truVision

ANPR camera integration to access control systems via Wiegand Interface Technical Note

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Introduction

This document describes how the ANPR camera can be used on TruPortal, ATS Master and Advanced using the camera's built-in Wiegand interface. When connecting the camera through Wiegand to an access control system it is not necessary to define the license plates as black or white listed in the license plate file because the camera always sends the badge ID, regardless if the defined license plate is white or black listed in the license plate file. The access control system will receive the card data and grant or deny access to the vehicle depending on the configuration for that "card".

Concept
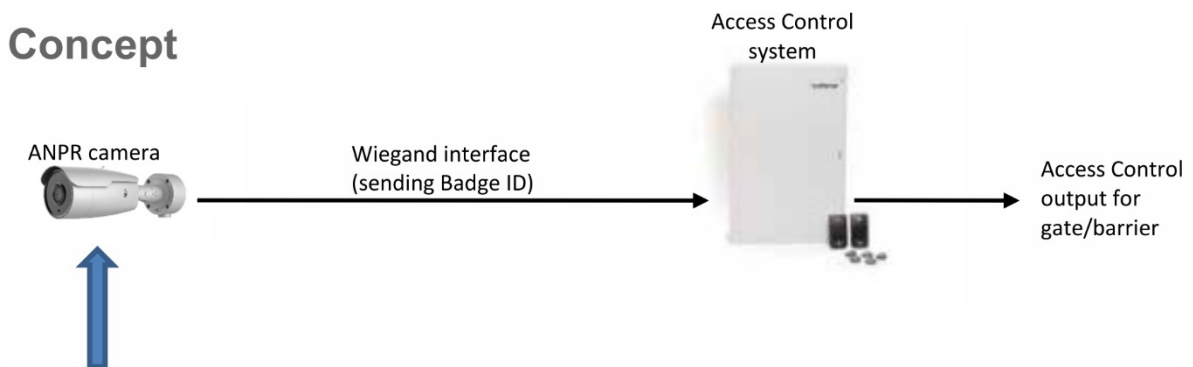
Example of a license plate file with badge ID information uploaded in the camera

No.	Plate Num	Group(0 black list, 1 white list)	ID	
	OABC654		00001	
	ELMN321		00033	
	ZDT923		11223	
	KAD405		23456	
	4NYN4ME		32767	
	RT123H		65535	Max badge ID when using 26 bit
	WDHG94		11122233	
	1JLQ207		1145543261	
	1AAB002		2147483647	Max badge ID when using 34 bit

Note: When adding a license plate to the license plate list, you also need to enter a badge ID in column "ID" in order to send that badge ID to the Wiegand output. When using 26-bit format in the camera make sure to **always enter the Badge ID in 5-digit format** in the license plate file.

Example of Badge ID:

Use: 00001, 00258, 01122

Do not use: 1, 258, 1122

Integration with TruPortal

The camera Wiegand interface supports 26-bit and 34-bit. This can be configured through the camera configuration web pages.

Wiegand 26-bit

The 26-bit Wiegand format uses 16 bits for the card number and 8 bits for the facility code. Please note that the facility code cannot be configured in the camera and is therefore always zero. For TruPortal, the card format can be configured two ways.

We recommend creating a custom 26 Bit Wiegand format without Facility code.

Using custom card format:

Facility code: N/A
Total bit length: 26

Data:
Card number start bit: 9
Card number bit length: 16
Facility code start bit: N/A
Facility code bit length: N/A
Issue code start bit: N/A
Issue code bit length: N/A

Parity:
Even parity start offset: 1
Even parity length: 12
Even parity check bit offset: 0
Odd parity start offset: 13
Odd parity length: 12
Odd parity check bit offset: 25

Important: When using 26-bit, the maximum number of decimal digits for the badge ID in the camera is 5 and the highest badge ID to be used is 65535 (2^{16}).

Odd parity	Facility code (8 bit always 0)								Card number data (16 bit)																	Even parity
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wiegand 34-bit

The Wiegand 34-bit format has a different layout compared to the 26-bit format. Also here we recommend creating a custom card format.

Add | **Remove**

Format Name:
ANPR 34-bit

Format Type:
Custom

Facility Code:
0

Total Bit Length:
34

Data Field:	Starting Bit:	Bit Length:
Card Number	1	32
Facility Code	0	0
Issue Code	0	0

Parity Type:	Start Offset:	Length:	Check Bit Offset:
Even	1	16	0
Odd	17	16	33

Total bit length: 34

<u>Data</u>:
Card number start bit: 1
Card number bit length: 32
Facility code: N/A
Issue code: 0

<u>Parity</u>:
Even parity start offset: 1
Even parity length: 16
Even parity check bit offset: 0
Odd parity start offset: 17
Odd parity length: 16
Odd parity check bit offset: 33

<u>Important</u>: When using 34-bit, the maximum number of decimal digits for the badge ID in the camera is 10 and the highest badge ID to be used is 2147483647 (2^{32}).

Odd parity	N/A	Card number data (32 bit)	Even parity
0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0

Integration with ATS intrusion panels and ATS8600

ATS panels convert the badge ID data into a specific ATS format. You can use the excel tool "ANPR_BadgeID_calculations_V1.0.xlsm" to calculate the ATS panel and ATS8600 card data starting from the badge ID that is loaded into the camera (column 1).

Badge ID in camera	26 bit card data		34 bit card format	
	Titan	ATS8600	Titan	ATS8600
12345	26.0.0.3.28.24.0	52172800	34.0.3.28.24.0.0	13356236800
45454	26.0.0.0.199.88.128	13064320	34.0.1.199.88.0.0	7639400448
65535	26.0.0.3.255.127.0	67075840	34.0.3.255.127.0.0	17171415040
65536	Card number too large ... not allowed!	Card number too large ... not allowed!	34.0.1.0.128.0.128	4303356032
2147483647	Card number too large ... not allowed!	Card number too large ... not allowed!	34.0.3.255.255.255.191	17179869119
2147483648	Card number too large ... not allowed!	Card number too large ... not allowed!	Card number too large ... not allowed!	Card number too large ... not allowed!
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296
	26.0.0.1.0.0.0	16777216	34.0.1.0.0.0.0	4294967296

<u>Example</u>: When badge ID 12345 is sent in 26-bit format by the camera, it will be received in the ATS panel as 26.0.0.3.28.24.0. In ATS8600, it will be received as 52172800.

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