

**RA1000 Series
LAN Adapter Unit
User's Manual**

Foreword

The present manual relates to the RA1000 Series optional units for the OmniAce II Thermal Dot Recorder. Thank you very much for procuring the RA11-137 LAN adapter Unit. Please read this operation manual carefully in order to properly use the equipment.

Refer to the operation manual when using the RA11-137 Waveform LAN adapter Unit. The manual was compiled in order to use the equipment properly and safely. Keep the manual together with the unit for ready reference at all times.

Related operation manuals :

| Manual name | Issue | Description |
|--|-----------------|---|
| Instruction Manual Mainframe For RA1000 Series | 95691-2074-0000 | RA1000 functions and operation are described |
| Instruction Manual RS-232C, GP-IB For RA1000 Series | 95691-2075-0000 | Reference when using the RS-232C and GP-IB functions. Interface commands and other information are provided for control by a personal computer. |
| Instruction Manual Amplifier Units For RA1000 Series | 95691-2076-0000 | Describes amplifier unit operation and setting. |

■ Before using

—Notice—

- ◆ In event of abnormality, immediately cut off the power. If the difficulty cannot be corrected, please contact the company or its representative. (Please provide a description of the phenomenon and conditions in as much detail as possible.)
- ◆ The contents of this manual are subject to change without prior notice.
- ◆ Unauthorized transfer or copying of this manual in whole or in part is prohibited.
- ◆ Although careful attention was given to completeness, in event there are unclear points, errors, spoiled pages or opinions, please contact the company.

■ Safety warnings and cautions

● To use this product safely:

This product conforms to IEC (International Electrotechnical Commission) safety ratings Class I.

Although the product has been manufactured with attention to safety, mishandling or misoperation by the user poses risk of serious incident. In order to avoid such hazards, be sure to read this manual carefully so as to gain a thorough understanding of the contents. The following types of notices appear on the product and in the manual in order to use the product safely. These are defined below.



Failure to heed this notice poses risk of serious and possibly fatal physical injury.



Failure to heed this notice poses risk of physical injury and damage to the equipment.

Be sure to observe the following items when using this product. The maker assumes no liability for loss or damage related to actions contrary to the caution notices.

Also, the operation manual cannot mention every possible prohibited or unwise action. Therefore, it is recommended to assume that an action not specifically mentioned in the manual is outside the capability of the product.

■ Warranty scope






The company products pass through rigid quality control at every process from design to manufacture. In event of suspected malfunction during use, before requesting service, first check for a possibly simple cause, such as operating error, correct power supply voltage, cables and connections. If service or temperature calibration is needed, please consult the company business office or representative. Mention model name (RA1100, RA1200, RA1300), serial number and a detailed description of the difficulty. The company standard warranty period and terms are indicated below.

■ Standard warranty period and terms

1. Warranty period : Effective for one year after date of delivery
2. Warranty terms : In event of failure during the warranty period, the company will bear the cost of repair.
However, repair costs will be charged in the following types of cases.
 - ① Damage or failure due to improper handling
 - ② Damage or failure due to fire, earthquake, transportation accident or natural disaster
 - ③ Damage or failure resulting from repair or modification by other than the company or persons authorized by the company
 - ④ Failure due to use or storage under environmental conditions exceeding the specifications
 - ⑤ Periodic calibration
 - ⑥ Damage or failure resulting from transporting or moving the product after delivery
3. Warranty limitation : The company bears no liability in regard to equipment not manufactured by the company.

■ Symbols used in this manual

Following is a list of symbols used in this manual together with their definitions.

| Symbol | Meaning |
|---|---|
|  | Failure to heed this notice poses risk of serious and possibly fatal physical injury. |
|  | Failure to heed this notice poses risk of physical injury and damage to the equipment. |
|  | Failure to heed this notice poses risk of operating error and loss of data. |
|  | Setting limitations or supplementary description |
|  | See reference page |
| Equipment | RA1000 Series unit |
| Memory | Refers to RA1000 Series unit internal memory. Measurement data are stored in this memory when measuring in the Memory and Transient modes. |
| < > | Refers to operation panel key. Example: <Start> key |
| ⟨ ⟩ | Refers to touch panel key appearing on screen. Example: ⟨Realtime⟩ |
| [] | Refers to screen indication when operation panel key is pressed. |
| Disk | The following types recording media can be used with this equipment. <ul style="list-style-type: none"> • FD: 3.5 inch floppy disk, 2HD type (double sided, high density) • MO: 3.5 inch magneto-optical disk (230 MB or 640 MB) The term Disk used in this manual refers to these media. |
| PC card | The following types of PC card can be used as recording media for this equipment. <ul style="list-style-type: none"> • IC memory card (SRAM card): 64 KB to 4 MB • Flash memory card: 2 MB to 640 MB The term PC card used in this manual refers to these media. |
| k (lower case) K (upper case) | <ul style="list-style-type: none"> • Lower case k refers to ×1000 numerical units, e.g., 10 kg = 10,000 grams. • Upper case K refers to ×1024 units of data, e.g., 4 K = 4096 bytes of data. |

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1. How to Use LAN Adapter Unit

1.1 RA1000 Series LAN Adapter Unit (RA11-137) Overview

This manual covers the setup for the RA1000 Series when the LAN adapter unit (RA11-137) is installed in the RA1000 Series main body.

To use this unit, RA1000 Series firmware version 1.9 or later is required. (You can confirm the version on the Version window on the Maintenance tab in the System screen.)



Caution The RA11-137 LAN adapter unit is used to control the RA1000 Series via Ethernet. To control the RA1000 Series, the Omniviewer NS2100, software for RA1000 Series, is necessary. Direct control (file access) from Windows is not available.



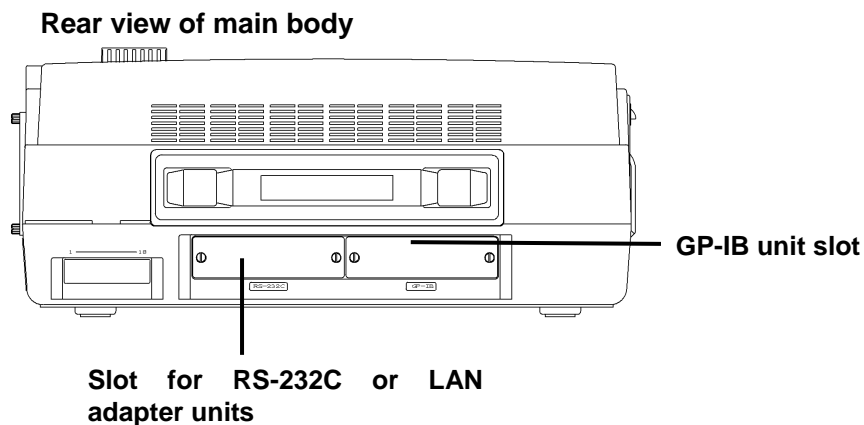
NOTE The port number for this unit is set to 1404. Accordingly, the port number for the software (Omniviewer NS2100) should also be set to 1404.

1.2 LAN Adapter Installation



Caution To connect or disconnect this unit, turn off the RA1000 main body and cut off the power supply by unplugging the power cable in advance. If this unit is connected or disconnected while the power of the RA1000 is on, this unit or the RA1000 main body may be damaged.

There are three slots on the rear of the RA1000 Series for the RS-232C unit (RA11-106), GP-IB unit (RA11-105), and LAN adapter unit (RA11-137).



Do not touch the components inside the RA1000 main body when replacing units. Physically touching the components inside the RA1000 main body may transfer static electricity, causing malfunction of the components. In order to avoid operational failure, do not touch other than the panel when replacing units.

To check whether the RS-232C unit, GP-IB unit, or LAN adapter unit is installed, see the Communication Setup tab in [System]. If the unit is not correctly installed, the tab does not appear.

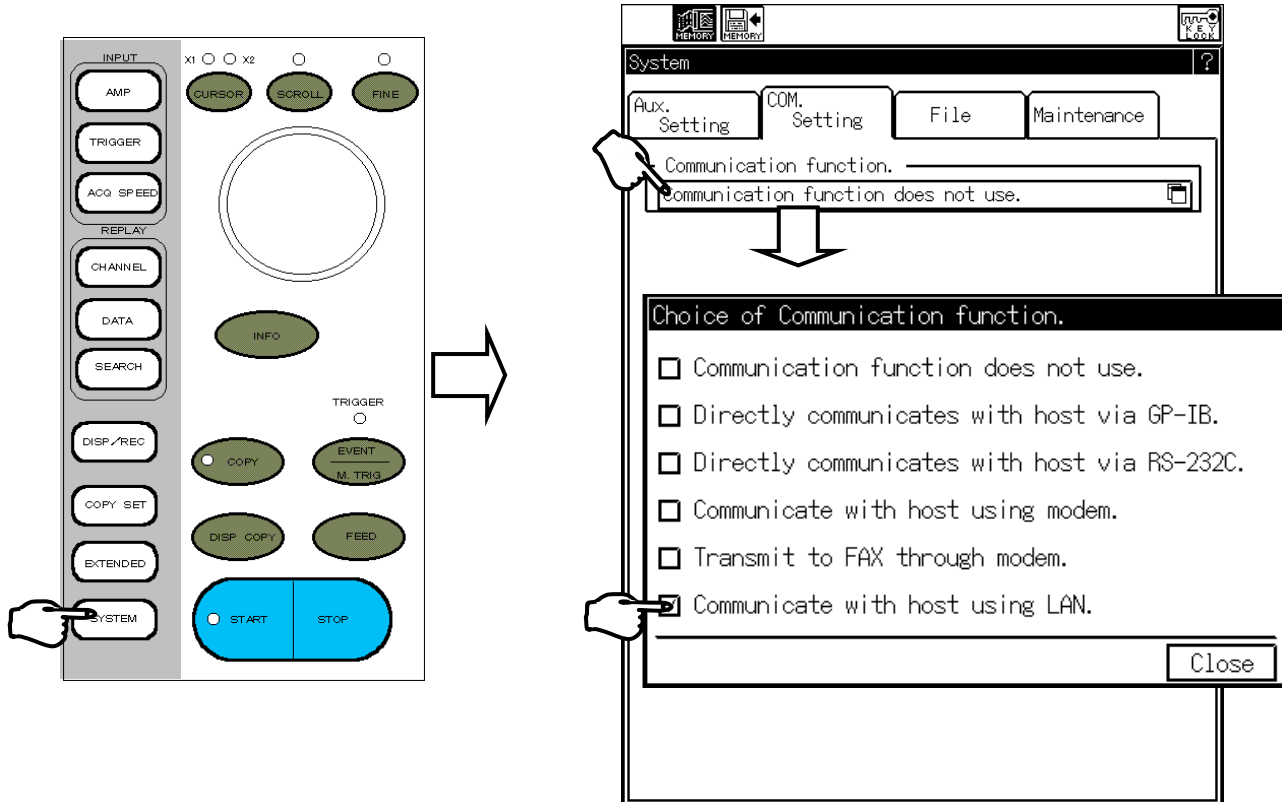


Caution The LAN adapter unit (RA11-137) and RS-232C unit share the one slot. Therefore, two units cannot be installed at a time.

1.3 Setting LAN for Communication Interface

Set up the RA1000 main body according to the communication interface to allow the RA1000 to be controlled by a personal computer or other external equipment through the communication interface.

The following settings are applicable when the RA1000 is equipped with a LAN adapter unit (RA11-137).



To communicate using the LAN

Remote controlling is available by connecting the LAN adapter and host computer using a LAN cable.

NOTE

Turn on the RA1000 main body after the LAN adapter unit has been correctly installed. After power on, you can select LAN in the Communication Device Selection screen on the Communication Setup tab in [System]

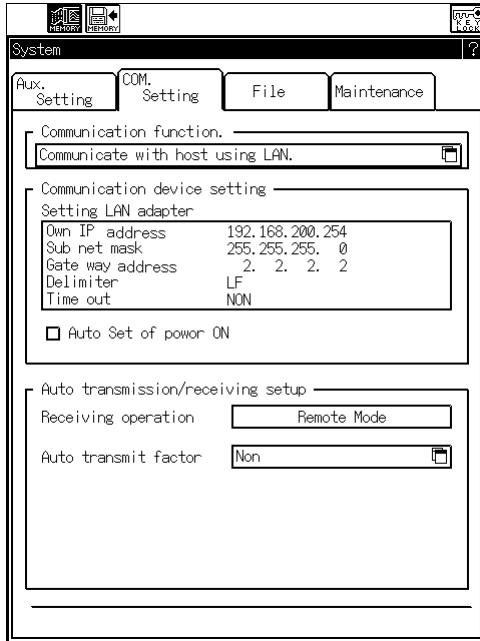
When this unit is first used, the setting above should be made after initialization by checking "Initialize the setup data for communications" in the Initialize screen on the Auxiliary tab in [System]. Without these settings, correct communications may be impossible.

1.4 Direct Control of RA1000 Using LAN

The RA1000 can be directly controlled by the host computer via the LAN interface.

1.4.1 LAN Adapter Setup Screen (Main)

Choose “Communicate to host using LAN” for the communication function. The following screen appears.



LAN adapter setup:
Set parameters such as the IP address. Pressing the frame opens the LAN Adapter Setup screen.

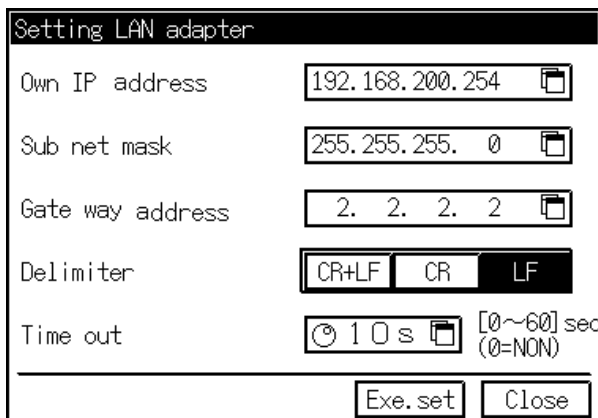
Operation at reception:
When the LAN interface receives an incoming signal, the RA1000 enters in the Remote status.
Auto transmission condition:
Upon the pre-set condition is satisfied, “!” is sent from the LAN interface.

1.4.2 LAN Adapter Setup Screen

By setting the LAN adapter, communications from the host computer become available.

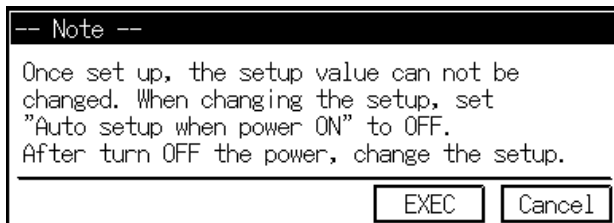
NOTE

To use the Omniviewer (NS2100), set the delimiter to LF. (The default setting is LF.)



These boxes are used to set the IP address subnet master gateway address. The Setup screen opens by pressing the screen frame.

Delimiter:
Set the delimiter during communication.
Timeout:
Set the timeout during communication. If no communication is made for the specified time, the status enters Local. (The default is 10 seconds.)

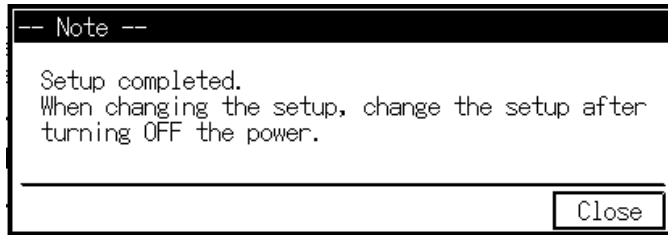


After making the settings above, the Caution screen appears by pressing the [Setup Execution] key. By pressing the [Execute] key, the LAN adapter settings are made and the RA1000 enters in the state of waiting for communication from the host computer.

NOTE

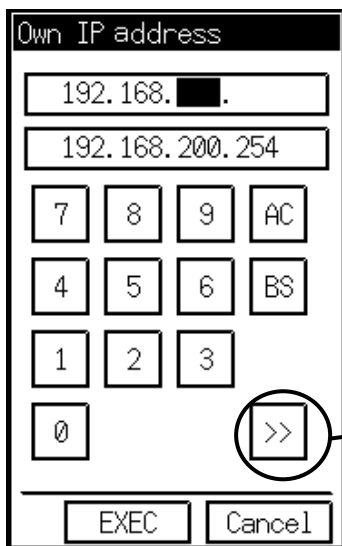
To change settings such as the IP address after LAN adapter setup, power down and restart the RA1000.

Pressing the screen frame after LAN adapter setup displays the caution screen indicating that the setup cannot be changed.



1.4.3 IP Address Subnet Mask Gateway Address Setup Screen

Use the following numeric pad to set the IP address subnet mask gateway address.



The format for the IP address subnet master gateway address is [***.***.***.***]. A decimal number from 0 to 255 should be entered for ***.

NOTE

[0.0.0.0] or [255.255.255.255] cannot be set for this address.

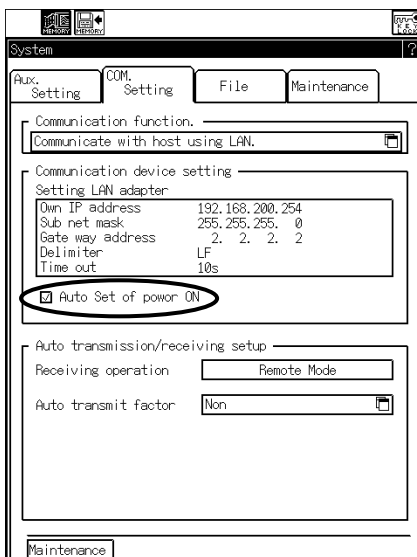
Move cursor:

To move the cursor to the next position after entering a number, press this key.

NOTE

The port number is set to 1404. You cannot change this number. This number should also be used for the application software (NS2100).

1.4.4 Auto Setup for Power up



By setting "Auto Setup of power ON" ON, automatic LAN adapter settings are made upon restarting the RA1000, allowing the RA1000 to be in the state of waiting for communication from the host computer.

NOTE

To cancel the automatic setup, set the checkbox to OFF and restart the RA1000. The LAN adapter setup screen is enabled.

1.5 Completion of LAN Adapter Setup

Remote control from the host computer becomes possible after LAN adapter setup. After receiving a command, the RA1000 displays the Remote Control screen.

Use our Omniviewer (NS2100) to perform remote control of the RA1000 via the LAN.

1.5.1 To Use Omniviewer (NS2100)

The Omniviewer (NS2100) is the remote-control and data-display software for the RA1000 Series. Before using NS2100, the IP address set in the LAN adapter should be set on the NS2100 screen.

NOTE

The port number is set to 1404. You cannot change this number. This number should also be used in NS2100.

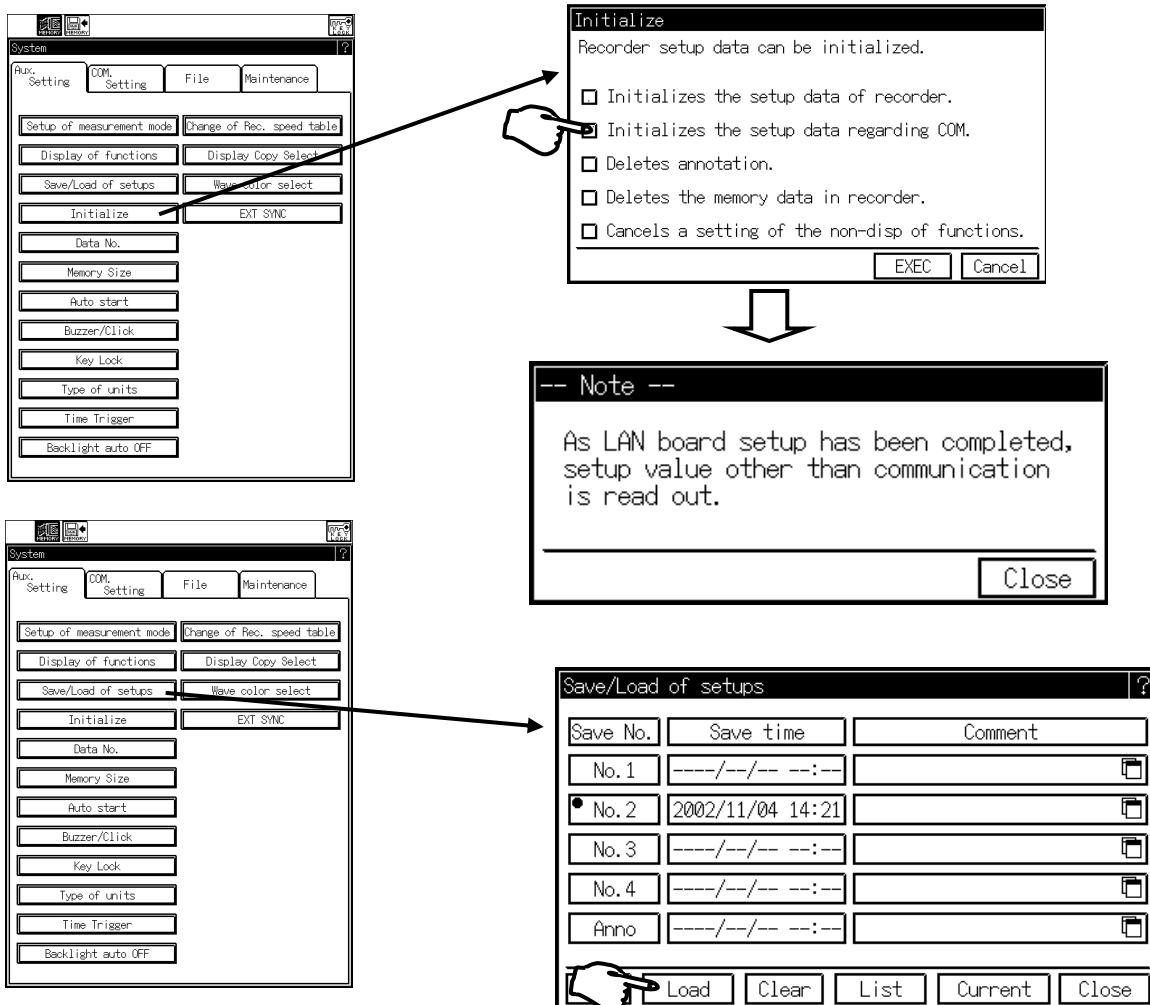
When the IP address subnet mask gateway address is set properly, the RA1000 displays the Remote Control screen at the moment of starting communication after setup of NS2100, and then remote control from the host computer becomes possible.

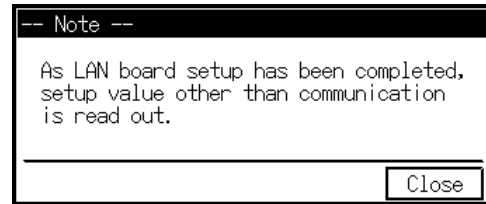
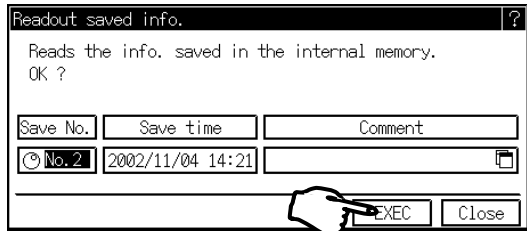
Closing the NS2100 returns the RA1000 to the Local mode.

1.6 Cautions

To connect the RA1000 to a network using the LAN adapter unit, the IP address subnet mask gateway address should be set in accordance with the advice by the network administrator.

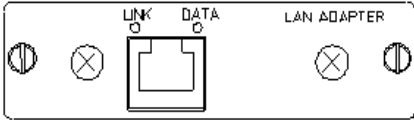
If the parameters are not properly set, problems as serious as entire network failure may occur.



**NOTE**

If the LAN adapter unit had already been set, setup information other than the information on communication including the LAN adapter is readout.

1.7 LAN Adapter Specifications

| Function | The LAN adapter unit is an interface board that allows the Omnicore II to be controlled from a computer on the network. This unit is inserted into the RS-232C slot. The measurement support software Omniviewer is used to control the Omnicore II via the LAN. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|---|-----------------------|--------|------|---|------|-----------------------|---|------|-----------------------|---|------|--------------------|---|---|----------|---|---|----------|---|------|--------------------|---|---|----------|---|---|----------|
| Rating | LAN unit specifications Protocol: TCP/IP IEEE802.3 compliant 100BASE-TX, 10BASE-T (Auto switching) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Connector | RJ-45 (Category 5)  | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | Approx. 90 g | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin alignment | <table border="1"> <thead> <tr> <th>Pin No.</th> <th>Signal</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TXD+</td> <td>Transmission data (+)</td> </tr> <tr> <td>2</td> <td>TXD-</td> <td>Transmission data (-)</td> </tr> <tr> <td>3</td> <td>RXD+</td> <td>Reception data (+)</td> </tr> <tr> <td>4</td> <td>—</td> <td>Reserved</td> </tr> <tr> <td>5</td> <td>—</td> <td>Reserved</td> </tr> <tr> <td>6</td> <td>RXD-</td> <td>Reception data (-)</td> </tr> <tr> <td>7</td> <td>—</td> <td>Reserved</td> </tr> <tr> <td>8</td> <td>—</td> <td>Reserved</td> </tr> </tbody> </table> | Pin No. | Signal | Name | 1 | TXD+ | Transmission data (+) | 2 | TXD- | Transmission data (-) | 3 | RXD+ | Reception data (+) | 4 | — | Reserved | 5 | — | Reserved | 6 | RXD- | Reception data (-) | 7 | — | Reserved | 8 | — | Reserved |
| Pin No. | Signal | Name | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | TXD+ | Transmission data (+) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | TXD- | Transmission data (-) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | RXD+ | Reception data (+) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | — | Reserved | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | — | Reserved | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | RXD- | Reception data (-) | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | — | Reserved | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | — | Reserved | | | | | | | | | | | | | | | | | | | | | | | | | | |

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