

Retractable Antenna Performance

NO. 1/4

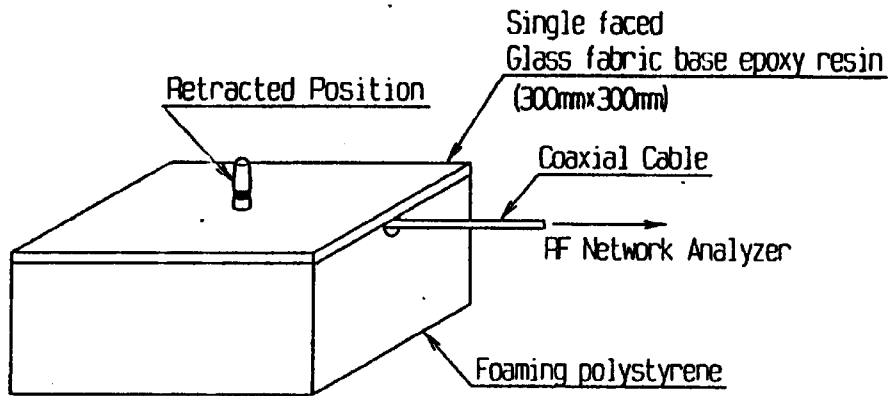
- 1. Description : Retractable whip type hand portable Cellular antenna
- 2. Your Part Number : 1AD4L90A04331
- 3. Model Name : SA4331
- 4. Appearance and Architecture : As on Outside appearance drawing(N8-S130-H00E)
To have no remarkable damage to outside appearance such like Scratch, Dirt or plating.

5. Electrical Characteristics

5-1. Contact Resistance :

- Extended position, Holder-Stopper : MAX. 3Ω
- Retracted position, Holder-Top plug: MAX. 3Ω

5-2. VSWR : To have Resonance of Return loss Max -3dB at condition of Antenna retracted within frequency of 934 MHz(+40, -20), when attached to 300mmx300m earth plate.



N 8 - S 1 3 0 - M 0 0 E

APPROVED	INSPECTED	DESIGN
<i>H. Makino</i> 7. APR. '00	<i>Y. Gammii</i> 7/4/'00	<i>J. Fukaya</i> 6. Apr. '00

6. Mechanical Characteristics

6-1. Extension and Retraction Initial Force :

Holder-Top plug: 1.96-6.08 N (Nippon Antenna insection: 1.96-5.88 N
 (200-620 gf) (200-600 gf)
 Holder-Stopper : 1.96-6.08 N (Nippon Antenna insection: 1.96-5.88 N
 (200-620 gf) (200-600 gf)
 After initial inspection to be 100~620 gf.

6-2. Extension and Retraction Force (Endurance)

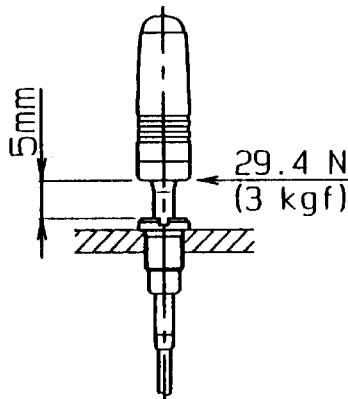
To be MIN. 100gf after 10,000 cycles at 30 times/Minute

6-3. Pulling Force :

Element not to come off after adding 98 N(10 kgf) for 10 seconds to direction of axial, under condition of the element To satisfy 5-2 and 6-1.

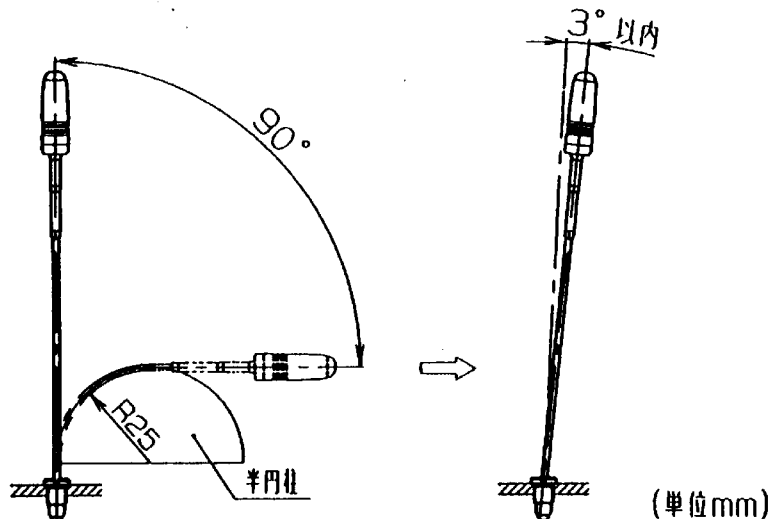
6-4. Break Strength :

Top part and Top plug not to break after 29.4 N(3 Kgf) for 5 seconds to the Top bottom part at direction of 90° against element axial, under condition of the holder fixed and Top part extended 5 mm from the holder surface. Bend to be allowed.



6-5. Bending Force:

Bend to be MAX. 3° after returned by itself, under condition of force the Top and give a 90° bend against a R25 mm cylinder, element extended and holder fixed.



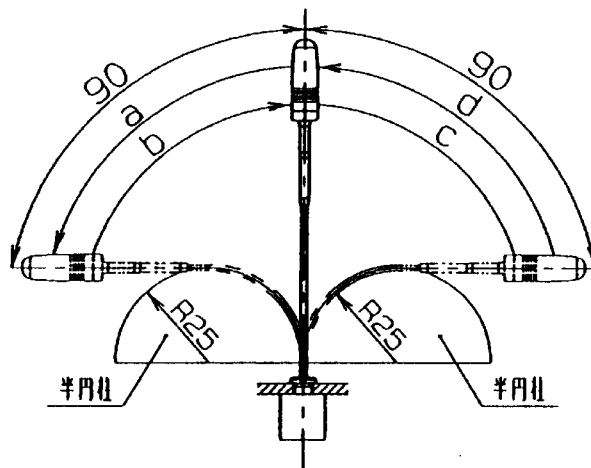
6-6. Anti-Cleep Age Performance :

To be no break after following condition.

Bend 90° left and by hand to R25 cylinder, holder fixed.

1,000 cycles, 1 cycle to be (a-b-c-d) at speed of 20 cycle/Minute.

Bending deformation of element allowed.



(单位mm)

6-7. Shock Resistance :

5-2 and 6-1 to be satisfied after spontaneous drop from 150 cm height to concrete floor, drop antenna downwards under the condition of element fully retracted to specified phone body.

Cap not to fall off.

But Top part Scratch, Whiting, dent and Top plug bent to be allowed.

6-8. Holder Strength :

Not to break after putting 78.4 N · cm (8 kgf · cm) of fixing force to your specified body.

7. Environmental Resistance

7-1. Vibration Resistance :

5-2 and 6-1 to be satisfied after 5-150 Hz of vibration test to 3 directions under the condition

Antenna fully retracted

Acceleration : 3G constant.

Sweep : 20 minutes.

7-2. Humidity Resistance :

5-2 and 6-1 to be satisfied after humidity test Antenna fully retracted and under following condition.

Leave for 96 hours under condition of $40 \pm 2^\circ\text{C}$, 90-95% then leave for 2 hours at room temperature after removing moisture.

7-3. Humidity resistance operation.

5-2 and 6-1 to be satisfied after left in test chamber of $40 \pm 2^\circ\text{C}$, relative humidity 90-85% for 1-2 hours.

7-4. Working Temperature :

5-2 and 6-1 to be satisfied after left for 1-2 hours at -30°C and $+60^\circ\text{C}$ for Working temperature.

(Heat resistance/Cold resistance working.)

7-5. Storage Temperature :

No be no permanent abnormality or deformation at $-40 - +85^\circ\text{C}$.

But Bending of element on condition of Antenna fully retracted, fixed to your specified body to be allowed.

7-6. High temperature withstand :

5-2 and 6-1 to be satisfied after left at $+85^\circ\text{C}$ for 96 hours, than 2 hours in room temperature.

To be permanent abnormality or deformation.

7-7. Low temperature withstand :

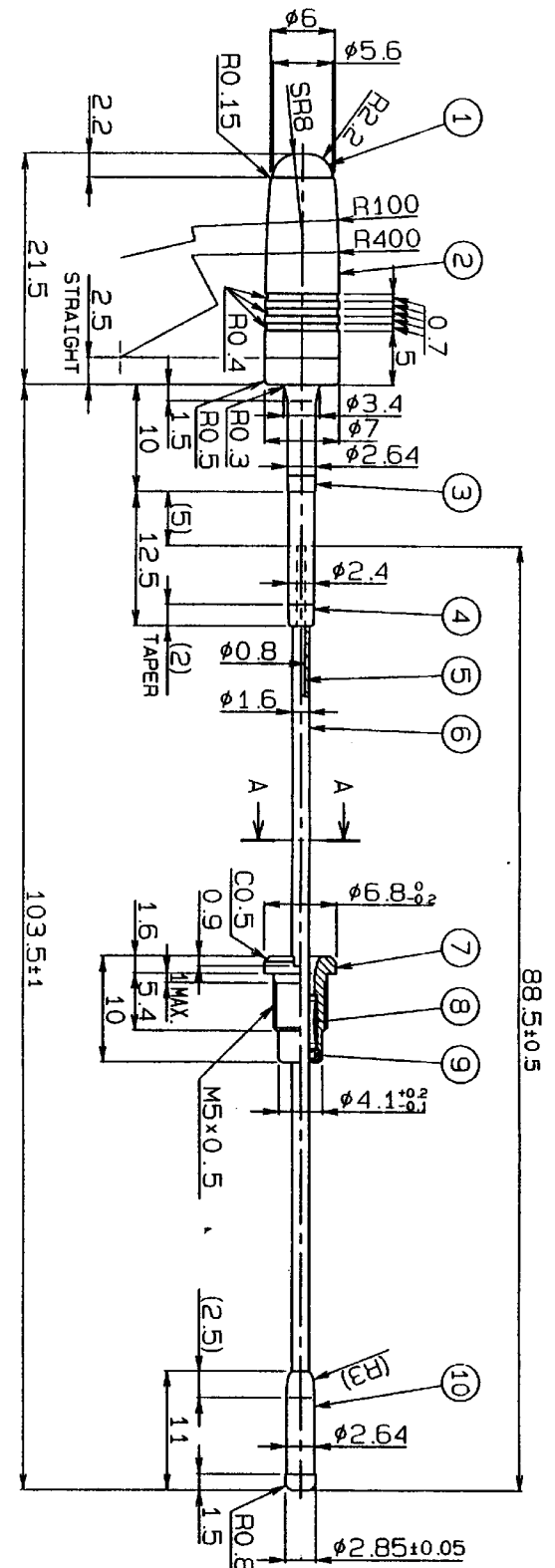
5-2 and 6-1 to be satisfied after left at -40°C for 96 hours, than 2 hours in room temperature.

To be permanent abnormality or deformation.

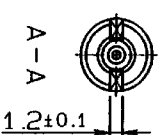
7-8. Temperature cycle :

5-2 and 6-1 to be satisfied after 20 cycles at 1 cycle condition of -40°C / 30 minutes at $+85^\circ\text{C}$ be 30 minutes, than left 2 hours in room temperature.

To be no permanent abnormality or deformation.



NOTES
 1. TOLERANCE NOT SPECIFIED TO BE ±0.2
 2. SCREW PART TO PASS 2ND GRADE SCREW GAUGE



ITEM #	DESCRIPTION	QUANTITY	MATERIAL	TREATMENT	PART DRAWING NO.	NOTE
1	CAP	1	ABS	MLCP		
2	TOP PLUG	1	ABS			PANTONE 575C
3	TOP PLUG	1	BRASS	MACR		
4	JOINT	1	NYLON			AH293
5	ELEMENT	1	NI-TI			
6	TUBE	1	PBT			AH293
7	HOLDER	1	ALUMINIUM-MANI			
8	DRUM SPRING	1	BRASS			
9	HOLDER RING	1	BRASS	MBN1		
10	STOPPER	1	ALUMINIUM-MACP			

GRADE	COMMON TOLERANCE
1	±0.10
2	±0.15
3	±0.20
4	±0.25
5	±0.30
6	±0.40
7	±0.50
8	±0.60
9	±0.70
10	±0.80

DATE	REVISION RECORD	DESIGN	CHECK	APPROVAL

SCALE 2:1
 DESIGNED 7. Nishiyama
 DRAWN 7. Nishiyama
 INSPECTED X. Yamamoto
 APPROVED M. Nakano
 MATERIAL TREATMENT ZAPR100
 PART DRAWING NO.
 NOTE
 OUTSIDE APPEARANCE DRAWING

日本アンテナ株式会社
 NIPPON ANTENNA CO., LTD.
 DRAWING NO. NB-S130-H00E

Antenna Gain (Peak Value)

	Extended (Whip)	Retracted (Helical)
CDMA	+1.9	+1.0

(Unit:dBd)