

ALP USER GUIDE V1.1

2022

测试的需求

- Pattern Generator-----协助定位问题模块
- Registers-----读写寄存器设置是否正确
- Margin Analysis-----测试链路是否正常

软件安装

TI TEXAS INSTRUMENTS

ALP

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产品 应用 设计资源 质量和可靠性 支持与培训 关于 TI

精确搜索

产品

- 接口 (99) >
- DLP 产品 (16) >
- 传感器 (13) >
- 放大器 (12) >
- 时钟和计时 (3) >

支持软件
ALP
Analog LaunchPad™ software

查看详细资料

结果数 1-25, 总数 1,102, 搜索 ALP 用时 0.51 秒

ti.com.cn/tool/cn/ALP?keyMatch=&tisearch=search-everything&usecase=software

设计资源 - 支持软件
ALP 支持软件

查看 TI ALP 支持软件的下载量、描述、特性和...

ALP

概述 下载 支持与培训

2. 使用 ALP-PROFILE-UPDATE 工具添加新器件配置文件和示例脚本

下载

支持软件
ALP - Analog LaunchPad (ALP) framework utility

版本: 1.57.0010
发布日期: 20-Mar-2018
支持的产品和硬件

2

下载

支持软件
ALP-PROFILE-UPDATE - Analog LaunchPad (ALP) profile update

版本: 11
发布日期: 16-NOV-2021
支持的产品和硬件

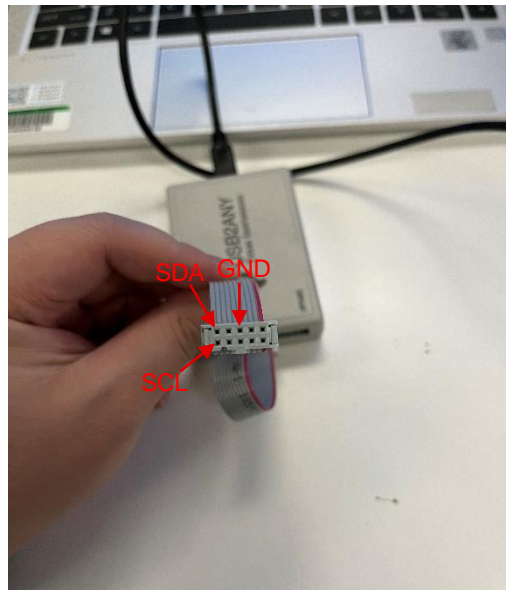
3

订海通知

软件安装



使用USB2ANY连接ALP上位机



- 将USB2ANY的SDA, SCL, GND连接到串行器/解串器的对应管脚
- 尽量避免I2C总线有其他的主设备, 多主一从有可能会 导致ALP无法访问到串 行器/解串器

USB2ANY User Guide:

https://www.ti.com/lit/ug/snau228/snau228.pdf?ts=1658756596782&ref_url=https%253A%252F%252Fwww.ti.com%252Ftool%252FUSB2ANY%253FkeyMatch%253D%2526tisearch%253Dsearch-everything%2526usecase%253Dhardware

软件启动

The screenshot shows the Texas Instruments Analog LaunchPAD software interface. On the left is a sidebar with a 'Tasks' pane containing 'Devices', 'Tools', and 'Preferences'. The 'Tools' pane is expanded, showing options like 'System Scripting', 'Plug-in Management', 'LPT Configuration', 'USB2ANY/Aardvark Setup', 'Demo Mode Setup' (highlighted with a red circle), 'Device Profiles', and 'EEPROM Setup'. The main window displays the 'ALP Demo Mode Setup' dialog box. The dialog has a 'Demo Setup' tab and a text box explaining that it is used to configure device types for emulation. Below the text are two panes: 'Defined ALP Devices' and 'Select a Daughter Board'. The 'Defined ALP Devices' pane shows a tree view with 'ALP Nano Board' and 'DS90UB948'. Below it are buttons for 'Add FPGA', 'Remove', 'Add Nano', and 'Add LPT MDIO'. The 'Select a Daughter Board' pane contains a table of daughter boards with columns for 'Name' and 'Short Name'. Below the table is an 'Add' button. At the bottom of the dialog are 'Ok' and 'Cancel' buttons.

Texas Instruments - Analog LaunchPAD

Tasks

- Devices
- Tools
 - System Scripting
 - Plug-in Management
 - LPT Configuration
 - USB2ANY/Aardvark Setup
 - Demo Mode Setup**
 - Device Profiles
 - EEPROM Setup
- Preferences
- Help

ALP Demo Mode Setup

Demo Setup

This dialog provides a method to setup the types of devices desired for emulation inside the ALP Framework. Each emulated device must be attached to a virtual ALP FPGA board (base board), ALP Nano board or LPT Phy MDIO board.

Defined ALP Devices

- ALP Nano Board
 - DS90UB948

Select a Daughter Board

Name	Short Name
AVS_Demo	AVS_Demo
CP104_Nano	CP104 - Nano
DP83640	DP83640
DP83640_Nano	DP83640
DS100BR210_111	DS100BRxxx Duals
DS100BR410	DS100BR410
DS100KR800_401	DS100KR800_401
DS100MB203	DS100MB203 MUX
DS110DF410	DS110DF410 EVK
DS110DF410Standalone	DS110DF410 Retimer
DS110DF410	DS110DF410

Buttons: Add FPGA, Remove, Add Nano, Add LPT MDIO, Add, Ok, Cancel

98x系列的ALP profile需要单独安装

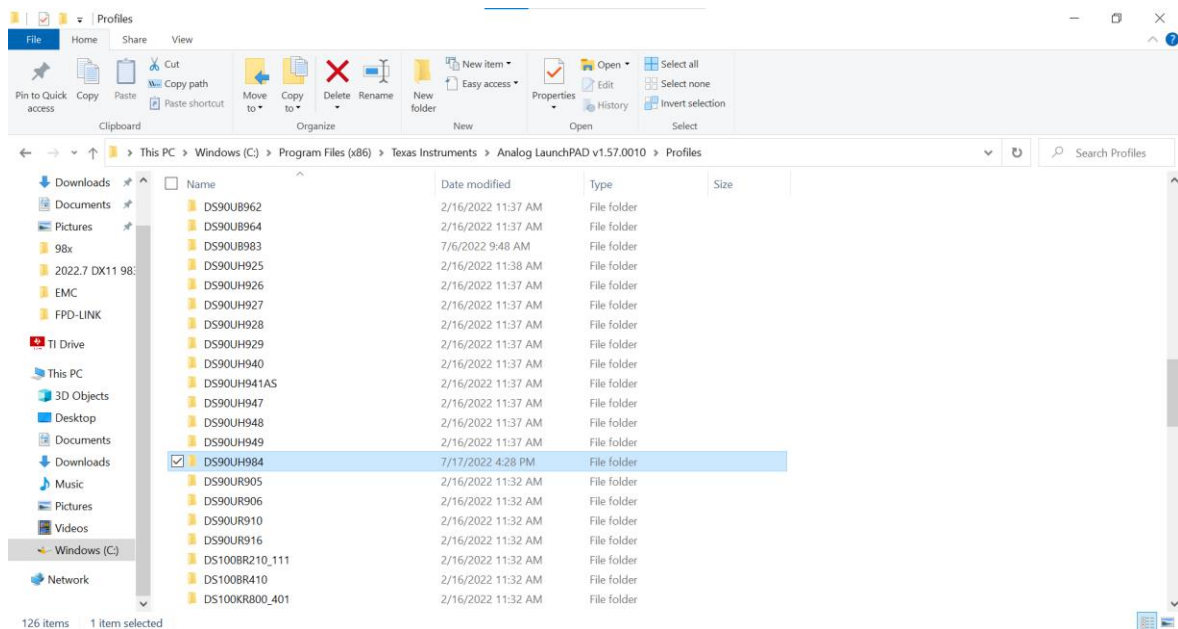
1. 下载98x的ALP profile



DS90UH984-v1.12.zip

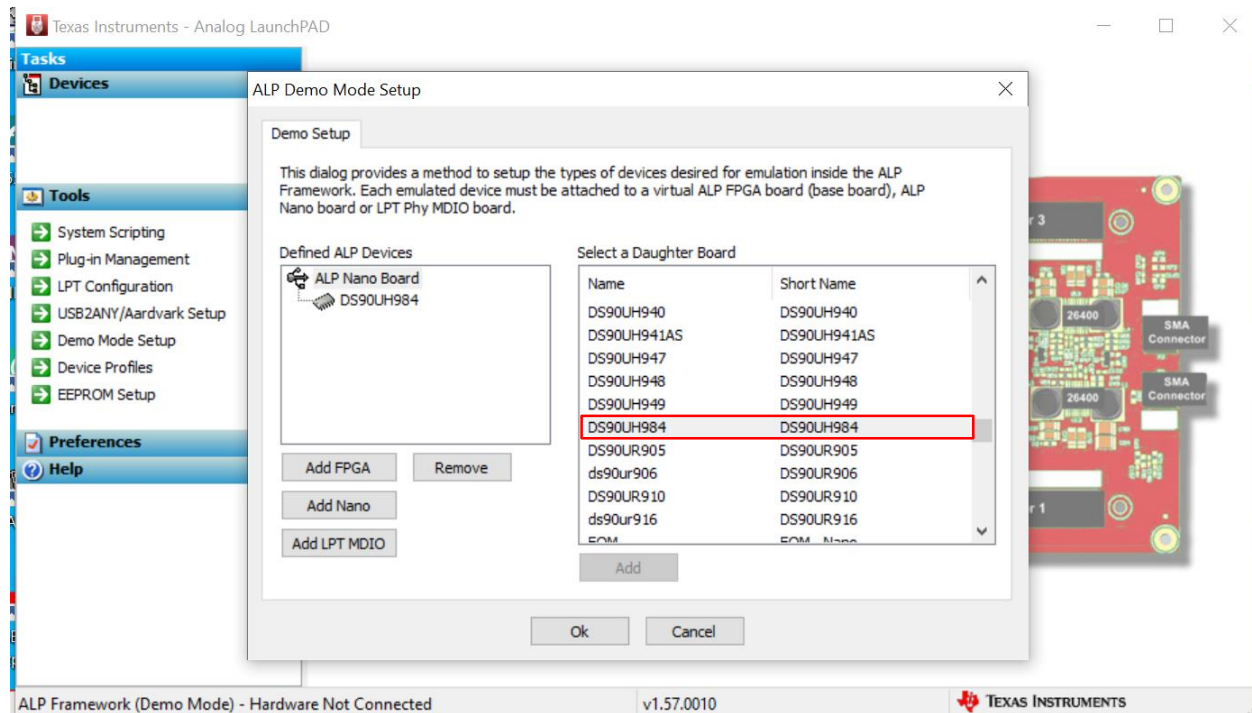
2. 解压后将文件夹复制到以下路径:

C:\Program Files (x86)\Texas Instruments\Analog LaunchPAD v1.57.0010\Profiles



98x系列的ALP profile需要单独安装

3. 完成1、2步后便可以生成98x ALP profile



软件启动

The screenshot displays the Texas Instruments Analog LaunchPAD software interface. The window title is "Texas Instruments - Analog LaunchPAD". The main window is titled "(ALP Nano 1/1) - DS90UB948". The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- Tasks:**
 - Devices
 - ALP Nano 1
 - DS90UB948
 - Tools
 - System Scripting
 - Plug-in Management
 - LPT Configuration
 - USB2ANY/Aardvark Setup
 - Demo Mode Setup
 - Device Profiles
 - EEPROM Setup
 - Preferences
 - Help

Main Content Area:

The main content area has a tabbed interface with the following tabs: Information, Pattern Generator, Registers, Scripting, Remote Registers, Patgen Registers, and Margin Analysis. The "Information" tab is selected.

Device Information:

Device:	DS90UB948 FPD-Link III Deserializer
Revision:	1
I2C Address (8-bit):	0x18
Pixel Clock:	50.000 MHz
Repeater Mode:	Disabled
Serial Link Mode:	FPD-Link III
Audio Mode:	2-channel

Partner Information:

Device:	DS90UB949 HDMI-to-FPD-Link III Bridge
Revision:	1
I2C Address (8-bit):	0x18
Pixel Clock:	50.000 MHz
Repeater Mode:	Disabled
Serial Link Mode:	FPD-Link III
Audio Mode:	2-channel

Current Link Status:

CDR Locked:	Yes
Linked to Serializer:	Yes

Connected I2C Ports:

Scan Connected Devices

Status Bar:

TI Info ALP Framework (Demo Mode) - Hardware Not Connected v1.57.0010 TEXAS INSTRUMENTS

确定连接成功

The screenshot displays the Texas Instruments Analog LaunchPAD interface. The main window is titled "(ALP Nano 1/1) - DS90UB948". The left sidebar contains sections for "Tasks", "Devices", "Tools", "Preferences", and "Help". The "Devices" section shows "ALP Nano 1" with a sub-entry "DS90UB948". The "Tools" section includes "System Scripting", "Plug-in Management", "LPT Configuration", "USB2ANY/Aardvark Setup", "Demo Mode Setup", "Device Profiles", and "EEPROM Setup". The "Preferences" section is checked, and "Help" is also visible.

The main content area is divided into several tabs: "Information", "Pattern Generator", "Registers", "Scripting", "Remote Registers", "Patgen Registers", and "Margin Analysis". The "Information" tab is active, showing "Device Information" and "Partner Information". The "Device Information" section is circled in blue and contains the following data:

Device:	DS90UB948 FPD-Link III Deserializer
Revision:	1
I2C Address (8-bit):	0x18
Pixel Clock:	50.000 MHz
Repeater Mode:	Disabled
Serial Link Mode:	FPD-Link III
Audio Mode:	2-channel

The "Partner Information" section contains the following data:

Device:	DS90UB949 HDMI-to-FPD-Link III Bridge
Revision:	1
I2C Address (8-bit):	0x18
Pixel Clock:	50.000 MHz
Repeater Mode:	Disabled
Serial Link Mode:	FPD-Link III
Audio Mode:	2-channel

Below the partner information, there is a "Current Link Status" section with the following data:

CDR Locked:	Yes
Linked to Serializer:	Yes

At the bottom of the main content area, there is a "Connected I2C Ports" section and a "Scan Connected Devices" button. The status bar at the bottom of the window shows "ALP Framework (Demo Mode) - Hardware Not Connected", "v1.57.0010", and the Texas Instruments logo.

Pattern generation

Texas Instruments - Analog LaunchPAD

Tasks

- Devices
 - ALP Nano 1
 - DS90UB948
- Tools
 - System Scripting
 - Plug-in Management
 - LPT Configuration
 - USB2ANY/Aardvark Setup
 - Demo Mode Setup
 - Device Profiles
 - EEPROM Setup
- Preferences
- Help

(ALP Nano 1/1) - DS90UB948

Information | **Pattern Generator** | Registers | Scripting | Remote Registers | Patgen Registers | Margin Analysis

Pattern Generator Control V2

- Enable Generator
- Invert Video
- Color Bars
- Enable Scrolling
- 18-bit Color

Checkerboard/VCOM Control

- Scale by 16
- Reverse VCOM
- Use Custom Color

Fixed Pattern: White | Custom Color #: 000000

Auto-Scrolling Control

- Number of Patterns: 14
- Frames per Pattern: 60

Pattern 1	White	Pattern 9	H Black/Blue
Pattern 2	Black	Pattern 10	V Black/White
Pattern 3	Red	Pattern 11	V Black/Red
Pattern 4	Green	Pattern 12	V Black/Green
Pattern 5	Blue	Pattern 13	V Black/Blue
Pattern 6	H Black/White	Pattern 14	Custom
Pattern 7	H Black/Red	Pattern 15	VCOM
Pattern 8	H Black/Green	Pattern 16	Checker

Video Control

Timing Source: Internal

Internal Timing

- Spec: HD 720p 60Hz
- Approximate Pixel Clock: 46.7 MHz
- Hsync: Pos | Vsync: Pos

Parameter	Horizontal	Vertical
Total Area	1648	750
Active Area	1280	720
Sync Width	80	5

Apply | Default

Status

- Approximate Frames/Second: 37.8
- Programmed Dimensions: 0x0

ALP Framework (Demo Mode) - Hardware Not Connected | v1.57.0010 | TEXAS INSTRUMENTS

Pattern generation

ALP Nano 1 DS90UB948

Tasks

Devices

Tools

- System Scripting
- Plug-in Management
- LPT Configuration
- USB2ANY/Aardvark Setup
- Demo Mode Setup
- Device Profiles
- EEPROM Setup

Preferences

Help

(ALP Nano 1/1) - DS90UB948

Information Pattern Generator Registers Scripting Remote Registers Patgen Registers Margin Analysis

Pattern Generator Control V2

Enable Generator Invert Video Color Bars

Enable Scrolling 18-bit Color

Checkerboard/VCOM Control

Scale by 16 Reverse VCOM Use Custom Color

Fixed Pattern White Custom Color # 000000

Auto-Scrolling Control

Number of Patterns 14 Frames per Pattern 60

Pattern 1 White Pattern 9 H Black/Blue

Pattern 2 Black Pattern 10 V Black/White

Pattern 3 Red Pattern 11 V Black/Red

Pattern 4 Green Pattern 12 V Black/Green

Pattern 5 Blue Pattern 13 V Black/Blue

Pattern 6 H Black/White Pattern 14 Custom

Pattern 7 H Black/Red Pattern 15 VCOM

Pattern 8 H Black/Green Pattern 16 Checker

Video Control

Timing source Internal

Internal Timing External

Spec HD 720 Internal w/Ext. Clock Internal w/Ext. Pixel Clock

Approximate Pixel Clock 46.7 MHz

Hsync Pos Vsync Pos

Parameter	Horizontal	Vertical
Total Area	1648	750
Active Area	1280	720
Sync Width	80	5

Apply Default

Status

Approximate Frames/Second: 37.8

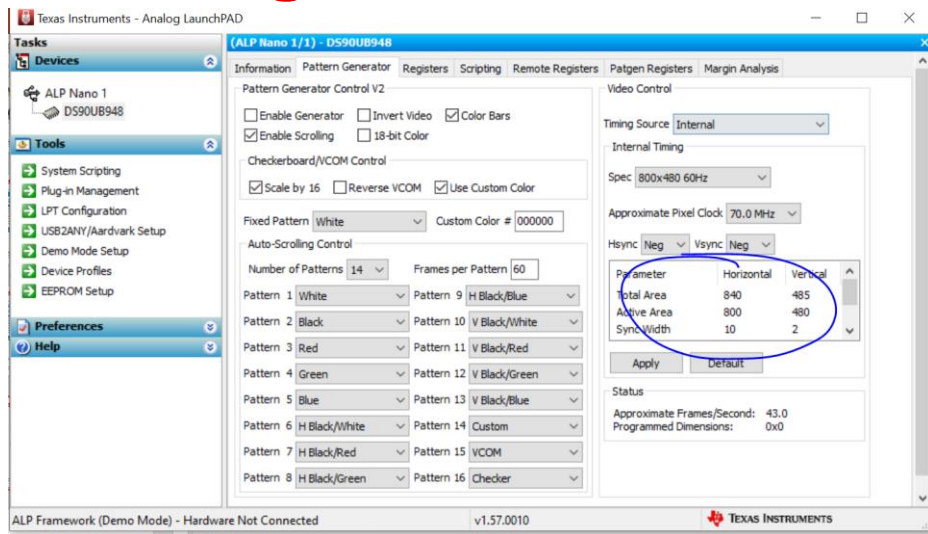
Programmed Dimensions: 0x0

ALP Framework (Demo Mode) - Hardware Not Connected v1.57.0010 TEXAS INSTRUMENTS

UB947 pattern	Status
internal CLK, internal timing	OK
external CLK, internal timing	NG
external CLK, external timing	NG

UB948 pattern	Status
internal CLK, internal timing	OK
external CLK, internal timing	NG
external CLK, external timing	NG

Pattern generation



Parameter	Symbol	1920xRGBx720			Unit
		Min.	Typ.	Max.	
CLK frequency	FCLK	94.23	95.97	102.23	MHZ
Horizontal valid data	thd	1920			CLK
Hsync pulse Width	thpw	32	32	32	CLK
Hsync back porch	thbp	32	32	32	CLK
Hsync front porch	thfp	32	64	192	CLK
1 horizontal line	th	2016	2048	2176	CLK
Vertical valid data	tvd	720			H
Vsync pulse width	tvpw	8	8	8	H
Vsync back porch	tvbp	8	8	8	H
Vsync front porch	tvfp	43	45	47	H
1 vertical field	tv	779	781	783	H
Frame rate	FR	60			Hz

Registers

Register Display - ALP Nano 1 - DS90UB948, Connector 1

Register	Data	Name
0x0000	0x58	I2C Device ID
0x0001	0x04	Reset
0x0002	0x00	General Configuration 0
0x0003	0xF0	General Configuration 1
0x0004	0x7F	BCC Watchdog Control
0x0005	0x2E	I2C Control 1
0x0006	0x00	I2C Control 2
0x0007	0x18	REMOTE ID
0x0008	0x00	SlaveID[0]
0x0009	0x00	SlaveID[1]
0x000A	0x00	SlaveID[2]
0x000B	0x00	SlaveID[3]
0x000C	0x00	SlaveID[4]
0x000D	0x00	SlaveID[5]
0x000E	0x00	SlaveID[6]
0x000F	0x00	SlaveID[7]
0x0010	0x00	SlaveAlias[0]
0x0011	0x00	SlaveAlias[1]
0x0012	0x00	SlaveAlias[2]
0x0013	0x00	SlaveAlias[3]
0x0014	0x00	SlaveAlias[4]
0x0015	0x00	SlaveAlias[5]

ALP Framework (Demo Mode) - Hardware Not Connected v1.57.0010 TEXAS INSTRUMENTS

Registers

Register Display - ALP Nano 1 - DS90UB948, Connector 1

Register	Data	Name
0x0000	0x58	I2C Device ID
0x0001	0x04	Reset
0x0002	0x00	General Configuration 0
0x0003	0xF0	General Configuration 1
0x0004	0x7F	BCC Watchdog Control
0x0005	0x2E	I2C Control 1
0x0006	0x00	I2C Control 2
0x0007	0x18	REMOTE ID
0x0008	0x00	SlaveID[0]
0x0009	0x00	SlaveID[1]
0x000A	0x00	SlaveID[2]
0x000B	0x00	SlaveID[3]
0x000C	0x00	SlaveID[4]
0x000D	0x00	SlaveID[5]
0x000E	0x00	SlaveID[6]
0x000F	0x00	SlaveID[7]
0x0010	0x00	SlaveAlias[0]
0x0011	0x00	SlaveAlias[1]
0x0012	0x00	SlaveAlias[2]
0x0013	0x00	SlaveAlias[3]
0x0014	0x00	SlaveAlias[4]
0x0015	0x00	SlaveAlias[5]

- Dump出当前串行器/解串器的寄存器值进行后续分析

Registers

Texas Instruments - Analog LaunchPAD

Tasks

Devices

- ALP Nano 1
DS90UB948

Tools

- System Scripting
- Plug-in Management
- LPT Configuration
- USB2ANY/Aardvark Setup
- Demo Mode Setup
- Device Profiles
- EEPROM Setup

Preferences

Help

(ALP Nano 1/1) - DS90UB948

Information Pattern Generator **Registers** Scripting Remote Registers Patgen Registers Margin Analysis

Value: Verbose Descriptions

Bit(s)	Type	Default	Name	Description
7 <input type="checkbox"/>	RW	0	I2C PASS THROUGH ALL	I2C Pass-Through All Transactions 0: Disabled 1: Enabled
6 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 4 <input type="checkbox"/>		0x1	I2C SDA HOLD	Internal SDA Hold Time This field configures the amount of internal hold time provided for the SDA input relative to the SCL input. Units are 50 nanoseconds.
3 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 0 <input type="checkbox"/>		0xE	I2C FILTER DEPTH	I2C Glitch Filter Depth This field configures the maximum width of glitch pulses on the SCL and SDA inputs that will be rejected. Units are nanoseconds.
0x06 - I2C Control 2				
0x07 - REMOTE ID				
0x08 - SlaveID[0]				
0x09 - SlaveID[1]				

Search String

Match Case

ALP Firmware (Demo Mode) Hardware Not Connected | 1: 57.0010 | TEXAS INSTRUMENTS

Margin analysis

The screenshot displays the Texas Instruments Analog LaunchPAD software interface. The main window is titled "(ALP Nano 1/1) - DS90UB948" and has several tabs: Information, Pattern Generator, Registers, Scripting, Remote Registers, Patgen Registers, and Margin Analysis. The Margin Analysis tab is active, showing the following configuration options:

- Margin Analysis Controls:**
 - RX Port Select:** A dropdown menu with "RX PORT 1" selected. A red circle highlights this dropdown.
 - Strobe Position:** Includes "Strobe Position Begin" (set to "STRB SETTING 2") and "Strobe Position End" (set to "STRB SETTING 9").
 - Run Options:** Includes checkboxes for "Save Result To File" and "Final Repr Reset".
 - EQ Level:** Includes "EQ Level Begin" (set to "EQ LEVEL 3") and "EQ Level End" (set to "EQ LEVEL 14").
 - Dwell Time (ms):** A text input field containing "1000".
 - Start Margin Analysis:** A button to initiate the analysis.
- Margin Analysis Status:** A table showing the status of the analysis across different EQ/SP levels.

EQ\SP	0	1	2	3	4	5	6	7	8	9
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										

The status table is currently empty. The bottom status bar shows "ALP Framework (Demo Mode) - Hardware Not Connected", "v1.57.0010", and the Texas Instruments logo.

Margin analysis

Texas Instruments - Analog LaunchPAD

The screenshot displays the Margin Analysis tool interface. On the left, there are navigation panels for **Tasks** (Devices, Tools, Preferences, Help) and **Devices** (ALP Nano 1, DS90UB948). The main window title is **(ALP Nano 1/1) - DS90UB948**. The **Margin Analysis** tab is active, showing the following controls:

- Margin Analysis Controls**
 - RX Port Select**: RX Port dropdown menu set to **RX PORT1**.
 - Strobe Position**: Strobe Position Begin dropdown menu set to **STRB SETTING 0** and Strobe Position End dropdown menu set to **STRB SETTING 9**.
 - Run Options**: Save Result To File, Final Repr Reset.
- Test Controls**
 - Dwell Time (ms)**: Input field set to **1000**.
 - EQ Level**: EQ Level Begin dropdown menu set to **EQ LEVEL 0** and EQ Level End dropdown menu set to **EQ LEVEL 14**.
 - Start Margin Analysis** button.
- Margin Analysis Status**

EQ\SP	0	1	2	3	4	5	6	7	8	9
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										

At the bottom, the status bar shows **ALP Framework (Demo Mode) - Hardware Not Connected**, **v1.57.0010**, and the **TEXAS INSTRUMENTS** logo.

Margin analysis

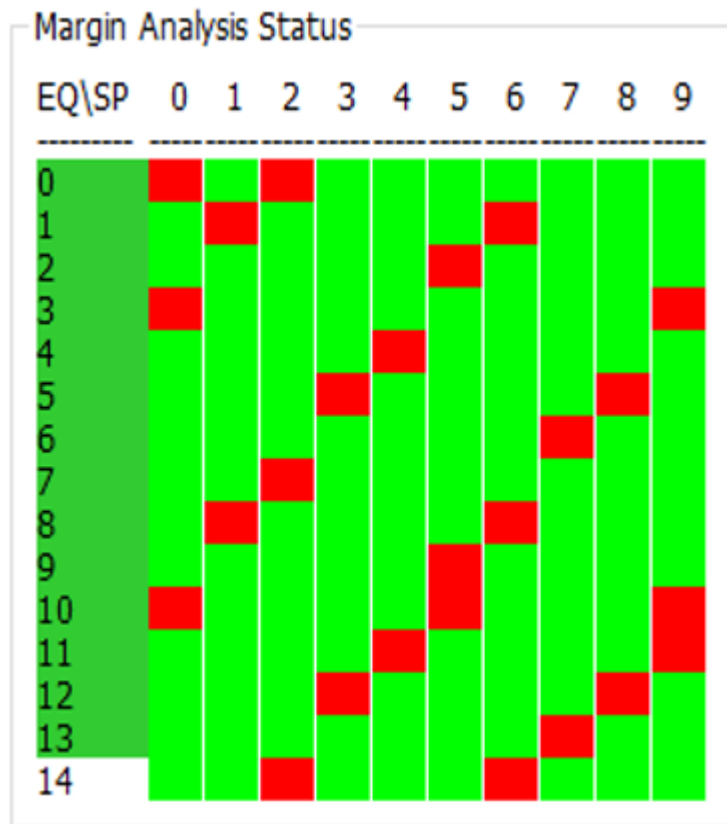
The screenshot displays the Texas Instruments Analog LaunchPAD software interface. The main window is titled "(ALP Nano 1/1) - DS90UB948" and has tabs for Information, Pattern Generator, Registers, Scripting, Remote Registers, Patgen Registers, and Margin Analysis. The Margin Analysis tab is active, showing the following configuration options:

- Margin Analysis Controls:**
 - RX Port Select:** RX Port dropdown menu set to "RX PORT1".
 - Strobe Position:** Strobe Position Begin dropdown menu set to "STRB SETTING 0" and Strobe Position End dropdown menu set to "STRB SETTING 9".
 - Run Options:** Checkboxes for "Save Result To File" and "Final Regr Reset", both of which are checked.
- Test Controls:**
 - Dwell Time (ms):** Input field set to "1000".
 - EQ Level:** EQ Level Begin dropdown menu set to "EQ LEVEL 0" and EQ Level End dropdown menu set to "EQ LEVEL 14".
 - Start Margin Analysis:** A button to initiate the analysis, circled in blue.

At the bottom of the Margin Analysis section, there is a "Margin Analysis Status" table with columns for EQ\SP and rows for EQ levels 0 through 9. The table is currently empty.

The status bar at the bottom of the window shows "ALP Framework (Demo Mode) - Hardware Not Connected", "v1.57.0010", and the Texas Instruments logo.

Margin analysis



Thanks!

Appendix

[FPD-Link Margin Analysis Program \(MAP\) user's guide](https://www.ti.com/lit/pdf/snlu243)

<https://www.ti.com/lit/pdf/snlu243>

[Margin Analysis Program \(MAP\) and strobe positions for DS90UB954-Q1 and 960-Q1](https://www.ti.com/lit/pdf/snla301?keyMatch=MARGIN%20ANALYSIS&tisearch=Search-EN-everything)

<https://www.ti.com/lit/pdf/snla301?keyMatch=MARGIN%20ANALYSIS&tisearch=Search-EN-everything>

Pattern generation:

[Exploring the Int Test Pattern Generation Feature of FPD-Link III IVI Devices \(Rev. G\)](https://www.ti.com/lit/pdf/snla132)

<https://www.ti.com/lit/pdf/snla132>

TI.COM web support - Summary

- Qual/Reliability Report/AECQ100 report: <https://www.ti.com/qualificationssummary/qualsumm/home?actionId=2800.html>
- Mass/Material Content Report: <http://www.ti.com/materialcontent/home>
- MSL: <http://www.ti.com/packaging/docs/mslsearch.tsp>
- Shelf Life: <http://www.ti.com/quality/docs/productshelflife.tsp>
- Marking: <http://www.ti.com/packaging/docs/partlookup.tsp>
- FIT / MTBF: <http://www.ti.com/quality/docs/estimator.tsp>
- ROHS/REACH/ Halogen/ Leadfree statement: <https://www.ti.com/support-quality/environmental-info/environmental-home.html>
- ISO 9001/IATF 16949/ISO 14001/OHSAS 18001/EMAS Certification: <http://www.ti.com/support-quality/certifications-and-standards/certifications.html>
- Fab/AT site: http://webtools.itg.ti.com/cgi-bin/webbrpt/rptedit.cgi?ctrlfile=/webapps/portal/matlinfo/material_master.ctrl&sc=1
- PPAP/CMRT/SGS/UL/CB report: www.ti.com/csc

