



ÖZDİSAN ELECTRONIC A.Ş.

Ark Chip AMT630A Register Settings

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Ark Chip AMT630A Register Settings



OSD settings

OSD group registers: 0xB6

INDEX_RAM_ADD_L

FB00H	index ram addr	写 index ram 地址, 低 8bit
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Index RAM address low byte

INDEX_RAM_ADD_H

FB0DH	index_ram_addr_hb	[0] 写 index ram 地址, 高 1bit [7:1] Reserved
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Index RAM address high byte

INDEX_RAM_DATA_L

FB01H	index ram data	写 index ram 数据, 低 8bit
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Index RAM data low byte

INDEX_RAM_DATA_H

FB0EH	Index_ram_data_hb	[1:0] 写 index ram 数据, 高 2bit [7:2] Reserved
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Index RAM data high byte

EACH_ICON_COLOR

FB10H	Index_color_data	写 index ram color data, 8bit, 用来表示每个 ICON 的前景色与背景色选择。 [2:0]: 选择前景色调色盘 [6:4]: 选择背景色调色盘
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Index ram color.

[2-0] foreground color.

[6-4] background color.

0- Transparent

1- RED

2- GREEN

3- BLUE

4- YELLOW

5- GREY

6- WHITE

7- BLACK

FONT_RAM_ADD_L

FB02H	font ram addr	写 font ram 地址, 低 8bit
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Font RAM address low byte

FONT_RAM_ADD_H

FB0FH	Font_ram_addr_hb	[3:0] 写 font ram 地址, 高 4bit [7:4] Reserved
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Font RAM address high byte

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FONT_RAM_DATA_L

FB04H	font ram data	写 font ram 低 8 位数据
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Font RAM data low byte

FONT_RAM_DATA_H

FB03H	font ram data	写 font ram 高 4 位数据
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Font RAM data high byte

OSD_CON1

FB05H	osd_con1	<p>[0] osdc_en : osd block 0 使能。0 无效, 1 有效</p> <p>[1] osdc1_en : osd block 1 使能。0 无效, 1 有效</p> <p>[2] osdc2_en : osd block 2 使能。0 无效, 1 有效</p> <p>[3] osdc3_en : osd block 3 使能。0 无效, 1 有效</p> <p>[4] osdc4_en : osd block 4 使能。0 无效, 1 有效</p> <p>[5] osd_bl_en : 闪烁区域使能 0 无效 1 有效</p> <p>[6] osdc_color_sel : color index select for 5 osd block 0: color from color index ram; 1: select front and back color.</p> <p>[7] osdc_bitmap_en : bitmap enable for 5 osd block, when set 1 it means there are bitmap font in font ram, when set 0 it means there are not bitmap font in font ram.</p>
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AMT630A has 5 OSD block, each of them can be used independently.

OSD_CON1 [0-4] controls visibility of OSD Blocks.

[0] OSD block_0: "0" Disable, "1" enable

[1] OSD block_1: "0" Disable, "1" enable

[2] OSD block_2: "0" Disable, "1" enable

[3] OSD block_3: "0" Disable, "1" enable

[4] OSD block_4: "0" Disable, "1" enable

[5] OSD blink enable

"0" Disable blinking, "1" Enable blinking

[6] OSD color select

If "1" all OSD has same background and foreground color.

If "0" every OSD has different background and foreground color.

OSD_CON2

FB06H	osd_con2	<p>[5:0] osd_blink : osd 闪烁区域闪烁频率调节</p> <p>[6] osd_mix_en: osd 与 video 混合使能</p> <p>[7] osd_mix_mode : OSD 的与 VIDEO blending 模式选择, 1: 整块 OSD 与 VIDEO 混合; 0: OSD 背景色与 VIDEO 混合, 该种模式只支持普通 OSD。</p>
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[5-0] OSD blink frequency.

[6] OSD mix enable:

"0" OSD and video alpha blending disable.

"1" OSD and video alpha blending enable.

[7] OSD mix mode:

"0" only background color alpha blending with video.

"1" foreground and background alpha blending with video.

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OSD_SIZE_X_BK0

FB07H	osdc_size_x	[6:0] osd block 0 水平方向最大字符数 [7] Reserved
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OSD block_0 width

OSD_SIZE_Y_BK0

FB08H	osdc_size_y	[5:0] osd block 0 垂直方向最大字符数 [7:6] Reserved
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OSD block_0 height

OSD_POS_X_L_BK0

FB0AH	osdc_posx	确定 osd block 0 起始点像素的水平位置的低 8 位
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OSD block_0 x position

OSD_POS_Y_L_BK0

FB0BH	osdc_posy	确定 osd block 0 起始点像素的垂直位置的低 8 位
-------	-----------	---------------------------------

OSD block_0 y position

OSD_POS_XY_H_BK0

FB09H	osdc_posx	[2:0] 确定 osd block 0 起始点像素的水平位置的高 3 位
	osdc_posy	[6:4] 确定 osd block 0 起始点像素的垂直位置的高 3 位

[2-0] OSD block_0 x position multiplier.

[6-4] OSD block_0 y position multiplier.

OSD_SIZE_X_BK1

FB12H	Osdc1_size_x	[6:0] osd block 1 水平方向最大字符数
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OSD block_1 width

OSD_SIZE_Y_BK1

FB13H	Osdc1_size_y	[5:0] osd block 1 垂直方向最大字符数
-------	--------------	-----------------------------

OSD block_1 height

OSD_POS_X_L_BK1

FB15H	Osdc1_posx	确定 osd block 1 起始点像素的水平位置的低 8 位
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OSD block_1 x position

OSD_POS_Y_L_BK1

FB16H	Osdc1_posy	确定 osd block 1 起始点像素的垂直位置的低 8 位
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OSD block_1 y position

OSD_POS_XY_H_BK1

FB14H	Osdc1_posy	[2:0] 确定 osd block 1 起始点像素的水平位置的高 2 位
	Osdc1_posx	[6:4] 确定 osd block 1 起始点像素的垂直位置的高 2 位
		[7] 确定 osd block 1 对应的 index ram 起始地址高 1 位

[2-0] OSD block_1 x position multiplier.

[6-4] OSD block_1 y position multiplier.

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INDEXRAM_ADD_BK1_START

FB17H	Osdc1_index_start_a	确定 osd block 1 对应的 index ram 起始地址低 8 位
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Index RAM block_1 start address.

OSD_SIZE_X_BK2

FB18H	Osdc2_size_x	[6:0] osd block 2 水平方向最大字符数
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OSD block_2 width

OSD_SIZE_Y_BK2

FB19H	Osdc2_size_y	[5:0] osd block 2 垂直方向最大字符数
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OSD block_2 height

OSD_POS_X_L_BK2

FB1BH	Osdc2_posx	确定 osd block 2 起始点像素的水平位置的低 8 位
-------	------------	---------------------------------

OSD block_2 x position

OSD_POS_Y_L_BK2

FB1CH	Osdc2_posy	确定 osd block 2 起始点像素的垂直位置的低 8 位
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OSD block_2 y position

OSD_POS_XY_H_BK2

FB1AH	Osdc2_posx Osdc2_posy	[2:0] 确定 osd block 2 起始点像素的水平位置的高 2 位 [6:4] 确定 osd block 2 起始点像素的垂直位置的高 2 位 [7] 确定 osd block 2 对应的 index ram 起始地址高 1 位
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[2-0] OSD block_2 x position multiplier.

[6-4] OSD block_2 y position multiplier.

INDEXRAM_ADD_BK2_START

FB1DH	Osdc2_index_start_a	确定 osd block 2 对应的 index ram 起始地址低 8 位
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Index RAM block_2 start address.

OSD_SIZE_X_BK3

FB1EH	Osdc3_size_x	[6:0] osd block 3 水平方向最大字符数
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OSD block_3 width

OSD_SIZE_Y_BK3

FB1FH	Osdc3_size_y	[5:0] osd block 3 垂直方向最大字符数
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OSD block_3 height

OSD_POS_X_L_BK3

FB21H	Osdc3_posx	确定 osd block 3 起始点像素的水平位置的低 8 位
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OSD block_3 x position

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OSD_POS_Y_L_BK3

FB22H	Osdc3_posy	确定 osd block 3 起始点像素的垂直位置的低 8 位
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OSD block_3 y position

OSD_POS_XY_H_BK3

FB20H	Osdc3_posx Osdc3_posy	[2:0] 确定 osd block 3 起始点像素的水平位置的高 2 位 [6:4] 确定 osd block 3 起始点像素的垂直位置的高 2 位 [7] 确定 osd block 3 对应的 index ram 起始地址高 1 位
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[2-0] OSD block_3 x position multiplier.

[6-4] OSD block_3 y position multiplier.

INDEXRAM_ADD_BK3_START

FB23H	Osdc3_index_start_a	确定 osd block 3 对应的 index ram 起始地址低 8 位
-------	---------------------	--

Index RAM block_3 start address.

OSD_SIZE_X_BK4

FB24H	Osdc4_sizex	[6:0] osd block 4 水平方向最大字符数
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OSD block_4 width

OSD_SIZE_Y_BK4

FB25H	Osdc4_sizey	[5:0] osd block 4 垂直方向最大字符数
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OSD block_4 height

OSD_POS_X_L_BK4

FB27H	Osdc4_posx	确定 osd block 4 起始点像素的水平位置的低 8 位
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OSD block_4 x position

OSD_POS_Y_L_BK4

FB28H	Osdc4_posy	确定 osd block 4 起始点像素的垂直位置的低 8 位
-------	------------	---------------------------------

OSD block_4 y position

OSD_POS_XY_H_BK4

FB26H	Osdc4_posx Osdc4_posy	[2:0] 确定 osd block 4 起始点像素的水平位置的高 2 位 [6:4] 确定 osd block 4 起始点像素的垂直位置的高 2 位 [7] 确定 osd block 4 对应的 index ram 起始地址高 1 位
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[2-0] OSD block_4 x position multiplier.

[6-4] OSD block_4 y position multiplier.

INDEXRAM_ADD_BK4_START

FB29H	Osdc4_index_start_a	确定 osd block 4 对应的 index ram 起始地址低 8 位
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Index RAM block_4 start address.

OSD_alpha_bright

FB0CH	osd_alpha_bright	[2:0]osd_alpha : 5 块 osd 与 video 混合参数 [7:3]osd_bright : 5 块 osd 亮度调节参数
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[2-0] osd_alpha: OSD and video alpha blending transparency.

[7-3] osd_bright: OSD brightness.

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OSD_COLOR

FB2AH	osdc_clr	5 块 osd 调色盘选择，在 osdc_color_sel 为 1 时有效 [7:4] 选择背景色 [3:0] 选择前景色
-------	----------	---

[3-0] OSD foreground color

[7-4] OSD background color

- 0- Transparent
- 1- RED
- 2- GREEN
- 3- BLUE
- 4- YELLOW
- 5- GREY
- 6- WHITE
- 7- BLACK

OSD_H_MIRROR

FB35H	osd_h_mirror & blink_block_sel	[2:0] blink_block_sel: osd 闪烁块选择，当 osd_bl_en 为 1 时有 效 0: osd block 0 闪烁; 1: osd block 1 闪烁; 2: osd block 2 闪烁; 3: osd block 3 闪烁; 4: osd block 4 闪烁; others: osd block 0 闪烁。 [3] hsync_edge_sel: 输入行同步上升沿、下降沿选择，用来定位 osd 位置: 1: 选择下降沿; 0: 选择上升沿; [4] osd_bitmap_cr0_touming_sel : OSD 的 bitmap 调色盘 cr0 是否为透明选择, 1: 不透明, 为调色盘 cr0 的颜色; 0: 透明 [5] vsyn_edge_sel: 输入场同步上升沿、下降沿选择，用来定位 osd 位置: 1: 选择下降沿; 0: 选择上升沿;
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[2-0] blink_block_sel: selects blinking block.

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Video Process Registers

VP group registers: 0xB4

CONTRAST_REG

0xD3	80h	[7:0]	Contrast	Contrast	图像效果相关，开放调试。
------	-----	-------	----------	----------	--------------

Adjust contrast.

BRIGHT_REG

0xD4	80h	[7:0]	Brightness	Brightness	图像效果相关，开放调试。
------	-----	-------	------------	------------	--------------

Adjust brightness.

SATURATION_REG

0xD6	3Fh	[7:0]	Saturation	Saturation	图像效果相关，开放调试。
------	-----	-------	------------	------------	--------------

Adjust Color.

VDE_REG

0xD2	4Fh	[7]	vde_test_vector_sel	VDE test vector select 0-output normal signal 1-output test vecotr(controlled by [3:0])
		[6:4]	vde_protect_sel	YCbCr dat format control in VDE module. Description is the same as rgb_protect_sel
		[3:0]	vde_out_sel	VDE output select

This register switch screen to test mode.

[7] vde_test_vector_sel

“0” Normal working mode, video signal on screen.

“1” Test mode, Test signal on screen.

[3-0] test signal select.

0: RED

1: GREEN

2: BLUE

3: GREY

4: BLACK

5: WHITE

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IC2 communication with AMT630A

AMT630A has 3 byte command array.

1. Byte register group address

Every register group has different registers

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For example Video process group address 0xB4.

2. Byte sub register address

Sub registers described in datasheet.

For example brightness register address 0xD4

0xD4	80h	[7:0]	Brightness	Brightness	图像效果相关，开放调试。
------	-----	-------	------------	------------	--------------

3. Byte Register value

Register value which you want to set.

Example command array to set brightness value 100,
0xB4,0xD4,0x64

Connecting to AMT630A

To connect AMT630A you can use this function.

```
void connect()
{
    write_register(0xBE,0xC6,0x40);
    write_register(0xB6,0x78,0x02);
}
```

OL

AMT630A has Font RAM and Font ROM.

Those fonts are included in AMT630A.

As you can see in the picture Fonts have a sequence, to select fonts, font address should be entered to INDEX_RAM_DATA_H and INDEX_RAM_DATA_L registers, for example “A” font address 11.

[illegible]

Font RAM address starts from 0x01C0.

All font color can be set to same or different color.

For more details please study demo codes.