

# Production Readiness Review Firts Stage Clock Distribution

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# A ■ Status procurement and production



# Context

The items required for the first stage of the Hyper-K clock distribution

Item	Provider	Quantity + spares	Item	Provider
FSCD box	Various	2 + 4	FSCD box	Various
Power supply unit	TDK-Lambda	4 + 1	Power supply unit	TDK-Lambda
Optical splitter box	Acphotonics	8 + 2	Optical splitter box	Acphotonics

- Two FSCD boxes are installed in the experimental area for operation.
- Only one FSCD is active at any given time.
- The second FSCD provides automatic failover in case of failure.
- Four spare FSCD boxes will be available for long-term maintenance.
- Each installed FSCD uses two power supply units for redundancy.
- An additional spare power supply is provided.
- Each installed FSCD (main and redundant) connects to four passive optical splitter boxes.



# Context

The key components that comprise an FSCD box are as follows:

Item	Provider	Quantity + spares
FSCD motherboard	Various	2 + 4
System-on-Module	Trenz	2 + 4
Clock Mezzanine card	Various	2 + 4
AuxIO card	Various	2 + 4
SecPow + NaviPanel card	Various	2 + 4
Enclosure	Schroff + machining	2 + 4



# Context

## Clock Mezzanine

- Minor **design adjustments** are required on the current prototype before final production.
- The prototype PCBs were manufactured by Würth Electronic, and the same supplier is expected to produce the final PCBs.
- The prototype was assembled by Ermatel, but a different manufacturer will likely be chosen for mass production.
- Irfu procured part of the component set; the remaining components will be supplied by the selected production company.
- Each card includes a unique electronic serial ID and a physical sticker with a short serial number.
- The Clock Mezzanine cards will undergo manual testing at Irfu, inside their corresponding FSCD box







# Procurement

- "Tender" of FSCD
  - Ask for a quote for the production of two complete FSCD boards and six mezzanines
  - FEDD-Agon (as Denis suggested) and Ouestronic.
  - Establish contact. Currently, emails are being exchanged to address questions and clarify doubts, but no quote has yet been provided.
- Components
  - The active components for the FSCD and mezzanine boards have been purchased and will be supplied to the production company.
  - The purchase has been received in our laboratory

## • **AOCJY\_100MHZ**

- Out of stock at Mouser, DG-Key and Farnell until October.
- We require six of them for the mezzanine.
- Proposed solution: use at least one unit from the current mezzanine to test the new HW and enable HW validation of production.
- Details : [Mouser](#)

AOCJY-100.000MHZ		Disponibilité
	N° Mouser : 815-AOCJY-100.0M	Stock: 0
	N° de fab. : <b>AOCJY-100.000MHZ</b>	<a href="#">Me prévenir lorsque le produit sera en stock.</a>
Les images sont fournies à titre indicatif Voir les caractéristiques du produit	Fab. : <a href="#">ABRACON</a>	<b>Vous pouvez toujours acheter ce produit pour une commande de réassortiment.</b>
	N° client: <input type="text" value="N° client"/>	<b>Sur commande:</b> 35 15/06/2026 attendu
	<b>Description :</b> Oscillateurs OCXO OCXO 25x22 5-SMD 100MHz 5ppb 0 C 50 C CMOS 3.3V	<b>Délai usine :</b> 32 Semaines 
		<b>Long délai signalé sur ce produit.</b>
		<b>Entrez la quantité:</b>



# Test

- Hardware modification
  - Change PPS\_LOC output signal to PPS\_from\_ACLK (PPS from Atomic Clock) input signal
  - HW change in a Voltage level shifter from mezzanine
  - FW change to count PPS
    - Waiting for compilation
  - One mezzanine chose to test in real HW. This **update required** in the clock system





# Status of procurements and planning

Item	Quantity	Order/delivery date	Status
Power supply unit	5	Jan 2025	delivered
Optical splitter box	10	Q1-26/Q2-26	To be ordered
FSCD motherboard	2	Q1-26/Q2-26	Quotation
System on Module	6	Jul 2024/Feb 2025	Delivered
Clock Mezzanine card	6	Q1-26/Q3-26	Quotation
AuxIO card	4	Q1-26/Q3-26	Quotation
SecPow and NaviPanel	4	Q1-26/Q3-26	Quotation
FSCD 19'' chassis	2	Q1-26/Q3-26	To be ordered
2m Fiber	250	Q1-26/Q3-26	To be ordered
100m Fiber Tx	16	Q1-26/Q3-26	To be ordered
100m Fiber Rx	48	Q1-26/Q3-26	To be ordered



# C ■ Timeline production and installation



# Planning and objectives (From Dec-2025)

## **Q1-2026**

End of Production Readiness Review(PRR)

## **Q1-2026**

Production Launch

## **End Q4-2026**

Delivery boards to japan (all FSCD but 1 Mezzanine)

## **Q3/Q4-2027**

FSCD system Installation



# Planning and objectives (Update)

## **End 2025**

Production Readiness Review (PRR)

## **Q1-2026**

Production Launch

## **From Q3-2026 to Q4-2026**

Delivery boards to japan

## **Q3/Q4-2027**

FSCD system Installation



# D ■ Open questions



# Open questions

- Despite few test not presented in this PRR, are you agree to go with production
  - EX. Hardware change on clock mezzanine (slide 7)