

PCB Antenna “MIFA”

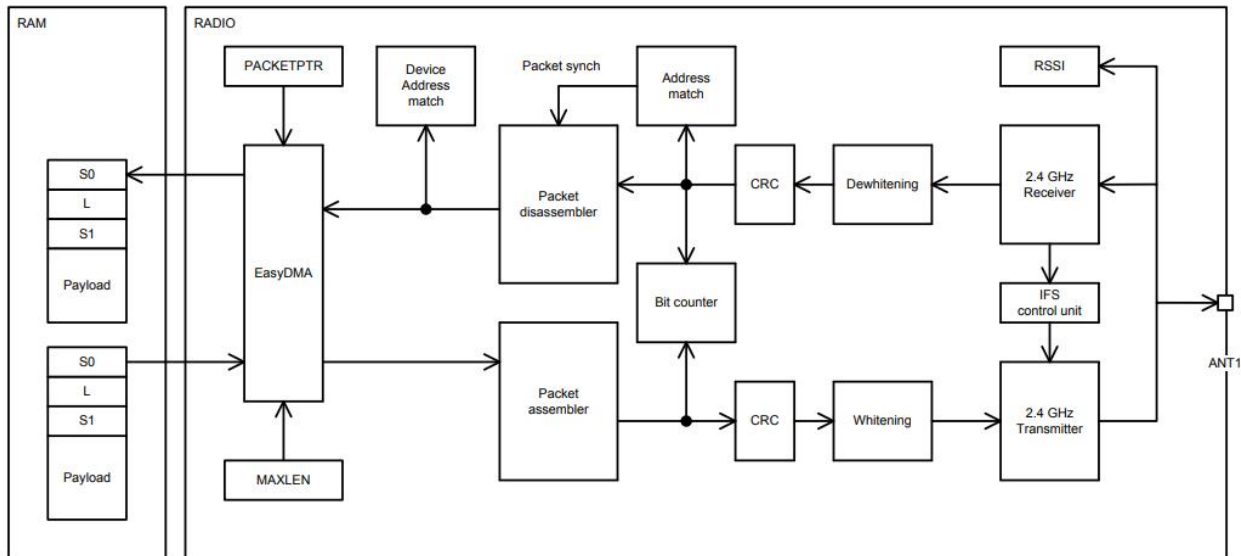
Typical antenna specifications:

Frequency Range (GHz)	2.4 ~ 2.5
Impedance (Ω)	50
Gain (dBi)	1.5 $\pm$ 0.35
Power (mW)	0.35
Temperature Range (°C)	-20 ~ +85

For more information refer to Nordic Semiconductor nRF52832 datasheet.

https://infocenter.nordicsemi.com/pdf/nRF52832_PS_v1.8.pdf

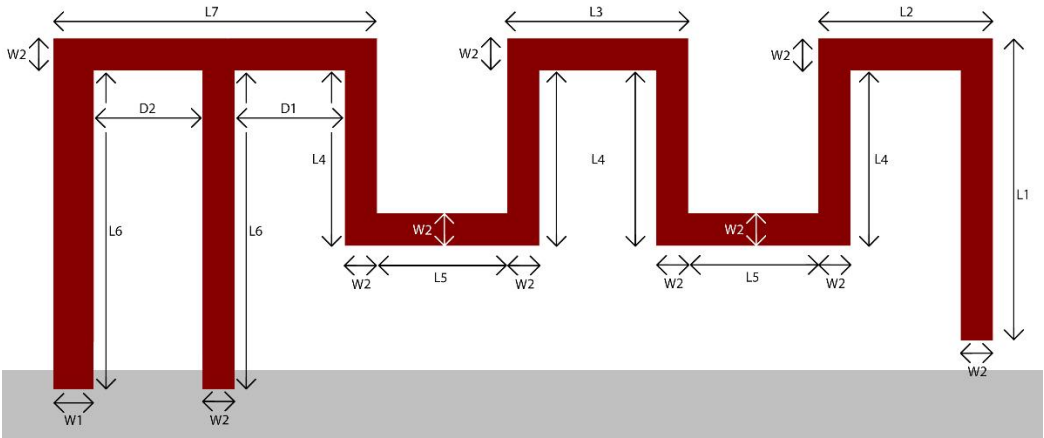
The nRF52832 radio block diagram is shown below.



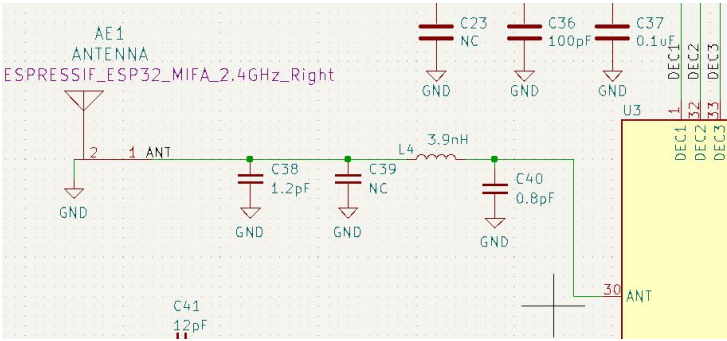
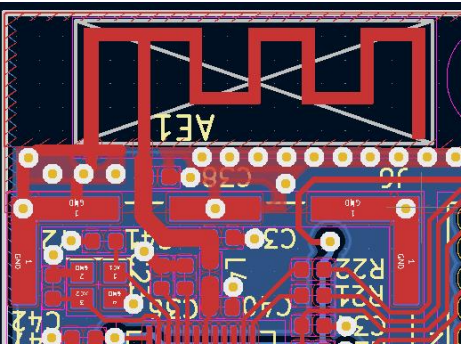
The antenna used in the product is similar to the Espressif ESP32 tuned to 2.4GHz, the dimensions are listed according to the figures below.

Table 1: Antenna Dimensions

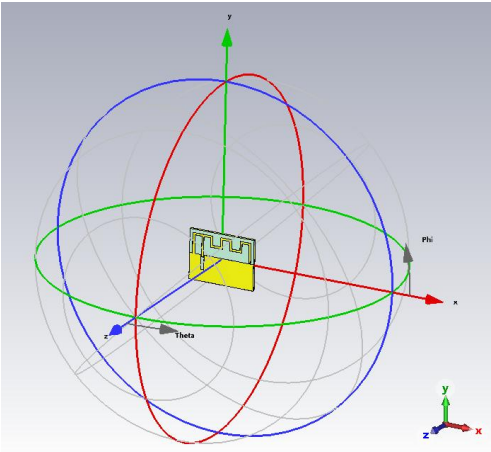
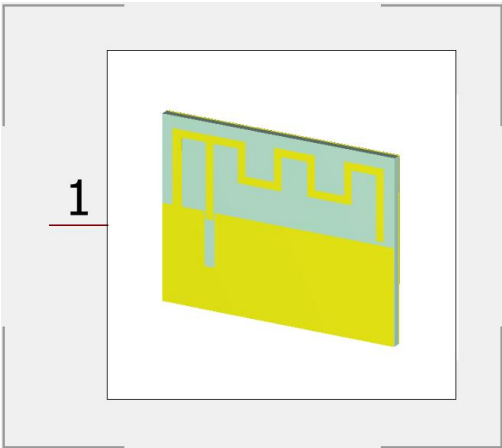
Reference	mm
L1	4.67 mm
L2	2.7 mm
L3	2.8 mm
L4	2.7 mm
L5	2 mm
L6	4.91 mm
L7	5 mm
W1	0.63 mm
W2	0.5 mm
D1	1.7 mm
D2	1.67 mm

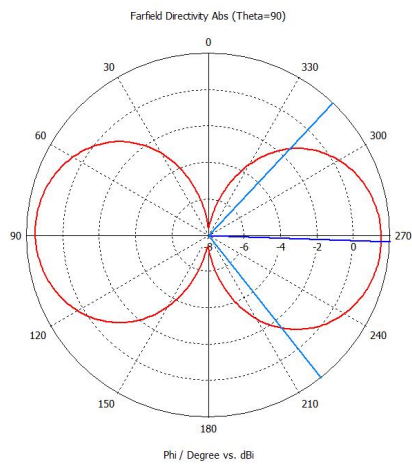
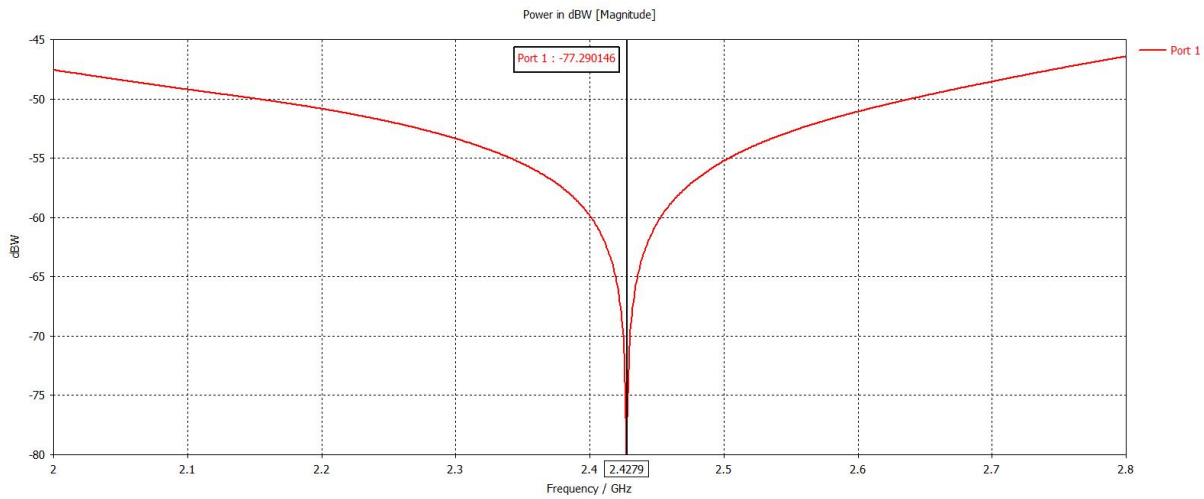


Antenna layout and matching network:



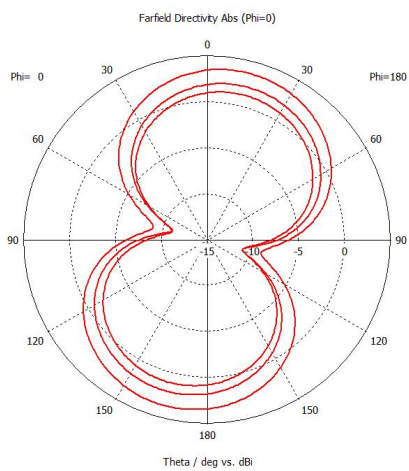
Plots of the simulated antenna model:



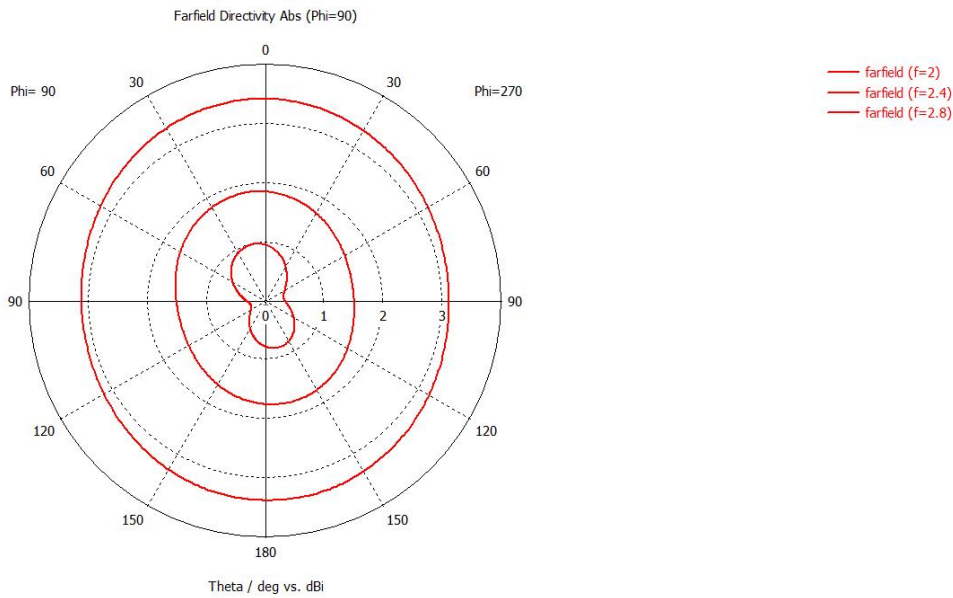


farfield (f=2.4) [1]

Frequency = 2.4 GHz
Main lobe magnitude = 1.51 dBi
Main lobe direction = 268.0 deg.
Angular width (3 dB) = 98.3 deg.



farfield (f=2)
farfield (f=2.4)
farfield (f=2.8)



Actual measurement:

