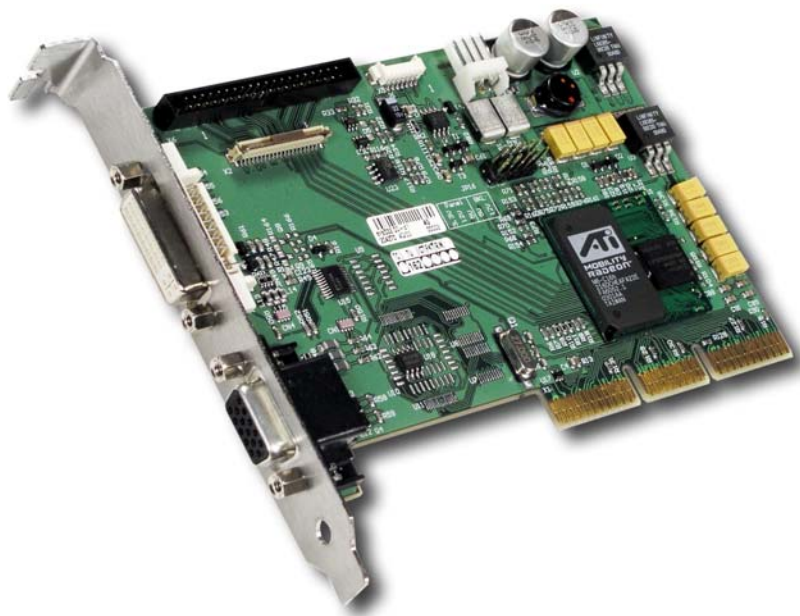


Preliminary

dFLAT-AGP-1

Flatpanel Configuration & Adaption Manual



	Introduction				
	<p>The dFlat-AGP-1 graphic-card can manage a total of 31 data records based on the VESA EDID standard (version 1.3). The following chapters give an insight into creating a record and the associated software tools (suitable for all 32-Bit Windows versions).</p> <p>The solution given here permits new records to be implemented without changing the hardware basis, the limitation to 31 entries plays no role. As such, nothing stands in the way of connecting any display desired – as long as only one LVDS interface is required.</p> <p>The program PHOENIX.EXE serves to create the EDID structure and generate an ASCII file that only contains the record's 128 bytes in readable form. Subsequently, the necessary conversion into binary format is done using the program DFLTCONF.EXE, whereby a few parameters not included in the EDID structure are added.</p> <p><u>Program overview:</u></p> <table border="0"> <tr> <td>PHOENIX.EXE</td><td>EDID editor (requires no further modules)</td></tr> <tr> <td>DFLTCONF.EXE</td><td>Conversion software tool (requires DFLATENG.DLL, DFLATGER.DLL and CW3230.DLL)</td></tr> </table>	PHOENIX.EXE	EDID editor (requires no further modules)	DFLTCONF.EXE	Conversion software tool (requires DFLATENG.DLL, DFLATGER.DLL and CW3230.DLL)
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	EDID Editor PHOENIX.EXE
	<p>After starting the program, the template <i>DRAFT.DAT</i> can be opened from the menu <i>File/Open EDID</i>. The option <i>File/Read Only</i> must then be deactivated to be able to change any data.</p> <p>This program contains a minor error, though. Often, the last value that you specify is not saved, so it is advisable to modify an unused value last.</p> <p><u>Property sheet GENERAL:</u> Only input fields <i>Mfg Week</i> and <i>Mfg Year</i> should be given any attention, though updating the date has no importance for the working of the graphic-card.</p> <p><u>Property sheet BASIC DISPLAY PARAMETERS:</u> Changes to the default values are unnecessary, since the graphic-card does not utilize these parameters.</p> <p><u>Property sheet COLOR / ESTABLISHED TIMINGS:</u> The input fields under <i>Color Characteristics</i> have no function and should remain unchanged, whereas <i>Established Timings</i> requires the supported resolutions to be defined. Only the IBM-/VESA fields are important:</p> <p style="padding-left: 40px;">720 x 400 @ 70 Hz (text mode) 640 x 480 @ 60 Hz 640 x 480 @ 72 Hz 640 x 480 @ 75 Hz 800 x 600 @ 56 Hz 800 x 600 @ 60 Hz 800 x 600 @ 72 Hz 800 x 600 @ 75 Hz 1024 x 768 @ 60 Hz 1024 x 768 @ 70 Hz 1024 x 768 @ 75 Hz 1280 x 1024 @ 75 Hz</p> <p>If an SVGA display at 800 x 600 pixels is being used, the fields from 720 x 400 @ 70 Hz to 800 x 600 @ 75 Hz, inclusive, must be set as active.</p> <p><u>Property sheet STANDARD TIMINGS:</u> Units for the input values (Timing ID #1): H. Active pixels [pixels] Refresh[Hz]</p> <p>Only <i>Timing-ID #1</i> has any function, <i>Timing-IDs #2 to #8</i> are unimportant. The field <i>Enable</i> should be active; both input possibilities <i>H. Active pixels</i> (horizontal active pixels) and <i>Refresh</i> require correct values (640 / 60 for a VGA panel, 800 / 60 for an SVGA panel etc.). Then remains only <i>Aspect Ratio</i>, which sets the width-to-height ratio (VGA, SVGA, XGA come under 4:3, whereas SXGA comes under 5:4).</p>

	<p><u>Property sheet DETAILED TIMINGS:</u></p> <p>Units for the input values (Descriptor Block 1):</p> <table><tr><td>Pixel Clk</td><td>[MHz]</td></tr><tr><td>H Active Pxl</td><td>[pixels]</td></tr><tr><td>H Blank</td><td>[pixels]</td></tr><tr><td>H Sync Offset</td><td>[pixels]</td></tr><tr><td>H Sync Width</td><td>[pixels]</td></tr><tr><td>H Border</td><td>[pixels]</td></tr><tr><td>V Active Lines</td><td>[lines]</td></tr><tr><td>V Blank</td><td>[lines]</td></tr><tr><td>V Sync Offset</td><td>[lines]</td></tr><tr><td>V Sync Width</td><td>[lines]</td></tr><tr><td>V Border</td><td>[lines]</td></tr></table> <p>Important for the dFlat-AGP-1 to function correctly is <i>Descriptor Block 1</i> and, under this, the category <i>Timings</i>. The input fields <i>Pixel Clk</i>, <i>H Active Pxl</i>, <i>H Blank</i>, <i>H Sync Offset</i>, <i>H Sync Width</i>, <i>V Active Lines</i>, <i>V Blank</i>, <i>V Sync Offset</i> and <i>V Sync Width</i> must be filled in with the correct values according to the panel's data sheet. In many cases, the value for Horizontal/Vertical Blank cannot be read directly from the data sheet. Instead, terms such as <i>Display Period</i> (active pixels/lines) or <i>Horizontal/Vertical Total</i> appear.</p> <p>In this case, the following calculation can be made:</p> <p>⇒ Blank Value = Total Value – Active Value.</p> <p>Sometimes, the datasheet does not specify Sync Offset and/or Sync Width. In this case, the permissible values can only be determined though testing. However, the rule is:</p> <p>⇒ The sum of Sync Offset and Sync Width must not exceed the value for Horizontal/Vertical Blank.</p> <p>Also, datasheets are often different for displays with double pixel clock. If Pixel Clock and Horizontal Values seem to be halved, this must be corrected for input:</p> <p>⇒ The values must always be entered as though it were a panel with single pixel clock.</p> <p>The two fields <i>H Image Size</i> and <i>V Image Size</i> are unused – it is up to the user to enter the outer dimensions of the display.</p> <p>The border fields (<i>H Border</i> and <i>V Border</i>) should not be given any value other than zero.</p> <p>dFlat-AGP-1 ignores the option <i>Interlaced</i>, panels with video properties are not supported.</p> <p><u>Examples:</u></p> <p>SHARP LQ150X1DW11 (double pixel clock)</p> <p>Data sheet specifications:</p> <table><tr><td>Clock Frequency [typ.]</td><td>32.5 MHz</td><td></td></tr><tr><td>Horizontal period [typ.]</td><td>672 Clocks</td><td>(equivalent to Horizontal Total)</td></tr><tr><td>Horizontal period (High)</td><td>512 Clocks</td><td>(equivalent to Horizontal Active)</td></tr><tr><td>Vertical period [typ.]</td><td>806 Lines</td><td>(equivalent to Vertical Total)</td></tr><tr><td>Vertical period (High)</td><td>768 Lines</td><td>(equivalent to Vertical Active)</td></tr></table> <p>no specification of Sync Offset and Sync Width.</p>	Pixel Clk	[MHz]	H Active Pxl	[pixels]	H Blank	[pixels]	H Sync Offset	[pixels]	H Sync Width	[pixels]	H Border	[pixels]	V Active Lines	[lines]	V Blank	[lines]	V Sync Offset	[lines]	V Sync Width	[lines]	V Border	[lines]	Clock Frequency [typ.]	32.5 MHz		Horizontal period [typ.]	672 Clocks	(equivalent to Horizontal Total)	Horizontal period (High)	512 Clocks	(equivalent to Horizontal Active)	Vertical period [typ.]	806 Lines	(equivalent to Vertical Total)	Vertical period (High)	768 Lines	(equivalent to Vertical Active)
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	<p>dFlat-AGP-1 does not evaluate <i>Descriptor Blocks 2 and 3</i>, all entries in these are optional. Specifying the monitor range limits in <i>Block 2</i> can later become significant, while it is imperative that the user change the entry in <i>Block 3</i> (ASCII String which specifying the company name), to guarantee definite assignment of the data.</p> <p><i>Descriptor Block 4</i> is a special case. The program DFLTCONF.EXE completely writes over this block to store additional special parameters that do not appear in the EDID record.</p>																																																																																								

	Conversion Program DFLTCONF.EXE
	<p>When starting the program for the first time, it prompts for the preferred language (English or German). The language can be reset afterwards by deleting the file DFLTCONF.CFG (although this resets all settings in the <i>Preferences</i> menu).</p> <p>The menu point <i>Features/Run PHOENIX.EXE</i> allows the EDID editor PHOENIX.EXE to be called, as long as the correct directory is entered in <i>Features/Preferences</i> and the program is enabled for calling.</p> <p>Choosing the menu point <i>File/Convert EDID files</i> converts the EDID ASCII file (*.DAT) into a binary file (*.EDI). After selecting the desired ASCII file, the user is prompted to input those panel parameters that are essential but are not specified in the EDID standard. The double pixel clock or 24-bit color depth can generally be taken from the datasheet. Expand mode is purely a BIOS feature; independent of the current resolution, the display always fill out the entire area of the screen. If backlight dimming is supported in the BIOS (i.e. a suitable DAC exists), the corresponding input field allows modification of this backlight dimming.</p> <p>There are two interface modes existing at 24-bit color depth: FPGI (Flat Panel Display Interface) or LDI (LVDS Display Interface). Some panels use the line SELL LVDS (SElect Lvds data order), which generally is on low level, for an optional switching between the two modes. The LVDS data assignment in the datasheet can give you an indication by the last channel (e.g. RX3/TX3 – SELL LVDS = low) whether it is a LDI-panel (contains the lowest bits). Most panels have a FPGI interface.</p>
	Using the Binary EDID File
	<p>By default, JILI3 files are used to select a panel from the database in the VGA BIOS, which itself consists of binary EDID records. To implement a display that is not yet present, the JILI3 files can be replaced with an EDID record, i.e. JILI3 files and EDID files are equivalent. Using the tool ATIMx, the binary EDID files can be anchored in the BIOS in the usual manner (with the function keys F3 and F5). The internal database is then no longer relevant.</p> <p>The VGA BIOS works precisely in a predefined order when determining a valid record:</p> <ol style="list-style-type: none"> 1. Does JILI3 files exist in the external adapter? If yes, use the related record from the database. 2. Does binary EDID files exist in the external adapter? If yes, use it. 3. Does JILI3 files exist in the internal area? If yes, use the related record from the database. 4. Binary EDID files exist in the internal area? If yes, use it. <p>Thus, it is also possible to run the external adapter with EDID files that exist in the internal area, as long as no valid data exist in the external adapter. This can be achieved by programming dummy files, for example (available as JILI3 file CLEAR.JCF).</p>

Technical Support	
	<p>Please report any errors or problems to this email address: sales-graphic@kontron.com.</p> <p>Normally, there is no telephone support. Please include the following information in your email message:</p> <p style="padding-left: 40px;"> Company name Your name Address Email Telephone/Fax Exact description of the hardware, etc. Exact description of the software in use (for example: Win 95 with driver XYZ) Exact description of the error. </p>

Revision History

Date	Author	Version	Description
08/16/04	M. Hüttmann	1.00	Preliminary release
09/15/04	M. Hüttmann	1.01	Add FPD/LDI feature