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1   Introduction

This document specifies the format of the HWPID used at the DPA protocol.

2   HWIPD

HW profile ID (HWPID) uniquely specifies the functionality of the device, the user peripherals, and FRC it implements, its behavior etc. HWPID as a mandatory part of the DPA request message can also be used to ensure that only certain devices execute DPA request. Unique HWPID values are allocated by IQRF Alliance primarily for standard and certified devices in order to maintain its uniqueness.

HWPID is actually a 2-byte wide value coded using little-endian style. It stores both manufacturer unique ID (primary key) and unique (manufacturer's) product ID (secondary key). There are 4 versions (classes) of the magnitude of the Manufacturer vs. Products groups.

Product						Manufacturer class #1									
bit.15	bit.14	bit.13	bit.12	bit.11	bit.10	bit.9	bit.8	bit.7	bit.6	bit.5	bit.4	bit.3	bit.2	bit.1	bit.0
x	x	x	x	x	x	0	0	0	0	0	0	0	x	x	0
Product ID													Manufacturer ID		

Product						Manufacturer class #2									
bit.15	bit.14	bit.13	bit.12	bit.11	bit.10	bit.9	bit.8	bit.7	bit.6	bit.5	bit.4	bit.3	bit.2	bit.1	bit.0
x	x	x	x	0	0	0	0	0	0	0	x	x[1]	x[1]	x[1]	1[1]
Product ID												Manufacturer ID			

Product						Manufacturer class #3									
bit.15	bit.14	bit.13	bit.12	bit.11	bit.10	bit.9	bit.8	bit.7	bit.6	bit.5	bit.4	bit.3	bit.2	bit.1	bit.0
x	x	x	x	x	x	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x[2]	x	x	0
Product ID								Manufacturer ID							

Product		Manufacturer class #4													
bit.15	bit.14	bit.13	bit.12	bit.11	bit.10	bit.9	bit.8	bit.7	bit.6	bit.5	bit.4	bit.3	bit.2	bit.1	bit.0
x	x	x	x	x[3]	x[3]	x[3]	x[3]	x[3]	x[3]	x[3]	x	x[1]	x[1]	x[1]	1[1]
Product ID		Manufacturer ID													

```
(1)  bit.[0-3]  ≠ [1111] (because of reserved HWPIDs 0x???F)
(2)  bit.[3-9]  ≠ [0000000]
(3)  bit.[5-11] ≠ [0000000]
```

Product   Product ID. In case the range does not fit all devices from the manufacturer an extra manufacturer's ID will be assigned.

Manufacturer   Manufacturer ID.

Summary: there are four classes of Manufacturers:
   1. Up to 4 (*2^2*) manufacturers with up to 64 products for each manufacturer.
   2. Up to 14 (*2^4 - 2^1*) manufacturers with up to 16 products for each manufacturer.
   3. Up to 2032 (*2^11 - 2^4)* manufacturers with up to 16 products for each manufacturer.
   4. Up to 7112 (*2^13 - 2^6 - 2^10 + 2^3)* manufacturers with up to 4 products for each manufacturer.

2.1   *Reserved HWPID Values*

In these cases, there is neither Manufacturer nor Product section.

0x0000   Default HWPID of the device without a handler loaded.
0xFFFF   Used to specify "do not care" HWPID at DPA requests. I.e. any device executes the request.
0x???F   Reserved for non-certified products, examples, development, etc.