

# Hardware Database Updates

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# HWDB Basics

- We need to be able to store and access information on all components in use
- Must be able to easily find their:
  - Full testing history
  - Log of current and previous connections to other components
  - Unique identifying number and barcode
- Can upload items through web interface or curl commands
- Testing database currently exists to experiment with

# Component Types

- Every kind of hardware component has an assigned component ID
- For current ColdADC the component ID is D0810020001
- Items of this type will be assigned an ID such as D0810020001-00001

Project	System Name	System ID	Subsystem Name	Subsystem ID	Item Type Name	Item Type ID
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	LArASIC	001	P5 version preproduction 1	0001
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	LArASIC	001	P5B version preproduction 1	0002
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	LArASIC	001	to be decided	0003
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	LArASIC	001	to be decided	0004
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	LArASIC	001	to be decided	0005
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	ColdADC	002	P2 version preproduction	0001
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	ColdADC	002	P2 version batch 1	0002
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	ColdADC	002	P2 version batch 2	0003
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	ColdADC	002	P2 version batch 3	0004
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	COLDATA	003	E4 version preproduction	0001
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	COLDATA	003	E4 version batch 1	0002
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	COLDATA	003	E4 version batch 2	0003
D	FD1-HD TPC Electronics and FD2-VD Bottom Drift Elect	081	COLDATA	003	E4 version batch 3	0004

# Component Type

- Users create and define properties of components
- Can define test types from here
- ColdADC component type is now properly defined and can receive items

## Edit Component Type

SPECS LOG IMAGES

Type Name ColdADC version P2 preproduction

Type ID 00001

Full Name D.FD1-HD TPC\_Elec. and FD2-VD Bottom\_Elec..ColdADC.ColdADC version P2 preproduction

Part Type ID D08100200001

Comments

Category generic

Managed by × tester × type-manager

Manufacturers × Louisiana State University

Created 2023-12-08 14:05:54

Created by Jacob Goudeau

Specifications

Version 0

Created 2023-12-08 14:01:27-06:00

Created by Jacob Goudeau

Datasheet {}

Connectors select a type

SAVE DONE

# JSON Input Files

- Customizable but must have the following to work:
  - Country code (ex. "US")
  - Institution number (ex. 144 = LSU)
  - Specifications
- Can specify manufacturer, serial number, other desired fields
- Images and test logs are uploaded in a separate file and connected to the item

```
{  
  "component_type": {  
    "part_type_id": "D08100200001"  
  },  
  "serial_number": "00008",  
  "country_code": "US",  
  "comments": "Testing!",  
  "institution": {  
    "id": 144  
  },  
  "manufacturer": {  
    "id": 32  
  },  
  "specifications": {  
    "Documents": "Links",  
    "Testing ID": "enr-4_133"  
  }  
}
```

```
CURL -H "Content-Type: application/json" -X POST -d @Add_AnItem_Test_Parts_1.json  
'APIPATH/component-types/Z00100100048/components'
```

# Current ColdADC HWDB Status

- Component type initialized and fields set
- Container/structure information not yet in use - should link to components that are hardware parents/daughters

Edit Item D08100200001-00008

QR	SPECS LOG	STRUCTURE LOG	CONTAINER LOG	TEST LOG	IMAGES
<b>Component Type</b>	D.FD1-HD TPC_Elec. and FD2-VD Bottom_Elec...ColdADC.ColdADC version P2 preproduction				
<b>Part ID</b>	D08100200001-00008-US144				
<b>Serial Number</b>	00008				
<b>Country of Origin</b>	United States				
<b>Resp. Institution</b>	Louisiana State University				
<b>Manufacturer</b>	Louisiana State University				
<b>Batch ID</b>	--SELECT--				
<b>Created</b>	2024-03-01 12:50:36				
<b>Created by</b>	Jacob Goudeau				
<b>Specs Version</b>					
<b>Comments</b>	Testing!				
<b>Enabled</b>	<input type="checkbox"/>				
<b>Contained in</b>	N/A				
<b>Specifications</b>	+				
<b>Sub-components</b>	+				

# Specifications

- Should include basic info about the component type
- Most of this will be preset values and the same for all items
- Some additional info like ID number or other unique information can be uploaded too

Specification history for [D08100200001-00008](#)

Created	Creator	Properties	Comments	Country_code	Institution_id	Specs_version	Enabled
2024-03-01 12:50:36.835787-06:00	<a href="#">Jacob Goudeau</a>	Documents: Links Testing ID: enr-4_133	Testing!	US	144	None	False

# Test Types

- We can define different kind of tests for each component type
- Definitely will define at least cold test/warm test types but need to decide if/how we want to separate further

ADD NEW...

Test name	Item tests	Comments	Created	Creator
Cold QC Test		Testing!!!	2024-03-01 12:18:00UTC-06:00	Jacob Goudeau
LN QC Test		Quality control test at cold temperature	2024-03-01 12:18:46UTC-06:00	Jacob Goudeau
QC Test		Test!!!	2024-01-22 12:47:48UTC-06:00	Jacob Goudeau

View Item Test Type ID:596 (# Tests:6)

SPECS LOG

**Test Type Name** LN QC Test

**Component Type** ColdADC version P2 preproduction

**Comments** Quality control test at cold temperature

**Created** 2024-03-01 12:18:46

**Created by** Jacob Goudeau

**Specifications**

<b>Version</b>	1
<b>Created</b>	2024-03-01 11:35:58-06:00
<b>Created by</b>	Jacob Goudeau
<b>Datasheet</b>	Plots: " Raw Data: " Test Date: " Test Location: " Test Operator: " Regs Read Test: " Soft Reset Test: " Average ADC Noise: 0 External VDDA Voltage: 0 External VDDA Power DIFF: 0

DONE



# Test Logs

- Can then easily browse a test type or look at all the testing history for specific chips
- Need to include future permanent raw data location

Test_id	Part_id	Created	Creator	Test_data	Test_spec_version	Comments
14902	D08100200001-00008	2024-03-01 12:51:55UTC-06:00	Jacob Goudeau	Plots: Plots embedded here Raw Data: link/to/raw/data Test Date: 1/13/2024 Test Location: LSU Test Operator: Jake Goudeau Regs Read Test: PASSED Soft Reset Test: PASSED Average ADC Noise: 133.81 External VDDA Voltage: 2.72 External VDDA Power DIFF: 0.36 External VDDA Power SE mode: 0.31	None	Testing!!!
14901	D08100200001-00008	2024-03-01 12:50:59UTC-06:00	Jacob Goudeau	Plots: Plots embedded here Raw Data: link/to/raw/data Test Date: 1/11/2024 Test Location: LSU Test Operator: Jake Goudeau Regs Read Test: FAILED Soft Reset Test: FAILED Average ADC Noise: 136.42 External VDDA Voltage: 2.54 External VDDA Power DIFF: 0.43 External VDDA Power SE mode: 0.29	None	Testing!!!
14900	D08100200001-00004	2024-03-01 12:25:41UTC-06:00	Jacob Goudeau	Plots: Plots embedded here Raw Data: link/to/raw/data Test Date: 1/12/2024 Test Location: LSU Test Operator: Jake Goudeau Regs Read Test: PASSED Soft Reset Test: FAILED Average ADC Noise: 131.18	None	Testing!!!

# Images

- Tested with 20pg PDF of images successfully
- Could be used to upload complete collection of associated plots

For Item: [D08100200001-00008](#)

<a href="#">ADD NEW...</a>	<a href="#">FILTER...</a>					
Image_name	Library	Item	Comments	Created	Image	Creator
<a href="#">Test3image.pdf</a>	comp	<a href="#">D08100200001-00008</a>		2024-03-01 13:05:23UTC-06:00		Jacob Goudeau

# Things we still need to do

- Decide what exactly goes into specifications
- Decide how many test types we want to separate into and what to put into them
- Determine permanent raw data storage locations and add to test reports
- Use container log and QR codes eventually
- Write a script to do all this automatically

**Thank You!**