

an App that talks to HWDB



- Runs on an iPad
- Provides a friendly interface
- Has been extensively employed by the HVS consortium

ProtoDUNE II

Cancel

Hanger Bar Checklist

Print

Selected Country/Institution: USA / University of Minnesota Twin Cities

NONE
Hajime Inc

Manufacturers: CERN
ATLAS Fibre

Drawing # PD2-20-1150

Type ID Z00100100097

Generated Parts ID

Date: 5/19/22 午前9:18

# Ordered	# Received	Visual	G10 Fiber Orientation	Length, Width, Thickness	# Cleaned
0	0	0	0	0	0

- # Ordered – Record number ordered in this shipment from vendor.
- # Received – Record number received in this shipment from vendor.
- Visual – Inspect for absence of machine marks and/or residue on surfaces. Record number that pass inspection.
- G10 Fiber Orientation – Record number that are machined in correct fiber orientation (see picture).
- Length, Width, Thickness – Record number that pass dimensional template test.
- # Cleaned – Record number cleaned in sonic bath, wiped with isopropyl alcohol, bagged and ready for shipping to factories.

Comment:

Send via email

Upload to HWDB

Basic interface

This is a single screen of iPad, showing a QC checklist for a CPA Hanger Bar, whose (temporary) Type ID = Z00100100097.

User enters data (QC test results).

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Select your Country/Institution IDs and Manufacturers

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Type ID Z00100100097

Generated Parts ID

Date: 5/19/22 午前 9:18

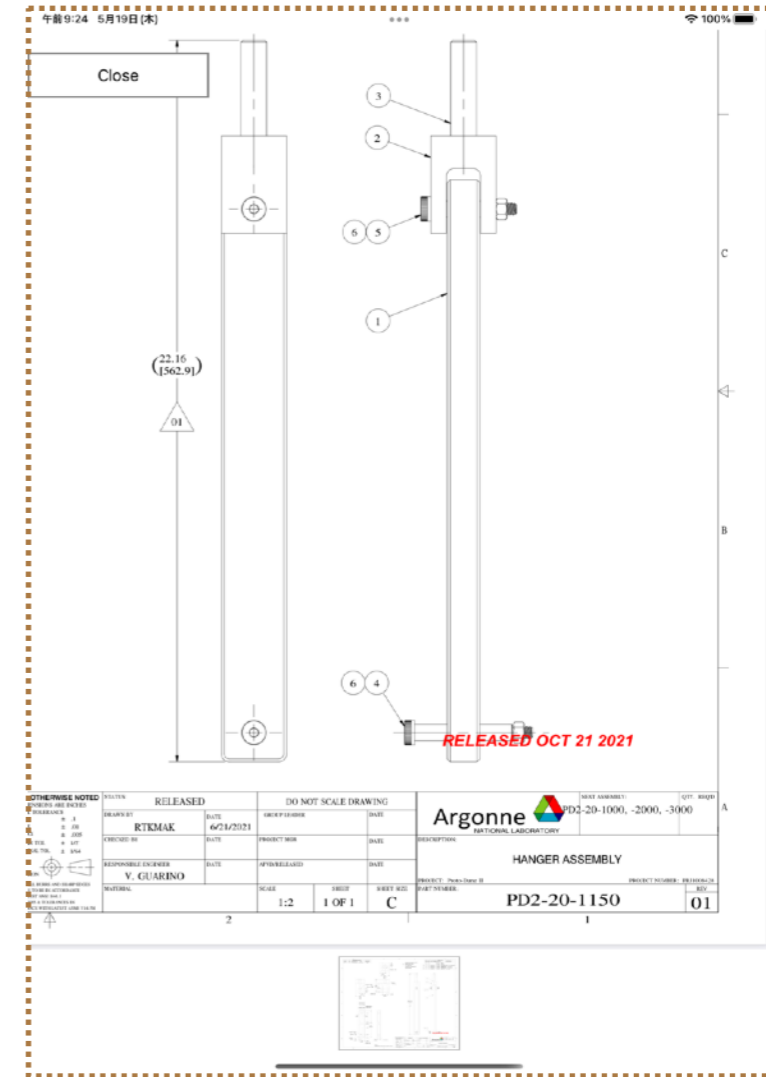
# Ordered	# Received	Visual	G10 Fiber Orientation	Length, Width, Thickness	# Cleaned
0	0	0	0	0	0

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[Send via email](#)

[Upload to HWDB](#)



The corresponding drawing pops up in a pinch-able window.

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- Length, Width, Thickness – Record number that pass dimensional template test.
- # Cleaned – Record number cleaned in sonic bath, wiped with isopropyl alcohol, bagged and ready for shipping to factories.

Comment:

[Send via email](#)

[Upload to HWDB](#)

Type ID: Z00100100097

Generated Parts ID: Z00100100097-00070

Upload was successful!
 Your contents have been uploaded successfully.
 Successful parts: HangerBar
 Failed parts: None

Okay

Date:	# Ordered	# Received	Length, Width, Thickness
	3	3	

Ordered – Record number ordered in this shipment from vendor.
 # Received – Record number received in this shipment from vendor.

The ID (really “EID”) will be displayed once its content is upload.

If you notice, we are uploading an Item (Hanger Bar Spect, e.g., # ordered), along with its QC Test results) together.

午前9:25 5月19日(木) 100%

Date: 5/19/22 午前9:24

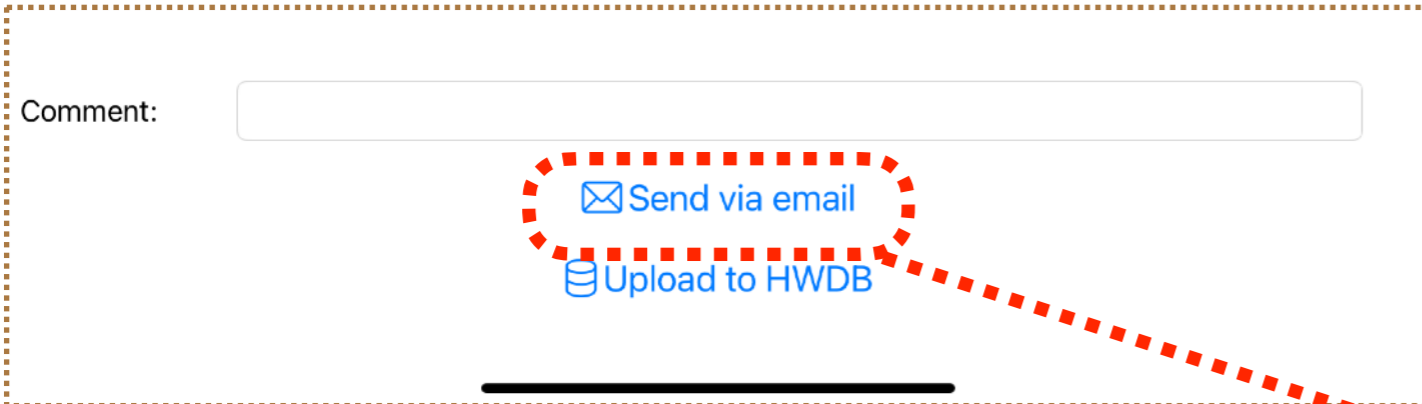
Name	Drawing #	Parts ID	# Ordered	# Received	Visual	Template	Cleaned
Main/Bottom Support Bar	PD2-20-1312	Z00100100050-0003 3	0	0	0	0	0
Upper Side Bar P1 US	PD2-20-1116	Z00100100051-0001 7	0	0	0	0	0
Upper Side Bar P1 DS	PD2-20-1113	Z00100100052-0001 4	0	0	0	0	0
Intermediate Bar	PD2-20-1115	Z00100100053-0001 3	0	0	0	0	0
Middle Side Bar P1 US	PD2-20-1223	Z00100100054-0001 3	0	0	0	0	0
Middle Side Bar P1256 DS	PD2-20-1224	Z00100100055-0001 3	0	0	0	0	0
Lower Side Bar P1 US	PD2-20-1134	Z00100100056-0001 3	0	0	0	0	0
Lower Side Bar P1 DS	PD2-20-1333	Z00100100057-0001 3	0	0	0	0	0
Upper Side Bar P256 US	PD2-20-2116	Z00100100058-0001 3	0	0	0	0	0
Upper Side Bar P25 DS	PD2-20-2113	Z00100100059-0001 3	0	0	0	0	0
Middle Side Bar P256 US	PD2-20-2123	Z00100100060-0001 3	0	0	0	0	0
Lower Side Bar P25 DS	PD2-20-2133	Z00100100061-0001 4	0	0	0	0	0
Lower Side Bar P256 US	PD2-20-2134	Z00100100062-0001 4	0	0	0	0	0
Upper Side Bar P6 DS	PD2-20-3113	Z00100100063-0002 9	0	0	0	0	0
Lower Side Bar P6 DS	PD2-20-3333	Z00100100064-0003 0	0	0	0	0	0

Ordered – Record number ordered in this shipment from vendor.
Received – Record number received in this shipment from vendor.
Visual – Record number that pass: Inspect for absence of cracks or damaged faces or edges.
Template – Record number that pass: Length and hole positions must fit template jig according to drawing #.
Cleaned – Record number cleaned in sonic bath, wiped with isopropyl alcohol, bagged and ready for shipping to factories.

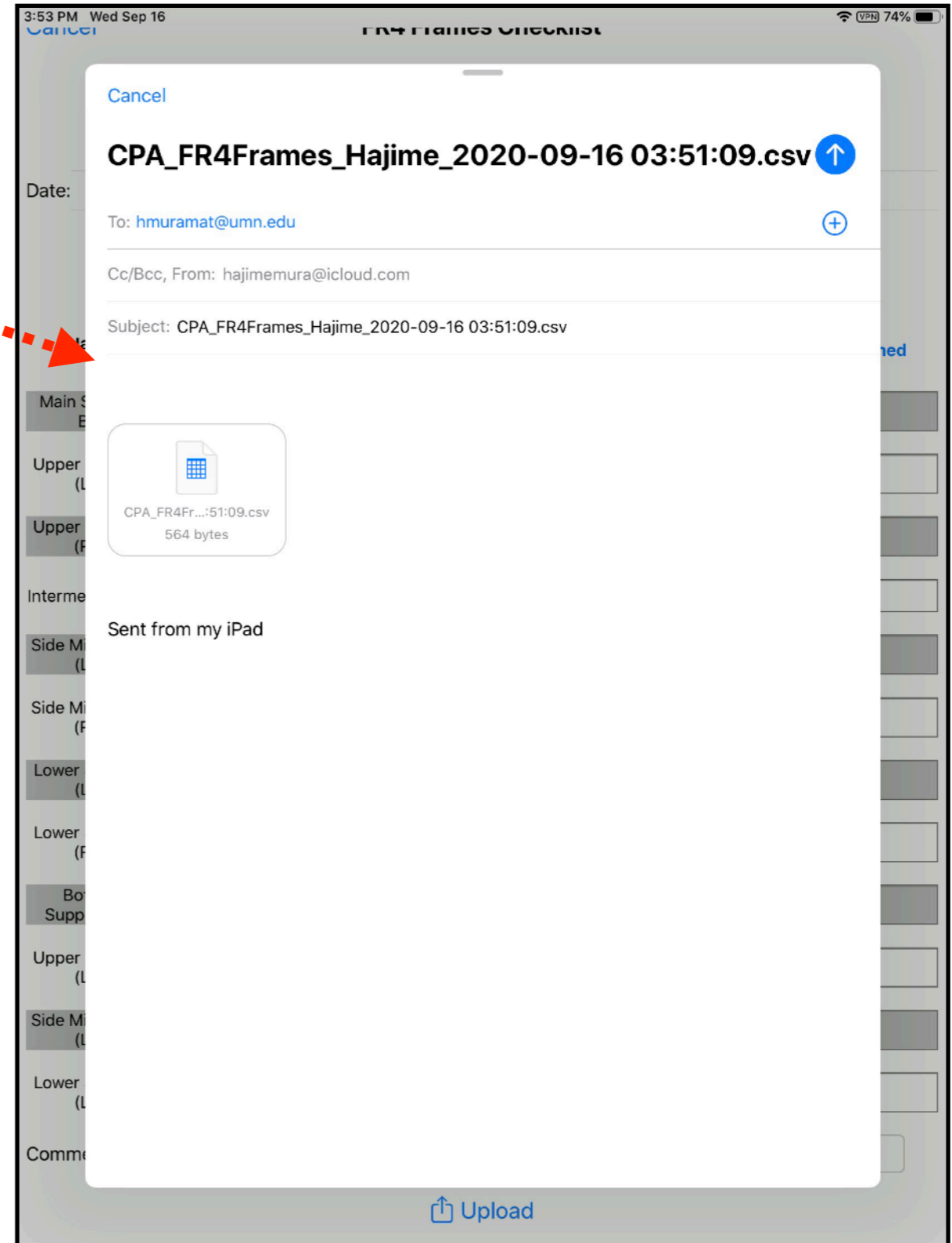
or we could have multiple Parts on a single iPad screen and upload their test results at once.

(in this case, they are different types of CPA FR4 frames)

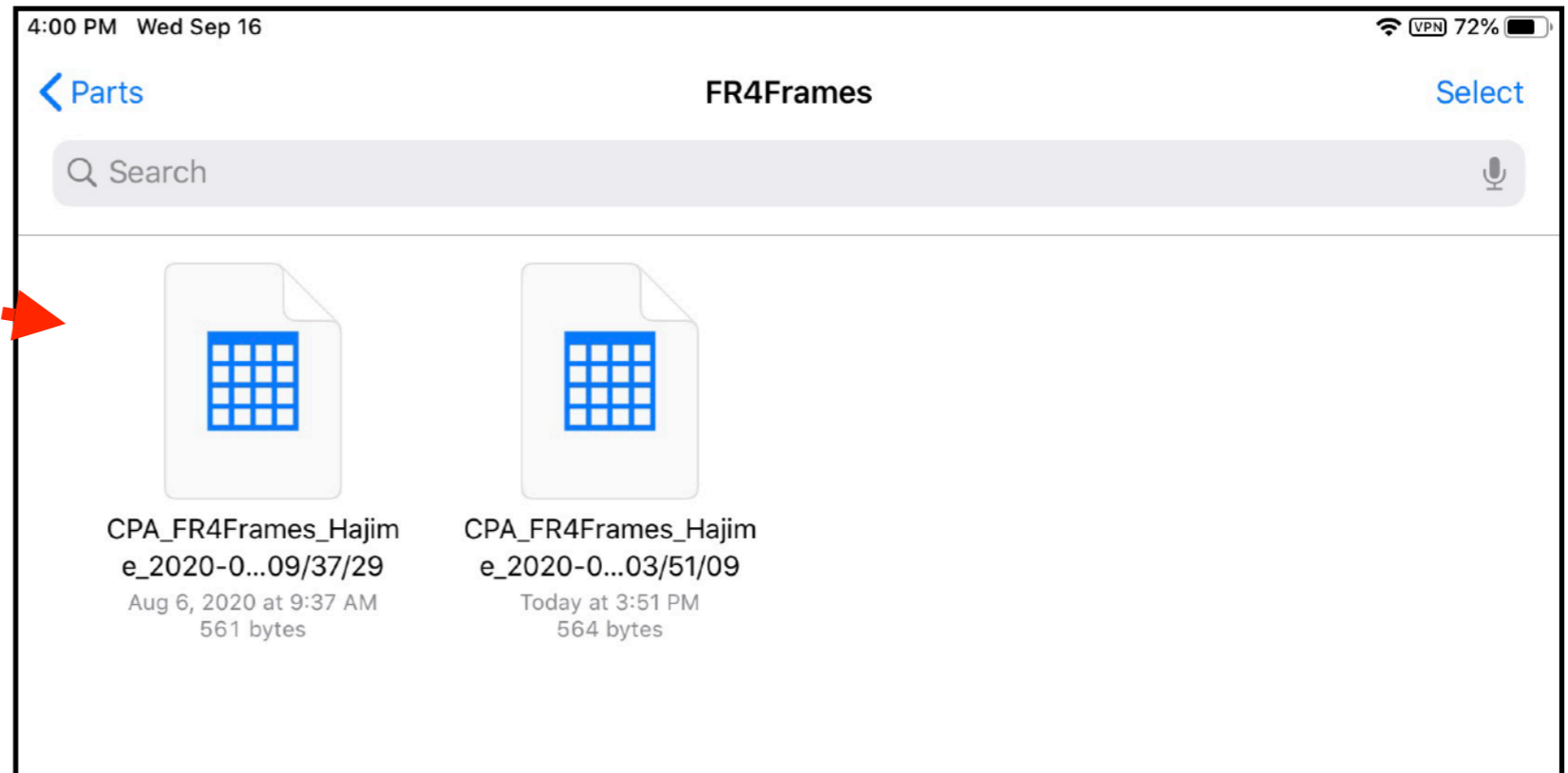
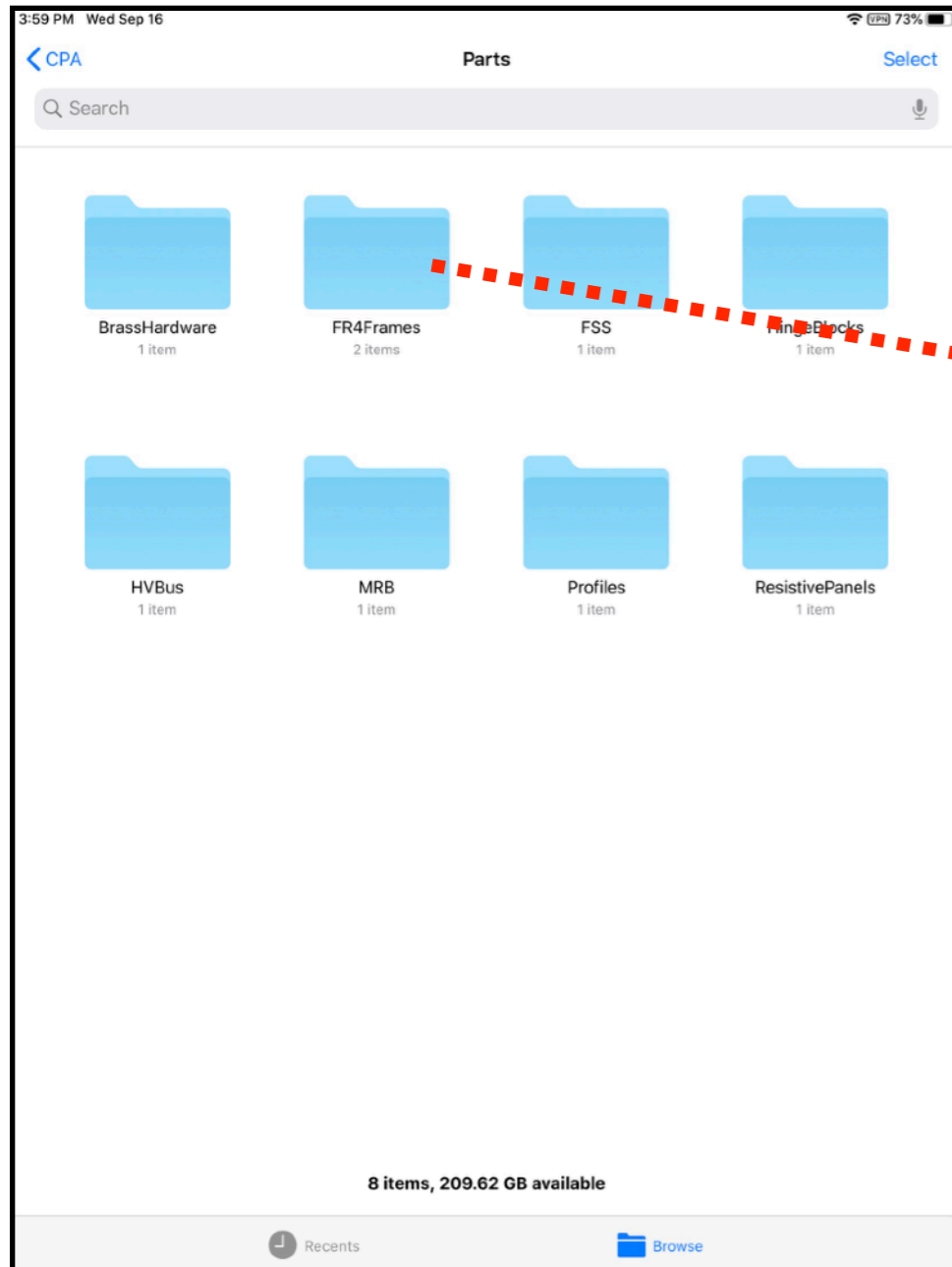
can also Email the results (csv)



**At the same time,
the file is also saved locally.**



csv files stored locally



- Stored files are accessible from “Files app”.
- Files are given different file names for each measurement.

An example of stored csv file

CPA_FR4Frames_Steve Magill_2020-09-16 033602						
Name	Drawing#	#Ordered	#Received	Visual	Template	Cleaned
Main Support Bar	DFD-20-A402.pdf	2	2	2	2	2
Upper Side Bar (LH)	DFD-20-A404.pdf					
Upper Side Bar (RH)	DFD-20-A406.pdf	2	2	2	2	2
Intermediate Bar	DFD-20-A405.pdf	20	20	20	20	20
Side Middle Bar (LH)	DFD-20-A502.pdf					
Side Middle Bar (RH)	DFD-20-A501.pdf	8	8	8	8	8
Lower Side Bar (LH)	DFD-20-A602.pdf					
Lower Side Bar (RH)	DFD-20-A604.pdf	2	2	2	2	2
Bottom Support Bar	DFD-20-A601.pdf	2	2	2	2	2
Upper Side Bar (LH)	DFD-20-B404.pdf	2	2	2	2	2
Side Middle Bar (LH)	DFD-20-B502.pdf	8	8	8	8	8
Lower Side Bar (LH)	DFD-20-B602.pdf	2	2	2	2	2
Comment:	48 total pieces - minor repairs to 12 pieces (vendor notified)					

- Filled CPA/Parts/FR4 Frames checklist, performed at ANL for the upcoming Ash River CPA production.

Assembly procedures

4:27 PM Wed Sep 16 100%

Cancel **Upper Unit F** View Drawings

1. Install Support Bar Description
2. Complete CPA Unit Frame Dimensional Checklist Checklist
3. Align Units Description
4. Drill Pin Holes Description
5. Complete CPA Panel Frame Dimensional Checklist Checklist
6. Separate 3 Units Description
7. Mount Connection Plate Description
8. Attach Electrical Tab Plates Description
9. Mount HV Cable on RP Description
10. Mount Vertical HV Bus cables Description
11. Attach 4 Section to Section Wires Description
12. Mount FSS Description
13. Front Mini-Electrical Board Description
14. Flip Unit Description
15. Attach HV Cable on RP Description

4:28 PM Wed Sep 16 100%

CPA Unit Frame Dimensional Checklist

Sun Sep 13	1	25			
Mon Sep 14	2	26			
Tue Sep 15	3	27	AM		
Date: Today 4 28 PM					
Thu Sep 17	5	29			
Fri Sep 18	6	30			
Sat Sep 19	7	31			

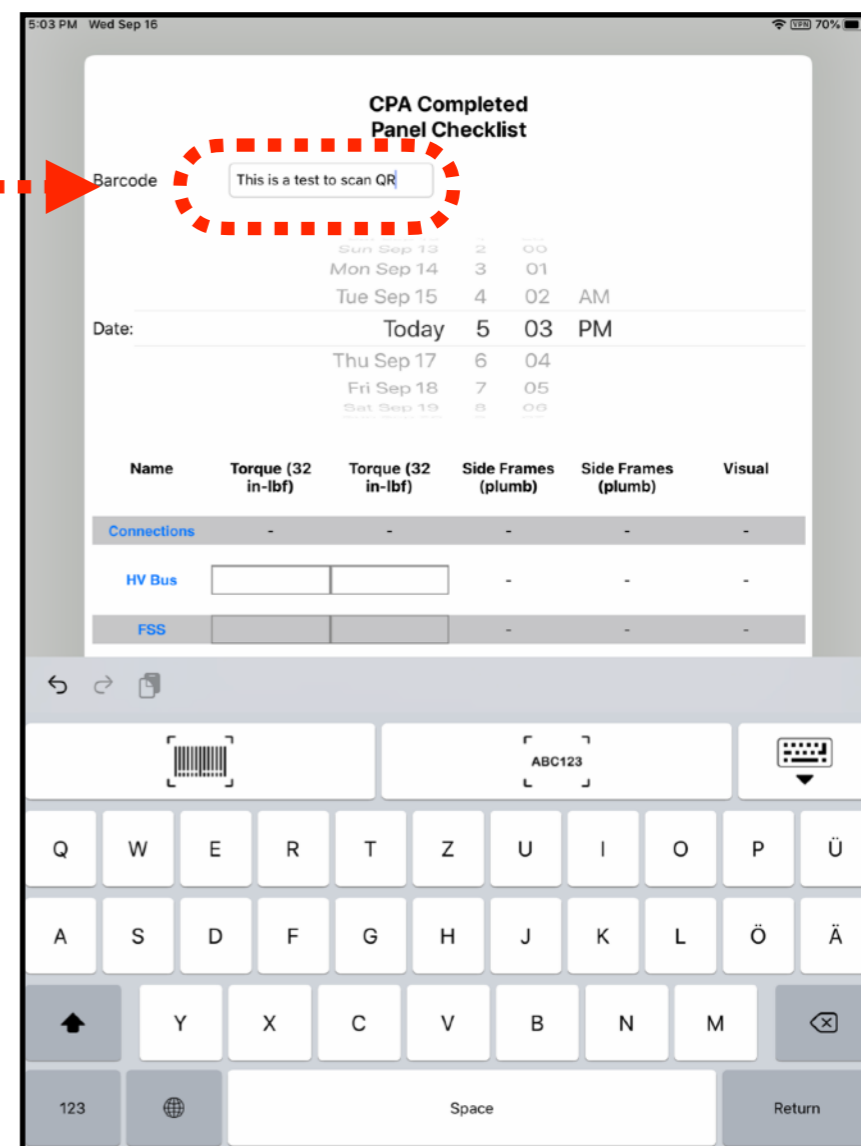
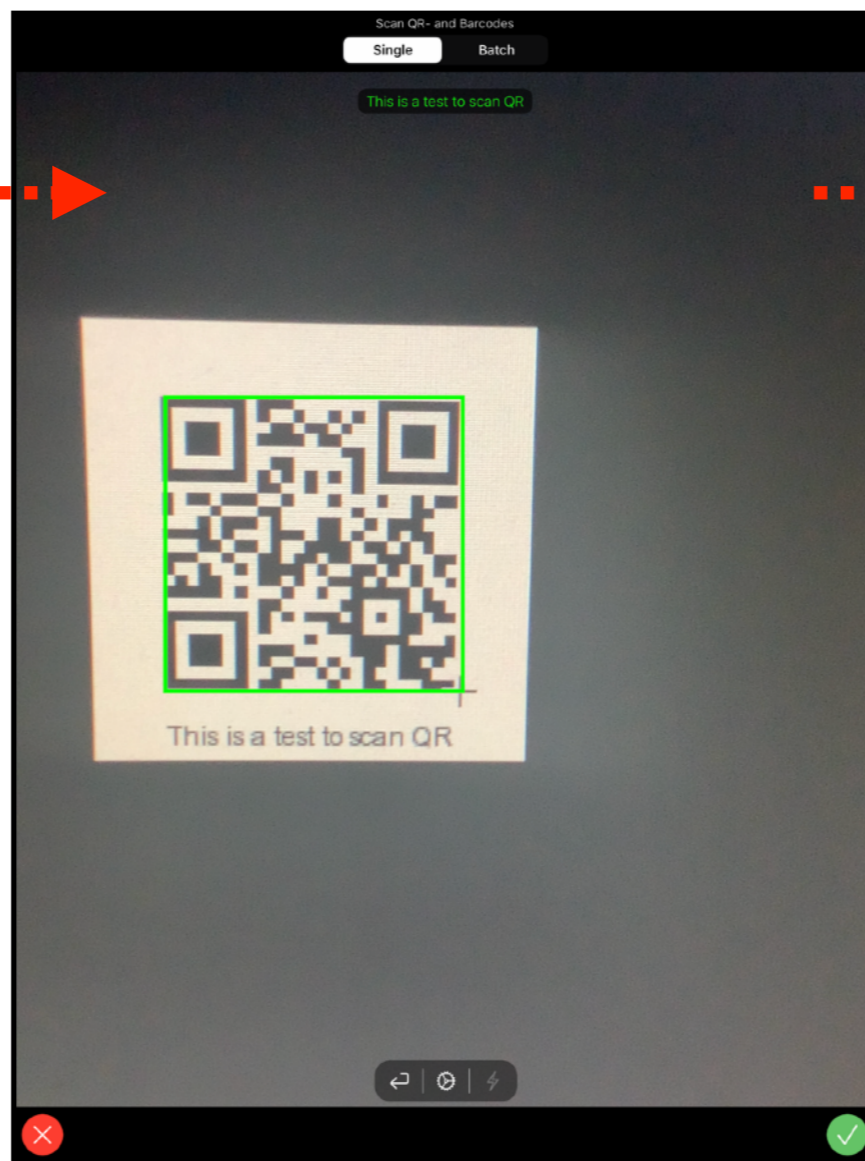
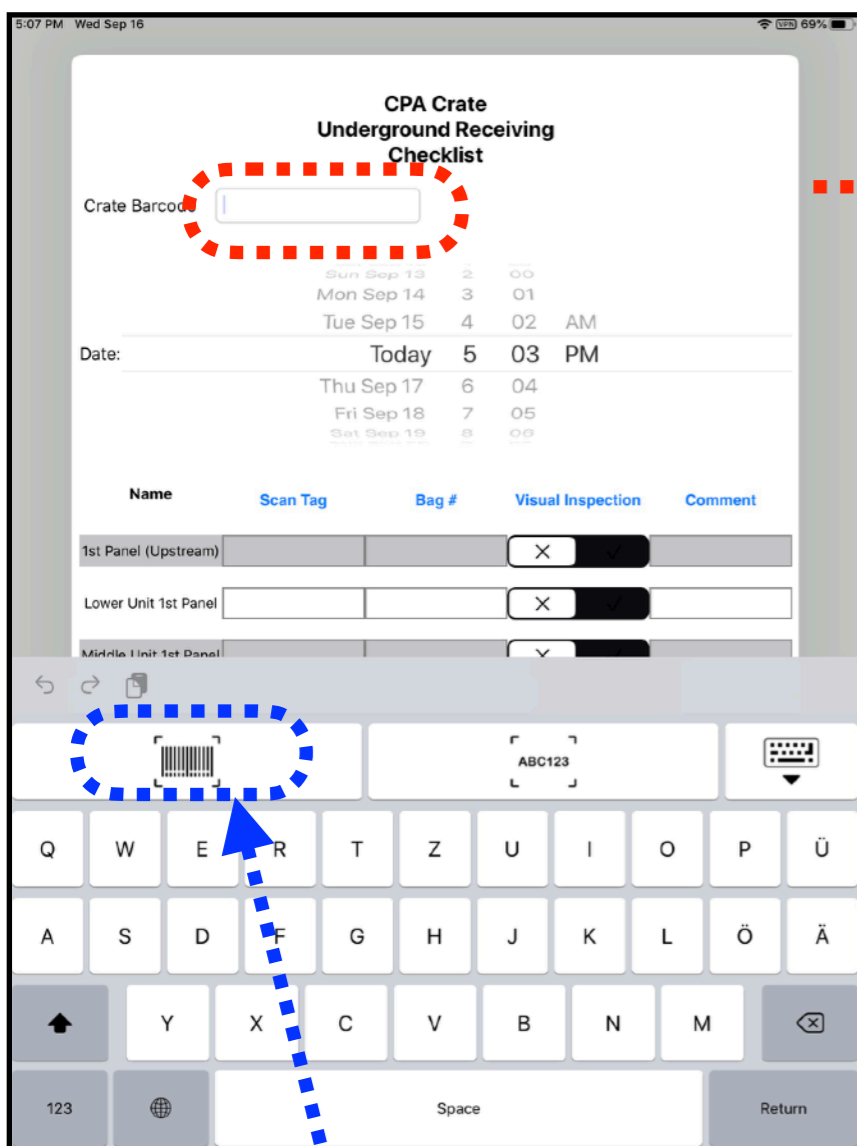
Panel Type	Unit Type	Drawing #	Visual	Length	Width
		DFD-20-	<input type="checkbox"/> <input checked="" type="checkbox"/>		
Diagonal	Diagonal	Side Straightness	Side Straightness	Flatness	RP-RP Cont.
		<input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>		

Comment:

Upload

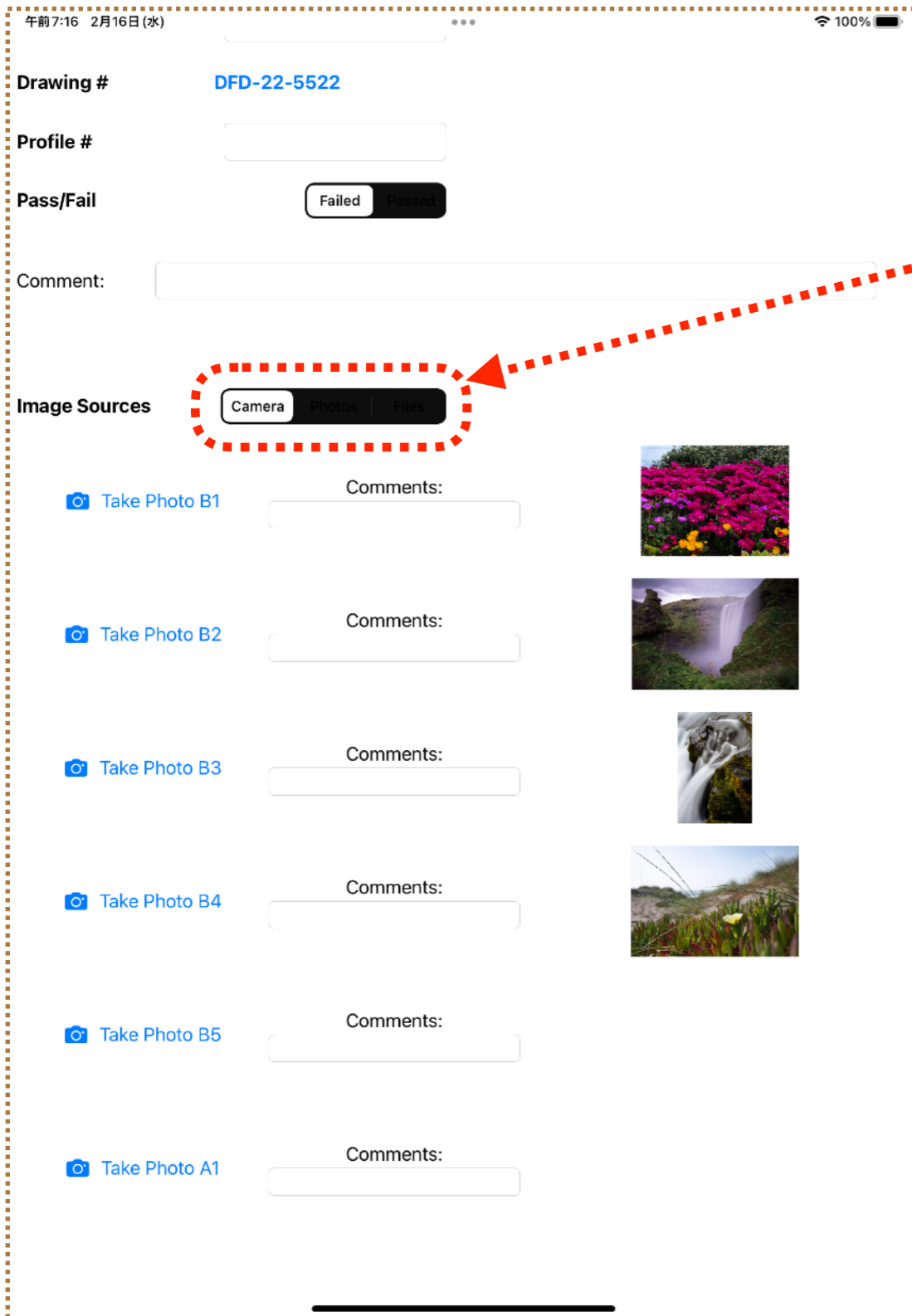
Step-by-step procedure can be also provided, including the actual QC checklist.

Scan QR (or bar) with iPad's camera



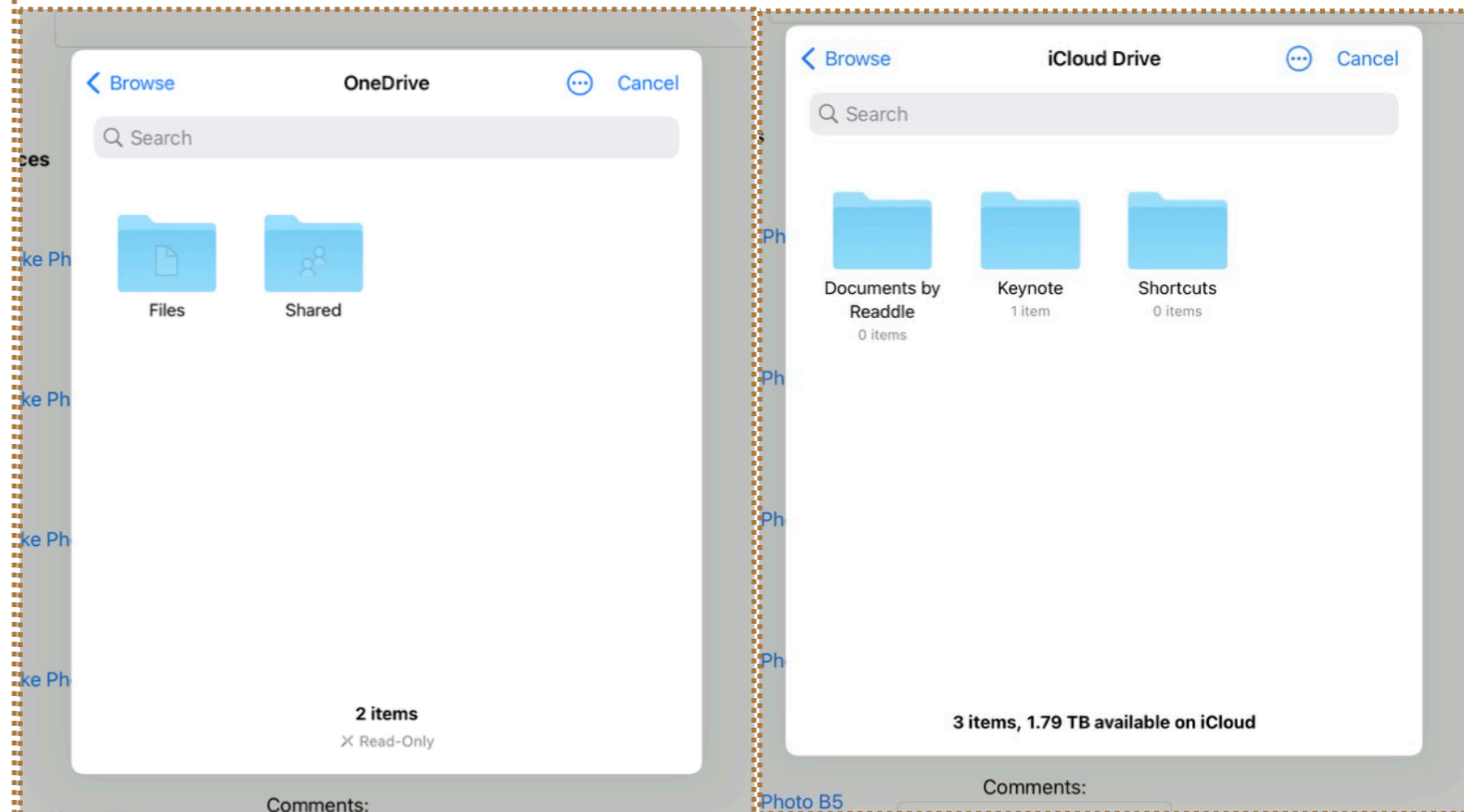
Triggers the iPad's camera session

Uploading images to the Hardware DB



One can select image sources:

- iPad's camera
- (Apple's) Photos
- Locally
- Cloud storage



Comments:

Photo B5

Comments:

or contents of a csv file directly

- Leon Mualem kindly provided a test csv file.

It has **9 columns and 21312 rows** (= 333 ASICs × 64 channels)

And we want to upload this.

- This is the same csv file that I showed in the previous REST session.

So we know how I defined its Test Type.

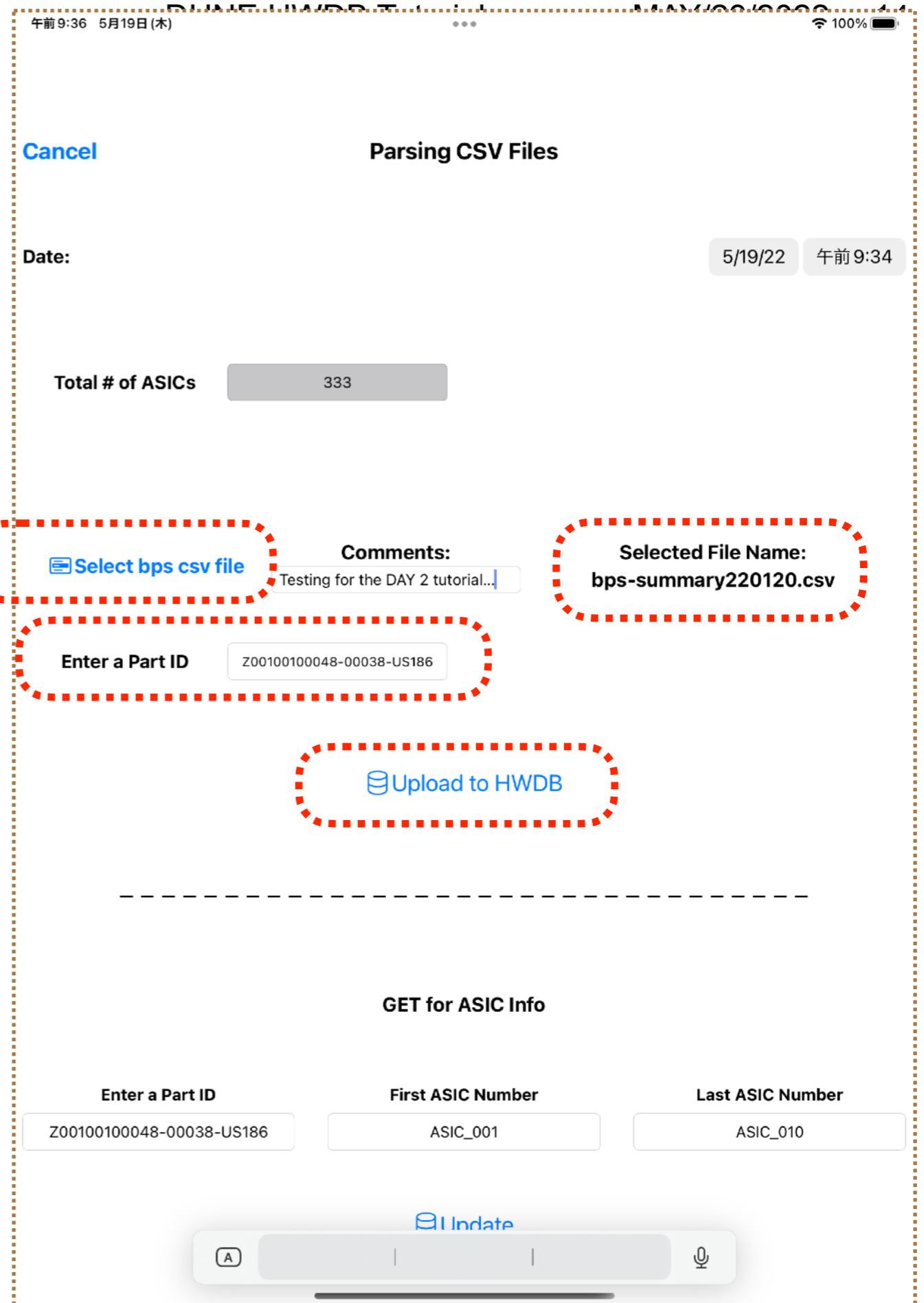
- ▶ I have nested Keys.

- ▶ On the root level,

I have **333 Key names**, corresponding to the **333 ASIC #s**.

- ▶ Under each ASIC, I have **9 Key names**, corresponding to the **9 columns**.

- ▶ In each of these **9 Keys**, I have an array, which holds **64 elements**.



- Pick the csv file (had it locally)
- Select a PID
- Click the "Upload"
- Took about 15 sec from my home...

DUNE Hardware DB

DEEP UNDERGROUND
NEUTRINO EXPERIMENT

Test history for [Z00100100048-00038](#)

- Home

- Batches
- Cable Structures
- Component Types
- Items
- Geographic Locations
- Images
- Manufacturers
- Purchase Orders
- Structures

- Admin <

- Logout

- Requests, Issues? ↗

ADD NEW TEST...

Test_type_id	Created	Creator	Test_data	Comments
test_1	2022-05-19 09:36:38.141771-05:00	Hajime Muramatsu	ASIC_001: Std: - '2.07' - '2.02' - '1.53' - '1.3' - '1.68' - '1.59' - '1.94' - '2.36' - '1.37' - '1.42' - '1.3' - '1.55' - '1.43' - '1.34' - '1.64' - '1.2' - '1.4' - '1.26' - '1.41'	Testing for the DAY 2 tutorial...

just to make sure it's there...

- '2.27'
 - '1.78'
 - '1.89'
 - '1.77'
 - '1.26'
 - '1.56'
 - '1.25'
 - '1.59'
 - '1.61'
 - '1.28'
 - '1.27'
 - '1.71'
 - '1.32'
 - '1.37'

now GET the info back

午前9:42 5月19日(木) 100%

GET for ASIC Info

Enter a Part ID: Z00100100048-00038-US186

First ASIC Number: ASIC_001

Last ASIC Number: ASIC_333

[Update](#)

ASIC Number

- ASIC_001
- ASIC_002
- ASIC_003
- ASIC_004
- ASIC_005
- ASIC_006
- ASIC_007
- ASIC_008
- ASIC_009
- ASIC_010
- ASIC_011
- ASIC_012
- ASIC_013
- ASIC_014
- ASIC_015
- ASIC_016
- ASIC_017
- ASIC_018
- ASIC_019
- ASIC_020
- ASIC_021
- ASIC_022
- ASIC_023
- ASIC_024
- ASIC_025

Scrollable

"333"

午前9:43 5月19日(木) 100%

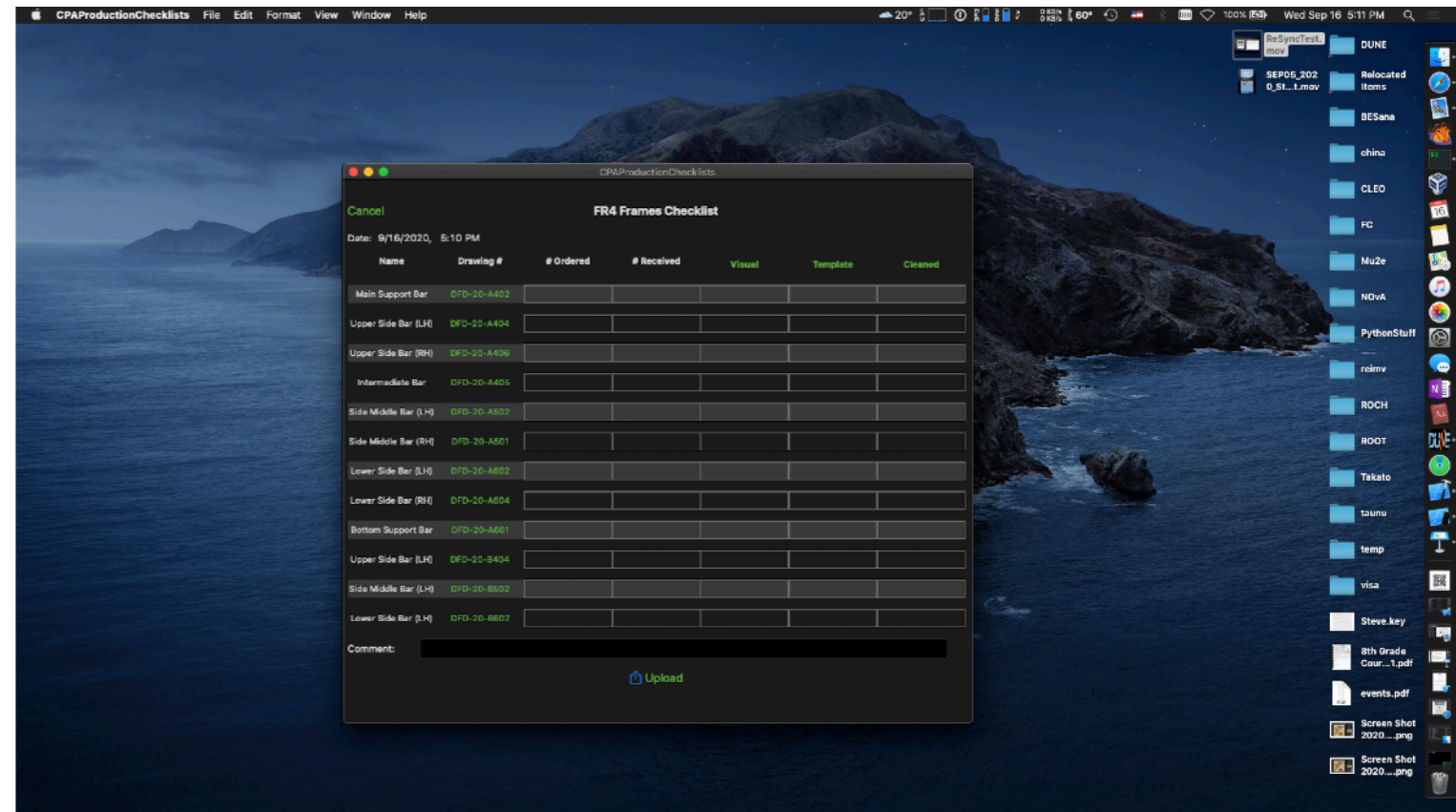
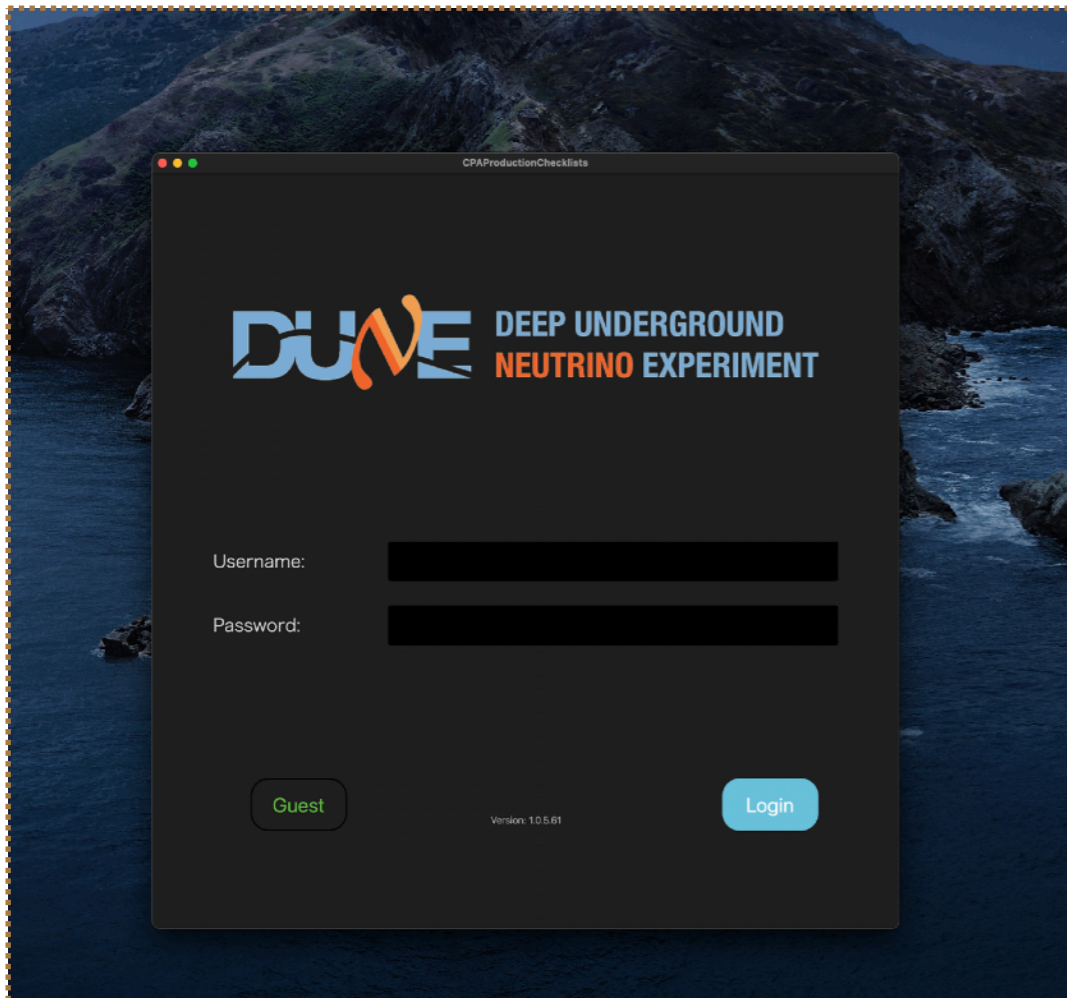
[Back](#)

Selected ASIC #	Creator	Created Date	Comments
ASIC_012	Hajime Muramatsu	2022-05-19 09:36:38	Testing for the DAY 2 tutorial...

runtime	Mean	Std	Nent	ChanName	Chan	ChipSN	io_group	io_channel
1642724269.41581	16.67	2.76	1166	ch00	0	1L10460	1	1
1642724269.41581	13.67	2.34	1209	ch01	1	1L10460	1	1
1642724269.41581	15.46	1.21	1249	ch02	2	1L10460	1	1
1642724269.41581	17.04	1.05	1166	ch03	3	1L10460	1	1
1642724269.41581	15.55	1.13	1199	ch04	4	1L10460	1	1
1642724269.41581	17.86	1.1	1248	ch05	5	1L10460	1	1
1642724269.41581	16.05	1.1	1169	ch06	6	1L10460	1	1
1642724269.41581	17.46	3.5	1217	ch07	7	1L10460	1	1
1642724269.41581	10.9	1.9	1208	ch08	8	1L10460	1	1
1642724269.41581	13.11	1.12	1247	ch09	9	1L10460	1	1
1642724269.41581	10.7	1.09	1238	ch10	10	1L10460	1	1
1642724269.41581	14.8	2.5	1196	ch11	11	1L10460	1	1
1642724269.41581	14.56	2.49	1260	ch12	12	1L10460	1	1
1642724269.41581	17.98	1.09	1271	ch18	18	1L10460	1	1
1642724269.41581	18.25	1.15	1225	ch19	19	1L10460	1	1
1642724269.41581	15.83	1.09	1192	ch20	20	1L10460	1	1
1642724269.41581	18.4	2.51	1252	ch21	21	1L10460	1	1
1642724269.41581	21.3	1.19	1204	ch22	22	1L10460	1	1
1642724269.41581	18.14	1.09	1241	ch23	23	1L10460	1	1
1642724269.41581	15.28	1.75	1210	ch24	24	1L10460	1	1
1642724269.41581	19.51	1.2	1214	ch25	25	1L10460	1	1
1642724269.41581	18.37	2.73	1718	ch26	26	1L10460	1	1
1642724269.41581	15.8	1.17	1296	ch27	27	1L10460	1	1
1642724269.41581	15.37	1.16	1261	ch28	28	1L10460	1	1
1642724269.41581	17.99	1.12	1300	ch29	29	1L10460	1	1
1642724269.41581	19.59	1.09	1176	ch30	30	1L10460	1	1

Clicking one of the ASIC #s shows info of the corresponding 64 channels

also runs on Mac



- No requests so far from our current customers.
But I tested anyway.
- Still might have to change some colors and font sizes...
- Could be helpful for ones who need bigger screens/physical keyboards?

Requirements

- You need an iPad.
 - ▶ Definitely not have to be the latest/fastest iPads.
 - ▶ Lately we recommend iPad Air
(light, cheaper than Pro, with a large screen)
- You need to let us know that you are interested in,
so that we can send you a link (Apple App store).

What if I don't like Apple!?

- We have just started to develop an app, that helps users to upload, based on Python.
- The 1st version will have a minimal functionality, takes a csv file as an input and uploads it to the HWDB.
- Might add more features based on demands.
- Plan to release this by the mid July.

- **Let us know if you are interested in, even just trying, in either of these apps.**
- **Any suggestion/request is very much welcome!**