

# ITE IT8586 on NM-A074 VIUU3

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# 1 Introduction

## 1.1 Disclaimer

**USE THIS DOCUMENT AT YOUR OWN RISK**

**PLEASE BE AWARE THAT ANY INFORMATION YOU MAY FIND IN THIS DOCUMENT MAY BE INACCURATE, MISLEADING, DANGEROUS, ADDICTIVE, UNETHICAL OR ILLEGAL.**

Some information in this document may create an unreasonable risk for readers who choose to use the information. The Author do not take any warranties about the completeness, reliability and accuracy of this information. Any action you take upon the information in this document is strictly at your won risk, and the Author will not be liable for any losses and damages in connection with the use of this document.

## 1.2 Prologue

This How-to will instruct you how to read and write the **ENE IT8586** keyboard controller on the **NM-A074** motherboard.

This process will clear every information in the bios. If you don't know how to restore this do not do this!

## 1.3 Super I/O

Super I/O, SIO is an integrated circuit on a computer motherboard that handles the slower and less prominent input/output devices shown below. When the Super input/output was first introduced in the late 1980's it was found on an expansion card, later this chip was embedded into the motherboard and communicated over the ISA bus. As ISA began to no longer be used with computers SIO communicated over the PCI bus. Today, super I/O communicates through the Southbridge and is still used with computers to support older legacy devices.

## 2 Preparation

### 2.1 Partlist

- SOFTWARE
  - Windows7 64Bit**
  - SVOD3 1.0.3.6**
- PROGRAMMER
  - SVODprogrammer ver 3**
- CABLES
  - 1x 0,5 mm Pitch 26 Pin AWM 20624 flex ribbon cable FFC**

## 2.2 Pinout

You need **KSI7**, **KSI6**, **KSI4**, **KSI5** and **KSO3**. Ground can be obtained from any usb ports.

|             |   |      |
|-------------|---|------|
| JKB PIN #25 | → | KSI7 |
| JKB PIN #24 | → | KSI6 |
| JKB PIN #21 | → | KSI4 |
| JKB PIN #22 | → | KSI5 |
| JKB PIN #04 | → | KSO3 |
| USB PORT    | → | GND  |

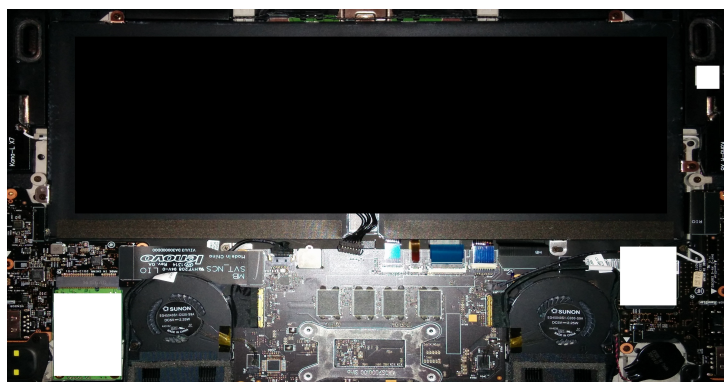


Figure 1: JKB keyboard connector

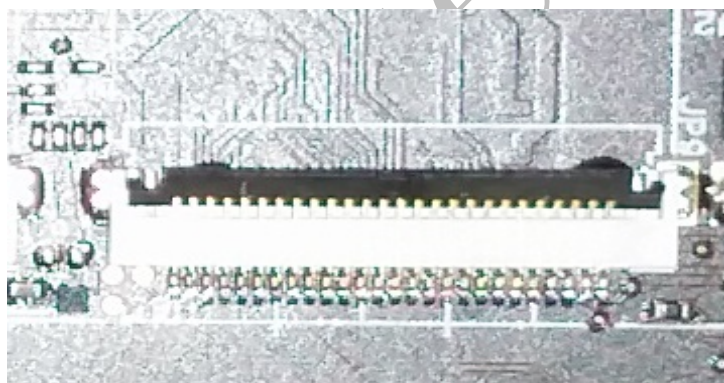


Figure 2: JKB 26pin 0,5mm port closer look

### 2.3 Cable Alignment

You must align the fpc cable to the left in the keyboard extender.

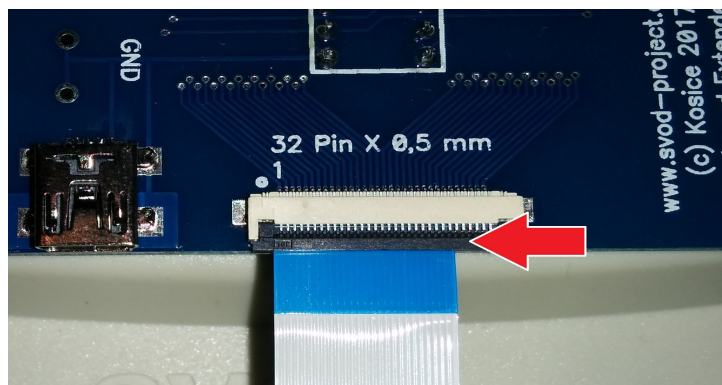


Figure 3: Pin 1 on the left side.

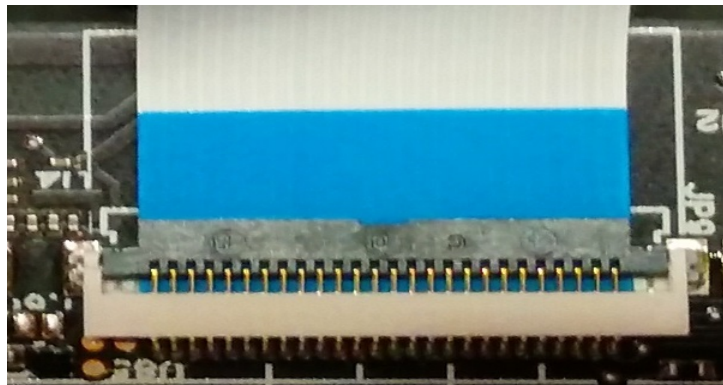
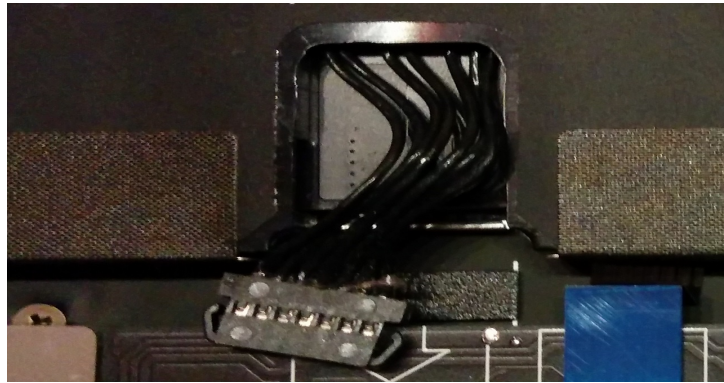


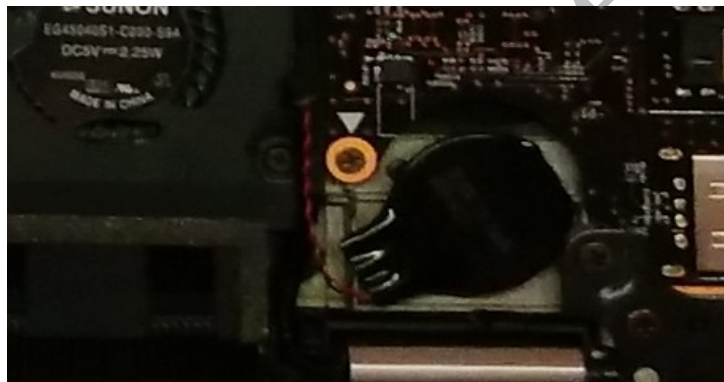
Figure 4: JKB with fpc cable.

## 2.4 Remove Batteries



**Figure 5:** Main Battery.

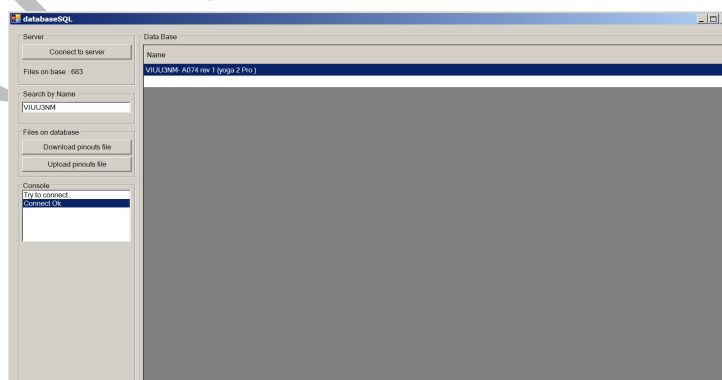
Unplug the main battery.



**Figure 6:** CMOS Battery.

Unplug the CMOS battery.

## 2.5 Download Pinout



**Figure 7:** SVOD3 online database.

Open the SVDO3 Software and use the online database to download the LA-A342P motherboard pinout.

## 3 Flashing

I assume you have connected the cables correct. The **ac connector** and **usb ground** must be detached unless you will be asked to attached.

### 3.1 Set Mode

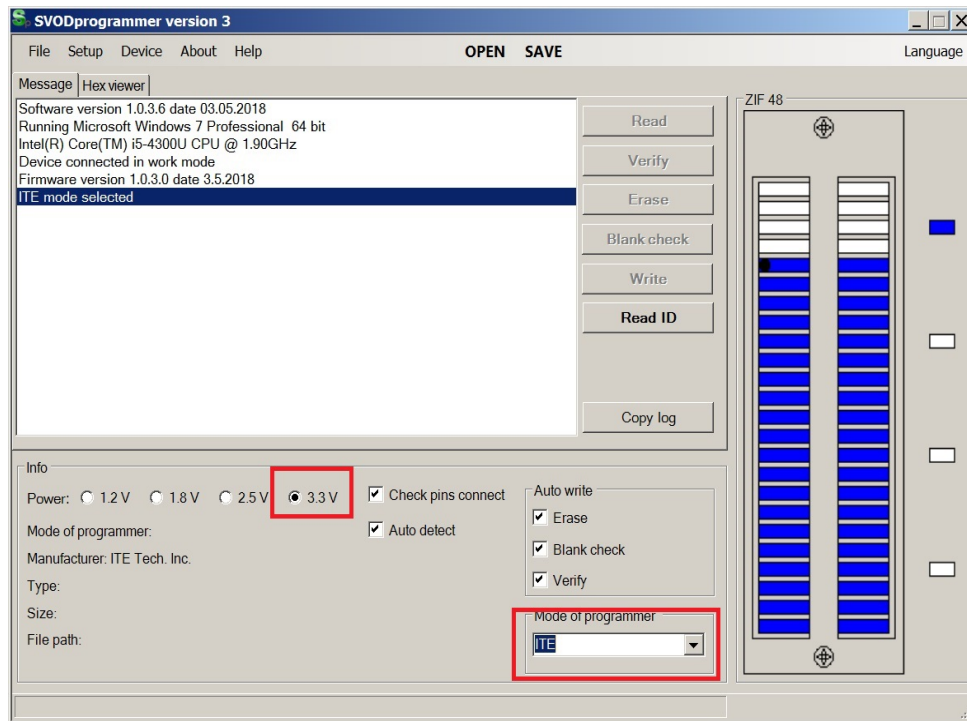
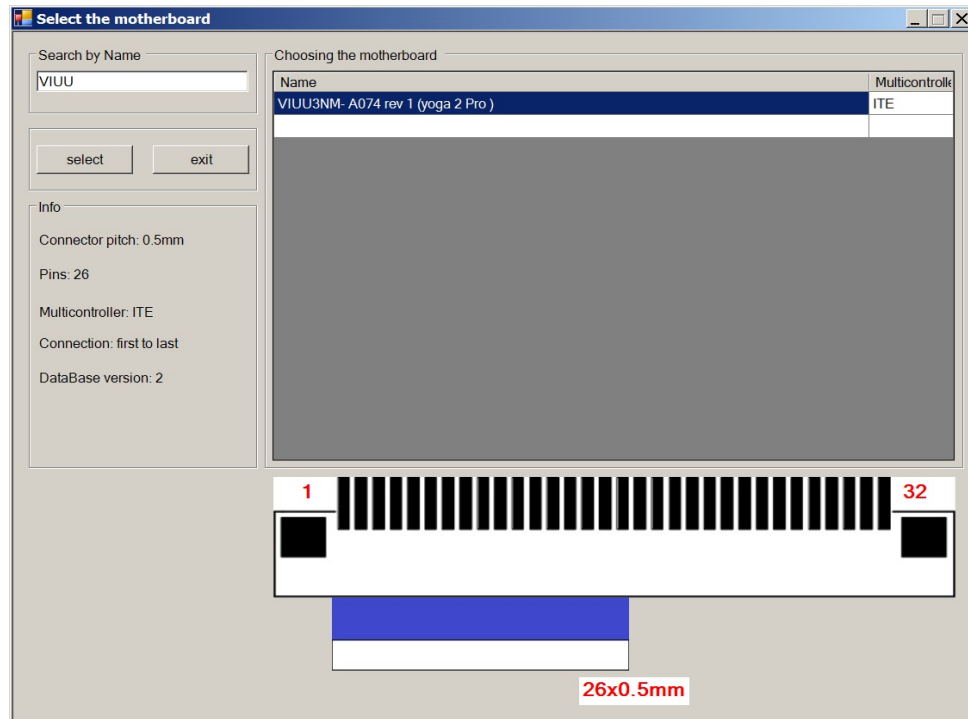


Figure 1: 3.3V and ENE Mode

Choose 3.3V and the ITE Mode.

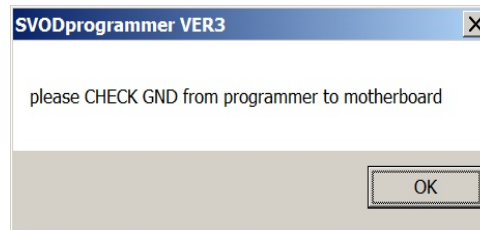
### 3.2 Select Motherboard



**Figure 1:** Select the motherboard

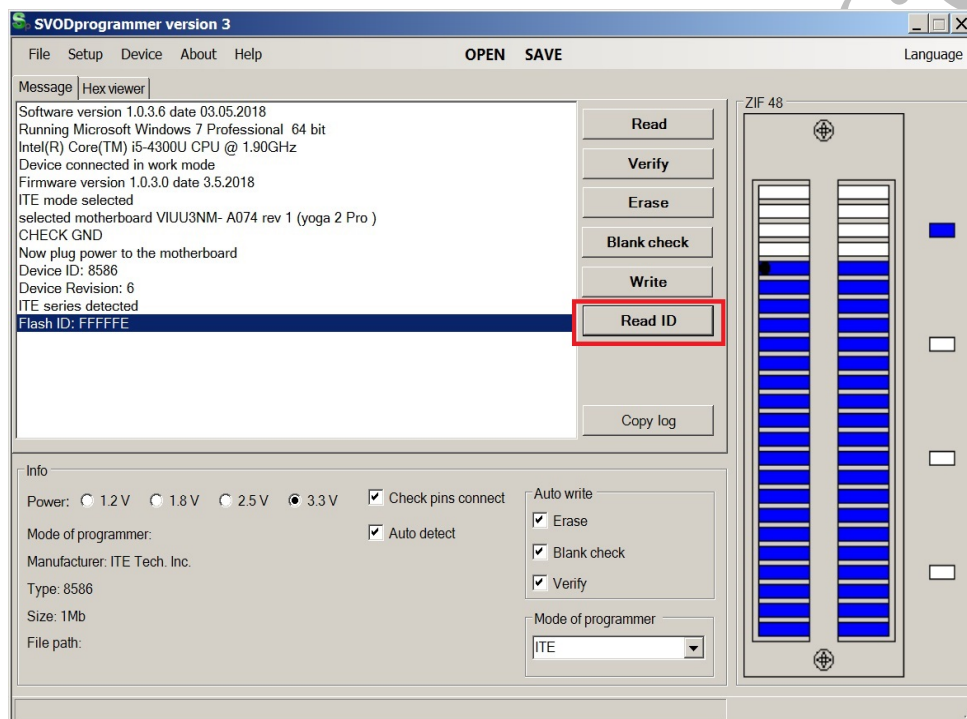
Choose your previously downloaded NM-A074 motherboard pinout.

### 3.3 Read ID



**Figure 2:** Check ground connection.

After selecting the motherboard pinout you will be asked to plug in the usb ground cable. If this is done you can also connect the ac power adapter cable.



**Figure 3:** Read ID

Click the Read ID button.



#### INFO

The Device ID should be **8586** and the Flash ID **FFFFFFE**. If you have instead **8D8F** and **FFFFFFF** recheck all cables and use a shorter or different usb ground cable.

### 3.4 Read IT8586

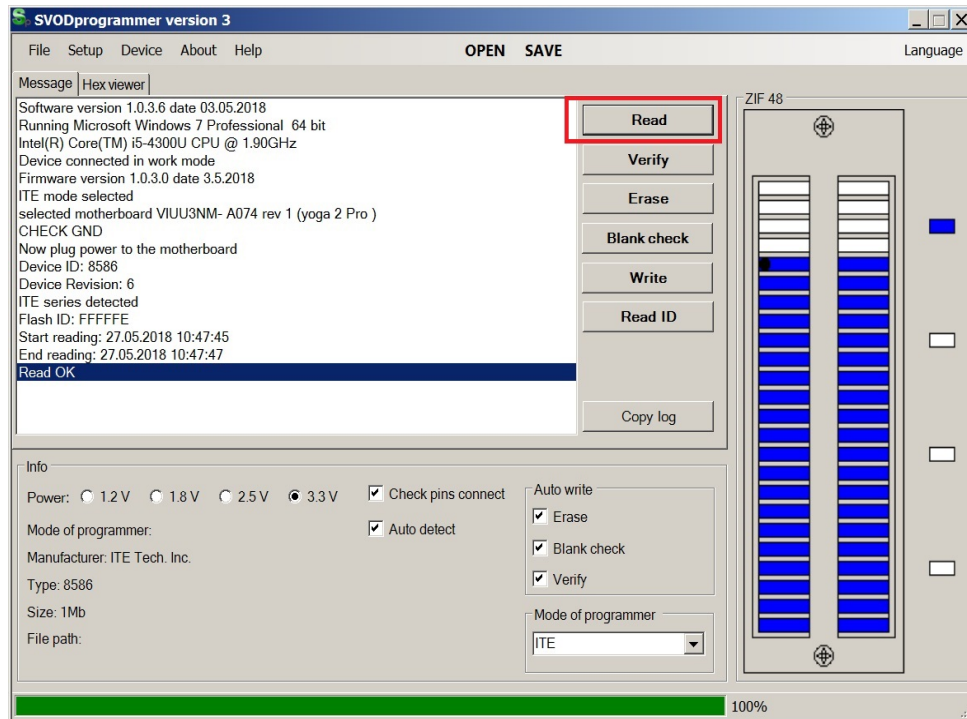


Figure 4: Click Read button

Make a backup of the actual content of the IT8586 and save it to a file.

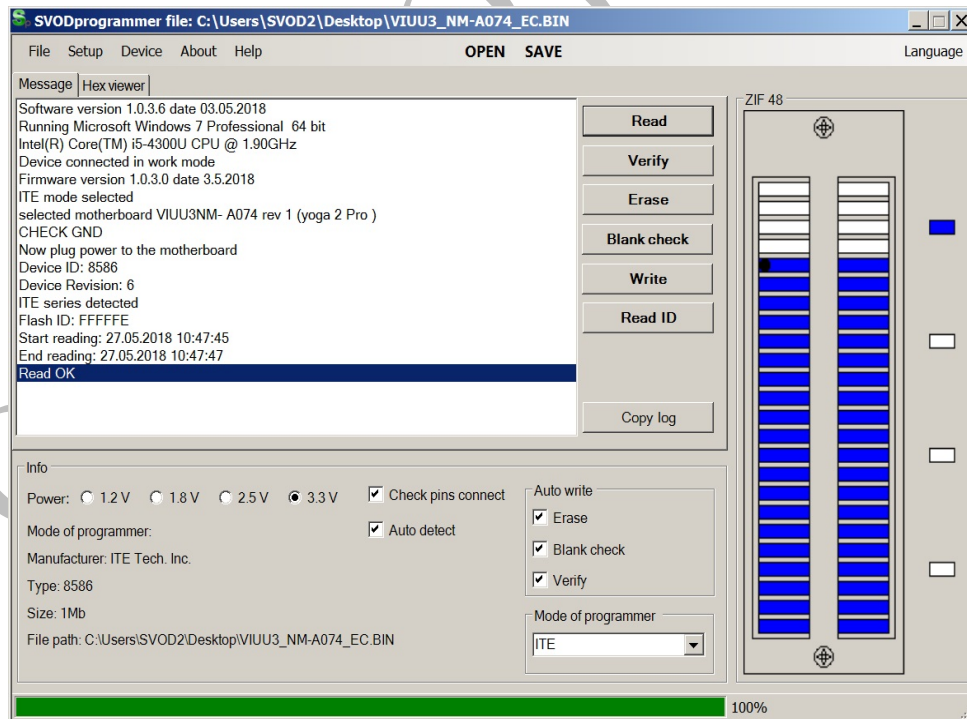


Figure 5: Read process finished...

### 3.5 Write IT8586

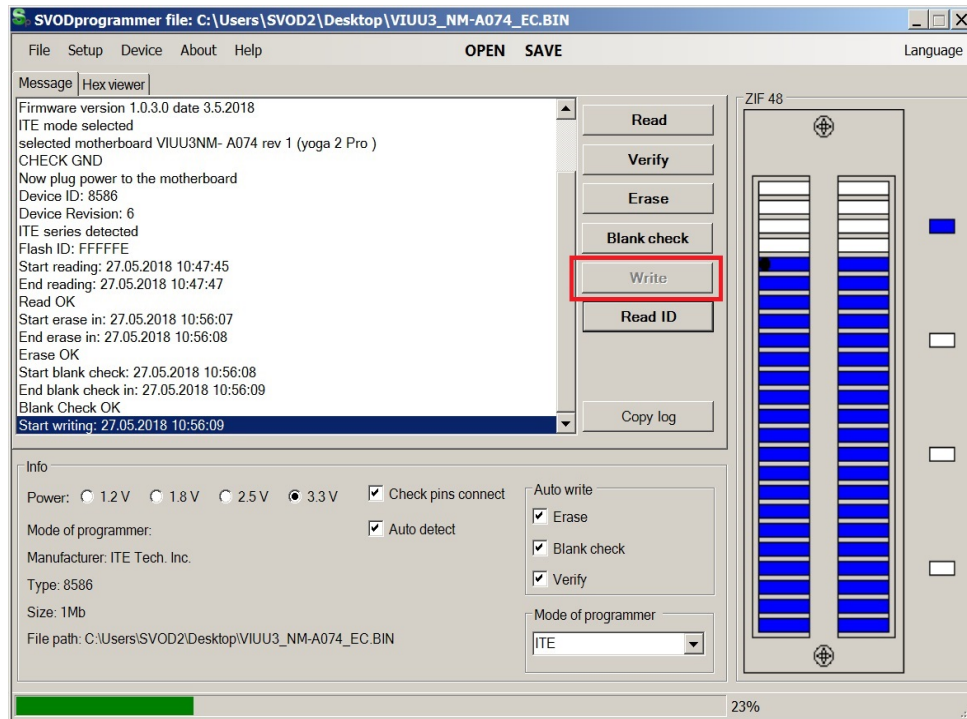


Figure 6: Click Write

- 1) Load nm-a074\_yoga2\_pro\_ite\_it8586\_128Kb\_factory.bin
- 2) Click Write

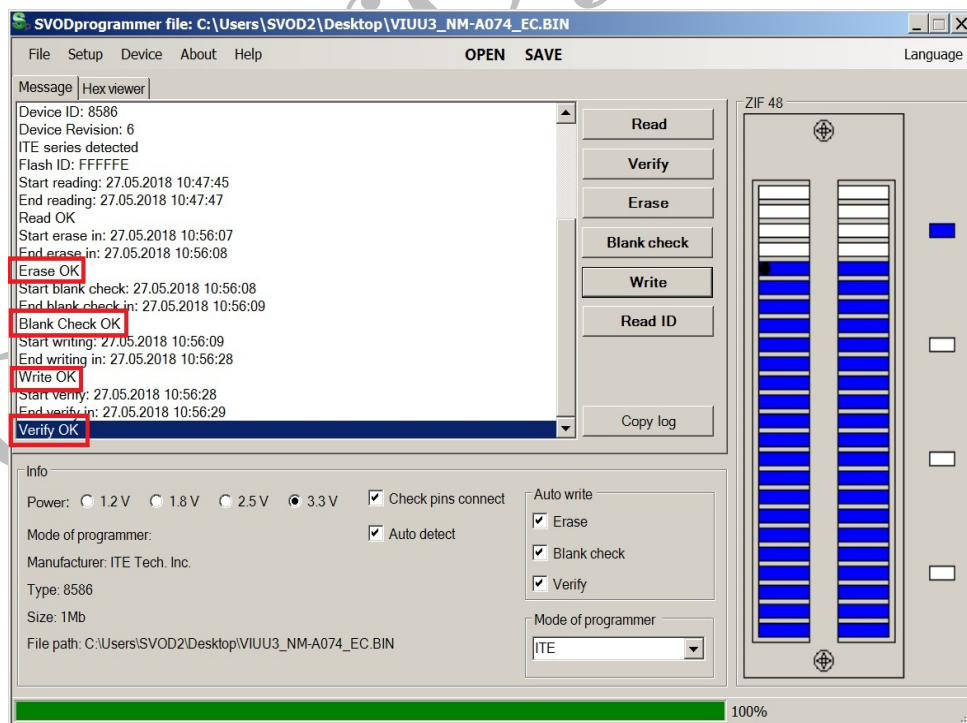


Figure 7: Flash process...

This step could take some time.

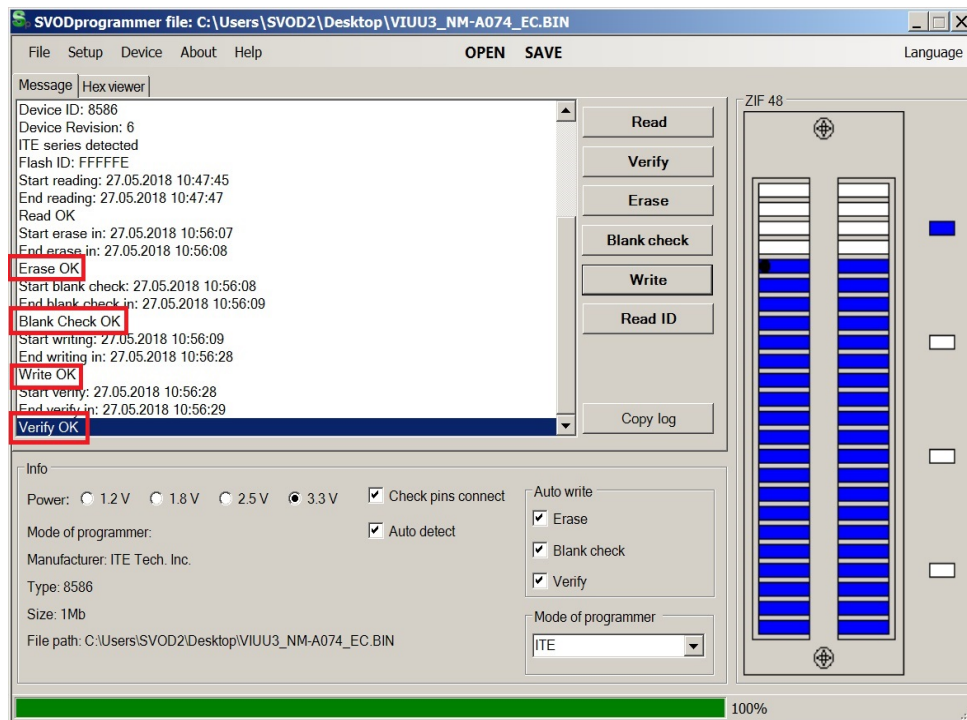


Figure 8: Successfull flashing with verification

## 4 Rewrite Information

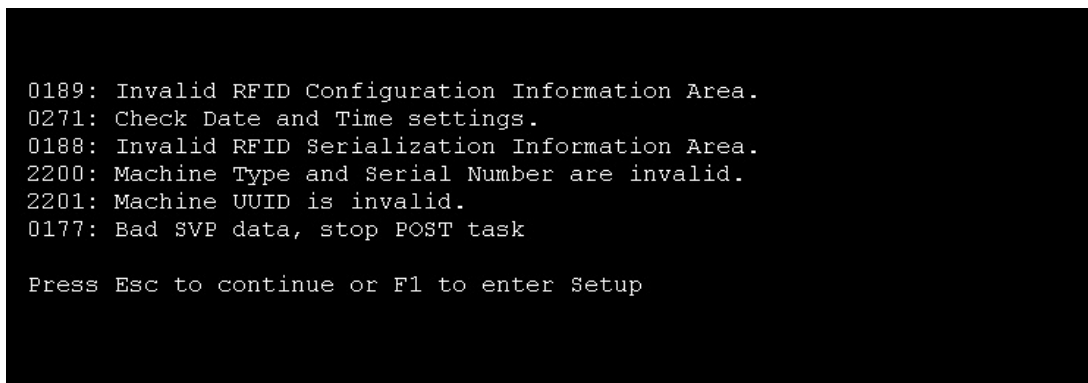


Figure 1: BIOS failure screen.

- How can i rewrite all the missing bios information?
  - 1) You can use the **Lenovo Hardware Maintenance Utility**
  - 2) You can use the **Lenovo Hardware Maintenance Disk**
  - 3) You can read the KB9012 again and edit the dump
- Do you know which steps could work?
  - 1) Initialize the EEPROM with the **Lenovo Hardware Maintenance Utility**
  - 2) Assign a UUID with the **Lenovo Hardware Maintenance Disk**
  - 3) Assign **B0** and **C0** with the **Lenovo Hardware Maintenance Utility**
  - 4) Set time and date correct
  - 5) Set a password and remove it afterwards
- Where ca i find **B0**

Open your backup and search for **SER#**. It is the first number, 21 digits.
- Where ca i find **C0**

Open your backup and search for **SER#**. It is the second number, 19 digits.  
Add a **1** in front to get 20 digits!

## 5 Question and Answers

- Where can i get the pinout of the mainboard?

*You can find the pinout and port label in the board schematics.*

- Do you know the exact description of the IT8586?

*IT8586VG/AX VFBGA128*

- Can i remove the password with this procedure?

*Not tested...*

## 6 Files

### Attachments:

ITE IT8586 factory dump for NM-A074: 

Svod-project.com