

6.1.4. เครื่องมือมาตรฐานในงานบำรุงรักษาเครื่องมือทางการแพทย์มีความเหมาะสมเป็นไปตามข้อกำหนดของผู้ผลิต หรือตามมาตรฐานของวิชาชีพที่เกี่ยวข้อง หรือตามประกาศของกรมสนับสนุนบริการสุขภาพ และเครื่องมือมาตรฐานต้องสามารถสอบกลับผลการวัดได้



Certificate No. : CP-SKPH-EKG-2510001

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CALIBRATION OF CERTIFICATE

Customer : Sankamphaeng Hospital
129 Buak Khang Subdistrict, San Kamphaeng District, Chiang Mai 50130.

Equipment: ELECTROCARDIOGRAPH, MULTICHANNEL

Department: ER

ID-Number : SKPH,EKG001

Asset ID : EKG-ER-02

Manufacturer : KENZ

Model : Cardico 1210

Serial no. : 1611-3368

Date of Calibration : 1 October 2025 **TEMPERATURE :** 25.6 °C

Date of Issued : 4 October 2025 **RELATIVE HUMIDITY :** 56.0 %RH

Due Date : 1 October 2026

CONDITION OF THIS RESULT OF TEST

1. REFERENCE STANDARD INSTRUMENT:

| ID Number | Description | Manufacture | Model | Cert No. | Due Date |
|------------|-----------------------|-------------|---------|----------|----------|
| SMM - 0002 | Vital Signs Simulator | RIGEL | UNI-SIM | 25MD1176 | 4/Jul/26 |

2. THIS CERTIFICATION IS TRACEABLE TO :

Technology Promotion Association (Thailand - Japan)

3. THIS RESULT OF TEST WAS FOUND ACCURATE AS SHOW ON DATE AND PLACE OF TEST ONLY

by :
Khanapong Khammatheeraroj

Approved by :
Natthasak Sunantha



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PROCEDURE USED

This instrument was calibration by comparison with standard Follow the Electrocardiograph, Multichannel calibration method of WI-OPS-CP-019. By using measuring instruments that have been calibrated by a standardized agency and calibrated under specified environmental conditions.

| Calibration Test | Dimension (Unit) | STD value | UUC Reading | Error value | Acceptable value | Uncertainty (±) |
|-------------------------------------|------------------|-----------|-------------|-------------|------------------|-----------------|
| ECG Function Control | | | | | | |
| Pulse measure at 60 HR | BPM | 60 | 60.00 | 0.00 | 57 to 63 | 1.29 |
| Pulse measure at 80 HR | BPM | 80 | 80.00 | 0.00 | 76 to 84 | 1.29 |
| Pulse measure at 120 HR | BPM | 120 | 120.00 | 0.00 | 114 to 126 | 1.29 |
| Gain Function Control | | | | | | |
| Gain measure at 5 (+/-10%) | mm/mV | 5 | 5.00 | 0.00 | 4.5 to 5.5 | - |
| Gain measure at 10 (+/-10%) | mm/mV | 10 | 10.00 | 0.00 | 9 to 11 | - |
| Gain measure at 20 (+/-10%) | mm/mV | 20 | 20.00 | 0.00 | 18 to 22 | - |
| Amplitude Function Control | | | | | | |
| Amplitude measure at 1 (+/-10%) | mV | 1 | 1.00 | 0.00 | 0.9 to 1.1 | - |
| Amplitude measure at 2 (+/-10%) | mV | 2 | 2.00 | 0.00 | 1.8 to 2.2 | - |
| Paper speed Function Control | | | | | | |
| Paper speed measure at 25 (+/-10%) | mm/sec | 25 | 25.00 | 0.00 | 22.5 to 27.5 | - |
| Paper speed measure at 50 (+/-10%) | mm/sec | 50 | 50.00 | 0.00 | 45 to 55 | - |

UUC : Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%

End of Certificate of Calibration

