FA Technical Report

Product:	**IC-KP2-2HBx; IQH1-…-V1; IQC22-…**
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Document version number:	**V1.0**
Date:	**2019-11-08**

Description

This document describes the commissioning of the function block FB3322 inside the Siemens Step-7 environment. With the FB3322 it is possible to read or write large data volumes from the IQC22 RFID tag without complicated command parameterisations.

The function block is able to read and write the whole memory of the IQC22 (256 Byte) with 5 command cycles. The start address is W#16#0, but can changed by the user. The function block is able to read and write memory areas with a size of 60 Bytes per command cycle.

Requirements:

Evaluation unit:	IC-KP2-2HBx
RFID head:	IQH1-…-V1
RFID tag:	IQC22-
Software:	Function block FB33 (IDENTControl) for commissioning the IC-KP2-2HBx

Inside the function block FB3322, the FB33 used for the command execution. In the first step, you have to configure the FB3322 with the correct values for the input and output addresses. After this, you trigger the initialisation routine with the input #SetRestart at the FB3322. This routine is successfully finished if the output #InitFinish switch to the high signal.

Configuration of the FB 3322 "Command_HeadX":

```
⊟ Netzwerk 2 : Call FB3322 for read/write IQC22 completly

        CALL  "Command_HeadX" , "DB_Command"      FB3322 / DB3322
         Input_Address     :=W#16#200
         Output_Address    :=W#16#200
         HeadNumber        :="HeadNumber"        MB726
         CommandCycles     :="CommandCycles"     MB708
         StartAddress      :="StartAddress"      MW724
         CommandLength     :=B#16#3C
         NumberReadDBHead1 :=331
         NumberWriteDBHead1:=332
         NumberReadDBHead2 :=333
         NumberWriteDBHead2:=334
         NumberInstDB      :=33
         Read              :="ReadCommand"       M700.2
         Write             :="WriteCommand"      M700.3
         End_Command       :="EndCommand"        M700.1
         Error             :="ErrorCommand"      M700.5
         Busy              :="BusyCommand"       M700.4
         NoDataCarrier     :="NoDataCarrier"     M700.6
         StartCommand      :="StartCommand"      M700.0
         InitFinish        :="InitFinish"        M0.0
         SetRestart        :="SetRestart"        M0.1
```

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The function block FB3322 "Command_HeadX" need to call together with the according instanz data block "DB_Command" inside the application program.

Example:
CALL FB3322; DB3322

It is possible to rename the function and the data block. The internal variables used as local variables. No global variables used inside the FB3322.

Input parameter:

Input_Address: [Word]	defines the start address of the input data field of the process data; configuration done in hexadecimal format; the belonging address value is visible in the hardware configuration in step 7 Address 512 := W#16#200
Output_Address: [Word]	defines the start address of the output data field of the process data; configuration done in hexadecimal format; the belonging address value is visible in the hardware configuration in step 7 Address 512 := W#16#200
HeadNumber: [Byte]	defines the channel on which the command should executed; Channel 1: HeadNumber := B#16#1 Channel 2: HeadNumber := B#16#2 This variable should connected to a byte variable of the customer specific application program
CommandCycles: [Byte]	defines the number of executed command cycles inside the read or writes routine of the FB3322. The configuration is in decimal format. The maximal number is 5. The first command Read/write 60 Bytes of user data. The second command read/write 60 Bytes. The last command (No. 5) read/write 16 Bytes. To read or write a specific data quantity following configuration is necessary: 60 Bytes: CommandCycles := 1 120 Bytes: CommandCycles := 2 180 Bytes: CommandCycles := 3 240 Bytes: CommandCycles := 4 256 Bytes: CommandCycles := 5
CommandLength: [Byte]	defines the length of the user data which are inside one telegram; by using the IQC22 RFID tag the length is fixed at 60 Bytes 60 Bytes: CommandLength := B#16#3C It is possible to configure this variable permanently with this value.
NumberReadDBHead1/2:[INT]	defines the number of the data block in which the read in data of head 1/2 are copied while read command execution. The length of the data block should be 256 Bytes (mirror of the complete memory of the IQC22) or it should have the same length like the read in data NumberReadDBHead1 := 331 NumberReadDBHead2 := 333
NumberWriteDBHead1/2:[INT]	defines the number of the data block in which the write data for head 1/2 are copied before starting command execution. The length of the data block should be 256 Bytes (mirror of the complete memory of the IQC22) or it should have the same length like the data that should written NumberWriteDBHead1 := 332 NumberWriteDBHead2 := 334
NumberInstDB: [INT]	defines the number of the according instanz data block of the according function block for the IDENTControl NumberInstDB := 33
Read: [Bool]	defines that a reading cycle will executed (start of the execution triggered by input "StartCommand")
Write: [Bool]	defines that a writing cycle will executed (start of the execution triggered by input "StartCommand")

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In/Out parameter:

StartCommand: [Bool]   defines the start of a command routine by setting to true

SetRestart: [Bool]   start of the initialisation routine to reset the internal function block and configure the tag type; should set after the power up of the device

InitFinish: [Bool]   Initialisation routine successfully finished

Out parameter:

End_Command: [Bool]   signalize with a positive edge the end of a command routine; this output will reset to false if a command routine starts

Error: [Bool]   signalize that an error occurs while execution of a command routine

Busy: [Bool]   signalize that the execution of a command routine is still active; after the start this bit is set to true until the command routine is finished

NoDataCarrier: [Bool]   signalize that a RFID tag leaves the detection range of the head while execution of the command routine

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