0x4C,0x0A,0x00,0x80,0x20,0x0C,0x09,0x84,0x3E,0x00,
00042
             0xF8,0x43,0x20,0xD0,0x28,0x14,0x0A,0x0D,0x0C,0xFC,0x00, // 'D'
             0xFA,0x08,0x20,0xFA,0x08,0x20,0xF8, // 'E'
0xFA,0x08,0x20,0xF2,0x08,0x20,0x80, // 'F'
0x3E,0x0C,0x33,0x00,0x40,0x08,0xF9,0x01,0x10,0x23,0x08,0x1E,0x00, // 'G'
00043
00044
00045
             0x85,0x0A,0x14,0x2F,0xD0,0xA1,0x42,0x84, //
0xAA,0xAA,0x80, // 'I'
00046
00047
             0x08,0x20,0x82,0x08,0x20,0xA2,0x70, // 'J'
00048
             0x85,0x12,0x45,0x0A,0x1E,0x24,0x44,0x44,// 'K'
0x82,0x08,0x20,0x82,0x08,0x20,0xF8, // 'L'
0xC1,0xB0,0x6C,0x2A,0x8A,0xA2,0xA5,0x29,0x4A,0x62,0x88,0x80, // 'M'
0xC2,0xC2,0xA2,0xB2,0x92,0x8A,0x8A,0x86,0x82, // 'N'
00049
00050
00051
             0x3E,0x18,0xCC,0x1A,0x02,0x80,0xA0,0x2C,0x19,0x8C,0x3E,0x00, // 'O'
00053
00054
             0xF9,0x0A,0x14,0x2F,0x90,0x20,0x40,0x80, // 'P'
             0x1E,0x0C,0x33,0x03,0x40,0x28,0x05,0xF8,0x91,0xA3,0x0C,0x1E,0xC0, // 'Q'
00055
             0xF9,0x1A,0x14,0x28,0xD6,0x24,0x44,0x88, //
0x72,0x28,0x20,0x70,0x28,0xA2,0x70, // 'S'
0xF8,0x82,0x08,0x20,0x82,0x08,0x20, // 'T'
00056
00057
00059
             0x85,0x0A,0x14,0x28,0x50,0xA1,0x66,0x78, // 'U'
00060
             0x81,0x20,0x90,0x88,0x42,0x41,0x20,0x50,0x30,0x08,0x00, // 'V'
             0x84,0x28,0x62,0x46,0x24,0xA4,0x4A,0x42,0x94,0x31,0x43,0x18,0x10,0x80, // 'W' 0x42,0x44,0x28,0x18,0x10,0x28,0x24,0x44,0x82, // 'X'
00061
             0x42,0x44,0x28,0x18,0x10,0x28,0x24,0x44,0x82,///
0x82,0x44,0x44,0x28,0x28,0x10,0x10,0x10,0x10,///
0xFC,0x10,0x60,0x82,0x04,0x10,0x40,0xFC,///Z'
00062
00063
00064
             0x68,0x88,0x88,0x88,0x84,0x20, // '['
00065
00066
             0x82,0x04,0x10,0x20,0x81,0x04,0x10,
             0xC2,0x22,0x22,0x22,0x24,0x80, // ']'
00067
             0x10,0x28,0x28,0x24,0x44,0x44,0x82, // '^'
00068
00069
             0xFC, //
             0x84, // '`'
00070
             0x3A,0x46,0x82,0x82,0x82,0x46,0x3A, // 'a'
00072
             0x80,0x80,0xB8,0xC4,0x82,0x82,0x82,0xC4,0xB8, // 'b'
00073
             0x38,0x44,0x80,0x80,0x80,0x44,0x38, // 'c'
00074
             0x02,0x02,0x3A,0x46,0x82,0x82,0x82,0x46,0x3A, // 'd'
             0x38,0x44,0x82,0xFE,0x80,0x44,0x38,//'e'
0x32,0x3C,0x84,0x21,0x08,0x40,//'f'
0x3A,0x46,0x82,0x82,0x82,0x46,0x3A,0xC6,0x3C,//'g'
00075
00076
00077
00078
             0x81,0x02,0xE6,0x68,0x50,0xA1,0x42,0x84, // 'h'
00079
             0x8A,0xAA,0x80, // 'i'
             0x41,0x24,0x92,0x4A,0x00, // 'j'
00080
             0x82,0x08,0xA4,0xA2,0x8E,0x24,0x88, // 'k'
0xAA,0xAA,0x80, // 'l'
00081
00082
             0xF7,0x22,0x28,0x8A,0x22,0x88,0xA2,0x28,0x88, // 'm'
00083
             0xB9,0x9A,0x14,0x28,0x50,0xA1,0x00, // 'n'
0x38,0x44,0x82,0x82,0x82,0x44,0x38, // 'o'
00084
00085
             0xB8,0xC4,0x82,0x82,0x82,0xC4,0xB8,0x80,0x80, // 'p'
00086
             0x3A,0x46,0x82,0x82,0x82,0x46,0x3A,0x02,0x02, // 'q'
0xE8,0x88,0x88,0x80, // 'r'
00087
00088
```

```
0x64,0xA0,0xC1,0x4B,0x80, // 's'
00090
            0x44,0xE4,0x44,0x44,0x40, // 't'
00091
            0x85,0x0A,0x14,0x28,0x59,0x9D,0x00, // 'u'
            0x84,0x44,0x44,0x48,0x28,0x30,0x10, // 'v'
00092
            0x80,0x51,0x91,0x32,0x26,0x43,0x50,0x66,0x0C,0xC0, // 'w' 0x88,0x90,0xC1,0x03,0x09,0x22,0x00, // 'x'
00093
00094
            0x84,0x89,0x22,0x43,0x06,0x04,0x10,0x20,//'y'
0xF8,0x42,0x08,0x42,0x0F,0x80,//'z'
00096
           0x64,0x44,0x48,0x44,0x44,0x60, // '{'
0xAA,0xAA,0x80, // '|'
0xC4,0x44,0x42,0x44,0x44,0xC0 // '}'
00097
00098
00099
00100 };
00101 const GFXglyph URW_Gothic_L_Book_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103
                     Ο,
                           2,
                                       4,
                                               Ο,
                                                     -1 }, // '
                                                     -9 }, // '!'
00104
                     1,
                           2,
                                  9,
                                        4,
                                                     -9 }, // ""
-9 }, // "#'
00105
                     4.
                           3.
                                  3.
                                        5.
                                               1.
00106
                           8,
                                  9,
                                        8,
                                               0,
                      6,
                                                     -10 }, // '$'
00107
                    15,
                            6,
                                 11,
                                        8,
                                               1,
                                                     -9 }, // '%'
00108
                    24,
                          10,
                                  9,
                                       12,
                                                     -9 }, // '&'
00109
                    36,
                           9,
                                  9,
                                               1,
                                        4,
00110
                    47,
                           2,
                                  3,
                                               1,
                                                     -9 }, // '('
00111
                    48,
                           5,
                                11,
                                        6,
                                               1,
                                                     -9 }, //
00112
                    55,
                           5.
                                 11,
                                        6,
                                               0,
00113
                           4,
                                                    -10 }, // '*'
                    62,
                                  4,
                                        6,
                                               1,
                                                     -7 }, // '+'
00114
                    64,
                           8,
                                  6,
                                        8,
                                               0,
00115
                    70,
                                  3,
                                        4,
                                                     -2 }, // ','
                                                     -4 }, // '-'
00116
                    72,
                           5,
                                  1,
                                        5,
                                               Ο,
                                                     -1 }, // '.'
-9 }, // '/'
00117
                    73,
                           2,
                                  1,
                                        4,
                                               1,
                                               Ο,
00118
                    74.
                           6,
                                 11.
                                        6,
                                                     -9 }, // '0'
00119
                                               1,
                    83.
                           7.
                                  9.
                                        8.
00120
                    91,
                                  9,
                                        8,
                                                     -9 }, // '1'
                           4,
                                               1,
00121
                    96,
                                  9,
                                               1,
                                                     -9 }, // '2'
                                                     -9 }, // '3'
00122
                   104,
                                  9,
                                        8,
                                                     -9 }, // '4'
00123
                   112,
                           8,
                                  9,
                                        8,
                                               Ο,
                                                     -9 }, // '5'
-9 }, // '6'
00124
                   121.
                           7,
                                  9.
                                        8,
                                               0,
00125
                   129,
                           7,
                                  9,
                                        8,
                                               1,
                   137,
                                               1,
                                                     -9 }, // '7'
                           6,
                                  9,
                                        8,
00127
                   144,
                           7,
                                  9,
                                        8,
                                               1,
                                                     -9 }, // '8'
                                                     -9 }, // '9'
00128
                   152,
                                  9,
                                        8,
                                               1,
                                                     -6 }, // ':'
-6 }, // ';'
00129
                   160,
                           2,
                                  6,
                                        4,
                                               1,
00130
                   162,
                           3,
                                  7,
                                        4,
                                               0,
                                                     -7 }, // '<'
                                        9,
00131
                           7,
                                  7,
                   165.
                                               1,
                                                     -5 }, // '='
00132
                   172,
                                        8,
                                               1,
                           7,
                                  3,
                   175,
                                                     -7 }, // '>'
00133
                                        9,
                                               1,
                                                     -9 }, // '?'
00134
                   182,
                                  9,
                                        8,
                                               1,
                                                     -9 }, // '@'
00135
                   189,
                          10,
                                  9,
                                       12,
                                               1,
                                                     -9 }, // 'A'
-9 }, // 'B'
00136
                   201,
                          10,
                                  9,
                                       10,
                                               Ο,
00137
                   213.
                           7.
                                  9.
                                        9.
                                               1,
                          10,
                                                     -9 }, // 'C'
                   221,
                                       11,
                                               1,
00138
                                  9.
                                                     -9 }, // 'D'
00139
                   233,
                           9,
                                  9,
                                       11,
                                               1,
                                                     -9 }, // 'E'
00140
                   244,
                           6,
                                  9,
                                               1,
                                                     -9 }, // 'F'
00141
                   251,
                           6,
                                  9,
                                                     -9 }, // 'G'
00142
                   258,
                         11,
                                  9,
                                       12,
                                               1,
                                                     -9 }, // 'H'
                   271.
00143
                           7.
                                  9.
                                        9,
                                               1,
                                                     -9 }, // 'I'
                   279,
00144
                           2,
                                  9,
                                        4,
7,
                                               1,
                   282,
                                               Ο,
                                                     -9 }, // 'J'
                           6,
                                  9,
00146
                   289,
                                        8,
                                                     -9 }, // 'K'
                                  9.
                                               1,
                                                     -9 }, // 'L'
00147
                   297,
                                  9,
                                        7,
                                               1,
                                                     -9 }, // 'M'
-9 }, // 'N'
00148
                   304.
                         10,
                                  9,
                                       12,
                                               1,
00149
                   316.
                           8.
                                  9,
                                       10,
                                               1,
                                                     -9 }, // '0'
00150
                   325,
                          10,
                                  9,
                                               1,
                                       12,
00151
                   337,
                           7,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // 'P'
00152
                   345,
                          11,
                                                     -9 }, // 'Q'
                                               1,
                                                     -9 }, // 'R'
00153
                   358,
                                  9,
                                        9,
                                               1,
                                                     -9 }, // 'S'
00154
                   366,
                           6,
                                  9,
                                        8,
                                               1,
                                                     -9 }, // 'I'
-9 }, // 'U'
00155
                   373,
                           6,
                                  9,
                                        6,
                                               Ο,
00156
                   380.
                           7.
                                  9.
                                        9.
                                               1.
                                                     -9 }, // 'V'
00157
                   388,
                                        9,
                                               0,
                           9.
                                  9.
                                                     -9 }, // 'W'
                   399,
                          12,
                                  9,
                                       13,
                                               0,
                                                     -9 }, // 'X'
00159
                   413,
                           8,
                                  9,
                                        8,
                                               Ο,
                                                     -9 }, // 'Y'
00160
                   422,
                           8,
                                  9,
                                        8,
                                               Ο,
                                                     -9 }, // 'Z'
                   431,
00161
                           7,
                                  9,
                                        8,
                                               1,
                                                     -9 }, // '['
-9 }, // '\'
-9 }, // '\'
00162
                   439.
                           4.
                                 11.
                                        5,
                                               1,
                   445,
00163
                                  9,
                                        8,
                           6,
                                               1,
                   452,
                                        5,
                                               Ο,
                           4,
                                                     -9 }, // '^'
00165
                   458,
                                        8,
                                               0,
                                  7,
                                                      1 }, // '_'
00166
                   465,
                                        7,
                                               0,
                                                    -10 }, // , ,,
00167
                   466,
                           4,
                                  2,
                                        6.
                                               1,
                                                     -7 }, // 'a'
00168
                   467.
                                       10,
                           8.
                                               1,
                                                     -9 }, // 'b'
                   474,
00169
                                  9,
                                               1,
                           8,
                                       10,
00170
                   483,
                                        9,
                                               1,
                            8,
                                      10,
00171
                   490,
                                               1,
                                                     -9 }, // 'd'
                            8,
                                      10,
                                                     -7 }, // 'e'
00172
                   499,
                            8,
                                                     -9 }, // 'f'
00173
                   506,
                           5,
                                  9,
                                        5,
                                               0,
                                                     -7 }, // 'g'
00174
                   512,
                            8,
                                  9,
                                       10,
                                               1,
                                                     -9 }, // 'h'
00175
                   521,
                                        9.
```

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```
-9 }, // 'i'
-9 }, // 'j'
-9 }, // 'k'
-9 }, // 'l'
                    529,
00177
                    532,
                                           4,
                    537,
00178
                                    9,
00179
                    544,
                             2,
                                    9,
                                           4,
                                                   1,
                                                         -7 }, // 'm'
-7 }, // 'n'
00180
                    547.
                            10,
                                          12,
00181
                    556.
                                           9.
                                                   1.
00182
                     563,
                                          10,
                                                   1,
                                                         -7 }, // 'p'
-7 }, // 'q'
-7 }, // 'r'
-7 }, // 'r'
00183
                    570,
                                          10,
00184
                    579,
                                    9,
                                          10,
                                                   1,
00185
                    588,
                              4,
00186
                    592.
                            5.
                                                   1,
                                                         -9 }, // 't'
-7 }, // 'u'
00187
                    597.
                                                   1,
                             4.
                                    9.
                                           6.
00188
                    602,
                                           9,
00189
                     609,
                                           8,
                                                   Ο,
00190
                    616, 11,
                                                   0,
                                                         -7 }, // 'w'
                                                         -7 }, // 'x'
-7 }, // 'y'
-7 }, // 'z'
00191
                    626,
                                                   0,
00192
                    633.
                                    9.
                                                   0,
00193
                    641,
                              6,
                                                   1,
                                                         -9 }, // '{'
00194
                    647,
                              4,
                                           5,
                                                   Ο,
                                                         -9 },
00195
                     653,
                                    9,
                                                   4.
00196
                                                         -9 } //
00197 };
00198 const GFXfont URW_Gothic_L_Book_12 PROGMEM = {
00199 (uint8_t *)URW_Gothic_L_Book_12Bitmaps,(GFXg1yph *)URW_Gothic_L_Book_12G1yphs,0x20, 0x7E, 17};
```

3.10 gothic9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t URW_Gothic_L_Book_9Bitmaps[] PROGMEM = {
00004
00005
              // Bitmap Data: 0x00, // ''
00006
00007
              0xAA,0x88, // '!'
              0xD8, // ""'
00008
              0x51,0x4F,0x94,0xFA,0x8A,0x00, // '#'
0x45,0xA0,0xC1,0x49,0x80, // '$'
0xC8,0xB0,0xB0,0x60,0x2C,0x32,0x1C, // '%'
00009
00010
00011
00012
              0x70,0xA1,0xD3,0x49,0x91,0x1D,0x00, // '&'
00013
00014
              0x04,0x88,0x88,0x42, // '('
              0x04,0x22,0x22,0x48, // ')'
0xDB,0x00, // '*'
0x20,0x8F,0x88,0x20, // '+'
00015
00016
00017
              0x20, // ','
0xE0, // '-'
00019
              0x80, // '.'
00020
              0x21,0x08,0x84,0x22,0x10, // '/'
00021
              0x72,0x28,0xA2,0x8A,0x27,0x00, // '0'
0xC9,0x24,0x90, // '1'
00022
00023
              0x72,0x20,0x84,0x21,0x0F,0x80, // '2'
00024
              0x64,0x84,0x41,0x49,0x80, // '3'
00026
              0x08,0x30,0xA2,0x44,0x9F,0x82,0x00, // '4'
00027
              0x72,0x07,0x02,0x0A,0x27,0x00, // '5'
              0x21,0x07,0x22,0x8A,0x27,0x00, // '6'
0xF0,0x88,0x44,0x21,0x00, // '7'
00028
              0xF0,0x88,0x44,0x21,0x00, // '7'
0x64,0xA4,0xC9,0x49,0x80, // '8'
00029
00030
              0x72,0x28,0x20,0x70,0x82,0x00, // '9'
0x80,0x80, // ':'
0x40,0x28, // ';'
00031
00032
00033
              0x19,0x88,0x1C,0x08, // '<'
0xF8,0x0F,0x80, // '='
0x81,0x81,0x98,0x80, // '>'
00034
00035
00036
              0x72,0x20,0x84,0x20,0x02,0x00, // '?'
00038
              0x3C,0x52,0xAA,0xCA,0xD2,0x6C,0x38, // '@'
00039
              0x10,0x30,0x28,0x48,0x7C,0x84,0x84, // 'A'
              0xE4,0xA5,0xC9,0x4B,0xC0,//'B'
0x3C,0x42,0x80,0x80,0x80,0x42,0x3C,//'C'
0xF1,0x12,0x14,0x28,0x51,0x3C,0x00,//'D'
0xF4,0x21,0xE8,0x42,0xC0,//'E'
0xF4,0x21,0xE8,0x42,0x00,//'F'
00040
00041
00042
00043
00045
              0x38,0x44,0x80,0x80,0x9E,0xC2,0x3C, // 'G'
              0x8A,0x26,0xBE,0x8A,0x28,0x80, // 'H'
0xAA,0xA8, // 'I'
0x10,0x84,0x21,0x49,0x80, // 'J'
00046
00047
00048
              0x8A,0x4A,0x30,0xA2,0x48,0x80, // 'K'
0x84,0x21,0x08,0x43,0xC0, // 'L'
00049
00050
00051
              0xC6, 0xC6, 0xCA, 0xAA, 0xAA, 0xB2, 0x92,
00052
              0x8B,0x2C,0xAA,0xAA,0x68,0x80, // 'N'
              0x38,0x44,0x82,0x82,0x82,0x44,0x38, // 'O'
00053
              0x52,0x24,0x22,0x62,0x02,0x14,0x35,//
0xF2,0x28,0xA2,0xF2,0x08,0x00, // 'P'
0x38,0x44,0x82,0x82,0xF2,0x8C,0x7E, // 'Q'
0xF2,0x28,0xA6,0xA2,0x49,0x80, // 'R'
00054
00055
              0xF2,0x28,0xA6,0xA2,0x49,0x80, //
```

```
0x64,0xA0,0xC1,0x4B,0x80, // 'S'
              0xF8,0x82,0x08,0x20,0x82,0x00, // 'T'
0x8A,0x28,0xA2,0x8A,0x27,0x00, // 'U'
00058
00059
              0x85,0x09,0x22,0x43,0x06,0x04,0x00, // 'V'
00060
             0x89,0x22,0x49,0x91,0x54,0x56,0x19,0x82,0x20, // 'W'
0x89,0x43,0x08,0x51,0x48,0x80, // 'X'
0x8A,0x25,0x14,0x20,0x82,0x00, // 'Y'
0xF0,0x88,0x84,0x43,0xC0, // 'Z'
00061
00062
00064
00065
              0x1A,0x49,0x22, // '['
              0x88,0x84,0x42,0x20, // '\'
0x19,0x24,0x94, // ']'
00066
00067
              0x21,0x45,0x12,0x88, // '^'
00068
              0xF8, // '_'
0x80, // '.'
00069
00070
00071
              0x7A,0x28,0xA2,0x78, // 'a'
              0x82,0x0F,0x22,0x8A,0x2F,0x00, // 'b'
0x7A,0x08,0x20,0x78, // 'c'
00072
00073
              0x08,0x27,0x22,0x8A,0x27,0x80, // 'd'
0x72,0x2F,0xA0,0x78, // 'e'
0x24,0xE4,0x44,0x40, // 'f'
00074
00076
00077
              0x7A,0x28,0xA2,0x7A,0x27,0x00, // 'g'
             0x82,0x0F,0x22,0x8A,0x28,0x80, // 'h'
0x8A,0xA8, // 'i'
0x41,0x24,0x92,0x80, // 'j'
0x84,0x25,0x4C,0x52,0x40, // 'k'
0xAA,0xA8, // '1'
00078
00079
00080
00081
00082
00083
              0xEC,0x92,0x92,0x92,0x92, // 'm'
             0xF2,0x28,0xA2,0x88, // 'n'
0x72,0x28,0xA2,0x70, // 'o'
00084
00085
              0xF2,0x28,0xA2,0xF2,0x08,0x00, // 'p'
00086
              0x7A,0x28,0xA2,0x78,0x20,0x80, // 'q'
0xD2,0x48, // 'r'
0xE8,0x4A,0xE0, // 's'
00087
00088
00089
00090
              0x44,0xE4,0x44,0x40, // 't'
             0x8A,0x28,0xA2,0x78, // 'u'
0x8A,0x45,0x18,0x20, // 'v'
0x82,0x92,0x6C,0x6C,0x24, // 'w'
0x93,0x08,0x29,0x00, // 'x'
00091
00092
00093
00095
              0x8A,0x45,0x18,0x20,0x84,0x00, // 'y'
00096
              0xF1,0x11,0x0F,0x00, // 'z'
             0x64,0x4C,0x44,0x42, // '{'
0xAA,0xA8, // '|'
0xC4,0x46,0x44,0x48 // '}'
00097
00098
00099
00100 };
00101 const GFXglyph URW_Gothic_L_Book_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103
                         0,
                                2,
                                      1, 4,
                                                       Ο,
                                                              -1 }, // '
                                                              -7 }, // '!'
00104
                         1,
                                2,
                                               4,
                                                       1,
                                                              -7 }, // · "·
00105
                         3.
                                3.
                                       2.
                                               5.
                                                       1.
                                                              -7 }, // '#'
-7 }, // '$'
00106
                                        7,
                         4.
                                               6.
                                                       0.
                                6.
00107
                        10,
                                5,
                                                       1,
                                                              -7 }, // '%'
00108
                        15,
                                                              -7 }, // '&'
-7 }, // "'
-7 }, // "'
00109
                        22,
                                              8,
00110
                        29,
                                2,
                                       2,
                                               4,
                                                       1,
00111
                        30,
                                4.
                                       8.
                                               5,
                                                       1,
                                                              -7 }, // ')'
00112
                        34,
                                4,
                                       8,
                                               5,
                                                       0,
                                               5,
                                                               -7 }, // '*'
                        38,
                                3,
                                        3,
                                                       1,
                                                              -7 }, // *
-5 }, // '+'
-1 }, // ','
-3 }, // '-'
-1 }, // '.'
00114
                        40,
                                               6,
                                6,
                                                       Ο,
00115
                        44,
                                2,
                                       2,
                                               4,
00116
                        45,
                                4,
                                       1,
                                               4,
                                                       Ο,
00117
                        46,
                                2,
                                       1,
                                               4,
                                                       1,
                                                              -7 }, // '/'
00118
                        47,
                                5,
                                               5,
                                                       Ο,
                                        8,
00119
                        52,
                                6,
                                               6,
                                                       1,
                                                               -7 }, // 'O'
00120
                                                       2,
                                                               -7 }, // '1'
                        58,
                                3,
                                               6,
                        61,
                                                               -7 }, // '2'
00121
                                               6,
                                                       Ο,
                                                              -7 }, // '3'
-7 }, // '4'
-7 }, // '5'
00122
                        67,
                                5,
                                       7,
                                               6,
                                                       Ο,
00123
                        72,
                                7,
                                               6,
                                                       Ο,
00124
                        79.
                                6.
                                               6.
                                                       0.
                                                               -7 }, // '6'
00125
                        85,
                                        7,
                                                       1,
                                6.
                                               6.
                                                              -7 }, // '7'
-7 }, // '8'
-7 }, // '9'
00126
                        91,
                                5,
                                               6,
                                                       0,
00127
                       96,
                                                       1,
00128
                      101,
                                6,
                                               6,
                                                       1,
                                                              -5 }, // ':'
00129
                      107,
                                2,
                                        5,
                                               4,
                                                       1,
                                                              -5 }, // ';'
-5 }, // '<'
00130
                      109.
                                              4,
7,
                                                       0,
                                3.
                                        5.
00131
                      111,
                                6,
                                        5,
                                                       1,
                                                               -4 }, // '='
00132
                      115,
                                        3,
                                               6,
                                                       Ο,
                                6,
00133
                      118,
                                                               -5 }, // '>'
                                6,
                                                              -7 }, // '?'
00134
                      122,
                                                       Ο,
                                                              -7 }, // '@'
00135
                      128.
                                8,
                                             10,
                                                       1,
                                                              -7 }, // 'A'
00136
                      135.
                                                       0,
                                8,
                                               8,
                                               7,
                                                               -7 }, // 'B'
00137
                      142,
                                5,
                                                       1,
00138
                      147,
                                8,
                                                       1,
00139
                      154,
                                                               -7 }, // 'D'
                                                       1,
                      161,
                                                              -7 }, // 'E'
00140
                                               6,
                                                              -7 }, // 'F'
00141
                      166,
                                5,
                                               6,
                                                       1,
                                                              -7 }, // 'G'
00142
                      171,
                                8,
                                                                       // 'H'
00143
                      178.
                                               8.
```

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```
-7 }, // 'I'
-7 }, // 'J'
-7 }, // 'K'
-7 }, // 'L'
00144
                    184,
                                   7,
00145
                    186,
                                                  0,
                                          6,
00146
                    191,
                                          7,
00147
                    197,
                             5,
                                    7,
                                          6,
                                                  1,
                                                        -7 }, // 'M'
00148
                    202.
                             8,
                                    7,
                                         10,
                                                        -7 }, // 'N'
                    209,
00149
                             6.
                                          8.
                                                  1.
                                                        -7 }, // '0'
00150
                    215,
                             8,
                                         10,
                                                  1,
00151
                    222,
                                          8,
                                                        -7 }, // 'P'
                                                        -7 }, // 'Q'
-7 }, // 'R'
00152
                    228,
                             8,
                                         10,
                                                  1,
00153
                    235,
                             6,
                                          8,
                                                  1,
                                                        -7 }, // 'S'
                    241.
00154
                             5.
                                    7,
                                          7,
                                                  1,
                                                        -7 }, // 'I'
00155
                    246.
                             6.
                                    7.
                                          6.
                                                  0.
                                                        -7 }, // 'U'
00156
                    252,
                             6,
                                          8,
                                                  1,
00157
                    258,
                                          7,
                                                  Ο,
                                                        -7 }, // 'V'
                                                        -7 }, // 'W'
00158
                    265,
                            10,
                                         10,
                                                  0,
                                                        -7 }, // 'X'
-7 }, // 'Y'
00159
                    274,
                             6,
                                          6,
                                                  Ο,
00160
                    280.
                             6,
                                          6,
                                                  0,
                                                        -7 }, // 'Z'
00161
                    286,
                             5,
                                          7,
                                                  1,
                                          5,
                                                        -7 }, // '['
00162
                    291,
                             3,
                                    8,
                                                  1,
                                                        -7 }, // [
-7 }, // '\'
-7 }, // ']'
-7 }, // '^
0 }, // '_'
-7 }, // '\'
00163
                    294,
                             4,
                                          6,
                                                  1,
00164
                    298,
                                    8,
00165
                    301,
                             6,
                                    5,
                                          6,
                                                  Ο,
00166
                    305,
                             6,
                                   1,
                                          6,
                                                  0,
                    306,
00167
                             3.
                                    2,
                                          4,
                                                  1,
00168
                    307,
                                    5,
                                                  1,
                                                        -5 }, // 'a'
                             6,
                                          8,
                                                        -7 }, // 'b'
00169
                    311,
                             6,
                                          8,
                                                  1,
00170
                    317,
                                    5,
                                          8,
                                                  1,
                                                        -5 }, // 'c'
                             6,
                                                       -3 }, // 'c'

-7 }, // 'd'

-5 }, // 'e'

-7 }, // 'f'
00171
                    321,
                             6,
                                          8,
                                                  1,
00172
                    327,
                             6,
                                    5,
                                          8,
                                                 Ο,
00173
                    331.
                             4.
                                    7,
                                          4,
                                                        -5 }, // 'g'
00174
                    335.
                                    7.
                                          8.
                                                  1.
                             6.
00175
                    341,
                                                        -7 }, // 'h'
                             6,
                                          8,
                                                  1,
00176
                    347,
                             2,
                                          4,
                                                  1,
                                                        -7 }, // 'i'
                                                        -7 }, // 'j'
00177
                    349,
                             3,
                                    9,
                                          4,
                                                  Ο,
                                                        -7 }, // 'k'
00178
                    353,
                             5,
                                          6,
                                                  1,
                                                        -7 }, // k
-7 }, // '1'
-5 }, // 'm'
                                    7,
00179
                    358.
                             2,
                                          4.
                                                  1,
00180
                    360,
                             8,
                                    5,
                                         10,
                                                  1,
                                                  1,
                                                        -5 }, // 'n'
00181
                    365,
                             6,
                                    5,
                                          8,
00182
                    369,
                             6,
                                          8,
                                                  1,
                                                        -5 }, // 'o'
00183
                    373,
                                          8,
                                                  1,
                                                        -5 }, // 'p'
                             6,
                                                        -5 }, // 'q'
-5 }, // 'r'
00184
                    379,
                             6,
                                    7,
                                          8,
                                                  1,
                    385,
00185
                             3,
                                    5,
                                          4,
                                                  1,
                                                        -5 }, // 's'
00186
                    387.
                             4.
                                    5.
                                          6,
                                                  1.
                                                        -7 }, // 't'
00187
                    390,
                                                  Ο,
                             4,
                                          4,
                    394,
                                                        -5 }, // 'u'
00188
                             6,
                                    5,
                                          8,
                                                  1,
                                                        -5 }, // 'v'
00189
                    398,
                                    5,
                                                  Ο,
                                                        -5 }, // 'w'
00190
                    402,
                             8,
                                    5.
                                          8,
                                                  Ο,
                                                        -5 }, // 'x'
                                          5,
00191
                    407,
                             5,
                                    5,
                                                  Ο,
                                                        -5 }, // 'y'
00192
                    411.
                             6.
                                    7.
                                          6.
                                                  0.
                                                        -5 }, // 'z'
00193
                    417.
                                                  1.
                             5.
                                    5.
                                          6.
00194
                    421,
                             4,
                                    8,
                                                  0,
                                                        -7 }, // '!'
00195
                    425,
                                                  3,
00196
                    427,
                             4,
                                    8,
                                          4,
                                                  0,
00197 };
00198 const GFXfont URW_Gothic_L_Book_9 PROGMEM = {
00199 (uint8_t *)URW_Gothic_L_Book_9Bitmaps,(GFXglyph *)URW_Gothic_L_Book_9Glyphs,0x20, 0x7E, 13};
```

3.11 mono12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Monospaced_plain_12Bitmaps[] PROGMEM = {
00004
               // Bitmap Data:
00005
00006
              0x00, // '
              0xAA,0xA2,0x80, // '!'
0xAA,0xA0, // '"'
00007
              OARH, UXAU, // '"'

0x14,0x24,0x7E,0x28,0x28,0xFC,0x48,0x50, // '#'

0x21,0xCA,0xA8,0xE0,0xE2,0xAA,0x70,0x82,0x00, // '$'

0x60,0x90,0x90,0x64,0x18,0x6C,0x12,0x12,0x0C, // '%'

0x38,0x81,0x03,0x06,0x12,0xA7,0x64,0x74, // '&'

0xA8, // "'
00008
00009
00010
00011
00012
00013
              0x64,0x48,0x88,0x88,0x44,0x60, // '('
00014
              0xC4,0x42,0x22,0x22,0x44,0xC0, // ')'
0x22,0xA7,0x1C,0xA8,0x80, // '*'
00015
              0x22,0xA7,0x1C,0xA8,0x80, // '*'
0x10,0x10,0x10,0xFE,0x10,0x10,0x10, // '+'
00016
00017
              0x4A,0x00, // ','
0xE0, // '-'
0xA0, // '.'
00018
00019
00020
               0x04,0x10,0x20,0x81,0x04,0x08,0x20,0x41,0x00, // '/'
00021
              0x78,0x92,0x14,0x29,0x50,0xA1,0x24,0x78, // '0'
0xE0,0x82,0x08,0x20,0x82,0x08,0xF8, // '1'
00022
00023
              0x79,0x08,0x10,0x20,0x82,0x08,0x20,0xFC, // '2'
```

```
0x79,0x08,0x10,0x23,0x80,0x81,0x42,0x78, // '3'
              0x18,0x30,0xA3,0x44,0x91,0x3F,0x04,0x08, // '4'
00026
              0xF9,0x02,0x07,0xC0,0xC0,0x81,0x46,0x78, // '5'
00027
              0x38,0x8A,0x05,0xCC,0xD0,0xA1,0x26,0x78,
00028
              0xFC, 0x18, 0x20, 0x41, 0x02, 0x08, 0x10, 0x40, // '7' 0x79, 0x0A, 0x14, 0x27, 0x90, 0xA1, 0x42, 0x78, // '8'
00029
00030
              0x79,0x92,0x14,0x28,0xCE,0x81,0x44,0x70, // '9'
0xA0,0xA0, // ':'
00032
              0x48,0x04,0xA0, // ';'
00033
00034
              0x04,0x73,0x06,0x03,0x80,0x80, // '<'
              0xFC, 0x03, 0xF0, // '='
00035
              0x80,0xE0,0x30,0x67,0x10,0x00, // '>'
0x72,0x20,0x8C,0x61,0x00,0x10,0x40, // '?'
0x38,0x9A,0x14,0xEA,0x54,0xA7,0x60,0x40,0x70,
00036
00037
00038
00039
              0x30,0x60,0xC2,0x44,0x89,0x1E,0x42,0x84, // 'A'
00040
              0xF9,0x0A,0x14,0x2F,0x90,0xA1,0x42,0xF8,
              0x38,0x8A,0x04,0x08,0x10,0x20,0x22,0x38, // 'C'
00041
              0xF1,0x12,0x14,0x28,0x50,0xA1,0x44,0xF0,//'D'
0xFD,0x02,0x04,0x0F,0xD0,0x20,0x40,0xFC,//'E'
00042
              0xFD,0x02,0x04,0x0F,0xD0,0x20,0x40,0x80, // 'F'
00044
00045
              0x38,0x8A,0x04,0x08,0xD0,0xA1,0x22,0x38, // 'G'
00046
              0x85,0x0A,0x14,0x2F,0xD0,0xA1,0x42,0x84,
              0xF8,0x82,0x08,0x20,0x82,0x08,0xF8, // 'I'
0x38,0x20,0x82,0x08,0x20,0xA2,0x70, // 'J'
0x85,0x12,0x45,0x0E,0x12,0x26,0x44,0x84, // 'K'
00047
00048
00049
              0x81,0x02,0x04,0x08,0x10,0x20,0x40,0xFC, // 'L'
00050
00051
              0x85,0x9B,0x35,0xAB,0x56,0xA1,0x42,0x84, // 'M'
00052
              0xC5,0x8A,0x95,0x2B,0x52,0xA5,0x46,0x8C, // 'N'
              0x78,0x92,0x14,0x28,0x50,0xA1,0x24,0x78,// 'O'
0xF9,0x0A,0x14,0x2F,0x90,0x20,0x40,0x80,// 'P'
0x78,0x92,0x14,0x28,0x50,0xA1,0x26,0x78,0x10,0x20,// 'Q'
0xF8,0x84,0x84,0x84,0xF8,0x88,0x84,0x84,0x82,// 'R'
00053
00054
00055
00056
              0x79,0x0A,0x06,0x07,0x80,0x81,0x42,0x78, // 'S'
00057
00058
              0xFE, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, // 'T'
              0x85,0x0A,0x14,0x28,0x50,0xA1,0x42,0x78,//'U'
0x85,0x09,0x22,0x44,0x89,0x0C,0x18,0x30,//'V'
0x82,0x92,0x92,0xAA,0xAA,0xAA,0x6C,0x44,0x44,//'W'
0x84,0x91,0x21,0x83,0x06,0x12,0x24,0x84,//'X'
00059
00060
00061
00063
              0x82,0x44,0x28,0x28,0x10,0x10,0x10,0x10,0x10, // 'Y'
              0xFC,0x18,0x20,0x83,0x04,0x10,0x60,0xFC, // 'Z'
0xD2,0x49,0x24,0x93,0x00, // '['
00064
00065
              0x80,0x81,0x01,0x02,0x02,0x04,0x04,0x08,0x08, // '\'
0xC9,0x24,0x92,0x4B,0x00, // ']'
00066
00067
00068
              0x30,0x92,0x10, //
              0xFE, // '_'
0x42, // '.'
00069
00070
00071
              0x72,0x20,0x9E,0x8A,0x27,0x80, // 'a'
              0x82,0x08,0x3C,0x8A,0x28,0xA2,0x8B,0xC0, // 'b'
0x73,0x28,0x20,0x83,0x07,0x80, // 'c'
00072
00073
00074
              0x08,0x20,0x9E,0x8A,0x28,0xA2,0x89,0xE0, // 'd'
              0x73,0x28,0xBE,0x82,0x27,0x00, // 'e'
00076
              0x18,0x82,0x3E,0x20,0x82,0x08,0x20,0x80, // 'f'
00077
              0x7A,0x28,0xA2,0x8A,0x27,0x82,0x48,0xC0, // 'g'
              0x82,0x08,0x2C,0xCA,0x28,0xA2,0x8A,0x20, // 'h'
00078
              0x20,0x00,0x38,0x20,0x82,0x08,0x23,0xE0, // 'i'
0x20,0x0E,0x22,0x22,0x22,0x22,0xC0, // 'j'
0x82,0x08,0x22,0x92,0x8C,0x28,0x92,0x20, // 'k'
00079
00080
00082
              0xE0,0x82,0x08,0x20,0x82,0x08,0x20,0x60, // '1'
00083
              0xFA, 0xAA, 0xAA, 0xAA, 0xAA, 0x80, // 'm'
              0xE3,0xAA,0xAA,0xAA,0xAA,0x8A,0x80,// 'm'
0xB3,0x28,0xA2,0x8A,0x28,0x80,// 'n'
0x72,0x28,0xA2,0x8A,0x27,0x00,// 'o'
0xF2,0x28,0xA2,0x8A,0x2F,0x20,0x82,0x00,// 'p'
0x7A,0x28,0xA2,0x8A,0x27,0x82,0x08,0x20,// 'q'
00084
00085
00086
              0x7A,0x28,0xA2,0x8A,0x2/,uxoz,uxou,...
0xF3,0x28,0x20,0x82,0x08,0x00, // 'r'
00087
00088
00089
              0x72,0x28,0x1C,0x0A,0x27,0x00,
              0x20,0x8F,0x88,0x20,0x82,0x08,0x38,//'t'
0x8A,0x28,0xA2,0x8A,0x27,0x80,//'u'
0x8A,0x25,0x14,0x50,0x82,0x00,//'v'
00090
00091
00092
              0x82,0x82,0x54,0x54,0x6C,0x28,0x28, // 'w'
00093
              0x89,0x45,0x08,0x51,0x48,0x80, // 'x'
              0x8A,0x25,0x14,0x51,0x82,0x08,0x43,0x00, // 'y'
0xF8,0x21,0x08,0x42,0x0F,0x80, // 'z'
00095
00096
              0x38,0x82,0x08,0x23,0x02,0x08,0x20,0x83,0x80, // '{'
00097
00098
00099
              0xE0,0x82,0x08,0x20,0x62,0x08,0x20,0x8E,0x00 // '}'
00101 const GFXglyph Monospaced_plain_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                              8,
00103
                         0,
                                2,
                                                       0,
                                                              -1 }, //
                                                              -9 }, // '!'
00104
                                       9.
                         1,
                                2..
                                                       3,
                                                              -9 }, // '"'
00105
                                                       2,
                         4,
                                4,
                                       3,
                                               8,
                                                              -8 }, // '#'
00106
                         6,
                                       8,
                                                       Ο,
                                8,
                                               8,
                                                              -9 }, // '$'
00107
                        14,
                                6,
                                                       1,
                                                              -9 }, // '%'
00108
                        23,
                                8,
                                        9,
                                              8,
                                                       Ο,
                                                              -9 }, // '&'
                                              8,
00109
                        32,
                                7,
                                       9,
                                                       1,
                                                              -9 }, // "'
                        40,
00110
                                        3,
                                               8,
                                                       3,
                                      11,
00111
                        41,
                                                             -10 }, // '('
                                               8.
```

3.11 mono12.h 27

```
-10 }, // ')'
-9 }, // '*'
-7 }, // '+'
-2 }, // ','
-4 }, // '-'
00112
                        47,
                                4,
                                      11,
                                               8,
                                                             -10 }, //
00113
                        53,
                                               8,
                                6,
                                        6,
00114
                        58,
                                8,
                                               8,
                                                       Ο,
00115
                        65,
                                3,
                                        3,
                                               8,
                                                       2,
00116
                        67,
                                4,
                                        1,
                                               8,
                                                       2,
00117
                        68.
                                2.
                                        2.
                                                       3.
                                               8.
                                7,
                                                              -9 }, // '/'
00118
                        69,
                                      10,
                                               8,
                                                       1,
00119
                        78,
                                        9,
                                                              -9 }, // 'O'
                                                              -9 }, // '0'
-9 }, // '1'
-9 }, // '2'
-9 }, // '3'
00120
                        86,
                                        9,
                                               8,
                                                       1,
00121
                        93,
                                7,
                                        9,
                                               8,
                                                       1,
                      101.
                                                       1,
00122
                                7,
                                        9,
                                               8,
                                                                           ,<sub>4</sub>,
                                                              -9 }, //
                                                       1,
00123
                      109.
                                7,
                                        9.
                                               8.
                                                              -9 }, // '5'
00124
                      117,
                                7,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // '6'
00125
                      125,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // '7'
00126
                      133,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // '7'

-9 }, // '8'

-9 }, // '9'

-6 }, // ':'
00127
                      141,
                                        9,
                                               8,
                                                       1,
00128
                      149.
                                7,
                                        9.
                                               8.
                                                       1,
00129
                      157,
                                2,
                                               8,
                                                       3,
                                        6,
                                               8,
                                                       2,
                                                              -6 }, // ';'
00130
                      159,
                                3,
                                        7,
                                                              -7 }, // '<'
-5 }, // '='
00131
                      162,
                                7,
                                        6,
                                               8,
                                                       1,
00132
                      168,
                                               8,
                                                       1,
                                                              -7 }, // '>'
-9 }, // '?'
00133
                      171,
                                7,
                                        6,
                                               8,
                                                       1,
                                                       2,
00134
                      177,
                                6,
                                        9,
                                               8,
                                                              -8 }, // '@'
-9 }, // 'A'
                      184,
00135
                                      10,
                                               8,
                                7,
                                                       1,
00136
                      193,
                                                       1,
                                        9,
                                               8,
                                7,
00137
                      201,
                                                       1,
                                                              -9 }, // 'B'
                                7,
                                        9,
                                               8,
00138
                      209,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'C'
                                                              -9 }, // 'C'
-9 }, // 'D'
-9 }, // 'E'
-9 }, // 'F'
00139
                      217,
                                7,
                                        9,
                                               8,
                                                       1,
                      225,
00140
                                7,
                                        9,
                                               8,
                                                       1,
00141
                      233.
                                7,
                                        9.
                                               8,
                                                       1,
                                                              -9 }, // 'G'
00142
                      241.
                                               8.
                                                       1,
                                7.
                                        9.
00143
                      249,
                                7,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'H'
00144
                      257,
                                6,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'I'
                                                              -9 }, // 'J'
00145
                      264,
                                6,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'K'
00146
                      271,
                                7,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'L'
-9 }, // 'M'
-9 }, // 'N'
                      279,
00147
                                7,
                                        9,
                                               8,
                                                       1,
00148
                      287,
                                7,
                                        9,
                                               8,
                                                       1,
                                7,
                                               8,
                                                       1,
                      295,
                                        9,
00150
                      303,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'O'
00151
                      311,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'P'
                                                              -9 }, // 'Q'
-9 }, // 'R'
                      319,
00152
                                7,
                                      11,
                                               8,
                                                       1,
00153
                      329,
                                8,
                                        9,
                                               8,
                                                       1,
                                                                           's'
                                                              -9 }, //
                                               8,
00154
                      338.
                                        9.
                                                       1.
                                7.
                                                              -9 }, // 'T'
00155
                      346,
                                        9,
                                               8,
                                                       Ο,
                                8,
00156
                      355,
                                                              -9 }, // 'U'
                                7,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'V'
00157
                      363,
                                        9,
                                               8,
                                                       1,
                                                              -9 }, // 'V'
-9 }, // 'W'
-9 }, // 'X'
-9 }, // 'Y'
00158
                      371,
                                8,
                                        9,
                                               8,
                                                       Ο,
00159
                      380,
                                7,
                                        9,
                                               8,
                                                       1,
00160
                      388.
                                8.
                                        9.
                                                       0.
                                               8.
                                                             -9 }, // 'Z'
-10 }, // '['
-9 }, // '\
                      397,
00161
                                7.
                                        9.
                                               8.
                                                       1.
00162
                      405,
                                      11,
                                               8,
                                                       3,
                                3,
00163
                      410,
                                      10,
                                               8,
                                                       1,
                                                             -9 }, // '\'
-10 }, // ']'
-9 }, // '^'
2 }, // '-'
-10 }, // '-'
00164
                      419,
                                3,
                                      11,
                                               8,
                                                       2,
00165
                      424,
                                7,
                                       3,
                                               8,
                                                       Ο,
00166
                      427.
                                8.
                                       1.
                                               8,
                                                       0,
00167
                      428,
                                4,
                                       2,
7,
                                               8,
                                                       2,
                      429,
                                               8,
                                                       1,
                                                              -7
                                                                   }, // 'a'
00168
                                6,
00169
                      435,
                                               8,
                                                       1,
                                                             -10
                                                                   }, // 'b'
                                6,
                                      10,
                                                                   }, // 'c'
00170
                      443,
                                6,
                                       7,
                                               8,
                                                       1,
                                                              -7
                                                             -10 }, // 'd'
-7 }, // 'e'
00171
                      449,
                                6,
                                      10,
                                               8,
                                                       1,
                      457,
00172
                                6,
                                        7,
                                               8,
                                                       1,
                                                             -10 }, //
00173
                      463,
                                      10,
                                               8,
                                                       1,
                                6,
                      471,
00174
                                6,
                                      10,
                                               8,
                                                       1,
                                                              -7
                                                                   }, // 'g'
00175
                      479,
                                      10,
                                                       1,
                                                             -10
                                                                   }, // 'h'
                                6,
                                               8,
                                                                   }, // 'i'
00176
                      487,
                                6,
                                      10,
                                               8,
                                                       1,
                                                             -10
                                                            -10 }, // 'i'
-10 }, // 'j'
-10 }, // 'k'
-10 }, // 'l'
00177
                      495,
                                4,
                                      13,
                                               8,
                                                       2,
00178
                      502,
                                6,
                                      10,
                                               8,
                                                       1,
00179
                                                       1.
                      510.
                                6.
                                      10.
                                               8.
                                       7,
                                                       1,
                                                              -7 }, // 'm'
00180
                      518,
                                               8,
                                6.
                                                              -7 }, // 'm'
-7 }, // 'n'
-7 }, // 'o'
-7 }, // 'p'
-7 }, // 'q'
-7 }, // 'r'
-7 }, // 's'
00181
                       524,
                                6,
                                               8,
                                                       1,
00182
                      530,
                                6,
                                               8,
                                                       1,
00183
                      536,
                                6,
                                      10,
                                               8,
                                                       1,
00184
                      544,
                                6,
                                      10,
                                               8,
                                                       1,
00185
                      552.
                                                       2,
                                6.
                                        7,
                                               8,
00186
                      558,
                                6,
                                               8,
                                                       1,
                       564,
                                                                   }, // 't'
00187
                                        9,
                                               8,
                                                       1,
                                                              -9
                                6,
                                                              -7 }, // 'u'
-7 }, // 'v'
00188
                      571,
                                               8,
                                6,
00189
                      577,
                                               8,
                                                              -7 },
00190
                      583.
                                8.
                                               8.
                                                       0,
                                                                       // 'x'
                                        7,
                                                              -7 },
00191
                      590.
                                6.
                                               8,
                                                       1,
                                                              -7
                      596,
00192
                                      10,
                                               8,
                                                       1,
                                6,
                                                                   },
00193
                       604,
                                               8,
                                                       1,
                                6,
00194
                       610,
                                                       1,
                                                             -10
                                6,
                                               8,
00195
                       619,
                                2,
                                      12,
                                               8,
                                                       3,
                                                             -10
                                                             -10 } // '}'
00196
                      622,
                                6,
                                      11,
                                               8,
00197 };
00198 const GFXfont Monospaced_plain_12 PROGMEM = {
```

00199 (uint8_t *)Monospaced_plain_12Bitmaps,(GFXglyph *)Monospaced_plain_12Glyphs,0x20, 0x7E, 15};

3.12 mono9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Monospaced_plain_9Bitmaps[] PROGMEM = {
00005
            // Bitmap Data:
00006
            0x00, // '
            0xAA, 0x88, // '!'
00007
00008
            0xAA, //
            0x31,0x4F,0x94,0xF9,0x8A,0x00, // '#'
00009
            0x21,0xEA,0x38,0x38,0xAF,0x08, // '$'
00010
00011
            0xE2,0x8E,0x8C,0x78,0xA3,0x80, // '%'
            0x72,0x10,0xCB,0x51,0xC0, // '&' 0xA0, // "'
00012
00013
            0x52,0x49,0x22, // '(
00014
           0x91,0x24,0xA4, // ')'
0xA9,0xC7,0x2A, // '*'
00015
00016
            0x20,0x8F,0x88,0x20, // '+'
00017
           0xA8, // ','
0xC0, // '-'
00018
00019
            0x80, // '.
00020
            0x11,0x08,0xC4,0x22,0x00, // '/'
00021
            0x64,0xA5,0x69,0x49,0x80, // '0'
00022
            0xC4,0x44,0x44,0xE0, // '1'
00023
00024
            0x64,0x84,0x66,0x63,0xC0, // '2'
            0x64,0x84,0xC1,0x0B,0x80, // '3'
00025
            0x21,0x18,0xCA,0x78,0x80, // '4'
00026
00027
            0xF4,0x21,0xC1,0x0B,0x80, // '5'
00028
            0x76,0x21,0xE9,0x49,0x80, // '6'
            0xF0,0x88,0x42,0x31,0x00, // '7'
00030
            0x64,0xA4,0xC9,0x49,0x80, // '8'
            0x64,0xA5,0xE1,0x1B,0x80, // '9'
0x80,0x80, // ':'
0x80,0xA8, // ';'
00031
00032
00033
           0x09,0xCE,0x06, // '<'
0xF8,0x0F,0x80, // '='
00034
00035
00036
            0x81,0xC3,0xB0, // '>'
00037
            0xF0,0x88,0x84,0x01,0x00, // '?'
            0x64,0xAD,0x6B,0x61,0x80, // '@'
00038
            0x63,0x19,0x29,0x7A,0x40, // 'A'
00039
            0xE4,0xA5,0xC9,0x4B,0xC0, // 'B'
00040
            0x74,0x21,0x08,0x41,0xC0, // 'C'
00042
            0xE4,0xA5,0x29,0x4B,0x80, // 'D'
00043
            0xF4,0x21,0xE8,0x43,0xC0, // 'E'
            0xF4,0x21,0xE8,0x42,0x00, // 'F'
00044
            0x74,0x21,0x69,0x49,0xC0, // 'G'
0x94,0xA5,0xE9,0x4A,0x40, // 'H'
00045
00046
00047
            0xE4,0x44,0x44,0xE0, // 'I'
            0x70,0x84,0x21,0x0B,0xC0, // 'J'
00048
00049
            0x95,0x31,0x8A,0x52,0x40, // 'K'
            0x84,0x21,0x08,0x43,0xC0, // 'L'
00050
            0x97,0xBD,0xEF,0x4A,0x40, // 'M'
00051
            0x96,0xB5,0x6B,0x5A,0x40, // 'N'
0x64,0xA5,0x29,0x49,0x80, // 'O'
00052
00053
            0xE4,0xA5,0xC8,0x42,0x00, // 'P'
00054
00055
            0x64,0xA5,0x29,0x49,0x82, // 'Q'
            0xE2,0x49,0x38,0xB2,0x48,0x80, // 'R'
0x64,0xA0,0xE1,0x49,0x80, // 'S'
00056
00057
00058
            0xF8,0x82,0x08,0x20,0x82,0x00, // 'T'
            0x94,0x85,0x29,0x49,0x80, // 'U'
0x94,0x98,0xC6,0x31,0x80, // 'V'
00059
00061
            0x8A,0x2A,0xB6,0x51,0x45,0x00, // 'W'
00062
            0x94,0x98,0xC6,0x4A,0x40, // 'X'
            0x89,0x45,0x08,0x20,0x82,0x00,//'Y'
0xF0,0x88,0x44,0x43,0xC0,//'Z'
0xD2,0x49,0x26,//'['
00063
00064
00065
            0x82,0x10,0xC2,0x10,0x40, // '\'
00066
            0xC9, 0x24, 0x96, // ']'
00067
            0x23,0x40, //
0xF8, // '_'
0x88, // '''
00068
00069
00070
            0xE0,0xBD,0x2F,0x00, // 'a'
00071
            0x84,0x21,0xC9,0x4A,0x5C, // 'b'
0x74,0x21,0x07,0x00, // 'c'
00072
00073
00074
            0x10,0x84,0xE9,0x4A,0x4E, // 'd'
00075
            0x64,0xBD,0x07,0x00, // 'e'
            0x32,0x11,0xE4,0x21,0x08, // 'f'
00076
            0x74,0xA5,0x27,0x09,0x80, // 'g'
0x84,0x21,0xE9,0x4A,0x52, // 'h'
00077
00078
            0x20,0x00,0x18,0x20,0x82,0x3E, // 'i'
```

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```
0x20,0x06,0x22,0x22,0x2E, // 'j'
0x84,0x21,0x2A,0x62,0x92, // 'k'
00081
             0xE0,0x82,0x08,0x20,0x82,0x06, // '1'
00082
00083
             0xFA,0xAA,0xAA,0xA8, // 'm'
             0xF4,0xA5,0x29,0x00, // 'n'
0x64,0xA5,0x26,0x00, // 'o'
00084
00085
             0xE4,0xA5,0x2E,0x42,0x00, // 'p'
00087
             0x74,0xA5,0x27,0x08,0x40, // 'q'
00088
             0xE8,0x88,0x80, // 'r'
             0xF4,0x1C,0x2F,0x00, // 's'
00089
             0x47,0x90,0x84,0x38, // 't'
00090
             0x94,0xA5,0x2F,0x00, // 'u'
0x94,0x98,0xC6,0x00, // 'v'
00091
00092
00093
             0x8A, 0xA5, 0x14, 0x50, // 'w'
00094
             0x93,0x18,0xC9,0x00, // 'x'
            0x94,0x98,0x64,0x23,0x00, // 'y'
0xF1,0x18,0x8F,0x00, // 'z'
0x64,0x48,0x44,0x46, // '{'
0xAA,0xAA,0x80, // '|'
00095
00096
00097
00098
             0xC4,0x42,0x44,0x4C // '}'
00099
00100 };
00101 const GFXglyph Monospaced_plain_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                                           -1 }, //
00103
                       Ο,
                               2,
                                     1,
                                            6,
                                                    0,
00104
                                                           -7 }, // '!'
                               2,
                        1,
                                                    2,
                                            6,
                                                           -7 }, // '"'
00105
                        3,
                               4,
                                             6,
                                                    1,
                                                           -7 }, // '#'
00106
                        4,
                                            6,
                                                    Ο,
                                                           -7 }, // '$'
00107
                      10,
                               6,
                                      8,
                                            6,
                                                    1,
                                                           -7 }, // '%'
-7 }, // '&'
00108
                      16,
                               6,
                                     7,
                                            6,
                                                    Ο,
00109
                      22,
                               5,
                                      7,
                                            6,
                                                    1,
                                                                       " "
00110
                      27,
                               2.
                                            6,
                                                    2,
                                                           -7 }, //
                                      2.
00111
                      28,
                               3,
                                      8,
                                            6,
                                                    2,
                                                           -8 }, // '('
00112
                       31,
                                      8,
                                            6,
                                                    2,
                                                           -8 }, // ')'
                                                           -7 }, // '*'
00113
                      34,
                               6,
                                      4,
                                            6,
                                                    Ο,
                                                           -5 }, // '*'
-5 }, // '+'
-1 }, // ','
-3 }, // '-'
00114
                      37,
                               6,
                                      5,
                                            6,
                                                    Ο,
00115
                      41,
                               2,
                                      3,
                                            6,
                                                    2,
00116
                                                    2,
                      42,
                               3,
                                      1,
                                            6,
                                                           -1 }, // '.'
                               2,
                                            6,
                                                    2,
                       43,
                                      1,
                                                           -7 }, // '/'
00118
                       44,
                               5,
                                            6,
                                                    Ο,
                                                           -/ }, // '/'

-7 }, // '0'

-7 }, // '1'

-7 }, // '2'
00119
                       49,
                               5,
                                            6,
                                                    1,
00120
                      54,
                               4,
                                      7,
                                            6,
                                                    2,
00121
                      58,
                               5,
                                      7,
                                            6,
                                                    1,
                                                           -7 }, // '3'
-7 }, // '4'
00122
                                      7,
                                            6,
                      63.
                               5,
                                                    1,
                               5,
00123
                                            6,
                                                    1,
                       68,
                                                           -7 }, // '5'
00124
                                            6,
                       73,
                               5,
                                                    1,
                                                           -7 }, // '6'
00125
                       78,
                                            6,
                                                    1,
                                                           - / }, // '6'

-7 }, // '7'

-7 }, // '8'

-7 }, // '9'
00126
                      83,
                               5,
                                      7,
                                            6,
                                                    1,
                                      7,
00127
                      88,
                               5,
                                            6,
                                                    1,
00128
                      93.
                               5.
                                                    1.
                                      7.
                                            6,
                                                           -5 }, // ':'
-5 }, // ';'
-5 }, // ';'
00129
                               2,
                                                    2,
                      98.
                                      5.
                                            6.
00130
                     100,
                               2,
                                            6,
                                                    2,
00131
                     102,
                               6,
                                      4,
                                            6,
                                                    1,
                                                           -4 }, // '='
00132
                     105,
                               6,
                                      3,
                                            6,
                                                    Ο,
                                                           - 1, // '='

-5 }, // '>'

-7 }, // '?'

-6 }, // '@'

-7 } // '...
00133
                     108,
                               6,
                                      4,
                                            6,
                                                    1,
                                      7,
00134
                     111.
                               5,
                                            6,
                                                    1,
00135
                     116,
                               5,
                                            6,
                                                    1,
                     121,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // 'A'
                                                           -7 }, // 'B'
-7 }, // 'C'
00137
                     126,
                                            6,
                                                    1,
00138
                     131,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // 'D'
-7 }, // 'E'
00139
                     136,
                               5,
                                      7,
                                            6,
                                                    1,
                     141,
00140
                               5,
                                      7,
                                            6,
                                                    1,
                                                           -7 }, // 'F'
00141
                     146,
                               5,
                                      7,
                                            6,
                                                    1,
00142
                     151,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // 'G'
00143
                     156,
                                            6,
                                                           -7 }, // 'H'
                               5,
                                                    1,
                                                           -7 }, // 'I'
00144
                     161,
                               4,
                                            6,
                                                    1,
                                                           -, }, // 'I'
-7 }, // 'J'
-7 }, // 'K'
-7 }, // 'L'
00145
                     165,
                               5,
                                      7,
                                            6,
                                                    1,
00146
                     170,
                               5,
                                      7,
                                            6,
                                                    1,
                                                    1,
00147
                     175.
                                            6,
                               5.
                                                    1,
                                                           -7 }, // 'M'
00148
                               5,
                                      7,
                                            6,
                     180.
                                                           -7 }, // 'N'
00149
                     185,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // '0'
00150
                     190,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // 'P'
00151
                     195,
                               5,
                                            6,
                                                    1,
                                                           -7 }, // 'Q'
00152
                     200,
                               5,
                                      8,
                                            6,
                                                    1,
                                                           -7 }, // 'R'
-7 }, // 'S'
-7 }, // 'T'
                     205.
00153
                               6,
                                      7,
                                            6,
                                                    1,
00154
                     211,
                               5,
                                            6,
                                                    1,
                     216,
00155
                               6,
                                            6,
                                                    Ο,
00156
                     222,
                                            6,
                                                    1,
                                                           -7 }, // 'U'
                                                           -7 }, // 'V'
00157
                     227,
                                            6,
                                                           -7 }, // 'W'
                     232,
00158
                               6,
                                            6,
                                                    Ο,
                                                           -7 }, // 'X'
00159
                     238.
                               5.
                                            6,
                                                    1,
                                                           -7 }, //
                     243,
00160
                               6,
                                      7,
                                            6,
                                                    Ο,
00161
                     249,
                                            6,
                               5,
                                                    1,
                                                           -8 }, // '['
00162
                     254,
                                                    2,
                                             6,
                     257,
                                                           -7 }, // '\'
00163
                                            6,
                                                    Ο,
                                                           -8 }, // ']'
00164
                     262,
                               3,
                                      8,
                                            6,
                                                    2,
                     265,
                                                           -7 },
                                                                   11
00165
                               6,
                                      2,
                                            6,
                                                    0,
00166
                     267,
                                            6.
                                                    0.
```

```
268.
                                                     -8 }, // '`'
                                                     -5 }, // 'a'
-8 }, // 'b'
-5 }, // 'c'
00168
                   269,
                                        6,
00169
                   273,
                                  8,
                                  5,
                   278,
00170
                           5,
                                               1,
                                                     -8 }, // 'd'
00171
                   282,
                                  8.
                                        6,
00172
                   287.
                                               1.
                                        6.
00173
                   291,
                                  8,
                                        6,
                                               1,
00174
                   296,
                                                     -5 }, // 'g'
                                                     -8 }, // 'h'
-8 }, // 'i'
-8 }, // 'j'
00175
                   301,
                                  8,
                   306,
00176
                           6,
                                  8,
                                        6,
                                               Ο,
00177
                   312.
                           4,
                                10.
                                        6,
                                               1,
                                                     -8 }, // 'k'
00178
                   317.
                           5.
                                  8.
                                        6.
                                               1.
                                                     -8 }, // 'l'
00179
                   322,
                           6,
                                  8,
                                        6,
                                               0,
00180
                   328,
                                                     -5 }, // 'm'
                            6,
                                        6,
                                               1,
                                                     -5 }, // 'n'
-5 }, // 'o'
00181
                   332,
                                  5,
00182
                   336,
                           5,
                                  5,
                                                     -5 }, // 'p'
-5 }, // 'q'
-5 }, // 'r'
00183
                   340.
                           5.
                                        6,
                                               1,
00184
                   345,
                           5,
                                               1,
                                        6,
00185
                   350,
                           4,
                                  5,
                                        6,
                                               2,
00186
                   353,
                                        6,
                                               1,
                                                     -6 }, // 't'
00187
                   357,
                                  6,
                   361,
                                                     -5 }, // 'u'
00188
                                  5,
                                        6,
                                               1,
                                                     -5 }, // 'v'
00189
                   365,
                           5,
                                  5,
                                        6,
                                               1,
                                                     -5 }, // 'w'
00190
                   369.
                           6,
                                  5.
                                        6,
                                               0,
00191
                   373,
                                                     -5 }, // 'x'
                           5,
                                  5,
                                        6,
                                               1,
                   377,
00192
                                        6,
                                               1,
00193
                   382,
                                                     -5 }, // 'z'
                                                     -8 }, // '{'
00194
                   386,
                           4,
                                  8,
                                               1,
                   390,
                                                     -8 },
00195
                           2,
                                  9,
                                        6,
                                               2,
00196
                   393.
                           4.
                                  8.
                                        6.
                                                     -8 } //
00197 };
00198 const GFXfont Monospaced_plain_9 PROGMEM = {
00199 (uint8_t *)Monospaced_plain_9Bitmaps,(GFXglyph *)Monospaced_plain_9Glyphs,0x20, 0x7E, 12);
```

3.13 opensans12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Open_Sans_Regular_12Bitmaps[] PROGMEM = {
00004
             // Bitmap Data: 0x00, // ''
00005
00006
             0xAA,0xA2,0x80, // '!'
0xAA,0xA0, // '"'
00007
00008
             0x12,0x0A,0x05,0x0F,0xE2,0x41,0x23,0xF8,0x50,0x48,0x00, // '#'
00010
             0x21,0xEA,0x28,0x60,0xE2,0x8A,0xF0,0x80, // '$'
00011
             0xC2,0x52,0x29,0x15,0xEA,0xD7,0xA8,0x94,0x4A,0x47,0x00, // '%'
00012
             0x70,0x24,0x12,0x0A,0x06,0x04,0x92,0x29,0x08,0x7A,0x00, // '&'
             0xA8, // "'
0x4C,0x88,0x88,0x88,0x8C,0x40, // '(
00013
00014
             0x46,0x22,0x22,0x22,0x26,0x40, // ')'
0x20,0x8F,0x94,0xD8, // '*'
00015
00016
             0x20,0x82,0x3E,0x20,0x82,0x00, // '+'
0x4A,0x00, // ','
0xC0, // '-'
00017
00018
00019
00020
00021
             0x11,0x08,0x44,0x21,0x08,0x80, // '/'
             0x72,0x28,0xA2,0x8A,0x28,0xA2,0x70, // '0'
00022
00023
             0x26,0xA2,0x22,0x22,0x20, // '1'
00024
             0x72,0x20,0x82,0x10,0x84,0x20,0xF8, // '2'
             0xF0,0x20,0x86,0x70,0x20,0x82,0xF0, // '3'
00025
             0x08,0x18,0x18,0x28,0x48,0x48,0xFE,0x08,0x08, // '4'
0xFA,0x08,0x3C,0x08,0x20,0x82,0xF0, // '5'
0x39,0x08,0x3C,0x8A,0x28,0xA2,0x70, // '6'
00026
00027
00029
             0xF8,0x20,0x84,0x10,0x82,0x10,0x40, // '7'
00030
             0x72,0x28,0xB6,0x72,0x28,0xA2,0xF0, // '8'
             0x72,0x28,0xA2,0x89,0xE0,0x86,0xE0, // '9'
0xA0,0xA0, // ':'
0x48,0x00,0x94, // ';'
00031
00032
00033
00034
             0x08,0xCC,0x30,0x30,0x20, // '<'
00035
             0xF8, 0x0F, 0x80, // '='
00036
             0x81,0x81,0x86,0x62,0x00, // '>'
             0xF2,0x20,0x84,0x20,0x80,0x18,0x60, // '?'
00037
             0x3E,0x10,0x49,0xEA,0x4A,0xA2,0xA8,0xAA,0x4A,0x6C,0x40,0x0F,0x80, // '@'
0x18,0x0C,0x06,0x04,0x82,0x43,0xF1,0x08,0x84,0x81,0x00, // 'A'
0xF9,0x0A,0x14,0x2F,0x90,0xA1,0x42,0xF8, // 'B'
00038
00039
00040
             0x3E,0x40,0x80,0x80,0x80,0x80,0x80,0x40,0x3C, // 'C'
00041
00042
             0xF8,0x84,0x82,0x82,0x82,0x82,0x82,0x84,0xF8, // 'D'
             OxFA, 0x08, 0x20, 0xFA, 0x08, 0x20, 0xF8, // 'E'

0xFA, 0x08, 0x20, 0xFA, 0x08, 0x20, 0xF8, // 'F'

0x3E, 0x40, 0x80, 0x80, 0x8E, 0x82, 0x82, 0x42, 0x3E, // 'G'

0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x82, // 'H'

0xAA, 0xAA, 0x80, // 'I'
00043
00044
00045
00046
```

3.13 opensans12.h 31

```
0x22,0x22,0x22,0x22,0x22,0xC0, // 'J'
            0x89,0x12,0x45,0x0E,0x12,0x24,0x44,0x84, // 'K'
0x82,0x08,0x20,0x82,0x08,0x20,0xF8, // 'L'
00049
00050
            0x21,0x60,0x20,0x02,0x00,0x20,0x84,0x1/' L'
0xC1,0x80,0x6A,0x2A,0x8A,0xA2,0xA5,0x29,0x4A,0x22,0x88,0x80, // 'M'
0xC2,0xC2,0xA2,0xA2,0x92,0x8A,0x8A,0x86,0x86, // 'N'
0x78,0xC6,0x82,0x82,0x82,0x82,0x82,0xC6,0x78, // 'O'
0xF2,0x28,0xA2,0x88,0xC8,0x20,0x80, // 'P'
00051
00052
00053
00055
            0x78,0xC6,0x82,0x82,0x82,0x82,0x82,0xC6,0x7C,0x08,0x04, // 'Q'
            00056
00057
00058
00059
00060
            0x84,0x24,0xC4,0x4A,0x44,0xA4,0x4A,0x43,0x18,0x31,0x83,0x18,0x31,0x80, // 'W'
00061
            0x44,0x44,0x28,0x28,0x10,0x28,0x28,0x44,0x82,//'X'
0x82,0x44,0x44,0x28,0x38,0x10,0x10,0x10,0x10,/''Y'
00062
00063
00064
            0x7C,0x04,0x08,0x08,0x10,0x20,0x20,0x40,0xFE, // 'Z'
            0xE8,0x88,0x88,0x88,0x88,0xE0, // '['
0x82,0x10,0x82,0x10,0x84,0x10, // '\
00065
00066
            0xE2,0x22,0x22,0x22,0x22,0xE0, // ']'
00067
00068
            0x10,0x30,0x28,0x48,0x44,0x44, // '^'
            0xF8, // '-'
0x44, // '-'
00069
00070
            0x70,0x27,0xA2,0x8B,0xE0, // 'a'
0x82,0x08,0x3C,0x8A,0x28,0xA2,0xF0, // 'b'
0x7A,0x08,0x20,0x81,0xC0, // 'c'
00071
00072
00073
00074
            0x08,0x20,0x9E,0x8A,0x28,0xA2,0x78, // 'd'
00075
            0x72,0x2F,0xA0,0x81,0xE0, // 'e'
            0x31,0x04,0x3C,0x41,0x04,0x10,0x40, // 'f'
00076
            0x3E,0x44,0x44,0x78,0x40,0x3C,0xC2,0x84,0x7C, // 'g'
00077
00078
            0x82,0x08,0x3E,0x8A,0x28,0xA2,0x88, // 'h
00079
            0x8A,0xAA, // 'i'
00080
            0x20,0x22,0x22,0x22,0x22,0xE0, // 'j'
00081
            0x82,0x08,0x24,0xA3,0x0A,0x24,0x90, // 'k'
            0xAA,0xAA,0x80, // '1'
0xF7,0x22,0x28,0x8A,0x22,0x88,0xA2,0x20, // 'm'
00082
00083
            0xFA,0x28,0xA2,0x8A,0x20, // 'n'
0x72,0x28,0xA2,0x89,0xC0, // 'o'
00084
00086
            0xF2,0x28,0xA2,0x8B,0xC8,0x20,0x80, // 'p'
00087
            0x7A,0x28,0xA2,0x89,0xE0,0x82,0x08, // 'q'
            0xB6,0x21,0x08,0x40, // 'r'
0xF4,0x30,0x61,0x78, // 's'
00088
00089
            0x47,0x90,0x84,0x21,0xC0, // 't'
0x8A,0x28,0xA2,0x8B,0xE0, // 'u'
0x84,0x91,0x22,0x43,0x06,0x00, // 'v'
00090
00091
00092
00093
            0x88,0x95,0x45,0x51,0x54,0x65,0x08,0x80, // 'w'
00094
            0x48,0x90,0xC1,0x84,0x99,0x00, // 'x'
            0x84,0x91,0x22,0x43,0x06,0x08,0x10,0xC0, // 'y'
00095
00096
            0xF0,0x42,0x10,0x83,0xE0, // 'z'
            0x18,0x82,0x08,0x23,0x23,0x08,0x20,0x81,0x80, // '{
0xAA,0xAA,0xAA, // '|'
00097
00098
            0xC0,0x82,0x08,0x20,0x62,0x08,0x20,0x8C,0x00 // '}'
00099
00100 };
00101 const GFXglyph Open_Sans_Regular_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103
                     0,
                            2,
                                                0,
                                                       -1 }, // '
              {
                                  1,
                                         4,
                                                       -9 }, // '!'
                      1,
                                   9.
                                                 1,
                                                       -9 }, // ""
00105
                                                       -9 }, // '#'
00106
                                   9,
                      6,
                                         9,
                                                 Ο,
                                                       -9 }, // '$'
00107
                     17,
                            6,
                                 10.
                                         8,
                                                 1,
                                                       -9 }, // '%'
00108
                     25,
                            9,
                                   9.
                                        11,
                                                 1,
                                                       -9 }, // '&'
00109
                     36,
                            9,
                                   9,
                                        10,
                                                 1,
                                                       -9 }, // "'
00110
                     47,
                            2,
                                   3,
                                         4,
                                                 1,
                                 11,
                                                       -9 }, // '('
00111
                     48,
                            4,
00112
                     54,
                            4,
                                         5,
                                                 Ο,
                                                       -9 }, // ')'
                                  11,
                                                       -9 }, // '*'
00113
                     60,
                            6,
                                   5,
                                         8,
                                                1,
                                                       -8 }, // '+'
00114
                     64,
                            6,
                                         8,
                                                       -1 }, // ','
00115
                     70.
                            3.
                                   3.
                                         4.
                                                 0.
                                                       -4 }, // '-'
00116
                     72.
                            3.
                                   1.
                                         5.
                                                 1.
00117
                     73,
                                                       -9 }, // '/'
00118
                     74,
                                   9,
                                                 Ο,
                                                       -9 }, // '0'
00119
                     80,
                            6,
                                   9,
                                         8,
                                                 1,
                                                       -9 }, // '1'
00120
                     87,
                            4,
                                   9,
                                         8,
                                                 1,
                                                       -9 }, // '2'
00121
                     92.
                            6.
                                   9.
                                         8.
                                                 1,
                                                       -9 }, // '3'
00122
                     99,
                            6,
                                   9,
                                         8,
                                                 1,
                   106,
                                                       -9 }, // '4'
00123
                            8,
                                   9.
                                         8.
                                                 Ο,
00124
                   115,
                                                       -9 }, // '5'
                            6,
                                                 1,
                                                       -9 }, // '6'
00125
                   122,
                                   9,
                                         8,
                                                       -9 }, // '7'
00126
                   129.
                            6,
                                   9.
                                         8.
                                                       -9 }, // '8'
00127
                   136.
                            6.
                                   9.
                                         8.
                                                 1,
                                                       -9 }, // '9'
00128
                   143,
                                   9,
                                         8,
                            6,
                                                 1,
00129
                   150,
                                   6,
00130
                   152,
                                                 Ο,
                   155,
                                                       -7 }, // '<'
00131
                                         8,
                                                 1,
                                                       -6 }, // '='
00132
                   160,
                            6,
                                   3,
                                         8,
                                                 1,
                                                       -7 }, // '>'
00133
                   163.
                            6,
                                         8,
00134
                    168,
                                                       -9 }, // '?'
                                                 0.
```

```
175,
                          10,
                                10,
                                      12,
                                                     -9 }, // '@'
                                                     -9 }, // 'A'
-9 }, // 'B'
-9 }, // 'C'
00136
                   188,
                                  9,
                                               0,
                           9,
00137
                   199,
                                  9,
                                        9,
00138
                   207,
                           8,
                                  9,
                                       9,
                                               1,
                                                     -9 }, // 'D'
00139
                   216,
                           8,
                                  9.
                                      10.
                                                     -9 }, // 'E'
00140
                   225,
                                  9.
                                               1.
                           6.
                                       8.
                                       7,
                                                     -9 }, // 'F'
00141
                   232,
                           6,
                                  9,
                                               1,
00142
                   239,
                                  9,
                                      10,
                                                     -9 }, // 'G'
                                                     -9 }, // 'H'
00143
                   248,
                           8,
                                  9,
                                      10,
                                               1,
                                                     -9 }, // 'I'
00144
                   257,
                           2,
                                  9,
                                       4,
                                               1,
                                                     -9 }, // 'J'
                                              -1,
00145
                   260.
                                11.
                           4.
                                       4.
                                                     -9 }, // 'K'
00146
                                              1,
                   266.
                           7.
                                  9.
                                       8.
                                                     -9 }, // 'L'
00147
                   274,
                           6,
                                  9,
                                               1,
00148
                   281,
                          10,
                                  9,
                                      12,
                                               1,
                                                     -9 }, // 'M'
00149
                   293,
                           8,
                                  9,
                                      10,
                                                     -9 }, // 'N'
                                                     -9 }, // 'O'
00150
                   302,
                           8,
                                  9,
                                      10,
                                                     -9 }, // 'P'
00151
                   311.
                           6.
                                  9.
                                       8.
                                               1,
                                                     -9 }, // 'Q'
00152
                   318,
                                11,
                                      10,
                           8,
                                               1,
                                                     -9 }, // 'R'
00153
                   329,
                           7,
                                  9,
                                       8,
                                               1,
                   337,
                                                     -9 }, // 'S'
00154
                           6,
                                  9,
                                        8,
                                                     -9 }, // 'T'
00155
                   344,
                                  9,
                                               0,
                                        8,
                                 9,
                                                     -9 }, // 'U'
00156
                   353,
                           8,
                                      10,
                                               1,
                                                     -9 }, // 'V'
00157
                   362,
                           8,
                                  9,
                                       8,
                                               0,
                                                     -9 }, // 'W'
00158
                   371.
                          12,
                                  9.
                                      12,
                                               0,
00159
                   385,
                                                     -9 }, // 'X'
                                  9,
                           8,
                                       8,
                                               0,
                   394,
                                                     -9 }, // 'Y'
00160
                           8,
                                  9,
                                        8,
                                               0,
                                                     -9 }, // 'Z'
00161
                   403,
                                  9,
                                        8,
                                               Ο,
                                                    -9 }, // '['
-9 }, // '\'
-9 }, // '\'
00162
                   412,
                           4,
                                11,
                                        5,
                                               1,
                   418,
00163
                           5,
                                  9,
                                        5,
                                               Ο,
00164
                   424.
                           4.
                                11.
                                        5.
                                               0.
                                                     -9 }, // '^'
00165
                   430.
                                        8.
                                               0.
                           8.
                                  6.
                                                     1 }, // '_'
00166
                   436,
                           6,
                                        6,
                                               0,
                                  1,
                                                     -9 }, // , -,
00167
                   437,
                                  2,
                                               2,
                           4,
                                                     -6 }, // 'a'
00168
                   438,
                                  6,
                                        8,
                                                     -9 }, // 'b'
00169
                   443,
                           6,
                                  9,
                                        8,
                                               1,
                                                     -6 }, // 'c'
                                        7,
00170
                   450.
                           6,
                                  6.
                                               1,
                                                     -9 }, // 'd'
00171
                   455,
                           6,
                                  9,
                                        8,
                                               1,
00172
                                               1,
                                                     -6 }, // 'e'
                   462,
                           6,
                                  6,
                                        8,
00173
                   467,
                           6,
                                  9,
                                               Ο,
                                                     -9 }, // 'f'
                                                     -6 }, // 'g'
00174
                   474,
                           8,
                                  9,
                                        8,
                                               0,
                                                    -9 }, // 'h'
-8 }, // 'i'
00175
                   483,
                           6,
                                  9,
                                       8,
                                               1,
00176
                   490,
                           2,
                                  8,
                                        4,
                                               1,
00177
                                                     -8 }, //
                   492.
                                       4,
7,
                           4.
                                11.
                                              -1,
                                                     -9 }, // 'k'
00178
                   498,
                                               1,
                           6,
                                  9,
00179
                   505,
                                                     -9 }, // 'l'
                           2,
                                  9,
                                        4,
                                               1,
00180
                   508,
                          10,
                                  6,
                                      12,
                                               1,
                                                     -6 }, // 'm'
                                                     -6 }, // 'n'
00181
                   516,
                           6,
                                  6,
                                       8,
                                               1,
                                                     -6 }, // 'o'
00182
                   521,
                           6,
                                  6,
                                       8,
                                               1,
                                                     -6 }, // 'p'
00183
                   526.
                                               1.
                           6.
                                  9.
                                        8.
                                                               'q'
00184
                   533,
                                               1,
                                                     -6 }, //
                           6.
                                  9.
                                        8.
                                                     -6 }, // 'r'
00185
                   540,
                                               1,
                           5,
                                  6,
                                        6,
                                                     -6 }, // 's'
00186
                   544,
                                        7,
                                               1,
                                  6,
                                                     -7 }, // 't'
00187
                   548,
                           5,
                                        5,
                                               Ο,
                                                     -6 }, // 'u'
00188
                   553,
                           6,
                                  6,
                                       8,
7,
                                               1,
                                                     -6 }, // 'v'
                   558.
00189
                           7.
                                  6.
                                               0.
                                                     -6 }, // 'w'
00190
                   564,
                          10,
                                      10,
                                               0,
                                  6,
                   572,
                                        7,
                                                     -6 }, // 'x'
                           7,
                                               Ο,
                                  6,
                                                     -6 }, // 'y'
-6 }, // 'z'
00192
                   578,
                                  9.
                                               Ο,
00193
                   586,
                                  6,
                                                     -9 }, // '{'
                   591,
00194
                           6,
                                11,
                                        6,
                                               0,
                                                            11 11
                                                     -9 },
00195
                   600.
                           2..
                                12,
                                        8.
                                               3.
00196
                                                     -9 } //
                   603,
                           6,
                                11,
                                        6,
                                               0,
00197 };
00198 const GFXfont Open_Sans_Regular_12 PROGMEM = {
00199 (uint8_t *)Open_Sans_Regular_12Bitmaps, (GFXglyph *)Open_Sans_Regular_12Glyphs, 0x20, 0x7E, 17};
```

3.14 opensans9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Open_Sans_Regular_9Bitmaps[] PROGMEM = {
00004
          // Bitmap Data: 0x00, // ''
00005
00006
          0xAA,0x88, // '!'
0xD8, // '"'
00007
00008
           0x28,0x51,0xF2,0x8F,0x8A,0x14,0x00, // '#'
00009
00010
           0x4E,0xCC,0x66,0xE4, // '$'
           0x68,0xA8,0xB0,0x7C,0x1A,0x2A,0x2C, // '%'
00011
          0x61,0x22,0x82,0x0A,0x53,0x3E,0x00, // '&'
0xA0, // ""
00012
00013
00014
          0x44,0x88,0x88,0x44, //
          0x44,0x22,0x22,0x44, // ')'
00015
```

3.14 opensans9.h 33

```
0x23,0xE2,0x14, // '*'
00017
                0x20,0x8F,0x88,0x20, // '+'
               0xA0, // ','
0xE0, // '-'
00018
00019
               0x80, // '.'
00020
00021
                0x22,0x44,0x48,0x80, // '/'
                0x71,0x48,0xA2,0x89,0x47,0x00, // '0'
               0x71,0x48,0xA2,0x89,0x47,0x00, // '0'
0x59,0x24,0x90, // '1'
0x70,0x41,0x04,0x21,0x0F,0x80, // '2'
0x70,0x84,0xC1,0x0B,0xC0, // '3'
0x10,0xC3,0x14,0x93,0xE1,0x00, // '4'
0xE4,0x21,0xC1,0x0B,0x80, // '5'
0x31,0x04,0x1C,0x89,0x27,0x00, // '6'
0xF8,0x41,0x04,0x20,0x84,0x00, // '7'
00023
00024
00025
00026
00027
00028
00029
00030
               0x71,0x45,0x08,0x52,0x27,0x00, // '8'
               0x72,0x48,0x9E,0x08,0x46,0x00, // '9' 0x80,0x80, // ':' 0x40,0x09,0x00, // ';'
00031
00032
00033
               0x19,0x86,0x06, // '<'
0xE0,0xE0, // '='
00035
                0xC0,0xC3,0x30, // '>'
00036
               0xE0,0x84,0x44,0x01,0x00, // '?'
00037
               0x10,0x04,0x16,0x6C,0xD7,0x00,0x3C,//'@'
0x30,0x60,0xC2,0x47,0x91,0x21,0x00,//'A'
0xF4,0xA5,0xC9,0x4B,0xC0,//'B'
0x7A,0x08,0x20,0x82,0x07,0x00,//'C'
00038
00039
00040
               0xF2,0x28,0xA2,0x8A,0x2F,0x00, // 'D'
0xE8,0x8E,0x88,0xE0, // 'E'
00042
00043
               0xF4,0x21,0xE8,0x42,0x00, // 'F'
0x7A,0x08,0x26,0x8A,0x27,0x80, // 'G'
00044
00045
               0x8A,0x28,0xBE,0x8A,0x28,0x80, // 'H'
0xAA,0xA8, // 'I'
00046
00047
                0x49,0x24,0x92,0xC0, // 'J'
00048
00049
                0x92,0x4A,0x30,0xA2,0x48,0x80, // 'K'
00050
                0x84,0x21,0x08,0x43,0xC0, // 'L'
               0x85,0x9B,0x36,0x6B,0x56,0xA9,0x00, // 'M'
0x8B,0x2C,0xAA,0x9A,0x68,0x80, // 'N'
0x72,0x28,0xA2,0x8A,0x27,0x00, // 'O'
00051
00052
00054
                0xE4,0xA5,0x4E,0x42,0x00, // 'P'
00055
                0x72,0x28,0xA2,0x8A,0x27,0x04, // 'Q'
               0xF2,0x49,0x38,0xA2,0x48,0x80, // 'R'
00056
               0x72,0x04,0x06,0x08,0x2F,0x00, // S'
0xF8,0x82,0x08,0x20,0x82,0x00, // T'
0x8A,0x28,0xA2,0x8A,0x27,0x00, // 'U'
00057
00058
00059
                0x8A,0x25,0x14,0x50,0x82,0x00, // 'V'
00061
                0x91,0x4C,0x96,0x8B,0x46,0x63,0x30,0x90, // 'W'
               0x89,0x45,0x08,0x51,0x48,0x80, // 'X'
0x89,0x45,0x08,0x20,0x82,0x00, // 'Y'
00062
00063
                0xF8,0x41,0x08,0x41,0x0F,0x80, // 'Z'
00064
               0xP2,0x41,0x08,0x41,0x0F,0x
0xD2,0x49,0x26, // '['
0x88,0x44,0x42,0x20, // '\'
0xC9,0x24,0x96, // ']'
0x21,0x45,0x22, // '^'
00065
00067
00068
00069
               0xF0, // '-'
0xA0, // '-'
00070
00071
                0x70,0x9D,0x27,0x00, // 'a'
                0x84,0x3D,0x29,0x4B,0xC0, // 'b'
00073
                0x72,0x20,0x87,0x00, // 'c'
00074
                0x10,0xBD,0x29,0x4B,0xC0, // 'd'
               0x71,0x2F,0x90,0x70, // 'e'
0x64,0xE4,0x44,0x40, // 'f'
0x7A,0x47,0x10,0x72,0x2F,0x00, // 'g'
0x84,0x3D,0x29,0x4A,0x40, // 'h'
0x8A,0xA8, // 'i'
00075
00076
00077
00078
00079
00080
                0x41,0x24,0x92,0xC0, // 'j'
               0x84,0x29,0x8C,0x52,0x40, // 'k'
0xAA,0xA8, // 'l'
0xED,0x2A,0x54,0xA9,0x40, // 'm'
00081
00082
00083
               0xF4,0xA5,0x29,0x00, // 'n'
0x71,0x48,0x94,0x70, // 'o'
00084
00086
                0xF4,0xA5,0x2F,0x42,0x00, // 'p'
00087
               0xF4,0xA5,0x2F,0x08,0x40, // 'q'
               0xE8,0x88,0x80, // 'r'
0x64,0x18,0x2E,0x00, // 's'
00088
00089
               0x4E,0x44,0x46, // 't'
0x94,0xA5,0x2F,0x00, // 'u'
00090
00092
                0x89,0x45,0x14,0x20, // 'v'
               0x92,0xAA,0x6C,0x6C,0x44, // 'w'
0x51,0x42,0x14,0x48, // 'x'
00093
00094
               0x89,0x45,0x14,0x20,0x8C,0x00, // 'y'
0xF1,0x10,0x8F,0x00, // 'z'
0x64,0x44,0x44,0x46, // '{'
0xAA,0xAA,0x80, // '|'
00095
00096
00097
00098
               0xC4,0x44,0x44,0x4C // '}'
00099
00100 };
00101 const GFXglyph Open_Sans_Regular_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
```

00100	,	0	0	1	2	0	1)	, ,	, ,
00103 00104	{	0, 1,	2, 2,	1, 7,	3, 3,	0, 1,		, //	111
00104	{	3,	3,	2,	5,	1,		, //	, 11,
00106	{	4,	7,	7,	7,	0,		, //	· # ·
00107	{	11,	4,	8,	6,	1,		, //	'ş'
00108	{	15,	8,	7,	8,	0,		, //	' % '
00109	{	22,	7,	7,	8,	1,		, //	'&'
00110	{	29,	2,	2,	3,	1,		, //	" "
00111	{	30,	4,	8,	4,	0,		, //	′(′
00112	{	34,	4,	8,	4,	0,		, //	′)′
00113	{	38,	6,	4,	6,	0,		, //	′ * ′
00114	{	41,	6,	5,	6,	0,		, //	' +'
00115 00116	{	45, 46,	2, 4,	2, 1,	3, 4,	0, 0,	-1 } -3 }	, //	, , , , _ ,
00117	{	47,	2,	1,	3,	1,		, //	<i>'</i> . <i>'</i>
00118	{	48,	4,	7,	4,	0,		, //	.,.
00119	{	52,	6,	7,	6,	0,		, //	,0,
00120	{	58,	3,	7,	6,	1,	-7 }	, //	11'
00121	{	61,	6,	7,	6,	0,		, //	121
00122	{	67,	5,	7,	6,	0,		, //	131
00123	{	72,	6,	7,	6,	0,		, //	4'
00124 00125	{	78, 83,	5, 6,	7, 7,	6,	1,		, //	'5'
00125	{	89,	6,	7,	6, 6,	0, 0,		, //	77'
00120	{	95,	6,	7,	6,	0,		, //	,8,
00128	{	101,	6,	7,	6,	0,		, //	,9,
00129	{	107,	2,	5,	3,	1,		, //	':'
00130	{	109,	3,	6,	3,	0,	-5 }	, //	';'
00131	{	112,	6,	4,	6,	0,		, //	<i>' < '</i>
00132	{	115,	4,	3,	6,	1,		, //	<i>'</i> = <i>'</i>
00133	{	117,	6,	4,	6,	0,		, //	' > '
00134	{	120,	5,	7,	5,	0,		, //	'?'
00135 00136	{	125, 132,	7, 7,	8, 7,	9, 7,	1, 0,		, //	'@' 'A'
00137	{	132,	5,	7,	7,	1,		, //	'B'
00137	{	144,	6,	7,	7,	1,		, //	, C,
00139	{	150,	6,	7,	8,	1,		, //	'D'
00140	{	156,	4,	7,	6,	1,		, //	'E'
00141	{	160,	5,	7,	6,	1,		, //	'F'
00142	{	165,	6,	7,	8,	1,		, //	'G'
00143	{	171,	6,	7,	8,	1,		, //	'H'
00144	{	177,	2,	7,	4,	1,		, //	'I'
00145	{	179,	3,	9,	3,	-1,		, //	'J'
00146 00147	{	183, 189,	6, 5,	7, 7,	7, 6,	1, 1,		, //	'K'
00147	{	194,	7,	7,	9,	1,		, //	'м'
00149	{	201,	6,	7,	8,	1,		, //	'N'
00150	{	207,	6,	7,	8,	1,		, //	101
00151	{	213,	5,	7,	6,	1,		, //	'P'
00152	{	218,	6,	8,	8,	1,		, //	'Q'
00153	{	224,	6,	7,	7,	1,		, //	'R'
00154	{	230,	6,	7,	6,	0,		, //	'S'
00155 00156	{	236, 242,	6,	7, 7,	6,	0, 1,		, //	'T'
00157	{	242,	6, 6,	7,	8, 6,	0,		, //	, v,
00157	{	254,	9,	7,	9,	0,		, //	
00159	{	262,	6,	7,	6,	0,	-7 }		'X'
00160	{	268,	6,	7,	6,	0,		, //	'Y'
00161	{	274,	6,	7,	6,	0,		, //	'Z'
00162	{	280,	3,	8,	4,	1,		, //	'['
00163	{	283,	4,	7,	4,	0,		, //	'\'
00164	{	287,	3,	8,	4,	0,		, //	']'
00165 00166	{	290, 293,	6, 5,	4, 1,	6, 5,	0, 0,	-6 } 1 }		, ,
00167	{	294,	2,	2,	6,	2,	-7 }		, ,,
00168	{	295,	5,	5,	6,	0,	-5 }		'a'
00169	{	299,	5,	7,	7,	1,	-7 }		'b'
00170	{	304,	5,	5,	5,	0,	-5 }		'c'
00171	{	308,	5,	7,	7,	1,	-7 }		'd'
00172	{	313,	6,	5,	6,	0,	-5 }		'e'
00173	{	317,	4,	7,	4,	0,	-7 }		′f′
00174	{	321,	6,	7,	6,	0,	-5 }		'g'
00175 00176	{	327, 332,	5, 2,	7, 7,	7, 3,	1, 1,	-7 } -7 }		'h'
00178	{	334,	3,	9,	3, 3,	-1,	-7 } -7 }		, j,
00178	{	338,	5,	7,	6,	1,	-7 }		′ k′
00179	{	343,	2,	7,	3,	1,	-7 }		11
00180	{	345,	7,	5,	9,	1,	-5 }	, //	' m'
00181	{	350,	5,	5,	7,	1,	-5 }		'n'
00182	{	354,	6,	5,	6,	0,	-5 }		′°′
00183	{	358,	5 ,	7,	7,	1,	-5 } -5 }		'p'
00184 00185	{	363, 368,	5, 4,	7, 5,	7, 5,	1, 1,	-5 } -5 }		'q' 'r'
00186	{	371,	5,	5,	5,	0,	-5 }		, s,
00187	{	375,	4,	6,	4,	0,	-6 }	, //	't'
00188	{	378,	5,	5,	7,	1,	-5 }	, //	'u'
00189	{	382,	6,	5,	6,	0,	-5 }	, //	′ v′

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```
00190
                  386,
                                                   -5 }, // 'w'
                                                   -5 }, // 'x'
-5 }, // 'y'
-5 }, // 'z'
00191
                  391,
                           6,
                                5,
                                      6,
                                             0,
                  395,
00192
                                      6,
                                             Ο,
00193
                  401,
                          5,
                                5,
                                      5,
                                             Ο,
                                                   -7 }, // '{'
00194
                  405.
                           4,
                                8,
                                      4,
                                             0,
                  409,
                                                   -7 },
00195
                          2.
                                 9.
                                             2.
                                      6.
00196
                  412,
                                      4,
00197 };
00198 const GFXfont Open_Sans_Regular_9 PROGMEM = {
00199 (uint8_t *)Open_Sans_Regular_9Bitmaps,(GFXglyph *)Open_Sans_Regular_9Glyphs,0x20, 0x7E, 13};
```

3.15 roboto12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Roboto_Condensed_Light_12Bitmaps[] PROGMEM = {
00004
              // Bitmap Data: 0x00, // ''
00005
00006
              0xAA,0xA8,0x80, // '!'
0xDB,0x00, // '"'
00007
00008
00009
              0x51,0x4F,0x94,0x53,0xEA,0x28,0xA0, // '#'
              0x43,0x25,0x28,0x30,0x52,0x93,0x90, // '$'
00010
              0xC1,0x52,0xC6,0x82,0x05,0x95,0x2A,0x0C, // '%'
00011
              0x30,0xA1,0x43,0x06,0x12,0xA6,0x44,0x74, // '&'
00012
00013
              0xA8, //
              0x4A,0x49,0x24,0x92,0x24, // '('
00014
              0x84,0x42,0x22,0x22,0x22,0x44,0x80, // ')'
0x22,0xA7,0x14,0x90, // '*'
00015
00016
              0x20,0x82,0x3E,0x20,0x82,0x00, // '+'
0x4A,0x00, // ','
00017
00018
              0x4A,0x00, //
0xE0, // '-'
0x80, // '.'
00019
00021
              0x11,0x08,0x44,0x21,0x08,0x84,0x00, // '/'
              0x64,0xA5,0x29,0x4A,0x52,0x60, // '0'
0x6A,0x22,0x22,0x22,0x20, // '1'
00022
00023
              0x64,0x84,0x22,0x11,0x10,0xF0, // '2'

0x64,0x84,0x22,0x11,0x10,0xF0, // '2'

0x64,0x84,0x26,0x08,0x52,0x60, // '3'

0x10,0x20,0xC1,0x85,0x12,0x3F,0x08,0x10, // '4'
00024
00025
00026
              0x74,0x21,0xE9,0x08,0x52,0x70, // '5'
0x62,0x21,0xC9,0x4A,0x52,0x60, // '6'
00027
00028
              0x62,0x21,0xC9,0x4A,0x52,0x60,
              0xF8,0x20,0x84,0x10,0x82,0x08,0x40,//'7'
0x64,0xA5,0x26,0x4A,0x52,0x70,//'8'
0x64,0xA5,0x29,0x38,0x42,0x60,//'9'
0x80,0x20,//':'
00029
00030
00031
00032
00033
              0x40,0x00,0x94, // ';'
              0x11,0x91,0x83,0x08, // '<'
0xF0,0x3C, // '='
00034
00035
00036
              0x82,0x0C,0x64,0x40, // '>'
              0xEA, 0x22, 0x24, 0x40, 0x40, // '?'
00037
00038
              0x1E,0x08,0x44,0xD2,0x54,0xA4,0xA9,0x4A,0x52,0x6C,0x40,0x18,0x03,0xC0, // '@'
              0x10,0x30,0x28,0x28,0x28,0x48,0x7C,0x44,0x86, //
              0xF2,0x49,0x24,0xE2,0x48,0xA4,0xF0, // 'B'
0x72,0x28,0xA0,0x82,0x08,0xA2,0x70, // 'C'
00040
00041
00042
              0xF2,0x28,0xA2,0x8A,0x28,0xA2,0xF0, // 'D'
              0xF4,0x21,0x0F,0x42,0x10,0xF0,//'E'
0xF4,0x21,0x0F,0x42,0x10,0x80,//'F'
0x72,0x28,0xA0,0x82,0x68,0xA2,0x78,//'G'
00043
00044
00045
00046
              0x8A,0x28,0xA2,0xFA,0x28,0xA2,0x88, // 'H'
              0xAA,0xAA,0x80, // 'I'
0x10,0x84,0x21,0x0A,0x52,0xE0, // 'J'
00047
00048
00049
              0x89,0x22,0x85,0x0E,0x14,0x24,0x44,0x8C, // 'K'
              0x84,0x21,0x08,0x42,0x10,0xF0, // 'L'
0x82,0x82,0xC6,0xC6,0xCA,0xAA,0xAA,0xB2,0x92, // 'M'
00050
              0x8A,0x2C,0xB2,0xAA,0xA9,0xA2,0x88, // 'N'
0x72,0x28,0xA2,0x8A,0x28,0xA2,0x70, // 'O'
00052
00053
              0xF2,0x48,0xA2,0x93,0xC8,0x20,0x80, // 'P'
00054
              0x72,0x28,0xA2,0x8A,0x28,0xA2,0x70,0x20, // 'Q' 0xF2,0x28,0xA2,0x8B,0xC9,0x24,0x88, // 'R' 0x78,0x92,0x12,0x03,0x01,0x21,0x24,0x78, // 'S'
00055
00056
00057
              0xFC,0x40,0x81,0x02,0x04,0x08,0x10,0x20,//'T'
0x8A,0x28,0xA2,0x8A,0x28,0xA2,0x70,//'U'
00058
00059
              0x85,0x09,0x22,0x44,0x85,0x0C,0x18,0x10, // 'V'
00060
00061
              0 \times 88, 0 \times A2, 0 \times 25, 0 \times 51, 0 \times 54, 0 \times 55, 0 \times 15, 0 \times 46, 0 \times 50, 0 \times 88, 0 \times 22, 0 \times 00, \ // \ 'W'
              0xC4,0x90,0xA1,0x81,0x06,0x12,0x24,0x84, // 'X'
0x84,0x91,0x21,0x83,0x02,0x08,0x10,0x20, // 'Y'
00062
00063
              0xF8,0x41,0x08,0x41,0x08,0x20,0xF8, //
00064
00065
              0xD2,0x49,0x24,0x92,0x60, // '['
00066
              0x84,0x10,0x84,0x10,0x84,0x10,0x80, // ' 
              0xC9,0x24,0x92,0x49,0x60, //
0x43,0x29,0x20, // '^'
00067
00068
00069
              0xF8, // '-'
0x88, // '-'
00070
```

```
0x64,0x84,0xE9,0x4B,0xC0, // 'a'
00072
            0x84,0x3D,0x29,0x4A,0x52,0xF0, // 'b'
00073
            0x72,0x28,0x20,0x82,0x27,0x00, // 'c'
            0x10,0xBD,0x29,0x4A,0x52,0xF0, // 'd'
00074
            0x72,0x48,0xBE,0x82,0x07,0x80, // 'e'
0x68,0xC8,0x88,0x88,0x80, // 'f'
0xF4,0xA5,0x29,0x4B,0xD2,0x60, // 'g'
00075
00076
00078
            0x84,0x3D,0x29,0x4A,0x52,0x90, // 'h'
00079
            0x8A,0xAA,0x80, // 'i'
            0x41,0x24,0x92,0x4A,0x00, // 'j'
00080
            0x84,0x2D,0x4C,0x62,0x94,0x90, // 'k'
00081
            0xAA,0xAA,0x80, // '1'
0xEE,0x92,0x92,0x92,0x92,0x92,0x92, // 'm'
00082
00083
            0xF4,0xA5,0x29,0x4A,0x40, // 'n'
0x64,0xA5,0x29,0x49,0x80, // 'o'
00084
00085
00086
            0xF4,0xA5,0x29,0x4B,0xD0,0x80, // 'p'
            0xF4,0xA5,0x29,0x4B,0xC2,0x10, // 'q'
0xE8,0x88,0x88,0x80, // 'r'
0x72,0x48,0x18,0x12,0x67,0x00, // 's'
00087
00088
            0x44,0xE4,0x44,0x44,0x60, // 't'
0x94,0xA5,0x29,0x49,0xC0, // 'u'
00090
00091
            0x8A, 0x45, 0x14, 0x61, 0x82, 0x00, // 'v'
00092
            0x92,0x9A,0x5A,0x6A,0x6C,0x2C,0x24,//'w'
0x99,0x46,0x08,0x61,0x48,0x80,//'x'
0x8A,0x45,0x14,0x60,0x82,0x10,0x40,//'y'
00093
00094
00095
            0xF1,0x08,0x88,0x43,0xC0, // 'z'
            0x64,0x88,0x88,0x88,0x84,0x60, // '{
00097
00098
            0xAA,0xAA,0xA8, // '|'
            0xC4,0x44,0x42,0x44,0x44,0xC0 // '}'
00099
00100 };
00101 const GFXglyph Roboto_Condensed_Light_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103
                      0,
                                                 0, -1 }, // '
                                                        -9 }, // '!'
00104
                      1,
                                   9,
                                                 1,
                                                        -9 }, // '"'
00105
                      4,
                                   3,
                                                       -9 }, // '#'
00106
                      6,
                                    9,
                                          7,
                                                 1,
                                                      -10 }, // '$'
00107
                     13,
                                  11,
                                                 1,
                             7,
                                          9,
                                                 1,
                     20,
                                   9,
                                                       -9 }, // '&'
-9 }, // "'
00109
                     28,
                                    9,
                                                 Ο,
00110
                     36,
                                   3,
                                                 1,
                                                      -10 }, // '('
-10 }, // ')'
                     37,
00111
                             3,
                                  13,
                                          5,
00112
                     42,
                             4,
                                  13,
                                          5,
                                                 0,
                                          6,
                                                       -9 }, //
00113
                     49.
                             6.
                                   5,
                                                 0.
                                                        -7 }, // '+'
00114
                     53,
                             6,
                                                 0,
                                                       -1 }, // ','
-4 }, // '-'
                                          3,
00115
                     59,
                             3,
                                                 Ο,
00116
                     61,
                                   1,
                                          4,
                                                 Ο,
                                                        -1 }, // '.'
00117
                     62,
                            2,
                                   1,
                                          4,
                                                 1,
                                                       -9 }, // '/'
-9 }, // '0'
00118
                     63,
                             5,
                                  10,
                                          5,
                                                 Ο,
                                          7,
7,
00119
                             5.
                     70.
                                   9.
                                                 1,
                                                        -9 }, // '1'
00120
                     76,
                                                 1,
                             4.
                                    9.
                                                        -9 }, // '2'
00121
                     81,
                                    9,
                                                 1,
                                                        -9 }, // '3'
00122
                     87,
                                    9,
                                                 1,
                                                        -9 }, // '4'
00123
                     93,
                                   9,
                                                 0,
                                                       -9 }, // '5'
                                          7,
7,
00124
                    101,
                             5,
                                   9,
                                                 1,
                                                       -9 }, // '6'
-9 }, // '7'
-9 }, // '8'
00125
                    107.
                             5.
                                   9.
                                                 1,
00126
                    113,
                             6,
                                   9,
                                          7,
7,
                                                 0,
                    120.
                             5,
                                    9,
                                                 1,
00128
                    126,
                                                        -9 }, // '9'
                                                        -6 }, // ':'
00129
                    132,
                             2,
                                                       -6 }, // ';'
-7 }, // '<'
00130
                    134.
                             3,
                                   8.
                                          3,
                                                 0,
                    137,
00131
                             5,
                                   6,
                                          6,
7,
                                                 0,
                                                        -5 }, // '='
00132
                    141,
                             5,
                                   3,
                                                 1,
00133
                    143,
                             5,
                                   6,
                                          6,
                                                 1,
                                                        -7 }, // '>'
00134
                    147,
                                   9,
                                                        -9 }, // '?'
                                          6,
                                                        -8 }, // '@'
00135
                    152,
                            10,
                                  11,
                                        10,
                                                 Ο,
                                                       -0 }, // '0'

-9 }, // 'A'

-9 }, // 'B'

-9 }, // 'C'
00136
                    166,
                            8,
                                   9,
                                         8,
                                                 0,
00137
                    175,
                             6,
                                   9,
                                          7,
                                                 1,
00138
                                                 1.
                    182.
                             6.
                                   9.
                                          8.
                                                        -9 }, // 'D'
00139
                                                 1,
                    189.
                             6.
                                   9.
                                          8.
                                                        -9 }, // 'E'
00140
                    196,
                             5,
                                                 1,
                                                        -9 }, // 'F'
00141
                    202,
                                    9,
                                                 1,
                                                        -9 }, // 'G'
00142
                    208,
                             6,
                                   9,
                                          8,
                                                 1,
                                                        -9 }, // 'H'
00143
                    215,
                             6,
                                   9,
                                          8,
                                                 1,
                                                        -9 }, // 'I'
00144
                    222.
                             2,
                                    9.
                                          4,
                                                 1,
                                                        -9 }, // 'J'
00145
                    225,
                                    9,
                             5,
                                                 1,
00146
                    231,
                                    9,
                                                 1,
                                                        -9 }, // 'K'
00147
                    239,
                                                        -9 }, // 'L'
                                                        -9 }, // 'M'
00148
                    245,
                             8,
                                    9,
                                        10,
                                                        -9 }, // 'N'
                                          8,
00149
                    254,
                             6,
                                    9.
                                                        -9 }, // '0'
00150
                    261.
                                   9.
                             6.
                                          8,
                                                 1,
                                          7,
                                                        -9 }, // 'P'
                    268,
                                    9,
00151
                                                 1,
                             6,
                                  10,
00152
                    275,
                             6,
00153
                    283,
                                    9,
                                                        -9 }, // 'R'
                             6,
                    290,
                                                        -9 }, // 'S'
00154
                                    9,
                                                 Ο,
                                                        -9 }, // 'T'
00155
                    298,
                                   9,
                                                 0,
                                                        -9 }, // 'U'
00156
                    306,
                                   9,
                                                        -9 }, // 'V'
00157
                    313.
                                                 0.
```

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```
00158
                   321, 10,
                                  9,
                                       10,
                                                      -9 }, // 'W'
                                                     -9 }, // 'X'
-9 }, // 'Y'
-9 }, // 'Z'
00159
                   333,
                                  9,
                           7,
                                        7,
                                               Ο,
                   341,
00160
                                  9,
                                               Ο,
00161
                   349,
                            6,
                                  9,
                                               1,
                                                    -10 }, // '['
-9 }, // '\'
-10 }, // ']'
00162
                   356,
                            3,
                                 12,
                                        4,
00163
                   361.
                                        5.
                                               0.
                                 10.
00164
                   368,
                            3,
                                 12,
                                        4,
                                               0,
                                                     -9 }, // '^'
00165
                   373,
                                  4,
                                                     -9 }, // '^'
0 }, // '_'
-9 }, // ''
-7 }, // 'a'
00166
                   376,
                                  1,
                                               Ο,
00167
                   377,
                            3,
                                  2,
                                        4,
                                               1,
                   378.
00168
                            5.
                                        7,
                                               1,
                                                     -9 }, // 'b'
                                        7,
00169
                   383.
                            5.
                                  9.
                                               1.
00170
                   389,
                            6,
                                        6,
                                               0,
00171
                   395,
                                  9,
                                        7,
                                               1,
                                                      -9 }, // 'd'
00172
                   401,
                                               0,
                                                     -7 }, // 'e'
                                                     -9 }, // 'e'

-9 }, // 'f'

-7 }, // 'g'

-9 }, // 'h'
                                        5,
7,
00173
                   407,
                                  9,
00174
                   412.
                            5.
                                  9.
                                               1,
00175
                   418,
                                  9,
                            5,
                                               1,
                                        4,
                                                      -9 }, // 'i'
00176
                   424,
                            2,
                                  9,
                                               1,
00177
                                                      -9 }, // 'j'
                   427,
                            3,
                                 11,
                                        4,
                                               Ο,
                                                     -9 }, // 'k'
00178
                   432,
                                  9,
                                               1,
                                                     -9 }, // '1'
-7 }, // 'm'
00179
                   438,
                            2,
                                  9,
                                        4,
00180
                   441,
                            8,
                                  7,
                                       10,
                                               1,
                                                     -7 }, // 'n'
-7 }, // 'o'
                                        7,
7,
00181
                                  7,
                   448.
                            5,
                                               1,
00182
                   453,
                            5,
                                               1,
                                        7,
                                                      -7 }, // 'p'
00183
                   458,
                            5,
                                  9,
                                               1,
                                                     -7 }, // p
-7 }, // 'q'
-7 }, // 'r'
-7 }, // 's'
-9 }, // 't'
00184
                   464,
                                  9,
00185
                   470,
                            4,
                                        5,
                                               1,
00186
                   474,
                            6,
                                        6,
                                               Ο,
00187
                   480.
                            4.
                                  9.
                                        4,
                                               0,
                                        7,
                                                     -7 }, // 'u'
00188
                   485.
                            5.
                                  7.
                                               1.
00189
                   490,
                            6,
                                               0,
00190
                   496,
                                               Ο,
                                                      -7 }, // 'w'
00191
                   503,
                                        6,
                                               Ο,
                                                     -7 }, // 'x'
                                                     -7 }, // 'y'
00192
                   509,
                                  9,
                                               Ο,
                                                     -7 }, // 'z'
00193
                   516,
                            5,
                                  7.
                                        6,
                                               1,
                                                            // '{'
00194
                                                     -9 },
                   521,
                            4,
                                11,
                                        5,
                                               1,
                                                      -9 }, // '|'
                                        4,
                                               1,
00195
                   527,
                            2,
                                 11,
00196
                   530,
                                 11.
                                                      -9 } // '}'
00197 };
00198 const GFXfont Roboto_Condensed_Light_12 PROGMEM = {
151:
```

3.16 roboto9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Roboto_Condensed_Light_9Bitmaps[] PROGMEM = {
00004
            // Bitmap Data: 0x00, // ''
00005
00006
            0xAA,0x88, // '!'
0xA0, // '"'
00007
80000
            0x51,0x47,0x98,0xF1,0x86,0x00, // '#'
0x64,0xA4,0xC1,0x49,0x88, // '$'
0xC7,0x38,0x87,0x58,0xC0, // '%'
00009
00010
00011
            0xC6,0x31,0x0E,0x53,0xC0, // '&'
0xA0, // "'
00012
00013
00014
            0xD2,0x49,0x24,0xC0, // '
            0x89,0x24,0x92,0x80, // ')'
0x47,0xA8, // '*'
00015
00016
            0x42,0x3C,0x84,0x00, // '+'
0xA0, // ','
0xC0, // '-'
00017
00018
00019
            0x80, // '.'
00020
            0x24,0x44,0x48,0x88, // '/'
00021
            0x64,0xA5,0x29,0x49,0x80, // '0'
0x59,0x24,0x90, // '1'
00022
00023
00024
            0x64,0x88,0x44,0x43,0xC0, // '2'
00025
            0x64,0x88,0xC1,0x49,0x80, // '3'
00026
            0x21,0x18,0xCA,0x78,0x80, // '4'
            0x74,0x19,0x21,0x49,0x80, // '5'
00027
            0x64,0x39,0x29,0x49,0x80, // '6'
00028
            0xF0,0x88,0x42,0x21,0x00, // '7'
0x64,0xA8,0xC9,0x49,0x80, // '8'
00029
00030
            0x65,0x25,0x27,0x11,0x80, // '9'
00031
00032
            0x80,0x80, // ':'
            0x80,0xA0, // ';'
00033
            0x24,0xC2, // '<'
00034
            0xE0,0xE0, // '='
0x84,0x68, // '>'
00035
00036
            0xD9,0x28,0x20, // '?'
```

```
0x38,0x44,0x9C,0xAA,0xAC,0xBC,0x40,0x38, // '@'
              0x21,0x86,0x14,0x51,0xC8,0x80, // 'A'
0xEA,0xAE,0xAA,0xE0, // 'B'
00039
00040
              0xE5,0x25,0x08,0x5B,0x80, // 'C'
00041
              0xEA, 0xAA, 0xAA, 0xEO, // 'D'
0xE8, 0x8E, 0x88, 0xEO, // 'E'
00042
00043
              0xE8,0x8E,0x88,0x80, // 'F'
00045
              0x74,0xA1,0x09,0x49,0xC0, // 'G'
              0x94,0xA5,0xE9,0x4A,0x40, // 'H'
0xAA,0xA8, // 'I'
0x22,0x22,0x2A,0x60, // 'J'
00046
00047
00048
              0xB5,0x31,0x8C,0x52,0xC0, // 'K'
0x88,0x88,0x88,0xE0, // 'L'
00049
00050
00051
               0x8A, 0x68, 0xB6, 0xEB, 0xAA, 0x80,
              0x94,0xB5,0xAB,0x5A,0x40, // 'N'
00052
              0x72,0x48,0xA2,0x8A,0x47,0x00, // '0'
0x55,0x25,0x4E,0x42,0x00, // 'P'
0x72,0x48,0xA2,0x8A,0x47,0x06, // 'Q'
0xE5,0x29,0x4E,0x52,0xC0, // 'R'
00053
00054
00055
               0xEA, 0x84, 0x2A, 0xE0, // 'S'
00057
              0xF1,0x08,0x42,0x10,0x80, // 'T'
0xAA,0xAA,0xAA,0xE0, // 'U'
00058
00059
              0x8A,0x49,0x14,0x61,0x82,0x00, // 'V'
00060
              0x92,0xB4,0xB4,0xB4,0xB4,0x6C,0x4C,0x48,//'W'
0x91,0x46,0x08,0x61,0x49,0x80,//'X'
0x9A,0x46,0x08,0x20,0x82,0x00,//'Y'
00061
00062
00063
00064
              0xF0,0x88,0x44,0x43,0xC0, // 'Z'
              0xAA,0xAA, // '['
00065
              0x88,0x84,0x44,0x22, // '\'
0x88,0x84,0x44,0x22, // '\'
0x4C,0xA0, // ''
0xE0, // '_'
0x88, // ''
00066
00067
00068
00069
00070
00071
              0x65,0x19,0x47,0x00, // 'a'
              0x84,0x39,0x29,0x4B,0x80,//'b'
0x64,0xA1,0x26,0x00,//'c'
0x10,0x9D,0x29,0x49,0xC0,//'d'
0x64,0xBD,0x07,0x00,//'e'
0x64,0xE4,0xE4,0x44,0x40,//'f'
00072
00073
00074
00076
00077
               0x74,0xA5,0x27,0x49,0x80, // 'g'
              0x84,0x39,0x49,0x4A,0x40, // 'h'
0x8A,0xA8, // 'i'
0x8A,0xAA,0x80, // 'j'
00078
00079
00080
              0x88,0xE8,0xEC,0xEO, // 'k'
0xAA,0xA8, // 'l'
00081
00082
00083
              0xDA, 0xAA, 0xAA, 0xA8, // 'm'
              0xE5,0x25,0x29,0x00, // 'n'
0x64,0xA5,0x26,0x00, // 'o'
00084
00085
              0xE4,0xA5,0x2E,0x42,0x00, // 'p'
0x74,0xA5,0x27,0x08,0x40, // 'q'
0xD2,0x48, // 'r'
00086
00087
              0x64,0x18,0x4F,0x00, // 's'
0x59,0x24,0x80, // 't'
00089
00090
              0x94,0x45,0x27,0x00, // 'u'
0x95,0x18,0x24,0x00, // 'v'
0xAD,0x72,0xE2,0x45,0x00, // 'w'
0xB3,0x10,0xCB,0x00, // 'x'
00091
00092
00093
              0x95,0x18,0xC4,0x21,0x00, // 'y'
0xE1,0x11,0x0F,0x00, // 'z'
00095
00096
              0x64,0x44,0x84,0x44,0x60, // '{'
0xAA,0xAA, // '|'
00097
00098
00099
              0x84,0x44,0x24,0x44,0x80 // '}'
00100 };
00101 const GFXglyph Roboto_Condensed_Light_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
00103
                 {
                         0, 2,
                                       1, 3,
                                                         0,
                                                                 -1 }, // '
                                                                  -7 }, // '!'
-7 }, // '"'
00104
                          1,
                                  2,
                                                 3,
                                                          1,
00105
                          3.
                                  2.
                                          2.
                                                 4.
                                                          1.
                                                                  -7 }, // '#'
00106
                          4,
                                                          0,
                                  6.
                                                 6.
00107
                         10,
                                  5,
                                          8,
                                                          0,
                                                                  -7 }, // '%'
00108
                         15,
                                                                 -7 }, // '&'
-7 }, // "'
00109
                         20,
                                  5,
                                                  6,
                         25,
00110
                                  2,
                                          2,
                                                 3,
                                                          Ο,
                                                                  -7 }, // '('
-7 }, // ')'
                                                 4,
00111
                         26.
                                  3.
                                          9.
                                                          1,
00112
                         30,
                                          9,
                                                          0,
                                  3,
                                                  4,
                                                                  -7 }, // '*'
00113
                                                  5,
                         34.
                                          3,
                                                          Ο,
                                                                  -5 }, // '+'
-1 }, // ','
-3 }, // '-'
00114
                         36,
                                                          Ο,
00115
                         40,
                                          2,
                                                 3,
                                                          Ο,
00116
                         41,
                                  3.
                                          1.
                                                 3,
                                                          0,
                                                                  -1 }, // '.'
                                  2,
00117
                         42.
                                          1.
                                                 3,
                                                          0,
                                                                  -7 }, // '/'
00118
                         43,
                                  4,
                                          8,
                                                  4,
                                                          0,
00119
                         47,
                                                          Ο,
00120
                                                                  -7 }, // '1'
                         52,
                                                          1,
                         55,
                                                                  -7 }, // '2'
00121
                                                  5,
                                                          Ο,
                                                                  -7 }, // '3'
00122
                         60,
                                  5,
                                                          0,
                                                                  -7 }, // '4'
00123
                         65,
                                  5,
                                                  5,
                                                          0,
                                                                  -7 }, // '5'
00124
                         70.
```

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```
-7 }, // '6'
-7 }, // '7'
-7 }, // '8'
-7 }, // '9'
                       75,
                                                    Ο,
                                     7,
00126
                       80,
                                                    Ο,
00127
                      85,
                               5,
                                            5,
                                                    Ο,
                                                           -7 },
00128
                      90,
                              5,
                                     7,
                                            5,
                                                    Ο,
                                                                       ':'
                      95,
                                                           -5 },
                                                                   11
00129
                               2,
                                      5,
                                            3,
                                                    0,
                                                           -5 }, // ';'
00130
                       97.
                               2.
                                            3.
                                                    0.
                                      6.
                                            5,
                                                           -5 }, // '<'
00131
                      99,
                               4,
                                      4,
                                                    0,
                                                           -4 }, // '='
00132
                     101,
                                                           -5 }, // '>'
00133
                     103,
                               4,
                                      4,
                                            5,
                                                    1,
                                                           -7 }, // '?'
00134
                     105,
                               3,
                                            5,
                                                           -6 }, // '@'
                                                    0.
00135
                     108.
                              8.
                                     8.
                                            8,
                                                           -7 }, //
                                                                       'A'
00136
                     116.
                              6.
                                      7.
                                            6.
                                                    0,
                                                           -7 }, // 'B'
00137
                     122,
                               4,
                                            6,
                                                    1,
                                                           -7 }, // 'C'
00138
                     126,
                                            6,
                                                    1,
00139
                     131,
                                            6,
                                                           -7 }, // 'D'
                                                           -7 }, // 'E'
00140
                     135,
                               4,
                                     7,
7,
                                            5,
                                                    1,
                                            5.
00141
                     139.
                              4,
                                                    1,
                                                           -7 }, // 'G'
00142
                     143,
                                            6,
7,
                                                    0,
                              5,
                               5,
                                      7,
                                                           -7 }, // 'H'
00143
                     148,
                                                    1,
                                                           -7 }, // 'I'
-7 }, // 'J'
00144
                     153,
                               2,
                                            3,
                                                    1,
00145
                     155,
                                            5,
                                                    0,
                               4,
                                                           -7 }, // 'K'
-7 }, // 'L'
00146
                     159,
                              5,
                                            6,
                                                    1,
00147
                     164,
                              4,
                                     7,
                                            5,
                                                    1,
                                                           -7 }, // 'M'
                                            8,
7,
00148
                     168.
                               6,
                                      7,
                                                    1,
00149
                     174,
                                                    1,
                                                           -7 }, // 'N'
                               5,
00150
                     179,
                                            6,
                                                           -7 }, // '0'
                               6,
                                                    0,
00151
                     185,
                                            6,
                                                           -7 }, // 'P'
                                                           -7 }, // 'Q'
00152
                     190,
                               6,
                                     8,
                                            6,
                                                    Ο,
                                                           -7 }, // 'R'
-7 }, // 'S'
00153
                     196,
                              5,
                                      7,
                                            6,
                                                    1,
00154
                     201.
                              4.
                                      7,
                                            6,
                                                    1.
                                                           -7 }, // 'I'
00155
                     205.
                              5.
                                      7.
                                            6.
                                                    0.
00156
                     210,
                                                           -7 }, // 'U'
                               4,
                                            6,
                                                    1,
00157
                     214,
                                            6,
                                                    Ο,
                                                           -7 }, // 'V'
                               6,
                                                           -7 }, // 'W'
00158
                     220,
                              8,
                                            8,
                                                    Ο,
                                                          -7 }, // 'W'
-7 }, // 'X'
-7 }, // 'Y'
-7 }, // 'Z'
00159
                     227,
                               6,
                                            6,
                                                    Ο,
                     233.
                                      7,
00160
                               6,
                                            6,
                                                    0,
00161
                     239,
                              5,
                                            6,
                                                    0,
                     244,
                              2,
                                            3,
                                                           -7 }, // '['
00162
                                      8,
                                                    1,
                                                           -7 }, // [
-7 }, // '\'
-7 }, // ']'
-7 }, // '^'
0 }, // '_'
-8 }, // ''
00163
                     246,
                               4,
                                      8,
                                            4,
                                                    Ο,
00164
                     250,
                                     8,
                                            3,
                                                    0,
00165
                     252,
                              4,
                                     3,
                                            4,
                                                    Ο,
                     254,
00166
                              4,
                                     1,
                                            4,
                                                    0,
                                                           -8 }, // '\'
-5 }, // 'a'
00167
                     255.
                               3.
                                     2.
                                            4,
                                                    0.
00168
                     256,
                               5,
                                     5,
                                            5,
                                                    0,
                     260,
                                            5,
                                                           -7 }, // 'b'
00169
                               5,
                                                    0,
                                                           -5 }, // 'c'
00170
                     265,
                                      5,
                                            5,
                                                    Ο,
                                                          -3 }, // 'c'

-7 }, // 'd'

-5 }, // 'e'

-7 }, // 'f'
00171
                     269,
                              5,
                                     7,
                                            5,
                                                    Ο,
00172
                     274,
                              5,
                                     5,
                                            5,
                                                    Ο,
                     278,
00173
                              4.
                                            4,
                                      7,
                                                    0.
                                                           -5 }, // 'g'
-7 }, // 'h'
-7 }, // 'i'
00174
                                            5,
                     282.
                                      7.
                              5.
                                                    0.
00175
                     287,
                               5,
                                            5,
                                                    0,
00176
                     292,
                              2,
                                            3,
                                                    1,
                                                           -7 }, // 'j'
00177
                     294,
                              2,
                                      9,
                                            3,
                                                    Ο,
                                                           -7 }, // 'j'

-7 }, // 'k'

-7 }, // 'l'

-5 }, // 'm'

-5 }, // 'n'
00178
                     297,
                               4,
                                     7,
                                            5,
                                                    1,
00179
                     301.
                                      7,
                              2,
                                            3.
                                                    0,
00180
                     303,
                               6,
                                            8,
                                     5,
                                                    1,
                     307,
                               5,
                                      5,
                                            5,
                                                    Ο,
00182
                     311,
                                                           -5 }, // 'o'
                                                    Ο,
                                                           -5 }, // 'p'
-5 }, // 'q'
-5 }, // 'r'
00183
                     315,
                               5,
                                            5,
                                                    Ο,
00184
                     320,
                               5,
                                     7,
                                            5,
                                                    Ο,
                     325,
00185
                              3,
                                     5,
                                            4,
                                                    1,
                                                                       's'
                                                           -5 }, //
00186
                     327,
                                            5,
                                                    0,
                              5,
                                     5,
00187
                     331,
                               3,
                                      6,
                                            4,
                                                    0,
                                                           -6 }, // 't'
00188
                     334,
                                                           -5 }, // 'u'
                                      5,
                                            5,
                                                    0,
                                                           -5 }, // 'v'
00189
                     338,
                                      5.
                                            5,
                                                    Ο,
                                                           -5 }, // 'w'
00190
                     342,
                              7,
                                     5,
                                            7,
                                                    Ο,
                                                                   // 'x'
00191
                     347,
                                      5,
                                            5,
                                                    Ο,
                                                           -5 },
                                                           -5 },
                                                                   11
                     351.
00192
                               5.
                                            5.
                                                    0.
00193
                     356,
                                            5,
                                                           -5 }, //
                               5.
                                      5.
                                                    0.
                                                           -7
00194
                     360,
                               4,
                                      9,
                                            4,
                                                    0,
                                                           -7 },
00195
                     365,
                                      8,
00196
                     367,
                               4,
                                     9,
                                            4,
                                                    0,
00197 };
00198 const GFXfont Roboto_Condensed_Light_9 PROGMEM = {
00199 (uint8_t *)Roboto_Condensed_Light_9Bitmaps,(GFXglyph *)Roboto_Condensed_Light_9Glyphs,0x20, 0x7E,
```

3.17 SansSerif12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation 00002 // In case of problems make sure that you are using the font file with the correct version! 00003 const uint8_t SansSerif_plain_12Bitmaps[] PROGMEM = { 00004
```

```
// Bitmap Data:
              0x00, //'''
00006
             0xAA,0xA2,0x80, // '!'
0xAA,0xA0, // '"'
00007
00008
              0x12,0x0A,0x1F,0xC4,0x82,0x47,0xF0,0xA0,0x90, //
00009
             0x21,0x2A,0x48,0xE0,0xE2,0xAA,0x70,0x82,0x00, // '$'
0x61,0x12,0x42,0x48,0xE0,0xE2,0xAA,0x70,0x82,0x00, // '$'
00010
00012
              0x30,0x24,0x10,0x0C,0x05,0x14,0x4A,0x19,0x88,0x7B,0x00, //
00013
              0xA8, // "'
             0x64,0x48,0x88,0x88,0x44,0x60, // '('
0xC4,0x42,0x22,0x22,0x44,0xC0, // ')'
0x22,0xA7,0x1C,0xA8,0x80, // '*'
00014
00015
00016
              0x10,0x10,0x10,0xFE,0x10,0x10,0x10, // '+'
00017
00018
              0xA8, // ',
             0xE0, // '-'
00019
              0xA0, // '.'
00020
             0x10,0x88,0x42,0x21,0x08,0x84,0x00, // '/'
0x78,0x92,0x14,0x28,0x50,0xA1,0x24,0x78, /
0xE0,0x82,0x08,0x20,0x82,0x08,0xF8, // '1'
00021
00022
              0x79,0x18,0x10,0x20,0x82,0x08,0x20,0xFC, // '2'
00024
00025
              0x79,0x08,0x10,0x23,0x80,0x81,0x42,0x78, // '3'
              0x18,0x30,0xA2,0x44,0x91,0x3F,0x04,0x08, // '4'
00026
              0xF9,0x02,0x07,0xC0,0xC0,0x81,0x46,0x78, // '5'
00027
             0x38,0x8A,0x05,0xCC,0xD0,0xA1,0x26,0x78,//'6'
0xFC,0x08,0x20,0x41,0x02,0x08,0x10,0x40,//'7'
00028
00029
              0x79,0x0A,0x14,0x27,0x90,0xA1,0x42,0x78, // '8'
00031
              0x79,0x92,0x14,0x2C,0xCE,0x81,0x44,0x70, // '9'
             0xA0,0xA0, // ':'
0xA0,0xA8, // ';'
00032
00033
              0x03,0x0F,0x38,0x1C,0x01,0xE0,0x18, // '<'
00034
             0xFF, 0x00, 0x3F, 0xC0, // '='
0xC0, 0x3C, 0x01, 0xC0, 0xE7, 0x86, 0x00, // '
00035
00036
              0x72,0x20,0x84,0x20,0x80,0x08,0x20, // '?'
00037
00038
              0x1F, 0x02, 0x0C, 0x40, 0x48, 0xF2, 0x91, 0x29, 0x12, 0x91, 0x48, 0xF8, 0x40, 0x02, 0x08, 0x1F, 0x00, \ \ / \ \ '0'
             0x18,0x0C,0x09,0x04,0x82,0x42,0x11,0xF8,0x84,0x81,0x00, // 'A'
0xF9,0x0A,0x14,0x2F,0x90,0xA1,0x42,0xF8, // 'B'
0x38,0x8A,0x04,0x08,0x10,0x20,0x22,0x38, // 'C'
0xF8,0x84,0x82,0x82,0x82,0x82,0x82,0x84,0xF8, // 'D'
00039
00040
00041
             0xFD,0x02,0x04,0x0F,0xD0,0x20,0x40,0xFC, // 'E'
0xFA,0x08,0x20,0xFA,0x08,0x20,0x80, // 'F'
00043
00044
00045
              0x3C,0x42,0x80,0x80,0x8E,0x82,0x82,0x42,0x3C, // 'G'
             0x82,0x82,0x82,0x82,0xFE,0x82,0x82,0x82,0x82,//'H'
0xAA,0xAA,0x80,//'I'
0x22,0x22,0x22,0x22,0x22,0x20,//'J'
00046
00047
00048
              0x84,0x88,0x90,0xA0,0xC0,0xA0,0x90,0x88,0x84, // 'K'
00049
00050
              0x82,0x08,0x20,0x82,0x08,0x20,0xF8, // 'L'
              0x81,0x61,0xB0,0xD4,0xAA,0x54,0xCA,0x65,0x02,0x81,0x00, // 'M'
00051
             00052
00053
00054
00056
              0xF8,0x84,0x84,0x84,0xF8,0x88,0x84,0x84,0x82, // 'R'
00057
              0x79,0x0A,0x04,0x07,0x80,0x81,0x42,0x78, // 'S'
             0x7F, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, 0x10, // 'T'
0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x82, 0x66, 0x7C, // 'U'
0x40, 0x88, 0x10, 0x84, 0x10, 0x82, 0x10, 0x24, 0x04, 0x80, 0x60, 0x0C, 0x00, // 'V'
0x84, 0x24, 0x44, 0x44, 0x44, 0x44, 0x2A, 0x82, 0x88, 0x2A, 0x81, 0x10, 0x11, 0x00, // 'W'
00058
00059
00060
00062
              0xC6,0x44,0x28,0x28,0x10,0x28,0x28,0x44,0x82, // 'X'
              0x82,0x44,0x44,0x28,0x28,0x10,0x10,0x10,0x10, // 'Y'
00063
00064
              0xFE,0x02,0x04,0x08,0x10,0x20,0x40,0x80,0xFE, // 'Z'
              0xD2,0x49,0x24,0x93,0x00, // '['
00065
             0x84,0x10,0x84,0x10,0x84,0x10,0x80, // '\'
0xC9,0x24,0x92,0x4B,0x00, // ']'
0x18,0x12,0x10,0x80, // '^'
00066
00067
00068
00069
              0xFC, // '_'
              0x42, // ,,,
00070
              0x79,0x08,0x13,0xE8,0x51,0x9D,0x00, // 'a'
00071
             0x81,0x02,0x07,0xCC,0xD0,0xA1,0x42,0xCD,0xF0, // 'b'
0x73,0x28,0x20,0x83,0x27,0x00, // 'c'
0x04,0x08,0x13,0xEC,0xD0,0xA1,0x42,0xCC,0xF8, // 'd'
00072
00073
             0x79,0x9A,0x17,0xE8,0x18,0x9E,0x00, // 'e'
0x32,0x11,0xE4,0x21,0x08,0x42,0x00, // 'f'
00075
00076
00077
              0x7D, 0x9A, 0x14, 0x28, 0x59, 0x9F, 0x02, 0x4C, 0x70, // 'g'
             0x81,0x02,0x05,0xCC,0x50,0xA1,0x42,0x85,0x08, // 'h'
0x8A,0xAA,0x80, // 'i'
00078
00079
              0x8A,0xAA,0x80, //
              0x41,0x24,0x92,0x49,0x60, // 'j'
00080
00081
              0x81,0x02,0x04,0x49,0x14,0x30,0x50,0x91,0x10, // 'k'
00082
              0xAA,0xAA,0xA0, // '1'
00083
              0xF7,0x22,0x28,0x8A,0x22,0x88,0xA2,0x28,0x88, // 'm'
             0xB9,0x8A,0x14,0x28,0x50,0xA1,0x00, // 'n'
0x79,0x9A,0x14,0x28,0x59,0x9E,0x00, // 'o'
00084
00085
              0xF9,0x9A,0x14,0x28,0x59,0xBE,0x40,0x81,0x00, // 'p'
             0x7D, 0x9A, 0x14, 0x28, 0x59, 0x9F, 0x02, 0x04, 0x08, // 'q' 0xB6, 0x21, 0x08, 0x42, 0x00, // 'r'
00087
00088
00089
              0x72,0x28,0x1C,0x0A,0x27,0x00, // 's'
             0x42,0x3C,0x84,0x21,0x08,0x70, // 't'
0x85,0x0A,0x14,0x28,0x51,0x9D,0x00, // 'u'
00090
00091
```

3.17 SansSerif12.h 41

```
0x85,0x09,0x22,0x44,0x86,0x0C,0x00, // 'v'
00093
           0x88,0xA2,0x25,0x51,0x54,0x55,0x08,0x82,0x20, // 'w'
00094
           0x84,0x91,0x21,0x84,0x89,0x21,0x00, // 'x'
           0x85,0x09,0x22,0x42,0x86,0x04,0x08,0x21,0x80, // 'y'
0xF8,0x21,0x08,0x42,0x0F,0x80, // 'z'
00095
00096
00097
           0x38,0x82,0x08,0x23,0x02,0x08,0x20,0x83,0x80, // '{
           0xAA, 0xAA, 0xAA, // '|'
00099
           0xE0,0x82,0x08,0x20,0x62,0x08,0x20,0x8E,0x00 // '}'
00100 };
00101 const GFXglyph SansSerif_plain_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                                  -1 }, // '
00103
                   0,
                          2.
                               1.
                                    5.
                                            0.
                                                  -9 }, // '!'
00104
                          2,
                                9,
                                      6,
                                             2,
                    1,
                                                  -9 }, // '"'
00105
                    4,
                                             1,
                                      6,
00106
                    6,
                          9,
                                8,
                                     11,
                                                  -8 }, // '#'
                                                  -9 }, // '$'
00107
                   15,
                          6,
                              11,
                                      9,
                                             2,
                                                  -9 }, // '%'
00108
                   24.
                         11.
                                9.
                                     12.
                                             0,
                                                  -9 }, // '&'
                   37,
00109
                          9,
                                9,
                                     11,
                                             1,
                                                  -9 }, //
                          2,
                                             1,
00110
                   48,
                                3,
                                      4,
                                                 -10 }, // '('
00111
                   49,
                          4,
                               11,
                                      6,
                                             1,
                   55,
                                                 -10 }, // ')'
00112
                                             1,
                          4,
                               11,
                                      6,
                                                  -9 }, // '*'
00113
                   61,
                          6,
                                6,
                                      7,
                                            1,
                                                  -7 }, // '+'
00114
                   66,
                          8,
                                7,
                                     11,
                                            1,
                                                  -2 }, // ','
00115
                   73,
                          2,
                                3,
                                      5,
                                             1,
00116
                   74,
                                      5,
                                             1,
                                                  -4 }, // '-'
                          4,
                                1,
                                                  -2 }, // '.'
00117
                   75,
                          2,
                                2,
                                      5,
                                             1,
00118
                   76,
                               10,
                                      5,
                                             Ο,
                                                  -9 }, // '/'
                                                  -9 }, // '0'
00119
                   83,
                          7,
                                9,
                                      9,
                                             1,
                                                  -9 }, // '1'
-9 }, // '2'
                   91,
00120
                          6,
                                9,
                                      9,
                                             1,
00121
                   98.
                          7,
                                9.
                                      9,
                                             1,
                                                  -9 }, // '3'
00122
                  106.
                                      9,
                                             1,
                          7.
                                9.
00123
                                9,
                                      9,
                                                  -9 }, // '4'
                  114,
                                             1,
00124
                  122,
                                9,
                                      9,
                                             1,
                                                  -9 }, // '5'
                                                  -9 }, // '6'
00125
                  130,
                                9,
                                      9,
                                             1,
                                                  -9 }, // '7'
00126
                  138,
                                9,
                                      9,
                                             1,
                                                  -9 }, // '8'
                                      9,
00127
                  146.
                          7,
                                9,
                                             1,
                                                  -9 }, // '9'
00128
                  154,
                          7,
                                9,
                                      9,
                                             1,
                                      5,
                                             1,
                                                  -6 }, // ':'
                  162,
                          2,
                                6,
00130
                  164.
                                             1,
                                                  -6 }, // ';'
                                                  -7 }, // '<'
00131
                  166,
                          9,
                                6,
                                    11,
                                             1,
                                                  -5 }, // '='
-7 }, // '>'
00132
                  173,
                          9,
                                3,
                                     11,
                                             1,
                  177,
00133
                          9,
                                6,
                                     11,
                                             1,
                                                  -9 }, // '?'
00134
                                             0,
                  184.
                          6.
                                9.
                                      7.
                                                  -9 }, // '@'
00135
                  191,
                         12,
                               11,
                                     14,
                                             1,
                                                  -9 }, // 'A'
00136
                  208,
                          9,
                                9,
                                      9,
                                             Ο,
00137
                  219,
                                9,
                                      9,
                                             1,
                                                  -9 }, // 'B'
                                                  -9 }, // 'C'
00138
                  227,
                          7,
                                9,
                                      9,
                                             1,
                                                  -9 }, // 'D'
00139
                  235,
                          8,
                                9,
                                     10,
                                            1,
                                                  -9 }, // 'E'
                                             1,
00140
                  244.
                          7.
                                9.
                                      9.
                                                  -9 }, // 'F'
                  252,
                                             1,
00141
                                9.
                          6.
                                      8.
                                     10,
                                                  -9 }, // 'G'
00142
                  259,
                                9,
                                             1,
                          8,
00143
                  268,
                          8,
                                9,
                                     10,
                                             1,
                                                  -9 }, // 'H'
                                                  -9 }, // 'I'
00144
                  277,
                          2,
                                9,
                                     4,
                                             1,
                                                  -9 }, // 'J'
00145
                  280,
                          4,
                               11,
                                      4,
                                            -1,
                                                  -9 }, // 'K'
                  286,
00146
                          8.
                                9.
                                      8.
                                            1,
                                                  -9 }, // 'L'
00147
                  295,
                                9,
                                             1,
                          6,
                  302,
                                    11,
                                             1,
                                                  -9 }, // 'M'
                          9,
                                9,
00149
                  313,
                                             1,
                                                  -9 }, // 'N'
                          8,
                                9.
                                                  -9 }, // '0'
00150
                  322,
                          8,
                                9,
                                     10,
                                             1,
                                                  -9 }, // 'P'
-9 }, // 'Q'
                                      9,
                  331,
00151
                          7,
                                9,
                                             1,
00152
                  339.
                          8.
                               11,
                                     10.
                                             1,
                                                  -9 }, // 'R'
00153
                  350,
                                9,
                                      9,
                                            1,
                          8,
00154
                  359,
                          7,
                                9,
                                      9,
                                             1,
                                                  -9 }, // 'S'
00155
                  367,
                                                  -9 }, // 'T'
                          8,
                                9,
                                             Ο,
                                                  -9 }, // 'U'
00156
                  376,
                          8,
                                9,
                                     10,
                                             1,
                                                  -9 }, // 'V'
00157
                  385,
                         11,
                                9,
                                     9,
                                            -1,
                                                  -9 }, // 'W'
00158
                  398,
                         12,
                                9,
                                     12,
                                            0,
                                                  -9 }, // 'X'
00159
                  412.
                          8.
                                9.
                                      8.
                                             0.
                                                  -9 }, // 'Y'
00160
                  421,
                          8.
                                9.
                                      8.
                                             0.
                                                  -9 }, // 'Z'
00161
                  430,
                          8,
                                9,
                                    10,
                                             1,
                                                  -9 }, // '['
00162
                  439,
                               11,
                                             2,
                                                  -9 }, // '\'
00163
                  444,
                          5,
                               10,
                                      5,
                                             Ο,
                                                  -9 }, // ']'
00164
                  451,
                          3,
                               11,
                                      6,
                                             1,
                                                  -9 }, //
00165
                  456.
                          9.
                                3.
                                     11.
                                             1.
                                                    2 }, // '_'
00166
                  460,
                                             0,
                          7,
                                1,
                                                  -10 }, // '`
                  461,
                                2,
                          4,
                                             1,
00168
                  462,
                                                  -7 }, // 'a'
                                                 -10 }, // 'b'
00169
                  469,
                               10,
                                      9,
                                                  -7 }, // 'c'
00170
                  478.
                          6,
                                7.
                                      8,
                                             1,
                                                 -10 }, // 'd'
00171
                  484.
                               10.
                          7,
                                      9,
                                             1,
00172
                                      9,
                                                  -7 }, //
                  493,
                          7,
                                7,
                                             1,
                               10,
00173
                  500,
                                             Ο,
                                                 -10
                          5,
00174
                  507,
                               10,
                                                  -7
                                             1,
00175
                  516,
                               10,
                                      9,
                                             1,
                                                 -10 }, // 'h'
                                                  -9 }, // 'i'
00176
                  525,
                          2,
                                9,
                                      4,
                                             1,
                                                  -9 }, // 'j'
00177
                  528,
                          3,
                               12,
                                      4,
                                             0,
00178
                  533,
                                                 -10 }, // 'k'
                               10.
                                      8.
```

```
542,
                                                    -10 }, // '1'
                                                     -7 }, // 'm'
-7 }, // 'n'
-7 }, // 'o'
                   545, 10,
00180
                                       12,
                                 7,
00181
                   554,
                   561,
00182
                                  7,
                                               1,
                                                     -7 }, // 'p'
-7 }, // 'q'
00183
                   568.
                                 10,
                                        9,
00184
                   577.
                                        9.
                                               1.
                                 10.
00185
                   586,
                                        6,
                                               1,
                                                     -7 }, // 'r'
-7 }, // 's'
-9 }, // 't'
-7 }, // 'u'
-7 }, // 'v'
00186
                   591,
                   597,
00187
                                  9,
                                               Ο,
                                        9,
00188
                   603,
                           7,
00189
                   610.
                                               0.
                                                     -7 }, // 'w'
00190
                   617, 10,
                                       10,
                                  7.
                                               0.
00191
                   626,
                                               0,
                                10,
                                                     -7 }, // 'y'
00192
                   633,
                                               Ο,
                                                     -7 }, // 'z'
00193
                   642,
                                 7,
                                               0,
                                                     -9 }, // '{'
00194
                   648,
                                11,
                                        9,
                                               2,
                            6,
                                                     -9 }, // 'l'
00195
                   657.
                            2.
                                 12.
                                        5.
                                               2,
                                                      -9 }
00196
                   660,
                            6,
                                 11,
00198 const GFXfont SansSerif_plain_12 PROGMEM = {
00199 (uint8_t *)SansSerif_plain_12Bitmaps,(GFXglyph *)SansSerif_plain_12Glyphs,0x20, 0x7E, 15};
```

3.18 SansSerif9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation 00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t SansSerif_plain_9Bitmaps[] PROGMEM = {
00004
              // Bitmap Data:
0x00, // ' '
0xAA,0x88, // '!'
00005
00006
00007
00008
               0xAA, // '"'
               0x28,0x53,0xF1,0x4F,0xCA,0x14,0x00, // '#'
00010
               0x21,0xEA,0x38,0x38,0xAF,0x08, // '$'
               0xE4,0x52,0x2A,0x1F,0xE1,0x51,0x28,0x9C,//'%'
0x30,0x91,0x03,0x29,0x53,0x1B,0x00,//'&'
00011
00012
              0x30,0x91,0x03,0x29,0x
0xA0, // "'
0x52,0x49,0x22, // '('
0x91,0x24,0xA4, // ')'
0xA9,0xC7,0x2A, // '*'
00013
00014
00015
00016
00017
               0x20,0x8F,0x88,0x20, // '+'
               0xA0, // ','
0xC0, // '-'
0x80, // '.'
00018
00019
00020
               0x22,0x44,0x48,0x80, // '/'
00022
               0x64,0xA5,0x29,0x49,0x80,
00023
               0xC4,0x44,0x44,0xE0, // '1'
               0x64,0x84,0x44,0x43,0xC0, // '2'
00024
               0x64,0x84,0xC1,0x0B,0x80, // '3'
0x10,0xC5,0x14,0x93,0xE1,0x00, // '4'
00025
00026
               0xF4,0x21,0xC1,0x0B,0x80, // '5'
00027
               0x76,0x21,0xC9,0x49,0x80, // '6'
               0xF0,0x88,0x42,0x21,0x00, // '7'
0x64,0xA4,0xC9,0x49,0x80, // '8'
00029
00030
00031
               0x64,0xA5,0xE1,0x1B,0x80, // '9'
               0x80,0x80, // ':'
0x80,0xA0, // ';'
00032
00033
               0x04,0x73,0x01,0xC0,0x40, // '<'
00034
00035
               0xFC, 0x03, 0xF0, // '='
00036
               0x80,0xE0,0x33,0x88,0x00, // '>'
              UX3U,UXEU,UX33,UX88,UX00, // '>'
0xF0,0x88,0x84,0x01,0x00, // '?'
0x3C,0x21,0x27,0x54,0xAA,0x54,0xF1,0x10,0x70, // '@'
0x30,0x61,0x22,0x47,0x90,0xA1,0x00, // 'A'
0xF2,0x28,0xBC,0x8A,0x2F,0x00, // 'B'
0x73,0x28,0x20,0x83,0x07,0x80, // 'C'
00037
00038
00039
00041
00042
               0xF2,0x68,0xA2,0x8A,0x6F,0x00, // 'D'
               0xF4,0x21,0xE8,0x43,0xC0,//'E'
0xF4,0x21,0xE8,0x42,0x00,//'F'
0xF3,0x28,0x26,0x8B,0x27,0x00,//'G'
00043
00044
00045
               0x8A,0x28,0xBE,0x8A,0x28,0x80, // 'H'
0xAA,0xA8, // 'I'
00046
00047
00048
               0x49,0x24,0x92,0x80, // 'J'
               0x8A,0x4A,0x30,0xA2,0x48,0x80, // 'K'
00049
               0x84,0x21,0x08,0x43,0xC0,//'L'

0x85,0x9B,0x35,0xAB,0x50,0xA1,0x00,//'M'

0x8B,0x2C,0xAA,0x9A,0x68,0x80,//'N'
00050
00051
00052
               0x73,0x68,0xA2,0x8B,0x67,0x00,
00053
00054
               0xE4,0xA5,0xC8,0x42,0x00, // 'P'
00055
               0x73,0x68,0xA2,0x8B,0x67,0x04, // 'Q'
               0xF2,0x49,0x38,0xA2,0x48,0x80, // 'R'
00056
               0x72,0x28,0x1C,0x0A,0x27,0x00, // 'S'
0xF8,0x82,0x08,0x20,0x82,0x00, // 'T'
00057
00058
               0x8A, 0x28, 0xA2, 0x8A, 0x27, 0x00, // 'U'
```

3.18 SansSerif9.h 43

```
0x85,0x09,0x22,0x44,0x86,0x0C,0x00, // 'V'
00061
               0x92,0x92,0x54,0x54,0x6C,0x28,0x28, // 'W'
               0xCC,0x90,0xC1,0x83,0x09,0x23,0x00, // 'X'
0x89,0x45,0x08,0x20,0x82,0x00, // 'Y'
00062
00063
              Ox5, Ux45, UXU5, UX2U, UX8Z, UXU0, // 'Y'

0xF8, 0x21, 0x08, 0x42, 0x0F, 0x80, // 'Z'

0xD2, 0x49, 0x26, // '['

0x88, 0x44, 0x42, 0x20, // '\'

0xC9, 0x24, 0x96, // ']'

0x30, 0x90, // '^'

0xF8, // '_'

0x88, // ''
00064
00065
00067
00068
00069
00070
               0x70,0xBD,0x2F,0x00, // 'a'
0x84,0x21,0xC9,0x4A,0x5C, // 'b'
0x74,0x21,0x07,0x00, // 'c'
00071
00072
00073
00074
               0x10,0x84,0xE9,0x4A,0x4E, // 'd'
00075
               0x64,0xBD,0x07,0x00, // 'e'
              0x72,0x11,0xC4,0x21,0x08,//'f'
0x74,0xA5,0x27,0x09,0x80,//'g'
0x84,0x21,0xE9,0x4A,0x52,//'h'
00076
00077
00079
               0x8A,0xA8, // 'i'
00080
               0x41,0x24,0x92,0xC0, // 'j'
              0x84,0x21,0x24,0x62,0x92, // 'k'
0x84,0x21,0x2A,0x62,0x92, // 'k'
0xAA,0xAA, // 'l'
0xFE,0x92,0x92,0x92,0x92, // 'm'
0xF4,0xA5,0x29,0x00, // 'n'
0x64,0xA5,0x26,0x00, // 'o'
00081
00082
00083
00084
00086
               0xE4,0xA5,0x2E,0x42,0x00, // 'p'
              0x74,0xA5,0x27,0x08,0x40, // 'q'
0xE8,0x88,0x80, // 'r'
0xE8,0x62,0xE0, // 's'
00087
00088
00089
              0x47,0x90,0x84,0x38, // 't'
0x94,0xA5,0x2F,0x00, // 'u'
0x8A,0x25,0x14,0x20, // 'v'
00090
00091
00092
               0x92,0xAA,0xAA,0x44,0x44, // 'w'
0x89,0x42,0x14,0x88, // 'x'
00093
00094
               0x89,0x11,0x42,0x82,0x04,0x30,0x00, // 'y'
00095
              0xF0,0x88,0x8F,0x00, // 'z'
0x64,0x48,0x44,0x46, // '{
00096
00098
               0xAA,0xAA,0x80, // '|'
00099
               0xC4,0x42,0x44,0x4C // '}'
00100 };
00101 const GFXglyph SansSerif_plain_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset 00103 { 0, 2, 1, 4, 0, -1}, //''
                                                          1,
                                                                 -7 }, // '"'
00105
                                                                 -7 }, // '#'
-7 }, // '$'
-7 }, // '%'
00106
                          4,
                                                 9,
                                                          1,
                                                 7,
00107
                         11,
                                          8,
                                                          Ο,
                                               10.
00108
                         17.
                                  9,
                                          7,
                                                          0,
                                                                 -7 }, // '&'
00109
                                  7,
                                          7,
                                                 9,
                         25.
                                                          1.
                                                                 -7 }, // "'
00110
                         32,
                                                 3,
                                                          1,
                                  2,
                                                                 -8 }, // '('
00111
                         33,
                                          8,
                                                          1,
                                                                 -8 }, // ')'
00112
                         36,
                                  3,
                                          8,
                                                 5,
                                                                 -7 }, // '*'
00113
                         39,
                                  6,
                                          4,
                                                 6,
                                                          0,
                                                                 -5 }, // '+'
-1 }, // ','
00114
                         42,
                                  6,
                                          5.
                                                 9,
                                                          1,
00115
                         46,
                                  2,
                                          2,
                                                 4,
                                                          1,
                                  3,
                                                 4,
                                                          1,
                                                                 -3 }, // '-'
                         47,
00117
                         48.
                                                                 -7 }, // '/'
00118
                         49,
                                                 4,
                                                          Ο,
                                                                 -7 }, // '0'
-7 }, // '1'
00119
                         53,
                                  5,
                                                 7,
                                                          1,
                                                 7,
7,
7,
00120
                         58,
                                  4,
                                                          2,
                                                                 -7 }, // '2'
00121
                         62,
                                          7,
                                  5,
                                                          1,
00122
                         67,
                                  5,
                                                          1,
                                                                 -7 }, // '3'
                                                 7,
00123
                         72,
                                                                 -7 }, // '4'
                                  6,
                                                          1,
                                                                 -7 }, // '5'
00124
                         78,
                                                          1,
                                                                 -7 }, // '6'
-7 }, // '7'
-7 }, // '8'
                                                 7,
00125
                         83,
                                  5,
                                          7,
                                                          1,
00126
                         88,
                                  5,
                                                 7,
7,
00127
                         93.
                                  5.
                                                          1.
                                                                 -7 }, // '9'
00128
                         98,
                                                          1,
                                  5.
                                                                 -5 }, // ':'
-5 }, // ';'
                       103,
                                  2,
                                                          1,
00130
                       105,
                                                 4,
                                                          1,
                                                                 -5 }, // '<'
00131
                       107,
                                          5,
                                                 9,
                                                                 -4 }, // '='
00132
                       112,
                                  7,
                                          3,
                                                 9,
                                                          1,
                                                                 -5 }, // '>'
-7 }, // '?'
00133
                                                 9,
                       115.
                                  7.
                                          5.
                                                          1,
00134
                       120,
                                                 6,
                                                          1,
00135
                       125,
                                  9,
                                          8,
                                                          1,
                                                                 -7 }, // '@'
00136
                       134,
                                                 7,
                                                                 -7 }, // 'A'
                                                          Ο,
                                                                 -7 }, // 'B'
00137
                       141,
                                                 8,
                                                                 -7 }, // 'C'
                       147,
00138
                                  6,
                                                 8,
                                                          1,
                                                                 -7 }, // 'D'
00139
                       153.
                                  6,
                                                 8,
                                                          1,
                                                 7,
                                                                 -7 }, // 'E'
00140
                       159,
                                  5,
                                                          1,
00141
                       164,
                                                          1,
00142
                       169,
                                                                 -7 }, // 'G'
                       175,
00143
                                                 8,
                                                                 -7 }, // 'H'
                                                                 -7 }, // 'I'
00144
                       181,
                                                 4,
                                                          1,
00145
                       183,
                                  3,
                                                 4,
                                                          0,
                                                                          // 'K'
00146
                       187.
```

```
193,
                                                   -7 }, // 'M'
-7 }, // 'N'
-7 }, // 'O'
00148
                  198,
00149
                  205,
                                      8,
00150
                  211,
                           6,
                                      8,
                                             1,
                                                   -7 }, // 'P'
00151
                  217,
                           5,
                                      7,
                                                   -7 }, // 'Q'
                  222,
00152
                           6.
                                8.
                                      8.
                                             1.
                                      7,
00153
                  228,
                           6,
                                             1,
00154
                  234,
                                                   -7 }, // 'S'
                                                   -7 }, // 'I'
-7 }, // 'U'
00155
                  240,
                                             Ο,
00156
                  246,
                           6,
                                      8,
                                                   -7 }, // 'V'
                  252.
00157
                          7,
                                      7,
                                             0.
                                                   -7 }, // 'W'
00158
                  259.
                          8.
                                 7.
                                      8.
                                             0.
00159
                  266,
                                             0,
                                                   -7 }, // 'Y'
00160
                  273,
                                      6,
                                             Ο,
                           6,
00161
                  279,
                                             0,
                                                   -7 }, // 'Z'
                                                   -7 }, // '['
00162
                  285,
                          3,
                                8,
                                      5,
00163
                  288.
                          4.
                                      4.
                                             0,
                                                   -7 }, // ']'
00164
                  292,
                          3,
                                8,
                                      5,
                                             1,
                                                   -7 }, // '^'
                           7,
                                      9,
00165
                  295,
                                2,
                                             1,
                                                   1 }, // '_'
                  297,
00166
                          6,
                                      6,
                                             Ο,
00167
                  298,
                                       6,
                                             1,
                                                   -5 }, // 'a'
-8 }, // 'b'
00168
                  299,
                                5
00169
                  303,
                          5,
                                8,
                                      7,
                                             1,
                                                   -5 }, // 'c'
                                      7,
7,
00170
                  308.
                          5,
                                5.
                                             1,
00171
                  312,
                           5,
                                             1,
                                                   -8 }, // 'd'
                                8,
00172
                  317,
                                                   -5 }, // 'e'
                           5,
                                5,
                                             1,
00173
                  321,
                                 8,
                                             Ο,
                                                   -8 }, // 'f'
                                                   -0 }, // 'f'
-5 }, // 'g'
-8 }, // 'h'
-7 }, // 'i'
00174
                  326,
                          5,
                                             1,
00175
                  331,
                          5,
                                8,
                                             1,
00176
                  336.
                          2,
                                 7.
                                      4.
                                             1,
                                                   -7 }, // 'j'
00177
                  338.
                          3.
                                 9.
                                      4.
                                             0.
00178
                  342,
                                8,
                                                   -8 }, // 'k'
                          5,
                                      6,
                                             1,
00179
                  347,
                          2,
                                 8,
                                      4,
                                             1,
                                                   -8 }, // '1'
00180
                  349,
                          8,
                                 5,
                                     10,
                                                   -5 }, // 'm'
                                                   -5 }, // 'n'
-5 }, // 'o'
00181
                  354,
                          5,
                                 5,
                                      7,
                                             1,
                                      7,
00182
                  358.
                          5,
                                 5.
                                             1,
                                                   -5 }, // 'p'
                                      7,
7,
00183
                  362,
                          5,
                                             1,
                                             1,
                                                   -5 }, // 'q'
00184
                  367,
                           5,
00185
                  372,
                                             1,
                                                   -5 }, // 'r'
                                                   -5 }, // 's'
00186
                  375,
                                 5,
                                                   -6 }, // 't'
-5 }, // 'u'
00187
                  378,
                          5,
                                 6,
                                      5,
                                             Ο,
                                      7,
00188
                  382,
                          5,
                                5,
                                             1,
                                                   -5 }, // 'v'
00189
                  386.
                                      6.
                                             0.
                          6.
                                5.
                                                   -5 }, // 'w'
00190
                  390,
                                5,
                                             0,
                          8,
                                      8,
                  395,
00191
                           6,
                                 5,
                                      6,
                                             Ο,
                                                   -5 }, // 'y'
-5 }, // 'z'
00192
                  399,
                                             Ο,
00193
                  406,
                          5,
                                5.
                                             1,
                                                   -7 }, // '{'
00194
                  410,
                           4,
                                8,
                                      6,
                                             1,
                                                   -7 }, // 'l'
00195
                  414.
                          2.
                                9.
                                      4.
00196
                  417.
                          4.
                                8.
                                      6.
00197 };
00198 const GFXfont SansSerif_plain_9 PROGMEM = {
```

3.19 serif12.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Serif_plain_12Bitmaps[] PROGMEM = {
00004
00005
            // Bitmap Data: 0x00, // ' '
00006
            0xDB, 0x6D, 0x86, 0xC0, // '!'
0xAA, 0xAO, // '"'
00007
00009
            0x12,0x0A,0x1F,0xC2,0x82,0x41,0x23,0xF8,0x50,0x48,0x00, // '#'
            0x20,0x41,0xE5,0x6A,0x4C,0x0E,0x52,0xA4,0xF0,0x81,0x00, // '$'
00010
            0x61,0x12,0x42,0x48,0x4A,0x06,0xD8,0x14,0x84,0x90,0x92,0x21,0x80, // '%'
00011
            0x38,0x11,0x04,0x01,0x80,0x93,0xA2,0x48,0x63,0x08,0x7D,0x80, // '&'
00012
00013
            0xA8, //
00014
            0x24,0x88,0x88,0x88,0x84,0x20, // '(
            0x84,0x42,0x22,0x22,0x44,0x80, // ')'
0x22,0xA7,0x3E,0x20, // '*'
00016
            0x10,0x10,0x10,0xFE,0x10,0x10,0x10,//'+'
0x4A,0x00,/'','
0xEO,/''-'
00017
00018
            0xE0, // '-'
0xD8, // '.'
00019
00020
00021
            0x10,0x88,0x42,0x21,0x08,0x84,0x00, // '/'
00022
            0x78,0x92,0x14,0x28,0x50,0xA1,0x24,0x78, // '0'
            0x62,0x82,0x08,0x20,0x82,0x08,0xF8, // '1'
00023
            0x79,0x08,0x10,0x20,0x82,0x08,0x22,0xFC, // '2'
00024
            0x79,0x08,0x10,0x23,0x81,0x81,0x42,0x78, // '3'
0x08,0x18,0x28,0x48,0x48,0xFE,0x08,0x08,0x1C, // '4'
0xF9,0x02,0x07,0xC8,0xC0,0x81,0x46,0x78, // '5'
00025
00026
            0xF9,0x02,0x07,0xC8,0xC0,0x81,0x46,0x78, //
```

3.19 serif12.h 45

```
0x38,0x8A,0x05,0xCC,0xD0,0xA1,0x26,0x78, // '6'
                               0xFD, 0x08, 0x20, 0x41, 0x02, 0x04, 0x10, 0x20, // '7' 0x79, 0x0A, 0x14, 0x27, 0x99, 0xA1, 0x42, 0x78, // '8'
00029
00030
                               0x79,0x92,0x14,0x2C,0xCE,0x81,0x44,0x70, // '9'
0xD8,0x6C, // ':'
0xD8,0x04,0xA0, // ';'
00031
00032
00033
                                0x03,0x0E,0x38,0x1C,0x01,0xC0,0x18, // '<'
                                0xFF,0x00,0x3F,0xC0, // '
00035
00036
                                0xC0,0x1C,0x01,0xC0,0xE3,0x86,0x00, // '>'
                                0x73,0x28,0x86,0x30,0x80,0x0C,0x30, // '?'
00037
                                0x1E,0x04,0x31,0x03,0x47,0x29,0x25,0x24,0xA4,0xA4,0x78,0x40,0x0C,0x20,0x78,0x00, // '@'
00038
                               0x08,0x07,0x01,0x40,0x50,0x22,0x08,0x87,0xF1,0x04,0xE3,0x80, // 'A' 0xFC,0x42,0x42,0x42,0x7C,0x42,0x42,0x42,0xFC, // 'B' 0x3E,0x20,0xA0,0x10,0x08,0x04,0x02,0x00,0x86,0x3E,0x00, // 'C'
00039
00040
00041
00042
                                0xFC,0x23,0x10,0x48,0x24,0x12,0x09,0x04,0x8C,0xFC,0x00, // 'D'
                               OxFE, 0x42, 0x40, 0x44, 0x7C, 0x44, 0x40, 0x42, 0xFE, // 'E'

0xFE, 0x42, 0x40, 0x44, 0x7C, 0x44, 0x40, 0x40, 0xEC, // 'F'

0x3E, 0x20, 0xA0, 0x10, 0x08, 0x04, 0x3A, 0x04, 0x82, 0x3E, 0x00, // 'G'

0xE3, 0x90, 0x44, 0x11, 0x04, 0x7F, 0x10, 0x44, 0x11, 0x04, 0xE3, 0x80, // 'H'
00043
00044
00045
                                0xE4,0x44,0x44,0x44,0xE0, // 'I'
00047
                                0x38,0x41,0x04,0x10,0x41,0x04,0x10,0x49,0x38,
00048
00049
                                0xEE,0x22,0x12,0x0A,0x06,0x02,0x81,0x20,0x88,0xE3,0x00, // 'K'
00050
                                0xE0,0x40,0x40,0x40,0x40,0x40,0x40,0x42,0xFE, // 'L'
                               0xE0,0xE6,0x0C,0x51,0x45,0x14,0x4A,0x44,0xA4,0x44,0x44,0x04,0xE0,0xE0,//'M'0xC3,0x98,0x45,0x11,0x64,0x49,0x11,0x44,0x31,0x0C,0xE1,0x00,//'N'0x3E,0x10,0x48,0x0A,0x02,0x80,0xA0,0x28,0x09,0x04,0x3E,0x00,//'O'
00051
00052
00054
                                0xFC,0x46,0x42,0x46,0x7C,0x40,0x40,0x40,0xE0, // 'P'
00055
                                0x3E,0x10,0x48,0x0A,0x02,0x80,0xA0,0x28,0x09,0x04,0x3E,0x01,0x00,0x30, // 'Q'
00056
                                0 \\ \text{xFC,} \\ 0 \\ \text{x10,} \\ 0 \\ \text{x21,} \\ 0 \\ \text{x08,} \\ 0 \\ \text{x7C,} \\ 0 \\ \text{x11,} \\ 0 \\ \text{x04,} \\ 0 \\ \text{x21,} \\ 0 \\ \text{x08,} \\ 0 \\ \text{xE1,} \\ 0 \\ \text{x80,} \\ \text{} // \\ \text{'R'} \\ \text{'R'} \\ \text{x80,} \\ \text{x
                               0x79,0x0A,0x06,0x03,0x01,0x81,0x42,0x78, // 'S'
0xFE,0x92,0x10,0x10,0x10,0x10,0x10,0x10,0x38, // 'T'
0xE3,0x90,0x44,0x11,0x04,0x41,0x10,0x44,0x11,0x8C,0x3E,0x00, // 'U'
00057
00058
00059
                                0xE3,0x90,0x44,0x30,0x88,0x22,0x05,0x01,0x40,0x70,0x08,0x00, // 'V'
00060
00061
                                0 \times E6, 0 \times 72, 0 \times 31, 0 \times 11, 0 \times 88, 0 \times 52, 0 \times 82, 0 \times 94, 0 \times 14, 0 \times A0, 0 \times A5, 0 \times 02, 0 \times 10, 0 \times 10, 0 \times 80, \ //\ 'W' \times 100, 0 \times 100,
00062
                                0 \\ \text{xe7,0x21,0x09,0x03,0x01,0x80,0xC0,0x90,0x84,0xe7,0x00,} \text{ } // \text{ 'X'} \\
                                0xE3,0x90,0x42,0x20,0x50,0x08,0x02,0x00,0x80,0x20,0x1C,0x00, // 'Y'
00063
                               0xFE,0x84,0x0C,0x08,0x10,0x20,0x60,0x42,0x60,0x42,0x60,0x20,0x60,0x42,0xFE,//'2'
00064
                              0x84,0x10,0x84,0x10,0x84,0x10,0x80,/
0xE2,0x22,0x22,0x22,0x22,0xE0,//']'
0x18,0x12,0x10,0x80,//'^'
0xFC,//'_'
0x42,//'''
00066
00067
00068
00069
00070
00071
                                0x71,0x10,0x23,0xC8,0x91,0x1F,0x00, // 'a'
                                0xC0,0x40,0x40,0x5C,0x66,0x42,0x42,0x42,0x66,0xDC, // 'b'
00072
00073
                                0x79,0x8A,0x04,0x08,0x18,0x9E,0x00, // 'c'
00074
                                0x0C,0x04,0x04,0x74,0xCC,0x84,0x84,0x84,0xCC,0x76, // 'd'
                               0x79,0x92,0x17,0xE8,0x18,0x9E,0x00, // 'e'
0x39,0x04,0x3C,0x41,0x04,0x10,0x43,0x80, // 'f'
0x76,0xCC,0x84,0x84,0x84,0xCC,0x74,0x04,0x8C,0x78, // 'g'
00075
00076
00077
                                0xC0,0x40,0x40,0x58,0x64,0x44,0x44,0x44,0x44,0xEE, // 'h'
00079
                                0x40,0xC4,0x44,0x44,0xE0, // 'i'
00080
                                0x10,0x0C,0x21,0x08,0x42,0x10,0x85,0xE0, // 'j'
                               0xC0,0x40,0x40,0x4C,0x48,0x50,0x70,0x48,0x44,0xEE, // 'k'
0xC4,0x44,0x44,0x44,0x4E, // 'l'
00081
00082
00083
                                0xD9,0x86,0x64,0x44,0x44,0x44,0x44,0x44,0x44,0xEE,0xE0, // 'm'
                               0xD8,0x64,0x44,0x44,0x44,0xEE, // 'n'
0x79,0x9A,0x14,0x28,0x59,0x9E,0x00, // 'o'
00085
00086
                                0xDC,0x66,0x42,0x42,0x42,0x66,0x5C,0x40,0x40,0xE0, // 'p'
00087
                                0x76,0xCC,0x84,0x84,0x84,0xCC,0x74,0x04,0x04,0x0E, // 'q'
                               0xD9,0xA4,0x10,0x41,0x0E,0x00, // 'r'
0x72,0x28,0x1C,0x0A,0x27,0x00, // 's'
0x42,0x3C,0x84,0x21,0x0A,0x70, // 't'
00088
00089
00090
                                0xCC, 0x44, 0x44, 0x44, 0x44, 0x44, 0x3E, // 'u'
00091
                                0xEE, 0x44, 0x44, 0x28, 0x28, 0x10, 0x10, // 'v'
00092
00093
                                0xE4,0xE4,0x44,0x4A,0x42,0xA8,0x2A,0x81,0x10,0x11,0x00, // 'w'
00094
                               0xEC,0x90,0xC1,0x83,0x09,0x37,0x00, // 'x
                               OxEE, 0x44, 0x44, 0x68, 0x28, 0x28, 0x10, 0x10, 0x30, 0xE0, // 'y' 0xFA, 0x41, 0x08, 0x41, 0x2F, 0x80, // 'z'
00095
00096
                                0x38,0x82,0x08,0x23,0x02,0x08,0x20,0x83,0x80, // '{
00098
                                0xAA,0xAA,0xAA, // '|'
00099
                               0xE0,0x82,0x08,0x20,0x62,0x08,0x20,0x8E,0x00 // '}'
00100 };
00101 const GFXglyph Serif_plain_12Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                                        Ο,
                                                                        2,
                                                                                                                            Ο,
                                                                                                                                            -9 }, // '!'
00104
                                                                                         9,
                                                                                                                            2,
                                                                                                                                           -9 }, // '"'
00105
                                                                                        3,
                                                                                                                                         -9 }, // '#'
                                                                                                     11,
00106
                                                        7,
                                                                        9,
                                                                                        9.
                                                                                                                                      -10 }, // '$'
00107
                                                                                    12.
                                                     18.
                                                                        7,
                                                                                                        9,
                                                                                                                           1,
                                                                   11,
                                                                                                                                         -9 }, // '%'
00108
                                                     29,
                                                                                        9,
                                                                                                      12,
                                                                                                                            1,
                                                                    10,
00109
                                                       42.
                                                                                         9,
                                                                                                      12,
                                                                                                                                          -9 }, // "'
00110
                                                     54,
                                                                                                         4,
                                                                                    11,
                                                     55,
                                                                                                                                      -10 }, // '('
00111
                                                                        4,
                                                                                                         6,
                                                                                                                                        -10 }, // ')'
00112
                                                     61,
                                                                        4,
                                                                                   11,
                                                                                                         6,
                                                                                                                           1,
                                                                                                                                          -9 }, // '*'
                                                     67,
00113
                                                                                        5,
                                                                                                         7,
                                                                                                     11,
00114
                                                      71.
```

```
-1 }, // ','
-4 }, // '-'
-2 }, // '.'
-9 }, // '/'
00115
                      78,
                                    3,
00116
                      80,
                                          5,
                                                  1,
                             4,
                                    1,
00117
                     81,
                                    2,
                                          5,
00118
                     82,
                             5,
                                   10,
                                          5,
                                                  Ο,
                                                                11
                                                                    ,0,
                                          9,
                                                        -9 },
00119
                     89,
                             7,
                                    9,
                                                  1,
                                                        -9 }, // '1'
00120
                                                  1,
                      97.
                             6.
                                    9.
                                          9.
                                          9,
                                                        -9 }, // '2'
00121
                    104,
                             7,
                                    9,
                                                  1,
00122
                    112,
                                    9,
                                          9,
                                                        -9 }, // '3'
                                                        -9 }, // '4'
00123
                    120,
                             8,
                                    9,
                                          9,
                                                  1,
                                                        -9 }, // '5'
-9 }, // '6'
00124
                    129,
                             7,
                                    9,
                                          9,
                                                  1,
00125
                    137.
                                          9,
                             7,
                                    9.
                                                  1,
                                          9,
                                                  1,
                                                        -9 }, //
00126
                    145.
                             7.
                                    9.
                                                        -9 }, // '8'
00127
                                          9,
                    153,
                                    9,
                                                  1,
                                                        -9 }, // '9'
00128
                    161,
                                    9,
                                          9,
                                                  1,
                                                        -5 }, // '9'

-5 }, // ':'

-5 }, // ';'

-7 }, // '<'

-5 }, // '='
00129
                    169,
                                    5,
                                          5,
00130
                    171,
                             3,
                                          5,
                                                  1,
00131
                    174.
                             9.
                                    6,
                                         11.
                                                  1,
                    181,
00132
                             9,
                                         11,
                                                  1,
                                    3,
                                                  1,
                                                        -7 }, // '>'
00133
                    185,
                             9,
                                    6,
                                         11,
00134
                                                        -9
                                                            }, // '?'
                    192,
                             6,
                                    9,
                                                  1,
                            11,
                                                        -8 }, // '@'
00135
                    199,
                                   11,
                                                        -9 }, // 'A'
-9 }, // 'B'
00136
                    215,
                            10,
                                    9,
                                         10,
                                                  Ο,
00137
                    227,
                             8,
                                    9,
                                         10,
                                                  1,
                    236,
                                                        -9 }, //
                                                                    'C'
00138
                             9.
                                    9.
                                         10,
                                                  1,
00139
                    247,
                                                  1,
                                                        -9 }, // 'D'
                             9,
                                    9,
                                         10,
                    258,
                                                        -9 }, // 'E'
00140
                             8,
                                    9,
                                          9,
                                                  1,
00141
                    267,
                             8,
                                    9,
                                          9,
                                                  1,
                                                        -9 }, // 'F'
                                                        -9 }, // 'G'
00142
                    276,
                             9,
                                    9,
                                         10,
                                                  1,
                                                        -9 }, // 'H'
-9 }, // 'I'
00143
                    287,
                            10,
                                    9,
                                         11,
                                                  1,
00144
                    299.
                             4.
                                    9.
                                          5.
                                                  1,
                                                                   , J,
00145
                    304.
                                          5,
                                                 -1,
                                                        -9 }, //
                                   12.
                             6.
00146
                    313,
                             9,
                                    9,
                                                  1,
                                                        -9 }, // 'K'
                                         10,
00147
                    324,
                             8,
                                    9,
                                          9,
                                                  1,
                                                        -9 }, // 'L'
00148
                    333,
                            12,
                                    9,
                                         13,
                                                  1,
                                                        -9 }, // 'M'
                                                        -9 }, // 'N'
00149
                    347,
                            10,
                                    9,
                                         11,
                                                  1,
                                                        -9 }, // '0'
00150
                    359,
                            10.
                                    9.
                                         11.
                                                  1,
                                                        -9 }, // 'P'
                    371,
00151
                             8,
                                    9,
                                          9,
                                                  1,
                            10,
                                   11,
                                         11,
                                                  1,
                                                        -9 }, // 'Q'
00152
                    380,
00153
                    394,
                            10,
                                    9,
                                         10,
                                                  1,
                                                        -9 }, // 'R'
                                                        -9 }, // 'S'
00154
                    406,
                                    9,
                                          8,
                                                  1,
                                                        -9 }, // 'T'
00155
                    414,
                             8,
                                    9,
                                          9,
                                                  1,
                                                        -9 }, // 'U'
                            10,
00156
                    423,
                                    9,
                                         11,
                                                  1,
                                                                    , v,
                                                        -9 }, //
00157
                    435.
                                    9.
                                                  0.
                            10.
                                         10.
                                                        -9 }, // 'W'
00158
                    447,
                            13,
                                                  Ο,
                                    9,
                                         13,
00159
                    462,
                                                        -9 }, // 'X'
                             9,
                                    9,
                                         10,
                                                  1,
                                                        -9 }, // 'Y'
00160
                    473,
                            10,
                                    9,
                                          9,
                                                  Ο,
                                                       -9 }, // 1
-9 }, // 'Z'
-10 }, // '['
-9 }, // '\'
00161
                    485,
                             8,
                                    9,
                                          9,
                                                  1,
00162
                    494,
                             4,
                                   11,
                                          6,
                                                  1,
                                                        -9 },
00163
                    500.
                                                  0.
                             5.
                                   10.
                                          5.
                    507,
                                          6,
                                                       -10 }, //
00164
                             4.
                                                  1.
                                   11.
                                                            }, // '^'
}, // '-'
}, // '-'
                                                        -9
00165
                    513,
                             9,
                                    3,
                                                  1,
                                         11,
00166
                    517,
                                    1,
                                          7,
                                                  Ο,
                                                         2
00167
                    518,
                                   2,
                                                  1,
                                                       -10
                                                                // 'a'
00168
                    519,
                                          8,
                                                  1,
                                                        -7
                                                       -10 }, // a'

-10 }, // 'b'

-7 }, // 'c'
                    526.
00169
                             8.
                                   10.
                                          9,
                                                  1,
00170
                    536,
                                          8,
                                                  1,
                             7,
00171
                    543,
                                          9,
                                                  1,
                                                       -10
                                                            }, // 'd'
                             8,
                                   10,
00172
                    553,
                                    7,
                                          8,
                                                        -7
                                                       -10 }, // 'f'
00173
                    560,
                                   10,
                                                  1,
                                                       -7 }, // 'g'
-10 }, // 'h'
00174
                    568.
                             8,
                                   10,
                                          9,
                                                  1,
00175
                    578.
                             8.
                                  10,
                                          9,
                                                  1,
                                                                    'i'
                                                        -9 }, //
00176
                    588,
                                    9,
                                          5,
                                                  1,
                             4,
00177
                    593,
                             5,
                                   12,
                                          5,
                                                 -1,
                                                        -9
                                                            }, // 'j'
00178
                    601,
                                   10,
                                          9,
                                                       -10
                                                            }, // 'k'
                             8,
                                                 1,
                    611,
                                                            }, // '1'
00179
                             4,
                                   10,
                                          5,
                                                  1,
                                                       -10
                                                        -7 }, // 'n'
-7 }, // 'n'
-7 }, // 'o'
00180
                    616,
                            12,
                                   7,
                                         13,
                                                  1,
00181
                    627,
                             8,
                                          9,
                                                  1,
                                                  1,
00182
                    634.
                             7.
                                          8.
                                   10,
                                                  1,
                                                        -7 }, //
                                                                    'p'
00183
                    641,
                                          9,
                             8.
                                                        -7 }, // 'q'
-7 }, // 'r'
00184
                    651,
                             8,
                                   10,
                                          9,
                                                  1,
00185
                    661,
                                    7,
                                          7,
                                                  1,
                                                        -7 },
                                                                // 's'
00186
                    667,
                             6,
                                                  1,
                                                                // 't'
00187
                    673,
                             5,
                                    9,
                                          6,
                                                  1,
                                                        -9 },
                                                        -7 },
                                                                11
                                                                    ' u'
00188
                    679.
                             8.
                                    7.
                                          9,
                                                  1.
                                                        -7
00189
                    686,
                                                  0,
                             8,
                    693,
00190
                                                  Ο,
                                                        -7
                            12,
00191
                    704,
                                          8,
                                                        -7
00192
                    711,
                             8,
                                   10,
                                          8,
                                                  0,
                                                        -7
                                                                // 'y'
                                                        -7
00193
                    721.
                             6,
                                    7.
                                          7,
                                                  1,
                                                                // '{'
                    727,
                                  11,
                                          9,
                                                       -10 },
00194
                             6,
                                                  1,
                    736,
00195
                                                  2,
                                                        -9
                             2,
                                  12,
                                          5,
00196
                    739,
                                  11,
                                          9,
                                                       -10 } //
                             6,
00197 };
00198 const GFXfont Serif_plain_12 PROGMEM = {
00199 (uint8_t *)Serif_plain_12Bitmaps,(GFXglyph *)Serif_plain_12Glyphs,0x20, 0x7E, 15};
```

3.20 serif9.h 47

3.20 serif9.h

```
00001 // Created by https://oleddisplay.squix.ch/ Consider a donation
00002 // In case of problems make sure that you are using the font file with the correct version!
00003 const uint8_t Serif_plain_9Bitmaps[] PROGMEM = {
              // Bitmap Data: 0x00, // ''
00005
00006
              0xAA, 0x88, // '!'
0xAA, // '"'
00007
00008
              0x28,0x51,0xF1,0x8F,0xCA,0x00, // '#'
0x47,0xB1,0xC7,0x2B,0x88, // '$'
0xE4,0x52,0x2A,0x1F,0xE1,0x51,0x28,0x9C, // '%'
00009
00010
00012
              0x70,0x50,0x40,0xAE,0xB4,0x98,0x76, // '&'
00013
              0xA0, // "'
00014
              0x52,0x49,0x22, // '(
              0x89,0x24,0x94, // ')'
0x23,0xEF,0x88, // '*'
00015
00016
00017
              0x20,0x8F,0x88,0x20, // '+'
              0x50, // ','
0xC0, // '-'
00018
00019
              0x80, // '.'
00020
              0x22,0x44,0x48,0x80, // '/'
00021
              0x72,0x28,0xA2,0x8A,0x27,0x00, // '0'
0x4C,0x44,0x44,0xE0, // '1'
00022
00023
00024
              0x64,0x84,0x44,0x2B,0xC0, // '2'
00025
              0x64,0x84,0x41,0x49,0x80, // '3'
00026
              0x10,0xC5,0x14,0xF8,0x43,0x80, // '4'
              0xF4,0x38,0x21,0x49,0x80, // '5'
00027
              0x73,0x28,0x3C,0x8A,0x27,0x00,//'6'
0xF4,0x88,0x42,0x21,0x00,//'7'
0x72,0x28,0x9C,0xDA,0x27,0x00,//'8'
00028
00029
00031
              0x72,0x28,0x9E,0x0A,0x67,0x00, // '9'
00032
              0x82, // ':'
              0x40,0x28, // ';'
00033
              0x04,0x73,0x03,0x80,0xC0, // '<'
00034
              0xFC,0x03,0xF0, // '='
0x80,0xE0,0x31,0xCC,0x00, // '>'
00035
00036
              0xE0,0x84,0xC4,0x01,0x00, // '?'
00037
00038
              0x3C,0x21,0x27,0x54,0xAA,0x54,0xF1,0x00,0x78, // '@'
              0x10,0x30,0x28,0x48,0x7C,0x44,0xC6,//'A'
0xF6,0x89,0x13,0xC4,0x48,0xBE,0x00,//'B'
0x38,0x8A,0x04,0x08,0x08,0x9E,0x00,//'C'
0xF8,0x99,0x12,0x24,0x49,0xBE,0x00,//'D'
00039
00040
00041
00042
              0xFC,0x89,0x03,0xC4,0x08,0xBF,0x00, // 'E'
00043
              0xFC,0x89,0x03,0xC4,0x08,0x38,0x00, // 'F'
00044
              0x38,0x8A,0x04,0x08,0xD8,0x9E,0x00, // 'G'
00045
              0xEE, 0x44, 0x44, 0x7C, 0x44, 0x44, 0xEE, // 'H'
0xE4, 0x44, 0x44, 0xEO, // 'I'
0x71, 0x08, 0x42, 0x10, 0x94, 0xCO, // 'J'
0xEC, 0x48, 0x50, 0x60, 0x50, 0x48, 0xE6, // 'K'
00046
00047
00048
00049
00050
              0xE1,0x04,0x10,0x41,0x2F,0x80, // 'L'
00051
              0xE3,0x98,0xC5,0x51,0x54,0x49,0x12,0x4E,0x38, // 'M'
              0xCE, 0x64, 0x64, 0x54, 0x4C, 0x4C, 0xE4, // 'N'
0x79, 0x9A, 0x14, 0x28, 0x59, 0x9E, 0x00, // 'O'
0xF1, 0x24, 0x9C, 0x41, 0x0E, 0x00, // 'P'
0x79, 0x9A, 0x14, 0x28, 0x59, 0x1E, 0x04, // 'Q'
00052
00053
00054
00055
              0xF8,0x91,0x23,0x85,0x09,0x39,0x00, /
0x72,0x28,0x1C,0x0A,0x27,0x00, // 'S'
00056
00057
              0xFA,0xA2,0x08,0x20,0x87,0x00, // 'T'
00058
              0xEE,0x44,0x44,0x44,0x44,0x44,0x38, // 'U'
0xCE,0x44,0x44,0x28,0x28,0x10,0x10, // 'V'
00059
00060
              0xEB, 0x92, 0x45, 0x51, 0x54, 0x36, 0x08, 0x82, 0x20, // 'W'
              0xDC,0x90,0xC1,0x83,0x09,0x3B,0x00, // 'X'
00062
00063
              0xEE, 0x44, 0x28, 0x10, 0x10, 0x10, 0x38,
00064
              0xFA,0x21,0x08,0x42,0x2F,0x80, // 'Z'
              0xD2,0x49,0x26, // '['
0x88,0x44,0x42,0x20, // '\
00065
00066
              0xC9,0x24,0x96, // ']'
00067
              0x30,0x90, //
00068
              0xF8, // '_'
0x88, // '.'
00069
00070
              0x60,0x4F,0x24,0xF8, // 'a'
00071
              0xC1,0x04,0x1C,0x49,0x24,0xBC, // 'b'
0x64,0xA1,0x07,0x00, // 'c'
00072
00073
              0x30,0x41,0x1C,0x92,0x49,0x1E, // 'd'
              0x64,0xBD,0x07,0x00, // 'e'
0x72,0x11,0xC4,0x21,0x1C, // 'f'
00075
00076
              0x7A,0x49,0x24,0x70,0x4E,0x00, // 'g'
00077
              0xC0,0x81,0x03,0xC4,0x89,0x12,0x76,//'h'
0x40,0xC4,0x44,0xE0,//'i'
0x20,0x62,0x22,0x22,0xE0,//'j'
00078
00079
              0xC0,0x81,0x02,0xC5,0x0E,0x12,0x76, // 'k'
00081
00082
              0xC4,0x44,0x44,0x4E, // '1'
00083
              0xFF, 0x12, 0x44, 0x91, 0x24, 0xED, 0x80, // 'm'
              0xF8,0x91,0x22,0x4E,0xC0, // 'n'
0x64,0xA5,0x26,0x00, // 'o'
00084
00085
```

```
0xF1,0x24,0x92,0x71,0x0E,0x00, // 'p'
00087
             0x7A, 0x49, 0x24, 0x70, 0x43, 0x80, // 'q'
00088
             0xF2,0x90,0x8E,0x00, // 'r'
             0xF4,0x18,0x2F,0x00, // 's'
00089
             0x47,0x10,0x85,0x38,//'t'
0xD8,0x91,0x22,0x47,0xC0,//'u'
0xD9,0x45,0x08,0x20,//'v'
00090
00091
00093
             0xD6,0x54,0x54,0x28,0x28, // 'w'
00094
             0xD9,0x42,0x14,0xD8, // 'x'
            0xD9,0x45,0x08,0x20,0x8C,0x00, // 'y'
0xF5,0x18,0xAF,0x00, // 'z'
0x64,0x44,0x84,0x46, // '{'
0xAA,0xAA,0x80, // '|'
00095
00096
00097
00098
00099
             0xC4,0x44,0x24,0x4C // '}'
00100 };
00101 const GFXglyph Serif_plain_9Glyphs[] PROGMEM = {
00102 // bitmapOffset, width, height, xAdvance, xOffset, yOffset
                                                           -1 }, // ' '
-7 }, // '!'
                              2,
                                                    0,
00103
                       0,
                                    1,
                                            4,
                        1,
                              2,
                                      7,
                                            5,
                                                    1,
                                                           -7 }, // ""
00105
                        3,
                               4,
                                     2,
                                                           -6 }, // '#'
00106
                        4,
                                            9,
                                                    0,
                                                           -7 }, // '$'
00107
                      10,
                                     8,
                                            7,
                                                    Ο,
                                           10,
00108
                      15,
                              9,
                                     7,
                                                    0,
                                                           -7 }, // '&'
-7 }, // "'
                      23,
00109
                                     7,
                              8,
                                            9,
                                                    0,
00110
                      30,
                              2,
                                     2,
                                            3,
                                                    1,
                                                           -8 }, // '('
00111
                      31,
                              3,
                                     8,
                                            5,
                                                    0,
                                                           -8 }, // ')'
-7 }, // '*'
00112
                      34,
                                     8,
                                            5,
00113
                      37,
                              6,
                                     4,
                                            6,
                                                    Ο,
                                                           -5 }, // '+'
-1 }, // ','
00114
                      40,
                              6,
                                     5,
                                            9,
                                                    1,
00115
                      44.
                              3,
                                     2.
                                            4,
                                                    0.
00116
                      45.
                                            4.
                                                           -3 }, //
                              3.
                                     1.
                                                    0.
                                                           -1 }, // '.'
00117
                              2,
                                            4,
                       46,
                                     1,
                                                    1,
00118
                      47,
                                            4,
                                                    Ο,
                                                           -7 }, // '/'
                                                           -7 }, // '0'
00119
                      51,
                              6,
                                            7,
                                                    Ο,
                                                          -7 }, // '0'

-7 }, // '1'

-7 }, // '2'

-7 }, // '3'
                                            7,
7,
                                     7,
7,
00120
                      57,
                              4,
                                                    1,
00121
                      61.
                              5,
                                                    0,
                                     7,
7,
                                            7,
7,
00122
                      66,
                              5,
                                                    0,
                                                           -7 }, // '4'
                       71,
                               6,
                                                    Ο,
00124
                               5,
                                                    1,
                                                           -7 }, // '5'
                                                           -7 }, // '6'
00125
                      82,
                                            7,
                                                    0,
                                                           -7 }, // '7'
-7 }, // '8'
00126
                      88,
                              5,
                                            7,
                                                    1,
                                            7,
7,
00127
                      93,
                              6,
                                     7,
                                                    0,
                                                           -7 }, // '9'
-4 }, // ':'
                                     7,
00128
                      99.
                              6,
                                                    0,
00129
                     105,
                                            4,
                              2,
                                     4,
                                                    1,
00130
                                                           -4 }, // ';'
                     106,
                              3,
                                      5,
                                            4,
                                                    Ο,
                                                           -5 }, // '<'
00131
                     108,
                                      5,
                                            9,
                                                    Ο,
                                                          -5 }, // '<'
-4 }, // '='
-5 }, // '>'
-7 }, // '?'
00132
                     113,
                              7,
                                     3,
                                            9,
                                                    Ο,
00133
                     116,
                              7,
                                     5,
                                            9,
                                                    Ο,
00134
                     121.
                              5.
                                      7.
                                            6.
                                                    0.
                                                           -6 }, // '@'
00135
                     126,
                              9.
                                           10.
                                                    0.
                                     8.
00136
                     135,
                              8,
                                            8,
                                                    0,
                                                           -7 }, // 'B'
00137
                     142,
                                            8,
                                                    Ο,
                                                           -7 }, // 'C'
00138
                     149,
                                            8,
                                                    Ο,
                                                           -7 }, // 'C'

-7 }, // 'D'

-7 }, // 'E'

-7 }, // 'F'

-7 }, // 'G'
00139
                     156,
                              7,
                                     7,
                                            8,
                                                    Ο,
                                     7,
00140
                     163.
                              7,
                                            8,
                                                    0,
00141
                     170,
                              7,
                                            7,
                                                    0,
                     177,
                                            8,
                                                    Ο,
                                                           -7 }, // 'H'
-7 }, // 'I'
00143
                     184,
                                            9,
                                                    0,
00144
                     191,
                                            5,
                                                    Ο,
                                                           -7 }, // 'J'
-7 }, // 'K'
00145
                     195,
                              5,
                                      9,
                                            5,
                                                   -1,
                     201,
00146
                              8.
                                     7,
                                            8,
                                                    0,
                                            7,
                                                           -7 }, // 'L'
00147
                     208,
                                      7,
                                                    0,
                              6,
00148
                     214,
                             10,
                                           11,
                                                    0,
                                                           -7 }, // 'M'
00149
                     223,
                                                           -7 }, // 'N'
                              8,
                                            9,
                                                    Ο,
                                                           -7 }, // '0'
00150
                     230,
                                            8,
                                                    Ο,
                                                          -/ }, // 'O'

-7 }, // 'P'

-7 }, // 'Q'

-7 }, // 'R'
00151
                     237,
                              6,
                                            7,
                                                    Ο,
00152
                     243,
                               7,
                                     8,
                                            8,
                                                    Ο,
                     250,
00153
                              7.
                                      7,
                                            8,
                                                    0.
                                            7,
                                                           -7 }, // 'S'
00154
                     257,
                                      7,
                                                    0,
                              6.
                                                           -7 }, // 'I'
-7 }, // 'U'
00155
                     263,
                              6,
                                                    0,
00156
                     269,
                              8,
                                            9,
                                                    0,
                                                           -7 }, // 'V'
00157
                     276,
                              8,
                                            8,
                                                    Ο,
                                                           -7 }, // 'W'
00158
                     283,
                             10,
                                     7,
                                           10,
                                                    Ο,
                                                           -7 }, // 'X'
-7 }, // 'Y'
                     292.
                                      7.
00159
                              7.
                                            8,
                                                    0,
00160
                     299,
                                            7,
7,
                              8,
                                                    -1,
                     306,
                                                           -7 }, // 'Z'
                                                    Ο,
00161
                               6,
                                                           -8 }, // '['
-7 }, // '\'
00162
                     312,
                                                    0,
00163
                     315,
                                            4,
                                                    Ο,
                                                           -8 }, // ']'
-7 }, // '^'
00164
                     319.
                               3,
                                     8.
                                            5,
                                                    1,
                                            9,
00165
                     322.
                               7.
                                     2.
                                                    1.
                                                            1 }, //
00166
                     324,
                                            6,
                                                    0,
                               6,
                                     1,
                                                           -8 }, // '`'
00167
                     325,
                                      2,
                               3,
                                            6,
00168
                     326,
                                                    0,
                                                           -5 }, // 'a'
                                            6,
                     330,
00169
                                     8,
                                                    Ο,
                                                           -8 }, // 'b'
                                                           -5 }, // 'c'
00170
                     336,
                              5,
                                     5,
                                            6,
                                                    Ο,
                                                           -8 }, // 'd'
00171
                     340,
                               6,
                                     8,
                                            6,
                                                    0,
                                                           -5 }, // 'e'
00172
                     346,
                                            6.
                                                    0.
```

```
00174
                 355,
                                          0,
                                               -5 },
00175
                 361,
00176
                 368,
                                         Ο,
00177
                 372,
                              9.
00178
                 377,
                                         Ο,
00179
                 384,
                                          0,
00180
                 388,
00181
                 395,
00182
                 400,
                                          Ο,
00183
                 404.
                                          0,
00184
                 410.
                                          0.
00185
                 416,
                                          0,
00186
                 420,
00187
                 424,
00188
                 428,
00189
                 433.
                                          0,
00190
                 437,
                                          0,
                 442,
00191
                                   6,
                                          Ο,
00192
                 446,
                                               -5 },
00193
                 452,
                                               -8 },
00194
                 456,
                                               -7 },
00195
                 460,
                              9,
00196
                 463,
                              8,
00197 };
00198 const GFXfont Serif_plain_9 PROGMEM =
00199 (uint8_t *)Serif_plain_9Bitmaps,(GFXglyph *)Serif_plain_9Glyphs,0x20, 0x7E, 12};
```

3.21 globals/globals.cpp File Reference

This file contains global variables, constants, and configurations used throughout the project.

```
#include "globals.h"
#include <libraries.h>
```

Functions

- ThreeWire myWire (21, 22, 4)
- IPAddress ip (192, 168, 1, 200)
- RtcDS1302< ThreeWire > Rtc (myWire)
- BfButton btn (BfButton::STANDALONE DIGITAL, 5, true, LOW)
- EthernetServer server (80)
- AccelStepper motor (AccelStepper::DRIVER, 2, 15)

Variables

```
• const uint32_t LOOP_TICKS = 50 / portTICK_PERIOD_MS
```

Timing and Scheduling Constants.

• const unsigned long min_bright_timer = 180000

Minimum time before dimming the screen (in milliseconds)

• const unsigned long turn_off_timer = 600000

Timer for turning off the display (in milliseconds)

• const int DIR PIN = 15

Rotary Encoder Pin Definitions.

const int STEP_PIN = 2

Step pin for rotary encoder.

• int **DT** = 16

Data pin for rotary encoder.

• int **CLK** = 17

Clock pin for rotary encoder.

• int lastClk = HIGH

Rotary Encoder State Variables.

int newClk = digitalRead(CLK)

Current clock state.

int dtValue = digitalRead(DT)

Data pin value for rotary encoder.

• int counter = 0

Encoder counter to track position.

• int **angle** = 0

Current angle of the encoder.

· int aState

Current state of the encoder.

• int aLastState

Last state of the encoder.

• long **position** = 0

Rotary encoder position.

• int lastAngle = 0

Last measured angle.

• int centerX = 80

Display Geometry Variables.

• int centerY = 74

Y coordinate for center of display.

• int **radius** = 40

Radius of UI elements.

• const int minBrightness = 200

Brightness Control Variables.

• const int maxBrightness = 230

Maximum brightness level.

• const int numBrightnessLevels = 10

Total number of brightness levels.

• int **brightnessLevel** = 5

Current brightness level.

• MenuState currentMenu = INITIAL_SCREEN

MenuState enum values represent different menu screens.

• MenuState previousMenu = MAIN_MENU

Previous menu state.

• int menuIndex = 0

Menu Structure and Indexes.

• const int menultems = 4

Total number of main menu items.

• String **menu** [menultems] = {"MAIN MENU", "Settings", "TCP server", "Stepper motor"}

Main menu labels.

• const int **submenultems** = 4

Total number of submenu items.

• String **submenu** [submenultems] = {"SETTINGS","Brightness","Colors","Font type"}

Submenu labels.

• const int colormenultems = 5

Number of items in color menu.

• String **colormenu** [colormenultems] = {"COLORS","Background","Selection bar","Selection border","Text"}

Color menu labels.

- const int ethernetmenultems = 5
- String ethernetmenu [ethernetmenultems] = {"IP","Port","Subnet","Status","Back"}
- const int steppermenultems = 3
- String **steppermenu** [steppermenultems] = {"STEPPER","Automatic", "Manual"}
- const int manualmenultems = 3
- String manualmenu [manualmenultems] = {"MANUAL","Forward","Backward"}
- const int automenultems = 1
- String automenu [automenultems] = {"AUTO"}
- byte mac [] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED }

Ethernet Configuration.

- char ipchar [16]
- char **subnetchar** [16]
- IPAddress subnet = Ethernet.subnetMask()
- char ipadress = sprintf(ipchar, "%d.%d.%d.%d", ip[0],ip[1],ip[2],ip[3])
- char **subnetadress** = sprintf(subnetchar, "%d.%d.%d.%d", subnet[0],subnet[1],subnet[2],subnet[3])
- String ipip = ipchar
- String subnetsubnet = subnetchar
- String ethernetInfo [5] = {ipip, "80", subnetsubnet, ""}

Ethernet settings: IP, Port, Subnet, Status.

• const unsigned short * images_main [] = {NULL, settings_icon, ethernet_icon, step_icon}

Icons for Menus.

• const unsigned short * images_settings [] = {NULL, brightness_icon, color_icon, font_icon}

Settings menu icons.

• const unsigned short * images_stepper [] = {NULL, automatic_icon, manual_icon}

Stepper motor menu icons.

• bool screenOn = true

Screen Control Variables.

• bool **engineeringMode** = false

Flag for enabling engineering/debug mode.

• volatile int encoderState = 0

Encoder state for handling inputs.

RtcDateTime lastDisplayedTime

Time last displayed on the screen.

• QueueHandle t screenUpdateQueue

Queues and Synchronization.

• xSemaphoreHandle gatekeeper = 0

Semaphore for managing screen updates.

• const uint16_t backgroundpossibleColors [] = {MINT_GREEN, TFT_WHITE, LIGHT_BLUE, PALE_GRAY, PALE_YELLOW, PALE_PINK, BEIGE, LAVENDER, SKY_BLUE}

Color Arrays for Background, Selection Bar, Border, and Text.

• const uint16_t selectbarpossibleColors [] = {TFT_RED, TFT_BLUE, TFT_YELLOW, TFT_PINK, TFT_← ORANGE, TFT_CYAN, TFT_SKYBLUE, TFT_VIOLET}

Possible selection bar colors.

• const uint16_t borderpossibleColors [] = {TFT_BLACK, TFT_RED, TFT_GREENYELLOW, TFT_BLUE, TFT_YELLOW, TFT_PINK, TFT_ORANGE, TFT_CYAN, TFT_LIGHTGREY, TFT_SKYBLUE, TFT_VIOLET}

Possible border colors

const uint16_t textpossibleColors [] = {TFT_BLACK, DARK_ORANGE, DARK_BLUE, DARK_GREEN}

Possible text colors.

const int backgroundcolors = 9

Color Count Variables.

• const int selectbarcolors = 8

Number of selection bar colors.

• const int textcolors = 4

Number of text colors.

• const int bordercolors = 11

Number of border colors.

- const int selectnumcolors [] ={backgroundcolors,selectbarcolors,textcolors,bordercolors}
- MenuState colormenuArray [] = {MenuState::SELECTION_BAR, MenuState::BACKGROUND, MenuState::TEXT, MenuState::SELECTION_BORDER}

Color Menu Arrays.

• String **background** [backgroundcolors] = {"Mint","White","Light blue", "Pale gray", "Yellow","Pale pink","Beige", "Lavender", "Skyblue"}

Background color labels.

- String **selectionbar** [selectbarcolors] = {"Red", "Blue", "Yellow", "Pink", "Orange", "Cyan", "Skyblue", "Violet"} Selection bar color labels.
- String **border** [bordercolors] = {"Black","Red","Green","Blue","Yellow","Pink","Orange","Cyan","Light grey","Skyblue","Violet"}

Border color labels.

• String **text** [textcolors] = {"Black","Orange","Dark blue","Dark green"}

Text color labels.

• int selectedBackgroundColor = 1

Selected Colors.

• int selectedTextColor = 0

Selected text color index.

• int selectedBarColor = 5

Selected selection bar color index.

• int selectedBorderColor = 0

Selected border color index.

int * selection [] = {NULL, &selectedBackgroundColor, &selectedBarColor, &selectedBorderColor, &selectedTextColor}

Array for selected colors.

• const GFXfont * possibleFont12 [] = {NULL, sansserif12, mono12, arimo12, serif12}

Font Configuration.

• const GFXfont * possibleFont9 [] = {NULL, sansserif9, mono9, arimo9, serif9}

Array of possible fonts (9-point size)

const int numFonts = sizeof(possibleFont12) / sizeof(possibleFont12[0])

Number of font options.

• String fontType [numFonts] = {"TEXT FONT", "SansSerif", "Monospaced", "Arimo", "Serif"}

Font type labels

const GFXfont * textType12 = possibleFont12[4]

Selected 12-point font.

const GFXfont * textType9 = possibleFont9[4]

Selected 9-point font.

• TFT_eSPI tft = TFT_eSPI()

Hardware Initialization.

- TickType_t **previousTick** = 0
- TickType_t previousTime = 0

3.21.1 Detailed Description

This file contains global variables, constants, and configurations used throughout the project.

Author

Juan Alberto Serrano Redondo.

3.21.2 Variable Documentation

3.21.2.1 backgroundcolors

```
const int backgroundcolors = 9
```

Color Count Variables.

Number of background colors.

Number of background colors

3.21.2.2 backgroundpossibleColors

```
const uint16_t backgroundpossibleColors[] = {MINT_GREEN, TFT_WHITE, LIGHT_BLUE, PALE_GRAY,
PALE_YELLOW, PALE_PINK, BEIGE, LAVENDER, SKY_BLUE}
```

Color Arrays for Background, Selection Bar, Border, and Text.

Possible background colors.

Possible background colors

3.21.2.3 centerX

```
int centerX = 80
```

Display Geometry Variables.

X coordinate for center of display.

X coordinate for center of display

3.21.2.4 colormenuArray

```
MenuState colormenuArray[] = {MenuState::SELECTION_BAR, MenuState::BACKGROUND, MenuState::TEXT,
MenuState::SELECTION_BORDER}
```

Color Menu Arrays.

Color menu states.

Color menu states

3.21.2.5 currentMenu

```
MenuState currentMenu = INITIAL_SCREEN
```

MenuState enum values represent different menu screens.

Current menu state.

Current menu state

3.21.2.6 DIR_PIN

```
const int DIR_PIN = 15
```

Rotary Encoder Pin Definitions.

Direction pin for rotary encoder.

Direction pin for rotary encoder

3.21.2.7 images_main

```
const unsigned short* images_main[] = {NULL, settings_icon, ethernet_icon, step_icon}
```

Icons for Menus.

Main menu icons.

Main menu icons

3.21.2.8 lastClk

```
int lastClk = HIGH
```

Rotary Encoder State Variables.

Last clock state.

Last clock state

3.21.2.9 LOOP_TICKS

```
const uint32_t LOOP_TICKS = 50 / portTICK_PERIOD_MS
```

Timing and Scheduling Constants.

Loop period in ticks for RTOS task.

Loop period in ticks for RTOS task

3.21.2.10 menuIndex

```
int menuIndex = 0
```

Menu Structure and Indexes.

Index for current menu item.

Index for current menu item

3.21.2.11 minBrightness

```
const int minBrightness = 200
```

Brightness Control Variables.

Minimum brightness level.

Minimum brightness level

3.21.2.12 possibleFont12

```
const GFXfont* possibleFont12[] = {NULL, sansserif12, mono12, arimo12, serif12}
```

Font Configuration.

Array of possible fonts (12-point size)

3.21.2.13 screenOn

```
bool screenOn = true
```

Screen Control Variables.

Flag indicating if the screen is currently on.

Flag indicating if the screen is currently on

3.21.2.14 screenUpdateQueue

QueueHandle_t screenUpdateQueue

Queues and Synchronization.

Queue for handling screen update commands.

Queue for handling screen update commands

3.21.2.15 selectedBackgroundColor

```
int selectedBackgroundColor = 1
```

Selected Colors.

Selected background color index.

Selected background color index

3.22 globals/globals.h File Reference

Global variable and constant definitions for the project.

```
#include <libraries.h>
```

Macros

- #define LOAD_GFXFF
- #define BRIGHTNESS PIN 25

Pin for brightness control.

• #define LIGHT_GRAY 0xC618

Light gray color for UI elements.

#define LIGHT_BLUE 0xE7DF

Light blue color for UI elements.

• #define PALE_GRAY 0xE71C

Pale gray color for UI elements.

• #define MINT_GREEN 0x97F6

Mint green color for UI elements.

#define PALE YELLOW 0xFFFB

Pale yellow color for UI elements.

#define PALE_PINK 0xFDBC

Pale pink color for UI elements.

• #define **BEIGE** 0xFF7B

Beige color for UI elements.

• #define LAVENDER 0xE5FF

Lavender color for UI elements.

• #define SKY_BLUE 0x9FFF

Sky blue color for UI elements.

• #define DARK_ORANGE 0xDBC9

Dark orange color for UI elements.

#define DARK_BLUE 0x00B1

Dark blue color for UI elements.

• #define **DARK_GREEN** 0x22A2

Dark green color for UI elements.

Enumerations

```
    enum MenuState {
        MAIN_MENU, SETTINGS, BRIGHTNESS, COLOR,
        TEXT_TYPE, BACKGROUND, SELECTION_BAR, SELECTION_BORDER,
        TEXT, SERVIDOR_TCP, STEPPER_MOTOR, MANUAL,
        AUTO, INITIAL_SCREEN }
```

Defines various states of the menu interface.

enum ScreenUpdateCommand { UPDATE_MAIN_MENU , UPDATE_CONFIG_BRIGHTNESS , UPDATE_CONFIG_BACKGRO , UPDATE_CONFIG_ASPECT }

Enum for screen update commands.

Variables

const uint32_t LOOP_TICKS

Loop period in ticks for RTOS task.

const unsigned long min_bright_timer

Minimum time before dimming the screen (in milliseconds)

· const unsigned long turn_off_timer

Timer for turning off the display (in milliseconds)

· const int DIR PIN

Direction pin for rotary encoder.

· const int STEP_PIN

Step pin for rotary encoder.

int DT

Data pin for rotary encoder.

int CLK

Clock pin for rotary encoder.

· int lastClk

Last clock state.

· int newClk

Current clock state.

• int dtValue

Data pin value for rotary encoder.

· int counter

Encoder counter to track position.

· int angle

Current angle of the encoder.

· int aState

Current state of the encoder.

• int aLastState

Last state of the encoder.

· long position

Rotary encoder position.

• int lastAngle

Last measured angle.

· int centerX

X coordinate for center of display.

· int centerY

Y coordinate for center of display.

• int radius

Radius of UI elements.

• const int minBrightness

Minimum brightness level.

· const int maxBrightness

Maximum brightness level.

const int numBrightnessLevels
 Total number of brightness levels.

· int brightnessLevel

Current brightness level.

• MenuState currentMenu

Current menu state.

• MenuState previousMenu

Previous menu state.

· int menuIndex

Index for current menu item.

· const int menultems

Total number of main menu items.

• String menu []

Main menu labels.

const int submenultems

Total number of submenu items.

• String submenu []

Submenu labels.

· const int colormenultems

Number of items in color menu.

• String colormenu []

Color menu labels.

- · const int ethernetmenultems
- String ethernetmenu []
- · const int steppermenultems
- String steppermenu []
- · const int manualmenultems
- String manualmenu []
- · const int automenultems
- String automenu []
- byte mac []

Ethernet Configuration.

- · IPAddress ip
- EthernetServer server
- char ipchar [16]
- char subnetchar [16]
- IPAddress subnet
- · char ipadress
- · char subnetadress
- · String ipip
- String subnetsubnet
- String ethernetInfo [5]

Ethernet settings: IP, Port, Subnet, Status.

const unsigned short * images_main []

Main menu icons.

const unsigned short * images_settings []

Settings menu icons.

• const unsigned short * images_stepper []

Stepper motor menu icons.

• bool screenOn

Flag indicating if the screen is currently on.

• bool engineeringMode

Flag for enabling engineering/debug mode.

· volatile int encoderState

Encoder state for handling inputs.

RtcDateTime lastDisplayedTime

Time last displayed on the screen.

QueueHandle_t screenUpdateQueue

Queue for handling screen update commands.

• xSemaphoreHandle gatekeeper

Semaphore for managing screen updates.

• const uint16_t backgroundpossibleColors []

Possible background colors.

const uint16_t selectbarpossibleColors []

Possible selection bar colors.

• const uint16_t borderpossibleColors []

Possible border colors.

const uint16_t textpossibleColors []

Possible text colors.

· const int backgroundcolors

Number of background colors.

const int selectbarcolors

Number of selection bar colors.

· const int textcolors

Number of text colors.

· const int bordercolors

Number of border colors.

- const int selectnumcolors []
- MenuState colormenuArray []

Color menu states.

• String background []

Background color labels.

• String selectionbar []

Selection bar color labels.

• String border []

Border color labels.

• String text []

Text color labels.

· int selectedBackgroundColor

Selected background color index.

• int selectedTextColor

Selected text color index.

• int selectedBarColor

Selected selection bar color index.

• int selectedBorderColor

Selected border color index.

• int * selection []

Array for selected colors.

const GFXfont * possibleFont12 []

Array of possible fonts (12-point size)

• const GFXfont * possibleFont9 []

Array of possible fonts (9-point size)

· const int numFonts

Number of font options.

• String fontType []

Font type labels.

const GFXfont * textType12

Selected 12-point font.

const GFXfont * textType9

Selected 9-point font.

- BfButton btn
- · ThreeWire myWire
- RtcDS1302< ThreeWire > Rtc
- AccelStepper motor
- · TFT eSPI tft

Hardware Initialization.

- TickType_t previousTick
- TickType t previousTime

3.22.1 Detailed Description

Global variable and constant definitions for the project.

This header file contains the global definitions for UI colors, menu states, rotary encoder configurations, display settings, and other system-wide constants and variables. It also declares external variables and enums that are used across different modules of the program, ensuring centralized configuration and ease of modification.

The file includes:

- · Custom color definitions for user interface (UI) elements.
- Pin assignments for hardware components (brightness control, rotary encoder).
- Timing constants and menu states (main menu, settings, motor control).
- · Rotary encoder state tracking and UI geometry settings.
- · Brightness control and menu structure.
- Ethernet configuration parameters and TCP server settings.
- Screen control and synchronization using FreeRTOS tasks and queues.
- · Enum definitions for menus and screen updates.

Author

Juan Alberto Serrano Redondo.

3.22.2 Enumeration Type Documentation

3.22.2.1 MenuState

enum MenuState

Defines various states of the menu interface.

Enumerator

MAIN_MENU	Main menu.
SETTINGS	Settings menu.
BRIGHTNESS	Brightness control menu.
COLOR	Color configuration menu.
TEXT_TYPE	Text font selection.

Enumerator

BACKGROUND	Background color selection.
SELECTION_BAR	Selection bar color.
SELECTION_BORDER	Selection border color.
TEXT	Text color configuration.
SERVIDOR_TCP	TCP server configuration.
STEPPER_MOTOR	Stepper motor control.
MANUAL	Manual stepper control.
AUTO	Automatic stepper control.
INITIAL_SCREEN	Initial splash screen.

3.22.2.2 ScreenUpdateCommand

enum ScreenUpdateCommand

Enum for screen update commands.

Enumerator

UPDATE_MAIN_MENU	Command to update the main menu.
UPDATE_CONFIG_BRIGHTNESS	Command to update brightness configuration.
UPDATE_CONFIG_BACKGROUNDCOLOR	Command to update background color.
UPDATE_CONFIG_ASPECT	Command to update UI aspects.

3.22.3 Variable Documentation

3.22.3.1 backgroundcolors

const int backgroundcolors [extern]

Number of background colors.

Number of background colors.

Number of background colors

3.22.3.2 backgroundpossibleColors

const uint16_t backgroundpossibleColors[] [extern]

Possible background colors.

Possible background colors.

Possible background colors

3.22.3.3 centerX

```
int centerX [extern]
```

X coordinate for center of display.

X coordinate for center of display.

X coordinate for center of display

3.22.3.4 colormenuArray

```
MenuState colormenuArray[] [extern]
```

Color menu states.

Color menu states.

Color menu states

3.22.3.5 currentMenu

```
MenuState currentMenu [extern]
```

Current menu state.

Current menu state.

Current menu state

3.22.3.6 DIR_PIN

```
const int DIR_PIN [extern]
```

Direction pin for rotary encoder.

Direction pin for rotary encoder.

Direction pin for rotary encoder

3.22.3.7 images_main

```
const unsigned short* images_main[] [extern]
```

Main menu icons.

Main menu icons.

Main menu icons

3.22.3.8 lastClk

int lastClk [extern]

Last clock state.

Last clock state.

Last clock state

3.22.3.9 LOOP_TICKS

```
const uint32_t LOOP_TICKS [extern]
```

Loop period in ticks for RTOS task.

Loop period in ticks for RTOS task.

Loop period in ticks for RTOS task

3.22.3.10 menuIndex

```
int menuIndex [extern]
```

Index for current menu item.

Index for current menu item.

Index for current menu item

3.22.3.11 minBrightness

```
const int minBrightness [extern]
```

Minimum brightness level.

Minimum brightness level.

Minimum brightness level

3.22.3.12 possibleFont12

```
const GFXfont* possibleFont12[] [extern]
```

Array of possible fonts (12-point size)

Array of possible fonts (12-point size)

3.22.3.13 screenOn

```
bool screenOn [extern]
```

Flag indicating if the screen is currently on.

Flag indicating if the screen is currently on.

Flag indicating if the screen is currently on

3.22.3.14 screenUpdateQueue

```
QueueHandle_t screenUpdateQueue [extern]
```

Queue for handling screen update commands.

Queue for handling screen update commands.

Queue for handling screen update commands

3.22.3.15 selectedBackgroundColor

```
int selectedBackgroundColor [extern]
```

Selected background color index.

Selected background color index.

Selected background color index

3.23 globals.h

Go to the documentation of this file.

```
00001
00023 #ifndef GLOBALS_H
00024 #define GLOBALS_H
00025
00026 #include <libraries.h>
00027
00028
00029 // Graphics and Pin Definitions
00030 #define LOAD_GFXFF
00031 #define BRIGHTNESS_PIN 25
00032
00033 // Custom Color Definitions
00034 #define LIGHT_GRAY 0xC618
00035 #define LIGHT_BLUE 0xE7DF
00036 #define PALE_GRAY 0xE71C
00037 #define MINT_GREEN 0x97F6
00038 #define PALE_YELLOW 0xFFFB
00039 #define PALE_PINK 0xFDBC
00040 #define BEIGE 0xFF7B
00041 #define LAVENDER 0xE5FF
00042 #define SKY_BLUE 0x9FFF
00043 #define DARK_ORANGE 0xDBC9
00044 #define DARK_BLUE 0x00B1
00045 #define DARK_GREEN 0x22A2
00046
00047 // Timing and Scheduling Constants
00048 extern const uint32_t LOOP_TICKS;
00049 extern const unsigned long min_bright_timer;
00050 extern const unsigned long turn_off_timer;
```

3.23 globals.h 65

```
00052 // Rotary Encoder Pin Definitions
00053 extern const int DIR_PIN;
00054 extern const int STEP_PIN;
00055 extern int DT;
00056 extern int CLK;
00058 // Rotary Encoder State Variables
00059 extern int lastClk;
00060 extern int newClk;
00061 extern int dtValue;
00062 extern int counter:
00063 extern int angle;
00064 extern int aState;
00065 extern int aLastState;
00066 extern long position;
00067 extern int lastAngle;
00068
00069 // Display Geometry Variables
00070 extern int centerX;
00071 extern int centerY;
00072 extern int radius;
00073
00074 // Brightness Control Variables 00075 extern const int minBrightness;
00076 extern const int maxBrightness;
00077 extern const int numBrightnessLevels;
00078 extern int brightnessLevel;
00079
00080 // Enum for Menu States
00085 enum MenuState {
00086
       MAIN_MENU,
00087
        SETTINGS,
00088
        BRIGHTNESS,
        COLOR,
TEXT_TYPE,
00089
00090
00091
        BACKGROUND,
        SELECTION_BAR,
        SELECTION_BORDER,
00093
00094
        TEXT,
00095
        SERVIDOR TCP.
00096
        STEPPER MOTOR,
00097
        MANUAL,
00098
        AUTO,
00099
        INITIAL_SCREEN
00100 };
00101
00102 extern MenuState currentMenu;
00103 extern MenuState previousMenu;
00104
00105 // Menu Structure and Indexes
00106 extern int menuIndex;
00107 extern const int menuItems;
00108 extern String menu[];
00109 extern const int submenuItems;
00110 extern String submenu[];
00111 extern const int colormenuItems;
00112 extern String colormenu[];
00113 extern const int ethernetmenuItems;
00114 extern String ethernetmenu[];
00115 extern const int steppermenuItems;
00116 extern String steppermenu[];
00117 extern const int manualmenuItems;
00118 extern String manualmenu[];
00119 extern const int automenuItems;
00120 extern String automenu[];
00121 // Ethernet Configuration
00122 extern byte mac[];
00123 extern IPAddress ip;
00124 extern EthernetServer server;
00125 extern char ipchar[16];
00126 extern char subnetchar[16];
00127 extern IPAddress subnet;
00128 extern char ipadress;
00129 extern char subnetadress;
00130 extern String ipip;
00131 extern String subnetsubnet;
00132 extern String ethernetInfo[5];
00133
00134
00135 // Icons for Menus
00136 extern const unsigned short *images_main[];
00137 extern const unsigned short *images_settings[];
00138 extern const unsigned short *images_stepper[];
00139
00140 // Screen Control Variables
00141 extern bool screenOn;
```

```
00142 extern bool engineeringMode;
00143 extern volatile int encoderState;
00144 extern RtcDateTime lastDisplayedTime;
00145
00146 // Queues and Synchronization
00147 extern OueueHandle t screenUpdateOueue;
00148 extern xSemaphoreHandle gatekeeper;
00149
00154 enum ScreenUpdateCommand {
00155 UPDATE_MAIN_MENU,
       UPDATE_CONFIG_BRIGHTNESS,
00156
00157 UPDATE_CONFIG_BACKGROUNDCOLOR,
00158
       UPDATE_CONFIG_ASPECT
00159 };
00160
00161 // Color Arrays for Background, Selection Bar, Border, and Text
00162 extern const uint16_t backgroundpossibleColors[];
00163 extern const uint16_t selectbarpossibleColors[];
00164 extern const uint16_t borderpossibleColors[];
00165 extern const uint16_t textpossibleColors[];
00166
00167 // Color Count Variables
00168 extern const int backgroundcolors;
00169 extern const int selectbarcolors:
00170 extern const int textcolors;
00171 extern const int bordercolors;
00172 extern const int selectnumcolors[];
00173
00174 // Color Menu Arrays
00175 extern MenuState colormenuArray[];
00176 extern String background[];
00177 extern String selectionbar[];
00178 extern String border[];
00179 extern String text[];
00180
00181 // Selected Colors
00182 extern int selectedBackgroundColor;
00183 extern int selectedTextColor;
00184 extern int selectedBarColor;
00185 extern int selectedBorderColor;
00186 extern int *selection[];
00187
00188 // Font Configuration
00189 extern const GFXfont* possibleFont12[];
00190 extern const GFXfont* possibleFont9[];
00191 extern const int numFonts;
00192 extern String fontType[];
00193 extern const GFXfont* textType12;
00194 extern const GFXfont* textType9;
00195
00196 extern BfButton btn;
00197 extern ThreeWire myWire;
00198 extern RtcDS1302<ThreeWire> Rtc;
00199 extern AccelStepper motor;
00200 extern TFT_eSPI tft;
00201 extern TickType_t previousTick;
00202 extern TickType_t previousTime;
00203
00204
00205 #endif // GLOBALS_H
```

3.24 GUI/GUI.cpp File Reference

Implementation of the functions related to the graphical user interface (GUI).

```
#include "GUI.h"
```

Functions

void printDateTime (const RtcDateTime &dt)

Displays the date and time on the screen and in the serial monitor.

· void drawNeedle (int angle, int length, uint32_t color)

Draws a needle on the dial.

• void drawDialMarks ()

Draws the dial marks.

· void updateDial ()

Updates the dial by moving the needle to the new position.

void setBrightness (int level)

Sets the screen brightness level.

• void drawBrightnessBar (int level)

Draws the brightness bar on the screen.

void drawSelectionBar (int16 t y, bool isSelected, int currentIndex, int totalItems)

Draws a selection bar on the screen.

3.24.1 Detailed Description

Implementation of the functions related to the graphical user interface (GUI).

This file contains the implementation of the functions to handle the GUI, such as drawing the dial needle, selection bar, and other functionalities.

Author

Juan Alberto Serrano Redondo.

3.24.2 Function Documentation

3.24.2.1 drawBrightnessBar()

Draws the brightness bar on the screen.

Parameters

```
level Current brightness level.
```

3.24.2.2 drawDialMarks()

```
void drawDialMarks ()
```

Draws the dial marks.

Draws the marks and numbers at regular intervals around the dial.

3.24.2.3 drawNeedle()

```
void drawNeedle (
          int angle,
          int length,
          uint32_t color)
```

Draws a needle on the dial.

This function draws a needle on the dial based on the specified angle and length.

Parameters

angle	Angle of the needle.
length	Length of the needle.
color	Color of the needle.

3.24.2.4 drawSelectionBar()

```
void drawSelectionBar (
    int16_t y,
    bool isSelected,
    int currentIndex,
    int totalItems)
```

Draws a selection bar on the screen.

This function draws a selection bar at the specified vertical position. The bar will be drawn differently based on whether it is selected or not, and its appearance can change depending on the current and total items.

Parameters

У	Vertical position of the bar (in pixels).
isSelected	A boolean flag indicating whether the bar is selected.
currentIndex	Index of the currently selected item (starting from 0).
totalltems	Total number of items in the selection list.

3.24.2.5 printDateTime()

```
void printDateTime ( {\tt const\ RtcDateTime\ \&\ } dt)
```

Displays the date and time on the screen and in the serial monitor.

This function takes a RtcDateTime object, formats the time as HH:MM, and displays it both on the serial monitor and the TFT screen.

Parameters

```
dt The current date and time in RtcDateTime format.
```

3.24.2.6 setBrightness()

```
\begin{tabular}{ll} \beg
```

Sets the screen brightness level.

Parameters

3.24.2.7 updateDial()

```
void updateDial ()
```

Updates the dial by moving the needle to the new position.

This function is responsible for refreshing the dial display by updating the needle's position based on new data or changes in the system state.

3.25 GUI/GUI.h File Reference

Graphical User Interface (GUI) module for managing the display elements.

```
#include <globals/globals.h>
#include <libraries.h>
```

Functions

• void drawNeedle (int angle, int length, uint32_t color)

Draws a needle on the dial.

• void drawDialMarks ()

Draws the dial marks.

• void drawSelectionBar (int16_t y, bool isSelected, int currentIndex, int totalItems)

Draws a selection bar on the screen.

• void updateDial ()

Updates the dial by moving the needle to the new position.

• void setBrightness (int level)

Sets the screen brightness level.

void drawBrightnessBar (int level)

Draws the brightness bar on the screen.

void printDateTime (const RtcDateTime &dt)

Displays the date and time on the screen and in the serial monitor.

3.25.1 Detailed Description

Graphical User Interface (GUI) module for managing the display elements.

This header file contains the function declarations for managing the graphical user interface (GUI) of the system. The functions provided here allow drawing different UI elements like needles, dials, selection bars, and adjusting the screen's brightness. This module interacts with the hardware display and manages visual elements based on user input or system state changes.

The primary purpose of this module is to offer functions that facilitate displaying information in a structured and visually intuitive manner on the screen, including dynamic updates such as moving the needle on a dial, changing brightness levels, and displaying the date and time.

It is assumed that the GUI interacts with a TFT display and uses a rotary encoder for user input, as well as other UI elements such as selection bars for menu navigation.

The file also defines various graphical components like brightness bars, dials, and selection bars.

Dependencies:

• This file relies on the global variables defined in globals.h and the libraries included in libraries.h.

Author

Juan Alberto Serrano Redondo.

3.25.2 Function Documentation

3.25.2.1 drawBrightnessBar()

Draws the brightness bar on the screen.

This function draws a visual representation of the current brightness level on the screen, showing the user the current setting.

Parameters

level	Current brightness level.
level	Current brightness level.

3.25.2.2 drawDialMarks()

```
void drawDialMarks ()
```

Draws the dial marks.

This function draws the marks around the dial, including numbers at angles 0, 60, 120, etc. It is used to set up the dial's appearance with evenly spaced markings.

Draws the marks and numbers at regular intervals around the dial.

3.25.2.3 drawNeedle()

```
void drawNeedle (
                int angle,
                int length,
                uint32_t color)
```

Draws a needle on the dial.

This function draws a needle on the dial at the specified angle and length, using the given color.

Parameters

angle	The angle at which to draw the needle (in degrees).
length	The length of the needle.
color	The color of the needle, represented as a 32-bit unsigned integer (usually RGB color).

This function draws a needle on the dial based on the specified angle and length.

Parameters

angle	Angle of the needle.					
length	Length of the needle.					
color	Color of the needle.					

3.25.2.4 drawSelectionBar()

```
void drawSelectionBar (
    int16_t y,
    bool isSelected,
    int currentIndex,
    int totalItems)
```

Draws a selection bar on the screen.

This function draws a selection bar at the specified vertical position. The bar will be drawn differently based on whether it is selected or not, and its appearance can change depending on the current and total items.

Parameters

У	Vertical position of the bar (in pixels).
isSelected	A boolean flag indicating whether the bar is selected.
currentIndex	Index of the currently selected item (starting from 0).
totalltems	Total number of items in the selection list.

3.25.2.5 printDateTime()

```
void printDateTime ( {\tt const\ RtcDateTime\ \&\ } dt)
```

Displays the date and time on the screen and in the serial monitor.

This function prints the current date and time on the screen, as well as in the serial monitor for debugging purposes.

Parameters

dt The current date and time in RtcDateTime format, typically retrieved from a real-time clock (RTC).

This function takes a RtcDateTime object, formats the time as HH:MM, and displays it both on the serial monitor and the TFT screen.

3.26 GUI.h 73

Parameters

dt The current date and time in RtcDateTime format.

3.25.2.6 setBrightness()

```
void setBrightness ( int \ level)
```

Sets the screen brightness level.

This function adjusts the brightness level of the screen based on the provided level value.

Parameters

level	The brightness level to set (usually between a predefined min and max value).
level	The brightness level to set.

3.25.2.7 updateDial()

```
void updateDial ()
```

Updates the dial by moving the needle to the new position.

This function is responsible for refreshing the dial display by updating the needle's position based on new data or changes in the system state.

3.26 GUI.h

Go to the documentation of this file.

```
00001 #ifndef GUI_H
00002 #define GUI_H
00003
00004 #include <globals/globals.h>
00005 #include braries.h>
00006
00040 void drawNeedle(int angle, int length, uint32_t color);
00041
00048 void drawDialMarks();
00049
00062 void drawSelectionBar(int16_t y, bool isSelected, int currentIndex, int totalItems);
00063
00070 void updateDial();
00071
00079 void setBrightness(int level);
08000
00089 void drawBrightnessBar(int level);
00098 void printDateTime(const RtcDateTime& dt);
00099
00100 #endif // GUI_H
```

3.27 automatic icon.h

```
00001 #if defined(__AVR_
00002
                                #include <avr/pgmspace.h>
00003 #elif defined(__PIC32MX__)
                             #define PROGMEM
00005 #elif defined(__arm_
00006
                             #define PROGMEM
00007 #endif
00008
00009 const unsigned short automatic_icon[ ] PROGMEM={0xffff, 0xffff, 
                  Oxffff, Oxffff
00010 0xffff, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                   Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00011 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                  0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff
00012 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xf0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00013 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0020, 0x0020, 0x0020, 0x0020, 0x0020, 0x0020, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00014 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                    0 \\ \text{x} \\ 00000, \ 0 \\ \text{x} \\ 000000, \ 0 \\ \text{x} \\ 000000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000,
                   0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00015 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x0000, 0x0020, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00016 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0020, 0x0000, 0x2945, 0x2965, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00017 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x4a69, 0x8430, 0x7bcf, 0x0020, 0x0000, 0x0000, 0x5aeb, 0xffff, 0xffff, 0x7bcf,
0x2104, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 00018 0xffff, 0x0000, 0x00000, 0x0000, 0x0000, 0x00000, 0x00000, 0x00000, 0x00000, 0x0
                    0x0000, 0x5acb, 0xffff, 0x52aa, 0xb5b6, 0xc638, 0xad55, 0xad55, 0xffff, 0xad55, 0xa514, 0xffff,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00019 0xffff, 0x0000, 0x18e3,
                   0x5acb, 0xffff, 0xf7be, 0x10a2, 0x8430, 0xffff, 0xffff, 0xffff, 0xf79e, 0x10a2, 0x0861, 0x39e7,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00020 0x0000, 0x6b6d, 0x73ae, 0xe73c,
                    0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xa534, 0x8430, 0x8410, 0xffdf, 0xd69a, 0xc638, 0xffff,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00021 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x8430, 0xffff, 0xffff, 0xffff,
                   0xffff, 0xffdf, 0x738e, 0x39e7, 0x4228, 0x0000, 0x0000, 0x0000, 0x39e7, 0xffff, 0xffff, 0x52aa,
                   0 \times 00000, 0 \times 00000,
00022 0x0000, 0x0000, 0x0000, 0x2104, 0x0000, 0x0020, 0x0000, 0x632c, 0xffff, 0x0000, 0x630c, 0xffff,
                    0x9cf3, 0x0861, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0020, 0x0000, 0x0841, 0x0841, 0x0000,
                    0x0000, 0x0000, 0x2104, 0x0000, 0x0000, 0x0000,
00023 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x73ae, 0xffff, 0x73ae, 0xb5b6, 0xffdf,
                   0x0000, 0x0000, 0x18e3, 0x0000, 0x0000, 0x0000,
00024 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x18c3, 0xc618, 0xffff, 0xffff, 0xffdf,
                    0xc638, 0x632c, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x2104, 0x0000, 0x0000, 0x0000,
00025 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0020, 0x5acb, 0xffff,
                   0xffff, 0xffff, 0xffff, 0x2965, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00026 0x0000, 0x4a49,
                    0xffff, 0xbdd7, 0x7bcf, 0xef7d, 0x39c7, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
0xffff, 0x7bcf, 0x0000, 0xffff, 0xef7d, 0x18e3, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
Oxffdf, Oxffdf, Oxffdf, Oxffdf, Oxffdf, Ox6b4d, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000, 0x18c3, 0xce79, 0xffff,
                   Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox6b4d, Ox0000, Ox0000, Ox0000, Ox0000, Ox0020,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00030 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0841, 0x0000, 0x3186, 0xffdf, 0xe73c,
                   0xef7d, 0xef7d, 0xef7d, 0xef7d, 0xef5d, 0xef5d, 0xbdf7, 0x0000, 0x0020, 0x0000, 0x0020, 0x00000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00031 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000, 0x0000,
                    0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00032 0xffff, 0xffff, 0xffff, 0x0000, 
                    0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                    0x0020, 0x0020, 0x0020, 0x0020, 0x0020, 0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00034 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                   0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00
```

```
0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00036 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                         0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 0xffff, 0x0000, 0x0000, 0x0000,
                         0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 0xffff, 0xf0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00039 0xffff, 
                        Oxffff, Oxffff
                        0xffff, 0xffff, 0xffff, 0xffff, 0xffff;
```

3.28 brightness icon.h

```
00001 #if defined(__AVR_
                                     #include <avr/pgmspace.h>
 00003 #elif defined( PIC32MX )
                                       #define PROGMEM
00004
00005 #elif defined(__arm
00006
                                #define PROGMEM
00007 #endif
00008
00009 const unsigned short brightness_icon[ ] PROGMEM={0xffff, 0xffff, 0xfffff
                        0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0xffff, 0xffff,
00010 0xffff, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox00000, Ox0000, Ox0000, Ox00000, Ox00000, Ox00000, Ox0000, Ox00000, O
                        0x0000, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00012 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff
00013 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00014 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00015 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                        0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00016 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
                        Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxfff
                        0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00017 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
                        0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00018 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xf000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 00019 0xffff, 0x0000, 0x00000, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000, 0x00000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0
                        0x0000, 0xfffff, 0xfffff, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00020 0x0000, 0xffff, 0x0000, 0x0000,
                        0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00021 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0x0000, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Ox0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00022 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Oxffff, Oxffff,
                        0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00023 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Oxffff, Oxffff,
                        Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000,
00024 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff,
                        0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                        Oxffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00025 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00026 0x0000, 0xffff, 0x0000, 0x0000,
                        0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00027 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000,
                        0x0000, 0xffff, 0xffff, 0x0fff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
```

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00028 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
               0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00030 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff,
               0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00031 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
               0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00032 0xfffff, 0xfffff, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00034 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000,\ 0xfffff,
Oxffff, Oxf0000, Ox0000, Ox00000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox00000, Ox0000, Ox0
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 0xffff, 0x0000,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 0xffff, 
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff);
```

3.29 color icon.h

```
00001 #if defined(__AVR_
00002
                     #include <avr/pgmspace.h>
00003 #elif defined(__PIC32MX__)
                      #define PROGMEM
00004
00005 #elif defined(__arm_
00006
                    #define PROGMEM
00007 #endif
00008
00009 const unsigned short color_icon[] PROGMEM={0xffff, 0xffff, 0xfff
             0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00010 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffdf, 0xffff, 0xf0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000,\ 0xffff,
             Oxffdf, Oxffff, Oxffff, Oxffff, Oxffff,
00011 0xffff, 0xffff, 0xffff, 0xffff, 0xffdf, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0 \\ \text{x} \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 000000, \ 0 \\ 000000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 000000, \ 0 \\ 000000, \ 0 \\ 0000
             0x0000, 0xf7be, 0xffff, 0xffff, 0xffff, 0xffff,
00012 0xffff, 0xffff, 0xffff, 0xffdf, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0xffdf, 0xffff, 0xffff, 0xffff,
00013 0xffff, 0xffff, 0xffdf, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0x0000, 0xffdf, 0xffff, 0xffff,
00014 0xffff, 0xffdf, 0x0000, 0x0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0xffdf, 0xffff,
00015 0xffdf, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffdf,
00016 0xffff, 0x0000, 0xffff, 0xffff,
             Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Oxffff, Oxffff, Ox0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00017 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
             Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Ox0000, Ox0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00018 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff, 0xffff,
             0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
             00019 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff, 0xffff, 0xffff,
             0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00020 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff,
             0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00021 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
             Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
             0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
```

3.30 empty_sun.h 77

```
00022 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                               0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
 00023 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xf000, 0x0000, 0x00000, 0x0000, 0x00000, 0x00000, 0x00000, 0x00000, 0x00000, 0x
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
 00024 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                               0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
 00025 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                              0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 00026 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
                               0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00027 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
                              Oxffff, Oxf0000,
0x0000, 0x00000, 0x00000, 0x00000, 0x00000, 0x00000, 0x00000, 0x0000, 0x0000, 
                               Oxffff, Oxf0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
 00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
                              Oxffff, Ox0000, Ox0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff
                               0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
 00031 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
                              0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffdf,
 00032 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                              Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, 0x0000, 0x0000, 0x0000, 0x0000,
                               0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
 00033 0xffff, 0xffff, 0xffdf, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                              0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00034 0xfffff, 0xfffff, 0xf7be, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x000
                               0x0000, 0x0000, 0xf7be, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x0000,\ 0x0000,
                              0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00036 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff,
                               Oxffdf, Oxffff, Oxffff, Oxffff, Oxffff,
 00037 0xffff, 0x0000, 0x0000, 0x0000,
                              0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff,
                              Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffdf, 0xffdf, 0xffff, 0xffff, 0xf7be, 0xef7d, 0xef7d, 0xffff, 
                               0xffff, 0xffff, 0xffff, 0xffff, 0xffff);
```

3.30 empty_sun.h

```
00001 // Generated by
                                                                                            : ImageConverter 565 Online
00002 // Generated from : luna.jpg
00003 // Time generated : Sun, 07 Jul 24 20:42:29 +0200 (Server timezone: CET)
00004 // Image Size
                                                                                            : 50x49 pixels
                                                                                       : 4900 bytes
00005 // Memory usage
00006
00007
00008 #if defined(__AVR_
00009
                                    #include <avr/pgmspace.h>
00010 #elif defined(__PIC32MX__)
00011
                                    #define PROGMEM
00012 #elif defined(__arm_
00013
                                    #define PROGMEM
00014 #endif
00015
00016 const unsigned short empty_sun[2450] PROGMEM={
00017 0xffff, 0xffff,
                        Oxffff, Oxffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00018 0xffff, 0xffff,
                       Oxffff, Oxffff
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00019 Oxffff, Oxffff,
                        Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00020 0xffff, 
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
```

```
00021 0xffff, 0xffff,
                          Oxffff, Oxffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00022 0xffff, 
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00023 0xffff, 0xffff,
                          Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00024 Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Oxfffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00025 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                           Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00026 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
                          0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00027 0xffff, 0xf0000,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox4a49, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00028 0xffff, 0xf0000, 0xffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00029 Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxfffff, Oxffffff, Oxffffff, Oxfffff, Oxffffff, Oxffffff, Oxffffff, Oxffffff, Oxffffff, Oxfffffff, Oxffffff, Ox
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxf000, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00030 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff,
                         Oxffff, Oxffff
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00031 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Ox0000, Ox0000,
                          0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00032 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Ox0000, Ox0000,
                         0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Oxffff, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00034 0xffff, 0x0000, 0xffff, 0xffff,
                         Oxffff, Oxffff
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00035 0xffff, 0x0000, 0xffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00036 Oxffff, Oxf0000,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff,
                         0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00039 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                         Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxf0000, Ox0000, Oxffff,
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00040 Oxffff, 
                          Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00041 0xffff, 0xffff,
                         Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00042 Oxffff, Oxffff,
                          Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00043 0xffff, 0xffff,
                         Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxfff
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00044 0xffff, 0xffff,
                          Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxfff
                         Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00045 0xffff, 
                          Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00046 0xffff, 
                          Oxffff, Oxffff,
                         0xffff, 0xffff, 0xffff, 0xffff, 0xffff);
```

3.31 ethernet active.h

00001 // Generated by : ImageConverter 565 Online 00002 // Generated from : luna.jpg

3.32 ethernet_icon.h 79

```
00003 // Time generated : Sun, 07 Jul 24 20:42:29 +0200 (Server timezone: CET)
00004 // Image Size : 50x49 pixels
00005 // Memory usage : 4900 bytes
00006
00007
00008 #if defined(__AVR__)
00009 #include <avr/pgmspace.h>
00010 #elif defined(__PIC32MX___)
         #define PROGMEM
00011
00012 #elif defined( arm
00013
        #define PROGMEM
00014 #endif
00015
00016 const unsigned short ethernet_active[2450] PROGMEM={0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000,
      0x00000,\ 0x00000,\ 0x00000,\ 0x00000,\ 0x00000,\ 0x00000,\ 0x00000,\ 0x00000,
00017 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000,
00018 0x0000, 0xfffff, 0x0000, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000,
00019 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
      Oxffff, Oxffff, Ox0000,
00020 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0x0000,
00021 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0x0000,
00022 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0x0000,
00023 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0x0000,
00024 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0x0000,
00025 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
      Oxffff, Oxffff, Ox0000,
00026 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000,
00027 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000,
00028 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
      Oxffff, Oxffff, Ox0000,
00029\ 0x0000,\ 0x0000,\ 0xffff,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,
      0x0000, 0x0000, 0x0000,
00030\ 0x0000,\ 0x0000,
      0x0000. 0x0000. 0x0000):
```

3.32 ethernet icon.h

```
00001 // Generated by
                                                                                                                          : ImageConverter 565 Online
 00002 // Generated from : luna.jpg
 00003 // Time generated : Sun, 07 Jul 24 20:42:29 +0200 (Server timezone: CET) 00004 // Image Size : 50x49 pixels 00005 // Memory usage : 4900 bytes
 00007
 00008 #if defined(__AVR__)
 00009
                                                 #include <avr/pgmspace.h>
 00010 #elif defined(__PIC32MX__)
                                               #define PROGMEM
 00011
 00012 #elif defined(__arm_
                                                  #define PROGMEM
 00013
 00014 #endif
 00015
00016 const unsigned short ethernet_icon[] PROGMEM={0xffff, 0xffff, 0x
                               Oxffff, Oxffff, Oxffff, Oxf000, Ox0000, Ox0000
 00017 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
                                 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
                                Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00018 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000
                                Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
 00019 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                                 0x0000, 0xffff, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                                0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
 00020 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                               0x0000, 0xffff, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x00000, 0x00000, 0x0000, 0x00000, 0x00000, 0x00000, 0x0000, 0x0000, 0
 00021 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                                 0x0000, 0xffff, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                                0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
 00022 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                                0x0000, 0xffff, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                                 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
```

```
00023 0xfffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00024 \ \text{Oxfifff}, \ 0\text{x}00000, \ 0\text{x}000000, \ 0\text{x}000000, \ 0\text{x}000000, \ 0\text{x}000000, \ 0\text{x}000000, \ 0
               0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00025 0xfffff, 0x0000, 0xffff,
                0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00026 0xffff, 0x0000, 0xffff,
               0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00027 0x0000, 0xffff,
                Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00029 0x0000, 0xffff,
                Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
                0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00030 0x0000, 0xffff,
               0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000, 0x0000, 0x00000, 0x00000, 0x00000, 0x00000, 0x0000, 0x00000, 
                Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00032\ 0x0000,\ 0x0000,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00033 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00034 0x0000, 0x0000,
               0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00035 0xffff, 0x0000, 0x0000,
                0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00036 0xffff, 0x0000, 0x0000,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00037 0xffff, 0x0000, 
               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00038 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00039 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00040 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00041 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00042 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00043 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xf0000, 0x0000, 0x0000, 0x0000, 0x0000,
               0x0000,\ 0x0000,\ 0xffff,\ 0xffff,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0x0000,\ 0xffff,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00044 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
                0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00045 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
               0xffff, 0xffff, 0xffff, 0xffff, 0xffff);
```

3.33 font icon.h

```
00001 #if defined(_AVR__)
00002    #include <avr/pgmspace.h>
00003 #elif defined(_PIC32MX__)
00004    #define PROGMEM
00005 #elif defined(_arm__)
00006    #define PROGMEM
00007 #endif
00008
00009 const unsigned short font_icon[] PROGMEM={0xffff, 0xffff, 0xf
```

3.33 font_icon.h 81

00010	Oxffff,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	0x0000,	0x0000,	0x0000,
							0x0000,					
		0xffff,										
00011	Oxffff,	0xffff,	Oxffff,	Oxffff,	0xffff,	Oxffff,	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
							0x0000,					
						Oxffff,		,	,	,	,	,
00012							0x0000,	0×0000.	0×0000.	0×0000.	0×0000.	0×0000.
00012							0x0000,					
		Oxffff,					ONOCCO,	OROGOO,	OROGOO,	020000,	ONOGOO,	ONOGOO,
00013							0x0000,	0**0000	0**0000	0**0000	0**0000	0**0000
00013							0x0000,					
							0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
00014		Oxffff,					0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
00014							0x0000,					
							0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0X0000,
00015						Oxffff,			0 5555	0 6666	0 6666	0 5555
00015	Oxffff,	Oxffff,	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	Oxffff,	Oxffff,	Oxffff,	OXIIII,
							0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
						Oxffff,						
00016							0x0000,					
							0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
						0xffff,						
00017							0x0000,					
	0x0000,	0xffff,	0xffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
	0x0000,	0x0000,	0x0000,	0x0000,	0xffff,	0xffff,						
00018	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	Oxffff,	0x0000,	0x0000,	Oxffff,	Oxffff,
							0x0000,					
						Oxffff,			,	,	,	
00019							0x0000,	Oxffff.	0×0000.	0×0000.	Oxffff.	Oxffff.
00013							0x0000,					
						0x0000,		·,	·/	~++ <i>,</i>	·/	J,
00000							0x0000,	Ovffff	0~0000	0~0000	Ovffff	Ovffff
00020							0x0000, 0xffff,					
	,			,	,			OXILII,	UXUUUU,	UXUUUU,	OXILII,	OXIIII,
00001						Oxffff,		0 5555	0 0000	0 5555	0 6666	0 5555
00021							Oxffff,					
							Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	Oxffff,
						0x0000,						
00022							Oxffff,					
	Oxffff,	0x0000,	0x0000,	0xffff,	0x0000,	0x0000,	0xffff,	0x0000,	0xffff,	0xffff,	0x0000,	0xffff,
						0x0000,						
00023							0xffff,					
	Oxffff,	0x0000,	0x0000,	0xffff,	0x0000,	0xffff,	0xffff,	0x0000,	0xffff,	0xffff,	0x0000,	0xffff,
	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,						
00024	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0xffff,	0xffff,	0x0000,	0x0000,	0xffff,	0xffff,	0xffff,
	0xffff,	0x0000,	0x0000,	0xffff,	0xffff,	0xffff,	0x0000,	0x0000,	0xffff,	0xffff,	0x0000,	0x0000,
	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,						
00025	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	Oxffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
	0x0000,	0x0000,	0x0000,	0x0000,	Oxffff,	Oxffff,	0x0000,	Oxffff,	Oxffff,	Oxffff,	Oxffff,	0x0000,
						0x0000,		•	·	,	,	,
00026							0x0000,	0x0000,	0x0000,	Oxffff.	Oxffff.	0xffff.
							0x0000,					
						0x0000,		,	,	,	,	,
00027							0x0000,	0×0000.	Oxffff.	Oxffff.	0×0000.	0×0000.
00027							0x0000,					
						Oxffff,		,	,	,	,	,
00028	Oxffff.	0x0000.	0x0000,	0x0000,	Oxffff.	0x0000.	0x0000,	0×0000.	Oxffff.	0×0000.	0×0000.	0×0000.
00020							0x0000,					
		Oxffff,					ONOCCO,	OMILIL,	ONIIII,	OMILIE,	OMITITI,	ONOGOO,
00020							0x0000,	0**0000	Owffff	0**0000	0**0000	0**0000
00023							0x0000,					
	,			,	,			UXIIII,	0x0000,	0x0000,	UXIIII,	UXIIII,
00000						Oxffff,	0xffff,	Ovffff	Ovffff	0~0000	0~0000	0~0000
00030							0x1111, 0xffff,					
								OXILII,	UXUUUU,	UXUUUU,	UXUUUU,	OXITEI,
00001						Oxffff,		0000	00000	0000	0000	0000
00031							0x0000,					
	,						0x0000,	uxu000,	UXUUUU,	UXUUUU,	UXUUUU,	UXUUUU,
						Oxffff,						
00032							0x0000,					
							0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
						0xffff,						
00033							0x0000,					
	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
						Oxffff,						
00034	Oxffff,	0xffff,	0xffff,	0xffff,	0xffff,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,
							0x0000,					
						Oxffff,		,	,	,	,	•
00035							0x0000,	0x0000.	0x0000.	0x0000,	0x0000.	0x0000,
							0x0000,					
						Oxffff,		/	/	/	/	/
00036							Oxffff,	0x0000.	0x0000.	0x0000.	0x0000.	0x0000.
							0x0000,					
						0xffff,		J,	J,	J,	J,	~/
00037							Oxffff,	0xffff	0xffff	$0 \times 0 \cap 0 \cap$	$0 \times 0 \cap 0 \cap$	0×0000
/							0x0000,					
		0xffff,					J,	J,	J,	~··-+++/	·····/	~/
00038							Oxffff,	Oxffff	Oxffff	Oxffff	Oxffff	0×0000
00000							0x0000,					
						0x0000,		ONTITL,	ONTTTT,	ONTTIL,	^VTTTT1	ONTTTT,
	OVTTTT'	OVTTTT'	OVTTTT'	OVTTTT'	OVITITI'	OVITITY)	,					

3.34 full sun.h

```
00001 // Generated by
                                                                                                             : ImageConverter 565 Online
00002 // Generated from : sol.jpg
00003 // Time generated : Sun, 07 Jul 24 20:42:51 +0200 (Server timezone: CET)
00004 // Image Size : 50x49 pixels
                                                                                                                : 4900 bytes
00005 // Memory usage
00006
00007
00008 #if defined(__AVR_
00009
                                            #include <avr/pgmspace.h>
00010 #elif defined(__PIC32MX__)
                                           #define PROGMEM
 00012 #elif defined( arm
                                           #define PROGMEM
00013
00014 #endif
00015
00016 const unsigned short full_sun[2450] PROGMEM={0xffff, 0xffff, 0xf
                            Oxffff, Oxfffff, Oxfffff, Oxfffff, Oxfffff, Oxfffff, Oxfffff, Oxffff, Oxffff, 
                             Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00017 Oxffff, Oxffff,
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00020 0xffff, 
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00021 Oxffff, Oxffff,
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00024 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
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00028 0xffff, 0x0000, 0x0000,
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00031 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0x0000, 0x0000,
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00032 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
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00033 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xf0ff, 0x0000, 0x0000, 0x0000,
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00034 0xffff, 0xf0000, 0x00000,
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00038 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
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00039 0xffff, 0xffff,
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3.35 granasat_logo.h

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  00042 Oxffff, 
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    00044 Oxffff, 
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  00045 0xffff, 
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    00046
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3.35 granasat_logo.h

```
00001 // Generated by
                                                                                                                        : ImageConverter 565 Online
00002 // Generated from : images.png
 00003 // Time generated : Wed, 17 Jul 24 21:08:31 +0200 (Server timezone: CET)
00004 // Image Size : 225x225 pixels
00005 // Memory usage : 101250 bytes
00006
00007
00008 #if defined( AVR
                                               #include <avr/pgmspace.h>
00010 #elif defined(__PIC32MX__)
                                               #define PROGMEM
00011
00012 #elif defined(__arm_
00013
                                              #define PROGMEM
00014 #endif
00015
00016 const unsigned short granasat_logo[] PROGMEM={0xffff, 0xffff, 0x
                                Oxffff, Oxffff,
                               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxfff
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                                0x54d8, 0x4497, 0x3476, 0x3456, 0x2c36, 0x2c36, 0x2c36, 0x3456, 0x4497, 0x54d8, 0x6538, 0x6d79,
                                0x85da, 0xa65b, 0xdf3d, 0xfffff, 0xfffff, 0xfffff, 0xfffff, 0xfffff, 0xfffff, 0xfffff, 0xfffff,
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                                0x6d59, 0x44d8, 0x3c77, 0x2c36, 0x2436, 0x2436, 0x2c36, 0x2c36, 0x2c36, 0x2c36, 0x2c36, 0x2c36,
                                0x2c56, 0x3456, 0x3456, 0x2c36, 0x2c36, 0x2436, 0x2436, 0x2436, 0x2c56, 0x4497, 0x4cd8, 0x6d59,
                                0xa63b, 0xcf1d, 0xef9e, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
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                                0x2416, 0x13d5, 0x1bf5, 0x2c36, 0x2c36, 0x2c36, 0x2c36, 0x2c36, 0x2c36, 0x2c416, 0x2416, 0x1bf5,
                                0x1bf6, 0x1c15, 0x3c97, 0x5d38, 0x9e3b, 0xdf5e, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
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00019 0xffff, 0xffff,
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                                0x54d8, 0xa67c, 0x7dba, 0x2436, 0x2c36, 0x2c36, 0x2c36, 0x3d76, 0x2c36, 0x2d16, 0x2c36, 0x3d56,
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	0×3477	0×7579	Ovef9e	0×6d59	0x2416,	0 x 2 4 1 6	0×5448	Ovd71d	0×13d5	0x2c36	0x2416	0×54f8
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00023												
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	0x0947.	0x0947.	0x1188.	0x120a.	0x1a6d,	0xlacf.	0x2351.	0x2393.	0x2c15.	0x2c77.	0x3498.	0x2c57.
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3.35 granasat logo.h

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	0x1a4c,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x0000,	0x2330,	0x2c77,	0x2c36,
			0x3456,									
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3.35 granasat logo.h 93

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                                                    Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxfffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxfff
                                                      Oxffff, Oxffff,
                                                      0xffff, 0xffff, 0xf7bf, 0xe77e, 0xc6fd, 0xa65b, 0x95fa, 0x7559, 0x5cf8, 0x4477, 0x3457, 0x2c36,
                                                      0x2c36, 0x3456, 0x4497, 0x5cf8, 0x7559, 0x95fa, 0xa65b, 0xc6fd, 0xe77e, 0xf7df, 0xfffff, 0xfffff,
                                                      Oxffff, Oxffff,
                                                   Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff
                                                      Oxffff, Oxffff);
 00136
```

3.36 images.h

```
00001 // images.h
00002
00003 #ifndef IMAGES H
00004 #define IMAGES_H
00005
00006 #include "automatic icon.h"
00007 #include "brightness_icon.h"
00008 #include "color_icon.h"
00009 #include "empty_sun.h"
00010 #include "ethernet_active.h"
00011 #include "ethernet_icon.h"
00012 #include "font_icon.h"
00013 #include "full sun.h"
00014 #include "granasat_logo.h"
00015 #include "manual_icon.h'
00016 #include "settings_icon.h"
00017 #include "step_icon.h"
00018
00019 #endif // TMAGES H
```

3.37 manual icon.h

```
00001 #if defined(__AVR_
                                                   #include <avr/pgmspace.h>
00002
00003 #elif defined(__PIC32MX___)
00004
                                              #define PROGMEM
00005 #elif defined( arm
                                              #define PROGMEM
00006
00007 #endif
00008
00009 const unsigned short manual_icon[ ] PROGMEM={0xffff, 0xffff, 0xf
                              0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              Oxffff, Oxffff,
00010 0xffff, 0x0000, 0x0000,
                               0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
                               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00011 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0x00000,\ 0xfffff,
                              Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00012 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000
                               Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00013 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                              0 \\ \text{x} \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 000000, \ 0 \\ 000000, \ 0 \\ 00000, \ 0 \\ 00000, \ 0 \\ 000000, \ 0 \\ 000000, \ 0 \\ 0000
                               0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
```

```
00015 0xfffff, 0xfffff, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00016 0xfffff, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x2104, 0xbdf7, 0x2945, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00017 0xfffff, 0xfffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x10a2, 0x0000, 0x0000, 0x0020, 0x0000, 0x630c, 0xffff, 0xbdf7, 0xffff, 0x6b6d, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00018 0xffff, 0x0000, 0x1082,
            0xa514, 0xf79e, 0x5acb, 0x0000, 0x0000, 0x10a2, 0xef5d, 0x8430, 0x0000, 0x7bcf, 0xf79e, 0x18c3,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00019 0xfffff, 0x0000, 0x39e7, 0xef7d,
            0xffff, 0xffff, 0xffff, 0xbdf7, 0x0841, 0x1082, 0xdefb, 0xa534, 0x0020, 0x9cd3, 0xe73c, 0x10a2,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00020 0x0000, 0x2104, 0xf79e, 0xffff,
            0x6b6d, 0x5aeb, 0x9cd3, 0xffff, 0xbdd7, 0x0000, 0x4a49, 0xf79e, 0xe71c, 0xf79e, 0x52aa, 0x0000,
            0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00021 0x0000, 0x9cd3, 0xffff, 0x4a69,
            0x0000, 0x0000, 0x0000, 0xa534, 0xffff, 0x4208, 0x0000, 0x0841, 0x8c51, 0x0861, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00022 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x069a, 0xffff, 0x18c3,
            0x0020, 0x0861, 0x0000, 0x738e, 0xffff, 0x6b6d, 0x0000, 0x0000, 0x31a6, 0x0000, 0x0000, 0x0000,
0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x00000, 0x00000, 0x0000, 0x0000, 0x0000, 0x00000, 0x00000, 0x00000, 0x00000, 0x000000, 0x00000, 0x00000, 0x00000, 0x00000, 0x00000, 0x00000, 0x0000
            0x0000, 0x0000, 0x0000, 0xa514, 0xffff, 0x18c3, 0x0861, 0x94b2, 0xd69a, 0x9cf3, 0x0861, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00024 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0841, 0xbdf7, 0xffff,
            0x5acb, 0x4228, 0x8c71, 0xffff, 0x738e, 0x0000, 0x39e7, 0xe73c, 0x0000, 0xdedb, 0x4a49, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00025 0x0000, 0x94b2,
            0xffff, 0xffff, 0xe71c, 0x630c, 0x0000, 0x0000, 0x0000, 0x8c71, 0xd69a, 0x94b2, 0x0861, 0x0020,
            0x0020, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00026 0x0000, 0x6b4d, 0xbdf7,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00027 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x8c71, 0xdedb, 0xd6ba, 0xdedb, 0xffff, 0xffff,
            0xffff, 0xffff, 0xffff, 0xffff, 0x9cd3, 0x9cd3, 0x4208, 0x0020, 0x0000, 0x0000, 0x0000, 0x4a49,
            0x6b6d, 0x0861, 0x0000, 0x0000, 0x0000, 0x0000,
00028 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xad55, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
            0xffff, 0xffff, 0xffff, 0xef7d, 0x52aa, 0x4208, 0x0000, 0x0000, 0x0000, 0x4a49, 0xce79, 0xffff,
            0xbdd7, 0x1082, 0x0000, 0x0000, 0x0000, 0xffff,
00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xa534, 0xffff, 0xffdf, 
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00030 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xa534, 0xffdf, 0xffbe, 0xffff, 0xffff, 0xffff,
            Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxef7d, Ox632c, Ox0020, Ox0000,
            0x0020, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00031 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xa514, 0xffff, 0xffff, 0xd6ba, 0x7bef, 0x7bef,
            0x7bef, 0x7bef, 0x7bef, 0x7bef, 0x7bef, 0x7bef, 0x7bef, 0x73ae, 0x7bcf, 0x2104, 0x0000, 0x0000, 0x0020,
            0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00032 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x18c3, 0x73ae, 0x73ae, 0x18c3, 0x0000, 0x0000,
            0x00000,\ 0x00000,
            0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020,
            0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00034 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0020, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff
00036 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
            Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
            Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 0xffff, 0xf0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
            0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff);
```

3.38 settings_icon.h

```
00001 #if defined(_AVR_)
00002 #include <avr/pgmspace.h>
00003 #elif defined(_PIC32MX__)
00004 #define PROGMEM
00005 #elif defined(_arm__)
00006 #define PROGMEM
00007 #endif
```

3.38 settings icon.h

```
00009 const unsigned short settings_icon[] PROGMEM={0xffff, 0xffff, 0x
           0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           Oxffff, Oxffff,
00010 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
           Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00011 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
           Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00012 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00013 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
            0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00014 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00015 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00016 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00017 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000,
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00018 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
           Oxffff, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00019 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
           Oxffff, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00020 0x0000, 0xffff, 0xffff, 0xffff,
           Oxffff, Oxffff, Oxffff, Oxffff,
                                                                      Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00021 0x0000, 0xffff, 0xffff, 0xffff,
           0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00022 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff, 0xffff, 0xffff,
           0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00023 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00024 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
           00025 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
           0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00026 0x0000, 0xffff, 0xffff, 0xffff,
           Oxffff, Oxffff, Ox0000, Ox0000, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxf0000, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00027 0x0000, 0xffff, 0xfffff, 0xfffff,
           Oxffff, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00028 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
           Oxffff, Ox0000, Ox0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
           Oxffff, Oxf0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Ox0000, Oxffff,
00030 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000,
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00031 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00032 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00034 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000. 0x0000.
           0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00036 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
           Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
           0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff
```

```
00038 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
```

3.39 step_icon.h

```
00001 #if defined(__AVR_
                                       #include <avr/pgmspace.h>
  00003 #elif defined(__PIC32MX__)
 00004
                                    #define PROGMEM
 00005 #elif defined(__arm_
 00006
                                  #define PROGMEM
 00007 #endif
 00009 const unsigned short step_icon[] PROGMEM={0xffff, 0xffff, 0xffff
                        Oxffff, Oxffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00010 0xffff, 0xf0000, 0x00000,
                       0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xfffff, 0xfffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
 00011 0xffff, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xfffff, 0xffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00012 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000,\ 0x0000,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
 00013 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xf0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00014 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff,
 00015 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00016 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
 00017 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                        Oxffff, Oxffff,
                       0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
00018 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0xffff, 0xfffff, 0xffff, 0xfffff, 0xffff, 0xffff
                       0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
 00019 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000,
                        0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00020 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0x0000, 0xffff, 0xffff, 0x0000,
                       0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0xffff,
                       0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
00021 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff, 0xffff,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0x0000, 0x0000, 0xffff,
                        0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
00022 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xf000, 0x0000, 0x0000, 0xffff,
                       Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxf0000, Ox0000, Ox0000, Oxffff,
                       0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
 00023 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000,
                       0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
                        Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000,
 00024 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
                       Oxffff, Oxffff,
                       Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000,
 00025 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                        Oxffff, Oxffff,
                        Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000,
 00026 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 00027 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 
                       Oxffff, Oxffff
                        Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Ox0000,
 00028 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                       Oxffff, Oxffff,
                       Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Oxffff,
00029 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                        Oxffff, Oxffff,
                        Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Oxffff,
 00030 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 
                        Oxffff, Oxffff,
                       Oxffff, Oxffff, Ox0000, Ox0000, Ox0000, Oxffff,
 00031 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
                       Oxffff, Oxfffff, Oxffff, Oxfff
                        Oxffff, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
```

```
00032 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
      Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Ox0000, Ox0000,
      0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00033 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
      0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000, 0xffff, 0xffff, 0xffff,
00034 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00035 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff,
00036 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff,
      Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00037 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0x0000, 0x0000, 0x0000,
      0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0xffff, 0xffff,
      Oxffff, Oxffff, Oxffff, Oxffff, Oxffff, Oxffff,
00038 Oxffff, Oxffff,
      0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0000, 0x0ffff, 0xffff, 0xffff, 0xffff, 0xffff,
      0xffff, 0xffff, 0xffff, 0xffff, 0xffff, 0xffff);
```

3.40 libraries.h File Reference

This header file groups all the libraries and external dependencies required for the project. Including this file in the code ensures the correct inclusion of all necessary libraries, simplifying dependency management and keeping the main code clean and organized.

```
#include <Arduino.h>
#include <freertos/FreeRTOS.h>
#include <freertos/task.h>
#include <BfButton.h>
#include <TFT_eSPI.h>
#include <EthernetENC.h>
#include <SPI.h>
#include <ArcelStapper.h>
#include <AccelStapper.h>
#include "icons/images.h"
#include <custom_fonts/custom_fonts.h>
```

3.40.1 Detailed Description

This header file groups all the libraries and external dependencies required for the project. Including this file in the code ensures the correct inclusion of all necessary libraries, simplifying dependency management and keeping the main code clean and organized.

Author

Juan Alberto Serrano Redondo

Included libraries:

- · Arduino.h: Provides essential functions for interacting with Arduino hardware.
- FreeRTOS: Enables the use of the real-time operating system (RTOS) on compatible microcontrollers.
- · BfButton: Provides advanced functionalities for handling buttons.

- TFT_eSPI: Facilitates communication and control of TFT displays.
- EthernetENC: Provides support for Ethernet communication using the ENC28J60 chip.
- · SPI: Serial Peripheral Interface communication protocol.
- ThreeWire: Library for communication on three-wire buses.
- RtcDS1302: Provides functions for interacting with the DS1302 RTC module.
- · AccelStepper: Enables control of stepper motors.
- · Icons: Defines all icons used in the project's graphical interface.
- · Fonts: Defines the fonts used in the project.

Including this file in any part of the project ensures that all necessary dependencies are available and correctly configured.

3.41 libraries.h

Go to the documentation of this file.

```
00001
00025 #ifndef LIBRARIES_H
00026 #define LIBRARIES_H
00027
00028 #include <Arduino.h>
00029 #include <freertos/FreeRTOS.h>
00030 #include <freertos/task.h>
00031 #include <fferentos/task.h>
00032 #include <Fferentos/task.h>
00033 #include <Fferentos/task.h>
00033 #include <Fferentos/task.h>
00033 #include <FfreeRTOS.h>
00034 #include <FfreeRTOS.h>
00035 #include <FfreeRTOS.h>
00036 #include <FfreeRTOS.h>
00037 #include <FfreeRTOS.h>
00036 #include <FfreeRTOS.h>
00037 #include <FfreeRTOS.h>
00037 #include <AccelStepper.h>
00038 #include "icons/images.h" // Includes all necessary icons
00039 #include <custom_fonts/custom_fonts.h>
00040
00041 #endif // LIBRARIES_H
```

3.42 main.cpp File Reference

Main project file.

```
#include <globals/globals.h>
#include <libraries.h>
#include <setup/setup.h>
```

Functions

• void loop ()

Initial system configuration and RTOS task setup.

3.42.1 Detailed Description

Main project file.

3.42.2 Function Documentation

3.42.2.1 loop()

```
void loop ()
```

Initial system configuration and RTOS task setup.

The setup function is responsible for initializing the system's peripherals and configuring the RTOS tasks. The use of an RTOS eliminates the need for traditional looping within the main loop function.

3.43 motor/motor.cpp File Reference

Implementation file for motor control functions.

```
#include "motor.h"
#include <globals/globals.h>
#include <libraries.h>
```

Functions

· void moveMotor (int steps)

Moves the stepper motor a specified number of steps.

3.43.1 Detailed Description

Implementation file for motor control functions.

Author

Juan Alberto Serrano Redondo

This file contains the implementation of functions used to control the stepper motor, including moving the motor a specified number of steps.

3.43.2 Function Documentation

3.43.2.1 moveMotor()

```
void moveMotor (
          int steps)
```

Moves the stepper motor a specified number of steps.

This function controls the stepper motor by setting the direction pin and generating step pulses to move the motor. It updates the motor's position and refreshes the screen if the current menu is MANUAL or AUTO.

Parameters

steps

The number of steps to move the motor. Positive values move the motor in one direction, and negative values move it in the opposite direction.

3.44 motor/motor.h File Reference

Header file for motor control functions.

Functions

• void moveMotor (int steps)

Moves the stepper motor a specified number of steps.

3.44.1 Detailed Description

Header file for motor control functions.

Author

Juan Alberto Serrano Redondo

This file contains the declarations of functions and variables used for controlling a stepper motor. It defines the necessary pins and functions to move the motor and update the screen based on the motor's position.

3.44.2 Function Documentation

3.44.2.1 moveMotor()

```
void moveMotor (
          int steps)
```

Moves the stepper motor a specified number of steps.

This function controls the stepper motor by setting the direction pin and generating step pulses to move the motor. It updates the motor's position and refreshes the screen if the current menu is MANUAL or AUTO.

Parameters

steps

The number of steps to move the motor. Positive values move the motor in one direction, and negative values move it in the opposite direction.

3.45 motor.h 105

3.45 motor.h

Go to the documentation of this file.

```
00001

00011 #ifndef MOTOR_H

00012 #define MOTOR_H

00013

00025 void moveMotor(int steps);

00026

00027 #endif // MOTOR_H
```

3.46 project_tasks/projectTasks.cpp File Reference

Header file for system task management.

```
#include "projectTasks.h"
#include <motor/motor.h>
#include <GUI/GUI.h>
#include <button/button.h>
#include <libraries.h>
#include <globals/globals.h>
```

Functions

void taskShowTime (void *pvParameters)

Task to display the current time on the screen.

void taskStartScreen (void *pvParameters)

Task to initialize and display the startup screen.

void taskUpdateScreen (void *pvParameters)

Task to update the screen based on the current menu.

void taskScreenTimeout (void *pvParameters)

Task to manage screen timeout and automatic brightness adjustment.

void rotarymotorTask (void *pvParameters)

Task for managing the rotary encoder.

void motorTask (void *pvParameters)

Task for controlling the motor.

void taskEthernet (void *pvParameters)

Task for managing Ethernet communication.

void taskEncoder (void *pvParameters)

Task for handling encoder-related tasks.

void taskButtonPress (void *pvParameters)

Task for handling button press events.

3.46.1 Detailed Description

Header file for system task management.

This header file contains function for managing system tasks, user interface on the screen, Ethernet communication, stepper motor control, and rotary encoder handling.

Author

Juan Alberto Serrano Redondo.

3.46.2 Function Documentation

3.46.2.1 motorTask()

Task for controlling the motor.

This task adjusts the motor speed based on the rotary encoder's state. It operates only when the menu is set to AUTO.

Parameters

ĺ	pvParameters	Pointer to task parameters (not used).	1
---	--------------	--	---

3.46.2.2 rotarymotorTask()

Task for managing the rotary encoder.

This task reads the state of the rotary encoder and updates the position and display accordingly. It only operates when the menu is set to AUTO.

Parameters

pvPa	arameters	Pointer to task parameters (not used).
------	-----------	--

3.46.2.3 taskButtonPress()

```
void taskButtonPress (
     void * pvParameters)
```

Task for handling button press events.

This task processes button presses, including single, double, and long presses, and executes the corresponding handlers.

Parameters

pvParameters	Pointer to task parameters (not used).
--------------	--

3.46.2.4 taskEncoder()

Task for handling encoder-related tasks.

This task processes the rotary encoder input to navigate menus and adjust settings. It updates the display based on the current menu and encoder position.

Parameters

pvParameters Pointer to task parameters (not	
--	--

3.46.2.5 taskEthernet()

Task for managing Ethernet communication.

This task handles Ethernet client connections and commands. It provides a menu for controlling the motor and updates the Ethernet status.

Parameters

|--|

3.46.2.6 taskScreenTimeout()

Task to manage screen timeout and automatic brightness adjustment.

Handles screen timeout and controls brightness and automatic shutdown.

Parameters

ny Paramatara	Pointer to task parameters (not used).
pvrarameters	rolliter to task parameters (not used).

3.46.2.7 taskShowTime()

```
void taskShowTime (
     void * pvParameters)
```

Task to display the current time on the screen.

This task shows the current time on the screen if the current menu is not the initial screen.

Parameters

D	Deinten to to all more of the control (more control)
pvParameters	Pointer to task parameters (not used).
,	

3.46.2.8 taskStartScreen()

```
void taskStartScreen (
     void * pvParameters)
```

Task to initialize and display the startup screen.

Configures and shows the initial screen, then switches to the main menu.

Parameters

pvParameters	Pointer to task parameters (not used).

3.46.2.9 taskUpdateScreen()

```
void taskUpdateScreen (
     void * pvParameters)
```

Task to update the screen based on the current menu.

Updates the screen according to the current menu and commands received in the queue.

Parameters

pvParameters	Pointer to task parameters (not used).

3.47 project_tasks/projectTasks.h File Reference

Header file for system task management.

```
#include <libraries.h>
```

Functions

void taskUpdateScreen (void *pvParameters)

Task to update the screen based on the current menu.

void taskStartScreen (void *pvParameters)

Task to initialize and display the startup screen.

void taskShowTime (void *pvParameters)

Task to display the current time on the screen.

void taskScreenTimeout (void *pvParameters)

Task to manage screen timeout and automatic brightness adjustment.

void rotarymotorTask (void *pvParameters)

Task for managing the rotary encoder.

void motorTask (void *pvParameters)

Task for controlling the motor.

void taskEthernet (void *pvParameters)

Task for managing Ethernet communication.

void taskEncoder (void *pvParameters)

Task for handling encoder-related tasks.

void taskButtonPress (void *pvParameters)

Task for handling button press events.

3.47.1 Detailed Description

Header file for system task management.

This header file contains function declarations for managing system tasks, user interface on the screen, Ethernet communication, stepper motor control, and rotary encoder handling.

Note

Ensure necessary libraries and definitions are included in the corresponding .cpp file.

Adjust constants and configurations according to hardware requirements.

3.47.2 Function Documentation

3.47.2.1 motorTask()

Task for controlling the motor.

This task adjusts the motor speed based on the rotary encoder's state. It operates only when the menu is set to AUTO.

Parameters

s (not used).	Pointer to task parameters	pvParameters
---------------	----------------------------	--------------

3.47.2.2 rotarymotorTask()

Task for managing the rotary encoder.

This task reads the state of the rotary encoder and updates the position and display accordingly. It only operates when the menu is set to AUTO.

Parameters

```
pvParameters Pointer to task parameters (not used).
```

3.47.2.3 taskButtonPress()

```
void taskButtonPress (
    void * pvParameters)
```

Task for handling button press events.

This task processes button presses, including single, double, and long presses, and executes the corresponding handlers.

Parameters

pvParameters	Pointer to task parameters (not used).

3.47.2.4 taskEncoder()

Task for handling encoder-related tasks.

This task processes the rotary encoder input to navigate menus and adjust settings. It updates the display based on the current menu and encoder position.

Parameters

	pvParameters	Pointer to task parameters (not used).	1
--	--------------	--	---

3.47.2.5 taskEthernet()

Task for managing Ethernet communication.

This task handles Ethernet client connections and commands. It provides a menu for controlling the motor and updates the Ethernet status.

Parameters

pvParameters Pointer to task parameters (not used

3.47.2.6 taskScreenTimeout()

Task to manage screen timeout and automatic brightness adjustment.

Handles screen timeout and controls brightness and automatic shutdown.

Parameters

pvParameters	Pointer to task parameters (not used).	
--------------	--	--

3.47.2.7 taskShowTime()

```
void taskShowTime (
     void * pvParameters)
```

Task to display the current time on the screen.

This task shows the current time on the screen if the current menu is not the initial screen.

3.48 projectTasks.h

Parameters

pvParameters Pointer to task parameters (not	١.
--	----

3.47.2.8 taskStartScreen()

Task to initialize and display the startup screen.

Configures and shows the initial screen, then switches to the main menu.

Parameters

pvParameters Pointer to task parameters (not used).

3.47.2.9 taskUpdateScreen()

Task to update the screen based on the current menu.

Updates the screen according to the current menu and commands received in the queue.

Parameters

by Parameters Pointer to task parameters (not used	pvParameters	Pointer to task parameters (not used).
--	--------------	--

3.48 projectTasks.h

Go to the documentation of this file.

```
00001
00013 #ifndef PROJECTTASK_H
00014 #define PROJECTTASK_H
00015 #include <libraries.h>
00016
00017 // LCD tasks
00018 void taskUpdateScreen(void *pvParameters);
00019 void taskStartScreen(void *pvParameters);
00020 void taskShowTime(void *pvParameters);
00021 void taskScreenTimeout (void *pvParameters);
00023 // Motor tasks
00024 void rotarymotorTask(void *pvParameters);
00025 void motorTask(void *pvParameters);
00026
00027 // Ethernet tasks
00028 void taskEthernet(void *pvParameters);
00029
00030 // Rotary encoder tasks
00031 void taskEncoder(void *pvParameters);
00032 void taskButtonPress(void *pvParameters);
00034 #endif // PROJECTTASK_H
```

3.49 setup/setup.h File Reference

Contains all setup configurations for the project including Ethernet, LCD, Motor, Pin, RTC, and Task setups.

```
#include <globals/globals.h>
#include <libraries.h>
#include <GUI/GUI.h>
#include project_tasks/projectTasks.h>
```

Functions

• void setup ()

3.49.1 Detailed Description

Contains all setup configurations for the project including Ethernet, LCD, Motor, Pin, RTC, and Task setups.

3.49.2 Function Documentation

3.49.2.1 setup()

```
void setup ()
```

Ethernet setup configuration for ENC28J60 module.

Initializes SPI communication and configures the Ethernet with the provided MAC address and IP.

- < Initializes SPI communication
- < CS pin for ENC28J60 module
- < Start Ethernet with MAC address and IP

LCD setup configuration for the TFT display.

Configures serial communication, initializes the display, sets text properties, and creates necessary queues and semaphores for screen management.

- < Initialize serial communication at 115200 baud
- < Initialize TFT display
- < Disable text wrapping
- < Set text size to small
- < Set display rotation
- < Create a queue for screen updates
- < Set initial screen brightness

- < Enable byte swapping for better display rendering
- < Create a mutex for controlling screen updates

Motor setup configuration.

Configures motor speed, acceleration, and reads initial state from encoder.

- < Read initial state of the encoder
- < Set maximum motor speed
- < Set motor acceleration

Pin setup configuration.

Configures the pins for the encoder and motor control.

- < Set CLK pin as input with pull-up resistor
- < Set DT pin as input with pull-up resistor
- < Set direction pin as output
- < Set step pin as output

RTC setup configuration.

Initializes the Real-Time Clock (RTC) and sets the date and time based on the compilation time. Verifies if the RTC is write-protected and ensures it is running.

- < Initialize RTC communication
- < Display the compilation date
- < Display the compilation time
- < Set compiled date and time

Check if the RTC's date and time are valid, and if not, set the compiled date and time.

< Set RTC to compilation time

Check if the RTC is write-protected, and disable write protection if necessary.

< Disable write protection

Check if the RTC is running, and start it if it is not.

- < Start RTC
- < Get the current date and time from the RTC

Compare the RTC time with the compiled time and update the RTC if necessary.

< Update RTC to compiled date and time

Task setup configuration.

Creates various FreeRTOS tasks for managing display, button presses, Ethernet, motor control, and screen updates.

- < Create task for displaying time
- < Create task for starting the screen (core 0)
- < Create task for reading encoder (core 0)
- < Create task for managing screen timeout
- < Create task for handling button presses
- < Create task for Ethernet communication
- < Create task for updating screen (core 1)
- < Create task for rotary motor control
- < Create task for motor control
- < Start the FreeRTOS scheduler

3.50 setup.h

Go to the documentation of this file.

```
00006 #ifndef SETUP H
00007 #define SETUP_H
00009 #include <globals/globals.h>
00010 #include braries.h>
00011 #include <GUI/GUI.h>
00012 #include <project_tasks/projectTasks.h>
00013 void setup(){
           SPI.begin();
00020
            Ethernet.init(26);
00021
            Ethernet.begin(mac, ip);
00029
            Serial.begin(115200);
00030
           tft.init();
00031
           tft.setTextWrap(false);
00032
            tft.setTextSize(1);
00033
            tft.setRotation(1);
00034
            screenUpdateQueue = xQueueCreate(10, sizeof(ScreenUpdateCommand));
00035
            setBrightness(brightnessLevel);
00036
            tft.setSwapBytes(true);
           gatekeeper = xSemaphoreCreateMutex();
aLastState = digitalRead(CLK);
00037
00045
            motor.setMaxSpeed(2000.0);
00046
            motor.setAcceleration(1000.0);
00053
            pinMode(CLK, INPUT_PULLUP);
           pinMode (DT, INPUT_PULLUP);
pinMode (DIR_PIN, OUTPUT);
pinMode (STEP_PIN, OUTPUT);
00054
00055
00056
            Rtc.Begin();
00066
            Serial.print("compiled: ");
            Serial.print(__DATE__);
Serial.print(" ");
00067
00068
            Serial.println(__TIME__);
00069
00071
            RtcDateTime compiled = RtcDateTime(__DATE__, __TIME__);
00076
            if (!Rtc.IsDateTimeValid()) {
00077
                 Serial println("RTC lost confidence in the DateTime! Setting compilation date and time.");
00078
                Rtc.SetDateTime(compiled);
00079
08000
00084
            if (Rtc.GetIsWriteProtected()) {
                Serial.println("RTC was write protected, enabling writing now");
00086
                Rtc.SetIsWriteProtected(false);
00087
00088
00092
           if (!Rtc.GetIsRunning()) {
00093
                Serial.println("RTC was not actively running, starting now");
00094
                Rtc.SetIsRunning(true);
00095
00096
00097
           RtcDateTime now = Rtc.GetDateTime();
00102
            if (now < compiled) {</pre>
                Serial.println("RTC is older than compile time! Updating DateTime.");
00103
00104
                Rtc.SetDateTime(compiled);
00105
            } else if (now > compiled) {
00106
                Serial.println("RTC is newer than compile time. (this is expected)");
00107
            } else if (now == compiled) {
00108
                Serial.println("RTC is the same as compile time! (not expected but all is fine)");
00109
00110
            xTaskCreatePinnedToCore(taskShowTime, "ShowTime", 16384, NULL, 1, NULL, 1);
00117
            xTaskCreatePinnedToCore(taskStartScreen, "TaskScreenStart", 16384, NULL, 5, NULL, 0);
           xTaskCreatePinnedToCore(taskEncoder, "TaskEncoder", 16384, NULL, 3, NULL, 0);
xTaskCreatePinnedToCore(taskEncoder, "TaskEncoder", 16384, NULL, 10, NULL, 1);
xTaskCreatePinnedToCore(taskButtonPress, "ButtonPress", 16384, NULL, 3, NULL, 0);
xTaskCreatePinnedToCore(taskEthernet, "TaskEthernet", 16384, NULL, 7, NULL, 1);
00118
00119
00120
00121
            xTaskCreatePinnedToCore(taskUpdateScreen, "UpdateScreen", 16384, NULL, 2, NULL, 0); xTaskCreate(rotarymotorTask, "Rotary motor Task", 2048, NULL, 4, NULL); xTaskCreate(motorTask, "Motor Task", 2048, NULL, 6, NULL);
00122
00123
00124
00125
            vTaskStartScheduler();
            ScreenUpdateCommand initialCommand = UPDATE_MAIN_MENU;
00127
00128
            xQueueSend(screenUpdateQueue, &initialCommand, portMAX_DELAY);
00130 #endif // COMBINED_SETUP_H
```

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