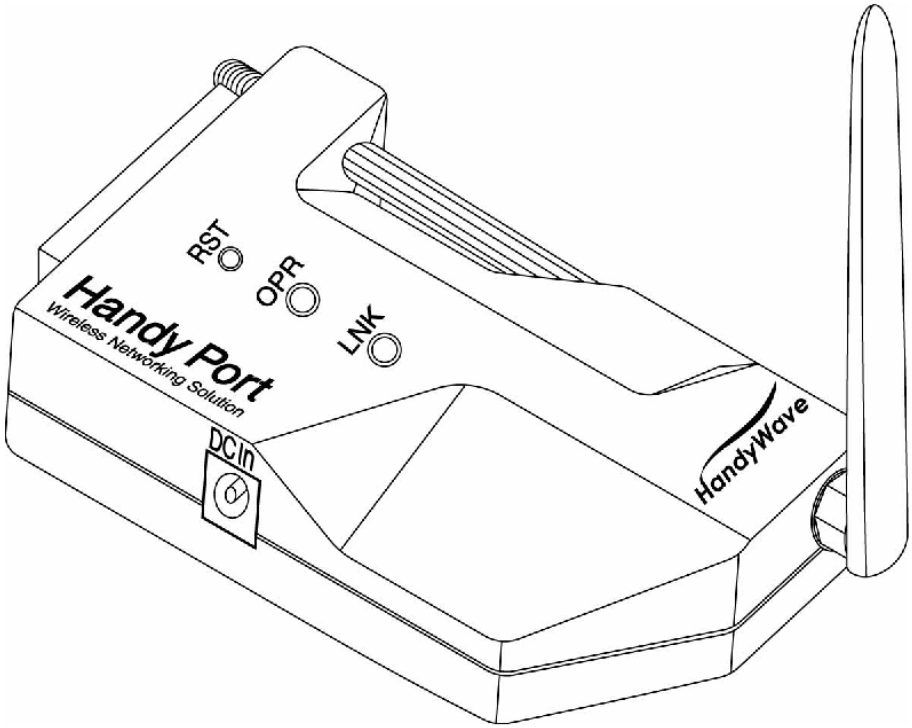
HPS-120

HandyPort-Serial

Wireless Solutions in your Hand

User's Manual

Version 2.1



HandyWave

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1. Introduction

Thank you for purchasing a HandyPort-Serial. The HandyPort-Serial can be used as a component in many types of systems allowing them to communicate wirelessly with other Bluetooth products such as PC-cards, laptops, handheld computers, mobile phones and other HandyPort-Serial. The HandyPort-Serial is a suitable component in new products as well as in existing products.

1.1. Features

- No need of external host and software
- Easy of installation and use
- Supports configuration of the local device
- Supports configuration of the remote device via Over-the-Air
- Easy of maintenance
- Supports up to 100 meter (Line of Sight)

1.2. Package

- HPS-120 2 EA
- Antenna 2 EA
- A USB Cable for Power Supply
- A Manual[1]

[1] This manual is required the software version 2.0 or above. If you have any more questions, please contact us.
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2. Specifications

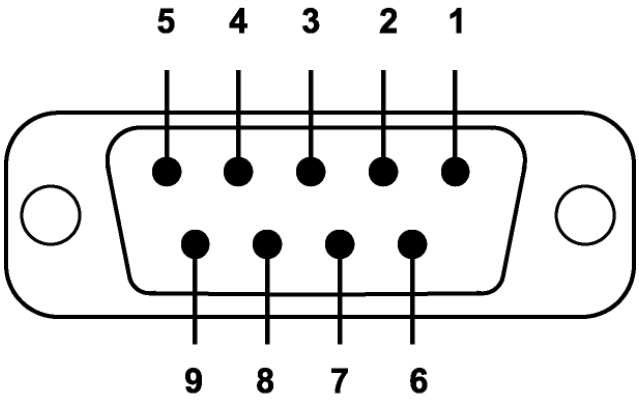
2.1. General

Baud Rate	Up to 115.2kbps (Recommend above 2.4kbps) Supports 1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2kbps
Coverage	Up to 100 M
Connection	Point-to-Point
Signal	DCD, TxD, RxD, GND, CTS/DSR[1], DTR, RTS
RS-232 Interface	D_SUB 9 Pin Female
Frequency	2.400 ~ 2.4835GHz
Tx. Power	Max 20 / Typical 16dBm (Class 1)
Rx. Sensitivity	-84dBm
Antenna Interface	SMA Female
Antenna Gain	Max. 2dBi
Power Supply	+5 ~ +12Vdc
Current Consumption	Max. 110mA
Operation Temperature	-20 ~ 75 °C
Size	35mm (W) x 65mm (D) x 16mm (H)

[1] The default hardware configuration is for using CTS. If you want to use DSR, please contact us.

2.2. RS-232 Interface

2.2.1. Pin-out



2.2.2. Signals

Pin Number	Signal	Direction	Description
1	DCD	Output	Data Carrier Detect
2	TxD	Output	Transmitted Data
3	RxD	Input	Received Data
4	DSR	N/A (Input)	Option: Data Set Ready[1]
5	GND	N/A	Signal Ground
6	DTR	Output	Data Terminal Ready
7	CTS	Input	Clear to Send
8	RTS	Output	Request to Send
9	Vcc	Input	Power Supply

2.3. Factory Settings

The following is the factory settings of COM port. You can change the factory settings of COM port with commands. In this case, you have to remember the changed factory settings.

- Baud rate: 9600 bps
- Data Bit: 8 bit
- Parity Bit: No parity
- Stop Bit: 1 stop bit
- Flow control: None

[1] The default hardware configuration is for using CTS. If you want to use DSR, please contact us.

2.4. Status LED

There are two LED on HPS-120.

- OPR (Red): When HPS-120 is supplied the power, it is turned on or flashed.
- LNK (Green): When a wireless link is on, it is turned on. If HPS-120 is in the configuration mode, it will be flashing every second.

2.5. Reset Button

The RST button has the following functions.

- Enter / Exit the configuration mode
- Restore the factory settings[1]
- Disconnect and reconnect a wireless connection.

2.5.1. Entering the Configuration Mode

When the LNK LED is OFF, push the RST button. When the LNK LED is ON, you have to push the RST button twice to enter the configuration mode. If you enter the configuration mode successfully, LNK LED will be flashing every second. And HPS-120 COM port will be stored the factory settings.

2.5.2. Exiting the Configuration Mode

You can have two options to exit the configuration mode.

Exit the configuration mode by software: Type “X”.

Exit the configuration mode by the RST button: Push the RST button.

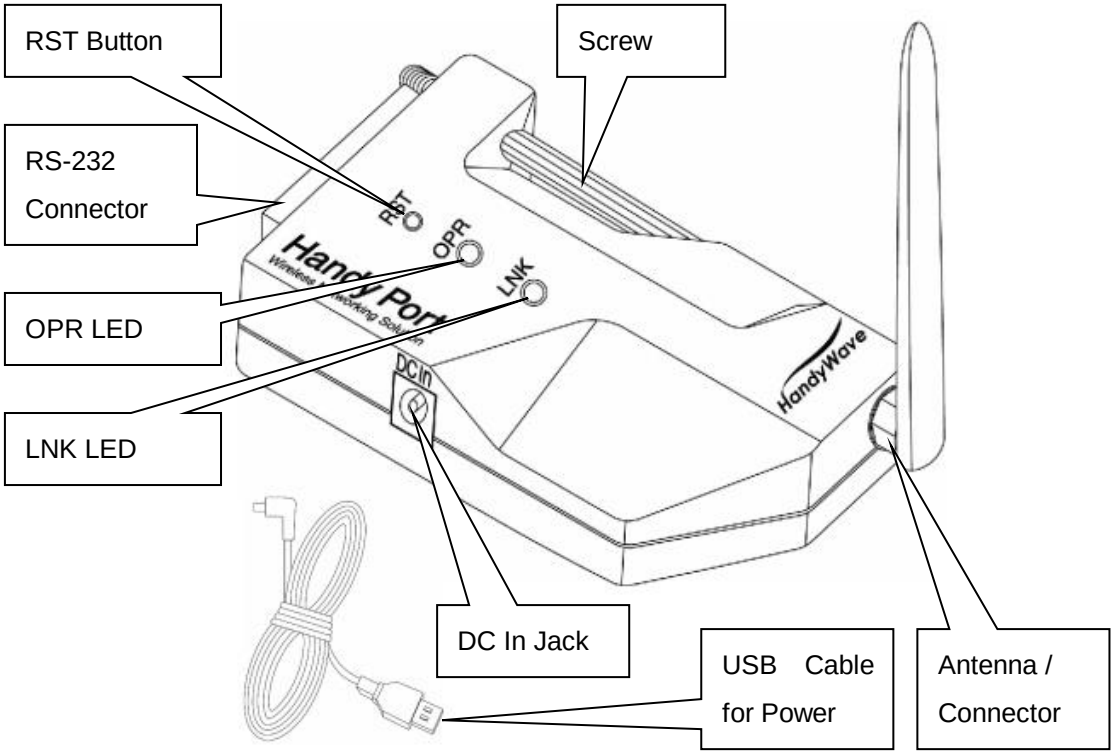
2.5.3. Re-connection

When the LNK LED is on, you can push the RST button to disconnect and reconnect a wireless link.

[1] If you push the RST button, the COM port of HPS-120 will be stored the factory settings.

3. Hardware Installation

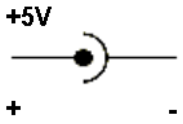
3.1. Hardware Description



3.2. Power Supply

You can supply power to the HPS-120 as follows:

- Use an AC/DC converter (Output Power: +5 ~ +12Vdc / 300mA).



- Use a provided USB cable.
- You can supply power via 9th pin of D_SUB 9 Pin connector.

3.3. Install Procedure

Step 1: Assemble a provided antenna to HPS-120 body.

Step 2: Plug a HPS-120 into the COM port of device.

Step 3: Power on.

Step 4: Configure the HPS-120, if necessary.

4. Usage

You can change the configuration of HPS-120 using Hyper Terminal[1].

4.1. Hyper Terminal Settings

Baud Rate: 9600 bps / Data Bit: 8 / Parity Bit: None / Stop Bit: 1 / Flow Control: None / Emulation: VT100

4.2. Configuration

4.2.1. Starting Configuration

Step 1: Plug a HPS-120 into a COM port of PC. And Power it on.

Step 2: Open a Hyper Terminal and set it up.

Step 3: Push the RST button on HPS-120. If you enter the configuration mode successfully, LNK LED will be flashing every second.

Step 4: Hit the <Enter> key, 5 second later.

Step 5: Change the configuration of HPS-120 with commands, if necessary.

4.2.2. Usage Printing

If you are in the configuration mode, type “?<Enter>” for listing of commands. If you want to know the usage of a command, type “?[command]<Enter>”. All commands and parameters are case sensitive. And you cannot use a <Backspace>.

4.2.3. After Configuration

After finishing the configuration, you have to execute a command “X” to apply changes.

[1] This manual is required the software version 2.0 or above.

4.3. Command Set

The commands are as follows[1]:

Item	Syntax	Description	Remarks
1. Connecting address	AAddr<CR>	Set a remote device address for a wireless connection.	A local and remote BD_ADDR always need to be difference.
2. Baud rate	BBR[D]<CR>	Change the baud rate. D (option): Change a factory setting[2].	Baud Rate (BR) - 0: 1200, 1: 2400, 2: 4800, 3: 9600, 4: 19200, 5: 38400, 6: 57600, 7: 115200
3. COM port	CCOMPort<CR>	Change a request serial port.	COMPort: '1' ~ '7' Only valid in connection mode 2.
4. PIN code	EPIN<CR>	Authentication Off: hit <Enter> Authentication On: Type up to 11 characters	Paired adapters should have a same PIN code.
5. Flow control	FFC[D]<CR>	Set the Flow control. D (option): Change a factory setting[3].	FC - 0: None 1: Hardware[4] 2: DTR/DSR[5]
6. Search timer	GTO<CR>	Set a search timeout. TO (timeout): ASCII '0' ~ "999"	Connection mode 3 only. Default: 10 sec.
7. Max number of search	HNO<CR>	Set the max number of search. NO: ASCII '0' ~ "999"	Connection mode 3 only. Default: 10
8. Search device	ITO,NO[L]<CR>	Execute searching devices. TO: ASCII '0' ~ "999" NO: ASCII '0' ~ "999" L (option): Display a long form.	Connection mode 3 only. ',': ASCII 0x2C
9. Discovery mode	JE/D<CR>	Set the discovery mode. 'E': Enable 'D': Disable	Connection mode 1 only. Default: Enable
10. Low Power Mode	KE/D<CR>	Set the low power mode. 'E': Enable 'D': Disable	Default: Disable

[1] If you push the RST button, the COM port of HPS-120 will be stored the factory settings.
[2] If you change a factory setting for baud rate, you have to remember it.
[3] If you change a factory setting for flow control, you have to remember it.
[4] This is a flow control between HPS-120 and DTE (will not be passed it over the air).
[5] This is a flow control between DTE (will be passed it over the air).

11. Connection mode	MMode<CR>[1]	Set a connection mode. Mode: '0' – '3' Mode 0 & 2: Required a remote address. Mode 2: Required a serial port.	0: 1:1 Mode 1: WAIT Mode 2: REGISTER and CONNECT Mode 3: WAIT Command Mode
12. Friendly name	NName<CR>	Set a friendly name up to 11 characters.	
13. Parity Bit	PPA[D][2]<CR>	Set the parity bit. D (option): Change a factory setting[3].	0: None, 1: Odd 2: Even
14. Connection Timeout	QTO<CR>	Set the connection timeout. TO: ASCII '0' ~ "999"	Connection mode 3 only. Default: 10 sec.
15. Stop Bit	SST[D]<CR>	Set the stop bit. D (option): Change a factory setting[4].	0: 1 Stop, 1: 2 Stop
16. Connect	TAddr[,TO]<CR>	Try to make a connection. Addr: a remote address TO (option): ASCII '0' ~ "999"	Connection mode 3 only. ',': ASCII 0x2C Default Timeout: 10 sec.
17. Cancel	U	Cancel a command.	Connection mode 3 only.
18. View	V	Display the device information	You can find out a software version.
19. CoD	WCoD<CR>	Set the class of device. CoD: 6-Hex in ASCII	Default: "001F00"
20. Exit	X	Apply changes.	Rebooting
21. Status	Z	Display the status of state machine.	'S': Idle / 'P': Pairing / 'C': Connecting / 'A': RF on / 'I': Inquiring
22. Usage	?[C]<CR>	Display the command list or usage. C: Command	

[1] <CR>: Carriage Return (0x0D)
[2] []: An optional parameter.
[3] If you change a factory setting for parity bit, you have to remember it.
[4] If you change a factory setting for stop bit, you have to remember it.