



# Gemini<sup>★</sup><sup>★</sup>

Desktop NMR Quantum Computer

| 2 Qubits |



# Specifications :

|  |  | Standard                                    |
|--|--|---|
| <b>System</b>                              | Coherence Time   | $\geq 20$ ms                                |
|  | Single-qubit Gate Operation  | $\geq 200$ gates                            |
|  | Two-qubit Gate Operation   | $\geq 20$ gates                             |
|  | NMR-frequency ( $^1\text{H}$ )   | $41.3 \pm 2.0$ MHz                          |
|  | Number of RF channels  | 2   |
|  | Pulses Resolution  | $\leq 100$ ns                               |
|  | 90° Pulse Width  | $\leq 30$ $\mu\text{s}$                     |
|  | Phase Resolution   | $\leq 0.1^\circ$                            |
|  | Receiver Dynamic Range   | -114 ~ -60 dBm                              |
|  | Digital Converter  | 500 MS/s, 8 Bit                             |
|  | Sample tube Diameter (Built-in, no need to change)                     | 5 mm  |
|  | NMR signal peak Resolution (FWHM)                                      | $\leq 20\text{Hz}$ ( $\text{H}_2\text{O}$ ) |
| $\leq 41.3\text{Hz}$ (Experimental Sample) |  |   |
| <b>Magnet</b>                              | Type   | Permanent Magnet                            |
|  | Operating Field  | 0.97 Tesla $\pm 5\%$                        |
|  | Stray Field (distance of the 0.5mT (5G) line from the magnetic center) | $\leq 0.5$ m                                |
|  | Magnet Operating Temperature Range                                     | 33 ~ 37 $^\circ\text{C}$                    |
|  | Magnet Operating Temperature Precision                                 | 0.01 $^\circ\text{C}$                       |
| <b>Operating Software</b>                  | Built-in Introduction of Quantum Computing                             | Yes   |
|  | Number of Built-in Demonstration Algorithms                            | $\geq 6$                                    |
|  | Custom Algorithms  | Yes   |
| <b>Mains Power Rating</b>                  |  | 100 ~ 240V AC ; 50Hz/60Hz ; Single Phase    |
| <b>Power Dissipation</b>                   |  | ~ 100 W                                     |

\* Specifications subject to change without notice