

Customer Code : \_\_\_\_\_

# DATASHEET

DAPU P/N: CM66K-G129-10.00MHz-3G-I

Customer P/N: \_\_\_\_\_

| DAPU             |         |          | Customer Approval      |
|------------------|---------|----------|------------------------|
| Drew             | Audited | Approved | Stamp, please! Thanks! |
|                  |         |          |                        |
| Date: 2024.07.01 |         |          |                        |

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## 1. Electrical Parameters

| Internal Receiver Characteristics | PARAMETERS                                   |  |      |         |                    | NOTES  |
|-----------------------------------|--|--|------|---------|--------------------|--|
|                                   | Type   | Auto Position Lock                           |      |         |                    |  |
|                                   | Number Of Channels                           | 72   |      |         |                    |  |
|                                   | Frequency Band                               | GPS L1C/A,<br>GLONASS L1OF,<br>Galileo E1B/C |      |         |                    |  |
|                                   | Sensitivity                                  | Tracking & Navigation                        |      | -165dBm |                    |  |
|                                   |  | Acquisition                                  |      | -148dBm |                    |  |
| Antenna INPUT                     | SMA-KE                                       |  |      |         | CN1                |  |
| State Input                       | Parameters                                   | Min.   | Typ. | Max.    | Unit.              |  |
|                                   | Lock   | 2.7  |      |         | V                  | <5mA Load  |
|                                   | Holdover                                     |  |      | 0.4     | V                  | <5mA Load  |
|                                   | Connector                                    | Pin 8  |      |         |                    |  |
| RF Output                         | Parameters                                   | Min.   | Typ. | Max.    | Unit.              | Test Condition   |
|                                   | Nominal Frequency                            | 10.00  |      |         | MHz                |  |
|                                   | Waveform                                     | HCMOS  |      |         |                    |  |
|                                   | High-level Output Voltage (V <sub>OH</sub> ) | 2.7  |      |         | V                  | < 5mA Load   |
|                                   | Low-level Output Voltage (V <sub>OL</sub> )  |  |      | 0.4     | V                  | < 5mA Load   |
|                                   | Rise/Fall Time                               |  |      | 8       | ns                 | < 5mA Load   |
|                                   | Duty Cycle                                   | 45   | 50   | 55      | %                  | < 5mA Load   |
|                                   | Accuracy                                     | -1   |      | +1      | ×10 <sup>-12</sup> | 24 hours average when locked to 1 PPS  |
|                                   | Short-term Stability                         |  |      | 0.02    | ×10 <sup>-9</sup>  | Temperature stability, no EMI/EMC or other interference, test after power for 1 hour ref. to 25°C; 1s.   |
|                                   | Aging Tolerance Per Day                      | -0.2   |      | +0.2    | ×10 <sup>-9</sup>  | V <sub>cc</sub> , T <sub>A</sub> constant measurement referenced to frequency observed with T <sub>A</sub> =25°C, V <sub>cc</sub> =5.0V, in FREE RUN condition and after 30 days of operation. |
|                                   | Aging Tolerance 1 Year                       | -0.01  |      | +0.01   | ×10 <sup>-6</sup>  |  |
| Phase Noise (All conditions)      |  |  | -118 | -113    | dBc/Hz             | 10Hz   |
|                                   |  |  | -138 | -133    |                    | 100Hz  |



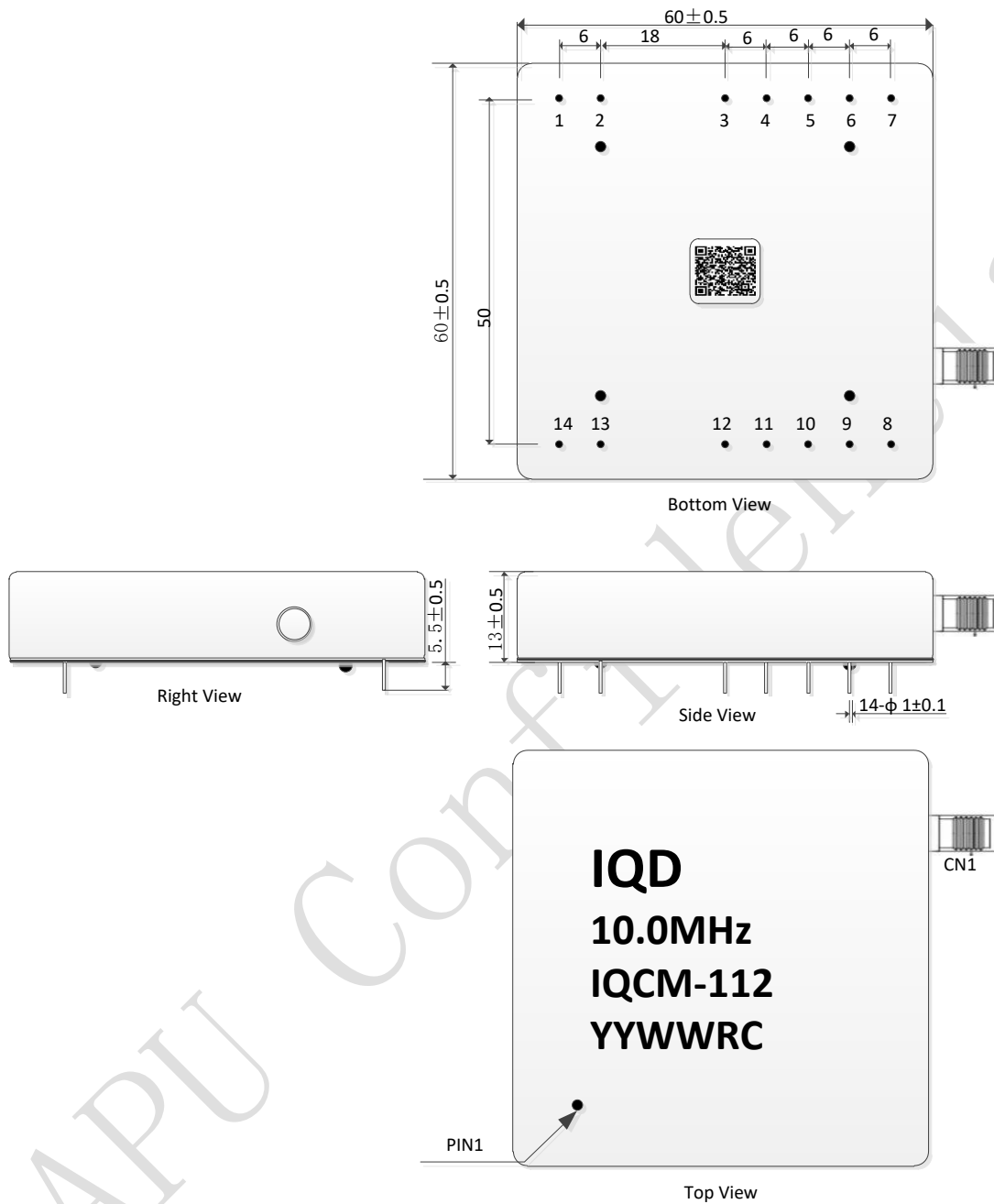
|                                       |  |        |      |      |         |   |
|---------------------------------------|--|--------|------|------|---------|---|
|                                       |  |        | -148 | -143 |         | 1KHz  |
|                                       |  |        | -150 | -145 |         | 10KHz   |
|                                       |  |        | -150 | -145 |         | 100KHz  |
|                                       |  |        | -150 | -150 |         | 1MHz  |
|                                       | Connector                                    | Pin 2  |      |      |         |   |
| GPS 1PPS Output                       | Parameters                                   | Min.   | Typ. | Max. | Unit.   | Test Condition  |
|                                       | Waveform                                     | HCMOS  |      |      |         |   |
|                                       | High-Level Output Voltage (V <sub>IH</sub> ) | 2.7    |      |      | V       | 15pF  |
|                                       | Low-Level Output Voltage (V <sub>IL</sub> )  |        |      | 0.4  | V       |   |
|                                       | Pulse Width                                  |        | 100  |      | ms      |   |
|                                       | Connector                                    | Pin 10 |      |      |         |   |
| State Output                          | Parameters                                   | Min.   | Typ. | Max. | Unit.   |   |
|                                       | Lock   | 2.7    |      |      | V       | <5mA Load   |
|                                       | Holdover                                     |        |      | 0.4  | V       | <5mA Load   |
|                                       | Connector                                    | Pin 5  |      |      |         |   |
| Holdover Capability                   | Holdover Time                                | Min.   | Typ. | Max. | Unit.   |   |
|                                       | 8 hours                                      | -1.5   |      | +1.5 | μs      | ΔT=±5°C, 8 hours holdover after turn on 4 days and GPS lock 3 days, Temperature variable speed less than 1°C per minute |
| Supply Voltage                        | Parameters                                   | Min.   | Typ. | Max. | Unit.   |   |
|                                       | Supply voltage                               | 4.75   | 5.0  | 5.25 | V       |   |
|                                       | Current consumption                          |        |      | 2000 | mA      | During Warm-up  |
|                                       |  |        |      | 1000 | mA      | During steady state operation @25°C   |
|                                       | AC ripple                                    |        |      | 50   | mVpk-pk | 10Hz to 1MHz  |
| Connector                             | Pin 12                                       |        |      |      |         |   |
| 1 PPS Output Waveform Characteristics | Parameters                                   | Min.   | Typ. | Max. | Unit.   |   |
|                                       | Waveform                                     | HCMOS  |      |      |         |   |
|                                       | High-Level Output Voltage(V <sub>OH</sub> )  | 2.7    |      |      | V       | 15pF  |
|                                       | Low-level Output voltage (V <sub>OL</sub> )  |        |      | 0.4  | V       |   |
|                                       | Pulse width                                  |        | 100  |      | ms      |   |
|                                       | Connector                                    | Pin 3  |      |      |         |   |



|                          | Parameters  | Min.   | Typ. | Max. | Unit. |  |
|--------------------------|---|--|------|------|-------|--|
| Serial Interfaces        | Rx high-level input voltage (VH )   | 2.7  |      |      | V     |  |
|                          | Rx low-level input voltage (VL)   |  |      | 0.4  | V     |  |
|                          | Tx high-level output voltage (VH )  | 2.7  |      |      | V     |  |
|                          | Tx low-level output voltage (VL)  |  |      | 0.4  | V     |  |
|                          | Data format   | NMEA-0183  |      |      |       |  |
|                          | Serial protocol   | 9600-N-8-1   |      |      |       |  |
|                          | Connector   | Pin6 and Pin7  |      |      |       |  |
|                          |   |  |      |      |       |  |
| Environmental Conditions | Parameter   | Conditions   |      |      |       |  |
|                          | Operating temperature   | -20°C to +75°C   |      |      |       |  |
|                          | Storage Temperature   | -55°C to +105°C  |      |      |       |  |
|                          | Storage humidity  | 30%~80%  |      |      |       |  |
|                          | ESD Level   | Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.   |      |      |       |  |
|                          |   | Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.   |      |      |       |  |
|                          | Moisture Sensitivity Level  | Not humidity sensitive.  |      |      |       |  |
|                          | Vibration   | Test Condition: 0.75mm ;acceleration:10g;10Hz~500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc. |      |      |       |  |
| Shock                    | 50g; 11ms; half sine wave (3 times for each 3 directions X ,Y , Z ),IEC 68-2-27 Test Ea/Severity 50A. |  |      |      |       |  |
| Full Package Storage     | Relative Humidity (%)   | 20%~70%  |      |      |       |  |
|                          | Temperature (°C)  | -10~35°C   |      |      |       |  |



## 2. Mechanical Structure(mm)



**Note1:** Tolerance  $\pm 0.20$ mm without mark

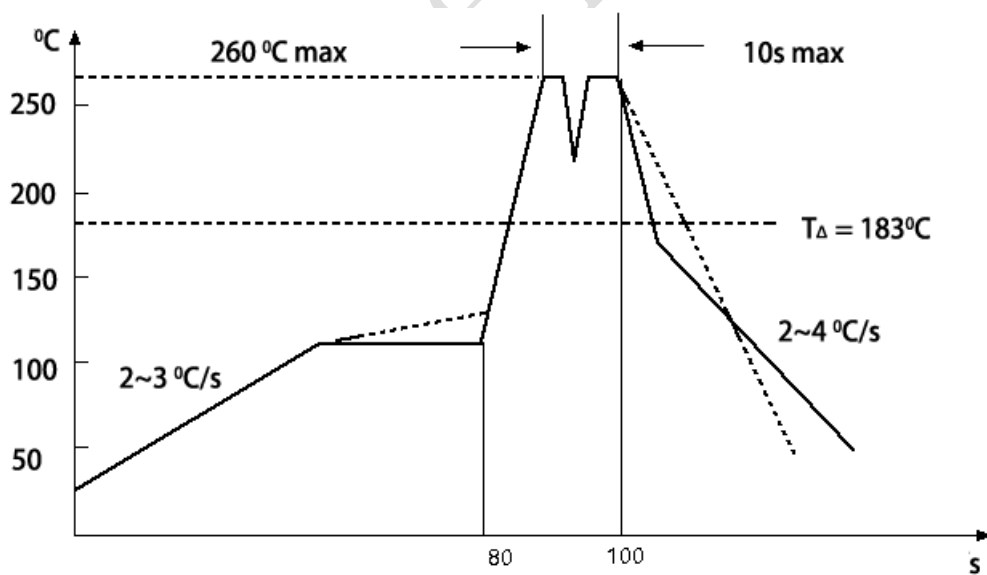
**Note2:** The first two YY representative: year  
After two WW representative: week

**Note3:** Referential Weight  $82 \pm 10$ g



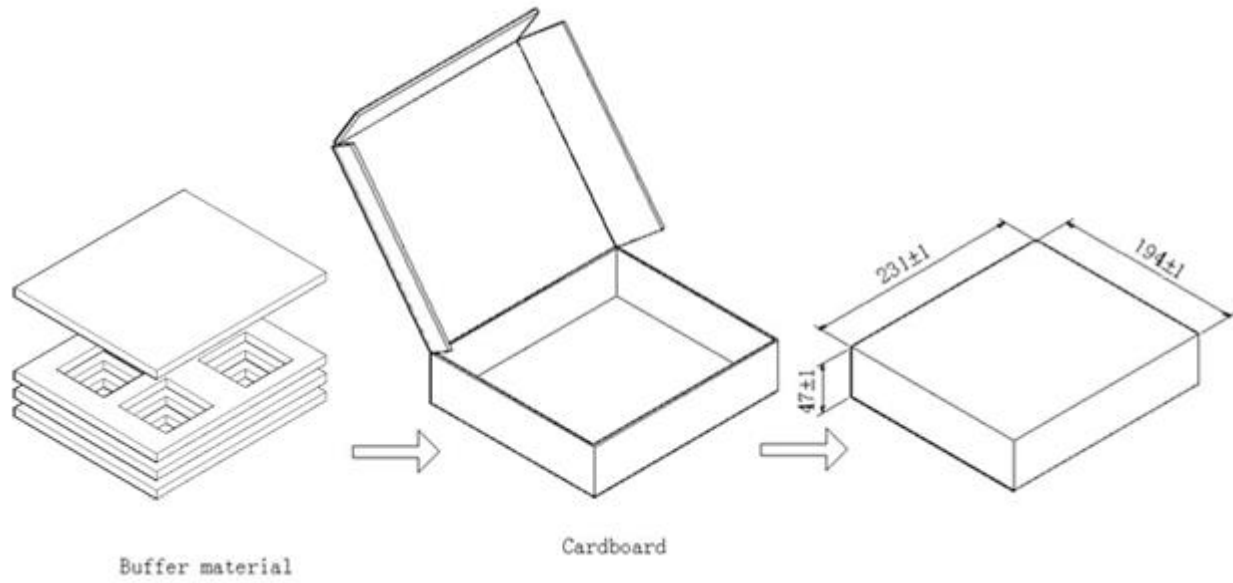
| PIN DEFINITION |              |   |
|----------------|--------------|---|
| PIN            | NAME         | DESCRIPTION   |
| 2              | 10MHz OUTPUT | 10MHz OCXO frequency output .   |
| 3              | 1PPS OUTPUT  | The clock module 1PPS output .  |
| 5              | State OUTPUT | State output. Output high level when the CM is locked and stable, others low level.       |
| 6              | RX INPUT     | Asynchronous serial data input. 9600-N-8-1.   |
| 7              | TX OUTPUT    | Asynchronous serial data output. 9600-N-8-1.  |
| 8              | State INPUT  | H: Lock Enable<br>The work state is set to normal operation when the state input is high. |
|                |              | L: Lock Disable<br>The module cannot be locked when the state input is low level.         |
| 10             | 1PPS OUTPUT  | 1PPS from the internal GPS/GLONASS/Galileo receiver.                                      |
| 12             | VCC          | Power supply input, 4.75V to 5.25V.   |
| 1、14           | NC           | Not connected.  |
| 4、9、11、13      | GND          | GND   |

### 3. Wave Soldering Curve (RoHS)





#### 4. Package (mm)



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