Section 1: Initialization

If the HUD and Video board are ON then first (if not you can omit these steps and start directly from Step 5):

- 1) Stop CANoe
- 2) Power OFF HUD (cut power supply)
- 3) Power OFF video board (cut power supply)
- 4) Disconnect HDMI from computer
- 5) Power ON video board (connect power supply)

Section 2: Check Videobox configuration

If the Videobox is already functioning, proceed to Section 2. Else if the Videobox is operated for the first time, do a visual inspection to ensure that the hardware is correctly configured.

Set of Jumpers and mode switches numbered are from 1 to 5(see the below figure). Ensure that the jumper and switch positions are exactly as depicted on the below pictures.



Closer view of 1 and 2



Closer view of 3



Closer view of 4 and 5



Section 2: Prepare video signal in Analog LaunchPAD

Alle Apps Dokumente Einstellungen Mehr 🔻 Höchste Übereinstimmung Analog LaunchPAD 6 Ordner Analog LaunchPAD Analysis - in Ethernet 5 Арр Analysis - in Ethernet > ビ Öffnen Analysis - in Ethernet G Als Administrator ausführen Dokumente Dateispeicherort öffnen analog.cbf -⊐ An "Start" anheften analog.can > → An Taskleiste anheften Analysis.xvp > 🗓 Deinstallieren org.apache.lucene.analyzers-> smartcn_8.0.0.v20190404-1858.jar sorg.apache.lucene.analyzers-> common_8.0.0.v20190404-1858.jar **anal**ogmeasurement.can > analogmeasurement.cbf > 💽 🧰 🖭 🧏 📥

6) Start Analog LaunchPAD

Refer Chapter 4 in this document if you still haven't installed Analog LaunchPAD

7) Ensure DS90UB929 is displayed under Devices

员 Texas Instruments - Analog LaunchPA	D								
Tasks		(USB2ANY 42	239A26	E1D0(02C00/1) -	D590UB929			
e Devices	۲	Information	HDMI	Syste	m Topology	Pattern Generator	Registers	Scripting	
With the second secon		Device In Device:	formatio	n —	DS90UB929	HDMI-to-FPD-Link II	I Bridge		
🔈 Tools	۲	I2C Addr	ess (8-bi	t):	2 0x18				
Preferences	۲	Pixel Cloc	k: Madau		33.288 MH	z			
🕐 Help	۲	Serial Link Mode:			FPD-Link III				
		Audio Mo	de:		Surround				

8) Load script:

Script Link

Devices	(USB2AIIY 4239A26E1D002C00/1) - DS90UB929 Information HDMI System Topology Pattern Generator Registers Scripting Remote Registers Patgen Registers	
USB2ANY 4239A26E1D002C00 DS90UB929 Tools 7 Preferences 7 Help 7	Texas Instruments - Analog LaunchFAD © 2007-2010 Texas Instruments Inc. All Rights Reserved The variable "supBoards" contains the selected daughter board object. The variable "supBoards" contains a list of ALF Boa objects present on this machine. > El Bun Duthon Crimt	rd Setup
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	Organisieren 👻 Neuer Ordner	
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Status after script is executed :

🔋 Texas Instruments - Analog LaunchPAD		_		×
Tasks	(USB2ANY 4239A26E1D002C00/1) - D590UB929			×
Devices 😞	Information HDMI System Topology Pattern Generator Registers Scripting Remote Registers Patgen Registers			^
CISB2ANY 4239A26E1D002C00	Texas Instruments - Analog LaunchPAD @ 2007-2018 Texas Instruments Inc. All Rights Reserved The variable "board" contains the selected daughter board object. The variable "alpBoards" contains a list of	^	Run	
💩 Tools 🛛 😵	ALP Board objects present on this machine.		Setup	
Preferences Image: Constraint of the second secon	<pre>>*** Running HDMI_timing_script.py *** EDID readback: [0, 255, 255, 255, 255, 255, 255, 255, 0, 5, 215, 0, 0, 0, 0, 0, 0, 255, 34, 1, 3, 128, 50, 31, 120, 7, 238, 149, 163 , 84, 76, 153, 38, 15, 80, 84, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,</pre>			-

Section 3: Prepare HUD for display

- 8) Connect HDMI to computer
- 10) Start CANoe (Bus wake up HUD) configuration corresponding to the SW release.

	*	🖗 – 🔍 🛛	ii - 📔	🚰 📑 Ŧ					VW_M	EB2_HUD_V10.c	fg * [Real Bus] - Vector CANoe	
	File	Home	Analysis	Simulation Te	st Diagnostics	Environment	Hardware Tools	Layout				
	Start	Stop 5	Step [Break Animate	100 V	 Online Mode Real Bus Standalone Mode 	dec hex sym num	Window Synchronization	Write P	Panel Favorites	Remove XCP/CCP		
ł	Trace						д ;	x				
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1	Time		Chn	ID	Name		Event Ty	*				
1	् 🖽	5547.0890	B2 CAN 1				CAN FD E	^				
1	् 🖻	6617.2257	50 CAN 1	FD	ESP_21_XIX_E3V_AB	CANFD	CAN FD F					
1	୍ 🕀 –	6617.2257	50 CAN 1	-	ESP_21_XIX_E3V_AB	CANFD_E2E	AUTOSAF					
1	୍ ⊞-	6617.2252	96 CAN 1	1B00001Bx	NMH_HUD_XIX_E3V_	ABCANED	CAN Fram					
1	୍ 🗄 -	6617.2252	96 CAN 1	-	NMH_HUD_XIX_E3V_	ABCANED	AUTOSAF					
1		6617.1658	00 CAN 1	16A954B5x	RLS_02_XIX_E3V_AB	CANED	CAN FD F					
1	• • • • • • • • • • • • • • • • • • •	6617.1658 📎	00 CAN 1	-	RLS_02_XIX_E3V_AB	CANFD_E2E	AUTOSAR					
1	< ∄	6617.2254	61 CAN 1	17F0001Bx	KN_HUD_XIX_E3V_A	BCANFD	CAN FD F					
1	< ₽	6617.2254	51 CAN 1	-	KN_HUD_XIX_E3V_A	BCANFD	AUTOSAF					
1	< ₽	6617.2058	72 CAN 1	663	BEM_02_XIX_E3V_AB	BCANED	CAN FD F					
1	< ₽	6617.2058	72 CAN 1	-	BEM_02_XIX_E3V_AB	BCANED	AUTOSAR					
1	< ₽	6617.2059	67 CAN 1	3C0	Klemmen_Status_01	XIX_E3V_ABCANFI	D CAN FD F					
1	<	6617.2059	57 CAN 1	-	Klemmen_Status_01	XIX_E3V_ABCANFI	D AUTOSAF					
		5549.9148	41 CAN 1	1D001B73x	HID_HUD_ZR_Req_F	D_XIX_E3V_ABCAN	NFD CAN FD F					
-	9	5549.9148	41 CAN 1	-	HID_HUD_ZR_Req_F	D_XIX_E3V_ABCAN	NFD AUTOSAR					
		6617.2062	53 CAN 1	1B000010x	NMH_Gateway_XIX_	E3V_ABCANFD	CAN Fram					

11) Power ON HUD (power supply)

12) Check the computer recognizes the screen (displays settings) and share the screen with the extended mode option.

Tasks	System Scripting
E Devices	
C USB2ANY 7438A26E28001F00	Texas Instruments - Analog LaunchPAD © 2007-2018 Texas Instruments Inc. All Rights Reserved The variable "alpBoards" contains a list of ALP Board objects present on this machi
• Tools	
 System Scripting Plug-in Management 	(USB2ANY 7438A26E28001F00/1) - D590UB929
Er Collinguation USB2ANY/Aardvark Setup Demo Mode Setup EEPROM Setup Preferences Enable Demo Mode Help Setup Setup	Information HDMI System Topology Pattern Generator Registers Scripting Remote Registers Patgen Registers Device DS90UB929 HDMI-to-FPD-Link III Bridge 2 2 12C Address (8-bit): 0x18 10x18 10x12 10x12 <td< td=""></td<>
	I2C Address (8-bit): 0x58 Pixel Clock: 75.077 MHz Repeater Mode: Disabled Serial Link Mode: FPD-Link III Audio Mode: Surround Current Link Status Linked to Deserializer: Linked to Video Source: Yes

Initially the HDMI Frequency will be set to 74MHz which is incorrect.

13) Check in the Analog LaunchPad tool for the correct resolution and frequency of the HDMI connection in the HDMI Tab.

Information HDMI System Topology	Pattern	Generator	Registers	Scripting	Remote Reg	jiste
Bridge Control Settings		EDID S	RAM			Г
FPD3 Audio Mode Auto-detect	\sim	Reg of	ffset (hex)	0		
FPD-Link III Mode Surround	/	Reg D	ata (hex))		
EDID Mode $$ Internal SRAM $$ $$ $$		EDII	D Read	EDID Write	2	
Bridge Control Mode $$ Internal $$ $$ $$		Displ	lay EDID			
Disable Remote EDID Load		EDID S	SRAM data	Default (RC	- (MC	
Disable Auto HDMI Init		FPD3 S	Status			
Disable Auto HDCP		Link Re	eady:	True		
RevA Workarounds		Link Ad	ctive: ode:	True Single Po	rt0	
Apply Settings		Port0 Port1 Port1	Linked Linked: CRC Errors:	True False 65		
HDMI Status		Port1 RGB E	CRC Errors: rrors	0		
RX_5V: Detected HDMI HPD: True HDCP State: Unauthenticated Active Video 948x544 HDMI Freq: 40 MHz	C	K				
	v1.	57.0010			4	ų,

If the yellow highlighted values are different, probably the script was not loaded or an incorrect script was loaded or hardware settings on Videobox are not ok. Below picture shows an example with incorrect values, and if this is the case start over from Section 2.



Consequently, ensure that the right script is loaded(Step 8) to set the correct parameters. After loading the script, verify that the parameters are as expected : Resolution 948 x 544 px and Frequency 40 Mhz.

14) Configure HID in CANoe trace window: Set RLS = 1021, RLS_Boost = 15 and Customer wish = 100 and click on "Submit values" button



15) Set maximum brightness and Turn on on Backlight

HUD cont	rol	4 ×
	NVEM_Abscha Level_0 ~	
	TransportMode TransportModelnacti ~	
	ORU_A IDLE V	
	Eyebox Brightne	SS
	MIN	l
	0 100	
		_

If the video box is disconnected from the power supply, the steps before need to be executed from the beginning as the video box doesn't have a permanent memory, the script is loaded in the video box RAM memory.