

Date: April 24th 2018

to:	from:
Regulatory Certification Body DEKRA Testing and Certification, S.A.U. Parque Tecnológico de Andalucía C/ Severo Ochoa 2 & 6 29590 Campanillas Málaga, España	SALTO Systems, S.L. C/Arkotz, 9, Pol. Lanbarren Oiartzun (Guipuzkoa) 20180 Spain

Related to product:

Type of equipment:	Electromechanical lock
Brand name:	AElement Fusion
Model:	AF0B, AF0D, AF0J
FCC ID:	UKCAFOB
IC:	10088A-AFOB

To whom it may concern,

We hereby declare that the 3 electromechanical locks AF0B, AF0D and AF0J are a family of product with RF capabilities. Our request is to certify the NFC interface present on the 3 products.

These 3 devices all integrate the same chipset from NXP Semiconductors to provide NFC communication capabilities.

MIFARE is the [NXP Semiconductors](#)-owned trademark of a series of chips widely used in [contactless smart cards](#) and [proximity cards](#). The **MIFARE** name covers proprietary technologies based upon various levels of the **ISO/IEC 14443 Type A** 13.56 MHz contactless smart card standard.

ISO/IEC 15693, is an [ISO](#) standard for vicinity cards, i.e. cards which can be read from a greater distance as compared with [proximity cards](#). Such cards can normally be read out by a reader without being powered themselves, as the reader will supply the necessary power to the card over the air (wireless).

Each standard has its own modulation schemes which are described in the document **Operational description** which makes part of this application.

The datasheet of the NXP module does not mention **ISO/IEC 15693** because it is not a feature from the chipset itself.

Nevertheless, we designed the products to also allow the use of the standard **ISO/IEC 15693** even when the chipset has not this mode as a default one.

In the **Operational description** document submitted, we refers to AF0D and AF0B as “MiFare” products because they use the NXP chip but they’ve also coded the **ISO/IEC 15693** standard.

Thus a “MiFare” product, according to our internal nomenclature, has both standards implemented.

Model AF0J is referred to as “HID iCLASS” because this model has a different functionality and the **ISO/IEC 14443 Type A** standard has been stripped down from the transmission modes leaving only **ISO/IEC 15693** standard mode.

The antenna is the same on all 3 products and construction is also equivalent. The main difference is the Bluetooth module used inside of each lock. These modules are already FCC and ISED approved so we’re following the modular approval approach regarding the Bluetooth functioning.

The 2 models AF0B and AF0D are so designed to be able to use both communication modes but the model AF0J is configured to only communicate by mode ISO 15963.

We performed measurements according to FCC rules and the appropriate ISED RSS to all 3 devices but only modulation ISO14443A was tested on model AF0D, as this is the worst case scenario between both NFC modulations, and modulation ISO 15963 was tested on model AF0J.

As the product AF0D includes 2 modules to provide Bluetooth communication, the spurious radiation emissions have been measured on this device taking into consideration the simultaneous transmission of both Bluetooth modules along with the NFC interface.

The product AF0B is a better case from AF0D because it only integrates one Bluetooth module.

The test report for model AF0J is applicable to all 3 products.

The evaluation of this request for the complete family must take into account 2 test reports.

- **53613RRF006A2s.pdf**
Tested device AF0D.
Simultaneous transmission of both NFC modes (mode ISO 14443A, and ISO 15693) and the 2 Bluetooth modules has been accounted.
The results are applicable to AF0B because this model is a better case.
- **53613RRF005s.pdf**
Tested device AF0J.
Simultaneous transmission of NFC (mode ISO 15963, only modulation used by this device) and the Bluetooth module has been accounted for.

Sincerely,

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