Applieddata.net

Embedded Computer Systems

Software Specification

for

Backlight Operation

Specification Version 1.1

ADS Document 10050-00015

Introduction

All Applied Data Systems devices that support driving a backlight inverter support software configurability of how the inverter operates. These configurations are handled through registry entries.

Supported Hardware Table (HWT) entries

```
;backlight level at boot
0xnnnn0010      0x80000000
```

Default Value: 0x80000000

Supported Values: 0x80000000 or 0x80000001

Description:

This value represents the state of the backlight at boot time as set by the boot loader. Bit 31 is a "magic" bit that should always be set to 1, allowing the boot loader to discriminate between an unset (null) value of zero and an intentional value of zero.

The first WORD (represented as "nnnn" above) is a RAM offset address that may vary by product as seen in the table below.

Product	HIWORD
AGX, VGX and GCX	0xA1E3####

Supported Registry Keys

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "StateForOn"=dword:0
```

Default Value: 0x0000

Supported Values: 0x00 or 0x01

Description:

This key sets the default "On" state for the backlight as used by the OS

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "StateForIdle"=dword:1
```

Default Value: 0x0001

Supported Values: 0x00 or 0x01

Description:

This key sets the default idle state for the backlight as used by the OS.

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "BacklightRunLevel"=dword:0
```
Default Value: 0x0000
Supported Values: 0x0000 to 0x00FF
Description:
    This key is used to set the default backlight PWM level for the backlight when the OS is in the normal Run mode

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "BacklightIdleLevel"=dword:FF
```
Default Value: 0x00FF
Supported Values: 0x0000 to 0x00FF
Description:
    This key is used to set the default backlight PWM level for the backlight when the OS is in the Idle mode.

Legacy/Deprecated Registry Keys

The following keys may be present on older systems but are no longer supported.

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "BLightLevel4On"=dword:0
```
Default Value: 0x0000
Supported Values: 0x0000 to 0x00FF
Description:
    This key is used to set the default PWM level for the backlight when the OS places it in the "on" state.

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "BLightLevel4Off"=dword:FF
```
Default Value: 0x00FF
Supported Values: 0x0000 to 0x00FF
Description:
    This key is used to set the default PWM level for the backlight when the OS places it in the "off" state.

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "ActiveHigh"=dword:0
```

Default Value: 0
Supported Values:
> 0: The backlight control is electrically LOW when on.
> 1: The backlight control is electrically HIGH when on.
> *Description:*
> This key is used to reverse the logic of the backlight inverter output of the system for compatibility with either active high or active low backlight inverters.

```
[HKEY_LOCAL_MACHINE\Platform\BackLight]
    "ReverseBackLightContol"=dword:0
```

Description:
> This key performed the same operation as "ActiveHigh"

```
[HKEY_LOCAL_MACHINE\Platform\Backlight]
    "StateForTimeout"=dword:1
```

Default Value: 0x0001
Supported Values: 0x00 or 0x01
Description:
> This key sets the default idle state for the backlight as used by the OS.

Implementation Matrix

The matrix below lists all ADS platforms verified to conform to this specification.

Date	Platform	Build	SmartIO	CPLD	Boot	Spec Rev
4/19/05	VGX	4.20.25	n/a	Rev B	1.08	1
6/2/05	GCX	4.20.10	n/a		1.03	1

Values labeled "n/a" have no effect on backlight operation on that particular platform.

Document History

The following list summarizes the changes made between releases of this document.

Version	Date	By	Notes
1	8/6/2004	ctacke	Initial Draft
	2/23/05	ctacke	Added new HWT and REG entries. Moved existing REG entries to legacy section.
1-1	3/23/05	ctacke	Released preliminary version
2	4/22/05	ctacke	Updated HWT address
3	6/2/05	ctacke	Added GCX. Added HWT prefix table
4	10/19/05	jcamann	Added StateForIdle registry value.

Specification History

The following list summarizes the changes made between versions of the specification.

REV	DESCRIPTION	BY
1.0	Initial release.	1/12/05 ctacke
1.1	New StateForIdle registry value added.	10/19/05 jcamann