**Listing 1. Inicjalizacja sterownika wyświetlacza LCD-TFT**

void ili9341\_Init**(**void**)**

**{**

/\* Initialize ILI9341 low level bus layer \*/

LCD\_IO\_Init**();**

/\* Configure LCD \*/

ili9341\_WriteReg**(**0xCA**);**

ili9341\_WriteData**(**0xC3**);**

ili9341\_WriteData**(**0x08**);**

ili9341\_WriteData**(**0x50**);**

ili9341\_WriteReg**(**LCD\_POWERB**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0xC1**);**

ili9341\_WriteData**(**0x30**);**

ili9341\_WriteReg**(**LCD\_POWER\_SEQ**);**

ili9341\_WriteData**(**0x64**);**

ili9341\_WriteData**(**0x03**);**

ili9341\_WriteData**(**0x12**);**

ili9341\_WriteData**(**0x81**);**

ili9341\_WriteReg**(**LCD\_DTCA**);**

ili9341\_WriteData**(**0x85**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x78**);**

ili9341\_WriteReg**(**LCD\_POWERA**);**

ili9341\_WriteData**(**0x39**);**

ili9341\_WriteData**(**0x2C**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x34**);**

ili9341\_WriteData**(**0x02**);**

ili9341\_WriteReg**(**LCD\_PRC**);**

ili9341\_WriteData**(**0x20**);**

ili9341\_WriteReg**(**LCD\_DTCB**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteReg**(**LCD\_FRMCTR1**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x1B**);**

ili9341\_WriteReg**(**LCD\_DFC**);**

ili9341\_WriteData**(**0x0A**);**

ili9341\_WriteData**(**0xA2**);**

ili9341\_WriteReg**(**LCD\_POWER1**);**

ili9341\_WriteData**(**0x10**);**

ili9341\_WriteReg**(**LCD\_POWER2**);**

ili9341\_WriteData**(**0x10**);**

ili9341\_WriteReg**(**LCD\_VCOM1**);**

ili9341\_WriteData**(**0x45**);**

ili9341\_WriteData**(**0x15**);**

ili9341\_WriteReg**(**LCD\_VCOM2**);**

ili9341\_WriteData**(**0x90**);**

ili9341\_WriteReg**(**LCD\_MAC**);**

ili9341\_WriteData**(**0xC8**);**

ili9341\_WriteReg**(**LCD\_3GAMMA\_EN**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteReg**(**LCD\_RGB\_INTERFACE**);**

ili9341\_WriteData**(**0xC2**);**

ili9341\_WriteReg**(**LCD\_DFC**);**

ili9341\_WriteData**(**0x0A**);**

ili9341\_WriteData**(**0xA7**);**

ili9341\_WriteData**(**0x27**);**

ili9341\_WriteData**(**0x04**);**

/\* Colomn address set \*/

ili9341\_WriteReg**(**LCD\_COLUMN\_ADDR**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0xEF**);**

/\* Page address set \*/

ili9341\_WriteReg**(**LCD\_PAGE\_ADDR**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x01**);**

ili9341\_WriteData**(**0x3F**);**

ili9341\_WriteReg**(**LCD\_INTERFACE**);**

ili9341\_WriteData**(**0x01**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x06**);**

ili9341\_WriteReg**(**LCD\_GRAM**);**

LCD\_Delay**(**200**);**

ili9341\_WriteReg**(**LCD\_GAMMA**);**

ili9341\_WriteData**(**0x01**);**

ili9341\_WriteReg**(**LCD\_PGAMMA**);**

ili9341\_WriteData**(**0x0F**);**

ili9341\_WriteData**(**0x29**);**

ili9341\_WriteData**(**0x24**);**

ili9341\_WriteData**(**0x0C**);**

ili9341\_WriteData**(**0x0E**);**

ili9341\_WriteData**(**0x09**);**

ili9341\_WriteData**(**0x4E**);**

ili9341\_WriteData**(**0x78**);**

ili9341\_WriteData**(**0x3C**);**

ili9341\_WriteData**(**0x09**);**

ili9341\_WriteData**(**0x13**);**

ili9341\_WriteData**(**0x05**);**

ili9341\_WriteData**(**0x17**);**

ili9341\_WriteData**(**0x11**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteReg**(**LCD\_NGAMMA**);**

ili9341\_WriteData**(**0x00**);**

ili9341\_WriteData**(**0x16**);**

ili9341\_WriteData**(**0x1B**);**

ili9341\_WriteData**(**0x04**);**

ili9341\_WriteData**(**0x11**);**

ili9341\_WriteData**(**0x07**);**

ili9341\_WriteData**(**0x31**);**

ili9341\_WriteData**(**0x33**);**

ili9341\_WriteData**(**0x42**);**

ili9341\_WriteData**(**0x05**);**

ili9341\_WriteData**(**0x0C**);**

ili9341\_WriteData**(**0x0A**);**

ili9341\_WriteData**(**0x28**);**

ili9341\_WriteData**(**0x2F**);**

ili9341\_WriteData**(**0x0F**);**

ili9341\_WriteReg**(**LCD\_SLEEP\_OUT**);**

LCD\_Delay**(**200**);**

ili9341\_WriteReg**(**LCD\_DISPLAY\_ON**);**

/\* GRAM start writing \*/

ili9341\_WriteReg**(**LCD\_GRAM**);**

**}**

**Listing 2. Funkcja mian()**

int main**(**void**)**

**{**

/\* USER CODE BEGIN 1 \*/

/\* USER CODE END 1 \*/

/\* MCU Configuration \*/

/\* Reset of all peripherals, Initializes the Flash interface and the Systick. \*/

HAL\_Init**();**

/\* USER CODE BEGIN Init \*/

/\* USER CODE END Init \*/

/\* Configure the system clock \*/

SystemClock\_Config**();**

/\* USER CODE BEGIN SysInit \*/

/\* USER CODE END SysInit \*/

/\* Initialize all configured peripherals \*/

MX\_GPIO\_Init**();**

MX\_DMA\_Init**();**

MX\_CRC\_Init**();**

MX\_I2C3\_Init**();**

MX\_SPI5\_Init**();**

MX\_TIM1\_Init**();**

MX\_USART1\_UART\_Init**();**

MX\_USB\_OTG\_HS\_HCD\_Init**();**

MX\_SPI3\_Init**();**

/\* USER CODE BEGIN 2 \*/

/\* USER CODE END 2 \*/

/\* Initialise the graphical hardware \*/

GRAPHICS\_HW\_Init**();**

/\* Initialise the graphical stack engine \*/

GRAPHICS\_Init**();**

/\* Graphic application \*/

GRAPHICS\_MainTask**();**

/\* Infinite loop \*/

**for(;;);**

**}**