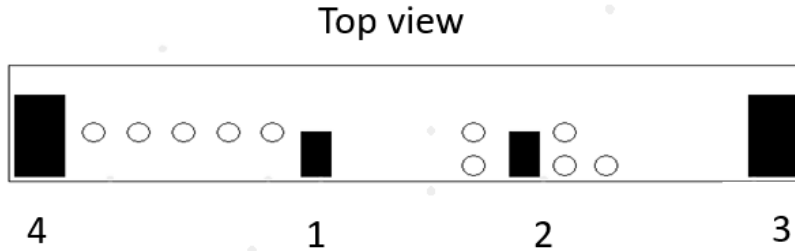


# NA2203B-3C-V1 Antenna Design Note

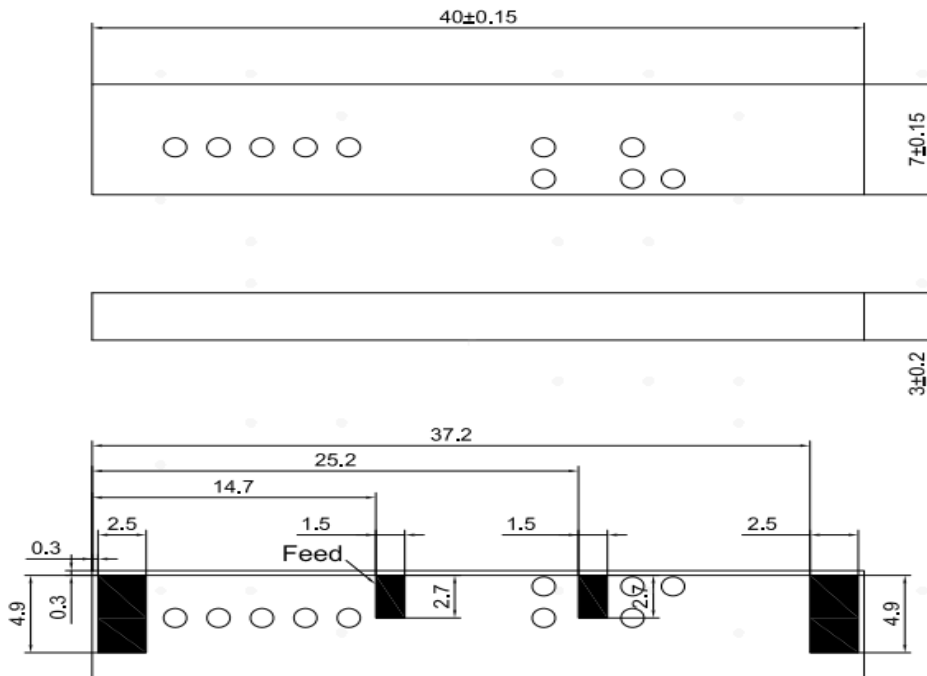
## 1. Schematic symbol and Pin definition (Top View)



The pin assignment for the NA2203B-3 antenna are as follows. The antenna has 4 pins and only two work. All other pins are designed for mechanical strength.

Pin No.	Description
1	Feed
2	Return/GND
3	Not used (Mechanical only)
4	Not used (Mechanical only)

## 2. Mechanical drawing



### 3. Transmission Line and PCB clearance area

The characteristic impedance of all transmission lines shall be designed as 50  $\Omega$ .

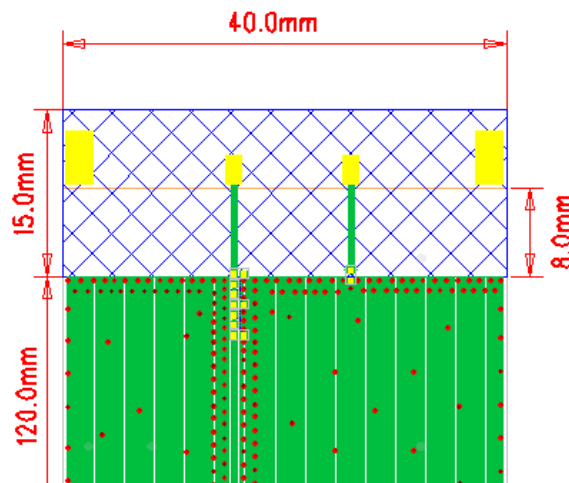
- The length of the transmission lines should be kept to as short as possible
- Any other part of the RF system, such as transceiver, power amplifiers, etc., shall also be designed with an impedance of 50  $\Omega$

Recommend PCB Layout : (Unit: mm)

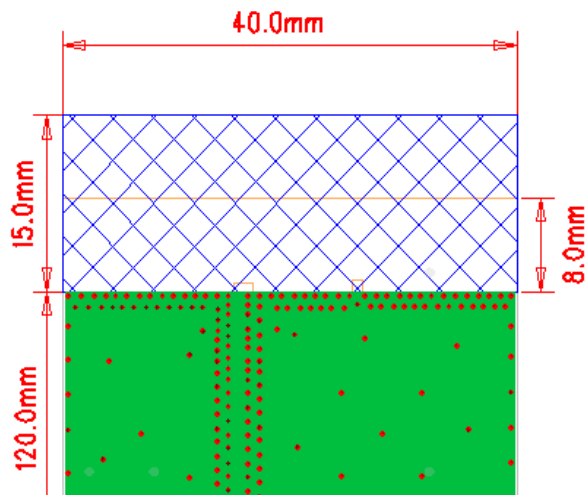
TEST PCB SIZE: 135 mm  $\times$  40 mm  $\times$  1.6 mm, PCB clearance area: 15 mm  $\times$  40 mm

## Front

 Pad area

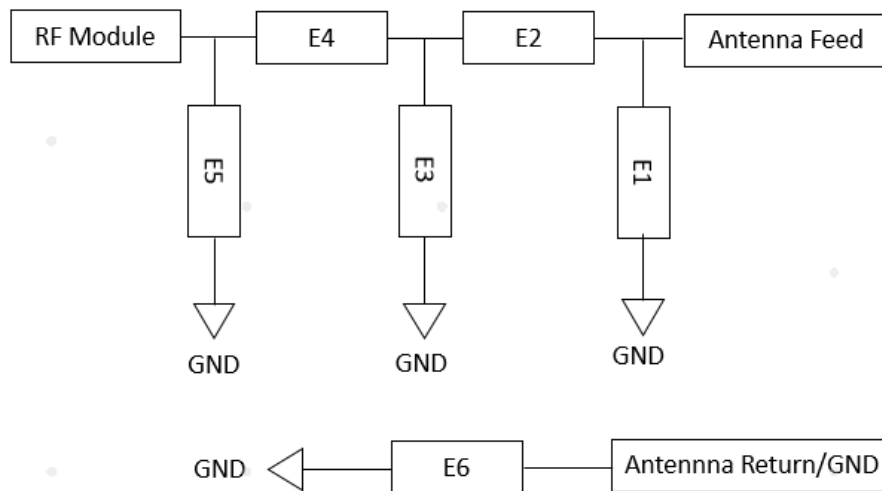


## Bottom

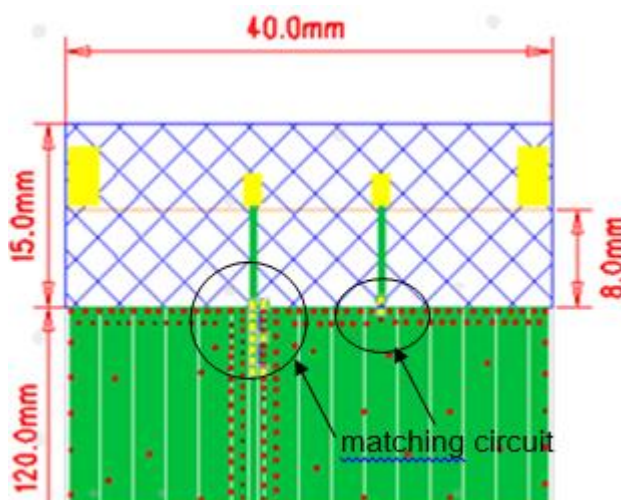


### 3. Matching circuit

The antenna requires a matching circuit that must be optimized for each product. The matching circuit will require up to four components and the following circuit should be designed into the host PCB. Not all components may be required but should be included as a precaution. The matching network must be placed close to the antenna feed to ensure it is more effective in tuning the antenna.



	Type	Value
E1	Capacitance	0.5pF
E2	Inductor	3.9nH
E3	/	NC
E4	Resistor	0Ω
E5	/	NC
E6	Inductor	6.8nH



## 4. antenna performance and interference

In addition to antenna performance, other interference from the PCB will also affect the module performance. In order to ensure the high performance of the module, the interference must be under control. Suggestions: keep speaker, LCD, CPU, FPC wiring, audio circuit, and power supply away from the antenna; add appropriate separation and shielding devices, or conduct filtering on the path.

## 5. Soldering Temperature

