



## Feature Description Document

### Creating a Custom Wiegand Format for MiFARE 32-BIT



## Purpose

This document describes how to create a Custom Wiegand Format for a MiFARE 32-BIT CSN in IXM WEB.

## Applies to

TITAN	TFACE	TOUCH 2	SENSE 2	MERGE 2	MYCRO
All Devices					

## Description

Wiegand Format is a string of predefined bits. In simpler terms, it is the arrangement of binary card data and is required to analyze the data received from the input, and before sending, the data will be put into a predefined format. Wiegand strings consist of even parity, odd parity, facility code, and ID codes. Invixium devices support the following Wiegand formats:

### 1. 26-bit standard format

The Standard 26-bit Format is an open format. It is widely used by various industries and is available from many sources. Almost all access control systems accept the Standard 26-bit Format.

### 2. Pass-Thru Wiegand

This format is customized as compared to the 26-bit standard format. This Wiegand Format string does not contain any parity bits and Facility code bits, the format string of this Wiegand type will only contain ID codes.

### 3. Custom Wiegand

In custom Wiegand Format, all parts of the Wiegand string are customizable. This type of Wiegand Format contains parity bits and ID code bits in the Wiegand Format string. The maximum length of a custom Wiegand Format is 512 bits. Custom Wiegand Format gives complete freedom to the admin to create a Wiegand Format. Admin can specify any number of user fields, can have any number of ID bits, and can have a maximum of four even parity and four odd parity bits.



## Creating a Custom Wiegand Format for MiFARE 32-BIT CSN

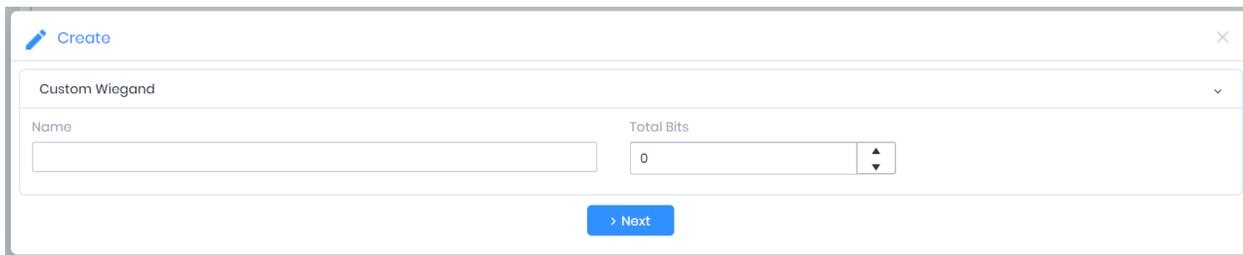
1. From Home >> Expand the Left Navigation Pane >> Navigate to the **General Settings** tab >> Click the **Wiegand** app to open the Wiegand Format settings.

The screenshot shows the 'Wiegand' settings page. At the top, there are navigation tabs: 'Wiegand', 'Smart Card Settings', and 'IXM WEB Server'. Below the tabs are three buttons: 'Create', 'Upload', and 'Delete'. A table with the following columns is displayed: 'Wiegand ID', 'Name', 'Type', and 'Action'. The table contains one row with the following data: '1', 'Standard 26 bit', 'Standard26Bits', and an edit icon. At the bottom of the page, there is a pagination control showing 'Page 1 of 1' and '1 to 1 of 1 Items'.

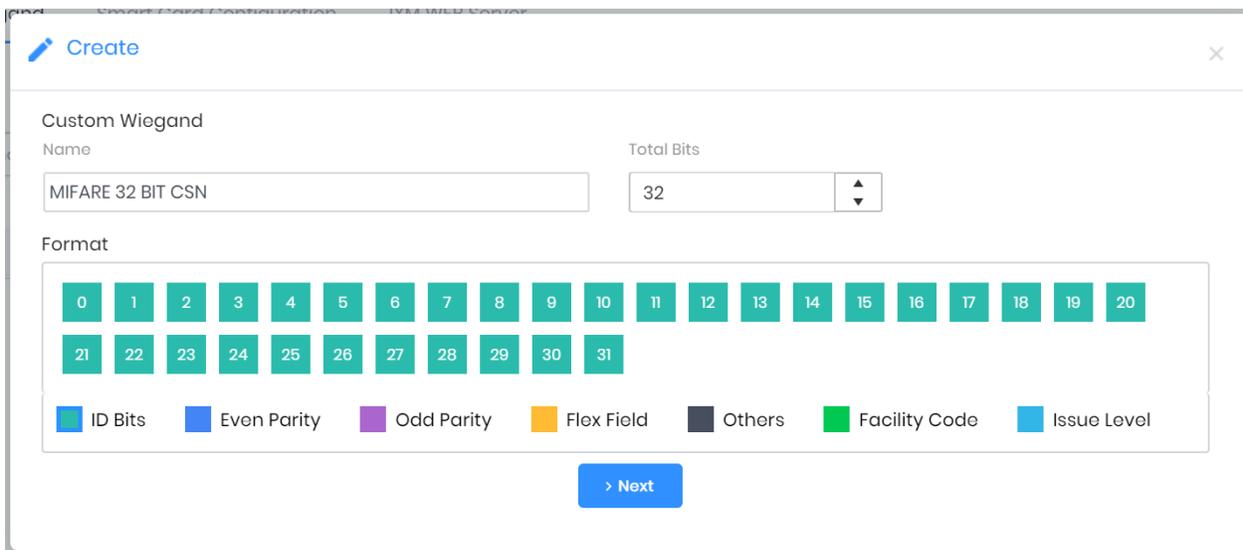
2. Hover mouse over **Create** and select the **Custom** option from the dropdown menu.

This screenshot is similar to the previous one, but the 'Create' button's dropdown menu is open. The dropdown menu shows two options: 'Passthru' and 'Custom'. The 'Custom' option is highlighted in blue. The rest of the page, including the table and pagination, remains the same as in the previous screenshot.

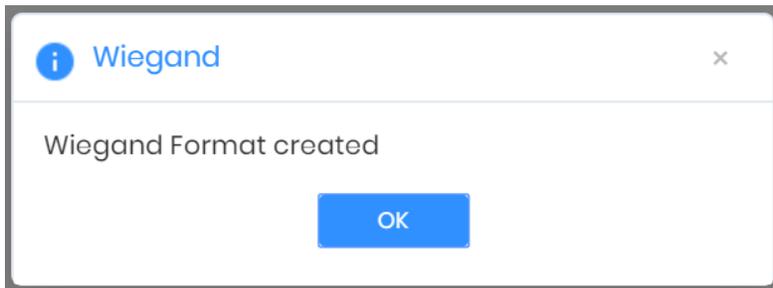
3. Create a custom Wiegand popup will be shown.



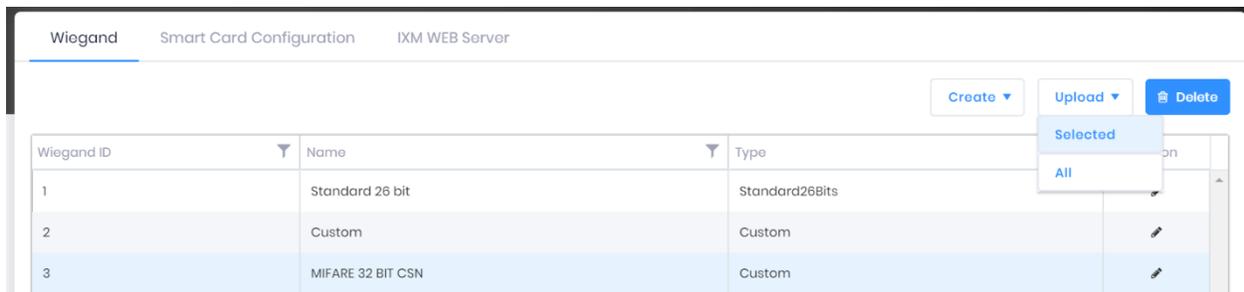
4. Give the name of the custom Wiegand i.e. MiFARE 32-BIT CSN and define total bits as 32 Bits where all the 32 bits are ID bits.



5. Click **Next** and hit the **Save** button to save these changes. Wiegand Format created message will be displayed.



6. Now select the new option listed for MiFARE 32-BIT CSN, hover on **Upload** and click on "Selected" from the dropdown menu, select the device to send these settings to, and click **OK**.





## Wiegand Output

INVIXIUM devices have Wiegand OUT lines to send Wiegand data to access control panels. When the user is authenticated, the device will put the user ID into the configured Wiegand format and write this Wiegand string on Wiegand OUT lines. Upon reception of Wiegand data, the panel will decide whether the door should be opened or not. The device will send Wiegand data on Wiegand OUT lines for the following events:

- 1. ID Type:** The user can choose ID Type as User ID, Prox Card ID, or Smartcard ID. Based on the selection the Wiegand string will be sent over Wiegand OUT lines.
- 2. Duress:** The user can choose different options for duress such as None, Reverse Output, Standard 26-bit, or any Custom Wiegand. Based on the selection, the Wiegand string will be sent over Wiegand OUT lines.
- 3. Identification Success:** When the user is identified successfully, the device will create a Wiegand string based on the selected Wiegand Format. User ID/Prox card ID/Smart card ID will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.
- 4. Identification Fail:** When the user identification fails, the device will create a Wiegand string based on the selected Wiegand Format. Zero (Not any user identified) value will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.
- 5. Verification Success:** When the user is verified successfully, the device will create a Wiegand string based on the selected Wiegand Format. User ID/Prox card ID/Smart card ID will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.
- 6. Verification Fail:** When the user verification fails, the device will create a Wiegand string based on the selected Wiegand Format. User ID/Prox card ID/Smart card ID value will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.



- 7. Anti-Shock:** When an anti-shock alarm occurs, the device will create a Wiegand string based on the selected Wiegand Format. Device ID/Device Serial Number/Device Name will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines. The default format for anti-shock is “IXM 82-bit device S/N”.
- 8. Heartbeat:** When an anti-shock alarm occurs, the device will create a Wiegand string based on the selected Wiegand Format. Device ID/Device Serial Number/Device Name will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.
- 9. User Not Found:** When the user is not found on the device, the device will create a Wiegand string based on the selected Wiegand Format. Entered User ID will be used as Wiegand ID. This Wiegand string will be sent over Wiegand OUT lines.

To apply changes in existing Wiegand Output settings, Click the **Devices** tab >> Click **Access Control** >> Expand **the Wiegand Output** section.

See the screenshot below for the output options to configure the output from the IXM devices.

The screenshot shows a configuration window titled "Wiegand Output" with a toggle switch in the top right corner. The window is divided into two main sections: "EVENTS" on the left and configuration options on the right. The "EVENTS" section lists six categories: Wiegand, Identification, Verification, Anti-Shock, Heart Beat, and User not found. For each event, there are dropdown menus for "ID Type" and "Format". The "Anti-Shock" event also has a "Duress" dropdown. The "Heart Beat" event has an "ID Value" dropdown and an "Interval (sec)" spinner set to 60. The "User not found" event has an "ID Value" dropdown.

Event	ID Type	Format	Duress	ID Value	Interval (sec)
Wiegand	User ID		None		
Identification	Standard 26 bit		None		
Verification	Standard 26 bit		None		
Anti-Shock	IXM 82 bit Device S/N		None	Device Serial Number	
Heart Beat	None			Device ID	60
User not found	None				



## Smartcard Serial Number Enrollment

While enrolling users, the admin will be required to add information about the card the user will be using. Follow the steps below to enroll users with their respective card details.

1. From Home >> Click the **Employees** tab on the top >> Click the **Add Employee** app on the right side of the screen.
2. Provide the necessary information of the user like ID, Name, access rules, etc.

**GENERAL INFORMATION**

First Name \* [ ] Last Name [ ] Employee ID \* [ 4 ] Employee Group [ Select Employee Group ]

Birthdate [ ] Gender [ Select ] Email [ ] Mobile [ ]

Office Phone [ ] Home Phone [ ]  Suspend Employee  Active  T&A Employee

**ADDRESS**

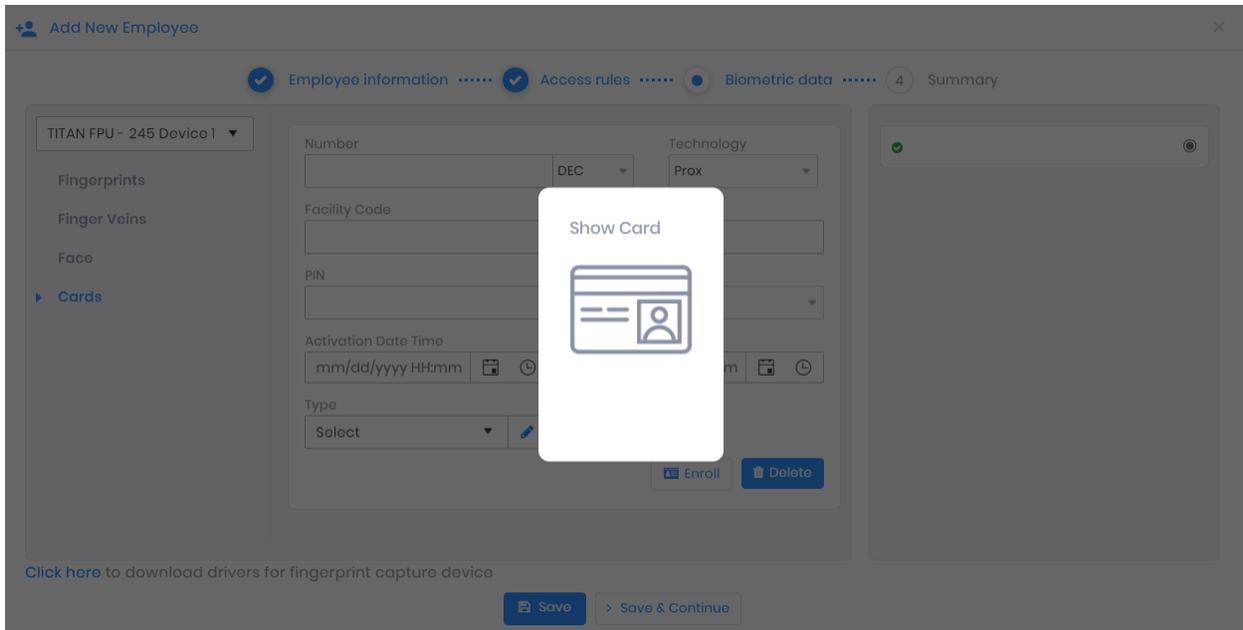
Address 1 [ ] Address 2 [ ] City [ ] State [ ] Country [ ] ZIP code [ ]

**ORGANIZATION HIERARCHY**

Company [ Select ] Location [ Select ] Branch [ Select ] Department [ Select ] Designation [ Select ] Section [ Select ]



- Now, click Save & Continue, and provide values for the Access rules section (not mandatory). Again, click Save & Continue. Inside the Biometric data section, select the device on which you want to enroll the Smart Card. Now, click the “Add” button then click on the “Enroll” button and place the card so that the device can read the card serial number to add for that user.





## Support

For more information relating to this Feature Description document, please contact us at [support@invixium.com](mailto:support@invixium.com)

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