

# **IDTECH<sup>®</sup>**

**Value through Innovation**



## **VP3300 OEM EXT User Manual**

**FC CE**

**80149521-001 Rev. B**

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#### **FCC Regulatory Compliance**

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 user manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

**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 NFC antenna.
- Increase the separation between the equipment and the 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.

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The NFC antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter and must be installed to provide a separation distance of at least 20cm from all persons.

**IC Compliance Warning**

Operation is subject to 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.

**Cautions and Warnings**



Warning: Avoid close proximity to radio transmitters which may reduce the capability of the reader.

**Revision History**

Rev	Date	Changes	By
A	11/22/2023	Initial Release	AC
B	02/29/2024	Updated mounting diagrams.	CB

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## 1. Overview

ID TECH's VP3300 OEM has received recognition for its versatility, enabling seamless integration in a wide range of settings. VP3300 OEM EXT emerges with additional enhancements that offer an expanded operating temperature range and an IP65-rated sealed connector to evolve into the next-generation product. VP3300 OEM EXT is an OEM module that includes a Contact EMV and Contactless NFC reader. The OEM module provides the ultimate flexibility by allowing the ICC connection to be installed remotely from the main contactless module. It is an optimal choice of reader for unattended sectors like Electric Vehicle (EV) charging stations, kiosk manufacturers, and more.

### 1.1. Universal SDK

Developers can integrate VP3300 OEM EXT into terminal systems with minimal effort using ID TECH's Universal SDK, available for Windows, Android, or iOS. To obtain the SDK and other useful utilities, demos, and downloads, be sure to check the Downloads link on the ID TECH Knowledge Base (no registration required).

### 1.2. Encryption

VP3300 supports industry-standard Triple DES or AES encryption and has DUKPT-based key management (per ANSI X.9-24). Configurable encryption can use data variants as desired. ID TECH operates a certified Key Injection Facility, capable of injecting your unit(s) with any required keys. Consult your ID TECH representative to learn about all available options involving key injection.

### 1.3. General Features

- Micro-USB port and RS232 support for communications and power
- ICC support: EMV Level 1 and EMV L2 approvals. All L1 & L2 on the device
- Contactless transaction support via Near Field Communication (NFC)
- LED status indicator
- Audio feedback
- Field upgradable firmware
- Standby mode for low power consumption
- Compact and ergonomic design to integrate with a variety of devices
- Available with a sturdy stand, for tabletop use
- TDES and AES 128 encryption support
- DUKPT key management
- Software Development Kits for Windows, Android, iOS
- One-year manufacturer's warranty

## 1.4. ICC Contact Card Features

- EMVCo Contact Level 1 & 2 Compliant

## 1.5. Contactless (NFC) Features

- Poll on Demand Mode:
  - EMV CTLS L1
  - Visa
  - Mastercard
  - AMEX
  - Discover
  - Apple Pay
  - Apple VAS
  - Google Pay
  - Google Pay Smart Tap 2.1
  - Samsung Pay
  - Interact
- Pass-thru Mode:
  - ISO 14443 Type A&B
  - ISO 18092 (including P2P)
  - MIFARE Classic 1K/4K
  - MIFARE Ultra light & MIFARE Ultra light EV1
  - MIFARE Ultra light C
  - MIFARE DESFire
  - MIFARE DESFire EV1 4K
  - MIFARE Plus
  - FeliCa™
- Smallest EMV certified Antenna

## 1.6. Other Agency Approvals and Compliances

- CE (EN55022/EN55024, Class- B)
- FCC (Part 15, Class-B)
- RoHS (DIRECTIVE 2011/65/EU)
- REACH
- EMV Contact L1&L2
- EMV Contactless L1
- TQM

## 2. Product Specifications

Physical	
<b>Dimensions</b>	64mm x 64mm x 12mm (L x W x H)
<b>*Antenna Enclosure</b>	(ICC module size is not included)
<b>Structure Material</b>	Plastic, PC UL 94V-0
<b>Texture</b>	MT11010
<b>Weight</b>	66g (Including Cable)
<b>Interface</b>	USB 2.0, RS232, USB-KB
Environmental	
<b>Operating Temperature</b>	-40 °C to 85 °C
<b>Storage Temperature</b>	-40 °C to 85 °C
<b>Operating Humidity</b>	Up to 95%, non-condensing
<b>Storage Humidity</b>	Up to 95%, non-condensing

### 2.1. Parts List

- USB2.0 Connector Cable to USB-A (power+ communication): 80121214-001
- RS232 Connector Cable to RS232 (communication) and USB-A (only power): 80149274-001



### 3. LED and Audio State Indicators

Device State	LED1	LED2	LED3	LED4	Sound
Run Mode	● blink	○ off	○ off	○ off	None
Transaction Started	● on	○ off	○ off	○ off	None
Contactless Transaction Successful	● blink once	● blink once	● blink once	● blink once	One long beep
Contactless Transaction Retry	○ off	○ off	○ off	○ off	Three short beeps
Contactless Transaction Failed	○ off	○ off	○ off	○ off	Two short beeps
Contact Transacting	● blink	○ off	○ off	○ off	None

#### 3.1. Power Consumption

No	Item	Specification	Note
1	Power Input: Vin	DC +5V	Normal operating input range
2	Power Consumption	70mA (Max) 500mA (Max) 90mA (Max)	Idle status (RUN mode) Contactless operating status Only ICC operating status

## 4. IDTECH Universal SDK: Software Development Support

ID TECH offers a Universal SDK (available for iOS, Android, or Windows) to enable rapid application development with any model of VP3300 as the target device. The languages supported include Objective C (on iOS), Java (on Android), and C# (on Windows). The Universal SDK includes rich, powerful libraries that make communication with VP3300 OEM EXT comparatively easy while greatly facilitating debugging.

Normally, development of applications that take advantage of VP3300 OEM EXT capabilities can be done in a high-level language like Java or C# (using convenience objects and data structures), obviating the need to send hex-code commands directly via USB-HID. Nevertheless, if you need to communicate with the device via audio jack or via USB-HID, it is possible to do so. For a command reference for VP3300-series products, consult the *NEO Interface Developers Guide* (IDG), P/N 80139403-001. This document includes not only low level (firmware) commands but error codes, response codes, and information on various default settings.

## 5. Updating Firmware

ID TECH strongly recommends updating firmware via the Universal SDK. Consult the Universal SDK Guide for your desired platform (included in the ZIP file downloaded from the Kiosk V product page) for integration details.

### 5.1. Universal SDK Demo App

The Universal SDK comes with a rich, fully featured demo app that allows users to run the reader in USB mode. Visit the [Knowledge Base](#) to download the Universal SDK Demo app as a standalone executable, separate from the SDK; the full SDK is not required to use the demo. Be sure to check out the [Universal Demo QuickStart Guide](#) for more detailed instructions about using the Universal SDK Demo app.

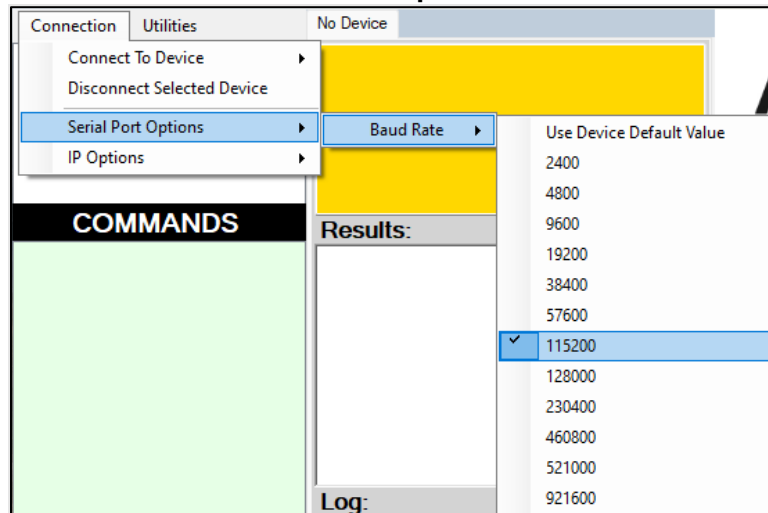
Follow the steps below to run the Universal SDK Demo app on Windows:

1. Plug the device into the host device with a supported communication cable (not included).
2. Double-click the UniversalSDKDemo.exe file and allow a few seconds for the main window to appear (see illustration below).

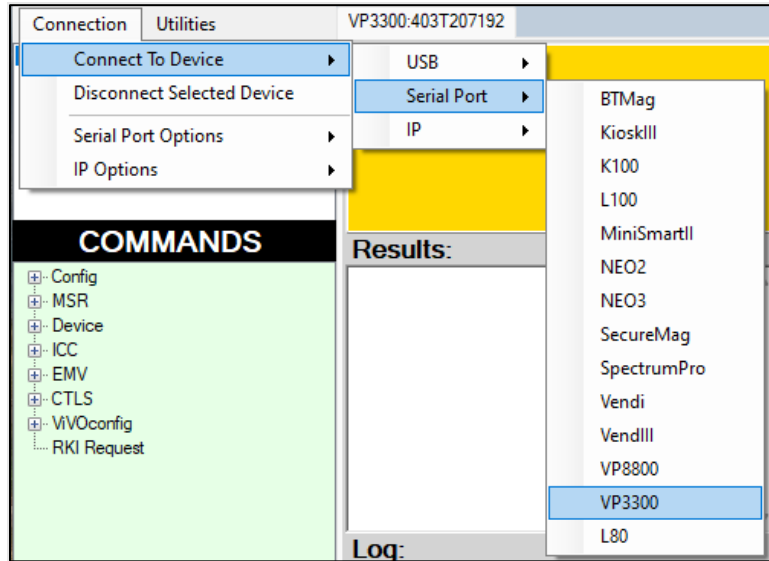
### 5.2. Updating Firmware via the USDK Demo App

Follow the steps below to update firmware via the USDK Demo app.

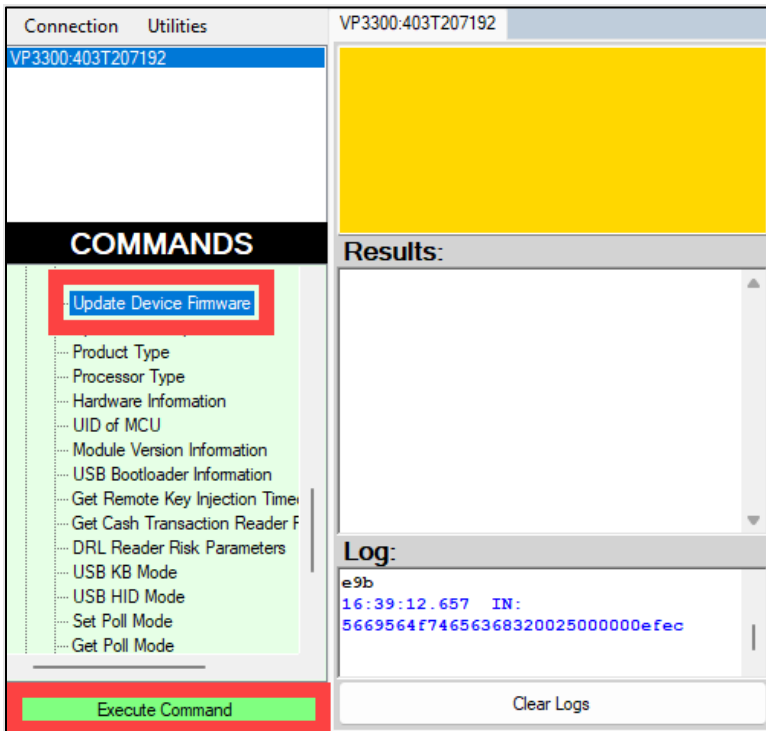
1. Before you begin, make sure to download the firmware update from the [VP3300 OEM EXT product page](#) and extract the files to your computer.
2. Before connecting the reader to your computer, open the USDK Demo app.
3. Follow these steps when using an RS-232 connection (if using USB, skip to step 4):
  - a. Select **Connection > Serial Port Options > Baud Rate > 115200**



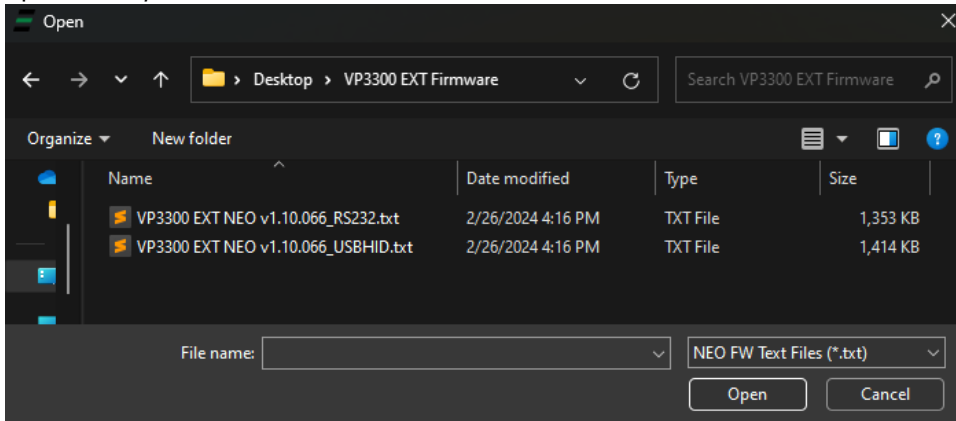
- b. Connect your VP3300 OEM EXT reader to your computer. In the USDK Demo app, select **Connection > Connect to Device > Serial Port > VP3300**.



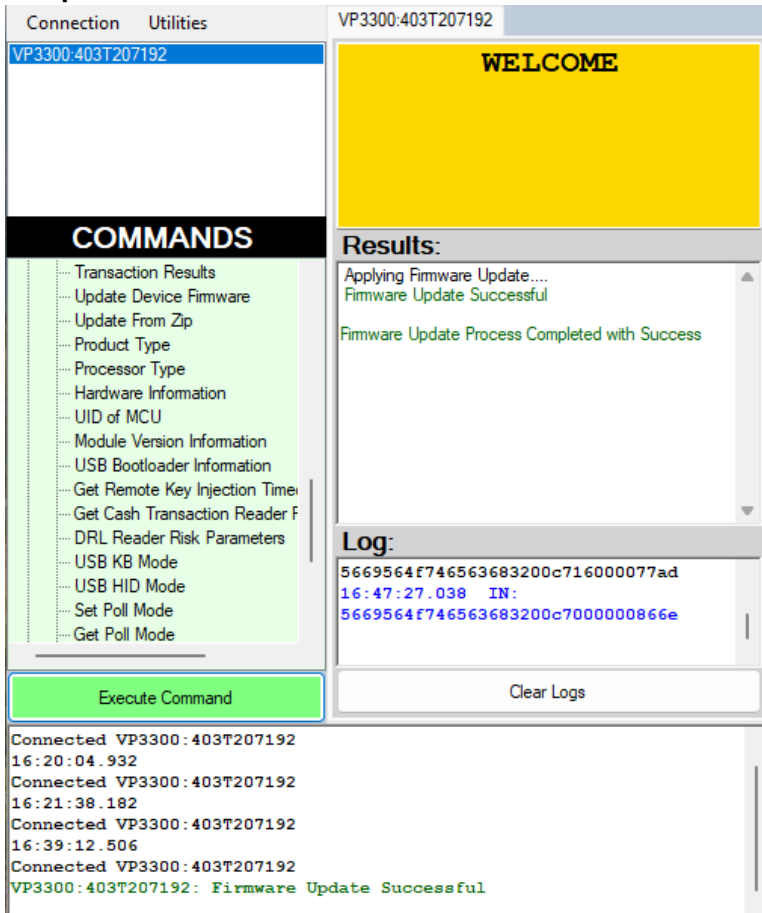
- c. In the Data window, choose **COM port 3**.
4. In the Commands window, select **Device > Update Device Firmware**, then select **Execute Command**.



- Locate the directory where you saved the firmware update files and select the firmware update for your connection—either **RS-232** or **USB-HID**.



- The USDK Demo app will run the firmware update process, which typically takes two to three minutes. When the process finishes, the Results panel displays **Firmware Update Process Completed with Success**.



## 6. Troubleshooting

The section below provides troubleshooting instructions.

### **Set Configuration Defaults (04-09)**

- Reset the group configurations to factory defaults. Contact (ICC L2) CAPKs are erased.
- Do not modify Transaction Category code (tag 9F 53), Terminal IFD Serial Number (tag FF F2), Application Capability (tag FF F3), Enable/Disable Burst Mode (tag FF F7), LCD font size (tag FF F9), LCD delay time (tag FF FA)

### **Set Configuration Defaults and Keep Encryption Key (04-0A)**

- Reset the Low Power Consumption Configuration to factory defaults.
- Do not modify LCL-KEK, data encryption Key, encryption type, Encryption Status, Serial Number (tag DF 89 1A), Other working keys (ECC Keys, Salt, PEK)

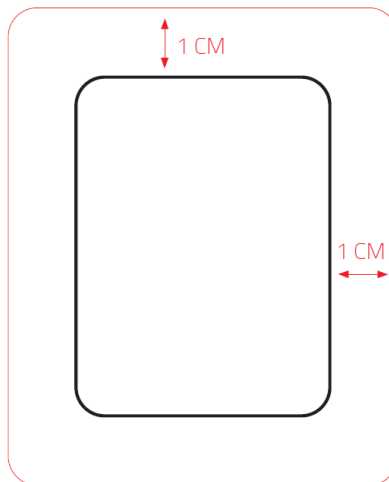
## 7. VP3300 OEM EXT Mounting Guidelines and EMV Contactless Logo Requirements

Note that if the VP3300 OEM EXT is mounted behind any kind of casing or cover, that assembly MUST follow EMV requirements regarding contactless logo size and position. See [EMVco Contactless Symbol Reproduction Requirements](#) for details.

### 7.1. VP3300 OEM EXT Mounting Requirements

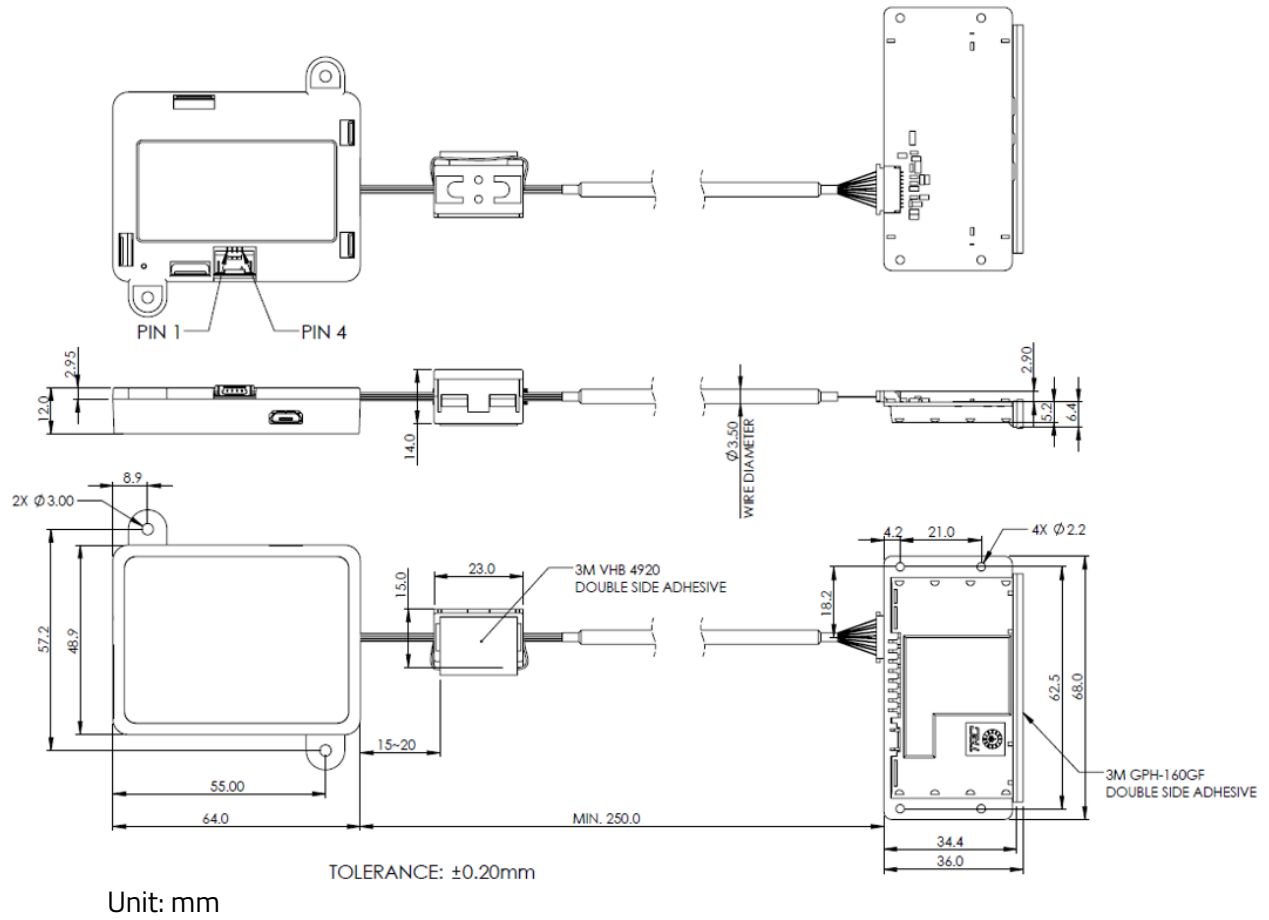
Note that the VP3300 OEM EXT antenna's RF field antenna is sensitive to the proximity of metal. There are three options for mounting the VP3300 OEM EXT in or on a metal surface:

- Mount with the front of the VP3300 OEM EXT at least 1cm *forward* of any metal.
- Mount with the front of the VP3300 OEM EXT at least 1cm *behind* any metal. Note that this will reduce the effective range of the antenna.
- Mount the front of the VP3300 OEM EXT flush with the metal, but allow a minimum of 1cm distance from the metal, as shown below:



## 7.2. Mounting Diagrams

The section below provides mounting diagrams for VP3300 OEM EXT readers.



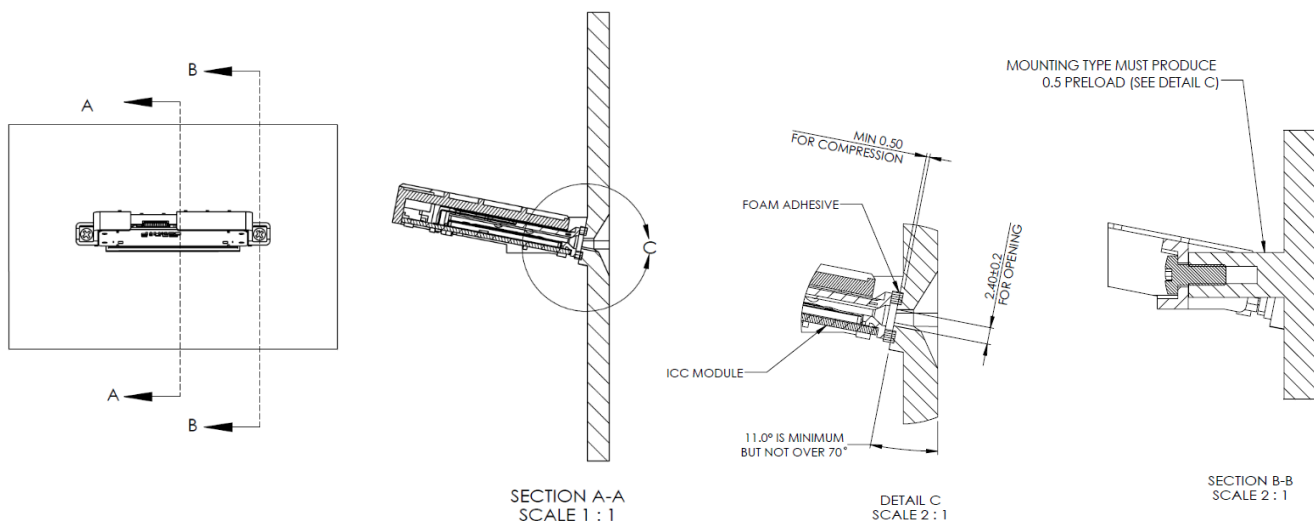


### 7.3. VP3300 OEM EXT ICC module mounting guidelines

When installing an ICC module of VP3300 OEM EXT reader, make sure to have a minimum 0.5mm compression of ICC adhesive in front of the reader's ICC opening to get good sealing between ICC connector and the mounting surface. Note that this installation requires a customized bracket.

ID TECH also suggests mounting the ICC module at a down-slanting angle. This helps the unit drain water and prevents water from accumulating inside the ICC connector. However, if the angle is too great the cardholder may not be able to see the ICC slot before inserting their card. The suggested mounting angle is between 11 to 70 degrees.

The ICC opening on mounting surface should be big enough for the ICC slot, but not too big. When mounting the ICC slot, consider the following factors: the maximum ISO card size, the mounting tolerance between the ICC module and the slot opening, and the size of the ICC foam adhesive. The suggested slot width is  $54.6 \pm 0.2$ mm, and the suggested slot height is  $2.4 \pm 0.2$ mm.



Unit: mm

## 8. For More Information

- To learn more about the VP3300 OEM EXT and other ID TECH products, visit the [ID TECH Knowledge Base](#).
- Visit us online at <http://idtechproducts.com>.
- Find more Tech Support resources at the [ID TECH Tech Support home page](#) or send an email describing any issues to [support@idtechproducts.com](mailto:support@idtechproducts.com).