# New Stackable Device Types

With Firmware Versions 3098 and higher (1040/22) and 569 and higher (1030/21) Multiple device types can now be used simultaneously on the same reader.

In the past some Device Types such as D5 had multiple compatibilities. D5 would decode standard 26 bit, DSX-33 bit, and DSX-37 bit.

With the newer firmware Multiple Device Types can be implemented (Stacked) by assigning one Device Type that you need to Device 0 and the next one to Device 1, the next one to Device 2, and so on.

The illustration below shows how to Stack multiple Device Types in the system. The illustration shows Device Types WE, D5, K0, L5, and X0 all working on every reader in the entire system at the same time.

Note/// There are several issues that should be addressed.

1. If you are using the multiple compatibility of an existing Device Type and you upgrade the firmware/flash in the controller(s), or once a new controller (containing the new firmware/flash) has been added to the system, it will be necessary to assign all of the Device Types required to the various Devices in the system.

2. If you require more Device Types than you have Devices, you can simply add an additional Device and give it the Device Type you require even though there will not actually be a controller with that address.

3. You cannot assign two different Device Types that are of the same bit length. This means that you cannot have more than 1 device type of the same bit length programmed in the system. There cannot be two different 26 bit formats or two different 37 bit formats in the Device List. It is ok to have the same Device Type more than once.

4. Once the different Device Types required have been addressed with the first few devices in the list, the rest of the devices can have the same Device Type as in the example below.

5. This feature only applies to Wiegand Formats. It cannot be used for Clock and Data formats. Clock and Data formats are typically but not always used for Magnetic Stripe and Barcode type readers.

6. The most common device types used for the Cards DSX sells are:
WE-26bit, D5-33bit, K0-35bit, L5-37bit, X0-48bit.



| NAME | DEVIC... | TYPE | UNL... | OPE... | USE ... | DOO... | REX ... | TRA... |
|---|---|---|---|---|---|---|---|---|
| Main Entrance | 0 | D5 | 5 | 60 | True | True | True | True |
| Delivery Entrance | 1 | WE | 5 | 60 | True | True | True | True |
| Employee Entrance | 2 | K0 | 5 | 60 | False | False | False | False |
| West Gate Entrance | 3 | L5 | 5 | 60 | True | True | True | True |
| Equipment Storage Closet | 4 | X0 | 5 | 60 | False | False | False | False |
| Warehouse South Entrance | 5 | D5 | 5 | 60 | False | False | False | False |
| Warehouse North Entrance | 6 | D5 | 5 | 60 | False | False | False | False |
| Time & Attendance Out | 7 | D5 | 5 | 60 | False | False | False | False |
| Time & Attendance In | 8 | D5 | 5 | 60 | True | True | True | False |
| Elevator Reader | 9 | D5 | 5 | 60 | True | True | True | False |
| 1043 Relays (Side A) | 10 | OR | 5 | 60 | True | True | True | False |
| 1043 Relays (Side B) | 11 | OR | 5 | 60 | True | True | True | False |

# Duplicate Card Resolution

When trying to use customer supplied cards from various locations in one system you can sometimes encounter duplicate card numbers. This is especially true with 26 bit cards but can be true of cards with different formats. In any case when the card numbers are the same but the facility code is different the system device types can be changed so that each card is read as a unique number.

## Enrolling the Card Numbers

Look up the Card Bit Length below and you will find the appropriate Bit Mask Device Type. If you use a 26 bit – Bit Mask Device Type all 26 bit cards will now have a new unique number. Once you have programmed a Device with the appropriate Bit Mask Device Type, simply use the cards at that device (reader) to determine what the new number is. The system will display Access Denied Code *#############* and the number between the two asterisks will be the new card number. Enter the new number in the Code field and enter the number printed on the card in the Imprinted Card number field.

These Bit Mask Device Types can be used in conjunction with other Device Types of different Bit Lengths. Bit Mask Device Types are available with Software Version 3.7 and higher.

## Bit Mask Device Types

| Bit Length | Device Type |
|------------|-------------|
| 26 | D3 |
| 27 | M4 |
| 28 | R4 |
| 29 | R5 |
| 30 | R6 |
| 31 | H4 |
| 32 | H3 |
| 33 | R7 |
| 34 | R8 |
| 35 | R9 |
| 36 | S0 |
| 37 | S1 |
| 38 | S2 |
| 39 | S3 |
| 40 | P2 |

# Card Number Calculator

When enrolling cards (using a card to find its number) is not an option, it may be possible to use the Card Number Calculator to determine the new card number.

## Entering New Cards and/or Card Holders

Instructions for new cards to be added in the system:
1. Copy the program into the DSX folder and run it.
2. Enter the Existing Device Type. For example – WE
3. The Original Number of bits is displayed.
4. Select the number of Bits. For example – 26
5. The new Bit Mask Device Type is displayed.
6. Enter the Facility Code. 1-255 (26bit)
7. Enter the card number. 1-65535 (26bit)
8. Click on the Calculate Number Button.
9. The Bit Mask Number is the new number. Highlight the entire number and right click and select copy.
10. Paste the number in the Code field for that Card Holder. Enter the printed number in the Imprinted Card Number field.

## Re-entering/Changing Existing Cards

Instructions for existing cards to be changed to the new number:
11. If the card holder had a card number in the system you can copy their card from the Card/Keys/Phone Tab and paste the new number in the code field. The initial copy allows all data to be transferred to the new card such as stop dates and access levels.
12. Once all of the card holders have been updated and their card copied and the new number entered they should all have two cards.
13. Once all of the new numbers have been added into the system the Device Type should be changed to the Bit Mask Device Type from the chart on this page.
14. Once all of the Device Types have been changed the old cards can be de-activated or deleted.

Note/// There are many different Card formats with different characteristics such as Parity. Due to the many variables the cards you intend to use should be tested to verify the number the Card Number Calculator produces the same number as the Bit Mask Device Type.