



PRODUCT SPECIFICATION

TITLE

600-6000MHz FLEXIBLE ANTENNA

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<u>REVISION:</u> A	<u>ECR/ECN INFORMATION:</u> EC No: 602848 DATE: 2018/08/17	<u>TITLE:</u> 600-6000MHz Flexible Antenna Product Specification	<u>SHEET No.</u> 1 of 8
<u>DOCUMENT NUMBER:</u> PS-2079010100	<u>CREATED / REVISED BY:</u> Kang Cheng 2018/08/14	<u>CHECKED BY:</u> Cooper Zhou 2018/08/14	<u>APPROVED BY:</u> Stary Song 2018/08/14

600-6000MHz FLEXIBLE ANTENNA

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances specification for 600-6000MHz Flexible Antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product name: 600-6000MHz Flexible Antenna
Series Number: 207901

2.2 DESCRIPTION

Series 207901 is a monopole and low profile flexible antenna for 600~960/1500~3000/3000~6000MHz band application. It's made from Poly-flexible material, has a size form 147mm x 25mm x 0.16mm and has double-sided TESA adhesive for "peel and stick" easy mounting.

2.3 FEATURES

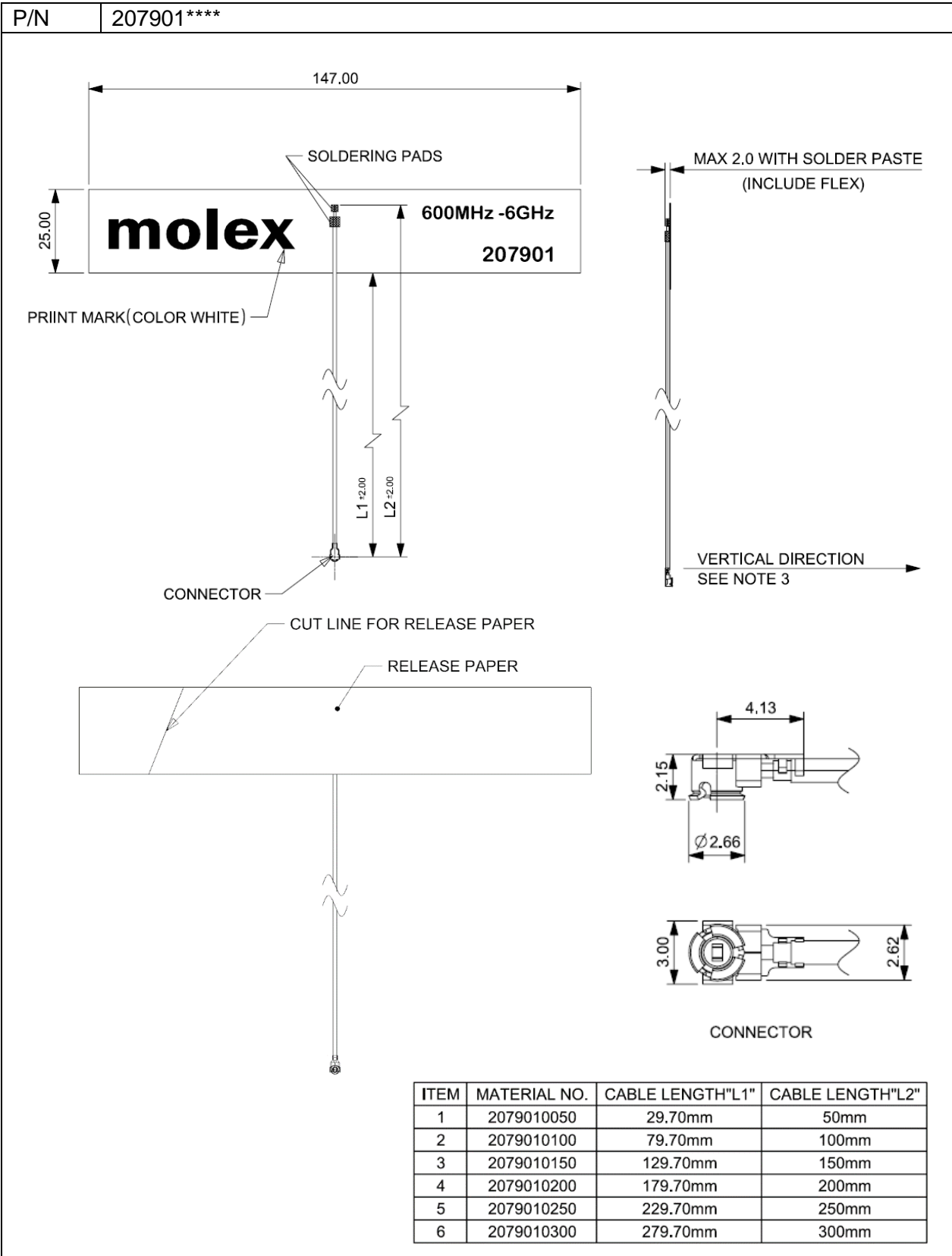
- 600~6000MHz, Linear polarization
- Flex size 147 x 25 x 0.16mm
- IPEX MHF (U.FL compatible) connector
- Cable OD1.13mm, 6 standard length options (50/100/150/200/250/300mm)
- Cable and connector can be customized
- RoHS Compliant



Molex 2079010100 600-6000MHz FLEXIBLE ANTENNA MODULE 3D VIEW

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2.4 PRODUCT STRUCTURE INFORMATION



Mechanical Structure Information for 2079010100

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3.0 APPLICABLE DOCUMENTS

Document	Number	Description
Sale Drawing(SD)	SD-2079010100	Mechanical Dimension of the product
Application Guide(AS)	AS-2079010100	Antenna Application and surrounding
Packing Drawing(PK)	PK-2079010100	Product packaging specifications

4.0 GENERAL SPECIFICATION

Product name	600-6000 MHz Flexible Antenna		
Part number	207901****		
Frequency	600-960 MHz	1500-3000 MHz	3000-6000 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		
Antenna type	Flex		
Connector type	U.FL (MHF compatible)		
User Implementation type	Adhesive TESA 68537		
Cable diameter	Ø1.13mm		
Cable length	50mm (P/N for 2079010050)		
	100mm (P/N for 2079010100)		
	150mm (P/N for 2079010150)		
	200mm (P/N for 2079010200)		
	250mm (P/N for 2079010250)		
	300mm (P/N for 2079010300)		

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5.0 ANTENNA SPECIFICATION.

5.1 ELECTRICAL REQUIREMENT

5.1.1 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 50mm			
P/N	2079010050		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.7dBi	5.0dBi	5.6dBi
Average Total efficiency	71%	67%	73%
Return Loss	< -3 dB	< -5 dB	< -5 dB

5.1.2 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 100mm			
P/N	2079010100		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.6dBi	4.9dBi	5.4dBi
Average Total Efficiency	>70%	>65%	>70%
Return Loss	< -3 dB	< -5 dB	< -5 dB

5.1.3 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 150mm			
P/N	2079010150		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.5dBi	4.8dBi	5.2dBi
Average Total Efficiency	68%	63%	66%
Return Loss	< -3 dB	< -5 dB	< -5 dB

5.1.4 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 200mm			
P/N	2079010200		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.4dBi	4.6dBi	5.0dBi
Average Total Efficiency	67%	60%	63%
Return Loss	< -3 dB	< -5 dB	< -5 dB

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5.1.5 ELECTRICAL REQUIREMENTS FOR CABLE LENGTH 250mm			
P/N	2079010250		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.3dBi	4.5dBi	4.8dBi
Average Total Efficiency	66%	58%	60%
Return Loss	< -3 dB	< -5 dB	< -5 dB

5.1.6 ELECTRICAL REQUIREMENTS FOR CABLE LENGTH 300mm			
P/N	2079010300		
Frequency Range	600-960MHz	1500-3000MHz	3000-6000MHz
Peak Gain(Max)	2.2dBi	4.3dBi	4.6dBi
Average Total Efficiency	64%	56%	57%
Return Loss	< -3 dB	< -5 dB	< -5 dB

Note that the above antenna performance is measured with just the antenna mounted on a PC/ABS block to similar 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.

6.0 MECHANICAL SPECIFICATION

DESCRIPTION	TEST CONDITION	TEST RESULT
Pull Test	1. Test machine: Max intelligent load tester 2. Stick the flex antenna on a plastic board, pull cable in axial direction.	Pull force >8N
Un-mating force (connector)	Solder the receptacle connector to the test board ,then place the board and plug on push-on/pull-off machine, and repeat mating and un-mating 30 cycles at a speed 25±3mm/min. along the mating axis.	Un-mating force : 0.5 kgf min

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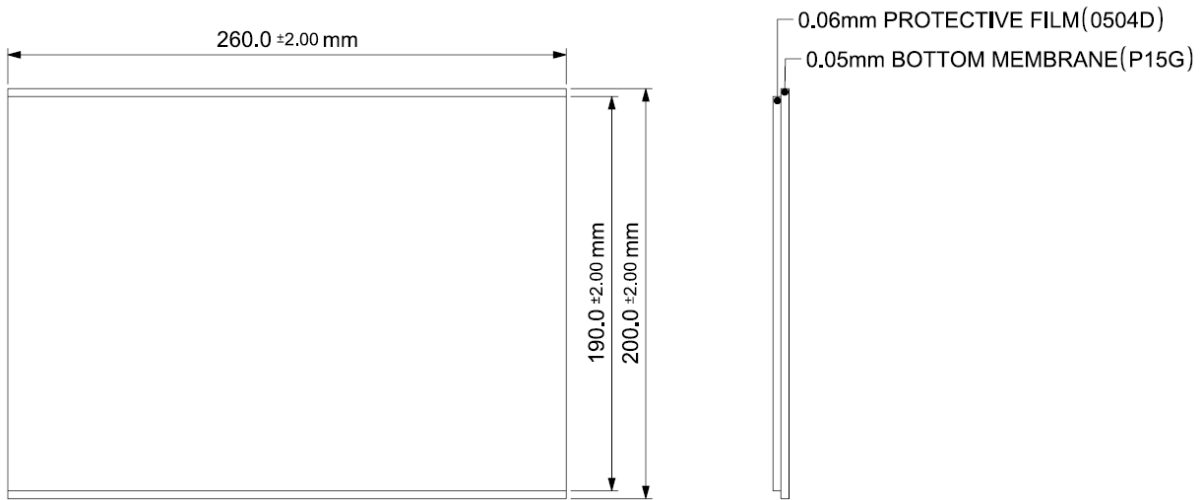
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7.0 ENVIRONMENTAL SPECIFICATION

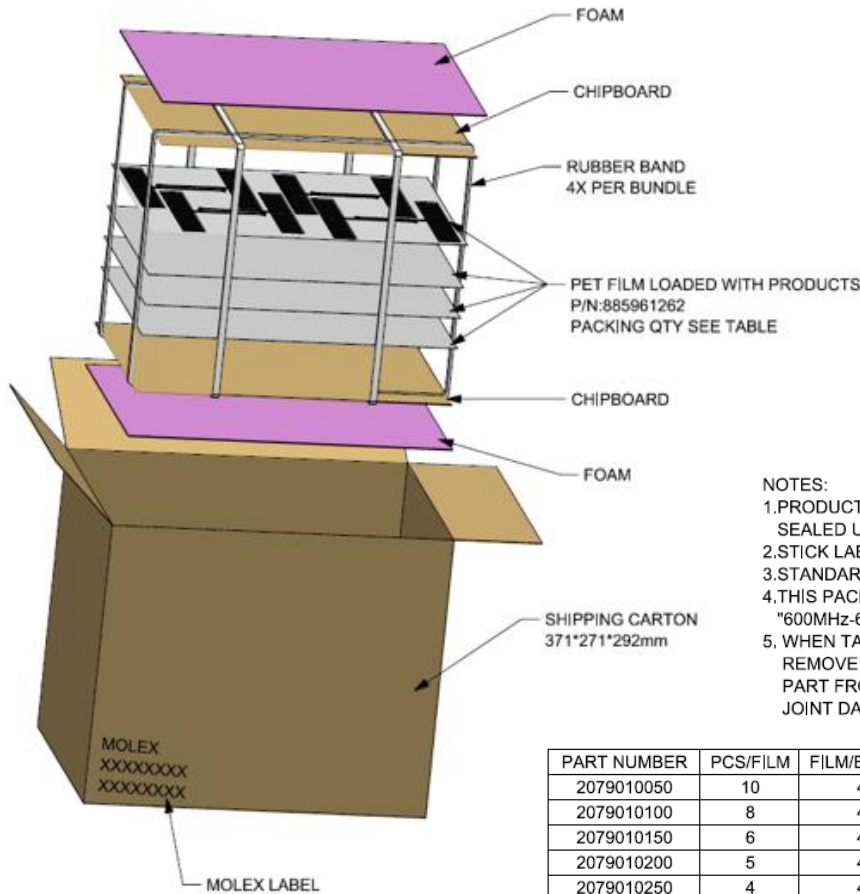
DESCRIPTION	SPECIFICATION
Temperature /Humidity cycling	<ol style="list-style-type: none"> 1.The device under test is kept for 30 mins in an environment with a temperature of -40 °C. 2. Kept for 4 Hours in an environment with a temperature of 85 degrees and a relative humidity of 95%. 3. Kept for 2 Hours in an environment with a temperature of 125 degrees and a relative humidity of 95%. 4. The cycle is repeated until a total of 40 cycles have been completed. Hereafter the conditions are stabilized at room temperature. Transfer temperature 8°C per min. 5. Parts should meet RF spec before and after test. 6. No cosmetic problem (No soldering problem; No adhesion problem of glue.)
Temperature Shock	<ol style="list-style-type: none"> 1.The device under test at -40 °C⇔125 °C by 100 cycles, Dwell of 30 mins, transition time between Dwell 30 secs (~ 61 mins / cycle) and each item should be measured after exposing them in normal temperature and humidity for 24 h. 2. Parts should meet RF spec before and after test. 3. No cosmetic problem (No soldering problem; No adhesion problem of glue) .
High Temperature	<ol style="list-style-type: none"> 1.Temperature:125°C, time:1008 hours 2.There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other 3. Parts should meet RF spec before and after test. 4. No cosmetic problem (No soldering problem; No adhesion problem of glue) .
Salt mist test	<ol style="list-style-type: none"> 1. The device under test is exposed to a spray of a 5% (by volume) resolution of NACL in water for 2 hours. Thereafter the device under test is left for 1 week in room temperature at a relative humidity of 95%. The cycle is repeated until a total of 2 cycles have been completed. Here after the conditions are stabilized at room temperature. 2. Parts should meet RF spec before and after test. 3. No visible corrosion. Discoloration accept.

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8.0 PACKING



PET FILM



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 "600MHz-6000MHz FLEXIBLE ANTENNA".
5. WHEN TAKING PRODUCT FROM PET FILM, PLEASE REMOVE THE COVER TAPE FIRST, THEN PICK UP THE PART FROM FLEX NOT THE CABLE, TO AVOID SOLDER JOINT DAMAGE.

PART NUMBER	PCS/FILM	FILM/BUNDLE	BUNDLE/CARTON	PCS/CARTON
2079010050	10	40	5	2000PCS
2079010100	8	40	5	1600PCS
2079010150	6	40	5	1200PCS
2079010200	5	40	5	1200PCS
2079010250	4	40	5	960PCS
2079010300	3	40	5	720PCS

PACKAGING INFORMATION FOR 207901****

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