CMG – Software Architecture Design

LLIO *

Low Level Input Output: Platform independent communication with the display (Low level pin sequences)

Combinations of:
- ARM / AVR / X86 / DEMO
- PARALLEL / SPI / BUS

_8IO4O electively with:
- 8080: A0 /CS /RD /WR
- 6800: A0 /CS E R/W

Samples:
- LLIO_ARM_PARALLEL_8IO4O
- (LLIO_ARM_SPI)
- (LLIO_ARM_BUS)

- LLIO_AVR_PARALLEL_8IO4O
- (LLIO_AVR_SPI)

- (LLIO_X86_PARALLEL_8IO4O)
- LLIO_X86_USB_???

- LLIO_DEMO_DISPLAY_GDI
- LLIO_DEMO_DISPLAY_GTK
- LLIO_DEMO_EMULATOR_xxxx

Exports:
- LLIO_Init(...);
- LLIO_Exit();
- LLIO_PowerManagement(...);

- LLIO_WriteA0(...);
- LLIO_WriteA1(...);
- LLIO_ReadA0();
- LLIO_ReadA1();

CTRL *

Controller Driver: Basic byte-wise memory access to the display

Controller specific:
- Initialize LCD
- Memory Access

Samples:
- CTRL_T6963 (1 bit)
- *CTRL_SED1335 (1 bit)*
- *CTRL_S1D13305 (1 bit)*
- CTRL_S1D13700 (1/2/4 bit)
- CTRL_LH155 (1 bit)
- *CTRL_LDS176 (8/12/16 bit)*

Exports:
- CTRL_Init(...);
- CTRL_Exit();
- CTRL_PowerManagement(...);
- CTRL_ControllerSpecific(...);

- CTRL_SetAddressPtr(...);
- CTRL_SetDirections(...);
- CTRL_GetByte();
- CTRL_SetByte(...);

DRV *
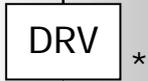
Display Driver: Optimized low level drawing routines: Pixels, Lines, Blitting

Samples:
- DRV_UNI_1BPP
- DRV_UNI_4BPP
- DRV_UNI_8BPP
- DRV_UNI_12BPP

Exports:
- DRV_Init(...);
- DRV_Exit();
- DRV_PowerManagement(...);
- DRV_ControllerSpecific(...);

Color/Pen:
- DRV_SetSolidColor(...);
- DRV_SetPen(...);
- DRV_SpoolPen(...);

Drawing:
- DRV_Pixel(...);
- DRV_HLine(...);
- DRV_VLine(...);
- DRV_GetVLine(...);

DRAW — API

Draw: Drawing library: Drawing, Solids, Blitting, Clipping, DisplayRotation, Modes

More complex / combined Drawing:

Color modes:
- Fixed fore-/backcolor
- Pen: n byte line style
- Brush: n*m image

Draw styles:
- Border only
- Fill only
- Border and fill

Draw Exports:
- CMG_Init(...);
- CMG_Exit();
- CMG_PowerManagement(...);
- DRV_ControllerSpecific(...);

Screen:
- CMG_GetScreenSize(...);
- CMG_SetDisplayOrientation(...);
- CMG_GetDisplayOrientation(...);
- CMG_SetClippingWindow(...);
- CMG_GetClippingWindow(...);

Modes:
- CMG_SetROPMode(...);
- CMG_SetDrawStyle(...);

Colors:
- CMG_SetColor(...);
- CMG_SetFillColor(...);
- CMG_SetPen(...);
- CMG_SetBrush(...);
- CMG_CreatePen(Ex) (...);
- CMG_CreateBrush(Ex) (...);

Pixel:
- CMG_Pixel(...);
- CMG_Line(Ex) (...);
- CMG_LineList(...);
- CMG_LineWidth(...);
- ??? Arc

Solids:
- CMG_Rectangle(...);
- CMG_Triangle(...);
- CMG_Circle(...);
- CMG_Ellipse(...);
- CMG_RoundedRectangle

Blitting:
- CMG_Blt(...);
- CMG_BltScaled(...);
- CMG_GetScreen(...);
- CMG_Scroll(...);

TEXT — API
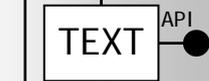
Text Engine:

- Loading fonts ???
- Getting Metrics
- Rendering
- Mono/Dynamic Space

GUI — API

Graphical User Interface:

- Dialogs / Windows ???
- Design Description Language
- Callbacks
- RedrawOnDemand

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* Multiple choice files

25.10.2006, Christian Merkle