



PRODUCT SPECIFICATION

TITLE

824-2170MHz FLEXIBLE ANTENNA

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<u>REVISION:</u> A	<u>ECR/ECN INFORMATION:</u> EC No: 174969 DATE: 2018/05/02	<u>TITLE:</u> 824-2170MHz Flexible Antenna Product Specification	<u>SHEET No.</u> 1 of 8
<u>DOCUMENT NUMBER:</u> PS-2072350100	<u>CREATED / REVISED BY:</u> Kang Cheng 2018/05/02	<u>CHECKED BY:</u> Cooper Zhou 2018/05/02	<u>APPROVED BY:</u> Stary Song 2018/05/02

824-2170MHz FLEXIBLE ANTENNA

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances specification for 824-2170MHz Flexible Antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

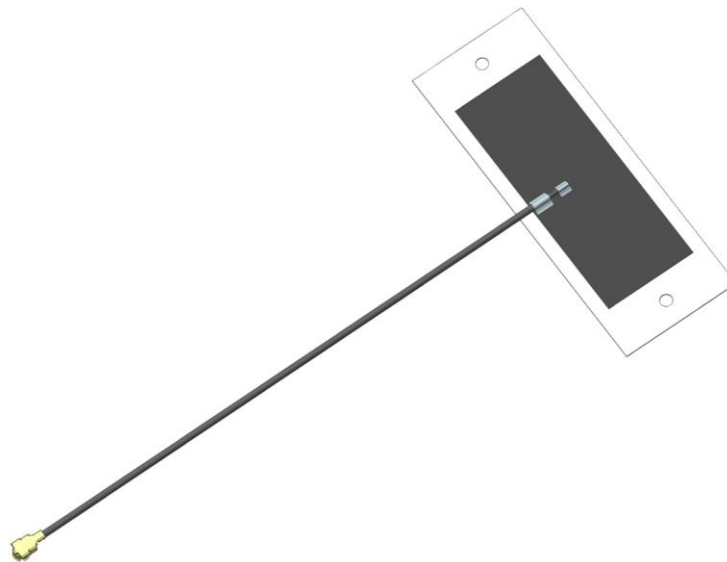
Product name: 824-2170MHz Flexible Antenna
Series Number: 207235

2.2 DESCRIPTION

Series 207235 is super small size monopole and low profile flexible antenna for 824~960/1710~2170MHz band application. It's made from Poly-flexible material, has a tiny form factor (40.4mm x15.4mm x0.1mm) and has double-sided 3M adhesive for "peel and stick" easy mounting.

2.3 FEATURES

- 824~960/1710~2170MHz, Linear polarization
- 40.4x15.4x0.1mm tiny size
- IPEX MHF (U.FL compatible) connector
- Cable OD1.13mm, 3 standard length options (100/150/200mm)
- Cable and connector can be customized
- RoHS Compliant



Molex 2072350100 824-2170MHz FLEXIBLE ANTENNA MODULE 3D VIEW

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2.4 PRODUCT STRUCTURE INFORMATION

P/N	207235****
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PRINT TEXT (COLOR:WHITE)

MOLEX
824~2170MHz flexible antenna
207235

MAX 2.0 mm WITH SOLDER PASTE
(INCLUDE FLEX)

VERTICAL DIRECTION
SEE NOTE 3

CONNECTOR

CONNECTOR

ITEM	MATERIAL NO.	CABLE LENGTH"L1"	CABLE LENGTH"L2"
1	2072350100	93.5mm	100mm
2	2072350150	143.5mm	150mm
3	2072350200	193.5mm	200mm

NOTES:

- MATERIAL:
FLEX SIZE:40.4*15.4mm
CABLE:Ø1.13mm
CONNECTOR:OD1,13 RF 2,5H MHF-13-N-01 CONNECTOR (PLUG GOLD PLATED)
- SOLDER MASK:BLACK.
- FOR PULL TEST, CAN NOT LIFT UP IN THE VERTICAL DIRECTION.
- APPLICATION SPEC PLEASE REFER TO AS OF 2072350100.
- PRODUCT SPEC PLEASE REFER TO PS OF 2072350100.
- PACKAGING DRAWING PLEASE REFER TO PK OF 2072350100.
- THE CONNECTOR WILL BE PROTECTED WITH A CAP.

Mechanical Structure Information for 2072350100

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3.0 APPLICABLE DOCUMENTS

Document	Number	Description
Sale Drawing(SD)	SD-2072350100	Mechanical Dimension of the product
Application Guide(AS)	AS-2072350100	Antenna Application and surrounding
Packing Drawing(PK)	PK-2072350100	Product packaging specifications

4.0 GENERAL SPECIFICATION

Product name	824-2170MHz Flexible Antenna	
Part number	207235*	
Frequency	824-960MHz	1710-2170MHz
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	MHF	
User Implementation type	Adhesive 3M907	
Cable	Ø1.13mm	

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5.0 ANTENNA SPECIFICATION.

5.1 ELECTRICAL REQUIREMENT

5.1.1 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 100mm		
P/N	2072350100	
Frequency Range	824-960MHz	1710-2170MHz
Peak Gain(Max)	0dBi	4.3dBi
Average Total efficiency	30%	60%
Return Loss	< -4 dB	< -6 dB

5.1.2 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 150mm		
P/N	2072350150	
Frequency Range	824-960MHz	1710-2170MHz
Peak Gain(Max)	0dBi	3.8dBi
Average Total Efficiency	31%	60%
Return Loss	< -5 dB	< -8 dB

5.1.3 ELECTRICAL REQUIREMENTS FOR CABLE LENGTHH 200mm		
P/N	2072350200	
Frequency Range	824-960MHz	1710-2170MHz
Peak Gain(Max)	0.6dBi	3.6dBi
Average Total Efficiency	40%	60%
Return Loss	< -10 dB	< -10 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.

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6.0 MECHANICAL SPECIFICATION

DESCRIPTION	SPECIFICATION
Pull Test	<ol style="list-style-type: none">1. Test machine: Max intelligent load tester2. Stick the flex antenna on a plastic board, pull cable in axial direction.3. Pull force >8N
Un-mating force	<ol style="list-style-type: none">1. Mating/un-mating the receptacle (soldered on PCB) and plug at a speed of 25±3mm/minutes.2. Un-mating force (total): initial 8N Min. after 30 cycles 5N Min.3. Un-mating force (inner contact): initial 0.15N Min. after 30 cycles 0.1N Min.

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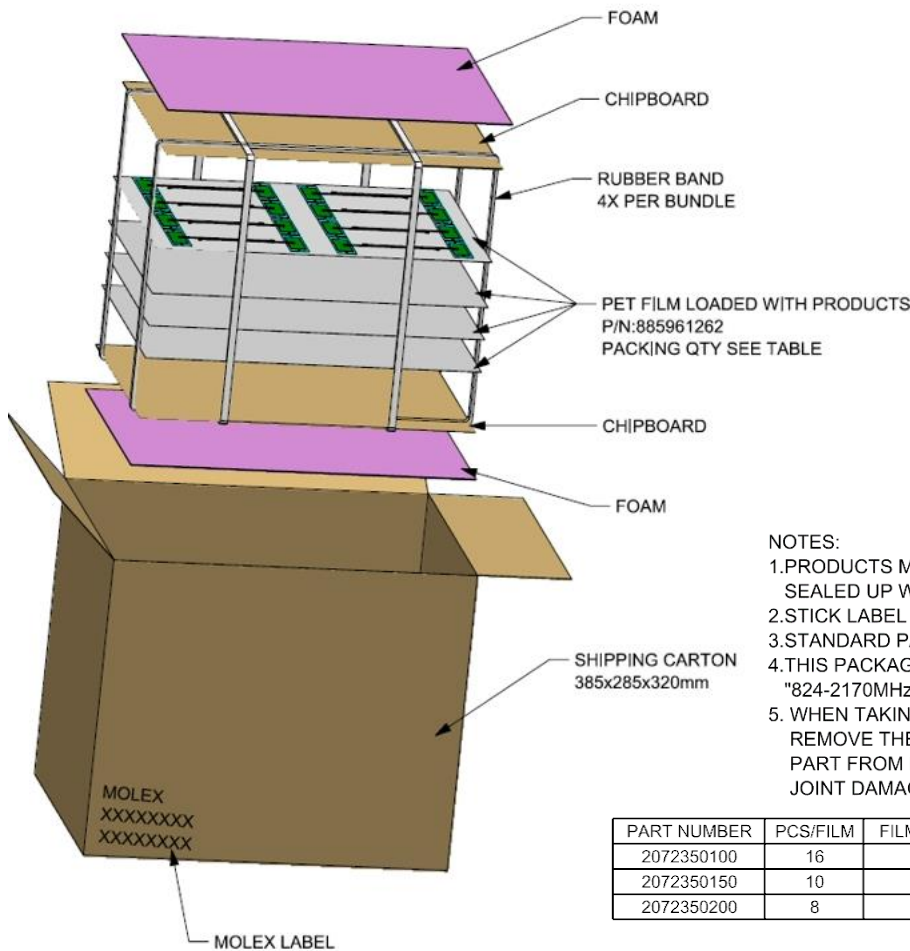
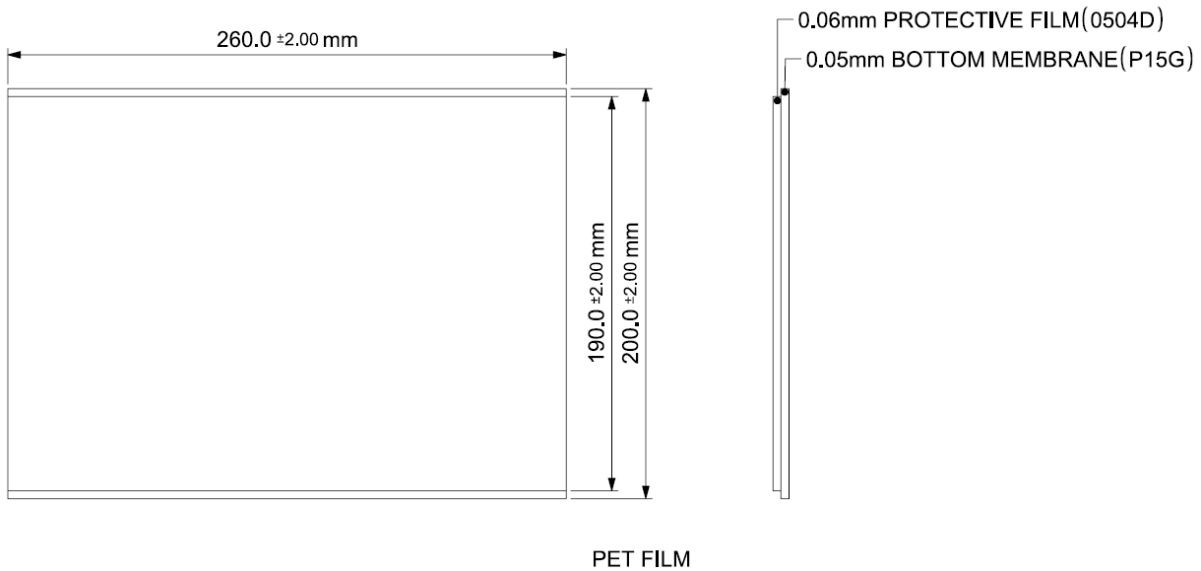
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7.0 ENVIRONMENTAL SPECIFICATION

DESCRIPTION	SPECIFICATION
Temperature /Humidity cycling	<ol style="list-style-type: none"> The device under test is kept for 30 mins in an environment with a temperature of -40 °C. Kept for 4 Hours in an environment with a temperature of 8cthe conditions are stabilized at room temperature. Parts should meet RF spec before and after test. No cosmetic problem (No soldering problem; No adhesion problem of glue) .
Temperature Shock	<ol style="list-style-type: none"> 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. Parts should meet RF spec before and after test. No cosmetic problem (No soldering problem; No adhesion problem of glue) .
High Temperature	<ol style="list-style-type: none"> Temperature:125°C, time:1008 hours There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other Parts should meet RF spec before and after test. No cosmetic problem (No soldering problem; No adhesion problem of glue) .
Salt mist test	<ol style="list-style-type: none"> 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. Parts should meet RF spec before and after test. No visible corrosion. Discoloration accept.

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8.0 PACKING



Packaging information for 2072350100

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