

Application Note 1: Using an ETS database entry for BIM M 113 in BIM M 13x

for Siemens Bus Interface Modules
BIM M130, BIM M131, BIM M132 and BIM M135

and for programmed KNX-Processors
184/01, 184/11 and 184/21

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2 Overview

In some cases it could be necessary to use the same ETS database entry for a device where an old BIM M 113 has been replaced with a new BIM M 130, M131, M132 or M135, or by one of the programmed KNX-Processors 184/01, 184/11 and 184/21. This guide describes the steps to enable the download of a BIM M 113 ETS database entry in a BIM M 13x device. After the download the old application software is not executed but a new application program for BIM M 13x that was programmed into the device during manufacturing must work with the communication objects and parameters.

Please keep in mind that there is no guarantee that this procedure will work in all cases.

3 Application program

The easiest way to generate a new application program is to use the BIM-Wizard contained within the BIM-Tools. Generate a new application with the same number of communication objects in the same order and with the same type as they are in the old application program. After generation open it with the IAR Embedded workbench for NEC 78K and develop an application that acts in the same way as the old application. The communication object handling is the same as in the old application, but parameters will be stored with 0x8000 added to the bus address where they are written. That means a parameter that is downloaded to 0x0400 can now be accessed at 0x8400.

To give the application program the possibility to run only if the correct old application program was loaded into the BIM M 13x device use the BIM M 13x API function `U._ReadBCU2Adr100(...)`. The following code shows how to get the application id of the loaded application program:

```
BYTE APID[7];  
.  
.  
.  
U._ReadBCU2Adr100(1, 7, APID);
```

After this the application id of the loaded application program is in the array 'APID'. Check in the new application program at startup if the correct application program was loaded and only in this case start working like the old application program.

4 Adjustment of the linker and project files

An application program for the BIM M 113 starts with the address table at 0x0116 and has a limit at address 0x046F. Therefore the addresses for the address, association and communication object tables could be the same but the start of the new application program must be above 0x046F (bus address) to provide enough space to download the old application program. The bus address 0x046F is translated in the chip address 0x846F. To ensure that the new application program will not be deleted while downloading, it should start at 0x8800, because at this address a new flash segment starts.

Adjust the linker file (*.xcl) by changing the start address of the application segments to 0x8800 in the line

```
-Z (CODE) NEAR_ID, CONST, RCODE, CODE=8800-...
```

For debugging your application with the assigned group addresses in ETS delete the entry "BIM_DEBUG_TABLES" in the project options under item 'Assembler' on tab 'Preprocessor' in the 'Defined symbols' box. After this start debugging and then download your old ETS database entry.

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5 Change of mask version 2.5 to 2.1

Before a download the ETS checks the mask version of the device. To enable the download of a BIM M 113 database entry a change of the mask version in BIM M 13x is necessary. This is done by writing the value 0xFF to the Property 204 (ID) in the object 0. Property manipulation could be done with the KNX Device Editor for example.

6 KNX Registration

The new product based on BIM M 13x able to handle an old BIM M 113 database entry must be again registered at KNX Association. KNX Association requires the new application program to be tested in a KNX accredited test laboratory by repeating at least one of the interworking/functionality test cases of the original product (containing the BIM M113).