Microchip MCP25625 :: CAN-FD Controller + Transceiver

th muda engineering

The Microchip MCP25625 is a complete, cost-effective and small-footprint CAN solution that can be easily added to a microcontroller with an available SPI interface. The MCP25625 interfaces directly with microcontrollers operating at 2.7V to 5.5V, there are no external level shifters required.

In addition, the MCP25625 connects directly to the physical CAN bus, supporting all requirements for CAN high-speed transceivers. The MCP25625 meets the automotive requirements for high-speed (up to 1 Mb/s), low quiescent current, electromagnetic compatibility (EMC) and electrostatic discharge (ESD).

The software is architected with long-term maintainability, portability across MCU platforms, and adherence to high software quality standards as core design principles.

✅ Layered architecture with clear HAL abstraction
✅ Conforms to ISO C99 standard
✅ Portable across multiple MCU platforms
✅ Supports both RTOS and bare-metal environments
✅ CMake build system for scalable integration
✅ Seamless integration with GCC toolchain
✅ Statically analyzed for MISRA, CERT, and CWE compliance

Initialization Interface

```
mcp25625_result_t mcp25625_init( mcp25625_handle_t*, ... )
```

Configuration Interface

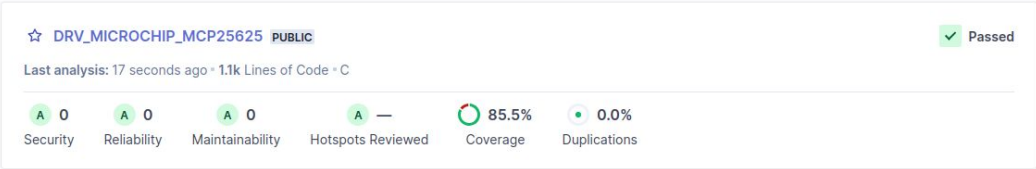
```
mcp25625_result_t mcp25625_set_power_mode( mcp25625_handle_t*, ... )
mcp25625_result_t mcp25625_set_mode( mcp25625_handle_t*, ... )
mcp25625_result_t mcp25625_set_interrupt( mcp25625_handle_t*, ... )
mcp25625_result_t mcp25625_set_mask( mcp25625_handle_t*, ... )
mcp25625_result_t mcp25625_set_filter( mcp25625_handle_t*, ... )
```

Data Retrieval Interface

```
mcp25625_result_t mcp25625_get_bus_config( uint32_t, ... )
mcp25625_result_t mcp25625_read( mcp25625_handle_t*, ... )
```

Write Interface

```
mcp25625_result_t mcp25625_write( mcp25625_handle_t*, ... )
```



Communication Interface:
SPI