Embedded Expert IO

EmbeddedExpertIO™

CERTIFICATE OF GRADUATION

Awarded To

Carlos Delfino Carvalho Pinheiro

GRADUATING FROM

Mastering STM32CubeMX 5 and CubeIDE - Embedded Systems

Date: 2025-01-30

Serial No.

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Curriculum - Mastering STM32CubeMX 5 and CubeIDE - Embedded Systems

• Introduction to STM32 ecosystem and tools	• Peripheral driver development
• Installing STM32CubeMX and CubeIDE	• Firmware development in CubeIDE
• STM32CubeMX interface overview	• Debugging embedded applications
• Clock configuration (Clock Tree)	• Middleware integration
• GPIO configuration	• FreeRTOS configuration
• Interrupts (EXTI)	• Task creation and scheduling
• Timers (TIM)	• Semaphores and IPC
• PWM generation	• Bare-metal programming
• ADC configuration	• Register-level programming
• DMA usage	• Driver development without HAL
• UART communication	• ARM Assembly basics
• SPI communication	• Complete firmware design
• USB configuration	