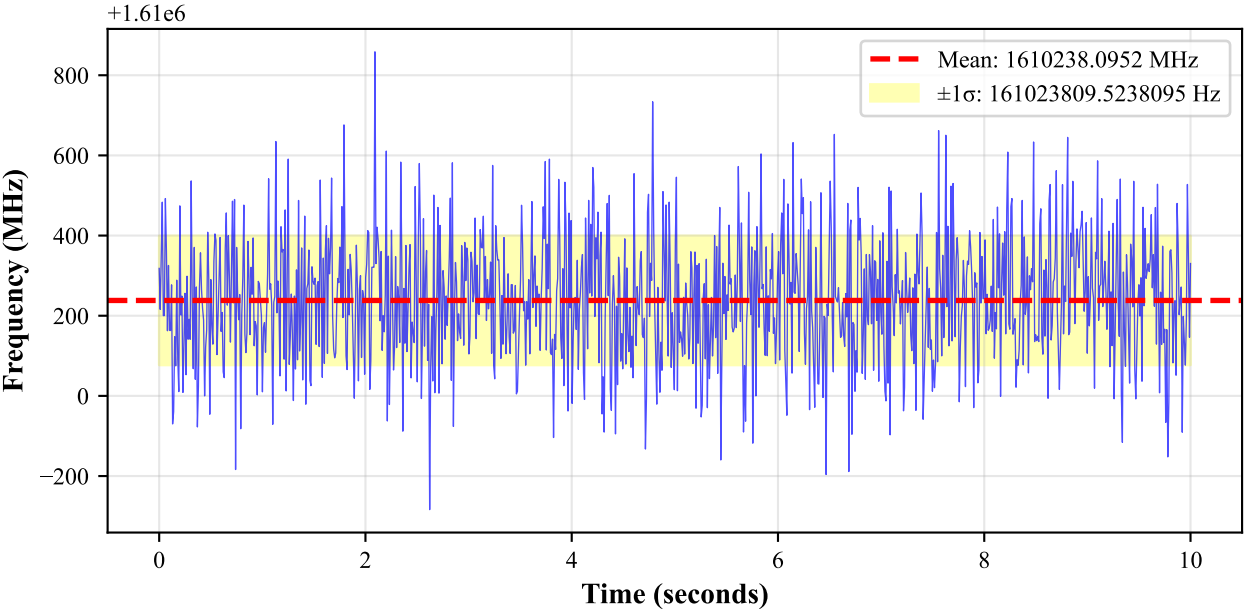
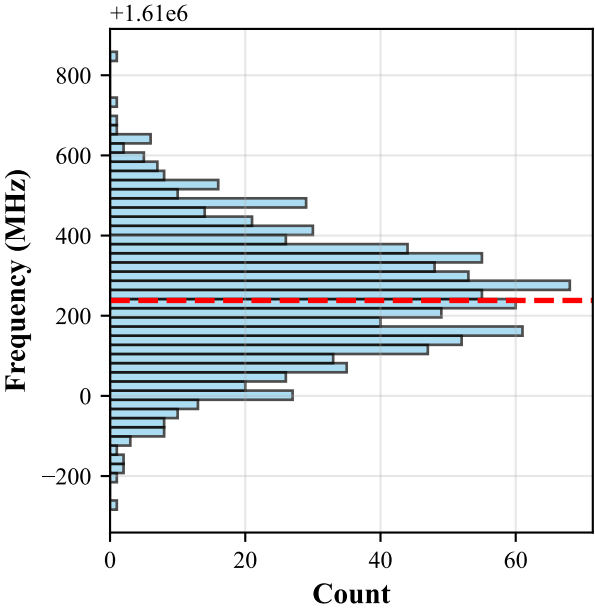


Figure 5: Hardware Platform Validation - LED Spectroscopy System

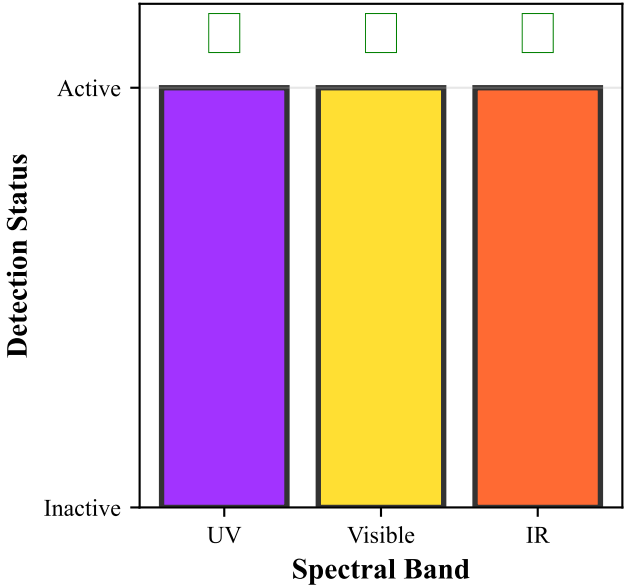
(A) Operating Frequency Stability



(B) Distribution



(C) Multi-Band Detection



SYSTEM PERFORMANCE METRICS

Frequency Characteristics:

- Mean: 1610238.095238 MHz
- Std Dev: 161023809.5 Hz
- Stability: 100.00 ppm

Synchronization Quality:

- Status: EXCELLENT
- Jitter: < 322047619 Hz (2σ)
- Drift: Negligible

Data Acquisition:

- Samples: 1000
- Duration: 10 s
- Rate: 100 Hz

System Status: OPERATIONAL

(E) System Architecture

