



AO100/4G/SMA

Outdoor GSM/LTE Colinear Antenna

Connector Type

SMA (Male) - options available on request

Cable Type

5m RG58 - other lengths are available

Approx Dimensions

380 x 36 x 36 (including base)

Tube Diameter 16.5mm

Bracket Fixing 156mm From Fixing Surface

Application

LTE690 GSM1800
 GSM850 GSM1900
 GSM900 UMTS 2.1GHz
 GSM1700 LTE 2690



AO100/4G/SMA/LL_15-0

Outdoor GSM/LTE Colinear Antenna

Connector Type

SMA (Male) - options available on request

Cable Type

15m LMR195 - other lengths are available

Approx Dimensions

380 x 36 x 36 (including base)

Tube Diameter 16.5mm

Application

LTE700 GSM1800
 GSM850 GSM1900
 GSM900 UMTS 2.1GHz
 GSM1700 LTE (4G)

other lengths available

5m cable AO100/4G/SMA/LL_5-0
10m cable AO100/4G/SMA/LL_10-0

| | |
|-------------------|--|
| Antenna Model | AO100/4G/SMA |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz (3G) / LTE 2690 |
| Gain | 2dBi |
| Polarisation | Linear |
| Impedance | 50Ω |
| VSWR | Less than 3:1 |
| Antenna substrate | |
| Electrode | |
| Mounting | L Bracket |
| RoHS compliant? | Yes |
| Cable Type | RG58 |
| Velocity factor | 66% |
| Cable Diameter | 5.0mm |
| RoHS compliant? | Yes |

| | |
|-------------------|--|
| Antenna Model | AO100/4G/SMA |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz (3G) / LTE 2690 |
| Gain | 2dBi |
| Polarisation | Linear |
| Impedance | 50Ω |
| VSWR | Less than 3:1 |
| Antenna substrate | |
| Electrode | |
| Mounting | L Bracket |
| RoHS compliant? | Yes |
| Cable Type | RG58 |
| Velocity factor | 66% |
| Cable Diameter | 5.0mm |
| RoHS compliant? | Yes |



AG400

GSM/LTE Spider Patch Antenna

Connector Type
SMA (Male) - options available on request
Cable Type
3m RG174 - other lengths are available
Approx Dimensions (mm)
161 x 20mm

Application
LTE690 GSM1900
GSM850 UMTS 2.1GHz
GSM900 UMTS 2.4GHz
GSM1800 LTE2690

| | |
|-----------------|---|
| Antenna Model | AG400 |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 UMTS 2.1GHz / UMTS 2.4GHz / LTE2690 |
| Gain | 3dBi |
| Polarisation | Vertical |
| Impedance | 50Ω |
| VSWR | Less than 2.0:1 |
| Gross Dimension | 161mm x 20mm |
| Weight | |
| Operating Temp | -40°C -+70°C |
| Cable Type | RG174 |
| Cable Length | 3m (or as specified) |
| Connectors | SMA (m) Nickel-plated brass crimp type |
| RoHS compliant | Yes |

AG460

GSM/LTE Strip Antenna

Connector Type
SMA (Male) - options available on request
Cable Type
3m RG174 - other lengths are available
Approx Dimensions (mm)
108mm x 20mm

Application
LTE690 GSM1900
GSM850 UMTS 2.1GHz
GSM900 UMTS 2.4GHz
GSM1800 LTE2690



| | |
|-----------------|---|
| Antenna Model | AG460 |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz / UMTS 2.4GHz / LTE2690 |
| Gain | 3dBi |
| Polarisation | Vertical |
| Impedance | 50Ω |
| VSWR | Less than 2.0:1 |
| Gross Dimension | 108mm x 20mm |
| Weight | |
| Operating Temp | -40°C -+70°C |
| Cable Type | RG174 |
| Cable Length | 3m (or as specified) |
| Connectors | SMA (m) Nickel-plated brass crimp type |
| RoHS compliant | Yes |



AEB400

GSM/LTE BODY MOUNT ANTENNA

Connector Type

SMA (Male) - options available on request

Cable Type

3m RG174 - other lengths are available

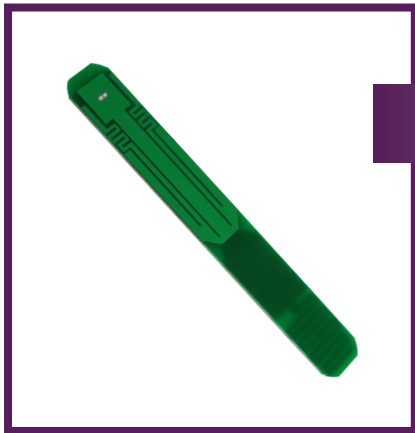
Approx Dimensions (mm)

48mm x 82mm

Application

| | |
|---------|-------------|
| LTE690 | GSM1900 |
| GSM850 | UMTS 2.1GHz |
| GSM900 | UMTS 2.4GHz |
| GSM1800 | LTE2690 |

| | |
|-----------------|---|
| Antenna Model | AEB400 |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 UMTS 2.1GHz / UMTS 2.4GHz / LTE2690 |
| Gain | 3dBi |
| Polarisation | Vertical |
| Impedance | 50Ω |
| VSWR | Less than 2.0:1 |
| Gross Dimension | 108mm |
| Weight | 160 |
| Operating Temp | -40°C -+70°C |
| Cable Type | LMR195 |
| Cable Length | 3m (or as specified) |
| Connectors | SMA (m) Nickel-plated brass crimp type |
| RoHS compliant | Yes |



PCB/4G/01

GSM/LTE PCB

Connector Type

Options available on request

Cable Type

Options available on request

Approx Dimensions (mm)

96mm x 14mm x 1.1mm

Application

LTE690 GSM1800
 GSM850 GSM1900
 GSM900 UMTS 2.1GHz
 GSM1700 LTE 2690

LTEB/SMA

GSM/LTE Swivel Blade Antenna

Connector Type

SMA (Male)

Cable Type

N/A

Approx Dimensions (mm)

13mm x 172mm

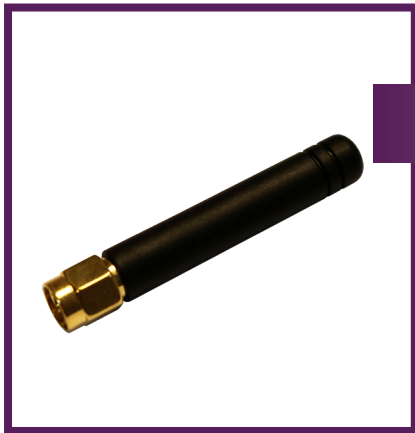
Application

LTE690 GSM1900
 GSM850 UMTS 2.1GHz
 GSM900 UMTS 2.4GHz
 GSM1800 LTE2690



| | |
|-----------------|---|
| Antenna Model | PCB/4G/01 |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1700 / GSM1800 / GSM1900 / UMTS 2.1GHz / LTE 2690 |
| Gain | 2dBi |
| Polarisation | Linear |
| Impedance | 50Ω |
| VSWR | Less than 2.1:1 |
| Gross Dimension | 96mm x 14mm x 1.1mm |
| Weight | |
| Operating Temp | -40°C -+85°C |
| Cable Type | UFL / RG174 / RG178 |
| Cable Length | As Specified |
| Connectors | As Specified |
| RoHS compliant | |

| | |
|-----------------|--|
| Antenna Model | LTEB/SMA |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz / UMTS 2.4GHz / LTE2690 |
| Gain | 3-5dBi |
| Polarisation | Vertical |
| Impedance | 50Ω |
| VSWR | Less than 2.0:1 |
| Gross Dimension | 13mm x 172mm |
| Weight | 15g |
| Operating Temp | -40°C - +70°C |
| Cable Type | N/A |
| Cable Length | N/A |
| Connectors | SMA (m) nickel-plated brass crimp type |
| RoHS compliant | Yes |



GSM/4G/CH/SMA

GSM/LTE PCB Antenna

Connector Type
SMA (Male) - options available on request

Cable Type
N/A

Approx Dimensions (mm)
51mm x 9mm
Tube Diameter 9mm

Application
LTE690 GSM1800 LTE2690
GSM850 GSM1900
GSM900 UMTS 2.1GHz

GSM/4G/CH/SMA_90

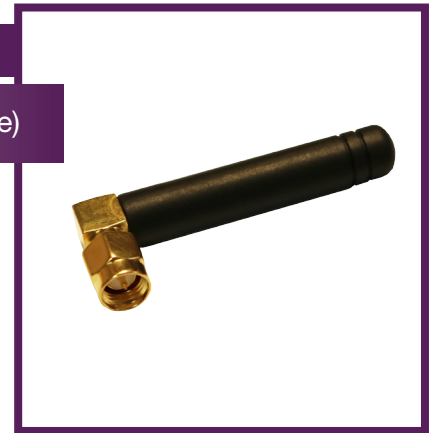
GSM/LTE Stubby Antenna (Right Angle)

Connector Type
SMA (Male) Right Angle

Cable Type
N/A

Approx Dimensions (mm)
48mm x 17mm
Tube Diameter 8mm

Application
LTE690 GSM1800 LTE2690
GSM850 GSM1900
GSM900 UMTS 2.1GHz



| | |
|-----------------|--|
| Antenna Model | GSM/LTE Stubby Antenna SMA (m) |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz / LTE2690 |
| Gain | 2.0dBi |
| Polarisation | |
| Impedance | |
| VSWR | Less than 3:1 |
| Gross Dimension | 9mm x 51mm x 9mm |
| Weight | |
| Operating Temp | -40°C -+60°C |
| Cable Type | N/A |
| Cable Length | N/A |
| Connectors | SMA (m) |
| RoHS compliant | |

| | |
|-----------------|--|
| Antenna Model | GSM/LTE Stubby Antenna Right Angled SMA (m) |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 / UMTS 2.1GHz / LTE2690 |
| Gain | 2.0dBi |
| Polarisation | |
| Impedance | |
| VSWR | Less than 3:1 |
| Gross Dimension | 8mm x 48mm x 17mm |
| Weight | |
| Operating Temp | -40°C -+60°C |
| Cable Type | N/A |
| Cable Length | N/A |
| Connectors | SMA (m) Right Angled |
| RoHS compliant | |



AEB480/GPLS/WiFi

GPS/Glonass/WiFi Antenna

Connector Type
Customer Specific Requirement
Cable Type
Customer Specific Requirement
Approx Dimensions (mm)
143.6mm x 65mm

AEB480/GPLS/LTE

GSM/Glonass/LTE Antenna

Connector Type
Customer Specific Requirement
Cable Type
Customer Specific Requirement
Approx Dimensions (mm)
143.6 x 65mm (Hole Size 30mm)



Application
LTE690 GSM1900 LTE2690
GSM850 GPS 1575-1602MHz
GSM900 UMTS 2.1GHz
GSM1800 UMTS 2.4GHz

| | |
|-----------------|--|
| Antenna Model | AEB480/GPLS/LTE |
| Frequency | LTE690 / GSM850 / GSM900 / GSM1800 / GSM1900 GPS 1575-1602MHz / UMTS 2.1GHz / UMTS 2.4GHz / LTE2690 |
| Gain | GSM: 28 +/- 2dB Typical LTE: 3dBi |
| Polarisation | GSM: RHCP LTE: Linear |
| Impedance | 50Ω |
| VSWR | GSM: <2.0 LTE: <2.0:1 |
| Gross Dimension | 143.6mm x 65mm |
| Weight | 1.2kg |
| Operating Temp | -40°C - +85°C |
| Cable Type | RG316, RG178, RG174, RG58U |
| Cable Length | 3m (although can be specified) |
| Connectors | SMA Male (can be specified) |
| RoHS compliant | |



AEB480/LTE/MIMO

LTE/MIMO Antenna

Connector Type
Customer Specific Requirement
Cable Type
Customer Specific Requirement
Approx Dimensions (mm)
143.6mm x 65mm

AEB480/GPLs/LTE/WIFI

LTE/MIMO/Glonass/WiFi Antenna

Connector Type
Customer Specific Requirement
Cable Type
Customer Specific Requirement
Approx Dimensions (mm)
143.6mm x 65mm

Application
GPS1575.42MHz
LTE 698-960
1710-2700MHz



| | |
|-----------------|--|
| Antenna Model | AEB480/GPLs/LTE |
| Frequency | GSM -1575.42MHz / LTE - 698-960 / 1620MHz / 1710-2700MHz |
| Gain | GSM: 28 +/- 2dB Typical LTE: 3dBi |
| Polarisation | GSM: RHCP LTE: Linear |
| Impedance | 50Ω |
| VSWR | GSM: <2.0 LTE: <2.0:1 |
| Gross Dimension | 143.6mm x 65mm |
| Weight | 1.2kg |
| Operating Temp | -40°C - +85°C |
| Cable Type | RG316, RG178, RG174, RG58U |
| Cable Length | 3m (although can be specified) |
| Connectors | SMA Male (can be specified) |
| RoHS compliant | |



Bespoke Solutions
- SINGULA
- EM & RFXpert
Cable Assemblies
PCB Design

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Bespoke Solutions

From a simple connector to a complete antenna design

In addition to our off-the-shelf range, we can also provide a bespoke design and manufacturing service for connectors, wiring and cable assemblies.

These solutions can cover anything from a simple connector change to a complete antenna design. We have a UK based production facility with co-axial cable processing machines, a wide range of stocked RF connectors and skilled operators.

This enables us to customise any of our standard antennas with the connector and cable length you need.

It also allows us to provide these services with very modest MOQ's and a quick turn-around.



We can offer a full design service, project managed in the UK, using our extensive off-shore resources where we have a number of design, test and production facilities. This takes advantage of the cost savings and speed that these facilities offer but keeps the design control with you.

SINGULA

SINGULA, created with the same leading edge technology as INTEGRATED Engineering Software's world renowned low frequency EMC design tools, is the best choice for applications requiring high frequency electromagnetic analysis. Utilising the innovative Method of Moments (MOM) technology or the Finite Elements Method (FEM) solver, SINGULA has been specifically designed to handle complex high frequency electromagnetic problems where conventional programs break down.

Antenna design engineers depend on SINGULA for the design and analysis of high frequency components including:

- ▶ Wire antennas (monopole, dipole, yagi, helix, spiral)
- ▶ Surface antennas (planar strip, spiral and reflector)
- ▶ Dielectric antennas (resonant and standing wave) on infinite/finite ground planes
- ▶ Various current sources, wire/surface antennas in presence of dielectric conducting bodies
- ▶ Electromagnetic scattering from dielectric conducting bodies, open surfaces and conducting wires
- ▶ EMC/EMI interactions
- ▶ Electromagnetic effects on humans

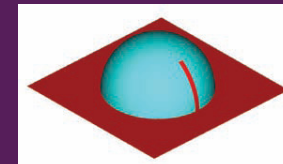
Fast, accurate and powerful...

SINGULA maximizes productivity by allowing the simulation of virtual prototypes on the computer.

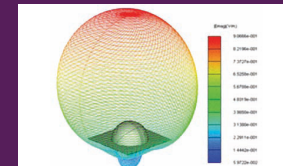
SINGULA significantly reduces design and prototype costs and provides engineers far greater insight into design optimisation and verification.

As easy as one, two, three...

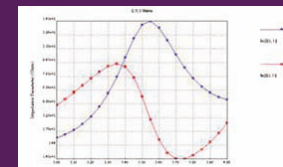
SINGULA provides fast, accurate results, exact modeling of boundaries and easy analysis of open region problems. SINGULA delivers a powerful, easy-to-use design and analysis tool right to your desktop. SINGULA goes to work in just three easy steps.



Create a physical model.



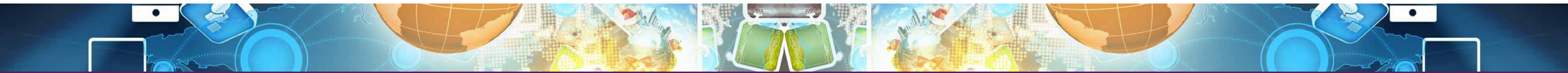
Use a field solver and obtain a field solution.



Obtain input impedance as a function of frequency.

SINGULA at a glance...

- ▶ MOM & FEM solvers available
- ▶ Powerful parametric solvers
- ▶ Easy to use
- ▶ Excellent graphic presentation
- ▶ 3D steady state scattering & radiation solver
- ▶ A wide range of post processing options for design evaluation & verification
- ▶ Time Saving Industry standard CAD import/export utilities
- ▶ Comprehensive technical support services





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