

APPROVAL SPECIFICATION

| | |
|------------------------|--------------------|
| Product Name | INTENNA |
| Model Name | SM-A546V_WiFi |
| Part No Frequency Band | WIFI(2.4GHz, 5GHz) |
| Production company | KESPION |



KESPION

KESPION Co., Ltd.

155, Namdongseo-ro, Namdong-gu, Incheon, Korea

TEL.: 82-2-2107-5500, FAX.: 82-2-837-6351

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1. Manufacturer

- KESPION Co., Ltd.

2. Model Name

- Basic Model: SM-A546V_SUB

3. Antenna Type

- WiFi: PIFA (Planar Inverted F Antenna)

4. Electric Performance Data

4.1 Antenna Gain

- SUB2_WiFi2 2.4Ghz

| Freq.[MHz] | Eff.[%] | Avg.[dBi] | Peak[dBi] |
|------------|---------|-----------|-----------|
| 2400 | 33.69 | -4.73 | -2.51 |
| 2425 | 33.28 | -4.78 | -2.47 |
| 2450 | 31.89 | -4.96 | -2.89 |
| 2485 | 32.49 | -4.88 | -2.78 |
| 2500 | 30.47 | -5.16 | -3.05 |

-SUB3_WIFI1 5Ghz

| Freq.[MHz] | Eff.[%] | Avg.[dBi] | Peak[dBi] |
|------------|---------|-----------|-----------|
| 5150 | 26.51 | -5.6 | -3.08 |
| 5325 | 20.39 | -6.91 | -3.55 |
| 5500 | 20.57 | -6.87 | -4.09 |
| 5725 | 18.1 | -7.42 | -4.73 |
| 5850 | 23.79 | -6.24 | -3.78 |

- SUB5_WiFi1 2.4Ghz + BT

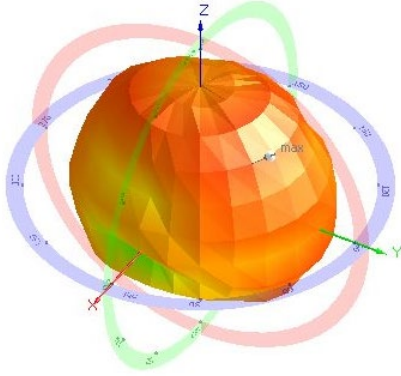
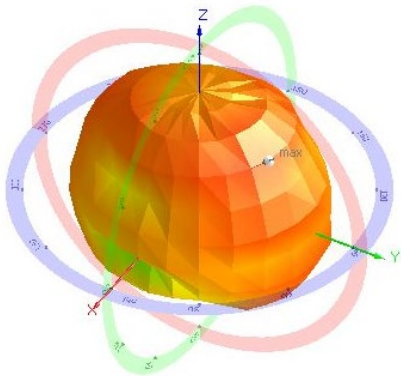
| Freq.[MHz] | Eff.[%] | Avg.[dBi] | Peak[dBi] |
|------------|---------|-----------|-----------|
| 2400 | 36.63 | -4.36 | -2.53 |
| 2425 | 36.83 | -4.34 | -2.19 |
| 2450 | 37.09 | -4.31 | -1.95 |
| 2485 | 40.67 | -3.91 | -1.93 |
| 2500 | 41.88 | -3.78 | -1.47 |

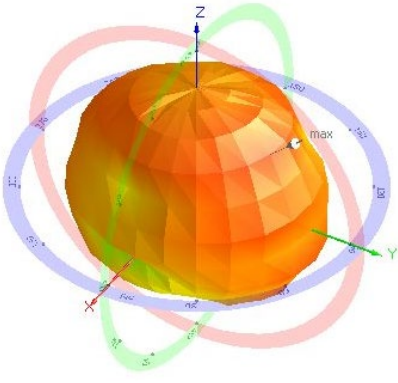
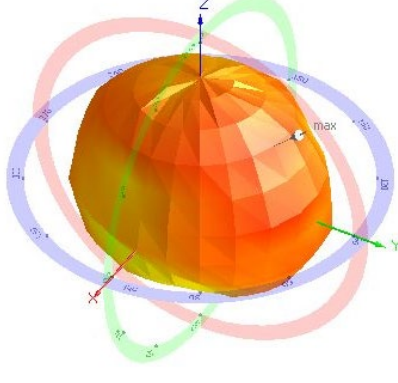
-SUB9_WIFI2 5Ghz

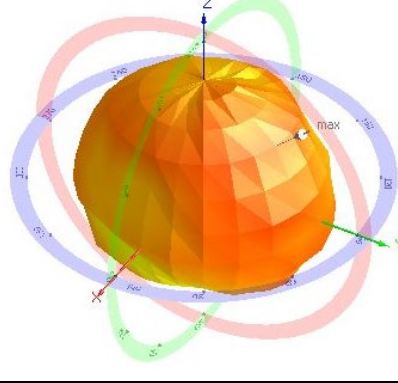
| Freq.[MHz] | Eff.[%] | Avg.[dBi] | Peak[dBi] |
|------------|---------|-----------|-----------|
| 5150 | 11.53 | -9.38 | -6.68 |
| 5325 | 12.31 | -9.1 | -6.84 |
| 5500 | 11.99 | -9.21 | -6.74 |
| 5725 | 12.33 | -9.09 | -6.51 |
| 5850 | 14.9 | -8.27 | -5.37 |

4.2 Radiation Pattern

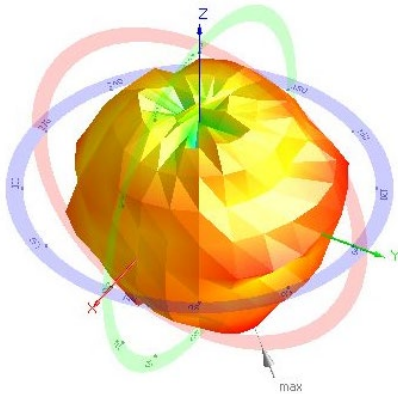
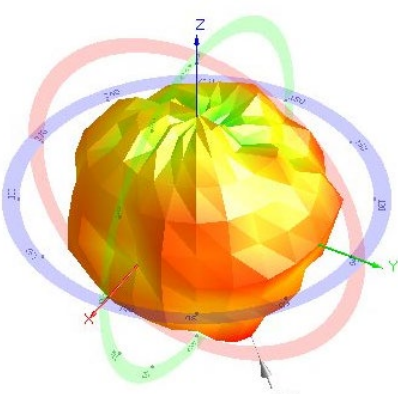
-SUB2_WIFI2 2Ghz

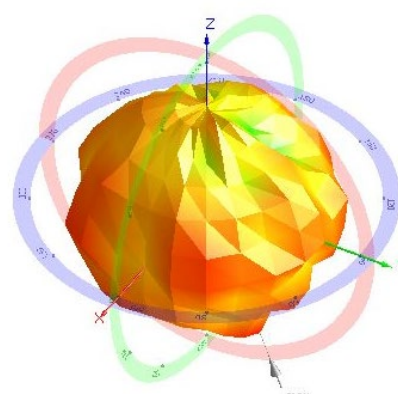
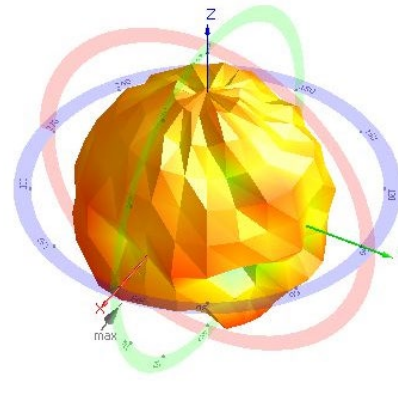
| 주파수 대역 (Frequency Band) | WIFI 2Ghz | |
|----------------------------|---|---|
| | 2400 MHz | 2425 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -4.73 | -4.78 |
| Peak Gain [dBi] | -2.51 | -2.47 |

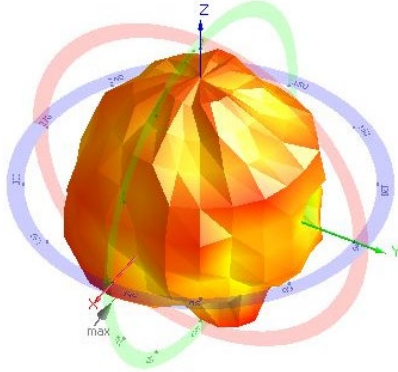
| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 2450 MHz | 2485 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -4.96 | -4.88 |
| Peak Gain [dBi] | -2.89 | -2.78 |

| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 2500 MHz | |
| 3D Radiation Pattern |  | |
| Avg Gain [dBi] | -5.16 | |
| Peak Gain [dBi] | -3.05 | |

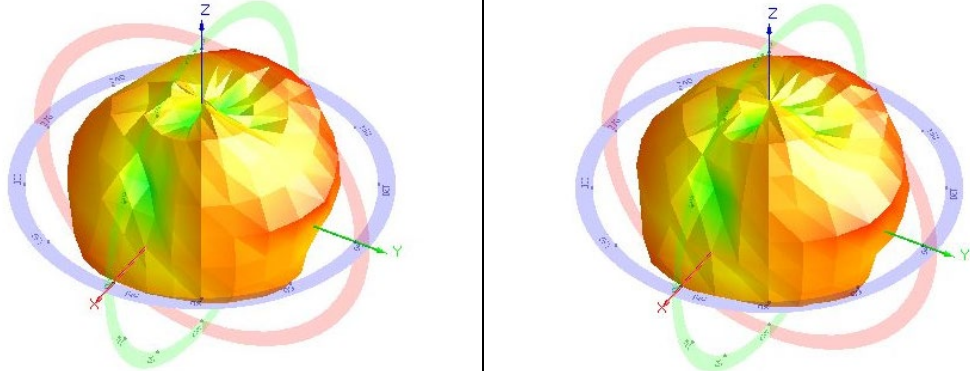
-SUB3_WIFI1 5Ghz

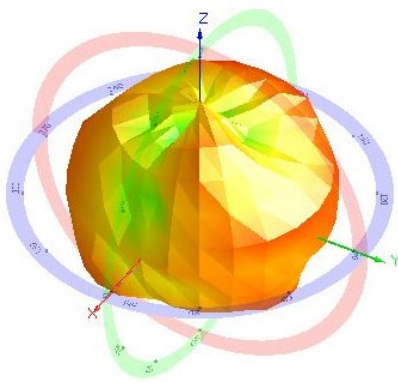
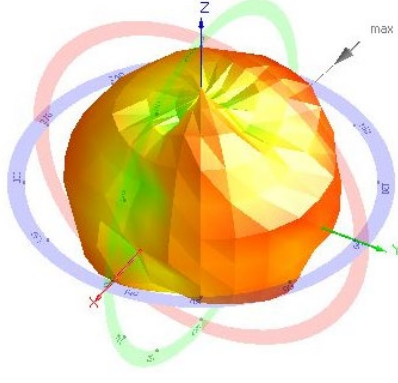
| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5150 MHz | 5325 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -5.6 | -6.91 |
| Peak Gain [dBi] | -3.08 | -3.55 |

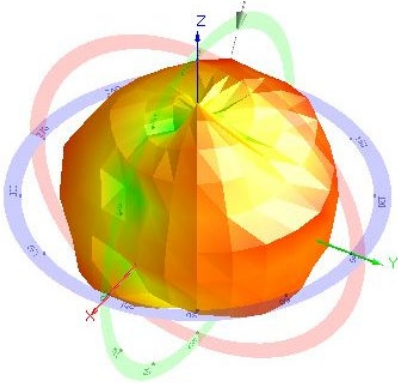
| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5500 MHz | 5725 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -6.87 | -7.42 |
| Peak Gain [dBi] | -4.09 | -4.73 |

| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5850 MHz | |
| 3D Radiation Pattern |  | |
| Avg Gain [dBi] | -6.24 | |
| Peak Gain [dBi] | -3.78 | |

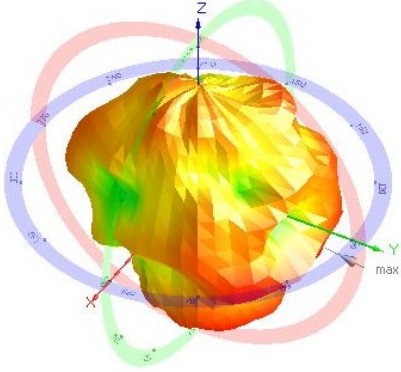
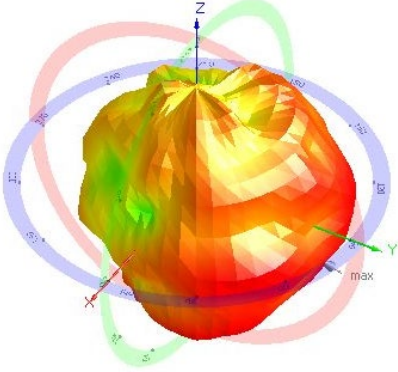
-SU5_WIFI1 2Ghz + BT

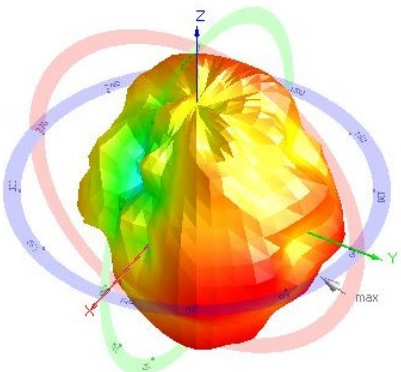
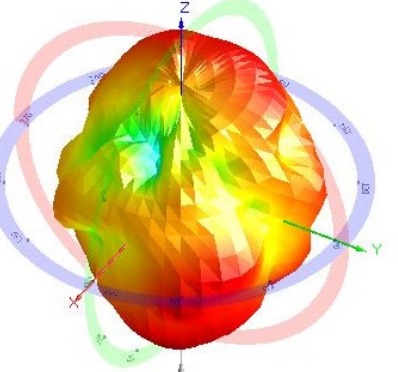
| 주파수 대역 (Frequency Band) | WIFI + BT | |
|----------------------------|--|----------|
| | 2400 MHz | 2425 MHz |
| 3D Radiation Pattern |  | |
| Avg Gain [dBi] | -4.36 | -4.34 |
| Peak Gain [dBi] | -2.53 | -2.19 |

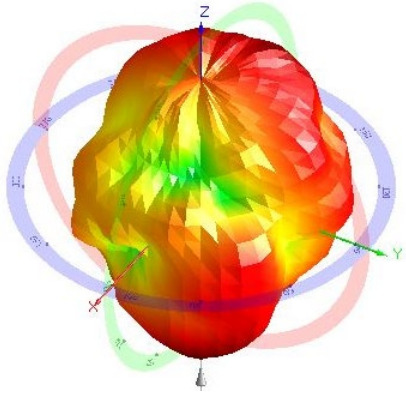
| 주파수 대역 (Frequency Band) | WIFI + BT | |
|----------------------------|---|--|
| | 2450 MHz | 2485 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -4.31 | -3.91 |
| Peak Gain [dBi] | -1.95 | -1.93 |

| 주파수 대역 (Frequency Band) | WIFI + BT | |
|----------------------------|---|--|
| | 2500 MHz | |
| 3D Radiation Pattern |  | |
| Avg Gain [dBi] | -3.78 | |
| Peak Gain [dBi] | -1.47 | |

-SU9_WIFI2 5Ghz

| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5150 MHz | 5325 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -9.38 | -9.1 |
| Peak Gain [dBi] | -6.68 | -6.84 |

| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5500 MHz | 5725 MHz |
| 3D Radiation Pattern |  |  |
| Avg Gain [dBi] | -9.21 | -9.09 |
| Peak Gain [dBi] | -6.74 | -6.51 |

| 주파수 대역 (Frequency Band) | WIFI | |
|----------------------------|---|--|
| | 5,850 MHz | |
| 3D Radiation Pattern |  | |
| Avg Gain [dBi] | -8.27 | |
| Peak Gain [dBi] | -5.37 | |

5. Test Equipment

5.1 MTG Chamber and Network analyzer



| Description | Manufacturer | Model | S/N | Cal Due |
|------------------|----------------------|--------|------------|---------------------------|
| Network Analyzer | Agilent Technologies | E5071C | MY46105084 | 2022.02.16 ~2023.02.15 |

5.2 Radiation Pattern Test

Please refer to appendix file.
(Photo is STC).