The **STM32WL** series, developed by **STMicroelectronics**, integrates a general-purpose microcontroller and a sub-GHz radio on a single chip. [These microcontrollers support multiple modulations, including **LoRa**, **2 (G)FSK**, **4 (G)FSK**, **(G)MSK**, **OOK**, and **BPSK**, making them ideal for long-range wireless applications with protocols like **LoRaWAN**, **Sigfox**, and more1](https://www.st.com/en/microcontrollers-microprocessors/stm32wl-series.html). Here are five reference links where you can learn more about STM32WL for free:

1. [**STMicroelectronics STM32WL Series Overview**: Explore detailed information about the STM32WL series, its features, and applications1](https://www.st.com/en/microcontrollers-microprocessors/stm32wl-series.html).
2. [**STM32WL3x Microcontrollers**](https://www.st.com/en/microcontrollers-microprocessors/stm32wl3x.html)[: Learn about the STM32WL3x series, which offers ultra-low power, multi-modulation capabilities, and an IQ interface for custom modulations](https://www.st.com/en/microcontrollers-microprocessors/stm32wl-series.html)[2](https://www.st.com/en/microcontrollers-microprocessors/stm32wl3x.html).
3. [**STM32WL Series Product Overview**](https://www.st.com/resource/en/product_presentation/microcontrollers_stm32wl_series_product_overview.pdf)[: Dive into the technical details of the STM32WL series, including its wireless capabilities, worldwide compatibility, and security features](https://www.st.com/en/microcontrollers-microprocessors/stm32wl-series.html)[3](https://www.st.com/resource/en/product_presentation/microcontrollers_stm32wl_series_product_overview.pdf).
4. [**STM32WL Blog Post: The 1st MCU with Embedded LoRa Transceiver**](https://blog.st.com/stm32wl/)[: Discover how the STM32WL became the world’s first wireless microcontroller to integrate a LoRa transceiver directly on its silicon die](https://www.st.com/en/microcontrollers-microprocessors/stm32wl-series.html)[4](https://blog.st.com/stm32wl/).
5. **STMicroelectronics YouTube Channel**: Explore video tutorials, demos, and educational content related to STM32WL and other STMicroelectronics products.

Happy learning! 🚀🔬📚