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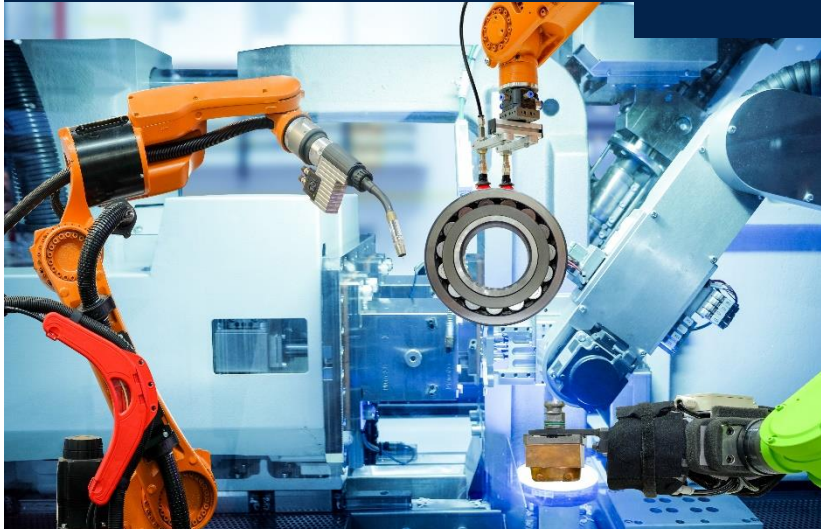
ST25DV-PWM product presentation





Main ST25DV-PWM market segments

Smart Industry



Industrial lighting, motor control

Smart City



Street lighting, building lighting





ST25DV-PWM key use cases

Product configuration



- Parameter **settings**
- **Simple** and **flexible**

Servicing & maintenance



- **Update** parameter in the field
- **Easy to use** and **adaptable**





ST25DV-PWM in lighting market

High-end segment

Previous



With MCU on board

New



Low-end segment

Previous



Without MCU on board

New





Typical NFC type 5 range

NFC Phone



Up to 7cm (3in.)



RFID Reader



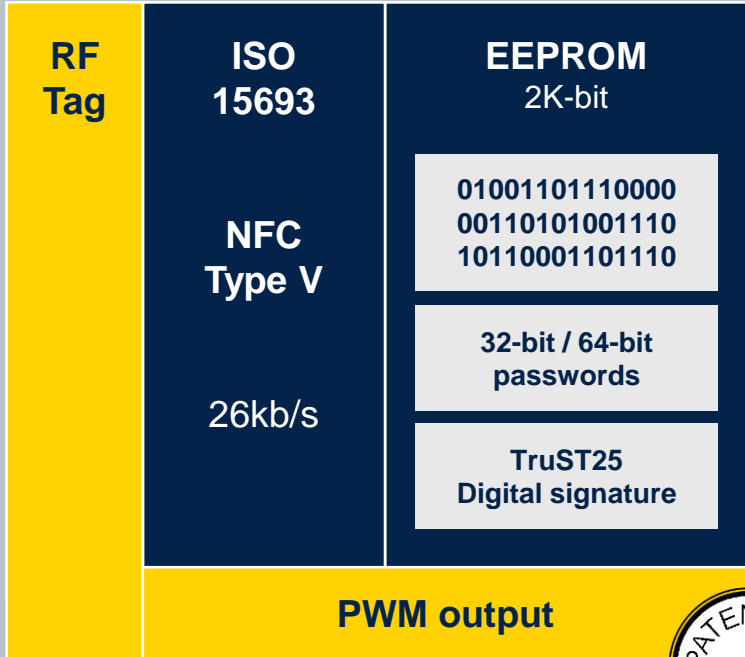
Up to 1m (3ft)



ST25DV-PWM dynamic NFC tag



ST25DV02K-W1 / -W2



SO8



TSSOP8

Use cases

- Targeted industrial applications such as Lighting LED driver, Motor control, Power supply unit

Key Features

- ISO15693 and NFC Type V
- 2K-bit memory
- Up to 2 PWM signal (push pull)
- Up to 15 bits resolution (62.5ns resolution step)
- Power Supply 1.8V - 5.5V
- 40°C to +105°C (PWM) temperature range
- TruST25 Digital Signature



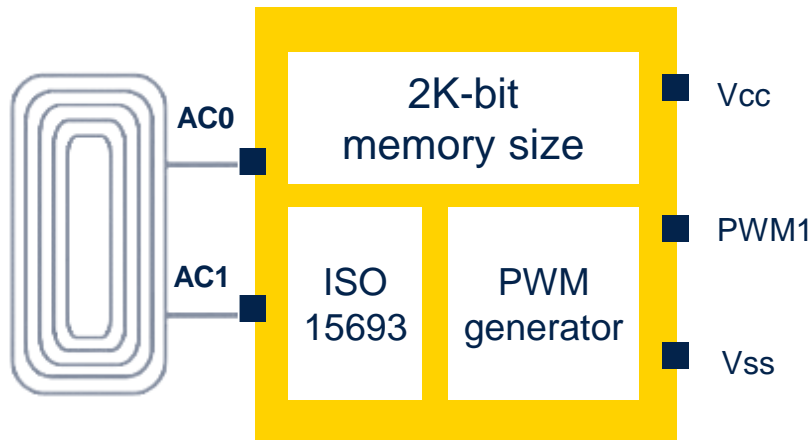
Key Benefits

- 2 in 1 chip, putting NFC connectivity with PWM functionality
- Cost optimized solution to address low end Lighting market
 - Significant BOM reduction as no MCU is required to drive the system



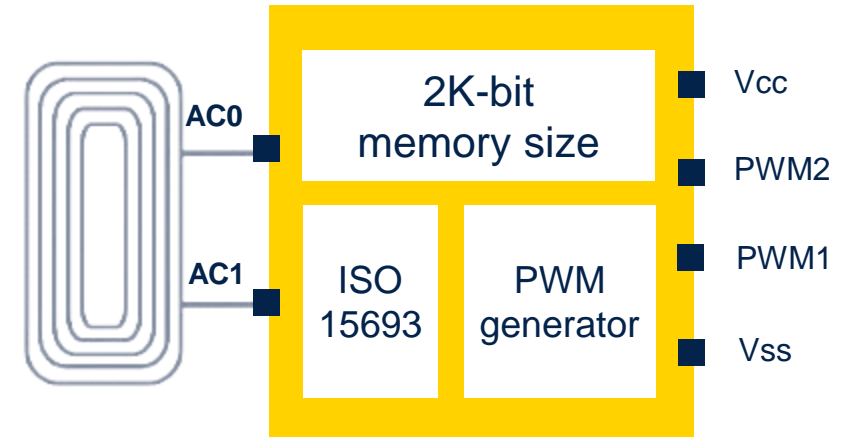
2 product options

1x PWM version

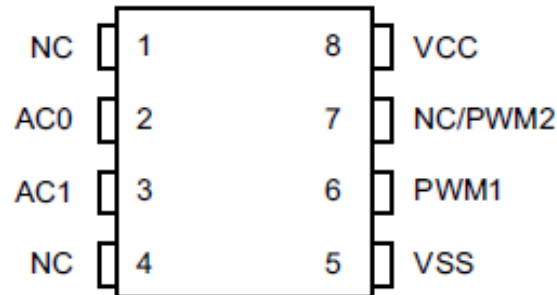


ICRef = 0x38 for 1x PWM

2x PWM version



ICRef = 0x39 for 2x PWM

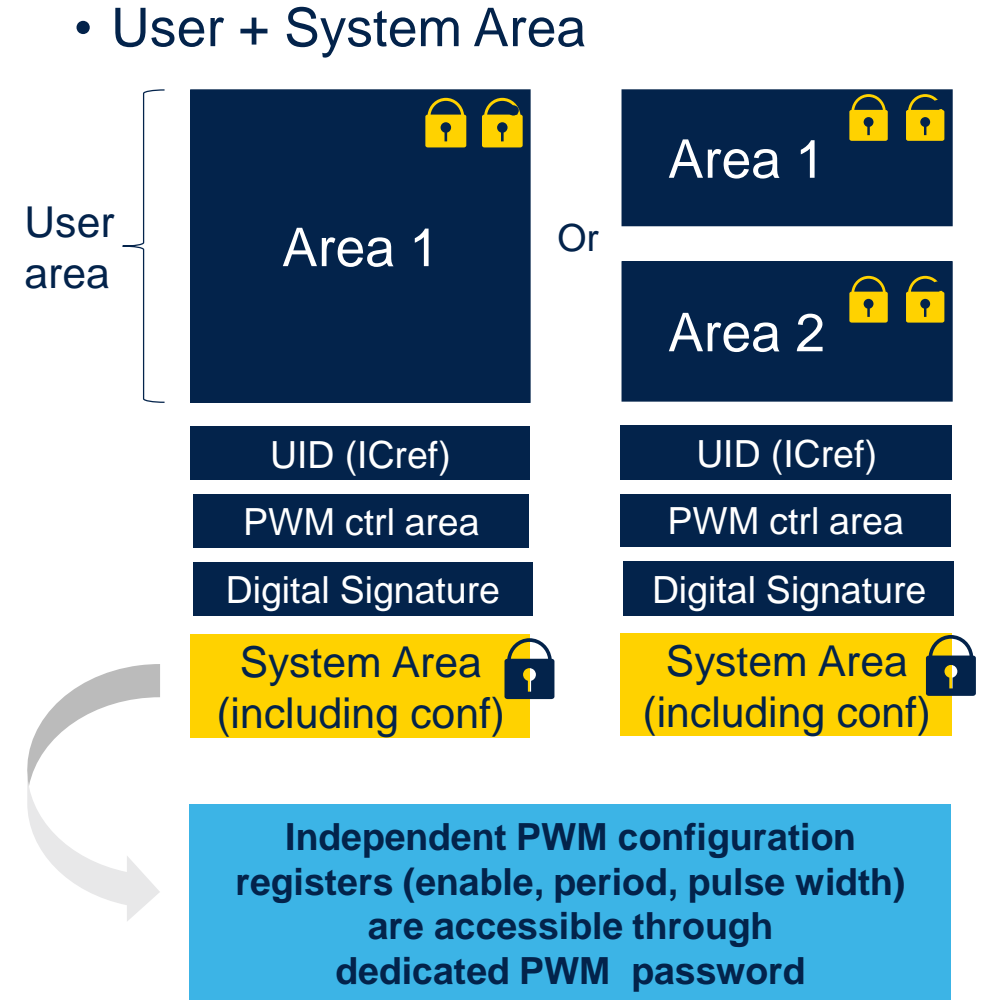


8 pins packages for both version → pin to pin compatibility



Memory mapping & password management

- EEPROM density
 - 2k-bit
- User EEPROM area configurable in 1 or 2 areas
 - Each area is individually read-/write- protected by password command
 - **64 bit password 1 area**
 - **2x 32-bit password 2 areas**
- PWM control area
 - Individually read/write protected by **32 bit password**
- System EEPROM area
 - Access protected by **32 bit password**
- Specific block used to store a **64 bit UID**
 - Its value is written by ST on the production line
- Dedicated area to store the **Digital Signature**





Dynamic NFC / RFID tags series

	M24LR series	ST25DV-I2C series	ST25DV-PWM series
Contactless Interface	ISO15693 NFC compatible	ISO15693 NFC Type 5	ISO15693 NFC Type 5
RF range	Long range (up to 1m)	Long range (up to 1m)	Long range (up to 1m)
RF speed	26kbps	26kbps	26kbps
Serial Interface	I2C @400kHz	I2C @1MHz	No
Fast Transfer mode	No	Yes (256B buffer)	No
Energy Harvesting	Yes	Yes	No
Digital output	Open-Drain GPO	OD or CMOS GPO	2x PWM
Extra features	-	Low Power mode	-
Memory format	EEPROM data	EEPROM data	EEPROM data
Memory size	4k / 16k / 64k-bit	4k / 16k / 64k-bit	2k-bit
Data protection	Password 32-bit	Password 64-bit	Password 64-bit TruST25 digital signature
Temperature range	-40°C to +85°C	-40°C to +85°C -40°C to +125°C (105°C RF)	-40°C to +85°C (105°C RF)
Package	SO8 / TSSOP8 / FPN8	SO8 / TSSOP8 / FPN8 / FPN12 / WLCSP10 / SBN12 *	SO8 / TSSOP8



* SBN12: Die form, sawn and Bumped wafer, 120µm thickness, inkless 8" wafer



PWM features summary

PWM characteristics

Clock Frequency	Target 16MHz
Clock accuracy	+/- 10% (over temperature range)
PWM signal output	1 port or 2 ports product version
PWM frequency	from 488Hz to 31.25kHz
PWM resolution	62.5ns (step) { from 9-bits @ 31.25kHz ... 12-bits @ 3.9kHz ... to 15-bits @ 488Hz
Vcc supply	1.8V to 5.5V
PWM sinking current	up to 4mA output driver across Vcc supply range
Start up time	< 3ms



ST25DV-PWM Rich Eco-System



- Antenna e-design tool
- Schematic, BOM, Gerber
- Applications notes



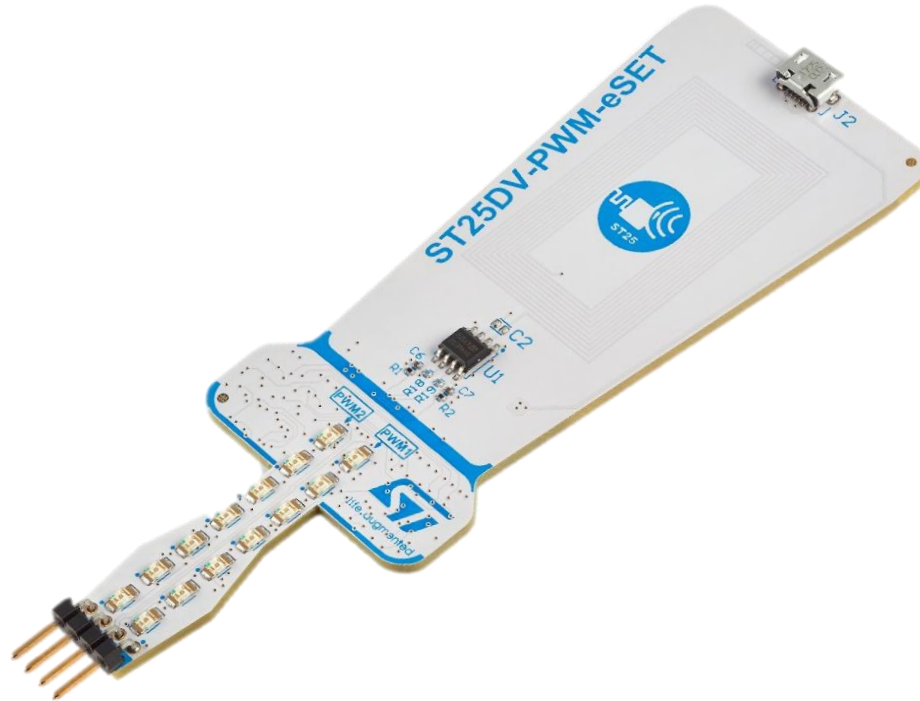
- PC software tool ST25 SDK
- Mobile Apps ST25 SDK (Android & iOS)
- Discovery kits



- Documentation
- E2e community
- Videos
- Webinar



ST25DV-PWM evaluation board



ST25DV-PWM-eSET




ST25DV-PWM discovery kit

- **ST25DV64K** dynamic NFC tag
- **STM32L0** ultra-low-power MCU
- LIS2DW12 three-axis linear accelerometer
- LPS22HB piezo-resistive pressure sensor
- HTS221 humidity and temperature sensor
- 40x40mm 8 turns antenna



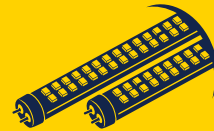
ST25DV-PWM - innovation for industrial

Coming soon

- ✓  NFC Forum Type 5 for smartphone interface
- ✓  RFID ISO15693 for factory programming and track & trace
- ✓ 2 x PWM outputs 
- ✓ TruST25 digital signature
- ✓ Large operating voltage 1.8-5.5V
- ✓ Industrial temperature range -40°C / +105°C
- ✓ Coming soon: NFC certification & 10-y longevity program
- ✓ 4 patents pending to protect ST & customers
- ✓ Turn-key evolutive discovery kit

Innovative

Application specific



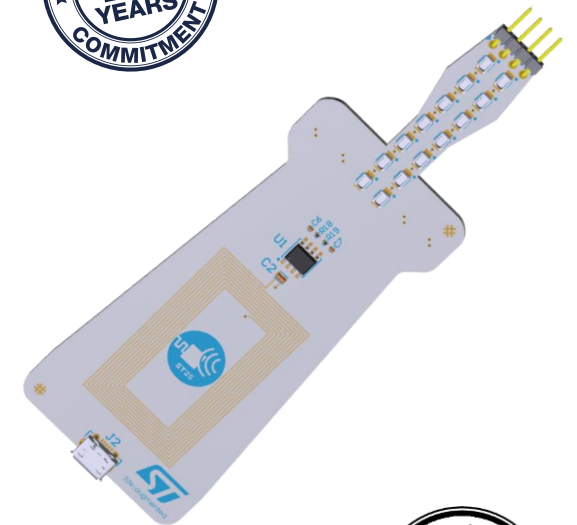
Lighting



Motor control



Other industrial





ST25DV-PWM part numbers



ST25DV-PWM

Dynamic NFC Type 5 Tag
ISO15693
+ 1x or 2x PWM IF
+ Extended Temperature

Package

SO8
SO8
TSSOP8
TSSOP8

2k-bit

ST25DV02K-W1R8S3
ST25DV02K-W2R8S3
ST25DV02K-W1R8T3
ST25DV02K-W2R8T3





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Solutions for NFC / RFID Tags & Readers



ST25 SIMPLY MORE CONNECTED



Thank you