



# MULTI FUNCTION MIMO ANTENNA

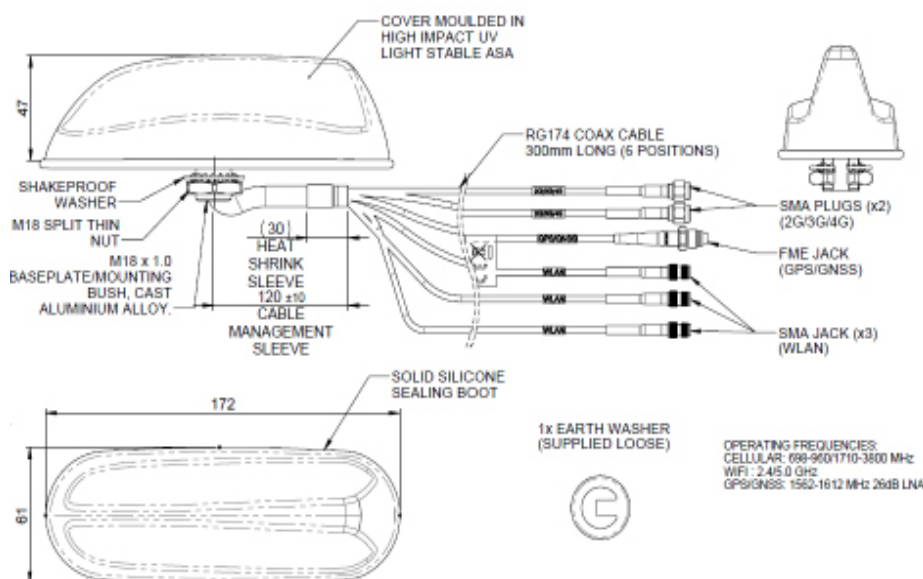
## MIMO LTE/GPS/WIFI ANTENNA

The Multi Function has a compact OEM style shark fin housing that contains 2x2 MiMo antenna function for 4G/3G/2G and an active antenna for

GPS/GLONASS/Galileo/Beidou with 26dB gain LNA. In order to maximise functionality versions of the Multi Function Antenna are available that add either 2x2 MiMo or 3x3 MiMo antenna functionality for 2.4/5.8GHz WiFi.

The shark fin style design provides multiple antenna functions while remaining discreet and is suitable for public safety (overt/covert), industrial and transport applications where a cost effective, efficient and robust antenna is essential. Requiring only a single hole mounting, the SHK[G] reduces vehicle damage, installation time & cost and visual impact whilst protecting a vehicle's resale value.

## Technical Drawing



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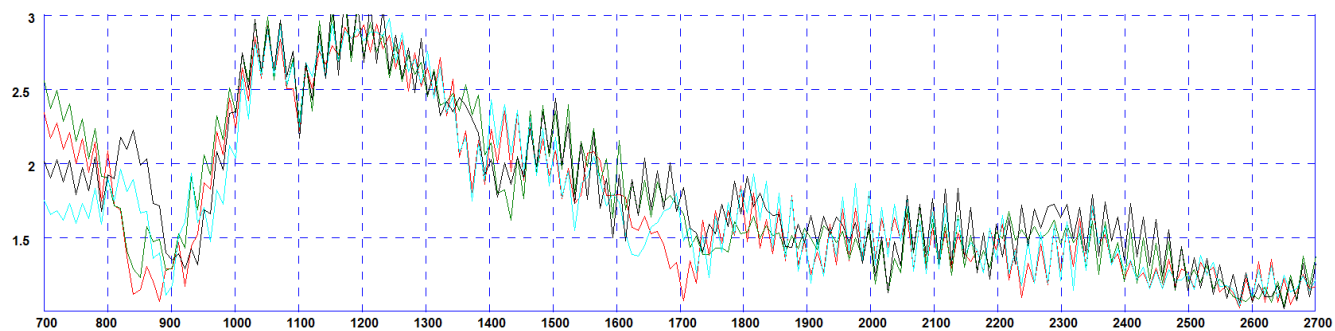
| Part Number                          |                |                                                                 |                                     |                              |           |
|--------------------------------------|----------------|-----------------------------------------------------------------|-------------------------------------|------------------------------|-----------|
|                                      |                | 2332157-1                                                       | 2332157-2                           | 2332157-3                    | 2332157-4 |
| Electrical Data                      |                |                                                                 |                                     |                              |           |
| Frequency Range (MHz)                |                | 698-960 / 1710-2170 / 2500-3800 (2G,3G,4G)                      |                                     |                              |           |
|                                      |                | -                                                               | 1562-1612 (GPS/GNSS/Galileo/Beidou) |                              |           |
|                                      |                | -                                                               |                                     | 2300-2500, 4900-6000 (WLAN   |           |
| Peak Gain:<br>(Excluding cable loss) | Elements 2&3   | 2dBi (598-960MHz), 5dBi (1710-3800MHz)                          |                                     |                              |           |
|                                      | Elements 4,5,6 | -                                                               |                                     | 4dBi (2.4GHz), 6dBi (5.8GHz) |           |
| Isolation with 5m CS29               |                | Cellular >12dBi, WiFi >20dB                                     |                                     |                              |           |
| Typicall efficiency w/o cable loss   |                | elements 2&3: >50%                                              |                                     |                              |           |
| Correlation co-efficient             |                | Elements 2&3: <0.2                                              |                                     |                              |           |
| Polarisation                         |                | Vertical (Element 6 is Horizontal)                              |                                     |                              |           |
| Pattern                              |                | Omni Directional                                                |                                     |                              |           |
| Impedance                            |                | 50Ω                                                             |                                     |                              |           |
| Max Input Power (W)                  |                | 25                                                              |                                     |                              |           |
| GPS /GNSS Data                       |                |                                                                 |                                     |                              |           |
| Frequency Range (MHz)                |                | -                                                               | 1562-1612                           |                              |           |
| VSWR                                 |                | -                                                               | <2:1 ± 4MHz                         |                              |           |
| Gain: LNA                            |                | -                                                               | 26dB                                |                              |           |
| Polarisation                         |                | -                                                               | Rigth Hand Cirular                  |                              |           |
| Operating Voltage                    |                | -                                                               | 3-5V DC (fed via Coax)              |                              |           |
| Current                              |                | -                                                               | Typical <20mA                       |                              |           |
| Mechanical Data                      |                |                                                                 |                                     |                              |           |
| Dimensions (mm)                      | Height         | 50 (2.2")                                                       |                                     |                              |           |
|                                      | Length         | 170 (6.77")                                                     |                                     |                              |           |
|                                      | Width          | 60 (2.4")                                                       |                                     |                              |           |
| Operating Temp (°C)                  |                | -40 to +80°C (-40 to 176°F)                                     |                                     |                              |           |
| Material                             |                | ASA, EPDM, Aluminium Alloy Black                                |                                     |                              |           |
| Approx Weight (g)                    |                | 260                                                             |                                     |                              |           |
| Ingress protection                   |                | IP 66                                                           |                                     |                              |           |
| Mounting Data                        |                |                                                                 |                                     |                              |           |
| Fixing                               |                | Panel Mount, 19mm hole size                                     |                                     |                              |           |
| Cable Data                           |                |                                                                 |                                     |                              |           |
| Cable Type all feeds                 |                | RG174 (UN ECE 118.01 Compliant)                                 |                                     |                              |           |
| Dimensions                           |                | 2.8mm x 300mm (0.11" x 12")                                     |                                     |                              |           |
| Termination                          |                | GPS/GNSS: FME Socket, 4G: 2x SMA plug, WiFi: 2 or 3x SMA socket |                                     |                              |           |

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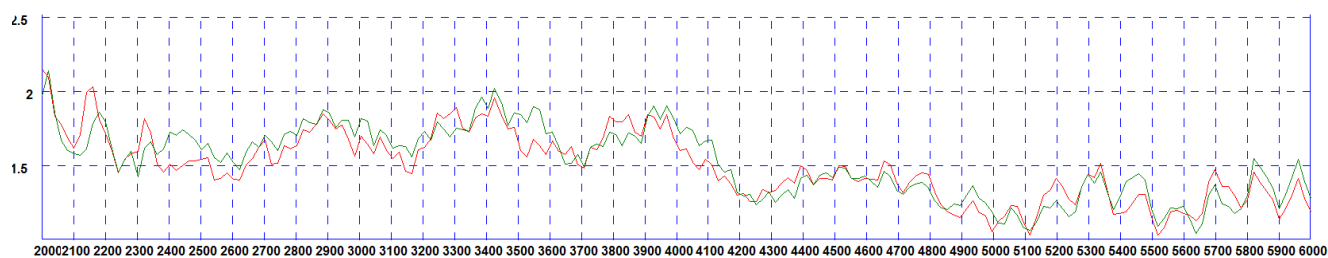
## VSWR

Typical VSWR - 2G/3G/4G Elements 2&3\*



\*VSWR measured with no whip and 5m (16') of CS29 cable Black & Blue = no ground plane Green and Red = 600x 600mm (2'x2') ground plane

Typical VSWR - WiFi Elements 4&5\*



\*VSWR measured with no whip and 5m (16') of CS32 cable

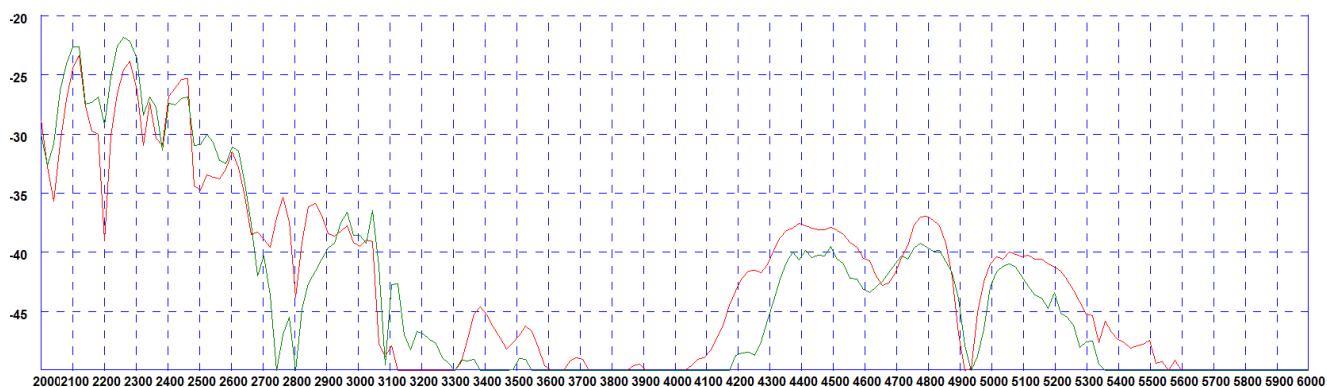
## Isolation

Typical Isolation - Cellular Elements 2&3\*



\*Isolation measured with no whip and 5m (16') of CS29 cable Green Plot = 600x600mm (2' X2') ground plane Red Plot = no ground plane

Typical Isolation - WiFi Elements 4&5\*

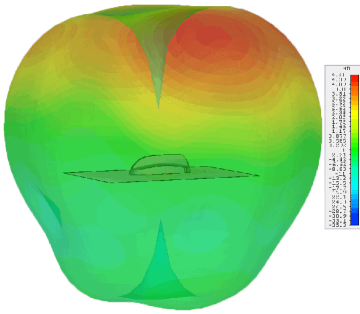


\*Isolation measured with no whip and 5m (16') of CS29 cable Red Plot = 600x600mm (2' X2') ground plane Green Plot = no ground plane

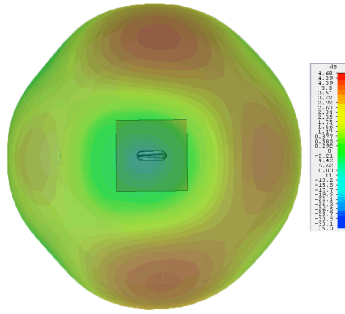
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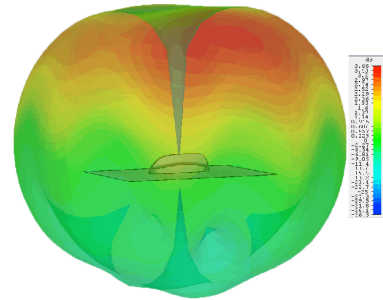
3D Gain Plot Side (700MHz)



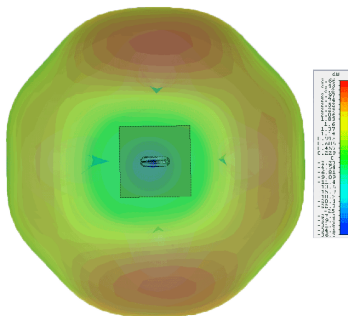
3D Gain Plot Top (700MHz)



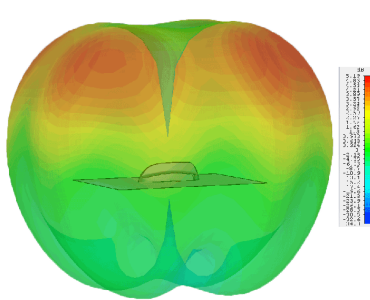
3D Gain Plot Side (800MHz)



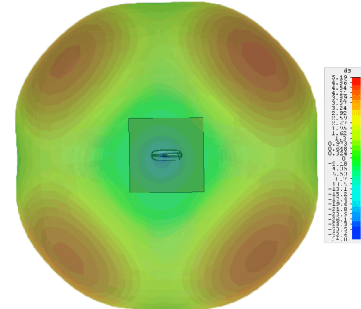
3D Gain Plot Top (800MHz)



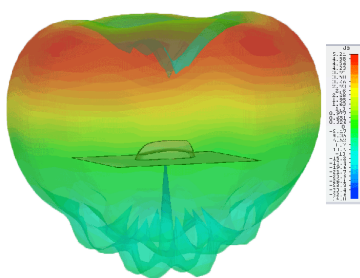
3D Gain Plot Side (900MHz)



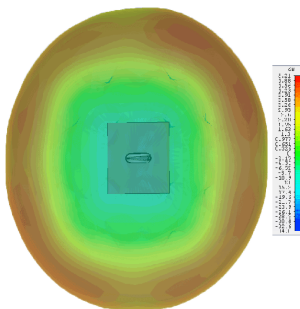
3D Gain Plot Top (900MHz)



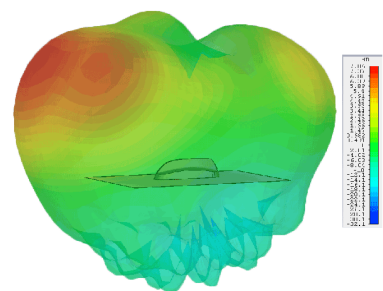
3D Gain Plot Side (1800MHz)



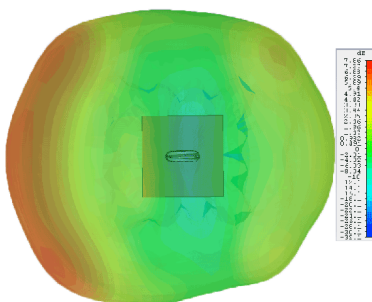
3D Gain Plot Top (1800MHz)



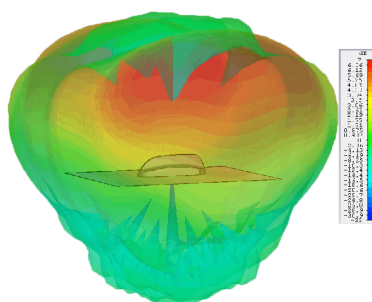
3D Gain Plot Side (2100MHz)



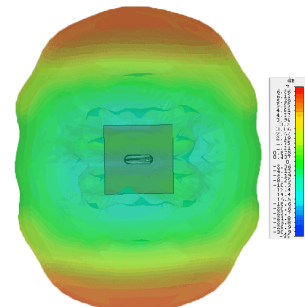
3D Gain Plot Top (2100MHz)



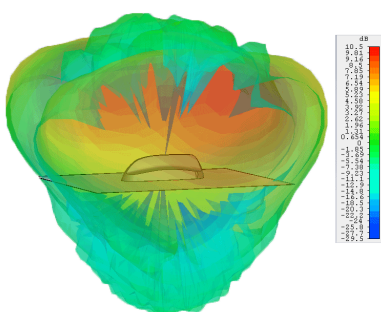
3D Gain Plot Side (2600MHz)



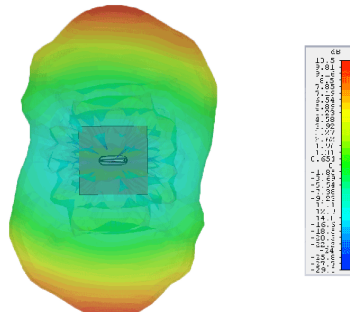
3D Gain Plot Top (2600MHz)



3D Gain Plot Side (3600MHz)



3D Gain Plot Top (3600MHz)

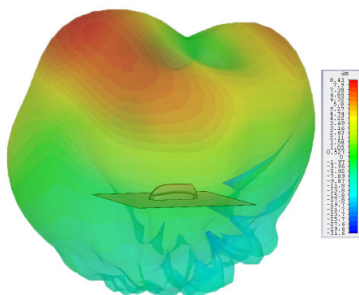


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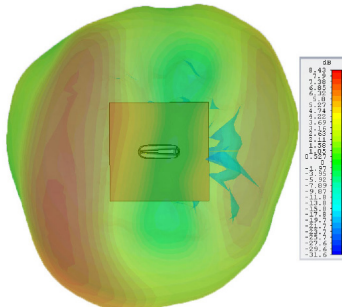
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Typical 3D Radiation Patterns - Wifi Elements 4&5

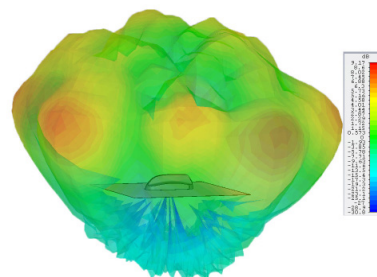
3D Gain Plot Side (2.4GHz)



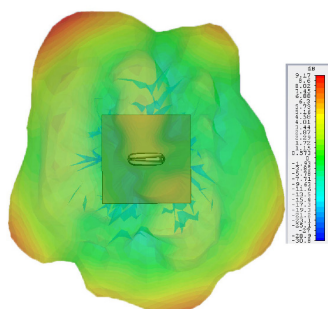
3D Gain Plot Top (2.4GHz)



3D Gain Plot Side (5.4GHz)

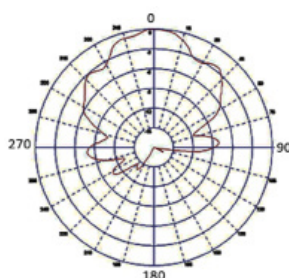


3D Gain Plot Top (5.4GHz)



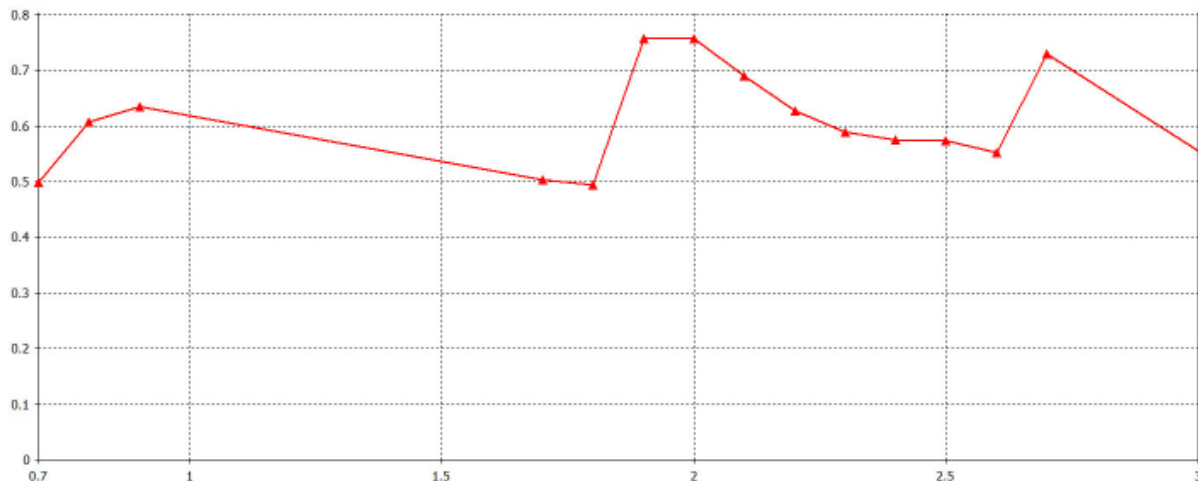
Typical Radiation Patterns - GPS/GNSS Element 1

Element 3: Typical E Plane Pattern



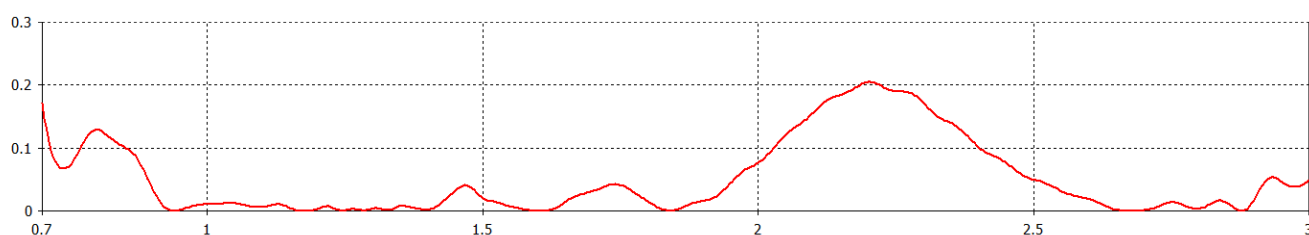
\*3D radiation patterns simulated in CST Microwave Studio on a 600x600mm (2' X2') ground plane with both elements fed together.

Typical Total Efficiency  
Typical Total Efficiency - Cellular Elements 2&3\*



\* Efficient simulated in free space with no whip and no ground plane and no cable.

Typical Correlation Co-efficient  
Typical Correlation Co-efficient- Cellular Elements 2&3\*



\*Correlation co-efficient simulated in free space with no whip, no additional cable and no ground plane

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9