



PRODUCT SPECIFICATION

TITLE

WIFI 6E FLEX CABLED 2X2 MIMO ANTENNA

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C1	EC No: 702681 DATE: 2022/04/08	WiFi 6E Flex Cabled 2x2 MIMO Antenna Product Specification	1 of 9
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-2084820100	Kang Cheng	Cooper Zhou	Horace Ma



PRODUCT SPECIFICATION

WIFI 6E FLEX CABLED 2X2 MIMO ANTENNA

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances specification for WiFi 6E Flex Cabled 2x2 MIMO Antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER (S)

Product name: WiFi 6E Flex Cabled 2x2 MIMO Antenna

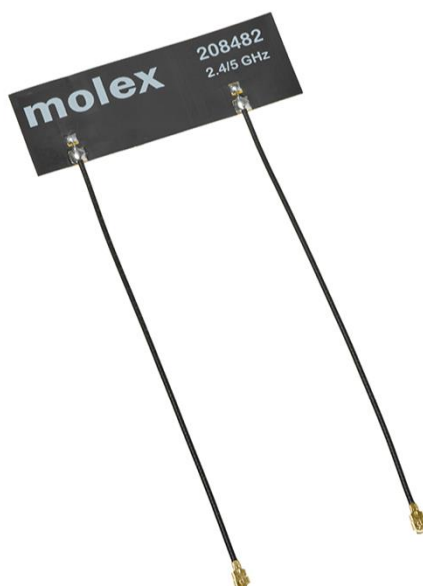
Series Number: 208482

2.2 DESCRIPTION

Series 208482 is one dipole and one monopole type, and low profile flexible antenna for 2.4/5/6GHz band applications, including WiFi 6E, Bluetooth and Zigbee. It's made from Poly-flexible material, has a size form 55.20mm x 19.20mm x 0.16mm and has double-sided TESA adhesive for "peel and stick" easy mounting.

2.3 FEATURES

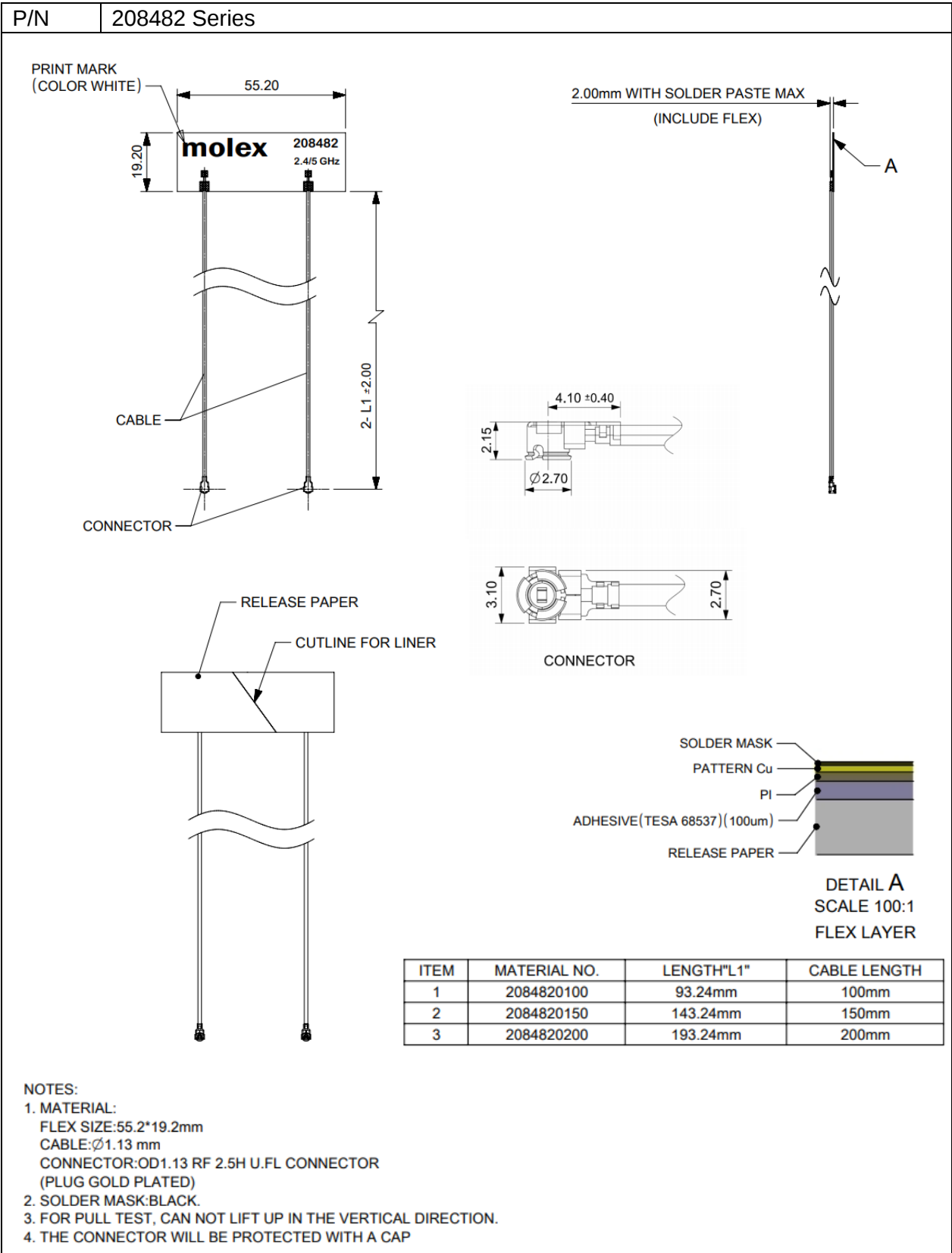
- 2400-2500 MHz/5150-5825 MHz/5925-7125MHz Linear polarization
- Flex size 55.20 x 19.20 x 0.16mm
- MHF (U.FL compatible) connector
- Cable OD1.13mm, 3 standard length options (100/150/200mm)
- Cable and connector can be customized



PRODUCT PHOTOGRAPH

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2.4 PRODUCT STRUCTURE INFORMATION



Mechanical Structure Information for 208482 series

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3.0 APPLICABLE DOCUMENTS

Document	Number	Description
Sale Drawing (SD)	SD-2084820100	Mechanical Dimension of the product
Application Guide (AS)	AS-2084820100	Antenna Application and surrounding
Packing Drawing (PK)	PK-2084820100	Product packaging specifications

4.0 GENERAL SPECIFICATION

Product name	WiFi 6E Flex Cabled 2x2 MIMO Antenna		
Part number	208482 series		
Frequency	2400-2500 MHz	5150-5850 MHz	5925-7125MHz
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 (U.FL compatible)		
User Implementation type	Adhesive TESA 68537		
Cable diameter	Ø1.13mm		
Cable length	100mm (P/N for 2084820100)		
	150mm (P/N for 2084820150)		
	200mm (P/N for 2084820200)		

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5.0 ANTENNA SPECIFICATION.

5.1 ELECTRICAL REQUIREMENT

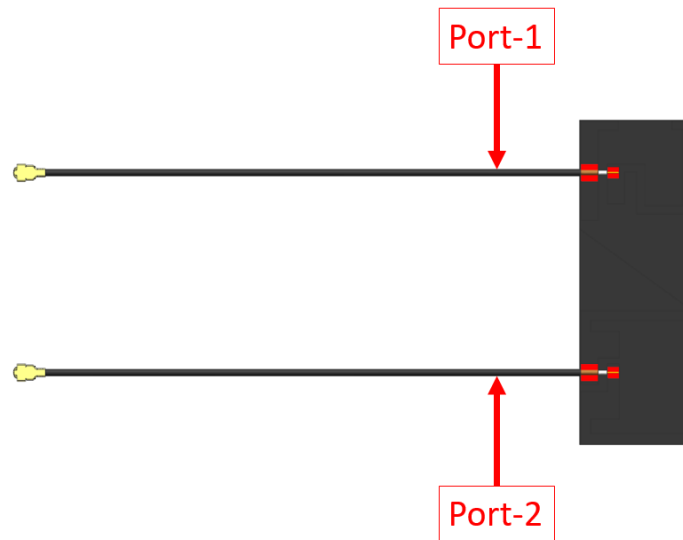
5.1.1 ELECTRICAL REQUIREMENTS FOR CABLE LENGTH 100mm						
P/N	2084820100					
Port	Port1			Port2		
Frequency Range	2400-2500MHz	5150-5850MHz	5925-7125MHz	2400-2500MHz	5150-5850MHz	5925-7125MHz
Peak Gain(Max)	2.9 dBi	5.0 dBi	4.4 dBi	3.4 dBi	5.9 dBi	5.1 dBi
Average Total efficiency	>65%	>75%	>65%	>75%	>70%	>65%
Return Loss	<-8dB	<-13dB	<-8dB	<-9dB	<-13dB	<-10dB

5.1.2 ELECTRICAL REQUIREMENTS FOR CABLE LENGTH 150mm						
P/N	2084820150					
Port	Port1			Port2		
Frequency Range	2400-2500MHz	5150-5850MHz	5925-7125MHz	2400-2500MHz	5150-5850MHz	5925-7125MHz
Peak Gain(Max)	2.7 dBi	4.8 dBi	4.07 dBi	3.2 dBi	5.7 dBi	4.77 dBi
Average Total efficiency	62%	70%	>60%	72%	66%	>60%
Return Loss	<-8dB	<-13dB	<-8dB	<-9dB	<-13dB	<-10dB

5.1.3 ELECTRICAL REQUIREMENTS FOR CABLE LENGTH 200mm						
P/N	2084820200					
Port	Port1			Port2		
Frequency Range	2400-2500MHz	5150-5850MHz	5925-7125MHz	2400-2500MHz	5150-5850MHz	5925-7125MHz
Peak Gain(Max)	2.5 dBi	4.5 dBi	3.75 dBi	3.0 dBi	5.4 dBi	4.45 dBi
Average Total efficiency	60%	67%	>55%	69%	62%	>55%
Return Loss	<-8dB	<-13dB	<-8dB	<-9dB	<-13dB	<-10dB

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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ANTENNA TESTED EQUIPMENT

6.0 MECHANICAL SPECIFICATION

DESCRIPTION	TEST CONDITION	TEST RESULT
Pull Test	- Test machine: Max intelligent load tester - 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 $25\pm 3\text{mm/min}$. along the mating axis.	Un-mating force : 0.5 kgf min

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7.0 ENVIRONMENTAL SPECIFICATION

DESCRIPTION	SPECIFICATION
Temperature /Humidity cycling	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	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	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	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.

REVISION:

C1

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Kang Cheng

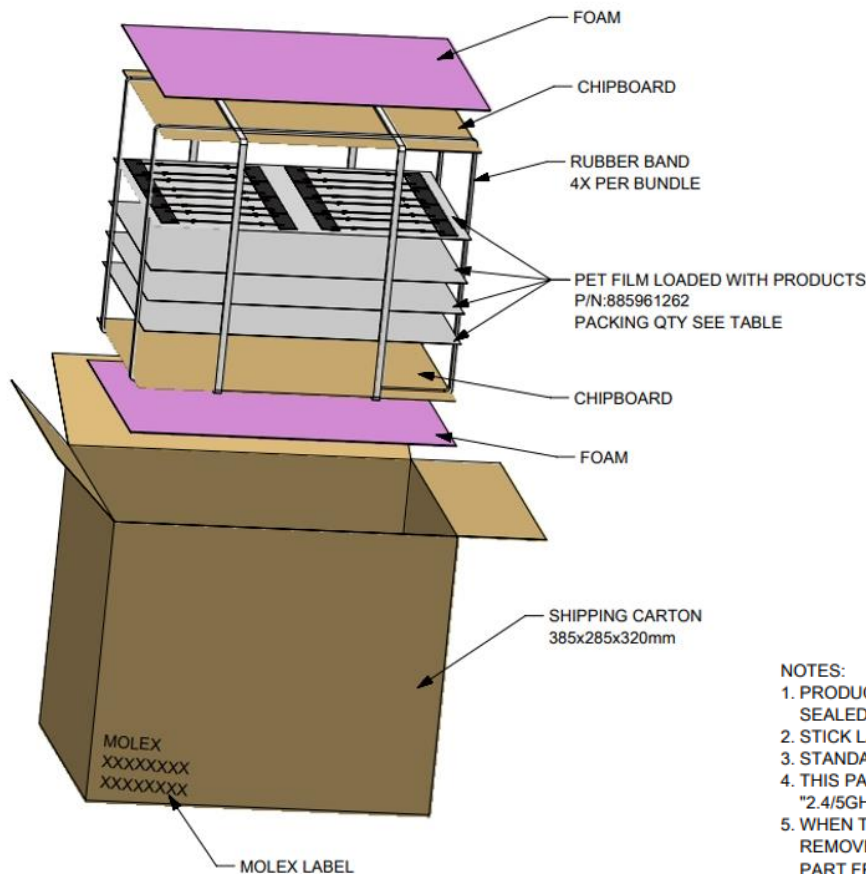
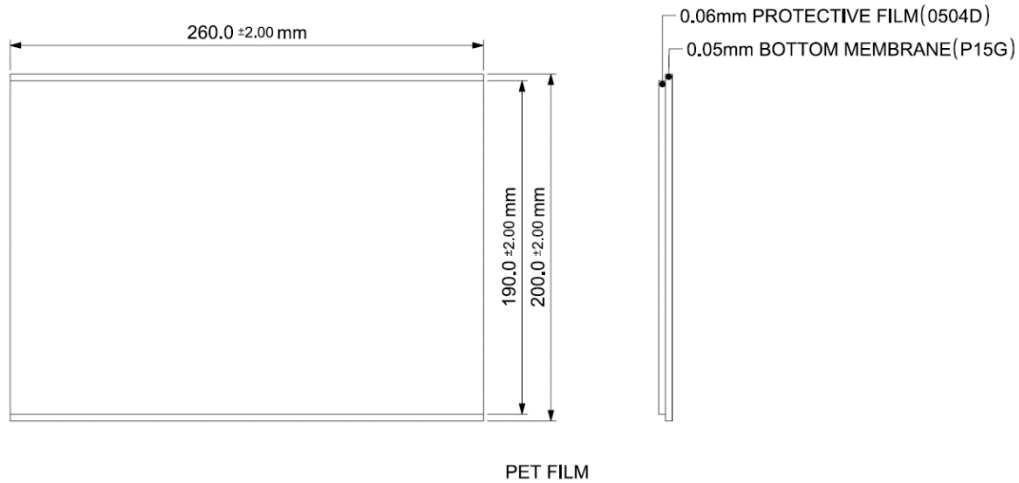
CHECKED BY:

Cooper Zhou

APPROVED BY:

Horace Ma

8.0 PACKING



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 "2.4/5GHz MIMO 2X2 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	FILMS/BUNDLE	BUNDLES/CARTON	QTY/CARTON
2084820100	16	40	5	3200PCS
2084820150	10	40	5	2000PCS
2084820200	8	40	5	1600PCS

PACKAGING INFORMATION FOR 208482 Series

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9.0 CHANGE HISTORY

REV.	DATE	DESCRIPTION
A	2018/10/15	First release
B	2020/07/10	Update file layout and add 6-7.125GHz band
C	2020/08/31	Optimized electrical requirement
C1	2022/04/08	Update features description

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