

Radio Modem HX-DU2005D



Embedded Radio Modem for Wireless Data Communications

Harxon HX-DU2005D is an embedded high performance radio modem providing reliable and stable wireless data communications for mission critical applications such as geodetic surveying and autonomous guidance solution for agricultural machines. It is an adjustable 0.5W and 2W UHF transceiver designed for integration into products that require either a one- or two-way radio communication link that is configurable for operation between 410-470MHz.



VERSATILE FEATURES WITH RELIABLE PERFORMANCE

This low power consumption radio modem provides reliable operation with sophisticated features as lightweight compact single board structure, high/low power switching, serial port baud rate switching, air baud rate switching, robust product performance with strong anti-interference capacity that make it versatile and easy to use for a wide variety of applications.

COMPATIBLE WITH MAJOR RADIO PROTOCOLS

Harxon HX-DU2005D is compatible with mainstream radio protocols such as TrimTalk450, TrimMark3, Transparent, SATEL, and also upgradable with expandable customized radio protocols are available.

COMPACT SINGLE BOARD STRUCTURE FOR EASY INTEGRATION

HX-DU2005D weights only 60g with small dimension and practical interface, it could be easily integrated into the customer's host device without complexity. It adopts a compact single board structure with efficient heat dissipation case ensuring reliable product performance.

LOW POWER CONSUMPTION

HX-DU2005D adopts optimized structure design for upgraded transmission efficiency while reducing power consumption, prolongs the battery life.

KEY FEATURES

- Support Air Baud Rate Switching: 19200bps, 9600bps
- Support Serial Port Baud Rate Switching: 115200bps, 38400bps, 19200bps, 9600bps
- Compatible with Radio Protocols: TrimTalk450(9600bps), TrimMark3(19200bps), Transparent(9600bps), SATEL(9600bps, 19200bps)
- Support Online Update
- Support High / Low Power Switch

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General Specification

| | |
|----------------------------|--------------------------|
| Frequency Range | 410~470MHz |
| Operating Mode | Half-duplex |
| Channel Spacing | 12.5KHz/25KHz |
| Modulation Type | GMSK / 4FSK |
| Channels | 1(programmable) |
| Operation Voltage | 5.0V |
| Power Consumption(typical) | |
| High power | 5.0W@5V DC |
| Low Power | 3.5W@5V DC |
| Standby | 0.5W@5V DC |
| Frequency Stability | $\leq \pm 1.0\text{ppm}$ |

Structural Specification

| | |
|-----------------------------|----------------|
| Size | 75Lx46Wx11H mm |
| Weight | About 60g |
| Antenna Interface | MCX Female |
| Antenna Interface Impedance | 50ohm |
| Data Interface | 2*8pin 1.27mm |

Modem

| | |
|------------------|----------------------|
| Air Baud Rate | 9600bps / 19200bps |
| Serial Port Baud | 9600bps / 19200bps |
| | 38400bps / 115200bps |

Transmitter

| | |
|------------------------|-------------------------|
| RF Output Power | |
| High Power (2.0W) | 33.2 \pm 0.5dBm@DC 5V |
| Medium Power (1.0W) | 30.0 \pm 0.5dBm@DC 5V |
| Low Power (0.5W) | 27.5 \pm 1.0dBm@DC 5V |
| Power Stability | $\pm 1\text{dB}$ |
| Adjacent Channel Power | >50dB@25KHz |

Receiver

| | |
|----------------------|--------------------------|
| Sensitivity | -115dBm@BER 10-5/9600bps |
| Co-channel Rejection | >-12dB |

Operation Environment

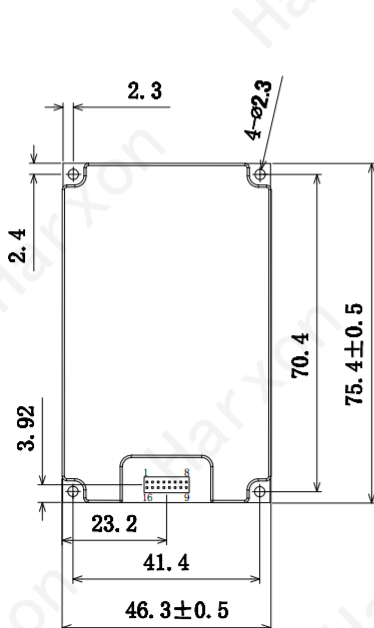
| | |
|------------------------|--|
| Temperature(operation) | -40°C~+70°C |
| Temperature(storage) | -50°C~+85°C |
| Shock and Vibration | GB / T2423.56-2006 / ISO 16750-3 2003 |

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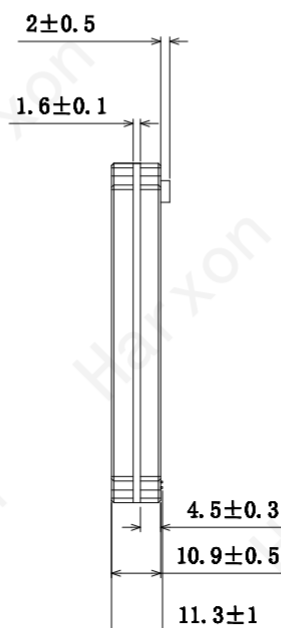
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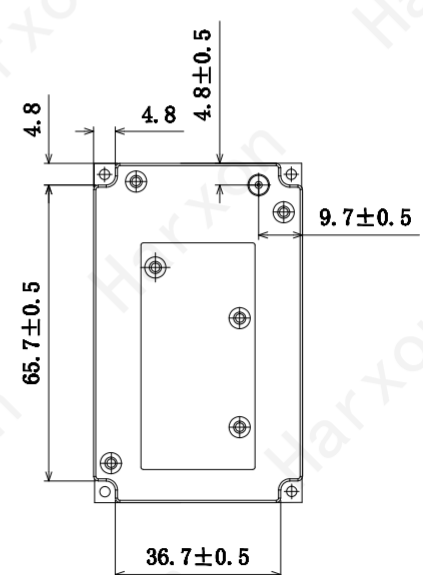
Structure Diagram(mm)



BOTTOM VIEW



SIDE VIEW

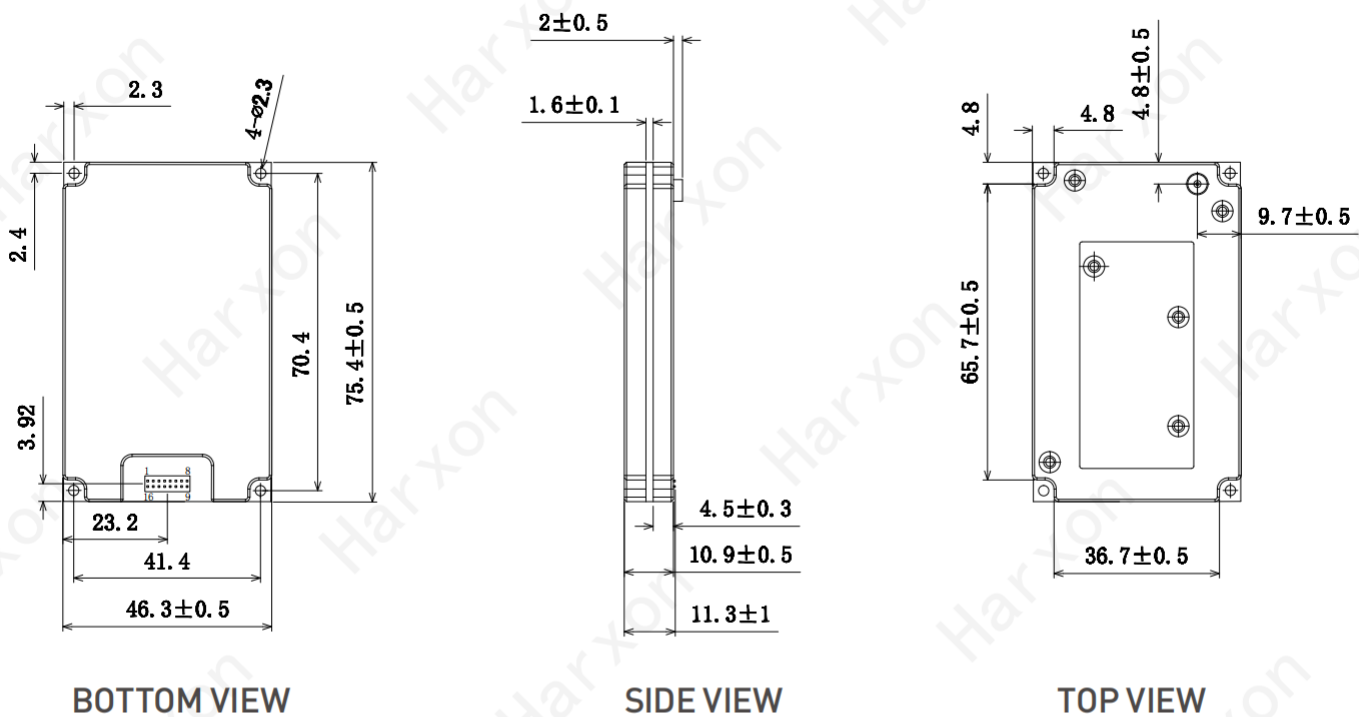


TOP VIEW

Undeclared Tolerance: $\pm 0.3\text{mm}$

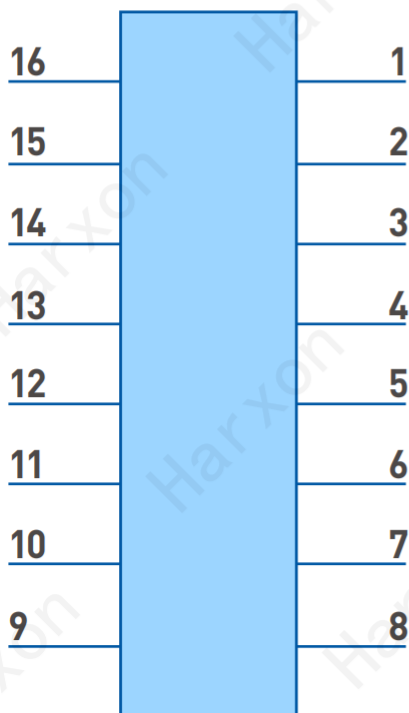
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Structure Diagram(mm)



Undeclared Tolerance:±0.3mm

Model Interface Pin Definition:



Data Interface Diagram

Pin Definition:

- Pin 1—VCC-stabilized + 5V DC power input
- Pin 2—VCC-stabilized + 5V DC power input
- Pin 3—VCC-stabilized + 5V DC power input
- Pin 4—VCC-stabilized + 5V DC power input
- Pin 5—Received Signal Strength Indicator(0.5V-2.5V)
- Pin 6—Not Connected
- Pin 7—TXD
- Pin 8—RXD
- Pin 9—CONFIG-pull down for configuration mode, pull up for data transmission mode
- Pin 10—for test, Not Connected
- Pin 11—for test, Not Connected
- Pin 12—for test, Not Connected
- Pin 13—external power negative input
- Pin 14—external power negative input
- Pin 15—external power negative input
- Pin 16—external power negative input