Remote Operation

This section describes remote operation of the CF2000 on a personal computer with a USB port.

Command Set Format

Each command code is composed of two to four alpha characters and an optional numeric parameter. If the command is sent without the numeric parameter, the instrument assumes the command is a request for status. When the command is a status request, the receiver returns a string consisting of the command followed by the current setup for that command. Commands must be entered using upper case characters.

All commands are terminated by a carriage return <CR>. Do not include spaces between a command and its associated numeric parameter. Data returned from the receiver will be terminated with a <CR><LF>.

USB Communications

Once connected to a USB port, the CF2000 will appear as a COM port in the Device Manager. The CF2000 will always use the next highest available COM port for operation. For instance, if COM ports 1 and 3 are in use by other peripherals and applications, the CF2000 will use COM 4. The CF2000 functions identically to a COM port from the reference point of both the host application and the serial device, and it can support serial device control requests defined in the Microsoft Win32® Communications API. Before connecting the CF2000 to a computer, the Drivers must first be installed. See the section on Driver Installation for details.

COM Settings

The communication settings for the COM port used by the CF2000 are as follows:
Baud Rate: 2400 bps
Data bits: 8
Parity: None
Stop Bits: 1
Flow Control: None

Remote Commands

The commands described the succeeding pages are available to the user for remote communication with and operation of the CF2000. In the descriptions of these commands, the following conventions are used:
1. A lowercase "x", "y" or "z" in the command or returned data syntax represents a numeric value, which is associated with a functional selection.
2. All command must be terminated with a carriage return character <CR>.
3. No spaces or null characters may be used.

If an illegal command is received by the CF2000 or if the input buffer overflows, the CF2000 will respond with an error E<CR><LF>. A colon character ":" (no carriage return) can be sent at any time to "flush" the input buffer of the CF2000.

Audio

Turns on or off the audio indicator on the CF2000.
Syntax: AUDx
Parameters:
Audio on or off (x):
0 = Audio indicator turned off
1 = Audio indicator turned on

Examples: To turn on the audio indicator, send the following command: AUD1<CR>
The CF2000 will respond with AUD<CR><LF>
To verify the audio indicator status, send the following command: AUD<CR>

If the audio indicator is on, the receiver will respond with: AUD1<CR><LF>

Auto
Sets the CF2000 to auto or manual mode.
Syntax: AUTOx
Parameters:
Auto on or off (x):
0 = Auto mode turned off (manual or count-up mode)
1 = Auto mode turned on (count-down mode)

Examples: To set the CF2000 to auto mode: AUTO1<CR>
The CF2000 will respond with AUTO<CR><LF>
To verify the current mode, send the following command: AUTO<CR>
If the CF2000 is in auto mode, the receiver will respond with: AUTO<CR><LF>

Channel Selection (CT2000 only)
Sets the channels in the CT2000 on or off.
Syntax: CHxyz
Parameters:
Channel 1 on or off (x):
0 = Channel 1 turned off
1 = Channel 1 turned on

Channel 2 on or off (y):
0 = Channel 2 turned off
1 = Channel 2 turned on

Channel 3 on or off (z):
0 = Channel 3 turned off
1 = Channel 3 turned on

Examples: To turn on channels one and three on the CT2000: CH101<CR>
The CT2000 will respond with CH<CR><LF>
To verify channel status, send the following command: CH<CR>
If channels 2 and 3 are on, the receiver will respond with: CH011<CR><LF>

Power Level (CF2000 only)
Sets the variable power level in the CF2000 over the range 0-100.
Syntax: Pxyz
Set emission level from 0% to 100% of full power.
000 = sets power level to 0%
001 = sets power level to 1%
002 = sets power level to 2%
.
.
.
050 = sets power level to 50%
.
.
.
098 = sets power level to 98%
099 = sets power level to 99%
100 = sets power level to 100%

Examples: To set the CF2000 UV emission power level value to 15 : P15<CR>

The CF2000 will respond with P<CR><LF>
To check the current emission power level value, send the following command: P<CR>
If the CF2000 power level value is 10: P10<CR><LF>

Emit
Starts or stops UV light emission.
Syntax: EMITx
Parameters:
Emission on or off (x):
0 = Turn UV LEDs off.
1 = Turn UV LEDs on.

Examples: To start UV light emission: EMIT1<CR>
The CF2000 will respond with EMIT<CR><LF>
To verify the UV emission status, send the following command: EMIT<CR>
If the UV emission is on, the receiver will respond with: EMIT1<CR><LF>

Lock
Locks out the front panel keys (except audio and emit keys).
Syntax: LOCKx
Parameters:
Lock on or off (x):
0 = Front panel lock turned off (all keys available)
1 = Front panel lock turned on (only audio and emit keys available)

Examples: To disable the front panel keys: LOCK1<CR>
The CF2000 will respond with LOCK<CR><LF>
To verify the lock status, send the following command: LOCK<CR>
If the CF2000 lock is set, the receiver will respond with: LOCK1<CR><LF>
Note: The lock status is not saved by the CF2000 when it is turned off.
The default value will be "lock off" when the device is turned back on.

Minutes
Sets the minutes value for UV emission while in auto mode. For auto mode, returns the current minutes value while UV emission is in progress. For manual mode, returns the minutes value for UV emission that has occurred. While UV emission is not in progress, the CF2000 will return zero for manual mode and the current minutes value setting in auto mode.
Syntax: MINxx
Parameters:
Number of minutes (xx):
00 = Zero minutes
01 = One minute
…
59 = 59 minutes

Examples: To set the CF2000 UV emission time minutes value to 5: MIN05<CR>
The CF2000 will respond with MIN<CR><LF>
To check the current emission time minutes value, send the following command: MIN<CR>
If the CF2000 is in auto mode and the minutes value is 1: MIN01<CR><LF>

Seconds
Sets the seconds value for UV emission while in auto mode. For auto mode, returns the current seconds value while UV emission is in progress. For manual mode, returns the seconds value for the UV emission that has occurred. While UV emission is not in progress, the CF2000 will return zero for manual mode and the current seconds value setting in auto mode.

Syntax: SECxx
Parameters:
Number of seconds (xx):
00 = Zero seconds
01 = One second
…
59 = 59 seconds

Examples: To set the CF2000 UV emission time seconds value to 15 : SEC15<CR>
The CF2000 will respond with SEC<CR><LF>
To check the current emission time seconds value, send the following command: SEC<CR>
If the CF2000 is in auto mode and the seconds value is 10: SEC10<CR><LF>