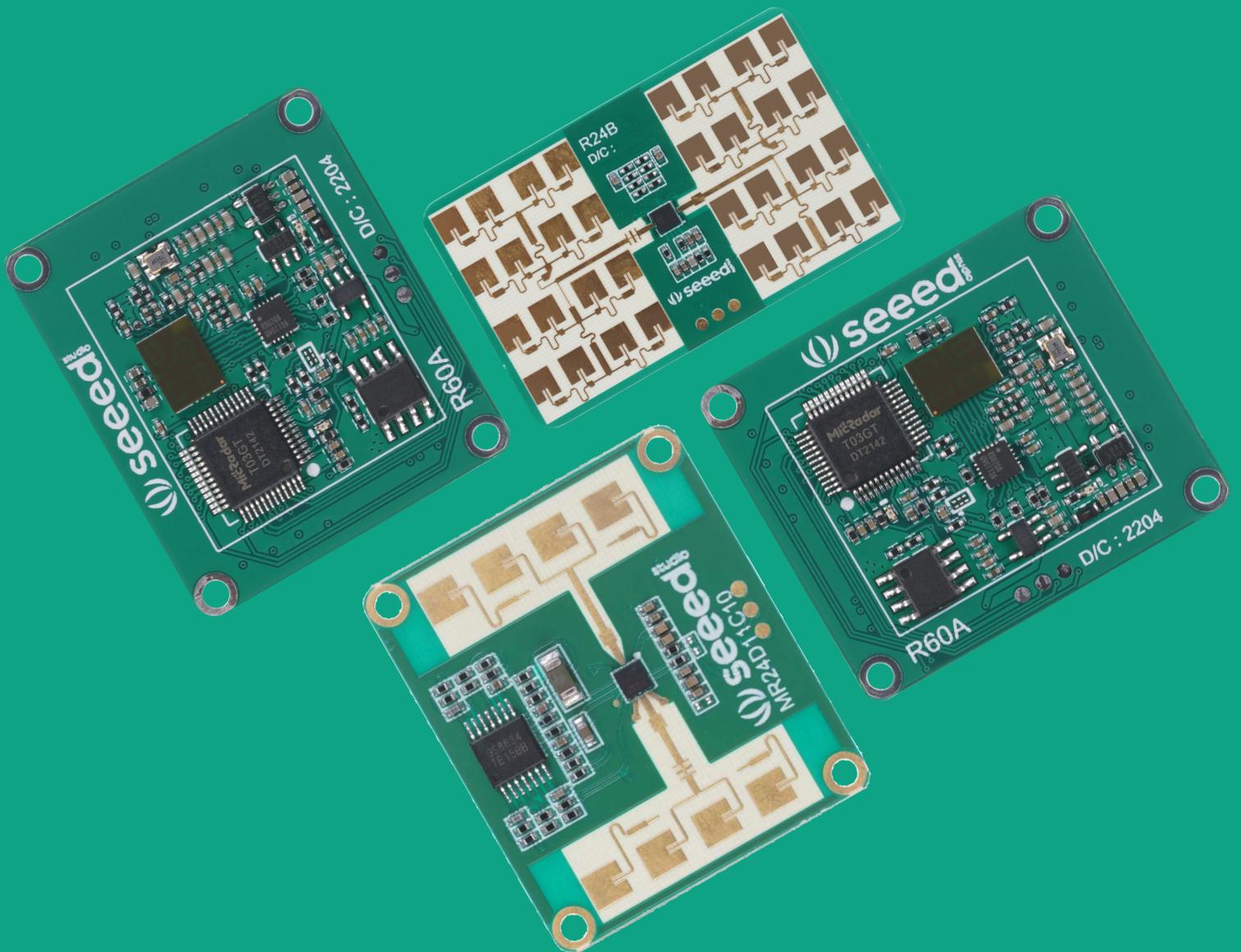


# Seeed Studio MMWave Sensor Case Design



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How the radar works: The radar antenna transmits electromagnetic waves through the plastic housing and receives the returned electromagnetic signals.



Radar antennas in orange



### Basic points of the shell:

- 1) The surface directly above the radar module must be flat, preferably with a surface area of 40mm \* 40mm or more.
- 2) The surface directly above the radar module must not contain metal or have metallic paint to avoid signal attenuation.
- 3) The surface of the radar module can be made of ABS+PC.
- 4) Power supply cable access, consider embedded or conventional USB or DC port
- 5) external power supply ( $\geq 0.8w$  power consumption) to consider power wiring
- 6) Equipped with keys to meet the requirements of the basic distribution network
- 7) Radar module double-row pin height can be selected, usually 3.8mm pins, plus the base is 6.3mm, please consider the product and PCBA thickness.
- 8) Whether to access light, infrared, 4G SIM card, if needed, please reserve the opening

### Key structural design points:

- 1) The thickness of the surface facing the radar module must not exceed 1.2mm
- 2) The distance between the antenna surface of the radar module and the surface of the housing should be kept at about 3mm
- 3) The radar antenna should not be obstructed by columns or other components at the same height as possible.
- 4) The power supply should be at a clear distance from the radar module (strong power needs to be isolated) to avoid interference
- 5) Consider the layout of WiFi, ZigBee and other communication modules, radar module on the surface, communication module can be under the PCBA.
- 6) Consider the working status of LEDs and the light transmission design of the distribution network indicator, add light guide pillar.
- 7) Consider the compatibility of this structure, whether it meets the size of 4G, Wi-Fi, Zigbee, BT and other communication methods.

### Power supply requirements:

- 1) Weak power input: It is recommended to use a power input greater than 5V to avoid some installation scenarios where the wiring is too long resulting in insufficient power supply to the radar, e.g. 9v/1 2v DC head, if a USB port is required, the adapter must be 9v/1 2v.
- 2) The PCBA needs 5V to meet >500mA current input.
- 3) Can use the whole machine built-in or external adapter power supply, adapter choose 5V 1A
- 4) Preferably reserved for 12V power input interface, dry contact interface, 485 communication interface

## External structure reference

- 1) Top recessed installation (engineering end, perforated and fixed), strong electrical equipment, two exposed ground(neutral) and light wires Used in hotel, property, office and other engineering installations



- 2) Top rear mounting (screw fixing, not perforated), strong electrical equipment, equipment with terminals for ground(neutral) and light wires



- 3) Tilt mounting: DC head powered product, fixed mounting, angle fixed.



- 4) Horizontal installation, 86-box form, strong electrical equipment, equipment with terminals for zero and fire wires



5) Adjustable angle to meet both overhead and tilt mounting requirements



Other: Radar products are human touch sensors to solve the privacy problem of the camera, it is recommended that the housing is not too large and conspicuous to reduce customer misunderstanding of the monitoring equipment