



T2K-ND280-022
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T2K ND280 Upgrade Document

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HA-TPC

FRONT END CARD (FEC)

POWER SUPPLY TESTING

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Abstract

This document describes the tests to be realized and the relevant test bench dedicated to check and measure the internal power supplies and the consumption current of the FEC boards.

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FEC-V2-1 board testing Manual - POWER SUPPLY

English Version - 2023 March 16th

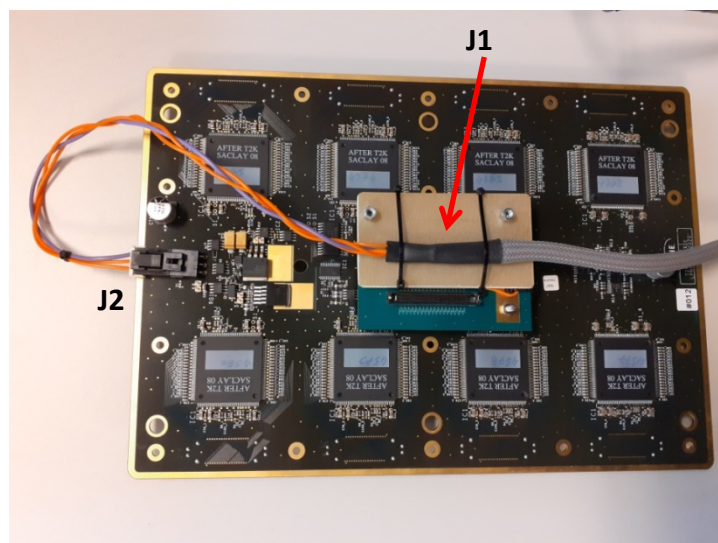
Measurement of internal supply voltages and consumption current

Equipment required:

- TTI / TSX1820P power supply with its mains cable
- Française d'Instrumentation / FI919X multimeter
- Dedicated 2-pole test cable to be connected to the multimeter
- Dedicated power cable to connect to 2 connectors of the FEC boards
- FEC_V2_1 boards to check
- Test sheets

Modus operandi:

- Connect the TTI power supply to the 230Vac mains, 'POWER' switch in OFF position.
- Set the 'POWER' switch to ON. Power supply display should show **5.00V** and **2.50A** as preset values.
- **Carefully** connect the dedicated power cable to **J1** (80-pin Hirose connector) and **J2** (3-pin Molex connector) of the board to be tested, as follows:



and the other side of the cable to the power supply:
purple wire to the '-' socket / triple orange wire to the '+' socket

- Connect the dedicated 2-pole cable to the multimeter (blue wire to the 'COM' socket, white wire to the 'V' socket)
- Set the multimeter switch to voltage measurement: $\overline{\text{V}}$
- Power supply: press the 'OUTPUT' push-button. **The board is now powered on.**



- Check that the **green LED (D1)** is on.
- Read and note the **consumption current**: display at the top right of the power supply. This current should be between 1.20 A and 1.50 A. If this current reaches 2.50 A, this indicates overconsumption which may be due to a short circuit. In this case, cut off the power supply as soon as possible by pressing 'OUTPUT'.
- Place the 2-pole test plug (multimeter) on the **S6** pads of the FEC board: read and note the voltage displayed by the multimeter which should be +3.30V (+/- 0.1V).
- Place the 2-pole test plug (multimeter) on the **S7** pads of the FEC board: read and note the voltage displayed by the multimeter which should be +1,80V (+/- 0,05V)
- Place the 2-pole test plug (multimeter) on the **S8** pads of the FEC board: read and note the voltage displayed by the multimeter which should be +1,32V (+/- 0,05V)
- Write down the 4 values recorded to the test sheet.

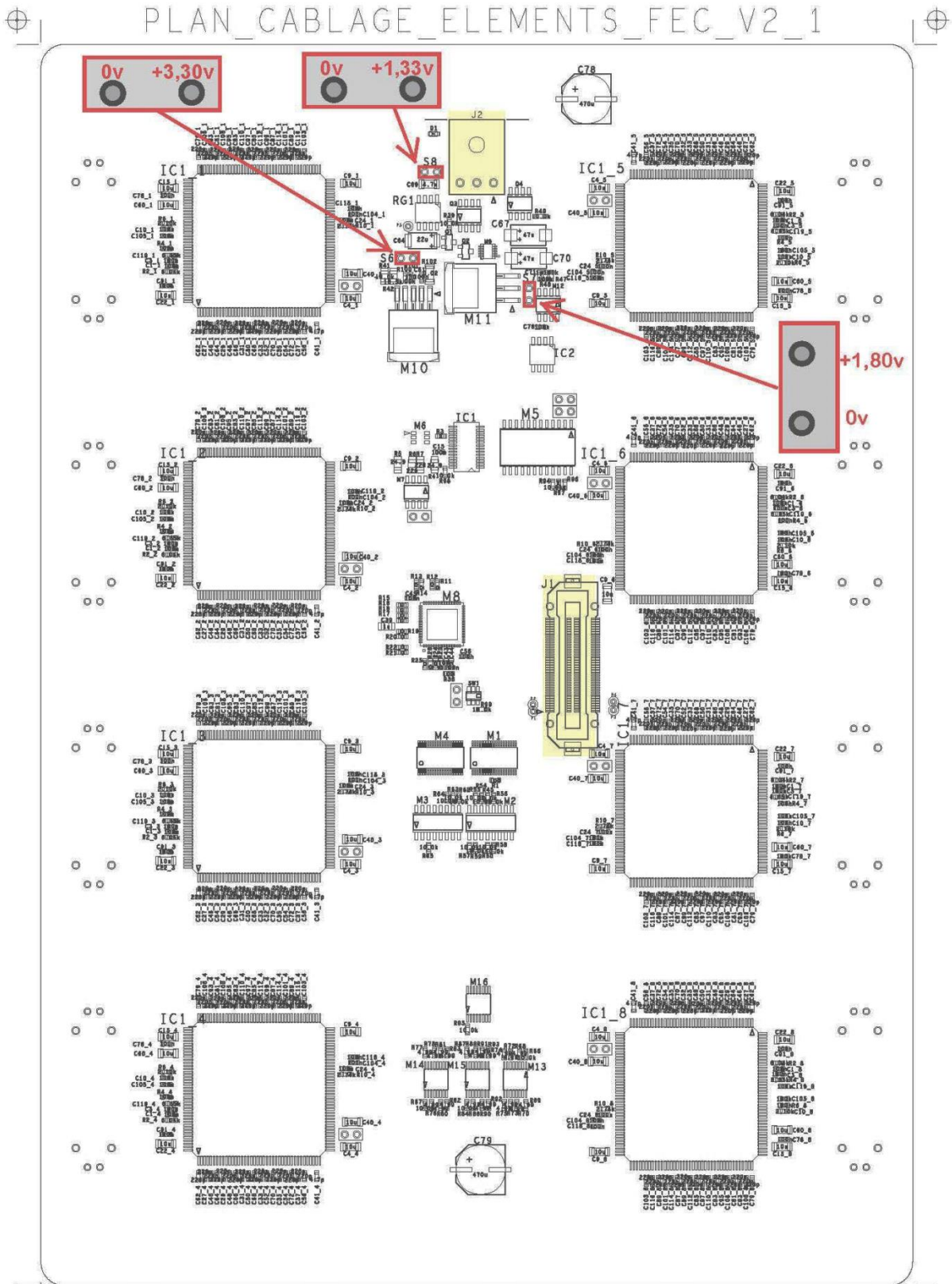


Before disconnecting the board under test, proceed as follows:

- Power supply: press the 'OUTPUT' push-button. **The board is now powered off.**
- Check that the **green LED (D1)** is off.

- Finish by disconnecting **J2** connector (3-pin Molex) by pressing the tab on top and pulling it backwards. Then **carefully** disconnect **J1** connector (80-pin Hirose) lifting it vertically.

ART FILM - CABTOP



Test des tensions d'alimentations internes - Carte FEC_V2_1 LPNHE - juillet 2020 / mise à jour 26 mars 2021

ART FILM - CABTOP

JM PARRAUD / LPNHE

29 juillet 2020 / maj 26 mars 2021/update : 2023 March 16

Internal supply voltages Test Mapping



FEC V2.1 - T2K-II

FICHE DE SUIVI - ENREGISTREMENT DES TESTS

DATE :

SOUS-TRAITANT :

OUESTRONIC

SN :

TESTS

RESULTATS

Banc-test "alimentations"	Vérification si D1/Led verte allumée		
	Alimentations :	S6 (3,30 ±0,10Vdc)	
		S7 (1,80 ±0,05Vdc)	
		S8 (1,32 ±0,05Vdc)	
Consommation courant (1,35 ±0,15A)			
Banc-test des power-pins connecteur Hirose	Test des soudures des alimentations sur J1 avec carte adaptatrice/testeur		
Banc de tests fonctionnels piloté par PC	Programme de test : connexion avec la carte FEM		
	Programme de test : vérification de la carte FEC		
	Vérification des résultats des tests (rapport PDF)		
	Sauvegarde des résultats des tests sur serveur Download		

TEST réalisé par :

Validation du test :

PANNE

REPARATION

Test sheet Template