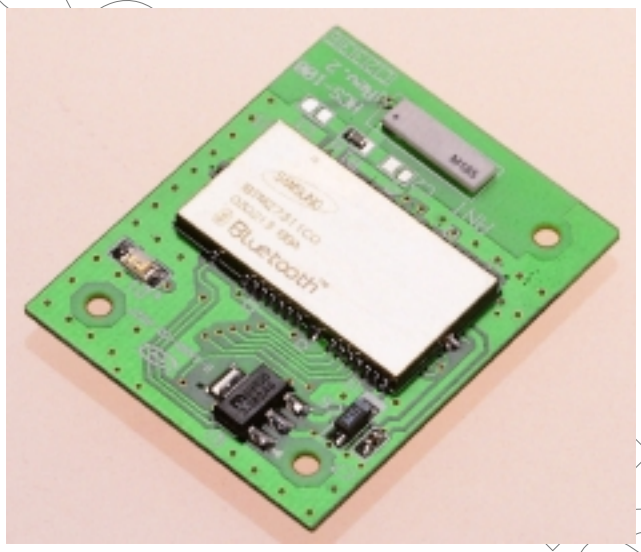
HCS-100

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

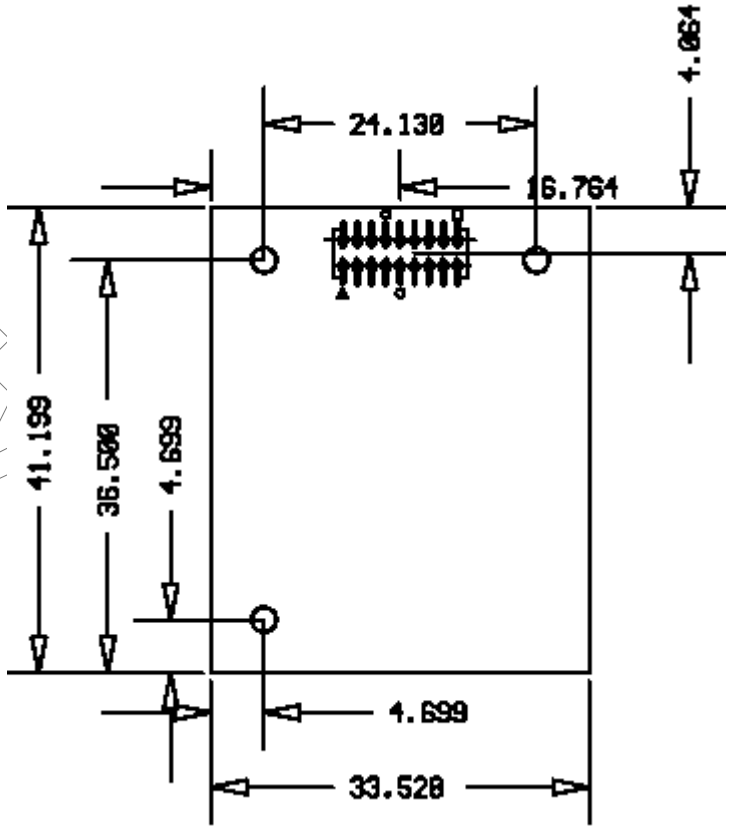
- HCS-100 2EA
- A manual

2. Specifications

2.1. General

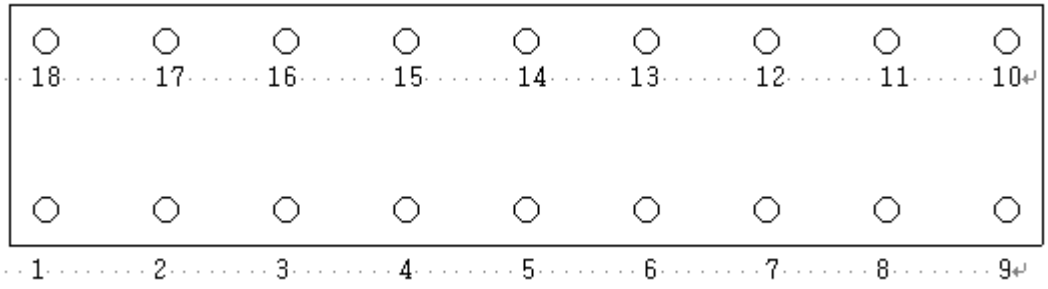
Baud Rate	Max. 115.2kbps Support: 1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2kbps
Coverage	100 M (LOS)
Communication	Point-to-Point
RS-232 Signal	TxD, RxD, RTS, CTS, DTR, DSR, GND
Control Signal	Reset, Link Status
RS-232 Interface	CLP-109-02-G-D-BE from SAMTEC
Standard	Bluetooth Specification Version 1.1
Frequency	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

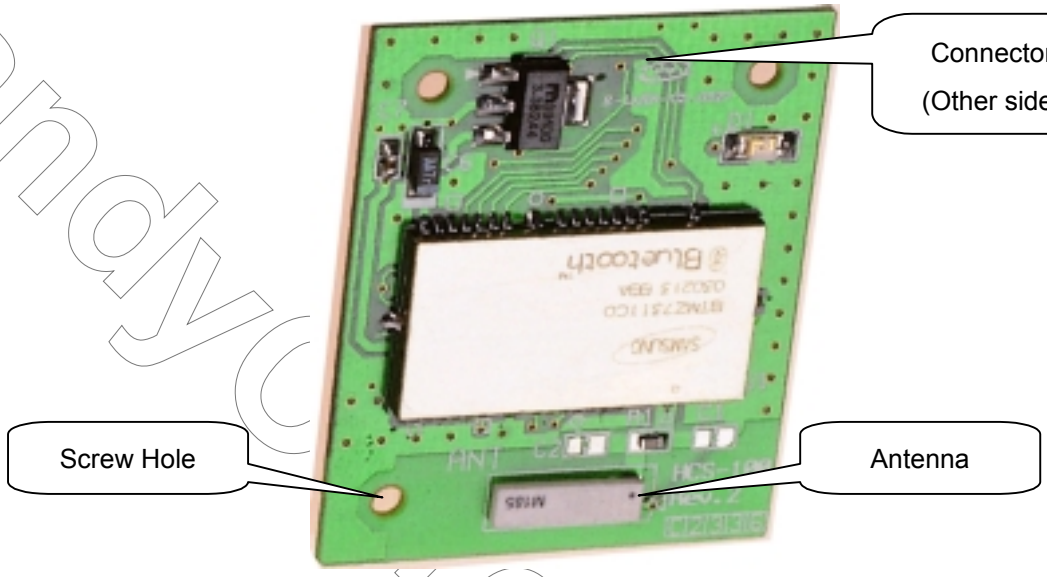
PIN No	Name	Direction	Description
1,18	Vcc	Input	Power Supply
2	SPI_MOSI	Input	SPI Data Input
3	SPI_CSB	Input	SPI Select
4	RXD	Input	+3.3V TTL level, RS-232 Received Signal
5	TXD	Output	+3.3V TTL level, RS-232 Transmitted Signal
6	/RTS	Output	+3.3V TTL level, RS-232 Ready To Send Signal
7	/CTS	Input	+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

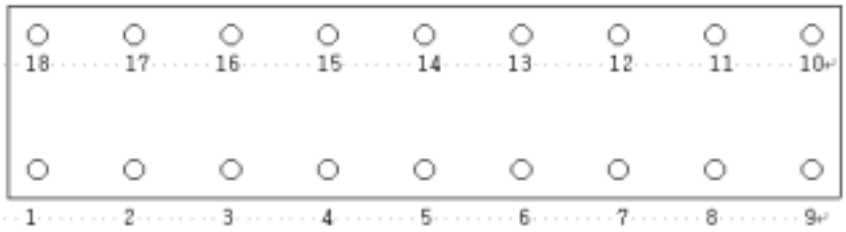
When HCS-100 is powered on, it is turned on.

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+ZAAddr<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+ZBBaud 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+ZCCOM Port	This is only valid in connection mode 2.	
4. PIN code	AT+ZEPIN<Enter>	Authentication Off: Type <Enter> Authentication On: Type up to 11 characters	Paired adapters should have a same PIN code.
5. Connection mode	AT+ZMmode	Set a connection mode	0: 1:1 Mode, 1: WAIT Mode, 2: REGISTER and CONNECT Mode
6. Friendly name	AT+ZNname<Enter>	Set a friendly name up to 11 characters.	
7. Command for the remote	AT+ZO	Enter configuration mode for the remote.	
8. Parity Bit	AT+ZPparity	Set the parity bit.	0: None, 1: Odd 2: Even
9. Stop Bit	AT+ZSstop	Set the stop bit.	0: 1 Stop, 1: 2 Stop
10. View	AT+ZV	Display configuration information	
11. Exit	AT+ZX	Apply changes.	
12. Usage	AT+Z?	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 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	AAddr<Enter>	Set a connecting address for remote device.	
2. Baud rate	BBaud Rate	Change the baud rate for the remote.	
3. COM port	CCOM Port	This is only valid in mode 2.	
4. PIN code	EPIN<Enter>	Authentication Off: Type <Enter> Authentication On: Type up to 11 characters	Paired adapters should have a same PIN code.
5. Connection mode	MMode	Set a connection mode for remote.	
6. Friendly name	NName<Enter>	Set a friendly name up to 11 characters for remote.	
7. Parity Bit	PParity	Set the parity bit.	0: None, 1: Odd 2: Even
8. Stop Bit	SStop	Set the stop bit.	0: 1 Stop, 1: 2 Stop
9. View	V	Display configuration information for remote	
10. Exit	X	Save changes and return to main menu.	
11. Usage	?	Print the usage.	

Remarks1: To configure a remote device via over-the-air, a local device must be able to 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.