


# 品名 P/N : ACK-3216-P1-MC-S

## 1.Explanation of part number :

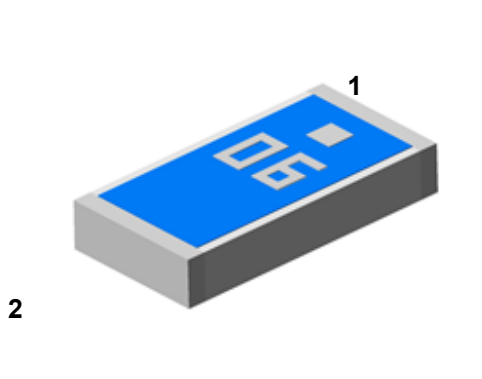
<b>AC</b>	<b>K</b>	-	<b>3216</b>	-	<b>P1</b>	-	<b>MC</b>	-	<b>S</b>
<b>Product Type</b>	<b>Center Frequency/Band Code</b>		<b>Product Code (Unit: mm)</b>		<b>Design Revision Code</b>		<b>Antenna Type</b>		<b>Special Code</b>
Chip Antenna	A: 2.4GHz E: Cellular G:868MHz H:915MHz K:3.4~3.8GHz L:5GHz M3:2G+5GHz N:NFC		Per 2 digits of length, width  e.g.: 3216 3.2*1.6(Length * Width)		P1:Rev.1		CC: Coupling Ceramic GF: On Ground, FR4 LC: Loop ceramic MC: Monopole Ceramic MF: Monopole FR4 PF: PIFA FR4		S: RoHS Compliant

## 2.Electrical Specification :

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A            X.X=N/A            X.XX=N/A ANGLES=N/A            HOLEDIA=N/A			<b>INPAQ TECHNOLOGY CO., LTD.</b>	
SCALE : N/A	UNIT : mm			THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
DRAWN BY : 詹惠雯	CHECKED BY : 詹惠雯			
DESIGNED BY : 黄瑞郎	APPROVED BY : 陳振榮			
TITLE : ACK-3216-P1-MC-S		DOCUMENT NO.	ENS070002030-000824000346	SPEC REV. <b>A1</b>

### 3. Antenna Drawing :

#### CONSTRUCTION



PIN	Connection
1	Feeding
2	Soldering terminal

#### DIMENSIONS

Figure	Symbol	Dimension (mm)
	L	3.10 ± 0.20
	W	1.60 ± 0.20
	T	0.60 ± 0.10
	A	0.25 ± 0.20

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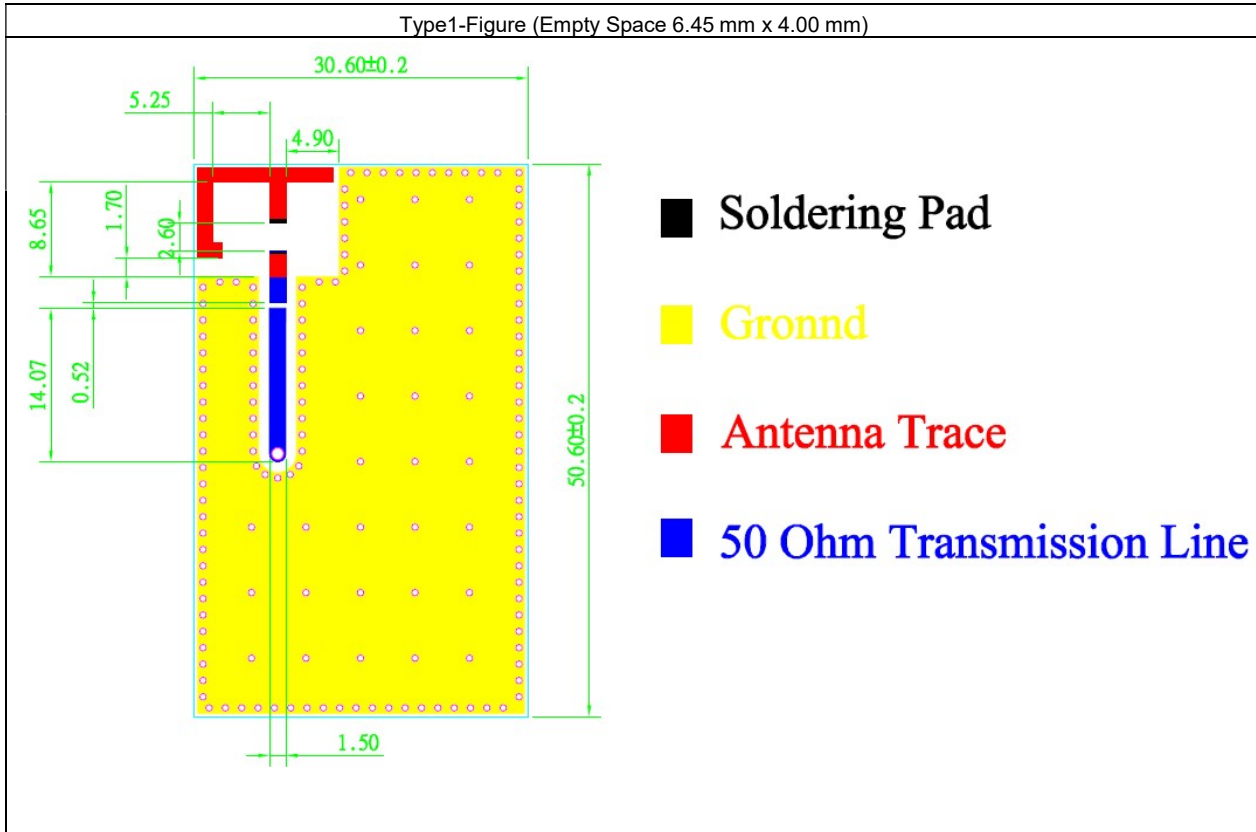
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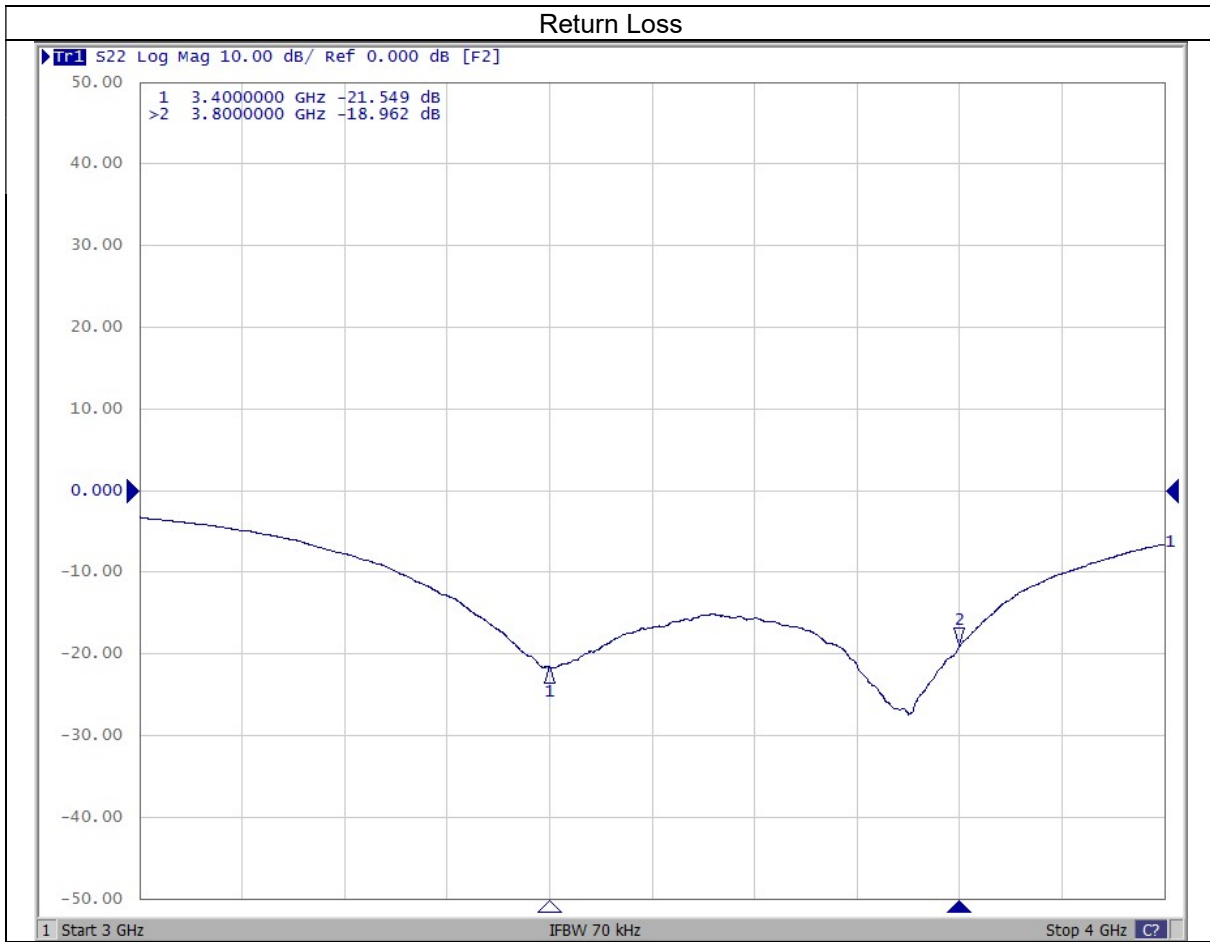
### 4. Performance Report :


#### SOLDER LAND PATTERN DESIGN

Test Board: Empty Space 8.655mm x 4.9 mm & Thick ness 0.8mm)



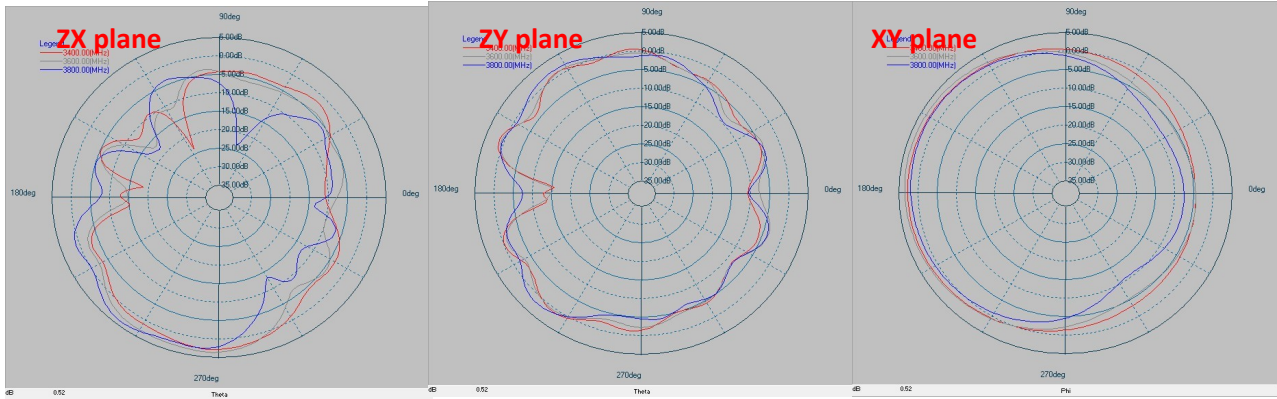
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RADIATION PATTERN

Radiation Pattern and Gain were dependent on measurement board design. The specification of RFACK-3216-P1-CC-S antenna was measured based on the PCB size and installation position as shown in the below figure Test Board.



	ZX plane		ZY plane		XY plane	
Layer	Max value	Average	Max value	Average	Max value	Average
3400(MHz)	2.79 dB	-2.81 dB	1.27 dB	-2.71 dB	2.79 dB	0.00 dB
3600(MHz)	3.58 dB	-2.41 dB	0.83 dB	-2.84 dB	3.72 dB	0.06 dB
3800(MHz)	3.79 dB	-2.90 dB	1.83 dB	-2.42 dB	2.31 dB	-1.52 dB

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### 5. RELIABILITY TEST

Test item	Test condition / Test method	Specification
Solderability JIS C 0050-4.6 JESD22-B102D	*Solder bath temperature : 235 ± 5°C  *Immersion time : 2 ± 0.5 sec  *Solder : Sn3Ag0.5Cu for lead-free	At least 95% of a surface of each terminal electrode must be covered by fresh solder.
Leaching <b>(Resistance to dissolution of metallization)</b> IEC 60068-2-58	*Solder bath temperature : 260 ± 5°C  *Leaching immersion time : 30 ± 0.5 sec  *Solder : SN63A	Loss of metallization on the edges of each electrode shall not exceed 25%.
Resistance to soldering heat JIS C 0050-5.4	*Preheating temperature : 120~150°C , 1 minute.  *Solder temperature : 270±5°C  *Immersion time : 10±1 sec  *Solder : Sn3Ag0.5Cu for lead-free  Measurement to be made after keeping at room temperature for 24±2 hrs	No mechanical damage.  Samples shall satisfy electrical specification after test.  Loss of metallization on the edges of each electrode shall not exceed 25%.
Drop Test JIS C 0044	*Height : 75 cm  *Test Surface : Rigid surface of concrete or steel.  *Times : 6 surfaces for each units ; 2 times for each side.	No mechanical damage.  Samples shall satisfy electrical specification after test.
Adhesive Strength of Termination JIS C 0051- 7.4.3	*Pressurizing force : 5N(≤ 0603) ; 10N(>0603) <b>*Test time : 10±1 sec</b>	No remarkable damage or removal of the termination.
Bending test JIS C 0051- 7.4.1	The middle part of substrate shall be pressurized by means of the pressurizing rod at a rate of about 1 mm/s per second until the deflection becomes 1mm/s and then pressure shall be maintained for 5±1 sec.  Measurement to be made after keeping at room temperature for 24±2 hours	No mechanical damage.  Samples shall satisfy electrical specification after test.

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 ANGLES = N/A      HOLEDIA = N/A



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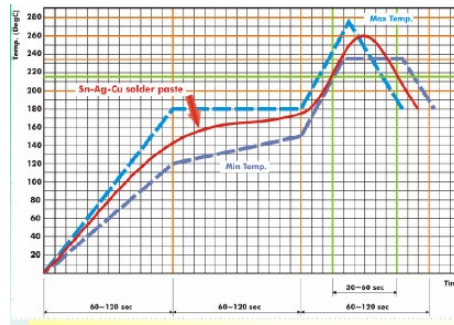
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Temperature cycle JIS C 0025	<ol style="list-style-type: none"> <li>30±3 minutes at -40°C±3°C,</li> <li>10~15 minutes at room temperature,</li> <li>30±3 minutes at +85°C±3°C,</li> <li>10~15 minutes at room temperature,</li> </ol> Total 100 continuous cycles  Measurement to be made after keeping at room temperature for 24±2 hrs	No mechanical damage.  Samples shall satisfy electrical specification after test.
Vibration JIS C 0040	*Frequency : 10Hz~55Hz~10Hz(1min) *Total amplitude : 1.5mm *Test times : 6hrs.(Two hrs each in three mutually perpendicular directions)	No mechanical damage.  Samples shall satisfy electrical specification after test.
High temperature JIS C 0021	*Temperature : 85°C±2°C *Test duration : 1000+24/-0 hours  Measurement to be made after keeping at room temperature for 24±2 hrs	No mechanical damage.  Samples shall satisfy electrical specification after test.
Humidity (steady conditions) JIS C 0022	*Humidity : 90% to 95% R.H. *Temperature : 40±2°C *Time : 1000+24/-0 hrs.  Measurement to be made after keeping at room temperature for 24±2 hrs ※ 500hrs measuring the first data then 1000hrs data	No mechanical damage.  Samples shall satisfy electrical specification after test.
Low temperature JIS C 0020	*Temperature : -40°C±2°C *Test duration : 1000+24/-0 hours  Measurement to be made after keeping at room temperature for 24±2 hrs	No mechanical damage.  Samples shall satisfy electrical specification after test.

**SOLDERING CONDITION**

Typical examples of soldering processes that provide reliable joints without any damage are given in Fig 2



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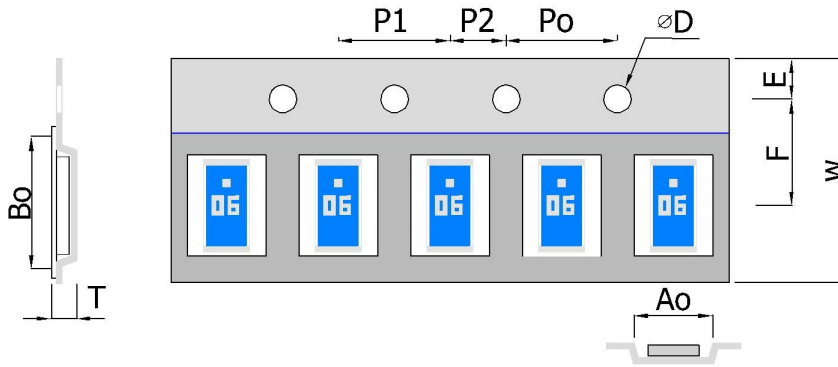
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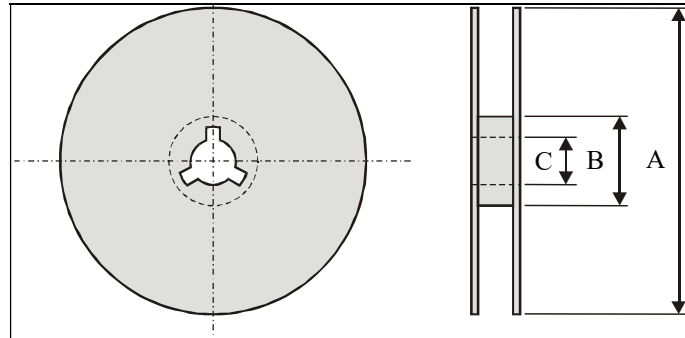
### 6. Package



Plastic Tape specifications (unit :mm)


Index	Ao	Bo	φD	T	W
Dimension (mm)	1.85 ± 0.10	3.5 ± 0.10	1.55 ± 0.05	0.73 ± 0.10	8.00 ± 0.30
Index	E	F	Po	P1	P2
Dimension (mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10

### Reel dimensions



Index	A	B	C
Dimension (mm)	Φ178.0	Φ60.0	Φ13.0

Taping Quantity:2000 pieces per 7" reel

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