

# TT19

## 4G Real-Time Temperature and Humidity Data Logger

User Guide V1.0



# 1. Product overview

TT19 is a global 4G real-time temperature and humidity data logger with high-quality sensitive components and high measurement accuracy. It is embedded with 4G modules, GPS modules and WiFi modules. The data is sent to the cloud through the 4G network for monitoring and analysis, and it's also with the function of automatically generating PDF reports. With 4000mAh large capacity battery and low power consumption design, once charge, TT19 can work for a long time, it's greatly adapt to different transportation temperature monitoring requirements.

Considering about the data security, TT19 not only uploads data to cloud, but also stores data into flash. And for emergency use, the user can easily connect the USB C port to automatically generate PDF report. With a complete cold chain visibility, traceability monitoring (temperature, humidity, light, shock, location) system, the TT19 is helping customers digitize their supply chain, prevent the loss of shipments with in-transit visibility and alerts, automate and increase compliance, and speed up product release, extremely improve transportation efficiency and reduce product losses.

## 2. Product features

1. The external is an ultra-low temperature PT100 temperature sensor, and the built-in SHT30 digital temperature and humidity sensor has strong anti-interference ability, high precision and fast response
2. Global use, support LTE with 2G fallback.
3. Real-time monitor temperature, humidity, light, shock and location.
4. Multi-use, with 4000mAh rechargeable battery.
5. High accuracy SHT30 digital temperature and humidity sensor with NIST traceable calibration.
6. Support GPS, WiFi and LBS multiple positioning, positioning accuracy up to 2m.
7. IP64 waterproof design adapt to harsh environments.
8. Two button design with large LCD display, friendly use and easily operate.
9. Automatically generate PDF report via USB C port for emergency use.

### 3. Product specifications

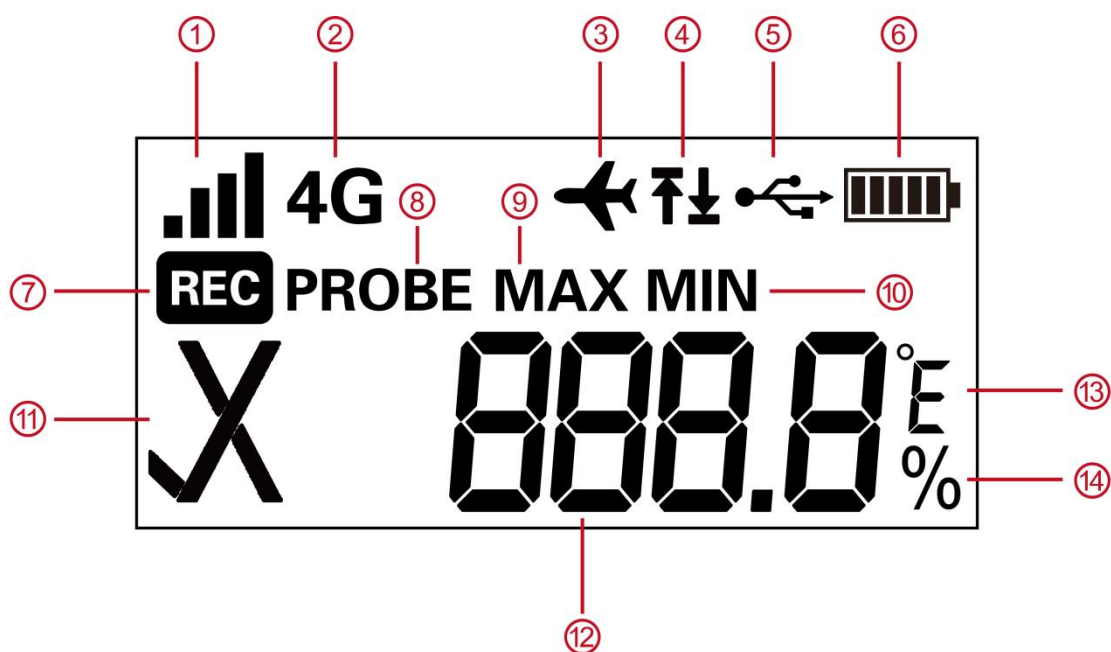
| Items                                   | Details  |
|---|--|
| Monitoring information                  | Temperature, humidity, location, light, vibration  |
| Temperature and humidity sensor         | External PT100 probe + Built-inSensirion SHT30   |
| Temperature measurement range           | External temperature: -80°C~ +120°C ( -112°F ~ 248°F)<br>Built-in temperature: -20°C~ +60°C ( -4°F ~ 140°F)<br>Built-in humidity: 5%~95%RH   |
| Temperature and humidity accuracy range | External probe temperature: $0.15 + 0.002 *  t $<br>Built-in temperature : $\pm 0.3^{\circ}\text{C}$ ( $0^{\circ}\text{C} \sim +60^{\circ}\text{C}$ ); $\pm 0.5^{\circ}\text{C}$ for other range<br>Built-in humidity: $\pm 3\%$ ( $10\% \sim 90\% \text{RH}$ ); $\pm 5\%$ for other range |
| Light sensor range                      | 0-64000lux   |
| Vibration sensor range                  | 0-16G  |
| Minimum unit                            | 0.1°C/0.1%RH/1 lux/0.001G  |
| Position type                           | GPS position, WiFi position, LBS base station position   |
| Memory capacity                         | 17,000   |
| Network system                          | Global LTE 4G, with 2G fallback  |
| Usage time                              | Once fully charged, it can be used for 60 days based on sending interval of 60 min and GPS turned on.  |
| Sending interval                        | 5-1440min, configurable  |
| Battery specification                   | Bulit-in3.7v/4000mAh Lithium rechargeable  |
| USB interface                           | USB-C  |
| Usage type                              | Multiuse+rechargeable  |
| Waterproof level                        | IP64   |
| Dimension                               | 100mm*66mm*29mm  |
| Weight                                  | 165g   |

## 4. Product description



| Items               | Functions  |
|---------------------|--|
| OK Light            | Indicate device status   |
| Alarm Light         | Indicate device status   |
| LCD Screen          | Display screen   |
| START/STATUS Button | Turn on/View Machine Status/Send Data  |
| STOP Button         | Turn off/View Machine Status   |
| ID                  | Device ID number   |
| Light Sensor        | Light sensor   |
| USB-C               | USB-C interface, for charging or automatically generating PDF report. The two LED will be on during charging and off when fully charged. |
| External Sensor     | External PT100 probe   |

## 5. LCD display instructions



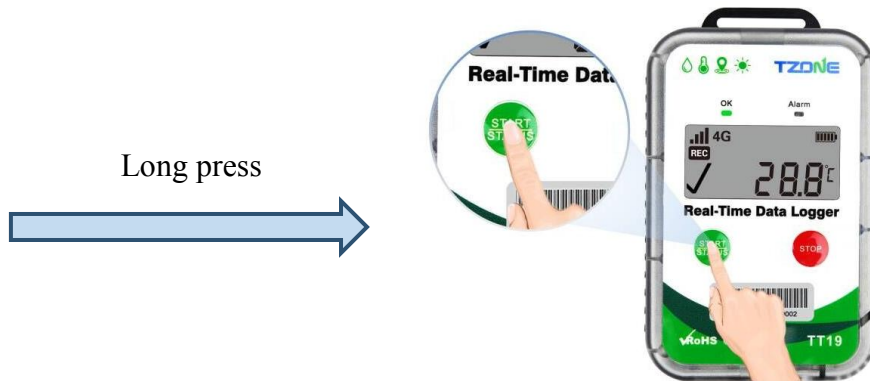
| Serial Number | Functions                                     | Explanation   |
|---------------|---|---|
| 1             | Network signal strength icon                  | Indicating signal strength, the more signal bars, the better signal strength.   |
| 2             | 4G network icon                               | Indicate the device connected with 4G network.  |
| 3             | Flight mode icon                              | It means the device has entered into flight mode, and it will only store data but not transmit.                           |
| 4             | Temperature and humidity exceeding the limits | Exceed the upper limit: ↑<br>Exceed the lower limit: ↓<br>Both exceed: ↑↓   |
| 5             | USB icon                                      | Indicate the USB connected and battery charging, when full charged, the USB icon will not display.                        |
| 6             | Battery status                                | The higher the number of grids, the higher the electricity. Please charge immediately when there is only 1 grid or space. |
| 7             | Record icon                                   | It means that device is in a record state, displayed after turn on.   |
| 8             | External icon                                 | Use "PROBE" to represent the external temperature . When the sensor is abnormal, it will display -----                    |
| 9             | Maximum icon                                  | Display the maximum temperature and humidity value.   |

|    |                                     |   |
|----|-------------------------------------|---|
| 10 | Minimum icon                        | Show the minimum temperature and humidity value.  |
| 11 | Temperature and humidity alarm icon | Normal: √ Alarm: ×  |
| 12 | Temperature and humidity value      | The resolution of temperature and humidity is 0.1. When the sensor is abnormal, it will display ----- |
| 13 | Temperature unit icon               | Temperature unit, optional “°C” or “°F” display   |
| 14 | Humidity unit icon                  | Humidity unit is “%”.   |

## 6. Device operation and status

### 6.1 Turn on

In off state, press the "START" button more than 3 seconds, the “OK” LED will light in green, and the LCD display will show temperature values which means you’ve turned on the device, and device will upload a data to cloud immediately.



### 6.2 Turn off

In on state, press the "STOP" button more than 3 seconds, the “Alarm” LED will light in red and the LCD display will be off, which means you’ve turned off the device, and device will upload a data to cloud immediately.



## 6.3 No alarm

After turning on without alarm, the "OK" led will flash in green once every 10 seconds.

## 6.4 Alarm

### 6.4.1 Temperature and humidity alarm

After turning on, if temperature or humidity alarm, the "Alarm" led will flash in red once every 10 seconds and the LCD will display the temperature and humidity alarm mark, device will upload a data to cloud immediately.

### 6.4.2 Shock alarm

After turning on, If shock alarm, the "Alarm" led will flash in red once every 10 seconds, and device will upload a data to cloud immediately.

### 6.4.3 Light alarm

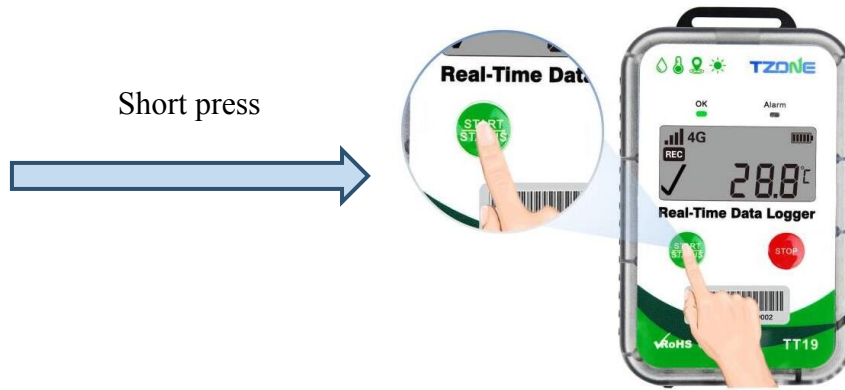
After turning on, If light alarm, the "Alarm" led will flash in red once every 10 seconds, and device will upload a data to cloud immediately.

Note: Each type of alarm will be triggered only once in every data uploading cycle.

## 6.5 Query status

After turning on the device, if short press the "START" button, the device will be awakened and immediately send a data to cloud. If no alarm, the "OK" LED will flash in green, if alarm, the "Alarm" LED will flash in red. Continuously pressing the button will toggle the display screen, in the order of "temperature value → humidity value → maximum temperature value → maximum humidity value → maximum external temperature value → minimum temperature value → minimum humidity value → minimum external temperature value"

Note: When toggling the display screen, short press the "STOP" button to toggle directly to the "temperature value" display screen. If there is no operation within 10 seconds, the LCD display will be off.

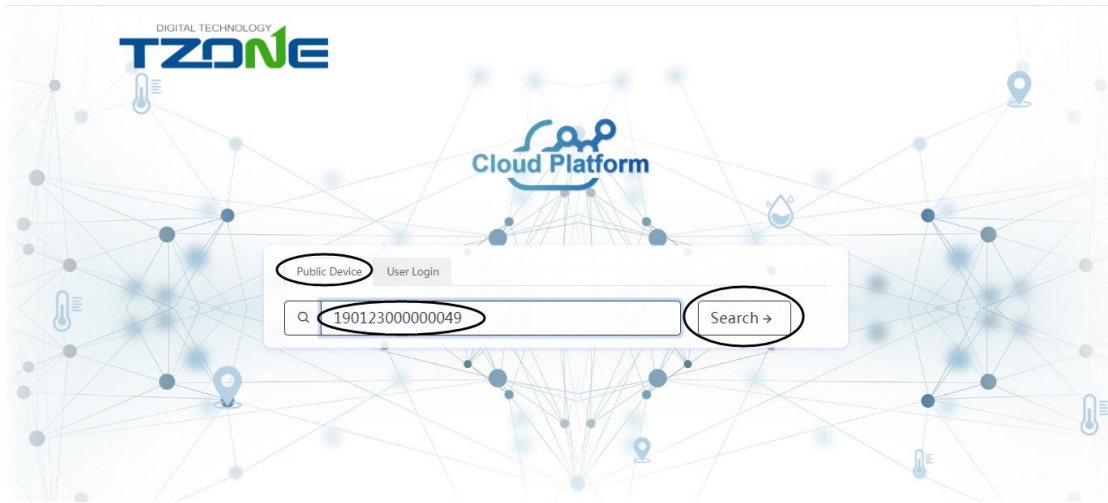


## 7. Data query

Tzone temperature and humidity cloud platform website: <http://cloud.tzonedigital.com/>

After turning on, the device data can be queried on TZONE cloud platform. Before entering the cloud platform, you will need to register an account. Once registered, log in and navigate to the "Device Management" section to add the TT19 ID.





cloud.tzonedigital.cn/Share?id=190123000000049

DIGITAL TECHNOLOGY  
**TZONE**

°C - English - Quit

Device ID : 190123000000049

|  |   |                |
|--|---|----------------|
| Temperature<br>26.7°C Channel 1 / 25.4°C Channel 2 | Humidity<br>75.2% Channel 1 / --% Channel 2 | Light<br>50lux |
| Vibration<br>0mg                                   | Battery<br>94%                              |                |

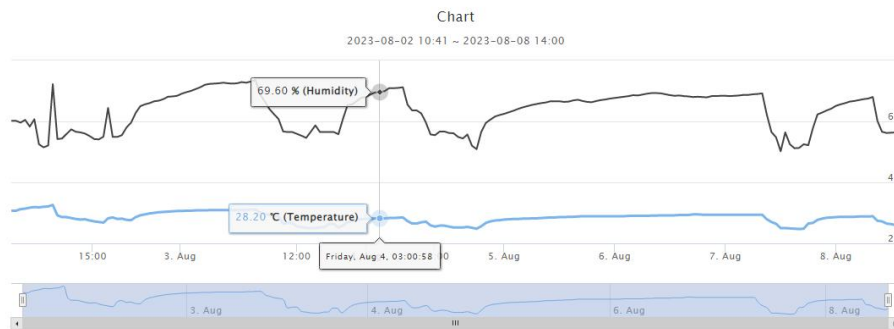
2023/09/15 11:03:49

Chart List

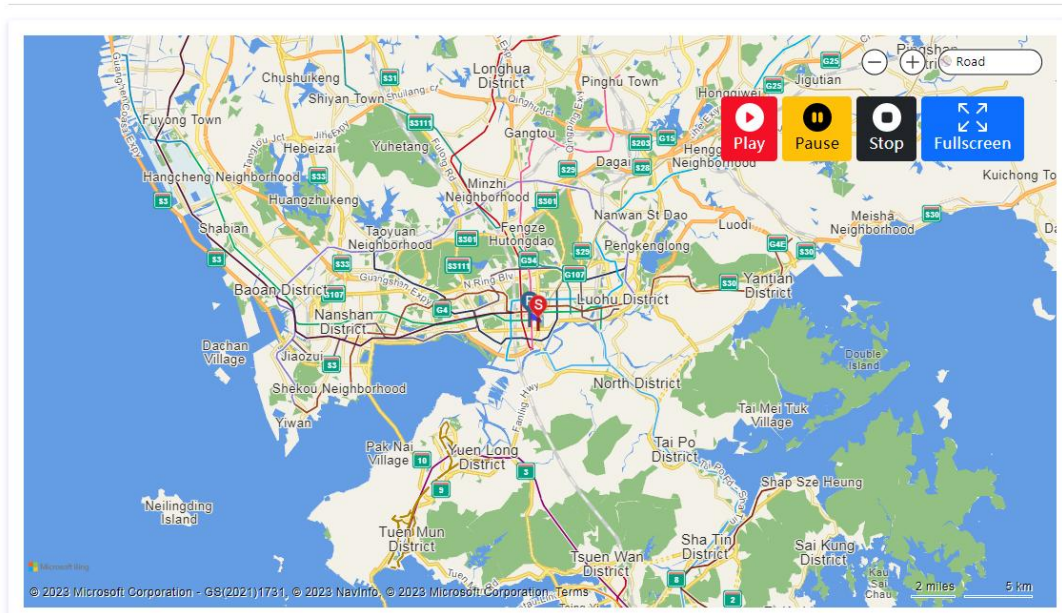
2023/09/08 11:06 2023/09/15 11:06 View Download

[Channel 1] Chart

Note: channel 1 is built-in data, channel 2 is external data



Tips: The query returns a maximum of 10000 data. If it exceeds, please change the time range.



## 8. PDF report data query

After using the USB cable provided by our company to connect the device to one computer, the computer reads the disk and automatically generates the PDF report. If the real-time data of the device cannot be queried, the historical data of the device can be viewed through the PDF report:

**Note:** Clear Data and Initialize function can clear all data in the report.

## DATA REPORT

ID: 190123000000049

### File Information

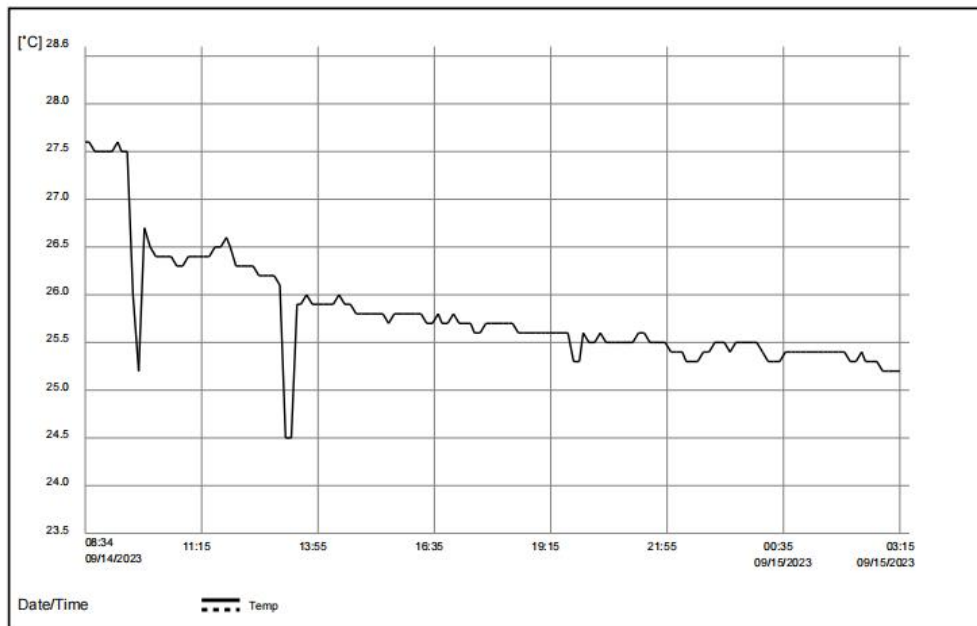
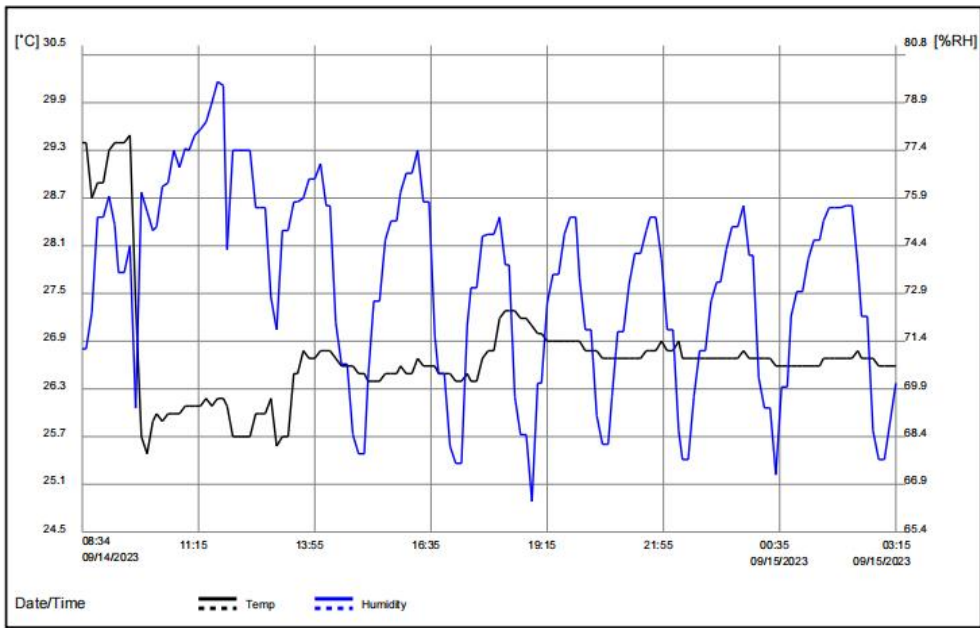
File Created Date: 09/15/23 03:16:52  
 Note: All Times shown are based on UTC+0:00 and 24-Hour dock [MM/DD/YY HH:MM:SS]

### Device Information

|              |                 |                   |      |
|--------------|-----------------|-------------------|------|
| Device Type: | TT19EX          | Firmware Version: | 1.01 |
| ID:          | 190123000000049 |                   |      |

### Logging Summary

|                   |                   |          |                       |
|-------------------|-------------------|----------|-----------------------|
| First Point:      | 09/14/23 08:34:54 | Max:     | 29.5°C/79.8%RH/27.6°C |
| Stop Time:        | 09/15/23 03:15:49 | Min:     | 25.5°C/66.4%RH/24.5°C |
| Number of Points: | 150               | Average: | 26.7°C/73.3%RH/25.8°C |
| Trip Length:      | 00d 18h 40m 55s   | MKT:     | 26.7°C/25.8°C         |



### Temperature&Humidity Table

| Date       | Time     | °C   | %RH  | °C   | Date       | Time     | °C   | %RH  | °C   | Date | Time | °C | %RH | °C |
|------------|----------|------|------|------|------------|----------|------|------|------|------|------|----|-----|----|
| 09/14/2023 | 08:34:54 | 29.4 | 71.2 | 27.6 | 09/15/2023 | 02:22:49 | 26.7 | 68.2 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:36:14 | 29.4 | 71.2 | 27.6 | 09/15/2023 | 02:23:49 | 26.7 | 68.2 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:46:18 | 28.7 | 72.3 | 27.5 | 09/15/2023 | 02:24:49 | 26.7 | 69.7 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:50:59 | 28.9 | 75.3 | 27.5 | 09/15/2023 | 02:25:49 | 26.7 | 71.7 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:52:02 | 28.9 | 75.3 | 27.5 | 09/15/2023 | 02:26:49 | 26.7 | 71.7 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:55:03 | 29.3 | 76.0 | 27.5 | 09/15/2023 | 02:27:49 | 26.7 | 73.2 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 08:57:17 | 29.4 | 75.1 | 27.6 | 09/15/2023 | 02:28:49 | 26.7 | 74.2 | 25.6 |      |      |    |     |    |
| 09/14/2023 | 08:59:51 | 29.4 | 73.6 | 27.5 | 09/15/2023 | 02:29:49 | 26.7 | 74.2 | 25.6 |      |      |    |     |    |
| 09/14/2023 | 09:01:31 | 29.4 | 73.6 | 27.5 | 09/15/2023 | 02:30:49 | 26.8 | 74.9 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 09:02:47 | 29.5 | 74.4 | 26.0 | 09/15/2023 | 02:31:49 | 26.8 | 75.3 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 09:29:50 | 27.4 | 69.3 | 25.2 | 09/15/2023 | 02:32:49 | 26.8 | 75.3 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 10:29:50 | 25.7 | 76.1 | 26.7 | 09/15/2023 | 02:33:49 | 26.9 | 74.0 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 10:43:39 | 25.5 | 75.5 | 26.5 | 09/15/2023 | 02:34:49 | 26.8 | 71.8 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 11:23:51 | 25.9 | 74.9 | 26.4 | 09/15/2023 | 02:35:49 | 26.8 | 71.8 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 11:29:50 | 26.0 | 75.0 | 26.4 | 09/15/2023 | 02:36:49 | 26.9 | 68.6 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 12:29:50 | 25.9 | 76.3 | 26.4 | 09/15/2023 | 02:37:49 | 26.7 | 67.7 | 25.3 |      |      |    |     |    |
| 09/14/2023 | 13:29:50 | 26.0 | 76.4 | 26.4 | 09/15/2023 | 02:38:49 | 26.7 | 67.7 | 25.3 |      |      |    |     |    |
| 09/14/2023 | 14:29:50 | 26.0 | 77.4 | 26.3 | 09/15/2023 | 02:39:49 | 26.7 | 69.7 | 25.3 |      |      |    |     |    |
| 09/14/2023 | 15:29:50 | 26.0 | 76.9 | 26.3 | 09/15/2023 | 02:40:49 | 26.7 | 71.1 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 16:29:50 | 26.1 | 77.5 | 26.4 | 09/15/2023 | 02:41:49 | 26.7 | 71.1 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 17:29:50 | 26.1 | 77.4 | 26.4 | 09/15/2023 | 02:42:49 | 26.7 | 72.7 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 18:29:50 | 26.1 | 77.9 | 26.4 | 09/15/2023 | 02:43:49 | 26.7 | 73.3 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 19:29:50 | 26.1 | 78.1 | 26.4 | 09/15/2023 | 02:44:49 | 26.7 | 73.3 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 20:29:50 | 26.2 | 78.3 | 26.4 | 09/15/2023 | 02:45:49 | 26.7 | 74.3 | 25.4 |      |      |    |     |    |
| 09/14/2023 | 21:29:50 | 26.1 | 78.9 | 26.5 | 09/15/2023 | 02:46:49 | 26.7 | 75.0 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 22:29:50 | 26.2 | 79.8 | 26.5 | 09/15/2023 | 02:47:49 | 26.7 | 75.0 | 25.5 |      |      |    |     |    |
| 09/14/2023 | 23:29:50 | 26.2 | 79.6 | 26.6 | 09/15/2023 | 02:48:49 | 26.8 | 75.7 | 25.5 |      |      |    |     |    |
| 09/15/2023 | 00:29:50 | 26.1 | 74.3 | 26.5 | 09/15/2023 | 02:49:49 | 26.7 | 74.1 | 25.5 |      |      |    |     |    |
| 09/15/2023 | 00:48:54 | 25.7 | 77.4 | 26.3 | 09/15/2023 | 02:50:49 | 26.7 | 74.1 | 25.5 |      |      |    |     |    |
| 09/15/2023 | 00:49:20 | 25.7 | 77.4 | 26.3 | 09/15/2023 | 02:51:49 | 26.7 | 70.3 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 00:50:15 | 25.7 | 77.4 | 26.3 | 09/15/2023 | 02:52:49 | 26.7 | 69.3 | 25.3 |      |      |    |     |    |
| 09/15/2023 | 00:50:43 | 25.7 | 77.4 | 26.3 | 09/15/2023 | 02:53:49 | 26.7 | 69.3 | 25.3 |      |      |    |     |    |
| 09/15/2023 | 00:51:14 | 26.0 | 75.6 | 26.2 | 09/15/2023 | 02:54:49 | 26.6 | 67.2 | 25.3 |      |      |    |     |    |
| 09/15/2023 | 00:52:39 | 26.0 | 75.6 | 26.2 | 09/15/2023 | 02:55:49 | 26.6 | 70.0 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 00:53:00 | 26.0 | 75.6 | 26.2 | 09/15/2023 | 02:56:49 | 26.6 | 70.0 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 00:53:12 | 26.2 | 72.8 | 26.2 | 09/15/2023 | 02:57:49 | 26.6 | 72.2 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:08:11 | 25.6 | 71.8 | 26.1 | 09/15/2023 | 02:58:49 | 26.6 | 73.0 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:23:11 | 25.7 | 74.9 | 24.5 | 09/15/2023 | 02:59:49 | 26.6 | 73.0 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:24:49 | 25.7 | 74.9 | 24.5 | 09/15/2023 | 03:00:49 | 26.6 | 74.0 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:25:49 | 26.5 | 75.8 | 25.9 | 09/15/2023 | 03:01:49 | 26.6 | 74.6 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:26:49 | 26.5 | 75.8 | 25.9 | 09/15/2023 | 03:02:49 | 26.6 | 74.6 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:27:49 | 26.8 | 75.9 | 26.0 | 09/15/2023 | 03:03:49 | 26.7 | 75.2 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:28:49 | 26.7 | 76.5 | 25.9 | 09/15/2023 | 03:04:49 | 26.7 | 75.6 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:29:49 | 26.7 | 76.5 | 25.9 | 09/15/2023 | 03:05:49 | 26.7 | 75.6 | 25.4 |      |      |    |     |    |
| 09/15/2023 | 01:30:49 | 26.8 | 77.0 | 25.9 | 09/15/2023 | 03:06:49 | 26.7 | 75.6 | 25.4 |      |      |    |     |    |