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## Firmware Release Notes

### Quantum NOE 77111 Exec v5.5

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140NOE77111		4.7	May 26, 2010

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## **140NOE77111 Version 5.5 Release Notes**

### **1 THE WEB PAGE ALLOWED USER TO ENTER MORE THAN 16 CHARACTERS AS A PASSWORD BUT ONLY 16 WERE USED**

#### **1.1 Issue**

If you entered a new password as 17 characters in the http password web page, the NOE returned a page saying that the password change was successful. When you try to use the new password, it fails.

#### **1.2 Resolution**

The password field was corrected to limit the user to 16 characters and no more will be accepted.

#### **1.3 Customer action**

Upgrade the NOE77111 firmware.

### **2 UNLESS THERE IS A VALID ENTRY IN THE ADDRESS TABLE THE FDR SERVER WILL NOT START**

#### **2.1 Issue**

The address service will not start unless there is at least one valid entry with a valid MAC address configured in Unity.

#### **2.2 Resolution**

The address service will start regardless of whether or not there is a valid address configured.

#### **2.3 Customer action**

Upgrade the NOE77111 firmware.

### **3 TWO COPIES OF FDR .PRM FILES SHOULD BE CREATED IN BOTH RAM AND FLASH. THE FLASH VERSION OF THE PRM FILES IN THE PATCH IS NOT CREATED**

#### **3.1 Issue**

The problem is in the algorithm when it attempts to parse the extension names of the FDR files on RAM ( .prm ). It is due to an existing method coding when comparing strings. The strings do not have the proper number of bytes so the Flash version of the .prm files could not be created.

#### **3.2 Resolution**

A more specific string comparing function in C programming language was used allowing specifying number of bytes to compare. The FLASH files are now created.

#### **3.3 Customer action**

Upgrade the NOE77111 firmware.

### **4 ENHANCEMENT TO ADD OPTION FOR SLOWER RETRIES WHEN COMMUNICATING WITH GATEWAYS**

#### **4.1 Issue**

Slower responding gateways can cause a problem in communications.

#### **4.2 Resolution**

There is an option in Unity 7.0 which the user can choose which will change the retry and retransmission rate when communication with gateways which are slower than normal communications.

#### **4.3 Customer action**

Upgrade the NOE77111 firmware. Upgrade to Unity version 7.0 required.

### **5 RESPONSE TO ICS-ALERT-12-020-03. THE NOE IS VULNERABLE TO HTTP SERVER BUFFER OVERFLOWS**

#### **5.1 Issue**

An HTTP GET request with too-long filename causes overflow, device crash.

#### **5.2 Resolution**

A Get request with an excessive length will be dropped.

### **5.3 Customer action**

Upgrade the NOE77111 firmware.

## **6 VARIOUS SECURITY ISSUES**

### **6.1 Issue**

Cyber Security changes necessary in the following

- 1) Telnet service
- 2) Wind River debug service port
- 3) unused logins/passwords from firmware

### **6.2 Resolution**

Removed Telnet service.  
Removed Windriver debug port.  
Removed unused password access points.

### **6.3 Customer action**

Upgrade the NOE77111 firmware.

## **7 PLC VIEWER WEB PAGE DOES NOT SHOW THE SFC TRANSITION CONTACT STATUS CORRECTLY.**

### **7.1 Issue**

The values shown for the status of the contact in the web page may not be the correct value of the contact. This was due to the fact that changes made to plcprograms.jar file was not included in build.

### **7.2 Resolution**

Change made to plcprograms.jar file are now included in build.

### **7.3 Customer action**

Upgrade the NOE77111 firmware.

## **8 RESPONSE TO ICS-ALERT-12-020-03. FTP BUFFER OVERLOAD**

### **8.1 Issue**

This release is in response to ICS-ALERT-12-020-03.

### **8.2 Resolution**

A possible problem due to FTP buffer overload was addressed and the vulnerability has been corrected.

### **8.3 Customer action**

Upgrade the NOE77111 firmware.

## **9 PLC PROGRAM VIEWER VARIABLE DISPLAY PERFORMANCE DECREASES AS THE APPLICATION GROWS**

### **9.1 Issue**

For large applications with a mixture of located and unlocated variables, PLC Program viewer sections would display "N/A" for various variables rather than their values.

### **9.2 Resolution**

All variables with a direct address (i.e. %M343) were being read as unlocated variables by block and offset. The block-offset combination was not valid, so an error was thrown for each variable by the application. The located variables are now handled more simply.

### **9.3 Customer Action**

Upgrade the NOE77111 firmware.

## **10 INCORRECT "INVALID ADDRESS" WARNINGS APPEAR IN THE PLC VIEWER.**

### **10.1 Issue**

Variable's address initially set to "UNLOCATED", which is incorrect.

### **10.2 Resolution**

Change "UNLOCATED" to `symbol.getAddress()` to initialize variable with proper address

### **10.3 Customer Action**

Upgrade the NOE77111 firmware.



## **140NOE77111 Version 5.1 Release Notes**

- **SPECIAL NOTE** THIS NOE77111 V5.1 INTEGRATES A NEW HARDWARE COMPONENT. THE NOE77111 WITH A PV OF 14 OR GREATER CANNOT BE DOWNGRADED TO EXEC VERSIONS LESS THAN VERSION 5.1.

### **11 ON AN ETHERNET DOWNLOAD USING UNITY 6.0 UNDER SOME CONDITIONS UNITY RETURNS AN ERROR.**

#### **11.1 Issue**

Unity 6 returns a 'Send message action failed. PLC is busy or request is invalid' error

#### **11.2 Resolution**

The handling of new downloaded configurations in the device have been resolved to prevent Unity Pro TCP disconnections when updating the controller through the Ethernet module IP address.

#### **11.3 Customer action**

Upgrade the NOE77111 firmware.

### **12 NOE RESETS AND GOES INTO KERNEL MODE DURING SAVING A PLC PROGRAM TO FLASH.**

#### **12.1 Issue**

There was a problem when downloading using ProWorx or Concept. The backplane watchdog timer was being overrun.

#### **12.2 Resolution**

The backplane watchdog timer is reset during the download and there is no longer a timer overrun.

#### **2.3 Customer action**

Upgrade the NOE77111 firmware.

## **13 IO SCANNER OPERATION DOES NOT ALWAYS TRIGGER FAST RETRANSMISSION IN TARGET DEVICE**

### **13.1 Issue**

Fast Retransmission is triggered by three KEEP ALIVE messages. Under some circumstances the NOE would only issue two.

### **13.2 Resolution**

The NOE77111 will not issue three KEEP ALIVE messages in order to insure that the target device will follow the fast retransmission algorithm.

### **13.3 Customer action**

Upgrade the NOE77111 firmware.

## **14 I/O SCANNING SPECIFIC COMBINATION OF REPETITION RATE AND HEALTH TIMEOUT NOT SUPPORTED**

### **14.1 Issue**

The combination of a 30ms repetition rate and 50ms Health Timeout leads to triggering Health Timeout in less than 50ms. This is due to a slight delay in the CPU while it is handling FDR synchronization.

### **14.2 Resolution**

The priority of the task controlling the Health timeout was raised eliminating the problem.

### **14.3 Customer action**

Upgrade the NOE77111 firmware.

## **140NOE77111 Version 5.0 Release Notes**

**SPECIAL NOTE** THIS NOE77111 V5.0 IS A PREMIUM HOT-STANDBY ONLY RELEASE TO SUPPORT THE MULTIRACK FEATURE. THE MINIMUM HOT-STANDBY FIRMWARE VERSIONS TO SUPPORT MULTIRACK ARE:

- ETY V5.0
- CPU V2.83
- COPRO V2.81

### **15 THE MSTR FUNCTION BLOCK IN UNITY WAS MODIFIED TO ALLOW IT TO READ 0X, 1X, AND 3X REGISTERS (20047914\*V5.0)**

#### **15.1 Issues**

There is no method of reading 3x, 1x or 0x registers from devices that do not support 4x registers.

#### **15.2 Resolution**

A new MSTR command "15" for the MBP\_MSTR block, accessible via UnityPro V6.0, was implemented to be able to send out any Modbus command as defined by the user in 4x registers. The functionality mimics the Data Exchange block (DATA\_EXCH) supported on the Premium and M340 line.



Command 15  
behavior

Complete details in Unity 6 Help

#### **15.3 Customer action**

Upgrade the NOE firmware.

### **16 THE MODBUS CLIENT MESSAGING CAPACITY WAS EXTENDED (20046443\* V5.0)**

#### **16.1 Issues**

Additional registers are required to access diagnostic information in the PRM (Profibus Remote Master module) in a single Modbus request. Quantum is limited to 100 registers per Modbus request.

## 16.2 Resolution

Expanded the message size of the Read, Write, and Read/Write function blocks; MBP\_MSTR, READ\_REG, WRITE\_REG, CREAD\_REG, CWRITE\_REG. This applied to both the client and server side of the NOE.

I/O Scanner does NOT support the extended message size.

## 16.3 Customer action

Upgrade the NOE firmware.

# 17 MSTR BLOCK TCP CONNECTIONS TAKE TOO LONG TO FREE UP FOR REUSE (20046811\* V5.0)

## 17.1 Issues

When an MSTR block is aborted, it takes 30 seconds before the socket is free.

## 17.2 Resolution

A new MBP\_MSTR sub-function 16, Reset connection, allows the closing of any pending/active/semi-open Port502 and network level TCP/IP connections.



Sub-function 16  
behavior

Complete details in Unity 6 Help

## 17.3 Customer action

Upgrade the NOE firmware.

# 18 UPDATED RACK VIEWER WEB PAGE V5.0 (20047528\* V5.0)

## 18.1 Issue

Redesigned web pages using Microsoft SilverLight and new features added.

## 18.2 Resolution

- Faster page update times than the traditional FactoryCast web pages that use JAVA.
- Pan and Zoom in the Rack Viewer to see a particular drop or module.
- New Rack Viewer will allow for a "System View" where Remote I/O is included in the view (ERIO, RIO and MB+ DIO for Quantum)
- An option is provided in Unity Pro 6.0 to disable the SilverLight Rack Viewer pages to save memory in the PLC. The legacy Rack Viewer pages will be used instead.

- It will no longer be necessary to re-import the Unity program into Web Designer and download to the module after a program change.

### **18.3 Customer action**

Upgrade the NOE firmware.

## **140NOE77111 Version 4.8 Release Notes**

### **19 I/O SCANNER NOT SCANNING AT CONFIGURED REP-RATE**

(20044462-20046322-20046496\*V4.8)

#### **19.1 Issues**

- The I/O Scanner may not operate at the configured Rep Rate if its configured rate is greater than 1 second.
- If the Rep Rate is configured for a value of 5 msec, the actual rep rate will vary between 1ms and the configured rate of 5 msec.

#### **19.2 Resolution**

Modified I/O Scanner task priorities.

#### **19.3 Customer action**

Upgrade the NOE firmware.

### **20 I/O SCANNER HEALTH BITS WILL NOT RETURN TO HEALTHY STATE (1) AFTER A TESYSPOrt IS POWER CYCLED (20047044\*V4.8)**

#### **20.1 Issue**

Sometimes after power cycling a TesysPort, the respective I/O Scanner health bits in the NOE changes to a state value of zero (0) and never changes back to a value of one (1) after power is re-applied to the TesysPort.

#### **20.2 Resolution**

If a response is not received within 3x times the configured health timeout, then the IO scanner connection is re-initialized.

#### **20.3 Customer action**

Upgrade the NOE firmware.

**21 I/O SCANNER COMMUNICATIONS WILL TAKE 600MS TO RECOVER ON LOSS OF A TCP REPLY PACKET FROM A GATEWAY**  
(20046858\*V4.8)

**21.1 Issue**

The I/O scanner fast retransmission algorithm may not be supported by all gateway devices causing message sequencing issues.

**21.2 Resolution**

Additional time through Keep-Alives was provided to allow gateways more time to respond.

**21.3 Customer action**

Upgrade the NOE firmware.

**22 AFTER MULTIPLE CONSECUTIVE SWAPS OF A QUANTUM HOT STANDBY SYSTEM, THE NOE771X1 DOES NOT RESTART**  
(20047016\*V4.8)

**22.1 Issue**

After performing 3 or more immediate swaps of a Hot Standby system, the NOE does not restart.

**22.2 Resolution**

Improved code handling of task cleanups after a swap over to eliminate NOE reboots.

**22.3 Customer action**

Upgrade the NOE firmware.

**23 NETWORK STATISTICS INCORRECTLY REPORTING LINK STATUS WHEN THE ETHERNET CABLE IS REMOVED** (20047033\*V4.8)

**23.1 Issue**

Within the MBP\_MSTR block, there is a Function Code 3 that can be used to 'Get Local Statistics' from an NOE. It returns the 'TCP/IP Ethernet Network Statistics' in a data buffer array. Word 3 of the data buffer array is used for the 'Board Status Word'. Bit 15 of Word 3 is used to monitor the status of the Link which is represented by the LINK LED on the front of the NOE module. The bit changes to a value of 1 when the Ethernet cable is plugged in. Then, if the Ethernet cable is removed from the NOE module, the LINK LED on the NOE goes off but bit 15 of word 3 of the data buffer array incorrectly flickers between values 1 and 0.

### **23.2 Resolution**

Detection of the Link Status has been routed to directly access the Ethernet modules link data.

### **23.3 Customer action**

Upgrade the NOE firmware.

## **24 I/O SCANNER STOPS COMMUNICATIONS WITH A GATEWAY DEVICE (20047079\*V4.8)**

### **24.1 Issue**

Termination of the IO Scanner connection by the server may result in a condition where the I/O Scanner does not restart.

### **24.2 Resolution**

When the NOE receives a Reset from the server it will close the connection and open up a new connection on a different port.

### **24.3 Customer action**

Upgrade the NOE firmware.

## **25 I/O SCANNER WILL NOT OPEN A CONNECTION IF THE DEVICE BEING SCANNED HAS A SLOW RESPONSE TIME (20047527\*V4.8)**

### **25.1 Issue**

If the device being IO scanned has a slow response time (110-120ms), then the IO scanner will not be able to open a connection.

### **25.2 Resolution**

The Round Trip time algorithm for retransmission was corrected.

### **25.3 Customer action**

Upgrade the NOE firmware.



## **140NOE77111 VERSION 4.7 RELEASE NOTES**

### **26 THE NOE GOES INTO DETECTED FAULT MODE IF THE PRIMARY HSBY PLC IS STOPPED (20046332\*V4.7)**

#### **26.1 Issue**

If the Primary PLC (HSBY configuration) is stopped, the NOE in the new Primary goes into detected fault mode for 20 seconds. This happens when there is more than one NOE configured.

The HSBY system has narrow window of time when Primary and standby change IP address. In some cases this leads to a duplicate IP conflict.

#### **26.2 Resolution**

A two part solution was implemented:

Part 1: Block BOOTP action if the device is configured as HSBY.

Part 2: Remove the (primary to offline) device from the Ethernet network, so the (standby to primary) device can obtain the IP address without an IP address conflict.

#### **26.3 Customer action**

Upgrade the NOE firmware.

### **27 NOE STOPS I/O SCANNER COMMUNICATION WITH SLOW RESPONDING DEVICES (20046431\* V4.7)**

#### **27.1 Issue**

I/O Scanning to devices with varying response times may stop if it receives a reset (RST) from the device. If a RST is received by the NOE on a connection it can cause the I/O Scanner entry to stop communicating.

#### **27.2 Resolution**

The firmware was changed so that when the NOE receives a RST from the server on an established connection, it closes the existing connection and tries to establish a new connection on a different port.

#### **27.3 Customer action**

Upgrade the NOE firmware.

## **28 I/O SCANNER MAY NOT HOLD LAST VALUE DURING A HSBY SWAP** (20046803\* V4.7)

### **28.1 Issue**

The NOE771xx IO scanner may not hold the last value on a swap over of the Hot Standby. The I/O scanner values become zero for one scan.

### **28.2 Resolution**

Delay events until the swap of the internal buffers are complete.

### **28.3 Customer action**

Upgrade the NOE firmware.

## **29 NOE CAN TAKE UP TO 25 SECONDS TO CLOSE A CONNECTION** (20046368\* V4.7)

### **29.1 Issue**

The NOE sends a set of 6 ACKS or Keep-alives followed by a RST. This can take up to 25 seconds before the connection is closed and allowing a new one to open.

In the code, the timer responsible for the retransmission was canceled thus stopping the retransmission from triggering.

### **29.2 Resolution**

The code to cancel the retransmit timer was modified.

### **29.3 Customer action**

Upgrade the NOE firmware.

## **30 THE NOE IS INCORRECTLY ASSIGNED AN ADDRESS OF 'CONFIGURED IP+1' INSTEAD OF THE 'CONFIGURED IP' IN A STANDALONE 140CPU6716X** (20047634\* V4.7)

### **30.1 Issue**

The 140NOE77101 incorrectly returned an address of 'configured IP+1' unless there was a remote drop configured with a '140 CRP 93x xx' in the same rack as the '140CPU6716x'. This only happened when the Hot Standby CPU was used as a standalone/offline configuration.

### **30.2 Resolution**

The 'configured IP' is now correctly assigned to the NOE.

### **30.3 Customer action**

Upgrade the NOE firmware.

## 31 UPGRADE INSTRUCTIONS

### 31.1 Concept Programming software

The NOE77111 Concept firmware is upgraded using the ProWorx32/Concept Exec Loader Utility.

### 31.2 Backup of customized web site

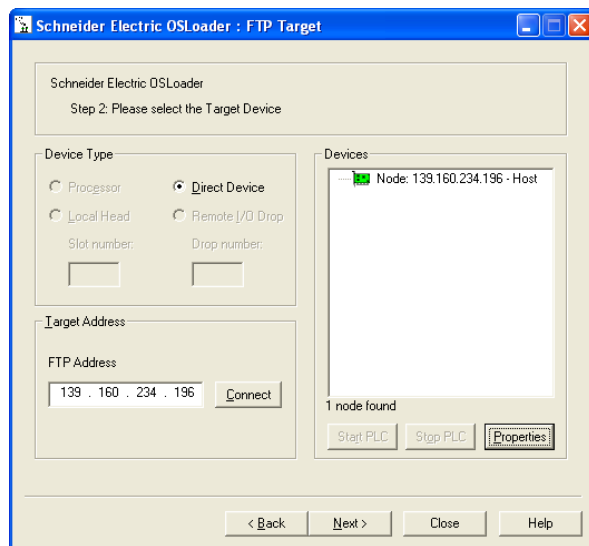
The customized web site will be erased by upgrading firmware. Customer must backup his project with Web Designer Software. Customer will be able to download after upgrade.

### 31.3 Unity Programming software

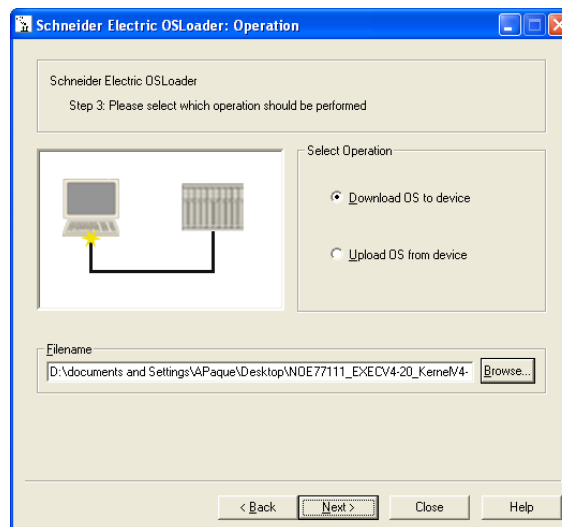
The NOE77111 firmware is upgraded using the Unity OS Loader.

This file is for Unity Loader

- 1- Select and launch Unity loader in Unity program group.
- 2- Select FTP transfer



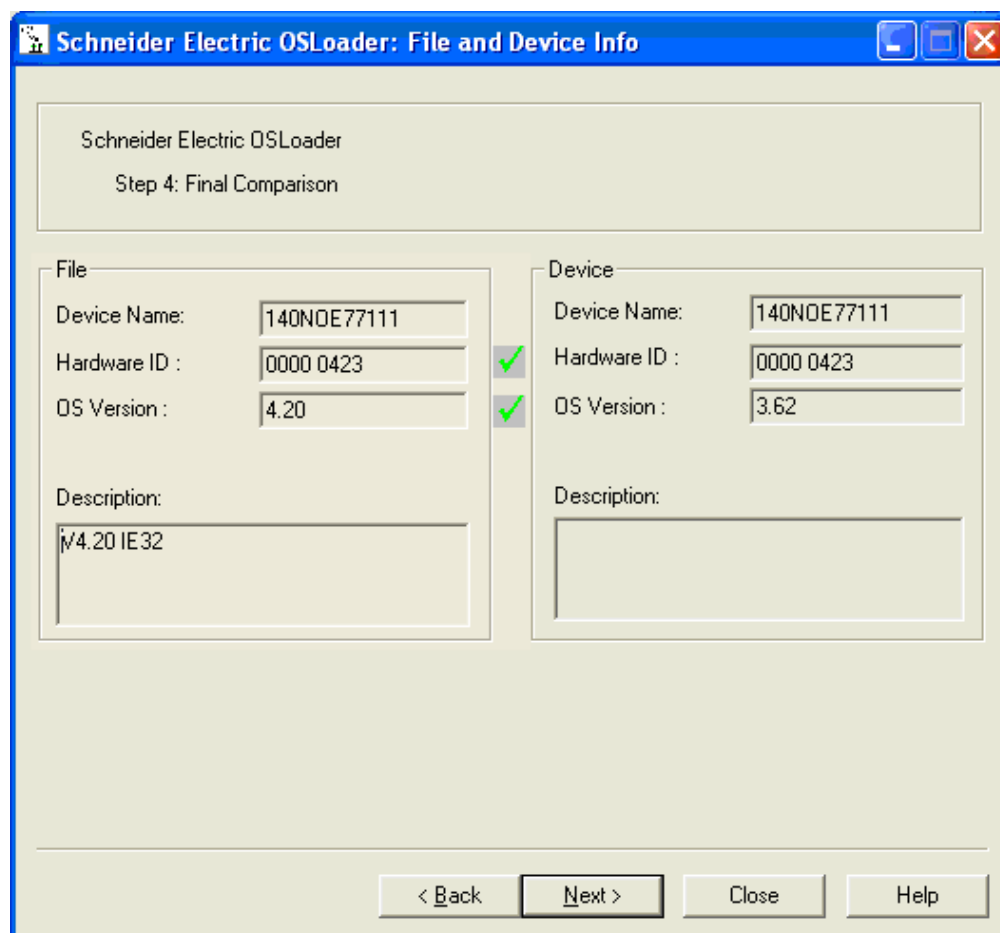
- 3- Fill the IP Address of your NOE77111



4- Select bin file from the unzipped archive

Go next

5- Go Next to start the downloading



## 31.4 Without Unity Programming software

For non-unity user, we provide a second solution to upgrade the NOE77111.

You will find upfwnoe.bat file into directory "No Unity User"

Under MS-DOS command window, you must type the following command from right directory like below.

This batch file downloads Firmware and Web Pages for the ROHS and no ROHS boards.

Then from DOS prompt enter (where file has been unzipped) :

**Usage: upfwnoe host\_name (if default FTP login USER:USERUSER)**

**or: upfwnoe host\_name ftp\_user ftp\_password**

Where host\_name is the IP address of your module

```

C:\WINNT\system32\cmd.exe
D:\New Folder <2>>dir
Volume in drive D is DATA
Volume Serial Number is 7C30-CD5B

Directory of D:\New Folder <2>

02/07/2009  09:39    <DIR>        .
02/07/2009  09:39    <DIR>        ..
17/03/2009  15:08                282  devsnoe.ftp
02/07/2009  09:36    <DIR>        FLASH0
17/03/2009  15:08                4 029  put771.ftp
02/07/2009  09:32            83 968  update_noe77111_module_2.doc
17/03/2009  15:31                1 027  upfwnoe.bat
                                89 306 bytes
                                3 Dir(s)  8 170 375 680 bytes free

D:\New Folder <2>>upfwnoe 192.168.2.72_
  
```

## 32 NOTES

### 32.1 ROHS and non-ROHS

This firmware is delivered for the following module

140 NOE 77111 non-ROHS board (ie Product Version 9 and previous)

140 NOE 77111 ROHS board (ie Product Version 10 and next)

Version that can be updated are 140NOE77111 V2.00 and upper if Kernel Version is upper than 2.0