# Allegro A3967 :: DC Stepper Motor Driver

The Allegro A3967 is a complete microstepping motor driver with integrated translator. It is designed to operate bipolar stepper motors in full, half, quarter and eighth step modes, with an output drive capability of 30 V and ±750 mA.

Microstepping capability improves motion smoothness, reduces vibration and audible noise, and enhances positional accuracy compared to standard full-step driving. Its compact integration of current control and protection features also reduces external component count, making it an efficient and cost-effective solution for robotics, CNC mechanisms, 3D printers, and precision positioning systems.

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
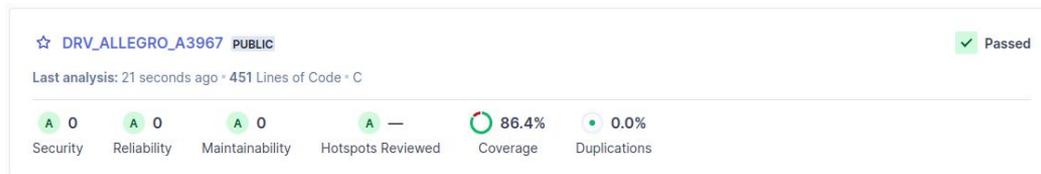
Initialization Interface

```
a3967_result_t a3967_init( a3967_handle_t*, a3967_attr_t )
```

Configuration Interface

```
a3967_result_t a3967_set_mode( a3967_handle_t*, ... )
a3967_result_t a3967_set_power_mode( a3967_handle_t*, ... )
a3967_result_t a3967_set_step_resolution( a3967_handle_t*, ... )
a3967_result_t a3967_set_angle_deg( a3967_handle_t*, ... )
a3967_result_t a3967_set_speed_deg_s( a3967_handle_t*, ... )
```

Data Retrieval Interface

```
a3967_result_t a3967_get_mode( a3967_handle_t*, ... )
a3967_result_t a3967_get_power_mode( a3967_handle_t*, ... )
```

Operation Interface

```
a3967_result_t a3967_run_step( a3967_handle_t*, ... )
```

☆ DRV_ALLEGRO_A3967 PUBLIC   ✓ Passed

Last analysis: 21 seconds ago · 451 Lines of Code · C

| A 0 | A 0 | A 0 | A — | ◯ 86.4% | • 0.0% |
| Security | Reliability | Maintainability | Hotspots Reviewed | Coverage | Duplications |

Communication Interface:
I/O