

Interface RF Connector with Switch

MS-151 Series



Overview

Designed for end user applications requiring re-direction of transmission from internal built-in antenna to the external antenna. Small size, lightweight and high reliability makes it ideal for use in 2.4 GHz band wireless LAN applications.

Features

1. Confirmation of complete connection

Built-in interlock feature confirms fully mated condition with a "click" sensation.

2. Non-directional connection

The connector can be mated in any position on a 360° axis and can rotate within the same when in use, allowing routing of the connected cable in any direction.

3. High durability

Guaranteed 5000 insertion/removal cycles.

4. Space-saving

The external dimensions of the board-mounted receptacle (5.0 mm high, 6.5 mm wide, 7.0 mm deep) makes it ideal for use in small devices.

5. Ease of connection and handling

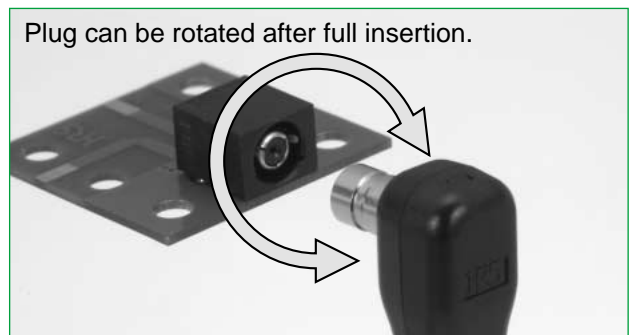
Over-molded plug, with convenient grip and built-in cable strain relief assures reliable mating/un-mating by end user.

6. Designed for board placement with automatic equipment

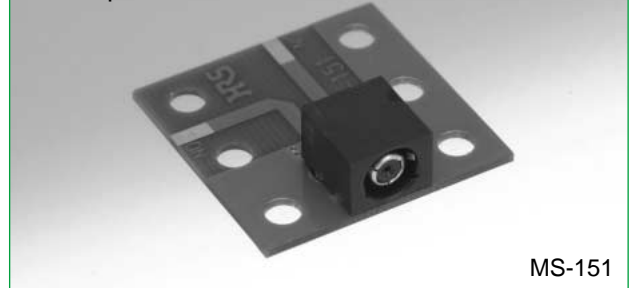
Top surface of receptacle assembly is flat, allowing reliable hold for vacuum nozzles of automatic placement equipment.

Applications

GPS terminals, wireless LAN modules, notebook computers, PDA, and other high frequency equipment. (Page 7 lists applications and antenna circuit switching examples.)



● Receptacle



MS-151

● Plug



MS-151-C(LP)

● SMA Conversion Adapter For Receptacle: MS-151



MS151P-HRMJ

● SMA Conversion Adapter For Plug: MS-151-C(LP)



MS151J-HRMJ

Product Specifications

| | | | |
|-----------------------------|----------------|-------------------------|----------------------|
| Frequency range | DC to 3GHz | | |
| Operating temperature range | -40°C to +85°C | | |
| Power rating | 4W | | |
| | | Not mated with the plug | Mated(MS-151-C-(LP)) |
| V.S.W.R. | DC to 1 GHz | 1.2 max. | |
| | 1 GHz to 2 GHz | 1.4 max. | |
| | 2 GHz to 3 GHz | 1.7 max. | |
| Insertion loss | DC to 1 GHz | 0.2dB max. | 0.3dB max. |
| | 1 GHz to 2 GHz | 0.4dB max. | 0.5dB max. |
| | 2 GHz to 3 GHz | 0.6dB max. | 1.0dB max. |
| Isolation loss | DC to 1 GHz | ———— | 20dB min. |
| | 1 GHz to 2 GHz | ———— | 18dB min. |
| | 2 GHz to 3 GHz | ———— | 12dB min. |

| Item | Specification | Conditions |
|--|--|---|
| 1. Contact resistance | 50 m ohms max. | 100 mA |
| 2. Insulation resistance | 1000 M ohms min. | 100 V DC |
| 3. Withstanding voltage | No flashover or insulation breakdown | 100 V AC / 1 minute |
| 4. Vibration | No electrical discontinuity of 10 μ s or more | Frequency: 10 to 500 Hz, single amplitude of 0.75 mm, acceleration of 98 m/s ² for 2 hours in each of the 3 directions |
| 5. Shock | | Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis |
| 6. Temperature cycle | Contact resistance: 100 m ohms max. Insulation resistance: 10 M ohms min. | Temperature: -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Time: 30 → 5 max. → 30 → 5 max.(Minutes) 100 cycles |
| 7. Humidity (Steady state) | | 96 hours at temperature of 40°C and humidity of 90% |
| 8. Salt spray | Contact resistance: 100 m ohms max. No corrosions | 5% salt water solution, 48 hours (at 35°C) |
| 9. Insertion/Withdrawal forces | Insertion force: 1~10N Withdrawal force: 3~15N | With corresponding connector |
| 10. Durability (insertion/ withdrawal) | Contact resistance: 100 m ohms max. | 5000 cycles |

Materials

Receptacle MS-151

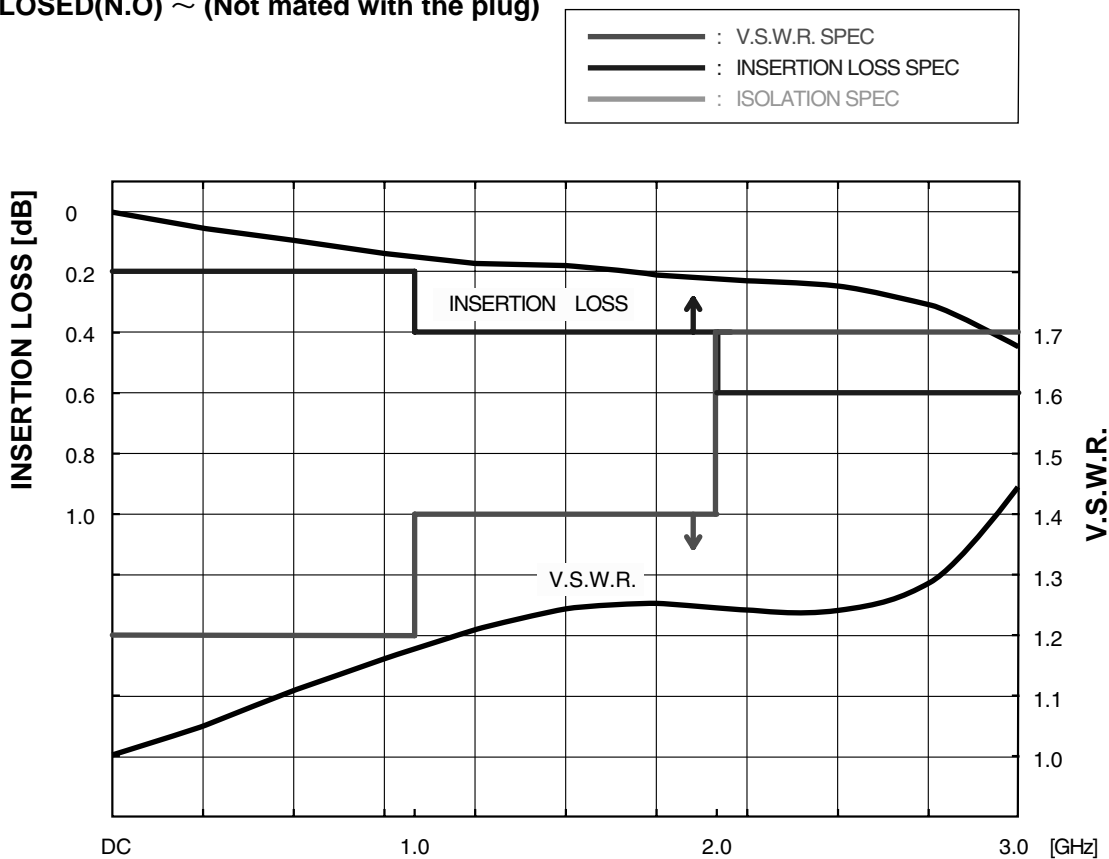
| Part | Material | Finish |
|-----------------------|----------------------|--|
| Insulator | Polyamide (UL 94V-0) | ———— |
| Lock mating section | Stainless steel | Nickel plating (Termination area: tin-lead plated) |
| Outer conductor shell | Phosphor bronze | Nickel plating (Termination area: tin-lead plated) |
| Contact A | Phosphor bronze | Gold plating |
| Contact C | Beryllium copper | Gold plating |

Plug MS-151-C(LP)

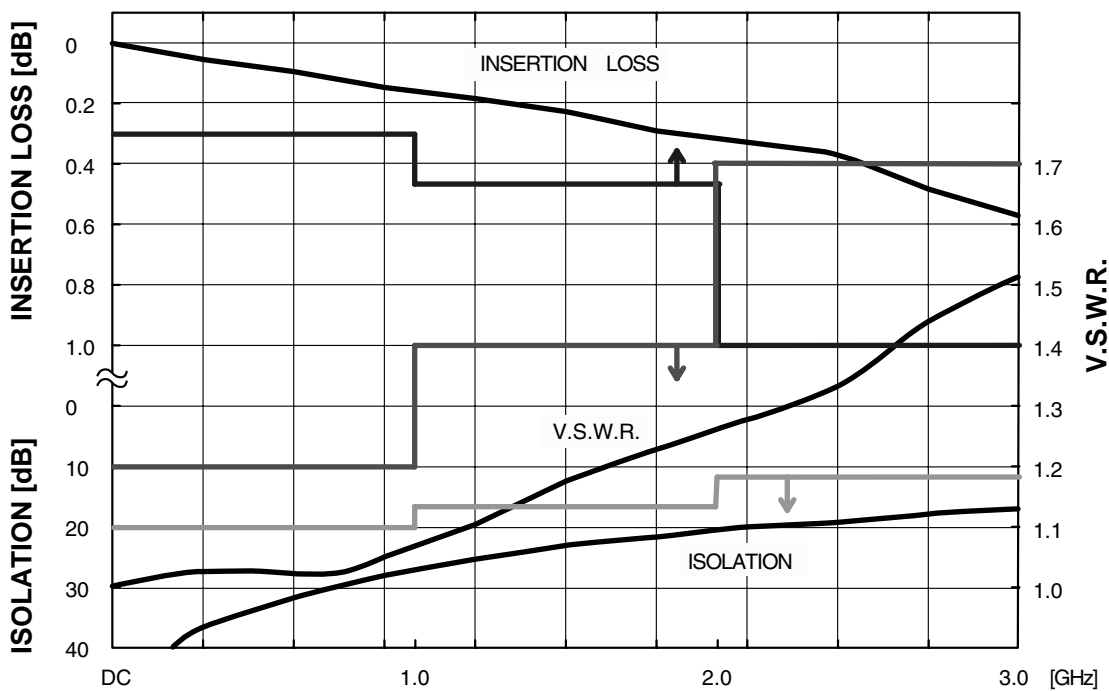
| Part | Material | Finish |
|-----------------------|----------------------|----------------|
| Cover A | PC | ———— |
| Cover B | PC | ———— |
| Ring | Stainless steel | Nickel plating |
| Outer conductor shell | Phosphor bronze | Nickel plating |
| Inner contact | Phosphor bronze | Gold plating |
| Insulator | Polyamide (UL 94-HB) | ———— |
| Ferrule | Stainless steel | ———— |
| Crimp metal fitting | Brass | Nickel plating |
| Bushing | Polyester | ———— |

◆ Typical data

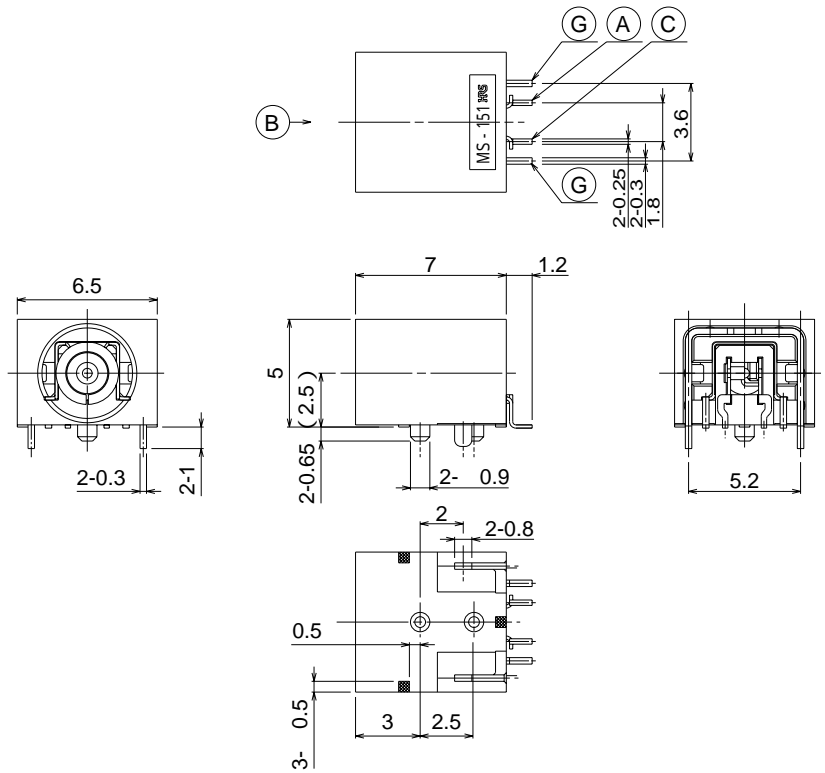
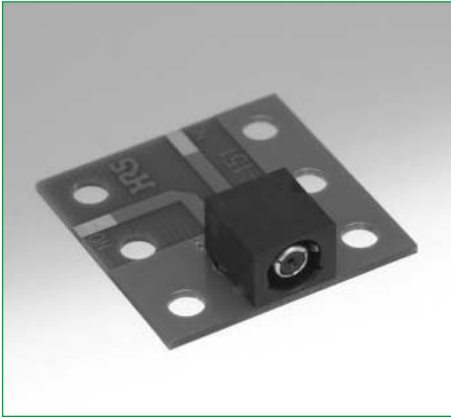
● NORMALLY CLOSED(N.O) ~ (Not mated with the plug)



● OPEN(N.O) ~ (Mated with the plug)

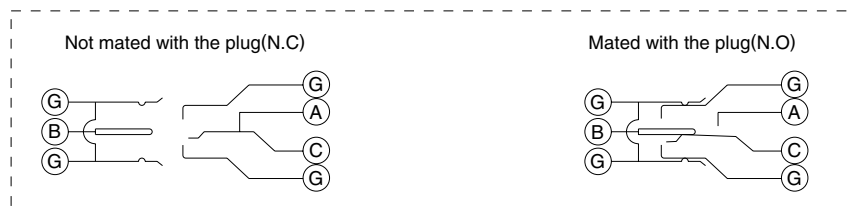


■ Receptacle

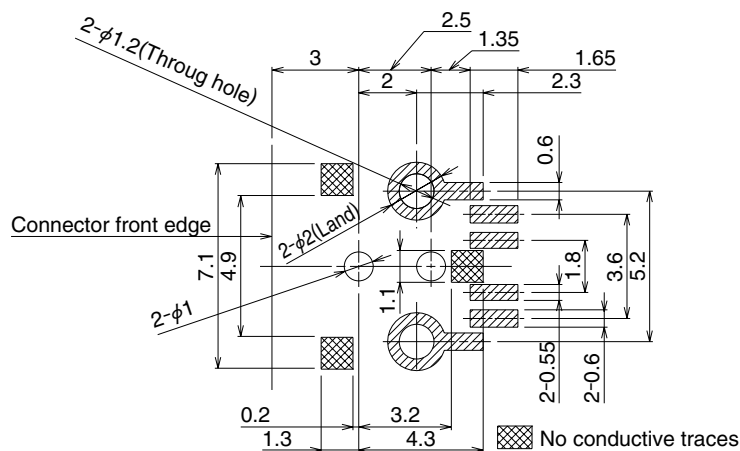


| Part Number | CL No. | Packaging |
|-------------|---------------|-----------------------|
| MS-151 | 358-0158-7 | 1,000 pieces per reel |
| MS-151(01) | 358-0158-7-01 | 100 pieces |

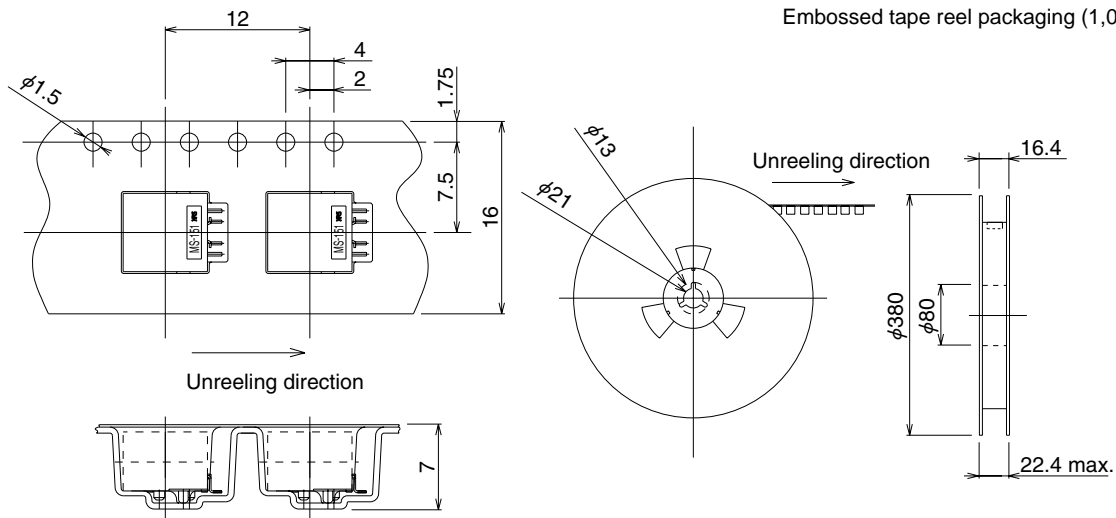
◆ Circuit diagram



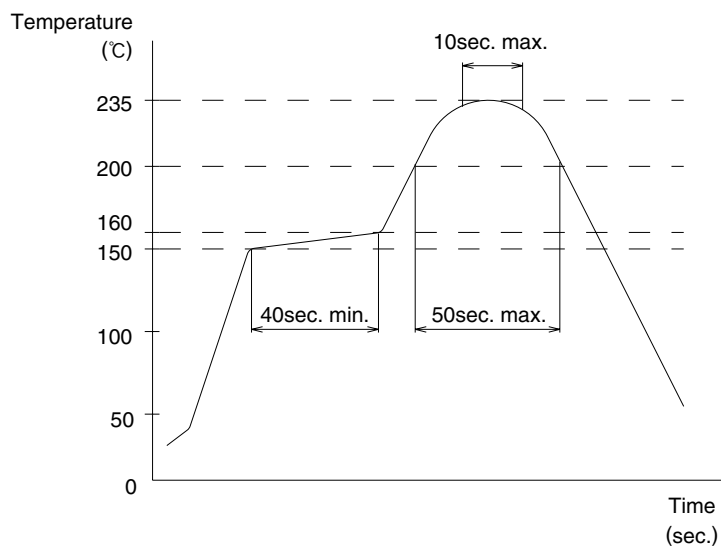
◆ PCB mounting pattern



◆ Packaging Specifications

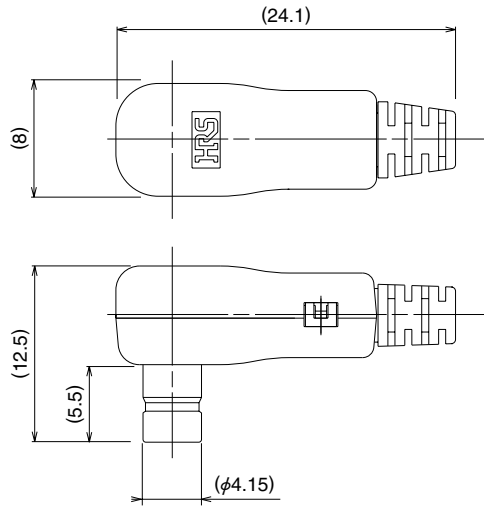


◆ Recommended Temperature Profile



| | |
|---------------------------|------------------|
| Maximum temperature | : 240°C |
| Peak temperature duration | : 10 sec. Max. |
| Peak temperature | : 220°C to 235°C |
| 200°C min. | : 50 sec. Max. |
| 150°C to 160°C | : 40 sec. Min. |

■ Plug



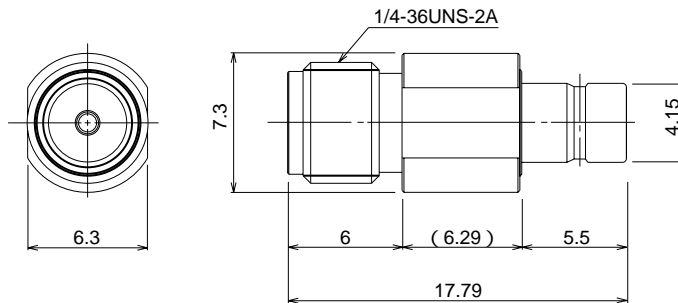
* Dedicated termination tools required.
* Can be supplied terminated with cable.

| Part Number | CL No. | Packaging | Applicable cable |
|--------------|------------|-----------|--|
| MS-151-C(LP) | 358-0160-9 | 1 | 1.5DS-QEHV(TA) or UL1.5DL1.5DS-QEHV(TA) |

Termination fixture: MS-151/CF-MD, MS-151/SO-MD, MS-151/BE-MP and MS-151/CK-MP
Please contact your Hirose Electric representative for information.

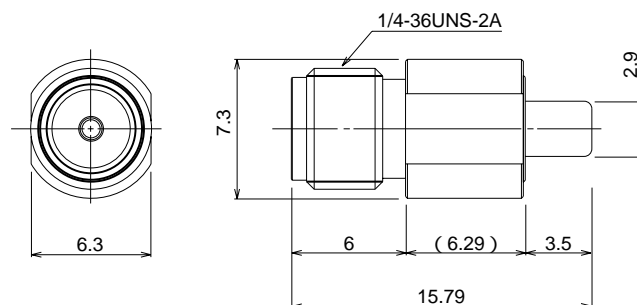
■ SMA Conversion adaptors

● For Receptacle: MS-151



| Part Number | CL No. | Packaging |
|-------------|------------|-----------|
| MS151P-HRMJ | 355-0089-7 | 1 |

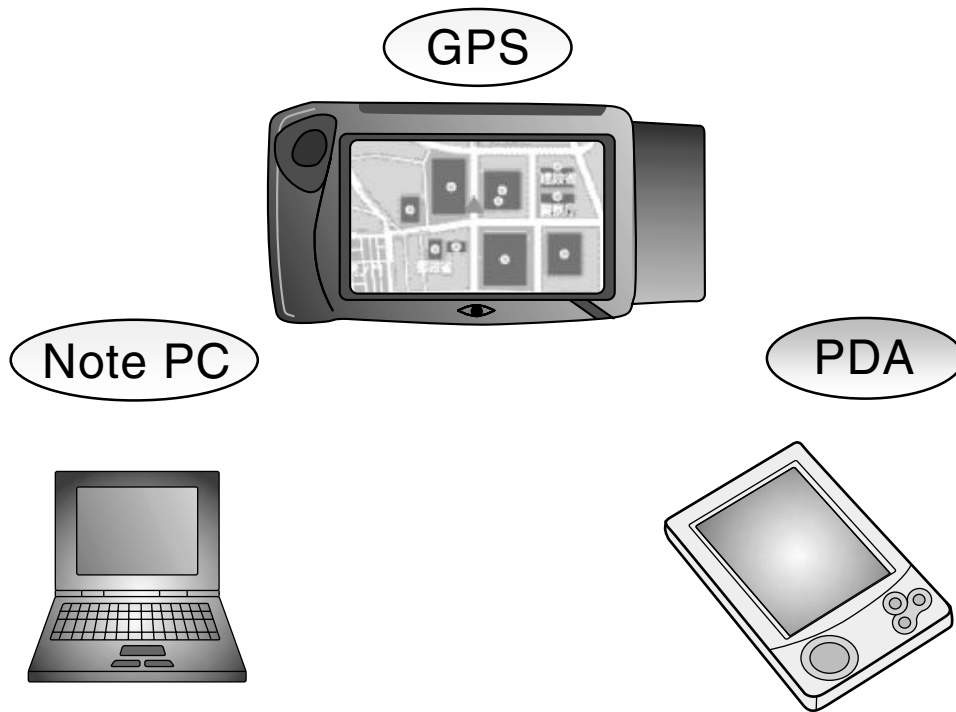
● For Plug: MS-151-C(LP)



| Part Number | CL No. | Packaging |
|-------------|------------|-----------|
| MS151J-HRMJ | 355-0088-4 | 1 |

■ Applications

- Notebook PC's, PDA's, GPS terminals, wireless communications equipments.



◆ Antenna Circuit Re-directing

