Calibration Report

ibmq_manila – Falcon r5.11H

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Overview

This calibration report summarizes the key parameters of the IBM Quantum processor ibmq_manila, based on the publicly released data from November 13, 2022. The device uses the Falcon r5.11H architecture and includes 5 superconducting qubits.

Technical Specifications

- **Processor type:** Falcon r5.11H
- **Number of qubits:** 5
- **CX connections:** 8
- **Basis gates:** CX, ID, IF_ELSE, RZ, SX, X
- **Calibration date:** 2022-11-13
- **Data source:** IBM Quantum public calibration data and validated measurements

Performance Parameters

Parameter	Value
Error probability p_{011}	0.318
Standard error of p_{011}	0.020
Readout fidelity	0.922
Gate error rate	0.050
Measurement error rate	0.020
Coherence time T_1	75 µs
Coherence time T_2	105 µs

Table 1: Calibration data for ibmq_manila on 2022-11-13.

Remarks

The values above characterize the performance of `ibmq_manila` as of the calibration date. The relatively high p_{011} transition probability may indicate decoherence or crosstalk under specific conditions. Nonetheless, the fidelity and coherence times remain consistent with standard performance for 5-qubit Falcon-class devices.