



# Datasheet

## Maximus

Part No:

FXUB66.07.0150C

### Description:

Flexible Wide Band 5G/4G Antenna 600-6000MHz

### Features:

Ground Plane Independent

600-6000MHz Wideband

5G/4G fully Operational on all Sub-6GHz bands

Efficiencies up to 80% on all cellular bands (600-6000MHz)

120.4x50.4x0.2 mm size

Connector: I-PEX MHF® I U.FL Compatible

Cable: 150mm of Ø1.37

CE Certified

RoHS & REACH Compliant



|                            |    |
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# 1. Introduction



The patented Maximus FXUB66 flexible wideband antenna has been designed to cover all working frequencies in the 600-6000 MHz spectrum, including all Cellular(5G/4G/3G/2G), NB-IoT, Cat-M, Wi-Fi, ISM and GNSS bands. Its use in a device improves substantially the radiated power and sensitivity, and enables the highest throughput rates of today's broadband devices.

The antenna is delivered with a flexible body with ground breaking high efficiencies on all bands, ground-plane independent, with a cable and connector for easy installation. It is made of durable flexible polymer, with a peak gain of 5dBi, an efficiency of more than 60% across all cellular bands and is designed to be mounted directly onto a plastic or glass enclosure / cover.

At 120.4x50.4x0.2mm, the antenna is ultra thin. It is assembled by a simple “peel and stick” process, attaching securely to non-metal surfaces via 3M adhesive. It enables designers to use only one antenna that covers all frequencies and future proofs device design for 5G and 4G globally. It is also the ideal antenna to fit in devices that are being retrofitted with wireless functionality, as it will cover non cellular applications such as 868, 915MHz or Zigbee applications. Its inherently wide bandwidth is more resistant to detuning than traditional small but narrow-band legacy antennas.

The Maximus antenna has a unique hybrid design. Within one antenna structure the electromagnetic waves travel in two predominant propagation modes - one for lower frequencies, (e.g. 5G/4G at 600 MHz) and the other for higher 5G/4G and Wi-Fi frequencies up to 6GHz.

It is an ideal choice for any device maker that needs to keep manufacturing costs down over the lifetime of a product, as the same antenna can be used if the radio module is upgraded to work on a different frequency band.

Cables and Connectors are fully customizable, subject to MOQ, for further information please contact your regional Taoglas Customer support team.

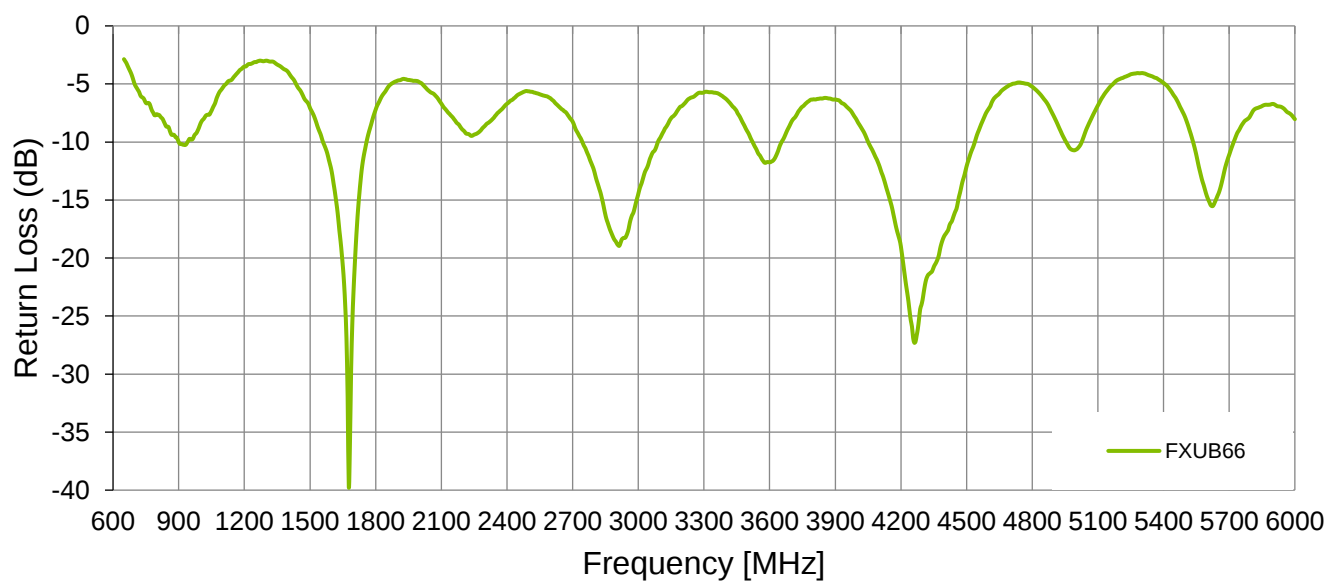
## 2. Specifications

| Electrical            |         |                                                  |         |           |           |           |           |           |           |
|-----------------------|---------|--------------------------------------------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|
| Frequency (MHz)       | 600-960 | 1390-1435                                        | 1575.42 | 1710-1990 | 1755-2170 | 2400-2500 | 2500-2700 | 3300-3800 | 4800-6000 |
| Peak Gain (dBi)       |         |                                                  |         |           |           |           |           |           |           |
| 2mm ABS               | 0.2dBi  | 2.5dBi                                           | 4.1dBi  | 2dBi      | 1.6dBi    | 2.8dBi    | 2.6dBi    | 3.5dBi    | 4.8dBi    |
| Average Gain (dB)     |         |                                                  |         |           |           |           |           |           |           |
| 2mm ABS               | -2.7dB  | -2.6dB                                           | -1.3dB  | -2.1dB    | -2.5dB    | -2dB      | -1.8dB    | -1.8dB    | -2.4dB    |
| Max VSWR              |         |                                                  |         |           |           |           |           |           |           |
| 2mm ABS               | 3.5:1   | 3.5:1                                            | 1.1:1   | 3:1       | 3.3:1     | 2.2:1     | 2:1       | 2.2:1     | 3:1       |
| Max Return Loss(dB)   |         |                                                  |         |           |           |           |           |           |           |
| 2mm ABS               | -5dB    | -5dB                                             | -20dB   | -6dB      | -5.5dB    | -7dB      | -10dB     | -7dB      | -6dB      |
| Efficiency            |         |                                                  |         |           |           |           |           |           |           |
| 2mm ABS               | 60%     | 48%                                              | 73%     | 61%       | 56%       | 63%       | 65%       | 66%       | 57%       |
| Impedance             |         | 50Ω                                              |         |           |           |           |           |           |           |
| Polarization          |         | Linear                                           |         |           |           |           |           |           |           |
| Radiation Pattern     |         | Omni-Directional                                 |         |           |           |           |           |           |           |
| Input Power           |         | 5 W                                              |         |           |           |           |           |           |           |
| Mechanical            |         |                                                  |         |           |           |           |           |           |           |
| Dimensions            |         | 120.4 x 50.4 x 0.2 mm                            |         |           |           |           |           |           |           |
| Material              |         | Flexible Polymer                                 |         |           |           |           |           |           |           |
| Cable                 |         | 150mm of Ø1.37 (Fully customizable)              |         |           |           |           |           |           |           |
| Connector             |         | I-PEX MHF® I U.FL Compatible(Fully customizable) |         |           |           |           |           |           |           |
| Environmental         |         |                                                  |         |           |           |           |           |           |           |
| Operating Temperature |         | -40°C to 85°C                                    |         |           |           |           |           |           |           |
| Storage Temperature   |         | -40°C to 85°C                                    |         |           |           |           |           |           |           |
| RoHS Compliant        |         | Yes                                              |         |           |           |           |           |           |           |

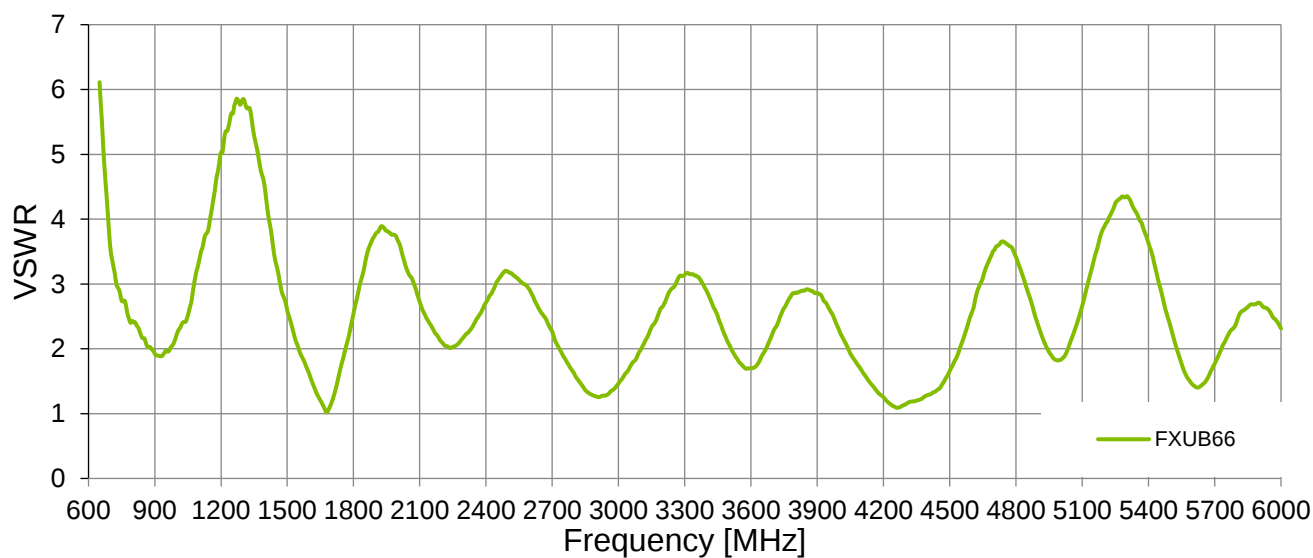
| 5G/4G Bands |                                                                    |                      |         |
|-------------|--------------------------------------------------------------------|----------------------|---------|
| Band Number | 5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA |                      |         |
|             | Uplink                                                             | Downlink             | Covered |
| 1           | UL: 1920 to 1980                                                   | DL: 2110 to 2170     | ✓       |
| 2           | UL: 1850 to 1910                                                   | DL: 1930 to 1990     | ✓       |
| 3           | UL: 1710 to 1785                                                   | DL: 1805 to 1880     | ✓       |
| 4           | UL: 1710 to 1755                                                   | DL: 2110 to 2155     | ✓       |
| 5           | UL: 824 to 849                                                     | DL: 869 to 894       | ✓       |
| 7           | UL: 2500 to 2570                                                   | DL: 2620 to 2690     | ✓       |
| 8           | UL: 880 to 915                                                     | DL: 925 to 960       | ✓       |
| 9           | UL: 1749.9 to 1784.9                                               | DL: 1844.9 to 1879.9 | ✓       |
| 11          | UL: 1427.9 to 1447.9                                               | DL: 1475.9 to 1495.9 | ✓       |
| 12          | UL: 699 to 716                                                     | DL: 729 to 746       | ✓       |
| 13          | UL: 777 to 787                                                     | DL: 746 to 756       | ✓       |
| 14          | UL: 788 to 798                                                     | DL: 758 to 768       | ✓       |
| 17          | UL: 704 to 716                                                     | DL: 734 to 746       | ✓       |
| 18          | UL: 815 to 830                                                     | DL: 860 to 875       | ✓       |
| 19          | UL: 830 to 845                                                     | DL: 875 to 890       | ✓       |
| 20          | UL: 832 to 862                                                     | DL: 791 to 821       | ✓       |
| 21          | UL: 1447.9 to 1462.9                                               | DL: 1495.9 to 1510.9 | ✓       |
| 22          | UL: 3410 to 3490                                                   | DL: 3510 to 3590     | ✓       |
| 23          | UL: 2000 to 2020                                                   | DL: 2180 to 2200     | ✓       |
| 24          | UL: 1625.5 to 1660.5                                               | DL: 1525 to 1559     | ✓       |
| 25          | UL: 1850 to 1915                                                   | DL: 1930 to 1995     | ✓       |
| 26          | UL: 814 to 849                                                     | DL: 859 to 894       | ✓       |
| 27          | UL: 807 to 824                                                     | DL: 852 to 869       | ✓       |
| 28          | UL: 703 to 748                                                     | DL: 758 to 803       | ✓       |
| 29          | UL: -                                                              | DL: 717 to 728       | ✓       |
| 30          | UL: 2305 to 2315                                                   | DL: 2350 to 2360     | ✓       |
| 31          | UL: 452.5 to 457.5                                                 | DL: 462.5 to 467.5   | ✗       |
| 32          | UL: -                                                              | DL: 1452 - 1496      | ✓       |
| 35          |                                                                    | 1850 to 1910         | ✓       |
| 38          |                                                                    | 2570 to 2620         | ✓       |
| 39          |                                                                    | 1880 to 1920         | ✓       |
| 40          |                                                                    | 2300 to 2400         | ✓       |
| 41          |                                                                    | 2496 to 2690         | ✓       |
| 42          |                                                                    | 3400 to 3600         | ✓       |
| 43          |                                                                    | 3600 to 3800         | ✓       |
| 48          |                                                                    | 3550 to 3700         | ✓       |
| 66          | UL: 1710-1780                                                      | DL: 2110-2200        | ✓       |
| 71          |                                                                    | 617 to 698           | ✓       |
| 74/75/76    |                                                                    | 1427 to 1518         | ✓       |
| 78          |                                                                    | 3300 to 3800         | ✓       |
| 79          |                                                                    | 4400 to 5000         | ✓       |
| 85          | 698-716                                                            | 728-746              | ✓       |

## 3. Antenna Characteristics

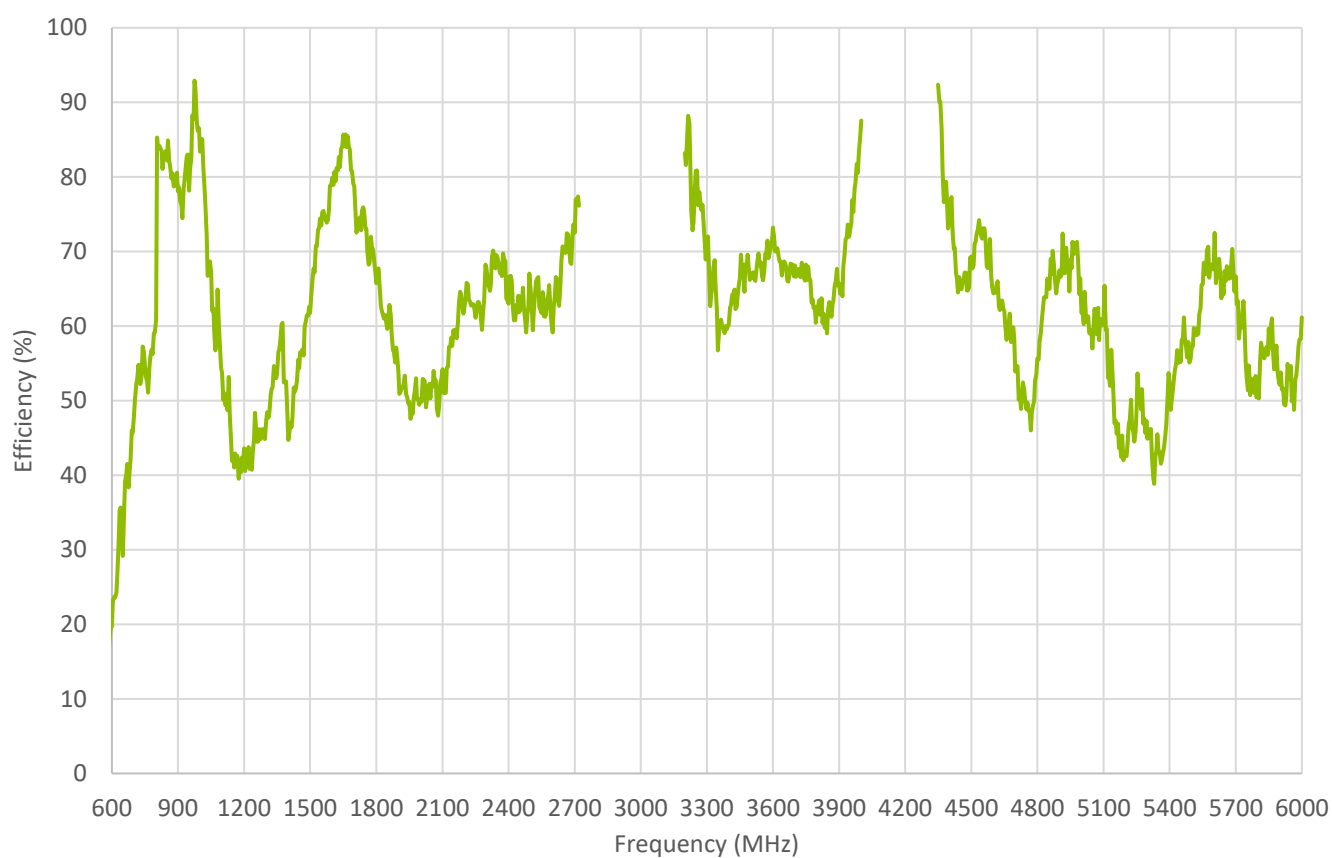
### 3.1 Return Loss



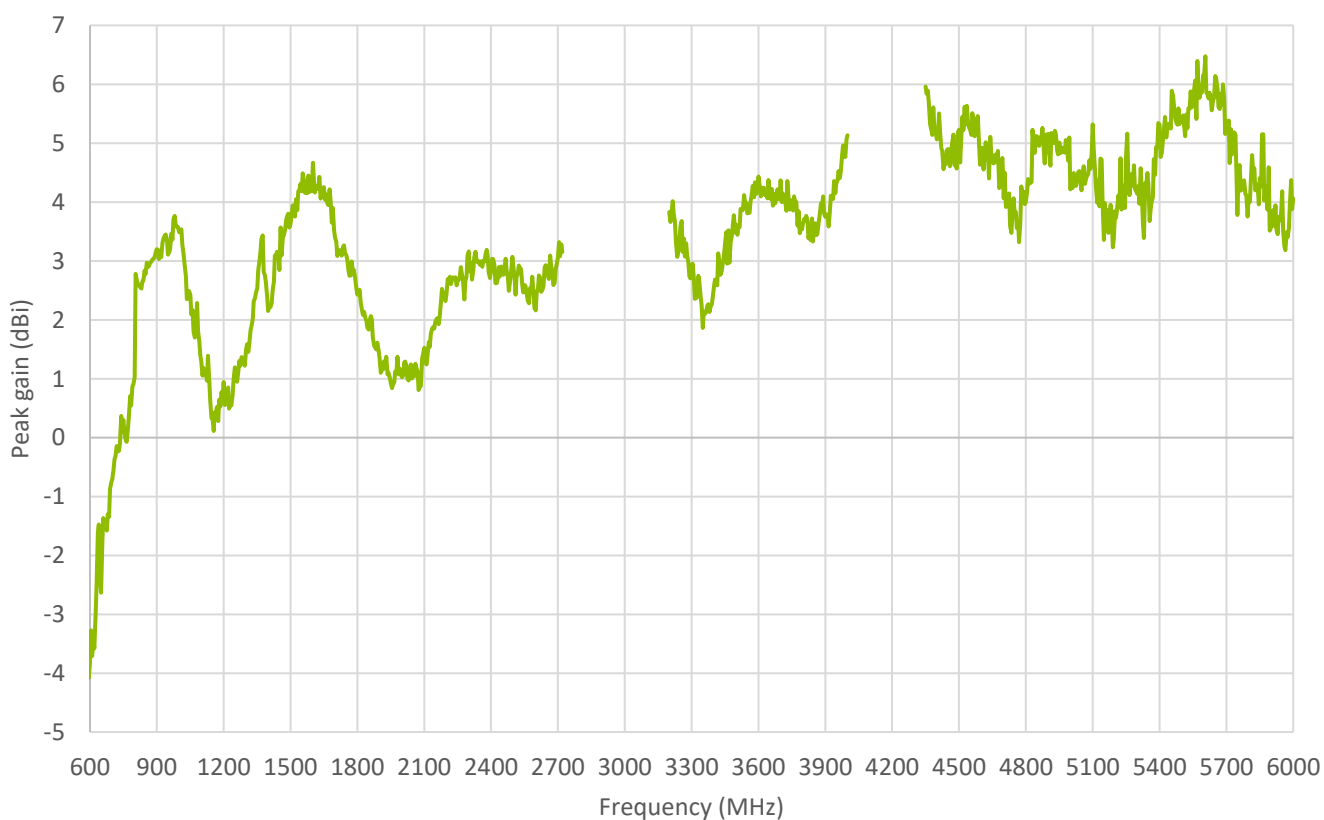
### 3.2 VSWR



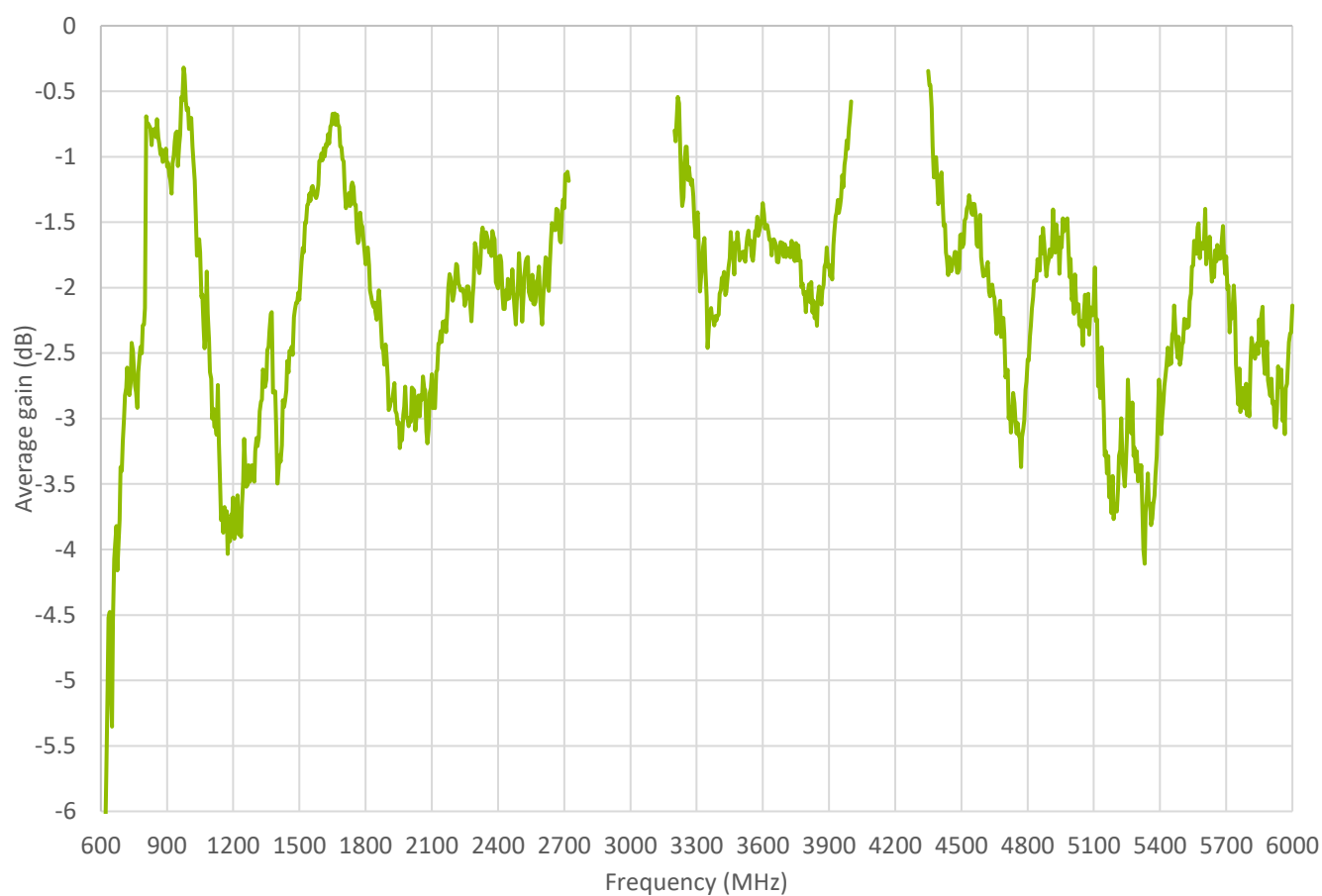
### 3.3 Efficiency



### 3.4 Peak Gain



### 3.5 Average Gain



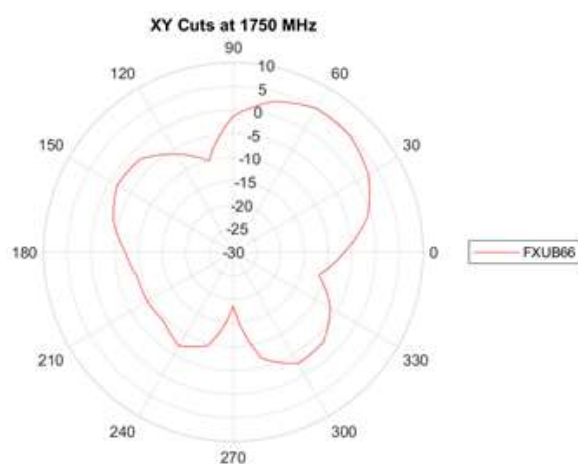
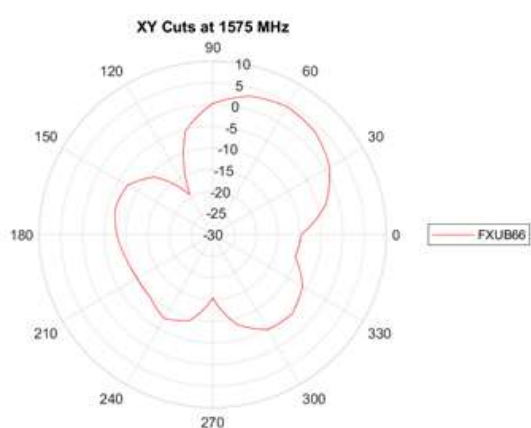
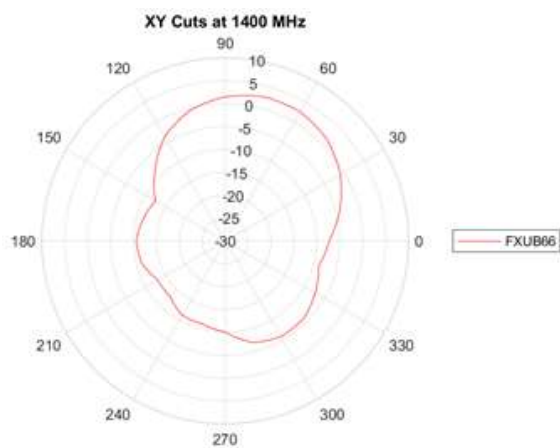
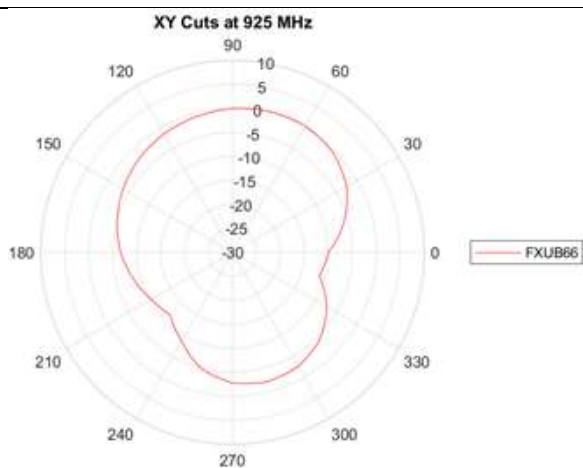
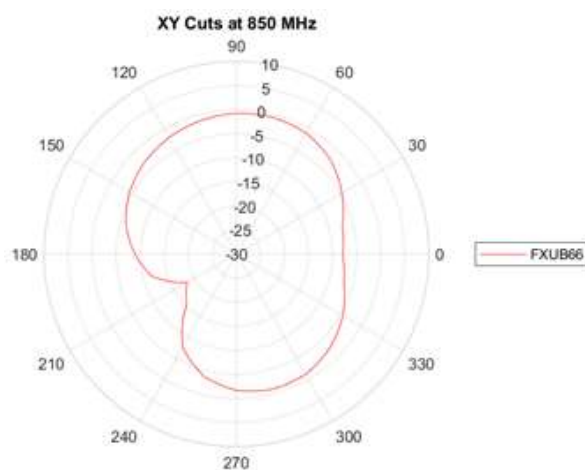
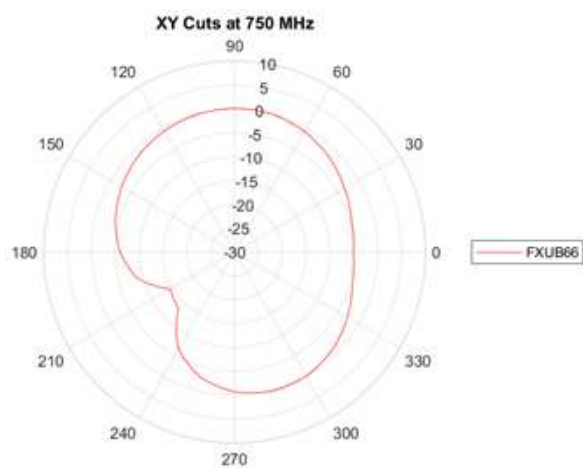
## 4. 2D Radiation Patterns

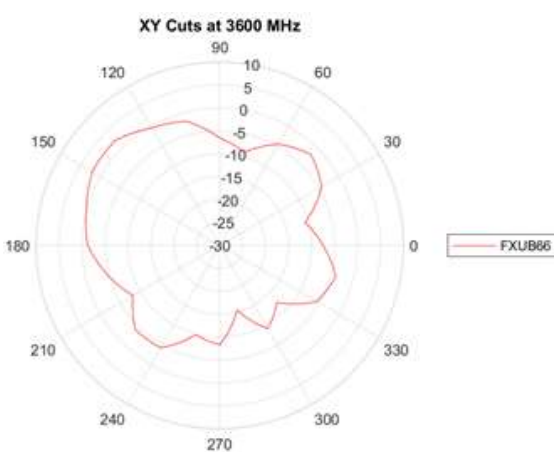
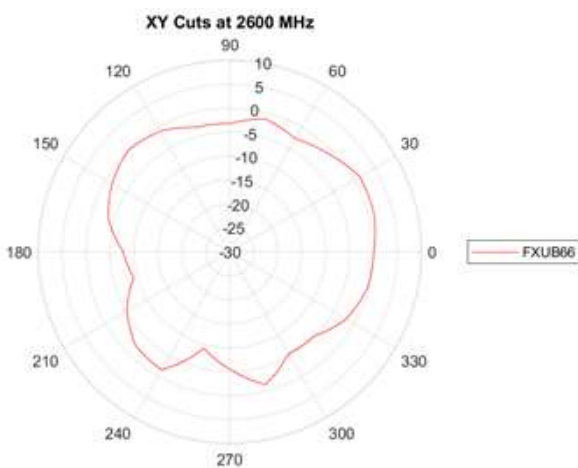
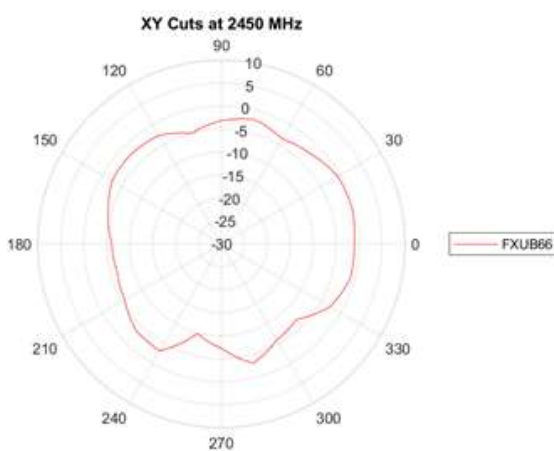
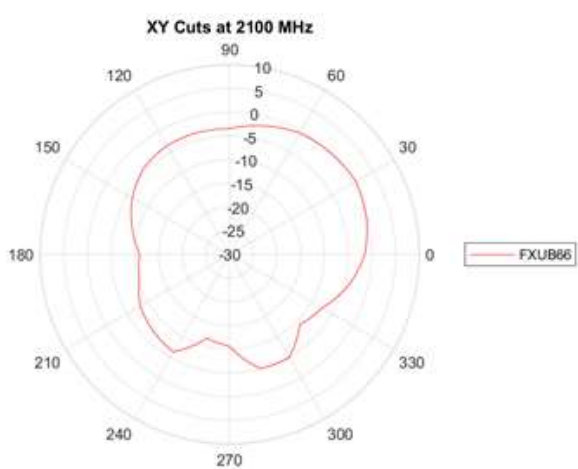
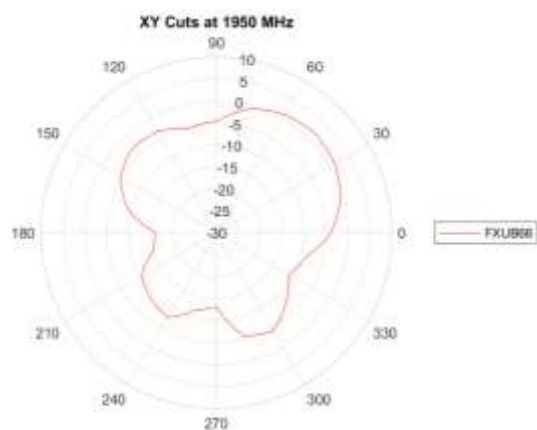
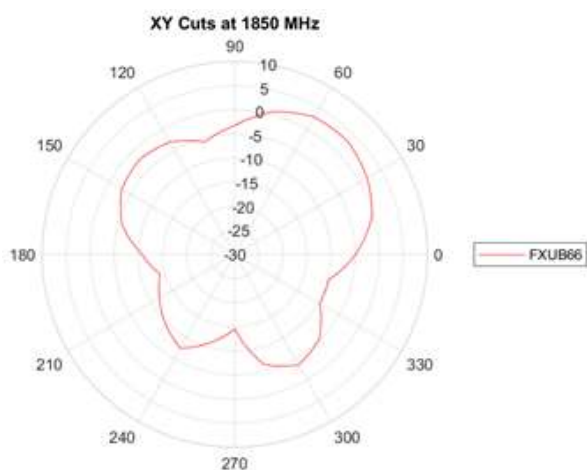
### 4.1 Test Setup

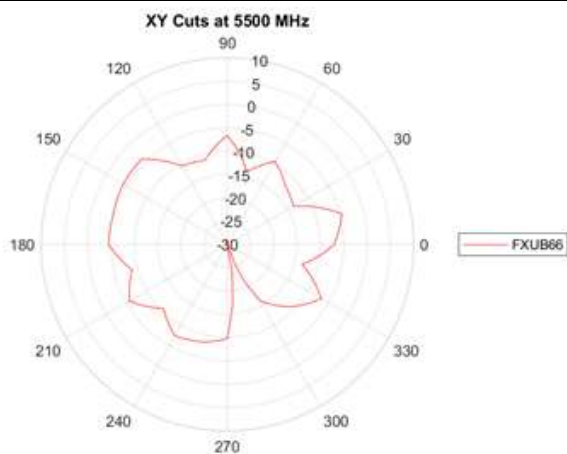


On 2mm ABS

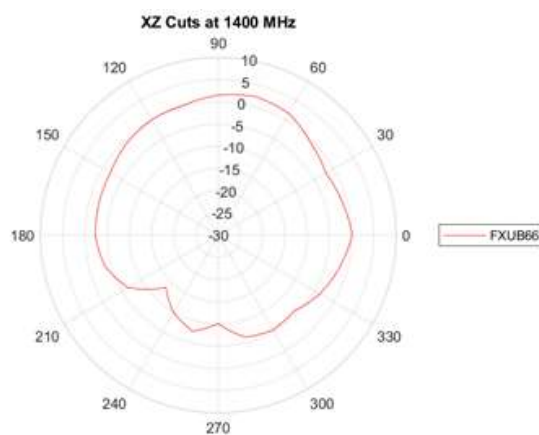
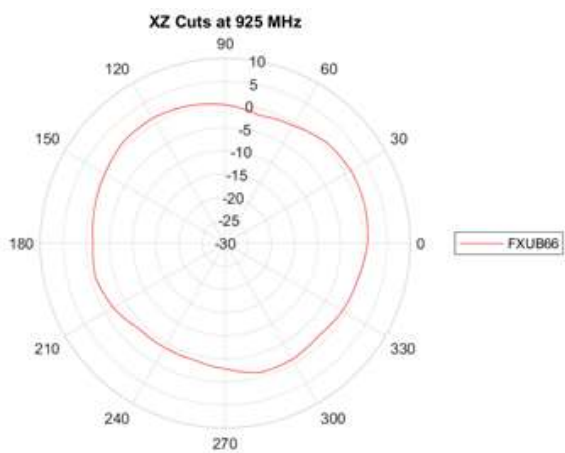
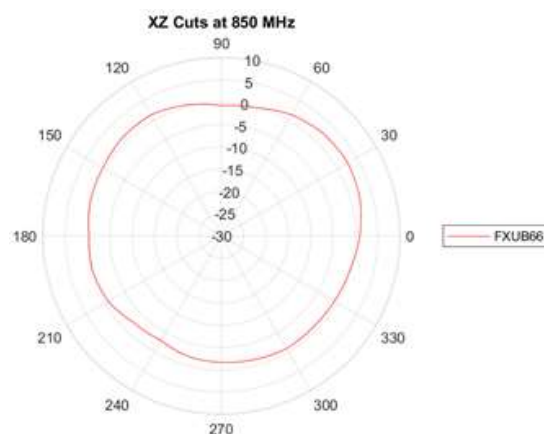
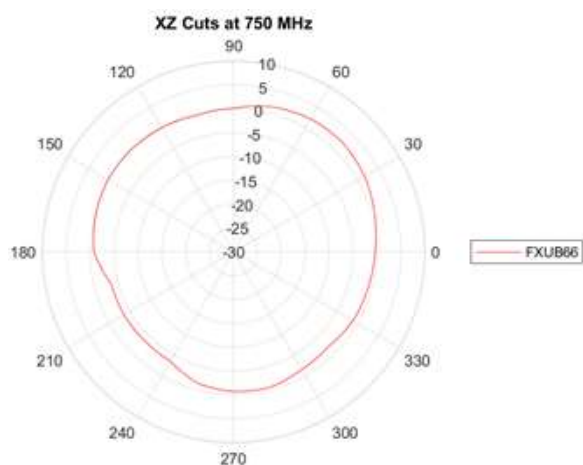
## XY Plane

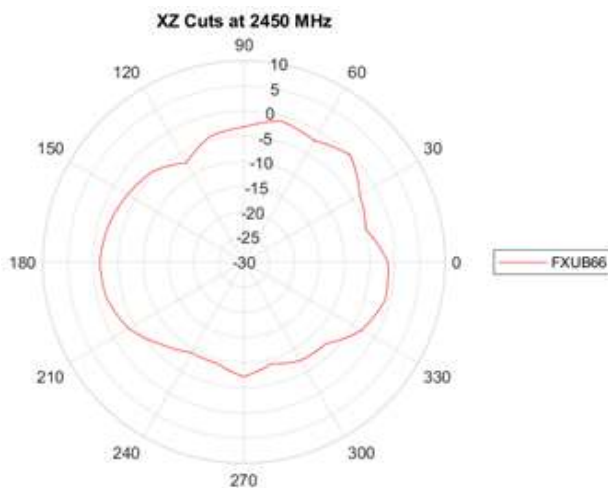
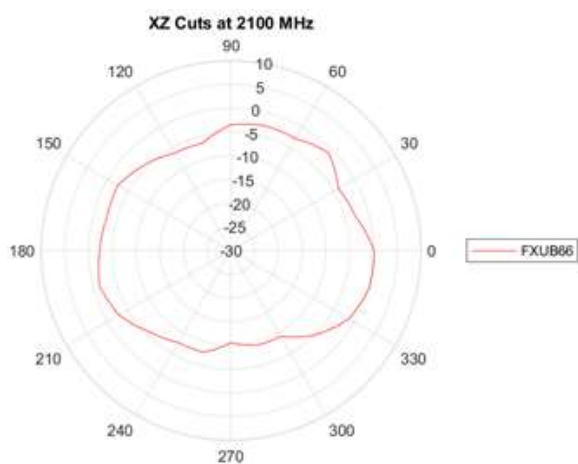
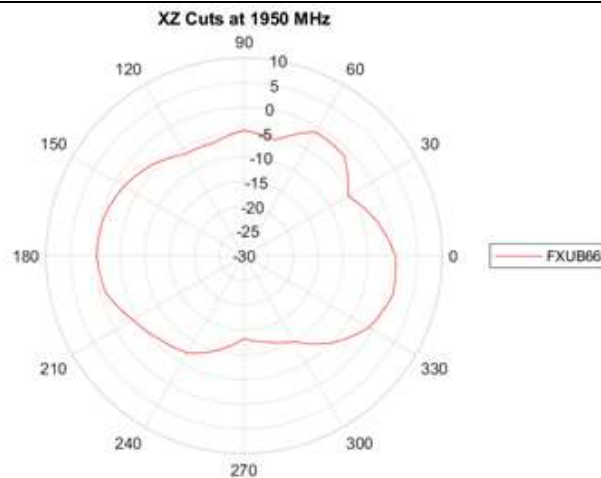
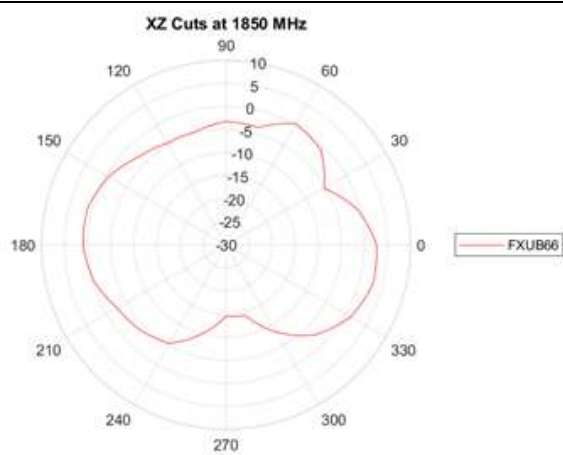
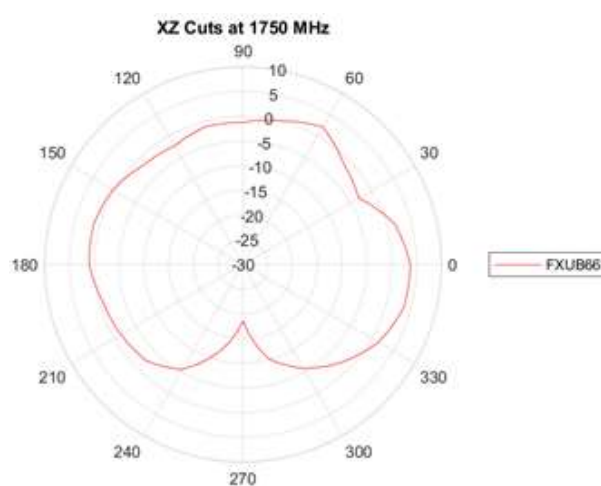
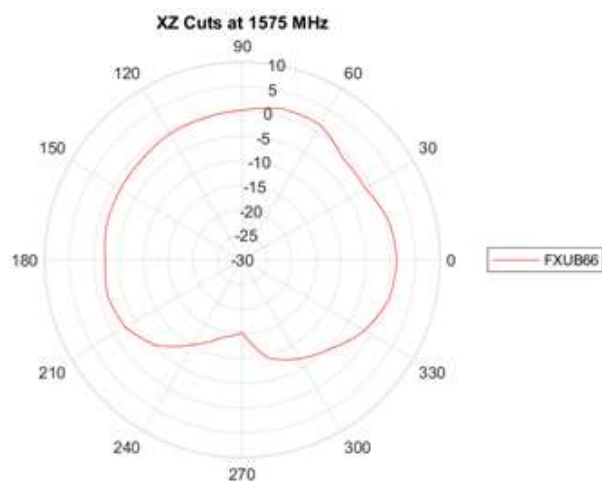


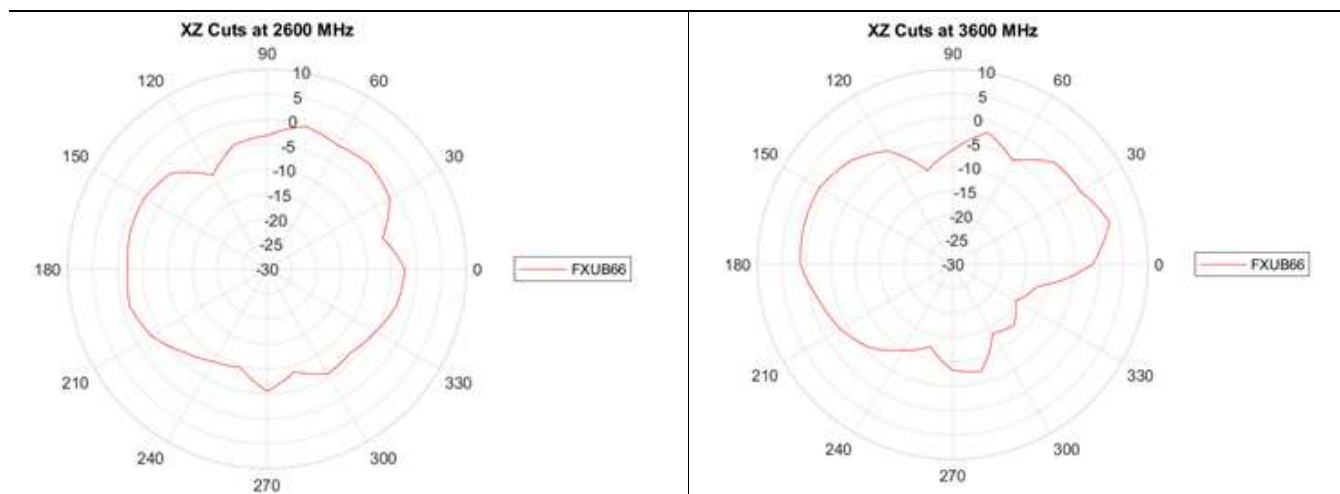




## XZ Plane

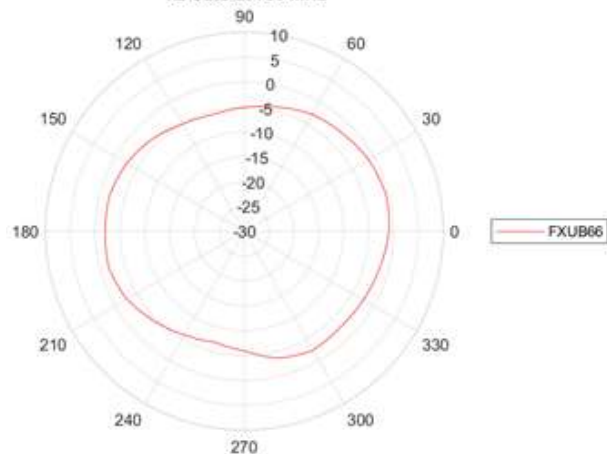




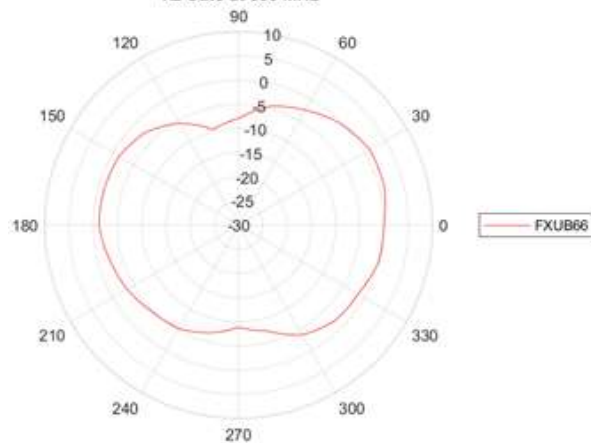


# YZ Plane

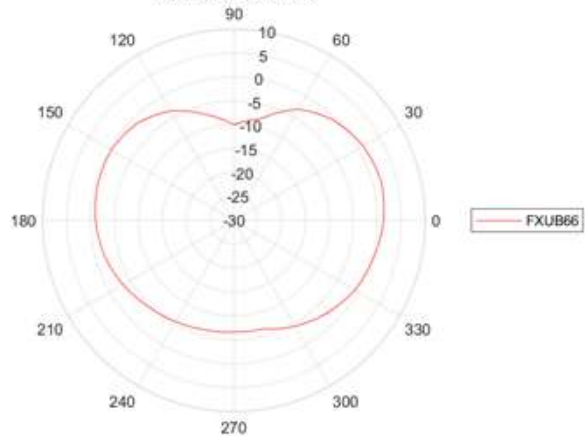
YZ Cuts at 750 MHz



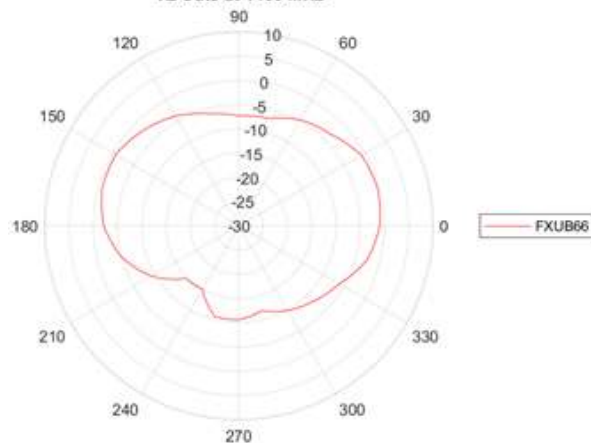
YZ Cuts at 850 MHz



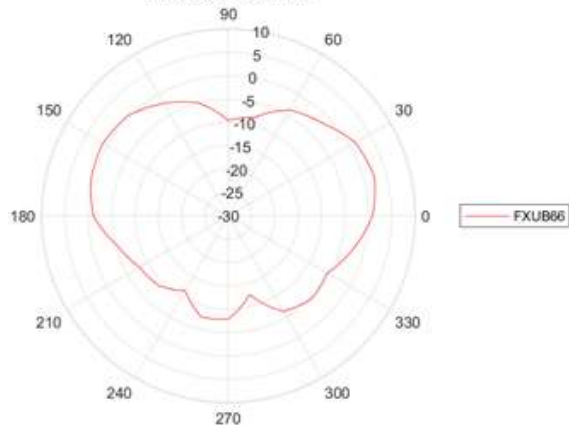
YZ Cuts at 925 MHz



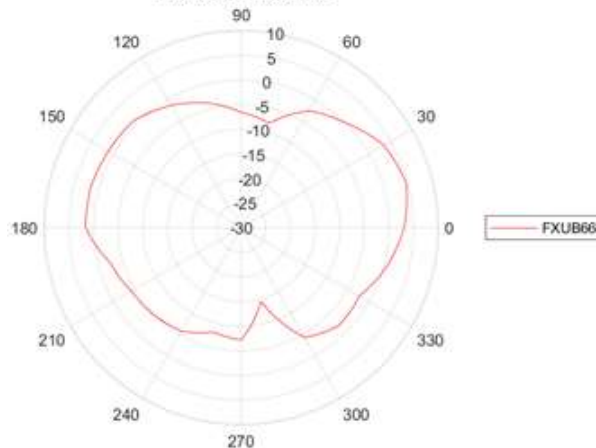
YZ Cuts at 1400 MHz

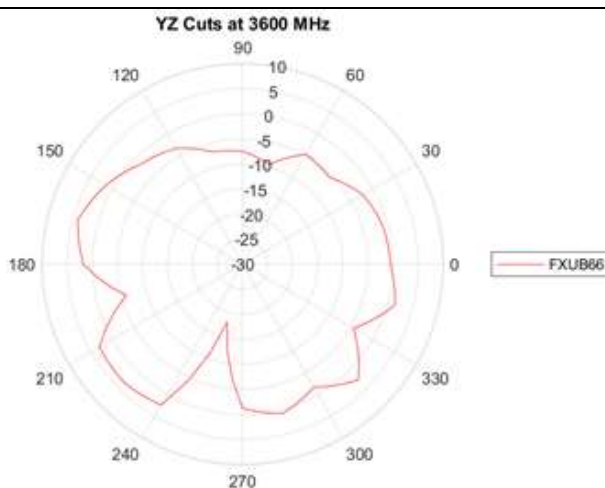
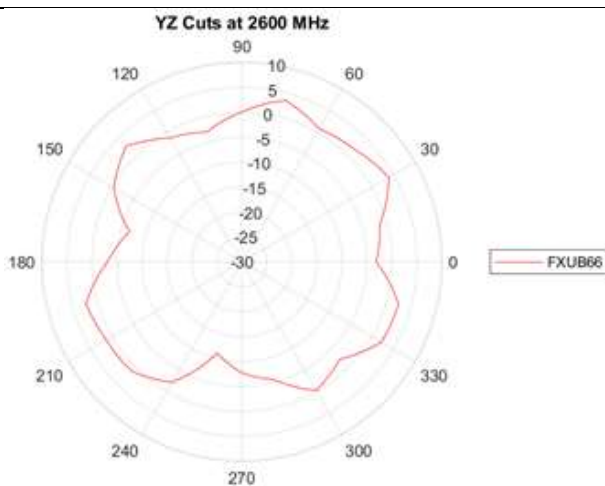
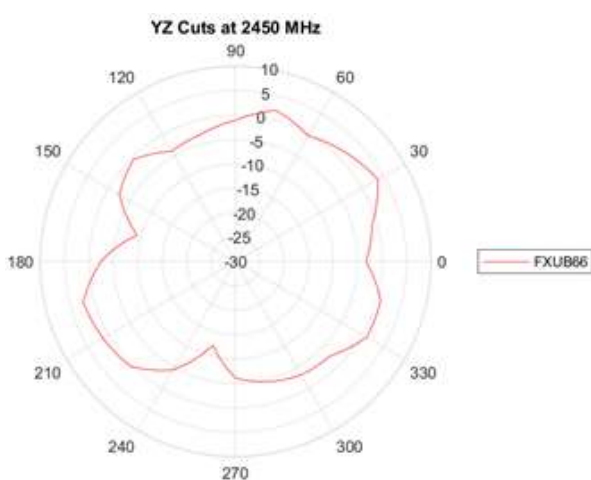
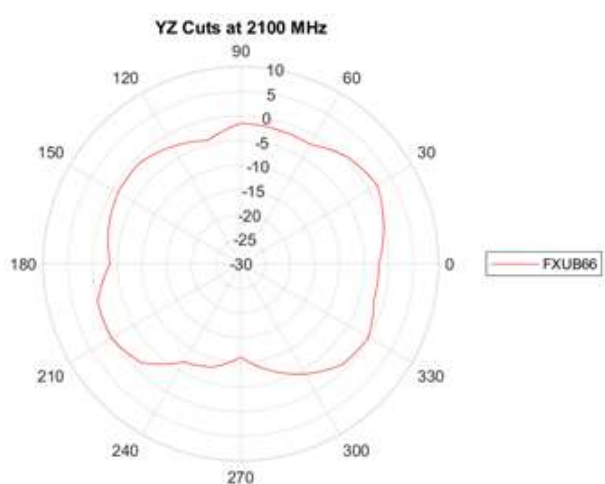
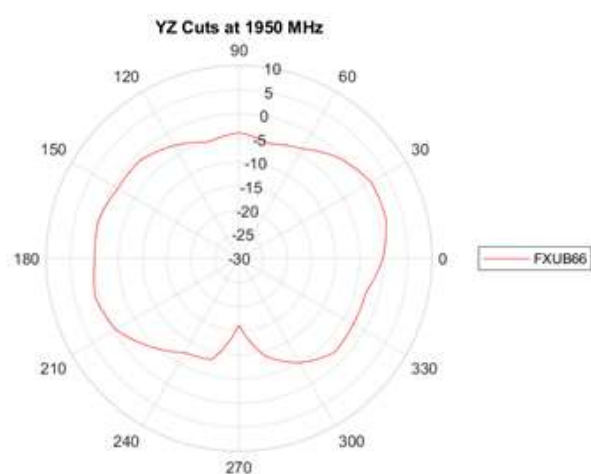
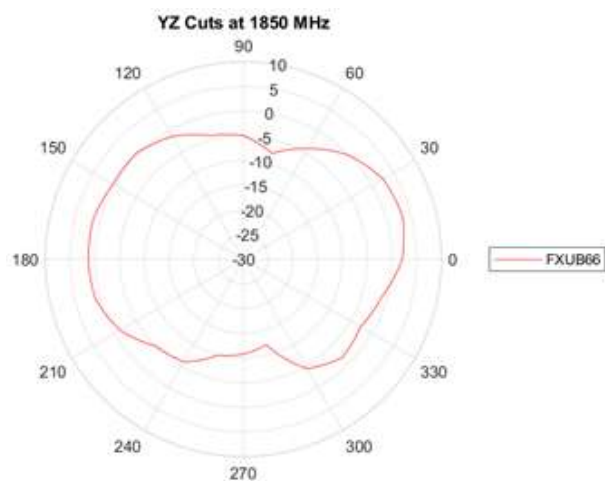


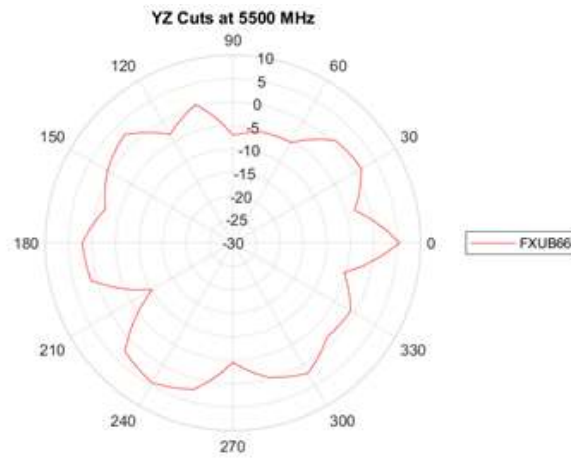
YZ Cuts at 1575 MHz



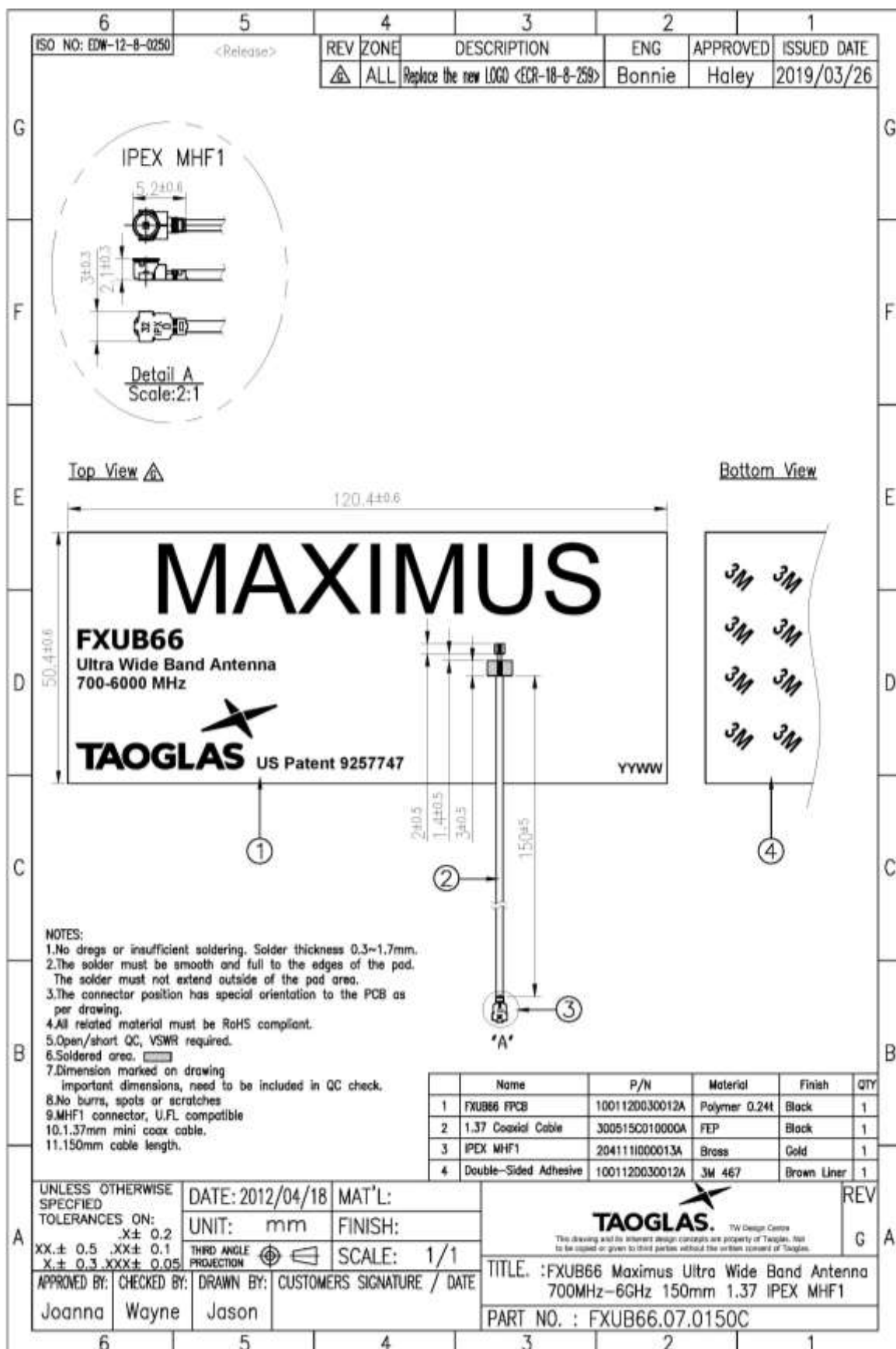
YZ Cuts at 1750 MHz





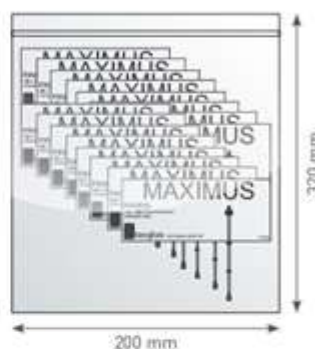
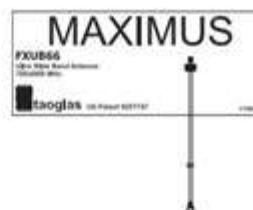


## 5. Mechanical Drawing (Units: mm)

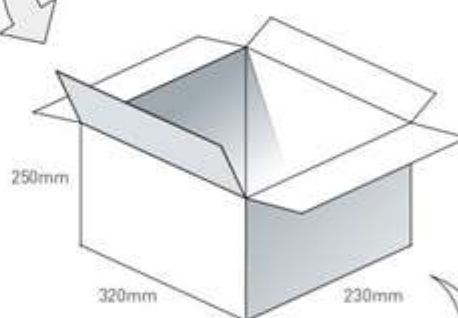


## 6. Packaging

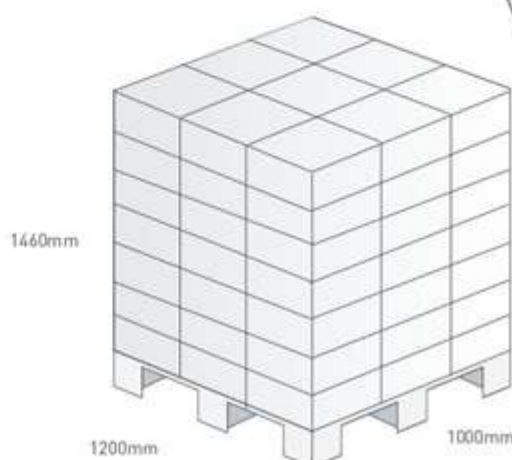
100pcs FXUB66.07.0150C per PE Bag  
Bag Dimensions - 320 x 200mm  
Weight - 380g



1,000 pcs FXUB66.07.0150C per carton  
Carton - 370 x 3200 x 180mm  
Weight - 4.01Kg



Pallet Dimensions 1200 x 1000 x 1460mm  
63 Cartons per Pallet  
9 Cartons per layer  
7 Layers



## Changelog for the datasheet

### SPE-12-8-040 – FXUB66.07.0150C

#### Revision: J (Current Version)

|                  |              |
|------------------|--------------|
| Date:            | 2020-10-20   |
| Changes:         | Updated Data |
| Changes Made by: | Jack Conroy  |

#### Previous Revisions

##### Revision: I

|                  |                |
|------------------|----------------|
| Date:            | 2019-03-26     |
| Changes:         | New data added |
| Changes Made by: | Jack Conroy    |

##### Revision: D

|                  |                           |
|------------------|---------------------------|
| Date:            | 2012-09-27                |
| Changes:         | Packaging Details Updated |
| Changes Made by: | Aine Doyle                |

##### Revision: H

|                  |                           |
|------------------|---------------------------|
| Date:            | 2019-03-26                |
| Changes:         | Data and Template Amended |
| Changes Made by: | Jack Conroy               |

##### Revision: C

|                  |                           |
|------------------|---------------------------|
| Date:            | 2012-09-20                |
| Changes:         | Packaging Details Updated |
| Changes Made by: | Aine Doyle                |

##### Revision: G

|                  |                  |
|------------------|------------------|
| Date:            | 2016-06-10       |
| Changes:         | Patent No. Added |
| Changes Made by: | Aine Doyle       |

##### Revision: B

|                  |                           |
|------------------|---------------------------|
| Date:            | 2012-09-10                |
| Changes:         | Packaging Details Updated |
| Changes Made by: | Aine Doyle                |

##### Revision: F

|                  |                           |
|------------------|---------------------------|
| Date:            | 2014-02-12                |
| Changes:         | Drawing and photo amended |
| Changes Made by: | Aine Doyle                |

##### Revision: A (Original First Release)

|         |            |
|---------|------------|
| Date:   | 2012-04-24 |
| Notes:  |            |
| Author: | Aine Doyle |

##### Revision: E

|                  |                           |
|------------------|---------------------------|
| Date:            | 2012-10-02                |
| Changes:         | Packaging Details Updated |
| Changes Made by: | Aine Doyle                |



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