

CORE Serial In  
(CS - 232) M

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## **Introduction**

This manual describes the procedures for using the interface cable to communicate between a computer and CORE universal remote controller.

The CORE itself contains a set of routines (called the Interface or CSUI) which enables it to communicate with a terminal at a rate of 9600 or 19200 baud. This interface control all of the CORE's functions from a keyboard program as if they were physically pressing keys on a keyboard. Also, there are additional functions available which transmit data between CORE and the host computer.

This manual is intended to be used by someone who works with the CORE. (See the CORE Reference Manual regarding programming the CORE.) It also assumes that you have a computer (or system) communicating with the CORE and that you are able to initialize the serial port on your computer to 9600 or 19200, and send characters as desired. To use the special commands, you must also be able to receive blocks of binary data and store them in memory and/or on disk.

## **Baud Rate**

The CORE is shipped with the baud rate set to 19200. To use 9600 baud, hold the '9' key down while pressing the 'c' key. To reset to 19200 baud, hold the '1' key down while pressing the 'c' key. A 'c'/reset (complete Clear) will reset the baud rate to 19200.

## **Hardware Protocol**

The CORE is configured to transmit (and receive) 8 bits and no parity. As shipped, transmit is on pin 3, receive is on pin 2. Pins 2 and 3 are reversible using an internal switch on p. 15.) Pin 20 (DTR) is connected to +5. Ground is on pin 1.

**Note:** in the descriptions which follow, numbers preceded by a dollar sign (i.e. \$20) are hexadecimal values.

## Getting Started

To begin serial communication, CORE must be in its normal display state, with the time on the top line and the location displayed on the bottom line. For example, if you are in the middle of setting an event timer, learning a program or editing a definition manually, CORE will not respond to characters sent over the serial port. You must manually exit these modes first. (**Note:** If the display is timed out, CORE will always be able to accept serial input).

To enter serial mode, send any character over the serial port. CORE Serial User Interface then outputs a "~" (ASCII \$7E = 126) to the serial port. CSUI then waits for a character from the serial port. If a character is not received in an allotted period of time (default timeout = 3 seconds), the CORE\_ will sound a reject tone and resume its normal operation. The CORE display returns to the PAGE and KEY that was in effect prior to activation of the serial interface.

The next character sent to CORE over the serial port will again echo a "~" and so on.

1. If you send one of the characters listed in Table 1, CORE will respond as it would when the corresponding key is pressed on the CORE itself. The CORE will echo the character sent **at the completion of the command**. You **must** wait for the echo before sending the next character. (If the CORE is sending an infrared signal, the interrupts are disabled and no characters can be received.)
2. If you send one of the special control characters in Table 2, you will initiate one of the special sequences described in the section on Special CSUI Commands.
3. A Carriage Return or ^M (ASCII \$0D = 13) will echo as a Carriage Return, followed by a LineFeed (ASCII \$0A = 10)
4. Any other character will be echoed as a BELL or ^G (ASCII 07).

TABLE 1: ASCII character

ASCII character	CORE Key
A	a
B	b
C	c
P	P
a	a
b	b
c	c
d	d
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
E	E
F	F
=	=
@	@
e	e
X	X
<	<
+	+
-	-
>	>
S	S
K	K
[	[
]	]



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