COSEC CPM EM PROX

Quick Installation Guide

MATRIX
SECURITY SOLUTIONS

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Important Safety Instructions

When using your COSEC CPM EM PROX Proximity Reader, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons. In addition, the following should also be followed:

1. Read and understand all instructions.

2. Follow all warnings and instructions marked on the product.

3. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning. If necessary, use mild soap.

4. Do not use this product near water, such as bath-tub, wash bowl, kitchen sink, laundry tub, in a wet basement, or swimming pool.

5. This product should be operated only from the type of power source indicated on the marking label in the end/host product. If you are not sure of the type of power supplied to your installation site, consult your dealer or local power company.

6. Never push objects of any kind into this product or through the cabinet slots as they may touch voltage points or short out parts that could result in fire or electric shock. Never spill liquid of any kind on the product.

7. To reduce the risk of electric shock, do not disassemble this product by yourself, but take it to qualified service whenever service or repair is required. Opening or removing the covers may expose you to dangerous voltages or other risks. Also, incorrect reassembly can cause electric shock when the unit is subsequently used.

8. Unplug this product from the Direct Current (DC) power source and refer to qualified service Personnel under these conditions:

a. When the power supply cord or plug is damaged or frayed.

b. If liquid has been spilled on the product.

c. If the product does not operate normally after following the operating instructions in this manual. Adjust only those controls that are covered by the operating instructions in this manual. Improper adjustment of other controls that are not covered by this manual may damage the unit and will often require extensive work by a qualified technician to restore normal operation.

d. If the product exhibits a distinct change in performance.

General

The MATRIX COSEC CPM EM PROX MODULE is an elegant looking reader which can be mounted to metal door frame (mullion) or any flat wall surface. MATRIX COSEC CPM EM PROX MODULE Reader uses an electronic module in epoxy potting that ensures successful operation even in harsh environments.

The COSEC CPM EM PROX MODULE design eliminates using external amplifiers, filters, antenna driver and even microcontroller. Approximately 6K flash memory is free for custom specific applications.

The reading distance varies according to antenna size. The practical read range is between 5-12 centimeters. Typically read range is 8cm.

Specification

Model	COSEC CMP EM PROX
Read Range	5-12 cm
Write Range	2-8 cm , changes according to antenna size)
Power/Current	5-5.5VDC (12VDC adapter through host product)
Operating Temperature	-40 to 85°C
Dimension in mm	71.4 x 43.4 x 15.2
Weight	29 g

Working Frequency :

COSEC CPM EM PROX module working frequency is from 120 KHz to 130.43 KHz.

Purpose : When 125KHz EMPROX module is inserted in the End product (door controllers), due to some environmental disturbance the end product may not work at 125KHz and which may result in poor card reader range . To achieve the best READ RANG we have kept the option to modify the frequency.

Installation

Insert the RF reader module “COSEC EM PROX” , matching the connector pins on the module with those provided on the card reader slot .

Antenna

COSEC CPM EMPROX RFID Antennas are winded wire gauge with different dimensions and having around 900µH +/- 20µH inductance value with a DC resistance of 12-17ohm.

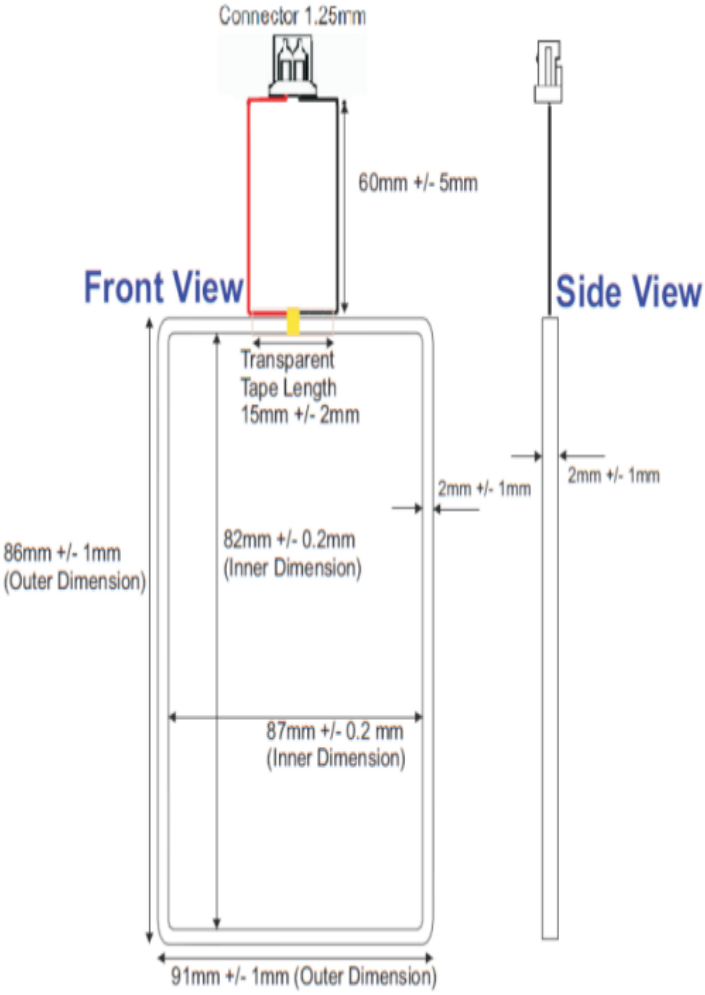
The module supports for different Matrix make antennas, the intentional radiator (COSEC CPM EM PROX) may be operated with the antenna with which it is authorized.

Supports following antenna;

1. **Standard LF Coil Antenna (COSEC PVR)**

Parameter Specifications:

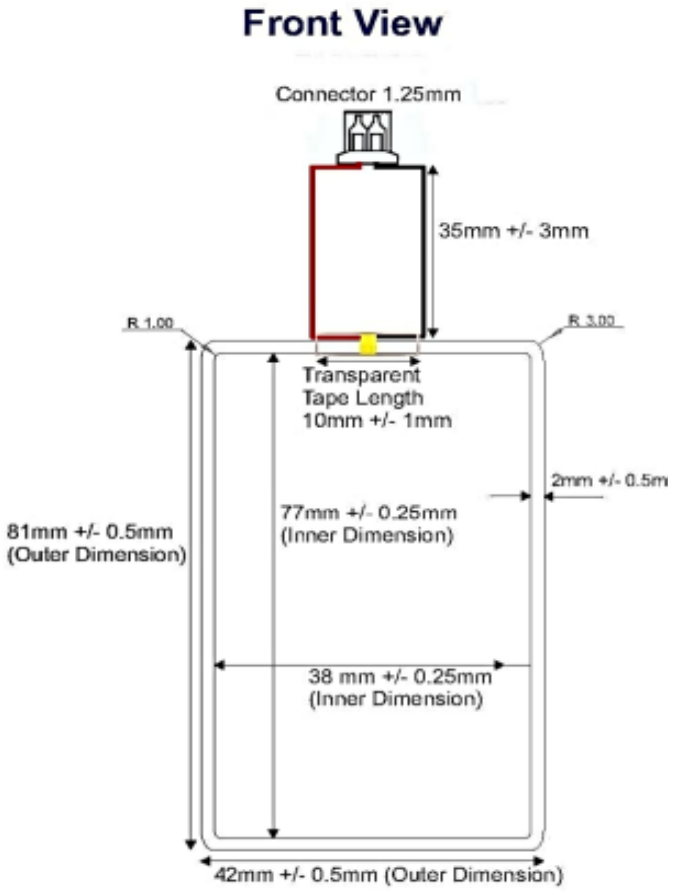
Frequency: 120KHz to 130.43KHz
Inductance: 900µ H +/- 20µ H
DC Resistance: 12 ohms +/- 10%
Wire Gauge: 36 AWG or Large


Connector 1.25mm
60mm +/- 5mm
Front View
Side View
Transparent
Tape Length
15mm +/- 2mm
2mm +/- 1mm
2mm +/- 1mm
82mm +/- 0.2mm
(Inner Dimension)
86mm +/- 1mm
(Outer Dimension)
87mm +/- 0.2 mm
(Inner Dimension)
91mm +/- 1mm (Outer Dimension)

2. Premium LF Coil Antenna (COSEC VEGA)

Parameter Specifications:

Frequency: 120KHz to 130.43KHz
Inductance: 900µ H +/- 20µ H
DC Resistance: 12 ohms +/- 10%
Wire Gauge: 36 AWG or Large



3. NGT LF Coil Antenna (COSEC NGT)

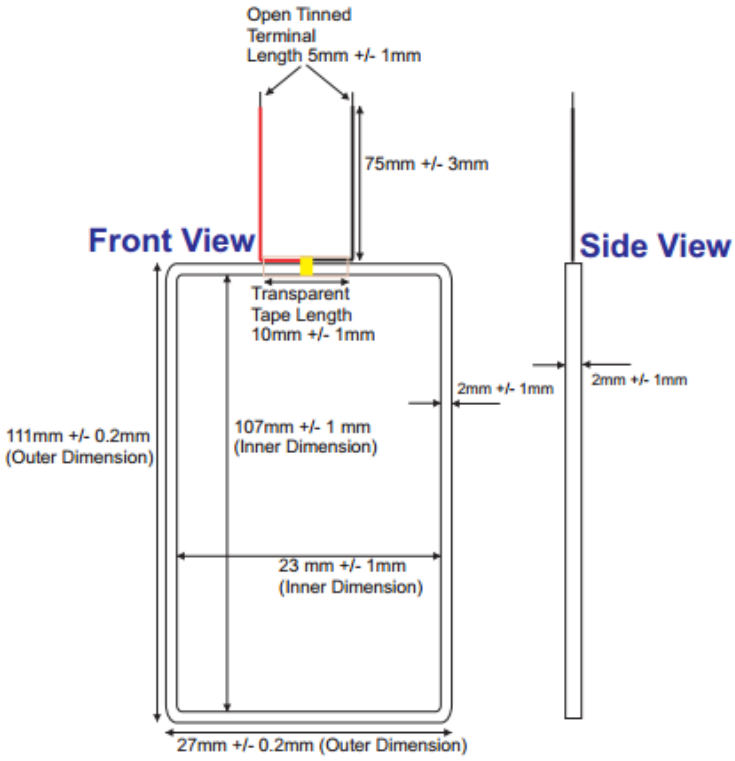
Parameter Specifications:

Frequency: 120KHz to 130.43KHz

Inductance: 900µ H +/- 20µH

DC Resistance: 12 ohms +/- 10%

Wire Gauge: 36 AWG or Large



4. CDC FP LF Coil Antenna (COSEC PATH)

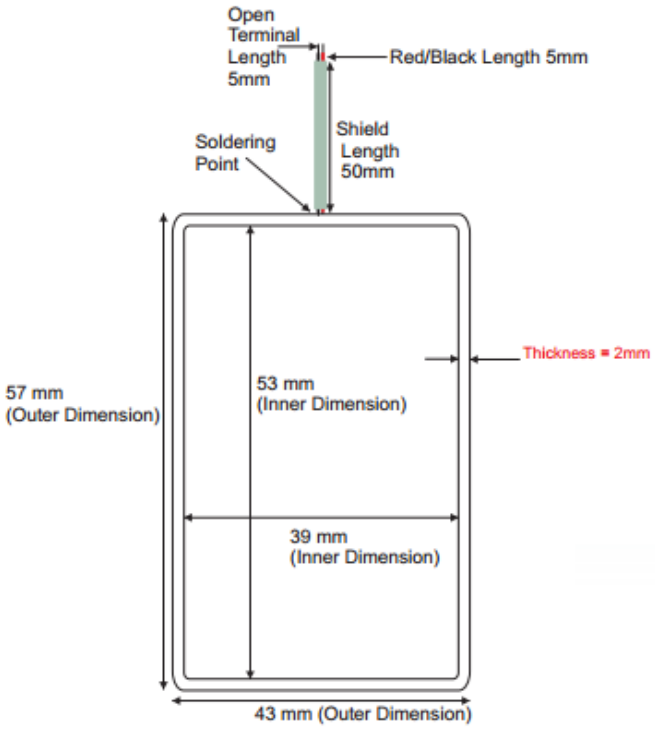
Parameter Specifications:

Frequency: 120KHz to 130.43KHz

Inductance: 900µ H +/- 20µ H

DC Resistance: 17ohms +/- 10%

Wire Gauge: 36 AWG or Large



LED indication in HOST product

LED Indications for Events in Normal State

LED	Color	Cadence	Meaning
Allowed	Green	Continuous ON	User Authenticated, allowed. Accompanied by a long beep.
Denied	Red	Blinking 200ms on - 200ms off	User Authentication failed, denied. Accompanied by three short beeps.
Alarm	Red	Blinking 200ms on - 200ms off	Major Alarm
	Red	Continuous ON	Critical Alarm

Operation

Matrix COSEC CMP EM PROX RFID (radio-frequency identification) is the wireless non-contact use of radio-frequency electromagnetic fields, for the purposes of identifying and tracking tags attached to objects.

The reader continuously emits RF carrier signals, and keeps observing the received RF signals for data.

The presence of a tag modulates the RF field, and the same is detected by the reader.

The passive tag absorbs a small portion of the energy emitted by the reader, and starts sending

modulated information when sufficient energy is acquired from the rf field generated by the reader.

The reader demodulates the signals received from the tag antenna, and decodes the same for further processing.

This EM PROX reader works with 125 KHz tags in credit card size shape cards
The EM4100 protocol is used. When you approach an RFID Tag close enough (5-8 cm) to the reader's coil, the reader will read the 10-digit unique ID of the Tag and transmit it as ASCII characters through the serial output with 2400 bits per second.
The circuit in the buzzer in end product/Door controller beeps when a Tag is read successfully.

Matrix COSEC EM PROX Module support the following frequencies;

- 120.00 KHz
- 121.21 KHz
- 122.45 KHz
- 123.71 KHz
- 125.00 KHz
- 126.32 KHz
- 127.66 KHz
- 129.03 KHz
- 130.43 KHZ

IMPROTANT: The modification/change in frequency is possible only through Matrix Door controller with the help of Service engineer.

FCC Compliance Statements

This device complies with Part 15 of the FCC rules. Operation is subject to 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 of this device.

The changes or modifications not expressly approved by the party responsible for Compliance could void the user's authority to operate the equipment.

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter, except if installed in compliance with FCC Multi Transmitter procedures.

To OEM Installer:

1. FCC on the final system must be labeled with "Contains FCC ID: 2ADHNCOSEC01" or "Contains transmitter Module FCC ID: 2ADHNCOSEC01 "

2. In the user manual, final system integrator must ensure that there is no instruction provided in the user Manual to install or remove the transmitter module.

3. Transmitter module must be installed used in strict accordance with the Manufacturer's instructions as described in the user documentation that comes with the product.

The user manual of the final host system must contain the following statements:

This device complies with Part 15 of the FCC rules. Operation is subject to 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 of this device.

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

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter, except if installed in compliance with FCC Multi Transmitter procedures.

FCC Class B Notice

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. 2. This device must accept any interference received, including interference that may cause undesired operation.

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/television technician for help.

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