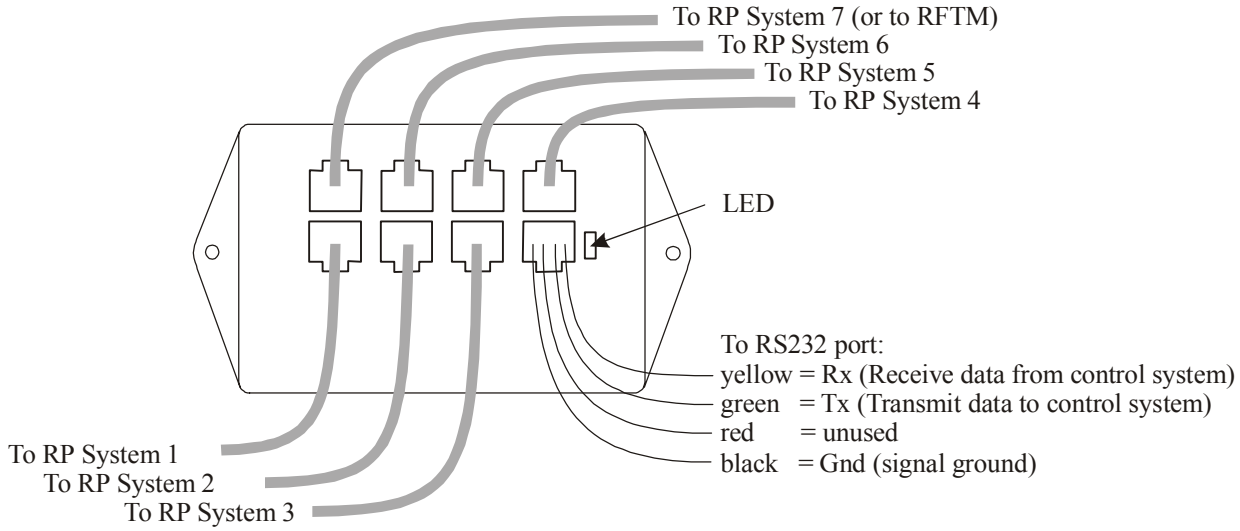
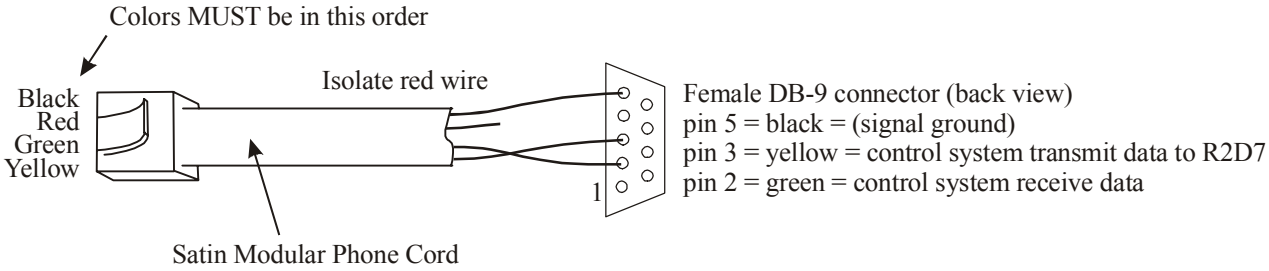
RS232 Port setup: 9600 8N1.



Note that System 1 **must** be connected to the eye port on a functional RP system for this unit to operate, all other system ports may be left unconnected.

A typical cable for connecting to a Home Automation System is as shown:



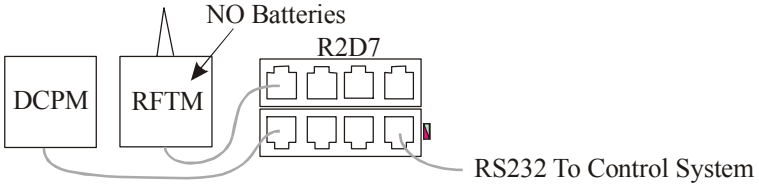
New to V4:

The LED reports the following:
On power up, it flashes red 4 times if the unit is in Bus mode, it flashes green then red 3 times if Radio mode.
When sending commands on the bus, it flickers green.
If a bad command is received, it will briefly flash red.

The protocol is described in "R2D7 V4 Protocol" document. Case sensitivity has been removed and extraneous characters before a command are ignored. The buffer is much larger.

R2D7 and radio control:

Port 7 has power connected from port 1. This allows an RFTM to be plugged directly in without needing a splitter for the DCPM. Connection as shown is useful when only radio is used.



 12/22/03

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Examples and other notes:

If you want to emulate the momentary action currently available using a transmitter with an RP in momentary mode, then put the desired RP's in momentary action, and use the following sequence
(assuming system 1, channel 23, tilting open):

When the button is pressed, send *1o23000; the R2D7 will begin sending "OPEN23" commands
When the button is released, send *1q; the R2D7 will stop sending when ; is received

The RP will respond appropriately by tilting if short button, latching if held longer than 1.5 seconds.
This method is recommended if an IR transmitter is used in conjunction with the control system.
(If the RP is placed in "Stop on Transmitter Button Release" mode, then the motor will run as long as the button is held)

Another method to accomplish this action is put the RP in maintained action:
When the button is pressed, send *1o23002; the R2D7 will send "OPEN23" for .1 seconds
When the button is released, send *1s; the R2D7 will send "STOP ALL"
The RP will respond by running as long as the button is held.

If the "time to send" value is not sent, then the R2D7 will send the command for 2 seconds. This guarantees the action happens even if the motor is already moving or if it is "momentary action." Stop ALL command is sent for .25 seconds.

A large "scene" can be created by using the ALL systems command. I.e., all motors in group 14 on all systems can be simultaneously opened by sending *0o14;

Complex scenes can be achieved by putting the RP's in "Stop on Transmitter Button Release" mode. The motors will run as long as commands are sent. Use the R2D7 to send timed commands to put the motors at desired locations. Make sure that all motors are fully closed (or open) before doing timed runs!

The RS232 port on the R2D7 interface can be wired with only 2 wires if you choose to ignore the feedback information. This means that the control system programmer must make sure that the buffer never overflows, and that all messages are correctly formatted.

A scene can be sequenced using the R2D7 by sending timed commands with pauses created by sending timed command to an unused channel. This effect can also be done by timing commands inside the control system program.

The R2D7 internal buffer is 256 bytes long. If the buffer reaches half full, then X-off is sent, and the control system is expected to stop sending commands. In this state, when the last message is read out of the buffer, X-on is sent and the control system may resume sending commands. If the buffer overflows, then an upper case "O" is sent back and ALL commands are thrown away and the buffer is cleared. If the control system keeps sending commands during this time, the first one will probably be bad, and the next valid command will be acted upon.

Any command received by the R2D7 that does not conform exactly to the protocol, or if any number is out of range, then an upper case "U" is sent back and that command is thrown away. The exception to this is that extra characters at the front of a command are ignored.

Between every command there is a forced delay of ¾ second. This allows the RP's time to get ready for the next command. (After a stop, the forced delay is only .1 sec.)

When a valid command is received, the R2D7 sends back "LF" to acknowledge the command. It then begins sending the desired command over the IR link. When the timed command is completed, the R2D7 sends "CR" to indicate that it has completed that command and is ready for the next one.

Special characters:

";" signifies end of command and can be used in place of "CR". ";" corresponds to ASCII character number 59 (0x3B)

"CR" or <CR> signifies end of command and can be used in place of ";".
"CR" corresponds to ASCII character number 13 (0x0D).

"LF" signifies "line feed" and is ignored by the R2D7. "LF" corresponds to ASCII character number 10 (0x0A).

"*" signifies start of command and corresponds to shift 8 on most keyboards, ASCII character number 42 (0x2A).

"X-off" (Ctrl-S on most keyboards) requests sender to stop sending, ASCII character number 19 (0x13).

"X-on" (Ctrl-Q on most keyboards) requests sender to resume sending, ASCII character number 17 (0x11).

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