Advanced Card Systems Ltd.
Card & Reader Technologies

AEM004

Contactless Smart Card Reader/Writer

User Manual V1.04

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1.0. Introduction

The AEM004 (Contactless Smart Card Reader/Writer) is an interface for the communication between a computer (for example, a PC) and a contactless card. Different types of contactless cards have different commands and different communication protocols. This prevents in most cases the direct communication between a contactless card and a computer. The AEM004 (Contactless Smart Card Reader/Writer) establishes a uniform interface from the computer to the smart card for a wide variety of cards. By taking care of the card specific particulars, it releases the computer software programmer of getting involved with the technical details of the smart card operation, which are in many cases not relevant for the implementation of a smart card system.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM

2.0. Integration instructions for host product manufacturers according to KDB 996369 D03

2.1. List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C has been investigated.

2.2. Specific operational use conditions

This module is certified connecting to specific host for indoor application.

2.3. Limited module procedures

The module does not have its own RF shield. The input voltage is 4.75-5.25V. RF power is pre-configured and is tested against FCC requirement with MSO 1350 CL E3(Model:MPH-SE012A).
Only MSO 1350 CL E3 (Model:MPH-SE012A) can be used as host.

2.4. Trace antenna designs

Not applicable.

2.5. RF exposure considerations

To maintain compliance with FCC's RF Exposure guidelines, this equipment should be installed and operated with minimum distance of 20cm from your body.

2.6. Antennas

This radio transmitter FCC ID: V5MAEM004 has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. The antenna is permanently fixed. It cannot be replaced.

No.	Antenna Type	Antenna Gain	Impedance	Frequency Range
1	PCB	0dBi	50Ω	13.56 MHz

2.7. Label and compliance information

The host product must be labeled in a visible area with the following "Contains FCC ID: V5MAEM004"

2.8. Information on test modes and additional testing requirements

Module manufacturer tested AEM004 in MSO 1350 CL E3 (Model:MPH-SE012A) in specific condition.

Any change should be tested against specific FCC rule parts.

When the module is installed into different host devices, the host manufacturers must test the host device accordance with the below C2PC test plan.

Test item	Requirement
Fundamental*note 1	The fundamental should continue compliance with the rule part.
Band edge*note 2	The band edge should continue compliance with the rule part.
Spurious radiated emission*note 2	The spurious radiated emission should continue compliance with the rule part.

Note 1: An increase in measured field strength over the module's tested field strength is the result of host installation, such as signal reflections, and this increased field strength value remains compliant with the rules. In that case, a statement is required in the C2PC report indicating that "an increase in field strength". And the manufacturer, lab, and TCB must investigate to determine if the initial module tested in a standalone module was improperly granted. The module may require a new FCC ID. An inquiry can be submitted to review a specific case, but the C2PC can only be given once the issue is resolved.

Note 2: Any radiated emission and band edge that does not comply with regulations must be corrected then the C2PC can only be granted once resolved.

Note 3: The test method is accordance with the ANSI C63.10-2013.

2.9. Additional testing, Part 15 Subpart B disclaimer

Module manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 Subpart B.

3.0. FCC Warning Statement

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

4.0. Canada ICES-003 Certification and Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe b est conforme à la norme nmb-003 du canada.

This device is intended only for OEM integrators under the following condition: The transmitter module may not be co-located with any other transmitter or antenna. As long as the condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:

Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne. Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the ISED cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

Any company of the host device which install this modular with limit modular approval should perform the test of radiated emission and spurious emission according to RSS-210 and RSS-Gen requirement, only if the test result comply with RSS-210 and RSS-Gen requirement, then the host can be sold legally.

Note Importante:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l' ISED ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada. toute entreprise de l'hôte qui installent ce dispositif modulaire avec limite approbation devrait effectuer l'essai des modules et des rayonnements non essentiels des émissions rayonnées selon RSS-210 et le cnr - gen, seulement si le résultat d'essai conforme RSS-210 et le cnr - gen, puis l'hôte peut être vendu légalement.

End Product Labeling

The final end product must be labeled in a visible area with the following:

Contains IC: 7710A-AEM004.

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: Contient des IC: 7710A-AEM004.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

This radio transmitter IC: 7710A-AEM004 has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below:

Cet émetteur radio IC: 7710A-AEM004 a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous:

No.	Antenna Type	Antenna Gain	Impedance	Frequency Range
1	PCB	0dBi	50Ω	13.56 MHz

Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Les types d'antennes non inclus dans cette liste qui ont un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour l'utilisation avec cet appareil.

5.0. Canada IC Warning Statement

This device complies with Innovation, Science, and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil nedoit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device is compliance with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance.

Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes.