

# Specification for Approval

## CONTENTS

|                              |                 |                        |            |
|------------------------------|-----------------|------------------------|------------|
| <b>Customer:</b>             | N/A             | <b>Vendor:</b>         | N/A        |
| <b>Customer P/N:</b>         | N/A             | <b>HL P/N:</b>         | N/A        |
| <b>Customer Device Name:</b> | N/A             | <b>HL Device Name:</b> | N/A        |
| <b>Version:</b>              | Initial Release | <b>Approval Date:</b>  | 2023-11-11 |

| Internal Approval |             |              |
|-------------------|-------------|--------------|
| Approved By:      | Checked By: | Prepared By: |
|                   |             | Tian Xiang   |
| Customer Approval |             |              |
|                   |             |              |

Revision:



HL Tronics (Kunshan) Co.,Ltd.

| Date       | Rev | Description of Changes |
|------------|-----|------------------------|
| 2018-03-09 | A   | Initial Release        |

## 1、Products Electrical

## PCB Antenna

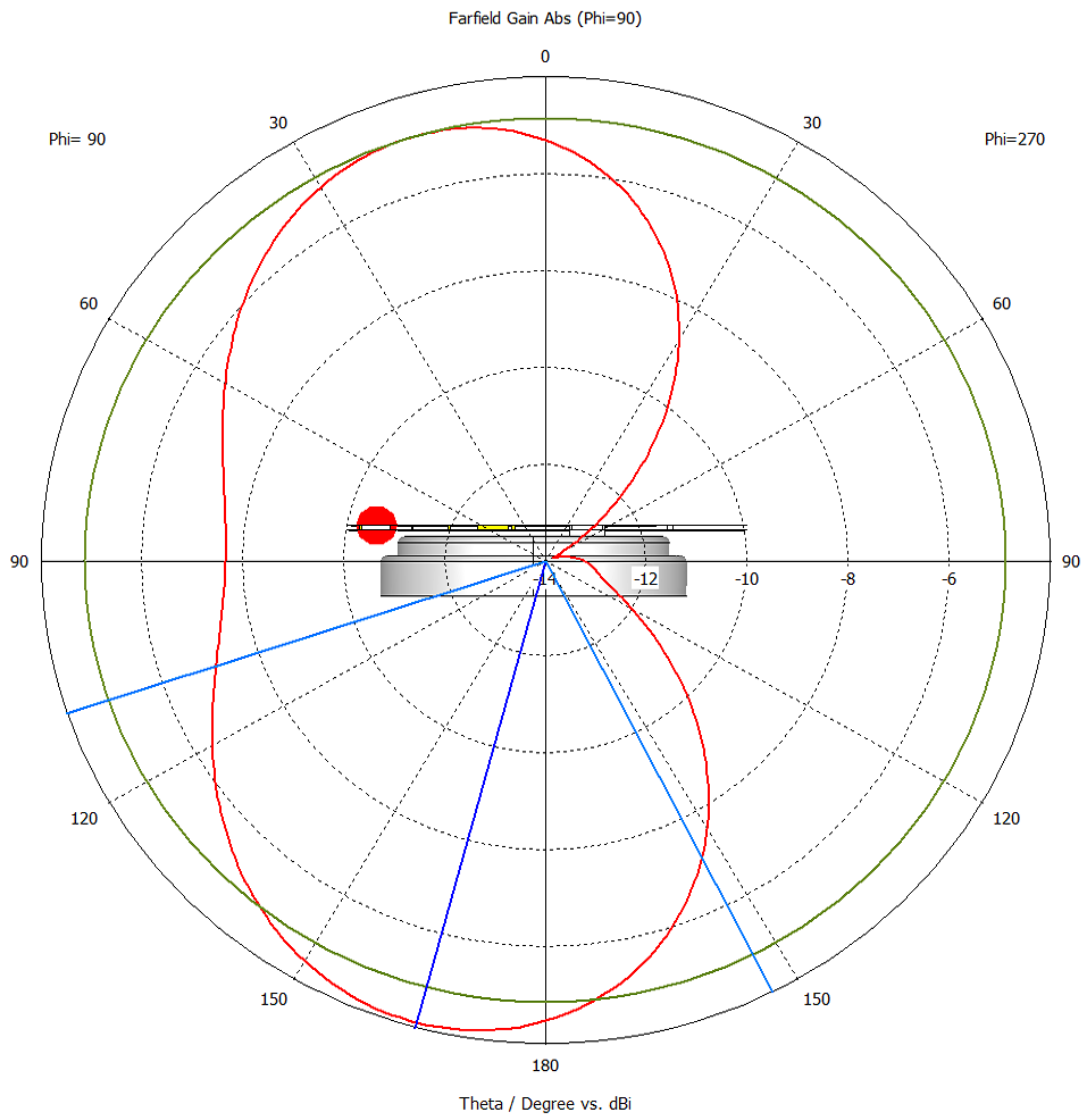
|   |                 |                 |
|---|-----------------|-----------------|
| 1 | Antenna Model   | PCB IFA Antenna |
| 2 | Frequency Range | 2400-2500MHz    |
| 3 | VSWR            | <2              |
| 4 | Broadband       | >100MHz         |
| 5 | Impedance       | 50 ohm          |
| 6 | Gain            | -1.8dbi         |
| 7 | Polarization    | LP              |

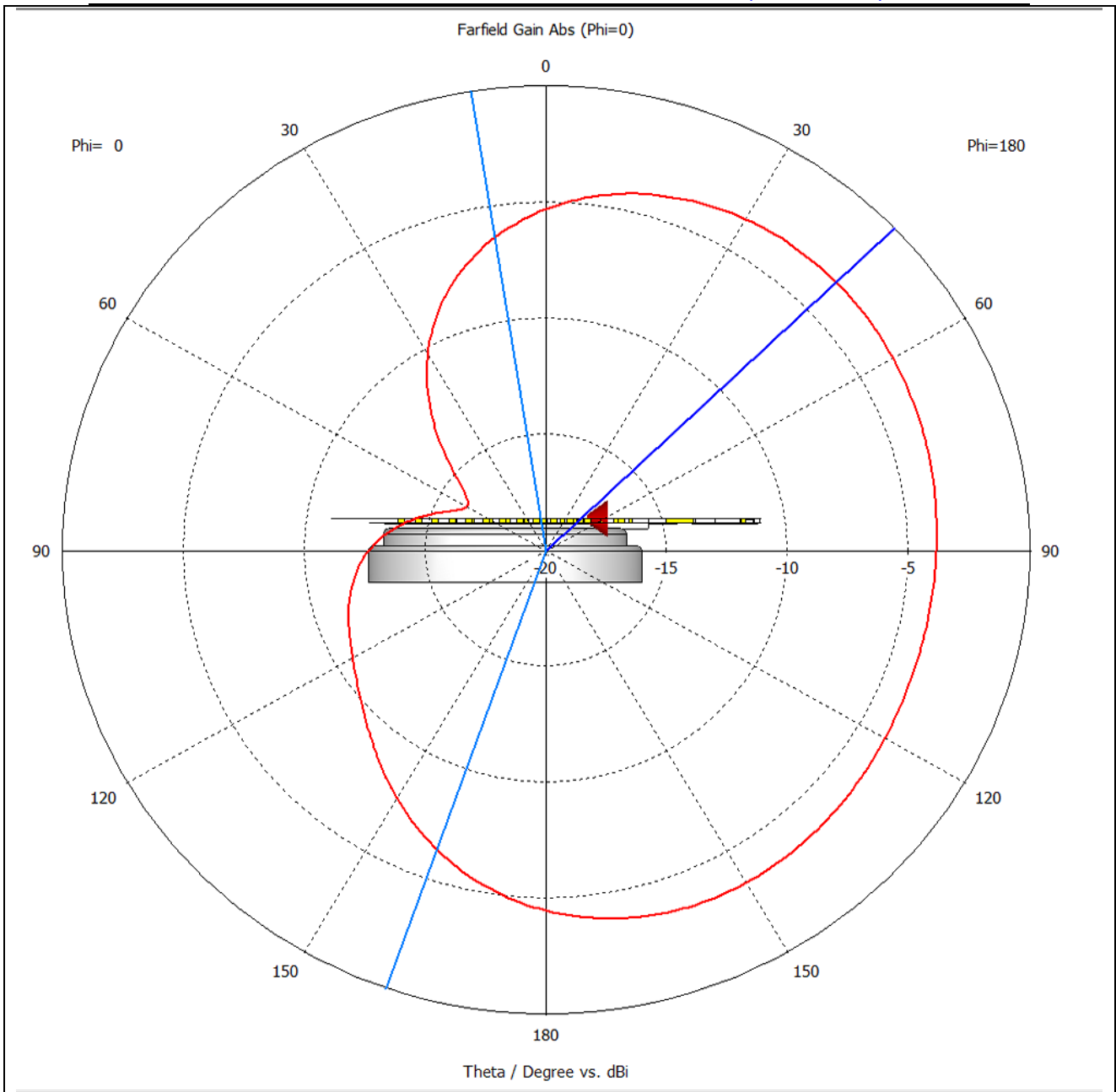
## 2、Antenna Test Data

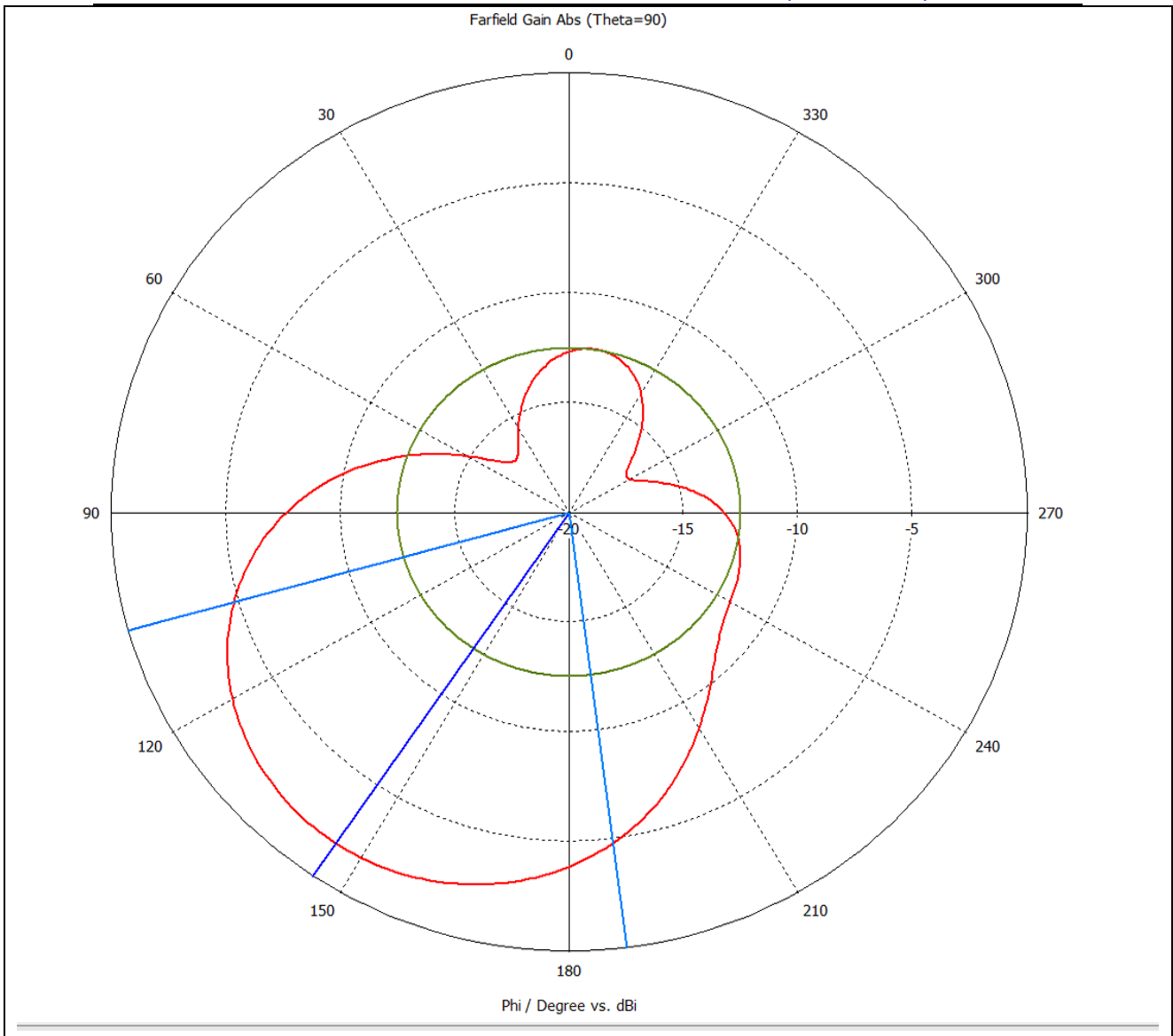
### 2.1 VSWR



## 2.2 RADIATION PATTERNS







**2.3 GAIN AND EFFICIENCY**

| Frequency / MHz | Efficiency / % | Gain/ dB |
|-----------------|----------------|----------|
| 2400            | 25.43          | -2.13    |
| 2410            | 26.29          | -2.13    |
| 2420            | 27.82          | -2.1     |
| 2430            | 29.35          | -2.02    |
| 2440            | 30.72          | -2.0     |
| 2450            | 31.55          | -1.8     |
| 2460            | 30.34          | -1.93    |
| 2470            | 29.28          | -1.89    |
| 2480            | 28.86          | -2.03    |
| 2490            | 28.77          | -2.29    |
| 2500            | 27.91          | -2.43    |
| AVG             | 26.94          | -2.09    |



### 3、PCB ANTENNA (MM)

