

# HDMI OSCILLOSCOPE

Daniel Kramnik



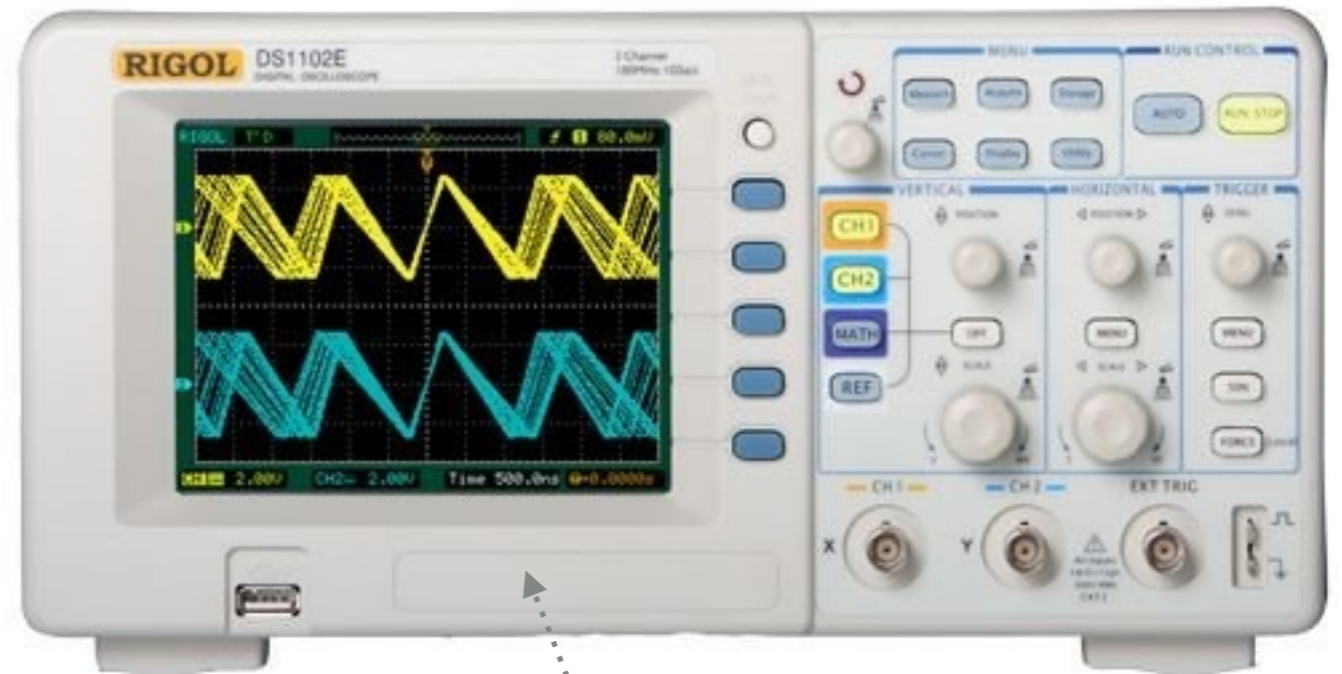
# \$100 Cheap-o Tablet



7" 1280x800 IPS LCD Screen

(Source: [http://ecx.images-amazon.com/images/I/61jfxgZ0JL\\_SL1000.jpg](http://ecx.images-amazon.com/images/I/61jfxgZ0JL_SL1000.jpg))

# \$500 Cheap-o Scope



5.7" 320x240 TFT LCD Screen

(Source: <http://ecx.images-amazon.com/images/I/4113ywwM7EL.jpg>)

\$500 Nice Tablet



10.1" 1366x768 IPS LCD Screen  
Micro HDMI Output

(Source: <http://ecx.images-amazon.com/images/I/81UsKlK%2B6LL.SL1500.jpg>)

\$5,000 Nice Scope



6.5" 640x480 TFT LCD Screen  
Optional VGA Output Plugin

(Source: [http://www.conrad.com/medias/global/ce/1000\\_1999/1200/1230/1231/123152\\_RB\\_00\\_FB.EPS\\_1000.jpg](http://www.conrad.com/medias/global/ce/1000_1999/1200/1230/1231/123152_RB_00_FB.EPS_1000.jpg))



# ECONOMIES OF SCALE?

The screenshot shows an eBay product listing for a "New OEM Dell Latitude L400 X200 12.1inch XGA Laptop LCD Screen LP121X1 - 97EKJ". The page includes a navigation bar with the eBay logo, search bar, and user account information. The product title is prominently displayed at the top of the listing area. Below the title, the item condition is listed as "New", and the quantity is set to 1. The price is shown as US \$29.99. A "Buy It Now" button is highlighted in blue, along with an "Add to cart" button. There are also links for "Add to watch list" and "Add to collection". The seller information section shows the seller is "splusdirect" with a 99% positive feedback rating. The shipping information indicates a cost of \$9.99 for expedited shipping, with an estimated delivery date between Friday, November 15 and Monday, November 18. The page also features a "Bill Me Later" option and a "Guarantee" section.

www.ebay.com/itm/New-OEM-Dell-Latitude-L400-X200-12-1inch-XGA-Laptop-LCD-Screen-LP121X1-97EKJ-/350831482297?pt=US\_Laptop\_Screens\_LCD\_Panels...

Hi, Daniel (Sign in) | Daily Deals | Sell | Customer Support UP TO 70% OFF My eBay 3 Cart

Shop by category All Categories Search Advanced

Back to search results | Listed in category: Computers/Tablets & Networking > Computer Components & Parts > Laptop Replacement Parts > Laptop Screens & LCD Panels

### New OEM Dell Latitude L400 X200 12.1inch XGA Laptop LCD Screen LP121X1 - 97EKJ

Item condition: **New** ✉️ | 📧 | 📱 | 📺 | 📷 | Add to watch list

Quantity:  More than 10 available / 1 sold

Price: **US \$29.99** **Buy It Now**

**Add to cart**

[Add to watch list](#)

[Add to collection](#)

**Experienced Seller** **New Condition**

**Bill Me Later** **New customers get \$10 back on 1st purchase**  
Subject to credit approval. [See terms](#)

Shipping: **\$9.99** Expedited Shipping | [See details](#)  
Item location: **Grand Prairie, Texas, United States**  
Ships to: **Worldwide**

Delivery: Estimated between **Fri. Nov. 15 and Mon. Nov. 18**  
Use **One-day Shipping** to get it by Nov. 15

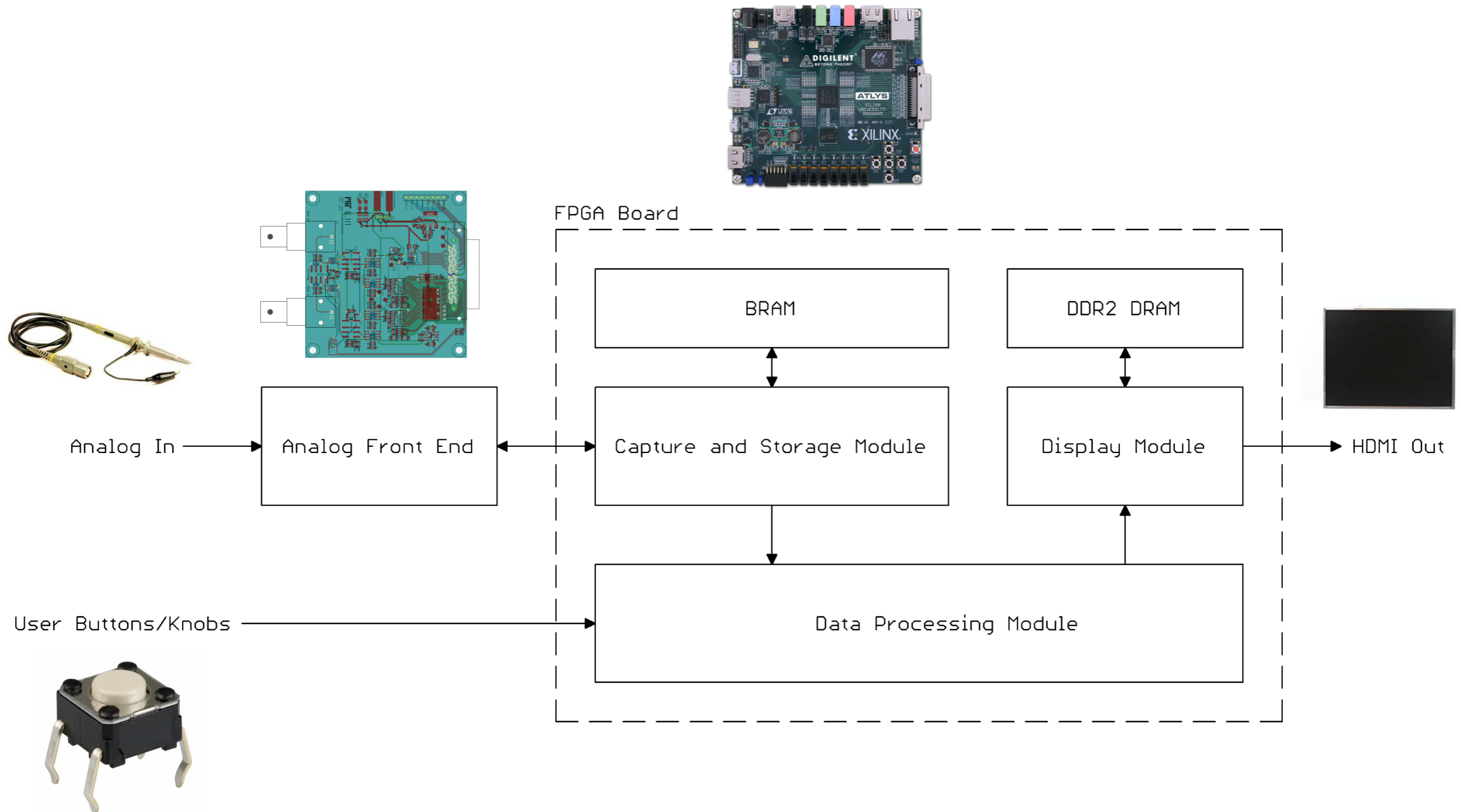
Payments: **PayPal**, Bill Me Later, Visa/MasterCard, Amex, Discover | [See details](#)

Returns: 30 days money back, buyer pays return shipping | [Read details](#)

Guarantee: **ebay** MONEY BACK GUARANTEE | [Learn more](#)  
Get the item you ordered or get your money back.

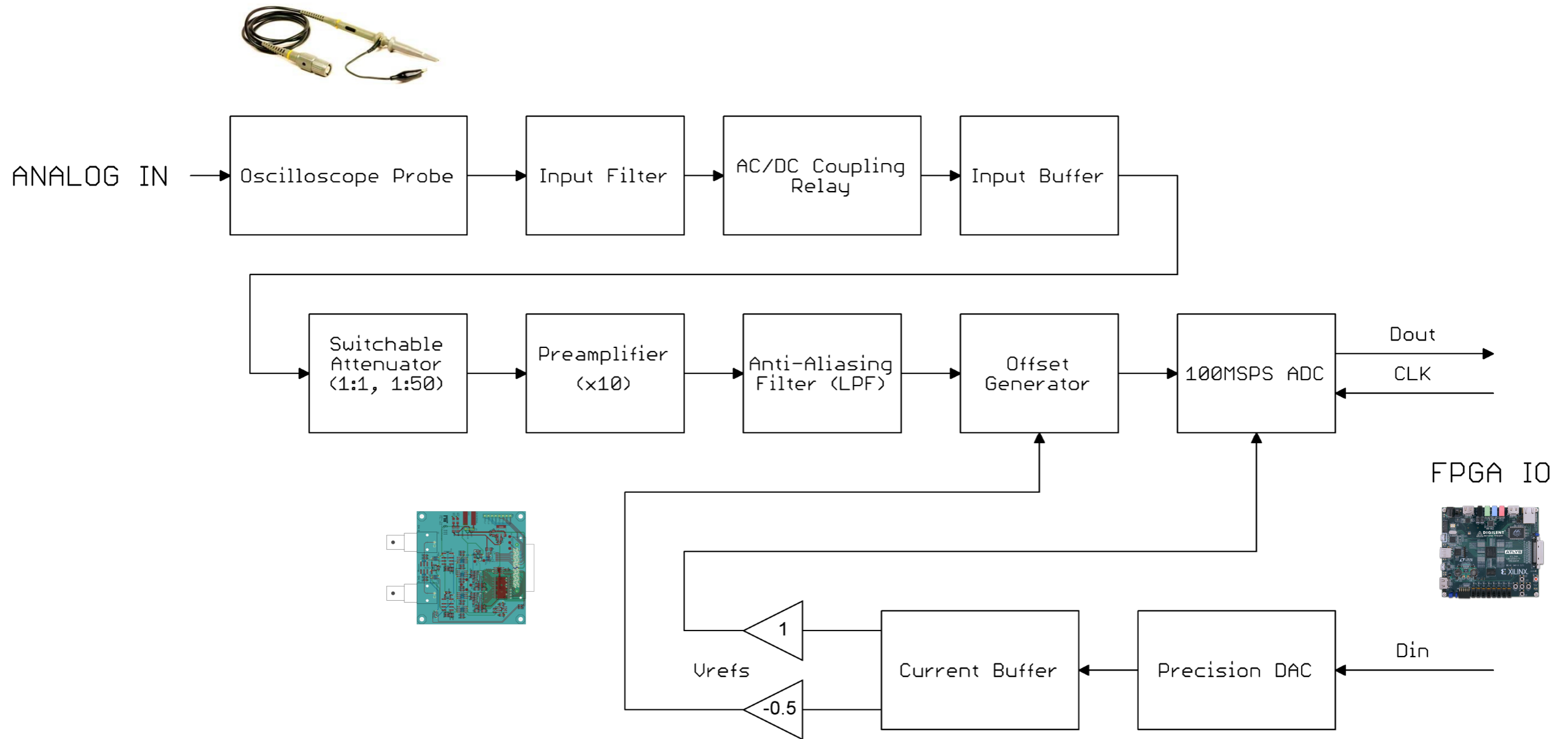
Mouse over image to zoom

# TOP-LEVEL DIAGRAM

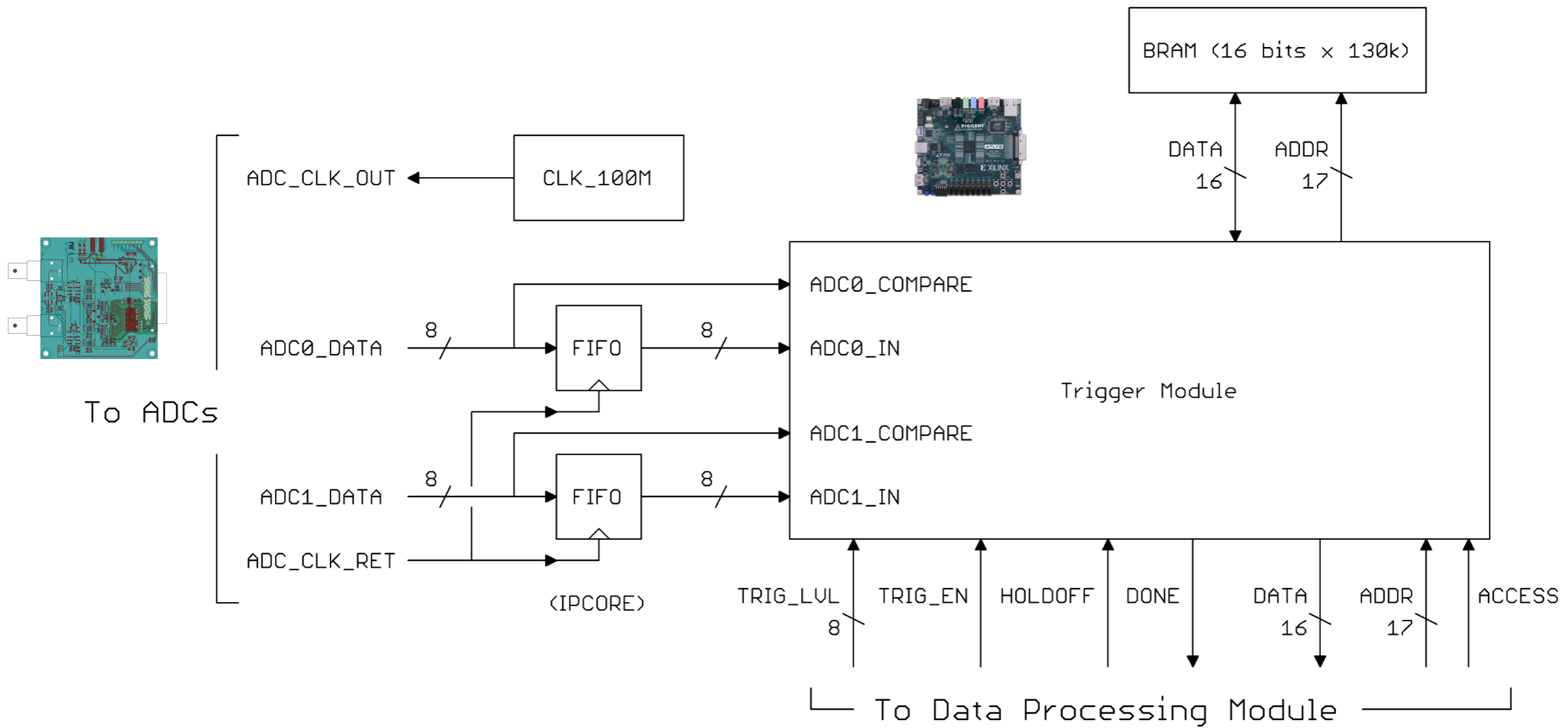


(Source: [http://www.myweb.ttu.edu/mhelm/DigitalKit/Pushbutton\\_Switch.jpg](http://www.myweb.ttu.edu/mhelm/DigitalKit/Pushbutton_Switch.jpg))

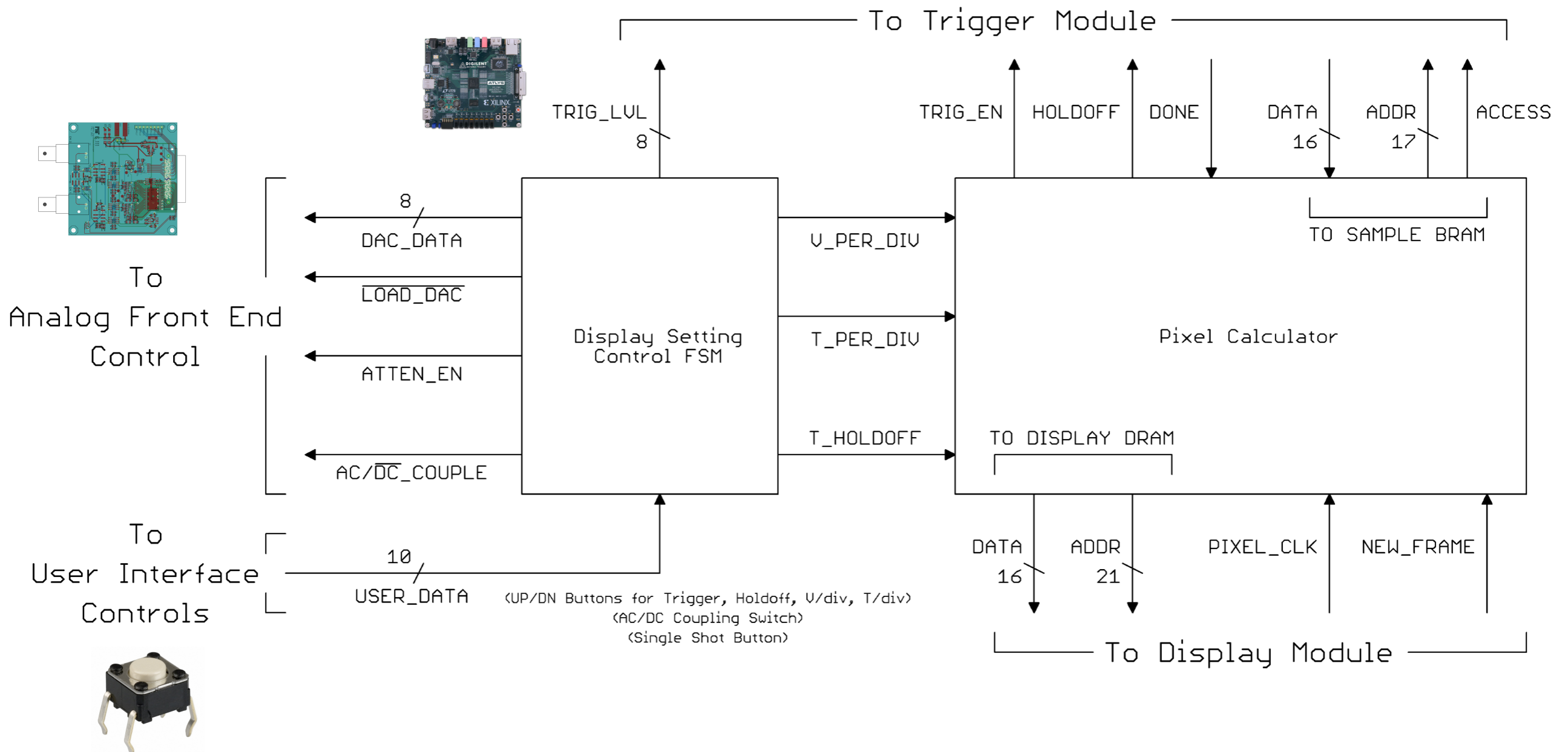
# ANALOG FRONT END



# CAPTURE AND STORE

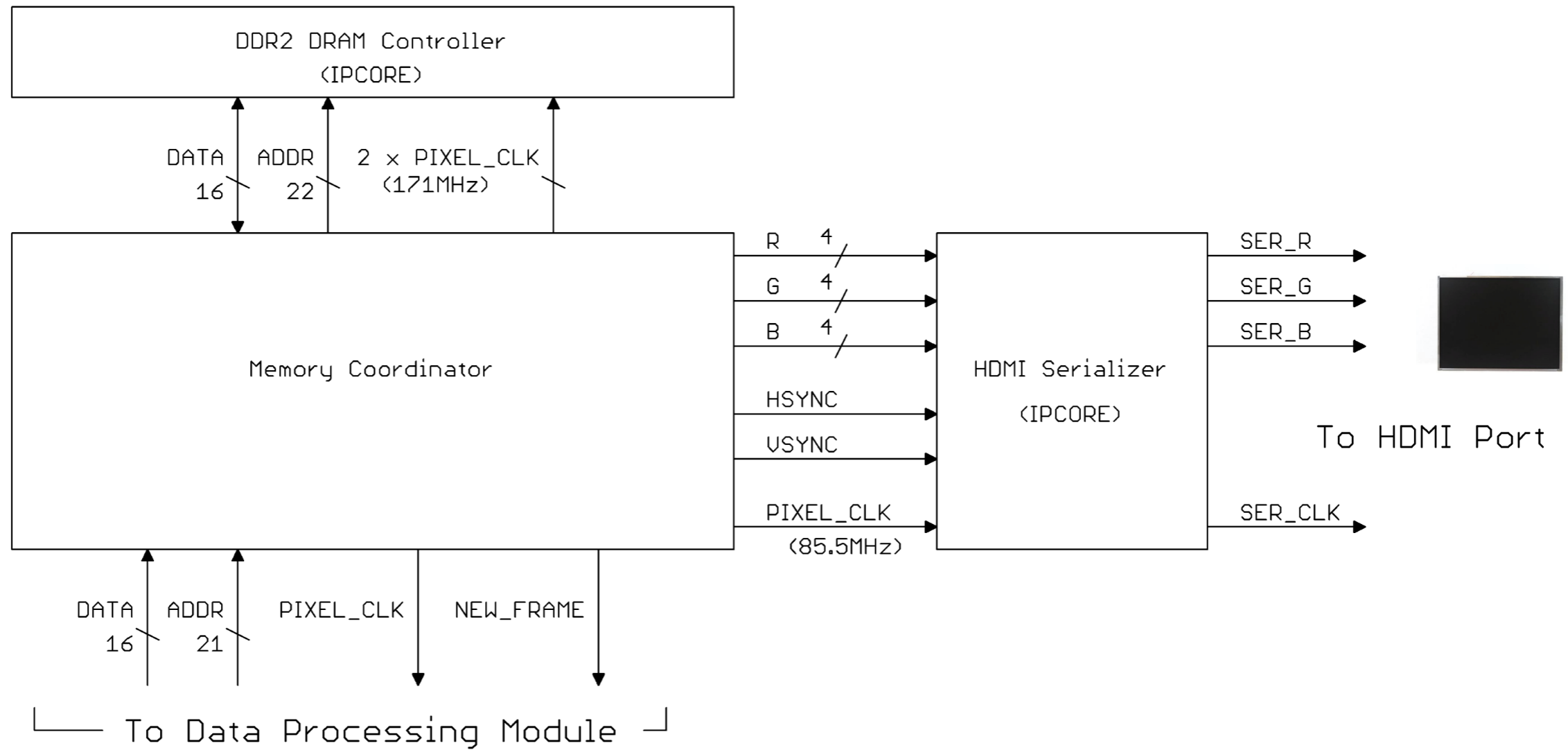


# DATA PROCESSING

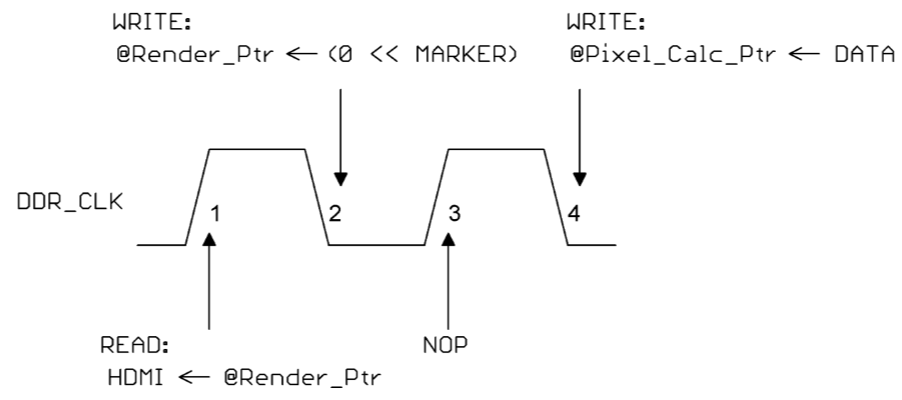
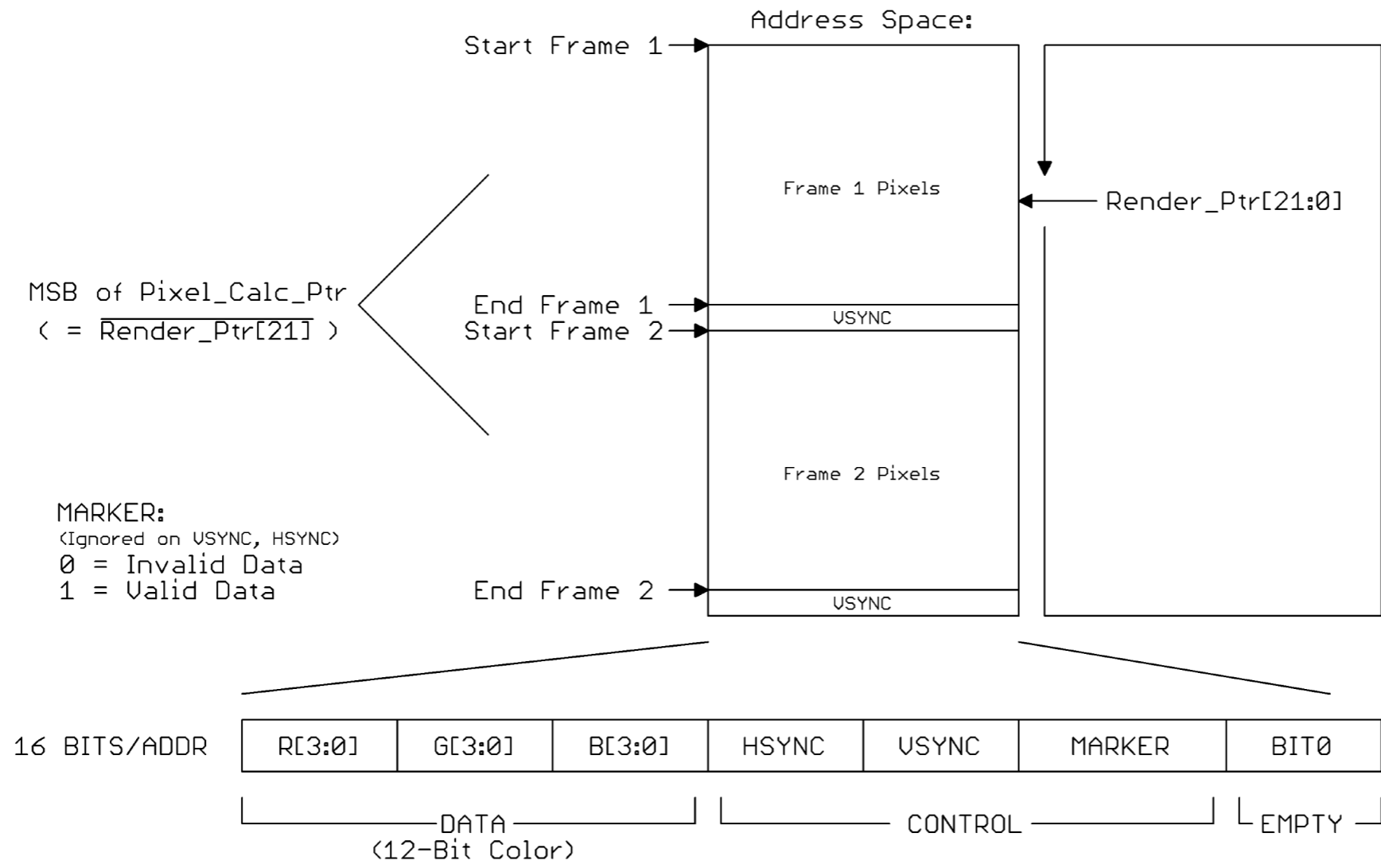




# DISPLAY



# DDR2 TIMING



# TIMELINE

- Week of 11/4: Schematic, board layout, and sendout of analog front end.
- Week of 11/11: Display module written and tested with Pong game.
- Week of 11/18: Board assembled and tested (arrives on Wed. 11/20)
- Week of 11/25: Basic single-shot trigger module and data processing module written and tested.
- Week of 12/2: Debug, work on adding continuous sampling and user interface stretch goals.



# QUESTIONS?