

# National Measurement Laboratory



## Report of Calibration



Date of Issue: August 08, 2019

Report No.: E190504A

Instrument: DC Voltage Standard

Manufacturer: xDevs

Model: 792X

Serial Number: X102

Applicant: Illya Tsemenko

Address: [REDACTED]

The result of this calibration, performed by the National Measurement Laboratory, is specified in this report. When the cover and the following 1 pages are separated, the validity of this report no longer exists.



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National Measurement Laboratory

# National Measurement Laboratory

321, Sec. 2, Kuang Fu Rd., Hsinchu, Taiwan 30011, R.O.C.

Report No.: E190504A

Instrument: DC Voltage Standard

Ambient Temp.:  $(23.0 \pm 1.5) ^\circ\text{C}$

Manufacturer: xDevs

Relative Humidity:  $(45 \pm 10) \%$

Model: 792X

Serial No.: X102

## Calibration Results and Descriptions

### I. Calibration Result

Nominal value (V)	Measured value (V)	Relative expanded uncertainty ( $\mu\text{V}/\text{V}$ )
10	9.999 9838	0.03

Note : The calibration result is based on the new Josephson constant ( $K_J = 483597.85 \text{ GHz/V}$ ).

### II. Descriptions

#### 1. Date of Calibration

This calibration was performed on August 7, 2019.

#### 2. Calibration Method

This calibration was carried out according to Instrument Calibration Technique for Programmable Josephson Voltage Measurement System<sup>1</sup>. The DC voltage standard was calibrated by comparing its outputs of 10 V with those of NML programmable Josephson voltage standard.

#### 3. Standard Used

10 V programmable Josephson voltage standard chip (S/N : chip 10WC\_131122-12).

#### 4. Relative Expanded Uncertainty

4.1 The relative expanded uncertainty was evaluated according to Measurement System Validation Procedure for Programmable Josephson Voltage Measurement System<sup>2</sup>.

4.2 The reported relative expanded uncertainty was obtained by multiplying the relative combined standard uncertainty with a coverage factor  $k = 2$ , corresponding to a level of confidence of approximately 95 %.

### III. References

- Instrument Calibration Technique for Programmable Josephson Voltage Measurement System, 07-3-A1-0079, 2<sup>nd</sup>, CMS/ITRI, 2017.
- Measurement System Validation Procedure for Programmable Josephson Voltage Measurement System, 07-3-A1-0201, 2<sup>nd</sup>, CMS/ITRI, 2017.