

# Updating Firmware on Barionet X8 or IO12 extension units

Section 1 is to learn the handling with the X8 /IO12 and to delete the old firmware.

Section 2 is for troubleshooting for the X8 when the LED 1 is blinking and the LED4 is always on.

At the end you will find some "General information" about the BCL programming.

If you are using a Barionet together with the Barionet Extension unit then the following steps you should do to prepare the communication (for both sections):

- make sure you have also loaded the latest Barionet firmware version, otherwise :
  - download the firmware from the forum's files section or homepage and unzip it
  - open a DOS command prompt and change into the new unzipped directory
  - start the Barionet.bat with the IP address as parameter, i.e. **Barionet 192.168.1.25**
  - follow the procedure on the screen and make sure that it does finishes successfully
  - wait 2 minutes
  - ready
- download the latest "mbt.cob"-file (currently mbt-v15.cob) from the forum's Files section and to upload it to your Barionet's WEB4 area (e.g: **tftp -i 192.168.1.25 put mbt-v15\_S.cob WEB4** )
- (not really required step) set the default jumper (see manual) on your X8, R6 or IO12
- connect/wire (power and RS485) your IO12 or X8 (see manual) to the Barionet.
- connect your PC's serial interface with the Barionet's RS232 interface
- change in the Barionet's setup the serial settings for:
  - the RS232 to 9600, 8 data bits, no parity ,1 stop bit no flow control
  - the RS485 to 19200, 8 data bits, even parity (enabled !), 1 stop bit no flow control
- open on your PC the Hyperterminal application (or any other terminal emulation like Teraterm) with the RS232 parameters of the Barionet
- restart your Barionet

## Section 1 (X8, IO12):

Following I have copied the output and the inputs from my Terminal emulation .  
My inputs are in **Bold!** My comments are in “” ! The overview over the registers you  
can find in the manual ( [http://www.barix.com/index.php?option=com\\_docman&itemid=187](http://www.barix.com/index.php?option=com_docman&itemid=187) ).

If LED2 or LED3 on the X8 is solid on then check the RS485 connection .  
If the LED 4 on the X8 is solid on after reboot then please go to section 2 below !

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Modbus and X8/R6 Test Application

Please select: 1 for factory, 2 for service mode, 3 for loader

**2**

Wadr,reg,val | Radr,reg,num or | sSadr,coil,val | bBadr | ls1,s2 | Cs1,s2 | Fs1,s2 | X ?

**R0,274,1** “ The 0 is for broadcast and the R for reading the Modbus register 274“

READ: 00FF “ response : Modbus address is hex FF = 255 (decimal) “

Wadr,reg,val | Radr,reg,num or | sSadr,coil,val | bBadr | ls1,s2 | Cs1,s2 | Fs1,s2 | X ?

**F25,64** “ delete the firmware on device with address 25-064, the address of your  
device you can find on the sticker of your device.

Thereafter the X8 LED behaviour will change and the X8 will not respond  
to any other commands until you have loaded the firmware again,  
see next chapter.”

Finally press X to leave this mode and change into “3 Loader Mode”.

## Section 2 (X8 only) :

If on the X8 the LED 1 is blinking and the LED4 is solid on, then the X8 was not delivered with the Modbus protocol. With the following steps you can load the Modbus support to your X8.

Following I have copied the output and the inputs from my Terminal emulation.

My inputs and my actions are in **Bold!** My comments are in “” !

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```
Modbus and X8/R6 Test Application
```

```
Please select: 1 for factory, 2 for service mode, 3 for loader
```

```
3
```

```
wrong serial setup - correcting & rebooting ..
```

```
Modbus and X8/R6 Test Application
```

```
Please select: 1 for factory, 2 for service mode, 3 for loader
```

```
loader started, please reset unit. Press F for erase command, S to send firmware
```

```
S
```

```
sending firmware
```

```
end programming
```

```
firmware load complete
```

```
“ from typing S until here needs approx. 30 seconds”
```

**you have to reboot the X8 and the Barionet (power off / on ) now**

```
Modbus and X8/R6 Test Application
```

```
Please select: 1 for factory, 2 for service mode, 3 for loader
```

```
2
```

```
wrong serial setup - correcting & rebooting ..
```

```
Modbus and X8/R6 Test Application
```

```
Please select: 1 for factory, 2 for service mode, 3 for loader
```

```
Wadr,reg,val | Radr,reg,num or | sSadr,coil,val | bBadr | ls1,s2 | Cs1,s2 | Fs1,s2 | X ?
```

**ready now you can go back to section 1**

## 3. General information

Playing with the mbt-v15.cob should give a feeling how to read/write with to Barionet extension units in a BCL application.

The sources of this cob -file is also available, from there you can copy the Modbus stuff (i.e. CRC calculation and frame building) for your own BCL application. You can find this Modbus stuff also as source in the R6\_IO12\_X8 Tool (files section), which is a nice tool to address the extension units by the serial number or to set other values of the initial setup.

There are already some examples to use the R6, IO12 or X8 devices on a Barionet without any additional programming.