Cow Necklace Sensor Operating Manual

Version 20200918 v2.0 Sensor

Cow Necklace BLE Manual

1. Wake up pressing the button on the front of the product.
2. Confirm by front LED Flashing
   1) 0.5 second flashing : 5 minute 5 second of acceleration value stored (opt=0)
   2) 1 second flashing : 30 minutes and 30 seconds of acceleration value stored (opt=1)
   3) 2 second flashing : 60 minutes 60 seconds acceleration value stored (opt=2)
3. Run the BLE app on your smartphone and scan it to connect.
4. When the 'get' string is sent, temperature/humidity/battery information is sent after acceleration sensor value is sent.
5. Send out NO_DATA to notify last when transfer is complete

   1) sending information of temperature/humidity/battery information
      Format : T, Index, Time stamp, Internal Temperature, Internal Humidity, External Temperature, External Humidity, Battery Level
      T : information separator temperature/humidity/battery
      Index : stored and transmitted temperature/humidity/battery Record Index
      Timestamp : Stored time(YYMMDDHHMMSS) Attention) Year is 2digit (20 is year 2020)

      Internal Temperature ℃
      Internal Humidity %
      External Temperature ℃
      External Humidity %
      Battery Level : %

      Example)

      SEND: get

      RECV:
      T,0,200107175401,21.1,43.6,21.8,44.6,100

      RECV: NO_DATA

T : temperature/humidity/battery , 0 : Index, 200107175401 : 2020Year January 7th 5hr. 54Min. 01sec., 21.1 : Internal Temperature 21.1℃,
43.6 : Interanl Humidity : 43.6%, 21.8 : External Temperature 21.8℃, 44.6 : External Temperature 44.6%, 100 : Battery Level 100%

2) G-sensor
    Format : G, Index, X, Y, Z
    G : Acceleration Sensor Value
    Index : Stored and transmitted acceleration sensor Record Index
    Timestamp : stored Time (YYMMDDHHMMSS) Attention) Year is 2digit (20 is year 2020)
    X : X Value (-32768 ~ 32767)
    Y : Y Value (-32768 ~ 32767)
    Z : Z Value (-32768 ~ 32767)

Ex)

RECV: G,0,200107175403,9333,-8467,-11444

RECV: G,1,200107175404,9328,-8405,-11463

RECV: G,2,200107175406,9357,-8417,-11490

    G : Acceleration Sensor, 0 : Index, 200107175403 : 2020Year January 7th 5Hr. 54Min. 03sec
      , 9333 : X-axis value, -8467 : Y-axis value, -11444 : Z-axis value

3) AI Modes
   Format : M, Algo, Switch
   M : Machine Learning Inference on-demand
   Algo : Please refer sales contract or SKU id
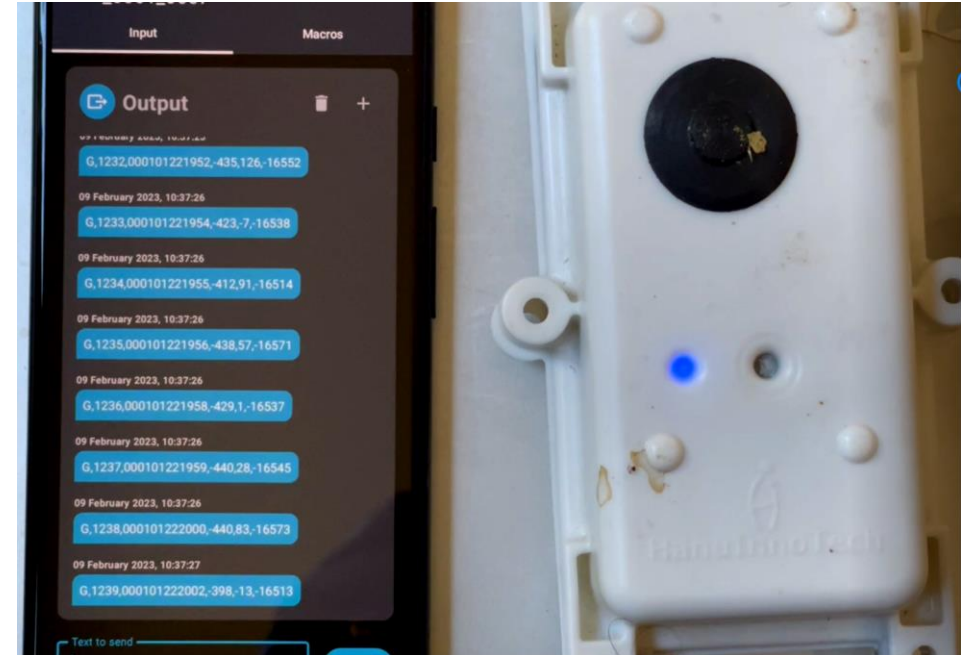   Switch : 0- Immediate health details, 1- activity, 2 – Climate Model, 3 – Extreme weather
   M,SKUID,0

Ex) M,SKUID,1

RECV: Healthy

Ex) M,SKUID,3

RECV: Climate Stress

6. Setting Method (Time must be set when battery is replaced)

1) After connecting the battery to the product, connect it to the board through a BLE in a smartphone app.

2) Command "cls-HASHCODE" initializes storage memory. Hashcode is issued securely when sensor installed!

3) Set the current time with the st command.

   Ex) styyMMddhhmmdd
       yy means 2 of 4 digits in the year (If year 2020 input 20)

4) Command "opt?" check for mode

5) If necessary, reset the mode with the opt=x command.
   opt=0 (5Min. 5Sec.)
   opt=1 (30Min. 30Sec.)
   opt=2 (60Min 60Sec.)

7. Command language(BLE)

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1) get   : Transfer data stored in memory to BLE.
2) cls-hashcode   : Initialize the memory.
3) cur   : Transmits the current sensor value.
4) st    : Set up the current time.(styyMMddhhmmss)
5) date  : Transmits the current time.(Check current time)
6) ver   : Send the firmware version.(Check current firmware version)
7) opt?  : Check the current mode.
8) opt=x : Sets the current mode.
          (0:5Min.5Sec, 1:30Min.30Sec, 2:60Min. 60Sec.)
9) M, SKU : Machine Learning immediate inference - Climate Models
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Cow Necklace ™

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The World's first Climate
Smart Sensors & Analytics Platform with
CMIP6 SSP Climate Models.

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