

microui

*User Manual*



**MICROEJ<sup>®</sup>**

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# Chapter 1. File Documentation

## 1.1. microui\_event\_decoder.h File Reference

```
#include <stdlib.h>
```

```
#include <stdint.h>
```

```
#include <stdbool.h>
```

```
#include "microui_event_decoder_conf.h"
```

### 1.1.1. Typedefs

- typedef void(\* MICROUI\_EVENT\_DECODER\_decode\_event\_data

### 1.1.2. Functions

- void MICROUI\_EVENT\_DECODER\_describe\_dump\_start ( void )
- void MICROUI\_EVENT\_DECODER\_describe\_dump\_past ( void )
- void MICROUI\_EVENT\_DECODER\_describe\_dump\_future ( void )
- void MICROUI\_EVENT\_DECODER\_describe\_dump\_events\_objects ( void )
- void MICROUI\_EVENT\_DECODER\_describe\_dump\_end ( void )
- void MICROUI\_EVENT\_DECODER\_drop\_data ( uint32\_t data, uint32\_t index)
- void MICROUI\_EVENT\_DECODER\_decode\_event ( uint32\_t event, uint32\_t index, MICROUI\_EVENT\_DECODER\_decode\_event\_data \* fct\_data\_decoder)

## Detailed Description

Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/inc/microui\_event\_decoder.h

## 1.2. microui\_event\_decoder\_conf.h File Reference

```
#include <stdio.h>
```

```
#include "microui_constants.h"
```

### 1.2.1. Macros

- #define MICROUIEVENTDECODER\_ENABLED
- #define MICROUIEVENTDECODER\_EVENTGEN\_COMMAND MICROUI\_EVENTGEN\_COMMANDS
- #define MICROUIEVENTDECODER\_EVENTGEN\_BUTTONS MICROUI\_EVENTGEN\_BUTTONS
- #define MICROUIEVENTDECODER\_EVENTGEN\_TOUCH MICROUI\_EVENTGEN\_TOUCH
- #define LLUI\_DEBUG\_TRACE (void)printf

## Detailed Description

Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/inc/microui\_event\_decoder\_conf.h

## 1.3. microui\_heap.h File Reference

```
#include <stdint.h>
```

### 1.3.1. Functions

- uint32\_t MICROUI\_HEAP\_total\_space ( void )
- uint32\_t MICROUI\_HEAP\_free\_space ( void )
- uint32\_t MICROUI\_HEAP\_number\_of\_allocated\_blocks ( void )

## Detailed Description

Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/inc/microui\_heap.h

## 1.4. LLDW\_PAINTER\_impl.c File Reference

```
#include "LLDW_PAINTER_impl.h"
```

```
#include "dw_drawing.h"
```

```
#include "LLUI_DISPLAY.h"
```

## 1.4.1. Macros

- `#define LOG_DRAW_START LLUI_DISPLAY_logDrawingStart(CONCAT_DEFINES(LOG_DRAW_, fn))`
- `#define LOG_DRAW_END LLUI_DISPLAY_logDrawingEnd(CONCAT_DEFINES(LOG_DRAW_, fn))`
- `#define DRAWING_PAINTER_NATIVE_NAME (CONCAT_DEFINES(DRAWING_PAINTER_NATIVE_PREFIX, fn))`
- `#define LOG_DRAW_drawThickFadedPoint 100`
- `#define LOG_DRAW_drawThickFadedLine 101`
- `#define LOG_DRAW_drawThickFadedCircle 102`
- `#define LOG_DRAW_drawThickFadedCircleArc 103`
- `#define LOG_DRAW_drawThickFadedEllipse 104`
- `#define LOG_DRAW_drawThickLine 105`
- `#define LOG_DRAW_drawThickCircle 106`
- `#define LOG_DRAW_drawThickEllipse 107`
- `#define LOG_DRAW_drawThickCircleArc 108`
- `#define LOG_DRAW_drawFlippedImage 200`
- `#define LOG_DRAW_drawRotatedImageNearestNeighbor 201`
- `#define LOG_DRAW_drawRotatedImageBilinear 202`
- `#define LOG_DRAW_drawScaledImageNearestNeighbor 203`
- `#define LOG_DRAW_drawScaledImageBilinear 204`

## 1.4.2. Functions

- `void DRAWING_PAINTER_NATIVE ( drawThickFadedPoint , MICROUI_GraphicsContext * gc, jint x, jint y, jint thickness, jint fade)`
- `void DRAWING_PAINTER_NATIVE ( drawThickFadedLine , MICROUI_GraphicsContext * gc, jint startX, jint startY, jint endX, jint endY, jint thickness, jint fade, DRAWING_Cap startCap, DRAWING_Cap endCap)`

- void DRAWING\_PAINTER\_NATIVE ( drawThickFadedCircle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jint thickness, jint fade)
- void DRAWING\_PAINTER\_NATIVE ( drawThickFadedCircleArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jfloat startAngle, jfloat arcAngle, jint thickness, jint fade, DRAWING\_Cap start, DRAWING\_Cap end)
- void DRAWING\_PAINTER\_NATIVE ( drawThickFadedEllipse , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jint thickness, jint fade)
- void DRAWING\_PAINTER\_NATIVE ( drawThickLine , MICROUI\_GraphicsContext \* gc, jint startX, jint startY, jint endX, jint endY, jint thickness)
- void DRAWING\_PAINTER\_NATIVE ( drawThickCircle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jint thickness)
- void DRAWING\_PAINTER\_NATIVE ( drawThickEllipse , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jint thickness)
- void DRAWING\_PAINTER\_NATIVE ( drawThickCircleArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jfloat startAngle, jfloat arcAngle, jint thickness)
- void DRAWING\_PAINTER\_NATIVE ( drawFlippedImage , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint regionX, jint regionY, jint width, jint height, jint x, jint y, DRAWING\_Flip transformation, jint alpha)
- void DRAWING\_PAINTER\_NATIVE ( drawRotatedImageNearestNeighbor , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint x, jint y, jint rotationX, jint rotationY, jfloat angle, jint alpha)
- void DRAWING\_PAINTER\_NATIVE ( drawRotatedImageBilinear , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint x, jint y, jint rotationX, jint rotationY, jfloat angle, jint alpha)
- void DRAWING\_PAINTER\_NATIVE ( drawScaledImageNearestNeighbor , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint x, jint y, jfloat factorX, jfloat factorY, jint alpha)
- void DRAWING\_PAINTER\_NATIVE ( drawScaledImageBilinear , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint x, jint y, jfloat factorX, jfloat factorY, jint alpha)

## Detailed Description

Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/src/LLDW\_PAINTER\_impl.c

## 1.5. LLUI\_DISPLAY\_HEAP\_impl.c File Reference

```
#include "microui_heap.h"
```

```
#include "BESTFIT_ALLOCATOR.h"
```

## 1.5.1. Macros

- #define BESTFITALLOCATOR\_HEADER\_SIZE (68)
- #define BESTFITALLOCATOR\_BLOCK\_SIZE ((\*(uint32\_t\*)((block)-sizeof(uint32\_t))) & 0x7ffffff)

## 1.5.2. Variables

- static BESTFIT\_ALLOCATOR image\_heap
- static uint32\_t heap\_size
- static uint32\_t free\_space
- static uint32\_t allocated\_blocks\_number

## 1.5.3. Functions

- uint32\_t MICROUI\_HEAP\_total\_space ( void )
- uint32\_t MICROUI\_HEAP\_free\_space ( void )
- uint32\_t MICROUI\_HEAP\_number\_of\_allocated\_blocks ( void )
- void LLUI\_DISPLAY\_IMPL\_image\_heap\_initialize ( uint8\_t \* heap\_start, uint8\_t \* heap\_limit)
- uint8\_t \* LLUI\_DISPLAY\_IMPL\_image\_heap\_allocate ( uint32\_t size)
- void LLUI\_DISPLAY\_IMPL\_image\_heap\_free ( uint8\_t \* block)

## Detailed Description

This MicroUI images heap allocator replaces the default allocator embedded in the MicroUI Graphics Engine. It is using a best fit allocator and provides some additional APIs to retrieve the heap information: total space, free space, number of blocks allocated.

See also: . LLUI\_DISPLAY\_impl.h file comment

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Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/src/LLUI\_DISPLAY\_HEAP\_impl.c

## 1.6. LLUI\_INPUT\_LOG\_impl.c File Reference

```
#include <assert.h>
```

```
#include <string.h>
```

```
#include "LLUI_INPUT_impl.h"
```

```
#include "microui_event_decoder.h"
```

### Detailed Description

This MicroUI FIFO (queue) logger replaces the default logger embedded in the MicroUI Input Engine. For each queue event, it stores the event's data size. This allows to be able to decode the event when LLUI\_INPUT\_dump() is called.

This logger does not interpret the event: it just recognizes the event's first element and event's data. When an event is detected, the logger calls microui\_event\_decoder.h functions.

See also: . LLUI\_INPUT\_impl.h file comment

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Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/src/LLUI\_INPUT\_LOG\_impl.c

## 1.7. LLUI\_PAINTER\_impl.c File Reference

```
#include "LLUI_PAINTER_impl.h"
```

```
#include "ui_drawing.h"
```

```
#include "LLUI_DISPLAY.h"
```

## 1.7.1. Macros

- `#define LOG_DRAW_START LLUI_DISPLAY_logDrawingStart(CONCAT_DEFINES(LOG_DRAW_, fn))`
- `#define LOG_DRAW_END LLUI_DISPLAY_logDrawingEnd(CONCAT_DEFINES(LOG_DRAW_, fn))`
- `#define MICROUI_PAINTER_NATIVE_NAME (CONCAT_DEFINES(MICROUI_PAINTER_NATIVE_PREFIX, fn))`
- `#define LOG_DRAW_writePixel 1`
- `#define LOG_DRAW_drawLine 2`
- `#define LOG_DRAW_drawHorizontalLine 3`
- `#define LOG_DRAW_drawVerticalLine 4`
- `#define LOG_DRAW_drawRectangle 5`
- `#define LOG_DRAW_fillRectangle 6`
- `#define LOG_DRAW_drawRoundedRectangle 8`
- `#define LOG_DRAW_fillRoundedRectangle 9`
- `#define LOG_DRAW_drawCircleArc 10`
- `#define LOG_DRAW_fillCircleArc 11`
- `#define LOG_DRAW_drawEllipseArc 12`
- `#define LOG_DRAW_fillEllipseArc 13`
- `#define LOG_DRAW_drawEllipse 14`
- `#define LOG_DRAW_fillEllipse 15`
- `#define LOG_DRAW_drawCircle 16`
- `#define LOG_DRAW_fillCircle 17`
- `#define LOG_DRAW_drawARGB 18`
- `#define LOG_DRAW_drawImage 19`

## 1.7.2. Functions

- `static void _check_bound ( jint max, jint * bound, jint * size, jint * origin)`
- `void MICROUI_PAINTER_NATIVE ( writePixel , MICROUI_GraphicsContext * gc, jint x, jint y)`

- void MICROUI\_PAINTER\_NATIVE ( drawLine , MICROUI\_GraphicsContext \* gc, jint startX, jint startY, jint endX, jint endY)
- void MICROUI\_PAINTER\_NATIVE ( drawHorizontalLine , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint length)
- void MICROUI\_PAINTER\_NATIVE ( drawVerticalLine , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint length)
- void MICROUI\_PAINTER\_NATIVE ( drawRectangle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height)
- void MICROUI\_PAINTER\_NATIVE ( fillRectangle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height)
- void MICROUI\_PAINTER\_NATIVE ( drawRoundedRectangle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jint cornerEllipseWidth, jint cornerEllipseHeight)
- void MICROUI\_PAINTER\_NATIVE ( fillRoundedRectangle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jint cornerEllipseWidth, jint cornerEllipseHeight)
- void MICROUI\_PAINTER\_NATIVE ( drawCircleArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jfloat startAngle, jfloat arcAngle)
- void MICROUI\_PAINTER\_NATIVE ( drawEllipseArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jfloat startAngle, jfloat arcAngle)
- void MICROUI\_PAINTER\_NATIVE ( fillCircleArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter, jfloat startAngle, jfloat arcAngle)
- void MICROUI\_PAINTER\_NATIVE ( fillEllipseArc , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height, jfloat startAngle, jfloat arcAngle)
- void MICROUI\_PAINTER\_NATIVE ( drawEllipse , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height)
- void MICROUI\_PAINTER\_NATIVE ( fillEllipse , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint width, jint height)
- void MICROUI\_PAINTER\_NATIVE ( drawCircle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter)
- void MICROUI\_PAINTER\_NATIVE ( fillCircle , MICROUI\_GraphicsContext \* gc, jint x, jint y, jint diameter)
- void MICROUI\_PAINTER\_NATIVE ( drawImage , MICROUI\_GraphicsContext \* gc, MICROUI\_Image \* img, jint regionX, jint regionY, jint width, jint height, jint x, jint y, jint alpha)

## Detailed Description

Definition in file C:/Jenkins/workspace/masterfb994a57/bsp-llmicroui/target~/ccomponentWorking/bsp/ui/src/LLUI\_PAINTER\_impl.c

## 1.8. microui\_event\_decoder.c File Reference

```
#include "microui_event_decoder.h"
```

### Detailed Description

This MicroUI Events decoder describes the events to the standard output stream.

See also: . LLUI\_INPUT\_LOG\_impl.c file comment

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