



PRODUCT SPECIFICATION

TITLE

MOLEX 5G<E ANTENNA LITE

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PS-2203550001	Kang Cheng	Hai Liu	Ning Luo

MOLEX 5G<E ANTENNA LITE

1.0 SCOPE

This product specification covers the mechanical, electrical and environmental performances specification for Molex 5G<E antenna lite.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product name: Molex 5G<E antenna lite
Series Number: 220355

2.2 DESCRIPTION

220355 is external antenna being designed to cover all Cellular working frequencies in the 698-5000MHz spectrum. The joint hinge of the antenna allows 90°rotating on vertical plane, and the SMA series connector allows 360°rotating on horizontal plane.

2.3 FEATURES

- Full band LTE cellular
- Dimension 150.40 x 19.9 mm
- SMA connector (RP-SMA male or SMA male)
- Black color
- Flame Retardant: HB



MOLEX 220355 SERIES PICTURE

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PRODUCT SPECIFICATION

220355 Series Material Number:

MOLEX P/N	DESCRIPTION	COLOR	CONNECTOR
2203550001	Molex 5G<E antenna lite with SMA male	Black	SMA Male
2203550011	Molex 5G<E antenna lite with RP-SMA male	Black	RP-SMA Male



**Antenna Connectors in straight and folded modes with SMA-Male
and RP-SMA-Male mounting options**
Offers design flexibility



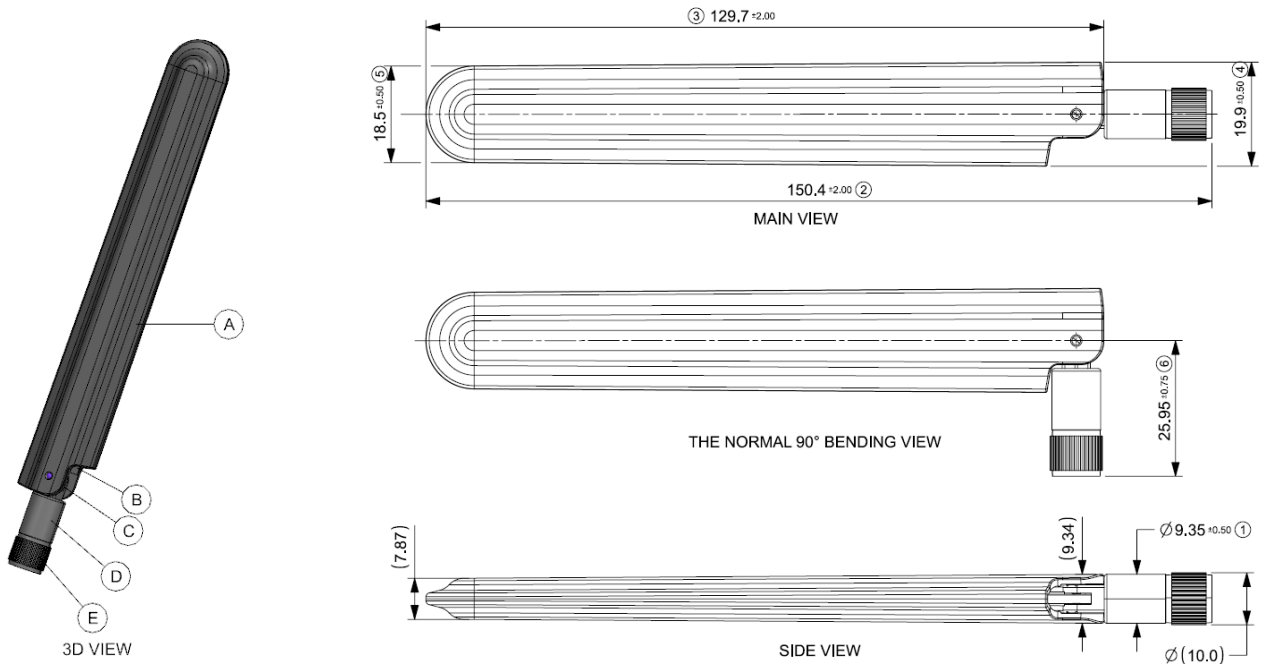
RP-SMA-Male



SMA-Male

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2.4 PRODUCT STRUCTURE INFORMATION

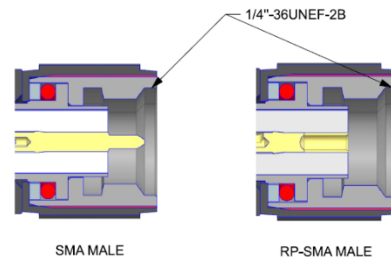


THIS MATERIAL TABLE IS APPLIED FOR ANTENNAS BELOW:
MOLEX P/N:2203550001

MATERIAL BOM		
ITEM	DESCRIPTION	
A	HOUSING CAP	ABS BLACK
B	PCB	FR-4
C	CABLE	RG178
D	BASE	PC+PBT BLACK
E	CONNECTOR	SMA MALE

THIS MATERIAL TABLE IS APPLIED FOR ANTENNAS BELOW:
MOLEX P/N:2203550011 & 2203559011

MATERIAL BOM		
ITEM	DESCRIPTION	
A	HOUSING CAP	ABS BLACK
B	PCB	FR-4
C	CABLE	RG178
D	BASE	PC+PBT BLACK
E	CONNECTOR	RP-SMA MALE



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PRODUCT SPECIFICATION

3.0 GENERAL SPECIFICATION

Product name	Molex LTE antenna	
Part number	2203550001	2203550011
Frequency	698~5000 MHz	
Polarization	Linear	
Operating with matching	-40°C to 85°C	
Storage with matching	-40°C to 85°C	
RF power	2 Watts	
Impedance with matching	50 Ohms	
Connector type	SMA Male	RP-SMA Male

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4.0 ANTENNA SPECIFICATION.

All measurements are done of the antenna mounted on a 100*100mm ground with VNA Agilent 5071C and Over-The-Air (OTA) chamber for the part No.220355 Series.

4.1 ELECTRICAL REQUIREMENT

Description	Equipment	Requirement			
Frequency Range	VNA E5071C	698-960MHz	1.71-2.69GHz	3.3-4.2GHz	4.2-5GHz
Return Loss	VNA E5071C	<-5 dB	<-5 dB	<-5 dB	<-10 dB
Peak Gain (Max)	OTA Chamber	1dBi	4.5dBi	3.6dBi	3.5dBi
Average Total Efficiency	OTA Chamber	>55%	>70%	>60%	>65%
Polarization	OTA Chamber	Linear			
Input Impedance	VNA E5071C	50 ohms			

Note that the above antenna performance is measured with just the antenna mounted on a PCB to simulate a free-space condition. When implement into the system, the frequency resonant might be off-tune due to the loading of surrounding components especially metal plane. This off-tune can be compensated through matching. Although module manufacturers specify a peak gain limit, it is based on free-space conditions. The peak gain will be degraded by 1 to 2dBi in the actual implementation as the radiation pattern will change due to the surround components. As such, during selection of antenna, you can select one with high peak gain to compensate for the loss. Molex can offer assistant to choose the best location and best tuning in-order to meet this peak gain requirement.

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5.0 ENVIRONMENTAL SPECIFICATION

DESCRIPTION	SPECIFICATION
Low Temperature Storage	1. Keep test samples in $-40\pm 2^{\circ}\text{C}$ chamber with 24 hours. 2. No cosmetic problem 3. The function meets the requirements after the test
High Temperature Storage	1. Keep test samples in $85\pm 2^{\circ}\text{C}$ chamber with 48 hours. 2. No cosmetic problem 3. The function meets the requirements after the test
Mechanical Shock	1. Shock accelerated speed: $a=500\pm 10\%$ m/S², 2. Time input: $t=6$ ms, Test 10 times each in six axis (X,Y,Z,-X,-Y,-Z) Mechanical and Function in spec after test 3. The function meets the requirements after the test
Salt Mist	1. NACL concentration:$5\%\pm 1\%$; Temperature:$35\pm 2^{\circ}\text{C}$; PH Range:6.5-7.2, Salt fog deposition:1-2ml/(80cm²•h), Time:48h 2. The function meets the requirements after the test 3. No visible corrosion. 4. Discoloration acceptable
Humidity Test	1. Test temperature: $40\pm 2^{\circ}\text{C}$, humidity: 95%, time: 96h 2. The function meets the requirements after the test 3. No cosmetic problem

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Thermal Cycle	- Test steps: - Temperature High: +85°C, uncontrolled humidity - Temperature Low: -40°C, uncontrolled humidity - Ramp Rate: 20°C / min. - Dwell Time: 23 minutes at High and Low temperatures Close to 60 min /cycle. - No cosmetic problem - The function meets the requirements after the test.
Drop Test	- Drop height :1 m, tested surface: each surface of product. Drop times: 3 time. The surface that product will land: stainless steel plate. - No cosmetic problem (Minor wear is acceptable) - The function meets the requirements after the test

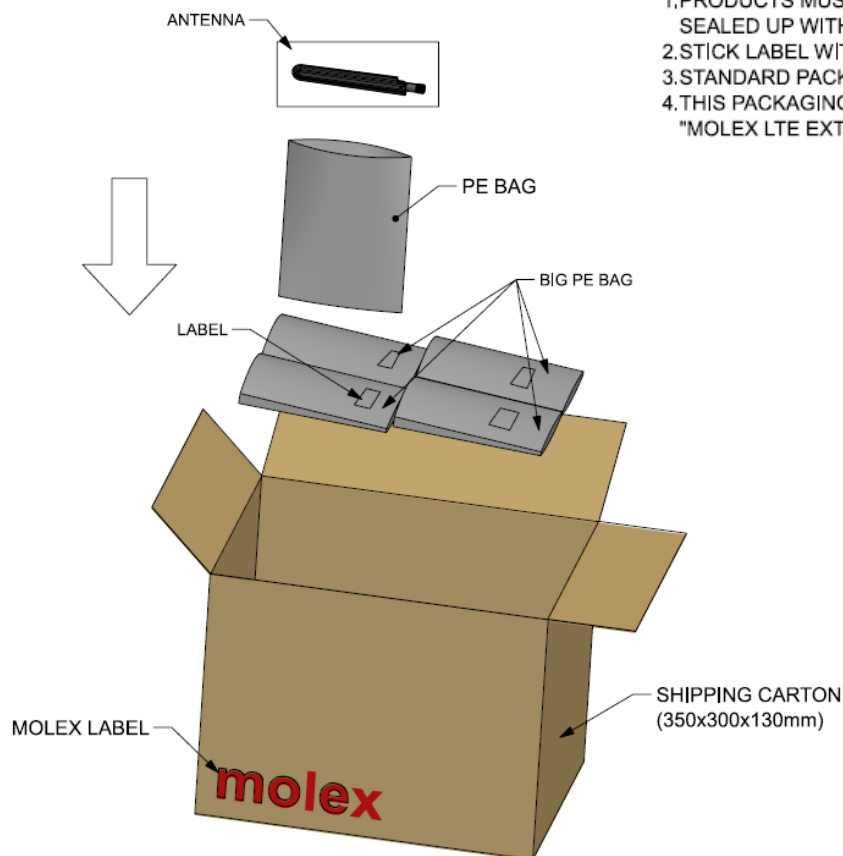
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6.0 PACKING

PART NUMBER	PCS/PE BAG	PE BAG/BIG PE BAG	BIG PE BAG/CARTON	QTY/CARTON
2203550001	10	5	10	500 PCS
2203550011	10	5	10	500 PCS

NOTES:

- 1.PRODUCTS MUST BE PACKED IN CARTONS AND SEALED UP WITH TAPE.
- 2.STICK LABEL WITH PART NUMBER AND DATE CODE
- 3.STANDARD PACKAGING QUANTITY:SEE TABLE
- 4.THIS PACKAGING SPECIFICATION TO BE USED FOR "MOLEX LTE EXTERNAL ANTENNA".



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7.0 CHANGE HISTORY

REV	DATE	DESCIRPTION
A	2022/08/25	First Release

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