

# R2D7 V4.1 Protocol

<i>Serial Port to BUS (RP Receivers)</i>		
<i>Information</i>	<i>Data</i>	<i># of characters <sup>1</sup></i>
Header (Start of command)	* (asterisk) for use on BUS to control RP	1
Subsystem number or Administration command	0 <sup>2</sup> – 7 if BUS, 7 – 99 if Radio V <sup>3</sup> = report version R = make port 7 Radio <sup>4</sup> B = make port 7 BUS	1 or 2
Command <sup>5</sup>	o = open c = close s = stop <sup>15</sup> w = wind p = program RP a = program accessory q <sup>6</sup> = quit sending	1
Channel <sup>7</sup>	00 <sup>8</sup> – 60 <sup>9</sup>	2
Time to send <sup>10 11</sup>	0 0 0 <sup>12</sup> – 9 9 9 20 <sup>th</sup> of seconds <sup>13</sup> (this value is optional)	3
Terminator	; (semicolon) or “CR” (enter key)	1
Pause	Send a command on an unused channel for the desired pause time.	

<i>BUS to Serial Port</i>	
<i>Event</i>	<i>R2D7 sends</i>
Powered up	“version <sup>3</sup> , X-on”
Terminator is received	“LF” if good command “U” sent if command cannot be understood “CR” is sent After command has been relayed to motors
Buffer <sup>14</sup> overflows and all data is purged	“O” is sent
Buffer <sup>14</sup> is half full	“X-off” (Ctrl-S)
Buffer <sup>14</sup> is empty	“X-on” (Ctrl-Q), but only if X-off was previously sent

Please refer to the “R2D7 Installation Guide” document for additional information including command examples.

<sup>1</sup> Total message length may be as short as 2 and as long as 10 characters, typically 6

<sup>2</sup> 0 means ALL systems (for super groups) ALL does not include the radio channels

<sup>3</sup> Version reports “4.1” then r if administered as Radio, or b if BUS, followed by carriage return (please note that all characters after V in this command are ignored)

<sup>4</sup> Radio requires a RFTM be plugged into port 7 jack without batteries

<sup>5</sup> Case is not important: s is the same as S and so on

<sup>6</sup> Stop sending a forever command. Any other command will stop transmission, but an error will be reported

<sup>7</sup> If command is stop or quit, then this value is optional and ignored

<sup>8</sup> 00 = ALL

<sup>9</sup> 60 sometimes called “cut strap ALL”

<sup>10</sup> If no digits, then the command is sent for 2 seconds, except for stop, program, or wind which are sent for ¼ second

<sup>11</sup> Time between commands = .75 sec if multiple commands are buffered (Time = .1 sec after a stop)

<sup>12</sup> 000 = Forever, use the q command to stop transmission

<sup>13</sup> Max timed pulse = 50 sec. If this is a radio command, the value is rounded up to the nearest 10<sup>th</sup> second

<sup>14</sup> Buffer is 256 bytes long

<sup>15</sup> Stop is a “universal stop” command. There is no channel associated with this command – see examples below.

Repeat of a command (open or close) can generally be utilized to achieve a ‘stop’, depending on the features programmed into the RP60xyz motor control.

# R2D7 V4.1 Protocol

<i>Special characters</i>		
<i>Character</i>	<i>Description</i>	<i>ASCII Character Number</i>
“ ; ”	Semicolon, signifies end of command	59 (0x3B)
“ CR ”	Carriage return, signifies end of command	13 (0x0D)
“ * ”	Asterisk, Shift 8 on most keyboards	42 (0x2A)
“ LF ”	Line feed, ignored (not used)	10 (0x0A)
“ X-off ”	Ctrl-S on most keyboards, requests sender to stop sending	19 (0x13)
“ X-on ”	Ctrl-Q on most keyboards, requests sender to resume sending	17 (0x11)

## *Example strings:*

System 1 Close ALL for default 2 seconds: **\*1c00;**

System 2 Open ALL for default 2 seconds: **\*2o00;**

System 3 Close 5 for .75 seconds (momentary shade possibly): **\*3c05015;**

System 4 Open 9 for 5 seconds: **\*4o09100;**

System 5 Close 23 for default 2 seconds: **\*5c23;**

System 6 Open 49 for .25 seconds (momentary shade possibly): **\*6o49005;**

System 7 Close 60 for default 2 seconds: **\*7c60;**

All Systems Open 21 for default of 2 seconds: **\*0o21;**

System 1 Stop for default .25 seconds: **\*1s;**