STM32WL Wireless Series
LoRa®, (G)FSK, (G)MSK, BPSK

STM32WL series: the STM32 pioneer in Sub-GHz wireless connectivity. Easy-to-use, reliable and tailored for a wide range of RF applications.

THE WORLD’S FIRST LoRa-ENABLED SYSTEM-ON-CHIP

The STM32WL series supports multi-modulation and delivers outstanding ultra-low-power performance. This makes it an ideal choice for LPWAN and IoT developments.

Embedding an Arm® Cortex®-M4 core and a Sub-GHz transceiver in one single chip, the STM32WL series ensures wireless application flexibility with LoRaWAN® and is compatible with other protocols in a fully open way.

WIRELESS CONNECTIVITY

Designed for Sub-GHz LPWANs, the STM32WL series comes with a LoRaWAN® stack, available on demand.

Thanks to a deep integration, the innovative and open architecture is optimized for flexible resource use, power management and helps lower BOM cost while offering a better user experience.

Developed using the same technology as the one implemented in our ultra-low-power STM32L4 microcontrollers, the STM32WL series, with its integrated Sub-GHz transceiver, provides similar digital and analog peripherals for basic or complex application use cases requiring an extended battery life and a long RF range.

SYSTEM PERIPHERALS

- Modulations: LoRa®, (G)FSK, (G)MSK, BPSK
- Linear Frequency Range: 150 to 960 MHz
- Dual-power Outputs: up to 22 dBm and up to 15 dBm (Embedded PAs)
- Up to 43 GPIOs
- Embedded SMPS and LDO
- Multiple low-power modes to maximize battery life.

SECURITY & ID

In addition to its wireless and ultra-low-power features, STM32WL microcontrollers include embedded security hardware functions such as 128- / 256-bit AES hardware encryption, PCROP read / write protection, and public-key cryptography with an elliptic curve encryption engine.
STM32WL PORTFOLIO

<table>
<thead>
<tr>
<th>Flash memory / RAM size (bytes)</th>
<th>Order code: NUCLEO-WL55JC</th>
</tr>
</thead>
<tbody>
<tr>
<td>256K / 64K</td>
<td>STM32WLE5JC</td>
</tr>
<tr>
<td>128K / 48K</td>
<td>STM32WLE5JB</td>
</tr>
<tr>
<td>64K / 20K</td>
<td>STM32WLE5J8</td>
</tr>
<tr>
<td>73-pin UFBGA (0.5 mm pitch)</td>
<td>Pin count</td>
</tr>
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STM32WLE5 microcontrollers provide designers with flexibility in terms of memory size. Four ECOPACK2®-compliant packages, featuring three different memory sizes, are available to address different levels of complexity to ensure a cost-efficient fit for application requirements.