


Référence	Langue	Visa	Date de création	Indice
1016-01-1.00-MAN-A-001	UK	N	28/08/2010	001

User's guide

Test bench NanoFip instructions

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Nom du document : 1016-01-1.00-MAN-A-001 -Manuel utilisateur Banc de test NanoFip.doc

Document history			
Index	Date	Author	Description
001	28/08/2010	NM	Document creation

SOMMAIRE CONTENTS

1. INTRODUCTION	4
1.1. SCOPE	4
1.2. REFERENCES	4
1.3. GLOSSARY	4
2. OVERVIEW	5
3. TEST BENCH IMPLEMENTATION	6
3.1. COMPONENTS LIST	6
3.2. CONNECTING SCAB (1016-11)	7
3.3. CONNECTING NFTC (1016-10)	8
4. NFTC CONTROL SOFTWARE	9
4.1. INSTALLATION	9
4.2. BENCH IDENTIFICATION	10
4.3. POWER SUPPLIES SURVEY	11
4.4. FIP VARIABLE READ / WRITE	12
4.5. TEMPERATURE CONTROL	13
4.6. CONFIGURATION	14
4.7. EEPROM CONTENT	16
5. NANOFIP PROGRAMMATION	17
6. LEGENDES	18

1. INTRODUCTION

1.1. SCOPE

This document is the user's guide of the *NanoFip* test bench (called NFTB). This manual covers the hardware and software aspects of this test bench.

1.2. REFERENCES

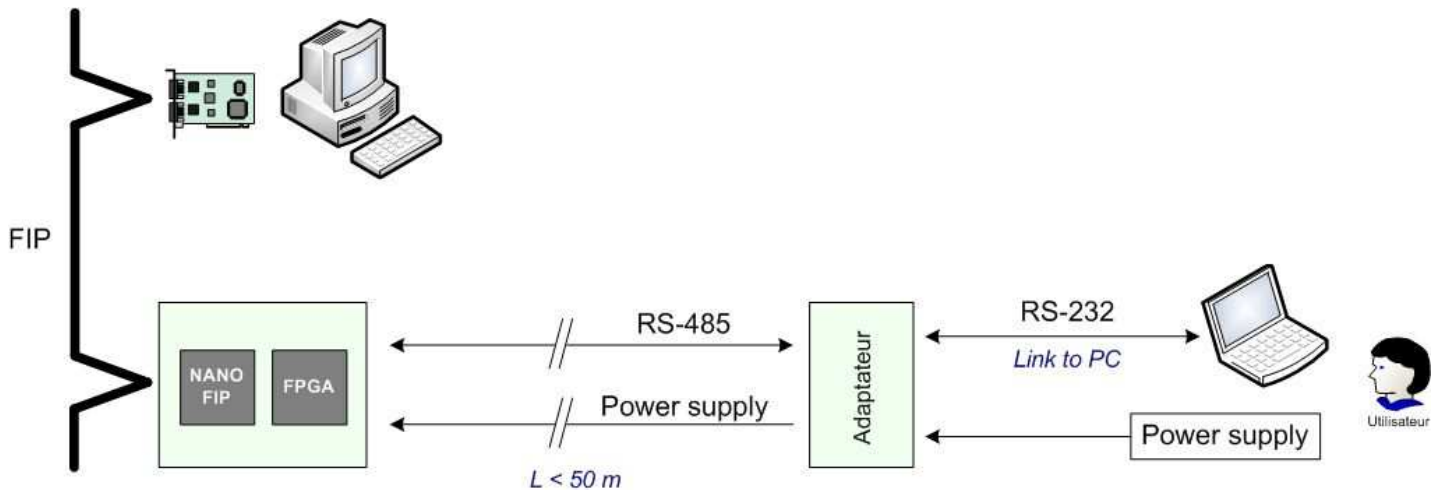
ID	Title	Reference
#1		
#		

1.3. GLOSSARY

CERN	Centre Européen de Recherche Nucléaire
FIP	Factory Instrumentation Protocol

2. OVERVIEW

The *NanoFip* test bench aims at connecting a *NanoFip* component on an existing FIP bus and control it thanks to a software interface.



The distance between the user and the NFTC card (*Nanofip* card) can be up to 50m.

The user can communicate with the NFTC card with a simple RS232 serial port. Moreover, he has to provide the NFTC power supply.



The supply voltage should be regulated at +9Vcc (maximum admissible is +9.5Vcc).

The power supply must be able to deliver up to 2A (maximum NFTC consumption).

3. TEST BENCH IMPLEMENTATION

3.1. COMPONENTS LIST

HLP provides the following parts for the test bench implementation:

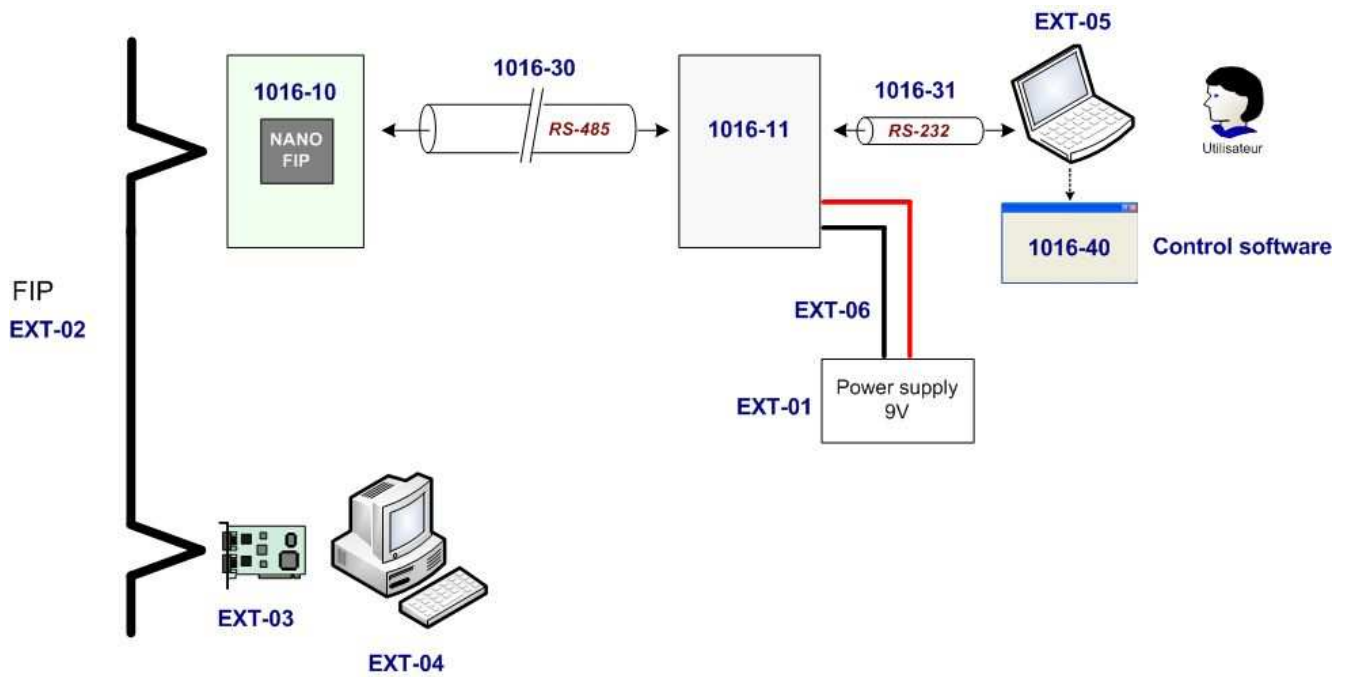
Reference	Number	Description
1016-10	1	NanoFip Test Card
1016-11	1	Supply and Communication Adaptator
1016-30	1	RS485 & supply cable
1016-31	1	RS232 cable
1016-40	1	Control software

The user has to provide the following parts:

Reference	Number	Description
EXT-01	1	Power supply : +9Vdc / 2A minimum
EXT-02	1	FIP/WFIP cable
EXT-03	1	FIP/WFIP arbitrator interface
EXT-04	1	PC : FIP arbitrator station
EXT-05	1	PC : NFTC controller
EXT-06	2	Supply cables (ideally one black and one red)



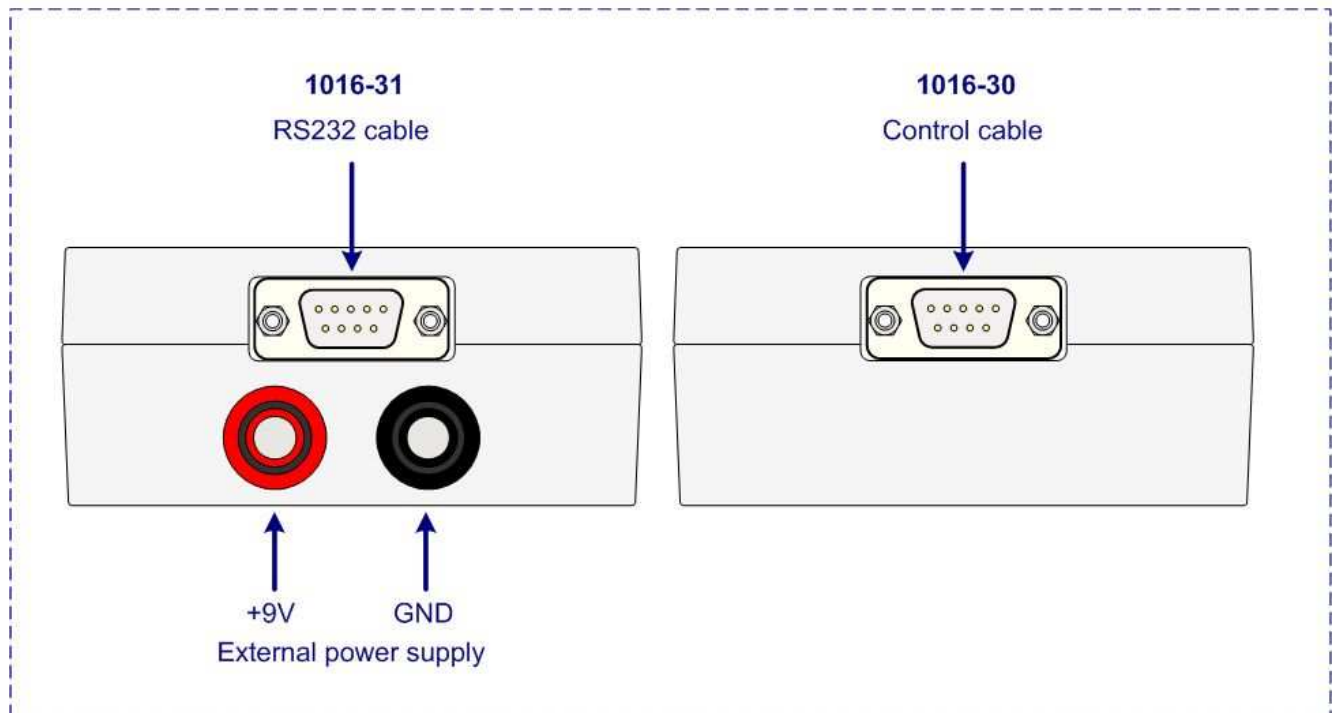
EXT-04 and EXT-05 can be the same PC.



3.2. CONNECTING SCAB (1016-11)

1016-11

Supply and Communication Adaptator Box





Connect the 2 EXT-06 cables on the power supply plugs.
Make sure the polarity is correct!

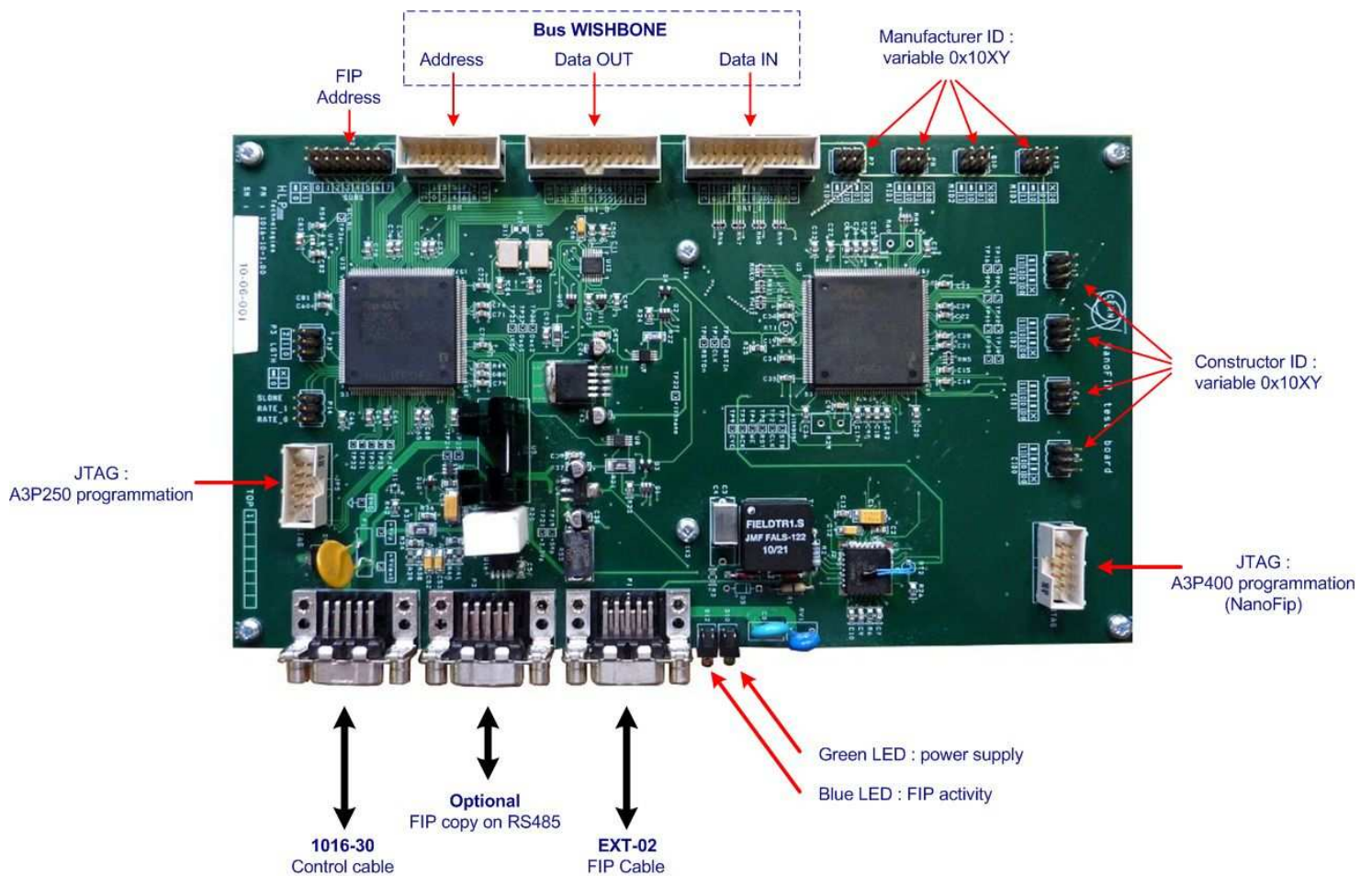


The other side of the RS232 cable (1016-31) is connected to COM1 port of the PC EXT-04.



The other side of the RS485 cable (1016-30) is connected to the NFTC card.

3.3. CONNECTING NFTC (1016-10)



4. NFTC CONTROL SOFTWARE

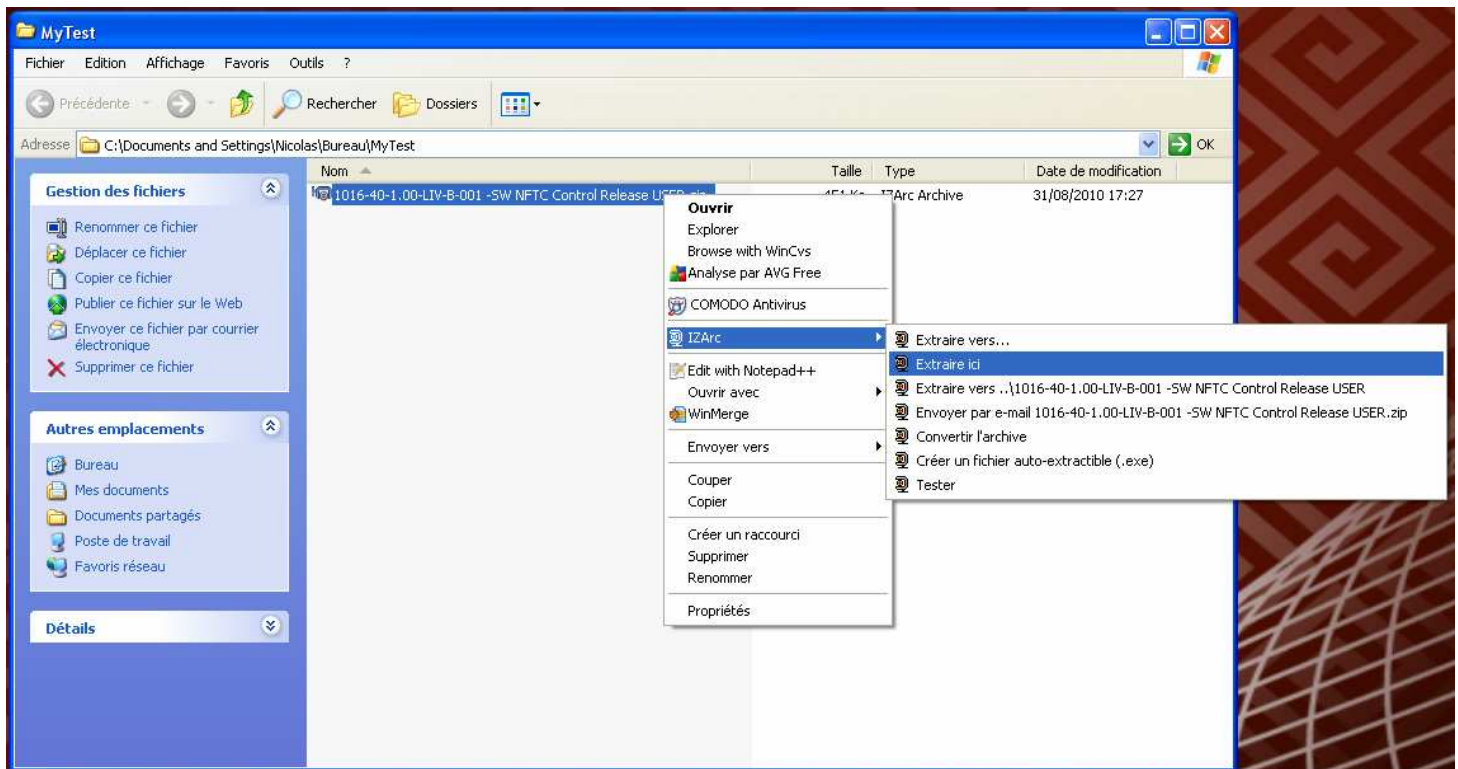


An edit control with a **yellow** background colour is **read-only**.

An edit control with a **green** background colour is **user writable**.

4.1. INSTALLATION

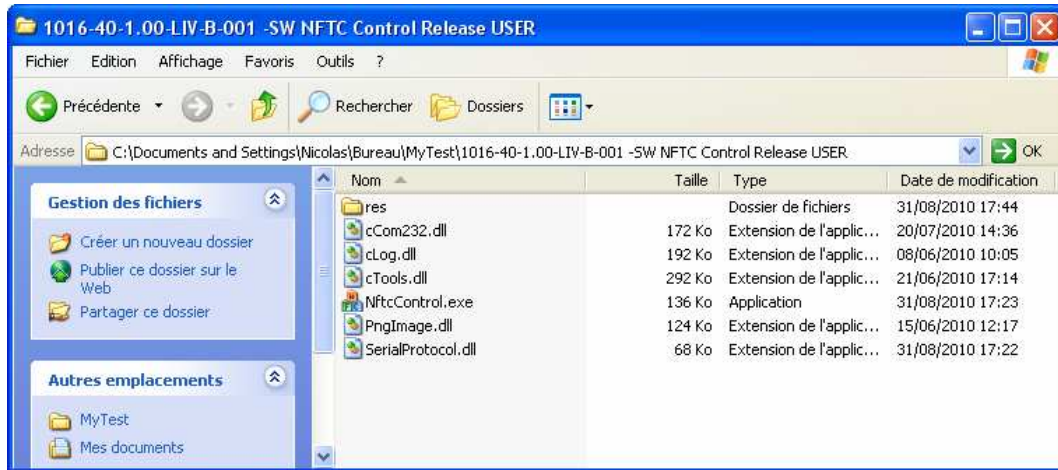
Unzip the file “**1016-40-1.00-LIV-B-xxx -SW NFTC Control Release USER.zip**” on the PC EXT-05.



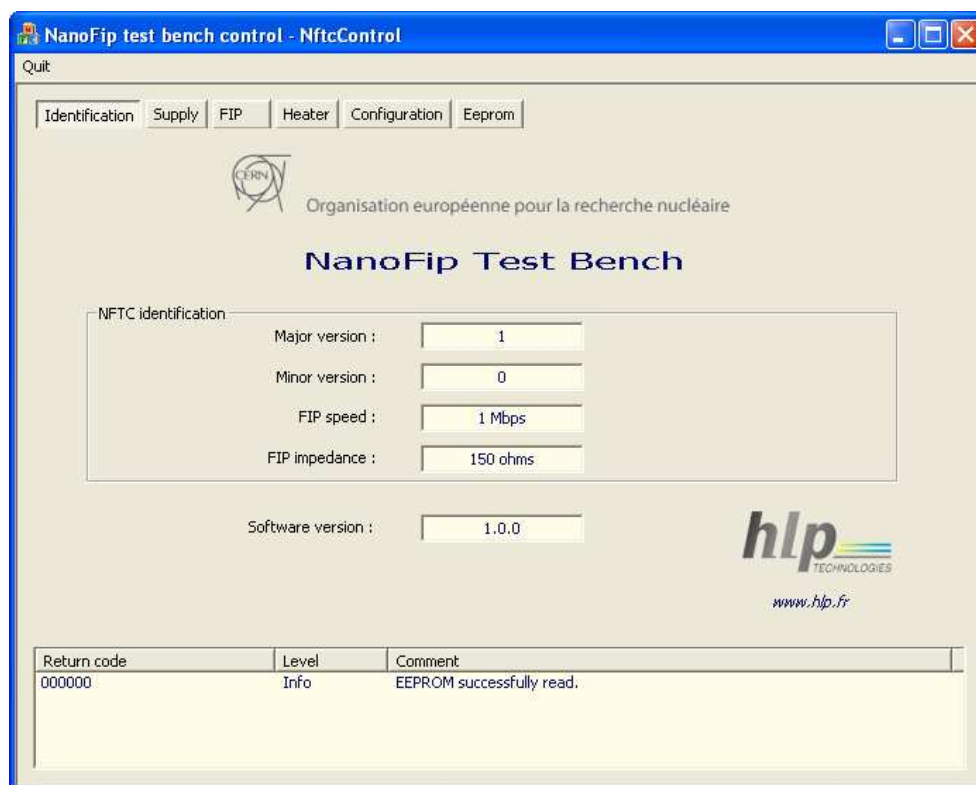
The user can choose his working directory anywhere on the PC.

4.2. BENCH IDENTIFICATION

Click on **NftcControl.exe** to launch the application.



The “**Identification**” tab appears first.



The PC, connected to COM1, reads some data from the NFTC EEPROM:

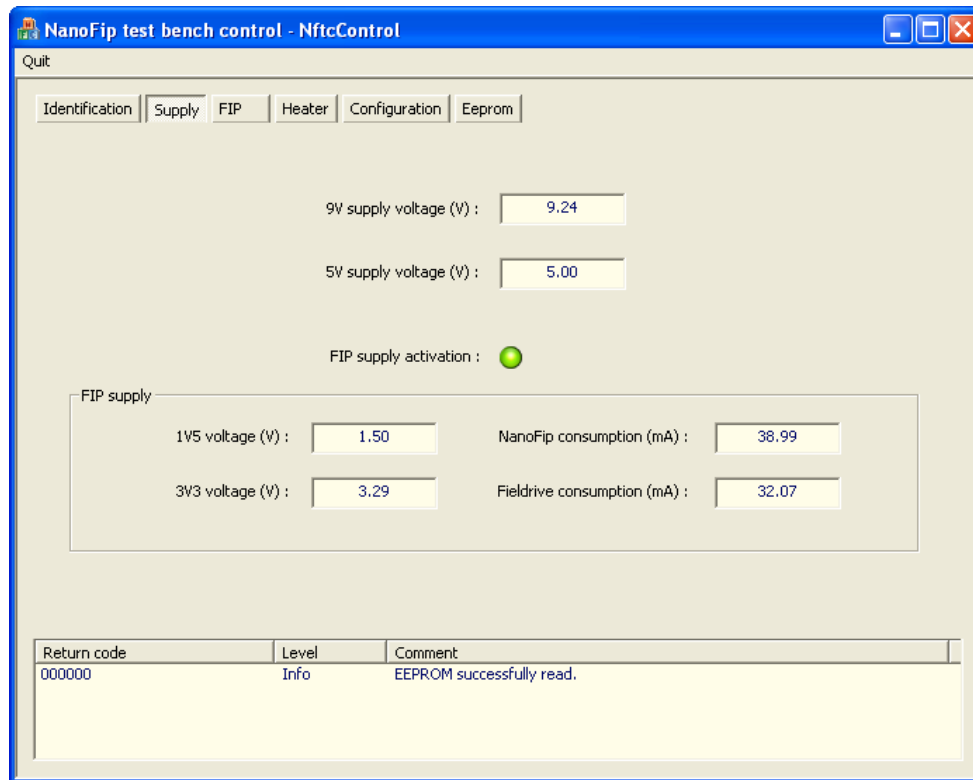
- the NFTC card version
- the HW FIP implementation : network speed and impedance

4.3. POWER SUPPLIES SURVEY

The « **Supply** » tab allows the user to have a look on supplies presents on the NFTC card.

The general supplies 9V and 5V are always activated.

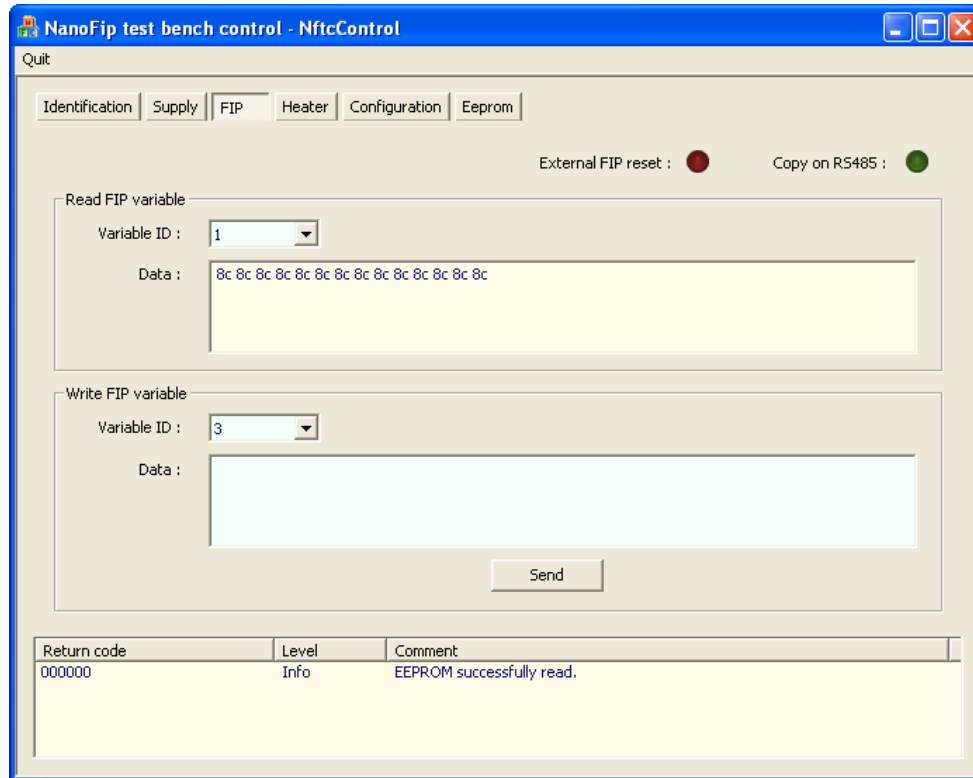
The FIP supply can be shutdown by clicking on the LED “*FIP supply activation*”.



The FIP supply acquisitions (+1.5V, +3,3V, NanoFip and Fieldrive consumptions) are significant when the LED “*FIP supply activation*” is ON.

4.4. FIP VARIABLE READ / WRITE

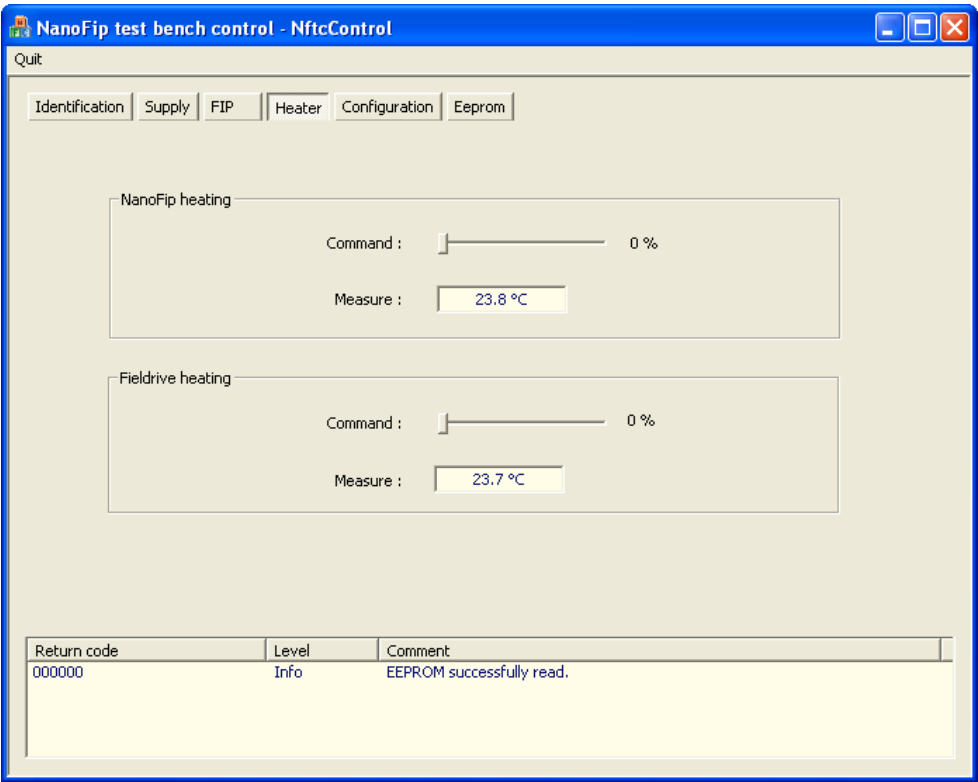
The « **FIP** » tab allows sending and receiving FIP variables.



The LED « *External FIP reset* » turns ON when the NanoFip receives a reset command from the FIP bus.

4.5. TEMPERATURE CONTROL

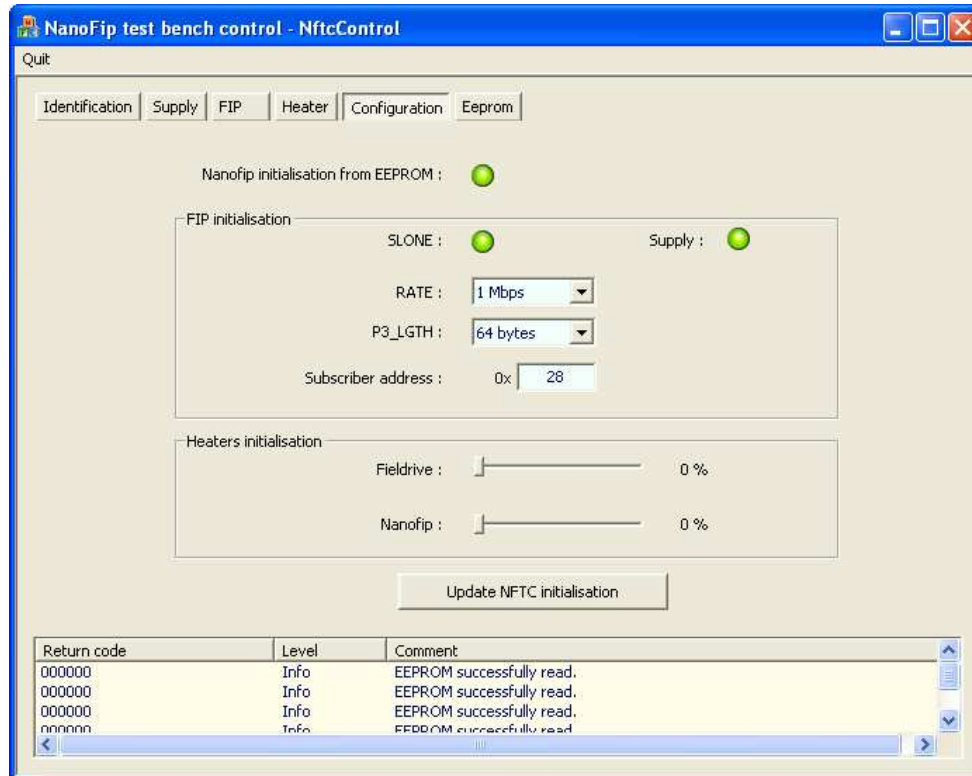
The « **Heater** » tab allows the user to have a look and control the NanoFip and Fieldrive temperature.



The heating command is sent to NFTC when cursors are moved.

4.6. CONFIGURATION

The « **Configuration** » tab allows the user to set up the initialisation parameters.



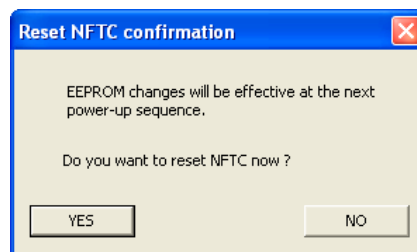
The following parameters can be changed :

Parameter	Description
NanoFip initialisation from EEPROM	<p>ON : all parameters presents on the page are applied at NFTC initialisation.</p> <p>OFF: none parameters presents on the page are applied at NFTC initialisation. The default FIP parameters are set by jumpers on the card (see p.8, §Connecting NFTC (1016-10)). The default heater command is 0%. The FIP supply is ON.</p>
SLONE	<p>ON : NanoFIP is set in SLONE mode.</p> <p>OFF: NanoFIP is set in MEMORY mode.</p>
Supply	<p>ON : the NanoFIP and Fieldrive components are supplied at the NFTC power-up.</p> <p>OFF: the NanoFIP and Fieldrive components are not supplied at the NFTC power-up. The user can activate the FIP supply manually (see "Supply" tab)</p>

RATE	Sets the value present on the NanoFip "RATE" pins.
P3_LGTH	Sets the value present on the NanoFip "P3_LGTH" pins.
Subscriber address	Sets the value present on the NanoFip "SUBS" pins (FIP address)
Heaters initialisation : Fieldrive	Sets the default command for the Fieldrive heater.
Heaters initialisation : NanoFip	Sets the default command for the NanoFip heater.

After changing some parameters, the user has to load the EEPROM by clicking on the button "*Update NFTC initialisation*".

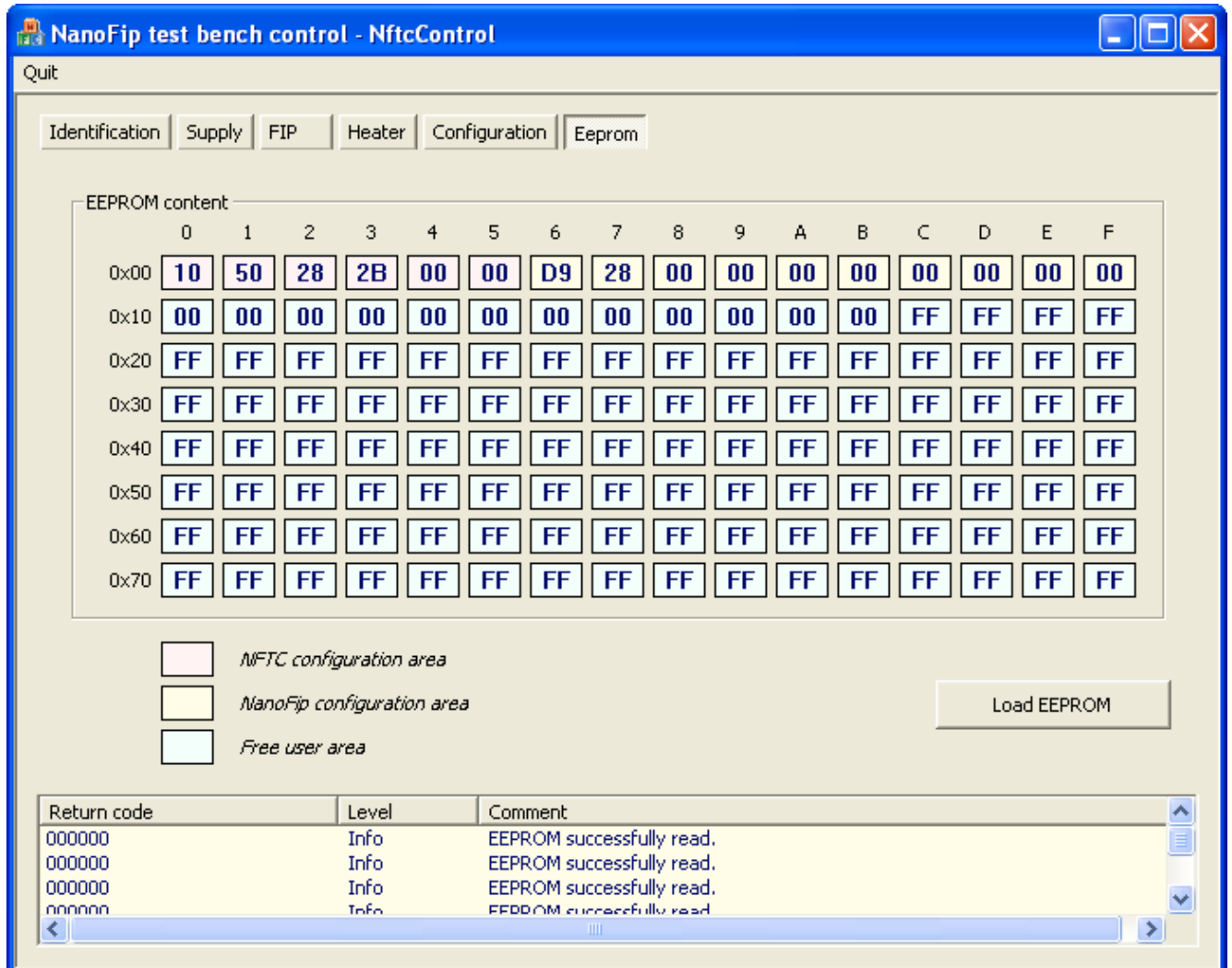
The following pop-up appears:



By clicking "YES", the user resets the NFTC card and charges the new parameters.

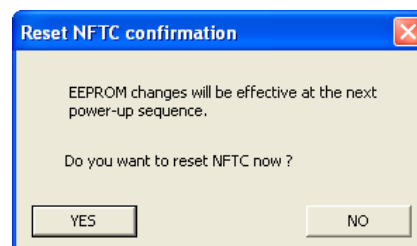
4.7. EEPROM CONTENT

The « **EEPROM** » tab is a view on the EEPROM content.



After changing some bytes, the user has to load the EEPROM by clicking on the button “Load EEPROM”.

The following pop-up appears:



By clicking “YES”, the user resets the NFTC card and charges the new parameters.

5. NANOFIP PROGRAMMATION

To load a program into the A3P400 (NanoFIP), the user has to connect the test bench.

Check that the FIP supply is ON (see [p.11, §Power supplies survey](#)).

Plug the FlashPro3 programmer on JP4 (see [p.8, §Connecting NFTC \(1016-10\)](#)) and load ACTEL programmer software.

6. LEGENDES



Information à souligner



Retour attendu de la MOA / du client



Point important impactant la poursuite du projet



Point bloquant pour la poursuite du projet