

MODEL: HDB-301R

多功能高清影音擷取盒(USB 3.0)

IEI

使用手册



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警告

此類訊息內警示的資訊可能導致產品損壞甚或造成人身傷害。請嚴正看待此類訊息內的警示。



小心

遵循此類訊息內的指示,能減少遺失資料甚或損壞產品的可能性。



注意

此類訊息包含必要但不一定是緊急的資訊。 仔細閱讀裡面的說明或指示能 避免犯錯。



高溫表面,請勿觸碰

此符號表示產品表面高溫,請勿觸碰。

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1.1 概述



圖表 1-1:HDB-301R 多功能高清影音擷取盒

HDB-301R 多功能高清影音擷取盒(以下簡稱擷取盒)透過 HDMI 連接,能支援 1080p Full HD 錄影。HDB-301R 配備有高效能的編碼器,並配備有 HDMI 輸入及輸出接頭。此外,可 至官網下載的軟體開發套件(SDK)和具彈性的系統架構,簡化了與相機、影像訊號處理/ 儲存/管理和安控應用程式的整合。

1.2 特性

- HDMI 輸入接頭,支援 1920x1080@60p
- 直接輸出未經壓縮影像,最高 1080p 解析度
- 配備 USB 3.0 SuperSpeed 介面
- 支援 DirectShow-compliant 軟體
- 提供軟體開發套件(SDK)

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1.3 應用

HDB-301R 可用來連接:

- 遊戲機(PS4、Xbox One、Xbox 360)
- DVD/藍光播放器
- 攝錄影機
- 專業錄影(航海、車用、工廠、醫療)

可應用於:

- 影像監控
- 影像分析
- 影像後製
- 影像直播



錄製受保護的 HDCP 影像為法律所禁止的行為,任何未經授權的截圖或錄影,皆可能侵犯版權所有者之權利且觸犯法律。

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1.4 外觀

HDB-301R 的連接埠及指示燈位置,請見下方圖表。



圖表 **1-2**:外觀



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1.5 規格

下表列出 HDB-301R 的規格:

	HDB-301R		
PC 連接介面	USB 3.0		
輸入			
影像輸入通道	1		
影像輸入介面	HDMI		
聲音輸入通道	1		
聲音輸 入介面	HDMI (stered))	
Loop-Through 輸出	I		
影像輸出通道	1		
影像輸出介面	HDMI		
聲音輸出通道	1		
聲音輸出介面	HDMI (stered))	
影像輸入			
	1920x1080	24p/25p/30p/50p/59.94p/60p	
	1680x1050	30p/60p	
	1440x900	30p/60p	
	1360x768	30p/60p	
	1280x1024	30p/60p	
	1280x800	30p/60p	
支援解析度	1280x768	30p/60p	
	1280x720	30p/50p/59.94p/60p	
	1024x768	30p/60p	
	800x600	60p	
	720x576	50p	
	720x480	59.94p/60p	
	640x480	60p	

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	1920x1080	24p/25p/30p/50p/59.94p/60p
	1680x1050	30p/60p
	1440x900	30p/60p
	1360x768	30p/60p
	1280x1024	30p/60p
	1280x800	30p/60p
影像擷取解析度(編碼)	1280x768	30p/60p
	1280x720	30p/50p/59.94/60p
	1024x768	30p/60p
	800x600	60p
	720x576	50p
	720x480	59.94p/60p
	640x480	60p
首頻輸入		
音頻輸入 	44.1 k [,] 48 k	Hz
音頻輸入 聲音取樣頻率 系統需求	44.1 k [,] 48 k	Hz
音頻輸入 聲音取樣頻率 系統需求	44.1 k [,] 48 k Windows:	Hz
首頻輸入 聲音取樣頻率 系統需求	44.1 k [,] 48 k Windows: Microsoft® V	Hz Vindows® 7/8.1/10 32-bit/64-bit
 普頻輛入 聲音取樣頻率 系統需求 作業系統 	44.1 k · 48 k Windows: Microsoft® V	Hz Vindows® 7/8.1/10 32-bit/64-bit
甘頻輸入 啓 音取様頻率 系統需求 作業系統	44.1 k · 48 k Windows: Microsoft® V Linux: Ubuntu 14.0	Hz Vindows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic)
 首頻輸入 聲音取樣頻率 系統需求 作業系統 軟體支援 	44.1 k · 48 k Windows: Microsoft® V Linux: Ubuntu 14.0	Hz Vindows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic)
甘頻輸入 聲音取樣頻率 系統需求 作業系統 軟體支援 軟體開發套件(SDK)	44.1 k,48 k Windows: Microsoft® V Linux: Ubuntu 14.0	Hz Vindows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic) 發套件
皆頻輸入 聲音取樣頻率 系統需求 作業系統 軟體支援 軟體開發套件(SDK) 其他	44.1 k,48 k Windows: Microsoft® V Linux: Ubuntu 14.0	Hz Windows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic) 發套件
ず頻輸入 野音取様頻率 系統需求 れに、 作業系統 軟體支援 軟體現發套件(SDK) 其他 尺寸	44.1 k,48 k Windows: Microsoft® V Linux: Ubuntu 14.0 提供軟體開發	Hz Windows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic) 经套件 在mm x 18 mm
ず頬輛入 野音取様頻率 系統需求 系統需求 作業系統 軟體支援 軟體支援 軟體開發套件(SDK) 其他 尺寸 操作溫度	44.1 k,48 k Windows: Microsoft® V Linux: Ubuntu 14.0 提供軟體開發 105 mm x 58 0°C ~ 60°C (3	Hz Windows® 7/8.1/10 32-bit/64-bit 4.2 64-bit (kernel version 3.16.0-30-generic) 發套件 mm x 18 mm 32ºF ~ 140ºF),未凝結

表格 **1-1**:規格

1.6 直播/預覽建議硬體需求

直播/預覽建議硬體需求如下:

直播建議硬體需求				
軟體	XSplit			
	欲錄製 HD 1080P 影片,建議使	依據 OBS 官網,由於需要考量		
處理器	用第四代 Intel® Core™ i7 或以	的因素很多,建議先使用 OBS		
	上效能處理器	軟體的 Tools → Auto		
		Configuration Wizard,以找到		
	o GD 或以上	適合使用者的硬體規格		
介面	USB 3.0			
注意 :如需要直播,	清直接參考下方 XSplit 或 OBS 官力	方建議系統連結 。		
XSplit:				
https://www.xsplit.com	n/zh_tw/broadcaster/faq/general/v	vhat-are-the-system-		
requirements-of-xspli	requirements-of-xsplit-broadcaster			
OBS:				
https://obsproject.com/wiki/System-Requirements				
預覽建議硬體需求				
軟體	XSplit	\bigtriangledown		
處理器	第三代2.3 GHz Intel® Core™ i5-	34xx或以上效能處理器		
記憶體	4 GB (最低)			
介面	USB 3.0			

表格 1-2: 直播/預覽建議硬體需求

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1.7 尺寸圖

以下為 HDB-301R 尺寸圖。



圖表 1-3:尺寸圖(單位:mm)





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硬體安裝



- 2.1 拆開包裝
 - 2.1.1 防靜電措施



若不遵循 ESD 預防措施可能會導致 HDB-301R 的永久性損壞,甚至造成使用者的人身傷害。

靜電放電 (ESD) 將可能對電子元件產生嚴重的損壞。乾燥的天氣尤其容易引起靜電放電 (ESD)。因此,無論是打開 HDB-301R 還是接觸電子元件,預防靜電顯得尤為重要,所 以請嚴格遵守以下防靜電措施。

- 佩戴防靜電錶帶:佩戴一個簡單的防靜電錶帶可以防止由於靜電放電(ESD)
 而造成主板損害。
- 自我接地:在使用主板之前,要觸摸一下任何一種接地導電物。在使用主板的
 時候,也要頻繁地觸摸連接到地面的導電物。
- 使用防靜電墊子:當安裝或配置 HDB-301R 系統和電子元件的時候,把產品放 在防靜電墊子上,這樣可以減少 ESD 對產品的損壞。
- 只接觸 PCB 的邊緣:當使用 PCB 的時候,只能接觸 PCB 的邊緣。

2.1.2 開箱注意事項

打開 HDB-301R 包裝時,請遵循以下幾點:

- 遵循第 2.1.1 章列出的防靜電措施。
- 確認包裝盒朝上,避免 HDB-301R 掉出盒子外。
- 確認第2.1.3章列出的所有配件齊全。

TONE OF





如果清單中列出的部分配件遺失,請勿繼續安裝。聯繫您購買HDB-301R 的IEI代理商或經銷商,或直接聯繫IEI業務人員。欲聯繫IEI業務人員,請 發送郵件至<u>sales@ieiworld.com</u>。

HDB-301R 的包裝內含:

數量	項目	圖片
1	HDB-301R 多功能高清影音擷取盒	
1	USB 3.0 連接線	
1	快速安裝指南	Cuck Installation Guide Version 1.9 Proceed Cucker Proceed

表格 2-1:包裝明細

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2.2 安裝注意事項

安裝過程中,請注意以下事項:

- **閱讀使用手冊**:使用手冊對 HDB-301R 的安裝說明和配置選項提供完整的描述。
- 專業人員:安裝 HDB-301R 的必須是經過培訓的專業人員。維護,升級,或者
 維修的專業人員需熟悉潛在危險。

2.3 連接至電腦

HDB-301R 配備有 USB 3.0 接頭可連接到電腦。請按照以下步驟,使用隨附的 USB 線連接 HDB-301R 和電腦。

- 步驟 1: 找出USB 3.0 接頭。USB 3.0 接頭的位置,請見 圖表 2-1。
- 步驟 2: 將 USB 3.0 連接線上的 Micro B 接頭和 HDB-301R 上的 USB 3.0 接頭對齊。
- 步驟 3: 一旦對齊,輕輕將 USB 3.0 連接線的 Micro B 接頭插入 HDB-301R 的 USB 3.0 接頭。
- **步驟 4:** 將 USB 3.0 連接線的另一端(USB Standard Type A) 接到電腦的 USB Type A 插 頭。



圖表 2-1:連接 HDB-301R 至電腦

2.4 連接 HDMI 裝置

HDB-301R 能夠連接至各種 HDMI 裝置,例如:遊戲機 (PS4、Xbox One、Xbox 360)、攝錄影機。請按照以下步驟,連接 HDMI 裝置到 HDB-301R。

- 步驟 1: 使用 HDMI 連接線將 HDMI 裝置與 HDB-301R 的 HDMI 輸入端連接。
- 步驟 2: 使用另一條 HDMI 連接線將 HDB-301R 的 HDMI 輸出端連接至螢幕或電視的 HDMI 插座。



圖表 2-2: 連接 HDMI 裝置到 HDB-301R

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IEI HDB-301R AP (Windows)

3.1 概述

IEI HDB-301R AP 能夠即時播放從 HDMI 輸入接頭傳送進來的未經壓縮影像。關於此程式的詳細資訊,請參考以下章節。



IEI HDB-301R AP 支援以下作業系統:

- Microsoft® Windows® 7 32-bit & 64-bit
- Microsoft® Windows® 8.1 32-bit & 64-bit
- Microsoft® Windows® 10 32-bit & 64-bit

3.2 安裝 IEI HDB-301R AP



請先至 IEI 網站下載 IEI HDB-301R AP 安裝檔案。

請依照以下步驟安裝IEI HDB-301R AP。如果系統已安裝舊版本的應用程式,請參考第 3.2.1 章先行解除安裝。



如果在安裝過程中出現 User Access Control 對話方塊,請點選 Yes 繼續。

- 步驟1: 確認以系統管理員身分登入系統。
- 步驟 2: 將 HDB-301R 連接到電腦。
- 步驟 3: 雙擊從 IEI 網站下載的 IEI HDB-301R AP 安裝檔。

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步驟 4: 選取Setup Wizard的顯示語言(圖表 3-1)。點擊OK繼續。

Installer L	anguage 🔀
	Please select a language.
0	Endish

圖表 3-1:選取顯示語言

步驟 5: 當IEI HDB-301R AP Setup Wizard 視窗 (圖表 3-2) 出現時,點擊Next 繼續。



圖表 3-2: IEI HDB-301R AP Setup Wizard 視窗

步驟 6: 選擇應用程式的安裝資料夾 (圖表 3-3), 然後點擊Install開始安裝。

HDB-301R_V100_AS Setup	
Choose Install Location Choose the folder in which to install HDB-301R_V100_AS .	
Setup will install HDB-301R_V100_AS in the following folder. To install in a diff dick Browse and select another folder. Click Install to start the installation.	erent folder,
Destination Folder C:\Program Files\HDB-301R_V100_AS Br	owse
Space required: 12.9MB Space available: 49.4GB	
Nullsoft Install System v2.46	Cancel

圖表 3-3:選擇安裝資料夾

步驟 7: 當 IEI HDB-301R AP 應用程式安裝完成時,會出現以下畫面,點擊 Finish 退出。



圖表 3-4:安裝完成



步驟 8: 於Windows控制台檢視裝置管理員以確認HDB-301R已正確安裝完成

(圖表 3-5)。

Device Manager
File Action View Help
⊿ 🚑 iei-PC
Image: A state of the state
Disk drives
Display adapters
🕨 🖉 Human Interface Devices
IDE ATA/ATAPI controllers
Keyboards
Mice and other pointing devices
Monitors
Other devices
Ports (COM & LPT)
Processors
Sound, video and game controllers
HDB-301R-R10
Intel(R) Display Audio
Realtek High Definition Audio

圖表 3-5:裝置管理員

3.2.1 解除安裝應用程式

請按照以下步驟解除安裝 IEI HDB-301R AP 應用程式。

- 步驟1: 確認以系統管理員身分登入系統。
- 步驟 2: 至 Start → All Programs → HDB-301R_V100_AS,然後點擊 Uninstall。

HDB-301R_V100_AS	
👰 HDB-301R	
🎯 Uninstall	
🗋 Website	

圖表 3-6:解除安裝

步驟 3: 會出現一確認視窗,點擊 Yes 以進行解除安裝。



3.3 使用 IEI HDB-301R AP

請按照以下步驟使用 IEI HDB-301R AP 觀看從 HDMI 輸入接頭傳送進來的影像。

步驟 1: 確認HDB-301R已接上影像輸入來源及顯示裝置。關於HDMI裝置連接,請參考第 2.4 章。

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步驟 2: 當IEI HDB-301R AP已安裝至電腦, Windows桌面上會出現HDB-301R圖示(圖表 3-7)。雙擊此圖示以開啓應用程式。



圖表 3-7:IEI HDB-301R AP 圖示

使用者可以從Start → All Programs → HDB-301R_V100_AS點擊HDB-301R, 以開啓應用程式(圖表 3-8)。

B HDB-301R_V100_AS	
🥘 HDB-301R	
🎯 Uninstall	
Website	

圖表 3-8:從 Windows 開始選單開啓

步驟 3: 出現IEI HDB-301R AP應用程式畫面(圖表 3-9)。點擊Device會出現下拉選單, 選取影像輸入來源後,使用者可以點擊Full screen以全螢幕模式顯示影像、使用 Zoom Out/Zoom In功能放大/縮小影像,另外也可以勾選FR讓畫面更新率出現在 顯示畫面視窗。

IEI HDB-301R AP v1.0.0.23 - 1920x1080 60p 44.1kHz - FW:2.7.2 - FPGA:1.27			
Device : HDB-301R-R10	Run Stop Full screen	FR 48 ZoomIn ZoomOut 50%	3
48			

圖表 3-9: IEI HDB-301R AP 畫面

步驟 4: 欲停止播放影像,點擊 Stop。

在 IEI HDB-301R AP 畫面最上方,使用者可以檢視應用程式版本、影像的解析度 及畫面更新率、HDB-301R 的韌體版本及 FPGA 版本。

Ø	IEI HDB-301R AP v1.0.0.23 - 1920x1080 60p 44.1kHz - FW:2.7.2 - FPGA:1.27
	Device : HDB-301R-R10 Run Stop Full screen Fr 48 ZoomIn ZoomOut 50%
4	48

圖表 3-10: IEI HDB-301R AP -- Stop (停止) 按鍵

3.4 Audio 設定

如果播放影像時沒有聲音,請參考以下步驟解決問題。

步驟 1: 至 控制台 → 聲音 → 錄製 或是對著Windows工作列的音效圖示按滑鼠右鍵, 然後點擊錄音裝置 (圖表 3-11)。



圖表 3-11:錄音裝置

步驟 2: 選取HDB-301R-R10,然後點擊內容(圖表 3-12)。

ST.C. Statement

9 聲音									×
播放	錄製	音效	通訊]					
選取下	面的錄音	皆裝置以修	多改其設定	Ë:					
	數 2- 页	位音效 介 HDB-30: 設裝置	面 1R-R10						
7	M Re 就	i crophor ealtek Hiç 緒	ne Igh Defini	ition A	udio				
Ê	ት定(C)				設為	預設值((S) 🔻	内容	ş(P)
					確定		取消		套用(A)

圖表 3-12:數位音效介面

步驟 3: 點擊接聽標籤 (圖表 3-13)。

🖙 數位音效介面 - 內容			X
一般 接聽 等級 進階			
您可以透過此 數位音效介面 端子開	決聽可攜式音頻	^{美播} 放器或其他裝置	8
☑ 聆聽此裝置			
透過此裝置播放:			
預設播放裝置		•	
電源管理			
◎ 使用電池電力時繼續執行			
◎ 自動停用以節省電力			
	確定	取消	套用(A)

圖表 3-13:數位音效介面 -- 內容

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步驟 4: 勾選聆聽此裝置,然後點擊套用(圖表 3-13)。



如果**聆聽此裝置**核取方塊已勾選,請先取消勾選,點擊**套用**,然後重複步驟4的動作。



於 Windows 10 作業系統下使用 IEI HDB-301R AP 時,若出現無聲音的現象,請重新開機即可解決。





搭配第三方軟體使用 HDB-301R

4.1 概述

IEI HDB-301R AP 僅提供預覽影像的功能,若需要進行直播或錄製影像,請搭配第三方軟 體使用。HDB-301R 相容 DirectShow 直播編檔軟體,如 OBS、XSplit、Wirecast、VLC 和 PotPlayer,通訊軟體如 Skype、Google Hangout 等,讓使用者可以快速的進行影像編輯、錄影、直播串流與視訊分享。

以下章節將概略介紹如何加入 HDB-301R 視訊擷取裝置到常見的 OBS 與 XSplit 軟體。

4.2 OBS 操作方式

- 步驟 1: 開啓 OBS。點擊左下角的加號以新增場景和來源。
- 步驟 2: 在來源欄位點擊加號新增視訊擷取裝置後,點擊確定。
- 步驟 3: 於屬性'視訊 摄取装置' 視窗的装置欄位選取 HDB-301R-R10, 然後點擊確定。



圖表 4-1: OBS 操作畫面



- **4.3 XSplit** 操作方式
 - 步驟1: 開啓 XSplit。點擊左下角的添加。
 - 步驟 2: 選取 Devices (webcam, capture cards...)。
 - 步驟3: 選取視頻。
 - 步驟 4: 選取 HDB-301R-R10。出現 HDB-301R 的影像後可調整影像大小。



圖表 4-2:XSplit 操作畫面



欲瞭解詳細的操作步驟,請至IEI官網(<u>http://www.ieiworld.com/</u>), 點選產品 → 影像擴取盒 → HDB-301R → Features, 觀看 HDB-301R相關的操作影片。

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HDB-301R SDK (Windows)

5.1 系統需求

SDK 安裝的系統需求如下所示。如果系統不是 Microsoft Visual Studio 2010 SP1 或更新版本,使用者需要安裝 Microsoft Visual C++ 2010 SP1 Redistributable Package (x86)。

- Microsoft Windows 7 32-bit/64-bit 或更新版本
- DirectX SDK -- August 2007
- Windows SDK 7.1
- Microsoft Visual Studio 2010 SP1

5.2 HDB-301R SDK 安裝

安裝IEI HDB-301R AP時,會一併安裝HDB-301R SDK。關於應用程式安裝,請參考第 3.2 章。

5.3 SDK 介紹

以下章節將概略介紹此 SDK。使用者可以從 sample code 了解更多細節及用途。

5.3.1 Error Code 定義

enum tagIEIDeviceErrCode

{

IEIDeviceErrCode_NG = 0, //Device NG IEIDeviceErrCode_OK = 1, //Device OK IEIDeviceErrCode_Library_NoInit = 1000, //Library is not initial IEIDeviceErrCode_Device_NoInit, //device is not initial IEIDeviceErrCode_Device_InitOver, //device initial number is over IEIDeviceErrCode_NoDevice, //no device IEIDeviceErrCode_Device_Err, //device error IEIDeviceErrCode_InitParam_Err, //parameter initial error IEIDeviceErrCode_DimensionSizeX_Over, //dimension size X is over IEIDeviceErrCode_DimensionSizeY_Over, //dimension size Y is over



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HDB-301R 多功能高清影音擷取盒

IEIDeviceErrCode_TimeOut, //command is timeout IEIDeviceErrCode_Callback_Err, //callback setting error IEIDeviceErrCode_Surface_Over, //surface buffer over IEIDeviceErrCode_Surface_Err, //surface buffer error

IEIDeviceErrCode_Param_Err, //parameter is error IEIDeviceErrCode_Device_NotRun, // device is not run IEIDeviceErrCode_Image_None, //no image in buffer IEIDeviceErrCode_NoInit_HidDevice, //not initial HID controller IEIDeviceErrCode_HidDeviceError, //HID device is error IEIDeviceErrCode_No_Hid_Device, //no HID device IEIDeviceErrCode_AES_Error, //AES command is error

};

enum tagIEIDeviceParam

{

IEIDeviceParam_AutoExposure = 0, IEIDeviceParam_AutoControl = 1, IEIDeviceParam_Exposure, IEIDeviceParam_Gain, IEIDeviceParam_Brightness, IEIDeviceParam_Contrast, IEIDeviceParam_Hue, IEIDeviceParam_Saturation, IEIDeviceParam_Sharpness, IEIDeviceParam_Gamma, IEIDeviceParam_ColorEnable, IEIDeviceParam_WhiteBalance, IEIDeviceParam_BacklightCompensation, IEIDeviceParam_MaxSizeX, IEIDeviceParam MaxSizeY, IEIDeviceParam_SizeX, IEIDeviceParam_SizeY, IEIDeviceParam_BufferSize, IEIDeviceParam_Depth,

IEIDeviceParam_Channels,

IEIDeviceParam_FrameRate, IEIDeviceParam_CaptureSpendTime, IEIDeviceParam_OneShot, IEIDeviceParam_SurfaceNum,

};

5.3.2 API 介紹

	void
Prototype	GetLibraryVersion
	(int *y, int *m, int *d, int *v)
Description	Get SDK version
	у:
	year.
	m :
Paramotor	month.
Falameter	d :
	day.
	v :
	version.
Return	None

	IEIDevice	
Prototype	Initialize_IEI_HDB	
	0	
Description Initialize IEI HDB library		
Parameter	None.	
Detum	IEIDevice:	
Return	taglElDeviceErrCode	

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	IEIDevice
Prototype	UnInitialize_IEI_HDB
	0
Description	Release IEI HDB library
Parameter	None
Deturn	IEIDevice:
Return	taglEIDeviceErrCode

	IEIDevice
Prototype	Get_IEI_HDB_DeviceName
	(int nID, char* sName, int nBufferSize)
Description	Get device name.
	nID:
	Device Index.
Paramotor	sName:
raiametei	char array.
	nBufferSize:
	char array size.
Poturn	IEIDevice:
Neturn	tagIEIDeviceErrCode

	IEIDevice
Prototype	Get_IEI_HDB_DeviceNum
	(int &nName)
Description Get total device number.	
Parameter	nName:
	Device number.
Deturn	IEIDevice:
Return	tagIEIDeviceErrCode

1000

	IEIDevice
Prototype	Open_IEI_HDB_Device
	(int nID, int &nDevice, void* p_hWnd)
Description	Open device.
	nID:
	Device index.
Parameter	nDevice:
Faiameter	feedback device index.
	p_hwnd
	dialog HWND
Poturn	IEIDevice:
Netuin	taglEIDeviceErrCode

Prototype	IEIDevice
	Close_IEI_HDB_Device
	(int nDevice)
Description	Close device.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	tagIEIDeviceErrCode

Prototype	IEIDevice
	Init_IEI_HDB_Control
	(int nDevice)
Description	Init parameter control.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	tagIEIDeviceErrCode

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Prototype	IEIDevice
	Init_IEI_HDB_ProcAmp
	(int nID, int &nDevice)
Description	Init parameter procamp control.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	taglEIDeviceErrCode

Prototype	IEIDevice
	Get_IEI_HDB_DeviceParam
	(int nDevice, int nParam, long &IValue)
Description	Get device parameter.
Parameter	nDevice:
	device index.
	nParam:
	parameter define number. See tagIEIDeviceParam.
	IValue:
	get value.
Return	IEIDevice:
	tagIEIDeviceErrCode

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Prototype	IEIDevice
	Set_IEI_HDB_DeviceParam
	(int nDevice, int nParam, long IValue)
Description	Set device parameter.
Parameter	nDevice:
	device index.
	nParam:
	parameter define number. See tagIEIDeviceParam.
	IValue:
	Set value.
Return	IEIDevice:
	taglEIDeviceErrCode

Prototype	IEIDevice
	Get_IEI_HDB_DeviceParamRange
	(int nDevice, int nParam, int &nMin, int &nMax, int &nStep)
Description	Get device parameter range.
	nDevice:
	device index.
Parameter	nParam:
	parameter define number. See tagIEIDeviceParam.
	nMin:
	min value.
	nMax:
	max value.
	nStep:
	value's step.
Poturn	IEIDevice:
Reluiti	taglEIDeviceErrCode



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Prototype	IEIDevice
	Set_IEI_HDB_DeviceCallback
	(int nDevice, FRAMECALLBACK func)
Description	Register image's callback function's pointer.
Parameter	nDevice:
	device index.
	func:
	Callback function's pointer.
Return	IEIDevice:
	tagIEIDeviceErrCode

Prototype	IEIDevice
	Get_IEI_HDB_QueueBuffer
	(int nDevice, void* ImgBuffer)
Description	Get queue buffer's image data.
Parameter	nDevice:
	device index.
	ImgBuffer:
	Image buffer's pointer.
Return	IEIDevice:
	taglEIDeviceErrCode

Prototype	IEIDevice
	Run_IEI_HDB
	(int nDevice)
Description	Run device.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	tagIEIDeviceErrCode

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Prototype	IEIDevice
	Pause_IEI_HDB
	(int nDevice)
Description	Pause device.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	taglEIDeviceErrCode

Prototype	IEIDevice
	Stop_IEI_HDB
	(int nDevice)
Description	Stop device.
Parameter	nDevice:
	device index.
Return	IEIDevice:
	tagIEIDeviceErrCode

Prototype	IEIDevice
	Get_IEI_HDB_FWVersion
	(int nDevice, BYTE b[])
Description	Get device firmware version.
Parameter	nDevice:
	device index.
	b:
	fw version, length is 14. Ex: HDBD722V2.03
Return	IEIDevice:
	tagIEIDeviceErrCode

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	IEIDevice		
Prototype	Get_IEI_HDB_FPGAVersion		
	(int nDevice, BYTE b[])		
Description	Get device FPGA version.		
Parameter	nDevice:		
	device index.		
	b:		
	FPGA version, length is 2. Ex: 23		
Return	IEIDevice:		
	tagIEIDeviceErrCode		

	IEIDevice				
Prototype	Get_IEI_HDB_ParameterData				
	(int nDevice, int *iResolutionX, int *iResolutionY, int				
	*iFrameRate, int *iInterlaced)				
Description	Get video source data.				
	nDevice:				
	device index.				
	iResolutionX:				
	Video source's resolution width, ex 1920.				
Parameter	iResolutionY:				
Parameter	Video source's resolution height, ex 1080.				
	iFrameRate:				
	video source's frame rate, ex 60.				
	iInterlaced:				
	video source is progressive(0) or interlacing(1).				
Determ	IEIDevice:				
Netuill	tagIEIDeviceErrCode				

E.C.E.

	IEIDevice			
Prototype	Set_IEI_HDB_FWReset			
	(int nDevice)			
Description	Set device reset.			
Parameter	nDevice:			
	device index.			
Return	IEIDevice:			
	taglEIDeviceErrCode			

	IEIDevice			
Prototype	Get_IEI_HDB_BypassPortEnable			
	(int nDevice, bool *bEnable)			
Description	Get device's bypass port is enable / disable			
Parameter	nDevice:			
	device index.			
	bEnable:			
	bypass is enable(true) / disable(false).			
Return	IEIDevice:			
	tagIEIDeviceErrCode			

	IEIDevice			
Prototype	Set_IEI_HDB_BypassPortEnable			
	(int nDevice, bool bEnable)			
Description	Set device's bypass port is enable / disable			
Parameter	nDevice:			
	device index.			
	bEnable:			
	bypass is enable(true) / disable(false).			
Return	IEIDevice:			
	taglEIDeviceErrCode			



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	IEIDevice			
Prototype	Get_IEI_HDB_FrameFlag			
	(int nDevice, bool *bOdd)			
Description	Get receive frame is odd or even.			
Parameter	nDevice:			
	device index.			
	bOdd:			
	Odd frame is true, even frame is false. For interlacing.			
Return	IEIDevice:			
	taglEIDeviceErrCode			

	IEIDevice			
Prototype	Set_IEI_HDB_SoundRenderEnable			
	(int nDevice, bool bSoundEnable)			
Description	Set sound renderer is enable / disable			
Parameter	nDevice:			
	device index.			
	bSoundEnable			
	renderer is enable(true) / disable(false).			
Return	IEIDevice:			
	taglEIDeviceErrCode			

	IEIDevice		
Prototype	Set_IEI_Device_WindowPosition		
	(int nDevice, RECT rect)		
Description	Set IVideoWindow size		
Parameter	nDevice:		
	device index.		
	rect:		
	window size		
Return	IEIDevice:		
	taglEIDeviceErrCode		

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	IEIDevice		
Prototype	Set_IEI_Device_SetRendererStatus		
	(int nDevice, int nRenderer)		
Description	Set device's renderer status to NULL renderer / Default		
Description	renderer.		
Parameter	nDevice:		
	device index.		
	nRenderer:		
	Renderer index		
Return	IEIDevice:		
	taglEIDeviceErrCode		

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HDB-301R SDK (Linux)

6.1 系統需求

欲在 Linux 環境下使用 IEI HDB-301R AP SDK,以下程式必須要安裝。

- Kernel: 3.16.0 (請更新至 3.16.0 版本或是最新的 linux kernel)
- OS: Ubuntu 14.04 Distribution 32-/64-bit

6.2 軟體安裝



請至 IEI 網站下載 IEI HDB-301R AP SDK 檔案。

請參考以下章節安裝 IEI HDB-301R AP SDK 至 Linux 系統。

6.2.1 Bin 檔

步驟1: 輸入下方資訊以 root 身分登入。

sudo -i

步驟 2: 輸入密碼。

password: *****

- 步驟 3: 將 IEI 網站下載的 IEI_hdb301xx_1_0_5_bin_3.16.0-30-generic_20150923_5560 (1_0_5 為發行版本,20150923 為發行日期,5560 為 svn 版本,3.16.0-30-generic 為 kernel 版本)檔案複製到系統硬碟。
- 步驟4: 輸入下方資訊以解壓縮檔案。

tar zxvf IEI_hdb301xx_ (version)_bin_(kernel version) (date)(svn version).tar.gz #tar zxvf IEI_hdb301xx_1_0_5_bin_3.16.0-30-generic_20150923_5560.tar.gz



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步驟 5: 輸入下方資訊以變更 SDK directory。

cd IEI_hdb301xx_ (version)_bin_(kernel version) (date)(svn version)
cd IEI_hdb301xx_1_0_5_bin_3.16.0-30-generic_20150923_5560

步驟 6: 如果系統 kernel 版本為 3.16.0 或更新, 請跳過步驟 6~7。

#./update_kernel_3-16-0.sh

.....

- 步驟7: 請重新開機。
- 步驟 8: 輸入以下資訊以安裝 IEI HDB-301R AP SDK。

#./env.sh

Please press ENTER.

```
A good blender ppa is here -
https://launchpad.net/~irie/+archive/blender
To further extend this ppa to libav11 check here -
https://launchpad.net/~mc3man/+archive/ubuntu/testing6
To repeat -
*Please note that if using this ppa I would *not* try upgrading to 14.10/15.04
ay on 14.04*
If upgrading anyway use ppa-purge first -
sudo ppa-purge ppa:mc3man/trusty-media
Also note that with apt-get a sudo apt-get dist-upgrade is needed for initial
More info: https://launchpad.net/~mc3man/+archive/ubuntu/trusty-media
Press [ENTER] to continue or ctrl-c to cancel adding it
```

Please press Y to confirm the system update.

```
Reading state information... Done
The following extra packages will be installed:
 libpthread-stubs0-dev libx11-dev libx11-doc libxau-dev libxcb1-dev
 libxdmcp-dev libxext-dev x11proto-core-dev x11proto-input-dev
 x11proto-kb-dev x11proto-video-dev x11proto-xext-dev xorg-sgml-doctools
 xtrans-dev
Suggested packages:
 libxcb-doc libxext-doc
The following NEW packages will be installed:
 libpthread-stubs0-dev libx11-dev libx11-doc libxau-dev libxcb1-dev
 libxdmcp-dev libxext-dev libxv-dev x11proto-core-dev x11proto-input-dev
 x11proto-kb-dev x11proto-video-dev x11proto-xext-dev xorg-sgml-doctools
 xtrans-dev
 upgraded, 15 newly installed, 0 to remove and 110 not upgraded.
Need to get 3,729 kB of archives.
After this operation 18.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Please press Y to confirm the system update.

Reading state information Done
The following extra packages will be installed:
i965-va-driver libass5 libenca0 libfdk-aac0 libmp3lame0 libopencore-amrnb0
libopencore-amrwb0 libopus0 libsdl1.2debian libsoxr0 libva1 libvdpau1
libvidstab1.0 libvo-aacenc0 libx264-142 libx265-59 libxvidcore4
va-driver-all vdpau-va-driver
Suggested packages:
opus-tools nvidia-vdpau-driver vdpau-driver libx265-59-dbg
The following NEW packages will be installed:
ffmpeg i965-va-driver libass5 libenca0 libfdk-aac0 libmp3lame0
libopencore-amrnb0 libopencore-amrwb0 libopus0 libsdl1.2debian libsoxr0
libva1 libvdpau1 libvidstab1.0 libvo-aacenc0 libx264-142 libx265-59
libxvidcore4 va-driver-all vdpau-va-driver
0 upgraded, 20 newly installed, 0 to remove and 110 not upgraded.
Need to get 32.6 MB of archives.
After this operation, 117 MB of additional disk space will be used.
Do you want to continue? [Y/n] y

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步驟 9: 檢查 HDB-301R 裝置。

#ls -al /dev/video0
crw-rw----+ 1 root video 81, 0 2015-04-23 00:39 /dev/video0
#dmesg | grep -i HDB-301R
[2588.853968] usb 4-4: Product: HDB-301R-R10
[2588.863941] uvcvideo: Found UVC 1.10 device HDB-301R-R10 (2933:d722)

6.2.2 原始碼

步驟 1: 輸入下方資訊以 root 身分登入。

\$ sudo su

步驟 2: 輸入密碼。

password: *****

- 步驟 3: 將 IEI 網站下載的 IEI_hdb301xx_(SDK VERSION)_(RELEASE DATE)_(SVN VERSION).tar.gz 檔案複製到系統硬碟。
- 步驟4: 輸入下方資訊以解壓縮檔案。

tar zxvf IEI_hdb301xx_(SDK VERSION)_(RELEASE DATE)_(SVN VERSION).tar.gz tar zxvf IEI_hdb301xx_1_0_3_5560.tar.gz

步驟 5: 輸入下方資訊以變更 SDK directory。

\$ cd hdb301xx_(version) /api/linux/ \$ cd hdb301xx_1_0_3/hdb301r_ffplay/

步驟 6: 輸入下方資訊以安裝 IEI HDB-301R AP SDK。

make

步驟 7: 系統開始安裝 IEI HDB-301R AP SDK。

6.3 於 Linux 環境使用 IEI HDB-301R AP SDK



如果變換解析度的間隔太短,可能會造成裝置錯誤。為避免此情形發生, 切換解析度的間隔請多於4秒。

- **步驟 1:** 變換至< IEI_hdb301xx_1_0_5_bin_3.16.0-30-generic_20150922_5549>資料 灰。
- 步驟 2: 輸入下方資訊於 Linux 環境開啓 IEI HDB-301R AP SDK。

\$./iei_ffplay

步驟 3: 會出現 SDK 畫面。使用者可以從畫面上 SDK 版本、影像的解析度及畫面更新率、 HDB-301R 的韌體版本及 FPGA 版本。。









常見問題



-

- Q: 如何下載最新版的驅動程式?
- A: HDB-301R是符合UVC和UAC標準的設備,因此不需要安裝驅動程式。
- Q: AP、SDK、程式範例碼的路徑位置?
- A: AP以及程式碼範例內含在 SDK 安裝包。如果你想要下載最新的AP、SDK 及程式碼範例, 請上官網(<u>http://www.ieiworld.com/</u>),點選 產品 → 影像擴取盒 → HDB-301R → Download,找到並下載最新的AP、SDK 及程式碼範例。



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Linux Open Source Code



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