

ALP *basic* Supplement

1 Document version history

Version	Description	Date
1	Initial release	2007-11-22
2	Introduction of ALP-4.0 <i>basic</i> : <ul style="list-style-type: none"> New DMD type 1080p Affected: Table 2 Added: Section Version Specific Capabilities Added: Section ALPB_DEV_DDC_SIGNALS, Bit 3: RST2BLKZ 	2008-08-26
3	Introduction of ALP-4.1 <i>basic</i> : <ul style="list-style-type: none"> New DMD type ALPB_DMDTYPE_DISCONNECT Affected: Table 3 Update: Section Version Specific Capabilities 	2009-09-23
4	Introduction of ALP-4.2 <i>basic</i> : <ul style="list-style-type: none"> Update: Section Version Specific Capabilities 	2010-06-21
5	<ul style="list-style-type: none"> New DMD type WUXGA Affected: Table 2, Table 3 	2011-12-09
6	<ul style="list-style-type: none"> New DMD type WXGA 	2020-03-23

Table 1: Document version history

2 DMD details

The following table contains detailed DMD geometry information. This summary can assist in application programming with the ALP *basic* API. And it may also help using the ALP *basic* GUI.

DMD format	XGA	SXGA+	1080p	WUXGA	WXGA
Geometry					
X: active pixels (horizontal dimension)	1024	1400	1920	1920	1280
Y: active pixels (vertical dimension)	768	1050	1080	1200	800
Reset and Clear Block Row Span (and count)					
Block 0 rows	0—47 (48)	0—62 (63)	0—71 (72)	0—79 (80)	0-49 (50)
Block 1 rows	48—95 (48)	63—128 (66)	72—143 (72)	80—159 (80)	50-99 (50)
Block 2 rows	96—143 (48)	129—194 (66)	144—215 (72)	160—239 (80)	100-149 (50)

DMD format	XGA	SXGA+	1080p	WUXGA	WXGA
Block 3 rows	144—191 (48)	195—260 (66)	216—287 (72)	240—319 (80)	150-199 (50)
Block 4 rows	192—239 (48)	261—326 (66)	288—359 (72)	320—399 (80)	200-249 (50)
Block 5 rows	240—287 (48)	327—392 (66)	360—431 (72)	400—479 (80)	250-299 (50)
Block 6 rows	288—335 (48)	393—458 (66)	432—503 (72)	480—559 (80)	300-349 (50)
Block 7 rows	336—383 (48)	459—524 (66)	504—575 (72)	560—639 (80)	350-399 (50)
Block 8 rows	384—431 (48)	525—590 (66)	576—647 (72)	640—719 (80)	400-449 (50)
Block 9 rows	432—479 (48)	591—656 (66)	648—719 (72)	720—799 (80)	450-499 (50)
Block 10 rows	480—527 (48)	657—722 (66)	720—791 (72)	800—879 (80)	500-549 (50)
Block 11 rows	528—575 (48)	723—788 (66)	792—863 (72)	880—959 (80)	550-599 (50)
Block 12 rows	576—623 (48)	789—854 (66)	864—935 (72)	960—1039 (80)	600-649 (50)
Block 13 rows	624—671 (48)	855—920 (66)	936—1007 (72)	1040—1119 (80)	650-699 (50)
Block 14 rows	672—719 (48)	921—986 (66)	1008—1079 (72)	1120—1199 (80)	700-749 (50)
Block 15 rows	720—767 (48)	987—1049 (63)	not available ^a	not available ^a	750-799 (50)
Supported Reset Block Groups					
Single block reset (GUI: Reset 1, API: ALPB_RESET_SINGLE)	0, 1, ..., 15	0, 1, ..., 15	0, 1, ..., 14 ^a	0, 1, ..., 14 ^a	0, 1, ..., 15
Dual block reset (GUI: Reset 2, API: ALPB_RESET_PAIR) ^b	0+1, 2+3, ..., 14+15	not available	0+1, 2+3, ..., 12+13, 14 ^a	0+1, 2+3, ..., 12+13, 14 ^a	0+1, 2+3, ..., 14+15
Quad block reset (GUI: Reset 4, API: ALPB_RESET_QUAD) ^b	ALP-4 versions only: 0—3, 4—7, 8—11, 12—15	not available	0—3, 4—7, 8—11, 12—14 ^a	0—3, 4—7, 8—11, 12—14 ^a	ALP-4 versions only: 0—3, 4—7, 8—11, 12—15
Global reset (GUI: Reset 16, API: ALPB_RESET_GLOBAL)	0—15	0—15	0—14 ^a	0—14 ^a	0—15

Table 2: DMD format

^a Commands on block 15 will be silently ignored. They do not produce errors. These commands simply do not affect the DMD.

^b ALP-4 *basic*: The availability of these reset groups depends on the signal RST2BLKZ. See also section ALPB_DEV_DDC_SIGNALS, Bit 3: RST2BLKZ.

3 Version Specific Capabilities

Caused by different hardware, the available set of features differs slightly between ALP-3 *basic* and the ALP-4 *basic* device versions (ALP-4.0, ALP-4.1, and ALP-4.2.) The table below summarizes these differences.

Feature/Code	ALP <i>basic</i> device version support
DMD type ALPB_DMDTYPE_XGA	ALP-3 <i>basic</i> : native support ALP-4 <i>basic</i> : automatically maps it to ALPB_DMDTYPE_XGA_07A
DMD type ALPB_DMDTYPE_SXGA_PLUS	ALP-3 <i>basic</i> only
DMD types ALPB_DMDTYPE_1080P_095A, ALPB_DMDTYPE_WUXGA_096A, ALPB_DMDTYPE_XGA_07A, ALPB_DMDTYPE_XGA_055A, ALPB_DMDTYPE_XGA_055X, and ALPB_DMDTYPE_WXGA_S450	ALP-4 <i>basic</i> only
DMD type ALPB_DMDTYPE_DISCONNECT	ALP-4.1 and ALP-4.2 <i>basic</i> only; read-only value
Query and control type ALPB_DEV_DDC_SIGNALS, Bit 3 (RST2BLKZ)	ALP-4 <i>basic</i> only (ALP-3 <i>basic</i> ignores this bit / resets it to '0')
Reset group ALPB_RESET_QUAD	ALP-4 <i>basic</i> only
Query type ALPB_DEV_DDC_VERSION	due to the D3000 PCB ALP-3 <i>basic</i> can only query Bit 1 and 2, valid values are 0, 2, 4, and 6; ALP-4 <i>basic</i> return Bits 0 to 2, values 0 to 7
Query type ALPB_DEV_SWITCHES	only available for ALP-3, ALP-4.0, and ALP-4.1; ALP-4.2 returns 0, because it has no DIP switches

Table 3: Differences between ALP-3 and ALP-4 *basic*

4 ALPB_DEV_DDC_SIGNALS, Bit 3: RST2BLKZ

This section applies to ALP-4 *basic* only. ALP-3 *basic* ignores the control bit RST2BLKZ and overwrites it with '0'.

This control bit can be used to select valid reset groups. The DLP® Discovery™ Digital Controllers DDC4000 and DDC4100 allow either dual block resets or quad block resets. The ALP-4 *basic* APIs check for proper usage of these reset groups and reject AlpbDevReset execution when RST2BLKZ is not set properly.

In order to use ALPB_RESET_PAIR (dual block reset) set this bit to '0'.

For ALPB_RESET_QUAD set this bit to '1'.

Note: As stated in the DDC data sheets, this control cannot be expected to take effect immediately upon assertion. So it is recommended to set it to one value and to not adjust it during normal system operation.