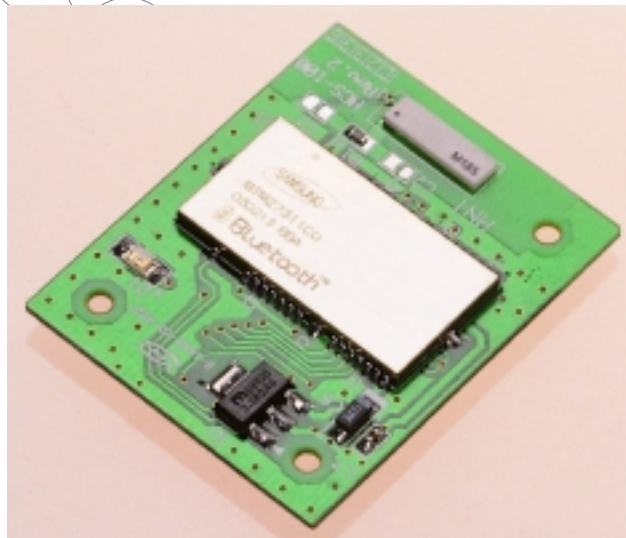


HCS-100

HandyCore-Serial

Wireless Solutions in your Hand

User's Manual



HandyWave

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1. Introduction

Thank you for purchasing a HandyCore-Serial. The HandyCore-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 HandyCore-Serial is a suitable component in new products as well as in existing products.

1.1. Key Features

- Bluetooth Serial Port Profile and Generic Access Profile
- No need of external Bluetooth host stack
- No need additional software on external host
- No Software installation is needed
- 100m service coverage (Line of Sight)
- Up to 115.2kbps throughput
- Configurable for use of different speeds and RS232 signals

1.2. Package

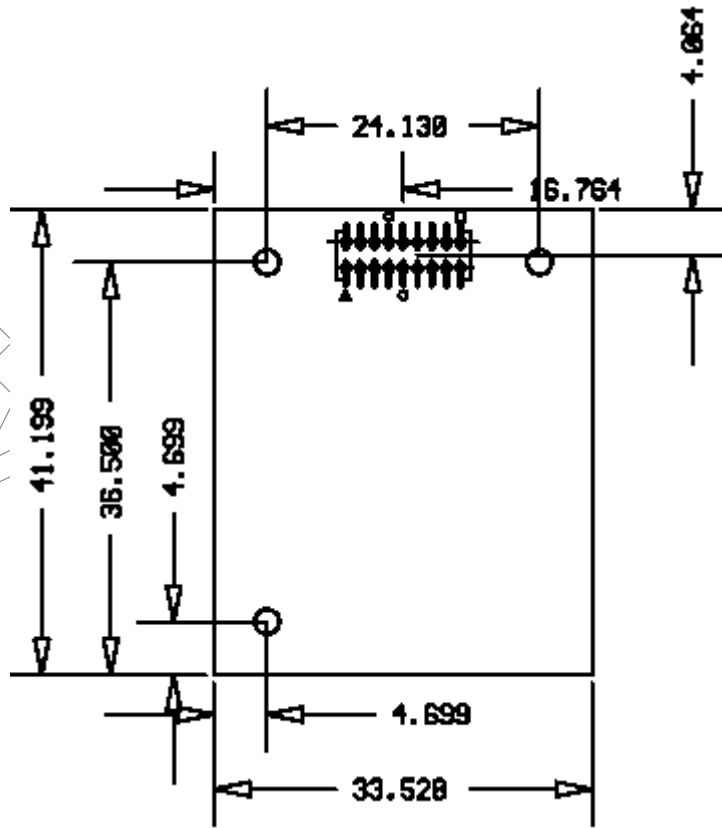
- HCS-100 2EA
- A manual

2. Specifications

2.1. General

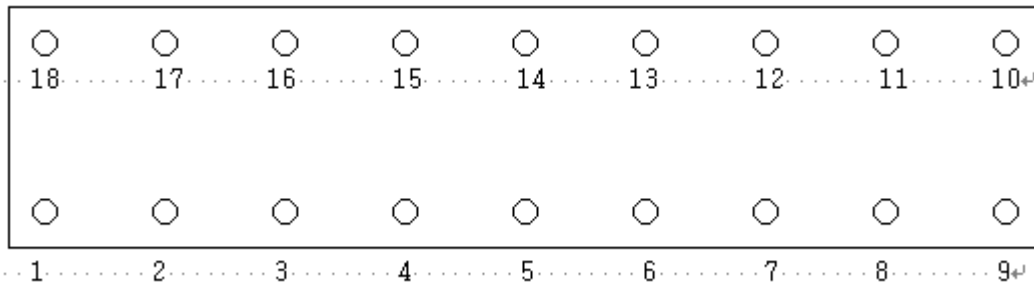
Baud Rate	<ul style="list-style-type: none">● Max. 115.2kbps● Support: 1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2kbps
Coverage	100 M (LOS)
Communication	Point -to -Point
RS -232 Signal	TxD, RxD, RTS, CTS, DTR, DSR, GND
Control Signal	Reset, Link Status
RS -232 Interface	CLP-109 -02 -G -D -BE from SAMTEC
Standard	Bluetooth Specification Version 1.1
Frequency	2.400 ~ 2.4835GHz (USA, Europe)
Hopping	1,600/Sec, 1MHz Channel Space
Modulation	GFSK, 1Mbps, 0.5BT Gaussian
Tx Power	Class 1 (Typical: 15dBm, Max: 20dBm)
Rx Signal Range	-84 ~ -20dBm
Size	33.528mm (W) x 41.199mm (D)
Antenna	
Type	Internal Chip Antenna
Gain	Max. 1.5 dBi
Environment	
Supply Voltage	+3.3 ~ 12VDC
Current Consume	Max. 100mA
Operating Temperature	-20 ~ 75 °C
Storage Temperature	-40 ~ 85 °C

2.2. Physical Dimension



Unit: mm

- Connector Top View



2.3. Pin Description

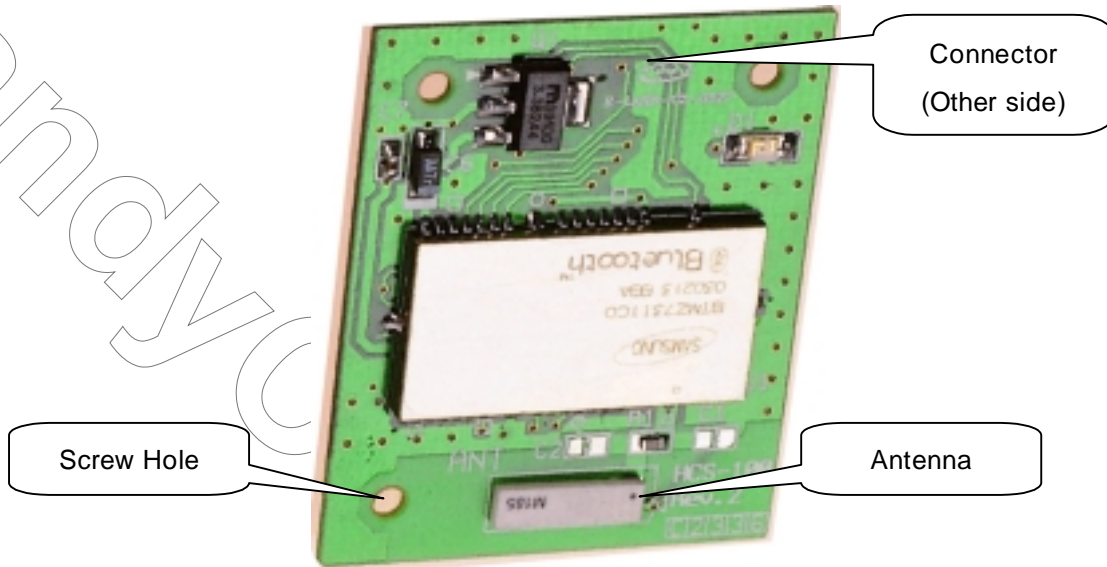
PIN No	Name	Direction	Description
1,18	Vcc	Input	Power Supply
2	SPI_MOSI	Input	SPI Data Input
3	SPI_CSB	Input	SPI Select
4	RXD	Input	+3.3V TTL level, RS -232 Received Signal
5	TXD	Output	+3.3V TTL level, RS -232 Transmitted Signal
6	/RTS	Output	+3.3V TTL level, RS -232 Ready To Send Signal
7	/CTS	Input	+3.3V TTL level, RS -232 Clear To Send Signal
8	SPI_CLK	Input	SPI Clock
9	SPI_MISO	Output	SPI Data Output
10,11	GND		Signal Ground
12	Link_status	Output	Status of Bluetooth Link Link On: High, Link Off: Low
13	RESET	Input	+3.3V TTL level, Active high
14	N/A		
15	N/A		
16	DTR	Input	Data Terminal Ready
17	DSR	Output	Data Set Ready

2.4. Power Status

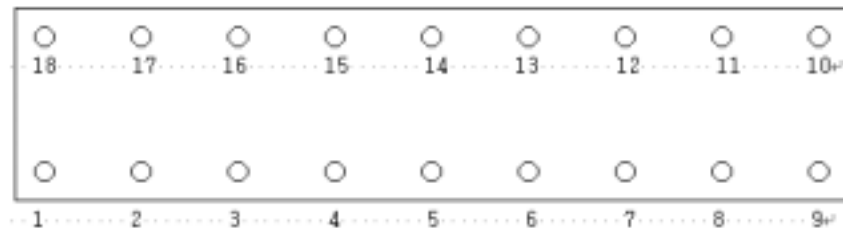
When HCS -100 is powered on, it is turned on.

3. Hardware Installation

3.1. Hardware & Connector



- Connector Top View



3.2. Power Supply

Supply 3.3 ~ 12Vdc to either pin number 1 or 18.

3.3. Install Procedure

Step 1: Mount a HCS-100 on your target board.

Step 2: Power on your target board.

4. Usage

When we ship a HCS -100, we configure the HCS -100 according to your requirements. After that you can change configuration of the HCS -100, either by a target CPU or by the other end via over -the -air.

4.1. Command Set

4.1.1. Command List for Local Device

Item	Syntax	Description	Remarks
1. Connecting address	AT+Z <u>A</u> Addr<Enter>	Set a remote device address for a wireless connection.	A local and remote BD_ADDR always need to be difference.
2. Baud rate	AT+Z <u>B</u> Baud Rate	Change the baud rate	Baud Rate - 0: 1200, 1: 2400, 2: 4800, 3: 9600, 4: 19200, 5: 38400, 6: 57600, 7: 115200
3. COM port	AT+Z <u>C</u> COM Port	This is only valid in connection mode 2.	
4. PIN code	AT+Z <u>P</u> IN<Enter>	Authentication Off: Type <Enter> Authentication On: Type up to 11 characters	Paired adapters should have a same PIN code.
5. Connection mode	AT+Z <u>M</u> mode	Set a connection mode	0: 1:1 Mode, 1: WAIT Mode, 2: REGISTER and CONNECT Mode
6. Friendly name	AT+Z <u>N</u> name<Enter>	Set a friendly name up to 11 characters.	
7. Command for the remote	AT+Z <u>O</u>	Enter configuration mode for the remote.	
8. Parity Bit	AT+Z <u>P</u> parity	Set the parity bit.	0: None, 1: Odd 2: Even
9. Stop Bit	AT+Z <u>S</u> stop	Set the stop bit.	0: 1 Stop, 1: 2 Stop
10. View	AT+Z <u>V</u>	Display configuration information	
11. Exit	AT+Z <u>X</u>	Apply changes.	
12. Usage	AT+Z <u>?</u>	Print the usage.	

4.1.2. Command List for Remote Device

To change the configuration for a remote device via over-the-air, firstly you have to use a command “AT+ZO” at the local device. The following are a procedure for changing configuration of remote device via over-the-air.

- Configure a remote device at the local device.
- Save changes at the local device.
- Make a wireless connection between the local device and remote device (automatically).
- Send changes from the local device to the remote device (automatically).
- Apply changes at the remote device and reboot (automatically).

Item	Syntax	Description	Remarks
1. Connecting address	<u>A</u> Addr<Enter>	Set a connecting address for remote device.	
2. Baud rate	<u>B</u> Baud Rate	Change the baud rate for the remote.	
3. COM port	<u>C</u> COM Port	This is only valid in mode 2.	
4. PIN code	<u>E</u> PIN<Enter>	Authentication Off: Type <Enter> Authentication On: Type up to 11 characters	Paired adapters should have a same PIN code.
5. Connection mode	<u>M</u> Mode	Set a connection mode for remote.	
6. Friendly name	<u>N</u> Name<Enter>	Set a friendly name up to 11 characters for remote.	
7. Parity Bit	<u>P</u> Parity	Set the parity bit.	0: None, 1: Odd 2: Even
8. Stop Bit	<u>S</u> Stop	Set the stop bit.	0: 1 Stop, 1: 2 Stop
9. View	<u>V</u>	Display configuration information for remote	
10. Exit	<u>X</u>	Save changes and return to main menu.	
11. Usage	<u>?</u>	Print the usage.	

Remarks1: To configure a remote device via over-the-air, a local device can make a connection to the remote device.

Remarks2: You can change a PIN code for the remote and local device as follows:

Change a PIN for remote at the local -> Apply it. -> Change a PIN for local and apply it.

Remarks3: Once you change a connecting address, and connection mode for the remote, the local device won't be able to make a connection to the remote device.