



# STM32MP1 - DES Device Electronic Signature

Revision 1.0



Hello, and welcome to this presentation of the STM32 Device Electronic Signature which can be used as a device identification or serial number.



- The Device Electronic Signature provides unique device information that can be read by applications including
  - 96 bit-long unique ID (UID)
  - Part number coding & package type information

## Application benefits

- Unique device identifier can be used for security and serial numbering schemes
- Device configuration information for multi-platform firmware
- Read-only information
- Easy to use and implement

The device electronic signature provides a set of registers containing die identification, unique device identifier (UID), and other read-only device information such as memory size, package type, and device calibration information. Applications can benefit from a unique identifier that can be used as a serial number or as part of a security key. It can also be used to manage software distribution/licensing features based on the UID.

## Pre-programmed at ST factory

- UID pre-programmed at ST factory
  - Cannot be altered by user
- Device information data
  - Device Part Number and Version
  - Package type

### Application benefits

- Can be used as a serial number or part of a security key
- Software licensing: Specific UID range can be used to limit functions/features of delivered firmware
- Applications can get device part number, version and package type when used with multi-platform firmware



The unique identifier (UID) and other device information are pre-programmed at the ST factory and cannot be altered by users. This identifier can be used as a security key or serial number, as well as an identifier for software licensing. Multi-platform firmware can use the device information to determine package type and part number for managing application functions and features.

# Unique device ID register

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## Read only unique device identifier

- Unique device ID is a 96-bit register consisting of
  - X and Y coordinates on the wafer
  - Lot and wafer numbers
- Unique ID is a unique identifier for each device
- Not all bits within the unique device ID are used
  - Data written in the registers has limited ranges (e.g. X and Y coordinates) smaller than the width of the dedicated register
  - Some bits in the register will always be '0' for a given product
  - Security-related applications could hash the Unique ID to create security keys



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The unique device identifier is a 96-bit register that contains the coordinates of the die on the wafer, lot number and wafer number.

This identifier is unique for each device manufactured by ST. As each record within the unique identifier has a given range, like the X and Y coordinates, not all the bits in the device ID are used. This is important for security-related purposes, where the number of bits used is an important parameter. Such security applications could hash the Unique ID to create security keys.

- For more details, please refer to following sources
  - STM32MP1 reference manuals (RM0441, RM0442 and RM0436)



For detailed information, please refer to the device's reference manuals and datasheet.