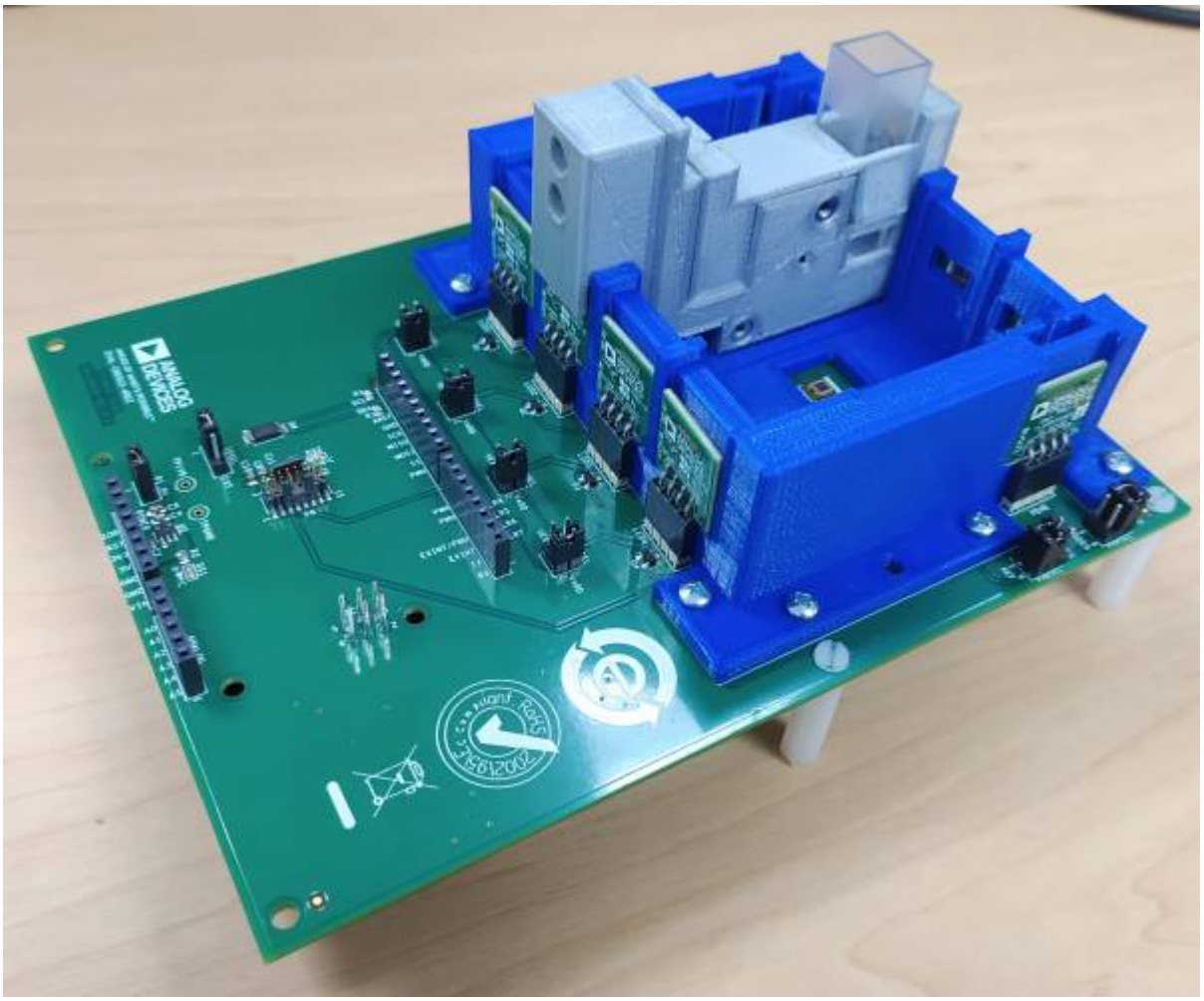
This version (17 Nov 2021 01:09) was ***approved*** by Brandon Bushey [https://ez.analog.com/members/Brandon].
The Previously approved version (/resources/eval/user-guides/circuits-from-the-lab/cn0503?rev=1627530170) (29 Jul 2021 05:42) is available.

EVAL-CN0503-ARDZ Hardware User Guide

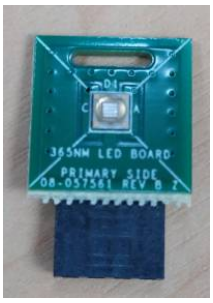
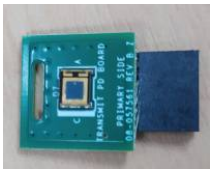
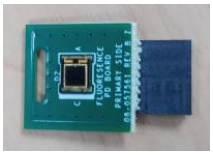
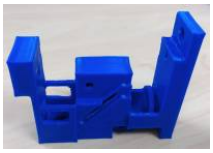
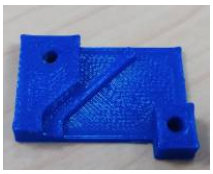
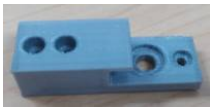
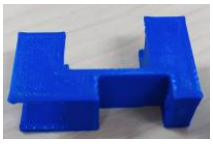
CN0503 [https://www.analog.com/CN0503] is a reconfigurable multi-parameter optical liquid measurement platform capable of performing colorimetry, turbidity, and fluorometry. The design minimizes complexity by using a highly integrated multimodal sensor front end capable of simultaneously driving four LEDs, and synchronously measuring four pairs of photodiodes at a flexible sampling rate. Furthermore, the front end has on-chip digital filters and high ambient light rejection which allow the platform to operate regardless of environmental lighting conditions.

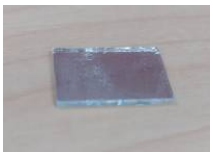


Materials Needed

Here are the list of items and their photos included in CN0503 [https://www.analog.com/CN0503].

Qty	Item Name	Description	Image
1	Main Board	CN0503 [https://www.analog.com/CN0503] Main PCB with ADPD4101 [https://www.analog.com/ADPD4101]	To be updated

Qty	Item Name	Description	Image
12	LED Boards	Accessory PCB with onboard LED (with wavelengths of 365nm, 405nm, 430nm, 470nm, 530nm, 568nm, 615nm, and 630nm plus 4 spare boards)	
4	Transmit Photodiode (PD) Boards	Accessory PCB with onboard Photodiode	
2	Fluorescent Photodiode (PD) Boards	Accessory PCB with onboard Photodiode	
1	Mounted Base	3D Printed PLA Fixture	
1	Cuvette Holder	3D Printed PLA Fixture	
1	Beamsplitter Cover	3D Printed PLA Fixture	
1	Lens Cover	3D Printed PLA Fixture	
1	Cuvette Holder Cover	3D Printed PLA Fixture	

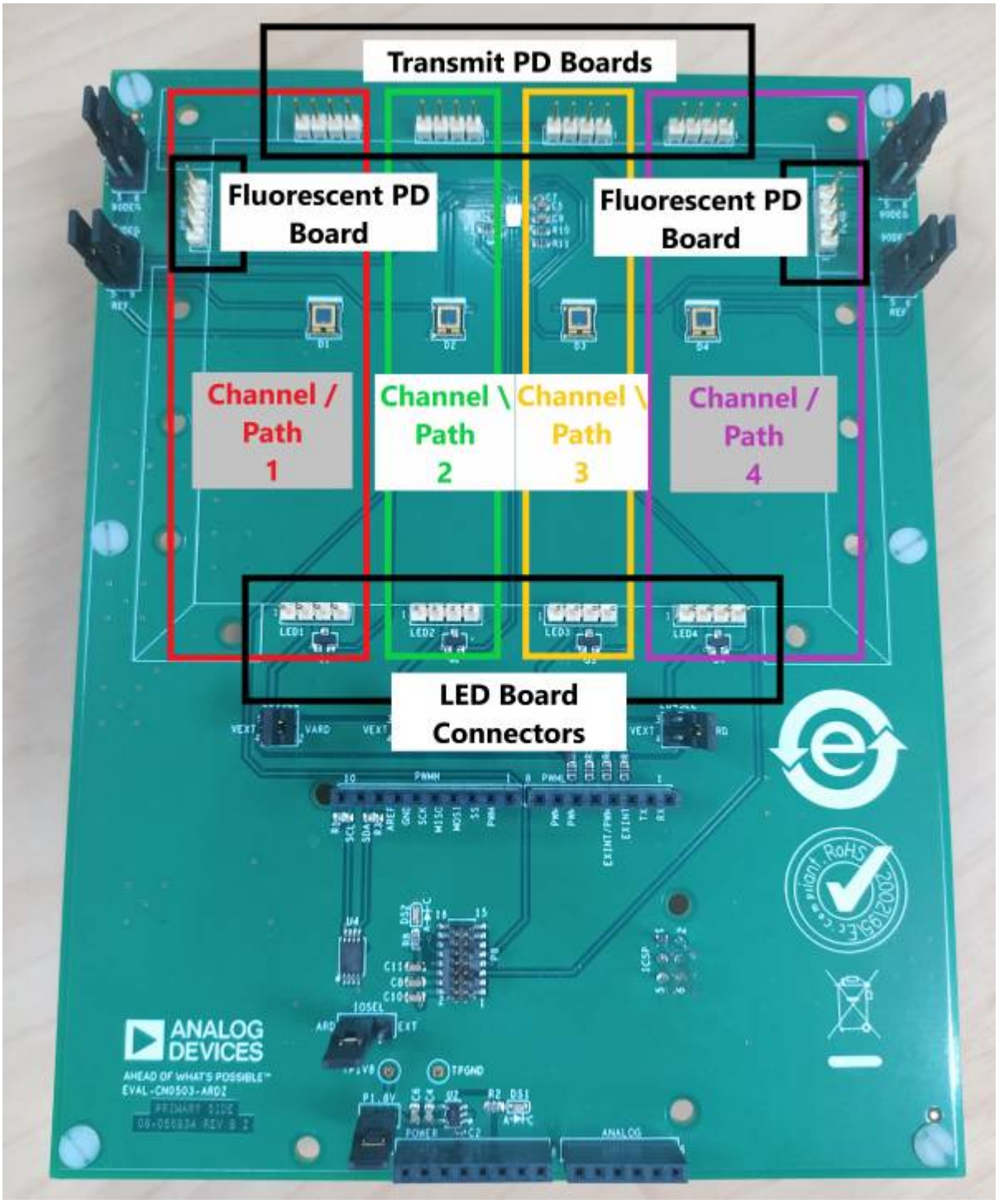
Qty	Item Name	Description	Image
5	Cuvettes	Type 1FLP Disposable Macro Cuvettes UV Plastic(Lightpath: 10mm) [https://www.fireflysci.com/disposable-fluorescence-cells/type-1flp-disposable-macro-cuvettes-lightpath-10mm]	
1	Condenser Lens	10mm Dia. x 6.6mm FL, Uncoated Molded Aspheric Condenser Lens [https://www.edmundoptics.com/p/10mm-dia-x-66mm-fl-uncoated-molded-aspheric-condenser-lens/30541/]	
1	Beamsplitter	12.5 x 17.5mm, 50R/50T, Plate Beamsplitter [https://www.edmundoptics.com/p/125-x-175mm-50r50t-plate-beamsplitter/5798/]	
1	Fluorescent Filter	SCHOTT GG-475, 12.5mm Dia., Longpass Filter [https://www.edmundoptics.com/p/gg-475-125mm-dia-longpass-filter/11320/]	
3	S1 Screw	0.7" 4-40 Phillips Pan Head Machine Screw [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=PMS%20440%200063%20PH]	
12	S2 Screw	0.575" 4-40 Phillips Pan Head Machine Screw [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=PMS%20440%200050%20PH]	
1	S3 Screw	1.0" 4-40 Phillips Pan Head Machine Screw [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=PTCSF%20440%200100%20PH]	

Qty	Item Name	Description	Image
16	Hex Nut	4-40 Hex Nut [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=36-7248-3-ND]	
4	M1 Magnet	D41 magnet [https://www.kjmagnetics.com/proddetail.asp?prod=D41]	
1	M2 Magnet	D52 magnet [https://www.kjmagnetics.com/proddetail.asp?prod=D52-N52]	
6	Plastic Standoffs and Plastic Screws	Plastic Standoffs [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=36-1902E-ND] and Plastic Screws [https://www.digikey.com/scripts/DkSearch/dksus.dll?KeywordSearch?Site=US&Keywords=36-9327-ND]	
1	Neutral Density Filter (Optional, not included)	Unmounted Ø1/2" Absorptive ND Filter, Optical Density: 1.0 [https://www.thorlabs.com/thorproduct.cfm?partnumber=NE510B]	
1	Narrowband Transmit Filter (Optional, not included)	568nm CWL, 10nm FWHM, 12.5mm Mounted Diameter [https://www.edmundoptics.com/p/568nm-cwl-10nm-fwhm-125mm-mounted-diameter/20163/]	

LED and Photodiode Boards

The CN0503 [https://www.analog.com/CN0503] supports 4 channels or paths of light which can be configured for different types of optical measurements. The 2 channels at the sides are capable of measuring light intensity reflected at 90 degrees from the liquid sample to support measurements for turbidity, fluorescence, etc. The LED boards placed in each of the 4 channels are interchangeable and natively support 8 different wavelengths. Additional spare boards are available to accommodate LEDs

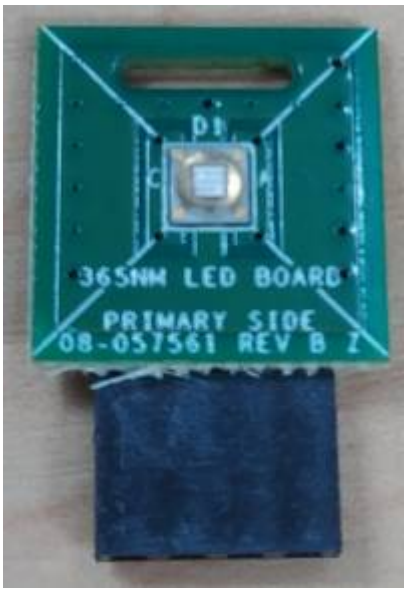
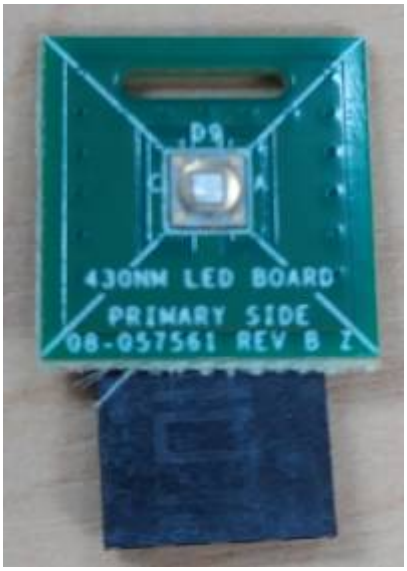
with other wavelengths.

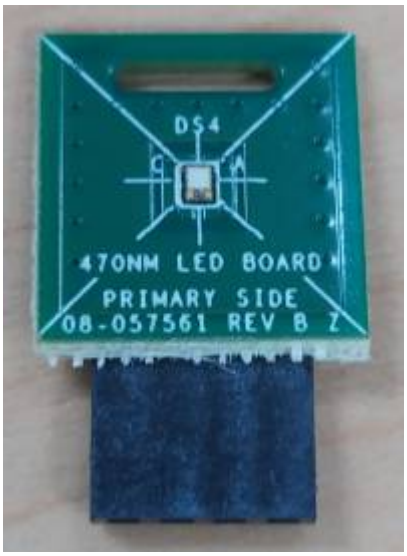
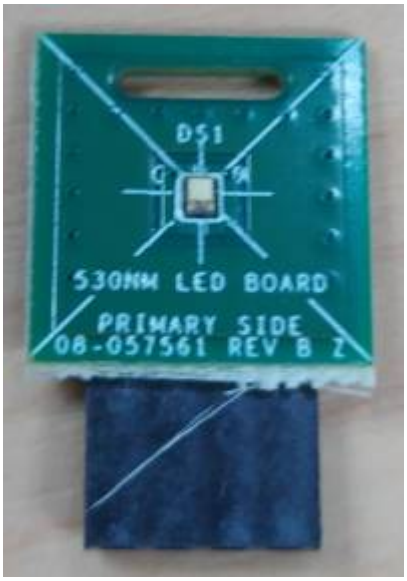


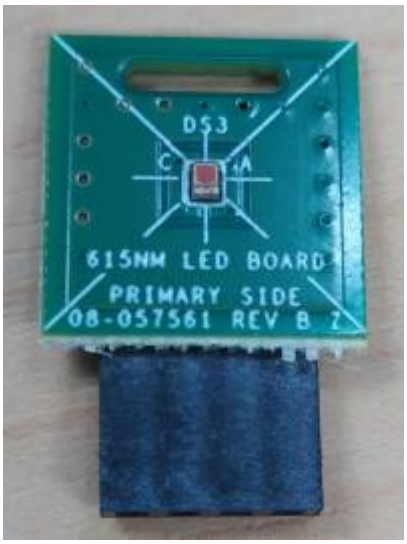
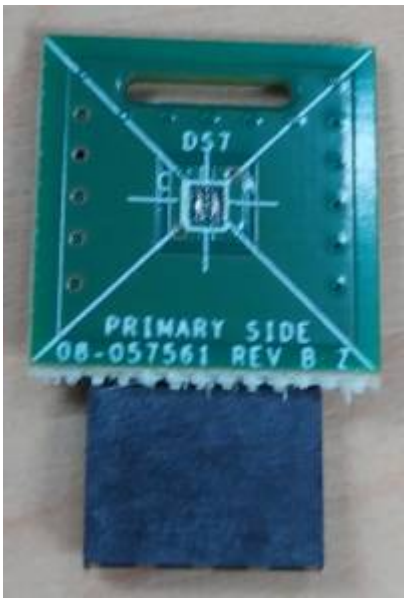
LED Boards

There are 12 LED boards listed below which are included in CN0503 [https://www.analog.com/CN0503] covering 8 different wavelengths, 2 spare boards for custom Lite-On LEDs, and 2 spare boards for Lumiled LEDs.

LED Board	Image

LED Board	Image
365nm wavelength LED Board	
405nm wavelength LED Board	
430nm wavelength LED Board	

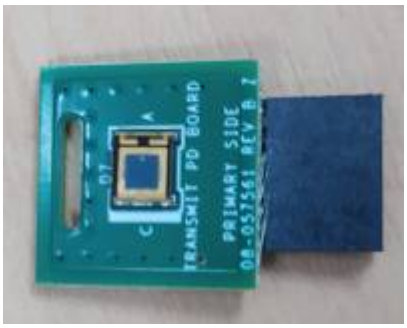
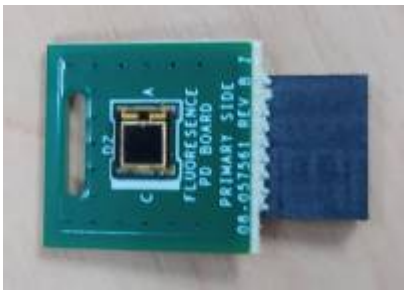
LED Board	Image
470nm wavelength LED Board	
530nm wavelength LED Board	
568nm wavelength LED Board	

LED Board	Image
615nm wavelength LED Board	
630nm wavelength LED Board	To be Updated
Spare Lite-on LED Board	To be Updated
Spare Lumiled LED Board	

Photodiode (PD) Boards

There are a total of 6 PD boards used in CN0503 [https://www.analog.com/CN0503], 4 Transmit PD Boards and 2 Fluorescent PD Boards. The Transmit PD Boards are used to measure light intensity passing through the liquid sample. The Fluorescent PD boards are used to measure light intensity reflected at 90 degrees to the side from the light sample.

PD Board	Image

PD Board	Image
Transmit PD Board	
Fluorescent PD Board	

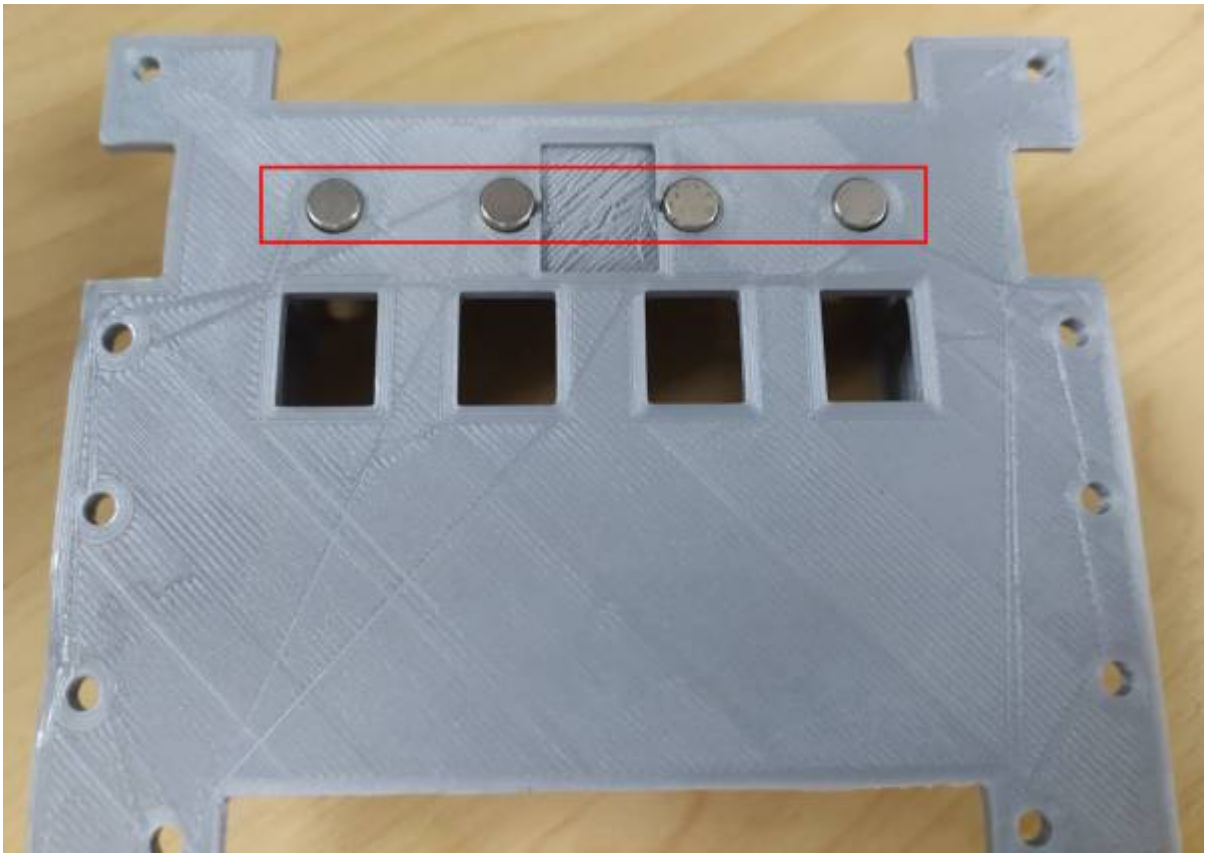
Assembling the Mechanical Fixtures

CN0503 [https://www.analog.com/CN0503] uses 3D printed mechanical fixtures to enable four directed light paths to the liquid sample held in a **Cuvette**. The mechanical fixtures can be classified into two separate objects: the **Mounted Base** and the **Tower**. The **Mounted Base** is capable of holding four **Towers** which are freely interchangeable, as well as two **Fluorescent Filters**. The **Tower** holds the **Cuvette**, which contains the liquid sample, and optical glass items: a **Condenser Lens**, a **Neutral Density Filter**, a **Narrowband Transmit Filter**, and a **Beamsplitter**. Below are two videos showing the assembly of the base and tower, respectively.

Assembling the Base

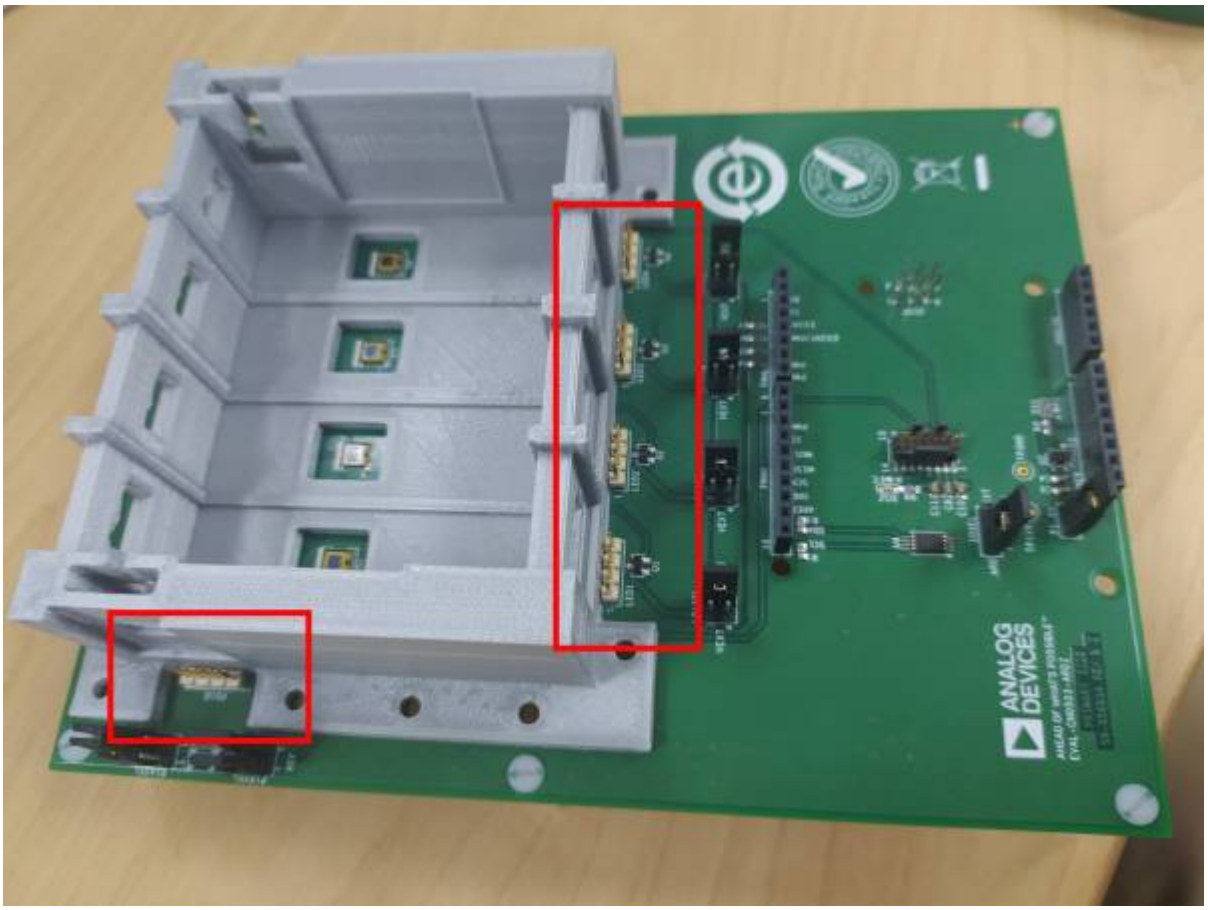
Mounting the Base

A **Mounted Base** fits on top of the **Main Board** by following the outlined position in the silkscreen. At its bottom, attach 4 **M1 magnets** to the provisions as shown below.

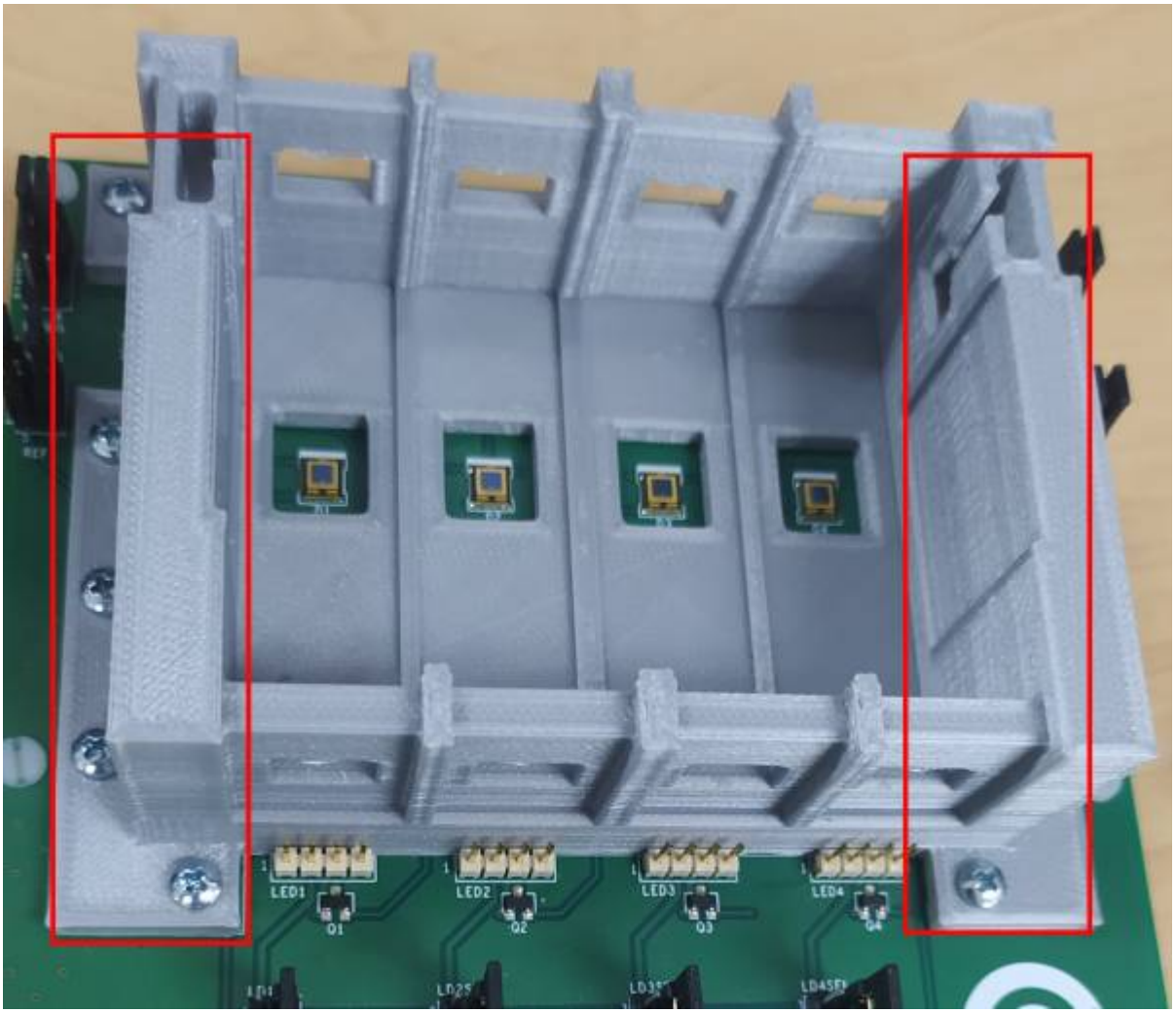


Watch out for these magnets as they may fall off when placing the **Mounted Base** on top of the **Main Board**

The **Mounted Base** will fit snugly between the LED and PD connectors.



Secure the **Mounted Base** to the **Main Board** using 10 **S2 Screws** and 10 **Hex Nuts** at the holes at its sides as shown below.



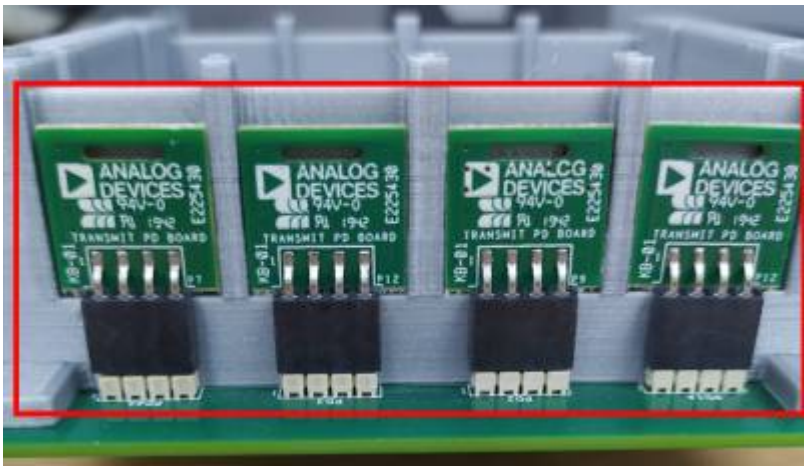
Connecting the LED and Photodiode (PD) Boards

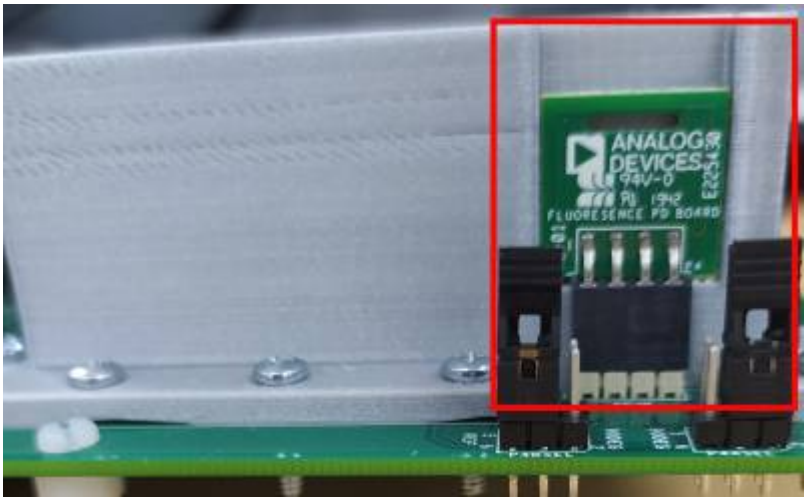
The **LED Boards** are drawn with a huge 'X' on the silkscreen which marks the center of the area of interest or the active area of the LED. To mount the **LED Boards**, face the top of the board with the LED facing towards the small window of the **Mounted Base** and attach the 4-pin female connectors to the jumper headers marked LED as shown below.

Be sure to check if the 'X' mark is centered at the middle of the small window of the base

To mount the photodiode (PD) boards, face the top of the board with the photodiode facing towards the small window of the

base and attach the 4-pin female connectors to the jumper headers marked PD as shown below.



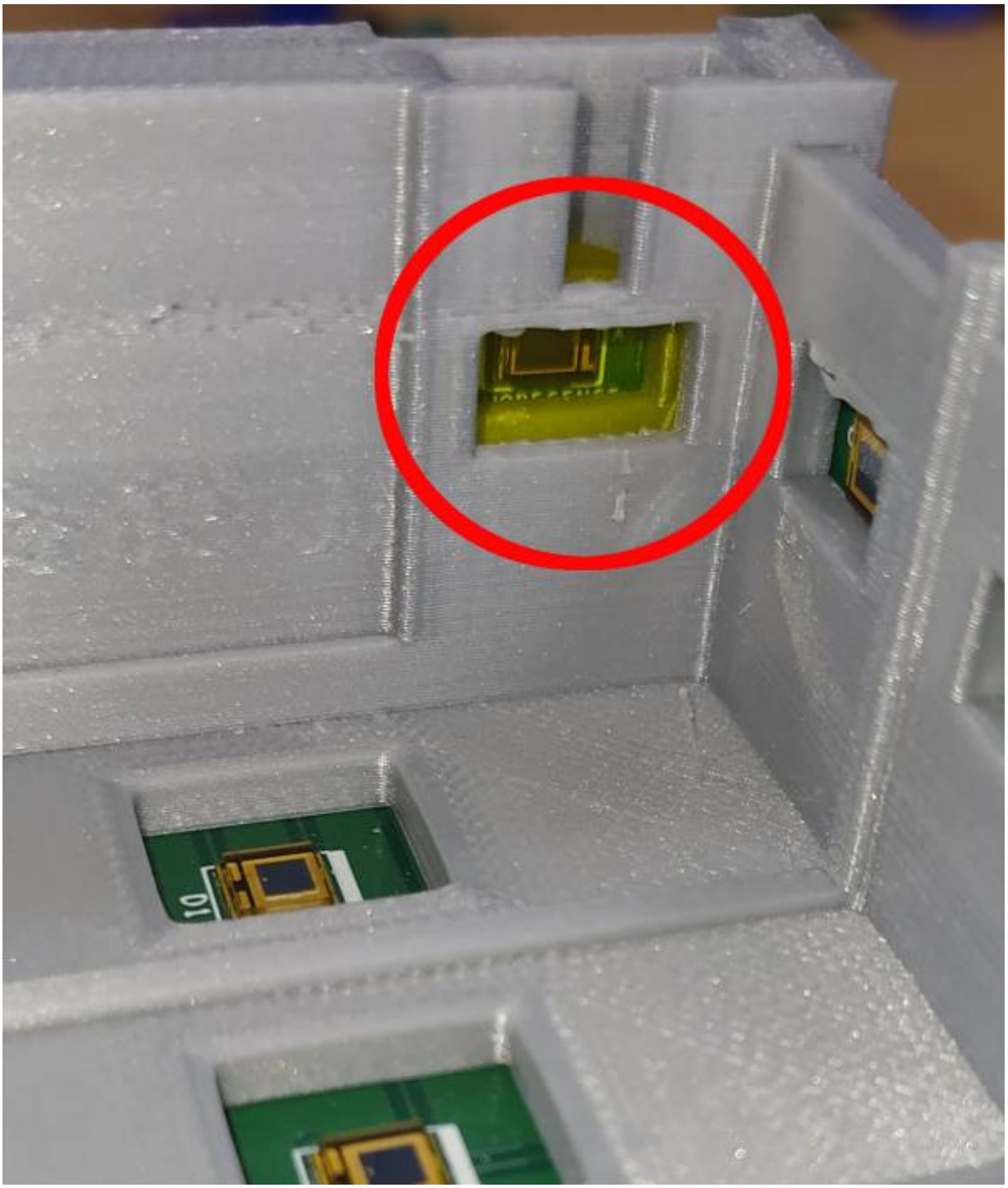


The two **Fluorescent PD Boards** should be placed at opposite sides of the base. The exact centering of the photodiode is not crucial

To replace or remove the PD and LED boards, pull the the notch in each board using a flat screw driver or fingernail to lift it up from the jumper headers

Inserting the Flourescent Filters

Two **Fluorescent Filters** can be placed in the square slot in front of each **Fluorescent PD Board** as shown below



Assembling the Tower

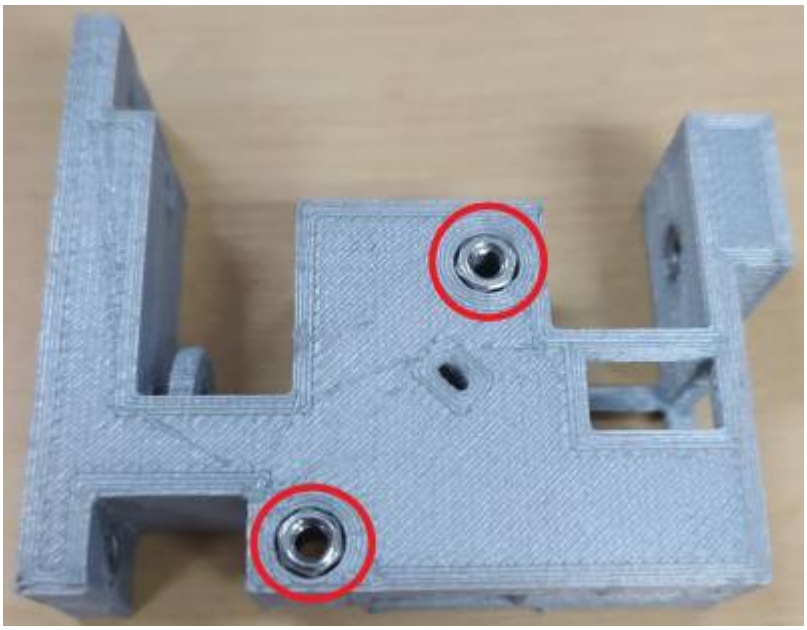
The tower holds the optical glass items and the cuvette which holds the liquid sample. This section details how each of these items are assembled into position to form the light path and also, the 3D printed mechanical fixtures which hold them in place (**Cuvette Holder**, **Cuvette Holder Cover**, **Beamsplitter Cover**, and **Lens Cover**).

> Following the proper order of steps to assemble the tower makes it easier to do as well as prioritizes the important optical glass pieces.

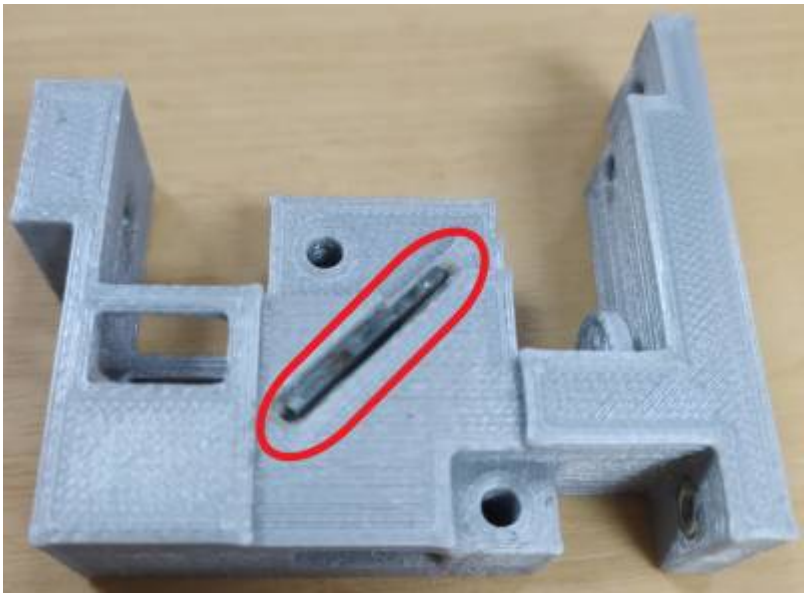
Securing the Beamsplitter

The **Beamsplitter** is used to direct the light path to both the liquid sample in the **Cuvette** as well as the reference photodiode located below it. It is angled at 45 degrees with respect to the light path and should be held tightly in place. Slight movements of the **Beamsplitter** will affect the measurement ratios obtained from the transmit photodiode and reference photodiode.

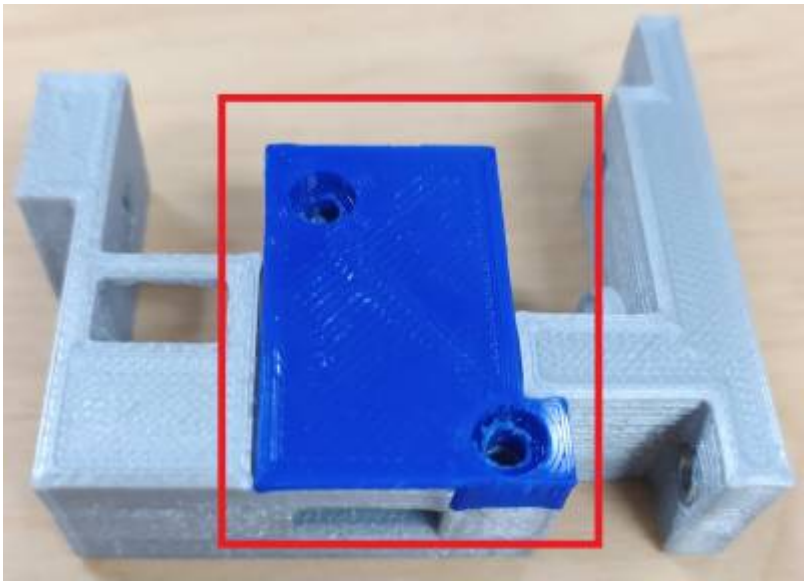
1. Starting with the **Cuvette Holder**, insert two **Hex Nuts** to each of the two circular depressions as shown below. These should be completely pressed and held tight to the depression to avoid the hassle of them coming off later.



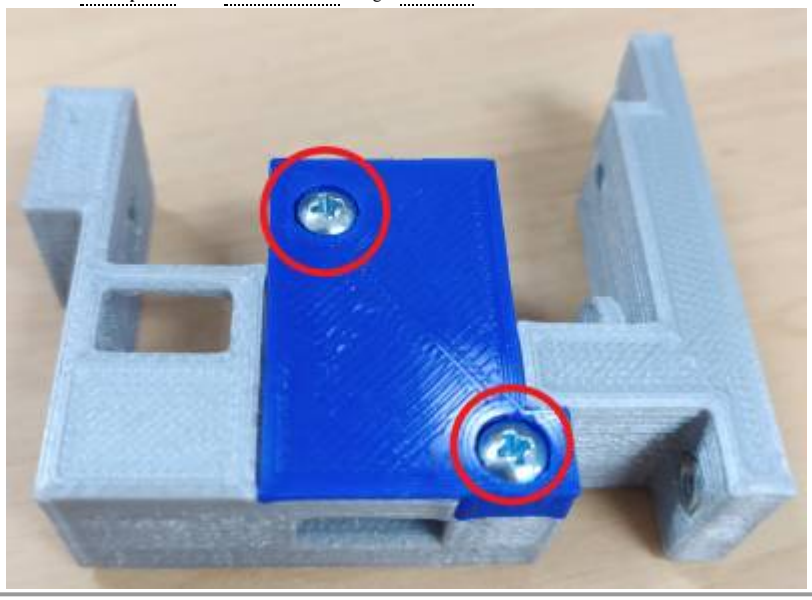
2. Insert the **Beamsplitter** in the angled 45 degree slit. Be careful in applying pressure as this may damage the part.



3. Secure the **Beamsplitter** with the **Beamsplitter Cover** as shown below.



4. Screw the **Beamsplitter** to the **Cuvette Holder** using 2 **S1 Screws** at the two holes as shown below. Be sure to drive the screws in until the head no longer protrudes from the depression.

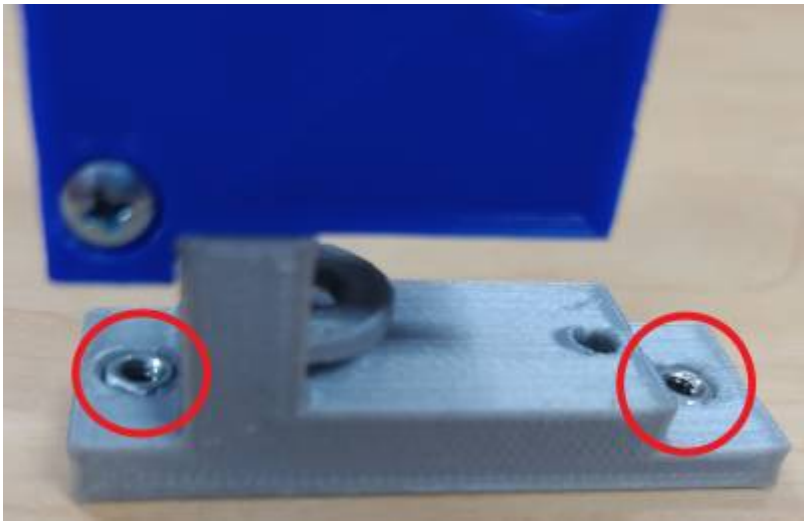


Check for slight movements of **Beamsplitter** by listening for clicking sounds when you shake the **Cuvette Holder**.

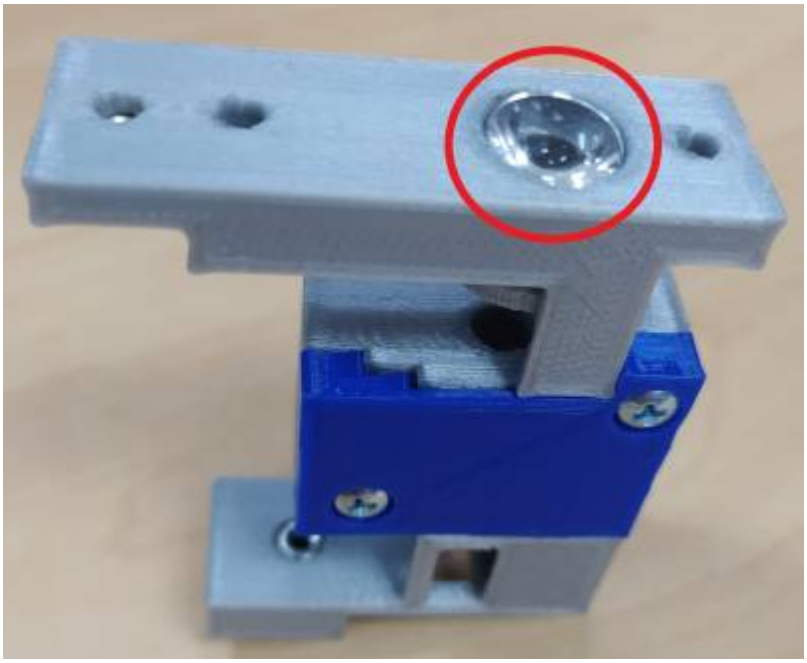
Securing the Condenser Lens

The **Condenser Lens** is used to focus and direct the light from the LED to through the tower and form the light path. Thus, it is important that the **Condenser Lens** be positioned properly and tightly secured so that no slight movements occur.

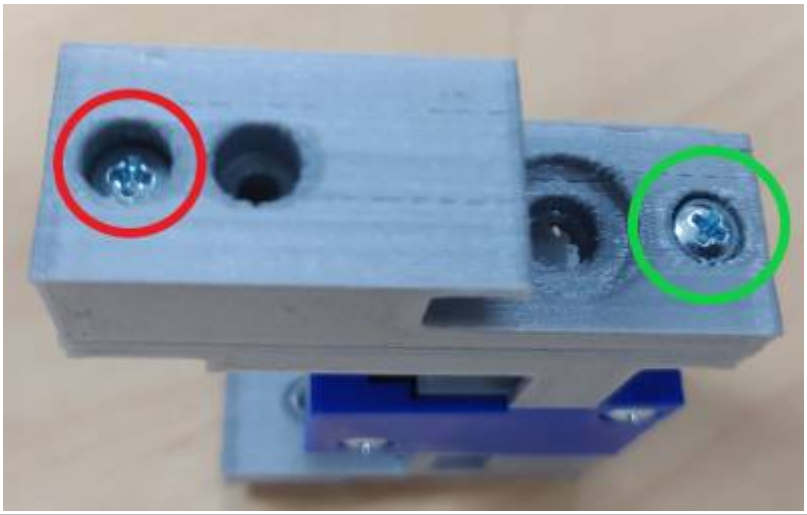
1. Attach 2 **Hex Nuts** to each of the two circular depressions on the **Cuvette Holder** as shown below. These should be completely pressed and held tight to the depression to avoid the hassle of them coming off later.



2. Place the **Condenser Lens** on the **Cuvette Holder**. This will be easier to do by rotating the **Cuvette Holder** vertically so that the **Condenser Lens** will drop in position.



3. Press the **Lens Cover** to the **Cuvette Holder** and screw it in place using an **S2 Screw** at the bottom hole (marked green) and an **S1 Screw** at the top hole (marked red) as show below.



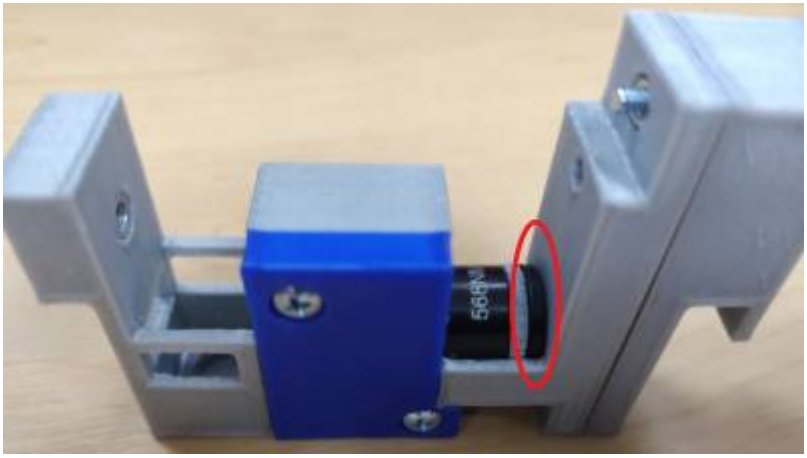
Check for slight movements of the lens by listening for clicking sounds when you shake the **Cuvette Holder**.

Adding a Narrowband Transmit Filter and Neutral Density Filter (Optional)

> This step is typically not required, because the EVAL-CN0503-ARDZ kit does not contain these components. Both the **Narrowband Transmit Filter** and **Neutral Density Filter** are optional items which can be added to the optical path if your application requires it.

1. The **Narrowband Transmit Filter** is used to select specific wavelengths of light from a wideband LED. Place the filter in to the **Cuvette Holder** as shown below. The placement does not need to be as secure and tight as the **Beamsplitter** and **Condenser Lens**.

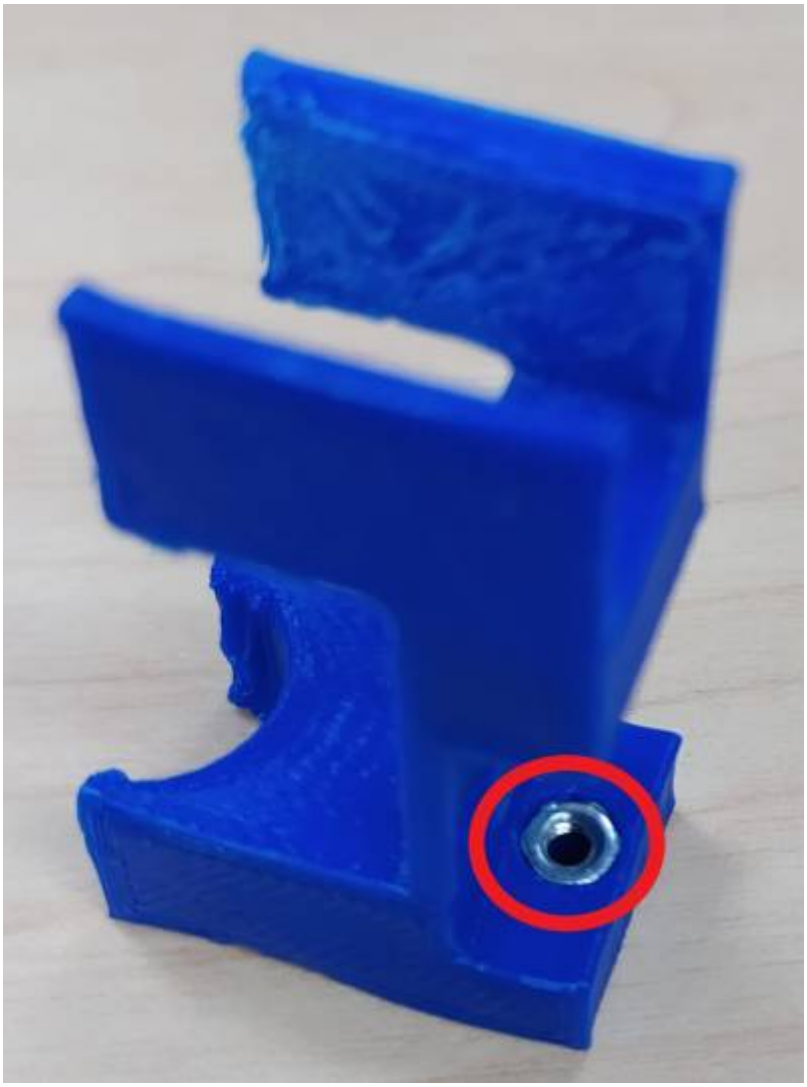
2. The **Neutral Density Filter** is used to decrease the light intensity for a wide range of wavelengths. For instances wherein the LED light intensity easily saturates the photodiode current input to the ADPD4101 [https://www.analog.com/ADPD4101], adding the **Neutral Density Filter** will help decrease the input current range.



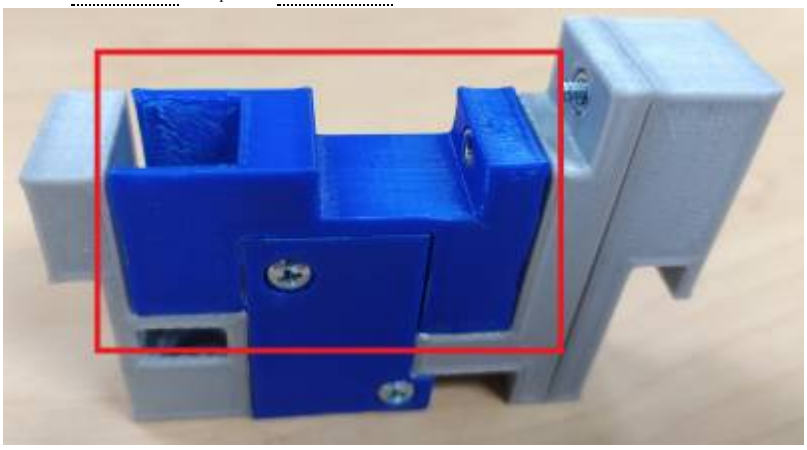
Placing the Cuvette Cover

The **Cuvette Cover** secures the hold for the **Cuvette** and shields the measurement light path from external sources. It also prevents the optional filters to be knocked out of the **Cuvette Holder**. Thus, it is necessary to lock the **Cuvette Holder** as detailed below.

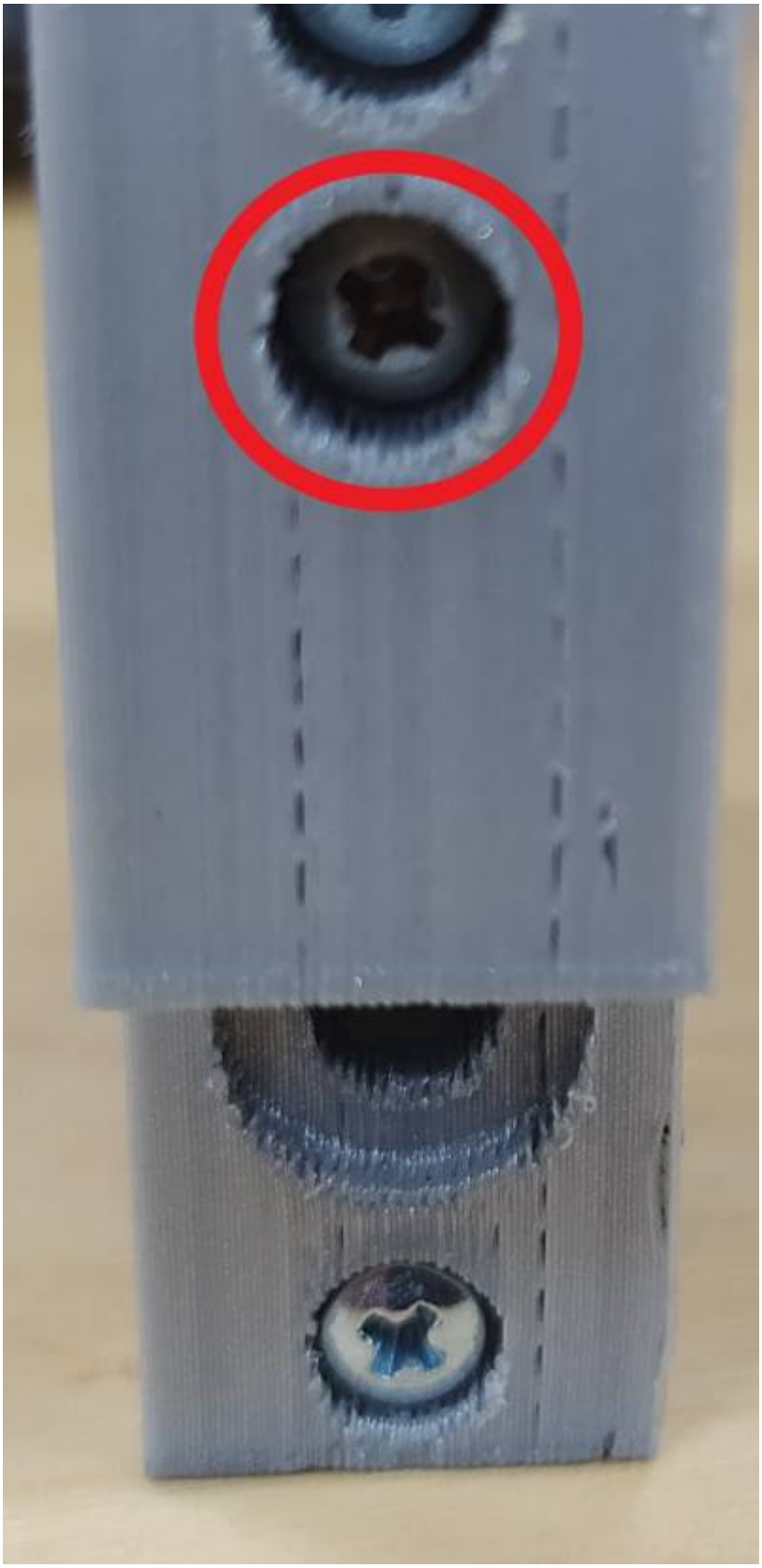
1. Insert a **Hex Nut** in the depression in the **Cuvette Cover**. This should be completely pressed and held tight to the depression to avoid the hassle of it coming off later.



2. Place the **Cuvette Cover** on top of the **Cuvette Holder** as shown below

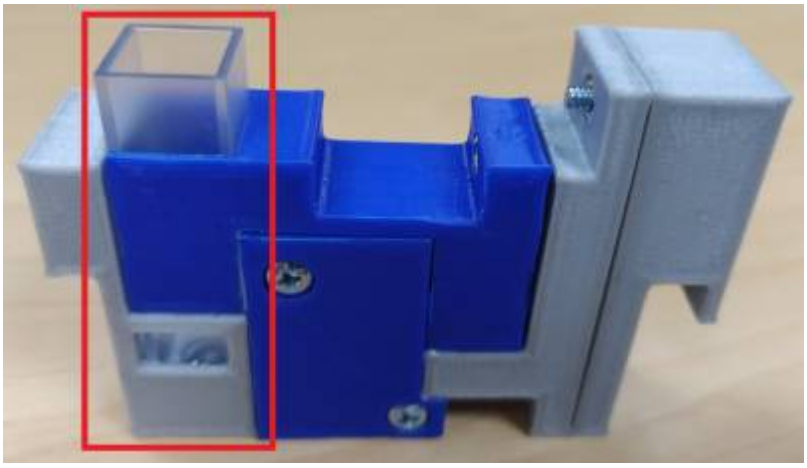


3. Secure the **Cuvette Cover** using an **S3 Screw** at the specified hole shown below.



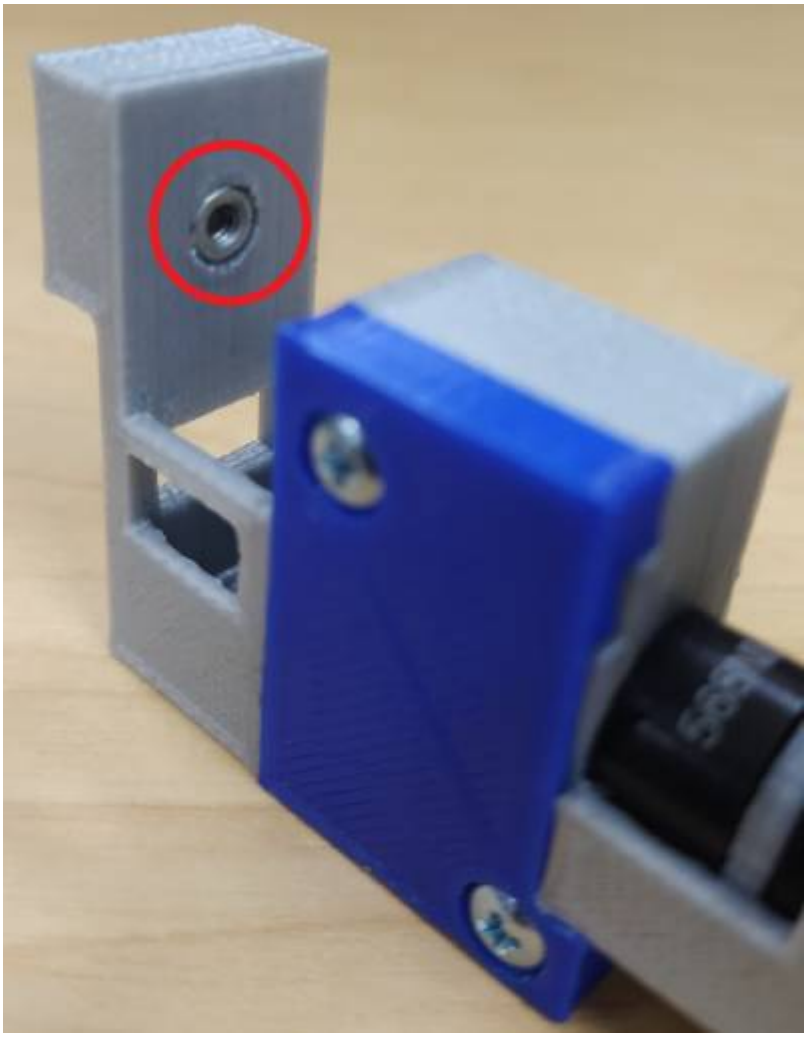
Placing the Cuvette

The **Cuvette** can easily be added to the **Cuvette Holder** as shown below.

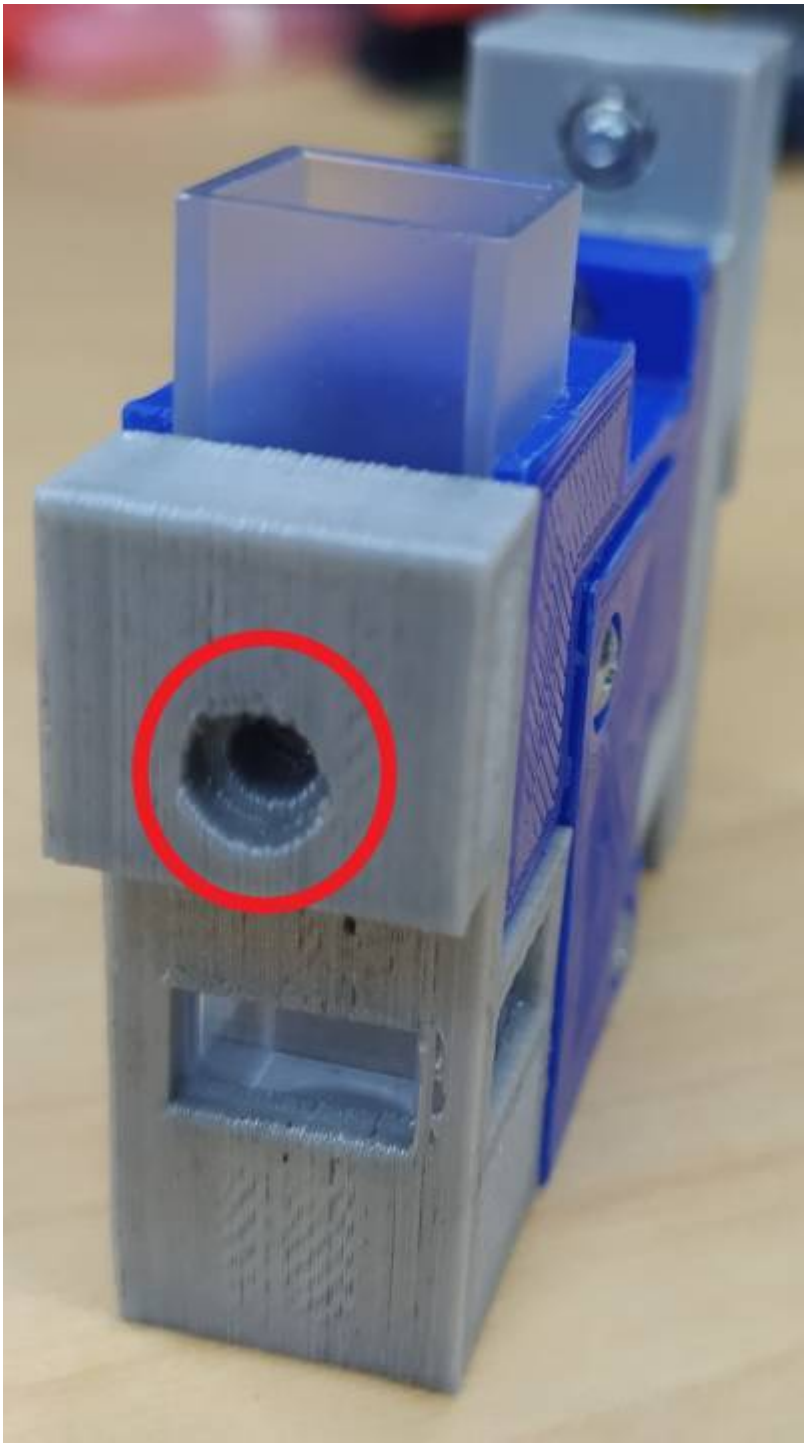


(Optional) The **Cuvette Holder** is a tight fit for 10mm by 10mm **Cuvette**. When using a smaller-sized cuvette, a provisional screw hole can be used to press against the **Cuvette** and secure it.

1. Remove the **Cuvette Cover** and insert a **Hex Nut** in the depression in the **Cuvette Holder** as shown below. This should be completely pressed and held tight to the depression to avoid the hassle of it coming off later.



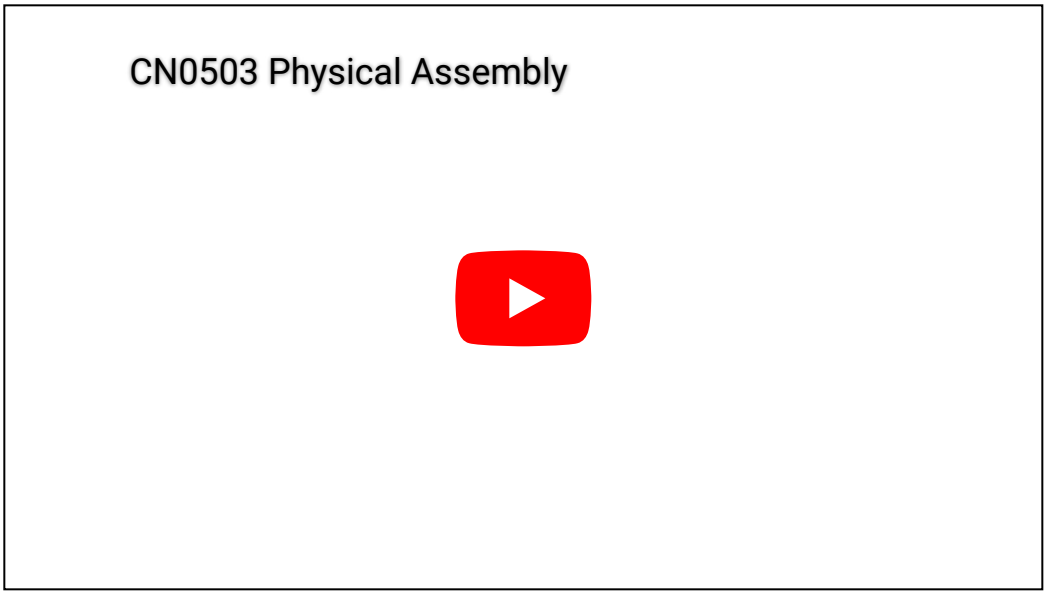
2. Replace the **Cuvette Cover** and attach an **S2 Screw** at the specified hole in the **Cuvette Holder** as shown below. The depth of the screw can be adjusted to increase or decrease the tightness of the hold.



Video Guides

Unboxing

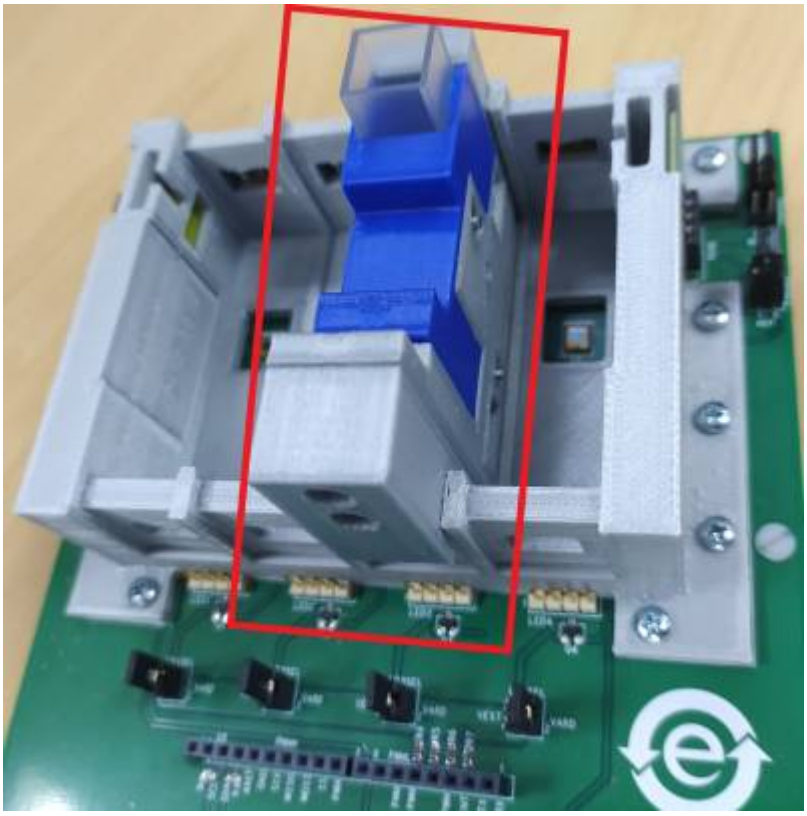
Assembly Video



Basic Fluoresence Demo

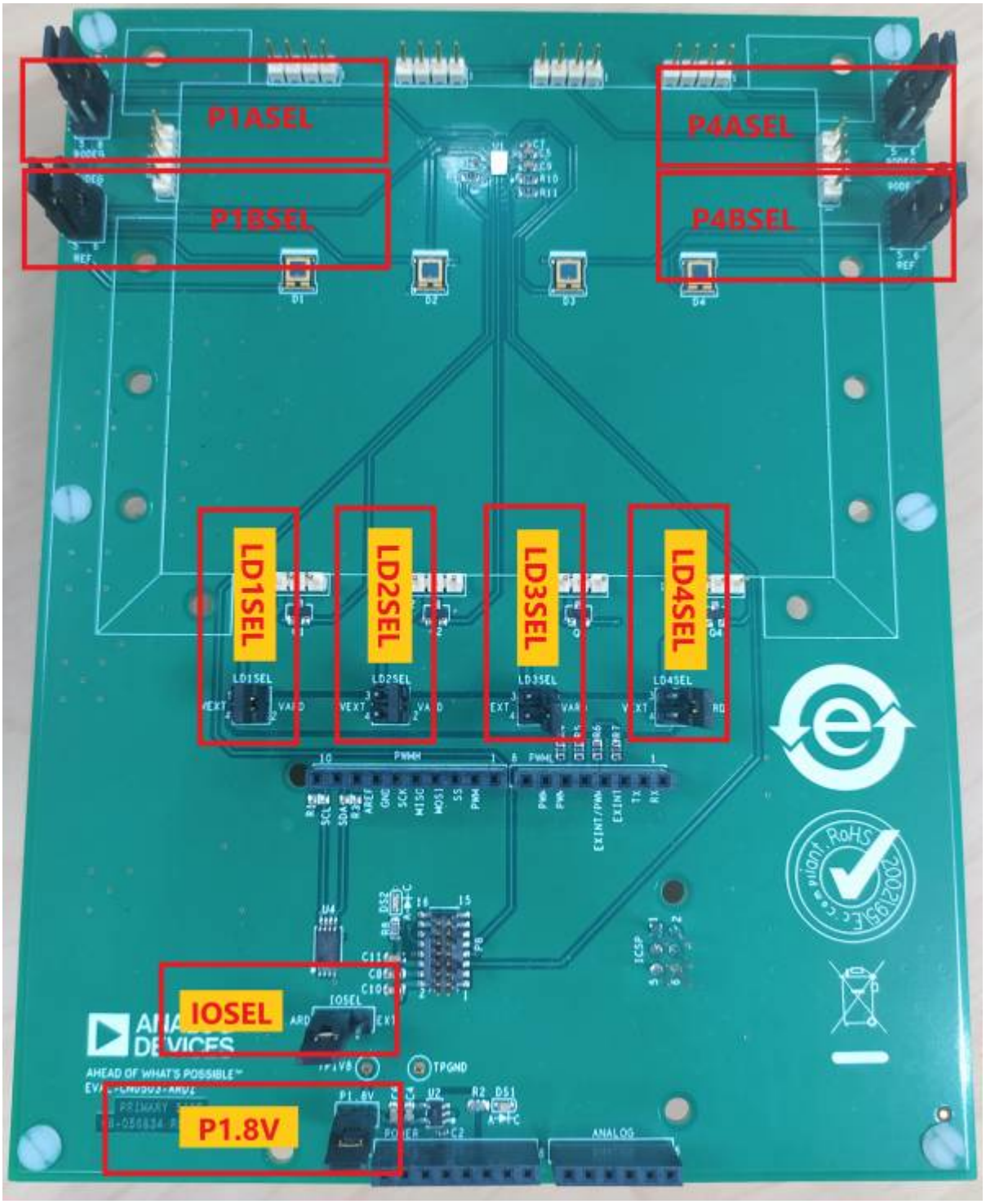
Mounting the Tower to the Base

The **Mounted Base** accommodates up to a maximum of 4 **Towers**. **Towers** are interchangeable and can be placed in any of the 4 positions. To attach the **Tower** to the **Mounted Base**, it should hang from the top of the walls of the base as shown below. Slight pressure may be needed to fully push the **Tower** down.



Jumper Settings

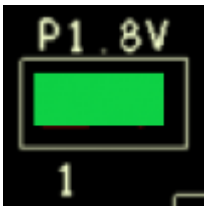
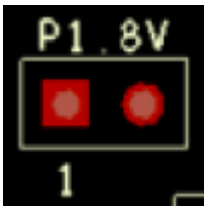
The CN0503 [https://www.analog.com/CN0503] has ten jumper positions which configure different settings as shown below. Also, the default shunt positions are highlighted.



1.8V LDO Enable

P1.8V enables the 1.8V LDO supply which sources its input voltage from the Arduino 3.3V pin. By default, a shunt is placed in P1.8V.

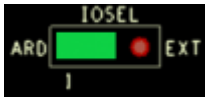
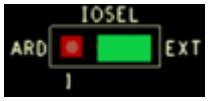
P1.8 Shunt	1.8V LDO Status	Image

P1.8 Shunt	1.8V LDO Status	Image
With Shunt (Default)	LDO Enabled	
No Shunt	LDO Disabled	

When using CN0503 [https://www.analog.com/CN0503] with an Arduino microcontroller, the LDO should be enabled. When using CN0503 [https://www.analog.com/CN0503] with the EVAL-ADPDUCZ, the LDO should be disabled.

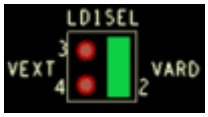
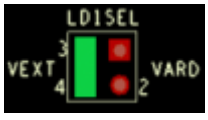
IO Voltage Selection

IOSEL selects the source of the logic level voltage for the ADPD4101 [https://www.analog.com/ADPD4101]. By default, a shunt is placed connecting pins 1 and 2.

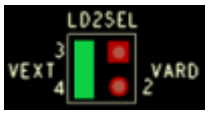
IOSEL Shunt Position	Source of Logic Level Voltage	Image
ARD Position Connecting pins 1 and 2	Sourced from Arduino IOREF pin	
EXT Position 2 and 3	Sourced from EVAL-ADPDUCZ 1.8V	

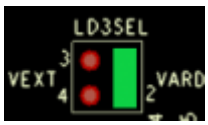
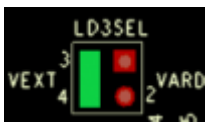
LED Supply Selection

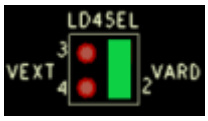
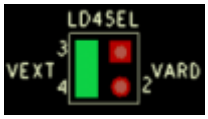
There are 4 jumper selection headers to set the supply source of each of the four LED connections. Each follow the same selection rules for shunt placement. By default, a shunt is placed connecting pins 1 and 2 for all 4 jumper headers.

LD1SEL Shunt Position	Source of LED1 supply	Image
VARD Position Connecting pins 1 and 2	Sourced from Arduino 5V	
VEXT Position Connecting pins 3 and 4	Sourced from EVAL-ADPDUCZ VBOOST	

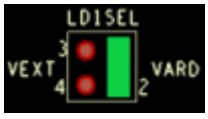
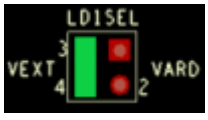
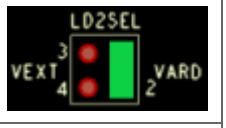
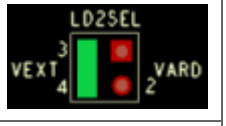
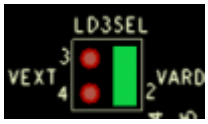
LD2SEL Shunt Position	Source of LED2 supply	Image
VARD Position Connecting pins 1 and 2	Sourced from Arduino 5V	

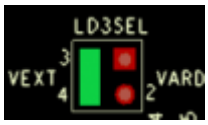
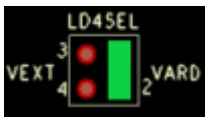
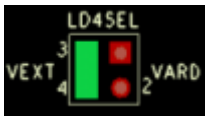
LD2SEL Shunt Position	Source of LED2 supply	Image
VEXT Position Connecting pins 3 and 4	Sourced from EVAL-ADPDUCZ VBOOST	

LD3SEL Shunt Position	Source of LED3 supply	Image
VARD Position Connecting pins 1 and 2	Sourced from Arduino 5V	
VEXT Position Connecting pins 3 and 4	Sourced from EVAL-ADPDUCZ VBOOST	

LD4SEL Shunt Position	Source of LED4 supply	Image
VARD Position Connecting pins 1 and 2	Sourced from Arduino 5V	
VEXT Position Connecting pins 3 and 4	Sourced from EVAL-ADPDUCZ VBOOST	

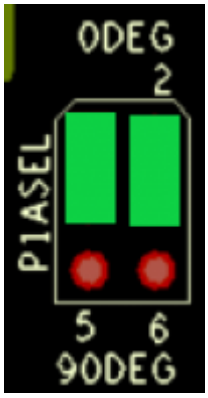
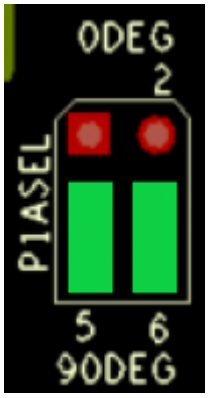
Each LED is connected to a transistor which protects the LED drivers of the ADPD4101 [https://www.analog.com/ADPD4101] from overvoltage.

LED Channel	Shunt Position	LED Power Source	Image
LD1SEL	**VARD Position** Connecting pins 1 and 2	Sourced from Arduino 5V	
	VEXT Position Connecting pins 3 and 4	Sourced from P8 VBOOST	
LD2SEL	**VARD Position** Connecting pins 1 and 2	Sourced from Arduino 5V	
	VEXT Position Connecting pins 3 and 4	Sourced from P8 VBOOST	
LD3SEL	**VARD Position** Connecting pins 1 and 2	Sourced from Arduino 5V	

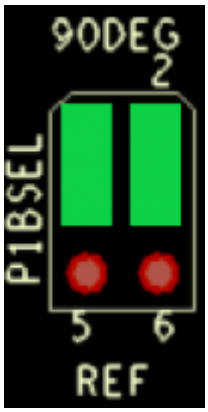
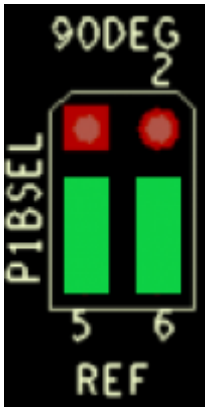
LED Channel	Shunt Position	LED Power Source	Image
	VEXT Position Connecting pins 3 and 4	Sourced from P8 VBOOST	
LD4SEL	**VARD Position** Connecting pins 1 and 2	Sourced from Arduino 5V	
	VEXT Position Connecting pins 3 and 4	Sourced from P8 VBOOST	

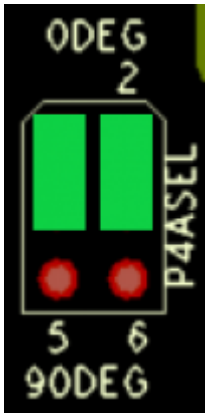
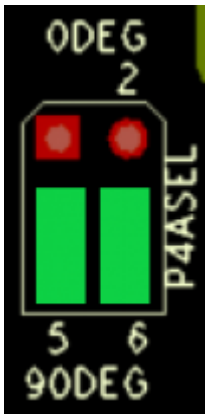
Photodiode Selection

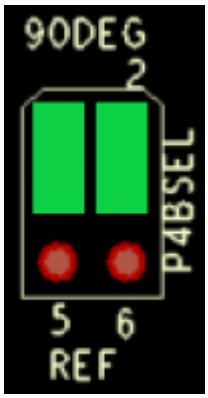
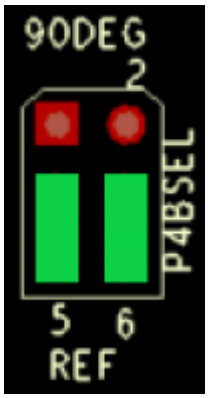
There are 4 photodiode selection headers available to the two side light paths. These 2 light paths have the option to use a fluorescent photodiode located at right angles from the light path. The combination of which photodiodes to be used by the ADPD4101 [https://www.analog.com/ADPD4101] can be configured by two selection headers, one for each input channel. Each selection header requires two shunts to configure, to connect both anode and cathode of the photodiode

P1ASEL Shunt Positions	Photodiode Connected to the First Input Channel	Image
0 DEG Position Connecting pins 1 and 3 Connecting pins 2 and 4	Transmit photodiode is connected to the first input channel	
90 DEG Position Connecting pins 3 and 5 Connecting pins 2 and 6	Fluorescent photodiode is connected to the first input channel	

P1BSEL Shunt Positions	Photodiode Connected to the Second Input Channel	Image

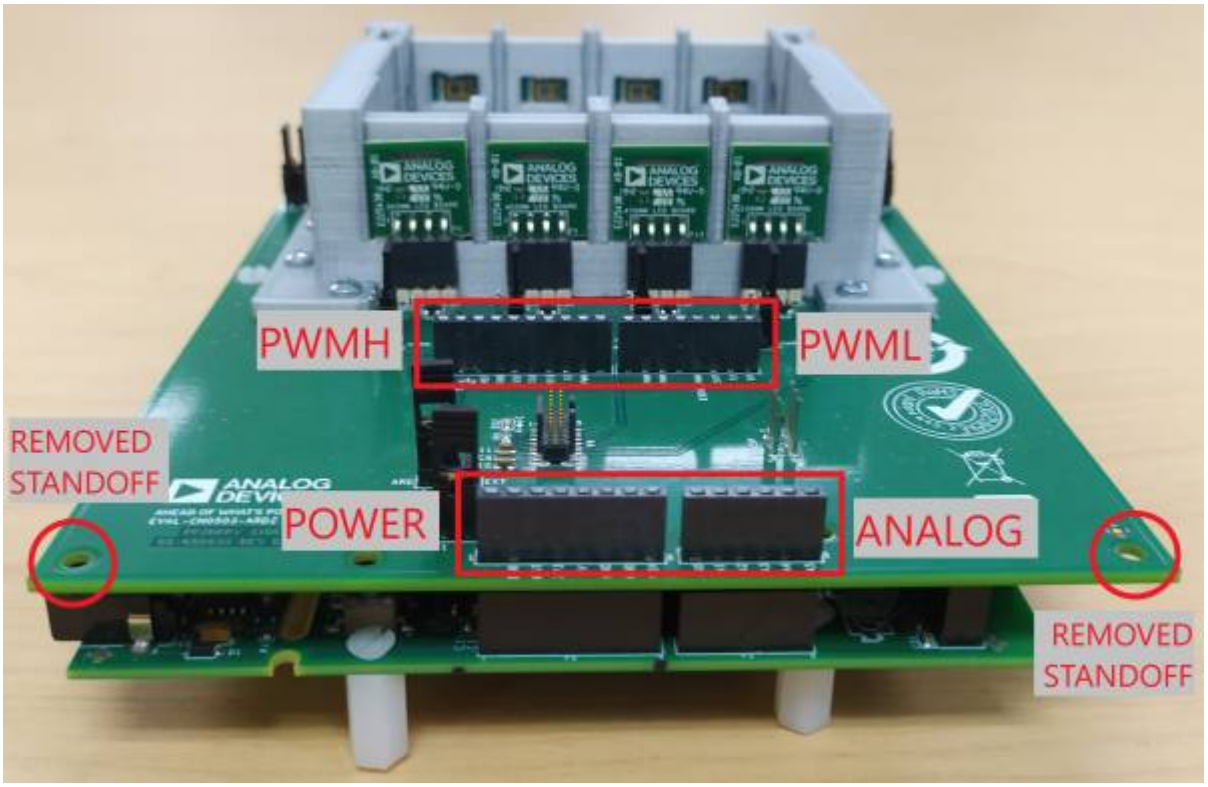
P1BSEL Shunt Positions	Photodiode Connected to the Second Input Channel	Image
90 DEG Position Connecting pins 1 and 3 Connecting pins 2 and 4	Fluorescent photodiode is connected to the second input channel	
REF DEG Position Connecting pins 3 and 5 Connecting pins 2 and 6	Reference photodiode is connected to the second input channel	

P4ASEL Shunt Positions	Photodiode Connected to the First Input Channel	Image
0 DEG Position Connecting pins 1 and 3 Connecting pins 2 and 4	Transmit photodiode is connected to the first input channel	
90 DEG Position Connecting pins 3 and 5 Connecting pins 2 and 6	Fluorescent photodiode is connected to the first input channel	

P4BSEL Shunt Positions	Photodiode Connected to the Second Input Channel	Image
90 DEG Position Connecting pins 1 and 3 Connecting pins 2 and 4	Fluorescent photodiode is connected to the second input channel	
REF DEG Position Connecting pins 3 and 5 Connecting pins 2 and 6	Reference photodiode is connected to the second input channel	

Arduino Connection

The CN0503 [https://www.analog.com/CN0503] is stacks on top of the EVAL-ADICUP3029 [https://www.analog.com/EVAL-ADICUP3029] or any Arduino microcontroller using the **PWMH**, **PWML**, **POWER**, and **ANALOG** headers. You will also have to remove the stand-offs from the CN0503 [https://www.analog.com/CN0503] as shown below.



Demo Hardware Setup

This section details the hardware setup of CN0503 [https://www.analog.com/CN0503] for a demonstration showing 4 different experiments in each optical path, utilizing colorimetry (absorbance measurement), turbidity, and fluorescence measurement. Below is a general block diagram of the setup.

Listed in the table below are the **LED Boards** and optional optical glass components used in each path.

Item	Optical Path 1	Optical Path 2	Optical Path 3	Optical Path 4
LED Board	365nm LED Board	430nm LED Board	615nm LED Board	530nm LED Board
Fluorescent Filter	Used	Not Used	Not Used	Not Used
Neutral Density Filter	Not Used	Not Used	Not Used	Not Used
Narrowband Transmit Filter	Not Used	Not Used	Not Used	Not Used

The jumper configuration of the CN0503 [https://www.analog.com/CN0503] for this setup is shown below.

Optical Path 1

In optical path 1, the experiment shows the detection of quinine in tonic water using fluorescence measurements. Optionally, you can also use samples of soda water and de-ionized water for comparison.

- Optical Platform: Fluorescence Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/fluorescence)

Optical Path 2

In optical path 2, the experiment shows pH measurement by using colorimetry to detect changes the solution through the bromothymol blue indicator. As pH changes from an acidic level to a neutral and basic level, bromothymol blue changes color from yellow to blue. A yellow colored solution will block 430nm light while a blue colored solution will allow it to pass. The change in pH can be done using a simple aquarium kit.

- Optical Platform: pH Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/colorimetry)

Optical Path 3

In optical path 3, the experiment shows nitrate detection using colorimetry. Using the API (Application Programming Interface) reagent found in nitrate test kits, a solution with a higher concentration of nitrate turns into a darker shade of red. As a result, the degree of absorbance of 615nm light decreases with the increasing nitrate concentration.

- Optical Platform: Nitrate Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/nitrate) *Coming Soon*

Optical Path 4

In optical path 4, the experiment shows turbidity measurements of cloudy water made by adding a a drop of milk and de-ionized water using 530nm light.

- Optical Platform: Turbidity Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/turbidity)

Software Reference Design & Demo

- Optical Water Quality Platform Setup (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/eval-adicup3029/reference_designs/demo_cn0503)
- Optical Platform: Fluorescence Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/fluorescence)
- Optical Platform: pH Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/colorimetry)
- Optical Platform: Turbidity Measurement Demo (ADICUP3029 + EVAL-CN0503-ADRZ) (/resources/eval/user-guides/circuits-from-the-lab/cn0503/turbidity)

Schematic, PCB Layout, Bill of Materials

EVAL-CN0503-ARDZ Design & Integration Files [https://www.analog.com/cn0503-designsupport]

- Schematics
- PCB Layout
- Bill of Materials
- Allegro Project

3D Printed Files (Mechanical Base and Cuvette Holder)

EVAL-CN0503-ARDZ STL Files (/_media/resources/eval/user-guides/circuits-from-the-lab/cn0503/rev_d.zip)

1. Mounted Base
2. Assembled Cuvette Holder (made up of the next several files)
    - Cuvette Holder
    - Cuvette Holder Cover
    - Beamsplitter Cover
    - Lens Cover

ADI (Analog Devices, Inc.) has ordered additional assembled Cuvette Holders from Shapeways [https://www.shapeways.com/] and received high quality prints back, although there are certainly other vendors capable of printing these files. ADI (Analog Devices, Inc.) is not responsible for any printing mishaps or issues with the printing vendors, we are merely providing our feedback.

Registration

Receive software update notifications, documentation updates, view the latest videos, and more when you register your hardware. Register [https://my.analog.com/en/app/registration/hardware/EVAL-CN0503-ARDZ?&v=RevA] to receive all these great benefits and more!

End of Document

---

resources/eval/user-guides/circuits-from-the-lab/cn0503.txt · Last modified: 17 Nov 2021 01:08 by Brandon Bushey [https://ez.analog.com/members/Brandon]