

2025-11-01

# E027: Appendix Part 3

Testing & Benchmarking Reference

Part Appendix · Duration: 5-7 minutes

*Beginner-Friendly Visual Study Guide*

## section 0 Overview

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Quick reference for testing workflows and benchmark results.

## section 0 Test Commands

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```
lstnumber# Run all tests
lstnumberpython -m pytest tests/ -v
lstnumber
lstnumber# Coverage report
lstnumberpython -m pytest --cov=src --cov-report=html
lstnumber
lstnumber# Benchmarks
lstnumberpython -m pytest tests/test_benchmarks/ --benchmark-only
```

## section 0 Test Statistics

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- Total: 4,563 tests (257 files)
- Unit: 81% (3,678 tests)
- Integration: 15% (681 tests)
- System: 4% (182 tests)
- Runtime: 45 seconds (100% pass rate)

## section 0 Benchmark Results

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Controller	Time ( $\mu$ s)
Classical SMC	23
Super-Twisting	31
Adaptive SMC	45
Hybrid Adaptive STA	62

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Next: E028 Documentation Reference