

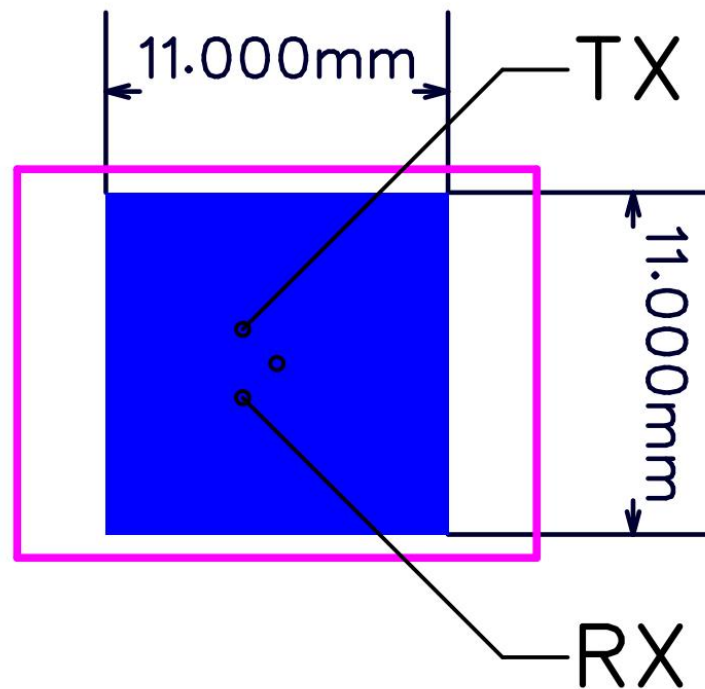


3. On-board Antenna Structure and Layout

Antenna Model: 1317T

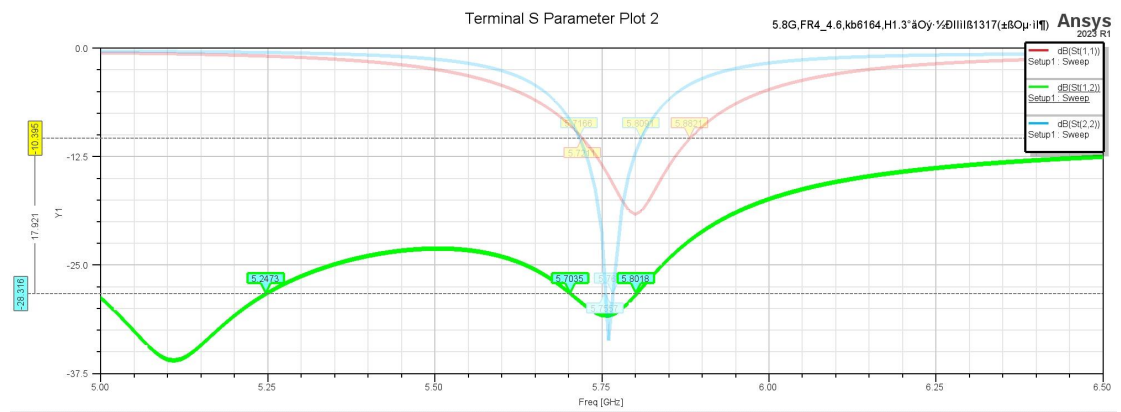
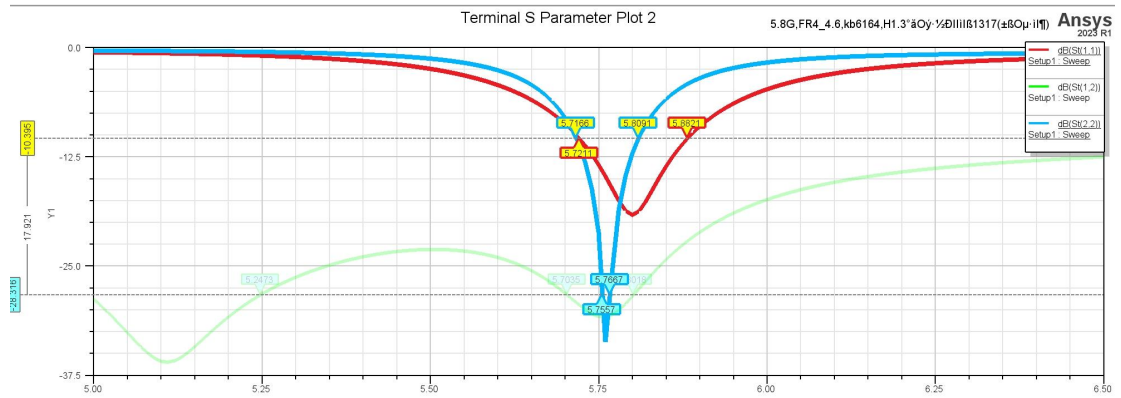
Antenna Type: PCB On-board Antenna

Antenna Engineering Drawing:

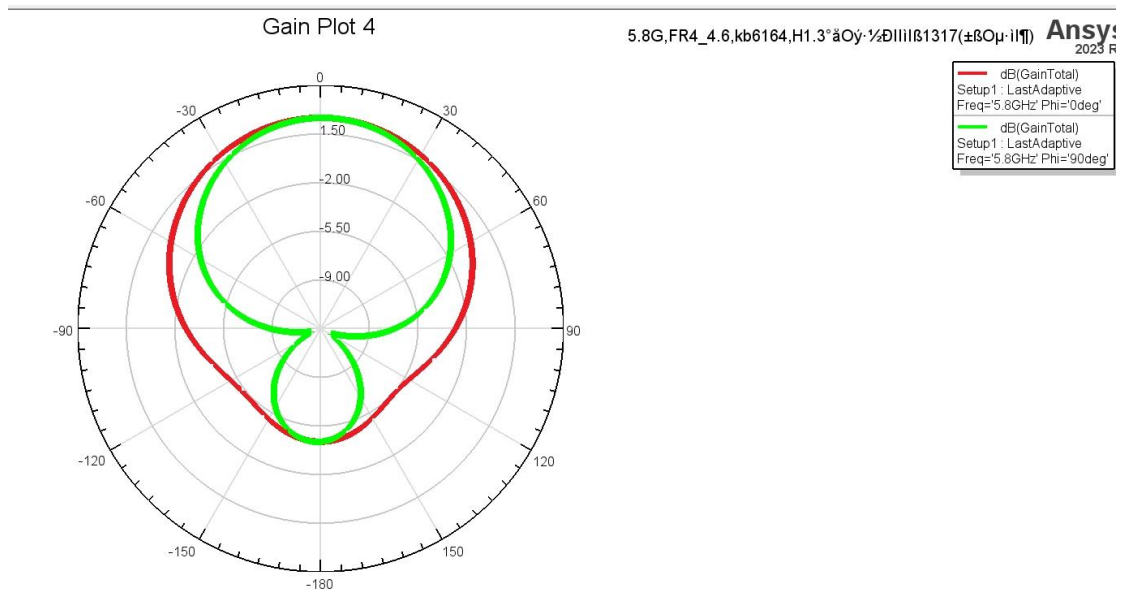


Bottom Layer Radiating Patch Copper Thickness: 0.035MM
PCB Dielectric Substrate Thickness: 1.3MM
Ground Plane Copper Thickness: 0.0152MM
Substrate Thickness: 0.21MM
Top Layer Feed Line & Patch Copper Thickness: 0.035MM

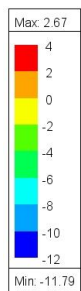
4. S-parameter isolation



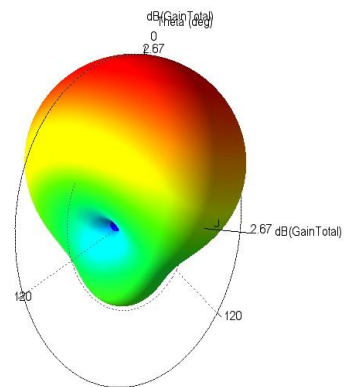
5. Receiving Antenna RX Ant1 Orientation Diagram



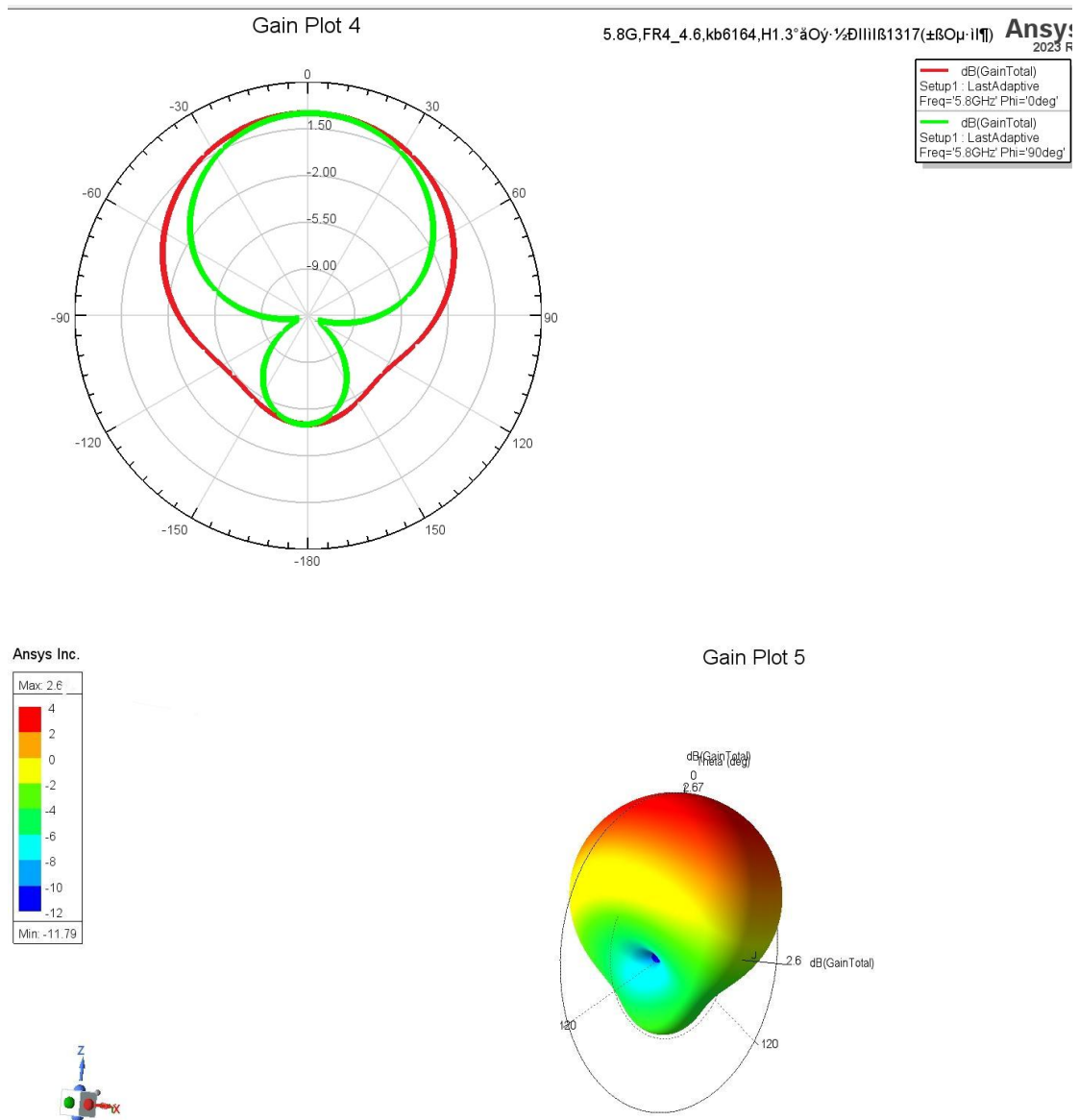
Ansys Inc.



Gain Plot 5



6. Transmitting Antenna TX Ant Direction Diagram



Freq/MHz	5725	5800	5825
Gain/dBi	2.1	2.6	2.3

7. Circuit Description

- ① The Equipment Under Test (EUT) is a 5.8 GHz radar sensor module, operating with a DC supply voltage ranging from 3 V to 3.6 V.
- ② This product mainly consists of a microcontroller unit (MCU) and a radar RF IC.
- ③ The radar IC of the module transmits and receives signals via the on-board antenna to detect motion information of targets.
- ④ After power-on, the AT58LP1T1RD radar IC generates a 5.8 GHz continuous wave (CW) through RC oscillation. An internal power switch enables fast pulse mode operation for power consumption reduction. Signals are transmitted and received by the on-board dual-port printed microstrip patch antenna. After receiving the echo signal carrying Doppler frequency shift, the antenna feeds the signal into the internal mixer to generate the difference frequency signal between the transmitted signal and echo signal. The MCU judges the trigger output according to the signal energy threshold configured.
- ⑤ Electrical parameter: DC Supply Voltage: 3.3 V
- ⑥ Product Name: Microwave Radar Sensor MW058G-Y1317T
- ⑦ Radar Module Specifications:

Operation Frequency: 5725-5875MHz

Modulation: CW,CW(PULSE)

Antenna Type: PCB On-board Antenna

Antenna Gain(Peak): 2.6 dBi