

# UAV Terrain following radar

Model: H31-1

*Application: UAV Terrain following radar*



UAV  
-Terrain following radar  
-Obstacle avoidance radar

[www.lintechtt.com](http://www.lintechtt.com)

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## Overview

UAV-H31-1 multi-target height fixing millimeter-wave radar is a multi-target height fixing millimeter-wave radar. It adopts linear frequency-modulated continuous wave (FMCW) modulation mode in 77GHz-81GHz band. It can accurately measure the distance between radar and ground or water and calculate the height of vegetation at the same time within the measuring range. 2cm measurement precision, small size, high sensitivity, light weight, easy integration, stable performance, can simultaneously detect the distance between vegetation and ground, can adapt to a variety of complex terrain environment, to meet the height guidance of unmanned flight platforms such as agricultural plant protection aircraft, small express transport aircraft, can also be applied to hydrological monitoring, liquid level measurement and other fields of application.

Features:

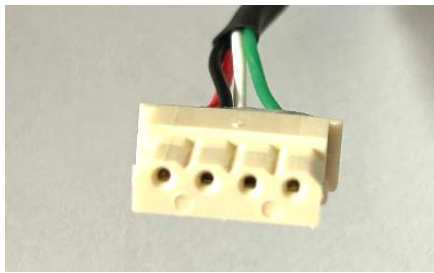
1. Power and antenna board higher integration;
2. power supply range 5-12V;
3. Stronger energy and stronger ability to detect targets;
4. The hardware bottom noise is relatively low, can set a high sensitivity
5. Fewer false positives
6. Light weight design at 90g.

## Specifications:

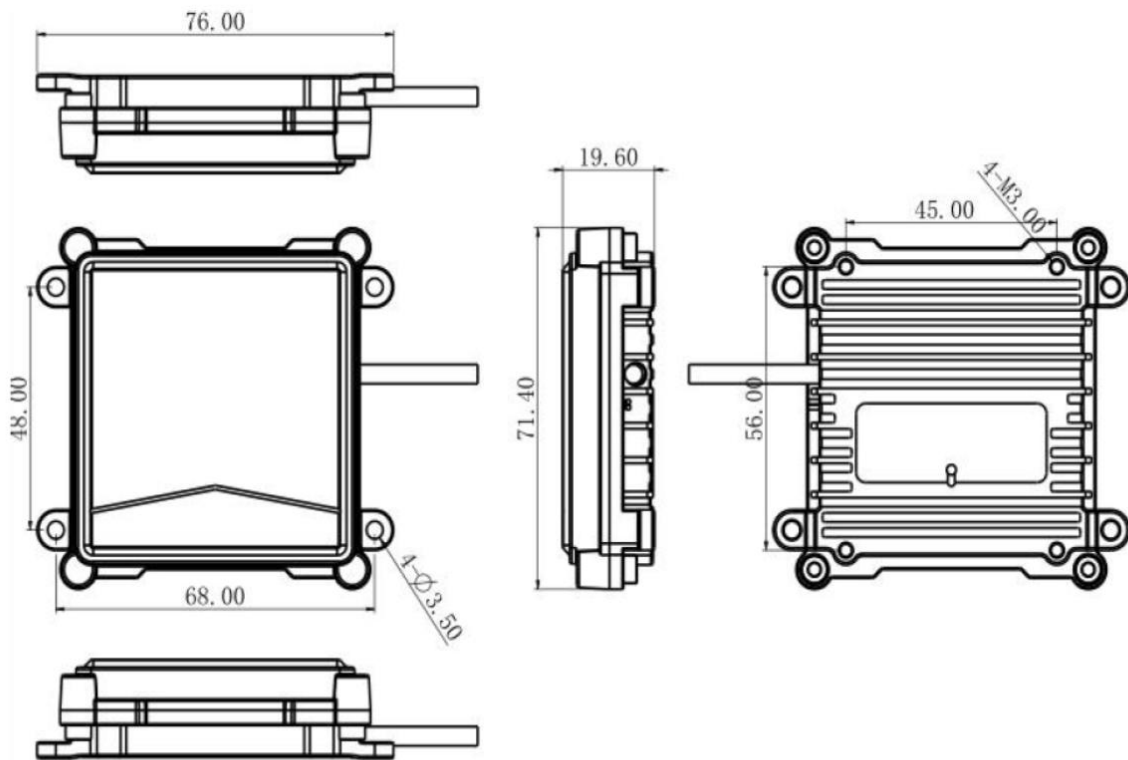
Feature	Parameter	Data
Antenna performance	Azimuth beam (3dB)	+/- 15°
	Pitch beam width(3dB)	-7~ +1°
	Max EIRP(dBm)	<b>30</b>
Radar performance	Detect range(m)	0.1-27(customized:0.1-15)
	Ranging accuracy(m)	0.02
	Range resolution(m)	0.12
Radar attribute	Transmitting frequency(GHz)	77-81
	Refresh rate(Hz)	20
	Bandwidth(GHz)	1.5
System attribute	Operating voltage(VDC)	5~12VDC
	Operating temperature	-40~ +85°C
	Power consumption(W)	<b>3</b>
	Data interface	UART
	IP rating	IP67
	Size(mm)	76*71.5*19.6
	Weight(g)	90

2.54mm 4P Connector define:

Pins	Define	Parameter
1	DC_In (Red)	5~12VDC
2	GND (Black)	GND
3	TX (Green)	0~3.3V
4	RX (White)	0~3.3V



Product Dimisions:



## Data Output explain

Serial port data parsing:

Detect DATA: Each frame are 12 bytes, DATA is hexadecimal, the height information is DATA[0], data [1], the height byte first. DATA[2]-DATA[4] is reserved. Data can not be processed.

Example: (0xFE 0xFC 0x00 0xE1 0x00 0xAD 0x01 0x26 0xC7 0x76 0x1D 0x1D)

$H=(\text{uint16\_t})((0x00*256)+0xE1)(\text{cm})$

$\text{CRC}=(0xFE+0xFC+0x00+0xE1+0x00+0xAD+0x01+0x26+0xC7) \ \&0xFF;$

Name	Length(Byte)	Value	Explain
HEAD	2	0xFE,0xFC	Start Bits
DATA[0] DATA[1]	2	0xFF 0xFF	Height (Negative numbers are invalid, the high byte comes first, in centimeters)
DATA[2] DATA[3]	2	-	Reserve
DATA[4] DATA[5]	2	-	Reserve
SEQ	1	0~255	Frame loop (This bit indicates the number of frames sent. If the number of frames is greater than 255, the frame number is cleared to zero)
CRC	1	-	Check bit (The first 9 bytes are summed for verification)
TAIL	2	0x1D,0x1D	End Bits