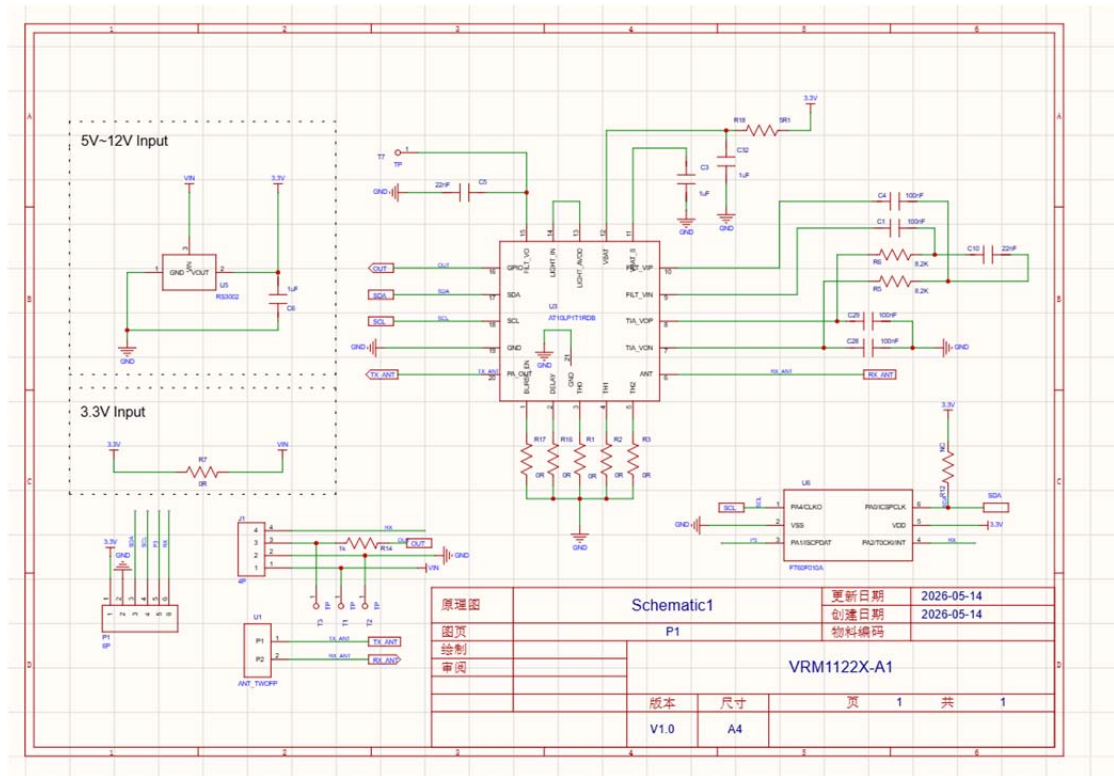
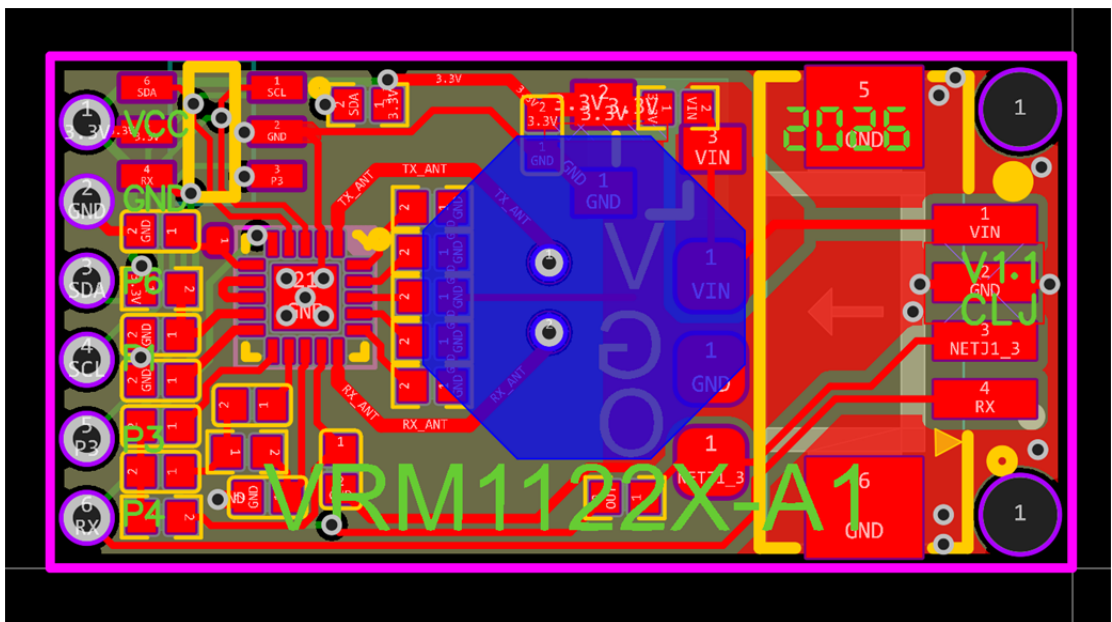
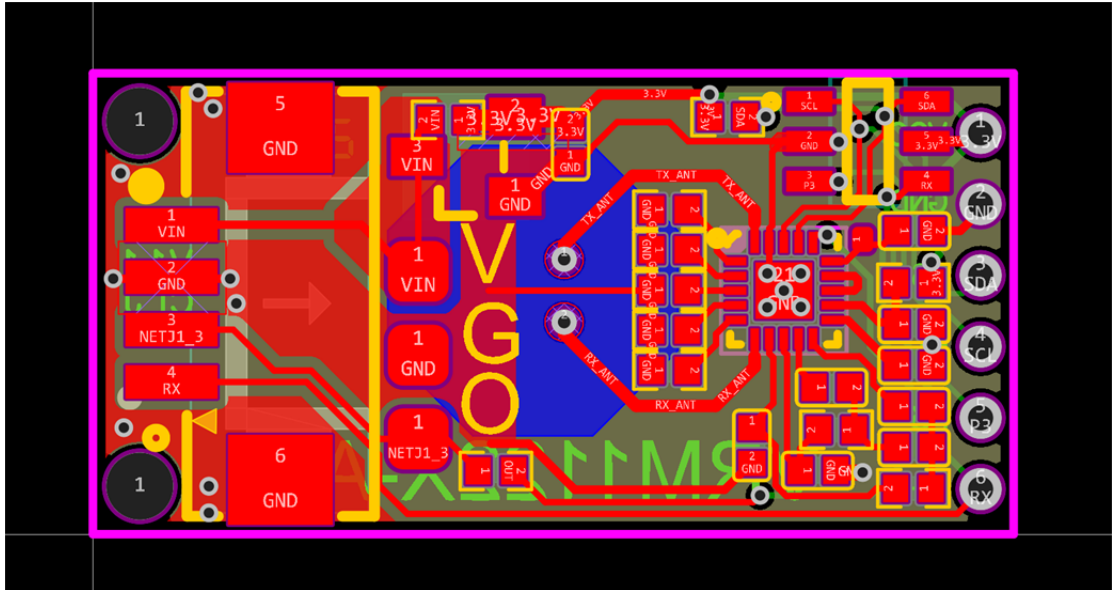


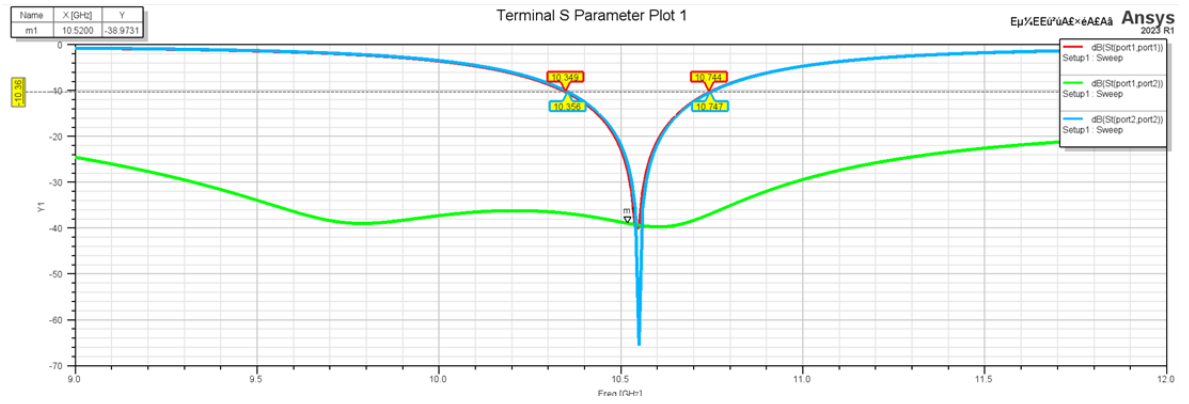
VRM1122-A1 Antenna Simulation Specification

1. Hardware Schematic





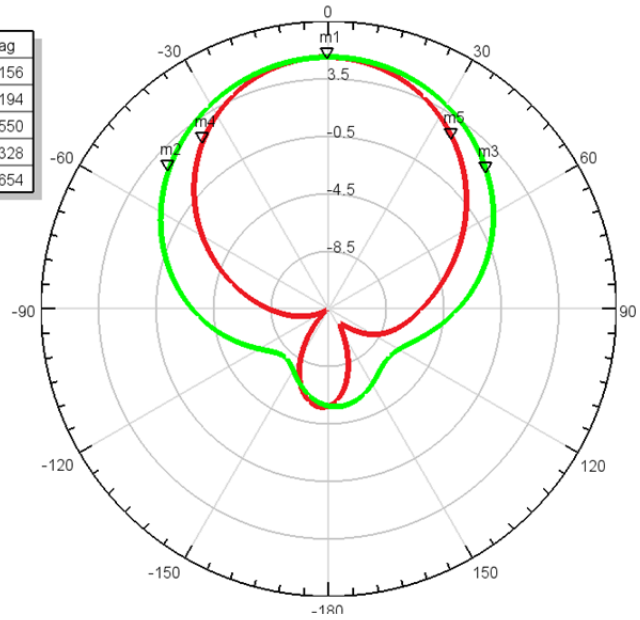
3. S-parameter isolation

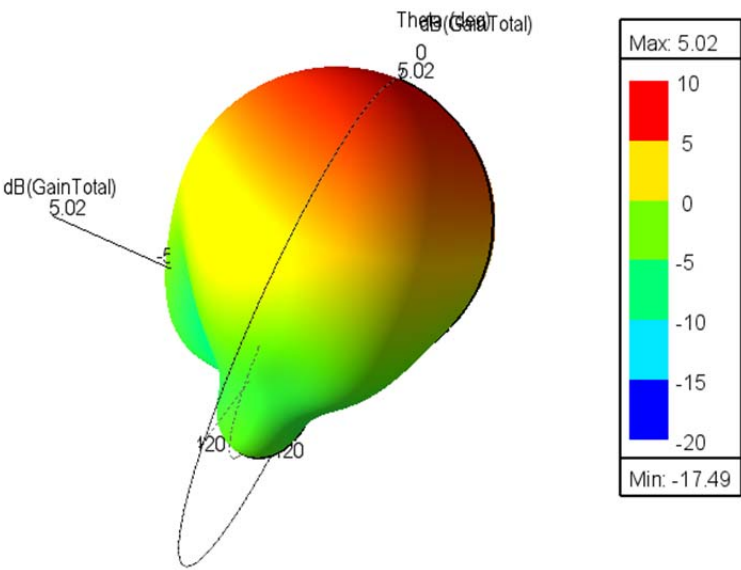


4. Receiving Antenna RX Ant1 Orientation Diagram

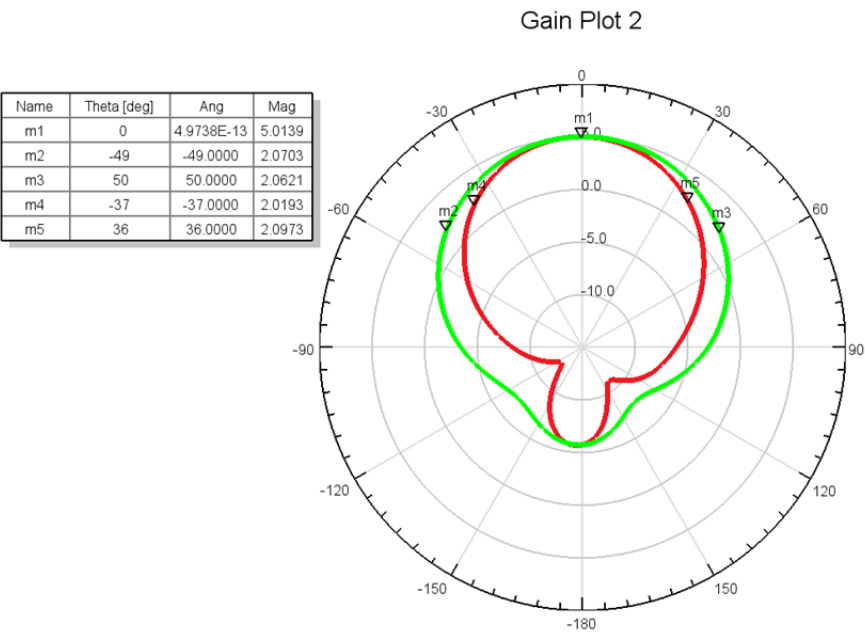
Gain Plot 2

Name	Theta [deg]	Ang	Mag
m1	0	4.9738E-13	5.0156
m2	-49	-49.0000	2.2194
m3	49	49.0000	2.0550
m4	-37	-37.0000	2.0328
m5	36	36.0000	2.1654

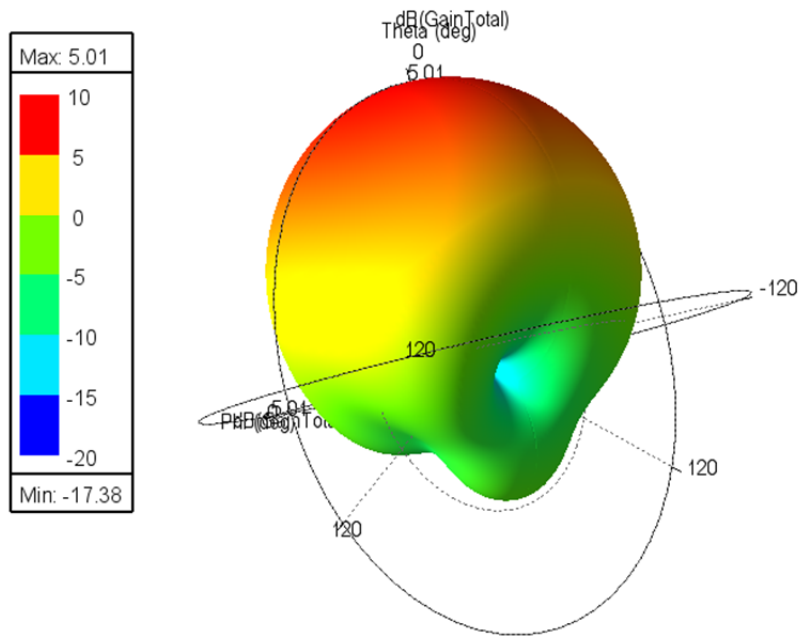




5. Transmitting Antenna TX Ant Direction Diagram



Gain Plot 1



6.Circuit Description

① The tested module is a 10.5G radar induction module with a DC power supply range of 2.7-4.8V.

② This product is mainly composed of a single-chip microcomputer (MCU) and a radar RF IC.

③ The radar chip of the product transmits and receives signals via the on-board antenna to detect the motion information of the measured object.

④ After power-on, the AT10LP1T1R radar chip of the product generates a 10.5G CW wave through RC oscillation, and then adopts a fast pulse mode via the internal power switch to reduce power consumption, with signals transmitted and received by the orthogonally polarized PCB on-board antenna. After the on-board antenna receives the signal with Doppler shift, the beat frequency signal of the transmitted signal and the echo signal is obtained through internal mixing, and the MCU sets the energy threshold of the signal to judge and trigger the output.

⑤ Electrical parameter: DC: 2.7-4.8V

⑥ Product name: Microwave Radar Sensor VRM1122-A1

⑦ Radar module parameters:

Operation Frequency: 10.5-10.55GHz

Modulation: CW,CW(PULSE)

Antenna Type: PCB On-board Antenna

Antenna Gain(Peak): 5.01 dBi

7.Summarize

The bandwidth of the antenna covers 10.3 to 10.8 GHz;

Individual antenna gain around 5.2dBi;

Antenna H-plane (wide-plane) -3db bandwidth $\pm 50^\circ$ without fluctuation, E-plane

(narrow-plane) -3dB bandwidth $\pm 40^\circ$;

Transceiver antenna isolation of the worst -20dB, in line with the requirements;

Antenna Size:

