



INTRODUCTION

Introducing **MP90A**, GIGA-TMS's latest released RFID Module. It not only equips build-in SAM socket, but also supports multiple ISO standards.

Other than contactless RFID cards, MP90A also supports SAM card. Users do not need to understand the complicated ISO/IEC14443 and ISO7816 standard to operate MP90A. With simple command through RS232/USB, users may master multiple RFID standards easily.

MP90A supports wild ranges of transmission protocols and transponder ICs available on the market. Designed to meet the requirements of both secure personal identity verification and supply chain management applications,

MP90A is ideal for access control, as well as Automatic Fare Collection (AFC), ticketing, vending and mobile solutions

Features

- Enhanced anti-collision algorithm for multi-card handling
- Full 3DES/AES crypto methods
- USB and RS232 Interface, 19200 N,8,1
- T=CL ISO7816 interface supported
- Built in SAM Socket
- Full access to data of contactless memory, high security and microcontroller-based cards

FEATURES

- **Supported Protocols**
 ISO14443A, all bit rates : 106 kbps
 ISO15693, all modes
 Downlink 1 of 4 and 1 of 256
 Uplink 6.6/13/26/53 kbps with 1 & 2 sub-carrier
 ISO14443B all bit rates : 106 kbps
- **Supported Standard Format**
 NFC 1~4 TAGs
 ISO14443A
 ISO14443B
 ISO15693
 ISO18092 Felica UID ONLY
- **Ultra small outline L90 x W30 x H8 mm**
- **Information Support**
 Support DLL and library
- **Plug-in fitting for 13.56Mhz**
- **Serial TTL Interface.**
- **Baud Rate 19200,N,8,1**
- **Power supply Active 130mA @5VDC**
- **Firmware Update**

Standard Configurations:

- ✓ **MP90AH----USB HID Interface**

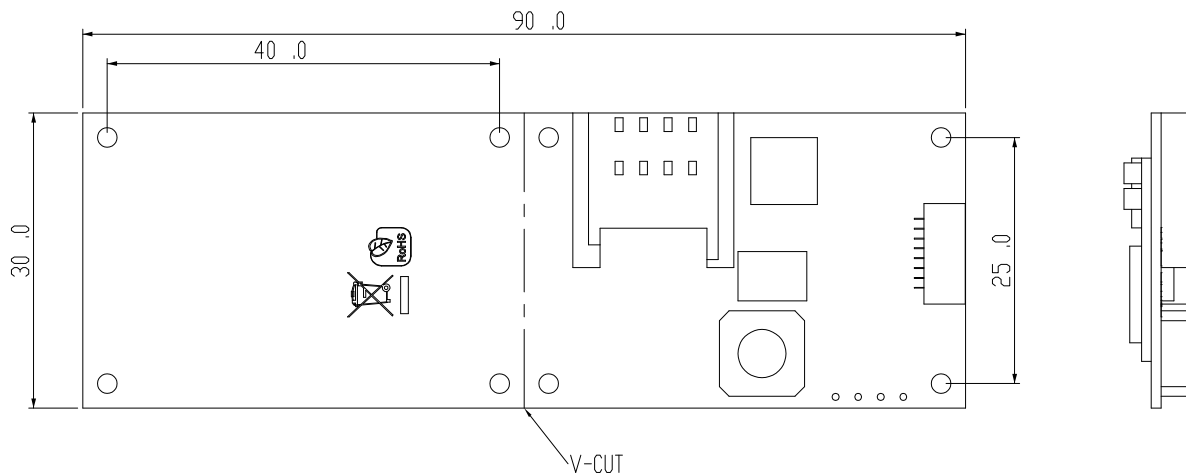
※ Specification is subject to change without notice.

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- ✓ Custom device programming is available

SPECIFICATIONS:

POWER REQUIREMENT	5V regulated for Operate Voltage . A linear regulator is recommended.
CURRENT REQUIREMENTS	Active 130mA @5VDC W/O Antenna
INTERFACE	USB HID Interface
Supported Protocols	ISO14443A, all bit rates : 106 kbps ISO15693, all modes Downlink 1 of 4 and 1 of 256 Uplink 6.6/13/26/53 kbps with 1 & 2 sub-carrier ISO14443B all bit rates: 106Kbps ISO 7816 for chip
Card Type	ISO 14443A MIFARE™Standard, MIFARE 4k, MIFARE Ultralight, MIFARE Ultralight C, MIFARE DESFire®, MIFARE DESFire EV1, ISO 14443B Smartcard ISO14443B, SRI4K, SRI512 ISO 15693 SIC5600, ICODE-SLI, ICODE-SLI-L, ICODE-SLIS Read payware and paypass and E-password NFC TAG 1~4 supportive ISO18092 Felica READ UID
FERQUENCY	13.56MHz standard.
TRANSPONDER	Read / Write
Baud Rate	19200,N,8,1
DIMENSIONS	DIP: 90(L) x 30(W) x 8(H) mm
WEIGHT	1.1g
ENVIRONMENT	Operating Temp : -0°C ~ +50°C Humidity : 10 ~ 90 % relative

PACKAGE DESCRIPTION

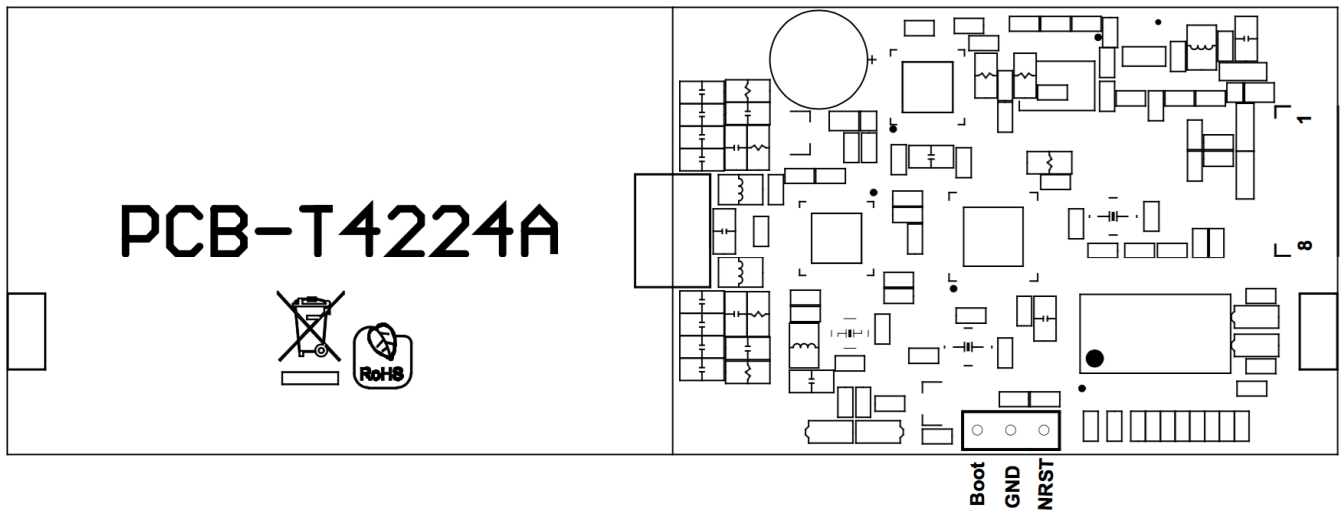


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PIN DEFINE & PIN DIAGRAMS:



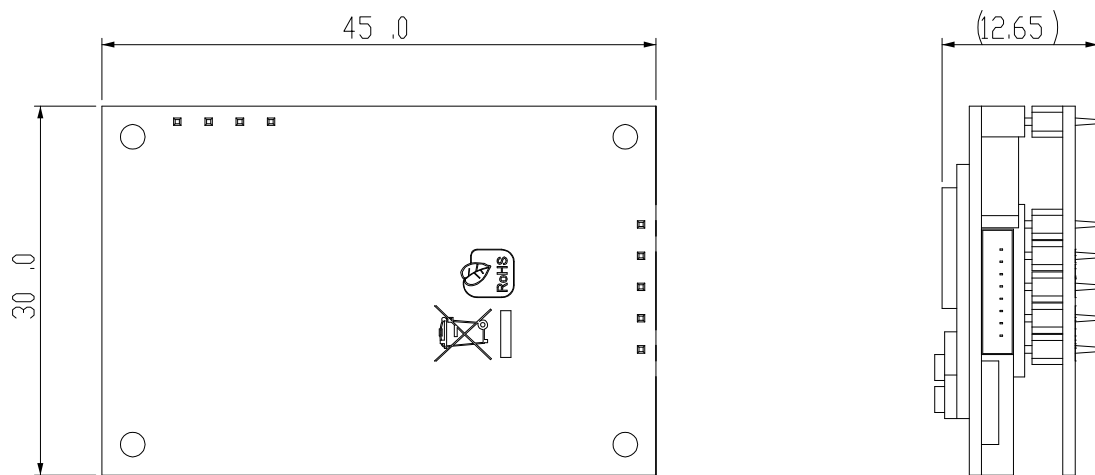
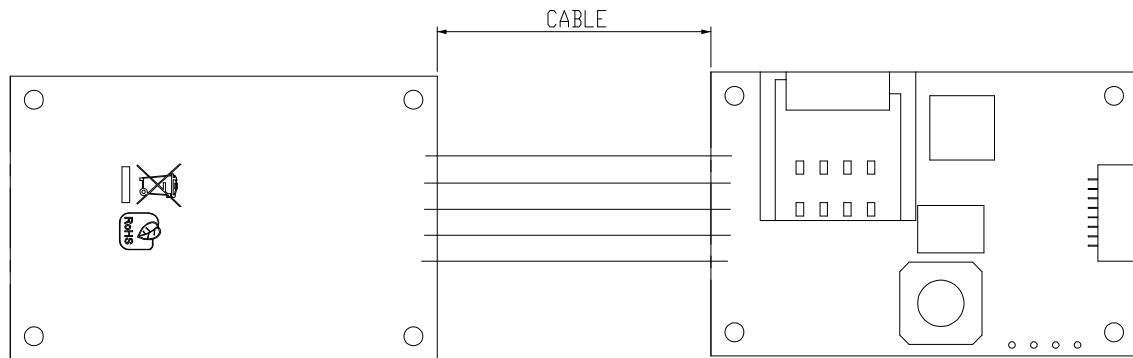
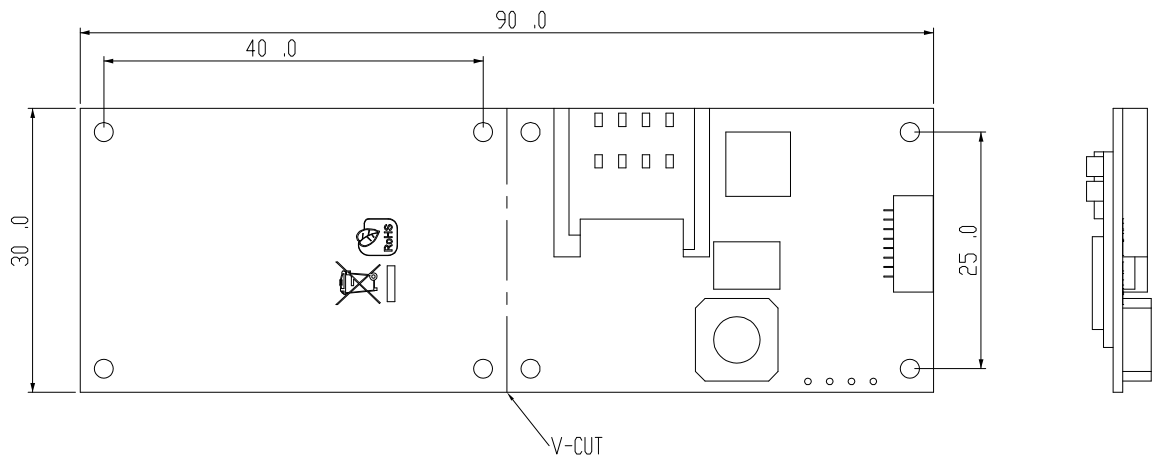
MP90AH- 00	
Description	USB (USB HID)
Pin Numbers	8
Connector	JST SH 1.0mm
PIN#	
1	+5 VDD
2	D-
3	D+
4	GND
5	SHIELD
6	--
7	TXD (Serial TTL)
8	RXD (Serial TTL)

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Appendix A



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Appendix B

Federal Communication Commission Interference Statement

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 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 Caution:

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

The module must be installed in **Windows PC and tablet PC or Andorid tablet PC**

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not 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 FCC authorization.

End Product Labeling

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

“Contains **FCC ID: WXAMP90A**”.

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.

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Appendix C

Canada Statement

This device complies with Industry Canada's licence-exempt RSSs. 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'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit 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 final end product must be labelled in a visible area with the following:

The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Contains transmitter module IC: 21494-REMEDIRFID1

The module must be installed in **Windows PC and tablet PC or Andorid tablet PC**

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

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