

SANYO

PHS Cell Station



- User's Manual -

March 17, 2004

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Installation conditions



■ Place

- CS shall be installed in the place where the public can not easily access.
- Installation place shall have the structure which can support the weight of CS and its fixing facilities.
- Installation place shall be flat with no inclination.
- If CS is installed in the place where it may drop down, it shall be provided with protective measure against the drop.
- There shall be no object around 2m of CS.
- For the maintenance use, there shall be the space in about 500mm around the stand.
- CS shall be installed in the direction that the logo plate appears upwards. CS can be placed in vertical direction with arranging the fixing metal.

Installation conditions



■ Antenna

- With fixing antennas, there shall be enough viewing angle from CS. (Target angle: vertical: 30 degree or more, horizontal: 330 degree or more)

■ ISDN Line

- Interconnection box for ISDN line shall be available near the CS.
- ISDN line length from the exchange to CS and its quality shall comply with the technical standard (ANSI T1.601-1992).

■ Power supply

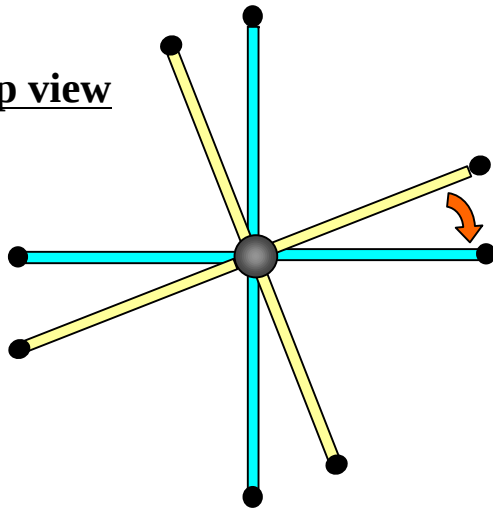
- AC120V shall be available with easy wiring connection work.

Fixing antenna for PBS-CS82 (case 1)

- In case of vertical separate distance between antennas: 15cm or more

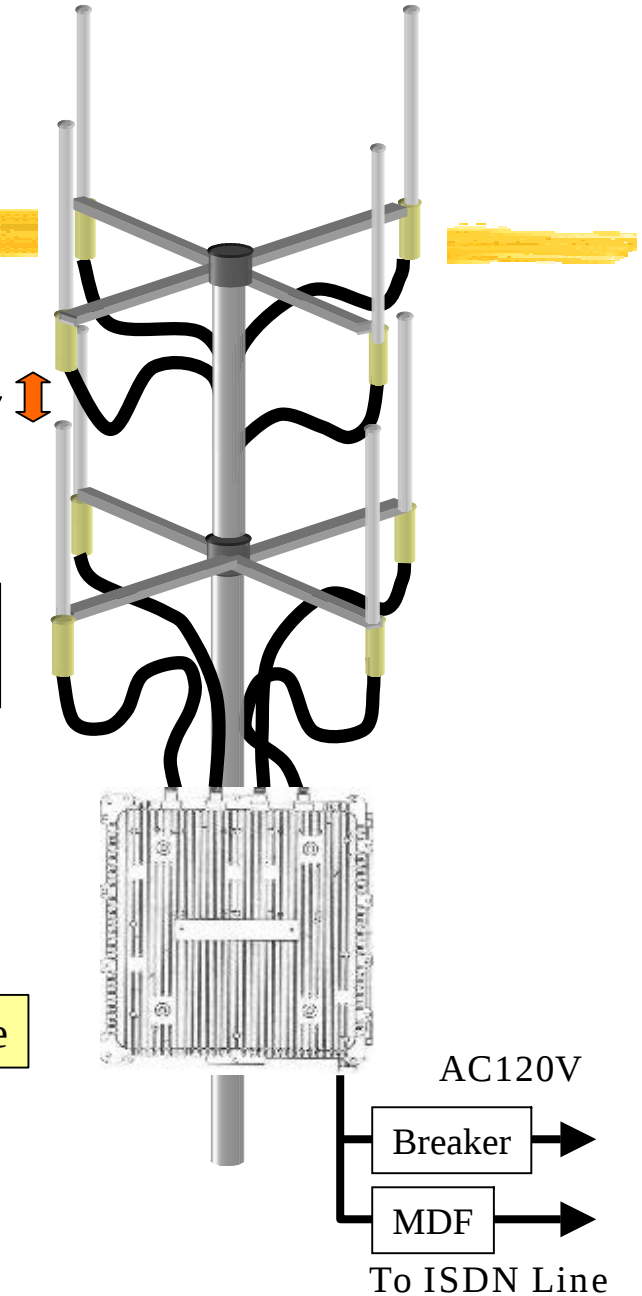
➡ Angle between arms : 0 degree

Top view



Vertical separate distance
between antennas

Angle between arms:0 degree

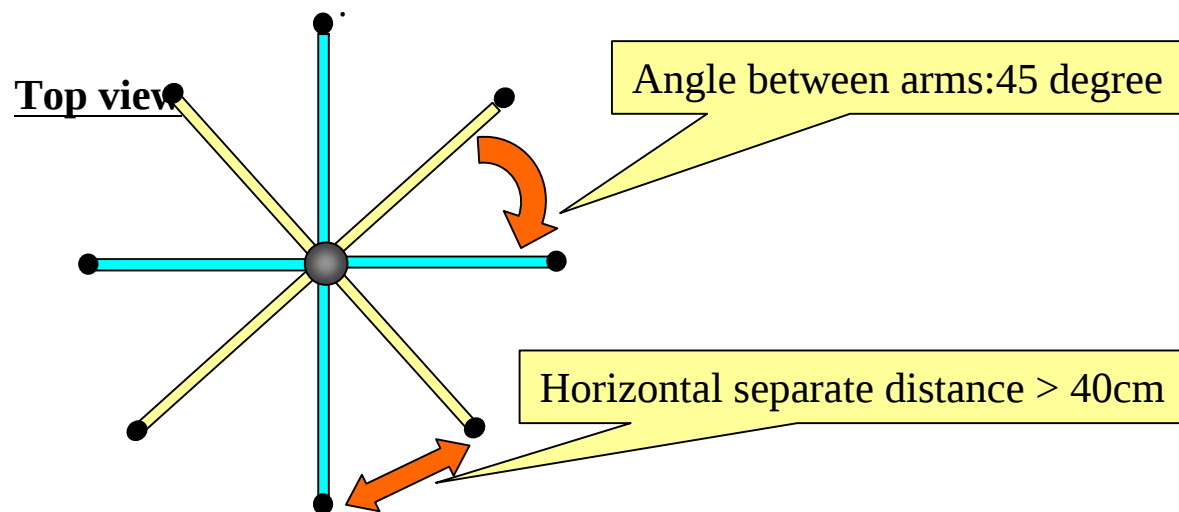


Fixing antenna for PBS-CS82 (case 2)

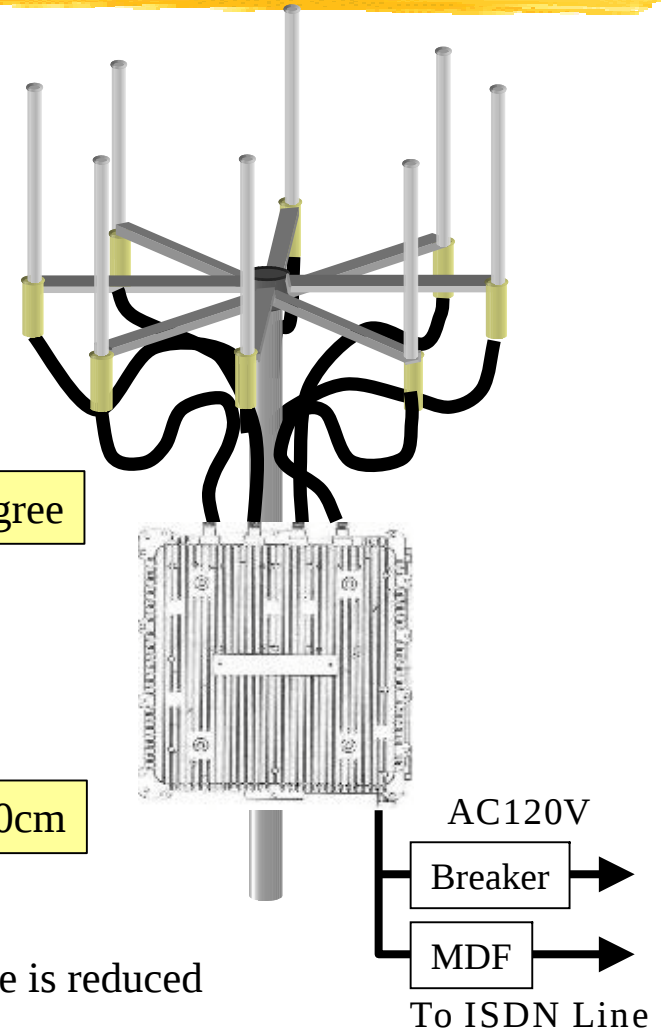
- In case of vertical separate distance between antennas: less than 15cm

➡ Angle between arms : 45 degree

➡ Horizontal separate distance between antennas: 40cm or more



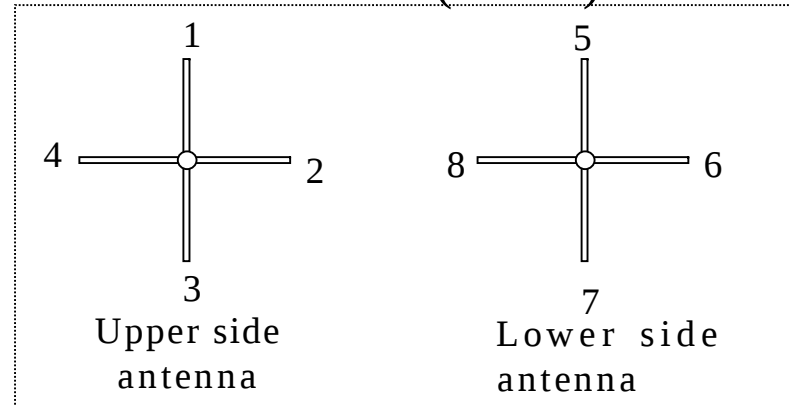
* If horizontal separate distance is less than 40cm, the performance is reduced



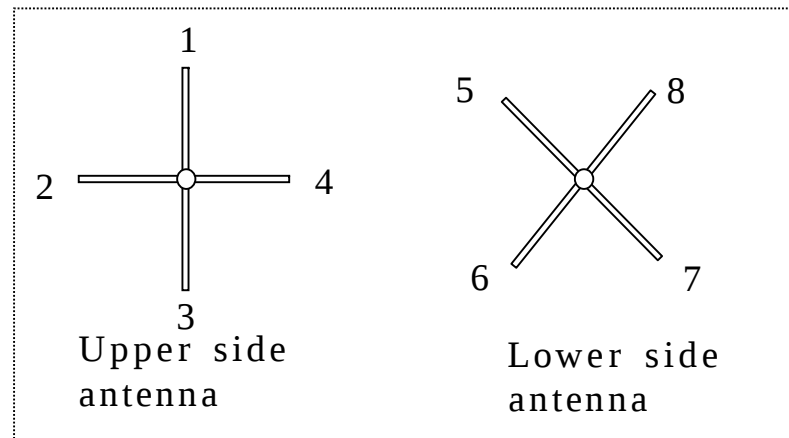
Connection of the antenna cable(PBS-CS82)

- Order of cable connection
 - Antenna connector 1 - 4 : upper side
 - Antenna connector 5 - 8 : lower side
- Numbering arrangement
 - Numbering arrangement of 1 - 4 and 5 - 8 shall be made clockwise or counterclockwise.
- Tightening torque of the antenna cable:
7 - 12 Kgf-cm.
- Wind the self-bonding tape between the antenna connector and the end of cable.

Case of Clockwise(Case1)



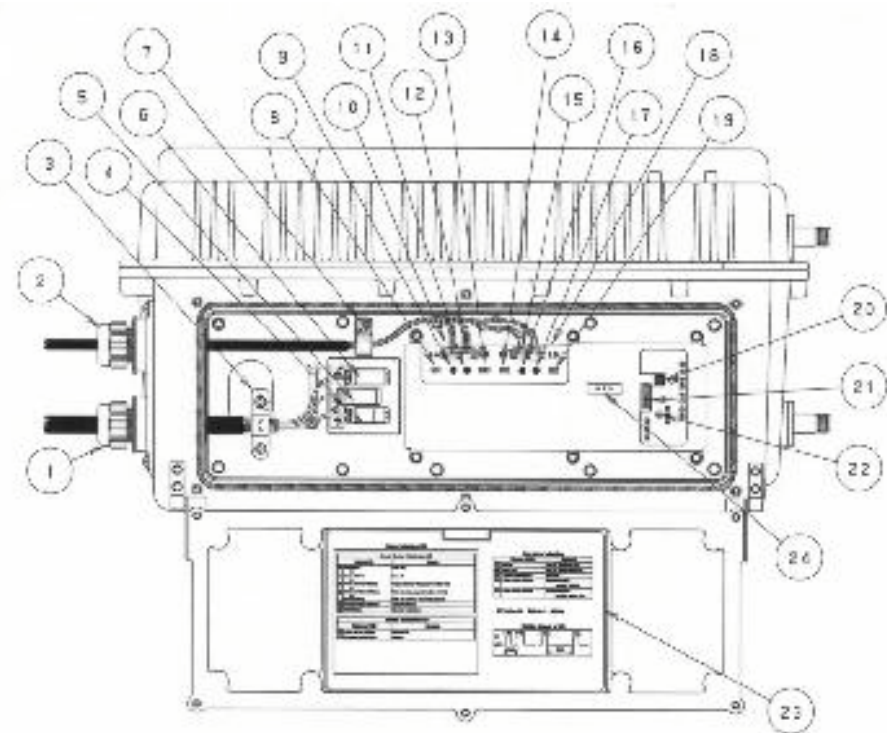
Case of Counterclockwise(Case2)



Terminal block appearance(PBS-CS82)

- Terminal block of the power supply and line's connections are shown below

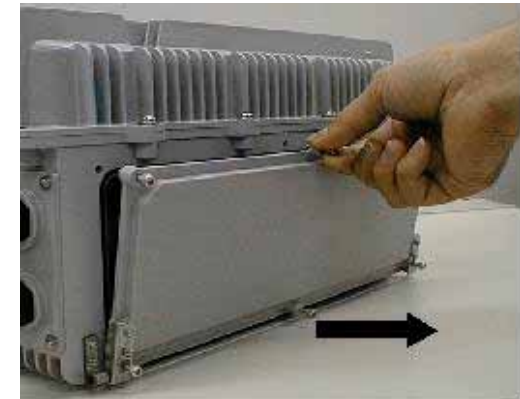
- 1:Cable gland for power cable
- 2:Cable gland for Line cable
- 3:Earth clamp for Power cable
- 4:Power supply Terminal(L)
- 5:GND Terminal(FG)
- 6:Power supply Terminal(N)
- 7:Earth clamp for Line cable
- 8,13,14,19:Line check terminal connector
- 9,11,16,17:Line Status LED
- 10,12,15,18:Line terminal connector
- 20:Status indications LED
- 21:Maintenance terminal connector
- 22:Reset Switch
- 23:Status indications LED Label
- 24:GPS indications label for GPS model



Notes at the time of lid opening and closing

Opening

- After loosening all lid's fixation screws completely, pull upper part and central screw of the lid, and slide. **(Photo1)**
- Confirm that all screws are free completely and two pins of the lid is at the right edge of two metal fittings ,therefore rotate the lid while pulling in the direction"an arrow" like below . **(Photo2)**



(Photo1)

Closing

- Tightening torque of Cap screw: 10 - 15 Kgf-cm
- Tighten with M4 hexagon Socket Cap screws. (Cap screw).
- Tighten 6 screws equally and well balanced, after confirming that the waterproof packing is nonexistent between the lid and the CS.

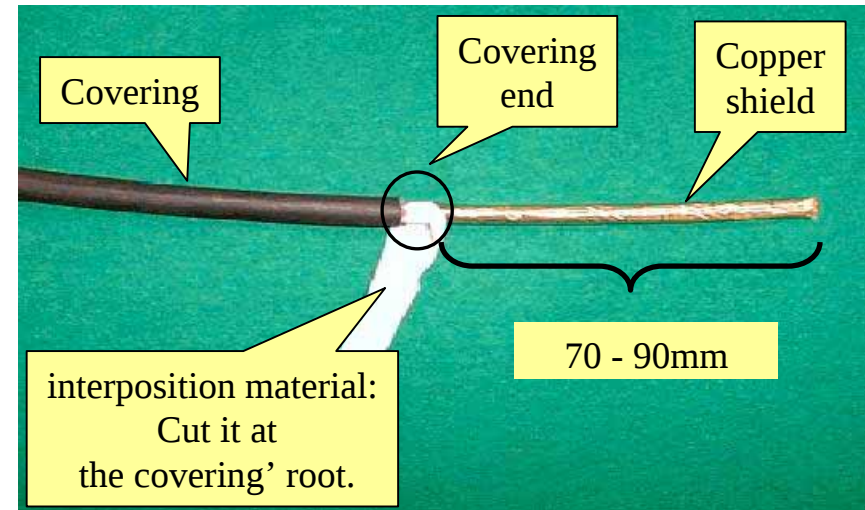
[Caution] If the clamp face or waterproof packing is scarred by screw's cusp, the waterproof performance may not be obtained.



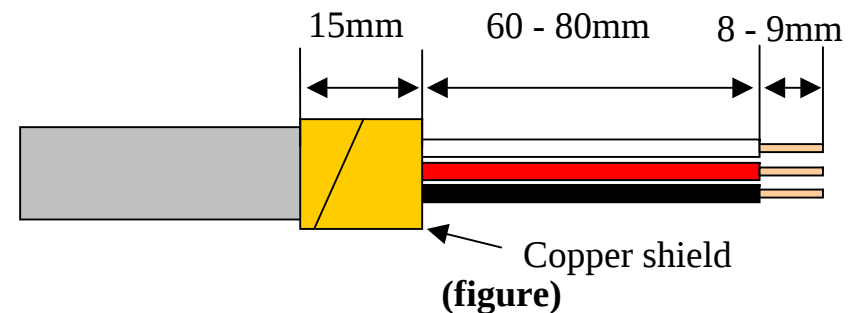
(Photo2)

Connection of the power cable (1)

- 1) Reeve the cable from the cable gland nut into the lid.
- 2) Pull the cable out to enough length that the tip of the cable can be processed.
- 3) Peel the covering of the cable. (Photo 3)
- 4) Peeling off core line.
- 5) Loosen the copper shield and wind it onto the core wire's tip 4 turns or more.



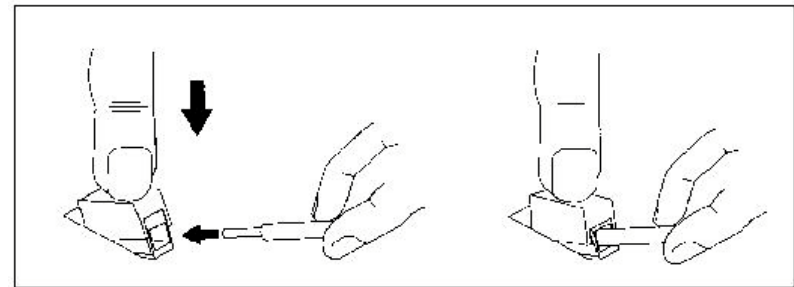
(Photo3)



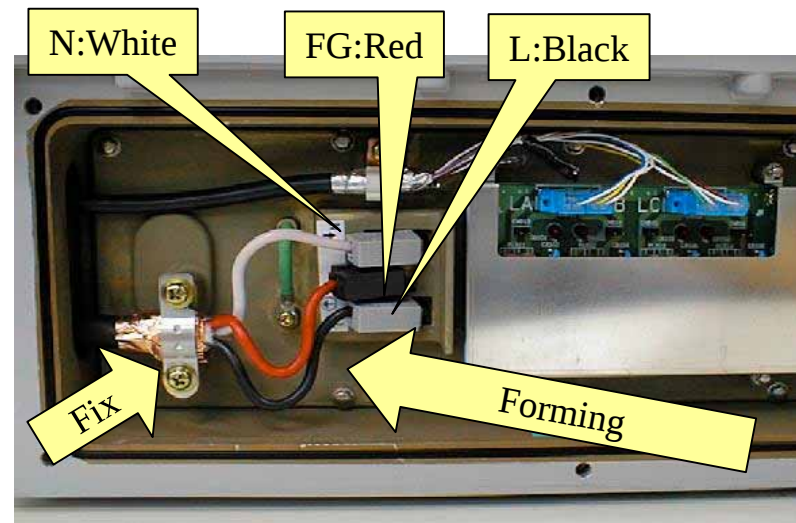
*The cable color is generally used in Japan, and it used in U.S.A. shall comply with the local specifications.

Connection of the power cable (2)

- 6) Feazings processing of the core line.
 - Push the upper part of the connector with a finger, and insert a core wire. (figure)
 - L (Loading), N (Neutral), FG (Frame Ground).
- 7) Combine the copper shield to the position “FIX” of Photo 5. And tighten the cable gland firmly.
 - **[Caution]**When the fixation of the terminal block's lid is imperfect, it is feared that this CS gives hindrance to other electric devices.
- 8) Form core wires that are inserted into the power supply terminal.
- 9) The tightening of the dome nut must be done by hand without fail and tighten it strongly.
- 10) Wind the self-bonding tape between the surface of dome nut and the end of cable.



(figure)



(photo5)

Connection of the Line cable (1)

- 1) Reeve the cable from the dome nut into the lid.
- 2) Pull the line cable out to enough length that the tip of the cable can be processed.
- 3) Peeling of the line cable covering.

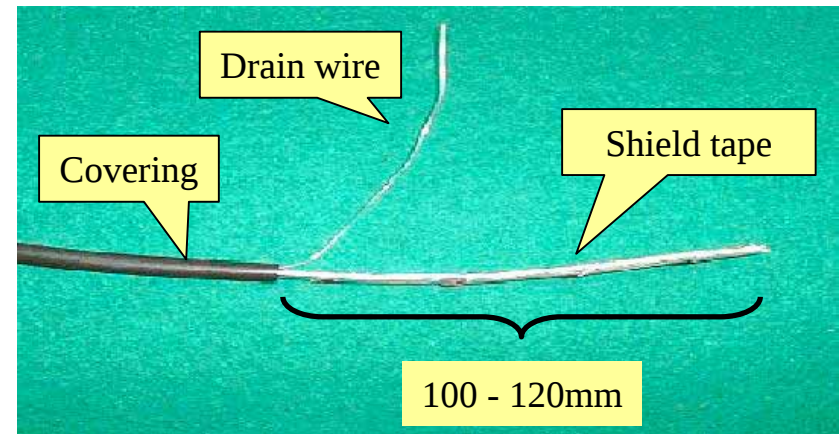
(Photo 6)

- Peel off the covering of the line cable. The length of the line cable is 100 - 120 mm. (Photo 6)

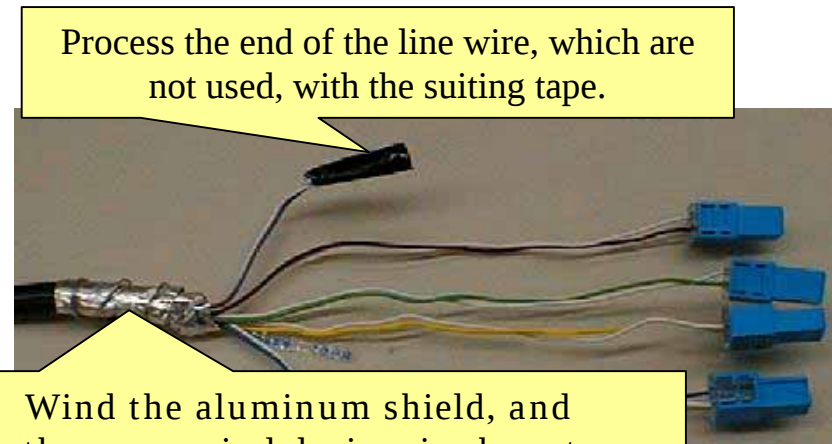
- 4) Loosen the shield and wind it on the heart line of covering 4 turns or more.

(Photo 7)

- Loosen these four pair lines, plug in the designated touching sockets.



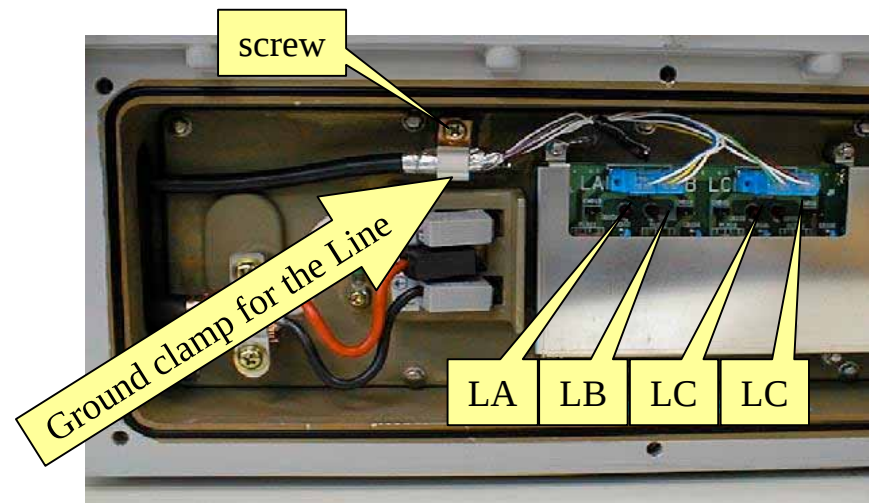
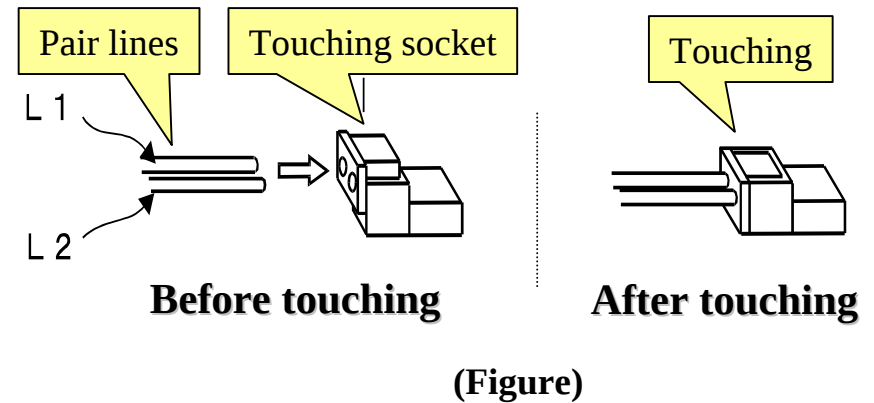
(photo6)



(photo7)

Connection of the Line cable (2)

- 5) Loosen these four pair lines, plug in the designated touching sockets.
- 6) Combine the copper shield to the position where is located in the arrow of Photo 8 below. And tighten the cable gland firmly.
- 7) Plug four touching sockets to the connector on the PWB in the terminal block. (Photo8)



(photo8)

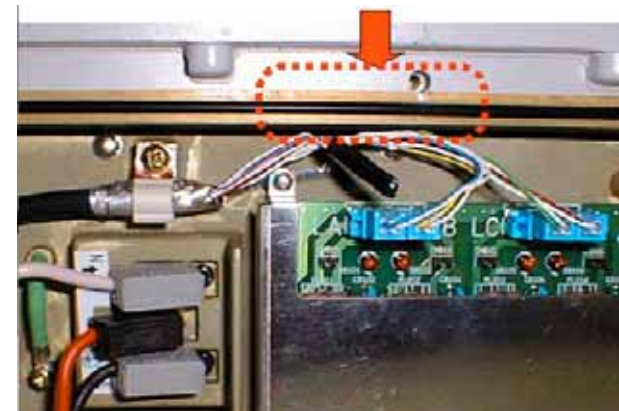
Connection of the Line cable (3)

8) Form core wires that are inserted into the line connector.

- Form the line cable as not touching on the block.
(Photo 9)
- Pay attention that the line cable does not touch on the packing .

9) Tighten the dome nut.

10) Wind the self-bonding tape between the surface of dome nut and the end of cable.



(photo9)

Concerning the installation of cables



- Ground earth terminal of the power cable securely
In case that ground does not executed, there is the possibility that destroys the CS.
Because the surge protection by the ground wire can not perform.
- The earthing less than 10ohm (Class A) is desirable.
There is the possibility that the obstacle occurs to sounds and pictures of other radio devices, when the earthing resistance becomes high.
- Separation distance between cables
Distance (generally 20 cm or more) shall be kept between the line cable and the power cable for secure installation.
- The shield processing of the cable (maintenance box & breaker box)
Earthing must be executed as for the breaker box.
- Installation of lightening facility
Specifications of the CS do not specify the requirement for the installation of lightning conductor. Don't connect the lightning cable to FG of the power supply.

WARNING!

RF exposure installation instruction



- To satisfy the FCC RF exposure requirement, a minimum separation distance of 4 feet must be maintained between the nearby person and radiating elements.
- Unauthorized alteration, modifications or attachments could impair its quality, damage the cell station, or result in violation of FCC regulations.

Appendix1:Installation materials (for example)

<u>Materials</u>	<u>Quantity</u>
	PBS-CS82
Antenna	8
Coaxial cable (upper)	4
Coaxial cable (lower)	4
Power supply cable	1
Line cable	4pair
Line connector	4
Stand	1set
Antenna pole	1
Antenna Arm	8
Arm fixing block(upper)	1
Arm fixing block(lower)	1
Self-bonding tape	as adequate
Tie band	as adequate

Appendix2:Cable specifications

Kinds	Usage	Specifications	Remarks
Coaxial cable	Antenna - PHS cell station	8D-SFA (connector with one-side N style (P)) MAX: 6m	Accessory of the antenna
Power cable	PHS cell station - power supply breaker box	With the 2.0mm ² , 3 cores with the copper shield tape Outsize diameter : 9.5 – 13 ø Frameresisting: PE cable The color is designated. (black, white, green and red)	Power cable the equivalent for the existing cell station
Line cable	Cell station - Maintenance box	Single line: ø 0.5mm-4 pairs A category 4 or more with aluminum or copper shield tape (Shield material 0.05t over) Outsize diameter : 6 – 8 ø Flame resisting: PE cable	Line cable the equivalent for the existing cell station