



PRODUCT SPECIFICATION

TITLE

Rectangular Standard NFC Antenna

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DOCUMENT NUMBER: PS-146236-001	CREATED / REVISED BY: Benson Liu 2017-01-18	CHECKED BY: Ryan Liu 2017-01-18	APPROVED BY: Welson Tan 2017-01-18



PRODUCT SPECIFICATION

Rectangular Standard NFC Antenna

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performances requirements and test methods for Rectangular Standard NFC antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER

Product name: Rectangular Standard NFC Antenna 146236-0XX1

1462360001	RECTANGLE STANDARD NFC ANTENNA 15X25
1462360101	RECTANGLE STANDARD NFC ANTENNA 15X25 (WITH FERRITE)
1462360011	RECTANGLE STANDARD NFC ANTENNA 23X27
1462360111	RECTANGLE STANDARD NFC ANTENNA 23X27 (WITH FERRITE)
1462360021	RECTANGLE STANDARD NFC ANTENNA 34X46
1462360121	RECTANGLE STANDARD NFC ANTENNA 34X46 (WITH FERRITE)
1462360031	RECTANGLE STANDARD NFC ANTENNA 45X55
1462360131	RECTANGLE STANDARD NFC ANTENNA 45X55 (WITH FERRITE)

2.2 Design and Construction

Antenna shall be of the design, construction and physical dimensions specified on the applicable sales drawing.

2.3 Materials

- a) Flex: Refer to respective Molex sales drawings
- b) Plating: Refer to respective Molex sales drawings
- c) Ferrite: Refer to respective Molex sales drawings

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See drawings and other sections of this specification for the relevant reference documents. In cases where the specification differs from the drawings, the drawings take precedence.

4.0 RATINGS

4.1 RF POWER

2 Watts

4.2 TEMPERATURE

Operating: - 30°C to + 85°C
Storage : - 40°C to + 95°C

4.3 HUMIDITY

Operating : - 30°C to + 85°C
- 30°C to + 50°C, 85%RH or less
+50°C to + 85°C, 60%RH or less

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Storage : - 40°C to + 95°C
 - 40°C to + 50°C, 85%RH or less
 +50°C to + 95°C, 60%RH or less

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

Part No.	1462360001	1462360011	1462360021	1462360031
Name	Rectangular Standard NFC Antenna 15X25	Rectangular Standard NFC Antenna 23X27	Rectangular Standard NFC Antenna 34X46	Rectangular Standard NFC Antenna 45X55
Size	15mm*25mm	23mm*27mm	34*46mm	45*55mm
Material	Flex	Flex	Flex	Flex
Antenna Type	Near-field coupling	Near-field coupling	Near-field coupling	Near-field coupling
Frequency Range	13.56MHz	13.56MHz	13.56MHz	13.56MHz
Inductor @ 13.56MHz	2.11uH	2.09uH	2.76uH	2.59uH
Part No.	1462360101	1462360111	1462360121	1462360131
Name	Rectangular Standard NFC Antenna 15X25 (With Ferrite)	Rectangular Standard NFC Antenna 23X27 (With Ferrite)	Rectangular Standard NFC Antenna 34X46 (With Ferrite)	Rectangular Standard NFC Antenna 45X55 (With Ferrite)
Size	15mm*25mm	23mm*27mm	34*46mm	45*55mm
Material	Flex with Ferrite	Flex with Ferrite	Flex with Ferrite	Flex with Ferrite
Antenna Type	Near-field coupling	Near-field coupling	Near-field coupling	Near-field coupling
Frequency Range	13.56MHz	13.56MHz	13.56MHz	13.56MHz
Inductor @ 13.56MHz	3.32uH	3.22uH	4.25uH	3.92uH

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	PLATING THICKNESS	Use X-ray measure the thickness of plating area	PLATING THICKNESS: Cu 28-38um, Ni 2-6um, Au 0.05um min

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Temperature/Humidity cycling	Test condition: 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.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.2	Temperature Shock	Test condition: The device under test at -40 °C ⇔ 125 °C by 100 cycles, dwell 30 secs(61 mins/ cycle) and each item should be measured after exposing them in normal temperature and humidity for 24h	1) Parts should meet RF spec before and after test 2) No cosmetic problem
5.3.3	High Temperature	Test condition: 1) Temperature: 125 °C; time: 1008hours 2) There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other	1) Parts should meet RF spec before and after test 2) No cosmetic problem
5.3.4	Salt mist	Test condition: 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 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. Hereafter the conditions are stabilized at room temperature.	1) Parts should meet RF spec before and after test 2) No visible corrosion. Discoloration accept

The meaning of text “No mechanical damage” in the table above is:

- a. no soldering problem
- b. no adhesion problem of glue
- c. no peel off of plating

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6.0 TEST GROUPINGS

Test Item	Description	Group1	Group2	Group3	Group4	Group5
5.2.1	Plating thickness	X				
5.3.1	Temperature cycling		X			
5.3.2	Heat sock			X		
5.3.3	High temperature				X	
5.3.4	Slat mist					X
	Sample Quantity(pcs)	5	5	5	5	5

7.0 PACKAGING

Refer to the Molex related packaging drawings.

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